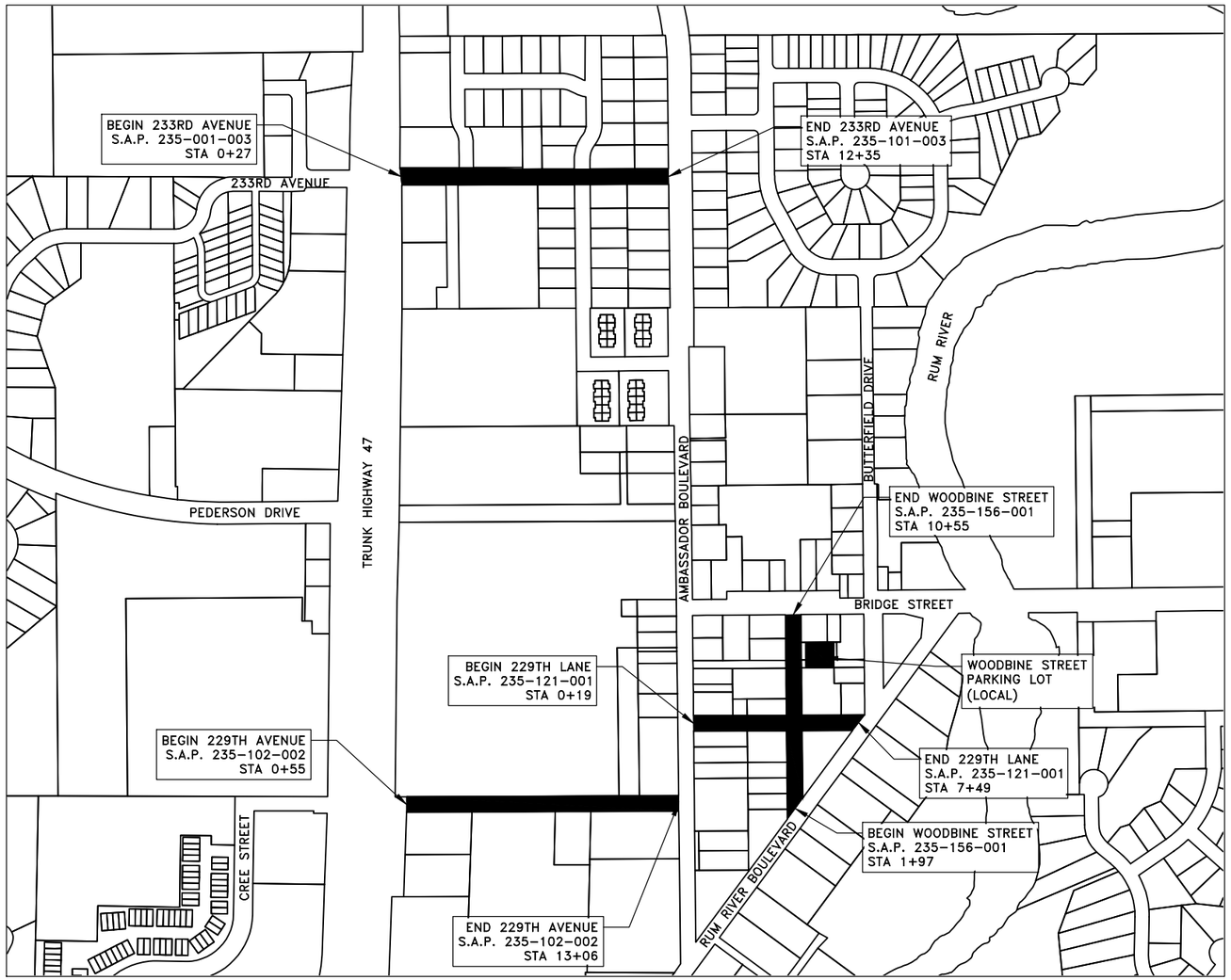
MINNESOTA DEPARTMENT OF TRANSPORTATION

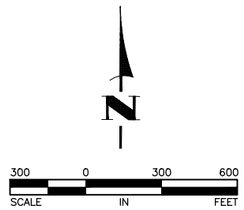
CONSTRUCTION PLANS FOR BITUMINOUS PAVEMENT RECLAMATION AND MILLING, BITUMINOUS SURFACING, AGGREGATE BASE, PUBLIC UTILITES, SIGNING, STRIPING, EROSION CONTROL, AND RESTORATION

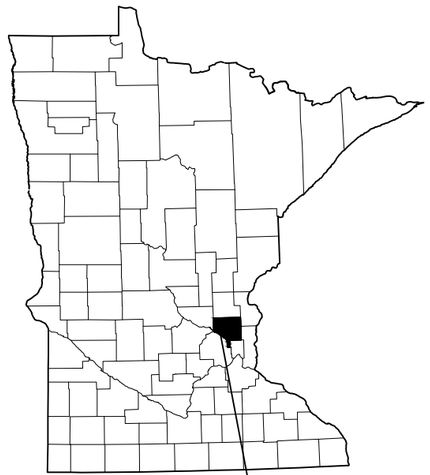
2025 STREET RECONSTRUCTION PROJECT

ST. FRANCIS, MINNESOTA

S.A.P. 235-101-003 LOCATED ON 233RD AVENUE FROM TRUNK HIGHWAY 47 TO AMBASSADOR BOULEVARD
S.A.P. 235-102-002 LOCATED ON 229TH AVENUE FROM TRUNK HIGHWAY 47 TO AMBASSADOR BOULEVARD
S.A.P. 235-121-001 LOCATED ON 229TH LANE FROM AMBASSADOR BOULEVARD TO RUM RIVER BOULEVARD
S.A.P. 235-156-001 LOCATED ON WOODBINE STREET FROM RUM RIVER BOULEVARD TO BRIDGE STREET
SECTIONS 5 & 32 - TOWNSHIPS 33 & 34 - RANGE 24







CITY OF ST.FRANCIS,
ANOKA COUNTY,
MINNESOTA

GOVERNING SPECIFICATIONS

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

THE 2023 EDITION OF THE CITY ENGINEERS ASSOCIATION OF MINNESOTA (CEAM) STANDARD SPECIFICATIONS SHALL APPLY.

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

ALL TRAFFIC CONTROL DEVICES AND SIGNING 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.

ALL REQUIREMENTS OF THE PROJECT MANUAL FOR THE 2025 STREET RECONSTRUCTION PROJECT.

SHEET INDEX

THIS PLAN CONTAINS 64 SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2-3	ESTIMATED QUANTITIES AND STANDARD PLATES
4	CONSTRUCTION NOTES, TABULATIONS, AND PROJECT LEGEND
5	TYPICAL STREET SECTIONS
6-9	DETAILS
10-12	MNDOT TEMPORARY SEDIMENT CONTROL (5-297.405)
13-18	MNDOT PEDESTRIAN CURB RAMP DETAILS (5-297.250)
19-21	EXISTING CONDITIONS AND REMOVALS PLANS
22-30	CONSTRUCTION PLANS
31	MNDOT STANDARD SIGN PLANS (5-297.701)
32-34	MNDOT SQUARE-TUBE SIGN MOUNTING DETAILS (5-297.718)
35	MNDOT FIN BASE (5-297.722)
36	PAVEMENT MARKING NOTES, SIGN TABULATION, AND DETAILS
37	PAVEMENT MARKING DETAILS AND NOTES
38-44	SIGNAGE AND STRIPING PLANS
45-50	PEDESTRIAN RAMP CONSTRUCTION PLAN
51	TRAFFIC CONTROL NOTES AND DETAILS
52-58	TRAFFIC CONTROL PLANS
59	TABULATIONS
X1-X5	CROSS SECTIONS

DATE _____
APPROVED: ANOKA COUNTY ENGINEER

DATE _____
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY

DATE _____
STATE AID ENGINEER: APPROVED FOR STATE AID FUNDING

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.

CRAIG J. JOCHUM, P.E.
HAKANSON ANDERSON
DESIGN ENGINEER

23461
LIC. NO.

DATE 2/12/25

DATE	REVISION

Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
763-427-5860 FAX 763-427-0520

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-2, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

PROJECT	STA. TO STA.	GROSS LENGTH (FEET)	BRIDGE LENGTH (FEET)	NET LENGTH (FEET)	NET LENGTH (MILES)	ADT (2025)	ADT (2045)	DESIGN ESAL	R VALUE	TON VALUE	DESIGN SPEED	NUMBER OF LANES	NUMBER OF PARKING LANES	FUNCTIONAL CLASSIFICATION
235-101-003 233RD AVENUE	0+27 TO 12+35	1208	0	1208	0.23	2700	3295	379,606	30	10	30	2	2	COLLECTOR
235-102-002 229TH AVENUE	0+55 TO 13+06	1251	0	1251	0.24	4593	5603	645,615	30	10	30	2	2	COLLECTOR
235-121-001 229TH LANE	0+19 TO 7+49	730	0	730	0.14	98	164	16,590	30	10	30	2	0	COLLECTOR
235-156-001 WOODBINE STREET	1+97 TO 10+55	858	0	858	0.16	198	332	33,560	30	10	30	2	0	COLLECTOR

S.A.P. 235-101-003
S.A.P. 235-102-002
S.A.P. 235-121-001
S.A.P. 235-156-001

SHEET 1 OF 59 SHEETS

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ESTIMATED QUANTITIES

ITEM NO.	REF. NOTES	Mn/DOT SPEC. NO.	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITY	S.A.P. 235-101-003 233RD AVENUE		S.A.P. 235-102-002 229TH AVENUE		S.A.P. 235-121-001 229TH LANE		S.A.P. 235-156-001 WOODBINE STREET		LOCAL FUNDING UTILITIES	LOCAL FUNDING PARKING LOT
						ROADWAY	STORM SEWER	ROADWAY	STORM SEWER	ROADWAY	STORM SEWER	ROADWAY	STORM SEWER	ESTIMATED QUANTITY	ESTIMATED QUANTITY
1		2021.501	MOBILIZATION	LUMP SUM	1	0.14		0.10		0.17	0.04	0.22	0.05	0.21	0.07
2		2101.505	CLEARING	ACRE	0.20					0.20					
3		2101.505	GRUBBING	ACRE	0.20					0.20					
4		2104.502	REMOVE CASTING	EACH	4					1		2			1
5		2104.502	REMOVE GATE VALVE AND BOX	EACH	5									5	
6		2104.502	REMOVE HYDRANT	EACH	2									2	
7		2104.502	REMOVE SIGN	EACH	3							3			
8		2104.502	SALVAGE SIGN	EACH	6					3		3			
9		2104.502	REMOVE CATCH BASIN	EACH	1							1			
10		2104.503	SAWING CONCRETE PAVEMENT - FULL DEPTH	LIN FT	315	157		83		59		12			4
11		2104.503	SAWING BITUMINOUS PAVEMENT - FULL DEPTH	LIN FT	922	379		127		196		192			28
12		2104.503	REMOVE PIPE CULVERT	LIN FT	112					112					
13		2104.503	REMOVE WATERMAIN	LIN FT	871									871	
14		2104.503	REMOVE SEWER PIPE (STORM)	LIN FT	8							8			
15		2104.503	REMOVE CONCRETE CURB	LIN FT	1567	953		386		134		82			12
16		2104.504	REMOVE CONCRETE PAVEMENT	SQ YD	357	157		90		26		84			
17		2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	898	192		95		277		327			7
18		2106.507	EXCAVATION - COMMON	CU YD	3961					1340		1805			816
19		2106.601	DEWATERING	LUMP SUM	1	0.14		0.10		0.17	0.04	0.22	0.05	0.21	0.07
20	①	2106.602	DEWATERING	EACH	2			2							
21	②	2108.604	SOIL STABILIZATION GEOGRID	SQ YD	1200					1200					
22		2112.519	SUBGRADE PREPARATION	ROAD STA	15.9					7.3		8.6			
23	③	2130.523	WATER	M GALLON	389	55		26		106		121			81
24		2211.509	AGGREGATE BASE CLASS 5	TON	3094	252		73		882		1094			793
25		2215.504	FULL DEPTH RECLAMATION	SQ YD	4178					1600		2578			
26		2215.507	HAUL FULL DEPTH RECLAMATION (LV)	CU YD	773					200		573			
27		2232.504	MILL BITUMINOUS SURFACE (2.0")	SQ YD	45.8					15.3		30.5			
28		2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	1037	369		365		110		193			
29		2360.504	TYPE SP 9.5 WEARING COURSE MIXTURE (2,B) 3.0" THICK	SQ YD	303	32				147		110			14
30		2360.509	TYPE SP 9.5 WEARING COURSE MIXTURE (2,B)	TON	1747	466		462		232		407			180
31		2360.509	TYPE SP 12.5 BITUMINOUS MIXTURE FOR PATCHING	TON	12	5		7							
32		2360.509	TYPE SP 12.5 NON WEARING COURSE MIXTURE (2,B)	TON	978					290		508			180
33		2411.502	CONCRETE FLUME	EACH	1										1
34		2501.502	15" RC PIPE APRON	EACH	2					2					
35		2501.503	15" RC PIPE CULVERT DESIGN 3006 CLASS V	LIN FT	40					40					
36		2502.602	6" PERF PE PIPE DRAIN	LIN FT	95										95
37		2503.503	12" RC PIPE SEWER DESIGN 3006 CLASS V	LIN FT	159						117		42		
38		2503.503	15" RC PIPE SEWER DESIGN 3006 CLASS V	LIN FT	211						203		8		
39		2505.503	18" RC PIPE SEWER DESIGN 3006 CLASS V	LIN FT	216								216		
40		2503.602	4" PVC CAP	EACH	1									1	
41		2503.602	CONNECT TO EXISTING SANITARY SEWER	EACH	1									1	
42		2503.602	CONNECT TO EXISTING STORM SEWER	EACH	3								3		
43		2503.602	CONNECT TO EXISTING DRAINAGE STRUCTURE	EACH	1										1
44		2503.603	4" PVC SANITARY SEWER SERVICE PIPE SDR 26	LIN FT	21									21	
45	④	2503.603	SANITARY SEWER SPOT REPAIR	LIN FT	24									24	
46		2504.601	TEMPORARY WATERMAIN SERVICE	LUMP SUM	1									1	
47		2504.602	TEMPORARY WATER SERVICE	EACH	7									7	
48		2504.602	RECONNECT WATER SERVICE	EACH	7									7	
49		2504.602	CONNECT TO EXISTING WATERMAIN	EACH	8									8	
50		2504.602	HYDRANT	EACH	2									2	
51		2504.602	1" CORPORATION STOP	EACH	6									6	
52		2504.602	4" GATE VALVE AND BOX	EACH	2									2	
53		2504.602	6" GATE VALVE AND BOX	EACH	2									2	
54		2504.602	8" GATE VALVE AND BOX	EACH	5									5	
55		2504.602	1" CURB STOP AND BOX	EACH	6									6	
56	⑤	2504.602	ADJUST GATE VALVE	EACH	11	10		1							
57		2504.602	SALVAGE SPRINKLER HEAD	EACH	20	5		5		4		6			
58		2504.602	INSTALL SPRINKLER HEAD	EACH	20	5		5		4		6			
59		2504.603	1" TYPE PE PIPE	LIN FT	233									233	
60		2504.603	4" WATERMAIN DUCTILE IRON CL 52	LIN FT	47									47	

REFERENCE NOTES:

① THIS ITEM IS TO PAY FOR DEWATERING, IF NEEDED, FOR THE CONSTRUCTION OF THE VALVES ON 229TH AVENUE. EACH AREA WILL BE MEASURED AS ONE UNIT THEREFORE THE QUANTITY IS TWO TOTAL. THIS ITEM WILL ONLY BE MEASURED IF DEWATERING IS REQUIRED.

② SEE REFERENCE NOTE 7 ON SHEET 5 FOR ADDITIONAL INFORMATION.

③ THIS ITEM WILL ONLY BE MEASURED AND PAID FOR RESTORATION IN ACCORDANCE WITH THE SPECIFICATION. ALL OTHER WATER NEEDED FOR DUST CONTROL OR CONSTRUCTION SHALL BE INCIDENTAL.

④ SEE GENERAL NOTE 12 ON SHEET 4.

⑤ THIS ITEM IS NOT MEASURED OR PAID ON NEW GATE VALVES.

⑥ THIS ITEM IS NOT MEASURED OR PAID ON NEW CASTINGS.

⑦ SEE REFERENCE NOTE 3 ON SHEET 22.

DATE	REVISION

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.

CRAIG J. JOCHUM, P.E.
Date 2/12/25 Lic. No. 23461

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE

Hakanson Anderson
Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
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www.hakanson-anderson.com

2025 STREET RECONSTRUCTION PROJECT

ESTIMATED QUANTITIES AND STANDARD PLATES

CITY OF ST. FRANCIS, MINNESOTA

SHEET 2 OF 59 SHEETS

SF327

ESTIMATED QUANTITIES

ITEM NO.	REF. NOTES	Mn/DOT SPEC. NO.	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITY	S.A.P. 235-101-003 233RD AVENUE		S.A.P. 235-102-002 229TH AVENUE		S.A.P. 235-121-001 229TH LANE		S.A.P. 235-156-001 WOODBINE STREET		LOCAL FUNDING UTILITIES	LOCAL FUNDING PARKING LOT
						ROADWAY	STORM SEWER	ROADWAY	STORM SEWER	ROADWAY	STORM SEWER	ROADWAY	STORM SEWER	ESTIMATED QUANTITY	ESTIMATED QUANTITY
61		2504.603	6" WATERMAIN DUCTILE IRON CL 52	LIN FT	52									52	
62		2504.603	8" PVC WATERMAIN	LIN FT	858									858	
63		2504.604	4" POLYSTYRENE INSULATION	SQ YD	10.7									10.7	
64		2504.608	DUCTILE IRON FITTINGS	POUND	809									809	
65		2506.502	CASTING ASSEMBLY	EACH	12					1	5	1	5		
66	⑥	2506.502	ADJUST FRAME AND RING CASTING	EACH	1	1									
67		2506.502	CONSTRUCT DRAINAGE STRUCTURE DESIGN H	EACH	4									4	
68		2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020	LIN FT	32.5						12.3		20.2		
69	⑦	2506.602	CASTING ASSEMBLY SPECIAL	EACH	1									1	
70		2506.602	GROUT CATCH BASIN OR MANHOLE	EACH	18	7		7				2			2
71		2511.507	RANDOM RIPRAP CLASS II	CU YD	6										6
72		2521.518	5" CONCRETE WALK	SQ FT	999							999			
73		2521.518	6" CONCRETE WALK	SQ FT	2683	1398		512		296		477			
74		2521.518	8" CONCRETE WALK	SQ FT	474			350				124			
75		2521.602	DRILL AND GROUT DOWEL BAR (EPOXY COATED)	EACH	163	84		30				49			
76		2531.503	CONCRETE CURB AND GUTTER DESIGN B418	LIN FT	1973					1230		743			
77		2531.503	CONCRETE CURB AND GUTTER DESIGN B612	LIN FT	421							10			411
78		2531.503	CONCRETE CURB AND GUTTER DESIGN B618	LIN FT	711							711			
79		2531.503	CONCRETE CURB AND GUTTER DESIGN SPECIAL	LIN FT	1339	953		386							
80		2531.504	6" CONCRETE DRIVEWAY PAVEMENT	SQ YD	233					135		98			
81		2531.504	8" CONCRETE DRIVEWAY PAVEMENT	SQ YD	83	38		35				10			
82		2531.618	TRUNCATED DOMES	SQ FT	273	122		53		42		56			
83		2563.601	TRAFFIC CONTROL SUPERVISOR	LUMP SUM	1	0.14		0.10		0.17	0.04	0.22	0.05	0.21	0.07
84		2563.601	TRAFFIC CONTROL	LUMP SUM	1	0.14		0.10		0.17	0.04	0.22	0.05	0.21	0.07
85		2563.601	ALTERNATE PEDESTRIAN ROUTE	LUMP SUM	1	0.14		0.10		0.17	0.04	0.22	0.05	0.21	0.07
86		2564.502	INSTALL SIGN	EACH	6					3		3			
87		2564.618	SIGN TYPE C	SQ FT	82					38		44			
88		2572.503	TEMPORARY FENCE	LIN FT	700	100		100		200		300			
89		2573.501	STABILIZED CONSTRUCTION EXIT	LUMP SUM	1	0.14		0.10		0.17	0.04	0.22	0.05	0.21	0.07
90		2573.501	EROSION CONTROL SUPERVISOR	LUMP SUM	1	0.14		0.10		0.17	0.04	0.22	0.05	0.21	0.07
91		2573.502	STORM DRAIN INLET PROTECTION	EACH	30	7		7		6		8			2
92		2573.503	SILT FENCE TYPE; MS	LIN FT	920					100		180			640
93		2574.507	COMMON TOPSOIL BORROW	CU YD	540	81		38		156		177			88
94		2574.507	FILTER TOPSOIL BORROW	CU YD	50										50
95		2574.508	FERTILIZER TYPE 1	POUND	318	45		21		87		99			66
96		2575.505	SEEDING	ACRE	1.06	0.15		0.07		0.29		0.33			0.22
97		2575.508	HYDRAULIC BONDED FIBER MATRIX	POUND	3710	525		245		1015		1155			770
98		2575.508	SEED SOUTHERN BOULEVARD	POUND	339	48		22		93		106			70
99		2575.508	SEED WET DITCH	POUND	2										2
100		2582.503	4" SOLID LINE MULTI-COMPONENT	LIN FT	1841	497		298							1046
101		2582.503	6" SOLID LINE MULTI-COMPONENT	LIN FT	4652	1730		2072				850			
102		2582.506	4" BROKEN LINE MULTI-COMPONENT	LIN FT	480	240		240							
103		2582.503	4" DOUBLE SOLID LINE MULTI-COMPONENT	LIN FT	455							455			
104		2582.518	PAVEMENT MESSAGE MULTI-COMPONENT	SQ FT	241	82		82				41			36
105		2582.518	CROSSWALK MULTI-COMPONENT	SQ FT	894	360		330		96		108			

REFERENCE NOTES:

① THIS ITEM IS TO PAY FOR DEWATERING, IF NEEDED, FOR THE CONSTRUCTION OF THE VALVES ON 229TH AVENUE. EACH AREA WILL BE MEASURED AS ONE UNIT THEREFORE THE QUANTITY IS TWO TOTAL. THIS ITEM WILL ONLY BE MEASURED IF DEWATERING IS REQUIRED.

② SEE REFERENCE NOTE 7 ON SHEET 5 FOR ADDITIONAL INFORMATION.

③ THIS ITEM WILL ONLY BE MEASURED AND PAID FOR RESTORATION IN ACCORDANCE WITH THE SPECIFICATION. ALL OTHER WATER NEEDED FOR DUST CONTROL OR CONSTRUCTION SHALL BE INCIDENTAL.

④ SEE GENERAL NOTE 12 ON SHEET 4.

⑤ THIS ITEM IS NOT MEASURED OR PAID ON NEW GATE VALVES.

⑥ THIS ITEM IS NOT MEASURED OR PAID ON NEW CASTINGS.

⑦ SEE REFERENCE NOTE 3 ON SHEET 22.

BASIS OF ESTIMATED QUANTITIES

AGGREGATE BASE CLASS 5	100 lbs/yd²/in
NON WEARING BITUMINOUS COURSE MIXTURE	110 lbs/yd²/in
WEARING COURSE BITUMINOUS MIXTURE	110 lbs/yd²/in
BITUMINOUS MATERIAL FOR TACK COAT - NEW ASPHALT	0.06 gal/yd²
BITUMINOUS MATERIAL FOR TACK COAT - OLD ASPHALT	0.07 gal/yd²
BITUMINOUS MATERIAL FOR TACK COAT - MILLED ASPHALT	0.08 gal/yd²
HYDRAULIC FIBER BONDED MATRIX	3500 lbs/acre
SEED MIX SOUTHERN BOULEVARD	320 lbs/acre
SEED MIX WET DITCH	40 lbs/acre
TYPE 1, COMMERCIAL FERTILIZER	300 lbs/acre

STANDARD PLATES

THESE STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY

PLATE NO.	DESCRIPTION
3000M	REINFORCED CONCRETE PIPE (6 SHEETS)
3006H	GASKET JOINT FOR R.C. PIPE (2 SHEETS)
3007F	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3145G	CONCRETE PIPE OR PRECAST CULVERT TIES
4006L	MANHOLE OR CATCH BASIN PRECAST - DESIGNS G & H
4011E	PRECAST CONCRETE BASE
4020J	MANHOLE OR CATCH BASIN (FOR USE WITH OR WITHOUT TRAFFIC LOADS) (2 SHEETS)
4026B	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4108F	ADJUSTING RINGS FOR CATCH BASINS AND MANHOLES
4110F	COVER CASTING FOR MANHOLES
4143E	STOOL GRATE AND CONCRETE FRAME (MEDIAN DRAIN)
4160D	CURB BOX CASTING FOR CATCH BASIN - CASTING NO. 823A AND 833A
4180J	MANHOLE OR CATCH BASIN STEP
7038A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
7100H	CONCRETE CURB AND GUTTER (DESIGN B AND DESIGN V)
7111J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB AND GUTTER)
8000K	TEMPORARY CHANNELIZERS (3 SHEETS)

S.A.P. 235-101-003
S.A.P. 235-102-002
S.A.P. 235-121-001
S.A.P. 235-156-001

DATE	REVISION

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.

CRAIG J. JOCHUM, P.E.
Date 2/12/25 Lic. No. 23461

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE

Hakanson Anderson
Civil Engineers and Land Surveyors
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2025 STREET RECONSTRUCTION PROJECT

ESTIMATED QUANTITIES AND STANDARD PLATES

CITY OF ST. FRANCIS, MINNESOTA

SHEET 3 OF 59 SHEETS

SF327

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PROJECT LEGEND

- 900 — EXISTING CONTOUR
- 900 — PROPOSED CONTOUR
- PROJECT PROPERTY LINE
- SURROUNDING PROPERTY LINE
- RIGHT OF WAY LINE
- EASEMENT LINE
- FO–BUR / FO–BUR — BURIED FIBER OPTIC CABLE
- T–BUR / T–BUR — BURIED TELEPHONE CABLE
- G / G / G — GAS MAIN
- P–BUR / P–BUR — BURIED ELECTRIC CABLE
- P–OH / P–OH — OVERHEAD ELECTRIC CABLE
- UTILITY PEDESTAL
- POWER POLE
- GUY WIRE
- LIGHT POLE
- SIGNAL POLE
- >> — STORM SEWER
- STORM SEWER MANHOLE
- CATCH BASIN
- FES
- I — WATERMAIN
- WATERMAIN MANHOLE
- HYDRANT
- GATE/BUTTERFLY VALVE
- WATER SERVICE
- > — SANITARY SEWER
- SANITARY SEWER MANHOLE
- SANITARY CLEANOUT
- SEWER SERVICE
- TRUNCATED DOMES
- CONCRETE CURB & GUTTER
- SIGN
- M MAILBOX
- 2 / 3 — DETAIL NUMBER / SHEET NUMBER
- SAWCUT BITUMINOUS OR CONCRETE
- W — DELINEATED WETLAND
- EXISTING TREELINE
- SB1 SOIL BORING
- C1 PAVEMENT CORE
- CONIFEROUS TREE
- DECIDUOUS TREE
- CSP CITY STANDARD PLATE

TAB A

UTILITY OWNER LIST

UTILITY OWNER LIST	CONTACT NUMBER
CITY OF ST FRANCIS PUBLIC WORKS	763-233-5200
ANOKA COUNTY HIGHWAY DEPARTMENT	763-324-4000
LUMEN	612-861-8702
CONNEXUS ENERGY	763-323-2660
MIDCONTINENT COMMUNICATIONS	800-888-1300
CENTER POINT ENERGY	612-720-7741
ZAYO BANDWIDTH, LLC	612-940-1788

GENERAL NOTES:

1. ALL CURB, BITUMINOUS, AND CONCRETE REMOVALS SHALL BE SAW CUT FULL DEPTH TO PROVIDE A CLEAN EDGE FOR NEW JOINT. BITUMINOUS MATCH POINTS SHALL BE MILLED PRIOR TO PLACEMENT OF NEW PAVEMENT PER DETAIL 1 SHEET 6.
2. INLET PROTECTION IS REQUIRED ON ALL CATCH BASINS. SEE DETAILS ON SHEETS 6 AND 10.
3. FOR ALL NEW STORM SEWER AND SANITARY CASTINGS FURNISH AND INSTALL NEW RINGS PER CITY STANDARD PLATES 309 AND 414.
4. THE SANITARY AND WATER SERVICES SHOWN ON THE PLANS ARE APPROXIMATE. CONTRACTOR SHALL LOCATE SERVICES IN THE FIELD WHEN NECESSARY AND PROTECT DURING EXCAVATION OPERATIONS (INCIDENTAL).
5. THE CONTRACTOR SHALL SALVAGE ALL BITUMINOUS PAVEMENT RECLAIM MATERIAL FOR REUSE. SALVAGE AND REPLACEMENT OF THE RECLAIM SHALL BE PAID PER ITEM 2215–HAUL FULL DEPTH RECLAMATION.
6. CONTRACTOR SHALL SAWCUT DRIVEWAYS AND SIDEWALKS AT DIRECTION OF ENGINEER.
7. ANY DEWATERING REQUIRED FOR CONSTRUCTION SHALL MEET REGULATORY REQUIREMENTS AND BEST MANAGEMENT PRACTICES SUCH THAT THE RECEIVING WATER IS NOT ADVERSELY AFFECTED.
8. THE UTILITY COMPANIES WILL NEED TO RELOCATE/MODIFY THEIR FACILITIES WITH THIS PROJECT. CONTRACTOR SHALL SCHEDULE AND COORDINATE CONSTRUCTION IN COOPERATION WITH UTILITY RELOCATION.
9. REMOVAL OF EXISTING WATER SERVICE PIPE AND SHUT OFF VALVES SHALL BE INCIDENTAL.
10. THE CONCRETE MIX DESIGNS FOR THIS PROJECT SHALL BE 3F52 FOR HAND–FORMED CONCRETE AND 3F32 FOR MACHINE FORMED CONCRETE. ENTRAINED AIR SHALL BE MAINTAINED BETWEEN 5% AND 7%.
11. ITEM 2506 ADJUST FRAME AND RING CASTING WILL ONLY BE MEASURED FOR EXISTING SANITARY AND STORM STRUCTURES WHERE INDICATED ON THESE PLANS.
12. TO THE EXTENT PRACTICAL THE CONTRACTOR SHALL LOCATE THE EXISTING SANITARY SEWER SERVICES AND PROTECT THEM DURING CONSTRUCTION. IF THE CONTRACTOR ACCIDENTALLY DAMAGES A SEWER SERVICE, THE CONTRACTOR WILL BE PAID PER ITEM 2503 SANITARY SEWER SPOT REPAIR. A MAXIMUM OF 6 LIN FT WILL BE MEASURED AT A REPAIR LOCATION. THIS ITEM WILL INCLUDE FURNISHING AND INSTALLING NEW PVC PIPE AND CONNECTING THE NEW SERVICE PIPE TO THE EXISTING SERVICE PIPE WITH FERNCO COUPLINGS OR AN APPROVED EQUAL.
13. ALL DISTURBED AREAS SHALL BE SEEDED, FERTILIZED, AND STABILIZED WITH HYDRAULIC BONDED FIBER MATRIX AT THE RATES SHOWN IN THE BASIS OF ESTIMATED QUANTITIES TABLE. SEEDING SHALL BE A SEPARATE OPERATION AND SHALL NOT BE PLACED WITH THE MULCH MATERIAL. PRIOR TO PLACING THE SEED, CONTRACTOR SHALL SUBCUT DISTURBED AREAS 4 INCHES AND PLACE COMMON TOPSOIL. REMOVAL AND DISPOSAL OF EXISTING MATERIALS AND SOIL SHALL BE INCIDENTAL.
14. ALL EXCESS SOIL MATERIAL SHALL BE DISPOSED OF OFF SITE BY THE CONTRACTOR. THIS WORK SHALL BE INCIDENTAL.
15. SHEETS 45–50 SHOW GENERAL PEDESTRIAN RAMP LAYOUTS. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO ENSURE ALL PEDESTRIAN RAMPS MEET ADA REQUIREMENTS AND MUST CONFORM WITH MNDOT STANDARDS PLANS 5–297.250 WHICH ARE INCLUDED AS SHEETS 13–18 OF THESE PLANS. THE REMOVAL LIMITS SHOWN ARE FOR GENERAL USE ONLY. THE CONTRACTOR IS RESPONSIBLE TO MAKE SURE ALL REQUIREMENTS ARE MET.
16. ALL ITEMS SALVAGED FOR RE–USE SHALL BE STORED AND PROTECTED BY THE CONTRACTOR. ANY ITEMS DAMAGED OR LOST DURING THE STORAGE PERIOD SHALL BECOME THE CONTRACTOR'S RESPONSIBLY TO REPLACE WITH NO ADDITIONAL COST.
17. PAVEMENT TOLERANCES AT CASTING AND VALVE BOXES ARE SHOWN ON THE DETAILS ON SHEET 9.
18. CONTRACTOR SHALL GROUT THE EXISTING DOGHOUSES AND RINGS FOR ALL EXISTING STORM SEWER STRUCTURES AS DIRECTED BY THE ENGINEER. THIS WORK SHALL BE PAID PER ITEM 2506 GROUT CATCH BASIN OR MANHOLE.
19. FOR 229TH AVENUE AND 233RD AVENUE WATER VALVE BOX LIDS SHALL BE ADJUSTED BY TURNING THE EXISTING VALVE BOX. CONTRACTOR SHALL MEASURE EACH BOX LID TO ENSURE THAT THE FINAL DIMENSION FROM THE TOP THE OF THE BITUMINOUS SURFACE TO THE TOP OF THE MANHOLE LID IS AS SHOW ON DETAIL 4 ON SHEET 9. DUCTILE ADJUSTING RINGS SHALL BE USED FOR VALVE BOXES THAT WILL NOT TURN IF APPROVED BY THE ENGINEER. THIS WORK SHALL BE PAID PER ITEM 2504 ADJUST GATE VALVE. MEASUREMENT WILL BE 1 EACH PER LOCATION REGARDLESS IF THE BOX IS ADJUSTED BY TURNING OR WITH A PAVING RING.
20. FOR 229TH AVENUE AND 233RD AVENUE THE ONLY CURB AND SIDEWALK REMOVAL SHOWN ON THE PLANS IS FOR THE RECONSTRUCTION OF THE PEDESTRIAN RAMPS. THE ENGINEER SHALL FIELD MARK ALL OTHER REQUIRED CURB REMOVAL AT THE TIME OF CONSTRUCTION. THE MINIMUM CURB REMOVAL LENGTH WILL BE 5 FEET. BITUMINOUS ADJACENT TO THE CURB SHALL BE REMOVED AND PATCHED PER DETAIL 2 ON SHEET 9. THE NEW CURB AND GUTTER SHALL MATCH THE EXISTING CURB TYPE (B618) UNLESS OTHERWISE NOTED. ALL CURB AND GUTTER WORK REGARDLESS OF THE DESIGN SHALL BE PAID PER ITEM 2101–REMOVE CONCRETE CURB AND GUTTER AND ITEM 2531–CONCRETE CURB AND GUTTER DESIGN SPECIAL.
21. CONTRACTOR SHALL REMOVE WATERMAIN SERVICES UP TO EXISTING CURB STOPS, UNLESS SHOWN OTHERWISE ON THE PLANS.
22. THE CONTRACTOR SHALL CONSTRUCT A CONTINUOUS TRACER WIRE ON THE WATER SYSTEM IN ACCORDANCE WITH THE PLANS AND SPECIFICATION AND MINNESOTA RURAL WATER ASSOCIATION SEWER/WATER UTILITY TRACER WIRE SPECIFICATIONS. THE MATERIAL AND WORK FOR THE CONSTRUCTION OF THE TRACER WIRE SYSTEM SHALL BE INCIDENTAL.
23. CONTRACTOR SHALL MAINTAIN ACCESS TO ALL BUSINESSES AT ALL TIMES. CONCRETE CURB, WALK, OR PAVEMENT CONSTRUCTED IN THESE DRIVEWAYS SHALL BE COMPLETED IN PHASES AS NEEDED TO PROVIDE ACCESS OR ALTERNATELY TEMPORARY ACCESS WILL NEED TO BE CONSTRUCTED. THIS WORK SHALL BE INCIDENTAL.

TAB B

UTILITY CONFLICT TABULATION

UTILITY OWNER	STREET	STATION	OFFSET	ITEM	REMARKS
CONNEXUS	WOODBINE STREET	2+15	30' R & 30' L	BURIED POWER	VERIFY DEPTH AND ADJUST IF NEEDED
CONNEXUS	WOODBINE STREET	3+15	8' R	POWER POLE	RELOCATED - OUT OF STREET PAVEMENT
CONNEXUS	WOODBINE STREET	5+50	14' R	POWER POLE	RELOCATED - OUT OF STREET PAVEMENT
CONNEXUS	WOODBINE STREET	5+94	15' R	POWER POLE	RELOCATED - OUT OF STREET PAVEMENT
CONNEXUS	WOODBINE STREET	8+00	15' R	POWER POLE	RELOCATED - OUT OF STREET PAVEMENT
CONNEXUS	WOODBINE STREET	9+77	25' R	POWER POLE	RELOCATED - OUT OF SIDEWALK
CONNEXUS	229TH AVENUE	12+93	42' L	POWER POLE	HOLD FOR VALVE CONSTUCTION
LUMEN	WOODBINE STREET	2+15	30' R & 30' L	BURIED CABLE	VERIFY DEPTH AND ADJUST IF NEEDED
LUMEN	WOODBINE STREET	2+60	30' R & 30' L	BURIED CABLE	VERIFY DEPTH AND ADJUST IF NEEDED
LUMEN	WOODBINE STREET	3+15	8' R	PEDISTAL	RELOCATED - OUT OF STREET PAVEMENT
LUMEN	WOODBINE STREET	3+15 TO 5+94	6' TO 15' R	BURIED CABLE	RELOCATED - OUT OF STREET PAVEMENT
LUMEN	WOODBINE STREET	5+94	14' R	PEDISTAL	RELOCATED - OUT OF STREET PAVEMENT
LUMEN	WOODBINE STREET	5+94	30' R & 30' L	BURIED CABLE	VERIFY DEPTH AND ADJUST IF NEEDED
LUMEN	WOODBINE STREET	5+94 TO 8+00	13' TO 15' R	BURIED CABLE	RELOCATED - OUT OF STREET PAVEMENT
LUMEN	WOODBINE STREET	8+00	14' R	PEDISTAL	RELOCATED - OUT OF STREET PAVEMENT
LUMEN	WOODBINE STREET	8+00 TO 9+50	20' R	BURIED CABLE	RELOCATED - OUT OF STREET PAVEMENT
LUMEN	WOODBINE STREET	9+50	20' R	PEDISTAL	RELOCATED - OUT OF STREET PAVEMENT
LUMEN	WOODBINE STREET	9+50 TO 10+45	22' R	BURIED CABLE	VERIFY DEPTH AND ADJUST IF NEEDED
LUMEN	WOODBINE STREET	10+23	16' R & 30' L	BURIED CABLE	VERIFY DEPTH AND ADJUST IF NEEDED
LUMEN	WOODBINE STREET	10+40	16' R & 30' L	BURIED CABLE	VERIFY DEPTH AND ADJUST IF NEEDED
LUMEN	WOODBINE STREET	5+52	35' L	PEDISTAL	RELOCATED - OUT OF STREET PAVEMENT
LUMEN	WOODBINE STREET	10+40	34' R	HANDHOLE	ADJUST FOR PED RAMP CONSTRUCTION
LUMEN	229TH AVENUE	12+90	15' L TO 40' L	BURIED CABLE	ADJUST IF NEEDED FOR VALVE CONSTRUCTION
MIDCONTINENT COMMUNICATIONS	WOODBINE STREET	8+00	14' R	PEDISTAL	RELOCATED - OUT OF STREET PAVEMENT
MIDCONTINENT COMMUNICATIONS	WOODBINE STREET	8+00 TO 9+50	20' R TO 25' R	BURIED CABLE	RELOCATED - OUT OF STREET PAVEMENT
MIDCONTINENT COMMUNICATIONS	WOODBINE STREET	9+50	25' R	PEDISTAL	RELOCATED - OUT OF STREET PAVEMENT
MIDCONTINENT COMMUNICATIONS	WOODBINE STREET	10+23	16' R & 30' L	BURIED CABLE	VERIFY DEPTH AND ADJUST IF NEEDED
MIDCONTINENT COMMUNICATIONS	WOODBINE STREET	10+40	16' R & 30' L	BURIED CABLE	VERIFY DEPTH AND ADJUST IF NEEDED
MIDCONTINENT COMMUNICATIONS	WOODBINE STREET	5+40 TO 6+20	23' L	BURIED CABLE	VERIFY DEPTH AND ADJUST IF NEEDED
MIDCONTINENT COMMUNICATIONS	WOODBINE STREET	5+52	35' L	PEDISTAL	RELOCATED - OUT OF STREET PAVEMENT
MIDCONTINENT COMMUNICATIONS	229TH AVENUE	12+90	15' L TO 40' L	BURIED CABLE	ADJUST IF NEEDED FOR VALVE CONSTRUCTION
CENTERPOINT ENERGY	WOODBINE STREET	5+40 TO 6+20	23' L	BURIED GAS	VERIFY DEPTH AND ADJUST IF NEEDED
CENTERPOINT ENERGY	WOODBINE STREET	8+00 TO 10+50	0' R TO 25' R	BURIED GAS	VERIFY DEPTH AND ADJUST IF NEEDED
CENTERPOINT ENERGY	WOODBINE STREET	10+15	27' R	BURIED GAS	ADJUST FOR NEW HYDRANT CONSTRUCTION

DATE	REVISION

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.

CRAIG J. JOCHUM, P.E.
Date 2/12/25 Lic. No. 23461

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE

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2025 STREET RECONSTRUCTION PROJECT

CONSTRUCTION NOTES, TABULATIONS, AND PROJECT LEGEND

CITY OF ST. FRANCIS, MINNESOTA

SHEET 4 OF 59 SHEETS

SF327

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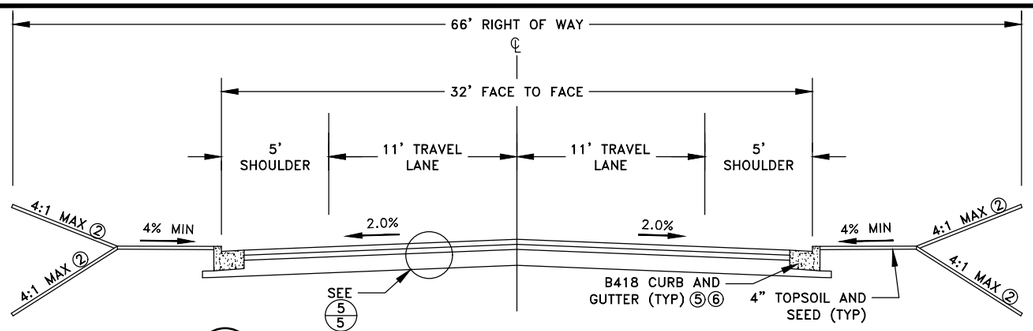
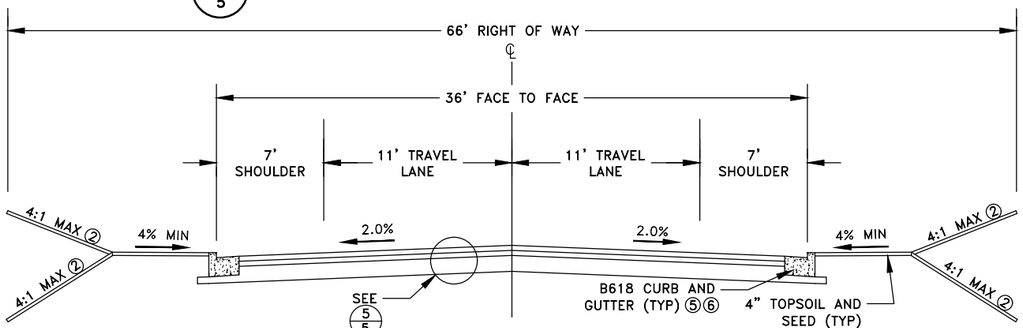
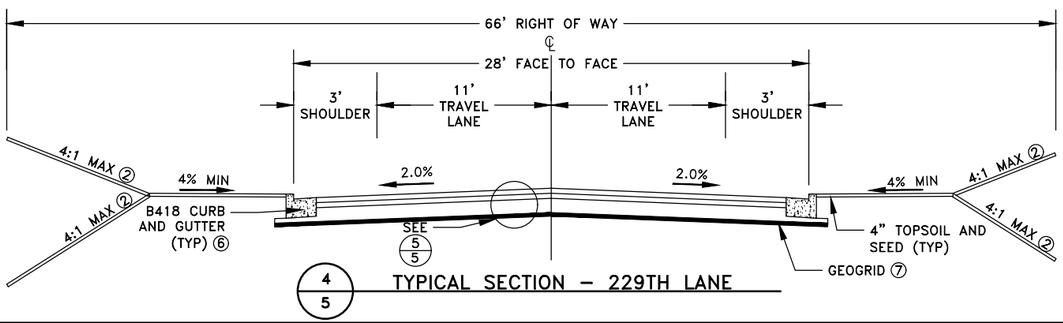


1/5 TYPICAL SECTION – WOODBINE STREET STA 1+97 TO 5+83

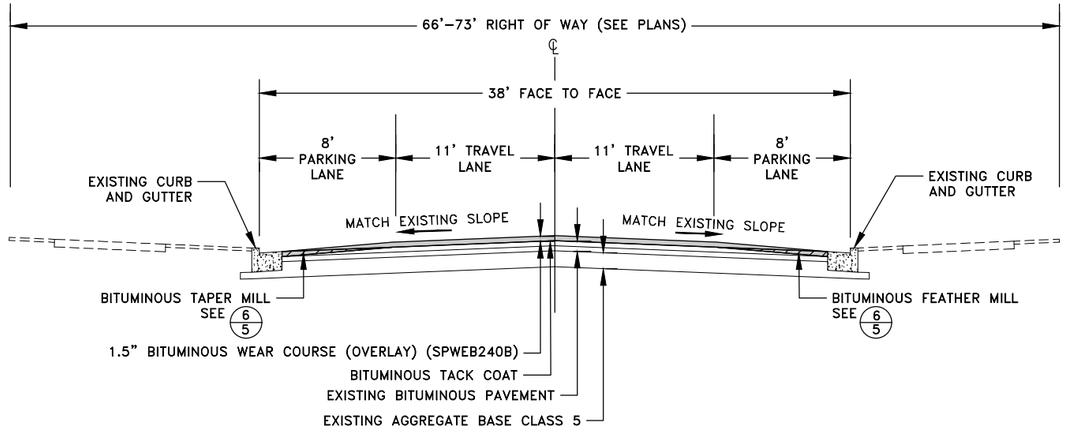


2/5 TYPICAL SECTION – WOODBINE STREET STA 5+83 TO 7+94

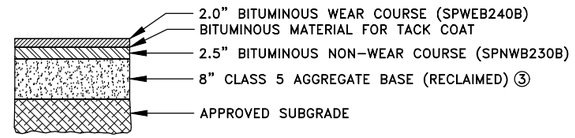
3/5 TYPICAL SECTION – WOODBINE STREET STA 7+94 TO 10+52 ①



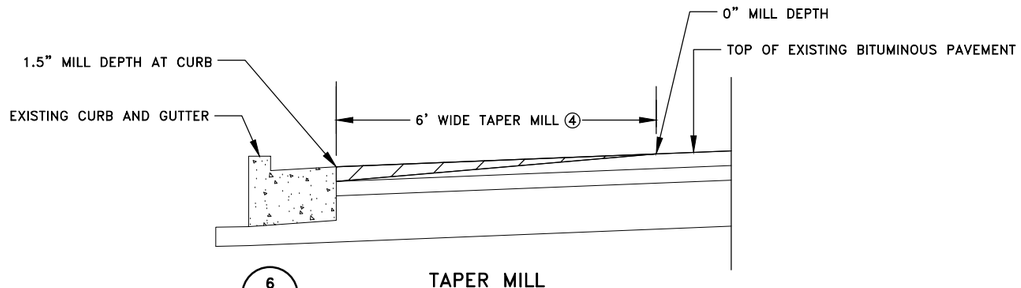
4/5 TYPICAL SECTION – 229TH LANE



5/5 TYPICAL OVERLAY SECTION – 229TH AVENUE AND 233RD AVENUE



5/5 TYPICAL DESIGN (STREET) SECTION



6/5 TAPER MILL

REFERENCE NOTES:

① STATION 7+94 TO 9+10 IS A TRANSITIONAL ZONE. SEE SHEET 38 FOR ADDITIONAL INFORMATION.

② BOULEVARD SLOPE VARIES. SEE CROSS SECTIONS FOR ADDITIONAL DETAILS.

③ CONTRACTOR SHALL USE RECLAIM MATERIAL FOR CLASS 5 AGGREGATE BASE. CONTRACTOR SHALL IMPORT CLASS 5 AGGREGATE BASE AFTER RECLAIM IS USED.

④ TAPER MILL SHALL BE PAID PER ITEM 2232–MILL BITUMINOUS PAVEMENT (SPECIAL). FOR THE OVERLAY STREETS THE TAPER MILL SHALL ALSO BE CONSTRUCTED AT MATCH POINTS TO EXISTING STREETS.

⑤ CURB AND GUTTER ON WOODBINE STREET SOUTH OF 229TH LANE SHALL BE B418 AND B618 NORTH OF 229TH LANE.

⑥ SEE DETAIL 2 ON SHEET 6 FOR ADDITIONAL CONSTRUCTION DETAILS.

⑦ GEOGRID MAYBE NEEDED ON 229TH LANE WEST OF WOODBINE STREET IN AREAS THAT HAVE "SC" SOILS. THIS WILL BE FIELD REVIEWED BY THE ENGINEER DURING CONSTRUCTION OF THE STREET SUBGRADE. GEOGRID SHALL BE TENSAR NX850 OR APPROVED EQUAL.

S.A.P. 235–101–003
S.A.P. 235–102–002
S.A.P. 235–121–001
S.A.P. 235–156–001

DATE	REVISION

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.

CRAIG J. JOCHUM, P.E.
Date 2/12/25 Lic. No. 23461

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE

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2025 STREET RECONSTRUCTION PROJECT

TYPICAL SECTIONS

CITY OF ST. FRANCIS, MINNESOTA

SHEET 5 OF 59 SHEETS

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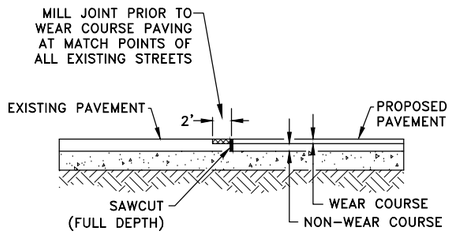
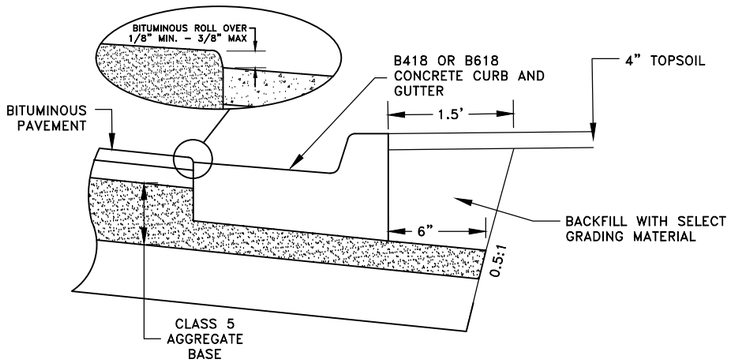
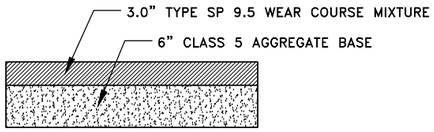


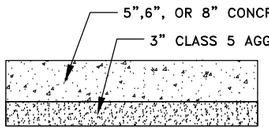
1/6 MILL DETAIL



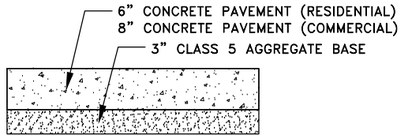
2/6 PAVING AT CURB



3/6 TYPICAL BITUMINOUS DRIVEWAY AND TRAIL

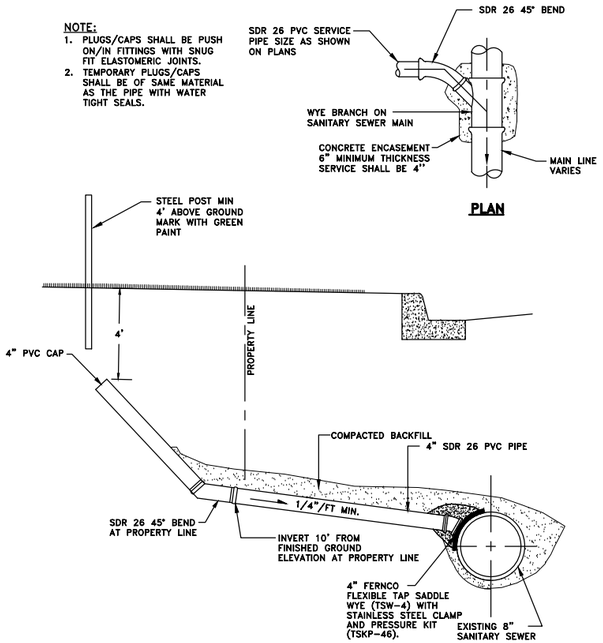


4/6 TYPICAL CONCRETE WALK

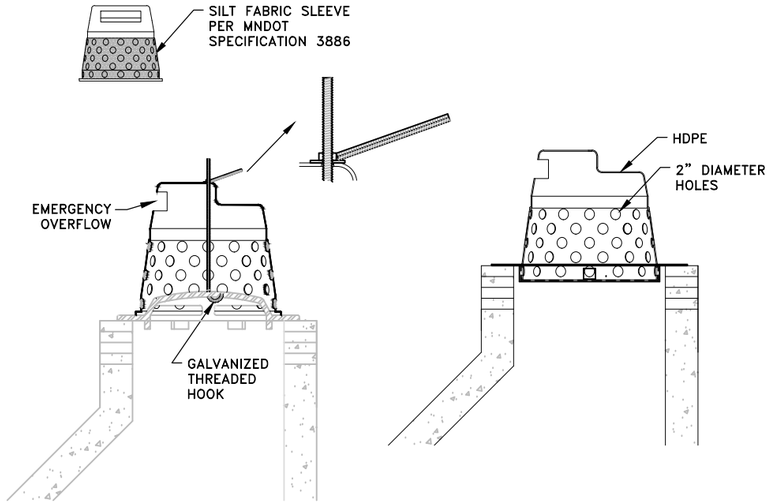


5/6 TYPICAL CONCRETE DRIVEWAY

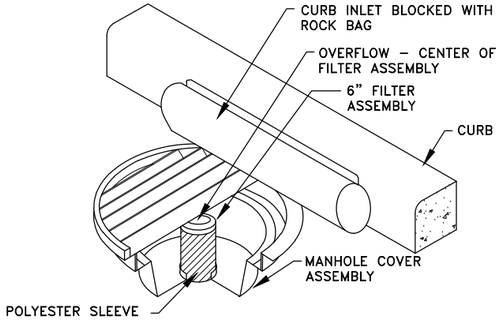
NOTE:
1. PLUGS/CAPS SHALL BE PUSH ON/IN FITTINGS WITH SNUG FIT ELASTOMERIC JOINTS.
2. TEMPORARY PLUGS/CAPS SHALL BE OF SAME MATERIAL AS THE PIPE WITH WATER TIGHT SEALS.



6/6 SANITARY SEWER SERVICE CONNECTION



7/6 SEDIMENT CONTROL BARRIER FOR MEDIAN DRAINS AND LOW POINTS ①
N.T.S.



NOTES:
1. ROAD DRAIN DEVICE FITS NEENAH R-3250-1 CASTINGS.
2. PLACE THE ROAD DRAIN-TOP SLAB MODEL DIRECTLY INTO THE CASTING.
3. INSTALL GASKET AND COVER CENTER OF GASKET WITH PIPE GREASE OR OTHER APPROVED LUBRICATION.
4. PLACE THE FILTER MEDIA ONTO THE RISER PIPE.
5. ADJUST FILTER MEDIA PROPER HEIGHT FOR OVERFLOW.
6. CHECK RISER TUBE TO MAKE SURE IT IS FULLY EXTENDED AND ALL FILTER HOLES ARE EXPOSED.
7. CHECK FILTER MEDIA AFTER EACH RAIN EVENT. CLEAN OR REPLACE IF SEDIMENT CLOGS FILTER.
8. REMOVE SEDIMENT AND DEBRIS FROM THE BASE OF THE RISER PIPE TO THE WIDTH EQUAL TO THE SIZE OF THE TOP SLAB MODEL.
9. THE ENGINEER WILL MEASURE STORM DRAIN INLET PROTECTION BY THE NUMBER OF INDIVIDUAL INLETS PROTECTED OVER THE LIFE OF THE CONTRACT REGARDLESS OF THE TYPES AND NUMBER OF DEVICES USED A EACH STORM INLET.

REFERENCE NOTES:
① CONTRACTOR SHALL PROVIDE BARRIERS AS NECESSARY AT LOW POINTS DURING CONSTRUCTION PRIOR TO CATCH BASIN CONSTRUCTION. ALTERNATE INLET PROTECTION AT LOW POINTS IS SHOWN ON SHEET 10.

8/6 INLET PROTECTION ROAD DRAIN CURB AND GUTTER
N.T.S.

S.A.P. 235-101-003
S.A.P. 235-102-002
S.A.P. 235-121-001
S.A.P. 235-156-001

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2025 STREET RECONSTRUCTION PROJECT

DETAILS

CITY OF ST. FRANCIS, MINNESOTA

SHEET 6 OF 59 SHEETS

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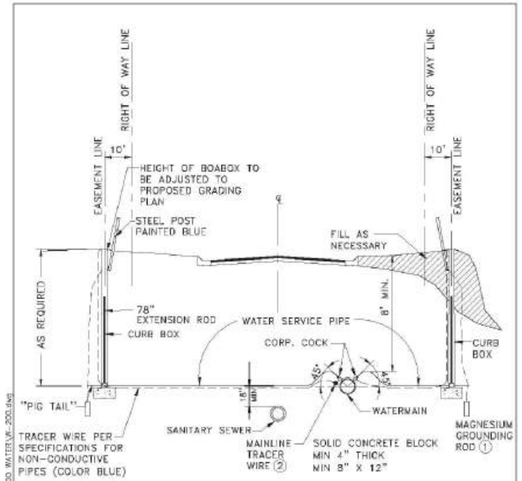
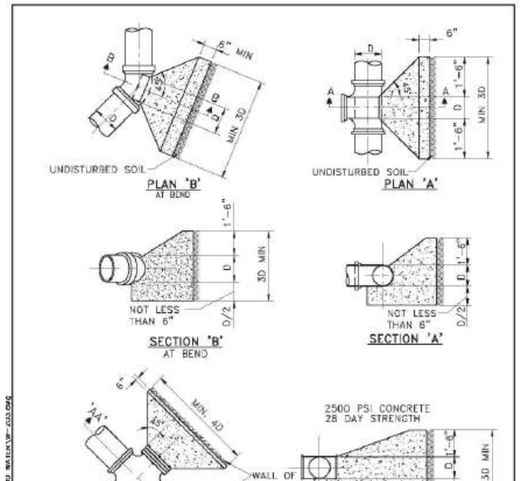


WATER SERVICE DETAIL
NO SCALE

APPROVED	
REVISED	

City of St. Francis

STANDARD PLATE NO. 200



APPROVED	
REVISED	

City of St. Francis

STANDARD PLATE NO. 203

PIPE SIZE	TEE or PLUG	CROSS W/ 2 PLUGS (i.e. 90° BEND)	1/8 BEND (45° BEND) AND 1/16 BEND (22.5°)
6"	0.22 CuYds	0.15 CuYds	0.05 CuYds
8"	0.27 CuYds	0.29 CuYds	0.08 CuYds
10"	0.32 CuYds	0.48 CuYds	0.14 CuYds
12"	0.37 CuYds	0.73 CuYds	0.21 CuYds
16"	0.53 CuYds	1.73 CuYds	0.49 CuYds
20"	0.82 CuYds	3.36 CuYds	0.95 CuYds
24"	1.34 CuYds	5.77 CuYds	1.63 CuYds

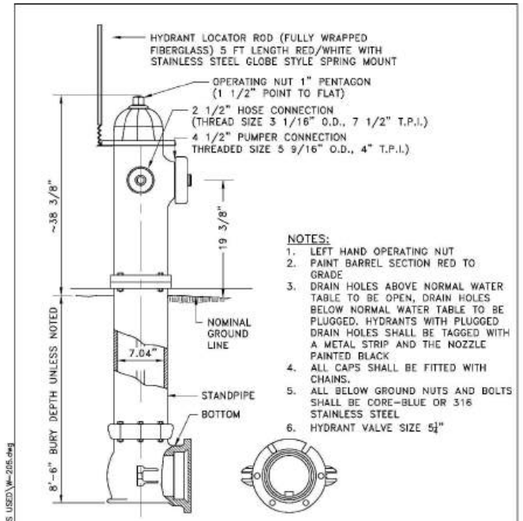
NOTE:
1. COVER FITTINGS ENCASED IN CONCRETE WITH POLYETHYLENE OR BUILDING PAPER PRIOR TO POURING.
2. CONCRETE BLOCKING SHALL BE POURED AGAINST FIRM, UNDISTURBED GROUND.
3. CONCRETE SHALL MEET THE REQUIREMENTS FOR GRADE B CONCRETE IN CONFORMANCE WITH Mn/DOT 2461.
4. ALL METAL PARTS OF TIE ROD OR STRAP TYPE RESTRAINTS SHALL BE GALVANIZED OR COATED WITH ASPHALTIC TYPE RUSTPROOFING.

WATERMAIN CONCRETE BLOCKING QUANITIES

APPROVED	
REVISED	

City of St. Francis

STANDARD PLATE NO. 204

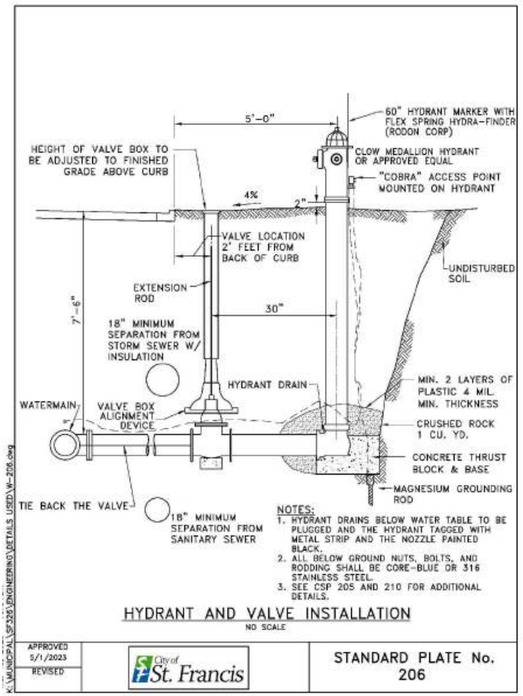


CLOW MEDALLION HYDRANT
(OR APPROVED EQUAL)
NO SCALE

APPROVED 5/1/2023	
REVISED	

City of St. Francis

STANDARD PLATE NO. 205

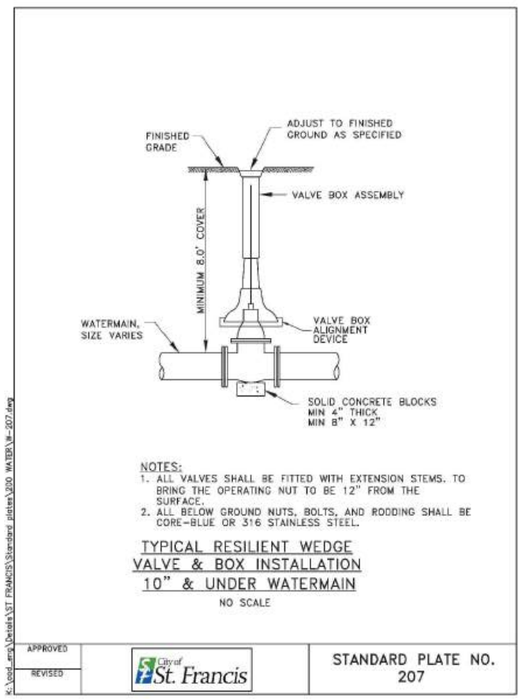


HYDRANT AND VALVE INSTALLATION
NO SCALE

APPROVED 5/1/2023	
REVISED	

City of St. Francis

STANDARD PLATE No. 206

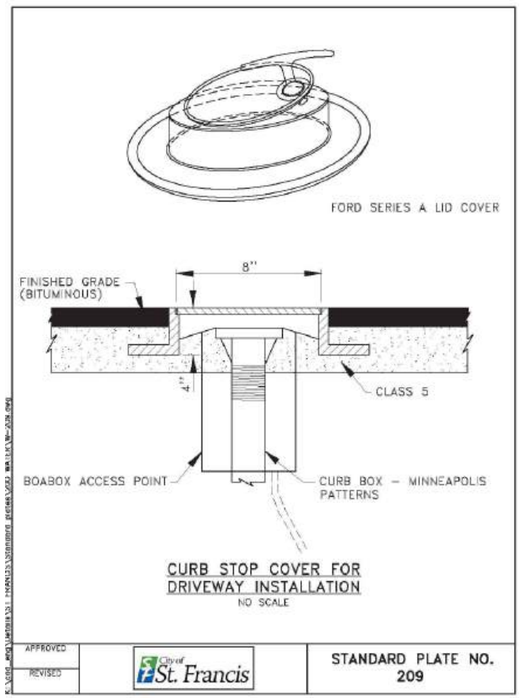


TYPICAL RESILIENT WEDGE VALVE & BOX INSTALLATION 10" & UNDER WATERMAIN
NO SCALE

APPROVED	
REVISED	

City of St. Francis

STANDARD PLATE NO. 207

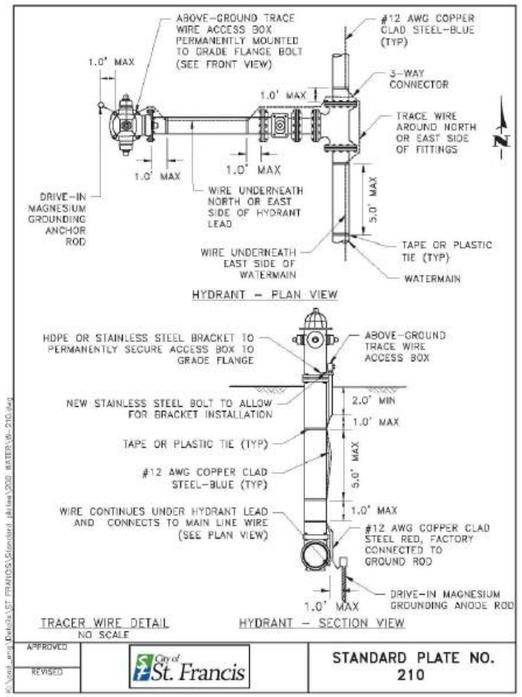


CURB STOP COVER FOR DRIVEWAY INSTALLATION
NO SCALE

APPROVED	
REVISED	

City of St. Francis

STANDARD PLATE NO. 209



APPROVED	
REVISED	

City of St. Francis

STANDARD PLATE NO. 210

S.A.P. 235-101-003
S.A.P. 235-102-002
S.A.P. 235-121-001
S.A.P. 235-156-001

DATE	REVISION

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.

CRAIG J. JOCHUM, P.E.
Date 2/12/25 Lic. No. 23461

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE

Hakanson Anderson
Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
763-427-5860 FAX 763-427-0520
www.hakanson-anderson.com

2025 STREET RECONSTRUCTION PROJECT

DETAILS

CITY OF ST. FRANCIS, MINNESOTA

SHEET 7 OF 59 SHEETS

SF327

Mar 12, 2025 - 5:19pm
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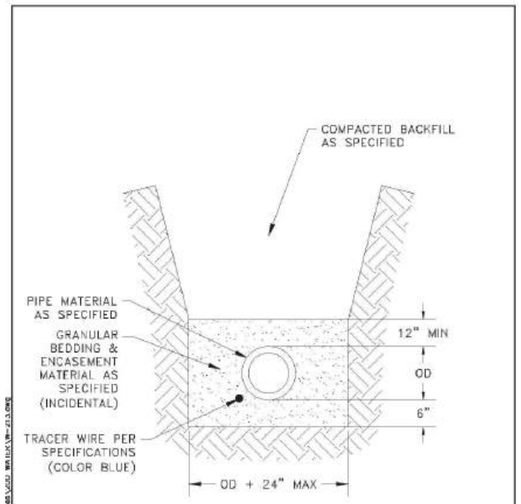
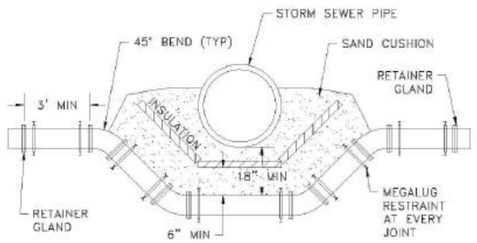


PVC C-900 WATERMAIN TRENCH
NO SCALE

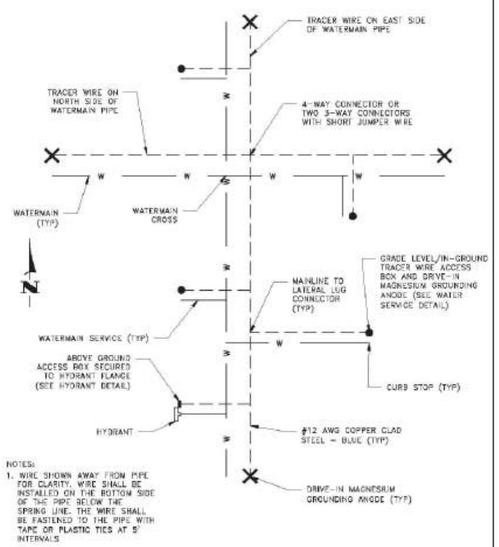
APPROVED
REVISED
City of St. Francis
STANDARD PLATE NO. 213



NOTES:
1. PROVIDE MEGALUG RESTRAINT AT JOINTS ON BENDS AND AS SHOWN ON DETAIL.
2. COAT ALL ANCHORAGE AS PER SPECIFICATIONS.
3. PROVIDE SAND CUSHION BETWEEN TOP OF WATERMAIN AND BOTTOM OF SEWER PIPE, MINIMUM DIMENSIONS AS SHOWN ON DETAIL (INCIDENTAL).
4. INSULATION TO BE 4" THICK POLYSTYRENE.
5. IN AREAS OF GREATER LONGITUDINAL SPACE, THE WATERMAIN SHALL BE GRADUALLY LOWERED AND RAISED, USING NO BENDS, OVER A DISTANCE OF 200 FEET.

WATERMAIN OFFSET
NO SCALE

APPROVED
REVISED
City of St. Francis
STANDARD PLATE NO. 214

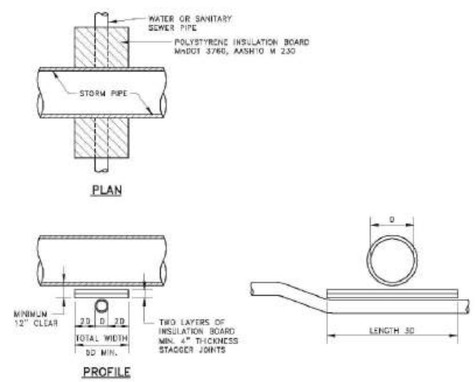


NOTES:
1. WIRE SHOWN AWAY FROM PIPE FOR CLARITY. WIRE SHALL BE INSTALLED ON THE BOTTOM SIDE OF THE PIPE BELOW THE SPRING LINE. THE WIRE SHALL BE FASTENED TO THE PIPE WITH TAPE OR PLASTIC TIES AT 5' INTERVALS

TRACER WIRE SAMPLE WATER PLAN
NO SCALE

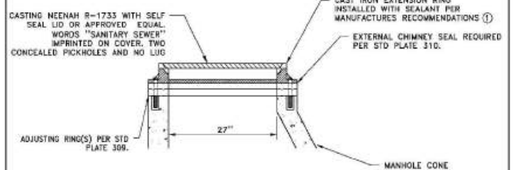
APPROVED
REVISED
City of St. Francis
STANDARD PLATE NO. 217

NOTE:
INSULATE ALL WATER OR SANITARY SEWER PIPE CROSSINGS WITHIN 2' OF STORM SEWER PIPE



INSULATION FOR WATER & SANITARY SEWER PIPE & SERVICES
NO SCALE

APPROVED
REVISED
City of St. Francis
STANDARD PLATE NO. 304

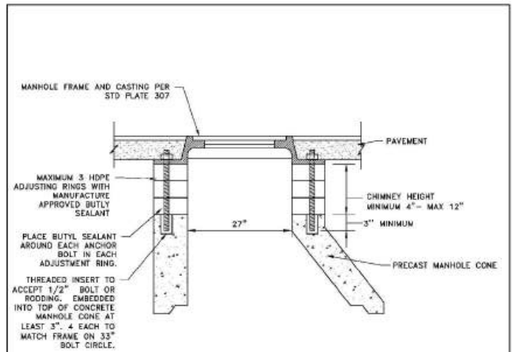


NOTE:
1. ALL NUTS, BOLTS, THREADED INSERTS, AND RODDING SHALL BE 316 STAINLESS STEEL.
2. CLEAN ALL SURFACES TO REMOVE SCALE OR LOOSE IMPEDIMENTS BEFORE PLACING ANY MASTIC, SEALANT, OR INSTALLATION OF FRAME AND CASTING SYSTEM.

REFERENCE NOTE:
① USED FOR OVERLAY PROJECTS ONLY.

SANITARY MANHOLE FRAME AND CASTING
NO SCALE

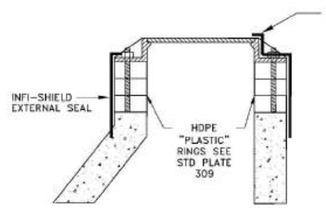
APPROVED 5/1/2023
REVISED 3/8/2025
City of St. Francis
STANDARD PLATE NO. 307



NOTES:
1. ALL NUTS, BOLTS, THREADED INSERTS, AND RODDING SHALL BE 316 STAINLESS STEEL.
2. ADJUSTMENT RINGS SHALL BE HIGH DENSITY POLYETHYLENE RINGS AS MANUFACTURED BY LADTECH, INC OR APPROVED EQUAL.
3. ALL RINGS SHALL MEET OR EXCEED MnDOT HS-20 TRAFFIC LOADING.
4. CLEAN ALL SURFACES TO REMOVE SCALE OR LOOSE IMPEDIMENTS BEFORE PLACING ANY MASTIC, SEALANT, OR INSTALLATION OF FRAME AND CASTING SYSTEM.
5. PLACE TWO 1/2" BEADS OF BUTYL SEALANT BETWEEN FIRST ADJUSTMENT RING AND CONCRETE STRUCTURE. ONE BEAD BETWEEN EACH SUBSEQUENT RING AND FRAME.

MANHOLE ADJUSTMENT RINGS
NO SCALE

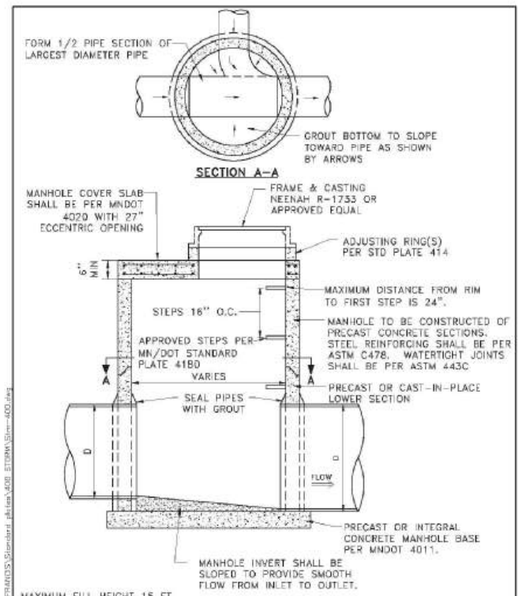
APPROVED 5/1/2023
REVISED 3/8/2025
City of St. Francis
STANDARD PLATE NO. 309



NOTES:
1. THE ADJUSTMENT RINGS AND FRAME SHALL BE SEALED WITH AN EXTERNAL RUBBER SEALING SLEEVE, "INFI-SHIELD" AS MANUFACTURED BY SEALING SYSTEM, INC. OR APPROVED EQUAL.
2. THE SEAL SHALL BE MADE OF EPDM RUBBER WITH A MINIMUM THICKNESS OF 60 MILS AND SEALED WITH A NON-HARDENING BUTYL RUBBER MASTIC.

EXTERNAL CHIMNEY SEAL
NO SCALE

APPROVED 5/1/2023
REVISED 3/8/2025
City of St. Francis
STANDARD PLATE NO. 310



SLAB-TOP MANHOLE
(STORM SEWER)
NO SCALE

APPROVED
REVISED
City of St. Francis
STANDARD PLATE NO. 400

S.A.P. 235-101-003
S.A.P. 235-102-002
S.A.P. 235-121-001
S.A.P. 235-156-001

DATE	REVISION

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CRAIG J. JOCHUM, P.E.
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DESIGNED BY: CJJ
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CHECKED BY: TAE

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2025 STREET RECONSTRUCTION PROJECT

DETAILS

CITY OF ST. FRANCIS, MINNESOTA

SHEET 8 OF 59 SHEETS

SF327

Mar 12, 2025 - 5:19pm
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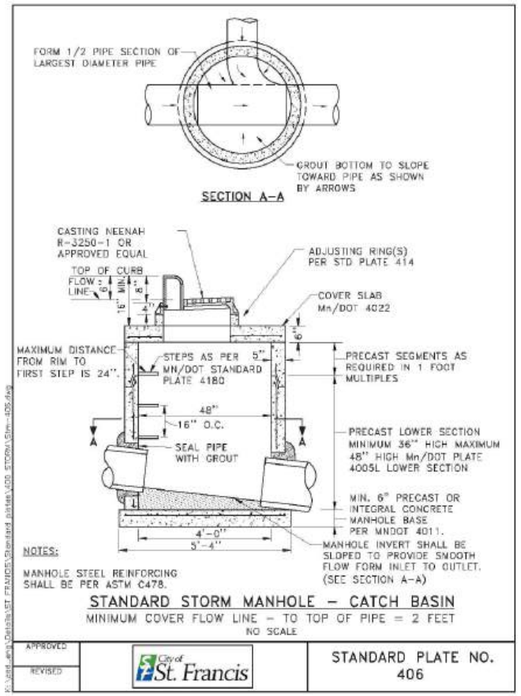
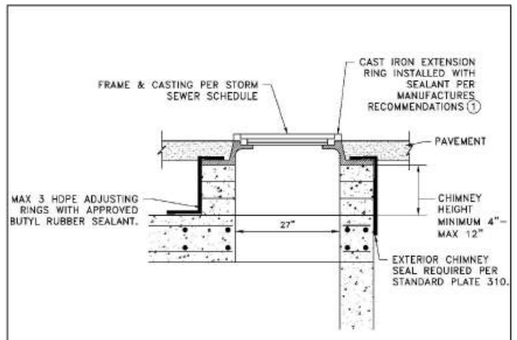


STANDARD STORM MANHOLE – CATCH BASIN

MINIMUM COVER FLOW LINE – TO TOP OF PIPE = 2 FEET

NO SCALE

APPROVED		STANDARD PLATE NO.
REVISED	City of St. Francis	406



NOTES:

1. ADJUSTMENT RINGS SHALL BE HIGH DENSITY POLYETHYLENE RINGS AS MANUFACTURED BY LADTECH, INC OR APPROVED EQUAL.
2. ALL RINGS SHALL MEET OR EXCEED MnDOT HS-20 TRAFFIC LOADING.
3. CLEAN ALL SURFACES TO REMOVE SCALE OR LOOSE IMPEDIMENTS BEFORE PLACING ANY MASTIC, SEALANT, OR INSTALLATION OF FRAME AND CASTING SYSTEM.
4. PLACE TWO 1/2" BEADS OF BUTYL SEALANT BETWEEN FIRST ADJUSTMENT RING AND CONCRETE STRUCTURE. ONE BEAD BETWEEN EACH SUBSEQUENT RING AND FRAME.

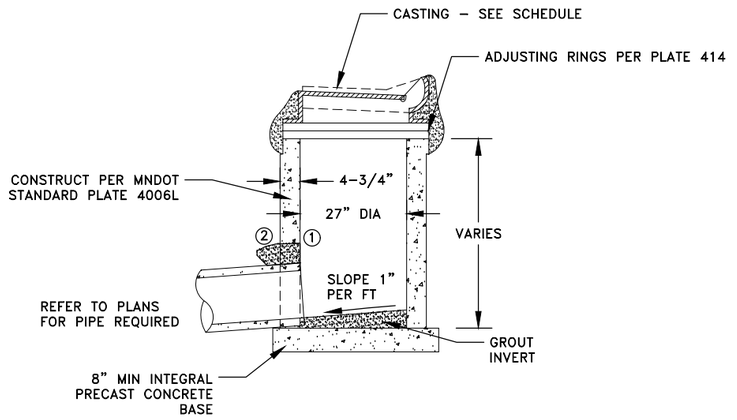
REFERENCE NOTES:

(1) USED FOR OVERLAY PROJECT ONLY.

STORM MANHOLE ADJUSTMENT RINGS

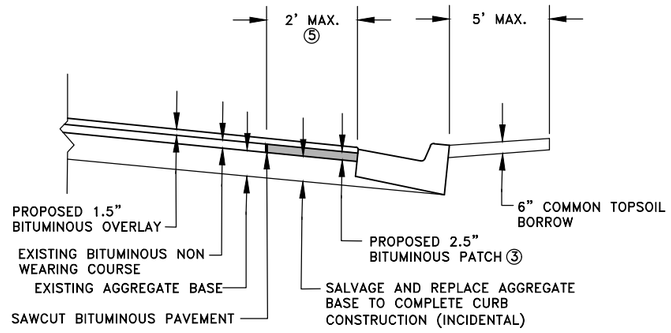
NO SCALE

APPROVED 5/1/2023		STANDARD PLATE NO.
REVISED 3/6/2025	City of St. Francis	414

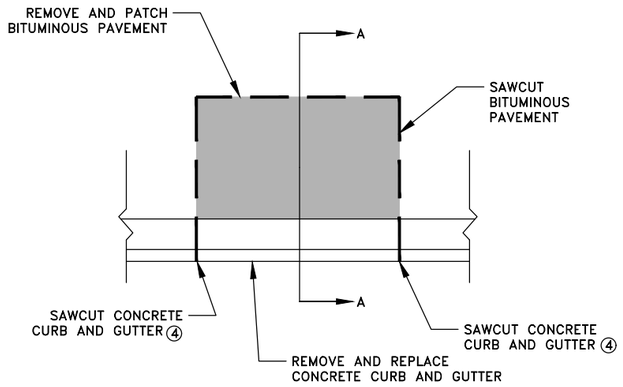


1/9 CATCH BASIN DESIGN H

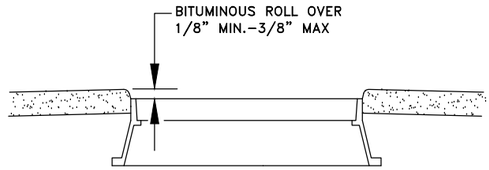
N.T.S.



SECTION A-A

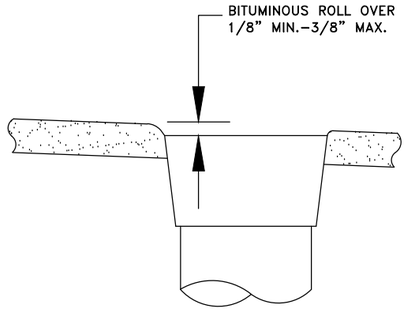


2/9 CURB REMOVAL DETAIL



3/9 PAVING AT CASTING DETAIL

N.T.S.



4/9 PAVING AT VALVE BOX DETAIL

N.T.S.

REFERENCE NOTES:

(1) FILL ANNULAR SPACE AROUND PIPE WITH NON-SHRINK GROUT. GROUT AROUND ENTIRE PIPE INSIDE AND OUT. GROUT SHALL MEET THE REQUIREMENTS OF MNDOT 2506.2.B.2 AND MNDOT 3107 TYPE M.

(2) FOR PVC PIPE CONNECTIONS PROVIDE FLEXIBLE WATERTIGHT SEAL TO BE APPROVED BY THE ENGINEER.

(3) BITUMINOUS MIXTURE FOR PATCHING SHALL BE PAID PER ITEM 2360 – SP 12.5 WEARING COURSE MIXTURE (2;B) 2.5" THICK.

(4) SAWCUTTING CURB AND GUTTER SHALL BE INCIDENTAL.

(5) IF THE CONTRACTOR REMOVES PAVEMENT BEYOND THE 2' ALL LABOR, MATERIAL, AND WORK REQUIRED TO RESTORE THE PAVEMENT SHALL BE INCIDENTAL BEYOND THE DIMENSIONS SHOWN.

S.A.P. 235-101-003
S.A.P. 235-102-002
S.A.P. 235-121-001
S.A.P. 235-156-001

DATE	REVISION

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DETAILS

CITY OF ST. FRANCIS, MINNESOTA

SHEET 9 OF 59 SHEETS

SF327

Mar 12, 2025 – 5:19pm
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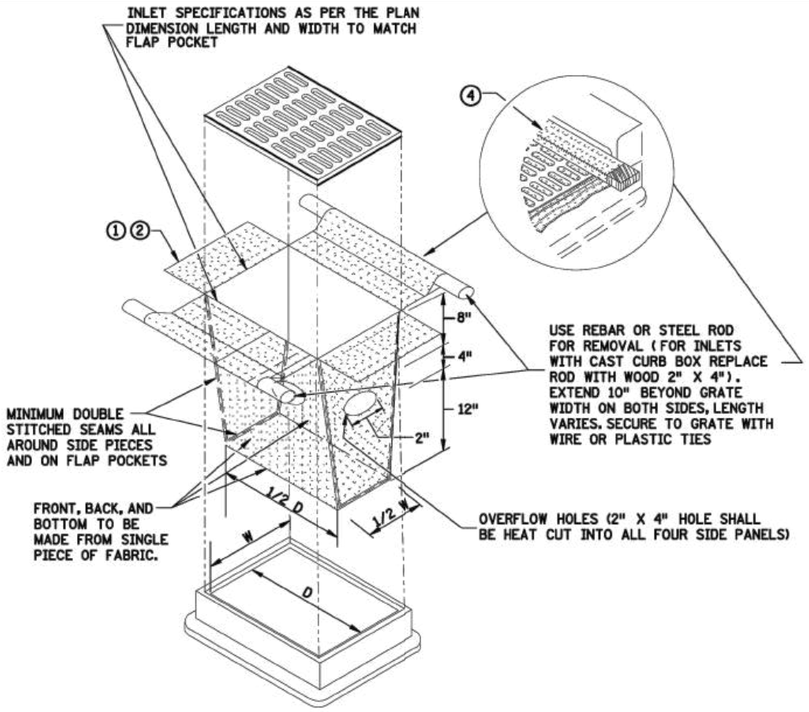
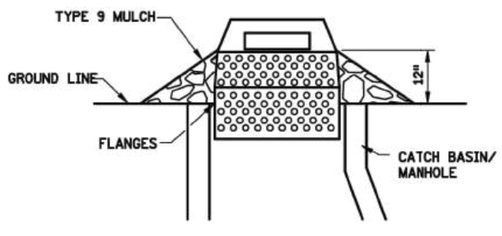


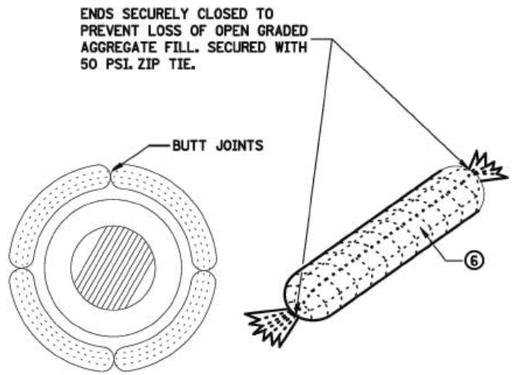
FILTER BAG INSERT ③

(CAN BE INSTALLED IN ANY INLET TYPE
WITH OR WITHOUT A CURB BOX)

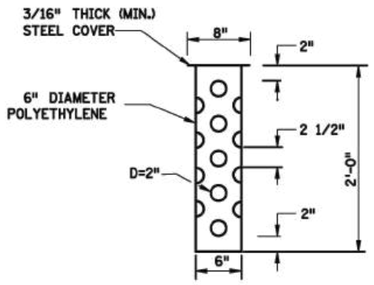


SEDIMENT CONTROL INLET HAT

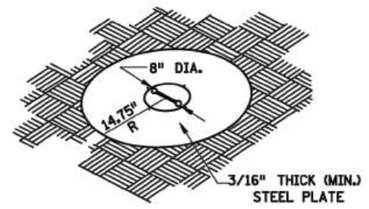
NOTE:
THE SEDIMENT CONTROL BARRIER SHALL BE A METAL OR PLASTIC/POLYETHYLENE RISER SIZED TO FIT INSIDE THE CATCH BASIN/MANHOLE; HAVE PERFORATIONS TO ALLOW FOR WATER INFILTRATION; HAVE AN OVERFLOW OPENING, FLANGES AND A LID/COVER.



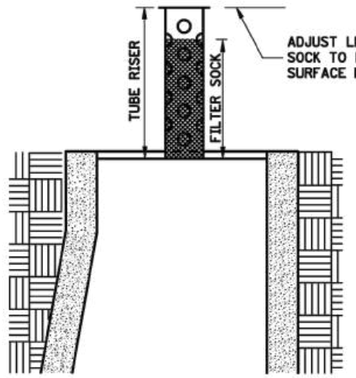
ROCK LOG/COMPOST LOG



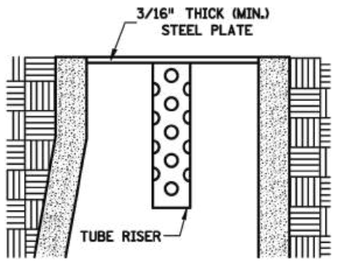
TUBE RISER



PERSPECTIVE VIEW

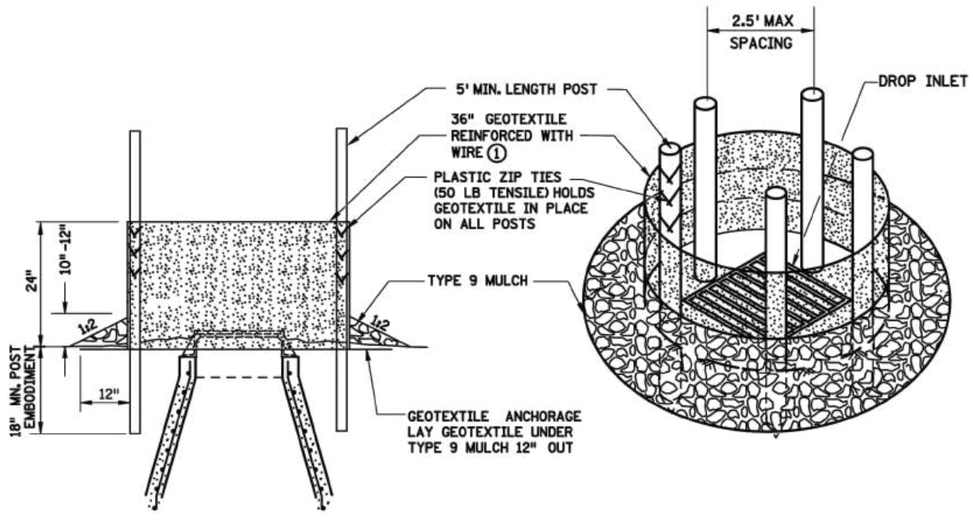


SECTION
(UP POSITION)



SECTION
(DOWN POSITION)

POP-UP HEAD



SILT FENCE RING AND ROCK FILTER BERM

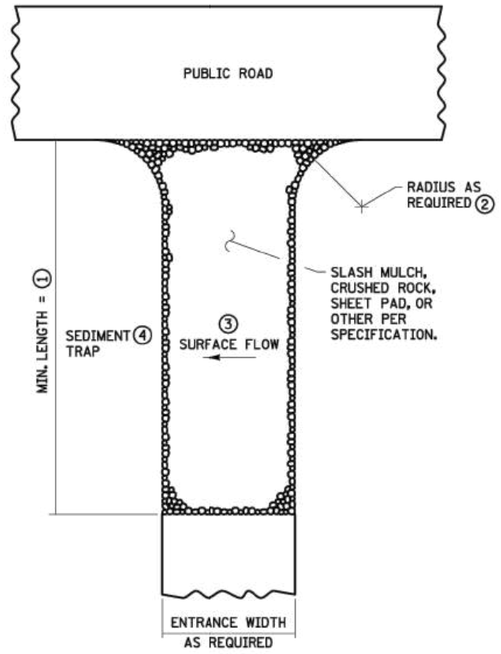
USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 or LESS

NOTES:
SEE SPECS. 2573, 3137, & 3886.

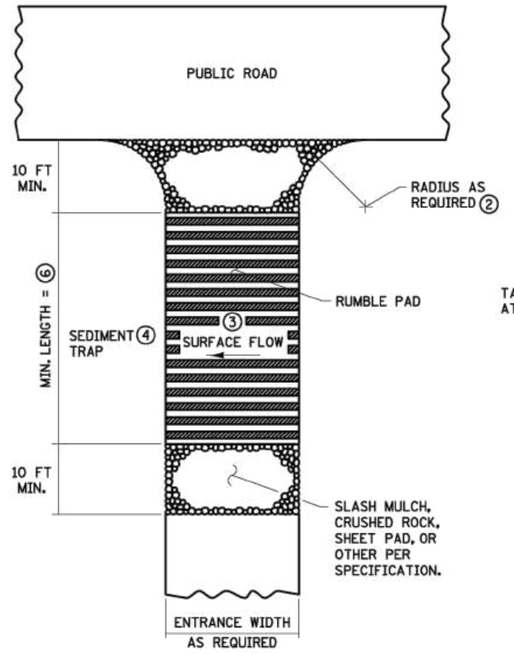
DEVICES MUST BE ADJUSTED ACCORDINGLY AS TO NOT CAUSE FLOODING ON ROADWAY THAT WOULD IMPEED TRAFFIC FLOW.

1. ALL GEOTEXTILE USED FOR INLET PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886.
2. FINISHED SIZE, INCLUDING POCKETS WHERE REQUIRED SHALL EXTEND A MINIMUM OF 10 INCHES AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
3. INSTALLATION NOTES:
   DO NOT PLACE FILTER BAG INSERT IN INLETS SHALLOWER THAN 30 INCHES, MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. THE PLACED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE OF 3 INCHES BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES. WHERE NECESSARY THE CONTRACTOR SHALL CLINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3 INCH SIDE CLEARANCE.
4. FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2 INCH X 4 INCH OR USE A ROCK SOCK OR SAND BAGS IN PLACE OF THE FLAP POCKETS.
5. SOCK HEIGHT MUST NOT BE SO HIGH AS TO SLOW DOWN WATER FILTRATION TO CAUSE FLOODING OF THE ROADWAY.
6. GEOTEXTILE SOCK BETWEEN 4-10 FEET LONG AND 4-6 INCH DIAMETER. SEAM TO BE JOINED BY TWO ROWS OF STITCHING WITH A PLASTIC MESH BACKING OR PROVIDE A HEAT BONDED SEAM (OR APPROVED EQUIVALENT). FILL ROCK LOG WITH OPEN GRADED AGGREGATE CONSISTING OF SOUND DURABLE PARTICLES OF COARSE AGGREGATE CONFORMING TO SPEC. 3137 TABLE 3137-1; CA-3 GRADATION.

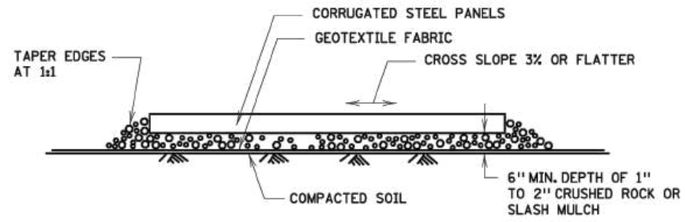
LEAD EXPERT OFFICE	LYNN CLARKOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP		TEMPORARY SEDIMENT CONTROL STORM DRAIN INLET PROTECTION	APPROVED: 02-28-2017 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.405	4 OF 8
	DEPARTMENT OF TRANSPORTATION	S.A.P. 235-101-003 S.A.P. 235-102-002 S.A.P. 235-121-001 S.A.P. 235-156-001	STANDARD PLAN	STATE PROJ. NO.		SHEET NO. 10	
				TRUNK HWY.		TOTAL SHEETS 59	



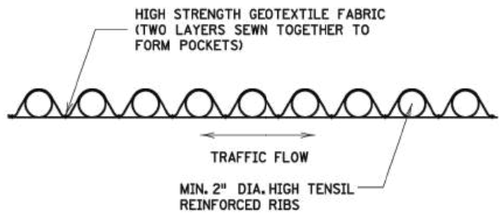
SLASH MULCH, CRUSHED ROCK, OR SHEET PAD CONSTRUCTION EXIT ⑤⑦



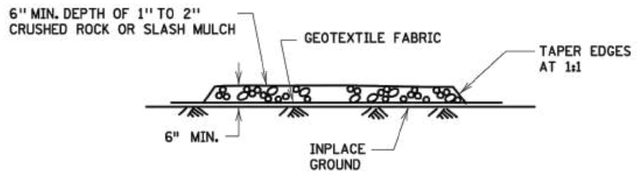
RUMBLE PAD CONSTRUCTION EXIT ⑤⑦



RUMBLE PAD



SHEET PAD



SLASH MULCH OR CRUSHED ROCK

NOTES:

SEE SPECS. 2573 & 3882.

① MINIMUM LENGTH SHALL BE THE GREATER OF 50 FEET OR A LENGTH SUFFICIENT TO ALLOW A MINIMUM OF 5 TIRE ROTATIONS ON THE PROVIDED PAD. MINIMUM LENGTH SHALL BE CALCULATED USING THE LARGEST TIRE WHICH WILL BE USED IN TYPICAL OPERATIONS.

② PROVIDE RADIUS OR WIDEN PAD SUFFICIENTLY TO PREVENT VEHICLE TIRES FROM TRACKING OFF OF PAD WHEN LEAVING SITE.

③ IF RUNOFF FROM DISTURBED AREAS FLOWS TOWARD CONSTRUCTION EXITS, PREVENT RUNOFF FROM DRAINING DIRECTLY TO PUBLIC ROAD OVER CONSTRUCTION EXIT BY CROWNING THE EXIT OR SLOPING TO ONE SIDE. IF SURFACE GRADING IS INSUFFICIENT, PROVIDE OTHER MEANS OF INTERCEPTING RUNOFF.

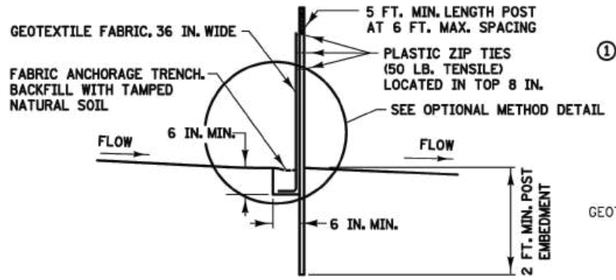
④ IF RUNOFF FROM CONSTRUCTION EXITS WILL DRAIN OFF OF PROJECT SITE, PROVIDE SEDIMENT TRAP WITH STABILIZED OVERFLOW.

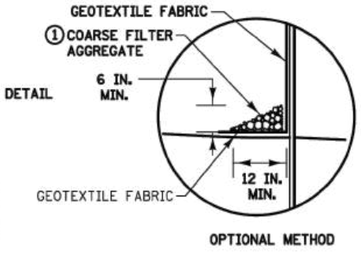
⑤ IF A TIRE WASH OFF IS REQUIRED THE CONSTRUCTION EXITS SHALL BE GRADED TO DRAIN THE WASH WATER TO A SEDIMENT TRAP.

⑥ MINIMUM LENGTH OF RUMBLE PAD SHALL BE 20 FEET, OR AS REQUIRED TO REMOVE SEDIMENT FROM TIRES. IF SIGNIFICANT SEDIMENT IS TRACKED FROM THE SITE, THE RUMBLE PAD SHALL BE LENGTHENED OR THE DESIGN MODIFIED TO PROVIDE ADDITIONAL VIBRATION. WASH-OFF LENGTH SHALL BE AS REQUIRED TO EFFECTIVELY REMOVE CONSTRUCTION SEDIMENT FROM VEHICLE TIRES.

⑦ MAINTENANCE OF CONSTRUCTION EXITS SHALL OCCUR WHEN THE EFFECTIVENESS OF SEDIMENT REMOVAL HAS BEEN REDUCED. MAINTENANCE SHALL CONSIST OF REMOVING SEDIMENT AND CLEANING THE MATERIALS OR PLACING ADDITIONAL MATERIAL (SLASH MULCH OR CRUSHED ROCK) OVER SEDIMENT FILLED MATERIAL TO RESTORE EFFECTIVENESS.

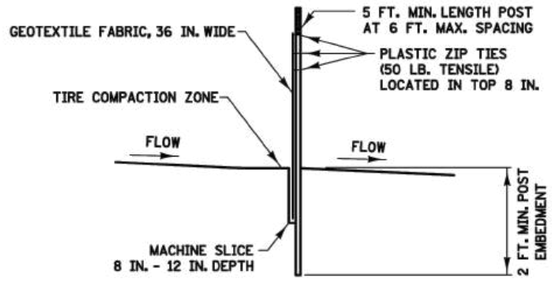
LEAD EXPERT OFFICE	LYNN CLARKOWSKI CHIEF ENVIRONMENTAL OFFICER OFFICE OF ENVIRNOMENTAL STEWARDSHIP		TEMPORARY SEDIMENT CONTROL STABILIZED CONSTRUCTION EXIT	APPROVED: 02-28-2017 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.405	5 OF 8
	DEPARTMENT OF TRANSPORTATION	S.A.P. 235-101-003 S.A.P. 235-102-002 S.A.P. 235-121-001 S.A.P. 235-156-001	STANDARD PLAN	STATE PROJ. NO.		SHEET NO. 11	
				TRUNK HWY.		TOTAL SHEETS 59	





OPTIONAL METHOD

SILT FENCE TYPE HI ②
(HAND INSTALLED)



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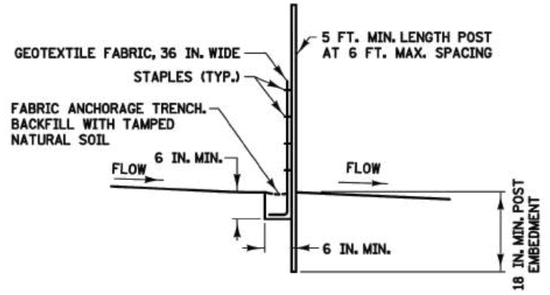
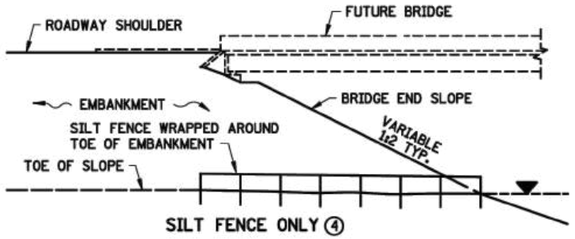
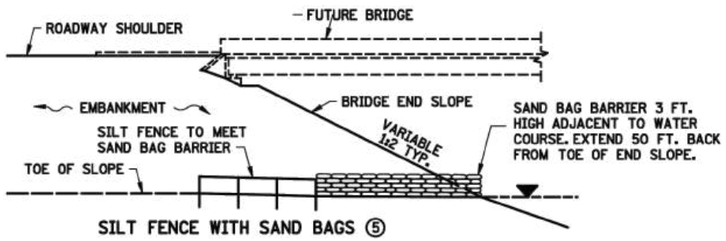
(MACHINE SLICED)



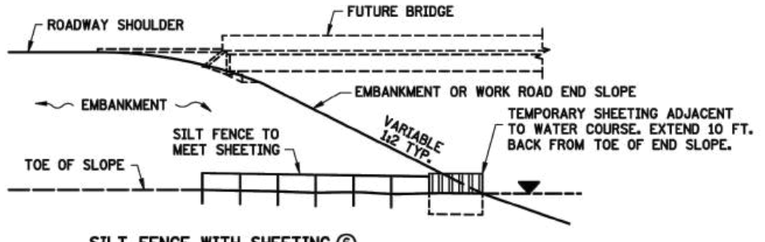
SILT FENCE TYPE PA ③
(PREASSEMBLED)



SILT FENCE ONLY ④

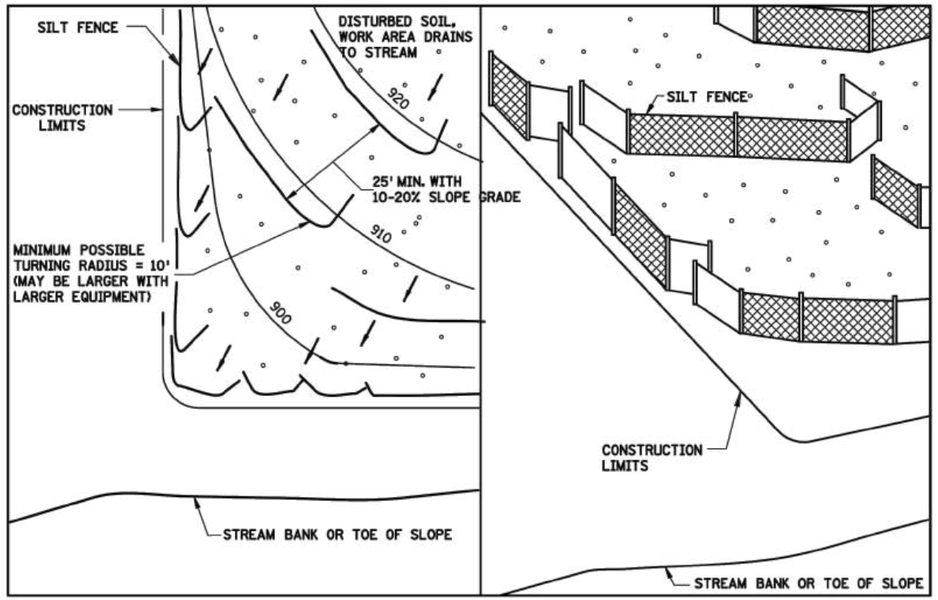


SILT FENCE WITH SAND BAGS ⑤



SILT FENCE WITH SHEETING ⑥

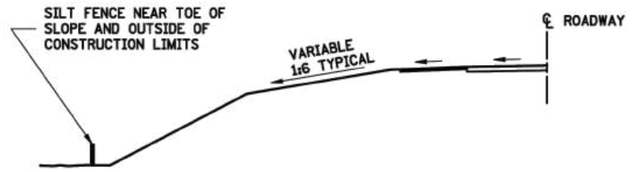
INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER



PLAN VIEW

J-HOOK INSTALLATION

PERSPECTIVE VIEW



LOCATION AT TOE OF ROADWAY EMBANKMENT

NOTES:

SEE SPECS. 2573, 3149 & 3886.

① COARSE FILTER AGGREGATE (SPEC. 3149) SHALL BE INCIDENTAL.

② TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 1 ACRE.

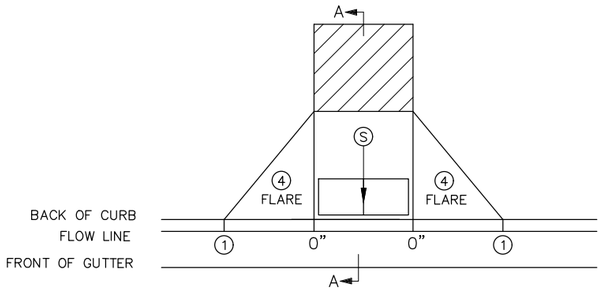
③ TO PROTECT AREAS FROM SHEET FLOW. MAXIMUM CONTRIBUTING AREA: 0.25 ACRE.

④ WATER COURSE FLOW VELOCITY: STANDING. CONTRIBUTING SLOPE AREA: 1./2 ACRE.

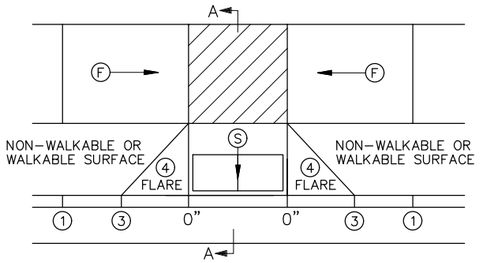
⑤ WATER COURSE FLOW VELOCITY: 1 TO 7 FT./SEC. CONTRIBUTING SLOPE AREA: 1. ACRE.

⑥ WATER COURSE FLOW VELOCITY: 8 TO 15 FT./SEC. CONTRIBUTING SLOPE AREA: 3 ACRES.

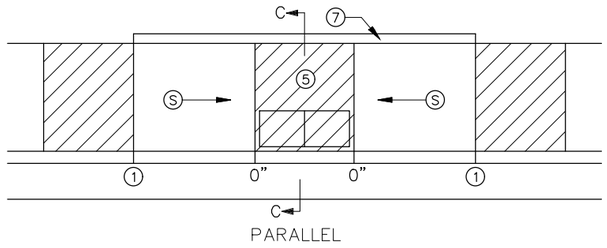
LEAD EXPERT OFFICE: LYNN CLARKOWSKI, CHIEF ENVIRONMENTAL OFFICER, OFFICE OF ENVIRNOMENTAL STEWARDSHIP		TEMPORARY SEDIMENT CONTROL SILT FENCE	APPROVED: 02-28-2017 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.405 — 6 OF 8
DEPARTMENT OF TRANSPORTATION	S.A.P. 235-101-003 S.A.P. 235-102-002 S.A.P. 235-121-001 S.A.P. 235-156-001	STANDARD PLAN	STATE PROJ. NO.		SHEET NO. 12
			TRUNK HWY.		TOTAL SHEETS 59



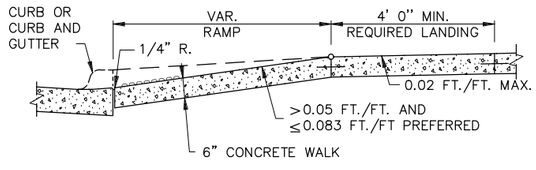
PERPENDICULAR



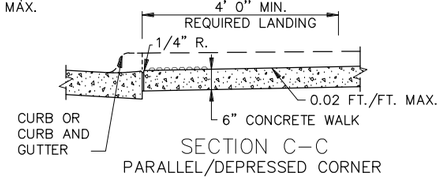
TIERED PERPENDICULAR



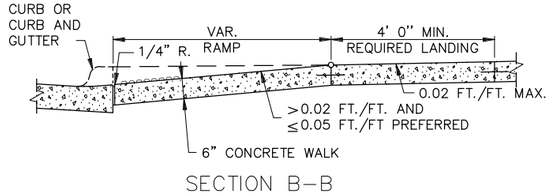
PARALLEL



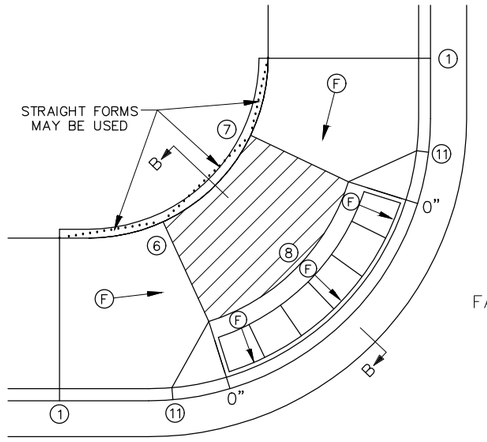
SECTION A–A
PERPENDICULAR/TIERED/DIAGONAL



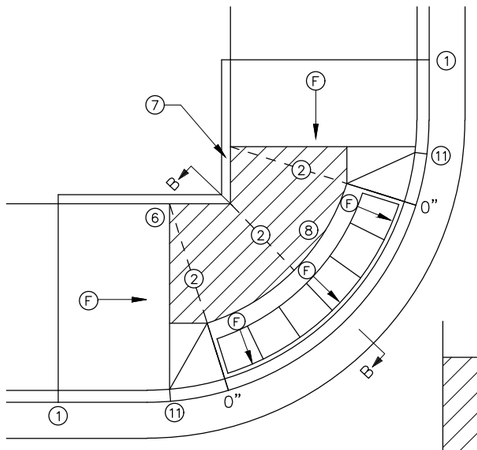
SECTION C–C
PARALLEL/DEPRESSED CORNER



SECTION B–B
FAN

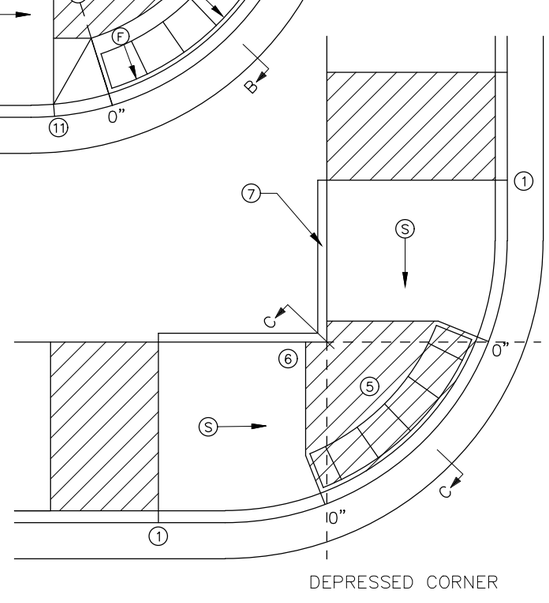


FAN (10)

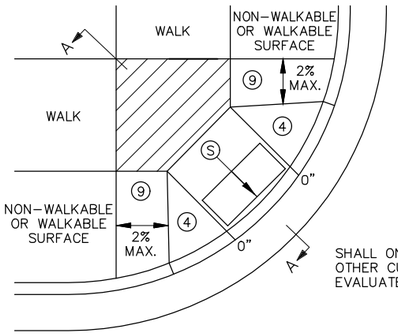


MODIFIED FAN (10)

USED WHEN RIGHT–OF–WAY
IS CONSTRAINED



DEPRESSED CORNER



DIAGONAL

SHALL ONLY BE USED AFTER ALL OTHER CURB RAMP TYPES HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL

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 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.

RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS 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.

(S) 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%.

(F) 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%.

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 PARS.

X" CURB HEIGHT

REVISION:

APPROVED: 11–04–2021
JEFFREY PERKINS
OPERATIONS DIVISION

S.A.P. 235–101–003
S.A.P. 235–102–002
S.A.P. 235–121–001
S.A.P. 235–156–001

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5–297.250 | 1 OF 6

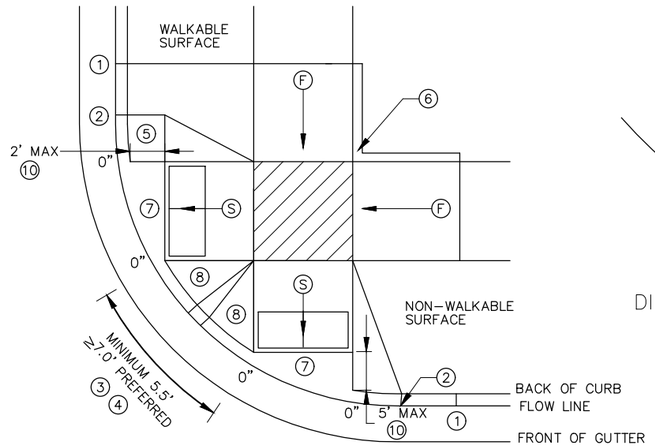
APPROVED: 11–04–2021
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

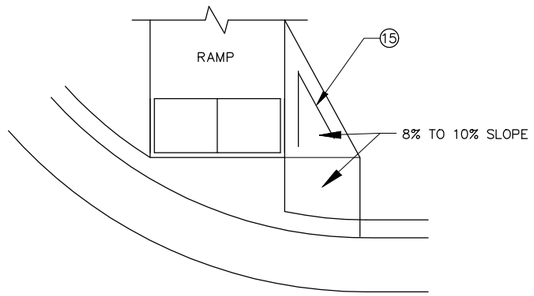
PEDESTRIAN CURB RAMP DETAILS

SHEET NO. 13 OF 59 SHEETS

Mar 12, 2025 – 5:19pm
K:\MUNICIPAL\SF326\ENGINEERING\PLAN DWG\SF326_MNDOT PED RAMP DETAILS.dwg

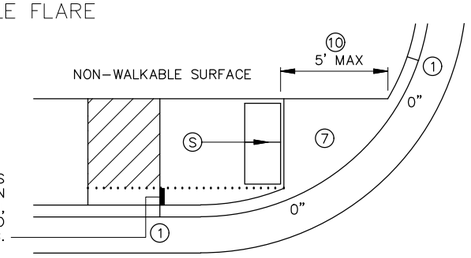


COMBINED DIRECTIONAL

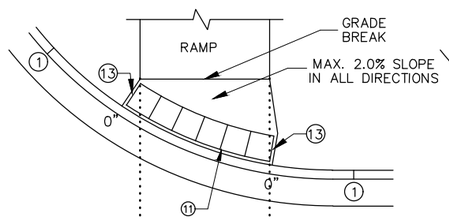


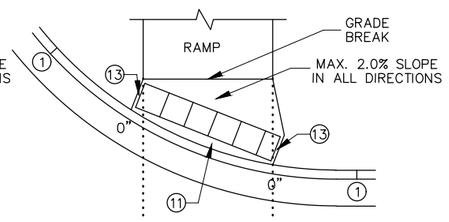
DIRECTIONAL RAMP WALKABLE FLARE

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.



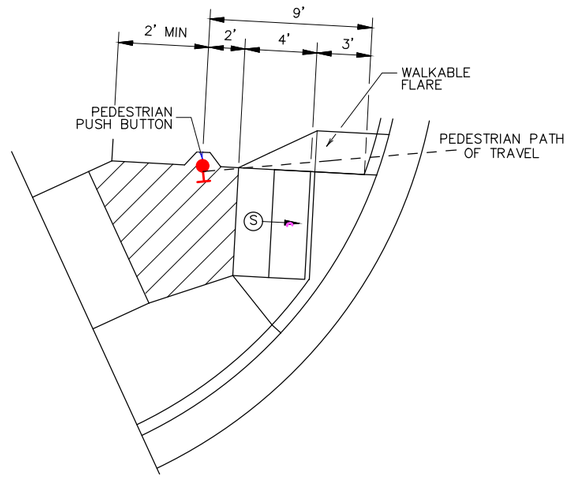
STANDARD ONE-WAY DIRECTIONAL ⑨





DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫

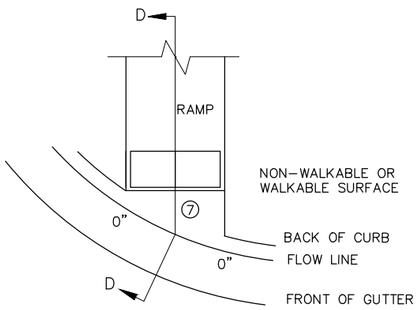
ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB

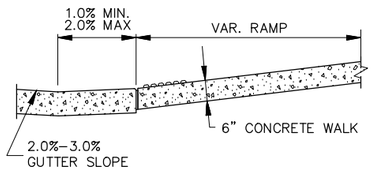


SEMI-DIRECTIONAL RAMP ③④⑨

3' DOME SETBACK, 4' LONG RAMP AND PUSH BUTTON 9' FROM THE BACK OF CURB

PRIMARILY USED FOR APS APPLICATIONS WHERE THE PAR DOES NOT CONTINUE PAST THE PUSH BUTTON (DEAD-END SIDEWALK)





SECTION D-D

CURB FOR DIRECTIONAL RAMPS ⑭

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.

(S) 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%.

(F) 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%.

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 PARS.

X" CURB HEIGHT

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JEFFREY PERKINS
OPERATIONS DIVISION

S.A.P. 235-101-003
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MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 2 OF 6

APPROVED: 11-04-2021
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

Mar 12, 2025 - 5:19pm
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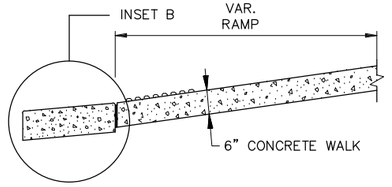
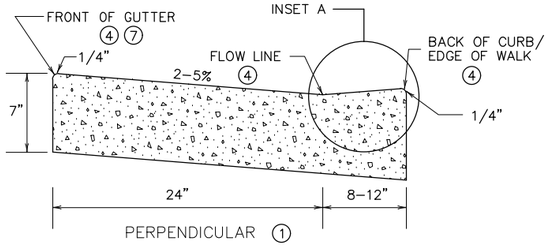
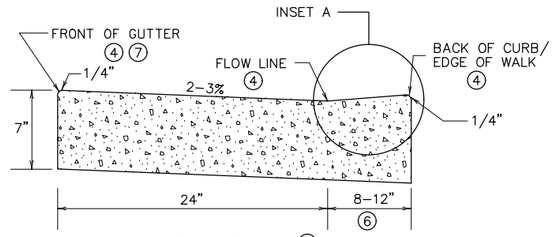
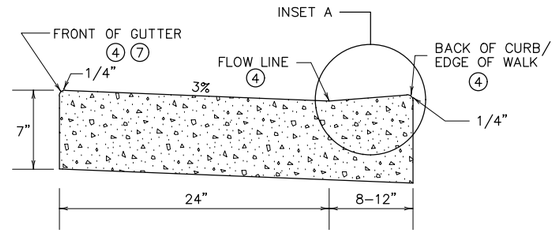




PERPENDICULAR ①

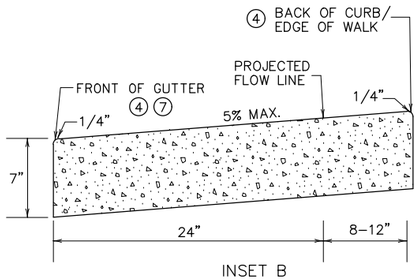


NON PERPENDICULAR ②



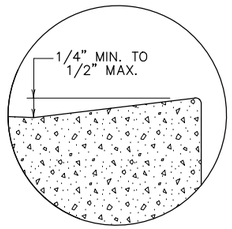
FOR CURB MACHINE PLACEMENT AROUND RADIUS ③
(REGARDLESS OF RAMP TYPE)

PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL

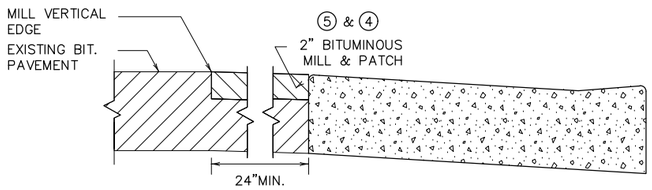


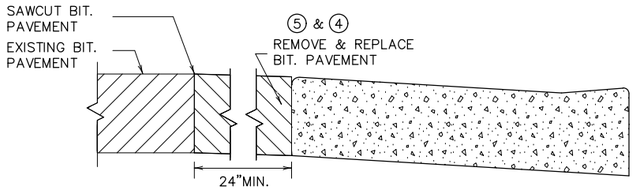
INSET B

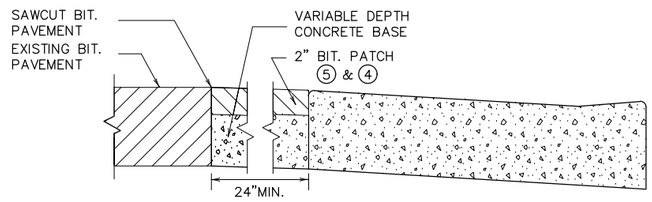
OUTFLOW GUTTER ⑧



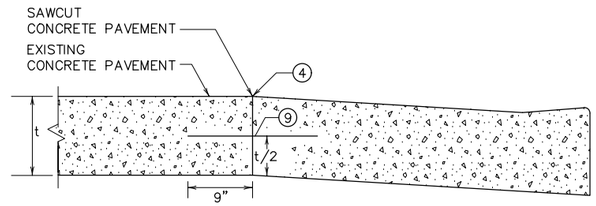
INSET A





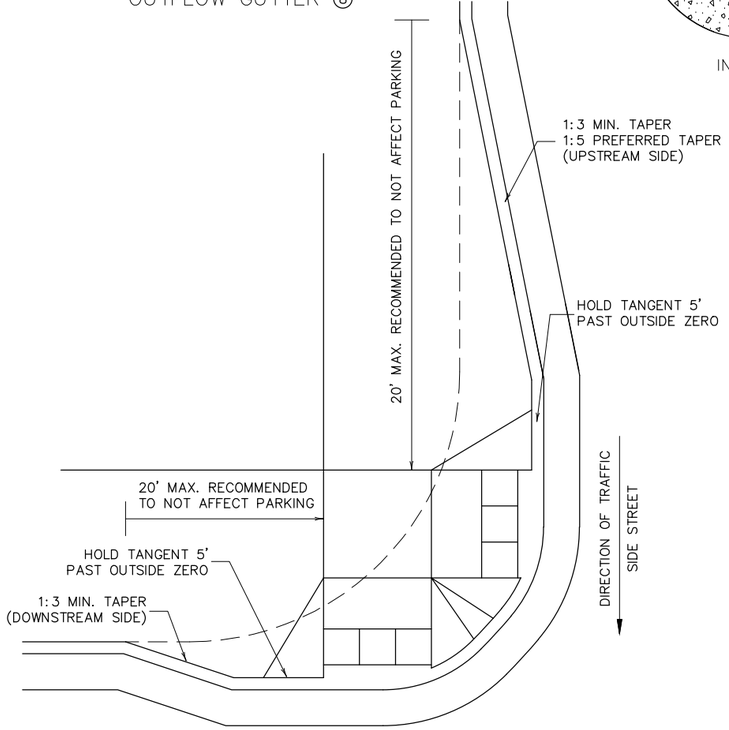


ONLY ALLOWED PER ENGINEER'S APPROVAL



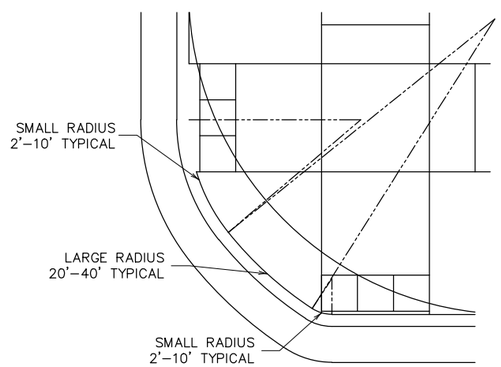
PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER

FOR USE ON CURB RAMP RETROFITS



ADA CURB EXTENSION WITH COMPOUND RADIUS (BUMP OUT) ⑪

DIRECTION OF TRAFFIC
MAIN STREET



COMBINED DIRECTIONAL ⑩
(COMPOUND RADIUS)

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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MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5–297.250 | 3 OF 6

APPROVED: 11–04–2021
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PEDESTRIAN CURB RAMP DETAILS

SHEET NO. 15 OF 59 SHEETS

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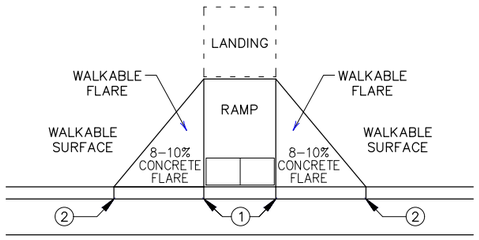
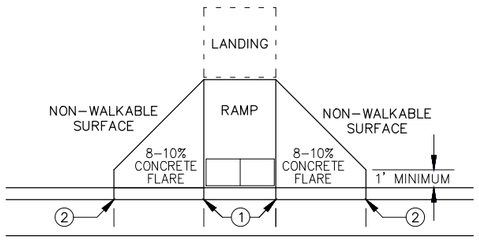
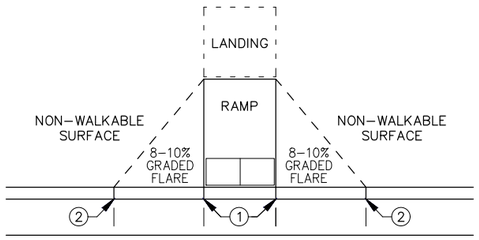


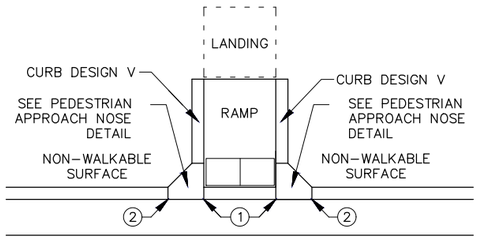
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON–WALKABLE SURFACE

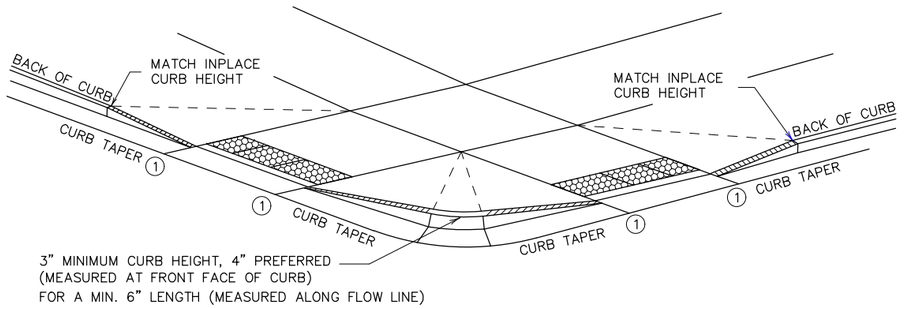


GRADED FLARES

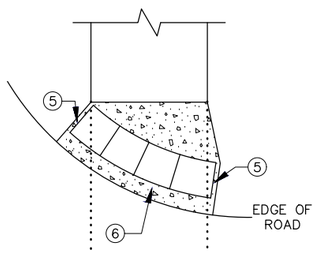


RETURNED CURB ④

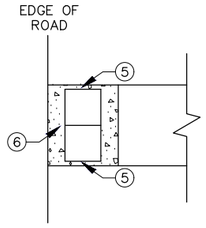
TYPICAL SIDE TREATMENT OPTIONS ③ ⑩



DETECTABLE EDGE WITH ⑦
CURB AND GUTTER

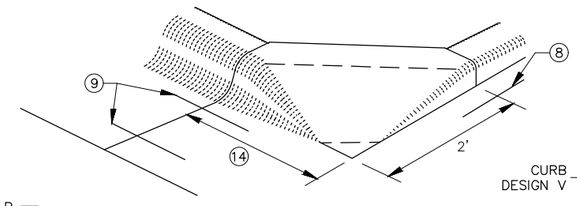


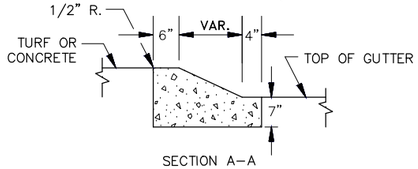
RADIAL DETECTABLE WARNING



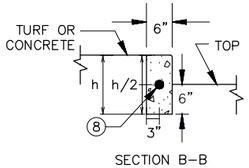
RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER





SECTION A–A



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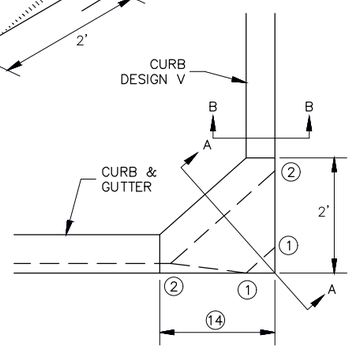
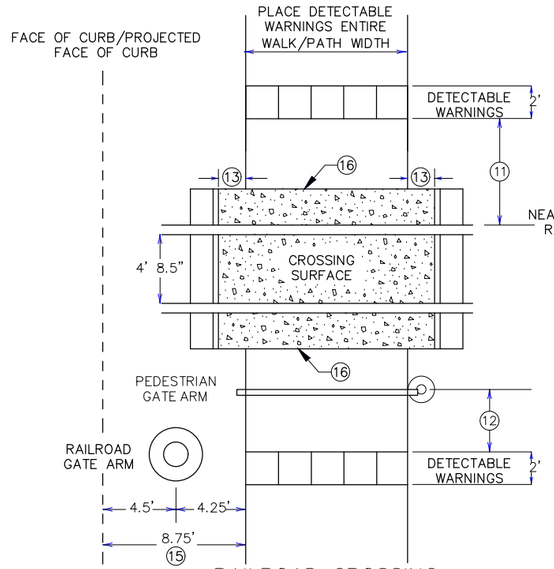


PEDESTRIAN APPROACH
NOSE DETAIL
(FOR RETURNED CURB
SIDE TREATMENT)



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 TAPER 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' FORM 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.

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MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5–297.250 | 4 OF 6

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STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

SHEET NO. 16 OF 59 SHEETS

Mar 12, 2025 – 5:19pm
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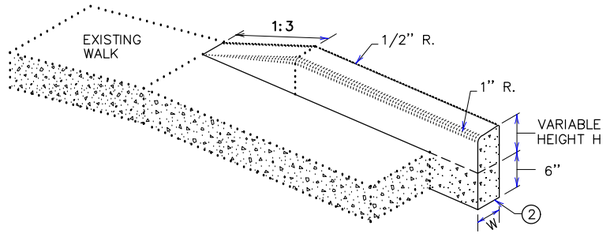
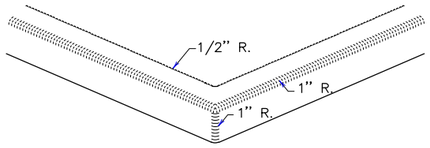
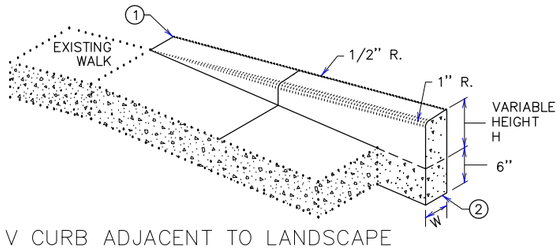


V CURB ADJACENT TO LANDSCAPE
CURB WITHIN SIDEWALK LIMITS

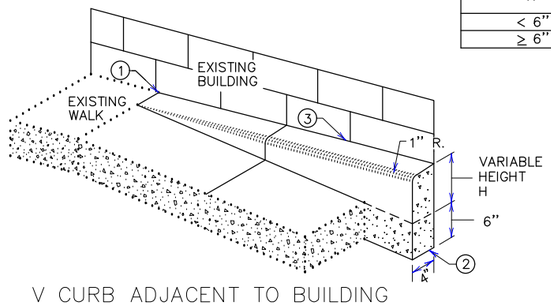


V CURB INTERSECTION

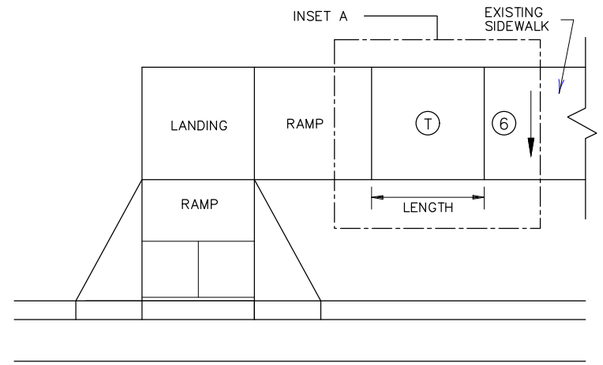
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"



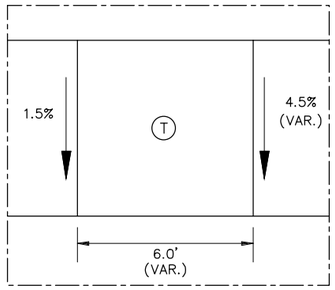
V CURB ADJACENT TO LANDSCAPE
CURB OUTSIDE SIDEWALK LIMITS



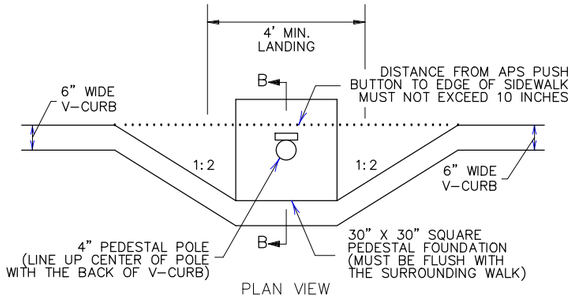
V CURB ADJACENT TO BUILDING OR BARRIER



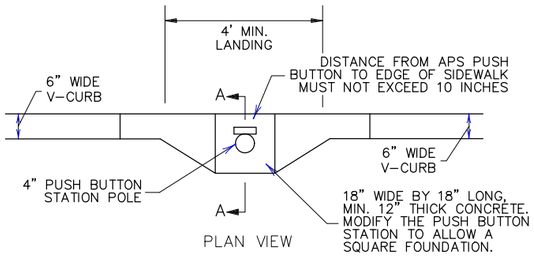
TRANSITION PANEL ④⑤



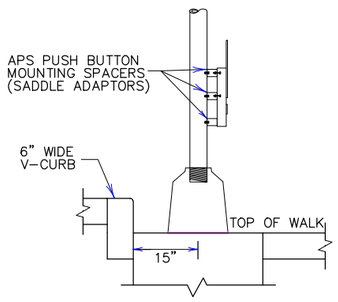
INSET A



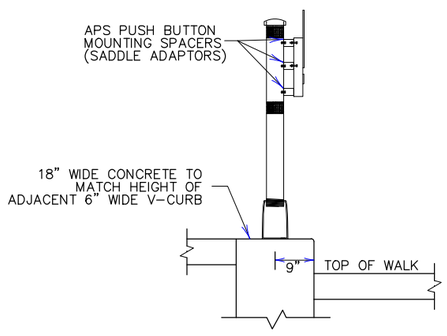
PLAN VIEW



PLAN VIEW



SECTION B–B



SECTION A–A

SIGNAL PEDESTAL & PUSH BUTTON (V–CURB)

PUSH BUTTON STATION (V–CURB)

NOTES:

A WALKABLE FLARE IS AN 8–10% CONCRETE FLARE THAT IS REQUIRED WHEN THE FLARE IS ADJACENT TO A WALKABLE SURFACE, OR WHEN THE PEDESTRIAN PATH OF TRAVEL OF A PUSH BUTTON TRAVERSES THE FLARE.

ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.

WHERE RIGHT–OF–WAY ALLOWS, USE OF V CURB SHOULD BE MINIMIZED. GRADING ADJACENT TURF OR SLOPING ADJACENT PAVEMENT IS PREFERRED.

V CURB SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS.

V CURB NEXT TO BUILDING SHALL BE A 4" WIDTH AND SHALL MATCH PREVIOUS TOP OF SIDEWALK ELEVATIONS.

① END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.

② ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.

③ CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A–E EXPANSION. LEAVE A MINIMUM 1/2" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.

④ THE MAX. RATE OF CROSS SLOPE TRANSITIONING IS 1' LINEAR FOOT OF SIDEWALK PER HALF PERCENT CROSS SLOPE. WHEN PAR WIDTH IS GREATER THAN 6' OR THE RUNNING SLOPE IS GREATER THAN 5%, DOUBLE THE CALCULATED TRANSITION LENGTH.

⑤ TRANSITION PANELS ARE TO ONLY BE USED AFTER THE RAMP, OR IF NEEDED, LANDING ARE AT THE FULL CURB HEIGHT (TYPICAL SECTION).

⑥ EXISTING CROSS SLOPE GREATER THAN 2.0%.

LEGEND

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

Ⓢ 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%.

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 PARS.

Ⓣ 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.

REVISION:

APPROVED: 11–04–2021
JEFFREY PERKINS
OPERATIONS DIVISION

S.A.P. 235–101–003
S.A.P. 235–102–002
S.A.P. 235–121–001
S.A.P. 235–156–001

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5–297.250 | 5 OF 6

APPROVED: 11–04–2021
REVISED:
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

SHEET NO. 17 OF 59 SHEETS

Mar 12, 2025 – 5:19pm
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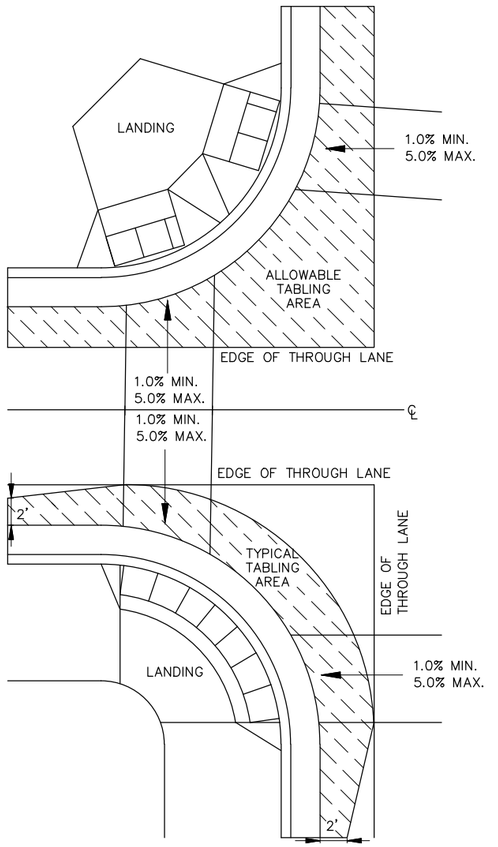
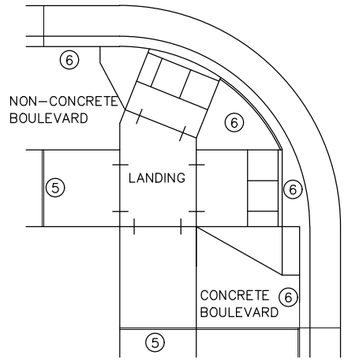
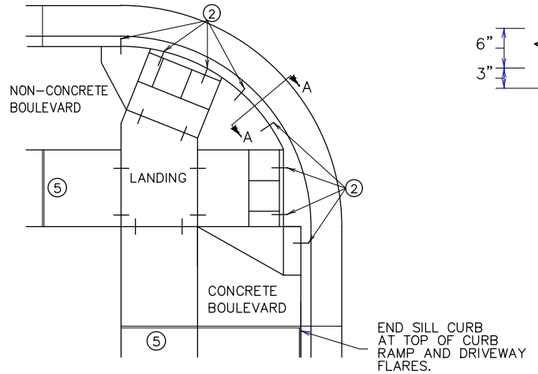


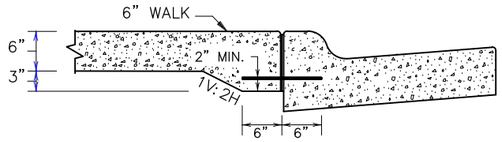
CURB LINE AND ROAD CROSSING ADJUSTMENTS



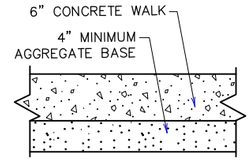
EXPANSION MATERIAL PLACEMENT
FOR CONCRETE ROADWAYS



CURB LINE REINFORCEMENT ④
PLACEMENT ON BITUMINOUS ROADWAYS

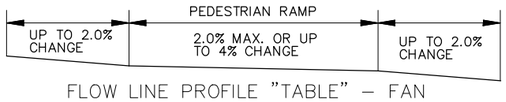


SECTION VIEW A–A
THICKENED SECTION
THROUGH CURB RAMP FLARES



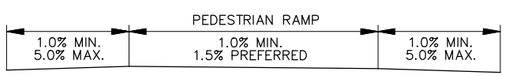
TYPICAL SIDEWALK SECTION
WITHIN INTERSECTION CORNER

FLOW LINE PROFILE "TABLE" – TWIN PERPENDICULARS

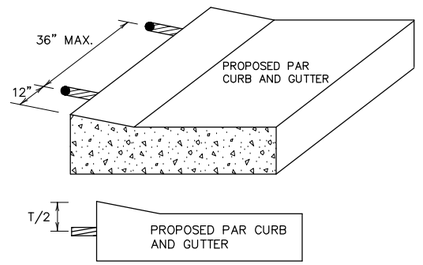


FLOW LINE PROFILE "TABLE" – FAN

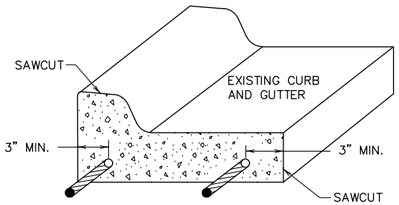
FLOW LINE PROFILE RAISE – TWIN PERPENDICULARS



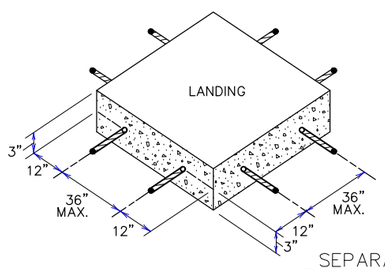
FLOW LINE PROFILE RAISE – FAN

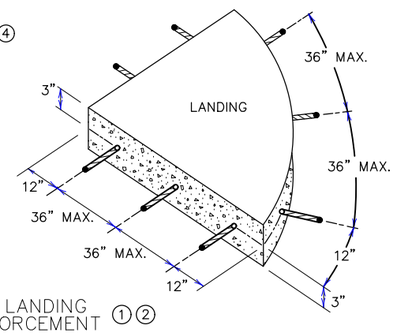


CURB RAMP REINFORCEMENT DETAILS ②④



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 PERKINS
OPERATIONS DIVISION

S.A.P. 235–101–003
S.A.P. 235–102–002
S.A.P. 235–121–001
S.A.P. 235–156–001

MINNESOTA
DEPARTMENT
OF
TRANSPORTATION

THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD PLAN 5–297.250 | 6 OF 6

APPROVED: 11–04–2021
REVISED:

PEDESTRIAN CURB RAMP DETAILS

SHEET NO. 18 OF 59 SHEETS

Mar 12, 2025 – 5:19pm
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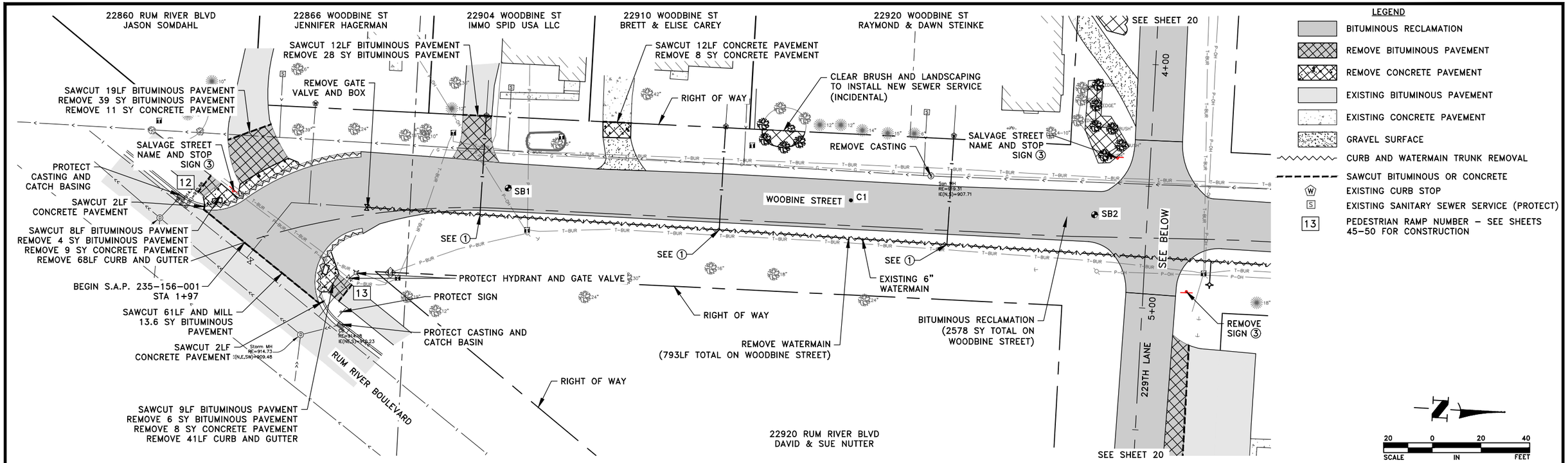

GENERAL NOTES:

1. CONTRACTOR SHALL RECLAIM THE EXISTING BITUMINOUS AND AGGREGATE BASE. IT IS ESTIMATED THAT THE RECLAIM DEPTH ON 229TH LANE AND WOODBINE STREET WILL BE 5" AND 8" RESPECTIVELY. THIS WORK SHALL BE PAID PER ITEM 2215–FULL DEPTH RECLAMATION. THE CONTRACTOR SHALL THEN SALVAGE AND STOCKPILE THE RECLAIM MATERIAL TO BE REUSED AS CLASS 5 AGGREGATE BASE. THE WORK TO SALVAGE AND PLACE THE SALVAGED RECLAIM SHALL BE PAID PER ITEM 2215–HAUL FULL DEPTH RECLAMATION.
2. ALL LANDSCAPE REMOVALS AND SALVAGING SHALL BE INCIDENTAL. ANY LANDSCAPE MATERIAL SALVAGED SHALL BE OFFERED TO THE PROPERTY OWNER PRIOR TO DISPOSING.

REFERENCE NOTES:

(1) CONTRACTOR SHALL REMOVE ALL WATER SERVICES AND CURB STOPS FROM THE WATERMAIN TRUNK IN THE STREET TO THE CURB STOP. REMOVAL OF ALL SERVICES AND CURB STOPS SHALL BE INCIDENTAL. CONTRACTOR SHALL PROTECT EXISTING SANITARY SEWER SERVICES DURING CONSTRUCTION.

(2) THIS ITEM SHALL BE PAID PER ITEM 2104–REMOVE SIGN WHICH INCLUDES REMOVING THE SIGN POST AND SIGNS REGARDLESS OF THE NUMBER OF SIGN PANELS ATTACHED TO THE POST.

(3) THIS ITEM SHALL BE PAID PER ITEM 2104–SALVAGE SIGN WHICH INCLUDES SALVAGING THE SIGN POST AND SIGNS REGARDLESS OF THE NUMBER OF SIGN PANELS ATTACHED TO THE POST.

(4) REMOVE TO FIRST JOINT.

S.A.P. 235–101–003
S.A.P. 235–102–002
S.A.P. 235–121–001
S.A.P. 235–156–001

DATE	REVISION

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.

CRAIG J. JOCHUM, P.E.
Date 2/12/25 Lic. No. 23461

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE

Hakanson Anderson
Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
763-427-5860 FAX 763-427-0520
www.hakanson-anderson.com

2025 STREET RECONSTRUCTION PROJECT

EXISTING CONDITIONS AND REMOVALS PLANS

WOODBINE STREET
CITY OF ST. FRANCIS, MINNESOTA

SHEET 19 OF 59 SHEETS

SF327

Mar 12, 2025 – 5:20pm
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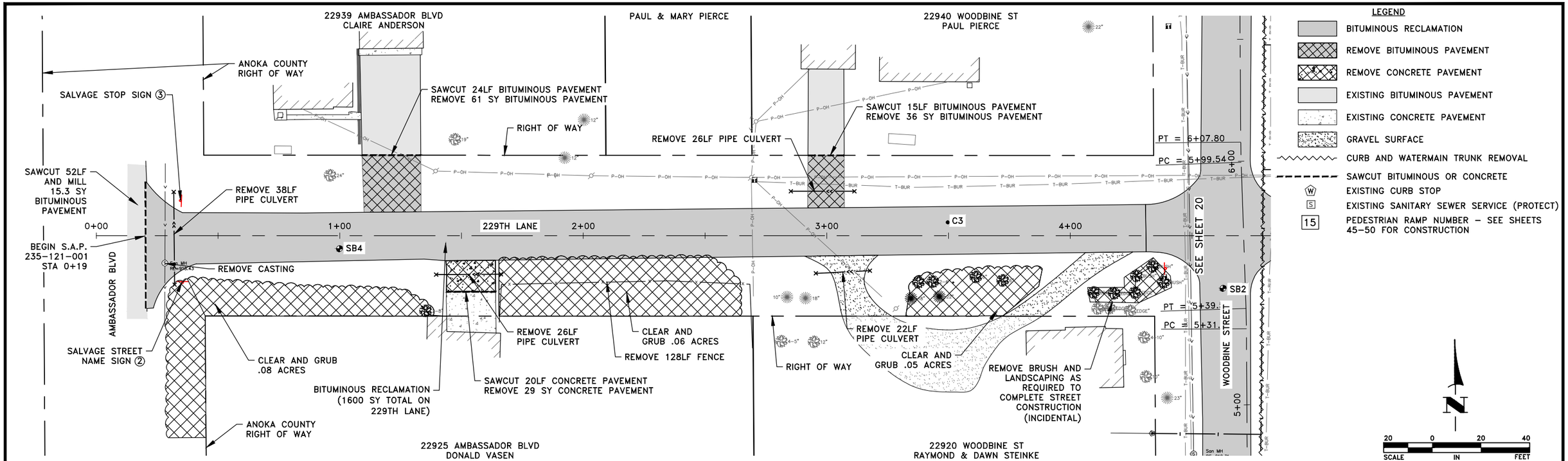

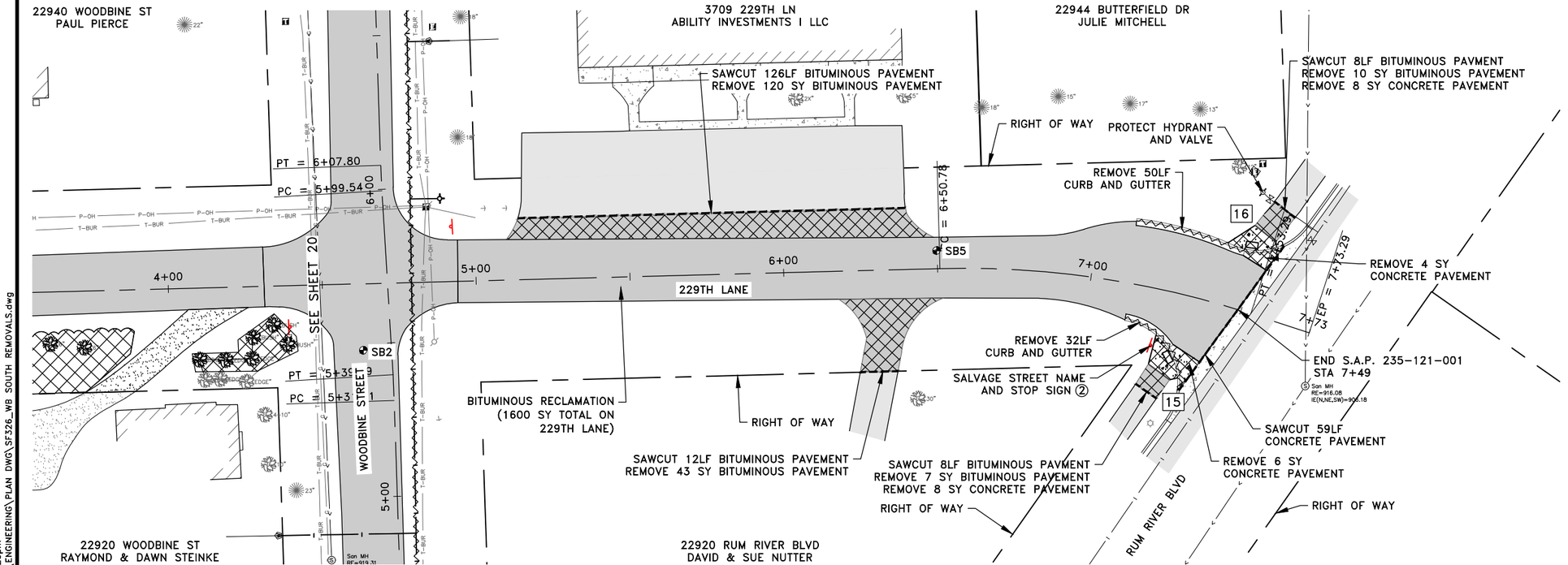

GENERAL NOTES:

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2. ALL LANDSCAPE REMOVALS AND SALVAGING SHALL BE INCIDENTAL. ANY LANDSCAPE MATERIAL SALVAGED SHALL BE OFFERED TO THE PROPERTY OWNER PRIOR TO DISPOSING.

REFERENCE NOTES:

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② THIS ITEM SHALL BE PAID PER ITEM 2104–SALVAGE SIGN WHICH INCLUDES SALVAGING THE SIGN POST AND SIGNS REGARDLESS OF THE NUMBER OF SIGN PANELS ATTACHED TO THE POST.

S.A.P. 235–101–003
S.A.P. 235–102–002
S.A.P. 235–121–001
S.A.P. 235–156–001

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Date 2/12/25 Lic. No. 23461

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE

Hakanson Anderson
Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
763-427-5860 FAX 763-427-0520
www.hakanson-anderson.com

2025 STREET RECONSTRUCTION PROJECT

EXISTING CONDITIONS AND REMOVALS PLANS

229TH LANE
CITY OF ST. FRANCIS, MINNESOTA

SHEET 20 OF 59 SHEETS

SF327

Mar 12, 2025 – 5:20pm
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LEGEND

- BITUMINOUS RECLAMATION
- REMOVE BITUMINOUS PAVEMENT
- REMOVE CONCRETE PAVEMENT
- EXISTING BITUMINOUS PAVEMENT
- EXISTING CONCRETE PAVEMENT
- GRAVEL SURFACE
- CURB AND WATERMAIN TRUNK REMOVAL
- SAWCUT BITUMINOUS OR CONCRETE
- (W) EXISTING CURB STOP
- (S) EXISTING SANITARY SEWER SERVICE (PROTECT)

PROTECT SIGN

WOODBINE STREET

RIGHT OF WAY

SB6

WOODBINE STREET ALLY

CB
RE=917.51
IE(S)=913.81

Storm MH
RE=919.62
IE(N,W,E)=912.52

Storm MH
RE=918.08
IE(N)=912.39
IE(W)=912.01
IE(E)=911.91

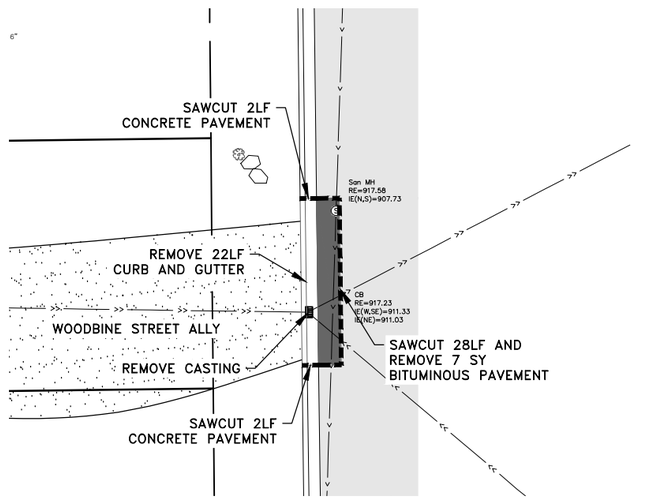
PT = 7+95.45
PC = 7+93.42

9+00

8+00

N

10 0 10 20
SCALE IN FEET



BUTTERFIELD DRIVE CURB AND GUTTER REPLACEMENT

S.A.P. 235-101-003
S.A.P. 235-102-002
S.A.P. 235-121-001
S.A.P. 235-156-001

DATE	REVISION

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CRAIG J. JOCHUM, P.E.
Date 2/12/25 Lic. No. 23461

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE

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2025 STREET RECONSTRUCTION PROJECT

EXISTING CONDITIONS AND REMOVALS PLANS

WOODBINE STREET PARKING LOT
CITY OF ST. FRANCIS, MINNESOTA

SHEET 21 OF 59 SHEETS

SF327

Mar 12, 2025 - 5:20pm
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22860 RUM RIVER BLVD
JASON SOMDAHL

22866 WOODBINE ST
JENNIFER HAGERMAN

22904 WOODBINE ST
IMMO SPID USA LLC

22910 WOODBINE ST
BRETT & ELISE CAREY

22920 WOODBINE ST
RAYMOND & DAWN STEINKE

SEE SHEET 24

49 SY BITUMINOUS PAVEMENT
8 SY 6" CONCRETE DRIVEWAY PAVEMENT

FURNISH AND INSTALL
COVER OVER CURB
STOP PER CSP 209 (3)

23 SY BITUMINOUS PAVEMENT
5 SY CONCRETE 6" DRIVEWAY PAVEMENT

EXISTING WATER
SERVICE (PROTECT)

28 SY 6" CONCRETE
DRIVEWAY PAVEMENT

RIGHT OF WAY

FUTURE
LOT

21LF 4" SEWER SERVICE
AND 4" PVC CAP
INVERT AT PROPERTY
LINE=908.85
SEE (6/6)

FURNISH AND INSTALL NEW
SANITARY SEWER CASTING (2)
EXISTING TC=919.31
PROPOSED TC=919.50

Block Wall

3+05.28

SB1

WOODBINE STREET

1+00

2+00

4+00

5+00

6+00

C1

SB2

R1

R2

PC = 5+31.21
PT = 5+39.59

PC = 6+99.54
PT = 7+07.80

Storm MH
RE=915.00
IE(NW,E)=910.20
IE(NE)=909.00
IE(SW)=908.90

Storm MH
RE=914.73
IE(N,E,SW)=909.48

Storm MH
RE=914.18
IE(NE,S)=910.23

BEGIN S.A.P. 235-156-001
STA 1+97

MILL AT MATCH
SEE (1/6)

8" GATE VALVE AND BOX
(1) CONNECT TO EXISTING
WATERMAIN

WATERMAIN ON
CENTERLINE

CONNECT TO EXISTING
SANITARY SEWER

R1 CURVE DATA
PI=2+46.93, 5.82' LT
NORTHING=227437.94
EASTING=475822.88
Δ=22.34°
R=300'
L=116.95'

R2 CURVE DATA
PI=5+35.40, 0.03' RT
NORTHING=227727.11
EASTING=475820.17
Δ=1.6°
R=300'
L=8.38'

RUM RIVER BOULEVARD

RIGHT OF WAY

29LF 12" RCP (CL V)
@ 0.75%

29TH LANE

503

504

505

506

SEE SHEET 23

22920 RUM RIVER BLVD
DAVID & SUE NUTTER

SEE SHEET 25

LEGEND

- (S) EXISTING SANITARY SEWER SERVICE (PROTECT)
- (W) WATER SERVICE (1)
- BITUMINOUS DRIVEWAY PAVEMENT SEE (3/6)
- CONCRETE DRIVEWAY PAVEMENT SEE (5/6)
- SILT FENCE

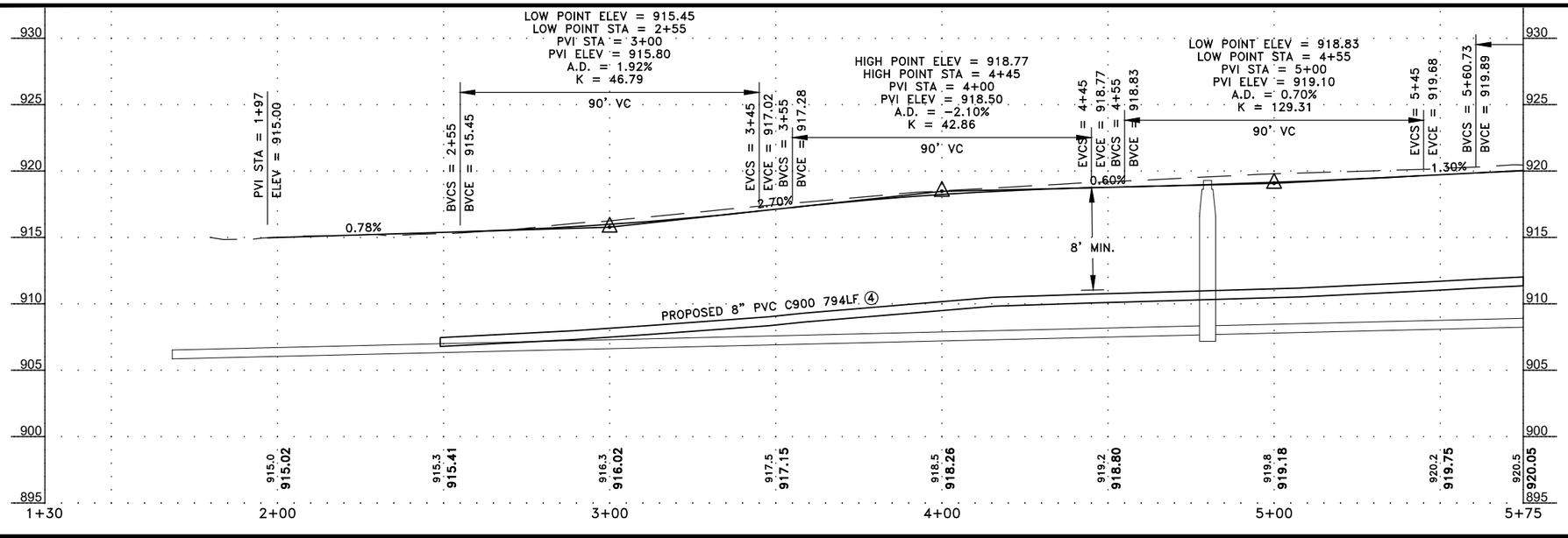
GENERAL NOTES:

1. SEE SHEET 4 FOR GENERAL CONSTRUCTION NOTES.
2. SEE SHEETS 45–50 FOR NEW PEDESTRIAN RAMP CONSTRUCTION.
3. SEE SHEETS 38–44 FOR SIGNAGE AND STRIPING.
4. CITY STANDARD PLATES (CSP) ARE SHOWN ON SHEETS 7–9.
5. SEE SHEET 5 FOR TYPICAL STREET SECTION.
6. CONSTRUCT GATE VALVE AND BOXES PER CSP 207.

REFERENCE NOTES:

(1) CONSTRUCT WATER SERVICE PER CSP 200.
(2) CONTRACTOR SHALL CONSTRUCT NEW CASTING PER CSP 307. PAYMENT FOR THIS WORK AND MATERIAL WILL BE PAID PER 2506 CASTING ASSEMBLY AND 2506 ADJUST FRAME AND RING CASTING.
(3) WORK AND MATERIAL FOR THIS ITEM SHALL BE PAID PER ITEM 2506 CASTING ASSEMBLY SPECIAL.
(4) SEE CSP 213 FOR PIPE BEDDING.

SCALE: 20 0 20 40 IN FEET



S.A.P. 235-101-003
S.A.P. 235-102-002
S.A.P. 235-121-001
S.A.P. 235-156-001

DATE	REVISION

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CRAIG J. JOCHUM, P.E.
Date 2/12/25 Lic. No. 23461

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE

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2025 STREET RECONSTRUCTION PROJECT

CONSTRUCTION PLANS

WOODBINE STREET
CITY OF ST. FRANCIS, MINNESOTA

SHEET 22 OF 59 SHEETS

SF327

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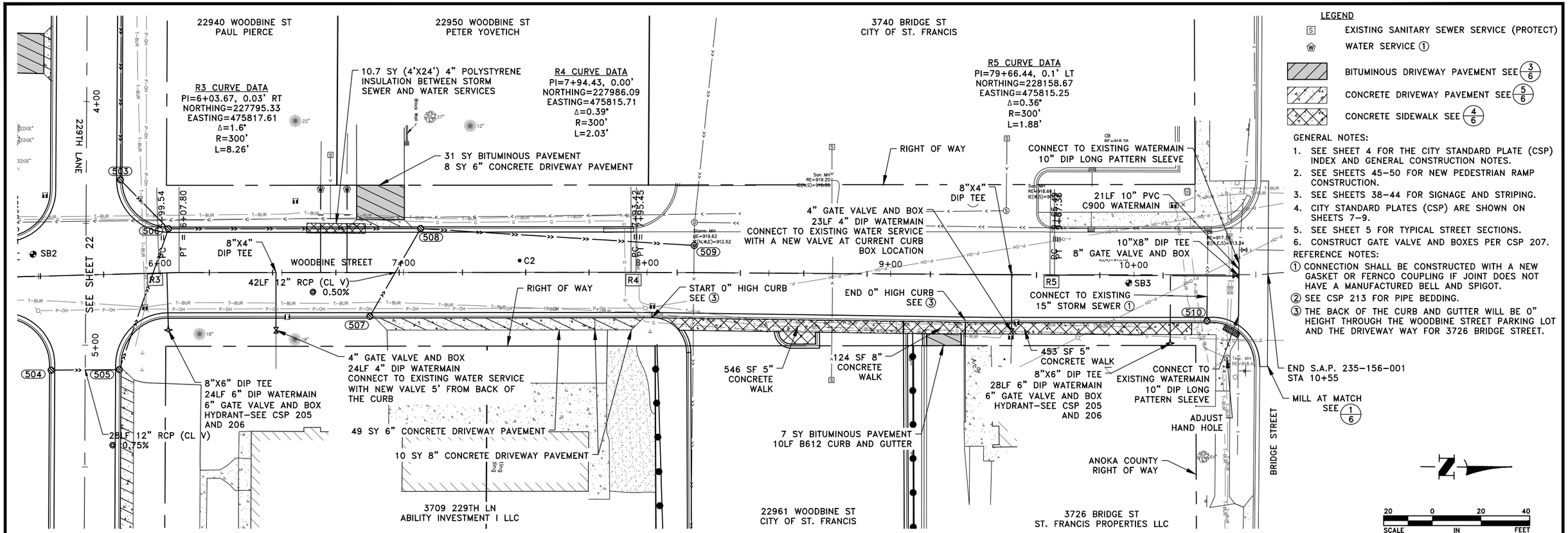

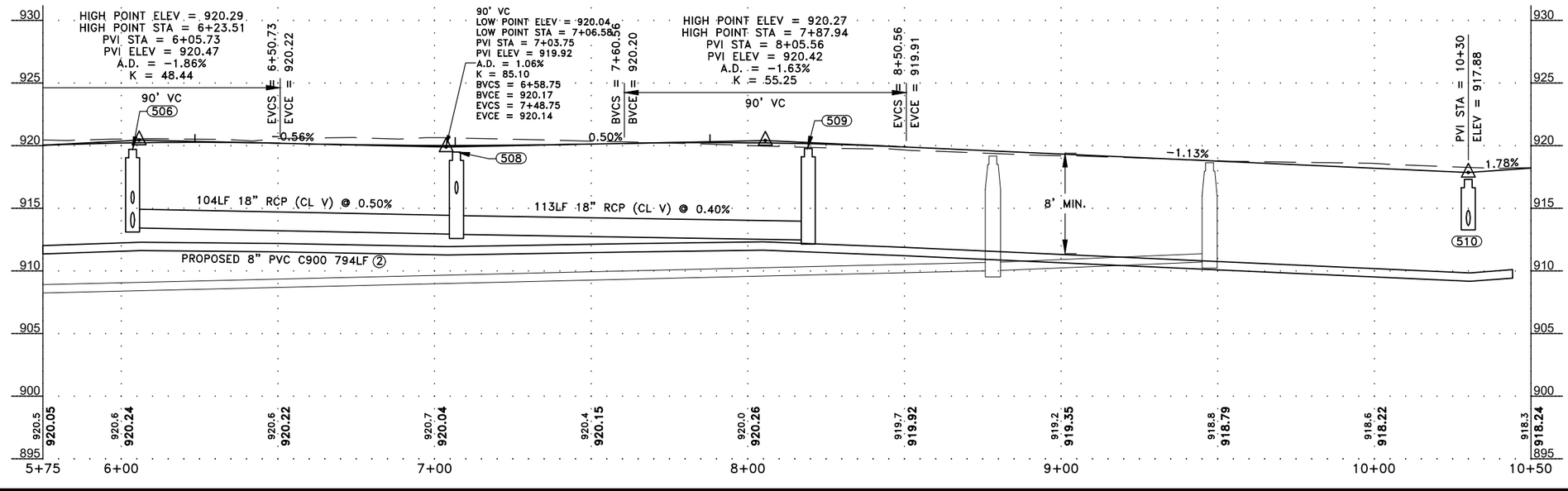

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WOODBINE STREET
CITY OF ST. FRANCIS, MINNESOTA

SHEET 23 OF 59 SHEETS

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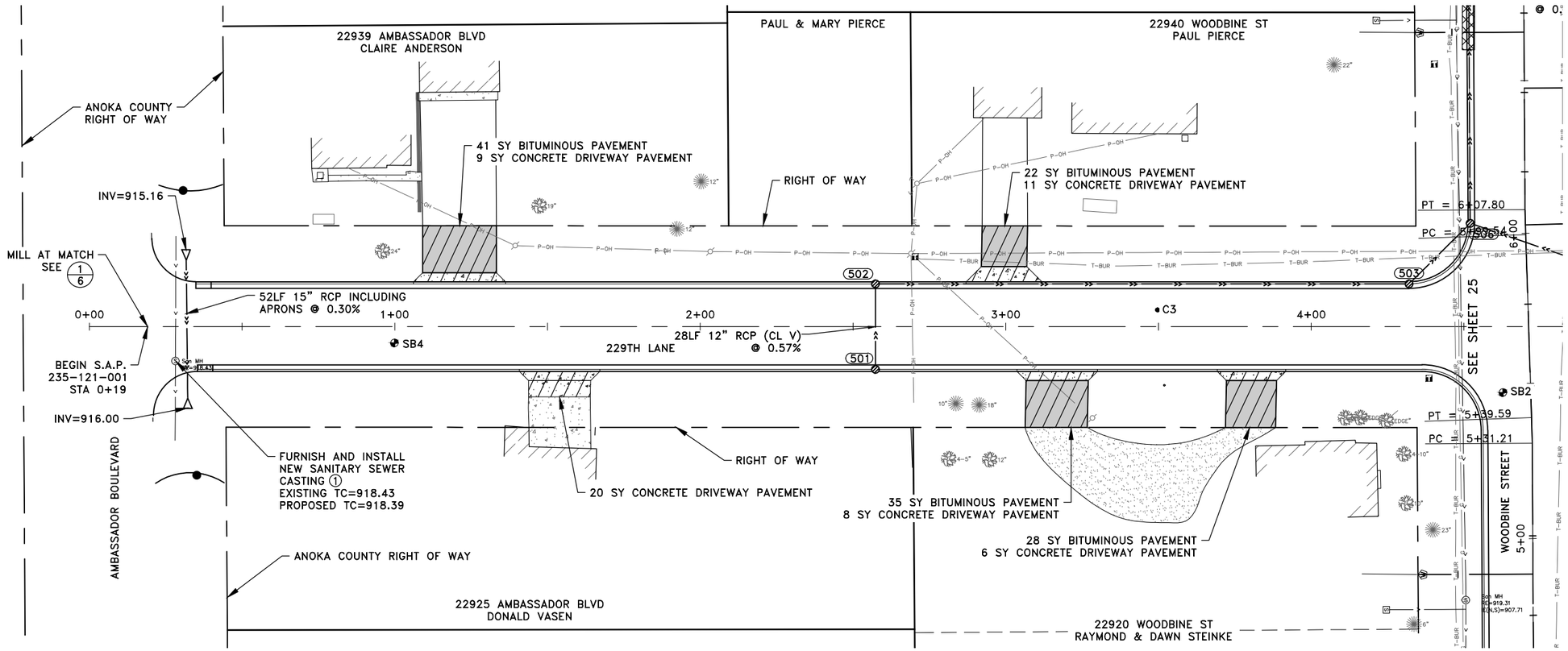

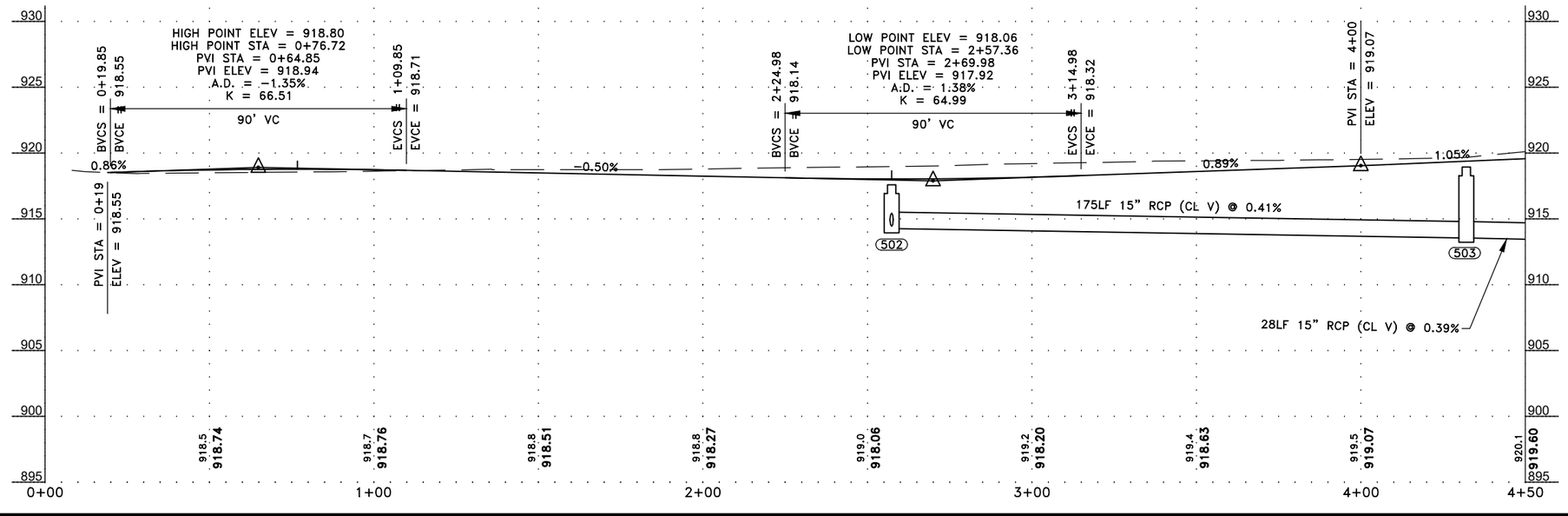

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2025 STREET RECONSTRUCTION PROJECT

CONSTRUCTION PLANS

229TH LANE
CITY OF ST. FRANCIS, MINNESOTA

SHEET 24 OF 59 SHEETS

SF327

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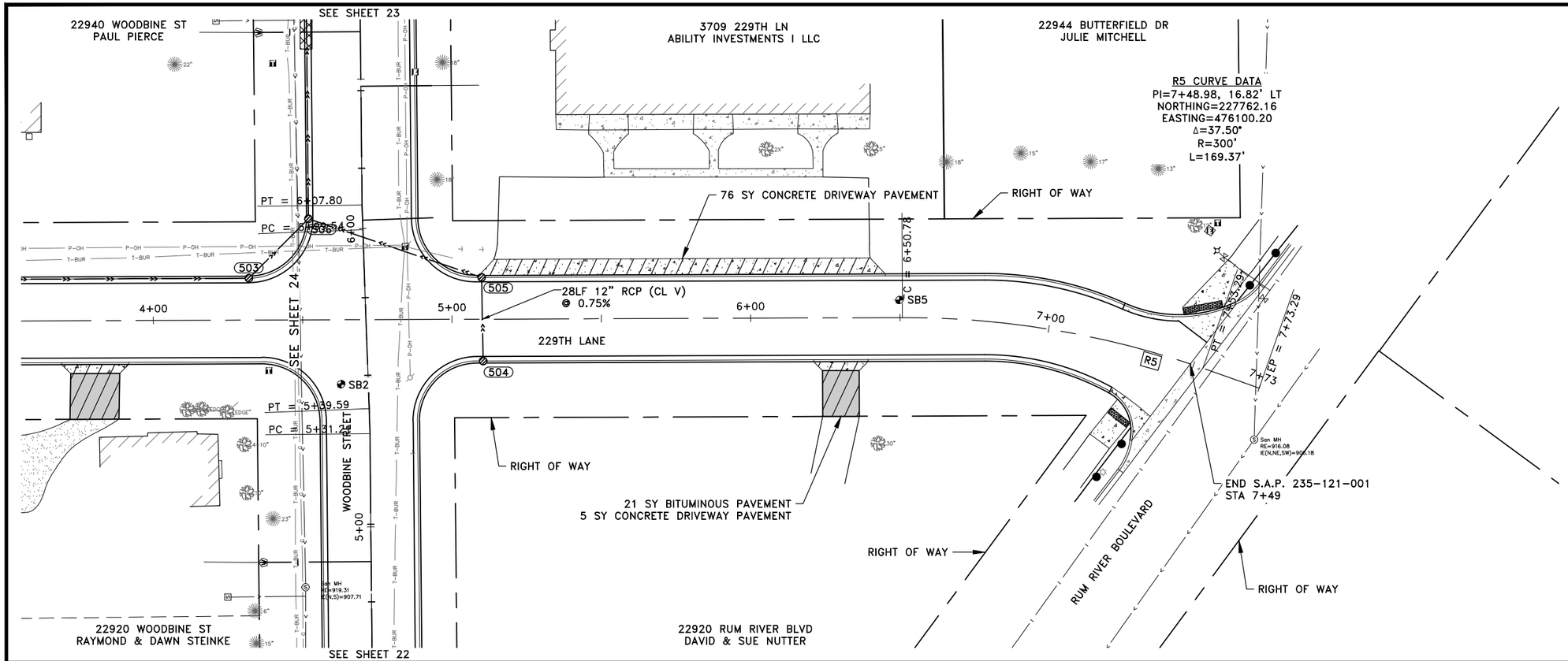

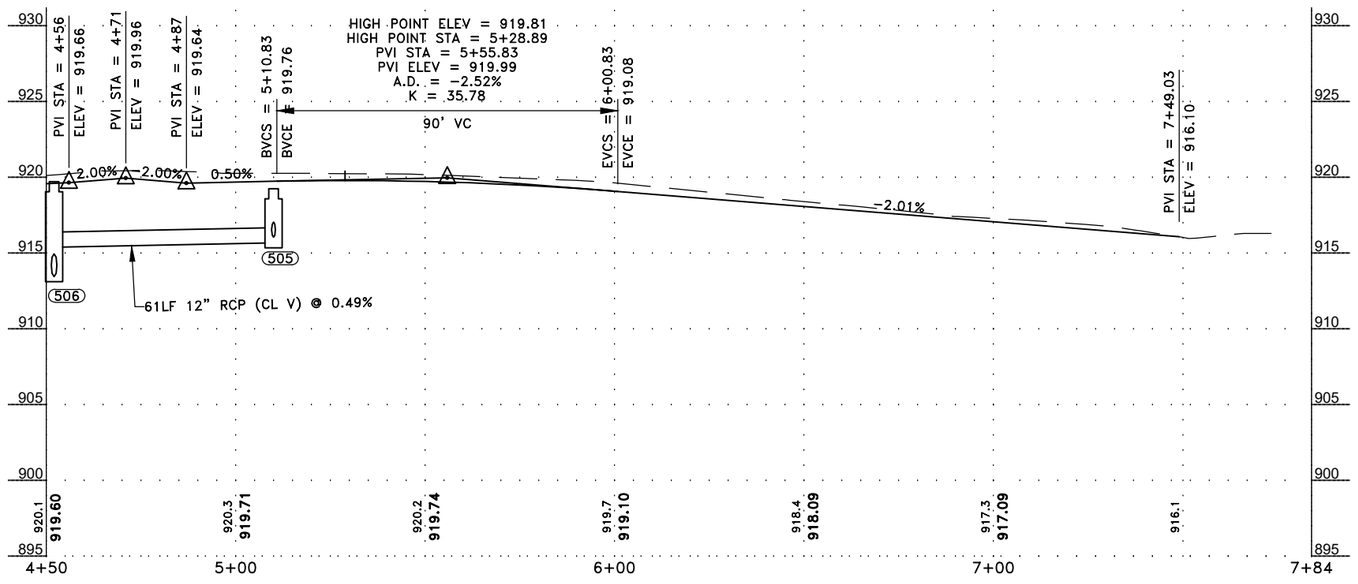

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2025 STREET RECONSTRUCTION PROJECT

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229TH LANE
CITY OF ST. FRANCIS, MINNESOTA

SHEET 25 OF 59 SHEETS

SF327

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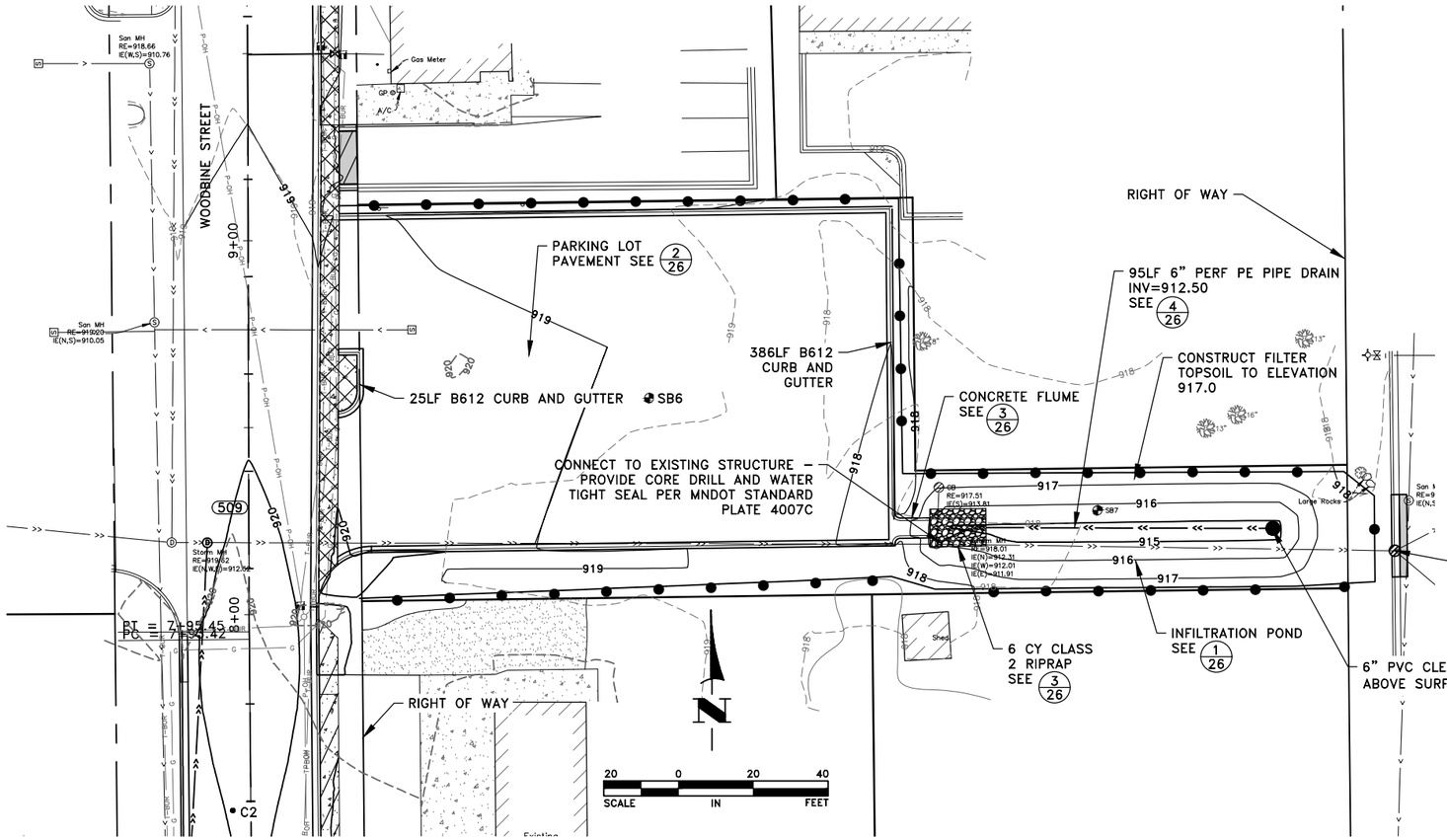
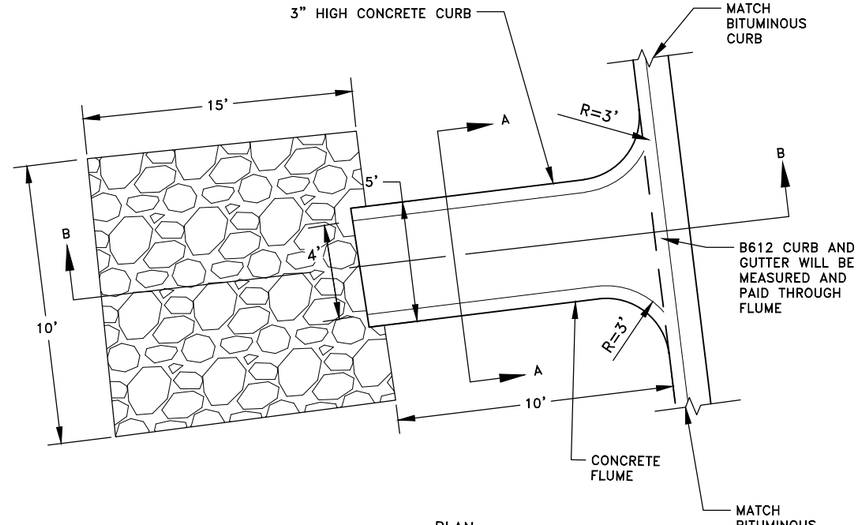
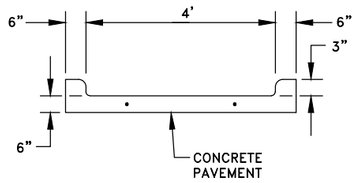
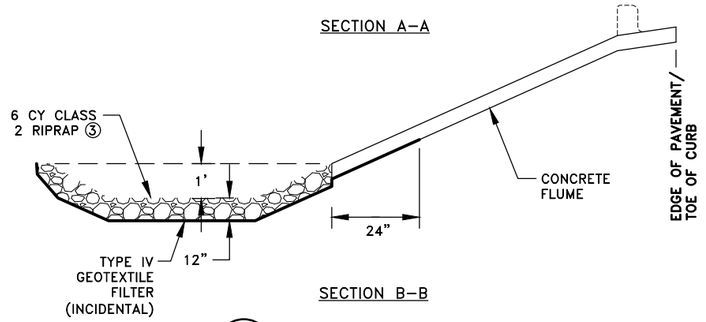




PLAN

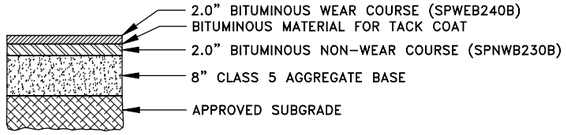


SECTION A–A

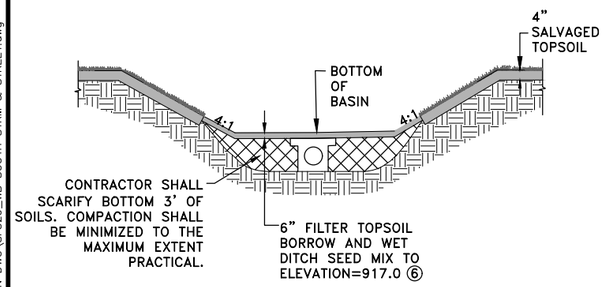


SECTION B–B

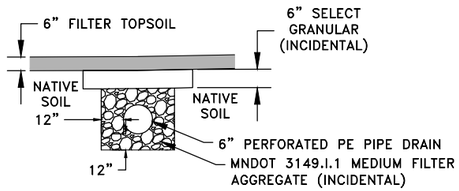
3/26 CONCRETE FLUME DETAIL
NO SCALE



2/26 TYPICAL DESIGN SECTION (PARKING LOT)
NO SCALE



1/26 INFILTRATION POND ①②
NO SCALE



4/26 PIPE DRAIN DETAIL
NO SCALE

LEGEND

- CONCRETE DRIVEWAY PAVEMENT SEE 5/6
- CONCRETE SIDEWALK SEE 4/6
- SILT FENCE

GENERAL NOTES:

1. SEE SHEET 4 FOR THE GENERAL CONSTRUCTION NOTES.
2. SEE SHEETS 45–50 FOR NEW PEDESTRIAN RAMP CONSTRUCTION.
3. SEE SHEETS 38–44 FOR SIGNAGE AND STRIPING.
4. CITY STANDARD PLATES (CSP) ARE SHOWN ON SHEETS 7–9.

REFERENCE NOTES:

① CONSTRUCTION EQUIPMENT SHALL BE MINIMIZED OVER THE FOOTPRINT OF THE BASIN. ONLY LOW PRESSURE, WIDE TRACKED EQUIPMENT SHALL BE USED FOR CONSTRUCTION.

② INFILTRATION BASINS SHALL NOT BE GRADED TO WITHIN THREE FEET OF THE FINAL GRADES UNTIL THE CONTRIBUTING DRAINAGE AREA HAS BEEN CONSTRUCTED AND FULLY STABILIZED OR RIGOROUS EROSION PREVENTION AND SEDIMENT CONTROLS, SUCH AS DIVERSION BERMS, TO KEEP SEDIMENT AND RUNOFF COMPLETELY AWAY FROM THE INFILTRATION AREAS HAVE BEEN PROVIDED.

③ CLASS 2 RIPRAP SHALL BE NATURAL FIELD STONE.

④ PAID PER ITEM 2360 TYPE SP 9.5 WEARING COURSE MIXTURE 3.0" THICK.

⑤ CLEANOUT SHALL INCLUDE 6" PVC WYE WITH RISER PIPE AND TWO CAPS.

⑥ ALSO SEED ENTIRE INFILTRATION POND WITH SEED SOUTHERN BOULEVARD MIX.

S.A.P. 235–101–003
S.A.P. 235–102–002
S.A.P. 235–121–001
S.A.P. 235–156–001

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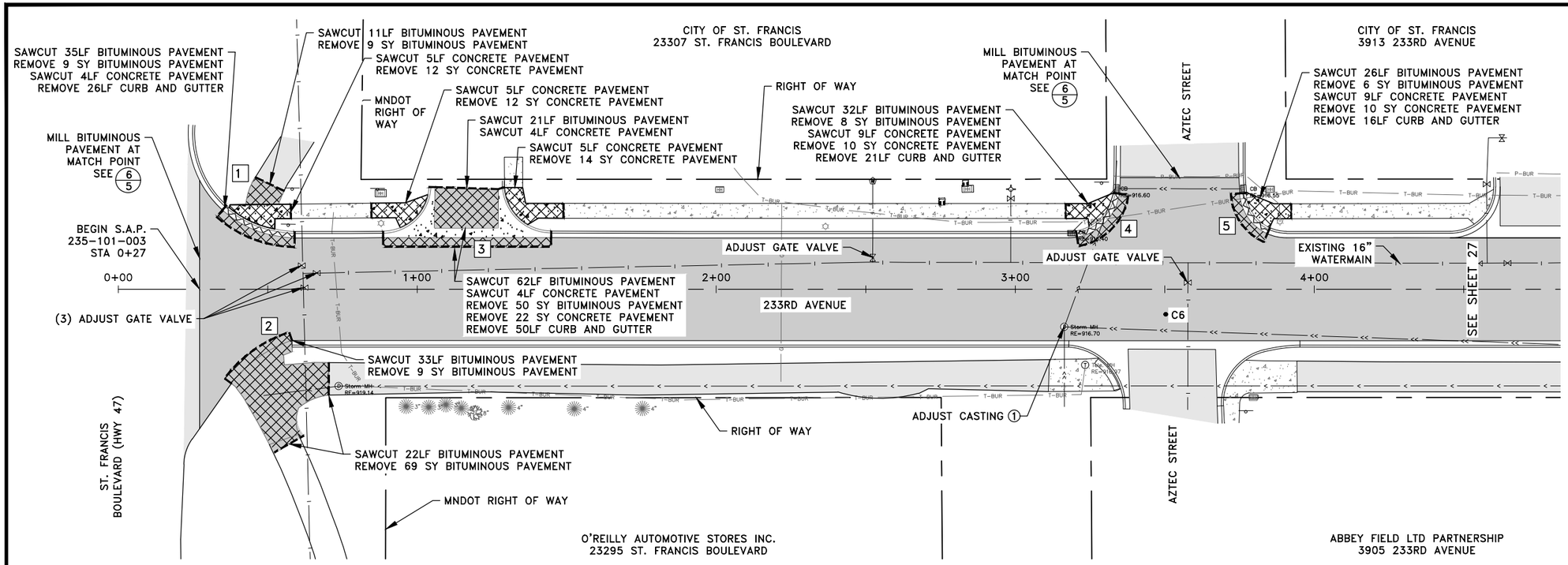
2025 STREET RECONSTRUCTION PROJECT

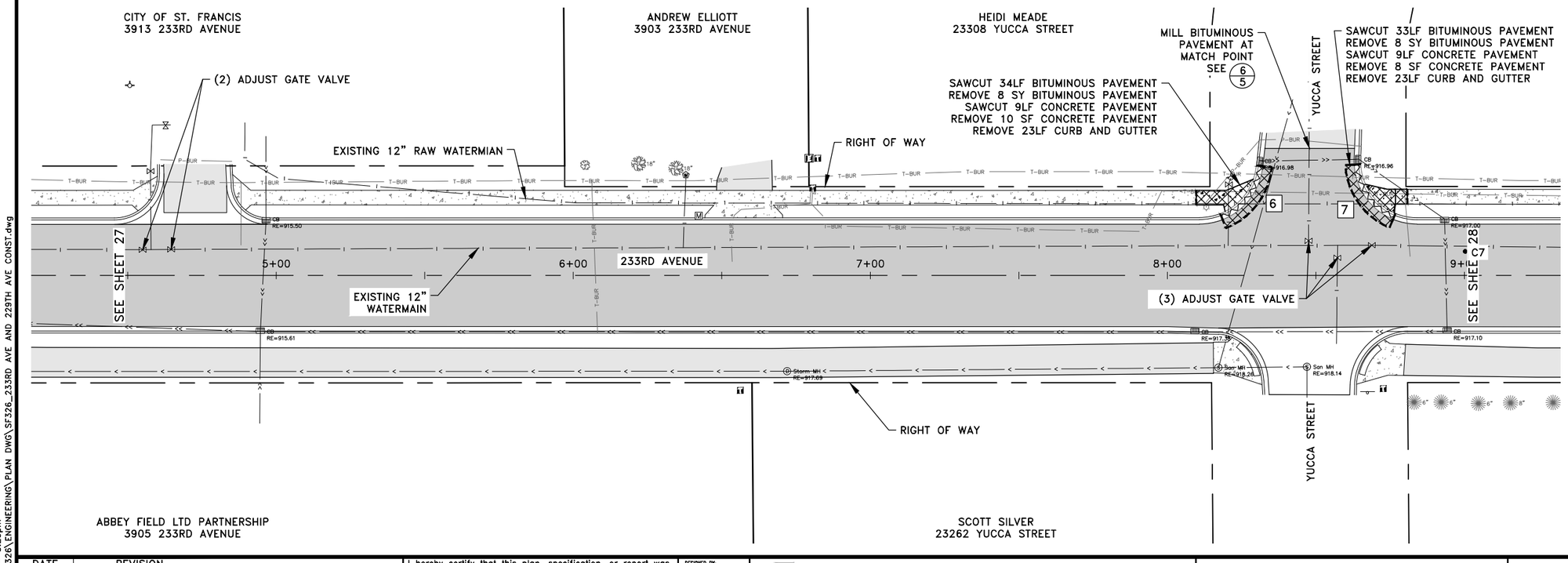
CONSTRUCTION PLANS

WOODBINE STREET PARKING LOT
CITY OF ST. FRANCIS, MINNESOTA

SHEET 26 OF 59 SHEETS

SF327





GENERAL NOTES:

1. SEE SHEET 4 FOR THE GENERAL CONSTRUCTION NOTES.
2. SEE SHEETS 45–50 FOR NEW PEDESTRIAN RAMP CONSTRUCTION.
3. SEE SHEETS 38–44 FOR SIGNAGE AND STRIPING.
4. CITY STANDARD PLATES (CSP) ARE SHOWN ON SHEETS 7–9.
5. ITEM 2106 EXCAVATION COMMON WILL NOT BE MEASURED OR PAID ON 233RD AVENUE OR 229TH AVENUE.

REFERENCE NOTES:

(1) MANHOLE CASTING SHALL BE ADJUSTED WITH A DUCTILE IRON ADJUSTING RING AS MANUFACTURED BY ESS BROTHERS AND SONS INC. OR APPROVED EQUAL. CONTRACTOR SHALL MEASURE THE MANHOLE CASTING TO ENSURE THAT THE FINAL DIMENSION FROM THE TOP OF THE BITUMINOUS SURFACE TO THE TOP OF THE MANHOLE CASTING IS AS SHOWN IN DETAIL 3 ON SHEET 9. THIS WORK SHALL BE PAID PER ITEM 2506 ADJUST FRAME AND RING CASTING.

S.A.P. 235-101-003
S.A.P. 235-102-002
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S.A.P. 235-156-001

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2025 STREET RECONSTRUCTION PROJECT

CONSTRUCTION PLANS

233RD AVENUE
CITY OF ST. FRANCIS, MINNESOTA

SHEET 27 OF 59 SHEETS

SF327

Mar 12, 2025 - 5:20pm
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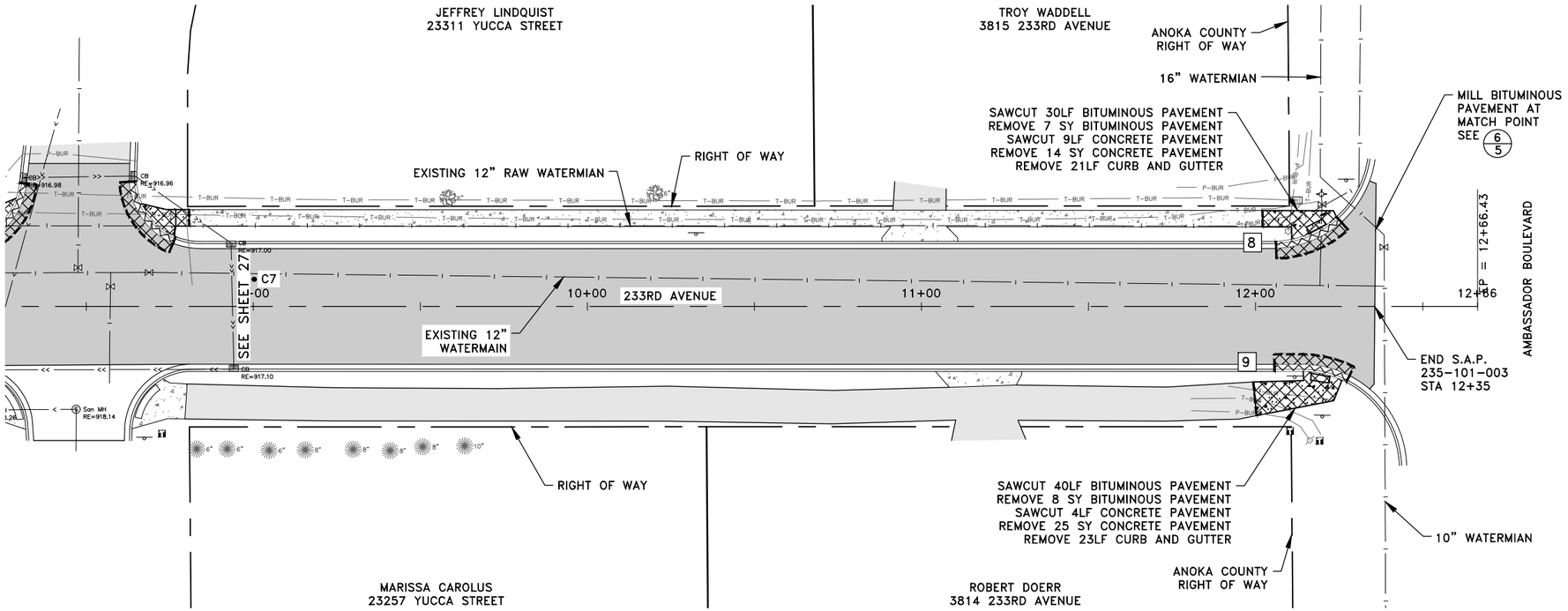

LEGEND

- REMOVE BITUMINOUS PAVEMENT
- REMOVE CONCRETE PAVEMENT
- EXISTING BITUMINOUS PAVEMENT
- EXISTING CONCRETE PAVEMENT
- PROPOSED BITUMINOUS MILL AND OVERLAY SEE 5/5
- CURB AND WATERMAIN TRUNK REMOVAL
- SAWCUT BITUMINOUS OR CONCRETE
- 8 PEDESTRIAN RAMP NUMBER – SEE SHEETS 45–50 FOR CONSTRUCTION

GENERAL NOTES:

1. SEE SHEET 4 FOR THE GENERAL CONSTRUCTION NOTES.
2. SEE SHEETS 45–50 FOR NEW PEDESTRIAN RAMP CONSTRUCTION.
3. SEE SHEETS 38–44 FOR SIGNAGE AND STRIPING.
4. CITY STANDARD PLATES (CSP) ARE SHOWN ON SHEETS 7–9.
5. ITEM 2106 EXCAVATION COMMON WILL NOT BE MEASURED OR PAID ON 233RD AVENUE OR 229TH AVENUE.

N

SCALE 20 0 20 40 IN FEET

S.A.P. 235–101–003
S.A.P. 235–102–002
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CONSTRUCTION PLANS

233RD AVENUE
CITY OF ST. FRANCIS, MINNESOTA

SHEET 28 OF 59 SHEETS

SF327

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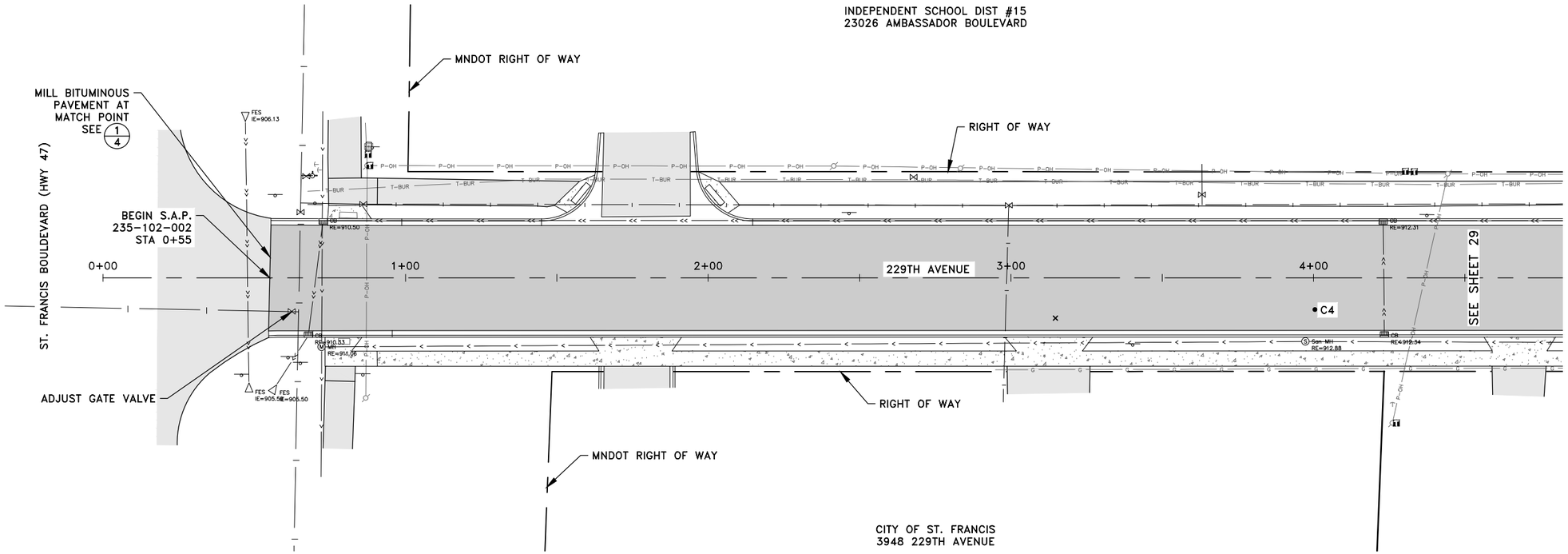

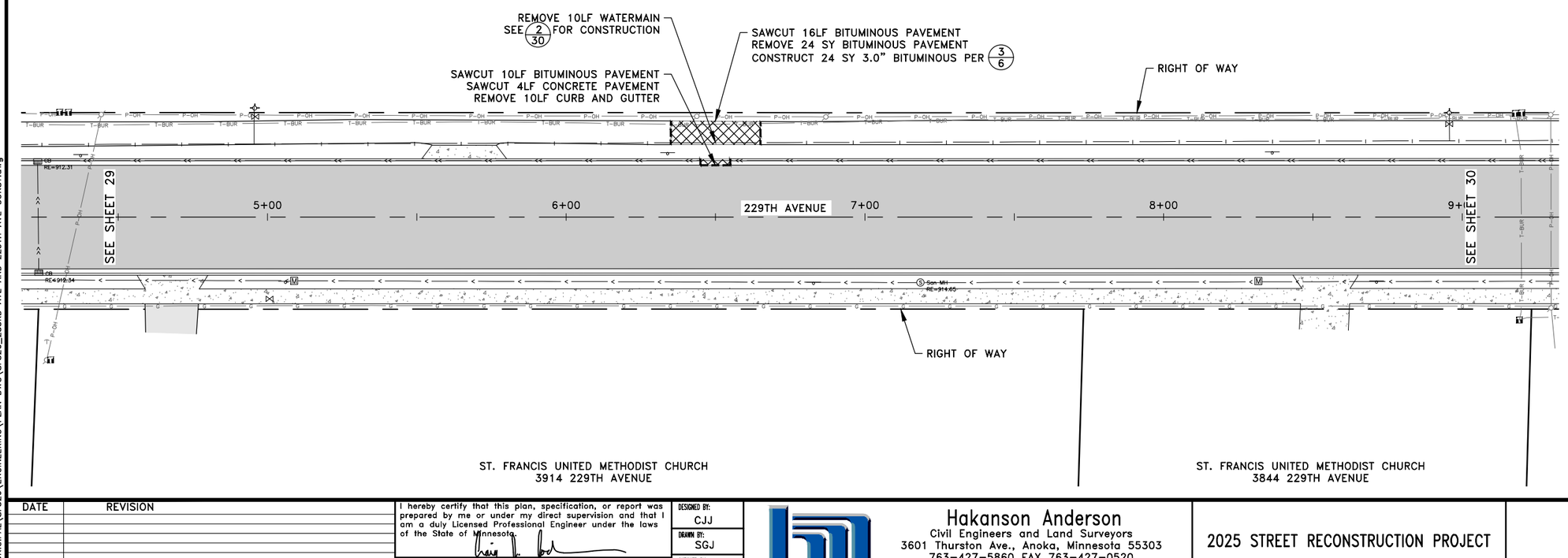

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229TH AVENUE
CITY OF ST. FRANCIS, MINNESOTA

SHEET 29 OF 59 SHEETS

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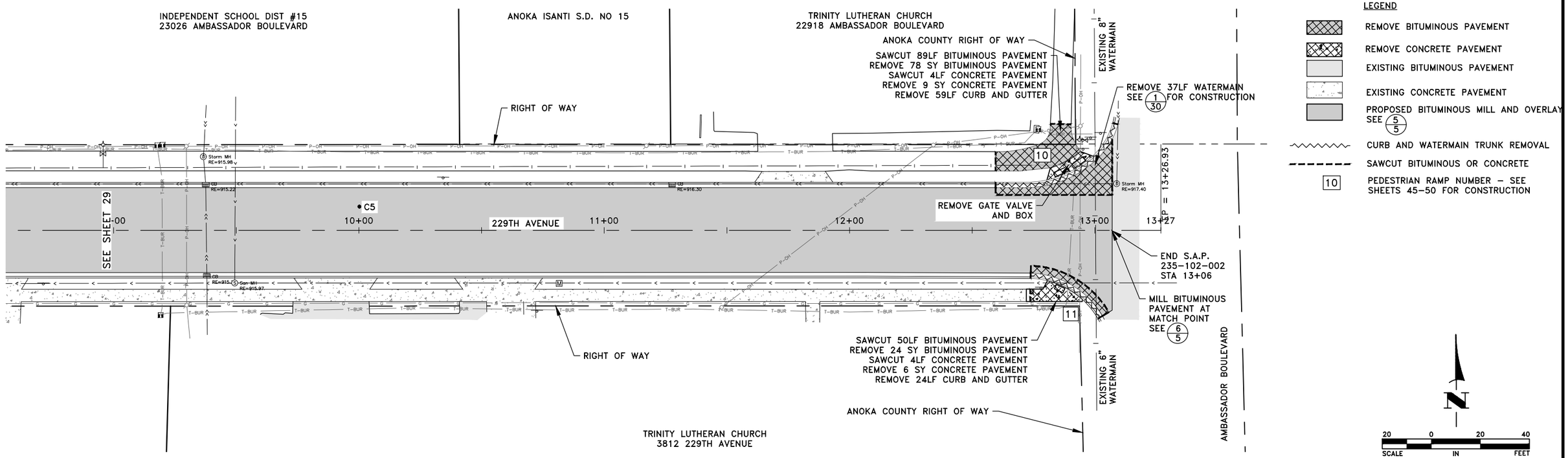
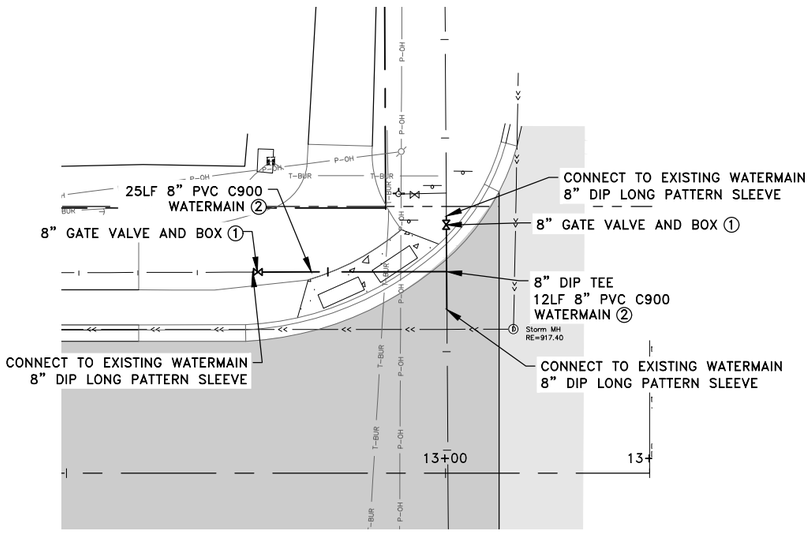
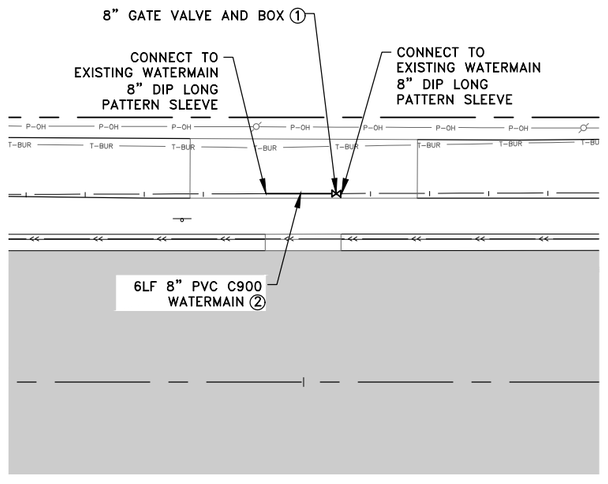




1/30 229TH LANE AND AMBASSADOR BOULEVARD GATE VALVE CONSTRUCTION



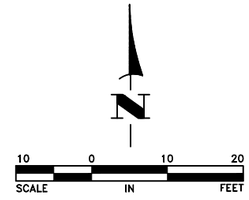
2/30 229TH AVENUE GATE VALVE CONSTRUCTION (STA 6+50)

GENERAL NOTES:

1. SEE SHEET 4 FOR THE GENERAL CONSTRUCTION NOTES.
2. SEE SHEETS 45–50 FOR NEW PEDESTRIAN RAMP CONSTRUCTION.
3. SEE SHEETS 38–44 FOR SIGNAGE AND STRIPING.
4. CITY STANDARD PLATES (CSP) ARE SHOWN ON SHEETS 7–9.
5. CONSTRUCT GATE VALVE AND BOXES PER CSP 207.
6. ITEM 2106 EXCAVATION COMMON WILL NOT BE MEASURED OR PAID ON 233RD AVENUE OR 229TH AVENUE.

REFERENCE NOTES:

① SEE CITY STANDARD PLATE 207.
② SEE CSP 213 FOR PIPE BEDDING.



S.A.P. 235–101–003
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2025 STREET RECONSTRUCTION PROJECT

CONSTRUCTION PLANS

229TH AVENUE
CITY OF ST. FRANCIS, MINNESOTA

SHEET 30 OF 59 SHEETS

SF327

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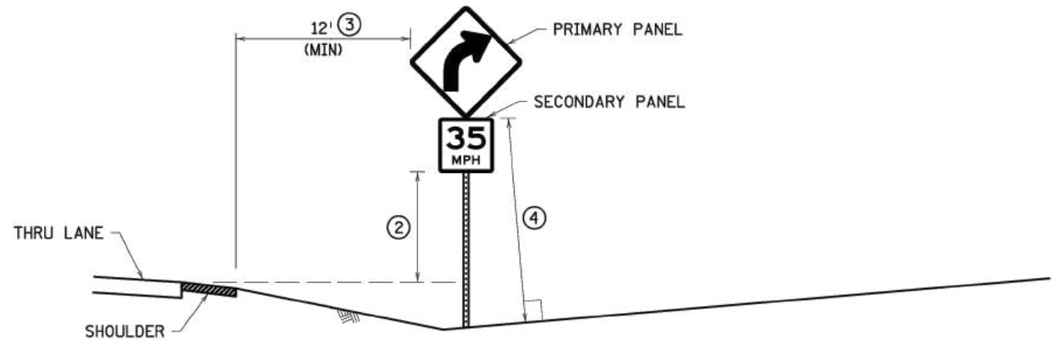
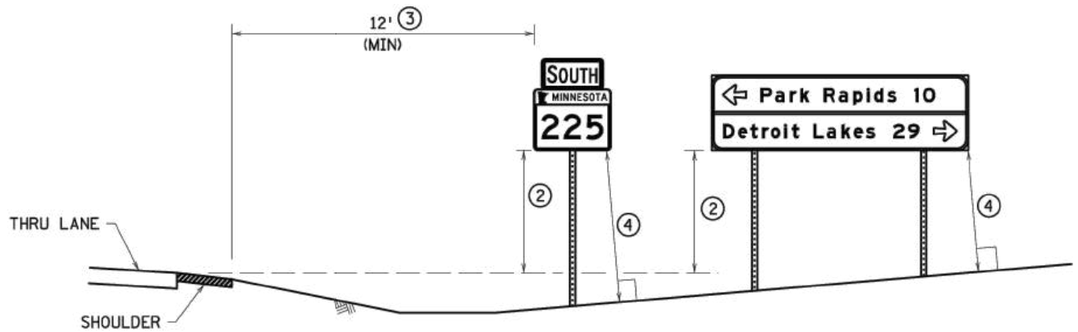
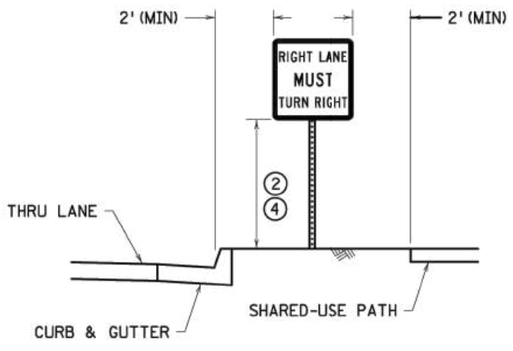


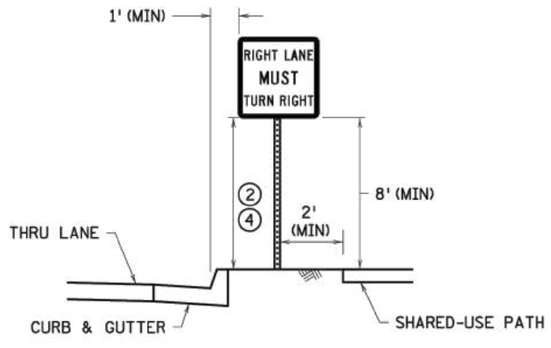
PRIMARY AND SECONDARY PANELS



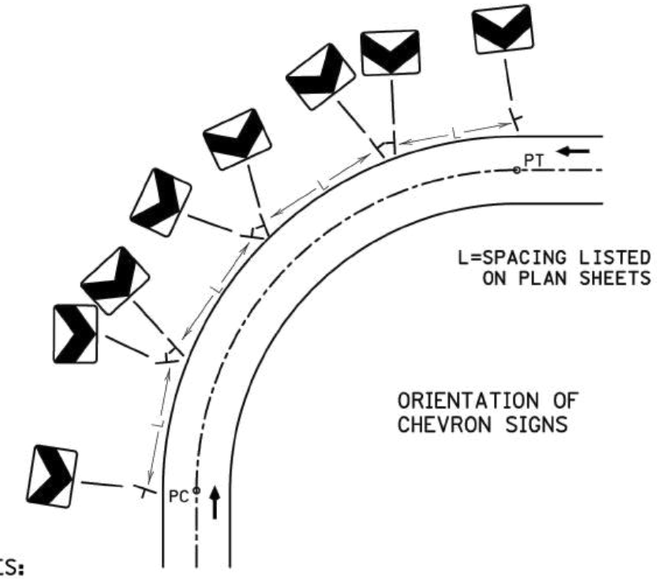
STANDARD LOCATIONS



BOULEVARD LOCATIONS
6' TO 12' WIDE



BOULEVARD LOCATIONS (1)
LESS THAN 6' WIDE



ORIENTATION OF
CHEVRON SIGNS

NOTES:

PLACE SIGNS AND ORIENT THEM APPROXIMATELY AS SHOWN IN THE PLAN, AT RIGHT ANGLES TO THE DIRECTION OF, AND FACING THE TRAFFIC THEY ARE INTENDED TO SERVE, UNLESS OTHERWISE SPECIFIED. TO AVOID SPECULAR GLARE, TURN SIGNS APPROXIMATELY THREE DEGREES AWAY FROM APPROACHING TRAFFIC.

IF A SIGN NEEDS TO BE REPOSITIONED FROM THE PROPOSED PLAN LOCATION IN ORDER TO AVOID CONFLICTS WITH UTILITIES OR OBSTACLES, CONTACT THE PROJECT ENGINEER.

MOUNT SIGN FACES PLUMB.

LATERAL CLEARANCES GIVEN APPLY TO RIGHT AND/OR LEFT SIDE INSTALLATION.

ERECT OR CONSTRUCT SIGN SUPPORT SO THAT NO PORTION OF THE SIGN PANEL IS WITHIN 15' OF THE RAIL OF A RAILROAD TRACK.

PLACE SIGNS SUCH THAT OBSTACLES DO NOT BLOCK THEM FROM BEING VIEWED BY THE APPROACHING TRAFFIC.

PLACE SIGNS A MINIMUM OF 10' FROM THE NEAREST OBSTACLE. OBSTACLES MAY INCLUDE, BUT ARE NOT LIMITED TO, LIGHT POLES, TREES, SIGNS, AND BUILDINGS. SIGNS MAY BE PLACED CLOSER TO SIGNS IN TIGHT AREAS, BUT NO MORE THAN TWO POSTS IN A 7' DIAMETER CIRCLE.

AVOID PLACING SIGNS IN DITCH BOTTOMS.

(1) ONLY USE WHEN BOULEVARD IS TOO NARROW TO OBTAIN ADEQUATE CURBED LOCATION SIGN OFFSETS.

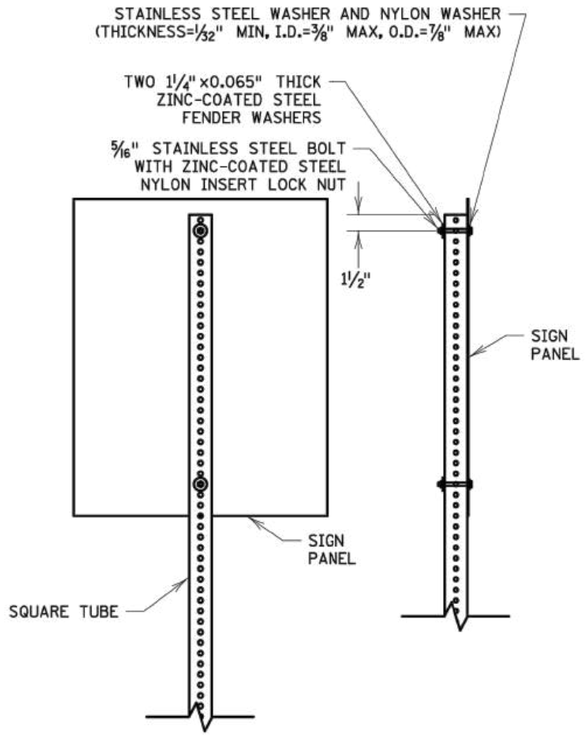
(2) ALL SIGN MOUNTING HEIGHTS ARE MEASURED VERTICALLY FROM THE BOTTOM OF THE LOWEST SIGN PANEL TO THE TOP OF THE CURB, OR IN ABSENCE OF CURB, TO THE NEAR EDGE OF THE THRU-LANE PAVEMENT. SEE SIGN TABULATIONS.

(3) MINIMUM OFFSET MAY BE REDUCED TO AT LEAST 6' FROM SHOULDER AND AT LEAST 12' FROM THRU LANE IF SITE CONDITIONS PROHIBIT A 12' OFFSET FROM SHOULDER.

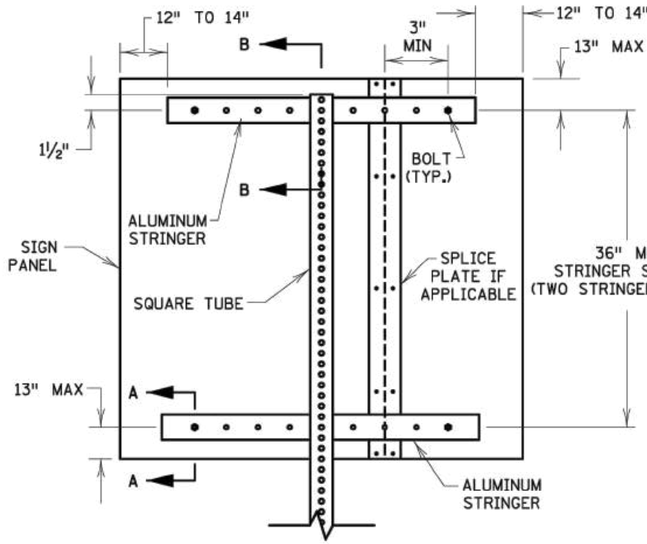
(4) CRASHWORTHY HEIGHT IS AT LEAST 7' FOR BREAKAWAY STRUCTURES AND AT LEAST 4' FOR BENDABLE STRUCTURES. SEE SPECIFIC SQUARE TUBE BASE STRUCTURE PLAN FOR CRASH RESPONSE TYPE. THE CRASHWORTHY HEIGHT IS MEASURED TO THE BOTTOM OF THE PRIMARY SIGN PANEL EXCLUDING ANY SECONDARY SIGN PANELS, MARKERS, DELINEATORS, AND REFERENCE LOCATION SIGN PANELS. ANY SECONDARY SIGN PANELS MOUNTED TO MORE THAN ONE POST ARE CONSIDERED PRIMARY SIGN PANELS FOR CRASHWORTHY PURPOSES.

LEAD EXPERT OFFICE	BRIAN SORENSON STATE TRAFFIC ENGINEER OFFICE OF TRAFFIC ENGINEERING	STANDARD SIGN PLACEMENT	APPROVED: 08-09-2023 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.701	1 OF 1

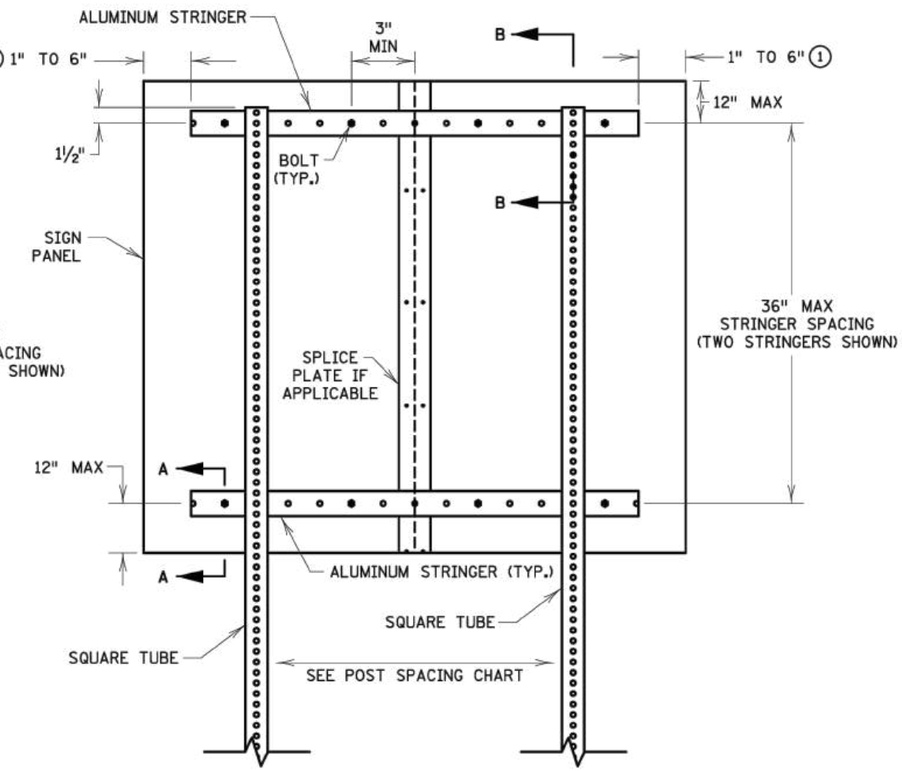
DEPARTMENT OF TRANSPORTATION	S.A.P. 235-101-003 S.A.P. 235-102-002 S.A.P. 235-121-001 S.A.P. 235-156-001	STANDARD PLAN	STATE PROJ. NO.	SHEET NO. 31
			TRUNK HWY.	TOTAL SHEETS 59



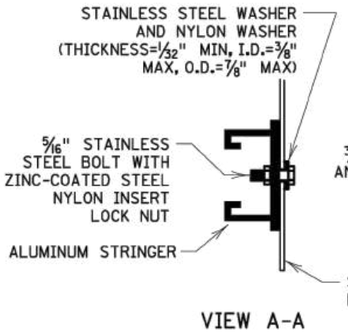
FOR SIGN PANELS UP TO 30" WIDE



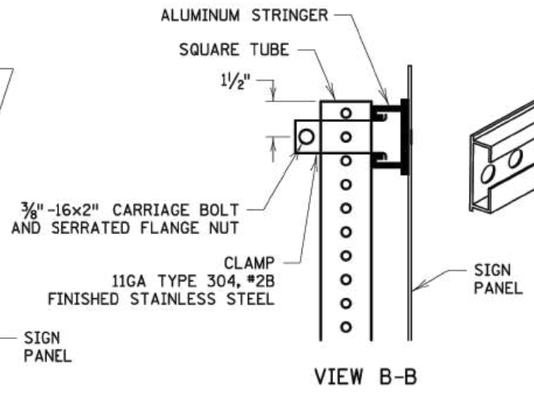
FOR SIGN PANELS 36" WIDE OR GREATER ON ONE POST



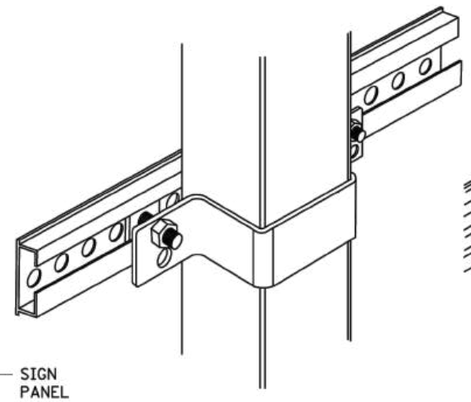
FOR SIGN PANELS ON TWO OR MORE POSTS



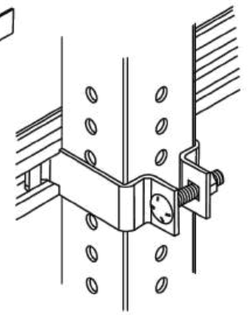
VIEW A-A



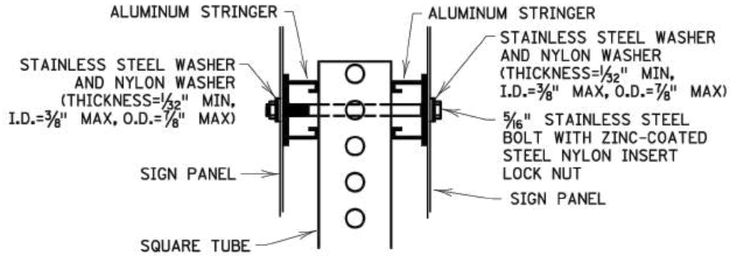
VIEW B-B



CLAMP DETAIL
4" SQUARE TUBE



CLAMP DETAIL
2" AND 2 1/2" SQUARE TUBE



BACK-TO-BACK SIGN MOUNTING WITH STRINGERS

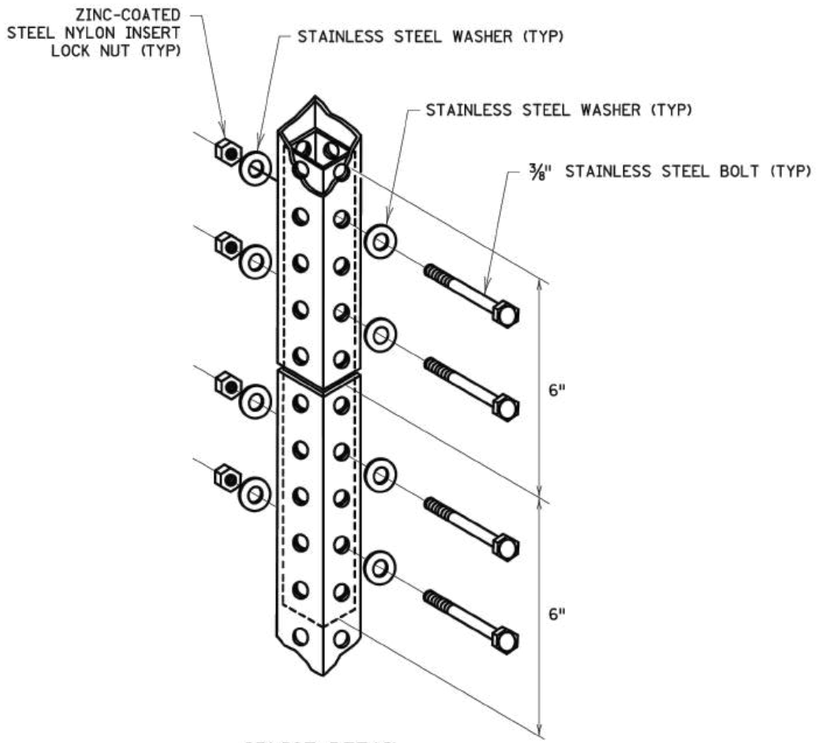
NOTES:

BOLT SIGN PANELS TO STRINGERS OR RISER POSTS AT NO GREATER THAN 24" SPACING OR ACCORDING TO THE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR MOUNTING HOLES (PUNCH CODES) INFORMATION.

CENTER STRINGERS ON SIGN PANEL.

(1) IF POST SPACING REQUIRES PLACEMENT OF A POST WITHIN THIS AREA, EXTEND STRINGERS AS NEEDED TO ACCOMMODATE THE STRINGER TO POST CLAMP.

LEAD EXPERT OFFICE: BRIAN SORENSON, STATE TRAFFIC ENGINEER, OFFICE OF TRAFFIC ENGINEERING		SQUARE-TUBE SIGN MOUNTING DETAILS	APPROVED: 08-09-2023 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.718 — 1 OF 3
DEPARTMENT OF TRANSPORTATION	S.A.P. 235-101-003, S.A.P. 235-102-002, S.A.P. 235-121-001, S.A.P. 235-156-001	STANDARD PLAN	STATE PROJ. NO.	SHEET NO. 32	
			TRUNK HWY.	TOTAL SHEETS 59	



SPLICE DETAIL

PANEL WIDTH	SQUARE TUBE POST SPACING						
	2 POSTS	3 POSTS	4 POSTS	5 POSTS	6 POSTS	7 POSTS	8 POSTS
(IN)	(IN)	(IN)	(IN)	(IN)	(IN)	(IN)	(IN)
42	15						
48	21						
54	30						
60	36						
66	36						
72	42						
78	42						
84	48						
90	48	42					
96	48	42					
102	54	42					
108	54	42					
114	60	42					
120	60	48					
126	66	48					
132	66	48	42				
138	72	48	42				
144	72	48	42				
150	78	54	42				
156	78	54	42				
162	84	54	42				
168	84	60	48				
174	90	60	48	42			
180	90	60	48	42			
186	96	66	48	42			
192	96	66	48	42			
198	102	66	54	42			
204	102	72	54	42			
210	108	72	54	42			
216	108	72	54	48	42		
222	114	78	60	48	42		
228	114	78	60	48	42		
234	120	78	60	48	42		
240	120	84	60	48	42		
246		84	66	54	42		
252		84	66	54	42		
258		90	66	54	42	42	
264		90	66	54	48	42	
270		90	72	54	48	42	
276		96	72	60	48	42	
282		96	72	60	48	42	
288		96	72	60	48	42	
294		102	78	60	54	42	
300		102	78	60	54	42	42
306		102	78	66	54	42	42
312		108	78	66	54	48	42
318		108	84	66	54	48	42
324		108	84	66	54	48	42
330		114	84	66	60	48	42
336		114	84	72	60	48	42

DISTANCES ARE CENTER-TO-CENTER OF POSTS

NOTES:

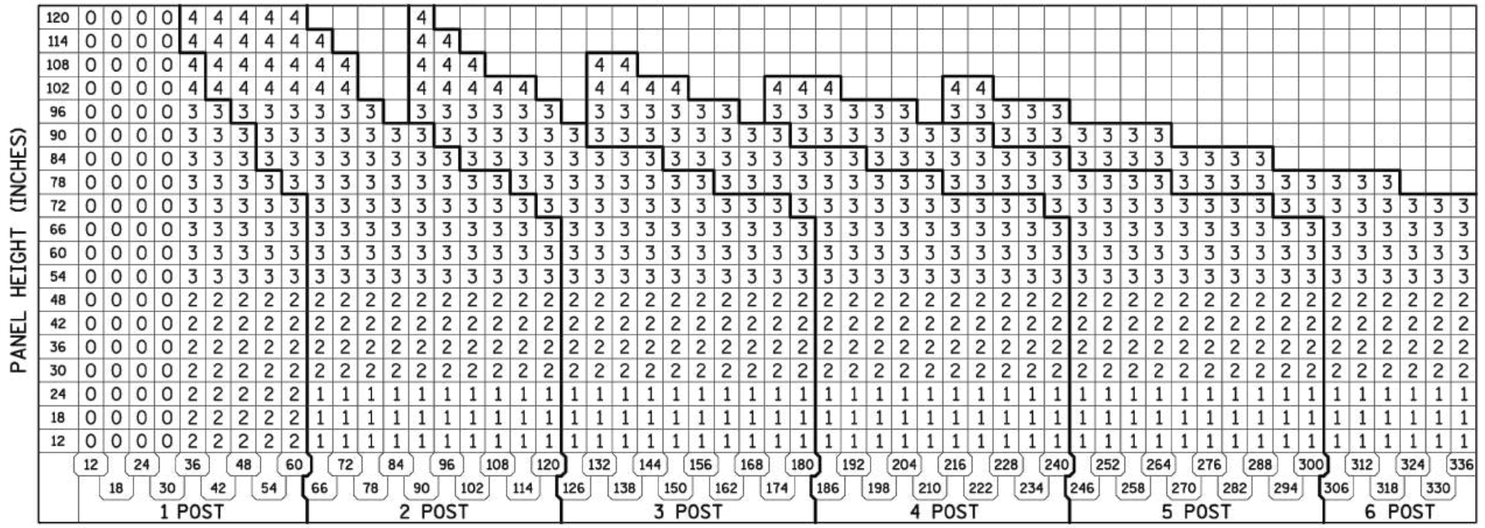
NO MORE THAN ONE SPLICE PER POST.

WHEN USED, THE SPLICE MUST BE PLACED AT LEAST 8' ABOVE GROUND. THE PREFERRED PLACEMENT LOCATION IS BEHIND THE SIGN PANEL.

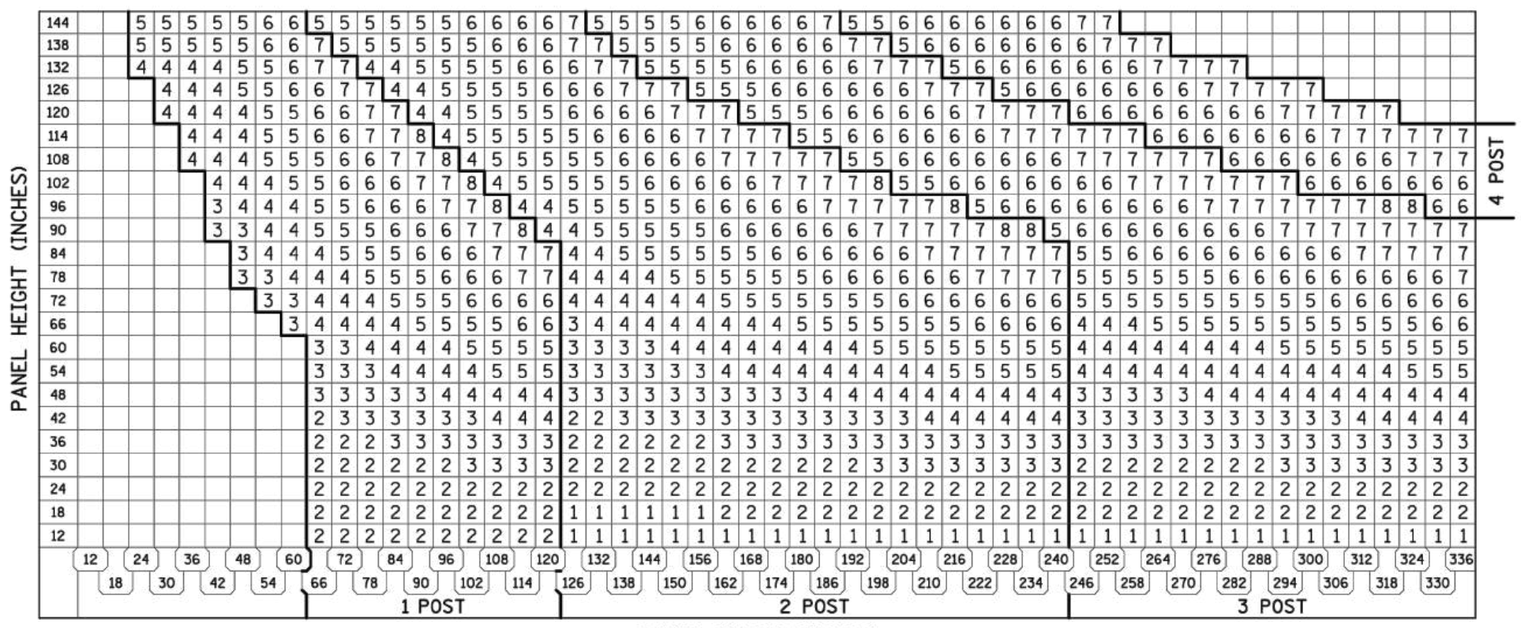
INTERIOR POST STUD SHALL BE ONE SIZE SMALLER FOR TIGHT FIT. IF RISER POST IS 2½", INTERIOR POST IS 2⅜". IF RISER POST IS 2", INTERIOR POST IS 1¾".

LEAD EXPERT OFFICE	BRIAN SORENSON STATE TRAFFIC ENGINEER OFFICE OF TRAFFIC ENGINEERING	SQUARE-TUBE SIGN MOUNTING DETAILS	APPROVED: 08-09-2023 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.718 / 2 OF 3
DEPARTMENT OF TRANSPORTATION	S.A.P. 235-101-003 S.A.P. 235-102-002 S.A.P. 235-121-001 S.A.P. 235-156-001	STANDARD PLAN	STATE PROJ. NO.	SHEET NO. 33	
			TRUNK HWY.	TOTAL SHEETS 59	

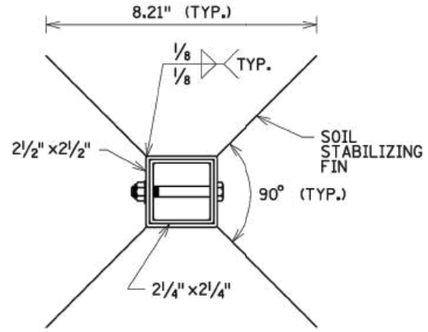
NUMBER OF ALUMINUM STRINGERS FOR 2½" OR SMALLER POSTS



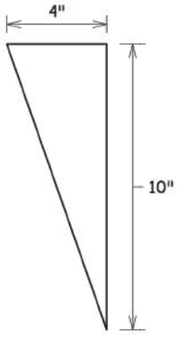
NUMBER OF STRINGERS FOR 4" POSTS



LEAD EXPERT OFFICE: BRIAN SORENSON, STATE TRAFFIC ENGINEER, OFFICE OF TRAFFIC ENGINEERING		SQUARE-TUBE SIGN MOUNTING DETAILS	APPROVED: 08-09-2023 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.718	3 OF 3
	DEPARTMENT OF TRANSPORTATION	S.A.P. 235-101-003 S.A.P. 235-102-002 S.A.P. 235-121-001 S.A.P. 235-156-001	STANDARD PLAN	STATE PROJ. NO.	SHEET NO. 34	
				TRUNK HWY.	TOTAL SHEETS 59	

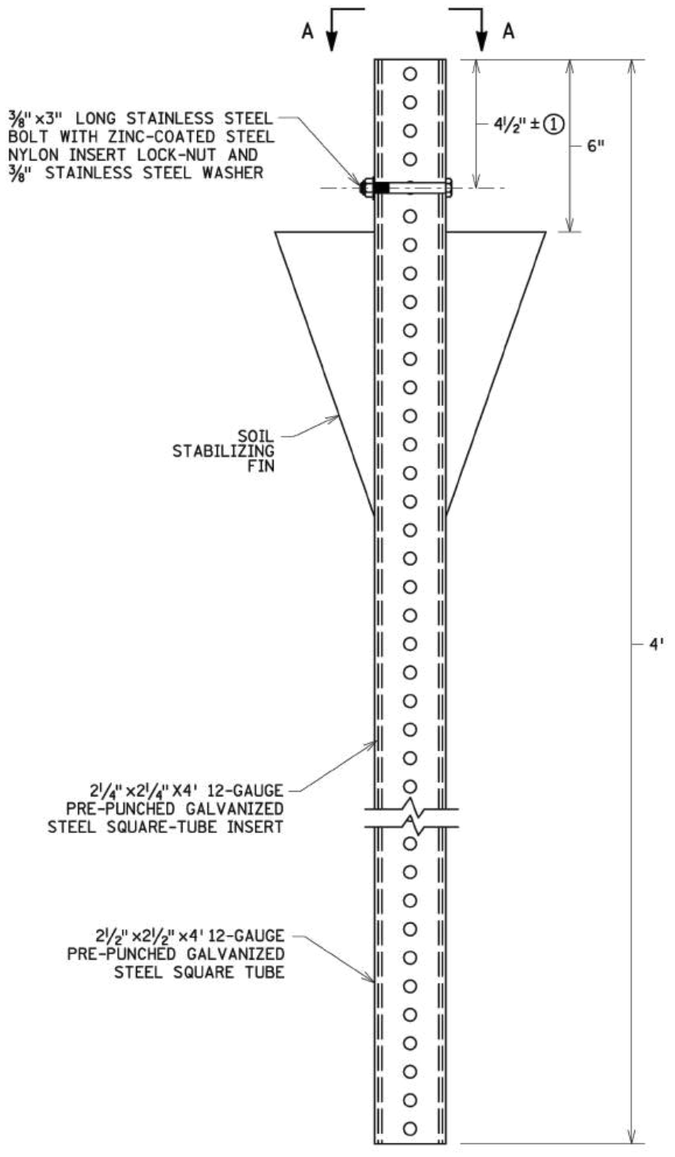


VIEW A-A

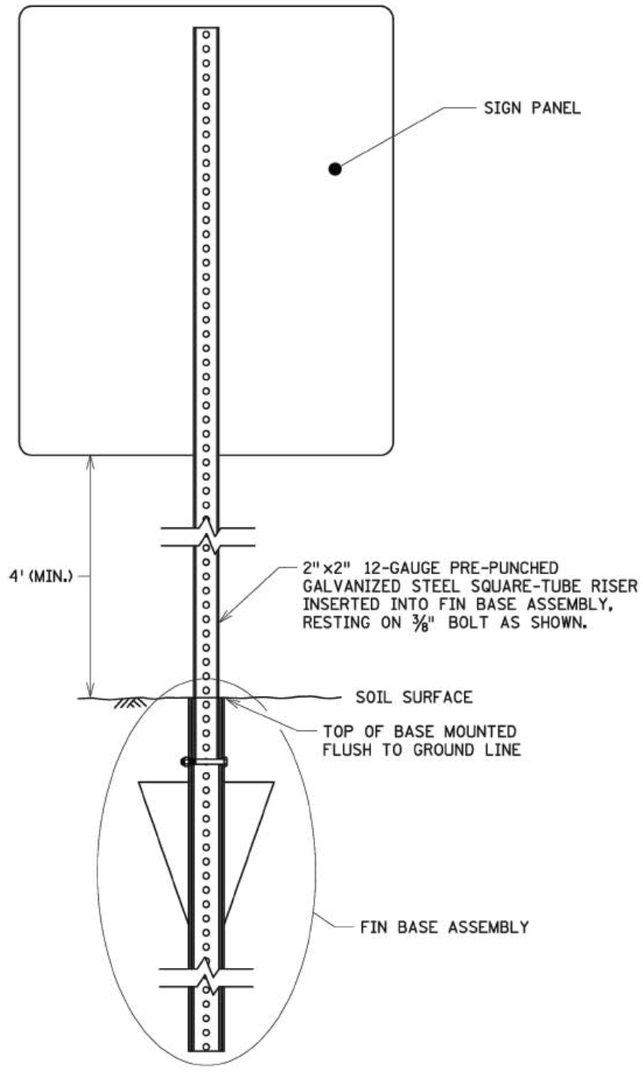


SOIL STABILIZING FIN
FOUR REQUIRED

12-GAUGE PRE-GALVANIZED ASTM A569 STEEL. WELD THE 10" EDGE OF EACH FIN TO EACH CORNER OF THE 2½" SQUARE TUBE. SEE VIEW A-A FOR WELDING DETAILS. WELDS MUST BE ZINC-COATED.



FIN BASE ASSEMBLY



FIN BASE IN SOIL

NOTES:

THE CRASH RESPONSE TYPE FOR THIS STRUCTURE IS BENDABLE.

TO MEET CRASHWORTHY REQUIREMENTS, THE DISTANCE BETWEEN THE BOTTOM OF THE SIGN PANEL AND THE GROUND SURFACE BELOW ANY PORTION OF THE SIGN PANEL MUST BE A MINIMUM OF 4'. SEE TABULATIONS FOR MOUNTING HEIGHT.

SEE STANDARD PLAN 5-297.718 FOR ADDITIONAL MOUNTING DETAILS.

SQUARE-TUBE SIGN POSTS IN ACCORDANCE WITH SPEC. 3402.

① INSERT BOLT IN 5TH HOLE DOWN.

LEAD EXPERT OFFICE: BRIAN SORENSON, STATE TRAFFIC ENGINEER, OFFICE OF TRAFFIC ENGINEERING		FIN BASE FOR 2" SQUARE-TUBE RISER POST IN SOIL	APPROVED: 08-09-2023 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.722	1 OF 1

DEPARTMENT OF TRANSPORTATION	S.A.P. 235-101-003 S.A.P. 235-102-002 S.A.P. 235-121-001 S.A.P. 235-156-001	STANDARD PLAN	STATE PROJ. NO.	SHEET NO. 35
			TRUNK HWY.	TOTAL SHEETS 59

GENERAL PAVEMENT MARKING NOTES AND INFORMATION:
THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND OBSERVATION. ENGINEER WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS. LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 1/4 INCH UNDER OR 1/4 INCH OVER THE SPECIFIED WIDTH WILL BE ALLOWED FOR STRIPING PROVIDED THE VARIATION IS GRADUAL AND DOES NOT DETRACT FROM THE GENERAL APPEARANCE. BROKEN LINE SEGMENTS MAY VARY UP TO ONE-HALF FOOT FROM THE SPECIFIED LENGTHS PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 1 INCH. MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINTS. ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.

MULTI COMPONENT (MULTI COMP):
THE ROAD SURFACE SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER JUST PRIOR TO APPLICATION. PAVEMENT CLEANING SHALL CONSIST OF AT LEAST BRUSHING WITH A ROTARY BROOM (NON-METALLIC) OR AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. NEW PORTLAND CEMENT CONCRETE SURFACES SHALL BE SANDBLAST CLEANED TO REMOVE ANY SURFACE TREATMENT AND/OR LAITANCE ON LOW SPEED (SPEED LIMIT 35 MPH OR LESS) URBAN PORTLAND CEMENT CONCRETE ROADWAYS. SANDBLAST CLEANING SHALL BE USED FOR ALL MULTI COMP PAVEMENT MARKINGS.

THE MULTI COMP MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE MULTI COMP LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

A MULTI COMP LINE SHALL BE APPLIED WITH A MINIMUM THICKNESS OF 20 MILS (WET) AND A MINIMUM WIDTH OF 4". GLASS BEADS SHALL BE APPLIED AT A MINIMUM RATE OF 25 LBS POUNDS PER GALLON. THE APPLICATION RATE SHALL BE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES FAHRENHEIT OR GREATER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

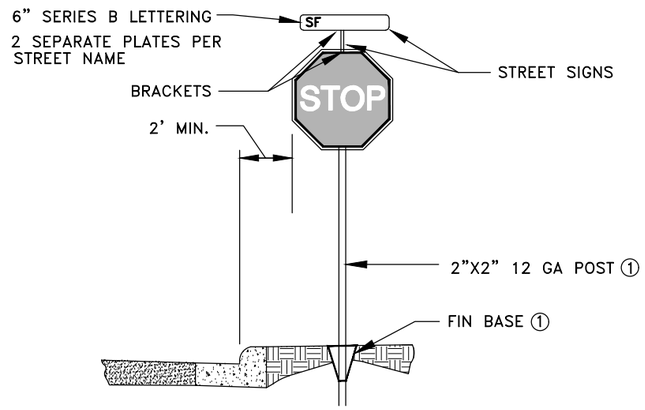
PREFORMED THERMOPLASTIC:
THE PREFORMED THERMOPLASTIC MARKINGS SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS ON CLEAN AND DRY SURFACES. SEE SPECIAL PROVISIONS FOR PREFORMED THERMOPLASTIC MARKING SPECIFICATIONS.

PAINT:
AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICAITON IN A MANNER AND TO THE EXTENT REQUIRED BY THE ENGINEER.

GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.

EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR TEMPERATURE IS 50 DEGREES FARHENHEIT OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILM OR DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

THE FILLING OF TANKS, POURING OF MATERIALS OR CLEANING OF EQUIPMENT SHALL NOT BE PERFORMED ON UNPROTECTED PAVEMENT SURFACES UNLESS ADEQUATE PROVISIONS ARE MADE TO PREVENT SPILLAGE OF MATERIAL.



NOTES:

SIGN BASE MATERIAL SHALL BE ALUMINUM. THICKNESS OF THE PLATE SHALL BE 0.08".

THE STREET NAME SIGNS SHALL BE NOTCHED AND MOUNTED IN AN E450 BRACKET AND PLACED ABOVE THE STOP SIGN.

STREET NAME SIGNS SHALL HAVE HIGH INTENSITY PRISMATIC RETROREFLECTIVE SHEETING (ASTM TYPE IV).

STOP SIGNS SHALL HAVE DIAMOND GRADE VIP RETROREFLECTIVE SHEETING (ASTM TYPE IX).

SIGNS AND INSTALLATION OF SIGNS SHALL BE IN ACCORDANCE WITH THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES"

1/36 STOP SIGN AND STREET NAME SIGN

SIGN AREA SUMMARY							TAB C	
SIGN NAME	SIGN NO.	COLOR	DIMENSIONS INCHES	AREA SQ FT	235-102-002 229TH LANE		235-156-001 WOODBINE STREET	
					QUANTITY	TOTAL	QUANTITY	TOTAL
SUMMARY OF SIGN PANELS TYPE C								
STOP	R1-1	WHITE ON RED	30 X 30	6.25	1	6	1	6
NO PARKING	R8-3	BLACK AND RED ON WHITE	24 X24	4	8	32	8	32
FIRE TRUCK	W11-8	BLACK ON WHITE	30 X 30	6.25		0	1	6
SIGN PANELS TYPE C TOTALS (SQ FT)						**38**		**44**

REFERENCE NOTES:
① SEE MNDOT STANDARD PLAN 5-297.722 FOR ADDITIONAL INFORMATION.

S.A.P. 235-101-003
S.A.P. 235-102-002
S.A.P. 235-121-001
S.A.P. 235-156-001

DATE	REVISION

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.
CRAIG J. JOCHUM, P.E.
Date 2/12/25 Lic. No. 23461

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE

Hakanson Anderson
Civil Engineers and Land Surveyors
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2025 STREET RECONSTRUCTION PROJECT

PAVEMENT MARKING NOTES, SIGN TABULATION. AND DETAILS

CITY OF ST. FRANCIS, MINNESOTA

SHEET 36 OF 59 SHEETS

SF327

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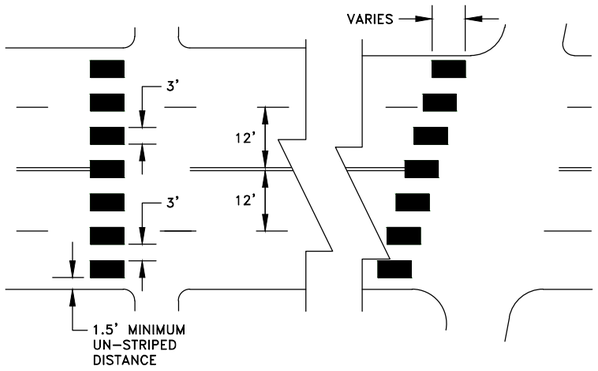
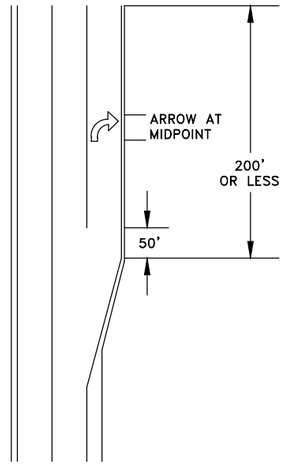
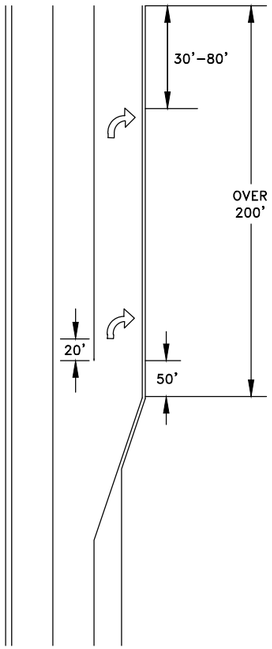


GENERAL CROSSWALK NOTES:

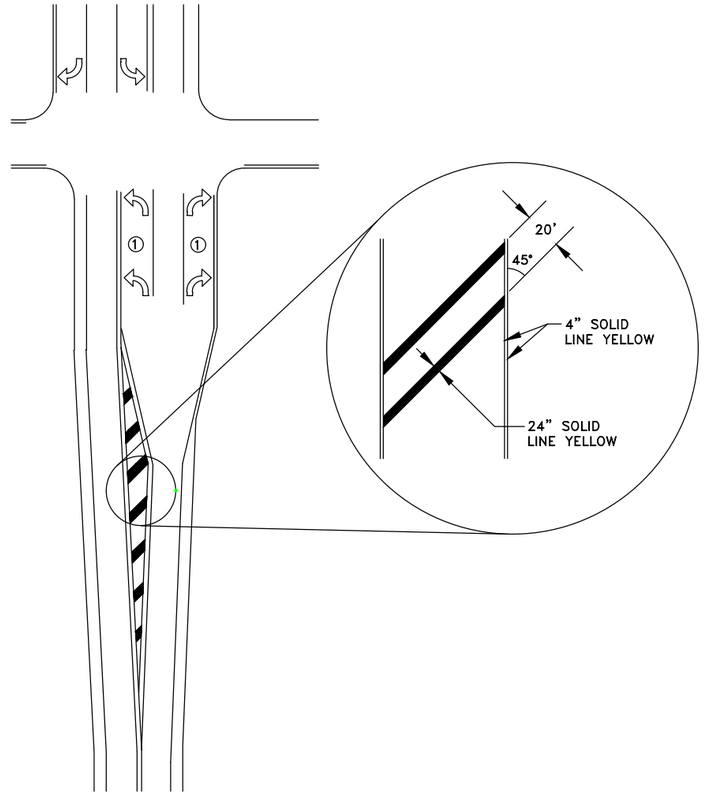
1. PAINTED AREAS TO BE CENTERED ON CENTERLINE AND LANE LINES.
2. A MINIMUM OF 1.5 FT. CLEAR DISTANCE SHALL BE LEFT ADJACENT TO THE CURB. IF LAST PAINTED AREA FALLS INTO THIS DISTANCE IT MUST BE OMITTED.
3. ON TWO LANE TWO WAY STREETS, USE SPACING SHOWN FOR AN 11 FT. INSIDE LANE.
4. FOR DIVIDED ROADWAYS, ADJUSTMENTS IN SPACING OF THE BLOCKS SHOULD BE MADE IN THE MEDIAN SO THAT THE BLOCKS ARE MAINTAINED IN THEIR PROPER LOCATION ACROSS THE TRAVELED PORTION OF THE ROADWAY.
5. AT SKEWED CROSSWALKS, THE BLOCKS ARE TO REMAIN PARALLEL TO THE LANE LINES AS SHOWN.
6. THE BLOCKS SHALL BE PLACED SO THAT THEY ARE NOT LOCATED IN THE WHEEL PATH OF THE VEHICLES

1/37 PEDESTRIAN CROSSWALK MARKINGS





2/37 TURN LANE MESSAGE PLACEMENT



3/37 LEFT TURN LANE ISLAND MARKINGS

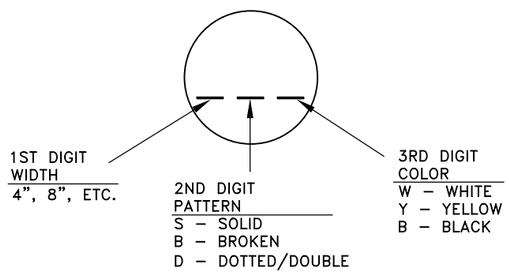
STRIPING KEY

CIRCLE–MULTI–COMPONENT

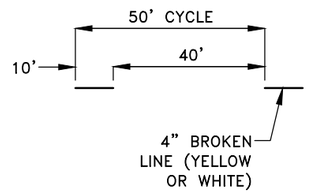
SQUARE–POLY PREFORMED THERMOPLASTIC

TRIANGLE–PAINT

PENTAGON–REMOVABLE PREFORMED PLASTIC MARKING



EXAMPLE: (4SW) = 4" SOLID LINE WHITE–MULTI–COMPONENT



4/37 BROKEN LINE DETAIL

GENERAL NOTES:

1. ARROW PAVEMENT MARKINGS SHALL BE 8 FEET.
2. ALL STRIPING SHALL BE EPOXY UNLESS OTHERWISE NOTED.
3. PAVEMENT MARKING CHARACTER AND MESSAGE AREAS ARE FROM PAGE R–3 OF THE PAVEMENT MARKING FIELD GUIDE.

REFERENCE NOTES:

① SEE (3/37) FOR NUMBER AND PLACEMENT OF ARROWS.

S.A.P. 235–101–003
S.A.P. 235–102–002
S.A.P. 235–121–001
S.A.P. 235–156–001

DATE	REVISION

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CRAIG J. JOCHUM, P.E.
Date 2/12/25 Lic. No. 23461

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE

Hakanson Anderson
Civil Engineers and Land Surveyors
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www.hakanson–anderson.com

2025 STREET RECONSTRUCTION PROJECT

PAVEMENT MARKING DETAILS AND NOTES

CITY OF ST. FRANCIS, MINNESOTA

SHEET 37 OF 59 SHEETS

SF327

Mar 12, 2025 – 5:20pm
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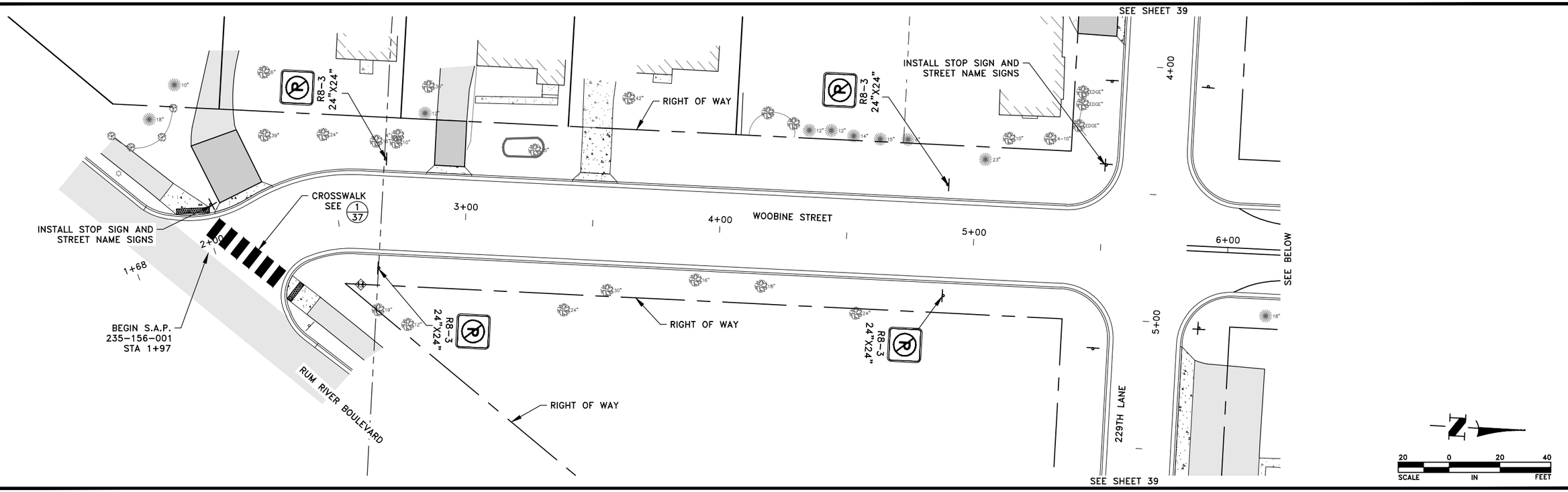

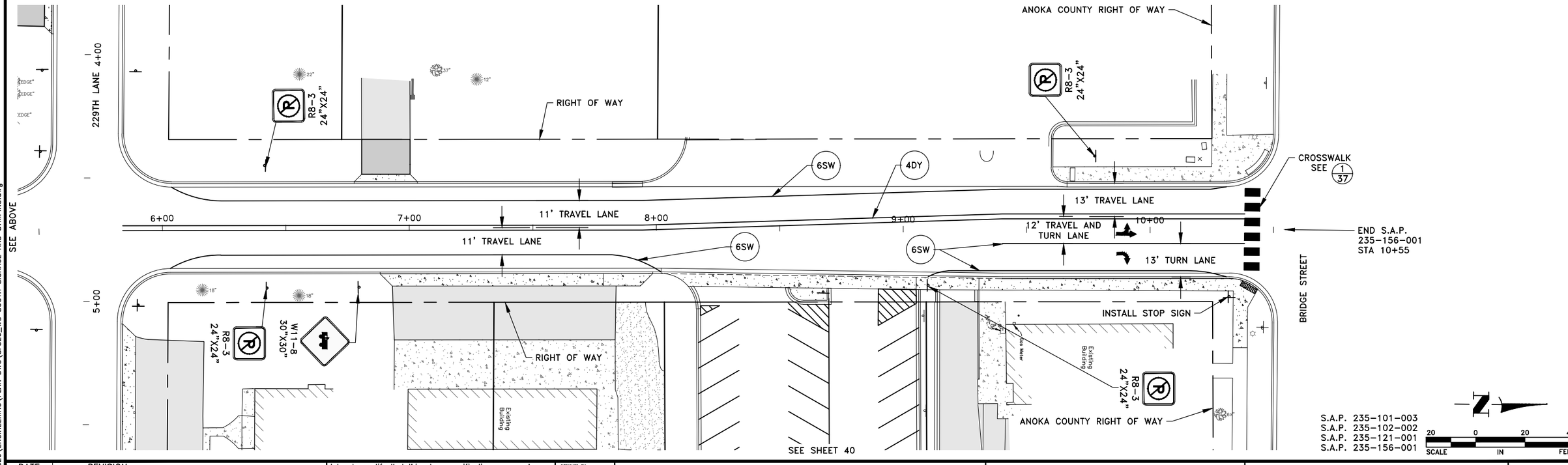

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2025 STREET RECONSTRUCTION PROJECT

SIGNAGE AND STRIPING PLANS

WOODBINE STREET
CITY OF ST. FRANCIS, MINNESOTA

SHEET 38 OF 59 SHEETS

SF327

Mar 12, 2025 - 5:21pm
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ANOKA COUNTY RIGHT OF WAY

INSTALL STOP SIGN

BEGIN S.A.P. 235-121-001 STA 0+19

0+00

AMBASSADOR BLVD

INSTALL STREET NAME SIGNS

R8-3 24"X24"

RIGHT OF WAY

1+00

2+00

3+00

4+00

229TH LANE

6+00

SEE BELOW

5+00

WOODBINE STREET

ANOKA COUNTY RIGHT OF WAY

SCALE 20 0 20 40 IN FEET

SEE SHEET 38

R1-1

STOP

R1-1 30"X30"

R8-3 24"X24"

Existing Building

RIGHT OF WAY

CROSSWALK SEE 1/37

6+00

4+00

5+00

6+00

7+00

229TH LANE

SEE ABOVE

5+00 WOODBINE STREET

7+73

END S.A.P. 235-121-001 STA 7+49

INSTALL STOP SIGN AND STREET NAME SIGNS

RUM RIVER BLVD

RIGHT OF WAY

SEE SHEET 38

S.A.P. 235-101-003
S.A.P. 235-102-002
S.A.P. 235-121-001
S.A.P. 235-156-001

SCALE 20 0 20 40 IN FEET

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2025 STREET RECONSTRUCTION PROJECT

SIGNAGE AND STRIPING PLANS

229TH LANE
CITY OF ST. FRANCIS, MINNESOTA

SHEET 39 OF 59 SHEETS

SF327

Mar 12, 2025 - 5:21pm
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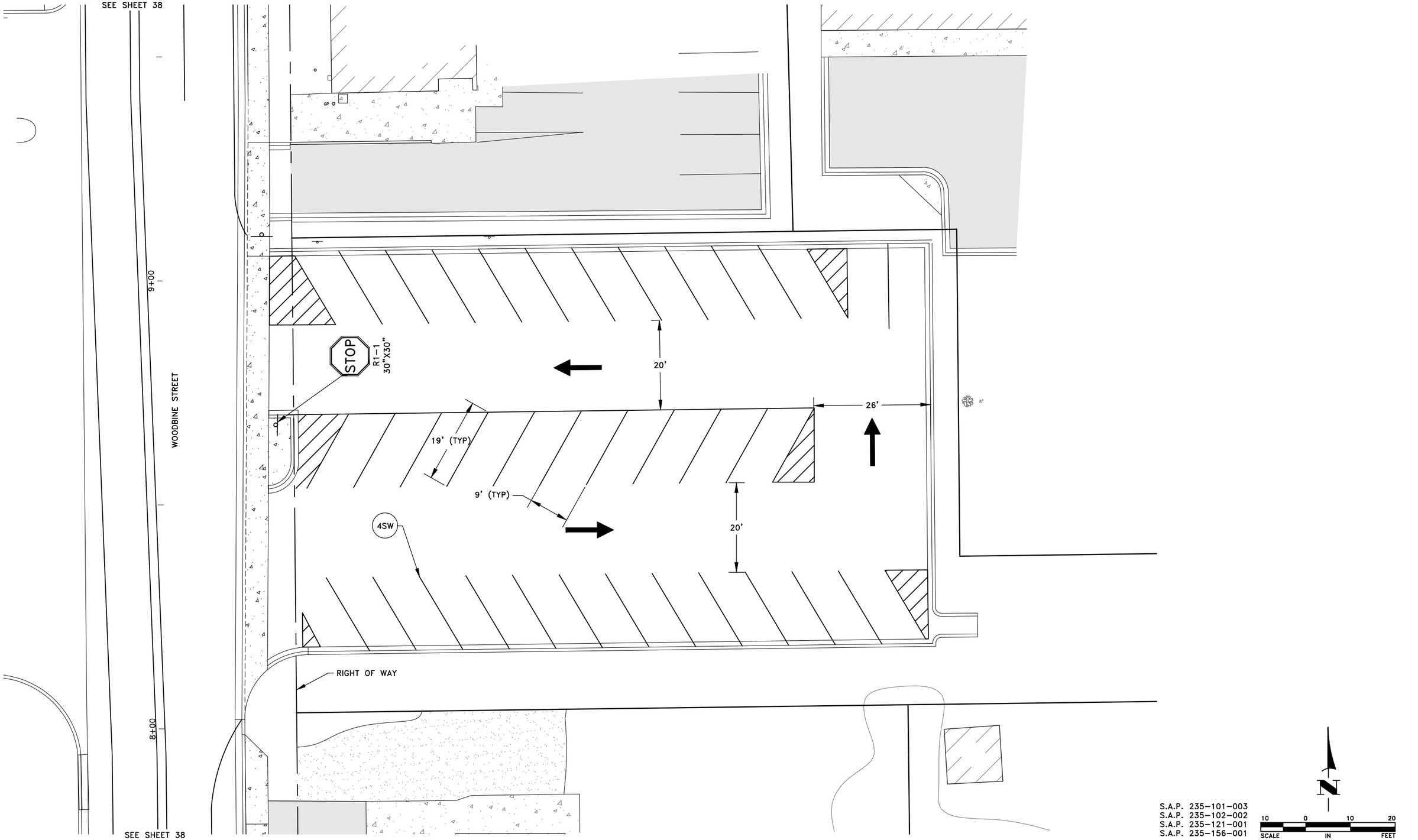

S.A.P. 235-101-003
S.A.P. 235-102-002
S.A.P. 235-121-001
S.A.P. 235-156-001

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2025 STREET RECONSTRUCTION PROJECT

SIGNAGE AND STRIPING PLANS

WOODBINE STREET PARKING LOT
CITY OF ST. FRANCIS, MINNESOTA

SHEET 40 OF 59 SHEETS

SF327

Mar 12, 2025 - 5:21pm
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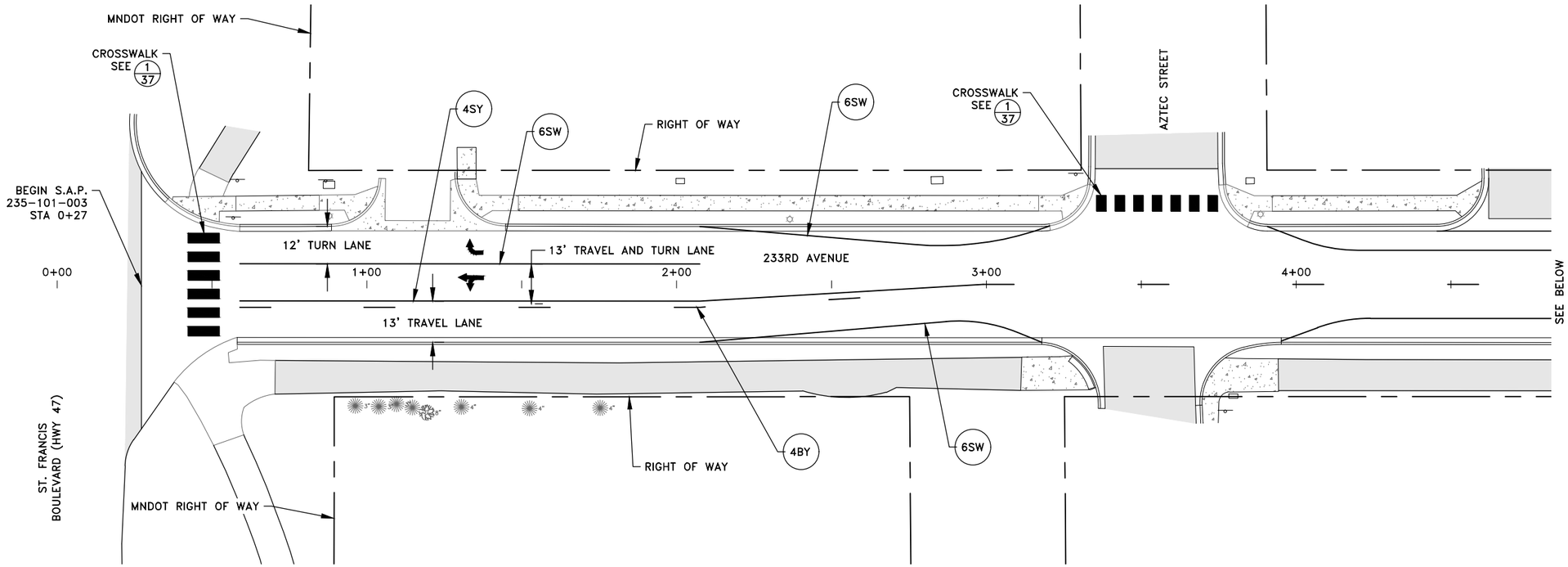

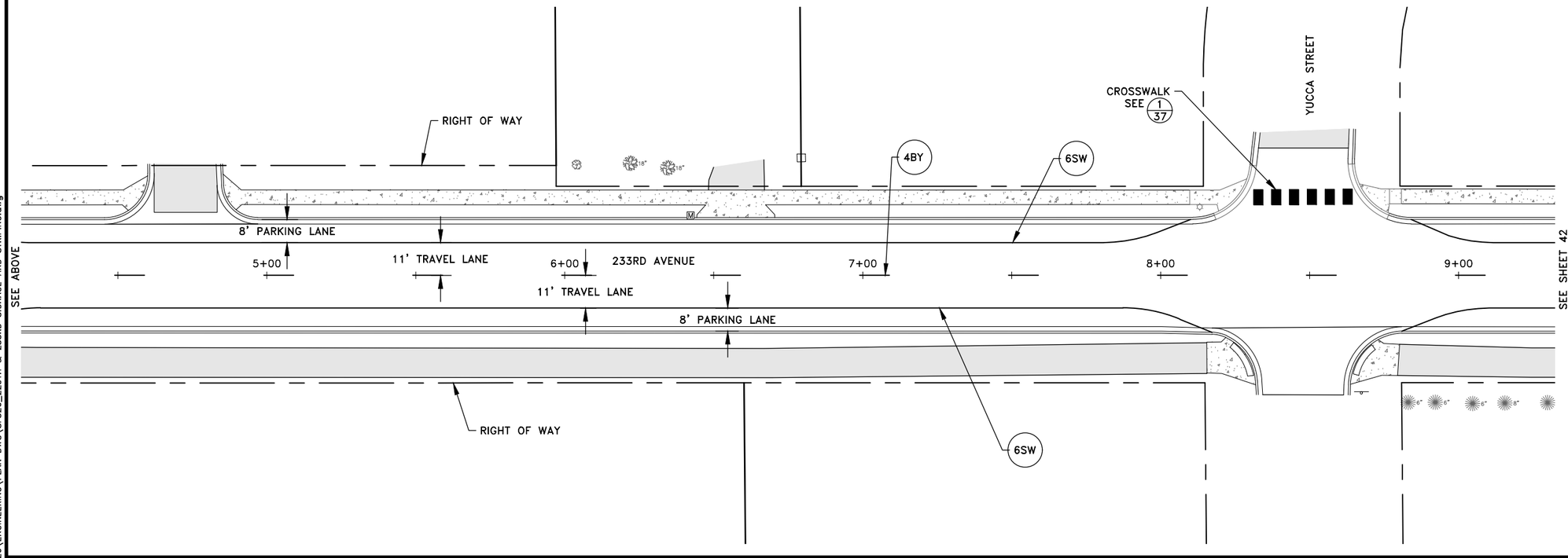

S.A.P. 235-101-003
S.A.P. 235-102-002
S.A.P. 235-121-001
S.A.P. 235-156-001

SCALE 20 0 20 40 IN FEET

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2025 STREET RECONSTRUCTION PROJECT

SIGNAGE AND STRIPING PLANS

233RD AVENUE
CITY OF ST. FRANCIS, MINNESOTA

SHEET 41 OF 59 SHEETS

SF327

Mar 12, 2025 - 5:21pm
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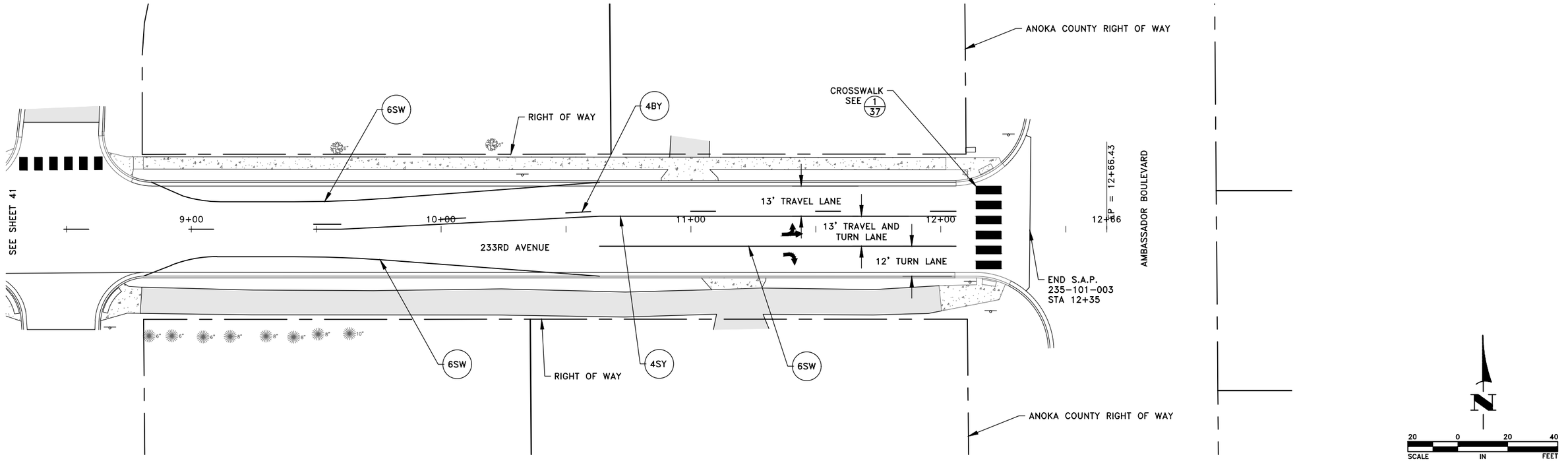

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2025 STREET RECONSTRUCTION PROJECT

SIGNAGE AND STRIPING PLANS

233RD AVENUE
CITY OF ST. FRANCIS, MINNESOTA

SHEET 42 OF 59 SHEETS

SF327

Mar 12, 2025 - 5:21pm
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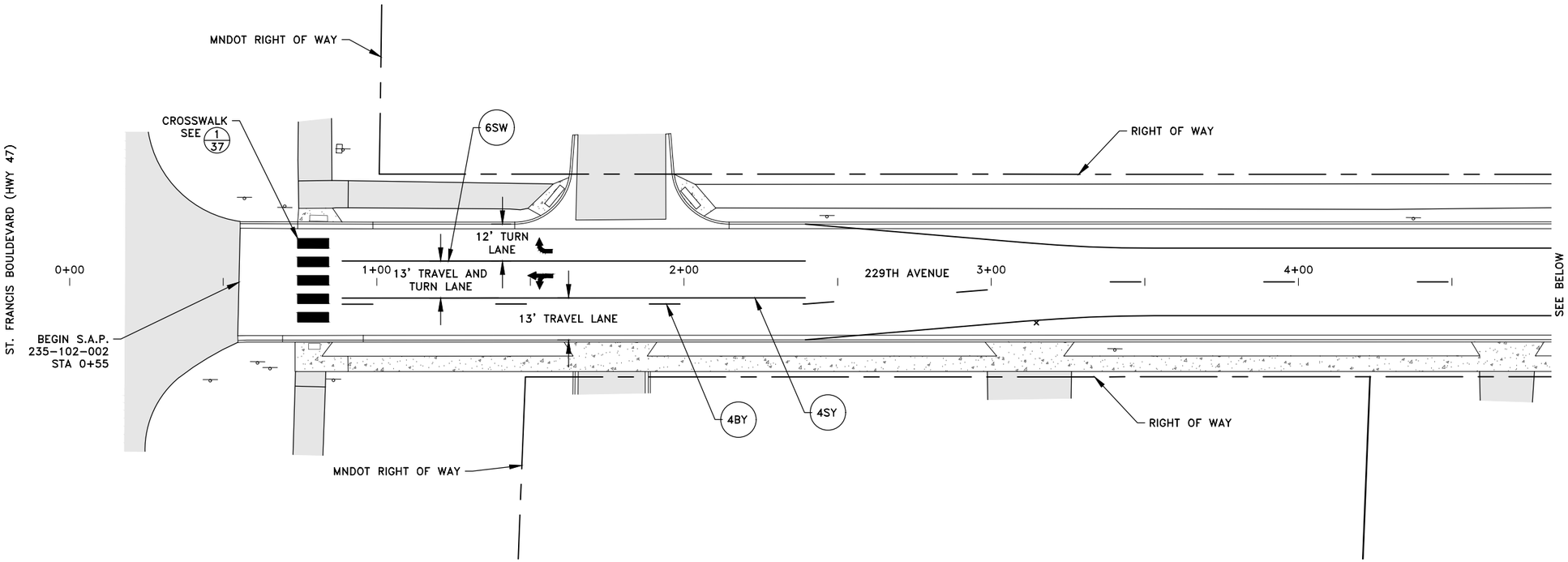

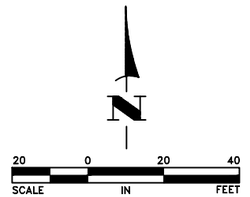

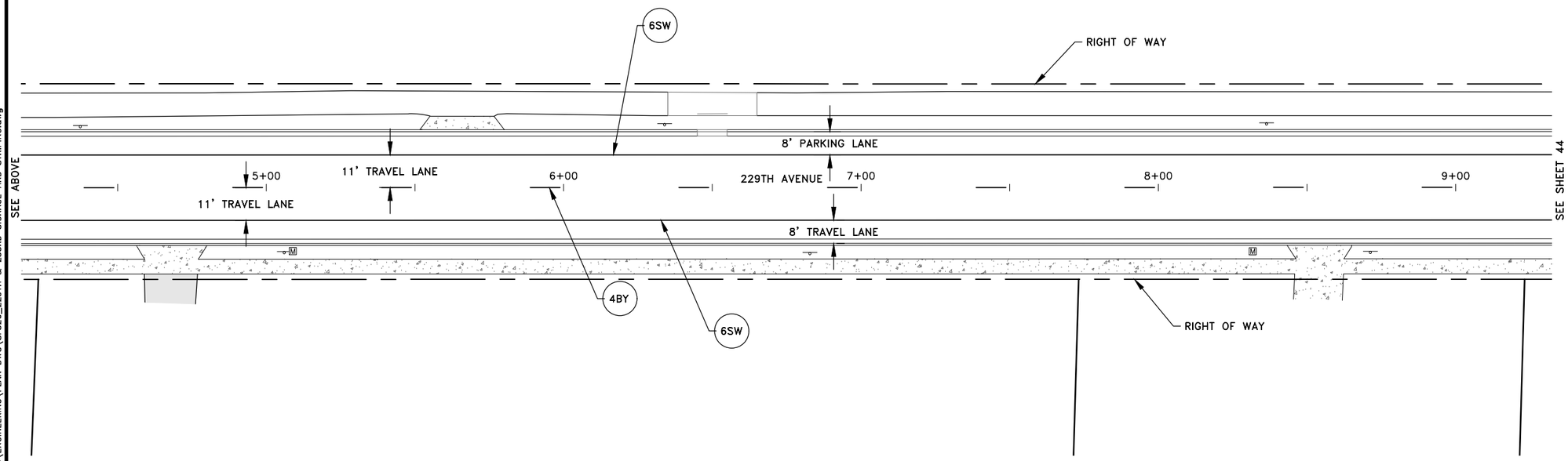

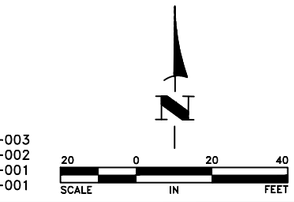

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2025 STREET RECONSTRUCTION PROJECT

SIGNAGE AND STRIPING PLANS

229TH AVENUE
CITY OF ST. FRANCIS, MINNESOTA

SHEET 43 OF 59 SHEETS

SF327

Mar 12, 2025 - 5:21pm
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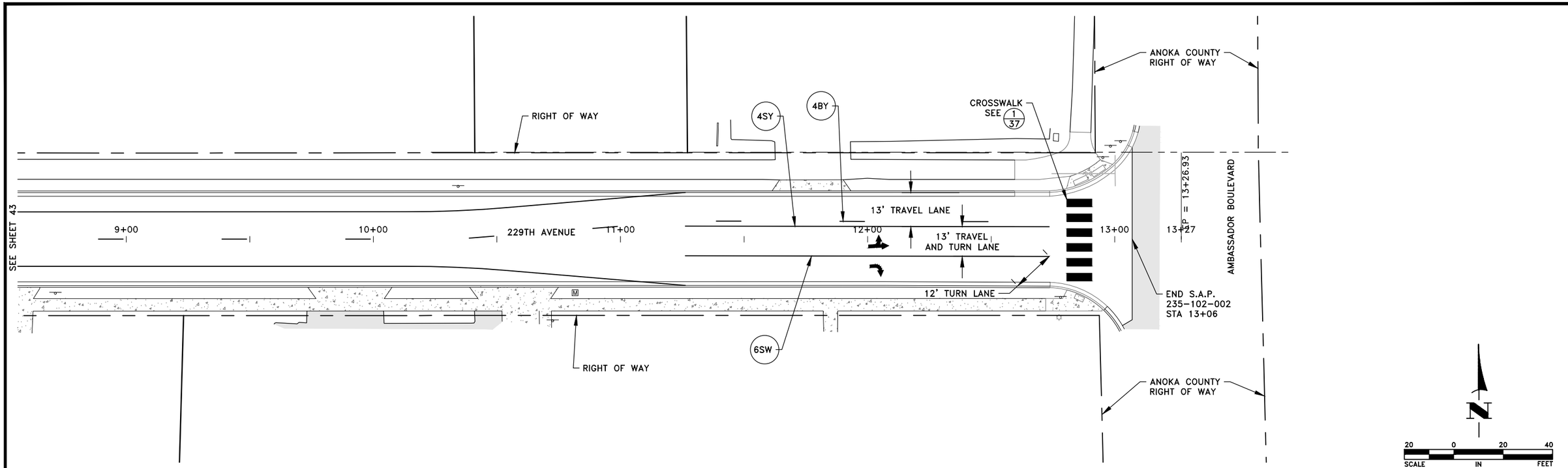

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2025 STREET RECONSTRUCTION PROJECT

SIGNAGE AND STRIPING PLANS

229TH AVENUE
CITY OF ST. FRANCIS, MINNESOTA

SHEET 44 OF 59 SHEETS

SF327

Mar 12, 2025 - 5:21pm
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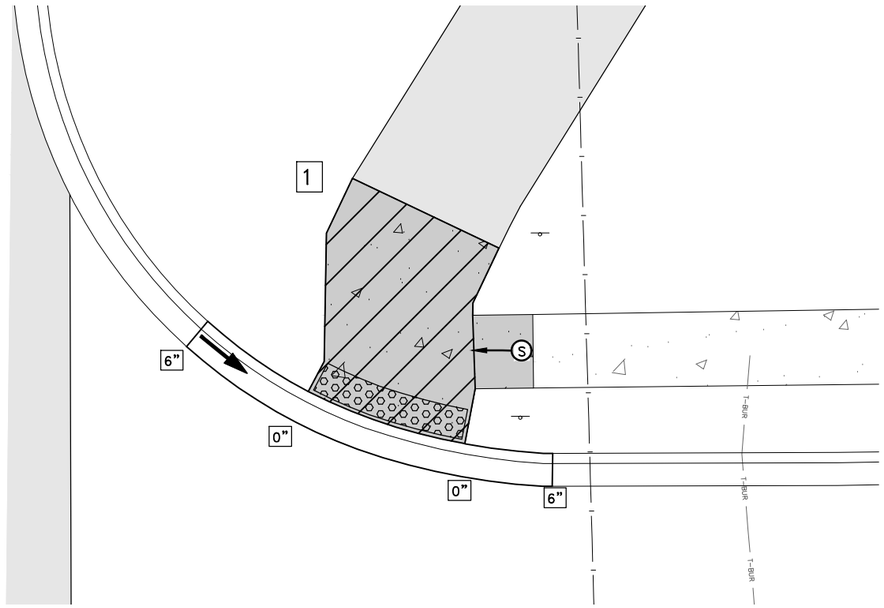


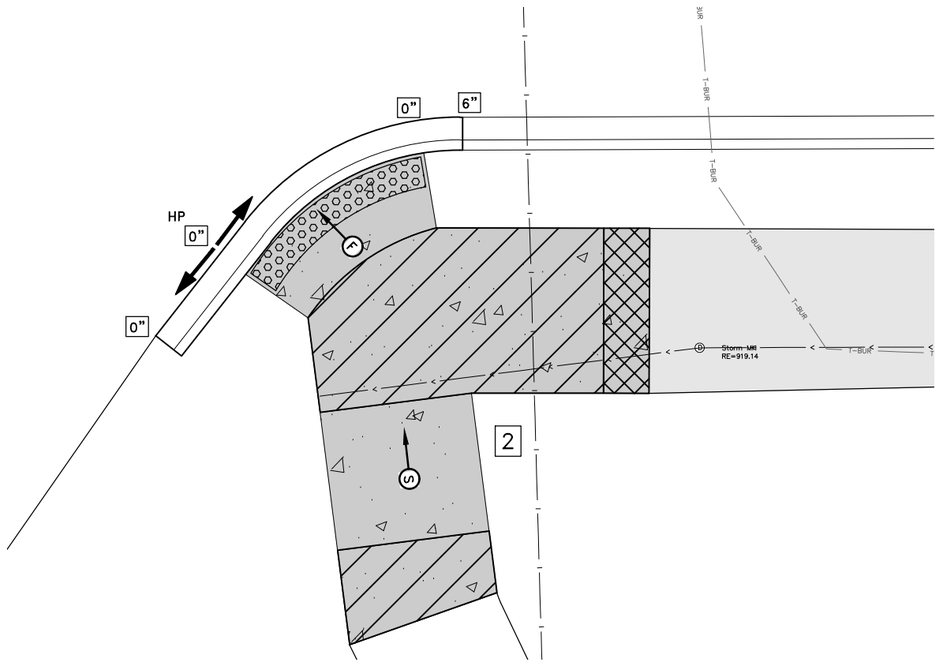
RAMP 1 – 233RD AVENUE AND TRUNK HIGHWAY 47 – NORTH

LEGEND

- LANDING AREA – 4'X4' MIN. DIMENSIONS. MAX. 2.0% CROSS SLOPE IN ALL DIRECTIONS.
- TRANSITION CROSS SLOPE TO 2.0% OR LESS.
- (S) INDICATES PEDESTRIAN RAMP – SLOPE SHALL BE BETWEEN 5.0% MIN. AND 8.3% MAX. IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
- (F) 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%.
- X" CURB HEIGHT
- HP HIGH POINT
- DRAINAGE ARROW
- 6" CONCRETE WALK

N

5 0 5 10
SCALE IN FEET



RAMP 2 – 233RD AVENUE AND TRUNK HIGHWAY 47 – SOUTH

N

5 0 5 10
SCALE IN FEET

S.A.P. 235-101-003
S.A.P. 235-102-002
S.A.P. 235-121-001
S.A.P. 235-156-001

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2025 STREET RECONSTRUCTION PROJECT

PEDESTRIAN RAMP CONSTRUCTION PLAN

CITY OF ST. FRANCIS, MINNESOTA

SHEET 45 OF 59 SHEETS

SF327

Mar. 12, 2025 – 5:21pm
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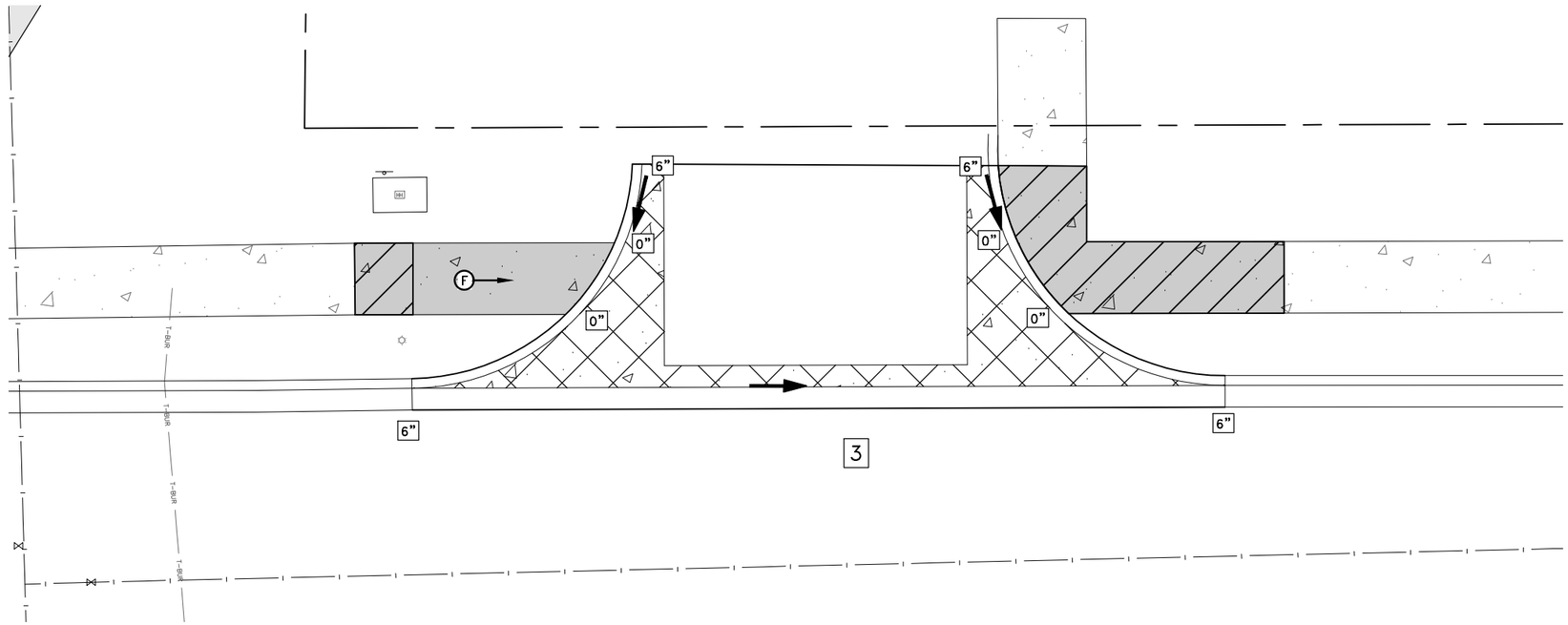

RAMP 3 – ST. FRANCIS LIQUOR STORE DRIVEWAY

LEGEND

- LANDING AREA – 4'X4' MIN. DIMENSIONS. MAX. 2.0% CROSS SLOPE IN ALL DIRECTIONS.
- TRANSITION CROSS SLOPE TO 2.0% OR LESS.
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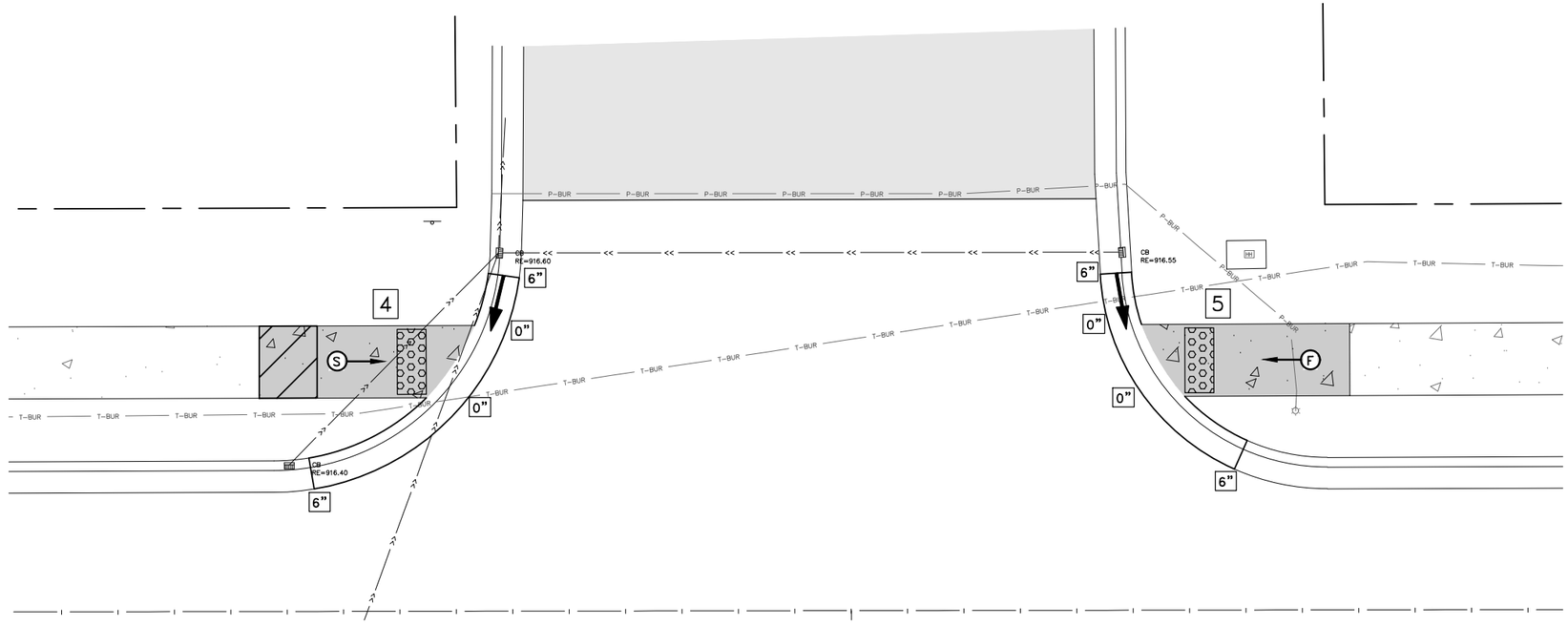
- (F) INDICATES PEDESTRIAN RAMP – SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
- X" CURB HEIGHT
- HP HIGH POINT
- DRAINAGE ARROW
- 6" CONCRETE WALK
- 8" CONCRETE DRIVEWAY PAVEMENT

N

5 0 5 10
SCALE IN FEET



RAMPS 4 AND 5 – 233RD AVENUE AND AZTEC STREET – NORTH

N

5 0 5 10
SCALE IN FEET

S.A.P. 235-101-003
S.A.P. 235-102-002
S.A.P. 235-121-001
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2025 STREET RECONSTRUCTION PROJECT

PEDESTRIAN RAMP CONSTRUCTION PLAN

CITY OF ST. FRANCIS, MINNESOTA

SHEET 46 OF 59 SHEETS

SF327

Mar. 12, 2025 – 5:21pm
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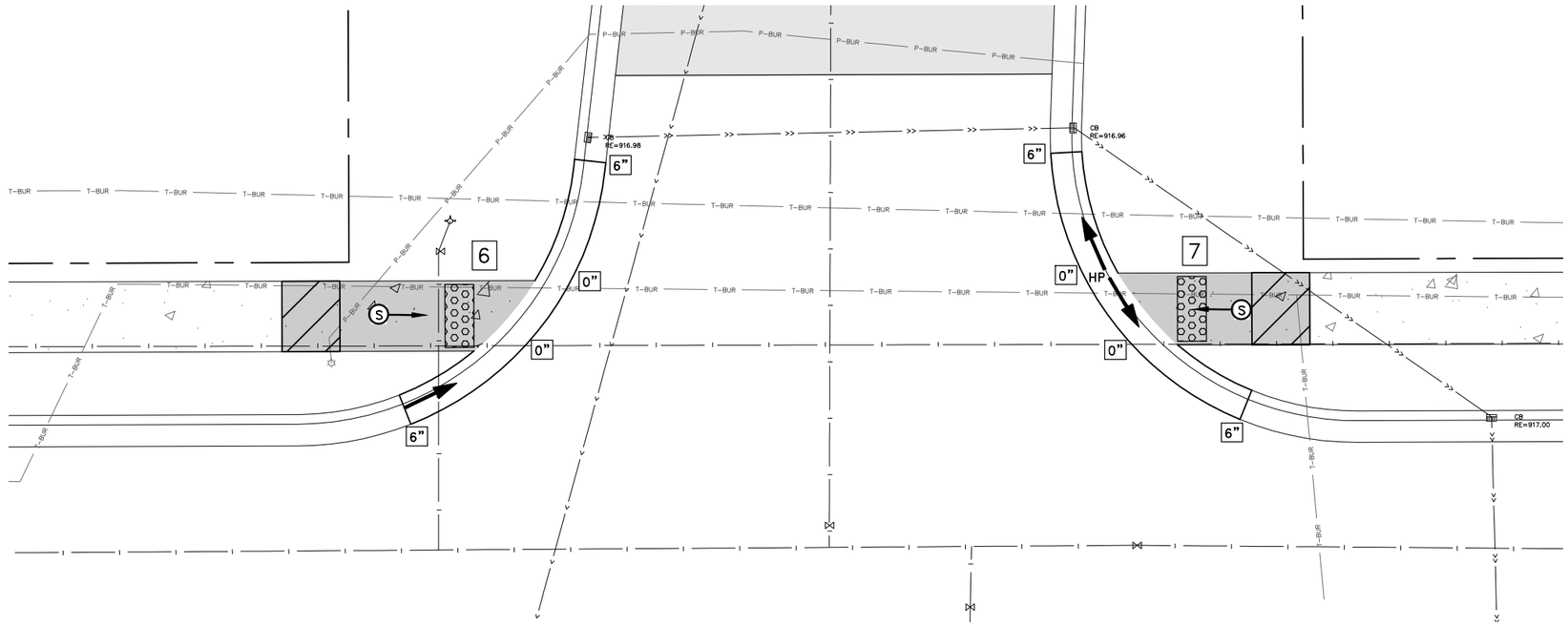

RAMPS 6 AND 7 – 233RD AVENUE AND YUCCA STREET – NORTH

LEGEND

- LANDING AREA – 4'X4' MIN. DIMENSIONS. MAX. 2.0% CROSS SLOPE IN ALL DIRECTIONS.
- TRANSITION CROSS SLOPE TO 2.0% OR LESS.
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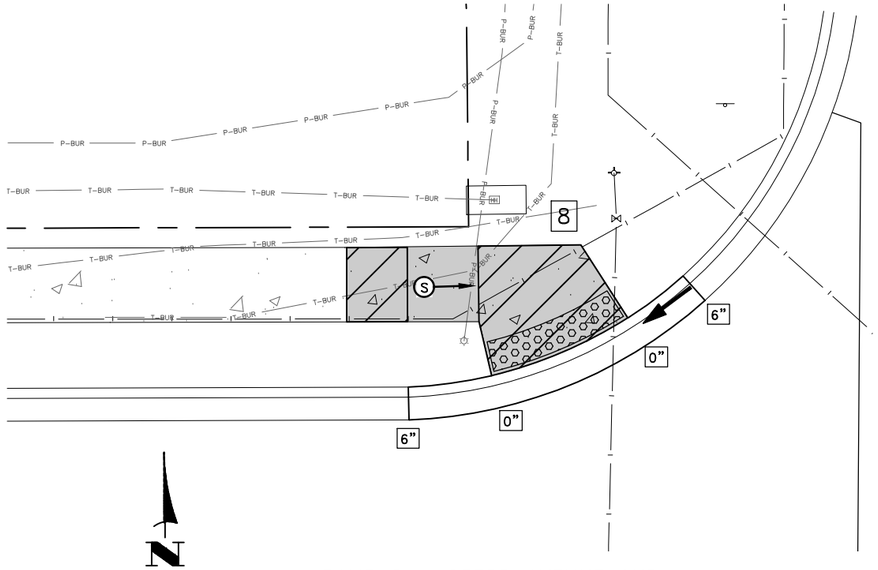
- (F) INDICATES PEDESTRIAN RAMP – SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
- X" CURB HEIGHT
- HP HIGH POINT
- DRAINAGE ARROW
- 6" CONCRETE WALK

N

5 0 5 10
SCALE IN FEET



RAMP 8 – 233RD AVENUE AND AMBASSADOR BOULEVARD – NORTH

N

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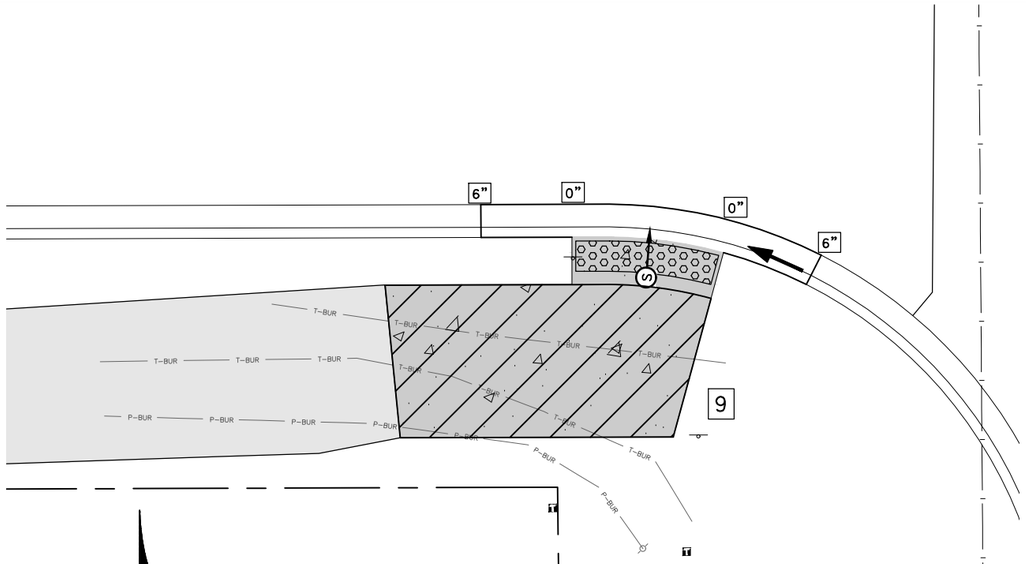
SCALE IN FEET



RAMP 9 – 233RD AVENUE AND AMBASSADOR BOULEVARD – SOUTH

S.A.P. 235-101-003
S.A.P. 235-102-002
S.A.P. 235-121-001
S.A.P. 235-156-001

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2025 STREET RECONSTRUCTION PROJECT

PEDESTRIAN RAMP CONSTRUCTION PLAN

CITY OF ST. FRANCIS, MINNESOTA

SHEET 47 OF 59 SHEETS

SF327

Mar. 12, 2025 – 5:21pm
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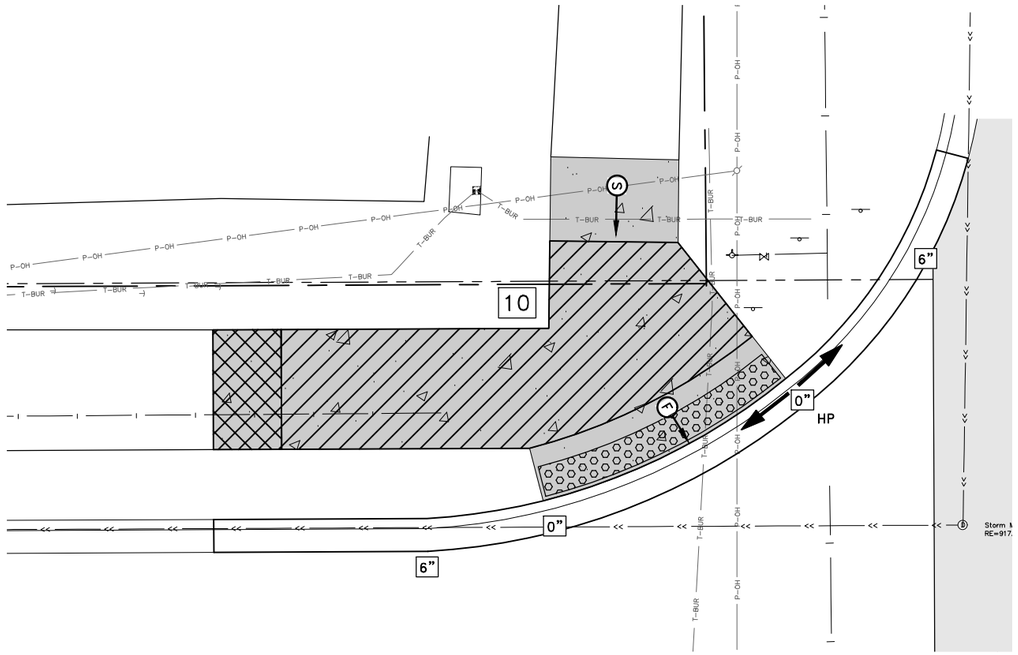

RAMP 10 – 229TH AVENUE AND AMBASSADOR BOULEVARD – NORTH

LEGEND

- LANDING AREA – 4'X4' MIN. DIMENSIONS. MAX. 2.0% CROSS SLOPE IN ALL DIRECTIONS.
- TRANSITION CROSS SLOPE TO 2.0% OR LESS.
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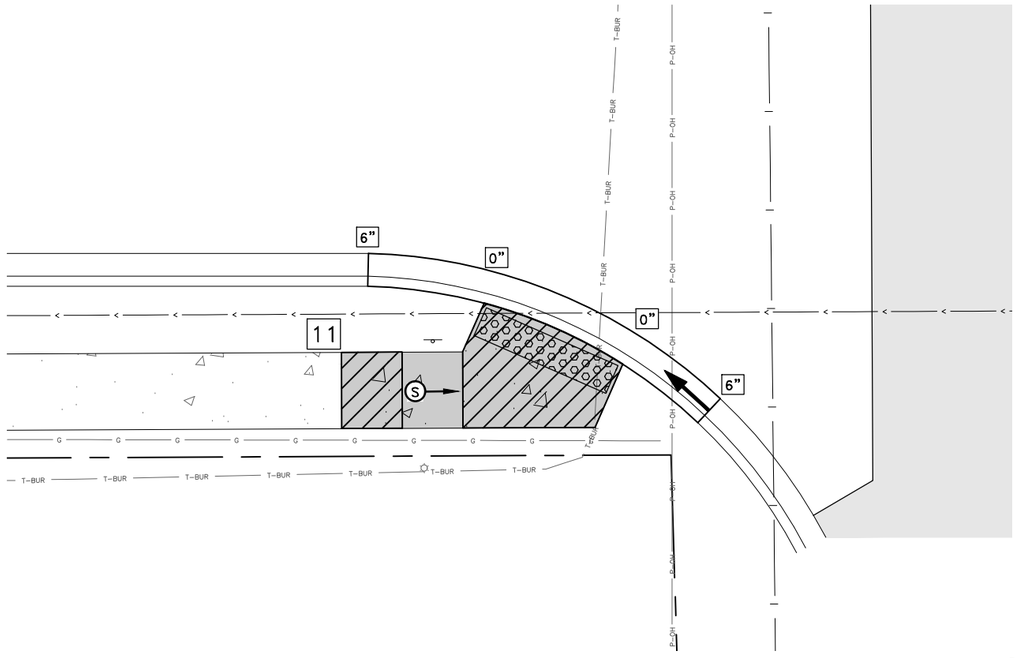
- X" CURB HEIGHT
- HP HIGH POINT
- DRAINAGE ARROW
- 6" CONCRETE WALK

N

SCALE 5 0 5 10 IN FEET



RAMP 11 – 229TH AVENUE AND AMBASSADOR BOULEVARD – SOUTH

N

SCALE 5 0 5 10 IN FEET

S.A.P. 235-101-003
S.A.P. 235-102-002
S.A.P. 235-121-001
S.A.P. 235-156-001

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Date 2/12/25 Lic. No. 23461

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE

Hakanson Anderson
Civil Engineers and Land Surveyors
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www.hakanson-anderson.com

2025 STREET RECONSTRUCTION PROJECT

PEDESTRIAN RAMP CONSTRUCTION PLAN

CITY OF ST. FRANCIS, MINNESOTA

SHEET 48 OF 59 SHEETS

SF327

Mar. 12, 2025 – 5:21pm
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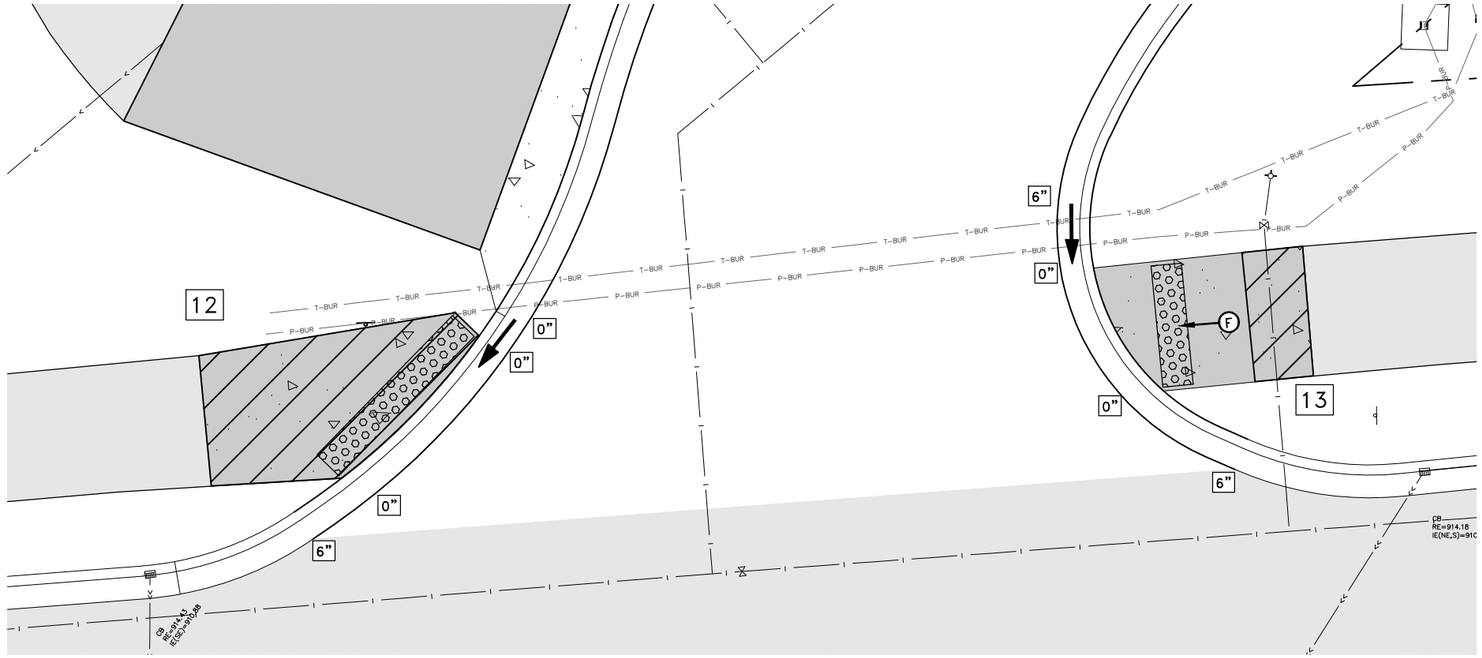
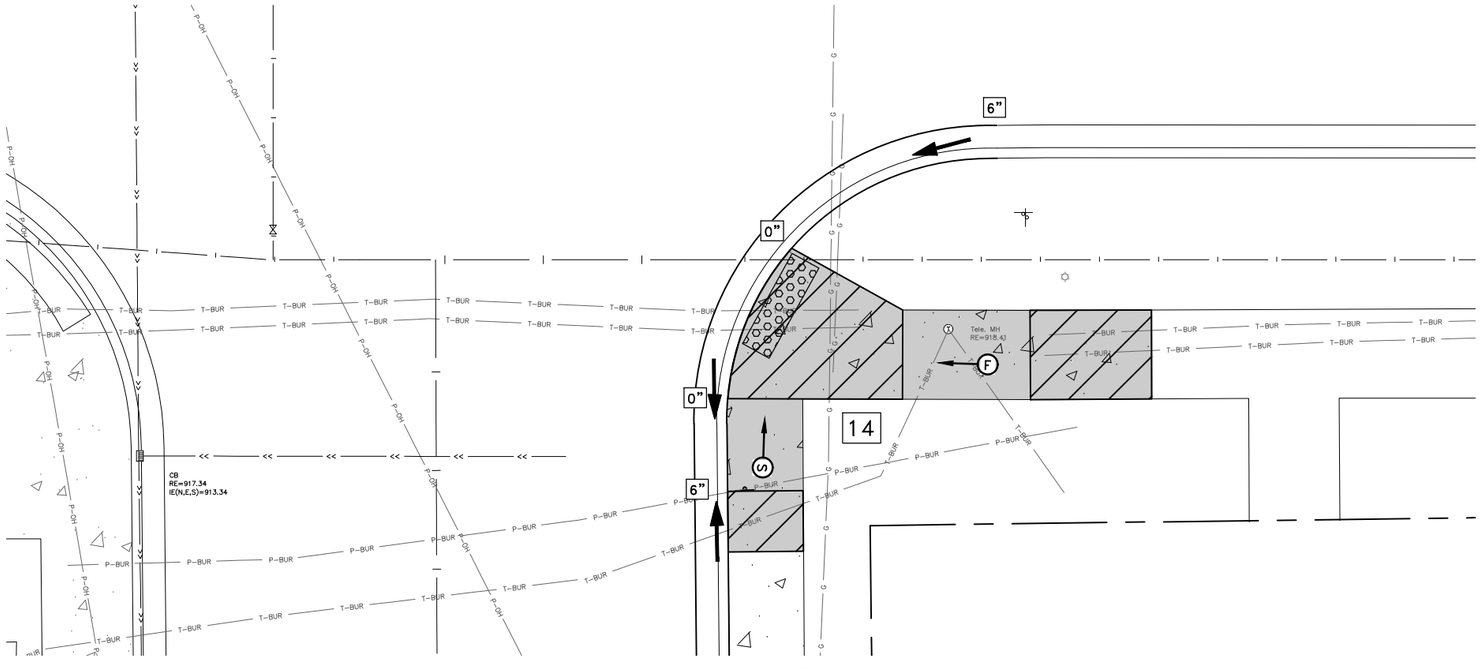


RAMPS 12 AND 13 – WOODBINE STREET AND RUM RIVER BOULEVARD

LEGEND

- LANDING AREA – 4'X4' MIN. DIMENSIONS. MAX. 2.0% CROSS SLOPE IN ALL DIRECTIONS.
- TRANSITION CROSS SLOPE TO 2.0% OR LESS.
- (S) INDICATES PEDESTRIAN RAMP – SLOPE SHALL BE BETWEEN 5.0% MIN. AND 8.3% MAX. IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
- (F) 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%.
- X" CURB HEIGHT
- HP HIGH POINT
- DRAINAGE ARROW
- 6" CONCRETE WALK

5 0 5 10
SCALE IN FEET



RAMP 14 – WOODBINE STREET AND RUM RIVER BOULEVARD

5 0 5 10
SCALE IN FEET

S.A.P. 235-101-003
S.A.P. 235-102-002
S.A.P. 235-121-001
S.A.P. 235-156-001

DATE	REVISION

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CRAIG J. JOCHUM, P.E.
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2025 STREET RECONSTRUCTION PROJECT

PEDESTRIAN RAMP CONSTRUCTION PLAN

CITY OF ST. FRANCIS, MINNESOTA

SHEET 49 OF 59 SHEETS

SF327

Mar. 12, 2025 – 5:21pm
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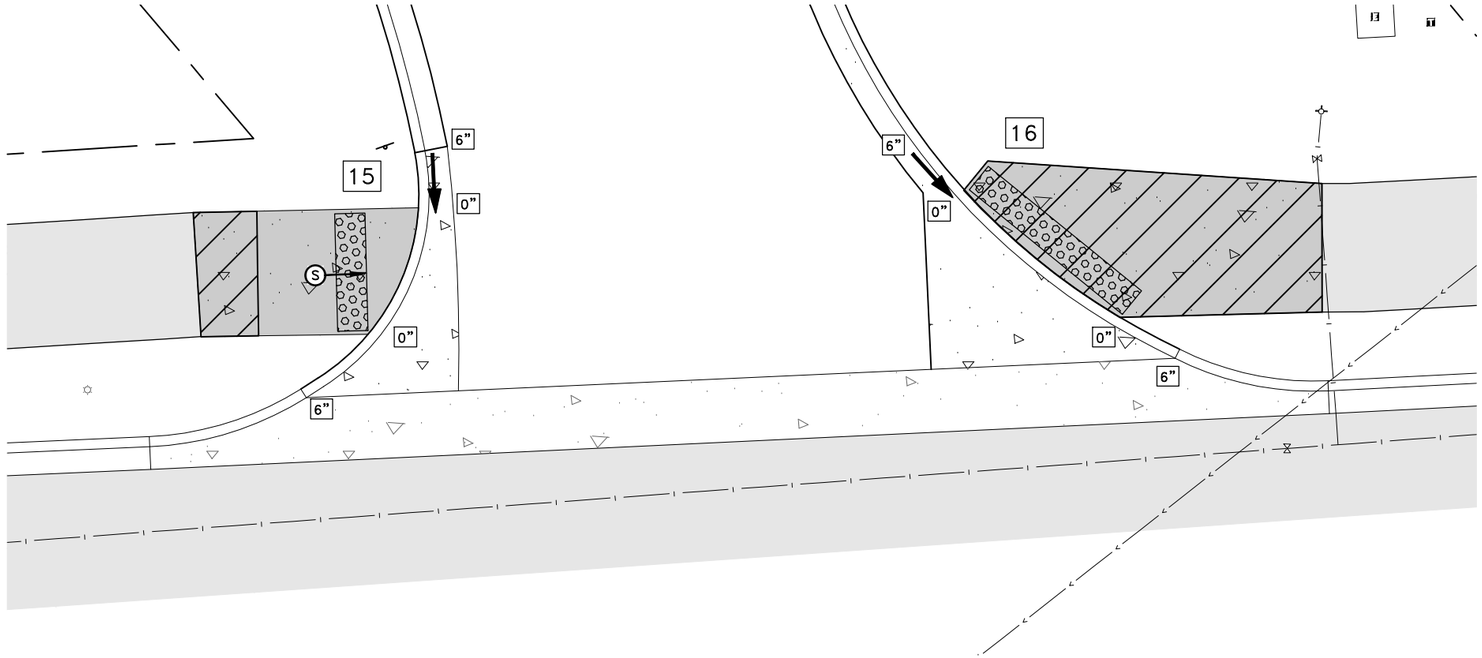

RAMPS 15 AND 16 – 229TH LANE AND RUM RIVER BOULEVARD

LEGEND

- LANDING AREA – 4'X4' MIN. DIMENSIONS. MAX. 2.0% CROSS SLOPE IN ALL DIRECTIONS.
- TRANSITION CROSS SLOPE TO 2.0% OR LESS.
- (S) INDICATES PEDESTRIAN RAMP – SLOPE SHALL BE BETWEEN 5.0% MIN. AND 8.3% MAX. IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
- (F) 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%.
- X" CURB HEIGHT
- HP HIGH POINT
- DRAINAGE ARROW
- 6" CONCRETE WALK

5 0 5 10
SCALE IN FEET

S.A.P. 235–101–003
S.A.P. 235–102–002
S.A.P. 235–121–001
S.A.P. 235–156–001

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2025 STREET RECONSTRUCTION PROJECT

PEDESTRIAN RAMP CONSTRUCTION PLAN

CITY OF ST. FRANCIS, MINNESOTA

SHEET 50 OF 59 SHEETS

SF327

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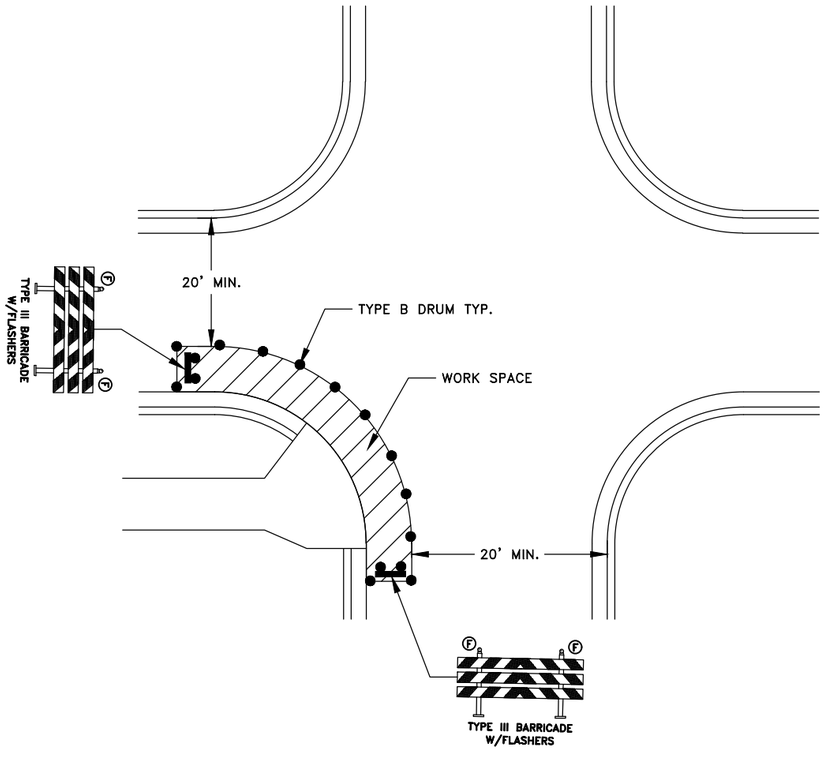
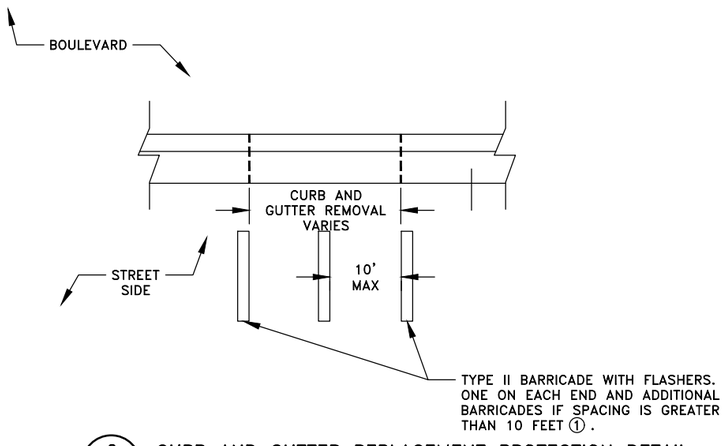


1/51 TRAFFIC CONTROL AT PEDESTRIAN RAMP AND CURB AND GUTTER CONSTRUCTION

N.T.S.



2/51 CURB AND GUTTER REPLACEMENT PROTECTION DETAIL

N.T.S.

GENERAL NOTES:

1. ALL CONTRACTOR TRAFFIC WITHIN THE CITY OF ST. FRANCIS SHALL BE LIMITED TO THE PROJECT AREA, DESIGNATED HAUL ROUTES, APPROVED CITY COLLECTOR STREETS OR COUNTY AND STATE HIGHWAYS.
2. THE PLANS INDICATE THE SALVAGE OR REMOVAL OF ALL STOP SIGNS AND STREET IDENTIFICATION SIGNS. THE CONTRACTOR SHALL MAINTAIN THESE SIGNS IN PLACE UNTIL THE PERMANENT SIGNS ARE INSTALLED. THESE SIGNS MAY REQUIRE TEMPORARY REMOVAL AND SALVAGE AND REPLACEMENT TO COMPLETE THE WORK. MAINTENANCE OF THE EXISTING SIGNS SHALL BE INCIDENTAL.
3. ALL TEMPORARY SIGNS SHALL BE REMOVED WITHIN 48 HOURS AFTER THEY ARE NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
4. ORANGE SAFETY FENCE SHALL BE CONSTRUCTED AS NEEDED AND AS DIRECTED BY THE ENGINEER. PAYMENT FOR THE FENCE SHALL BE PER ITEM 2572–TEMPORARY FENCE.
5. FULL ACCESS AT ALL DRIVEWAYS SHALL BE MAINTAINED AND REMAIN FULLY OPERATIONAL AT ALL TIMES. DRIVEWAYS WITHIN THE WORK ZONE MAY BE CLOSED FOR A SHORT PERIOD OF TIME FOR REMOVALS, UTILITY CONSTRUCTION AND PAVEMENT CONSTRUCTION. CLOSURE OF ALL DRIVEWAYS SHALL BE COORDINATED WITH THE PROPERTY OWNER AND CITY. AFTER REMOVAL OF THE PAVEMENT ADJACENT TO THE DRIVEWAYS IN THE WORK ZONE, THE CONTRACTOR SHALL IMMEDIATELY RAMP THE MATCH POINTS WITH CLASS 5 AGGREGATE BASE OR BITUMINOUS MILLINGS. ALL LABOR, MATERIAL AND WORK REQUIRED TO MAINTAIN ACCESS SHALL BE INCIDENTAL. CONTRACTOR SHALL ALSO IMMEDIATELY RAMP DRIVEWAYS AND ALLOW PROPERTY OWNERS ACCESS TO THEIR PROPERTY THROUGH THEIR DRIVEWAYS AS SOON AS THE CONCRETE HAS CURED.
6. CONTRACTOR SHALL FURNISH AND INSTALL TEMPORARY PEDESTRIAN ACCESS ROUTE DEVICES, INCLUDING BUT NOT LIMITED TO PEDESTRIAN CHANNELIZERS AND PEDESTRIAN RAILING SYSTEMS, SIDEWALK BARRICADES, TEMPORARY WALKWAY SURFACES, DETECTABLE WARNING SURFACES, AUDIBLE MESSAGE DEVICES, CURB RAMPS, CHANNELIZERS AND ALL REQUIRED SIGNAGE TO MEET ALL REQUIREMENTS OF THE NOVEMBER 2005 VERSION OF THE PUBLIC RIGHT–OF–WAY ACCESSIBILITY GUIDELINES, THE LATEST VERSION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL–PART 6 AND THE AMERICANS WITH DISABILITIES ACT. THE CONTRACTOR SHALL PROVIDE TEMPORARY PEDESTRIAN ACCESS ROUTE LAYOUTS AND DETOURS FOR ANY PROPOSED SIDEWALK OR TRAIL CLOSURES. ALL LABOR, MATERIAL ND EQUIPMENT REQUIRED TO MAINTAIN PEDESTRIAN ACCESS ROUTES SHALL BE INCIDENTAL TO ITEM 2563–ALTERNATE PEDESTRIAN ROUTE.
7. CONTRACTOR SHALL MAINTAIN A HANDICAP ACCESSIBLE PEDESTRIAN ROUTE AT ALL TIMES UNLESS AN APPROVED DETOUR IS CONSTRUCTED. ROUTE SHALL MEET ALL REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT. CONTRACTOR SHALL SUBMIT A DETAILED PLAN TO THE ENGINEER FOR APPROVAL SHOWING HOW THE ROUTE WILL BE MAINTAINED THROUGHOUT CONSTRUCTION. THIS WORK SHALL BE PAID PER ITEM 2563–ALTERNATE PEDESTRIAN ROUTE.
8. REFER TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD) FOR SPACING OF TRAFFIC CONTROL SIGNS AND DEVICES.
9. IN AREAS THAT ARE NOT IN A CONTROLLED WORK SPACE, ALL DROP OFFS GREATER THAN 2" (CURB REMOVAL) SHALL BE MARKED WITH TYPE 2 BARRICADES WITH FLASHERS AT BOTH ENDS AND EVERY 10 L.F. SEE DETAIL 2 ON SHEET 51.
10. THE TRAFFIC CONTROL DEPICTED ON SHEETS 52–58 ARE CONSIDERED THE MINIMUM TRAFFIC CONTROL REQUIRED TO COMPLETE THE CONSTRUCTION IN THE REQUIRED PHASES. THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIAL AND EQUIPMENT REQUIRED TO PROVIDE A SAFE WORK SPACE AT ALL TIMES. THE TRAFFIC CONTROL PHASES SHOWN DO NOT DEPICT TRAFFIC CONTROL THAT IS REQUIRED FOR CONSTRUCTION OF THE BITUMINOUS PAVEMENT AND STRIPING. THE CONTRACTOR SHALL PROVIDE LAYOUTS FOR APPROVAL BY THE ENGINEER FOR THESE WORK ITEMS. UNLESS NOTED ON THE TRAFFIC CONTROL PLANS AND PROVIDED FOR ON THE BID FORM ALL TRAFFIC CONTROL REQUIRED TO COMPLETE THIS PROJECT SHALL BE INCIDENTAL TO ITEM 2563–TRAFFIC CONTROL.
11. ALL NON–STANDARD TRAFFIC CONTROL SIGNS ON SHEETS 52–58 SHALL HAVE 8" SERIES C LETTERING.
12. ALL TEMPORARY TRAFFIC CONTROL SIGNS, UNLESS OTHERWISE NOTED, SHALL BE CONSTRUCTED ON TWO PERMANENT POSTS. POSTS SHALL BE REMOVED UPON COMPLETION OF THE PROJECT, OR UNTIL NO LONGER NEEDED, AND ALL DISTURBED AREAS SHALL BE RESTORED.
13. CONTRACTOR SHALL PROVIDE A 1:10 TAPER AND "BUMP" SIGNS (W8–1a) AT ALL MATCH POINTS TO THE EXISTING PAVEMENT UNTIL THE FINAL WEAR COURSE OF BITUMINOUS IS COMPLETED. TAPERS SHALL BE REMOVED JUST PRIOR TO PAVING. THIS MILLING WORK SHALL BE INCIDENTAL.
14. ALL SIGNS MOUNTED INTO THE GROUND ON STATE RIGHT OF WAY (HWY 47) SHALL FOLLOW MASH–16 REQUIREMENTS. SIGN MOUNTS SHALL USE SQUARE TUBE POSTS AND FOLLOW THE PERMANENT SIGNING DETAILS SHOWN ON SHEETS 31–35.
15. CONTRACTOR SHALL REMOVE OR BLACKOUT EXISTING STRIPING AND PAVEMENT MESSAGES THAT CONFLICT WITH THE PHASE 1 TRAFFIC CONTROL. THIS WORK SHALL BE INCIDENTAL.
16. CONTRACTOR SHALL REMOVE OR BLACKOUT EXISTING PERMANENT STRIPING AND PAVEMENT MESSAGES AND NEW TEMPORARY PAVEMENT MESSAGES AND STRIPING THAT CONFLICT WITH EACH SUBSEQUENT TRAFFIC CONTROL PHASE. THIS WORK SHALL BE INCIDENTAL.
17. THE BITUMINOUS BASE COURSE AND THE WEAR COURSE SHALL BE PLACED OVER THE FULL WIDTH OF THE SECTION ON EACH DAYS RUN. SEE NOTE 10 ABOVE. THE CONTRACTOR SHALL PROVIDE ACCESS TO ALL PROPERTIES AND THRU TRAFFIC AT ALL TIMES UNLESS OTHERWISE NOTED ON THE PLANS.
18. SHEETS 55–58 SHOW TEMPORARY CLOSURE OF THE INTERSECTIONS THAT ACCESS THE PROJECT AREA. ONLY ONE OF THESE ACCESSES CAN BE CLOSED AT A TIME.
19. SEE SHEET 4 FOR GENERAL CONSTRUCTION NOTES.

REFERENCE NOTES:

(1) BARRICADE INCIDENTAL TO ITEM–2563 TRAFFIC CONTROL.

S.A.P. 235–101–003
S.A.P. 235–102–002
S.A.P. 235–121–001
S.A.P. 235–156–001

DATE	REVISION

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CRAIG J. JOCHUM, P.E.
Date 2/12/25 Lic. No. 23461

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE

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2025 STREET RECONSTRUCTION PROJECT

TRAFFIC CONTROL NOTES AND DETAILS

CITY OF ST. FRANCIS, MINNESOTA

SHEET 51 OF 59 SHEETS

SF327

Mar 12, 2025 – 5:21pm
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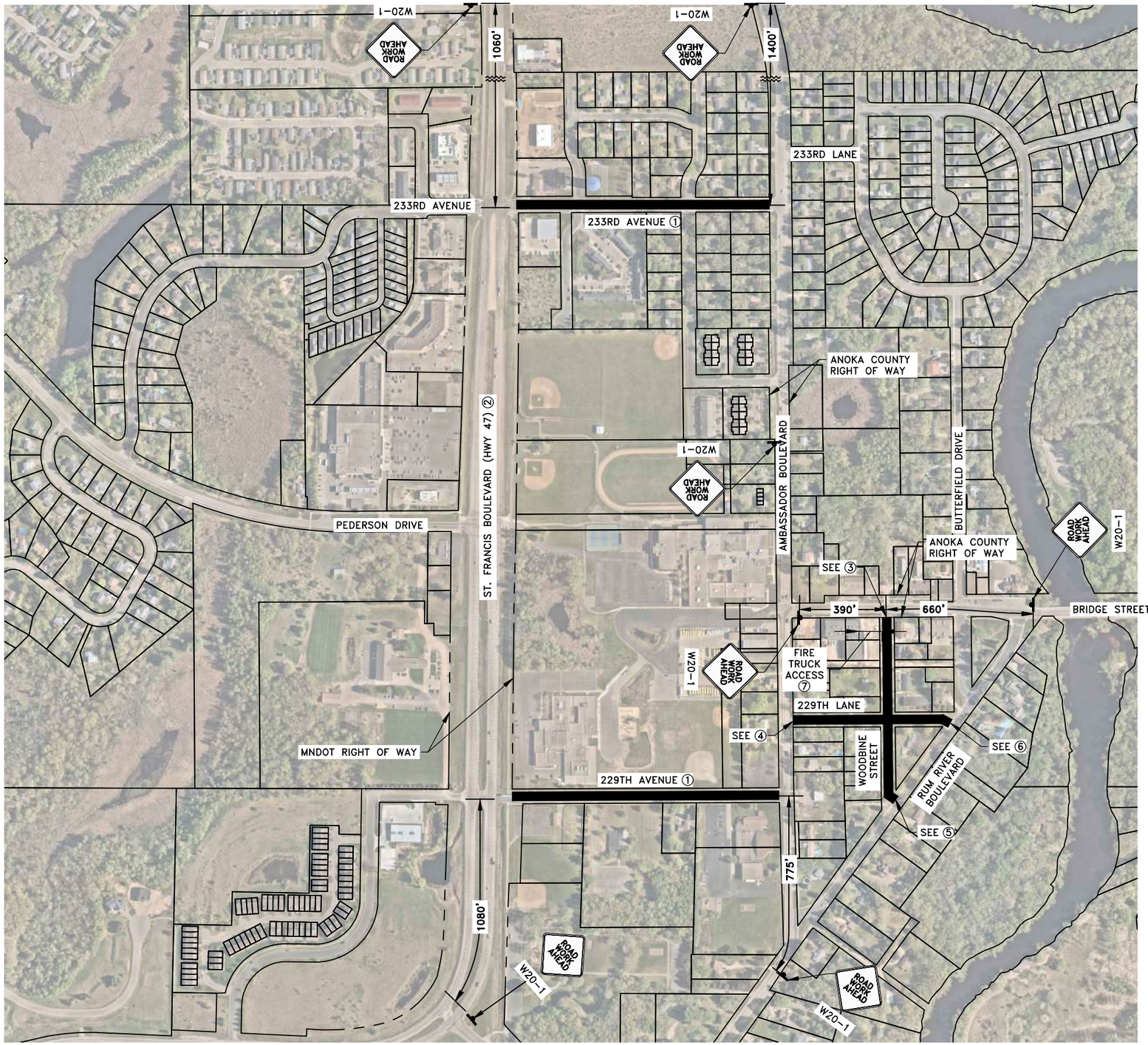

GENERAL NOTES:

1. SEE SHEET 4 FOR GENERAL CONSTRUCTION NOTES AND SHEET 51 FOR TRAFFIC CONTROL NOTES AND DETAILS.

REFERENCE NOTE:

① SEE SHEETS 53 AND 54 FOR TRAFFIC CONTROL ON 233RD AVENUE AND 229TH AVENUE.

② PERMIT IS REQUIRED FROM MN/DOT DISTRICT 3 FOR WORK WITHIN THE TRUNK HIGHWAY 47 RIGHT-OF-WAY.

③ SEE SHEET 55.

④ SEE SHEET 56.

⑤ SEE SHEET 57.

⑥ SEE SHEET 58.

⑦ THE CONTRACTOR SHALL COORDINATE WITH THE FIRE CHIEF TO PROVIDE ACCESS AT ALL TIMES FOR FIRE TRUCKS AND OTHER EMERGENCY RESPONSE VEHICLES. AT A MINIMUM A 20' WIDE GRAVEL SURFACED ROAD CAPABLE OF SUPPORTING THE EMERGENCY RESPONSE VEHICLES SHALL BE PROVIDED FROM THE ACCESS TO A PAVED STREET NOT UNDER CONSTRUCTION.

SCALE 250 0 250 500 IN FEET

S.A.P. 235-101-003
S.A.P. 235-102-002
S.A.P. 235-121-001
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2025 STREET RECONSTRUCTION PROJECT

OVERALL TRAFFIC CONTROL PLAN

CITY OF ST. FRANCIS, MINNESOTA

SHEET 52 OF 59 SHEETS

SF327

Mar 12, 2025 - 5:21pm
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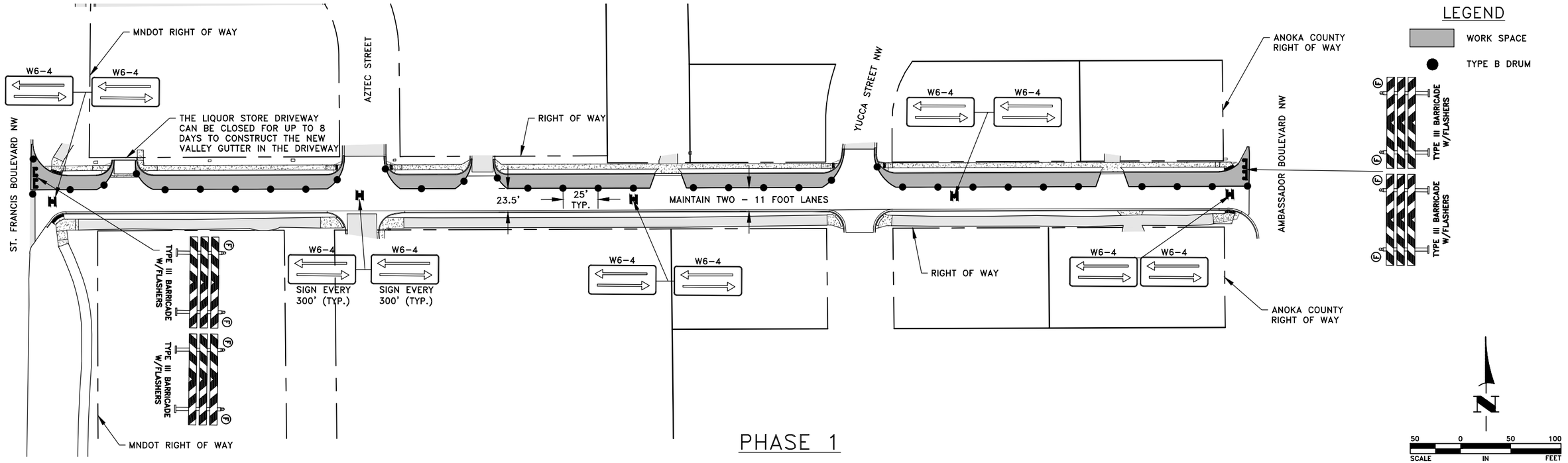
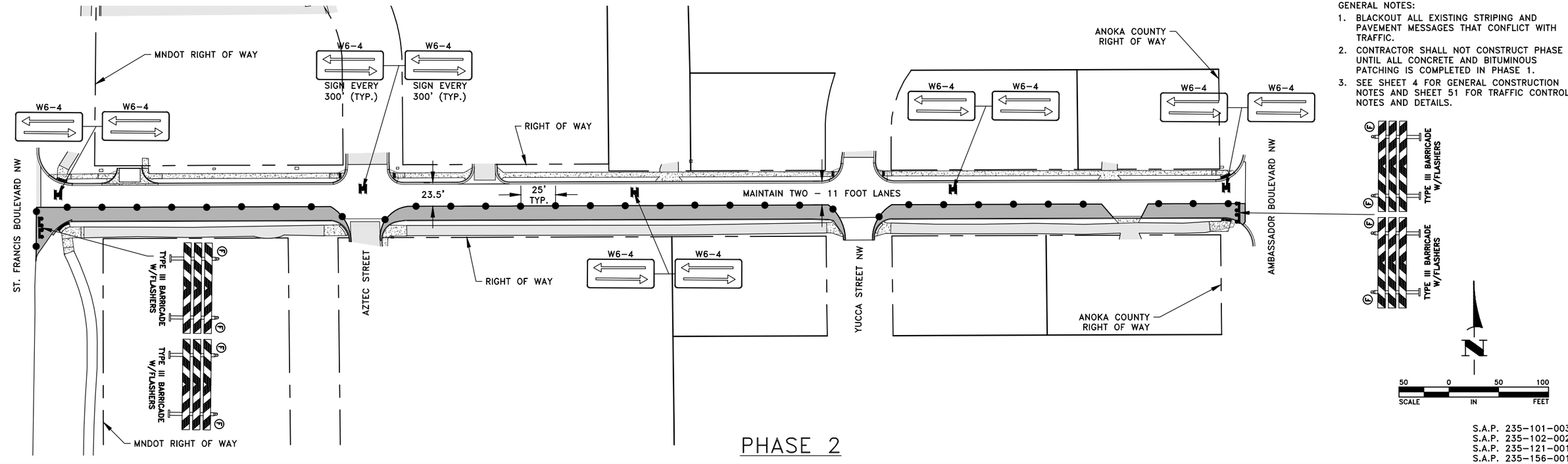


PHASE 1



PHASE 2

GENERAL NOTES:

1. BLACKOUT ALL EXISTING STRIPING AND PAVEMENT MESSAGES THAT CONFLICT WITH TRAFFIC.
2. CONTRACTOR SHALL NOT CONSTRUCT PHASE 2 UNTIL ALL CONCRETE AND BITUMINOUS PATCHING IS COMPLETED IN PHASE 1.
3. SEE SHEET 4 FOR GENERAL CONSTRUCTION NOTES AND SHEET 51 FOR TRAFFIC CONTROL NOTES AND DETAILS.

S.A.P. 235-101-003
S.A.P. 235-102-002
S.A.P. 235-121-001
S.A.P. 235-156-001

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2025 STREET RECONSTRUCTION PROJECT

TRAFFIC CONTROL PLAN

233RD AVENUE
CITY OF ST. FRANCIS, MINNESOTA

SHEET 53 OF 59 SHEETS

SF327

Mar 12, 2025 - 5:21pm
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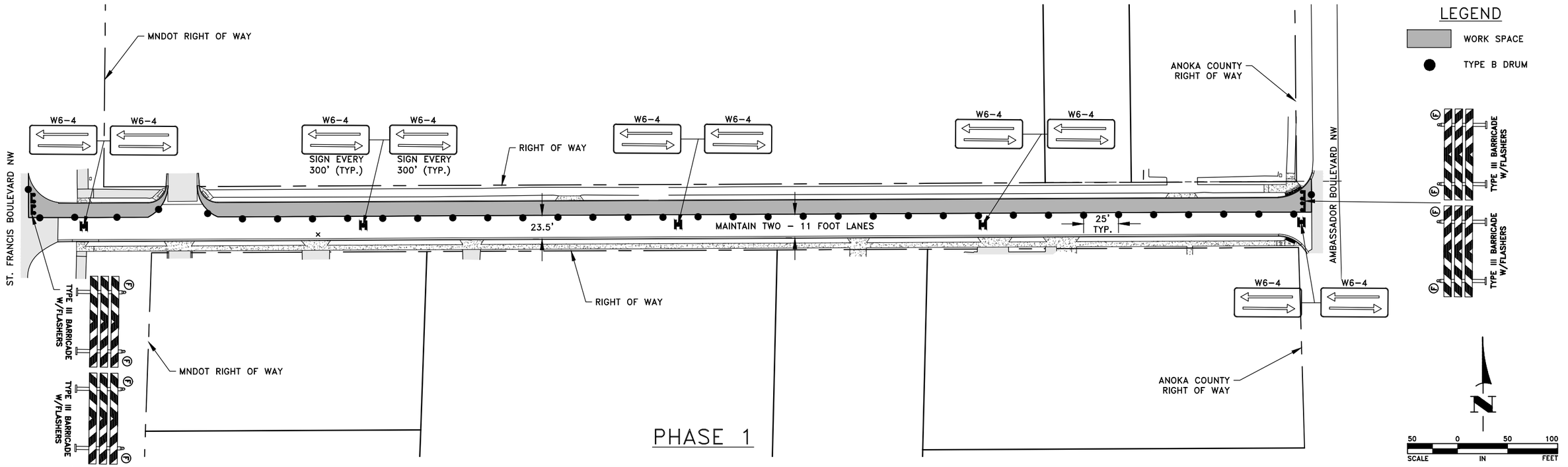

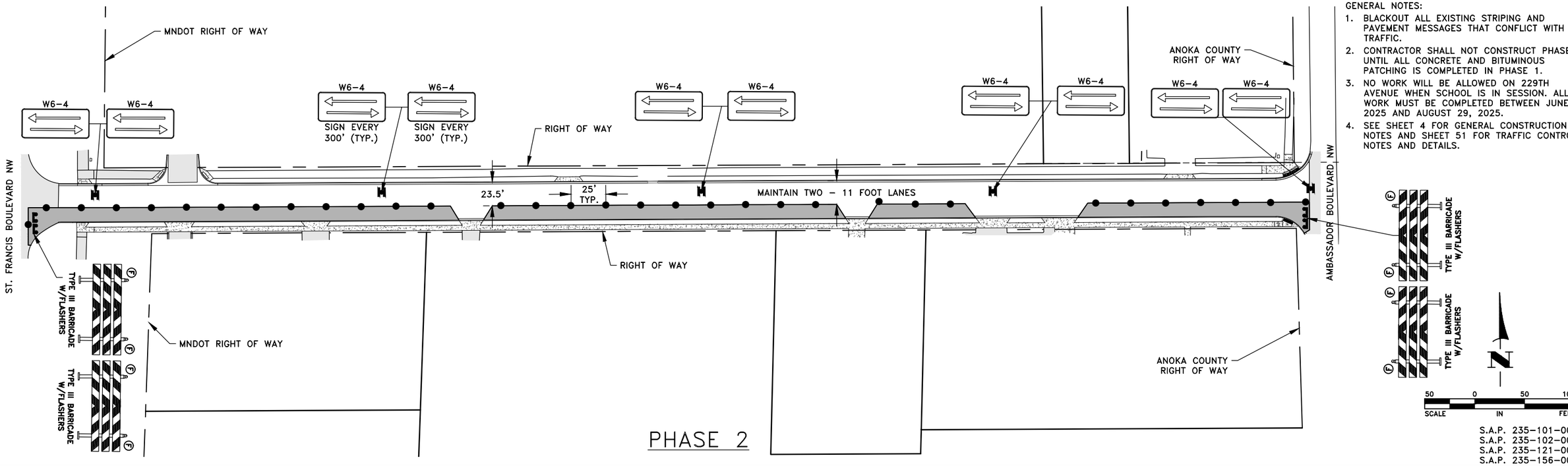

GENERAL NOTES:

1. BLACKOUT ALL EXISTING STRIPING AND PAVEMENT MESSAGES THAT CONFLICT WITH TRAFFIC.
2. CONTRACTOR SHALL NOT CONSTRUCT PHASE 2 UNTIL ALL CONCRETE AND BITUMINOUS PATCHING IS COMPLETED IN PHASE 1.
3. NO WORK WILL BE ALLOWED ON 229TH AVENUE WHEN SCHOOL IS IN SESSION. ALL WORK MUST BE COMPLETED BETWEEN JUNE 5, 2025 AND AUGUST 29, 2025.
4. SEE SHEET 4 FOR GENERAL CONSTRUCTION NOTES AND SHEET 51 FOR TRAFFIC CONTROL NOTES AND DETAILS.

S.A.P. 235-101-003
S.A.P. 235-102-002
S.A.P. 235-121-001
S.A.P. 235-156-001

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2025 STREET RECONSTRUCTION PROJECT

TRAFFIC CONTROL PLAN

229TH AVENUE
CITY OF ST. FRANCIS, MINNESOTA

SHEET 54 OF 59 SHEETS

SF327

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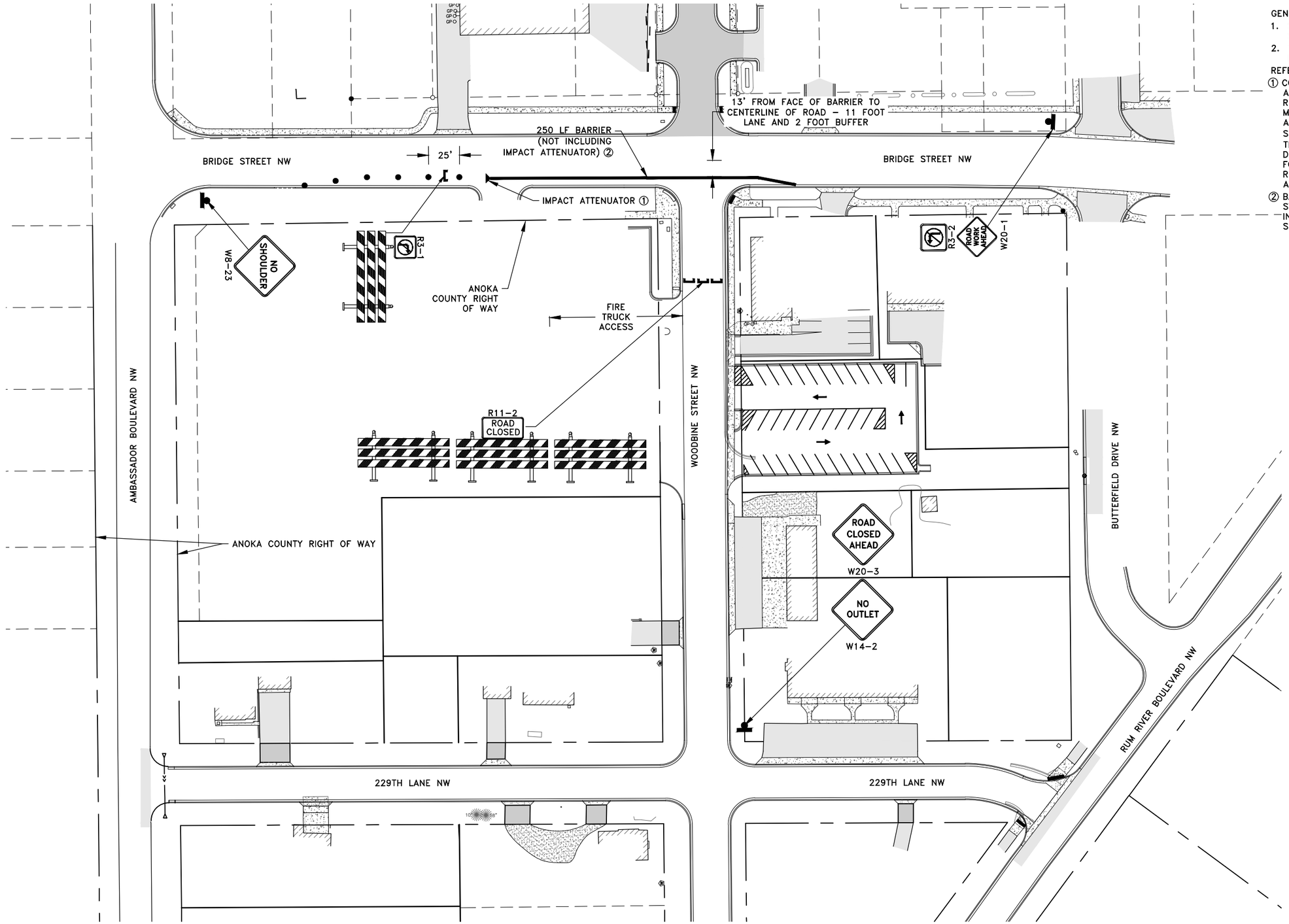

GENERAL NOTES:

1. SEE SHEET 4 FOR GENERAL CONSTRUCTION NOTES AND SHEET 51 FOR TRAFFIC CONTROL NOTES AND DETAILS.
2. THIS INTERSECTION WILL BE ALLOWED TO BE CLOSED A MAXIMUM OF 5 CALENDAR DAYS.

REFERENCE NOTES:

① CONTRACTOR SHALL FURNISH AND INSTALL A IMPACT ATTENUATOR. IMPACT ATTENUATOR SHALL MEET THE REQUIREMENTS OF THE QUADGAURD CZ SYSTEM AS MANUFACTURED BY ENERGY ABSORPTION SYSTEMS, INC. OR APPROVED EQUAL. DESIGN LENGTH OF THE CRASH CUSHION SHALL BE DETERMINED USING THE FORMULA/CRITERIA IN THE MN/DOT TEMPORARY BARRIER GUIDANCE MANUAL DATED DECEMBER 2018. IMPACT ATTENUATOR SHALL BE DESIGNED FOR A 35 MPH SPEED LIMIT. A MINIMUM OF TWO FEET IS REQUIRED BETWEEN THE END OF THE IMPACT ATTENUATOR AND LANE LINE.

② BARRIER SHALL MEET THE REQUIREMENTS OF MNDOT STANDARD PLATE 8337. ALL BARRIERS SHALL BE PINNED INCLUDING RETAINER BOLTS. NO PART OF THE BARRIER SHALL BE CLOSER THAN 2 FEET OF THE LANE LINE.

S.A.P. 235-101-003
S.A.P. 235-102-002
S.A.P. 235-121-001
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2025 STREET RECONSTRUCTION PROJECT

TRAFFIC CONTROL PLAN – FOR TIE IN WORK AT BRIDGE STREET AND WOODBINE STREET CITY OF ST. FRANCIS, MINNESOTA

SHEET 55 OF 59 SHEETS

SF327

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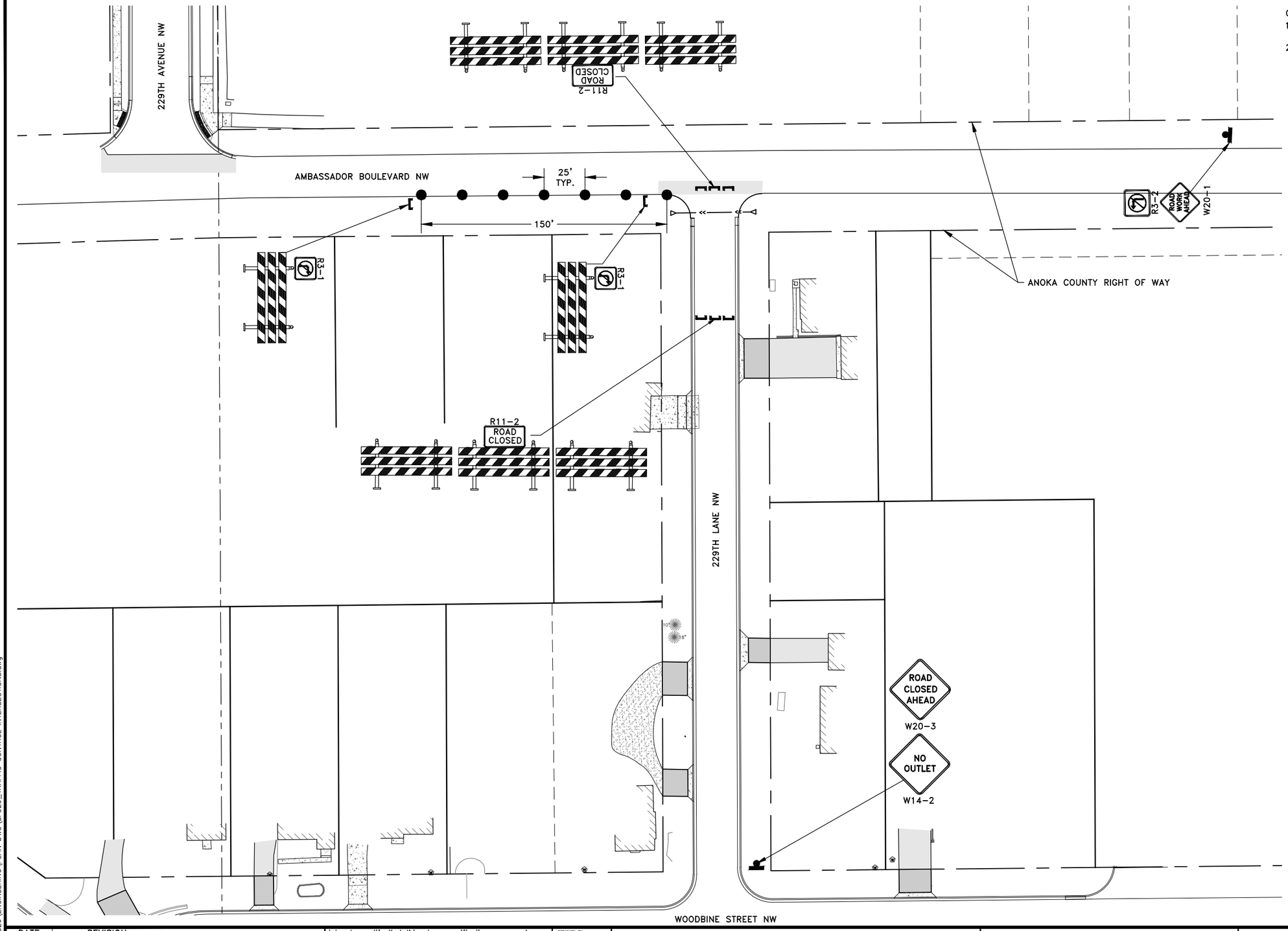
GENERAL NOTES:

1. SEE SHEET 4 FOR GENERAL CONSTRUCTION NOTES AND SHEET 51 FOR TRAFFIC CONTROL NOTES AND DETAILS.
2. THIS INTERSECTION IS ALLOWED TO BE CLOSED A MAXIMUM OF 7 CALENDAR DAYS. AFTER THAT THE INTERSECTION CAN BE CLOSED ONLY WHEN APPROVED BY THE ENGINEER. THE TRAFFIC CONTROL SHOWN ON THIS SHEET SHALL BE USED ANYTIME THE INTERSECTION IS CLOSED.



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2025 STREET RECONSTRUCTION PROJECT

TRAFFIC CONTROL PLAN FOR CULVERT WORK ON 229TH LANE

CITY OF ST. FRANCIS, MINNESOTA

SHEET 56 OF 59 SHEETS

SF327

Mar 12, 2025 - 5:21pm
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GENERAL NOTES:

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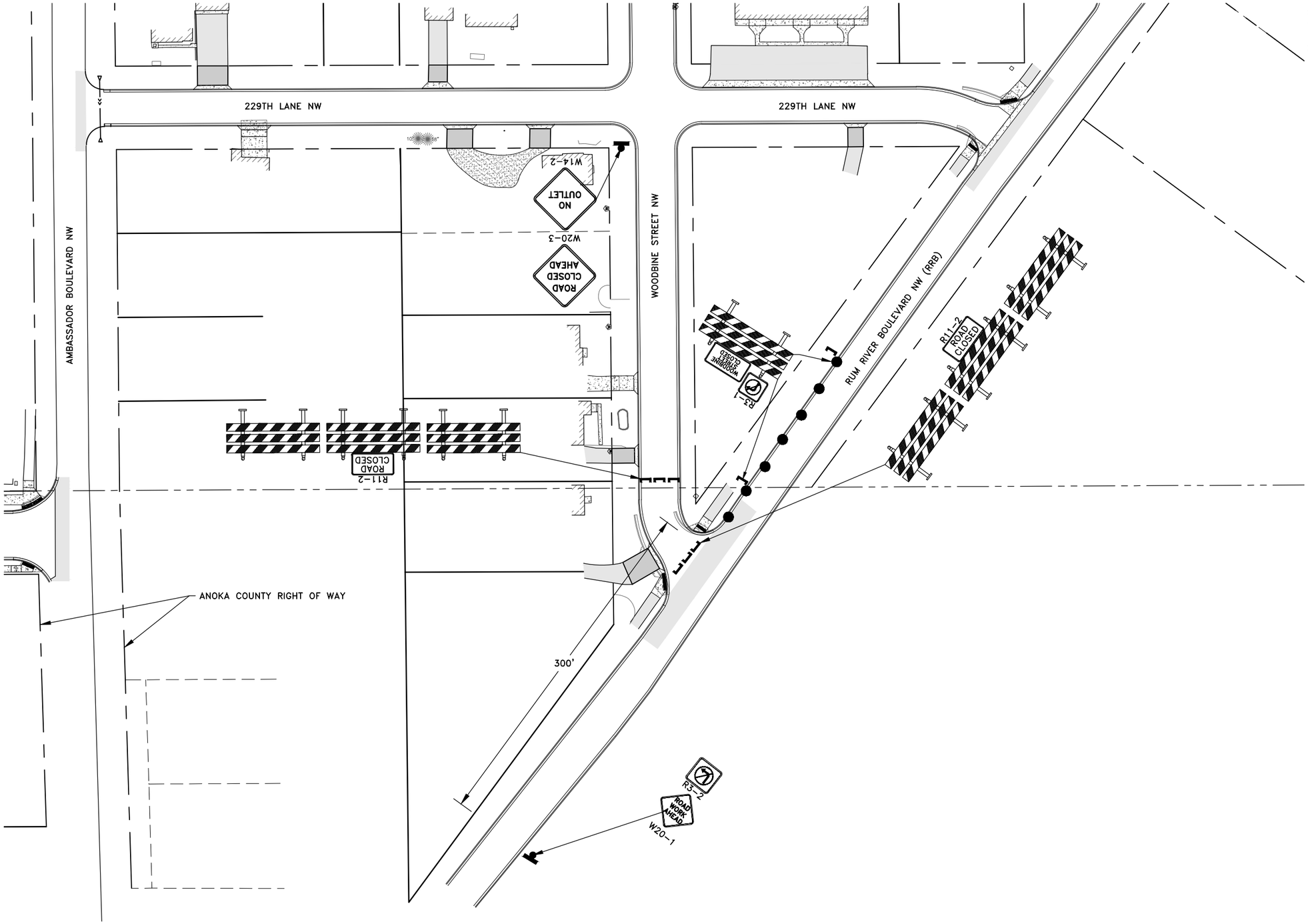
2. THIS INTERSECTION IS ALLOWED TO BE CLOSED A MAXIMUM OF 7 CALENDAR DAYS. AFTER THAT THE INTERSECTION CAN BE CLOSED ONLY WHEN APPROVED BY THE ENGINEER. THE TRAFFIC CONTROL SHOWN ON THIS SHEET SHALL BE USED ANYTIME THE INTERSECTION IS CLOSED.



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Hakanson Anderson
Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
763-427-5860 FAX 763-427-0520
www.hakanson-anderson.com

2025 STREET RECONSTRUCTION PROJECT

TRAFFIC CONTROL PLAN FOR TIE IN WORK ON WOODBINE STREET AND RRB

CITY OF ST. FRANCIS, MINNESOTA

SHEET 57 OF 59 SHEETS

SF327

Mar 12, 2025 - 5:21pm
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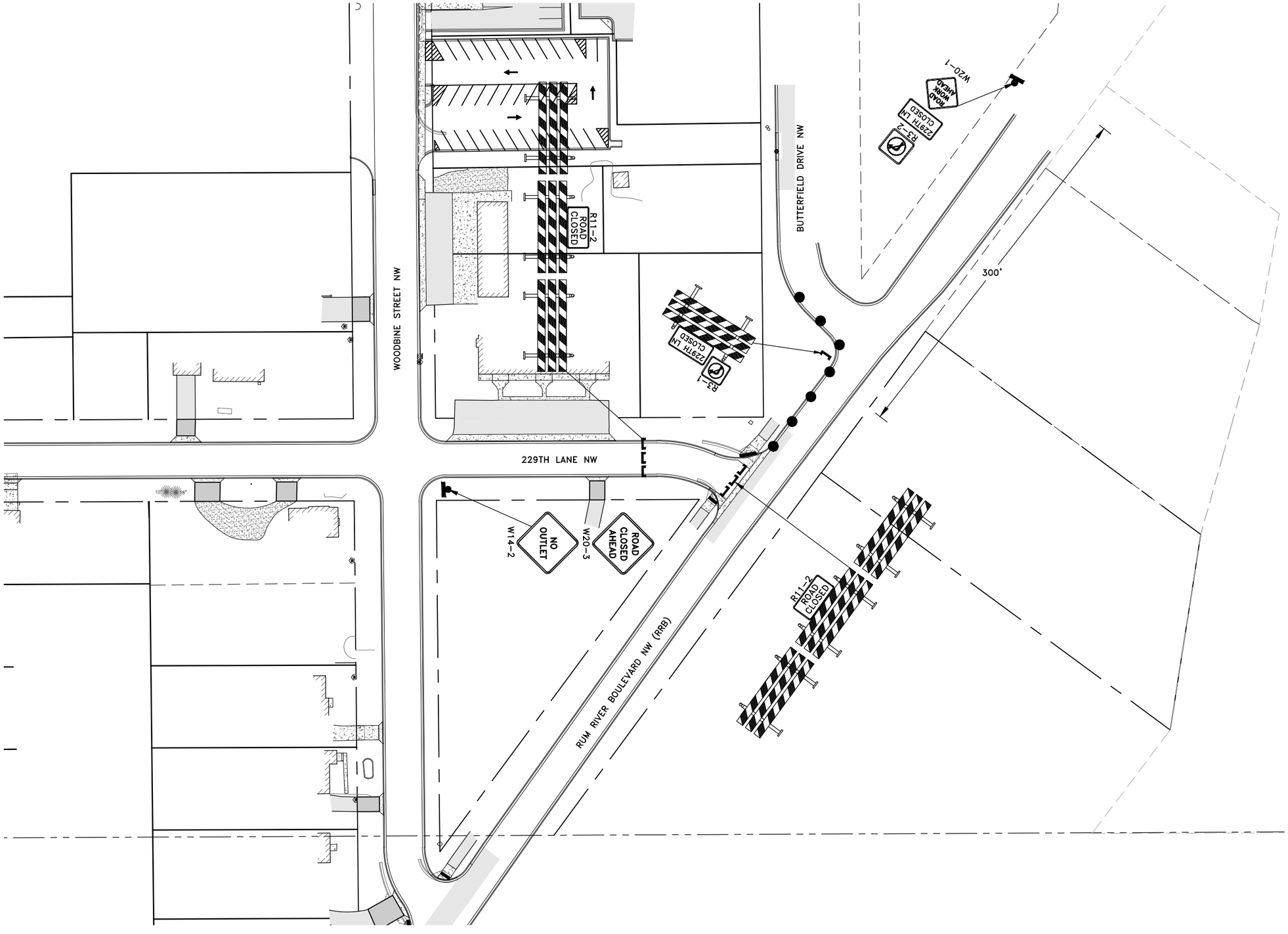
GENERAL NOTES:

1. SEE SHEET 4 FOR GENERAL CONSTRUCTION NOTES AND SHEET 51 FOR TRAFFIC CONTROL NOTES AND DETAILS.
2. THIS INTERSECTION IS ALLOWED TO BE CLOSED A MAXIMUM OF 7 CALENDAR DAYS. AFTER THAT THE INTERSECTION CAN BE CLOSED ONLY WHEN APPROVED BY THE ENGINEER. THE TRAFFIC CONTROL SHOWN ON THIS SHEET SHALL BE USED ANYTIME THE INTERSECTION IS CLOSED.



S.A.P. 235-101-003
S.A.P. 235-102-002
S.A.P. 235-121-001
S.A.P. 235-156-001

DATE	REVISION

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.

CRAIG J. JOCHUM, P.E.
Date 2/12/25 Lic. No. 23461

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE

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2025 STREET RECONSTRUCTION PROJECT

TRAFFIC CONTROL PLAN FOR TIE IN WORK ON 229TH LN AND RRB

CITY OF ST. FRANCIS, MINNESOTA

SHEET 58 OF 59 SHEETS

SF327

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SUMMARY OF STORM SEWER

TAB D

STRUCTURE NO.		STRUCTURE LOCATION	DRAINAGE STRUCTURES				FLOWLINE OR TOP OF CASTING ELEVATION	INVERT ELEVATION		12" RCP CL V	15" RCP CL V	18" RCP CL V	STORM DRAIN INLET PROTECTION	CONNECT TO EXISTING STORM SEWER
FLOWS FROM	FLOWS TO	STREET	TYPE	DETAIL 1 ON SHEET 9 LIN FT	CITY PLATE 400 AND 406 ON SHEETS 8 AND 9 LIN FT	CASTING ASSEMBLY				LIN FT	LIN FT	LIN FT	EACH	EACH
501	502	229TH LANE	CB	3.0		NEENAH 3250-1	917.62	N	914.62	28			1	
502	503	229TH LANE	CBMH		3.3	NEENAH 3250-1	917.62	S	914.46		175		1	
								E	914.30					
503	506	229TH LANE	CBMH		5.4	NEENAH 3250-1	918.96	NE & W	913.58		28		1	
504	505	229TH LANE	CB	3.0		NEENAH 3250-1	919.27	N	916.27	28			1	
505	506	229TH LANE	CBMH		3.6	NEENAH 3250-1	919.27	NW	915.70	61			1	
								S	916.06					
506	508	WOODBINE STREET	CBMH		6.3	NEENAH 3250-1	919.73	N & SW	913.47			103	1	
								SE	915.40					
507	508	WOODBINE STREET	CB	3.0		NEENAH 3250-1	919.40	NW	916.40	42			1	
508	509	WOODBINE STREET	CBMH		6.6	NEENAH 3250-1	919.52	SE	916.19			113	1	
								N & SW	912.95					
509	EXPIPE	WOODBINE STREET	STMH		7.3	NEENAH R-1733	919.80	S & E	912.50					2
510	EXPIPE	WOODBINE STREET	CB	3.7		NEENAH 3250-1	917.34	W	913.63		8		1	1
TOTALS				12.7	32.5	10				159	211	216	9	3

PEDESTRIAN RAMP SUMMARY

TAB E

PED RAMP NUMBER	LOCATION		PAY ITEMS											
	STREET	STATION	2104 - SAWING CONCRETE PAVEMENT	2104 - SAWING BITUMINOUS PAVEMENT	2104 - REMOVE CURB AND GUTTER	2104 - REMOVE CONCRETE PAVEMENT	2104 - REMOVE BITUMINOUS PAVEMENT	2211 - AGGREGATE BASE CLASS 5	2360 - TYPE SP 9.5 WEARING COURSE MIXTURE (2;B) 3.0" THICK	2360 - TYPE SP 12.5 BIT. FOR PATCHING	2521 - 6" CONCRETE WALK	2521 - 8" CONCRETE PAVEMENT	CONCRETE CURB AND GUTTER DESIGN SPECIAL	2531 - TRUNCATED DOMES
			LIN FT	LIN FT	LIN FT	SQ YD	SQ YD	TON	SQ YD	TON	SQ FT	SQ YD	LIN FT	SQ FT
1	233RD AVENUE	STA 0+50 - 25' LEFT	9	46	26	12	18	14.5		0.5	165		26	20
2	233RD AVENUE	STA 0+50 - 30' RIGHT		55			78	29.3		0.5	441		25	26
3	233RD AVENUE	STA 1+20 - 25' LEFT	19	83	50	48	50	55.0	32	1.1	195	21	106	0
4	233RD AVENUE	STA 3+30 - 25' LEFT	9	32	21	10	8	9.4		0.4	67		20	10
5	233RD AVENUE	STA 3+80 - 25' LEFT	9	26	16	10	6	8.0		0.3	65		16	10
6	233RD AVENUE	STA 8+25 - 25' LEFT	9	34	23	10	8	9.6		0.5	76		22	10
7	233RD AVENUE	STA 8+70 - 25' LEFT	9	33	23	8	8	8.9		0.5	57		22	10
8	233RD AVENUE	STA 12+15 - 25' LEFT	9	30	21	14	8	10.9		0.4	104		20	18
9	233RD AVENUE	STA 12+15 - 25' RIGHT	4	40	23	25	8	15.3		0.5	228		22	18
		SUBTOTALS	**77**	**379**	**203**	**137**	**192**	**161**	**32**	**4.7**	**1398**	**21**	**279**	**122**
10	229TH AVENUE	STA 12+90 - 25' LEFT	4	77	62	9	71	37.8		6.0	407		59	34
11	229TH AVENUE	STA 12+90 - 25' RIGHT	4	50	24	6	24	14.3		0.5	105		25	19
		SUBTOTALS	**8**	**127**	**86**	**15**	**95**	**52**		**6.5**	**512**		**84**	**53**
12	WOODBINE STREET	STA 2+00 - 25' LEFT	2	8	68	9	4	13.4			138			26
13	WOODBINE STREET	STA 2+25 - 20' RIGHT	2	9	41	8	9	11.5			107			16
14	WOODBINE STREET	STA 10+45 - 25' RIGHT	8		25	30		14.4			232			14
		SUBTOTALS	**12**	**17**	**134**	**47**	**13**	**39**			**477**			**56**
15	229TH LANE	STA 7+40 - 25' RIGHT	29	8	32	14	7	11.9			111			16
16	229TH LANE	STA 7+40 - 25' LEFT	30	8	50	12	10	14.5			185			26
		SUBTOTALS	**59**	**16**	**82**	**26**	**17**	**26**			**296**			**42**

DIP FITTING SUMMARY

TAB F

FITTING IDENTIFICATION	STREET	STATION	SIZE (INCHES)	FITTING WEIGHT (LBS)
TEE	WOODBINE	6+03	8 X 6	72
TEE	WOODBINE	6+46	8 X 4	60
TEE	WOODBINE	9+50	8 X 4	60
TEE	WOODBINE	10+15	8 X 6	72
TEE	WOODBINE	10+42	10 X 8	105
SLEEVE - LONG PATTERN	WOODBINE	10+42	10	62
SLEEVE - LONG PATTERN	WOODBINE	10+42	10	62
			SUBTOTAL	493
SLEEVE - LONG PATTERN	229TH AVENUE	6+47	8	46
SLEEVE - LONG PATTERN	229TH AVENUE	6+53	8	46
SLEEVE - LONG PATTERN	229TH AVENUE	12+48	8	46
TEE	229TH AVENUE	13+00	8	86
SLEEVE - LONG PATTERN	229TH AVENUE	13+00	8	46
SLEEVE - LONG PATTERN	229TH AVENUE	13+00	8	46
			SUBTOTAL	316
			TOTAL WEIGHT (LBS)	**809**

S.A.P. 235-101-003
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CHECKED BY: TAE

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2025 STREET RECONSTRUCTION PROJECT

TABULATIONS

CITY OF ST. FRANCIS, MINNESOTA

SHEET 59 OF 59 SHEETS

SF327

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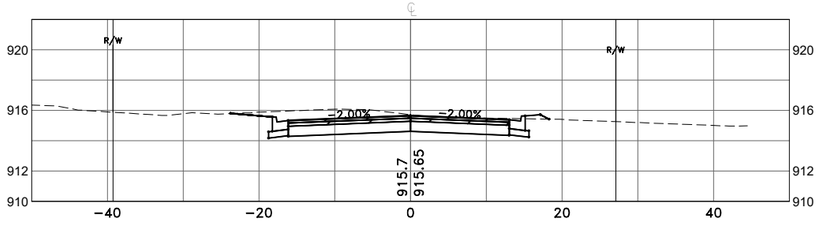

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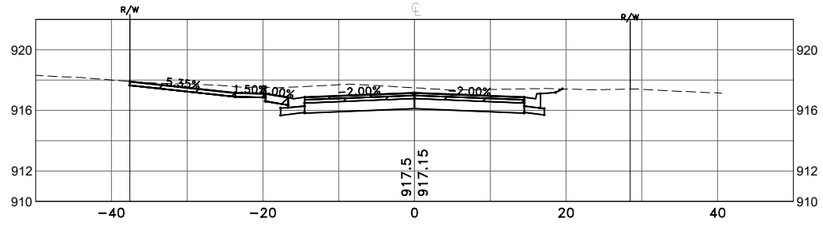

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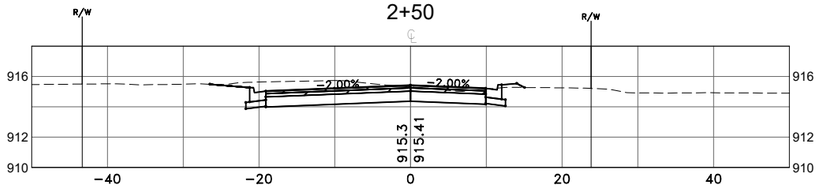

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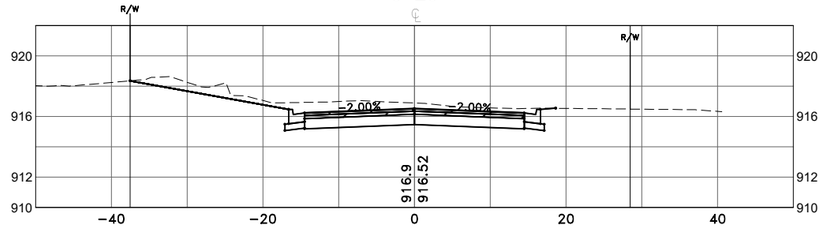

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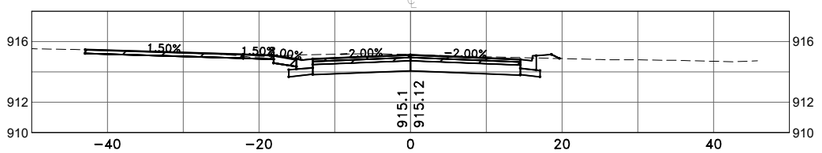

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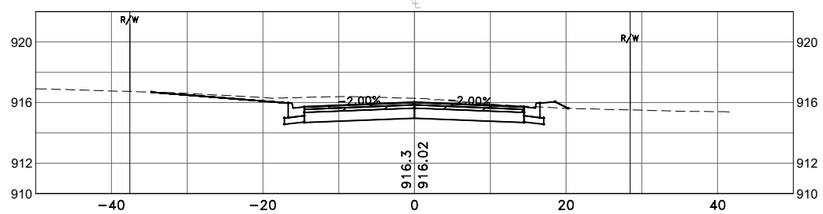

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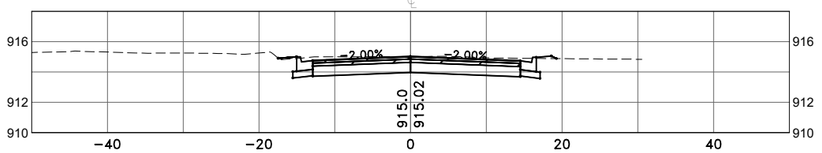

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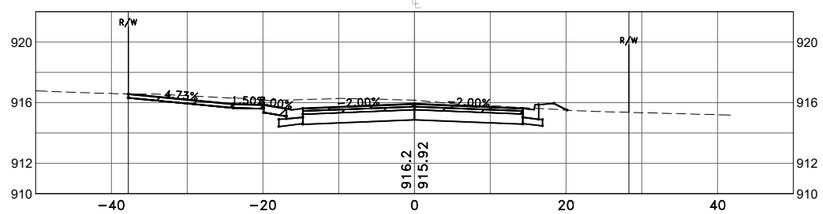

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SHEET X1 OF X5 SHEETS

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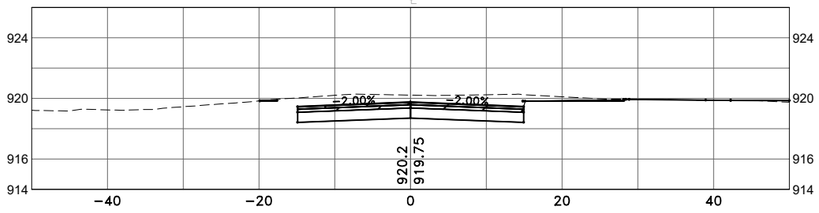

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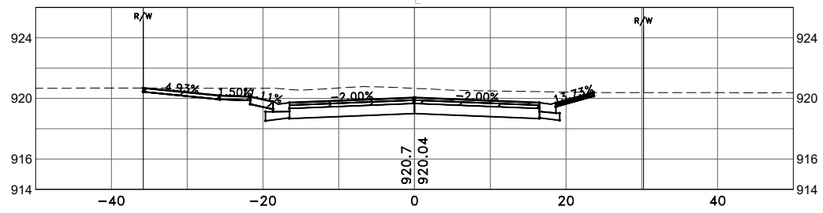

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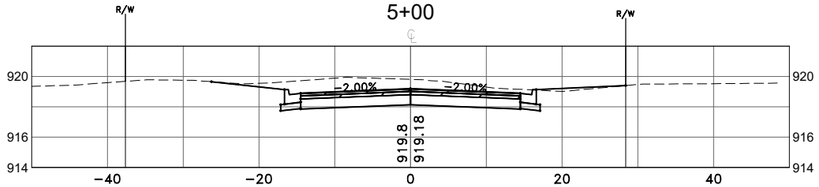

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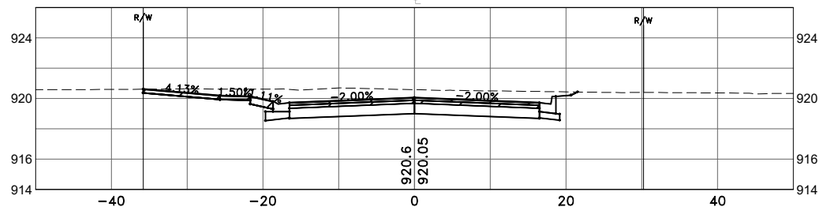

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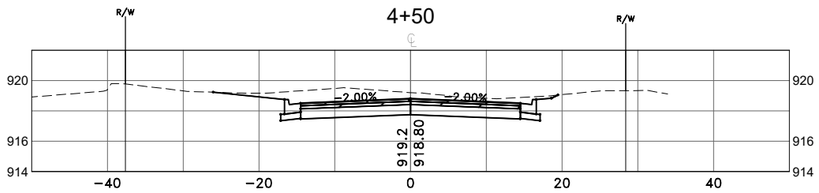

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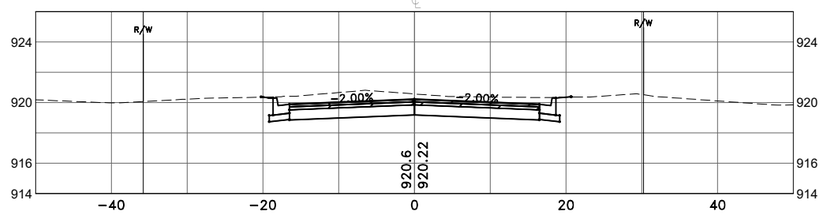

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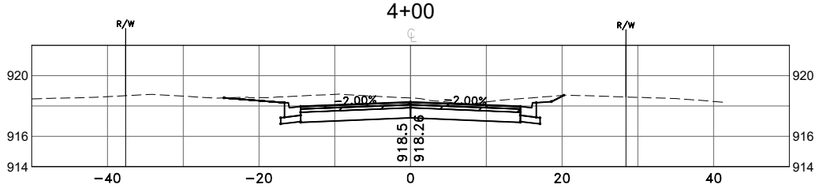

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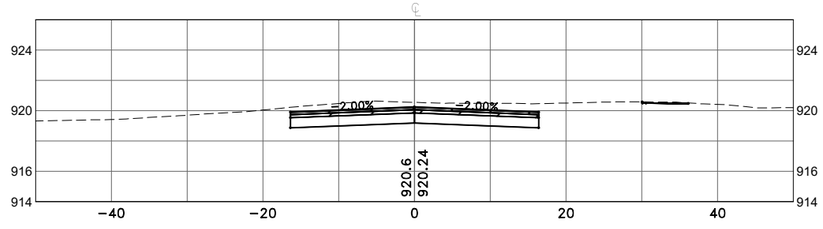

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SHEET X2 OF X5 SHEETS

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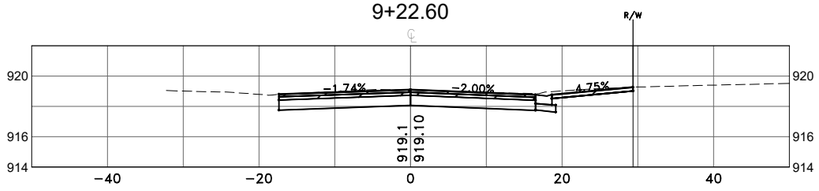

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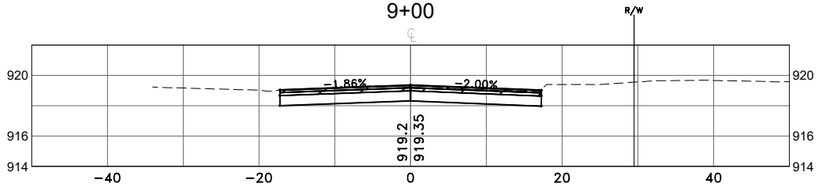

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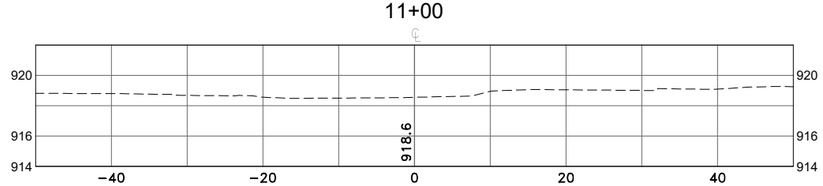

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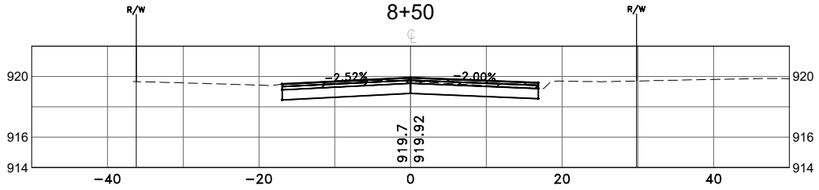

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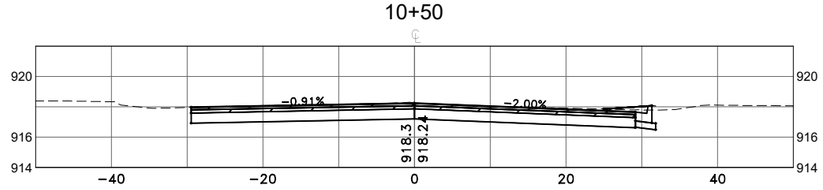

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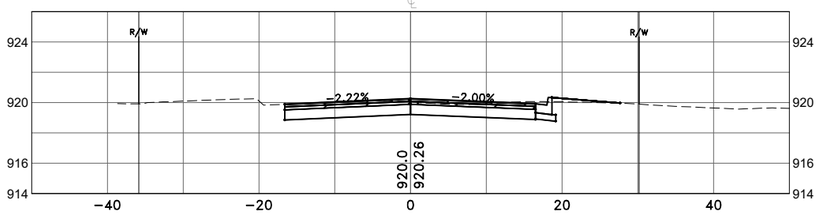

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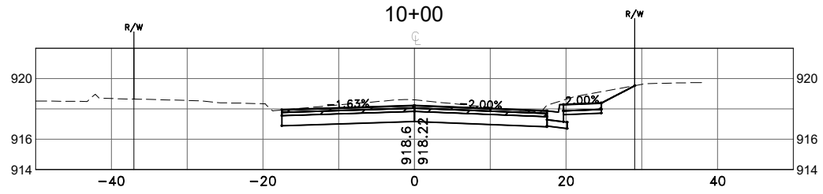

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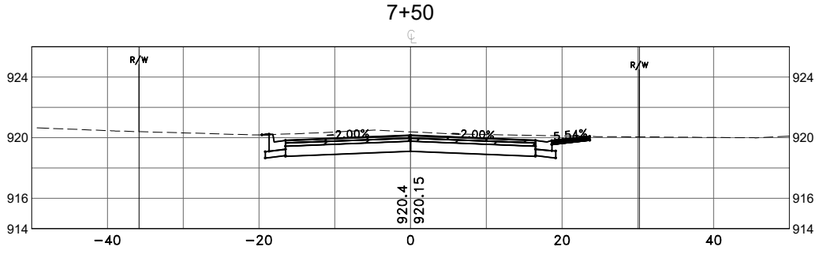

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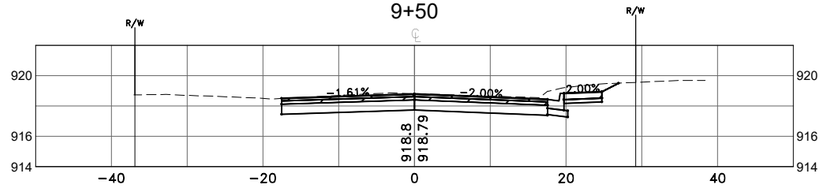

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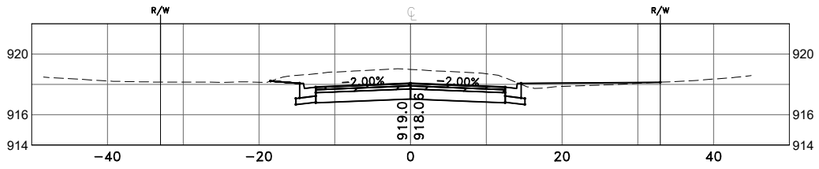

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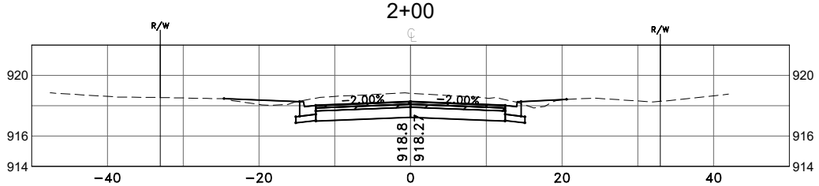

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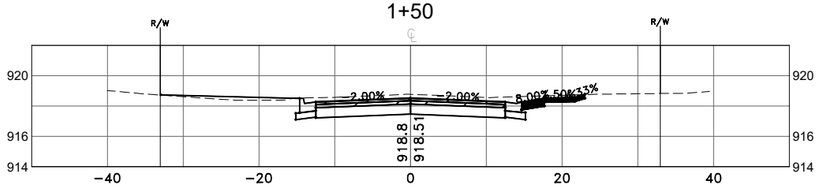

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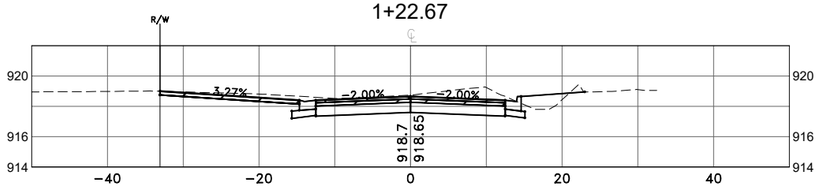

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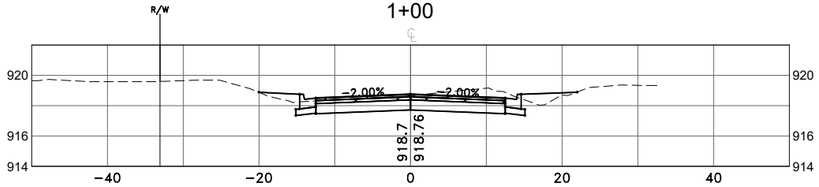

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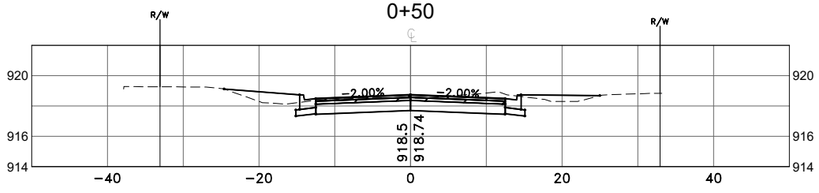

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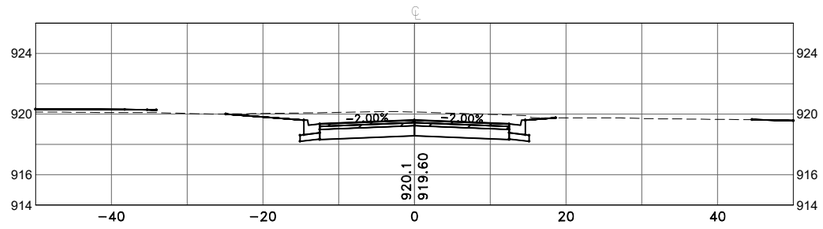

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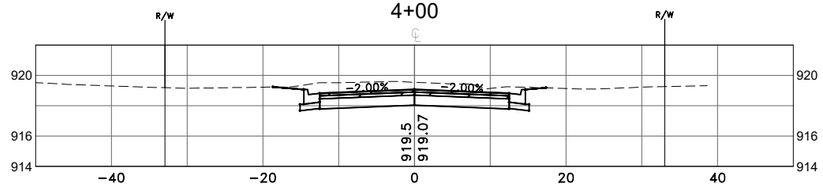

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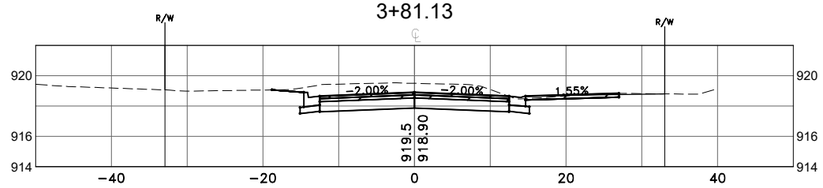

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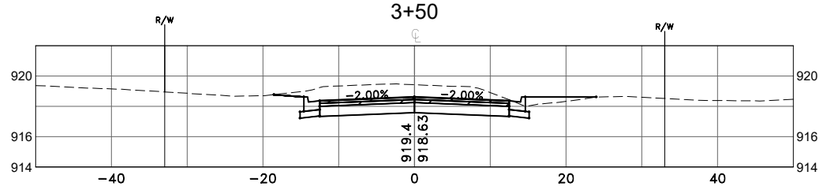

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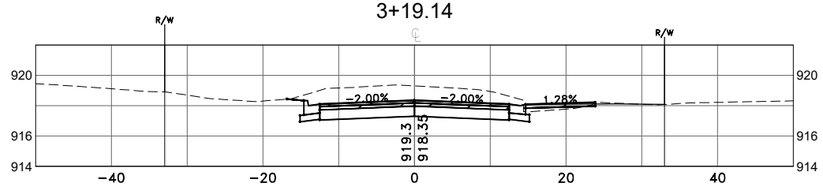

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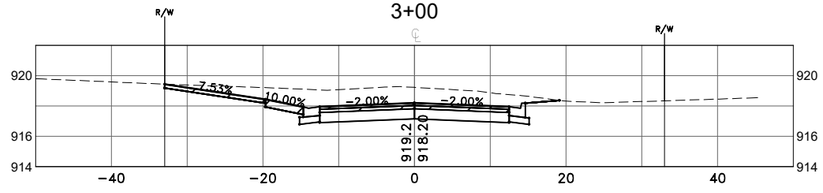

S.A.P. 235-101-003
S.A.P. 235-102-002
S.A.P. 235-121-001
S.A.P. 235-156-001

DATE	REVISION

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE

Hakanson Anderson
Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
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www.hakanson-anderson.com

2025 STREET RECONSTRUCTION PROJECT

CROSS SECTIONS

229TH LANE
CITY OF ST. FRANCIS, MINNESOTA

SHEET X4 OF X5 SHEETS

SF327

Mar 12, 2025 - 5:22pm
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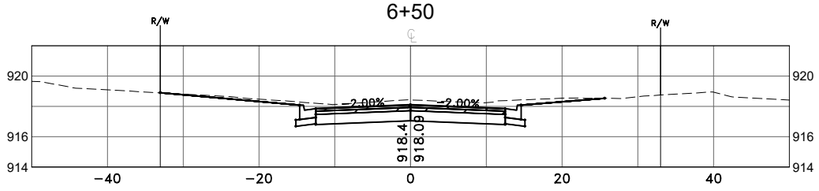

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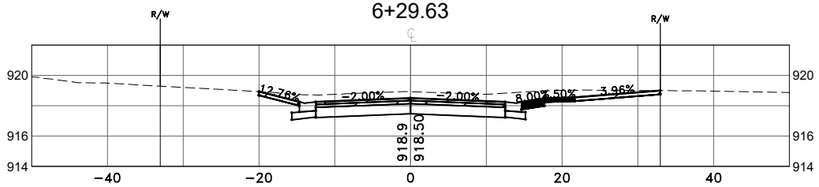

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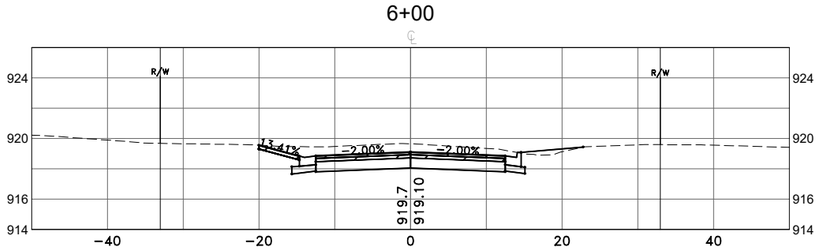

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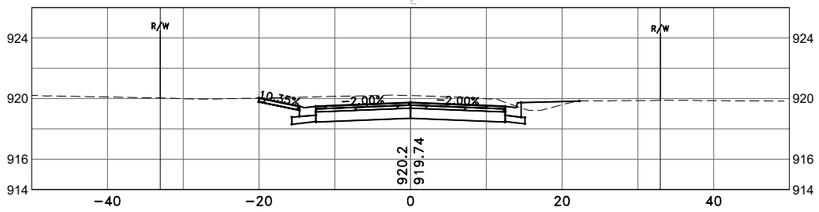

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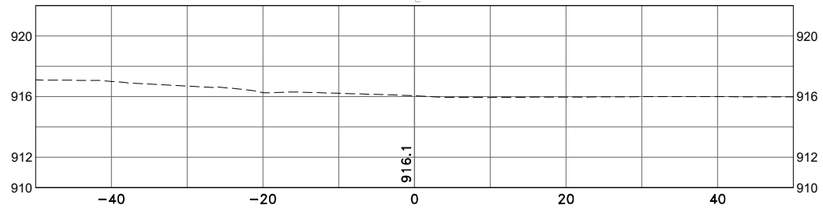

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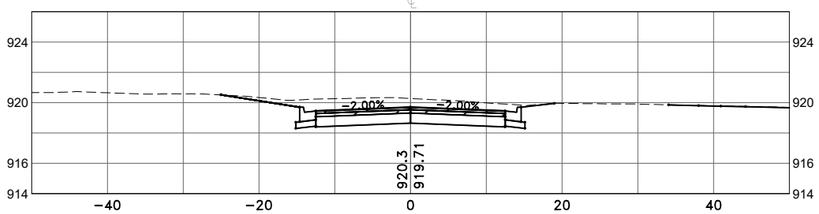

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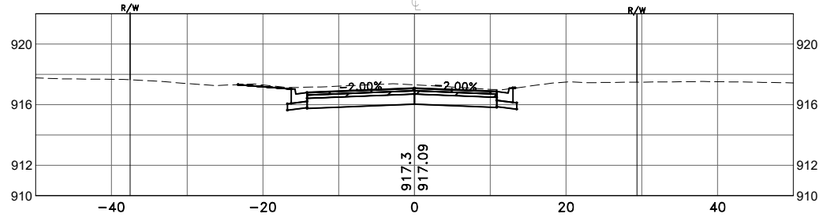

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SHEET X5 OF X5 SHEETS

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