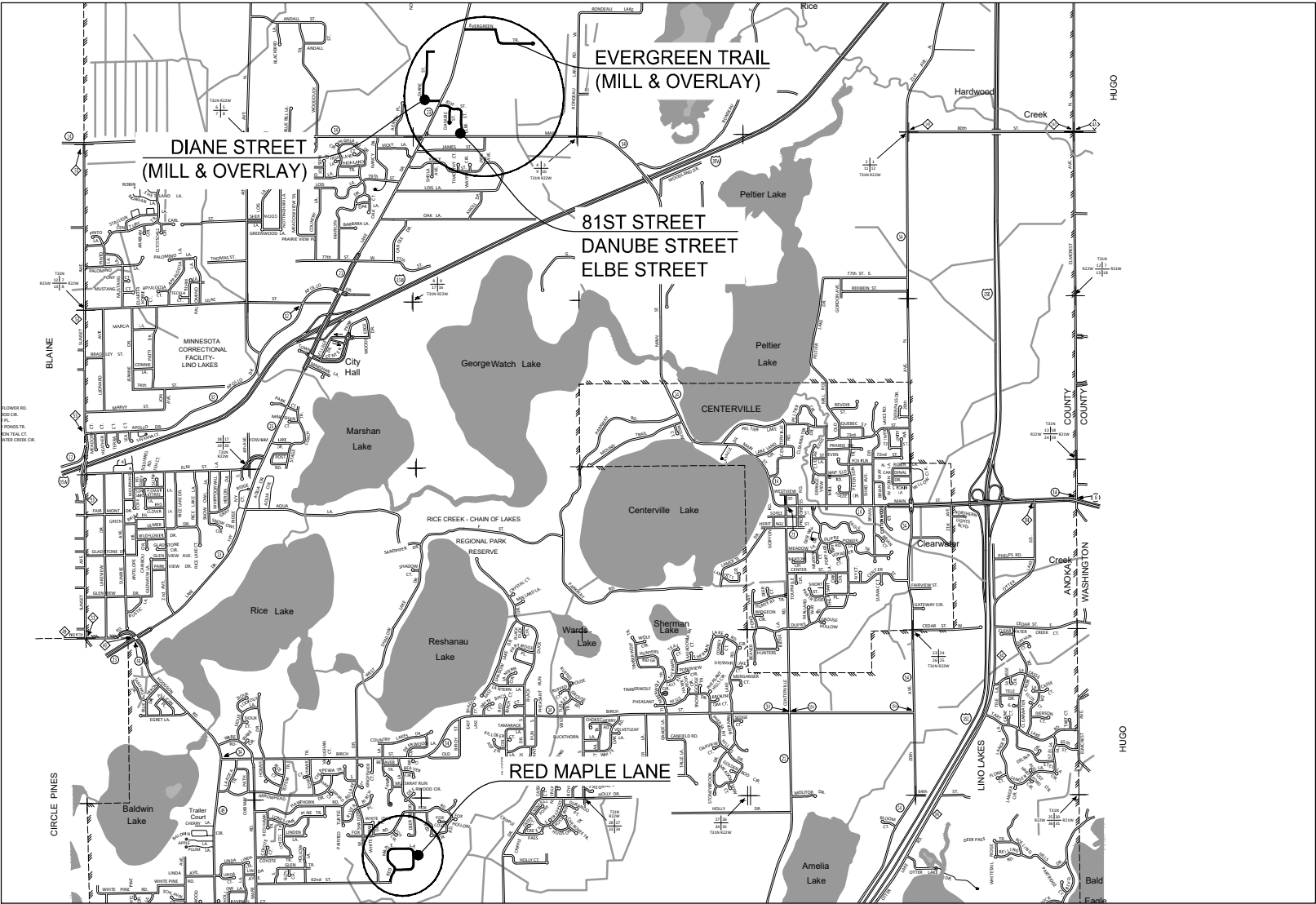


2025 STREET RECONSTRUCTION PROJECT

CITY OF LINO LAKES

CONSTRUCTION PLAN FOR MILL & OVERLAY, BITUMINOUS SURFACING, WATERMAIN, SANITARY SEWER, AND STORM SEWER

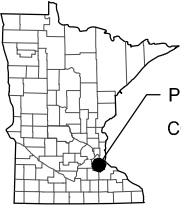
LOCATED ON	<u>EVERGREEN TRAIL</u>	FROM <u>LAKE DRIVE (CR 23)</u>	TO <u>CUL-DE-SAC</u>
	<u>DIANE STREET</u>	FROM <u>LAKE DRIVE (CR 23)</u>	TO <u>STREET TERMINUS</u>
	<u>81ST STREET</u>	FROM <u>LAKE DRIVE (CR 23)</u>	TO <u>ELBE STREET</u>
	<u>DANUBE STREET</u>	FROM <u>CUL-DE-SAC</u>	TO <u>81ST STREET</u>
	<u>ELBE STREET</u>	FROM <u>MAIN STREET (CR14)</u>	TO <u>81ST STREET</u>
	<u>RED MAPLE LANE</u>	FROM <u>62ND STREET</u>	TO <u>STREET TERMINUS</u>



PROJECT LOCATION MAP

EXCAVATION NOTICE SYSTEM

A CALL TO GOPHER STATE ONE (651-454-0002) IS REQUIRED A MINIMUM OF 48 HOURS PRIOR TO PERFORMING ANY EXCAVATION.



PROJECT LOCATION
COUNTY: ANOKA

SECT 4, TWP 31N, RNG 22W
SECT 32, TWP 31N, RNG 22W

HORIZONTAL DATUM:
ANOKA COUNTY COORDINATE SYSTEM
DATUM: NAD83 (1996) ADJUSTMENT
UNITS: US SURVEY FEET
VRS MOUNT POINT: 1996 CMRX

VERTICAL DATUM:
NAVD88
GEOID: MN03

UTILITY INFORMATION

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

GOPHER ONE CALL TICKET NUMBER: 243100906, 243100967, 243100991, 243100927

UTILITY COORDINATION MEETING HELD ON: DECEMBER 20, 2024

GOVERNING SPECIFICATIONS

THIS WORK SHALL BE DONE IN ACCORDANCE WITH THE 2024 EDITION OF THE CITY OF LINO LAKES "GENERAL SPECIFICATIONS AND STANDARD DETAIL PLATES FOR STREET AND UTILITY CONSTRUCTION."

THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

PLAN SET INDEX

SHEET NO.	DESCRIPTION
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2	GENERAL LAYOUT
3	STATEMENT OF ESTIMATED QUANTITIES
4-6	TABULATIONS
7	CONSTRUCTION NOTES
8-12	GENERAL DETAILS
13-18	STANDARD PLANS
19-20	TYPICAL SECTIONS
21-27	REMOVAL PLAN
28-33	OVERLAY PLAN
34-46	SANITARY SEWER AND WATERMAIN PLAN
47-60	STREET AND STORM SEWER CONSTRUCTION PLAN
61	POND GRADING
62-68	EROSION CONTROL & SEDIMENT CONTROL PLAN
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73	SIGNING AND STRIPING PLAN
74-96	CROSS SECTIONS
97	DETOUR ROUTE



THIS PLAN SET CONTAINS 97 SHEETS

THIS PLAN SET HAS BEEN PREPARED FOR:

CITY OF LINO LAKES
600 TOWN CENTER PARKWAY
LINO LAKES, MN 55014
(651) 982-2400

ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND ORDINANCES WILL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.



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.

PAUL HORNBY, P.E.

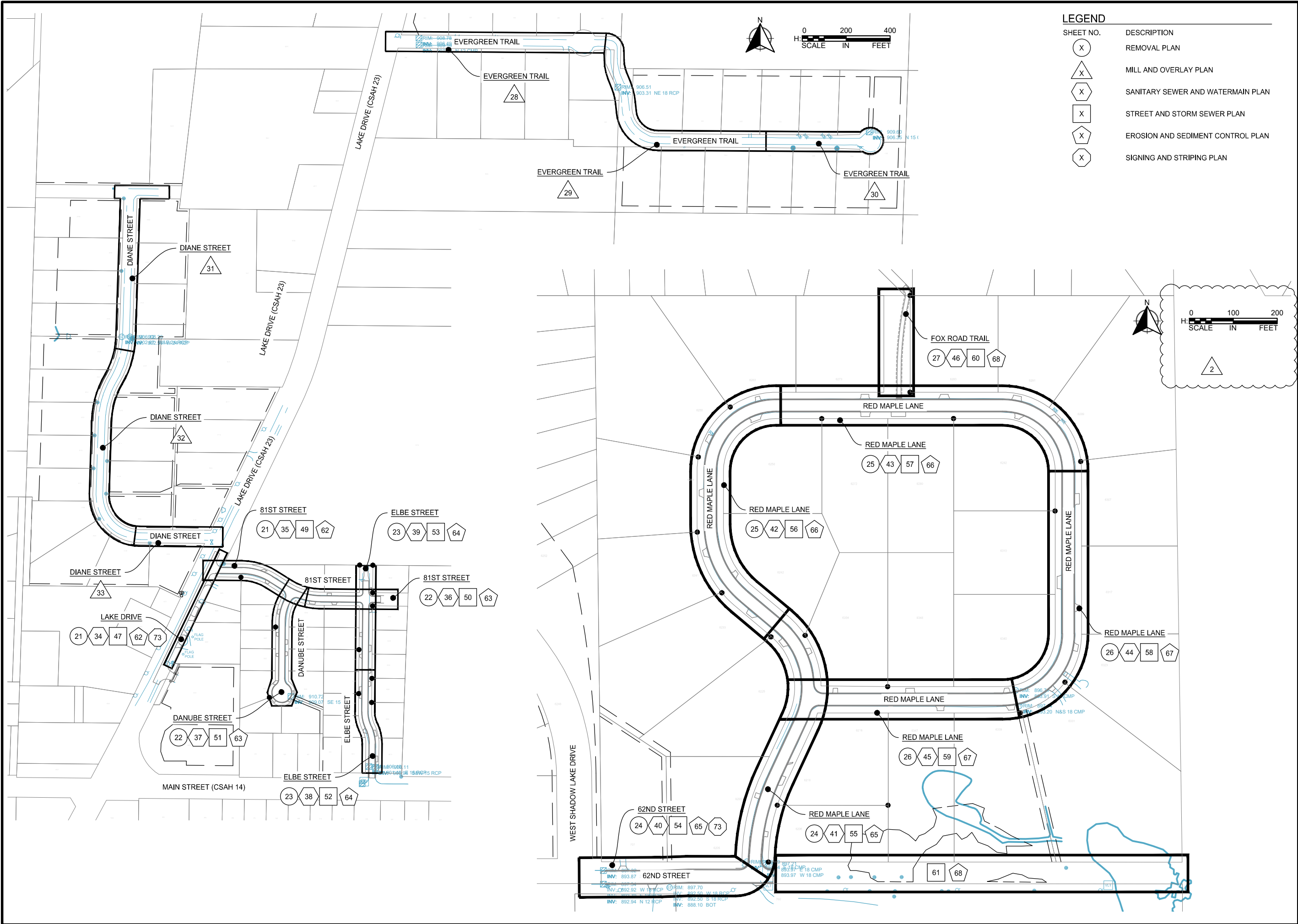
DATE: 01/24/2025



LICENSE NUMBER: 23359

WSB PROJ. NO. 023620-000

SHEET
1
OF
97

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SCALE:
AS SHOWN


DESIGN BY:
THC

PLAN BY:
THC

CHECK BY:
PTH

REVISIONS		
NO.	DATE	DESCRIPTION
2	02-05-2025	ADDENDUM NO. 2

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.



PAUL HORNBY, PE

DATE: 01-24-2025 LIC. NO. 23359

GENERAL LAYOUT

2024 STREET RECONSTRUCTION PROJECT CITY OF LINO LAKES

WSB PROJECT NO.
023620-000

SHEET

2 OF 97

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STATEMENT OF ESTIMATED QUANTITIES								
PROJECT TOTALS					DIANE STREET	EVERGREEN TRAIL	PINE HAVEN	COLONIAL WOODS
MNDOT SPECIFICATION NO.	DESCRIPTION	NOTES	UNITS	TOTAL ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY
SCHEDULE A. - SURFACE IMPROVEMENTS								
2021.501	MOBILIZATION		LS	1	0.25	0.25	0.25	0.25
2101.505	CLEARING	1	ACRE	0.9		0.1	0.1	0.7
2101.505	GRUBBING	1	ACRE	0.9		0.1	0.1	0.7
2101.524	CLEARING	1	TREE	23			13	10
2101.524	GRUBBING	1	TREE	23			13	10
2101.610	TREE TRIMMING	1	HOURL	10			5	5
2104.502	SALVAGE MAIL BOX	33	EACH	70			40	30
2104.502	REMOVE SIGN		EACH	2				2
2104.502	SALVAGE SIGN		EACH	13			8	5
2104.503	SALVAGE FENCE	44	LF	20				20
2104.503	REMOVE CURB & GUTTER		LF	34			30	4
2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)	12	LF	1790			1600	190
2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	12	LF	2000	90	400	1190	320
2104.504	REMOVE CONCRETE DRIVEWAY PAVEMENT	12, 13	S Y	600			300	300
2104.504	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	12, 13	S Y	1100			700	400
2104.504	REMOVE CONCRETE PAVEMENT	12, 13	S Y	1200			1200	
2104.504	REMOVE BITUMINOUS PAVEMENT	12, 13	S Y	26900	400	500	13200	12800
2104.518	REMOVE CONCRETE WALK	12	S F	100			70	30
2104.518	REMOVE BITUMINOUS WALK	12	S F	2680			550	2130
2106.507	EXCAVATION - COMMON (P)		C Y	10800	200	200	4700	5700
2106.507	EXCAVATION - COMMON	1	C Y	700			300	400
2106.507	EXCAVATION - SUBGRADE	1	C Y	700	25	75	300	300
2106.507	EXCAVATION - CHANNEL AND POND		C Y	70	5	5	10	50
2106.507	SELECT GRANULAR EMBANKMENT (CV)	1, 14, 15	C Y	700	25	75	300	300
2106.601	DEWATERING		LS	1			0.5	0.5
2106.601	TEMPORARY ROAD	1	LS	1				1
2112.519	SUBGRADE PREPARATION	16	R DST	65			31	34
2123.610	STREET SWEEPER (WITH PICKUP BROOM)	1, 37	HOURL	40	10	10	10	10
2123.610	UTILITY CREW	1, 36	HOURL	20			10	10
2130.523	WATER	26	M GAL	160			80	80
2211.507	AGGREGATE BASE (CV) CLASS 5 (P)	17	C Y	6000	90	110	2900	2900
2232.504	MILL BITUMINOUS SURFACE	29	S Y	4200	100	100	1500	2500
2331.501	JOINT ADHESIVE	6	LF	13250	300	550	5000	7400
2357.506	BITUMINOUS MATERIAL FOR TACK COAT		GALLON	1280	40	110	530	600
2360.504	TYPE SP 9.5 WEAR CRS MIX (2,B) 2.0" THICK	40	S Y	4000			1500	2500
2360.504	TYPE SP 9.5 WEAR CRS MIX (2,C) 3.0" THICK	1, 19, 22	S Y	1200			700	500
2360.509	TYPE SP 9.5 WEARING COURSE MIXTURE (2,B)	24, 29	TON	1800	800	1000		
2360.509	TYPE SP 9.5 WEARING COURSE MIXTURE (2,C)		TON	1730	30		700	1000
2360.509	TYPE SP 12.5 WEARING COURSE MIXTURE (2,C)		TON	2860	60		1200	1600
2360.509	TYPE SP 12.5 WEARING COURSE MIXTURE (4,E)	28, 43	TON	800			800	
2360.509	TYPE SP 12.5 NON WEAR COURSE MIXTURE (4,B)	28, 43	TON	400			400	
2504.602	IRRIGATION SYSTEM REPAIR		EACH	25	2	3	10	10
2505.503	6" PERFORATED PVC DRAIN TILE	10	LF	900			500	400
2505.601	UTILITY COORDINATION	16	LS	1	0.25	0.25	0.25	0.25
2521.518	2.5" BITUMINOUS WALK	19, 23	S F	2780			480	2300
2521.518	4" CONCRETE WALK	19	S F	30				30
2521.518	6" CONCRETE WALK	19	S F	160			60	100
2531.503	CONCRETE CURB & GUTTER DESIGN B418	19, 34	LF	400			200	200
2531.503	CONCRETE CURB & GUTTER DESIGN B618	19, 35	LF	1060		60	400	600
2531.603	CONCRETE CURB & GUTTER DESIGN SURMOUNTABLE	19	LF	10670	120	50	3800	6700
2531.507	6" CONCRETE DRIVEWAY PAVEMENT	19	S Y	500			240	260
2531.518	TRUNCATED DOMES		S F	32			16	16
2535.503	BITUMINOUS CURB	28, 41	LF	300			300	
2540.602	INSTALL MAIL BOX	33	EACH	70			40	30
2540.602	MAIL BOX	1	EACH	10			5	5
2540.602	MAIL BOX SUPPORT	1	EACH	10			5	5
2540.602	TEMPORARY MAIL BOX		LS	1			0.5	0.5
2557.503	INSTALL SALVAGED FENCE	44	LF	20				20
2557.602	REPAIR DOG FENCE	1	EACH	4			1	1
2563.601	TRAFFIC CONTROL	16	LS	1	0.15	0.15	0.35	0.35
2564.602	INSTALL SALVAGED SIGN	4, 27	EACH	13			8	5
2573.502	SILT FENCE, TYPE MS		LF	6200	2000	2000	100	2100
2573.502	STORM DRAIN INLET PROTECTION		EACH	75	5	11	24	35
2573.503	SEDIMENT CONTROL LOG TYPE WOOD FIBER		LF	3400	1000	2000	200	200
2573.604	STABILIZED CONSTRUCTION EXIT	16	LS	1	0.25	0.25	0.25	0.25
2574.507	COMMON TOPSOIL, BORROW	7	C Y	2520	70	250	800	1400
2574.508	FERTILIZER TYPE 3		LB	330			260	70
2574.508	FERTILIZER TYPE 4		LB	135	5	60		70
2575.504	ROLLED EROSION PREVENTION CATEGORY 25		S Y	10			10	
2575.504	SODDING TYPE LAWN		S Y	11467	67		6300	5100
2575.505	SEEDING		ACRE	0.8				0.8
2575.508	HYDRAULIC MULCH MATRIX		LB	4100			3300	800
2575.608	SEED SOUTHERN TALLGRASS ROADSIDE		LB	10				10
2575.608	SEED WET DITCH		LB	10				10
2575.535	WATER	3	M GAL	200	20	20	80	80
2582.503	4" SOLID LINE MULTI COMP		LF	2600			2600	
2582.503	4" DBLE SOLID LINE MULTI COMP		LF	1800			1800	
2582.503	4" DBLE SOLID LINE PAINT		LF	400				400
2582.503	4" SOLID LINE PAINT		LF	100			100	
2582.518	PAVT MSSG PAINT		S F	31			31	



STATEMENT OF ESTIMATED QUANTITIES								
PROJECT TOTALS					DIANE STREET	EVERGREEN TRAIL	PINE HAVEN	COLONIAL WOODS
MN/DOT SPECIFICATION NO.	DESCRIPTION	NOTES	UNITS	TOTAL ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY
SCHEDULE B. - SANITARY SEWER IMPROVEMENTS								
2104.501	REMOVE SEWER PIPE (SANITARY)	11	LF	70			70	
2503.602	CONNECT TO EXISTING SANITARY SEWER		EACH	2			1	1
2503.602	8"X4" PVC WYE		EACH	50			21	29
2503.602	15"X4" PVC WYE		EACH	10			10	
2503.603	4" PVC PIPE SEWER	5, 10	LF	1785			902	883
2503.603	8" PVC PIPE SEWER - SDR 35	5, 8	LF	4700			1357	3343
2503.603	15" PVC PIPE SEWER - SDR 26	5, 9	LF	1466			1466	
2503.603	TELEWISE SANITARY SEWER		LF	6166			2823	3343
2506.502	CASTING ASSEMBLY (SANITARY)		EACH	43			17	26
2506.602	CHIMNEY SEAL	42	EACH	43			17	26
2506.603	CONST 48" DIA SAN SEWER MANHOLE	5	LF	664			326	338

STATEMENT OF ESTIMATED QUANTITIES								
PROJECT TOTALS					DIANE STREET	EVERGREEN TRAIL	PINE HAVEN	COLONIAL WOODS
MN/DOT SPECIFICATION NO.	DESCRIPTION	NOTES	UNITS	TOTAL ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY
SCHEDULE C. - WATERMAIN IMPROVEMENTS								
2104.502	SALVAGE HYDRANT & VALVE		EACH	1			1	
2104.503	REMOVE WATER MAIN	11	LF	140			70	70
2504.602	CONNECT TO EXISTING WATER MAIN		EACH	4			1	3
2504.602	1" CORPORATION STOP		EACH	59			30	29
2504.602	SACRIFICIAL ANODE BAG (32 LB)	1, 32	EACH	33			18	15
2504.602	8" GATE VALVE & BOX		EACH	8			3	5
2504.602	12" GATE VALVE & BOX		EACH	5			5	
2504.602	1" CURB STOP & BOX		EACH	59			30	29
2504.602	HYDRANT ASSEMBLY	2, 21	EACH	21			10	11
2504.603	1" TYPE K COPPER PIPE		LF	1877			927	950
2504.603	6" WATERMAIN DUCTILE IRON CL 52	2	LF	12			12	
2504.603	8" WATERMAIN DUCTILE IRON CL 52	2	LF	5075			1447	3628
2504.603	12" WATERMAIN DUCTILE IRON CL 52	2	LF	1354			1354	
2504.604	4" POLYSTYRENE INSULATION		S Y	418			400	18
2504.608	DUCTILE IRON FITTINGS		POUND	4564			2079	2485

STATEMENT OF ESTIMATED QUANTITIES								
PROJECT TOTALS					DIANE STREET	EVERGREEN TRAIL	PINE HAVEN	COLONIAL WOODS
MN/DOT SPECIFICATION NO.	DESCRIPTION	NOTES	UNITS	TOTAL ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY
SCHEDULE D. - DRAINAGE IMPROVEMENTS								
2104.502	REMOVE DRAINAGE STRUCTURE	11	EACH	8	2	2		4
2104.503	REMOVE SEWER PIPE (STORM)	11	LF	218	43	75	100	
2104.603	ABANDON STORM SEWER	11, 20	LF	142		142		
2501.502	12" RC PIPE APRON	31	EACH	1				1
2500.502	15" CS PIPE APRON	31	EACH	1		1		
2501.502	15" RC PIPE APRON	31	EACH	4		1	2	2
2501.502	18" RC PIPE APRON	31	EACH	4		1	2	1
2503.503	16" PVC PIPE SEWER	25	LF	255		255		
2503.503	12" RC PIPE SEWER DESIGN 3006 CLASS V		LF	102			61	41
2503.503	15" RC PIPE SEWER DESIGN 3006 CLASS V		LF	3350		355	1164	1831
2503.503	18" RC PIPE SEWER DESIGN 3006 CLASS V		LF	335		98	98	139
2503.503	28" SPAN RC PIPE-ARCH SEWER CL IIIA		LF	31	31			
2503.602	CONNECT TO EXISTING STORM SEWER		EACH	2			2	
2506.502	CASTING ASSEMBLY (STORM)		EACH	55	2	7	18	28
2506.602	CHIMNEY SEAL	42	EACH	55	2	7	18	28
2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPECIAL	38	EACH	21	1	3	7	10
2507.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN SPEC 1	39	EACH	1				1
2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020		LF	118	3	14	42	60
2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 60-4020		LF	26.5			10	16
2511.507	RANDOM RIPRAP CLASS III		C Y	8		8		

NOTES:

- (P) DENOTES PLAN QUANTITY.
1. AS DIRECTED BY THE ENGINEER IN THE FIELD (MAY REQUIRE MULTIPLE MOBILIZATIONS).
2. WITH POLYWRAP.
3. TURF ESTABLISHMENT.
4. INSTALLATION OF SALVAGED ITEM.
5. RESTRICTED TRENCH WIDTH. CONTRACTOR TO UTILIZE SPECIAL CONSTRUCTION METHODS TO LIMIT CONSTRUCTION IMPACTS TO THOSE IDENTIFIED ON THE PLANS FOR BORING PIT LOCATIONS AND CONNECTIONS TO EXISTING MAIN.
6. MASTIC.
7. COMPACTED VOLUME.
8. SDR 35
9. SDR 26
10. SCHEDULE 40
11. ALL SIZES AND MATERIALS.
12. THICKNESS MAY VARY (INCIDENTAL).
13. REMOVAL OF INTEGRAL CURB (BITUMINOUS AND CONCRETE) INCLUDED IN PAVEMENT REMOVAL.
14. MUST BE PRE-APPROVED BY THE ENGINEER PRIOR TO THE START OF WORK.
15. NO LESS THAN 100% SHALL PASS THE TWO-INCH (2") SIEVE.
16. SEE CITY OF LINO LAKES GENERAL SPECIFICATIONS FOR REQUIREMENTS.
17. 100% CRUSHED.
18. SEE PROJECT MANUAL APPENDIX FOR EXISTING PAVEMENT INFORMATION. SEE TYPICAL SECTIONS.
19. INCLUDES EXCAVATION AND 6" AGGREGATE BASE CLASS 5.
20. BULKHEAD BOTH ENDS OF PIPE AND BLOW-FILL PIPE WITH SILICA SAND OR FLOWABLE FILL
21. INCLUDES VALVE.
22. FOR BITUMINOUS DRIVEWAYS.

23. FOR BITUMINOUS WALK.
24. FOR OVERLAY.
25. C900.
26. DUST CONTROL.
27. SIGNS AND POSTS DAMAGED BY SALVAGE OPERATIONS OR DURING STORAGE SHALL BE REPLACED BY THE CONTRACTOR AT NO COST TO THE OWNER.
28. FOR CSAH 23.
29. EDGE MILL AT DRIVEWAYS FOR DIANE STREET AND EVERGREEN TRAIL AND MILL BITUMINOUS WEDGE.
30. FOR RESIDENTIAL SIDEWALKS.
31. INCLUDES TRASH GUARD.
32. FOR USE AT GATE VALVES AND HYDRANTS UNLESS WITHIN 50 FEET OF EACH OTHER AS DIRECTED BY THE ENGINEER.
33. INCLUDES MAIL BOX SUPPORT.
34. FOR USE AT INTERSECTIONS.
35. FOR USE AT CATCH BASINS.
36. NOT FOR CONTRACTOR USE IN LOCATION OF UTILITIES UNDER GOPHER STATE ONE CALL (GSOCL) REQUIREMENTS.
37. NOT FOR CONTRACTOR USE FOR EROSION CONTROL CLEAN-UP.
38. 2'X3' CATCH BASIN.
39. POND OUTLET CONTROL STRUCTURE.
40. BITUMINOUS WEDGE - 3' WIDE FROM EDGE OF GUTTER TOWARD CENTERLINE 2" TO 0" TAPERED THICKNESS.
41. TYPE B4.
42. UTILITY SEALANT - SEE DIVISION 2 FOR SPECIFICATION.
43. INCLUDES SHOULDER REMOVAL (AS DIRECTED BY THE COUNTY).
44. ALL TYPES.



SCALE: AS SHOWN
PLAN BY: THC
DESIGN BY: THC
CHECK BY: PTH

REVISIONS

NO.	DATE	DESCRIPTION
2	02-05-2025	ADDENDUM NO. 2

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SANITARY TABULATION																				
STRUCT NO.	STREET	STATION	OFFSET	SIDE	TOP OF CASTING ELEV. (FINISHED)	OUTLET ELEV. BOTTOM	REMOVE SEWER PIPE (SANITARY)	CASTING ASSEMBLY	48" DIA MANHOLE	STEPS REQ.	CONNECT TO EXISTING SANITARY SEWER	8" PVC SDR 35	15" PVC SDR 26	4" PVC SCH 40	8"X4" PVC WYE	15"X4" PVC WYE	DRAINS TO STRUCT. NO.	PIPE GRADE	INVERT ELEV.	NOTES
							LIN FT	EACH	LIN FT		EACH	LIN FT	LIN FT	LIN FT	EACH	EACH		FT/FT		
6000	LAKE DRIVE	141+58.71	54.51	RT	917.88	892.07	68	R-1642	25.9	YES	1									CONNECT TO EXISTING SANITARY SEWER
6001	LAKE DRIVE	141+89.20	25.00	RT	917.42	892.13		R-1642	25.4	YES			42				6000	0.0015	892.07	
6002	LAKE DRIVE	145+39.19	27.48	RT	916.38	892.61		R-1642	23.9	YES			350	40		2	6001	0.0015	892.13	
6003	LAKE DRIVE	146+75.88	28.29	RT	916.11	892.82		R-1642	23.4	YES			137	20		1	6002	0.0015	892.61	
15" PLUG	LAKE DRIVE	147+55.88	28.56	RT		892.94							80				6003	0.0015	892.82	15" PLUG (INCIDENTAL)
6004	81ST STREET	62+27.19	0.00		916.64	893.09		R-1642	23.7	YES			182	24		1	6003	0.0015	892.82	
6005	81ST STREET	63+11.93	0.00		916.22	893.22		R-1642	23.1	YES			84				6004	0.0015	893.09	
6006	81ST STREET	64+32.05	0.00		915.62	893.40		R-1642	22.3	YES			120			1	6005	0.0015	893.22	
6008	DANUBE STREET	74+10.00	0.00		914.29	898.10		R-1642	16.3	YES	116						6006	0.0232	895.40	
6009	DANUBE STREET	70+25.00	0.07	LT	911.33	899.54		R-1642	11.9	YES	385			300	9		6008	0.0037	898.10	
6010	81ST STREET	65+32.86	0.00		915.12	893.55		R-1642	21.7	YES			100	33		1	6006	0.0015	893.40	
6011	81ST STREET	67+69.71	0.00		913.42	893.91		R-1642	19.6	YES			237	82		3	6010	0.0015	893.55	
6011A	81ST STREET	69+00.07	0.02	LT	913.36	894.11		R-1642	19.4	YES			130	36		1	6011	0.0015	893.91	
15" PLUG	81ST STREET	69.04.07	0.02	LT		894.12							4				6011	0.0015	893.91	15" PLUG (INCIDENTAL)
8" PLUG	ELBE STREET	89+20.00	0.00			894.30						20					6012	0.0040	894.22	8" PLUG (INCIDENTAL)
6012	ELBE STREET	89+00.00	0.00		913.96	894.22		R-1642	19.9	YES		78					6011	0.0040	893.91	
6013	ELBE STREET	86+28.60	0.00		910.74	894.68		R-1642	16.2	YES		193			92	3	6011	0.0040	893.91	
6014	ELBE STREET	83+08.60	0.00		908.04	896.06		R-1642	12.1	YES	320			152	5		6013	0.0040	894.78	
6015	ELBE STREET	81+94.65	0.00		907.38	896.61		R-1642	10.9	YES	113			62	2		6014	0.0040	896.16	
6016	ELBE STREET	80+62.87	0.00		906.72	897.24		R-1642	9.6	YES	132			61	2		6015	0.0040	896.71	
6017	62ND STREET	90+90.30	1.21	LT	897.81	882.70		R-1642	15.2	YES	1									CONNECT TO EXISTING SANITARY SEWER
6017A	62ND STREET	91+75.05	9.22	LT	898.26	883.04		R-1642	15.3	YES	85			37	1		6017	0.0040	882.70	
6018	62ND STREET	93+97.86	7.02	LT	897.21	883.93		R-1642	13.4	YES	223						6017A	0.0040	883.04	
6018A	62ND STREET	94+51.09	7.14	LT	898.49	884.14		R-1642	14.5	YES	53						6018	0.0040	883.93	
8" PLUG	62ND STREET	94+57.70	7.18	LT		884.17					6						6018	0.0040	883.93	8" PLUG (INCIDENTAL)
6019	RED MAPLE LANE	101+18.83	0.00		897.89	884.25		R-1642	13.8	YES	80						6018	0.0040	883.93	
6020	RED MAPLE LANE	102+32.68	0.00		898.63	884.70		R-1642	14.0	YES	114			62	2		6019	0.0040	884.25	
6021	RED MAPLE LANE	104+55.62	0.00		900.08	885.59		R-1642	14.6	YES	222			31	1		6020	0.0040	884.70	
6022	RED MAPLE LANE	105+50.00	0.00		900.65	885.96		R-1642	14.8	YES	93			61	2		6021	0.0040	885.59	
6023	RED MAPLE LANE	106+42.54	0.00		901.22	886.33		R-1642	15.0	YES	92						6022	0.0040	885.96	
6024	RED MAPLE LANE	107+75.01	0.00		902.02	886.86		R-1642	15.3	YES	132			33	1		6023	0.0040	886.33	
6025	RED MAPLE LANE	108+58.12	0.00		902.53	887.19		R-1642	15.5	YES	83						6024	0.0040	886.86	
6026	RED MAPLE LANE	109+33.82	0.00		902.99	887.49		R-1642	15.6	YES	75			51	2		6025	0.0040	887.19	
6027	RED MAPLE LANE	110+54.83	0.00		903.73	887.97		R-1642	15.9	YES	121						6026	0.0040	887.49	
6028	RED MAPLE LANE	111+44.55	9.95	LT	904.00	888.34		R-1642	15.8	YES	92			60	2		6027	0.0040	887.97	
6029	RED MAPLE LANE	112+25.38	0.00		904.43	888.67		R-1642	15.9	YES	83			31	1		6028	0.0040	888.34	
6030	RED MAPLE LANE	112+89.66	0.00		904.47	888.93		R-1642	15.7	YES	64			36	1		6029	0.0040	888.67	
6031	RED MAPLE LANE	115+61.56	0.00		903.29	890.02		R-1642	13.4	YES	272			61	2		6030	0.0040	888.93	
6032	RED MAPLE LANE	117+87.56	0.00		901.02	890.92		R-1642	10.2	YES	226			87	3		6031	0.0040	890.02	
6033	RED MAPLE LANE	128+00.00	0.00		897.18	886.69		R-1642	10.6	YES	275			61	2		6021	0.0040	885.59	
6034	RED MAPLE LANE	129+93.15	0.00		896.53	887.46		R-1642	9.2	YES	193			28	1		6033	0.0040	886.69	
6035	RED MAPLE LANE	130+78.82	0.00		896.54	887.80		R-1642	8.9	YES	84			59	2		6034	0.0040	887.46	
6036	RED MAPLE LANE	131+66.35	0.00		896.74	888.15		R-1642	8.7	YES	86						6035	0.0040	887.80	
6037	RED MAPLE LANE	132+23.88	0.00		896.97	888.38		R-1642	8.7	YES	57			32	1		6036	0.0040	888.15	
6038	RED MAPLE LANE	135+72.70	0.00		898.72	889.78		R-1642	9.1	YES	349			90	3		6037	0.0040	888.15	
6039	RED MAPLE LANE	119+50.00	0.00		899.36	890.14		R-1642	9.3	YES	91			35	1		6038	0.0040	898.78	
6040	RED MAPLE LANE	118+59.47	8.49	LT	900.11	890.51		R-1642	9.7	YES	92			28	1		6039	0.0040	890.14	
TOTAL							68		663.2		2	4700	1466	1785	50	10				

SANITARY SEWER NOTES:
1.) PAY HEIGHTS ARE FROM BOTTOM OF CASTING TO INVERT PLUS 0.7'.
2.) LENGTH OF PIPE ARE TO CENTER OF STRUCTURE OR END OF BARREL.

WATERMAIN TABULATION														
STREET	REMOVE WATERMAIN	SALVAGE HYDRANT AND VALVE	CONNECT TO EXISTING WATERMAIN	1" CORPORATION STOP	1" CURB STOP AND BOX	ANODE BAG	8" GATE VALVE AND BOX	12" GATE VALVE AND BOX	HYDRANT	1" TYPE K COPPER PIPE	6" WATERMAIN DIP CL 52	8" WATERMAIN DIP CL 52	12" WATERMAIN DIP CL 52	DUCTILE IRON FITTINGS
	LIN FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH		LIN FT	LIN FT	LIN FT	LIN FT	LB
LAKE DRIVE (CSAH 23)	62	1	1	3	3	4		2	2	30			564	598
81ST STREET				5	5	6		3	3	163	12		790	953
DANUBE STREET				10	10	3	1		2	368		509		172
ELBE STREET				12	12	5	2		3	366		938		356
62ND STREET	41		1	1	1	3	2		1	44		423		140
RED MAPLE LANE				28	28	11	2		9	906		2930		2122
FOX ROAD TRAIL			2			2	1		1			275		223
	103	1	4	59	59	34	8	5	21	1877	12	5075	1354	4564

WATERMAIN NOTES:
1.) DUCTILE IRON PIPE AND HYDRANT LEADS TO BE POLYWRAPPED (INCIDENTAL).
2.) WATERMAIN OVERDEPTH IS INCIDENTAL.
3.) CONTRATOR TO USE SPECIAL CONSTRUCTION METHODS TO KEEP WATERMAIN WITHIN CONSTRUCTION LIMITS.

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STORM TABULATION - DIANE STREET AND EVERGREEN TRAIL																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
STRUCT. NO.	STREET	STATION	OFFSET FT	SIDE	STRUCTURE PAY HEIGHTS			CONNECT TO EX STORM SEWER EACH	CASTING ASSEMBLY	TOP OF CASTING ELEV. (FINISHED)	OUTLET ELEV. BOTTOM	CIRCULAR								DRAINS TO			NOTES																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
					SPECIAL (2'X3' BOX) EACH	48-4020 LIN FT	60-4020 LIN FT					16" PVC LIN FT	15" RCP CL V LIN FT	18" RCP CL V LIN FT	28" ARCH RCP CL IIIA LIN FT	15" CMP APRON EACH	15" RCP TRASH GUARD EACH	15" RCP APRON EACH	15" RCP TRASH GUARD EACH	18" RCP APRON EACH	18" RCP TRASH GUARD EACH	GUIDE POST TYPE B EACH		RIPRAP CL III CY	STRUCT. NO.	PIPE GRADE FT/FT	INVERT ELEV.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
5601	EVERGREEN TRAIL	13+27.09	80.76	LT							902.54																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														

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STORM TABULATION - RECONSTRUCTION																																
STRUCT. NO.	STREET	STATION	OFFSET FT	SIDE	STRUCTURE PAY HEIGHTS					STEPS REQ.	CONNECT TO EX DRAINAGE STRUCT. EACH	CONNECT TO EX STORM SEWER EACH	CASTING ASSEMBLY	TOP OF CASTING ELEV. (FINISHED)	OUTLET ELEV. BOTTOM	CIRCULAR										DRAINS TO			NOTES			
					SPECIAL (2'X3' BOX) EACH	SPECIAL 1 EACH	48-4020 LIN FT	54-4020 LIN FT	60-4020 LIN FT							12" RCP CL V LIN FT	15" RCP CL V LIN FT	18" RCP CL IV LIN FT	18" RCP CL V LIN FT	12" RCP APRON EACH	15" RCP TRASH GUARD EACH	15" RCP APRON EACH	18" RCP TRASH GUARD EACH	18" RCP APRON EACH	18" RCP TRASH GUARD EACH	INSTALL CONCRETE PIPE (SALVAGED 18" RCP) LIN FT	STRUCT. NO.	PIPE GRADE FT/FT		INVERT ELEV.		
5000	RED MAPLE LN	100+54.18	172.59	RT									R-1678-A	898.00	892.37																15" FLARED END SECTION	
5001A	RED MAPLE LN	100+55.44	32.07	RT			5.0			YES			R-3067	897.26	893.07		141									28	5000	0.0050	892.37			
5001	RED MAPLE LN	100+71.89	15.00	RT			4.2						R-3067	897.25	893.19		24										5001A	0.0050	893.07			
5002	RED MAPLE LN	100+71.64	15.00	LT					4.0				R-3067	897.25	893.34		30										5001	0.0050	893.19			
5003	RED MAPLE LN	102+22.68	15.00	LT			4.4						R-3067	898.33	894.01		155										5002	0.0043	893.34			
5004	RED MAPLE LN	102+22.68	15.00	RT	1								R-3067	898.33	894.33		30									26	5003	0.0050	894.18			
5005	RED MAPLE LN	103+62.14	15.00	LT			4.4						R-3067	899.24	894.99		141										5003	0.0071	894.01			
5005A	RED MAPLE LN	104+25.02	15.00	LT			4.5			YES			R-3067	899.64	895.25		61										5005	0.0042	894.99			
5006	RED MAPLE LN	103+62.14	15.00	RT	1								R-3067	899.24	895.24		30										5005	0.0050	895.09			
5007	RED MAPLE LN	104+91.70	15.00	LT			4.7			YES			R-3067	900.06	895.50		61										5005A	0.0042	895.25			
5007A	RED MAPLE LN	105+56.62	15.00	LT			4.2						R-3067	900.46	896.38		59										5007	0.0050	895.50			
5008	RED MAPLE LN	104+92.90	15.00	RT	1								R-3067	900.07	896.07		30										5007A	0.0147	896.38		FIELD FILL SUMP WITH CONCRETE	
5009	RED MAPLE LN	106+21.68	15.00	LT			4.1						R-3067	900.85	897.26		59										5009	0.0050	897.26		FIELD FILL SUMP WITH CONCRETE	
5009A	RED MAPLE LN	107+34.65	15.00	LT			4.1						R-3067	901.54	897.82		111										5009	0.0050	897.26		SUMP INVERT: 897.54	
5010	RED MAPLE LN	106+19.41	15.00	RT	1								R-3067	900.84	897.41		30										5009	0.0050	897.26		FIELD FILL SUMP WITH CONCRETE	
5011	RED MAPLE LN	108+22.05	15.00	LT			4.1						R-3067	902.08	898.28		92										5009A	0.0050	897.83		FIELD FILL SUMP WITH CONCRETE	
5012	RED MAPLE LN	108+22.05	15.00	RT	1								R-3067	902.07	898.43		30										5011	0.0050	898.28		SUMP INVERT: 898.07	
5100	RED MAPLE LN	130+04.01	44.38	RT										893.01									1	1			5100	0.0020	893.01		FIELD FILL SUMP WITH CONCRETE	
5101	RED MAPLE LN	130+04.00	15.00	RT					4.1	YES			R-3067	896.28	893.07				29								5101	0.0050	893.07		FIELD FILL SUMP WITH CONCRETE	
5102	RED MAPLE LN	130+04.04	15.00	LT			4.1						R-3067	896.28	893.22		30										5102	0.0050	893.22		FIELD FILL SUMP WITH CONCRETE	
5103	RED MAPLE LN	130+16.79	15.00	LT	1								R-3067	896.28	893.28		11										5102	0.0050	893.22		FIELD FILL SUMP WITH CONCRETE	
5104	RED MAPLE LN	131+06.35	15.00	RT			4.0						R-3067	896.34	893.49												5101	0.0038	893.07		FIELD FILL SUMP WITH CONCRETE	
5105	RED MAPLE LN	131+06.35	15.00	LT	1								R-3067	896.34	893.64		30										5104	0.0050	893.49		SUMP INVERT: 892.41	
5106	RED MAPLE LN	132+06.62	15.00	RT					3.8				R-3067	896.66	893.81		108										5104	0.0030	893.49		FIELD FILL SUMP WITH CONCRETE	
5107	RED MAPLE LN	132+06.62	15.00	LT	1								R-3067	896.66	893.96		30										5106	0.0050	893.81		FIELD FILL SUMP WITH CONCRETE	
5108	RED MAPLE LN	120+09.80	15.00	LT					4.1				R-3067	896.65	895.43		401										5106	0.0040	893.81		FIELD FILL SUMP WITH CONCRETE	
5108A	RED MAPLE LN	119+55.51	15.00	LT			4.1						R-3067	899.07	895.85		59										5108	0.0070	895.43		FIELD FILL SUMP WITH CONCRETE	
5109	RED MAPLE LN	120+09.80	15.00	RT	1								R-3067	898.65	895.58		30										5108	0.0050	895.43		SUMP INVERT: 894.65	
5110	RED MAPLE LN	119+01.71	15.00	LT			3.5						R-3067	899.61	896.26		59										5108A	0.0070	895.85		FIELD FILL SUMP WITH CONCRETE	
5111	RED MAPLE LN	119+01.71	15.00	RT	1								R-3067	899.61	896.41		30										5110	0.0050	896.26		SUMP INVERT: 895.61	
5200	ELBE ST	80+51.58	15.00	RT					5.6	YES		1	R-3067	906.46	900.94																CONNECT TO EXISTING 15" RCP STORM SEW	
5201	ELBE ST	80+51.58	15.00	LT	1								R-3067	906.46	902.46		30											5200	0.0050	902.41		
5202	ELBE ST	81+71.11	15.00	RT			5.3			YES			R-3067	907.02	901.80		121											5200	0.0050	900.94		
5203	ELBE ST	81+70.97	15.00	LT	1								R-3067	907.02	903.02		30											5202	0.0050	902.87		
5204	ELBE ST	83+14.20	15.00	RT			5.2			YES			R-3067	907.84	902.79		36											5204A	0.0070	902.54		
5204A	ELBE ST	82+75.39	15.00	RT			5.2			YES			R-3067	907.59	902.54		106											5202	0.0070	901.80		
5205	ELBE ST	83+14.20	15.00	LT	1								R-3067	907.84	903.84		30											5204	0.0050	903.69		
5206	ELBE ST	85+33.78	15.00	RT			4.6						R-3067	909.59	905.13		220											5204	0.0107	902.79		
5207	ELBE ST	85+33.78	15.00	LT	1								R-3067	909.59	905.59		30											5204	0.0050	905.44		
5208	81ST ST	88+06.06	16.00	RT					4.8	YES			R-1678-A	913.14	908.48		272											5206	0.0123	905.13		
5209	81ST ST	68+26.85	15.00	RT			4.3						R-3067	912.84	908.69		41											5208	0.0050	908.89		
5210	81ST ST	68+26.86	15.00	LT	1								R-3067	912.84	908.84		30											5209	0.0050	908.69		
5211	81ST ST	67+38.71	15.00	RT			4.6			YES			R-3067	913.58	909.13		47											5208	0.0050	908.48		
5212	81ST ST	67+38.71	15.00	LT			4.4						R-3067	913.58	909.28		30											5211	0.0050	909.13		
5213	81ST ST	88+52.53	15.00	LT	1								R-3067	913.39	909.34		23											5212	0.0050	909.28		
5300	DANUBE ST	70+42.45																														

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2025 STREET IMPROVEMENT PROJECT - DANUBE STREET EARTHWORK TABULATION				
STATION	EXCAVATION - COMMON		EMBANKMENT	ROAD SECTION
	TOPSOIL HOLD DOWN	COMMON	COMMON TOPSOIL BORROW	AGGREGATE BASE (CV) CLASS 5
	[CU YD.]	[CU YD.]	[SQ FT]	[CU YD.]
70+00.00 - 70+50.00	14	88	14	61
70+50.00 - 71+50.00	27	225	27	159
71+50.00 - 72+00.00	14	53	14	43
72+00.00 - 72+35.00	10	36	10	30
72+35.00 - 72+91.00	15	58	15	48
72+91.00 - 73+26.00	10	37	10	30
73+26.00 - 74+00.00	20	80	20	63
74+00.00 - 74+24.00	7	26	7	21
74+24.00 - 74+50.00	7	27	7	22
74+50.00 - 75+00.00	14	59	14	48
TOTAL PROJECT	138	689	138	525
TOTAL PROJECT	827		138	525

2025 STREET IMPROVEMENT PROJECT - ELBE STREET EARTHWORK TABULATION				
STATION	EXCAVATION - COMMON		EMBANKMENT	ROAD SECTION
	TOPSOIL HOLD DOWN	COMMON	COMMON TOPSOIL BORROW	AGGREGATE BASE (CV) CLASS 5
	[CU YD.]	[CU YD.]	[SQ FT]	[CU YD.]
80+00.00 - 80+50.00	14	17	14	18
80+50.00 - 80+90.00	11	29	11	30
80+90.00 - 81+50.00	16	48	16	44
81+50.00 - 82+00.00	14	44	14	37
82+00.00 - 82+28.00	8	26	8	21
82+28.00 - 83+00.00	20	62	20	53
83+00.00 - 83+79.00	22	69	22	58
83+79.00 - 84+13.00	10	33	10	25
84+13.00 - 84+36.00	7	24	7	17
84+36.00 - 84+95.00	16	57	16	43
84+95.00 - 85+63.00	19	62	19	50
85+63.00 - 86+00.00	10	36	10	27
86+00.00 - 86+60.00	16	61	16	44
86+60.00 - 87+00.00	11	40	11	30
87+00.00 - 87+70.00	19	71	19	51
87+70.00 - 88+00.00	8	36	8	24
88+00.00 - 88+65.00	18	71	18	52
88+65.00 - 89+00.00	10	34	10	26
89+00.00 - 89+50.00	14	26	14	18
TOTAL PROJECT	263	846	263	668
TOTAL PROJECT	1109		263	668



2025 STREET IMPROVEMENT PROJECT - 62ND STREET EARTHWORK TABULATION				
STATION	EXCAVATION - COMMON		EMBANKMENT	ROAD SECTION
	TOPSOIL HOLD DOWN	COMMON	COMMON TOPSOIL BORROW	AGGREGATE BASE (CV) CLASS 5
	[CU YD.]	[CU YD.]	[SQ FT]	[CU YD.]
90+50.00 - 91+00.00	71	43	71	34
91+00.00 - 91+50.00	71	43	71	34
91+50.00 - 91+66.00	23	14	23	11
91+66.00 - 92+00.00	48	28	48	23
92+00.00 - 92+50.00	71	43	71	34
92+50.00 - 93+00.00	71	47	71	34
93+00.00 - 93+50.00	71	55	71	34
93+50.00 - 94+00.00	71	109	71	61
94+00.00 - 94+15.04	22	38	22	25
94+15.04 - 94+50.00	50	31	50	24
TOTAL PROJECT	569	451	569	314
TOTAL PROJECT	1020		569	314

2025 STREET IMPROVEMENT PROJECT - RED MAPLE LANE STA 100+50.00 TO STA 120+39.86 EARTHWORK TABULATION				
STATION	EXCAVATION - COMMON		EMBANKMENT	ROAD SECTION
	TOPSOIL HOLD DOWN	COMMON	COMMON TOPSOIL BORROW	AGGREGATE BASE (CV) CLASS 5
	[CU YD.]	[CU YD.]	[SQ FT]	[CU YD.]
100+50.00 - 101+00.00	13	111	13	56
101+00.00 - 101+30.00	8	37	8	26
101+30.00 - 101+50.00	6	24	6	18
101+50.00 - 102+00.00	13	62	13	43
102+00.00 - 102+11.00	3	15	3	10
102+11.00 - 102+50.00	10	52	10	34
102+50.00 - 102+65.00	4	20	4	13
102+65.00 - 103+00.00	9	42	9	30
103+00.00 - 103+50.00	13	53	13	43
103+50.00 - 104+00.00	13	54	13	43
104+00.00 - 104+50.00	13	108	13	71
104+50.00 - 105+00.00	13	112	13	71
105+00.00 - 105+50.00	13	62	13	43
105+50.00 - 105+60.00	3	13	3	9
105+60.00 - 106+08.00	13	56	13	41
106+08.00 - 106+50.00	11	44	11	36
106+50.00 - 107+10.00	16	58	16	52
107+10.00 - 107+50.00	11	37	11	35
107+50.00 - 108+00.00	13	49	13	43
108+00.00 - 108+50.00	13	54	13	43
108+50.00 - 108+74.00	7	28	7	21
108+74.00 - 109+00.00	7	31	7	23
109+00.00 - 109+50.00	13	56	13	43
109+50.00 - 110+05.00	14	57	14	47
110+05.00 - 110+50.00	12	42	12	39
110+50.00 - 111+00.00	13	40	13	43
111+00.00 - 111+22.00	6	17	6	19
111+22.00 - 111+50.00	8	22	8	24
111+50.00 - 112+00.00	13	42	13	43
112+00.00 - 112+52.00	14	47	14	45
112+52.00 - 113+00.00	13	47	13	41
113+00.00 - 113+50.00	13	61	13	43
113+50.00 - 114+00.00	13	80	13	43
114+00.00 - 114+50.00	13	94	13	43
114+50.00 - 114+92.50	11	82	11	37
114+92.50 - 115+50.00	15	97	15	49
115+50.00 - 116+00.00	13	72	13	43
116+00.00 - 116+50.00	13	70	13	43
116+50.00 - 116+73.00	6	33	6	20
116+73.00 - 117+00.00	7	38	7	23
117+00.00 - 117+50.00	13	69	13	43
117+50.00 - 118+00.00	13	69	13	43
118+00.00 - 118+34.00	9	48	9	29
118+34.00 - 118+45.00	3	16	3	10
118+45.00 - 119+00.00	14	70	14	47
119+00.00 - 119+24.00	7	29	7	21
119+24.00 - 119+50.00	7	31	7	23
119+50.00 - 120+00.00	13	61	13	43
120+00.00 - 120+39.86	11	49	11	49
TOTAL PROJECT	525	2561	525	1800
TOTAL PROJECT	3086		525	1800

2025 STREET IMPROVEMENT PROJECT - RED MAPLE LANE STA 126+50.00 TO STA 135+75.00 EARTHWORK TABULATION				
STATION	EXCAVATION - COMMON		EMBANKMENT	ROAD SECTION
	TOPSOIL HOLD DOWN	COMMON	COMMON TOPSOIL BORROW	AGGREGATE BASE (CV) CLASS 5
	[CU YD.]	[CU YD.]	[SQ FT]	[CU YD.]
125+50.00 - 125+90.00	11	65	11	32
125+90.00 - 126+00.00	3	16	3	8
126+00.00 - 126+50.00	13	68	13	38
126+50.00 - 127+00.00	13	55	13	38
127+00.00 - 127+60.00	16	70	16	45
127+60.00 - 128+00.00	11	50	11	30
128+00.00 - 128+29.00	8	35	8	22
128+29.00 - 128+50.00	6	26	6	16
128+50.00 - 129+00.00	13	61	13	38
129+00.00 - 129+50.00	13	62	13	38
129+50.00 - 129+85.00	10	43	10	27
129+85.00 - 130+00.00	4	17	4	12
130+00.00 - 130+50.00	13	55	13	38
130+50.00 - 130+81.00	9	38	9	24
130+81.00 - 131+00.00	5	25	5	15
131+00.00 - 131+20.00	6	26	6	15
131+20.00 - 131+50.00	8	40	8	23
131+50.00 - 131+76.50	7	36	7	20
131+76.50 - 132+00.00	7	32	7	18
132+00.00 - 132+50.00	13	66	13	38
132+50.00 - 132+64.00	4	19	4	11
132+64.00 - 133+00.00	10	44	10	27
133+00.00 - 133+20.00	6	22	6	15
133+20.00 - 133+50.00	8	32	8	23
133+50.00 - 134+00.00	13	52	13	38
134+00.00 - 134+50.00	13	51	13	38
134+50.00 - 135+12.00	17	65	17	47
135+12.00 - 135+50.00	10	42	10	29
135+50.00 - 135+75.00	7	28	7	19
TOTAL PROJECT	277	1241	277	782
TOTAL PROJECT	1518		277	782

NOTES:

- PLACING, STOCKPILING, REMOVING FROM STOCKPILE, HAULING OR DISPOSING OF EXCAVATED MATERIALS IS CONSIDERED INCIDENTAL.
- ALL STOCKPILE AREAS SHALL BE APPROVED BY THE ENGINEER.
- SOILS NOT USED ON THE PROJECT SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF OUTSIDE OF THE RIGHT-OF-WAY. NO DIRECT COMPENSATION WILL BE PAID FOR THE PREPARATION OF AN ACCEPTABLE DISPOSAL PLAN OR FOR OFF-PROJECT DISPOSAL OF MATERIALS. DISPOSAL SITES SHALL BE LEFT IN A WELL GRADED CONDITION WITH ALL SOLID WASTES AND BOULDERS ADEQUATELY COVERED.
- UNLESS DIRECTED OTHERWISE BY THE PROJECT ENGINEER, ANY MATERIAL THAT IS FOUND TO BE UNNECESSARY FOR THE CONSTRUCTION OF THE ROADWAY EMBANKMENT AND DISPOSAL OF THE SAME BECOMES NECESSARY, ON OR OFF THE PROJECT, THE DISPOSAL AND RELATED ITEMS WILL BE CONSIDERED INCIDENTAL.
- CONTRACTOR SHALL UTILIZE EXCESS EXCAVATION IN AREAS WHERE UNSUITABLE MATERIAL IS ENCOUNTERED PRIOR TO HAULING OFF SITE. NO ADDITIONAL PAYMENT WILL BE MADE FOR UTILIZING EXISTING EXCAVATION MATERIAL.




SCALE: AS SHOWN
PLAN BY: THC

DESIGN BY: THC
CHECK BY: PTH

REVISIONS

NO.	DATE	DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.



PAUL HORNBY, PE
DATE: 01+24-2025 LIC. NO.: 23359

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- C1. THE CONTRACTOR SHALL DEVELOP AND SUBMIT A STAGING PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL. THE CONTRACTOR SHALL CONTAIN OPERATIONS TO THE STAGING AREA AS IDENTIFIED IN THE PLANS.
- C2. THE CONTRACTOR IS TO COORDINATE ALL CONSTRUCTION WITH PRIVATE UTILITIES SUCH AS TELEPHONE, GAS, CABLE TV, ETC. (INCIDENTAL). THE CONTRACTOR SHALL CALL GOPHER STATE ONE CALL A MINIMUM OF 48 HOURS PRIOR TO EXCAVATION. THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES DURING CONSTRUCTION AT NO ADDITIONAL COMPENSATION. EXISTING UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE. IT IS THE CONTRACTORS RESPONSIBILITY TO VERIFY EXACT LOCATIONS AND ELEVATIONS.
- C3. THE INFORMATION SHOWN ON THESE PLANS CONCERNING TYPE AND LOCATION OF PRIVATE UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.
- C4. ALL CONSTRUCTION AS CALLED FOR IN THESE CONTRACT DOCUMENTS SHALL BE PERFORMED IN ACCORDANCE WITH ALL OSHA REQUIREMENTS.
- C5. EXCAVATED MUCK AND UNSTABLE ORGANIC MATERIAL (MUCK EXCAVATION) SHALL BE CONSIDERED EXCESS MATERIAL AND DISPOSED OF OUTSIDE THE RIGHT OF WAY IN ACCORDANCE WITH MN/DOT SPECIFICATION 2104.3D3.
- C6. STRIP ALL IN PLACE TOPSOIL AND SLOPE DRESSING IN AREAS TO BE DISTURBED BY CONSTRUCTION AND REUSE AS SLOPE DRESSING.
- C7. SLOPE DRESSING ON THIS PROJECT IS DEFINED AS THE TOPSOIL PLACED DURING CONSTRUCTION TO PROVIDE A MEDIUM FOR ESTABLISHING TURF.
- C8. BITUMINOUS AND CONCRETE ITEMS DISTURBED BY CONSTRUCTION SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OUTSIDE OF THE RIGHT OF WAY IN ACCORDANCE WITH MN/DOT SPECIFICATION 2104.3D3.
- C9. SELECT GRANULAR MATERIAL SHALL MEET THE REQUIREMENTS OF MN/DOT SPECIFICATION 3149.
- C10. WHERE CONNECTING TO IN PLACE ROADWAYS AT THE TERMINI OF THE PROPOSED NEW CONSTRUCTION, CUT VERTICALLY TO THE BOTTOM OF THE IN PLACE SURFACING THEN AT A 1(V):20(H) TAPER TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.
- C11. AS A PRECAUTIONARY MEASURE, TRAFFIC LANES TO BE USED DURING CONSTRUCTION MUST BE DELINEATED TO KEEP VEHICLES A SAFE DISTANCE AWAY FROM THE ADJACENT EXCAVATION. THE DELINEATION SHOULD COINCIDE WITH POINTS ESTABLISHED BY PROJECTING A 1(V) : 2(H) OR FLATTER SLOPE BETWEEN THE EDGE OF THE TRAFFIC SURFACE AND THE BOTTOM OF THE EXCAVATION.

- C12. GROUND WATER ELEVATIONS MAY FLUCTUATE DUE TO VARIATIONS IN SEASONAL AND ANNUAL PRECIPITATION. (SEE SOIL BORINGS IN THE PROJECT MANUAL)
- C13. TEST ROLLING OF THE SUBGRADE WILL BE REQUIRED, PER CITY STANDARD DATED JANUARY 2024 MN/DOT SPECIFICATIONS OR AS MODIFIED IN THE SPECIAL PROVISIONS.
- C14. USE TACK COAT BETWEEN ALL BITUMINOUS LAYERS AND PRIOR TO PLACING ANY BITUMINOUS MIXTURES ON EXISTING PAVEMENT. THE BITUMINOUS TACK COAT MATERIAL SHALL BE APPLIED AT A UNIFORM RATE OF 0.10 GAL/SQ YD FOR LOCATIONS WHERE NEW PAVEMENT IS PLACED OVER EXISTING PAVEMENT AND 0.05 GAL/SQ YD FOR LOCATIONS WHERE NEW PAVEMENT IS PLACED OVER A MILLED SURFACE. THE APPLICATION RATE IS FOR UNDILUTED EMULSIONS (AS SUPPLIED FROM THE REFINERY) OR MC RC LIQUID ASPHALTS.
- C15. WHENEVER THE WORD "INCIDENTAL" IS USED IN THIS PLAN OR SPECIFICATIONS, IT SHALL MEAN THAT NO DIRECT PAYMENT SHALL BE MADE.
- C16. NO EXTRA PAYMENT WILL BE MADE FOR TEMPORARY STOCKPILING OF EXCAVATION, EMBANKMENT, AND/OR BORROW MATERIAL.
- C17. THE CONTRACTOR SHALL COORDINATE THE REMOVAL AND REINSTALLATION OF ALL MISCELLANEOUS STRUCTURES SUCH AS PRIVATE SIGNS, GARBAGE PICK UPS, ETC. WITHIN THE PROJECT LIMITS WITH THE APPROPRIATE OWNERS. THIS WORK SHALL BE INCIDENTAL TO THE ITEM WHICH REQUIRES THE REMOVAL AND/OR RELOCATION, UNLESS A BID ITEM HAS BEEN PROVIDED FOR IN THE PROPOSAL FORM.
- C18. TEMPORARY EROSION CONTROL DEVICES AND THEIR SUGGESTED LOCATIONS HAVE BEEN SHOWN ON THE PLANS ALONG WITH PAY ITEMS FOR THEIR USE. THIS DOES NOT HOWEVER RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO CONDUCT CONSTRUCTION IN A MANNER THAT WILL CONTROL EROSION. MAINTAIN EROSION CONTROL AS SET IN MN/DOT SPECIFICATIONS 1717, 1803, 2101, 2573, AND 2575, AND AS AMENDED BY THE SPECIAL PROVISIONS.
- C19. PLEASE READ THE PERMIT APPLICATION AND THE PERMIT FOR ANY SPECIAL CONDITIONS. THE FOLLOWING CONSTRUCTION PERMITS APPLY:
A - NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
B - MINNESOTA DEPARTMENT OF HEALTH (MDH)
C - ANOKA COUNTY
D - MINNESOTA POLLUTION CONTROL AGENCY (MPCA)
E - RICE CREEK WATERSHED DISTRICT (RCWD)

- U1. ALL SANITARY SEWER AND STORM SEWER MANHOLE CASTINGS WITHIN THE GRADING AND ROADWAY AREA ARE TO BE ADJUSTED TO MATCH THE FINISH BITUMINOUS GRADE. ALL SANITARY SEWER MANHOLE TOP OF CASTINGS SHALL BE DEPRESSED .04'. (NEENAH R-1642 OR APPROVED EQUAL). STORM SEWER MANHOLE TOP OF CASTINGS SHALL BE DEPRESSED .04'. (NEENAH R-1642 OR APPROVED EQUAL). CATCH BASIN TOP OF CASTINGS SHALL BE DEPRESSED .17'. (NEENAH R-3067-V OR APPROVED EQUAL).
- U2. ALL EXISTING GATE VALVE BOXES WITHIN THE GRADING AND ROADWAY AREA ARE TO BE ADJUSTED TO MATCH THE FINISH BITUMINOUS GRADE. ALL GATE VALE BOXES LOCATED IN BITUMINOUS STREET SECTION SHALL BE DEPRESSED .04'.
- U3. ALL VALVE BOXES SHALL BE LOWERED TO AN ELEVATION BELOW THE REMOVED PAVEMENT SECTION DURING GRADING OPERATIONS. VALVE BOXES THAT ARE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED AT NO ADDITIONAL COMPENSATION.
- U4. IF THE CONTRACTOR NEEDS TO SHUT OFF THE WATERMAIN, THEY MUST COORDINATE WITH THE AFFECTED PROPERTY OWNERS AND THE CITY PUBLIC WORKS STAFF A MINIMUM OF 72 HOURS IN ADVANCE. THE CONTRACTOR SHALL NOT OPERATE GATE VALVES FOR THE CITY. GATE VALVE OPERATIONS SHALL ONLY BE COMPLETED BY CITY PUBLIC WORKS STAFF.
- U5. THE CONTRACTOR SHALL STAGE CONSTRUCTION TO MAINTAIN DISCHARGE FROM EXISTING STORM SEWER SYSTEM. ALL MATERIALS, LABOR, AND EQUIPMENT NECESSARY TO COMPLETE THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
- U6. THE DISINFECTION OF THE WATERMAIN SHALL BE PERFORMED ACCORDING TO AWWA STANDARD C651. IF THE TABLET OR CONTINUOUS FEED METHODS ARE USED, THE COMPLETED WATERMAIN SHALL BE DISINFECTED FOR 24 HOURS WITH AT LEAST 50 PPM AVAILABLE CHLORINE, WITH A RESIDUAL OF AT LEAST 10 PPM THROUGHOUT THE LENGTH OF THE MAIN AT THE END OF THE 24 HOUR PERIOD. TWO OR MORE SUCCESSIVE SETS OF SAMPLES, TAKEN AT 24 HOUR INTERVALS, SHALL INDICATE MICROBIOLOGICALLY SATISFACTORY WATER BEFORE THE WATER MAIN IS PLACED INTO OPERATION.
- U9. THE CONTRACTOR SHALL PROVIDE NAVD88 HORIZONTAL AND VERTICAL DATA OF SERVICE LINES AT THE RIGHT OF WAY.

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PAUL HORNBY, PE
DATE: 01-24-2025 LIC. NO. 23359

CONSTRUCTION NOTES

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO.
023620-000

SHEET

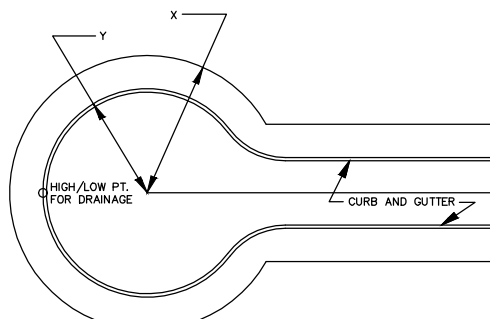
7 OF 97



SCALE: DESIGN BY:
AS SHOWN THC
PLAN BY: CHECK BY:
THC PTH

REVISIONS	
NO.	DESCRIPTION


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STANDARD CUL-DE-SAC

	X	Y*
COM./IND.	60' RAD.	AS DIRECTED BY THE ENGINEER
URBAN	60' RAD.	46' RAD.
RURAL	60' RAD.	46' RAD.

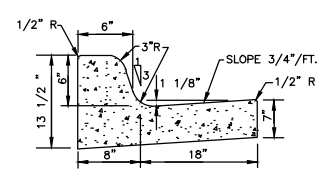
*NOTE:
1. ALL DISTANCE FOR STREET WIDTHS ARE MEASURED TO BACK OF CURB.



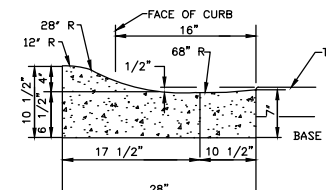
STANDARD CUL-DE-SAC

JANUARY, 2024

GEN-3




MnDOT B618
CY CONCRETE PER LIN. FT. = .0582
LIN. FT. PER CY OF CONCRETE = 17.2



MODIFIED 'S' DESIGN

NOTES:
1. MINIMUM OF 3" AGGREGATE BASE, CL 5 UNDER ALL CURB AND GUTTER
2. STAMP W FOR WATER SERVICE AND S FOR SANITARY SERVICE

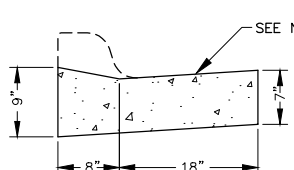
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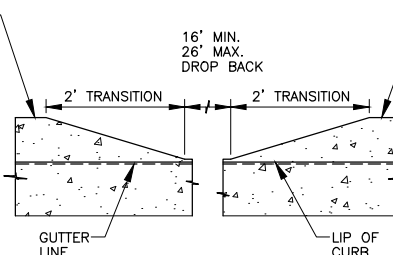
CONCRETE CURB AND GUTTER

JANUARY, 2024


GEN-4



NOTES:
1) SLOPE 3/4" PER FOOT NORMAL, UNLESS OTHERWISE SPECIFIED. IF A DIFFERENT GUTTER SLOPE IS PERMITTED, THE GUTTER FORM MAY BE TILTED.
2) DROP CURB BACK AT DRIVEWAY OPENINGS. TRANSITION FROM FULL BACK TO DROP BACK TO BE MADE IN 2'. ROUND ALL SLOPE INTERSECTIONS.



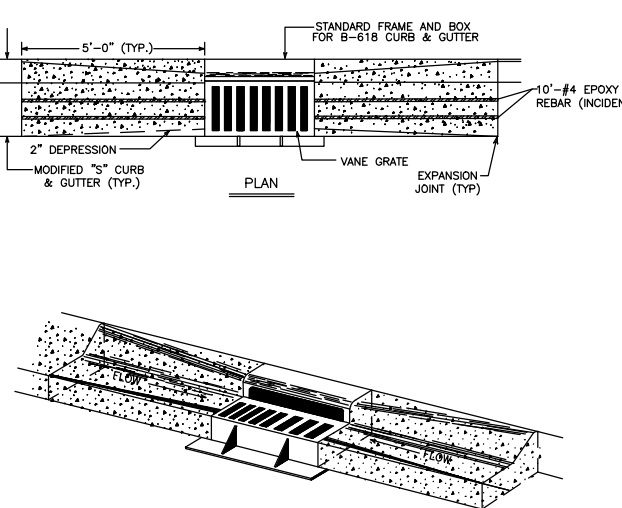
NOTES:
1. DRIVEWAYS WITH GRADE GREATER THAN 10% MUST OBTAIN ENGINEERING DEPT. APPROVAL.
2. DRIVEWAY AREA MUST MEET CODE FOR LOT COVERAGE.
3. NO DRIVEWAY SHALL BE CLOSER THAN 40' FROM END OF CORNER RADII.
4. DRIVEWAY WIDTH IS 28' MAXIMUM FROM RIGHT-OF-WAY LINE TO BACK OF CURB.
5. DRIVEWAYS SHALL BE NO CLOSER THAN 5' FROM THE ADJACENT PROPERTY LINE.
6. A FORD A-1 METER BOX IS REQUIRED FOR ALL CURB STOPS LOCATED WITHIN THE DRIVEWAY.
7. JOINT WIDTH SHALL BE AS SPECIFIED IN Mn/DOT 2521.




RESIDENTIAL DRIVEWAY

JANUARY, 2024

GEN-5



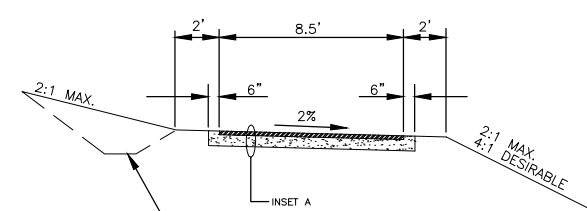
PLAN




CATCH BASIN INSTALLATION

JANUARY, 2024


GEN-8



INSET A



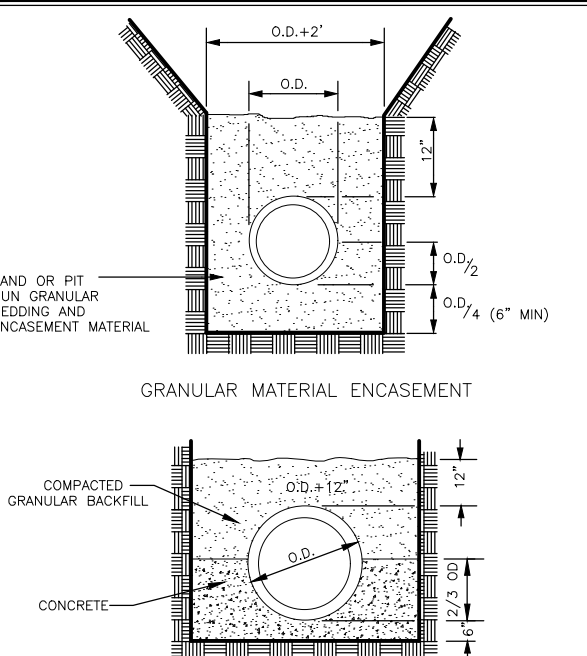
2.5" 2360 TYPE SP WEARING COURSE
6" AGGREGATE BASE, CL 5
24" APPROVED SUBGRADE



BITUMINOUS TRAIL


JANUARY, 2024

GEN-9



GRANULAR MATERIAL ENCASEMENT

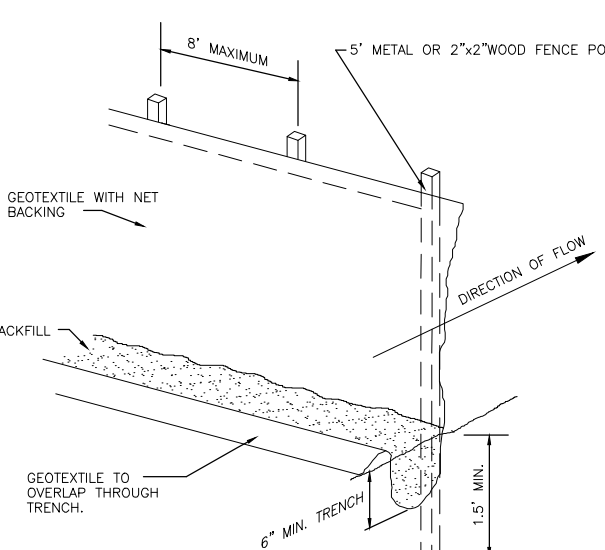
CONCRETE CRADLE




PIPE BEDDING DETAILS

JANUARY, 2024

GEN-13



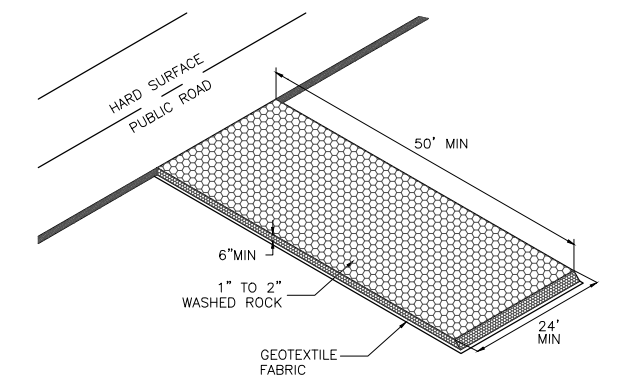
NOTES:
1. SILT FENCE SHALL CONFORM TO MNDOT 3886, (GTF 100 OR EQUAL)
2. FENCING SHALL BE PLACED ALONG CONTOURS OR AS DIRECTED BY ENGINEER.




SILT FENCE

JANUARY, 2024

GEN-16





ROCK CONSTRUCTION ENTRANCE



ROCK CONSTRUCTION ENTRANCE

JANUARY, 2024

GEN-17




SCALE: AS SHOWN
PLAN BY: THC
THC

DESIGN BY: THC
CHECK BY: PTH

REVISIONS

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PAUL HORNBY, PE

DATE: 01-24-2025
LIC. NO.: 23359

GENERAL DETAILS

2024 STREET RECONSTRUCTION PROJECT CITY OF LINO LAKES

WSB PROJECT NO.
023620-000

SHEET

8 OF 97

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DEFLECTOR PLATE
OVERFLOW #1—CENTER OF FILTER ASSEMBLY
10" FILTER ASSEMBLY
OVERFLOW #2—TOP OF CURB BOX
CURB
CG-3067 HIGH-FLOW
HIGH-FLOW FABRIC
WIMCO MODEL # CG-3067 HIGH-FLOW INLET PROTECTION OR APPROVED EQUAL

CURB AND GUTTER INLET PROTECTION
NO SCALE

APPROVED MnDOT SILT FENCE FABRIC FASTEN TO STAKES 2' O.C.
OPENING FOR LARGE EVENTS
PERFORATED WALL
SILT FABRIC TO BE WRAPPED AROUND SCB IF NEEDED
CATCH BASIN
TOP VIEW
CROSS SECTION VIEW
INFASAFE SEDIMENT CONTROL BARRIER ROYAL ENVIRONMENTAL SERVICES OR AN ENGINEER APPROVED EQUAL

REAR YARD INLET PROTECTION
NO SCALE

INLET PROTECTION

JANUARY, 2024

GEN-19

NOTES:
DIMENSIONS AS PER U.S. POSTAL SERVICE

ADDRESS MUST BE ON SIDE OF BOX FROM WHICH CARRIER APPROACHES IN LETTERS ABOUT ONE INCH HIGH (OR ON FRONT WHERE BOXES ARE GROUPED).

18"
163 E. COOK
10"
CLEAR ZONE
NEWSPAPER BOX
48"
MIN. 18"

MAIL BOX

JANUARY, 2024

GEN-20

FE
MH
GV

NOTES:

- STRUCTURE MARKER SIGNS SHALL BE FURNISHED AND INSTALLED FOR ALL STRUCTURES LOCATED OUTSIDE OF THE STREET RIGHT OF WAY AND SHALL BE CONSIDERED INCIDENTAL.
- 0.063" THICK ALUMINUM SIGN. WHITE LETTERS ON GREEN HIGH INTENSITY REFLECTORIZED BACKGROUND.
- U—CHANNEL POST, MINIMUM 1.2LB./FT. 6'— 6" LONG, PAINTED GREEN.

STREET MARKING SIGNS

JANUARY, 2024

GEN-21

LAKE PL
145th St W
9"
2-3/8" O.D.
8.0'
GUTTER LINE
CONCRETE GROUT
NO SCALE

STREET SIGN SPECIFICATIONS

MATERIAL:
ALUMINUM BLANKS SHALL BE CONSTRUCTED OF 5052-H38 ALLOY. HAVE A GAUGE OF .080. BE NOTCHED FOR USE WITH E-450 BRACKETS, HAVE HOLES PUNCHED AT EACH END FOR BOLTING TOGETHER AND BE 9" AS REQUIRED. BLANKS SHALL HAVE 1 1/2" ROUND CORNERS.

PLATES SHALL BE COVERED WITH ENGINEERING GRADE REFLECTIVE SHEETING, WHITE ON GREEN. (PRIVATE STREETS SHALL BE WHITE ON BROWN) LETTERING SHALL BE SERIES C, 6" U.C. AND 4.5" L.C.

E-450 BRACKETS ARE TO BE ALUMINUM DESIGNED FOR USING 9" PLATES AS REQUIRED.

TUBULAR POSTS SPECIFICATIONS

TUBULAR POSTS USED FOR MOUNTING STREET NAME/TRAFFIC CONTROL SIGNS, SHALL VARY IN LENGTH, SHALL BE 2-3/8" O.D., SHALL BE GALVANIZED AND SHALL HAVE A WEIGHT OF 2LB./FT.

ABBREVIATIONS

Ave FOR AVENUE
Blvd FOR BOULEVARD
Cir FOR CIRCLE
Ct FOR COURT
Dr FOR DRIVE
E FOR EAST
Pkwy FOR PARKWAY
Pl FOR PLACE
St FOR STREET
Ter FOR TERRACE
Trl FOR TRAIL
W FOR WEST

STREET SIGN

JANUARY, 2024

GEN-23

2' 0"
4' 0"
5' MIN.
NOMINAL 1" x 8" x 8" NO. 1 GRADE LUMBER OR STEEL / ALUMINUM PANELS
4" x 4" x 8' TREATED WOOD POSTS
1/2"x6" GALV. BOLTS W/ CUT WASHER
7 1/2"
1' 3 1/4"
1' 1/4"
2' 2" MIN.
APPROX. 2' 8"

NOTES:

- THE BARRICADE BOARD FACE SURFACE SHALL BE FULLY REFLECTORIZED IN ALTERNATE SILVER WHITE AND RED STRIPING, USING REFLECTIVE SHEETING CONFORMING TO THE REQUIREMENTS OF SPEC. 3352.2A2g STANDARD NO. 1.
- PRIOR TO INSTALLING THE REFLECTIVE SHEETING, THE BARRICADE BOARDS SHALL BE GIVEN A COMPLETE COAT OF WHITE WOOD PRIMER PAINT FOLLOWED BY A SECOND COAT OF WHITE EXTERIOR PAINT APPLIED ONLY TO THE SURFACES NOT COVERED WITH REFLECTIVE SHEETING.
- THE BARRICADE BOARDS SHALL BE COMPLETELY PAINTED AND RELECTORIZED SHEETING APPLIED BEFORE INSTALLED ON THE POSTS.

PERMANENT BARRICADE

JANUARY, 2024

GEN-24

TREE PROTECTION FENCE
4.5' DBH
10' MAX.
48'
STAKE
20'-0" FOR 20" DIA. TREE
STAKE

Notes:

- Tree protection fence shall be installed prior to any other construction activity taking place on site and shall not be removed until construction is complete.
- Fence shall be placed a minimum of 1 foot per caliber inch DBH (diameter at breast height, measured at 4.5' above grade) away from trunk of tree to be saved.
- Groups of trees may share a tree protection fence, provided the distances in note #1 can be maintained, and as approved by the City Forester.
- Fence shall be 48" orange safety fence, anchored with 6" metal t-posts or 2" by 2" wooden stakes placed a maximum of 10' apart. Substitutions in materials must be approved by City Forester.
- No grading, storage, parking, or any other vehicular traffic or construction activity shall occur within protection fence, including during fence installation and removal.
- If there are incursions into the tree protection zone, the trees may be deemed damaged by the City Forester. These trees may have to be mitigated by planting of additional trees.

TREE PROTECTION FENCE DETAIL

JANUARY, 2024

GEN-27

POINT 1
POINT 2
STAKE
COMPOST, STRAW OR WOOD FIBER 12" DIA. ROLL ENCLOSED IN POLYPROPYLENE NETTING OR A GEOTEXTILE BAG.
STAKE
BIOROLL
STAKE
FLOW
45°

NOTE:
POINT 1 MUST BE A MINIMUM OF 6" HIGHER THAN POINT 2 TO ENSURE THAT WATER FLOWS OVER THE DIKE AND NOT AROUND THE ENDS.

2" x 2" x 16" LONG WOODEN STAKES AT 1'-0" SPACING MINIMUM. STAKES SHALL BE DRIVEN THROUGH THE BACK HALF OF THE COMPOST LOG AT AN ANGLE OF 45° WITH THE TOP OF THE STAKE POINTING UPSTREAM.

PIPE CHECK BIOROLL WEIR

JANUARY, 2024

GEN-28

ADJUSTING RINGS 2 - 2" RINGS, MINIMUM 5 - 2" RINGS, MAXIMUM (1" MAX. OF RINGS & MORTAR).
1/2" MORTAR ON OUTSIDE, BETWEEN RINGS, CASTING & AND MANHOLE. FINISH SMOOTH ON THE INSIDE.
27"
16" O.C.
48"
RUBBER GASKET AT ALL JOINTS
MANHOLE SLEEVE SEE DETAIL
MIN. 2'-0"
6"
48"
SECTION A-A
"GATOR WRAP" OR APPROVED EQUAL ALL JOINTS AND RINGS.
A URETHANE OR BUTYL SEAL SHALL BE USED TO SEAL THE TOP RING TO THE CASTING AND THE BOTTOM RING TO THE CONE OR TOP SLAB.
NO WOOD SHALL BE USED FOR ADJUSTING CASTING; CEMENT MORTAR ONLY. ADJUSTING RINGS MAY BE CONCRETE OR PLASTIC.
CAST IRON MANHOLE FRAME & COVER AS PER SPECIFICATIONS.
MANHOLE STEPS SHALL BE CAST IRON, ALUMINUM OR STEEL REINFORCED PLASTIC, PER ASTM C478. STEP LOCATION SHALL BE AS NOTED IN THE SPECIFICATIONS.
PRECAST REINFORCED CONCRETE MANHOLE SECTIONS PER ASTM C478, FURNISHED WITH O-RING GASKETS AND LUBRICANT EXCEPT AS OTHERWISE SPECIFIED. A 12" OR 18" BARREL SECTION SHALL BE INSTALLED UNDER THE CONE WHENEVER POSSIBLE.
PIPE CONNECTIONS TO MANHOLE SHALL BE MADE WATER TIGHT BY CAST INPLACE RUBBER BOOT AND CEMENT MORTAR. INSIDE SURFACE SHALL BE FINISHED SMOOTH.
PROTECT MANHOLE FROM RAINWATER, INFILTRATION AND SEDIMENT DURING CONSTRUCTION BY GRADING, SEALING AND COVERING.

SANITARY SEWER MANHOLE TYPE 301 (PIPES 27" OR LESS)

JANUARY, 2024

SAN-1

SCALE: AS SHOWN
DESIGN BY: THC
PLAN BY: PTH
CHECK BY: PTH

REVISIONS

NO.	DATE	DESCRIPTION

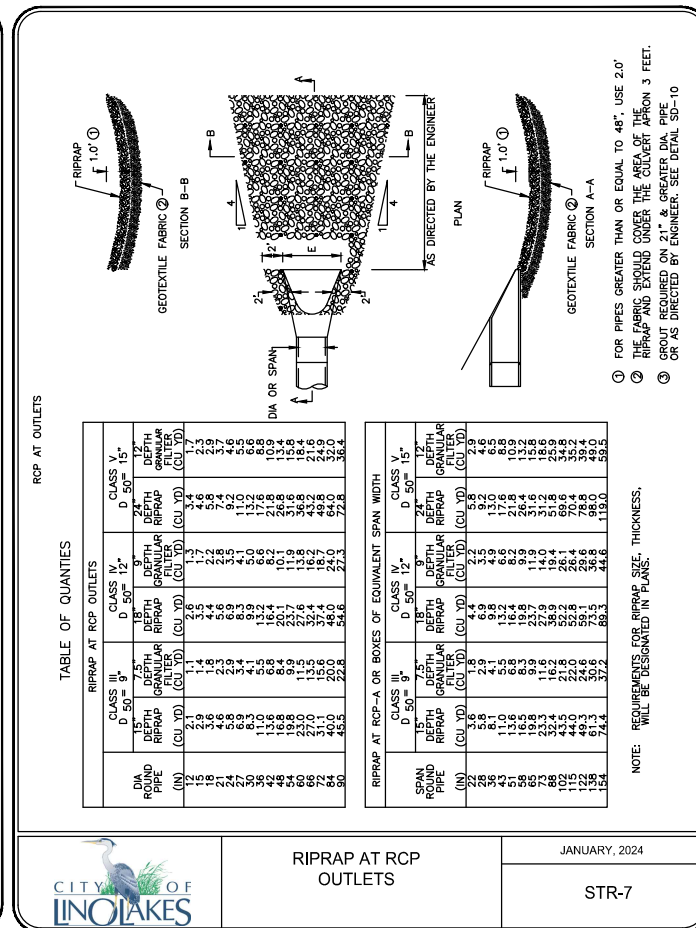
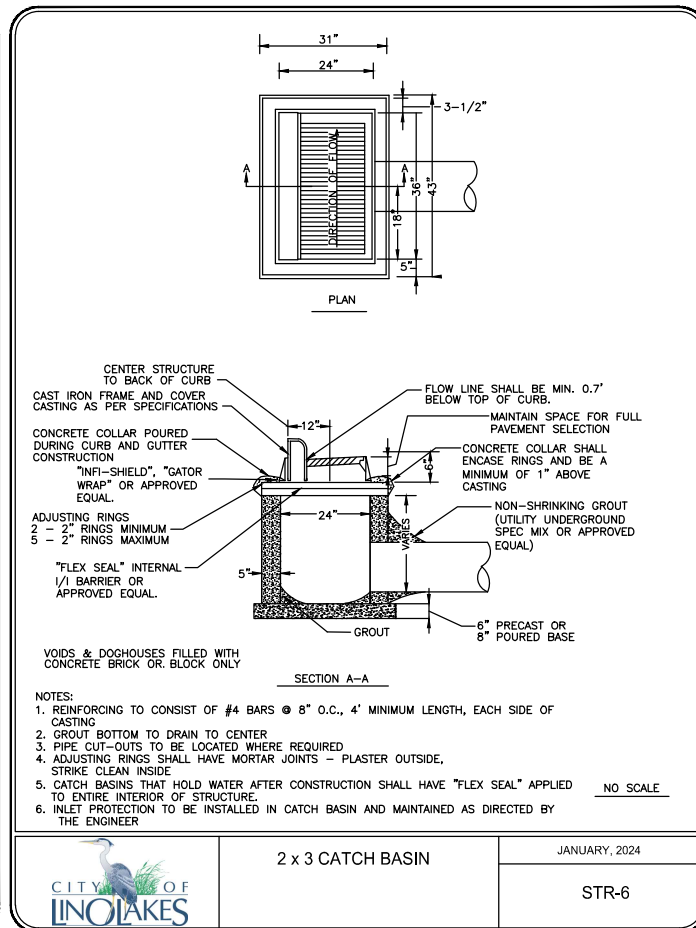
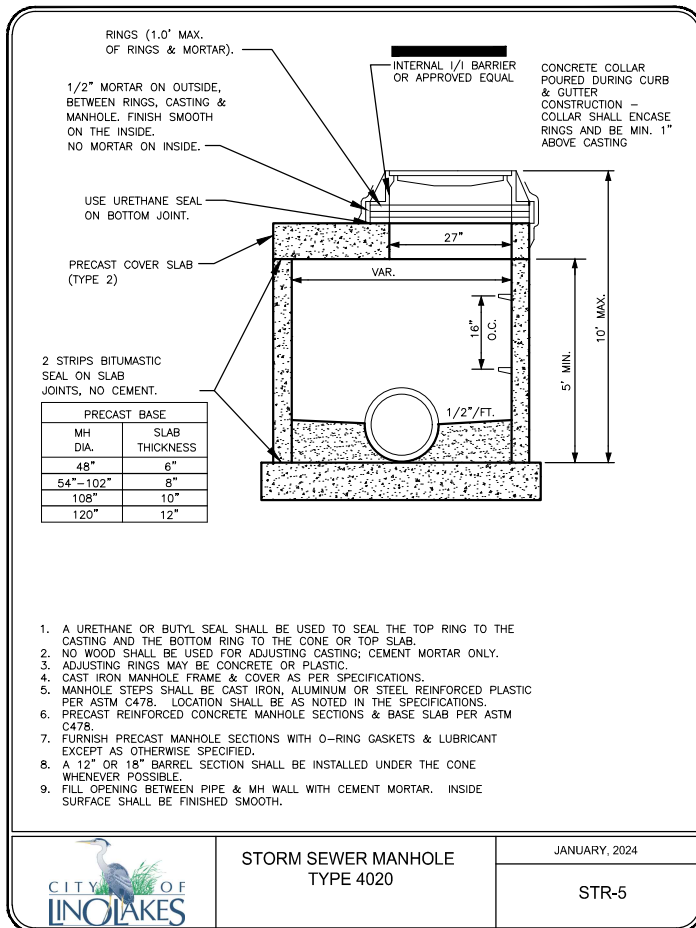
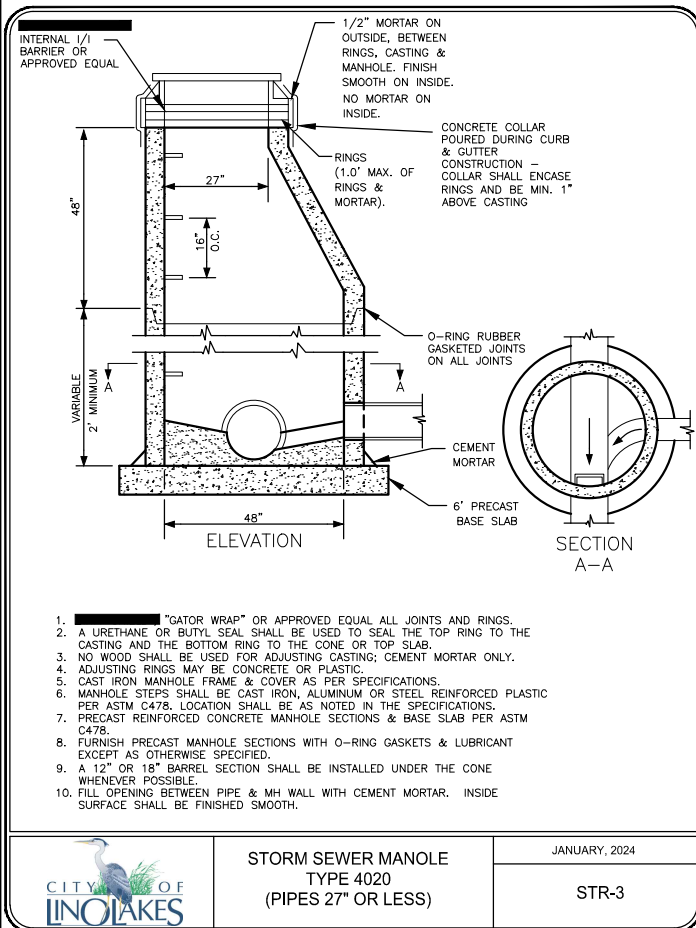
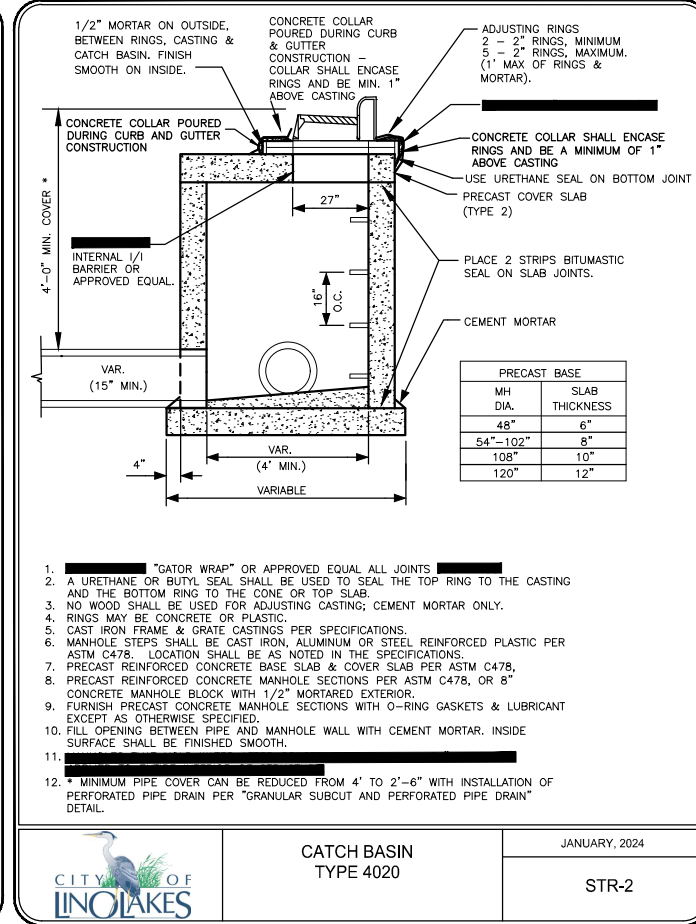
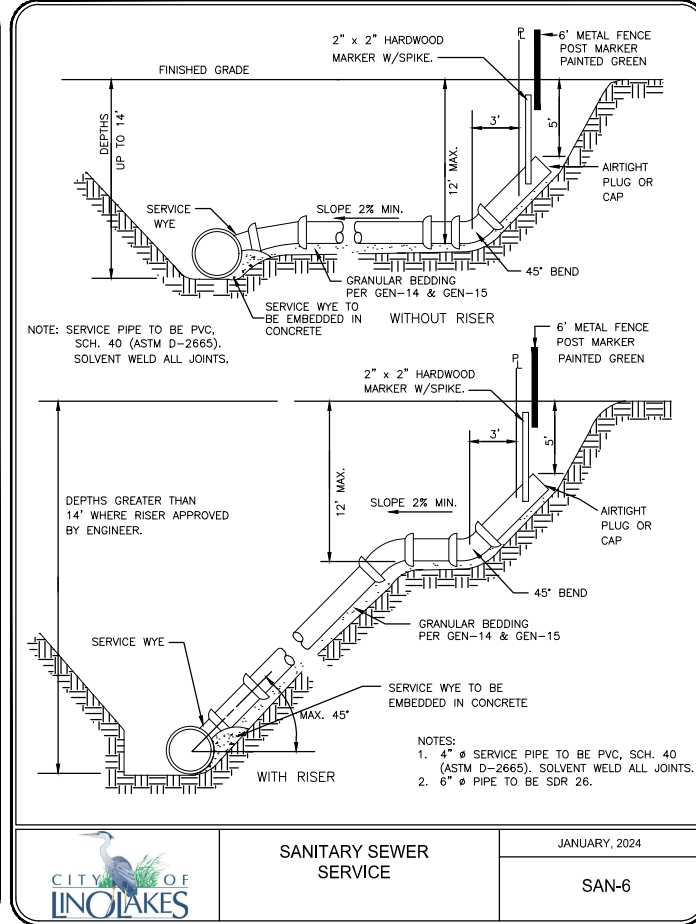
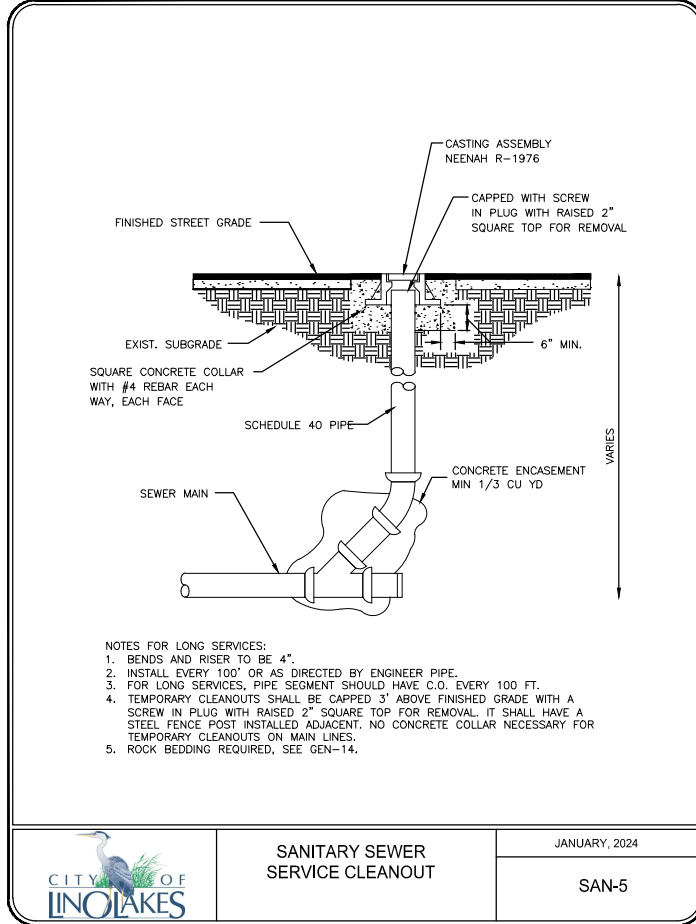
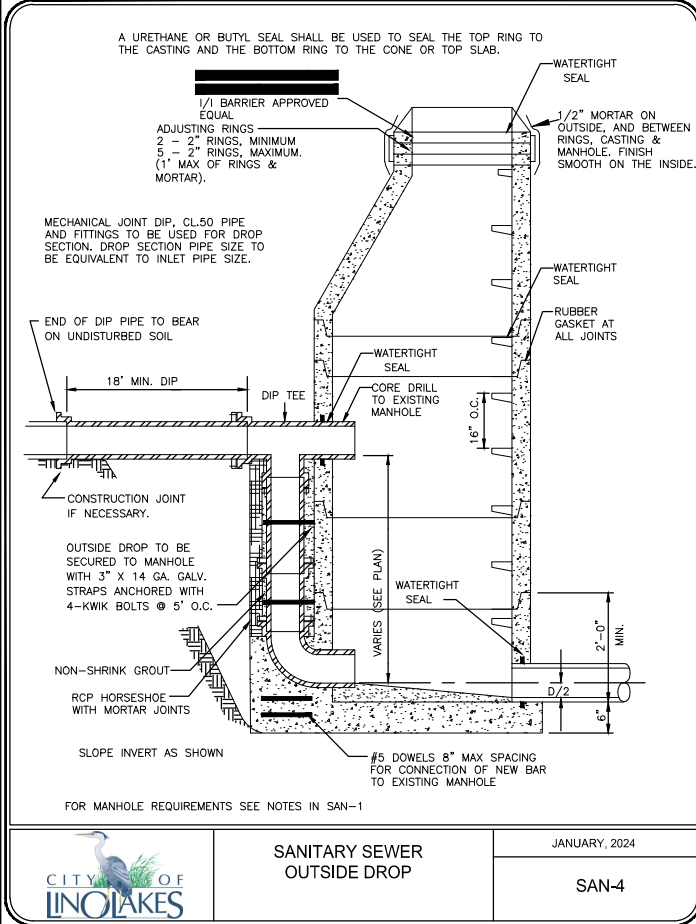
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PAUL HORNBY, PE
DATE: 01-24-2025 LIC. NO.: 23359

GENERAL DETAILS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

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wsb CITY OF LINO LAKE

SCALE: AS SHOWN DESIGN BY: THC

PLAN BY: THC CHECK BY: PTH

REVISIONS

NO.	DATE	DESCRIPTION

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PAUL HORNBY, PE

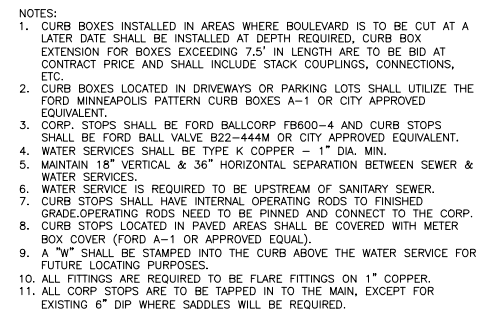
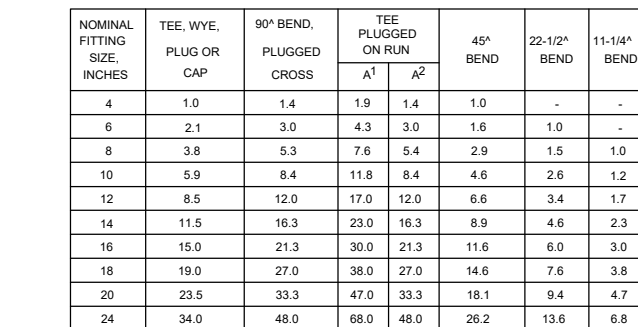
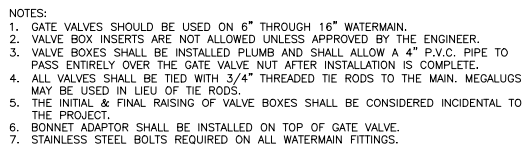
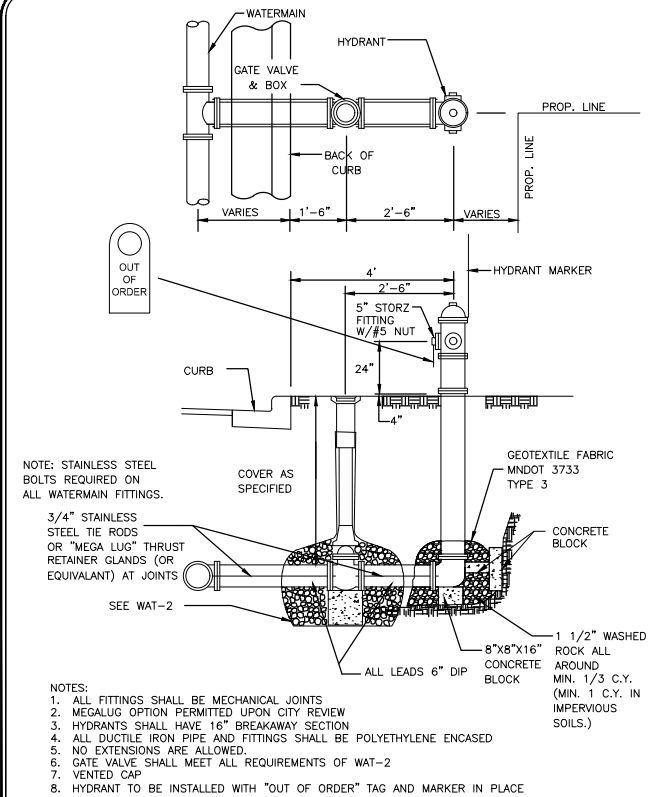
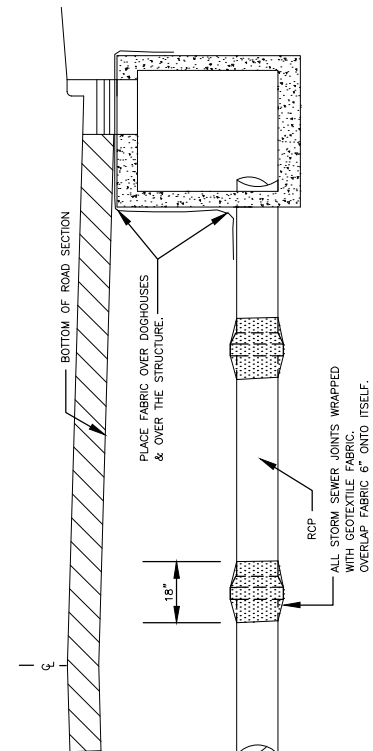
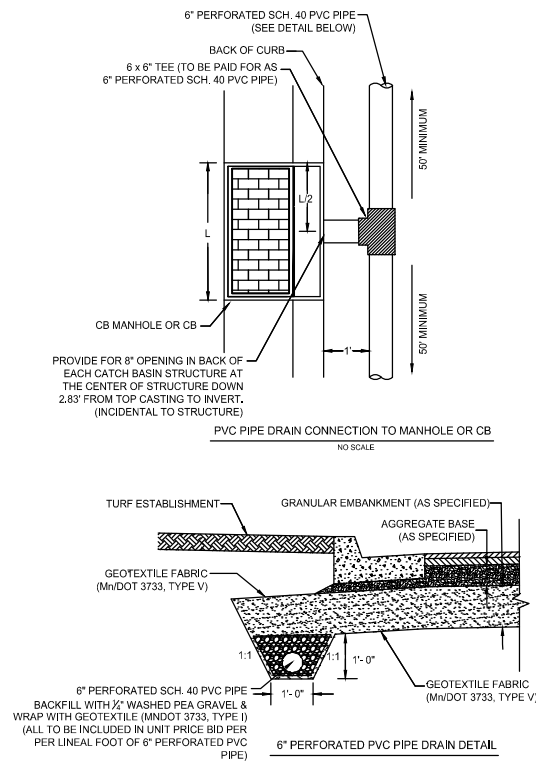
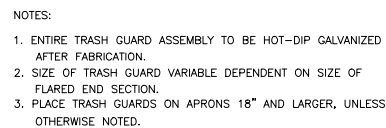
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GENERAL DETAILS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKE

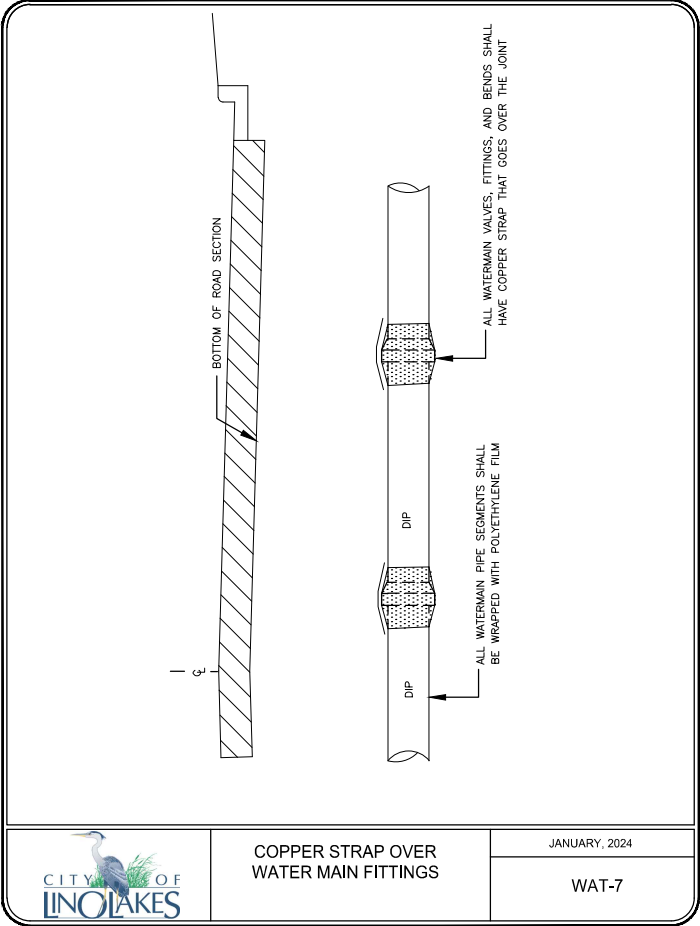
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SHEET



2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

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WSB PROJECT NO.
023620-000

SHEET
12 OF 97

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

GENERAL
DETAILS

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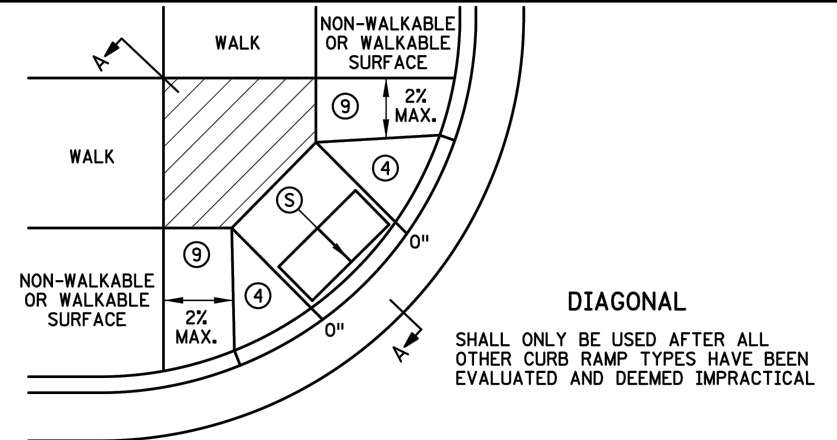
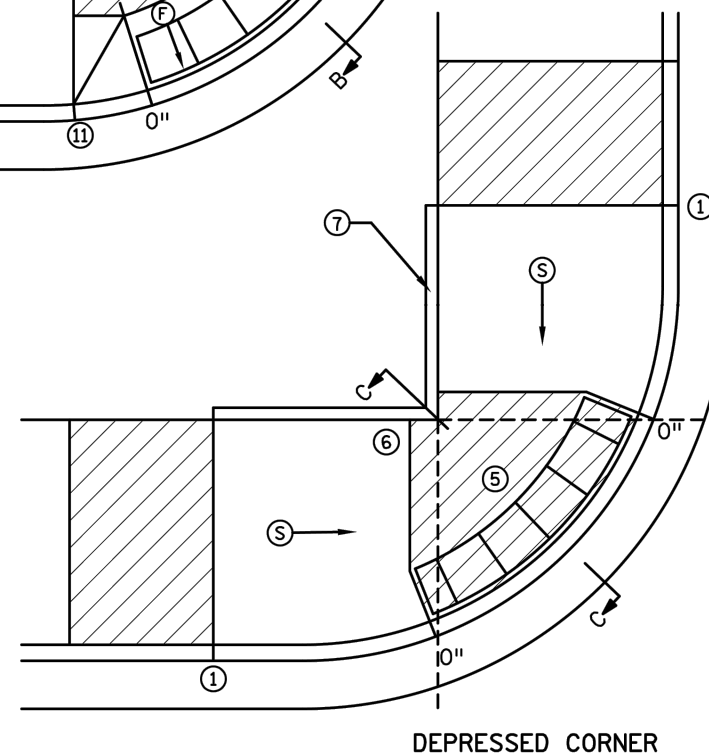
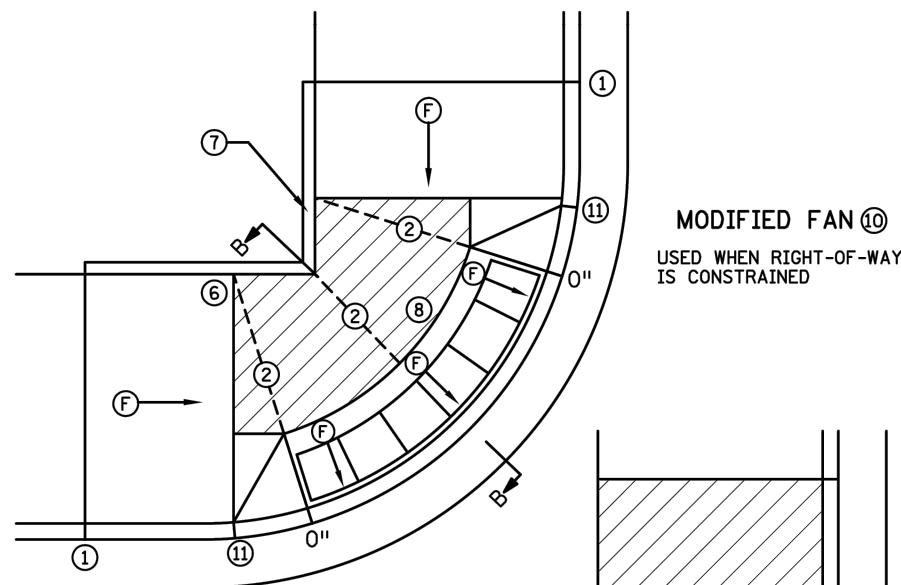
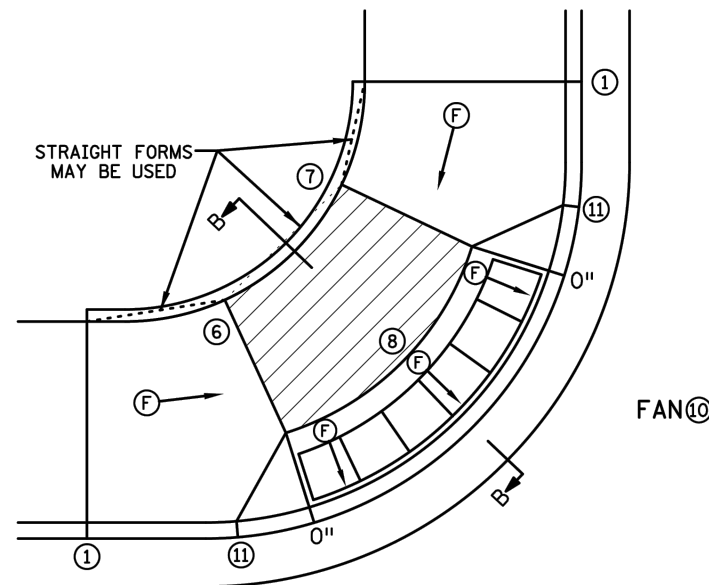
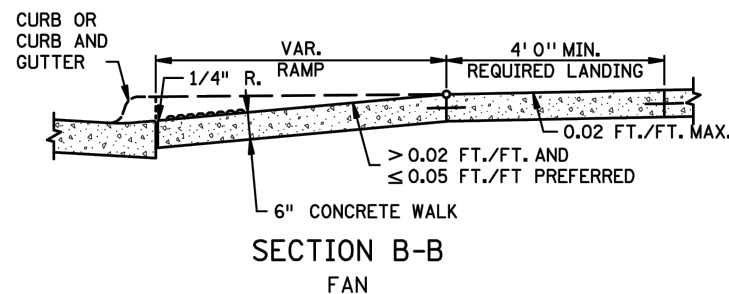
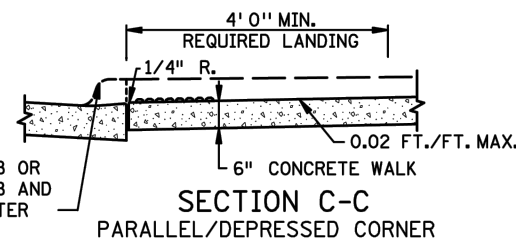
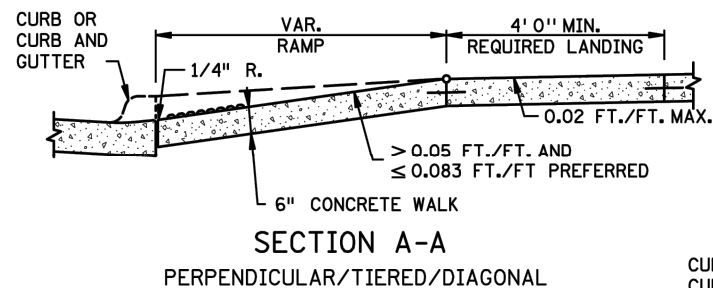
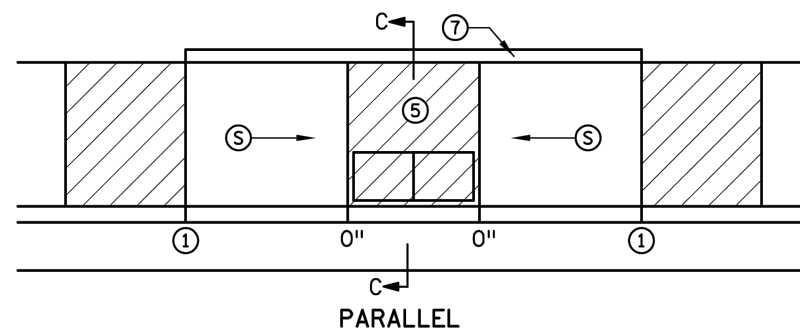
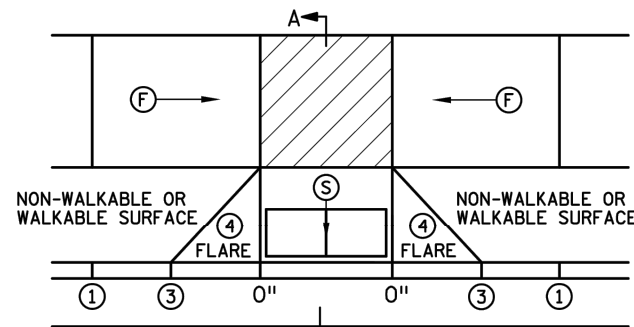
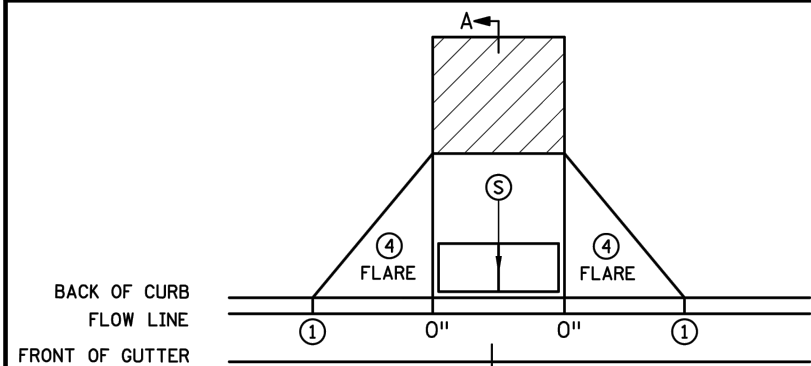

PAUL HORNBY, PE

DATE: 01-24-2025 LIC. NO. 23359

REVISIONS

NO.	DATE	DESCRIPTION

SCALE:	DESIGN BY:
AS SHOWN	THC
PLAN BY:	CHECK BY:
THC	PTH



NOTES:

- LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE GREATER THAN 2%.
- INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.
- SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL RUNNING SLOPE IS GREATER THAN 5.0%.
- CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.
- ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL, THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH. (EXCEPT AS STATED IN ⑥ BELOW.)
- TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 OF 6 FOR ALL SEPARATELY POURED INITIAL LANDINGS.
- WHEN SIDEWALK IS AT BACK OF CURB, TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE. MAINTAIN POSITIVE BOULEVARD DRAINAGE TO TOP OF CURB.
- ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.
- 4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNING SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNING IS ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0" - 3" OFFSET IS ALLOWED.
- WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNING SHOULD NOT BE GREATER THAN 20 FEET.
- RECTANGULAR DETECTABLE WARNING SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNING SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.

- ① MATCH FULL HEIGHT CURB.
- ② 4' MINIMUM DEPTH LANDING REQUIRED ACROSS TOP OF RAMP.
- ③ 3" HIGH CURB WHEN USING A 3' LONG RAMP, 4" HIGH CURB WHEN USING A 4' LONG RAMP.
- ④ SEE SHEET 4 OF 6, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
- ⑤ DETECTABLE WARNINGS MAY BE PART OF THE 4' X 4' MIN. LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.
- ⑥ THE GRADE BREAK SHALL BE PERPENDICULAR TO THE BACK OF WALK. THIS WILL ENSURE THAT THE GRADE BREAK IS PERPENDICULAR TO THE DIRECTION OF TRAVEL. (TYPICAL FOR ALL)
- ⑦ WHEN ADJACENT TO GRASS, GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS LESS THAN 5% RUNNING SLOPE SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
- ⑧ A 7' MIN TOP RADIUS GRADE BREAK IS REQUIRED TO BE CONSTRUCTIBLE.
- ⑨ PAVE FULL WALK WIDTH.
- ⑩ "S" SLOPES ON FANS SHALL ONLY BE USED WHEN ALL OTHER FEASIBLE OPTIONS HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.
- ⑪ INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3" CURB HEIGHT. REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

LEGEND

- THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.
- ⑤ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
 - ⑥ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
 - ⑦ LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PAR.
 - X" CURB HEIGHT

REVISION:

APPROVED: 11-04-2021

Jeffrey J. Perkins
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA
DEPARTMENT
OF
TRANSPORTATION

STANDARD PLAN 5-297.250

1 OF 6

THOMAS STYRBICKI
STATE DESIGN ENGINEER

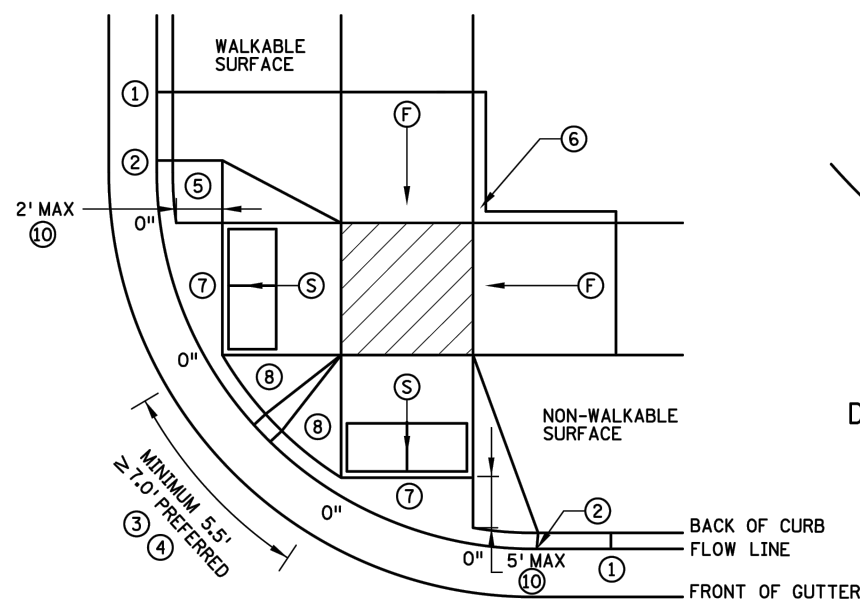
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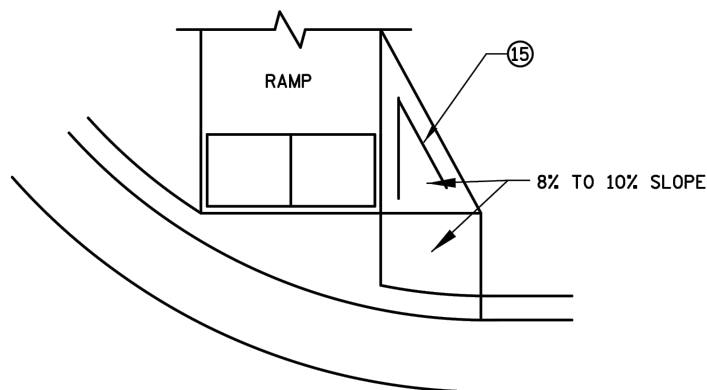
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PEDESTRIAN CURB RAMP DETAILS

(TH) SHEET NO. 13 OF 97 SHEETS

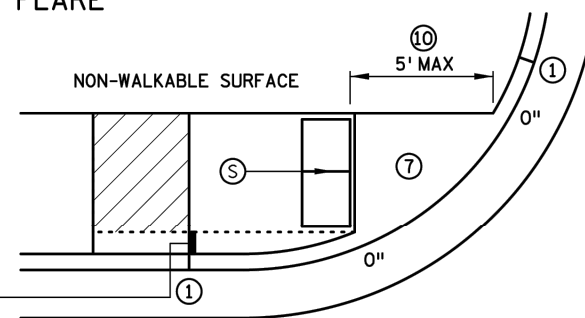


COMBINED DIRECTIONAL

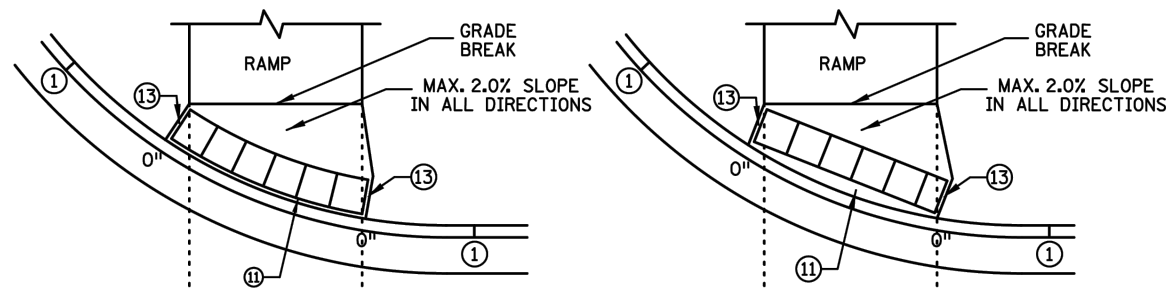


DIRECTIONAL RAMP WALKABLE FLARE

IF NON-CONCRETE BLVD. IS CONSTRUCTED AND IS LESS THAN 2' IN WIDTH AT TOP OF CURB TRANSITION, PAVE CONCRETE RAMP WIDTH TO ADJACENT BACK OF CURB.

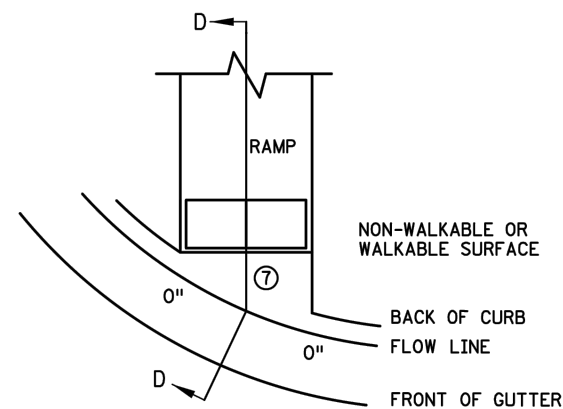


STANDARD ONE-WAY DIRECTIONAL ⑨

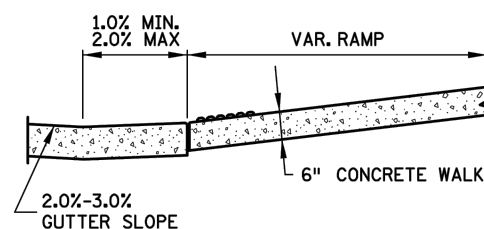


DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫

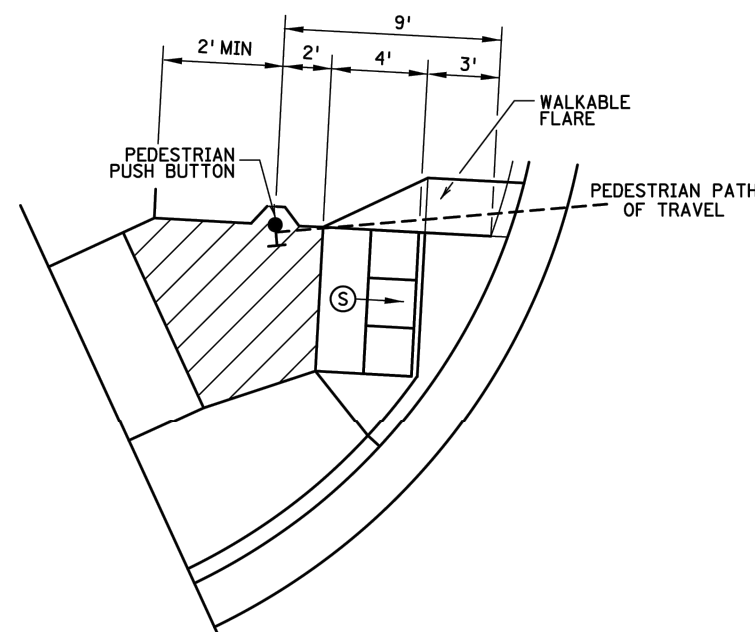
ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB



CURB FOR DIRECTIONAL RAMPS ⑭



SECTION D-D



SEMI-DIRECTIONAL RAMP ③④⑨

3' DOME SETBACK, 4' LONG RAMP AND PUSH BUTTON 9' FROM THE BACK OF CURB
PRIMARYLY USED FOR APS APPLICATIONS WHERE THE PAR DOES NOT CONTINUE PAST THE PUSH BUTTON (DEAD-END SIDEWALK)

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE.

INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.

SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL SLOPE IS GREATER THAN 5.0%.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOP GRADE BREAK OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL. THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH.

TO ENSURE INITIAL RAMPS AND INITIAL LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS SHALL BE CAST SEPARATELY, FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 AND THE ADA SPECIAL PROVISION (PROSECUTION OF WORK).

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

WHEN THE BOULEVARD IS 4' WIDE OR LESS, THE TOP OF CURB TAPER SHALL MATCH THE RAMP SLOPES TO REDUCE NEGATIVE BOULEVARD SLOPES FROM THE TOP BACK OF CURB TO THE PAR.

ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0" - 3" OFFSET IS ALLOWED.

WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.

RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB. SEE NOTES ⑩ & ⑪ FOR INFORMATION REGARDING RECTANGULAR DETECTABLE WARNING PLACEMENT.

① MATCH FULL CURB HEIGHT.

② 3" HIGH CURB WHEN USING A 3' LONG RAMP
4" HIGH CURB WHEN USING A 4' LONG RAMP.

③ 3" MINIMUM CURB HEIGHT (5.5' MIN. DISTANCE REQUIRED BETWEEN DOMES)
4" PREFERRED (7' MIN. DISTANCE REQUIRED BETWEEN DOMES).

④ THE "BUMP" IN BETWEEN THE RAMPS SHOULD NOT BE IN THE PATH OF TRAVEL FOR COMBINED DIRECTIONAL RAMPS. IF THIS OCCURS MODIFY THE RAMP LOCATION OR SWITCH RAMP TO A FAN/DEPRESSED CORNER.

⑤ WHEN USING CONCRETE PAVED FLARES ON THE OUTSIDE OF DIRECTIONAL RAMPS, AND ADJACENT TO A WALKABLE SURFACE, DIRECTIONAL RAMP FLARES SHALL BE USED. SEE THE DETAIL ON THIS SHEET.

⑥ GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.

⑦ MAX. 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.

⑧ 8% TO 10% WALKABLE FLARE.

⑨ PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.

⑩ FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.

⑪ RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK UP TO 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.

⑫ FOR DIRECTIONAL RAMPS WITH THE DETECTABLE WARNINGS PLACED AT THE BACK OF CURB, THE DETECTABLE WARNINGS SHALL COVER THE ENTIRE WIDTH OF THE WALK/PATH. THIS ENSURES A DETECTABLE EDGE AND HELPS ELIMINATE THE CURB TAPER OBSTRUCTING THE PATH OF PEDESTRIAN TRAVEL.

⑬ THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.

⑭ TO BE USED FOR ALL DIRECTIONAL RAMPS, EXCEPT WHERE DOMES ARE PLACED ALONG THE BACK OF CURB.

⑮ PLACE 2 NO. 4 BARS 4 INCHES FROM SIDE OF FORMS WITH A MINIMUM 2 INCHES OF CONCRETE COVER ALONG EACH SIDE OF FLARE (INCIDENTAL).

LEGEND

THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

③ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.

④ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.

⑤ LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PAR.

X" CURB HEIGHT

REVISION:

APPROVED: 11-04-2021

Jeffrey J. Perkins
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA
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STANDARD PLAN 5-297.250

2 OF 6

THOMAS STYRBICKI
STATE DESIGN ENGINEER

APPROVED: 11-04-2021

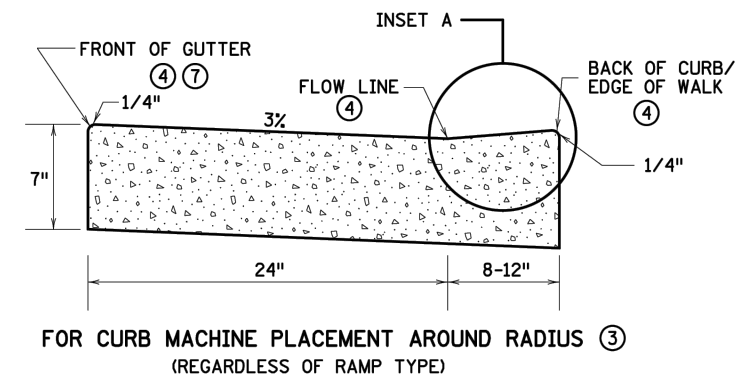
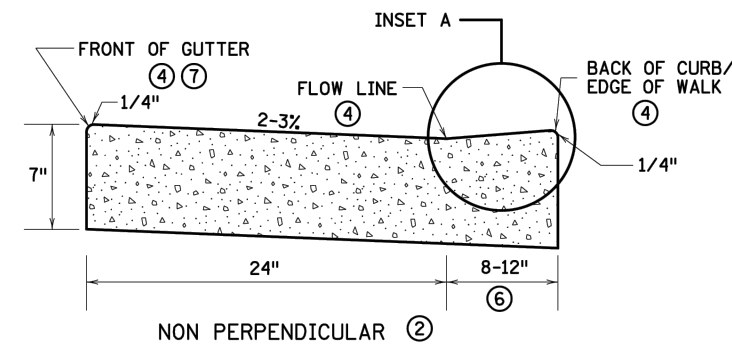
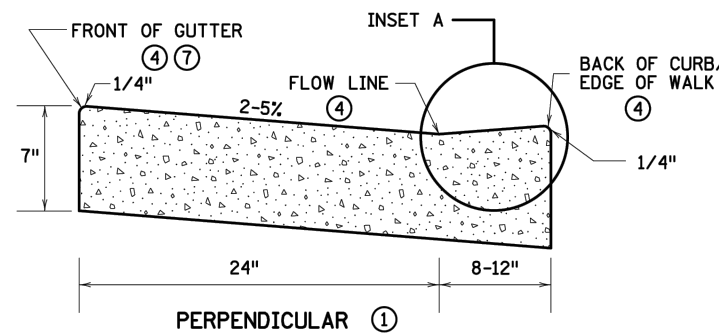
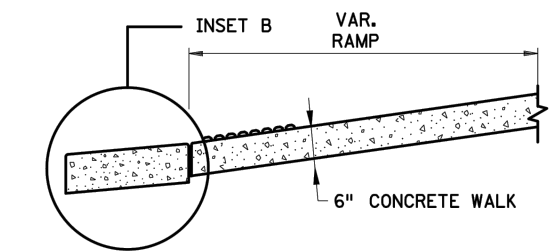
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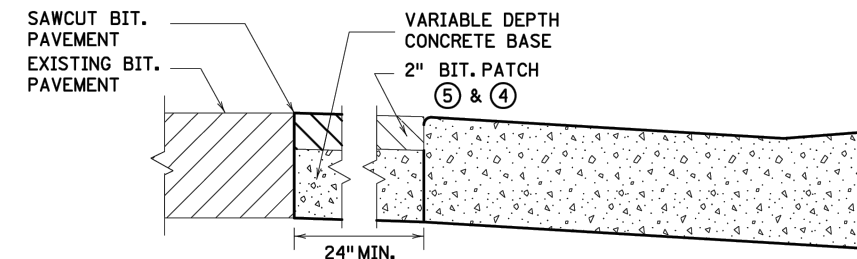
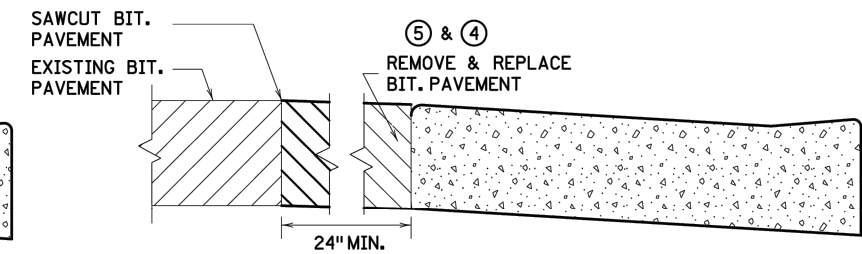
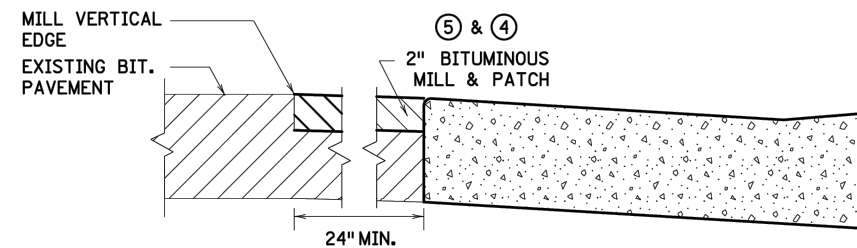
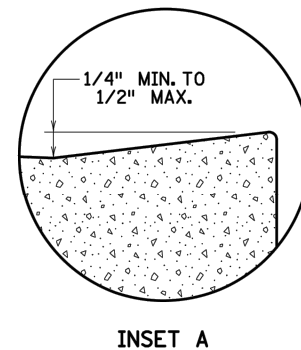
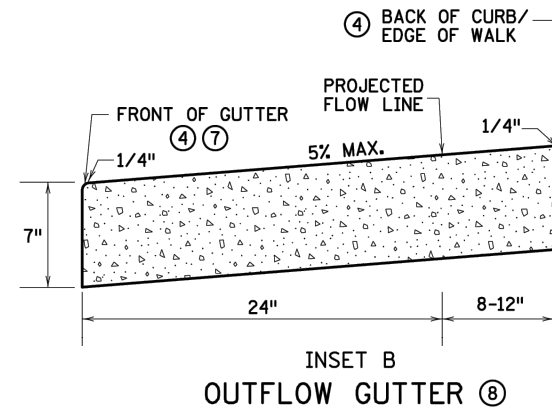
PEDESTRIAN CURB RAMP DETAILS

(T.H.)

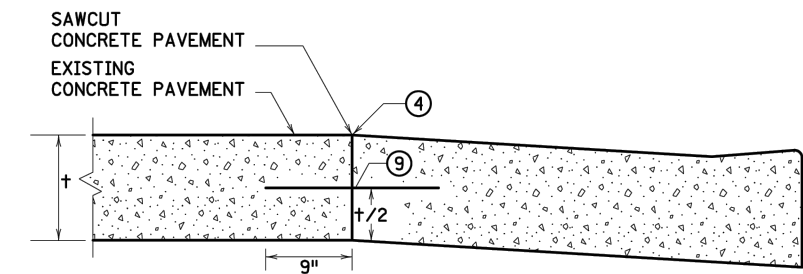
SHEET NO. 14 OF 97 SHEETS



PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL



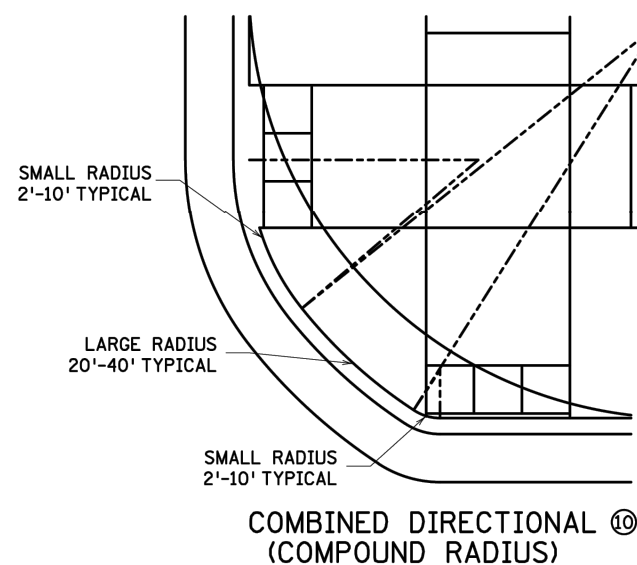
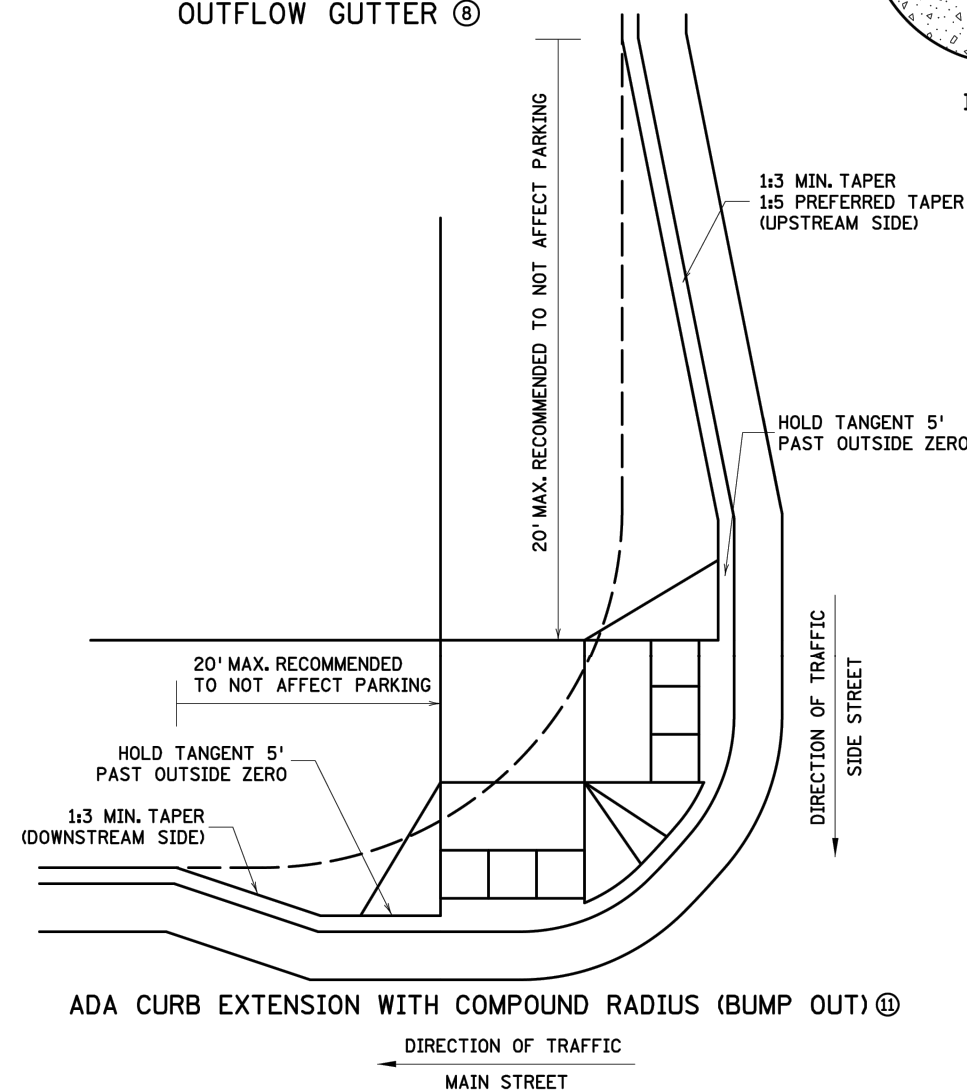
ONLY ALLOWED PER ENGINEER'S APPROVAL



PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER FOR USE ON CURB RAMP RETROFITS

NOTES:

- POSITIVE FLOW LINE DRAINAGE SHALL BE MAINTAINED THROUGH THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% MAXIMUM. NO PONDING SHALL BE PRESENT IN THE PAR.
- ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE SHALL NOT BE GREATER THAN 1/4 INCH.
- ① FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, TIERED PERPENDICULAR, PARALLEL, AND DIAGONAL RAMPS.
- ② FOR USE AT CURB RAMPS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED NON PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS & DEPRESSED CORNERS.
- ③ BEGIN GUTTER SLOPE TRANSITION 10' OUTSIDE OF ALL CURB RAMPS.
- ④ THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4".
- ⑤ ELEVATION CHANGE TAKES PLACE FROM THE EXISTING TO NEW FRONT OF GUTTER. PATCH IS USED TO MATCH THE NEW GUTTER FACE INTO THE EXISTING ROADWAY.
- ⑥ VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS. SEE SHEET 2 FOR DIRECTIONAL CURB SLOPE REQUIREMENTS.
- ⑦ TOP FRONT OF GUTTER SHALL BE CONSTRUCTED FLUSH WITH PROPOSED ADJACENT PAVEMENT ELEVATION. TOP 1.5" OF THE GUTTER FACE MUST BE A FORMED EDGE. PAR GUTTER SHALL NOT BE OVERLAID.
- ⑧ SHOULD BE USED AT VERTICALLY CONSTRAINED AREAS WHEN AT A DRAINAGE HIGH POINT OR SUPER ELEVATED ROADWAY SEGMENTS.
- ⑨ DRILL AND GROUT NO. 4 EPOXY-COATED 18" LONG TIE BARS AT 30" CENTER TO CENTER INTO EXISTING CONCRETE PAVEMENT 1' MINIMUM FROM ALL JOINTS.
- ⑩ HELPS PROVIDE TWO SEPARATE RAMPS, REDUCES THE DOME SETBACK LENGTH AND MINIMIZES DIRECTIONAL CURB. THIS RADIUS DESIGN CLOSELY FOLLOWS THE TURNING VEHICLE PATH WHILE OPTIMIZING CURB RAMP LENGTH.
- ⑪ CURB EXTENSIONS SHOULD BE USED IN VERTICALLY CONSTRAINED AREAS, USUALLY IN DOWNTOWN ROADWAY SEGMENTS WHERE ON-STREET PARKING IS AVAILABLE. CURB EXTENSIONS SHOULD BE CONSIDERED FOR APS INTERSECTIONS WHERE SPACE IS LIMITED. PUSH BUTTONS MUST MEET APS CRITERIA AS DESCRIBED IN THE PUSH BUTTON LOCATION DETAIL SHEET.



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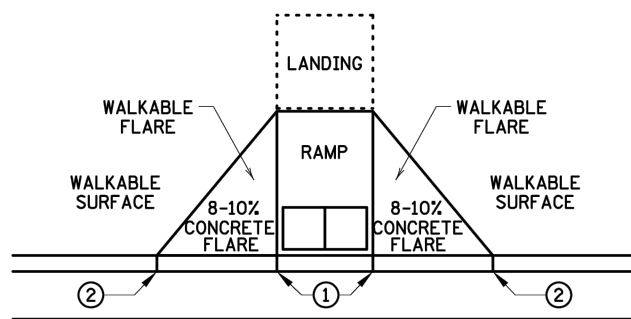
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Tom Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER

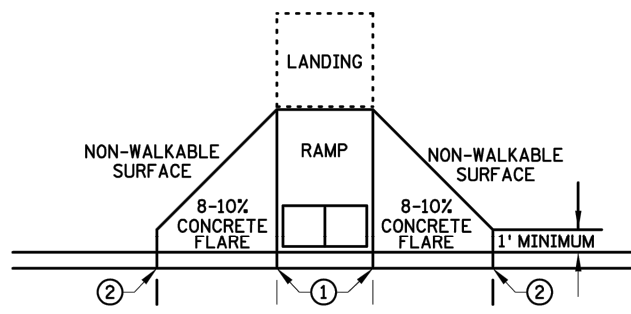
3 OF 6
APPROVED: 11-04-2021
REVISED:
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PEDESTRIAN CURB RAMP DETAILS

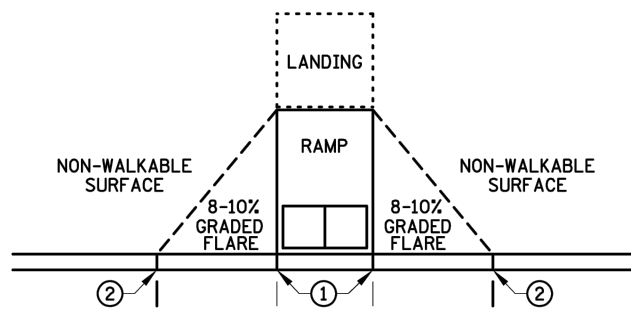
(TH) SHEET NO. 15 OF 97 SHEETS



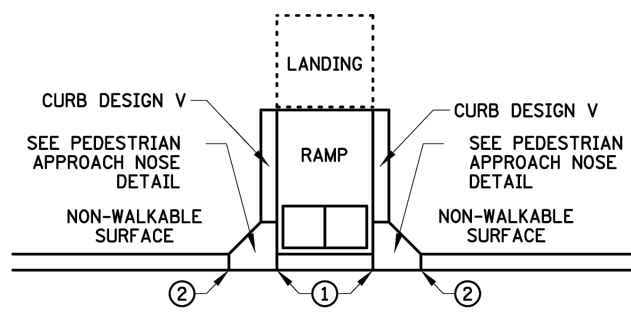
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

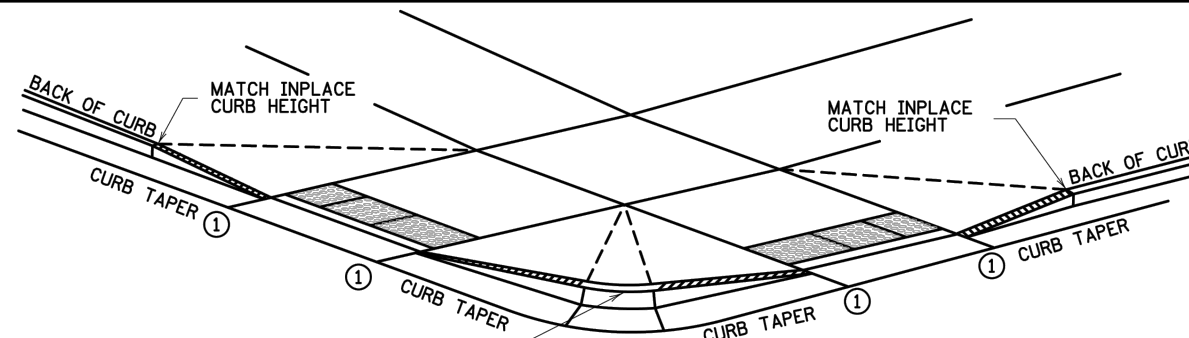


GRADED FLARES



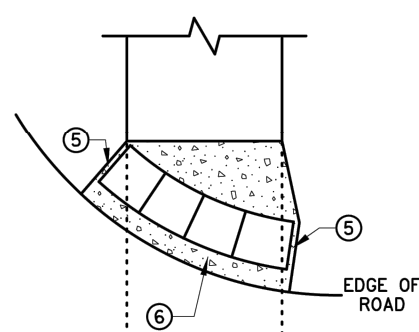
RETURNED CURB ④

TYPICAL SIDE TREATMENT OPTIONS ③ ⑩

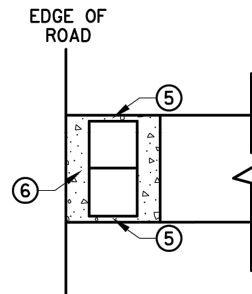


3" MINIMUM CURB HEIGHT, 4" PREFERRED
(MEASURED AT FRONT FACE OF CURB)
FOR A MIN. 6" LENGTH (MEASURED ALONG FLOW LINE)

DETECTABLE EDGE WITH
CURB AND GUTTER ⑦

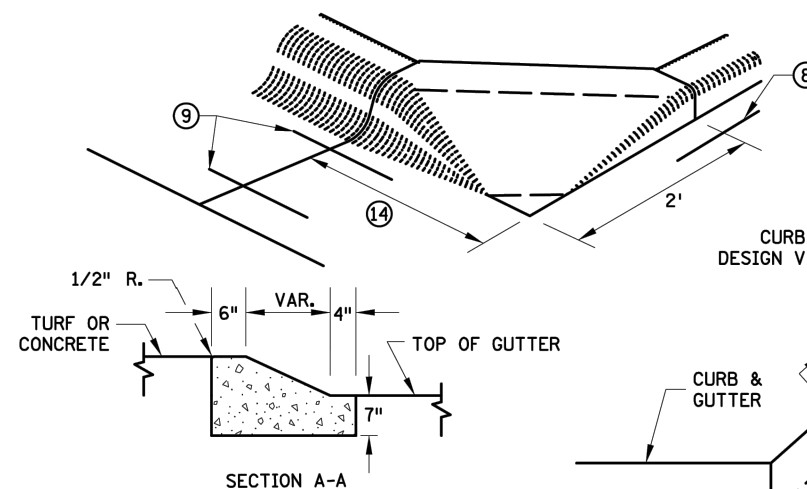


RADIAL DETECTABLE WARNING

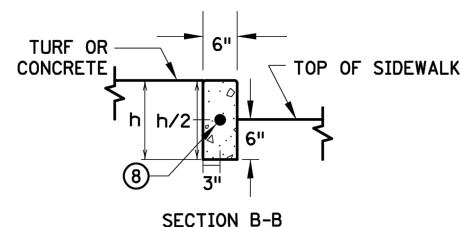


RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

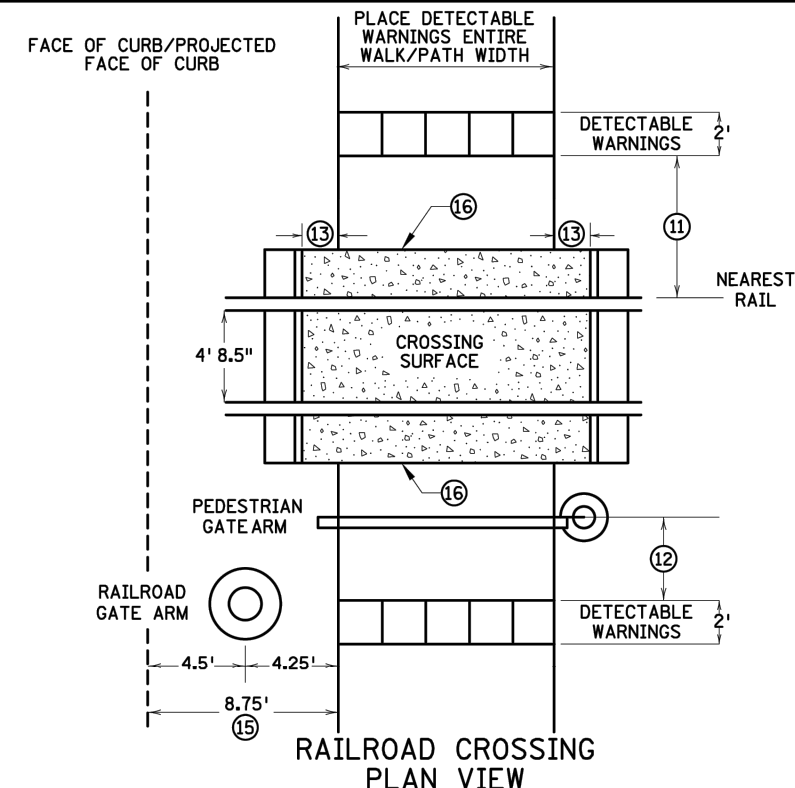


SECTION A-A



SECTION B-B

PEDESTRIAN APPROACH
NOSE DETAIL
(FOR RETURNED CURB
SIDE TREATMENT)



RAILROAD CROSSING
PLAN VIEW

NOTES:

- INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3 INCH CURB HEIGHT. INCREASE CURB TAPER LENGTH AT LESS THAN 8% OR REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.
- SEE STANDARD PLATE 7038 AND THIS SHEET FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.
- A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.
- CONCRETE FLARE LENGTHS ADJACENT TO NON-WALKABLE SURFACES SHOULD BE LESS THAN 8' LONG MEASURED ALONG THE RAMPS FROM THE BACK OF CURB.
- ① 0" CURB HEIGHT. SEE INSET A ON SHEET 3 OF 6.
- ② FULL CURB HEIGHT.
- ③ SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE OF BOTH ROADWAY AND SIDEWALK, ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.
- ④ TYPICALLY USED FOR MEDIANS AND ISLANDS.
- ⑤ WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE EDGE OF ROADWAY. MAINTAIN 3" MAX. BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
- ⑥ IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNINGS SHALL BE PLACED 1' FROM THE EDGE OF BITUMINOUS ROADWAY AND/OR BITUMINOUS SHARED-USE PATH TO PROVIDE VISUAL CONTRAST.
- ⑦ ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES DETECTABLE WARNINGS WHEREVER THERE IS ZERO-INCH HIGH CURB. CURB TAPERS ARE CONSIDERED A DETECTABLE EDGE WHEN THE TAPER STARTS WITHIN 3" OF THE EDGE OF THE DETECTABLE WARNINGS. AND UNIFORMLY RISES TO A 3-INCH MINIMUM CURB HEIGHT. ANY CURB NOT PART OF A CURB TAPER AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH ACCESSIBILITY STANDARDS.
- ⑧ DRILL AND GROUT 1 - NO. 4 12" LONG REINFORCEMENT BAR (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE V CURB.
- ⑨ DRILL AND GROUT 2 - NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE CURB AND GUTTER.
- ⑩ SIDE TREATMENT EXAMPLES SHOWN ARE WHEN THE INITIAL LANDING IS APPROXIMATELY LEVEL WITH THE FULL HEIGHT CURB (I.E. 6' LONG RAMP FOR 6" HIGH CURB). WHEN THE INITIAL LANDING IS MORE THAN 1" BELOW FULL HEIGHT CURB REFER TO SHEETS 1 & 2 TO MODIFY THE CURB HEIGHT TAPERS AND MAINTAIN POSITIVE BOULEVARD DRAINAGE. CONSTRUCT THESE TAPERS AT 0"-3" AT 8-10%, THEN LESS THAN 5% FROM 3" CURB TO FULL CURB HEIGHT.
- ⑪ NEAREST EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 12' MINIMUM TO 15' MAXIMUM FROM THE NEAREST RAIL. FOR SKEWED RAILWAYS IN NO INSTANCE SHALL THE DETECTABLE WARNING BE CLOSER THAN 12' MEASURED PERPENDICULAR TO THE NEAREST RAIL.
- ⑫ WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL, 2' FROM THE APPROACHING SIDE OF THE GATE ARM. THIS CRITERIA GOVERNS OVER NOTE ⑪.
- ⑬ CROSSING SURFACE SHALL EXTEND 2' MINIMUM PAST THE OUTSIDE EDGE OF WALK OR SHARED-USE PATH.
- ⑭ 3' FOR MEDIANS AND SPLITTER ISLANDS. NOSE CAN BE REDUCED TO 2' ON FREE RIGHT ISLANDS.
- ⑮ SIDEWALK TO BE PLACED 8.75' MIN. FROM THE FACE OF CURB/PROJECTED FACE OF CURB. THIS ENSURES MIN. CLEARANCE BETWEEN THE SIDEWALK AND GATE ARM COUNTERWEIGHT SUPPORTS.
- ⑯ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.

REVISION:
APPROVED: 11-04-2021
<i>Jeffrey J. Perkins</i>
JEFFREY PERKINS OPERATIONS DIVISION

m MINNESOTA DEPARTMENT OF TRANSPORTATION	STANDARD PLAN 5-297.250 4 OF 6 <i>Tom Styrbicki</i> THOMAS STYRBICKI STATE DESIGN ENGINEER APPROVED: 11-04-2021 REVISED:
STATE PROJ. NO.	(TH) SHEET NO. 16 OF 97 SHEETS

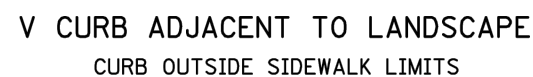
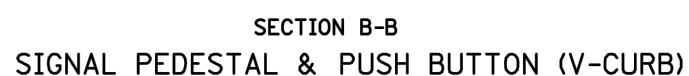
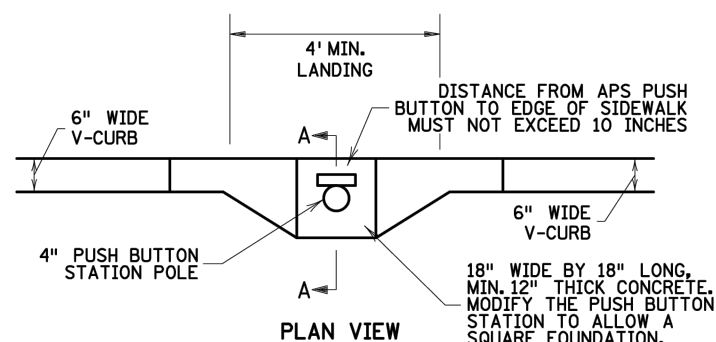


Diagram illustrating a proposed building layout. The layout includes a Landing, a Ramp, and a Transfer area (T). A dashed line indicates the length of the Transfer area, labeled "LENGTH". An inset labeled "INSET A" shows a detail of the Transfer area, including a "6" and a "T" (Transfer) area. The inset also shows an "EXISTING SIDEWALK" and a "RAMP" area.



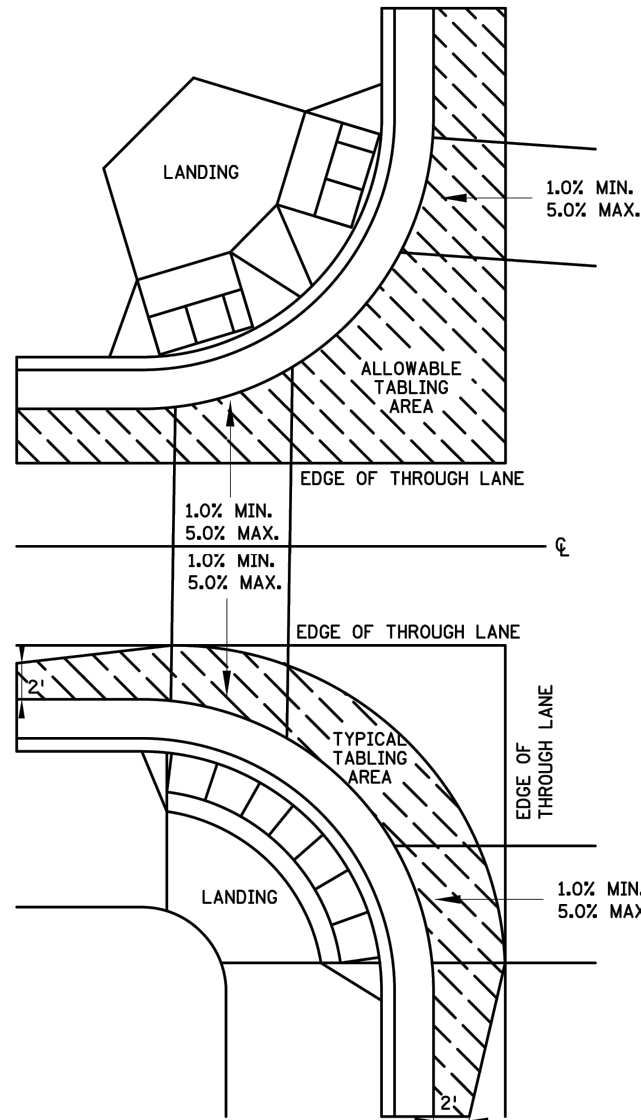
Diagram illustrating the Plan View of a Pedestrian Pole and Foundation. The diagram shows a 4" PEDESTAL POLE (LINE UP CENTER OF POLE WITH THE BACK OF V-CURB) mounted on a 30" X 30" SQUARE PEDESTAL FOUNDATION (MUST BE FLUSH WITH THE SURROUNDING WALK). The foundation is centered within a 4' MIN. LANDING area. The landing is bordered by 6" WIDE V-CURB on both sides. The distance from the APS PUSH BUTTON to the edge of the sidewalk must not exceed 10 inches. The diagram also indicates a 1:2 slope for the sidewalk sections.



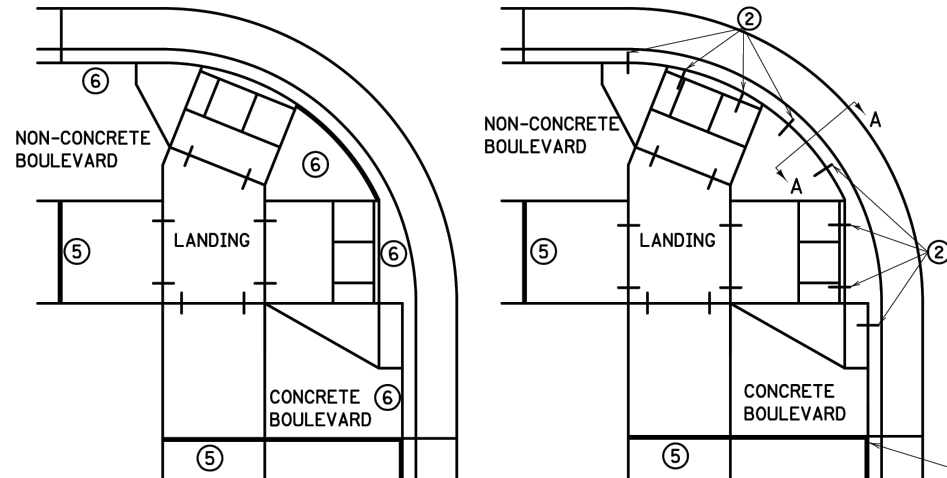
- ⑥ EXISTING CROSS SLOPE GREATER THAN 2.0%.

⑦ TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK. SEE THIS SHEET FOR ADDITIONAL INFORMATION.

(TH) SHEET NO. 17 OF 97 SHEETS

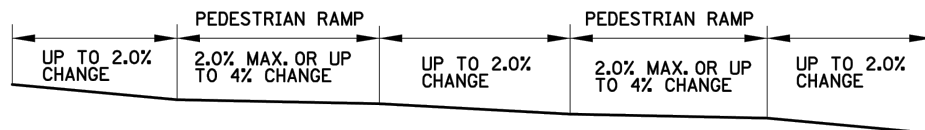


CURB LINE AND ROAD CROSSING ADJUSTMENTS

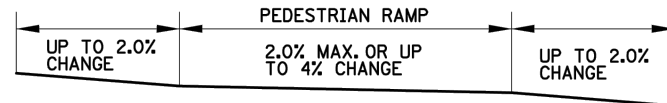


EXPANSION MATERIAL PLACEMENT FOR CONCRETE ROADWAYS

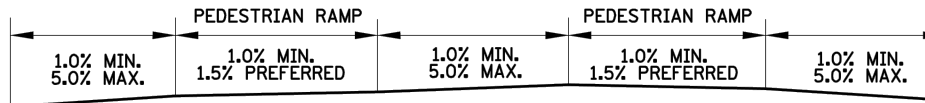
CURB LINE REINFORCEMENT ④ PLACEMENT ON BITUMINOUS ROADWAYS



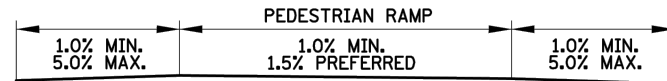
FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



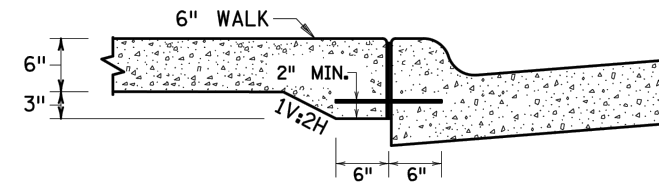
FLOW LINE PROFILE "TABLE" - FAN



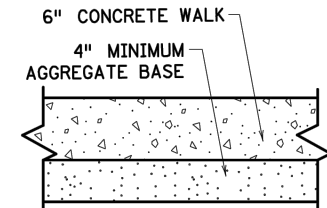
FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS



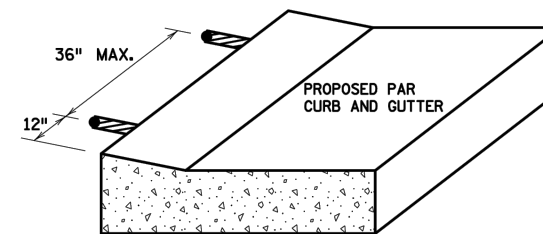
FLOW LINE PROFILE RAISE - FAN



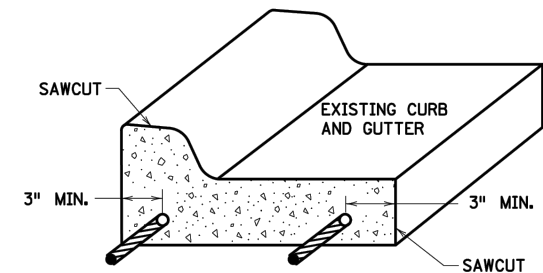
SECTION VIEW A-A THICKENED SECTION THROUGH CURB RAMP FLARES



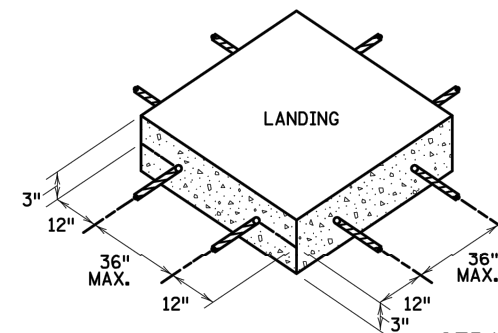
TYPICAL SIDEWALK SECTION WITHIN INTERSECTION CORNER



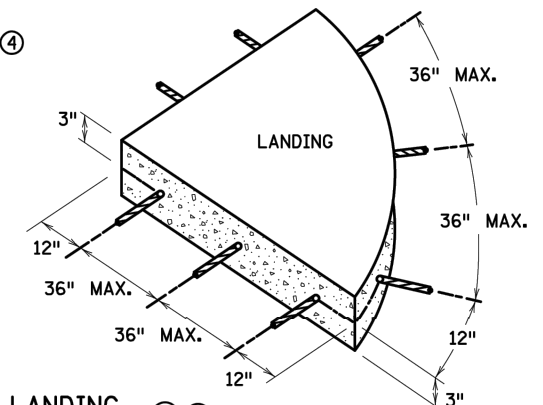
CURB RAMP REINFORCEMENT DETAILS ②④



CURB AND GUTTER REINFORCEMENT ③



SEPARATE LANDING POUR REINFORCEMENT ①②



GENERAL NOTES:

"TABLING" OF CROSSWALKS MEANS MAINTAINING LESS THAN 2% CROSS SLOPE WITHIN A CROSSWALK, IS REQUIRED WHEN A ROADWAY IS IN A STOP OR YIELD CONDITION AND THE PROJECT SCOPE ALLOWS.

RECONSTRUCTION PROJECTS: ON FULL PAVEMENT REPLACEMENT PROJECTS "TABLING" OF ENTIRE CROSSWALK SHALL OCCUR WHEN FEASIBLE.

MILL & OVERLAY PROJECTS: "TABLING" OF FLOW LINES, IN FRONT OF THE PEDESTRIAN RAMP, IS REQUIRED WHEN THE EXISTING FLOW LINE IS GREATER THAN 2%. WARPING OF THE BITUMINOUS PAVEMENT CAN NOT EXTEND INTO THE THROUGH LANE. TABLE THE FLOW LINE TO 2% OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:

- 1) 1.0% MIN. CROSS-SLOPE OF THE ROAD
- 2) 5.0% MAX. CROSS-SLOPE OF THE ROAD
- 3) "TABLE" FLOW LINE UP TO 4% CHANGE FROM EXISTING SLOPE IN FRONT OF PEDESTRIAN RAMP
- 4) UP TO 2% CHANGE IN FLOW LINE FROM EXISTING SLOPE BEYOND THE PEDESTRIAN CURB RAMP

STAND-ALONE ADA RETROFITS: FOLLOW MILL & OVERLAY CRITERIA ABOVE HOWEVER ALL PAVEMENT WARPING IS DONE WITH BITUMINOUS PATCHING ON BITUMINOUS ROADWAYS AND FULL-DEPTH APRON REPLACEMENT ON CONCRETE ROADWAYS.

RAISING OF CURB LINES SHOULD OCCUR IN VERTICALLY CONSTRAINED AREAS. RAISE THE CURB LINES ENOUGH TO ALLOW COMPLIANT RAMPS OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:

- 1) 1.0% MIN. AND 5.0% MAXIMUM CROSS-SLOPE OF THE ROAD
- 2) 1.0% MIN. FLOW LINE (ON EITHER SIDE OF PEDESTRIAN RAMP) TO MAINTAIN POSITIVE DRAINAGE
- 3) 5.0% RECOMMENDED MAX. FLOW LINE
- 4) LONGITUDINAL THROUGH LANE ROADWAY TAPERS SHOULD BE 1" VERTICAL PER 15' HORIZONTAL

NOTES:

- ① TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET FOR ALL SEPARATELY POURED INITIAL LANDINGS.
- ② DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) AT 36" MAXIMUM CENTER TO CENTER MINIMUM 12" SPACING FROM CONSTRUCTION JOINTS. BARS TO BE ADJUSTED TO MATCH RAMP GRADE. BARS TO BE PAID BY EACH.
- ③ DRILL AND GROUT 2 - NO. 4 X 12" LONG (6" EMBEDDED) REINFORCEMENT BARS (EPOXY COATED). REINFORCEMENT REQUIRED FOR ALL CONSTRUCTION JOINTS. BARS TO BE PAID BY EACH.
- ④ THIS CURB LINE REINFORCEMENT DETAIL SHALL BE USED ON BITUMINOUS ROADWAYS. FOR CONCRETE ROADWAYS, SEE NOTE 6.
- ⑤ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.
- ⑥ USE AN APPROVED TYPE F (1/4 INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.

REVISION:

APPROVED: 11-04-2021

Jeffrey J. Perkins
Jeffrey J. Perkins
OPERATIONS DIVISION

MINNESOTA
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OF
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6 OF 6

THOMAS STYRBICKI
STATE DESIGN ENGINEER

APPROVED: 11-04-2021

REVISED:

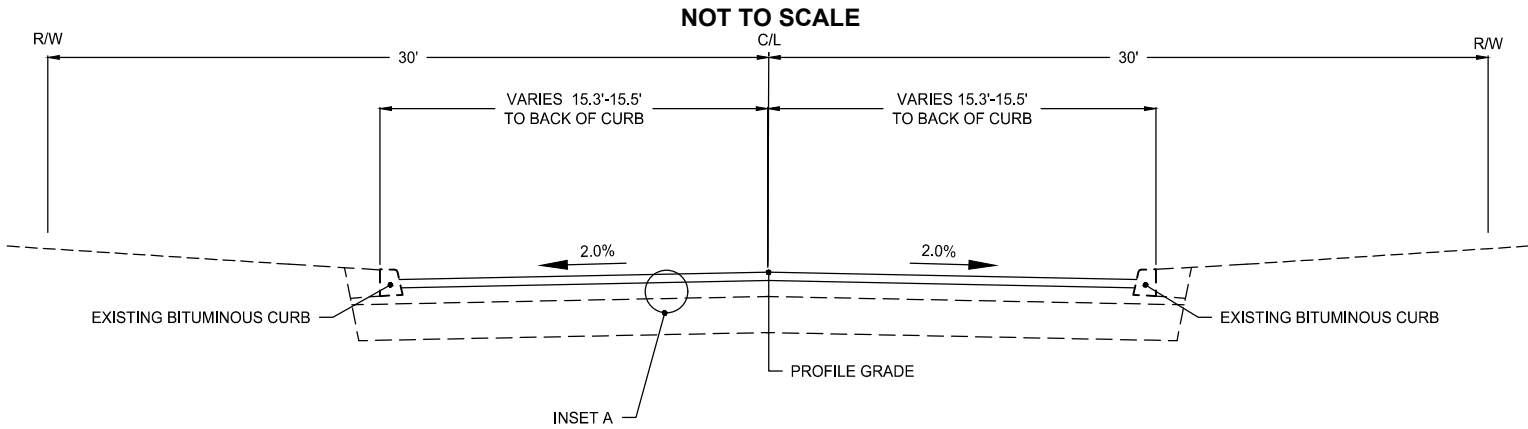
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PEDESTRIAN CURB RAMP DETAILS

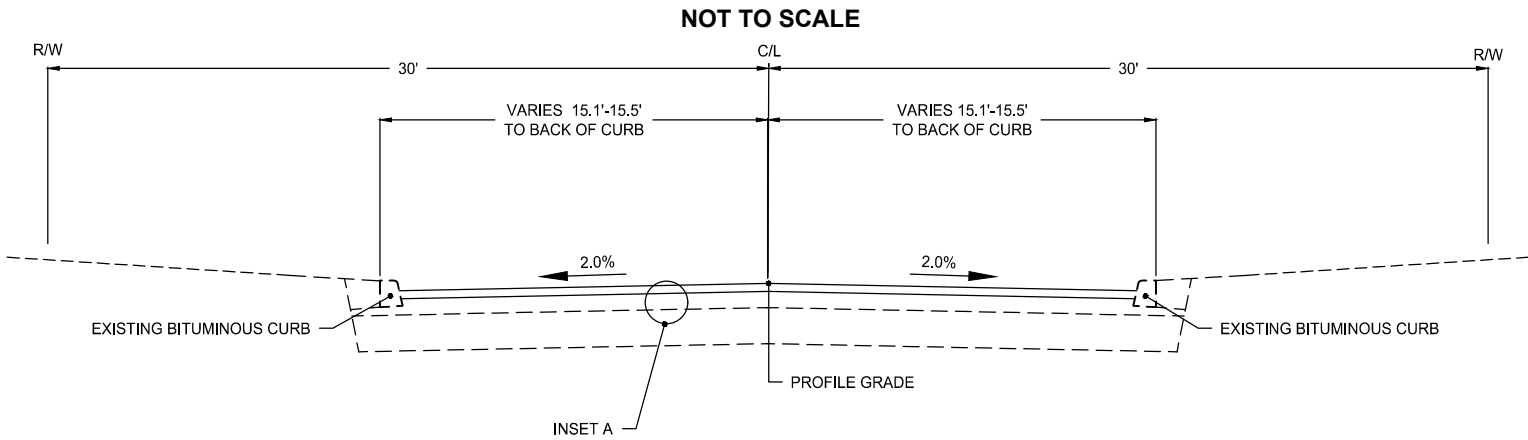
(TH) SHEET NO. 18 OF 97 SHEETS

NOTES:
1. APPLY MASTIC JOINT ADHESIVE TO ALL COLD JOINTS PRIOR TO FINAL LIFT OF PAVEMENT (SEE SPECIFICATION).

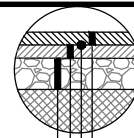
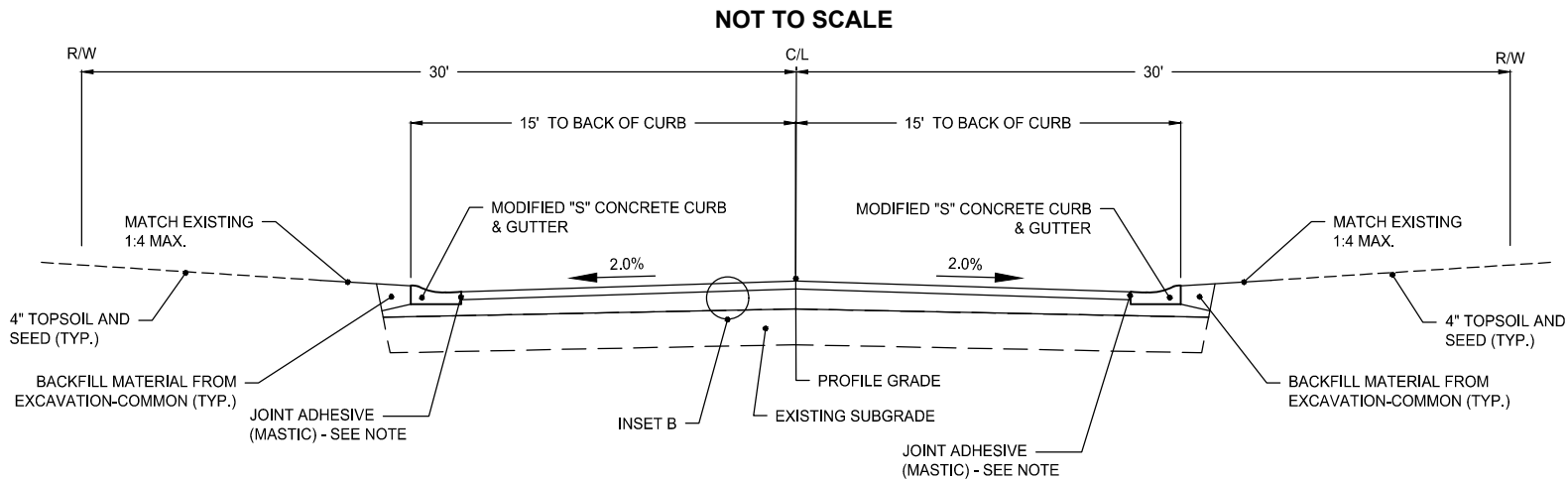
OVERLAY PAVEMENT SECTION
EVERGREEN TRAIL (STA. 1+28.05 TO STA. 26+70.78)



OVERLAY PAVEMENT SECTION
DIANE STREET (STA. 35+15.45 TO STA. 55+70.10)

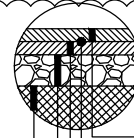


TYPICAL SECTION
81ST STREET (STA. 60+34.07 TO STA. 68+79.88)
DANUBE STREET (STA. 70+14.23 TO STA. 75+43.74)
ELBE STREET (STA. 80+25.02 TO STA. 89+39.74)



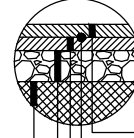
INSET A
1.5" OVERLAY SECTION

- 1.5" TYPE SP 9.5 WEARING COURSE MIX SPEC 2360 (SPWEA240B)
- 2357 BITUMINOUS TACK COAT
- EXISTING BITUMINOUS PAVEMENT
- EXISTING AGGREGATE BASE



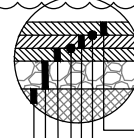
INSET B
BITUMINOUS ROAD PAVEMENT SECTION

- 1.5" TYPE SP 9.5 WEARING COURSE MIX SPEC 2360 (SPWEA240C)
- 2357 BITUMINOUS TACK COAT
- 3" TYPE SP 12.5 WEAR COURSE MIX SPEC 2360 (SPWEB240C)
- 8" AGGREGATE BASE CLASS 5
- SELECT GRANULAR EMBANKMENT (AS DIRECTED BY THE ENGINEER)



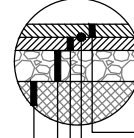
INSET C
BITUMINOUS ROAD PATCH SECTION

- OVERLAY SECTION (INSET A)
- 2357 BITUMINOUS TACK COAT
- 2" TYPE SP 12.5 WEAR COURSE MIX SPEC 2360 (SPWEB240B)
- 8" AGGREGATE BASE CLASS 5
- SELECT GRANULAR EMBANKMENT (AS DIRECTED BY THE ENGINEER)



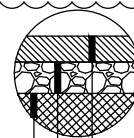
INSET D
LAKE DRIVE (CSAH 23) PAVEMENT SECTION

- 2" TYPE SP 12.5 WEARING COURSE MIX SPEC 2360 (SPWEB440E)
- 2357 BITUMINOUS TACK COAT
- 2" TYPE SP 12.5 WEARING COURSE MIX SPEC 2360 (SPWEB440E)
- 2357 BITUMINOUS TACK COAT
- 2" TYPE SP 12.5 NON WEARING COURSE MIX SPEC 2360 (SPNWB430B)
- 18" AGGREGATE BASE CLASS 5
- EXISTING SUBGRADE



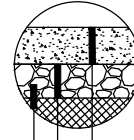
INSET E
EXISTING LAKE DRIVE (CSAH 23) PAVEMENT

- 1.5" TYPE SP 12.5 WEARING COURSE MIX SPEC 2360 (SPWEB440E)
- 2357 BITUMINOUS TACK COAT
- 2" TYPE SP 12.5 WEARING COURSE MIX SPEC 2360 (SPNWB440E)
- 7" EXISTING CONCRETE PAVEMENT (CRACKED AND SEATED)
- EXISTING SUBGRADE



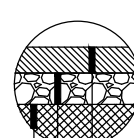
BITUMINOUS DRIVEWAY

- 3" TYPE SP 9.5 WEARING COURSE MIX SPEC 2360 (SPWEA240C)
- AGGREGATE BASE CLASS 5 (MATCH EXISTING)
- APPROVED SUBGRADE



CONCRETE DRIVEWAY

- 6" CONCRETE DRIVEWAY PAVEMENT (Mn/DOT 3F52)
- AGGREGATE BASE CLASS 5 (MATCH EXISTING)
- APPROVED SUBGRADE



BITUMINOUS WALK

- 2.5" TYPE SP 9.5 WEARING COURSE MIX SPEC 2360 (SPWEA240C)
- 6" AGGREGATE BASE CLASS 5
- APPROVED SUBGRADE

SCALE: AS SHOWN
DESIGN BY: THC
PLAN BY: THC
CHECK BY: PTH

REVISIONS

NO.	DATE	DESCRIPTION
1	02-03-2025	ADDENDUM NO. 1
2	02-05-2025	ADDENDUM NO. 2

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PAUL HORNBY, PE

DATE: 01-24-2025 LIC. NO. 23359

TYPICAL
SECTIONS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO.
023620-000

SHEET

19 OF 97

**TYPICAL SECTION
LAKE DRIVE (CSAH 23)**

Profile view of the proposed road section. The section is symmetrical about the centerline (C/L). From left to right, the components are:

- R/W** (Right of Way)
- 1.5' TO P.I.** (1.5 feet to Point of Intersection)
- 8' SHOULDER**
- 12' THRU LANE**
- C/L** (Centerline)
- VARIES LEFT TURN LANE/PAINTED MEDIAN**
- 12' THRU LANE**
- 8' SHOULDER**
- 1.5' TO P.I.** (1.5 feet to Point of Intersection)
- R/W** (Right of Way)

The profile shows a **2.5%** grade on both sides of the centerline. The **PROFILE GRADE** is indicated by a solid line. The **4" TOPSOIL AND SEED (TYP.)** is shown as a dashed line. The **MATCH EXISTING 1:4 MAX.** is indicated by a dashed line. The **VARIES 46' TO 54'** dimension is shown above the centerline. The **INSET E** and **INSET D** are marked with circles at the centerline and shoulder edges respectively.

NOT TO SCALE

NOT TO SCALE

Plan view of a 30' wide concrete curb and gutter section. The section is symmetrical about the centerline (C/L). The total width is 30', with 15' from the C/L to the back of the curb. The section includes a 2.0% slope, joint adhesive, backfill material, and match existing conditions. The section is labeled with dimensions and materials.

Labels and dimensions:

- 30' (Total width)
- 15' TO BACK OF CURB (Distance from C/L to curb back)
- 2.0% (Slope)
- MODIFIED "S" CONCRETE CURB & GUTTER
- JOINT ADHESIVE (MASTIC) - SEE NOTE
- BACKFILL MATERIAL FROM EXCAVATION-COMMON (TYP.)
- MATCH EXISTING 1:4 MAX.
- 4" TOPSOIL AND SEED (TYP.)
- EXISTING SUBGRADE
- PROFILE GRADE
- INSET B
- C/L (Centerline)
- R/W (Right-of-Way)

- 1.5" TYPE SP 9.5 WEARING COURSE MIX SPEC 2360 (SPWEA240B)
- 2357 BITUMINOUS TACK COAT
- EXISTING BITUMINOUS PAVEMENT
- EXISTING AGGREGATE BASE

- 1.5" TYPE SP 9.5 WEARING COURSE MIX SPEC 2360 (SPWEA240C)
- 2357 BITUMINOUS TACK COAT
- 3" TYPE SP 12.5 WEAR COURSE MIX SPEC 2360 (SPWEB240C)
- 8" AGGREGATE BASE CLASS 5
- SELECT GRANULAR EMBANKMENT (AS DIRECTED BY THE ENGINEER)

- OVERLAY SECTION (INSET A)
- 2357 BITUMINOUS TACK COAT
- 2" TYPE SP 12.5 WEAR COURSE MIX SPEC 2360 (SPWEB240B)
- 8" AGGREGATE BASE CLASS 5
- SELECT GRANULAR EMBANKMENT (AS DIRECTED BY THE ENGINEER)

- 2" TYPE SP 12.5 WEARING COURSE MIX SPEC 2360 (SPWEB440E)
 - 2357 BITUMINOUS TACK COAT
 - 2" TYPE SP 12.5 WEARING COURSE MIX SPEC 2360 (SPWEB440E)
 - 2357 BITUMINOUS TACK COAT
 - 2" TYPE SP 12.5 NON WEARING COURSE MIX SPEC 2360 (SPNWB430B)
 - 18" AGGREGATE BASE CLASS 5
 - EXISTING SUBGRADE

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2357 BITUMINOUS TACK COAT
- 2" TYPE SP 12.5 WEARING COURSE MIX SPEC 2360 (SPNWB440E)
- 7" EXISTING CONCRETE PAVEMENT (CRACKED AND SEATED)
- EXISTING SUBGRADE

- 3" TYPE SP 9.5 WEARING COURSE MIX SPEC 2360 (SPWEA240C)
- AGGREGATE BASE CLASS 5 (MATCH EXISTING)
- APPROVED SUBGRADE

- 6" CONCRETE DRIVEWAY PAVEMENT (Mn/DOT 3F52)
- AGGREGATE BASE CLASS 5 (MATCH EXISTING)
- APPROVED SUBGRADE

- 2.5" TYPE SP 9.5 WEARING COURSE MIX SPEC 2360 (SPWEA240C)
- 6" AGGREGATE BASE CLASS 5
- APPROVED SUBGRADE

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 PAUL HORNBY, PE

DATE: 01-24-2025 LIC. NO: 23359

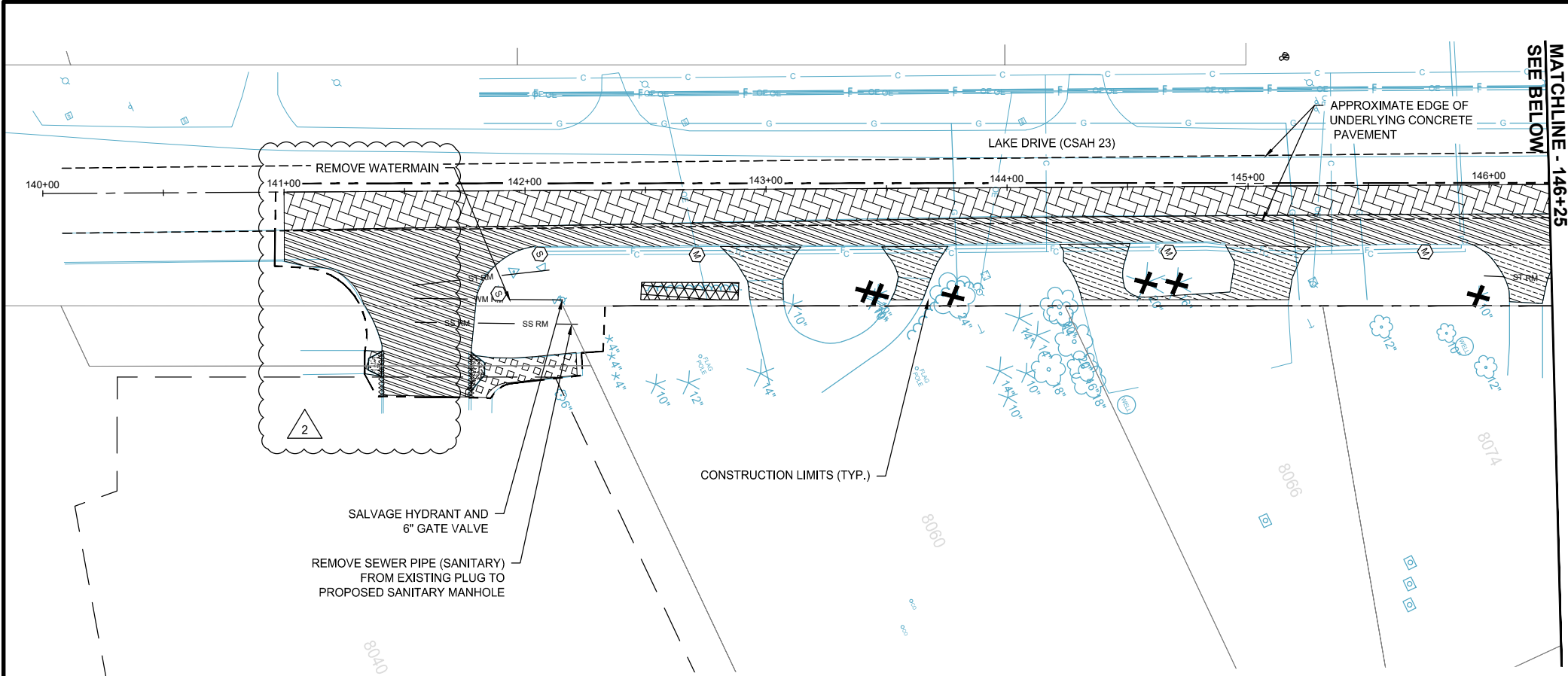
TYPICAL SECTIONS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

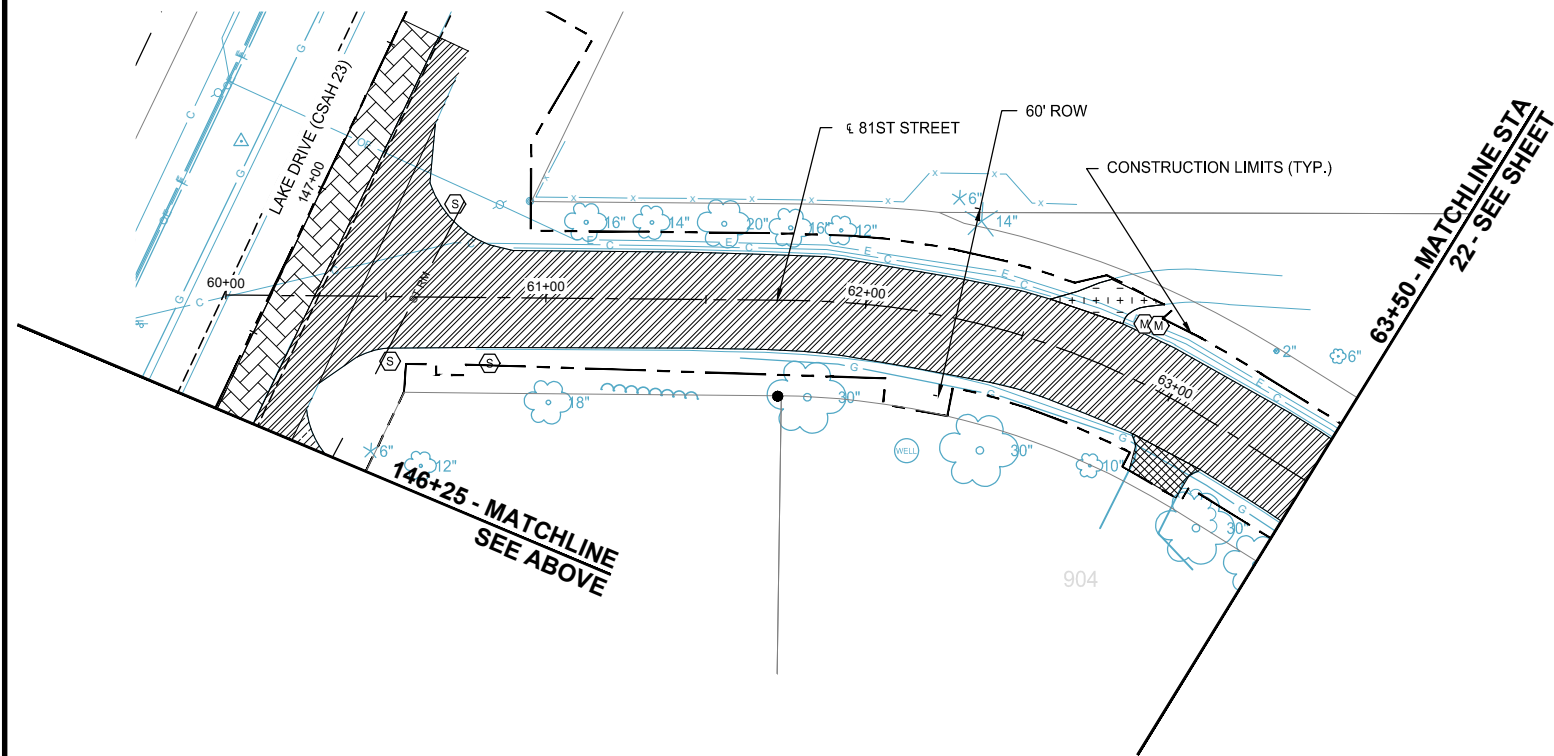
WSB PROJECT NO.
023620-000

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LAKE DRIVE (CSAH 23)

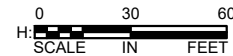


81ST STREET

NOTES:

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8. CONTRACTOR TO CONTACT CITY TO LOCATE ALL WATER SERVICES PRIOR TO CLEARING/GRUBBING ANY TREES.
9. ONLY MAJOR LANDSCAPING ITEMS HAVE BEEN IDENTIFIED ON THE PLANS FOR PROTECTION AND/OR SALVAGE AND REINSTALLATION. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING THE SITE AND DETERMINING ALL ITEMS NEEDING TO BE SALVAGED AND REINSTALLED TO FACILITATE CONSTRUCTION.
10. ONLY SHRUBS TO BE REPLACED ARE SHOWN ON THE PLANS FOR REMOVAL. REMOVAL OF SHRUBS SHALL BE INCIDENTAL (SEE Mn/DOT 2101).
11. BITUMINOUS CURB REMOVAL IS INCLUDED IN THE REMOVE BITUMINOUS PAVEMENT BID ITEM.
12. CONTRACTOR TO EDGE MILL DRIVEWAYS TO TRANSITION ELEVATION CHANGE AT DRIVEWAY.

LOCATION



SCALE: AS SHOWN
PLAN BY: THC
DESIGN BY: THC
CHECK BY: PTH

REVISIONS

NO.	DATE	DESCRIPTION
2	02-05-2025	ADDENDUM NO. 2

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PAUL HORNBY, PE

DATE: 01-24-2025 LIC. NO. 23359

REMOVAL PLAN

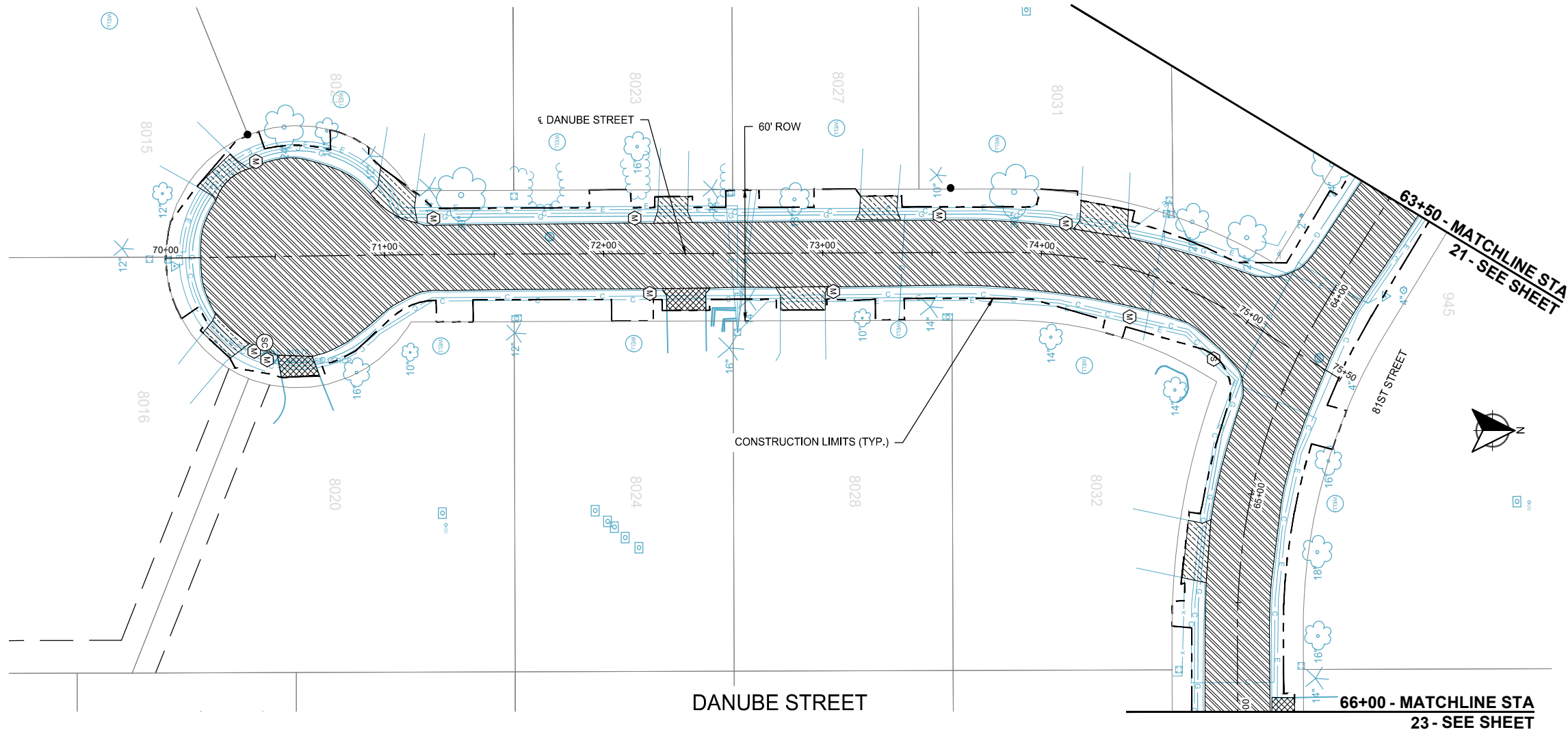
2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO.
023620-000



SHEET

21 OF 97

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SCALE:
AS SHOWN
PLAN BY:
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CHECK BY:
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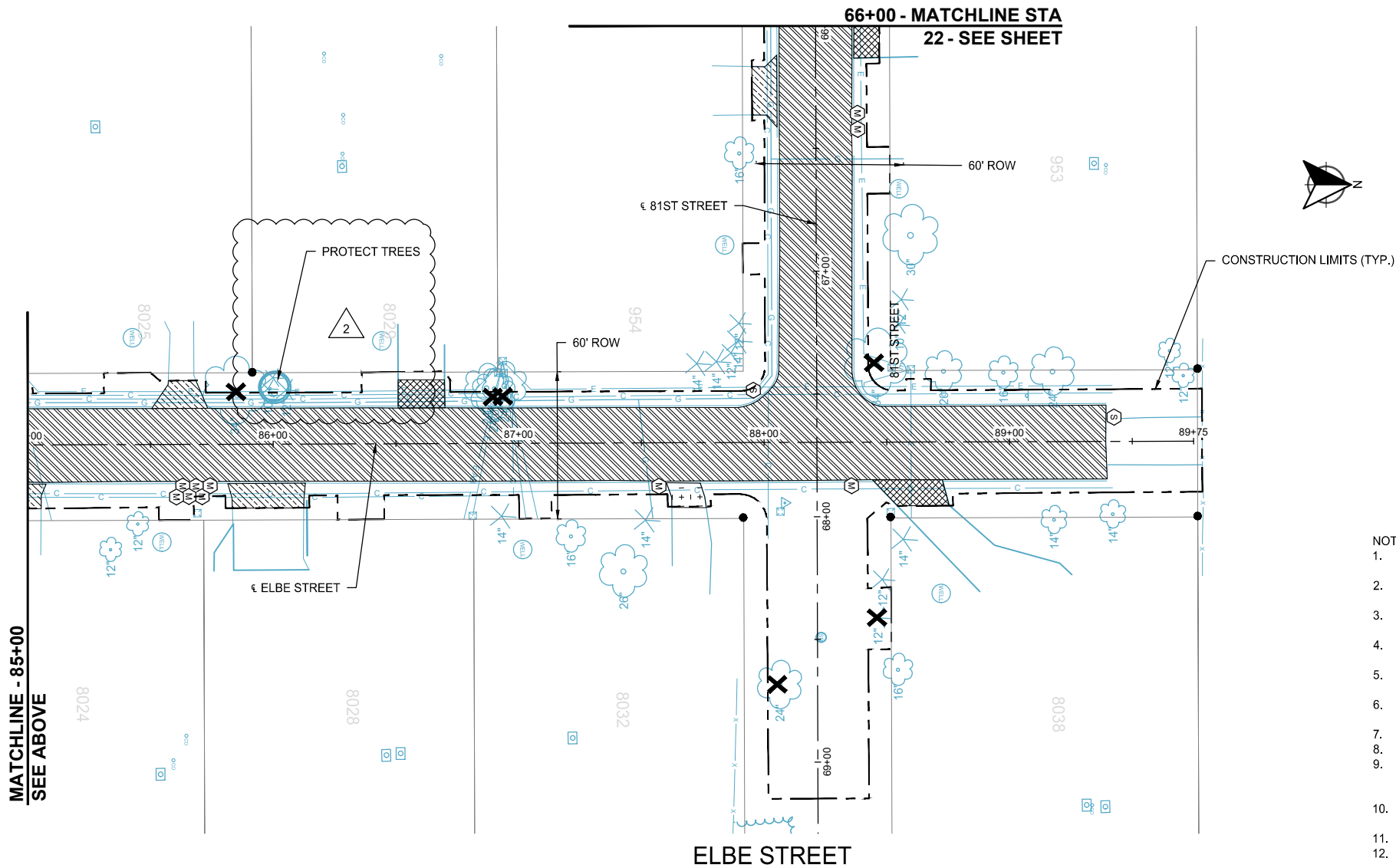


PAUL HORNBY, PE

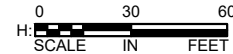
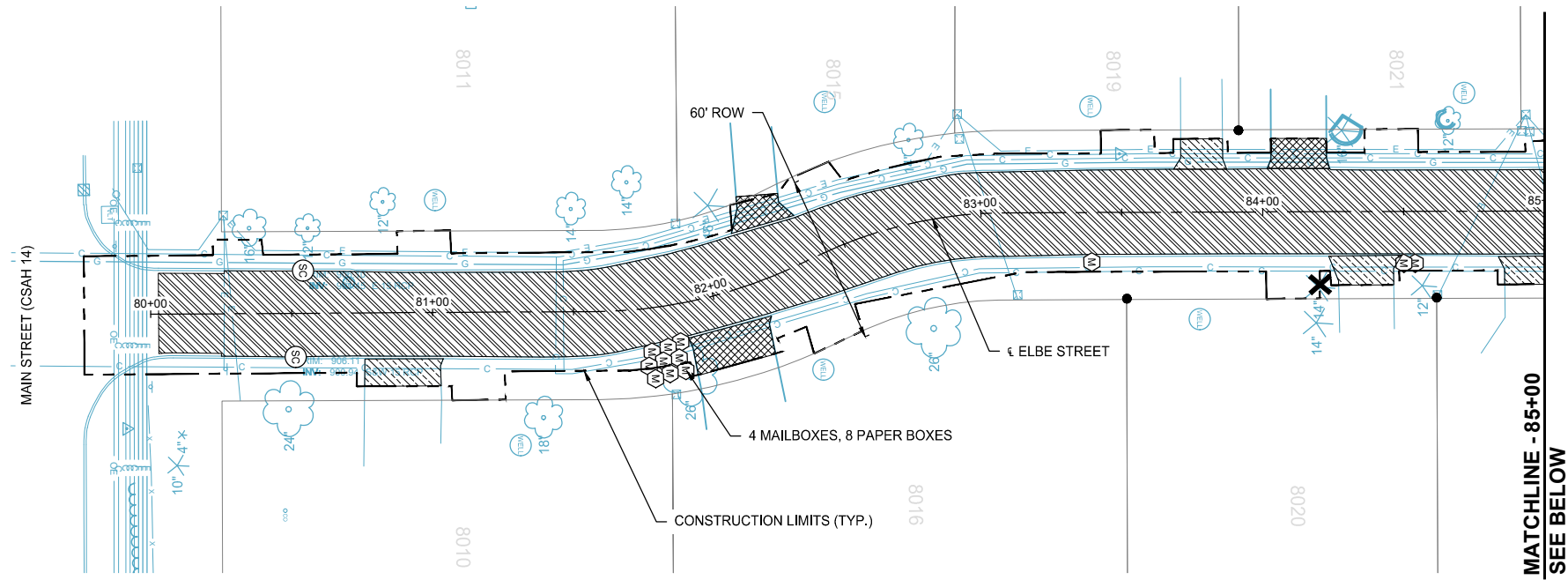
DATE: 01-24-2025 LIC. NO. 23359

REMOVAL PLAN

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LOCATION



REVISIONS

NO.	DATE	DESCRIPTION
2	02-05-2025	ADDENDUM NO. 2

SCALE: AS SHOWN
PLAN BY: THC

DESIGN BY: THC
CHECK BY: PTH

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PAUL HORNBY, PE

DATE: 01-24-2025 LIC. NO. 23359

REMOVAL PLAN

2024 STREET RECONSTRUCTION PROJECT CITY OF LINO LAKES

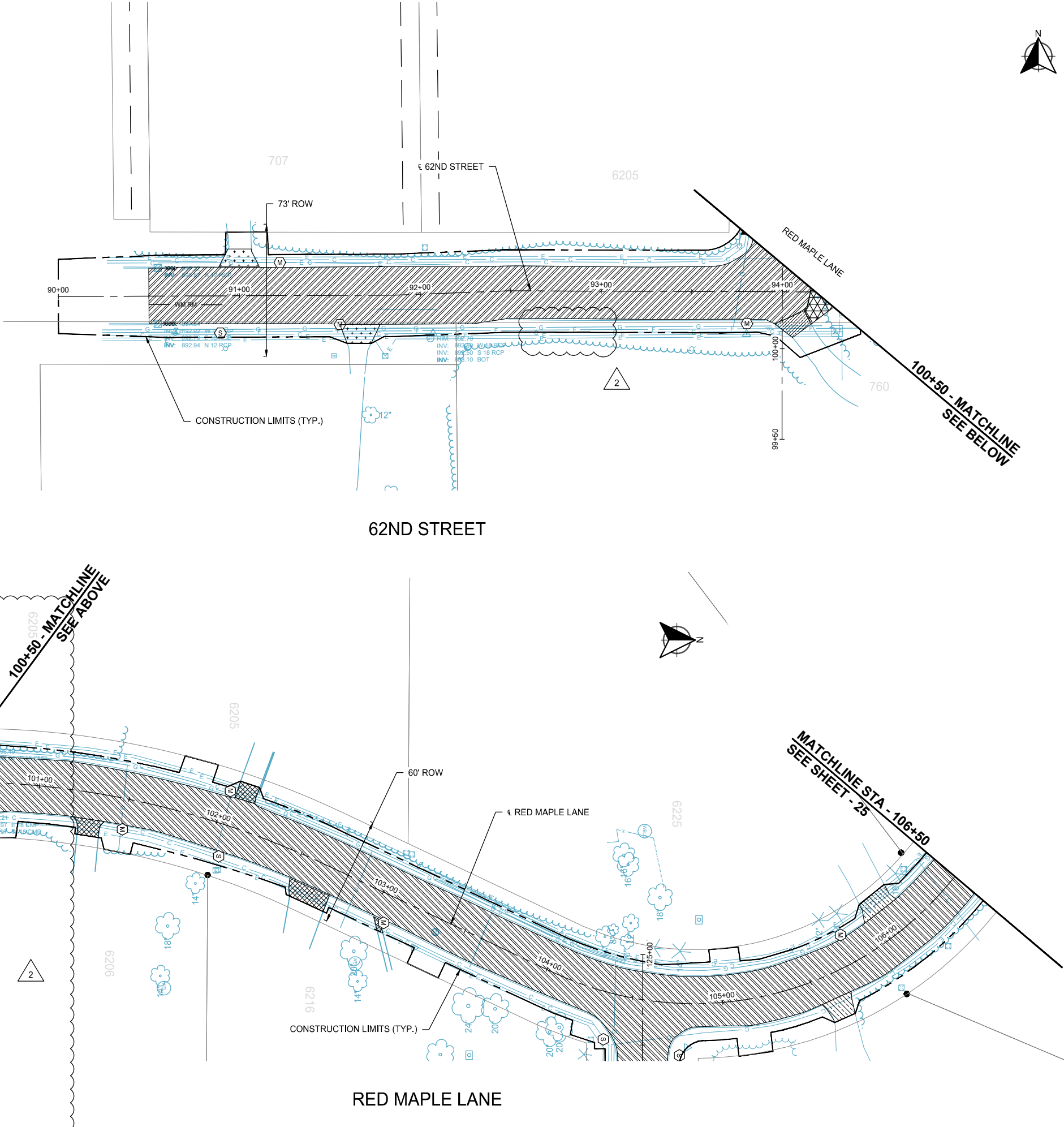
WSB PROJECT NO.
023620-000

SHEET

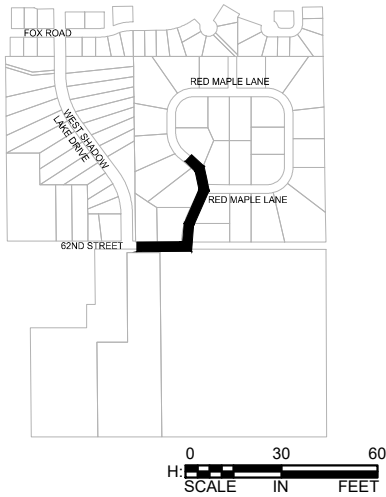
23 OF 97

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- NOTES:
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LOCATION



wsb CITY OF LINO LAKES

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PLAN BY: THC

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REVISIONS		
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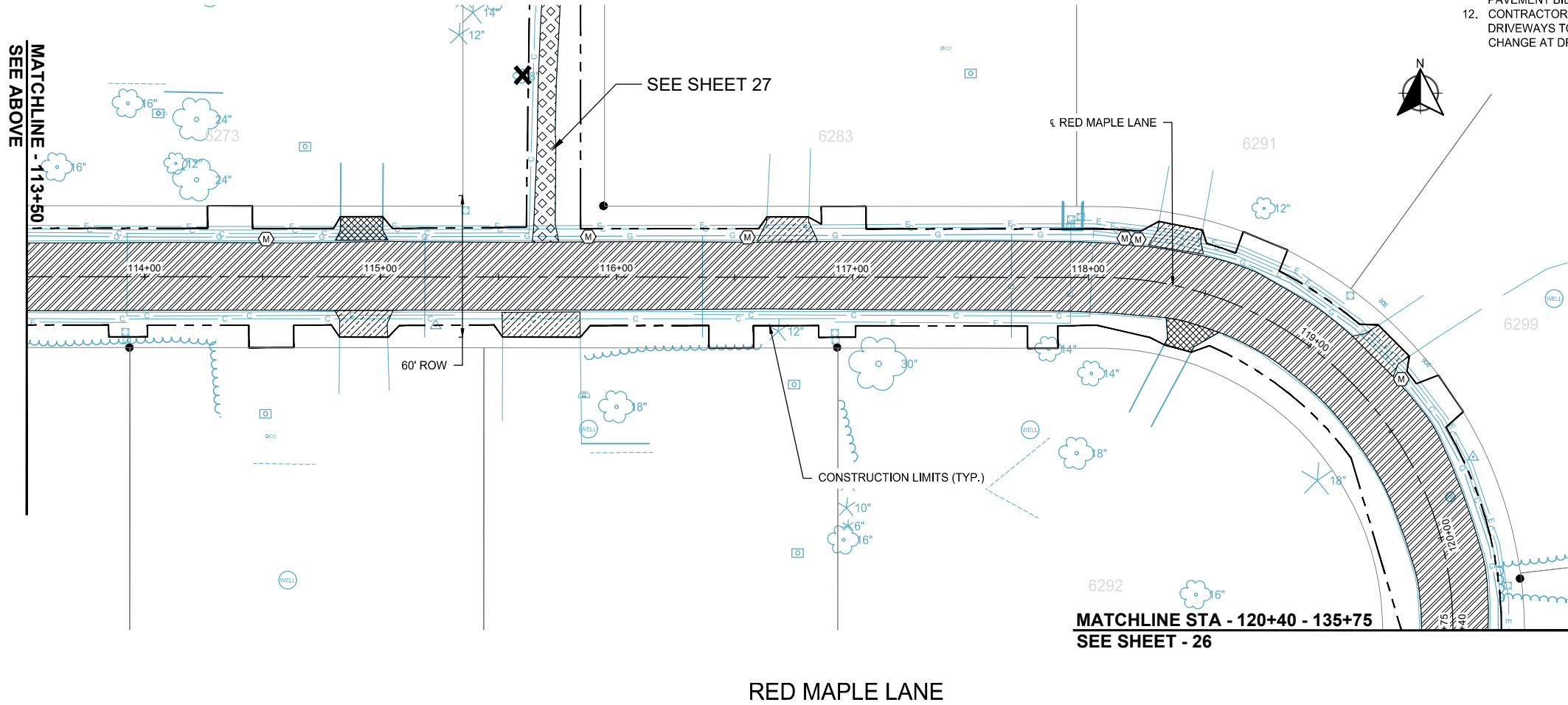
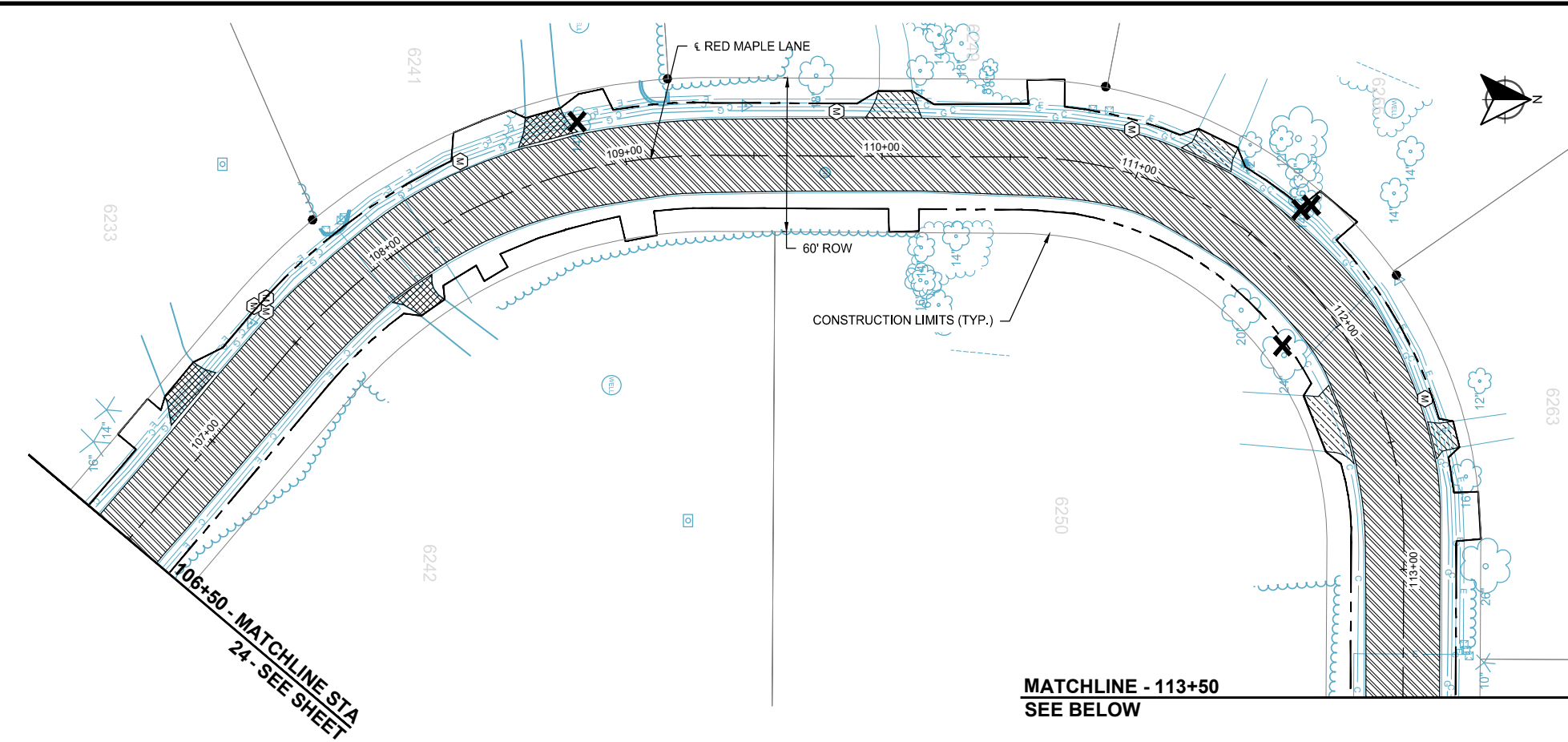
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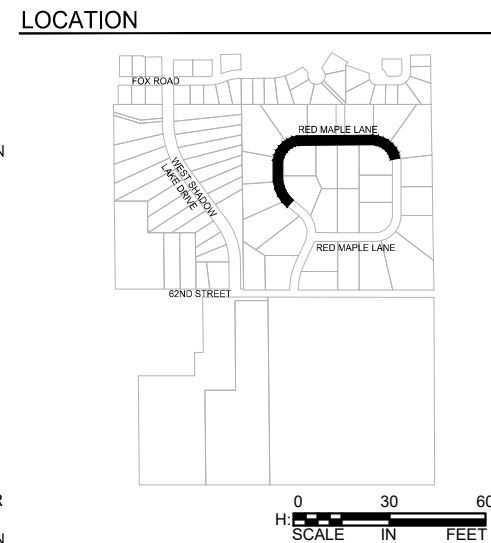
REMOVAL PLAN

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

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wsb CITY OF LINO LAKES

SCALE: AS SHOWN DESIGN BY: THC
PLAN BY: CHECK BY: PTH
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NO.	DESCRIPTION

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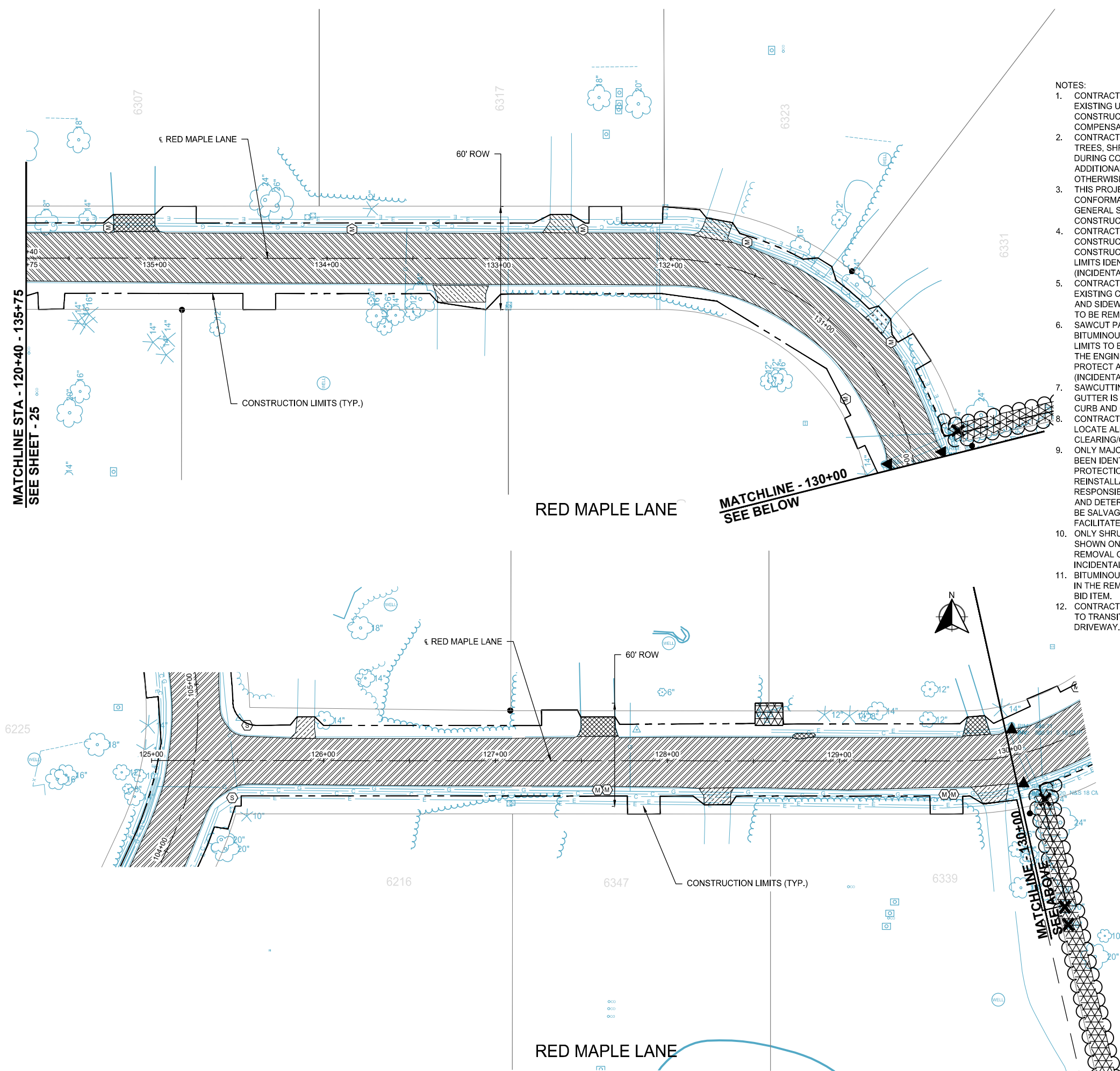
PAUL HORNBY, PE
DATE: 01-24-2025 LIC. NO. 23359

REMOVAL PLAN

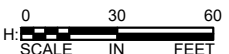
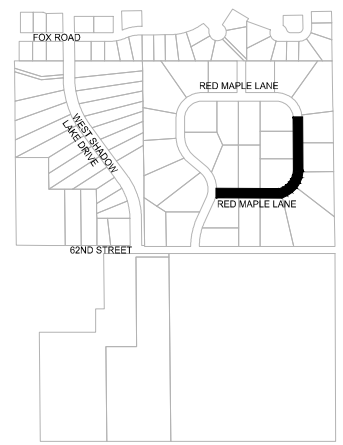
2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO.
023620-000

SHEET



- NOTES:
1. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES DURING CONSTRUCTION AT NO ADDITIONAL COMPENSATION.
 2. CONTRACTOR SHALL PROTECT EXISTING TREES, SHRUBS, AND LANDSCAPING DURING CONSTRUCTION AT NO ADDITIONAL COMPENSATION UNLESS OTHERWISE NOTED.
 3. THIS PROJECT SHALL BE IN CONFORMANCE WITH THE NPDES GENERAL STORM WATER PERMIT FOR CONSTRUCTION ACTIVITIES (MN R100001).
 4. CONTRACTOR SHALL USE SPECIAL CONSTRUCTION METHODS TO KEEP CONSTRUCTION OPERATION WITHIN THE LIMITS IDENTIFIED ON THE PLANS (INCIDENTAL).
 5. CONTRACTOR SHALL PROTECT ALL EXISTING CONCRETE CURB, DRIVEWAYS, AND SIDEWALK THAT IS NOT IDENTIFIED TO BE REMOVED (INCIDENTAL).
 6. SAWCUT PAVEMENT (FULL DEPTH) FOR BITUMINOUS AND CONCRETE REMOVALS. LIMITS TO BE IDENTIFIED IN THE FIELD BY THE ENGINEER. CONTRACTOR SHALL PROTECT ALL SAWED EDGES (INCIDENTAL).
 7. SAWCUTTING CONCRETE CURB AND GUTTER IS INCIDENTAL TO REMOVAL OF CURB AND GUTTER.
 8. CONTRACTOR TO CONTACT CITY TO LOCATE ALL WATER SERVICES PRIOR TO CLEARING/GRUBBING ANY TREES.
 9. ONLY MAJOR LANDSCAPING ITEMS HAVE BEEN IDENTIFIED ON THE PLANS FOR PROTECTION AND/OR SALVAGE AND REINSTALLATION. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING THE SITE AND DETERMINING ALL ITEMS NEEDING TO BE SALVAGED AND REINSTALLED TO FACILITATE CONSTRUCTION.
 10. ONLY SHRUBS TO BE REPLACED ARE SHOWN ON THE PLANS FOR REMOVAL. REMOVAL OF SHRUBS SHALL BE INCIDENTAL (SEE Mn/DOT 2101).
 11. BITUMINOUS CURB REMOVAL IS INCLUDED IN THE REMOVE BITUMINOUS PAVEMENT BID ITEM.
 12. CONTRACTOR TO EDGE MILL DRIVEWAYS TO TRANSITION ELEVATION CHANGE AT DRIVEWAY.

[illegible]

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PAUL HORNBY, PE

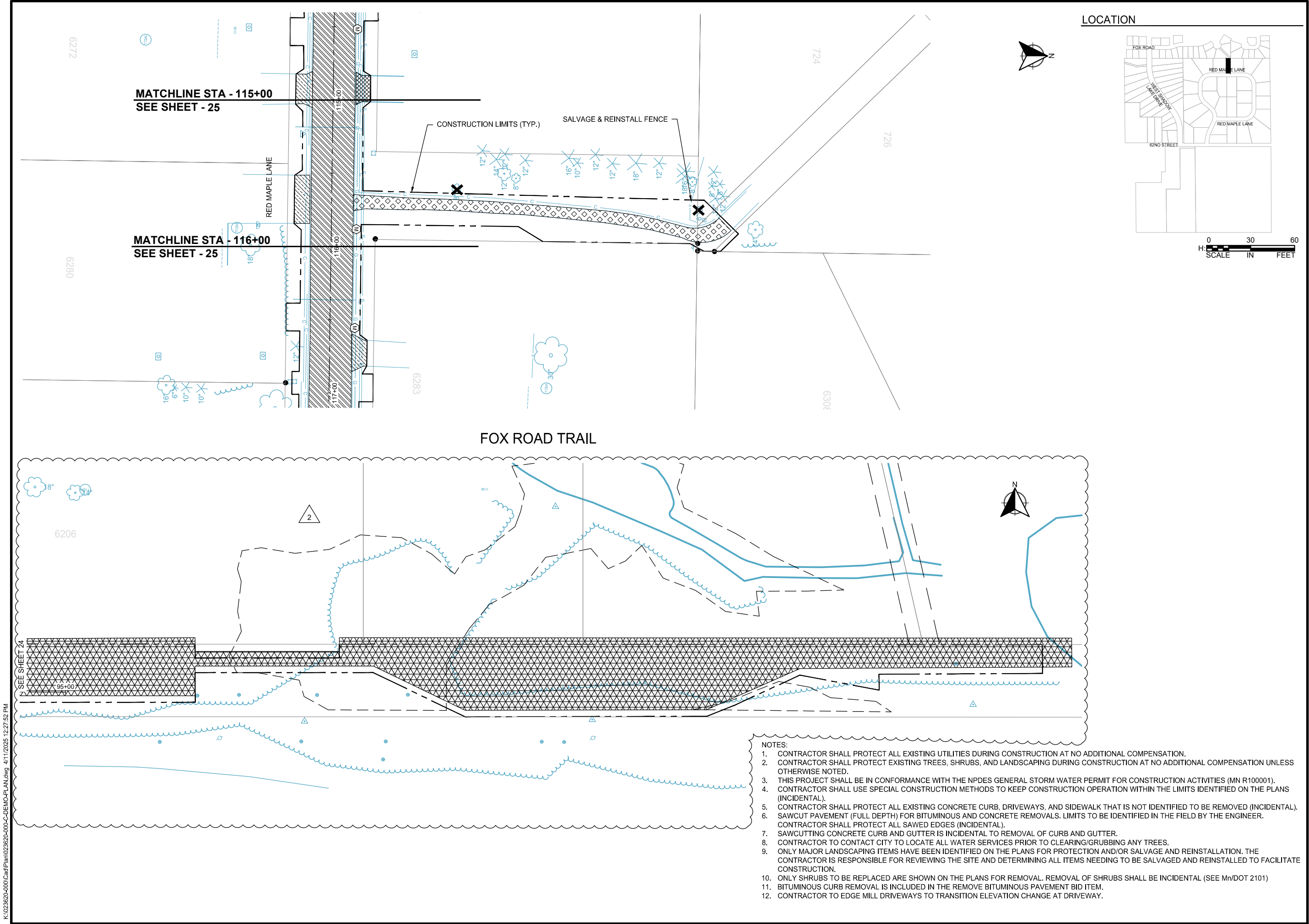
DATE: 01-24-2025 LIC. NO: 23359

REMOVAL PLAN

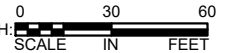
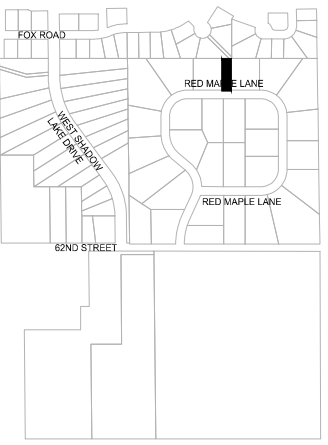
2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO.
023620-000

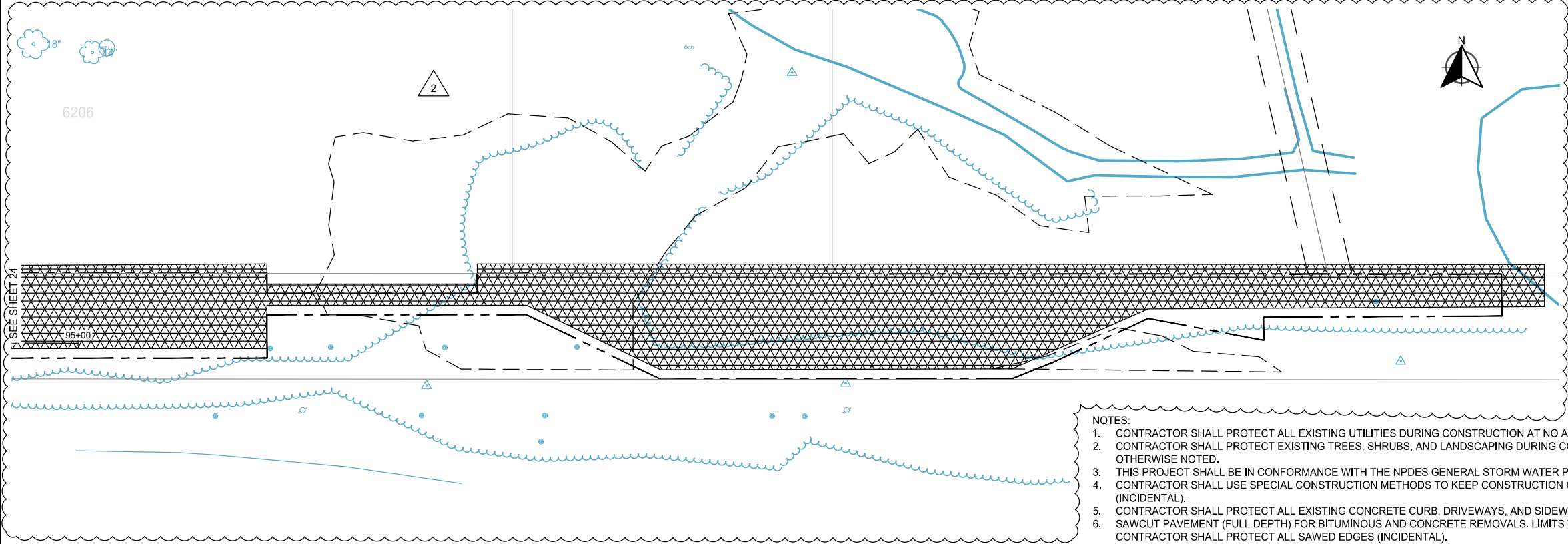
SHEET





LOCATION



FOX ROAD TRAIL



- NOTES:
1. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES DURING CONSTRUCTION AT NO ADDITIONAL COMPENSATION.
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 6. SAWCUT PAVEMENT (FULL DEPTH) FOR BITUMINOUS AND CONCRETE REMOVALS. LIMITS TO BE IDENTIFIED IN THE FIELD BY THE ENGINEER.
 7. SAWCUTTING CONCRETE CURB AND GUTTER IS INCIDENTAL TO REMOVAL OF CURB AND GUTTER.
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 11. BITUMINOUS CURB REMOVAL IS INCLUDED IN THE REMOVE BITUMINOUS PAVEMENT BID ITEM.
 12. CONTRACTOR TO EDGE MILL DRIVEWAYS TO TRANSITION ELEVATION CHANGE AT DRIVEWAY.




SCALE:
AS SHOWN
PLAN BY:
THC

DESIGN BY:
THC
CHECK BY:
PTH

REVISIONS		
NO.	DATE	DESCRIPTION
2	02-05-2025	ADDENDUM NO. 2

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.



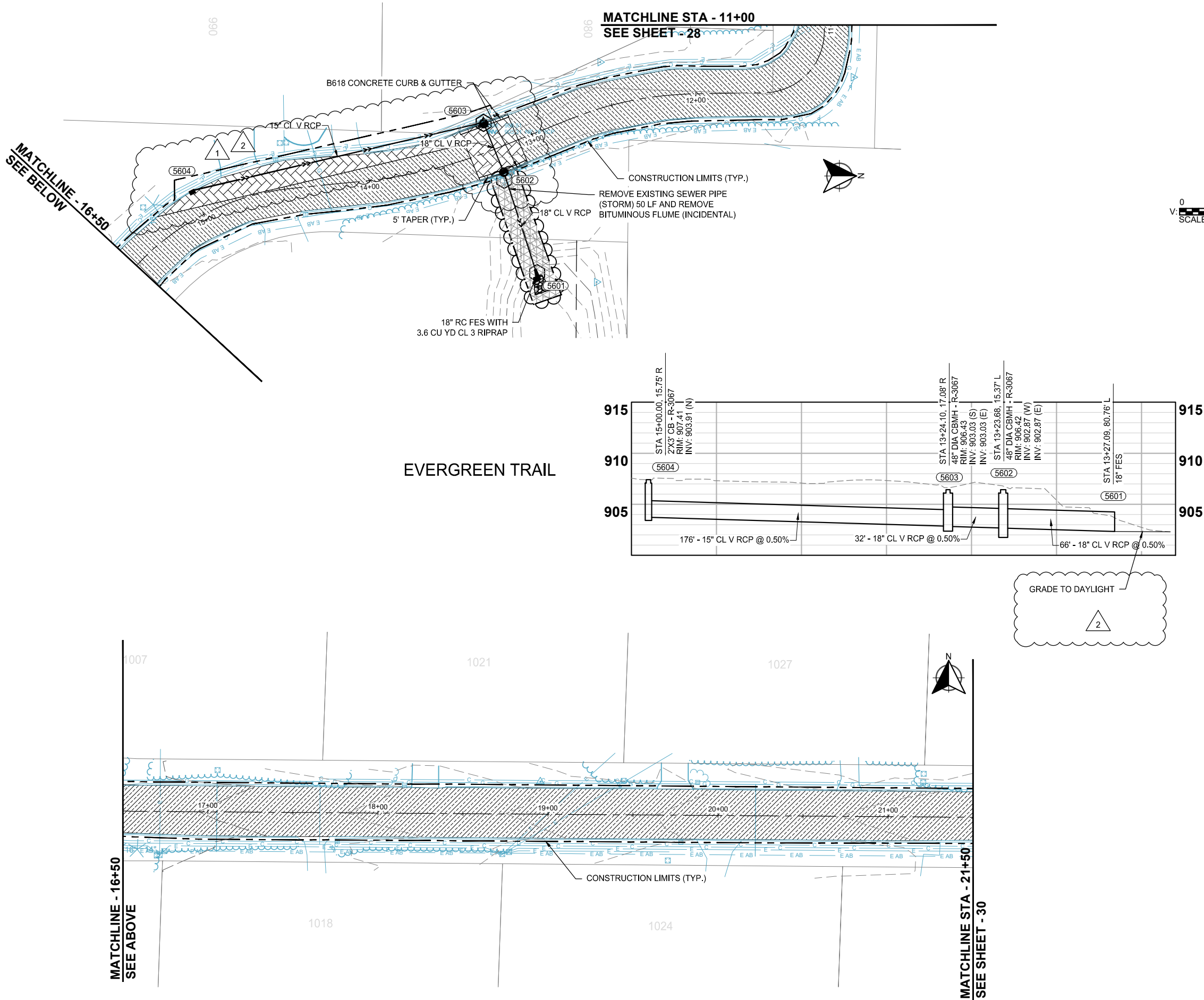
PAUL HORNBY, PE

DATE: 01-24-2025 LIC. NO. 23359

REMOVAL PLAN

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

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LOCATION



LEGEND

- INLET PROTECTION
- REMOVE DRAINAGE STRUCTURE
-

OVERLAY NOTES:

- REMOVAL AND REPLACEMENT OF SPOT CURB AND GUTTER SHALL BE MARKED BY THE ENGINEER IN THE FIELD, A MINIMUM OF 10' PANEL FOR SPOT CURB REMOVAL.
- CONTRACTOR SHALL PROTECT EXISTING TREES, SHRUBS, AND LANDSCAPING DURING CONSTRUCTION AT NO ADDITIONAL COMPENSATION.
- SAWCUT PAVEMENT (FULL DEPTH) FOR BITUMINOUS BITUMINOUS AND CONCRETE REMOVAL LIMITS TO BE IDENTIFIED IN THE FIELD BY THE ENGINEER. CONTRACTOR SHALL PROTECT ALL SAWED EDGES (INCIDENTAL).
- EDGE MILL DRIVEWAYS FULL WIDTH.
- CONTRACTOR SHALL PROTECT EXISTING CONCRETE CURB AND GUTTER UNLESS OTHERWISE MARKED FOR REMOVAL (INCIDENTAL).
- TEMPORARY STABILIZATION: HYDROMULCH TYPE 3884.B2. PERMANENT STABILIZATION: CATEGORY 25 EROSION CONTROL BLANKET (NATURAL NET), MnDOT SEED MIX 25-151 @ 121 LBS/ACRE WITH FERTILIZER TYPE 3 @ 350 LBS/ACRE.

SCALE: AS SHOWN
PLAN BY: THC
DESIGN BY: THC
CHECK BY: PTH

REVISIONS

NO.	DATE	DESCRIPTION
1	02-03-2025	ADDENDUM NO. 1
2	02-05-2025	ADDENDUM NO. 2

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PAUL HORNBY, PE

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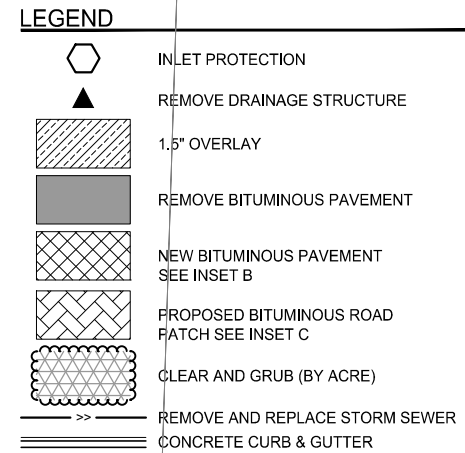
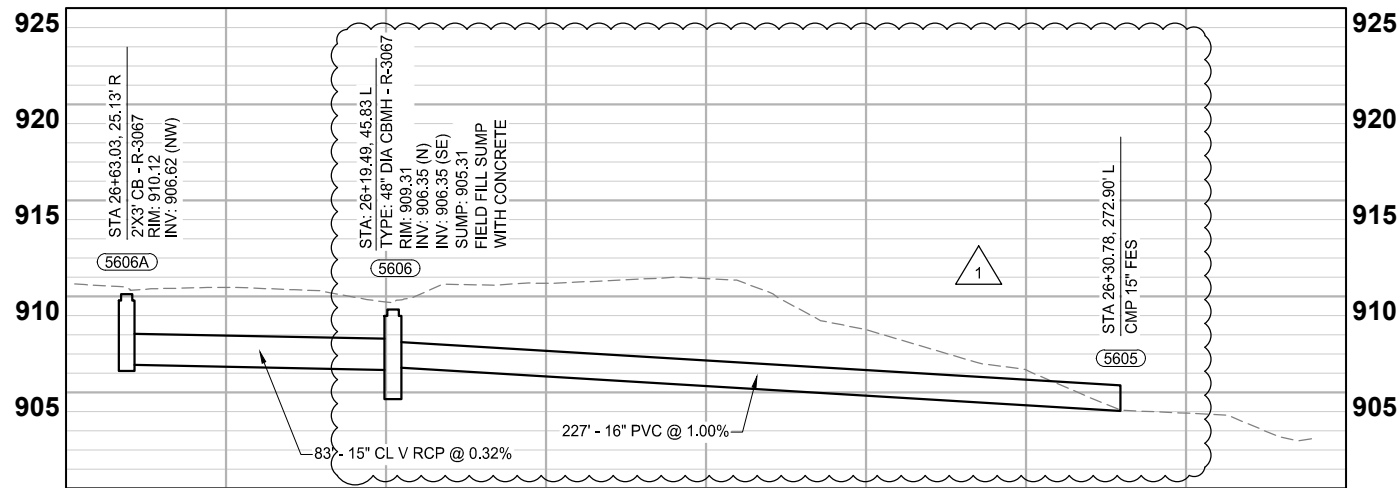
OVERLAY PLAN

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO.
023620-000

SHEET

29 OF 97



- OVERLAY NOTES:**
1. REMOVAL AND REPLACEMENT OF SPOT CURB AND GUTTER SHALL BE MARKED BY THE ENGINEER IN THE FIELD, A MINIMUM OF 10' PANEL FOR SPOT CURB REMOVAL.
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 6. TEMPORARY STABILIZATION: HYDROMULCH TYPE 3884.B2, PERMANENT STABILIZATION: CATEGORY 25 EROSION CONTROL BLANKET (NATURAL NET), MnDOT SEED MIX 25-151 @ 121 LBS/ACRE WITH FERTILIZER TYPE 3 @ 350 LBS/ACRE.

SCALE:		DESIGN BY:
AS SHOWN		THC
PLAN BY:		CHECK BY:
THC		PTH

REVISIONS		
NO.	DATE	DESCRIPTION
2	06-09-2025	ADDENDUM NO. 2
1	03-12-2025	REVISION 1 : MOVED STORM SEWER

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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: 01-24-2025 LIC. NO: 23359

OVERLAY PLAN

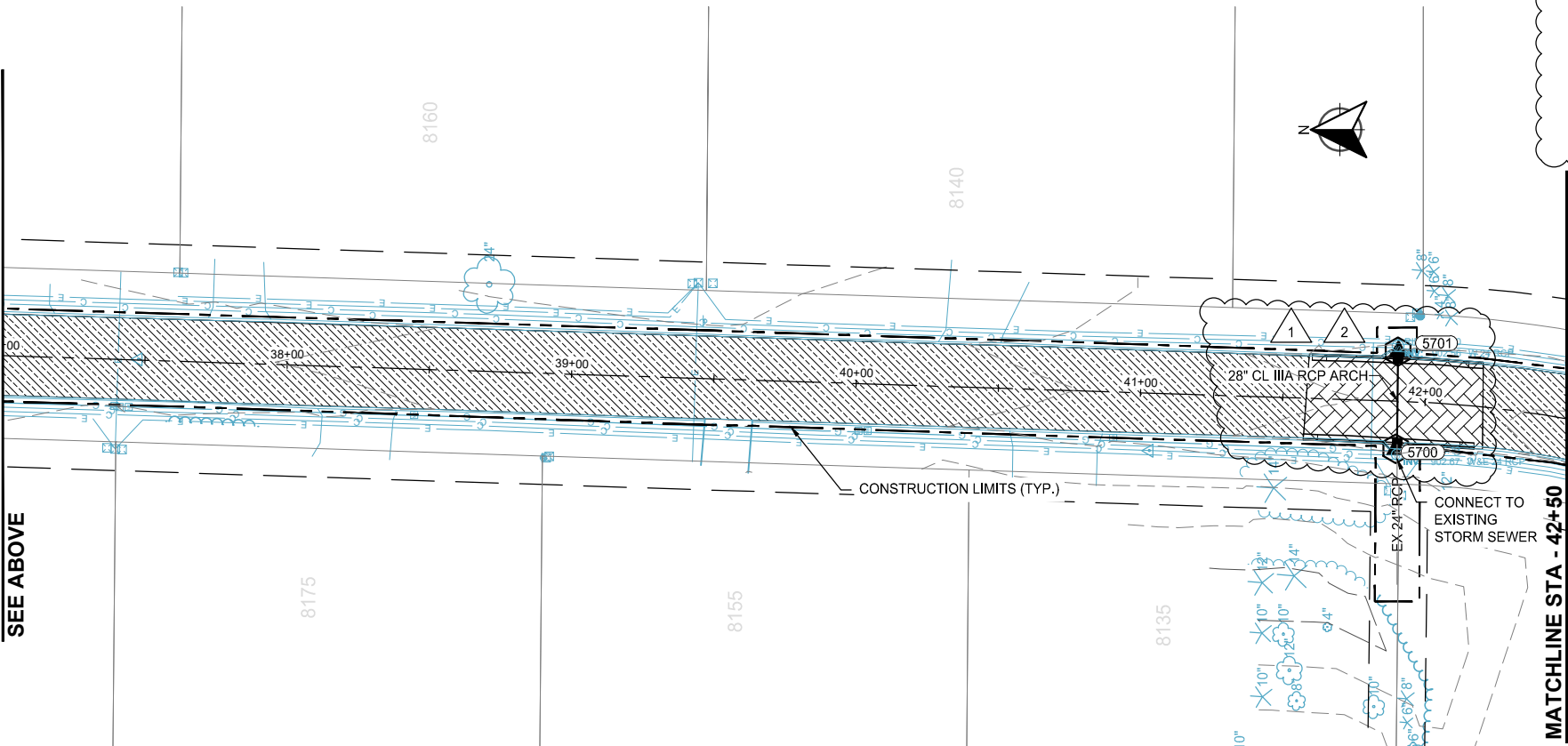
2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO.
023620-000

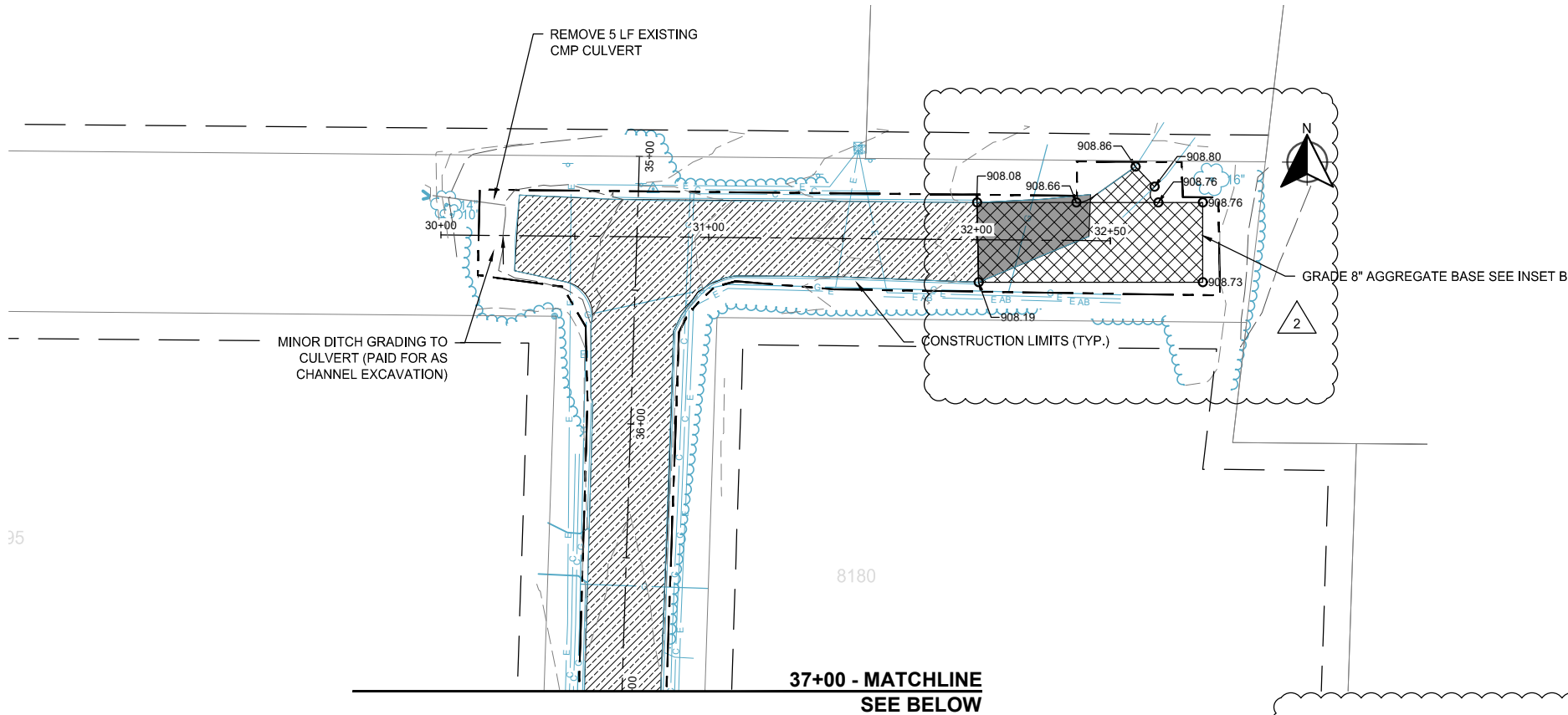
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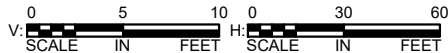
MATCHLINE - STA 37+00
SEE ABOVE



MATCHLINE STA - 42+50
SEE SHEET - 32

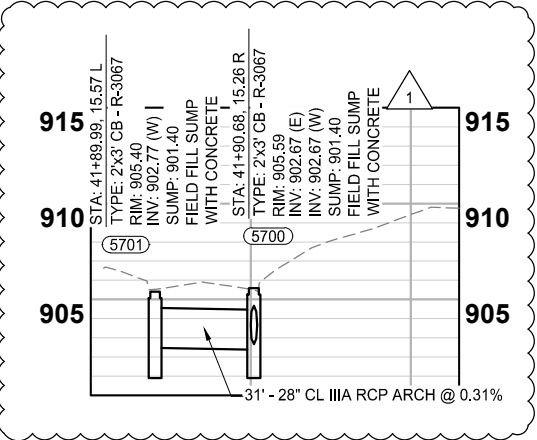


LOCATION



LEGEND

- INLET PROTECTION
- REMOVE DRAINAGE STRUCTURE
- 1.5" OVERLAY
- REMOVE BITUMINOUS PAVEMENT
- NEW BITUMINOUS PAVEMENT SEE INSET B
- PROPOSED BITUMINOUS ROAD PATCH SEE INSET C
- CLEAR AND GRUB (BY ACRE)
- REMOVE AND REPLACE STORM SEWER CONCRETE CURB & GUTTER



OVERLAY NOTES:

- REMOVAL AND REPLACEMENT OF SPOT CURB AND GUTTER SHALL BE MARKED BY THE ENGINEER IN THE FIELD, A MINIMUM OF 10' PANEL FOR SPOT CURB REMOVAL.
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SCALE: AS SHOWN
DESIGN BY: THC
PLAN BY: THC
CHECK BY: PTH

REVISIONS

NO.	DATE	DESCRIPTION
1	02-03-2025	ADDENDUM NO. 1
2	02-05-2025	ADDENDUM NO. 2
1	03/19/2025	REVISION 1 ADJUST STORM SEWER

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PAUL HORNBY, PE

DATE: 01-24-2025 LIC. NO. 23359

OVERLAY PLAN

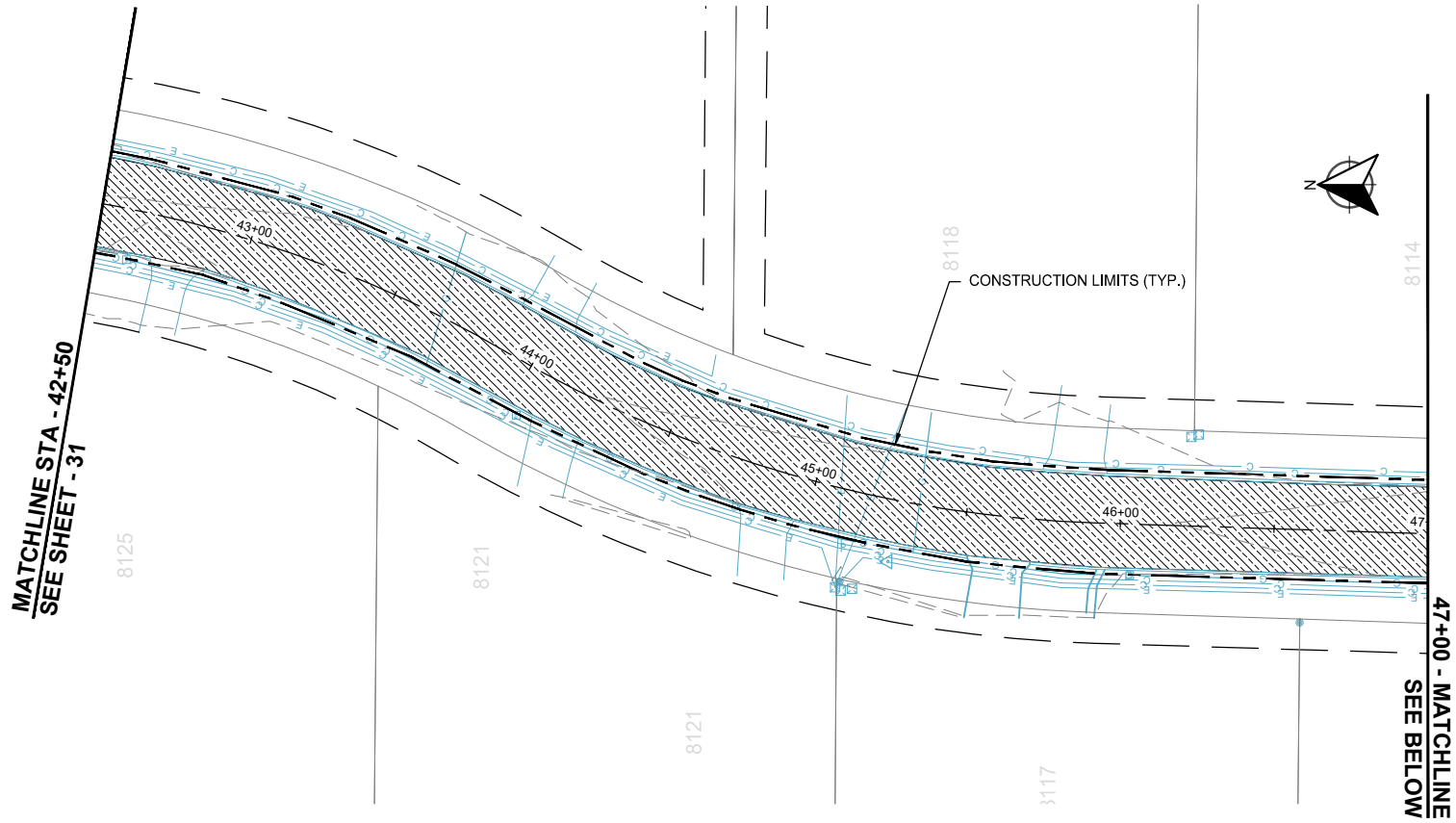
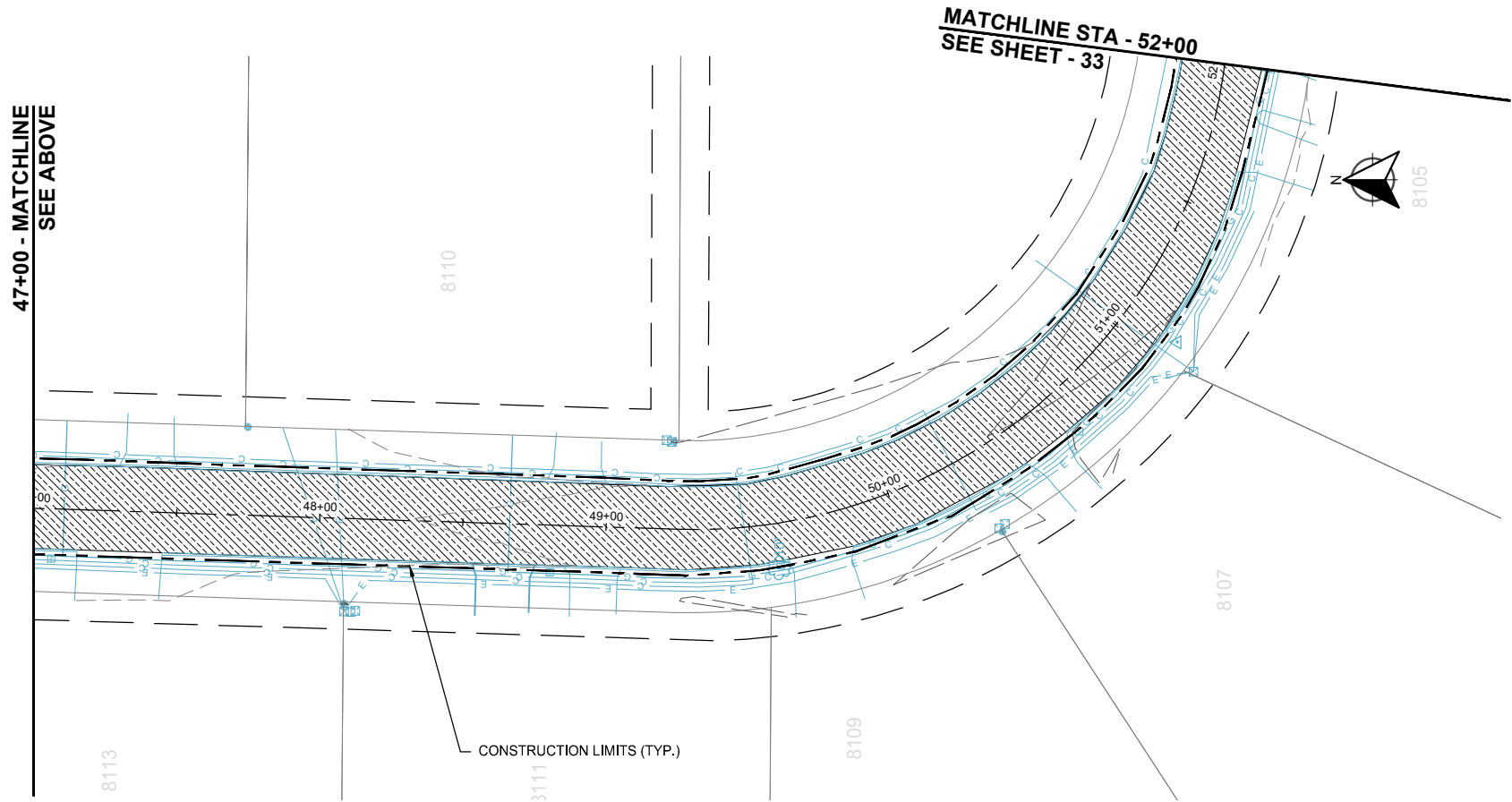
2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO.
023620-000

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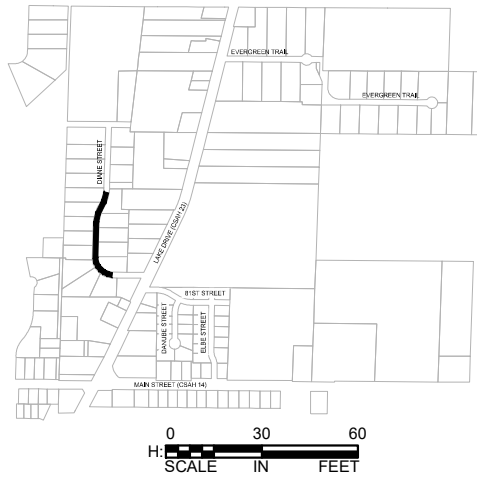
31 OF 97

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DIANE STREET

LOCATION



LEGEND

- INLET PROTECTION
- REMOVE DRAINAGE STRUCTURE
- 1.5" OVERLAY
- REMOVE BITUMINOUS PAVEMENT
- NEW BITUMINOUS PAVEMENT SEE INSET B
- PROPOSED BITUMINOUS ROAD PATCH SEE INSET C
- CLEAR AND GRUB (BY ACRE)
- REMOVE AND REPLACE STORM SEWER
- CONCRETE CURB & GUTTER

OVERLAY NOTES:

- REMOVAL AND REPLACEMENT OF SPOT CURB AND GUTTER SHALL BE MARKED BY THE ENGINEER IN THE FIELD, A MINIMUM OF 10' PANEL FOR SPOT CURB REMOVAL.
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- EDGE MILL DRIVEWAYS FULL WIDTH.
- CONTRACTOR SHALL PROTECT EXISTING CONCRETE CURB AND GUTTER UNLESS OTHERWISE MARKED FOR REMOVAL (INCIDENTAL).
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SCALE: AS SHOWN
PLAN BY: THC
DESIGN BY: THC
CHECK BY: PTH

REVISIONS

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OVERLAY PLAN

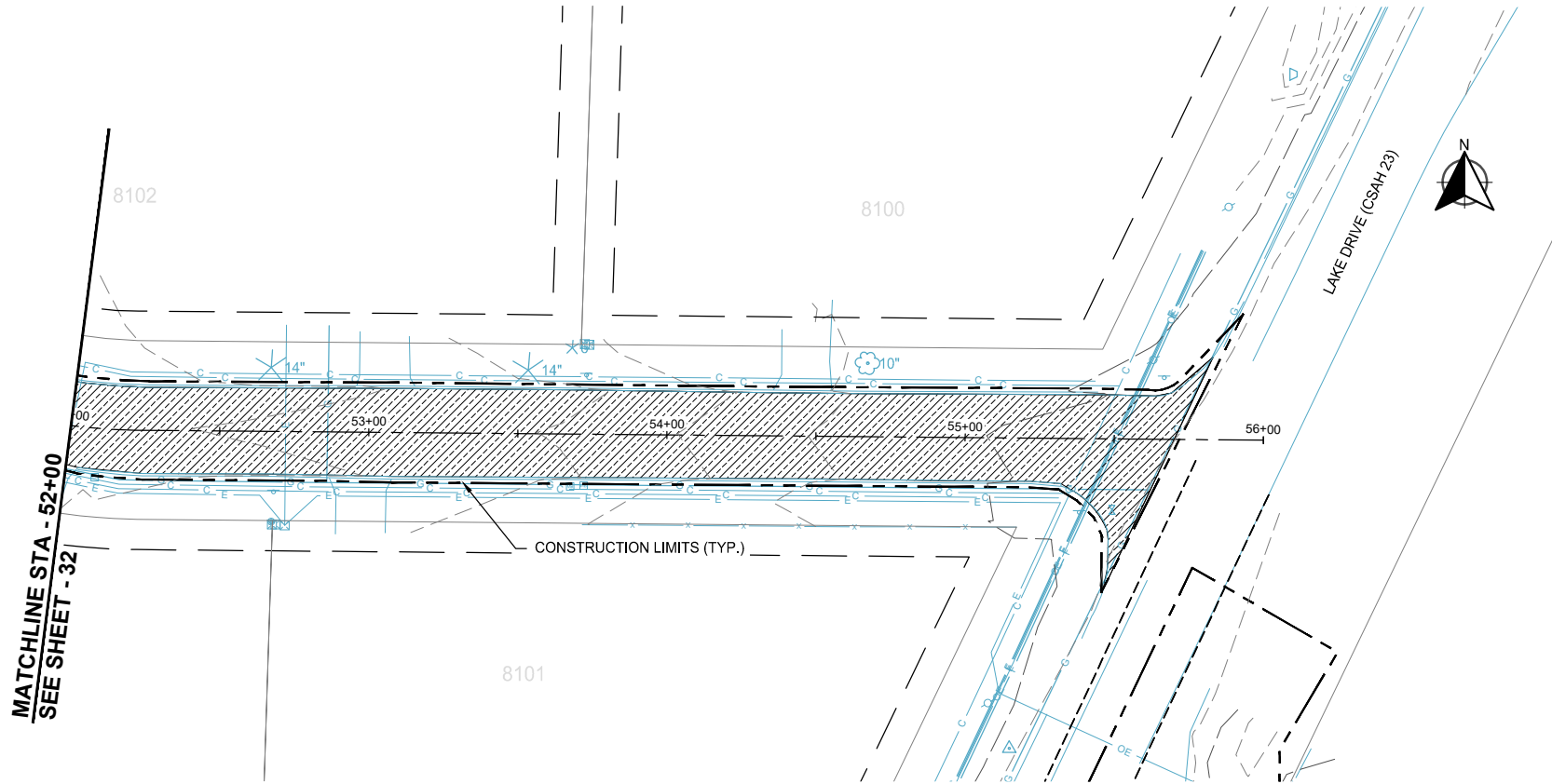
2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

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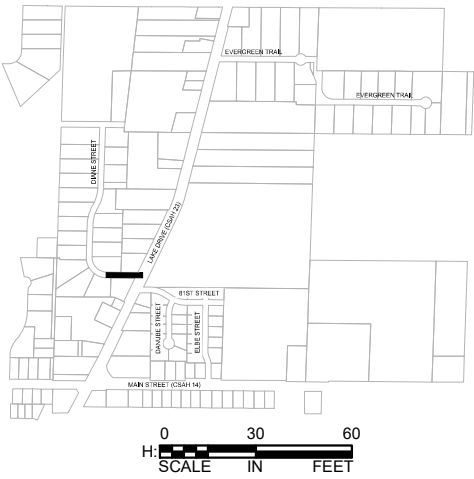
32 OF 97

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DIANE STREET

LOCATION



LEGEND

- INLET PROTECTION
- REMOVE DRAINAGE STRUCTURE
- 1.5" OVERLAY
- REMOVE BITUMINOUS PAVEMENT
- NEW BITUMINOUS PAVEMENT SEE INSET B
- PROPOSED BITUMINOUS ROAD PATCH SEE INSET C
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- CONCRETE CURB & GUTTER

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PLAN BY: THC
DESIGN BY: THC
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REVISIONS

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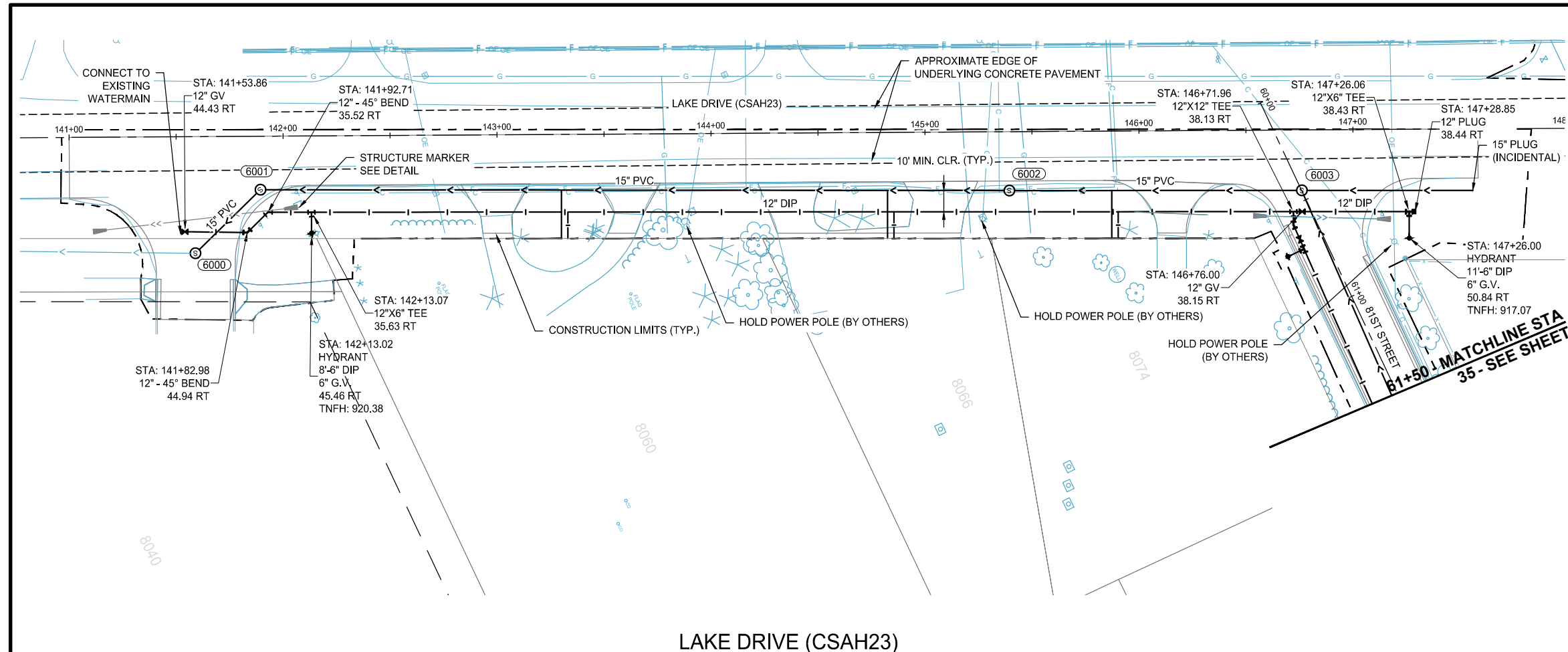
OVERLAY PLAN

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

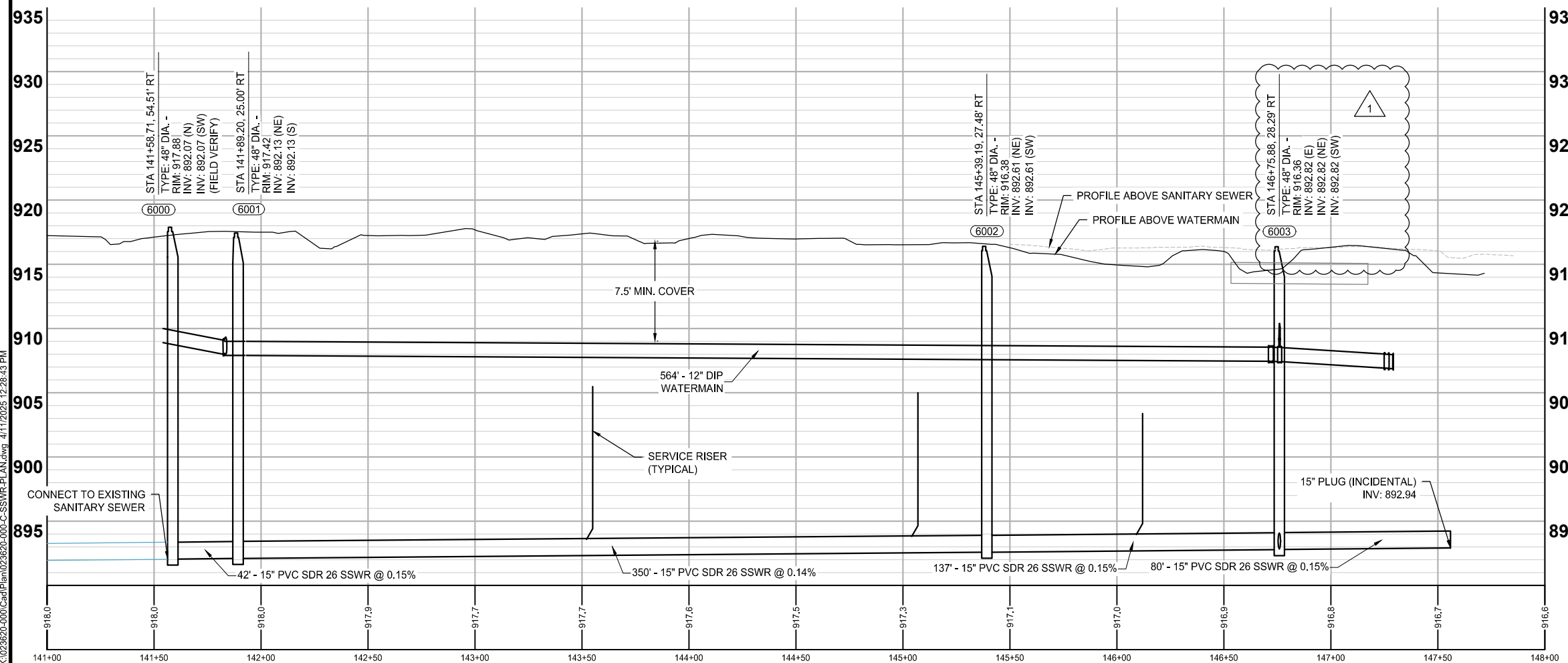
WSB PROJECT NO.
023620-000

SHEET

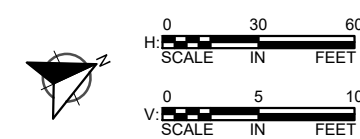
33 OF 97



LAKE DRIVE (CSAH23)



LOCATION



- NOTES:
1. WATER SERVICES TO BE 1" TYPE "K" COPPER (UNLESS NOTED OTHERWISE).
 2. CONTRACTOR SHALL PROTECT EXISTING UTILITIES DURING CONSTRUCTION AT NO ADDITIONAL COMPENSATION.
 3. THE EXISTING UTILITIES SHOWN ON THESE PLANS ARE APPROXIMATE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THEIR EXACT LOCATION AND ELEVATIONS.
 4. WATER SERVICES CROSSING STORM SEWER SHALL BE INSULATED. LOWER WATER SERVICE AS NECESSARY TO AVOID CONFLICT WITH STORM SEWER.
 5. WATERMAIN AND SERVICES MINIMUM COVER 7.5' UNLESS SHOWN OTHERWISE.
 6. WATERMAIN SHOWN WITH ELEVATION TO TOP OF THE PIPE IS GREATER THAN MINIMUM COVER (INCIDENTAL).
 7. CONSTRUCT WATERMAIN WITH AT LEAST 1.5' VERTICAL CLEAR OF SEWER CROSSINGS.
 8. CONTRACTOR SHALL USE RESTRICTED TRENCH METHODS OF CONSTRUCTION TO PROTECT ITEMS THAT ARE NOT MARKED FOR REMOVAL.
 9. RECONNECT SANITARY SEWER SERVICE INCLUDES RECONNECTION OF SERVICE PIPE CUT INCLUDING SHEAR-RING COUPLING AT EACH CONNECTION POINT (2 MIN) (SEE DETAIL).

SCALE:	DESIGN BY:
AS SHOWN	THC
PLAN BY:	CHECK BY:
THC	PTH

REVISONS	
NO.	DATE DESCRIPTION
1	03-21-2025 REVISED TOP OF CASTINGS

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DATE: 01-24-2025 LIC. NO: 23359

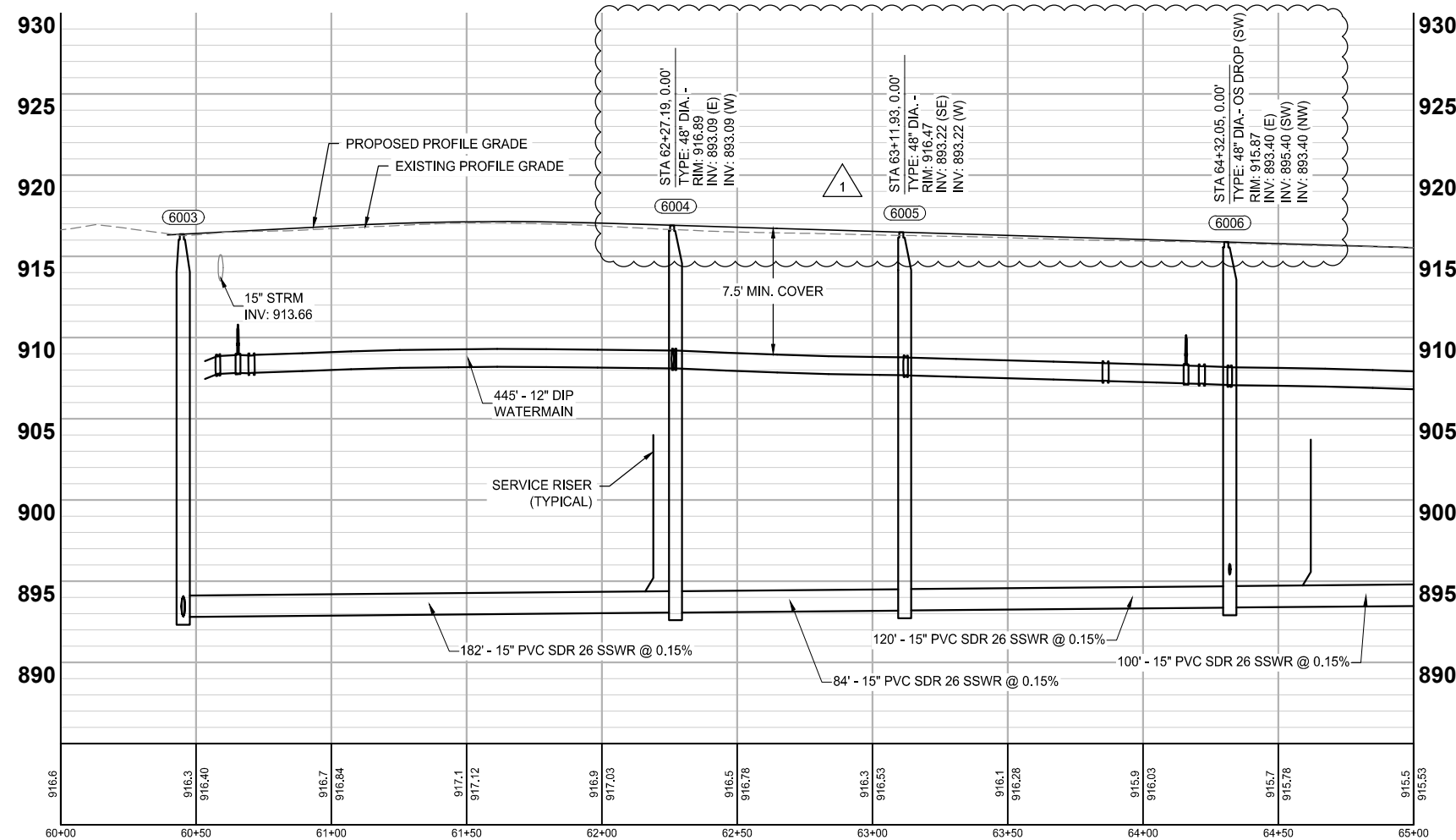
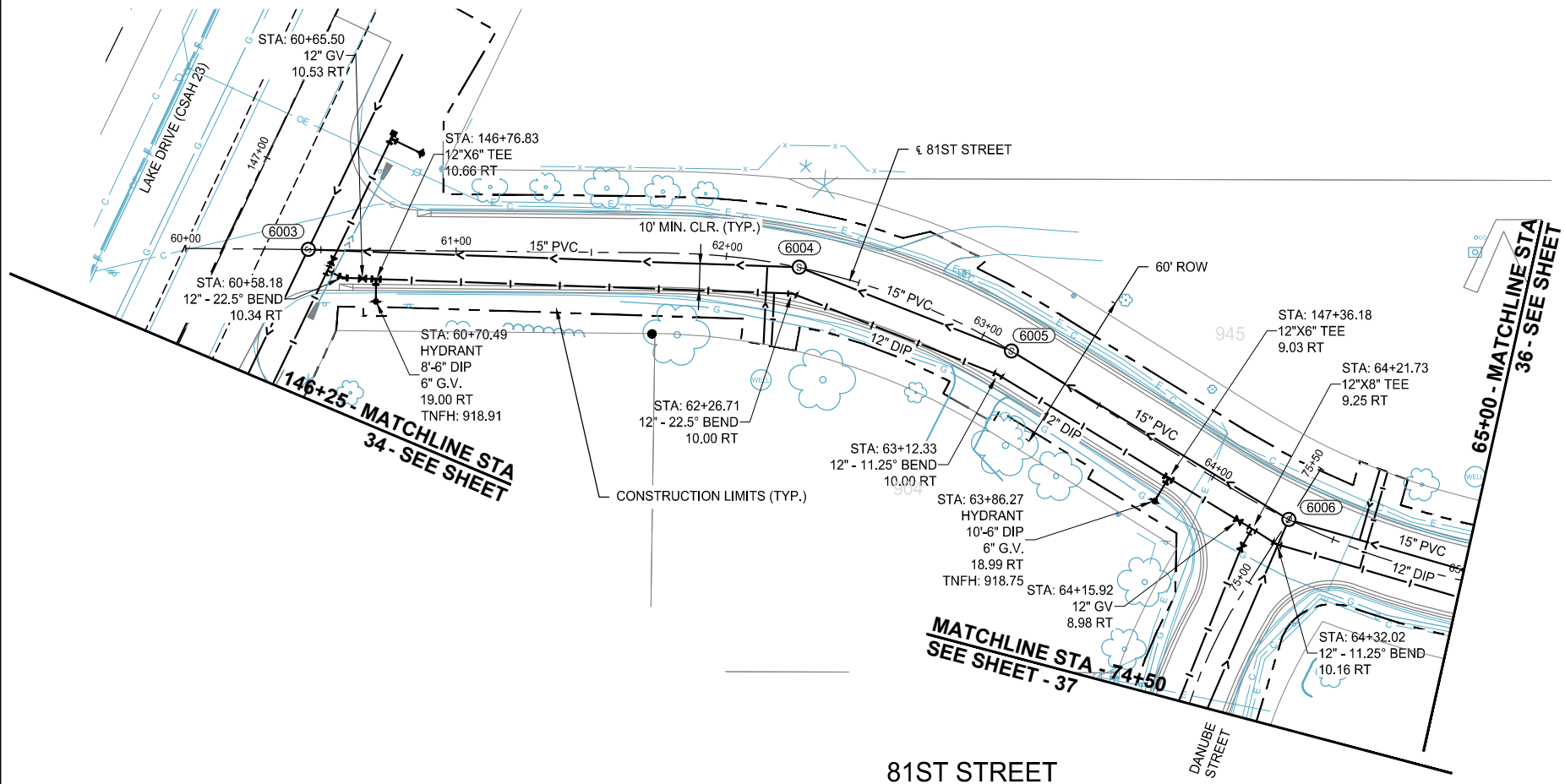
SANITARY SEWER AND WATERMAIN PLAN

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

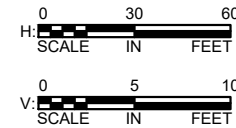
WSB PROJECT NO.
023620-000

SHEET

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LOCATION



NOTES:

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9. RECONNECT SANITARY SEWER SERVICE INCLUDES RECONNECTION OF SERVICE PIPE CUT INCLUDING SHEAR-RING COUPLING AT EACH CONNECTION POINT (2 MIN) (SEE DETAIL).

SCALE: AS SHOWN
PLAN BY: THC
DESIGN BY: THC
CHECK BY: PTH

REVISIONS			
NO.	DATE	DESCRIPTION	REVISED TOP OF CASTINGS
1	03-21-2025		

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DATE: 01-24-2025 LIC. NO.: 23359

SANITARY SEWER AND WATERMAIN PLAN

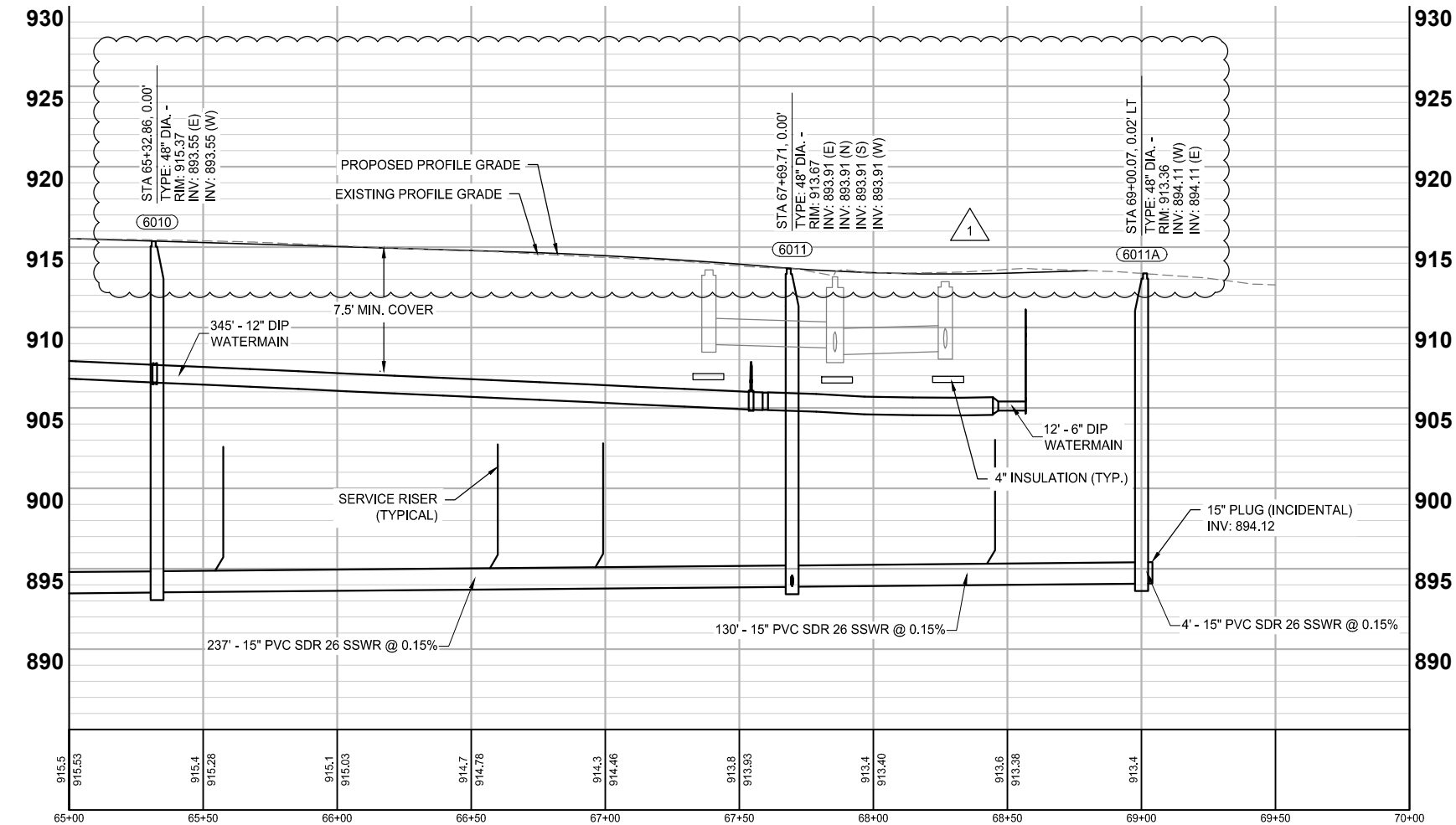
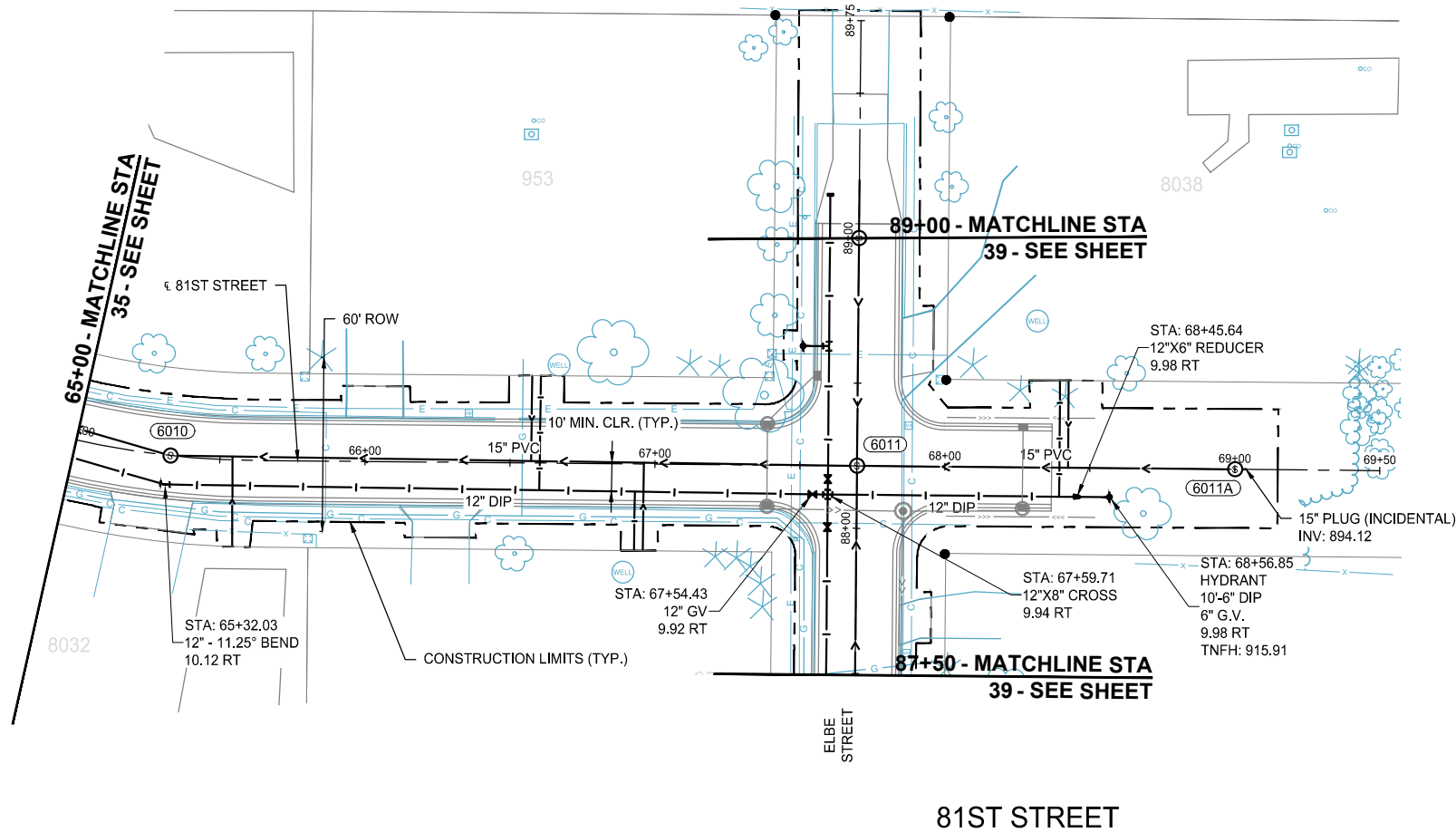
2024 STREET RECONSTRUCTION PROJECT CITY OF LINO LAKES

WSB PROJECT NO.
023620-000

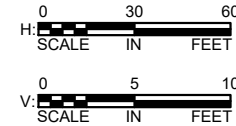
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LOCATION



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9. RECONNECT SANITARY SEWER SERVICE INCLUDES RECONNECTION OF SERVICE PIPE CUT INCLUDING SHEAR-RING COUPLING AT EACH CONNECTION POINT (2 MIN) (SEE DETAIL).

SCALE: AS SHOWN
PLAN BY: THC
DESIGN BY: THC
CHECK BY: PTH

REVISIONS

NO.	DATE	DESCRIPTION
1	03-21-2025	REVISED TOP OF CASTINGS

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PAUL HORNBY, PE

DATE: 01-24-2025 LIC. NO.: 23359

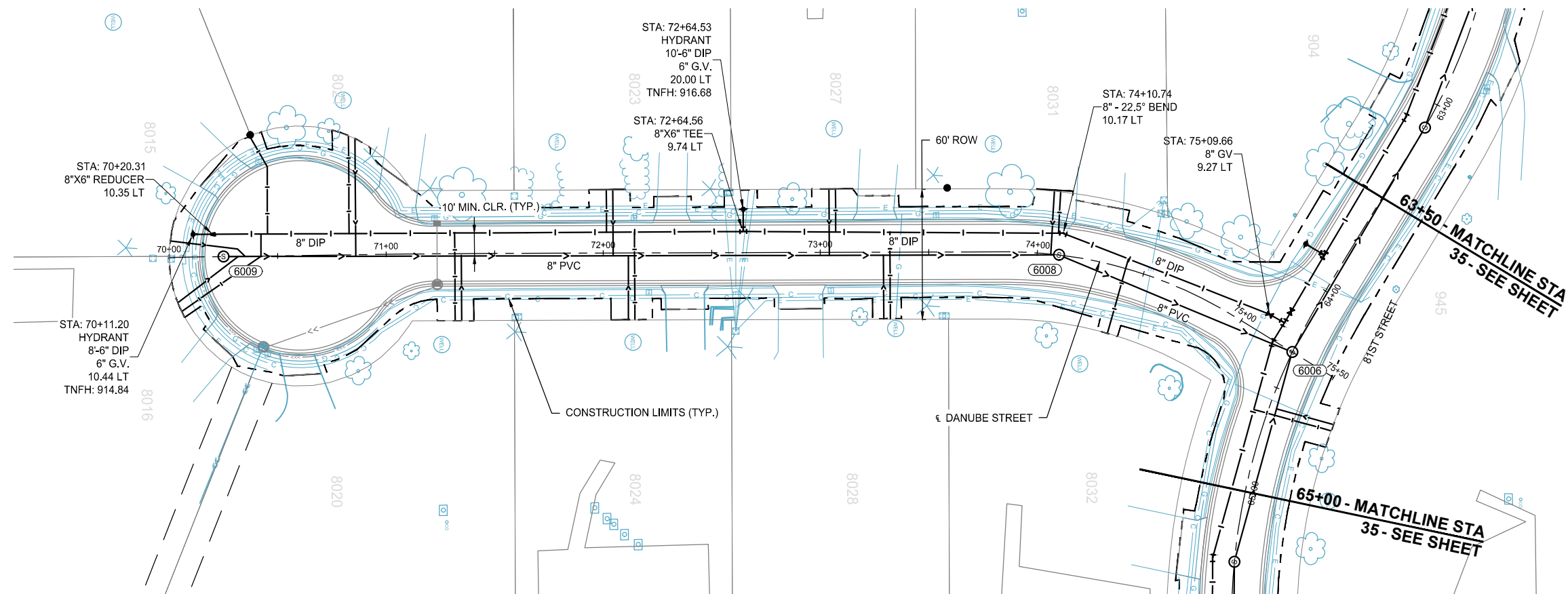
SANITARY SEWER AND WATERMAIN PLAN

2024 STREET RECONSTRUCTION PROJECT CITY OF LINO LAKES

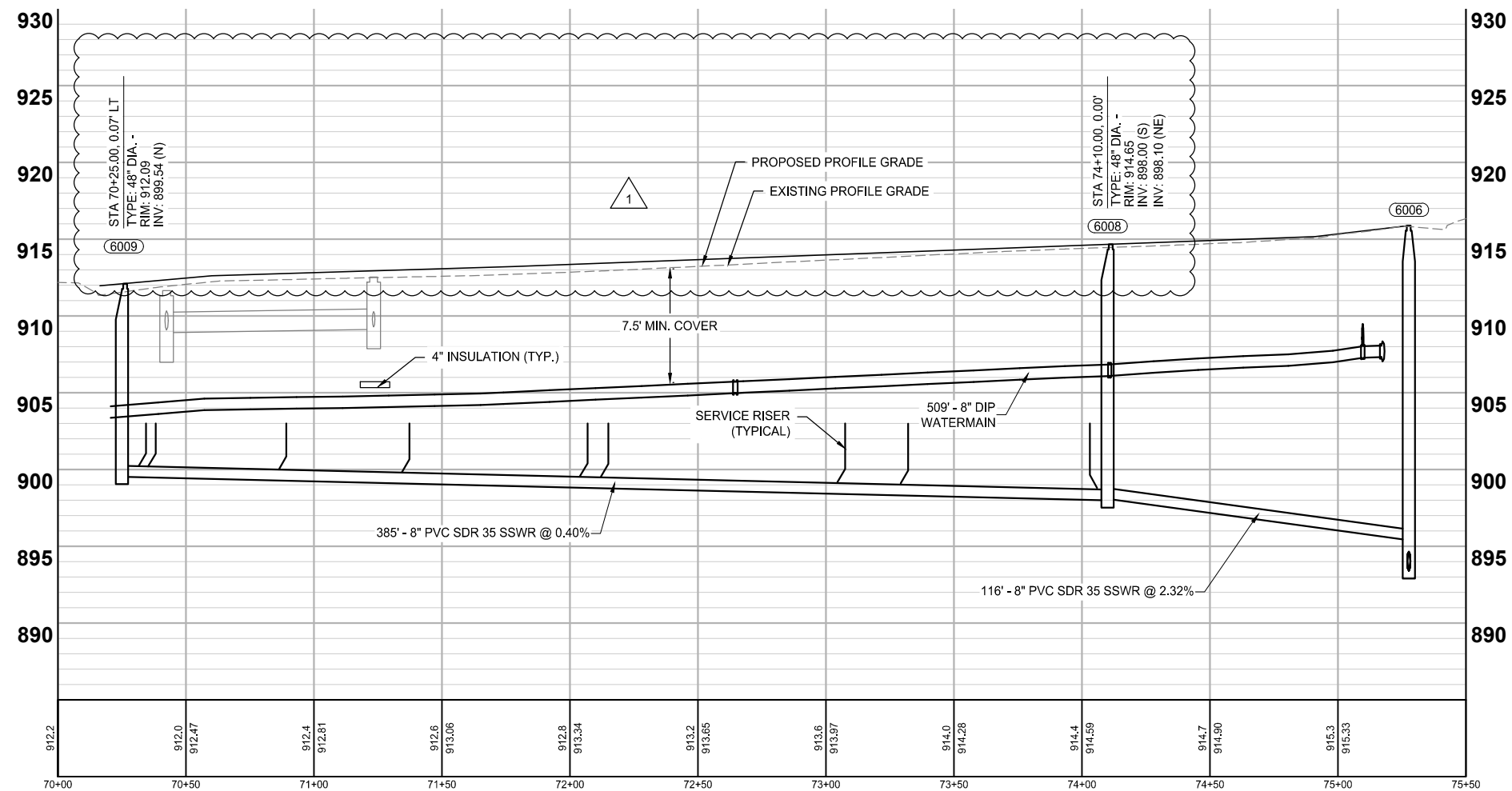
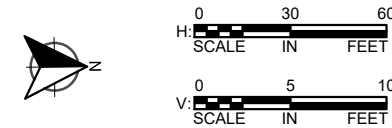
WSB PROJECT NO.
023620-000

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DANUBE STREET

LOCATION

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[illegible]

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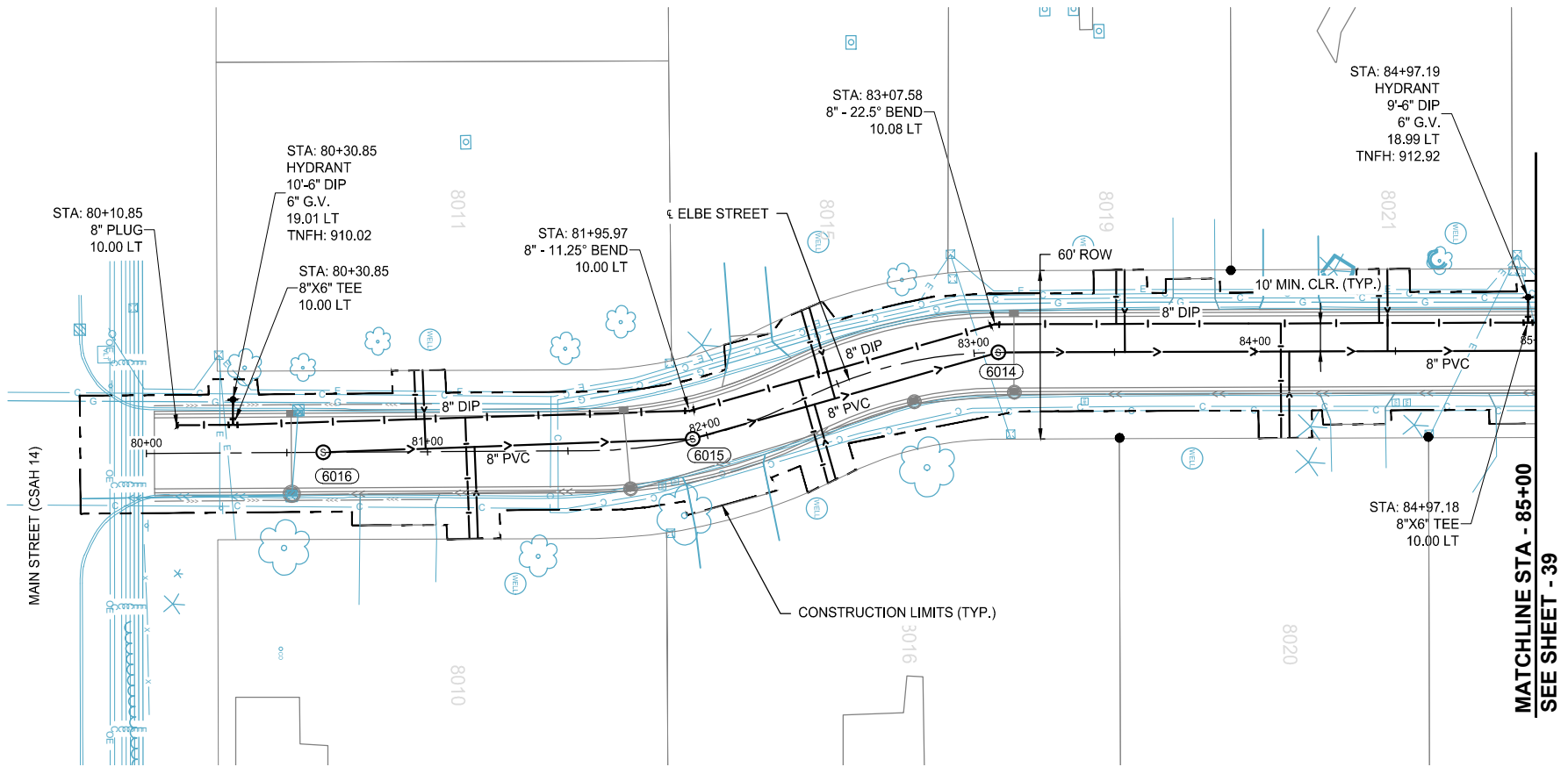
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2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

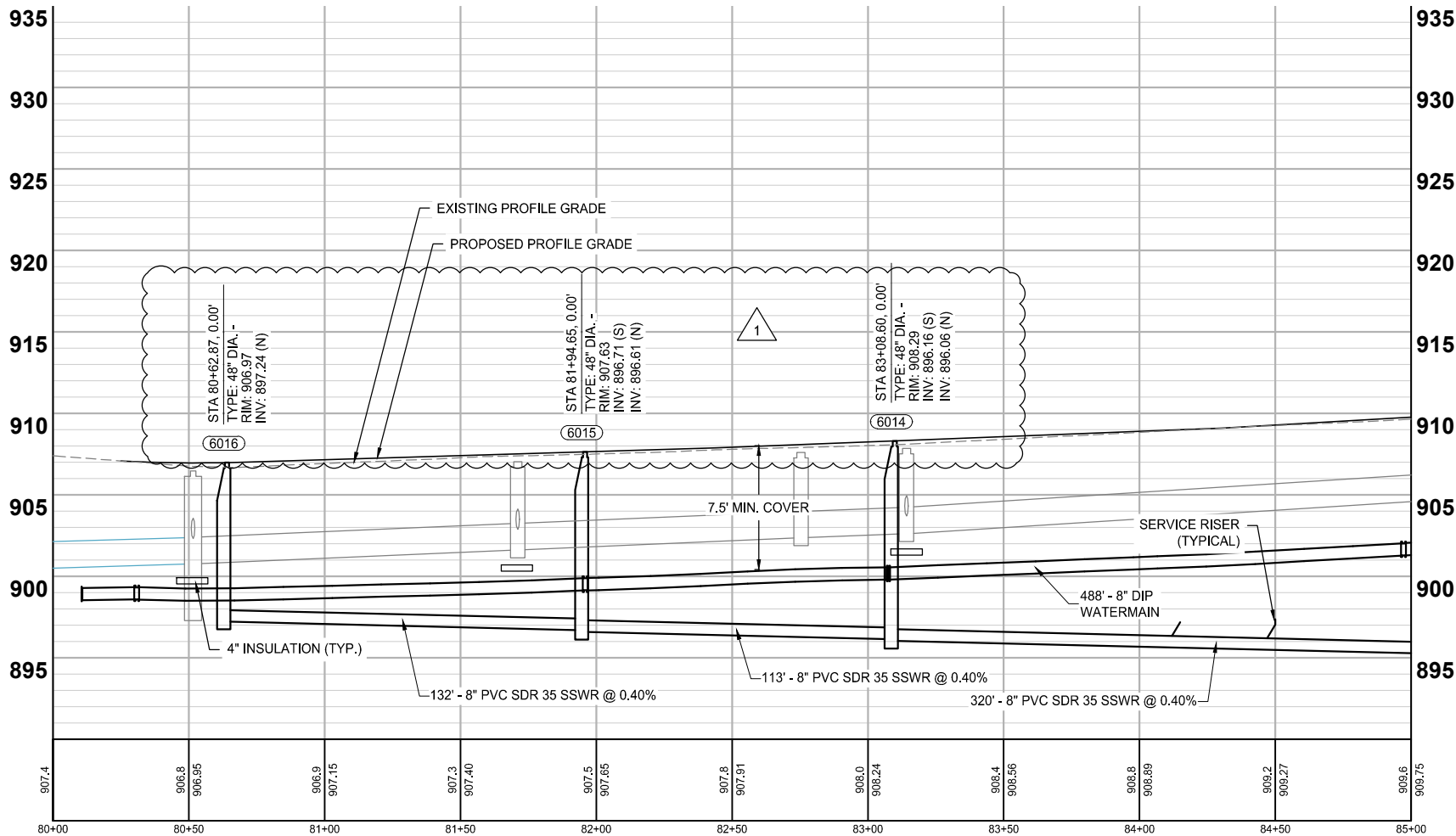
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ELBE STREET



LOCATION



0 30 60
SCALE IN FEET

0 5 10
SCALE IN FEET

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SCALE: AS SHOWN
DESIGN BY: THC
PLAN BY: THC
CHECK BY: PTH

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SANITARY SEWER AND WATERMAIN PLAN

2024 STREET RECONSTRUCTION PROJECT CITY OF LINO LAKES

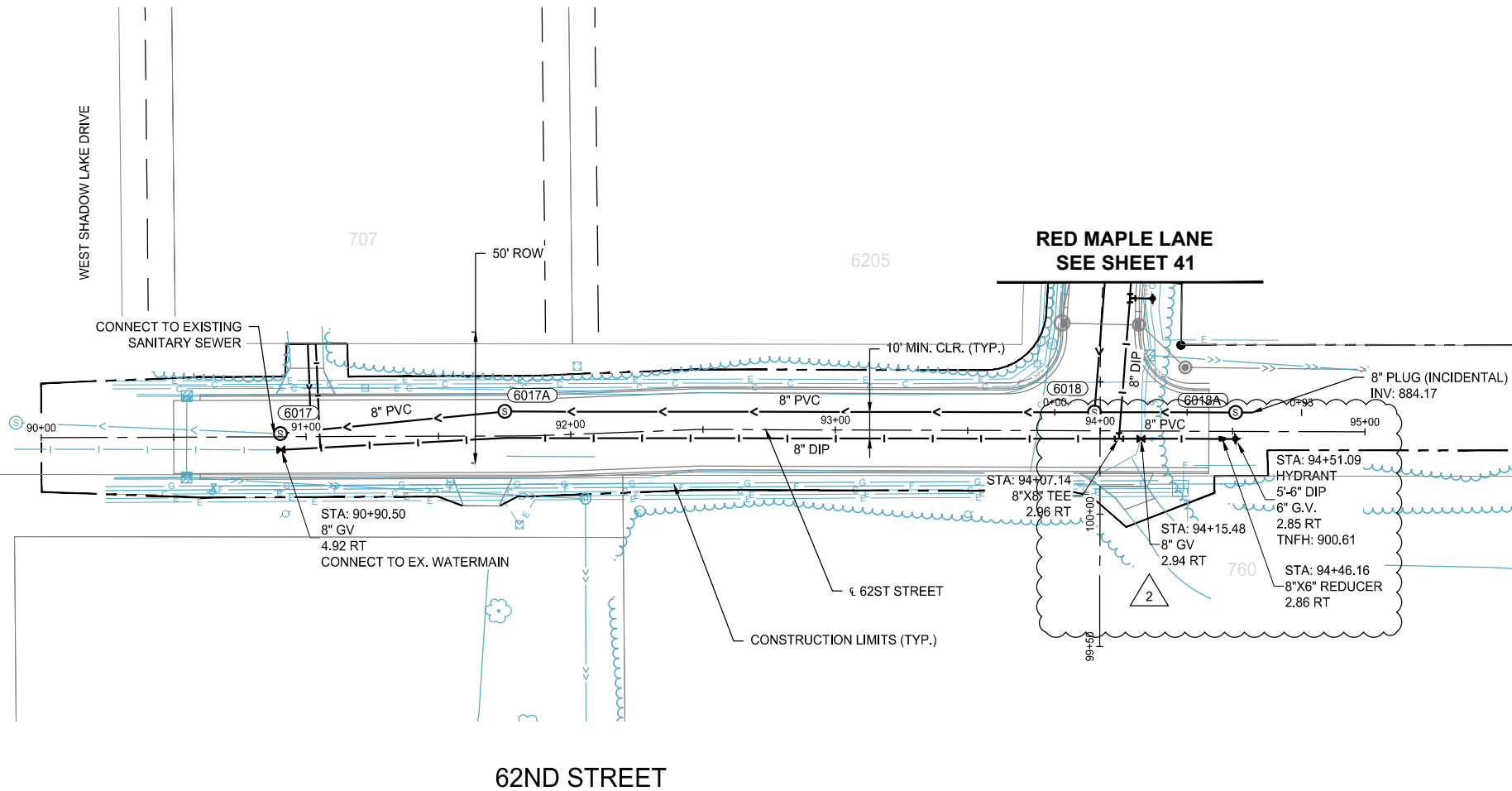
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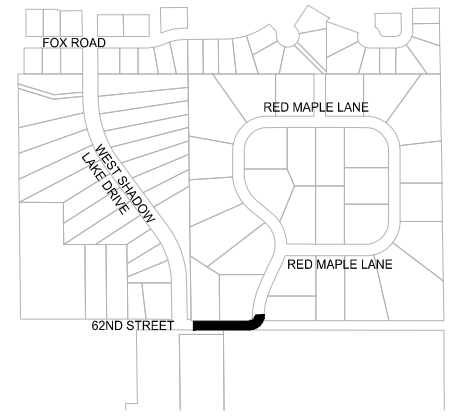
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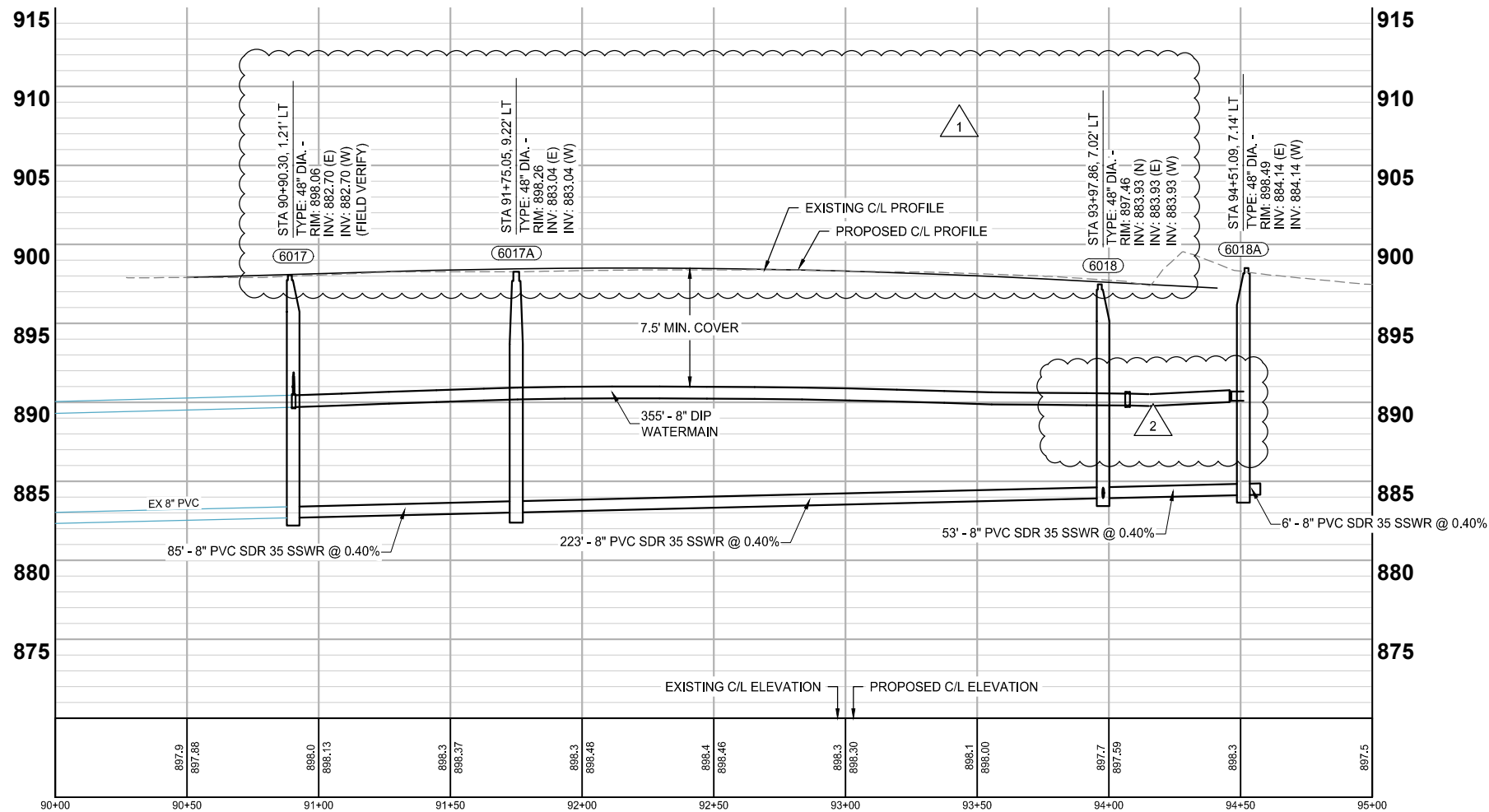


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REVISIONS

NO.	DATE	DESCRIPTION
2	02-05-2025	ADDENDUM NO 2
1	02-21-2025	ADJUSTED TOP OF CASTINGS

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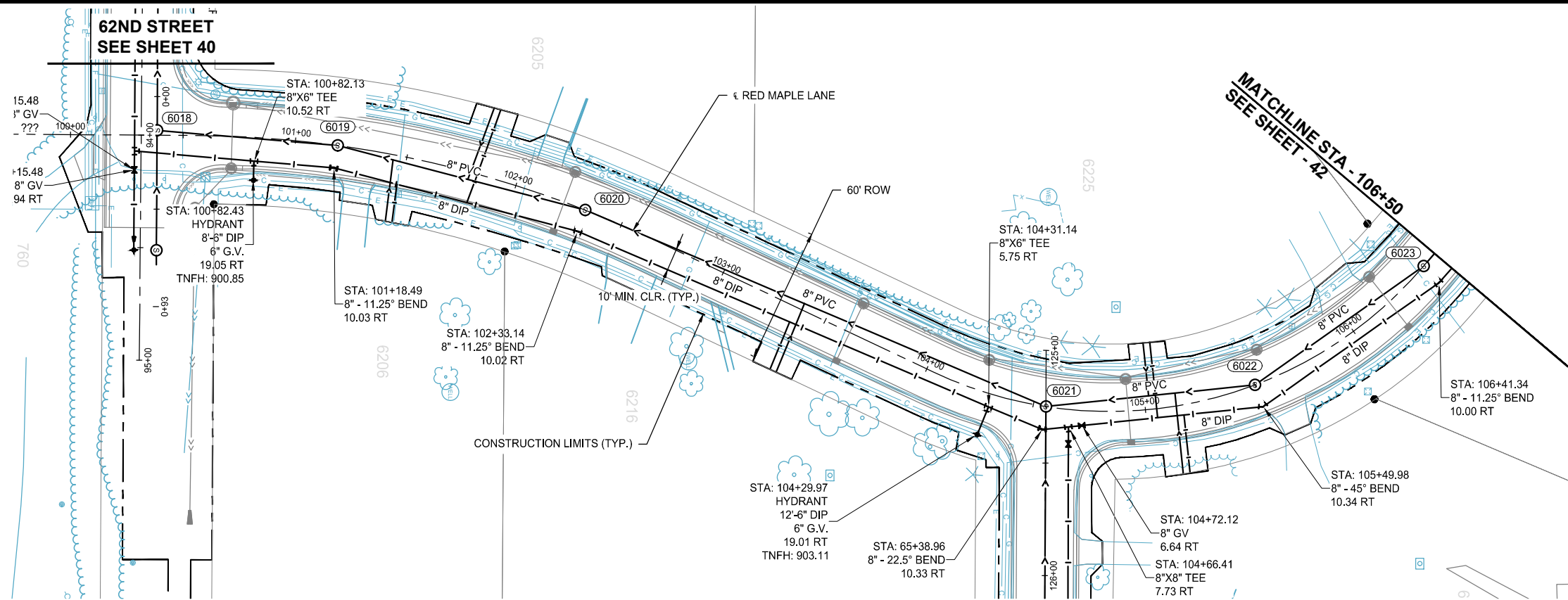
2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO.
023620-000

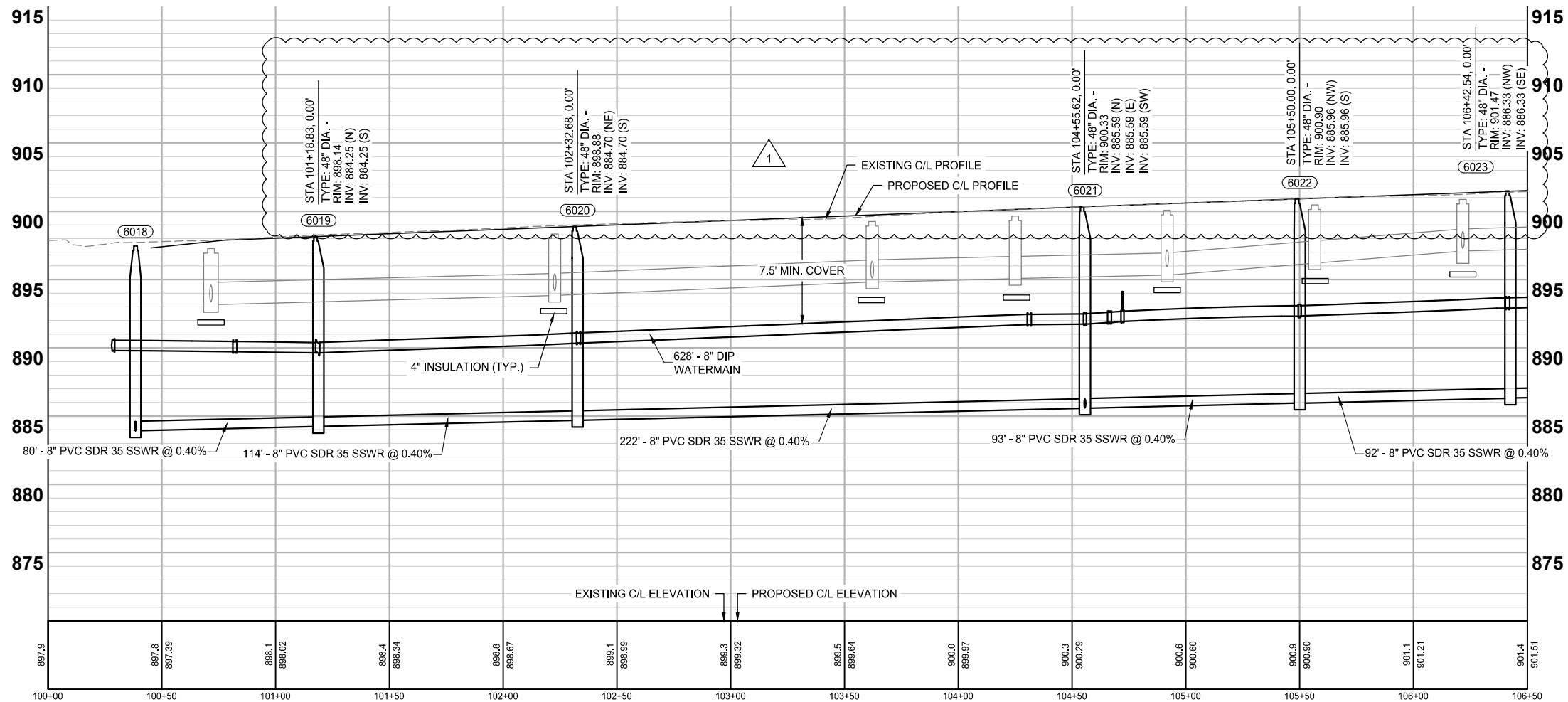
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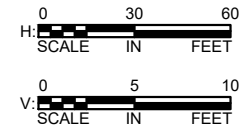
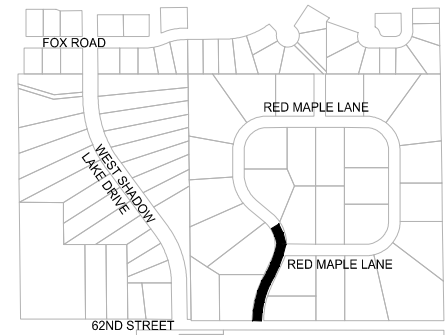
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RED MAPLE LANE



LOCATION



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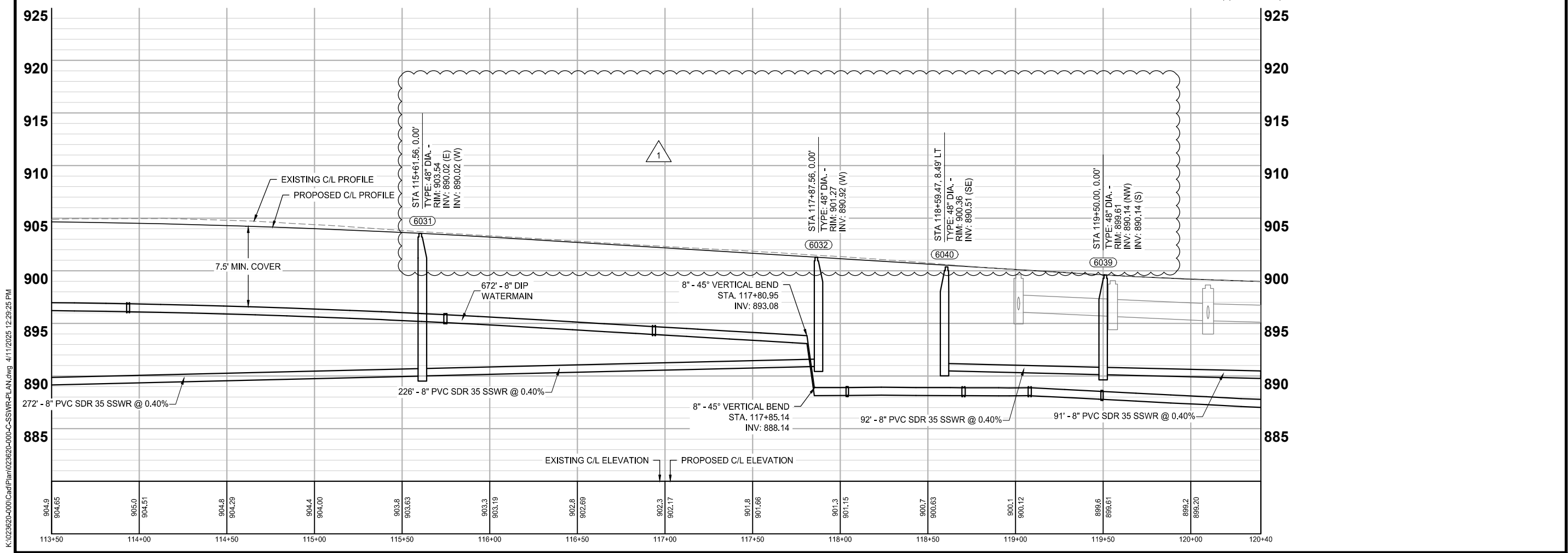
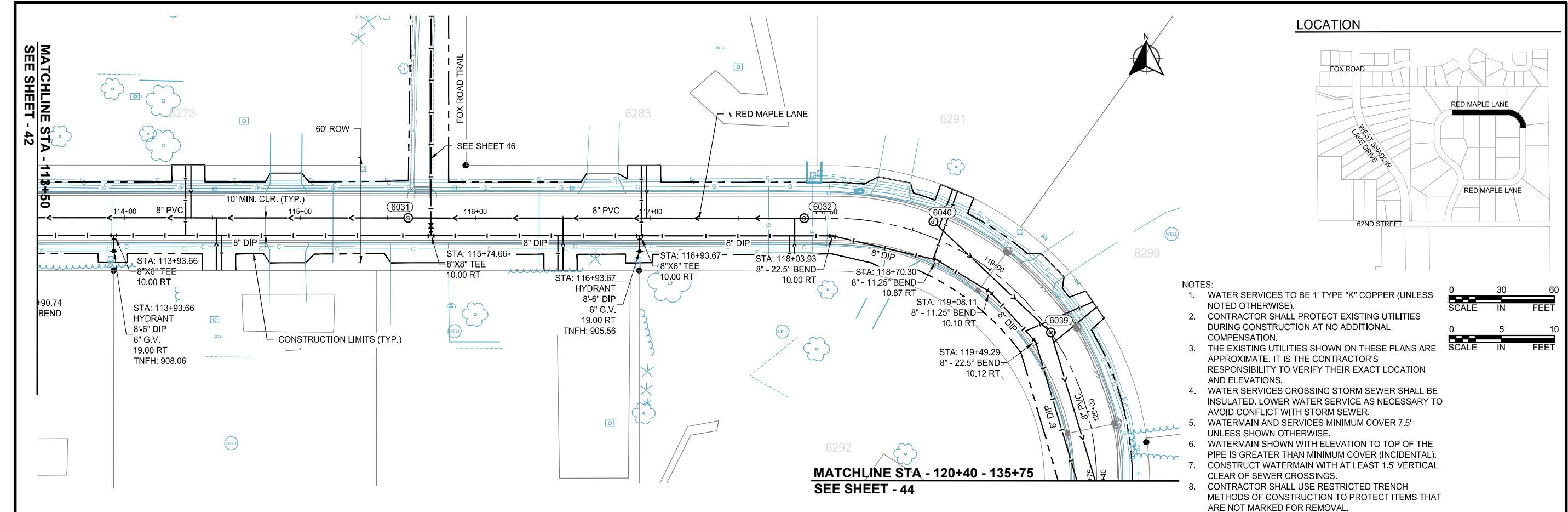
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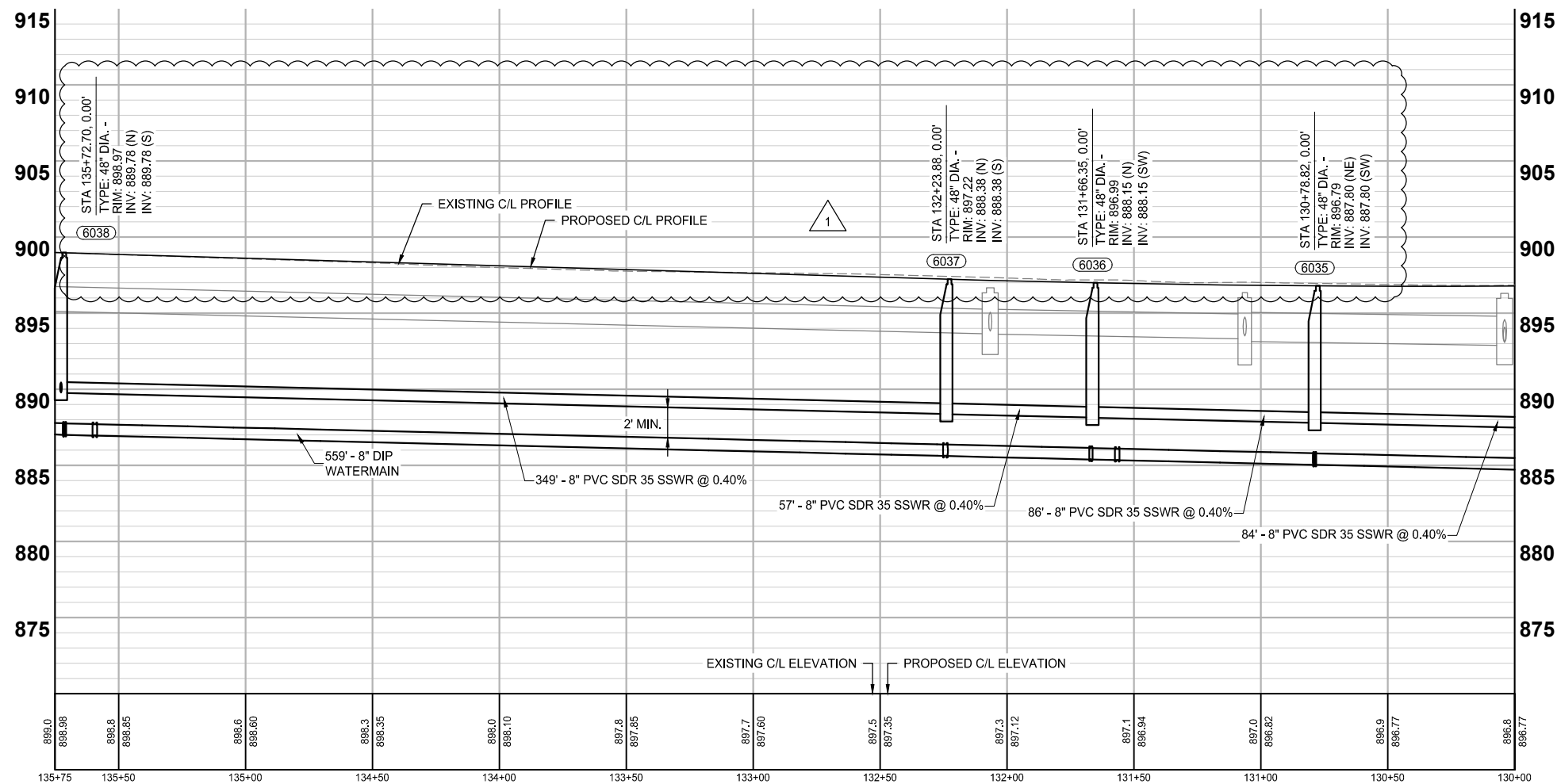
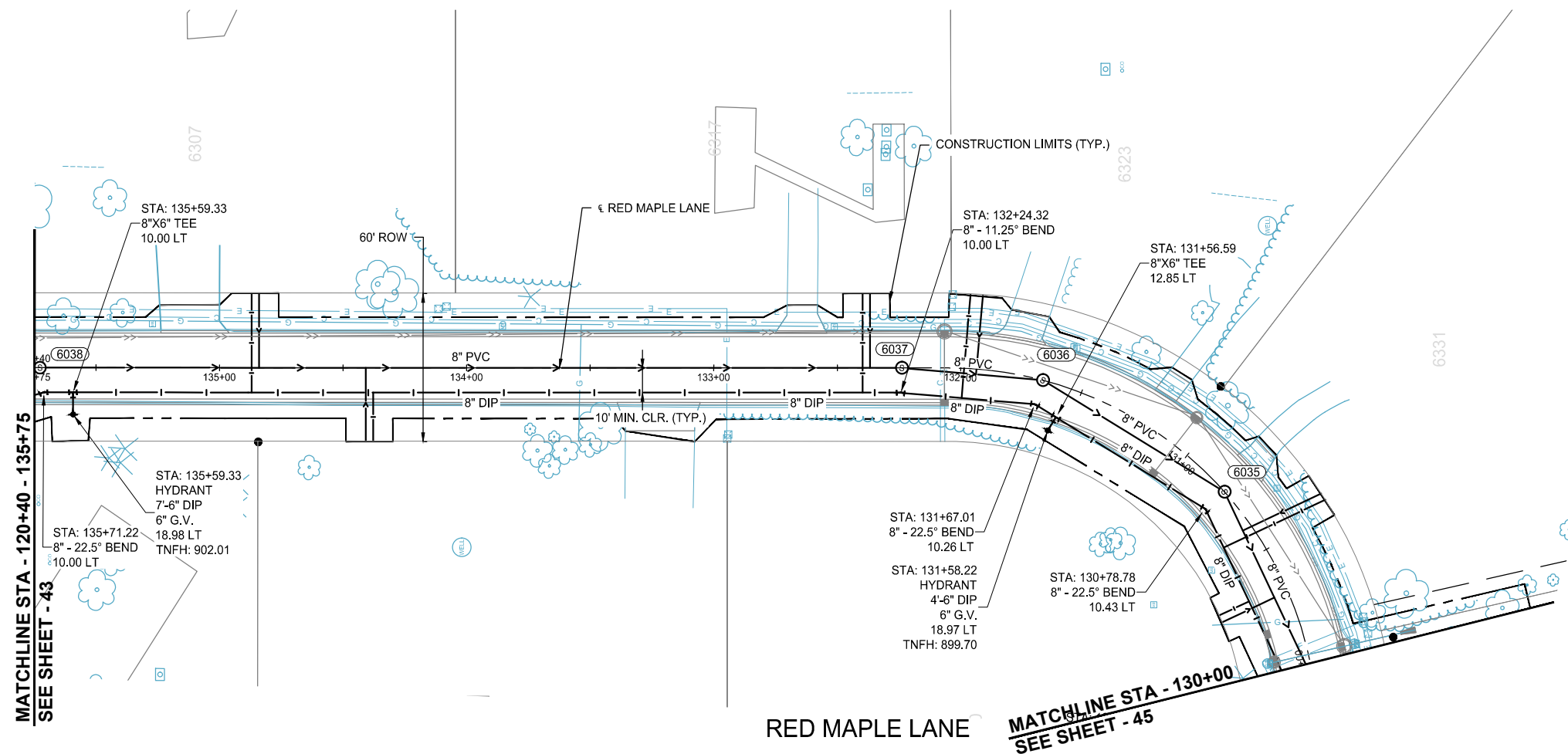
SANITARY SEWER AND WATERMAIN PLAN

2024 STREET RECONSTRUCTION PROJECT CITY OF LINO LAKES

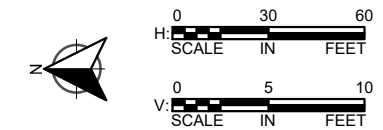
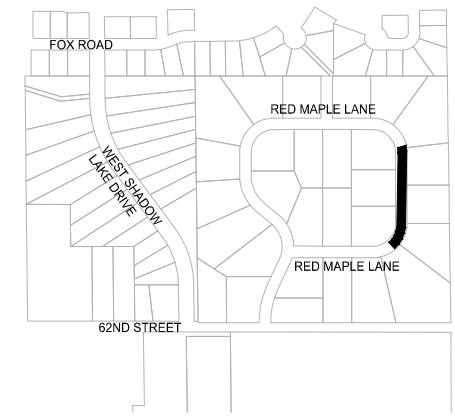
WSB PROJECT NO.
023620-000

SHEET






LOCATION



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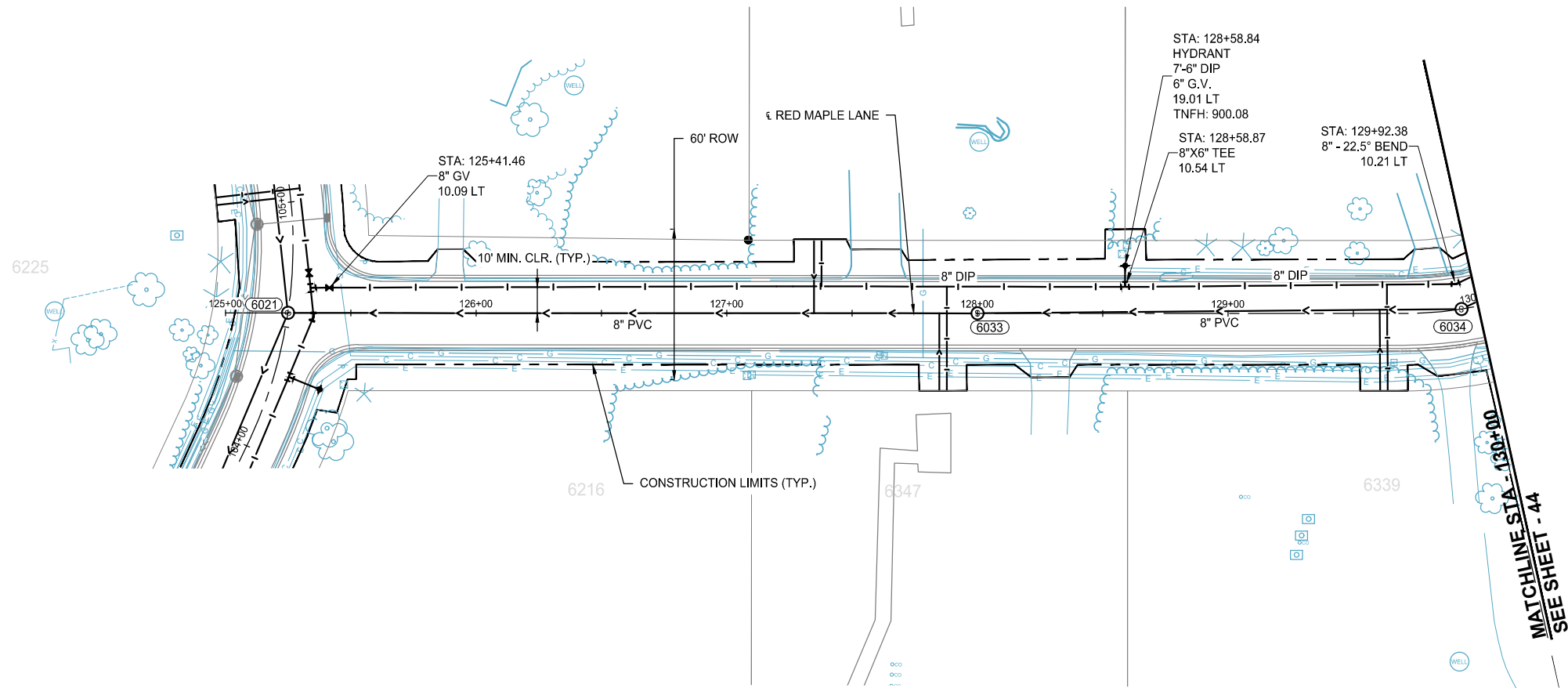
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2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

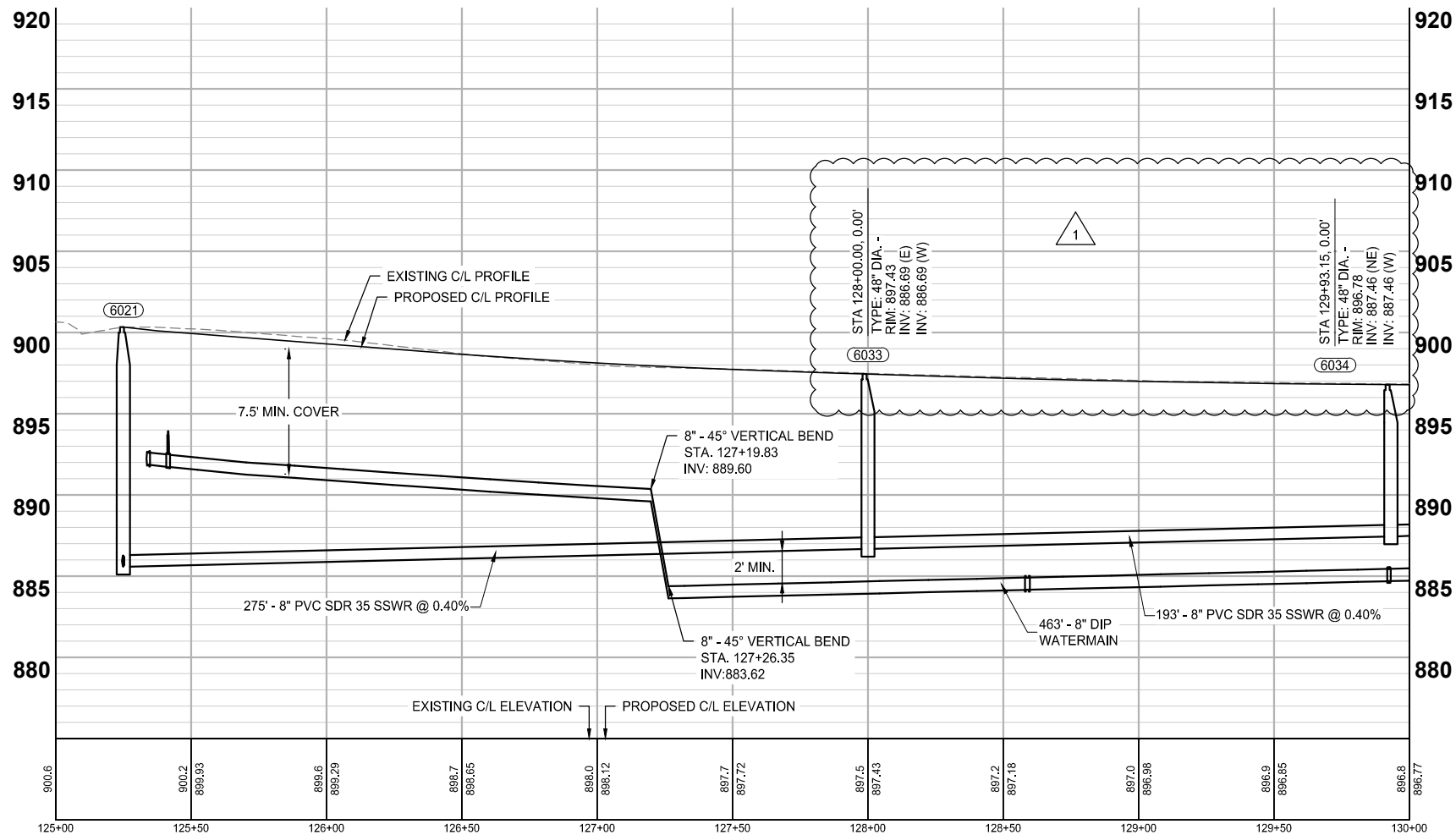
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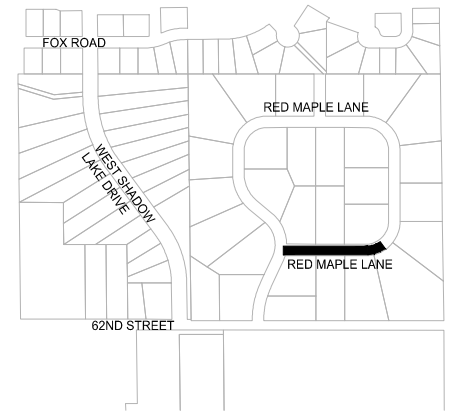
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RED MAPLE LANE



LOCATION



0 30 60
SCALE IN FEET

0 5 10
SCALE IN FEET

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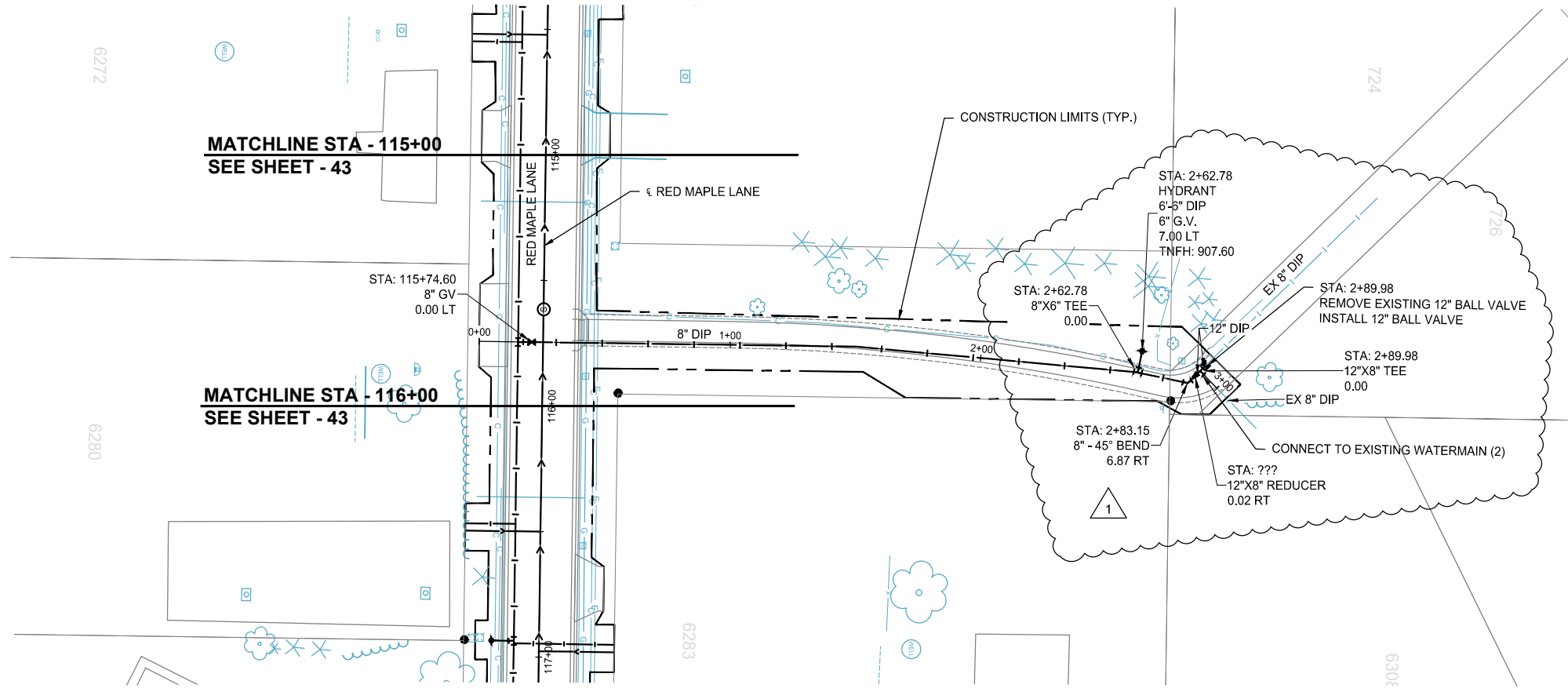
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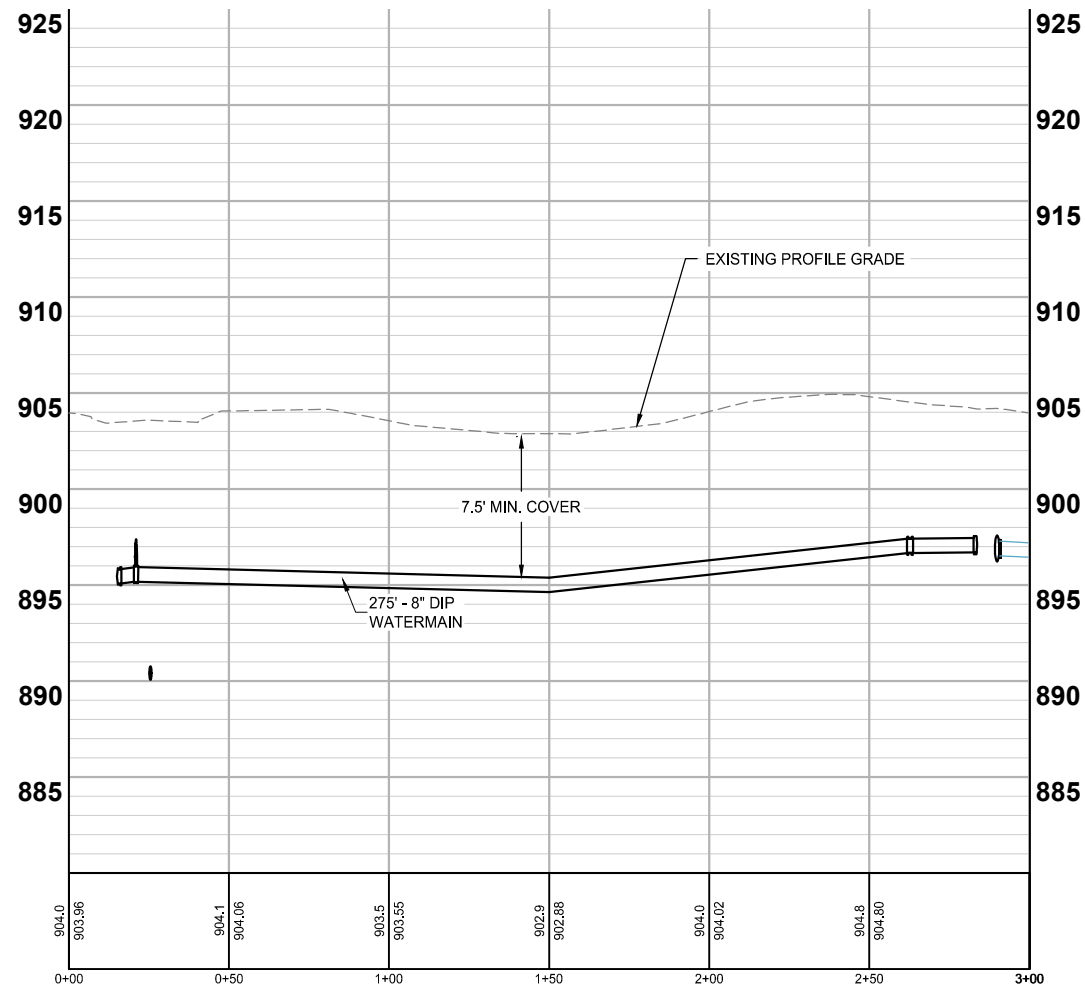
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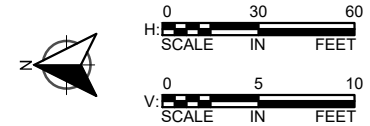
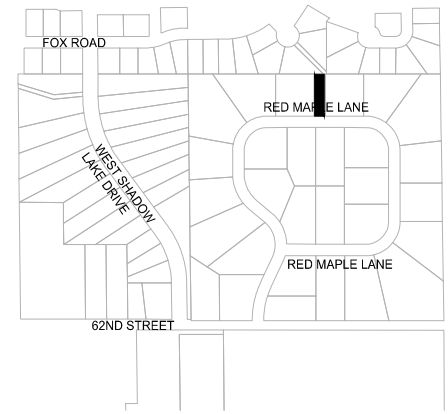
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FOX ROAD TRAIL



LOCATION



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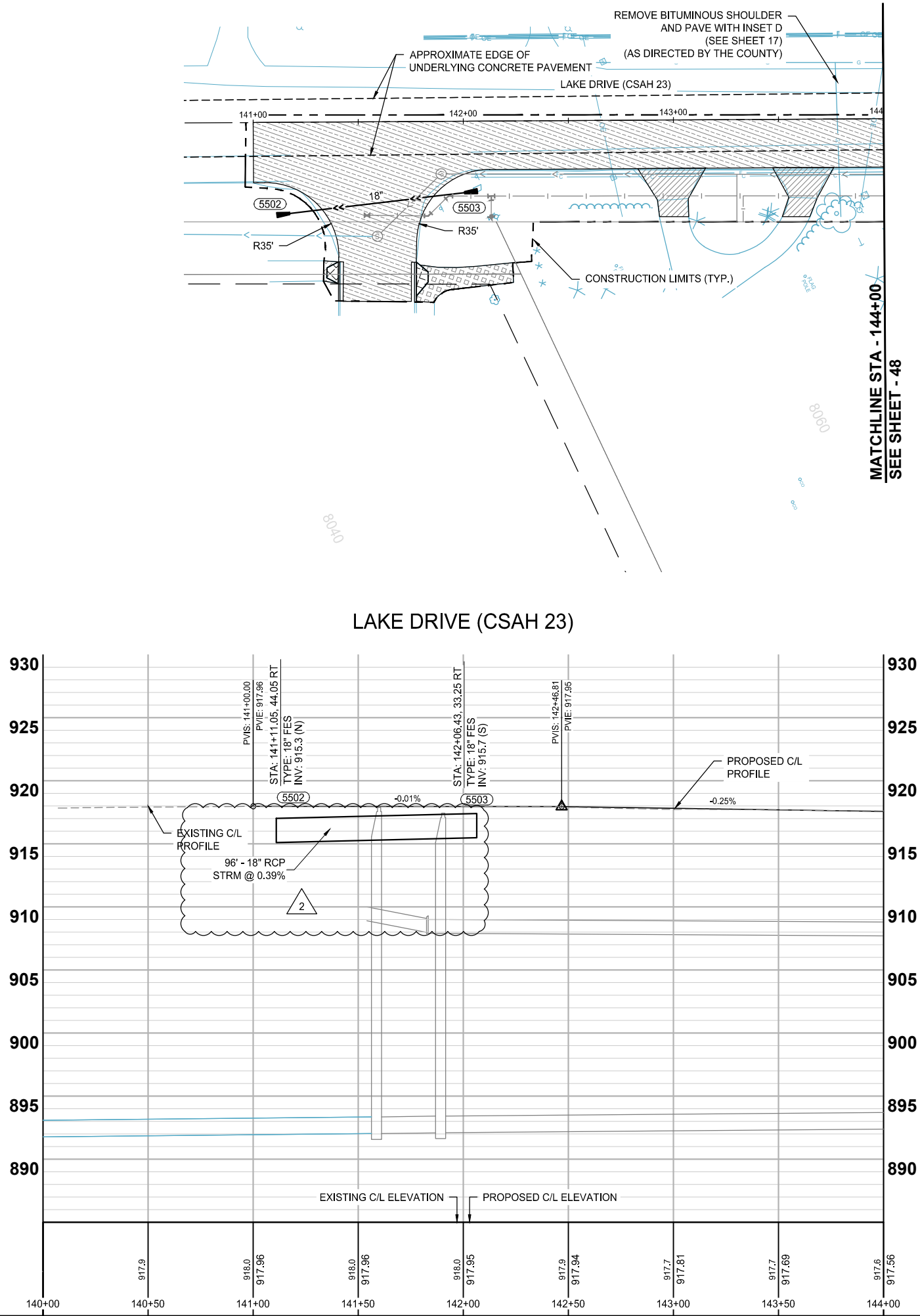
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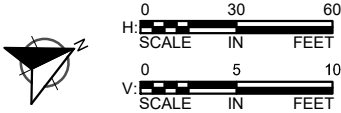
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LOCATION



- STREET CONSTRUCTION NOTES:
1. DROP MODIFIED "S" CURB AT DRIVEWAYS (SEE DETAILS).
 2. CONTRACTOR SHALL PROTECT EXISTING TREES, SHRUBS, AND LANDSCAPING DURING CONSTRUCTION AT NO ADDITIONAL COMPENSATION.
 3. SAWCUT PAVEMENT (FULL DEPTH) FOR BITUMINOUS AND CONCRETE REMOVAL LIMITS TO BE IDENTIFIED IN THE FIELD BY THE ENGINEER. CONTRACTOR SHALL PROTECT ALL SAWED EDGES (INCIDENTAL).
 4. EDGE MILL DRIVEWAYS FULL WIDTH.
 5. CONTRACTOR SHALL PROTECT EXISTING CONCRETE CURB AND GUTTER UNLESS OTHERWISE MARKED FOR REMOVAL (INCIDENTAL).
 6. TEMPORARY STABILIZATION: HYDROMULCH TYPE 3884.B2. PERMANENT STABILIZATION: CATEGORY 25 EROSION CONTROL BLANKET (NATURAL NET), MnDOT SEED MIX 25-151 @ 121 LBS/ACRE WITH FERTILIZER TYPE 3 @ 350 LBS/ACRE.
 7. CONTRACTOR TO INSTALL B418 CURB & GUTTER AT INTERSECTION RADII AND B618 AT CATCH BASINS.



SCALE: AS SHOWN
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PLAN BY: THC
CHECK BY: PTH

REVISIONS

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STREET AND STORM SEWER CONSTRUCTION PLAN

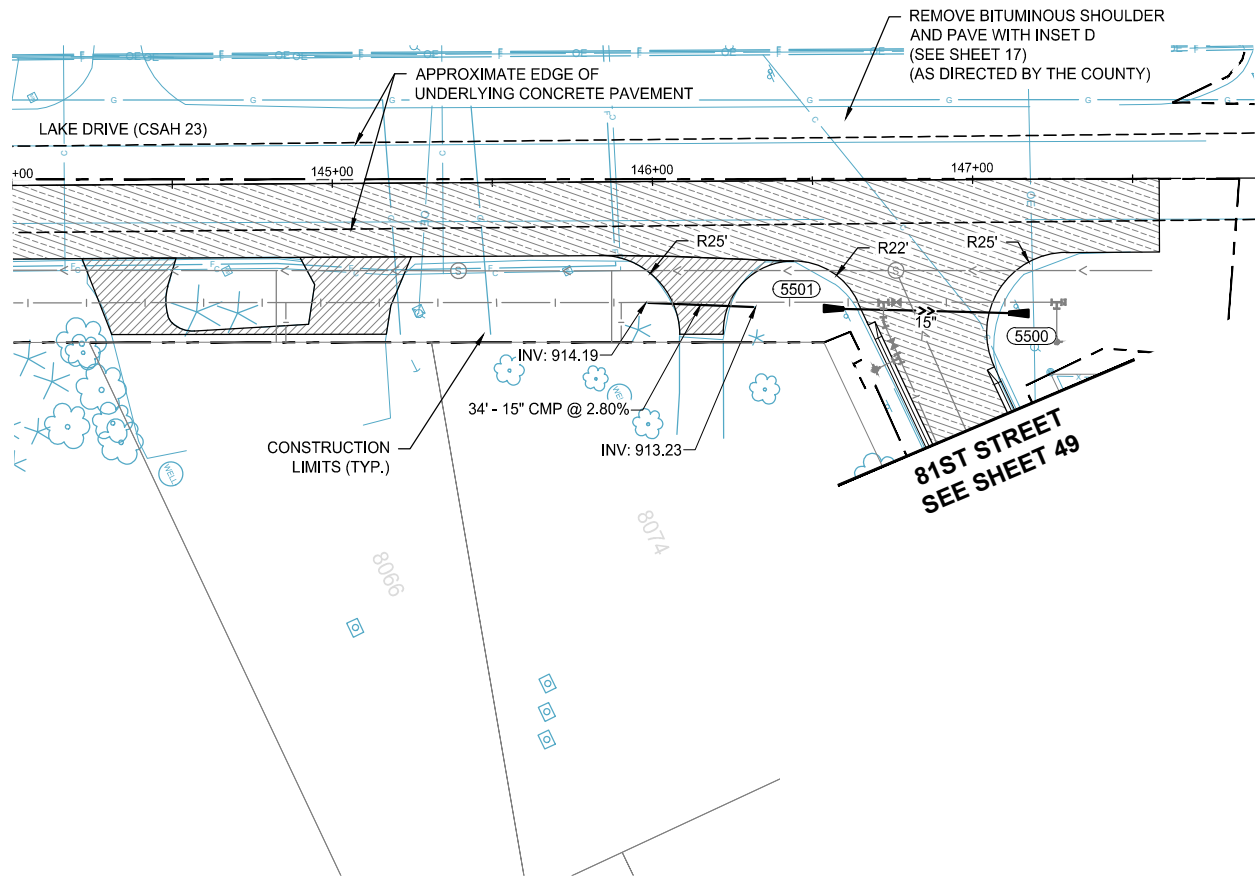
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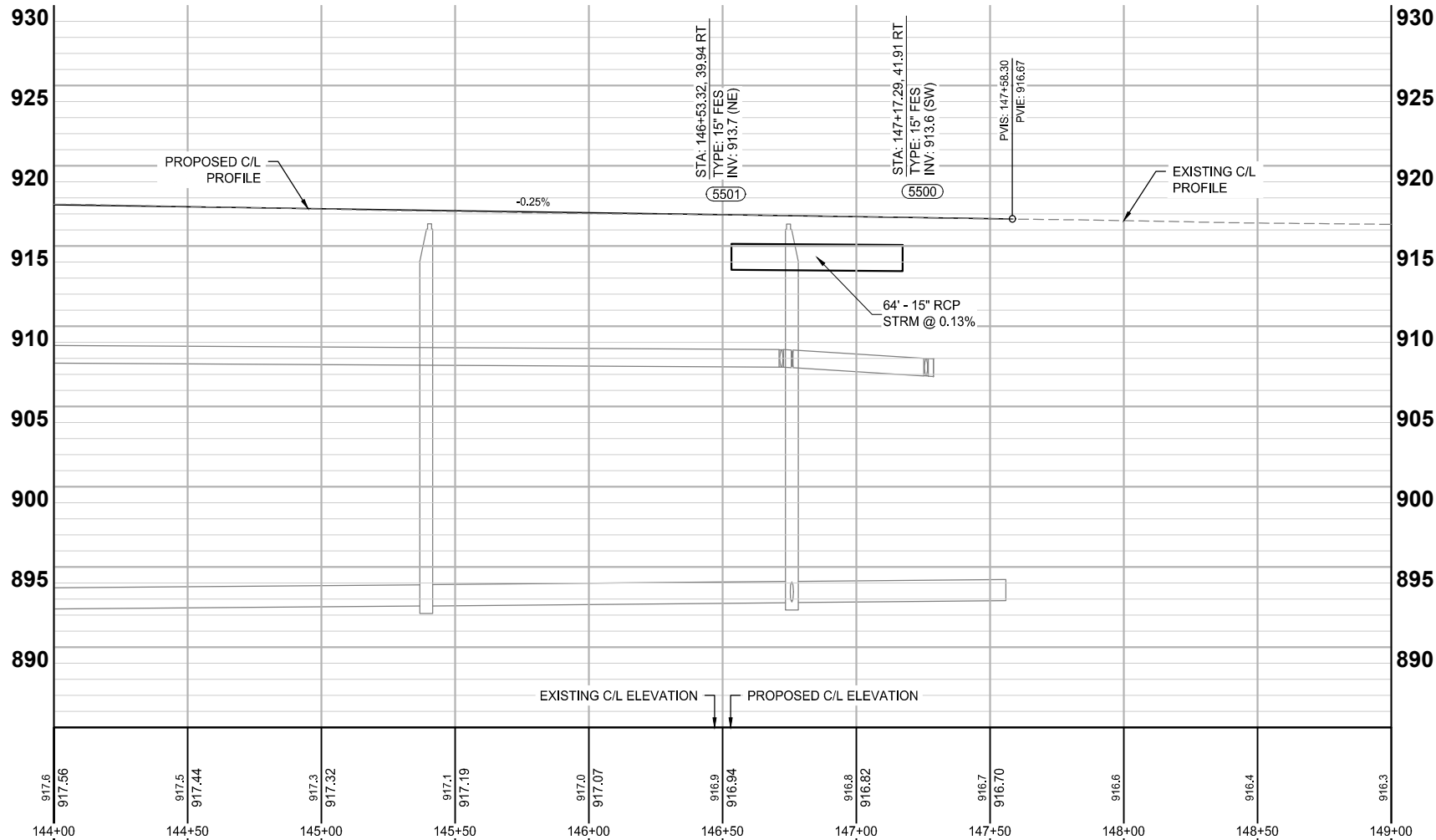
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LAKE DRIVE (CSAH 23)



LOCATION



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CHECK BY: PTH

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PAUL HORNBY, PE

DATE: 01-24-2025 LIC. NO. 23359

STREET AND STORM SEWER CONSTRUCTION PLAN

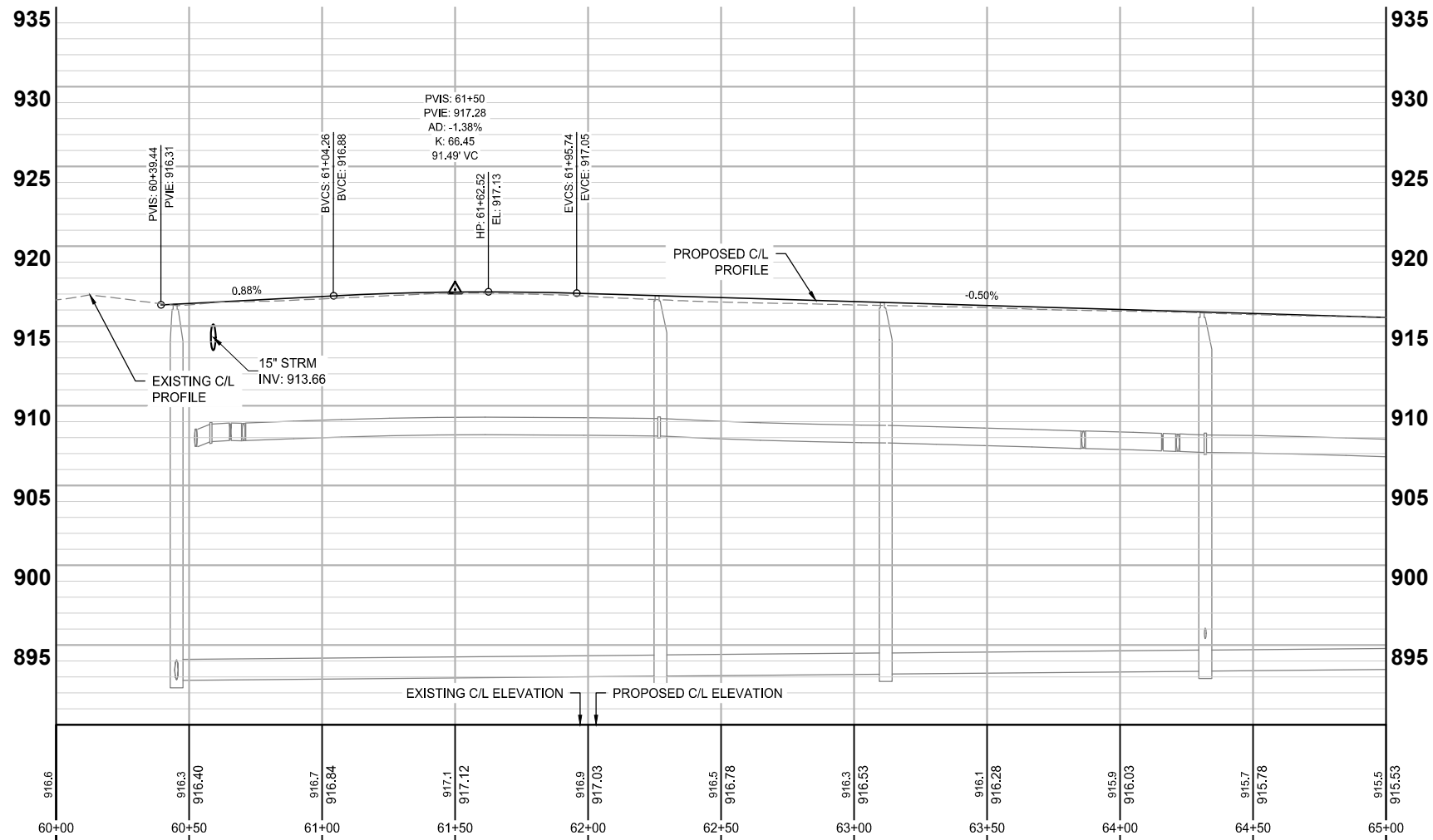
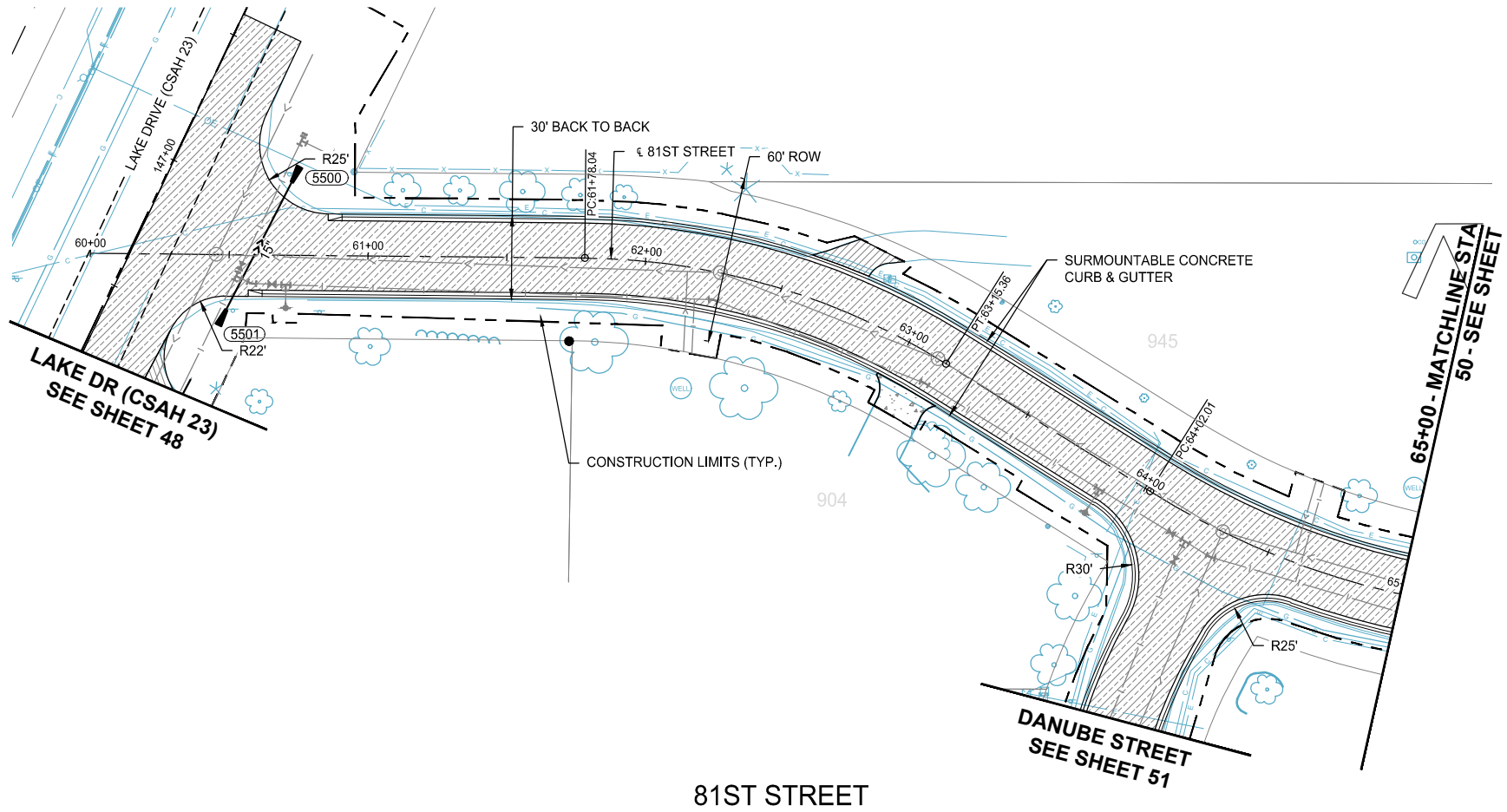
2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO.
023620-000

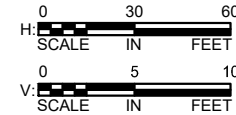
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48 OF 97

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LOCATION



SCALE: AS SHOWN
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STREET AND STORM SEWER CONSTRUCTION PLAN

2024 STREET RECONSTRUCTION PROJECT CITY OF LINO LAKES

STREET CONSTRUCTION NOTES:

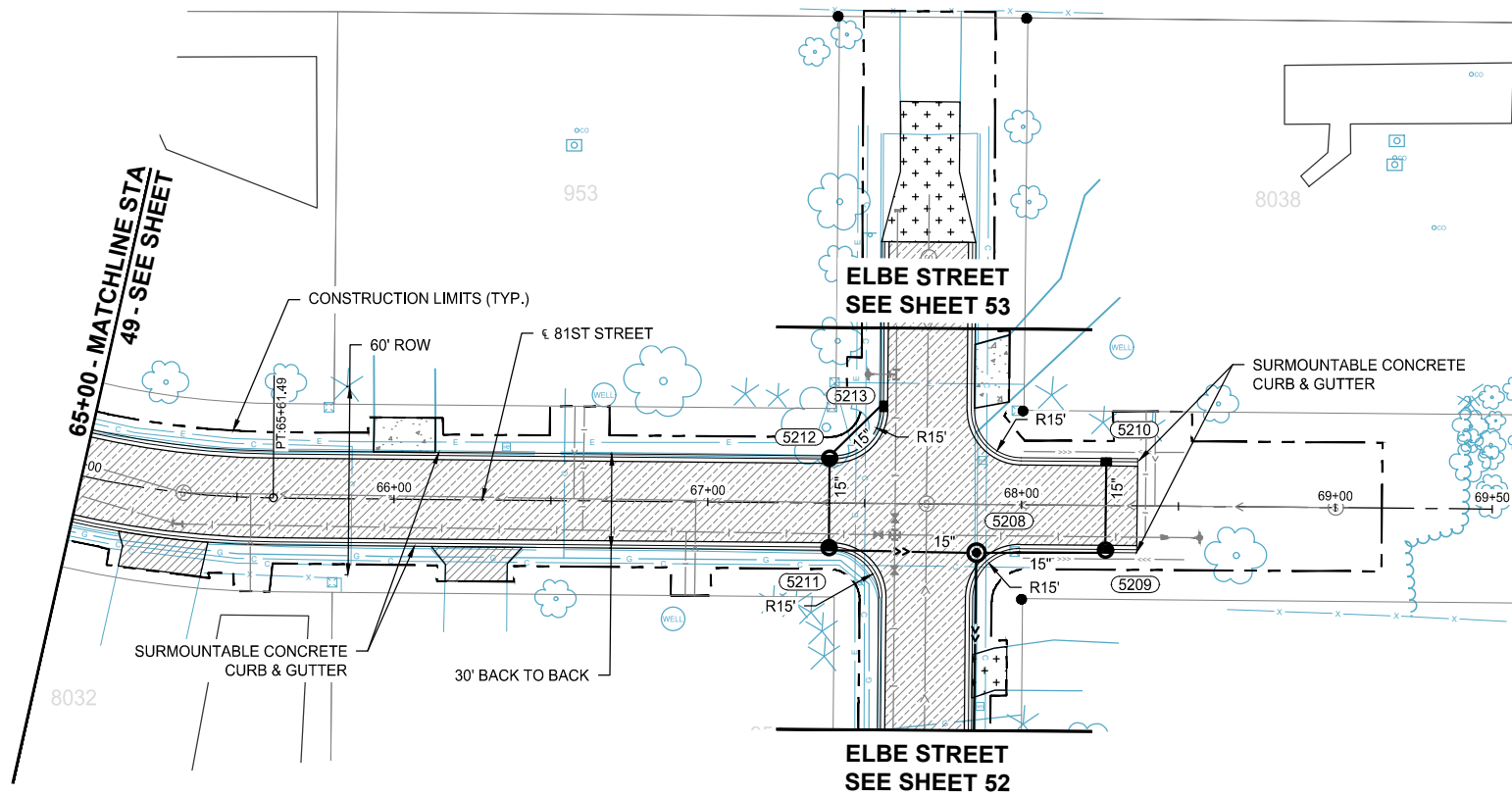
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7. CONTRACTOR TO INSTALL B418 CURB & GUTTER AT INTERSECTION RADII AND B618 AT CATCH BASINS.

WSB PROJECT NO.
023620-000

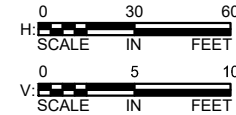
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49 OF 97

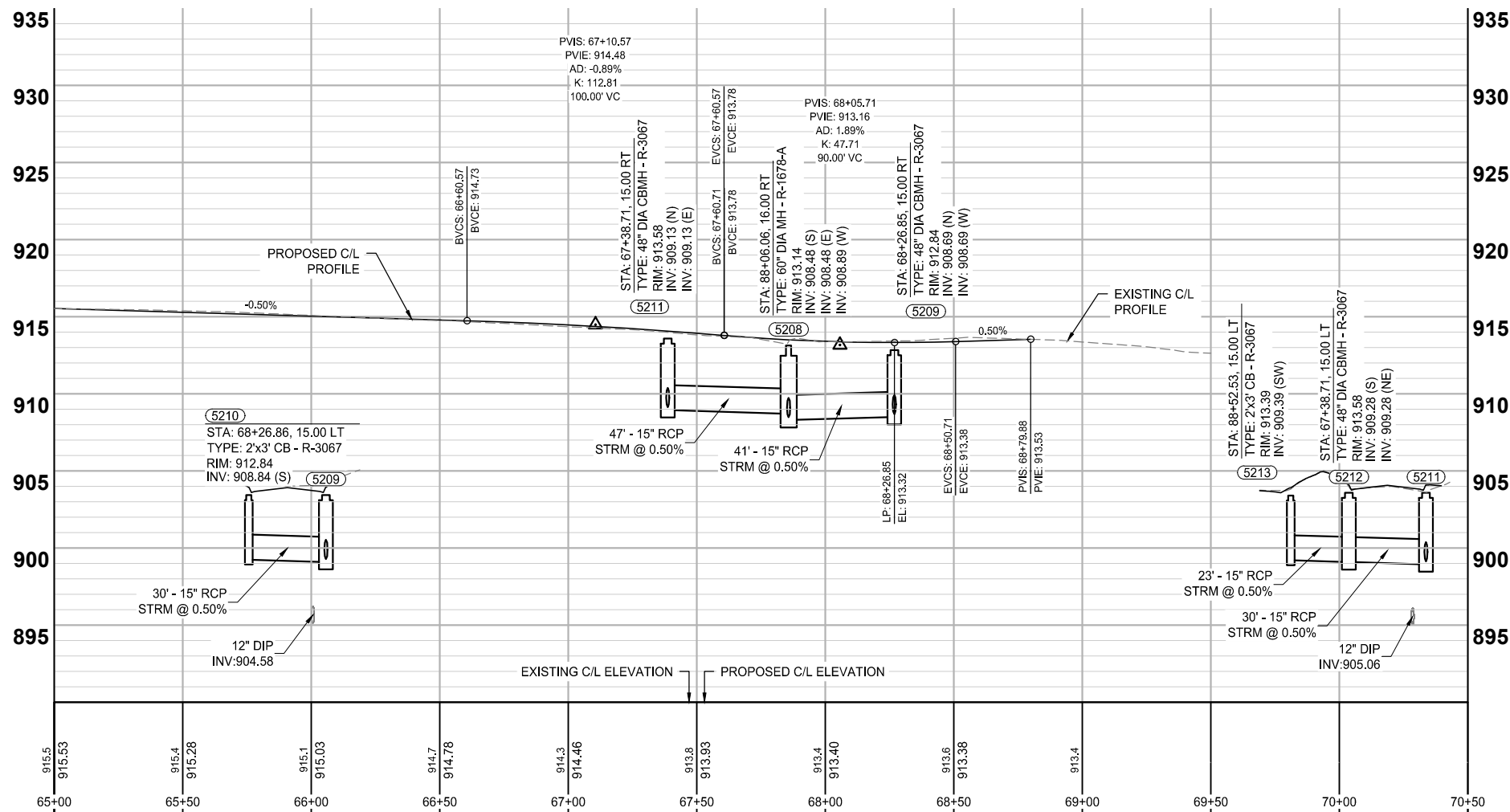
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LOCATION



81ST STREET



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PAUL HORNBY, PE

DATE: 01-24-2025 LIC. NO. 23359

STREET AND STORM SEWER CONSTRUCTION PLAN

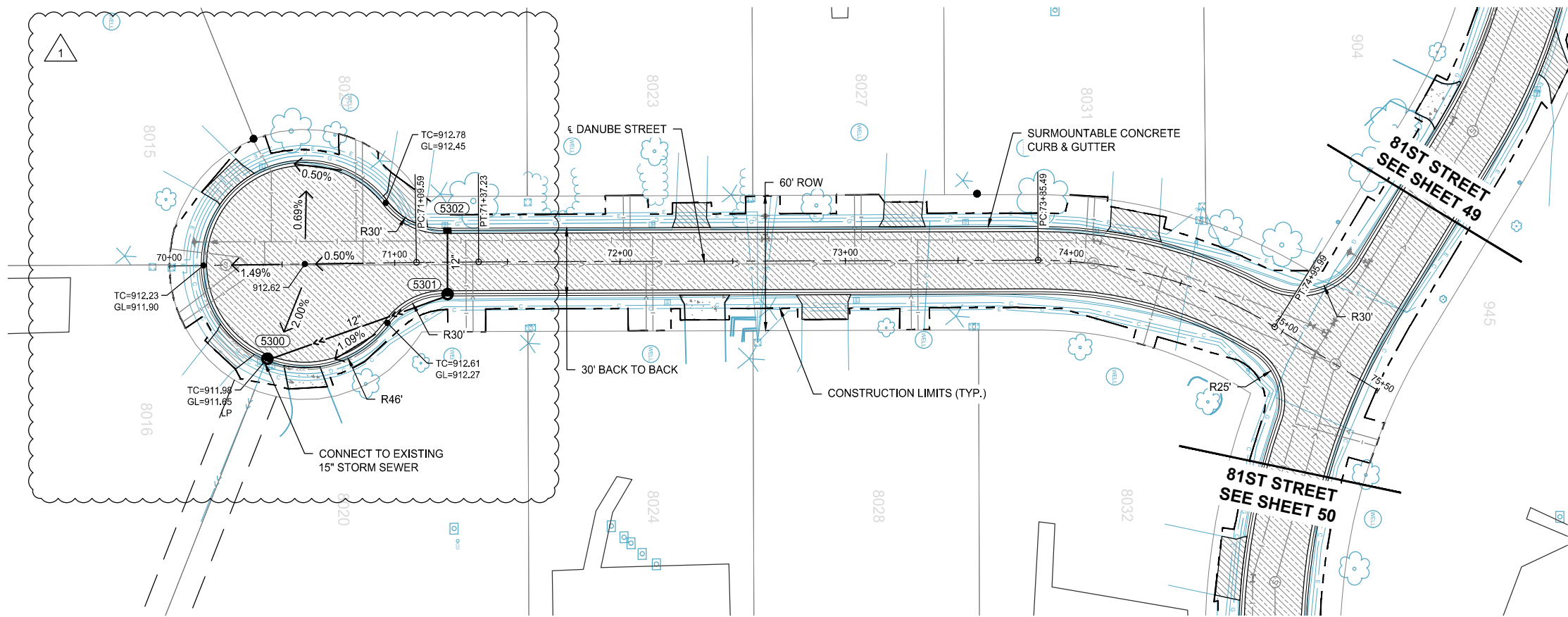
2024 STREET RECONSTRUCTION PROJECT CITY OF LINO LAKES

WSB PROJECT NO.
023620-000

SHEET

50 OF 97

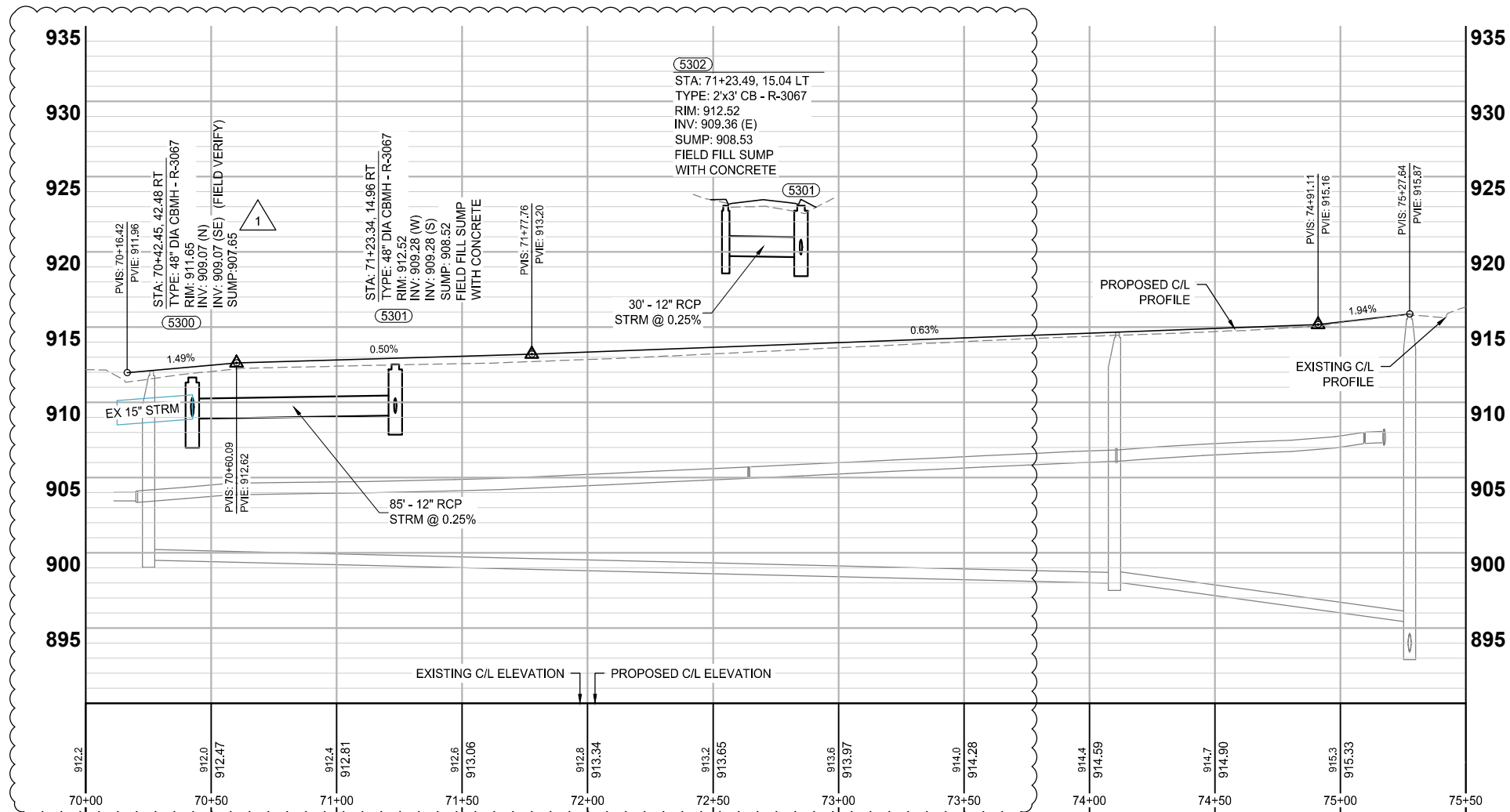
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LOCATION



DANUBE STREET



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SCALE: AS SHOWN
DESIGN BY: THC
PLAN BY: PTH
CHECK BY: PTH

REVISIONS

NO.	DATE	DESCRIPTION
2	02-05-2025	ADDENDUM NO. 2
1	05-19-2025	AUDITED PROFILE AND STRM SWR

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PAUL HORNBY, PE

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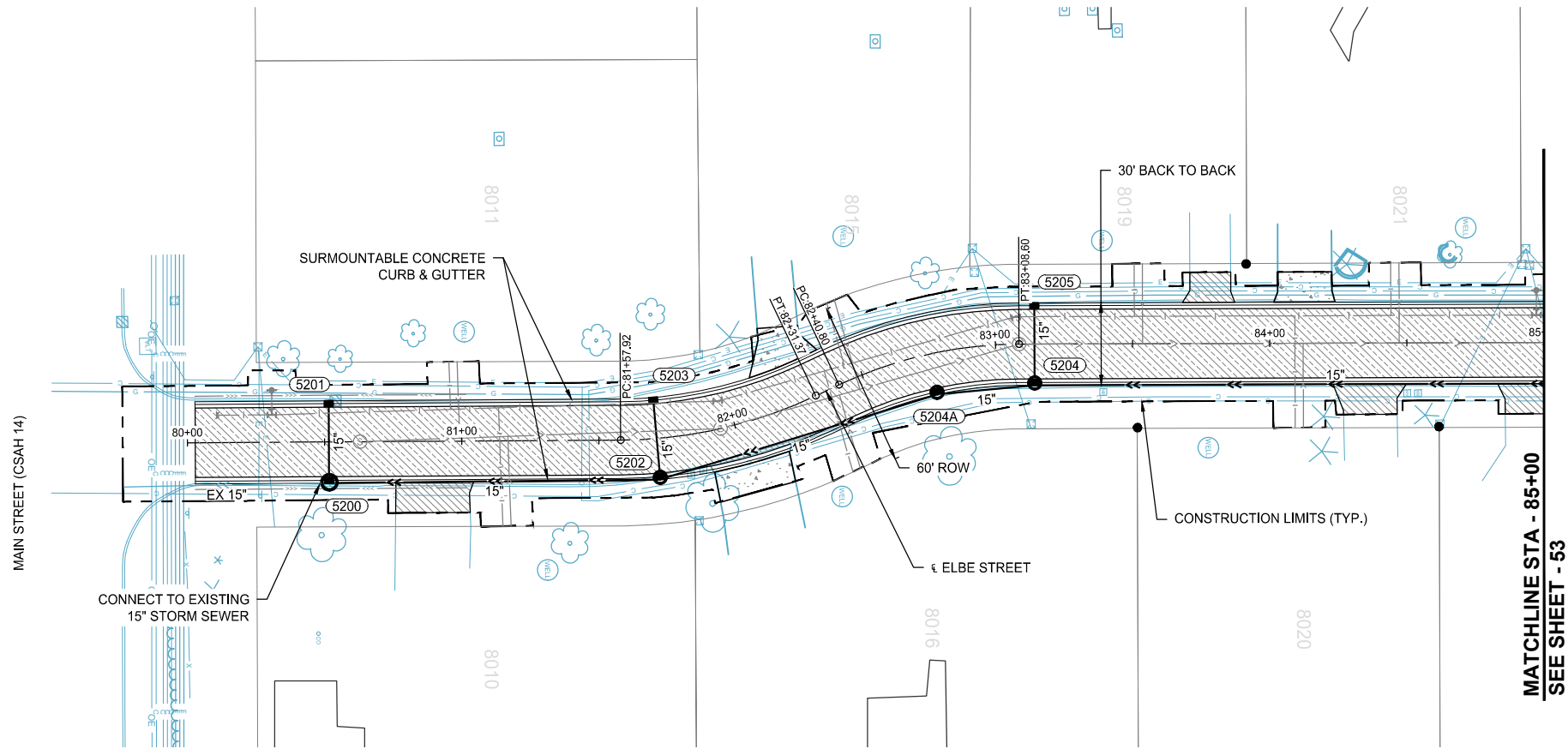
2024 STREET RECONSTRUCTION PROJECT CITY OF LINO LAKES

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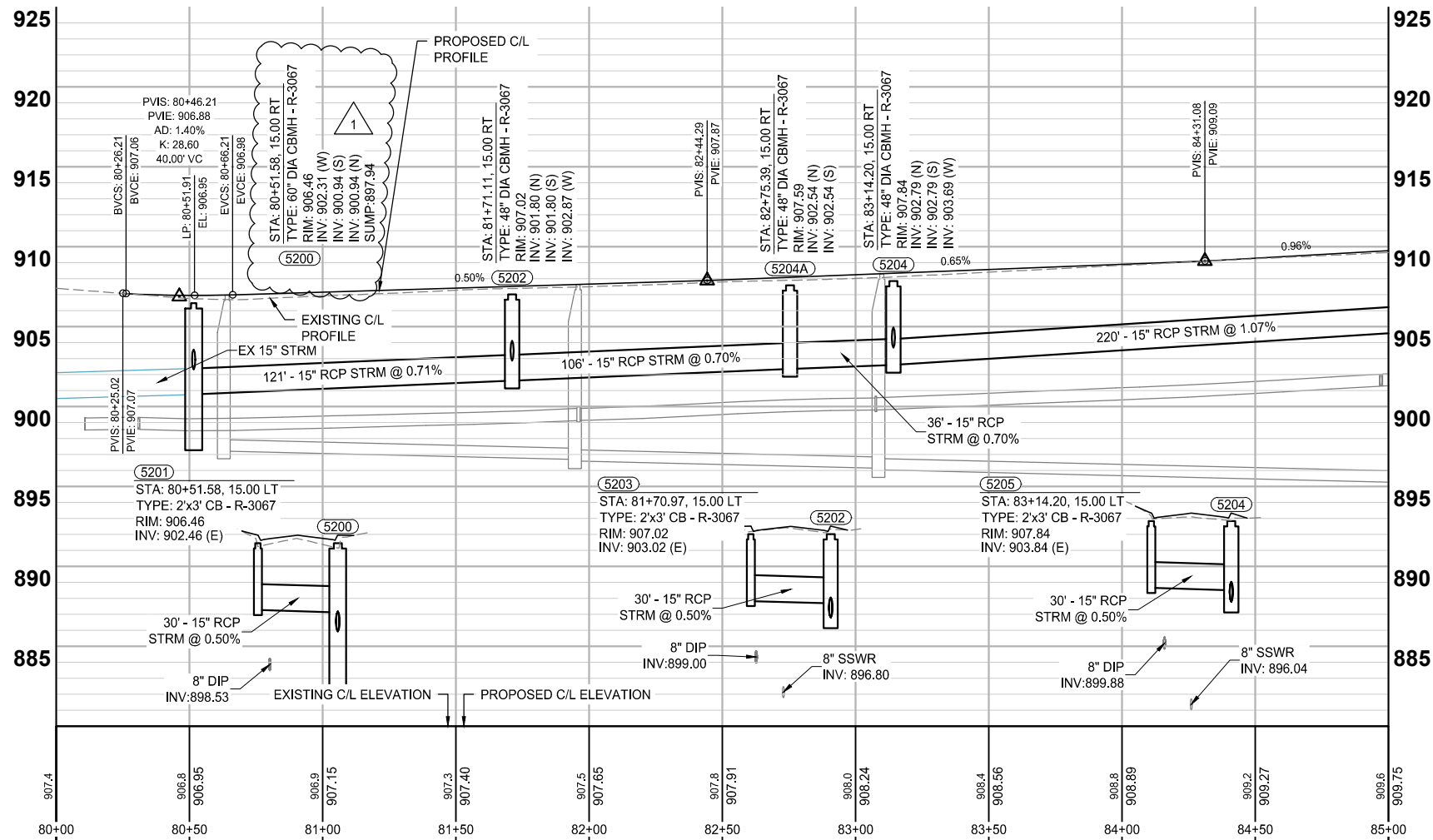
SHEET

51 OF 97

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ELBE STREET



LOCATION



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REVISIONS

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2	02-05-2025	ADDENDUM NO. 2
1	03/19/2025	REVISED STORM SEWER

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STREET AND STORM SEWER CONSTRUCTION PLAN

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

STREET CONSTRUCTION NOTES:

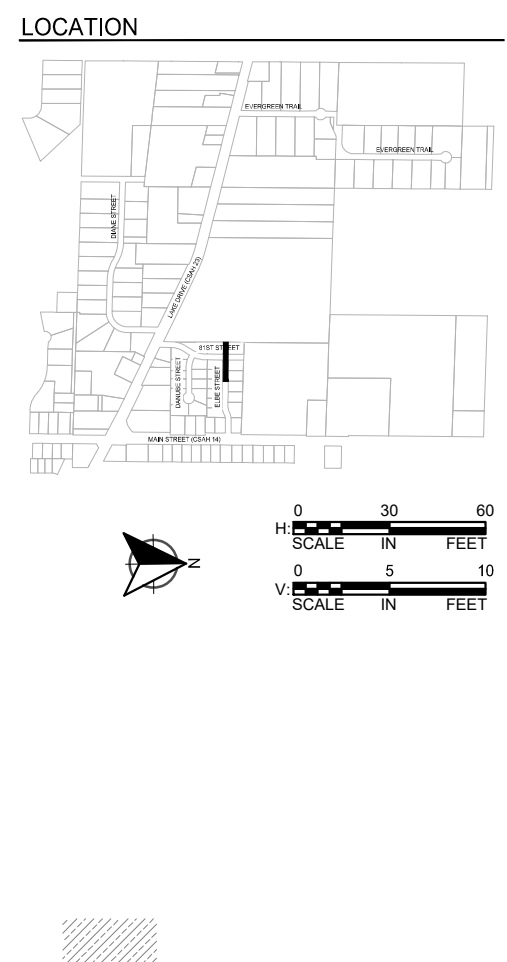
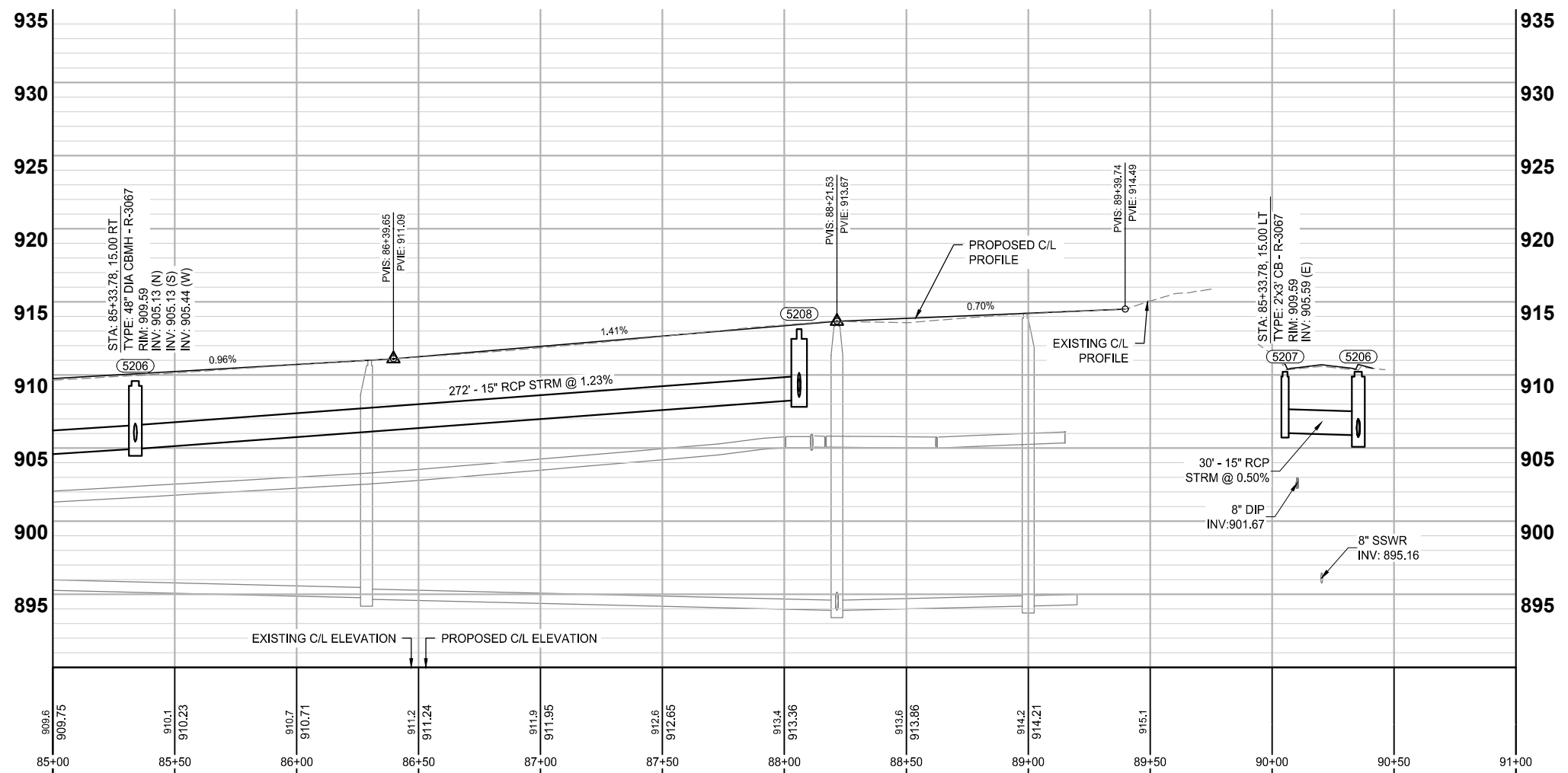
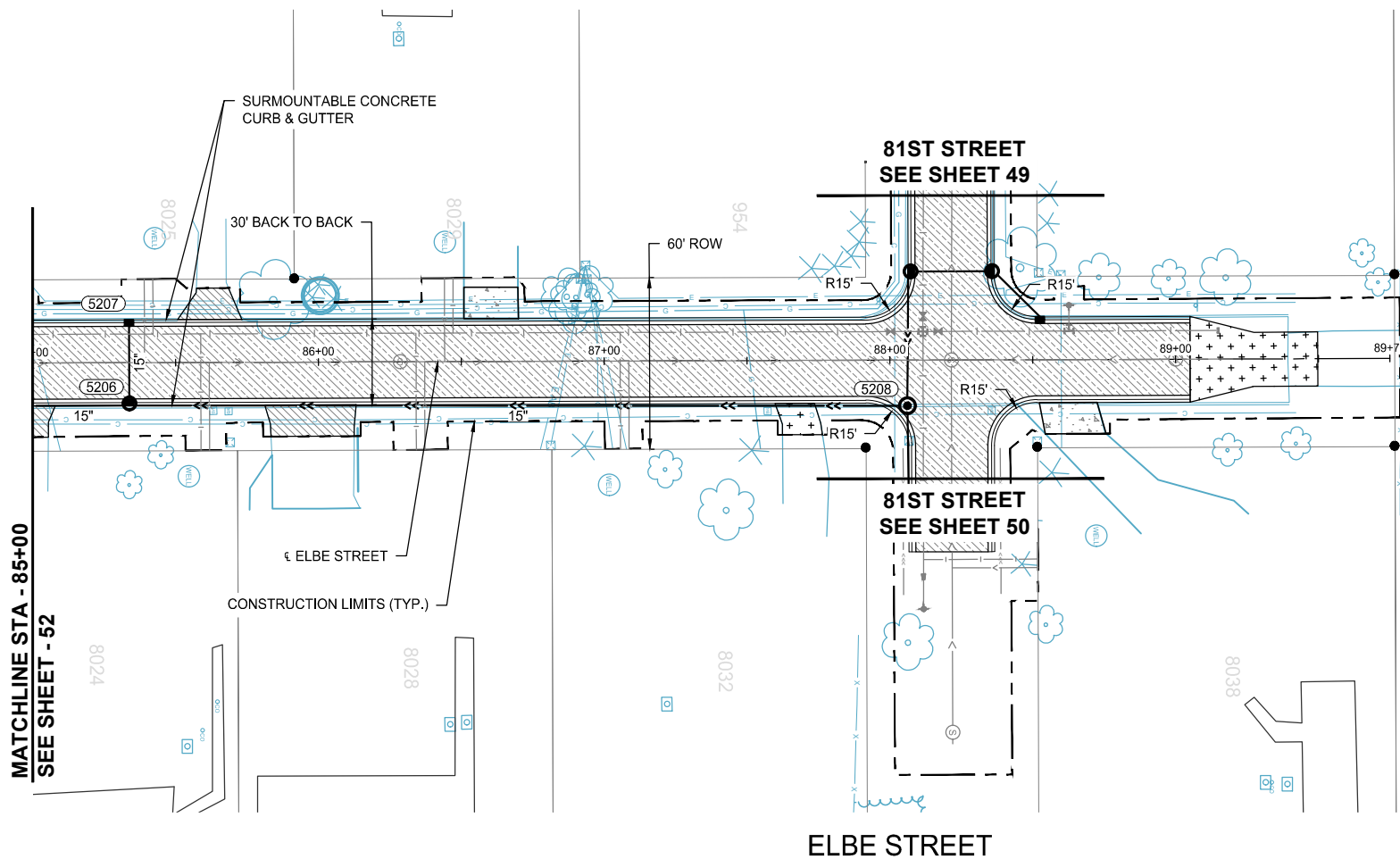
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WSB PROJECT NO.
023620-000

SHEET

52 OF 97

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CITY OF LINO LAKES

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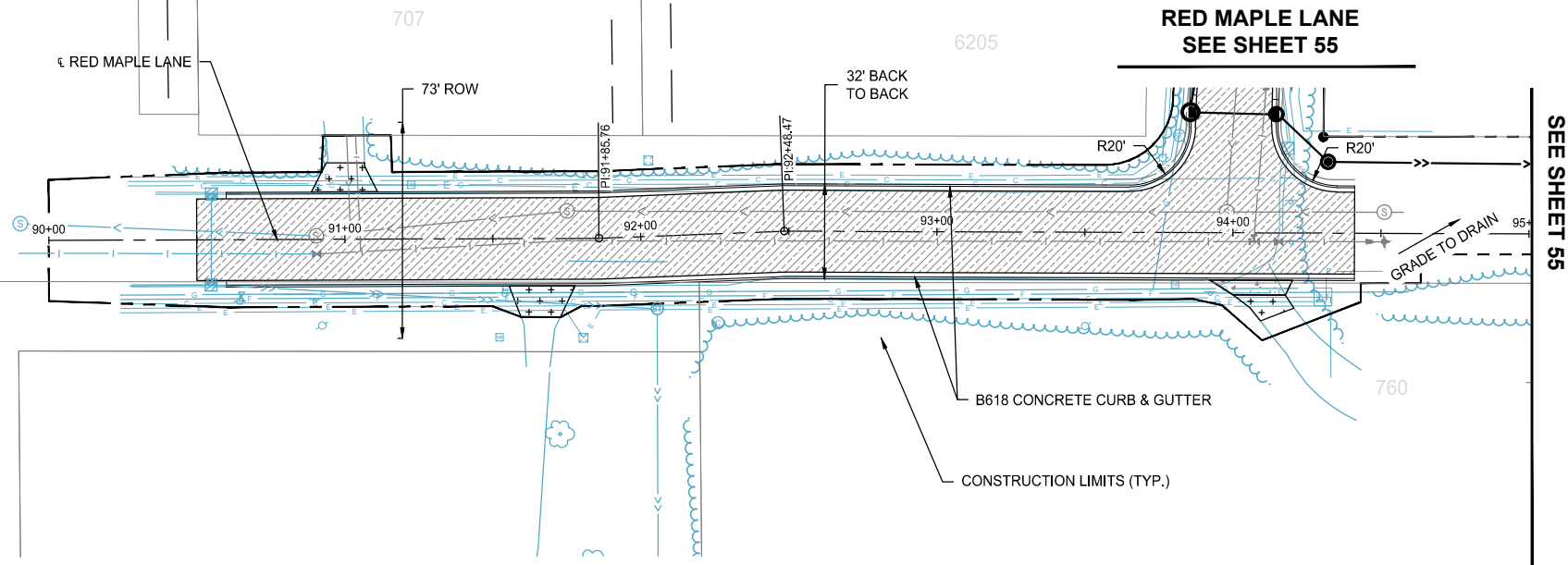
PAUL HORNBY, PE
DATE: 01-24-2025 LIC. NO. 23359

STREET AND STORM SEWER CONSTRUCTION PLAN

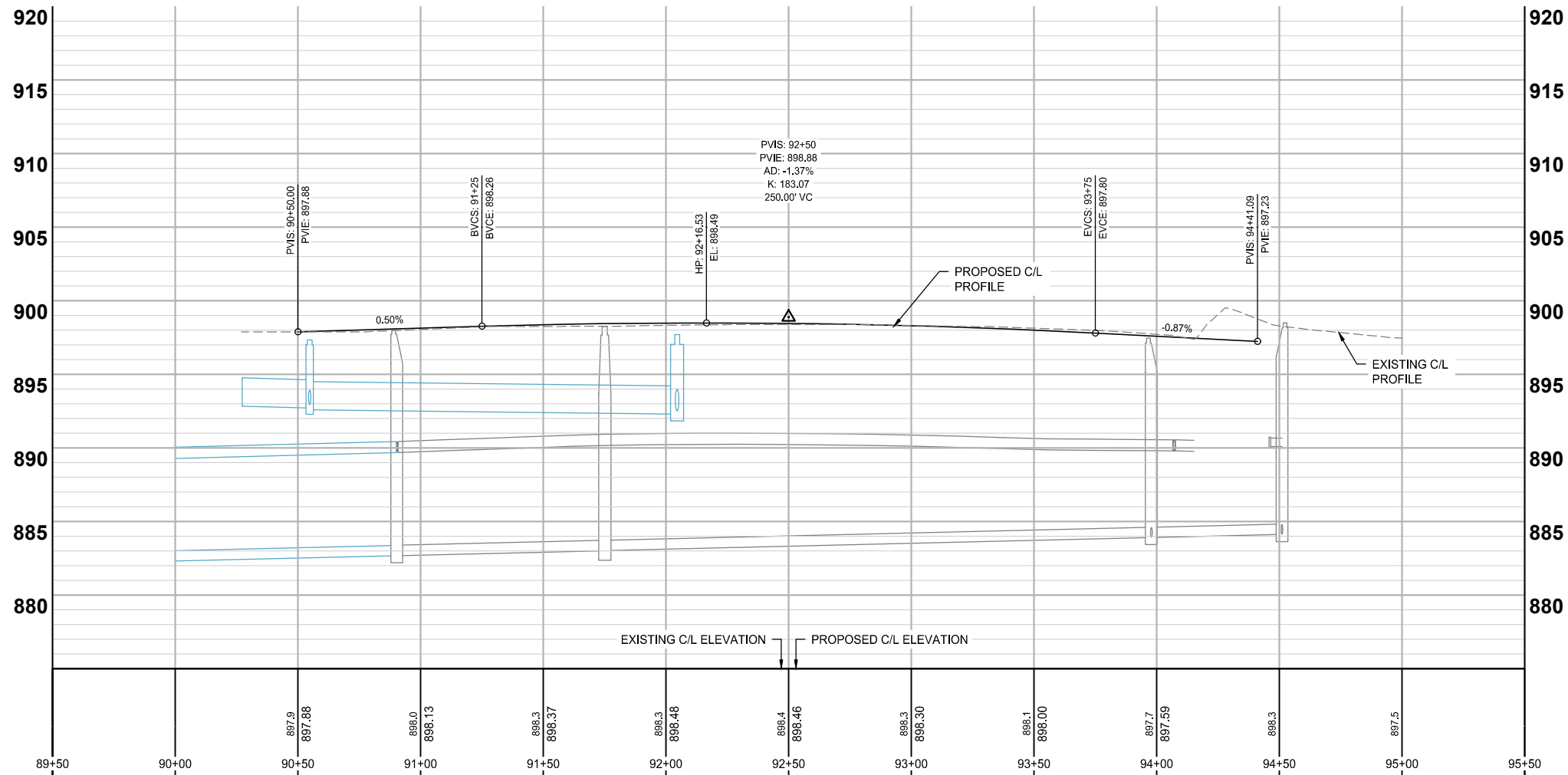
2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO. 023620-000
SHEET 97 OF 97

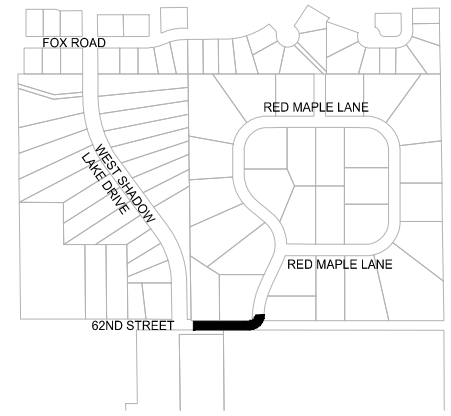
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62ND STREET



LOCATION



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STREET AND STORM SEWER CONSTRUCTION PLAN

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

STREET CONSTRUCTION NOTES:

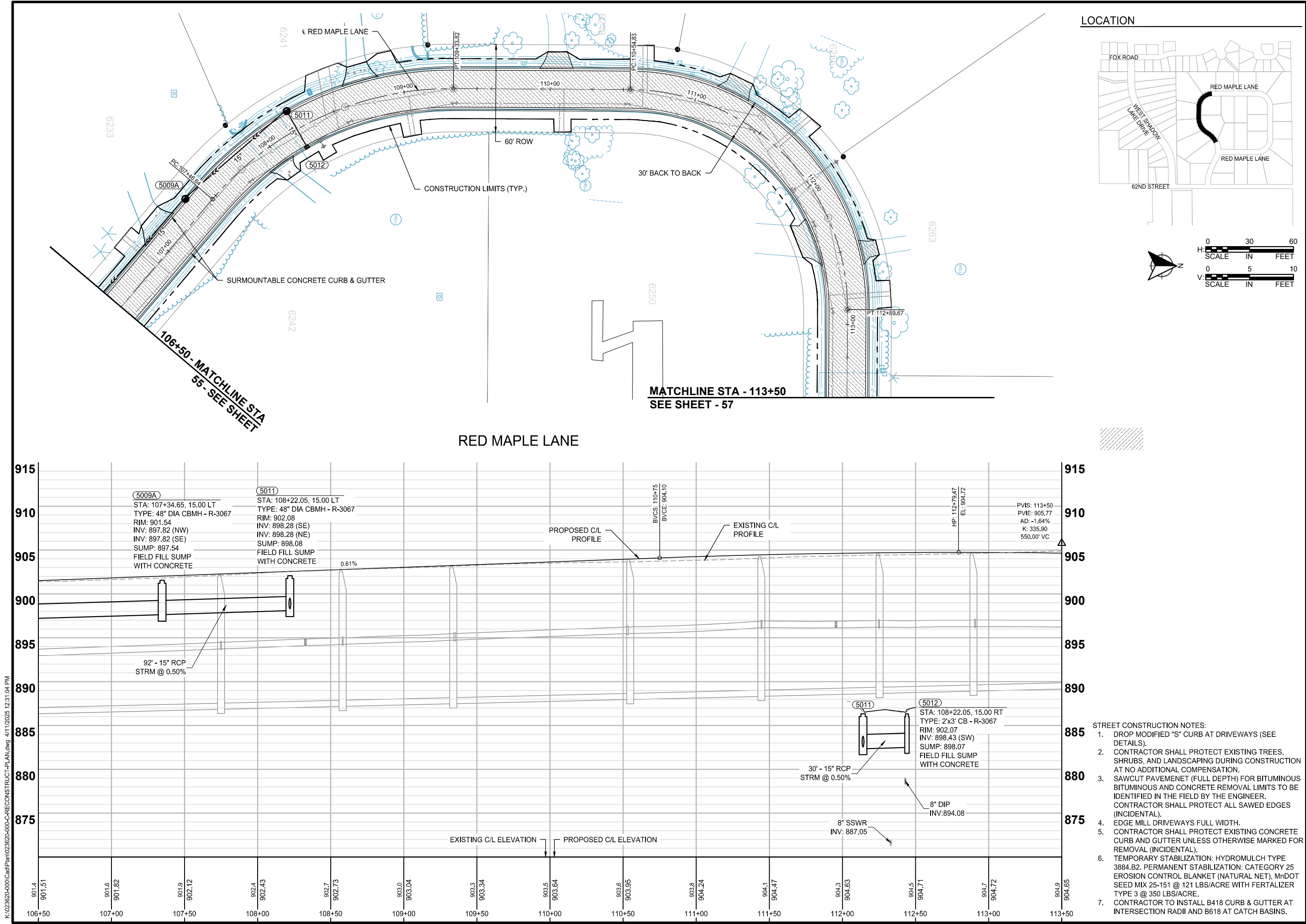
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WSB PROJECT NO. 023620-000

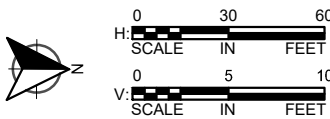
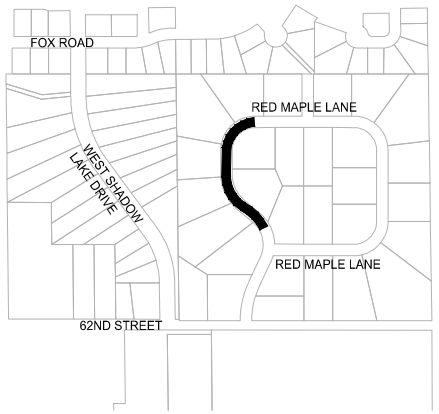
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54 OF 97

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LOCATION



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STREET AND STORM SEWER CONSTRUCTION PLAN

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CITY OF LINO LAKES

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WSB PROJECT NO.
023620-000

SHEET

56 OF 97

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SEE SHEET - 56

MATCHLINE STA - 113+50

FOX CIRCLE TRAIL
SEE SHEET 60

SEE SHEET 60 FOR
BITUMINOUS WALK
RESTORATION

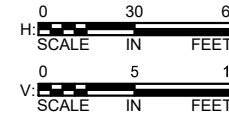
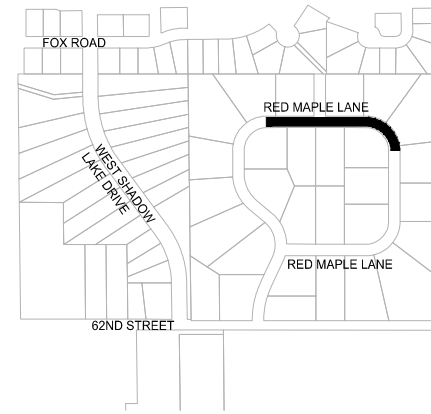
30' BACK TO BACK

CONSTRUCTION LIMITS (TYP.)

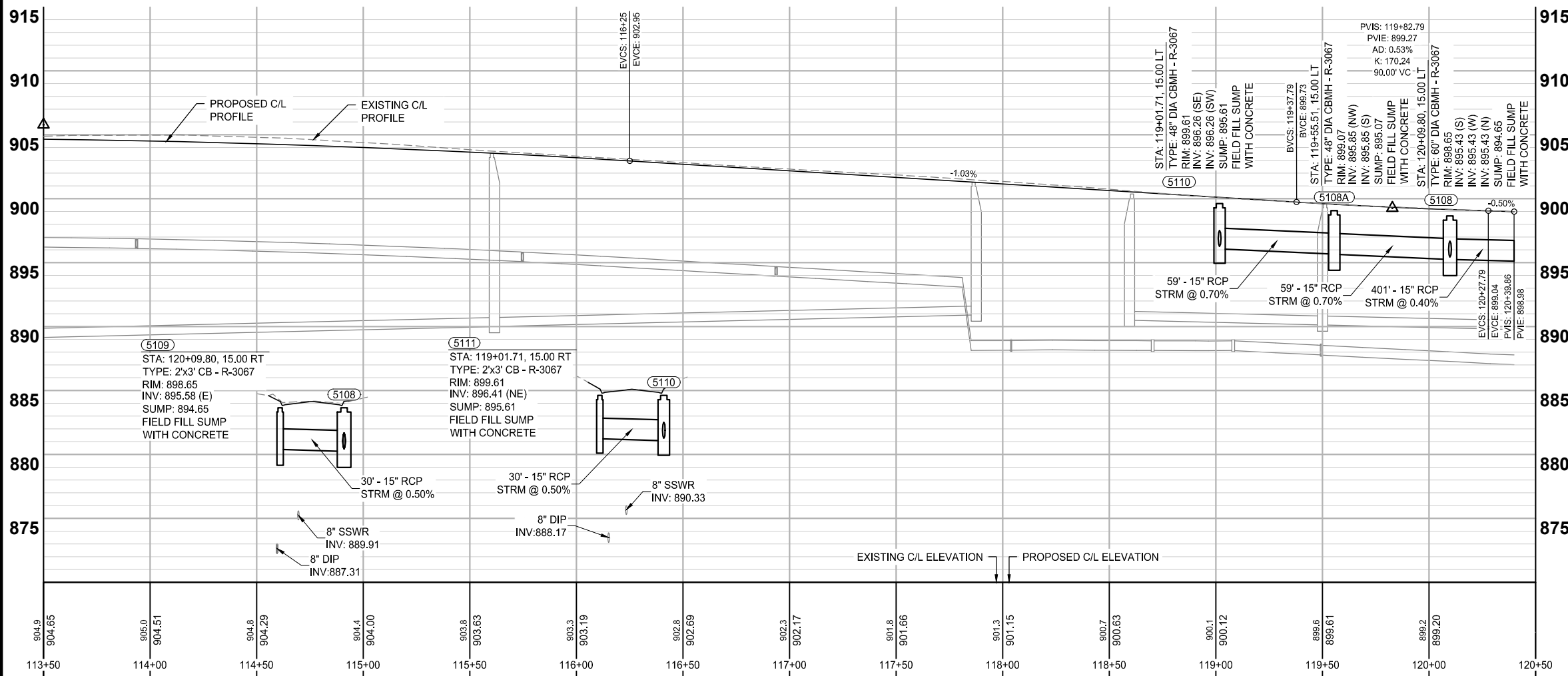
SURMOUNTABLE CONCRETE
CURB & GUTTER

MATCHLINE STA - 120+40 - 135+75
SEE SHEET - 58

LOCATION



RED MAPLE LANE



SCALE: AS SHOWN
PLAN BY: THC

DESIGN BY: THC
CHECK BY: PTH

REVISIONS

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STREET AND
STORM SEWER
CONSTRUCTION
PLAN

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

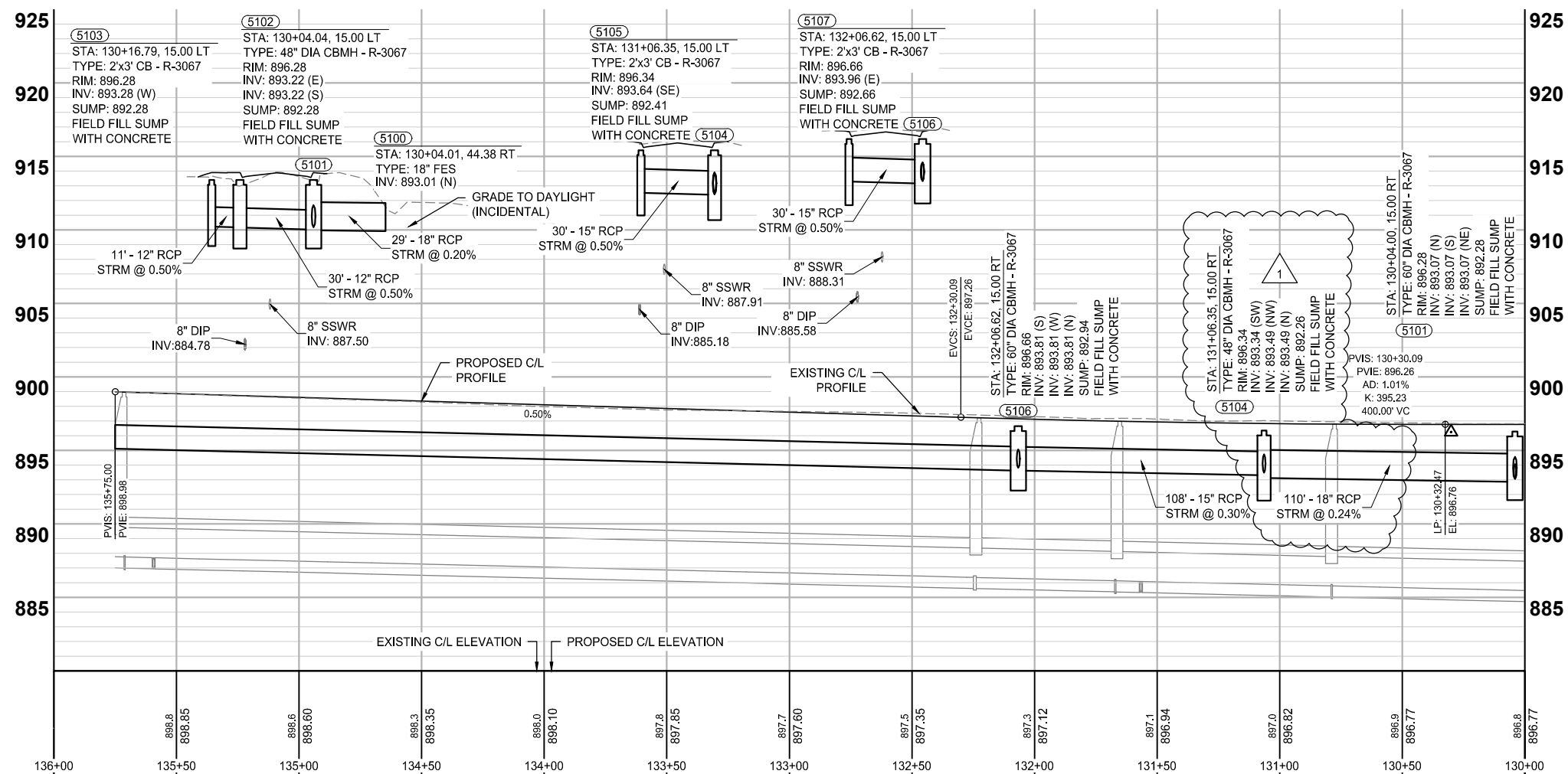
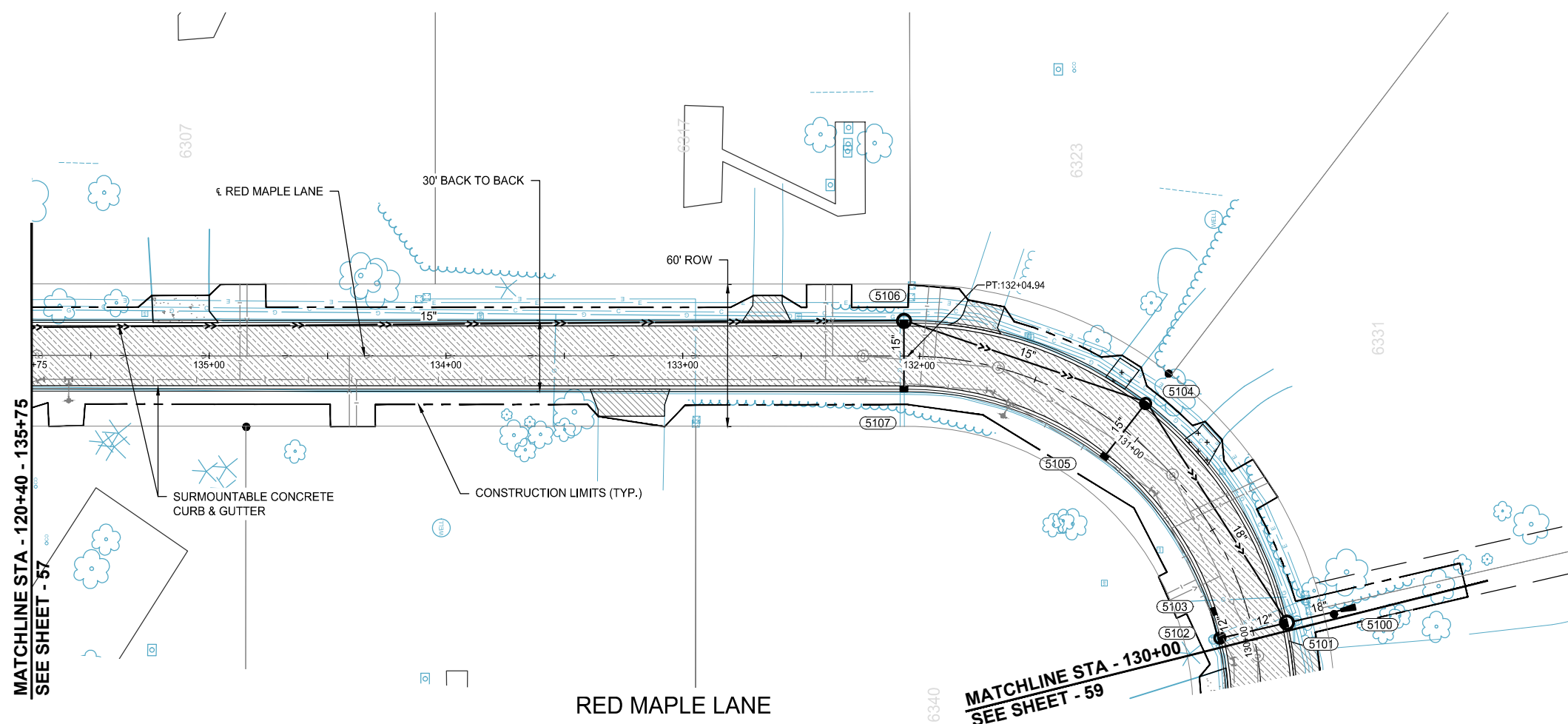
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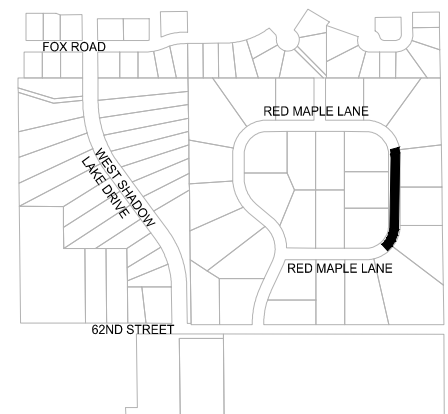
WSB PROJECT NO.
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SHEET

57 OF 97



LOCATION



SCALE: AS SHOWN
PLAN BY: THC

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REVISIONS		
NO.	DATE	DESCRIPTION
1	03/19/2025	REVISION 1 ADJUSTED STORM SEWER

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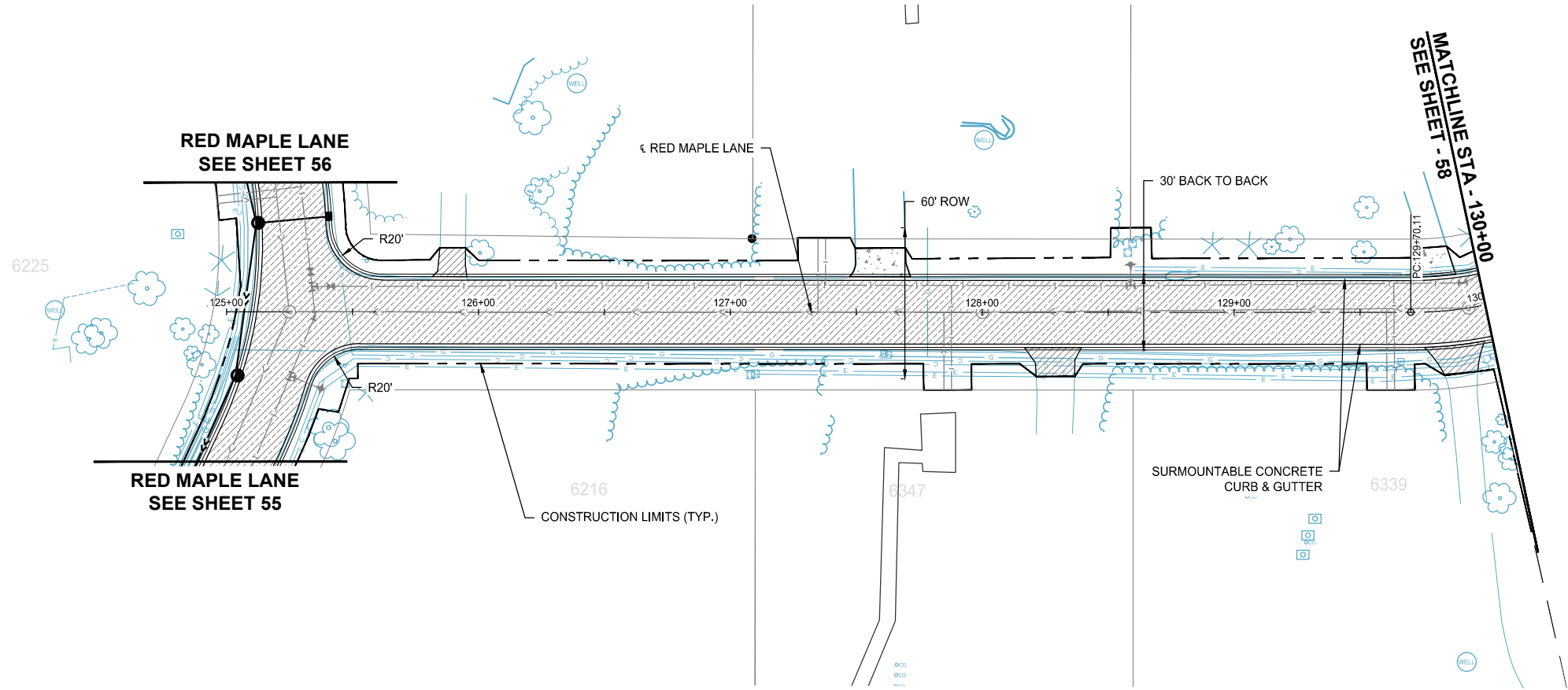
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CITY OF LINO LAKES

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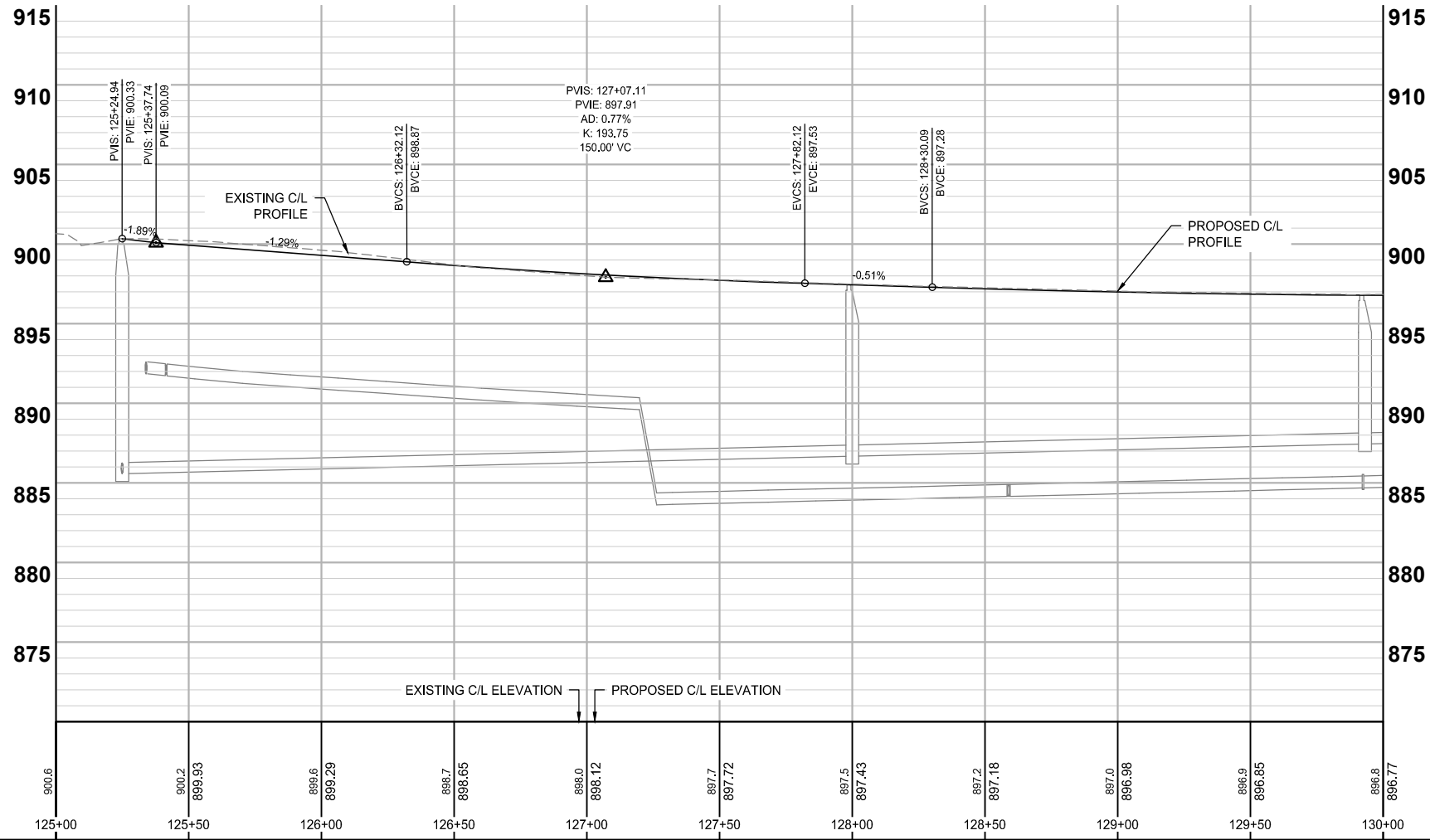
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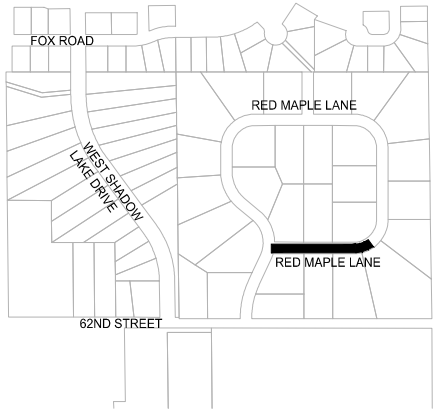
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RED MAPLE LANE



LOCATION



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PAUL HORNBY, PE

DATE: 01-24-2025 LIC. NO. 23359

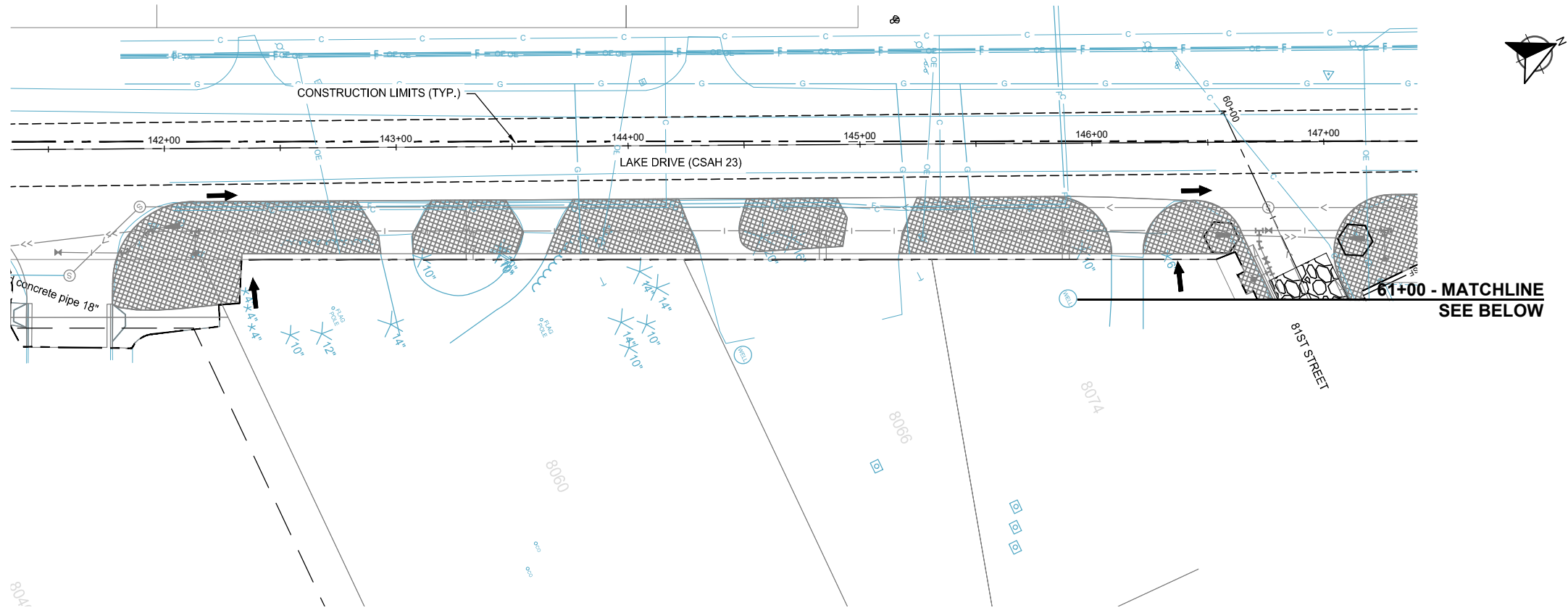
STREET AND STORM SEWER CONSTRUCTION PLAN

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

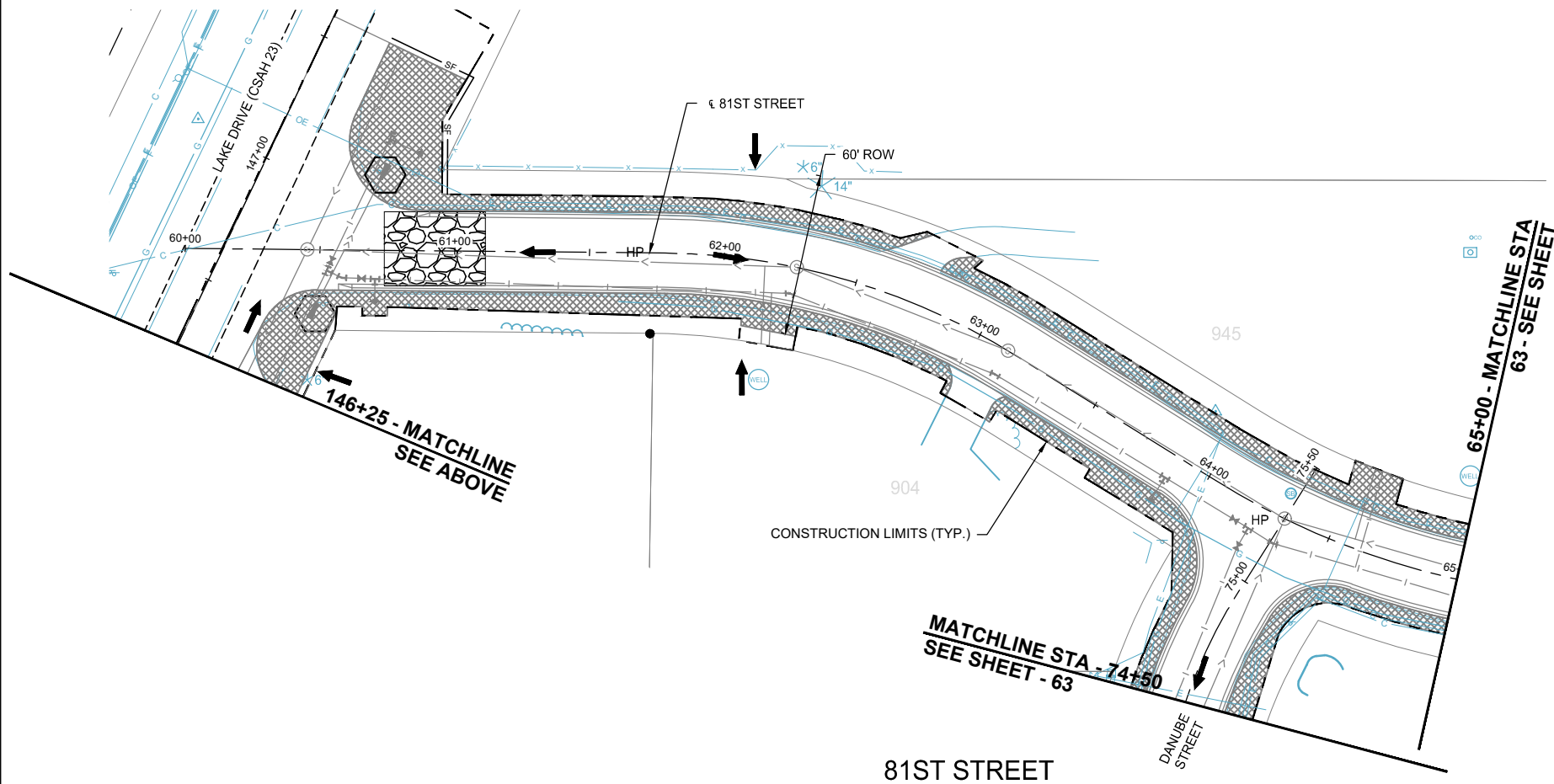
WSB PROJECT NO. 023620-000

SHEET 59 OF 97

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LAKE DRIVE (CR 23)



81ST STREET

LOCATION



LEGEND

- INLET PROTECTION
- FLOW DIRECTION
- RIP RAP
- LOW POINT
- HIGH POINT
- WOOD FIBER BIOROLL
- SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- PERMANENT STABILIZATION:
SODDING TYPE LAWN
TEMPORARY STABILIZATION:
SLOPE LESS THAN 3:1 - HYDRAULIC
MULCH TYPE 3884.B.2 @2500 lbs/ACRE
SLOPE 3:1 OR GREATER - DITCH
BOTTOMS, PONDS, EROSION CONTROL
BLANKET TYPE 25 WITH WET DITCH @
20 lbs/ACRE OR OATS @100lbs/ACRE
- DITCH AND WETLAND:
WET DITCH @ 20 lbs/ACRE
FERTILIZER TYPE 4 @ 180 lbs/ACRE
- PERMANENT STABILIZATION:
SOUTHERN TALLGRASS ROADSIDE @
26 lbs/ACRE
FERTILIZER TYPE 3 @ 200 lbs/ACRE
TEMPORARY STABILIZATION:
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MULCH TYPE 3884.B.2 @2500 lbs/ACRE
SLOPE 3:1 OR GREATER - DITCH
BOTTOMS, PONDS, EROSION
CONTROL BLANKET TYPE 25 WITH
WET DITCH @ 20 lbs/ACRE OR OATS
@100lbs/ACRE

NOTES:

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wsb

CITY OF LINO LAKES

SCALE: AS SHOWN
PLAN BY: THC
DESIGN BY: THC
CHECK BY: PTH

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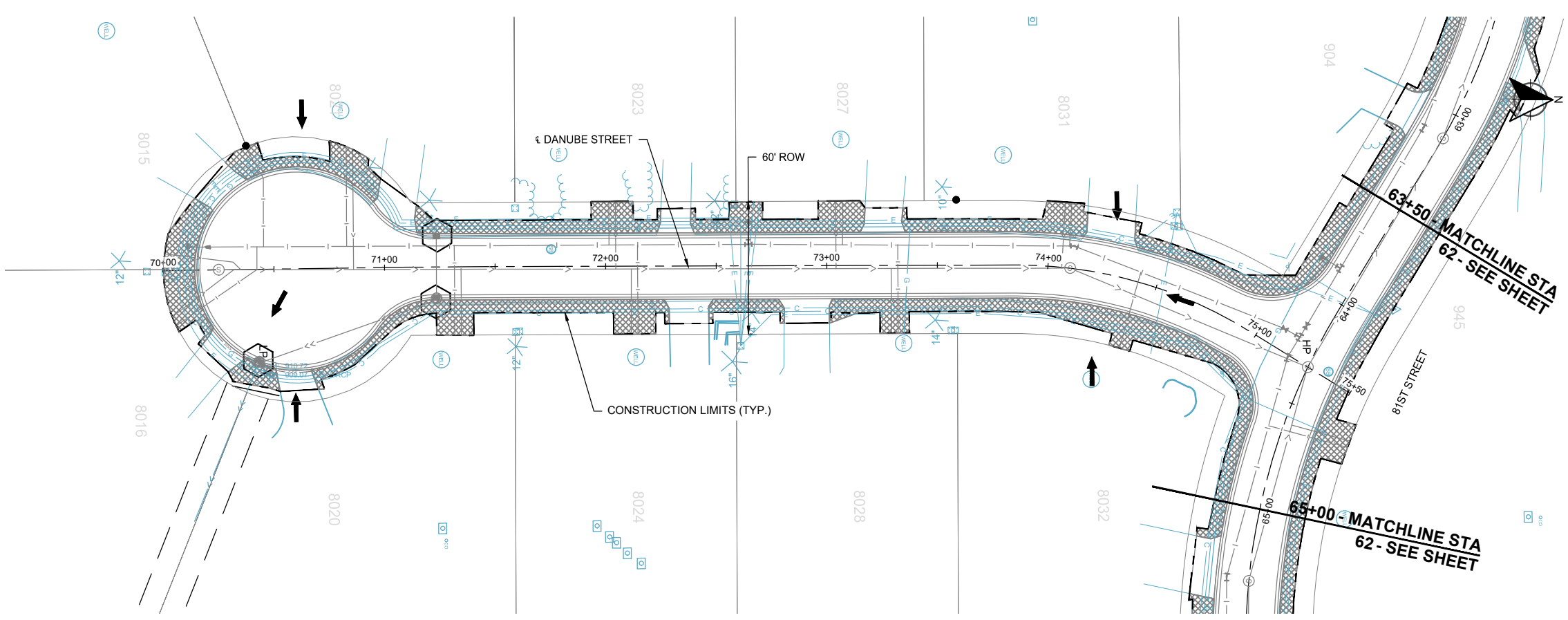
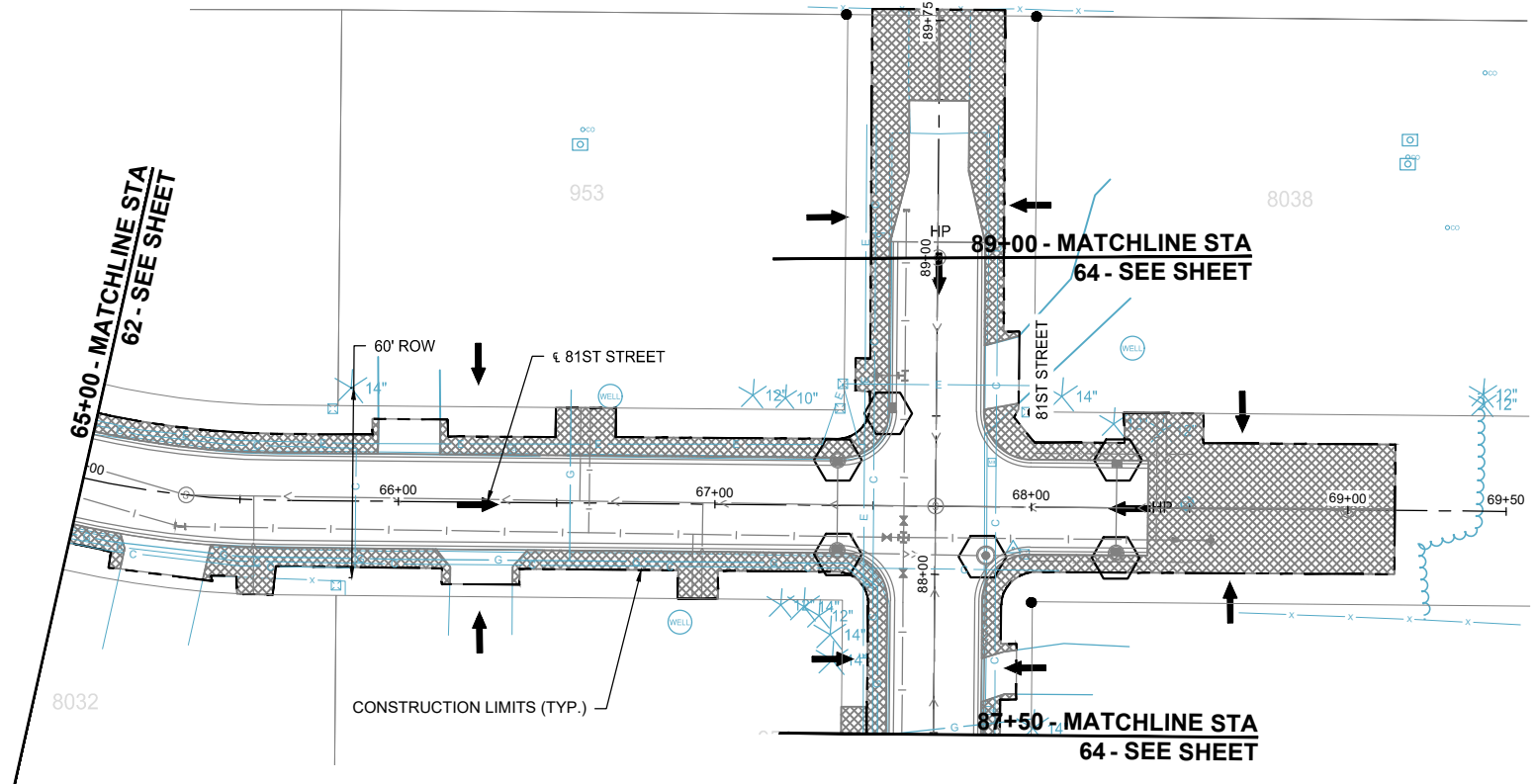
PAUL HORNBY, PE

DATE: 01-24-2025
LIC. NO.: 23359

EROSION CONTROL & SEDIMENT CONTROL PLAN

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

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LOCATION



LEGEND

- INLET PROTECTION
- FLOW DIRECTION
- RIP RAP
- LOW POINT
- HIGH POINT
- WOOD FIBER BIOROLL
- SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- PERMANENT STABILIZATION:**
 - SODDING TYPE LAWN
- TEMPORARY STABILIZATION:**
 - SLOPE LESS THAN 3:1 - HYDRAULIC MULCH TYPE 3884.B.2 @2500 lbs/ACRE
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- DITCH AND WETLAND:**
 - WET DITCH @ 20 lbs/ACRE
 - FERTILIZER TYPE 4 @ 180 lbs/ACRE
- PERMANENT STABILIZATION:**
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SCALE: AS SHOWN
PLAN BY: THC

DESIGN BY: THC
CHECK BY: PTH

REVISIONS	
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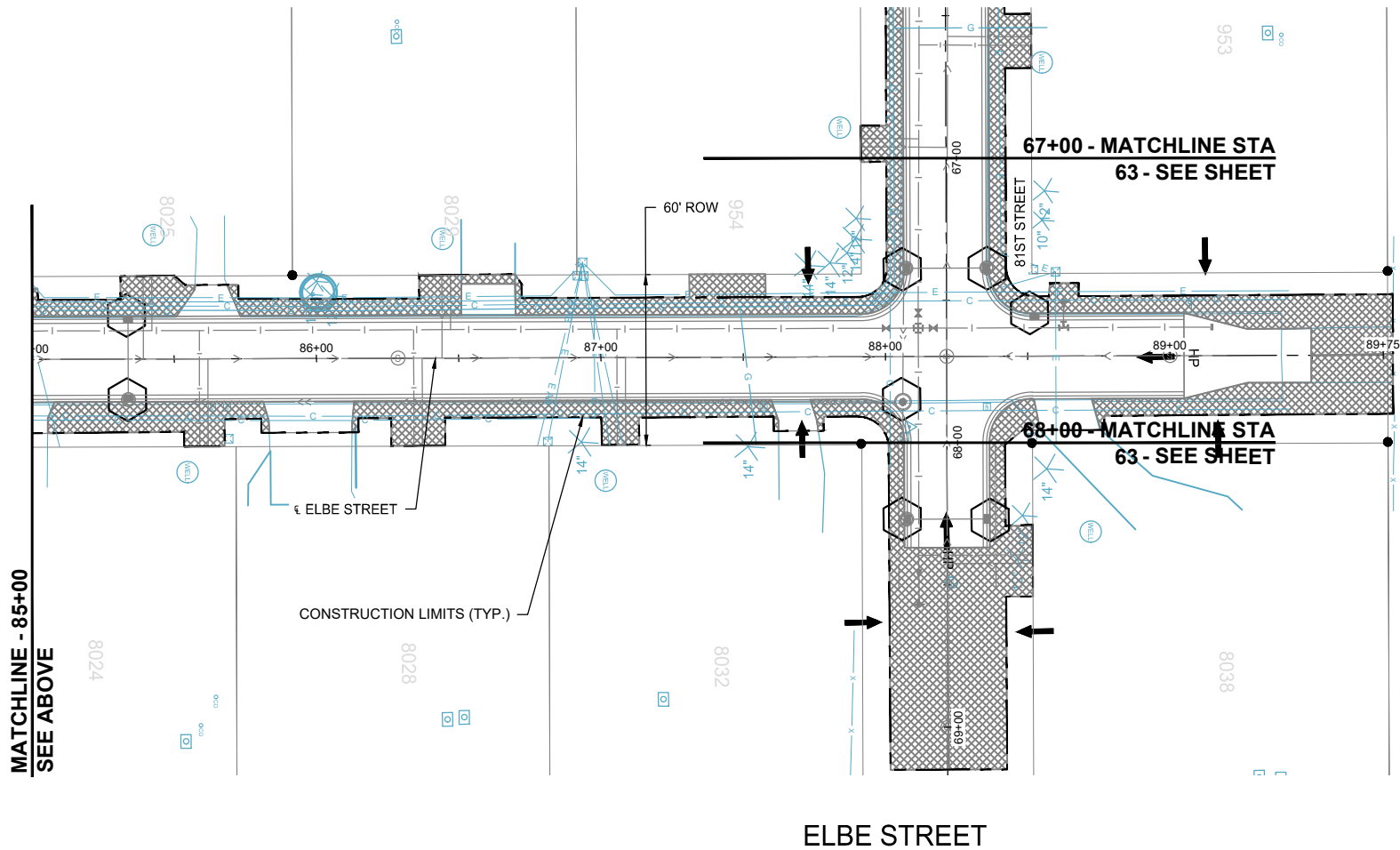
PAUL HORNBY, PE
DATE: 01-24-2025 LIC. NO.: 23359

EROSION CONTROL & SEDIMENT CONTROL PLAN

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO. 023620-000
SHEET 63 OF 97

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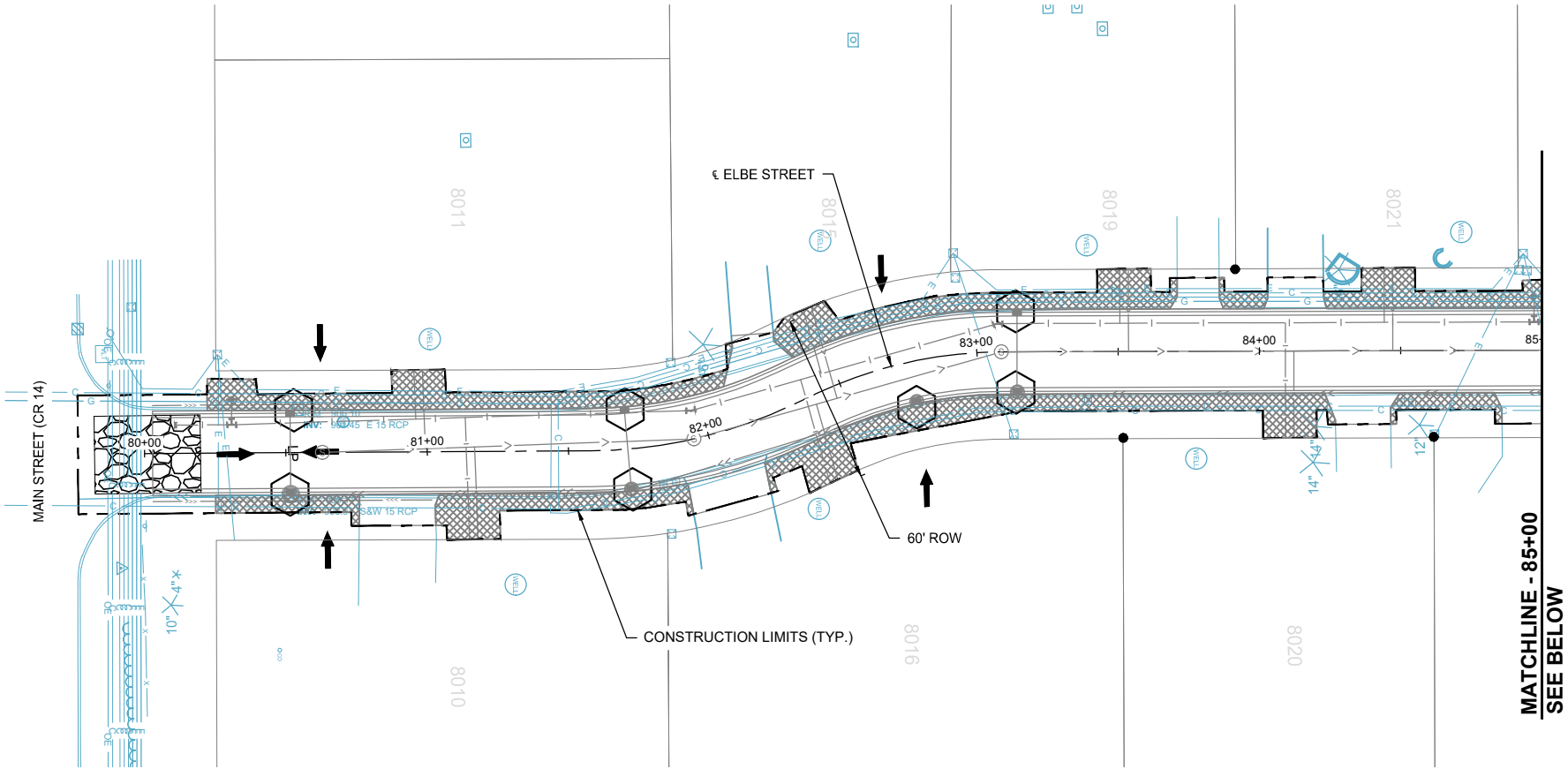


MATCHLINE - 85+00
SEE ABOVE

ELBE STREET

67+00 - MATCHLINE STA
63 - SEE SHEET

68+00 - MATCHLINE STA
63 - SEE SHEET



ELBE STREET

MATCHLINE - 85+00
SEE BELOW



LEGEND

- INLET PROTECTION
- FLOW DIRECTION
- RIP RAP
- LOW POINT
- HIGH POINT
- WOOD FIBER BIOROLL
- SILT FENCE
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wsb **CITY OF LINO LAKES**

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PAUL HORNBY, PE
DATE: 01-24-2025 LIC. NO. 23359

**EROSION
CONTROL &
SEDIMENT
CONTROL PLAN**

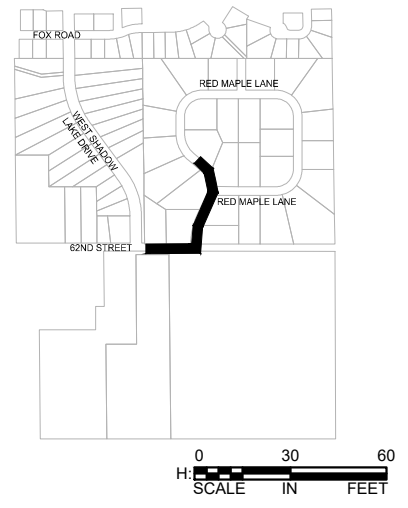
**2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES**



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695



LOCATION






SCALE: AS SHOWN
PLAN BY: THC

DESIGN BY: THC
CHECK BY: PTH

REVISIONS	
NO.	DESCRIPTION

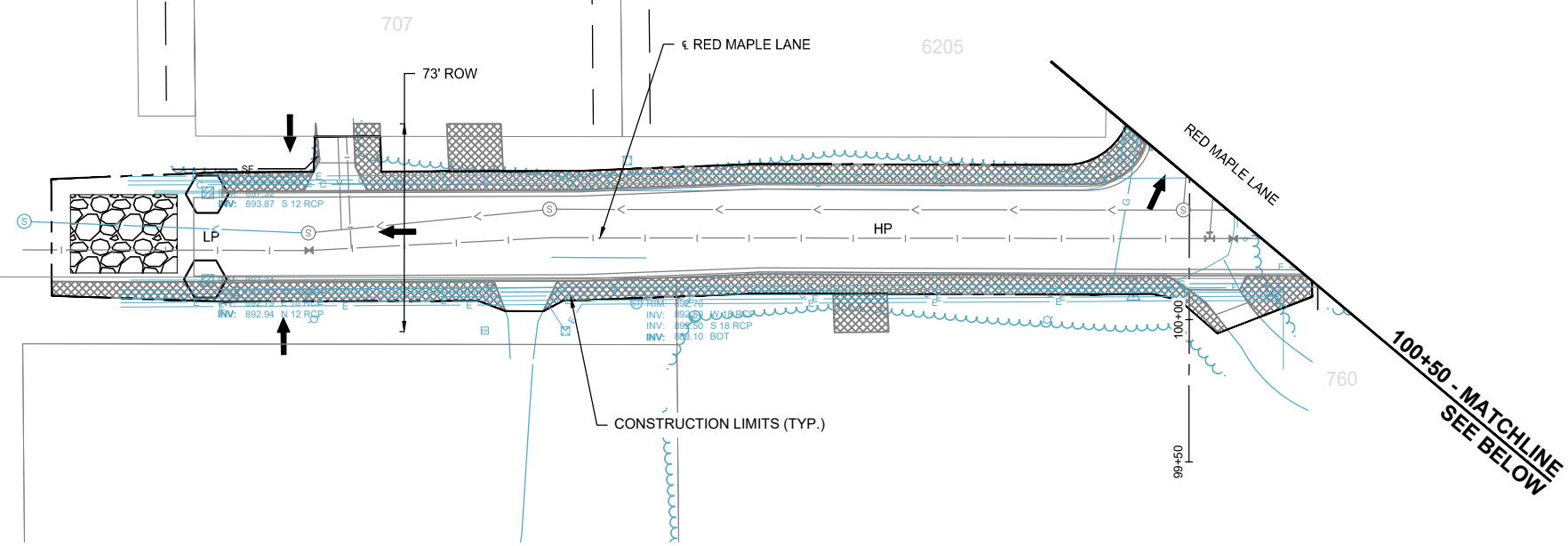
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










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EROSION CONTROL & SEDIMENT CONTROL PLAN

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

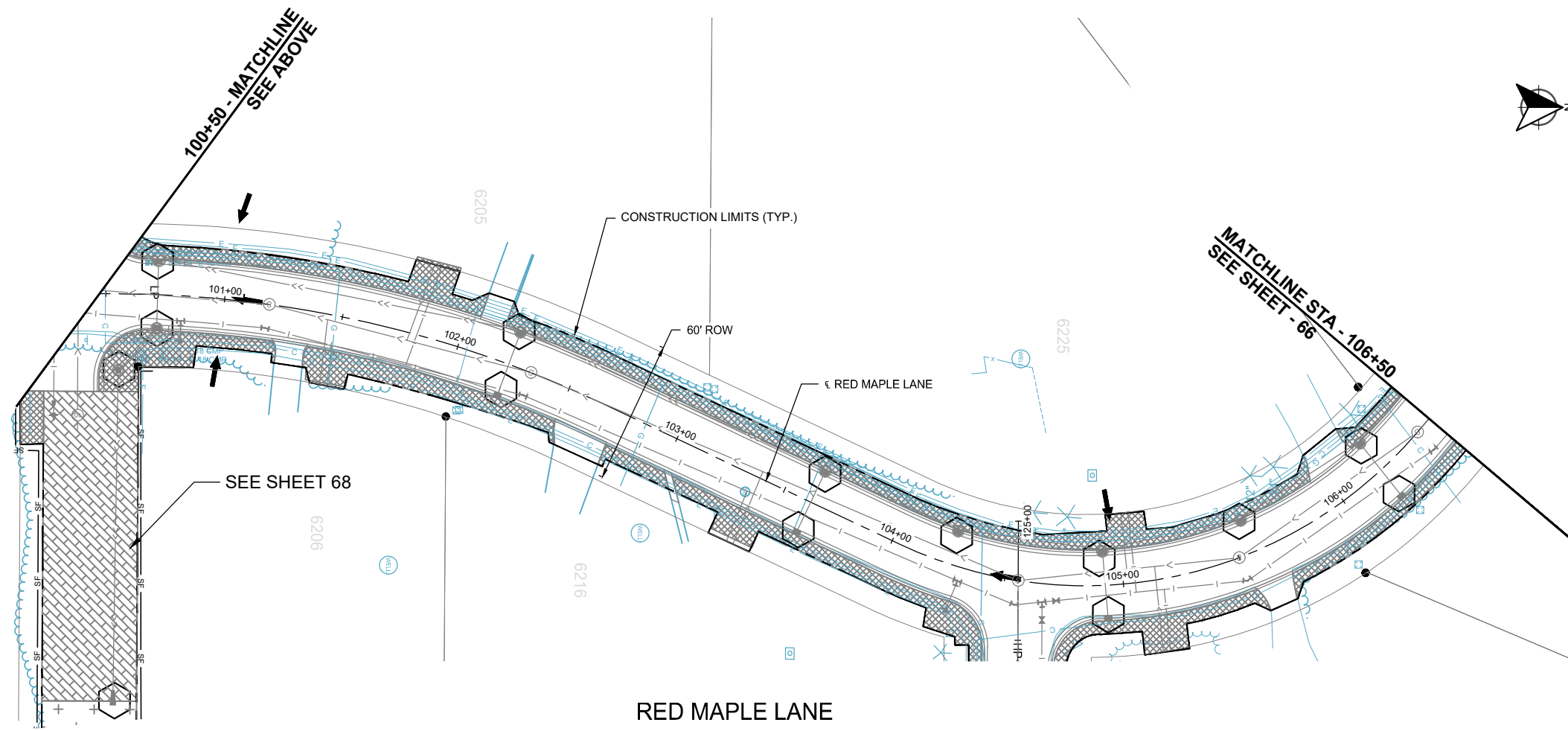


LEGEND

-  INLET PROTECTION
-  FLOW DIRECTION
-  RIP RAP
-  LOW POINT
-  HIGH POINT
-  WOOD FIBER BIOROLL
-  SILT FENCE
-  STABILIZED CONSTRUCTION ENTRANCE
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SODDING TYPE LAWN
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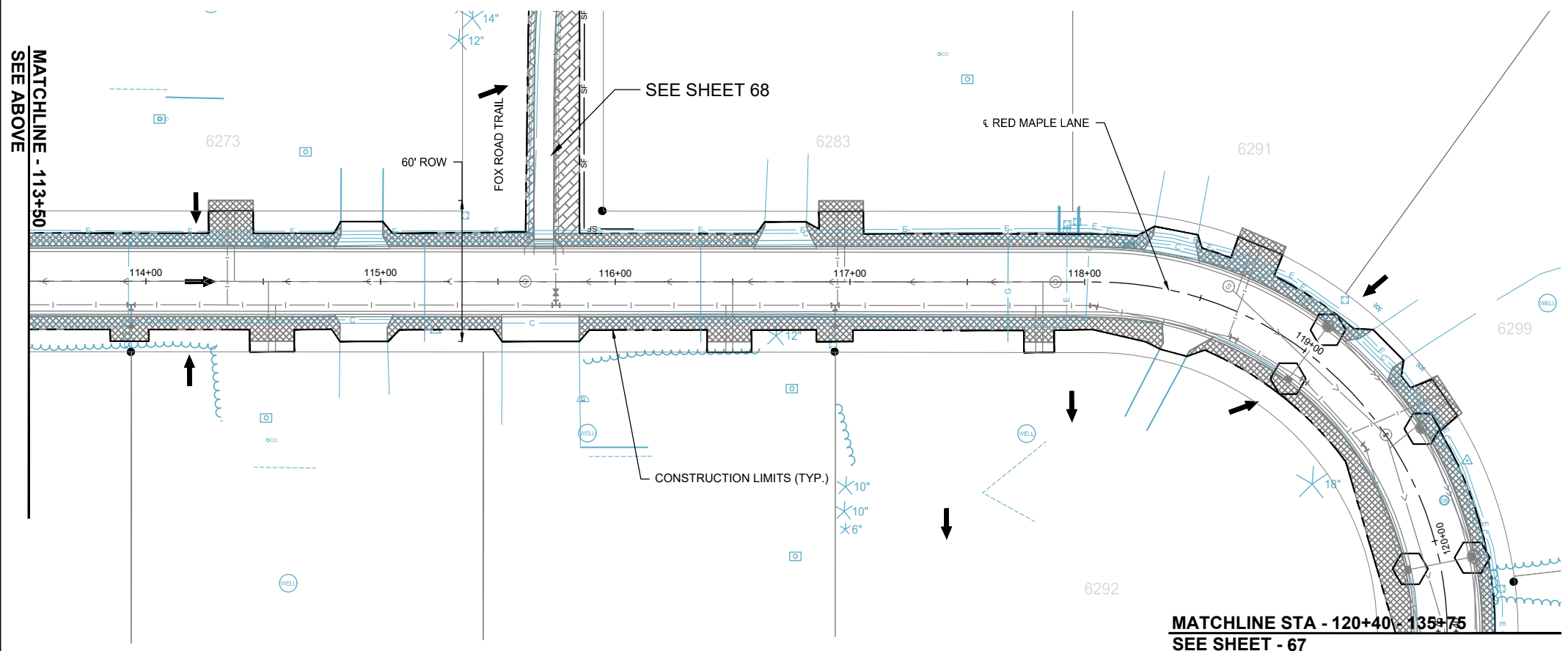
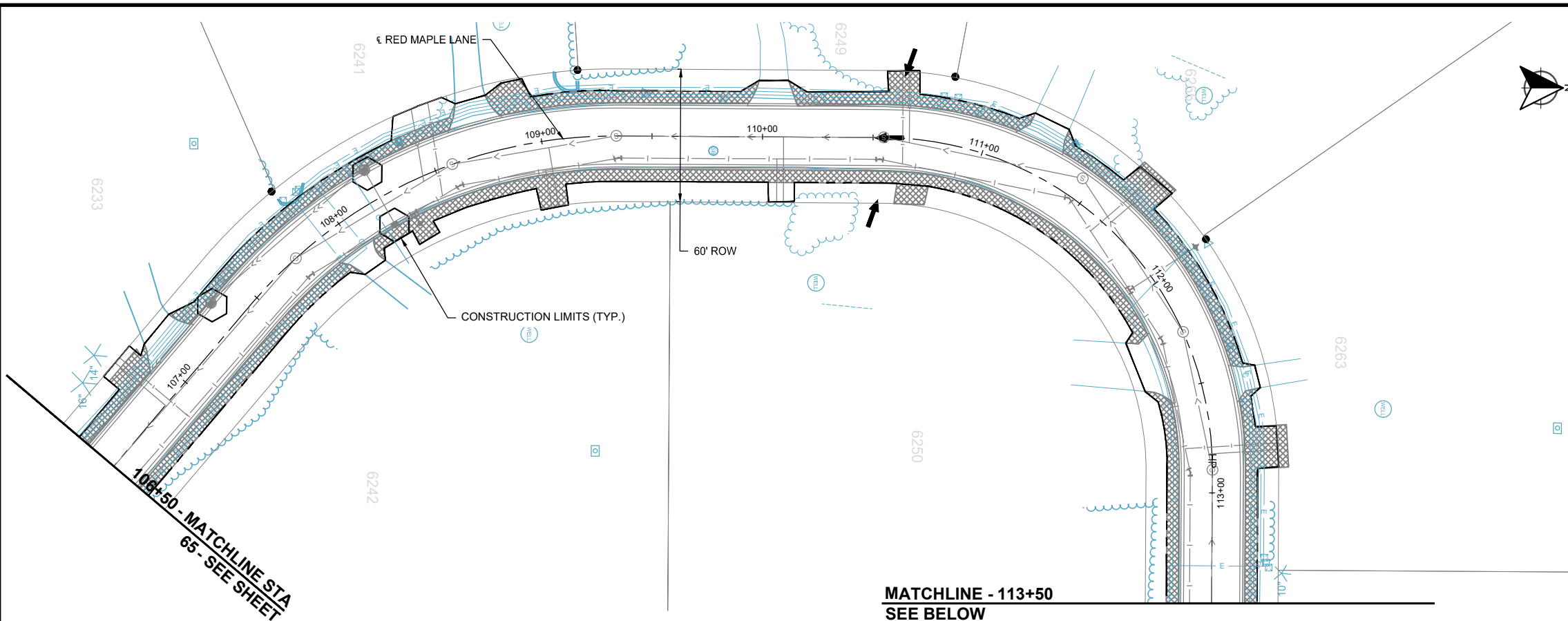
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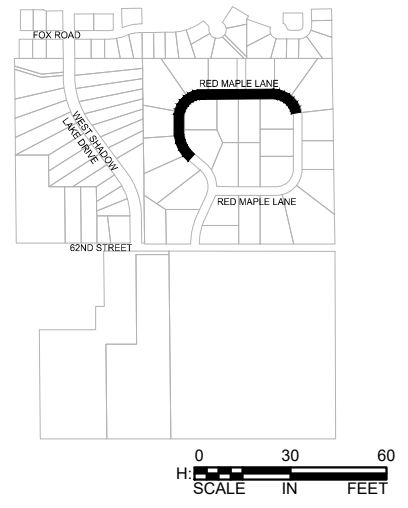
62ND STREET

RED MAPLE LANE

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LOCATION



LEGEND

- INLET PROTECTION
- FLOW DIRECTION
- RIP RAP
- LOW POINT
- HIGH POINT
- WOOD FIBER BIOROLL
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wsb

CITY OF LINO LAKES

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PLAN BY: THC

DESIGN BY: THC
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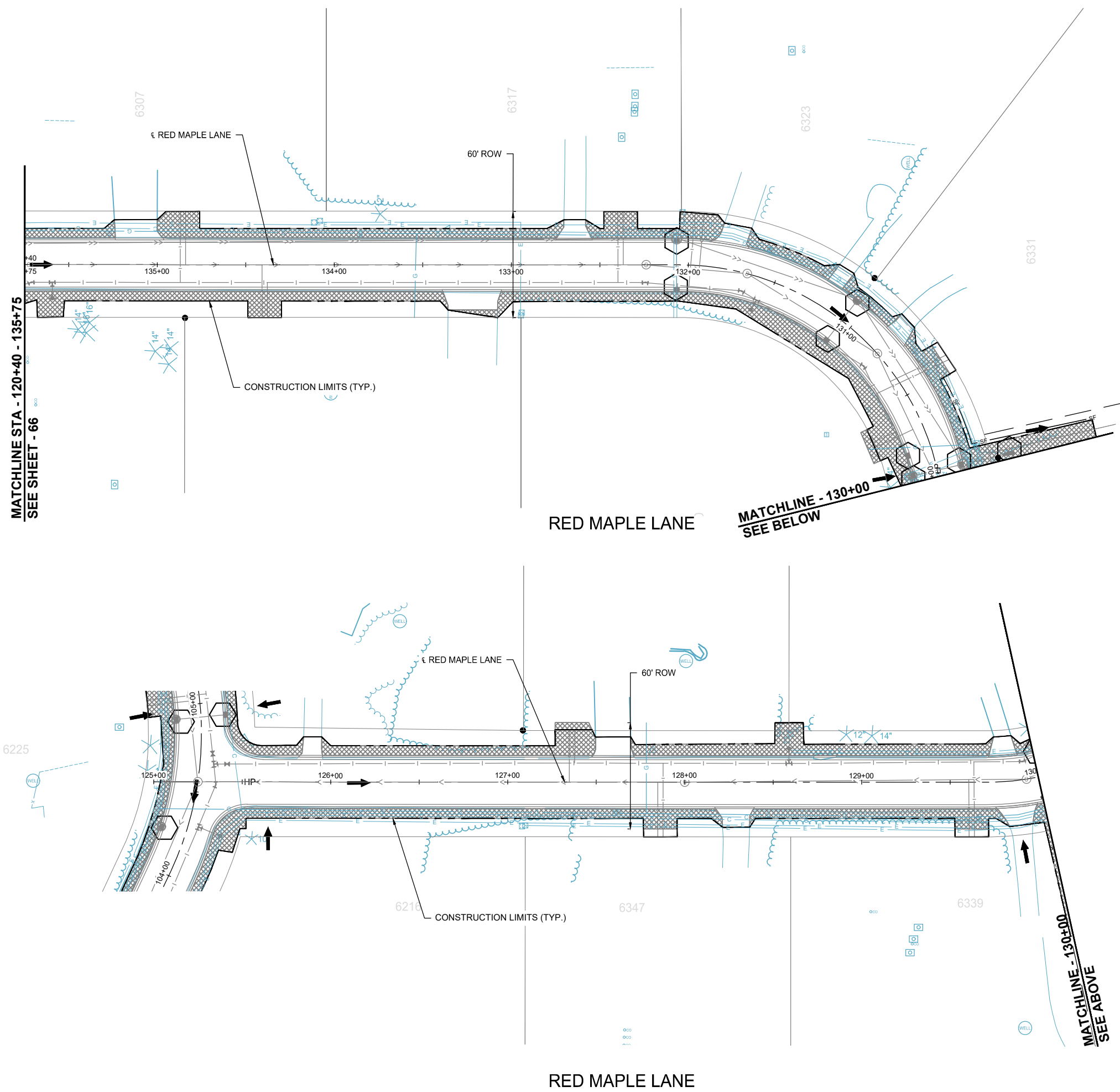
PAUL HORNBY, PE
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EROSION CONTROL & SEDIMENT CONTROL PLAN

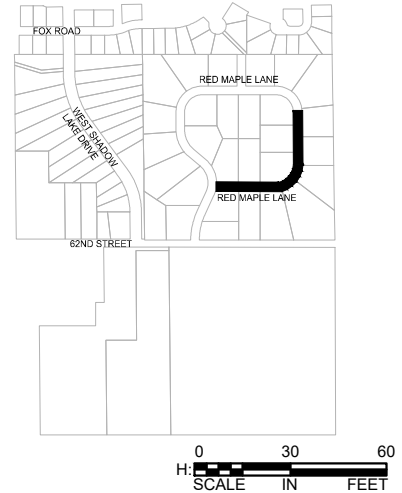
2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO. 023620-000
SHEET 66 OF 97

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LOCATION



LEGEND

- INLET PROTECTION
- FLOW DIRECTION
- RIP RAP
- LOW POINT
- HIGH POINT
- WOOD FIBER BIOROLL
- SILT FENCE
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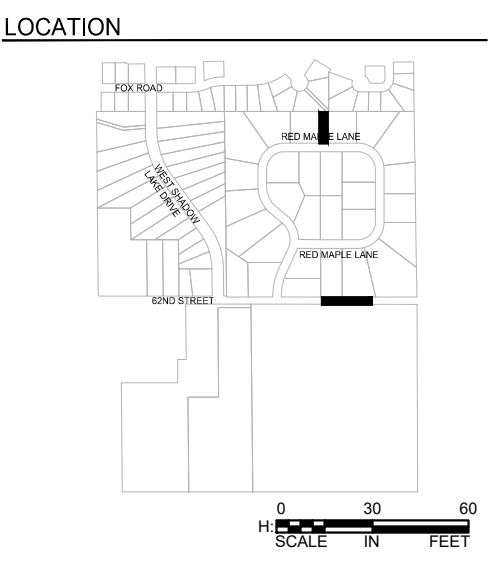
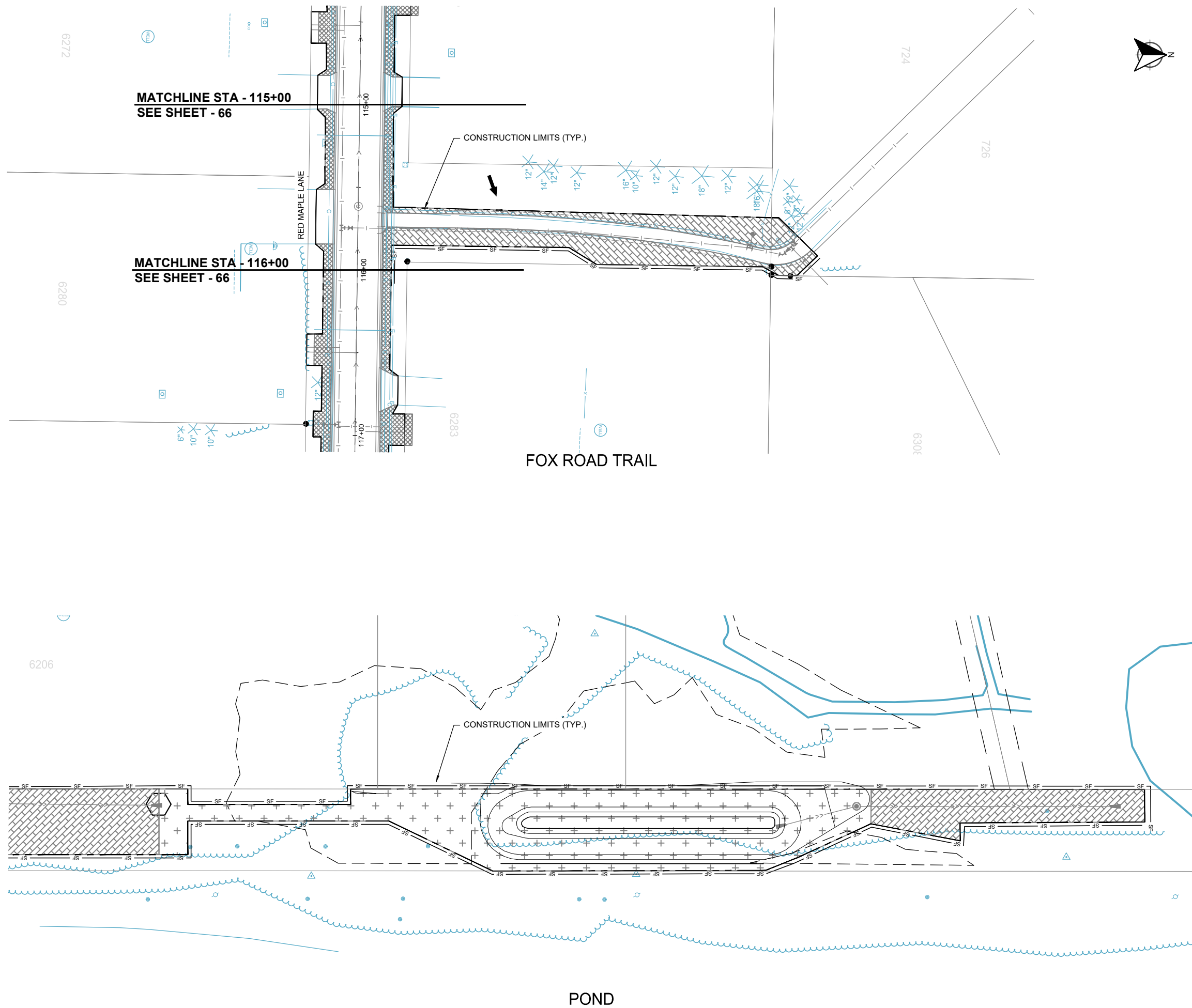
2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO.
023620-000

SHEET

67 OF 97

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LEGEND

	INLET PROTECTION
	FLOW DIRECTION
	RIP RAP
	LOW POINT
	HIGH POINT
	WOOD FIBER BIOROLL
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	STABILIZED CONSTRUCTION ENTRANCE
	PERMANENT STABILIZATION: SODDING TYPE LAWN SLOPE LESS THAN 3:1 - HYDRAULIC MULCH TYPE 3884.B.2 @2500 lbs/ACRE SLOPE 3:1 OR GREATER - DITCH BOTTOMS, PONDS, EROSION CONTROL BLANKET TYPE 25 WITH WET DITCH @ 20 lbs/ACRE OR OATS @100lbs/ACRE
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2024 STREET RECONSTRUCTION PROJECT

CITY OF LINO LAKES

WSB PROJECT NO. 023620-000
SHEET 68 OF 97

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STORMWATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE

PROJECT NAME: LINO LAKES 2025 STREET REHABILITATION

PROJECT LOCATION: STREET: EVERGREEN TRL, DIANE ST, 81ST ST, DANUBE ST, ELBE ST, RED MAPLE LN
COUNTY: ANOKA
STATE: MINNESOTA

PROJECT NUMBER: WSB 023620-000

RED MAPLE LN CITY: LINO LAKES

ZIP: 55014

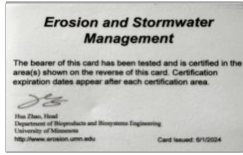
LATITUDE/LONGITUDE: 45.1993, -93.0984

THE PLANNED SCOPE OF THE PROJECT INCLUDES:
THE CITY OF LINO LAKES IS PROPOSING TO RECONSTRUCT THE EXISTING STREETS, (EVERGREEN TRAIL, DIANE STREET, 81ST STREET, DANUBE STREET, ELBE STREET, RED MAPLE LANE), WITH MILL AND OVERLAY. CONSTRUCTION OF NEW SANITARY SEWER AND WATERMAIN IS PROPOSED, ALONG WITH RECONSTRUCTION OF EXISTING STORM SEWER FACILITIES.

TENTATIVE CONSTRUCTION SCHEDULE (OPERATOR SHOULD PROVIDE ESTIMATED CONSTRUCTION SCHEDULE TO THE ENGINEER)	
CONSTRUCTION ACTIVITIES:	ESTIMATED DATES OF SOIL DISTURBANCE ACTIVITIES:
TEMPORARY SEDIMENT CONTROL BMPS & REMOVALS	MAY 2025
GRADING & UTILITY WORK	JUNE - JULY 2025
CURB & PAVEMENT	JULY - SEPT 2025
FINAL STABILIZATION	NOV 2025

PROJECT PERSONNEL AND TRAINING

SWPPP DEVELOPER:
WSB DUANE GACHNE
3701 40TH AVE NW SUITE 100
ROCHESTER, MN, 55901
507-910-2983/DGACHNE@WSBENG.COM



CONTRACTOR TO PROVIDE CERTIFICATION OF EROSION CONTROL OFFICER AND ANY OTHER CREW MEMBERS WHO WILL WORK ON THE IMPLEMENTATION OF THE SWPPP AND THE INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS BEFORE, DURING, AND AFTER CONSTRUCTION UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA. PROVIDE PROOF OF CERTIFICATION AT THE PRECONSTRUCTION MEETING. WORK WILL NOT BE ALLOWED TO COMMENCE UNTIL PROOF OF CERTIFICATION HAS BEEN PROVIDED TO THE PROJECT ENGINEER.

CHAIN OF RESPONSIBILITY

THE CITY OF LINO LAKES AND THE CONTRACTOR ARE CO-PERMITTEES FOR THE NPDES CONSTRUCTION GENERAL PERMIT. THE CONTRACTOR IS RESPONSIBLE TO COMPLY WITH ALL ASPECTS OF THE NPDES CONSTRUCTION PERMIT AT ALL TIMES UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA.

NAME	COMPANY	TITLE	PHONE
DIANE HANKEE	CITY OF LINO LAKES	CITY ENGINEER (OWNER CONTACT)	612-360-1298
PAUL HORNBY	WSB	PROJECT MANAGER	651-325-6849
		CONTRACTOR CONTACT	
		ON SITE ESC INSPECTOR	

AGENCY CONTACTS

ORGANIZATION	CONTACT NAME	PHONE/EMAIL
MPCA (EMERGENCY) 24 HOUR	STATE DUTY OFFICER	1-800-422-0798
MPCA	MATT HOSKINS	651-757-2864/MATTHEW.HOSKINS@STATE.MN.US
LINO LAKES LGU (RCWD)	PATRICK HUGHES	763-398-3080/PHUGHES@RICECREEK.ORG
ACOE	TOM HINGSBERGER	651-290-5367
MNDNR ECO/WATERS	WES SAUNDERS-PEARCE	651-259-5822
ANOKA CONSERVATION DISTRICT	MITCH HAUSTEIN	763-434-2030

LOCATION OF SWPPP REQUIREMENTS

THE REQUIRED SWPPP ELEMENTS MAY BE LOCATED IN MANY PLACES WITHIN THE PLAN SET AS WELL AS IN THE SPECIAL PROVISIONS, PROJECT MANUAL, MNDOT SPEC BOOK, OR ON FILE WITH THE PROJECT OWNER.

DESCRIPTION	LOCATION
TEMPORARY/PERMANENT EROSION CONTROL MEASURES	SHEET NO.58-64
DIRECTION OF FLOW	SHEET NO. 58-64
CONSTRUCTION NOTES & STANDARD PLATES	SHEET NO. 5-10
DRAINAGE PLAN & CONSTRUCTION PLAN	SHEET NO. 6-18
BMP TABULATION	SHEET NO. 3-4
STORMWATER CALCULATIONS	DRAINAGE REPORT & HYDRAULIC REPORT. AVAILABLE UPON REQUEST

RECEIVING WATERS

A SPECIAL AND IMPAIRED WATERS SEARCH WAS COMPLETED USING THE MPCA SEARCH ENGINE ON 12/2/2024. BASED ON THIS REVIEW, THE FOLLOWING SPECIAL/IMPAIRED WATERS (WITH CONSTRUCTION RELATED IMPAIRMENTS) ARE LOCATED WITHIN ONE MILE OF, AND DOWNSTREAM OF, ANY PROJECT DISCHARGE POINTS. PARTS 23.9 & 23.10 OF THE NPDES PERMIT APPLY. BASED ON THIS REVIEW, THERE ARE NO SPECIAL IMPAIRED WATERS (WITH CONSTRUCTION RELATED IMPAIRMENTS) LOCATED WITHIN ONE MILE OF, AND DOWNSTREAM OF, PROJECT DISCHARGE POINTS. THE FOLLOWING IS A LIST OF RECEIVING WATERS WITHIN ONE MILE OF THE PROJECT:

WATERBODY	IMPAIRMENT(S)
RICE LAKE	NUTRIENTS
RESHANAU LAKE	NUTRIENTS
GEORGE WATCH LAKE	NUTRIENTS

AREAS OF ENVIRONMENTAL SENSITIVITY (AES) AND INFESTED WATERS

IN ADDITION TO THE LIST OF SPECIAL AND IMPAIRED WATERS, THE CONTRACTOR SHALL BE AWARE THAT THERE ARE WETLANDS AND EXISTING STORMWATER FACILITIES WITHIN AND NEAR THE PROJECT BOUNDARY. THERE IS A MAP OF KNOWN NATURAL RESOURCES ON THE LAST PAGE OF THE SWPPP NARRATIVE. AREAS OF ENVIRONMENTAL SENSITIVITY ARE ALSO CALLED OUT ON THE PLAN SHEETS.

SOIL TYPES

A PROJECT WIDE GEOTECHNICAL REPORT WAS COMPLETED DURING THE DESIGN PHASE. GLACIAL TILL IS PREDOMINATING ALONG MOST OF THE ALIGNMENT, HOWEVER, GLACIAL OUTWASH AND GLACIAL FLUVIUM IS ALSO NOTED. THE TILL CONSISTS OF A BLEND OF SAND AND CLAY WHILE THE OUTWASH AND FLUVIUM IS GENERALLY SAND WITH SILT WITH ENCOUNTERS OF LEAN CLAY. ADDITIONAL SOIL INFORMATION CAN BE FOUND IN THE GEOTECHNICAL REPORT, LOCATED WITHIN THE PROJECT SPECIFICATIONS. SOIL CLASSIFICATIONS FOR HIGHLY ERODIBLE LAND (HEL), POTENTIALLY HIGHLY ERODIBLE LAND (PHEL), AND NOT HIGHLY ERODIBLE LAND (NHEL) SOILS CAN BE FOUND ON *FIGURE 1. SWPPP RESOURCE MAP.*

NATIVE TOPSOIL WILL BE STRIPPED; IF MATERIAL NEEDS TO BE STOCKPILED, APPROPRIATE ACTION WILL TAKE PLACE TO ENSURE THE STOCKPILES HAVE ALL PROPER BMPS IN PLACE ACCORDING TO THIS SWPPP AND THE NPDES PERMIT.

ENVIRONMENTAL REVIEW

NO FORMAL ENVIRONMENTAL REVIEW WAS REQUIRED FOR THIS PROJECT.

WETLANDS: MITIGATION MEASURES ARE NOT REQUIRED AS A RESULT OF NO WETLAND IMPACTS FROM THE PROJECT. ALL WETLAND AREAS WILL BE PROTECTED WITH PERIMETER CONTROL AND A 50’ NATURAL BUFFER (IF INFEASIBLE, REDUNDANT PERIMETER CONTROL MEASURES), INCLUDED AREAS THAT ARE PERMITTED TO BE FILLED AND/OR EXCAVATED UNTIL WORK IN THE PERMITTED AREAS ARE NECESSARY. REDUNDANT BMP MEASURES MUST BE PLACED 5’ FROM THE INITIAL PERIMETER CONTROL MEASURE WITH A STABILIZED BUFFER STRIP BETWEEN THE BMPS.

THREATENED/ENDANGERED SPECIES: ANOKA COUNTY LISTS THE TRICOLORED BAT, THE SALAMANDER MUSSEL AS PROPOSED ENDANGERED, THE WHOOPING CRANE AS EXPERIMENTAL POPULATION NON-ESSENTIAL, THE RUSTY PATCHED BUMBLE BEE AS ENDANGERED, THE MONARCH BUTTERFLY AS CANDIDATE, AND THE WESTERN FRITILLARY AS PROPOSED THREATNED SPECIES WITHIN THE COUNTY. TREE REMOVAL SHOULD OCCUR OUTSIDE OF THE TRICOLORED BAT ACTIVE SEASON (APRIL 1 TO OCTOBER 31). BASED ON THE CONSTRUCTION ACTIVITIES, IT IS DETERMINED THAT THE PROJECT WILL HAVE NO EFFECT ON THESE SPECIES OR THEIR HABITATS. HOWEVER, IF THESE SPECIES ARE FOUND, CONTRACTOR TO STOP WORK IMMEDIATELY FOR FURTHER INVESTIGATION.

DRINKING WATER/WELLS: ACCORDING TO THE MDH, THE PROJECT IS NOT LOCATED WITHIN ANY DRINKING WATER SUPPLY MANAGEMENT AREA (DWSMA) OR NEAR ANY WELLHEAD PROTECTION AREAS.

CONTAMINATED PROPERTIES: THE MPCA’S “WHAT’S IN MY NEIGHBORHOOD” DATABASE WAS REVIEWED ON 12/2/2024. THE RESULTS OF THIS REVIEW SHOW NO KNOWN HAZARDOUS WATSTES SITES LOCATED ADJACENT TO THE PROJECT ALIGNMENT.THE DEPTH OF THE FULL RECLAMATION IS NOT PROPOSED TO UNEARTH ANY CONTAMINATED SOIL, CONTAMINATED WATER, AND/OR REGULATED WASTE. REFER TO MNDOT SPEC 1717.1.A. FOR POTENTIAL INDICATORS OF CONTAMINATED MATERIALS AND REGULATED WASTE. IF CONTAMINATED MATERIAL, CONTAMINATED WATER, AND/OR REGULATED MATERIALS ARE FOUND, CREWS ARE TO STOP WORK IMMEDIATELY FOR FURTHER INVESTIGATION/TESTING.

FLOOD CONTINGENCY PLAN: PROJECT ACTIVITIES MAY OCCUR WITHIN THE 100-YEAR FLOODPLAIN OR FLOODWAY, THEREFORE, THE PROJECT ENGINEER (AT THEIR DISCRETION) MAY REQUIRE A PREVENTATIVE FLOOD CONTINGENCY PLAN FOR SPECIFIC PROJECT ACTIVITIES AND AREAS IF SEASONAL PRECIPITATION POSSES A POTENTIAL RISK OF FLOODING WORK AREAS WITHIN THE PROJECT LIMITS. THIS PLAN SHALL BE SUBMITTED BY THE OPERATOR TO THE PROJECT ENGINEER FOR APPROVAL A MINIMUM OF 72 HOURS PRIOR TO THE SCHEDULED WORK AND/OR DURING ACTIVE WORK WITHIN THE FLOODPLAIN. NO WORK WITHIN THE FLOODPLAIN CAN COMMENCE UNTIL WRITTEN APPROVAL HAS BEEN GRANTED BY THE PROJECT ENGINEER.

AQUATIC INVASIVE SPECIES: ALL IN-WATER, AND DEWATERING EQUIPMENT SHALL BE DECONTAMINATED OF ALL AQUATIC PLANTS AND PROHIBITED INVASIVE SPECIES PRIOR TO USING WITHIN SURFACE WATERS ON-SITE AND TRANSPORTING OFF-SITE. ALL DECONTAMINATION ACTIVITIES SHALL MEET THE CHAPTER 1 STANDARDS OF THE MINNESOTA DNR’S BEST PRACTICES MANUAL FOR MEETING DNR GENERAL PUBLIC WATERS WORK PERMIT GP 2004-0001.

LAND FEATURE CHANGES

TOTAL AREA TO BE DISTURBED = 11.24 ACRES
IMPERVIOUS AREA: PRE-CONSTRUCTION = 8.15 ACRES/POST-CONSTRUCTION = 8.13 ACRES
NET DECREASE OF IMPERVIOUS AREA = 0.02 ACRES

LONG TERM MAINTENANCE AND OPERATION:
THE NPDES PERMANENT STORMWATER TREATMENT SYSTEM (PART 15.1) IS NOT REQUIRED BECAUSE THE NET NEW IMPERVIOUS AREA CREATED BY THE PROJECT IS LESS THAN ONE ACRE.

STABILIZATION TIME FRAMES

AREA	TIME FRAME	NOTES
EXPOSED AREAS	IMMEDIATELY AND NO LATER THAN 7 OR 14 DAYS OF BEING UNWORKED	1, 4, 5
LAST 200 LINEAL FEET OF DRAINAGE DITCH/SWALE	WITHIN 24 HOURS OF CONNECTION TO SURFACE WATER/PROPERTY EDGE	1, 2, 3
REMAINING PORTIONS OF DRAINAGE DITCH OR SWALE	7 DAYS	1, 3
PIPE AND CULVERT OUTLETS	24 HOURS	
STOCKPILES	7 DAYS	1

1. INITIATE STABILIZATION IMMEDIATELY WHEN CONSTRUCTION HAS TEMPORARILY OR PERMANENTLY CEASED ON ANY PORTION OF THE SITE. COMPLETE STABILIZATION WITHIN THE TIME FRAME LISTED. IN MANY INSTANCES THIS WILL REQUIRE STABILIZATION TO OCCUR MORE THAN ONCE DURING THE COURSE OF THE PROJECT. TEMPORARY SOIL STOCKPILES WITHOUT SIGNIFICANT CLAY OR SILT AND STOCKPILED AND CONSTRUCTED ROAD BASE ARE EXEMPT FROM THE STABILIZATION REQUIREMENT.



SCALE: AS SHOWN
PLAN BY: THC
THC

DESIGN BY: THC
CHECK BY: PTH

REVISIONS	
NO.	DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.

PAUL HORNBY, PE

DATE: 01-24-2025 LIC. NO.: 23359

STORMWATER POLLUTION PREVENTION PLAN

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO.
023620-000

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2. STABILIZE WETTED PERIMETER OF DITCH (I.E. WHERE THE DITCH GETS WET).
3. APPLICATION OF MULCH, HYDROMULCH, TACKIFIER AND POLYACRYLAMIDE ARE NOT ACCEPTABLE STABILIZATION METHODS IN THESE AREAS.
4. STABILIZE ALL AREAS OF THE SITE PRIOR TO THE ONSET OF WINTER. ANY WORK STILL BEING PERFORMED WILL BE MULCHED OR BLANKETED WITHIN THE TIME FRAMES IN THE NPDES PERMIT.
5. TOPSOIL BERMS MUST BE STABILIZED TO BE CONSIDERED PERIMETER CONTROL BMPS. USE RAPID STABILIZATION METHOD 3. THE SEED MIX USED IN THE RAPID STABILIZATION MAY BE SUBSTITUTED AS FOLLOWS:

A. SINGLE YEAR CONSTRUCTION BETWEEN MAY 1 – AUGUST 1, SEED WITH SEED MIX OATS

B. SINGLE YEAR CONSTRUCTION BETWEEN AUGUST 1 – OCTOBER 31, SEED WITH SEED MIX WINTER WHEAT

C. MULTI YEAR TEMPORARY STABILIZATION TWO-YEAR COVER CROP
6. KEEP DITCHES AND EXPOSED SOILS IN AN EVEN ROUGH GRADED CONDITION IN ORDER TO BE ABLE TO APPLY EROSION CONTROL MULCHES, HYDROMULCHES, AND BLANKETS.

SITE INSPECTION AND MAINTENANCE

THE EROSION CONTROL OFFICER IS TO INSPECT THE ENTIRE CONSTRUCTION SITE AT LEAST ONCE EVERY SEVEN (7) DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS. THE OPERATOR SHALL PROVIDE A RAINFALL GAUGE ON-SITE AT VARIOUS MILE INTERVALS ALONG THE ALIGNMENT. INSPECT ALL TEMPORARY AND PERMANENT PROJECT BMPS UNTIL THE SITE HAS UNDERGONE FINAL STABILIZATION AND THE NOT HAS BEEN SUBMITTED. INSPECT SURFACE WATER INCLUDING DRAINAGE DITCHES FOR SIGNS OF EROSION AND SEDIMENT DEPOSITION. INSPECT CONSTRUCTION SITE VEHICLE EXIT LOCATIONS FOR EVIDENCE OF TRACKING ONTO PAVED SURFACES. INSPECT SURROUNDING PROPERTIES FOR EVIDENCE OF OFF-SITE SEDIMENT ACCUMULATION. INSPECT INFILTRATION AREAS FOR SIGN OF SEDIMENT DEPOSITION AND COMPACTIONS (TO ENSURE THAT EQUIPMENT IS NOT BEING DRIVEN ACROSS THE AREA). ALL INSPECTIONS AND MAINTENANCE CONDUCTED MUST BE RECORDED IN WRITING BY THE OPERATOR AND RETAINED WITH THE SWPPP. SUBMIT INSPECTION REPORTS IN A FORMAT THAT IS ACCEPTABLE TO THE PROJECT ENGINEER. RECORDS OF EACH INSPECTION AND MAINTENANCE ACTIVITY SHALL INCLUDE:

A. DATE, TIME, AND NAME OF PERSON(S) CONDUCTING INSPECTIONS;

B. FINDINGS OF INSPECTIONS, INCLUDING RECOMMENDATIONS FOR CORRECTIVE ACTIONS;

C. CORRECTIVE ACTIONS TAKEN (INCLUDING DATES, TIMES, AND PARTY COMPLETING MAINTENANCE ACTIVITIES); INCLUDING DOCUMENTATION/PHOTOS OF IMPLEMENTED BMPS INTENDED TO CORRECT A PROBLEM BUT FAILED.

D. DATE AND AMOUNT OF ALL RAINFALL EVENTS GREATER THAN 0.5 INCHES IN 24 HOURS;

E. DOCUMENTATION OF CHANGES MADE TO THE SWPPP.

REPLACE, REPAIR OR SUPPLEMENT ALL NONFUNCTIONAL BMPS BY THE END OF THE NEXT BUSINESS DAY FOLLOWING DISCOVERY UNLESS LISTED DIFFERENTLY BELOW:

A. REPAIR, REPLACE, OR SUPPLEMENT PERIMETER CONTROL DEVICES WHEN THEY BECOME NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT OF THE DEVICE. COMPLETE REPAIRS BY THE END OF THE NEXT BUSINESS DAY FOLLOWING DISCOVERY.

B. REPAIR OR REPLACE INLET PROTECTION DEVICES WHEN THEY BECOME NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT AND/OR DEPTH OF THE DEVICE.

C. DRAIN AND REMOVE SEDIMENT FROM TEMPORARY AND PERMANENT SEDIMENT BASINS ONCE THE SEDIMENT HAS REACHED 1/2 THE STORAGE VOLUME. COMPLETE WORK WITHIN 72 HOURS OF DISCOVERY.

D. REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS INCLUDING DRAINAGE WAYS, CATCH BASINS, AND OTHER DRAINAGE SYSTEMS. STABILIZE ANY AREAS THAT ARE DISTURBED BY SEDIMENT REMOVAL OPERATIONS. SEDIMENT REMOVAL AND STABILIZATION MUST BE COMPLETED WITHIN 7 DAYS OF DISCOVERY.

E. REMOVE TRACKED SEDIMENT FROM PAVED SURFACES BOTH ON AND OFF SITE WITHIN ONE (1) CALENDAR DAY OF DISCOVERY. STREET SWEEPING MAY HAVE TO OCCUR MORE OFTEN TO MINIMIZE OFF SITE IMPACTS. LIGHTLY WET THE PAVEMENT PRIOR TO SWEEPING.

F. MAINTAIN ALL BMPS UNTIL WORK HAS BEEN COMPLETED, SITE HAS GONE UNDER FINAL STABILIZATION, AND THE NOT HAS BEEN SUBMITTED TO THE MPCA.

CONSTRUCTION ACTIVITY REQUIREMENTS: EROSION/SEDIMENT CONTROL, PROCEDURES, & MAINTENANCE STANDARDS

1. AMEND THE SWPPP AND DOCUMENT ALL CHANGES TO THE SWPPP AND ASSOCIATED PLAN SHEETS IN A TIMELY MANNER. SWPPP AMENDMENTS AND SITE PLANS WILL BE PREPARED BY THE OPERATOR AND SUBMITTED TO THE OWNER FOR REVIEW AND WRITTEN APPROVAL BY THE PROJECT OWNER (OR DESIGNATED REPRESENTATIVE). STORE THE SWPPP AND ALL AMENDMENTS ON SITE AT ALL TIMES.
2. PREPARE AND SUBMIT A SITE MANAGEMENT PLAN FOR THE ENGINEER’S ACCEPTANCE FOR STAGING/STOCKPILE MANAGEMENT AREAS, CONCRETE MANAGEMENT, CONCRETE SLURRY APPLICATION AREAS, FUGITIVE DUST CONTROL PLAN, SPILL CONTAINMENT PLAN, HAZARDOUS MATERIAL MANIFEST & MANAGEMENT PLAN, WETLAND MANAGEMENT PLAN, VEGETATION PRESERVATION & MAINTENANCE PLAN, WORK IN AND NEAR AREAS OF ENVIRONMENTAL SENSITIVITY, AREAS IDENTIFIED IN THE PLANS AS “SITE MANAGEMENT PLAN AREA”, ANY WORK THAT WILL REQUIRE DEWATERING, ANY ADDITIONAL PLANS LISTED IN THE PROJECT SPECIFICATIONS, AND AS REQUIRED BY THE ENGINEER. SUBMIT ALL SITE MANAGEMENT PLANS TO THE ENGINEER IN WRITING. ALLOW A MINIMUM OF 7 DAYS FOR MNDOT PROJECT ENGINEER TO REVIEW AND ACCEPT SITE MANAGEMENT PLAN SUBMITTALS. WORK WILL NOT BE ALLOWED TO COMMENCE IF A SITE MANAGEMENT PLAN IS REQUIRED UNTIL ACCEPTANCE HAS BEEN GRANTED BY THE ENGINEER. THERE WILL BE NO EXTRA TIME ADDED TO THE CONTRACT DUE TO THE UNTIMELY SUBMITTAL.
3. THERE IS NO CONSTRUCTION PHASING OR STAGING DEFINED BY THE OWNER FOR THIS PROJECT. THE SCHEDULE FOR INSTALLING TEMPORARY BMPS SHALL BE INCORPORATED INTO THE OPERATOR’S WEEKLY SCHEDULE FOR EACH CONSTRUCTION STAGE AND PRESENTED TO THE OWNER’S REPRESENTATIVE. THE PROJECT’S CONSTRUCTION PHASING AND STAGING IS DEFINED BY THE “CONSTRUCTION STAGING & TRAFFIC CONTROL PLAN” AND PROJECT SPECIFICATIONS.
4. BURNING OF ANY MATERIAL IS NOT ALLOWED WITHIN PROJECT BOUNDARY.
5. DO NOT DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMITS. DELINEATE AREAS NOT TO BE DISTURBED AND WETLANDS (EVEN AREAS THAT ARE PERMITTED FOR CONSTRUCTION) PRIOR TO STARTING GROUND DISTURBING ACTIVITIES. IF IT BECOMES NECESSARY TO DISTURB AREAS OUTSIDE OF THE CONSTRUCTION LIMITS, OBTAIN WRITTEN PERMISSION FROM THE PROJECT ENGINEER PRIOR TO PROCEEDING. PRESERVE ALL NATURAL BUFFERS SHOWN ON THE PLANS.
6. ROUTE STORMWATER AROUND UNSTABILIZED AREAS OF THE SITE WHENEVER FEASIBLE. PROVIDE EROSION CONTROL AND VELOCITY DISSIPATION DEVICES AS NEEDED TO KEEP CHANNELS FROM ERODING AND TO PREVENT NUISANCE CONDITIONS AT THE OUTLET.
7. DIRECT DISCHARGE FROM BMPS TO VEGETATED AREAS WHENEVER FEASIBLE. PROVIDE VELOCITY DISSIPATION DEVICES AS NEEDED TO PREVENT EROSION.
8. LOCATE PERIMETER CONTROL ON THE CONTOUR TO CAPTURE OVERLAND, LOW-VELOCITY SHEET FLOWS DOWN GRADIENT OF ALL EXPOSED SOILS AND PRIOR TO DISCHARGING TO SURFACE WATERS. PLACE J-HOOKS AT A MAXIMUM OF 100-FOOT INTERVALS.
9. ALL STOCKPILES MUST HAVE PERIMETER SEDIMENT CONTROLS IMPLEMENTED AND MAINTAINED AT ALL TIMES AND SHOULD BE INSTALLED PRIOR TO INITIATION OF STOCKPILING. PILES CANNOT BE PLACED IN BUFFER AREAS OR SURFACE WATERS, INCLUDING

- STORMWATER CONVEYANCES SUCH AS CURB AND GUTTER SYSTEMS, OR CONDUITS AND DITCHES UNLESS THERE IS A BYPASS IN PLACE TO PREVENT STORMWATER RUN-ON INTO THE STOCKPILE.
10. STEEP SLOPES MAY BE TEMPORARILY CREATED DURING GRADING OPERATIONS. STABILIZATION OF STEEP SLOPES (3:1 OR GREATER) SHALL BE PROPERLY CAT-TRACKED AND STABILIZED PER THE EROSION CONTROL PLAN. LONG SLOPES CAN BE BROKEN UP WITH SEDIMENT CONTROL LOGS IF EROSION IS EVIDENT.
11. DITCH CHECKS WILL BE PLACED AS INDICATED ON THE PLANS DURING ALL PHASES OF CONSTRUCTION.
12. ALL STORM DRAIN INLETS, THAT RECEIVE PROJECT STORMWATER, MUST BE PROTECTED BY APPROPRIATE BMPS DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL FOR DISCHARGING TO THE INLET HAVE BEEN STABILIZED. INLET PROTECTION MAY BE REMOVED FOR A PARTICULAR INLET IF A SPECIFIC SAFETY CONCERN (STREET FLOODING/FREEZING) HAS BEEN IDENTIFIED AND THE PERMITTEE(S) HAS RECEIVED WRITTEN CORRESPONDENCE FROM THE JURISDICTIONAL AUTHORITY VERIFYING THE NEED FOR REMOVAL. WRITTEN CORRESPONDENCE MUST BE DOCUMENTED IN THE SWPPP.
13. SILT FENCE IS NOT AN ACCEPTABLE CATCH BASIN INLET PROTECTION BMP. CONTACTOR SHALL CLEAN, REMOVE AND DISPOSE OF SEDIMENT, AND/OR REPLACE STORM DRAIN INLET PROTECTION ON A ROUTINE BASIS TO ENSURE THE DEVICE IS FULLY FUNCTIONAL PRIOR TO THE NEXT FORECASTED PRECIPITATION EVENT (30% OR GREATER).
14. DISCHARGE TURBID OR SEDIMENT LADEN WATER TO TEMPORARY SEDIMENT BASINS WHENEVER FEASIBLE. IN THE EVENT THAT IT IS NOT FEASIBLE TO DISCHARGE THE SEDIMENT LADEN WATER TO A TEMPORARY SEDIMENT BASIN, THE WATER MUST BE TREATED SO THAT IT DOES NOT CAUSE A NUISANCE CONDITION IN THE RECEIVING WATERS OR TO DOWNSTREAM LANDOWNERS. CLEAN OUT ALL PERMANENT STORMWATER BASINS REGARDLESS OF WHETHER USED AS TEMPORARY SEDIMENT BASINS/TRAPS TO THE DESIGN CAPACITY AFTER COMPLETING ALL UP-GRADIENT LAND DISTURBING ACTIVITY. USE A SKIMMER DEVICE FOR BASIN DRAINING.
15. PROVIDE STABILIZATION IN ANY TRENCHES CUT FOR DEWATERING OR SITE DRAINING PURPOSES.
16. THE CONTRACTOR SHALL SUBMIT A DEWATERING PLAN AND NARRATIVE TO THE PROJECT ENGINEER FOR APPROVAL 7 DAYS PRIOR TO UNDERTAKING THESE ACTIVITIES. DEWATERING PLAN MUST INCLUDE BMP’S TO PREVENT SEDIMENT TRANSPORT, EROSION, AND ADVERSE IMPACTS TO DOWNSTREAM RECEIVING WATERS. THE DEWATERING PLAN MUST ALSO INCLUDE ANY SPECIFIC CHEMICAL TREATMENTS (FLOC, POLYMERS, ETC.) THAT WILL BE USED. THE CONTRACTOR IS RESPONSIBLE TO OBTAIN ANY PERMIT NECESSARY FOR THESE ACTIVITIES; THE DEWATERING PLAN AND DNR APPROPRIATIONS PERMIT WILL BECOME PART OF THE SWPPP. THE CONTRACTOR SHALL VISUALLY CHECK AND PHOTOGRAPH THE DISCHARGE AT THE BEGINNING AND AT LEAST ONCE EVERY 24 HOURS OF OPERATION TO ENSURE ADEQUATE TREATMENT HAS BEEN OBTAINED AND NUISANCE CONDITIONS WILL NOT RESULT FROM THE DISCHARGE.

TEMPORARY & PERMANENT EROSION CONTROL BMPS

SEED MIX: SEED MIX SHALL BE USED IN CONSTRUCTION AND REVEGETATION PROJECTS IN ORDER TO ENHANCE SOIL NUTRIENT AVAILABILITY AND BIOLOGICAL SOIL STRUCTURE, ENCOURAGE NATIVE PLAN SUCCESSION, REDUCE EROSION, AND DISCOURAGE INVASIVE PLANT SPECIES. INOCULATION OF SOILS WITH MYCORRHIZAL FUNGI OR THE PRESENCE OF PRE-EXISTING SOIL MICROBES IS ESSENTIAL FOR THE STABILIZATION OF ADVERSE SOILS, ESTABLISHMENT OF NATIVE GRASSES, AND THE EXCLUSION OF NON-NATIVE “ANNUALS” AND NOXIOUS WEEDS.

EROSION CONTROL BLANKET: EROSION CONTROL BLANKETS (ECBS) ARE A SOIL STABILIZATION (EROSION CONTROL) BMP, INTENDED TO PROTECT DISTURBED SOIL SURFACES FROM RAINDROP IMPACT EROSION. ECBS ARE CARPET-LIKE MATS, INSTALLED OVER AND ANCHORED TO THE PROPERLY PREPARED SOIL SURFACES. PROPERLY SELECTED AND INSTALLED, ECBS CAN MIMIC THE BENEFICIAL EFFECTS OF VEGETATIVE COVER THEREBY REDUCING EROSION RATES BY OVER 90%. ECBS ALSO PROTECT SEEDS AND PROVIDE A BENEFICIAL ENVIRONMENT FOR VEGETATION TO BECOME ESTABLISHED. CONTRACTOR SHALL VERIFY DURING REGULAR INSPECTIONS THAT NO GULLIES, RILLS, OR SCOUR HOLES HAVE FORMED UNDER EROSION CONTROL BLANKETS AND MATS AND CORRECT ALL ERODED AREAS WITHIN 7 DAYS. ALL REPAIRS MUST BE COMPLETED WITHIN 24 HOURS OF DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS.

STRAW MULCHING: DISTURBED SOIL AREAS SHALL BE PROTECTED WITH STRAW MULCH. MULCHING IS THE APPLICATION OF A PROTECTIVE LAYER OF STRAW OR OTHER SUITABLE MATERIAL TO THE SOIL SURFACE. STRAW MULCH SHALL BE USED IN CONJUNCTION WITH SEEDING AND HYDRO-SEEDING FOR ESTABLISHMENT OF VEGETATION. STRAW MULCH MUST BE SECURED TO THE GROUND USING DISKING OR AN OVERSPRAY OF AN HECP. MULCHING IS COMMONLY USED AS A TEMPORARY MEASURE TO PROTECT BARE OR DISTURBED SOIL AREAS THAT HAVE NOT BEEN SEEDED, UNTIL NATIVE VEGETATION RE-GROWS. CERTIFIED WEED-FREE MULCH MUST BE USED WHEN USING NATIVE SEED MIXES OR WHEN WORKING NEAR ENVIRONMENTALLY SENSITIVE AREAS.

HYDRAULIC MATRICES: HYDRAULIC MATRICES ARE EROSION CONTROL PRODUCTS THAT ARE USED TO STABILIZE EXPOSED SOILS. THESE MATRICES ARE APPLIED IN A SLURRY, PRODUCED BY MIXING FIBER, WATER AND A BINDING AGENT TOGETHER IN A MECHANICAL HYDRO-SEEDER. WOOD FIBER IS WIDELY USED BUT OTHER FIBERS CAN INCLUDE PAPER, STRAW, COIR, CORN, ETC. THE EFFECTIVENESS OF THESE HYDRAULIC MATRICES ARE DEPENDENT ON:

– PROPER SOIL PREPARATION

– APPLICATION RATES (DEPENDENT ON THE MANUFACTURERS RECOMMENDATIONS)

– THE TYPE OF FIBERS USED

– THE TYPE OF BOND AGENT(S) ADDED

THESE HYDRAULIC MATRICES ARE CLASSIFIED IN THE MNDOT SPEC BOOK AND APPROVED PRODUCTS LIST, DEPENDING ON THE PRODUCT CHARACTERISTICS, STRENGTH, AND LONGEVITY. HYDRAULIC MATRICES USED INCLUDE: ORGANIC FIBER MATRIX, HYDRAULIC MULCH MATRIX, STABILIZED FIBER MATRIX, BONDED FIBER MATRIX, AND FIBER REINFORCED MATRIX.

SOD TYPE LAWN: SOD IS A PERMANENT EROSION PREVENTION BMP THAT PROVIDES INSTANTANEOUS SOIL STABILIZATION. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF SOD AS OUTLINED IN THE PROJECT SPECIFICATIONS.

ENERGY DISSIPATER: AN ENERGY DISSIPATER IS A STRUCTURE DESIGNED TO CONTROL EROSION AT THE OUTLET OF A CHANNEL OR CONDUIT.

RAPID STABILIZATION METHOD #1: THIS METHOD SHALL CONSIST OF TYPE 1 MULCH (2 TON PER ACRE) WITH DISC ANCHORING BE SPREAD IN AREAS THAT HAVE BEEN UNWORKED FOR 7 OR 14 DAYS. THIS METHOD SHALL BE USED ON SLOPES OF 3:1 AND LESS. OPERATOR MUST APPLY MULCH IN A UNIFORM PATTERN OVER THE DISTURBED SOILS TO ACHIEVE A MINIMUM OF 90% GROUND COVER.

RAPID STABILIZATION METHOD #2: THIS METHOD SHALL CONSIST OF TYPE 3 MULCH (1.5 TON PER ACRE) OR 3884 TYPE STABILIZED FIBER MATRIX (750 LBS PER ACRE) BE SPREAD IN AREAS THAT HAVE BEEN UNWORKED FOR 7 OR 14 DAYS. THIS METHOD SHALL BE USED ON SLOPES LESS THAN 3:1.



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REVIEWS	NO.	DATE	DESCRIPTION				

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PAUL HORNBY, PE

DATE: 01-24-2025LIC. NO.: 23359

STORMWATER POLLUTION PREVENTION PLAN

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO.
023620-000

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RAPID STABILIZATION METHOD #3: THIS WORK SHALL CONSIST OF OPERATIONS NECESSARY TO RAPIDLY STABILIZE SMALL CRITICAL AREAS WITHIN 200 FEET OF SURFACE WATERS, TO PREVENT OFF SITE SEDIMENTATION AND OR TO COMPLY WITH PERMIT REQUIREMENTS. THIS FORM OF RAPID STABILIZATION EMPLOYS SFM, SEED MIX OATS, AND FERTILIZER TYPE 3. THIS METHOD SHALL BE USED ON SLOPES LESS THAN 3:1. INSTALL PER MNDOT SPECIFICATION 2575.3.M.1.C.

RAPID STABILIZATION METHOD #4: THIS METHOD SHALL CONSIST OF CATEGORY 20/25 EROSION CONTROL BLANKET (NATURAL NET ONLY) IN COMBINATION WITH MNDOT SEED MIX OATS (2 LBS PER 100 SQ. YD.) AND TYPE 3 SLOW RELEASE FERTILIZER (8 LBS PER 100 SQ. YD.). THIS IS AN ACCEPTABLE BMP FOR DISTURBED AREAS ADJACENT TO ENVIRONMENTALLY SENSITIVE AREAS, SURFACE WATERS, AND WITHIN THE LAST 200 FEET OF DITCH BOTTOMS.

TEMPORARY & PERMANENT SEDIMENT CONTROL BMPS

SEDIMENT CONTROL LOGS: SEDIMENT CONTROL LOGS ARE MANUFACTURED FROM STRAW, WOOD EXCELSIOR, COCONUT FIBERS, AND/OR OTHER MATERIALS THAT ARE BOUND WITH POLYPROPYLENE OR BIODEGRADABLE NETTING INTO TIGHT TUBULAR ROLLS. FIBER ROLLS CONTROL THREE TYPES OF EROSIONAL PROCESSES; EROSION CONTROL, RUN OFF CONTROL, AND SEDIMENT CONTROL. SEDIMENT CONTROL LOGS CAN BE USED FOR THE FOLLOWING:

- SLOPE INTERRUPTERS TO REDUCE EROSION ON NEWLY CONSTRUCTED SLOPES
- TEMPORARY DITCH CHECKS TO REDUCE RUNOFF VELOCITIES IN DRAINAGE CHANNELS
- SEDIMENT CONTROL BARRIERS FOR SMALL DISTURBED SOIL AREAS SUCH AS STOCKPILES, DISCRETE SLOPES, OR INDIVIDUAL LOTS

MACHINE SLICED SILT FENCE: A SILT FENCE IS A TEMPORARY SEDIMENT BARRIER CONSISTING OF FILTER FABRIC ENTRENCHED INTO THE SOIL AND ATTACHED TO SUPPORTING POSTS. SILT FENCE IS INTENDED TO BE INSTALLED WHERE SEDIMENT-LADEN WATER CAN POND, THUS ALLOWING THE SEDIMENT TO FALL OUT OF SUSPENSION AND SEPARATE FROM THE RUNOFF. SILT FENCE INSTALLED WITH A TRENCHER OR BY SLICING IS THE MOST EFFECTIVE INSTALLATION METHOD TO ENSURE AGAINST COMMON SILT FENCE FAILURES. THE BMP WILL BE CLEANED OUT OR REPLACED WHEN THE SEDIMENT REACHES 1/2 THE HEIGHT OF THE FENCE.

FLOTATION SILT CURTAIN: FLOTATION SILT CURTAIN WILL BE IN PLACE WHERE PROJECT ACTIVITIES ARE LOCATED WITHIN OR NEAR A SURFACE WATER/WETLAND. THE CURTAIN WILL BE LOCATED AS TIGHT TO THE SHORELINE AS POSSIBLE AND NOT TO EXCEED 1/4 THE STREAM WIDTH. DOWN GRADIENT PERIMETER CONTROL MUST STILL BE INSTALLED AS WELL AS AN ADDITIONAL REDUNDANT BMP WHEN WORK IS WITHIN 50 FEET OF THE SURFACE WATER.

STABILIZED CONSTRUCTION EXIT: TEMPORARY CONSTRUCTION EXITS ARE CONSTRUCTED AT THE EGRESS POINT FROM THE CONSTRUCTION AREA ONTO A PAVED ROAD. A STABILIZED CONSTRUCTION EXIT IS A TRACKING CONTROL BMP INTENDED TO PREVENT TRACKING OF SOIL FROM THE CONSTRUCTION SITE BY EQUIPMENT AND VEHICLES. THE EXITS ARE CONSTRUCTED OF LARGE ANGULAR ROCK, STEEL RIBS (RUMBLE STRIPS), OR TRACK PADS INTENDED TO KNOCK THE MUD OFF THE TIRES BEFORE TRAVELING ONTO THE ROADWAY.

CHEMICAL TREATMENTS: OPERATOR MUST AMEND THE SWPPP TO INCLUDE THE INTENDED USES AND LOCATIONS OF FLOCCULANTS, POLYMERS, AND OTHER SEDIMENTATION TREATMENT CHEMICALS. CHEMICAL TREATMENTS MUST BE IN COMPLIANCE WITH PART 9.18.

BIORETENTION & BIOSWALES: BIORETENTION BASINS AND BIOSWALES DIRECT SHEET FLOW ACROSS A GRASS BUFFER STRIP TO A PONDING AREA FOR INFILTRATION. THEY UTILIZE SOILS AND BOTH WOODY AND HERBACEOUS PLANTS TO REMOVE POLLUTANTS FROM STORMWATER RUNOFF. THE PONDING AREA GENERALLY CONSISTS OF A SURFACE LAYER CONTAINING ORGANICS SUCH AS MULCH, TREES, NATIVE GRASSES AND SHRUBS, A SUBSURFACE LAYER OF PLANTING SOIL, AND A SAND BED.

DUST CONTROL: OPERATOR WILL COMPLY WITH STATE RULE 7011.0150 ON DUST PREVENTION REQUIREMENTS. DUST FROM THE SITE WILL BE CONTROLLED BY INCREASED STREET SWEEPING AND/OR USING A MOBILE PRESSURE-TYPE DISTRIBUTOR TRUCK TO APPLY POTABLE WATER TO DISTURBED AREAS. THE MOBILE UNIT WILL APPLY WATER AT A RATE NECESSARY TO PREVENT RUNOFF AND PONDING.

POLLUTION PREVENTION MANAGEMENT

POTENTIAL SOURCES OF POLLUTANTS FROM CONSTRUCTION ACTIVITIES INCLUDE, BUT NOT LIMITED TO:

1. SEDIMENT AND FUGITIVE DUST GENERATED FROM CLEARING AND GRUBBING, IMPORT/EXPORT OPERATIONS, REMOVALS/COMPACTION, MASS/FINE GRADING, EXCAVATIONS, TRENCHING, TOPSOIL STRIPING STOCKPILING, WET/DRY PAVEMENT CUTTING, STREET CONSTRUCTION.
2. BASIC/ACIDIC PH LEVELS FROM CURB AND GUTTER, MANHOLE STRUCTURES, SIDEWALKS, DRIVEWAY APRONS, FOUNDATIONS, BRIDGE ABUTMENTS, WET/DRY PAVEMENT CUTTING, MASONRY WASHOUT/CLEANOUT.
3. EXCESS NUTRIENTS FROM LANDSCAPING INSTALLATIONS, SOIL ADDITIVES, FERTILIZATION, MULCHING.
4. HYDROCARBONS FROM STREET CONSTRUCTION, DEMOLITION/REMOVALS, WET/DRY PAVEMENT CUTTING.

- OPERATOR WILL COMPLY WITH ALL OF THE POLLUTION PREVENTION AND MANAGEMENT MEASURES IDENTIFIED IN THE NPDES-CSW PERMIT, PART 12.1. STORAGE AND DISPOSAL OF CONSTRUCTION AND HAZARDOUS WASTES MUST BE IN COMPLIANCE WITH MPCA REGULATIONS.
- A. POSITION AND STAKE DOWN ALL PORTABLE TOILETS SO THEY CANNOT BE TIPPED OR KNOCKED OVER. SUPPLY ADEQUATE SECONDARY CONTAINMENT.
 - B. SECONDARY CONTAINMENT IS NEEDED AROUND ALL STATIONARY EQUIPMENT (GENERATORS, PUMPS, LIGHT PLANTS, ETC.) PROVIDE CONTAINMENT FOR ALL HAZARDOUS MATERIALS AND TOXIC WASTE.
 - C. NO ENGINE DEGREASING IS ALLOWED ON SITE.
 - D. VEHICLE AND EQUIPMENT WASHING TO OCCUR IN DESIGNATED AREA AS DETERMINED BY THE CONTRACTOR SUBMITTAL OF A MANAGEMENT PLAN FOR THESE ACTIVITIES.
 - E. PROPERLY CLEAN UP AND REPORT ALL SPILLS AS REQUIRED BY THE MPCA AND MNDOT SPECIFICATIONS.
 - F. PROVIDE A SPILL KIT AT EACH WORK LOCATION ON THE SITE.
 - G. PROVIDE A SECURE STORAGE AREA WITH RESTRICTED ACCESS FOR ALL HAZARDOUS MATERIALS AND TOXIC WASTE. RETURN ALL HAZARDOUS MATERIALS AND TOXIC WASTE TO THE DESIGNATED STORAGE AREA AT THE END OF THE BUSINESS DAY UNLESS INFEASIBLE. STORE ALL HAZARDOUS MATERIALS AND TOXIC WASTE (INCLUDING BUT NOT LIMITED TO OIL, DIESEL FUEL, GASOLINE, HYDRAULIC FLUIDS, PAINT, PETROLEUM BASED PRODUCTS, WOOD PRESERVATIVES, ADDITIVES, CURING COMPOUNDS, AND ACIDS) IN SEALED CONTAINERS WITH SECONDARY CONTAINMENT. CLEAN UP SPILLS IMMEDIATELY. STORE, COLLECT AND DISPOSE OF ALL SOLID WASTE.
 - H. SLURRY FROM CONCRETE OPERATIONS MUST BE VACUUMED UP IMMEDIATELY. NO CONCRETE WASHOUT SHALL COME IN CONTACT WITH THE GROUND AND MUST BE PROPERLY DISPOSED OF.
 - I. A SIGN MUST BE INSTALLED ADJACENT TO EACH CONCRETE WASHOUT FACILITY.


- J. CREATE AND FOLLOW A WRITTEN DISPOSAL PLAN FOR ALL WASTE MATERIALS. INCLUDE IN THE PLAN HOW THE MATERIAL WILL BE DISPOSED OF AND THE LOCATION OF THE DISPOSAL SITE. SUBMIT PLAN TO THE ENGINEER PRIOR TO CONSTRUCTION.
- K. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT DISCHARGE OR PLACEMENT OF BITUMINOUS GRINDINGS, CUTTINGS, MILLINGS, AND OTHER BITUMINOUS WASTES FROM AREAS OF EXISTING OR FUTURE VEGETATED SOILS AND FROM ALL WATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES.

FINAL STABILIZATION

FINAL STABILIZATION IS ACHIEVED WHEN NPDES CGP PARTS 13.1-13.7 (AS APPLICABLE) ARE COMPLETED PRIOR TO SUBMISSION OF THE NOTICE OF TERMINATION (NOT) TO MPCA.

1. ALL AREAS MUST BE STABILIZED WITH A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70%.
2. ALL TEMPORARY SEDIMENT CONTROL BMP MEASURES MUST BE REMOVED PRIOR TO SUBMITTING PERMIT NOT.
3. THE NOT SUBMITTAL MUST INCLUDE EITHER GROUND OR AERIAL PHOTOGRAPHS SHOWING THE AFOREMENTIONED REQUIREMENTS OF HAVE BEEN MET.

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PAUL HORNBY, PE
DATE: 01-24-2025 LIC. NO. 23359



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REVISONS	NO.	DATE	DESCRIPTION

STORMWATER
POLLUTION
PREVENTION
PLAN

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

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STORMWATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE

PROJECT NAME: LINO LAKES 2025 STREET REHABILITATION

PROJECT LOCATION: STREET: EVERGREEN TRL, DIANE ST, 81ST ST, DANUBE ST, ELBE ST, RED MAPLE LN
COUNTY: ANOKA
STATE: MINNESOTA

PROJECT NUMBER: WSB 023620-000

RED MAPLE LN CITY: LINO LAKES

ZIP: 55014

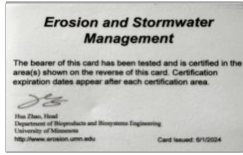
LATITUDE/LONGITUDE: 45.1993, -93.0984

THE PLANNED SCOPE OF THE PROJECT INCLUDES:
THE CITY OF LINO LAKES IS PROPOSING TO RECONSTRUCT THE EXISTING STREETS, (EVERGREEN TRAIL, DIANE STREET, 81ST STREET, DANUBE STREET, ELBE STREET, RED MAPLE LANE), WITH MILL AND OVERLAY. CONSTRUCTION OF NEW SANITARY SEWER AND WATERMAIN IS PROPOSED, ALONG WITH RECONSTRUCTION OF EXISTING STORM SEWER FACILITIES.

TENTATIVE CONSTRUCTION SCHEDULE (OPERATOR SHOULD PROVIDE ESTIMATED CONSTRUCTION SCHEDULE TO THE ENGINEER)	
CONSTRUCTION ACTIVITIES:	ESTIMATED DATES OF SOIL DISTURBANCE ACTIVITIES:
TEMPORARY SEDIMENT CONTROL BMPS & REMOVALS	MAY 2025
GRADING & UTILITY WORK	JUNE - JULY 2025
CURB & PAVEMENT	JULY - SEPT 2025
FINAL STABILIZATION	NOV 2025

PROJECT PERSONNEL AND TRAINING

SWPPP DEVELOPER:
WSB DUANE GACHNE
3701 40TH AVE NW SUITE 100
ROCHESTER, MN, 55901
507-910-2983/DGACHNE@WSBENG.COM



CONTRACTOR TO PROVIDE CERTIFICATION OF EROSION CONTROL OFFICER AND ANY OTHER CREW MEMBERS WHO WILL WORK ON THE IMPLEMENTATION OF THE SWPPP AND THE INSTALLATION, INSPECTION, AND MAINTENANCE OF THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS BEFORE, DURING, AND AFTER CONSTRUCTION UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA. PROVIDE PROOF OF CERTIFICATION AT THE PRECONSTRUCTION MEETING. WORK WILL NOT BE ALLOWED TO COMMENCE UNTIL PROOF OF CERTIFICATION HAS BEEN PROVIDED TO THE PROJECT ENGINEER.

CHAIN OF RESPONSIBILITY

THE CITY OF LINO LAKES AND THE CONTRACTOR ARE CO-PERMITTEES FOR THE NPDES CONSTRUCTION GENERAL PERMIT. THE CONTRACTOR IS RESPONSIBLE TO COMPLY WITH ALL ASPECTS OF THE NPDES CONSTRUCTION PERMIT AT ALL TIMES UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA.

NAME	COMPANY	TITLE	PHONE
DIANE HANKEE	CITY OF LINO LAKES	CITY ENGINEER (OWNER CONTACT)	612-360-1298
PAUL HORNBY	WSB	PROJECT MANAGER	651-325-6849
		CONTRACTOR CONTACT	
		ON SITE ESC INSPECTOR	

AGENCY CONTACTS

ORGANIZATION	CONTACT NAME	PHONE/EMAIL
MPCA (EMERGENCY) 24 HOUR	STATE DUTY OFFICER	1-800-422-0798
MPCA	MATT HOSKINS	651-757-2864/MATTHEW.HOSKINS@STATE.MN.US
LINO LAKES LGU (RCWD)	PATRICK HUGHES	763-398-3080/PHUGHES@RICECREEK.ORG
ACOE	TOM HINGSBERGER	651-290-5367
MNDNR ECO/WATERS	WES SAUNDERS-PEARCE	651-259-5822
ANOKA CONSERVATION DISTRICT	MITCH HAUSTEIN	763-434-2030

LOCATION OF SWPPP REQUIREMENTS

THE REQUIRED SWPPP ELEMENTS MAY BE LOCATED IN MANY PLACES WITHIN THE PLAN SET AS WELL AS IN THE SPECIAL PROVISIONS, PROJECT MANUAL, MNDOT SPEC BOOK, OR ON FILE WITH THE PROJECT OWNER.

DESCRIPTION	LOCATION
TEMPORARY/PERMANENT EROSION CONTROL MEASURES	SHEET NO.58-64
DIRECTION OF FLOW	SHEET NO. 58-64
CONSTRUCTION NOTES & STANDARD PLATES	SHEET NO. 5-10
DRAINAGE PLAN & CONSTRUCTION PLAN	SHEET NO. 6-18
BMP TABULATION	SHEET NO. 3-4
STORMWATER CALCULATIONS	DRAINAGE REPORT & HYDRAULIC REPORT. AVAILABLE UPON REQUEST

RECEIVING WATERS

A SPECIAL AND IMPAIRED WATERS SEARCH WAS COMPLETED USING THE MPCA SEARCH ENGINE ON 12/2/2024. BASED ON THIS REVIEW, THE FOLLOWING SPECIAL/IMPAIRED WATERS (WITH CONSTRUCTION RELATED IMPAIRMENTS) ARE LOCATED WITHIN ONE MILE OF, AND DOWNSTREAM OF, ANY PROJECT DISCHARGE POINTS. PARTS 23.9 & 23.10 OF THE NPDES PERMIT APPLY. BASED ON THIS REVIEW, THERE ARE NO SPECIAL IMPAIRED WATERS (WITH CONSTRUCTION RELATED IMPAIRMENTS) LOCATED WITHIN ONE MILE OF, AND DOWNSTREAM OF, PROJECT DISCHARGE POINTS. THE FOLLOWING IS A LIST OF RECEIVING WATERS WITHIN ONE MILE OF THE PROJECT:

WATERBODY	IMPAIRMENT(S)
RICE LAKE	NUTRIENTS
RESHANAU LAKE	NUTRIENTS
GEORGE WATCH LAKE	NUTRIENTS

AREAS OF ENVIRONMENTAL SENSITIVITY (AES) AND INFESTED WATERS

IN ADDITION TO THE LIST OF SPECIAL AND IMPAIRED WATERS, THE CONTRACTOR SHALL BE AWARE THAT THERE ARE WETLANDS AND EXISTING STORMWATER FACILITIES WITHIN AND NEAR THE PROJECT BOUNDARY. THERE IS A MAP OF KNOWN NATURAL RESOURCES ON THE LAST PAGE OF THE SWPPP NARRATIVE. AREAS OF ENVIRONMENTAL SENSITIVITY ARE ALSO CALLED OUT ON THE PLAN SHEETS.

SOIL TYPES

A PROJECT WIDE GEOTECHNICAL REPORT WAS COMPLETED DURING THE DESIGN PHASE. GLACIAL TILL IS PREDOMINATING ALONG MOST OF THE ALIGNMENT, HOWEVER, GLACIAL OUTWASH AND GLACIAL FLUVIUM IS ALSO NOTED. THE TILL CONSISTS OF A BLEND OF SAND AND CLAY WHILE THE OUTWASH AND FLUVIUM IS GENERALLY SAND WITH SILT WITH ENCOUNTERS OF LEAN CLAY. ADDITIONAL SOIL INFORMATION CAN BE FOUND IN THE GEOTECHNICAL REPORT, LOCATED WITHIN THE PROJECT SPECIFICATIONS. SOIL CLASSIFICATIONS FOR HIGHLY ERODIBLE LAND (HEL), POTENTIALLY HIGHLY ERODIBLE LAND (PHEL), AND NOT HIGHLY ERODIBLE LAND (NHEL) SOILS CAN BE FOUND ON *FIGURE 1. SWPPP RESOURCE MAP.*

NATIVE TOPSOIL WILL BE STRIPPED; IF MATERIAL NEEDS TO BE STOCKPILED, APPROPRIATE ACTION WILL TAKE PLACE TO ENSURE THE STOCKPILES HAVE ALL PROPER BMPS IN PLACE ACCORDING TO THIS SWPPP AND THE NPDES PERMIT.

ENVIRONMENTAL REVIEW

NO FORMAL ENVIRONMENTAL REVIEW WAS REQUIRED FOR THIS PROJECT.

WETLANDS: MITIGATION MEASURES ARE NOT REQUIRED AS A RESULT OF NO WETLAND IMPACTS FROM THE PROJECT. ALL WETLAND AREAS WILL BE PROTECTED WITH PERIMETER CONTROL AND A 50’ NATURAL BUFFER (IF INFEASIBLE, REDUNDANT PERIMETER CONTROL MEASURES), INCLUDED AREAS THAT ARE PERMITTED TO BE FILLED AND/OR EXCAVATED UNTIL WORK IN THE PERMITTED AREAS ARE NECESSARY. REDUNDANT BMP MEASURES MUST BE PLACED 5’ FROM THE INITIAL PERIMETER CONTROL MEASURE WITH A STABILIZED BUFFER STRIP BETWEEN THE BMPS.

THREATENED/ENDANGERED SPECIES: ANOKA COUNTY LISTS THE TRICOLORED BAT, THE SALAMANDER MUSSEL AS PROPOSED ENDANGERED, THE WHOOPING CRANE AS EXPERIMENTAL POPULATION NON-ESSENTIAL, THE RUSTY PATCHED BUMBLE BEE AS ENDANGERED, THE MONARCH BUTTERFLY AS CANDIDATE, AND THE WESTERN FRITILLARY AS PROPOSED THREATNED SPECIES WITHIN THE COUNTY. TREE REMOVAL SHOULD OCCUR OUTSIDE OF THE TRICOLORED BAT ACTIVE SEASON (APRIL 1 TO OCTOBER 31). BASED ON THE CONSTRUCTION ACTIVITIES, IT IS DETERMINED THAT THE PROJECT WILL HAVE NO EFFECT ON THESE SPECIES OR THEIR HABITATS. HOWEVER, IF THESE SPECIES ARE FOUND, CONTRACTOR TO STOP WORK IMMEDIATELY FOR FURTHER INVESTIGATION.

DRINKING WATER/WELLS: ACCORDING TO THE MDH, THE PROJECT IS NOT LOCATED WITHIN ANY DRINKING WATER SUPPLY MANAGEMENT AREA (DWSMA) OR NEAR ANY WELLHEAD PROTECTION AREAS.

CONTAMINATED PROPERTIES: THE MPCA’S “WHAT’S IN MY NEIGHBORHOOD” DATABASE WAS REVIEWED ON 12/2/2024. THE RESULTS OF THIS REVIEW SHOW NO KNOWN HAZARDOUS WATSTES SITES LOCATED ADJACENT TO THE PROJECT ALIGNMENT.THE DEPTH OF THE FULL RECLAMATION IS NOT PROPOSED TO UNEARTH ANY CONTAMINATED SOIL, CONTAMINATED WATER, AND/OR REGULATED WASTE. REFER TO MNDOT SPEC 1717.1.A. FOR POTENTIAL INDICATORS OF CONTAMINATED MATERIALS AND REGULATED WASTE. IF CONTAMINATED MATERIAL, CONTAMINATED WATER, AND/OR REGULATED MATERIALS ARE FOUND, CREWS ARE TO STOP WORK IMMEDIATELY FOR FURTHER INVESTIGATION/TESTING.

FLOOD CONTINGENCY PLAN: PROJECT ACTIVITIES MAY OCCUR WITHIN THE 100-YEAR FLOODPLAIN OR FLOODWAY, THEREFORE, THE PROJECT ENGINEER (AT THEIR DISCRETION) MAY REQUIRE A PREVENTATIVE FLOOD CONTINGENCY PLAN FOR SPECIFIC PROJECT ACTIVITIES AND AREAS IF SEASONAL PRECIPITATION POSSES A POTENTIAL RISK OF FLOODING WORK AREAS WITHIN THE PROJECT LIMITS. THIS PLAN SHALL BE SUBMITTED BY THE OPERATOR TO THE PROJECT ENGINEER FOR APPROVAL A MINIMUM OF 72 HOURS PRIOR TO THE SCHEDULED WORK AND/OR DURING ACTIVE WORK WITHIN THE FLOODPLAIN. NO WORK WITHIN THE FLOODPLAIN CAN COMMENCE UNTIL WRITTEN APPROVAL HAS BEEN GRANTED BY THE PROJECT ENGINEER.

AQUATIC INVASIVE SPECIES: ALL IN-WATER, AND DEWATERING EQUIPMENT SHALL BE DECONTAMINATED OF ALL AQUATIC PLANTS AND PROHIBITED INVASIVE SPECIES PRIOR TO USING WITHIN SURFACE WATERS ON-SITE AND TRANSPORTING OFF-SITE. ALL DECONTAMINATION ACTIVITIES SHALL MEET THE CHAPTER 1 STANDARDS OF THE MINNESOTA DNR’S BEST PRACTICES MANUAL FOR MEETING DNR GENERAL PUBLIC WATERS WORK PERMIT GP 2004-0001.

LAND FEATURE CHANGES

TOTAL AREA TO BE DISTURBED = 11.24 ACRES
IMPERVIOUS AREA: PRE-CONSTRUCTION = 8.15 ACRES/POST-CONSTRUCTION = 8.13 ACRES
NET DECREASE OF IMPERVIOUS AREA = 0.02 ACRES

LONG TERM MAINTENANCE AND OPERATION:
THE NPDES PERMANENT STORMWATER TREATMENT SYSTEM (PART 15.1) IS NOT REQUIRED BECAUSE THE NET NEW IMPERVIOUS AREA CREATED BY THE PROJECT IS LESS THAN ONE ACRE.

STABILIZATION TIME FRAMES

AREA	TIME FRAME	NOTES
EXPOSED AREAS	IMMEDIATELY AND NO LATER THAN 7 OR 14 DAYS OF BEING UNWORKED	1, 4, 5
LAST 200 LINEAL FEET OF DRAINAGE DITCH/SWALE	WITHIN 24 HOURS OF CONNECTION TO SURFACE WATER/PROPERTY EDGE	1, 2, 3
REMAINING PORTIONS OF DRAINAGE DITCH OR SWALE	7 DAYS	1, 3
PIPE AND CULVERT OUTLETS	24 HOURS	
STOCKPILES	7 DAYS	1

1. INITIATE STABILIZATION IMMEDIATELY WHEN CONSTRUCTION HAS TEMPORARILY OR PERMANENTLY CEASED ON ANY PORTION OF THE SITE. COMPLETE STABILIZATION WITHIN THE TIME FRAME LISTED. IN MANY INSTANCES THIS WILL REQUIRE STABILIZATION TO OCCUR MORE THAN ONCE DURING THE COURSE OF THE PROJECT. TEMPORARY SOIL STOCKPILES WITHOUT SIGNIFICANT CLAY OR SILT AND STOCKPILED AND CONSTRUCTED ROAD BASE ARE EXEMPT FROM THE STABILIZATION REQUIREMENT.



SCALE: AS SHOWN
PLAN BY: THC
THC

DESIGN BY: THC
CHECK BY: PTH

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NO.	DESCRIPTION

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PAUL HORNBY, PE

DATE: 01-24-2025 LIC. NO.: 23359

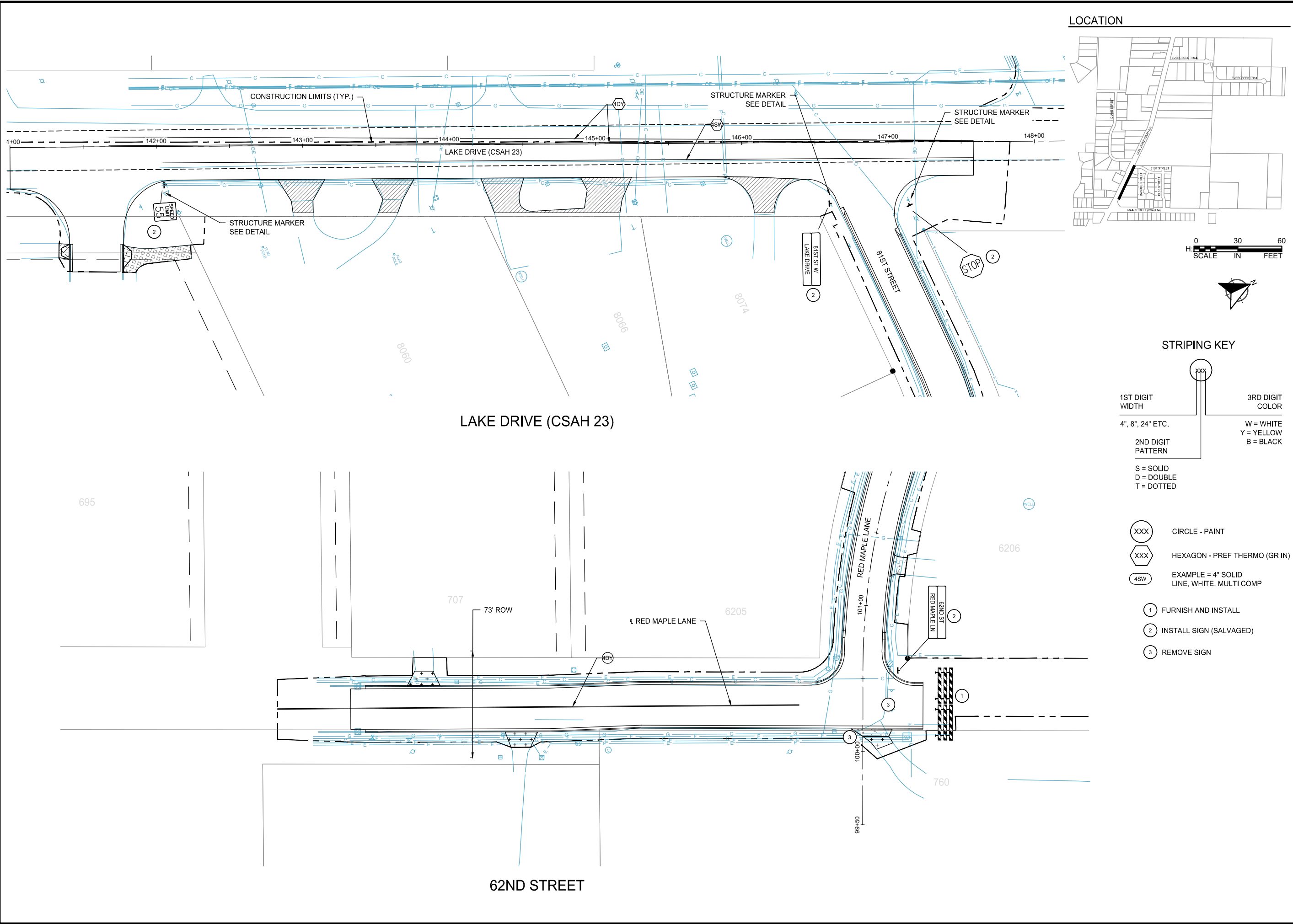
STORMWATER POLLUTION PREVENTION PLAN

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

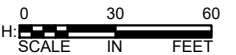
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LOCATION



STRIPING KEY

- 1ST DIGIT WIDTH
4", 8", 24" ETC.
- 2ND DIGIT PATTERN
S = SOLID
D = DOUBLE
T = DOTTED
- 3RD DIGIT COLOR
W = WHITE
Y = YELLOW
B = BLACK
- XXX CIRCLE - PAINT
XXX HEXAGON - PREF THERMO (GR IN)
4SW EXAMPLE = 4" SOLID LINE, WHITE, MULTI COMP
- 1 FURNISH AND INSTALL
2 INSTALL SIGN (SALVAGED)
3 REMOVE SIGN



SCALE: AS SHOWN
PLAN BY: THC

DESIGN BY: THC
CHECK BY: PTH

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PAUL HORNBY, PE

SIGNING AND STRIPING PLAN

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO.
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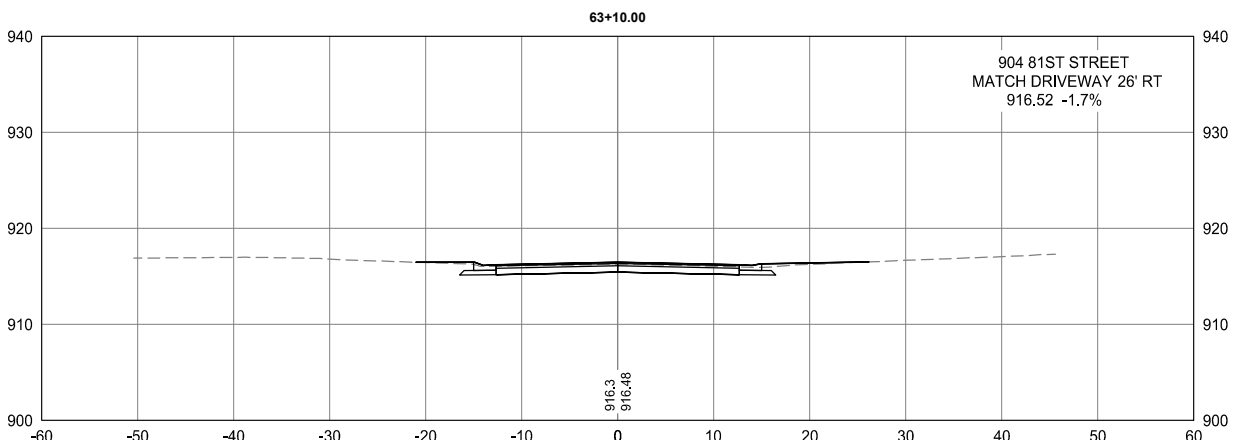
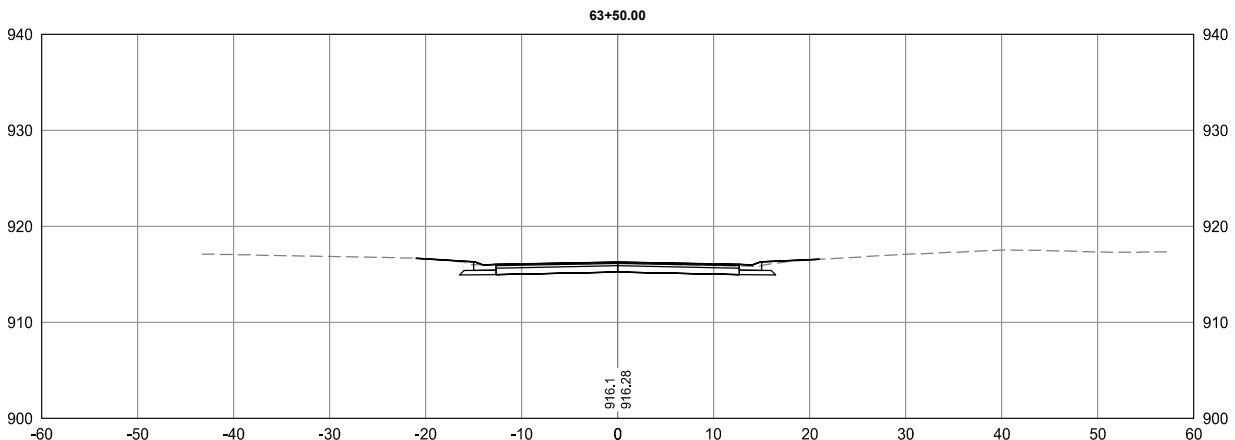
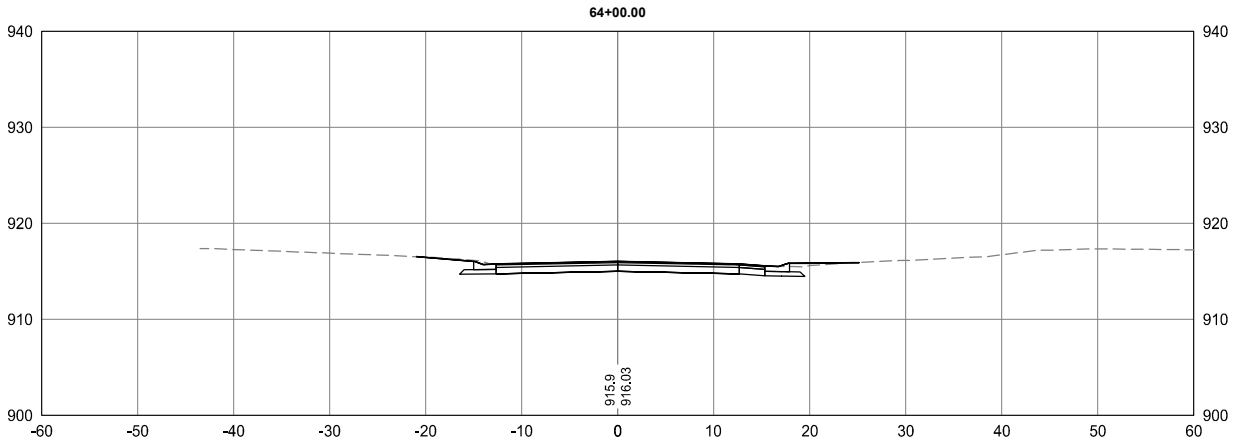
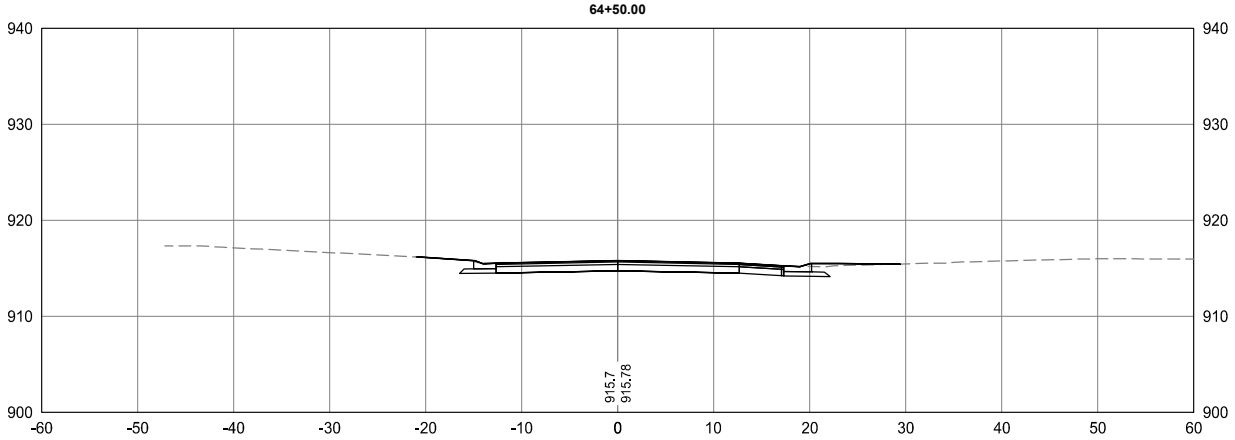
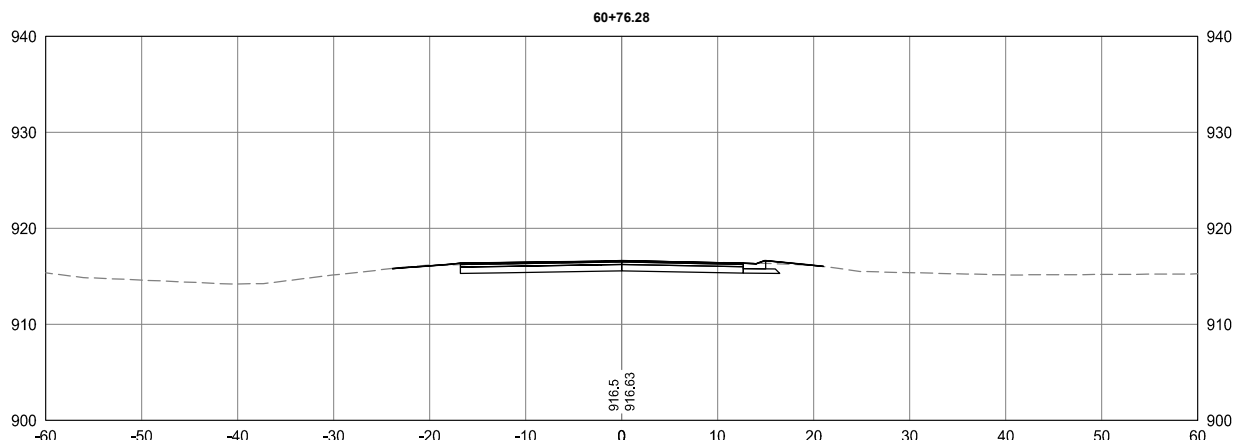
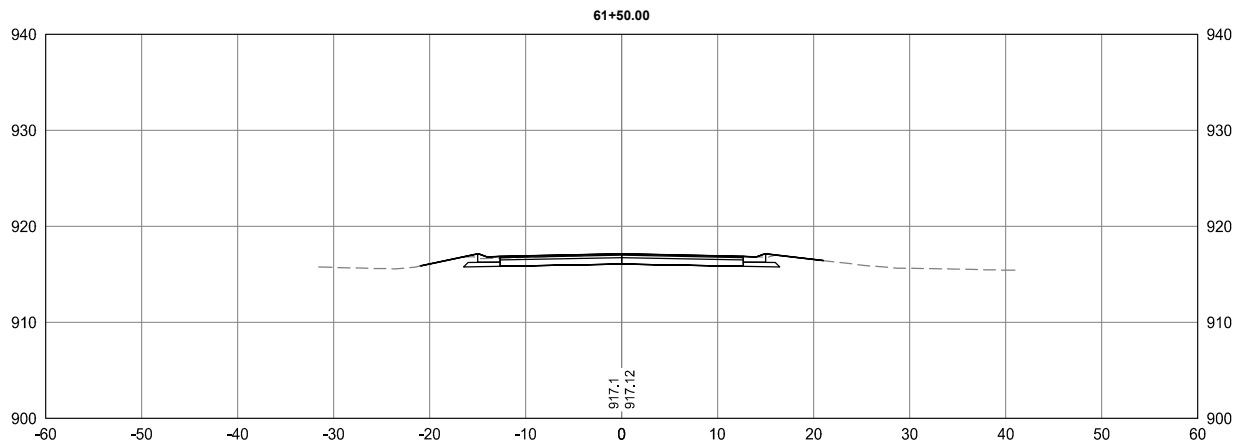
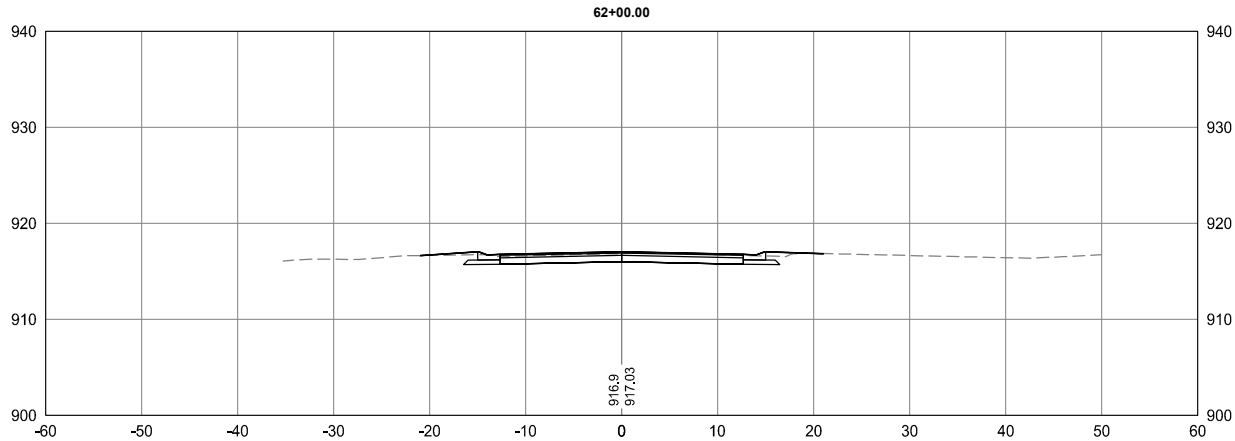
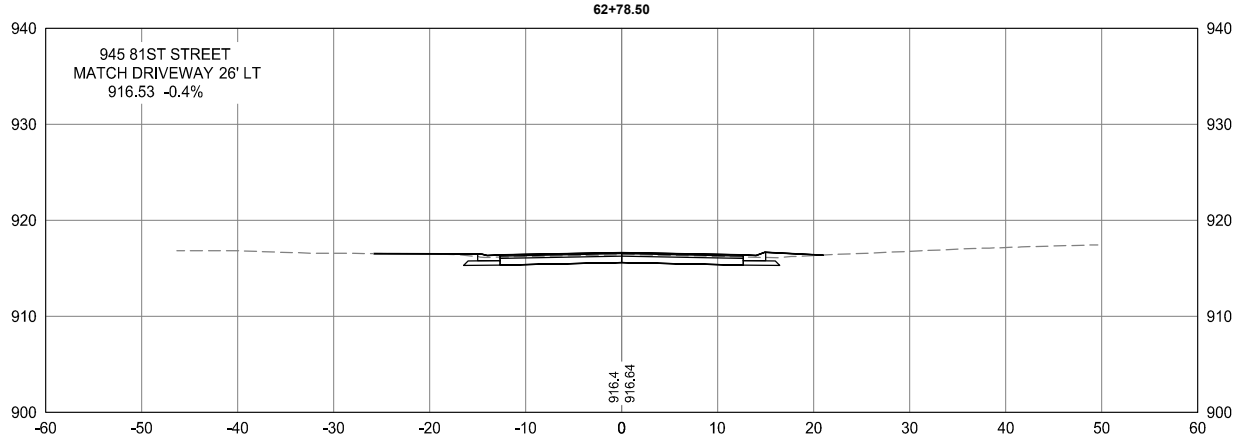
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81ST STREET

2



SCALE: AS SHOWN
DESIGN BY: THC
PLAN BY: THC
CHECK BY: PTH

REVISIONS			
NO.	DATE	DESCRIPTION	
2	02-05-2025	ADDENDUM NO 2	

CROSS SECTIONS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO.
023620-000

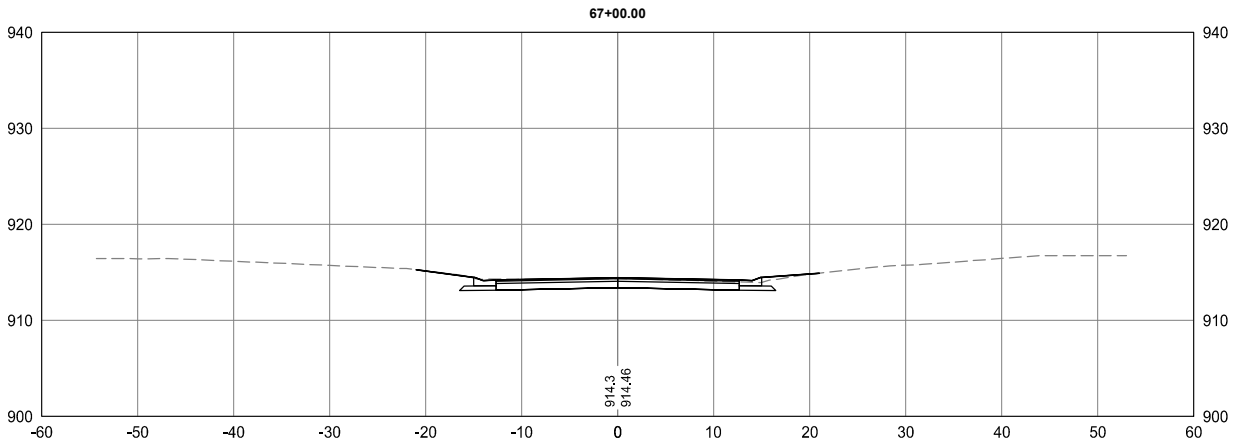
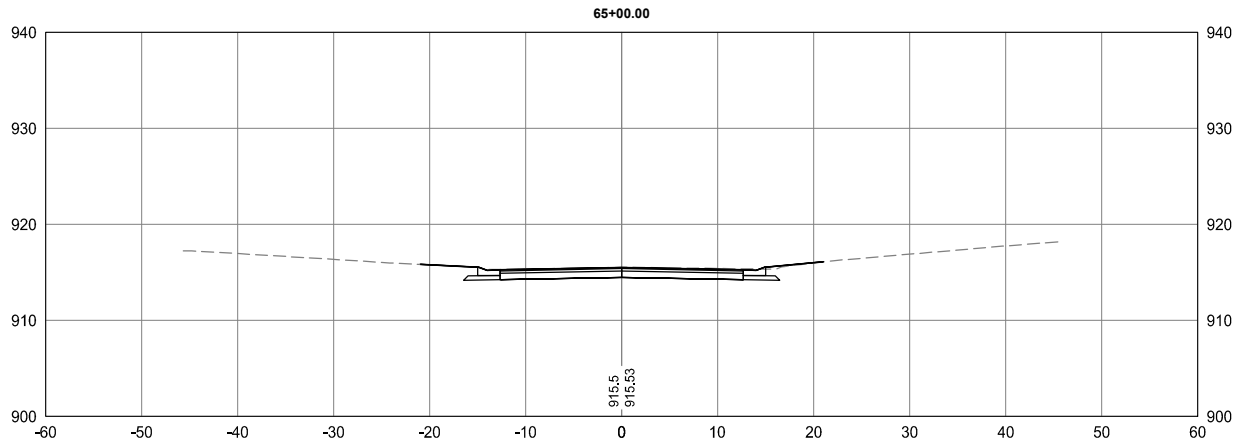
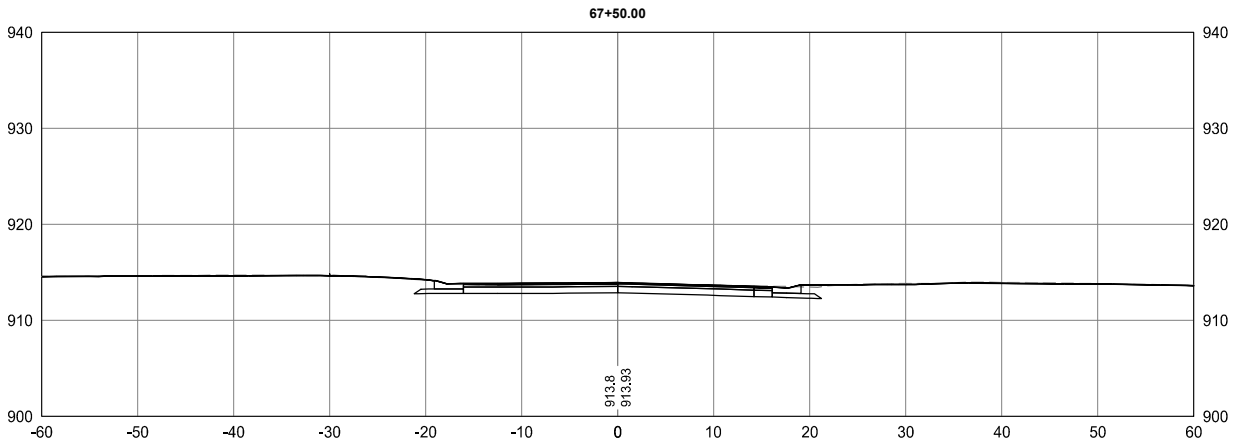
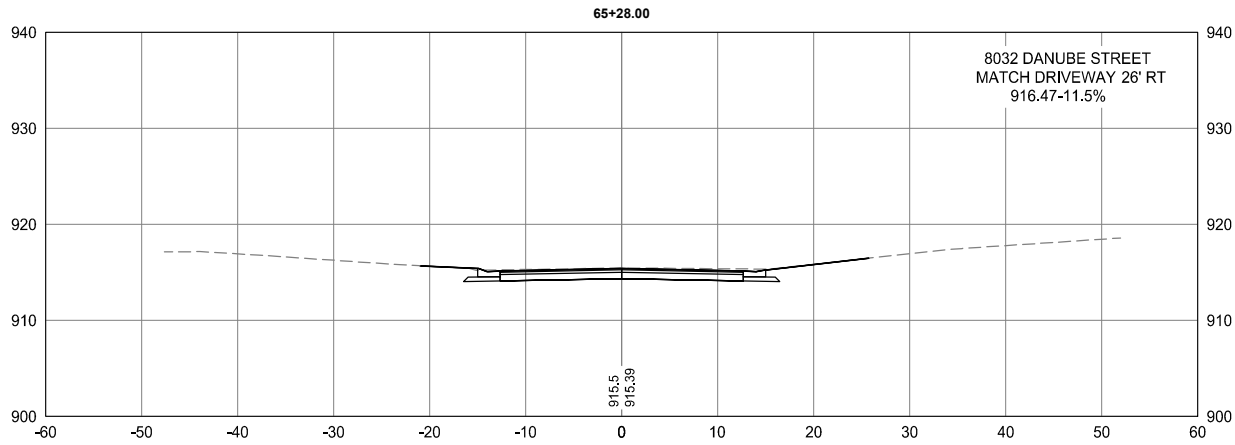
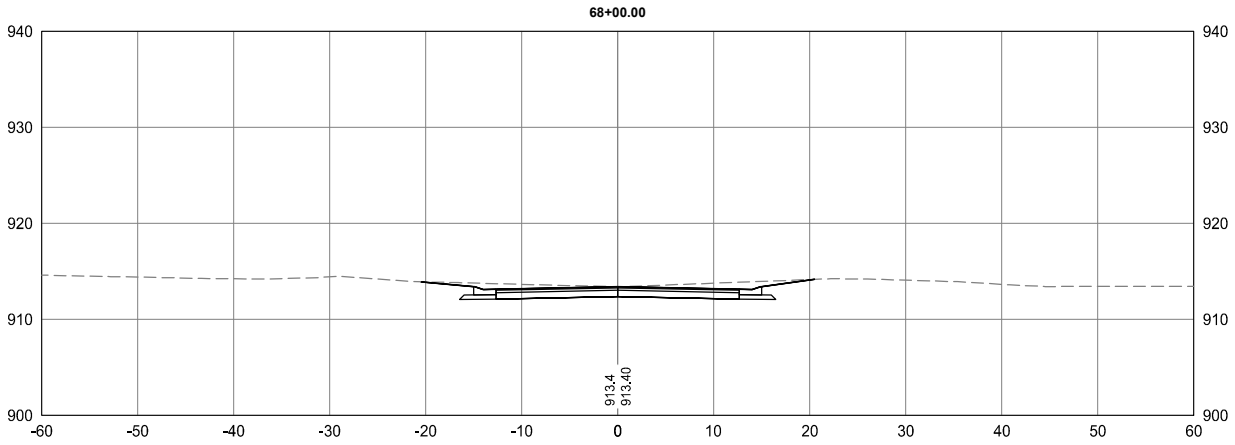
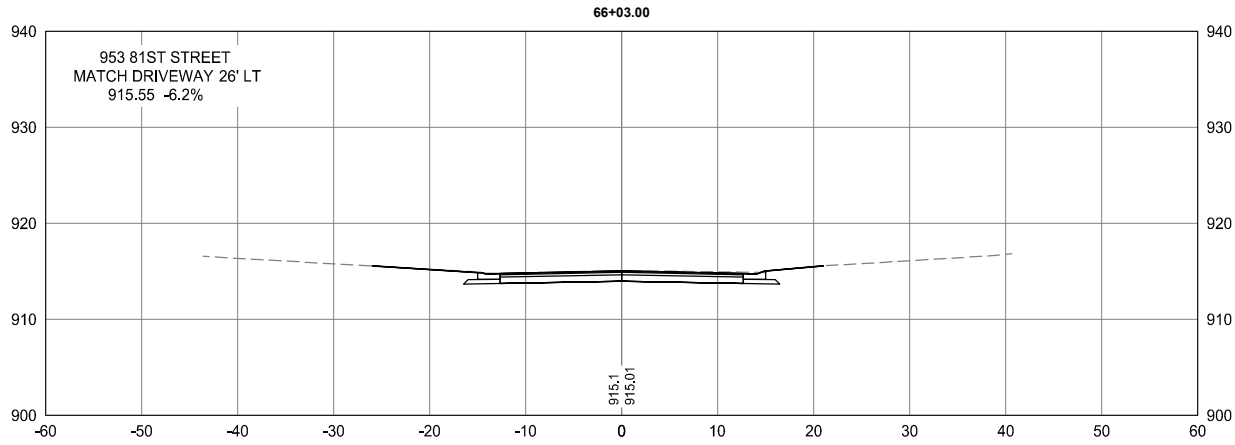
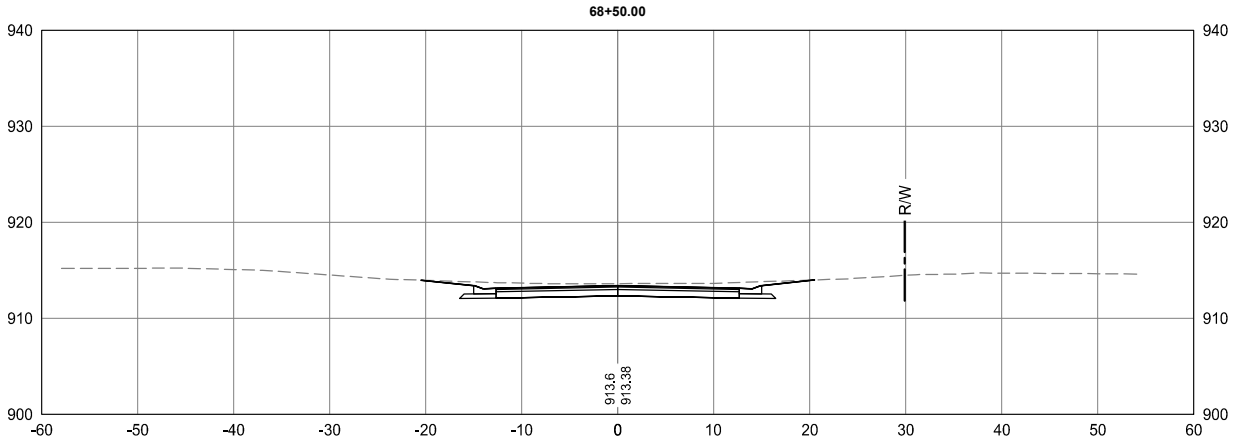
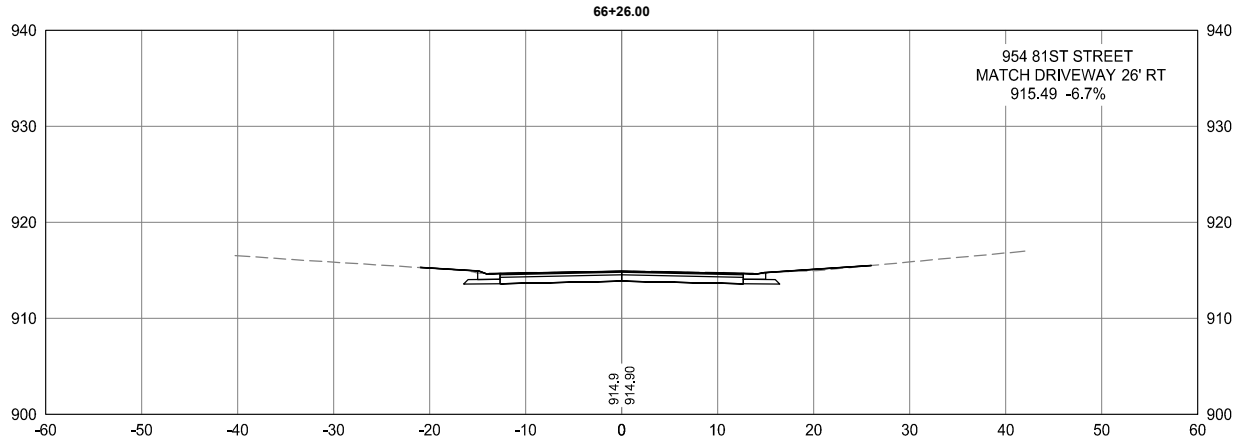
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81ST STREET

2



SCALE: AS SHOWN
DESIGN BY: THC
PLAN BY: THC
CHECK BY: PTH

REVISIONS		
NO.	DATE	DESCRIPTION
2	02-05-2025	ADDENDUM NO 2

CROSS SECTIONS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO.
023620-000

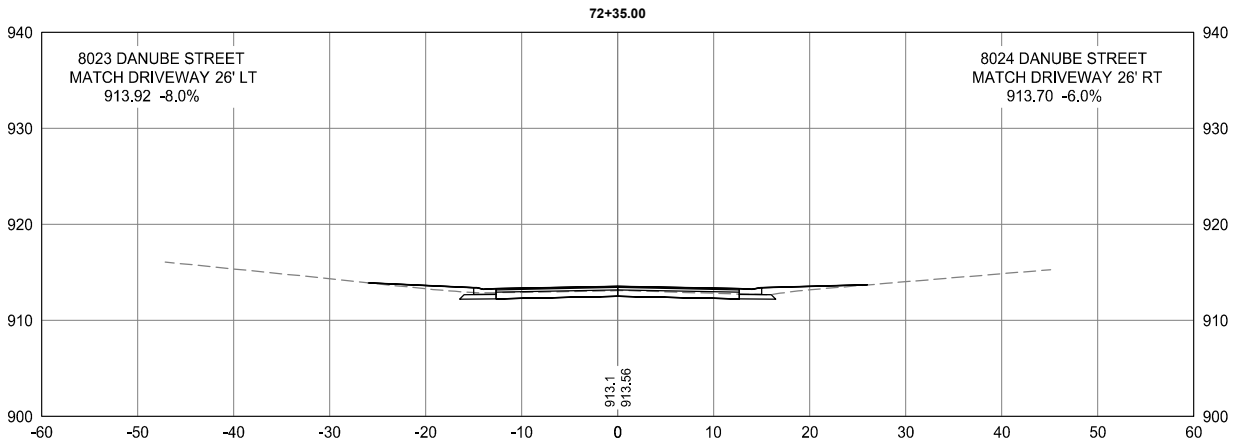
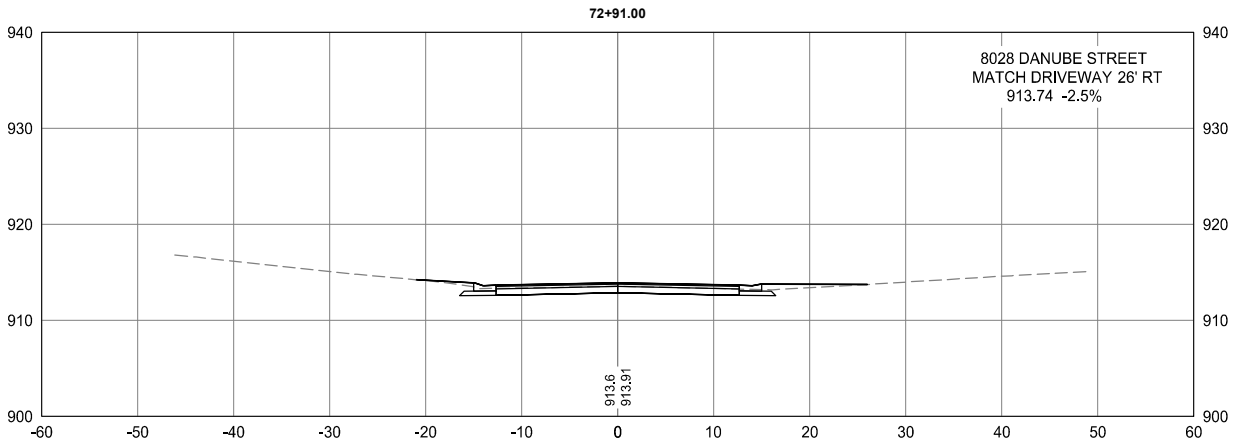
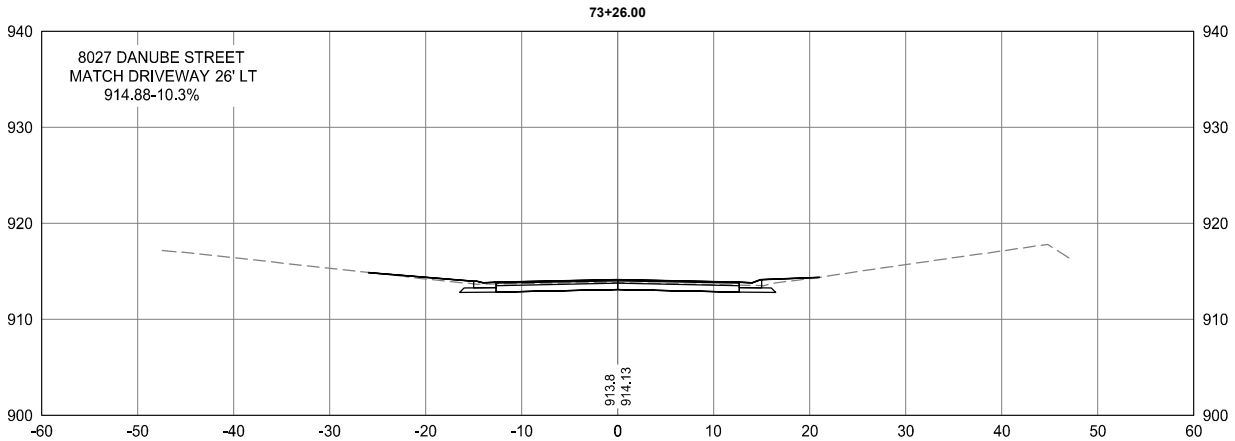
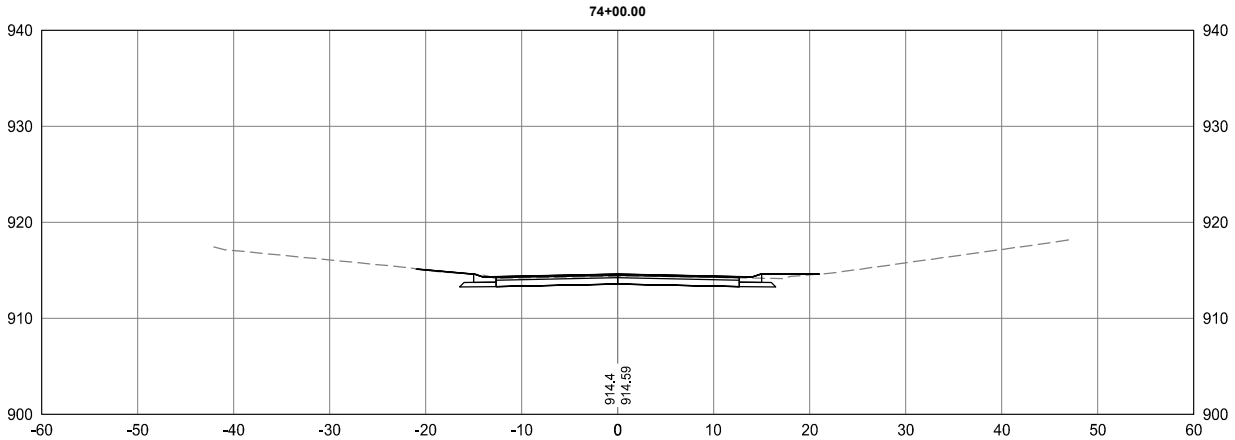
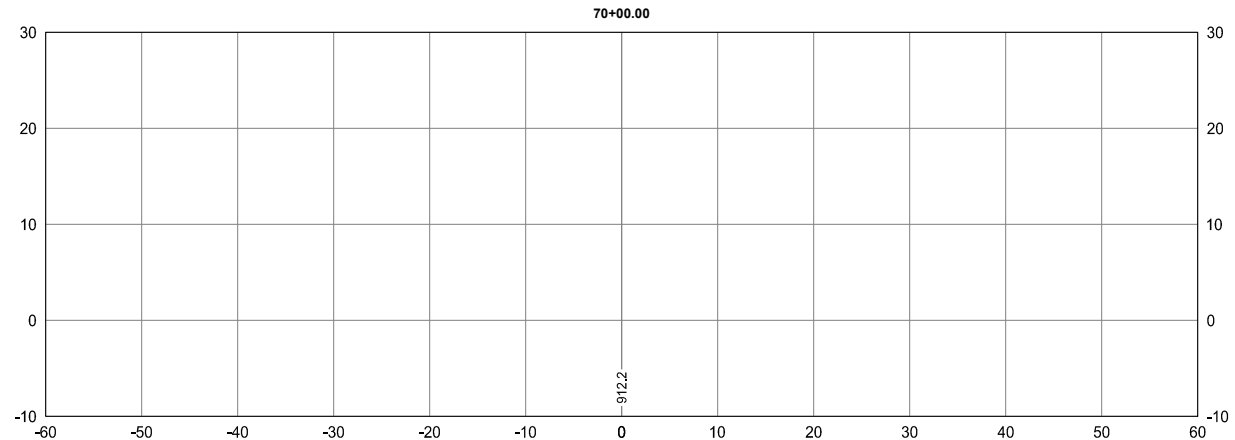
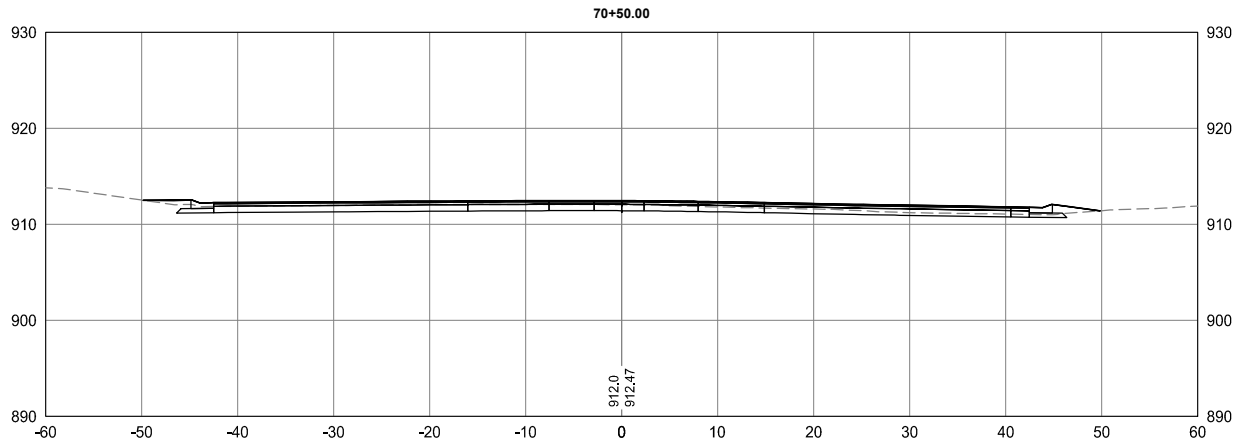
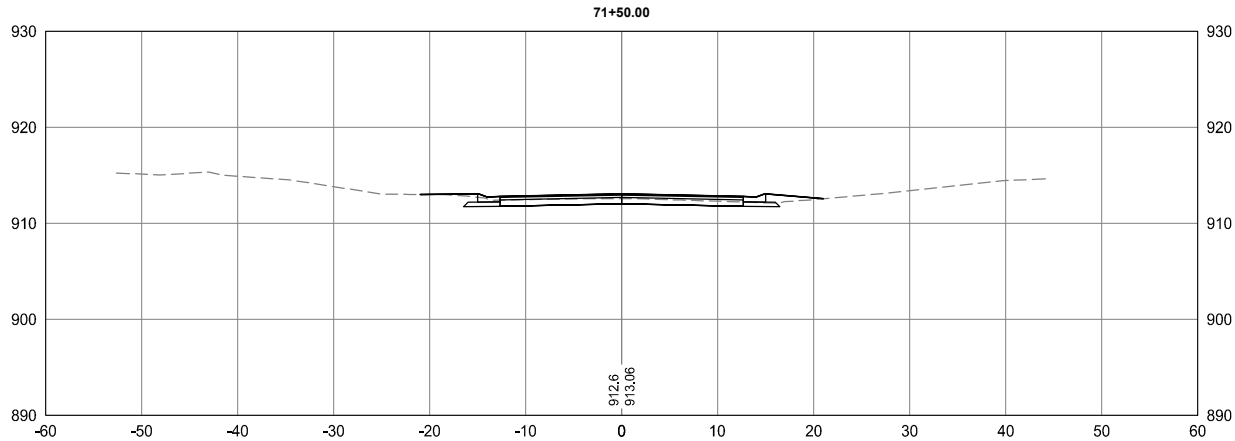
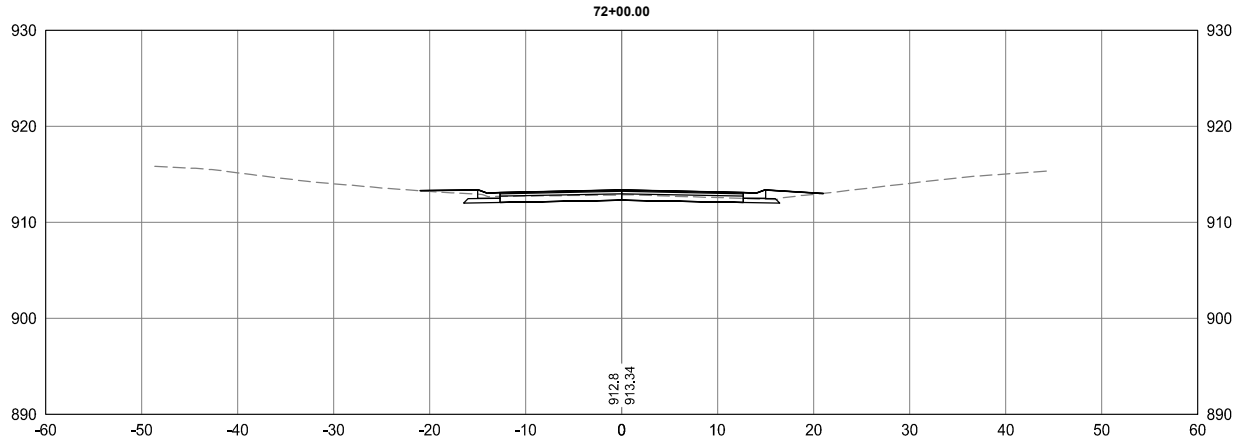
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DANUBE STREET

2



SCALE: AS SHOWN
DESIGN BY: THC
PLAN BY: THC
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REVISIONS		
NO.	DATE	DESCRIPTION
2	02-05-2025	ADDENDUM NO 2

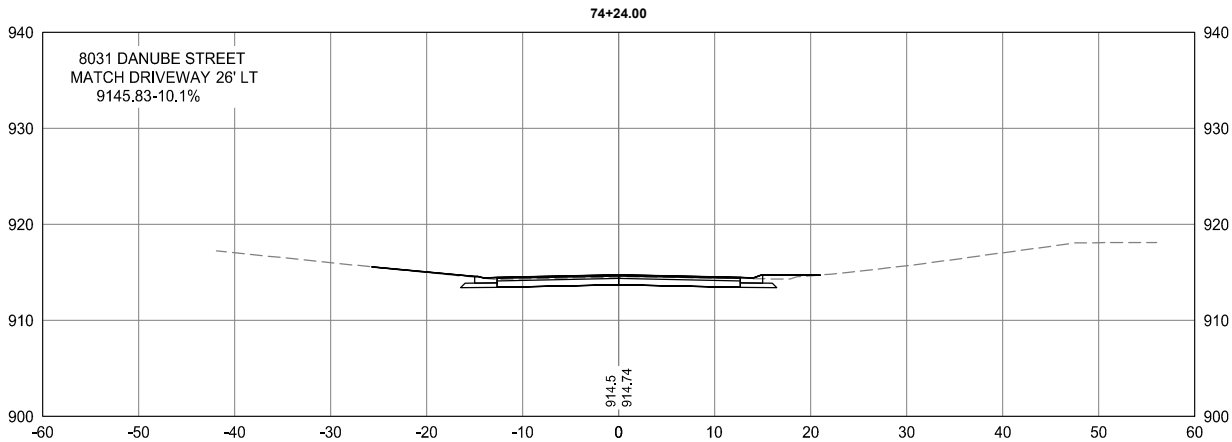
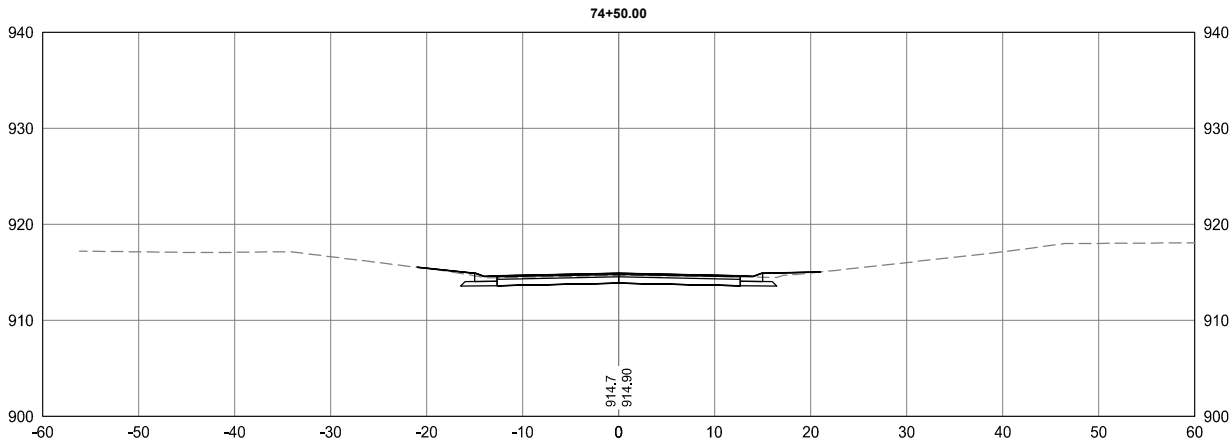
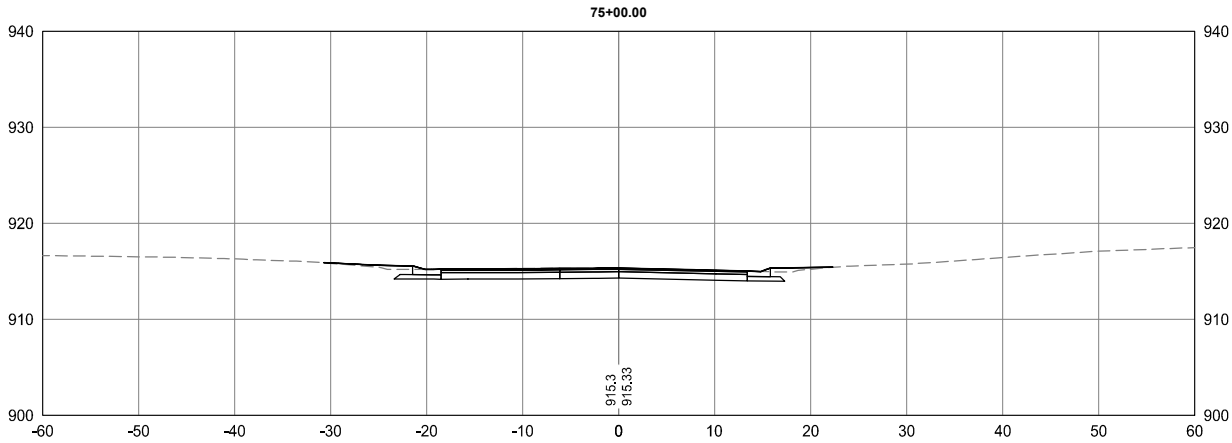
CROSS SECTIONS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO.
023620-000

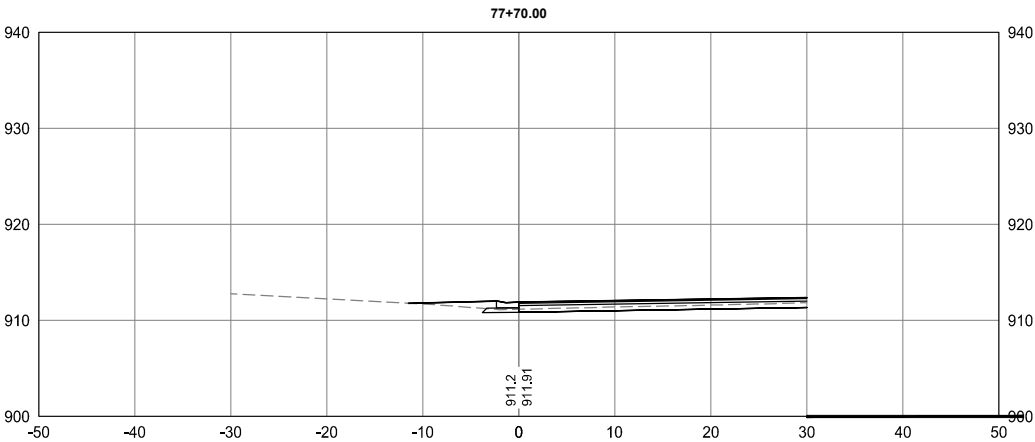
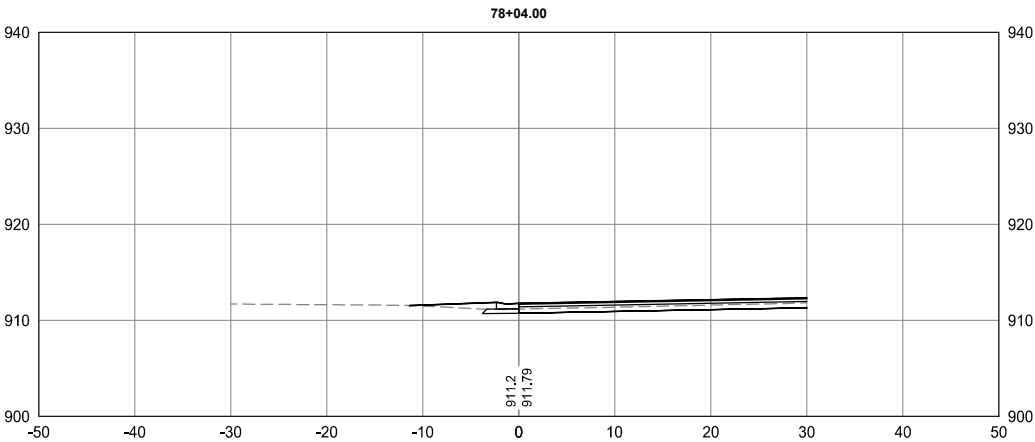
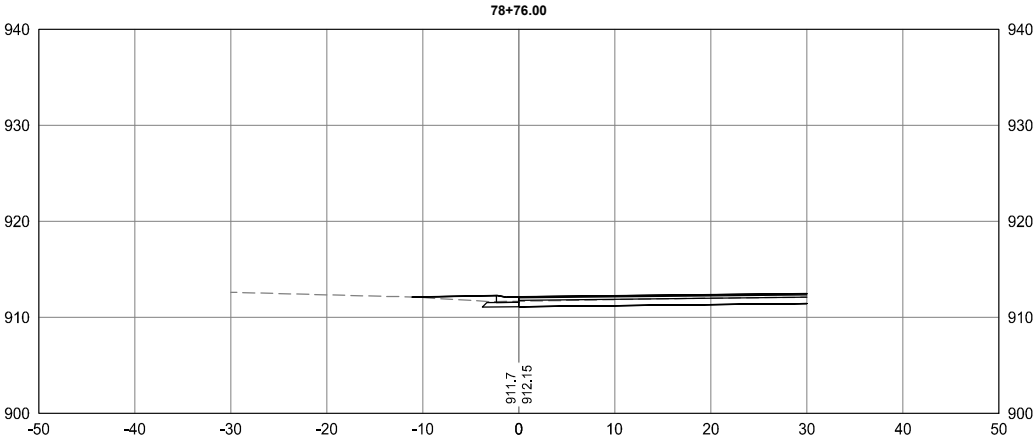
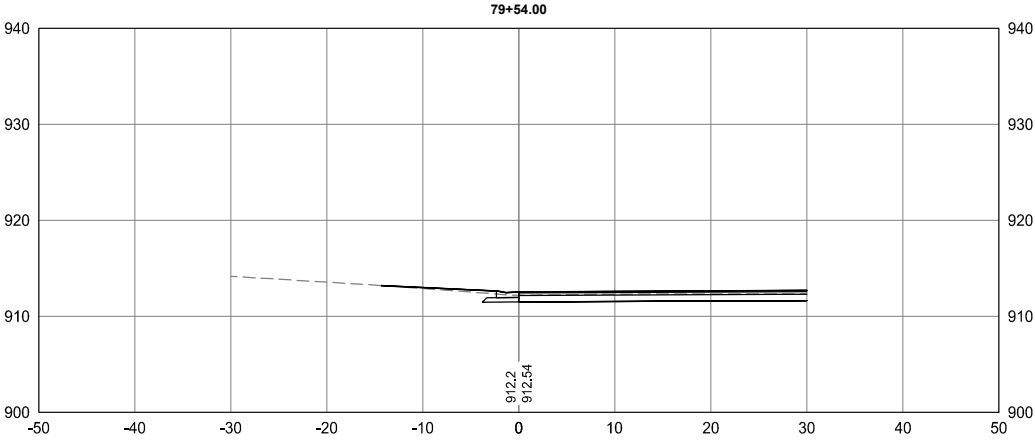
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DANUBE STREET



DANUBE
CUL-DE-SAC

2



SCALE: AS SHOWN
PLAN BY: THC
DESIGN BY: THC
CHECK BY: PTH

REVISIONS

NO.	DATE	DESCRIPTION
2	02-05-2025	ADDENDUM NO 2

CROSS
SECTIONS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

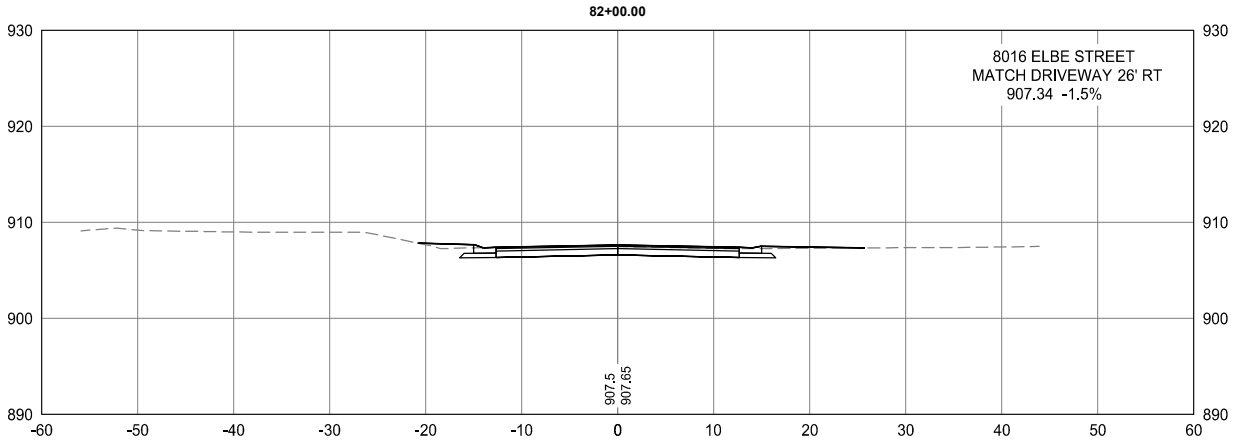
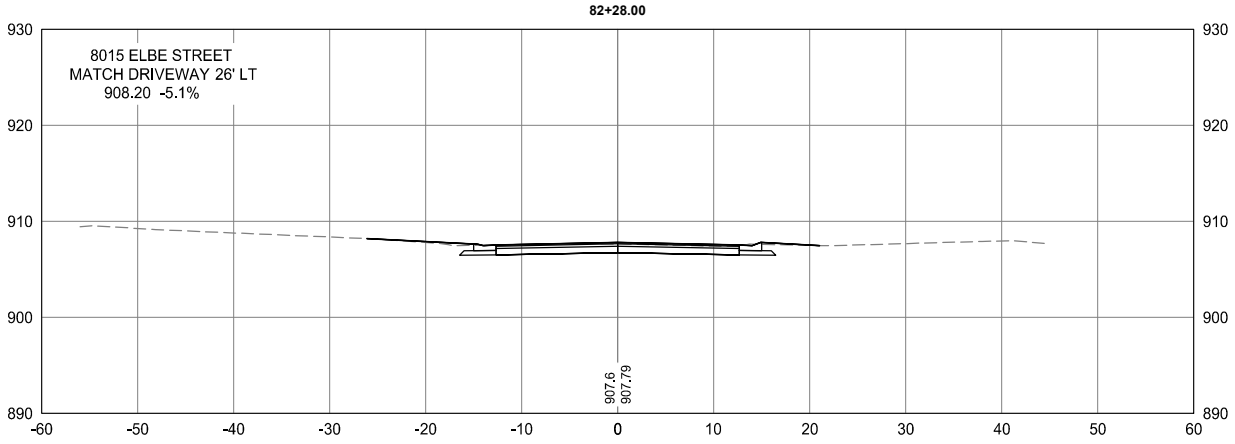
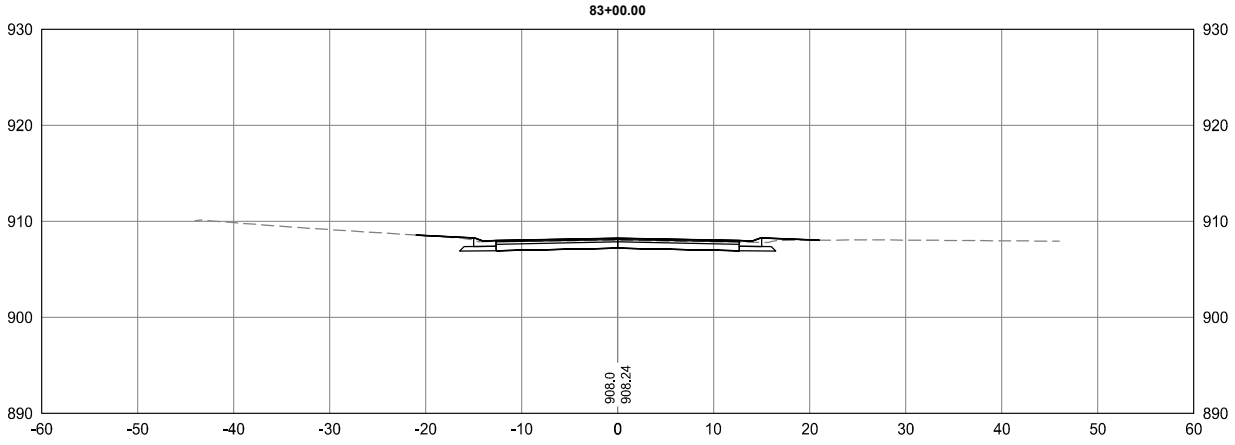
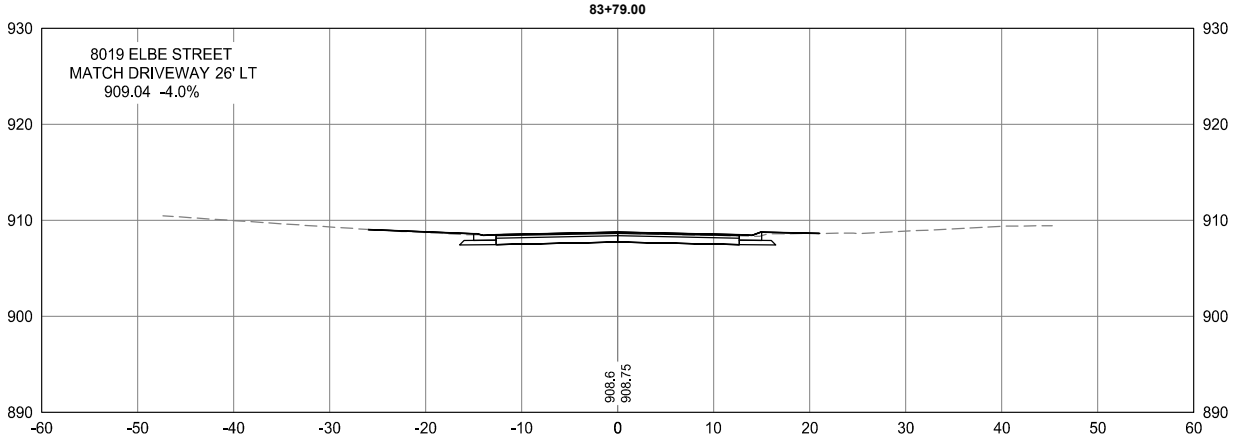
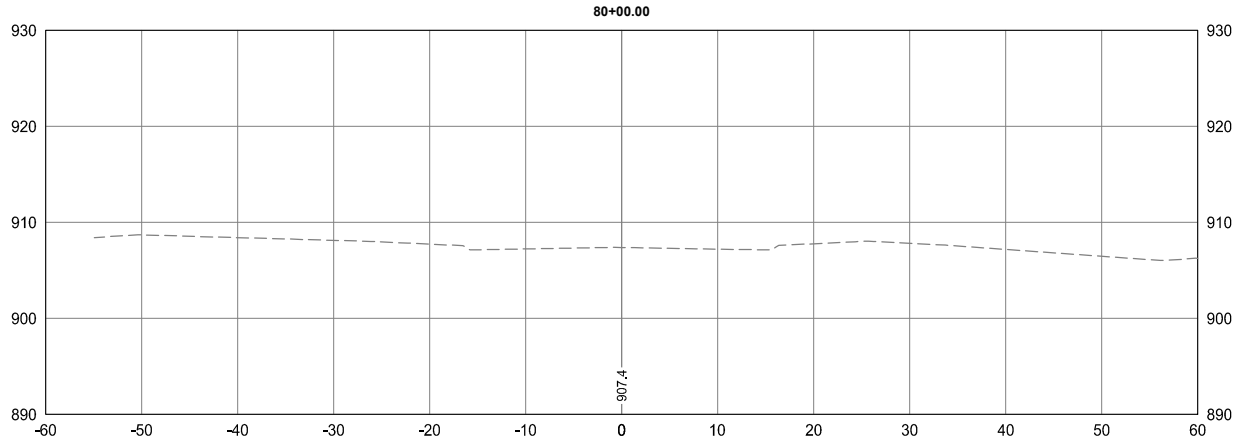
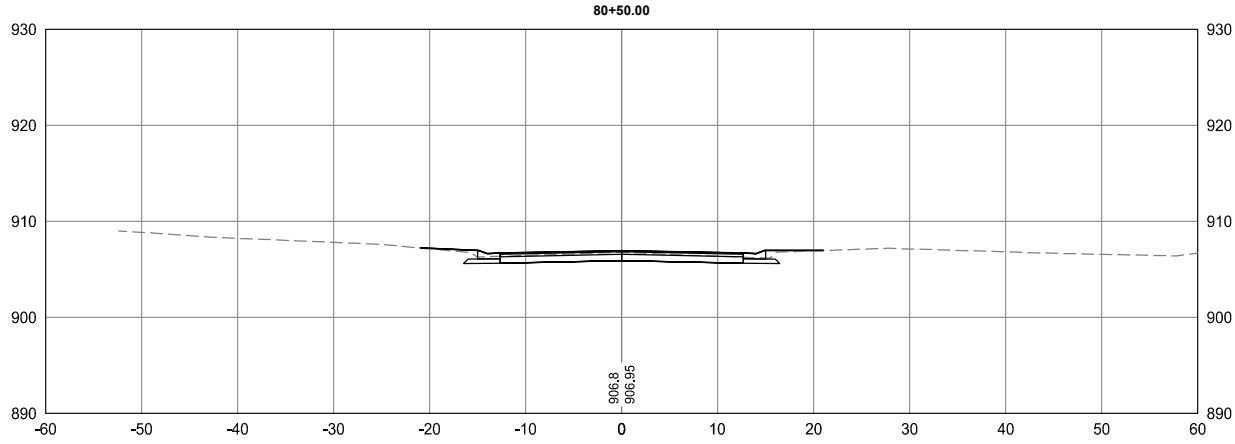
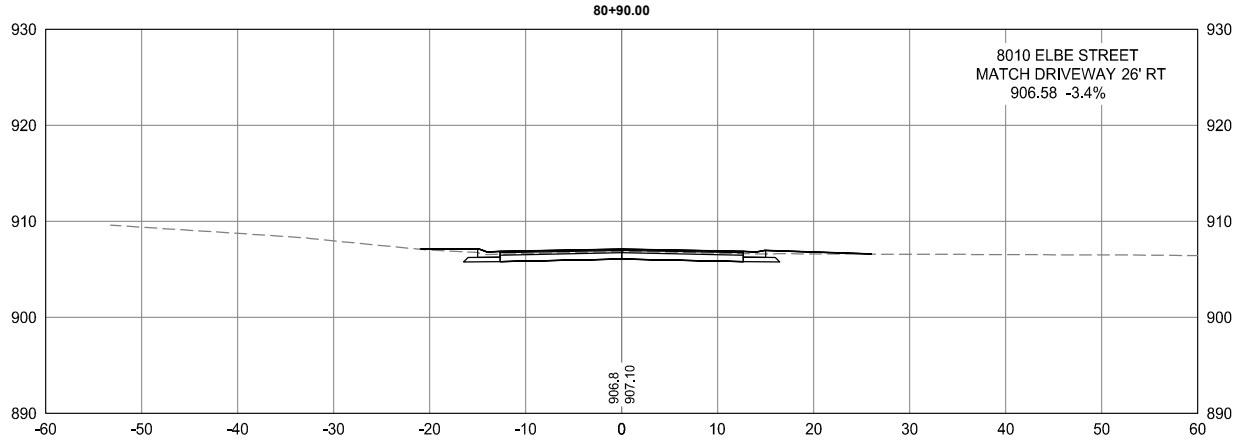
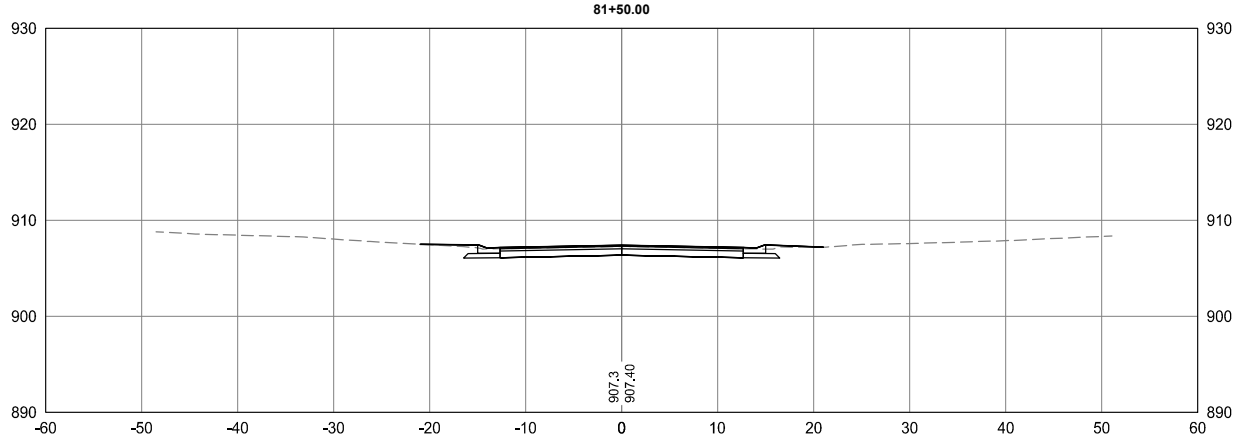
WSB PROJECT NO.
023620-000

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ELBE STREET

2



SCALE: AS SHOWN
DESIGN BY: THC
PLAN BY: THC
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REVISIONS		
NO.	DATE	DESCRIPTION
2	02-05-2025	ADDENDUM NO 2

CROSS SECTIONS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

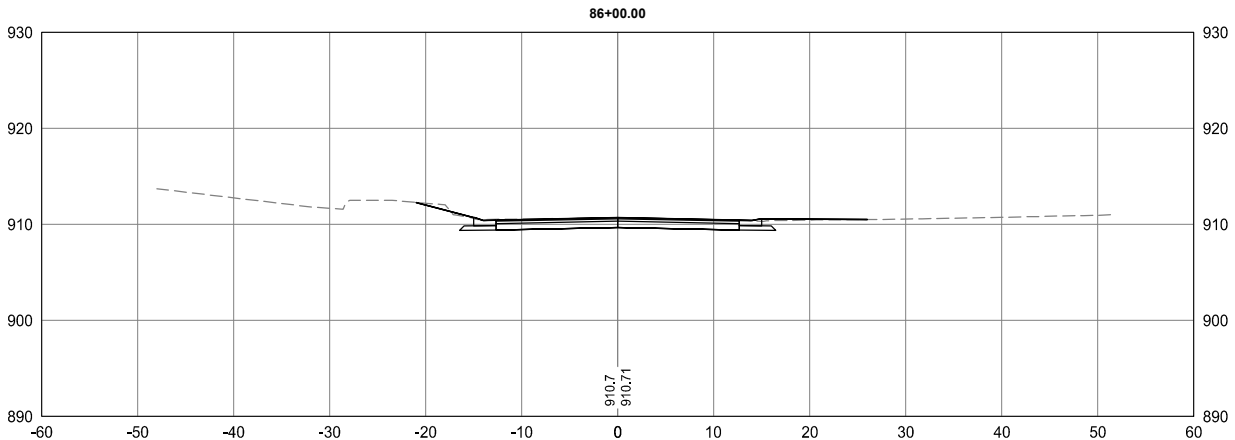
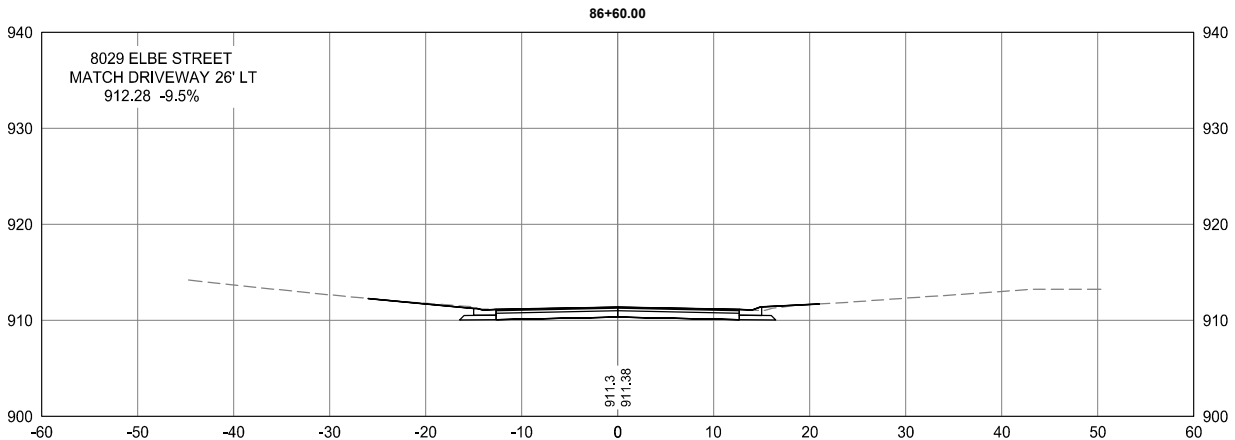
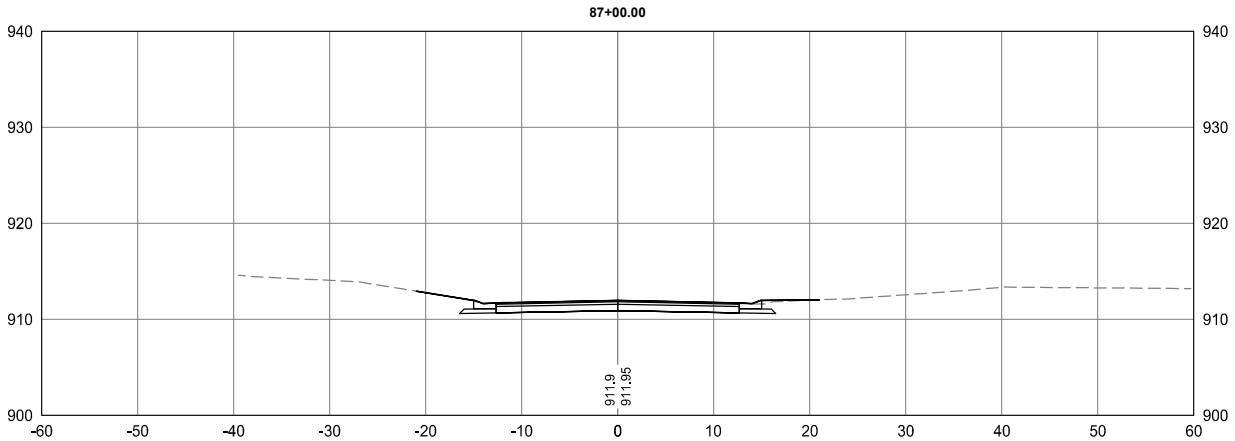
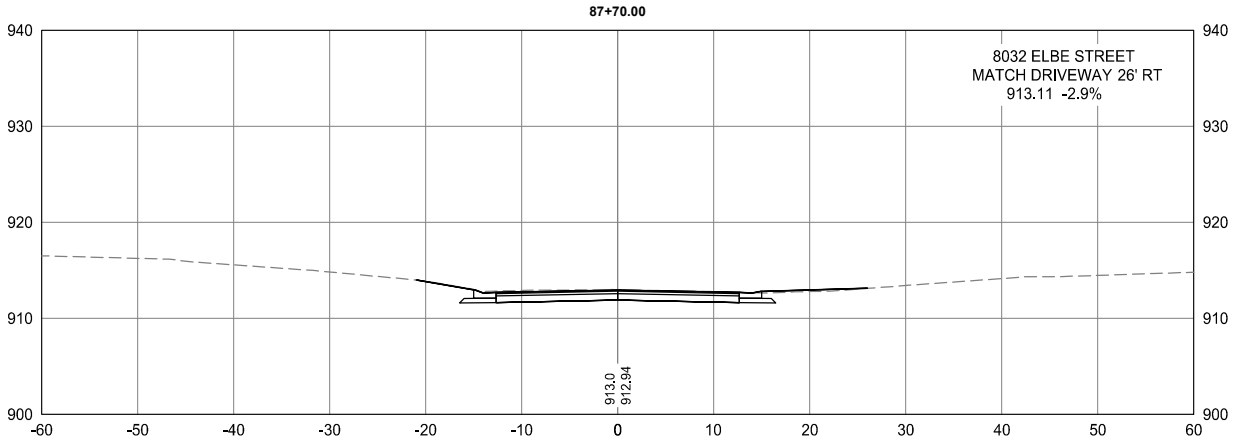
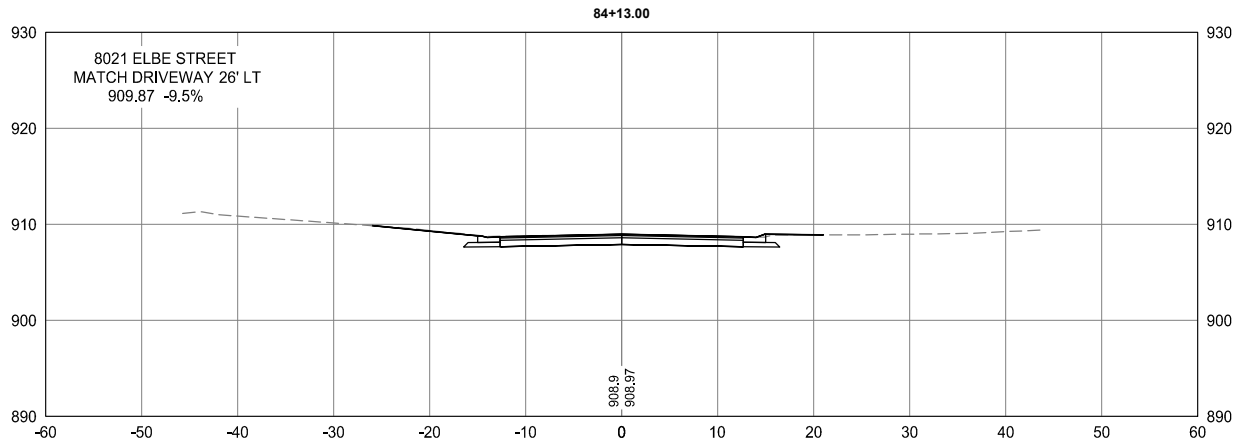
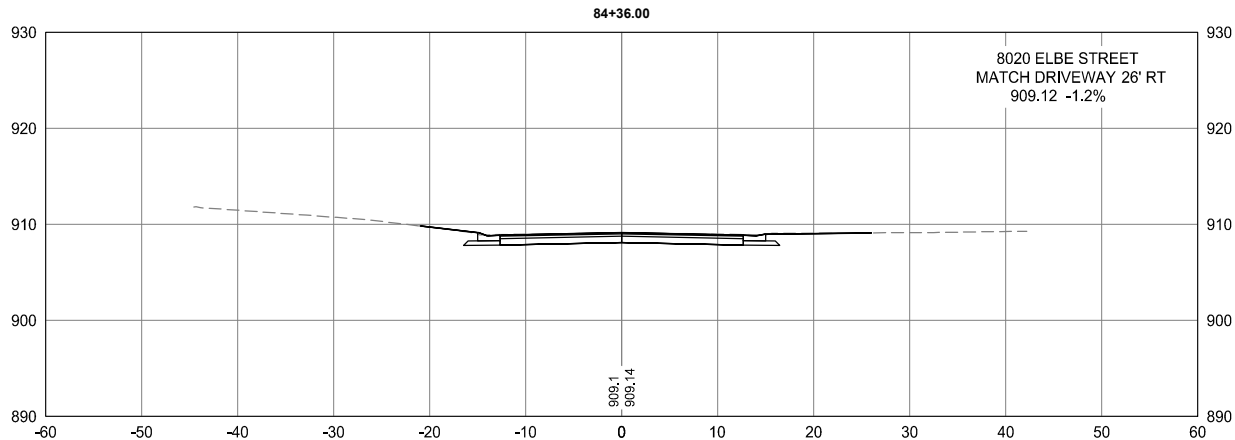
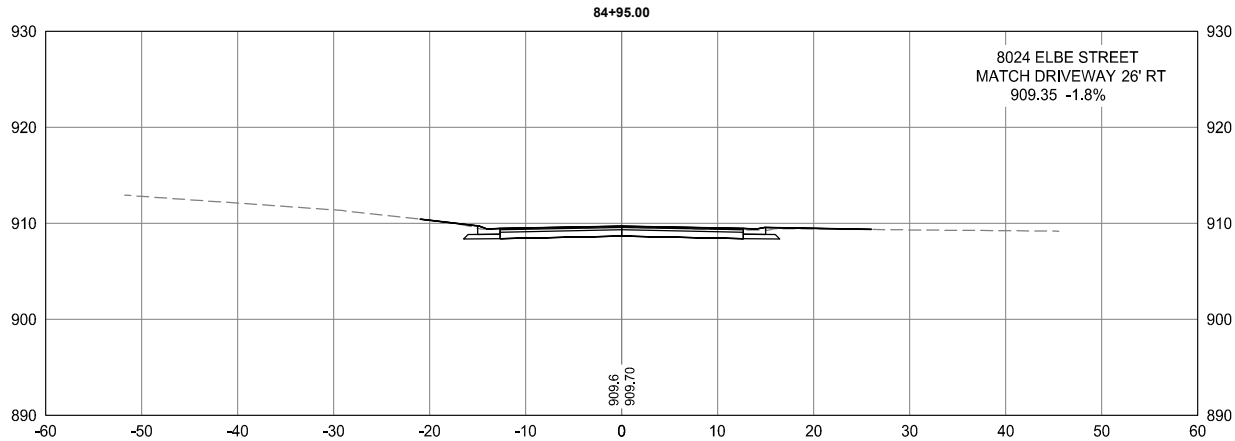
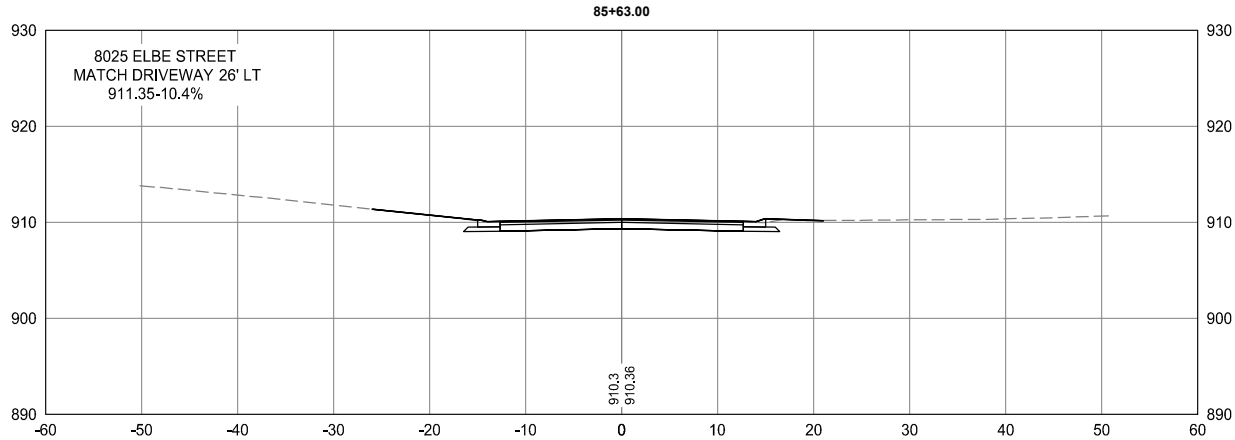
WSB PROJECT NO.
023620-000

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ELBE STREET

2



SCALE: AS SHOWN
DESIGN BY: THC
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REVISIONS			
NO.	DATE	DESCRIPTION	
2	02-05-2025	ADDENDUM NO 2	

CROSS SECTIONS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

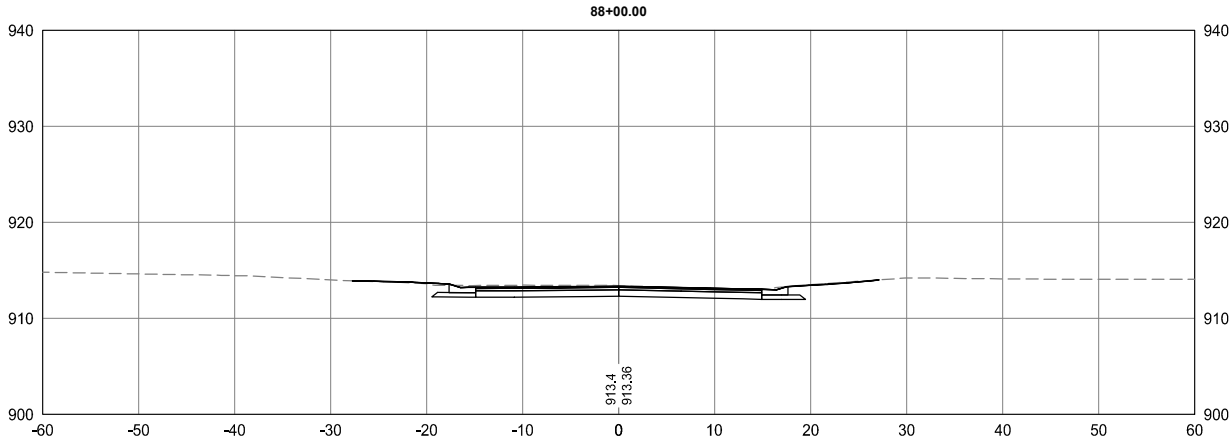
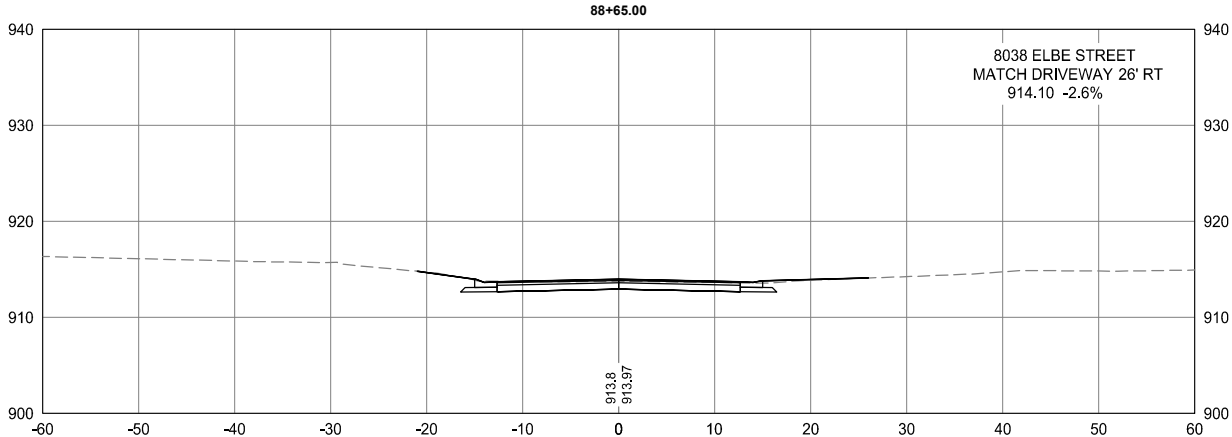
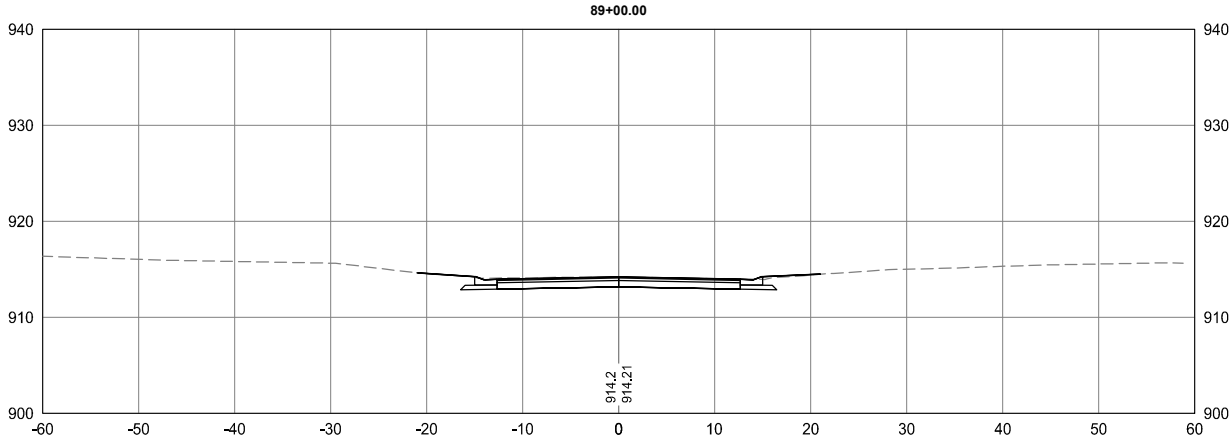
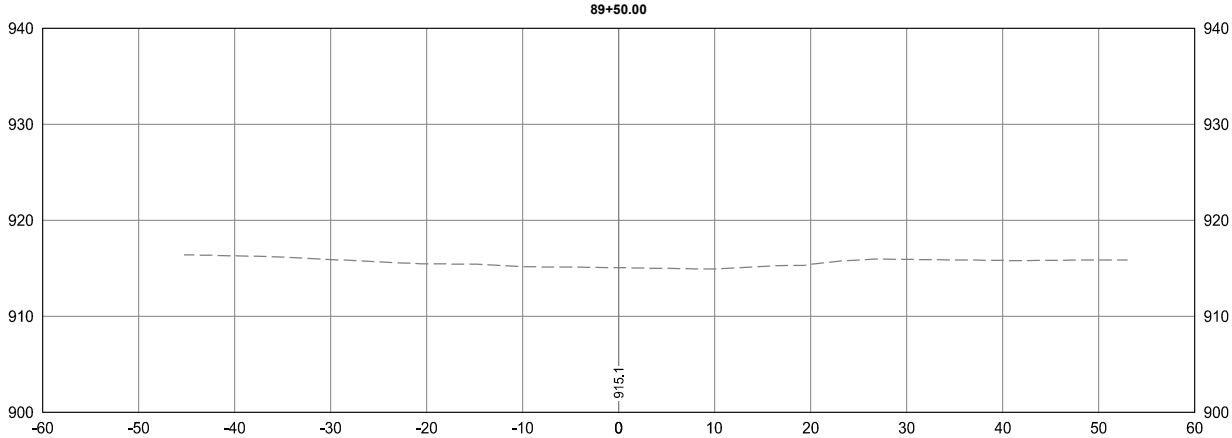
WSB PROJECT NO.
023620-000

SHEET
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ELBE STREET

2



SCALE: AS SHOWN
PLAN BY: THC
DESIGN BY: THC
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REVISIONS		
NO.	DATE	DESCRIPTION
2	02-05-2025	ADDENDUM NO 2

CROSS SECTIONS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

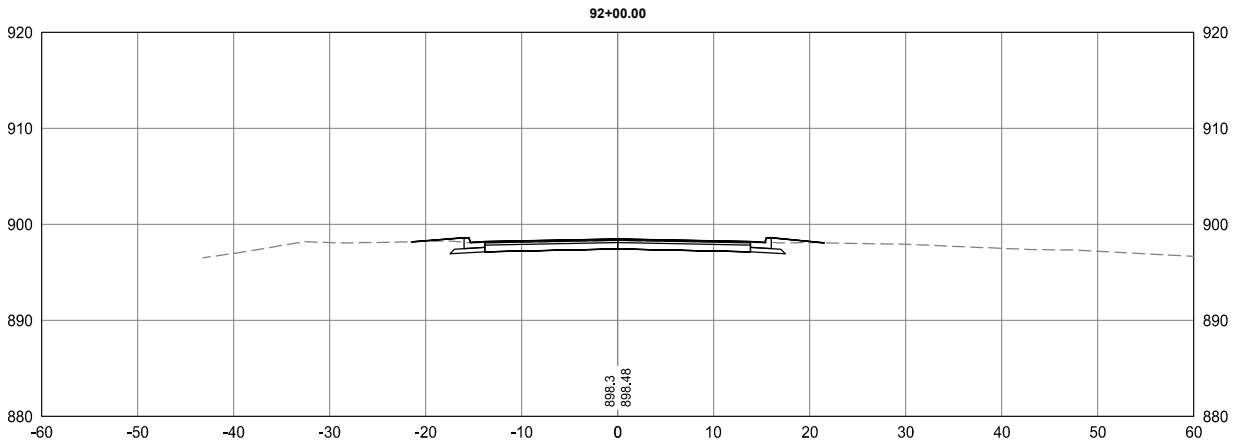
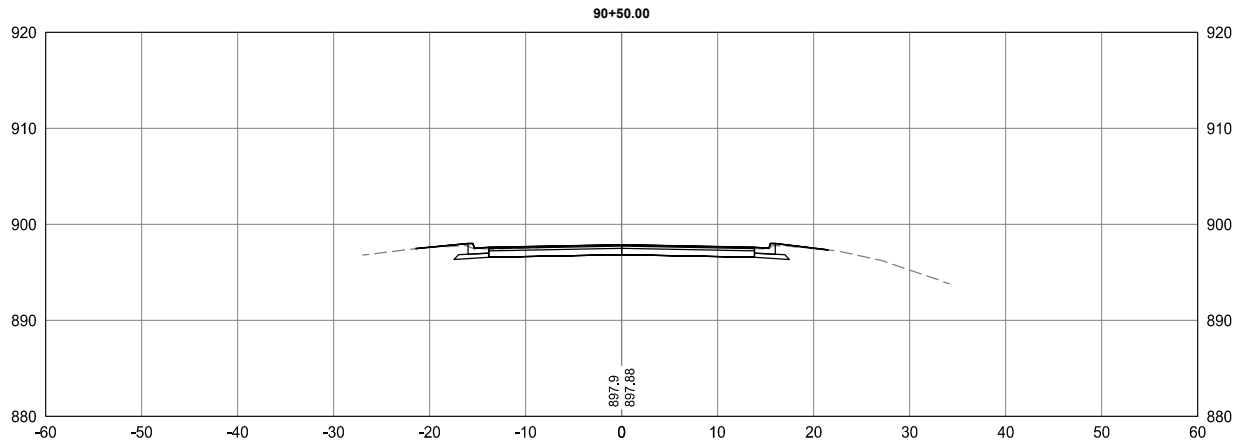
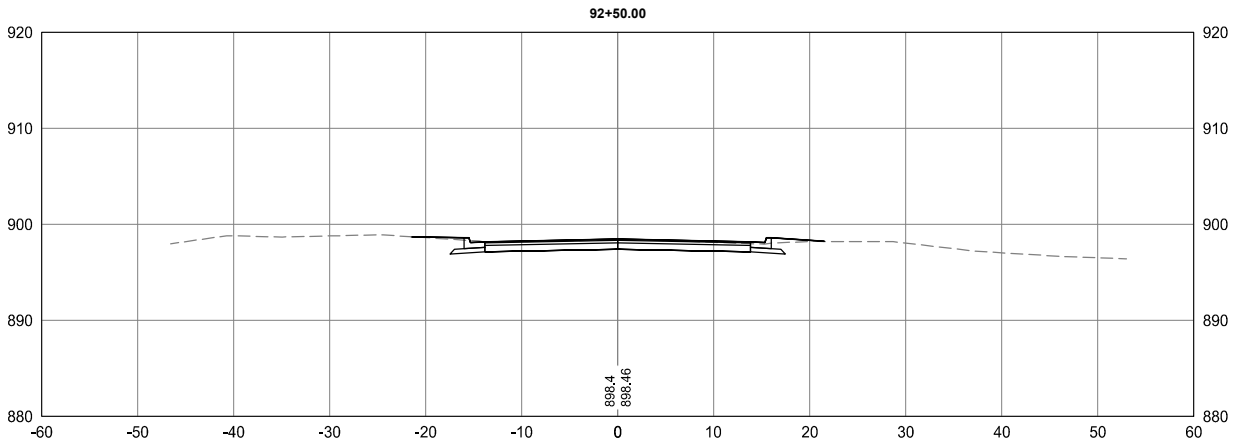
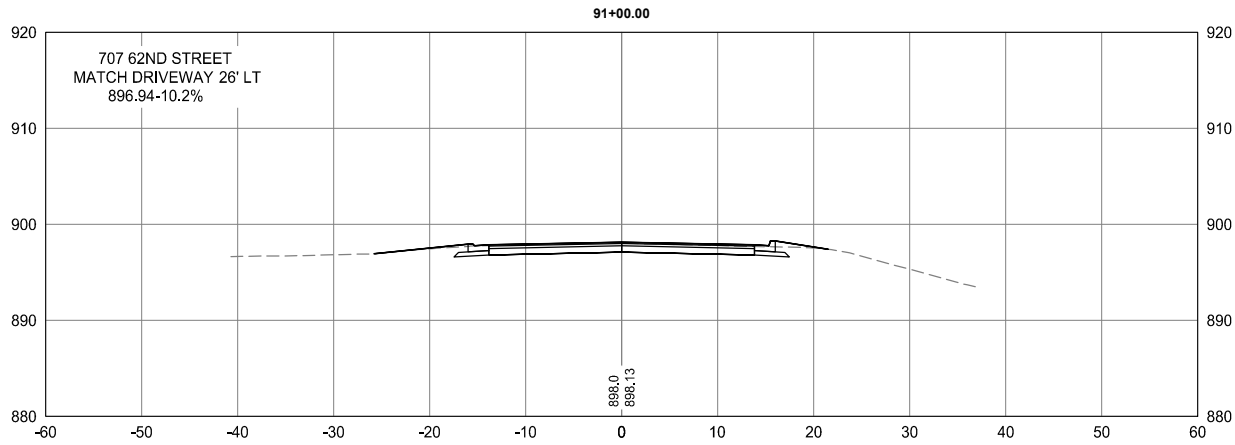
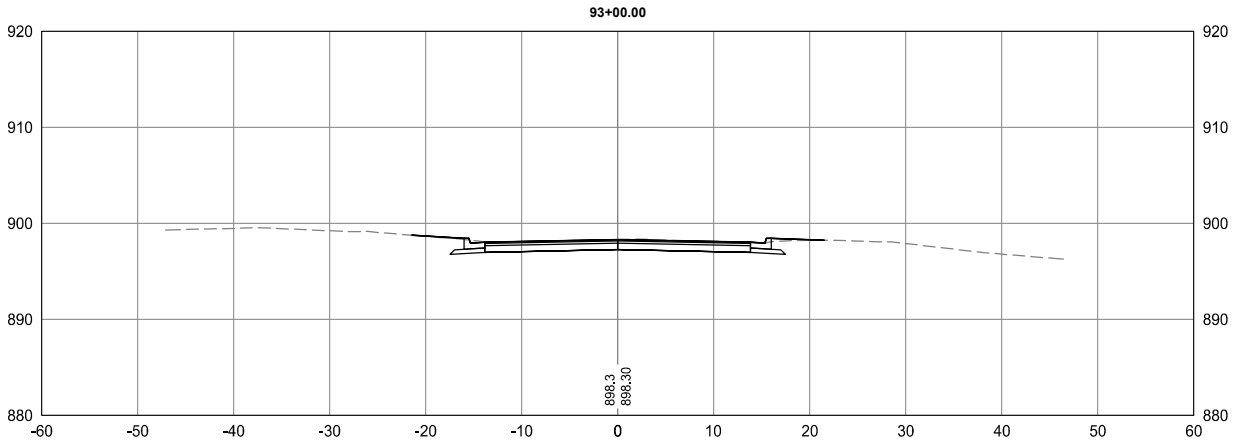
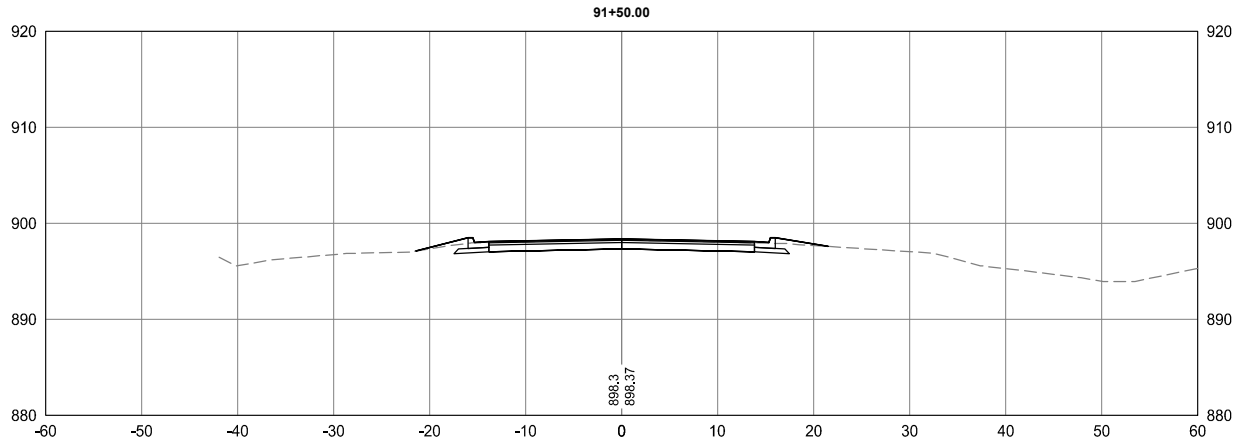
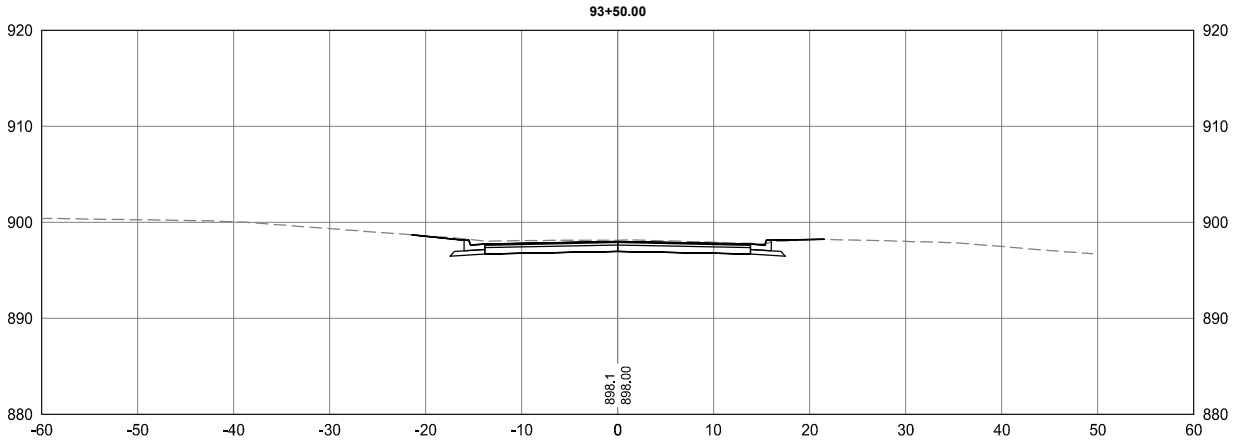
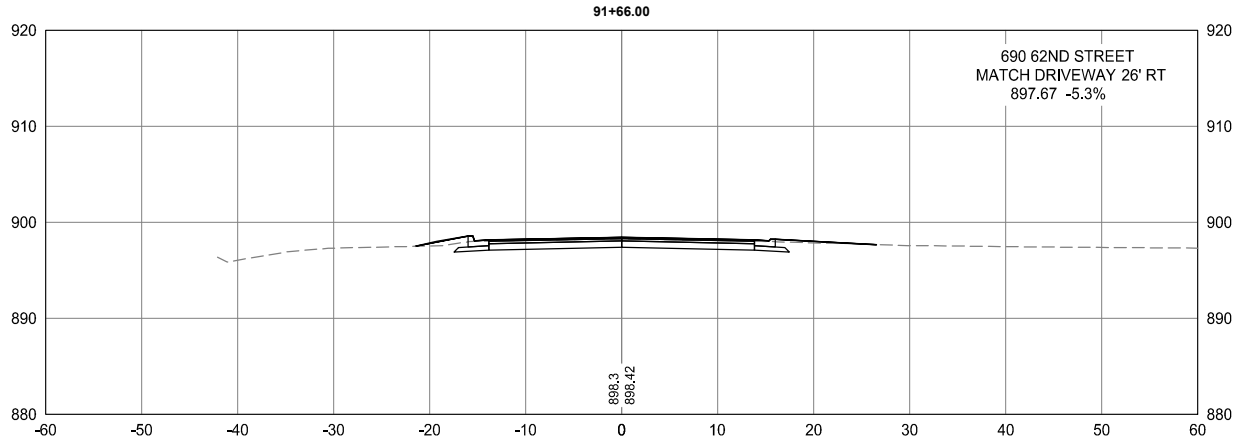
WSB PROJECT NO.
023620-000

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62ND STREET

2



REVISIONS		
NO.	DATE	DESCRIPTION
2	02-05-2025	ADDENDUM NO 2

CROSS SECTIONS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

62ND STREET

2



SCALE: AS SHOWN
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DESIGN BY: THC
CHECK BY: PTH

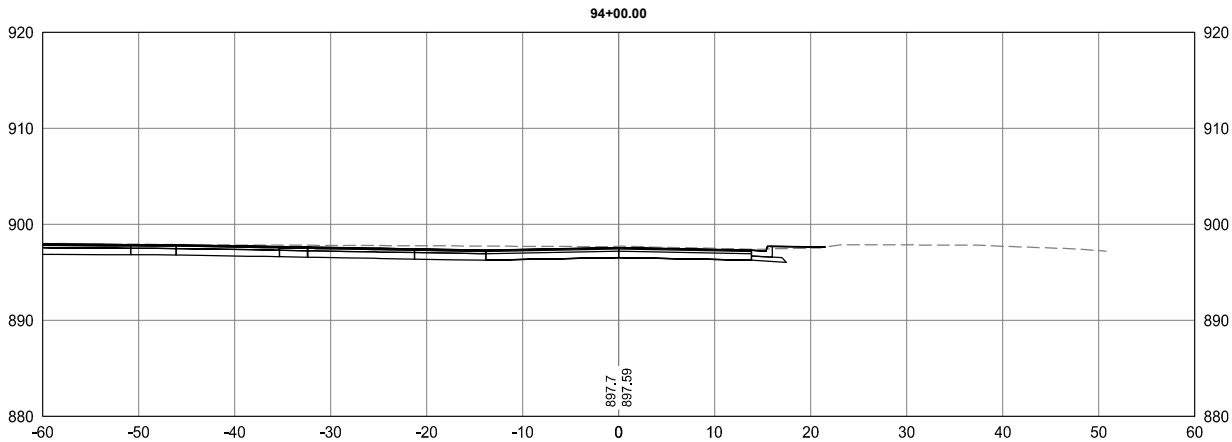
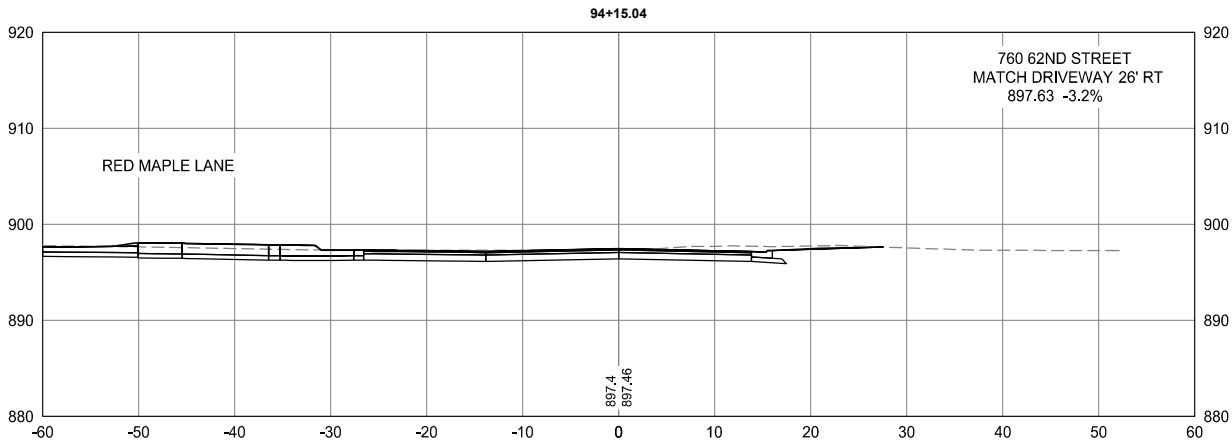
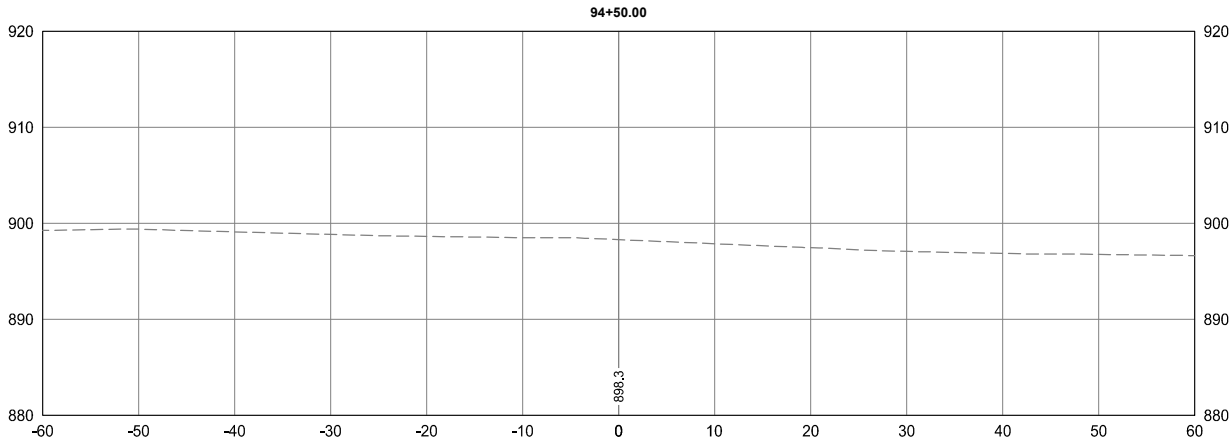
REVISIONS	
NO.	DATE
2	02-05-2025
ADDENDUM NO 2	

CROSS SECTIONS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO.
023620-000

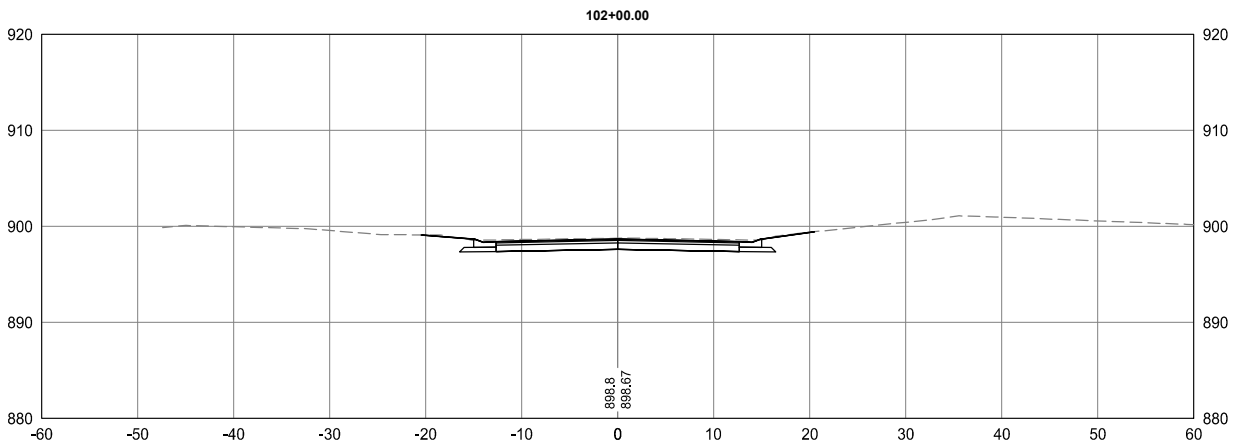
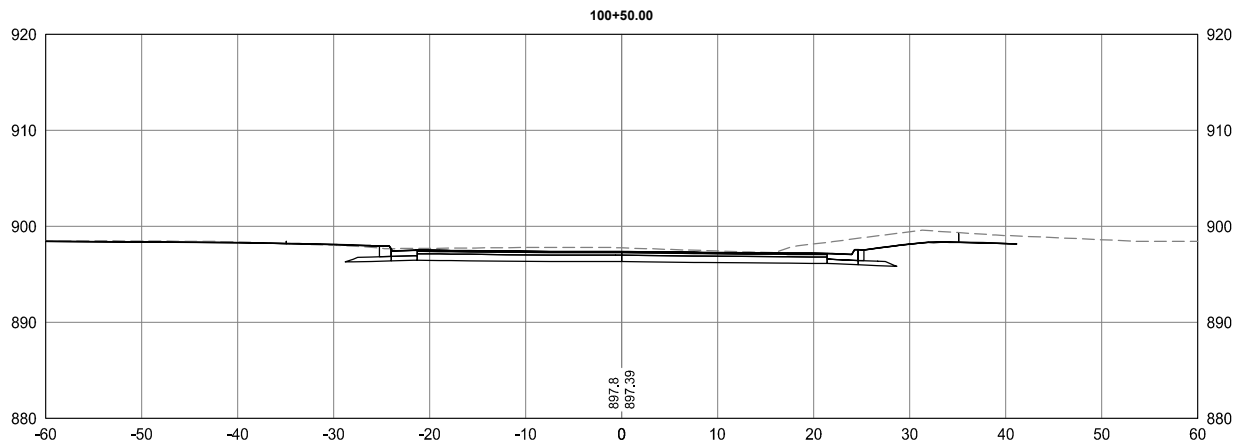
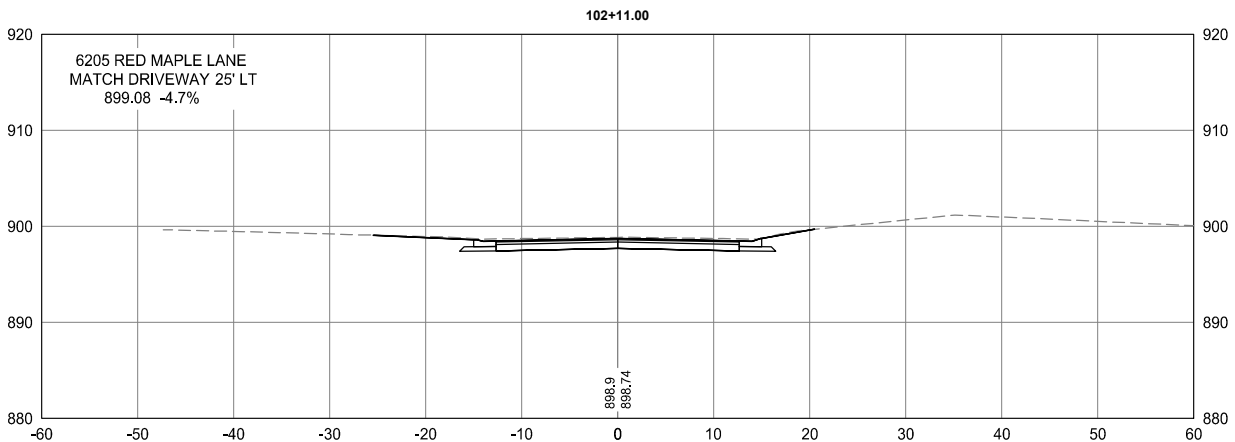
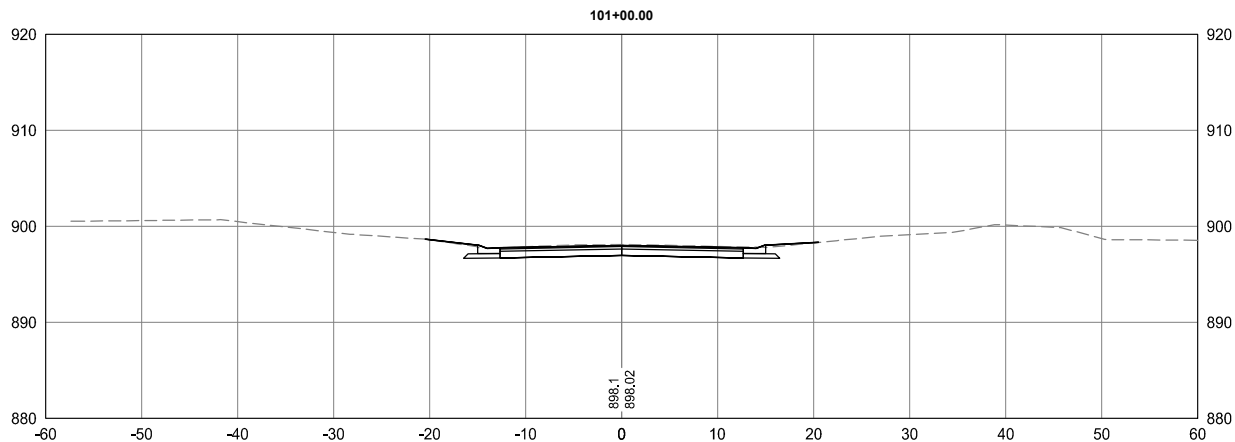
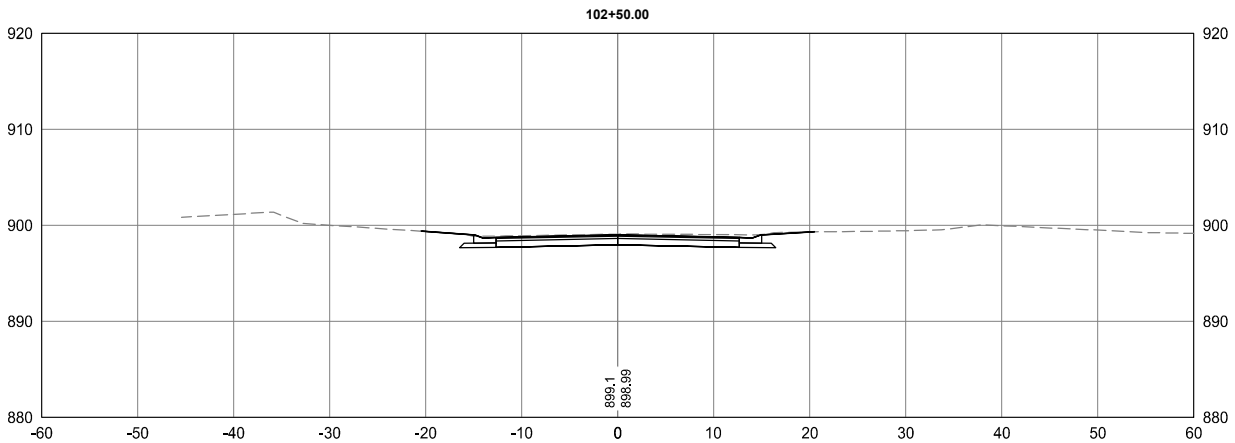
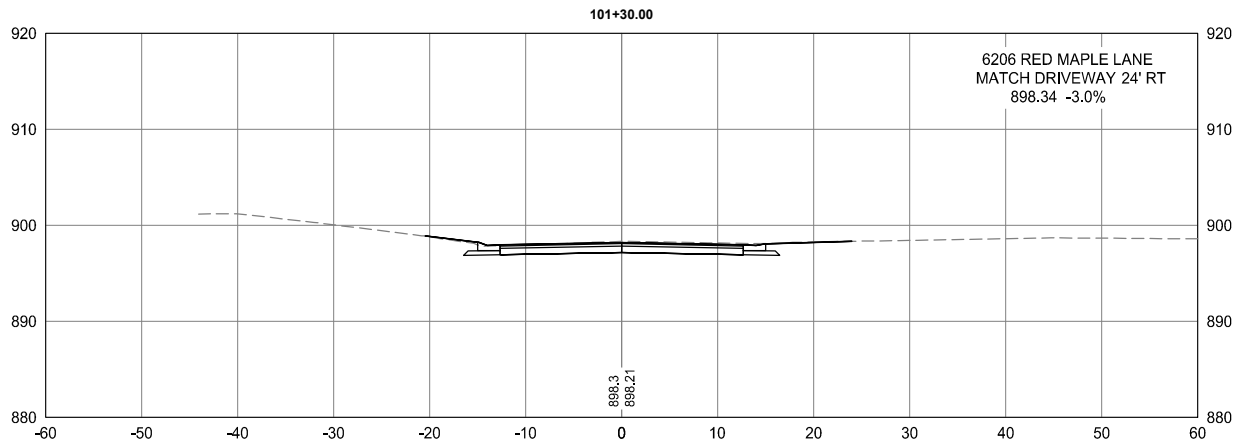
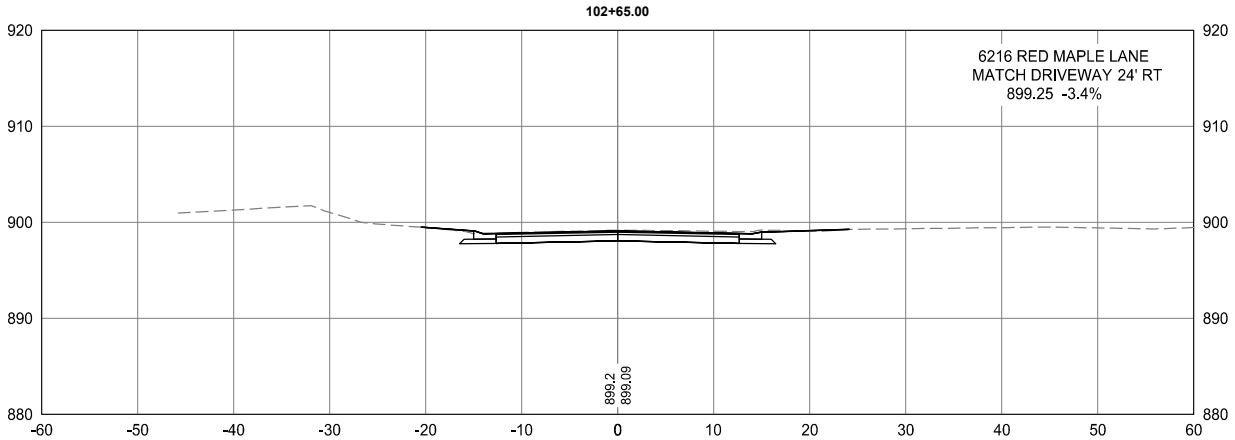
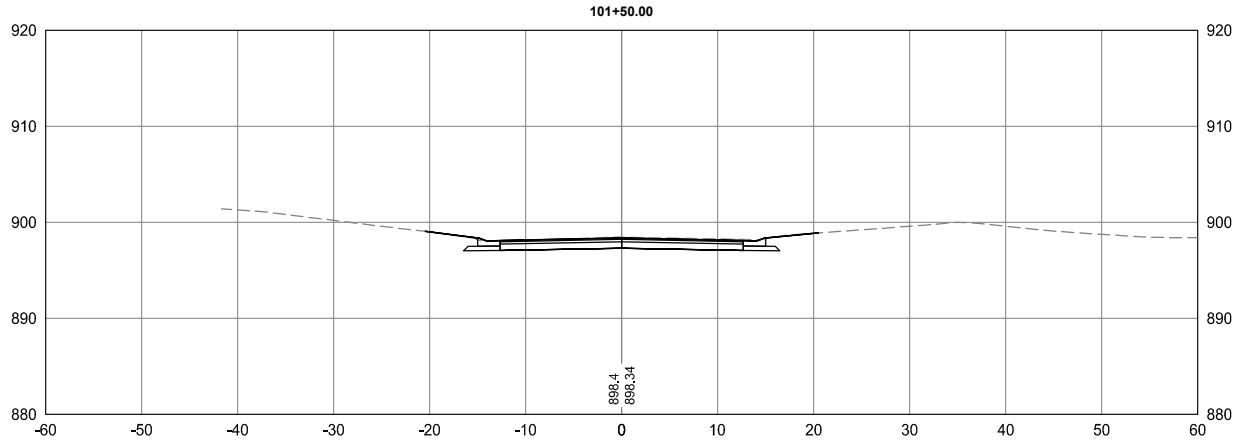
SHEET
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RED MAPLE LANE

2



SCALE: AS SHOWN
DESIGN BY: THC
PLAN BY: THC
CHECK BY: PTH

REVISIONS		
NO.	DATE	DESCRIPTION
2	02-05-2025	ADDENDUM NO 2

CROSS SECTIONS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

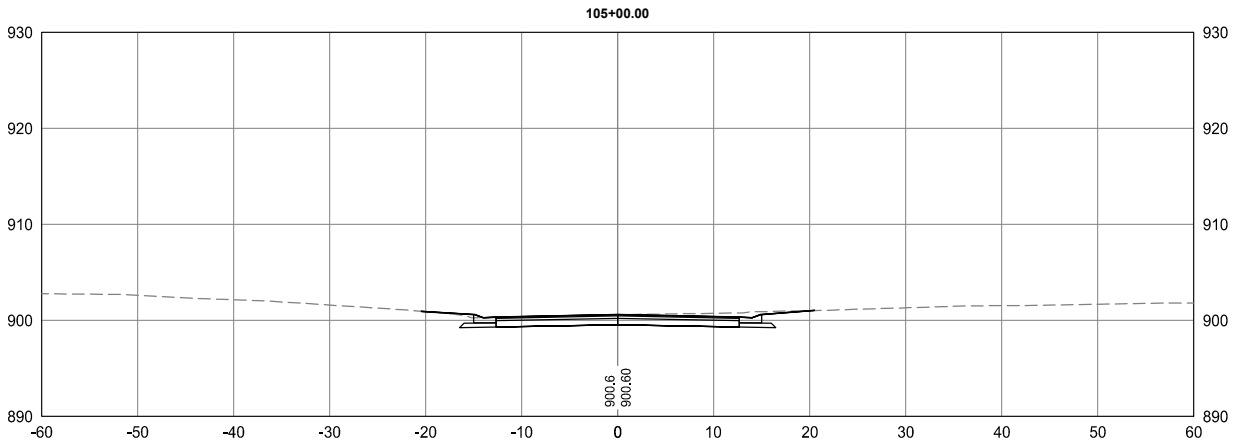
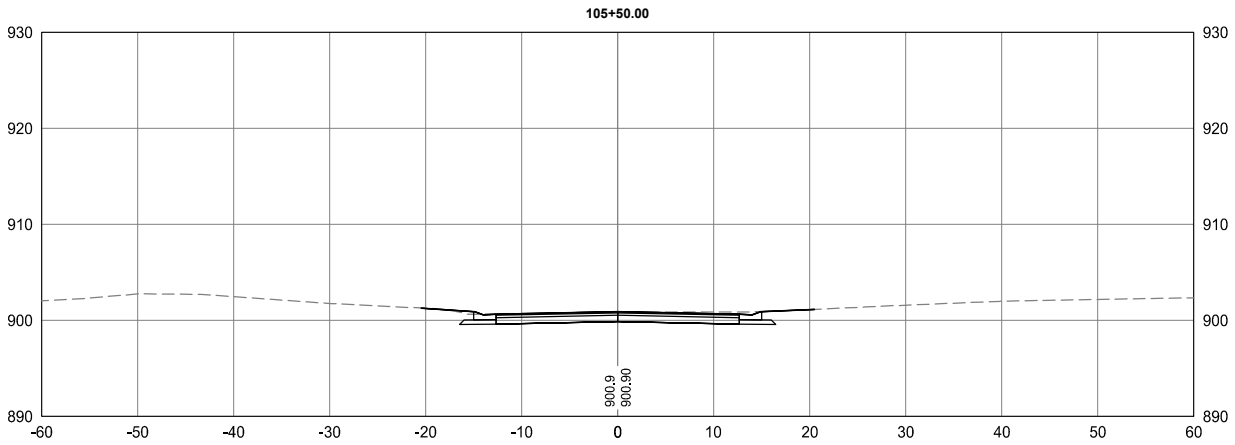
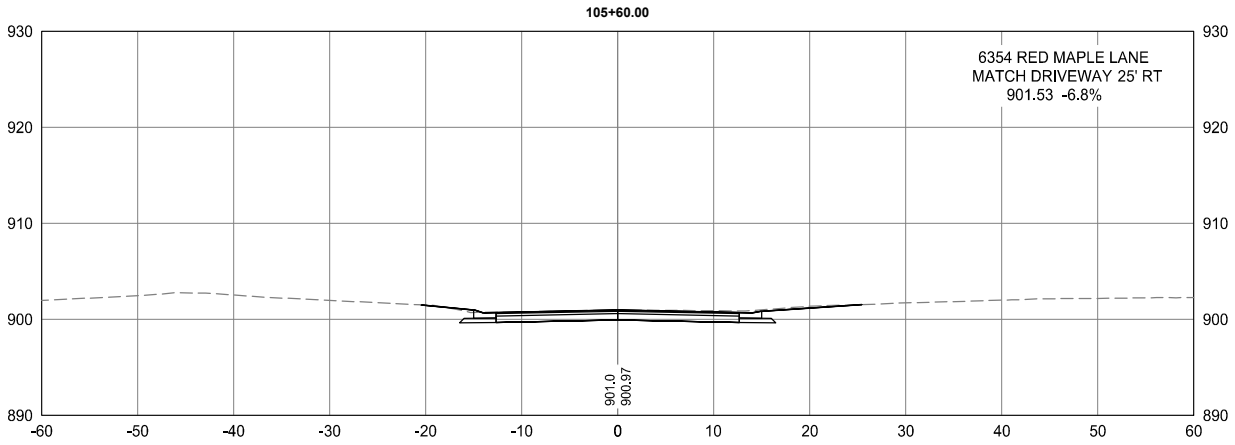
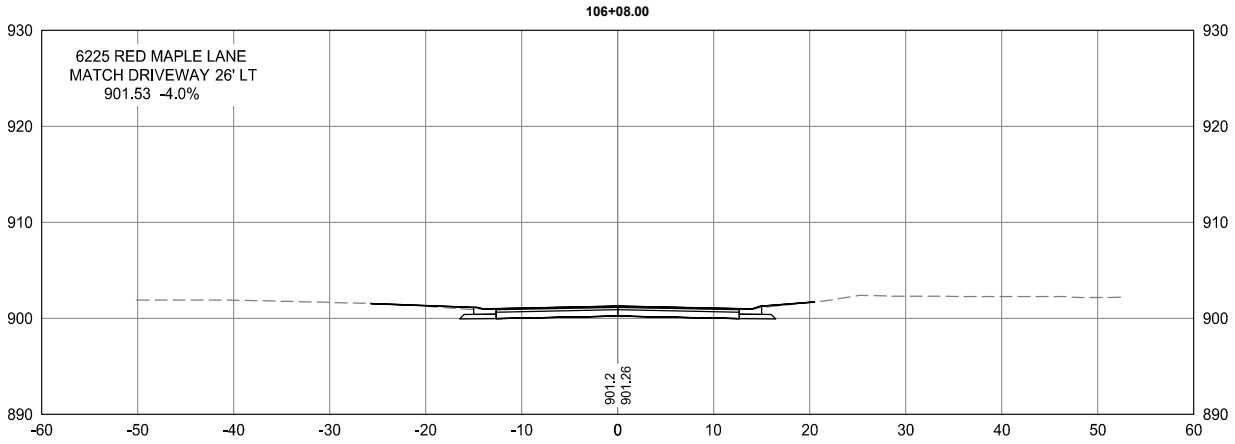
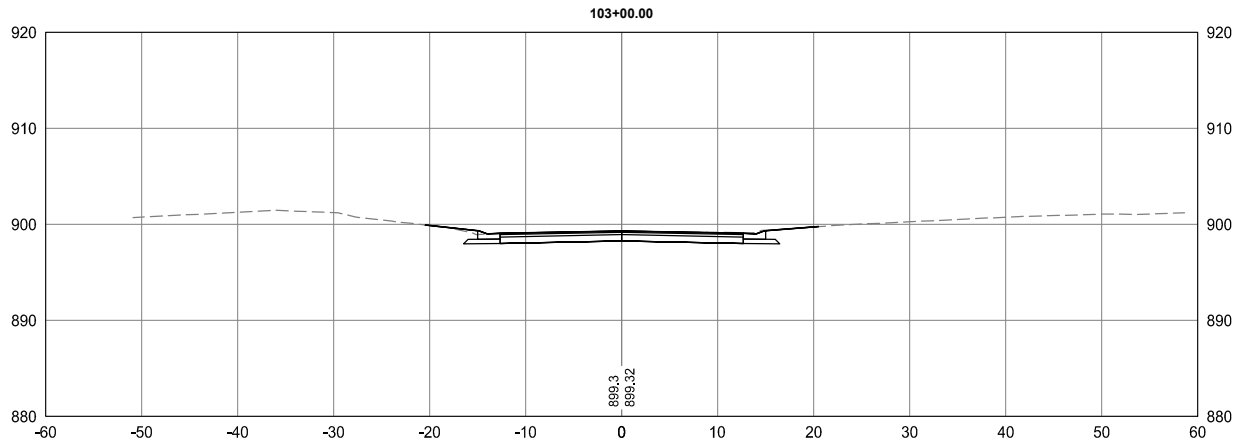
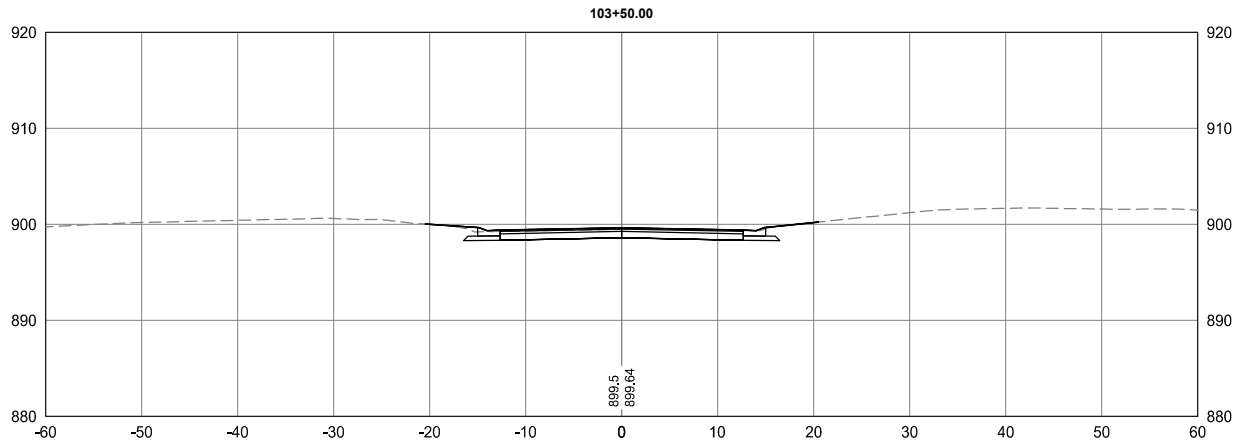
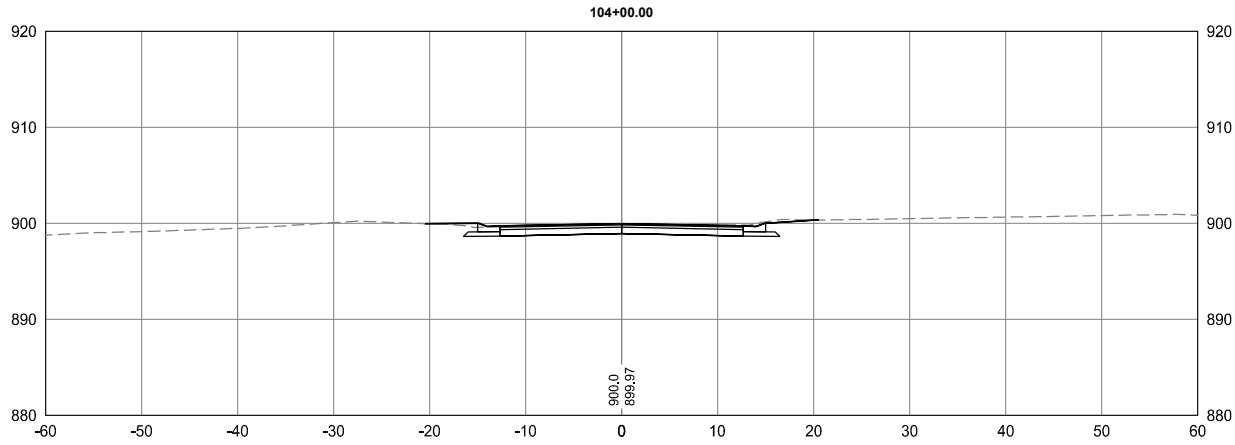
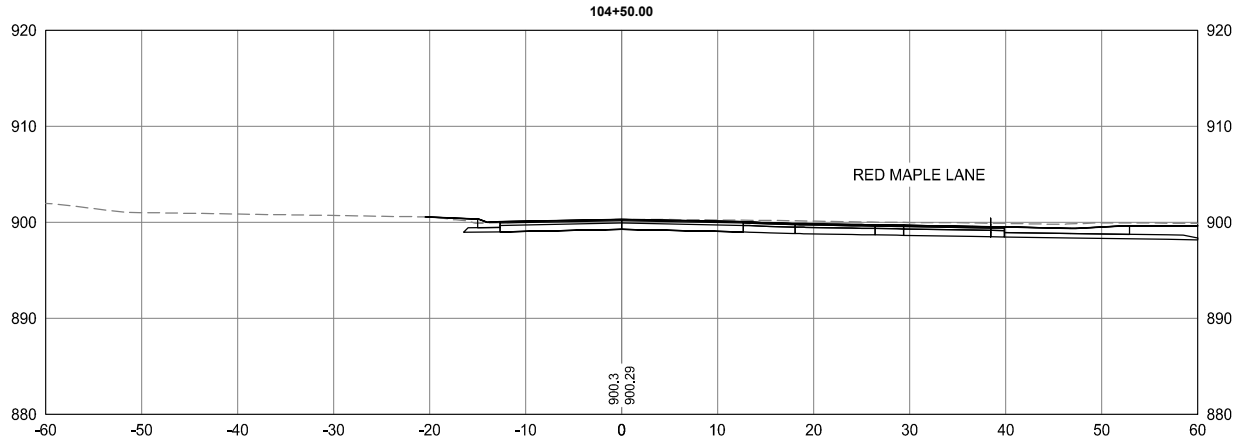
WSB PROJECT NO.
023620-000

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RED MAPLE LANE

2



SCALE: AS SHOWN
DESIGN BY: THC
PLAN BY: THC
CHECK BY: PTH

REVISIONS		
NO.	DATE	DESCRIPTION
2	02-05-2025	ADDENDUM NO 2

CROSS SECTIONS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO.
023620-000

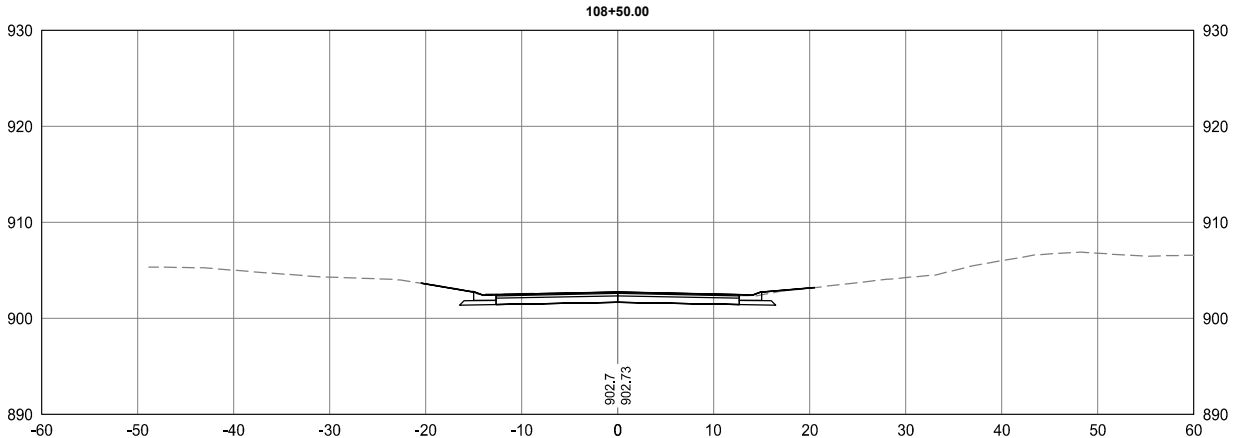
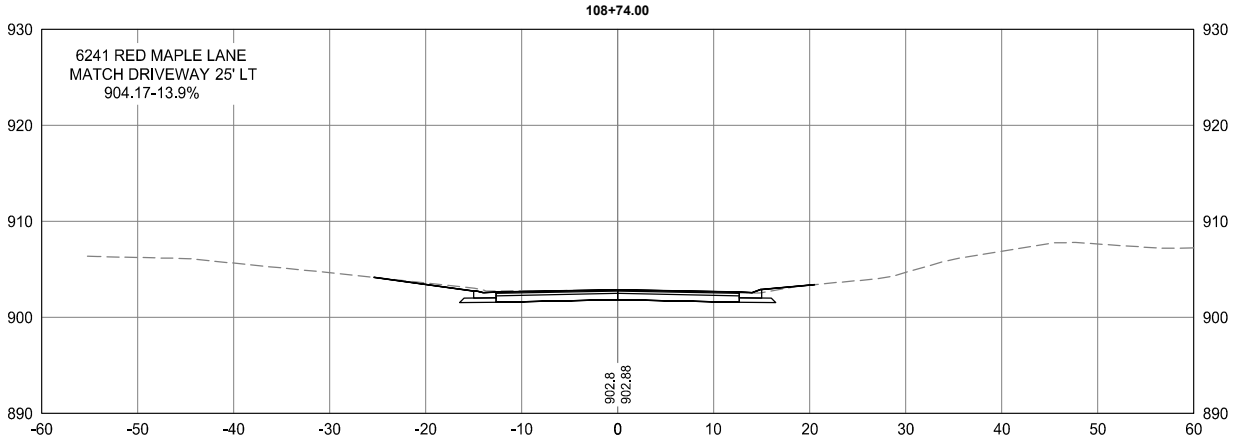
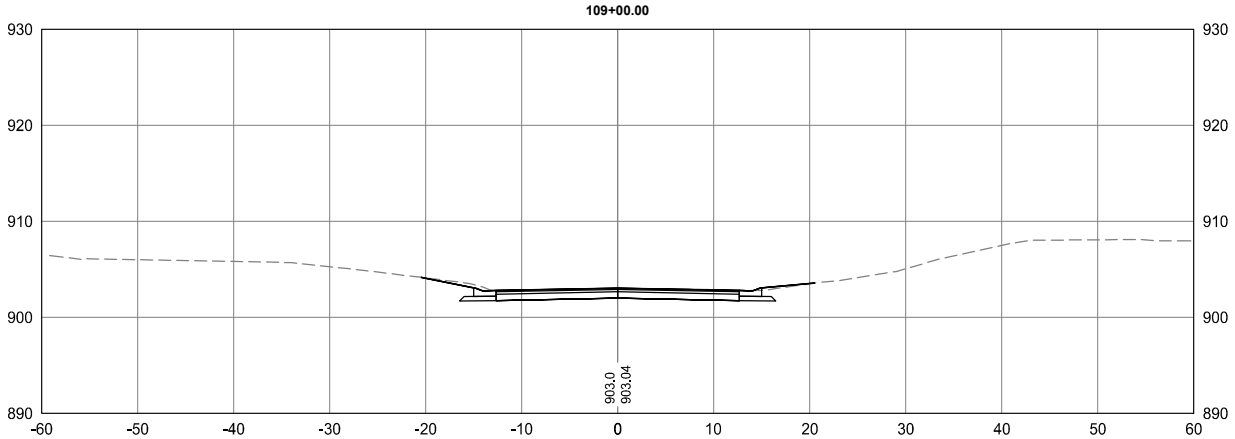
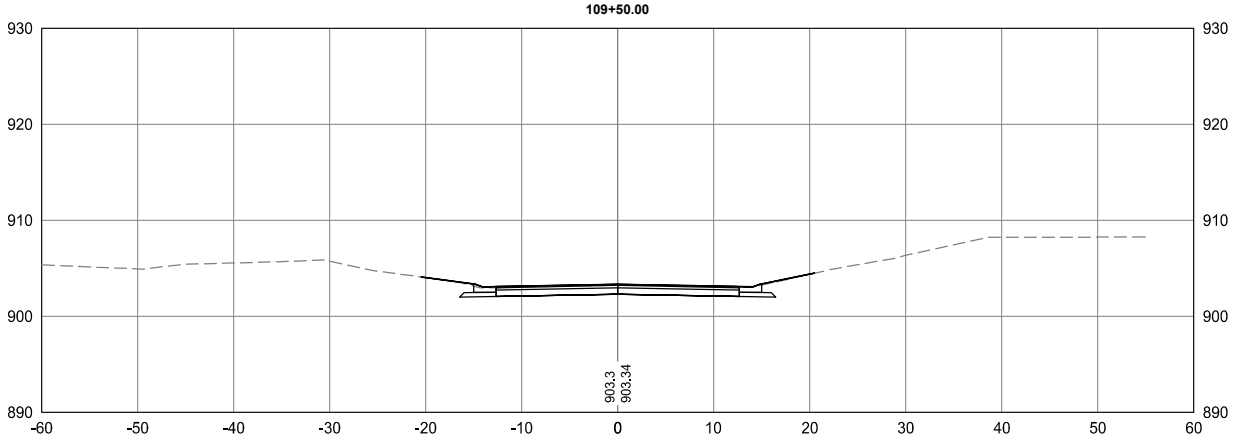
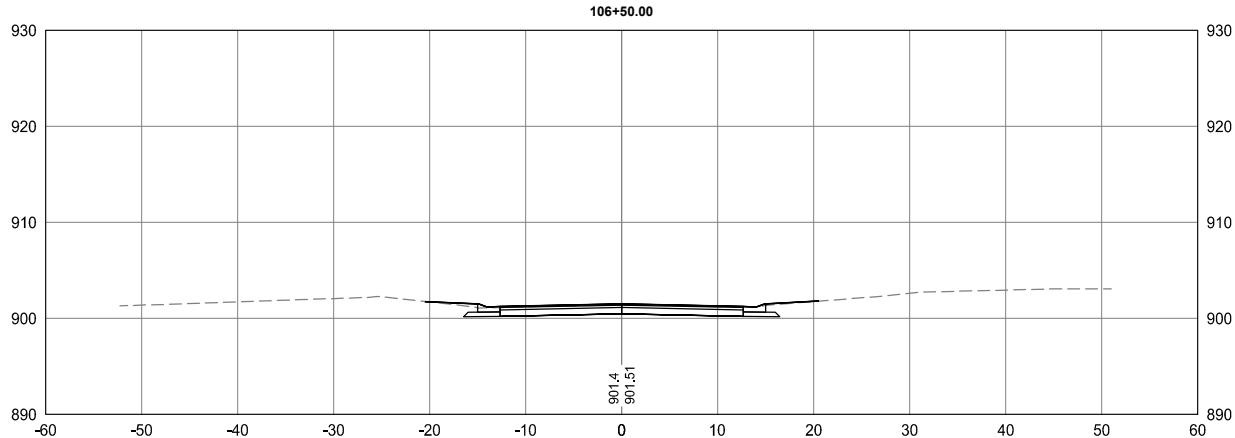
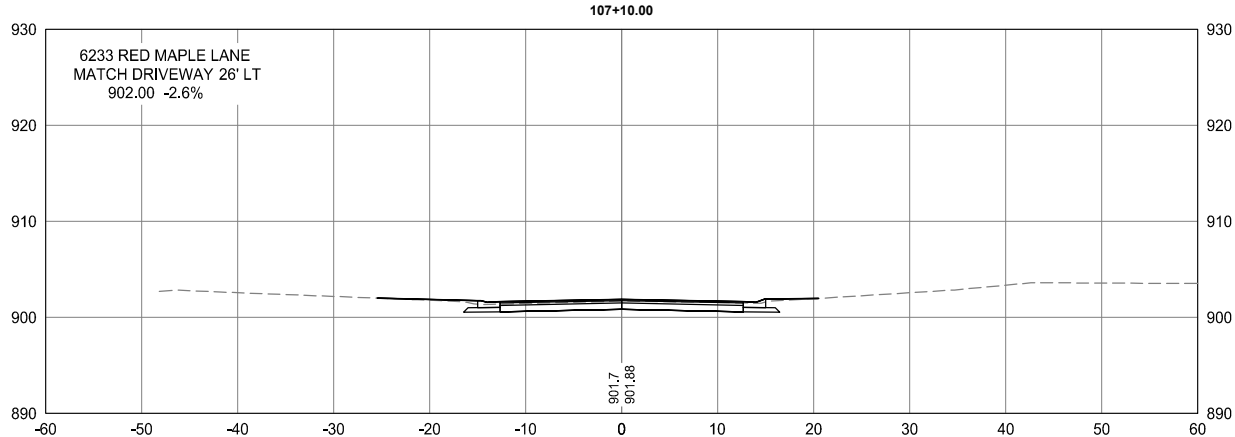
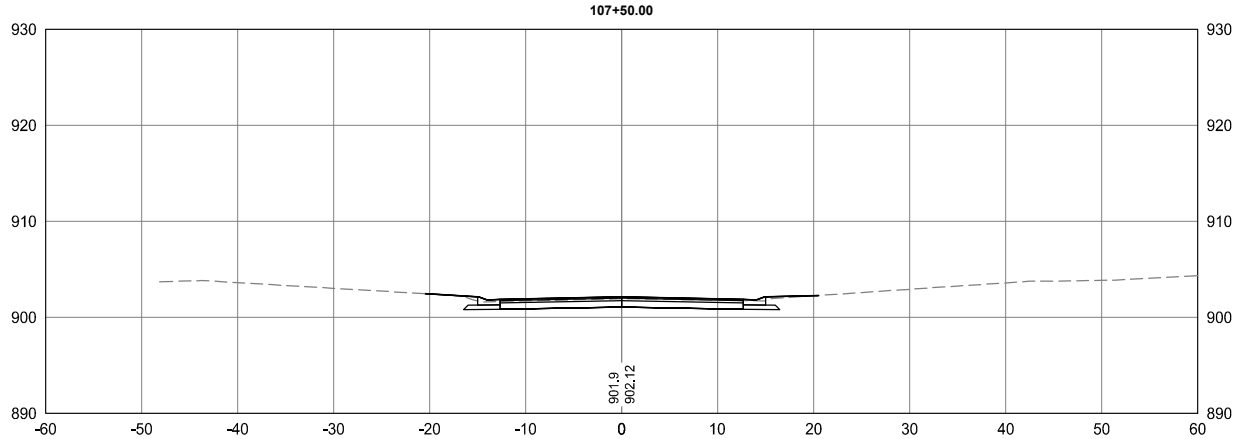
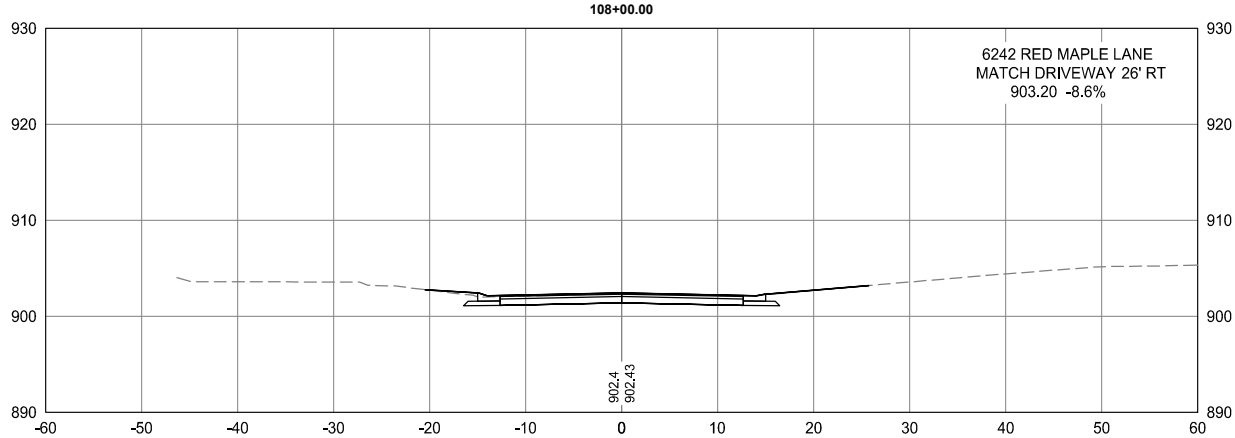
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RED MAPLE LANE

2



SCALE: AS SHOWN
DESIGN BY: THC
PLAN BY: THC
CHECK BY: PTH

REVISIONS			
NO.	DATE	DESCRIPTION	
2	02-05-2025	ADDENDUM NO 2	

CROSS SECTIONS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

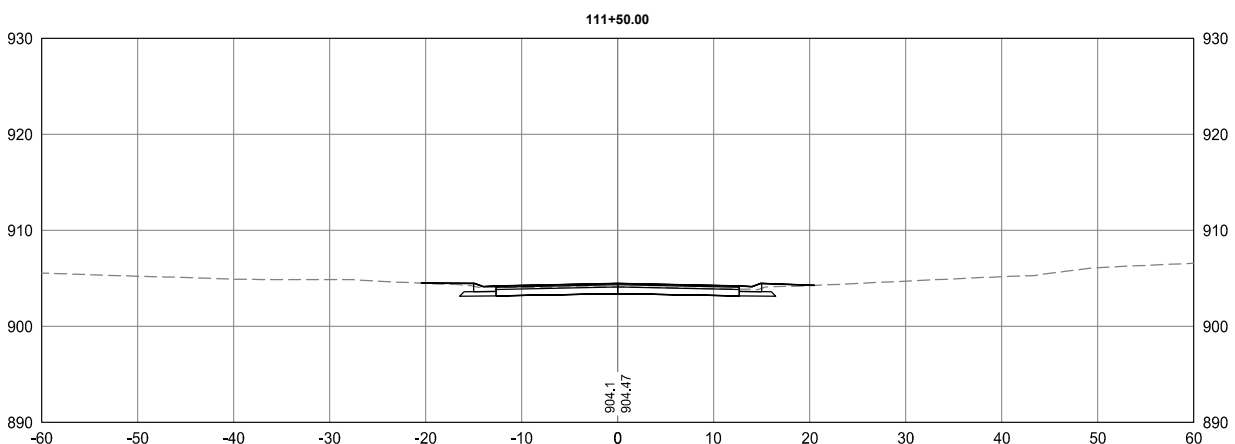
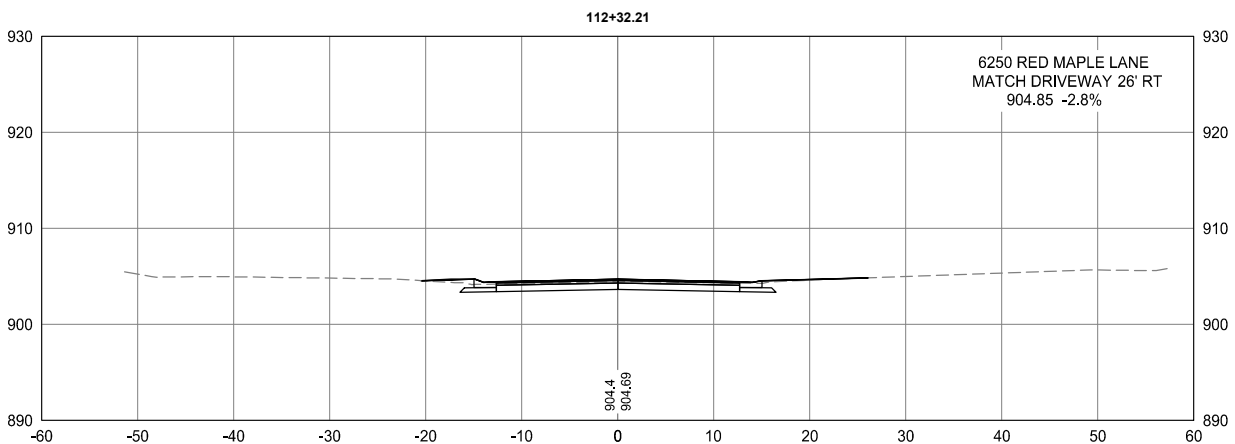
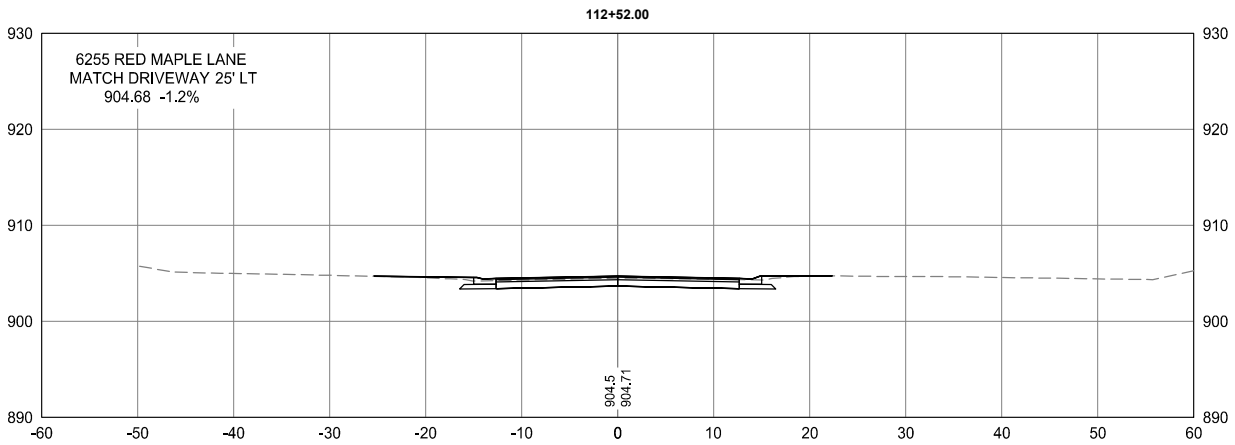
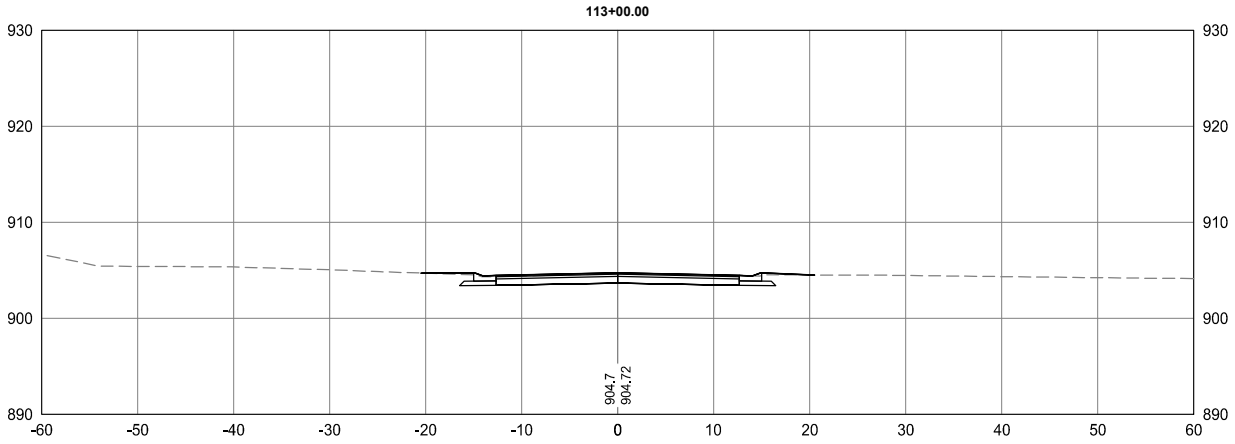
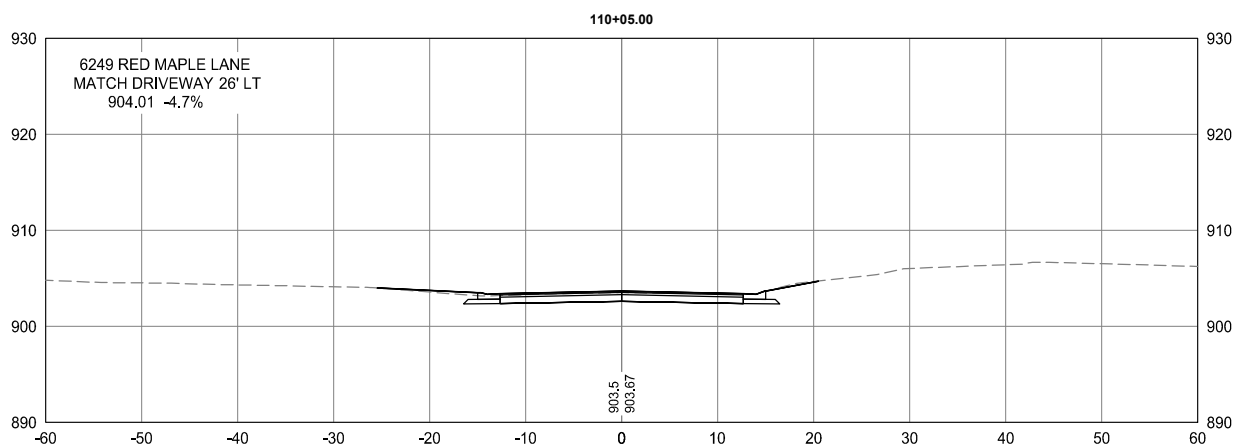
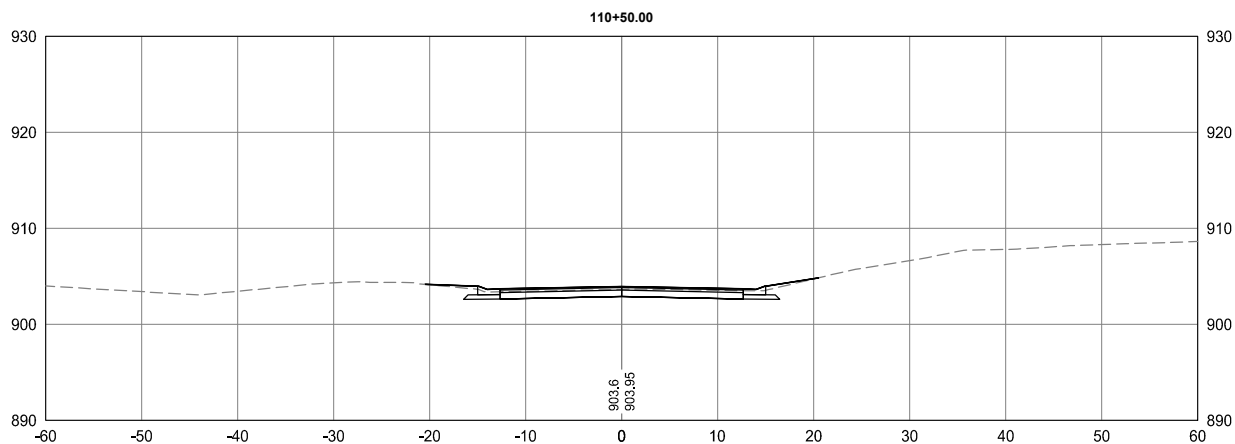
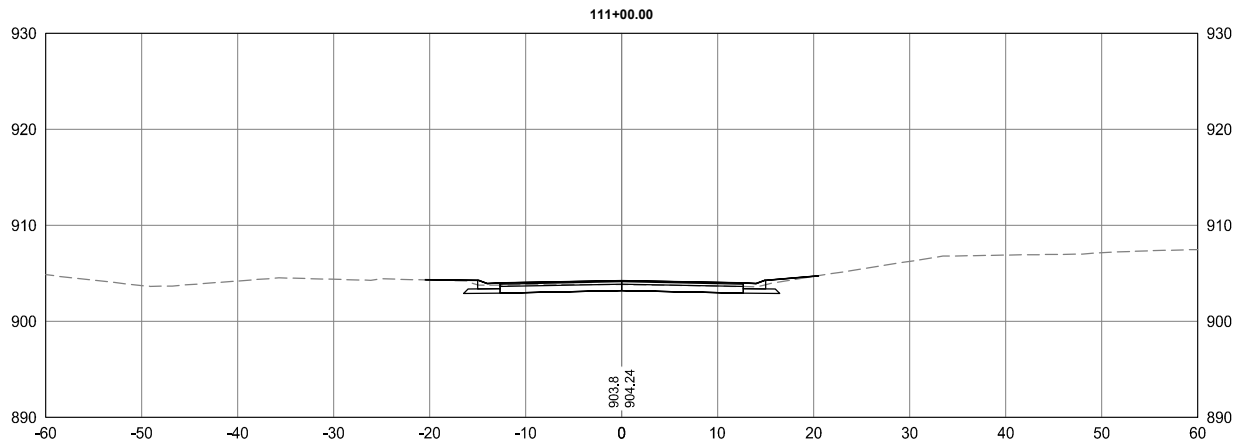
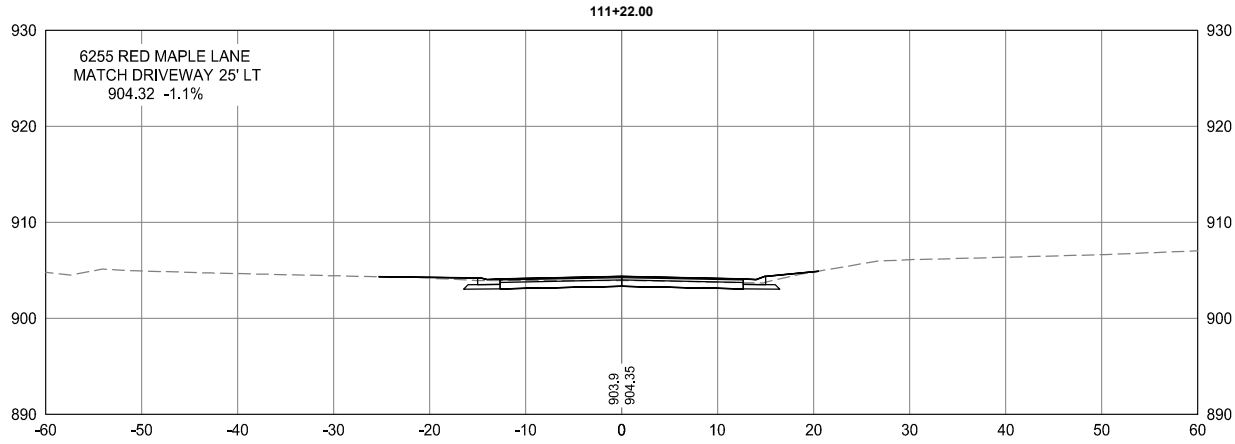
WSB PROJECT NO.
023620-000

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RED MAPLE LANE

2



SCALE: AS SHOWN
DESIGN BY: THC
PLAN BY: THC
CHECK BY: PTH

REVISIONS		
NO.	DATE	DESCRIPTION
2	02-05-2025	ADDENDUM NO 2

CROSS SECTIONS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

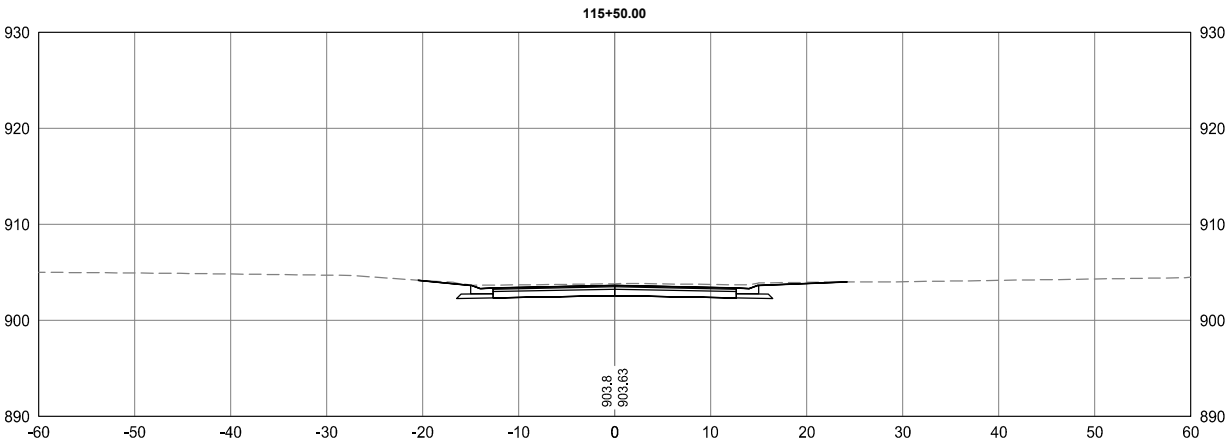
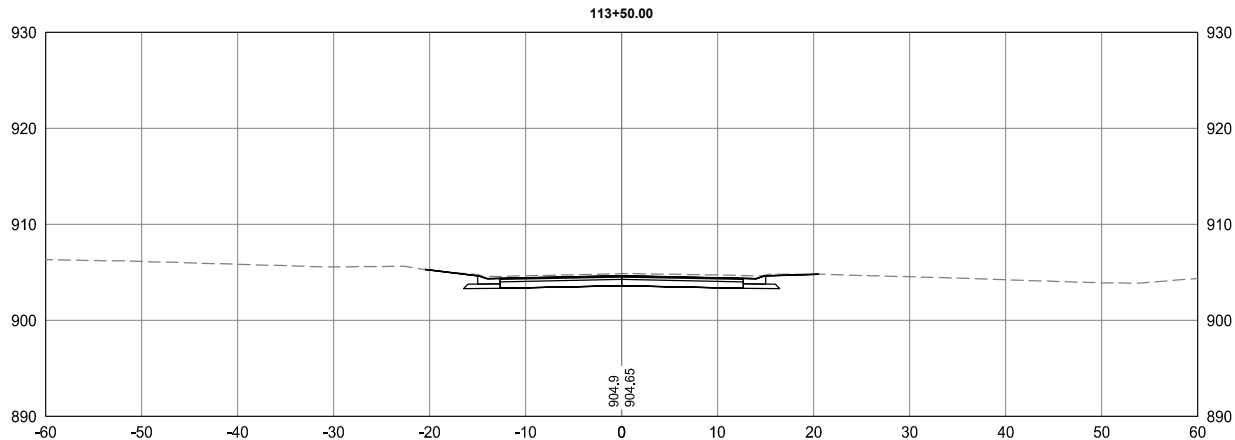
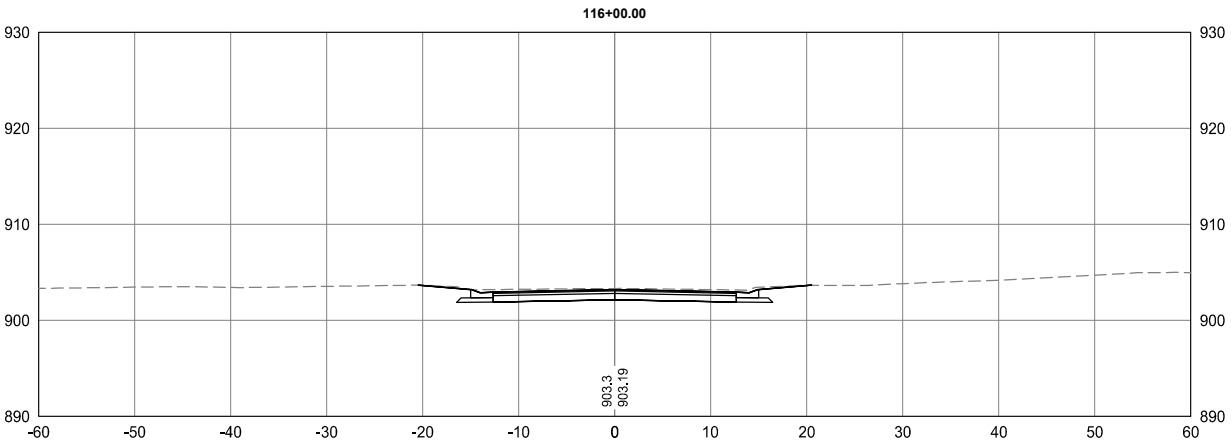
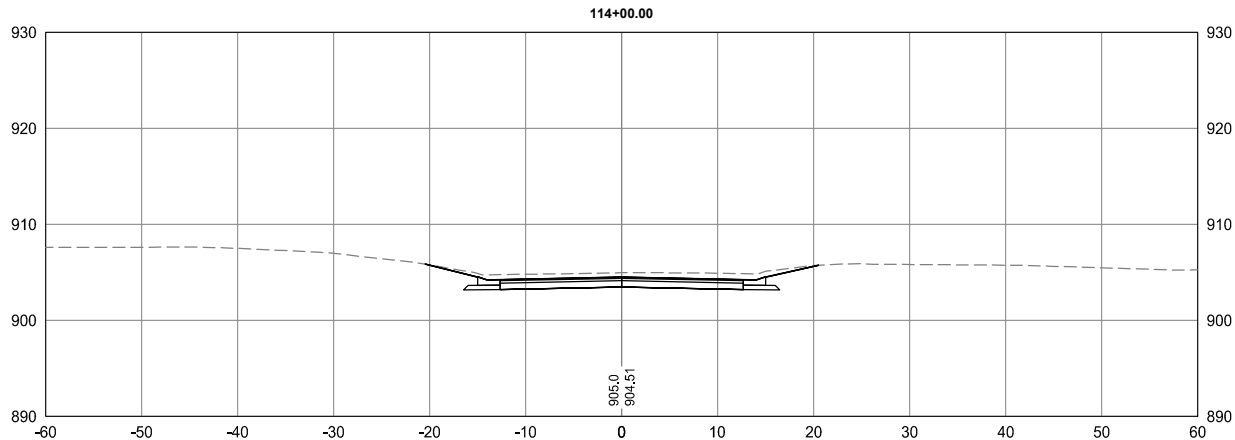
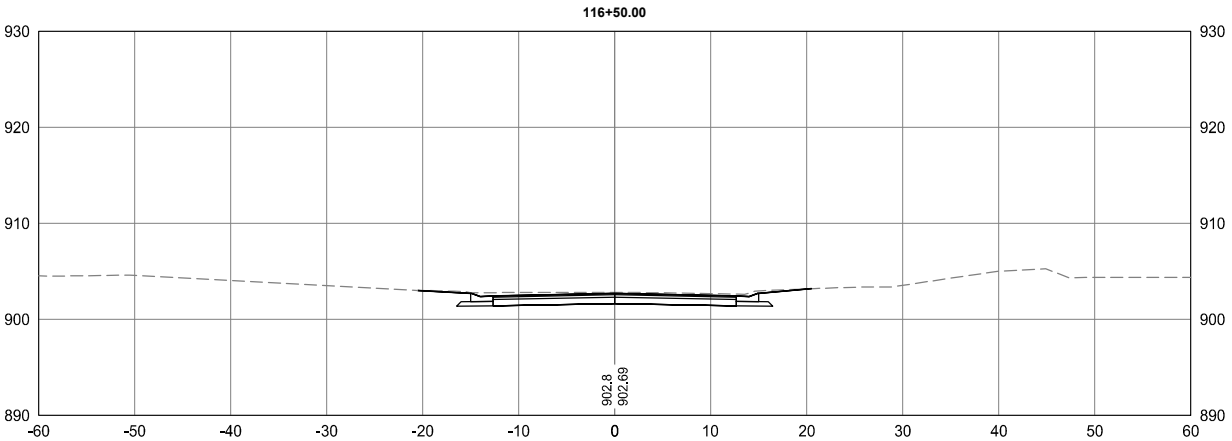
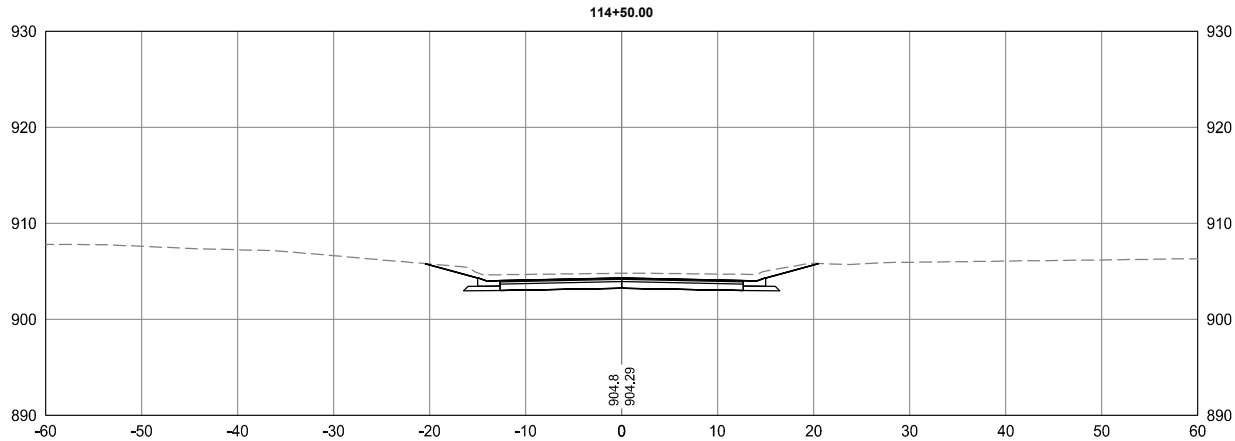
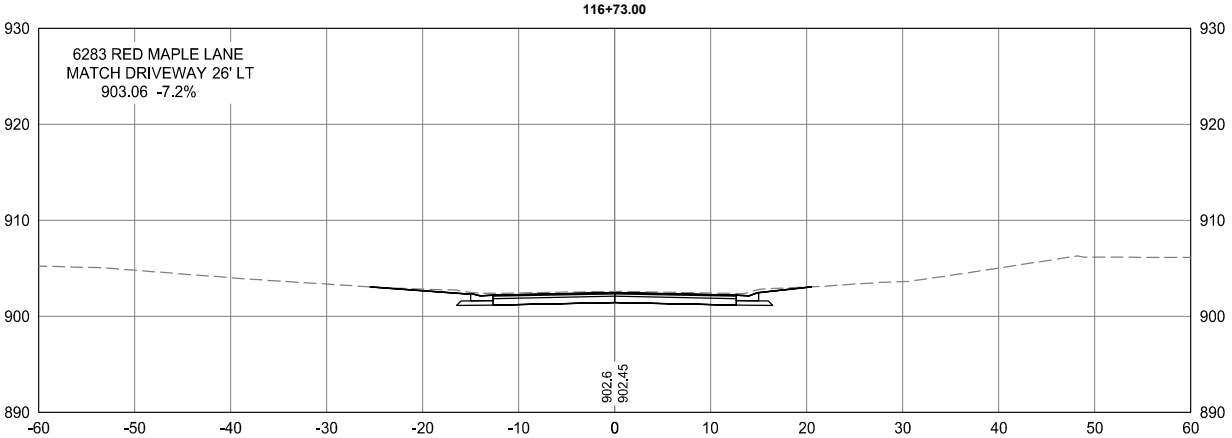
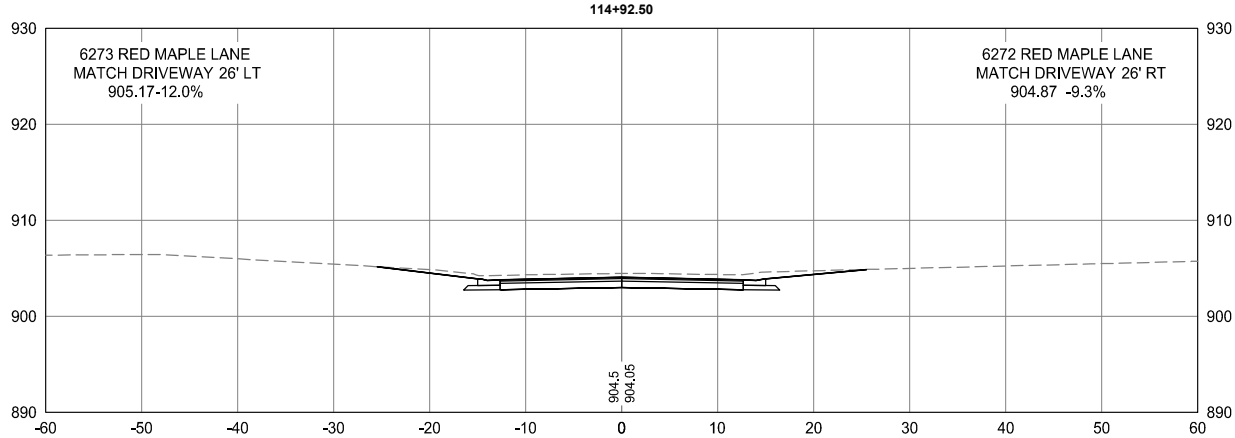
WSB PROJECT NO.
023620-000

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RED MAPLE LANE

2



SCALE: AS SHOWN
DESIGN BY: THC
PLAN BY: THC
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REVISIONS		
NO.	DATE	DESCRIPTION
2	02-05-2025	ADDENDUM NO 2

CROSS SECTIONS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

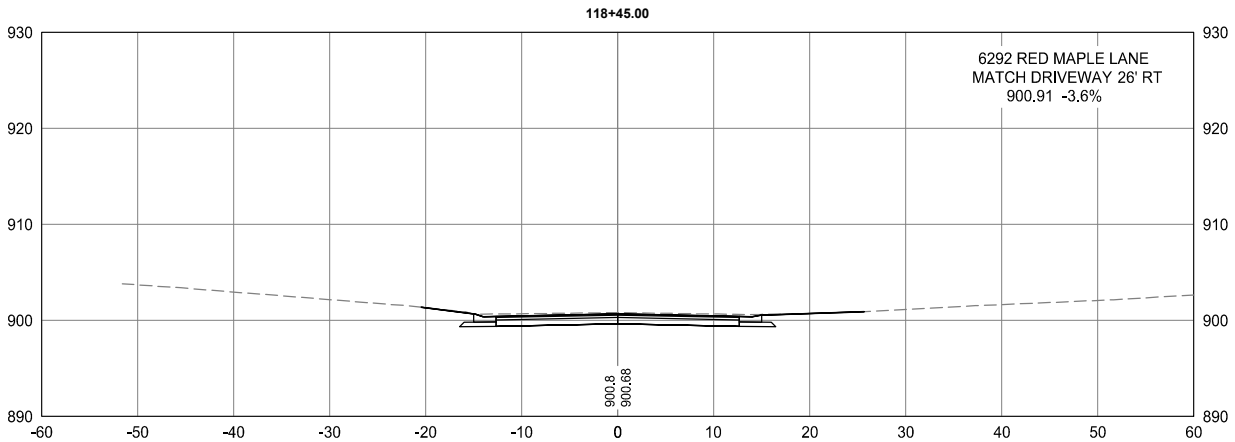
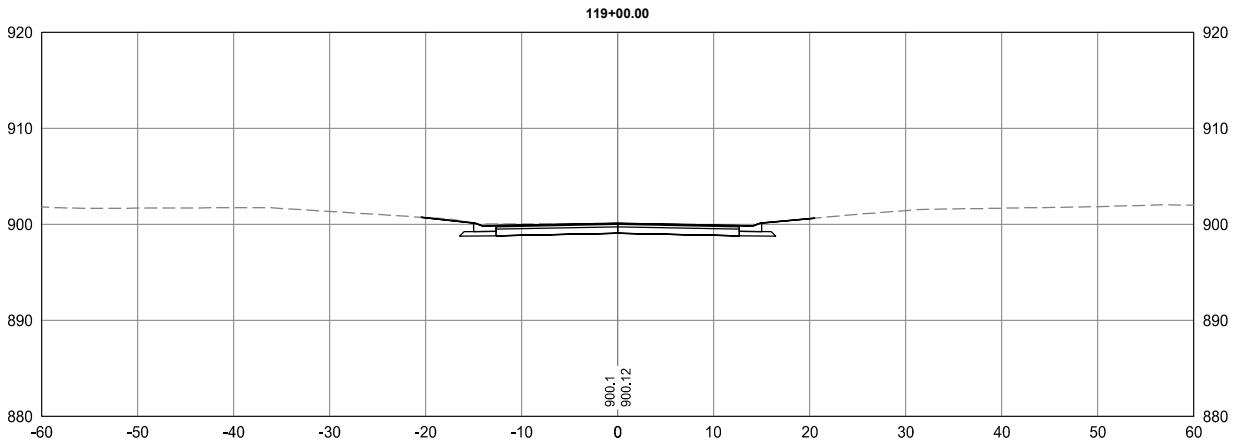
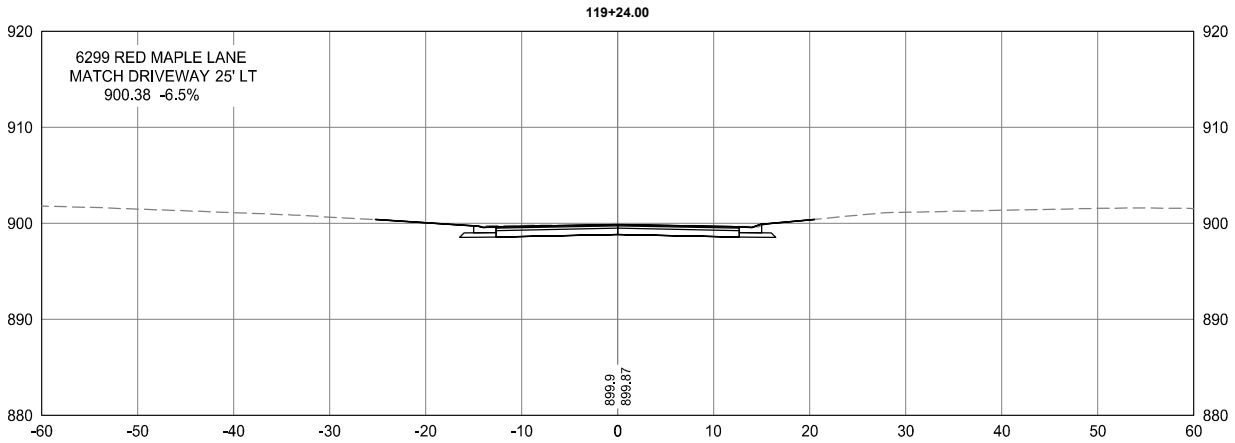
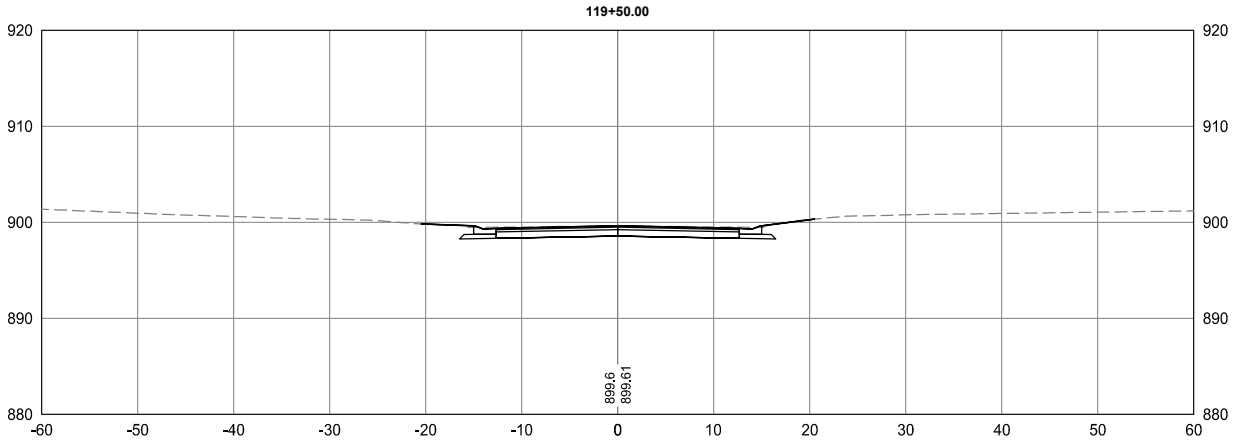
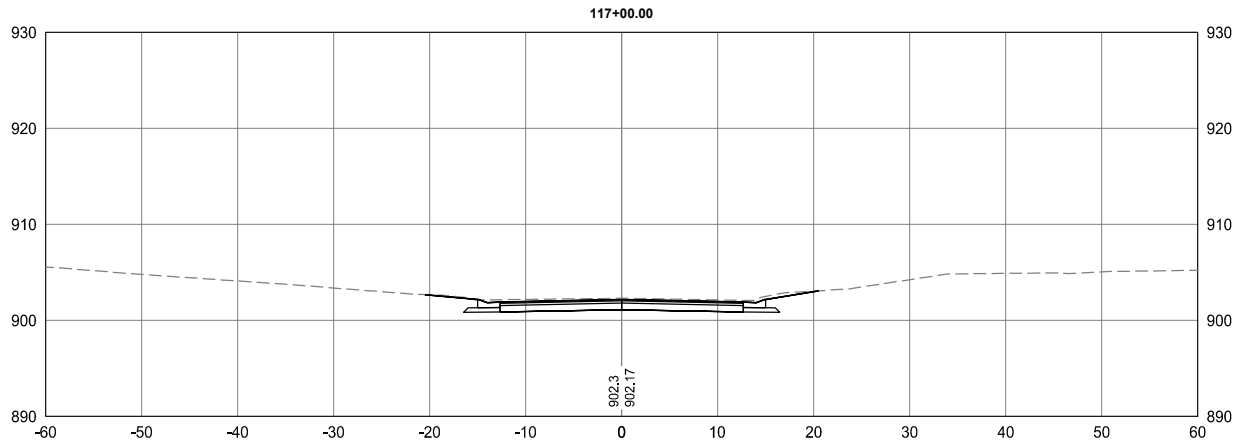
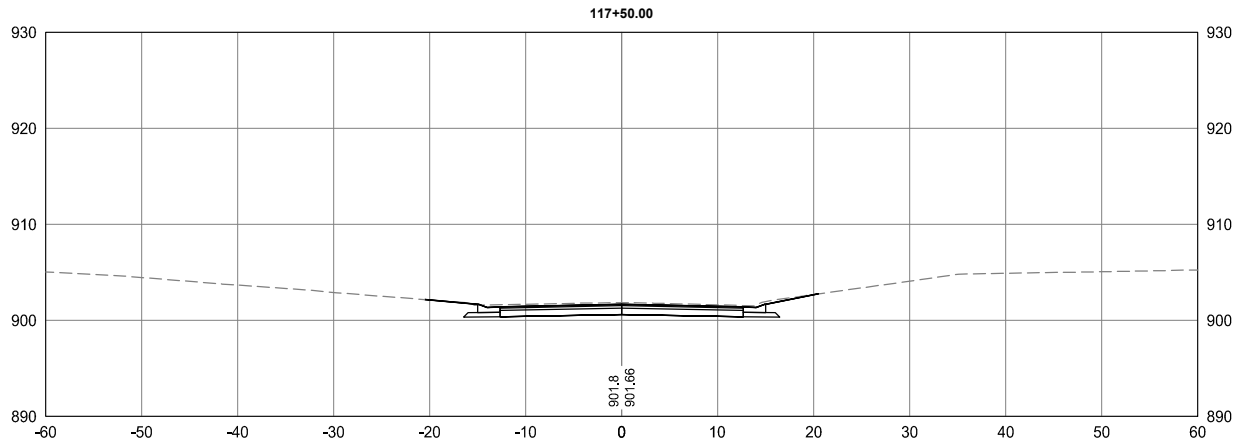
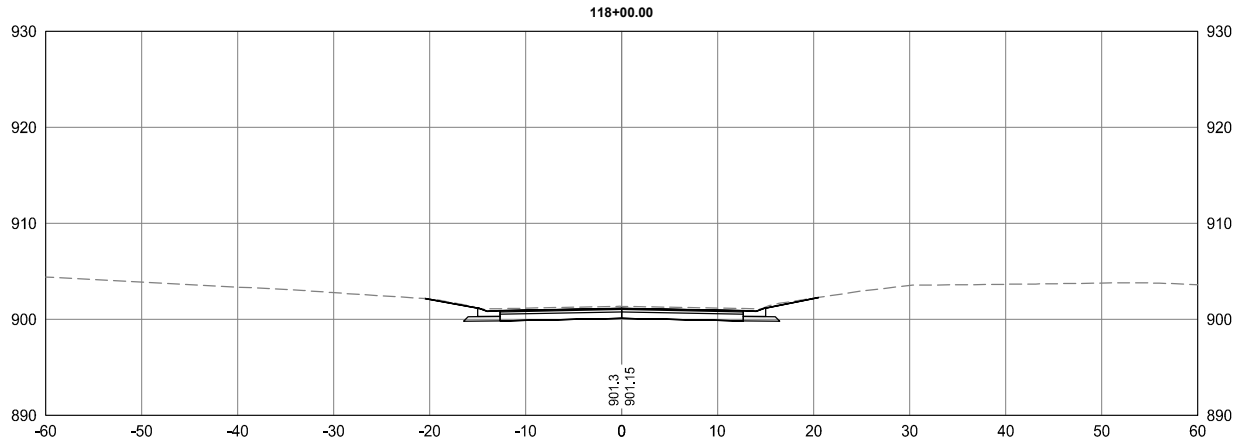
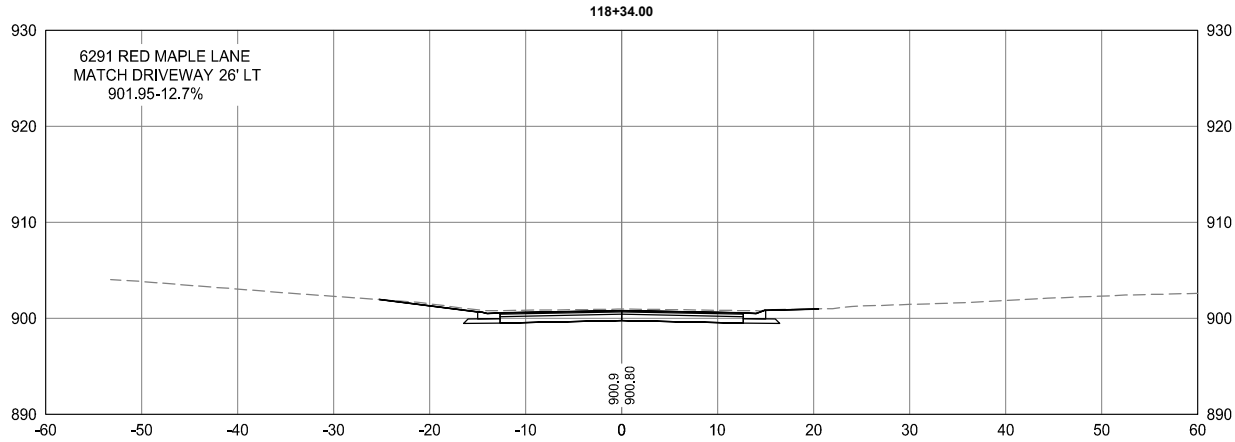
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RED MAPLE LANE

2



SCALE: AS SHOWN
DESIGN BY: THC
PLAN BY: THC
CHECK BY: PTH

REVISIONS		
NO.	DATE	DESCRIPTION
2	02-05-2025	ADDENDUM NO 2

CROSS SECTIONS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO.
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RED MAPLE LANE

2



SCALE: AS SHOWN
PLAN BY: THC
DESIGN BY: THC
CHECK BY: PTH

REVISIONS

NO.	DATE	DESCRIPTION
2	02-05-2025	ADDENDUM NO 2

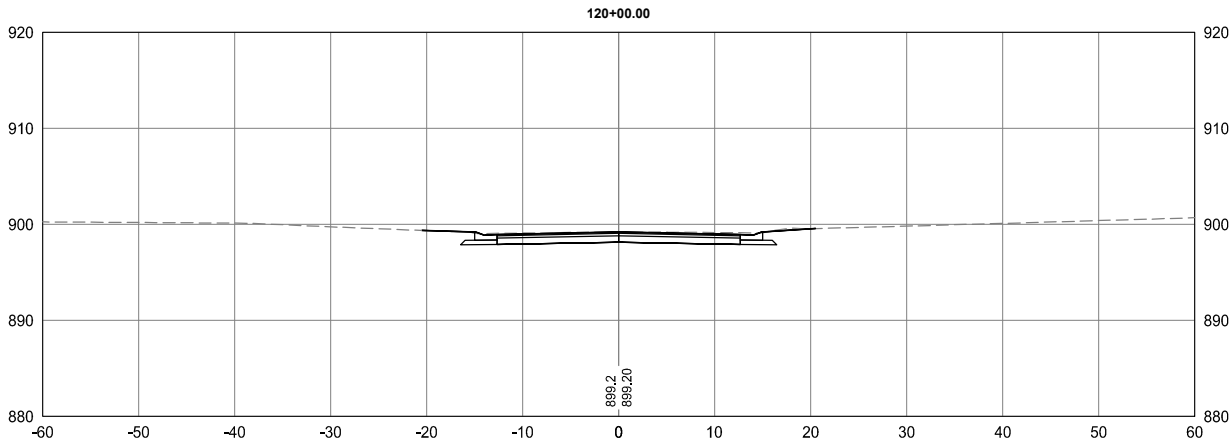
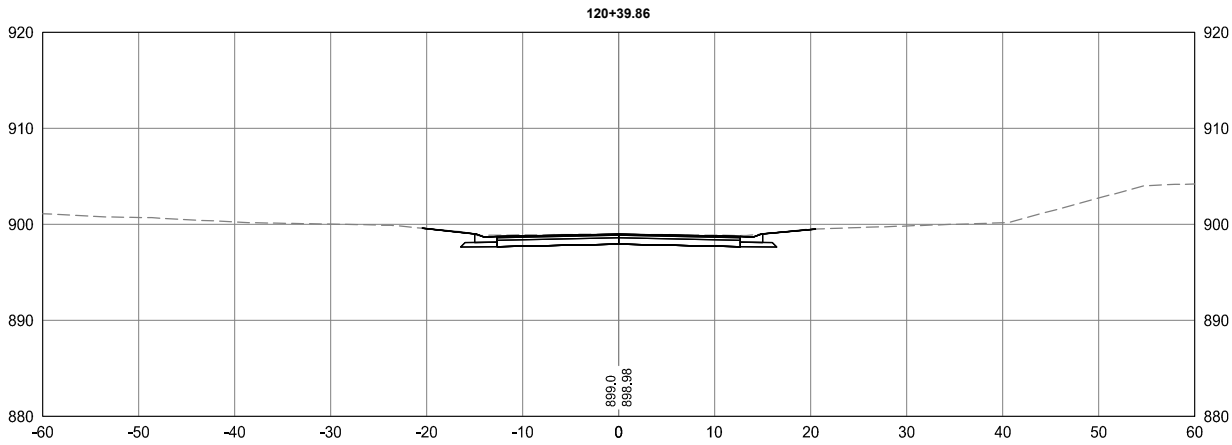
CROSS SECTIONS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO.
023620-000

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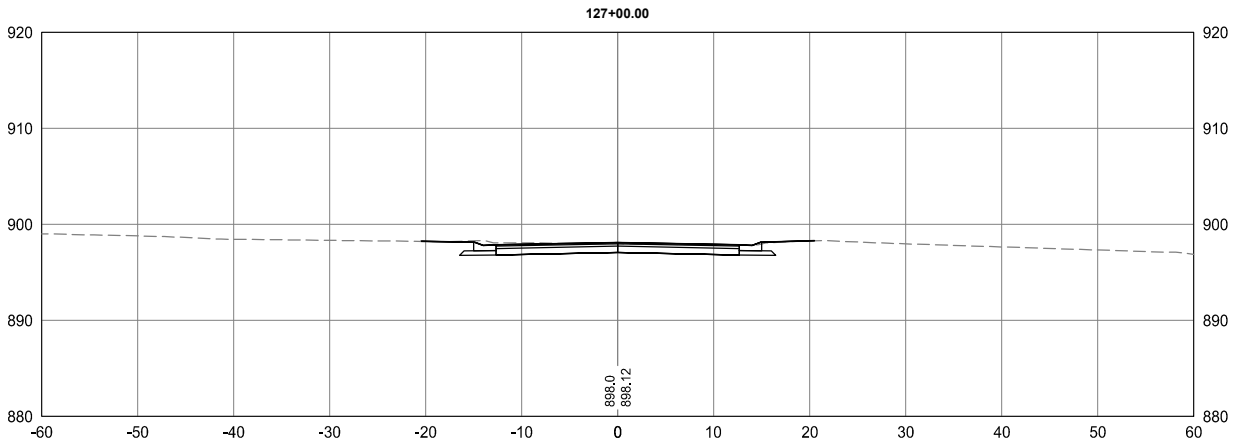
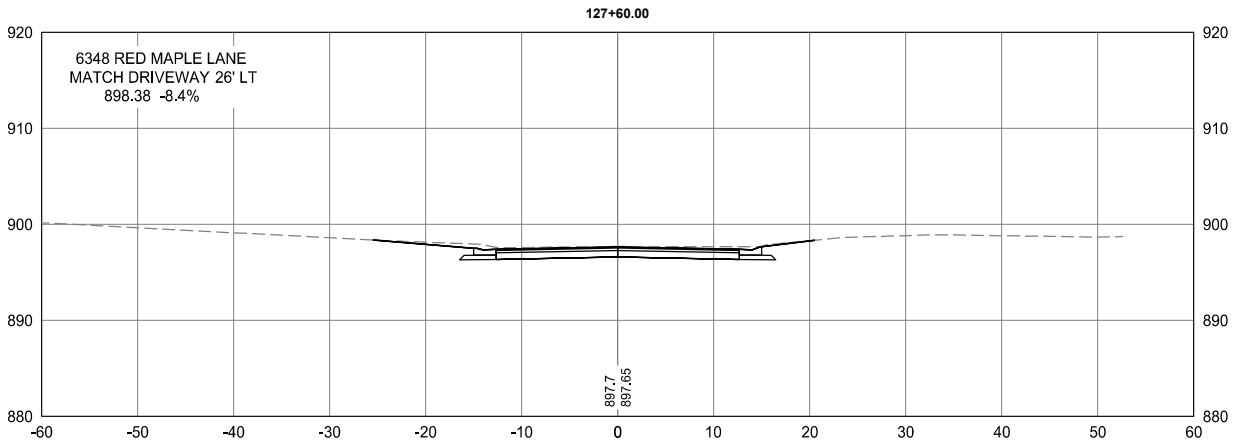
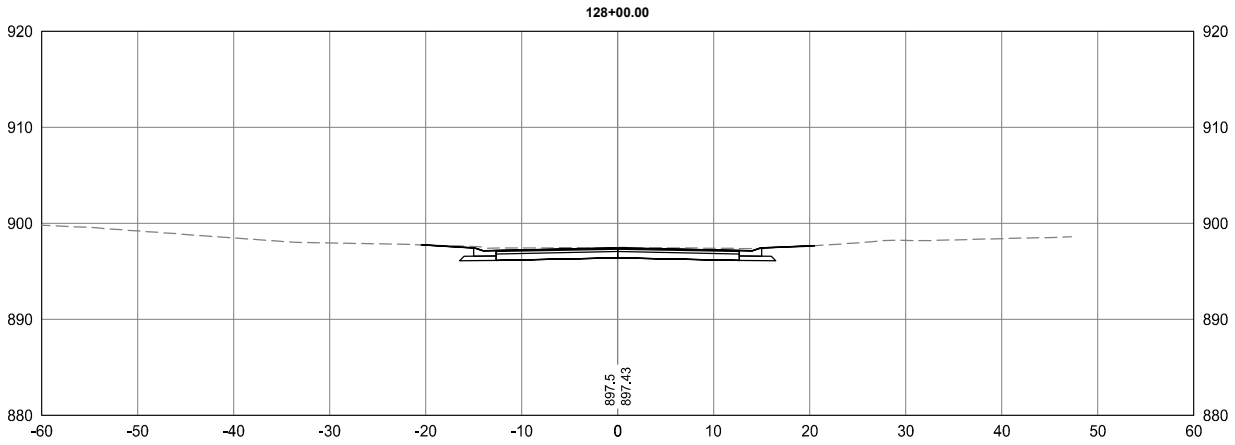
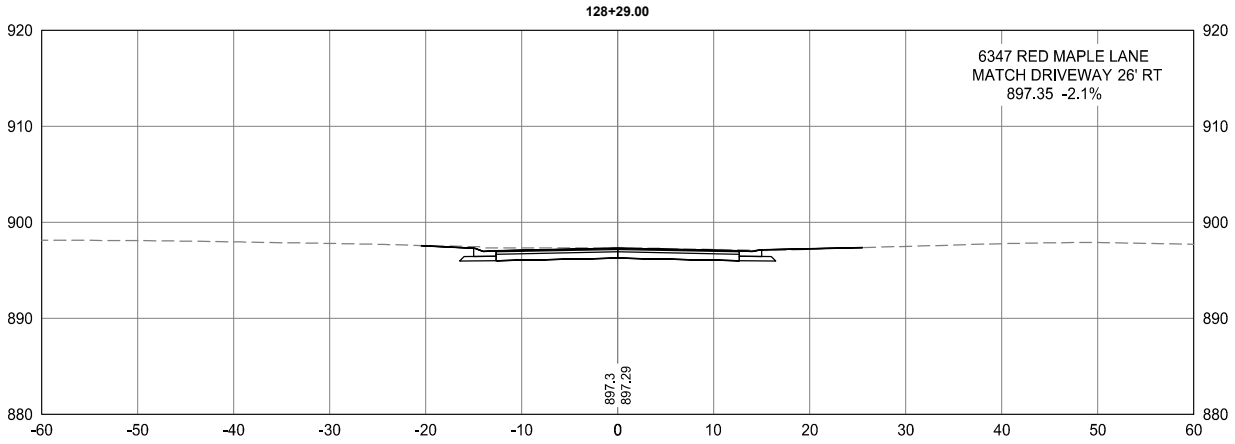
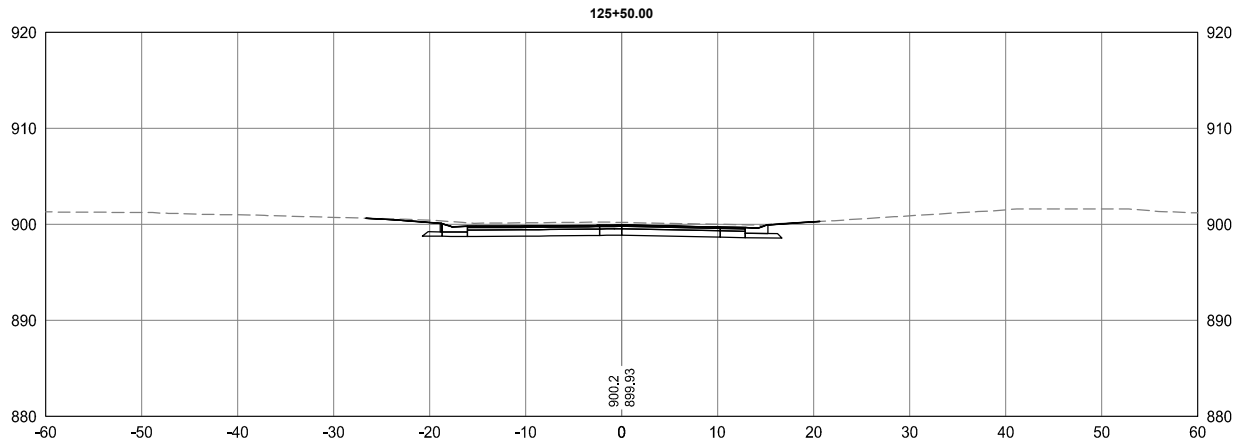
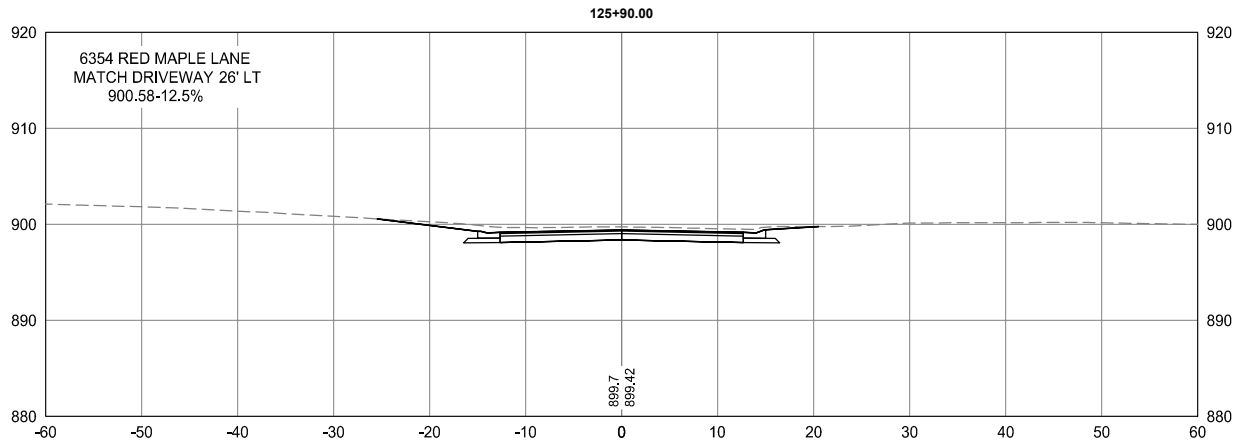
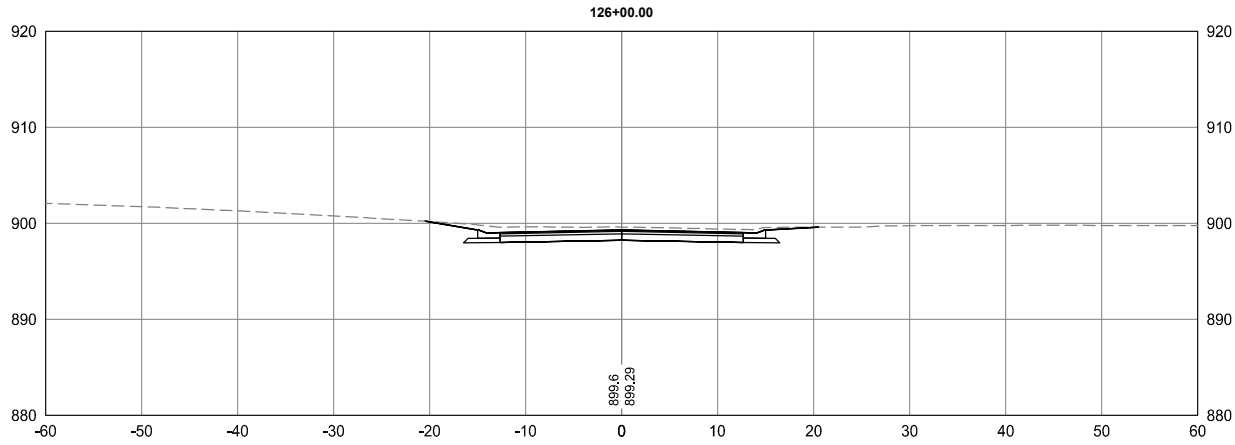
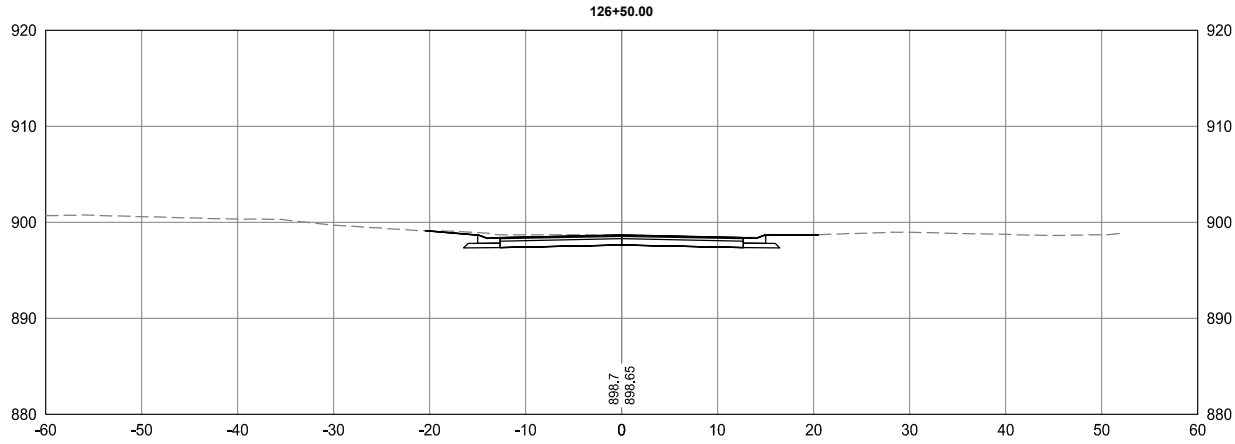
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RED MAPLE LANE

2



SCALE: AS SHOWN
PLAN BY: THC
DESIGN BY: THC
CHECK BY: PTH

REVISIONS		
NO.	DATE	DESCRIPTION
2	02-05-2025	ADDENDUM NO 2

CROSS SECTIONS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO.
023620-000

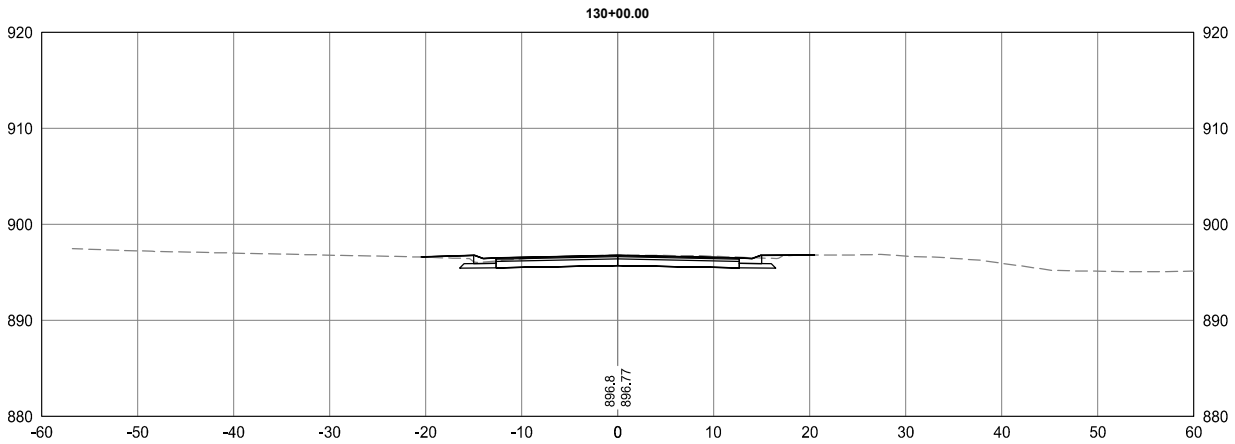
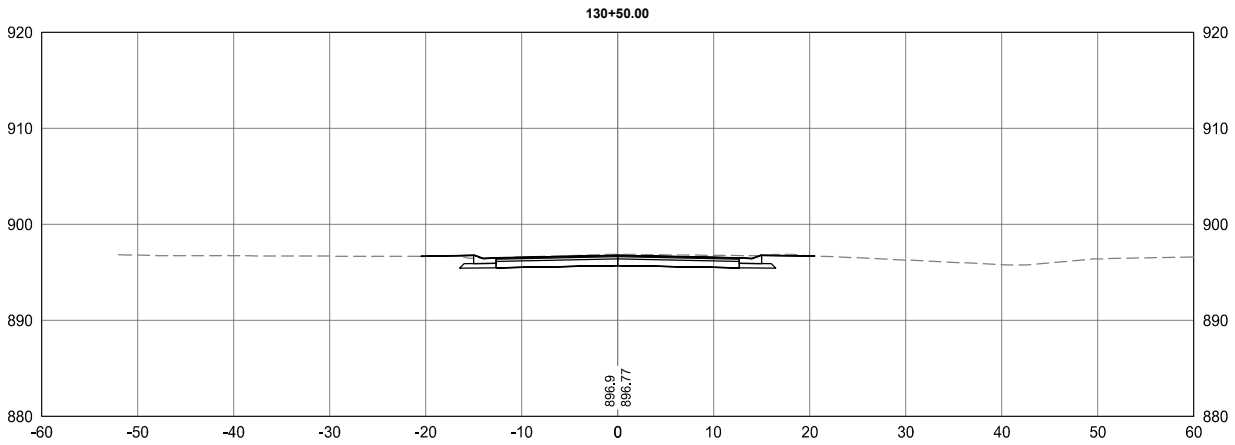
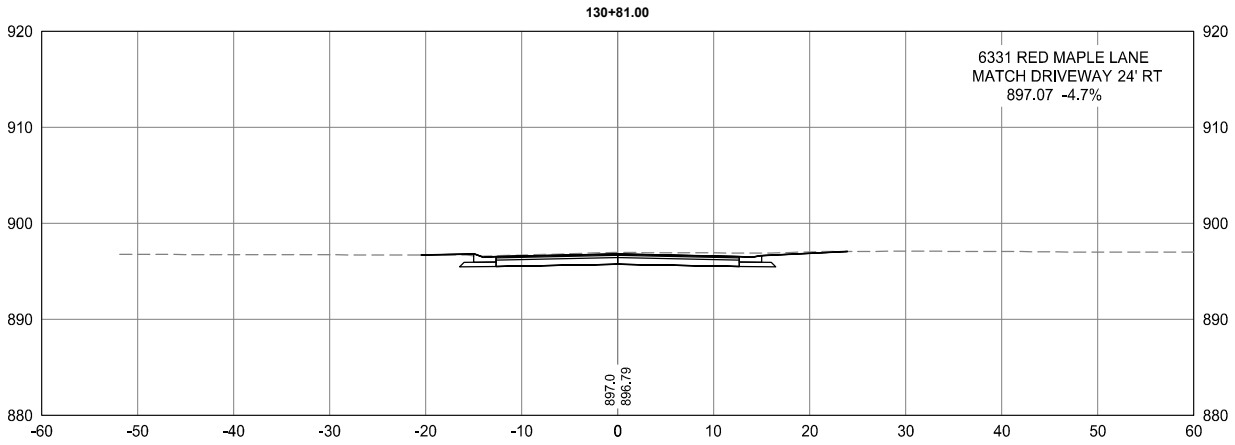
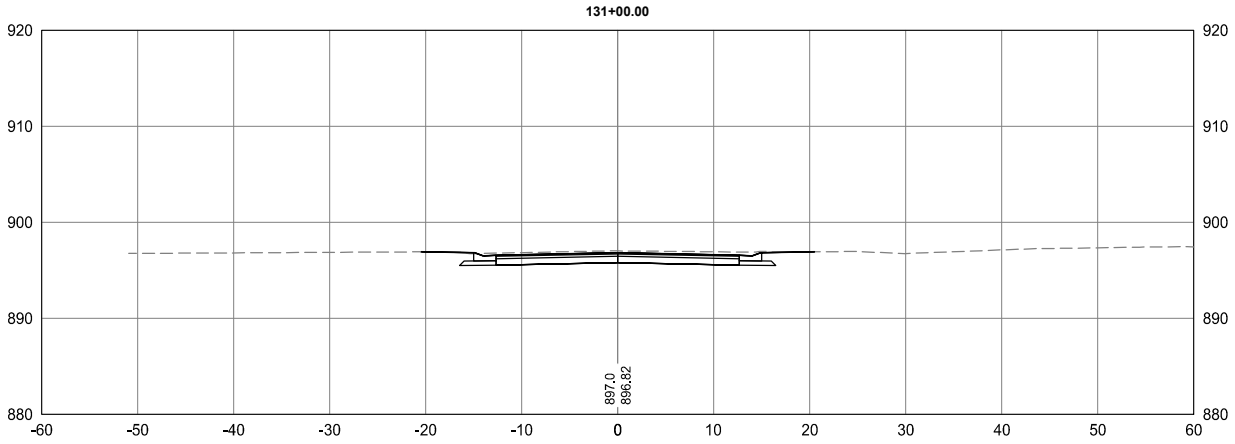
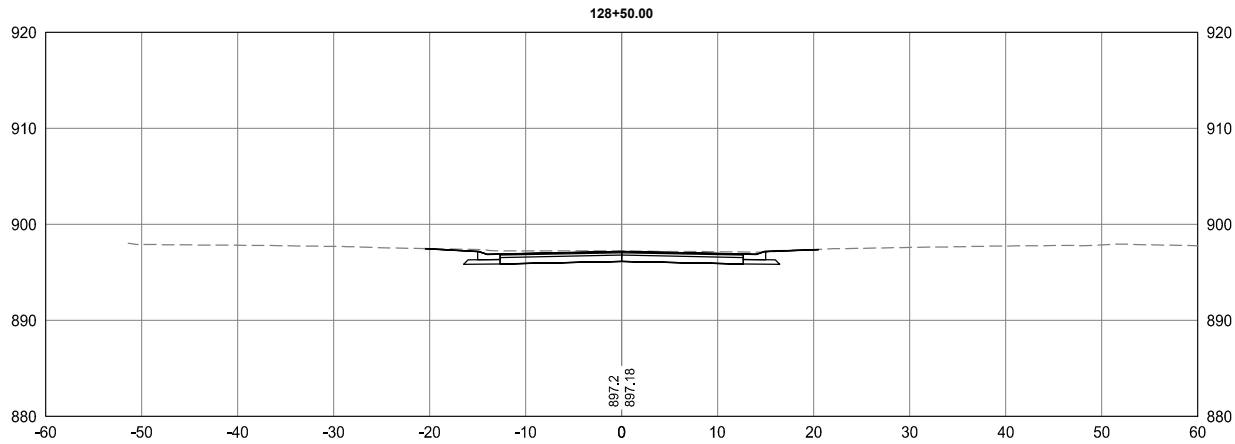
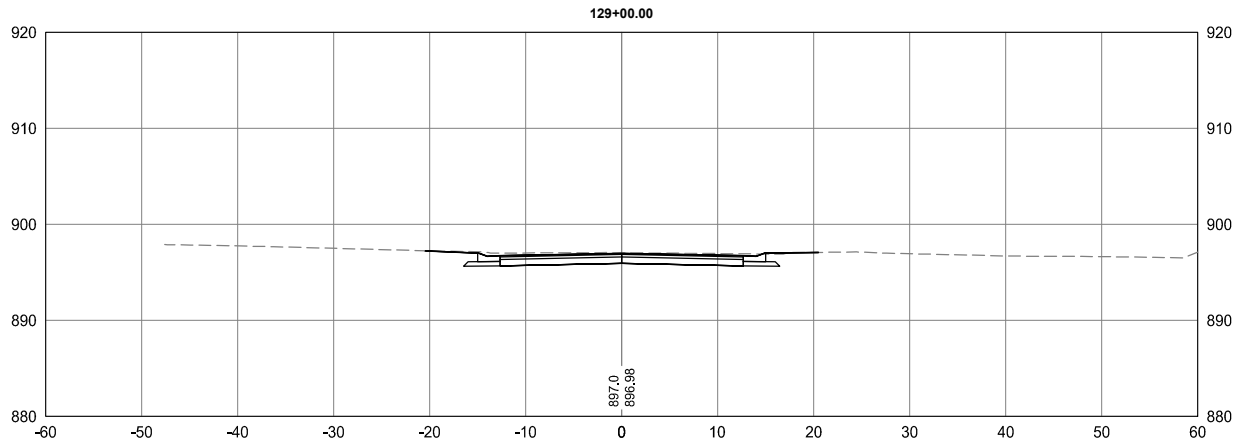
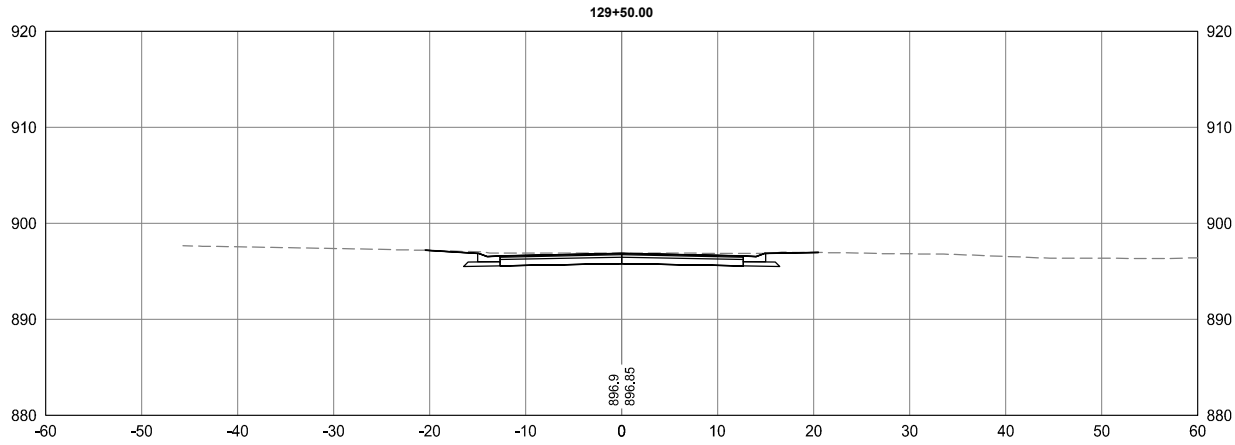
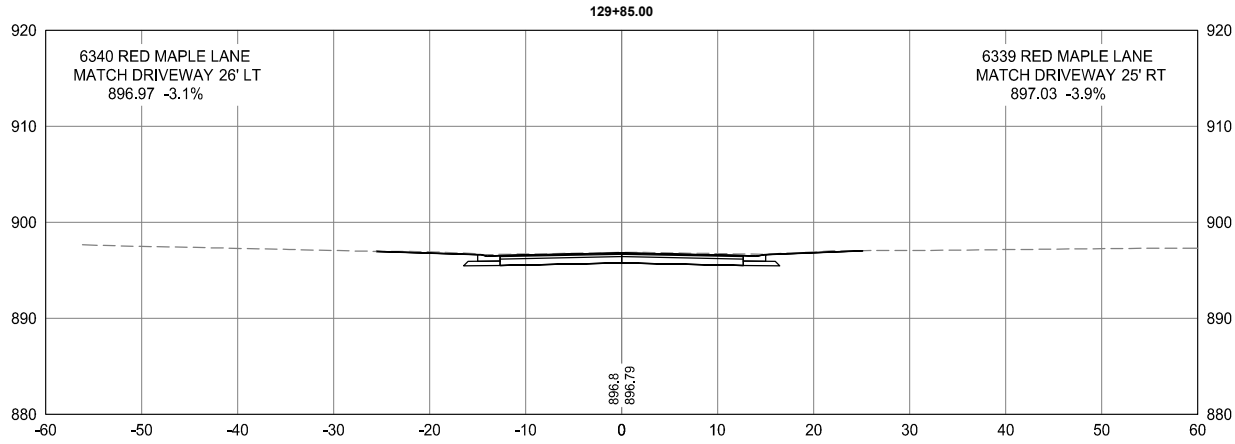
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RED MAPLE LANE

2



SCALE: AS SHOWN
DESIGN BY: THC
PLAN BY: THC
CHECK BY: PTH

REVISIONS		
NO.	DATE	DESCRIPTION
2	02-05-2025	ADDENDUM NO 2

CROSS SECTIONS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

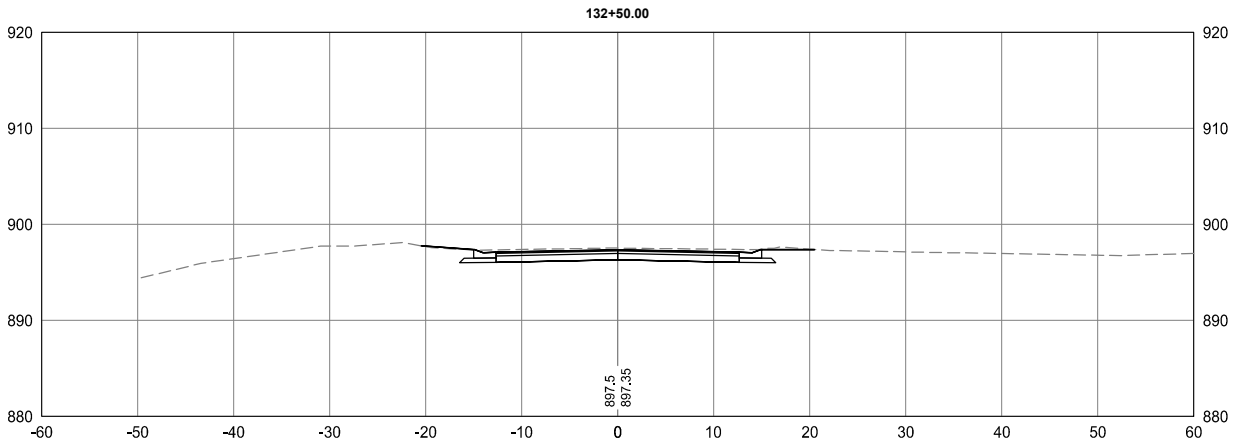
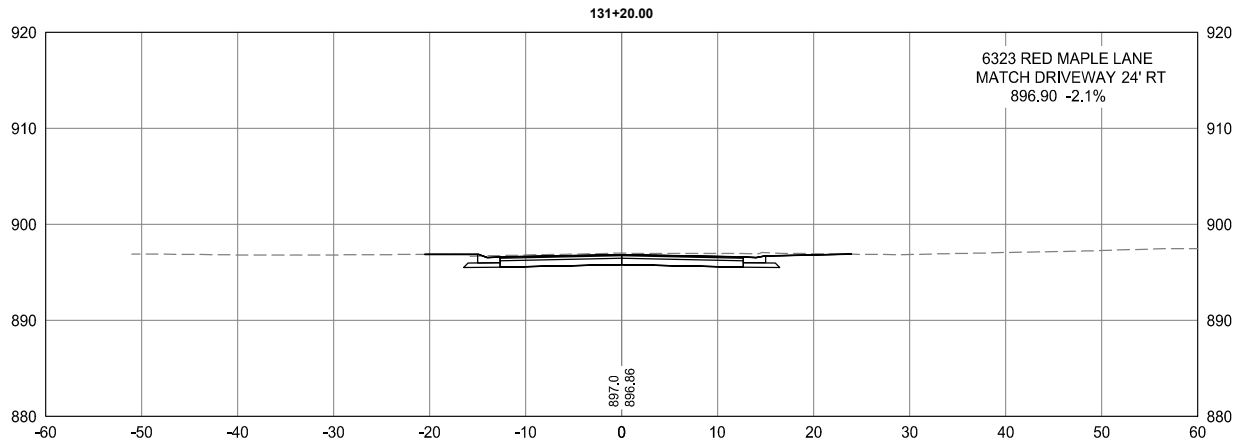
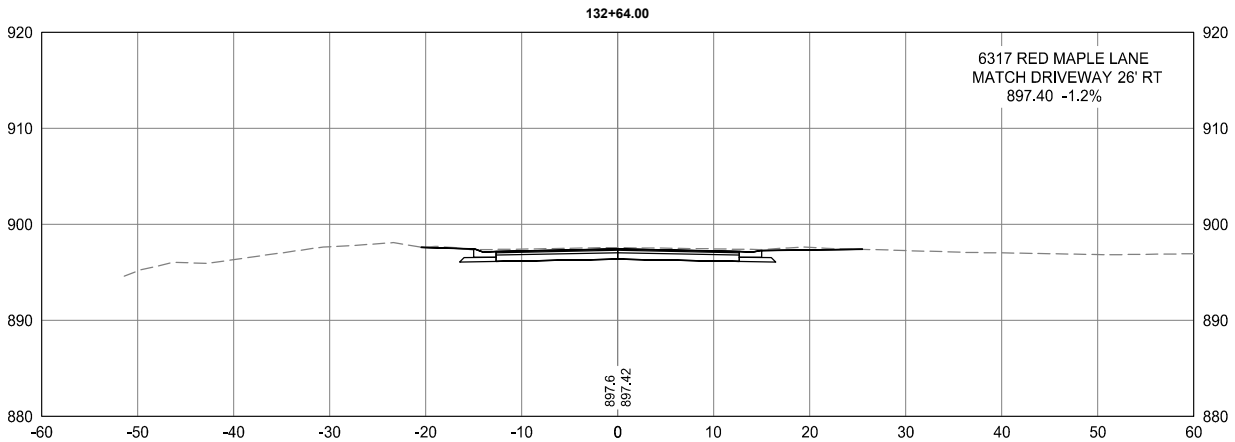
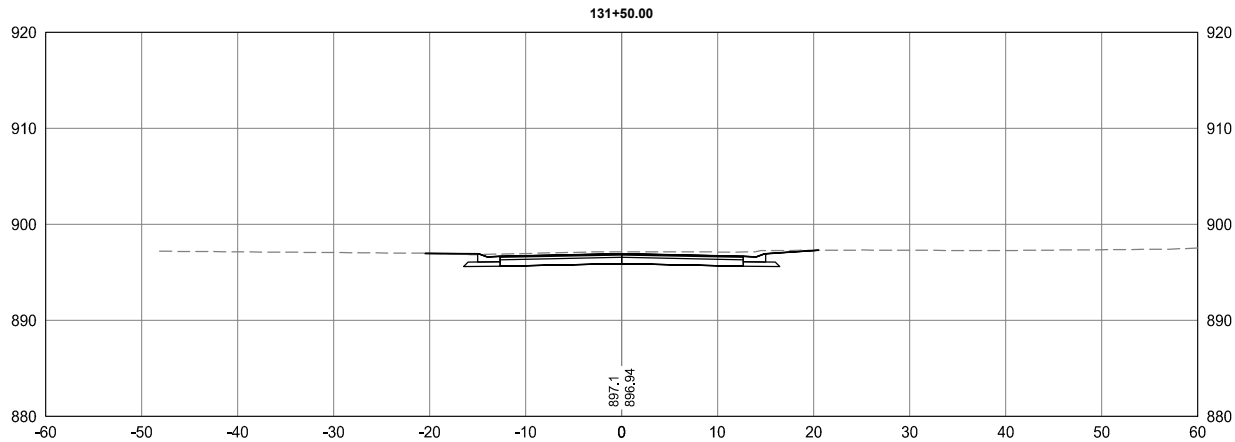
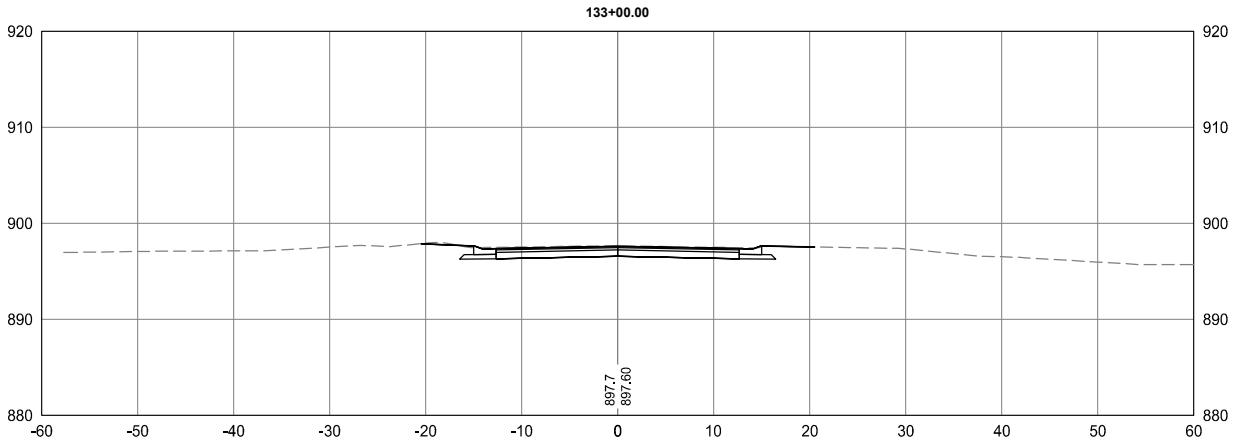
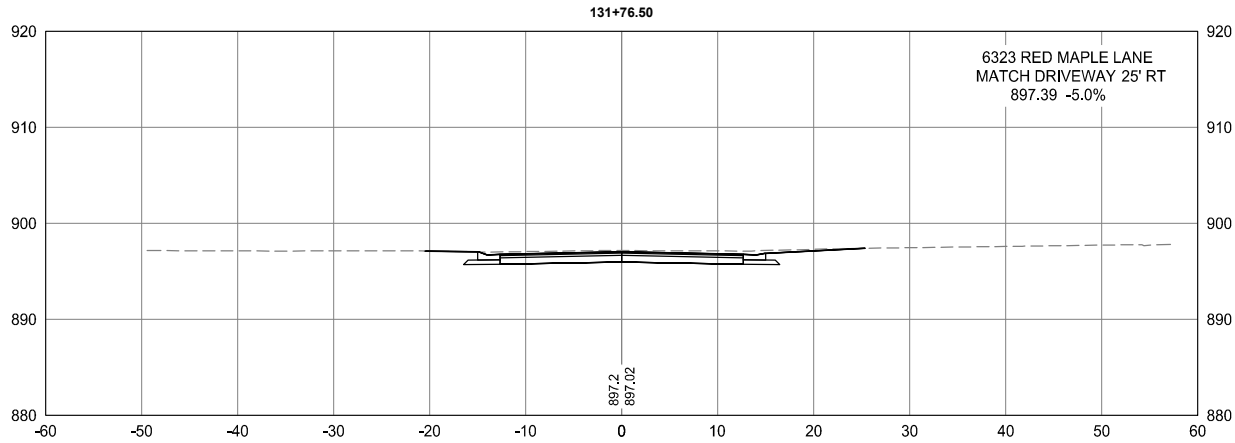
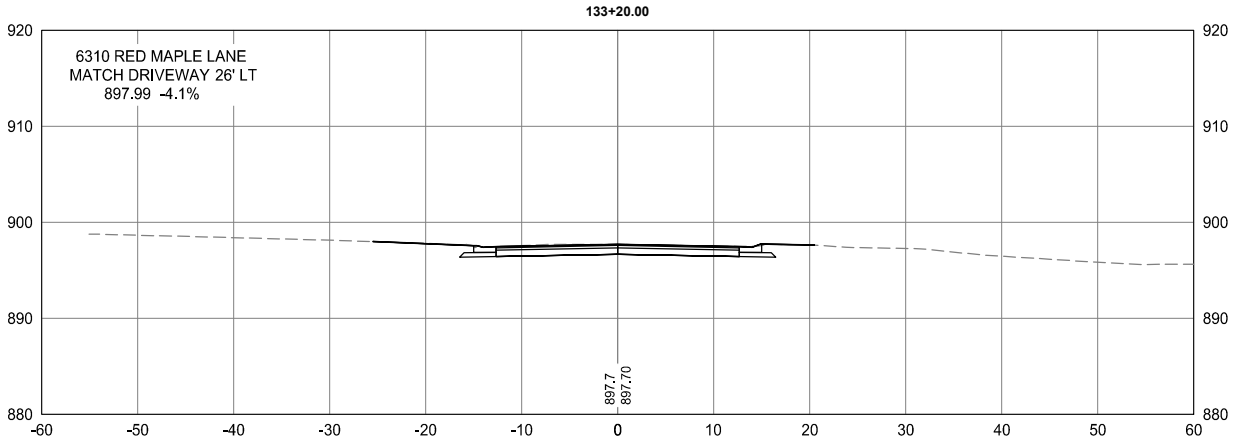
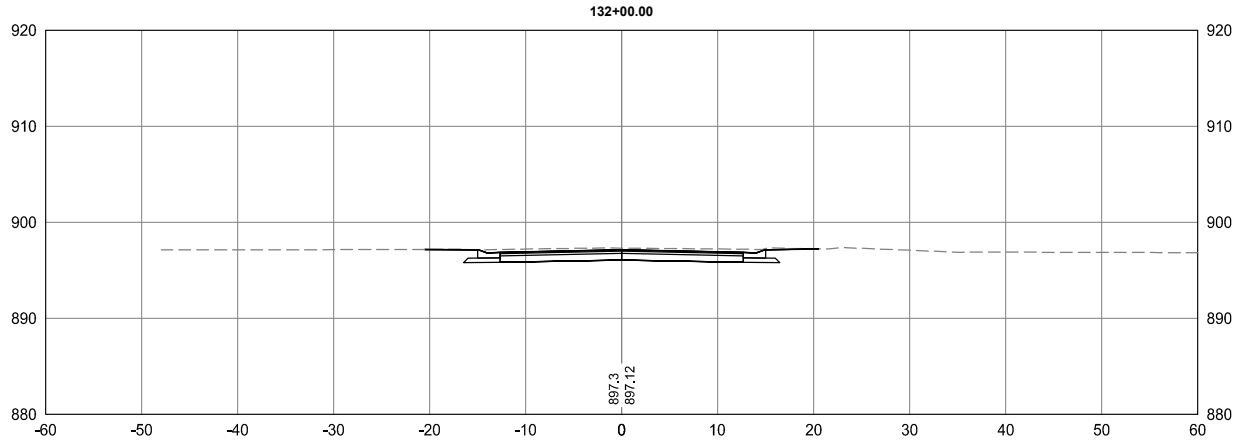
WSB PROJECT NO.
023620-000

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RED MAPLE LANE

2



SCALE: AS SHOWN
DESIGN BY: THC
PLAN BY: THC
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REVISIONS		
NO.	DATE	DESCRIPTION
2	02-05-2025	ADDENDUM NO 2

CROSS SECTIONS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

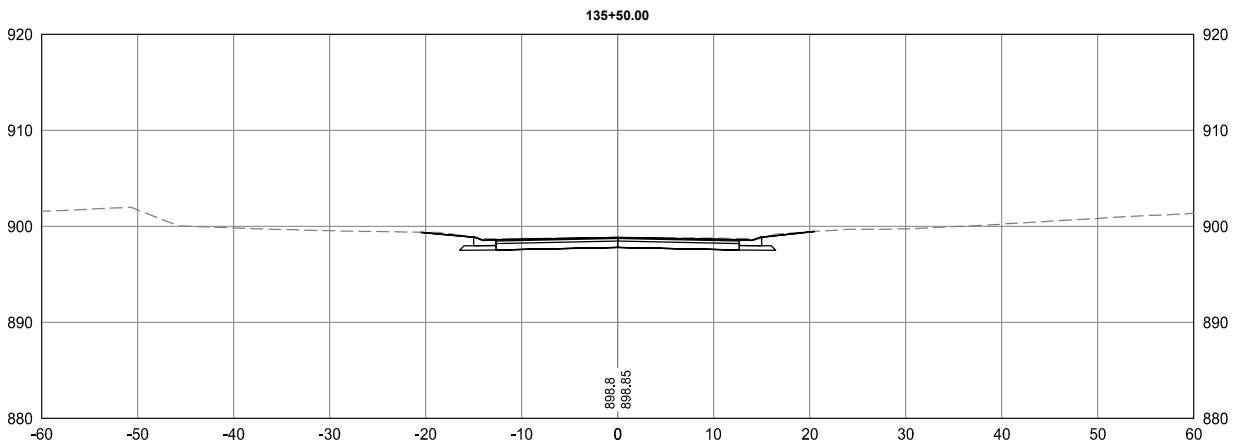
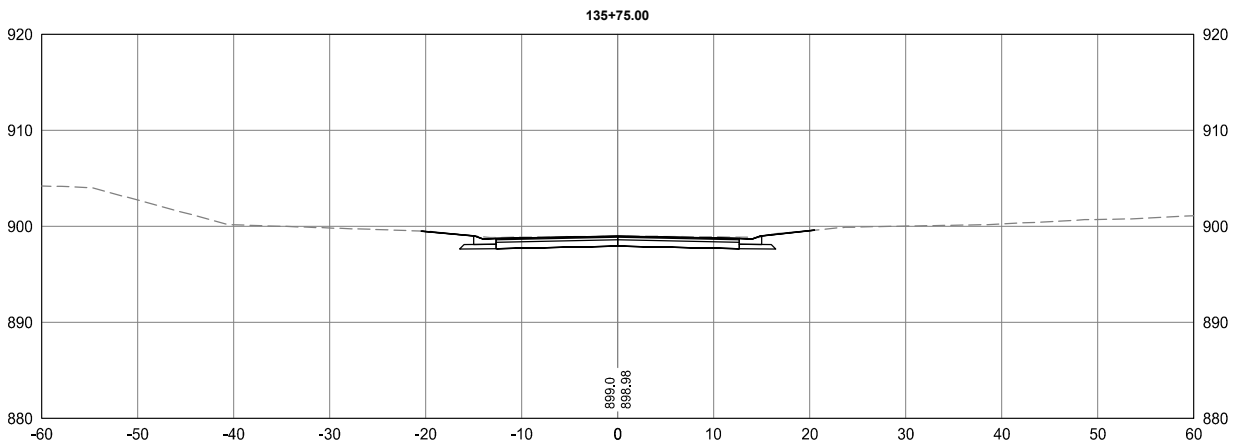
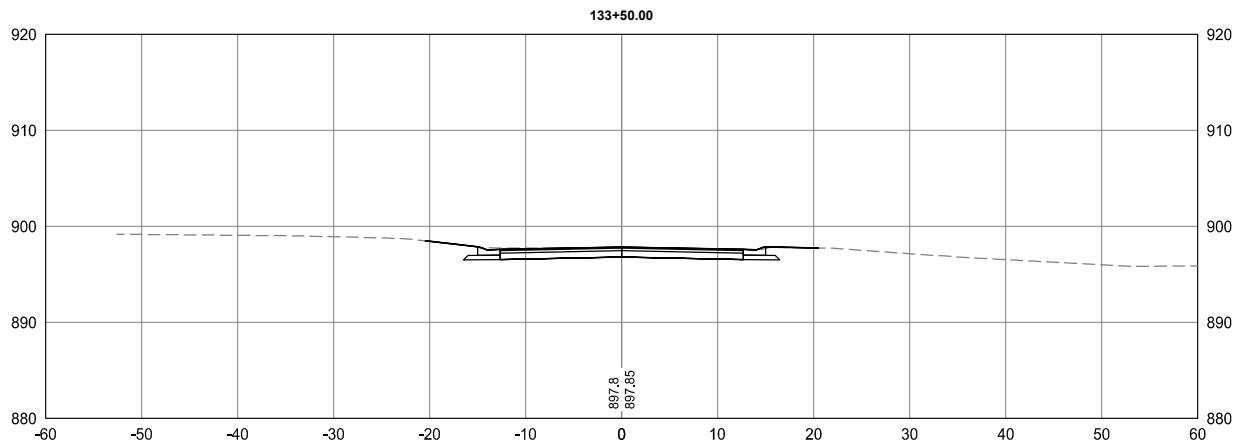
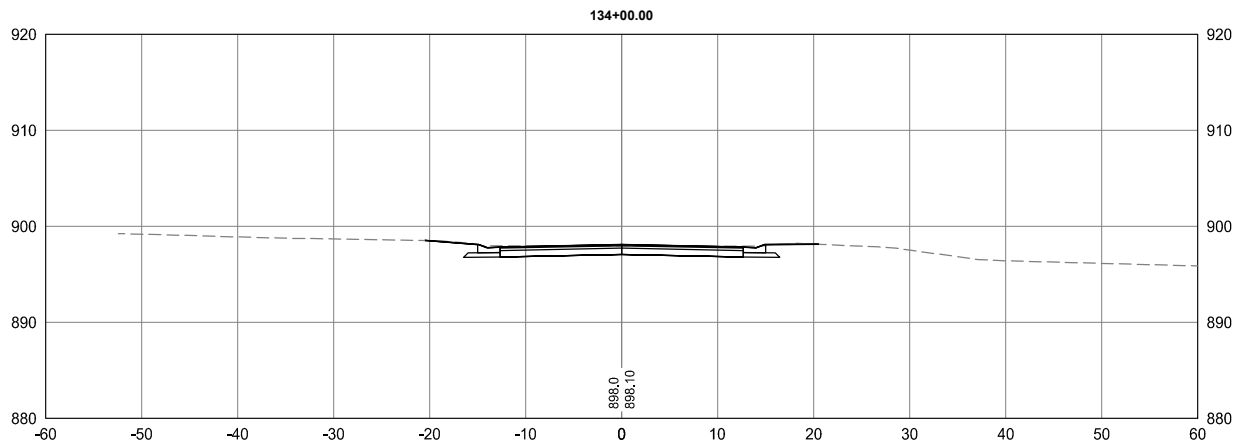
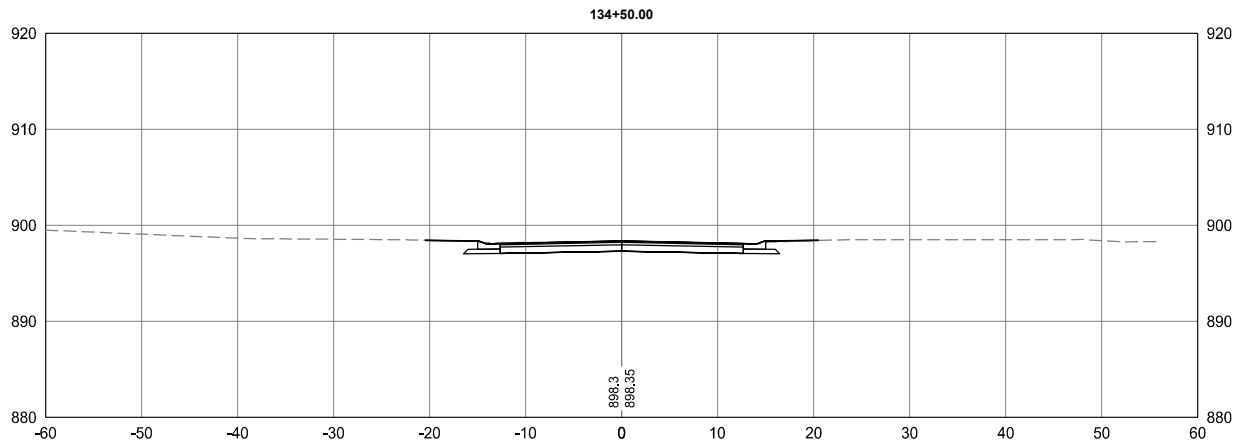
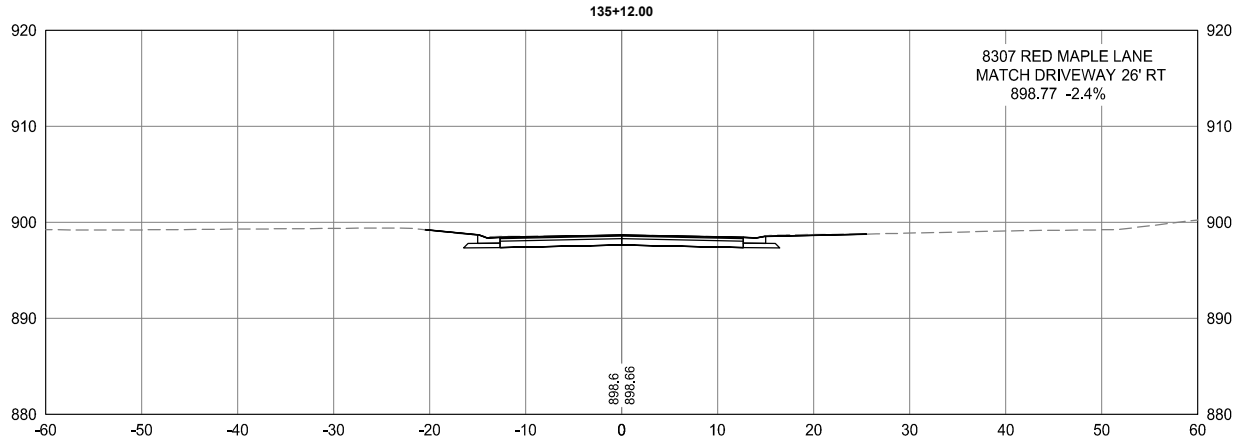
WSB PROJECT NO.
023620-000

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RED MAPLE LANE

2



REVISIONS		
NO.	DATE	DESCRIPTION
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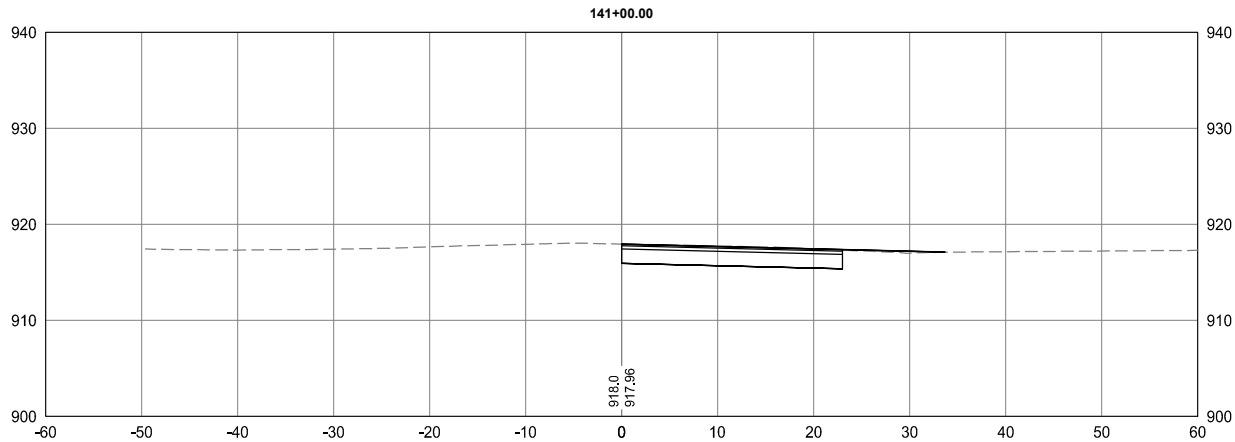
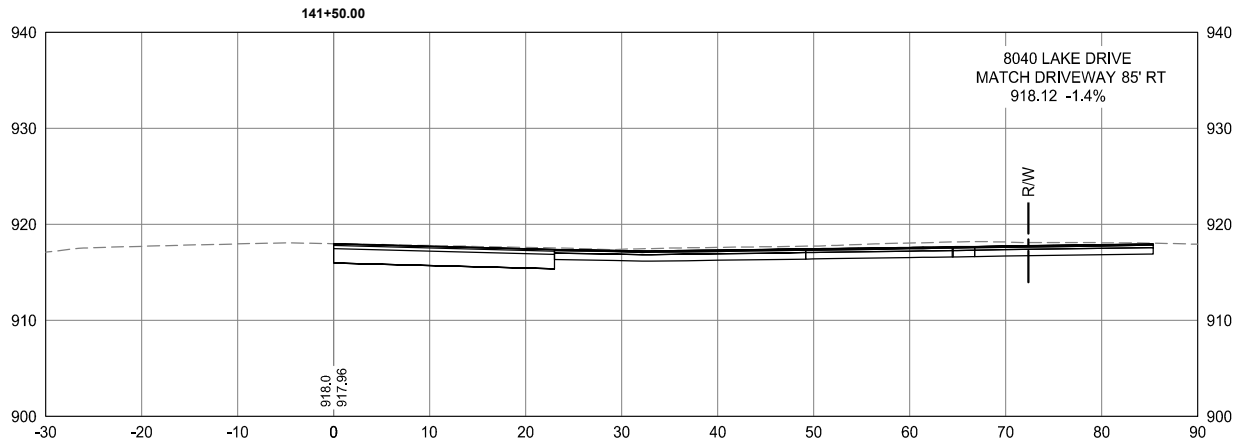
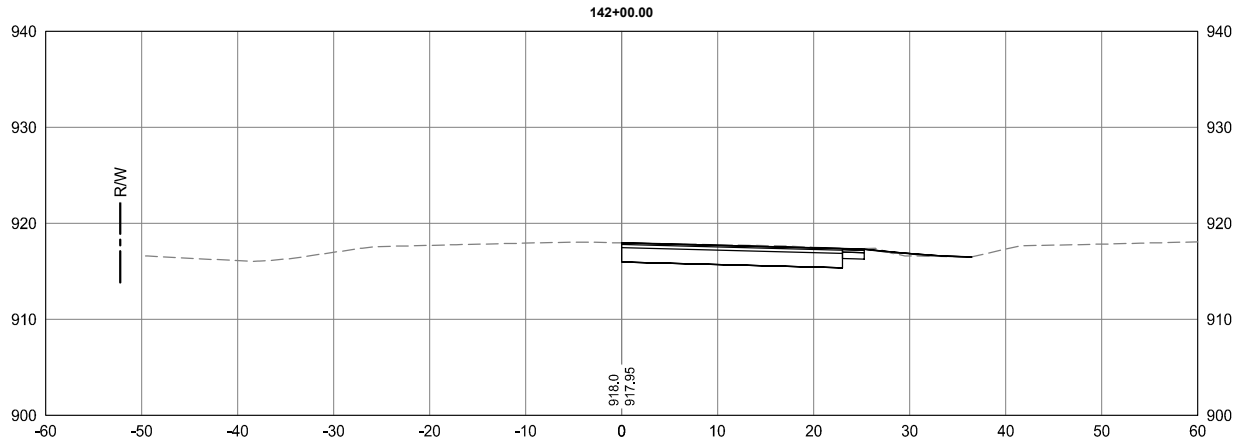
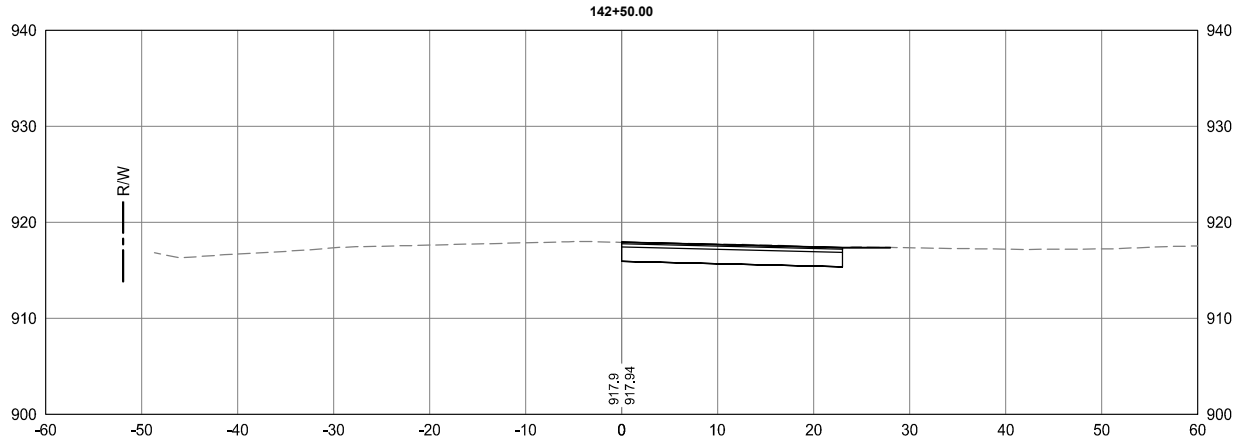
CROSS SECTIONS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

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LAKE DRIVE (CSAH 23)

2



SCALE: AS SHOWN
PLAN BY: THC
DESIGN BY: THC
CHECK BY: PTH

REVISIONS		
NO.	DATE	DESCRIPTION
2	02-05-2025	ADDENDUM NO 2

CROSS SECTIONS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

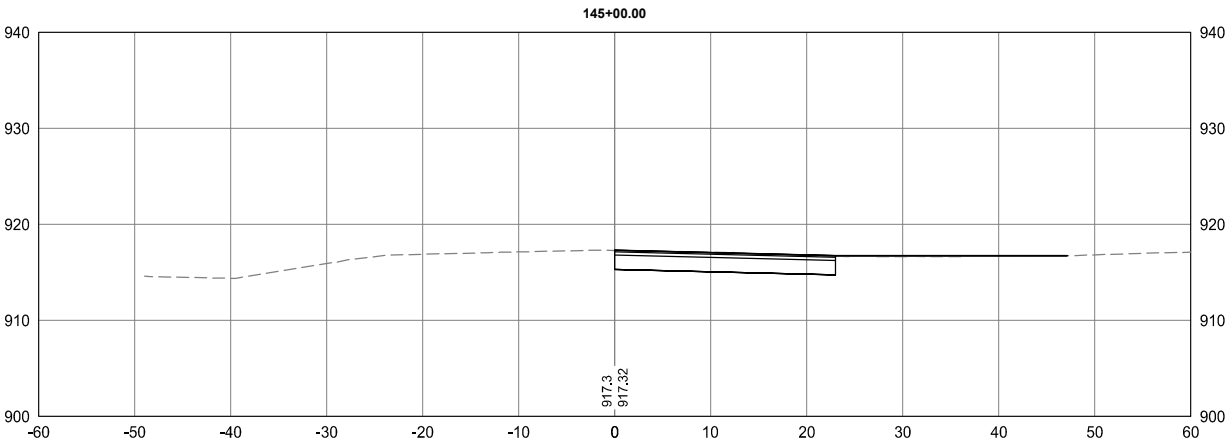
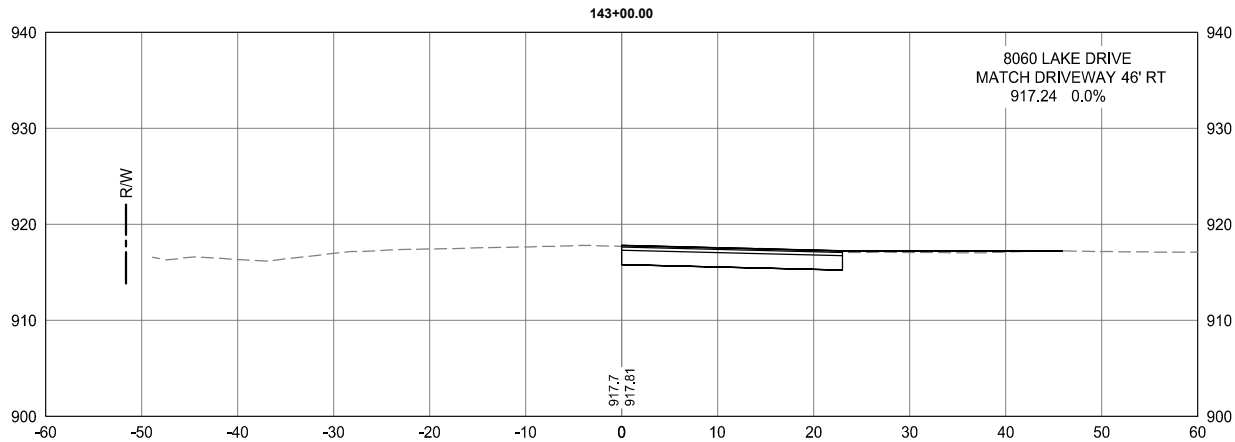
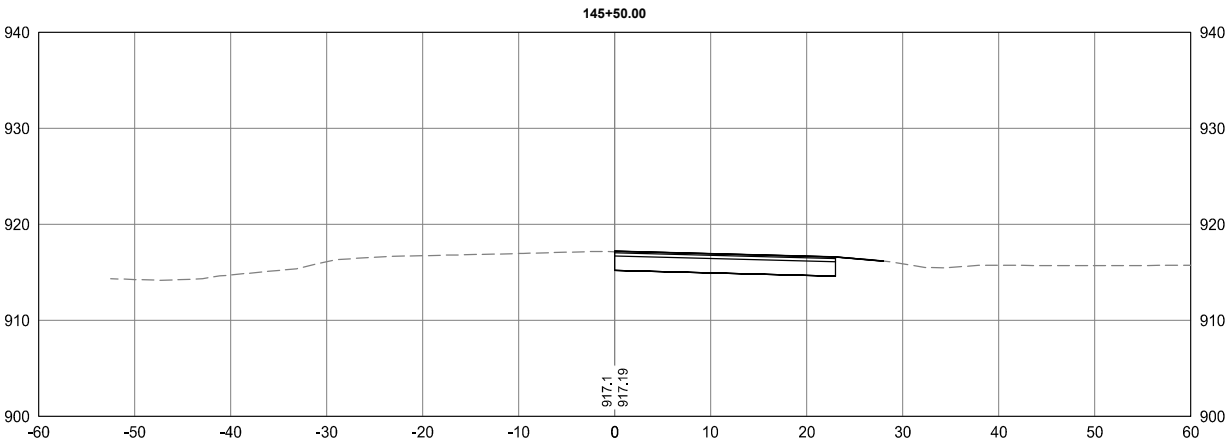
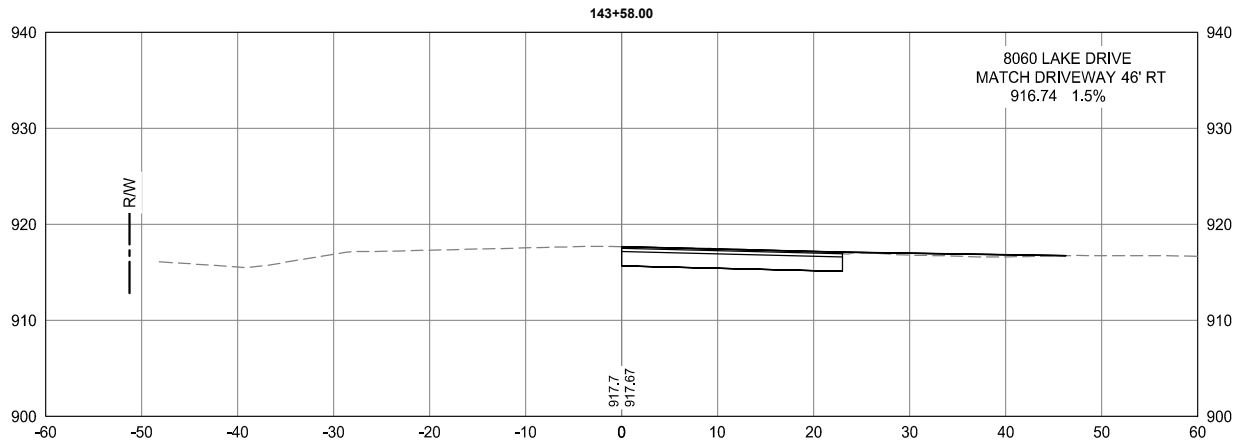
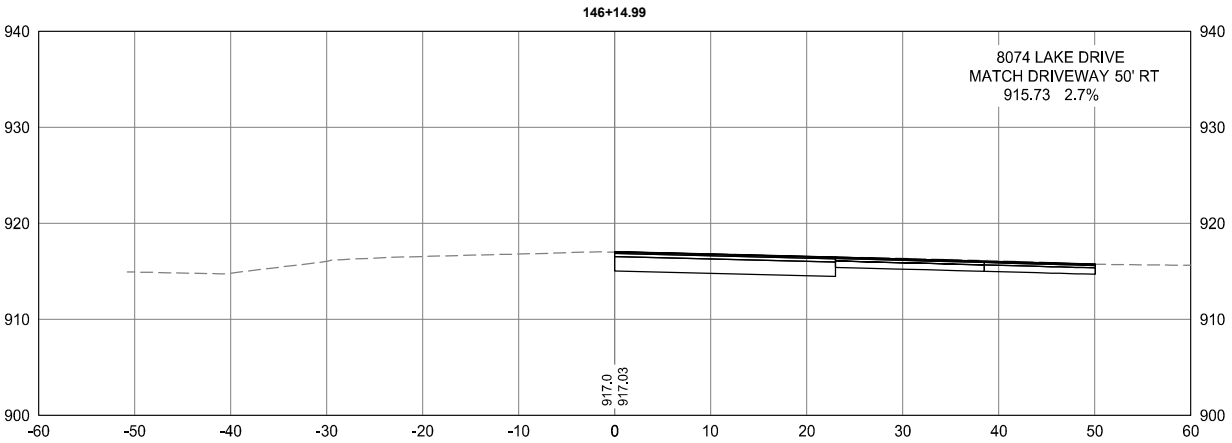
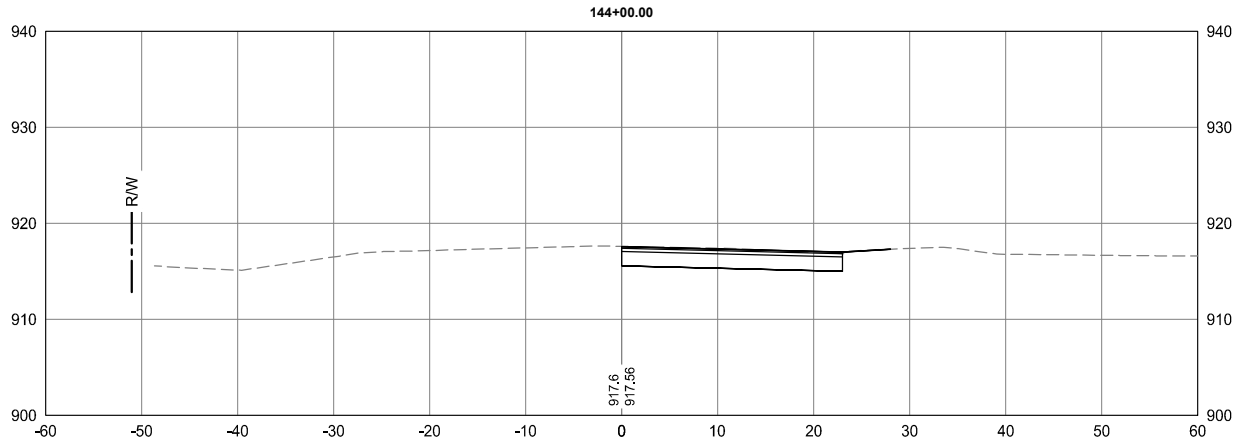
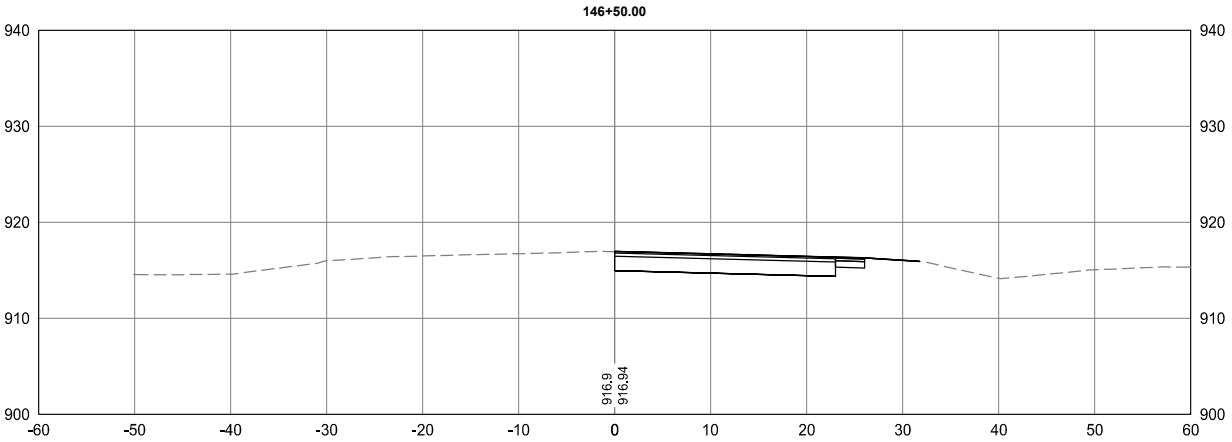
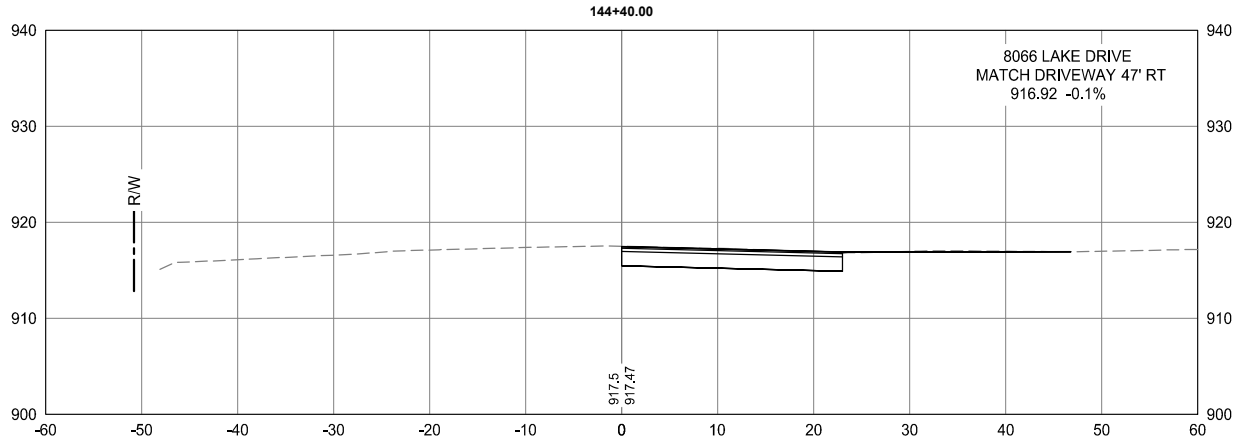
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LAKE DRIVE (CSAH 23)

2



SCALE: AS SHOWN
DESIGN BY: THC
PLAN BY: THC
CHECK BY: PTH

REVISIONS		
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CROSS SECTIONS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO.
023620-000

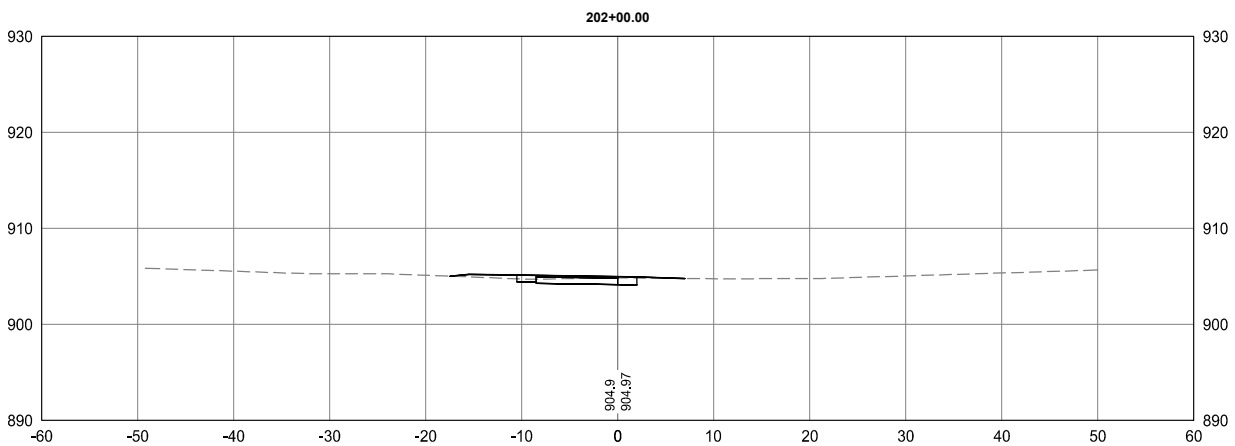
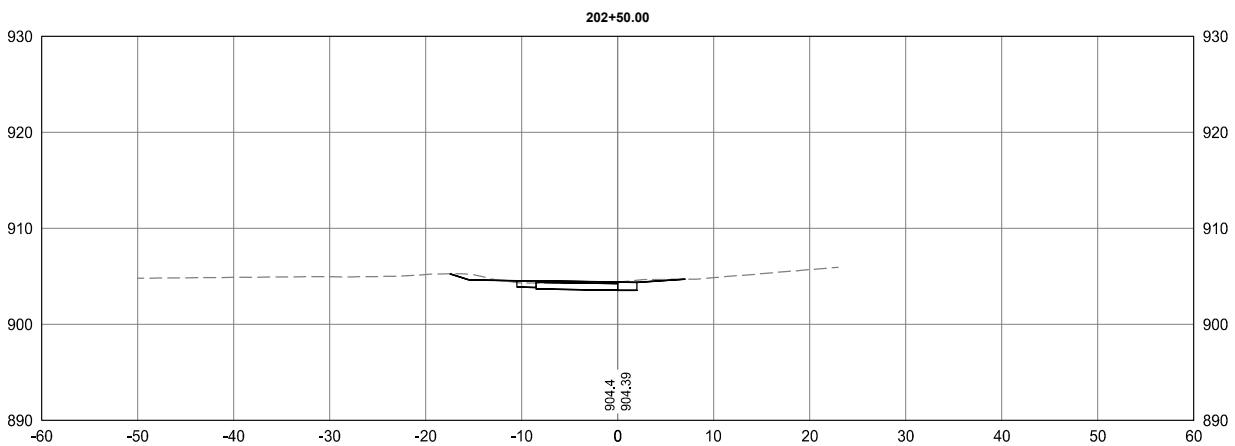
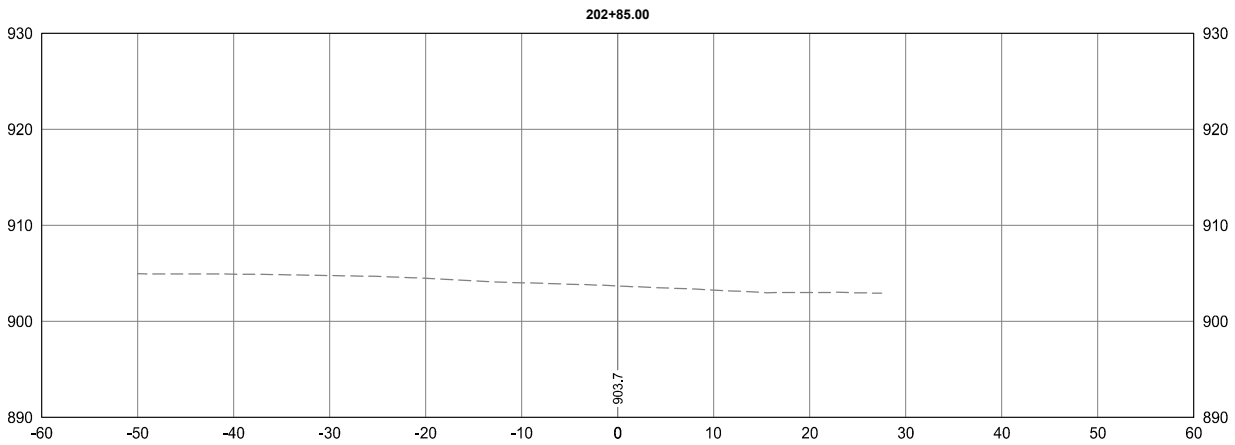
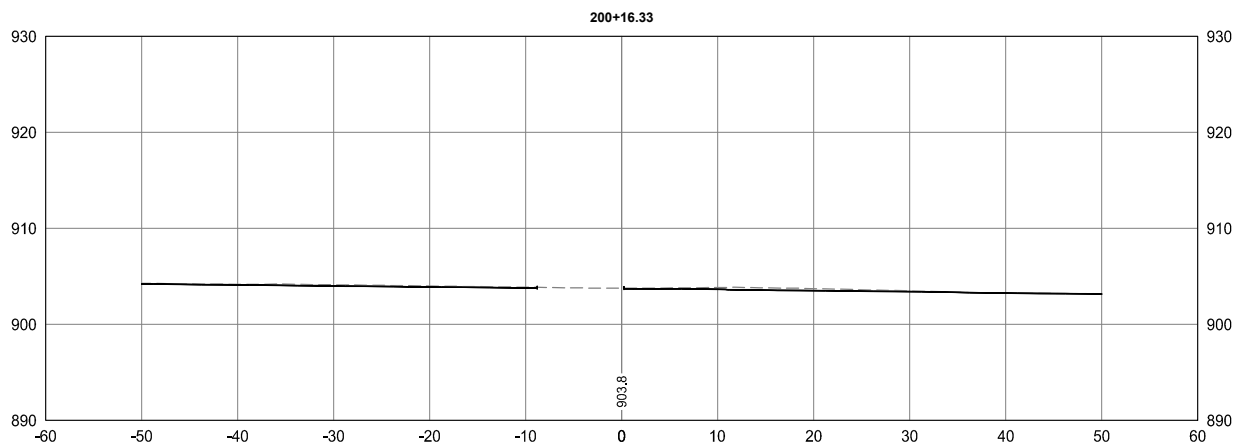
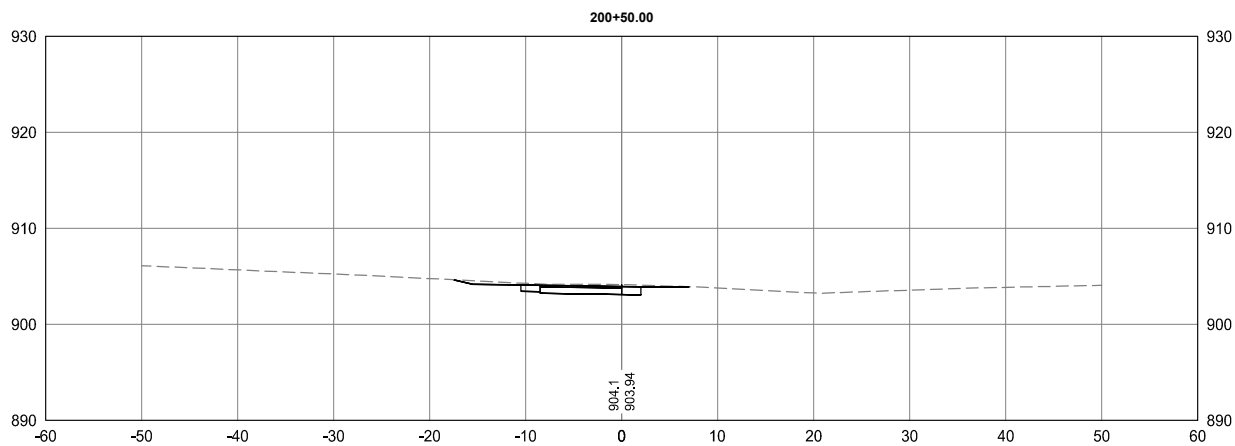
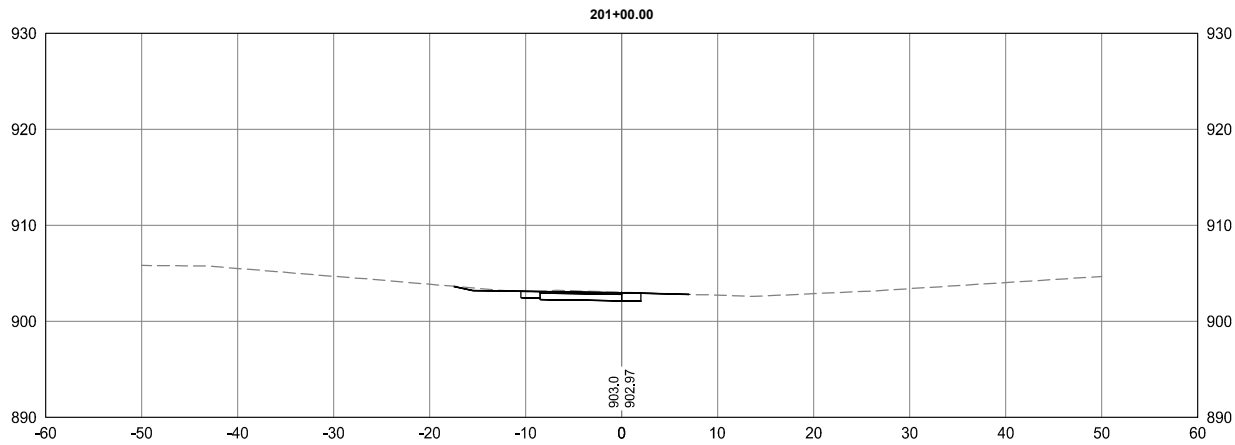
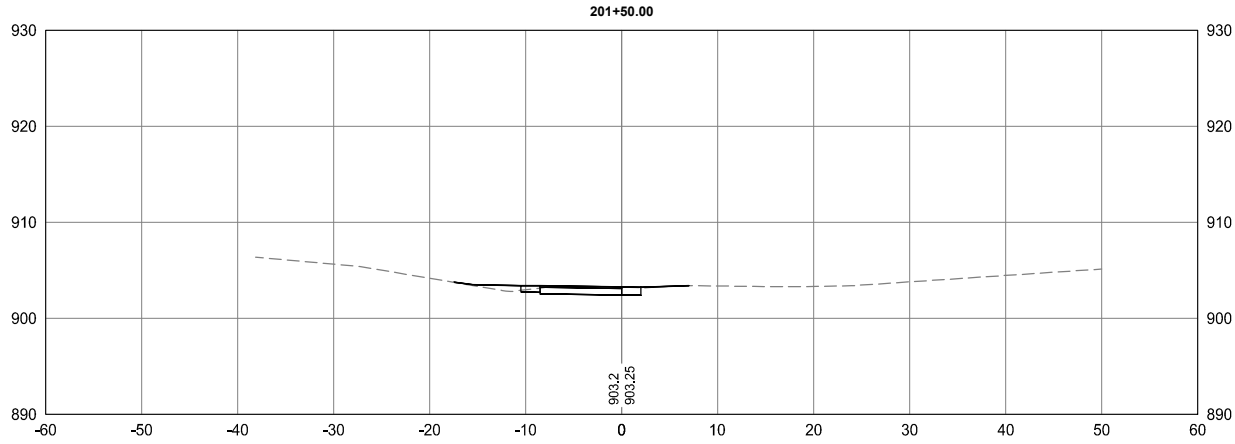
SHEET

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FOX CIRCLE TRAIL

2



SCALE: AS SHOWN
PLAN BY: THC
DESIGN BY: THC
CHECK BY: PTH

REVISIONS		
NO.	DATE	DESCRIPTION
2	02-05-2025	ADDENDUM NO 2

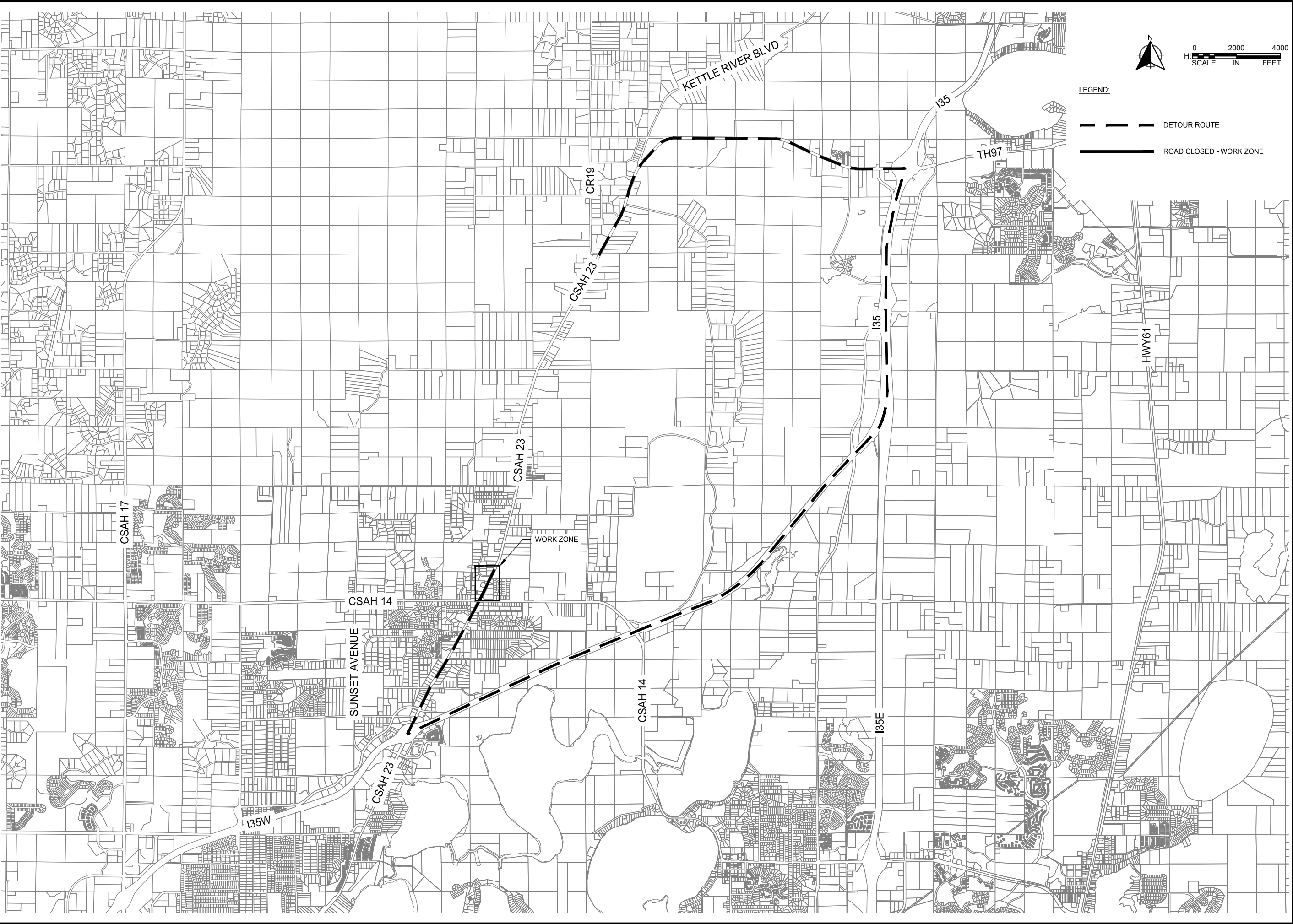
CROSS SECTIONS

2024 STREET RECONSTRUCTION PROJECT
CITY OF LINO LAKES

WSB PROJECT NO.
023620-000

SHEET



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LEGEND:

--- DETOUR ROUTE

— ROAD CLOSED - WORK ZONE




SCALE:
AS SHOWN
PLAN BY:
THC

DESIGN BY:
THC
CHECK BY:
PTH

REVISIONS	
NO.	DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.



PAUL HORNBY, PE

DATE: 01-24-2025 LIC. NO. 23359

DETOUR PLAN

2024 STREET RECONSTRUCTION PROJECT

CITY OF LINO LAKES

WSB PROJECT NO.
023620-000

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