

STATEMENT OF ESTIMATED QUANTITIES

Notes	Item Number	ITEM DESCRIPTION	Unit	TOTAL PROJECT QUANTITIES ESTIMATED
	2021.501	MOBILIZATION	LUMP SUM	1
	2104.502	REMOVE MANHOLE OR CATCH BASIN	EACH	3
	2104.502	REMOVE SIGN TYPE C	EACH	69
	2104.502	REMOVE SIGN PANEL TYPE C	EACH	11
	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	509
1	2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	4552
1	2104.503	REMOVE CURB AND GUTTER	LIN FT	2602
2	2104.504	REMOVE CONCRETE DRIVEWAY PAVEMENT	SQ YD	45
3	2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	995
	2104.518	REMOVE CONCRETE MEDIAN	SQ FT	3148
	2105.607	COMMON EXCAVATION	CU YD	22
	2105.607	SELECT GRANULAR BORROW (LV)	CU YD	31
4	2211.509	AGGREGATE BASE CLASS 5	TON	88
5	2232.504	MILL BITUMINOUS SURFACE (2.0")	SQ YD	65159
6	2232.604	MILL BITUMINOUS PAVEMENT (SPECIAL)	SQ YD	3284
	2301.504	CONCRETE PAVEMENT 6" HIGH-EARLY	SQ YD	45
	2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	3401
7	2360.509	TYPE SP 12.5 BITUMINOUS MIXTURE FOR PATCHING	TON	66
8	2360.509	TYPE SP 12.5 WEARING COURSE MIXTURE (4C)	TON	152
	2360.509	TYPE SP 12.5 WEARING COURSE MIXTURE (4C)	TON	7493
	2433.603	SAW AND SEAL JOINT	LIN FT	16
9	2504.602	ADJUST GATE VALVE	EACH	32
11	2506.502	CASTING ASSEMBLY	EACH	41
10	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN H	LIN FT	8.7
10	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020	LIN FT	7.3
12	2506.602	GROUT CATCH BASIN OR MANHOLE	EACH	101
	2506.602	REPAIR CATCH BASINS	EACH	26
13	2521.518	4" CONCRETE WALK	SQ FT	1178
	2521.602	DRILL AND GROUT REINF BAR (EPOXY COATED)	EACH	300
	2521.618	CONCRETE CURB RAMP WALK	SQ FT	872
	2531.503	CONCRETE CURB AND GUTTER DESIGN B618	LIN FT	2602
	2531.503	CONCRETE CURB AND GUTTER DESIGN B618 (MODIFIED)	LIN FT	737
	2531.504	6" CONCRETE DRIVEWAY PAVEMENT	SQ YD	45
	2531.602	CONCRETE MEDIAN NOSE-SPECIAL	EACH	2
1	2531.604	8" CONCRETE VALLEY GUTTER	SQ YD	24
	2531.618	TRUNCATED DOMES	SQ FT	132
	2563.601	TRAFFIC CONTROL SUPERVISOR	LUMP SUM	1
14, 15	2563.601	TRAFFIC CONTROL	LUMP SUM	1
	2563.610	FLAGGER	HR	24
16	2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	UNIT DAY	20
	2564.502	INSTALL SIGN PANEL TYPE C	EACH	14
22	2564.502	INSTALL SIGN TYPE C	EACH	72
	2564.518	SIGN PANELS TYPE C	SQ FT	435
	2564.602	DELINEATOR / MARKER	EACH	14
	2565.602	ADJUST HANDHOLE	EACH	1
	2573.501	EROSION CONTROL SUPERVISOR	LUMP SUM	1
17	2573.502	STORM DRAIN INLET PROTECTION	EACH	93
	2574.507	COMMON TOPSOIL BORROW	CU YD	437
18	2575.508	HYDRAULIC REINFORCED FIBER MATRIX	POUND	614
19	2581.503	REMOVABLE PREFORMED PAVEMENT MARKING TAPE	LIN FT	360
20, 22	2582.503	4" SOLID LINE MULTI-COMPONENT	LIN FT	33896
20, 22	2582.503	4" BROKEN LINE MULTI-COMPONENT	LIN FT	2160
20, 22	2582.503	4" DOUBLE SOLID LINE MULTI-COMPONENT	LIN FT	3004
21, 22	2582.503	24" SOLID LINE PREFORM THERMO GROUND IN	LIN FT	639
21, 22	2582.518	PAVEMENT MESSAGE PREFORM THERMOPLASTIC	SQ FT	742
21, 22	2582.518	CROSSWALK PREFORM THERMOPLASTIC	SQ FT	2052

CONSTRUCTION NOTES

1	REFERENCE DETAILS (PAGES 7-9) FOR CONSTRUCTION AND REMOVAL DETAILS
2	ITEM FOR CONCRETE DRIVEWAYS. CONTRACTOR IS RESPONSIBLE FOR CONTACTING PROPERTY OWNER 48 HOURS BEFORE STARTING OPERATION.
3	ITEM FOR BITUMINOUS DRIVEWAYS AND STREET APPROACHES. CONTRACTOR IS RESPONSIBLE FOR CONTACTING PROPERTY OWNER 48 HOURS BEFORE STARTING OPERATION.
4	GRAVEL BASE FOR CONCRETE AND BITUMINOUS DRIVEWAYS, NEW CONCRETE WALK AND CURB PATCHES
5	DETAIL MILLING AROUND MANHOLES, CATCH BASINS, GATE VALVES, AND ALONG CURB LINE IS INCIDENTAL TO THIS ITEM.
6	TO BE USED FOR MILLING STREET APPROACHES AND/OR DETAIL MILLING AREAS AS IDENTIFIED IN THE PLAN.
7	ITEM INCLUDES BITUMINOUS PATCHING AROUND NEW CURB, STORM STRUCTURE REPAIRS, AND ANY POTHOLES.
8	STREET APPROACHES SHALL BE PAVED AFTER MAINLINE, AND BEFORE FINAL STRIPING
9	GATE VALVES TO BE ADJUSTED ONLY AS NECESSARY AS DETERMINED BY THE ENGINEER.
10	PAY HEIGHT IS MEASURED FROM INVERT OF OUTLET PIPE TO TOP OF PRECAST CONCRETE STRUCTURE PLUS AN ALLOWANCE OF 0.70 FEET FOR THE DEPTH OF THE CONCRETE BASE, REGARDLESS OF ITS ACTUAL THICKNESS. CONCRETE ADJUSTMENT RINGS ARE INCIDENTAL. CONNECTIONS TO EXISTING STORM SEWER ARE INCIDENTAL.
11	ITEM INCLUDES FULL REPLACEMENT OF CASTING ADJUSTMENT RINGS. REMOVAL OF MANHOLE OR CATCH BASIN CASTING (S), ADJUSTING RINGS, AND INSTALLING A METAL PLATE, FOR THE PURPOSE OF ADJUSTING OR RE-RINGING A CASTING FOR A STRUCTURE SHALL BE INCIDENTAL.SEE STORM TABULATIONS FOR RING HEIGHTS. CASTINGS IN ROADWAY SHALL BE INSTALLED BETWEEN BASE AND WEAR LIFT PAVING
12	ITEM INCLUDES GROUTING OF INVERTS, DOGHOUSES, RINGS, STRUCTURES AND CASTINGS AS DIRECTED BY PLAN AND ENGINEER. SEE DRAINAGE TAB, PAGES 10-13.
13	ITEM USED FOR CONCRETE MEDIAN.
14	CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN TEMPORARY SIGNAGE WHENEVER EXISTING SIGNAGE IS REMOVED. TEMPORARY SIGNAGE SHALL BE INCIDENTAL TO TRAFFIC CONTROL.
15	ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO, AND BE INSTALLED IN ACCORDANCE WITH, THE MOST CURRENT REVISION OF THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". "DO NOT PASS, PASS WITH CARE, NO CENTER STRIPE, AND STOP HERE ON RED SIGNS SHALL BE INPLACE WHENEVER PERMANENT PAVEMENT MARKINGS ARE NOT PRESENT.
16	2 MESSAGE BOARDS, ONE ON THE EACH END OF PROJECT, SHALL BE INSTALLED 10 DAYS PRIOR TO ANY CONSTRUCTION; REFERENCE STRIPING PLAN FOR DETAILS.
17	ALL DRAINAGE STRUCTURES AFFECTED BY THIS PROJECT MUST HAVE INLET PROTECTION.
18	TYPE 3 FERTILIZER AND TYPE 25-121 SEED ARE INCIDENTAL TO THIS ITEM. SEE "BASIS OF PLANNED QUANTITIES" FOR APPLICATION RATES.
19	CENTERLINE AND LANE DESIGNATION SKIPS TO BE APPLIED AS SOON AS POSSIBLE ON MILLED SURFACE AND EACH NEW LIFT OF PAVEMENT; SKIPS MUST BE IN PLACE BEFORE THE CONTRACTOR LEAVES FOR THE DAY. CONTRACTOR IS TO REMOVE PRIOR TO FINAL STRIPING.
20	FINAL STRIPING SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLETION OF MAINLINE WEAR COURSE PAVING. CANNOT BE INSTALLED SOONER THAN 48 HOURS.
21	INCLUDES ALL THERMOPLASTIC GORE AREA HATCHING, LANE DESIGNATION ARROWS, AND PAVEMENT MESSAGES.
22	FOR SURFACE MOUNT CONCRETE INSTALLATIONS, USE KLEEN BREAK MODEL 425 SIGN SUPPORT OR EQUIVALENT.
23	ALL PAVEMENT MARKINGS WILL BE TESTED POST INSTALLATION BY ANOKA COUNTY. ANY PAVEMENT MARKINGS THAT DO NOT MEET RETROREFLECTIVITY PER MNDOT SPEC. 2582.3C.3, CONTRACTOR IS RESPONSIBLE FOR REPLACING PAVEMENT MARKINGS AT ENGINEERS REQUEST AT NO COST TO ANOKA COUNTY.

THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT

MNDOT STANDARD PLATES

PLATE NO.	DESCRIPTION
3007F	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
4011E	PRECAST CONCRETE BASE
4020J	MANHOLE OR CATCH BASIN (FOR USE WITH OR WITHOUT TRAFFIC LOADS) (2 SHEETS)
4024A	48" DIA. PRECAST SHALLOW DEPTH CATCH BASIN - DESIGN SD
4026B	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4110F	COVER CASTING FOR MANHOLE (FOR USE IN ALL TRAFFIC AREAS) - CASTING NO. 715 AND 716
4134A	CURB BOX CASTING FOR CATCH BASIN (FOR DESIGN B CURBS)- CASTING NO. 825
7038A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
7100H	CONCRETE CURB AND GUTTER (DESIGN B AND DESIGN V)
7111J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB AND GUTTER)
7113A	CONCRETE APPROACH NOSE DETAIL
8000K	TEMPORARY CHANNELIZERS (3 SHEETS)

BASIS OF PLANNED QUANTITIES

2357	BITUMINOUS MATERIAL FOR TACK COAT	0.05 GAL / SQ YD
2211	AGGREGATE BASE CLASS 5	1.8 TONS / CU YD
2360	ALL BITUMINOUS PAVEMENT	115 LBS / SQ YD / IN THICKNESS
2581	REMOVABLE PREFORM PAVEMENT MARKING TAPE	2' AT 50' INTERVALS
2575	SEED MIXTURE 25-121	61 LBS / ACRE
2574	FERTILIZER TYPE 3	350 LBS / ACRE
2575	HYDRAULIC REINFORCED FIBER MATRIX	3900 LBS / ACRE

NO	DATE	BY	CKD	APPR	REVISION	03/24/2025	8:52:15 AM
NAME: P:\24-01-00\CSAH_12_(HWY 65-FOLEY BLVD)\Base\Proposed\SEQ.dgn							

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: GERALD J. AUGER JR.
 SIGNATURE: 
 DATE: 01/30/2025 LICENSE NO. 26511

DRAWN BY: RRH DATE: 12/04/2023
 DESIGN BY: SPH DATE: 8/29/2024
 CHECKED BY: CSO DATE: 10/30/2024



**ANOKA COUNTY
HIGHWAY DEPT.**

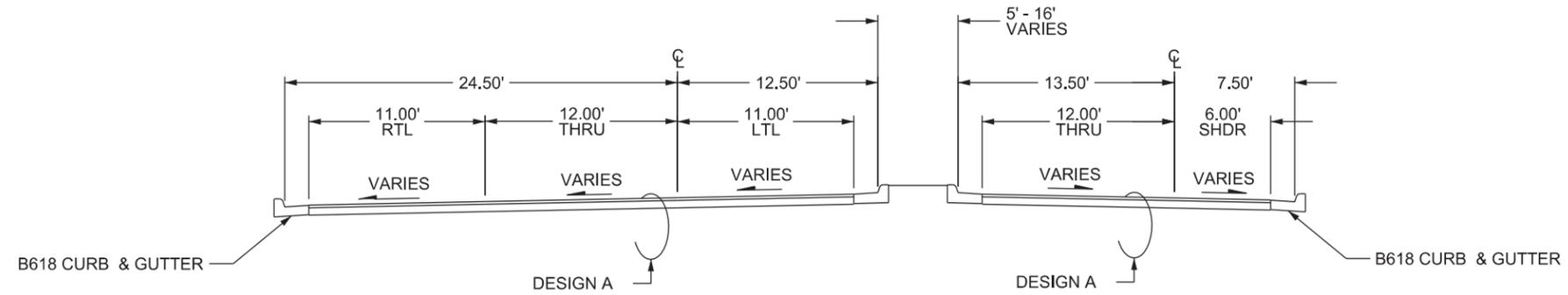
STATE AID PROJECT 002-612-038

STATEMENT OF ESTIMATED QUANTITIES

Sheet 2 of 39 Sheets

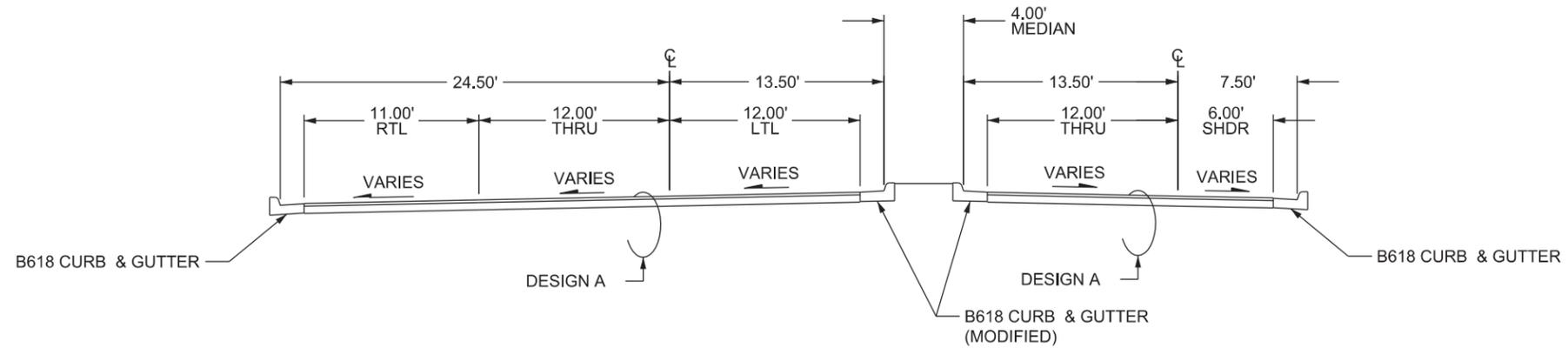
CSAH 12 - NORTHDALÉ BLVD NW EXISTING SECTION

10+62.50 - 15+96.00
41+16.00 - 46+07.00 (PROPOSED)



CSAH 12 - NORTHDALÉ BLVD NW PROPOSED SECTION

10+62.50 - 15+96.00

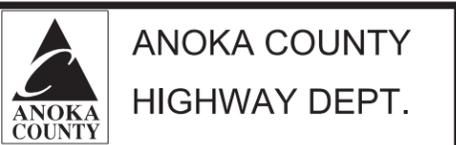


NO	DATE	BY	CKD	APPR	REVISION	
	02/20/2025					9:24:54 AM
NAME: P:\24-01-00\CSAH_12_(HWY 65-FOLEY BLVD)\Base\Proposed\TYPICALS.dgn						

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

PRINT NAME: GERALD J. AUGÉ JR.
SIGNATURE: *[Signature]*
DATE: 01/30/2025 LICENSE NO. 26511

DRAWN BY: RRH DATE: 12/04/2023
DESIGN BY: SPH DATE: 8/29/2024
CHECKED BY: CSO DATE: 10/30/2024

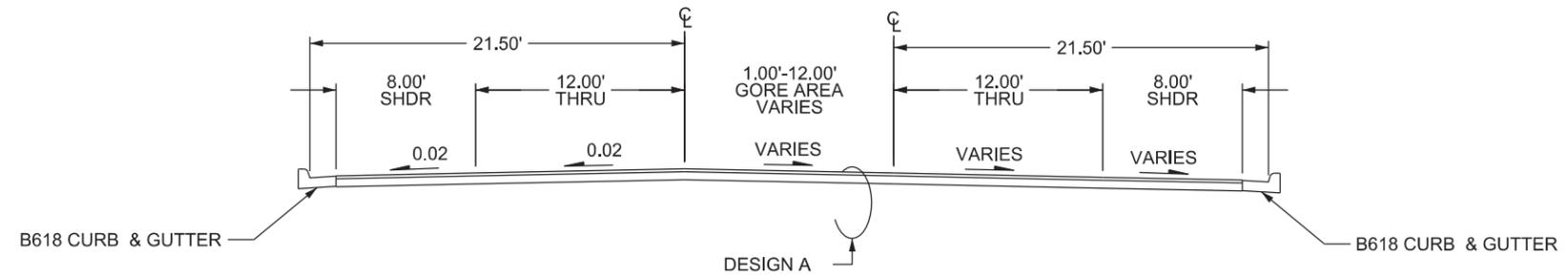


STATE AID PROJECT 002-612-038

TYPICAL SECTIONS
Sheet 3 of 39 Sheets

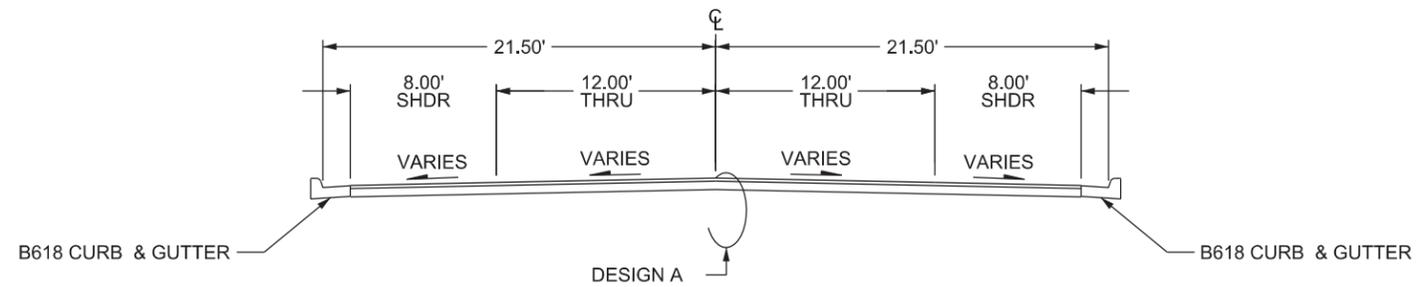
CSAH 12 - 109TH AVE NE
EXISTING/PROPOSED SECTION

15+96.00 - 17+88.00
33+05.00 - 38+21.00



CSAH 12 - NORTHDAL BLVD NW
EXISTING/PROPOSED SECTION

17+88.00 - 33+05.00



NO	DATE	BY	CKD	APPR	REVISION	
	02/20/2025					9:24:54 AM
NAME: P:\24-01-00\CSAH_12_(HWY 65-FOLEY BLVD)\Base\Proposed\TYPICALS.dgn						

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: GERALD J. AUGER JR.
 SIGNATURE:
 DATE: 01/30/2025 LICENSE NO. 26511

DRAWN BY: RRH DATE: 12/04/2023
 DESIGN BY: SPH DATE: 8/29/2024
 CHECKED BY: CSO DATE: 10/30/2024



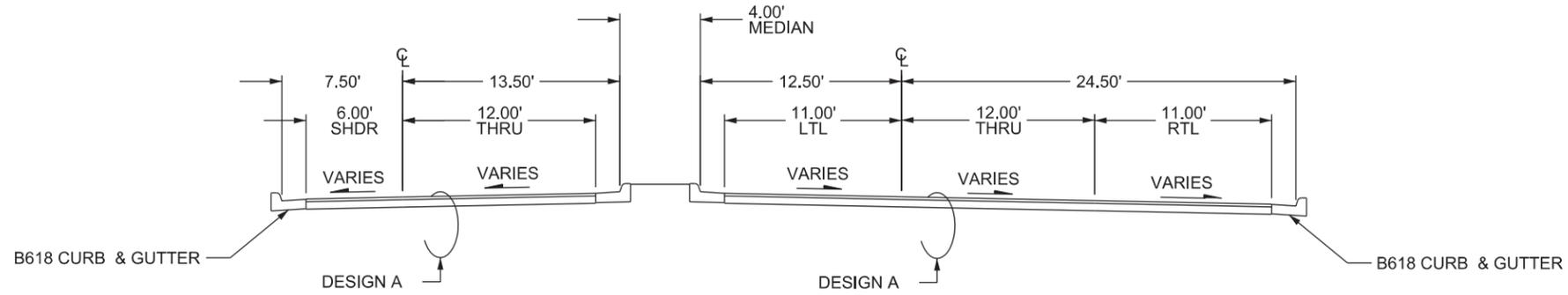
ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-612-038

TYPICAL SECTIONS
 Sheet 4 of 39 Sheets

CSAH 12 - NORTHDALE BLVD NW EXISTING/PROPOSED SECTION

38+21.00 - 41+16.00

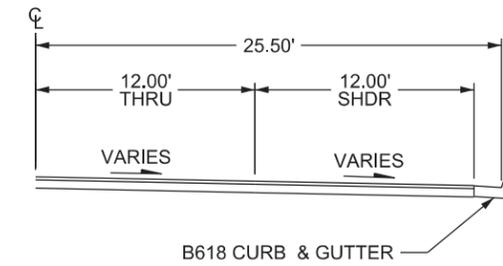
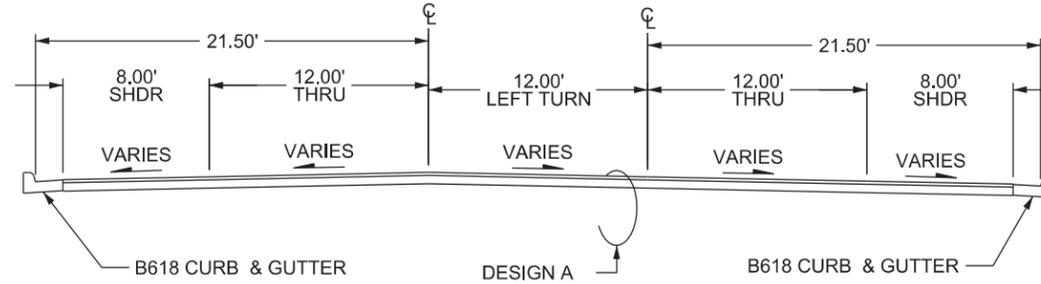
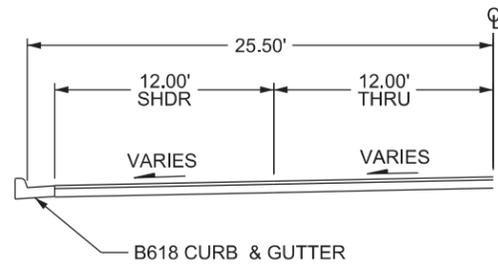


CSAH 12 - 109TH AVE NE (EXISTING/PROPOSED) SECTION

69+47.00 - 73+23.00

46+07 - 81+18

64+75.00 - 69+00.00



NO	DATE	BY	CKD	APPR	REVISION	02/20/2025	9:24:54 AM
NAME: P:\24-01-00\CSAH_12_(HWY 65-FOLEY BLVD)\Base\Proposed\TYPICALS.dgn							

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

PRINT NAME: GERALD J. AUGER JR.
SIGNATURE:
DATE: 01/30/2025 LICENSE NO. 26511

DRAWN BY: RRH DATE: 12/04/2023
DESIGN BY: SPH DATE: 8/29/2024
CHECKED BY: CSO DATE: 10/30/2024



**ANOKA COUNTY
HIGHWAY DEPT.**

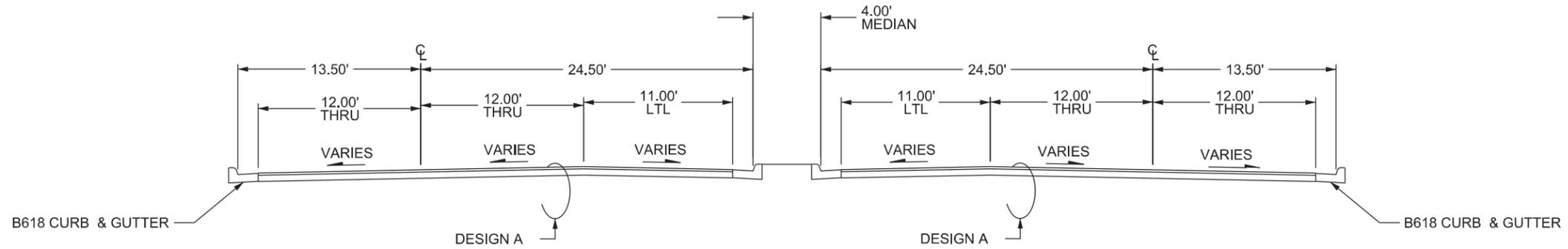
STATE AID PROJECT 002-612-038

TYPICAL SECTIONS
Sheet 5 of 39 Sheets

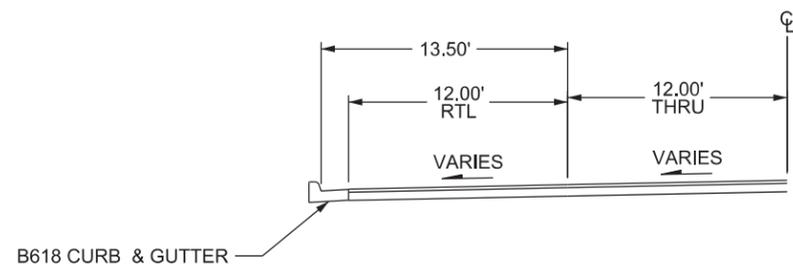
CSAH 12 - NORTHDAL BLVD NW EXISTING/PROPOSED SECTION

81+18.00 - 83+80.00
85+88.00 - 89+61.00
92+28.00 - 96+06.00
102+41.00 - 106+07.00

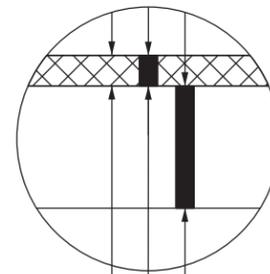
82+80.00 - 85+88.00
88+58.00 - 92+28.00
95+00.00 - 98+77.00
99+23.00 - 102+41.00
105+00.00 - 108+37.00



92+40.00 - 97+02.00

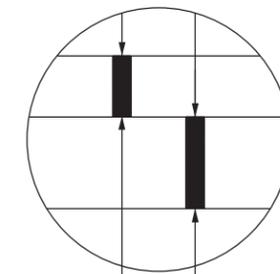


DESIGN A MILL SECTION



2.0" MILL BITUMINOUS
2.0" BITUMINOUS WEAR (SPWEB440C)
REMAINING BITUMINOUS (4.0")

EXISTING SECTION



6" EXISTING BITUMINOUS
EXISTING AGGREGATE BASE

NO	DATE	BY	CKD	APPR	REVISION	
	02/20/2025					9:24:54 AM

NAME: P:\24-01-00\CSAH_12_(HWY 65-FOLEY BLVD)\Base\Proposed\TYPICALS.dgn

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: GERALD J. AUGER JR.
SIGNATURE:
DATE: 01/30/2025 LICENSE NO. 26511

DRAWN BY: RRH DATE: 12/04/2023
DESIGN BY: SPH DATE: 8/29/2024
CHECKED BY: CSO DATE: 10/30/2024

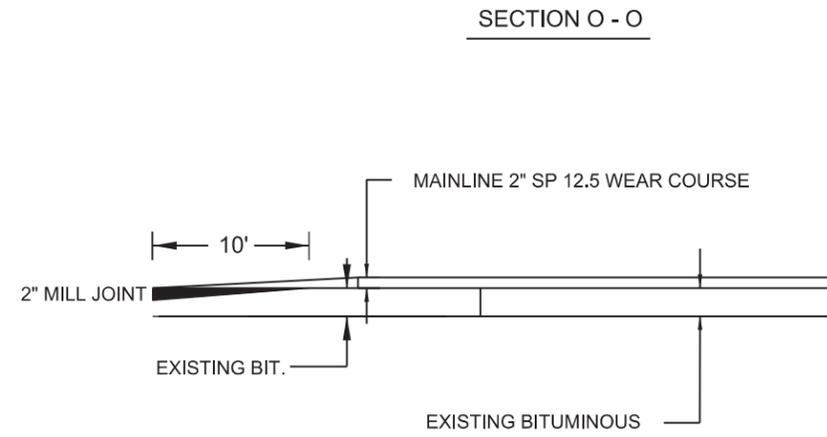
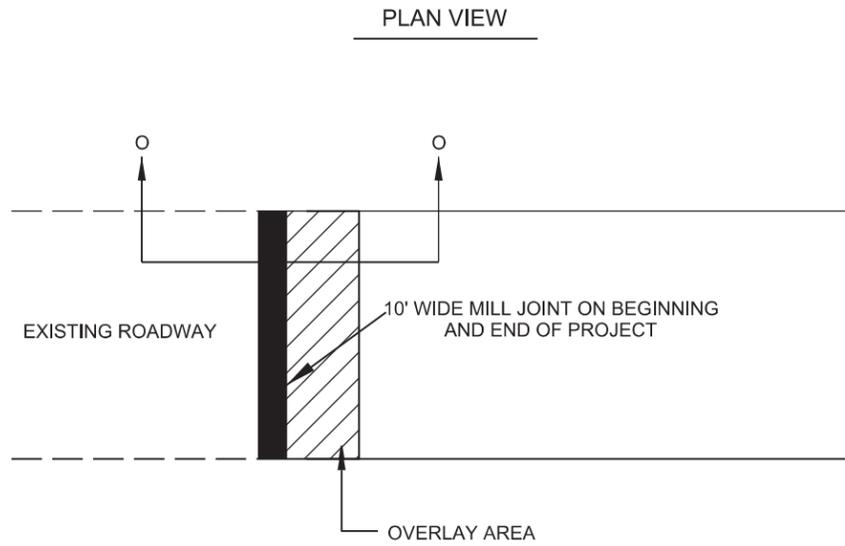
**ANOKA COUNTY
HIGHWAY DEPT.**

STATE AID PROJECT 002-612-038

TYPICAL SECTIONS

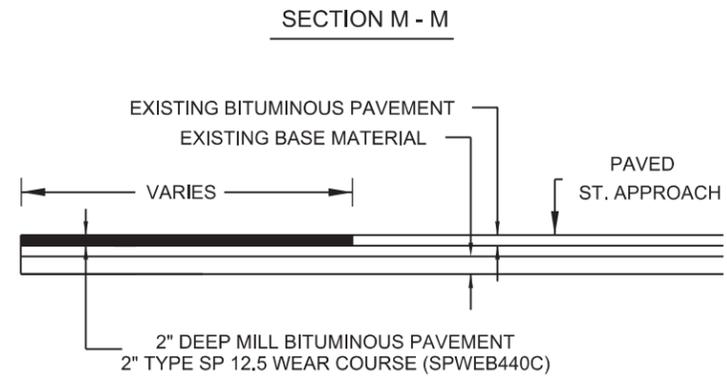
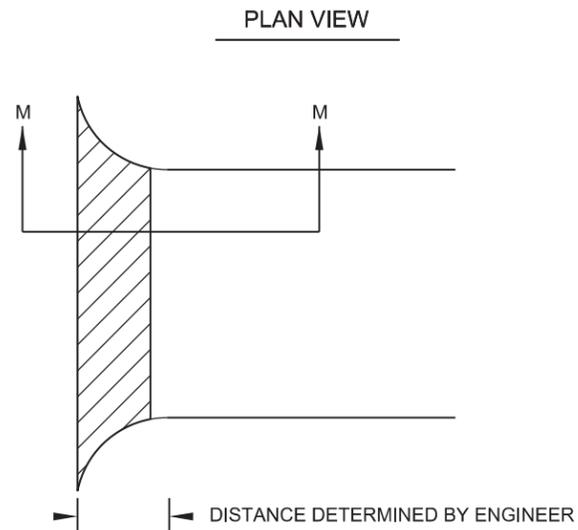
Sheet 6 of 39 Sheets

MAINLINE JOINT DETAIL (OVERLAY)



STREET APPROACH DETAIL (MILL & OVERLAY)

BITUMINOUS STREET



NO	DATE	BY	CKD	APPR	REVISION	
	02/20/2025					9:24:53 AM

NAME: P:\24-01-00\CSAH_12_(HWY 65-FOLEY BLVD)\Base\Proposed\DETAILS.dgn

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

PRINT NAME: GERALD J. AUGER JR.

SIGNATURE:

DATE: 01/30/2025 LICENSE NO. 26511

DRAWN BY: RRH DATE: 12/04/2023

DESIGN BY: SPH DATE: 8/29/2024

CHECKED BY: CSO DATE: 10/30/2024

ANOKA COUNTY

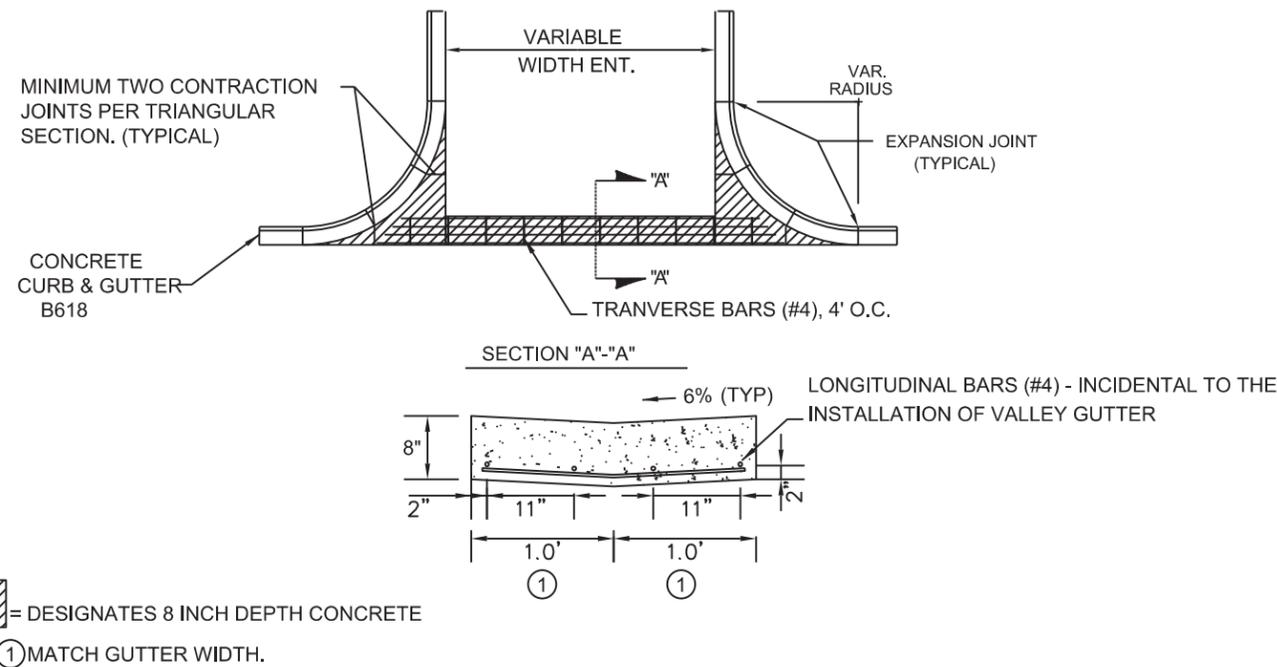
HIGHWAY DEPT.

STATE AID PROJECT 002-612-038

DETAILS

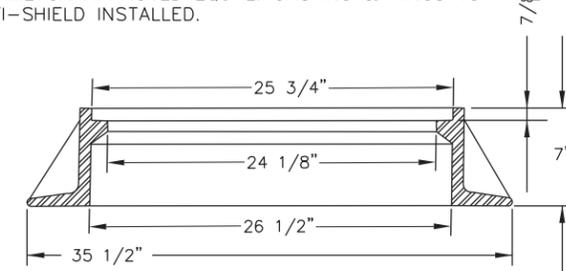
Sheet 7 of 39 Sheets

CROSS GUTTER DETAIL
PAID FOR AS 8" VALLEY GUTTER



STANDARD MANHOLE CASTING

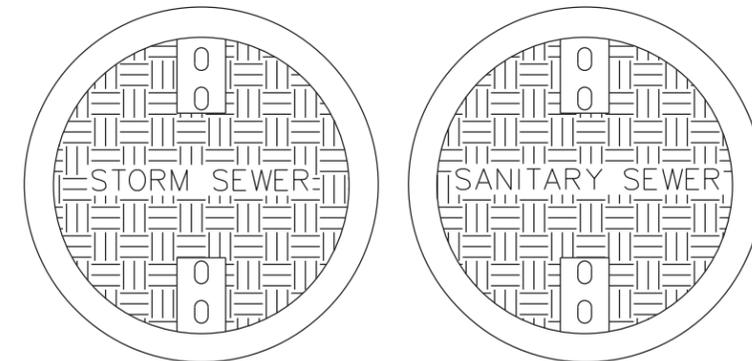
CASTING - NEENAH FOUNDRY NO. R-1733 SERIES MANHOLE FRAME OR APPROVED EQUAL. CASTING & RINGS TO HAVE INFI-SHIELD INSTALLED.



COVER-ESS BROTHER 301-CP LID. OR EQUAL WITH RUBBER GASKET ON THE BOTTOM OF THE LID.

NEENAH R1733-5044

NEENAH R1733-5044



NOTE: ALL LIDS MUST HAVE RUBBER GASKET ON THE BOTTOM OF THE LID.

NO	DATE	BY	CKD	APPR	REVISION	02/20/2025	9:24:53 AM
NAME: P:\24-01-00\CSAH_12_(HWY 65-FOLEY BLVD)\Base\Proposed\DETAILS.dgn							

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

PRINT NAME: GERALD J. AUGER JR.

SIGNATURE: *[Signature]*

DATE: 01/30/2025 LICENSE NO. 26511

DRAWN BY: RRH DATE: 12/04/2023

DESIGN BY: SPH DATE: 8/29/2024

CHECKED BY: CSO DATE: 10/30/2024



ANOKA COUNTY
HIGHWAY DEPT.

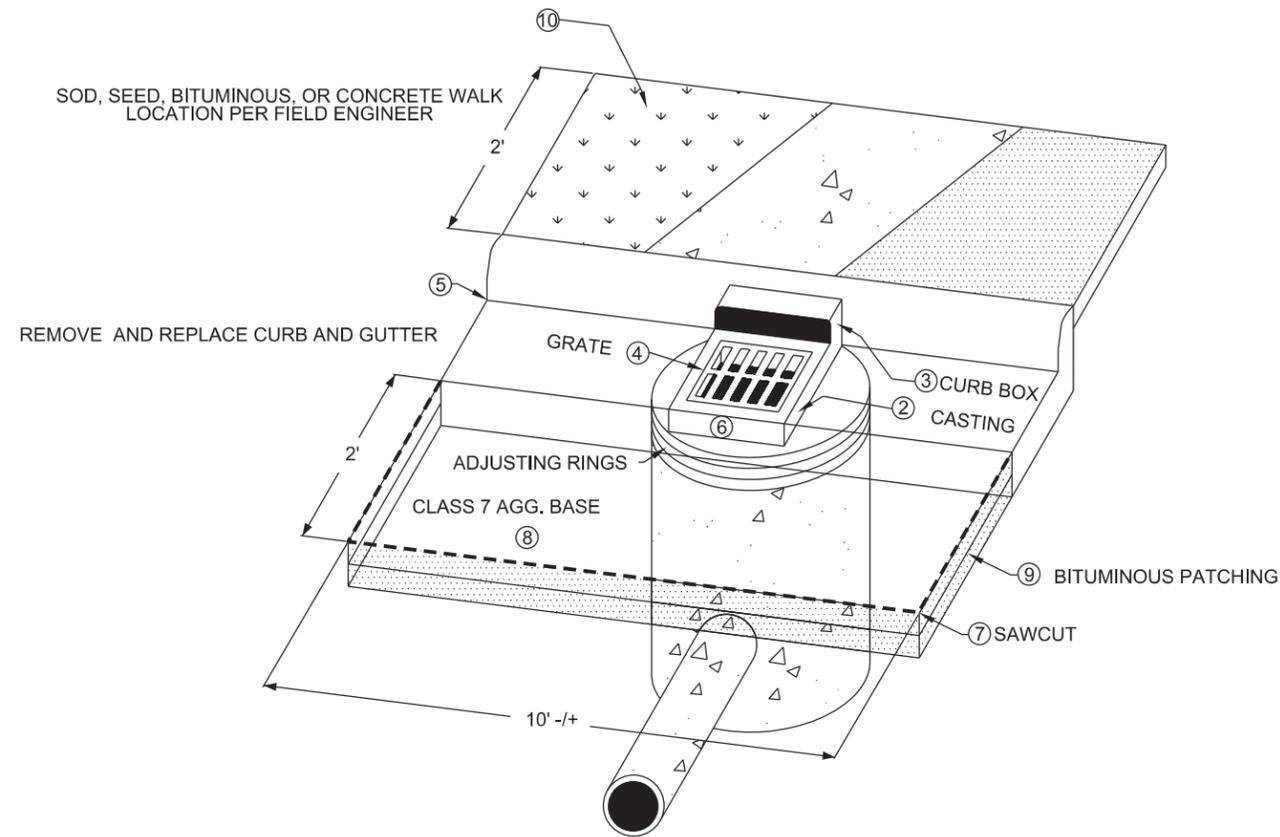
STATE AID PROJECT 002-612-038

DETAILS

Sheet 8 of 39 Sheets

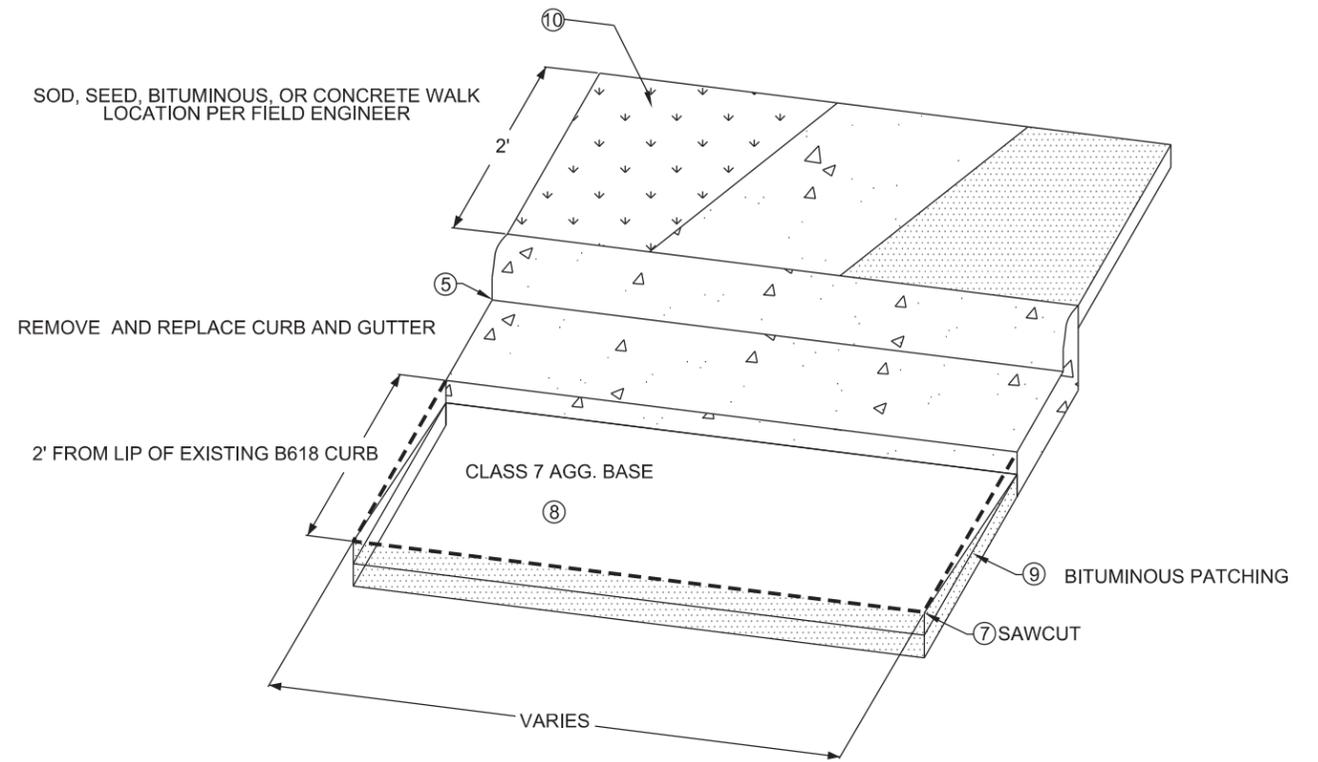
CATCH BASIN DETAIL

SEE STRUCTURE TAB FOR LOCATION
(PAGE 3)



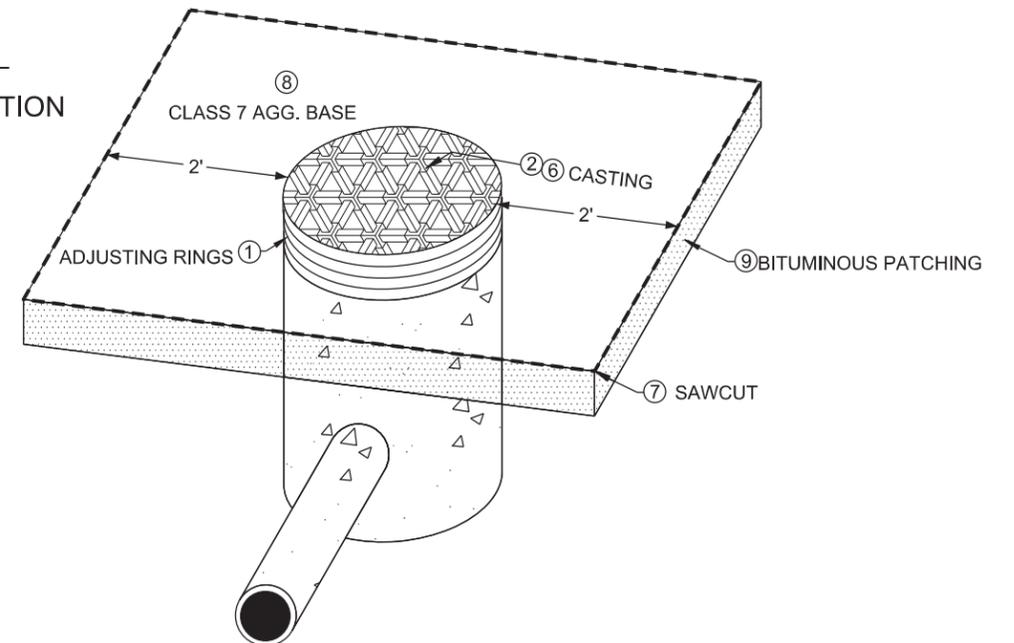
NEW CURB DETAIL

SEE PLAN FOR LOCATION



MANHOLE DETAIL

SEE STRUCTURE TAB FOR LOCATION
(PAGE 3)



NOTES

FOR TRAFFIC CONTROL AT CATCH BASIN AND MANHOLE REPAIRS REFER TO THE MINNESOTA MANUAL ON TEMPORARY TRAFFIC CONTROL LAYOUTS FIELD MANUAL.

- ① CONCRETE ENCASED CONCRETE ADJUSTING RINGS STANDARD PLATE 4026A
- ② RING AND FRAME CASTING; REFERENCE CASTING ASSEMBLIES SUMMARY CHART FOR CASTING TYPE
- ③ CURB BOX MATCHES CASTING REFERENCE CHART FOR CASTING TYPE
- ④ GRATE CASTING; REFERENCE CASTING ASSEMBLIES SUMMARY CHART FOR CASTING TYPE
- ⑤ CONCRETE CURB AND GUTTER DESIGN B STANDARD PLATE 7100H, FORM CURB TO FIT CASTING
- ⑥ INSTALLATION OF CATCH BASIN OR MANHOLE CASTINGS; REFERENCE STANDARD PLATE PER TYPE OF CASTING
- ⑦ SAWCUT BITUMINOUS PAVEMENT / CONCRETE CURB FULL DEPTH.
- ⑧ ADD AND COMPACT AGGREGATE BASE CLASS 5 AROUND REPAIRED STRUCTURE. ITEM INCIDENTAL TO ENTIRE STRUCTURE REPAIR
- ⑨ REMOVE VARIABLE DEPTH BITUMINOUS, PATCH WITH 2, 3" LIFTS OF BITUMINOUS, TOP LIFT SHOULD TAPER TO BOTTOM LIFT AT CURB.
- ⑩ REPLACE DISTURBED AREA BEHIND CATCH BASIN WITH EITHER SOD (RESIDENTIAL AREAS), EROSION CONTROL BLANKET, BITUMINOUS ,OR CONCRETE

NO	DATE	BY	CKD	APPR	REVISION	02/20/2025	9:24:53 AM
NAME: P:\24-01-00\CSAH_12_(HWY 65-FOLEY BLVD)\Base\Proposed\DETAILS.dgn							

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: GERALD J. AUGER JR.
 SIGNATURE:
 DATE: 01/30/2025 LICENSE NO. 26511

DRAWN BY: RRH DATE: 12/04/2023
 DESIGN BY: SPH DATE: 8/29/2024
 CHECKED BY: CSO DATE: 10/30/2024



ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-612-038

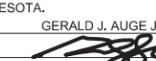
DETAILS

Sheet 9 of 39 Sheets

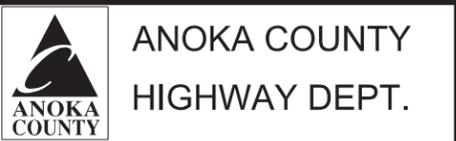
STORM DRAINAGE TAB

NUMBER	TYPE	ACTION	NEW CASTING TYPE	FURNISH AND INSTALL CASTING ASSEMBLY	RING HEIGHT (INCIDENTAL)	REMOVE STRUCTURE	GROUT CATCH BASIN OR MANHOLE	CONSTRUCT DRAINAGE STRUCTURE DESIGN H	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48"	REPAIR CATCH BASIN (REBUILD INVERT AND/OR DOGHOUSE)	NOTES
				EACH	LIN FT	EACH	EACH	LIN FT	LIN FT	EACH	
100	CB	GROUT	C				1				
101	CB	GROUT	C				1				
103	CB	RE-RING	A	1	0.4		1			1	NO CURB BOX, CURB PLATE NEEDED, GROUT
104	CB	RECONSTRUCT	A	1	0.7	1			7.3		
105	CB	GROUT	C				1			1	GROUT DOGHOUSE
106	CB	RECONSTRUCT	A	1	0.0	1		5.9			
107	CB	GROUT	A				1			1	GROUT DOGHOUSE
108	CB	GROUT	C				1			1	GROUT DOGHOUSE/INVERT
109	CB	GROUT	C				1				COMPLETELY FULL
110	CB	GROUT	C				1				CLEAN INVERT
111	CB	OK									
113	CB	GROUT	C				1				CLEAN INVERT
114	CB	GROUT	C				1				CLEAN INVERT
116	CB	GROUT	A				1				
117	CB	RE-RING	B	1	1.2						
118	CB	GROUT	A				1				
119	CB	GROUT	A				1			1	GROUT DOGHOUSE
120	CB	RE-RING	A	1	0.2						CLEAN INVERT
121	CB	RE-RING	A	1	0.8					1	GROUT DOGHOUSE
121A	CB	RE-RING	A	1	1.0						
122	CB	GROUT	C				1				CLEAN INVERT
123	CB	GROUT	C				1				
124	CB	GROUT	A				1			1	GROUT DOGHOUSE
125	CB	RE-RING	A	1	0.5						
128	CB	GROUT	C				1				
129	CB	GROUT	C				1				
130	CB	GROUT	C				1				
131	CB	GROUT	C				1				
132	CB	RE-RING	A	1	0.8						
133	CB	GROUT	A				1				
138	CB	RE-RING	A	1	0.2						
139	CB	GROUT	A				1				
140	CB	RE-RING	A	1	0.8						
141	CB	GROUT	A				1				
142	CB	GROUT	A				1				
143	CB	GROUT	A				1				
144	CB	GROUT	A				1				
145	CB	GROUT	A				1				
146	CB	GROUT	A				1				
147	CB	GROUT	A				1				
148	CB	GROUT	A				1				
149	CB	GROUT	A				1				
150	CB	GROUT	A				1				
152	CB	OK									
152A	CB	GROUT	A				1				
154	CB	OK									
155	CB	GROUT	C				1				
157	CB	GROUT	A				1				
158	CB	RE-RING	A	1	0.9						
159	CB	OK									
160	CB	RE-RING	A	1	0.6						
161	CB	GROUT	C	1	1.1					1	GROUT DOGHOUSE
162	CB	GROUT	A				1			1	GROUT DOGHOUSE
163	CB	GROUT	A				1				
164	CB	GROUT	C	1	0.8						
165	CB	GROUT	C	1	0.4						
166	CB	GROUT	A				1				
167	CB	RECONSTRUCT	A	1	0.2	1		2.8			
SUBTOTALS				17	10.6	3	38	8.7	7.3	9	

NO	DATE	BY	CKD	APPR	REVISION	02/20/2025	9:25:04 AM
NAME: P:\24-01-00\CSAH_12_(HWY 65-FOLEY BLVD)\Base\Proposed\STORM TABS.dgn							

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: GERALD J. AUGER JR.
 SIGNATURE: 
 DATE: 01/30/2025 LICENSE NO. 26511

DRAWN BY: RRH DATE: 12/04/2023
 DESIGN BY: SPH DATE: 8/29/2024
 CHECKED BY: CSO DATE: 10/30/2024



STATE AID PROJECT 002-612-038

STORM SEWER TABULATIONS
 Sheet 10 of 39 Sheets

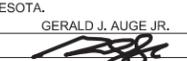
STORM DRAINAGE TAB

NUMBER	TYPE	ACTION	NEW CASTING TYPE	FURNISH AND INSTALL CASTING ASSEMBLY	RING HEIGHT (INCIDENTAL)	REMOVE STRUCTURE	GROUT CATCH BASIN OR MANHOLE	CONSTRUCT DRAINAGE STRUCTURE DESIGN H	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48"	REPAIR CATCH BASIN (REBUILD INVERT AND/OR DOGHOUSE)	NOTES
				EACH	LIN FT	EACH	EACH	LIN FT	LIN FT	EACH	
172A	CB	GROUT	A				1				CLEAN INVERT
174	CB	GROUT	A				1				
175	CB	GROUT	A				1				
176	CB	GROUT	B				1				
177	CB	GROUT	B				1			1	GROUT DOGHOUSE
178	CB	RE-RING	A	1	0.9						
179	CB	GROUT	A				1				
180	CB	GROUT	B				1				
181	CB	GROUT	A				1				
182	CB	OK									
183	CB	GROUT	B				1				
184	CB	RE-RING	A	1	0.3						
185	CB	OK									
186	CB	RE-RING	B	1	0.7						
187	CB	RE-RING	A	1	0.5						
188	CB	OK									
189	CB	GROUT	B				1				
190	CB	RE-RING	A	1	0.0						
193	CB	RE-RING	A	1	0.4						
194	CB	GROUT	B				1				
195	CB	RE-RING	A	1	0.7						
199	CB	GROUT	A				1			1	GROUT DOGHOUSE
401	CB	GROUT	A				1				
402	CB	GROUT	B				1			1	GROUT DOGHOUSE
408	CB	RE-RING	A	1	0.2					1	GROUT DOGHOUSE
408	CB	GROUT	A				1			1	GROUT DOGHOUSE/INVERT
411	CB	GROUT	B				1				
414	CB	RE-RING	A	1	0.5						
415	CB	GROUT	A				1				
418	CB	GROUT	A				1				
419	CB	GROUT	B				1			1	GROUT DOGHOUSE
420	CB	GROUT	A				1			1	GROUT DOGHOUSE
423	CB	GROUT	A				1				
424	CB	RE-RING	B	1	1.0						
425	CB	GROUT	A				1				
201	MH	GROUT	A-7D				1			1	GROUT INVERT
202	MH	GROUT	A-7D				1			1	GROUT DOGHOUSE
203	MH	GROUT	A-7D				1			1	GROUT STRUCTURE
205	MH	RE-RING	A-7D	1	0.5					1	CLEAN AND GROUT INVERT
206	MH	GROUT	A-7D				1				
SUBTOTALS				11	5.7	0	26	0	0	11	

NO	DATE	BY	CKD	APPR	REVISION	02/20/2025	9:25:01 AM
NAME: P:\24-01-00\CSAH_12_(HWY 65-FOLEY BLVD)\Base\Proposed\STORM TABS.dgn							

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

PRINT NAME: GERALD J. AUGER JR.

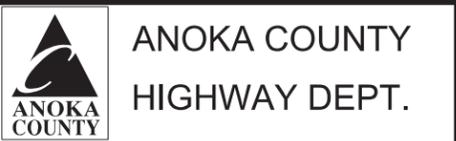
SIGNATURE: 

DATE: 01/30/2025 LICENSE NO. 26511

DRAWN BY RRH DATE 12/04/2023

DESIGN BY SPH DATE 8/29/2024

CHECKED BY CSO DATE 10/30/2024



STATE AID PROJECT 002-612-038

STORM SEWER TABULATIONS

Sheet 11 of 39 Sheets

STORM DRAINAGE TAB

NUMBER	TYPE	ACTION	NEW CASTING TYPE	FURNISH AND INSTALL CASTING ASSEMBLY	RING HEIGHT (INCIDENTAL)	REMOVE STRUCTURE	GROUT CATCH BASIN OR MANHOLE	CONSTRUCT DRAINAGE STRUCTURE DESIGN H	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48"	REPAIR CATCH BASIN (REBUILD INVERT AND/OR DOGHOUSE)	NOTES
				EACH	LIN FT	EACH	EACH	LIN FT	LIN FT	EACH	
206A	MH	GROUT	A-7D				1				
207	MH	GROUT	A-7D				1			1	GROUT INVERT/DOUGHOUSE
207A	MH	GROUT	A-7D				1				
208	MH	OK									
209	MH	OK									
210	MH	OK									
211	MH	OK									
212	MH	RE-RING	A-7D	1	1.0						
213	MH	OK									
216	MH	OK									
218	MH	OK									
220	MH	RE-RING	A-7D	1	0.7					1	GROUT DOGHOUSE/INVERT
221	MH	GROUT	A-7D				1			1	GROUT DOGHOUSE
222	MH	RE-RING	A-7D	1	0.6					1	GROUT DOGHOUSE
224	MH	RE-RING	A-7D	1	0.4						
224A	MH	RE-RING	A-7D	1	0.8					1	GROUT DOGHOUSE
225	MH	GROUT	A-7D				1			1	GROUT DOGHOUSE
226	MH	RE-RING	A-7D	1	0.4						
227	MH	GROUT	A-7D				1				
230	MH	RE-RING	A-7D	1	0.8						
232	MH	GROUT	A-7D				1				
300	MH	GROUT	A-7D				1				SAN MH
300A	MH	RE-RING	A-7D	1	0.6						SAN MH
301	MH	GROUT	A-7D				1				SAN MH
302	MH	GROUT	A-7D				1				SAN MH
303	MH	GROUT	A-7D				1				SAN MH
304	MH	GROUT	A-7D				1				SAN MH
306	MH	GROUT	A-7D				1				SAN MH
307	MH	GROUT	A-7D				1				SAN MH
308	MH	GROUT	A-7D				1				SAN MH
309	MH	GROUT	A-7D				1				SAN MH
309A	MH	GROUT	A-7D				1				SAN MH
309B	MH	GROUT	A-7D				1				SAN MH
310	MH	GROUT	A-7D				1				SAN MH
310A	MH	GROUT	A-7D				1				SAN MH
311	MH	RE-RING	A-7D	1	1.7						SAN MH
312	MH	GROUT	A-7D				1				SAN MH
313	MH	RE-RING	A-7D	1	2.5						SAN MH
314	MH	RE-RING	A-7D	1	1.6						SAN MH
314A	MH	GROUT	A-7D				1				SAN MH
315	MH	GROUT	A-7D				1				SAN MH
317	MH	GROUT	A-7D				1				SAN MH
318	MH	GROUT	A-7D				1				SAN MH
319	MH	GROUT	A-7D				1				SAN MH
320	MH	GROUT	A-7D				1				SAN MH
322	MH	GROUT	A-7D				1				SAN MH
323	MH	RE-RING	A-7D	1	2.0						SAN MH
324	MH	RE-RING	A-7D	1	2.0						SAN MH
325	MH	GROUT	A-7D				1				SAN MH
325A	MH	GROUT	A-7D				1				SAN MH
327	MH	GROUT	A-7D				1				SAN MH
328	MH	GROUT	A-7D				1				SAN MH
329	MH	GROUT	A-7D				1				SAN MH
329A	MH	GROUT	A-7D				1				SAN MH
330	MH	GROUT	A-7D				1				SAN MH
330A	MH	GROUT	A-7D				1				SAN MH
330B	MH	GROUT	A-7D				1				SAN MH
SUBTOTALS				13	15.1	0	37	0.0	0.0	6	
TOTALS				41	31.4	3	101	8.7	7.3	26	

NO	DATE	BY	CKD	APPR	REVISION	02/20/2025	9:25:02 AM
NAME: P:\24-01-00\CSAH_12_(HWY 65-FOLEY BLVD)\Base\Proposed\STORM TABS.dgn							

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

PRINT NAME: GERALD J. AUGER JR.

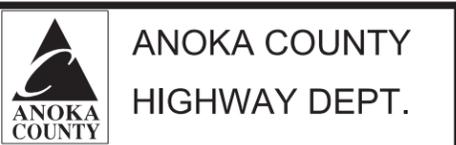
SIGNATURE: 

DATE: 01/30/2025 LICENSE NO. 26511

DRAWN BY RRH DATE 12/04/2023

DESIGN BY SPH DATE 8/29/2024

CHECKED BY CSO DATE 10/30/2024



STATE AID PROJECT 002-612-038

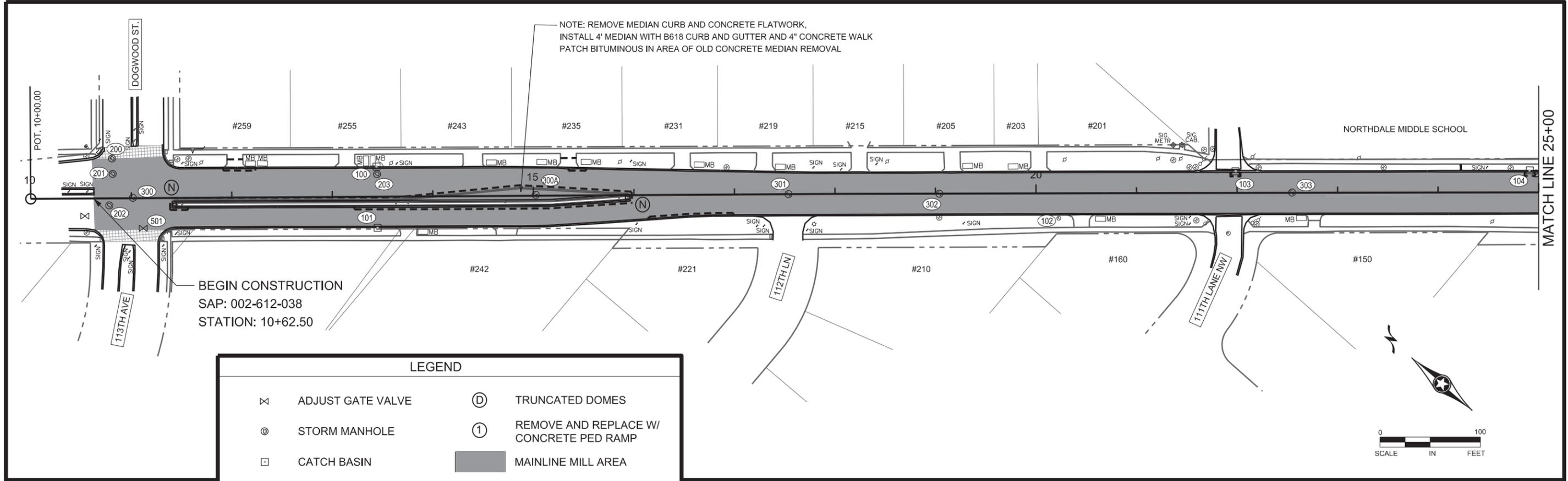
STORM SEWER TABULATIONS

Sheet 12 of 39 Sheets

CASTING ASSEMBLIES SUMMARY						
ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING	CURB BOX	DESCRIPTION	NOTES	QUANTITY
A-7D	700-7	715		301-CP LID WITH RUBBER GASKET ON BOTTOM	CASTING COVER STAMPED "STORM SEWER" (NEENAH R-1733 WITH LID 301-CP)	8
A-7D	700-7	715		301-CP LID WITH RUBBER GASKET ON BOTTOM	CASTING COVER STAMPED "SANITARY SEWER" (NEENAH R-1733 WITH LID 301-CP)	6
A	NEENAH R-3250-DVSP	V	YES	NEENAH R-3250-DVSP		21
B	NEENAH R-3448-B	A	NO	NEENAH R-3448-B		3
C	NEENAH R-3067-V	V	YES	NEENAH R-3067-V		3
ALL CASTING HEIGHTS ARE TO BE VERIFIED IN THE FIELD						
ALL MANHOLE COVERS SHOULD BE LABELED AS STORM OR SANITARY						
NEW MANHOLE CASTINGS TO BE INSTALLED FLUSH WITH THE MILLED ASPHALT SURFACE.						
ALL MANHOLES TO BE WRAPPED WITH INFI- SHIELD. THIS WORK IS INCIDENTAL TO THE CASTING ASSEMBLY.						
ADJUSTING RINGS TO BE INSTALLED AND GLUED DURING THE PAVING OPERATION.						
ADJUSTING RINGS TO BE RECESSED 1/4" FROM TOP OF FINISHED MAT						

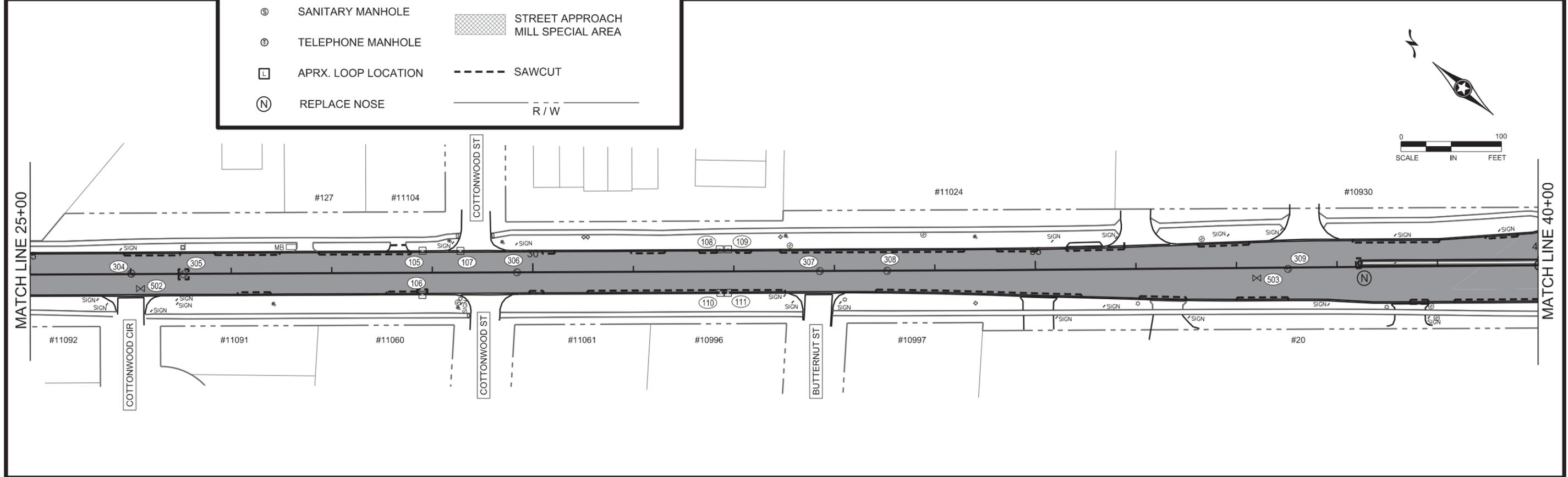
GATE VALVE TAB			
NUMBER	STATION	OFFSET	ADJUST
501	11+11.73	29.87	1
502	26+09.67	14.44	1
503	37+20.09	10.09	1
504	40+48.16	30.12	1
505	42+10.75	4.00	1
506	42+07.39	8.26	1
507	41+69.10	45.00	1
508	42+47.18	73.54	1
510	48+28.85	33.22	1
511	48+55.39	26.24	1
512	50+65.57	32.83	1
513	53+95.56	34.17	1
514	55+84.97	-43.5	1
515	58+92.46	-62.07	1
516	60+56.89	40.05	1
517	69+18.29	-57.95	1
518	73+47.16	41.86	1
520	80+66.29	-57.00	1
521	80+65.85	42.15	1
522	85+78.44	45.15	1
525	92+22.58	-68.66	1
526	92+21.35	40.48	1
527	92+21.28	45.94	1
528	102+28.74	24.08	1
529	103+97.40	18.08	1
530	103+97.40	8.93	1
531	105+66.78	14.98	1
532	108+83.65	13.09	1
533	109+02.50	22.69	1
534	109+06.98	16.15	1
535	109+11.34	18.03	1
536	109+05.39	31.21	1
		TOTAL	32
GATE VALVES TO BE ADJUSTED ONLY AS NECESSARY AS DETERMINED BY THE ENGINEER.			

	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: <u>GERALD J. AUGER JR.</u> SIGNATURE:  DATE: <u>01/30/2025</u> LICENSE NO. <u>26511</u>	DRAWN BY <u>RRH</u> DATE <u>12/04/2023</u> DESIGN BY <u>SPH</u> DATE <u>8/29/2024</u> CHECKED BY <u>CSO</u> DATE <u>10/30/2024</u>	 ANOKA COUNTY HIGHWAY DEPT.	STATE AID PROJECT <u>002-612-038</u>	STORM SEWER TABULATIONS Sheet <u>13</u> of <u>39</u> Sheets
NO DATE BY CKD APPR REVISION NAME: P:\24-01-00\CSAH_12_(HWY 65-FOLEY BLVD)\Base\Proposed\STORM TABS.dgn	02/20/2025 9:25:06 AM				



LEGEND

⊗	ADJUST GATE VALVE	⊕	TRUNCATED DOMES
⊙	STORM MANHOLE	①	REMOVE AND REPLACE W/ CONCRETE PED RAMP
□	CATCH BASIN	■	MAINLINE MILL AREA
⊙	SANITARY MANHOLE	▨	STREET APPROACH MILL SPECIAL AREA
⊙	TELEPHONE MANHOLE	- - -	SAWCUT
⊔	APRX. LOOP LOCATION	—	R / W
⊕	REPLACE NOSE		



NO	DATE	BY	CKD	APPR	REVISION	
	02/20/2025					9:24:57 AM

NAME: P:\24-01-00\CSAH_12_(HWY 65-FOLEY BLVD)\Base\Proposed\CP1.dgn

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

PRINT NAME: GERALD J. AUGER JR.

SIGNATURE: *[Signature]*

DATE: 01/30/2025 LICENSE NO. 26511

DRAWN BY: RRH DATE: 12/04/2023

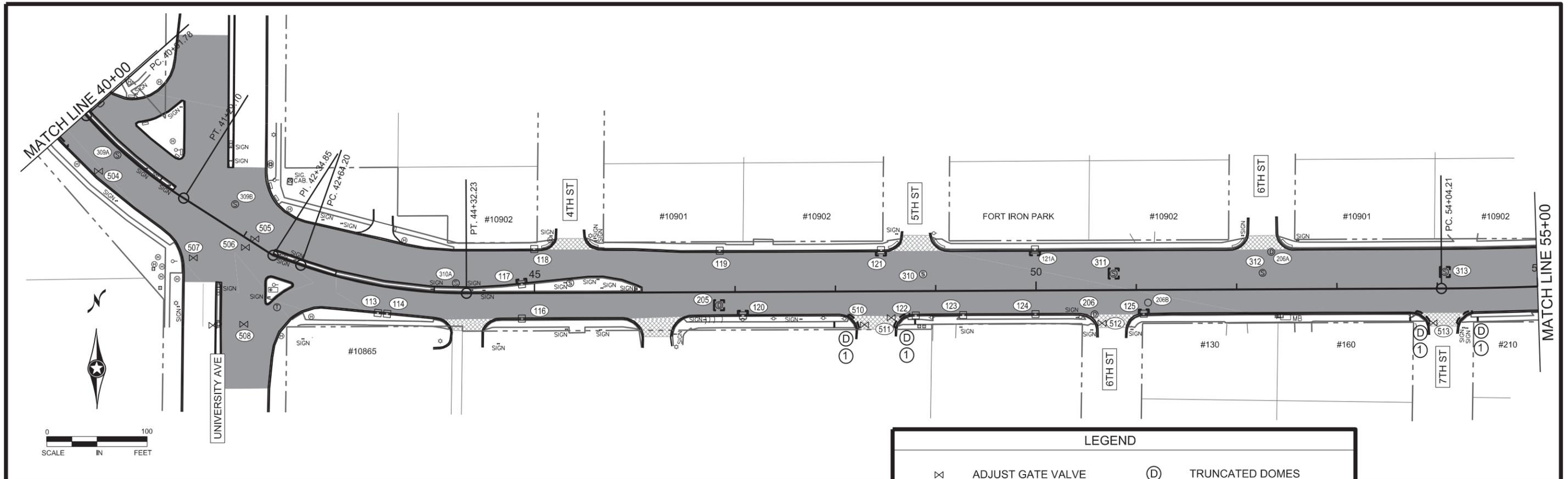
DESIGN BY: SPH DATE: 8/29/2024

CHECKED BY: CSO DATE: 10/30/2024

ANOKA COUNTY
HIGHWAY DEPT.

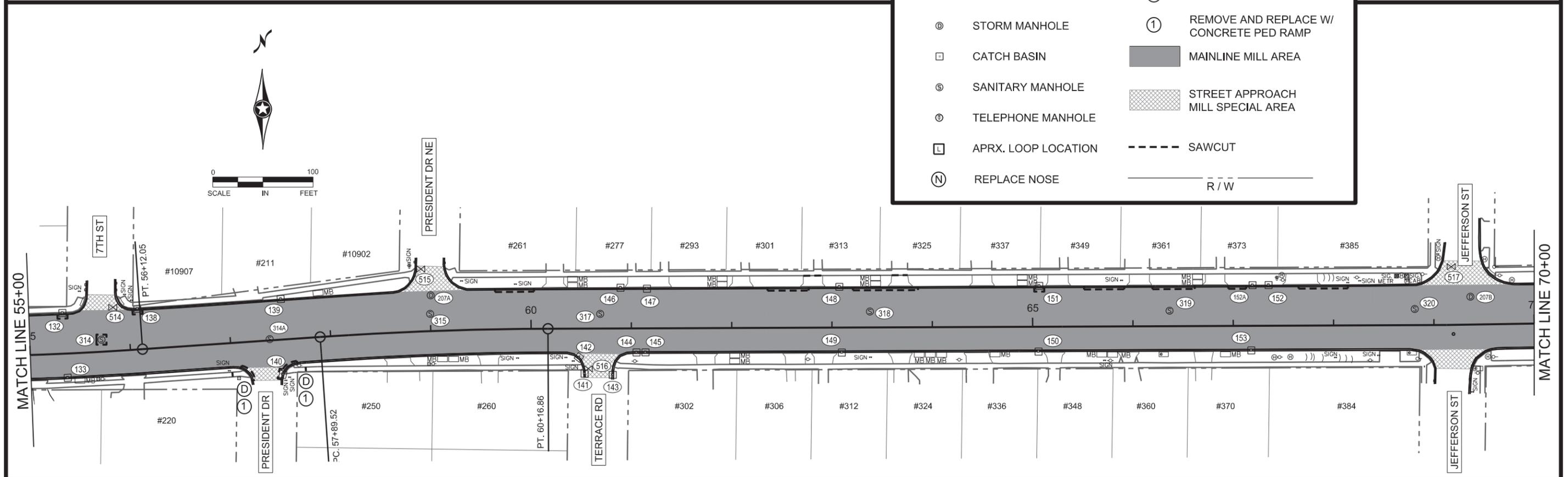
STATE AID PROJECT 002-612-038

CONSTRUCTION PLAN
STA 10+62.50 TO 40+00
Sheet 14 of 39 Sheets



LEGEND

⊗	ADJUST GATE VALVE	⊕	TRUNCATED DOMES
⊙	STORM MANHOLE	①	REMOVE AND REPLACE W/ CONCRETE PED RAMP
⊠	CATCH BASIN	■	MAINLINE MILL AREA
⊙	SANITARY MANHOLE	▨	STREET APPROACH MILL SPECIAL AREA
⊙	TELEPHONE MANHOLE	- - -	SAWCUT
⊠	APRX. LOOP LOCATION	—	R / W
⊕	REPLACE NOSE		



NO	DATE	BY	CKD	APPR	REVISION	02/20/2025	9:24:58 AM
NAME: P:\24-01-00\CSAH_12_(HWY 65-FOLEY BLVD)\Base\Proposed\CP2.dgn							

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

PRINT NAME: GERALD J. AUGER JR.

SIGNATURE:

DATE: 01/30/2025 LICENSE NO. 26511

DRAWN BY RRH DATE 12/04/2023

DESIGN BY SPH DATE 8/29/2024

CHECKED BY CSO DATE 10/30/2024

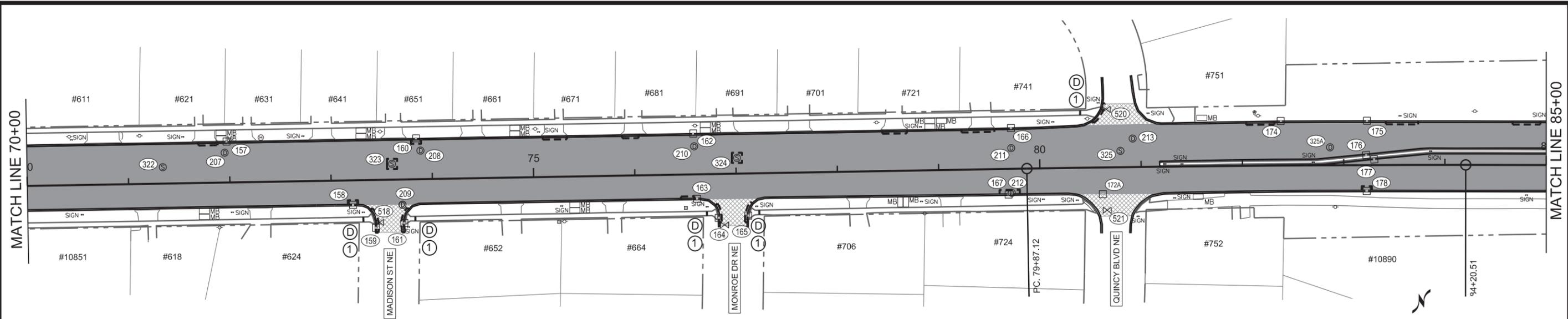

**ANOKA COUNTY
HIGHWAY DEPT.**

STATE AID PROJECT 002-612-038

CONSTRUCTION PLAN

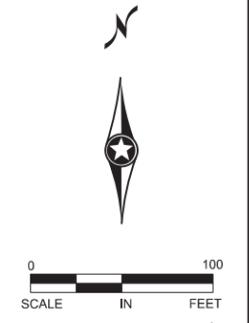
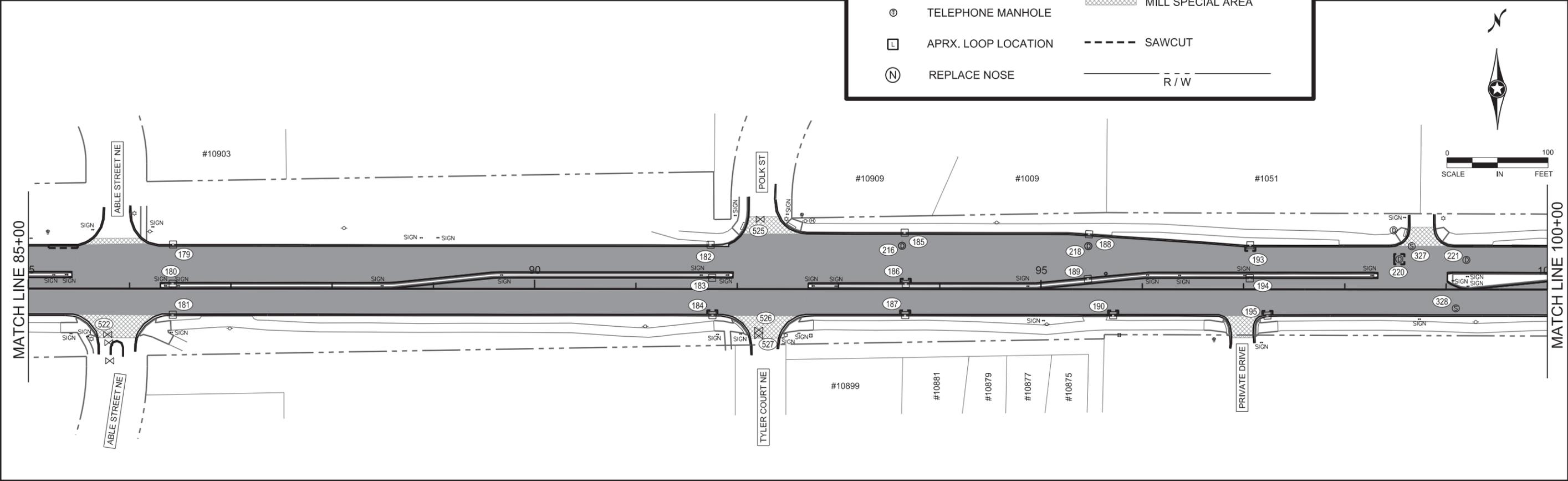
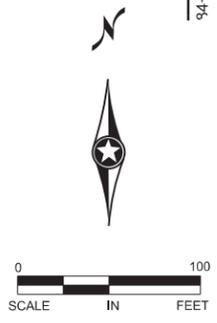
STA 40+00 TO 70+00

Sheet 15 of 39 Sheets



LEGEND

⊗	ADJUST GATE VALVE	Ⓧ	TRUNCATED DOMES
Ⓧ	STORM MANHOLE	Ⓛ	REMOVE AND REPLACE W/ CONCRETE PED RAMP
Ⓛ	CATCH BASIN	■	MAINLINE MILL AREA
Ⓛ	SANITARY MANHOLE	▨	STREET APPROACH MILL SPECIAL AREA
Ⓛ	TELEPHONE MANHOLE	- - -	SAWCUT
Ⓛ	APRX. LOOP LOCATION	—	R / W
Ⓛ	REPLACE NOSE		



NO	DATE	BY	CKD	APPR	REVISION	TIME
	02/20/2025					9:24:59 AM

NAME: P:\24-01-00\CSAH_12_(HWY 65-FOLEY BLVD)\Base\Proposed\CP3.dgn

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

PRINT NAME: GERALD J. AUGER JR.

SIGNATURE:

DATE: 01/30/2025 LICENSE NO. 26511

DRAWN BY RRH DATE 12/04/2023

DESIGN BY SPH DATE 8/29/2024

CHECKED BY CSO DATE 10/30/2024

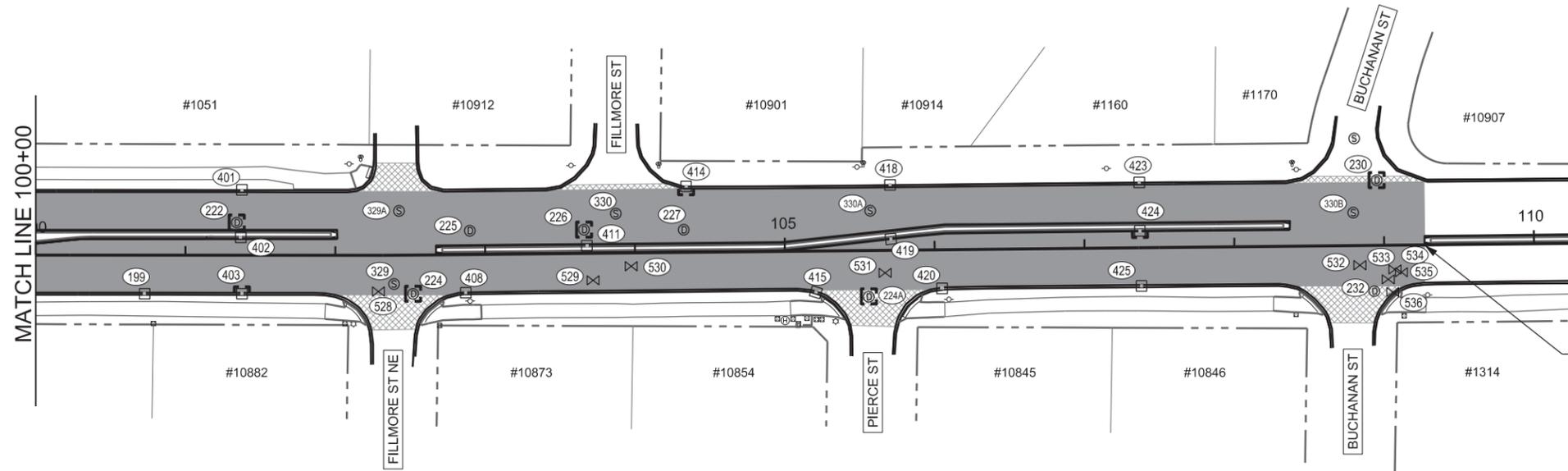
**ANOKA COUNTY
HIGHWAY DEPT.**

STATE AID PROJECT 002-612-038

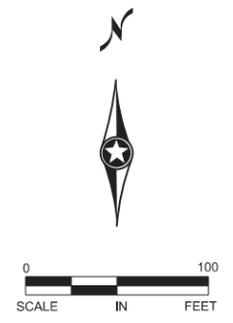
CONSTRUCTION PLAN

STA 70+00 TO 100+00

Sheet 16 of 39 Sheets



END CONSTRUCTION
 SAP: 002-612-038
 STATION: 109+26.94



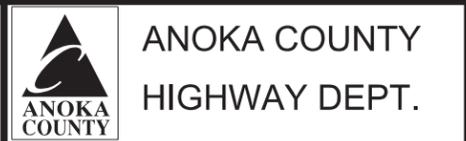
LEGEND			
⊗	ADJUST GATE VALVE	Ⓧ	TRUNCATED DOMES
Ⓧ	STORM MANHOLE	Ⓛ	REMOVE AND REPLACE W/ CONCRETE PED RAMP
Ⓛ	CATCH BASIN	■	MAINLINE MILL AREA
Ⓛ	SANITARY MANHOLE	▨	STREET APPROACH MILL SPECIAL AREA
Ⓛ	TELEPHONE MANHOLE	---	SAWCUT
Ⓛ	APRX. LOOP LOCATION	---	R / W
Ⓛ	REPLACE NOSE		

NO	DATE	BY	CKD	APPR	REVISION	
	02/20/2025					9:25:00 AM

NAME: P:\24-01-00\CSAH_12_(HWY 65-FOLEY BLVD)\Base\Proposed\CP4.dgn

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: GERALD J. AUGER JR.
 SIGNATURE: *[Signature]*
 DATE: 01/30/2025 LICENSE NO. 26511

DRAWN BY: RH DATE: 12/04/2023
 DESIGN BY: SPH DATE: 8/29/2024
 CHECKED BY: CSO DATE: 10/30/2024

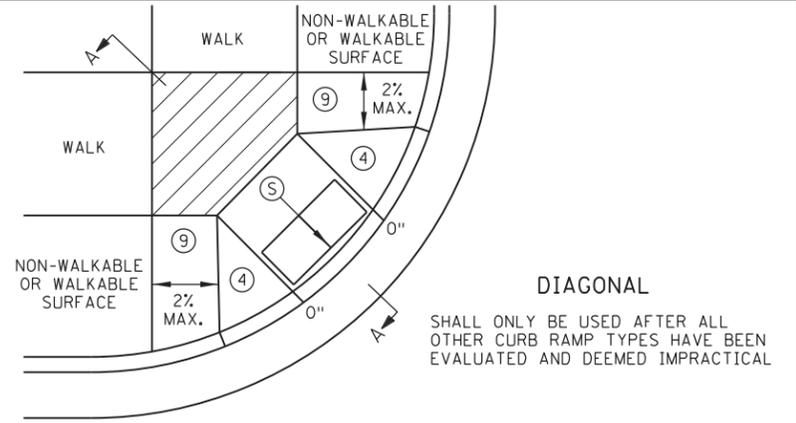
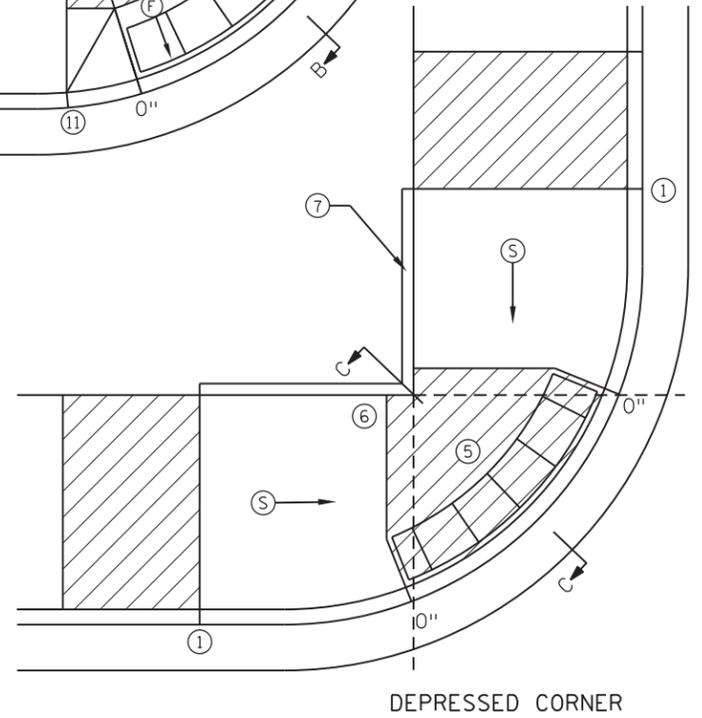
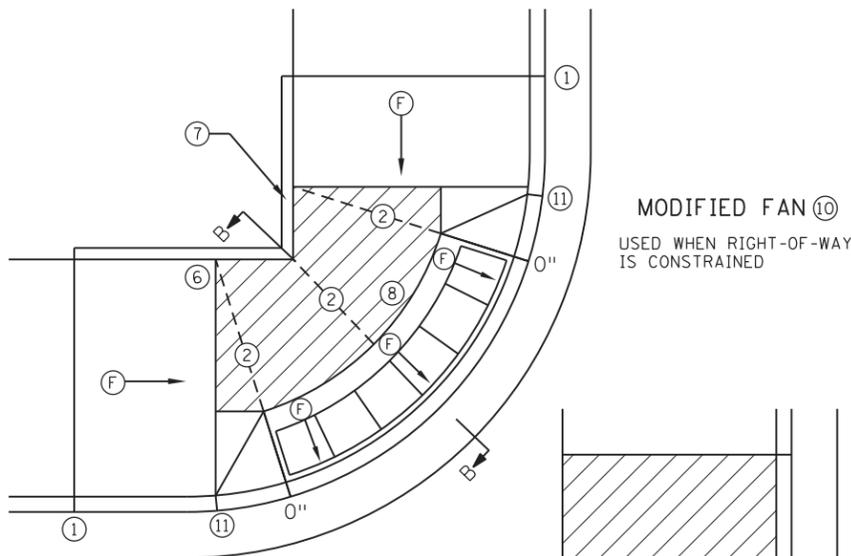
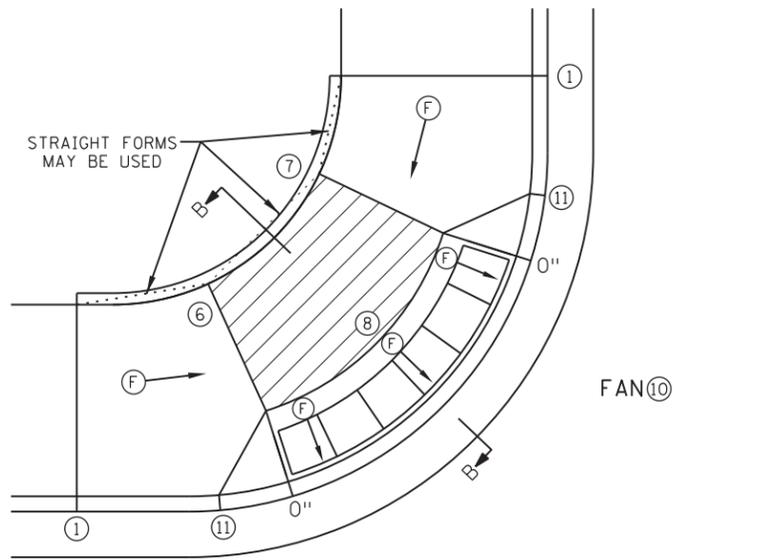
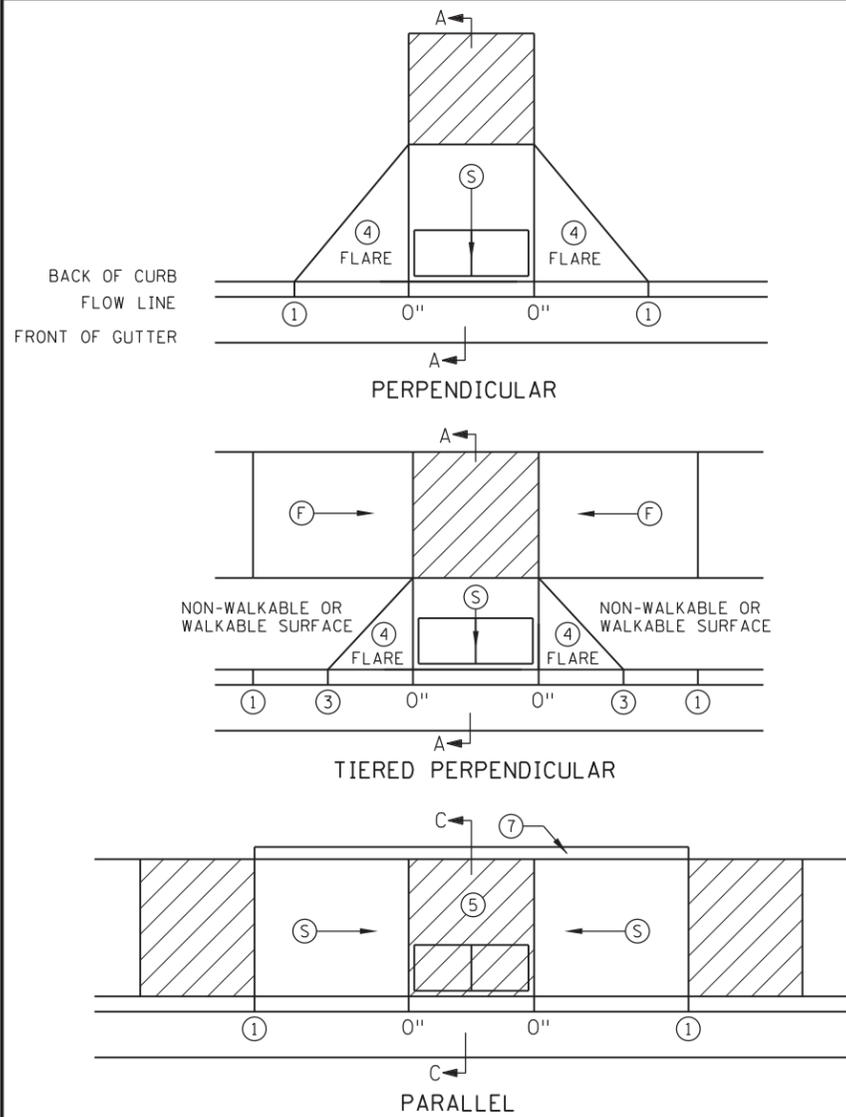


STATE AID PROJECT 002-612-038

CONSTRUCTION PLAN
 STA 100+00 TO 109+26.94
 Sheet 17 of 39 Sheets

PLOTTED/REVISED: 01/13/2025

DISTRICT #: PLOT NAME: \$\$\$\PLOT\NAME\$\$\$ PATH & FILENAME: P:\24-01-00\CSAH\12-AD\AD.dgn

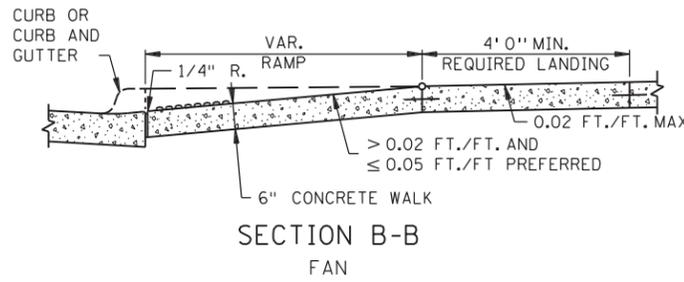
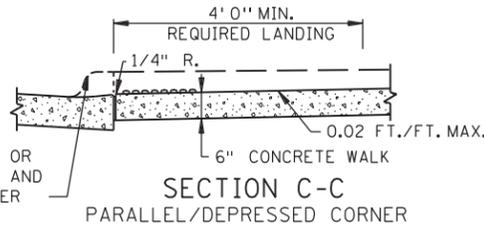
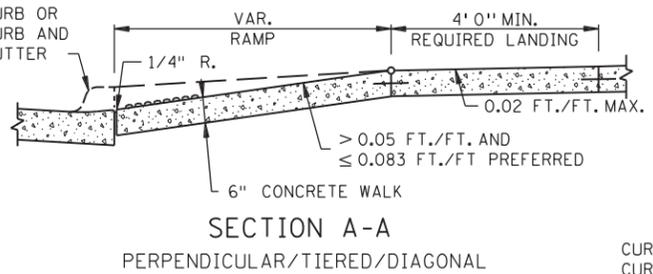


NOTES:

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	
	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



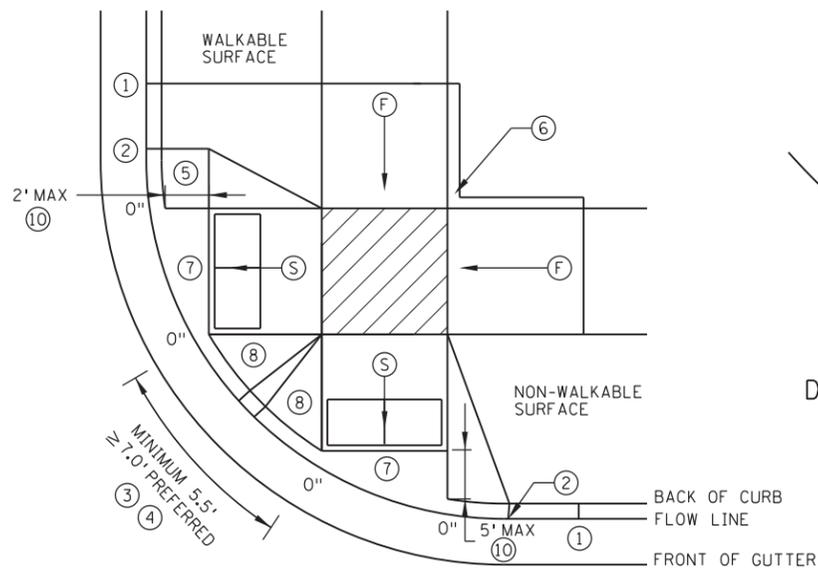
REVISION:
APPROVED: 11-04-2021
Jeffrey Perkins
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA
DEPARTMENT OF TRANSPORTATION
Tom Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER
APPROVED: 11-04-2021
REVISED:

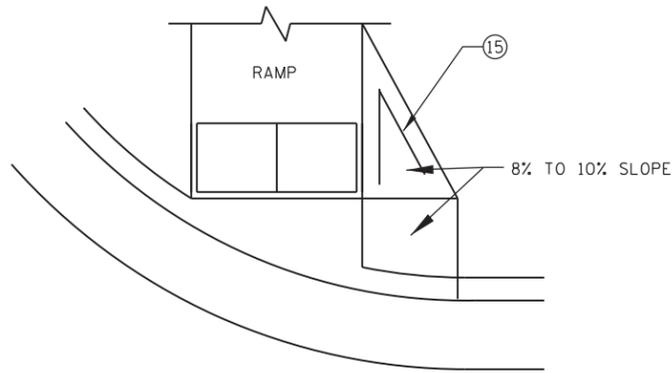
STANDARD PLAN 5-297.250 1 OF 6
PEDESTRIAN CURB RAMP DETAILS
STATE AID PROJ. NO. 002-612-038 SHEET NO.18 OF 39 SHEETS

PLOTTED/REVISED: 01/13/2025

DISTRICT #: PLOT NAME: \$\$\$@PLOT\$NAME\$\$\$ PATH & FILENAME: P:\24-01-00\CSAH_12_1\HWY 65-FOLEY BLVD\Bases\Proposed\CSAH_12_ADA.dgn

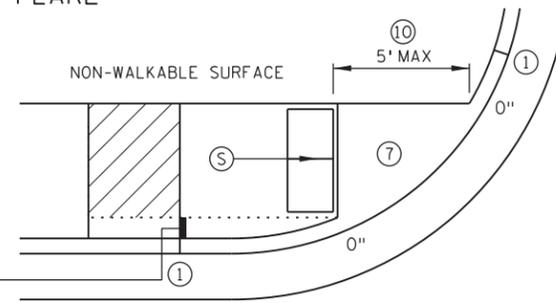


COMBINED DIRECTIONAL

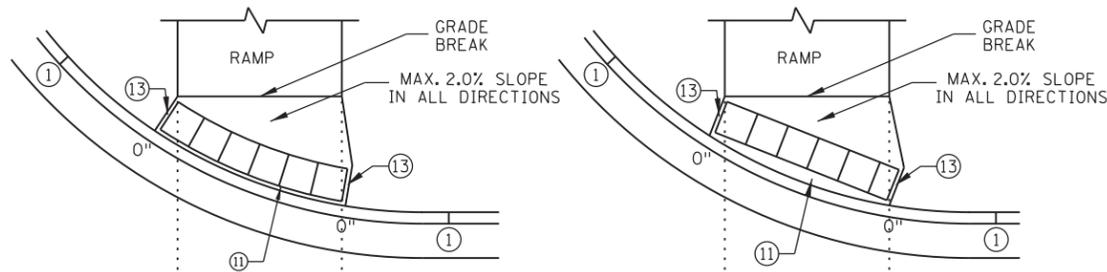


DIRECTIONAL RAMP WALKABLE FLARE

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.

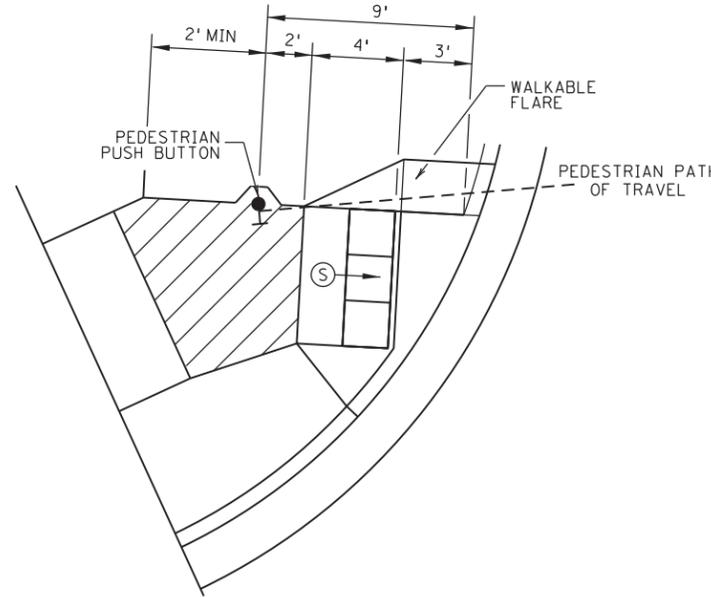


STANDARD ONE-WAY DIRECTIONAL ⑩



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)

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

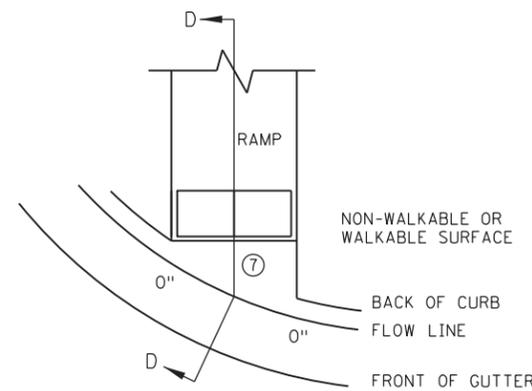
THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.

⑤ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.

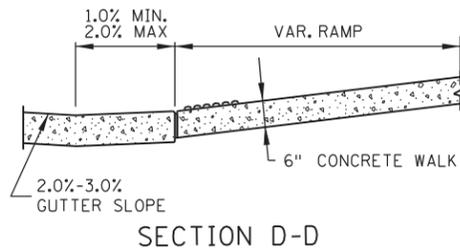
⑥ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.

⑦ LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PAR.

X" CURB HEIGHT



CURB FOR DIRECTIONAL RAMPS ⑭



SECTION D-D

REVISION:
 APPROVED: 11-04-2021
 Jeff J. Perkins
 OPERATIONS DIVISION



STANDARD PLAN 5-297.250 2 OF 6
 APPROVED: 11-04-2021
 REVISOR:
 THOMAS STYRBICKI
 STATE DESIGN ENGINEER

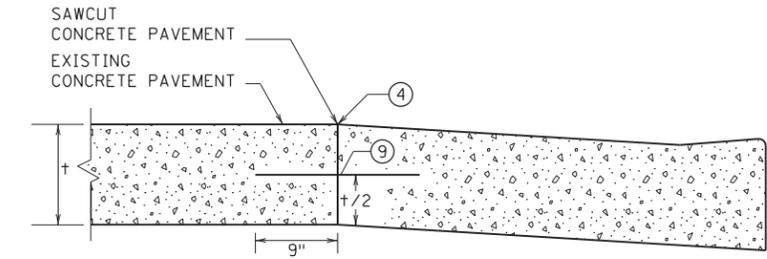
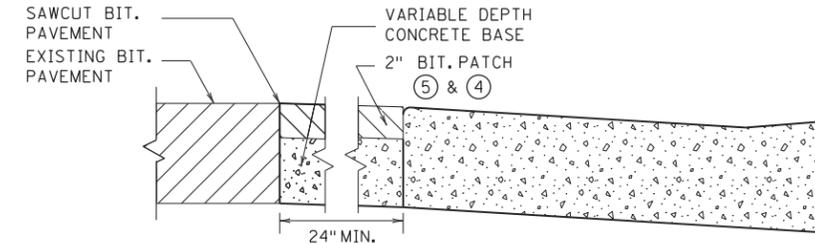
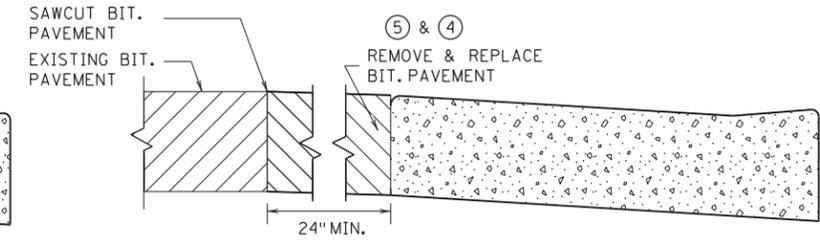
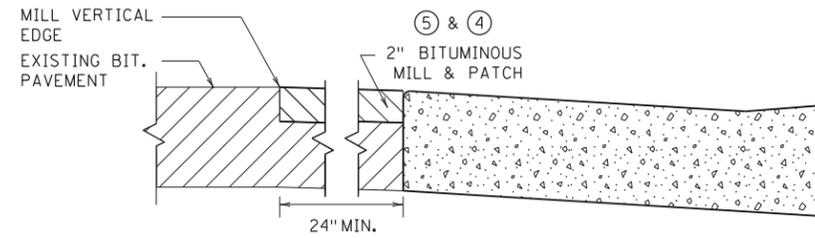
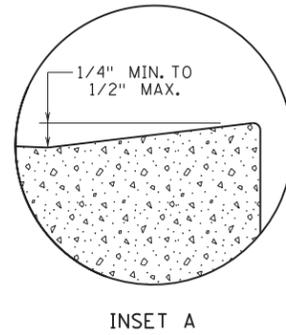
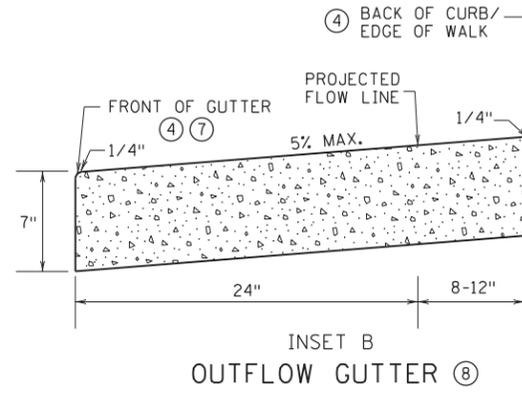
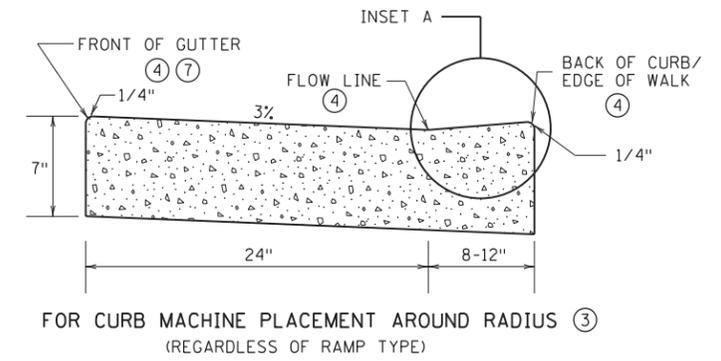
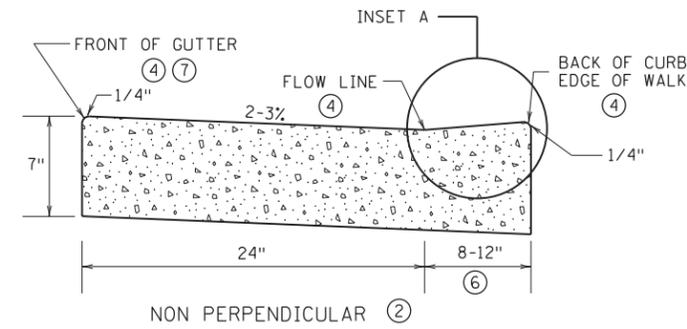
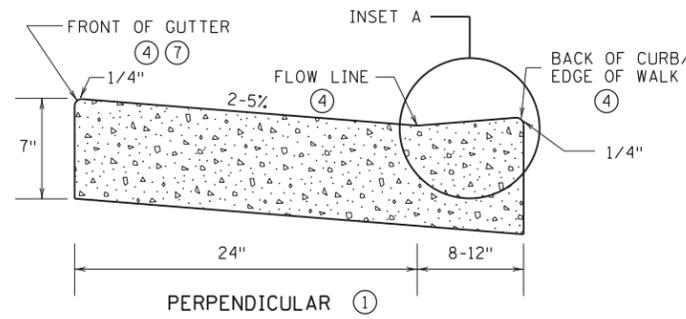
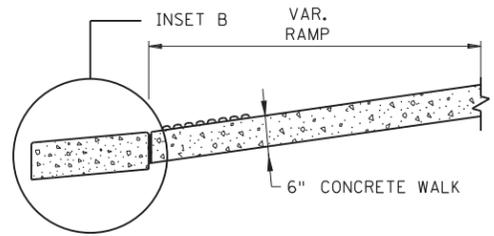
PEDESTRIAN CURB RAMP DETAILS

STATE AID PROJ. NO. 002-612-038

SHEET NO.19 OF 39 SHEETS

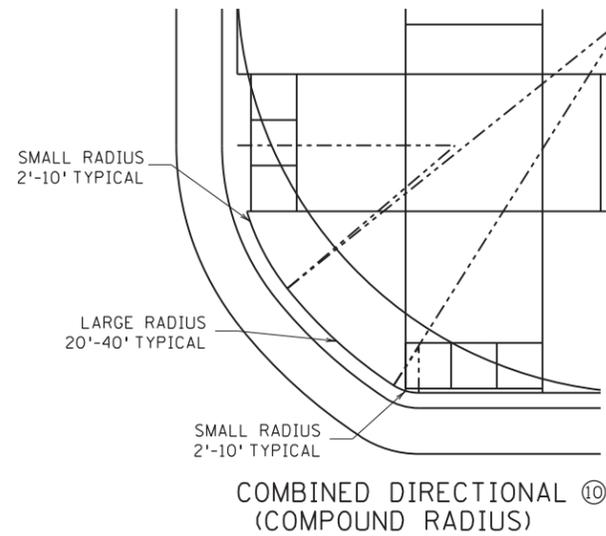
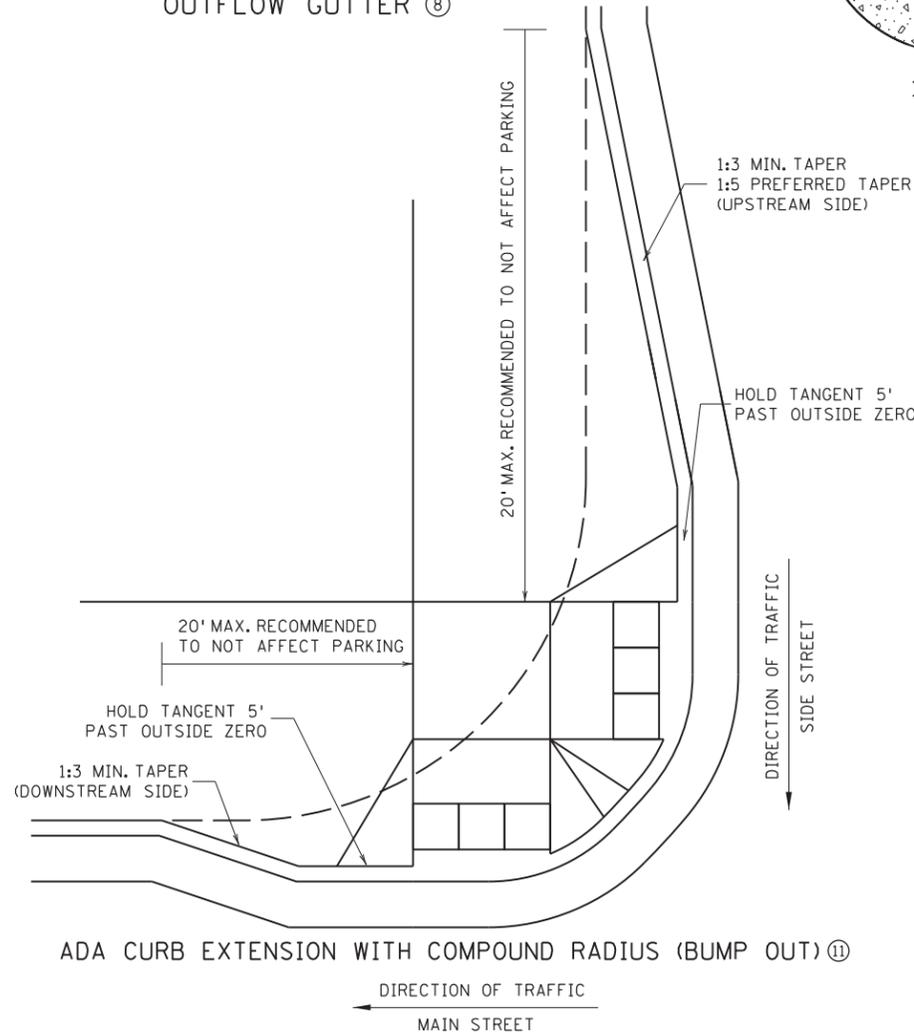
PLOTTED/REVISED: 01/13/2025

DISTRICT #: PLOT NAME: \$\$\$\PLOT\NAME\$\$\$ PATH & FILENAME: P:\24-01-00\CSAH_12_1\HWY 65-FOLEY BLVD\Base\Proposed\CSAH_12_ADA.dgn



ONLY ALLOWED PER ENGINEER'S APPROVAL

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



NOTES:

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

REVISION: APPROVED: 11-04-2021 Jeff J. Perkins OPERATIONS DIVISION



STANDARD PLAN 5-297.250 3 OF 6 APPROVED: 11-04-2021 REVISOR: Thomas Styrbicki STATE DESIGN ENGINEER

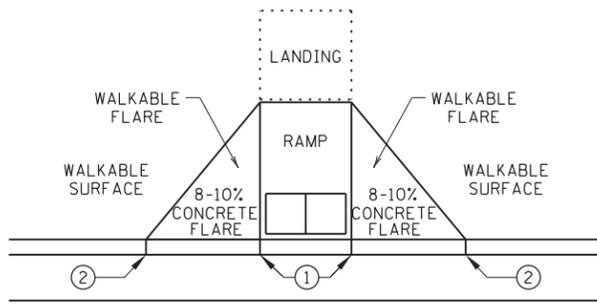
PEDESTRIAN CURB RAMP DETAILS

STATE AID PROJ. NO. 002-612-038

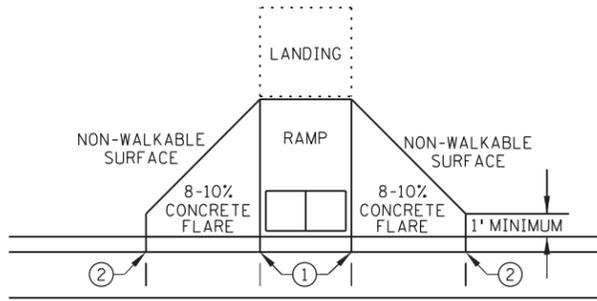
SHEET NO.20 OF 39 SHEETS

PLOTTED/REVISED: 01/13/2025

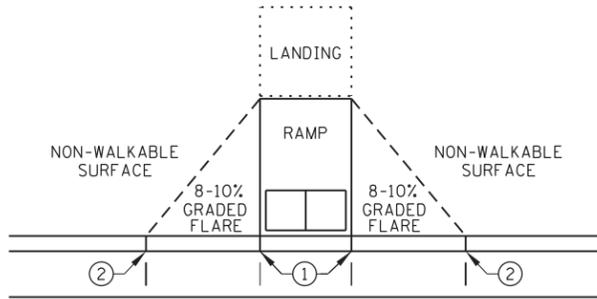
DISTRICT #: PLOTNAME: \$\$\$@PLOTNAME\$\$\$ FILENAME: P:\24-01-00\CSAH_12_1\HWY 65-FOLEY BLVD\1-Base\Proposed\CSAH_12_ADA.dgn



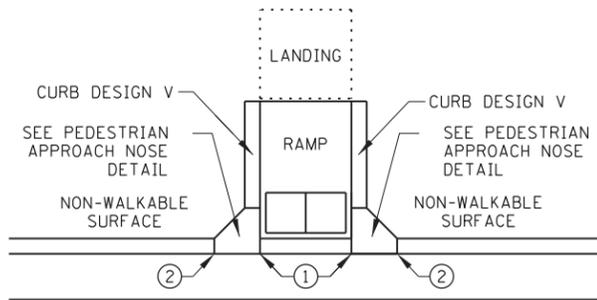
PAVED FLARES ADJACENT TO WALKABLE SURFACE



PAVED FLARES ADJACENT TO NON-WALKABLE SURFACE

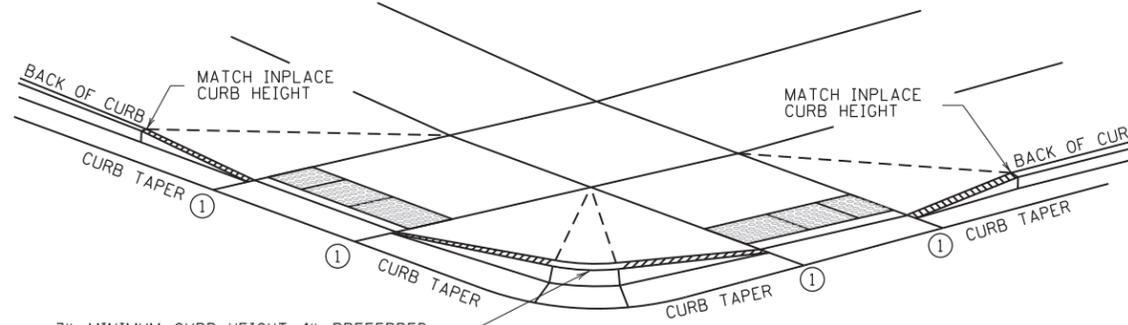


GRADED FLARES



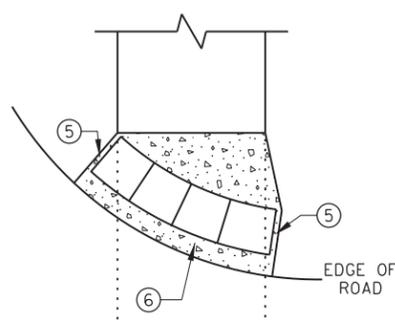
RETURNED CURB ④

TYPICAL SIDE TREATMENT OPTIONS ③ ⑩

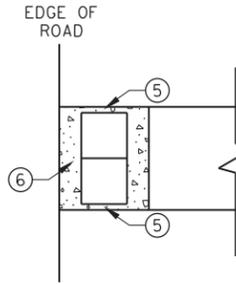


3" MINIMUM CURB HEIGHT, 4" PREFERRED (MEASURED AT FRONT FACE OF CURB) FOR A MIN. 6" LENGTH (MEASURED ALONG FLOW LINE)

DETECTABLE EDGE WITH CURB AND GUTTER ⑦

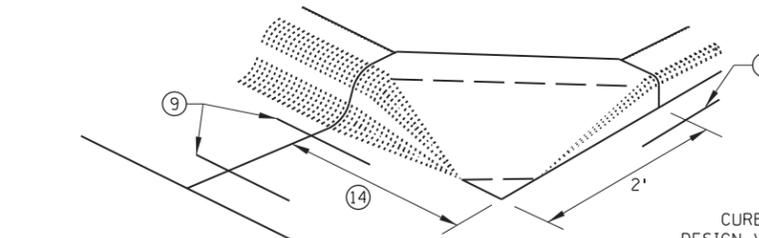


RADIAL DETECTABLE WARNING

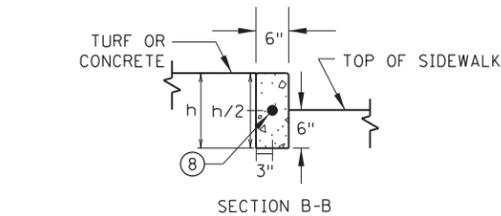


RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

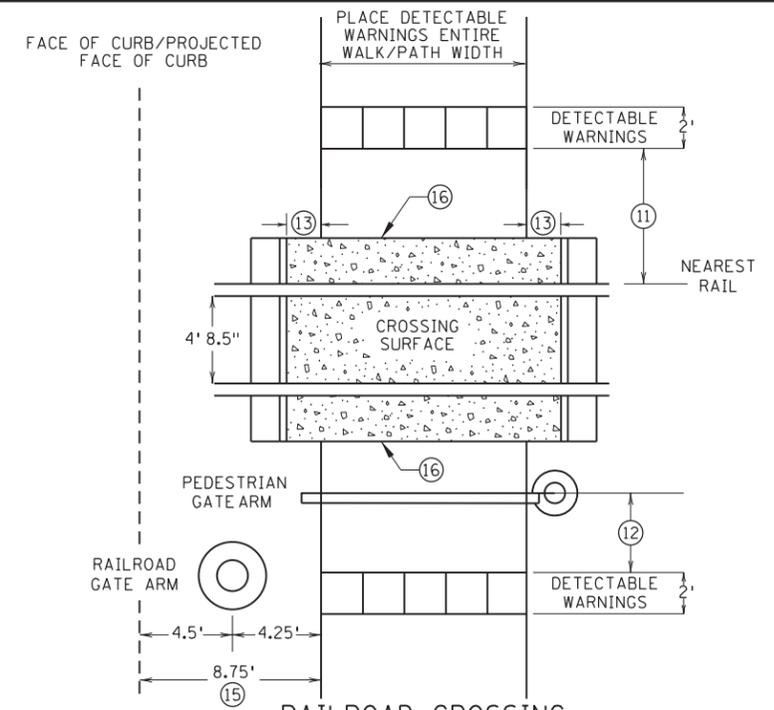


SECTION A-A



SECTION B-B

PEDESTRIAN APPROACH NOSE DETAIL (FOR RETURNED CURB SIDE TREATMENT)



RAILROAD CROSSING PLAN VIEW

NOTES:

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

REVISION:

APPROVED: 11-04-2021

Jeffrey D. Perkins
JEFFREY PERKINS
OPERATIONS DIVISION

m
MINNESOTA
DEPARTMENT
OF
TRANSPORTATION

STANDARD PLAN 5-297.250

4 OF 6

Tom Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER

APPROVED: 11-04-2021
REVISED:

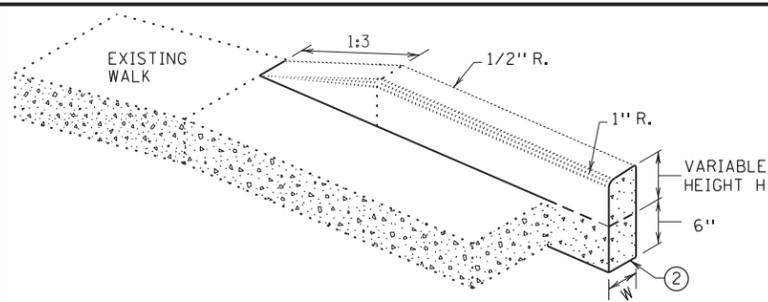
PEDESTRIAN CURB RAMP DETAILS

STATE AID PROJ. NO. 002-612-038

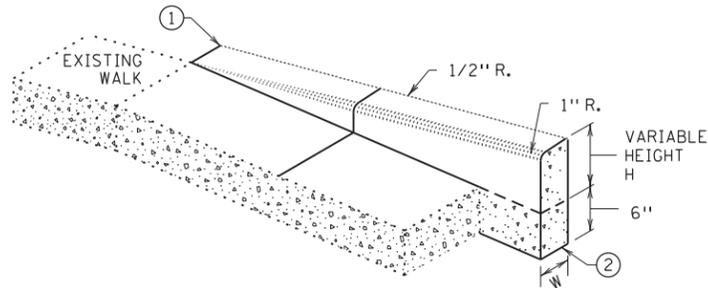
SHEET NO. 21 OF 39 SHEETS

PLOTTED/REVISED: 01/13/2025

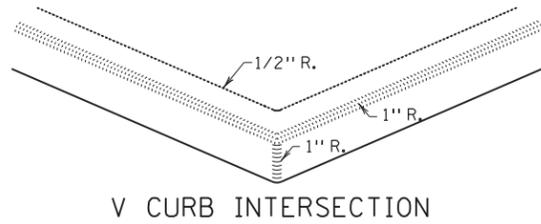
DISTRICT #: PLOTNAME: \$\$\$PLOTNAME\$\$\$
 PATH & FILENAME: P:\24-01-00\CSAH_12_12\HWY 65-FOLEY BLVD\Base\Proposed\CSAH_12_ADA.dgn



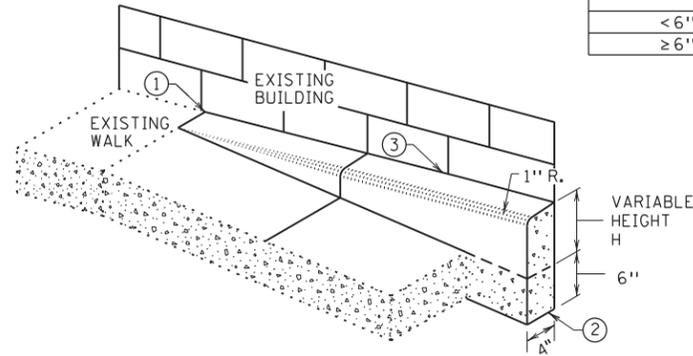
V CURB ADJACENT TO LANDSCAPE
CURB WITHIN SIDEWALK LIMITS



V CURB ADJACENT TO LANDSCAPE
CURB OUTSIDE SIDEWALK LIMITS

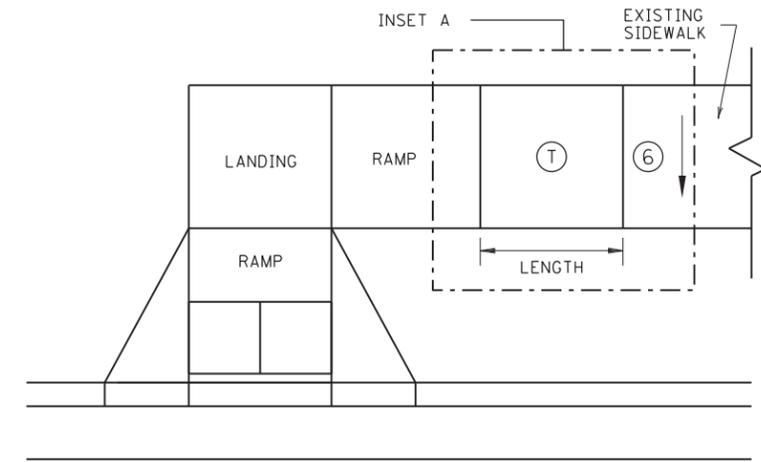


V CURB INTERSECTION

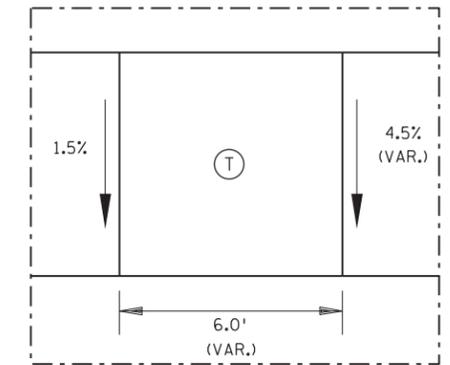


V CURB ADJACENT TO BUILDING
OR BARRIER

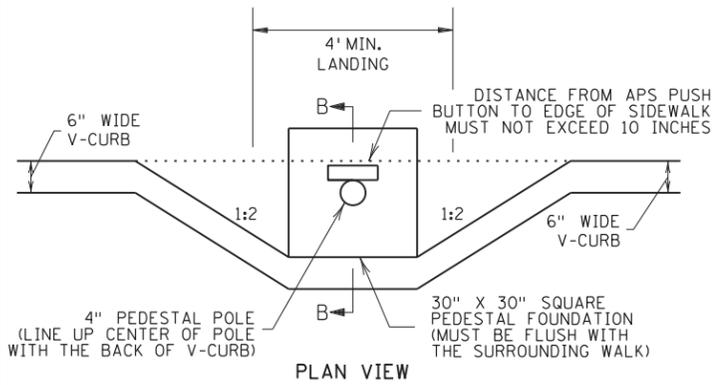
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"



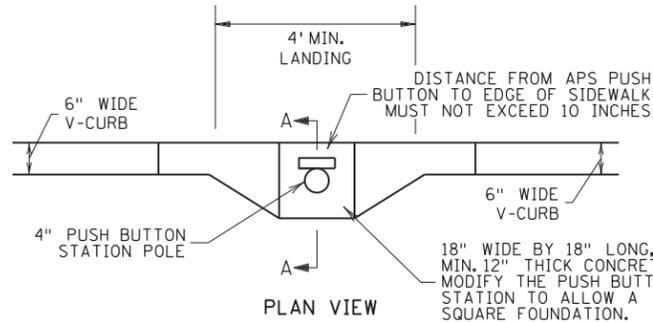
TRANSITION PANEL ④ ⑤



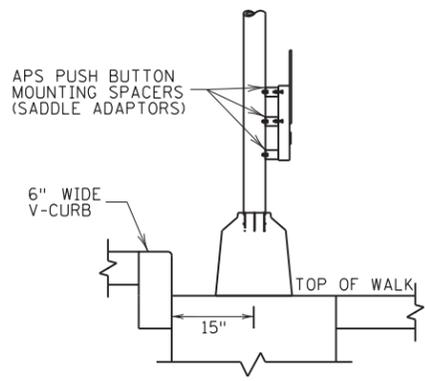
INSET A



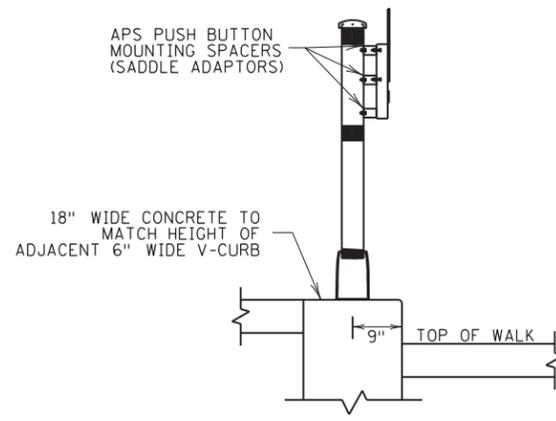
PLAN VIEW



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 1/2" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.
- ④ THE MAX. RATE OF CROSS SLOPE TRANSITIONING IS 1' LINEAR FOOT OF SIDEWALK PER HALF PERCENT CROSS SLOPE. WHEN PAR WIDTH IS GREATER THAN 6' OR THE RUNNING SLOPE IS GREATER THAN 5%, DOUBLE THE CALCULATED TRANSITION LENGTH.
- ⑤ TRANSITION PANELS ARE TO ONLY BE USED AFTER THE RAMP, OR IF NEEDED, LANDING ARE AT THE FULL CURB HEIGHT (TYPICAL SECTION).
- ⑥ EXISTING CROSS SLOPE GREATER THAN 2.0%.

LEGEND

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

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

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

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

REVISION:
 APPROVED: 11-04-2021
 Jeff J. Perkins
 OPERATIONS DIVISION

m
 MINNESOTA
 DEPARTMENT
 OF
 TRANSPORTATION

STANDARD PLAN 5-297.250 5 OF 6
 APPROVED: 11-04-2021
 REVISOR:
 THOMAS STYRBICKI
 STATE DESIGN ENGINEER

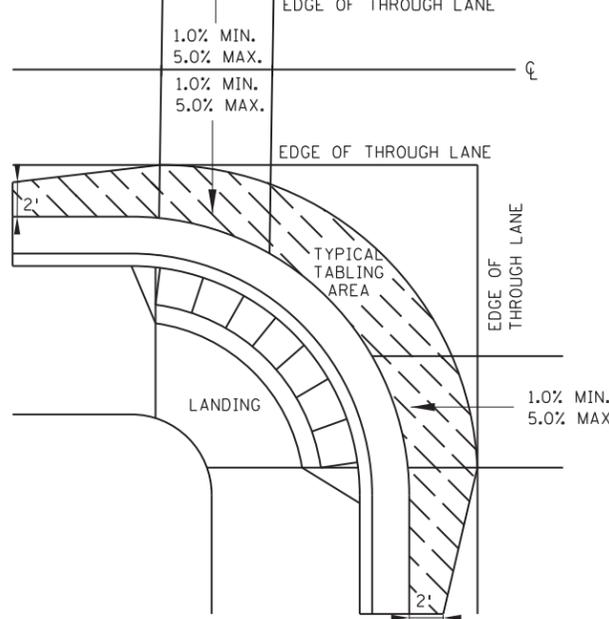
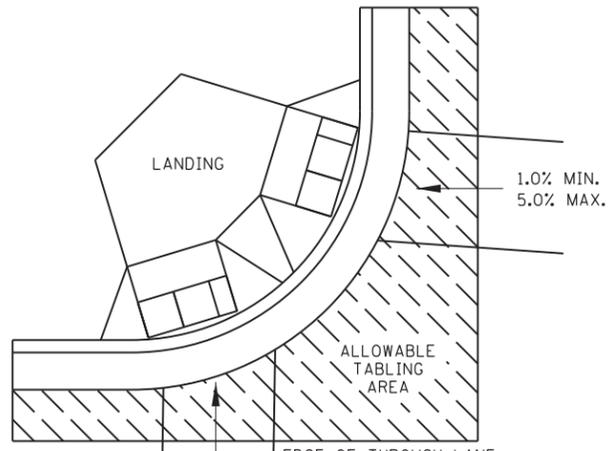
PEDESTRIAN CURB RAMP DETAILS

STATE AID PROJ. NO. 002-612-038

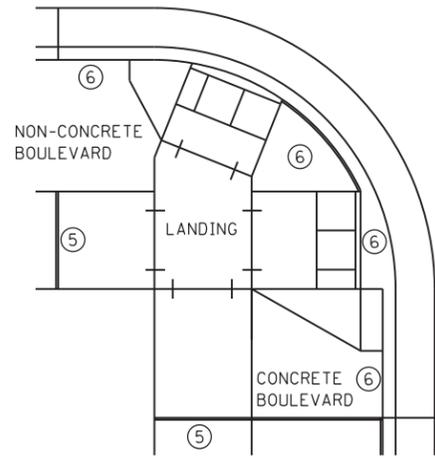
SHEET NO.22 OF 39 SHEETS

PLOTTED/REVISED: 01/13/2025

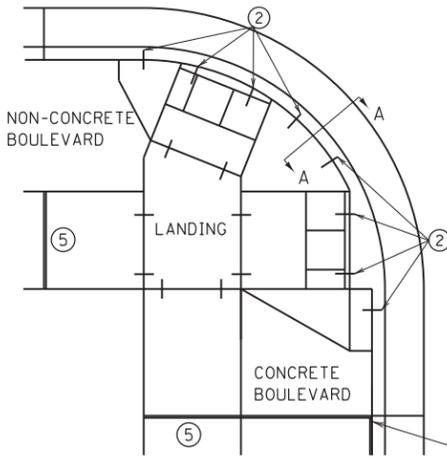
DISTRICT #: PLOT NAME: \$\$\$@PLOT\$NAME\$\$\$ PATH & FILENAME: P:\24-01-00\CSAH_12_1\HWY 65-FOLEY BLVD\Bases\Proposed\CSAH_12_ADA.dgn



CURB LINE AND ROAD CROSSING ADJUSTMENTS



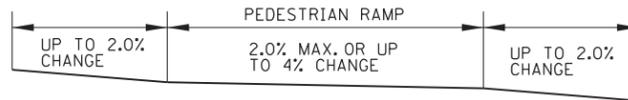
EXPANSION MATERIAL PLACEMENT FOR CONCRETE ROADWAYS



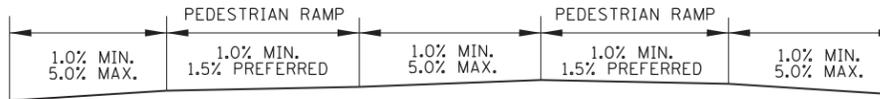
CURB LINE REINFORCEMENT ④ PLACEMENT ON BITUMINOUS ROADWAYS



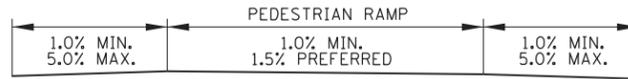
FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



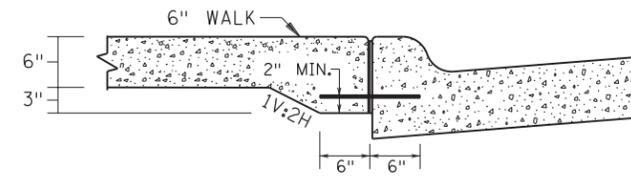
FLOW LINE PROFILE "TABLE" - FAN



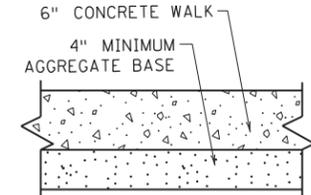
FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS



FLOW LINE PROFILE RAISE - FAN

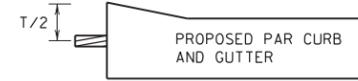
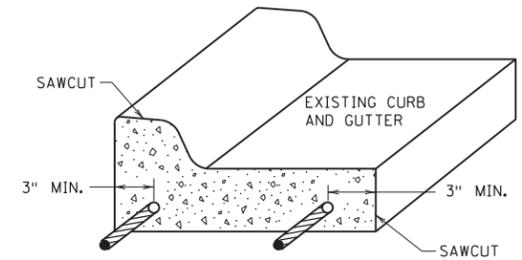
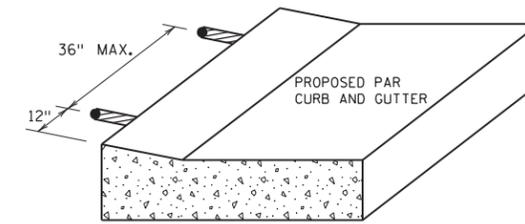


SECTION VIEW A-A THICKENED SECTION THROUGH CURB RAMP FLARES



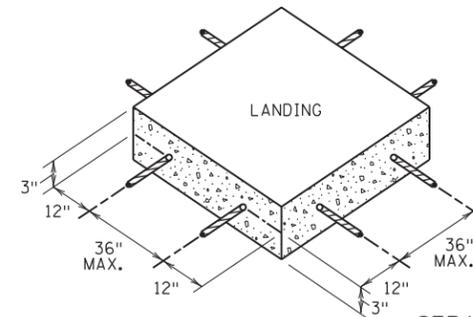
TYPICAL SIDEWALK SECTION WITHIN INTERSECTION CORNER

END SILL CURB AT TOP OF CURB RAMP AND DRIVEWAY FLARES.

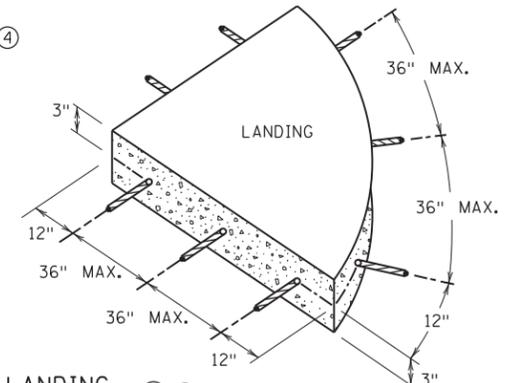


CURB RAMP REINFORCEMENT DETAILS ② ④

CURB AND GUTTER REINFORCEMENT ③



SEPARATE LANDING POUR REINFORCEMENT ① ②



GENERAL NOTES:

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

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

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

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

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

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

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

NOTES:

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

REVISION:

APPROVED: 11-04-2021

Jeffrey J. Perkins
JEFFREY PERKINS
OPERATIONS DIVISION

m
MINNESOTA
DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 6 OF 6

APPROVED: 11-04-2021
REVISED:

Tom Styrbicki
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

STATE AID PROJ. NO. 002-612-038

SHEET NO.23 OF 39 SHEETS

PERMANENT PAVEMENT MARKING PLAN
NOTES & GUIDELINES

GENERAL INFORMATION:

1. THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. ANOKA COUNTY HIGHWAY DEPARTMENT WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS. LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.
2. EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.
3. A TOLERANCE OF 1/4 INCH UNDER OR 1/4 INCH OVER THE SPECIFIED WIDTH WILL BE ALLOWED FOR STRIPING PROVIDED THE VARIATION IS GRADUAL AND DOES NOT DETRACT FROM THE GENERAL APPEARANCE. BROKEN LINE SEGMENTS MAY VARY UP TO ONE-HALF FOOT FROM THE SPECIFIED LENGTHS PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 1 INCH. MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINTS. ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.
4. PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.
5. THE FILLING OF TANKS, POURING OF MATERIALS OR CLEANING OF EQUIPMENT SHALL NOT BE PERFORMED ON UNPROTECTED PAVEMENT SURFACES UNLESS ADEQUATE PROVISIONS ARE MADE TO PREVENT SPILLAGE OF MATERIAL.

MULTI-COMPONENT (MULTI-COMP):

1. THE ROAD SURFACE SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER JUST PRIOR TO APPLICATION. PAVEMENT CLEANING SHALL CONSIST OF AT LEAST BRUSHING WITH A ROTARY BROOM (NON-METALLIC) OR AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. NEW PORTLAND CEMENT CONCRETE SURFACES SHALL BE SANDBLAST CLEANED TO REMOVE ANY SURFACE TREATMENT AND/OR LAITANCE ON LOW SPEED (SPEED LIMIT 35 MPH OR LESS) URBAN PORTLAND CEMENT CONCRETE ROADWAYS. SANDBLAST CLEANING SHALL BE USED FOR ALL MULTI-COMP PAVEMENT MARKINGS.
2. THE MULTI-COMP MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE MULTI-COMP LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.
3. A MULTI-COMP LINE SHALL BE APPLIED WITH A MINIMUM THICKNESS OF 20 MILS (WET) AND 4" WIDE. GLASS BEADS SHALL BE APPLIED PER MANUFACTURER'S SPECIFICATIONS.
4. PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR AND PAVEMENT SURFACE TEMPERATURES ARE 40° OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILM OR DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

PERMANENT STRIPING

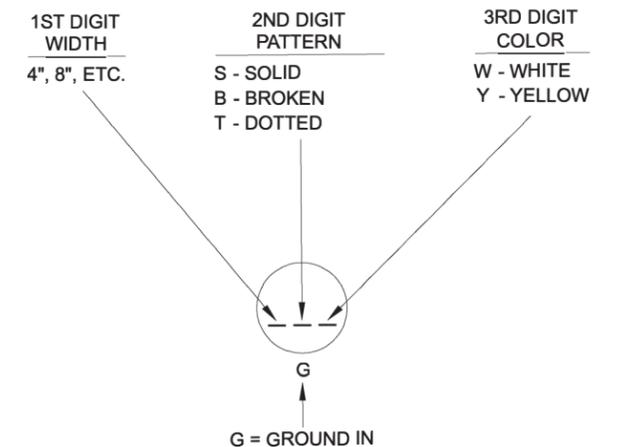
PERMANENT PAVEMENT MARKING TABULATION				
ITEM DESCRIPTION	UNIT	TOTAL QUANTITY		
		WHITE	YELLOW	
4" SOLID LINE MULTI-COMP	LIN FT	22,282	11,614	
4" BROKEN LINE MULTI-COMP	LIN FT	1170	990	
4" SOLID DOUBLE LINE MULTI-COMP	LIN FT		3004	
3'X6' ZEBRA CROSSWALK PREF THERMOPLASTIC, GROUND IN	SQ FT	2052		
24" SOLID LINE, PREF THERMOPLASTIC, GROUND IN	LIN FT	366	273	
PAVEMENT MESSAGE, PREF THERMOPLASTIC	SQ FT	742		

PAVEMENT MARKING SYMBOLS & MATERIALS LEGEND

- — — — — BROKEN LINE - 50' CYCLE (10' LINE, 40' GAP)
- - - - - DOTTED LINE - 15' CYCLE (3' LINE, 12' GAP)
- ↩ ↪ PAVEMENT MESSAGE - LEFT OR RIGHT ARROW
- ↑ PAVEMENT MESSAGE - THRU/RIGHT ARROW
- CROSSWALK BLOCK

STRIPING KEY

- --- CIRCLE - MULTI-COMP
- ⬡ --- OCTAGON - PREF THERMO



EXAMPLE: (4SW) = 4" SOLID LINE WHITE MULTI-COMP

NO	DATE	BY	CKD	APPR	REVISION

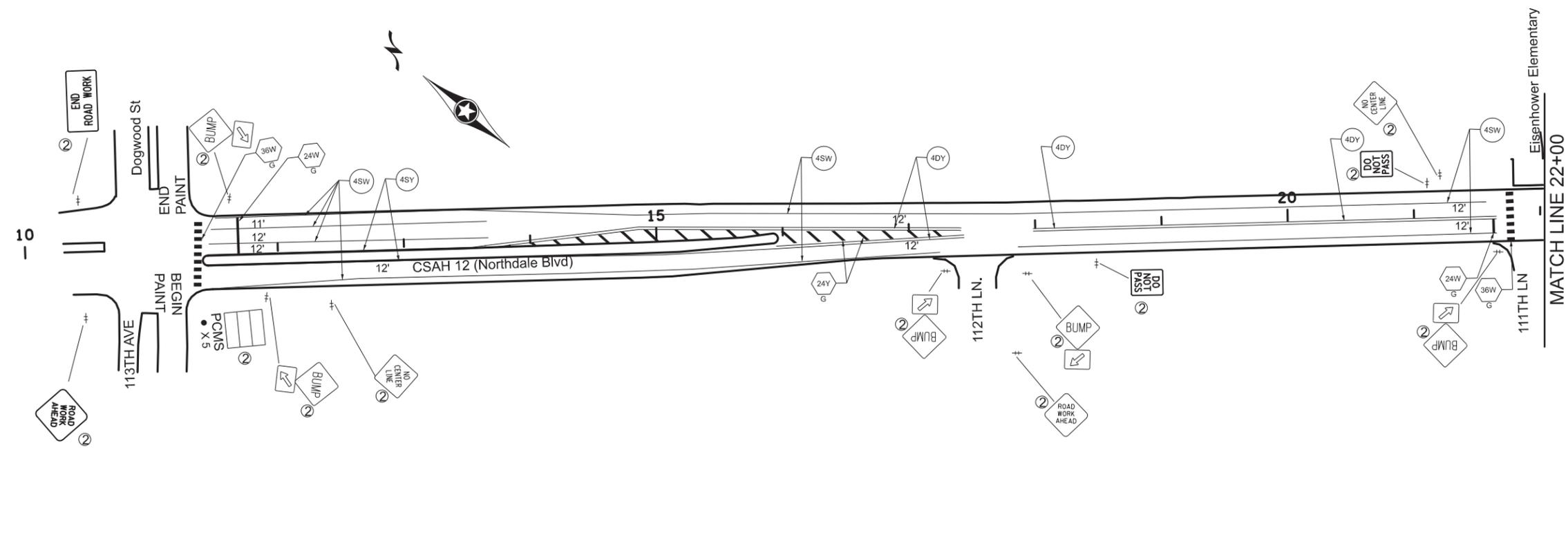
NAME: P:\

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: SEAN R. THIEL
 SIGNATURE: *Sean R. Thiel*
 DATE: 1/21/21 License No. 45129

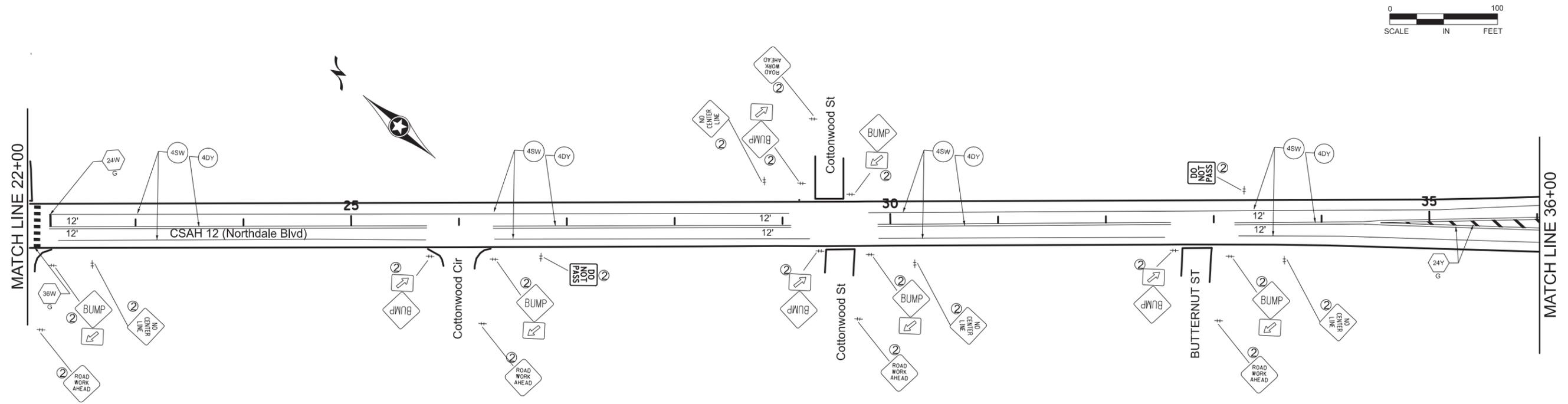
DRAWN BY: LJK DATE: 12/8/24
 DESIGN BY: LJK DATE: 12/8/24
 CHECKED BY: _____ DATE: _____


ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-612-038



- SIGNING NOTES**
- ① F & I
 - ② TEMPORARY TRAFFIC CONTROL SIGN
 - ④ REMOVE
- STRIPING KEY**
- --- CIRCLE - MULTI-COMP
 - --- OCTAGON - PREF THERMO
 - G GROUND IN



NO	DATE	BY	CKD	APPR	REVISION

NAME: SDGNS

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

PRINT NAME: SEAN R. THIEL

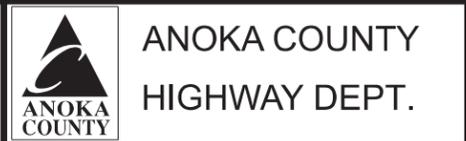
SIGNATURE: *Sean R. Thiel*

DATE: 2/25/2025 LICENSE NO. 45129

DRAWN BY: LJK DATE: 12/8/24

DESIGN BY: LJK DATE: 12/8/24

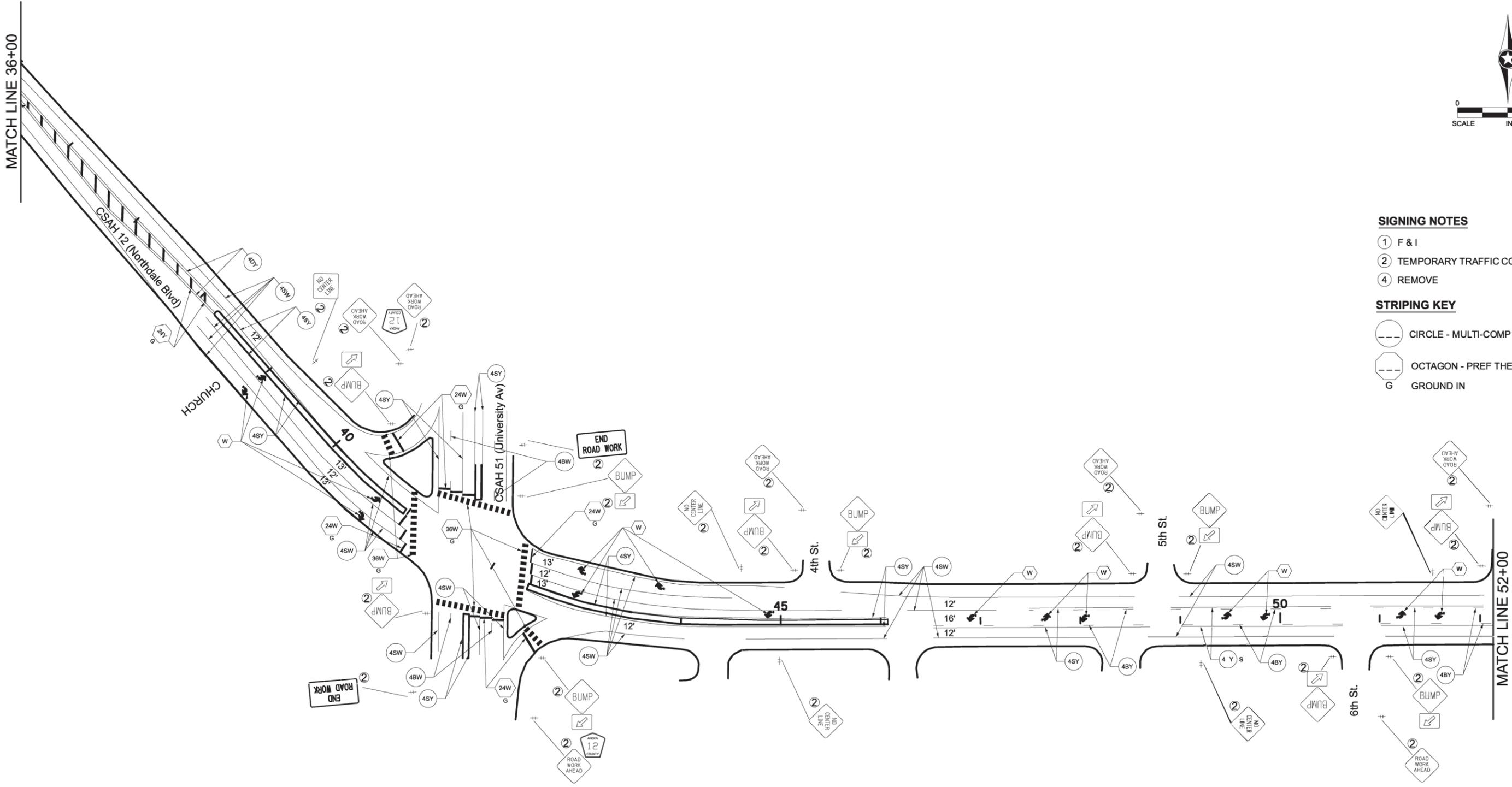
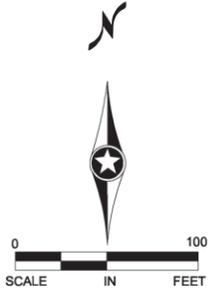
CHECKED BY: _____ DATE: _____



SAP 002-612-038

PERMANENT STRIPING AND TEMPORARY SIGNING

Sheet 25 of 39 Sheets



SIGNING NOTES

- ① F & I
- ② TEMPORARY TRAFFIC CONTROL SIGN
- ④ REMOVE

STRIPING KEY

- --- CIRCLE - MULTI-COMP
- --- OCTAGON - PREF THERMO
- G GROUND IN

NO	DATE	BY	CKD	APPR	REVISION

NAME: \$DGN\$

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

PRINT NAME: SEAN R. THIEL
 SIGNATURE: *Sean R. Thiel*
 DATE: 1/21/2025 LICENSE NO. 45129

DRAWN BY LJK DATE 12/8/24
 DESIGN BY LJK DATE 12/8/24
 CHECKED BY _____ DATE _____

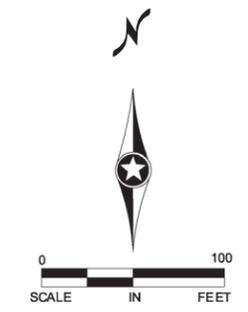
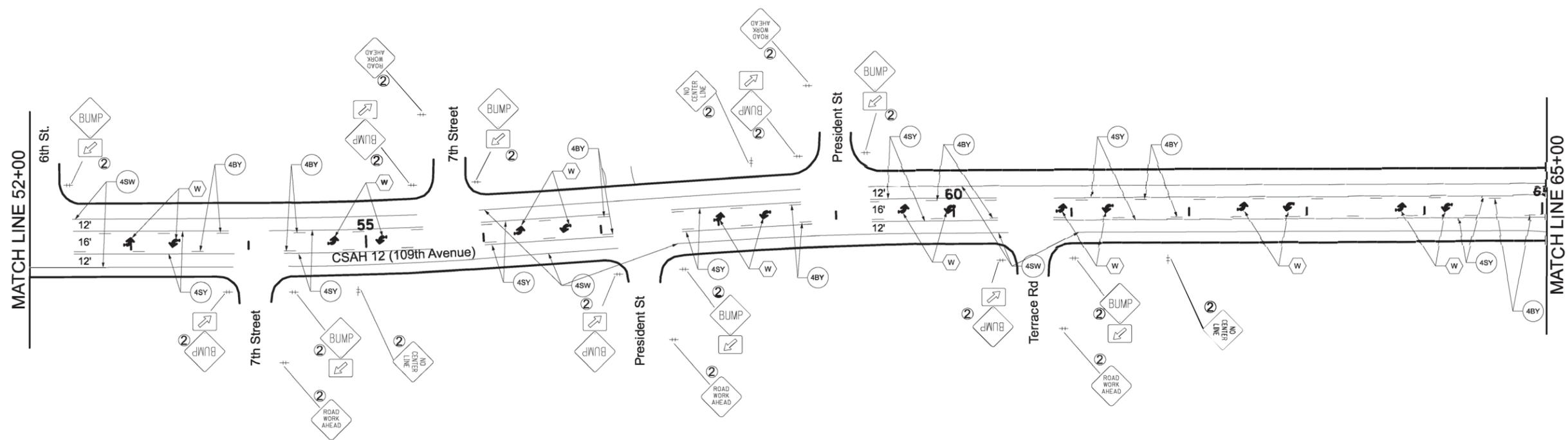


**ANOKA COUNTY
 HIGHWAY DEPT.**

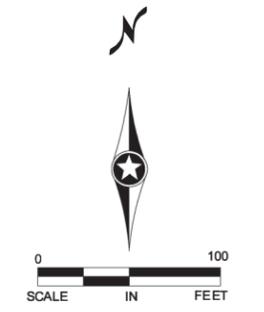
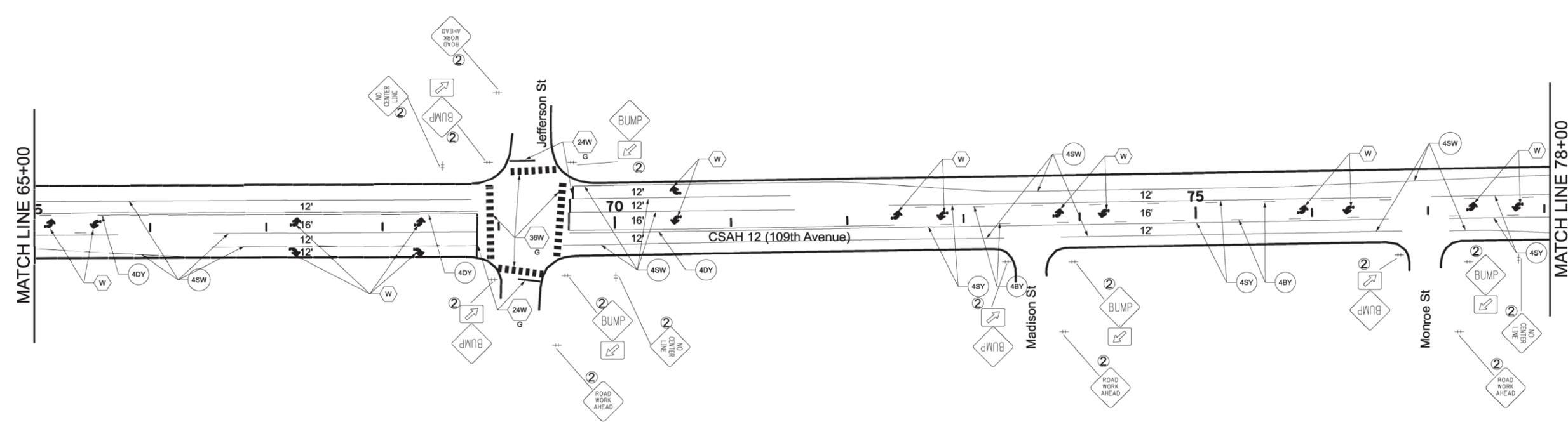
SAP 002-612-038

**PERMANENT STRIPING AND
 TEMPORARY SIGNING**

Sheet 26 of 39 Sheets



- SIGNING NOTES**
- ① F & I
 - ② TEMPORARY TRAFFIC CONTROL SIGN
 - ④ REMOVE
- STRIPING KEY**
- CIRCLE - MULTI-COMP
 - ⬡ OCTAGON - PREF THERMO
 - G GROUND IN



NO	DATE	BY	CKD	APPR	REVISION

NAME: SDGNS

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

PRINT NAME: SEAN R. THIEL

SIGNATURE: *Sean R. Thiel*

DATE: 1/21/2025 LICENSE NO. 45129

DRAWN BY: LJK DATE: 12/8/24

DESIGN BY: LJK DATE: 12/8/24

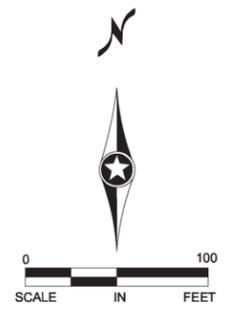
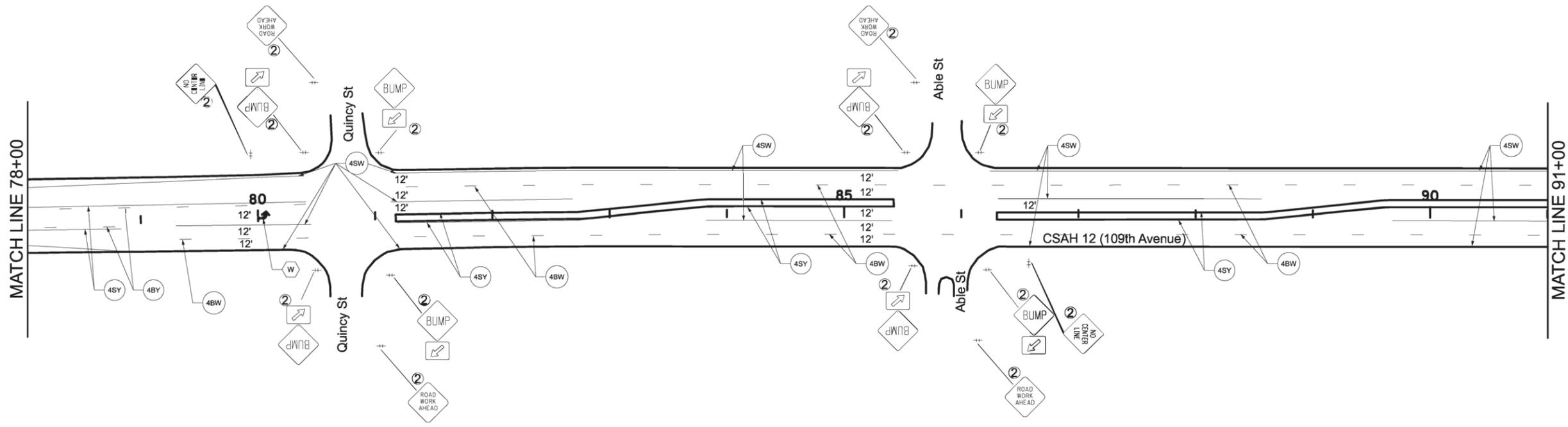
CHECKED BY: _____ DATE: _____



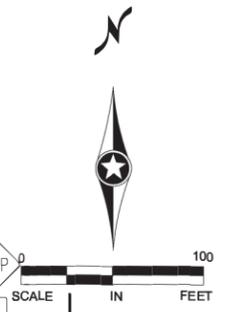
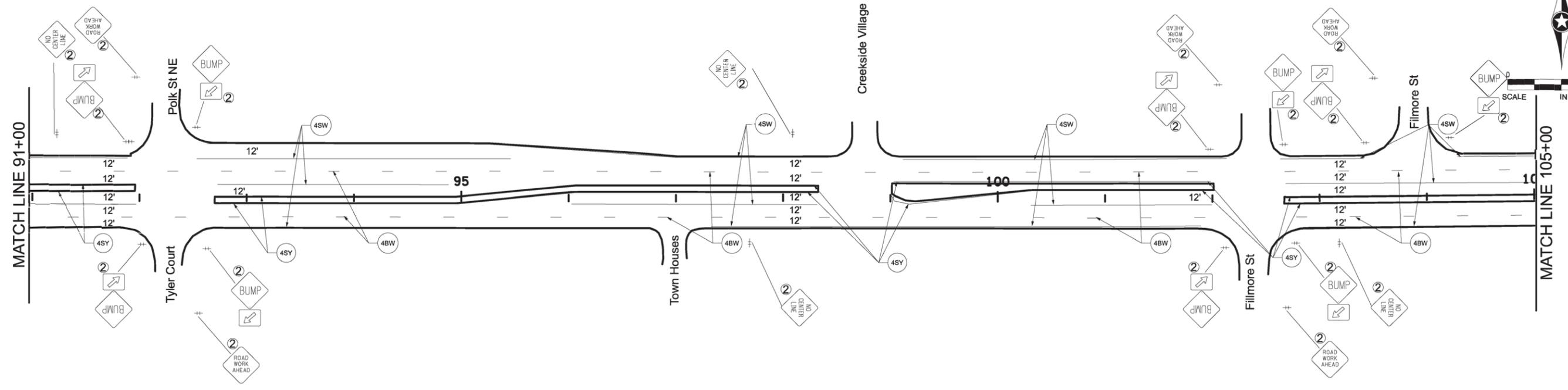
SAP 002-612-038

PERMANENT STRIPING AND TEMPORARY SIGNING

Sheet 27 of 39 Sheets



- SIGNING NOTES**
- ① F & I
 - ② TEMPORARY TRAFFIC CONTROL SIGN
 - ④ REMOVE
- STRIPING KEY**
- CIRCLE - MULTI-COMP
 - OCTAGON - PREF THERMO
 - G GROUND IN



NO	DATE	BY	CKD	APPR	REVISION

NAME: SDGNS

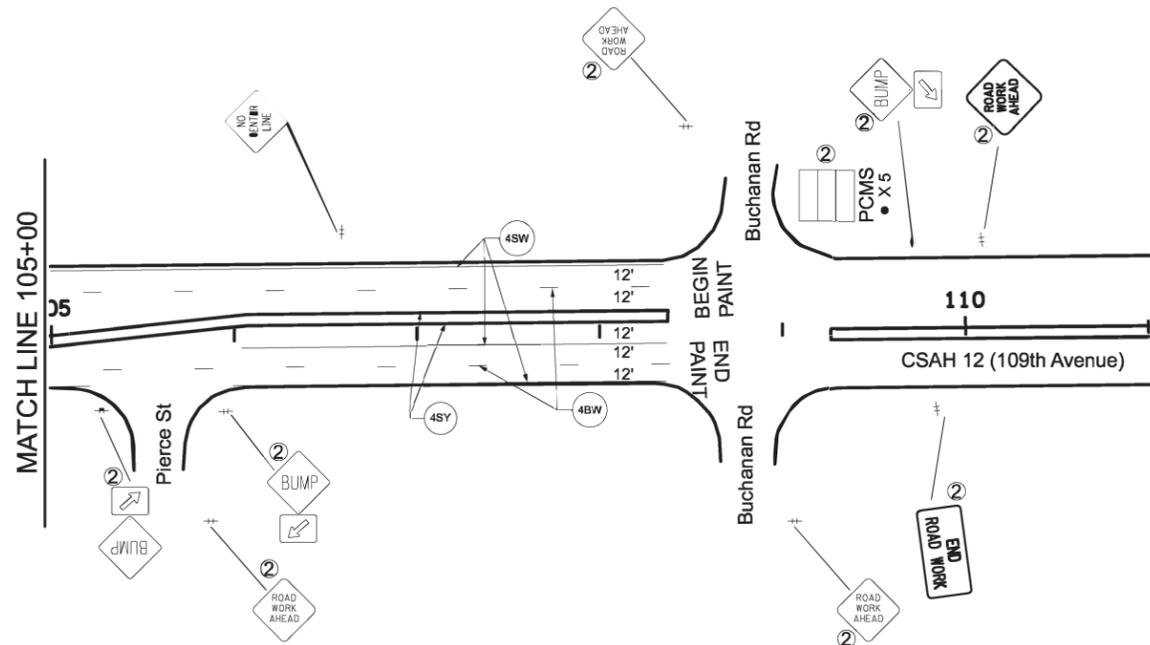
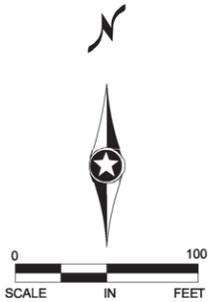
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: SEAN R. THIEL
 SIGNATURE: *Sean R. Thiel*
 DATE: 1/21/2025 LICENSE NO. 45129

DRAWN BY: LJK DATE: 12/8/24
 DESIGN BY: LJK DATE: 12/8/24
 CHECKED BY: _____ DATE: _____



SAP 002-612-038



SIGNING NOTES

- ① F & I
- ② TEMPORARY TRAFFIC CONTROL SIGN
- ④ REMOVE

STRIPING KEY

- --- CIRCLE - MULTI-COMP
- --- OCTAGON - PREF THERMO
- G GROUND IN

NO	DATE	BY	CKD	APPR	REVISION

NAME: \$DGN\$

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

PRINT NAME: SEAN R. THIEL

SIGNATURE: *Sean R. Thiel*

DATE: 1/21/2025 LICENSE NO. 45129

DRAWN BY LJK DATE 12/8/24

DESIGN BY LJK DATE 12/8/24

CHECKED BY _____ DATE _____



**ANOKA COUNTY
HIGHWAY DEPT.**

SAP 002-612-038

PERMANENT STRIPING AND
TEMPORARY SIGNING

Sheet 29 of 39 Sheets

TEMPORARY TRAFFIC CONTROL SIGNS AND DEVICES

"W" SERIES				
SIGN	MUTCD CODE	COLOR	SIZE	QUANTITY
	W3-4	BLACK ON ORANGE	48" X 48"	AS NEEDED
	W8-1	BLACK ON ORANGE	48" X 48"	65
	W16-7PL	BLACK ON ORANGE	30" X 18"	65
	W8-8	BLACK ON ORANGE	48" X 48"	AS NEEDED
	W8-9	BLACK ON ORANGE	48" X 48"	AS NEEDED
	W8-11	BLACK ON ORANGE	48" X 48"	AS NEEDED
	W8-12	BLACK ON ORANGE	48" X 48"	23
	W8-23	BLACK ON ORANGE	48" X 48"	AS NEEDED
	M1-6M	WHITE AND YELLOW ON BLUE	24" X 24"	2
	W20-1	BLACK ON ORANGE	48" X 48"	AS NEEDED (ESTIMATED 36)
	W20-4	BLACK ON ORANGE	48" X 48"	AS NEEDED
	W20-7	BLACK ON ORANGE	48" X 48"	AS NEEDED

"R" SERIES				
SIGN	MUTCD CODE	COLOR	SIZE	QUANTITY
	R4-1	BLACK ON WHITE	24" X 30"	4
	R4-2	BLACK ON WHITE	24" X 30"	AS NEEDED

"G" SERIES				
SIGN	MUTCD CODE	COLOR	SIZE	QUANTITY
	G20-2	BLACK ON ORANGE	48" X 24"	4

DEVICES		
ITEM	MUTCD CODE	QUANTITY
	DRUM	AS NEEDED (ESTIMATED 10)
	TYPE C	2 (10 DAYS EACH)

PCMS - MESSAGE SEQUENCE LAYOUT

	R	O	A	D		
	W	O	R	K		
	B	E	G	I	N	S

	<	D	A	T	E	>	
	E	X	P	E	C	T	
	D	E	L	A	Y	S	

NOTES:

1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS."
2. ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MN MUTCD.
3. CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.
4. LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
5. CONTRACTOR SHALL SUPPLY AND PLACE THE PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) A MINIMUM TEN DAYS PRIOR TO ACTUAL COMMENCEMENT OF ROAD WORK, TO A LOCATION AS SPECIFIED BY THE ENGINEER. SIGNS TO BE REMOVED WHEN ROAD WORK BEGINS. PAYMENT SHALL BE MADE AS PER ITEM 2563.613 PORTABLE CHANGEABLE MESSAGE SIGN BY THE UNIT/DAY.
6. CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN ON THIS DRAWING AND DETAILED IN THE SPECIAL PROVISIONS FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THIS ROADWAY IS PERMANENTLY STRIPED. ALL NECESSARY TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.
7. ACCESS SHALL BE MAINTAINED TO ALL STREETS AND DRIVEWAYS IN CONSTRUCTION AREA.
8. ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
9. ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING.
10. ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. ANY SALVAGED AND REINSTALLED SIGNS SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE. THIS WILL BE CONSIDERED AS INCIDENTAL TO INSTALL SIGN TYPE C.

SIGNING NOTES

- ① F & I
- ② TEMPORARY TRAFFIC CONTROL SIGN
- ④ REMOVE

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

SYMBOL DESCRIPTION

- ⊥ TRAFFIC CONTROL SIGN (SINGLE POST)
- ⊕ TRAFFIC CONTROL SIGN (TEMPORARY)
- DRUM-LIKE CHANNELIZER TYPE B = 
-  PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\24-01-00\CSAH_01_(550 E HANSON-EGRET)\Base\Traffic\CSAH 1 - Signing and Striping

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

PRINT NAME: SEAN R. THIEL
 SIGNATURE: 
 DATE: 1/21/2025 LICENSE NO. 45129

DRAWN BY: LJK DATE: 12/8/24
 DESIGN BY: LJK DATE: 12/8/24
 CHECKED BY: _____ DATE: _____



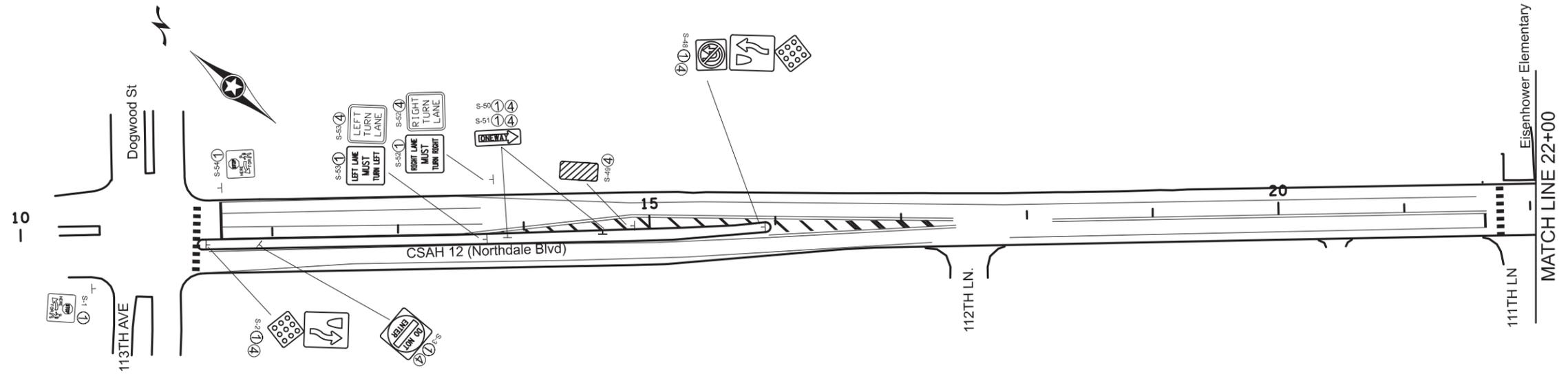
ANOKA COUNTY

HIGHWAY DEPT.

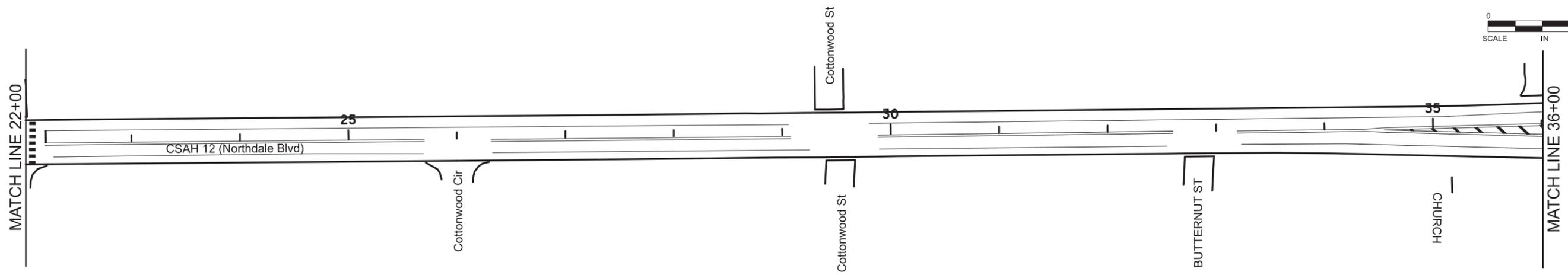
SAP 002-612-038

TEMPORARY SIGNING NOTES
AND TABULATIONS

Sheet 30 of 39 Sheets



- SIGNING NOTES**
- ① F & I
 - ② TEMPORARY TRAFFIC CONTROL SIGN
 - ④ REMOVE



NO	DATE	BY	CKD	APPR	REVISION

NAME: SDGNS

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

PRINT NAME: SEAN R. THIEL
 SIGNATURE: *Sean R. Thiel*
 DATE: 2/25/2025 LICENSE NO. 45129

DRAWN BY LJK DATE 12/8/24
 DESIGN BY LJK DATE 12/8/24
 CHECKED BY _____ DATE _____

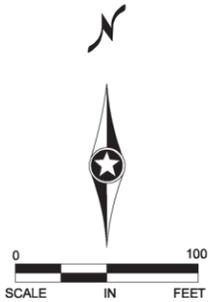


**ANOKA COUNTY
 HIGHWAY DEPT.**

SAP 002-612-038

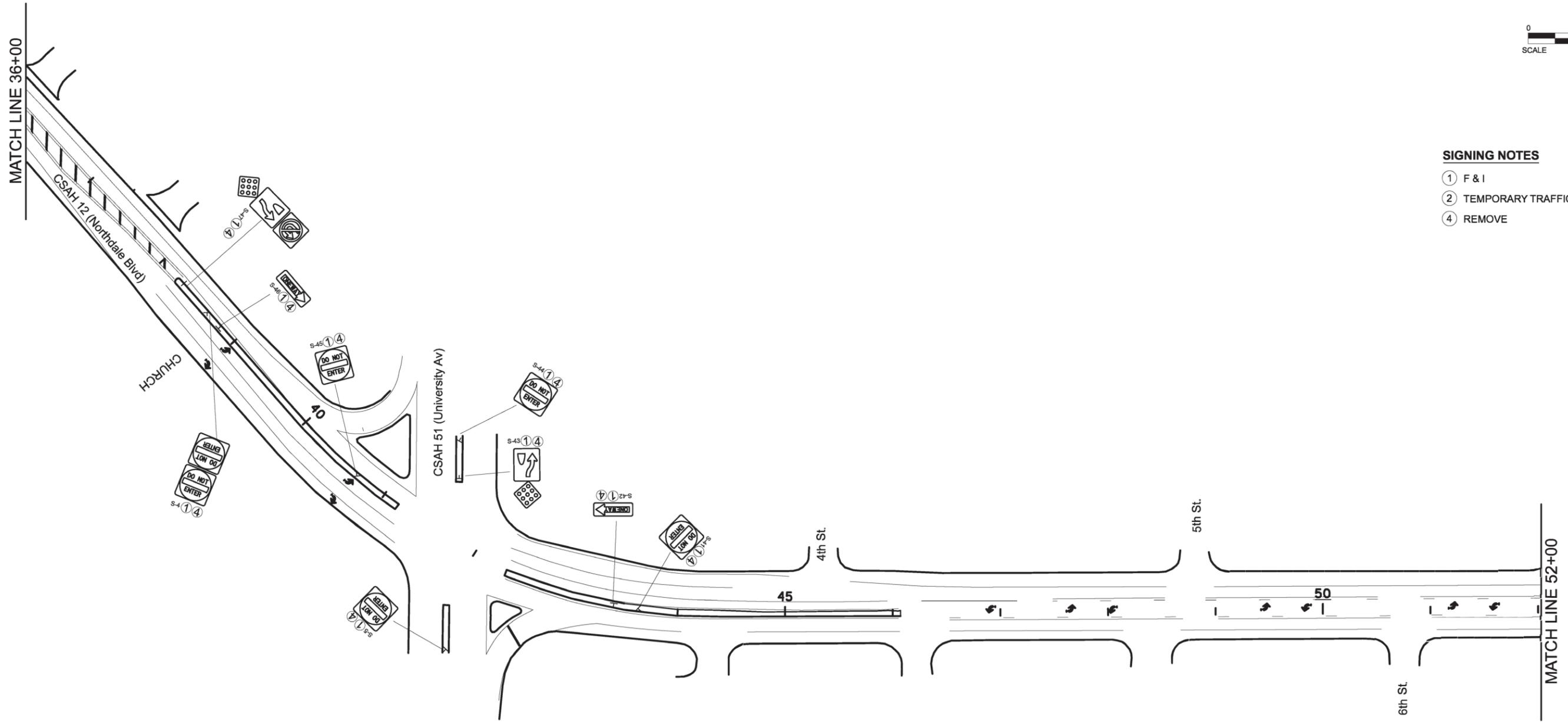
PERMANENT SIGNING

Sheet 31 of 39 Sheets



SIGNING NOTES

- ① F & I
- ② TEMPORARY TRAFFIC CONTROL SIGN
- ④ REMOVE



NO	DATE	BY	CKD	APPR	REVISION

NAME: SDGNS

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

PRINT NAME: SEAN R. THIEL
 SIGNATURE: *Sean R. Thiel*
 DATE: 1/21/2025 LICENSE NO. 45129

DRAWN BY LJK DATE 12/8/24
 DESIGN BY LJK DATE 12/8/24
 CHECKED BY _____ DATE _____

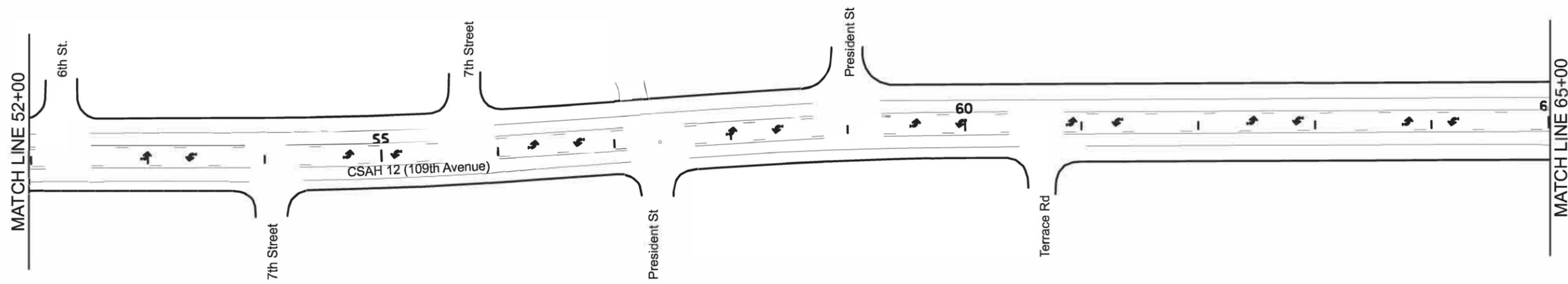


**ANOKA COUNTY
 HIGHWAY DEPT.**

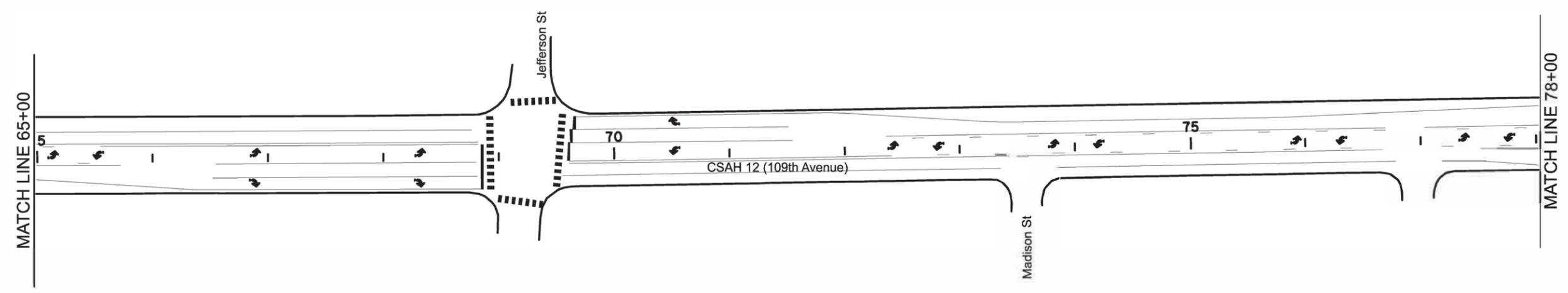
SAP 002-612-038

PERMANENT SIGNING

Sheet 32 of 39 Sheets



- SIGNING NOTES**
- ① F & I
 - ② TEMPORARY TRAFFIC CONTROL SIGN
 - ④ REMOVE



NO	DATE	BY	CKD	APPR	REVISION

NAME: SDGNS

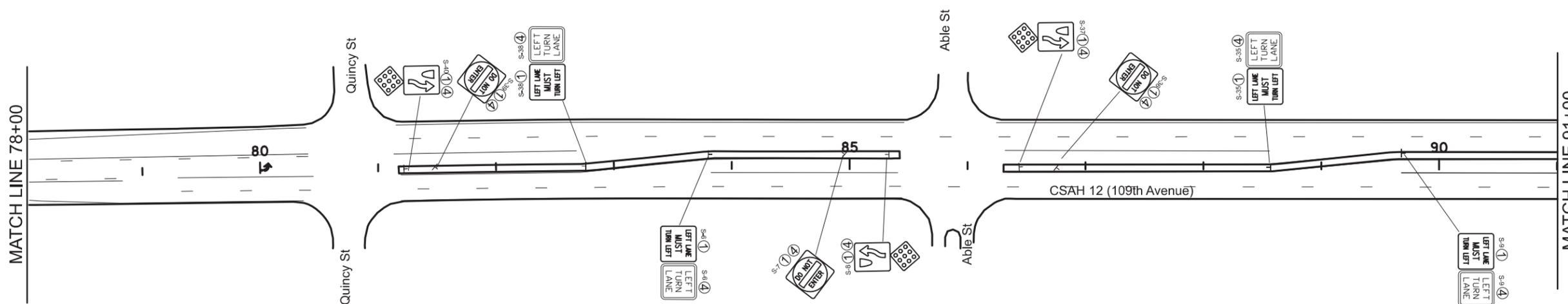
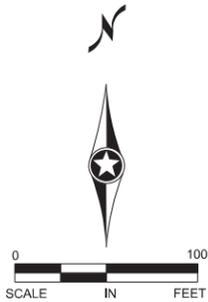
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: SEAN R. THIEL
 SIGNATURE: *Sean R. Thiel*
 DATE: 1/21/2025 LICENSE NO. 4512.9

DRAWN BY LJK DATE 12/8/24
 DESIGN BY LJK DATE 12/8/24
 CHECKED BY _____ DATE _____

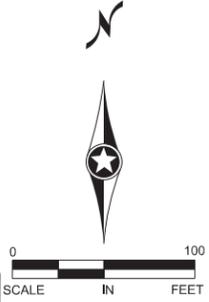
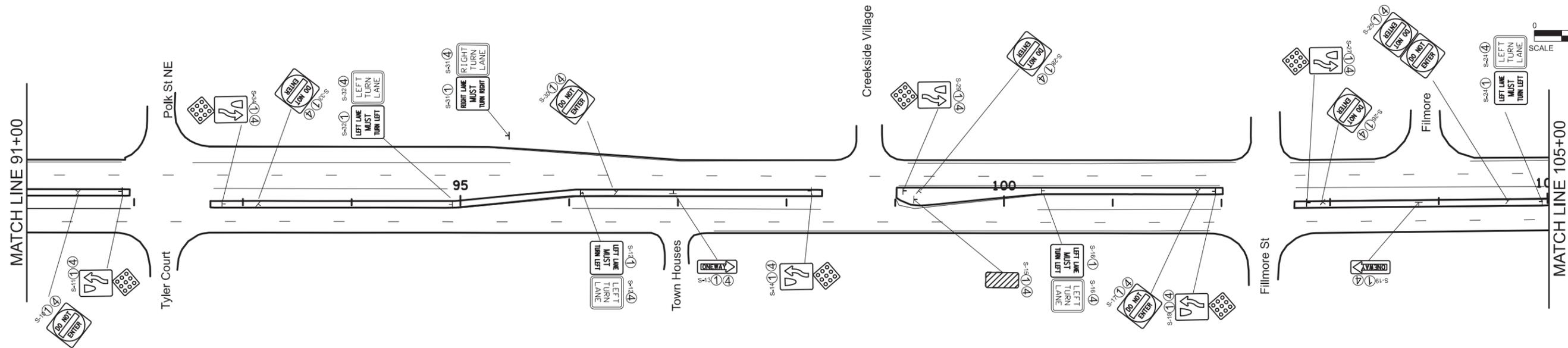


SAP 002-612-038



- SIGNING NOTES**
- ① F & I
 - ② TEMPORARY TRAFFIC CONTROL SIGN
 - ④ REMOVE

Sean R. Thiel



NO	DATE	BY	CKD	APPR	REVISION

NAME: SDGNS

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

PRINT NAME: SEAN R. THIEL

SIGNATURE: *Sean R. Thiel*

DATE: 2/25/2025 LICENSE NO. 45129

DRAWN BY: LJK DATE: 12/8/24

DESIGN BY: LJK DATE: 12/8/24

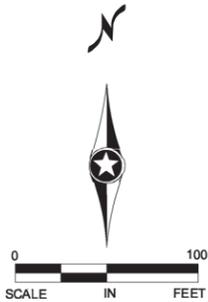
CHECKED BY: _____ DATE: _____



SAP 002-612-038

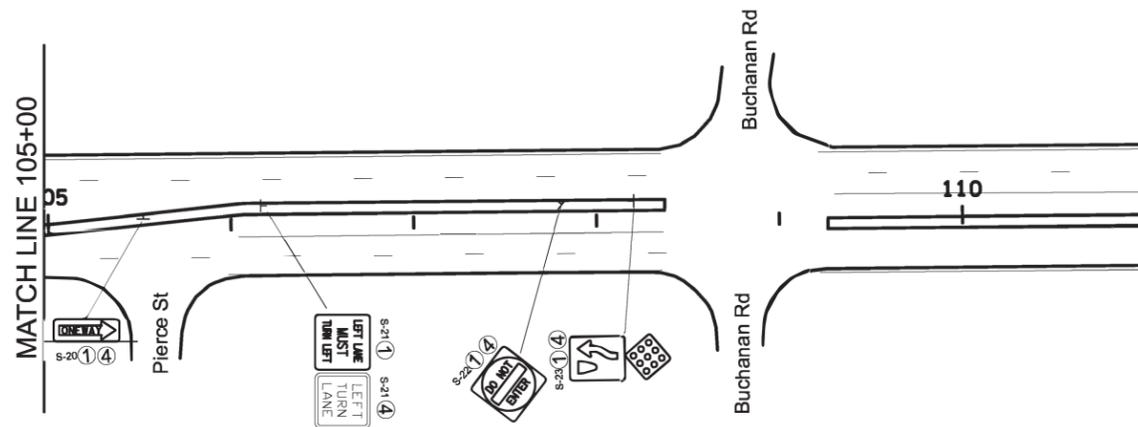
PERMANENT SIGNING

Sheet 34 of 39 Sheets



SIGNING NOTES

- ① F & I
- ② TEMPORARY TRAFFIC CONTROL SIGN
- ④ REMOVE



NO	DATE	BY	CKD	APPR	REVISION

NAME: SDGNS

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

PRINT NAME: SEAN R. THIEL
 SIGNATURE: *Sean R. Thiel*
 DATE: 1/21/2025 LICENSE NO. 45129

DRAWN BY LJK DATE 12/8/24
 DESIGN BY LJK DATE 12/8/24
 CHECKED BY _____ DATE _____



**ANOKA COUNTY
 HIGHWAY DEPT.**

SAP 002-612-038

PERMANENT SIGNING

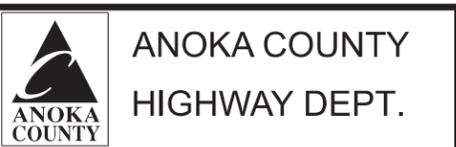
Sheet 35 of 39 Sheets

SIGN AND DELINEATOR / MARKER													ST-A
SIGN NUMBER	PANEL					SUPPORT		REMOVE SIGN TYPE C EACH	REMOVE SIGN TYPE C PANEL EACH	SIGN SQ FEET	INSTALL SIGN TYPE C EACH	INSTALL SIGN TYPE C PANEL EACH	DELINEATOR / MARKER EACH
	PANEL CODE	LEGEND	SIZE (W x H)		MOUNTING HEIGHT	TYPE	NUMBER OF POSTS						
			INCHES	FEET									
S-1	R1-5bL	STOP HERE FOR PEDESTRIANS	36	x	36	7	U-SOIL	1		9.00	1	1	
S-2	R4-7	KEEP RIGHT	24	x	30	7	S-CONC	1	1	5.00	1		
	OM1-1	9 BUTTON	18	x	18	4			1	2.25	1		1
S-3	R5-1	DO NOT ENTER	30	x	30	7	S-CONC	1	1	6.25	1		
S-4	R5-1	DO NOT ENTER	30	x	30	7			1	6.25	1		
S-5	R5-1	DO NOT ENTER	30	x	30	7	S-CONC	1	1	6.25	1		
S-6	R3-X1L	LEFT TURN LANE	30	x	30	7	S-CONC	1	1	6.25			
	R3-7L	LEFT LANE MUST TURN LEFT	30	x	30					6.25	1	1	
S-7	R5-1	DO NOT ENTER	30	x	30	7	S-CONC	1	1	6.25	1		
S-8	R4-7	KEEP RIGHT	24	x	30	7	S-CONC	1	1	5.00	1		
	OM1-1	9 BUTTON	18	x	18	4			1	2.25	1		1
S-9	R3-X1L	LEFT TURN LANE	30	x	30	7	S-CONC	1	1	6.25			
	R3-7L	LEFT LANE MUST TURN LEFT	30	x	30					6.25	1	1	
S-10	R5-1	DO NOT ENTER	30	x	30	7	S-CONC	1	1	6.25	1		
S-11	R4-7	KEEP RIGHT	24	x	30	7	S-CONC	1	1	5.00	1		
	OM1-1	9 BUTTON	18	x	18	4			1	2.25	1		1
S-12	R3-X1L	LEFT TURN LANE	30	x	30	7	S-CONC	1	1	6.25			
	R-37L	LEFT LANE MUST TURN LEFT	30	x	30					6.25	1	1	
S-13	R6-1R	ONE WAY	54	x	18	7	S-CONC	1	1	6.75	1		
S-14	R4-7	KEEP RIGHT	24	x	30	7	S-CONC	1	1	5.00	1		
	OM1-1	9 BUTTON	18	x	18	4			1	2.25	1		1
S-15	OM3-3L	CLEARANCE MARKER LEFT	12	x	36	4	S-CONC	1	1	3.00	1		1
S-16	R3-X1L	LEFT TURN LANE	30	x	30	7	S-CONC	1	1	6.25			
	R3-7L	LEFT LANE MUST TURN LEFT	30	x	30					6.25	1	1	
S-17	R5-1	DO NOT ENTER	30	x	30	7	S-CONC	1	1	6.25	1		
S-18	R4-7	KEEP RIGHT	24	x	30	7	S-CONC	1	1	5.00	1		
	OM1-1	9 BUTTON	18	x	18	4			1	2.25	1		1
S-19	R6-1R	ONE WAY	54	x	18	7	S-CONC	1	1	6.75	1		
S-20	R6-1R	ONE WAY	54	x	18	7	S-CONC	1	1	6.75	1		
S-21	R3-X1L	LEFT TURN LANE	30	x	30	7	S-CONC	1	1	6.25			
	3-7L	LEFT LANE MUST TURN LEFT	30	x	30					6.25	1	1	
S-22	R5-1	DO NOT ENTER	30	x	30	7	S-CONC	1	1	6.25	1		
S-23	R4-7	KEEP RIGHT	24	x	30	7	S-CONC	1	1	5.00	1		
	OM1-1	9 BUTTON	18	x	18	4			1	2.25	1		1
S-24	R3-X1L	LEFT TURN LANE	30	x	30	7	S-CONC	1	1	6.25			
	R3-7L	LEFT LANE MUST TURN LEFT	30	x	30					6.25	1	1	
S-25	R5-1	DO NOT ENTER	30	x	30	7	S-CONC	1	1	6.25	1		
	R5-1	DO NOT ENTER	30	x	30	7			1	6.25	1		
S-26	R5-1	DO NOT ENTER	30	x	30	7	S-CONC	1	1	6.25	1		
S-27	R4-7	KEEP RIGHT	24	x	30	7	S-CONC	1	1	5.00	1		
	OM1-1	9 BUTTON	18	x	18	4			1	2.25	1		1

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\24-01-00CSAH_01_(550 E HANSON-EGRET)\Base\Traffic\CSAH 1 - Signing and Striping					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: SEAN R. THIEL
 SIGNATURE: *Sean R. Thiel*
 DATE: 1/21/2025 LICENSE NO. 45129

DRAWN BY: LJK DATE: 12/8/24
 DESIGN BY: LJK DATE: 12/8/24
 CHECKED BY: DATE:



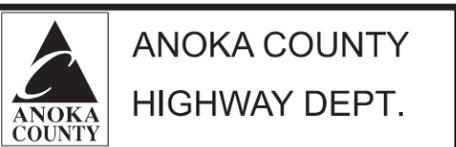
SAP 002-612-038

SIGN AND DELINEATOR / MARKER													ST-A
SIGN NUMBER	PANEL					SUPPORT		REMOVE SIGN TYPE C	REMOVE SIGN TYPE C PANEL	SIGN	INSTALL SIGN TYPE C	INSTALL SIGN TYPE C PANEL	DELINEATOR / MARKER
	PANEL CODE	LEGEND	SIZE (W x H)		MOUNTING HEIGHT	TYPE	NUMBER OF POSTS	EACH	EACH	SQ FEET	EACH	EACH	EACH
			INCHES	FEET									
S-28	R5-1	DO NOT ENTER	30	x	30	7	S-CONC	1	1	6.25	1		
S-29	R4-7	KEEP RIGHT	24	x	30	7	S-CONC	1	1	5.00	1		
	OM1-1	9 BUTTON	18	x	18	4			1	2.25	1		1
S-30	R5-1	DO NOT ENTER	30	x	30	7	S-CONC	1	1	6.25	1		
S-31	R3-X1R	RIGHT TURN LANE	30	x	30	7	U-SOIL	1	1	1	6.25		
	R3-7R	RIGHT LANE MUST TURN RIGHT	30	x	30				6.25	1	1		
S-32	R3-X1L	LEFT TURN LANE	30	x	30	7	S-CONC	1	1	1	6.25		
	R3-7L	LEFT LANE MUST TURN LEFT	30	x	30				6.25	1	1		
S-33	R5-1	DO NOT ENTER	30	x	30	7	S-CONC	1	1	6.25	1		
S-34	R4-7	KEEP RIGHT	24	x	30	7	S-CONC	1	1	5.00	1		
	OM1-1	9 BUTTON	18	x	18	4			1	2.25	1		1
S-35	R3-X1L	LEFT TURN LANE	30	x	30	7	S-CONC	1	1	1	6.25		
	R3-7L	LEFT LANE MUST TURN LEFT	30	x	30				6.25	1	1		
S-36	R5-1	DO NOT ENTER	30	x	30	7	S-CONC	1	1	6.25	1		
S-37	R4-7	KEEP RIGHT	24	x	30	7	S-CONC	1	1	5.00	1		
	OM1-1	9 BUTTON	18	x	18	4			1	2.25	1		1
S-38	R3-X1L	LEFT TURN LANE	30	x	30	7	S-CONC	1	1	6.25	1		
	R3-7L	LEFT LANE MUST TURN LEFT	30	x	30				6.25	1	1		
S-39	R5-1	DO NOT ENTER	30	x	30	7	S-CONC	1	1	6.25	1		
S-40	R4-7	KEEP RIGHT	24	x	30	7	S-CONC	1	1	5.00	1		
	OM1-1	9 BUTTON	18	x	18	4			1	2.25	1		1
S-41	R5-1	DO NOT ENTER	30	x	30	7	S-CONC	1	1	6.25	1		
S-42	R6-1R	ONE WAY	36	x	12	7	S-CONC	1	1	3.00	1		
S-43	R4-7	KEEP RIGHT	24	x	30	7	S-CONC	1	1	5.00	1		
	OM1-1	9 BUTTON	18	x	18	4			1	2.25	1		
S-44	R5-1	DO NOT ENTER	30	x	30	7	S-CONC	1	1	6.25	1		
S-45	R5-1	DO NOT ENTER	30	x	30	7	S-CONC	1	1	6.25	1		
S-46	R6-1R	ONE WAY	36	x	12	7	S-CONS	1		3.00	1		
S-47	R3-4	NO U-TURN	24	x	24	7	S-CONC	1	1	4.00	1		
	R4-7	KEEP RIGHT	24	x	30	7			1	5.00	1		
	OM1-1	9 BUTTON	18	x	18	4			1	2.25	1		1
S-48	R3-4	NO U-TURN	24	x	24	7	S-CONC	1	1	4.00	1		
	R4-7	KEEP RIGHT	24	x	30	7			1	5.00	1		
	OM1-1	9 BUTTON	18	x	18	4			1	2.25	1		1
S-49	OM3-3L	CLEARANCE MARKER LEFT	12	x	36	4	S-CONC	1	1	3.00			
S-50	R6-1R	ONE WAY	36	x	12	7	S-CONC	1	1	3.00	1		
S-51	R6-1R	ONE WAY	36	x	12	7	S-CONC	1	1	3.00	1		
S-52	R3-X1R	RIGHT TURN LANE	30	x	30	7	U-SOIL	1	1	1	6.25		
	R3-7R	RIGHT LANE MUST TURN RIGHT	30	x	30				6.25	1	1		
S-53	R3-X1L	LEFT TURN LANE	30	x	30	7	S-CONC	1	1	1	6.25		
	R3-7L	LEFT LANE MUST TURN LEFT	30	x	30				6.25	1	1		
S-54	R1-5bL	STOP HERE FOR PEDESTRIANS	36	x	36	7	U-SOIL	1		9.00	1	1	
TOTAL								69	11	435	72	14	14

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\24-01-00CSAH_01_(550 E HANSON-EGRET)\Base\Traffic\CSAH 1 - Signing and Striping					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: SEAN R. THIEL
 SIGNATURE: *Sean R. Thiel*
 DATE: 2/25/2025 LICENSE NO. 45129

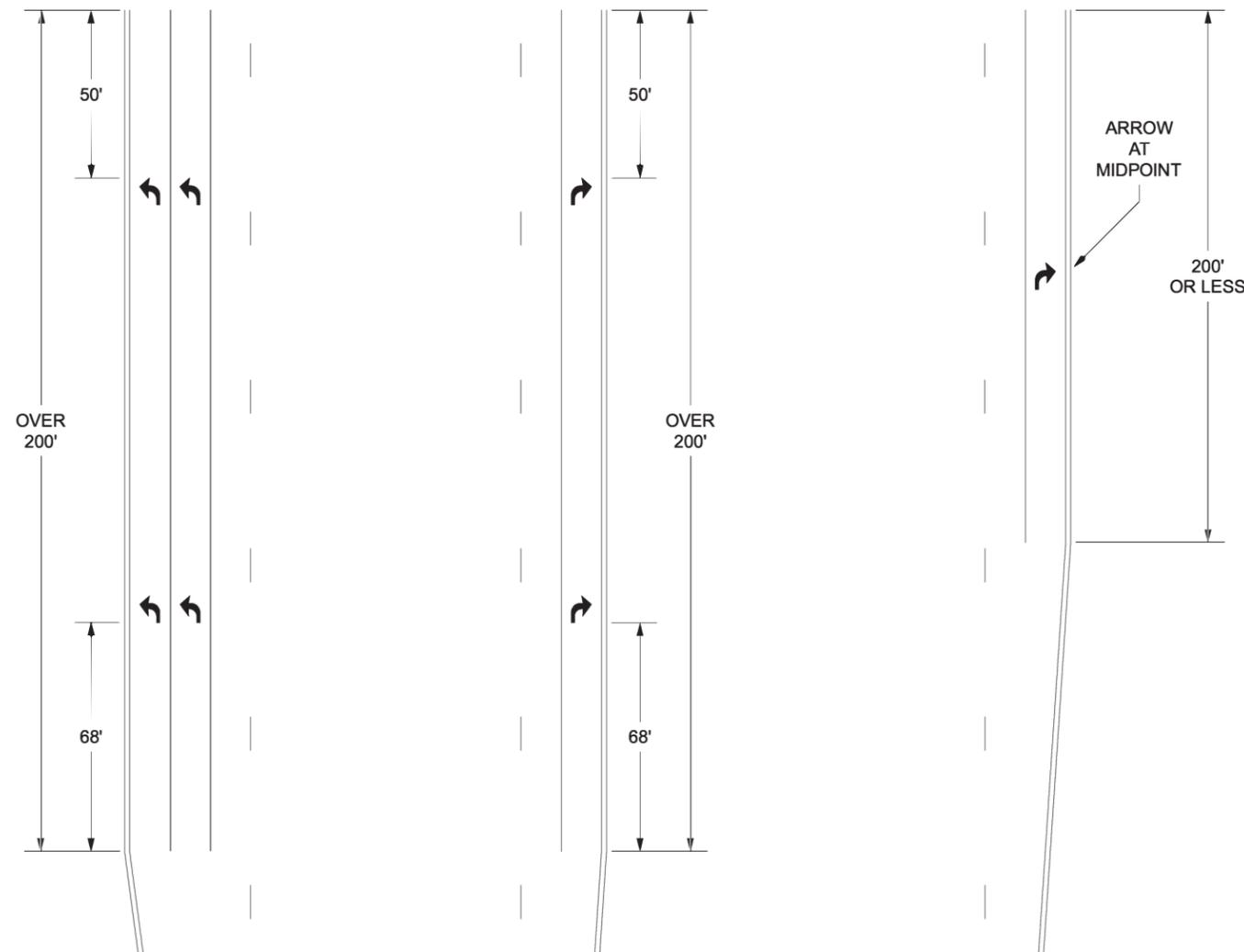
DRAWN BY: LJK DATE: 12/8/24
 DESIGN BY: LJK DATE: 12/8/24
 CHECKED BY: DATE:



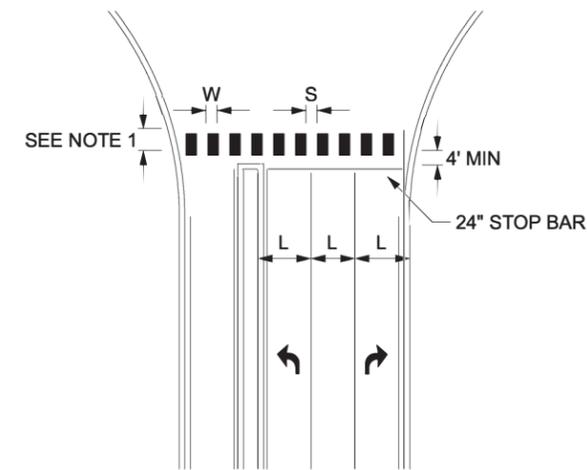
SAP 002-612-038

PAVEMENT MARKING TYPICALS

TURN LANE ARROW PLACEMENT

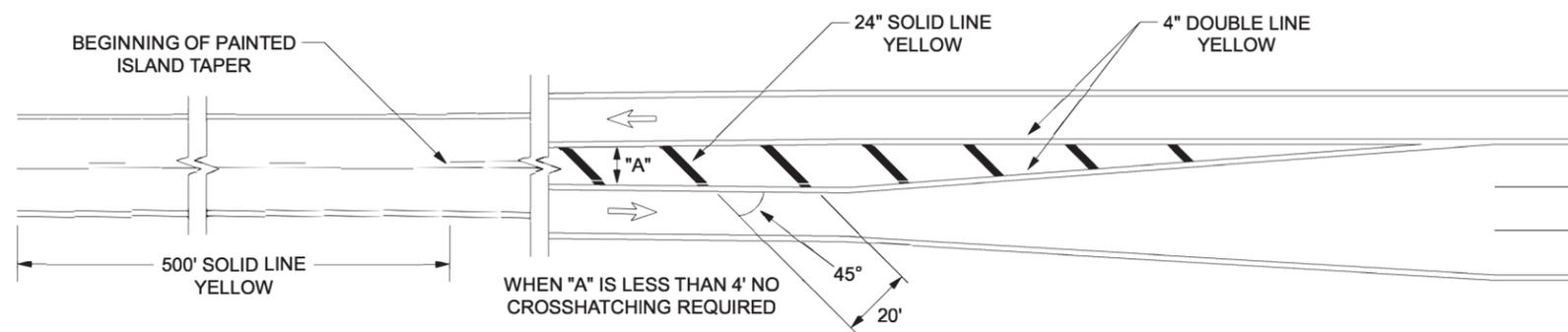


PEDESTRIAN CROSSWALK



(L) WIDTH OF INSIDE LANE	(W) WIDTH OF PAINTED AREAS	(S) WIDTH OF SPACE
9'	2.0'	2.5'
10'	2.5'	2.5'
11'	2.5'	3.0'
12'	3.0'	3.0'
13'	3.0'	3.5'

LEFT TURN ISLAND MARKINGS



CROSSWALK NOTES:

1. THE BLOCKS SHALL BE A MINIMUM OF 6' AND AT LEAST AS LONG AS THE TRUNCATED DOMES. FOR FANNED TRUNCATED DOMES THE BLOCKS SHALL BE AT LEAST AS LONG AS THE APPROACHING SIDEWALK OR SHARED-USE PATH.
2. BLOCKS TO BE CENTERED ON CENTERLINE AND LANE LINES.
3. A MINIMUM OF 1.5' CLEAR DISTANCE SHALL BE LEFT ADJACENT TO THE CURB FACE. IF BLOCK FALLS INTO THIS DISTANCE IT MUST BE OMITTED.
4. ON TWO LANE TWO WAY STREETS, USE SPACING SHOWN FOR AN 11' INSIDE LANE.
5. FOR DIVIDED ROADWAYS, ADJUSTMENTS IN SPACING OF THE BLOCKS SHOULD BE MADE IN THE MEDIAN SO THAT THE BLOCKS ARE MAINTAINED IN THEIR PROPER LOCATION ACROSS THE TRAVELED PORTION OF THE ROADWAY.
6. AT SKEWED CROSSWALKS, THE BLOCKS ARE TO REMAIN PARALLEL TO THE LANE LINES.
7. THE BLOCKS SHALL BE PLACED SO THAT THEY ARE NOT LOCATED IN THE WHEEL PATH OF THE VEHICLES.
8. LOCATION OF CROSSWALK BLOCKS, STOP BARS, SIGNAL LOOPS AND PEDESTRIAN RAMPS ARE APPROXIMATE. FINAL LOCATIONS TO BE DETERMINED AND FIELD VERIFIED DURING CONSTRUCTION BY THE FIELD ENGINEER.

NO	DATE	BY	CKD	APPR	REVISION

NAME: SDGNS

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

PRINT NAME: SEAN R. THIEL
 SIGNATURE: *Sean R. Thiel*
 DATE: 1/21/2025 LICENSE NO. 45129

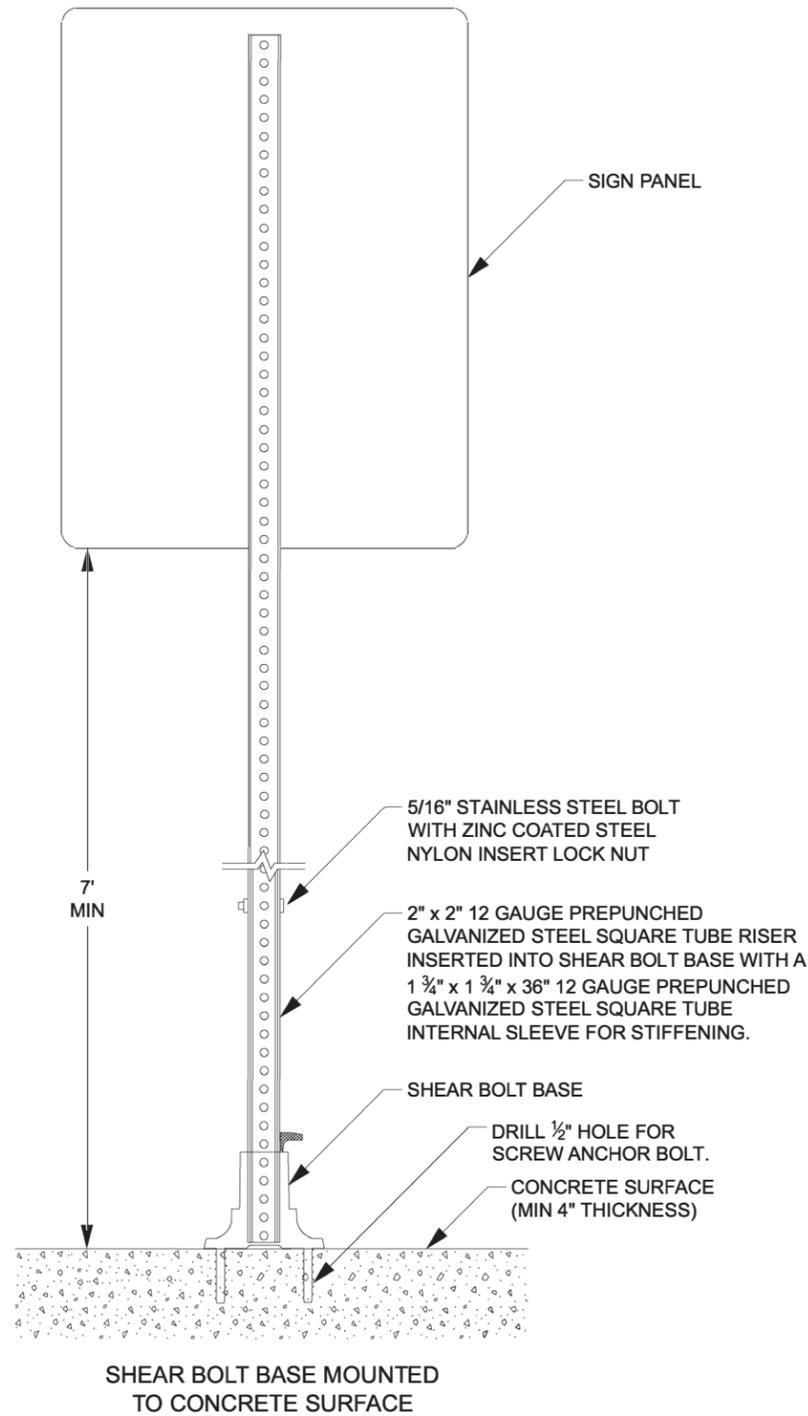
DRAWN BY: LJK DATE: 12/8/24
 DESIGN BY: LJK DATE: 12/8/24
 CHECKED BY: _____ DATE: _____

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-612-038

SIGN INSTALLATION TYPICALS

ISLAND MOUNT SQUARE TUBE SHEAR BOLT BASE SIGN INSTALLATION TYPICAL

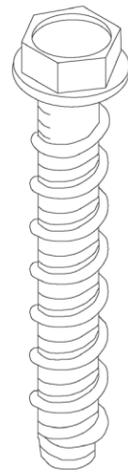


SIGN NOTES:

1. TO MEET CRASHWORTHY REQUIREMENTS THE DISTANCE BETWEEN THE BOTTOM OF THE SIGN PANEL AND THE GROUND SURFACE BELOW ANY PORTION OF THE PRIMARY SIGN PANEL MUST BE A MINIMUM OF 7 FEET. SEE TABULATIONS FOR MOUNTING HEIGHT.
2. INSTALLATION OF SHEAR BOLT BASE MUST BE NO EARLIER THAN 3 DAYS AFTER CONCRETE IS PLACED.
3. FOR SHEAR BOLT BASE USE APPROVED PRODUCT FROM MnDOT APPROVED PRODUCTS LIST. PRODUCT MUST BE MODIFIED AS SHOWN.
4. USE ANTI SEIZE ON THE SHEAR BOLT CONNECTIONS.

INSTALLATION NEAR SHARED-USE PATHWAY (MN MUTCD):

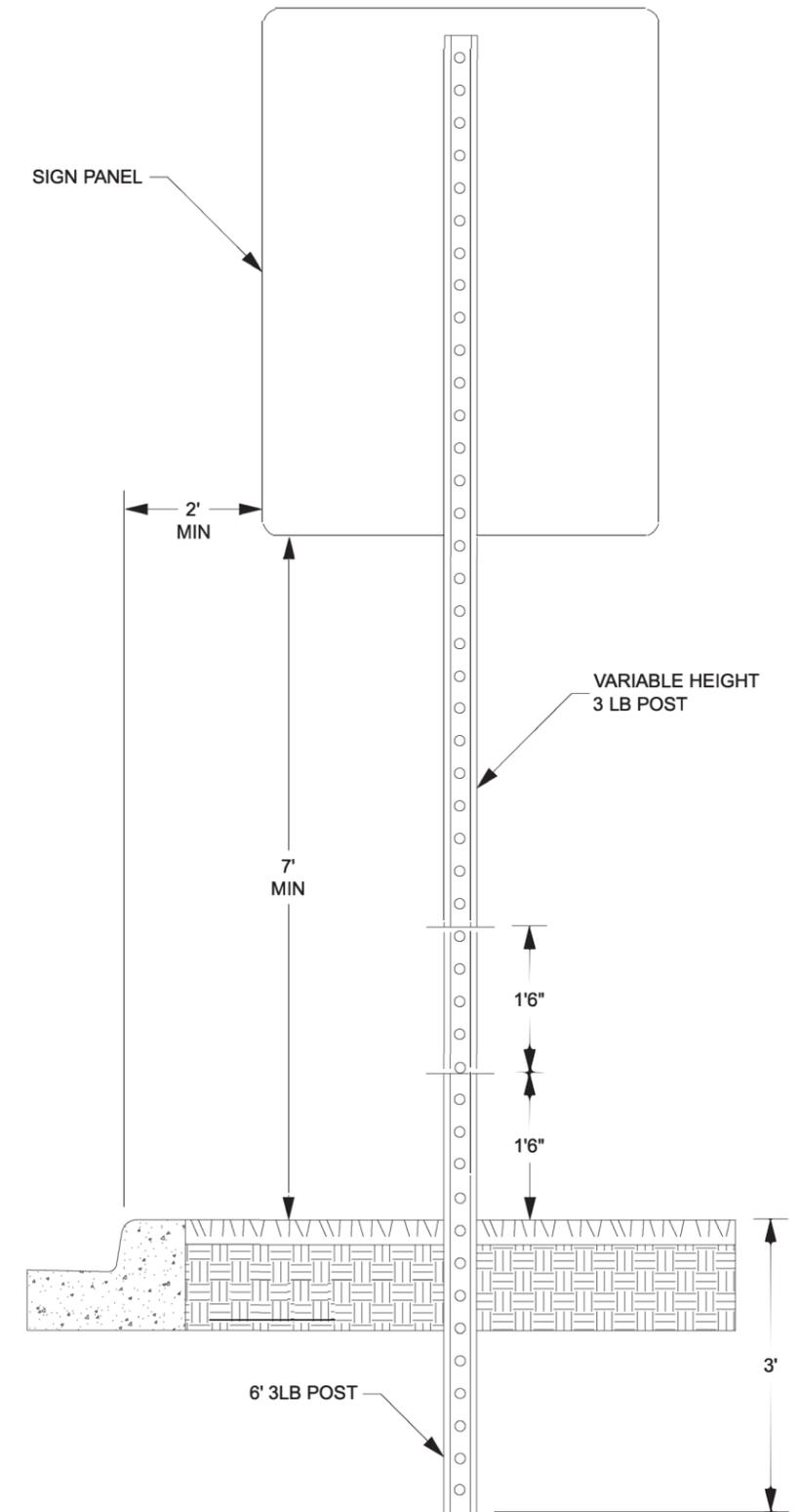
- THE MINIMUM HEIGHT MEASURED VERTICALLY FROM THE SHARED-USE PATHWAY TO THE BOTTOM OF THE SIGN SHALL BE 7 FEET. IF A SECONDARY SIGN IS MOUNTED BELOW THE PRIMARY SIGN AND IS MOUNTED LESS THAN 7 FEET, IT SHALL NOT PROJECT MORE THAN 4 INCHES INTO THE SHARED-USE PATHWAY.



SCREW ANCHOR BOLT

5" LONG CARBON STEEL THAT MUST MEET A MINIMUM ALLOWABLE TENSION LOAD OF 2270 PSI.

GROUND POST MOUNT SIGN INSTALLATION TYPICAL



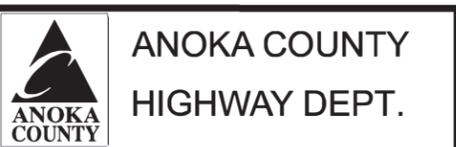
NO	DATE	BY	CKD	APPR	REVISION

NAME: SDGNS

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

PRINT NAME: SEAN R. THIEL
 SIGNATURE: *Sean R. Thiel*
 DATE: 1/21/2025 LICENSE NO. 45129

DRAWN BY: LJK DATE: 12/8/24
 DESIGN BY: LJK DATE: 12/8/24
 CHECKED BY: _____ DATE: _____



SAP 002-612-038