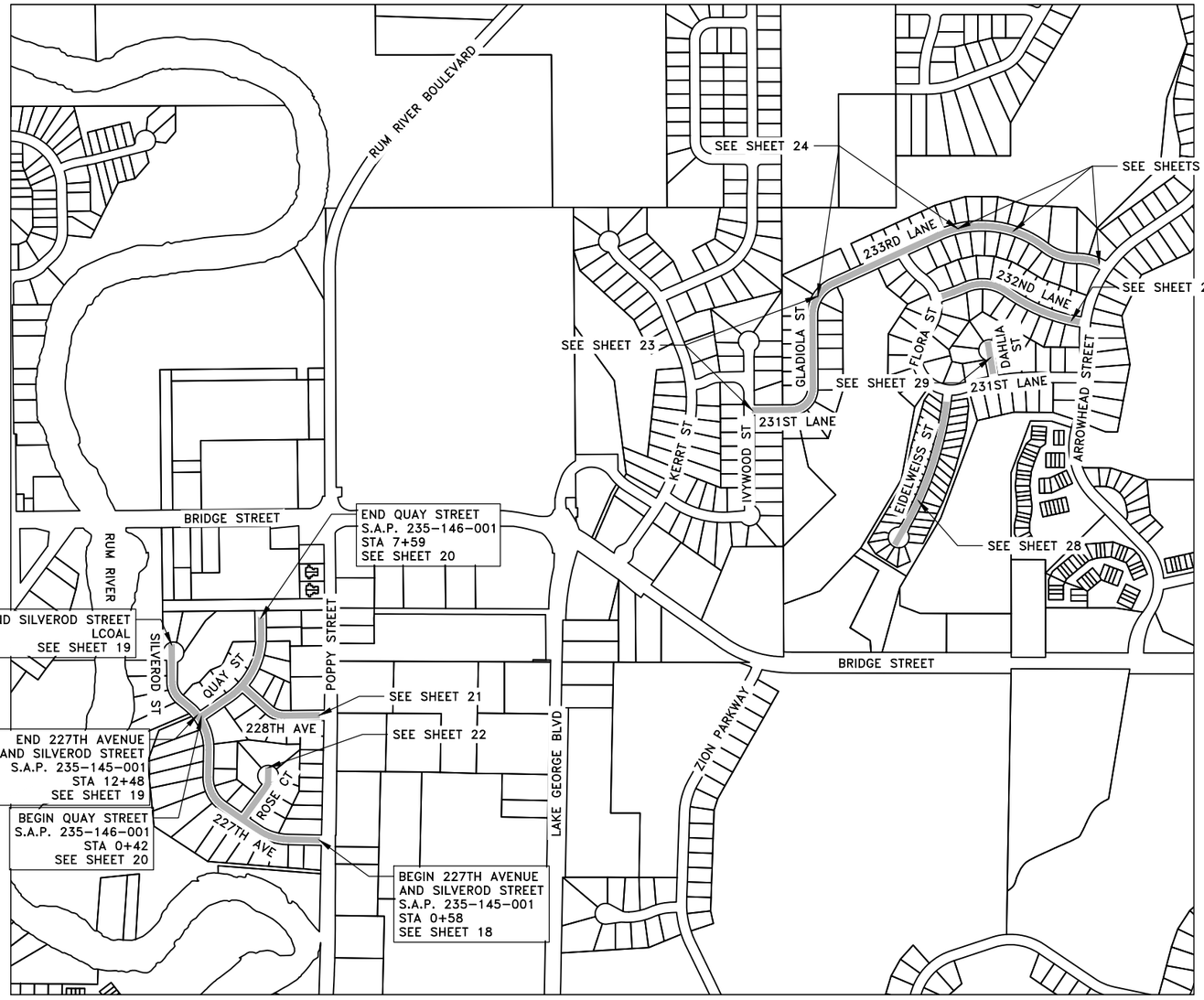
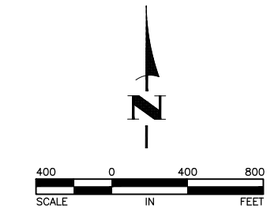
MINNESOTA DEPARTMENT OF TRANSPORTATION

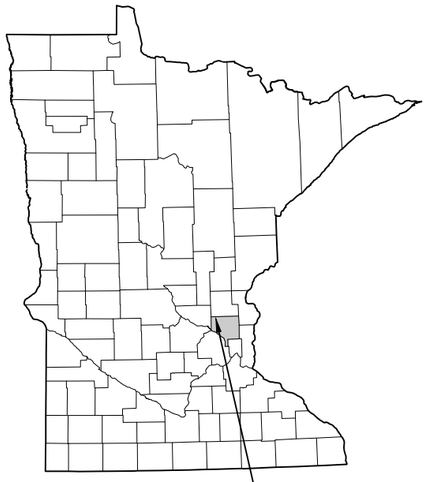
CONSTRUCTION PLANS FOR BITUMINOUS PAVEMENT MILLING, BITUMINOUS SURFACING, EROSION CONTROL, AND RESTORATION
2026 STREET REHABILITATION PROJECT
ST. FRANCIS, MINNESOTA

S.A.P. 235-145-001 LOCATED ON 227TH AVENUE AND SILVEROD STREET FROM POPPY STREET TO QUAY STREET
S.A.P. 235-146-001 LOCATED ON QUAY STREET FROM SILVEROD STREET TO 229TH LANE
SECTIONS 5 & 32 - TOWNSHIPS 33 & 34 - RANGE 24





PROJECT LOCATION



CITY OF ST. FRANCIS,
ANOKA COUNTY,
MINNESOTA

GOVERNING SPECIFICATIONS

THE 2025 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

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 2026 STREET REHABILITATION PROJECT.

SHEET INDEX

THIS PLAN CONTAINS 34 SHEETS

DATE _____

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

DATE _____

FOR 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

23461 DATE 3/2/26

LIC. NO.

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

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 UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-22, ENTITLED, "STANDARD GUIDELINES FOR INVESTIGATING AND DOCUMENTING EXISTING UTILITIES."

PROJECT	STA. TO STA.	GROSS LENGTH (FEET)	BRIDGE LENGTH (FEET)	NET LENGTH (FEET)	NET LENGTH (MILES)	ADT (2026)	ADT (2046)	DESIGN ESAL	R VALUE	TON VALUE	DESIGN SPEED	NUMBER OF LANES	NUMBER OF PARKING LANES	FUNCTIONAL CLASSIFICATION
235-145-001 227TH AVENUE AND SILVEROD STREET	0+58 TO 12+48	1190	0	1190	0.23	163	202	23,112	30	10	30	2	1	COLLECTOR
235-146-001 QUAY STREET	0+42 TO 7+59	717	0	717	0.14	95	118	13,487	30	10	30	2	1	COLLECTOR

S.A.P. 235-145-001
S.A.P. 235-146-001

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ESTIMATED QUANTITIES

ITEM NO.	REF. NOTES	TAB	Mn/DOT SPEC. NO.	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITY	S.A.P. 235-145-001 227TH AVENUE AND SILVEROD STREET ESTIMATED QUANTITIES	S.A.P. 235-146-001 QUAY STREET ESTIMATED QUANTITIES	LOCAL FUNDING ESTIMATED QUANTITIES
1			2021.501	MOBILIZATION	LUMP SUM	1	0.21	0.1	0.69
2		A	2104.502	REMOVE CASTING	EACH	2			2
3		A	2104.502	REMOVE VALVE BOX	EACH	7	5	2	
4		A	2104.502	SALVAGE CASTING	EACH	2			2
5		B	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	392	143	67	182
6		B	2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	1227	491	240	496
7	⑤	B	2104.503	REMOVE CURB AND GUTTER	LIN FT	758	278	143	337
8		B	2104.504	REMOVE CONCRETE PAVEMENT	SQ YD	100	40		60
9		B	2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	221	77	38	106
10		B	2211.509	AGGREGATE BASE CLASS 5	TON	63	24	2.4	36.20
11			2232.504	MILL BITUMINOUS SURFACE	SQ YD	10807	1597	966	8244
12			2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GALLONS	1828	253	152	1423
13	①	B	2360.504	TYPE SP 12.5 WEARING COURSE MIXTURE (2;B) 3.0" THICK	SQ YD	197	77	38	82
14	②		2360.509	TYPE SP 4.75 BITUMINOUS MIXTURE FOR PATCHING	TON	110	30	20	60
15			2360.509	TYPE SP 9.5 WEARING COURSE MIXTURE (2;B)	TON	2479	343	207	1929
16		A	2504.602	VALVE BOX	EACH	7	5	2	
17	③	A	2504.602	ADJUST VALVE BOX - WATER	EACH	8		1	7
18		A	2506.502	CASTING ASSEMBLY	EACH	2			2
19		A	2506.502	INSTALL CASTING	EACH	2			2
20	⑥	A	2506.602	GROUT CATCH BASIN OR MANHOLE	EACH	62	13	8	41
21	④	A	2506.602	ADJUST FRAME AND RING CASTING	EACH	40	6	5	29
22		B	2521.518	6" CONCRETE WALK	SQ FT	986	335		651
23			2521.602	DRILL AND GROUT REINF BAR (EPOXY COATED)	EACH	70	40		30
24	⑤	B	2531.503	CONCRETE CURB AND GUTTER DESIGN SPECIAL	LIN FT	758	278	143	337
25		B	2531.618	TRUNCATED DOMES	SQ FT	52	26		26
26			2563.601	TRAFFIC CONTROL SUPERVISOR	LUMP SUM	1	0.21	0.1	0.69
27			2563.601	TRAFFIC CONTROL	LUMP SUM	1	0.21	0.1	0.69
28	⑧		2564.518	SIGN PANEL TYPE XI	SQ FT	28	16	12	
29			2573.501	EROSION CONTROL SUPERVISOR	LUMP SUM	1	0.21	0.1	0.69
30			2573.503	SEDIMENT CONTROL LOG TYPE COMPOST	LIN FT	1364	500	257	607
31			2574.507	COMMON TOPSOIL BORROW	CU YD	114	50	10	54
32	⑦		2575.604	SITE RESTORATION	SQ YD	639	230	95	314

BASIS OF ESTIMATED QUANTITIES

AGGREGATE BASE CLASS 5	100 lbs/yd^2/in
NON WEARING BITUMINOUS COURSE MIXTURE	110 lbs/yd^2/in
WEARING COURSE BITUMINOUS MIXTURE	110 lbs/yd^2/in
BITUMINOUS MATERIAL FOR TACK COAT - NEW ASPHALT	0.06 gal/yd^2
BITUMINOUS MATERIAL FOR TACK COAT - OLD ASPHALT	0.07 gal/yd^2
BITUMINOUS MATERIAL FOR TACK COAT - MILLED ASPHALT	0.08 gal/yd^2
HYDRAULIC FIBER BONDED MATRIX	3500 lbs/acre
SOUTHERN BOULEVARD SEED MIX	160 lbs/acre
TYPE 3, SLOW RELEASE FERTILIZER	400 lbs/acre

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 CONSTRUCTION NOTES:

1. SALVAGING AND INSTALLING MAILBOXES OR SIGNS IF REQUIRED FOR CONSTRUCTION SHALL BE INCIDENTAL.
2. CONTRACTOR SHALL TAPER/RAMP THE PAVEMENT AT ALL MATCH POINTS. ON THE DAY THE PAVEMENT WILL BE CONSTRUCTED AT EACH MATCH POINT THE CONTRACTOR SHALL PROVIDE A STRAIGHT PERPENDICULAR MILL AND REMOVE THE TAPER/RAMP. TAPERING/RAMPING AND PROVIDING A PERPENDICULAR MILL AT ALL MATCH POINTS SHALL BE INCIDENTAL.
3. ALL CURB AND GUTTER, BITUMINOUS, AND CONCRETE REMOVALS SHALL BE SAW CUT FULL DEPTH TO PROVIDE A CLEAN EDGE FOR NEW JOINT.
4. 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 RESPONSIBILITY TO REPLACE WITH NO ADDITIONAL COST.
5. ALL EXCESS SOIL MATERIAL SHALL BE DISPOSED OF OFF SITE BY THE CONTRACTOR. THIS WORK SHALL BE INCIDENTAL.
6. SHEETS 30-31 SHOW GENERAL PEDESTRIAN RAMP LAYOUTS.
7. CONTRACTOR SHALL REMOVE AND DISPOSE ALL DEBRIS AND VEGETATION AND SWEEP ALL EXISTING BITUMINOUS SURFACES PRIOR TO PLACING ANY PATCHING MATERIAL OR THE WEARING COURSE. THIS WORK SHALL BE INCIDENTAL.
8. THE CONTRACTOR SHALL BE RESPONSIBLE TO CALL IN LOCATES AND COORDINATE WITH THE SMALL UTILITIES (GAS, PHONE, ELECTRIC, ETC.) AS REQUIRED TO COMPLETE THE WORK.
9. SEE SHEETS 32-34 FOR TRAFFIC CONTROL.

REFERENCE NOTES:

① THIS WORK SHALL BE FOR BITUMINOUS PATCHING FOR CASTING AND VALVE BOX REMOVAL, CONCRETE CURB AND GUTTER REPLACEMENT, AND PEDESTRIAN RAMP CONSTRUCTION. SEE DETAILS 1, 2, AND 3 ON SHEET 4.

② THIS WORK SHALL BE FOR BITUMINOUS PATCHING FOR POTHOLE REPAIRS PRIOR TO PAVING THE OVERLAY. THIS WORK SHALL BE FIELD MARKED BY THE ENGINEER. SEE SHEET 3 FOR ADDITIONAL INFORMATION.

③ 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 3 ON SHEET 5. 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 VALVE BOX-WATER. MEASUREMENT WILL BE 1 EACH PER LOCATION REGARDLESS IF THE BOX IS ADJUSTED BY TURNING OR WITH A PAVING RING.

④ MANHOLE CASTINGS, THAT ARE TO REMAIN IN PLACE, SHALL BE ADJUSTED WITH DUCTILE IRON ADJUSTING RINGS AS MANUFACTURED BY ESS BROTHERS AND SONS INC. OR APPROVED EQUAL. CONTRACTOR SHALL MEASURE EACH 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 2 ON SHEET 5. THIS WORK SHALL BE PAID PER ITEM 2506-ADJUST FRAME AND RING CASTING.

⑤ THE ONLY CURB REMOVAL SHOWN ON THE PLANS IS FOR THE RECONSTRUCTION OF THE PEDESTRIAN RAMPS AND AT CATCH BASIN SALVAGE LOCATIONS. 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 1 ON SHEET 4. THE CONTRACTOR SHALL CONSTRUCT THE NEW CURB AND GUTTER PER CITY STANDARD PLATE 704 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.

⑥ CONTRACTOR SHALL GROUT THE EXISTING DOGHOUSES AND RINGS FOR ALL EXISTING STORM SEWER, MANHOLES, CATCH BASINS, AND THE RINGS FOR ALL EXISTING SANITARY SEWER STRUCTURES AS DIRECTED BY THE ENGINEER. THIS WORK SHALL BE PAID PER ITEM 2506-GROUT CATCH BASIN OR MANHOLE.

⑦ 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. ALL WORK REQUIRED TO RESTORE ALL DISTURBED AREAS SHALL BE MEASURED BY THE SQUARE YARD AND PAID PER ITEM 2575-SITE RESTORATION. 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.

⑧ SEE SHEETS 15-17 FOR SIGN PLACEMENT, SIGN MOUNTINGS, AND SIGN BASE.

THE LISTED STANDARD PLANS AND DETAILS ARE INCORPORATED BY REFERENCE INTO THE PLAN SET. THE CERTIFICATION ON THIS SHEET SIGNIFIES THE ENGINEER SELECTED THE STANDARD PLANS AND PLATES AS APPROPRIATE FOR USE ON THE PROJECT.

STANDARD PLANS

PLAN NO.	SHEET(S)	DESCRIPTION
5-297.250	1-6	PEDESTRIAN CURB RAMP DETAILS
5-297.701	1	STANDARD SIGN PLACEMENT
5-297.718	1	SQUARE-TUBE SIGN MOUNTING DETAILS
5-297.722	1	FIN BASE FOR 2" SQUARE-TUBE RISER POST IN SOIL

STANDARD PLATES

THESE STANDARD PLATES AS APPROVED BY THE FHWA SHALL APPLY

PLATE NO.	DESCRIPTION
4026A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
8000K	TEMPORARY CHANNELIZERS (3 SHEETS)

PROJECT LEGEND

- PROJECT PROPERTY LINE
- SURROUNDING PROPERTY LINE
- RIGHT OF WAY LINE
- EASEMENT LINE
- FO-BUR BURIED FIBER OPTIC CABLE
- T-BUR BURIED TELEPHONE CABLE
- G GAS MAIN
- P-BUR BURIED ELECTRIC CABLE
- P-OH OVERHEAD ELECTRIC CABLE
- UTILITY PEDESTAL
- POWER POLE
- GUY WIRE
- LIGHT POLE
- SIGNAL POLE
- STORM SEWER
- STORM SEWER MANHOLE
- CATCH BASIN
- FES
- WATERMAIN
- WATERMAIN MANHOLE
- HYDRANT
- GATE/BUTTERFLY VALVE
- WATER SERVICE
- SANITARY SEWER
- SANITARY SEWER MANHOLE
- SANITARY CLEANOUT
- SEWER SERVICE
- TRUNCATED DOMES
- CONCRETE CURB & GUTTER
- SIGN
- DETAIL NUMBER (2/3)
- SHEET NUMBER
- SAWCUT BITUMINOUS OR CONCRETE

S.A.P. 235-145-001
S.A.P. 235-146-001

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 3/2/26 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

2026 STREET REHABILITATION PROJECT

CONSTRUCTION NOTES AND ESITMATED QUANTITIES

CITY OF ST. FRANCIS, MINNESOTA

SHEET 2 OF 34 SHEETS

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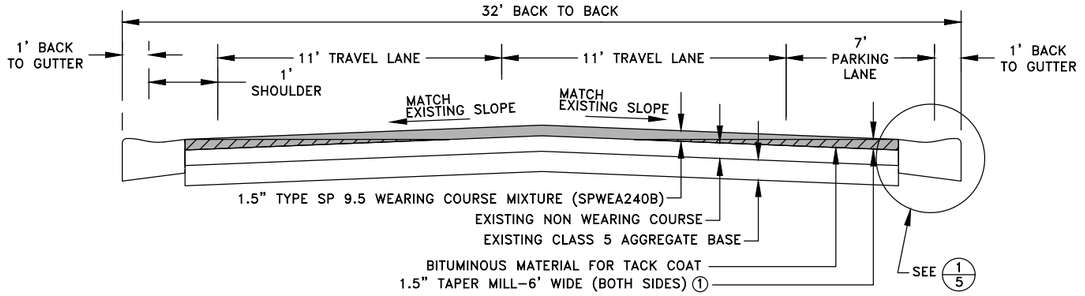
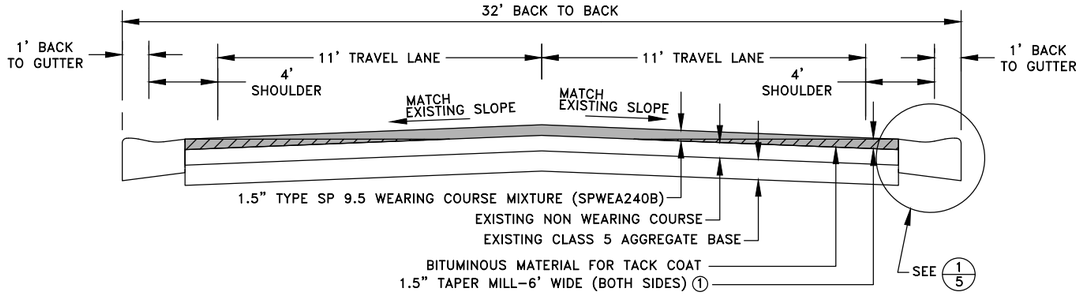
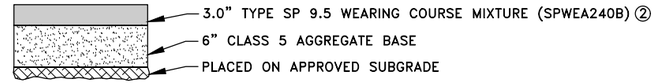


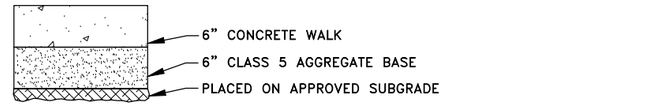
1/3 TYPICAL TAPER MILL AND OVERLAY SECTION
227TH AVENUE, SILVEROD STREET AND QUAY STREET ③
N.T.S.



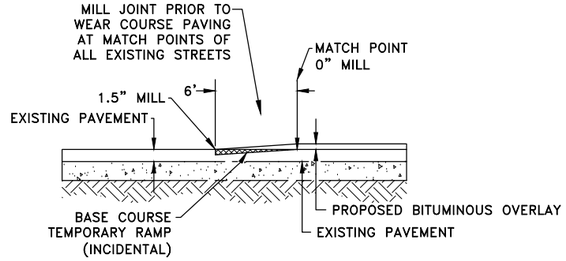
2/3 TYPICAL TAPER MILL AND OVERLAY SECTION
228TH AVENUE, SILVEROD STREET, ROSE COURT, 231ST LANE, 232ND LANE, 233RD LANE, GLADIOLA STREET, EIDELWEISS STREET, AND DAHLIA STREET ③
N.T.S.



3/3 BITUMINOUS TRAIL SECTION
NO SCALE



4/3 6" CONCRETE WALK SECTION
NO SCALE



5/3 MILL DETAIL ①
NO SCALE

REFERENCE NOTES:
① TAPER MILL SHALL BE PAID PER ITEM 2232–MILL BITUMINOUS SURFACE.
② BITUMINOUS PAVEMENT SHALL BE PAID PER ITEM 2360–TYPE SP 9.5 WEARING COURSE MIXTURE (2;B) 3" THICK.
③ PRIOR TO CONSTRUCTION OF THE BITUMINOUS OVERLAY THE CONTRACTOR SHALL PATCH ALL PAVEMENT POTHOLES THAT ARE 1/2 INCH OR DEEPER. PATCH WILL BE PAID BY ITEM 2360 TYPE SP 4.75 BITUMINOUS MIXTURE FOR PATCHING. IN LARGE AREAS THAT HAVE POTHOLES, MIX SHALL BE SPREAD BY GRADER, SKID STEER OR OTHER APPROPRIATE EQUIPMENT. PATCH MATERIAL SHALL BE COMPACTED WITH A STEEL DRUM ROLLER. PATCH SHALL BE TACK COATED PRIOR TO PLACEMENT. TACK COAT WILL BE PAID PER THE BID ITEM.

S.A.P. 235–145–001
S.A.P. 235–146–001

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2026 STREET REHABILITATION PROJECT

TYPICAL SECTION AND DETAILS

CITY OF ST. FRANCIS, MINNESOTA

SHEET 3 OF 34 SHEETS

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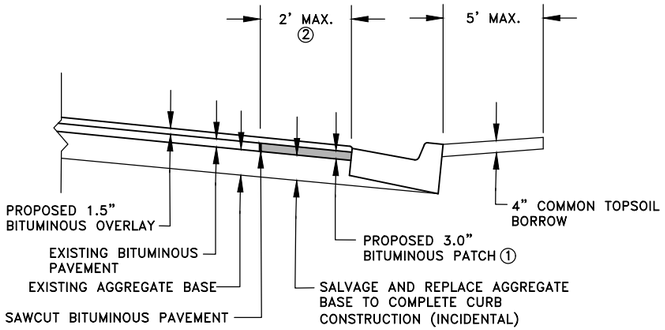
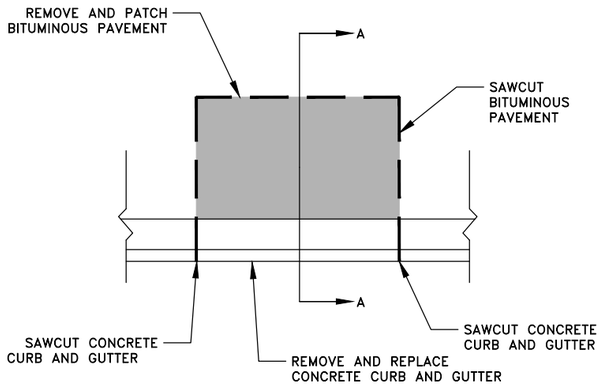


SECTION A–A



1/4 CURB REMOVAL DETAIL ④

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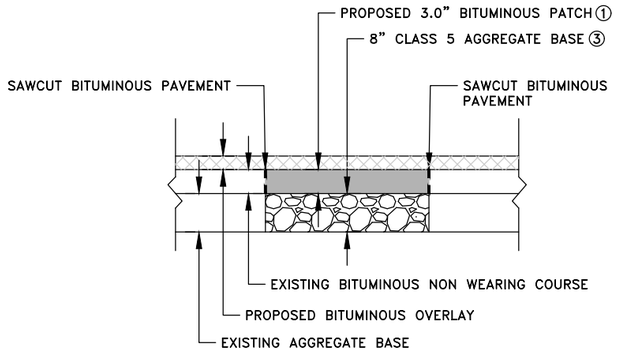

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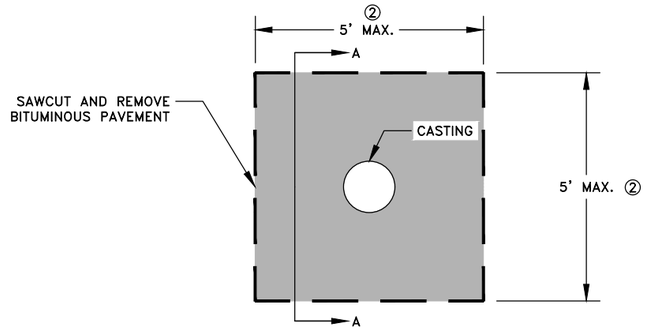

2/4 BITUMINOUS PATCHING AT CASTING REMOVALS ⑤

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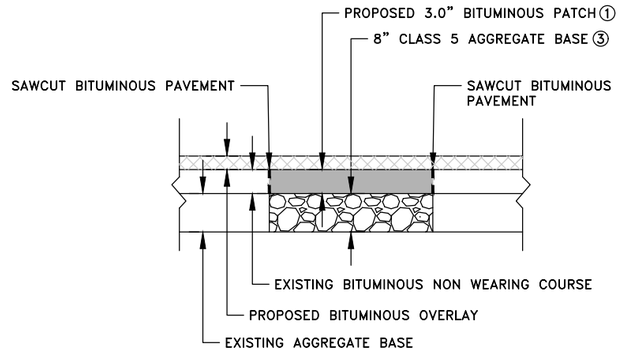

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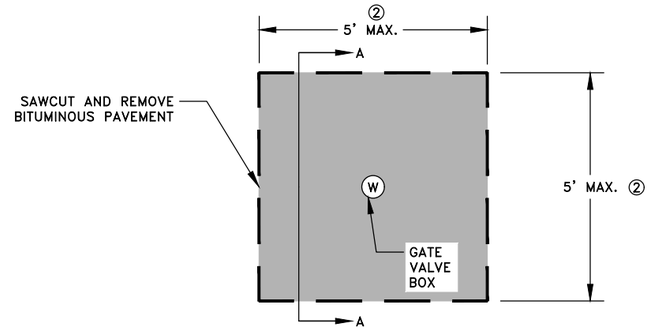

3/4 BITUMINOUS PATCHING AT GATE VALVE BOX REMOVAL ⑤

N.T.S.

REFERENCE NOTES:

① BITUMINOUS MIXTURE FOR PATCHING SHALL BE PAID PER ITEM 2360 TYPE SP 12.5 WEARING COURSE MIXTURE (2:B) 3.0" THICK.

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

③ AGGREGATE BASE SHALL BE PAID PER ITEM 2211 AGGREGATE BASE CLASS 5.

④ SEE (2/32) FOR REQUIRED BARRICADES. BARRICADES SHALL REMAIN IN PLACE UNTIL THE BITUMINOUS OVERLAY IS COMPLETED.

⑤ CONTRACTOR SHALL USE FLAGGERS AS REQUIRED TO MAINTAIN TWO WAY TRAFFIC DURING REPLACEMENT OF CASTINGS AND VALVE BOXES. CONTRACTOR SHALL PATCH THE BITUMINOUS THE SAY DAY AS REMOVAL OR TEMPORARILY FILL THE REMOVED AREA WITH CLASS 5 AGGREGATE BASE.

S.A.P. 235–145–001
S.A.P. 235–146–001

DATE	REVISION

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2026 STREET REHABILITATION PROJECT

DETAILS

CITY OF ST. FRANCIS, MINNESOTA

SHEET 4 OF 34 SHEETS

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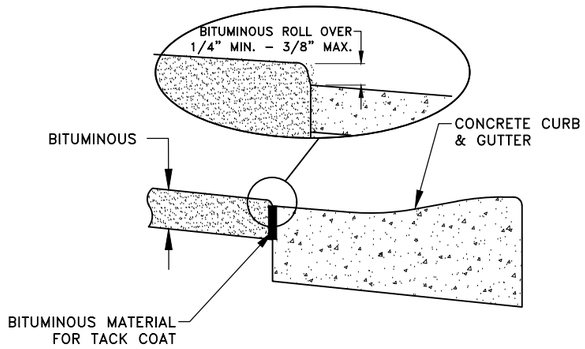
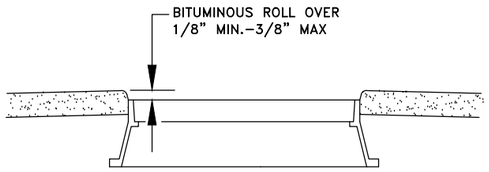
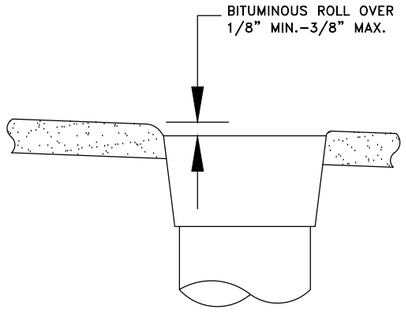


1/5 PAVING AT CURB DETAIL
N.T.S.



2/5 PAVING AT CASTING DETAIL
N.T.S.



3/5 PAVING AT VALVE BOX DETAIL
N.T.S.

S.A.P. 235–145–001
S.A.P. 235–146–001

DATE	REVISION

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CRAIG J. JOCHUM, P.E.
Date 3/2/26 Lic. No. 23461

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

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2026 STREET REHABILITATION PROJECT

DETAILS

CITY OF ST. FRANCIS, MINNESOTA

SHEET 5 OF 34 SHEETS

SF328

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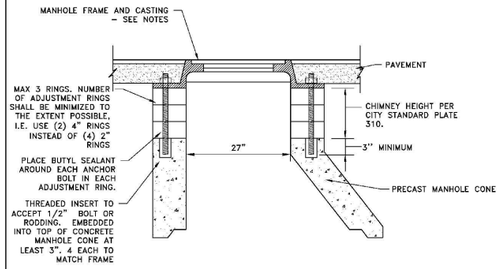
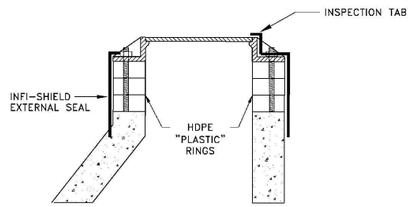


NOTES:
1. ALL NUTS, BOLTS, THREADED INSERTS, AND RODDING SHALL BE 316 STAINLESS STEEL.
2. ADJUSTMENT RINGS SHALL BE HIGH DENSITY POLYETHYLENE RINGS AS MANUFACTURED BY LADTECH, INC OR APPROVED EQUAL.
3. ALL RINGS SHALL MEET OR EXCEED MnDOT HS-20 TRAFFIC LOADING.
4. AS DETERMINED BY THE CITY ENGINEER, PRECAST CONCRETE ADJUSTING RINGS OR BRICK CHIMNEY WILL BE ALLOWED FOR ADJUSTING EXISTING MANHOLES.
5. CLEAN ALL SURFACES TO REMOVE SCALE OR LOOSE IMPEDIMENTS BEFORE PLACING ANY MASTIC, SEALANT, OR INSTALLATION OF FRAME AND CASTING SYSTEM.
6. 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

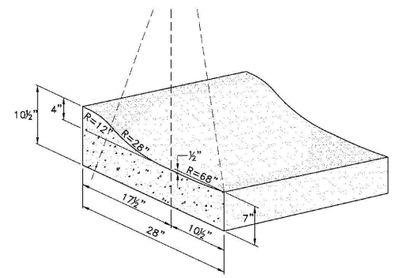
APPROVED 5/1/2023	City of St. Francis	STANDARD PLATE NO. 309
REVISED		



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.

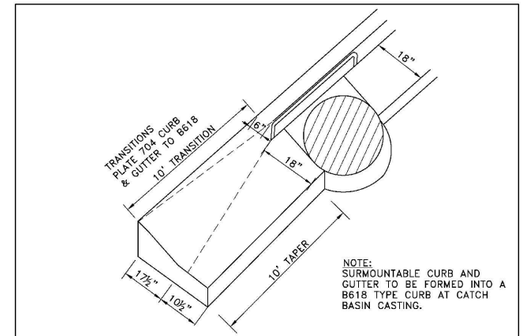
EXTERNAL CHIMNEY SEAL
NO SCALE

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



SURMOUNTABLE CONCRETE CURB AND GUTTER
NO SCALE

APPROVED 5/1/2023	City of St. Francis	STANDARD PLATE NO. 704
REVISED		



CURB TRANSITION (B618) AT CATCH BASIN
NOT TO SCALE

APPROVED 5/1/2023	City of St. Francis	STANDARD PLATE NO. 705
REVISED 10/14/2025		

GENERAL NOTES:
1. STORM SEWER CASTINGS SHALL BE NEENAH R-1733 WITH TWO CONCEALED LIFT HOLES, RAISED KNOB SURFACE DESIGN, WITH 2" HIGH RAISED FLUSH LETTERING "STORM SEWER" OR APPROVED EQUAL.
2. SANITARY SEWER CASTINGS SHALL BE NEENAH R-1733 WITH, T-SEAL GASKET, TWO CONCEALED LIFT HOLES, RAISED KNOB SURFACE DESIGN, WITH 2" HIGH RAISED FLUSH LETTERING "SANITARY SEWER" OR APPROVED EQUAL.

S.A.P. 235-145-001
S.A.P. 235-146-001

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CHECKED BY: TAE

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2026 STREET REHABILITATION PROJECT

DETAILS

CITY OF ST. FRANCIS, MINNESOTA

SHEET 6 OF 34 SHEETS

SF328

STRUCTURE AND VALVE ITEMS — TAB A

STREET SEGMENT	STRUCTURE NUMBER	2104 REMOVE CASTING (EACH)	2104 - REMOVE VALVE BOX (EACH)	2104 - SALVAGE CASTING (EACH)	2504 - VAVLE BOX (EACH)	2504 - ADJUST VALVE BOX - WATER (EACH)	2506 - CASTING ASSEMBLY (EACH)	2506 - INSTALL CASTING (EACH)	2506 - GROUT CATCH BASIN OR MANHOLE (EACH)	2506 - ADJUST FRAME AND RING CASTING (EACH)
227TH AVENUE AND SILVEROD STREET 235-145-001	SAN1								1	1
	SAN2								1	1
	SAN3								1	1
	SAN4								1	1
	SAN5								1	1
	SAN6								1	1
	STRM1								1	
	STRM2								1	
	STRM3								1	
	STRM4								1	
	STRM5								1	
	STRM6								1	
	STRM7								1	
	VALVES		5		5					
SUBTOTAL		0	5	0	5	0	0	0	13	6
QUAY STREET 235-146-001	SAN9								1	1
	SAN10								1	1
	SAN11								1	1
	SAN12								1	1
	SAN13								1	1
	STRM9								1	
	STRM10								1	
	STRM11								1	
	VALVES		2		2	1				
SUBTOTAL		0	2	0	2	1	0	0	8	5
SIVEROD STREET - LOCAL	SAN7	1					1			
	SAN8								1	1
	STRM8	1					1			
SUBTOTAL		2	0	0	0	0	2	0	1	1
228TH AVENUE - LOCAL	SAN14								1	1
	SAN15								1	1
SUBTOTAL		0	0	0	0	0	0	0	2	2
ROSE COURT - LOCAL	SAN16								1	1
SUBTOTAL		0	0	0	0	0	0	0	1	1

STRUCTURE AND VALVE ITEMS (CONTINUED) — TAB A

STREET SEGMENT	STRUCTURE NUMBER	2104 REMOVE CASTING (EACH)	2104 - REMOVE VALVE BOX (EACH)	2104 - SALVAGE CASTING (EACH)	2504 - VAVLE BOX (EACH)	2504 - ADJUST VALVE BOX - WATER (EACH)	2506 - CASTING ASSEMBLY (EACH)	2506 - INSTALL CASTING (EACH)	2506 - GROUT CATCH BASIN OR MANHOLE (EACH)	2506 - ADJUST FRAME AND RING CASTING (EACH)
231ST LANE, GLADIOLA STREET, AND 233RD LANE - LOCAL	SAN17								1	1
	SAN18								1	1
	SAN19								1	1
	SAN20								1	1
	SAN21								1	1
	SAN22								1	1
	SAN23								1	1
	SAN24								1	1
	SAN25								1	1
	SAN26								1	1
	SAN27								1	1
	SAN28								1	1
	SAN29								1	1
	SAN30								1	1
	STRM12								1	
	STRM13								1	
	STRM14								1	
	STRM15								1	
	STRM16								1	
	STRM17								1	
	STRM18								1	
	STRM19								1	
	STRM20								1	
	STRM21								1	
	STRM22								1	
	VALVES					5				
SUBTOTAL		0	0	0	0	5	0	0	25	14
232ND LANE - LOCAL	SAN31								1	1
	SAN32								1	1
	SAN33								1	1
	SAN34								1	1
	VAVLES					1				
SUBTOTAL		0	0	0	0	1	0	0	4	4
EIDELWEISS STREET - LOCAL	SAN35								1	1
	SAN36								1	1
	SAN37								1	1
	SAN38								1	1
	SAN39								1	1
	STRM23								1	
	STRM24			1				1		
	STRM25			1				1		
	STRM26								1	
	VAVLES					1				
SUBTOTAL		0	0	2	0	1	0	2	7	5
DAHLIA STREET - LOCAL	SAN40								1	1
SUBTOTAL		0	0	0	0	0	0	0	1	1
PROJECT TOTALS		2	7	2	7	8	2	2	62	39

S.A.P. 235-145-001
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2026 STREET REHABILITATION PROJECT

TABULATIONS

CITY OF ST. FRANCIS, MINNESOTA

SHEET 7 OF 34 SHEETS

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CONCRETE AND BITUMINOUS REMOVAL AND REPLACEMENT

TAB B

A. PEDESTRIAN RAMP SUMMARY

PED RAMP NUMBER	LOCATION		PAY ITEMS									
	THRU 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 12.5 WEARING COURSE MIX 3.0" THICK	2521 - 6" CONCRETE WALK	2531 - CON CURB & GUTTER DESIGN SPECIAL	2531 - TRUNCATED DOMES
			LIN FT	LIN FT	LIN FT	SQ YD	SQ YD	TON	SQ YD	SQ FT	LIN FT	SQ FT
227TH AVENUE AND SILVEROD STREET - SAP 235-145-001												
1	227TH AVENUE	STA 5+60, LEFT	14	21	17	14	4	6.5	4	115	17	10
2	SILVEROD STREET	STA 12+45, LEFT	17	37	23	26	5	11.5	5	220	23	16
LOCAL FUNDED STREET												
3	SILVEROD STREET	STA 16+50, LEFT	14	36	25	21	30	17.9	6	360	25	16
4	231ST LANE	STA 0+30, RIGHT	18	29	27	18	6	6.9	6	105	27	10
		SUBTOTAL	63	123	92	79	45	42.8	21	800	92	52

B. VALVE BOX REMOAVAL AND REPLACEMENT SUMMARY

	LOCATION		PAY ITEMS									
	THRU 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 12.5 WEARING COURSE MIX 3.0" THICK	2521 - 6" CONCRETE WALK	2531 - CON CURB & GUTTER DESIGN SPECIAL	2531 - TRUNCATED DOMES
			LIN FT	LIN FT	LIN FT	SQ YD	SQ YD	TON	SQ YD	SQ FT	LIN FT	SQ FT
227TH AVENUE AND SILVEROD STREET - SAP 235-145-001												
	227TH AVENUE	STA 5+43, RIGHT		20			3	1.2	3			
	227TH AVENUE	STA 5+58, LEFT		20			3	1.2	3			
	SILVEROD STREET	STA 12+06, LEFT		20			3	1.2	3			
	SILVEROD STREET	STA 12+28, RIGHT		20			3	1.2	3			
	SILVEROD STREET	STA 12+50, LEFT		20			3	1.2	3			
QUAY STREET - SAP 235-146-001												
	QUAY STREET	STA 3+18, LEFT		20			3	1.2	3			
	QUAY STREET	STA 3+30, RIGHT		20			3	1.2	3			
		SUBTOTAL	0	140	0	0	21	8.4	21	0	0	0

C. SALVAGE AND INSTALL CATCH BASINS SUMMARY

STR. NO.	LOCATION		PAY ITEMS									
	THRU 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 12.5 WEARING COURSE MIX 3.0" THICK	2521 - 6" CONCRETE WALK	2531 - CON CURB & GUTTER DESIGN SPECIAL	2531 - TRUNCATED DOMES
			LIN FT	LIN FT	LIN FT	SQ YD	SQ YD	TON	SQ YD	SQ FT	LIN FT	SQ FT
EIDELWEISS STREET - LOCAL												
STRM 24	EIDELWEISS STREET	STA 1+15, RIGHT	30	24	20	14	5	7	5	126	20	
STRM 25	EIDELWEISS STREET	STA 4+15, RIGHT	5	24	20		5	2	5		20	
		SUBTOTAL	35	48	40	14	10	9	10	126	40	0

D. CASTING REMOVAL AND REPLACEMENT SUMMARY

STR. NO.	LOCATION		PAY ITEMS									
	THRU 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 12.5 WEARING COURSE MIX 3.0" THICK	2521 - 6" CONCRETE WALK	2531 - CON CURB & GUTTER DESIGN SPECIAL	2531 - TRUNCATED DOMES
			LIN FT	LIN FT	LIN FT	SQ YD	SQ YD	TON	SQ YD	SQ FT	LIN FT	SQ FT
SILVEROD STREET - LOCAL												
STRM8	SILVEROD STREET	STA 13+66, LEFT		20			3	1.2	3			
SAN7	SILVEROD STREET	STA 14+50		20			3	1.2	3			
		SUBTOTAL	0	40	0	0	6	2.4	6	0	0	0

E. CURB AND GUTTER REMOVAL AND REPLACEMENT SUMMARY

LOCATION			PAY ITEMS									
			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 12.5 WEARING COURSE MIX 3.0" THICK	2521 - 6" CONCRETE WALK	2531 - CON CURB & GUTTER DESIGN SPECIAL	2531 - TRUNCATED DOMES
			LIN FT	LIN FT	LIN FT	SQ YD	SQ YD	TON	SQ YD	SQ FT	LIN FT	SQ FT
227TH AVENUE AND SILVEROD STREET - SAP 235-145-001												
	227TH AVENUE	STA 0+58 TO STA 8+00	70	207	148		33		33		148	
	SILVEROD STREET	STA 8+00 TO STA 12+48	42	126	90		20		20		90	
QUAY STREET - SAP 235-146-001												
	QUAY STREET	STA 0+42 TO 7+59	67	200	143		32		32		143	
LOCAL FUNDING												
	ALL STREET SEGMENTS		115	343	245		54		54		245	
		SUBTOTAL	294	876	626	0	139	0	139	0	626	0
		PROJECT TOTALS	**392**	**1227**	**758**	**93**	**221**	**62.6**	**197**	**926**	**758**	**52**

S.A.P. 235-145-001
S.A.P. 235-146-001

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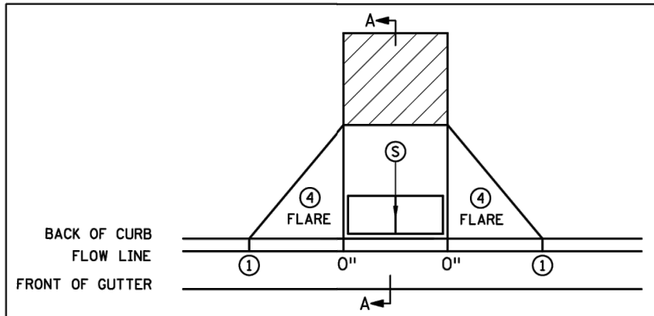

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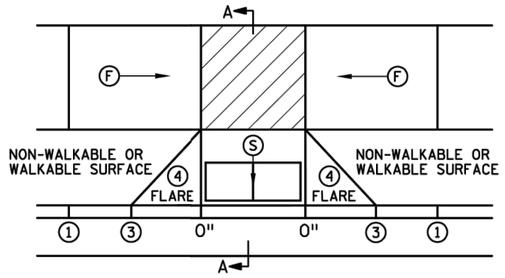
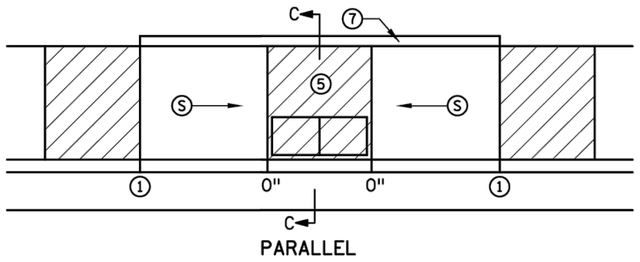
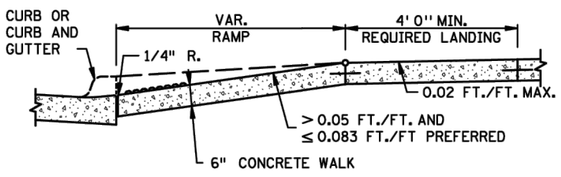


TIERED PERPENDICULAR

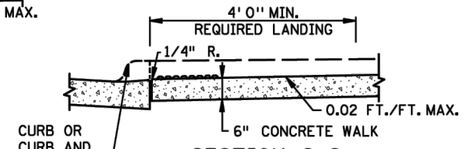


PARALLEL



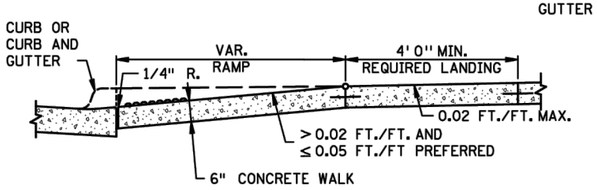
SECTION A-A

PERPENDICULAR/TIERED/DIAGONAL



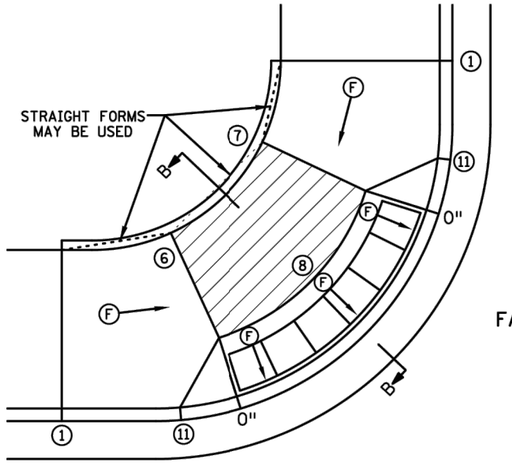
SECTION C-C

PARALLEL/DEPRESSED CORNER

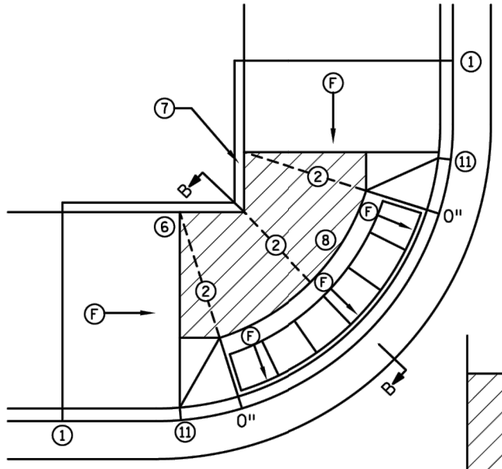


SECTION B-B

FAN

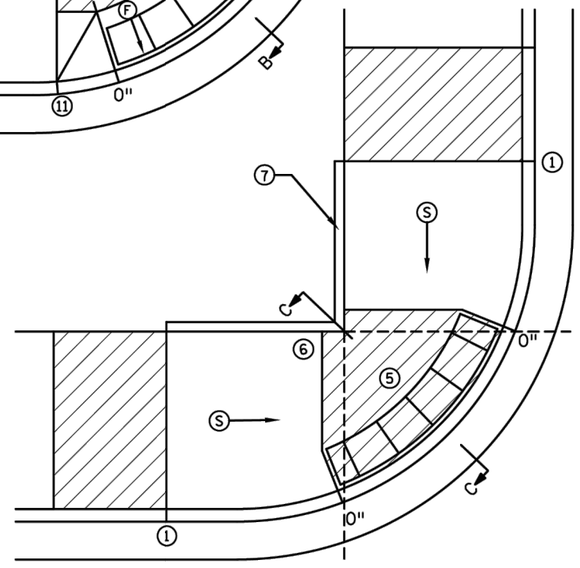


FAN (10)

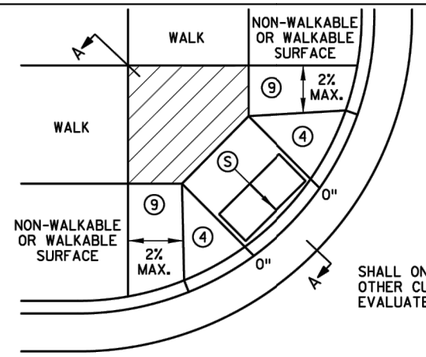


MODIFIED FAN (10)

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.

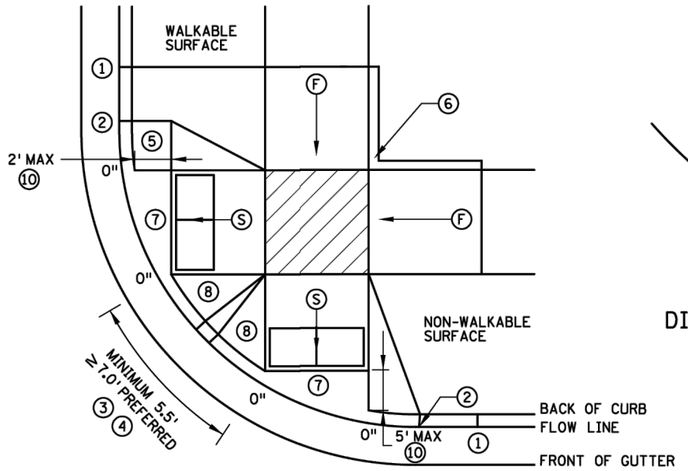
(1) MATCH FULL HEIGHT CURB.
(2) 4' MINIMUM DEPTH LANDING REQUIRED ACROSS TOP OF RAMP.
(3) 3" HIGH CURB WHEN USING A 3' LONG RAMP, 4" HIGH CURB WHEN USING A 4' LONG RAMP.
(4) SEE SHEET 4 OF 6, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
(5) DETECTABLE WARNINGS MAY BE PART 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

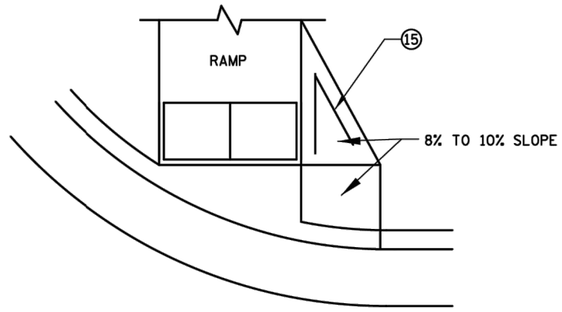
THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

- (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

LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION	PEDESTRIAN CURB RAMP DETAILS	APPROVED: 11-04-2021 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.250	1 OF 6
	DEPARTMENT OF TRANSPORTATION	S.A.P. 235-145-001 S.A.P. 235-146-001	STANDARD PLAN	STATE PROJ. NO.	SHEET NO. 9	
				TRUNK HWY.	TOTAL SHEETS 34	

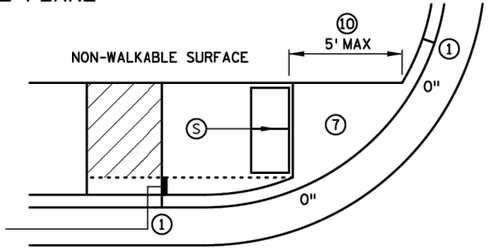


COMBINED DIRECTIONAL

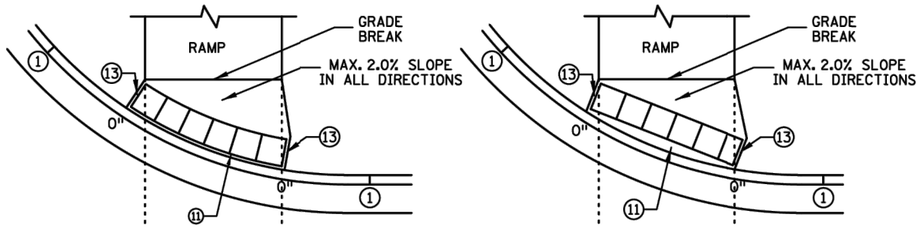


DIRECTIONAL RAMP WALKABLE FLARE

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.

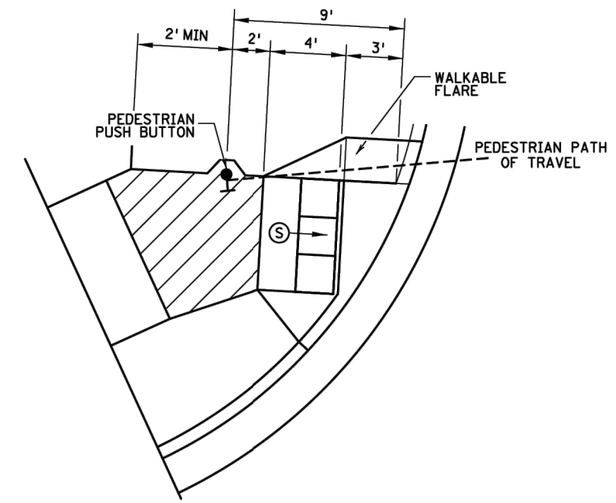


STANDARD ONE-WAY DIRECTIONAL ⑨



DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫

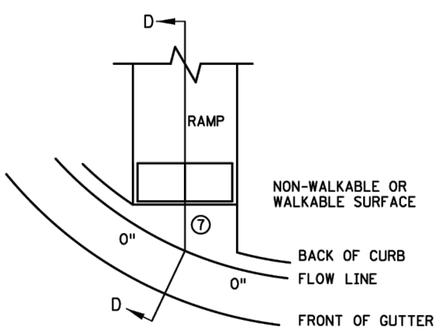
ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB

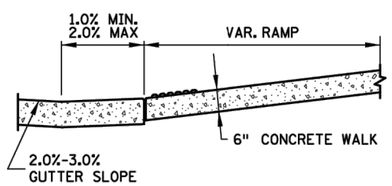


SEMI-DIRECTIONAL RAMP ③④⑨

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.

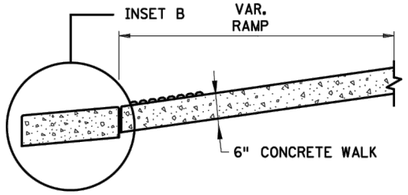
Ⓢ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.

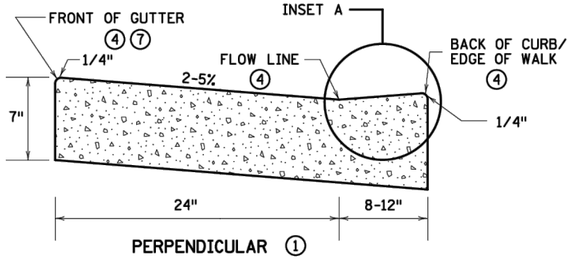
Ⓕ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.

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.

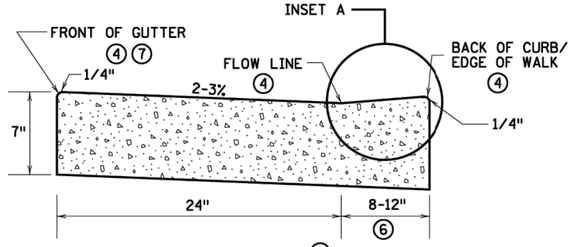
X" CURB HEIGHT

LEAD EXPERT OFFICE: JEFFREY PERKINS, OPERATIONS DIVISION		PEDESTRIAN CURB RAMP DETAILS	APPROVED: 11-04-2021 REVISED:	THOMAS STYRBICKI, STATE DESIGN ENGINEER	STANDARD PLAN 5-297.250	2 OF 6
	DEPARTMENT OF TRANSPORTATION	S.A.P. 235-145-001 S.A.P. 235-146-001	STANDARD PLAN	STATE PROJ. NO.	SHEET NO. 10	
				TRUNK HWY.	TOTAL SHEETS 34	

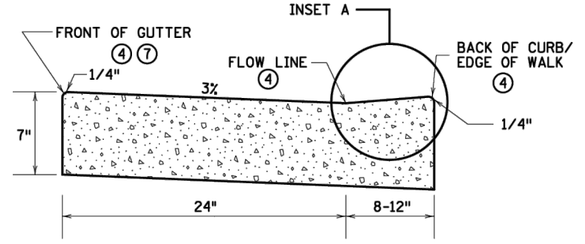




PERPENDICULAR ①

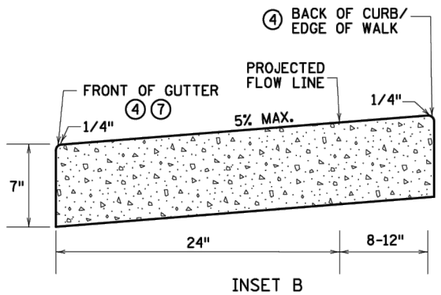


NON PERPENDICULAR ②



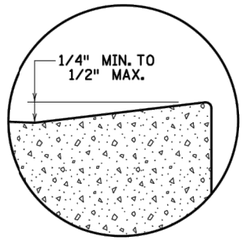
FOR CURB MACHINE PLACEMENT AROUND RADIUS ③
(REGARDLESS OF RAMP TYPE)

PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL

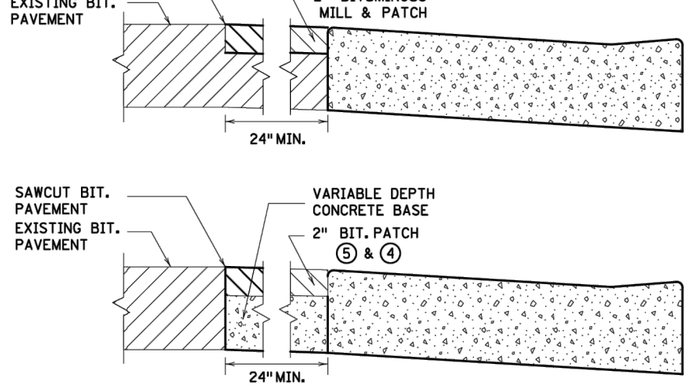


INSET B

OUTFLOW GUTTER ⑧



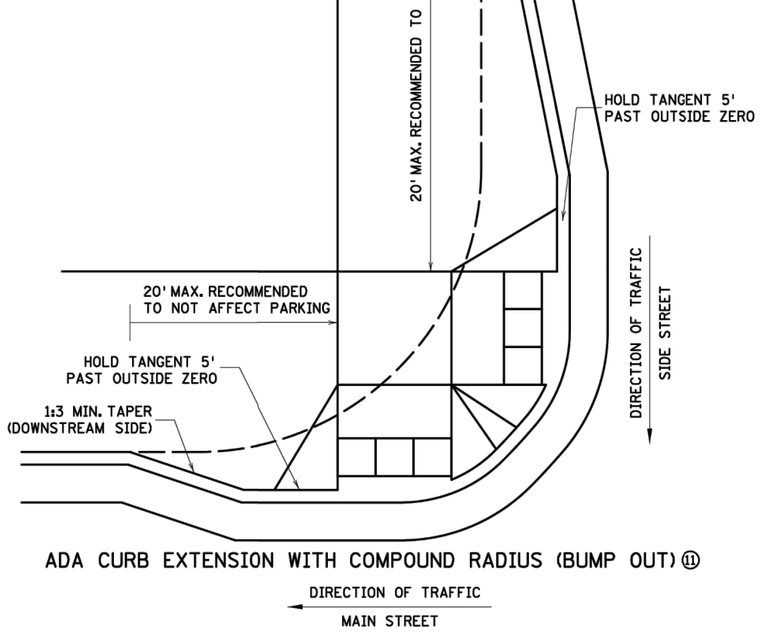
INSET A



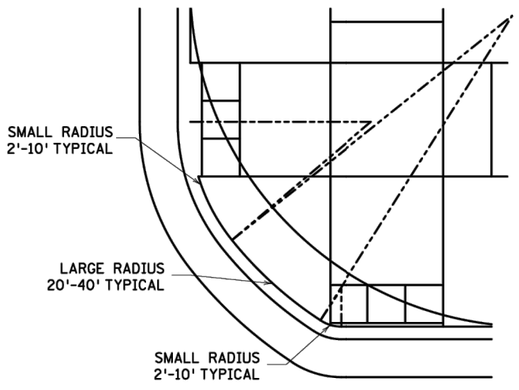
ONLY ALLOWED PER ENGINEER'S APPROVAL

PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER

FOR USE ON CURB RAMP RETROFITS



ADA CURB EXTENSION WITH COMPOUND RADIUS (BUMP OUT) ⑪



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.

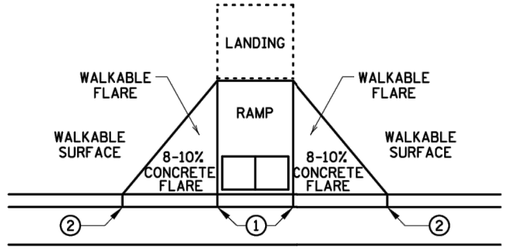
⑧ SHOULD BE USED AT VERTICALLY CONSTRAINED AREAS WHEN AT A DRAINAGE HIGH POINT OR SUPER ELEVATED ROADWAY SEGMENTS.

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.

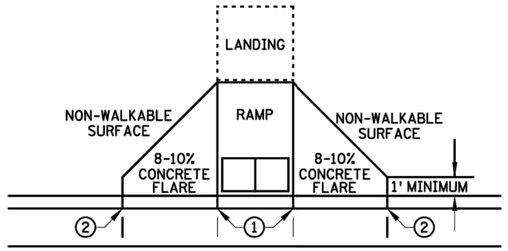
⑩ HELPS PROVIDE TWO SEPARATE RAMPS, REDUCES THE DOME SETBACK LENGTH AND MINIMIZES DIRECTIONAL CURB. THIS RADIUS DESIGN CLOSELY FOLLOWS THE TURNING VEHICLE PATH WHILE OPTIMIZING CURB RAMP LENGTH.

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.

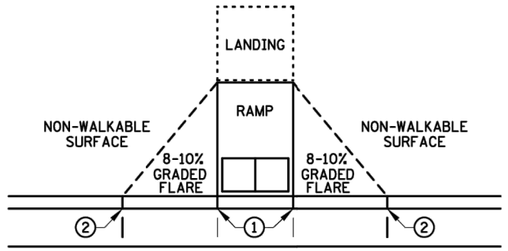
LEAD EXPERT OFFICE	JEFFREY PERKINS OPERATIONS DIVISION	PEDESTRIAN CURB RAMP DETAILS	APPROVED: 11-04-2021 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.250	3 OF 6
	DEPARTMENT OF TRANSPORTATION	S.A.P. 235-145-001 S.A.P. 235-146-001	STANDARD PLAN	STATE PROJ. NO.	SHEET NO.	11
				TRUNK HWY.	TOTAL SHEETS	34



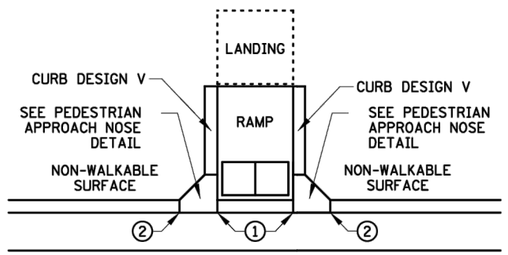
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

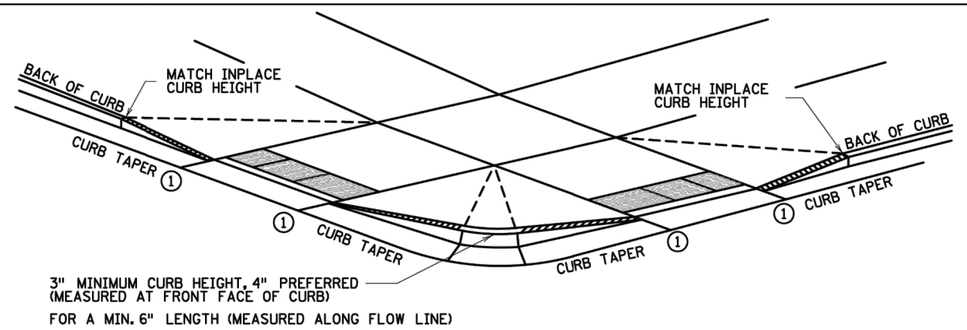


GRADED FLARES

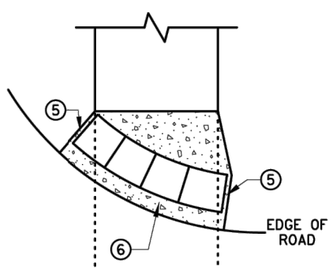


RETURNED CURB ④

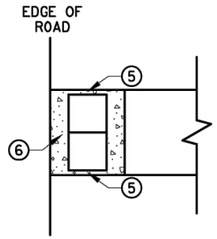
TYPICAL SIDE TREATMENT OPTIONS ③ ⑩



DETECTABLE EDGE WITH ⑦
CURB AND GUTTER

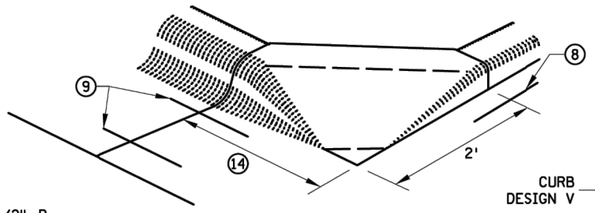


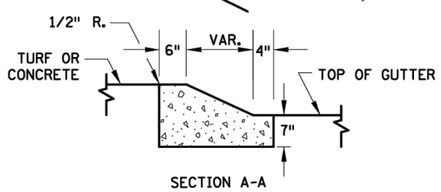
RADIAL DETECTABLE WARNING



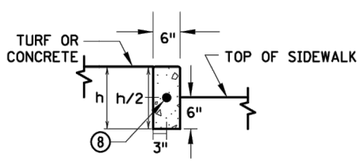
RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

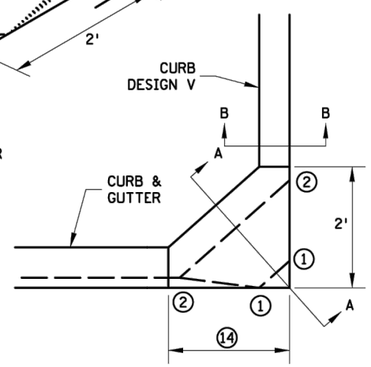




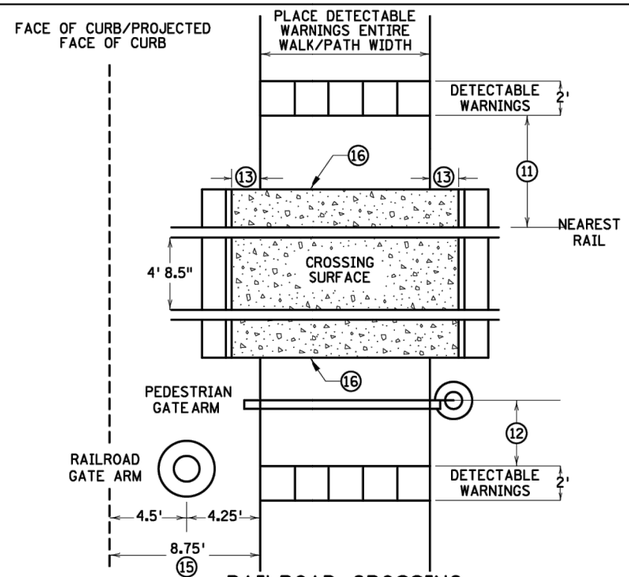
SECTION A-A



SECTION B-B



PEDESTRIAN APPROACH
NOSE DETAIL
(FOR RETURNED CURB
SIDE TREATMENT)



RAILROAD CROSSING
PLAN VIEW

NOTES:

INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3 INCH CURB HEIGHT. INCREASE CURB TAPER LENGTH AT LESS THAN 8% OR REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

SEE STANDARD PLATE 7038 AND THIS SHEET FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.

A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.

CONCRETE FLARE LENGTHS ADJACENT TO NON-WALKABLE SURFACES SHOULD BE LESS THAN 8' LONG MEASURED ALONG THE RAMPS FROM THE BACK OF CURB.

① 0" CURB HEIGHT. SEE INSET A ON SHEET 3 OF 6.

② FULL CURB HEIGHT.

③ SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE OF BOTH ROADWAY AND SIDEWALK, ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.

④ TYPICALLY USED FOR MEDIANS AND ISLANDS.

⑤ WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE EDGE OF ROADWAY. MAINTAIN 3" MAX. BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.

⑥ IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNINGS SHALL BE PLACED 1' FROM THE EDGE OF BITUMINOUS ROADWAY AND/OR BITUMINOUS SHARED-USE PATH TO PROVIDE VISUAL CONTRAST.

⑦ ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES DETECTABLE WARNINGS WHEREVER THERE IS ZERO-INCH HIGH CURB. CURB TAPERS ARE CONSIDERED A DETECTABLE EDGE WHEN THE TAPER STARTS WITHIN 3" OF THE EDGE OF THE DETECTABLE WARNINGS. AND UNIFORMLY RISES TO A 3-INCH MINIMUM CURB HEIGHT. ANY CURB NOT PART OF A CURB TAPER AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH ACCESSIBILITY STANDARDS.

⑧ DRILL AND GROUT 1 - NO. 4 12" LONG REINFORCEMENT BAR (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE V CURB.

⑨ DRILL AND GROUT 2 - NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE CURB AND GUTTER.

⑩ SIDE TREATMENT EXAMPLES SHOWN ARE WHEN THE INITIAL LANDING IS APPROXIMATELY LEVEL WITH THE FULL HEIGHT CURB (I.E. 6' LONG RAMP FOR 6" HIGH CURB). WHEN THE INITIAL LANDING IS MORE THAN 1" BELOW FULL HEIGHT CURB REFER TO SHEETS 1 & 2 TO MODIFY THE CURB HEIGHT TAPERS AND MAINTAIN POSITIVE BOULEVARD DRAINAGE. CONSTRUCT THESE TAPERS AT 0"-3" AT 8-10%, THEN LESS THAN 5% FROM 3" CURB TO FULL CURB HEIGHT.

⑪ NEAREST EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 12' MINIMUM TO 15' MAXIMUM FROM THE NEAREST RAIL. FOR SKEWED RAILWAYS IN NO INSTANCE SHALL THE DETECTABLE WARNING BE CLOSER THAN 12' MEASURED PERPENDICULAR TO THE NEAREST RAIL.

⑫ WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL, 2' FROM THE APPROACHING SIDE OF THE GATE ARM. THIS CRITERIA GOVERNS OVER NOTE ⑪.

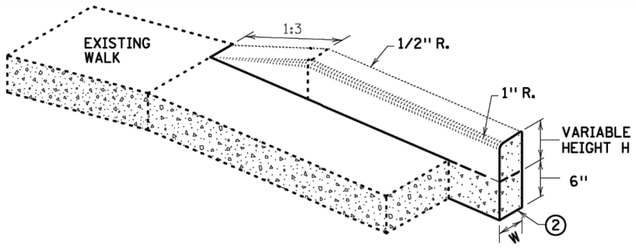
⑬ CROSSING SURFACE SHALL EXTEND 2' MINIMUM PAST THE OUTSIDE EDGE OF WALK OR SHARED-USE PATH.

⑭ 3' FOR MEDIANS AND SPLITTER ISLANDS. NOSE CAN BE REDUCED TO 2' ON FREE RIGHT ISLANDS.

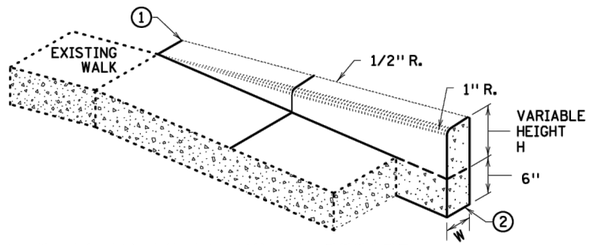
⑮ SIDEWALK TO BE PLACED 8.75' MIN. FROM THE FACE OF CURB/PROJECTED FACE OF CURB. THIS ENSURES MIN. CLEARANCE BETWEEN THE SIDEWALK AND GATE ARM COUNTERWEIGHT SUPPORTS.

⑯ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.

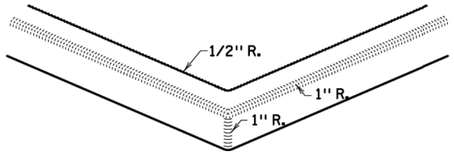
LEAD EXPERT OFFICE: JEFFREY PERKINS, OPERATIONS DIVISION		PEDESTRIAN CURB RAMP DETAILS	APPROVED: 11-04-2021 REVISED:	THOMAS STYRBICKI, STATE DESIGN ENGINEER	STANDARD PLAN 5-297.250 — 4 OF 6
	DEPARTMENT OF TRANSPORTATION	S.A.P. 235-145-001 S.A.P. 235-146-001	STANDARD PLAN	STATE PROJ. NO.	SHEET NO. 12
				TRUNK HWY.	TOTAL SHEETS 34



V CURB ADJACENT TO LANDSCAPE
CURB WITHIN SIDEWALK LIMITS

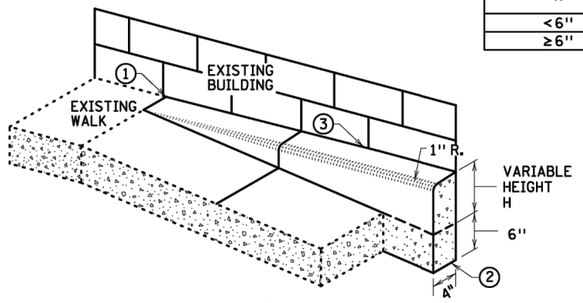


V CURB ADJACENT TO LANDSCAPE
CURB OUTSIDE SIDEWALK LIMITS

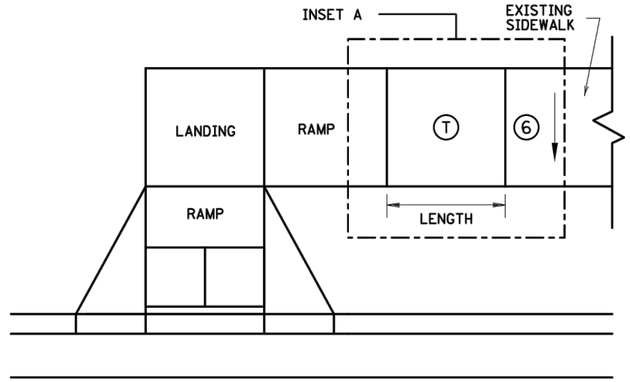


V CURB INTERSECTION

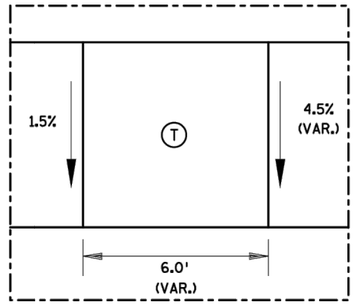
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
<6"	4"
≥6"	6"



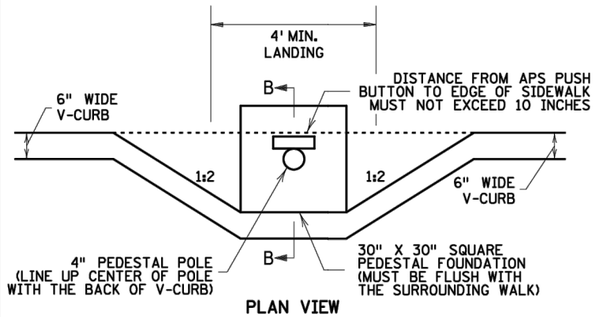
V CURB ADJACENT TO BUILDING OR BARRIER



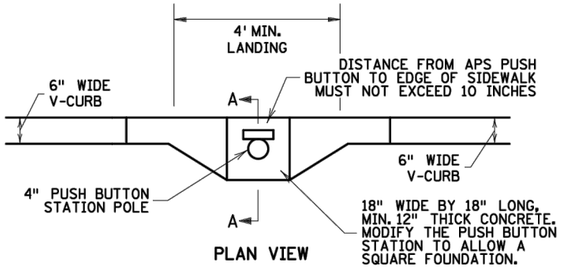
TRANSITION PANEL ④⑤



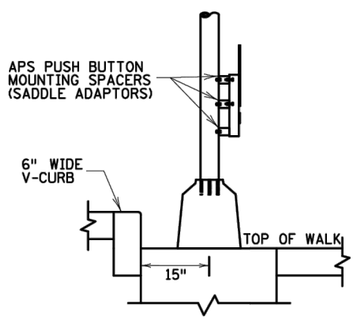
INSET A



PLAN VIEW

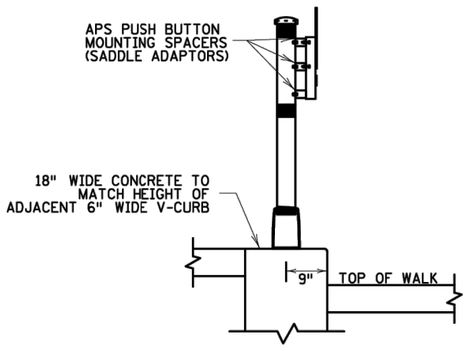


PLAN VIEW



SECTION B-B

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)



SECTION A-A

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 ½" 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

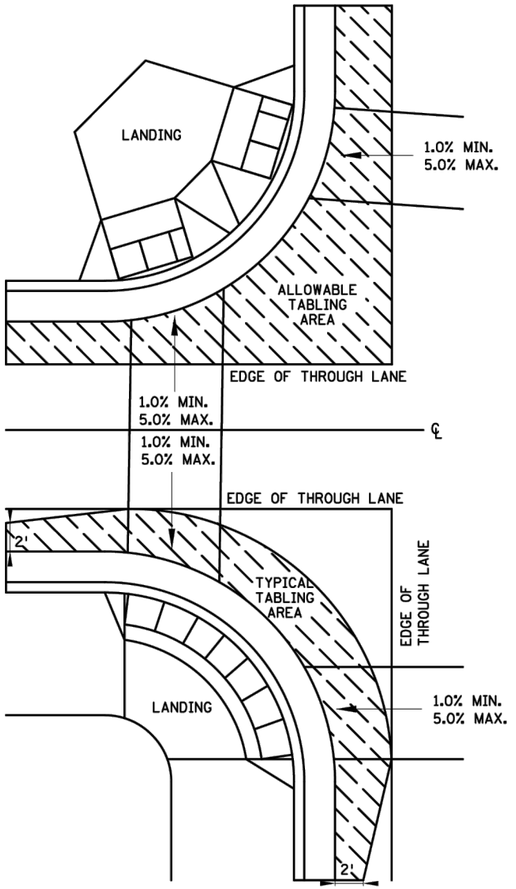
THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

Ⓢ 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%.

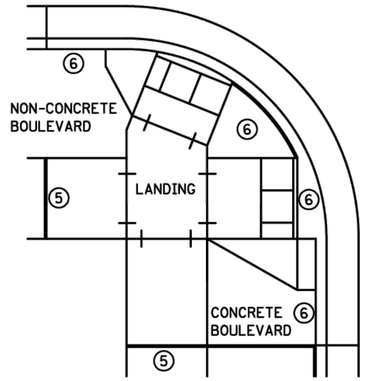
LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.

Ⓣ 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.

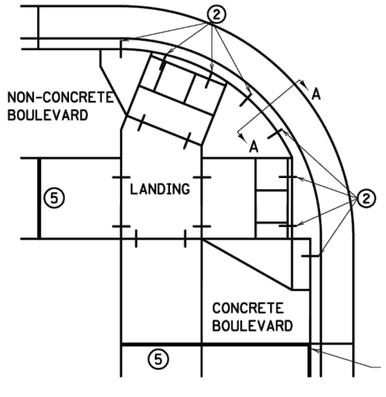
LEAD EXPERT OFFICE: JEFFREY PERKINS, OPERATIONS DIVISION		PEDESTRIAN CURB RAMP DETAILS	APPROVED: 11-04-2021 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.250	5 OF 6
DEPARTMENT OF TRANSPORTATION	S.A.P. 235-145-001 S.A.P. 235-146-001	STANDARD PLAN	STATE PROJ. NO.		SHEET NO.	13
			TRUNK HWY.		TOTAL SHEETS	34



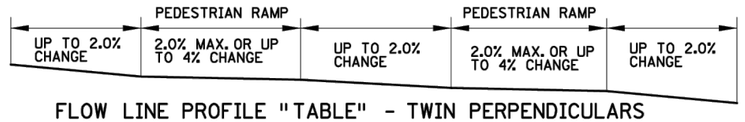
CURB LINE AND ROAD CROSSING ADJUSTMENTS



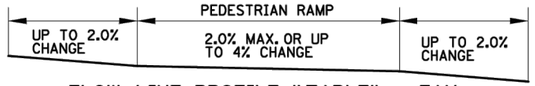
EXPANSION MATERIAL PLACEMENT FOR CONCRETE ROADWAYS



CURB LINE REINFORCEMENT ④ PLACEMENT ON BITUMINOUS ROADWAYS



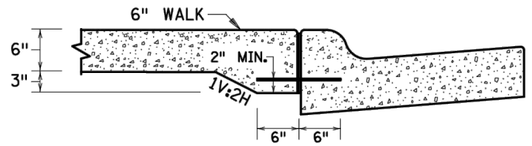
FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



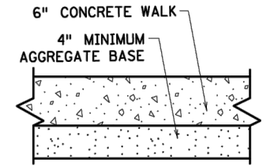
FLOW LINE PROFILE "TABLE" - FAN

FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS

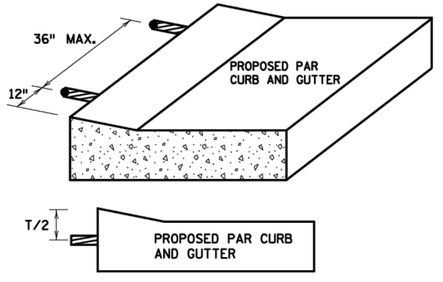
FLOW LINE PROFILE RAISE - FAN



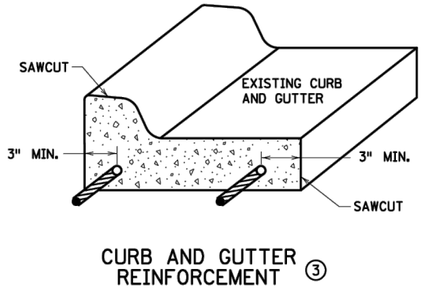
SECTION VIEW A-A
THICKENED SECTION
THROUGH CURB RAMP FLARES



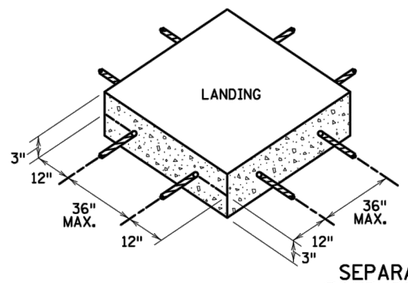
TYPICAL SIDEWALK SECTION
WITHIN INTERSECTION CORNER

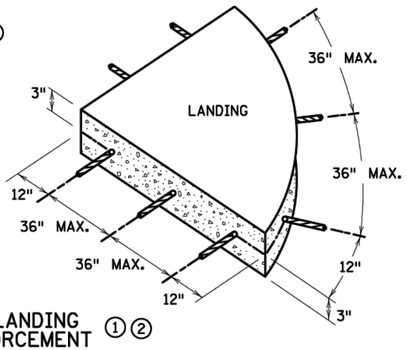


CURB RAMP REINFORCEMENT DETAILS ②④



CURB AND GUTTER REINFORCEMENT ③





SEPARATE LANDING POUR REINFORCEMENT ①②

GENERAL NOTES:

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

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

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

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

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

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

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

NOTES:

① TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET FOR ALL SEPARATELY POURED INITIAL LANDINGS.

② DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) AT 36" MAXIMUM CENTER TO CENTER MINIMUM 12" SPACING FROM CONSTRUCTION JOINTS. BARS TO BE ADJUSTED TO MATCH RAMP GRADE. BARS TO BE PAID BY EACH.

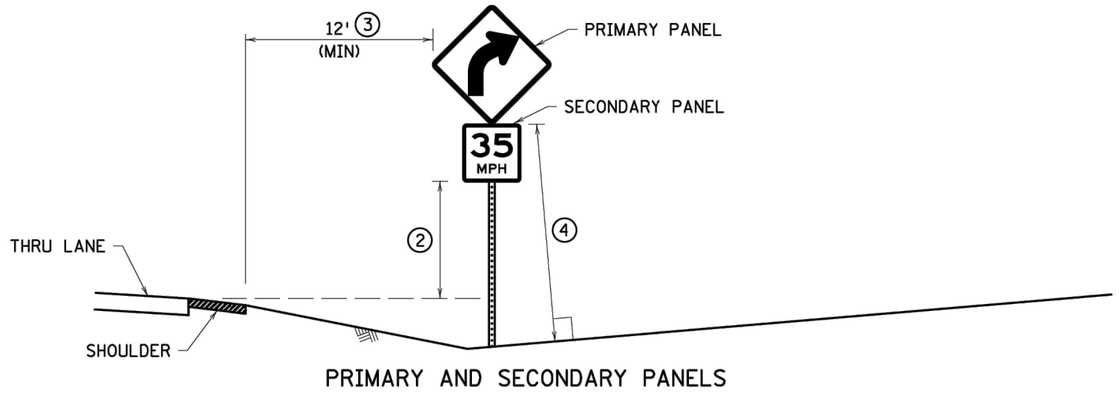
③ DRILL AND GROUT 2 - NO. 4 X 12'' LONG (6" EMBEDDED) REINFORCEMENT BARS (EPOXY COATED). REINFORCEMENT REQUIRED FOR ALL CONSTRUCTION JOINTS. BARS TO BE PAID BY EACH.

④ THIS CURB LINE REINFORCEMENT DETAIL SHALL BE USED ON BITUMINOUS ROADWAYS. FOR CONCRETE ROADWAYS, SEE NOTE 6.

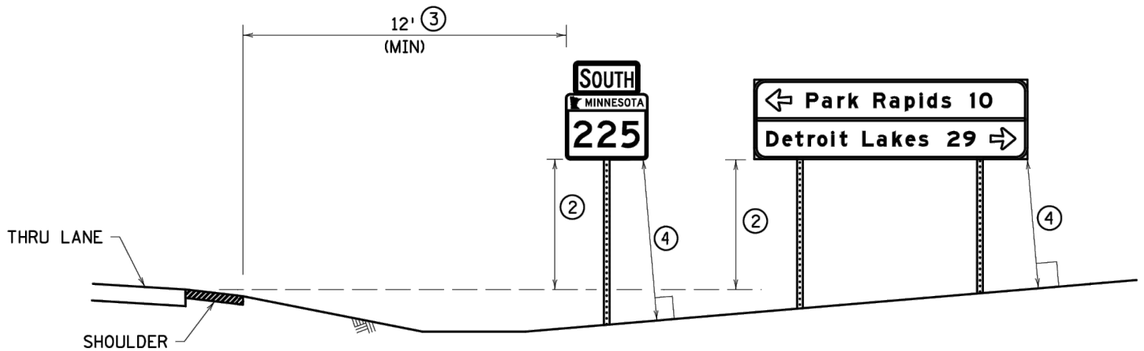
⑤ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.

⑥ USE AN APPROVED TYPE F (1/4 INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.

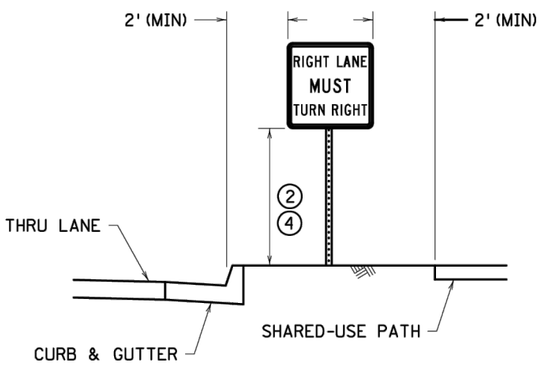
LEAD EXPERT OFFICE: JEFFREY PERKINS, OPERATIONS DIVISION	PEDESTRIAN CURB RAMP DETAILS	APPROVED: 11-04-2021 REVISED:	THOMAS STYRBICKI STATE DESIGN ENGINEER	STANDARD PLAN 5-297.250	6 OF 6
DEPARTMENT OF TRANSPORTATION	S.A.P. 235-145-001 S.A.P. 235-146-001	STANDARD PLAN	STATE PROJ. NO.	SHEET NO.	14
			TRUNK HWY.	TOTAL SHEETS	34



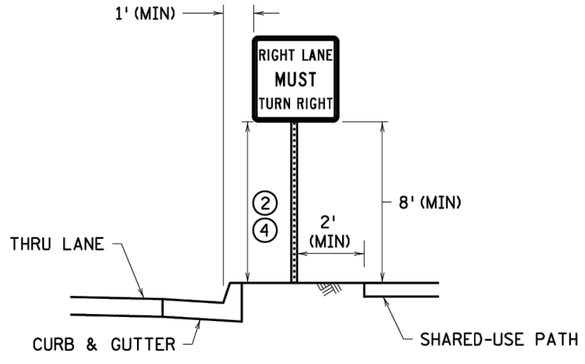
PRIMARY AND SECONDARY PANELS



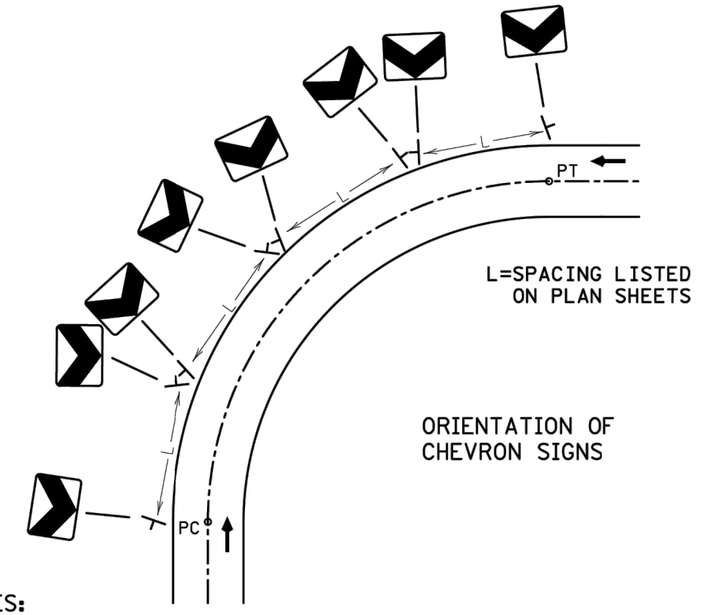
STANDARD LOCATIONS



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.

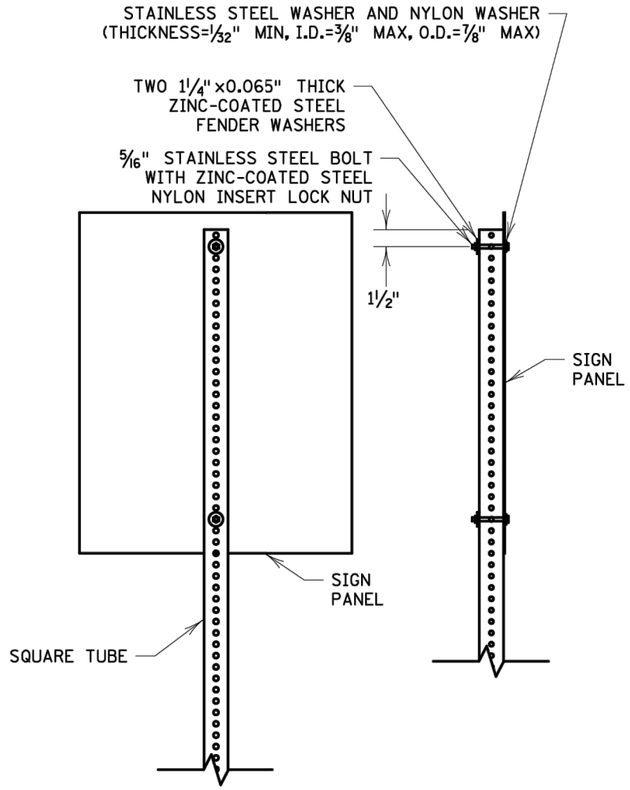
(2) ALL SIGN MOUNTING HEIGHTS ARE MEASURED VERTICALLY FROM THE BOTTOM OF THE LOWEST SIGN PANEL TO THE TOP OF THE CURB, OR IN ABSENCE OF CURB, TO THE NEAR EDGE OF THE THRU-LANE PAVEMENT. SEE SIGN TABULATIONS.

(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.

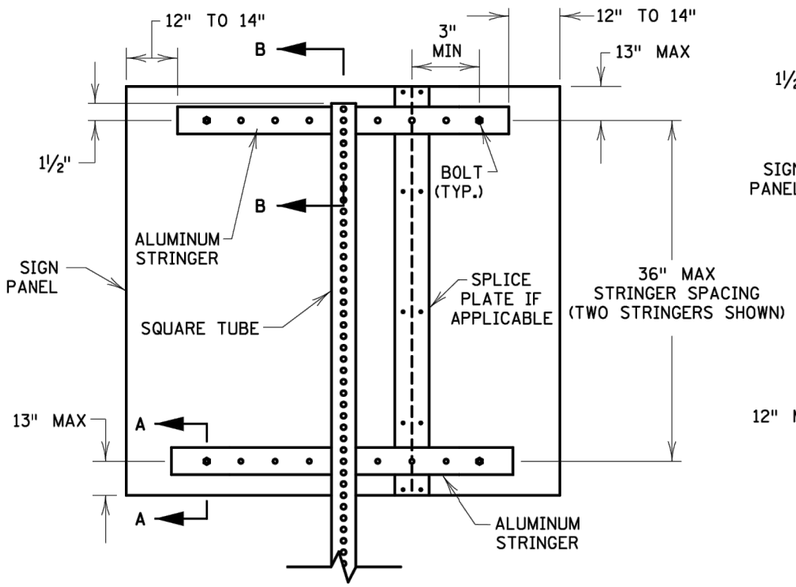
(4) CRASHWORTHY HEIGHT IS AT LEAST 7' FOR BREAKAWAY STRUCTURES AND AT LEAST 4' FOR BENDABLE STRUCTURES. SEE SPECIFIC SQUARE TUBE BASE STRUCTURE PLAN FOR CRASH RESPONSE TYPE. THE CRASHWORTHY HEIGHT IS MEASURED TO THE BOTTOM OF THE PRIMARY SIGN PANEL EXCLUDING ANY SECONDARY SIGN PANELS, MARKERS, DELINEATORS,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

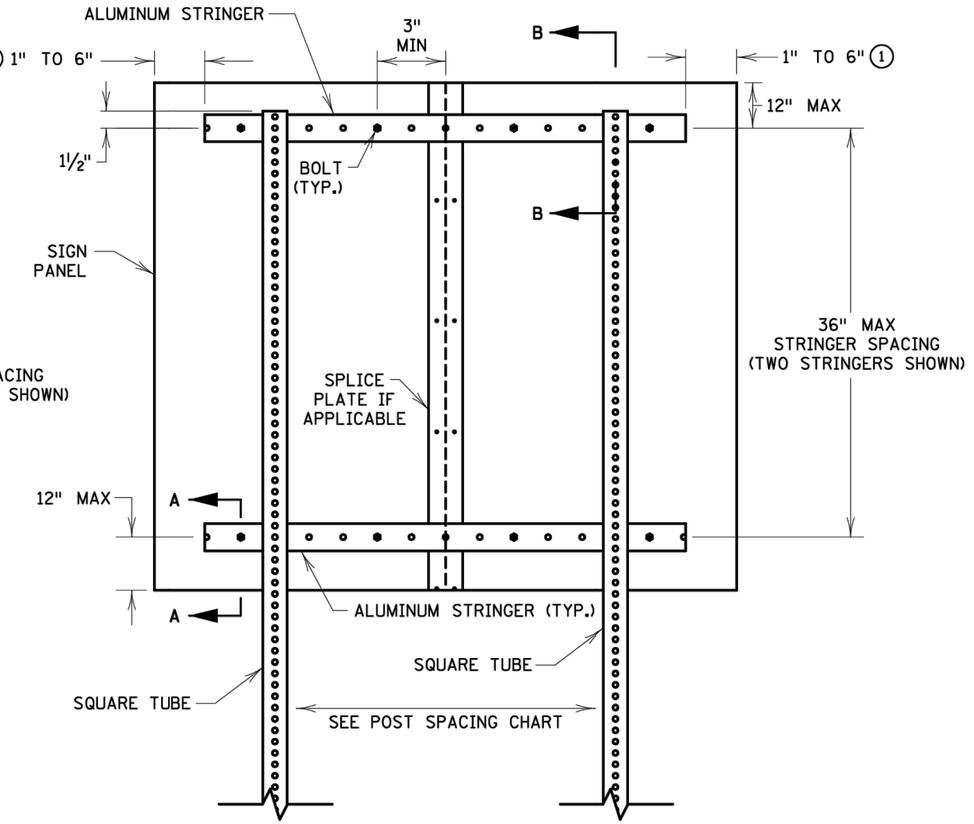
DEPARTMENT OF TRANSPORTATION	S.A.P. 235-145-001 S.A.P. 235-146-001	STANDARD PLAN	STATE PROJ. NO.	SHEET NO.	15
			TRUNK HWY.	TOTAL SHEETS	34



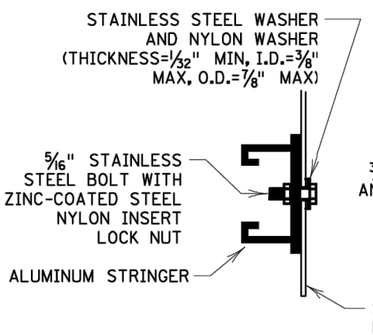
FOR SIGN PANELS UP TO 30" WIDE



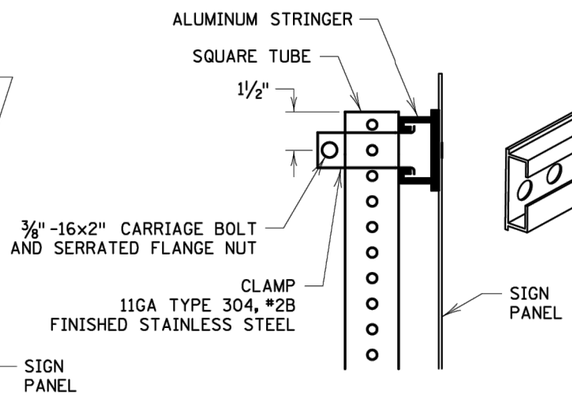
FOR SIGN PANELS 36" WIDE OR GREATER ON ONE POST



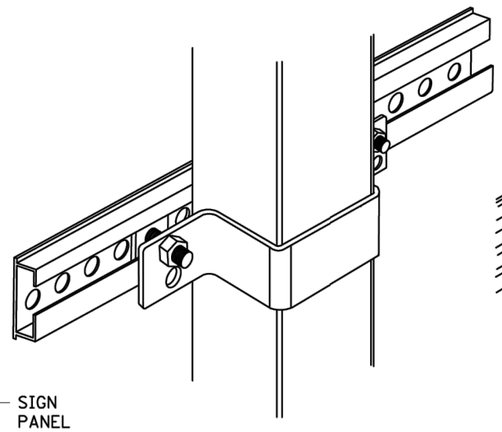
FOR SIGN PANELS ON TWO OR MORE POSTS



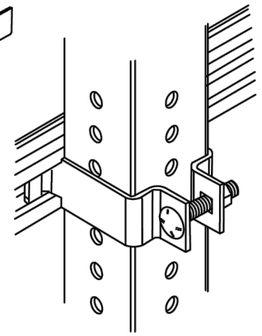
VIEW A-A



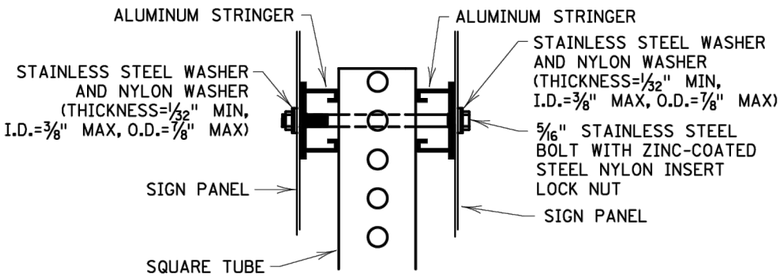
VIEW B-B



CLAMP DETAIL
4" SQUARE TUBE



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



BACK-TO-BACK SIGN MOUNTING WITH STRINGERS

NOTES:

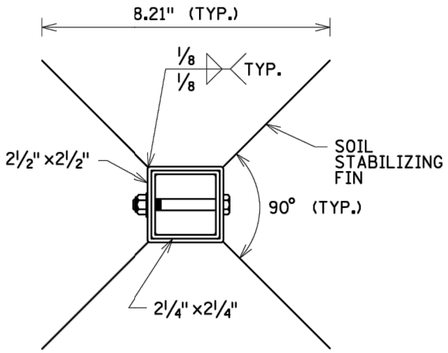
BOLT SIGN PANELS TO STRINGERS OR RISER POSTS AT NO GREATER THAN 24" SPACING OR ACCORDING TO THE MNDOT STANDARD SIGNS AND MARKINGS MANUAL FOR MOUNTING HOLES (PUNCH CODES) INFORMATION.

CENTER STRINGERS ON SIGN PANEL.

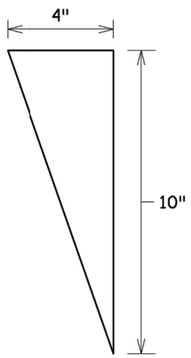
(1) IF POST SPACING REQUIRES PLACEMENT OF A POST WITHIN THIS AREA, EXTEND STRINGERS AS NEEDED TO ACCOMMODATE THE STRINGER TO POST CLAMP.

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. 235-145-001 S.A.P. 235-146-001	STANDARD PLAN	STATE PROJ. NO.	SHEET NO.	16
			TRUNK HWY.	TOTAL SHEETS	34

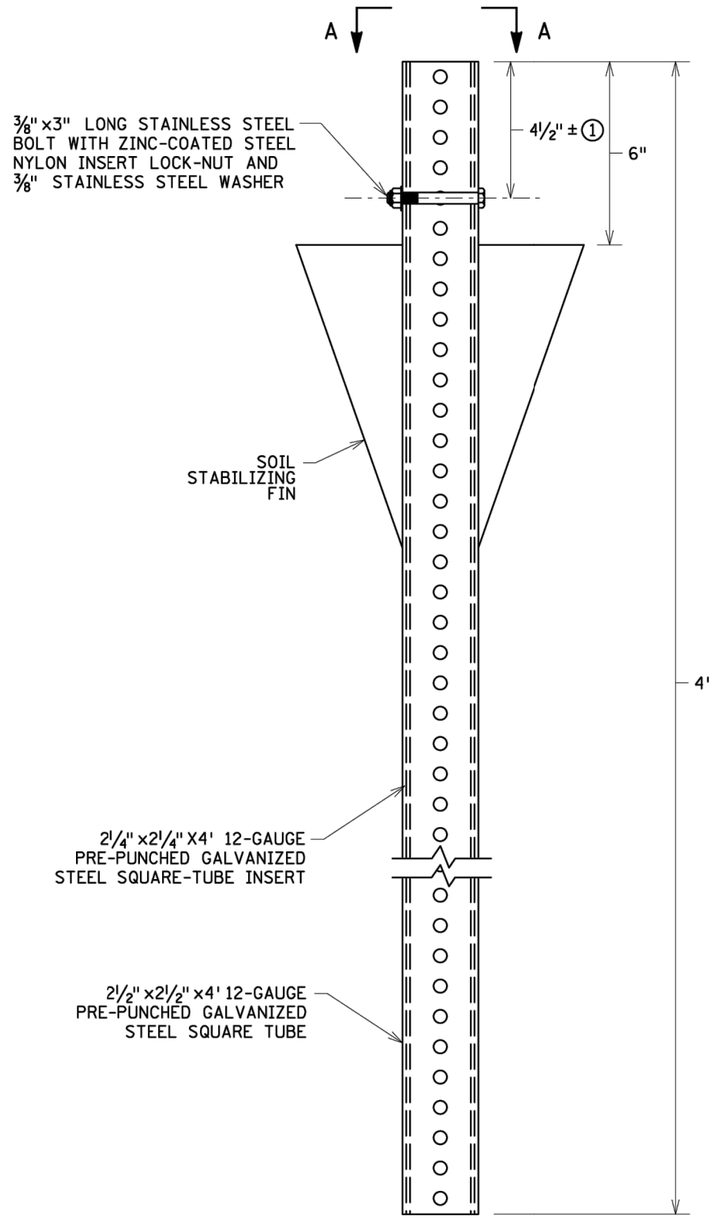


VIEW A-A

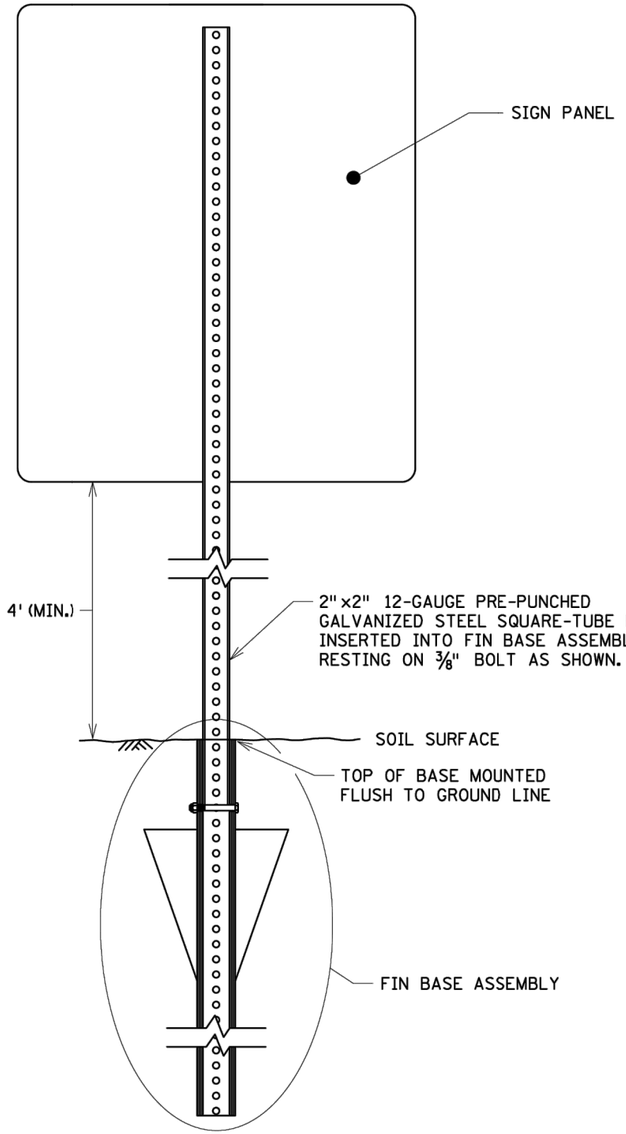


SOIL STABILIZING FIN
FOUR REQUIRED

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.

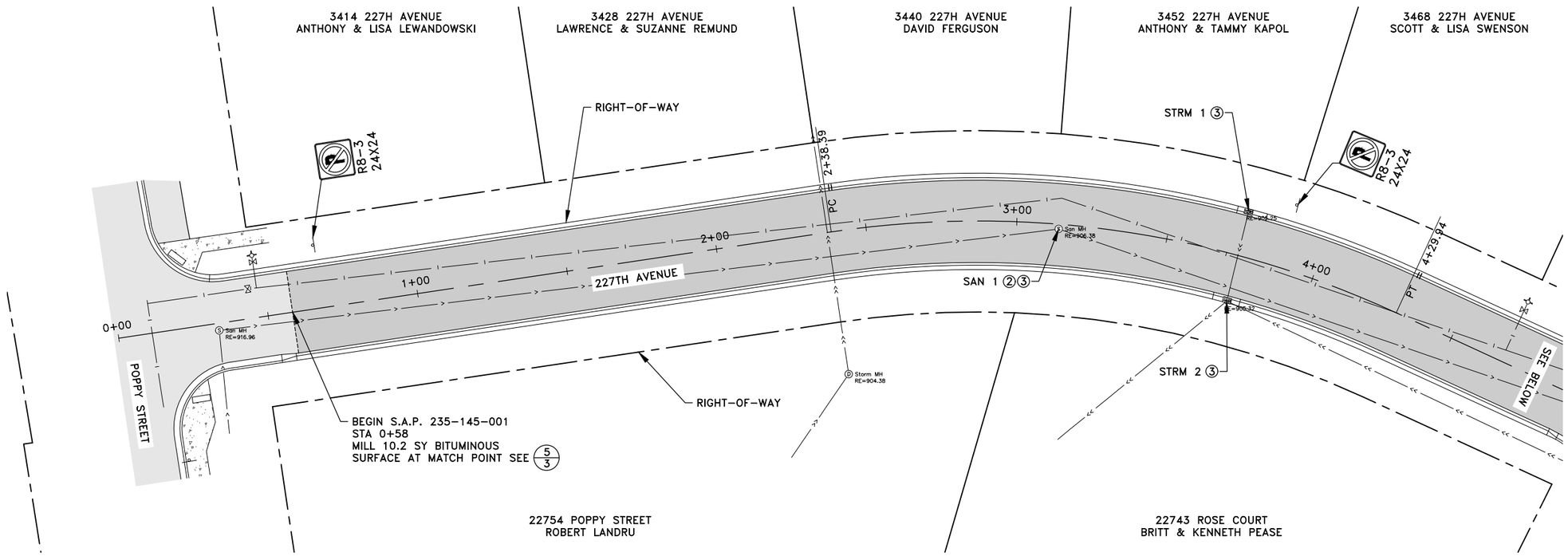
SEE STANDARD PLAN 5-297.718 FOR ADDITIONAL MOUNTING DETAILS.

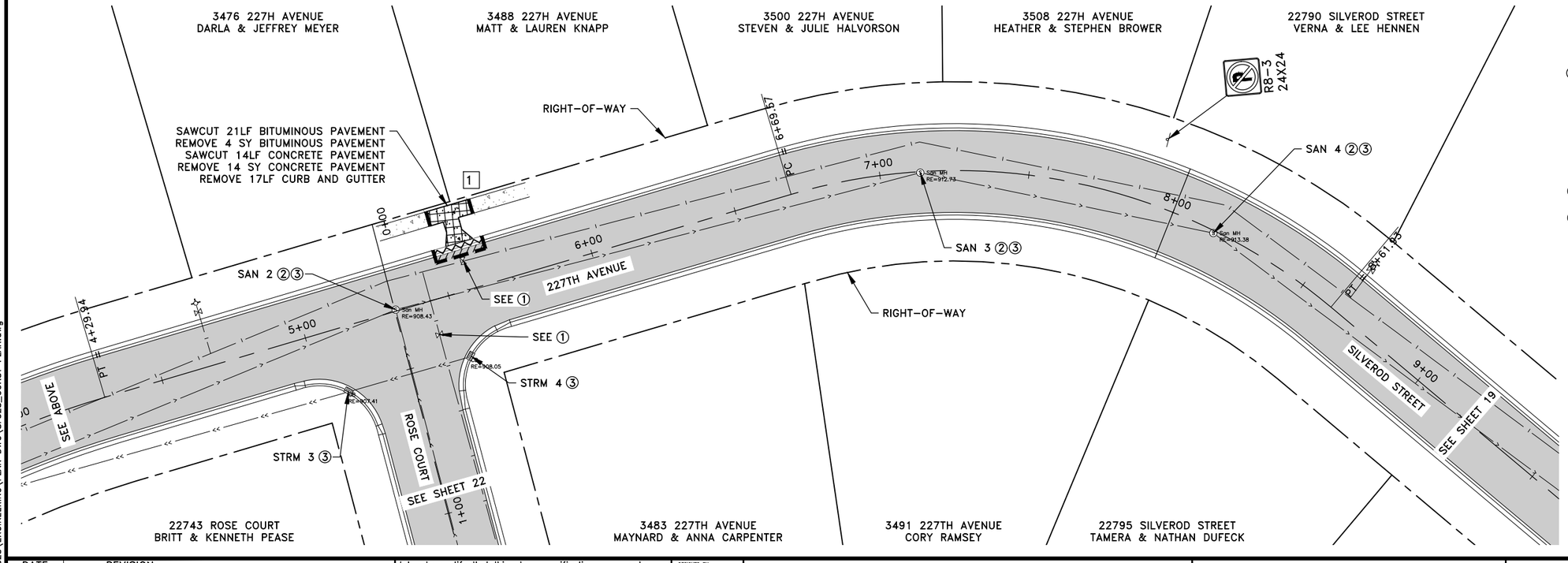
SQUARE-TUBE SIGN POSTS IN ACCORDANCE WITH SPEC. 3402.

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. 235-145-001 S.A.P. 235-146-001	STANDARD PLAN	STATE PROJ. NO.	SHEET NO.	17
			TRUNK HWY.	TOTAL SHEETS	34





GENERAL NOTES:

1. SEE SHEET 2 FOR GENERAL CONSTRUCTION NOTES.
2. SEE SHEET 3 FOR TYPICAL SECTIONS.

REFERENCE NOTES:

① TOP PORTION OF THE GATE VALVE BOX SHALL BE REMOVED AND REPLACED. THIS WORK SHALL BE PAID PER ITEM 2104 REMOVE VALVE BOX AND ITEM 2504 VALVE BOX. SEE 3/4 FOR PAVEMENT REMOVAL AND REPLACEMENT DETAILS. VALVE BOX SHALL MATCH LENGTH AND DIAMETER OF THE EXISTING TOP SECTION. LID SHALL BE NON-LOCKING AND SHALL BE IMPRINTED WITH "WATER".

② ADJUST FRAME AND RING CASTING. SEE SHEET 2 FOR ADDITIONAL INFORMATION.

③ GROUT CATCH BASIN OR MANHOLE. SEE SHEET 2 FOR ADDITIONAL INFORMATION.

S.A.P. 235-145-001
S.A.P. 235-146-001

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 3/2/26 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

2026 STREET REHABILITATION PROJECT

CONSTRUCTION PLAN

227TH AVENUE AND SILVEROD STREET
CITY OF ST. FRANCIS, MINNESOTA

SHEET 18 OF 34 SHEETS

SF328

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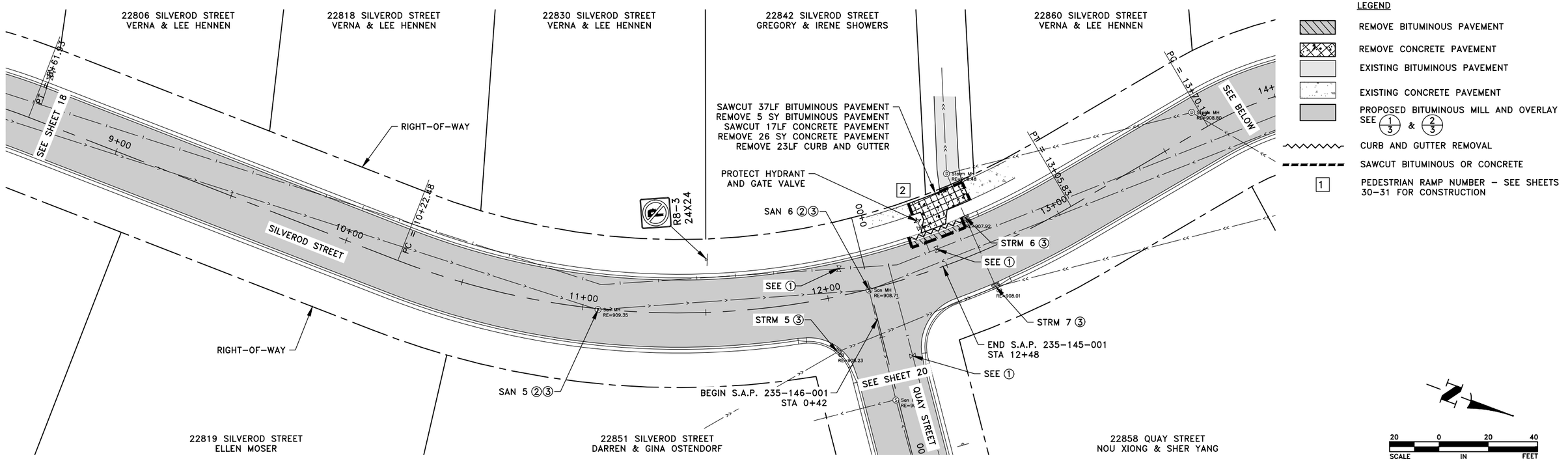

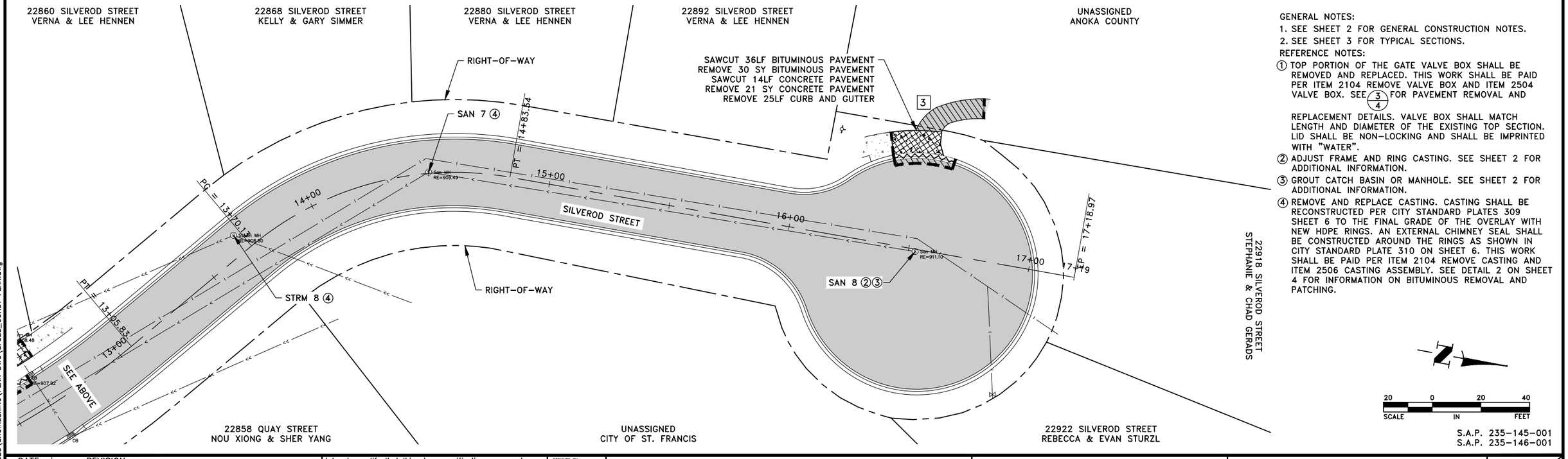

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② ADJUST FRAME AND RING CASTING. SEE SHEET 2 FOR ADDITIONAL INFORMATION.

③ GROUT CATCH BASIN OR MANHOLE. SEE SHEET 2 FOR ADDITIONAL INFORMATION.

④ REMOVE AND REPLACE CASTING. CASTING SHALL BE RECONSTRUCTED PER CITY STANDARD PLATES 309 SHEET 6 TO THE FINAL GRADE OF THE OVERLAY WITH NEW HDPE RINGS. AN EXTERNAL CHIMNEY SEAL SHALL BE CONSTRUCTED AROUND THE RINGS AS SHOWN IN CITY STANDARD PLATE 310 ON SHEET 6. THIS WORK SHALL BE PAID PER ITEM 2104 REMOVE CASTING AND ITEM 2506 CASTING ASSEMBLY. SEE DETAIL 2 ON SHEET 4 FOR INFORMATION ON BITUMINOUS REMOVAL AND PATCHING.

S.A.P. 235–145–001
S.A.P. 235–146–001

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2026 STREET REHABILITATION PROJECT

CONSTRUCTION PLAN

SILVEROD STREET
CITY OF ST. FRANCIS, MINNESOTA

SHEET 19 OF 34 SHEETS

SF328

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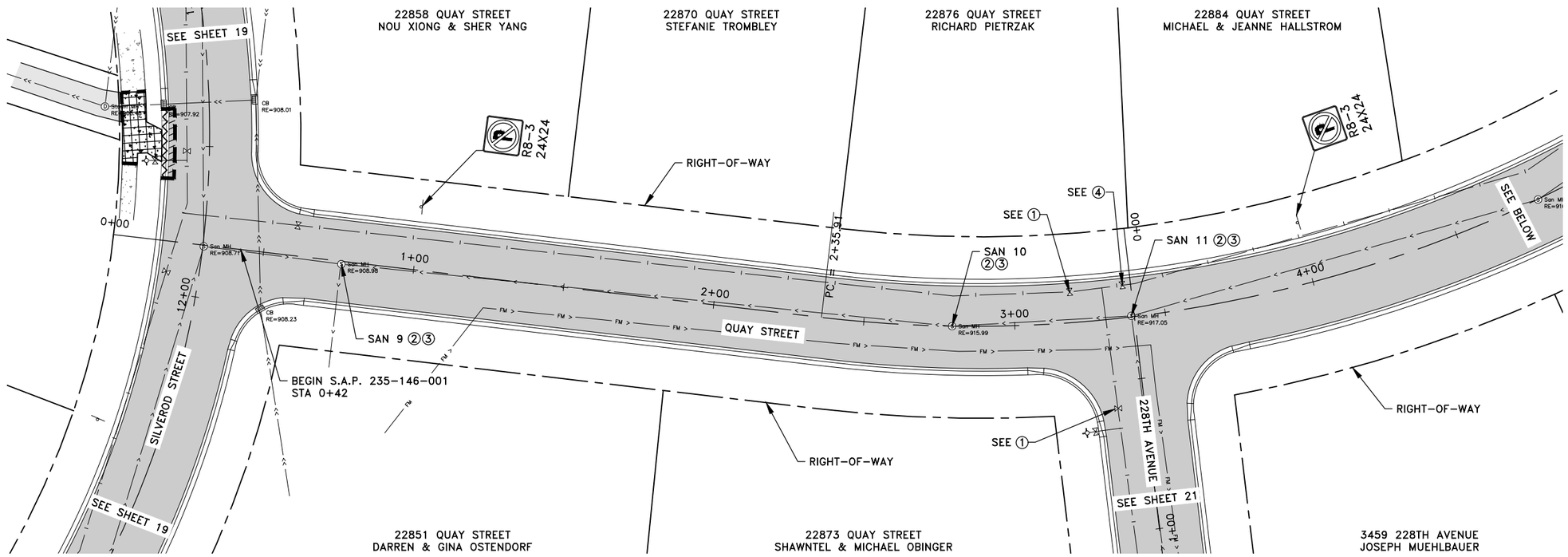
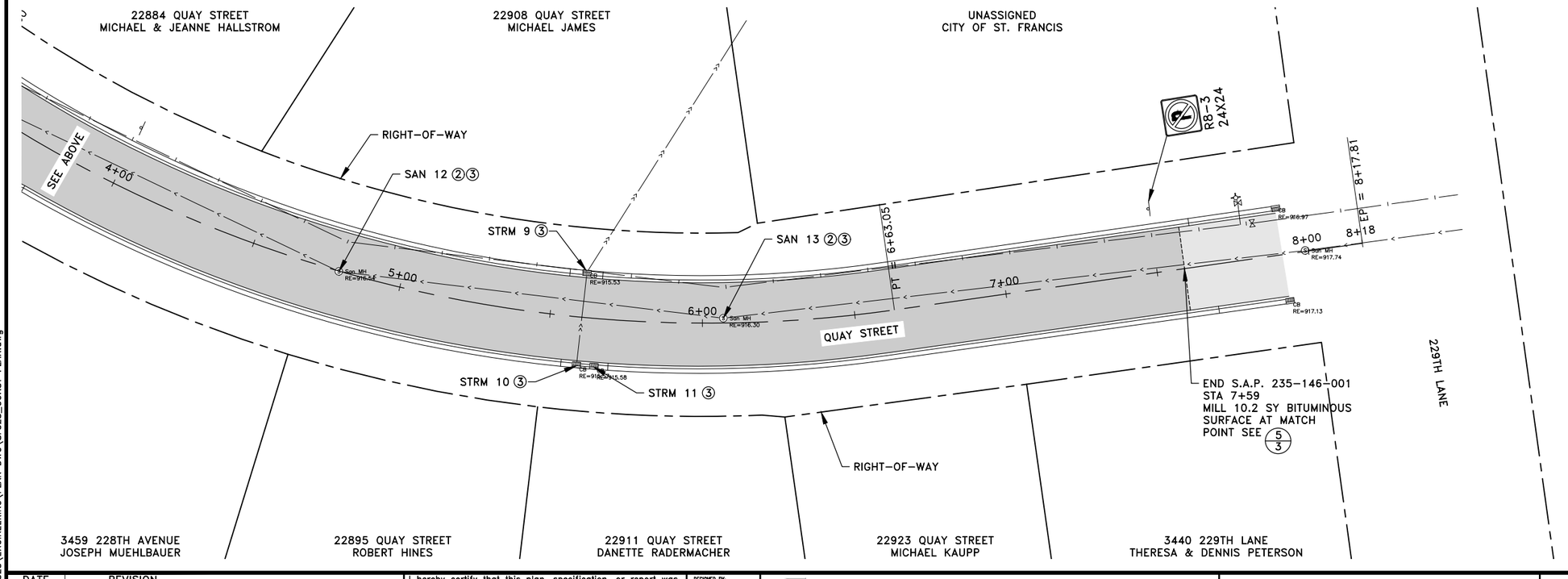


LEGEND

- REMOVE BITUMINOUS PAVEMENT
- REMOVE CONCRETE PAVEMENT
- EXISTING BITUMINOUS PAVEMENT
- EXISTING CONCRETE PAVEMENT
- PROPOSED BITUMINOUS MILL AND OVERLAY SEE 1/3
- CURB AND GUTTER REMOVAL
- SAWCUT BITUMINOUS OR CONCRETE
- [1] PEDESTRIAN RAMP NUMBER – SEE SHEETS 30-31 FOR CONSTRUCTION

SCALE 20 0 20 40 IN FEET



GENERAL NOTES:

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2. SEE SHEET 3 FOR TYPICAL SECTIONS.

REFERENCE NOTES:

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② ADJUST FRAME AND RING CASTING. SEE SHEET 2 FOR ADDITIONAL INFORMATION.

③ GROUT CATCH BASIN OR MANHOLE. SEE SHEET 2 FOR ADDITIONAL INFORMATION.

④ ADJUST VALVE BOX. SEE SHEET 2 FOR ADDITIONAL INFORMATION.

SCALE 20 0 20 40 IN FEET

S.A.P. 235-145-001
S.A.P. 235-146-001

DATE	REVISION

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

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2026 STREET REHABILITATION PROJECT

CONSTRUCTION PLAN

QUAY STREET
CITY OF ST. FRANCIS, MINNESOTA

SHEET 20 OF 34 SHEETS

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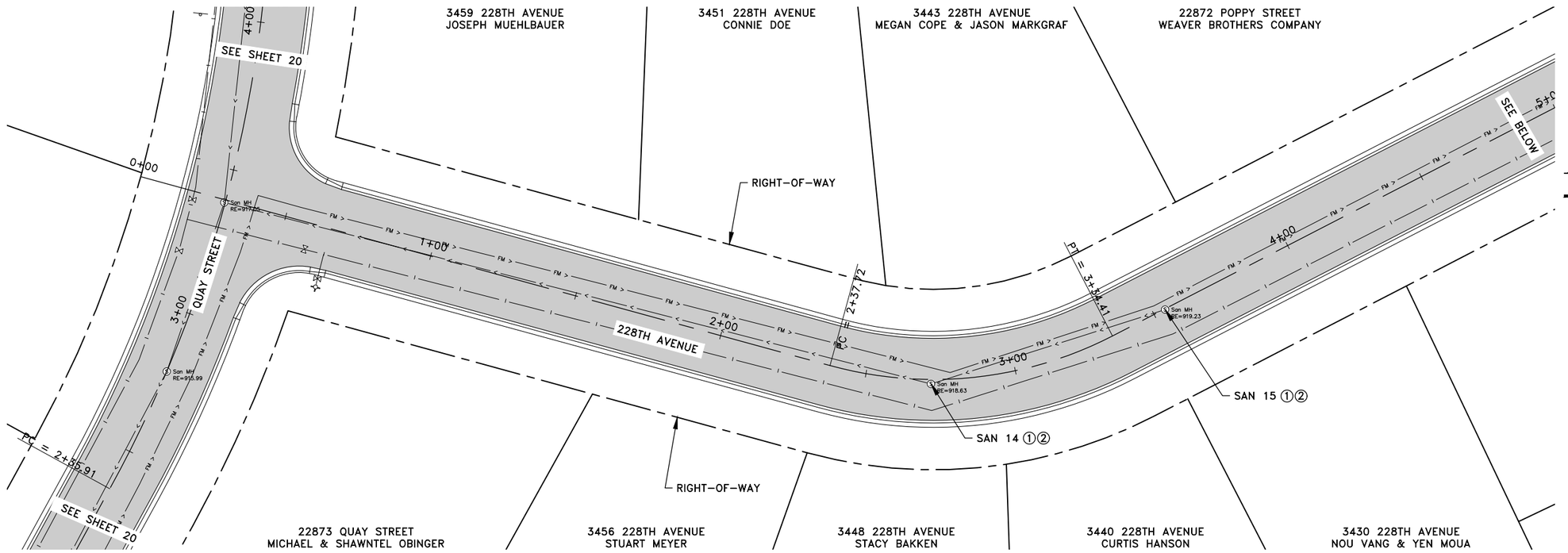

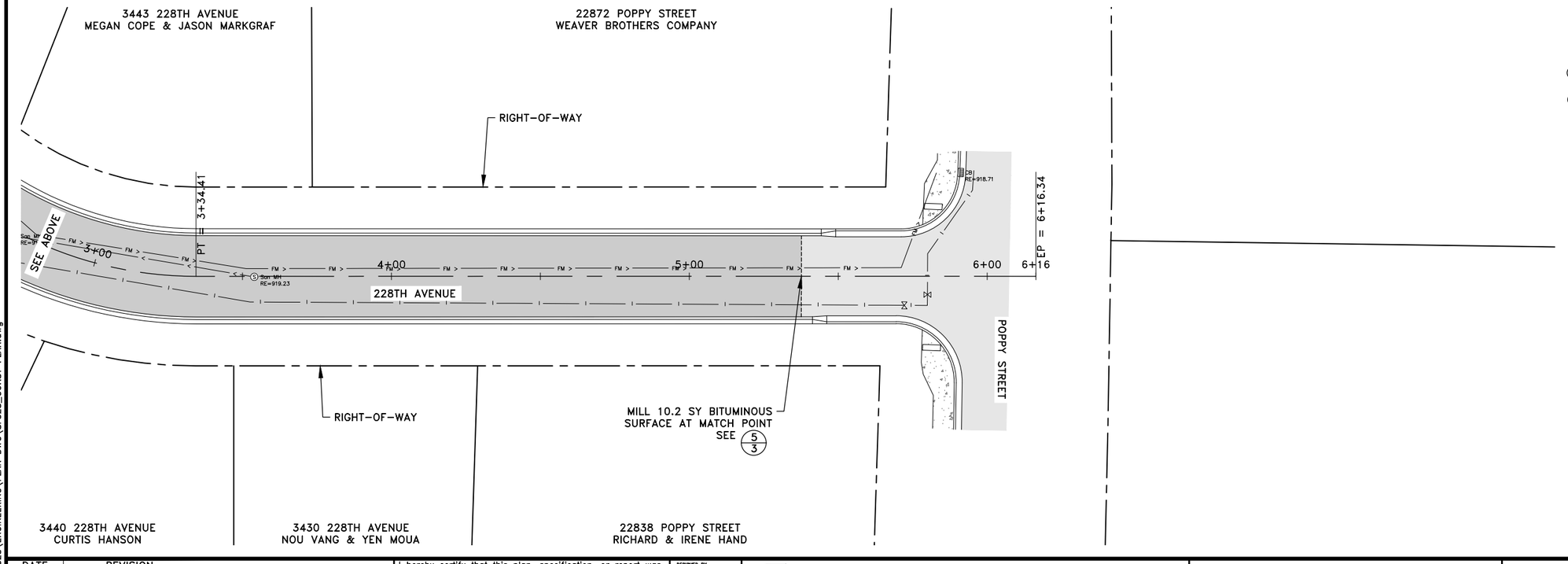

GENERAL NOTES:
1. SEE SHEET 2 FOR GENERAL CONSTRUCTION NOTES.
2. SEE SHEET 3 FOR TYPICAL SECTIONS.

REFERENCE NOTES:
① ADJUST FRAME AND RING CASTING. SEE SHEET 2 FOR ADDITIONAL INFORMATION.
② GROUT CATCH BASIN OR MANHOLE. SEE SHEET 2 FOR ADDITIONAL INFORMATION.

S.A.P. 235–145–001
S.A.P. 235–146–001

DATE	REVISION

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2026 STREET REHABILITATION PROJECT

CONSTRUCTION PLAN

228TH AVENUE
CITY OF ST. FRANCIS, MINNESOTA

SHEET 21 OF 34 SHEETS

SF328

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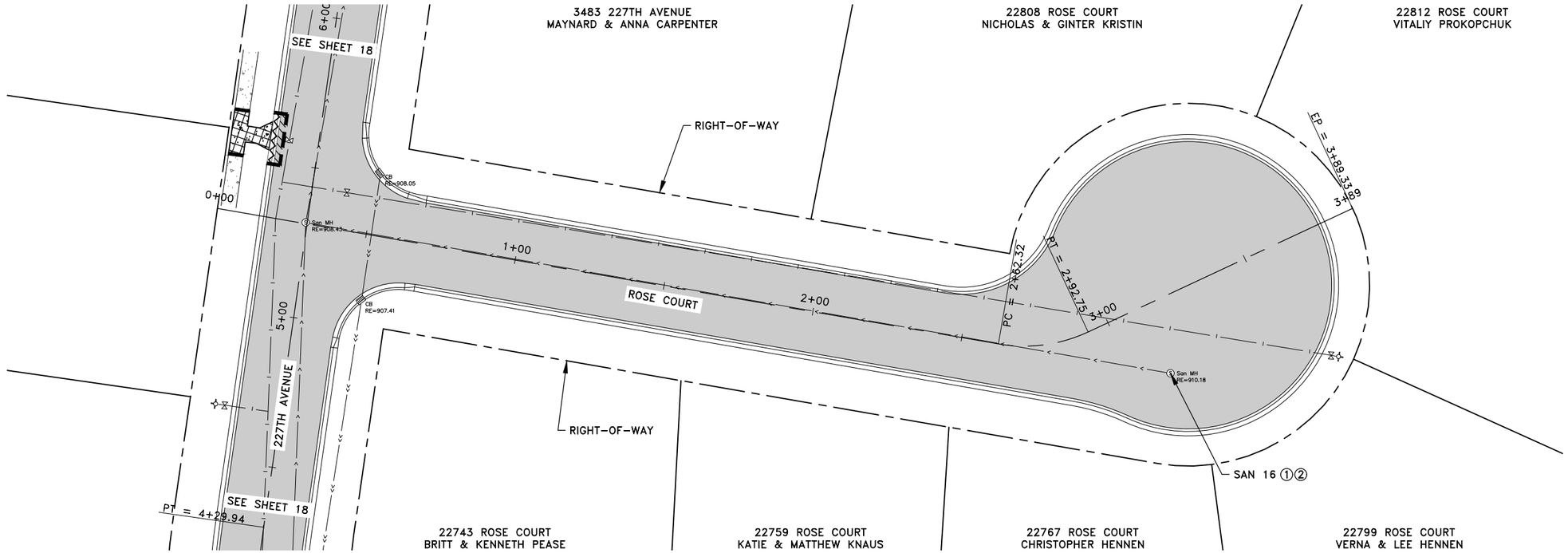

LEGEND

- REMOVE BITUMINOUS PAVEMENT
- REMOVE CONCRETE PAVEMENT
- EXISTING BITUMINOUS PAVEMENT
- EXISTING CONCRETE PAVEMENT
- PROPOSED BITUMINOUS MILL AND OVERLAY SEE 2/3
- CURB AND GUTTER REMOVAL
- SAWCUT BITUMINOUS OR CONCRETE
- [1] PEDESTRIAN RAMP NUMBER – SEE SHEETS 30–31 FOR CONSTRUCTION

GENERAL NOTES:

1. SEE SHEET 2 FOR GENERAL CONSTRUCTION NOTES.
2. SEE SHEET 3 FOR TYPICAL SECTIONS.

REFERENCE NOTES:

① ADJUST FRAME AND RING CASTING. SEE SHEET 2 FOR ADDITIONAL INFORMATION.

② GROUT CATCH BASIN OR MANHOLE. SEE SHEET 2 FOR ADDITIONAL INFORMATION.

SCALE: 20 0 20 40 IN FEET

S.A.P. 235–145–001
S.A.P. 235–146–001

DATE	REVISION

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CRAIG J. JOCHUM, P.E.
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2026 STREET REHABILITATION PROJECT

CONSTRUCTION PLAN

ROSE COURT
CITY OF ST. FRANCIS, MINNESOTA

SHEET 22 OF 34 SHEETS

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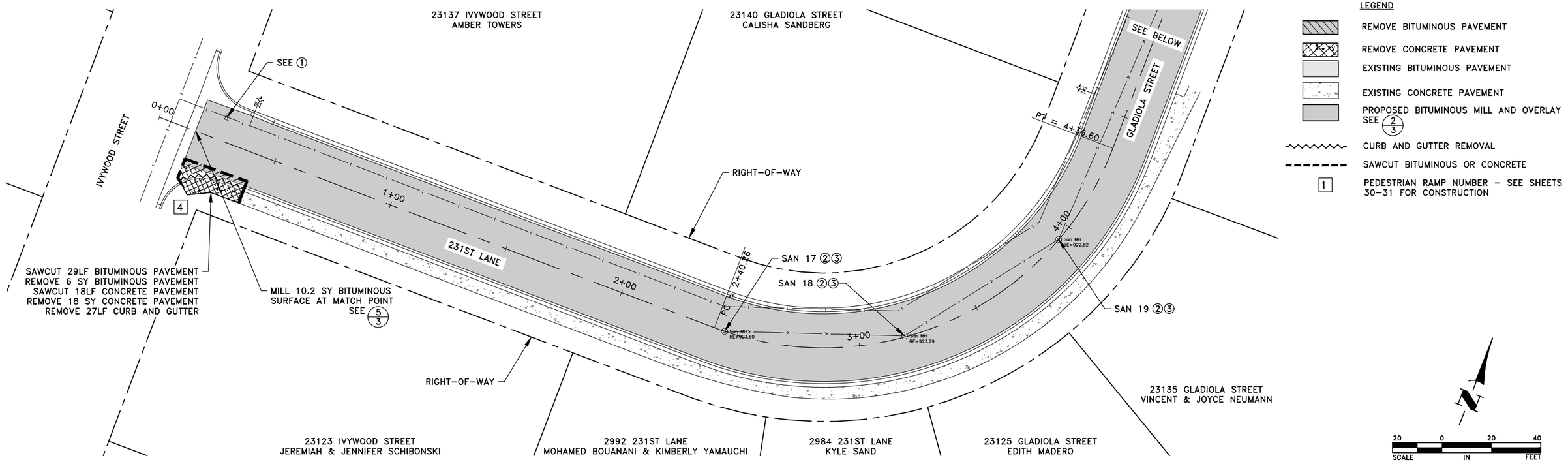

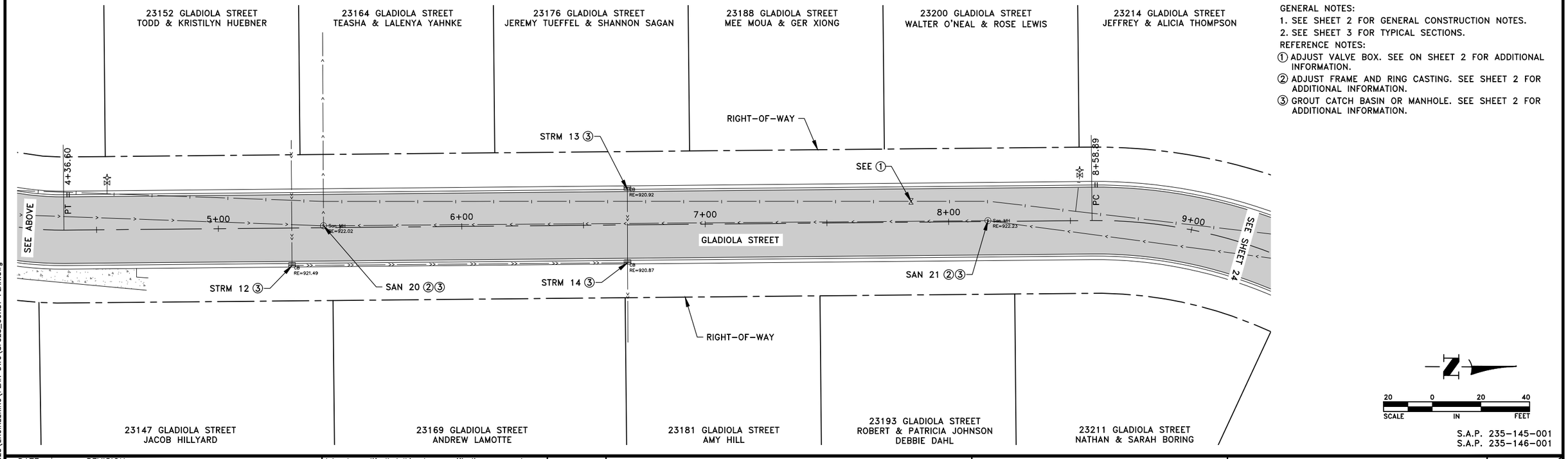

GENERAL NOTES:
1. SEE SHEET 2 FOR GENERAL CONSTRUCTION NOTES.
2. SEE SHEET 3 FOR TYPICAL SECTIONS.

REFERENCE NOTES:
① ADJUST VALVE BOX. SEE ON SHEET 2 FOR ADDITIONAL INFORMATION.
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S.A.P. 235-145-001
S.A.P. 235-146-001

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CRAIG J. JOCHUM, P.E.
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2026 STREET REHABILITATION PROJECT

CONSTRUCTION PLAN

231ST LANE AND GLADIOLA STREET
CITY OF ST. FRANCIS, MINNESOTA

SHEET 23 OF 34 SHEETS

SF328

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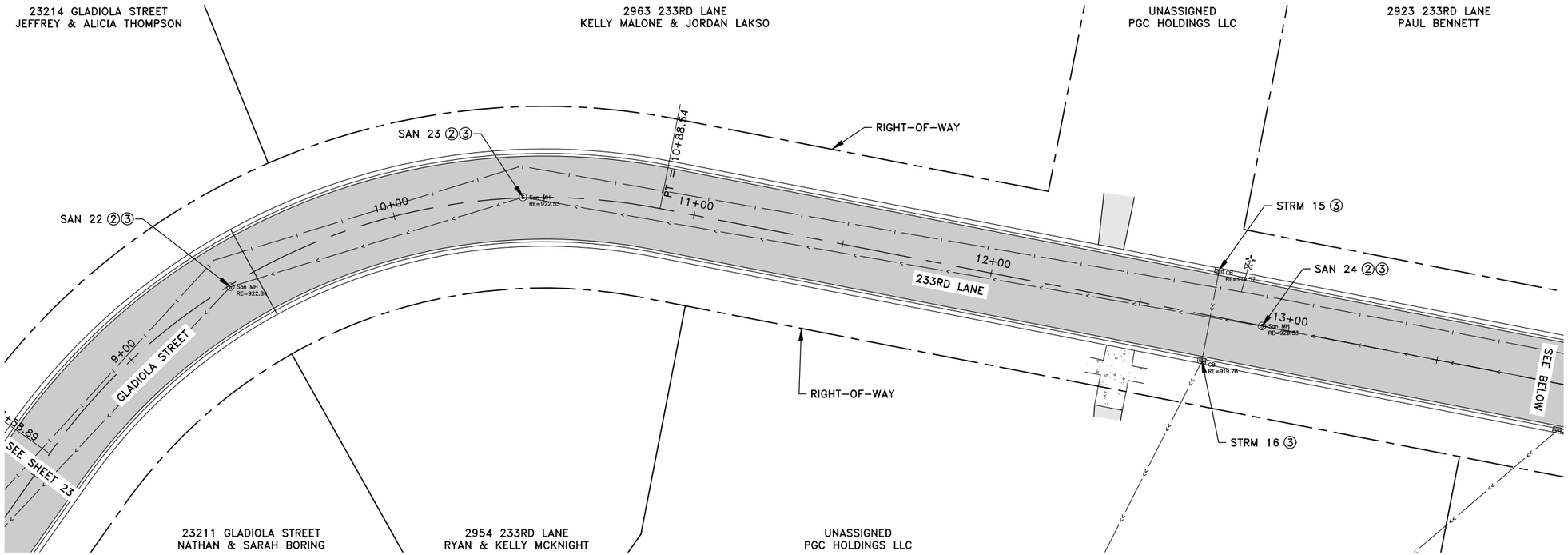

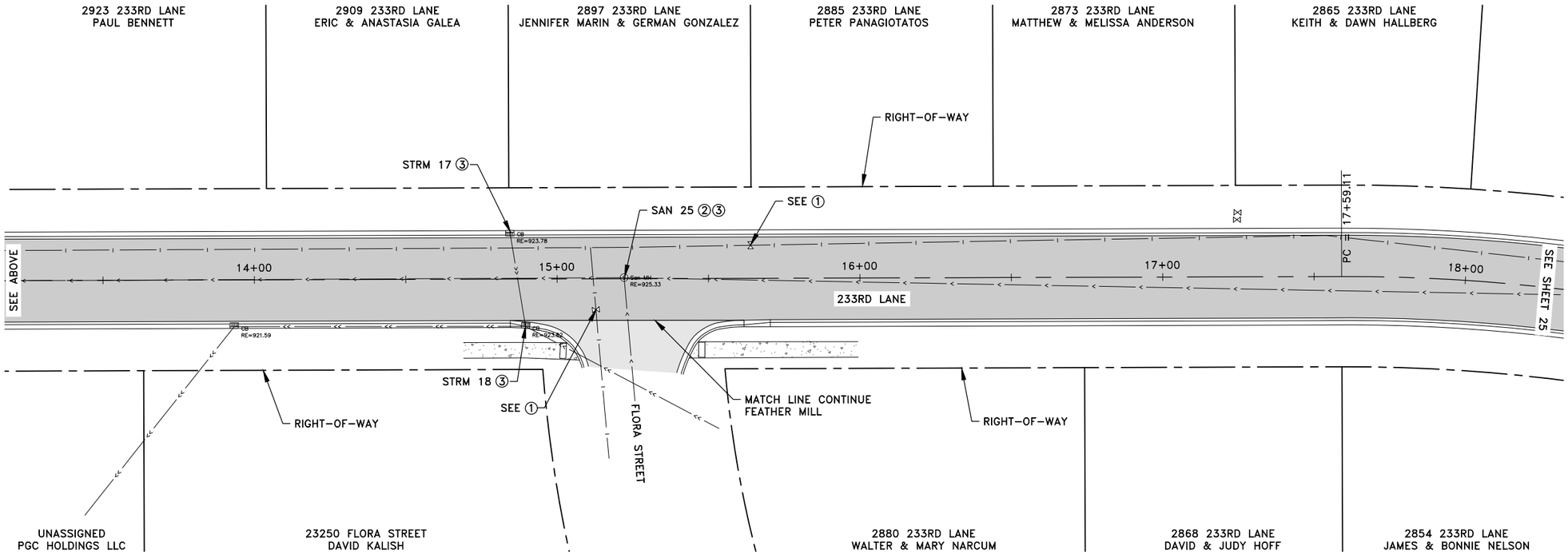

GENERAL NOTES:
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2. SEE SHEET 3 FOR TYPICAL SECTIONS.

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② ADJUST FRAME AND RING CASTING. SEE SHEET 2 FOR ADDITIONAL INFORMATION.
③ GROUT CATCH BASIN OR MANHOLE. SEE SHEET 2 FOR ADDITIONAL INFORMATION.

S.A.P. 235–145–001
S.A.P. 235–146–001

DATE	REVISION

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CRAIG J. JOCHUM, P.E.
Date 3/2/26 Lic. No. 23461

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

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Civil Engineers and Land Surveyors
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763-427-5860 FAX 763-427-0520
www.hakanson-anderson.com

2026 STREET REHABILITATION PROJECT

CONSTRUCTION PLAN

GLADIOLA STREET AND 233RD LANE
CITY OF ST. FRANCIS, MINNESOTA

SHEET 24 OF 34 SHEETS

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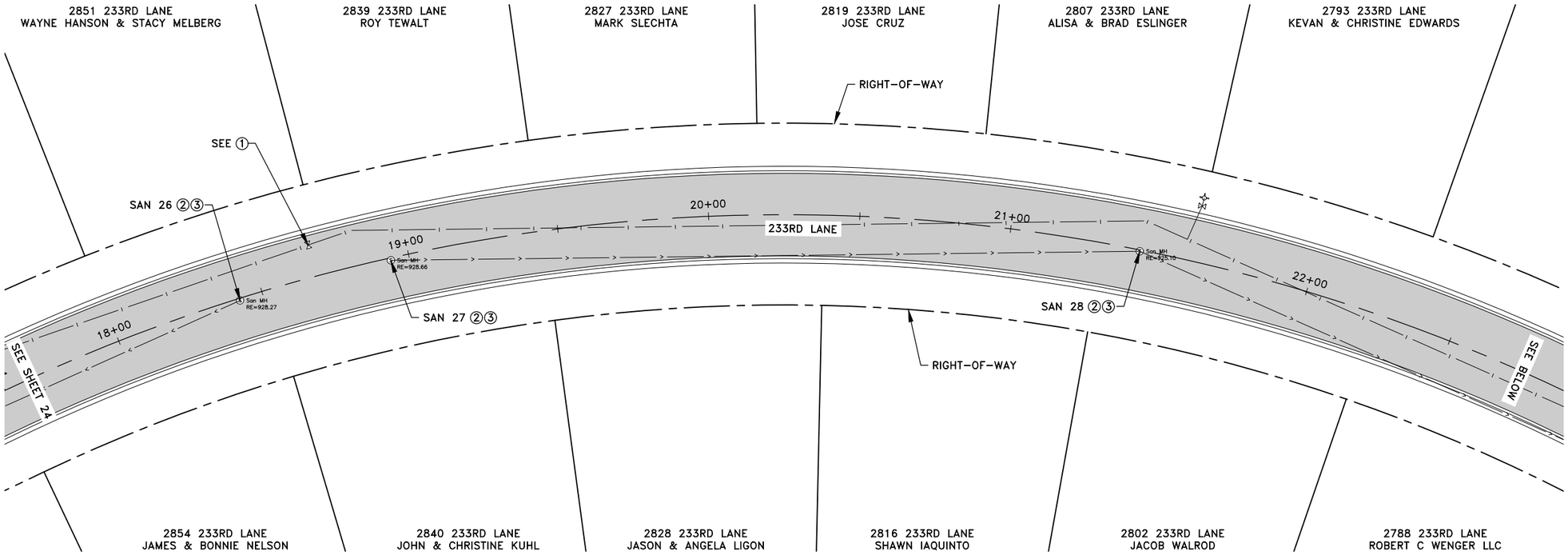

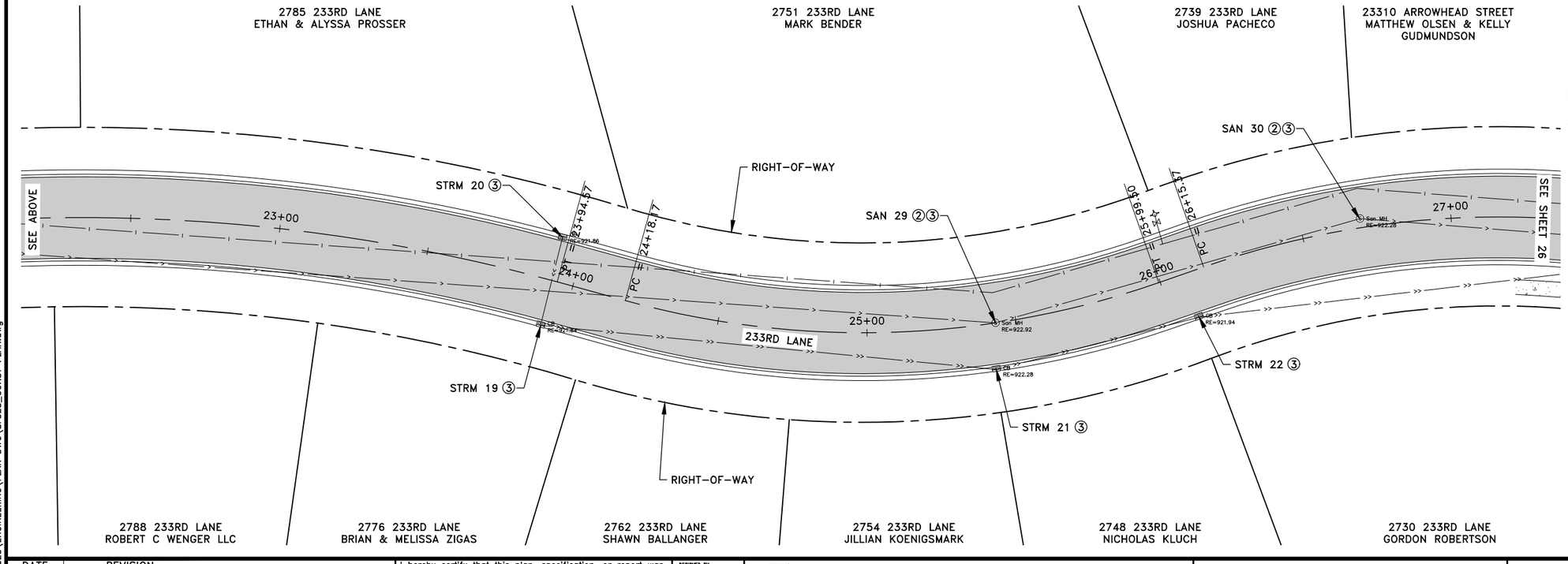

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233RD LANE
CITY OF ST. FRANCIS, MINNESOTA

SHEET 25 OF 34 SHEETS

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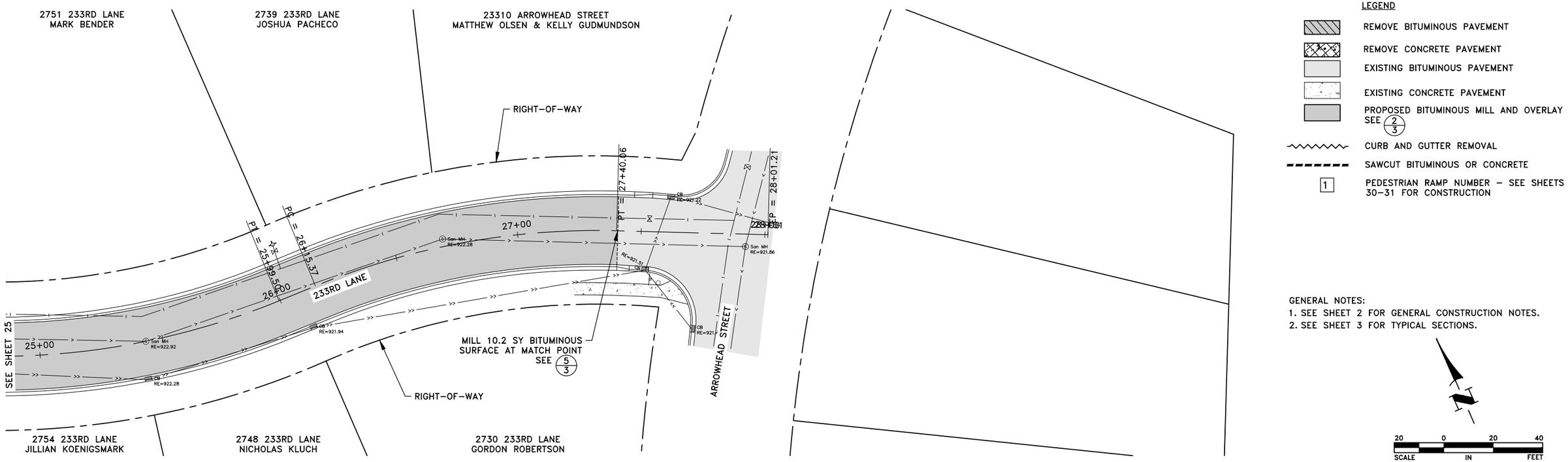

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CONSTRUCTION PLAN

233RD LANE
CITY OF ST. FRANCIS, MINNESOTA

SHEET 26 OF 34 SHEETS

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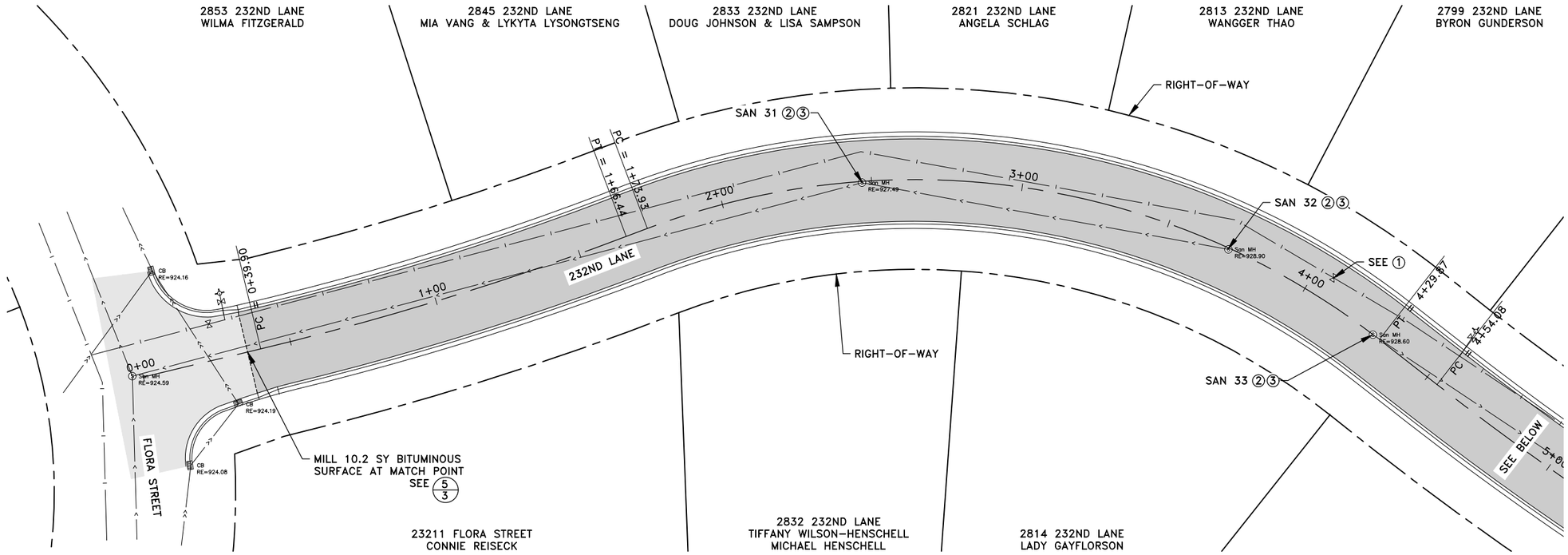

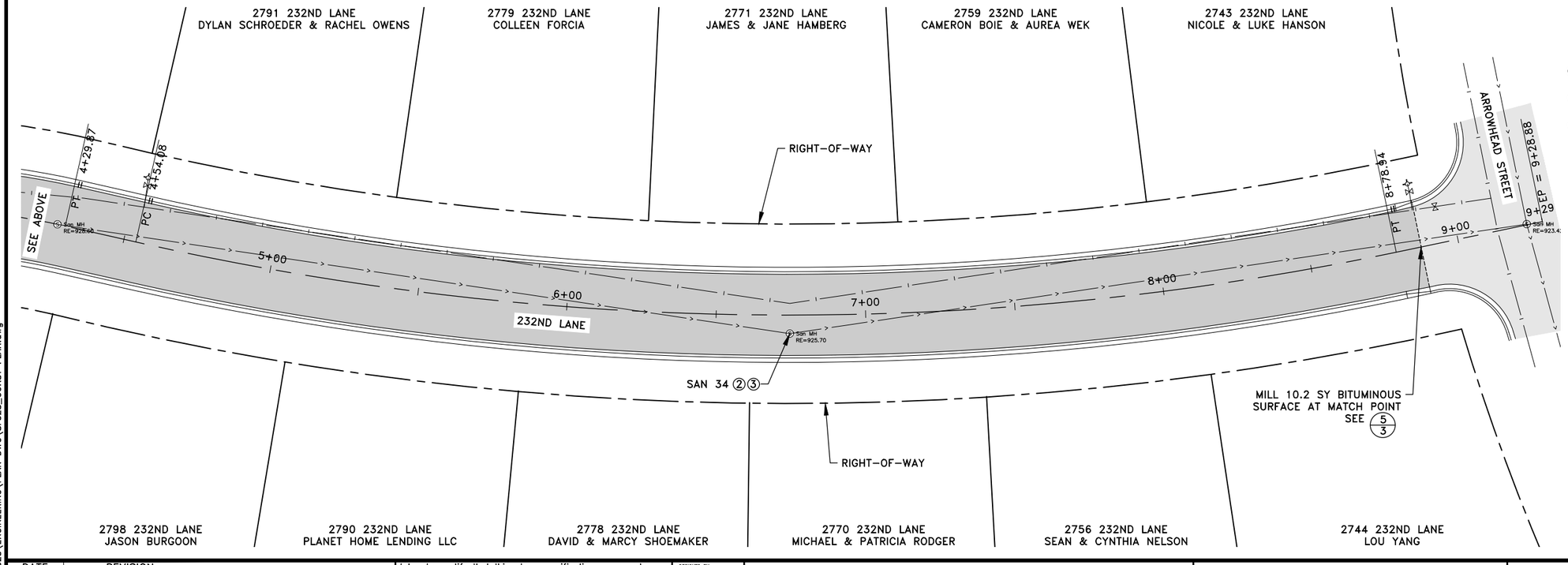

GENERAL NOTES:
1. SEE SHEET 2 FOR GENERAL CONSTRUCTION NOTES.
2. SEE SHEET 3 FOR TYPICAL SECTIONS.

REFERENCE NOTES:
(1) ADJUST VALVE BOX. SEE SHEET 2 FOR ADDITIONAL INFORMATION.
(2) ADJUST FRAME AND RING CASTING. SEE SHEET 2 FOR ADDITIONAL INFORMATION.
(3) GROUT CATCH BASIN OR MANHOLE. SEE SHEET 2 FOR ADDITIONAL INFORMATION.

S.A.P. 235-145-001
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CONSTRUCTION PLAN

232ND LANE
CITY OF ST. FRANCIS, MINNESOTA

SHEET 27 OF 34 SHEETS

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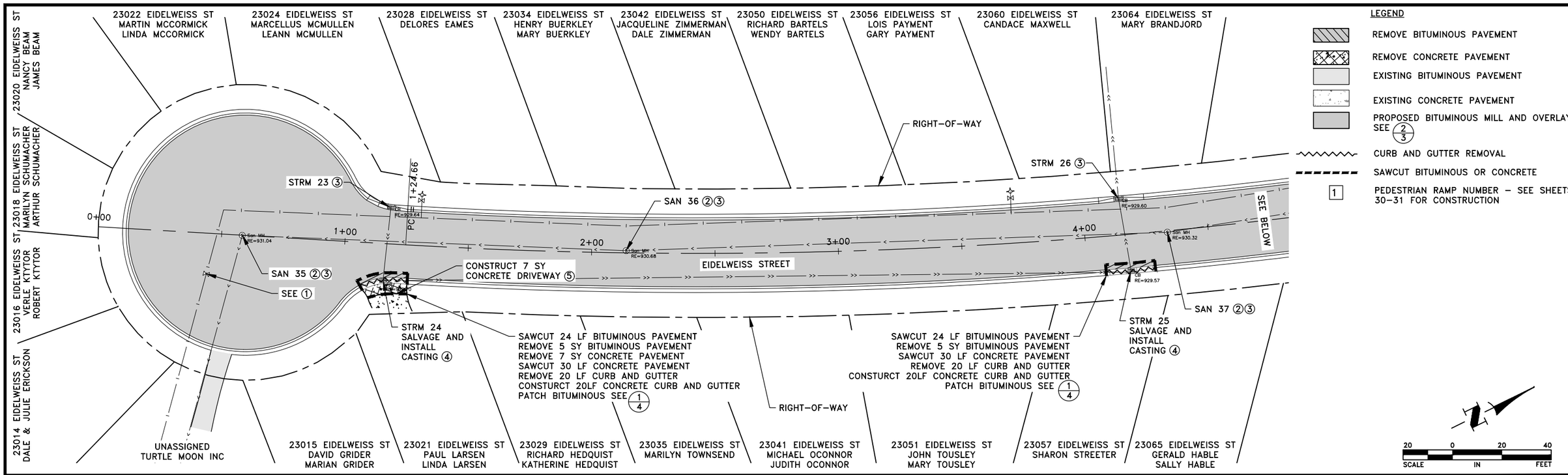

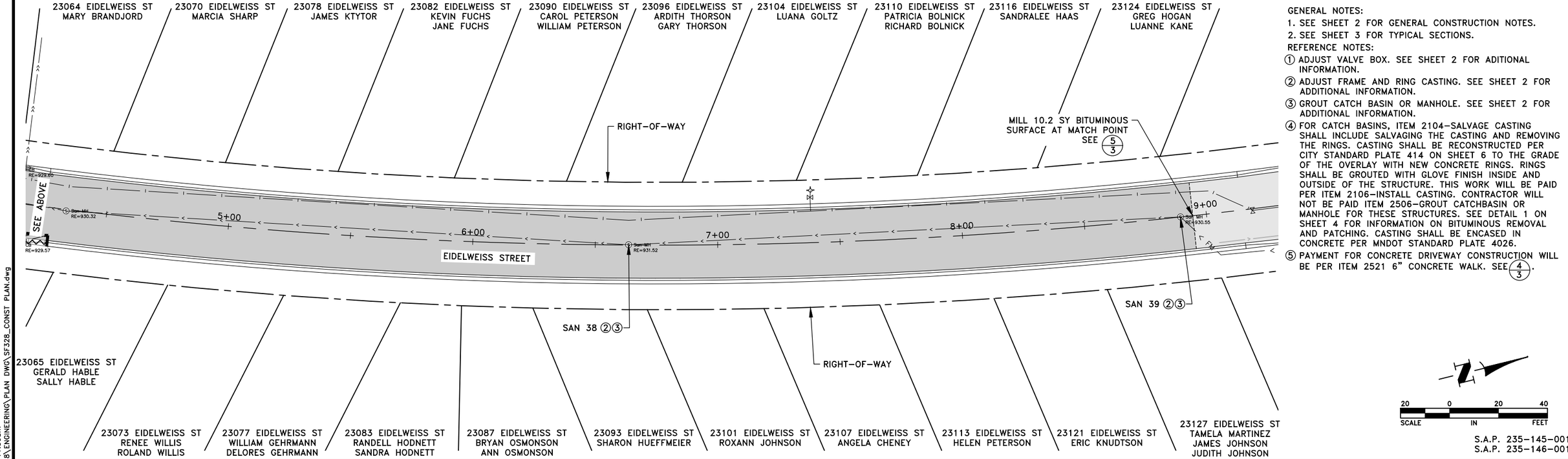

GENERAL NOTES:

1. SEE SHEET 2 FOR GENERAL CONSTRUCTION NOTES.
2. SEE SHEET 3 FOR TYPICAL SECTIONS.

REFERENCE NOTES:

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② ADJUST FRAME AND RING CASTING. SEE SHEET 2 FOR ADDITIONAL INFORMATION.

③ GROUT CATCH BASIN OR MANHOLE. SEE SHEET 2 FOR ADDITIONAL INFORMATION.

④ FOR CATCH BASINS, ITEM 2104–SALVAGE CASTING SHALL INCLUDE SALVAGING THE CASTING AND REMOVING THE RINGS. CASTING SHALL BE RECONSTRUCTED PER CITY STANDARD PLATE 414 ON SHEET 6 TO THE GRADE OF THE OVERLAY WITH NEW CONCRETE RINGS. RINGS SHALL BE GROUTED WITH GLOVE FINISH INSIDE AND OUTSIDE OF THE STRUCTURE. THIS WORK WILL BE PAID PER ITEM 2106–INSTALL CASTING. CONTRACTOR WILL NOT BE PAID ITEM 2506–GROUT CATCHBASIN OR MANHOLE FOR THESE STRUCTURES. SEE DETAIL 1 ON SHEET 4 FOR INFORMATION ON BITUMINOUS REMOVAL AND PATCHING. CASTING SHALL BE ENCASED IN CONCRETE PER MNDOT STANDARD PLATE 4026.

⑤ PAYMENT FOR CONCRETE DRIVEWAY CONSTRUCTION WILL BE PER ITEM 2521 6" CONCRETE WALK. SEE 4/3.

S.A.P. 235–145–001
S.A.P. 235–146–001

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2026 STREET REHABILITATION PROJECT

CONSTRUCTION PLAN

EIDELWEISS STREET
CITY OF ST. FRANCIS, MINNESOTA

SHEET 28 OF 34 SHEETS

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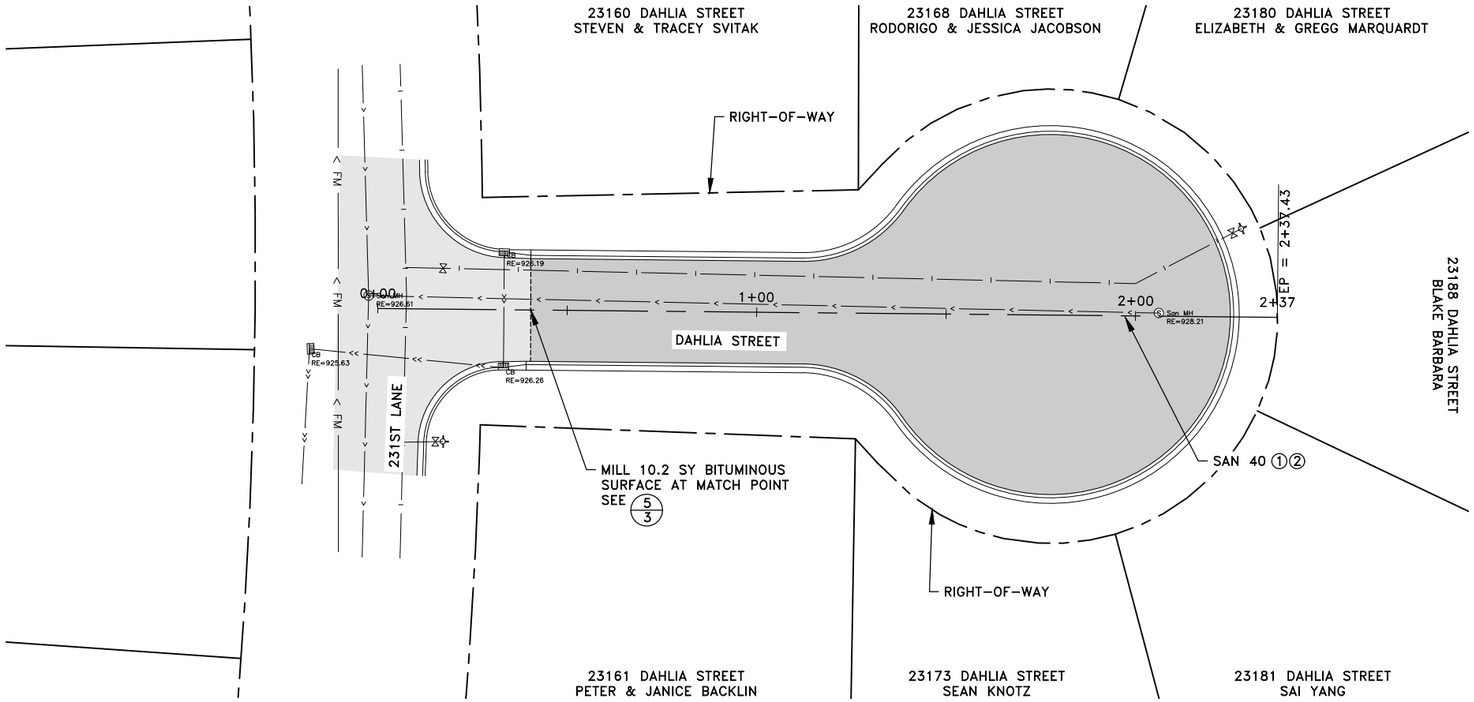

LEGEND

- REMOVE BITUMINOUS PAVEMENT
- REMOVE CONCRETE PAVEMENT
- EXISTING BITUMINOUS PAVEMENT
- EXISTING CONCRETE PAVEMENT
- PROPOSED BITUMINOUS MILL AND OVERLAY SEE 2/3
- CURB AND GUTTER REMOVAL
- SAWCUT BITUMINOUS OR CONCRETE
- [1] PEDESTRIAN RAMP NUMBER – SEE SHEETS 30–31 FOR CONSTRUCTION

GENERAL NOTES:
1. SEE SHEET 2 FOR GENERAL CONSTRUCTION NOTES.
2. SEE SHEET 3 FOR TYPICAL SECTIONS.

REFERENCE NOTES:
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2026 STREET REHABILITATION PROJECT

CONSTRUCTION PLAN

DAHLIA STREET
CITY OF ST. FRANCIS, MINNESOTA

SHEET 29 OF 34 SHEETS

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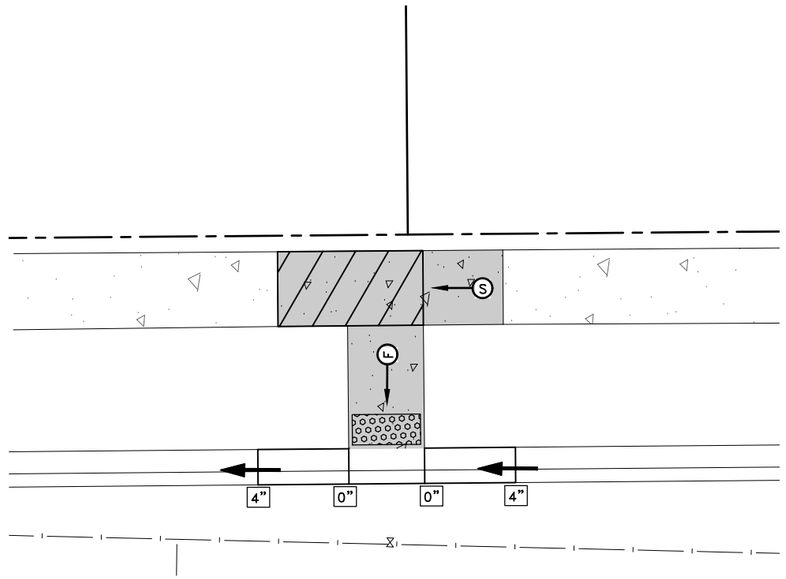
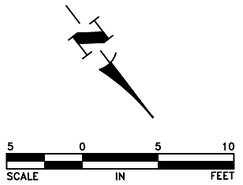


PEDESTRIAN CURB RAMP 1: 227TH AVENUE

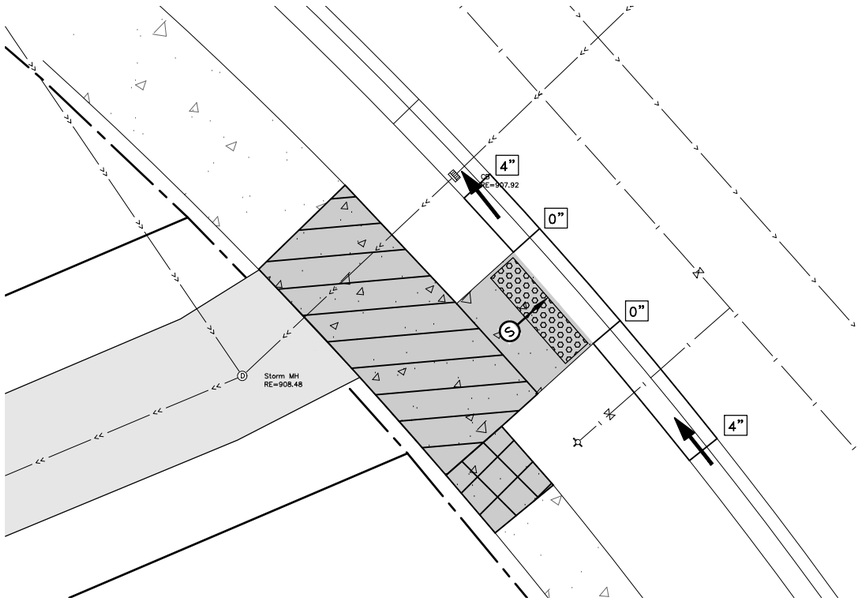


LEGEND

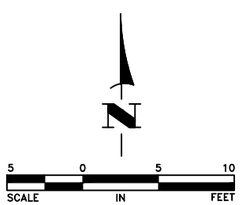
- 6" CONCRETE WALK
- LANDING
- TRANSITION PANEL
- TRUNCATED DOMES

GENERAL NOTES:

1. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO ENSURE ALL PEDESTRIAN RAMPS MEET ALL ADA REQUIREMENTS AND MUST CONFORM WITH MNDOT STANDARD PLANS 5-297.250 WHICH ARE INCLUDED AS SHEETS 9-14 OF THESE PLANS. THE REMOVAL LIMITS SHOWN ARE FOR GENERAL USE ONLY. THE CONTRACTOR IS RESPONSIBLE TO MAKE SURE ALL REQUIREMENTS ARE MET.



PEDESTRIAN CURB RAMP 2: SILVEROD STREET



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2026 STREET REHABILITATION PROJECT

PEDESTRIAN CURB RAMP CONSTRUCTION PLAN

CITY OF ST. FRANCIS, MINNESOTA

SHEET 30 OF 34 SHEETS

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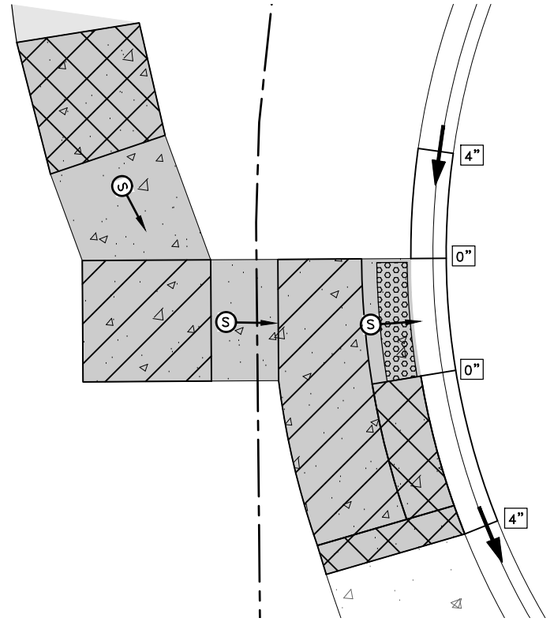
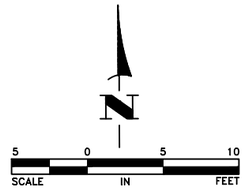


PEDESTRIAN CURB RAMP 3: SILVEROD STREET

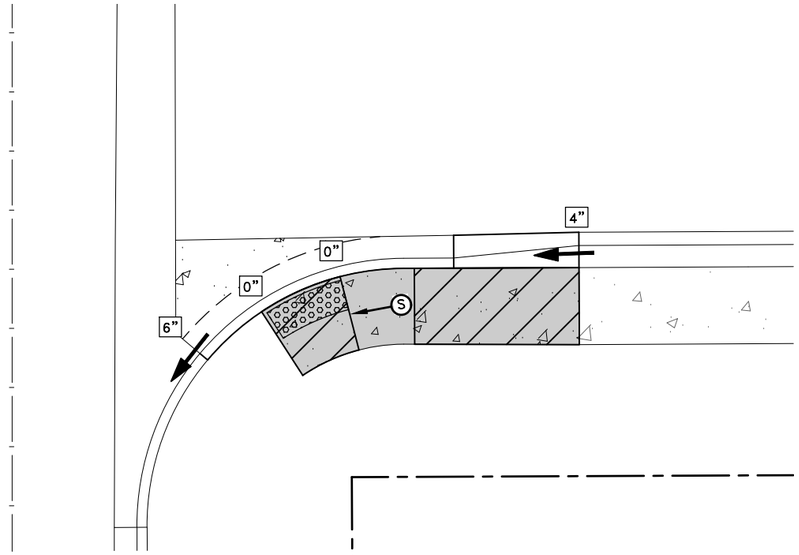


LEGEND

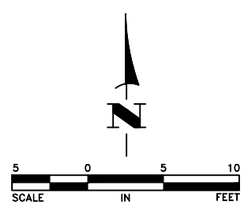
- 6" CONCRETE WALK
- LANDING
- TRANSITION PANEL
- TRUNCATED DOMES

GENERAL NOTES:

1. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO ENSURE ALL PEDESTRIAN RAMPS MEET ALL ADA REQUIREMENTS AND MUST CONFORM WITH MNDOT STANDARD PLANS 5-297.250 WHICH ARE INCLUDED AS SHEETS 9-14 OF THESE PLANS. THE REMOVAL LIMITS SHOWN ARE FOR GENERAL USE ONLY. THE CONTRACTOR IS RESPONSIBLE TO MAKE SURE ALL REQUIREMENTS ARE MET.



PEDESTRIAN CURB RAMP 4: 231ST LANE



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2026 STREET REHABILITATION PROJECT

PEDESTRIAN CURB RAMP CONSTRUCTION PLAN

CITY OF ST. FRANCIS, MINNESOTA

SHEET 31 OF 34 SHEETS

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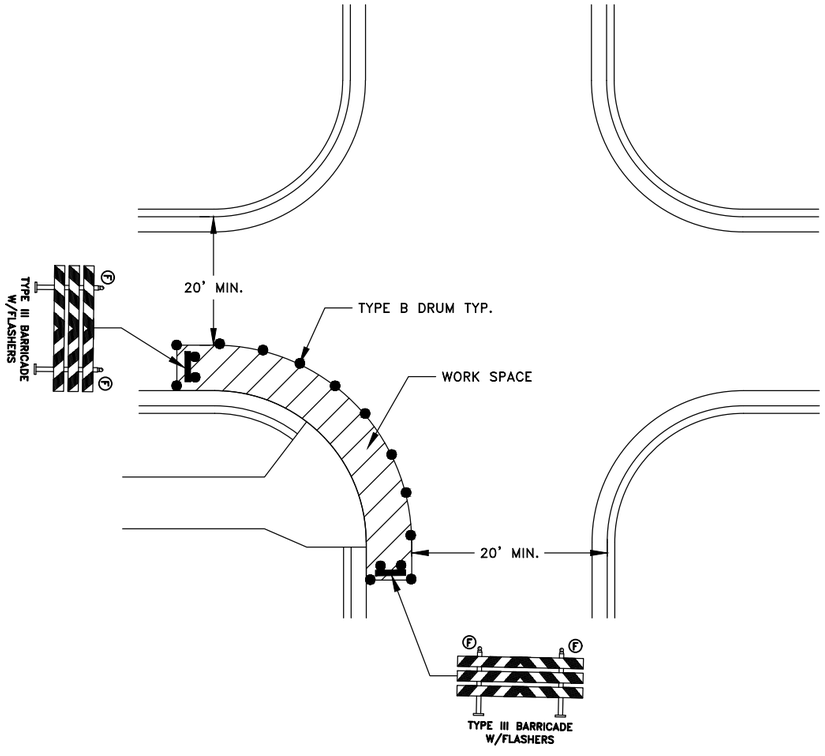
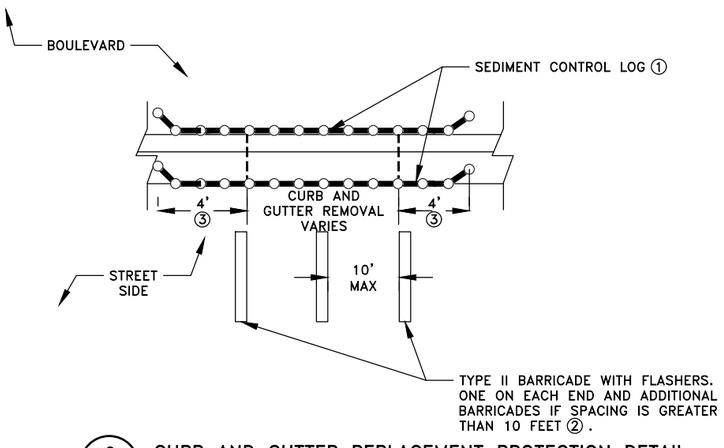


1/32 TRAFFIC CONTROL AT PEDESTRIAN RAMP AND CURB AND GUTTER CONSTRUCTION

N.T.S.



2/32 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. ALL TEMPORARY SIGNS SHALL BE REMOVED WITHIN 48 HOURS AFTER THEY ARE NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
3. CONTRACTOR SHALL PROVIDE ACCESS TO RESIDENTS AT ALL TIMES. WHEN TEMPORARY OBSTRUCTION OF THE DRIVEWAYS IS REQUIRED FOR PAVING AND OTHER WORK THE CONTRACTOR SHALL PROVIDE THE AFFECTED RESIDENTS WITH 24 HOURS NOTICE.
4. CONTRACTOR SHALL FURNISH AND INSTALL TEMPORARY PEDESTRIAN, BICYCLE, AND GOLF CART 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, THE AMERICANS WITH DISABILITIES ACT, MNDOT'S GUIDANCE DOCUMENT "PEDESTRIAN ACCOMMODATIONS THROUGH WORK ZONES DESIGN GUIDANCE", AND MNDOT'S GUIDANCE DOCUMENT "ACCOMMODATING PEOPLE ON BICYCLES THROUGH WORK ZONES." THE CONTRACTOR SHALL PROVIDE TEMPORARY PEDESTRIAN, BICYCLE, AND GOLF CART ACCESS ROUTE LAYOUTS AND DETOURS FOR ANY PROPOSED SIDEWALK OR TRAIL CLOSURES. ALL LABOR, MATERIAL AND EQUIPMENT REQUIRED TO MAINTAIN PEDESTRIAN AND BICYCLE ACCESS ROUTES SHALL BE INCIDENTAL.
5. REFER TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD) FOR SPACING OF TRAFFIC CONTROL SIGNS AND DEVICES.
6. 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 DETAILS 1 AND 2 ON SHEET 32.
7. THE TRAFFIC CONTROL DEPICTED ON SHEETS 33 AND 34 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.
8. ALL NON-STANDARD TRAFFIC CONTROL SIGNS ON SHEETS 33 AND 34 SHALL HAVE 8" SERIES C LETTERING.
9. 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.
10. 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.
11. THE BITUMINOUS WEAR COURSE SHALL BE PLACED OVER THE FULL WIDTH OF THE SECTION ON EACH DAYS RUN. THE CONTRACTOR SHALL PROVIDE ACCESS TO ALL PROPERTIES AND THRU TRAFFIC AT ALL TIMES UNLESS OTHERWISE NOTED ON THE PLANS.
12. SEE SHEET 2 FOR GENERAL CONSTRUCTION NOTES.

REFERENCE NOTES:

① CONTRACTOR SHALL PLACE SEDIMENT CONTROL LOG IN GUTTER UPON REMOVAL OF THE CURB. THE CONTRACTOR SHALL THEN RELOCATE THE SEDIMENT CONTROL LOG TO THE BACK OF THE CURB IMMEDIATELY AFTER THE CURB IS CONSTRUCTED. RELOCATING THE SEDIMENT CONTROL LOG SHALL BE INCIDENTAL.

② BARRICADE INCIDENTAL TO ITEM-2563 TRAFFIC CONTROL.

③ SEDIMENT CONTROL LOG SHALL BE MEASURED AT A MAXIMUM OF 4 FEET PAST THE CURB AND GUTTER REMOVAL. SEDIMENT CONTROL LOG BEYOND THAT POINT SHALL BE INCIDENTAL.

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2026 STREET REHABILITATION PROJECT

TRAFFIC CONTROL NOTES AND DETAILS

CITY OF ST. FRANCIS, MINNESOTA

SHEET 32 OF 34 SHEETS

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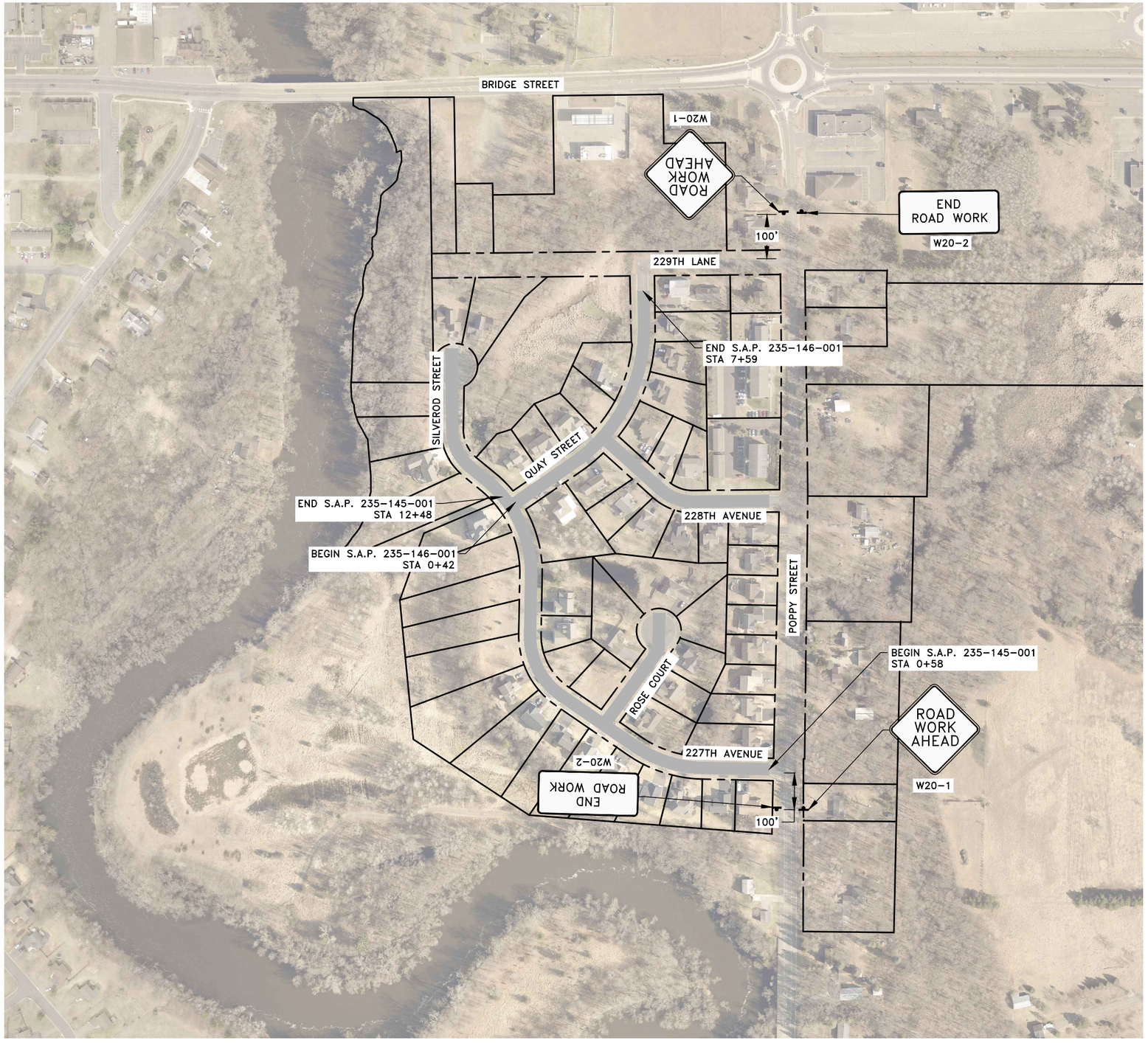

LEGEND

WORK ZONE

GENERAL TRAFFIC CONTROL NOTES:

1. REFER TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD) FOR SPACING OF TRAFFIC CONTROL SIGNS AND DEVICES.
2. CONTRACTOR SHALL TEMPORARILY CLOSE SHOULDER ON POPPY STREET FOR PAVEMENT TIE-INS. THE LAYOUT SHOWN IN FIGURE 6P-6 OF THE MINNESOTA MUTCD 11TH EDITION SHALL BE USED.
3. CONTRACTOR SHALL PROVIDE ACCESS TO RESIDENTS AT ALL TIMES. WHEN TEMPORARY OBSTRUCTION OF THE DRIVEWAYS IS REQUIRED FOR PAVING AND OTHER WORK THE CONTRACTOR SHALL PROVIDE THE AFFECTED RESIDENTS WITH 24 HOURS NOTICE.
4. 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.
5. SEE (1/32) FOR TYPICAL TRAFFIC CONTROL AT PEDESTRIAN RAMP AND CURB AND GUTTER CONSTRUCTION.
6. SEE (2/32) FOR BARRICADES REQUIRED AT CURB AND GUTTER REPLACEMENT AREAS.

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2026 STREET REHABILITATION PROJECT

TRAFFIC CONTROL PLAN WEST AREA

CITY OF ST. FRANCIS, MINNESOTA

SHEET 33 OF 34 SHEETS

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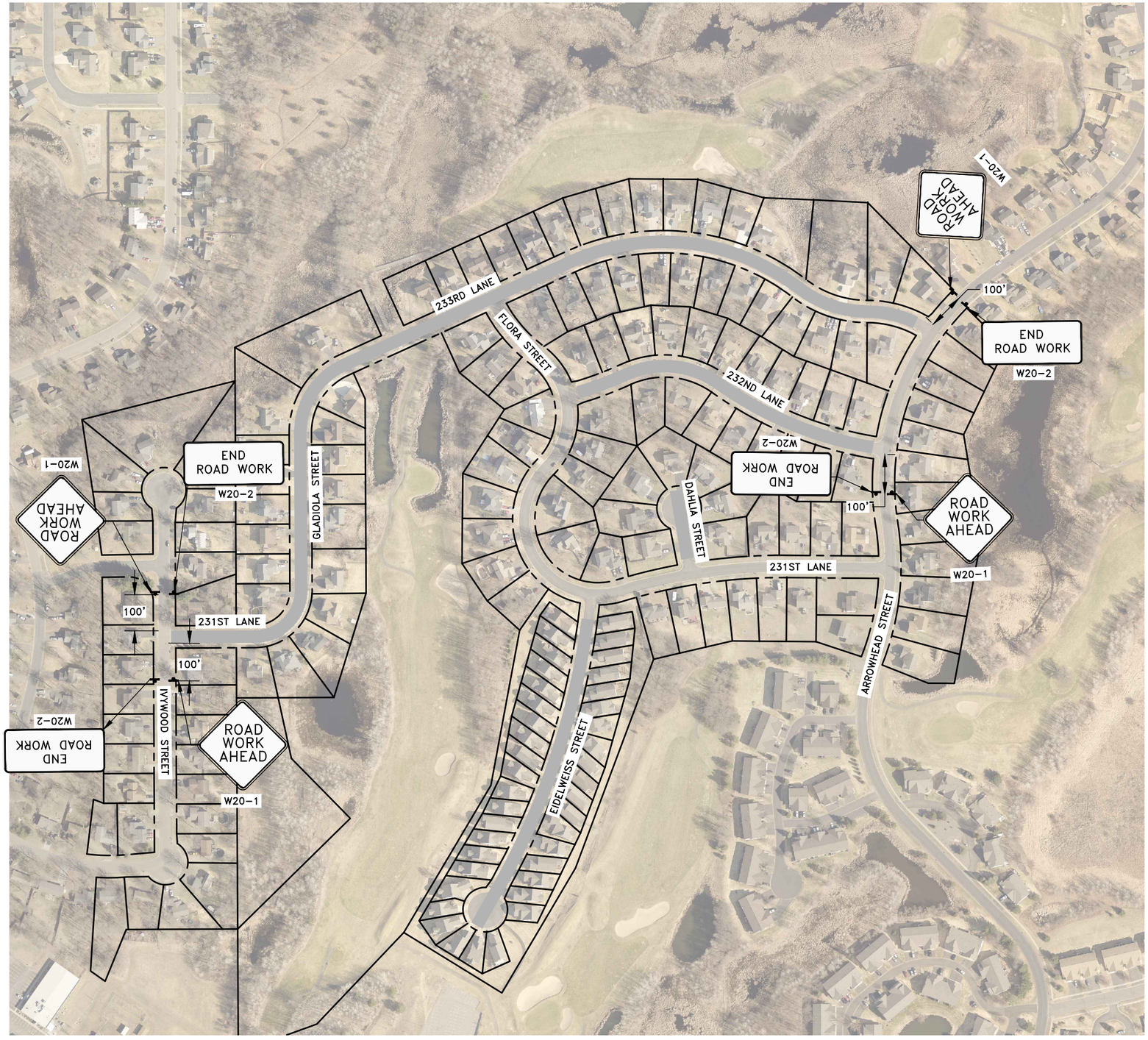

LEGEND

WORK ZONE

GENERAL TRAFFIC CONTROL NOTES:

1. REFER TO THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD) FOR SPACING OF TRAFFIC CONTROL SIGNS AND DEVICES.
2. CONTRACTOR SHALL TEMPORARILY CLOSE SHOULDER ON ARROWHEAD STREET, 231ST LANE, FLORA STREET, AND IVYWOOD STREET FOR PAVEMENT TIE-INS. THE LAYOUT SHOWN IN FIGURE 6P-6 OF THE MINNESOTA MUTCD 11TH EDITION SHALL BE USED.
3. CONTRACTOR SHALL PROVIDE ACCESS TO RESIDENTS AT ALL TIMES. WHEN TEMPORARY OBSTRUCTION OF THE DRIVEWAYS IS REQUIRED FOR PAVING AND OTHER WORK THE CONTRACTOR SHALL PROVIDE THE AFFECTED RESIDENTS WITH 24 HOURS NOTICE.
4. 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.
5. SEE (1/32) FOR TYPICAL TRAFFIC CONTROL AT PEDESTRIAN RAMP AND CURB AND GUTTER CONSTRUCTION.
6. SEE (2/32) FOR BARRICADES REQUIRED AT CURB AND GUTTER REPLACEMENT AREAS.

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SCALE IN FEET

S.A.P. 235-145-001
S.A.P. 235-146-001

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 3/2/26 Lic. No. 23461

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

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2026 STREET REHABILITATION PROJECT

TRAFFIC CONTROL PLAN EAST AREA

CITY OF ST. FRANCIS, MINNESOTA

SHEET 34 OF 34 SHEETS

SF328

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