MINNESOTA DEPARTMENT OF TRANSPORTATION
ANOKA COUNTY

CONSTRUCTION PLAN FOR MILL BITUMINOUS, BITUMINOUS SURFACING, CURB & GUTTER, AND SEWER REPAIRS

LOCATED ON CSAH 17 BETWEEN SOUTH COUNTY LINE AND NORTH ROAD

CSAH 17

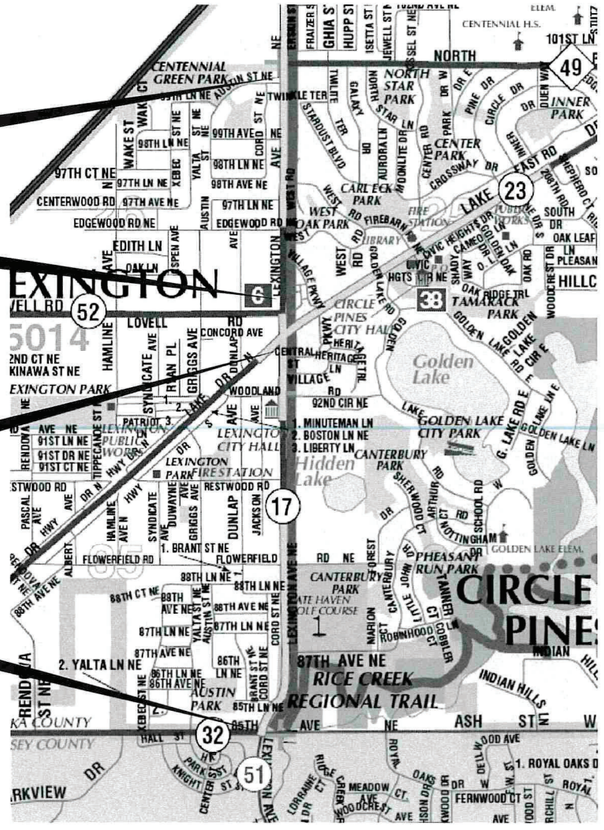
GROSS LENGTH	10,369.51	FEET	1.964	MILES
EXCEPTIONS-LENGTH	576.00	FEET	0.109	MILES
NET LENGTH	9,793.51	FEET	1.855	MILES

END SAP 002-617-026
CSAH 17, STA: 116+62.51

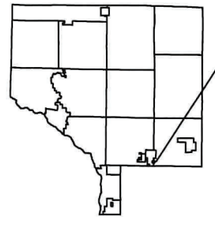
END EXCEPTION
CSAH 17, STA: 80+40.00

BEGIN EXCEPTION
CSAH 17, STA: 74+64.00

BEGIN SAP 002-617-026
CSAH 17, STA: 12+93.00



PROJECT LOCATION



CITY OF BLAINE, CIRCLE PINES, AND LEXINGTON
ANOKA COUNTY
MN/DOT TRANSPORTATION DISTRICT - METRO
SECTION 25, 26, 35
TOWNSHIP 31 NORTH
RANGE 23 WEST

DESIGN DESIGNATION (CSAH 17)

ESAL 20	1,503,092	FUNCTIONAL CLASSIFICATION	A-MINOR EXPANDER
R VALUE	75	NO. OF TRAFFIC LANES 4	NO. OF PARKING LANES N/A
ADT (2023)	14,137	DESIGN SPEED 45 MPH	
PROJ. ADT (2043)	14,137	STOPPING SIGHT DISTANCE BASED ON:	
PROJ. HCADT (2043)	834	HEIGHT OF EYE 3.5'	HEIGHT OF OBJECT 2.0'
SOIL FACTOR	N/A	DESIGN SPEED NOT ACHIEVED AT :	
10 TON DESIGN		STA. ____ TO STA. ____	MPH ____

GOVERNING SPECIFICATIONS

THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AND THE "SUPPLEMENTAL SPECIFICATIONS" DATED SEPTEMBER 2022 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 65 SHEETS

INDEX

Approved 2-15 ,20 23
ANOKA COUNTY ENGINEER

Approved Steve M Winter 2-16 ,20 23
CITY OF LEXINGTON ENGINEER

Approved 2-16 ,20 23
CITY OF CIRCLE PINES ENGINEER

Approved Daniel Schluender ,2023
CITY OF BLAINE ENGINEER

Dan Erickson Digitally signed by Dan Erickson Date: 2023.02.21 08:14:23 -06'00' ,20 ___
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY

Dan Erickson Digitally signed by Dan Erickson Date: 2023.02.21 08:14:48 -06'00' ,20 ___
for STATE AID ENGINEER:
APPROVED FOR STATE AID FUNDING

NO	DATE	BY	CKD	APPR	REVISION		
						02/15/2023	7:16:50 AM

NAME: P:\23-01-00\CSAH_17_(SCL-I35W)\Base\Proposed\CSAH_17_TITLE.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 AUGE JR.
SIGNATURE:
DATE: 12-08-22 LICENSE NO. 26511

DRAWN BY MR DATE 03/15/2022
DESIGN BY MR DATE 03/15/2022
CHECKED BY CO DATE 05/25/2022

ANOKA COUNTY HIGHWAY DEPT.

STATE AID PROJECT 002-617-027

TITLE SHEET

Sheet 1 of 65 Sheets

SPHaas

STATEMENT OF ESTIMATED QUANTITIES

Notes	Item Number	ITEM DESCRIPTION	Unit	TOTAL PROJECT QUANTITIES ESTIMATED
	2021.501	MOBILIZATION	LUMP SUM	1
	2102.503	PAVEMENT MARKING REMOVAL	LIN FT	19635
1	2104.502	REMOVE DRAINAGE STRUCTURE	EACH	4
	2104.502	REMOVE SIGN TYPE C	EACH	24
2	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	365
2	2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	2168
2	2104.503	REMOVE CURB AND GUTTER	LIN FT	1604
	2104.504	REMOVE CONCRETE PAVEMENT	SQ YD	23
	2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	439
	2104.518	REMOVE BITUMINOUS WALK	SQ FT	2221
	2104.518	REMOVE CONCRETE WALK	SQ FT	127
	2104.518	REMOVE CONCRETE MEDIAN	SQ FT	272
	2105.607	COMMON EXCAVATION	CU YD	29
3	2211.509	AGGREGATE BASE CLASS 5	TON	205
4	2232.504	MILL BITUMINOUS SURFACE (2.0")	SQ YD	68169
5	2232.604	MILL BITUMINOUS PAVEMENT (SPECIAL)	SQ YD	2485
	2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	3530
6	2360.509	TYPE SP 12.5 BITUMINOUS MIXTURE FOR PATCHING	TON	159
7	2360.509	TYPE SP 12.5 WEARING COURSE MIXTURE (4;C)	TON	263
	2360.509	TYPE SP 12.5 WEARING COURSE MIXTURE (4;C)	TON	7839
8	2504.602	ADJUST GATE VALVE	EACH	17
9	2506.502	CASTING ASSEMBLY	EACH	63
10	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN G	LIN FT	14.9
10	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN H	LIN FT	1.9
10	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48-4020	LIN FT	2.1
11	2506.602	GROUT CATCH BASIN OR MANHOLE	EACH	94
	2506.602	REPAIR CATCH BASINS	EACH	29
12	2521.518	4" CONCRETE WALK	SQ FT	272
13	2521.602	DRILL AND GROUT REINF BAR (EPOXY COATED)	EACH	96
	2521.618	CONCRETE CURB RAMP WALK	SQ FT	2915
	2531.503	CONCRETE CURB AND GUTTER DESIGN B412	LIN FT	36
	2531.503	CONCRETE CURB AND GUTTER DESIGN B418	LIN FT	463
	2531.503	CONCRETE CURB AND GUTTER DESIGN B612	LIN FT	60
	2531.503	CONCRETE CURB AND GUTTER DESIGN B618	LIN FT	1045
	2531.618	TRUNCATED DOMES	SQ FT	384
14	2550.602	LOOP DETECTOR DESIGN NMC	EACH	1
	2563.601	TRAFFIC CONTROL SUPERVISOR	LUMP SUM	1
15,16	2563.601	TRAFFIC CONTROL	LUMP SUM	1
	2563.602	RAISED PAVEMENT MARKER TEMPORARY	EACH	286
17	2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	UNIT DAY	20
23	2564.618	SIGN TYPE C	SQ FT	163.5
18	2573.502	STORM DRAIN INLET PROTECTION	EACH	183
	2574.507	COMMON TOPSOIL BORROW	CU YD	344
19	2575.508	HYDRAULIC REINFORCED FIBER MATRIX	POUND	4299
20	2581.503	REMOVABLE PREFORMED PAVEMENT MARKING TAPE	LIN FT	6773
	2581.603	REMOVABLE PREFORMED PLASTIC MASK (BLACK)	LIN FT	180
	2582.503	4" SOLID LINE PAINT	LIN FT	36307
21	2582.503	4" SOLID LINE MULTI-COMPONENT GROUND IN	LIN FT	41021
21	2582.503	4" BROKEN LINE MULTI-COMPONENT GROUND IN	LIN FT	5200
22	2582.503	24" SOLID LINE PREFORM THERMO GROUND IN	LIN FT	36
22	2582.518	PAVEMENT MESSAGE PREFORM THERMOPLASTIC GROUND IN	SQ FT	589
22	2582.518	CROSSWALK PREFORM THERMOPLASTIC GROUND IN	SQ FT	270

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

CONSTRUCTION NOTES

1		REFERENCE DETAILS (PAGE 8) FOR REMOVAL DETAILS
2		REFERENCE DETAILS (PAGES 6-7)
3		ITEM TO BE USED AS BASE FOR NEW CONCRETE WALK AND CURB PATCHES.
4		~~COST TO MILLING AROUND MANHOLES, CATCH BASINS, GATE VALVES, AND ALONG CURB LINE IS INCIDENTAL TO THIS~~ ITEM.
5		TO BE USED FOR MILLING STREET APPROACHES AND/OR DETAIL MILLING AREAS AS IDENTIFIED IN THE PLAN.
6		ITEM INCLUDES BITUMINOUS PATCHING AROUND NEW CURB, STORM STRUCTURE REPAIRS, AND ANY POTHOLES.
7		STREET APPRACHES SHALL BE PAVED AFTER MAINLINE, AND BEFORE FINAL STRIPING. SEE BITUMINOUS STREET SUMMARY.
8		GATE VALVES TO BE ADJUSTED ONLY AS NECESSARY AS DETERMINED BY THE ENGINEER.
9		~~ITEM INCLUDES ADJUSTMENT OF CASTINGS TO MEET FINISH GRADE. SEE STORM SEWER TABS FOR RING~~ HEIGHTS.
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 GROUTING OF INVERTS, DOGHOUSES, RINGS, STRUCTURES AND CASTINGS AS DIRECTED BY PLAN AND/OR ENGINEER. SEE STORM SEWER TAB, PAGE 9.
12		ITEM USED FOR CONCRETE MEDIAN.
13		#4 REINFORCEMENT BARS TO BE INSTALLED IN CURB RAMP WALK.
14		LOOP REPLACEMENT REQUIRED ONLY IF DAMAGED DURING CONSTRUCTION OPERATIONS. EXISTING SIGNAL PLANS ARE INCLUDED AT THE END OF THIS PLAN.
15		CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN TEMPORARY SIGNAGE WHENEVER EXISTING SIGNAGE IS REMOVED. TEMPORARY SIGNAGE SHALL BE INCIDENTAL TO TRAFFIC CONTROL.
16		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.
17		2 MESSAGE BOARDS, ONE ON THE EACH END OF PROJECT, SHALL BE INSTALLED 10 DAYS PRIOR TO ANY CONSTRUCTION; REFERENCE STRIPING PLAN FOR DETAILS.
18		ALL DRAINAGE STRUCTURES AFFECTED BY THIS PROJECT MUST HAVE INLET PROTECTION.
19		TYPE 3 FERTILIZER AND TYPE 25-121 SEED ARE INCIDENTAL TO THIS ITEM. SEE "BASIS OF PLANNED QUANTITIES" FOR APPLICATION RATES.
20		TEMPORARY YELLOW CENTERLINE SKIPS AND WHITE LANE DESIGNATION SKIPS TO BE APPLIED EVERY 50' AS SOON AS POSSIBLE ON NEWLY PAVED SURFACE. SKIPS MUST BE INPLACE BEFORE OPENING TO TRAFFIC AND BEFORE THE CONTRACTOR LEAVES FOR THE DAY. CONTRACTOR IS TO REMOVE TEMPORARY PAVEMENT
21		FINAL STRIPING SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLETION OF MAINLINE WEAR COURSE PAVING. CANNOT BE INSTALLED SOONER THAN 48 HOURS.
22		THERMOPLASTIC REPLACEMENT REQUIRED AT CSAH 17 AND CSAH 32 IF THERMO STOP BARS AND CROSS WALKS ARE DAMAGED DURING PAVING PROCESS AS DETERMINED BY ENGINEER.
23		ITEM INCLUDES "MARKER SIGN PANEL" QUANTITY ON PAGE 53. LOCATIONS OF NEW SIGNS WILL BE CORED OR HAVE TELSPAR SET BY ANOKA COUNTY.

BITUMINOUS STREET SUMMARY

LOCATION	BITUMINOUS 2360 TYPE SP 12.5 WEAR (4,F) TON	NOTES
Cord Street	19	[1]
87th Avenue	22	[1]
88th Lane	24	[1]
Flowerfield Road East	16	[1]
Flowerfield Road West	25	[1]
Restwood Road	27	[1]
Woodland Road East	23	[1]
Woodland Road West	21	[1]
Village Parkway	25	[1]
Central Street	15	[1]
Edgewood Road	13	[1]
97th Lane	17	[1]
99th Avenue	15	[1]
Austin Street	17	[1]
PROJECT TOTAL	263	

BITUMINOUS SUMMARY NOTES:

[1] QUANTITY ESTIMATED FOR 1 LIFTS

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
4024A	48" DIA. PRECAST SHALLOW DEPTH CATCH BASIN - DESIGN SD
4026A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4110F	COVER CASTING FOR MANHOLE (FOR USE IN ALL TRAFFIC AREAS) – CASTING NO. 715
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)
8132B	PREFORMED RIGID PVC CONDUIT LOOP DETECTOR - LAYOUT DETAILS, LAYOUT NOTES, TYPICAL INSTALLATION (3 SHEETS)

NO	DATE	BY	CKD	APPR	REVISION		
						03/08/2023	9:53:45 AM

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ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE AID PROJECT 002-617-027

STATEMENT OF ESTIMATED QUANTITIES

SPHaas

CSAH 17 - Lexington AVE NE

(EXISTING/PROPOSED) SECTION

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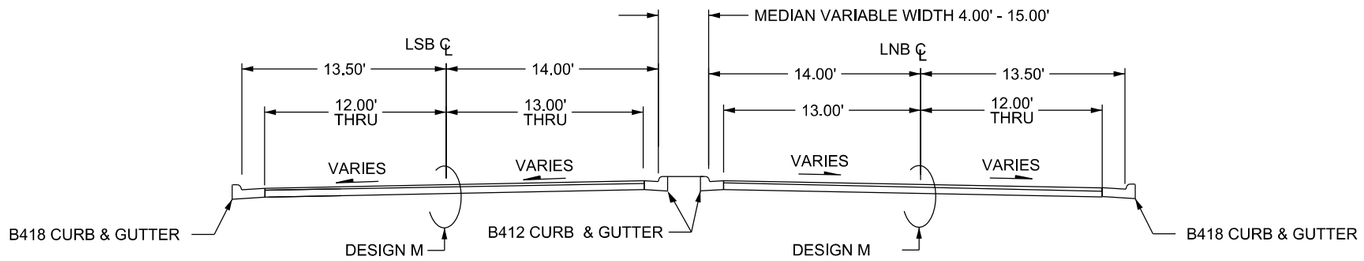

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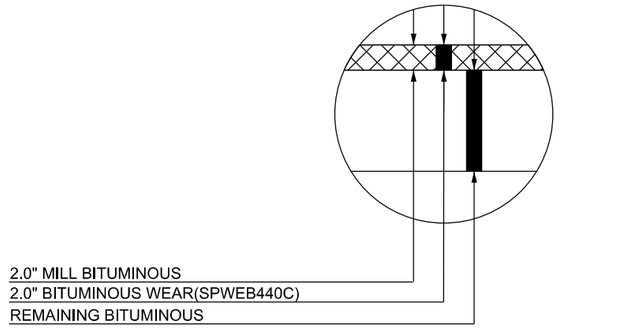

CSAH 17 - Lexington AVE NE

(EXISTING/PROPOSED) SECTION

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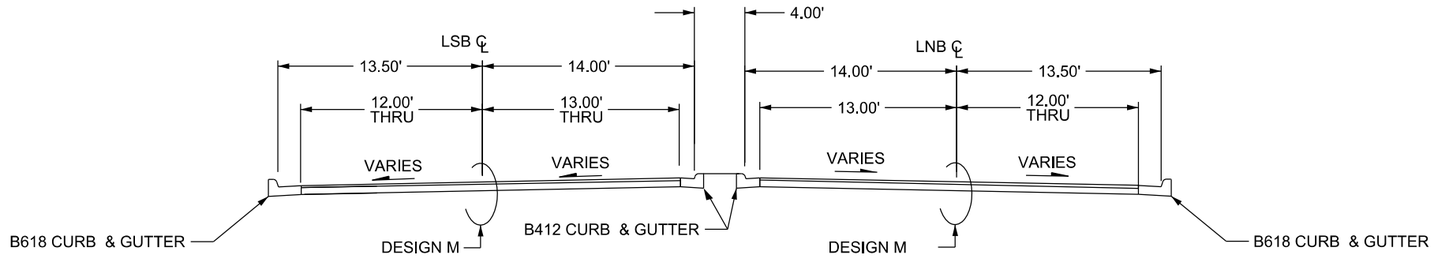
63+89.00 - 66+94.00



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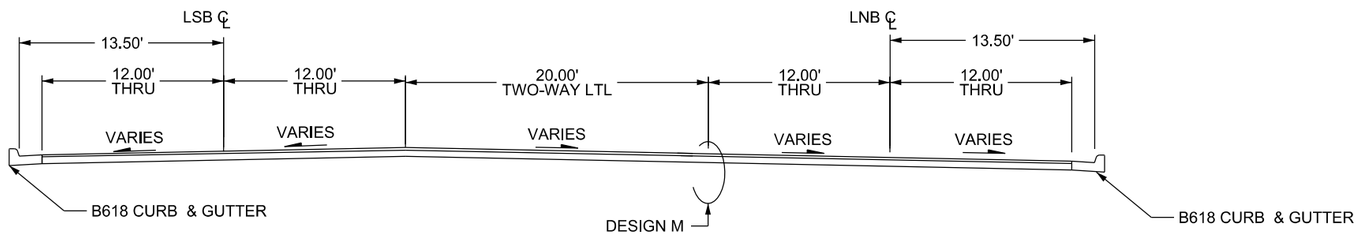

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ANOKA COUNTY HIGHWAY DEPT.

STATE AID PROJECT 002-617-027

TYPICAL SECTIONS

Sheet 3 of 65 Sheets

SPHaas

CSAH 17 - Lexington AVE NE

(EXISTING/PROPOSED) SECTION

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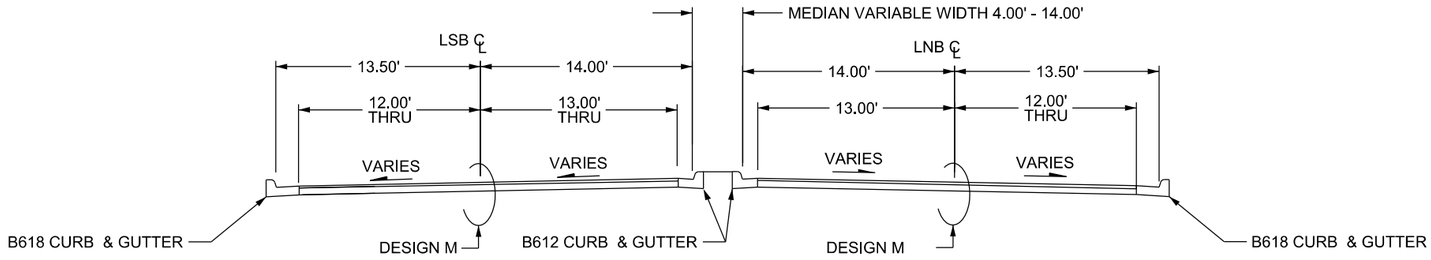
92+97.00 - 116+42.00



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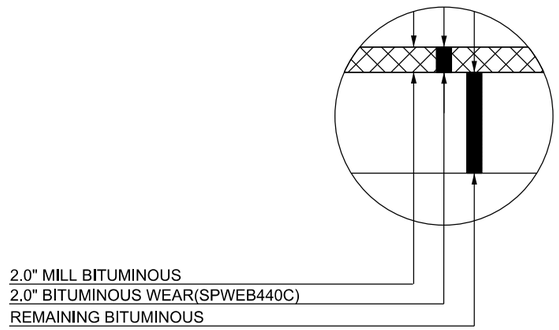

CSAH 17 - Lexington AVE NE

(EXISTING/PROPOSED) SECTION

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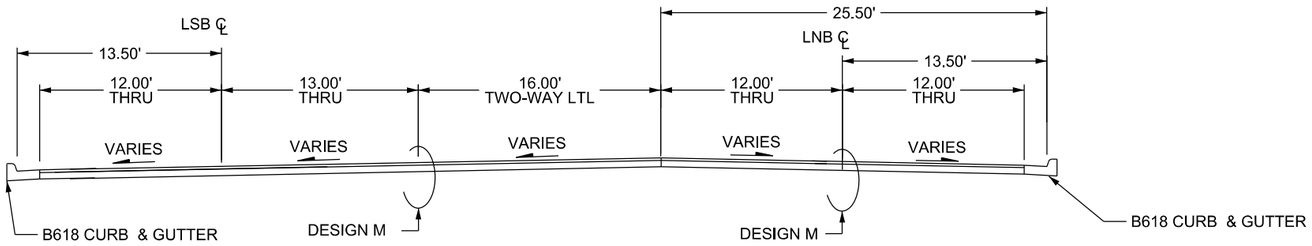

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ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

STATE AID PROJECT 002-617-027

TYPICAL SECTIONS

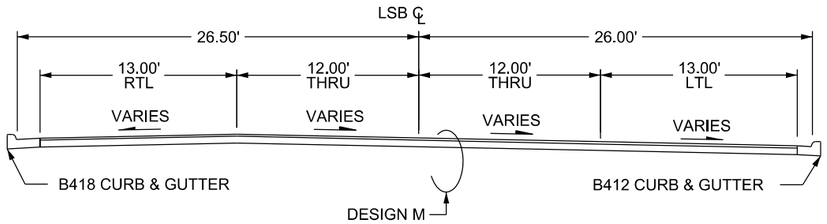
Sheet 4 of 65 Sheets

SPHaas

CSAH 17 - Lexington AVE NE

TYPICAL LSB TURN LANES

1012+73.00 - 1016+00.00



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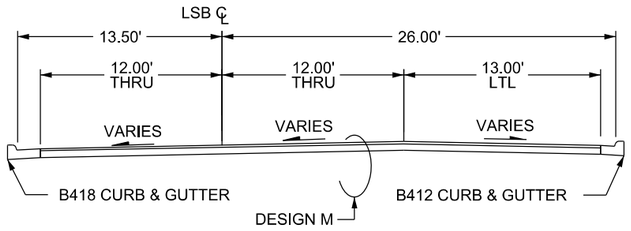

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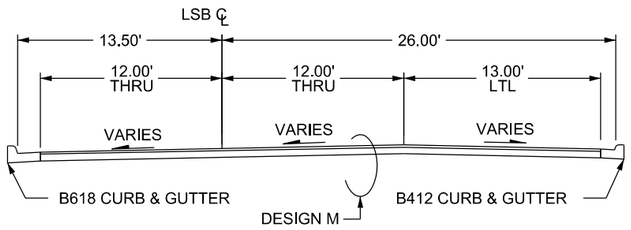

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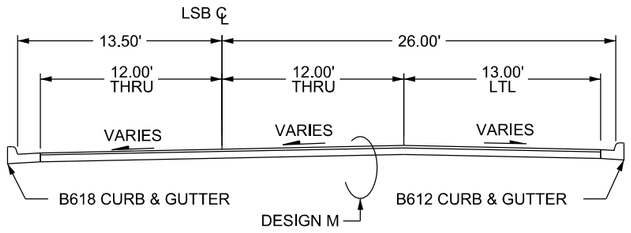
1100+36.00 - 1104+19.00



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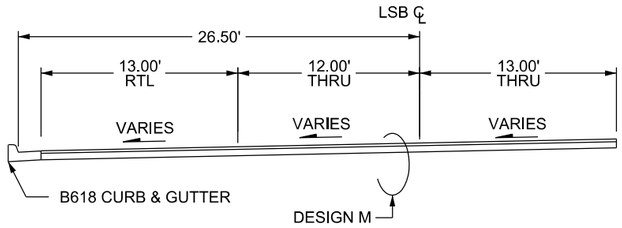

CSAH 17 - Lexington AVE NE

TYPICAL LNB TURN LANES

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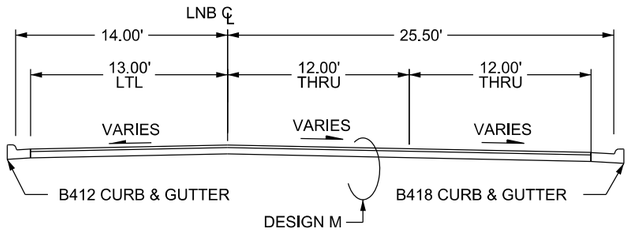
35+62.00 - 39+39.00



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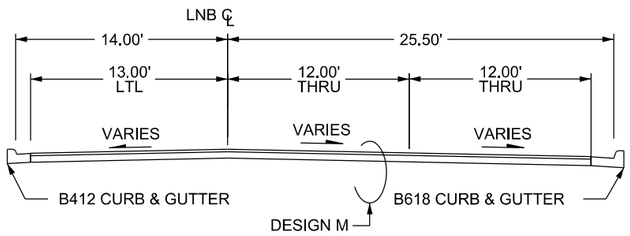
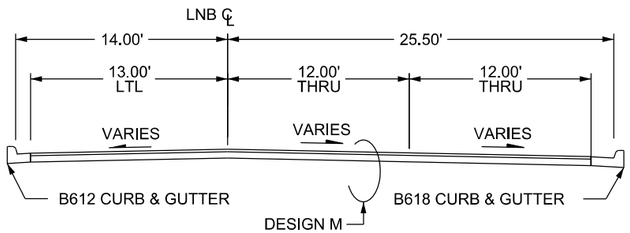


67+93.00 - 69+70.00
71+90.00 - 74+64.00

93+44.00 - 96+94.00
102+70.00 - 106+41.00
113+80.00 - 116+42.00



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ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-617-027

TYPICAL SECTIONS

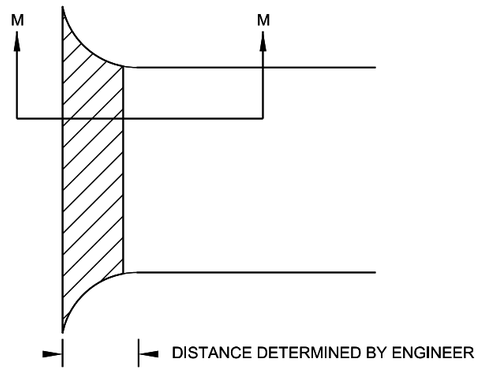
Sheet 5 of 65 Sheets

SPHaas

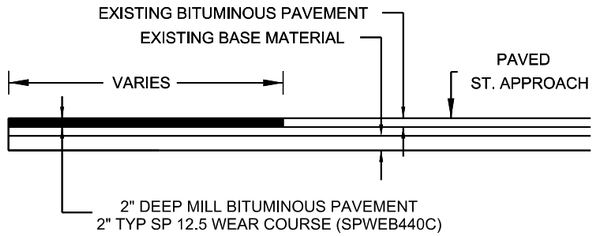
STREET APPROACH DETAIL (MILL & OVERLAY)

BITUMINOUS STREET

PLAN VIEW

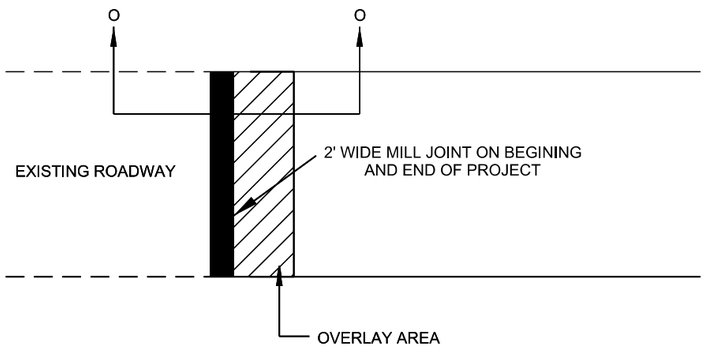


SECTION M - M



MAINLINE JOINT DETAIL (OVERLAY)

PLAN VIEW



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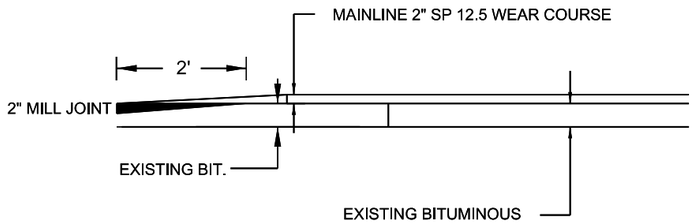

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PRINT NAME: GERALD J AUGE JR.

SIGNATURE:

DATE: 12-08-22 LICENSE NO. 26511

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ANOKA COUNTY

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STATE AID PROJECT 002-617-027

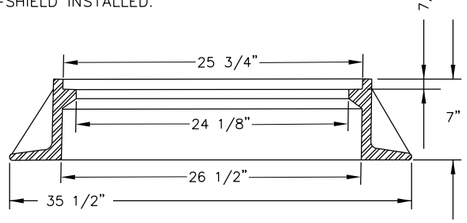
DETAILS

Sheet 6 of 65 Sheets

SPHaas

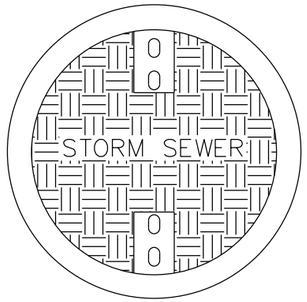
STANDARD MANHOLE CASTING

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

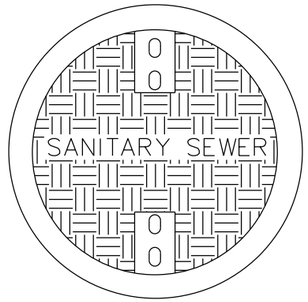


COVER–ESS BROTHER 301–CP LID. OR EQUAL WITH RUBBER GASKET ON THE BOTTOM OF THE LID.

NEENAH R1733–5044



NEENAH R1733–5044



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

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)	3
A-7D	700-7	715		301-CP LID WITH RUBBER GASKET ON	CASTING COVER STAMPED "SANITARY SEWER" (NEENAH R-1733 WITH LID 301-CP)	3
A	NEENAH R-3030	L	YES	NEENAH R-3030-L		8
B	NEENAH R-3030	L	NO	NEENAH R-3030-L	CURB PLATE NEEDED	3
C	NEENAH R-3250-DVSP	V	YES	NEENAH R-3250-DVSP		40
D	NEENAH R-3250-DVSP	V	NO	NEENAH R-3250-DVSP	CURB PLATE NEEDED	20

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

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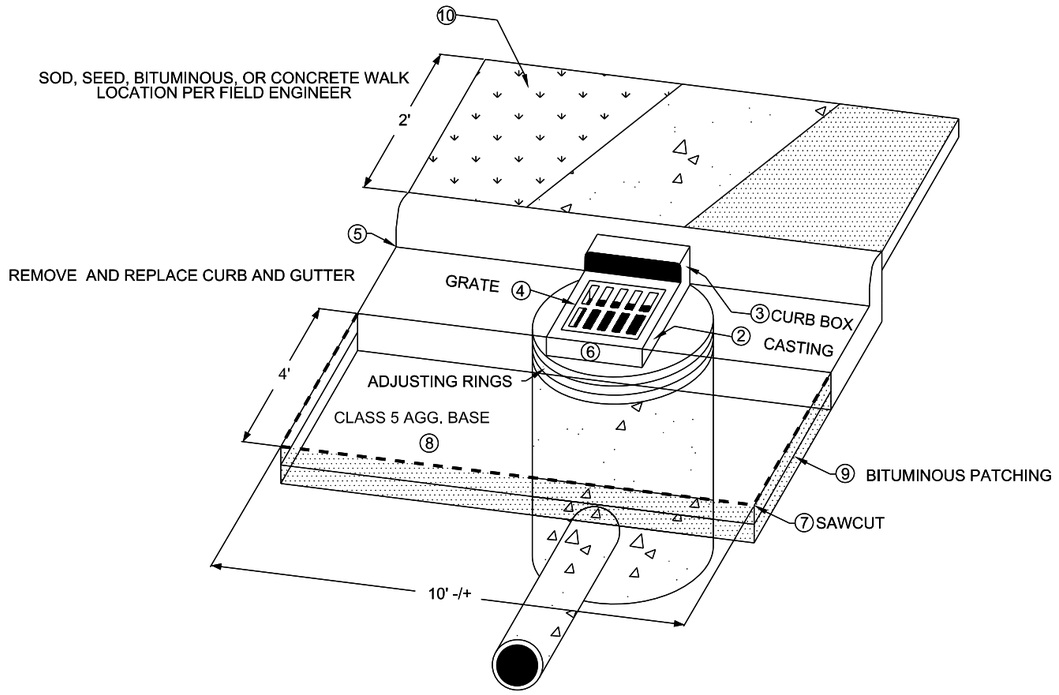
DETAILS

Sheet 7 of 65 Sheets

SPHaas

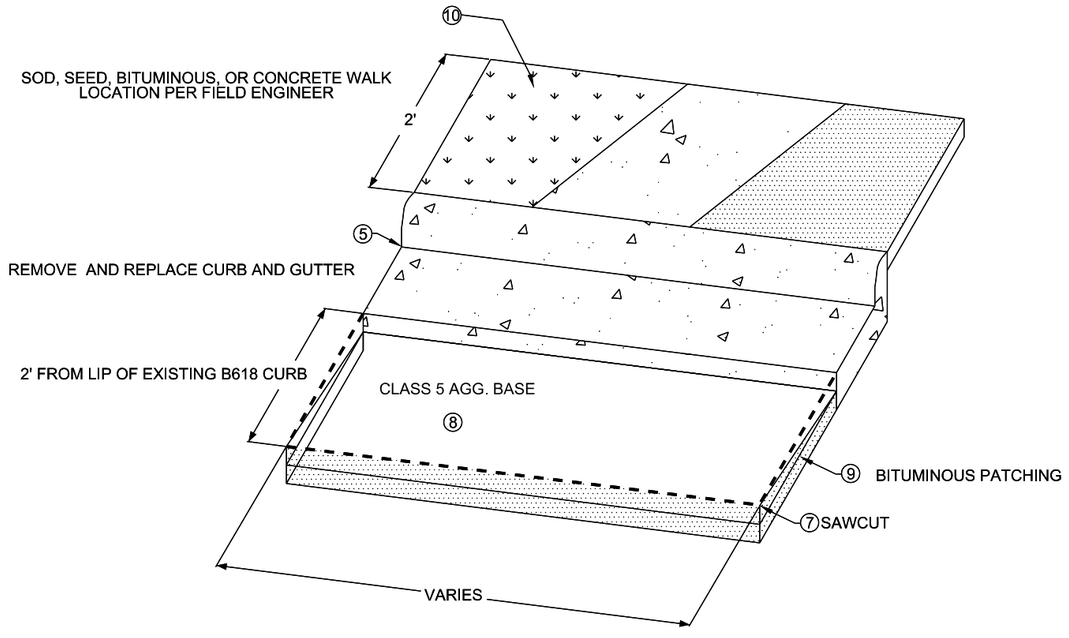
CATCH BASIN DETAIL

SEE STRUCTURE TAB FOR LOCATION
(PAGE 9)



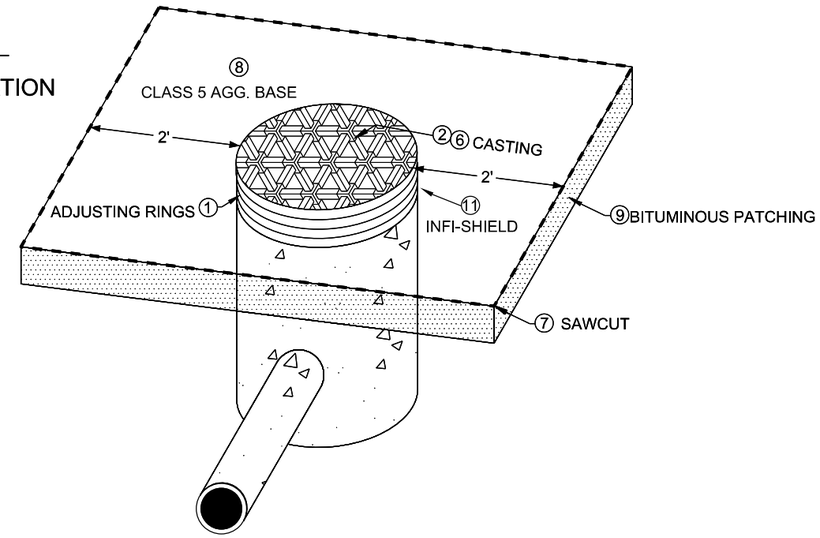
NEW CURB DETAIL

SEE PLAN FOR LOCATION



MANHOLE DETAIL

SEE STRUCTURE TAB FOR LOCATION
(PAGE 9)



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 DISTURED AREA BEHIND CATCH BASIN WITH EITHER SOD (RESIDENTAL AREAS), EROSION CONTROL BLANKET, BITUMINOUS ,OR CONCRETE
11. WRAP STORM SEWER MANHOLE AND SANITARY SEWER MANHOLE CONCRETE ADJUSTING RINGS & CASTING WITH INFI-SHIELD SEAL WRAP OR APPROVED EQUIVALENT, INSTALL PER MANUFACTURER'S RECOMMENDATIONS, INFI-SHIELD WRAP INCIDENTAL TO ADJUSTMENT.

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DETAILS

Sheet 8 of 65 Sheets

SPHaas

STORM DRAINAGE TAB

NUMBER	TYPE	ACTION	NEW CASTING TYPE	FURNISH AND INSTALL CASTING ASSEMBLY	RING HEIGHT (INCIDENTAL)	REMOVE STRUCT.	GROUT CATCH BASIN OR MANHOLE	CONST. DRAINAGE STRUCT. DESIGN H	CONNECT TO EXISTING STORM SEWER (INCIDENTAL)	REPAIR CATCH BASIN (REBUILD INVERT AND/OR DOGHOUSE)	NOTES
				EACH	LIN FT	EACH	EACH	LIN FT	EACH	EACH	
100	CB	GROUT					1				
101	CB	GROUT					1				
102	CB	GROUT					1				
103	CB	GROUT					1				
104	CB	GROUT					1				
105	CB	RE-RING	D	1	0.3					1	Rebuild invert
106	CB	GROUT					1			1	Rebuild doghouse and invert
107	CB	OK									
108	CB	RE-RING	B	1	1.0						Clean
109	CB	GROUT					1				Clean
110	CB	RE-RING	D	1	1.1						
110A	CB	GROUT					1				Grout structure and doghouse
111	CB	GROUT					1				
112	CB	GROUT					1			1	Rebuild doghouse and invert
113	CB	GROUT					1				Grout invert and doghouse
114	CB	GROUT					1			1	Rebuild invert, grout doghouse, clean
115	CB	GROUT					1				Grout invert and doghouse
116	CB	RE-RING	D	1	0.3					1	Rebuild invert
117	CB	GROUT					1				
118	CB	RE-RING	B	1	0.6					1	Rebuild invert
119	CB	GROUT					1			1	Rebuild doghouse
120	CB	GROUT					1				
121	CB	RE-RING	D	1	0.9					1	Rebuild doghouse
122	CB	GROUT					1				Clean
123	CB	RE-RING	B	1	0.8					1	Rebuild doghouse
124	CB	RE-RING	D	1	0.5					1	Rebuild doghouse
125	CB	GROUT					1				
126	CB	RE-RING	D	1	0.4					1	Rebuild doghouse and invert
127	CB	RE-RING	D	1	0.3						
128	CB	GROUT					1			1	Rebuild invert
129	CB	RE-RING	D	1	0.6						
130	CB	GROUT					1				
131	CB	GROUT					1				
132	CB	GROUT					1				
133	CB	RE-RING	D	1	0.3						
134	CB	RE-RING	D	1	0.3					1	Rebuild doghouse
135	CB	RE-RING	D	1	0.4					1	Rebuild doghouse
136	CB	RE-RING	D	1	0.2						
137	CB	RE-RING	D	1	0.6					1	Rebuild doghouse
138	CB	GROUT					1			1	Rebuild doghouse
139	CB	GROUT					1				
140	CB	GROUT					1				
141	CB	GROUT					1				
142	CB	OK									
143	CB	RECON	D	1	0.6	1		1.9	2		12" to NW and 15" to S
144	CB	RE-RING	D	1	0.6					1	Rebuild doghouse and clean
145	CB	GROUT					1				
146	CB	GROUT					1				
147	CB	GROUT					1				
148	CB	GROUT					1			1	Rebuild doghouse
149	CB	GROUT					1				
150	CB	RE-RING	D	1	1.1						
151	CB	RE-RING	D	1	0.6						Clean
152	CB	GROUT					1				Clean
153	CB	RE-RING	D	1	0.9						
154	CB	RE-RING	D	1	0.5						
155	CB	GROUT					1			1	Rebuild invert
156	CB	GROUT					1				
157	CB	GROUT					1				
158	CB	RE-RING	C	1	0.7						
159	CB	GROUT					1				Clean
160	CB	RE-RING	C	1	0.7						Grout doghouse and clean
161	CB	GROUT					1				
162	CB	GROUT					1				
163	CB	OK									
164	CB	GROUT					1				
165	CB	GROUT					1				
166	CB	RE-RING	C	1	0.7						Grout doghouse
167	CB	RE-RING	C	1	0.7					1	Rebuild doghouse and invert
168	CB	GROUT					1				
169	CB	RE-RING	C	1	0.7						
170	CB	RE-RING	C	1	0.8					1	Rebuild doghouse and clean
171	CB	RE-RING	C	1	0.8					1	Rebuild doghouse
172	CB	GROUT					1				
173	CB	GROUT					1			1	Rebuild invert
174	CB	GROUT					1				
175	CB	GROUT					1				Grout doghouse
176	CB	RE-RING	C	1	0.5						Grout invert and doghouse, clean
177	CB	GROUT					1				Grout doghouse
178	CB	RE-RING	C	1	0.5					1	Rebuild doghouse
179	CB	RE-RING	C	1	0.6						
TOTALS				**32**	**19.6**	**1**	**46**	**1.9**	**2**	**24**	

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 G	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48"	CONNECT TO EXISTING STORM SEWER (INCIDENTAL)	REPAIR CATCH BASIN (REBUILD INVERT AND/OR DOGHOUSE)	NOTES
				EACH	LIN FT	EACH	EACH	LIN FT	LIN FT	EACH	EACH	
181	CB	GROUT					1					Clean
182	CB	RE-RING	C	1	0.7							
183	CB	GROUT					1					Clean
184	CB	GROUT					1					
186	CB	GROUT					1					
187	CB	GROUT					1					
188	CB	GROUT					1					
189	CB	RE-RING	D	1	1.1							Reuse casting
190	CB	GROUT					1					
191	CB	GROUT					1					
192	CB	GROUT					1					
193	CB	RE-RING	C	1	1.0							
194	CB	RE-RING	C	1	0.5						1	Rebuild doghouse
195	CB	RE-RING	C	1	0.8							
196	CB	GROUT					1					Clean
197	CB	RE-RING	C	1	0.4							Clean
198	CB	RE-RING	C	1	0.7						1	Rebuild invert
199	CB	GROUT					1					
200	CB	GROUT					1					Clean
201	CB	GROUT					1					Grout doghouse
202	CB	RE-RING	C	1	0.4							
203	CB	GROUT					1					
204	CB	GROUT					1					
205	CB	GROUT					1					Clean
206	CB	GROUT					1					
207	CB	GROUT					1					
208	CB	GROUT					1					
209	CB	GROUT					1					Clean
210	CB	RE-RING	C	1	1.0							
211	CB	GROUT					1					Grout structure and doghouse
212	CB	GROUT					1					Clean
213	CB	GROUT					1					
214	CB	RE-RING	C	1	0.9							
215	CB	RE-RING	C	1	0.9							
216	CB	RECONSTRUCT	A	1	0.6	1		4.0		1		
217	CB	GROUT					1					Clean
218	CB	RECONSTRUCT	A	1	0.6	1		4.0		1		
219	CB	GROUT					1				1	Rebuild invert and doghouse and clean
220	CB	GROUT					1					
221	CB	GROUT					1					
222	CB	GROUT					1					
223	CB	RE-RING	A	1	0.9							Grout invert and doghouse
224	CB	RE-RING	C	1	0.7							Grout invert and doghouse
225	CB	RE-RING	C	1	0.8							Clean
226	CB	RE-RING	C	1	0.3							Clean
227	CB	GROUT					1					
228	CB	GROUT					1					
229	CB	GROUT					1					
230	CB	RE-RING	C	1	0.5							Grout invert and doghouse
231	CB	GROUT					1					Grout invert and doghouse and clean
232	CB	RE-RING	C	1	0.3							Clean
233	CB	OK										
234	CB	GROUT					1					
235	CB	RE-RING	C	1	0.5							Clean
236	CB	GROUT					1				1	Rebuild invert
237	CB	GROUT					1					
238	CB	GROUT					1					Grout invert and doghouses
239	CB	RE-RING	C	1	0.3							Clean
240	CB	GROUT					1				1	Rebuild invert and clean
241	CB	GROUT					1					
242	CB	GROUT					1					Grout structure
243	CB	RE-RING	C	1	0.7							
244	CB	RECONSTRUCT	C	1	0.3							New top hat
245	CB	GROUT					1					
246	CB	GROUT					1					Grout structure and clean
247	CB	GROUT					1					
249	CB	GROUT					1					
250	CB	RE-RING	C	1	0.7							
251	CB	RECONSTRUCT	C	1	0.0	1		2.4		1		
252	CB	GROUT					1					
253	CB	RECONSTRUCT	A	1	0.4				0.7			New top hat
254	CB	GROUT					1					
255	CB	GROUT					1					
256	CB	RE-RING	A	1	0.3							Clean
256A	CB	RECONSTRUCT	A	1	0.5				0.7			New top hat
257	CB	RE-RING	C	1	0.3							Clean
258	CB	RECONSTRUCT	C	1	0.8			4.5				
259	CB	GROUT					1					
260	CB	GROUT					1					Clean
261	CB	RECONSTRUCT	A	1	0.6				0.7			New top hat and clean
TOTALS				**31**	**18.5**	**3**	**48**	**14.9**	**2.1**	**3**	**5**	

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STATE AID PROJECT 002-617-027

STORM SEWER TABULATIONS

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STORM DRAINAGE TAB

NUMBER	TYPE	ACTION	NEW CASTING TYPE	FURNISH AND INSTALL CASTING ASSEMBLY	RING HEIGHT (INCIDENTAL)	REMOVE STRUCTURE	GROUT CATCH BASIN OR MANHOLE	REPAIR CATCH BASIN (REBUILD INVERT AND/OR DOGHOUSE)	NOTES
				EACH	LIN FT	EACH	EACH	EACH	
262	CB	GROUT					1		Clean
263	CB	GROUT					1		Clean
264	CB	GROUT					1		
265	CB	GROUT					1		
266	CB	RE-RING	A	1	0.6				
267	CB	GROUT					1		
268	CB	RE-RING	C	1	1.1				Clean
269	CB	GROUT					1		Clean
270	CB	RE-RING	C	1	0.8				
271	CB	RE-RING	C	1	0.5				
272	CB	GROUT					1		Grout structure and clean
273	CB	RE-RING	C	1	0.4				
274	CB	GROUT					1		
275	CB	GROUT					1		
276	CB	RE-RING	C	1	1.3				Clean
277	CB	GROUT					1		Clean
278	CB	GROUT					1		
279	CB	GROUT					1		
280	CB	RE-RING	C	1	0.6				
281	CB	GROUT					1		
282	CB	RE-RING	C	1	1.3				Clean
283	CB	GROUT					1		Grout invert
301	MH	GROUT					1		
302	MH	GROUT					1		
303	MH	RE-RING	A-7D	1	0.8				
305	MH	OK							
306	MH	OK							
307	MH	GROUT					1		
308	MH	RE-RING	A-7D	1	1.0				
309	MH	OK							
310	MH	GROUT					1	1	Rebuild invert and clean
311	MH	RE-RING	A-7D	1	0.5				
400	MH SAN	RE-RING	A-7D	1	0.2				
401	MH SAN	OK							
402	MH SAN	OK							
403	MH SAN	RE-RING	A-7D	1	0.2				
404	MH SAN	GROUT					1		
405	MH SAN	GROUT					1		
406	MH SAN	GROUT					1		
407	MH SAN	RE-RING	A-7D	1	0.8				
408	MH SAN	GROUT					1		
409	MH SAN	GROUT					1		
410	MH SAN	GROUT					1		
TOTALS				**14**	**10.1**	**0**	**24**	**1**	

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					REVISION	02/15/2023 7:19:54 AM

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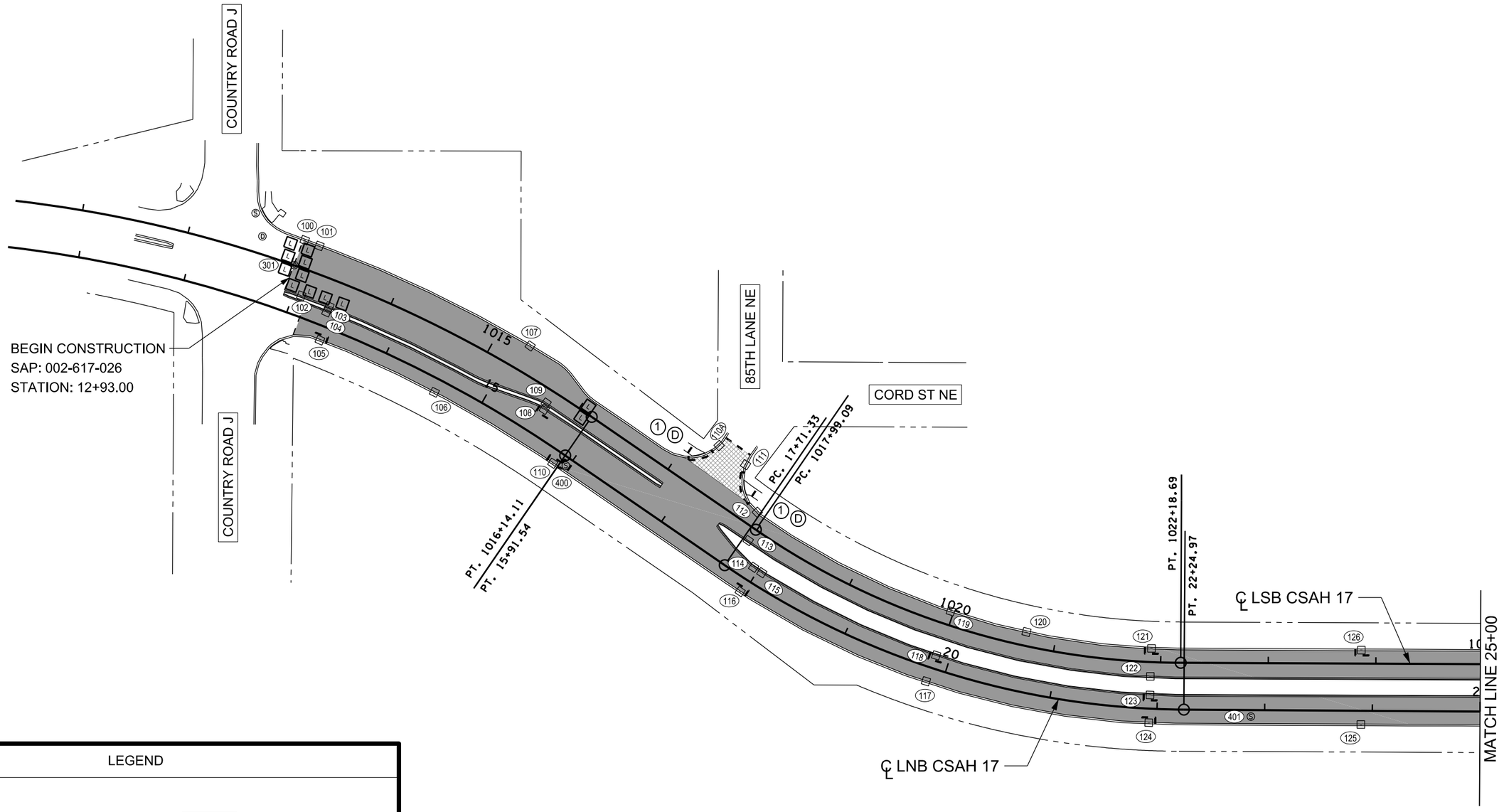
STORM SEWER TABULATIONS

Sheet 10 of 65 Sheets

SPHaas



LEGEND

- ADJUST GATE VALVE
- APPROX. LOOP LOCATION
- TRUNCATED DOMES
- REMOVE WALK / CONSTRUCT CURB RAMP WALK
- MAINLINE MILL AREA
- STREET APPROACH MILL SPECIAL AREA
- SAWCUT
- R / W

0 100
SCALE IN FEET

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						02/15/2023	7:17:11 AM

NAME: P:\23-01-00\CSAH_17_(SCL-I35W)\Base\Proposed\CSAH_17_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 AUGE JR.

SIGNATURE:

DATE: 12-08-22 LICENSE NO. 26511

DRAWN BY MR DATE 03/15/2022

DESIGN BY MR DATE 03/15/2022

CHECKED BY CO DATE 05/25/2022

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

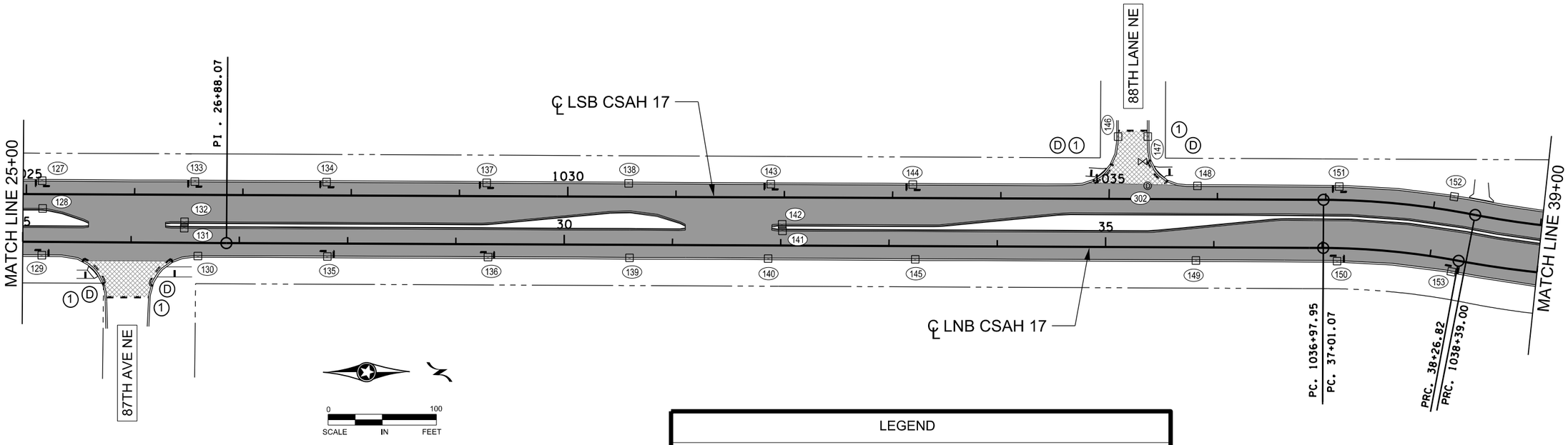
STATE AID PROJECT 002-617-027

CONSTRUCTION PLAN

STA 12+93.00 TO 25+00

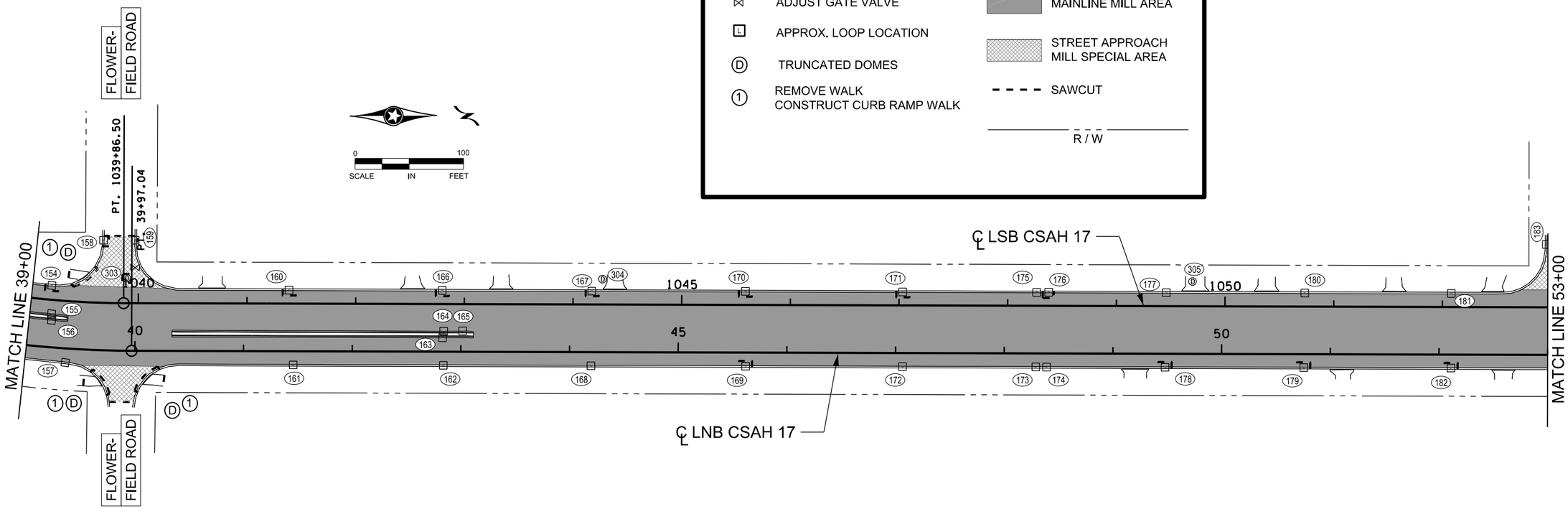
Sheet 11 of 65 Sheets

SPHaas



LEGEND

- ⋈ ADJUST GATE VALVE
- L APPROX. LOOP LOCATION
- D TRUNCATED DOMES
- 1 REMOVE WALK, CONSTRUCT CURB RAMP WALK
- MAINLINE MILL AREA
- STREET APPROACH MILL SPECIAL AREA
- SAWCUT
- R / W



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PRINT NAME: GERALD J AUGE JR.

SIGNATURE:

DATE: 12-08-22 LICENSE NO. 26511

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ANOKA COUNTY HIGHWAY DEPT.

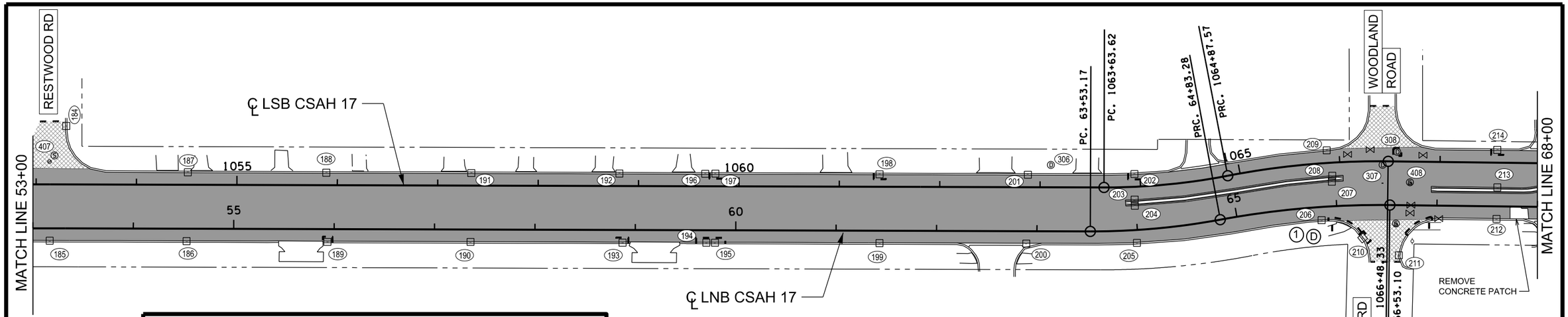
STATE AID PROJECT 002-617-027

CONSTRUCTION PLAN

STA 25+00 TO 53+00

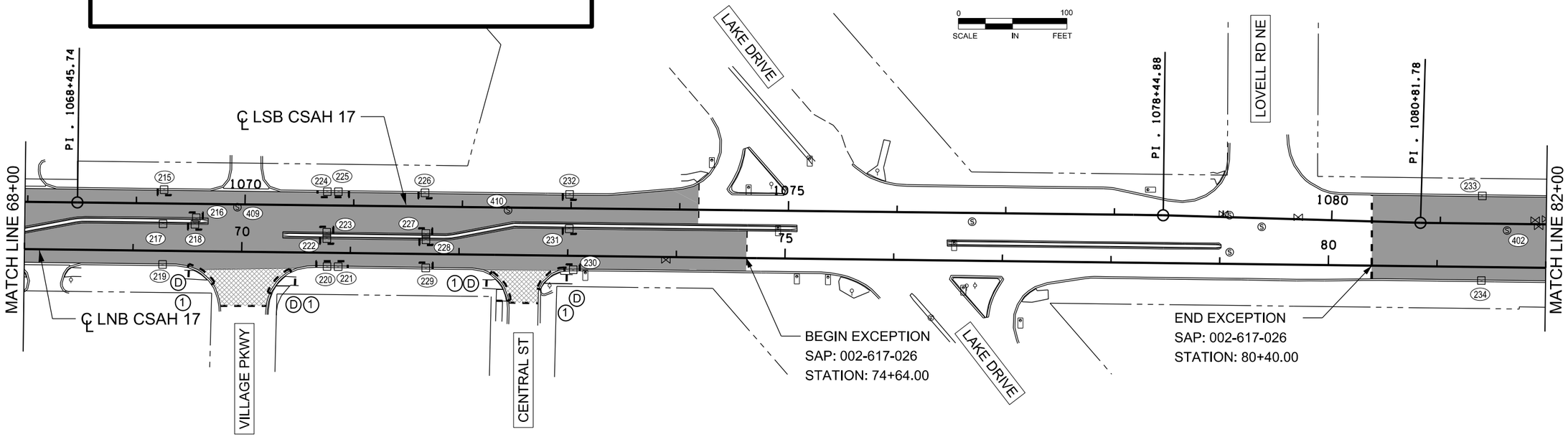
Sheet 12 of 65 Sheets

SPHaas



LEGEND

- ADJUST GATE VALVE
- APPROX. LOOP LOCATION
- (D) TRUNCATED DOMES
- (1) REMOVE WALK, CONSTRUCT CURB RAMP WALK
- MAINLINE MILL AREA
- STREET APPROACH MILL SPECIAL AREA
- SAWCUT
- R / W



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PRINT NAME: GERALD J AUGE JR.

SIGNATURE:

DATE: 12-08-22 LICENSE NO. 26511

DRAWN BY MR DATE 03/15/2022

DESIGN BY MR DATE 03/15/2022

CHECKED BY CO DATE 05/25/2022

ANOKA COUNTY HIGHWAY DEPT.

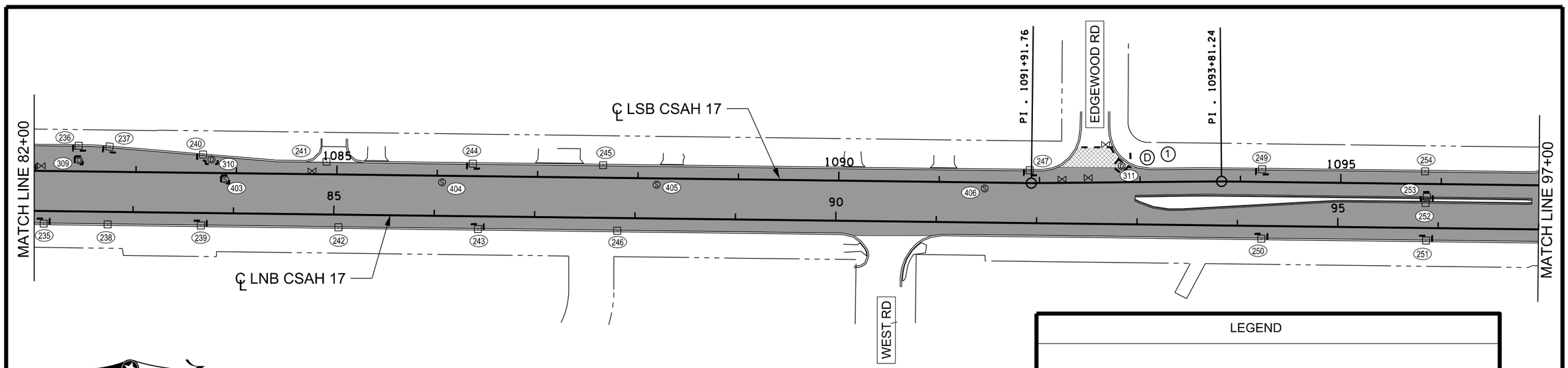
STATE AID PROJECT 002-617-027

CONSTRUCTION PLAN

STA 53+00 TO 82+00

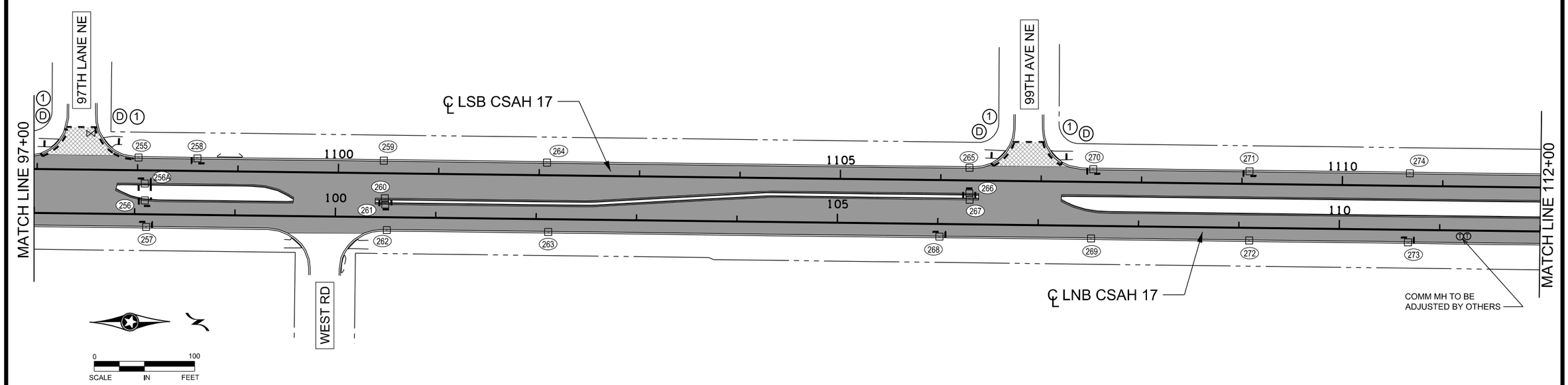
Sheet 13 of 65 Sheets

SPHaas



LEGEND

- ⋈ ADJUST GATE VALVE
- L APPROX. LOOP LOCATION
- D TRUNCATED DOMES
- 1 REMOVE WALK, CONSTRUCT CURB RAMP WALK
- MAINLINE MILL AREA
- STREET APPROACH MILL SPECIAL AREA
- SAWCUT
- R / W



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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 AUGE JR.

SIGNATURE:

DATE: 12-08-22 LICENSE NO. 26511

DRAWN BY MR DATE 03/15/2022

DESIGN BY MR DATE 03/15/2022

CHECKED BY CO DATE 05/25/2022

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

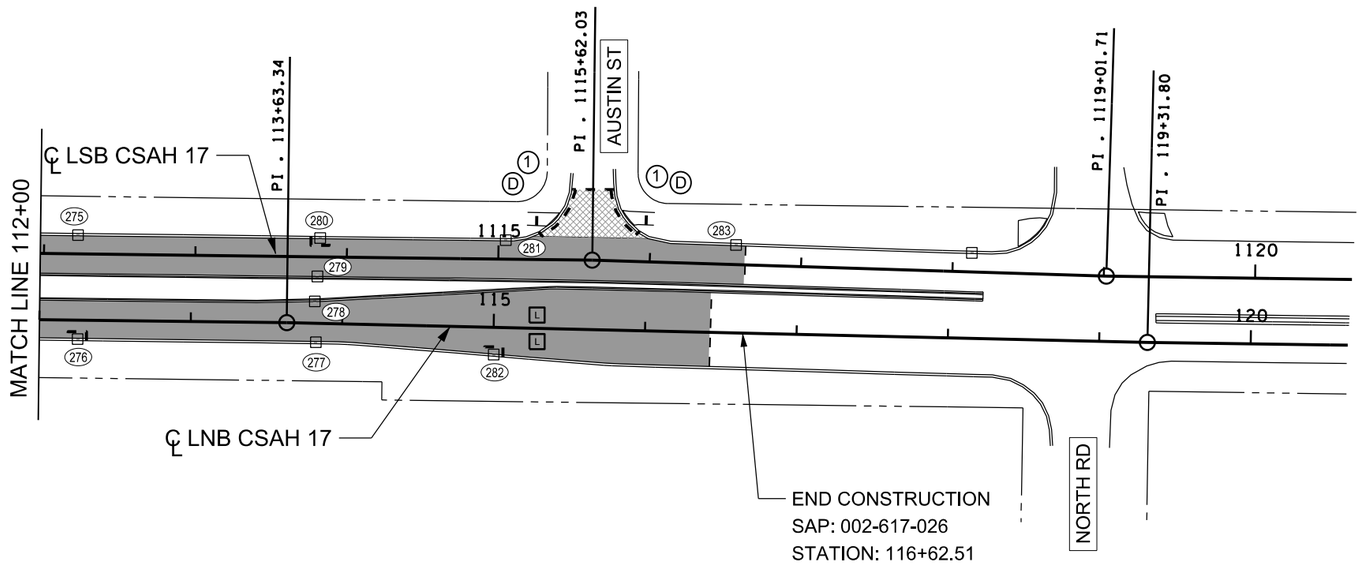
STATE AID PROJECT 002-617-027

CONSTRUCTION PLAN

STA 82+00 TO 112+00

Sheet 14 of 65 Sheets

SPHaas



0 100
SCALE IN FEET

LEGEND

- ⋈ ADJUST GATE VALVE
- L APPROX. LOOP LOCATION
- Ⓓ TRUNCATED DOMES
- ① REMOVE WALK, CONSTRUCT CURB RAMP WALK
- MAINLINE MILL AREA
- STREET APPROACH MILL SPECIAL AREA
- SAWCUT
- R / W

NO	DATE	BY	CKD	APPR	REVISION		
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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.

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ANOKA COUNTY

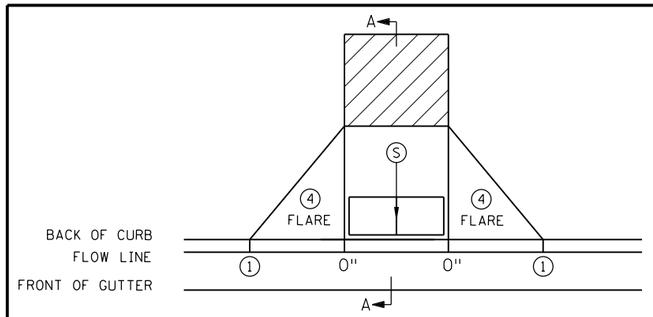
ANOKA COUNTY HIGHWAY DEPT.

STATE AID PROJECT 002-617-027

CONSTRUCTION PLAN

STA 112+00 TO 116+42.00

Sheet 15 of 65 Sheets



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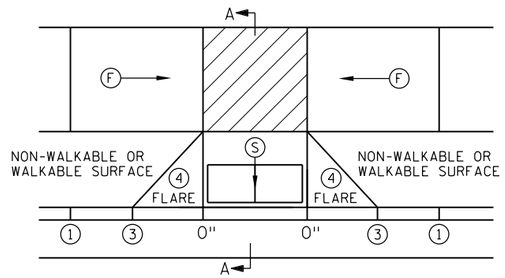
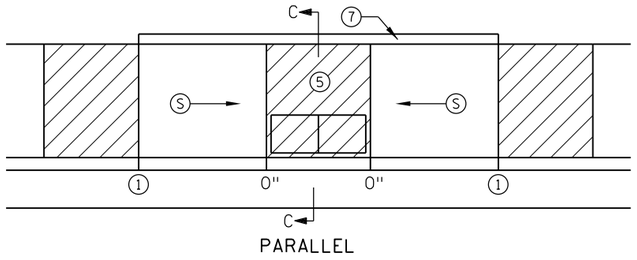
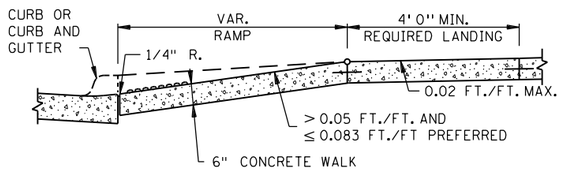


TIERED PERPENDICULAR

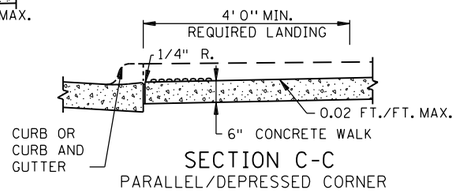


PARALLEL



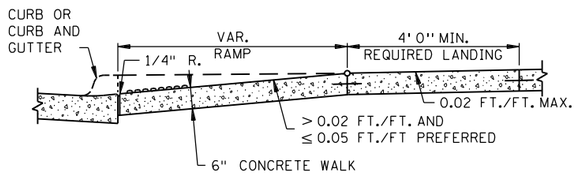
SECTION A-A

PERPENDICULAR/TIERED/DIAGONAL



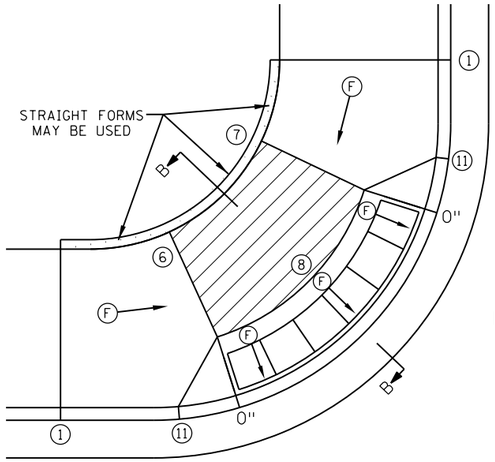
SECTION C-C

PARALLEL/DEPRESSED CORNER

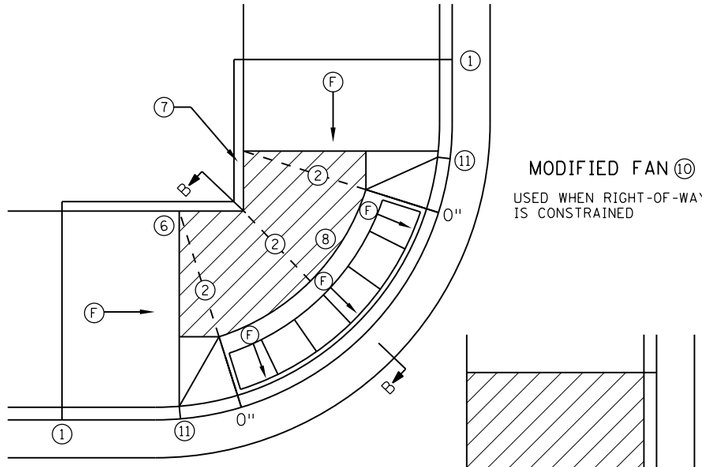


SECTION B-B

FAN

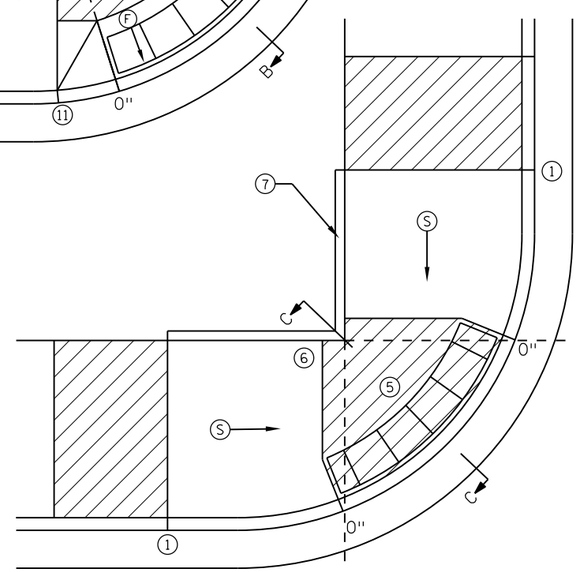


FAN (10)



MODIFIED FAN (10)

USED WHEN RIGHT-OF-WAY IS CONSTRAINED



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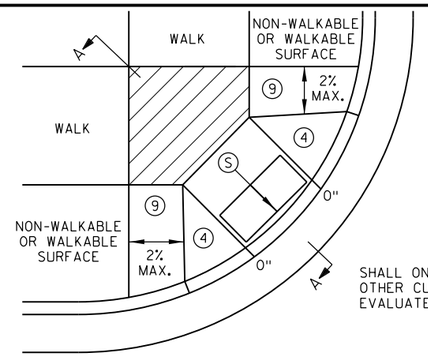


DIAGONAL

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

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE GREATER THAN 2%.

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

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

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

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL, THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH. (EXCEPT AS STATED IN (6) BELOW.

TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 OF 6 FOR ALL SEPARATELY POURED INITIAL LANDINGS.

WHEN SIDEWALK IS AT BACK OF CURB, TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

MAINTAIN POSITIVE BOULEVARD DRAINAGE TO TOP OF CURB.

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

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

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

RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.

(1) MATCH FULL HEIGHT CURB.

(2) 4' MINIMUM DEPTH LANDING REQUIRED ACROSS TOP OF RAMP.

(3) 3" HIGH CURB WHEN USING A 3' LONG RAMP, 4" HIGH CURB WHEN USING A 4' LONG RAMP.

(4) SEE SHEET 4 OF 6, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.

(5) DETECTABLE WARNINGS MAY BE PART OF THE 4' X 4' MIN. LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.

(6) THE GRADE BREAK SHALL BE PERPENDICULAR TO THE BACK OF WALK. THIS WILL ENSURE THAT THE GRADE BREAK IS PERPENDICULAR TO THE DIRECTION OF TRAVEL. (TYPICAL FOR ALL)

(7) WHEN ADJACENT TO GRASS, GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS LESS THAN 5% RUNNING SLOPE SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.

(8) A 7' MIN TOP RADIUS GRADE BREAK IS REQUIRED TO BE CONSTRUCTIBLE.

(9) PAVE FULL WALK WIDTH.

(10) "S" SLOPES ON FANS SHALL ONLY BE USED WHEN ALL OTHER FEASIBLE OPTIONS HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.

(11) INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3" CURB HEIGHT. REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

LEGEND

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

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

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

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

X" CURB HEIGHT

REVISION:

APPROVED: 11-04-2021

JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | **1 OF 6**

APPROVED: 11-04-2021
REVISED:

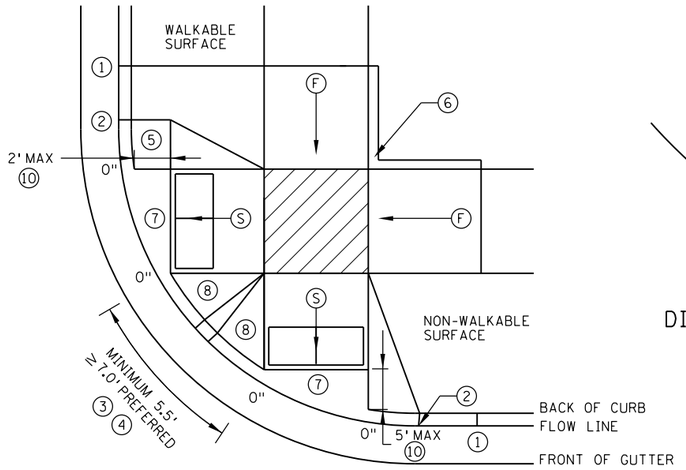
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

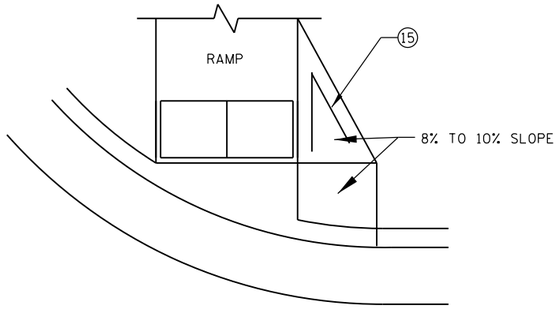
STATE AID PROJ. NO. 002-617-027

SHEET NO. 16 OF 65 SHEETS

DISTRICT #:
PLOT NAME: $$@IPLOT$NAME@$$
PATH & FILENAME: P:\23-01-00\CSAH_17_(SCL-135W)\Base\Proposed\ADA.dgn
PLOTTED/REVISED: 02/15/2023

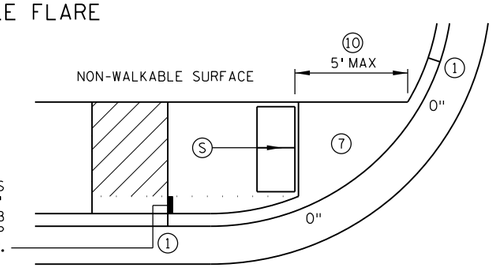


COMBINED DIRECTIONAL

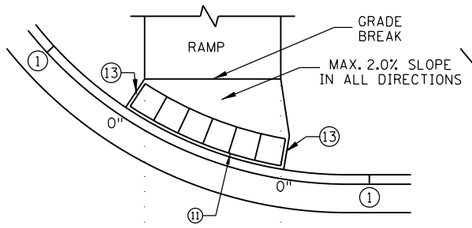


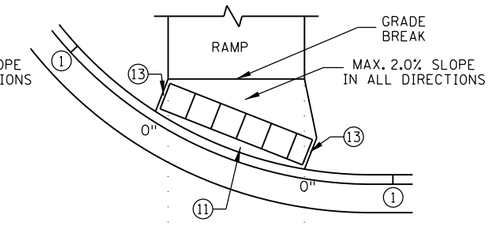
DIRECTIONAL RAMP WALKABLE FLARE

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



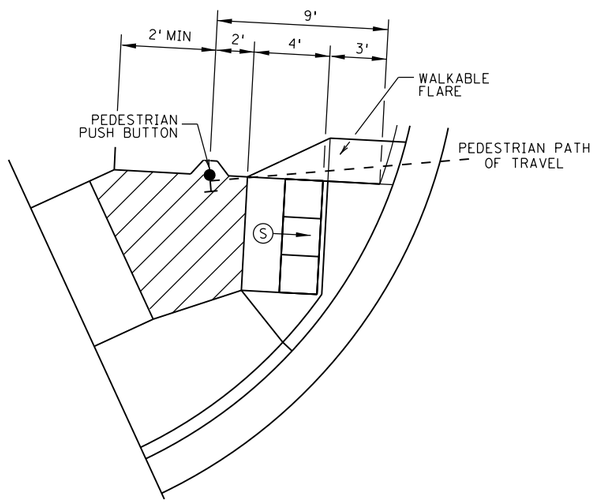
STANDARD ONE-WAY DIRECTIONAL ⑨





DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫

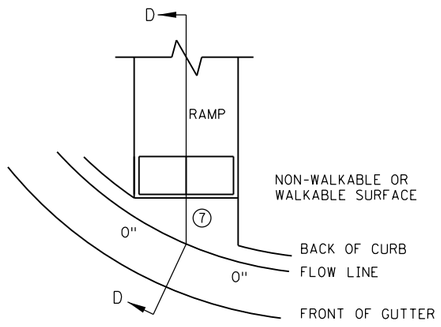
ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB

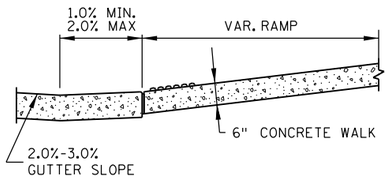


SEMI-DIRECTIONAL RAMP ③④⑨

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

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





SECTION D-D

CURB FOR DIRECTIONAL RAMPS ⑭

NOTES:

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

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

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

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

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

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

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

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

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

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

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

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

① MATCH FULL CURB HEIGHT.

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

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

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

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

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

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

⑧ 8% TO 10% WALKABLE FLARE.

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

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

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

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

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

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

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

LEGEND

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

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

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

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

X" CURB HEIGHT

REVISION:

APPROVED: 11-04-2021
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STANDARD PLAN 5-297.250 | 2 OF 6

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

PEDESTRIAN CURB RAMP DETAILS

STATE AID PROJ. NO. 002-617-027 SHEET NO. 17 OF 65 SHEETS

PLOTTED/REVISED: 02/15/2023
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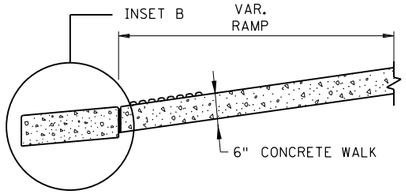
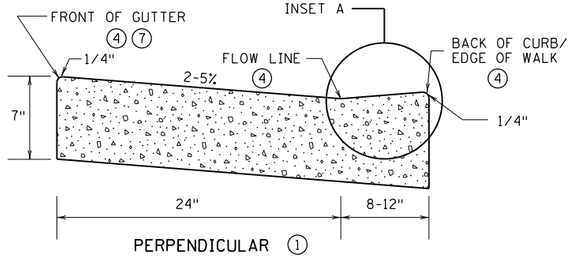
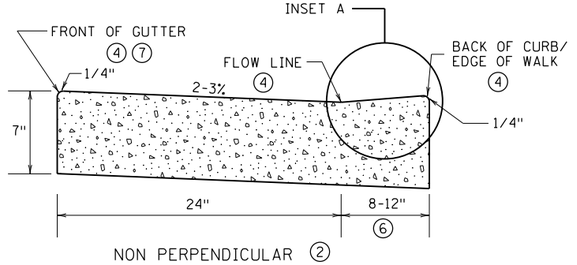
PATH & FILENAME: P:\23-01-00\CSAH.17_(SCL-135W)\Base\Proposed\ADA.dgn

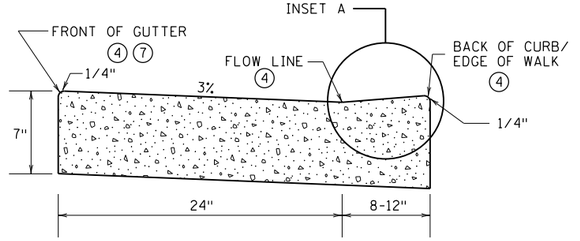




PERPENDICULAR (1)

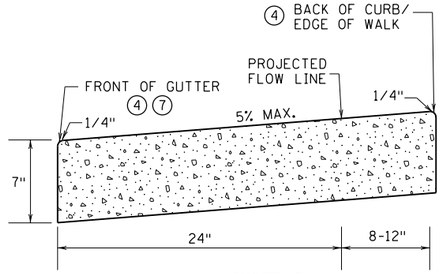


NON PERPENDICULAR (2)

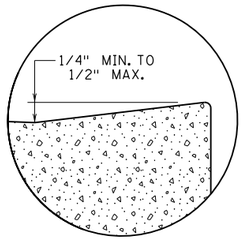


FOR CURB MACHINE PLACEMENT AROUND RADIUS (3)
(REGARDLESS OF RAMP TYPE)

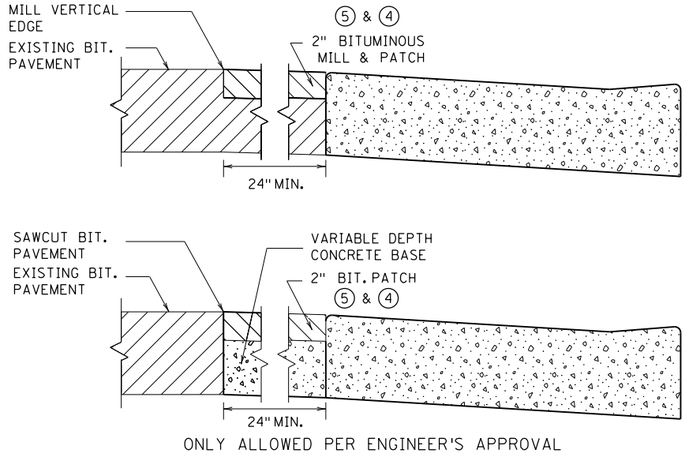
PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL



INSET B
OUTFLOW GUTTER (8)



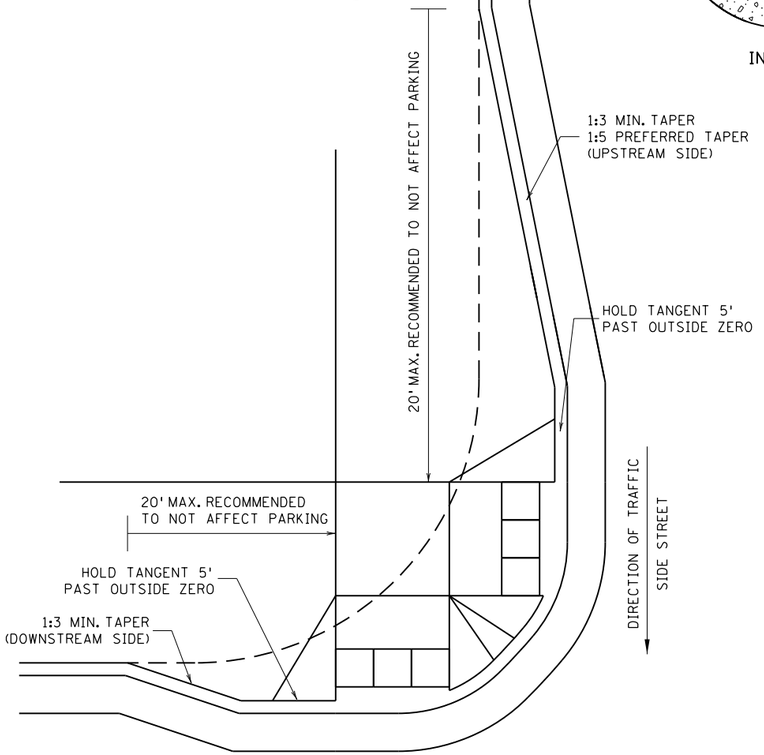
INSET A



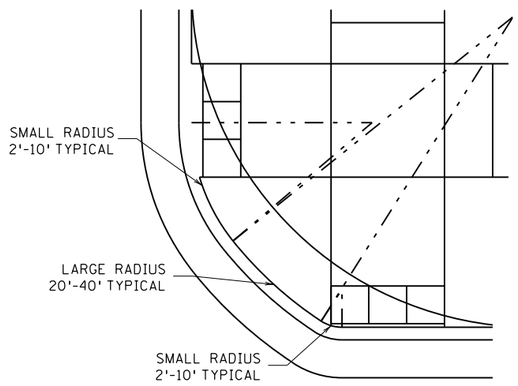
ONLY ALLOWED PER ENGINEER'S APPROVAL

PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER

FOR USE ON CURB RAMP RETROFITS



ADA CURB EXTENSION WITH COMPOUND RADIUS (BUMP OUT) (11)



COMBINED DIRECTIONAL (10)
(COMPOUND RADIUS)

NOTES:

POSITIVE FLOW LINE DRAINAGE SHALL BE MAINTAINED THROUGH THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% MAXIMUM.

NO PONDING SHALL BE PRESENT IN THE PAR.

ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE SHALL NOT BE GREATER THAN 1/4 INCH.

(1) FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, TIERED PERPENDICULAR, PARALLEL, AND DIAGONAL RAMPS.

(2) FOR USE AT CURB RAMPS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED NON PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS & DEPRESSED CORNERS.

(3) BEGIN GUTTER SLOPE TRANSITION 10' OUTSIDE OF ALL CURB RAMPS.

(4) THERE SHALL BE NO VERTICAL DISCONTINUITIES GREATER THAN 1/4".

(5) ELEVATION CHANGE TAKES PLACE FROM THE EXISTING TO NEW FRONT OF GUTTER. PATCH IS USED TO MATCH THE NEW GUTTER FACE INTO THE EXISTING ROADWAY.

(6) VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS. SEE SHEET 2 FOR DIRECTIONAL CURB SLOPE REQUIREMENTS.

(7) TOP FRONT OF GUTTER SHALL BE CONSTRUCTED FLUSH WITH PROPOSED ADJACENT PAVEMENT ELEVATION. TOP 1.5" OF THE GUTTER FACE MUST BE A FORMED EDGE. PAR GUTTER SHALL NOT BE OVERLAID.

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

(9) DRILL AND GROUT NO. 4 EPOXY-COATED 18" LONG TIE BARS AT 30" CENTER TO CENTER INTO EXISTING CONCRETE PAVEMENT 1' MINIMUM FROM ALL JOINTS.

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

(11) CURB EXTENSIONS SHOULD BE USED IN VERTICALLY CONSTRAINED AREAS, USUALLY IN DOWNTOWN ROADWAY SEGMENTS WHERE ON-STREET PARKING IS AVAILABLE. CURB EXTENSIONS SHOULD BE CONSIDERED FOR APS INTERSECTIONS WHERE SPACE IS LIMITED. PUSH BUTTONS MUST MEET APS CRITERIA AS DESCRIBED IN THE PUSH BUTTON LOCATION DETAIL SHEET.

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STANDARD PLAN 5-297.250 | 3 OF 6

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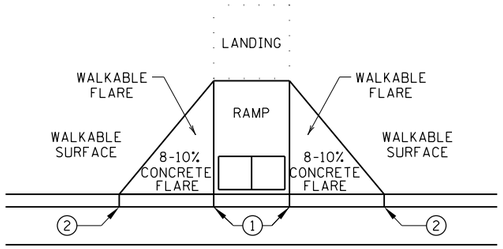
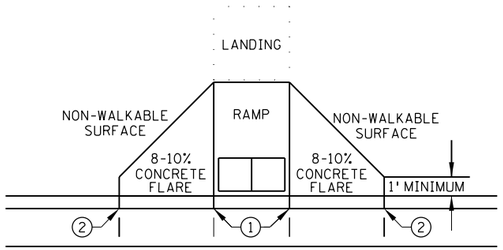
PEDESTRIAN CURB RAMP DETAILS

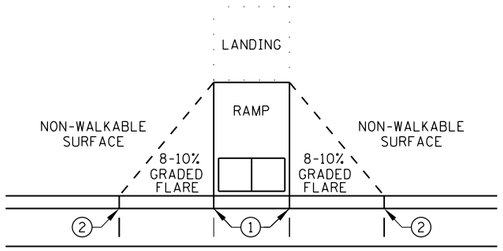
STATE AID PROJ. NO. 002-617-027



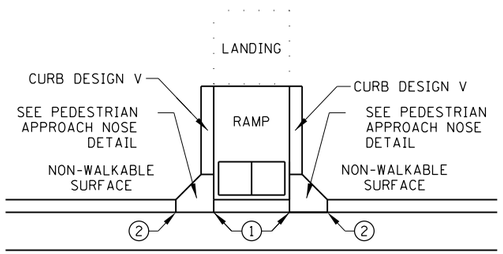
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

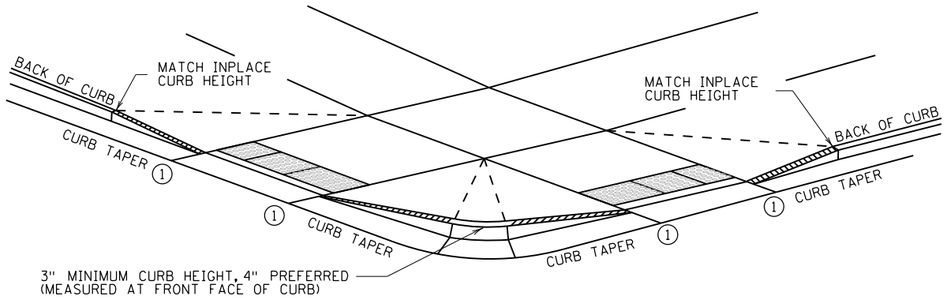


GRADED FLARES

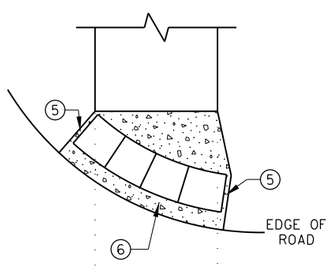


RETURNED CURB ④

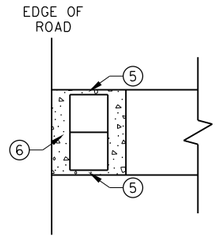
TYPICAL SIDE TREATMENT OPTIONS ③ ⑩



DETECTABLE EDGE WITH ⑦
CURB AND GUTTER

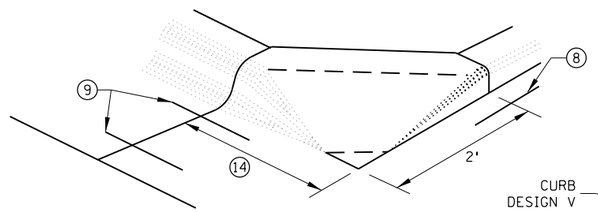


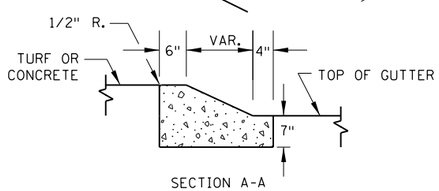
RADIAL DETECTABLE WARNING



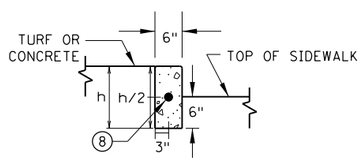
RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

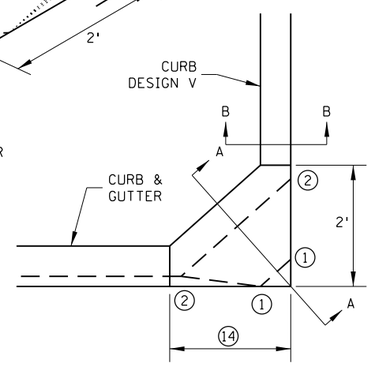




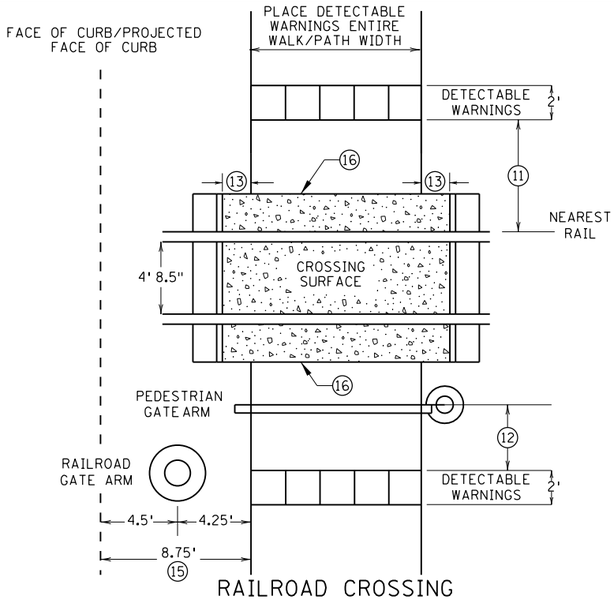
SECTION A-A



SECTION B-B



PEDESTRIAN APPROACH
NOSE DETAIL
(FOR RETURNED CURB
SIDE TREATMENT)



RAILROAD CROSSING
PLAN VIEW

NOTES:

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

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

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

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

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

② FULL CURB HEIGHT.

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

④ TYPICALLY USED FOR MEDIANS AND ISLANDS.

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

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

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

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

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

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

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

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

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

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

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

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

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STANDARD PLAN 5-297.250 | 4 OF 6

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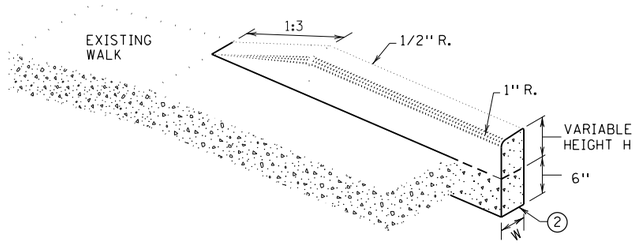
PEDESTRIAN CURB RAMP DETAILS

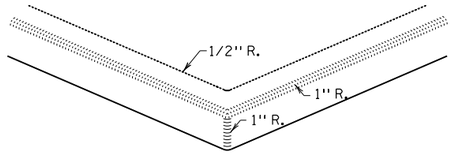
STATE AID PROJ. NO. 002-617-027

SHEET NO. 19 OF 65 SHEETS



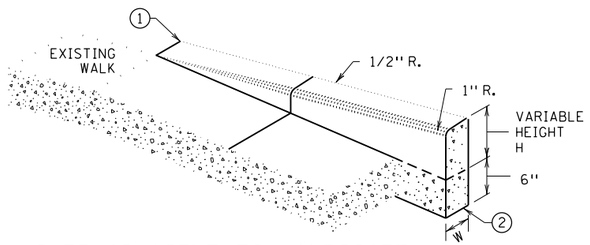
V CURB ADJACENT TO LANDSCAPE

CURB WITHIN SIDEWALK LIMITS



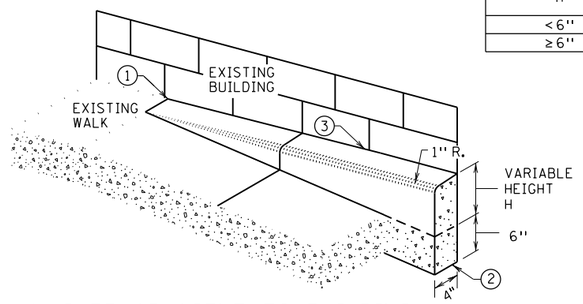
V CURB INTERSECTION

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

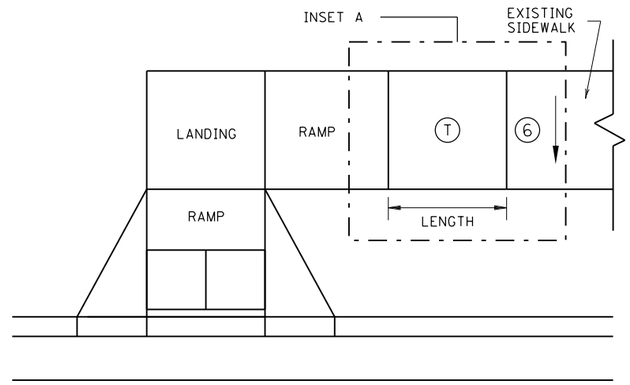


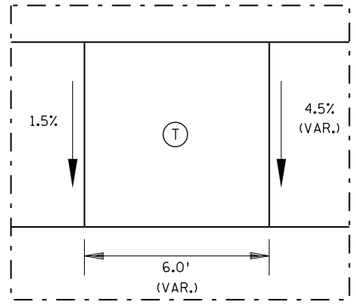
V CURB ADJACENT TO LANDSCAPE

CURB OUTSIDE SIDEWALK LIMITS



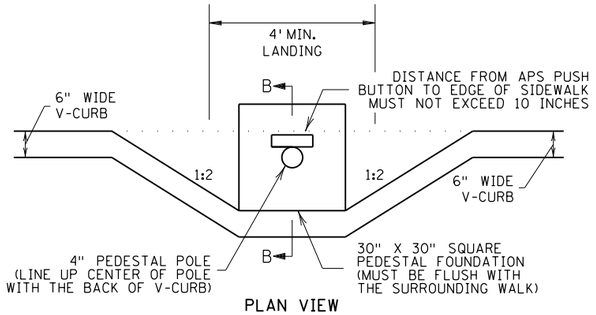
V CURB ADJACENT TO BUILDING OR BARRIER



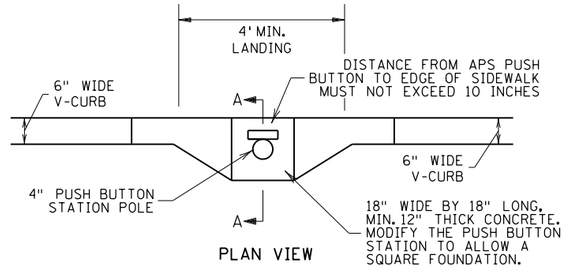


TRANSITION PANEL ④⑤

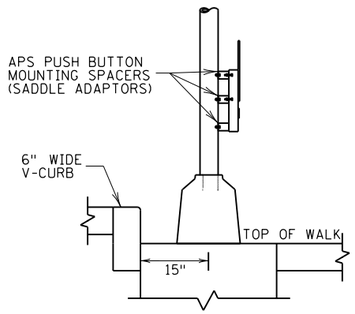
INSET A



PLAN VIEW

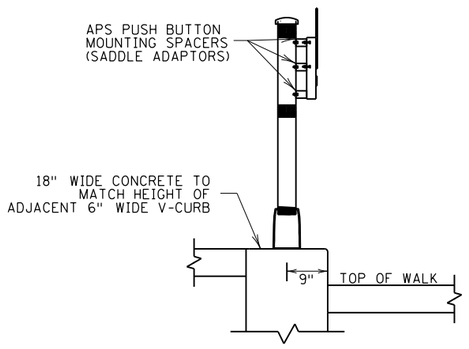


PLAN VIEW



SECTION B-B

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)



SECTION A-A

PUSH BUTTON STATION (V-CURB)

NOTES:

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

ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.

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

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

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

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

(2) ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.

(3) CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A-E EXPANSION. LEAVE A MINIMUM ½" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.

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

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

(6) EXISTING CROSS SLOPE GREATER THAN 2.0%.

LEGEND

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

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

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.

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

REVISION:

APPROVED: 11-04-2021

JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 | 5 OF 6

APPROVED: 11-04-2021
REVISED:

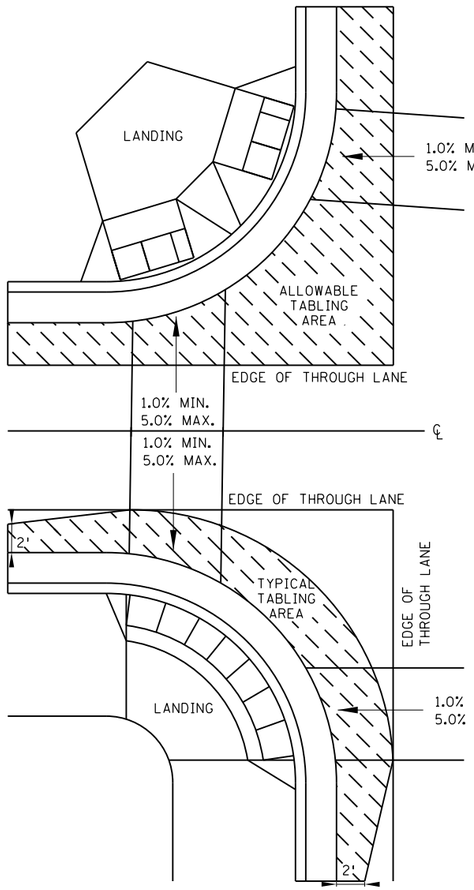
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

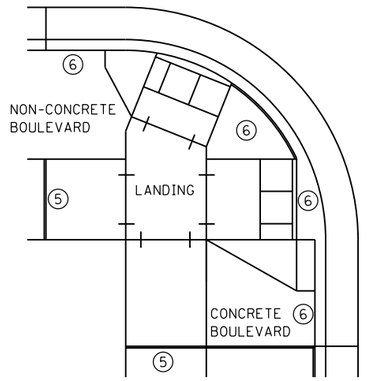
STATE AID PROJ. NO. 002-617-027

SHEET NO. 20 OF 65 SHEETS

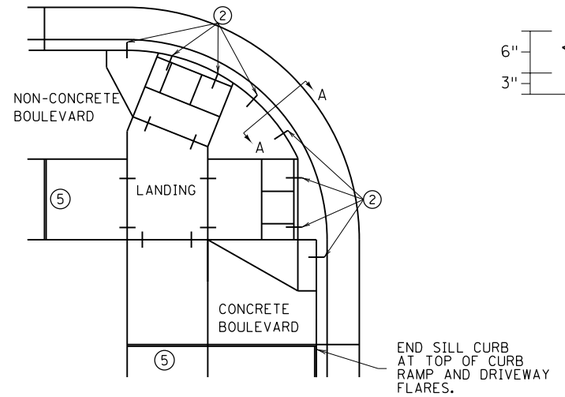
PLOTTED/REVISED: 02/15/2023
DISTRICT #:
PLOT NAME: $$@PLOT$NAME@$$
PATH & FILENAME: P:\23-01-00\CSAH 17_(SCL-135W)\Base\Proposed\ADA.dgn



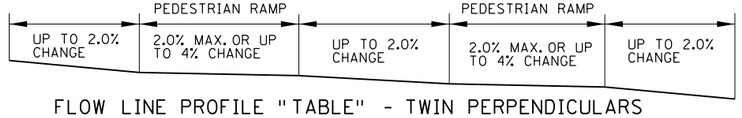
CURB LINE AND ROAD CROSSING ADJUSTMENTS



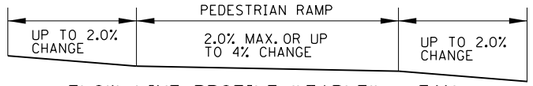
EXPANSION MATERIAL PLACEMENT
FOR CONCRETE ROADWAYS



CURB LINE REINFORCEMENT ④
PLACEMENT ON BITUMINOUS ROADWAYS



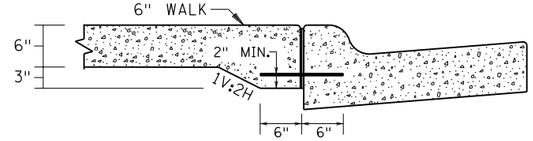
FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



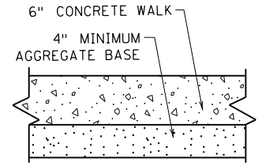
FLOW LINE PROFILE "TABLE" - FAN

FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS

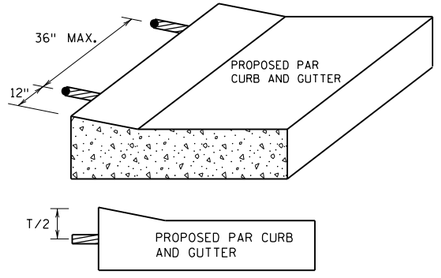
FLOW LINE PROFILE RAISE - FAN

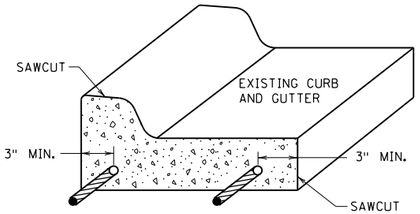


SECTION VIEW A-A
THICKENED SECTION
THROUGH CURB RAMP FLARES



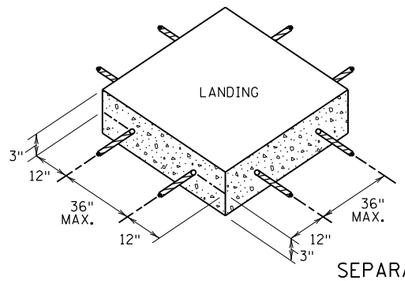
TYPICAL SIDEWALK SECTION
WITHIN INTERSECTION CORNER

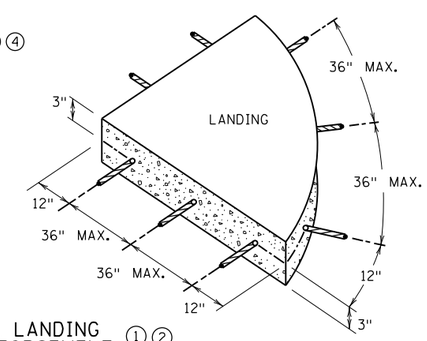




CURB AND GUTTER
REINFORCEMENT ③

CURB RAMP REINFORCEMENT DETAILS ②④





SEPARATE LANDING
POUR REINFORCEMENT ①②

GENERAL NOTES:

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

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

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

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

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

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

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

NOTES:

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

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

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

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

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

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

REVISION:

APPROVED: 11-04-2021
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD PLAN 5-297.250 | 6 OF 6

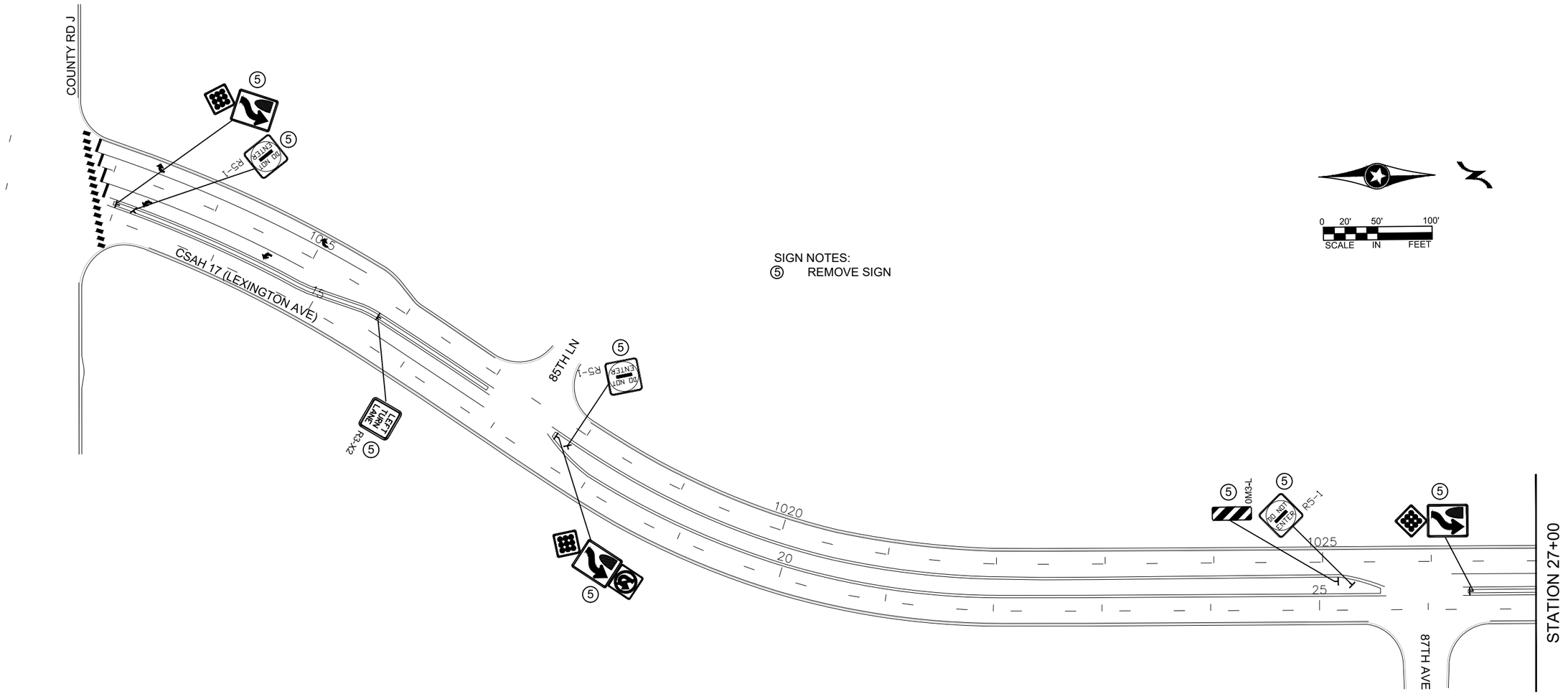
APPROVED: 11-04-2021
REVISED:

PEDESTRIAN CURB RAMP DETAILS

STATE AID PROJ. NO. 002-617-027

SHEET NO. 21 OF 65 SHEETS

PLOTTED/REVISED: 02/15/2023
DISTRICT #:
PLOT NAME: $$@PLOT$NAME@$$
PATH & FILENAME: P:\23-01-00\CSAH_17_(SCL-135W)\Base\Proposed\ADA.dgn



SIGN NOTES:
⑤ REMOVE SIGN

0 20' 50' 100'
SCALE IN FEET

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\20-01-00\CSAH_17_(SCL-I35W)\Base\Traffic\Existing Sign Removals.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: JORGE R. BERNAL DELGADO DATE: 02-15-23

SIGNATURE: _____ LICENSE NO. 57216

DRAWN BY TMV DATE 10/06/22

DESIGN BY TMV DATE 10/06/22

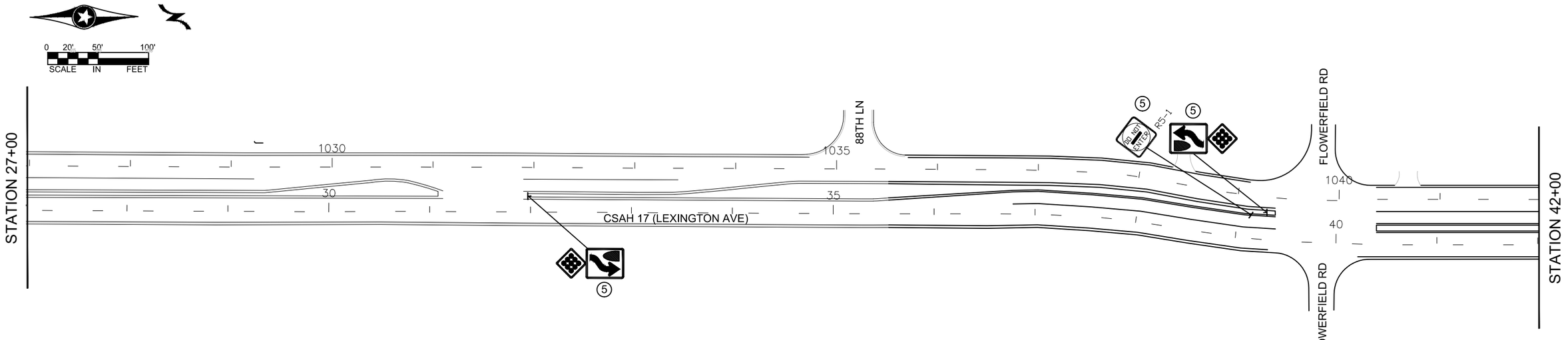
CHECKED BY JRB DATE 11/04/22

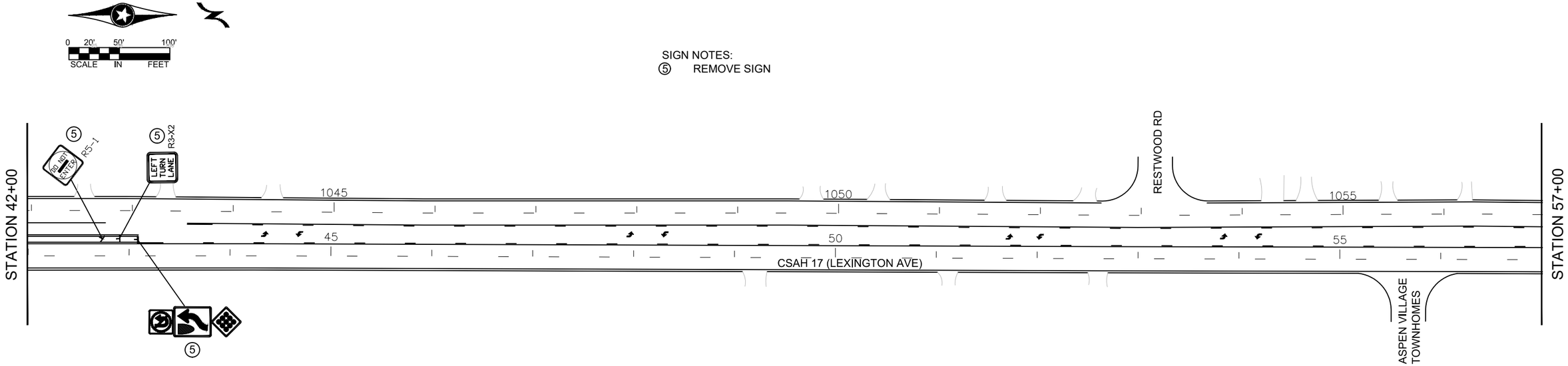
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-617-027

EXISTING SIGN REMOVALS

SHEET 22 OF 65 SHEETS





NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY HIGHWAY DEPT.

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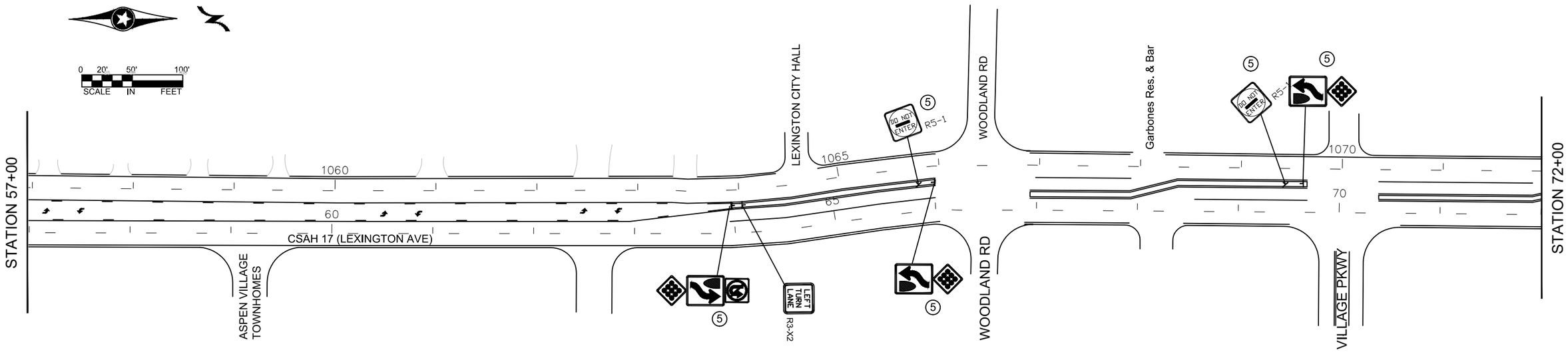
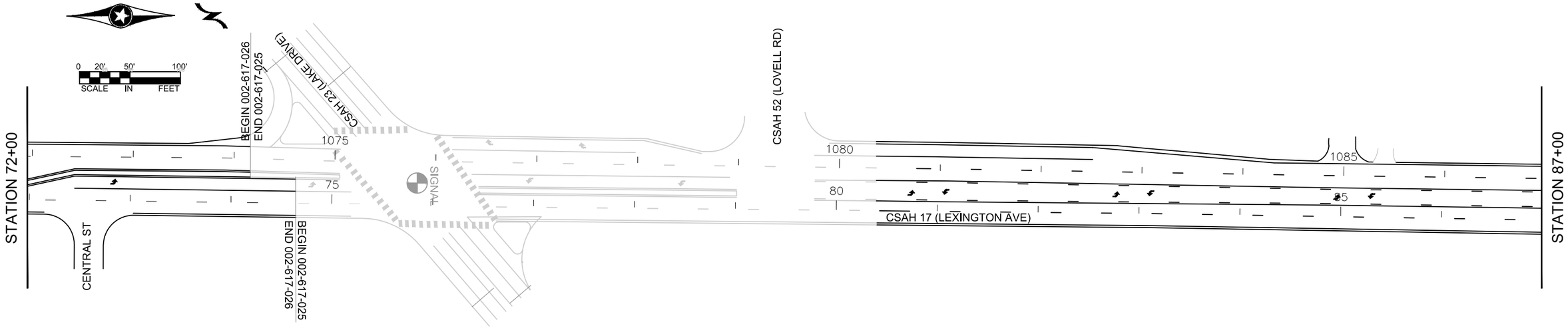
EXISTING SIGN REMOVALS

SHEET 23 OF 65 SHEETS



SIGN NOTES:
⑤ REMOVE SIGN



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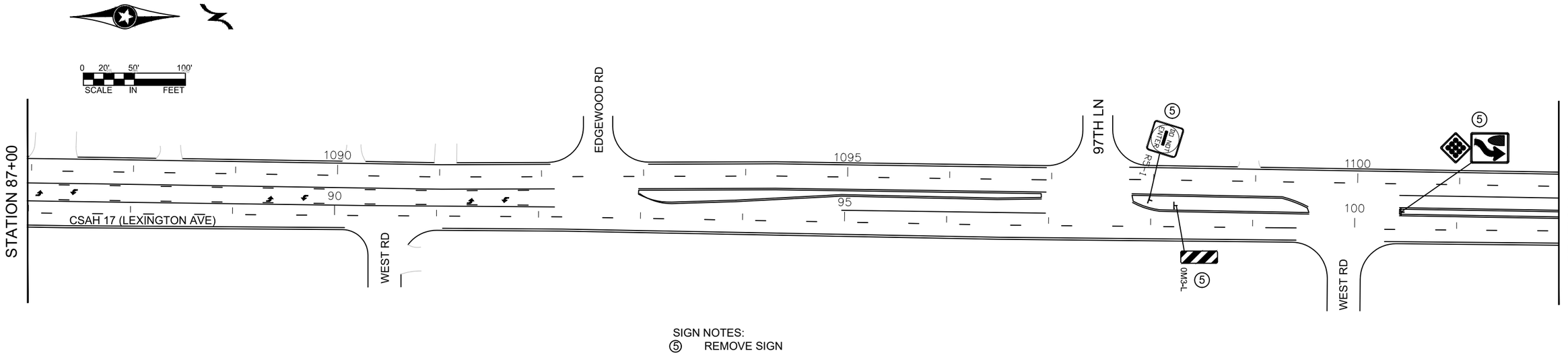
CHECKED BY JRB DATE 11/04/22

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-617-027

EXISTING SIGN REMOVALS

SHEET 24 OF 65 SHEETS



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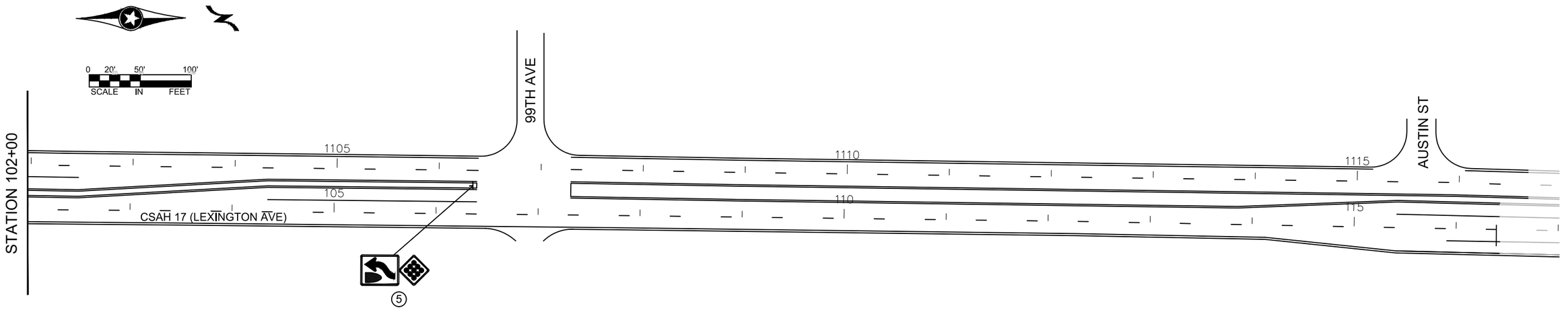
⑤ REMOVE SIGN



NO	DATE	BY	CKD	APPR	REVISION

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CHECKED BY JRB DATE 11/04/22

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-617-027

EXISTING SIGN REMOVALS

SHEET 25 OF 65 SHEETS

EXISTING SIGN TAB

STATION	ADDRESS/ DESCRIPTION (NOTES)	REMOVE SIGN TYPE C	SIGN NUMBER	SIGN LEGEND
		EACH		
13+00	MEDIAN	1	R4-7	KEEP RIGHT
			OM1-1	9 BUTTON
13+15	MEDIAN	1	R5-1	DO NOT ENTER
15+55	MEDIAN	1	R3-X2	LEFT TURN LANE
17+60	MEDIAN	1	R3-4	NO U TURN
			R4-7	KEEP RIGHT
			OM1-1	9 BUTTON
17+70	MEDIAN	1	R5-1	DO NOT ENTER
25+20	MEDIAN	1	OM3-L	HAZARD MARKER
25+30	MEDIAN	1	R5-1	DO NOT ENTER
26+40	MEDIAN	1	R4-7	KEEP RIGHT
			OM1-1	9 BUTTON
32+00	MEDIAN	1	R4-7	KEEP RIGHT
			OM1-1	9 BUTTON
39+20	MEDIAN	1	R5-1	DO NOT ENTER
39+30	MEDIAN	1	R4-7	KEEP RIGHT
			OM1-1	9 BUTTON
42+70	MEDIAN	1	R5-1	DO NOT ENTER
42+90	MEDIAN	1	R3-X2	LEFT TURN LANE
43+10	MEDIAN	1	R3-4	NO U TURN
			R4-7	KEEP RIGHT
			OM1-1	9 BUTTON
64+00	MEDIAN	1	R3-4	NO U TURN
			R4-7	KEEP RIGHT
			OM1-1	9 BUTTON
64+10	MEDIAN	1	R3-X2	LEFT TURN LANE
65+90	MEDIAN	1	R5-1	DO NOT ENTER
66+00	MEDIAN	1	R4-7	KEEP RIGHT
			OM1-1	9 BUTTON
69+50	MEDIAN	1	R5-1	DO NOT ENTER
69+60	MEDIAN	1	R4-7	KEEP RIGHT
			OM1-1	9 BUTTON
98+00	MEDIAN	1	R5-1	DO NOT ENTER
98+30	MEDIAN	1	OM3-L	HAZARD MARKER
100+45	MEDIAN	1	R4-7	KEEP RIGHT
			OM1-1	9 BUTTON
106+40	MEDIAN	1	R4-7	KEEP RIGHT
			OM1-1	9 BUTTON
	TOTAL	24		

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\20-01-00\CSAH_17_(SCL-I35W)\Base\Traffic\Existing Sign Removals.dwg

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PRINT NAME: JORGE R. BERNAL DELGADO DATE: 02-15-23

SIGNATURE: _____ LICENSE NO. 57216

DRAWN BY TMV DATE 10/06/22

DESIGN BY TMV DATE 10/06/22

CHECKED BY JRB DATE 11/04/22

ANOKA COUNTY

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-617-027

EXISTING SIGN REMOVAL QUANTITIES

TRAFFIC CONTROL NOTES: (TYP.)

- 45 MPH: SOUTH PROJECT LIMIT TO FLOWERFIELD RD
- 40 MPH: FLOWERFIELD RD TO RESTWOOD RD
- 35 MPH: RESTWOOD RD TO WEST RD
- 45 MPH: WEST RD TO 109TH AVE
- 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.
- REMOVE ALL CONFLICTING PAVEMENT MARKINGS WITHIN THE CONSTRUCTION LIMITS.
- BLACK REMOVABLE PREFORMED TAPE SHALL BE USED ON ALL CONFLICTING PAVEMENT MARKINGS OUTSIDE OF THE CONSTRUCTION LIMITS AND AS INDICATED ON PLAN SHEETS.
- LANE TAPE SHALL BE USED FOR TEMPORARY PAVEMENT MARKINGS IN THE AREA SOUTH OF CSAH 32 TO CSAH 32, BETWEEN STA. 75+00 AND STA. 83+00.
- PAINT SHALL BE USED FOR TEMPORARY PAVEMENT MARKINGS IN THE AREAS NORTH OF CSAH 32 TO STA. 75+00.
- TRPMs ARE TO BE USED IN TAPER AREAS, SPACED AT 10' INTERVALS.
- CONTRACTOR SHALL SUPPLY AND PLACE THE PORTABLE CHANGEABLE MESSAGE SIGN (CMS) 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 DRIVEWAY IN CONSTRUCTION AREA.
- OPEN LEFT TURN LANES WHEN MEDIAN WORK IS COMPLETE.
- BARRICADES AND TRAFFIC CONTROL DEVICES WITHIN THE WORK SPACE MAY BE TEMPORARILY REMOVED WHEN IT INTERFERES WITH ACTIVE WORK OPERATIONS. THE BARRICADES AND OR TRAFFIC CONTROL DEVICES MUST BE REPLACED WHEN ACTIVE WORK OPERATIONS END. THIS IS THE RESPONSIBILITY OF THE ONSITE TRAFFIC CONTROL SUPERVISOR OR HIS REPRESENTATIVE.
- PILES OF DIRT, CONCRETE, DEBRIS SHALL BE REMOVED DAILY.
- PROTECT ALL EXCAVATIONS EVEN IN CLOSED LANE SECTIONS.
- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. THE SIGNS TO BE REMOVED FOR MEDIAN WORK, SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE. THIS WILL BE CONSIDERED AS INCIDENTAL TO INSTALL SIGN TYPE C.
- SOUTHBOUND CSAH 17 AT CSAH 32 MAY HAVE A DAILY LEFT TURN LANE CLOSURE BETWEEN 9 AM - 3 PM WHEN THE ACTUAL WORK AT THE STORM SEWER OCCURS.
- CONTACT ACHD SIGNALS FOR 4-WAY FLASH SIGNAL OPERATIONS AT THE INTERSECTION OF CSAH 17 AND CSAH 32 FOR THE SOUTHBOUND CSAH 17 LEFT TURN LANE CLOSURE.

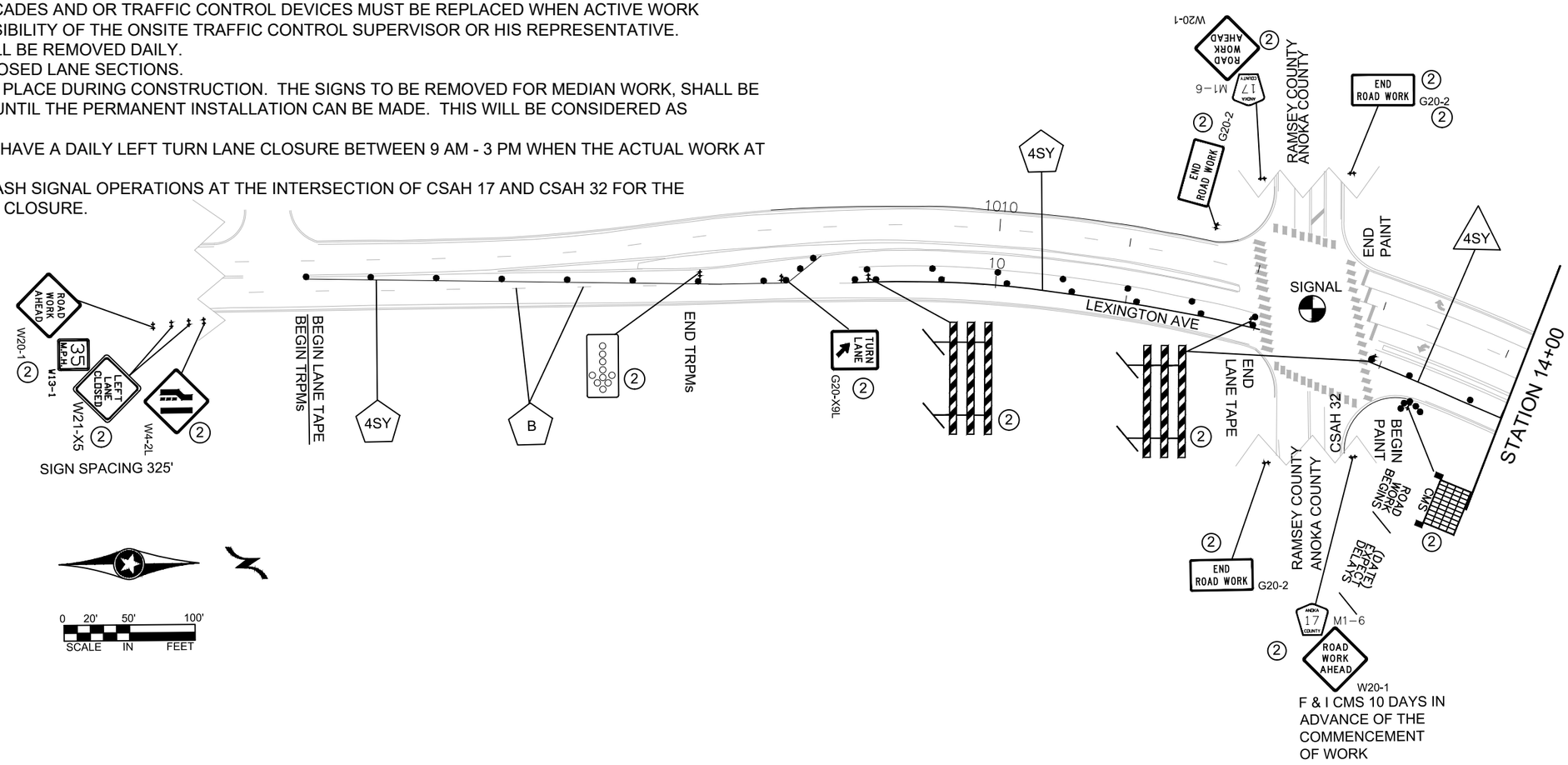
STRIPING KEY

TRIANGLE - PAINT

PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING

SIGN NOTES:

② TEMPORARY TRAFFIC CONTROL SIGN



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\20-01-00\CSAH_17_(SCL-I35W)\Base\Traffic\TC So Section Stage 1.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: JORGE R. BERNAL DELGADO DATE: 02-15-23

SIGNATURE: _____ LICENSE NO. 57216

DRAWN BY TMV DATE 10/10/22

DESIGN BY TMV DATE 10/10/22

CHECKED BY JRB DATE 11/04/22

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-617-027

TRAFFIC CONTROL
SOUTH SECTION
STAGE 1

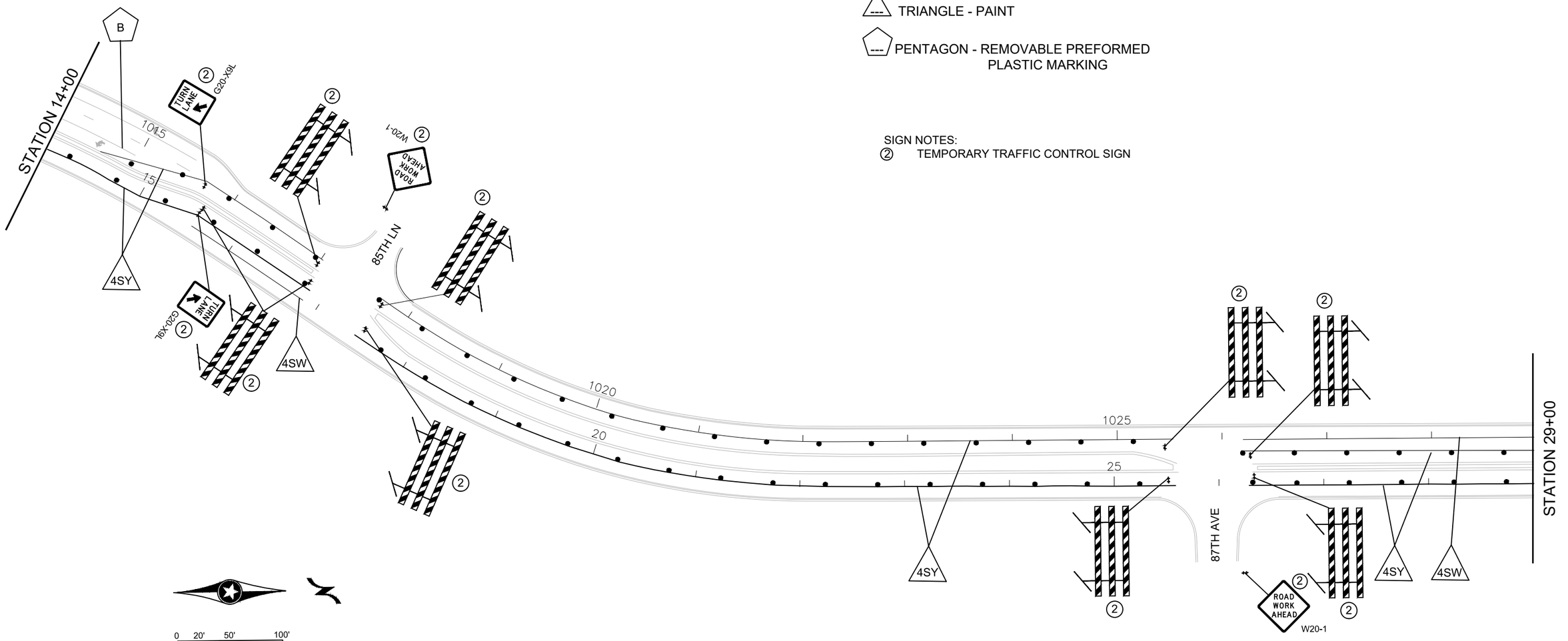
SHEET 27 OF 65 SHEETS

STRIPING KEY

TRIANGLE - PAINT

PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING

SIGN NOTES:
② TEMPORARY TRAFFIC CONTROL SIGN



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\20-01-00\CSAH_17_(SCL-I35W)\Base\Traffic\TC So Section Stage 1.dwg

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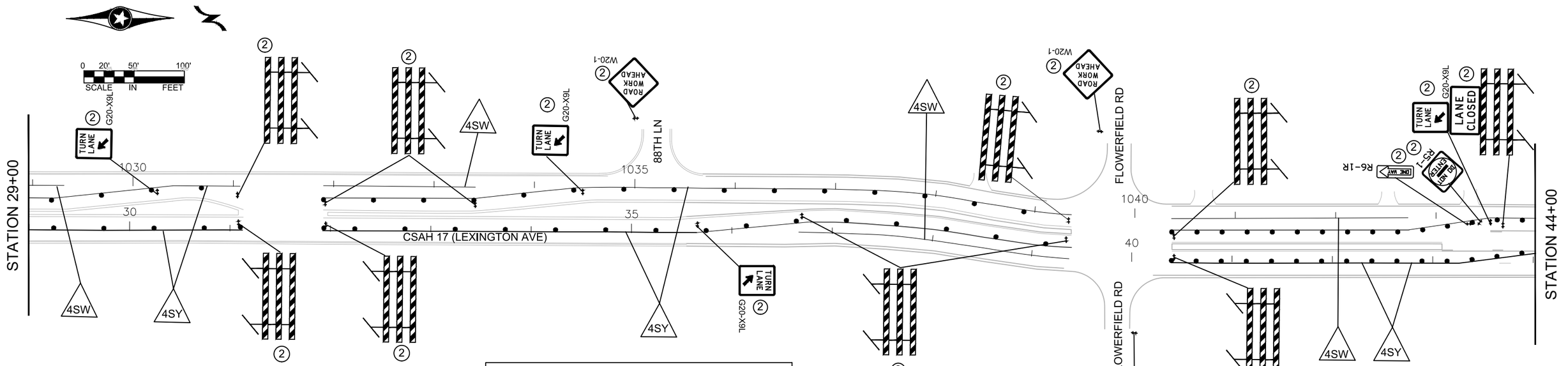
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-617-027

TRAFFIC CONTROL
SOUTH SECTION
STAGE 1

SHEET 28 OF 65 SHEETS



STRIPING KEY

TRIANGLE - PAINT

PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING

INSERT A

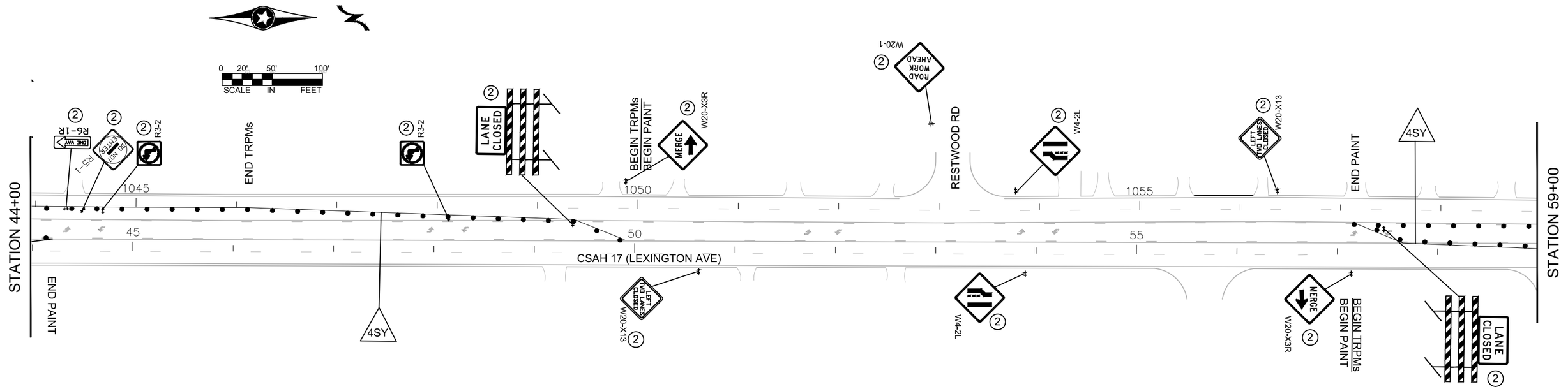
DO NOT ENTER R5-1

ONE WAY R6-1R

PLACE SIGN SETS AT ALL DRIVEWAYS ON WEST SIDE OF CSAH 17 BETWEEN STA. 38+00 & 64+00 APPROXIMATE 12 SETS

SIGN NOTES:

② TEMPORARY TRAFFIC CONTROL SIGN



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\20-01-00\CSAH_17_(SCL-I35W)\Base\Traffic\TC So Section Stage 1.dwg

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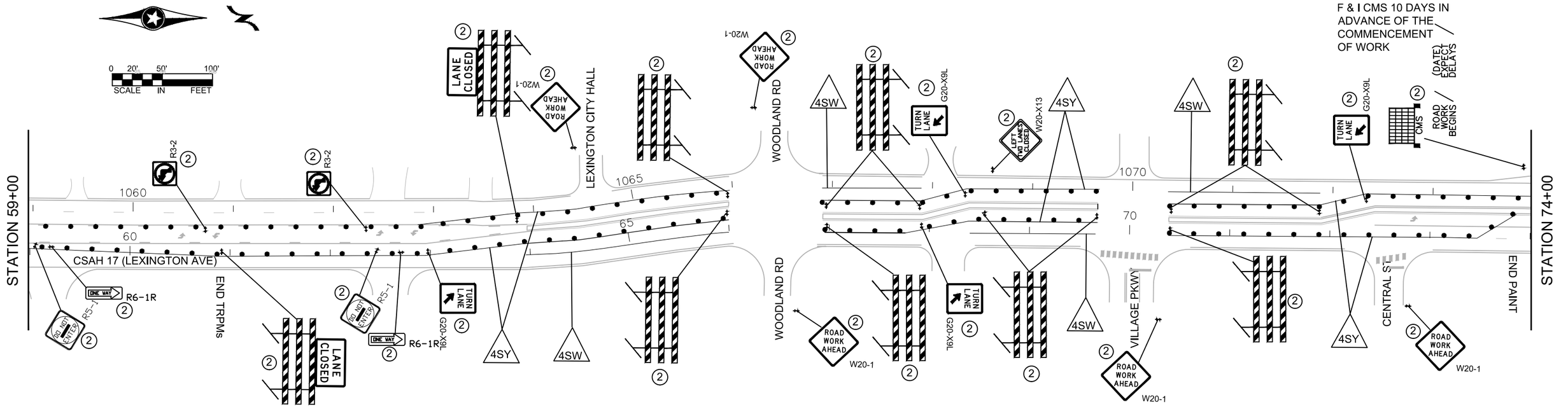
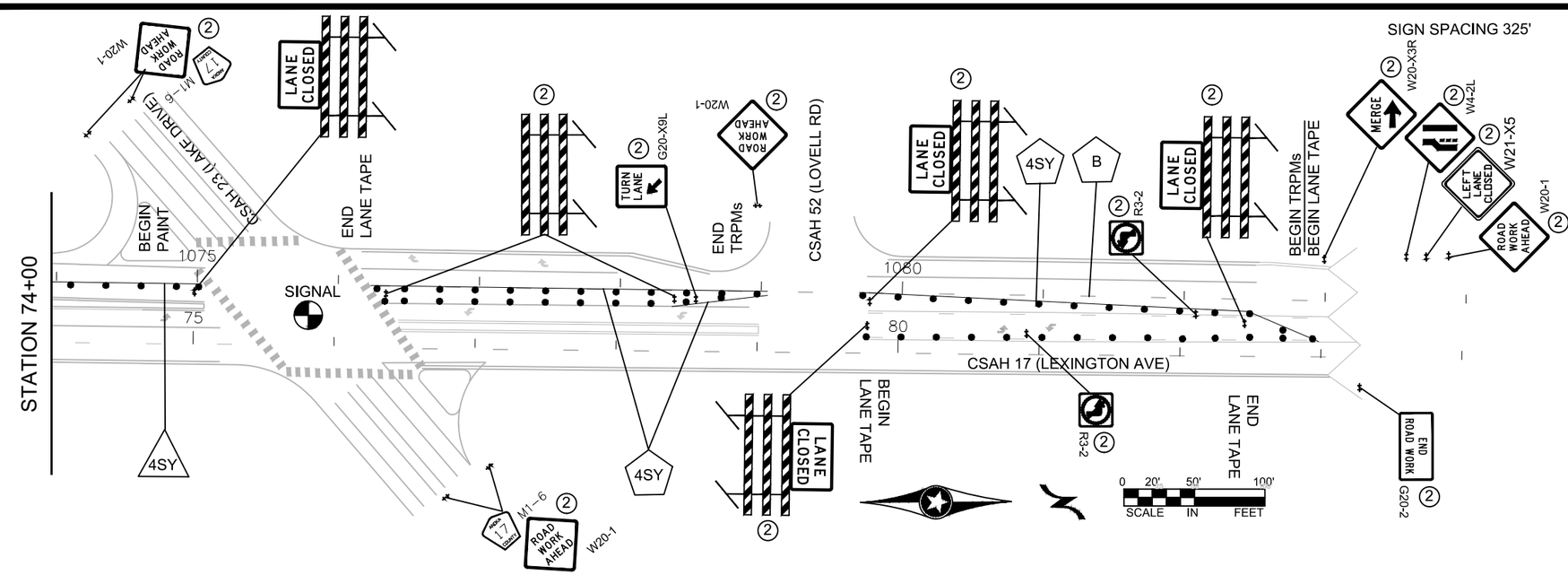
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-617-027

TRAFFIC CONTROL
SOUTH SECTION
STAGE 1

SHEET 29 OF 65 SHEETS





INSERT A

PLACE SIGN SETS AT ALL DRIVEWAYS ON WEST SIDE OF CSAH 17 BETWEEN STA. 38+00 & 64+00
APPROXIMATE 12 SETS

SIGN NOTES:
② TEMPORARY TRAFFIC CONTROL SIGN

STRIPING KEY

TRIANGLE - PAINT

PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\20-01-00\CSAH_17_(SCL-I35W)\Base\Traffic\TC So Section Stage 1.dwg

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ANOKA COUNTY HIGHWAY DEPT.

SAP 002-617-027

TRAFFIC CONTROL
SOUTH SECTION
STAGE 1

SHEET 30 OF 65 SHEETS

TRAFFIC CONTROL NOTES: (TYP.)

- 45 MPH: SOUTH PROJECT LIMIT TO FLOWERFIELD RD
- 40 MPH: FLOWERFIELD RD TO RESTWOOD RD
- 35 MPH: RESTWOOD RD TO WEST RD
- 45 MPH: WEST RD TO 109TH AVE
- 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.
- REMOVE ALL CONFLICTING PAVEMENT MARKINGS WITHIN THE CONSTRUCTION LIMITS..
- LANE TAPE SHALL BE USED FOR TEMPORARY PAVEMENT MARKINGS IN THE AREA SOUTH OF CSAH 32 TO CSAH 32, BETWEEN STA. 75+00 AND STA. 83+00.
- BLACK REMOVABLE PREFORMED TAPE SHALL BE USED ON ALL CONFLICTING PAVEMENT MARKINGS OUTSIDE OF THE CONSTRUCTION LIMITS AND AS INDICATED ON PLAN SHEETS.
- PAINT SHALL BE USED FOR TEMPORARY PAVEMENT MARKINGS IN THE AREAS NORTH OF CSAH 32 TO STA. 75+00.
- TRPMs ARE TO BE USED IN TAPER AREAS, SPACED AT 10' INTERVALS.
- CONTRACTOR SHALL SUPPLY AND PLACE THE PORTABLE CHANGEABLE MESSAGE SIGN (CMS) 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.
- BARRICADES AND TRAFFIC CONTROL DEVICES WITHIN THE WORK SPACE MAY BE TEMPORARILY REMOVED WHEN IT INTERFERES WITH ACTIVE WORK OPERATIONS. THE BARRICADES AND OR TRAFFIC CONTROL DEVICES MUST BE REPLACED WHEN ACTIVE WORK OPERATIONS END. THIS IS THE RESPONSIBILITY OF THE ONSITE TRAFFIC CONTROL SUPERVISOR OR HIS REPRESENTATIVE.
- PILES OF DIRT, CONCRETE, DEBRIS SHALL BE REMOVED DAILY.
- PROTECT ALL EXCAVATIONS EVEN IN CLOSED LANE SECTIONS.
- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. THE SIGNS TO BE REMOVED FOR MEDIAN NOSE WORK, SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE. THIS WILL BE CONSIDERED AS INCIDENTAL TO INSTALL SIGN TYPE C.

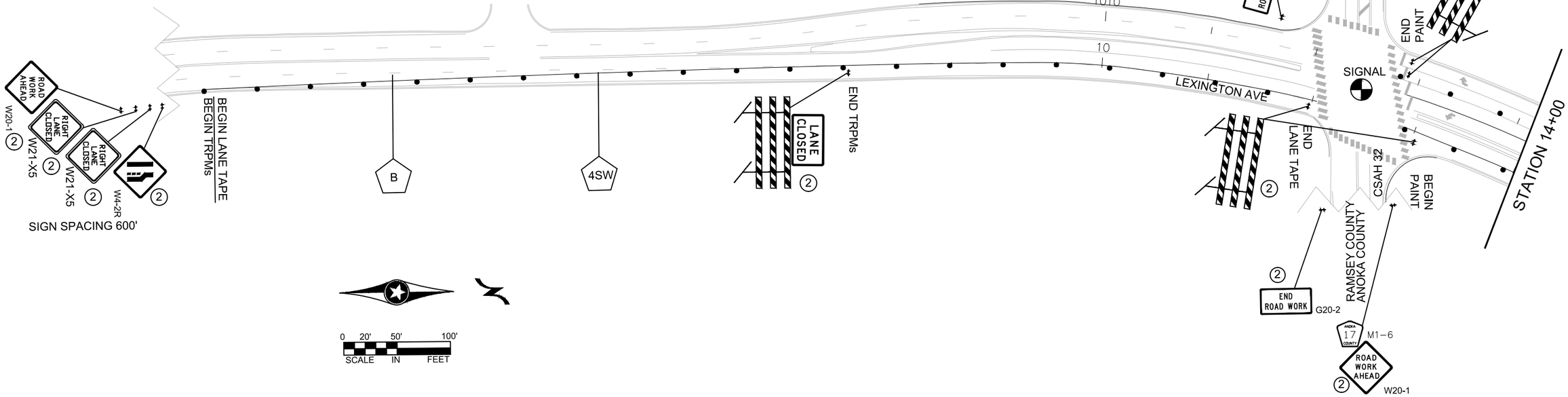
STRIPING KEY

TRIANGLE - PAINT

PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING

SIGN NOTES:

② TEMPORARY TRAFFIC CONTROL SIGN



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\20-01-00\CSAH_17_(SCL-I35W)\Base\Traffic\TC So Section Stage 2.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: JORGE R. BERNAL DELGADO DATE: 02-17-23

SIGNATURE: _____ LICENSE NO. 57216

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ANOKA COUNTY HIGHWAY DEPT.

SAP 002-617-027

TRAFFIC CONTROL
SOUTH SECTION
STAGE 2

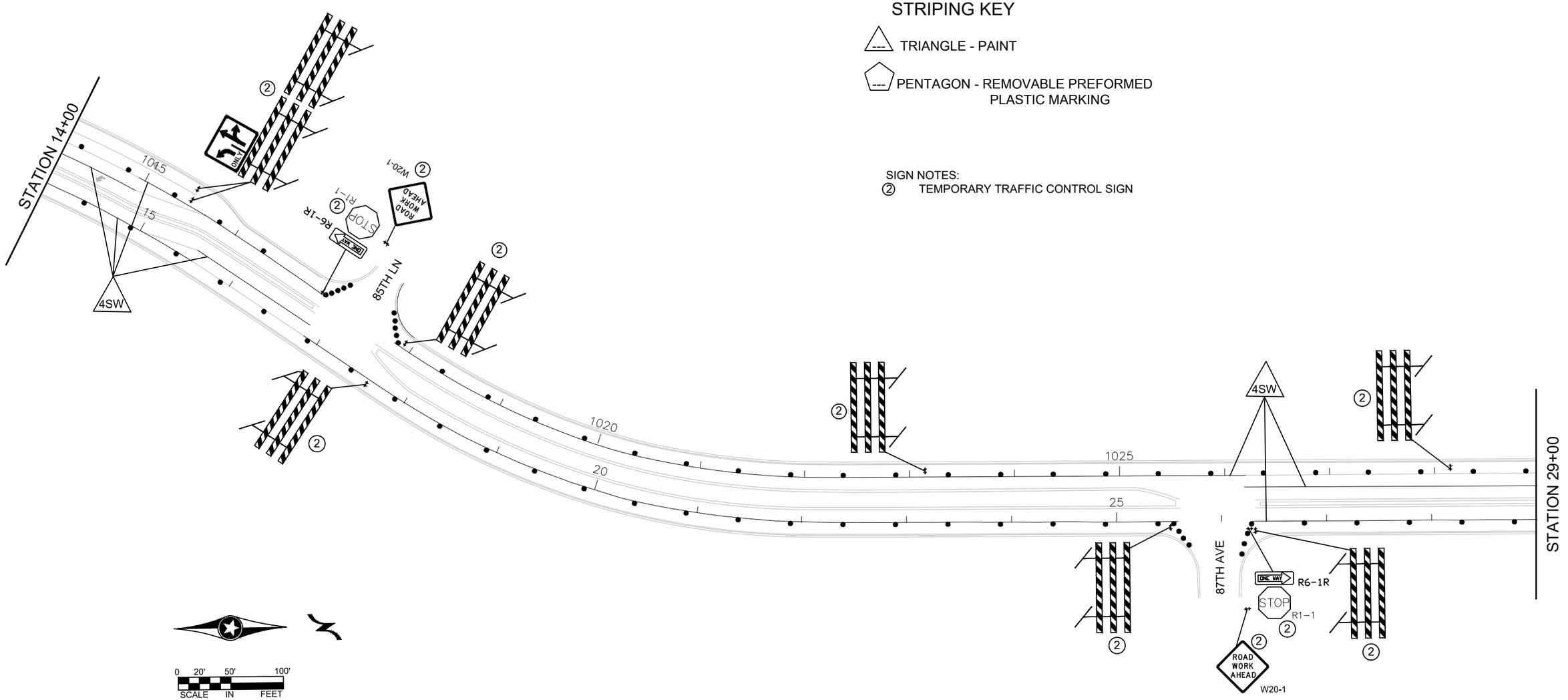
SHEET 31 OF 65 SHEETS

STRIPING KEY

TRIANGLE - PAINT

PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING

SIGN NOTES:
② TEMPORARY TRAFFIC CONTROL SIGN



0 20' 50' 100'
SCALE IN FEET

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\20-01-00\CSAH_17_(SCL-I35W)\Base\Traffic\TC So Section Stage 2.dwg

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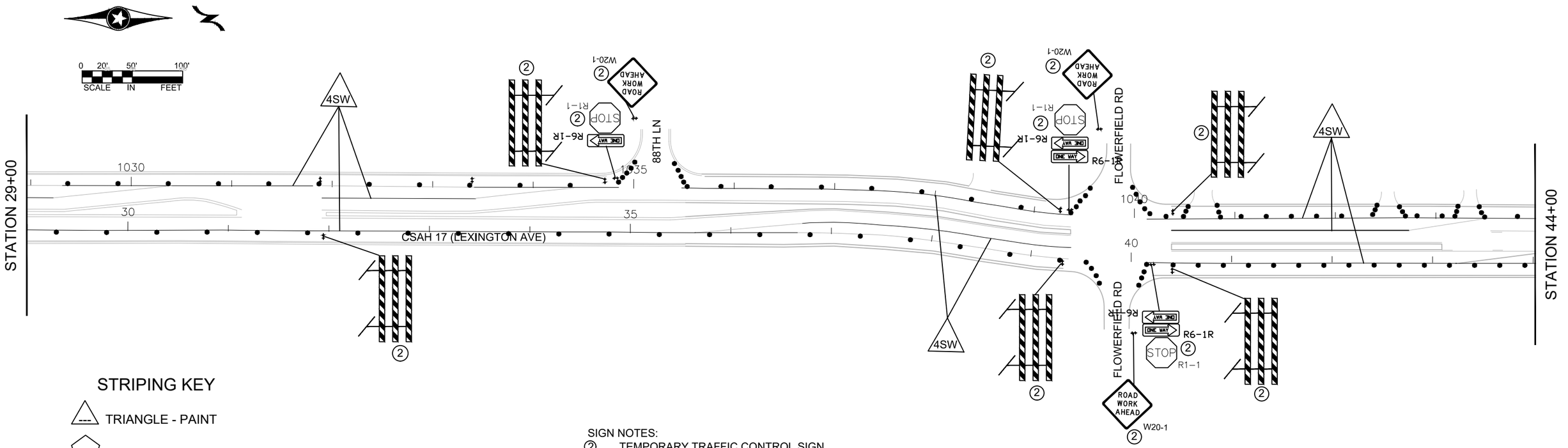
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-617-027

TRAFFIC CONTROL
SOUTH SECTION
STAGE 2

SHEET 32 OF 65 SHEETS



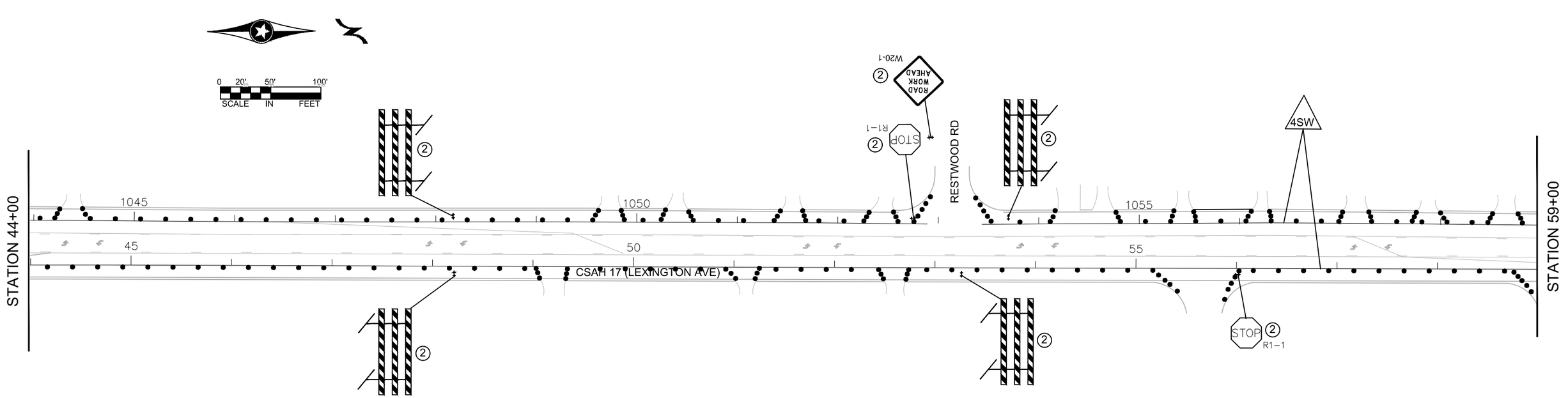
STRIPING KEY

TRIANGLE - PAINT

PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING

SIGN NOTES:

② TEMPORARY TRAFFIC CONTROL SIGN



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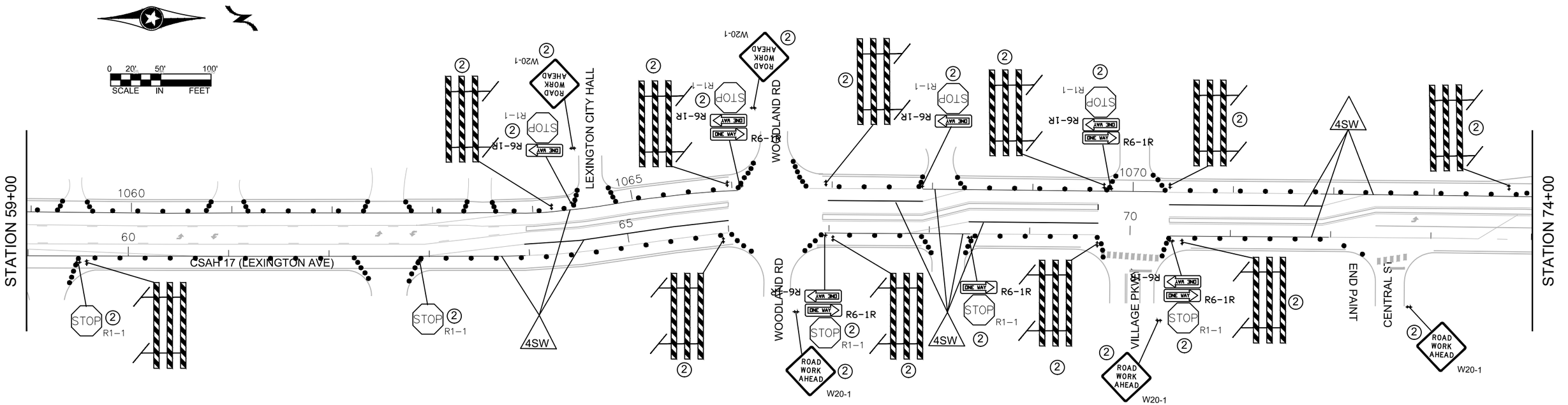
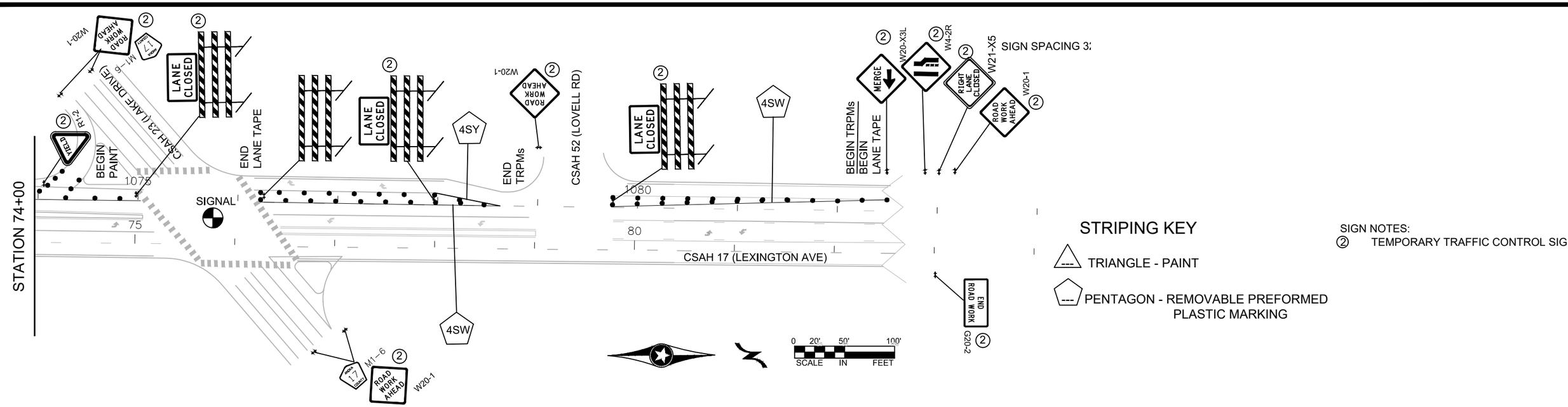
SAP 002-617-027

TRAFFIC CONTROL
SOUTH SECTION
STAGE 2

SHEET 33 OF 65 SHEETS





STRIPING KEY

TRIANGLE - PAINT

PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING

SIGN NOTES:

② TEMPORARY TRAFFIC CONTROL SIGN

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\20-01-00\CSAH_17_(SCL-I35W)\Base\Traffic\TC So Section Stage 2.dwg

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SAP 002-617-027

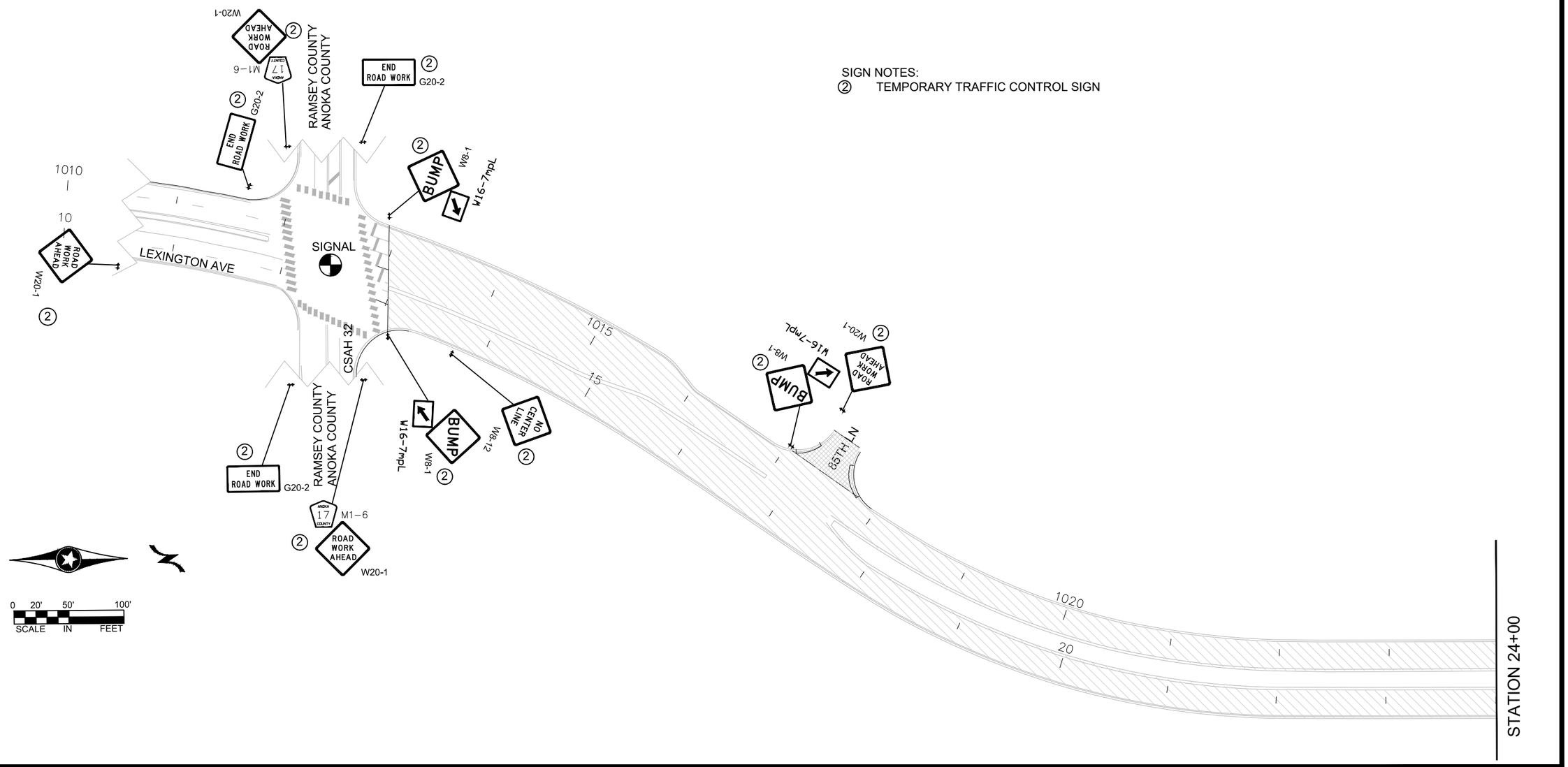
TRAFFIC CONTROL
SOUTH SECTION
STAGE 2

SHEET 34 OF 65 SHEETS

TRAFFIC CONTROL NOTES: (TYP.):

- 45 MPH: SOUTH PROJECT LIMIT TO FLOWERFIELD RD.
- 40 MPH: FLOWERFIELD RD TO RESTWOOD RD
- 35 MPH: RESTWOOD RD TO WEST RD.
- 45 MPH: WEST RD TO 109TH AVE.
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MNMUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- ALL LANE CLOSURES FOR CONSTRUCTION DURING THIS STAGE 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 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 THE TRAFFIC CONTROL LUMP SUM.
- ACCESS SHALL BE MAINTAINED TO ALL STREETS AND DRIVEWAYS IN CONSTRUCTION AREA.
- CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.
- CONTRACTOR SHALL CONTACT ACHD SIGNALS FOR ANY SIGNAL SYSTEM OPERATION CHANGES.

SIGN NOTES:
② TEMPORARY TRAFFIC CONTROL SIGN



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\20-01-00\CSAH_17_(SCL-I35W)\Base\Traffic\TC So Section Stage 3.dwg

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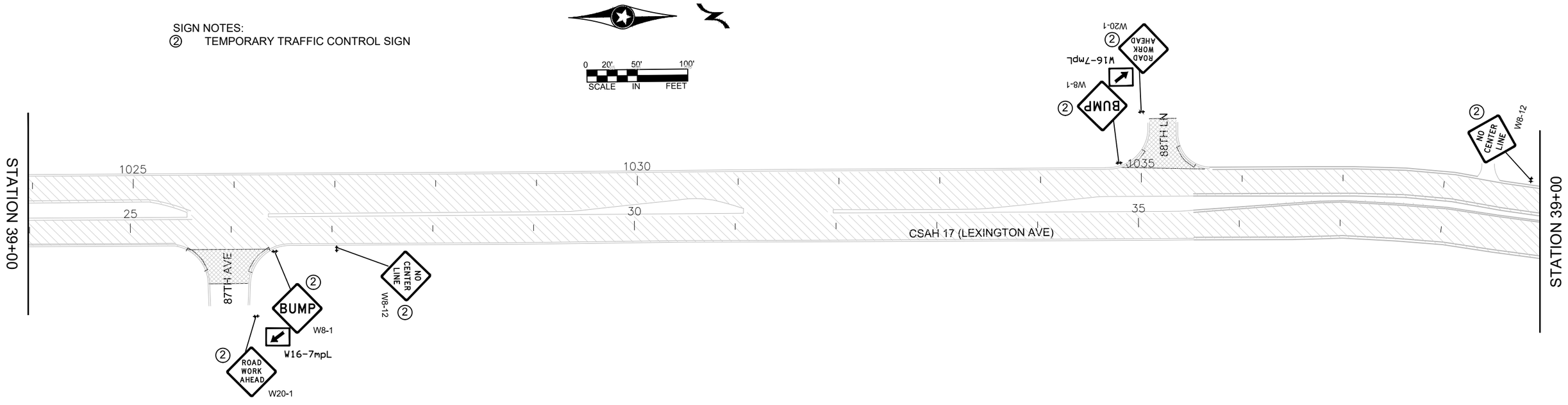
ANOKA COUNTY HIGHWAY DEPT.

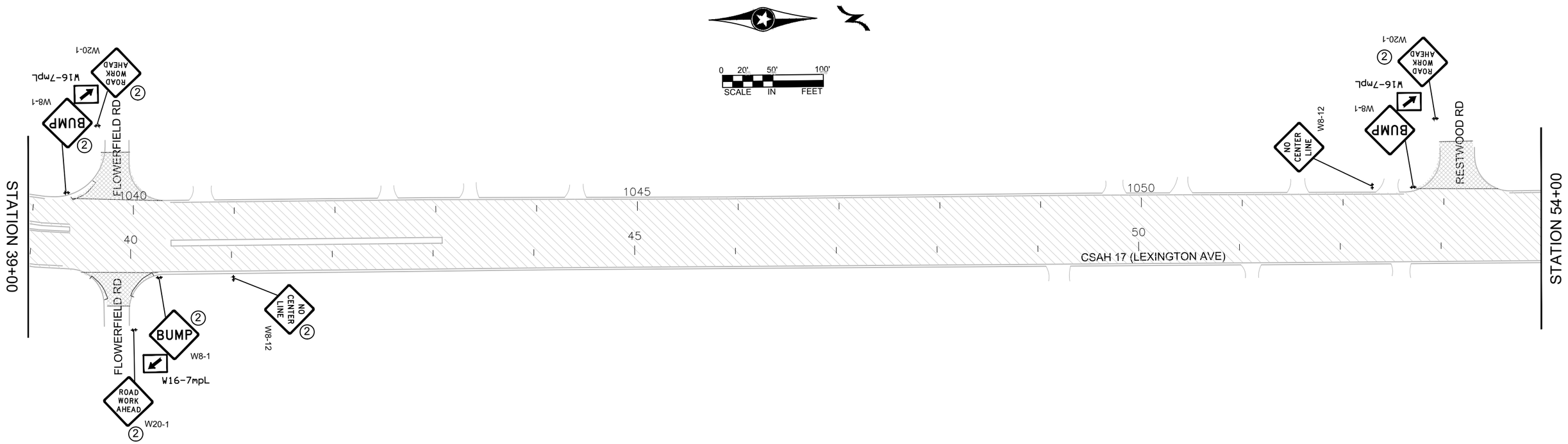
SAP 002-617-027

TRAFFIC CONTROL
SOUTH SECTION
STAGE 3

SHEET 35 OF 65 SHEETS

SIGN NOTES:
② TEMPORARY TRAFFIC CONTROL SIGN





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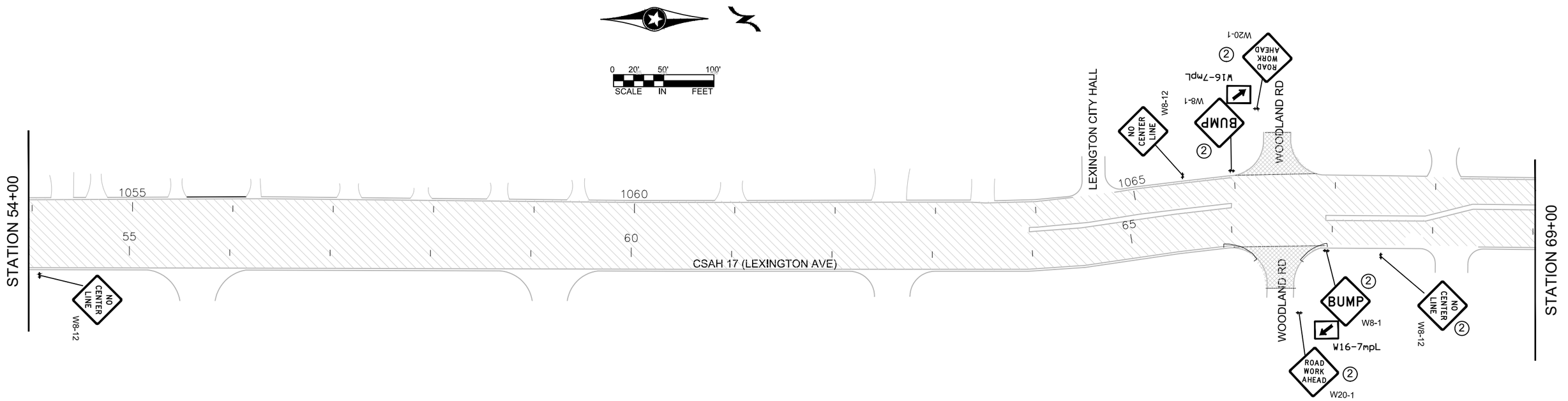
ANOKA COUNTY HIGHWAY DEPT.

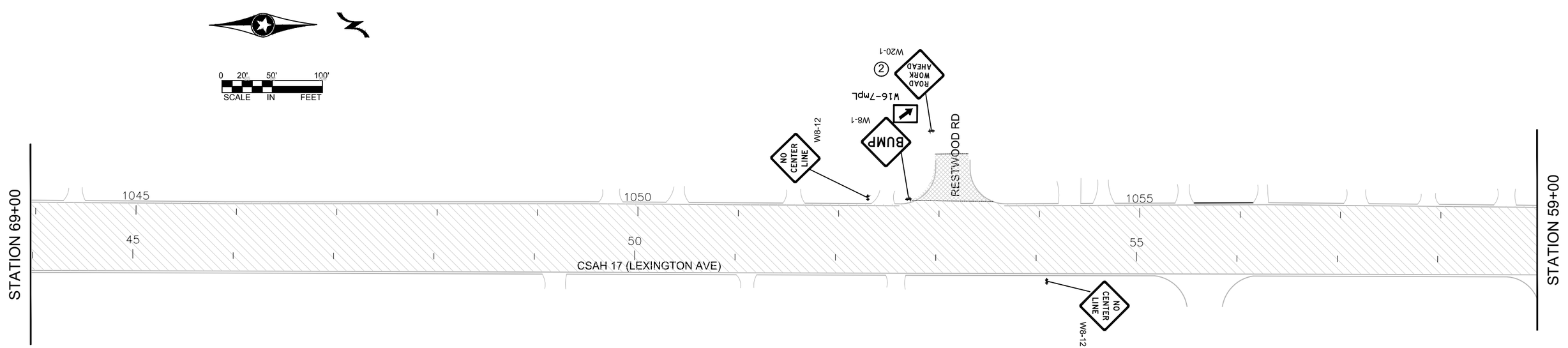
SAP 002-617-027

TRAFFIC CONTROL
SOUTH SECTION
STAGE 3

SHEET 36 OF 65 SHEETS



SIGN NOTES:
② TEMPORARY TRAFFIC CONTROL SIGN



NO	DATE	BY	CKD	APPR	REVISION

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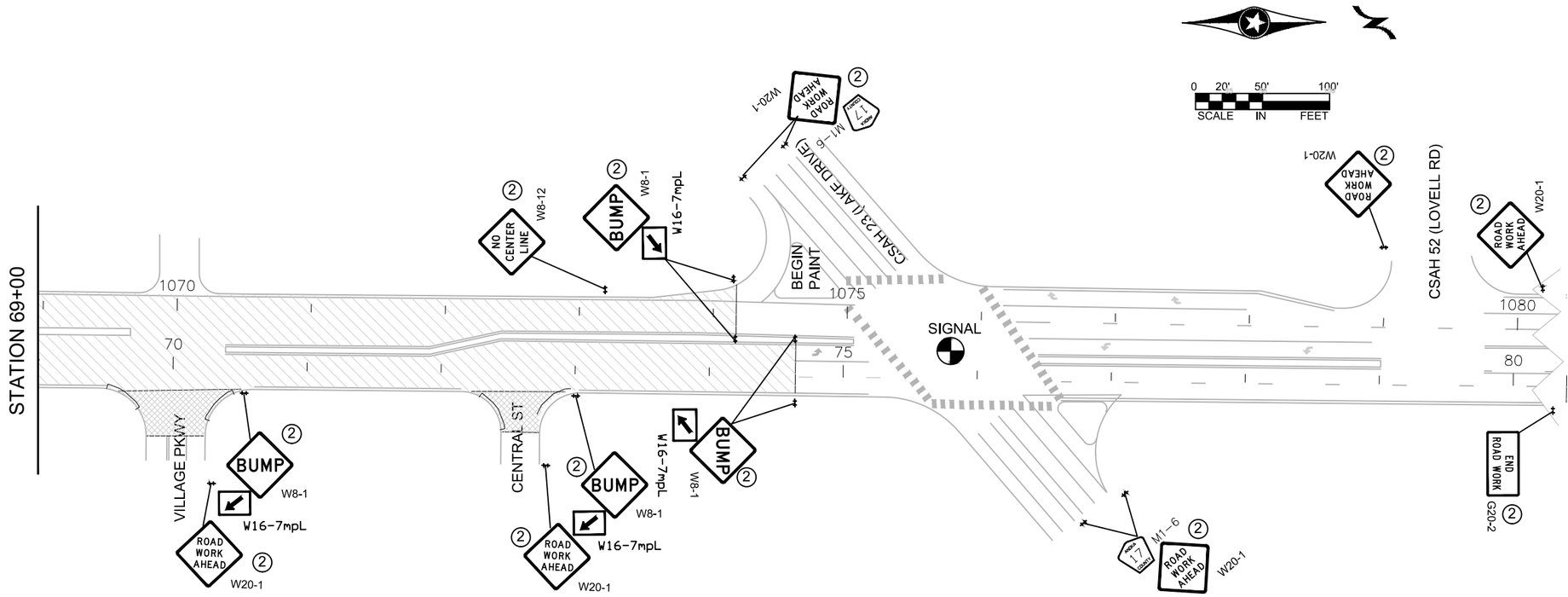
SAP 002-617-027

TRAFFIC CONTROL
SOUTH SECTION
STAGE 3

SHEET 37 OF 65 SHEETS



SIGN NOTES:
② TEMPORARY TRAFFIC CONTROL SIGN

NO	DATE	BY	CKD	APPR	REVISION

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ANOKA COUNTY HIGHWAY DEPT.

SAP 002-617-027

TRAFFIC CONTROL
SOUTH SECTION
STAGE 3

SHEET 38 OF 65 SHEETS

TRAFFIC CONTROL NOTES: (TYP.)

- 45 MPH: SOUTH PROJECT LIMIT TO FLOWERFIELD RD
- 40 MPH: FLOWERFIELD RD TO RESTWOOD RD
- 35 MPH: RESTWOOD RD TO WEST RD
- 45 MPH: WEST RD TO 109TH AVE
- 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.
- REMOVE ALL CONFLICTING PAVEMENT MARKINGS WITHIN CONSTRUCTION LIMITS.
- LANE TAPE SHALL BE USED FOR TEMPORARY PAVEMENT MARKINGS IN THE AREA SOUTH OF STA.80+00 AND NORTH OF STA 116+53 NORTHBOUND AND STA 1116+68 SOUTHBOUND.
- BLACK REMOVABLE PREFORMED TAPE SHALL BE USED ON ALL CONFLICTING PAVEMENT MARKINGS OUTSIDE OF THE CONSTRUCTION LIMITS AND AS INDICATED ON PLAN SHEETS.
- PAINT SHALL BE USED FOR TEMPORARY PAVEMENT MARKINGS IN THE AREAS BETWEEN STA 80+00 AND 116+43 NORTHBOUND AND STA 1116+68 SOUTHBOUND.
- TRPMs ARE TO BE USED IN TAPER AREAS, SPACED AT 10' INTERVALS.
- CONTRACTOR SHALL SUPPLY AND PLACE THE PORTABLE CHANGEABLE MESSAGE SIGN (CMS) 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.
- OPEN LEFT TURN LANES WHEN MEDIAN WORK IS COMPLETE.
- BARRICADES AND TRAFFIC CONTROL DEVICES WITHIN THE WORK SPACE MAY BE TEMPORARILY REMOVED WHEN IT INTERFERES WITH ACTIVE WORK OPERATIONS. THE BARRICADES AND OR TRAFFIC CONTROL DEVICES MUST BE REPLACED WHEN ACTIVE WORK OPERATIONS END. THIS IS THE RESPONSIBILITY OF THE ONSITE TRAFFIC CONTROL SUPERVISOR OR HIS REPRESENTATIVE.
- PILES OF DIRT, CONCRETE, DEBRIS SHALL BE REMOVED DAILY.
- PROTECT ALL EXCAVATIONS EVEN IN CLOSED LANE SECTIONS.
- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. THE SIGNS TO BE REMOVED FOR MEDIAN WORK, SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE. THIS WILL BE CONSIDERED AS INCIDENTAL TO INSTALL SIGN TYPE C.
- CONTACT ACHD SIGNALS FOR SIGNAL OPERATIONS AT THE INTERSECTION OF CSAH 49.

STRIPING KEY

TRIANGLE - PAINT

PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING

SIGN NOTES:

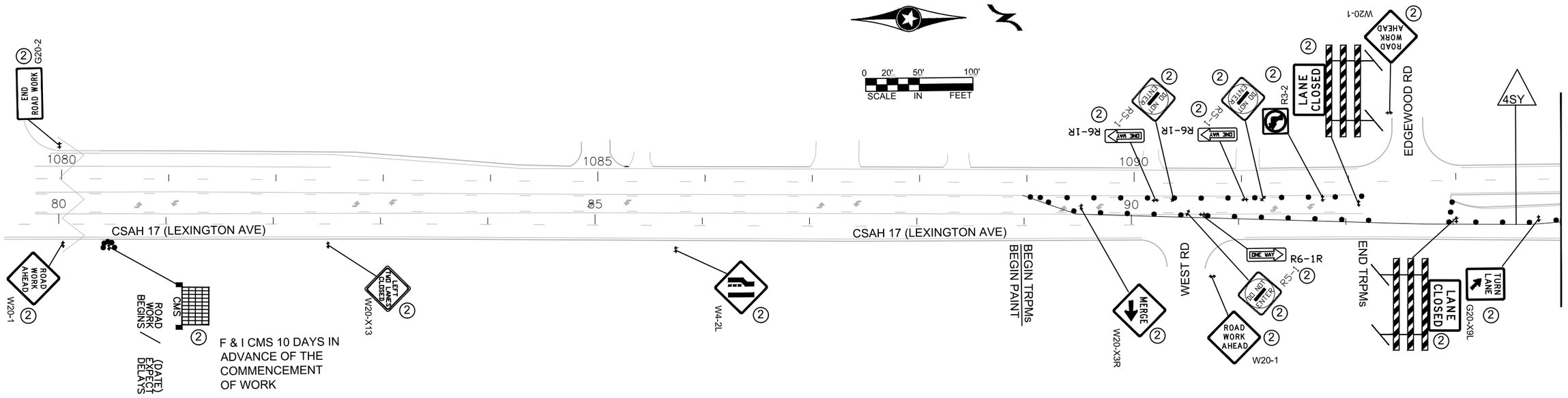
② TEMPORARY TRAFFIC CONTROL SIGN

INSERT A

DO NOT ENTER R5-1

ONE WAY R6-1R

PLACE SIGN SETS AT ALL DRIVEWAYS ON WEST SIDE OF CSAH 17 BETWEEN STA. 1084+00 & 1092+00 APPROXIMATE 6 SETS



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\20-01-00\CSAH_17_(SCL-I35W)\Base\Traffic\TC North Section Stage 1.dwg

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PRINT NAME: JORGE R. BERNAL DELGADO DATE: 02-17-23

SIGNATURE: _____ LICENSE NO. 57216

DRAWN BY TMV DATE 10/17/22

DESIGN BY TMV DATE 10/17/22

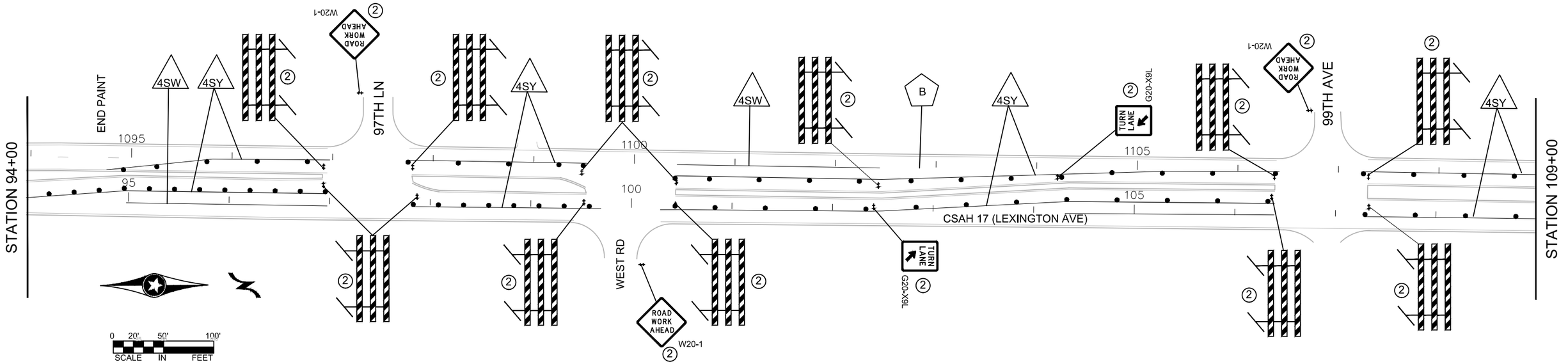
CHECKED BY JRB DATE 11/04/22

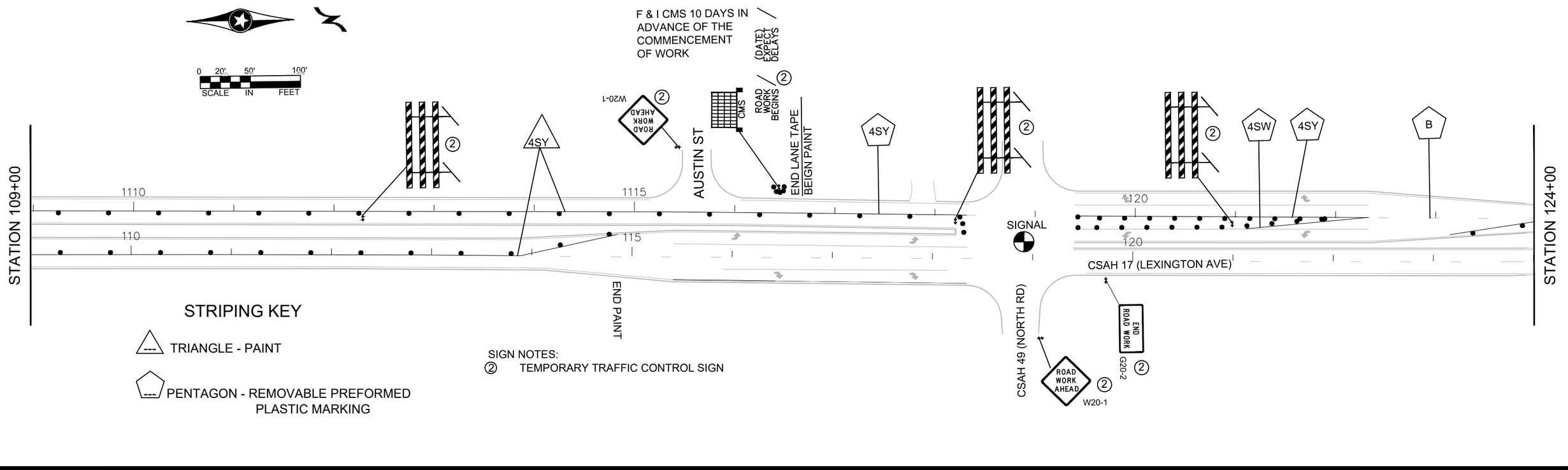
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-617-027

TRAFFIC CONTROL
NORTH SECTION
STAGE 1

SHEET 39 OF 65 SHEETS





STRIPING KEY

TRIANGLE - PAINT

PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING

SIGN NOTES:

② TEMPORARY TRAFFIC CONTROL SIGN

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\20-01-00\CSAH_17_(SCL-I35W)\Base\TC North Section Stage 1.dwg

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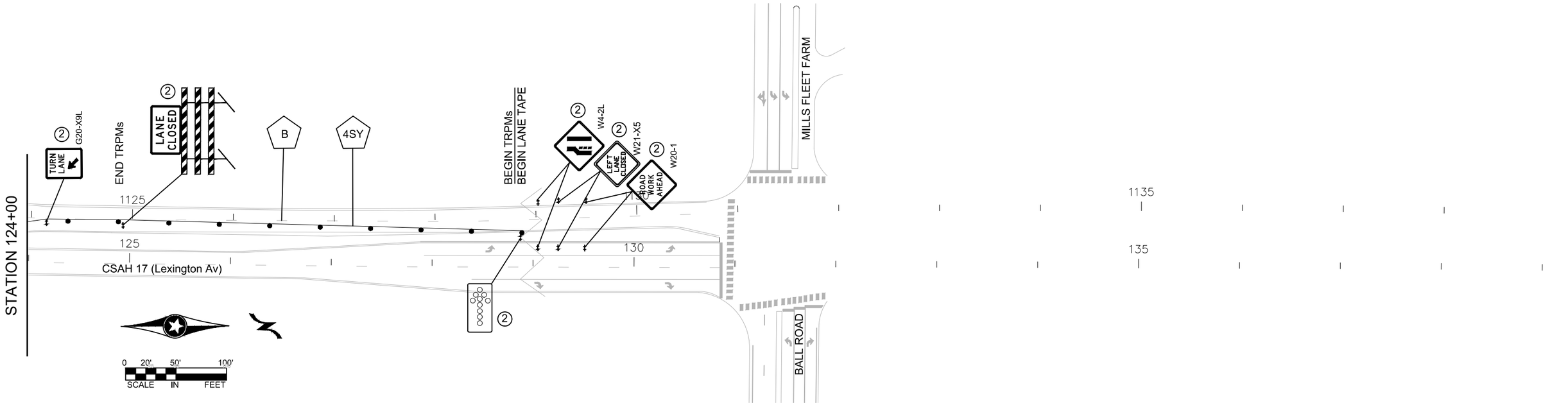
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-617-027

TRAFFIC CONTROL
NORTH SECTION
STAGE 1

SHEET 40 OF 65 SHEETS



STRIPING KEY

TRIANGLE - PAINT

PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING

SIGN NOTES:
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ANOKA COUNTY HIGHWAY DEPT.

SAP 002-617-027

TRAFFIC CONTROL
NORTH SECTION
STAGE 1

SHEET 41 OF 65 SHEETS

TRAFFIC CONTROL NOTES: (TYP.)

- 45 MPH: SOUTH PROJECT LIMIT TO FLOWERFIELD RD
- 40 MPH: FLOWERFIELD RD TO RESTWOOD RD
- 35 MPH: RESTWOOD RD TO WEST RD
- 45 MPH: WEST RD TO 109TH AVE
- 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.
- LANE TAPE SHALL BE USED FOR TEMPORARY PAVEMENT MARKINGS IN THE AREA SOUTH OF STA.80+00 AND NORTH OF STA 116+53 NORTHBOUND AND STA 1116+68 SOUTHBOUND.
- BLACK REMOVABLE PREFORMED TAPE SHALL BE USED ON ALL CONFLICTING PAVEMENT MARKINGS OUTSIDE OF THE IMMEDIATE NORTH SECTION CONSTRUCTION LIMITS AND AS INDICATED ON PLAN SHEETS.
- PAINT SHALL BE USED FOR TEMPORARY PAVEMENT MARKINGS IN THE AREAS BETWEEN STA 80+00 AND 116+43 NORTHBOUND AND STA 1116+68 SOUTHBOUND.
- TRPMs ARE TO BE USED IN TAPER AREAS, SPACED AT 10' INTERVALS.
- CONTRACTOR SHALL SUPPLY AND PLACE THE PORTABLE CHANGEABLE MESSAGE SIGN (CMS) 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.
- BARRICADES AND TRAFFIC CONTROL DEVICES WITHIN THE WORK SPACE MAY BE TEMPORARILY REMOVED WHEN IT INTERFERES WITH ACTIVE WORK OPERATIONS. THE BARRICADES AND OR TRAFFIC CONTROL DEVICES MUST BE REPLACED WHEN ACTIVE WORK OPERATIONS END. THIS IS THE RESPONSIBILITY OF THE ONSITE TRAFFIC CONTROL SUPERVISOR OR HIS REPRESENTATIVE.
- PILES OF DIRT, CONCRETE, DEBRIS SHALL BE REMOVED DAILY.
- PROTECT ALL EXCAVATIONS EVEN IN CLOSED LANE SECTIONS.
- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. THE SIGNS TO BE REMOVED FOR MEDIAN WORK, SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE. THIS WILL BE CONSIDERED AS INCIDENTAL TO INSTALL SIGN TYPE C.
- CONTACT ACHD SIGNALS FOR SIGNAL OPERATIONS AT THE INTERSECTION OF CSAH 49.

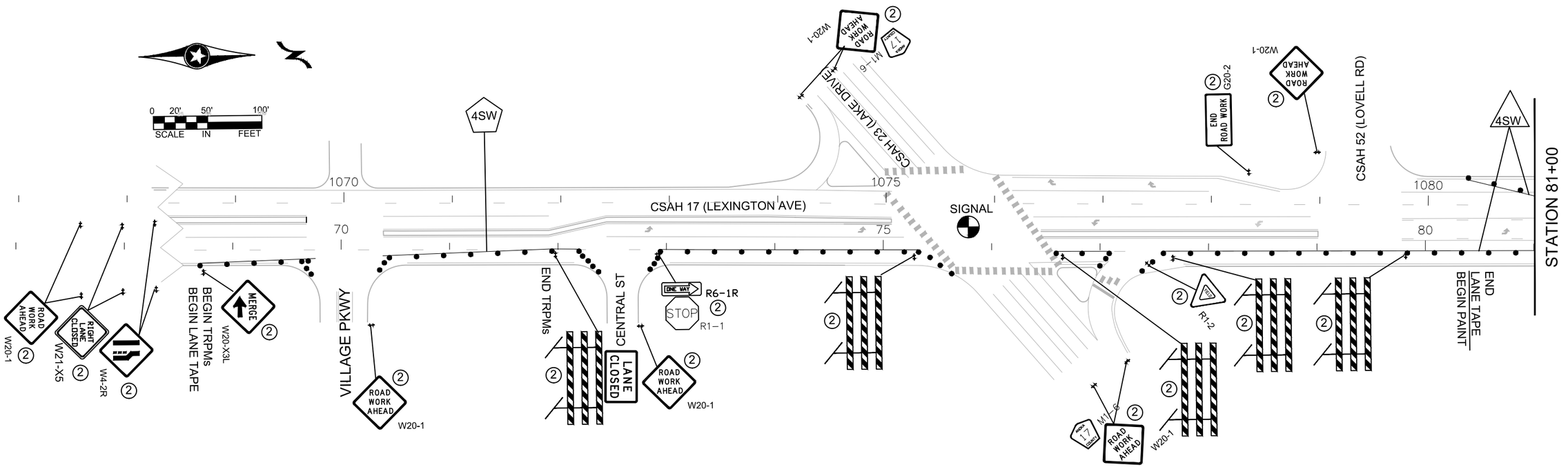
STRIPING KEY

TRIANGLE - PAINT

PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING

SIGN NOTES:

② TEMPORARY TRAFFIC CONTROL SIGN



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\20-01-00\CSAH_17_(SCL-I35W)\Base\Traffic\TC North Section Stage 2.dwg

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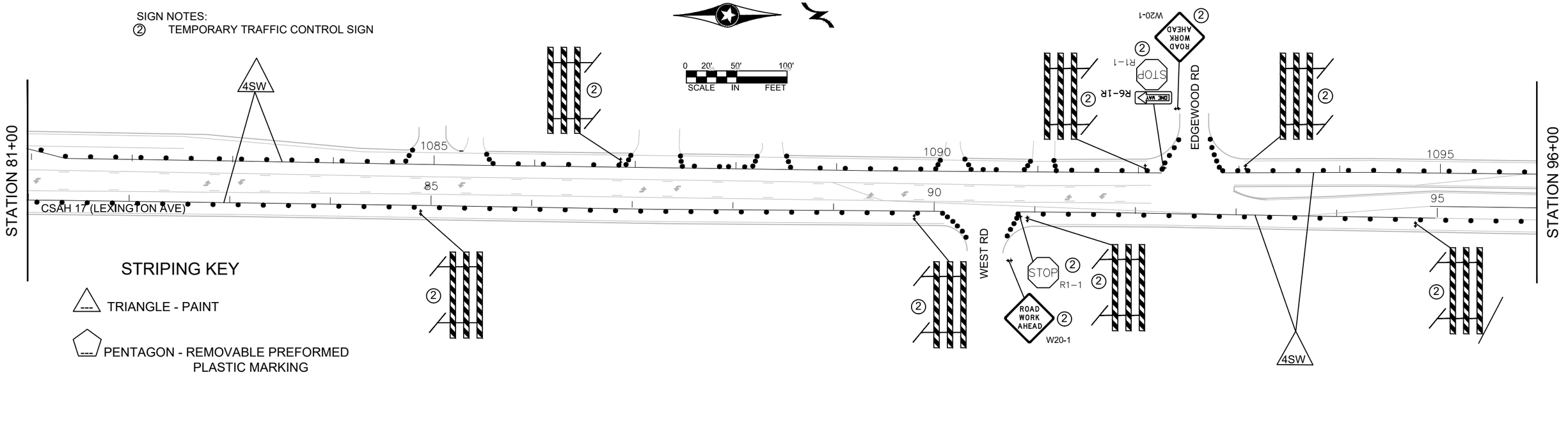
ANOKA COUNTY HIGHWAY DEPT.

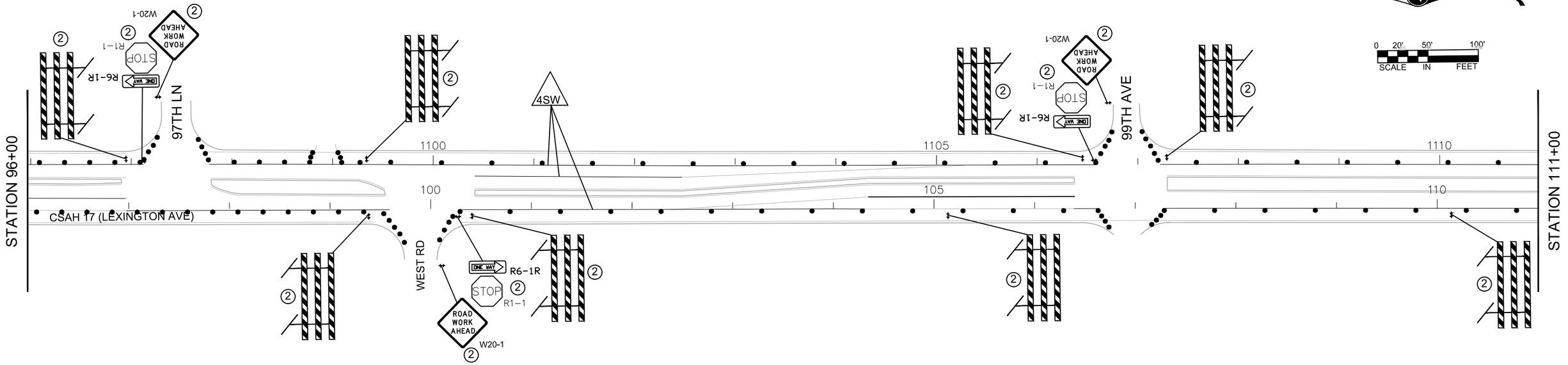
SAP 002-617-027

TRAFFIC CONTROL
NORTH SECTION
STAGE 2

SHEET 42 OF 65 SHEETS

SIGN NOTES:
② TEMPORARY TRAFFIC CONTROL SIGN





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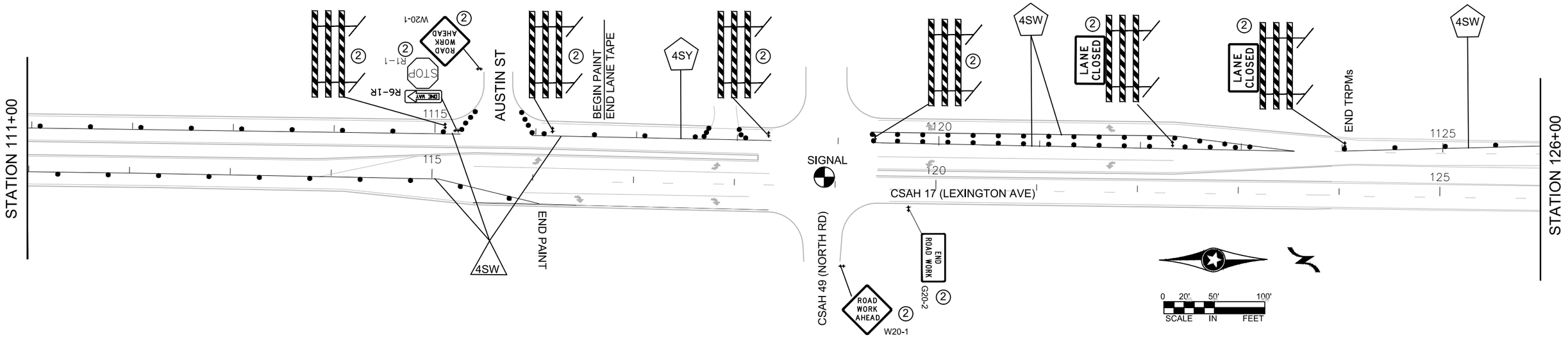
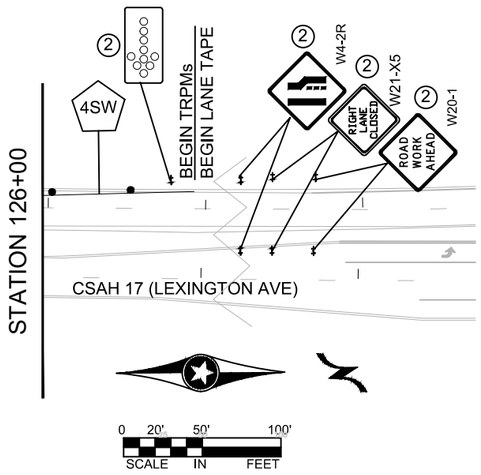
SAP 002-617-027

TRAFFIC CONTROL
NORTH SECTION
STAGE 2

SHEET 43 OF 65 SHEETS





STRIPING KEY

TRIANGLE - PAINT

PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING

SIGN NOTES:

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SAP 002-617-027

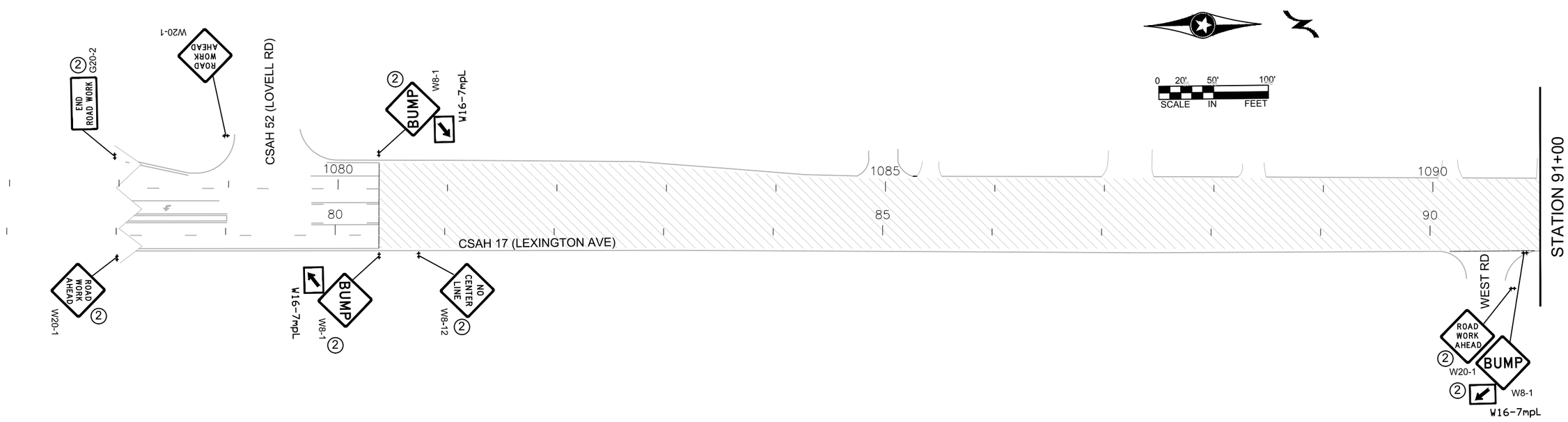
TRAFFIC CONTROL
NORTH SECTION
STAGE 2

SHEET 44 OF 65 SHEETS

TRAFFIC CONTROL NOTES: (TYP.):

- 45 MPH: SOUTH PROJECT LIMIT TO FLOWERFIELD RD.
- 40 MPH: FLOWERFIELD RD TO RESTWOOD RD
- 35 MPH: RESTWOOD RD TO WEST RD.
- 45 MPH: WEST RD TO 109TH AVE.
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MNMUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- ALL LANE CLOSURES FOR CONSTRUCTION DURING THIS STAGE 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 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 THE TRAFFIC CONTROL LUMP SUM.
- ACCESS SHALL BE MAINTAINED TO ALL STREETS AND DRIVEWAYS IN CONSTRUCTION AREA.
- CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.
- CONTRACTOR SHALL CONTACT ACHD SIGNALS FOR ANY SIGNAL SYSTEM OPERATION CHANGES.

SIGN NOTES:
② TEMPORARY TRAFFIC CONTROL SIGN



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\20-01-00\CSAH_17_(SCL-I35W)\Base\Traffic\TC North Section Stage 3.dwg

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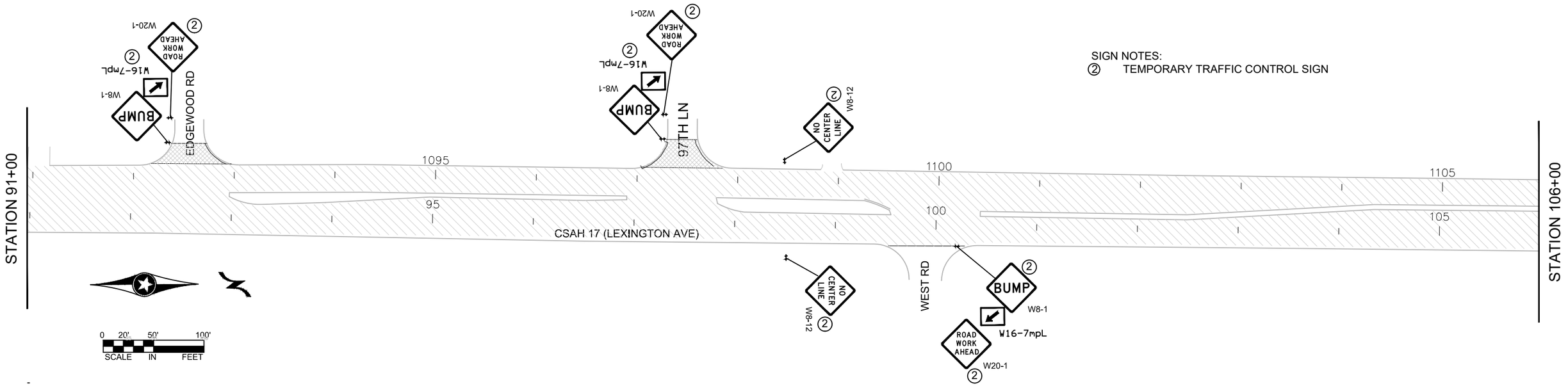
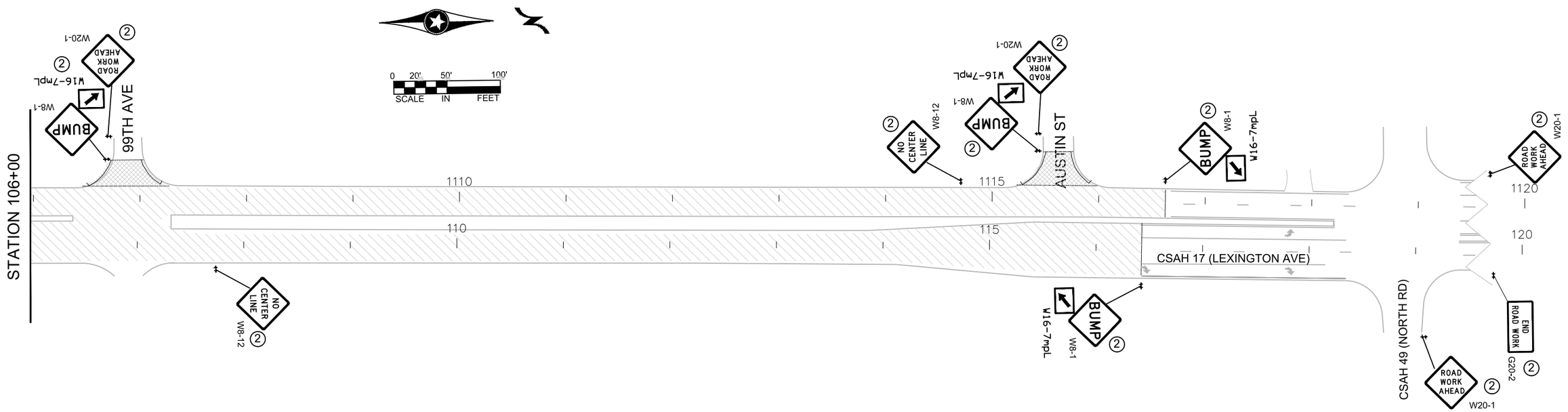
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-617-027

TRAFFIC CONTROL
NORTH SECTION
STAGE 3

SHEET 45 OF 65 SHEETS





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ANOKA COUNTY HIGHWAY DEPT.

SAP 002-617-027

TRAFFIC CONTROL
NORTH SECTION
STAGE 3

SHEET 46 OF 65 SHEETS

TEMPORARY TRAFFIC CONTROL SIGNS

M.U.T.C.D. CODE	SIZE	INSERT	SOUTH SECTION QTY. STAGE 1	SOUTH SECTION QTY. STAGE 2	SOUTH SECTION QTY. STAGE 3	NORTH SECTION QTY. STAGE 1	NORTH SECTION QTY. STAGE 2	NORTH SECTION QTY. STAGE 3
R6-1R	36" x 12"	ONE WAY	0	18	0	0	6	0
R1-1	30" x 30"	STOP	0	16	0	0	7	0
R1-2	36" x 36" x 36"	YIELD	0	1	0	0	1	0
R3-2	24" x 24"		6	0	0	1	0	0
R5-1	20" x 30"	DO NOT ENTER	16	0	0	9	0	0
R6-1R	36" x 12"	ONE WAY	16	0	0	9	0	0
W4-2	48" x 48"		4	0	0	3	0	0
W4-2	48" x 48"		0	2	0	0	4	0
W8-1	48" x 48"	BUMP	0	0	17	0	0	10
W16-7P	30" x 18"		0	0	17	0	0	10
W8-12	48" x 48"	NO CENTER LINE W8-12	0	0	11	0	0	5
M1-6M	24" x 24"	17	6	6	6	0	4	0
W20-1	48" x 48"	ROAD WORK AHEAD	20	20	20	10	18	10
W20-1	48" x 48"	MERGE	3	0	0	1	0	0
W20-1	48" x 48"	MERGE	0	1	0	0	1	0
W20-X13	48" x 48"	LEFT TWO LANES CLOSED	3	0	0	1	0	0
W21-X5	48" x 48"	LEFT LANE CLOSED	2	0	0	2	0	0
W13-1P	30" x 30"	35 M.P.H.	2	0	0	0	0	0

M.U.T.C.D. CODE	SIZE	INSERT	SOUTH SECTION QTY. STAGE 1	SOUTH SECTION QTY. STAGE 2	SOUTH SECTION QTY. STAGE 3	NORTH SECTION QTY. STAGE 1	NORTH SECTION QTY. STAGE 2	NORTH SECTION QTY. STAGE 3
W21-X5	48" x 48"	RIGHT LANE CLOSED	0	3	0	0	4	0
W3-4	48" x 48"	BE PREPARED TO STOP	AS NEEDED			AS NEEDED		
W20-4	48" x 48"	ONE LANE ROAD AHEAD	AS NEEDED			AS NEEDED		
W20-7	48" x 48"		AS NEEDED			AS NEEDED		
R11 G20-X9	30" X 36"	TURN LANE	AS NEEDED (ESTIMATED) 11	0	0	AS NEEDED (ESTIMATED) 4	0	0
	48" x 30"	LANE CLOSED	0	4	0	0	3	0
R3-8AD	36" x 30"	ONLY	0	1	0	0	0	0
R3-2 TYPE III	8 FOOT		0	38	0	0	26	0
R11								
	48" x 30"	LANE CLOSED	9	0	0	3	0	0
	54" x 18"	ONE WAY	0	0	0	0	0	0
R6-1R TYPE III	8 FOOT		43	0	0	19	0	0
G20-X2A	36" X 18"	END ROAD WORK	4	4	4	2	2	2
ARROWBOARD			1	0	0	1	1	0
REFLECTORIZED REBOUNDABLE DRUM			362	623	0	165	399	0
CMS sign to be installed a minimum of ten days prior to actual commencement of road work. Signs to be removed when road work begins.		CMS	2 10 DAYS EACH	0	0	2 10 DAYS EACH	0	0

CHANGEABLE MESSAGE BOARD - 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		

CMS SIGN TO BE PLACED A MINIMUM OF TEN DAYS PRIOR TO ACTUAL COMMENCEMENT OF ROAD WORK. SIGNS TO BE REMOVED WHEN ROAD WORK BEGINS.

TEMPORARY PAVEMENT MARKING TABULATION			
ITEM	UNIT	TOTAL QUANTITY	NOTES
PAVEMENT MARKING REMOVAL 4" SOLID WHITE PAINT	LIN FT	5172	
PAVEMENT MARKING REMOVAL 4" SOLID YELLOW PAINT	LIN FT	14463	
TEMPORARY RAISED PAVEMENT MARKER	EACH	286	1
REMOVABLE BLASK MASK	LIN FT	180	
4" REMOVABLE POLY PREFORM TAPE (WHITE)	LIN FT	4004	
4" REMOVABLE POLY PREFORM TAPE (YELLOW)	LIN FT	2769	
4" SOLID LINE WHITE - PAINT	LIN FT	22014	
4" SOLID LINE YELLOW - PAINT	LIN FT	14293	

1 - SPACED EVERY 10 FEET

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\20-01-00\CSAH_17_(SCL-I35W)\Base\Traffic\Staging Quantities.dwg

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SAP 002-617-027

TEMPORARY SIGNING QUANTITIES

SHEET 47 OF 65 SHEETS

PERMANENT PAVEMENT MARKING PLAN
NOTES AND GUIDELINES

GENERAL INFORMATION:
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.

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

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

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

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

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

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

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

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

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

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

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

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

PAVEMENT MARKING TABULATION

ITEM	UNIT	TOTAL QUANTITY	NOTES
4" SOLID LINE WHITE - MULTI COMP GROUND IN	LIN FT	22801	
4" BROKEN LINE WHITE - MULTI COMP GROUND IN	LIN FT	3900	1
4" SOLID LINE YELLOW - MULTI COMP GROUND IN	LIN FT	18220	
4" BROKEN LINE YELLOW - MULTI COMP GROUND IN	LIN FT	1300	1
24" SOLID LINE WHITE - PREFORMED THERMOPLASTIC GROUND IN	LIN FT	36	
3'X6' ZEBRA CROSSWALK - PREFORMED THERMOPLASTIC GROUND IN	SQ FT	270	
PAVEMENT MESSAGE (RIGHT ARROW) - PREFORMED THERMOPLASTIC GROUND IN	SQ FT	31	
PAVEMENT MESSAGE (LEFT ARROW) - PREFORMED THERMOPLASTIC GROUND IN	SQ FT	558	

1 - 10' STRIPE, 40' GAP

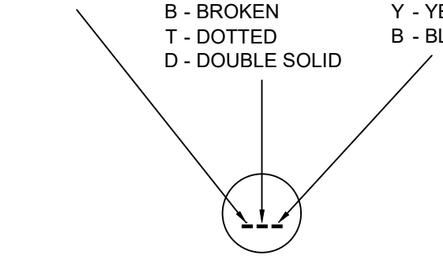
SYMBOLS & MATERIALS LEGEND

- CROSSWALK BLOCK WHITE - POLY PREFORM
- PAVEMENT MESSAGE (LEFT ARROW) POLY PREFORM

STRIPING KEY

- CIRCLE - MULTI COMP GROUND IN
- TRIANGLE - PAINT
- SQUARE - POLY PREFORM THERMOPLASTIC
- PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING

1ST DIGIT WIDTH	2ND DIGIT PATTERN	3RD DIGIT COLOR
4", 8", ETC.	S - SOLID B - BROKEN T - DOTTED D - DOUBLE SOLID	W - WHITE Y - YELLOW B - BLACK



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

— — BROKEN LINE - 50' CYCLE (10' LINE, 40' GAP)

- - - - DOTTED LINE - 15' CYCLE (3' LINE, 12' GAP) UNLESS SHOWN OTHERWISE IN THE PLAN

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\20-01-00\CSAH_17_(SCL-I35W\Base\Traffic\Perm Pvmt Mrkg Guide Notes 2021.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: JORGE R. BERNAL DELGADO DATE: 02-28-23

SIGNATURE: _____ LICENSE NO. 57216

DRAWN BY TMV DATE 10/07/22

DESIGN BY TMV DATE 10/07/22

CHECKED BY JRB DATE 11/04/22

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-617-027

PERMANENT PAVEMENT MARKING PLAN DETAILS

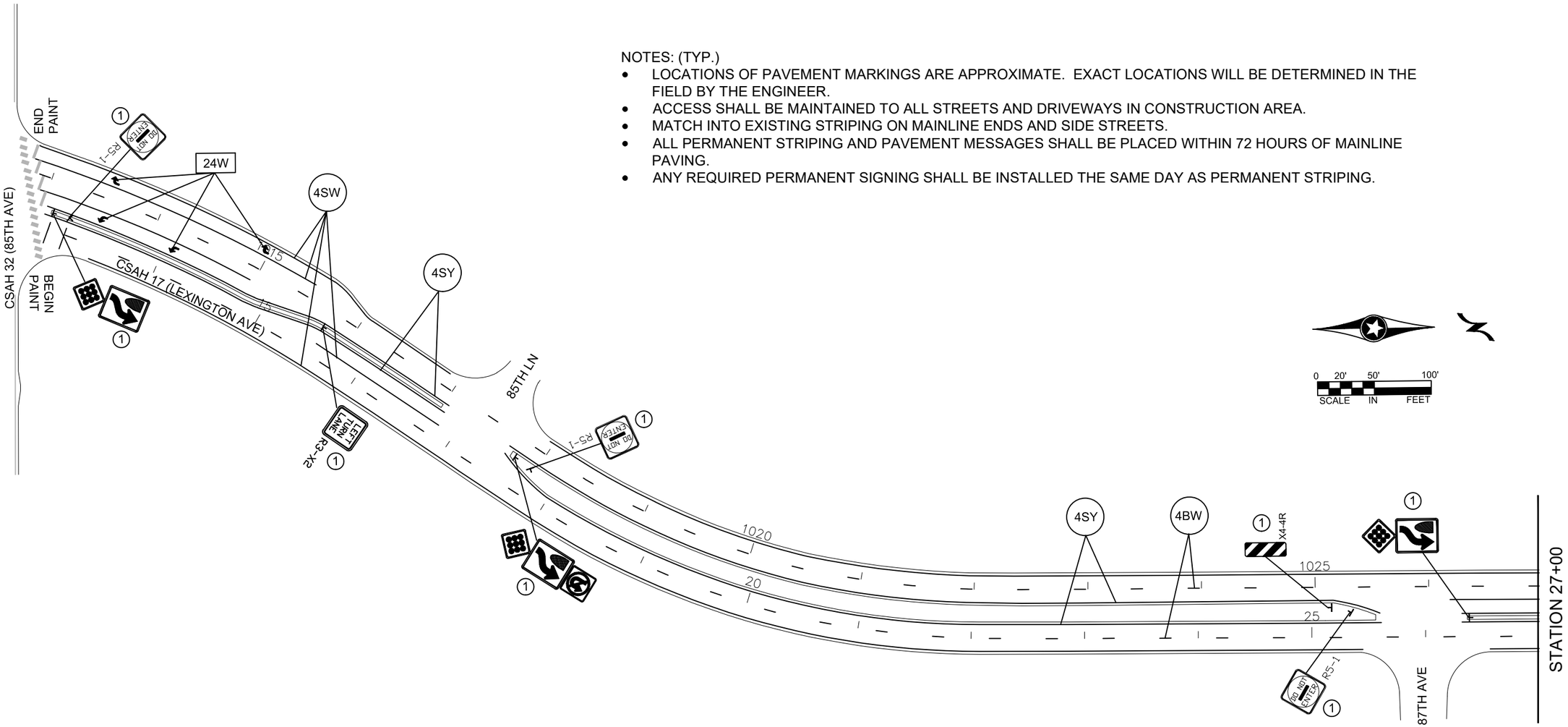
SHEET 48A OF 65 SHEETS

STRIPING KEY:

CIRCLE - MULTI COMP GROUND IN

SQUARE - POLY PREFORM GROUND IN

SIGN NOTES:
① INSTALL SIGN



NOTES: (TYP.)

- LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- ACCESS SHALL BE MAINTAINED TO ALL STREETS AND DRIVEWAYS IN CONSTRUCTION AREA.
- MATCH INTO EXISTING STRIPING ON MAINLINE ENDS AND SIDE STREETS.
- 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.

NO	DATE	BY	CKD	APPR	REVISION
1	02/27/23	TMV	JRB	02/28/23	

NAME: P:\20-01-00\CSAH_17_(SCL-I35W)\Base\Traffic\Perm S&S.dwg

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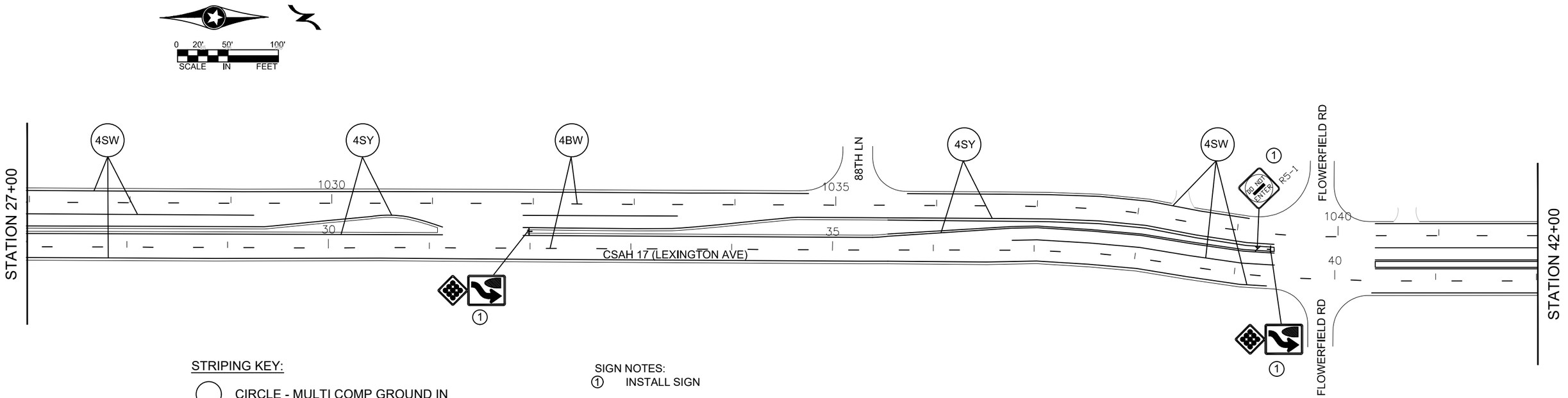
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-617-027

PERMANENT SIGNING & STRIPING

SHEET 49A OF 65 SHEETS



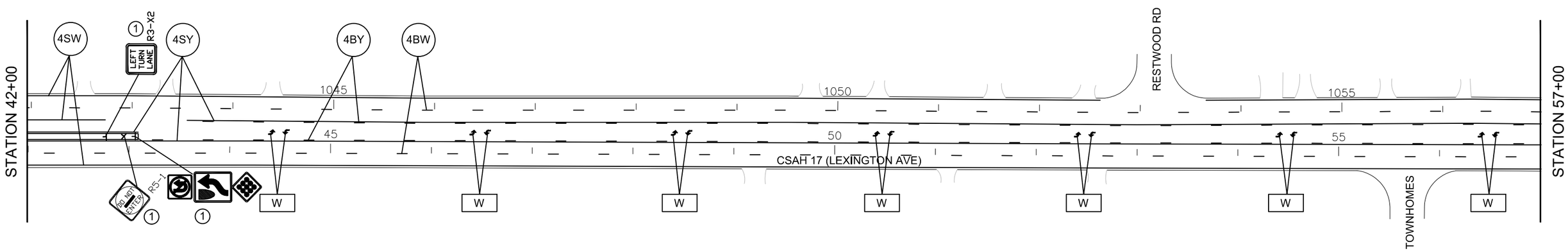
STRIPING KEY:

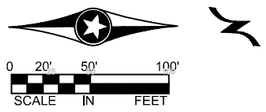
CIRCLE - MULTI COMP GROUND IN

SQUARE - POLY PREFORM GROUND IN

SIGN NOTES:

① INSTALL SIGN





NO	DATE	BY	CKD	APPR	REVISION
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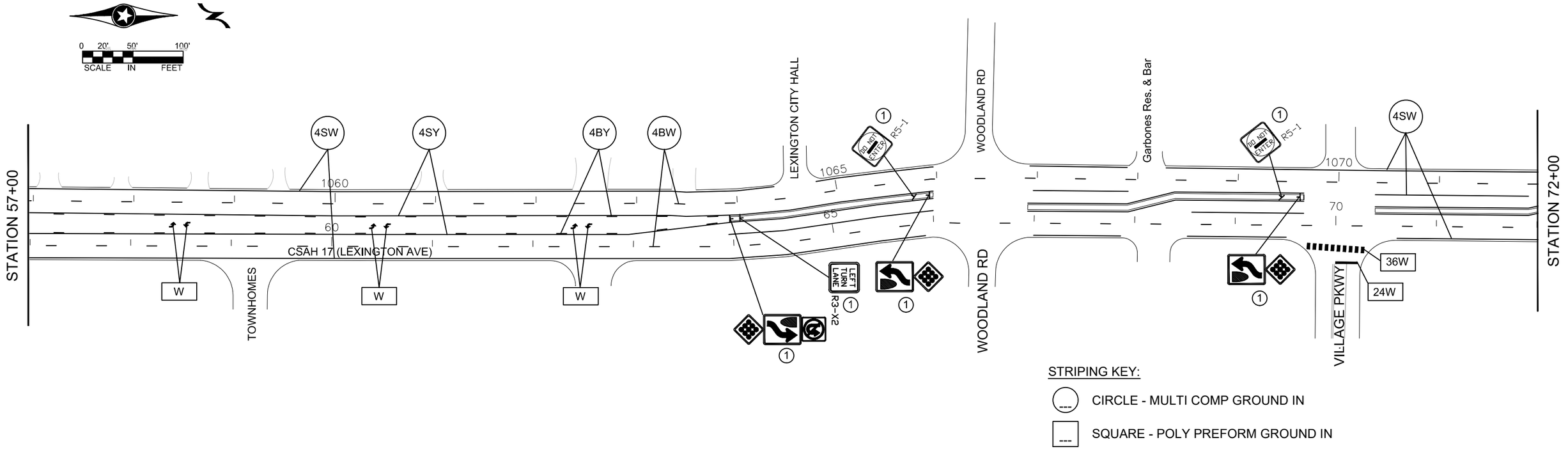
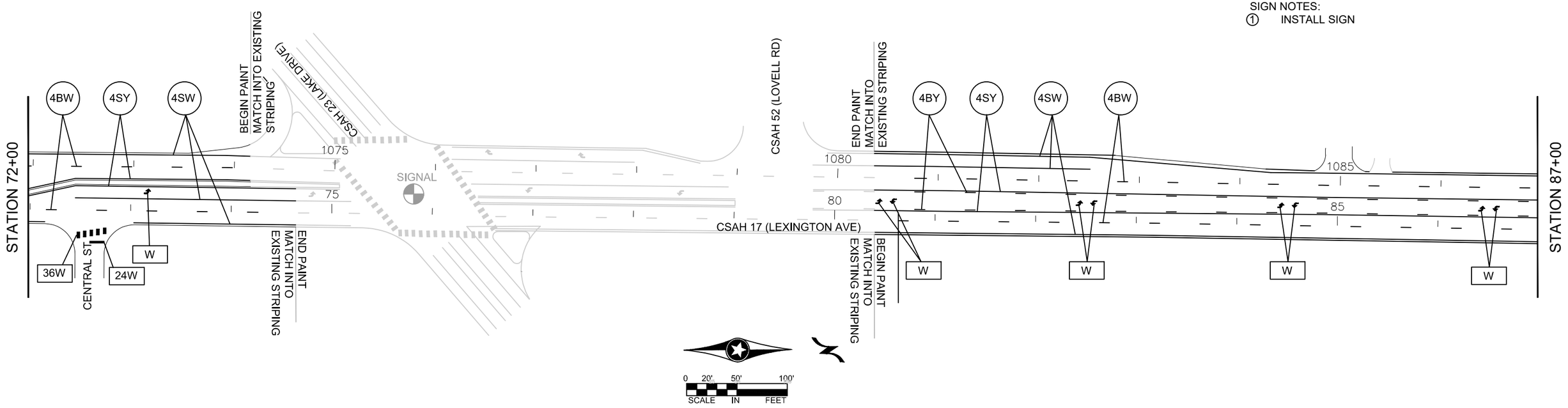
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-617-027

PERMANENT SIGNING & STRIPING

SHEET 50A OF 65 SHEETS





NO	DATE	BY	CKD	APPR	REVISION
1	02/27/23	TMV	JRB	02/28/23	

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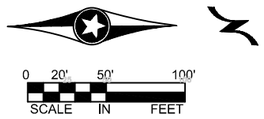
ANOKA COUNTY HIGHWAY DEPT.

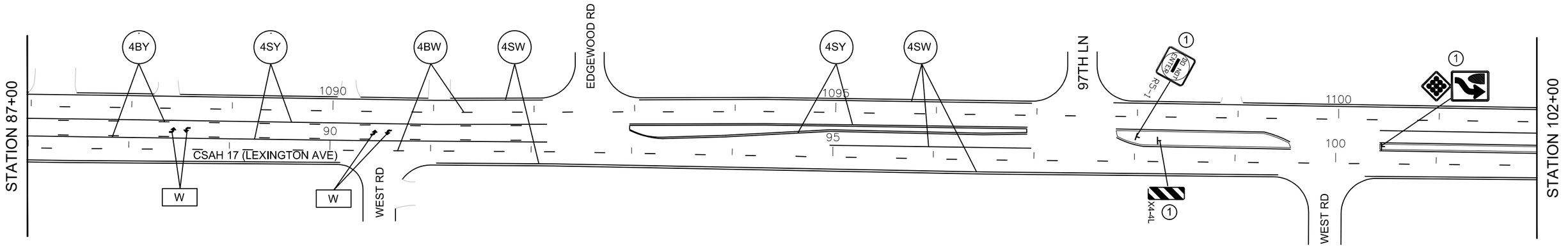
SAP 002-617-027

PERMANENT SIGNING & STRIPING

SHEET 51A OF 65 SHEETS

SIGN NOTES:
① INSTALL SIGN

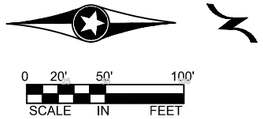


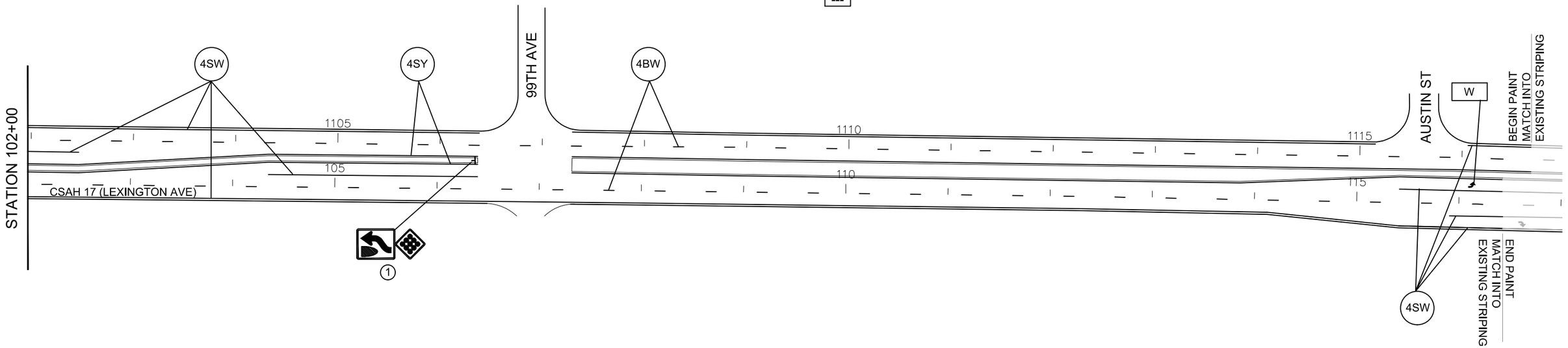


STRIPING KEY:

CIRCLE - MULTI COMP GROUND IN

SQUARE - POLY PREFORM GROUND IN





NO	DATE	BY	CKD	APPR	REVISION
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ANOKA COUNTY HIGHWAY DEPT.

SAP 002-617-027

PERMANENT SIGNING & STRIPING

SHEET 52A OF 65 SHEETS

TYPE C SIGN PANELS

M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY	SQ FT PANEL AREA	SQ FT TOTAL AREA	MOUNTING POST PER INSTALLATION	MOUNTING HEIGHT
R3-7	30" X 30"		3	6.25	18.75	1	7.0'
R3-4	24" X 24"		3	4.00	12.00	1	7.0'
R4-7	24" X 30"		11	5.00	55.00		
OM1-1	18" X 18"		11	2.25	24.75		
R5-1	30" X 30"		8	6.25	50.00	1	7.0'
TYPE C SIGN PANEL TOTALS			36		160.50		

MARKER SIGN PANELS

M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY	SQ FT PANEL AREA	SQ FT TOTAL AREA	MOUNTING POST PER INSTALLATION	MOUNTING HEIGHT
OM3-L	12" X 36"		1	3.00	3.00	1	4.0'
MARKER SIGN PANEL TOTALS			1		3.00		

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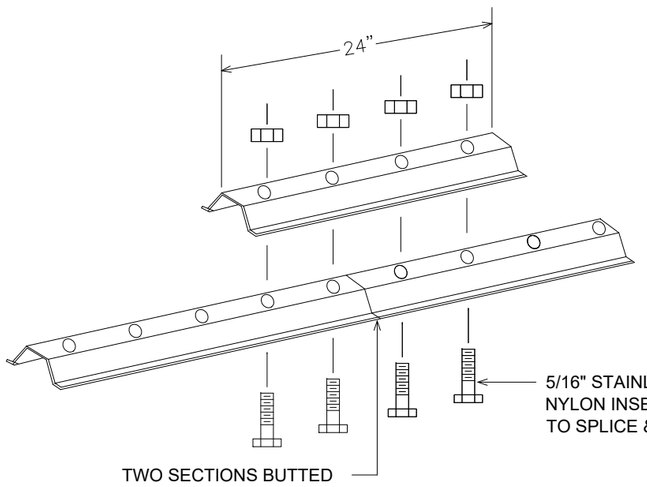
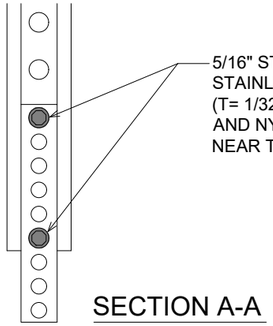
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-617-027

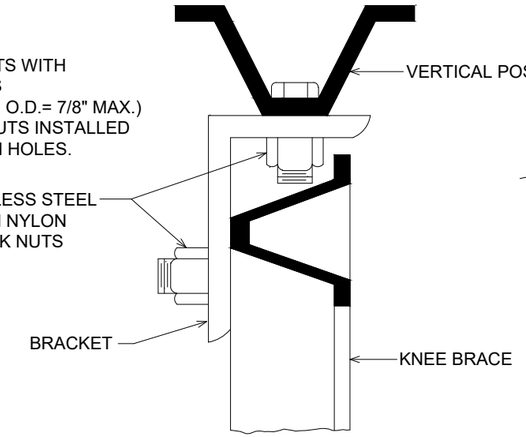
PERMANENT SIGNING QUANTITIES

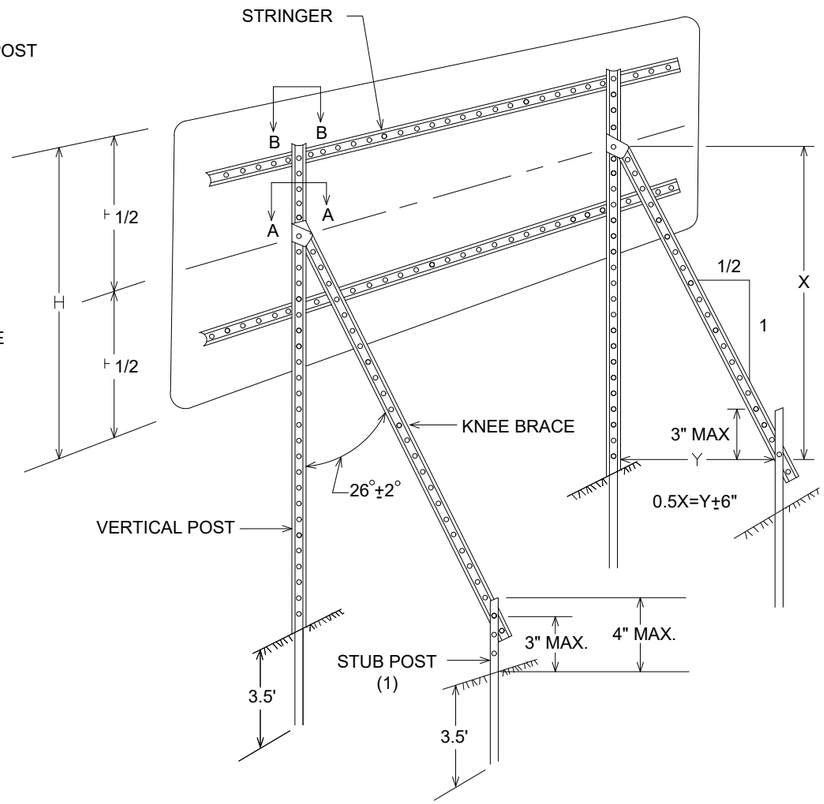
SHEET 53 OF 65 SHEETS



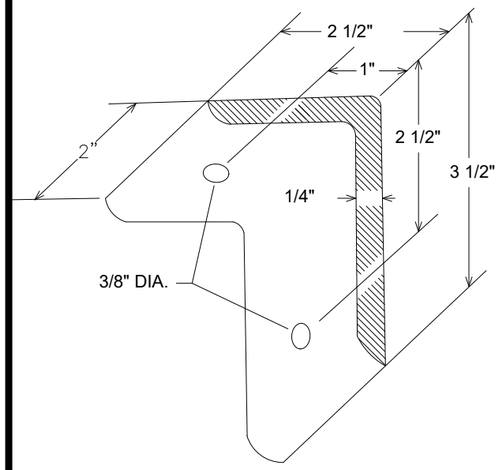


SECTION A-A



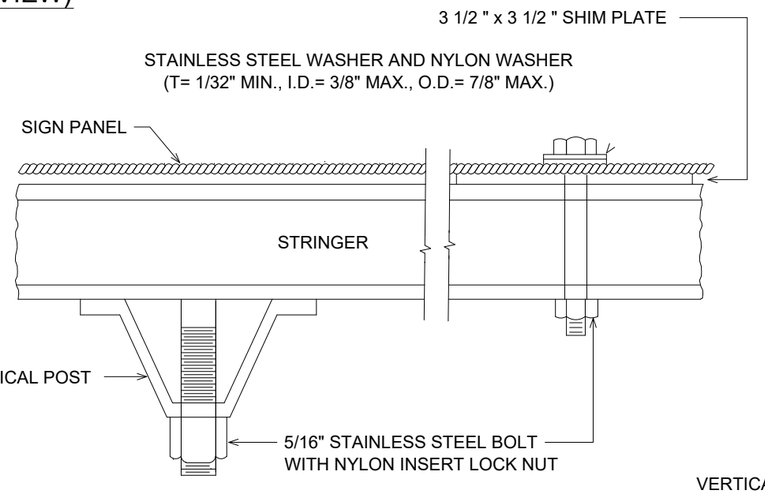


LATERAL BRACE OR STRINGER SPLICE DETAIL (EXPLODED VIEW)

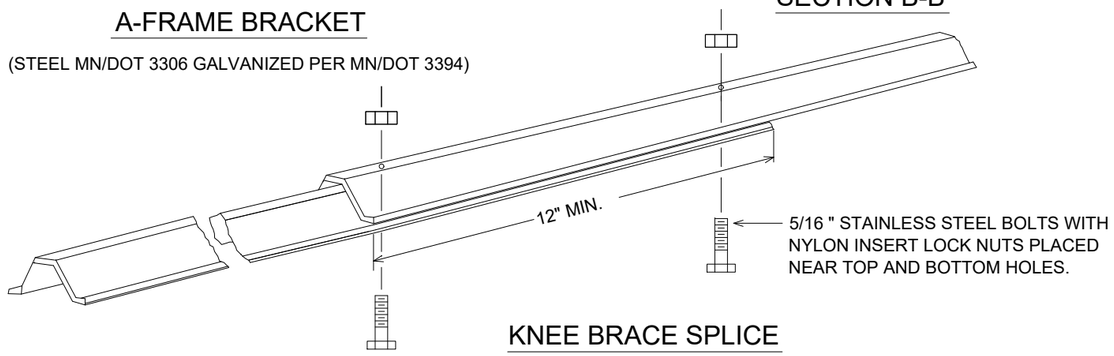


A-FRAME BRACKET

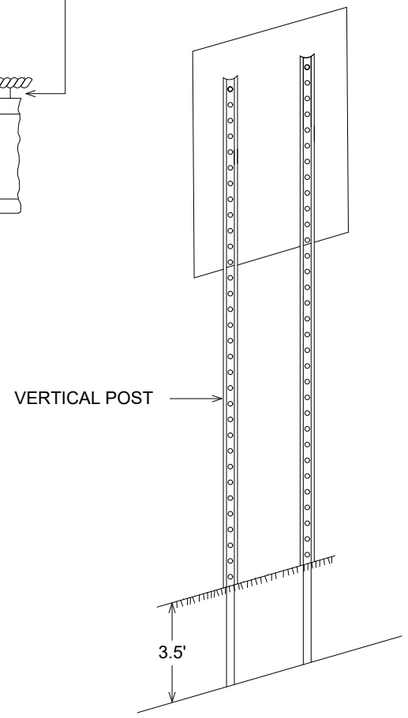
(STEEL MN/DOT 3306 GALVANIZED PER MN/DOT 3394)



SECTION B-B

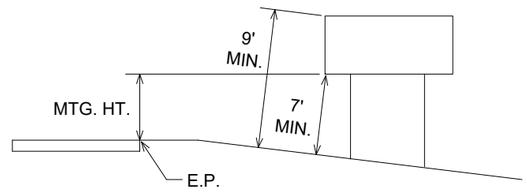


KNEE BRACE SPLICE



TYPICAL INSTALLATION 36" AND LARGER TYPE "C" SIGNS

TYPICAL "A-FRAME" INSTALLATION TYPE "D" SIGNS



TYPICAL MOUNTING

(1) OFFSET STUB POST 1' TOWARD ROADWAY RELATIVE TO VERTICAL POST.

TYPE C & D SIGN STRUCTURAL DETAILS

NO	DATE	BY	CKD	APPR	REVISION

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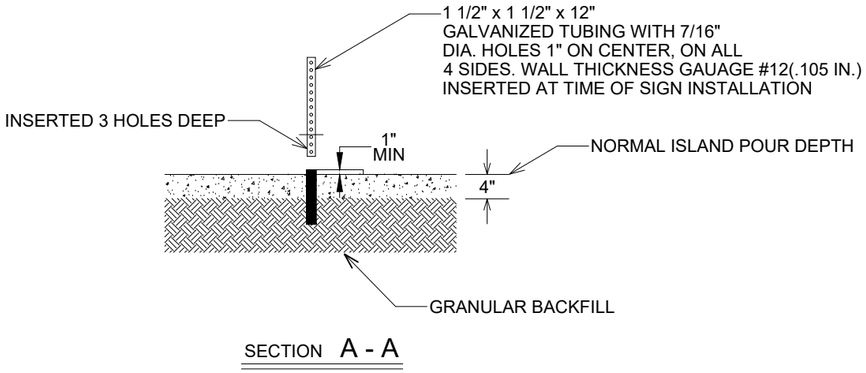
ANOKA COUNTY HIGHWAY DEPT.

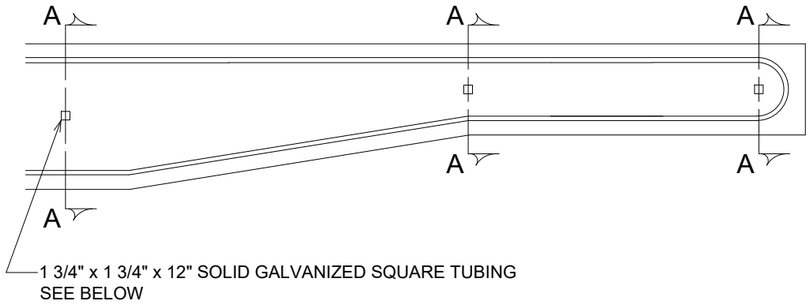
SAP 002-617-027

SIGNING & STRIPING DETAILS

SHEET 54 OF 65 SHEETS

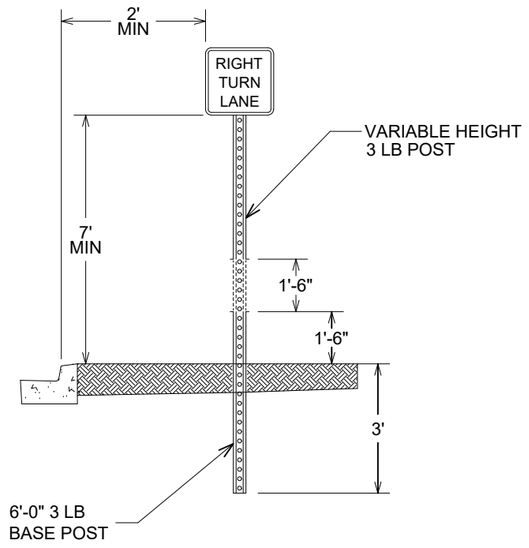


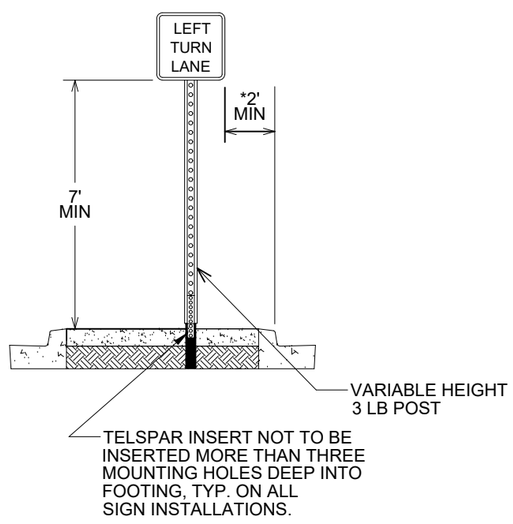
GROUND POST MOUNT SIGN
INSTALLATION TYPICAL

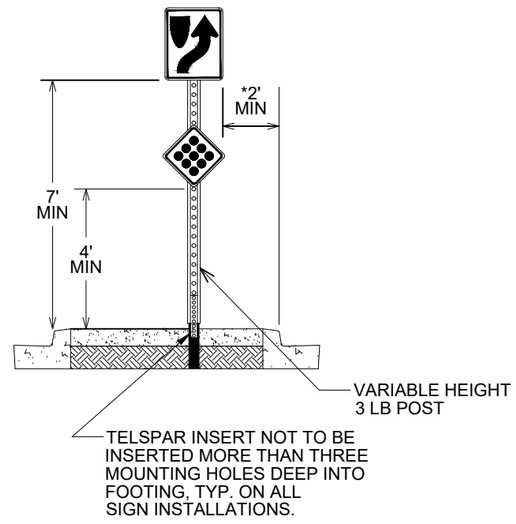


ISLAND MOUNT BREAK-AWAY SIGN
INSTALLATION TYPICAL

ISLAND MOUNT BREAK-AWAY SIGN
SIGN INSTALLATION TYPICAL
KEEP RIGHT/CLUSTER







*1' MIN FOR NARROW URBAN LOCATIONS

INSTALLATION NEAR SIDEWALK (MN MUTCD)

The minimum height, measured vertically from the bottom of the sign to the sidewalk, of signs installed above sidewalks shall be 7 feet. If the bottom of a secondary sign that is mounted below another sign is mounted lower than 7 feet above a pedestrian sidewalk or pathway, the secondary sign shall not project more than 4 inches into the pedestrian facility.

NO	DATE	BY	CKD	APPR	REVISION

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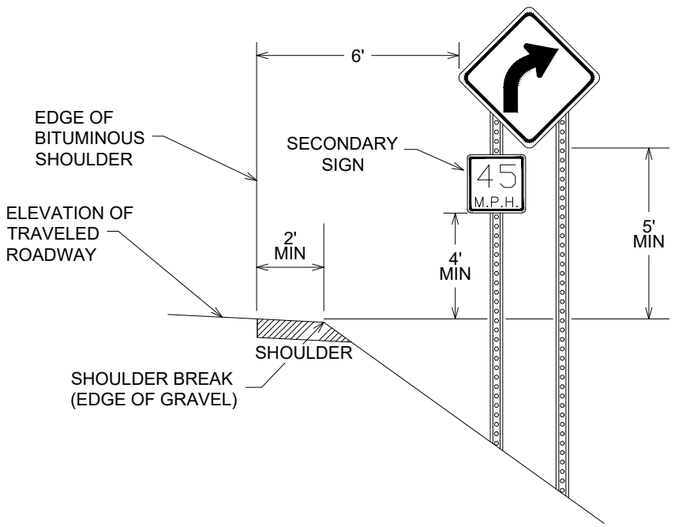
SAP 002-617-027

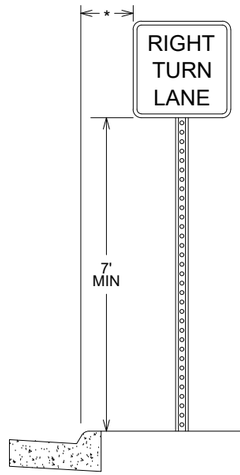
SIGNING & STRIPING DETAILS

SHEET 55 OF 65 SHEETS

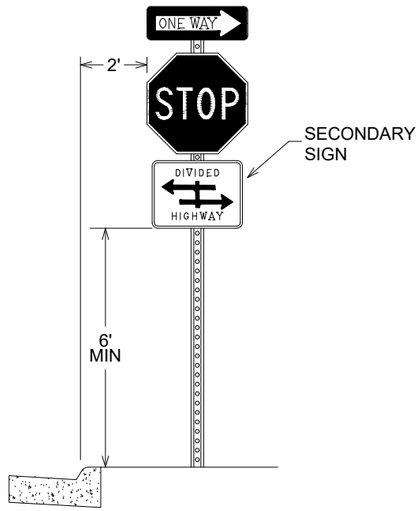
TYPICAL SIGN PLACEMENT
(RURAL)

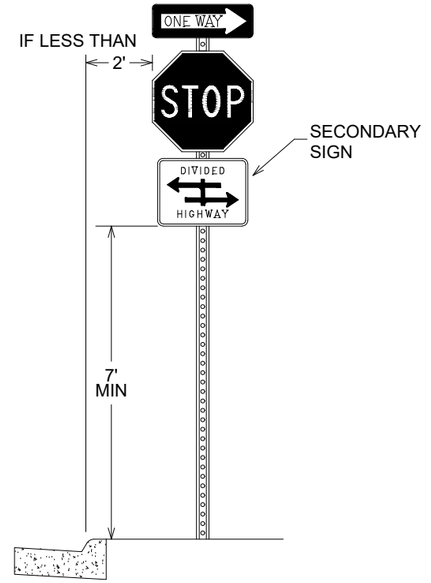


TYPICAL SIGN PLACEMENT
(URBAN)



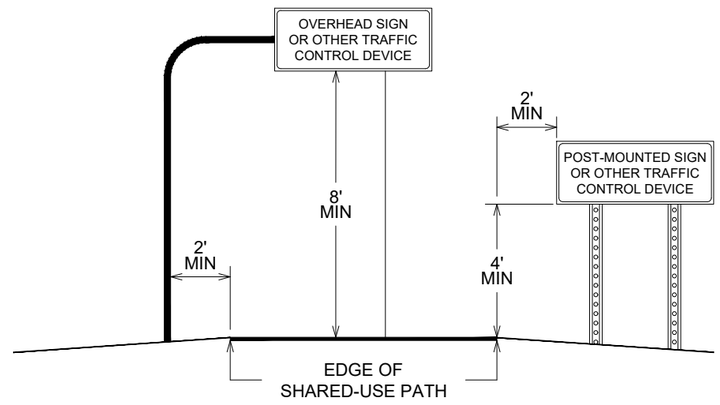
*2' - NARROW BOULEVARD (≤ 8' WIDE)
6' - WIDE BOULEVARD





NOTES:
- ALL DIMENSIONS ARE MINIMUMS
- MAINTAIN A DISTANCE OF 2' BETWEEN SIGNS AND BITUMINOUS TRAIL
- 7' SIGN CLEARANCE IF A 2' DISTANCE BETWEEN SIGN AND BITUMINOUS TRAIL CANNOT BE MAINTAINED

TYPICAL SIGN PLACEMENT
SHARED-USE PATH



NO	DATE	BY	CKD	APPR	REVISION

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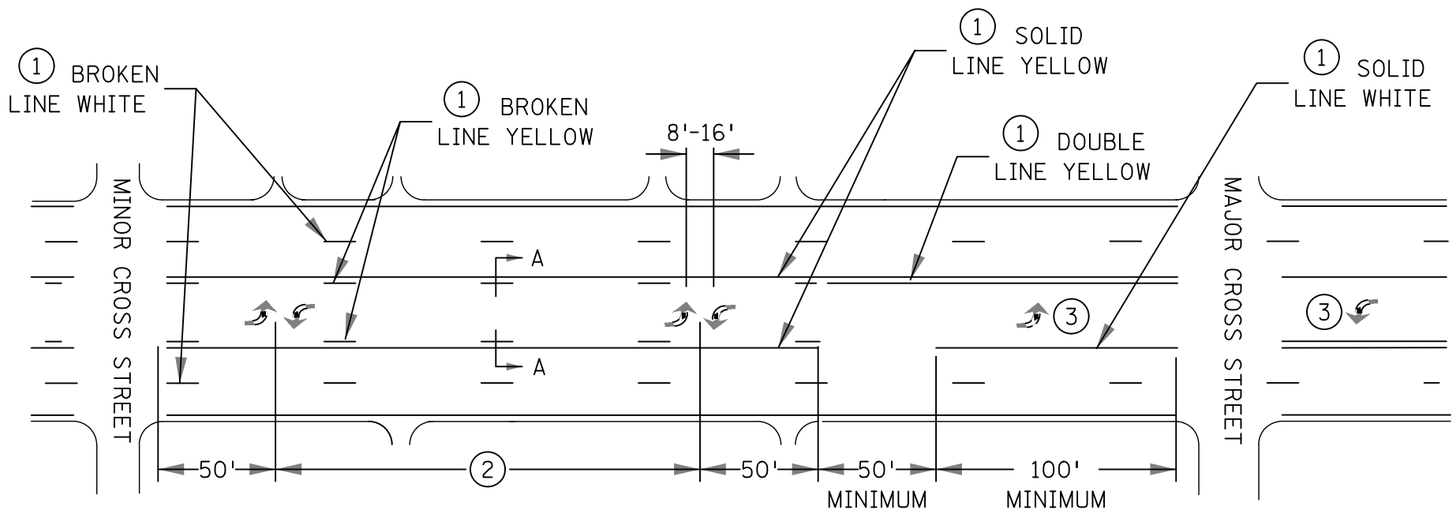
ANOKA COUNTY HIGHWAY DEPT.

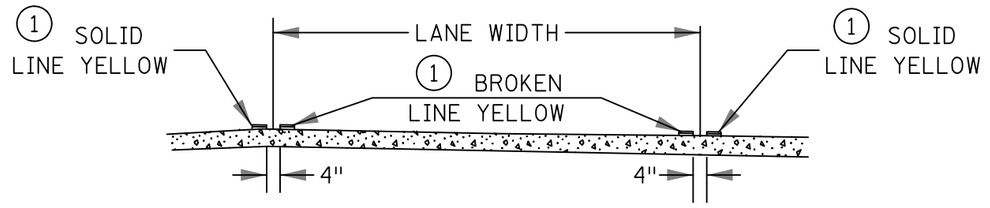
SAP 002-617-027

SIGNING & STRIPING DETAILS

SHEET 56 OF 65 SHEETS

TWO-WAY LEFT-TURN LANE





SECTION A-A
TWO WAY LEFT TURN LANE

DESIGNER'S NOTES:

1. MAY USE 6" OR 4" FOR LANE LINES, EXCLUDING TURN LANES, AUXILIARY AND/OR DROP LANES.
2. INSERT SPACING, BASED ON FIELD CONDITIONS.
3. SINGLE-DIRECTION LEFT-TURN ARROWS SHALL NOT BE USED IN LANES BORDERED ON BOTH SIDES BY TWO-WAY LEFT TURN LANE MARKINGS. SEE "TURN LANE WITH ARROW MESSAGE, OR WITH DOTTED LINE EXTENSION" TYPICALS FOR PLACEMENT AND NUMBER OF ARROWS OR OPTIONAL LANE LINE EXTENSIONS, (MN MUTCD SECTION 3B.20).

PUBLISHED BY OTE: 16 NOV 2021 | MODIFIED:

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\20-01-00\CSAH_17_(SCL-I35W)\Base\Traffic\Sign&Stripe_Details 2019.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: JORGE R. BERNAL DELGADO DATE: 02-17-23

SIGNATURE: LICENSE NO. 57216

DRAWN BY TMV DATE 04/07/22

DESIGN BY TMV DATE 04/07/22

CHECKED BY JRB DATE 11/04/22

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-617-027

SIGNING & STRIPING DETAILS

SHEET 57 OF 65 SHEETS

SIGNAL INDICATION CHART

ALL SIGNAL INDICATIONS SHALL BE 300 mm
ALL CIRCULAR & ARROW INDICATIONS SHALL BE LED

SIGNAL FACE	R	Y	G	RLTA	YLTA	GLTA
1-1,1-2						
2-1,2-2,2-3	●	●	●			
4-1,4-2,4-3	●	●	●			
4-4,4-5	●	●	●		←	←
5-1,5-2				←	←	←
6-1,6-2,6-3	●	●	●			
8-1,8-2,8-3	●	●	●			
8-4,8-5	●	●	●		←	←

SIGNAL HEAD PHASING

FACE / PHASE

4-a, 4-b (R, Y, G) — Ø4 & Ø8
8-a, 8-b (R, Y, G) — Ø3 & Ø7

(4) PA100 FOUNDATION
TYPE PA100-A-10.7 m-D12 m-3 m (DAVIT AT 350°)
2 - ONE WAY SIGNALS (OVERHEAD)
(0 m AND 3.4 m FROM END OF MAST ARM)
TYPE 10B POLE MOUNTED AT 90°
TYPE 20B POLE MOUNTED AT 180°
LUMINAIRE - 200 WATT H.P.S. WITH P.E.C. AND TEST SWITCH
ONE WAY EVP DETECTOR AND LIGHT
(1.8 m FROM END OF MAST ARM), 19 mm HUB
2 - PEDESTRIAN PUSHBUTTONS
1 - R10-12 (24"x30") SIGN
EXTEND 78 mm RSC INTO HH-13 WITH:
3 - 12/C #12, 2 - 3/C #12
1 - 3/C #12 (LUM.) AND 1 - 3/C #20

(2) PA100 FOUNDATION
TYPE PA100-A-10.7 m-D12 m-3 m (DAVIT AT 350°)
2 - ONE WAY SIGNALS (OVERHEAD)
(0 m AND 3.6 m FROM END OF MAST ARM)
TYPE 10B POLE MOUNTED AT 90°
TYPE 20B POLE MOUNTED AT 180°
LUMINAIRE - 200 WATT H.P.S. WITH P.E.C. AND TEST SWITCH
ONE WAY EVP DETECTOR AND LIGHT
(1.8 m FROM END OF MAST ARM), 19 mm HUB
2 - PEDESTRIAN PUSHBUTTONS
1 - R10-12 (24"x30") SIGN
EXTEND 78 mm RSC INTO HH-5 WITH:
3 - 12/C #12, 2 - 3/C #12
1 - 3/C #12 (LUM.) AND 1 - 3/C #20

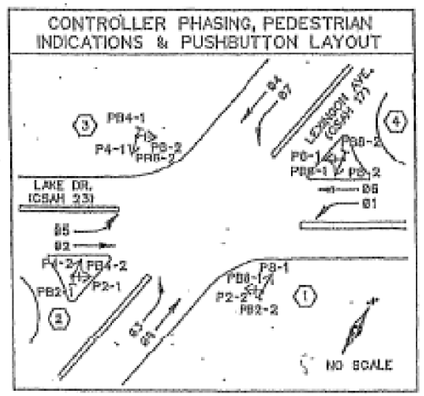
(3) PA100 FOUNDATION
TYPE PA100-A-12.2 m-D12 m-3 m (DAVIT AT 350°)
2 - ONE WAY SIGNALS (OVERHEAD)
(0.2 m AND 4.0 m FROM END OF MAST ARM)
TYPE 10B POLE MOUNTED AT 90°
TYPE 20B POLE MOUNTED AT 180°
LUMINAIRE - 200 WATT H.P.S. WITH P.E.C. AND TEST SWITCH
ONE WAY EVP DETECTOR AND LIGHT
(1.8 m FROM END OF MAST ARM), 19 mm HUB
2 - PEDESTRIAN PUSHBUTTONS
EXTEND 78 mm RSC INTO HH-10 WITH:
3 - 12/C #12, 2 - 3/C #12
1 - 3/C #12 (LUM.) AND 1 - 3/C #20

103 mm RSC
3 - 12/C #12
2 - 3/C #12
1 - 3/C #12 (LUM.)
3 - 2/C #14
1 - 3/C #20

SIGNAL OPERATION NOTES

- NORMAL OPERATION IS 8 PHASE
- FLASH MODE SHALL BE ALL RED
- Ø1 & Ø5 SHALL BE PROTECTED LEFT TURNS
  LEFT TURNS
- Ø3 & Ø7 SHALL BE PROTECTED/PERMISSIVE
  LEFT TURNS
- Ø2 & Ø8 SHALL BE ON VEHICLE REQALL

CONTROLLER PHASING, PEDESTRIAN INDICATIONS & PUSHBUTTON LAYOUT



FUNCTIONS:

(1) CALL AND EXTEND
(3) EXTEND ONLY
(7) DELAY CALL, IMMEDIATE EXTEND

LOOP DETECTOR CHART

DESIGNATION	SIZE	FUNCTION	DISTANCE FROM # STOP LINE
D1-1	2-1.7m x 1.7m	(1)	3.4, 12.2 m
D1-2	2-1.7m x 1.7m	(1)	-1, 7.8 m
D2-1	1-1.7m x 1.7m	(1)	107 m
D3-1	2-1.7m x 1.7m	(1)	3.4, 12.2 m
D3-2	2-1.7m x 1.7m	(1)	-1, 7.8 m
D4-1,D4-2	1-1.7m x 1.7m	(3)	73 m
D4-3,D4-4	2-1.7m x 1.7m	(1)	+1, 3.4 m
D4-5 W/O D4-6	3-1.7m x 1.7m	(7)	-7.8,-3.4, 1 m
D5-1	2-1.7m x 1.7m	(1)	3.4, 12.2 m
D5-2	2-1.7m x 1.7m	(1)	-1, 7.8 m
D9-1	1-1.7m x 1.7m	(1)	107 m
D7-1	2-1.7m x 1.7m	(1)	3.4, 12.2 m
D7-2	2-1.7m x 1.7m	(1)	-1, 7.8 m
D8-1,D8-2	1-1.7m x 1.7m	(3)	73 m
D8-3 W/O D8-4	3-1.7m x 1.7m	(1)	-7.8,-3.4, 1 m
D8-4	2-1.7m x 1.7m	(1)	-1, 3.4 m

20 10 0 20 40
scale feet

PLAN HAS METRIC UNITS, BUT SCALE OF THIS PLAN IS IN FEET.

NOTE: THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATIONAL PURPOSES ONLY.

(1) PA100 FOUNDATION
TYPE PA100-A-12.2 m-D12 m-3 m (DAVIT AT 350°)
2 - ONE WAY SIGNALS (OVERHEAD)
(0.2 m AND 4.0 m FROM END OF MAST ARM)
TYPE 10B POLE MOUNTED AT 90°
TYPE 20B POLE MOUNTED AT 180°
LUMINAIRE - 200 WATT H.P.S. WITH P.E.C. AND TEST SWITCH
ONE WAY EVP DETECTOR AND LIGHT
(1.8 m FROM END OF MAST ARM), 19 mm HUB
2 - PEDESTRIAN PUSHBUTTONS
EXTEND 78 mm RSC INTO HH-1 WITH:
3 - 12/C #12, 2 - 3/C #12
1 - 3/C #12 (LUM.) AND 1 - 3/C #20

(A) CONTROLLER FOUNDATION
CONTROLLER & CABINET
EXTEND 103 mm RSC INTO HH-1 WITH:
6 - 12/C #12, 4 - 3/C #12,
9 - 2/C #14 AND 2 - 3/C #20
(**) 1-12 SM FIBER OPTIC CABLE-F & I)
EXTEND 103 mm RSC INTO HH-18 WITH:
8 - 12/C #12, 4 - 3/C #12,
10 - 2/C #14 AND 2 - 3/C #20
EXTEND 53 mm RSC INTO HH-18 WITH:
1 - 78 mm RSC STUB OUT OF CABINET (THREAD AND CAP BOTH ENDS)

(B) SERVICE CABINET FOUNDATION
SIGNAL SERVICE CABINET
EXTEND 53 mm RSC INTO HH-19 WITH: 3 - 1/C #8
EXTEND 53 mm RSC INTO HH-1 WITH: 4 - 3/C #12 (LUM.)
EXTEND 53 mm RSC INTO HH-20 WITH: 3 - 3/C #2

(C) SOURCE OF POWER INPLACE WOOD POLE
53 mm RSC RISER AND WEATHERHEAD WITH:
3 - 1/C #2

(**) 1-12 SM FIBER OPTIC CABLE-F & I)

INTERCONNECT NOTES:

1) ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE AND IN OPERATION, EXCEPT WHERE BOXED IN AND DENOTED BY (**) AND BY F & I (ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF "TRAFFIC CONTROL INTERCONNECT" PAY ITEM).
2) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
3) ALL HANDHOLES ARE PVC HANDHOLES WITH METAL FRAMES AND COVERS AND ARE INPLACE. AND COVER. SEE SPECIAL PROVISIONS.
4) (F & I) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.

MATCH LINE "A" (INTERCONNECT) SEE SHEET 92
MATCH LINE TO EAST
MATCH LINE TO SOUTH
NEW CURB
LAKE DR. (CSAH 23) 70 km/h (45 MPH)
LEXINGTON AVE. (CSAH 17) 55 km/h (35 MPH)
8"x300
Ø4+Ø8 EVP
Ø1-Ø6 EVP
Ø3-Ø8 EVP
53 mm RSC 1 - 2/C #14
78 mm RSC 1 - 2/C #14
103 mm RSC 6 - 12/C #12, 4 - 3/C #12, 2 - 3/C #12 (LUM.), 10 - 3/C #14, 2 - 3/C #20
3.6 m
4.2 m

DESIGN TEAM
DRAWN BY: SAS
DESIGNED: JMO
CHECKED BY: JMO

NO.	BY	DATE	REVISIONS

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.
Certified By: _____ (Signature or Printed Name) Lic. No. 22457
Printed Name: JOHN M. GRAY, PE Date: 9/29/2017

SEH — 3535 VADNAIS CENTER DR, ST. PAUL, MN 55110

ANOKA COUNTY, MN
CSAH 23
S.A.P. 002-623-017

TRAFFIC CONTROL INTERCONNECT INTERSECTION LAYOU
CSAH 23 (LAKE DRIVE) AT CSAH 17

FILE NO. AN04C1416IT
SGL16 OF SGL19
93 / 96

FILE: S:\ME\A\Anoka\1416IT\5-Prod-dsgn\55-Drawings\41-Tronstney\Plansheets\C0141681_sgl16.dgn
MODEL: SGL16

FOR REFERENCE PURPOSES ONLY

NO	DATE	BY	CKD	APPR	REVISION		
						02/15/2023	7:17:17 AM

NAME: P:\23-01-00\CSAH_17_(SCL-I35W)\Base\Proposed\CSAH_17_SIGNAL.dgn

DRAWN BY MR DATE 02/24/2022
DESIGN BY MR DATE 02/24/2022
CHECKED BY CO DATE 11/29/2022

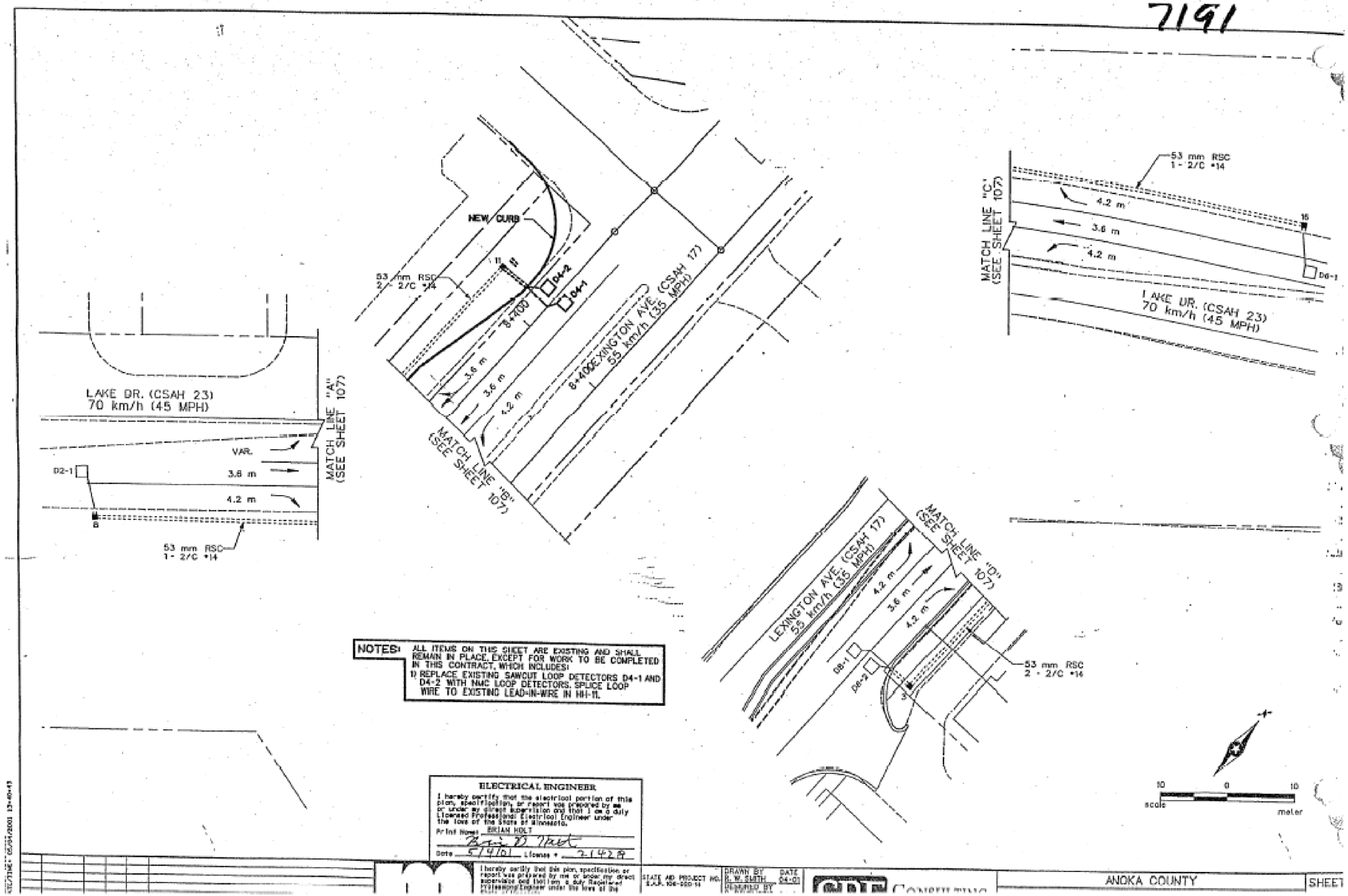
ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-617-027

EXISTING SIGNAL PLANS

Sheet 58 of 65 Sheets

7191



NOTES: ALL ITEMS ON THIS SHEET ARE EXISTING AND SHALL REMAIN IN PLACE, EXCEPT FOR WORK TO BE COMPLETED IN THIS CONTRACT, WHICH INCLUDES:
1) REPLACE EXISTING SAWCUT LOOP DETECTORS D4-1 AND D4-2 WITH NAMC LOOP DETECTORS. SPLICE LOOP WIRE TO EXISTING LEAD-IN-WIRE IN HH-11.

ELECTRICAL ENGINEER

I hereby certify that the electrical portion of this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Electrical Engineer under the laws of the State of Minnesota.

Print Name: BRIAN HOLT

Signature: Brian D Holt

Date: 5/14/01 License #: 21429

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the

STATE AID PROJECT NO. S.A.P. 106-000-14

DRAWN BY R. W. SMITH DATE 04-01

DESIGNED BY

ANOKA COUNTY

SHEET

NO	DATE	BY	CKD	APPR	REVISION		
						02/15/2023	7:17:23 AM

NAME: P:\23-01-00\CSAH_17_(SCL-I35W)\Base\Proposed\CSAH_17_SIGNAL.dgn

DRAWN BY MR DATE 02/24/2022

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CHECKED BY CO DATE 11/29/2022

ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-617-027

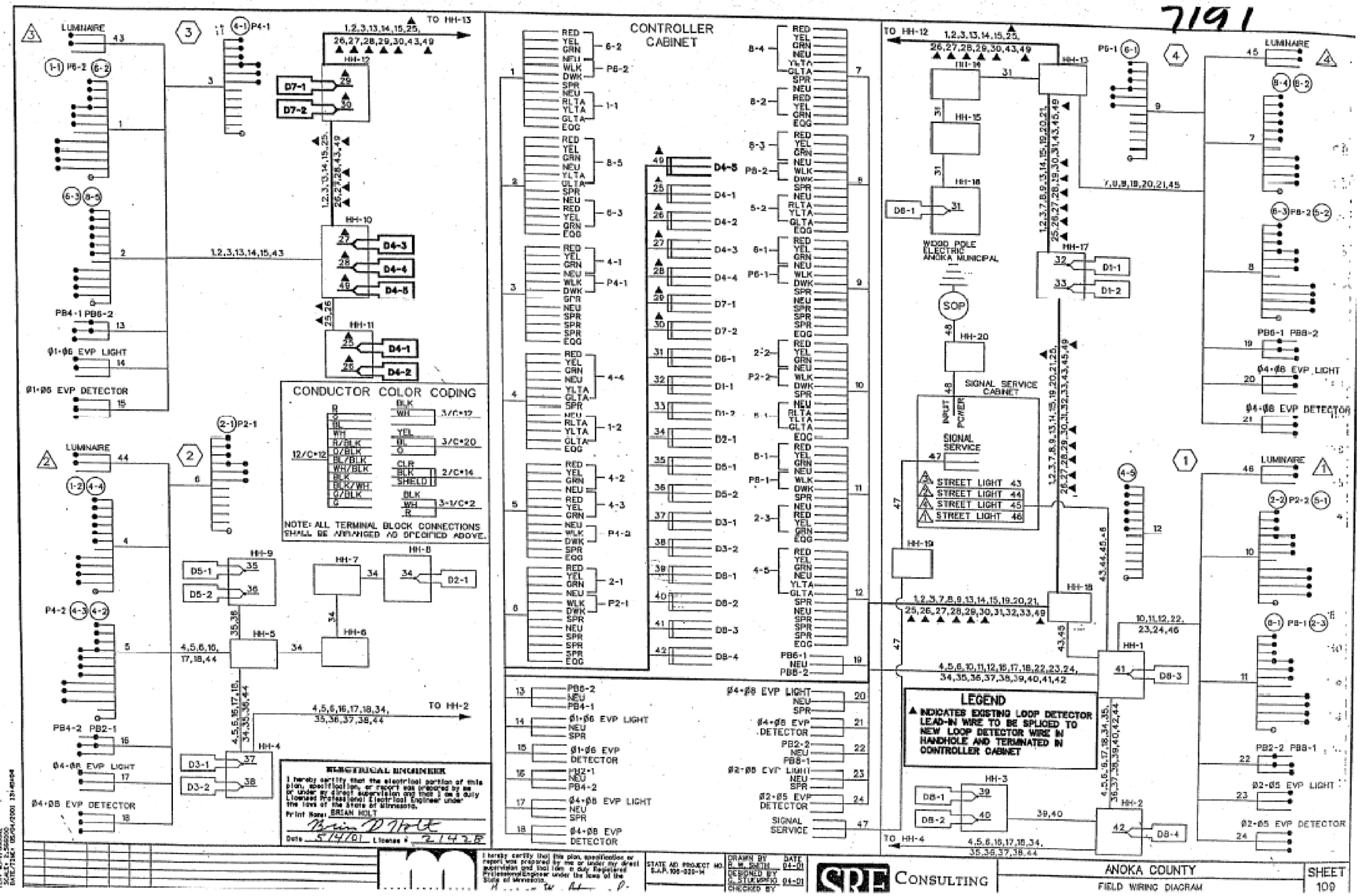
EXISTING SIGNAL PLANS

Sheet 59 of 65 Sheets

FOR REFERENCE PURPOSES ONLY

SPHoos

7191



FOR REFERENCE PURPOSES ONLY

NO	DATE	BY	CKD	APPR	REVISION		
						02/15/2023	7:17:30 AM

NAME: P:\23-01-00\CSAH_17_(SCL-I35W)\Base\Proposed\CSAH_17_SIGNAL.dgn

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CHECKED BY CO DATE 11/29/2022

ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-617-027

EXISTING SIGNAL PLANS

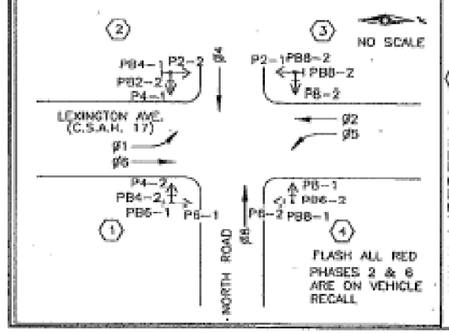
Sheet 60 of 65 Sheets

SPHaas

LOOP DETECTOR CHART			DISTANCE FROM STOP LINE
DESIGNATION	SIZE	FUNCTION	
D1-1	2 – 6' x 6'	(1)	2', 32'
D1-2	2 – 6' x 6'	(1)	-13', 17'
D2-1	1 – 6' x 6'	(1)	300'
D2-2	1 – 6' x 6'	(1)	300'
D4-1	**1 – 6' x 6'**	**(3)**	**120'**
D4-2	**2 – 6' x 6'**	**(1)**	**0', 9'**
D4-3	**1 – 6' x 6'**	**(7)**	**7'**
D4-4	**1 – 6' x 10'**	**(7)**	**-2'**
D5-1	2 – 6' x 6'	(1)	4.5', 34'
D5-2	2 – 6' x 6'	(1)	-11', 19'
D6-1	1 – 6' x 6'	(1)	300'
D6-2	1 – 6' x 6'	(1)	300'
D8-1	1 – 6' x 6'	(3)	180'
D8-2	3 – 6' x 6'	(7)	-18', -3', 12'
D8-3	1 – 6' x 6'	(7)	-25'

FUNCTIONS:
(1) – CALL AND EXTEND
(3) – EXTEND ONLY
(7) – IMMEDIATE EXTEND, DELAY CALL

CONTROLLER PHASING, PEDESTRIAN INDICATIONS & PUSHBUTTON LAYOUT



2 INPLACE–LEAVE INPLACE
TYPE PA100–A50–D40–9 (DAVIT AT 350°)
PA100 POLE FOUNDATION
3 – ONE WAY SIGNALS (OVERHEAD)
(0', 11' AND 23' FROM END OF MAST ARM)
ONEWAY EVP DETECTOR AND LIGHT
(6' FROM END OF MAST ARM), 3/4" HUB
TYPE 10B AT 0°
TYPE 10B AT 270°
LUMINAIRE – 250 WATT H.P.S. W/PEC & CHECK SWITCH
2 – PEDESTRIAN PUSH BUTTON & SIGN
3" RSC INTO HH 7A
2-12/C #12
4-3/C #12
1-3/C #12 (LUM)
1-3/C #20

INPLACE: 3" RSC
2-12/C #12
4-3/C #12
1-3/C #12 (LUM)
1-3/C #20
1-NYLON ROPE
F&I: 3-2/C #14

INPLACE: 2" RSC
F&I: 3-2/C #14

1 INPLACE–LEAVE INPLACE
TYPE PA90–A0
(0° PERPENDICULAR TO NORTH RD.)
PA90 POLE FOUNDATION
F&I: 30' MAST ARM
F&I: 1–ONE WAY SIGNAL (OVERHEAD)
(0' FROM END OF MAST ARM)
F&I: ONE WAY EVP DETECTOR AND LIGHT
(6' FROM END OF MAST ARM), 3/4" HUB F&I: 1-2/C #14
TYPE 10B AT 0°
TYPE 10B AT 270°
2 – PEDESTRIAN PUSH BUTTONS & SIGNS
3" RSC INTO HH 2A
2-12/C #12
2-3/C #12
1-3/C #20
1-NYLON ROPE

INPLACE: 3" RSC
2-12/C #12
4-3/C #12
1-3/C #12(LUM)
5-2/C #14
1-3/C #20
1-NYLON ROPE
F&I: 3-2/C #14

INPLACE: 2" RSC
1-3/C #12 (LUM)

INPLACE: 4" RSC
4-12/C #12
8-3/C #12
1-3/C #12 (LUM)
6-2/C #14
2-3/C #20
1-Spr #19
F&I: 1-2/C #14

INPLACE: 3" RSC
3-1/C #4

3 INPLACE–LEAVE INPLACE
TYPE PA90–A30
PA100 POLE FOUNDATION
1 – ONE WAY SIGNALS (OVERHEAD)
(0' FROM END OF MAST ARM)
ONEWAY EVP DETECTOR AND LIGHT
(6' FROM END OF MAST ARM), 3/4" HUB
TYPE 10B AT 0°
TYPE 10B AT 270°
2 – PEDESTRIAN PUSH BUTTON & SIGN
3" RSC INTO HH 12A
2-12/C #12
2-3/C #12
1-3/C #20

INPLACE: 3" RSC
2-12/C #12
2-3/C #12
1-3/C #20
F&I: 1-2/C #14

20A F&I: 2" RSC 1-2/C#14

INPLACE: 3" RSC
2-12/C #12
2-3/C #12
2-2/C #14
1-3/C #20
F&I: 1-2/C #14

INPLACE 2" RSC
2-2/C #14
1-6pr #19

INPLACE: 3" RSC
2-12/C #12
2-3/C #12
4-2/C #14
1-3/C #20
1-6pr #19
F&I: 1-2/C #14

INPLACE 1½" RSC
1-2/C #14

S.O.P. NSP WOOD POLE (INP.)
2" RISER AND WEATHERHEAD
3-1/C #6
POLE TO HH 15A
2" RSC
3-1/C #6

4 INPLACE–LEAVE INPLACE
TYPE PA100–A45–D40–9 (DAVIT AT 350°)
PA100 POLE FOUNDATION
3 – ONE WAY SIGNALS (OVERHEAD)
(0', 12' AND 24' FROM END OF MAST ARM)
2 ONEWAY EVP DETECTOR AND LIGHT
(6' FROM END OF MAST ARM), 3/4" HUB
TYPE 10B AT 0°
TYPE 10B AT 270°
LUMINAIRE – 250 WATT H.P.S. W/PEC & CHECK SWITCH
2 – PEDESTRIAN PUSH BUTTONS & SIGNS
3" RSC INTO HH 8A
2-12/C #12
4-3/C #12
1-3/C #12 (LUM)
1-3/C #20

A INPLACE–LEAVE INPLACE
EQUIPMENT PAD
CONTROLLER AND CABINET
CONTROLLER CABINET TO HH 1A
4" RSC
4-12/C #12
6-3/C #12
8-2/C #14
2-3/C #20
1-Spr #19
F&I: 1-2/C #14
CONTROLLER CABINET TO HH 2A
4" RSC
4-12/C #12
6-3/C #12
5-2/C #14
2-3/C #20
1-NYLON ROPE
F&I: 3-2/C #14
CONTROLLER CABINET TO HH 13A
2" RSC
3-1/C #6
STUB 2-3" RSC AND CAP

B INPLACE–LEAVE INPLACE
SERVICE CABINET WITH FOUNDATION
SERVICE CABINET TO HH 14A (SERVICE)
2" RSC
3-1/C #6
SERVICE CABINET TO HH 1A (LIGHTING)
2" RSC
2-3/C #12 (LUM)
SERVICE CABINET TO HH 13A (SERVICE)
2" RSC
3-1/C #6

NOTES:
1. THIS PROJECT SHALL CONSIST OF INSTALLING A 30' MAST ARM ON EXISTING POLE 1, F&I VEHICLE HEAD 4–3, F&I LOOPS D4–1, D4–2, D4–3, AND D4–4, AND F&I EVP EQUIPMENT ON POLE 1. THE REMAINDER OF THE SIGNAL SYSTEM SHALL NOT BE MODIFIED.
2. VEHICLE HEAD 4–3 SHALL BE A 12" 3–SECTION R–Y–G WITH LED INDICATIONS.
3. SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED EQUIPMENT.
4. EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
5. A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY FOR EMERGENCY VEHICLE PREEMPTION EQUIPMENT SHALL BE MOUNTED 6" FROM THE END OF NEW MASTARM 1. A 3/C #20 SHALL BE WIRED DIRECT TO THE CONDUIT OUTLET BODY AND 2–1/C #14 SHALL BE WIRED FROM THE TERMINAL BLOCK IN THE SIGNAL BASE TO THE CONDUIT OUTLET BODY.
6. THE EXACT LOCATION OF HANDHOLES AND LOOP DETECTORS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
7. SEE SPECIAL PROVISIONS FOR HANDHOLE TYPE.
8. SEE SPECIAL PROVISIONS FOR CONTRACTOR RESPONSIBILITY FOR LOCATION OF UTILITIES.
9. NEW VEHICLE HEAD 4–3 SHALL HAVE RED LED AND INCANDESCENT YELLOW AND GREEN INDICATIONS.

GRAPHIC SCALE IN FEET 0 5 10 20

45 MPH
CSAH 17 (LEXINGTON AVE)
NORTH ROAD (35 MPH)
45'
55'
50'
S.O.P.

Wenck
Wenck Associates, Inc.
1800 Pioneer Creek Center
Maple Plain, MN 55359-4947
(763) 479-4200

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
Edward L. Terhaar
EDWARD L. TERHAAR DATE: 2/28/08 LIC. NO. 20442

NO	DATE	BY
1	2/15/2023	MR

MILLS FLEET FARM
MILLS PROPERTIES, INC.
BLAINE, MINNESOTA
CSAH 17/NORTH ROAD INTERSECTION LAYOUT
SHEET NO. 3
SHEET 3 of 10

NO	DATE	BY	CKD	APPR	REVISION		
					REVISION	02/15/2023	7:17:36 AM

NAME: P:\23-01-00\CSAH_17_(SCL-I35W)\Base\Proposed\CSAH_17_SIGNAL.dgn

DRAWN BY MR DATE 02/24/2022
DESIGN BY MR DATE 02/24/2022
CHECKED BY CO DATE 11/29/2022

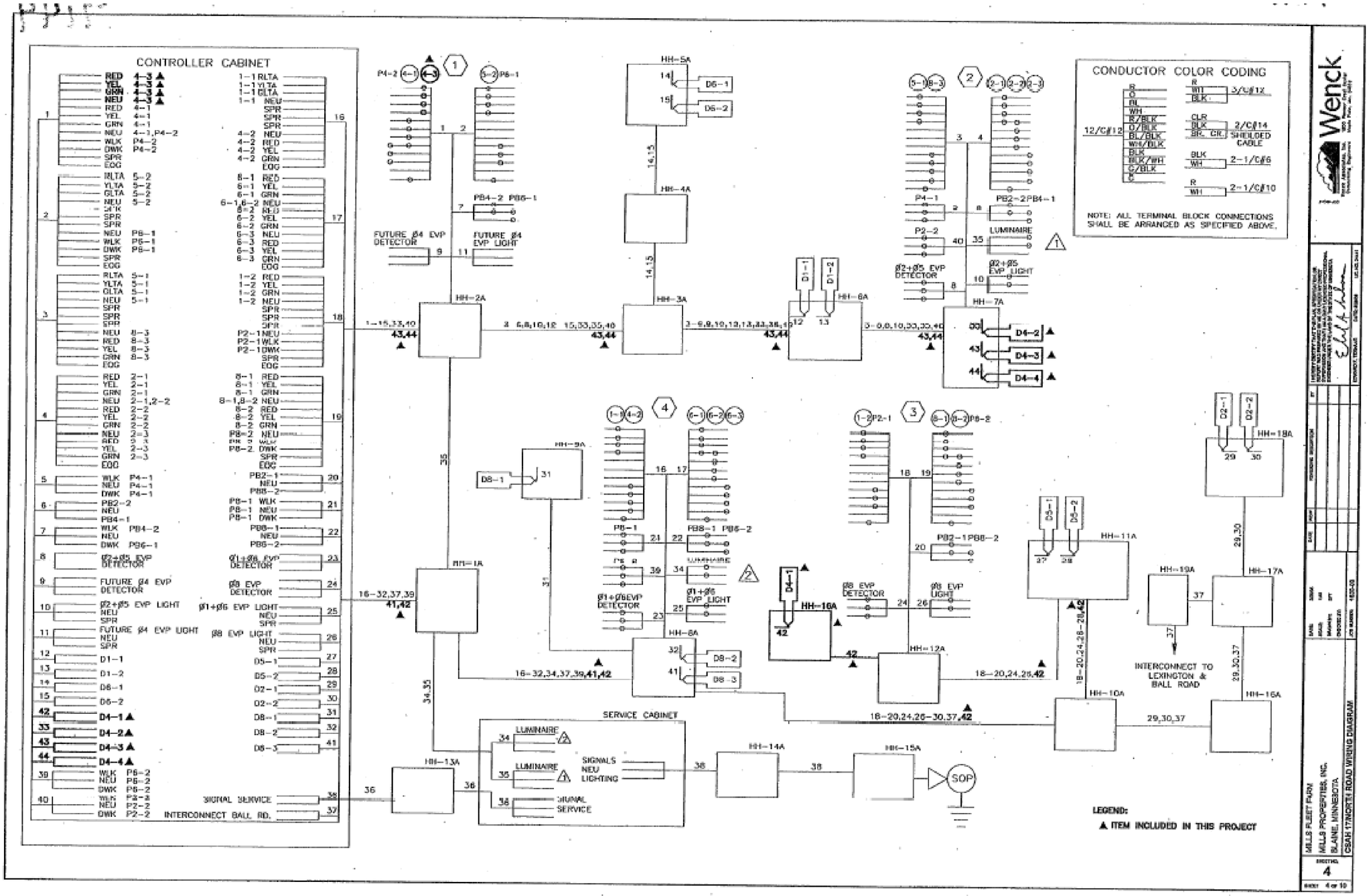
ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-617-027

EXISTING SIGNAL PLANS

Sheet 61 of 65 Sheets

FOR REFERENCE PURPOSES ONLY



FOR REFERENCE PURPOSES ONLY

NO	DATE	BY	CKD	APPR	REVISION		
						02/15/2023	7:17:42 AM

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DRAWN BY MR DATE 02/24/2022
DESIGN BY MR DATE 02/24/2022
CHECKED BY CO DATE 11/29/2022

ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-617-027

EXISTING SIGNAL PLANS

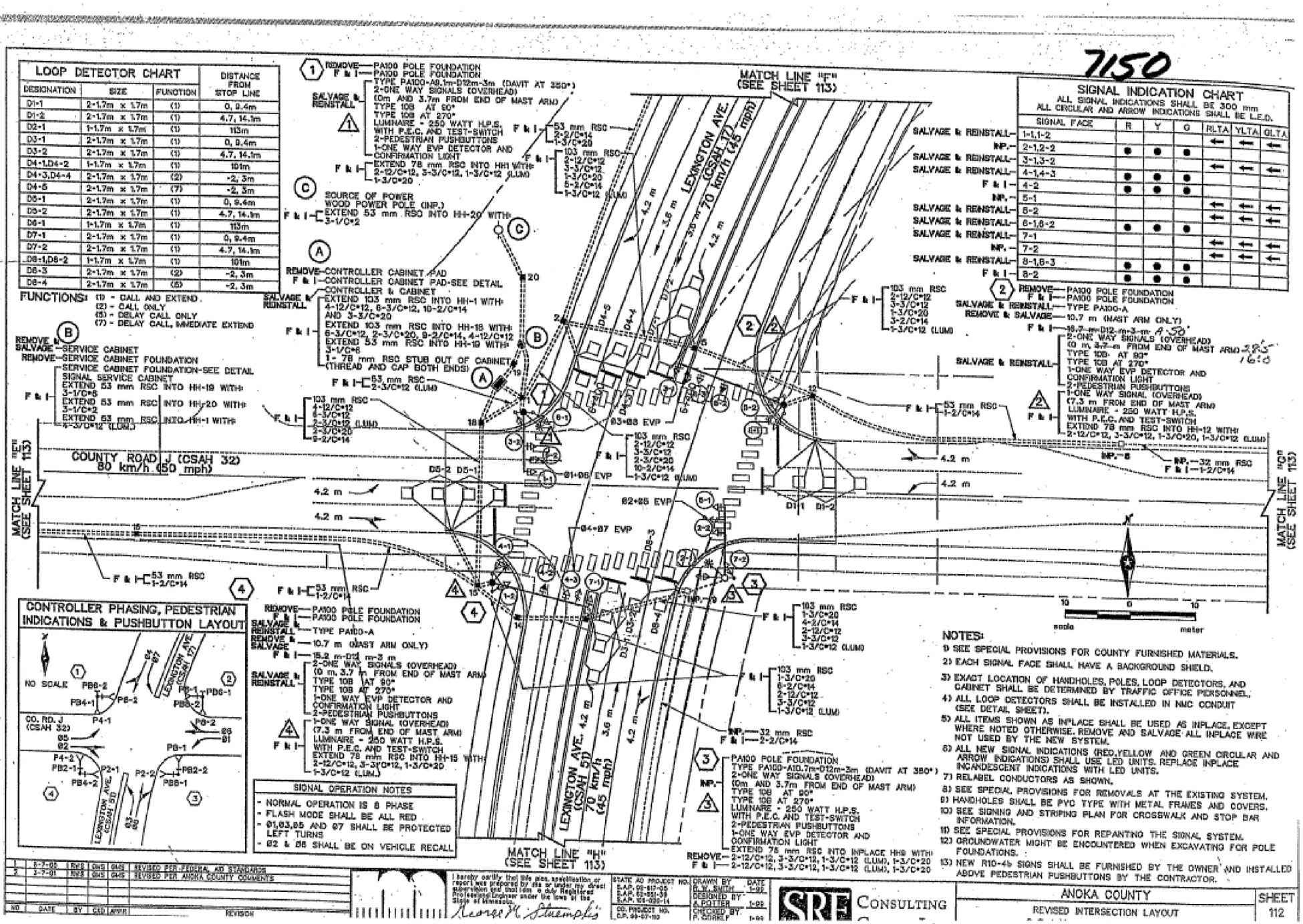
Sheet 62 of 65 Sheets

7150

LOOP DETECTOR CHART			
DESIGNATION	SIZE	FUNCTION	DISTANCE FROM STOP LINE
D1-1	2-1.7m x 1.7m	(1)	0, 9.4m
D1-2	2-1.7m x 1.7m	(1)	4.7, 14.1m
D2-1	1-1.7m x 1.7m	(1)	113m
D3-1	2-1.7m x 1.7m	(1)	0, 9.4m
D3-2	2-1.7m x 1.7m	(1)	4.7, 14.1m
D4-1,D4-2	1-1.7m x 1.7m	(1)	101m
D4-3,D4-4	2-1.7m x 1.7m	(2)	-2, 3m
D4-5	2-1.7m x 1.7m	(7)	-2, 3m
D5-1	2-1.7m x 1.7m	(1)	0, 9.4m
D5-2	2-1.7m x 1.7m	(1)	4.7, 14.1m
D6-1	1-1.7m x 1.7m	(1)	113m
D7-1	2-1.7m x 1.7m	(1)	0, 9.4m
D7-2	2-1.7m x 1.7m	(1)	4.7, 14.1m
D8-1,D8-2	1-1.7m x 1.7m	(1)	101m
D8-3	2-1.7m x 1.7m	(2)	-2, 3m
D8-4	2-1.7m x 1.7m	(5)	-2, 3m

FUNCTIONS: (1) - CALL AND EXTEND.
(2) - CALL ONLY
(5) - DELAY CALL ONLY
(7) - DELAY CALL, IMMEDIATE EXTEND

SIGNAL INDICATION CHART ALL SIGNAL INDICATIONS SHALL BE 300 mm ALL CIRCULAR AND ARROW INDICATIONS SHALL BE L.E.D.						
SIGNAL FACE	R	Y	G	RLTA	YLTA	GLTA
1-1,1-2				↑	↑	↑
2-1,2-2	●		●			
3-1,3-2				↑	↑	↑
4-1,4-3	●	●	●			
4-2	●	●	●			
5-1				↑	↑	↑
6-2				↑	↑	↑
6-1,6-2	●	●	●			
7-1				↑	↑	↑
7-2				↑	↑	↑
8-1,8-3	●	●	●			
8-2	●	●	●			



CONTROLLER PHASING, PEDESTRIAN INDICATIONS & PUSHBUTTON LAYOUT

SIGNAL OPERATION NOTES
- NORMAL OPERATION IS 8 PHASE
- FLASH MODE SHALL BE ALL RED
- Ø1,Ø3,Ø5 AND Ø7 SHALL BE PROTECTED LEFT TURNS
- Ø2 & Ø8 SHALL BE ON VEHICLE RECALL

NOTES:
1) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
2) EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
3) EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS, AND CABINET SHALL BE DETERMINED BY TRAFFIC OFFICE PERSONNEL.
4) ALL LOOP DETECTORS SHALL BE INSTALLED IN NMC CONDUIT (SEE DETAIL SHEET).
5) ALL ITEMS SHOWN AS INPLACE SHALL BE USED AS INPLACE, EXCEPT WHERE NOTED OTHERWISE. REMOVE AND SALVAGE ALL INPLACE WIRE NOT USED BY THE NEW SYSTEM.
6) ALL NEW SIGNAL INDICATIONS (RED,YELLOW AND GREEN CIRCULAR AND ARROW INDICATIONS) SHALL USE LED UNITS. REPLACE INPLACE INCANDESCENT INDICATIONS WITH LED UNITS.
7) RELABEL CONDUCTORS AS SHOWN.
8) SEE SPECIAL PROVISIONS FOR REMOVALS AT THE EXISTING SYSTEM.
9) HANDHOLES SHALL BE PVC TYPE WITH METAL FRAMES AND COVERS.
10) SEE SIGNING AND STRIPING PLAN FOR CROSSWALK AND STOP BAR INFORMATION.
11) SEE SPECIAL PROVISIONS FOR REPAINTING THE SIGNAL SYSTEM.
12) GROUNDWATER MIGHT BE ENCOUNTERED WHEN EXCAVATING FOR POLE FOUNDATIONS.
13) NEW R10-4b SIGNS SHALL BE FURNISHED BY THE OWNER AND INSTALLED ABOVE PEDESTRIAN PUSHBUTTONS BY THE CONTRACTOR.

NO	DATE	BY	CKD	APPR	REVISION
2	2-7-05	RWS	GMS	GMS	REVISED PER FEDERAL AID STANDARDS
1	3-7-01	RWS	GMS	GMS	REVISED PER ANOKA COUNTY COMMENTS

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.
Leonard M. Stuempfle

STATE AID PROJECT NO.
S.A.P. 02-617-05
S.A.P. 02-651-59
S.A.P. 163-020-14
CO. PROJECT NO.
C.P. 99-57-110

DRAWN BY R.W. SMITH 1-96
DESIGNED BY A.POTTER 1-96
CHECKED BY P. CORRIEA 1-96

SRF CONSULTING

ANOKA COUNTY
REVISED INTERSECTION LAYOUT
SHEET 112

FOR REFERENCE PURPOSES ONLY

NO	DATE	BY	CKD	APPR	REVISION		
						02/15/2023	7:17:48 AM

NAME: P:\23-01-00\CSAH_17_(SCL-I35W)\Base\Proposed\CSAH_17_SIGNAL.dgn

DRAWN BY MR DATE 02/24/2022
DESIGN BY MR DATE 02/24/2022
CHECKED BY CO DATE 11/29/2022

ANOKA COUNTY
HIGHWAY DEPT.

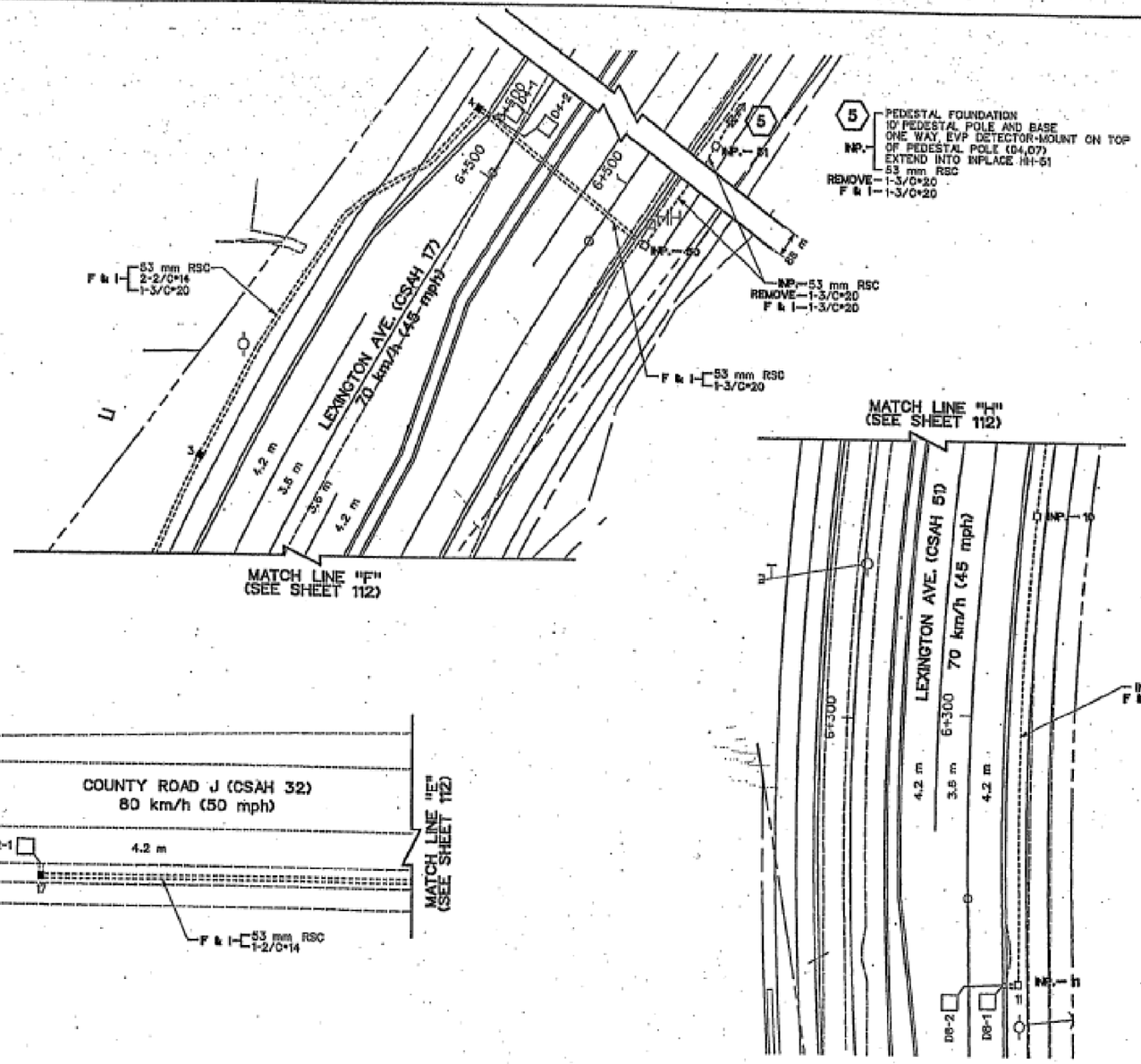
STATE AID PROJECT 002-617-027

EXISTING SIGNAL PLANS

Sheet 63 of 65 Sheets

SPHaas

7150



NO	DATE	BY	CKD	APPR	REVISION
1	8-7-20	RNS	GMS	GMS	REVISED PER FEDERAL AID STANDARDS

02/15/2023 7:17:54 AM

NAME: P:\23-01-00\CSAH_17_(SCL-I35W)\Base\Proposed\CSAH_17_SIGNAL.dgn

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the state of Minnesota.

George M. Thiemstra

STATE AID PROJECT NO.
S.A.P. 02-617-DS
S.A.P. 02-617-AC
S.A.P. 106-020-14

CO. PROJECT NO.
C.P. 09-07-18

DRAWN BY B. W. SMITH DATE 1-09
DESIGNED BY A. POTTER 1-09
CHECKED BY 1-09

SRF CONSULTING

ANOKA COUNTY
REVISED MATCHLINE LAYOUT

SHEET 113

DRAWN BY MR DATE 02/24/2022
DESIGN BY MR DATE 02/24/2022
CHECKED BY CO DATE 11/29/2022

ANOKA COUNTY HIGHWAY DEPT.

STATE AID PROJECT 002-617-027

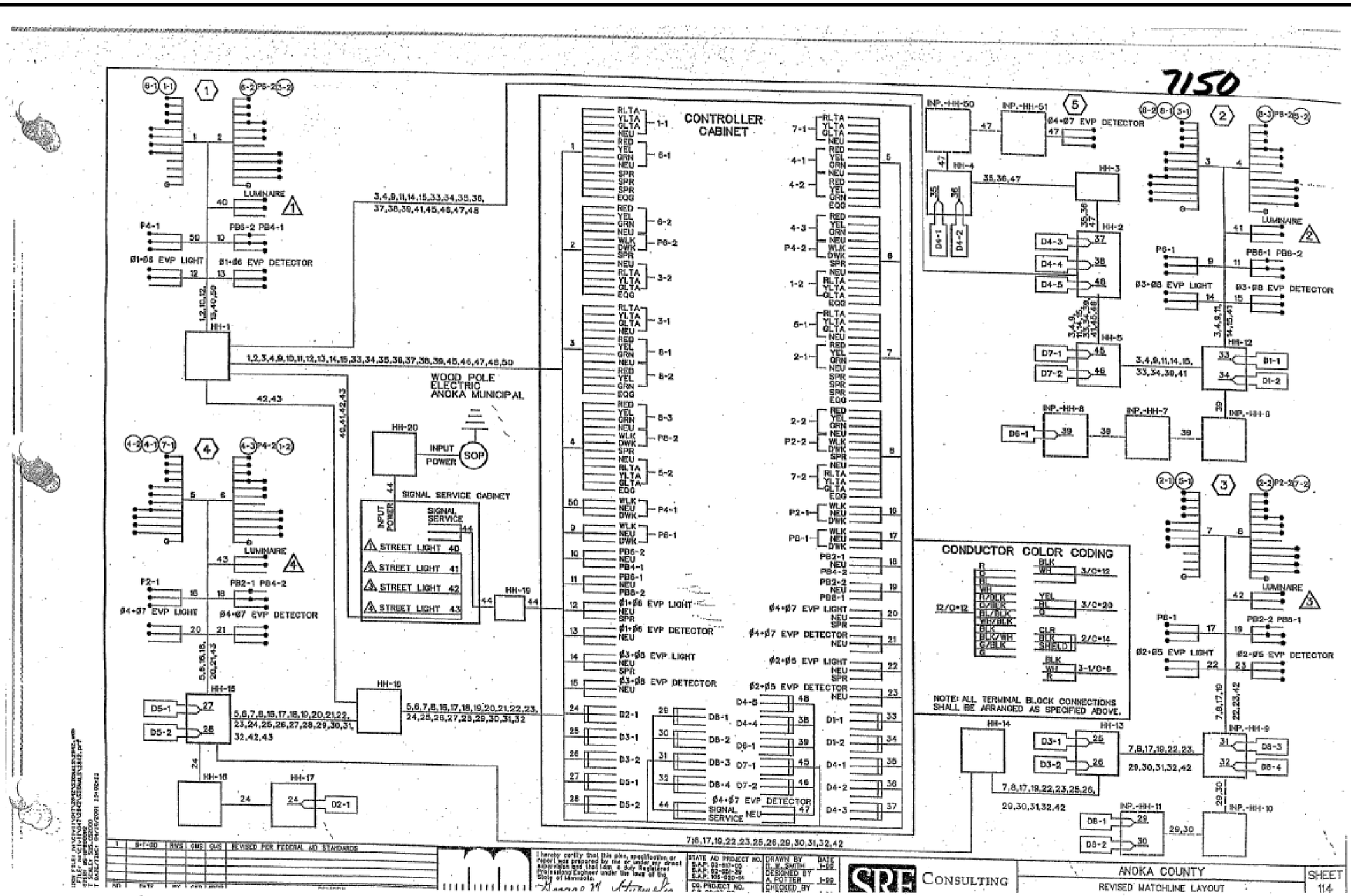
EXISTING SIGNAL PLANS

Sheet 64 of 65 Sheets

FOR REFERENCE PURPOSES ONLY

SPHaas

7150



NO	DATE	BY	CKD	APPR	REVISION		
						02/15/2023	7:18:00 AM

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DRAWN BY MR DATE 02/24/2022

DESIGN BY MR DATE 02/24/2022

CHECKED BY CO DATE 11/29/2022

ANOKA COUNTY HIGHWAY DEPT.

STATE AID PROJECT 002-617-027

EXISTING SIGNAL PLANS

Sheet 65 of 65 Sheets

FOR REFERENCE PURPOSES ONLY