

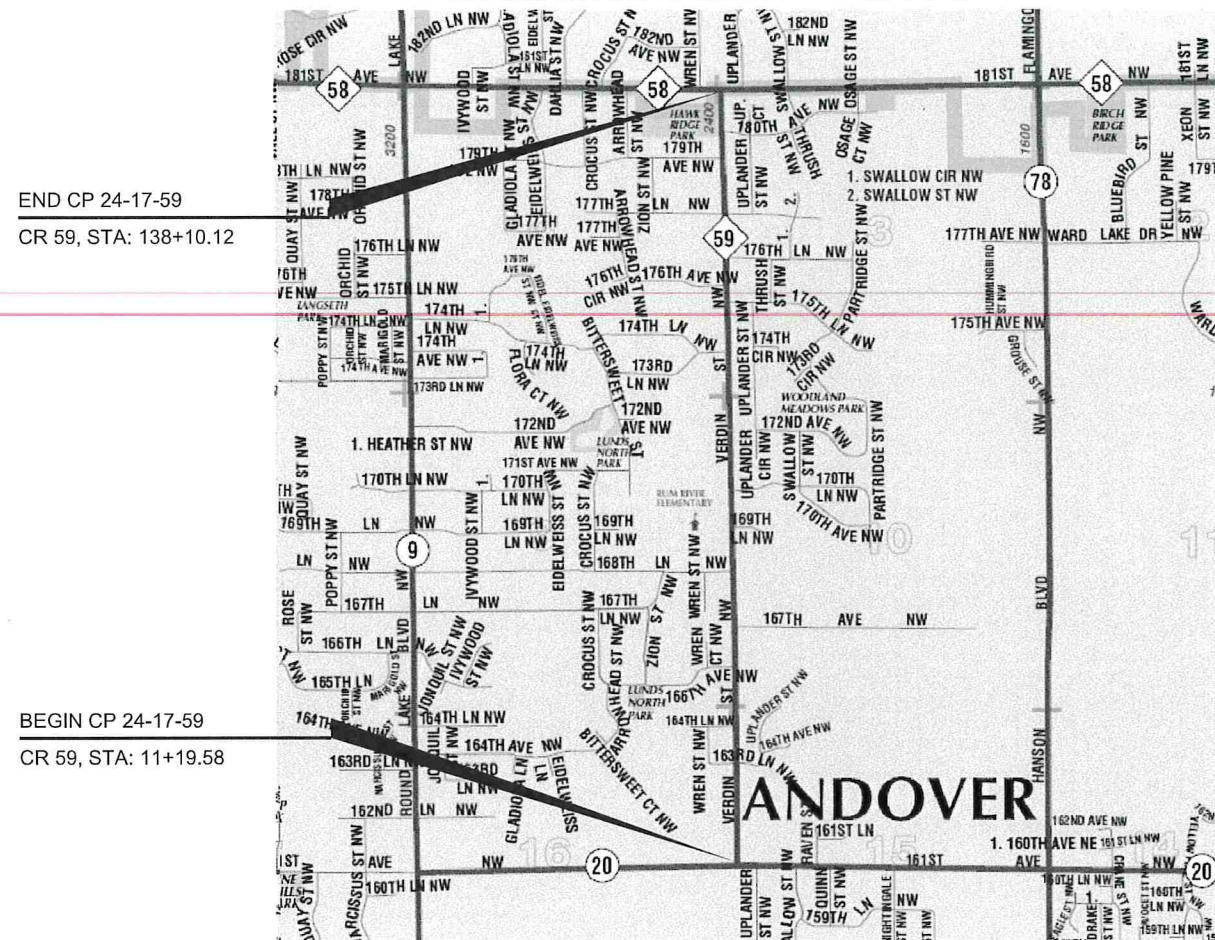
MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

CONSTRUCTION PLAN FOR BITUMINOUS SURFACING, CURB & GUTTER, BITUMINOUS RECLAMATION, SEWER REPAIRS, CULVERT REPAIRS AND CONSTRUCT RIGHT TURN LANES

LOCATED ON CR 59 BETWEEN CSAH 20 (161ST AVE NW) AND CR 58 (181ST AVE NW)

CR 59 (VERDIN ST. NW)

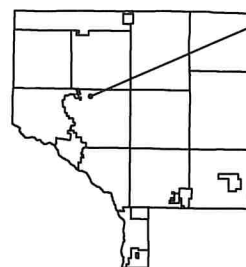
GROSS LENGTH 12,690.54 FEET 2.404 MILES
 EXCEPTIONS-LENGTH 0.00 FEET 0.000 MILES
 NET LENGTH 12,690.54 FEET 2.404 MILES



END CP 24-17-59
CR 59, STA: 138+10.12

BEGIN CP 24-17-59
CR 59, STA: 11+19.58

PROJECT LOCATION



CITY OF ANDOVER
ANOKA COUNTY
MN/DOT TRANSPORTATION DISTRICT - METRO
SECTION 3,4,9,10,15,16
TOWNSHIP 32 NORTH
RANGE 24 WEST

GOVERNING SPECIFICATIONS

THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.
 ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

THIS PLAN CONTAINS 26 SHEETS

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES
3	TABULATIONS
4	STORM AND CULVERT TABULATIONS
5-8	TYPICAL SECTIONS
9-13	DETAILS
14-18	CONSTRUCTION PLAN
19	PERMANENT PAVEMENT MARKING PLAN NOTES AND TABULATIONS
20	PAVEMENT MARKING TYPICALS
21-25	SIGNING AND PERMANENT STRIPING
26	TEMP. & PERM. TRAFFIC CONTROL TABULATIONS

DESIGN DESIGNATION (CR 59)

ESAL 20 <u>397,649</u>	FUNCTIONAL CLASSIFICATION <u>MAJOR COLLECTOR</u>
R VALUE <u>70</u>	NO. OF TRAFFIC LANES <u>2</u> NO. OF PARKING LANES <u>0</u>
ADT (2024) <u>3366</u>	DESIGN SPEED <u>55</u> MPH
PROJ. ADT (2044) <u>3366</u>	STOPPING SIGHT DISTANCE BASED ON:
SOIL FACTOR <u>199</u>	HEIGHT OF EYE <u>3.5'</u> HEIGHT OF OBJECT <u>2.0'</u>
DESIGN SPEED NOT ACHIEVED AT:	
SOIL FACTOR <u>N/A</u>	STA. _____ TO STA. _____ MPH _____
<u>10</u> TON DESIGN	

Approved 12-22-23
ANOKA COUNTY ENGINEER

NO	DATE	BY	CKD	APPR	REVISION
	12/21/2023				4:52:49 PM

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: 12-08-2023 LICENSE NO. 26511

DRAWN BY DBK DATE 12/05/23
 DESIGN BY DBK DATE 12/05/23
 CHECKED BY CO DATE 12/05/23



**ANOKA COUNTY
HIGHWAY DEPT.**

COUNTY PROJECT 24-17-59

TITLE SHEET
Sheet 1 of 26 Sheets

STATEMENT OF ESTIMATED QUANTITIES

Notes	Item Number	Code	ITEM DESCRIPTION	Unit	TOTAL PROJECT QUANTITIES ESTIMATED
	2021.501	00010	MOBILIZATION	LUMP SUM	1
34	2101.502	00020	CLEARING	EACH	5
	2101.502	00030	GRUBBING	EACH	5
	2104.502	01240	REMOVE SIGN TYPE C	EACH	12
	2104.502	02500	SALVAGE CONCRETE APRON	EACH	2
31	2104.502	03320	SALVAGE SIGN TYPE C	EACH	15
1	2104.503	00195	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	99
1	2104.503	00205	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	696
	2104.503	00255	REMOVE PIPE CULVERTS	LIN FT	428
	2104.503	00315	REMOVE CURB AND GUTTER	LIN FT	104
1,2	2104.504	00080	REMOVE CONCRETE DRIVEWAY PAVEMENT	SQ YD	193
1,3	2104.504	00110	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	SQ YD	705
1,3	2104.504	00120	REMOVE BITUMINOUS PAVEMENT	SQ YD	2652
	2104.518	00100	REMOVE BITUMINOUS WALK	SQ FT	620
	2105.607	00015	COMMON EXCAVATION	CU YD	11
30	2106.602	00020	CONSTRUCT TURN LANES	EACH	11
4	2123.510	00020	MOTOR GRADER	HOUR	20
5	2123.510	00130	DOZER	HOUR	100
6	2130.523	00010	WATER	M GALLON	20
7,8	2211.509	00070	AGGREGATE BASE CLASS 5	TON	98
9	2215.504	00010	FULL DEPTH RECLAMATION	SQ YD	46264
10	2215.507	00010	HAUL FULL DEPTH RECLAMATION (LV)	CU YD	84
11	2221.509	00080	SHOULDER BASE AGGREGATE CLASS 5	TON	1222
12	2232.604	00470	MILL BITUMINOUS PAVEMENT (SPECIAL)	SQ YD	266
32	2301.508	00010	SUPPLEMENTAL PAVEMENT REINFORCEMENT	POUND	187
	2301.602	00071	DRILL AND GROUT REINF BAR (EPOXY COATED)	EACH	29
	2357.506	00010	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	2449
13,15	2360.509	13200	TYPE SP 9.5 WEARING COURSE MIXTURE (3,B)	TON	80
14	2360.509	20100	TYPE SP 12.5 BITUMINOUS MIXTURE FOR PATCHING	TON	3
16	2360.509	24300	TYPE SP 12.5 WEARING COURSE MIXTURE (4,C)	TON	609
	2360.509	24300	TYPE SP 12.5 WEARING COURSE MIXTURE (4,C)	TON	12439
	2451.607	00450	PIPE BEDDING MATERIAL	CU YD	11
	2501.502	01018	18" CS PIPE APRON	EACH	4
	2501.502	23015	15" CS SAFETY APRON AND GRATE DESIGN 3128	EACH	4
	2501.502	23018	18" CS SAFETY APRON AND GRATE DESIGN 3128	EACH	1
	2501.502	44015	15" RC SAFETY APRON	EACH	9
	2501.502	44018	18" RC SAFETY APRON	EACH	2
	2501.503	05015	15" CP PIPE CULVERT	LIN FT	74
29	2501.503	12018	18" CS PIPE CULVERT	LIN FT	10
	2501.503	24125	12" RC PIPE CULVERT DESIGN 3006 CLASS V	LIN FT	8
	2501.503	24155	15" RC PIPE CULVERT DESIGN 3006 CLASS V	LIN FT	280
	2501.503	24185	18" RC PIPE CULVERT DESIGN 3006 CLASS V	LIN FT	72
33	2501.602	47120	CLEAN PIPE CULVERT	EACH	2
18	2506.502	06000	CASTING ASSEMBLY	EACH	5
17	2506.503	00070	CONSTRUCT DRAINAGE STRUCTURE DESIGN G	LIN FT	3.4
17	2506.503	00080	CONSTRUCT DRAINAGE STRUCTURE DESIGN H	LIN FT	2.1
19	2506.602	06040	GROUT CATCH BASIN OR MANHOLE	EACH	5
	2506.602	06110	CLEAN OUT CATCH BASIN	EACH	7
	2521.618	00400	CONCRETE CURB RAMP WALK	SQ FT	620
	2531.503	02315	CONCRETE CURB AND GUTTER DESIGN B618	LIN FT	104
	2531.504	00060	6" CONCRETE DRIVEWAY PAVEMENT	SQ YD	193
	2531.618	00010	TRUNCATED DOMES	SQ FT	118
20	2540.602	00150	MAIL BOX SUPPORT	EACH	20
	2563.601	00001	TRAFFIC CONTROL SUPERVISOR	LUMP SUM	1
21,22	2563.601	00010	TRAFFIC CONTROL	LUMP SUM	1
23	2563.613	01100	PORTABLE CHANGEABLE MESSAGE SIGN	UNIT DAY	20
	2564.502	00213	INSTALL SIGN TYPE C	EACH	12
24	2573.502	00110	STORM DRAIN INLET PROTECTION	EACH	9
	2573.503	00023	SILT FENCE; TYPE MS	LIN FT	1085
	2573.503	00061	SEDIMENT CONTROL LOG TYPE WOOD FIBER	LIN FT	100
	2574.507	00100	COMMON TOPSOIL BORROW	CU YD	2523
25	2575.508	40003	HYDRAULIC REINFORCED FIBER MATRIX	POUND	745
26	2581.503	00010	REMOVABLE PREFORMED PAVEMENT MARKING TAPE	LIN FT	508
27	2582.503	10124	24" SOLID LINE PAINT	LIN FT	72
27	2582.503	30104	4" SOLID LINE MULTI-COMPONENT	LIN FT	29490
27	2582.503	30204	4" BROKEN LINE MULTI-COMPONENT	LIN FT	1180
27	2582.503	30404	4" DOUBLE SOLID LINE MULTI-COMPONENT	LIN FT	7484
28	2582.503	76124	24" SOLID LINE PREFORM THERMO GROUND IN	LIN FT	420
28	2582.518	04000	PAVEMENT MESSAGE PREFORM THERMOPLASTIC	SQ FT	123.6
28	2582.518	05000	CROSSWALK PAINT	SQ FT	162
28	2582.518	08020	CROSSWALK PREFORM THERMOPLASTIC GROUND IN	SQ FT	162

CONSTRUCTION NOTES


1	REFERENCE DETAILS (PAGE 8-9) FOR 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	ITEM USED TO MOVE EXCESS RECLAIM MATERIAL AT THE RECLAIM AREA LIMITS TO CREATE A SMOOTH TRANSITION BETWEEN THE PROPOSED AND EXISTING PAVEMENT AND FOR GRADE CORRECTION AREAS.
5	TO BE USED FOR DITCH GRADING AND FOR DRESSING DISTURBED AREAS AFTER CLEARING AND GRUBBING.
6	WATER TO BE USED FOR DUST CONTROL AS DIRECTED BY THE ENGINEER.
7	GRAVEL BASE FOR CONCRETE AND BITUMINOUS STREET APPROACHES AND DRIVEWAYS.
8	ITEM USED FOR PEDESTRIAN RAMP REPLACEMENT AREAS AND CURB PATCHES.
9	THIS WORK INCLUDES SPREADING, WATERING, COMPACTING, SHAPING, AND MAINTAINING THE BLENDED RECLAIMED MATERIAL TO THE SPECIFIC PROFILE AND CROSS SECTION.
10	ITEM USED TO HAUL EXCESS RECLAIM FROM TIE-IN POINTS AND REUSED ON SITE.
11	ITEM INCLUDES 7 TONS FOR EACH GRAVEL ENTRANCE AND GRAVEL STREET APPROACH.
12	TO BE USED FOR MILLING STREET APPROACHES AND/OR DETAIL MILLING AREAS AS IDENTIFIED IN THE PLAN.
13	ITEM FOR BITUMINOUS DRIVEWAYS. DRIVEWAYS SHALL BE PAVED AFTER MAINLINE AND BEFORE FINAL STRIPING.
14	ITEM INCLUDES BITUMINOUS PATCHING AROUND NEW CURB, STORM STRUCTURE REPAIRS, AND ANY POTHOLES.
15	CONTRACTOR IS RESPONSIBLE FOR CONTACTING PROPERTY OWNER 48 HOURS BEFORE STARTING OPERATION.
16	STREET APPROACHES SHALL BE PAVED AFTER MAINLINE, AND BEFORE FINAL STRIPING
17	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.
18	ITEM INCLUDES FULL REPLACEMENT OF CASTING ADJUSTMENT RINGS. SEE STORM TABULATIONS FOR RING HEIGHTS. CASTINGS IN ROADWAY SHALL BE INSTALLED BETWEEN BASE AND WEAR LIFT PAVING
19	ITEM INCLUDES GROUTING OF INVERTS, DOGHOUSES, RINGS, STRUCTURES AND CASTINGS AS DIRECTED BY PLAN AND ENGINEER. SEE DRAINAGE TAB, PAGE 3.
20	MAILBOXES ARE TO BE INSTALLED AT THE EXISTING MAILBOX LOCATION OR AS DIRECTED BY THE LOCAL POSTAL AUTHORITY. CONTRACTOR IS RESPONSIBLE FOR CONTACTING. MAILBOX REMOVAL AND ALL MATERIALS ARE INCIDENTAL TO INSTALLATION.
21	CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN TEMPORARY SIGNAGE WHENEVER EXISTING SIGNAGE IS REMOVED. TEMPORARY SIGNAGE SHALL BE INCIDENTAL TO TRAFFIC CONTROL.
22	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.
23	2 MESSAGE BOARDS, ONE ON THE EACH END OF PROJECT, SHALL BE INSTALLED 10 DAYS PRIOR TO ANY CONSTRUCTION; REFERENCE STRIPING PLAN FOR DETAILS.
24	ALL DRAINAGE STRUCTURES AFFECTED BY THIS PROJECT MUST HAVE INLET PROTECTION.
25	TYPE 3 FERTILIZER AND TYPE 25-121 SEED ARE INCIDENTAL TO THIS ITEM. SEE "BASIS OF PLANNED QUANTITIES" FOR APPLICATION RATES.
26	CENTERLINE AND LANE DESIGNATION SKIPS TO BE APPLIED AS SOON AS POSSIBLE ON MILLED SURFACE AND EACH NEW LIFT OF PAVEMENT; SKIPS MUST BE INPLACE BEFORE THE CONTRACTOR LEAVES FOR THE DAY. CONTRACTOR IS TO REMOVE PRIOR TO FINAL STRIPING.
27	FINAL STRIPING SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLETION OF MAINLINE WEAR COURSE PAVING. CANNOT BE INSTALLED SOONER THAN 48 HOURS.
28	INCLUDES ALL THERMOPLASTIC STOP BARS, GORE AREA HATCHING, CROSSWALKS, LANE DESIGNATION ARROWS, AND PAVEMENT MESSAGES.
29	ITEM TO BE CONNECTED TO EXISTING CULVERT PIPE. CLAMP AND CLAMP INSTALLATION INCIDENTAL.
30	ITEM USED FOR CONSTRUCTION OF TURN LANE AND BYPASS LANE. ITEMS INCLUDED IN THE TURN & BYPASS LANE BY THE EACH ARE - COMMON EXCAVATION, SELECT GRANULAR BORROW, TOPSOIL, AGG BASE CL-5, SHAPING OF SUBGRADE AND AGGREGATE BASE ARE INCIDENTAL TO CONSTRUCT TURN LANE ITEM. SEE TAB ON PAGE 3.
31	ITEM USED FOR SIGNS IN THE NEW RIGHT TURN LANE AND BYPASS LANE AREAS.
32	ITEM INCLUDES USE OF NO. 4 SIZED EPOXY COATED REINFORCEMENT BAR AND TO BE USED IN CONCRETE DRIVEWAYS WITH CULVERT REPLACEMENTS. REFER TO STD PLATE 1070N FOR BAR PLACEMENT.
33	ITEM USED FOR DEBRIS FILLED CULVERTS AFFECTED DURING CONSTRUCTION AS DIRECTED BY THE ENGINEER.
34	ITEM USED FOR CLEARING TREES IN TURN LANE CONSTRUCTION AREAS.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\24-01-00\CR_59_(CSAH 20-CSAH 58)\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: 12-08-2023 LICENSE NO. 26511

DRAWN BY DBK DATE 12/05/23

DESIGN BY DBK DATE 12/05/23

CHECKED BY CO DATE 12/05/23



ANOKA COUNTY

HIGHWAY DEPT.

COUNTY PROJECT 24-17-59

STATEMENT OF ESTIMATED QUANTITIES

Sheet 2 of 26 Sheets

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

MNDOT STANDARD PLATES	
PLATE NO.	DESCRIPTION
3000M	REINFORCED CONCRETE PIPE (6 SHEETS)
3006H	GASKET JOINT FOR R.C. PIPE (2 SHEETS)
3007F	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3022C	PRECAST CONCRETE SAFETY APRON (3 SHEETS)
3040F	CORRUGATED METAL PIPE CULVERT (STANDARD 2-2/3" X 1/2" CORRUGATION)
3123J	METAL APRON FOR C.S. PIPE
3124B	METAL APRON CONNECTION
3128H	METAL SAFETY APRON & GRATE (2 SHEETS)
3129A	METAL APRON FOR CORRUGATED POLYETHYLENE PIPE (USE AT ENTRANCES AND DRIVEWAYS)
3146C	ANTI-SEEPAGE DIAPHRAGM (FOR CMP AND CMP-A)
3221D	CORRUGATED STEEL PIPE COUPLING BAND (3 SHEETS)
4006L	MANHOLE OR CATCH BASIN PRECAST - DESIGNS G AND H
4011E	PRECAST CONCRETE BASE
4020J	MANHOLE OR CATCH BASIN (FOR USE WITH OR WITHOUT TRAFFIC LOADS) (2)
4026B	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4108F	ADJUSTING RINGS FOR CATCH BASINS AND MANHOLES
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)
7107I	ENTRANCE NOSE (URBAN DESIGN)
7111J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB AND GUTTER)
7113A	CONCRETE APPROACH NOSE DETAIL
8000K	TEMPORARY CHANNELIZERS (3 SHEETS)
9350B	MAILBOX SUPPORT - SWING-AWAY TYPE

BITUMINOUS STREET SUMMARY		
LOCATION	BITUMINOUS	NOTES
	2360 TYPE SP 12.5 WEAR (4,C)	
	TON	
163RD LN E	21	[1]
163RD LN W	38	[1]
164TH LN	42	[1]
166TH AVE	35	[1]
167TH AVE	32	[1]
168TH LN	43	[1]
169TH LN	38	[1]
170TH LN	30	[1]
172ND LN	33	[1]
174TH LN	44	[1]
175TH LN	40	[1]
176TH LN W	27	[1]
176TH LN E	40	[1]
177TH LN W	28	[1]
177TH LN E	30	[1]
179TH LN	30	[1]
180TH LN	31	[1]
PARK ENT	26	[1]
PROJECT TOTAL	609	

BITUMINOUS SUMMARY NOTES:
 [1] QUANTITY ESTIMATED FOR 2 LIFTS

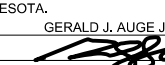
RIGHT TURN LANE TAB						
STREET	STATION RANGE	RTL / BYPASS	COMMON EXCAVATION (CU YDS)	GRANULAR BORROW (CV) (CU YDS)	TOPSOIL BORROW (LV) (CU YDS)	CLASS 5 (TON)
164TH LN NW	33+81 - 38+61	RTL	248	719	101	106
166TH AVE NW	43+69 - 48+49	RTL	300	627	74	106
168TH LN NW	59+24 - 62+91	RTL	179	268	36	82
170TH LN NW	67+62 - 72+42	RTL	207	379	56	103
172ND LN NW	77+58 - 82+38	RTL	158	337	34	106
174TH LN NW	95+38 - 100+18	RTL	185	498	58	106
175TH LN NW	98+69 - 103+49	RTL	223	639	94	106
177TH LN NW (EAST)	113+26 - 118+06	RTL	196	641	76	106
177TH LN NW (WEST)	118+33 - 123+13	RTL	179	472	51	106
179TH AVE NW	127+45 - 131+60	RTL	204	439	62	106
180TH AVE NW	126+80 - 131+60	RTL	171	400	57	92
TOTALS:			2250	5420	699	1128

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	
	12/21/2023					4:53:09 PM

NAME: P:\24-01-00\CR_59_(CSAH 20-CSAH 58)\Base\Proposed\SEQ.dgn

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 **ANOKA COUNTY
HIGHWAY DEPT.**

COUNTY PROJECT 24-17-59

TABULATIONS

Sheet 3 of 26 Sheets

STORM DRAINAGE TAB							
NUMBER	TYPE	ACTION	NEW CASTING TYPE	FURNISH AND INSTALL CASTING ASSEMBLY	RING HEIGHT (INCIDENTAL)	GROUT CATCH BASIN OR MANHOLE	NOTES
				EACH	LIN FT	EACH	
100	CB	RERING	TYPE C	1	0.6	1	GROUT DOGHOUSE/CLEAN SUMP
101	CB	RERING	TYPE C	1	0.4	1	GROUT RINGS & DOGHOUSE/CLEAN SUMP
102	CB	RERING	TYPE C	1	0.4	1	CLEAN SUMP
103	CB	GROUT				1	
104	CB	GROUT				1	GROUT RINGS
105	CB	OKAY					CLEAN SUMP
106	CB	OKAY					CLEAN SUMP
107	CB	OKAY					CLEAN SUMP
108	CB	OKAY					CLEAN SUMP
200	MH	CONSTRUCT					SEE CULVERT TAB
201	MH	CONSTRUCT					SEE CULVERT TAB
202	MH	OKAY					
TOTALS				3	1.4	5	


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	CASTING COVER STAMPED "STORM SEWER" (NEENAH R-1733 WITH LID 301-CP)	2
C	NEENAH R-3250-DVSP	V	YES	NEENAH R-3250-DVSP		3
ALL CASTING HEIGHTS 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						

CULVERT REPLACEMENT TAB																		
STA	TYPE	INSTALL OFFSET (+/-)	FURNISH AND INSTALL CASTING	REMOVE PIPE	INSTALL 18" CMP	INSTALL 15 IN HDEP PIPE	INSTALL 12 IN CONC PIPE*	INSTALL 15 IN CONC PIPE*	INSTALL 18 IN CONC PIPE*	CONSTRUCT DRAINAGE STRUCTURE DESIGN H	CONSTRUCT DRAINAGE STRUCTURE DESIGN G	15" CS SAFETY APRON	18" CS SAFETY APRON	RC SAFETY APRON (EACH)			NOTES	
			EACH	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	EACH	EACH	12"	15"		18"
33+99.48	MH	-34.56	1						16		3.4						1	SALVAGE SAFETY APRON
34+15.04	APRON	-42.59		30.4		30						1						
38+36.75	APRON	-37.06										1						
38+66.75	APRON	-37.05										1						
44+01.44	MH	-27.63	1				15			2.10								T.C. 909.43 (REQUIRES 4" CASTING HEIGHT)
44+14.70	APRON	-35.17											1					SALVAGE SAFETY APRON
72+11.60	APRON	+38.35		82.0					80									
72+91.40	APRON	+32.69																1
82+08.11	APRON	+36.36		75.2					86									1
82+93.92	APRON	+30.64																1
94+85.63	APRON	-32.58		70.2					78									1
95+63.38	APRON	-38.76																1
99+79.36	APRON	-42.5		25.6		43.5						1						
100+22.84	APRON	-41.11										1						
101+95.54	EXTEND	+42.72			10								1					
117+92.29	APRON	-36.62		46.0					62									1
118+53.51	APRON	-46.44																1
127+03.37	APRON	-34.33		50.0					55									1
127+64.60	APRON	-44.06																1
131+40.31	APRON	+41.96		48.7					62									1
132+02.13	APRON	+37.15																1
TOTALS			2	428	10	74	15	343	96	2.1	3.4	4	1	1	9	3		
INSTALL CULVERT INVERTS TO EXISTING CULVERT INVERT DEPTH. FIELD VERIFY DEPTHS.																		
*RCP PIPE INSTALL LENGTHS ARE FROM END OF APRON INV TO END OF APRON INV (IF APRONS ON BOTH SIDES). PIPES WITH ONE APRON ARE FROM APRON INV TO END OF PIPE INV.																		
CONTRACTOR TO FIELD VERIFY ALL PIPE AND APRON SIZES.																		

NO	DATE	BY	CKD	APPR	REVISION	12/21/2023	4:53:05 PM
NAME: P:\24-01-00\CR_59_(CSAH 20-CSAH 58)\Base\Proposed\SEQ.dgn							

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SIGNATURE: 

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CHECKED BY CO DATE 12/05/23



ANOKA COUNTY
HIGHWAY DEPT.

COUNTY PROJECT 24-17-59

STORM AND CULVERT TABULATIONS

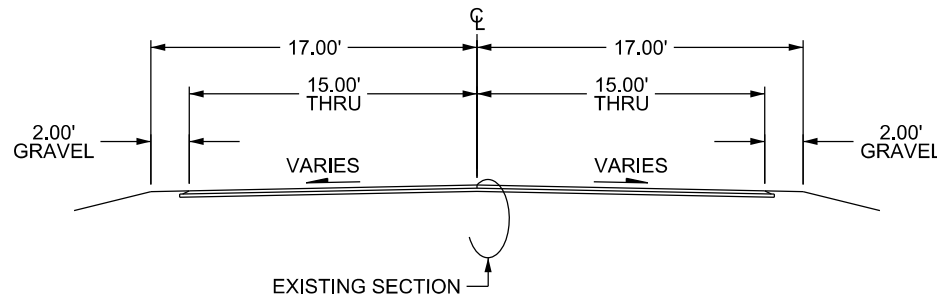
Sheet 4 of 26 Sheets

CR 59 - VERDIN ST NW

EXISTING SECTION

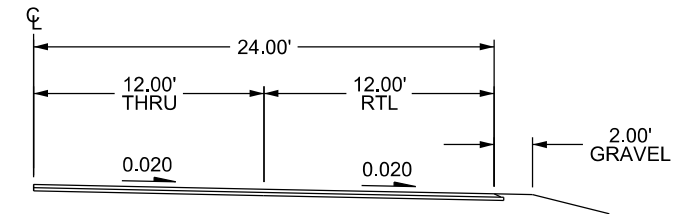
11+20.00 - 51+27.00

74+43.00 - 138+10.00



LNB RIGHT TURN LANE

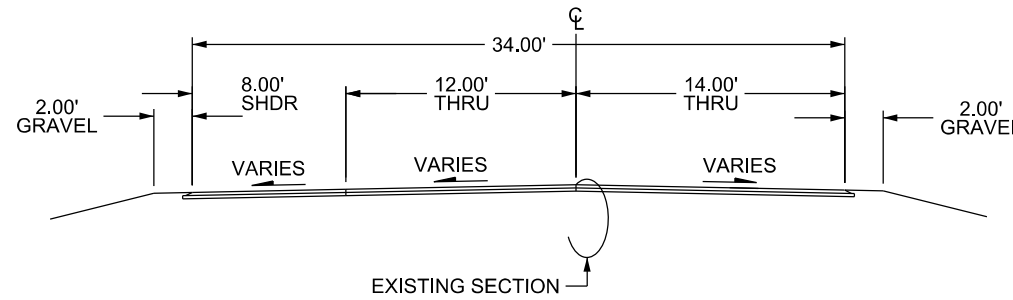
22+42.00 - 27+34.00



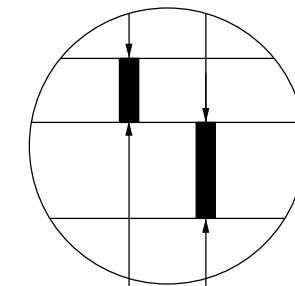
CR 59 - VERDIN ST NW

EXISTING SECTION

51+27.00 - 52+56.00



EXISTING SECTION



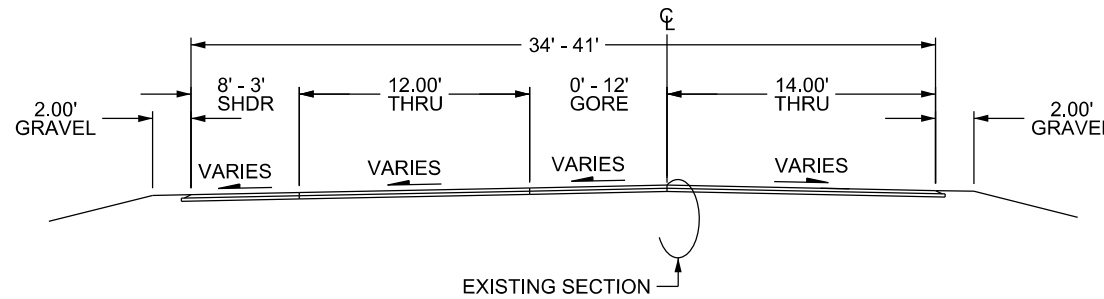
8-8.5" EXISTING BITUMINOUS

EXISTING AGGREGATE BASE

CR 59 - VERDIN ST NW

EXISTING SECTION

52+56.00 - 60+16.00



NO	DATE	BY	CKD	APPR	REVISION	TIME
	12/21/2023					4:53:19 PM

NAME: P:\24-01-00\CR_59_(CSAH 20-CSAH 58)\Base\Proposed\Typicals.dgn

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**ANOKA COUNTY
HIGHWAY DEPT.**

COUNTY PROJECT 24-17-59

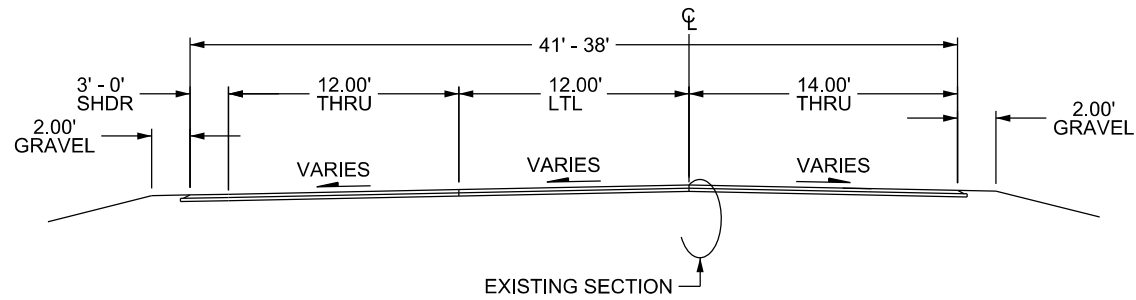
TYPICAL SECTIONS

Sheet 5 of 26 Sheets

CR 59 - VERDIN ST NW

EXISTING SECTION

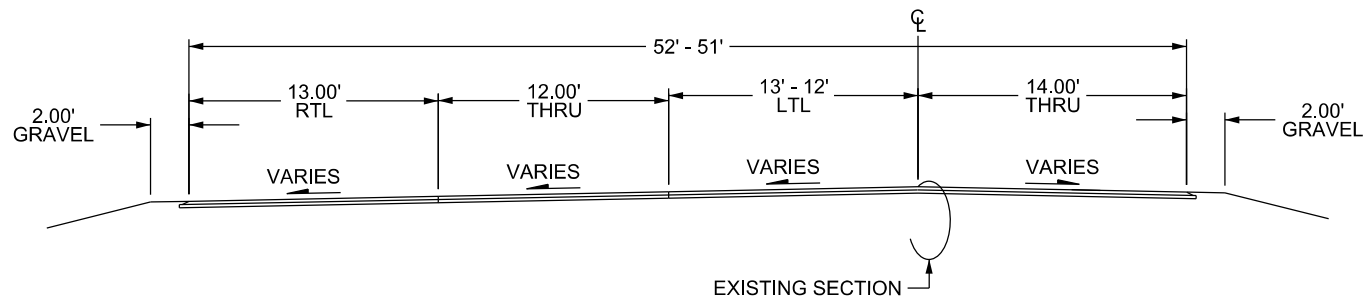
60+16.00 - 63+75.00



CR 59 - VERDIN ST NW

EXISTING SECTION

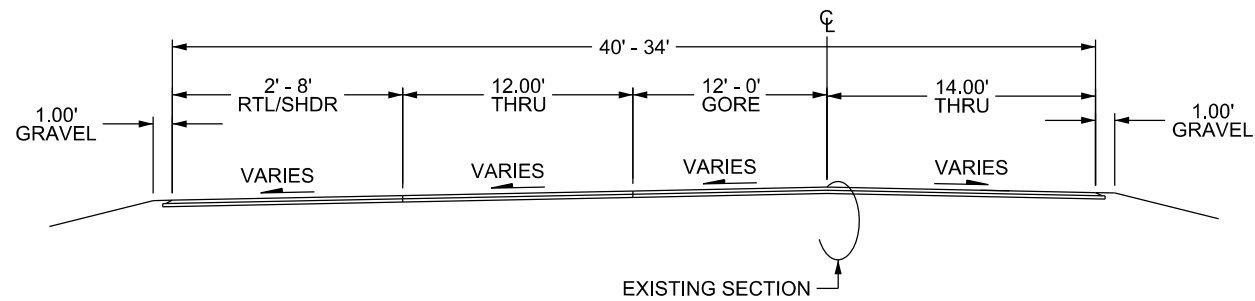
63+75.00 - 71+71.00



CR 59 - VERDIN ST NW

EXISTING SECTION

71+71.00 - 74+43.00



NO	DATE	BY	CKD	APPR	REVISION	

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ANOKA COUNTY
HIGHWAY DEPT.

COUNTY PROJECT 24-17-59

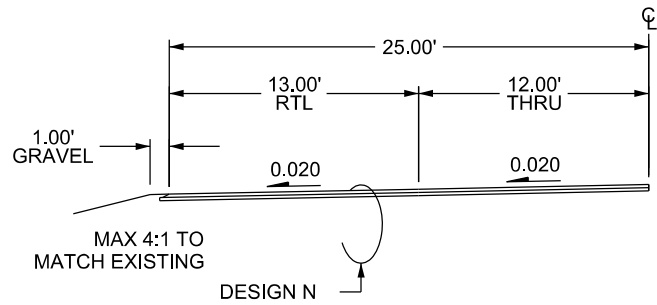
TYPICAL SECTIONS

Sheet 6 of 26 Sheets

SPH005

CONSTRUCT LSB RTL

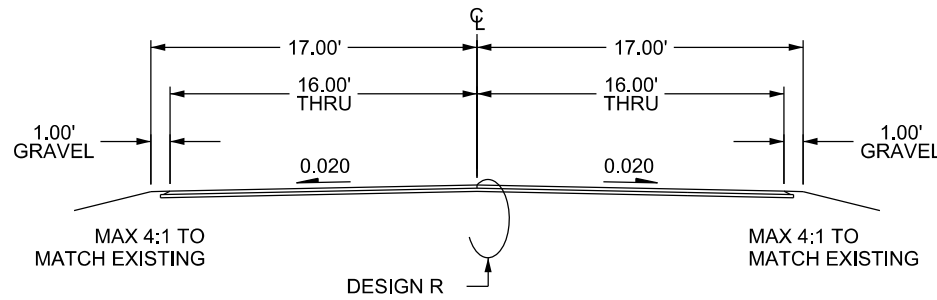
33+71.00 - 38+61.00
43+69.00 - 48+49.00
95+38.00 - 100+18.00
118+33.00 - 123+13.00
127+45.00 - 131+60.00



CR 59 - VERDIN ST NW

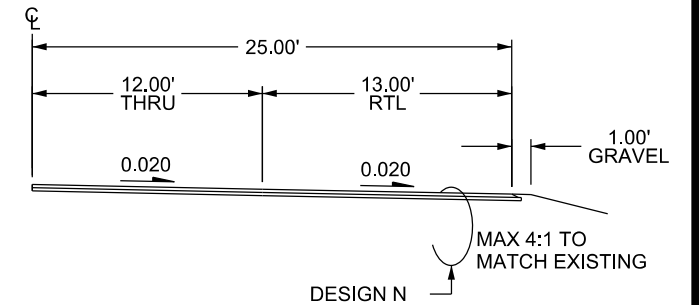
PROPOSED SECTION

11+20.00 - 51+27.00
74+43.00 - 138+10.00



CONSTRUCT LNB RTL

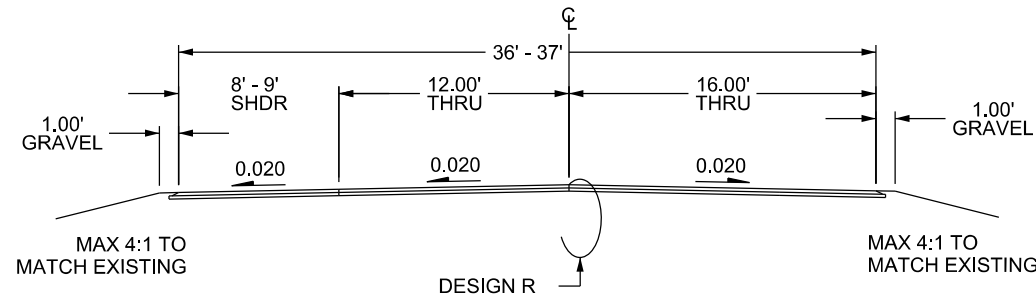
22+42.00 - 27+34.00*
77+58.00 - 82+38.00
98+69.00 - 103+49.00
113+26.00 - 118+06.00
126+80.00 - 131+60.00



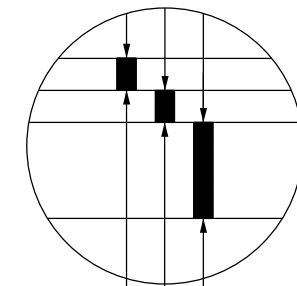
CR 59 - VERDIN ST NW

PROPOSED SECTION

51+27.00 - 52+56.00



DESIGN N
NEW RTL SECTION

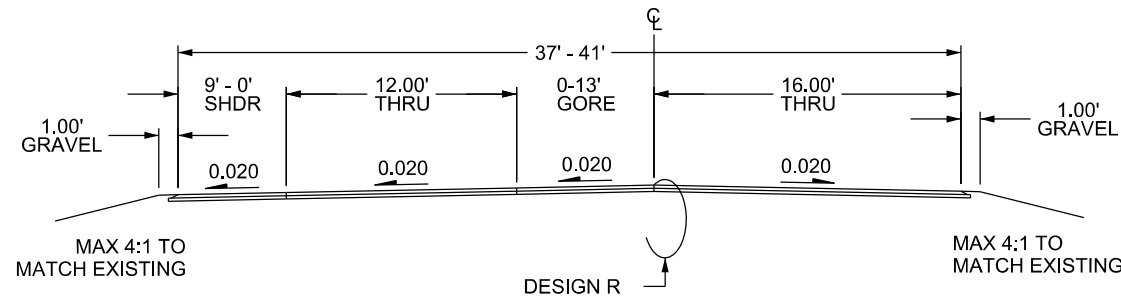


2.0" BITUMINOUS WEAR (SPWEB440C)
2.0" BITUMINOUS WEAR (SPWEB440C)
6" AGGREGATE BASE, CLASS 5

CR 59 - VERDIN ST NW

PROPOSED SECTION

52+56.00 - 60+16.00



* EXISTING TURN LANE

NO	DATE	BY	CKD	APPR	REVISION	12/21/2023	4:53:20 PM
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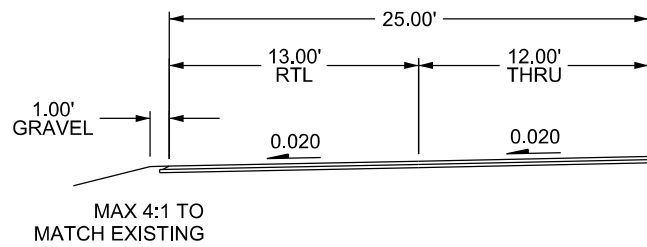
ANOKA COUNTY
HIGHWAY DEPT.

COUNTY PROJECT 24-17-59

TYPICAL SECTIONS
 Sheet 7 of 26 Sheets

CONSTRUCT LSB RTL

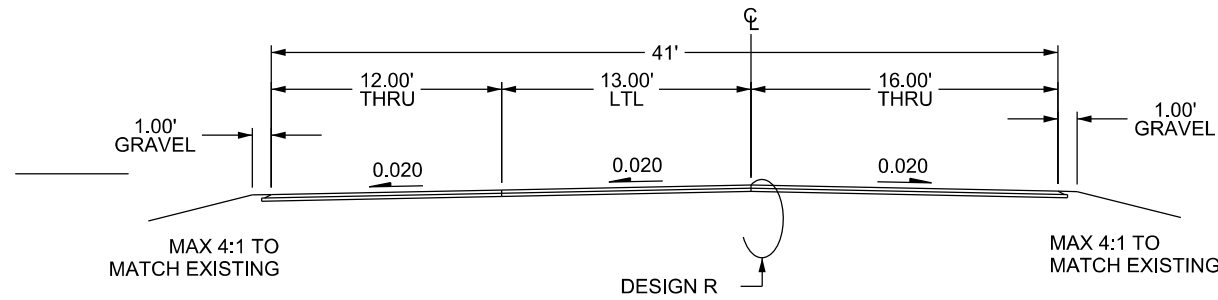
59+24.00 - 62+91.00
63+75.00 - 71+71.00*



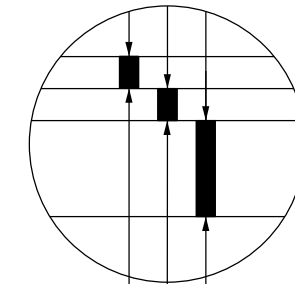
CR 59 - VERDIN ST NW

PROPOSED SECTION

60+16.00 - 63+75.00



DESIGN R
RECLAIM SECTION

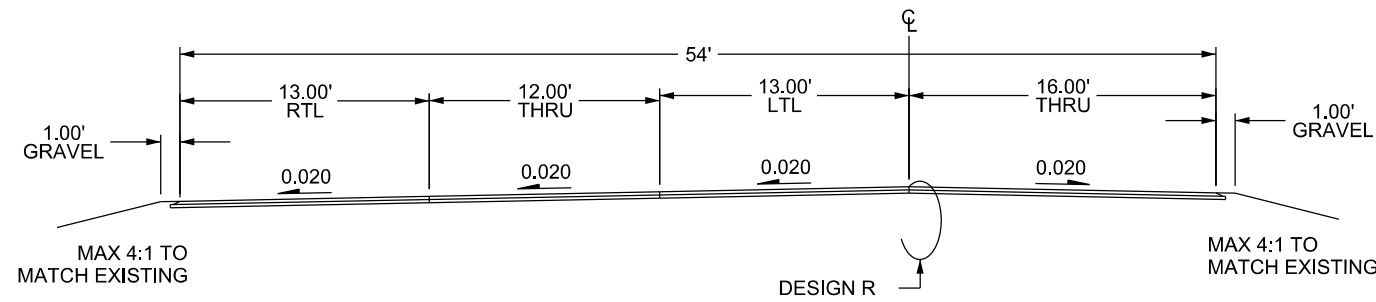


2.0" BITUMINOUS WEAR(SPWEB440C)
2.0" BITUMINOUS WEAR(SPWEB440C)
RECLAIMED BITUMINOUS

CR 59 - VERDIN ST NW

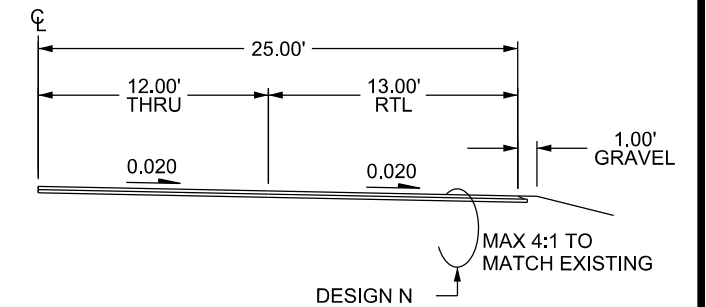
PROPOSED SECTION

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CONSTRUCT LNB RTL

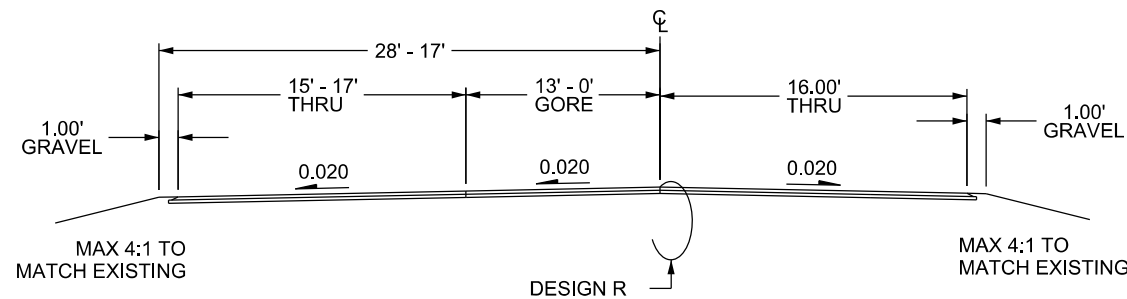
67+62.00 - 72+42.00



CR 59 - VERDIN ST NW

PROPOSED SECTION

71+71.00 - 74+43.00



* EXISTING TURN LANE

NO	DATE	BY	CKD	APPR	REVISION	TIME
	12/21/2023					4:53:20 PM

NAME: P:\24-01-00\CR_59_(CSAH 20-CSAH 58)\Base\Proposed\Typicals.dgn

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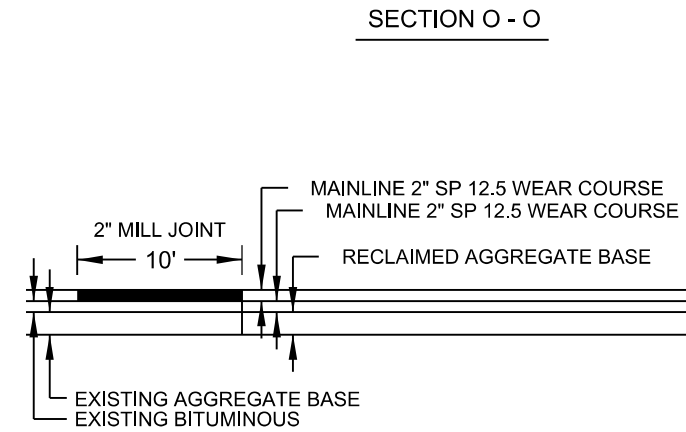
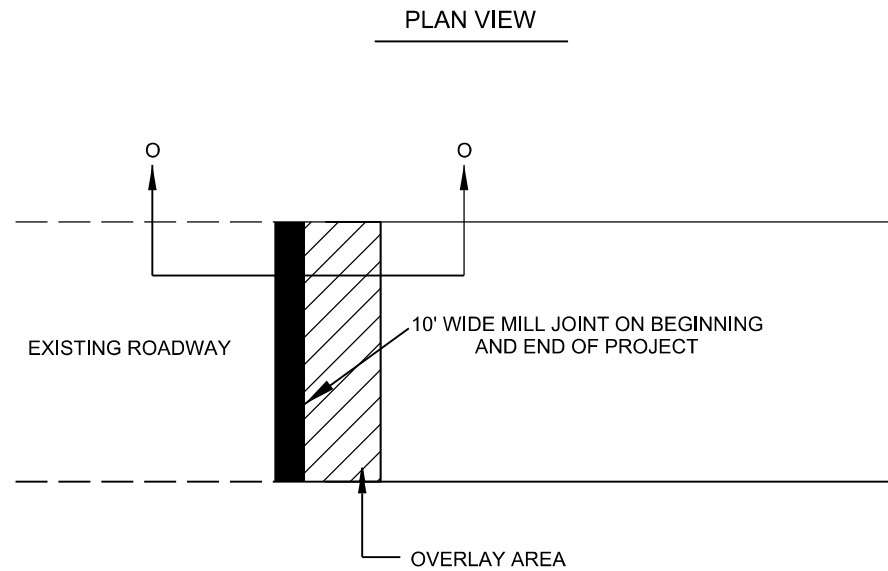
ANOKA COUNTY
HIGHWAY DEPT.

COUNTY PROJECT 24-17-59

TYPICAL SECTIONS

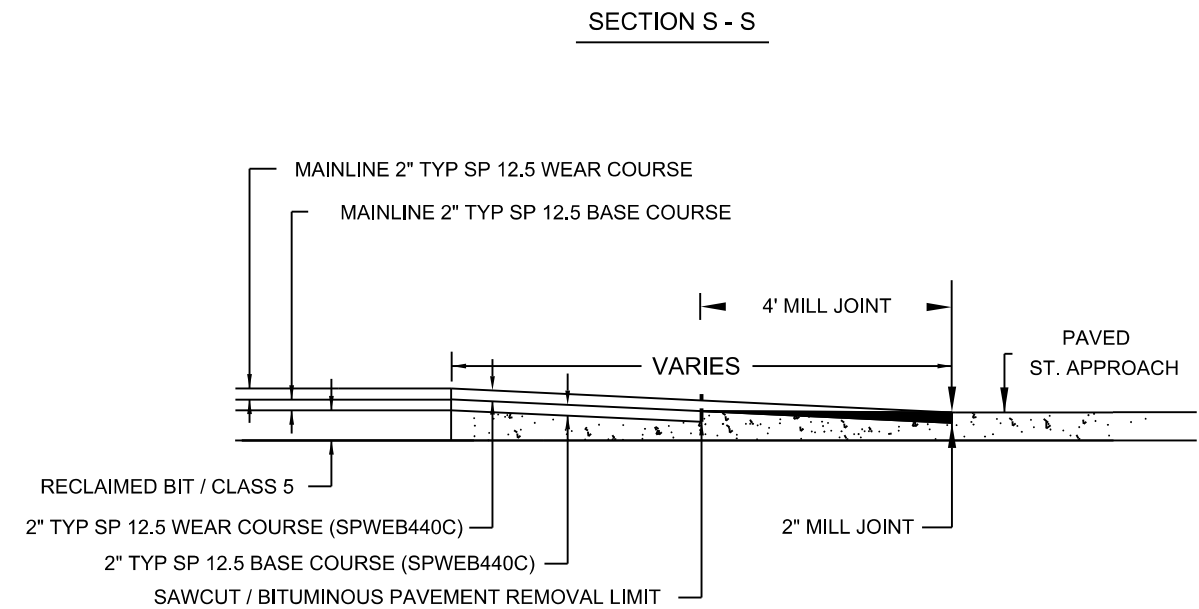
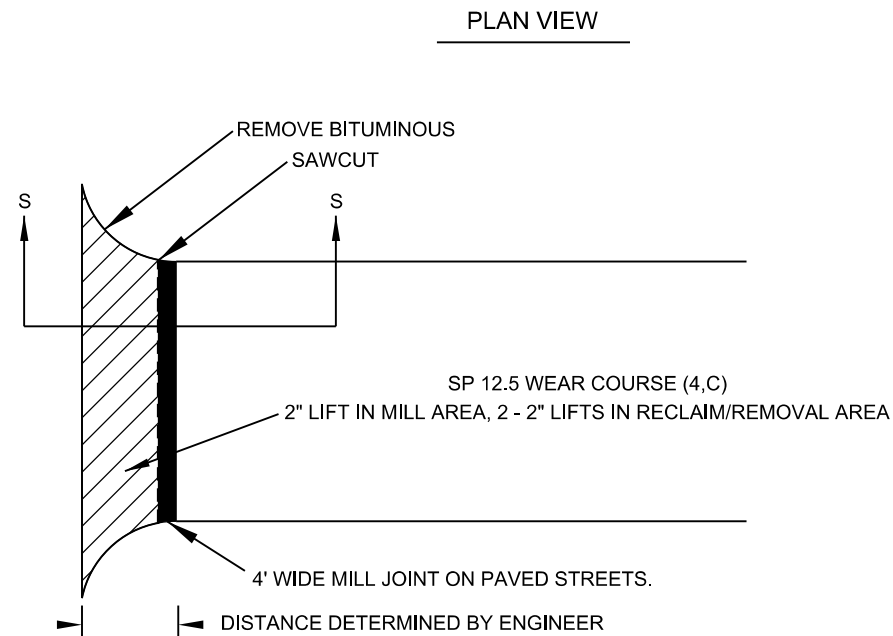
Sheet 8 of 26 Sheets

MAINLINE JOINT DETAIL (RECLAIM)



STREET APPROACH DETAIL (RECLAIM)

BITUMINOUS STREET



NO	DATE	BY	CKD	APPR	REVISION	DATE	TIME
	12/21/2023						4:53:26 PM

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ANOKA COUNTY

HIGHWAY DEPT.

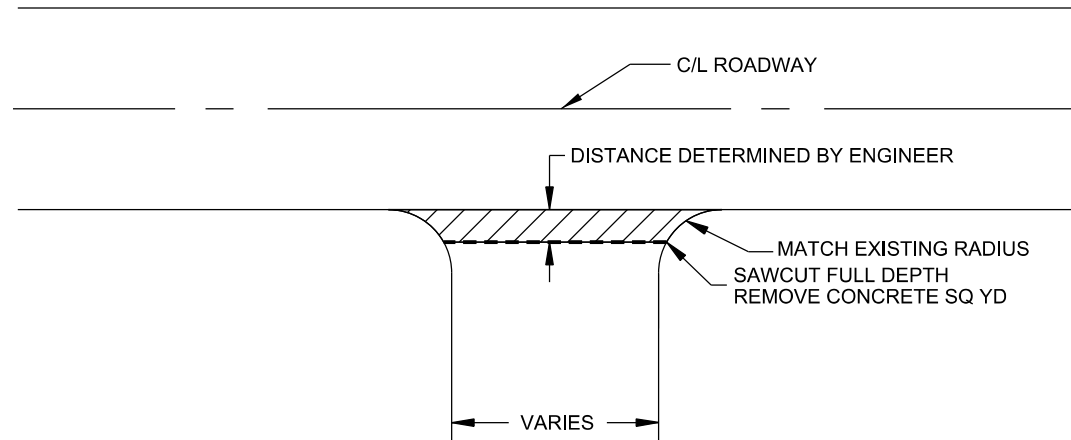
COUNTY PROJECT 24-17-59

DETAILS

Sheet 9 of 26 Sheets

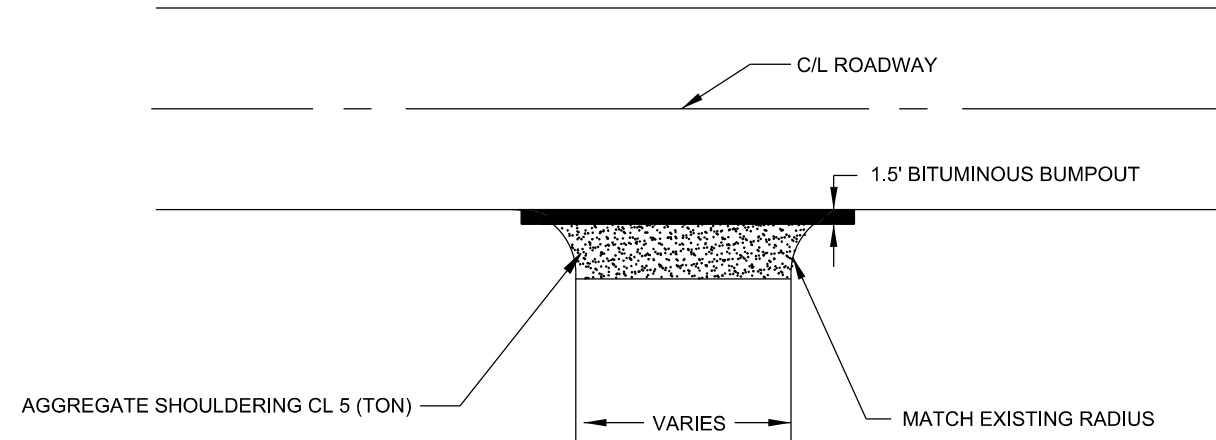
DRIVEWAY DETAIL

CONCRETE DRIVEWAY



DRIVEWAY DETAIL

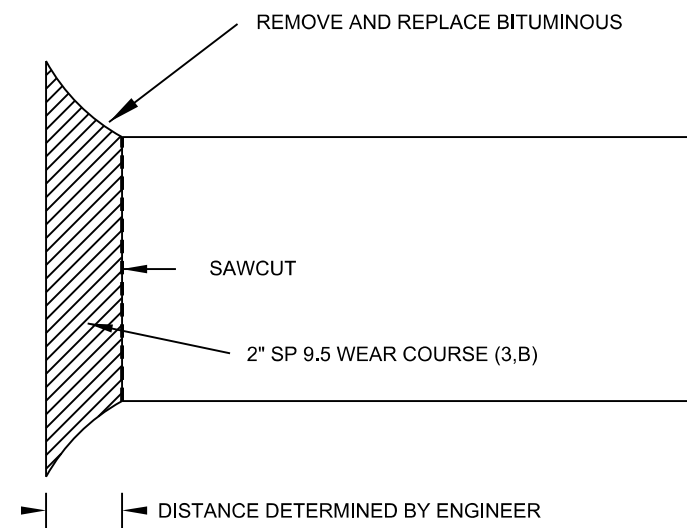
GRAVEL / FIELD ENTRANCE



RECLAIM AREA - DRIVEWAY DETAIL

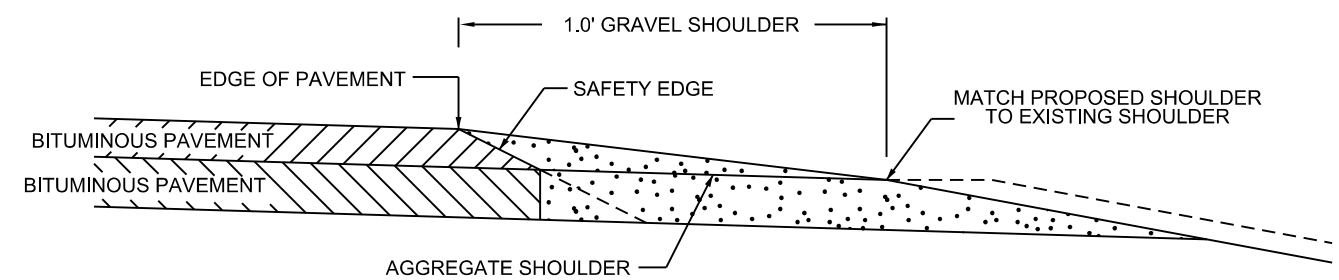
BITUMINOUS

PLAN VIEW



SHOULDER DETAIL

BITUMINOUS SAFETY EDGE
GRAVEL SHOULDER



SAFETY EDGE TO BE USED IN ALL NON-CURB AREAS ON SHOULDER.

OPTIONAL DESIGN EXTENDS SAFETY EDGE DEEPER THAN 6" AND WIDER THAN 10.5". SEE SPECIAL PROVISIONS.

NO	DATE	BY	CKD	APPR	REVISION	DATE	TIME
						12/21/2023	4:53:26 PM

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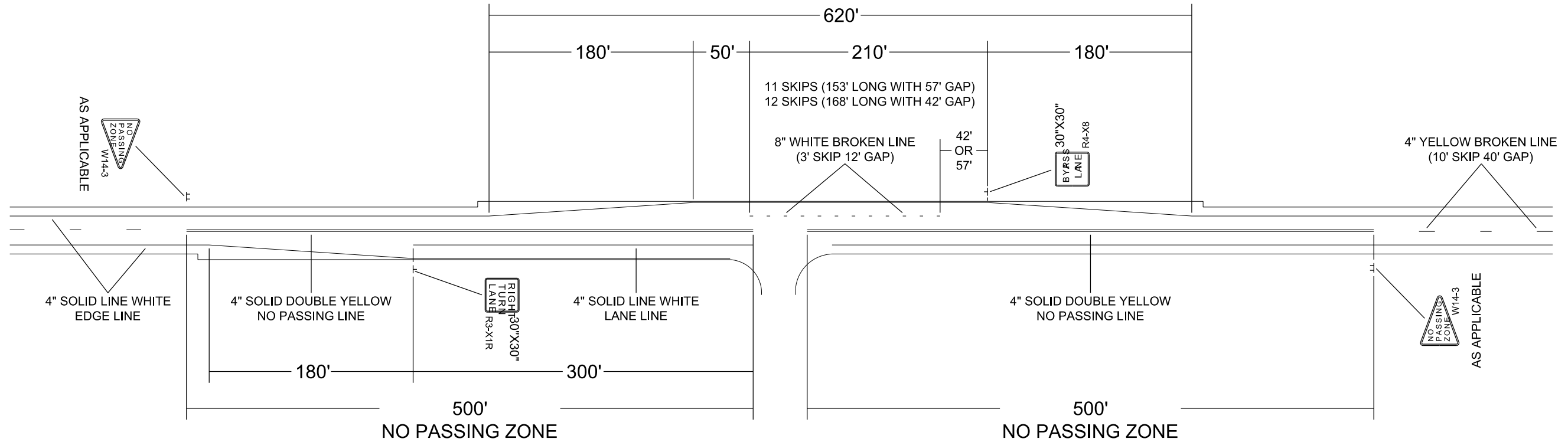
ANOKA COUNTY
HIGHWAY DEPT.

COUNTY PROJECT 24-17-59

DETAILS
 Sheet 10 of 26 Sheets

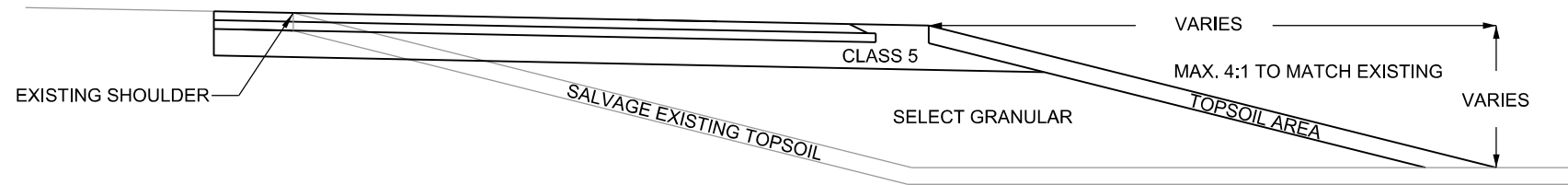
RIGHT TURN AND BYPASS LANE

GENERAL LAYOUT PLAN VIEW



RIGHT TURN AND BYPASS LANE

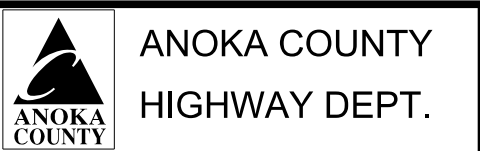
SECTION T - T



NO	DATE	BY	CKD	APPR	REVISION	12/21/2023	4:53:26 PM
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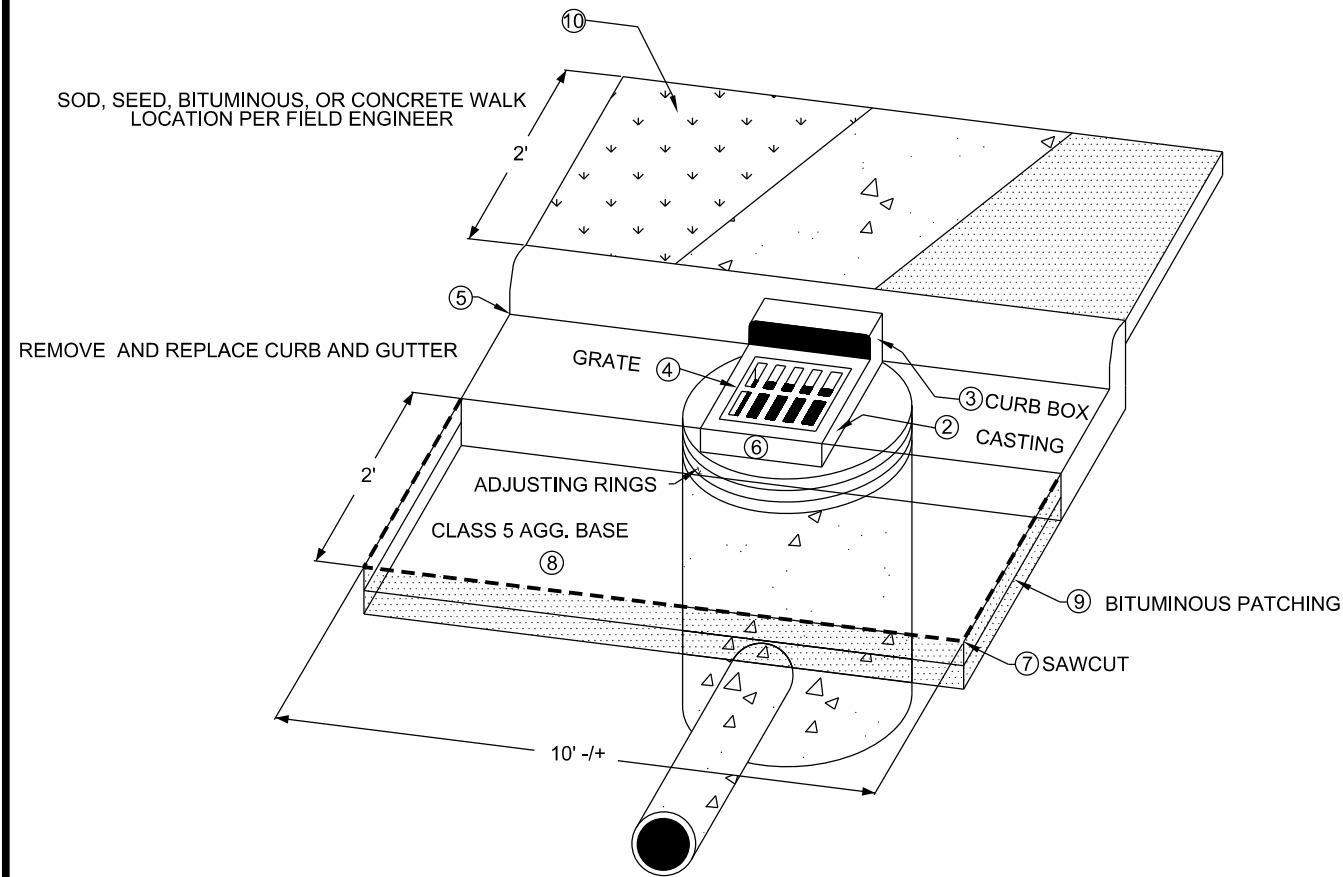


COUNTY PROJECT 24-17-59

DETAILS
 Sheet 11 of 26 Sheets

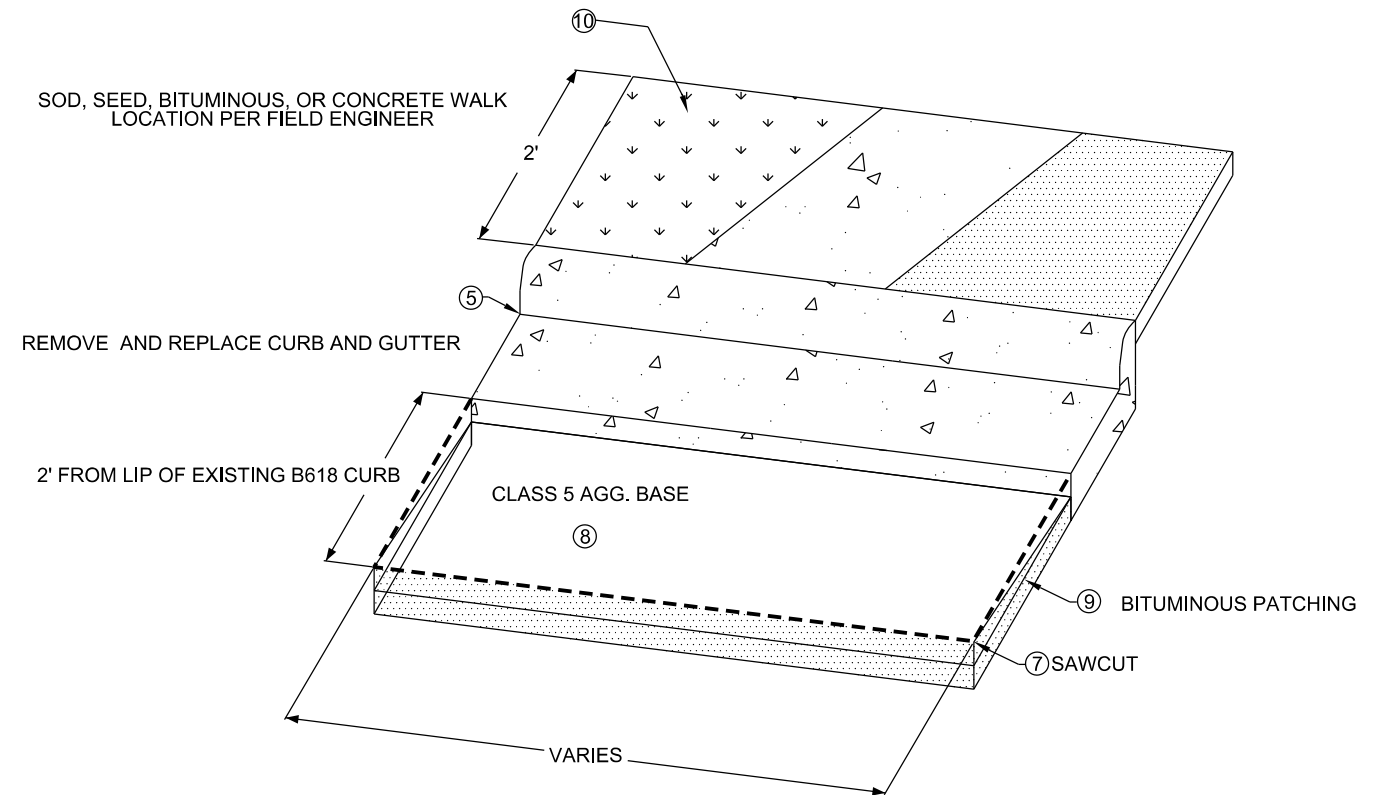
CATCH BASIN DETAIL

SEE STRUCTURE TAB FOR LOCATION
(PAGE 3)



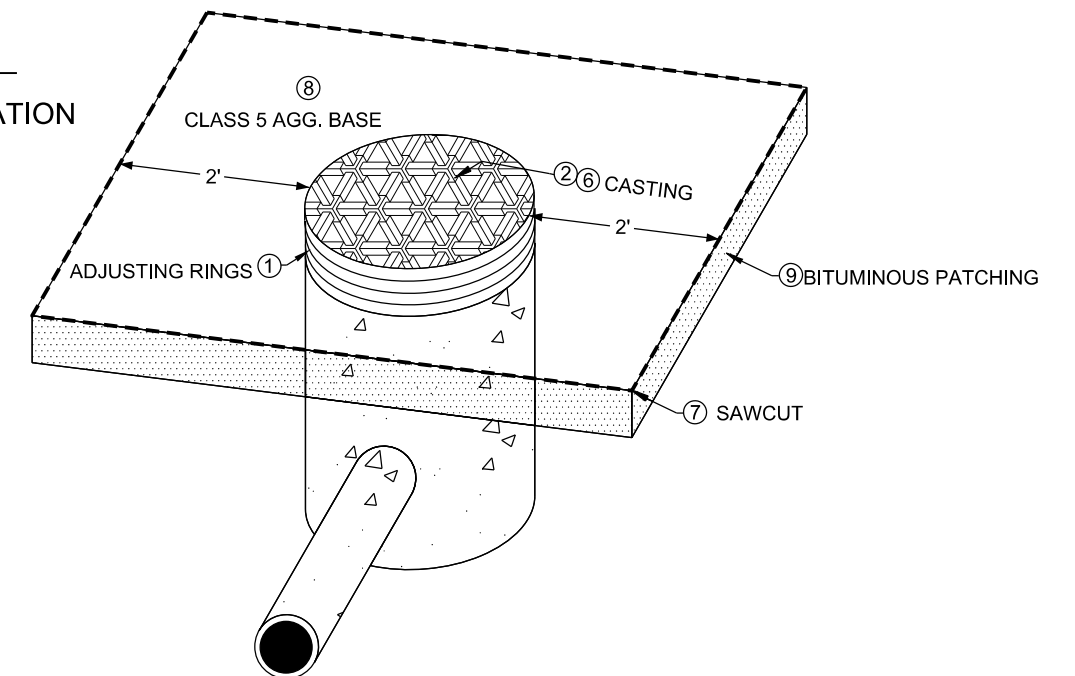
NEW CURB DETAIL

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	12/21/2023	4:53:27 PM
NAME: P:\24-01-00\CR_59_(CSAH 20-CSAH 58)\Base\Proposed\Details.dgn							

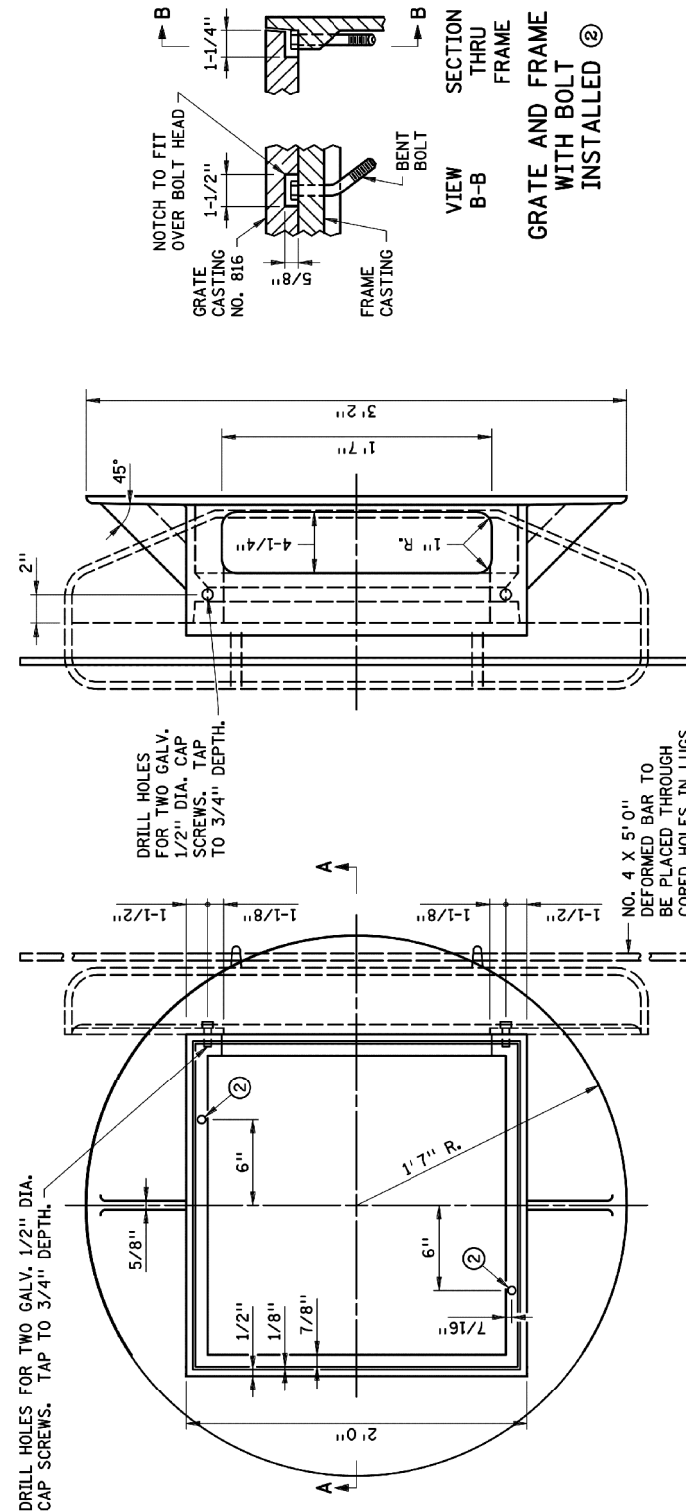
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ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 24-17-59

DETAILS
Sheet 12 of 26 Sheets

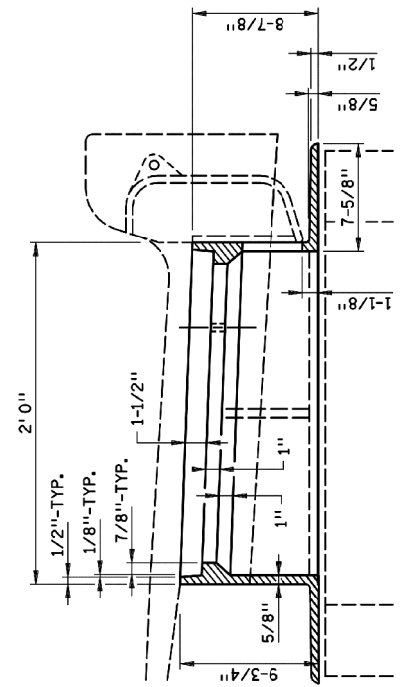


END VIEW

TOP VIEW

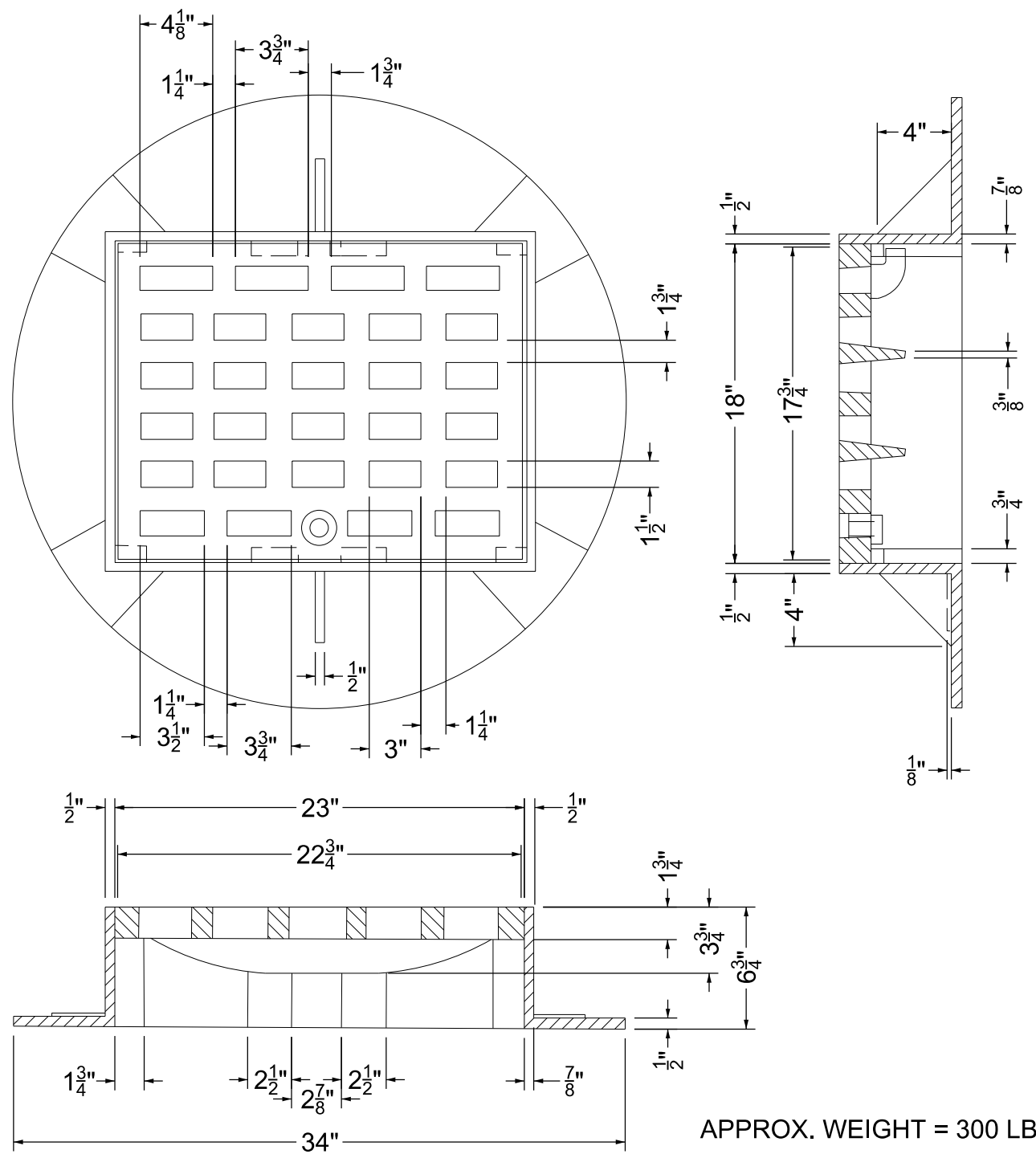
CASTINGS USED FOR ASSEMBLY
 GRATE NO. 816 (MNDOT STD PLATE 4154B)
 CURB BOX ① NO. 823A (MNDOT STD PLATE 4160) OR

NOTES:
 USE 1/4" FILLETS IN ALL CORNERS. SEE MNDOT STANDARD PLATE 7111 FOR INSTALLATION REQUIREMENTS.
 ① APPLIES TO DESIGN B OR V CURB AND CURB AND GUTTER.
 ② AT LOCATIONS INDICATED IN TOP VIEW, PROVIDE 9/16" DIA. HOLES WHEN GRATE NO. 816 (MNDOT STD PLATE 4154) IS USED WITH THIS FRAME. FIELD PLACE 1/2" DIA X 4" LONG GALV BOLT IN UP STREAM SIDE AND BENT UNDERSIDE TO PREVENT REMOVAL. THIS WILL PREVENT GRATE NO. 816 (MNDOT STD PLATE 4154) FROM BEING PLACED IN WRONG AND NOT BEING BICYCLE SAFE



GRATE FRAME CASTING TYPE C & D

FRAME RING AND CASTING TYPE A



NO	DATE	BY	CKD	APPR	REVISION	
	12/21/2023					4:53:27 PM

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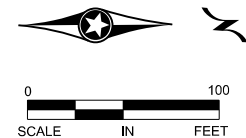
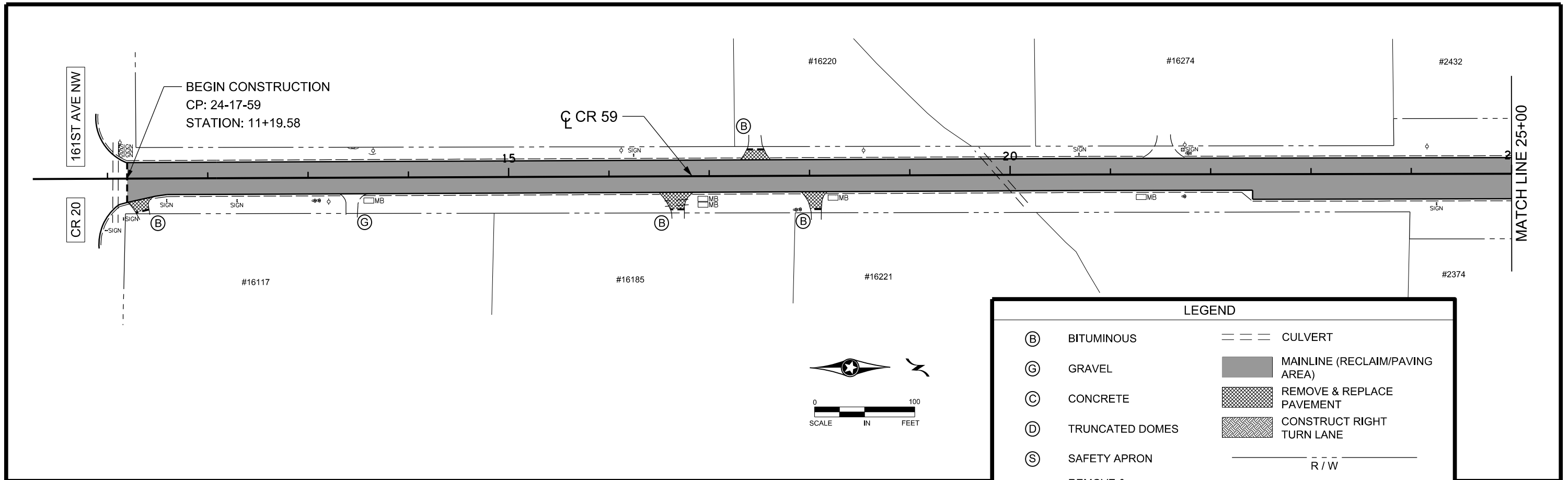
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ANOKA COUNTY HIGHWAY DEPT.

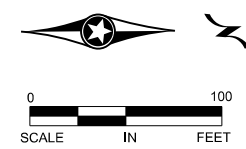
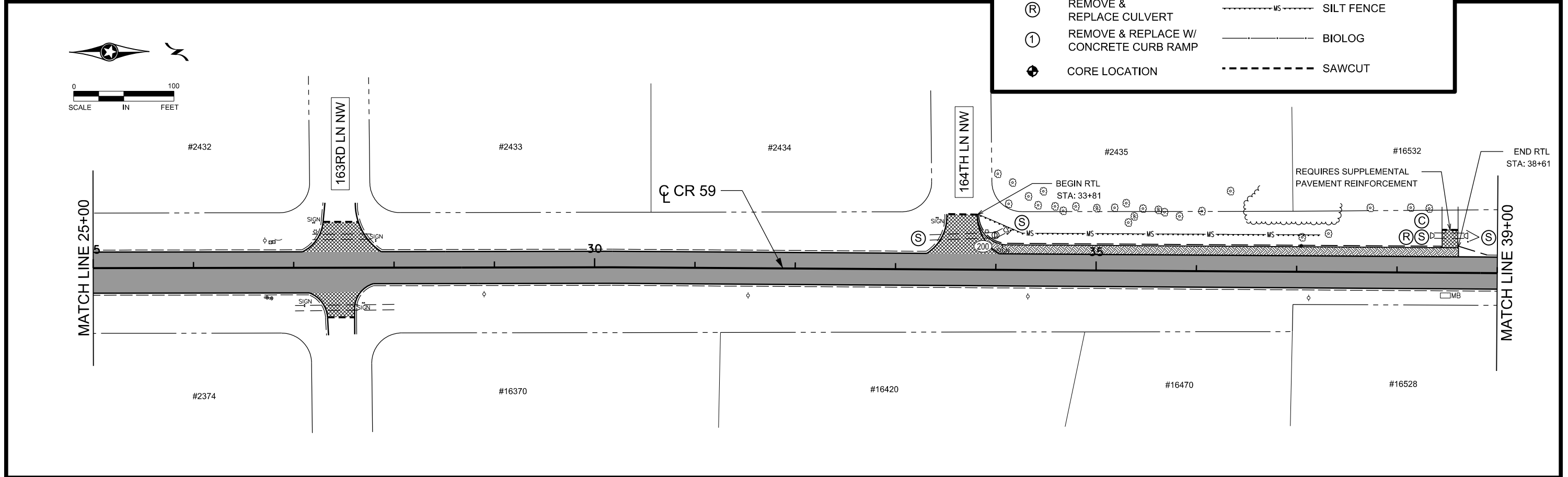
STATE AID PROJECT 24-17-59

DETAILS
 Sheet 13 of 26 Sheets



LEGEND

(B) BITUMINOUS	==	CULVERT
(G) GRAVEL	[Solid Grey Box]	MAINLINE (RECLAIM/PAVING AREA)
(C) CONCRETE	[Cross-hatched Box]	REMOVE & REPLACE PAVEMENT
(D) TRUNCATED DOMES	[Wavy-hatched Box]	CONSTRUCT RIGHT TURN LANE
(S) SAFETY APRON	---	R/W
(R) REMOVE & REPLACE CULVERT	-----MS-----	SILT FENCE
(1) REMOVE & REPLACE W/ CONCRETE CURB RAMP	---	BIOLOG
◆ CORE LOCATION	- - - - -	SAWCUT



NO	DATE	BY	CKD	APPR	REVISION		
	12/21/2023					4:53:59 PM	

NAME: P:\24-01-00\CR_59_(CSAH 20-CSAH 58)\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: 12-08-2023 LICENSE NO. 26511

DRAWN BY DBK DATE 12/05/23

DESIGN BY DBK DATE 12/05/23

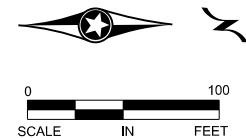
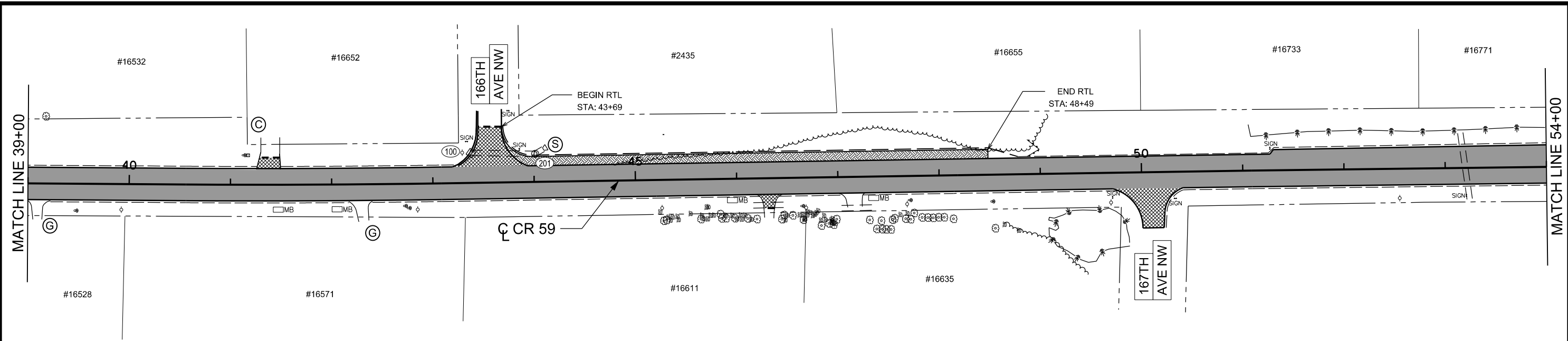
CHECKED BY CO DATE 12/05/23

ANOKA COUNTY
HIGHWAY DEPT.

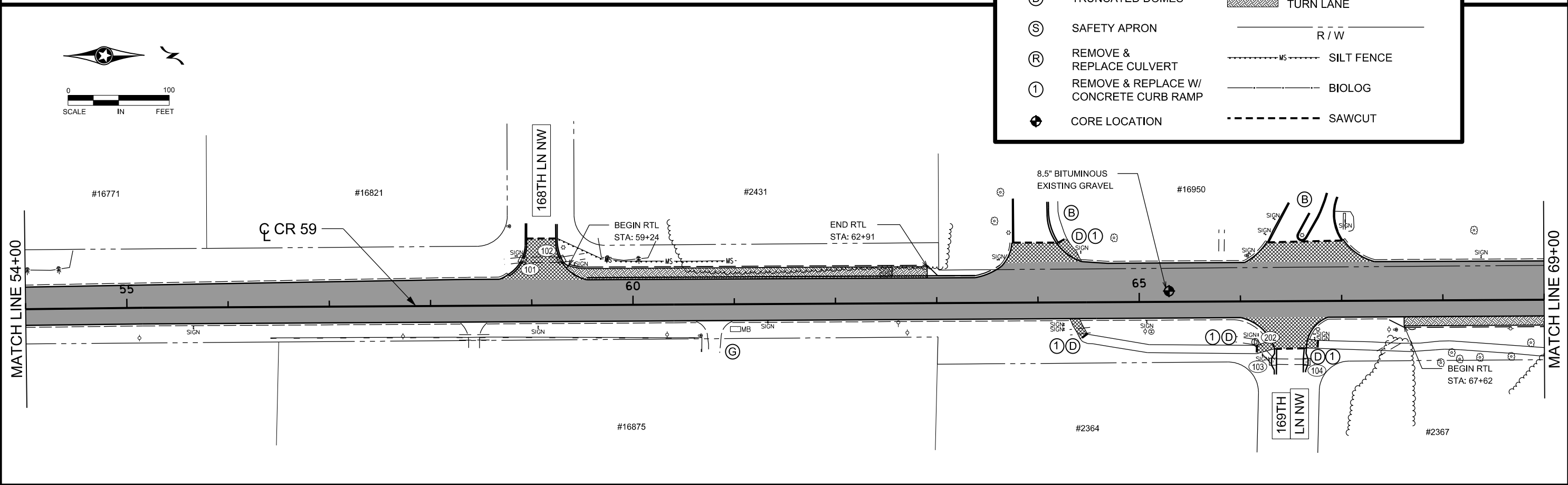
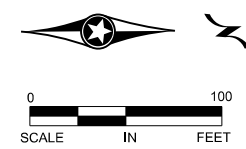
COUNTY PROJECT 24-17-59

CONSTRUCTION PLAN
STA 11+19.58 TO 39+00.00
Sheet 14 of 26 Sheets

SPH:ocs



LEGEND			
(B)	BITUMINOUS	==	CULVERT
(G)	GRAVEL	[Solid Grey Box]	MAINLINE (RECLAIM/PAVING AREA)
(C)	CONCRETE	[Cross-hatched Box]	REMOVE & REPLACE PAVEMENT
(D)	TRUNCATED DOMES	[Diagonal-hatched Box]	CONSTRUCT RIGHT TURN LANE
(S)	SAFETY APRON	---	R / W
(R)	REMOVE & REPLACE CULVERT	---MS---	SILT FENCE
(1)	REMOVE & REPLACE W/ CONCRETE CURB RAMP	---	BIOLOG
(+)	CORE LOCATION	---	SAWCUT



NO	DATE	BY	CKD	APPR	REVISION	12/21/2023	4:54:05 PM

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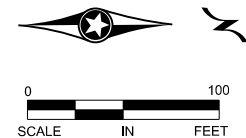
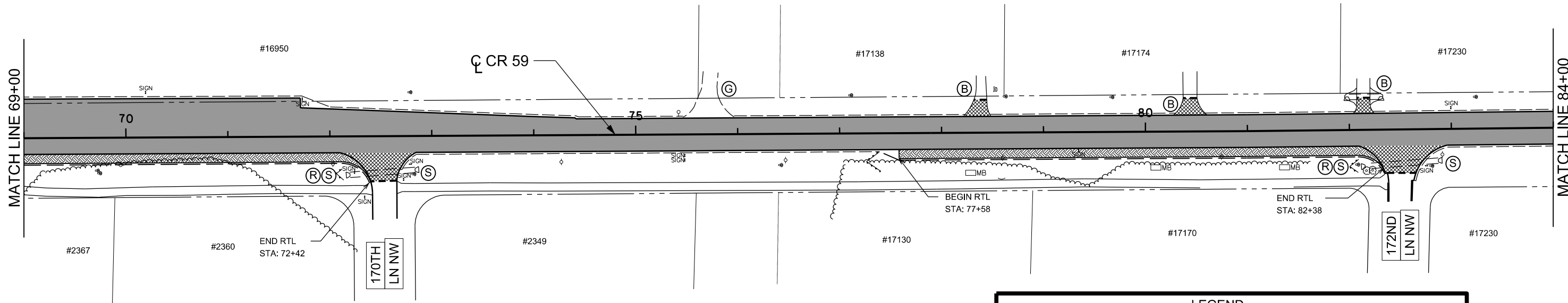
ANOKA COUNTY HIGHWAY DEPT.

COUNTY PROJECT 24-17-59

CONSTRUCTION PLAN
 STA 39+00.00 TO 69+00.00
 Sheet 15 of 26 Sheets

MATCH LINE 69+00

MATCH LINE 84+00



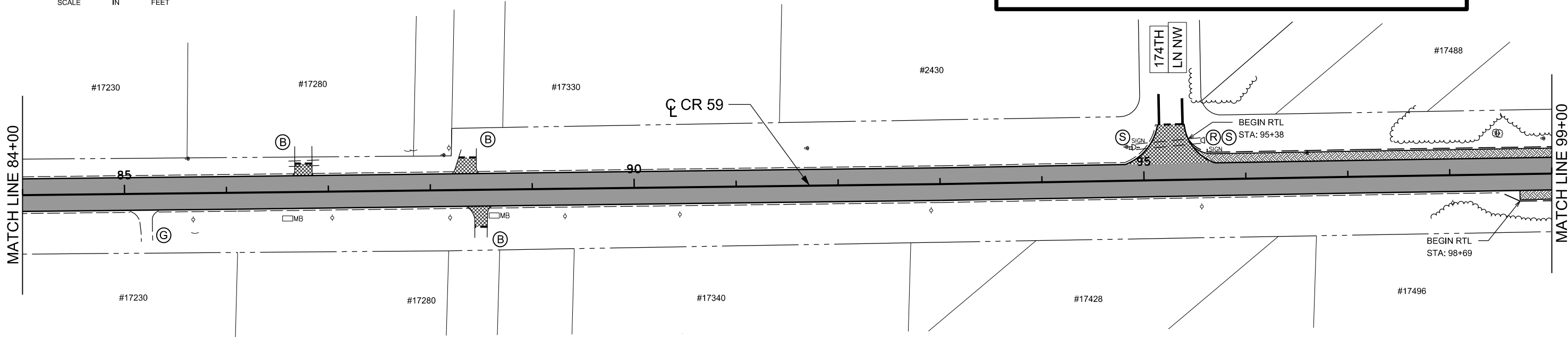
LEGEND

(B) BITUMINOUS	CULVERT
(G) GRAVEL	MAINLINE (RECLAIM/PAVING AREA)
(C) CONCRETE	REMOVE & REPLACE PAVEMENT
(D) TRUNCATED DOMES	CONSTRUCT RIGHT TURN LANE
(S) SAFETY APRON	R/W
(R) REMOVE & REPLACE CULVERT	SILT FENCE
(1) REMOVE & REPLACE W/ CONCRETE CURB RAMP	BIOLOG
◆ CORE LOCATION	SAWCUT



MATCH LINE 84+00

MATCH LINE 99+00



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NAME: P:\24-01-00\CR_59_(CSAH 20-CSAH 58)\Base\Proposed\CP3.dgn

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DESIGN BY DBK DATE 12/05/23

CHECKED BY CO DATE 12/05/23

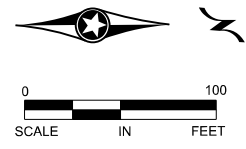
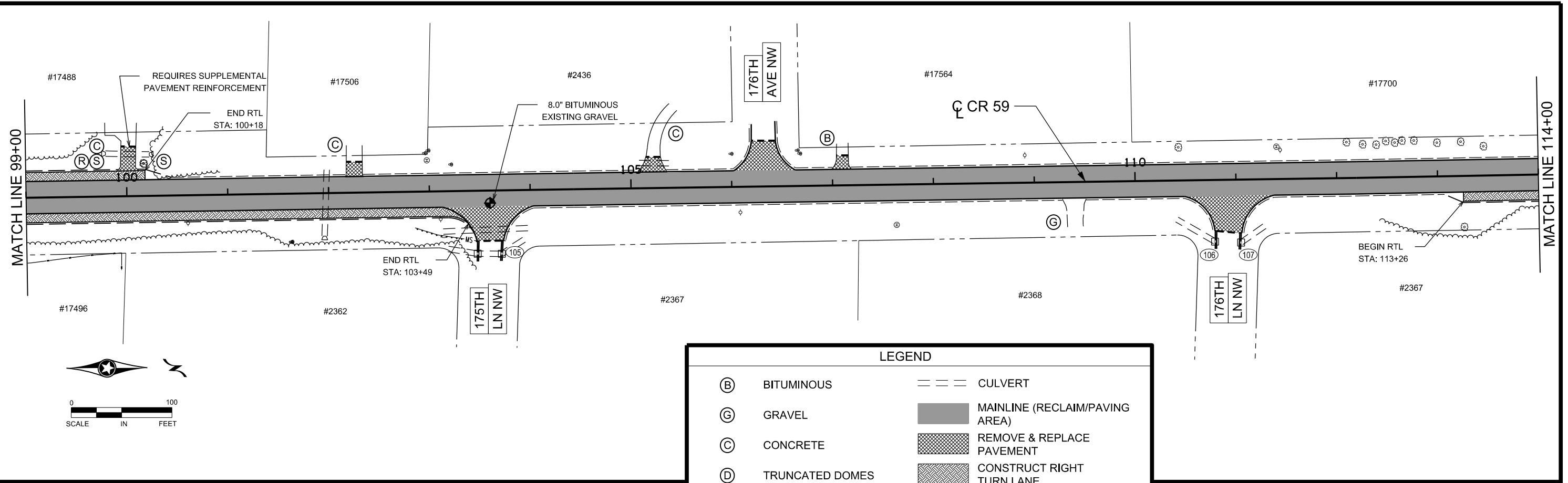
**ANOKA COUNTY
HIGHWAY DEPT.**

COUNTY PROJECT 24-17-59

CONSTRUCTION PLAN

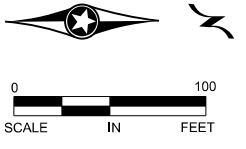
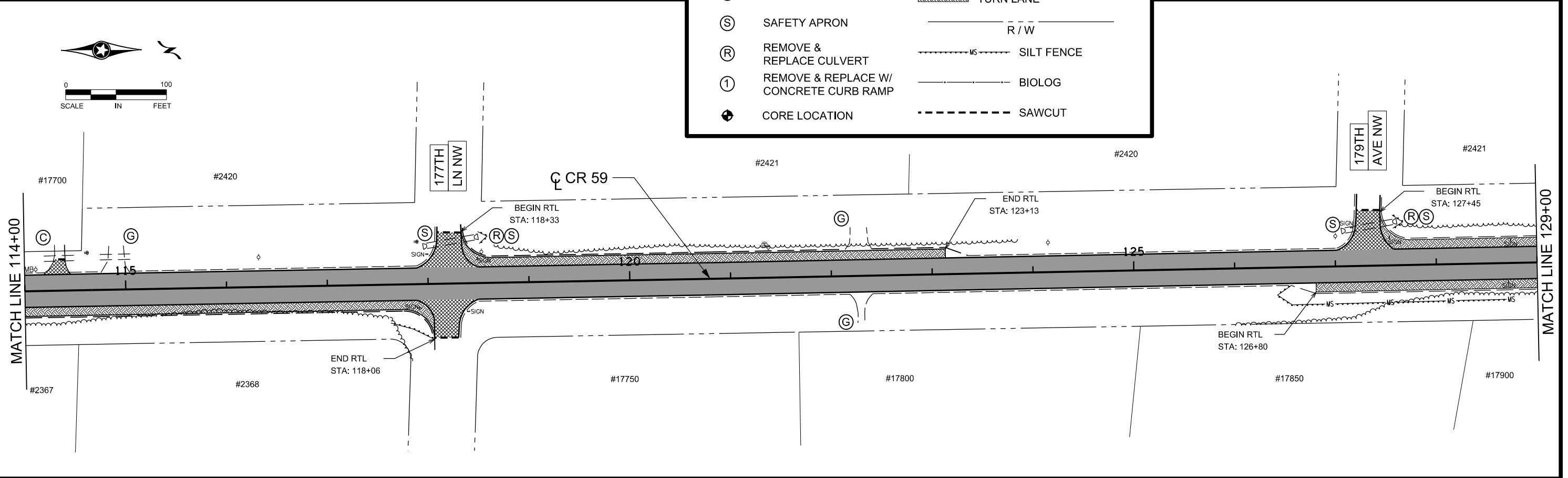
STA 69+00.00 TO 99+00.00

Sheet 16 of 26 Sheets



LEGEND

(B)	BITUMINOUS	---	CULVERT
(G)	GRAVEL	[Hatched Box]	MAINLINE (RECLAIM/PAVING AREA)
(C)	CONCRETE	[Cross-hatched Box]	REMOVE & REPLACE PAVEMENT
(D)	TRUNCATED DOMES	[Diagonal-hatched Box]	CONSTRUCT RIGHT TURN LANE
(S)	SAFETY APRON	---	R / W
(R)	REMOVE & REPLACE CULVERT	---MS---	SILT FENCE
(1)	REMOVE & REPLACE W/ CONCRETE CURB RAMP	---	BIOLOG
(●)	CORE LOCATION	---	SAWCUT



NO	DATE	BY	CKD	APPR	REVISION	TIME
	12/21/2023					4:54:15 PM

NAME: P:\24-01-00\CR_59_(CSAH 20-CSAH 58)\Base\Proposed\CP4.dgn

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SIGNATURE: *[Signature]*

DATE: 12-08-2023 LICENSE NO. 26511

DRAWN BY DBK DATE 12/05/23

DESIGN BY DBK DATE 12/05/23

CHECKED BY CO DATE 12/05/23

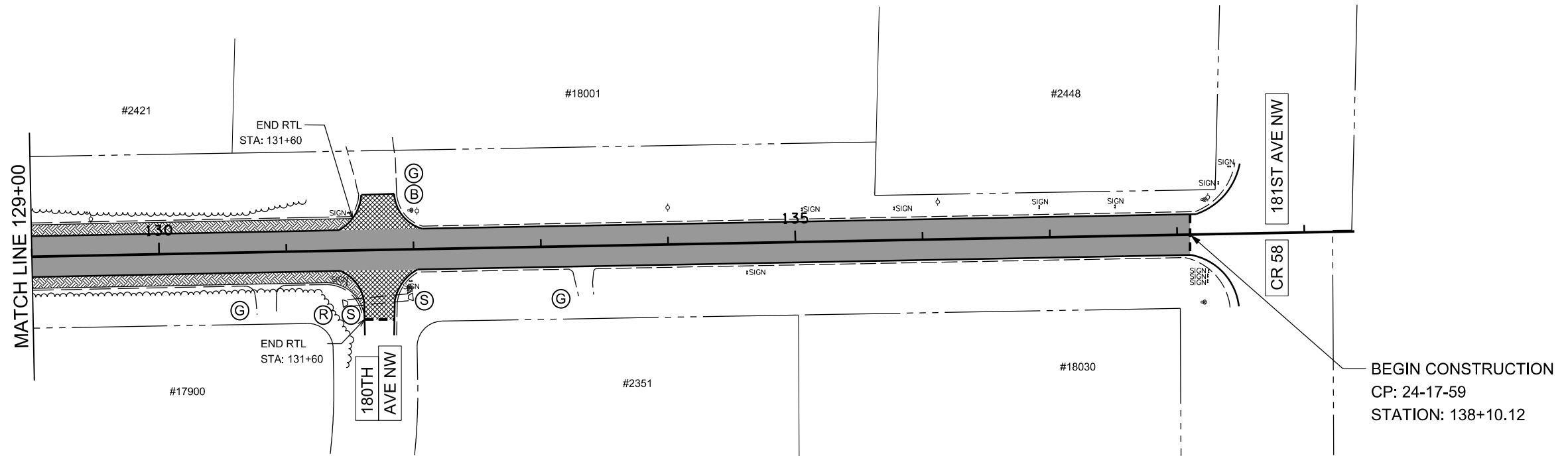
**ANOKA COUNTY
HIGHWAY DEPT.**

COUNTY PROJECT 24-17-59

CONSTRUCTION PLAN

STA 99+00.00 TO 129+00.00

Sheet 17 of 26 Sheets



LEGEND	
(B) BITUMINOUS	--- CULVERT
(G) GRAVEL	█ MAINLINE (RECLAIM/PAVING AREA)
(C) CONCRETE	▨ REMOVE & REPLACE PAVEMENT
(D) TRUNCATED DOMES	▩ CONSTRUCT RIGHT TURN LANE
(S) SAFETY APRON	----- R / W
(R) REMOVE & REPLACE CULVERT	----- MS ----- SILT FENCE
(1) REMOVE & REPLACE W/ CONCRETE CURB RAMP	----- BIOLOG
⊕ CORE LOCATION	--- SAWCUT

NO	DATE	BY	CKD	APPR	REVISION	
	12/21/2023					4:54:19 PM

NAME: P:\24-01-00\CR_59_(CSAH 20-CSAH 58)\Base\Proposed\CP5.dgn

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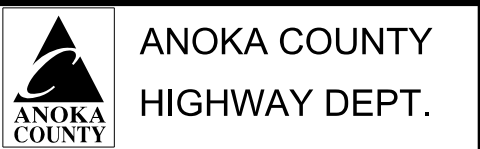
SIGNATURE: *[Signature]*

DATE: 12-08-2023 LICENSE NO. 26511

DRAWN BY DBK DATE 12/05/23

DESIGN BY DBK DATE 12/05/23

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COUNTY PROJECT 24-17-59

CONSTRUCTION PLAN
 STA 129+00.00 TO 138+10.12
 Sheet 18 of 26 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.

PAINT:

1. AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICATION IN A MANNER AND TO THE EXTENT REQUIRED BY THE ENGINEER.
2. GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.
3. EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR AND PAVEMENT SURFACE TEMPERATURES ARE 50°F 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.

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 AT A MINIMUM RATE OF 25 LBS POUNDS PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.
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.

PERFORMED THERMOPLASTIC:




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

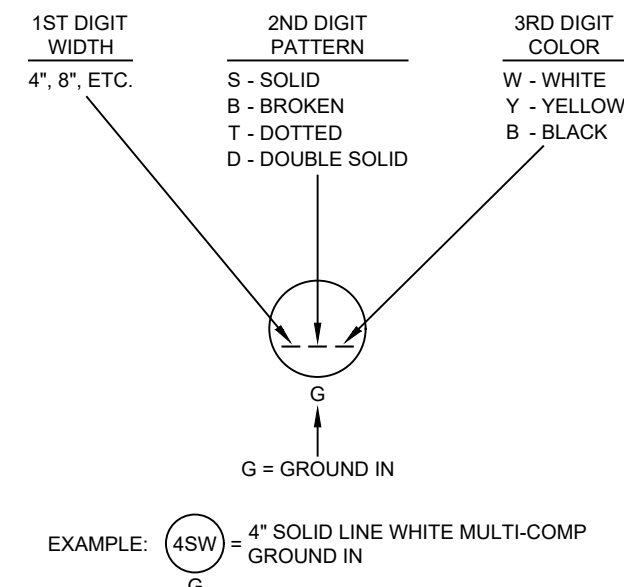
PERMANENT PAVEMENT MARKING TABULATION			
ITEM DESCRIPTION	UNIT	TOTAL QUANTITY	
		WHITE	YELLOW
4" SOLID LINE MULTI-COMP	LIN FT	28530	960
4" SOLID DOUBLE LINE MULTI-COMP	LIN FT		7484
4" BROKEN LINE MULTI-COMP	LIN FT		1180
24" SOLID LINE PERFORMED THERMOPLASTIC, GROUND IN	LIN FT	46	374
24" SOLID LINE PAINT	LIN FT	72	
3' X 6' CROSSWALK PERFORMED THERMOPLASTIC, GROUND IN	SQ FT	162	
3' X 6' CROSSWALK PAINT	SQ FT	162	
ARROW PERFORMED THERMOPLASTIC	SQ FT	123.6	

PAVEMENT MARKING SYMBOLS & MATERIALS LEGEND

- BROKEN LINE - 50' CYCLE (10' LINE, 40' GAP)
- █ CROSSWALK BLOCK
- ↩ PAVEMENT MESSAGE (LEFT ARROW)

STRIPING KEY

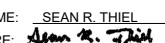
-  CIRCLE - MULTI-COMP
-  TRIANGLE - PAINT
-  OCTAGON - PREF THERMO



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\24-01-00\CR_59_(CSAH 20-CSAH58)\Base\Traffic\Permanent Pavement Marking Plan Notes & Tabulations.dwg

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

PRINT NAME: SEAN R. THIEL
SIGNATURE: 
DATE: 1/9/2024 LICENSE NO. 45129

DRAWN BY: FL DATE: 12/14/24
DESIGN BY: FL DATE: 12/14/24
CHECKED BY: SRT DATE: _____



**ANOKA COUNTY
HIGHWAY DEPT.**

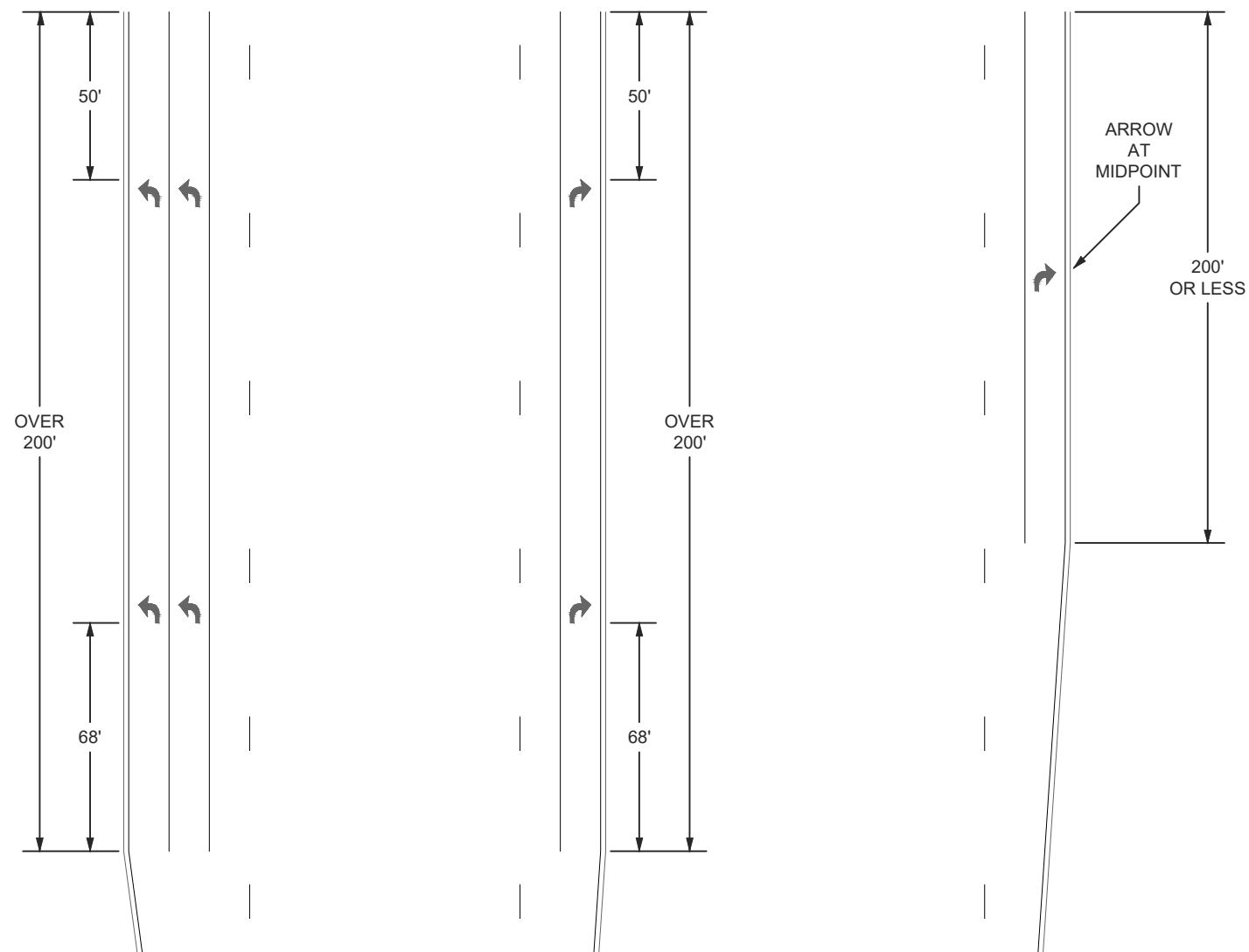
CP 24-17-59

PERMANENT PAVEMENT MARKING PLAN
NOTES & TABULATIONS

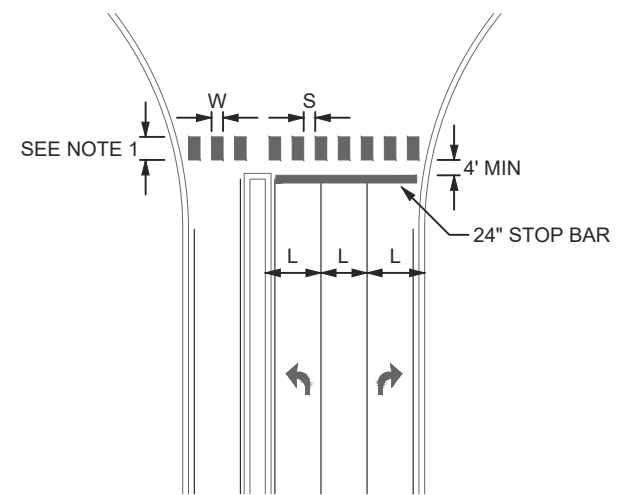
Sheet 19 of 26 Sheets

PAVEMENT MARKING TYPICALS

TURN LANE ARROW PLACEMENT

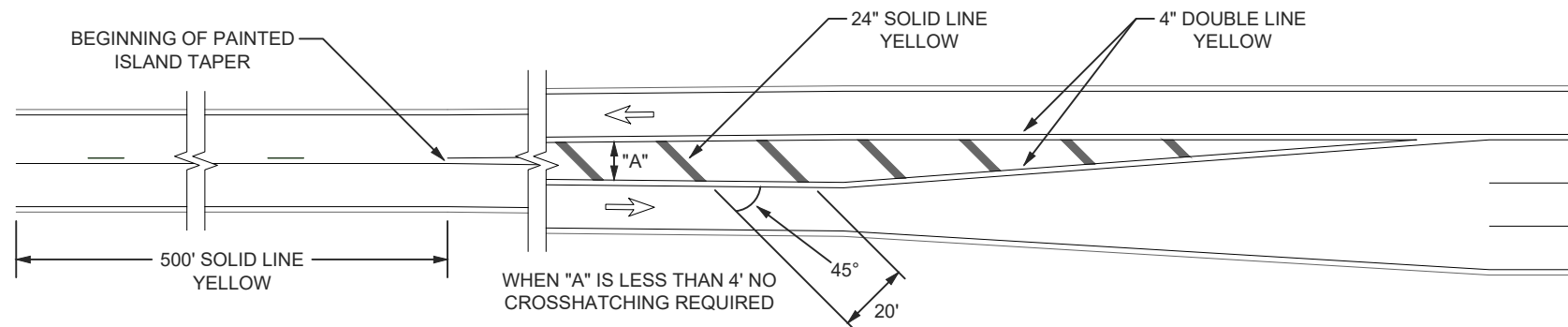


PEDESTRIAN CROSSWALK



(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.

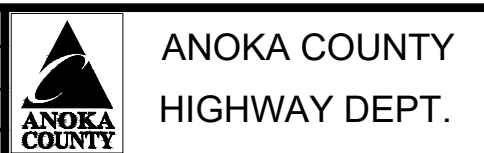
NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\24-01-00\CR_59_(CSAH 20-CSAH 58)\Base\Traffic\Signing & Striping Details.dwg

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 CHECKED BY: SRT DATE: _____



CP 24-17-59

PAVEMENT MARKING TYPICALS
 Sheet 20 of 26 Sheets

NOTES: (TYP.)

- 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."
- CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.
- LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- 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.
- 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.
- ACCESS SHALL BE MAINTAINED TO ALL STREETS AND DRIVEWAYS IN CONSTRUCTION AREA.
- ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
- ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING.
- 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.

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

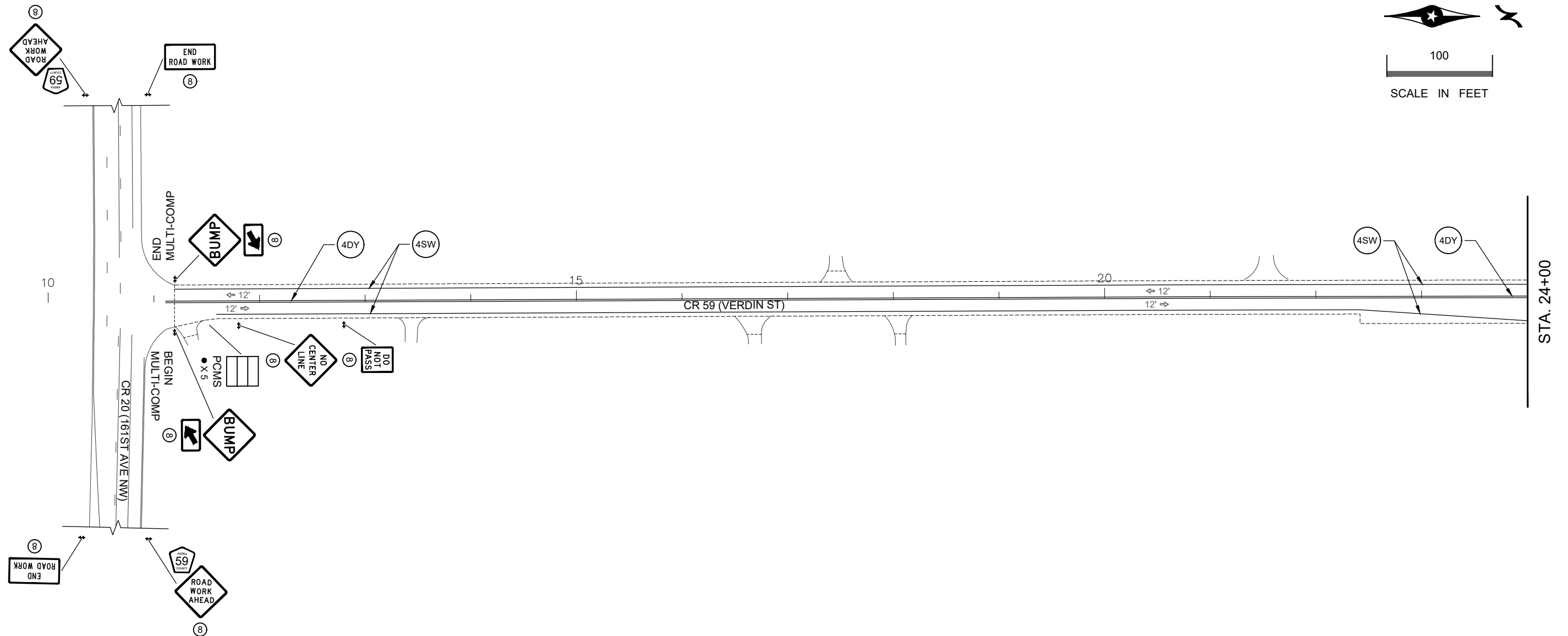
SYMBOL	DESCRIPTION
⊥	TRAFFIC CONTROL SIGN (SINGLE POST)
⦶	TRAFFIC CONTROL SIGN (TEMPORARY)
●	DRUM-LIKE CHANNELIZER TYPE B =
	PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)

STRIPING KEY

	CIRCLE - MULTI-COMP
	TRIANGLE - PAINT
	OCTAGON - PREF THERMO GROUND IN

SIGNING NOTES

- ① F. & I.
- ⑧ TEMPORARY TRAFFIC CONTROL SIGN



NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\24-01-00\CR_59_(CSAH 20-CSAH 58)\Base\Traffic\Signing and Permanent Striping.dwg

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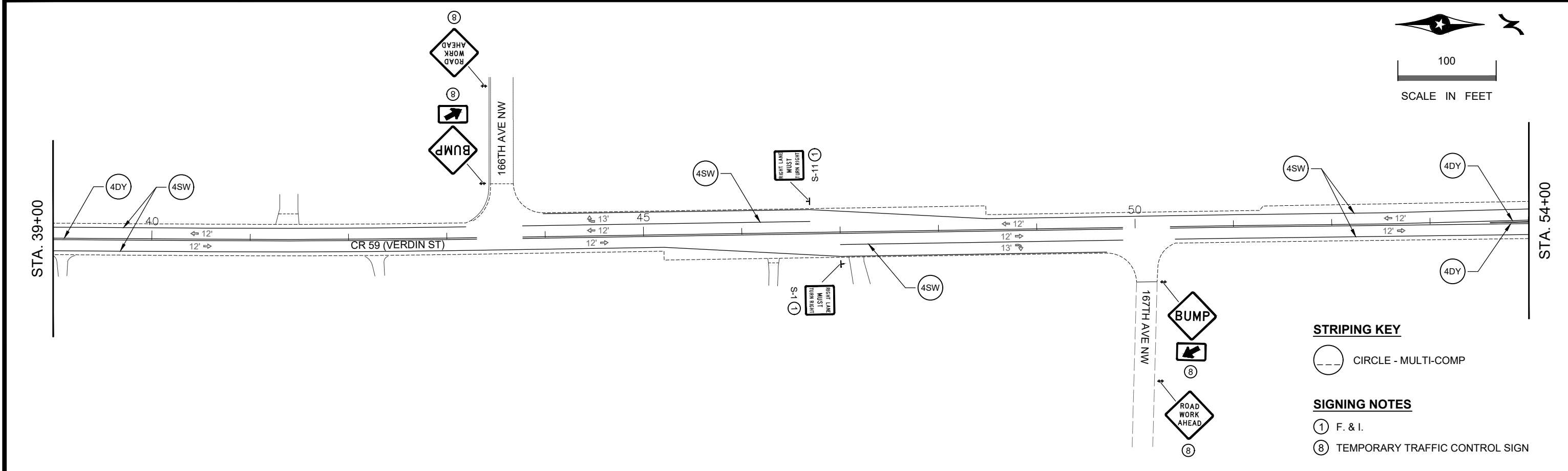
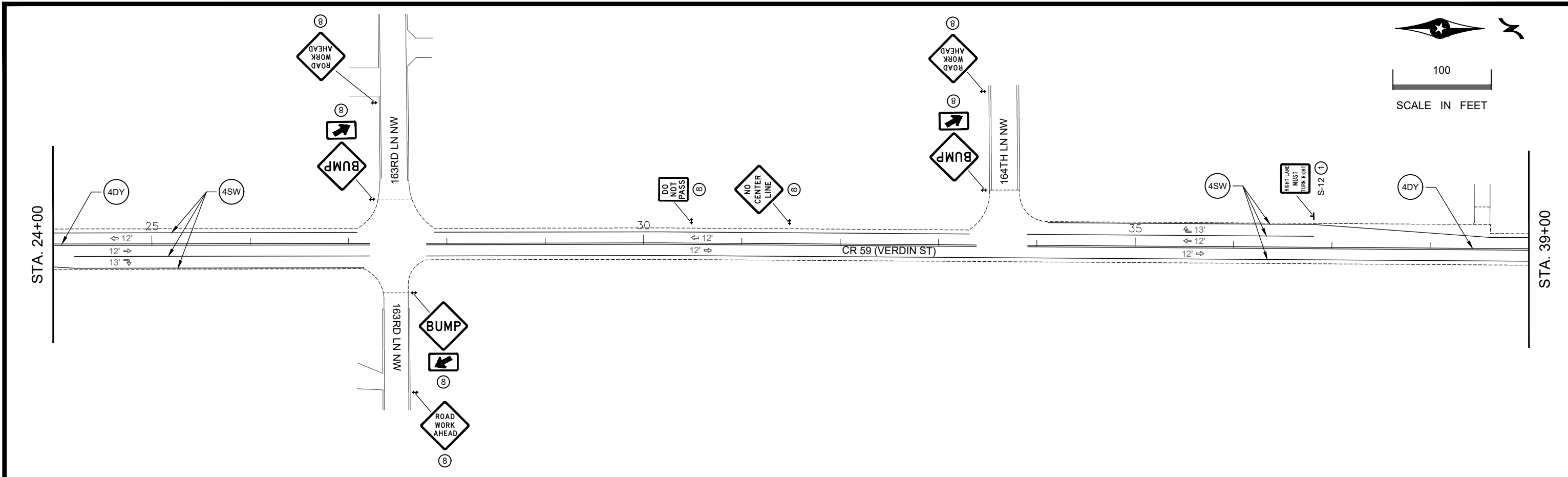
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DRAWN BY: FL DATE: 12/14/24
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ANOKA COUNTY
HIGHWAY DEPT.

CP 24-17-59

SIGNING AND PERMANENT STRIPING
 Sheet 21 of 26 Sheets



STRIPING KEY

○ CIRCLE - MULTI-COMP

SIGNING NOTES

① F. & I.

⑧ TEMPORARY TRAFFIC CONTROL SIGN

NO	DATE	BY	CKD	APPR	REVISION

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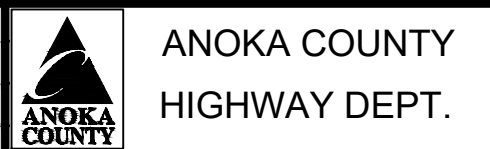
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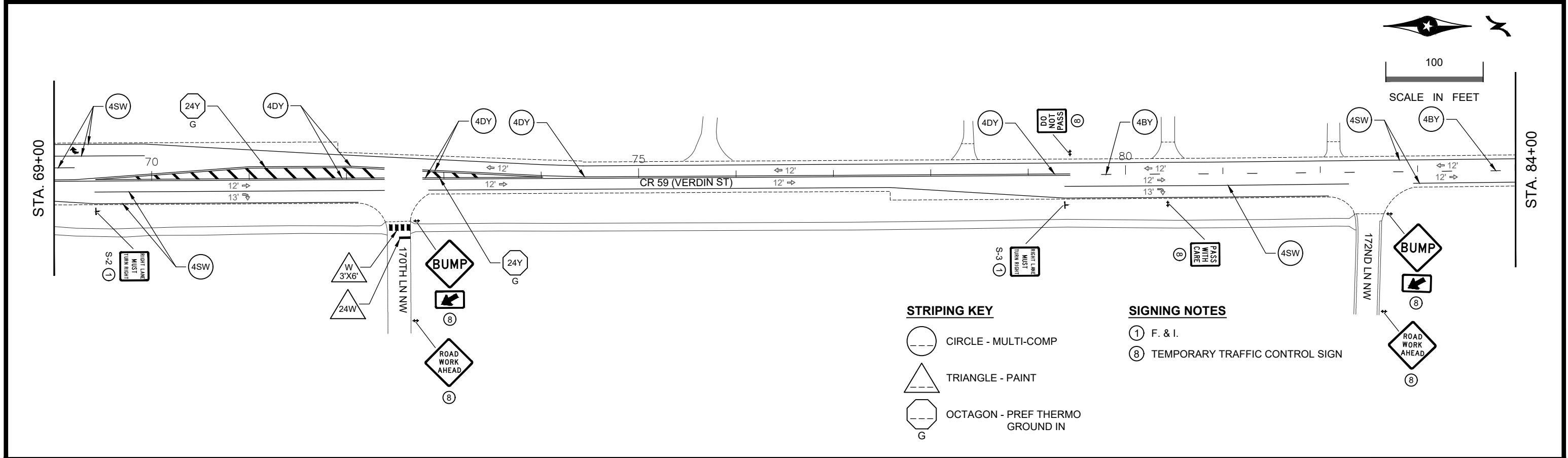
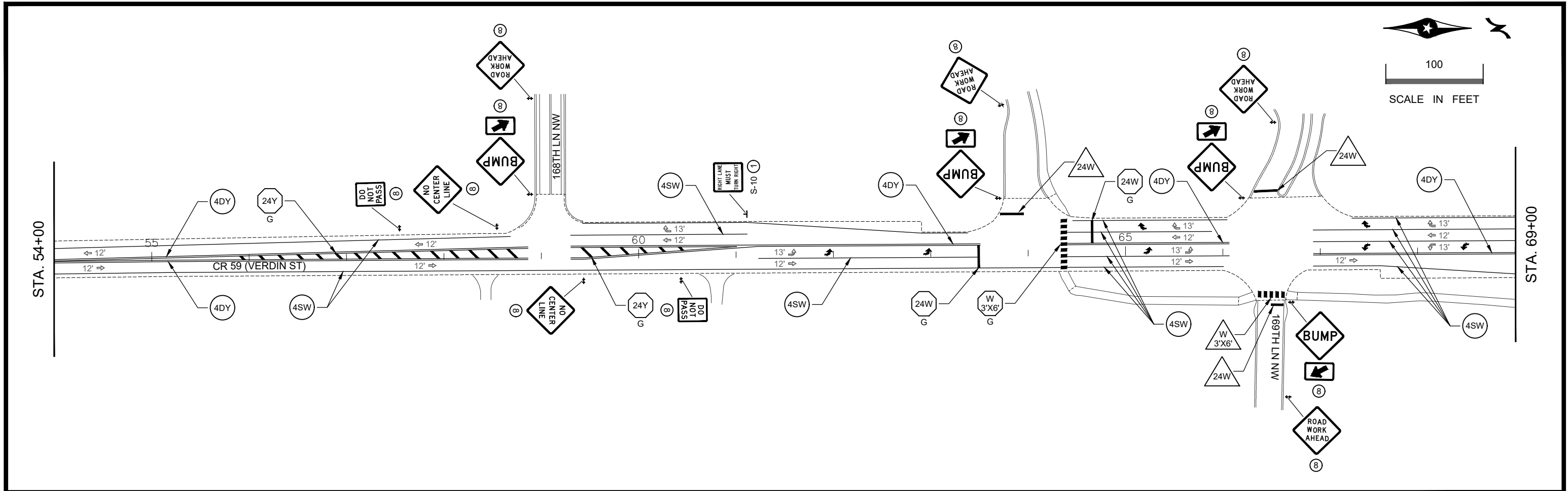
CHECKED BY: SRT DATE: _____



CP 24-17-59

SIGNING AND PERMANENT STRIPING

Sheet 22 of 26 Sheets



STRIPING KEY

- CIRCLE - MULTI-COMP
- TRIANGLE - PAINT
- OCTAGON - PREF THERMO GROUND IN

SIGNING NOTES

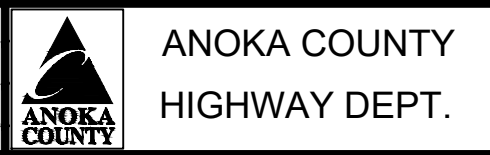
- ① F. & I.
- ⑧ TEMPORARY TRAFFIC CONTROL SIGN

NO	DATE	BY	CKD	APPR	REVISION

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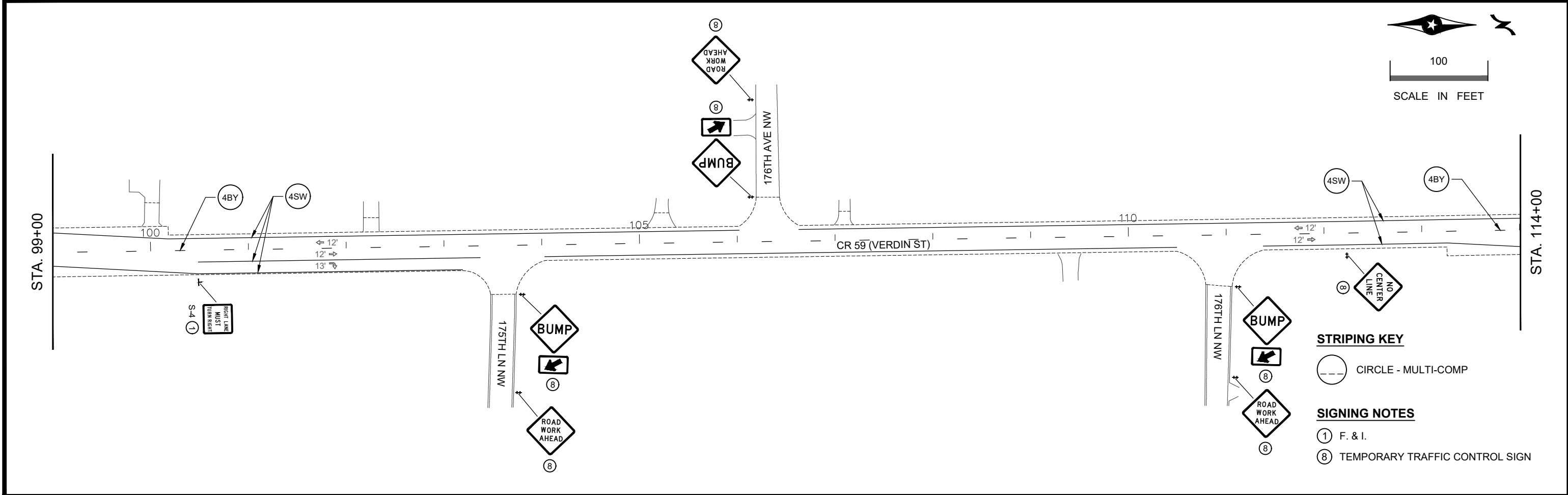
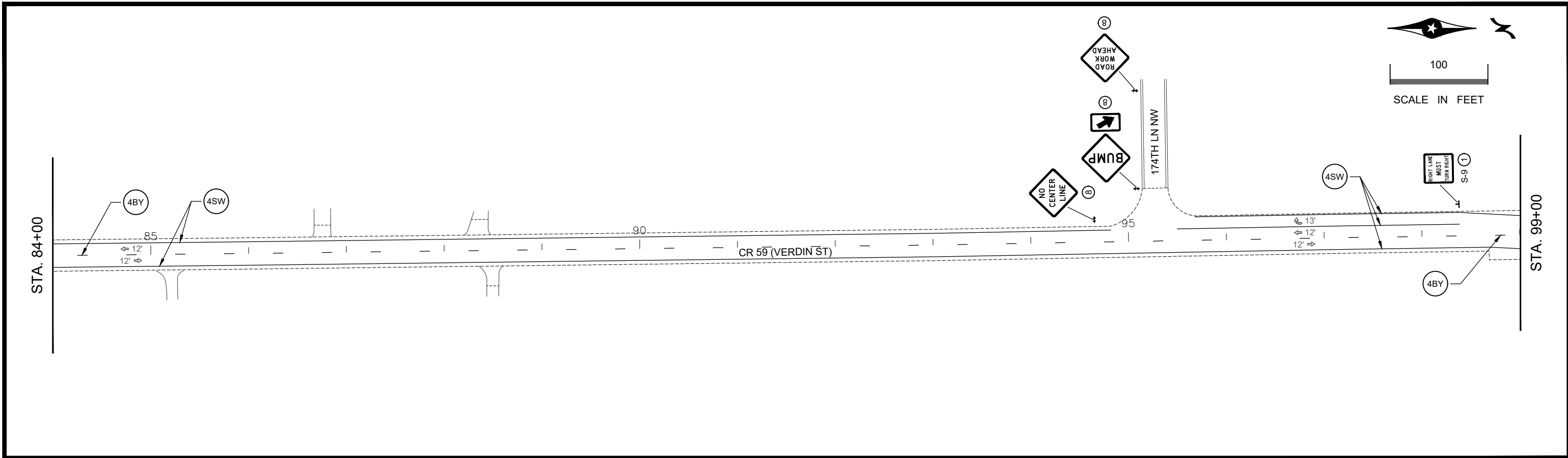
PRINT NAME: SEAN R. THIEL
 SIGNATURE: *Sean R. Thiel*
 DATE: 1/9/2024 LICENSE NO. 45129

DRAWN BY: FL DATE: 12/14/24
 DESIGN BY: FL DATE: 12/14/24
 CHECKED BY: SRT DATE: _____



CP 24-17-59

SIGNING AND PERMANENT STRIPING
 Sheet 23 of 26 Sheets



- STRIPING KEY**
- CIRCLE - MULTI-COMP
- SIGNING NOTES**
- ① F. & I.
 - ⑧ TEMPORARY TRAFFIC CONTROL SIGN

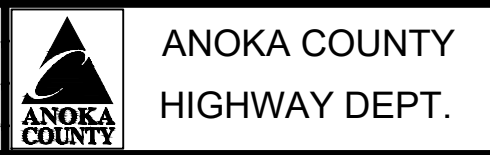
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NAME: P:\24-01-00\CR_59_(CSAH 20-CSAH 58)\Base\Traffic\Signing and Permanent Striping.dwg

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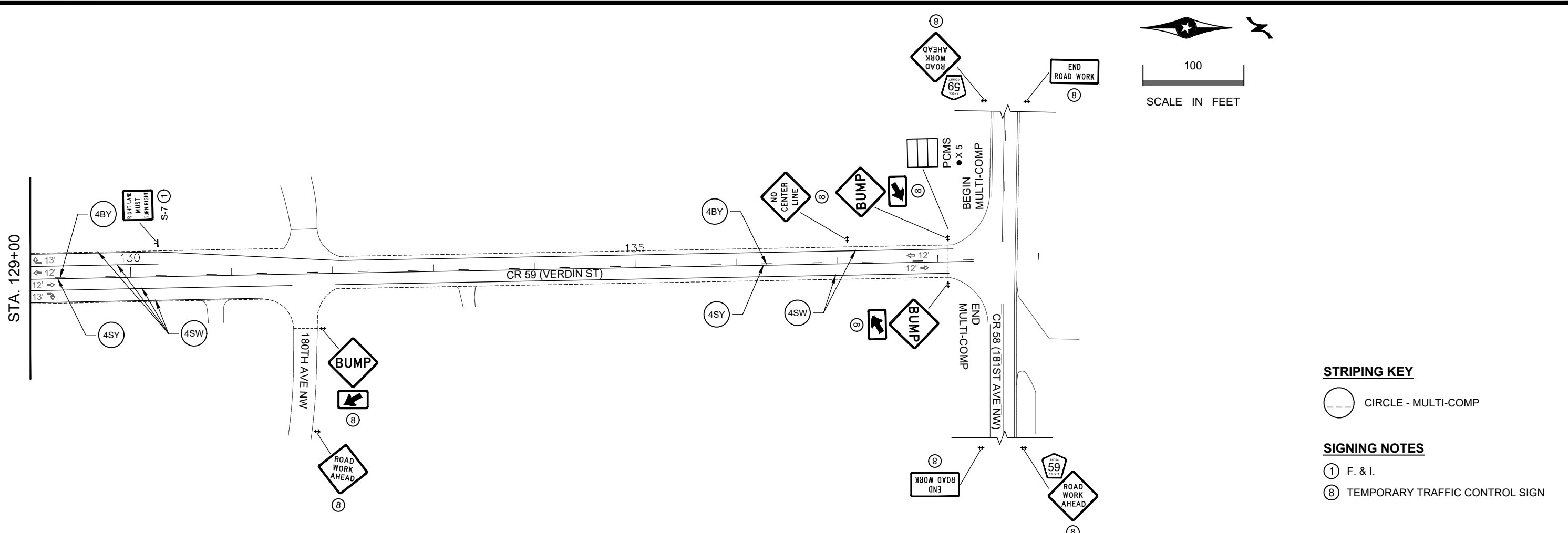
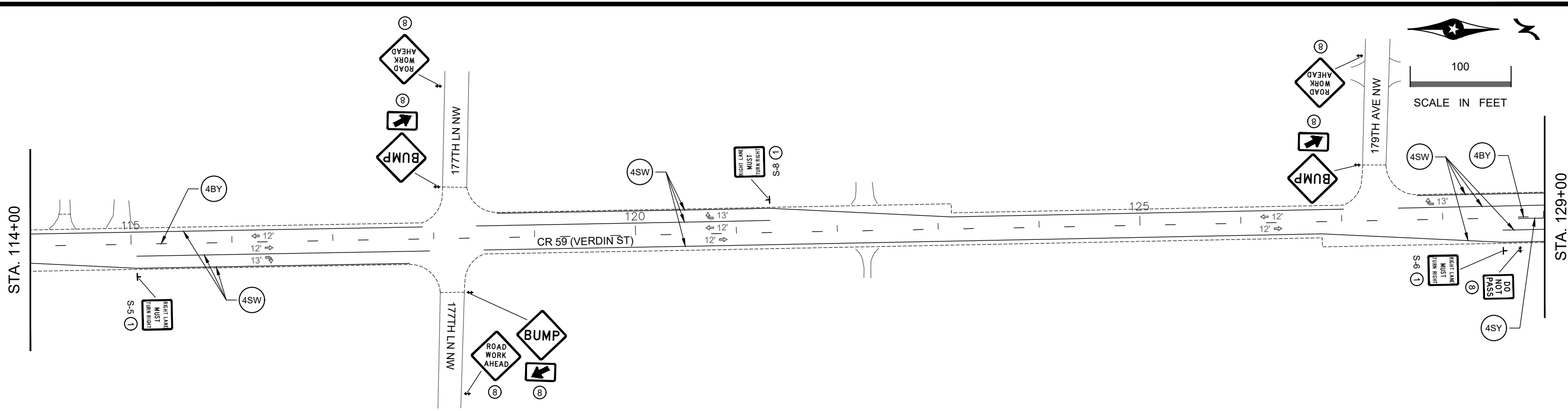
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SIGNING AND PERMANENT STRIPING
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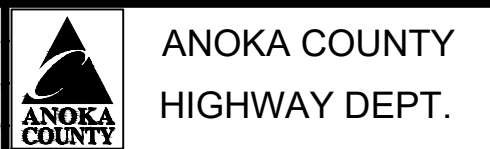
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SIGNING AND PERMANENT STRIPING
 Sheet 25 of 26 Sheets

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"	23
	W16-7PL	BLACK ON ORANGE	30" X 18"	23
	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"	7
	W8-23	BLACK ON ORANGE	48" X 48"	AS NEEDED
	W20-1	BLACK ON ORANGE	48" X 48"	AS NEEDED (ESTIMATED 23)
	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"	6
	R4-2	BLACK ON WHITE	24" X 30"	1

"M" SERIES				
SIGN	MUTCD CODE	COLOR	SIZE	QUANTITY
	M1-6M	WHITE AND YELLOW ON BLUE	24 X 24	4

"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)
(2)	TYPE C	2 (10 DAYS EACH)

PCMS - MESSAGE SEQUENCE LAYOUT

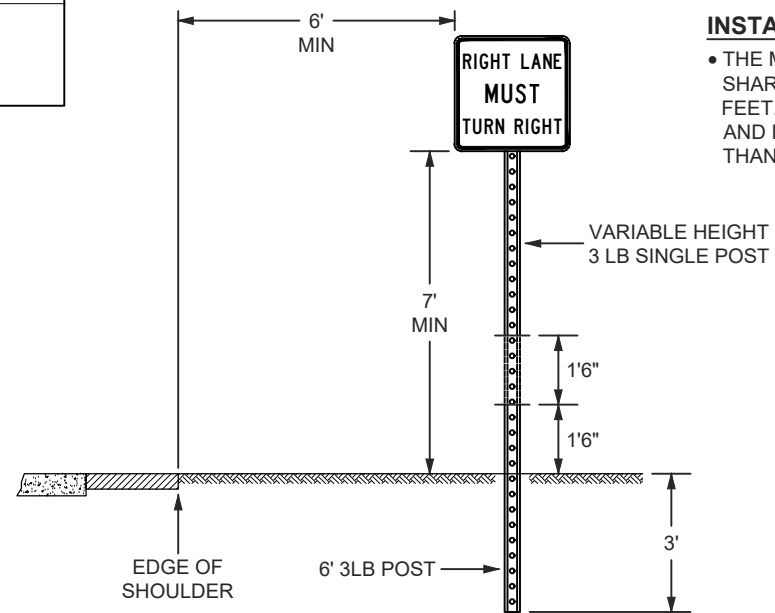
	R	O	A	D	
	W	O	R	K	
	B	E	G	I	N
	S				

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

PERMANENT SIGNING AND STRIPING

SIGN NUMBER	PERMANENT SIGNING TABULATION				SUPPORT TYPE (1)	NUMBER OF POSTS	INSTALL SIGN TYPE C EACH	SIGN SQ FT
	CODE	LEGEND	PANEL					
			SIGN (W X H) INCHES	MOUNTING HEIGHT FEET				
S-1	R3-7R	RIGHT LANE MUST TURN RIGHT	30 X 30	7	U-SOIL	1	1	6.25
S-2	R3-7R	RIGHT LANE MUST TURN RIGHT	30 X 30	7	U-SOIL	1	1	6.25
S-3	R3-7R	RIGHT LANE MUST TURN RIGHT	30 X 30	7	U-SOIL	1	1	6.25
S-4	R3-7R	RIGHT LANE MUST TURN RIGHT	30 X 30	7	U-SOIL	1	1	6.25
S-5	R3-7R	RIGHT LANE MUST TURN RIGHT	30 X 30	7	U-SOIL	1	1	6.25
S-6	R3-7R	RIGHT LANE MUST TURN RIGHT	30 X 30	7	U-SOIL	1	1	6.25
S-7	R3-7R	RIGHT LANE MUST TURN RIGHT	30 X 30	7	U-SOIL	1	1	6.25
S-8	R3-7R	RIGHT LANE MUST TURN RIGHT	30 X 30	7	U-SOIL	1	1	6.25
S-9	R3-7R	RIGHT LANE MUST TURN RIGHT	30 X 30	7	U-SOIL	1	1	6.25
S-10	R3-7R	RIGHT LANE MUST TURN RIGHT	30 X 30	7	U-SOIL	1	1	6.25
S-11	R3-7R	RIGHT LANE MUST TURN RIGHT	30 X 30	7	U-SOIL	1	1	6.25
S-12	R3-7R	RIGHT LANE MUST TURN RIGHT	30 X 30	7	U-SOIL	1	1	6.25
TOTAL =							12	75

PERMANENT SIGN INSTALLATION TYPICAL



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.

NOTES:

- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.
- ALL TYPE III BARRICADES SHALL BE REFLECTORIZED ON BOTH SIDES. BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MUTCD.

SPECIFIC NOTES:

1. U-CHANNEL 3LBS PER FOOT BLACK POST.
2. PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) TO BE INSTALLED A MINIMUM OF 10 DAYS PRIOR TO ACTUAL COMMENCEMENT OF ROAD WORK. SIGNS TO BE REMOVED WHEN ROAD WORK BEGINS.

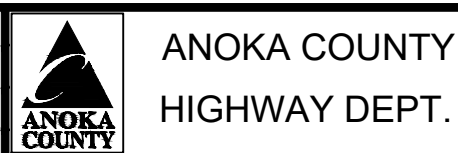
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