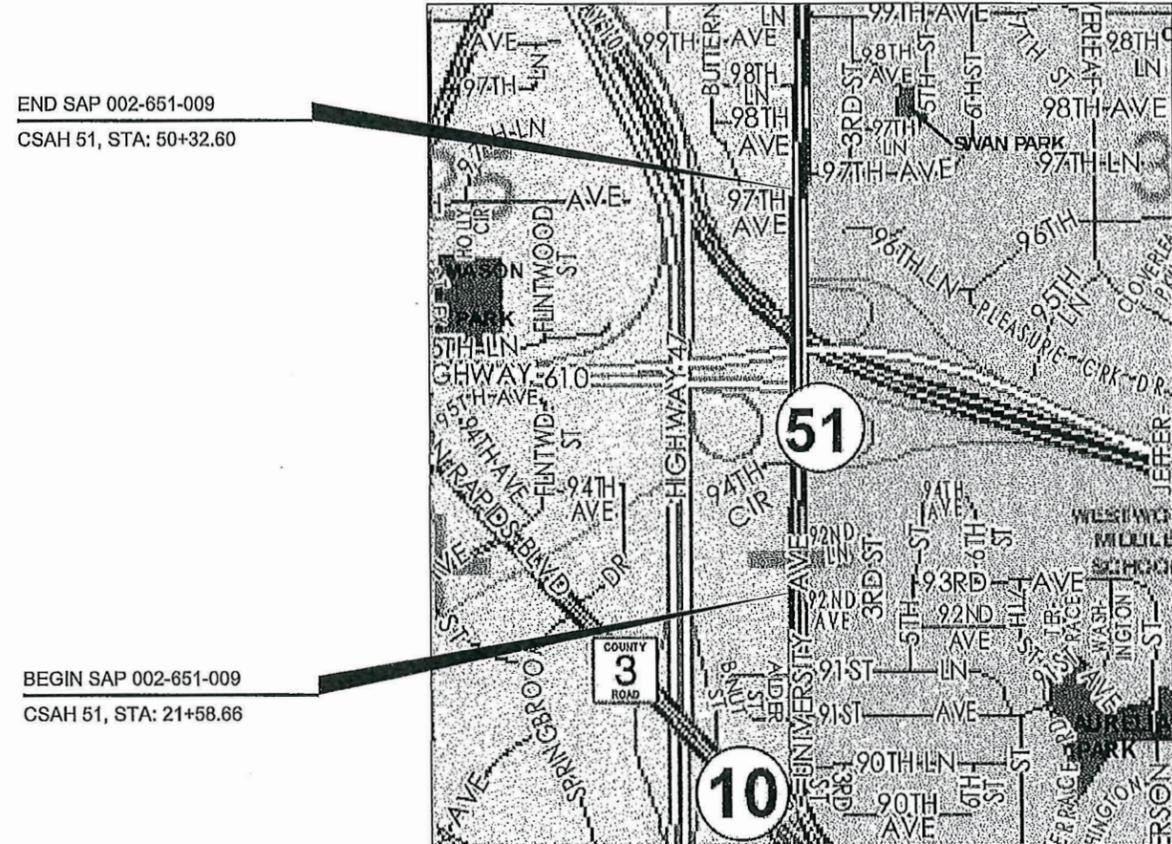


# MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

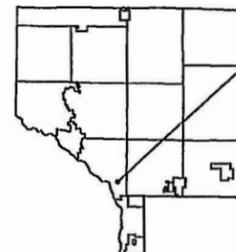
CONSTRUCTION PLAN FOR MILL BITUMINOUS, BITUMINOUS SURFACING, CURB & GUTTER, AND SEWER REPAIRS

LOCATED ON CSAH 51 BETWEEN 92ND AVENUE NE AND 97TH AVENUE NW

GROSS LENGTH	2873.94	FEET	0.544	MILES
EXCEPTIONS-LENGTH	0.00	FEET	0.000	MILES
NET LENGTH	2873.94	FEET	0.544	MILES



## PROJECT LOCATION



CITY OF BLAINE, COON RAPIDS  
ANOKA COUNTY  
MN/DOT TRANSPORTATION DISTRICT - METRO  
SECTIONS 25, 30, 31 AND 36  
TOWNSHIP 31 NORTH  
RANGE 23, 24 WEST

### GOVERNING SPECIFICATIONS

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

THIS PLAN CONTAINS 24 SHEETS

### INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES
3-4	TYPICAL SECTIONS
5-6	DETAILS
7-8	STORM SEWER TABULATIONS
9	CONSTRUCTION PLAN
10	PERMANENT PAVEMENT MARKING NOTES AND TABULATIONS
11-12	PERMANENT STRIPING AND TEMPORARY SIGNING
13-14	PERMANENT SIGNING
15	TEMPORARY SIGNING NOTES AND TABULATIONS
16	PERMANENT SIGNING TABULATIONS
17	PAVEMENT MARKING TYPICAL
18	SIGN INSTALLATION TYPICALS
19-21	EXISTING SIGNAL PLANS - 94TH CIRCLE NW (SOUTH 610 RAMP)
22-24	EXISTING SIGNAL PLANS - NORTH 610 RAMP

Approved 2-26, 2025  
ANOKA COUNTY ENGINEER

Approved 2-27, 2025  
CITY OF BLAINE ENGINEER

Approved 2/26, 2025  
CITY OF COON RAPIDS ENGINEER

Dan Erickson 2025.03.11 12:03:24 -05'00'  
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY

Dan Erickson 2025.03.11 12:03:46 -05'00'  
for STATE AID ENGINEER:  
APPROVED FOR STATE AID FUNDING

DESIGN DESIGNATION (CSAH 51)			
ESAL 20	1,490,546	FUNCTIONAL CLASSIFICATION	A-MINOR RELIEVER
R VALUE	70	NO. OF TRAFFIC LANES	4
ADT (2022)	14019	NO. OF PARKING LANES	0
PROJ. ADT (2046)	14019	DESIGN SPEED	45 MPH
PROJ. HCDT (2025)	827	STOPPING SIGHT DISTANCE BASED ON:	
SOIL FACTOR	N/A	HEIGHT OF EYE	3.5'
		HEIGHT OF OBJECT	2.0'
		DESIGN SPEED NOT ACHIEVED AT:	
		STA.	TO STA. MPH

NO	DATE	BY	CKD	APPR	REVISION
	02/04/2025				8:02:04 AM

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. LAUGE JR.  
SIGNATURE:   
DATE: 01/30/2025 LICENSE NO. 28511

DRAWN BY SPH DATE 9/30/2024  
DESIGN BY SPH DATE 9/30/2024  
CHECKED BY CSO DATE 10/30/2024



**ANOKA COUNTY  
HIGHWAY DEPT.**

STATE AID PROJECT 002-651-009

TITLE SHEET  
Sheet 1 of 24 Sheets

### STATEMENT OF ESTIMATED QUANTITIES

Notes	Item Number	ITEM DESCRIPTION	Unit	SAP 002-651-009 QUANTITIES ESTIMATED
	2021.501	MOBILIZATION	LUMP SUM	1
	2104.502	REMOVE MANHOLE OR CATCH BASIN	EACH	1
	2104.502	REMOVE SIGN TYPE C	EACH	11
	2104.502	REMOVE SIGN PANEL TYPE C	EACH	5
1	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	63
1	2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	194
1	2104.503	REMOVE CURB AND GUTTER	LIN FT	110
	2105.607	COMMON EXCAVATION	CU YD	2
2	2211.509	AGGREGATE BASE CLASS 5	TON	10
3	2232.504	MILL BITUMINOUS SURFACE (2.0")	SQ YD	25416
4	2232.604	MILL BITUMINOUS PAVEMENT (SPECIAL)	SQ YD	811
	2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	1310
5	2360.509	TYPE SP 12.5 BITUMINOUS MIXTURE FOR PATCHING	TON	9
6	2360.509	TYPE SP 12.5 WEARING COURSE MIXTURE (4:C)	TON	9
	2360.509	TYPE SP 12.5 WEARING COURSE MIXTURE (4:C)	TON	2923
7	2504.602	ADJUST GATE VALVE	EACH	8
9	2506.502	CASTING ASSEMBLY	EACH	5
8	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN 60-4020	LIN FT	3.4
10	2506.602	GROUT CATCH BASIN OR MANHOLE	EACH	39
11	2521.518	4" CONCRETE WALK	SQ FT	120
	2521.602	DRILL AND GROUT REINF BAR (EPOXY COATED)	EACH	12
	2531.503	CONCRETE CURB AND GUTTER DESIGN B424	LIN FT	56
	2531.503	CONCRETE CURB AND GUTTER DESIGN B612	LIN FT	25
	2531.503	CONCRETE CURB AND GUTTER DESIGN B618	LIN FT	30
	2531.602	CONCRETE MEDIAN NOSE-SPECIAL	EACH	1
	2531.618	TRUNCATED DOMES	SQ FT	24
	2563.601	TRAFFIC CONTROL SUPERVISOR	LUMP SUM	1
12,13	2563.601	TRAFFIC CONTROL	LUMP SUM	1
14	2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	UNIT DAY	20
	2564.502	INSTALL DELINEATOR	EACH	1
	2564.502	INSTALL SIGN TYPE C	EACH	16
	2564.518	SIGN PANELS TYPE C	SQ FT	102
	2565.602	ADJUST HANDHOLE	EACH	1
	2573.501	EROSION CONTROL SUPERVISOR	LUMP SUM	1
15	2573.502	STORM DRAIN INLET PROTECTION	EACH	43
	2574.507	COMMON TOPSOIL BORROW	CU YD	27
16	2575.508	HYDRAULIC REINFORCED FIBER MATRIX	POUND	210
17	2581.503	REMOVABLE PREFORMED PAVEMENT MARKING TAPE	LIN FT	116
18, 20	2582.503	4" SOLID LINE MULTI-COMPONENT	LIN FT	13792
18, 20	2582.503	4" BROKEN LINE MULTI-COMPONENT	LIN FT	1071
19, 20	2582.518	PAVEMENT MESSAGE PREFORM THERMOPLASTIC	SQ FT	264
19, 20	2582.518	CROSSWALK PREFORM THERMOPLASTIC GROUND IN	SQ FT	1674

### 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 (PAGES 5-6) FOR DETAILS
2	ITEM TO BE USED AS BASE FOR NEW CONCRETE WALK AND CURB PATCHES.
3	DETAIL MILLING AROUND MANHOLES, CATCH BASINS, GATE VALVES, AND ALONG CURB LINE IS INCIDENTAL TO THIS ITEM.
4	TO BE USED FOR MILLING STREET APPROACHES AND/OR DETAIL MILLING AREAS AS IDENTIFIED IN THE PLAN.
5	ITEM INCLUDES BITUMINOUS PATCHING AROUND NEW CURB, STORM STRUCTURE REPAIRS, AND ANY POTHOLES.
6	STREET APPROACHES SHALL BE PAVED AFTER MAINLINE, AND BEFORE FINAL STRIPING
7	GATE VALVES TO BE ADJUSTED ONLY AS NECESSARY AS DETERMINED BY THE ENGINEER.
8	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.
9	ITEM INCLUDES FULL REPLACEMENT OF CASTING ADJUSTMENT RINGS. REMOVAL OF MANHOLE OR CATCH BASIN CASTING (S), ADJUSTING RINGS, AND INSTALLING A METAL PLATE, FOR THE PURPOSE OF ADJUSTING OR RE-RINGING A CASTING FOR A STRUCTURE SHALL BE INCIDENTAL. SEE STORM TABULATIONS FOR RING HEIGHTS. CASTINGS IN ROADWAY SHALL BE INSTALLED BETWEEN BASE AND WEAR LIFT PAVING
10	ITEM INCLUDES GROUTING OF INVERTS, DOGHOUSES, RINGS, STRUCTURES AND CASTINGS AS DIRECTED BY PLAN AND ENGINEER. SEE DRAINAGE TAB, PAGES 7-8.
11	ITEM USED FOR CONCRETE MEDIAN. CONTRACTOR TO VERIFY PATTERN IN EXISTING CONCRETE MEDIAN, NEW CONCRETE AREA MUST MATCH EXISTING PATTERN.
12	CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN TEMPORARY SIGNAGE WHENEVER EXISTING SIGNAGE IS REMOVED. TEMPORARY SIGNAGE SHALL BE INCIDENTAL TO TRAFFIC CONTROL.
13	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.
14	2 MESSAGE BOARDS, ONE ON THE EACH END OF PROJECT, SHALL BE INSTALLED 10 DAYS PRIOR TO ANY CONSTRUCTION; REFERENCE STRIPING PLAN FOR DETAILS.
15	ALL DRAINAGE STRUCTURES AFFECTED BY THIS PROJECT MUST HAVE INLET PROTECTION.
16	TYPE 3 FERTILIZER AND TYPE 25-121 SEED ARE INCIDENTAL TO THIS ITEM. SEE "BASIS OF PLANNED QUANTITIES" FOR APPLICATION RATES.
17	CENTERLINE AND LANE DESIGNATION SKIPS TO BE APPLIED AS SOON AS POSSIBLE ON MILLED SURFACE AND EACH NEW LIFT OF PAVEMENT; SKIPS MUST BE INPLACE BEFORE THE CONTRACTOR LEAVES FOR THE DAY. CONTRACTOR IS TO REMOVE PRIOR TO FINAL STRIPING.
18	FINAL STRIPING SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLETION OF MAINLINE WEAR COURSE PAVING. CANNOT BE INSTALLED SOONER THAN 48 HOURS.
19	INCLUDES ALL THERMOPLASTIC STOP BARS, GORE AREA HATCHING, CROSSWALKS, LANE DESIGNATION ARROWS, AND PAVEMENT MESSAGES.
20	ALL PAVEMENT MARKINGS WILL BE TESTED POST INSTALLATION BY ANOKA COUNTY. ANY PAVEMENT MARKINGS THAT DO NOT MEET RETROREFLECTIVITY PER MNDOT SPEC. 2582.3C.3, CONTRACTOR IS RESPONSIBLE FOR REPLACING PAVEMENT MARKINGS AT ENGINEERS REQUEST AT NO COST TO ANOKA COUNTY.

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

#### MNDOT STANDARD PLATES

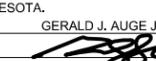
PLATE NO.	DESCRIPTION
4026B	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4110F	COVER CASTING FOR MANHOLE (FOR USE IN ALL TRAFFIC AREAS) - CASTING NO. 715
4134A	CURB BOX CASTING FOR CATCH BASIN (FOR DESIGN B CURBS)- CASTING NO. 825
7100H	CONCRETE CURB AND GUTTER (DESIGN B AND DESIGN V)
7111J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB AND GUTTER)
7113A	CONCRETE APPROACH NOSE DETAIL
8000K	TEMPORARY CHANNELIZERS (3 SHEETS)
9350C	MAILBOX SUPPORT - SWING-AWAY TYPE

NO	DATE	BY	CKD	APPR	REVISION
	03/18/2025				10:13:37 AM

NAME: P:\25-01-00\CSAH\_51\_(250 N. 92ND-97TH AVE)\Base\Proposed\CSAH 51\_SEQ.dgn

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

PRINT NAME: GERALD J. AUGER JR.

SIGNATURE: 

DATE: 01/30/2025 LICENSE NO. 26511

DRAWN BY SPH DATE 11/04/2024

DESIGN BY SPH DATE 11/04/2024

CHECKED BY CSO DATE 11/04/2024



**ANOKA COUNTY  
HIGHWAY DEPT.**

COUNTY PROJECT 002-651-009

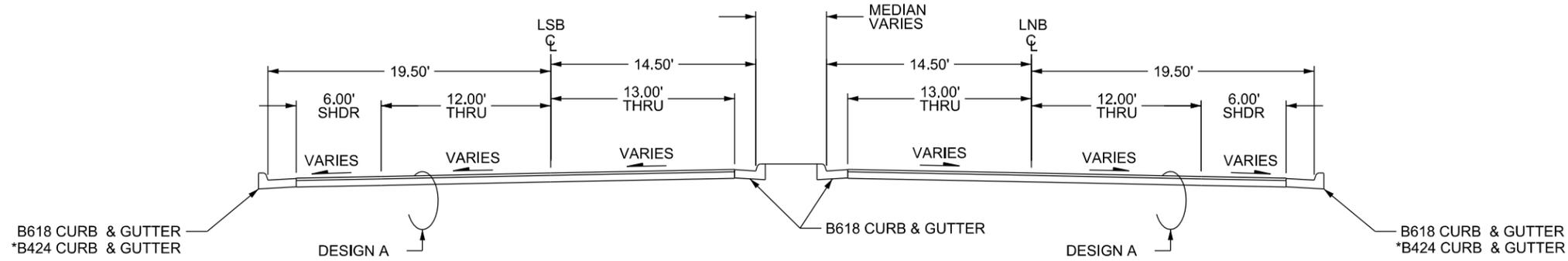
STATEMENT OF ESTIMATED QUANTITIES

Sheet 2 of 24 Sheets

### CSAH 51 - UNIVERSITY AVENUE EXISTING/PROPOSED SECTION

1021+58.66 - 1022+46.00\*  
1029+06.00 - 1031+46.00\*  
1039+45.00 - 1044+64.00  
1049+49.00 - 1050+36.73

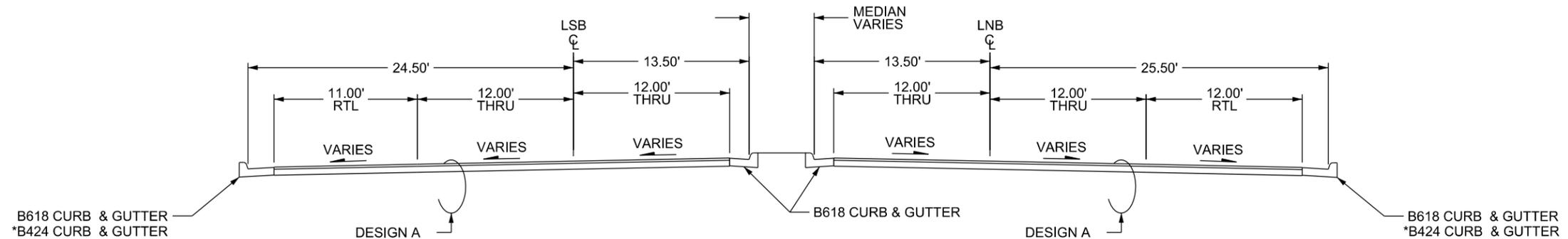
21+58.66 - 22+43.00\*  
25+75.00 - 26+95.00\*  
31+30.00 - 40+22.00  
44+50.00 - 45+91.00



### CSAH 51 - UNIVERSITY AVENUE EXISTING/PROPOSED SECTION

1022+46.00 - 1029+06.00\*  
1031+46.00 - 1033+71.00

22+43.00 - 25+75.00\*  
40+22.00 - 44+50.00  
45+91.00 - 50+32.60

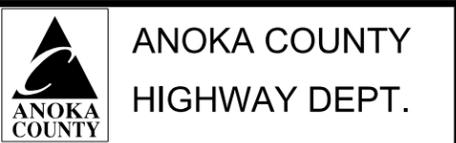


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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: GERALD J. AUGER JR.  
 SIGNATURE: *[Signature]*  
 DATE: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

DRAWN BY: SPH DATE: 9/30/2024  
 DESIGN BY: SPH DATE: 9/30/2024  
 CHECKED BY: CSO DATE: 10/30/2024



STATE AID PROJECT 002-651-009

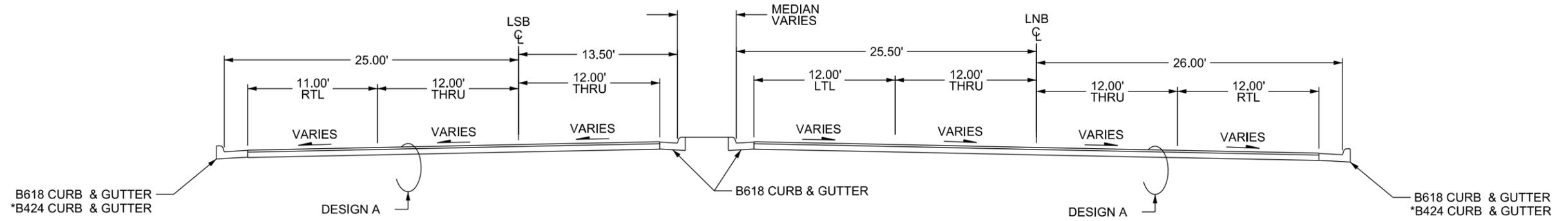
TYPICAL SECTIONS  
 Sheet 3 of 24 Sheets

### CSAH 51 - UNIVERSITY AVENUE

#### EXISTING/PROPOSED SECTION

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1031+46.00 - 1033+71.00

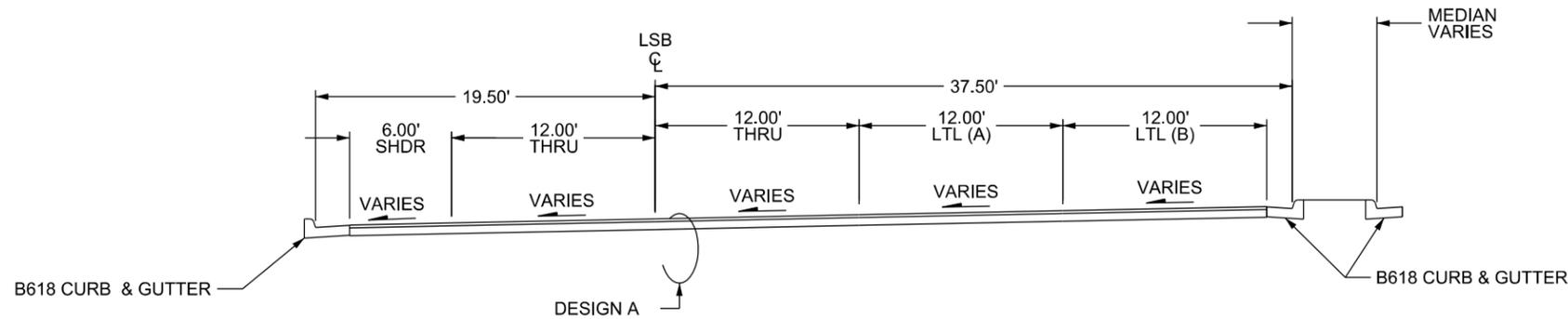
26+95.00 - 31+30.00\*  
48+38.00 - 50+32.60



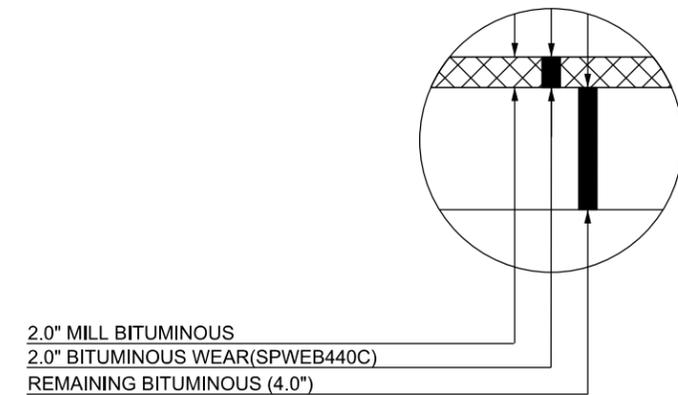
### CSAH 51 - UNIVERSITY AVENUE

#### EXISTING/PROPOSED SECTION

1031+46.00 - 1039+45.00 (A)  
1031+46.00 - 1036+05.00 (B)  
1044+64.00 - 1049+94.00 (A)  
1044+64.00 - 1048+33.00 (B)



### DESIGN A MILL SECTION



NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: GERALD J. AUGER JR.

SIGNATURE:

DATE: 01/30/2025 LICENSE NO. 26511

DRAWN BY SPH DATE 9/30/2024

DESIGN BY SPH DATE 9/30/2024

CHECKED BY CSO DATE 10/30/2024

**ANOKA COUNTY**

**HIGHWAY DEPT.**

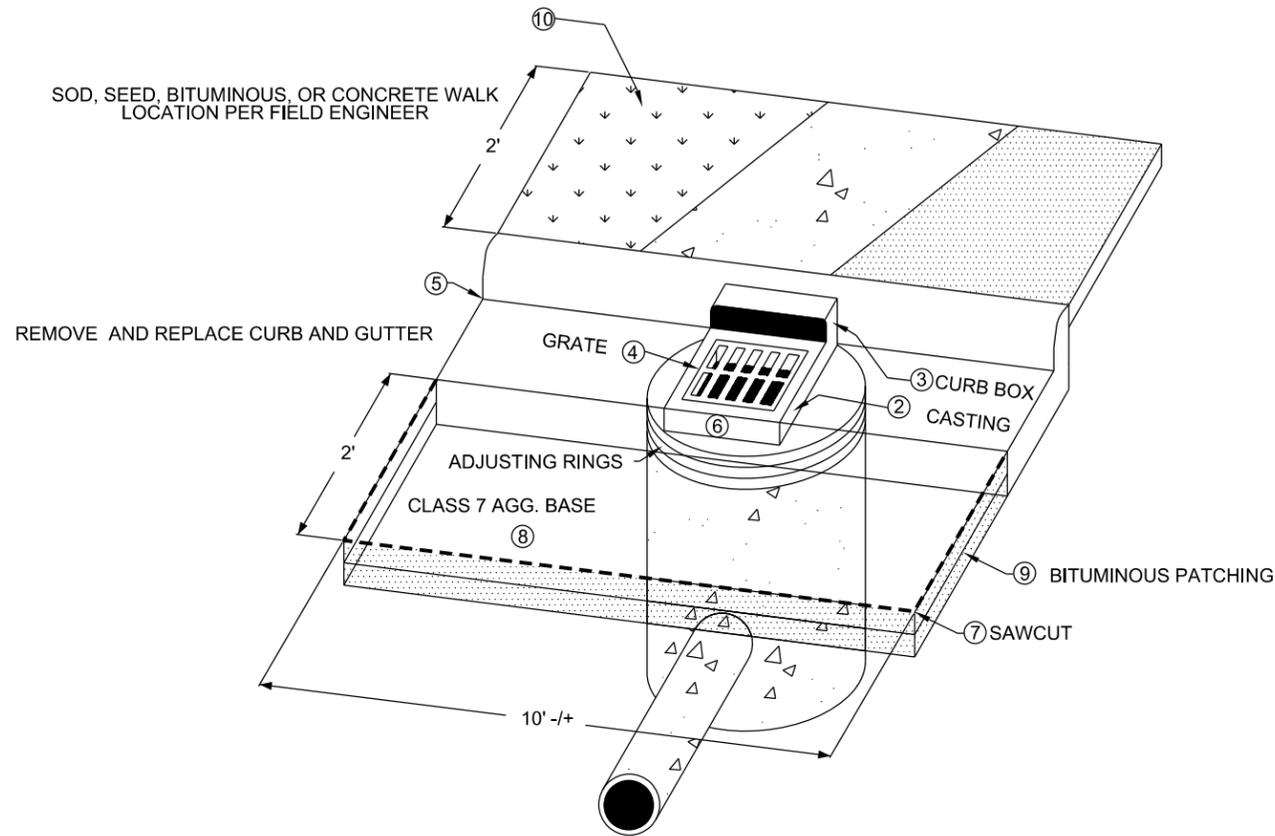
STATE AID PROJECT 002-651-009

TYPICAL SECTIONS

Sheet 4 of 24 Sheets

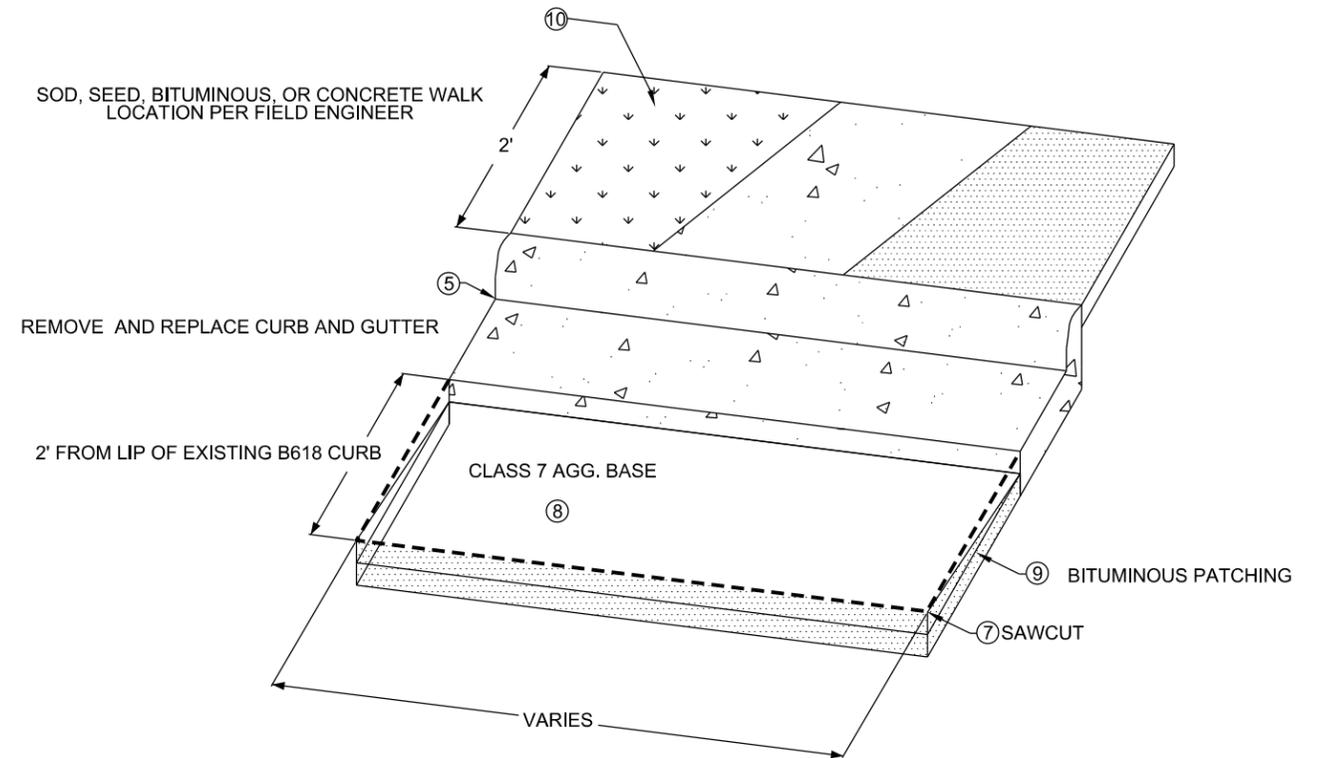
### CATCH BASIN DETAIL

SEE STRUCTURE TAB FOR LOCATION  
(PAGE 3)



### NEW CURB DETAIL

SEE PLAN FOR LOCATION

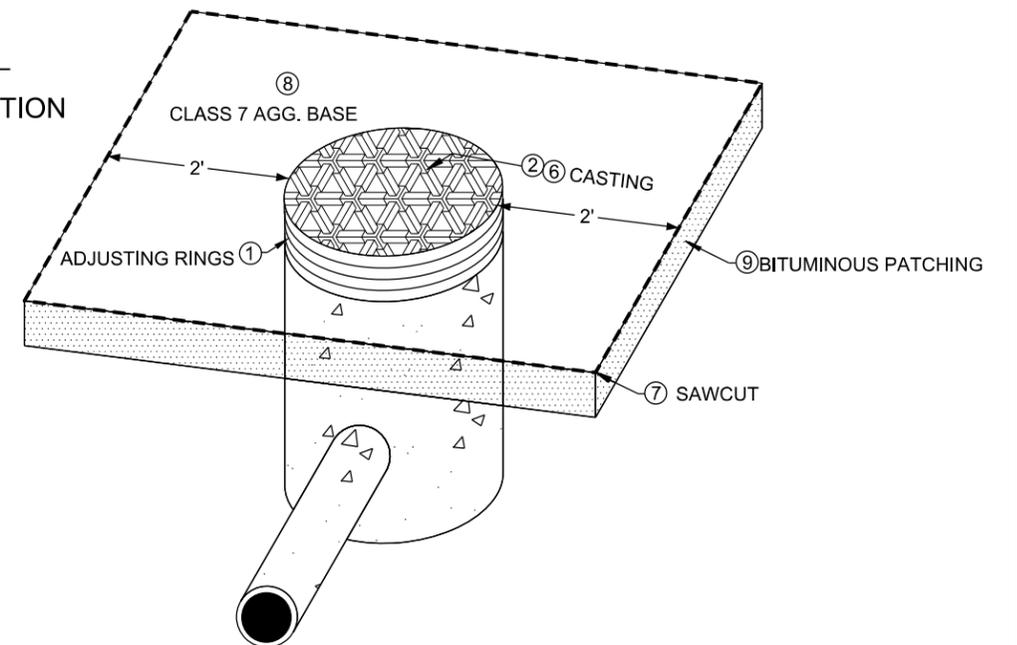


### NOTES

- 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 LIFTS OF BITUMINOUS, TOP LIFT SHOULD TAPER TO BOTTOM LIFT AT CURB.
  - ⑩ REPLACE DISTURBED AREA BEHIND CATCH BASIN WITH EITHER SOD (RESIDENTIAL AREAS), EROSION CONTROL BLANKET, BITUMINOUS, OR CONCRETE

### MANHOLE DETAIL

SEE STRUCTURE TAB FOR LOCATION  
(PAGE 3)



NO	DATE	BY	CKD	APPR	REVISION	
	02/04/2025					8:02:10 AM
NAME: P:\25-01-00\CSAH_51_(250 N. 92ND-97TH AVE)\Base\Proposed\CSAH 51_DETAILS.dgn						

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

PRINT NAME: GERALD J. AUGER JR.

SIGNATURE: *[Signature]*

DATE: 01/30/2025 LICENSE NO. 26511

DRAWN BY: SPH DATE: 9/30/2024

DESIGN BY: SPH DATE: 9/30/2024

CHECKED BY: CSO DATE: 10/30/2024

**ANOKA COUNTY**  
**HIGHWAY DEPT.**

STATE AID PROJECT 002-651-009

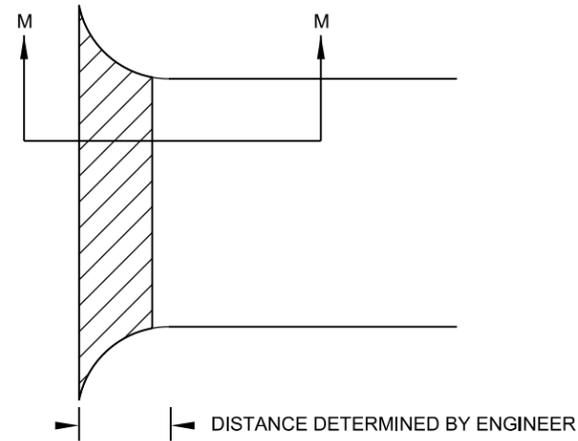
DETAILS

Sheet 5 of 24 Sheets

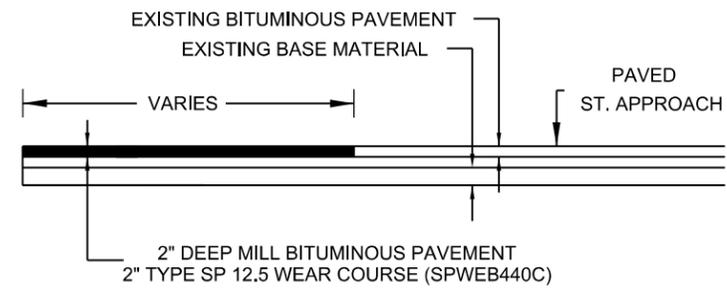
# STREET APPROACH DETAIL (MILL & OVERLAY)

## BITUMINOUS STREET

PLAN VIEW



SECTION M - M



NO	DATE	BY	CKD	APPR	REVISION	
	02/04/2025					8:02:10 AM
NAME: P:\25-01-00\CSAH_51_(250 N. 92ND-97TH AVE)\Base\Proposed\CSAH 51_DETAILS.dgn						

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PRINT NAME: GERALD J. AUGER JR.

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DATE: 01/30/2025 LICENSE NO. 26511

DRAWN BY SPH DATE 9/30/2024

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CHECKED BY CSO DATE 10/30/2024



**ANOKA COUNTY  
HIGHWAY DEPT.**

STATE AID PROJECT 002-651-009

DETAILS

Sheet 6 of 24 Sheets

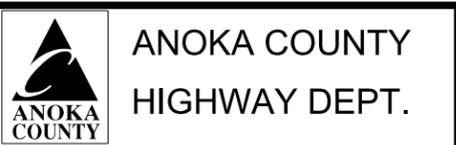
**STORM DRAINAGE TAB**

NUMBER	TYPE	ACTION	NEW CASTING TYPE	FURNISH AND INSTALL CASTING ASSEMBLY	RING HEIGHT (INCIDENTAL)	REMOVE STRUCTURE	GROUT CATCH BASIN OR MANHOLE	CONSTRUCT DRAINAGE STRUCTURE DESIGN 60"	CONNECT TO EXISTING STORM SEWER (INCIDENTAL)	NOTES
				EACH	LIN FT	EACH	EACH	LIN FT	EACH	
119	CB	GROUT					1			GROUT RINGS
120	CB	GROUT					1			GROUT RINGS
121	CB	GROUT					1			GROUT RINGS
122	CB	GROUT					1			GROUT RINGS
123	CB	GROUT					1			GROUT RINGS
124	CB	GROUT					1			GROUT RINGS
125	CB	GROUT					1			GROUT RINGS
126	CB	GROUT					1			GROUT RINGS
129	CB	GROUT					1			GROUT RINGS
130	CB	OK								
131	CB	GROUT					1			GROUT DOGHOUSE
132	CB	GROUT					1			GROUT RINGS
133	CB	OK								
135	CB	OK								
136	CB	RE-CONSTRUCT	A	1	0.5	1		3.4	3	RE-CONSTRUCT
137	CB	CLEAN								CLEAN OUT
138	CB	OK								
139	CB	GROUT					1			GROUT RINGS AND DOGHOUSE
140	CB	GROUT					1			GROUT RINGS
141	CB	GROUT					1			GROUT RINGS
142	CB	GROUT					1			GROUT RINGS
143	CB	GROUT					1			GROUT RINGS
144	CB	GROUT					1			GROUT RINGS
145	CB	GROUT					1			GROUT RINGS
146	CB	GROUT					1			GROUT RINGS
147	CB	GROUT					1			GROUT RINGS
148	CB	GROUT					1			GROUT RINGS
149	CB	GROUT					1			GROUT RINGS
150	CB	GROUT					1			GROUT RINGS AND DOGHOUSE
151	CB	RE-RING	B	1	0.2					
152	CB	GROUT					1			GROUT RINGS AND DOGHOUSE
153	CB	RE-RING	B	1	0.7					
154	CB	GROUT					1			GROUT RINGS
155	CB	GROUT					1			GROUT RINGS AND DOGHOUSE
156	CB	GROUT					1			GROUT RINGS
157	CB	GROUT					1			GROUT RINGS
158	CB	RE-RING	B	1	0.5					
159	CB	GROUT					1			GROUT RINGS AND STRUCTURE
160	CB	GROUT					1			GROUT RINGS
161	MH-SAN	GROUT					1			GROUT RINGS
202	MH-SAN	GROUT					1			GROUT RINGS
203	MH-SAN	GROUT					1			GROUT RINGS
305	MH-SAN	GROUT					1			GROUT RINGS
306	MH-SAN	GROUT					1			GROUT RINGS
307	MH-SAN	RE-RING	A-7D	1	0.3					
308	CB	OK								
129A	CB	GROUT					1			GROUT RINGS
138A	CB	GROUT					1			GROUT RINGS AND DOGHOUSE
153A	CB	GROUT					1			GROUT RINGS
156A	CB	GROUT					1			GROUT RINGS
<b>TOTALS</b>				5	2.2	1	39	3.4	3	

NO	DATE	BY	CKD	APPR	REVISION	02/04/2025	8:02:11 AM
NAME: P:\25-01-00\CSAH_51_(250 N. 92ND-97TH AVE)\Base\Proposed\CSAH 51_STORM.dgn							

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

DRAWN BY: SPH DATE: 9/30/2024  
 DESIGN BY: SPH DATE: 9/30/2024  
 CSO DATE: 10/30/2024



STATE AID PROJECT 002-651-009

STORM SEWER TABULATIONS  
 Sheet 7 of 24 Sheets

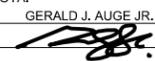
<b>GATE VALVE TAB</b>			
NUMBER	STATION	OFFSET	ADJUST
500	21+24.2	10.1	1
501	26+03.5	8.5	1
502	1027+60.0	-4.0	1
503	1027+58.6	-10.4	1
504	1027+55.9	-17.5	1
505	1031+19.5	-32.5	1
506	1031+56.0	-7.7	1
507	48+90.4	13.9	1
		TOTAL	8
GATE VALVES TO BE ADJUSTED ONLY AS NECESSARY AS DETERMINED BY THE ENGINEER.			

<b>CASTING ASSEMBLIES SUMMARY</b>						
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 "SANITARY SEWER" (NEENAH R-1733 WITH LID 301-CP)	1
A	NEENAH R-3030	L	YES	NEENAH R-3030-L		1
B	NEENAH R-3250-DVSP	V	YES	NEENAH R-3250-DVSP		3
ALL CASTING HEIGHTS TO BE VERIFIED IN THE FIELD						
ALL MANHOLE COVERS SHOULD BE LABELED AS STORM OR SANITARY						
NEW MANHOLE CASTINGS TO BE INSTALLED FLUSH WITH THE MILLED ASPHALT SURFACE.						
ALL MANHOLES TO BE WRAPPED WITH INFIL 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						

NO	DATE	BY	CKD	APPR	REVISION
	02/04/2025				
NAME: P:\25-01-00\CSAH_51_(250 N. 92ND-97TH AVE)\Base\Proposed\CSAH 51_STORM.dgn					

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PRINT NAME: GERALD J. AUGER JR.

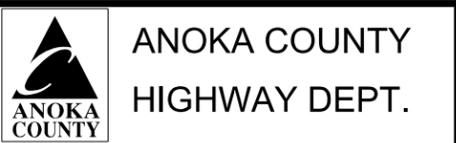
SIGNATURE: 

DATE: 01/30/2025 LICENSE NO. 26511

DRAWN BY SPH DATE 9/30/2024

DESIGN BY SPH DATE 9/30/2024

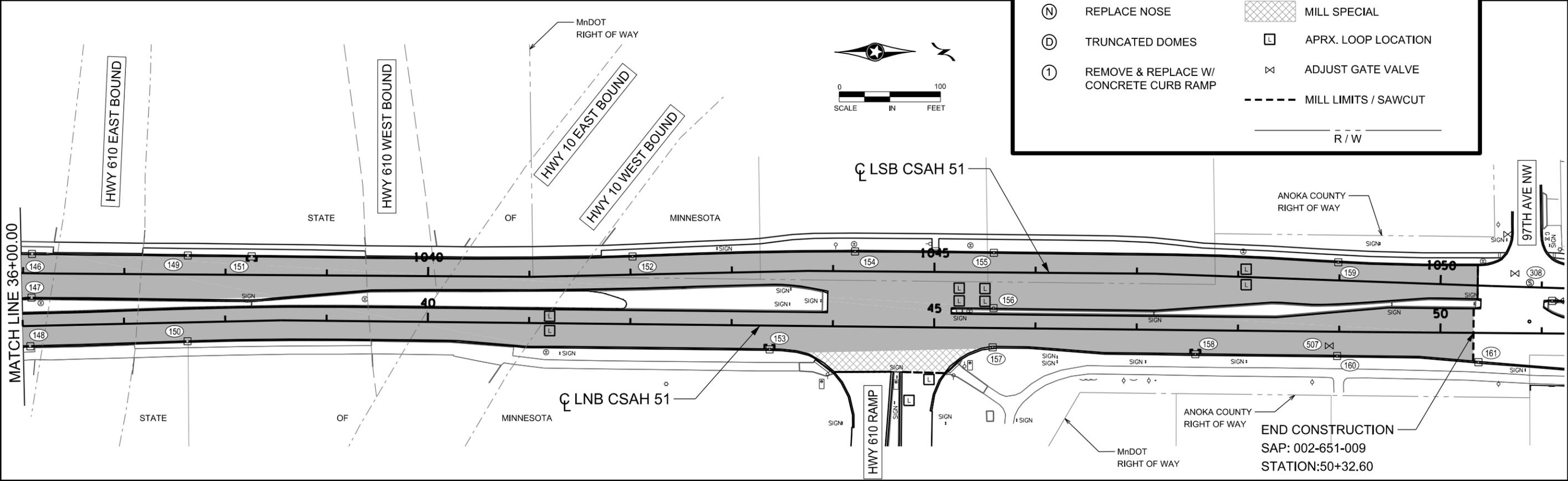
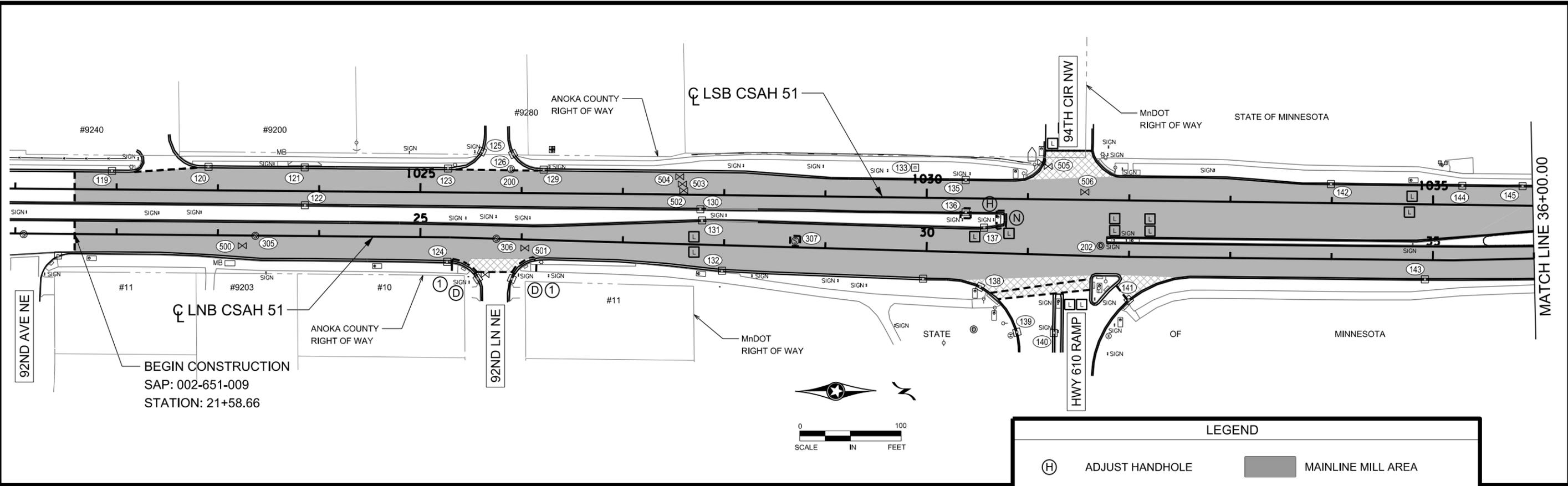
CHECKED BY CSO DATE 10/30/2024



STATE AID PROJECT 002-651-009

STORM SEWER TABULATIONS

Sheet 8 of 24 Sheets



**LEGEND**

(H)	ADJUST HANDHOLE	[Solid Grey Box]	MAINLINE MILL AREA
(N)	REPLACE NOSE	[Cross-hatched Box]	MILL SPECIAL
(D)	TRUNCATED DOMES	[Square with L]	APRX. LOOP LOCATION
(1)	REMOVE & REPLACE W/ CONCRETE CURB RAMP	[Square with X]	ADJUST GATE VALVE
		[Dashed Line]	MILL LIMITS / SAWCUT
		[Solid Line]	R / W

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NAME: P:\25-01-00\CSAH\_51\_(250 N. 92ND-97TH AVE)\Base\Proposed\CSAH 51\_CP.dgn

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PRINT NAME: GERALD J. AUGER JR.

SIGNATURE: *[Signature]*

DATE: 01/30/2025 LICENSE NO. 26511

DRAWN BY SPH DATE 9/30/2024

DESIGN BY SPH DATE 9/30/2024

CHECKED BY CSO DATE 10/30/2024

**ANOKA COUNTY  
HIGHWAY DEPT.**

STATE AID PROJECT 002-651-009

**CONSTRUCTION PLAN**  
STA 21+58.66 TO 50+32.60  
Sheet 9 of 24 Sheets

## PERMANENT PAVEMENT MARKING PLAN NOTES & GUIDELINES

### GENERAL INFORMATION:

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

### MULTI-COMPONENT (MULTI-COMP):

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

### PERMANENT STRIPING

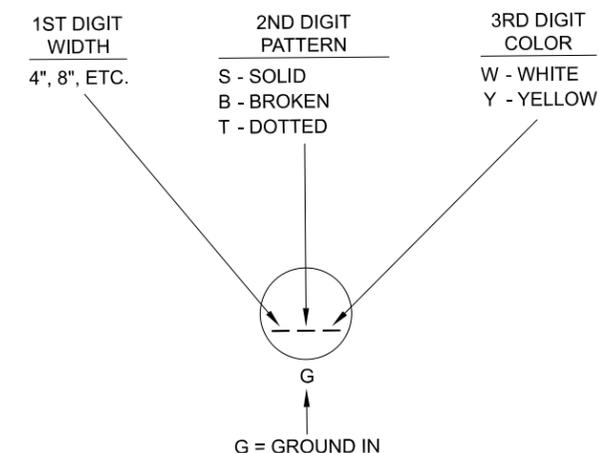
PERMANENT PAVEMENT MARKING TABULATION				
ITEM DESCRIPTION	UNIT	TOTAL QUANTITY		
		WHITE	YELLOW	
4" SOLID LINE MULTI-COMP	LIN FT	8507	5285	
4" BROKEN LINE MULTI-COMP	LIN FT	1071		
3'X6' ZEBRA CROSSWALK PREF THERMOPLASTIC, GROUND IN	SQ FT	1674		
PAVEMENT MESSAGE, PREF THERMOPLASTIC, RIGHT ARROW	SQ FT	78		
PAVEMENT MESSAGE, PREF THERMOPLASTIC, LEFT ARROW	SQ FT	186		

### PAVEMENT MARKING SYMBOLS & MATERIALS LEGEND

- — BROKEN LINE - 50' CYCLE (10' LINE, 40' GAP)
- ↩ ↪ PAVEMENT MESSAGE - LEFT OR RIGHT ARROW
- CROSSWALK BLOCK

### STRIPING KEY

- CIRCLE - MULTI-COMP
- OCTAGON - PREF THERMO

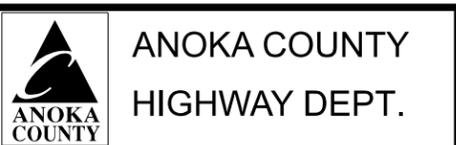


EXAMPLE: = 4" SOLID LINE WHITE MULTI-COMP

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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: SEAN R. THIEL  
 SIGNATURE: *Sean R. Thiel*  
 DATE: 2/3/2025 LICENSE NO. 45129

DRAWN BY: ALS DATE: 01/08/25  
 DESIGN BY: ALS DATE: 01/08/25  
 CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_



SAP 002-651-009

PERMANENT PAVEMENT  
MARKING NOTES AND  
TABULATIONS

Sheet 10 of 24 Sheets

**SIGNING NOTES**

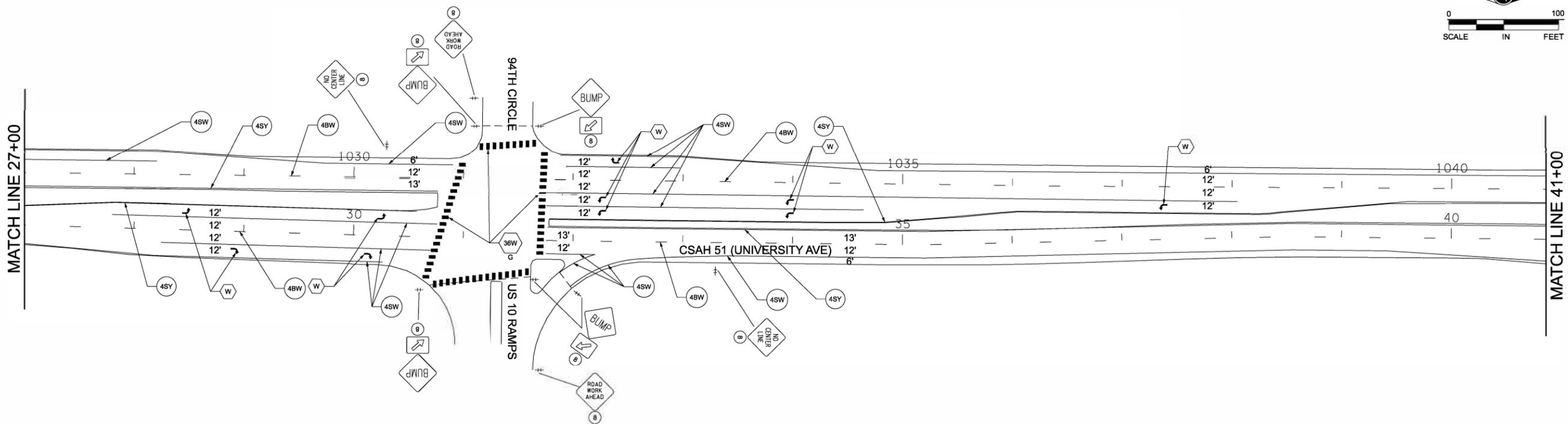
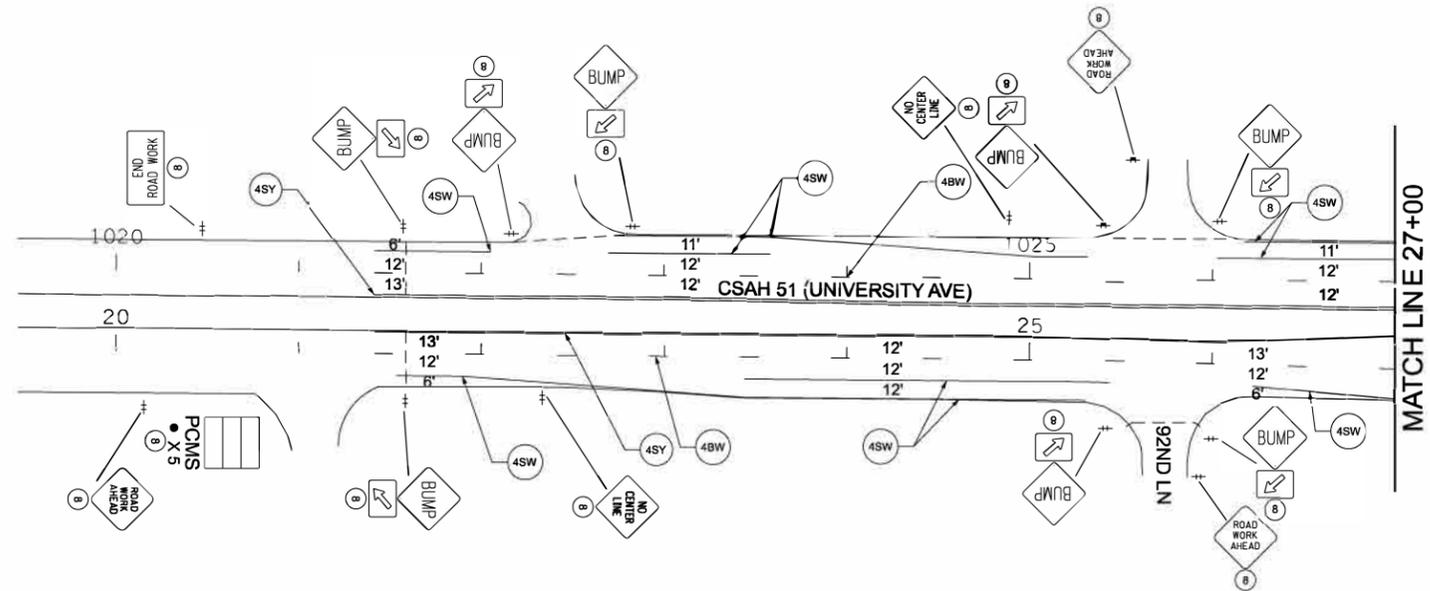
- ① F & I
- ④ REMOVE
- ⑧ TEMPORARY TRAFFIC CONTROL SIGN

**STRIPING KEY**

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

**TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND**

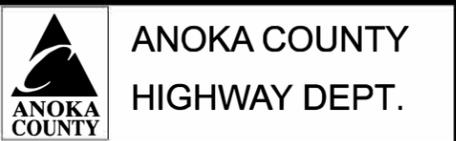
- | SYMBOL  | DESCRIPTION  |
|---|--|
| ±   | TRAFFIC CONTROL SIGN (SINGLE POST)   |
| ++  | TRAFFIC CONTROL SIGN (TEMPORARY)   |
| ●   | DRUM-LIKE CHANNELIZER TYPE B =  |
|  | PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)  |



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NAME: P:\25-01-00CSAH_51_(250 N. 92ND-97TH AVE)\Base\Traffic\CSAH 51 - Signing & Striping.dgn					

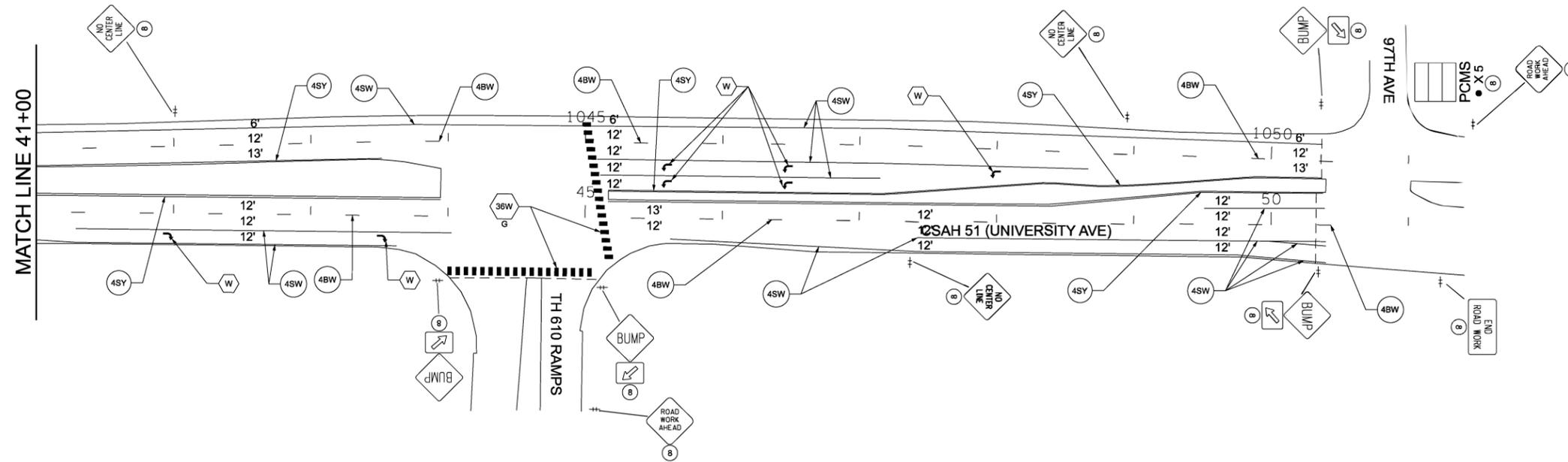
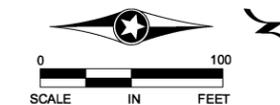
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 CHECKED BY: DATE:



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PERMANENT STRIPING AND TEMPORARY SIGNING  
 Sheet 11 of 24 Sheets



- SIGNING NOTES**
- (8) TEMPORARY TRAFFIC CONTROL SIGN
- STRIPING KEY**
- CIRCLE - MULTI-COMP
  - OCTAGON - PREF THERMO
  - G GROUND IN

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\25-01-00\CSAH_51_(250 N. 92ND-97TH AVE)\BaseTraffic\CSAH 51 - Signing & Striping.dgn					

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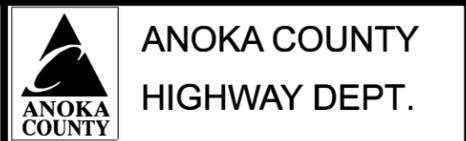
SIGNATURE: *Sean R. Thiel*

DATE: 2/3/2025 LICENSE NO. 45129

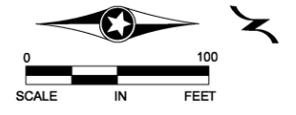
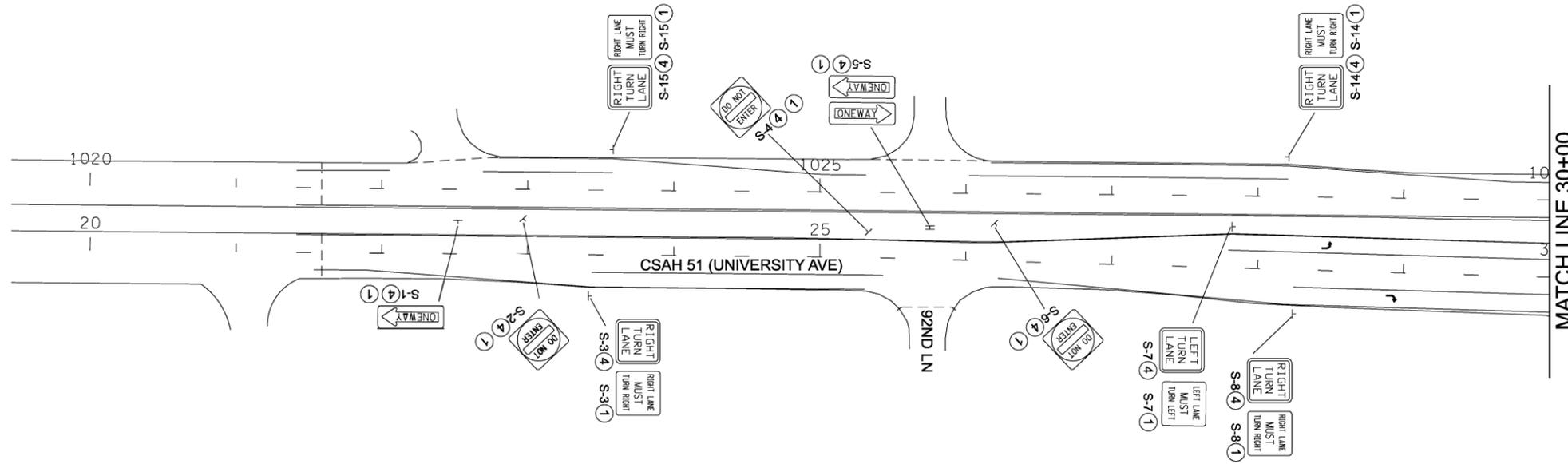
DRAWN BY ALS DATE 01/08/25

DESIGN BY ALS DATE 01/08/25

CHECKED BY DATE

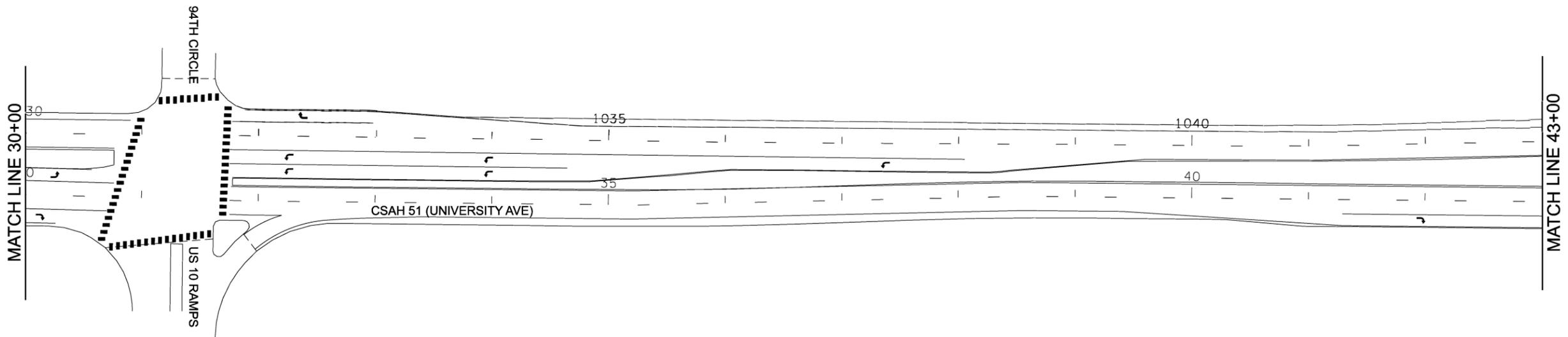


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**SIGNING NOTES**

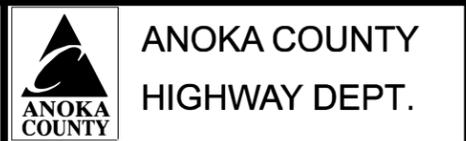
- ① F & I
- ④ REMOVE



NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\25-01-00\CSAH_51_(250 N. 92ND-97TH AVE)\Base\Traffic\CSAH 51 - Signing & Striping.dgn					

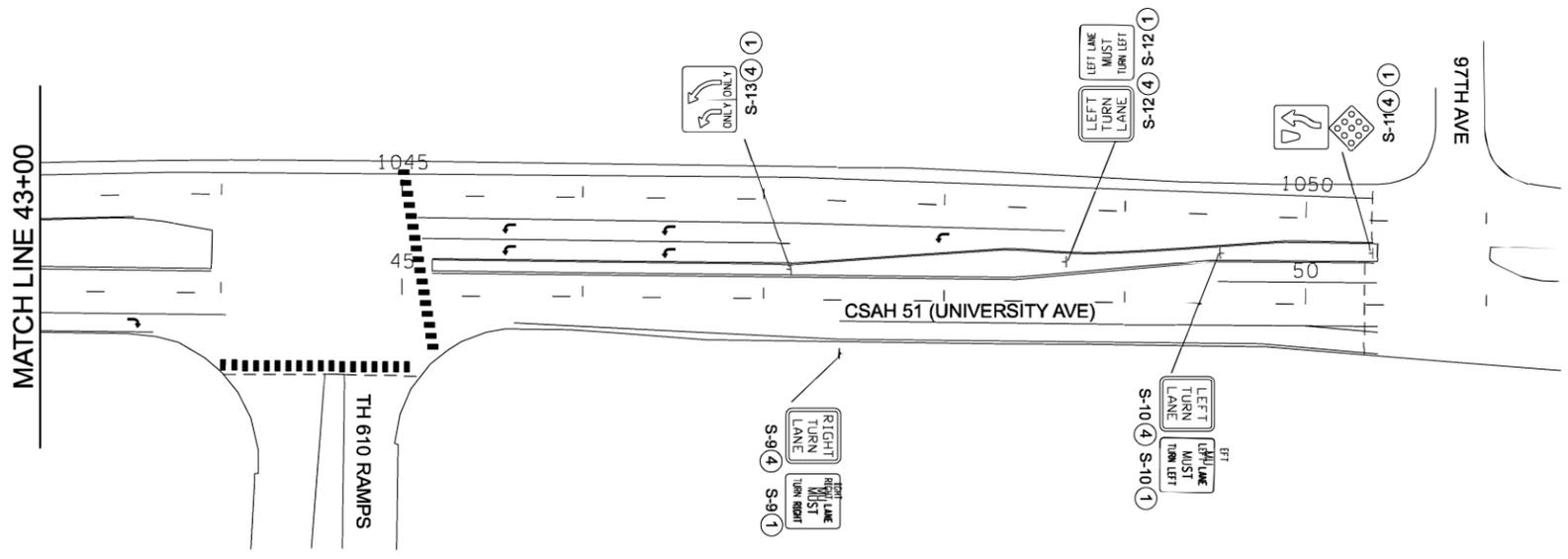
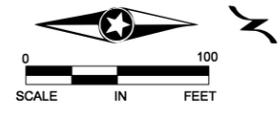
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PERMANENT SIGNING  
 Sheet 13 of 24 Sheets



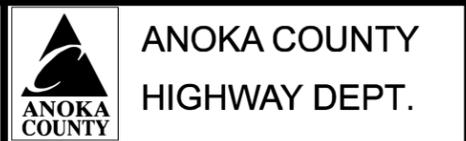
**SIGNING NOTES**

- ① F & I
- ④ REMOVE

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 CHECKED BY DATE



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PERMANENT SIGNING  
 Sheet 14 of 24 Sheets

## TEMPORARY TRAFFIC CONTROL SIGNS AND DEVICES

"W" SERIES				
SIGN	MUTCD CODE	COLOR	SIZE	QUANTITY
	W3-4	BLACK ON ORANGE	48" X 48"	AS NEEDED
	W8-1	BLACK ON ORANGE	48" X 48"	11
	W16-7PL	BLACK ON ORANGE	30" X 18"	11
	W8-8	BLACK ON ORANGE	48" X 48"	AS NEEDED
	W8-9	BLACK ON ORANGE	48" X 48"	AS NEEDED
	W8-11	BLACK ON ORANGE	48" X 48"	AS NEEDED
	W8-12	BLACK ON ORANGE	48" X 48"	8
	W8-23	BLACK ON ORANGE	48" X 48"	AS NEEDED
	W20-1	BLACK ON ORANGE	48" X 48"	AS NEEDED (ESTIMATED 5)
	W20-4	BLACK ON ORANGE	48" X 48"	AS NEEDED
	W20-7	BLACK ON ORANGE	48" X 48"	AS NEEDED

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

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

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

### PCMS - MESSAGE SEQUENCE LAYOUT

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

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

### NOTES:

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

### SIGNING NOTES

- ① F & I
- ④ REMOVE
- ⑧ TEMPORARY TRAFFIC CONTROL SIGN

### TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

#### SYMBOL DESCRIPTION

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

NO	DATE	BY	CKD	APPR	REVISION

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 SIGNATURE:   
 DATE: 2/3/2025 LICENSE NO. 45129

DRAWN BY: ALS DATE: 01/08/25  
 DESIGN BY: ALS DATE: 01/08/25  
 CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_



**ANOKA COUNTY**  
**HIGHWAY DEPT.**

SAP 002-651-009

## SIGN AND DELINEATOR / MARKER

**ST-A**

SIGN NUMBER	PANEL				SUPPORT		REMOVE SIGN TYPE C	REMOVE SIGN TYPE C PANEL	SIGN	INSTALL SIGN TYPE C	INSTALL SIGN TYPE C PANEL	DELINEATOR / MARKER
	PANEL CODE	LEGEND	SIZE (W x H)		MOUNTING HEIGHT	TYPE	NUMBER OF POSTS	EACH	SQ FEET	EACH	EACH	EACH
			INCHES	FEET								
S-1	R6-1R	ONE WAY RIGHT	54	x 18	7	S-CONC	1		6.75	1		
S-2	R5-1	DO NOT ENTER	30	x 30	7	S-CONC	1		6.25	1		
S-3	R3-X1R	RIGHT TURN LANE	30	x 30		U-SOIL	1	1	6.25		1	
	R3-7R	RIGHT LANE MUST TURN RIGHT	30	x 30	7							
S-4	R5-1	DO NOT ENTER	30	x 30	7	S-CONC	1		6.25	1		
S-5	R6-1R	ONE WAY RIGHT	54	x 18	7	S-CONC	1	1	6.75	1		
	R6-1R	ONE WAY RIGHT	54	x 18								
S-6	R5-1	DO NOT ENTER	30	x 30	7	S-CONC	1		6.25	1		
S-7	R3-X1L	LEFT TURN LANE	30	x 30		S-CONC	1	1	6.25	1		
	R3-7L	LEFT LANE MUST TURN LEFT	30	x 30	7							
S-8	R3-X1R	RIGHT TURN LANE	30	x 30		U-SOIL	1	1	6.25		1	
	R3-7R	RIGHT LANE MUST TURN RIGHT	30	x 30	7							
S-9	R3-X1R	RIGHT TURN LANE	30	x 30		U-SOIL	1	1	6.25		1	
	R3-7R	RIGHT LANE MUST TURN RIGHT	30	x 30	7							
S-10	R3-X1L	LEFT TURN LANE	30	x 30		S-CONC	1	1	6.25	1		
	R3-7L	LEFT LANE MUST TURN LEFT	30	x 30	7							
S-11	R4-7	KEEP RIGHT	24	x 30	7	S-CONC	1	1	5	1		1
	OM1-1	TYPE 1 OBJECT MARKER	18	x 18	4							
S-12	R3-X1L	LEFT TURN LANE	30	x 30		S-CONC	1	1	6.25	1		
	R3-7L	LEFT LANE MUST TURN LEFT	30	x 30	7							
S-13	R3-8AB	L-L	36	x 30	7	S-CONC	1	1	7.5	1		
S-14	R3-X1R	RIGHT TURN LANE	30	x 30		U-SOIL	1	1	6.25		1	
	R3-7R	RIGHT LANE MUST TURN RIGHT	30	x 30	7							
S-15	R3-X1R	RIGHT TURN LANE	30	x 30		U-SOIL	1	1	6.25		1	
	R3-7R	RIGHT LANE MUST TURN RIGHT	30	x 30	7							
<b>TOTAL</b>							<b>11</b>	<b>5</b>	<b>102</b>	<b>11</b>	<b>5</b>	<b>1</b>

SPECIFIC NOTES:  
(1) BACK TO BACK

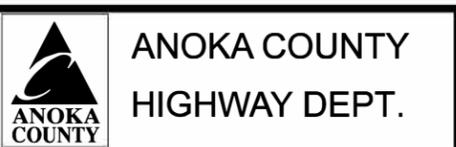
NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\25-01-00\CSAH\_51\_(250 N. 92ND-97TH AVE)\Base\Traffic\CSAH 51 - Signing & Striping.dgn

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

PRINT NAME: SEAN R. THIEL  
SIGNATURE: *Sean R. Thiel*  
DATE: 2/3/2025 LICENSE NO. 45129

DRAWN BY: ALS DATE: 01/08/25  
DESIGN BY: ALS DATE: 01/08/25  
CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_



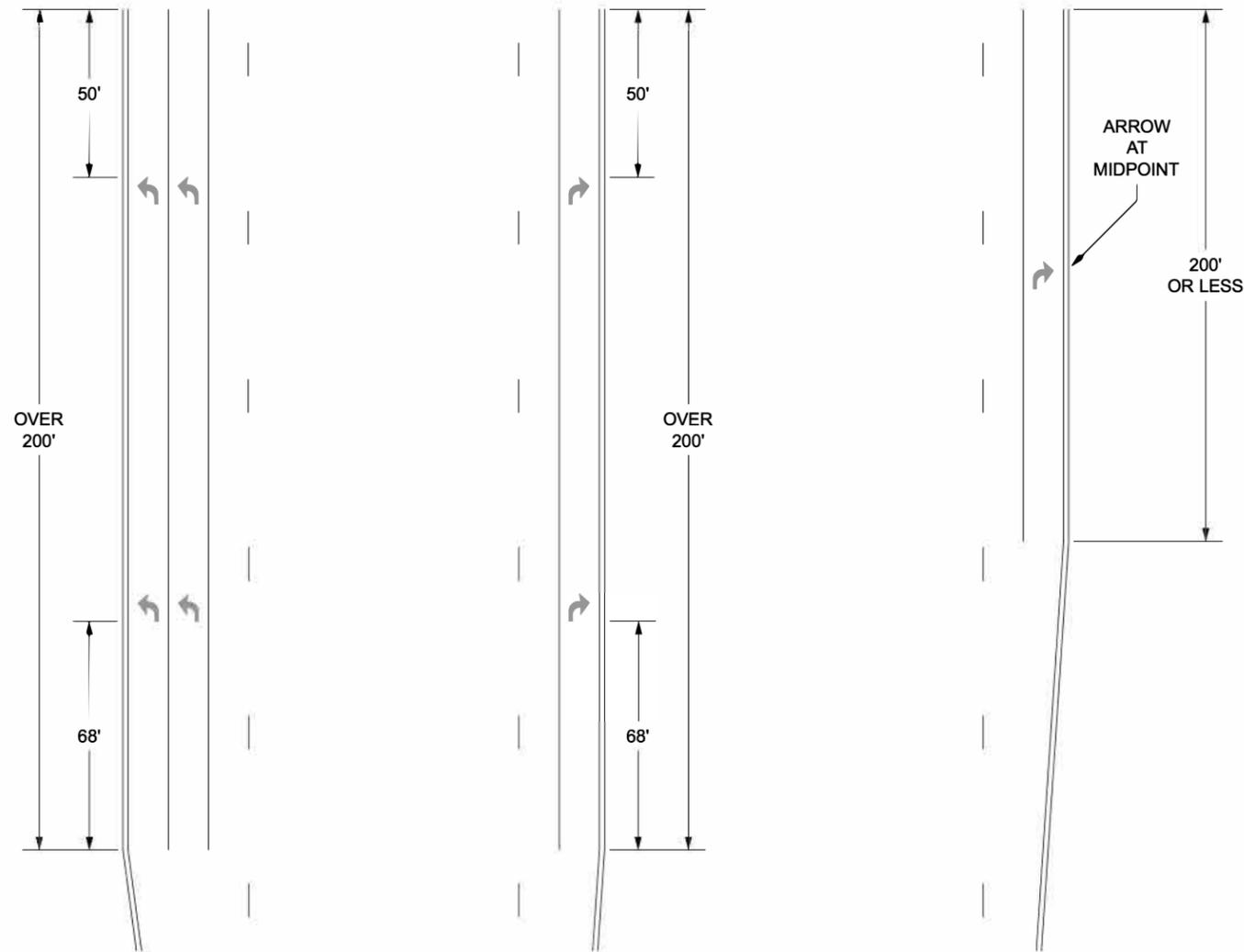
SAP 002-651-009

PERMANENT SIGNING  
TABULATIONS

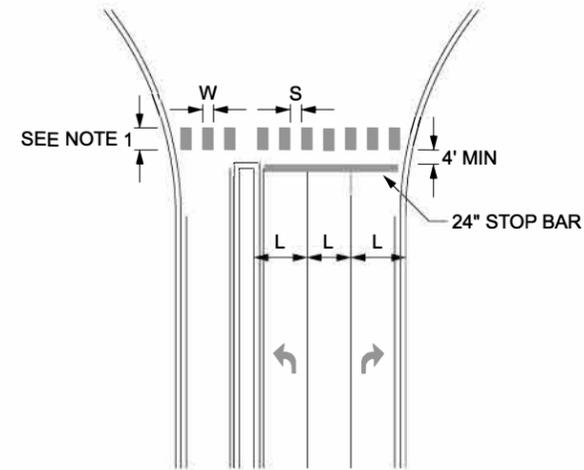
Sheet 16 of 24 Sheets

# PAVEMENT MARKING TYPICALS

## TURN LANE ARROW PLACEMENT

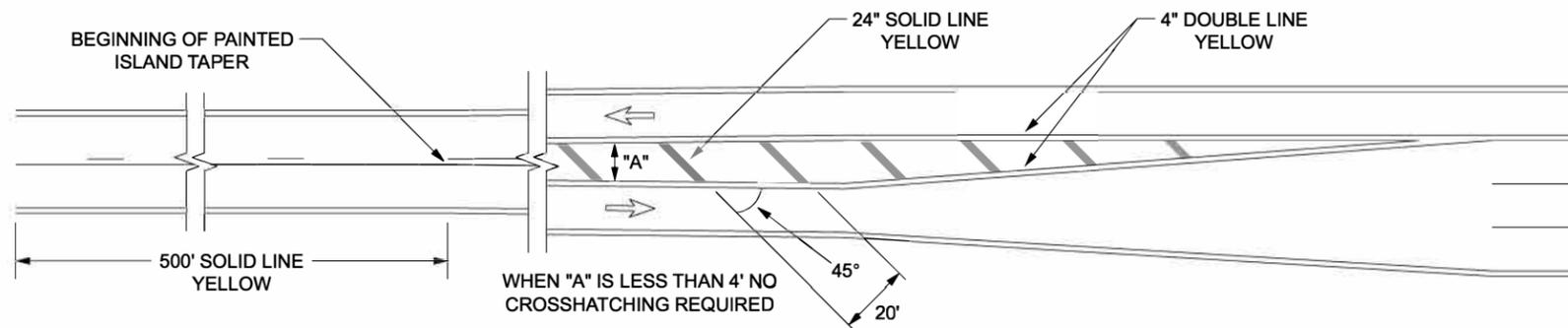


## PEDESTRIAN CROSSWALK



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

## LEFT TURN ISLAND MARKINGS



### CROSSWALK NOTES:

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

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\25-01-00\CSAH\_51\_(250 N. 92ND-97TH AVE)\Base\Traffic\CSAH 51 - Signing & Striping.dgn

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

PRINT NAME: SEAN R. THIEL  
 SIGNATURE: *Sean R. Thiel*  
 DATE: 2/3/2025 LICENSE NO. 45129

DRAWN BY: ALS DATE: 01/08/25  
 DESIGN BY: ALS DATE: 01/08/25  
 CHECKED BY: DATE:



ANOKA COUNTY  
HIGHWAY DEPT.

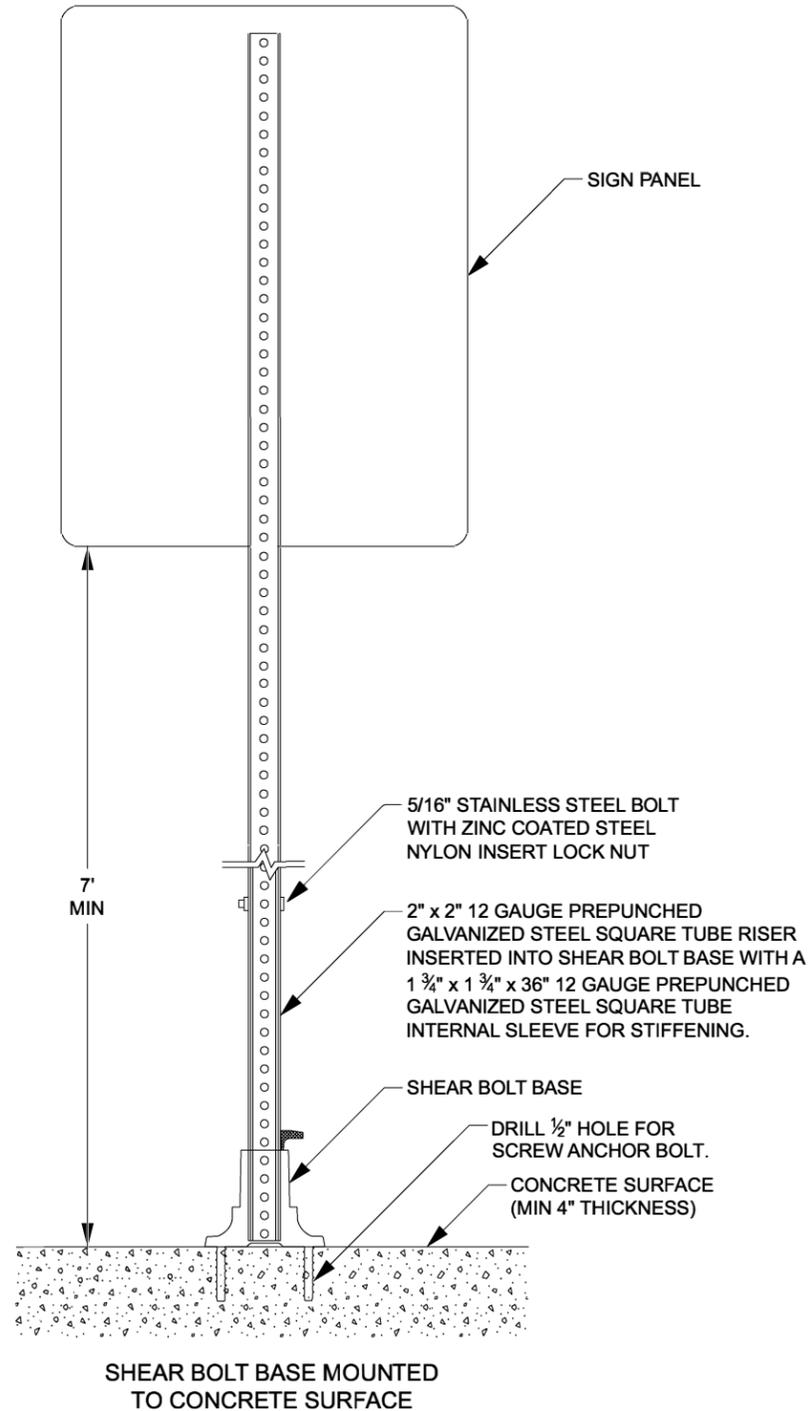
SAP 002-651-009

PAVEMENT MARKING TYPICAL

Sheet 17 of 24 Sheets

**SIGN INSTALLATION TYPICALS**

**ISLAND MOUNT  
SQUARE TUBE SHEAR BOLT BASE  
SIGN INSTALLATION TYPICAL**

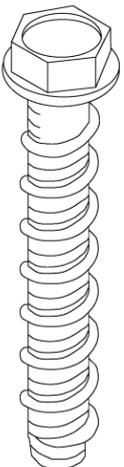


**SIGN NOTES:**

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

**INSTALLATION NEAR SHARED-USE PATHWAY (MN MUTCD):**

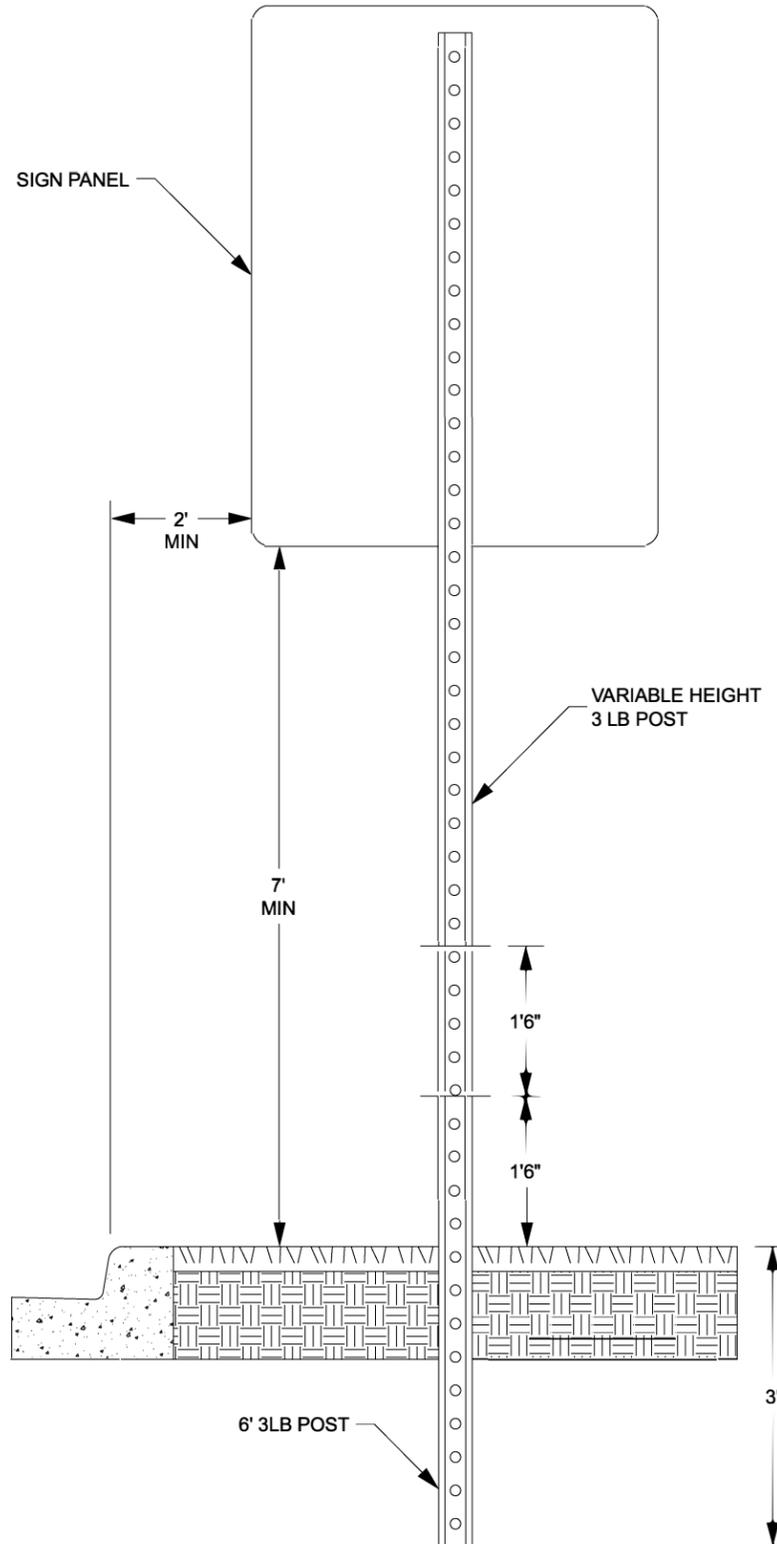
- THE MINIMUM HEIGHT MEASURED VERTICALLY FROM THE SHARED-USE PATHWAY TO THE BOTTOM OF THE SIGN SHALL BE 7 FEET. IF A SECONDARY SIGN IS MOUNTED BELOW THE PRIMARY SIGN AND IS MOUNTED LESS THAN 7 FEET, IT SHALL NOT PROJECT MORE THAN 4 INCHES INTO THE SHARED-USE PATHWAY.



**SCREW ANCHOR BOLT**

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

**GROUND POST MOUNT  
SIGN INSTALLATION TYPICAL**

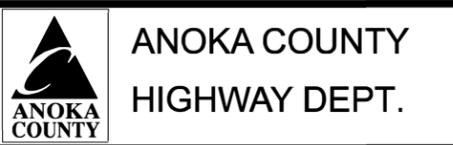


NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\25-01-00\CSAH\_51\_(250 N. 92ND-97TH AVE)\Base\Traffic\CSAH 51 - Signing & Striping.dgn

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: SEAN R. THIEL  
 SIGNATURE: *Sean R. Thiel*  
 DATE: 2/3/2025 LICENSE NO. 45129

DRAWN BY: ALS DATE: 01/08/25  
 DESIGN BY: ALS DATE: 01/08/25  
 CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

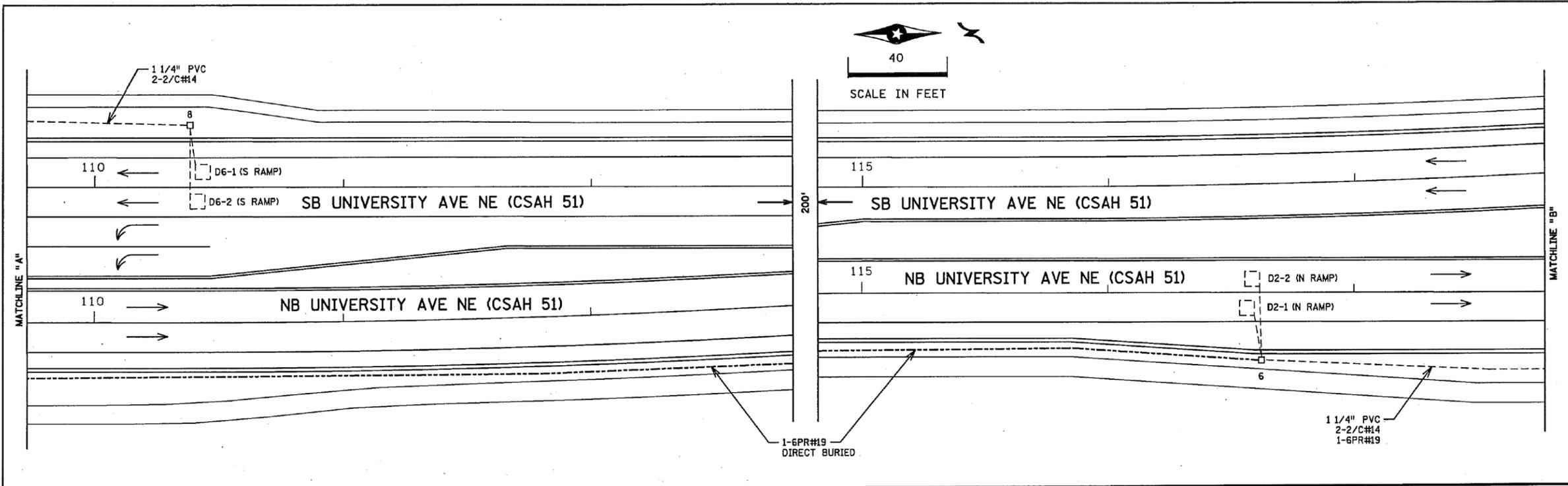


SAP 002-651-009



PLOTTED/REVISED: 13-FEB-2019

DISTRICT #: Metro  
PILOT NAME: 22124A\_SGL  
PATH & FILENAME: Proj\Bids\DM\_RCS\01000000\Traf\Signal\22124A\_SGL.dgn



- ② PA100 POLE FOUNDATION  
TYPE PA100-A-50-D40-9 (DAVIT AT 350 DEG)  
3-ONE WAY SIGNALS OVERHEAD  
(0', 17' AND 29' FROM END OF MAST ARM)  
2-TYPE 10B WITH CD PED HEADS AT 0 & 270 DEG  
LUMINAIRE-200W HPS  
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT  
(4' FROM END OF MAST ARM) (PHASES 1+6)  
1-SIGN (R6-1L) ONE WAY  
1-SIGN (R6-1R) ONE WAY  
3" RSC TO HH 4:  
2-12/C #12  
3-3/C #12  
1-3/C #20

- ① PA100 POLE FOUNDATION  
TYPE PA100-A-50-D40-9 (DAVIT AT 350 DEG)  
ONE WAY SIGNAL OVERHEAD  
2-TYPE 10B WITH CD PED HEADS AT 0 & 270 DEG  
LUMINAIRE-200W HPS  
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT  
(4' FROM END OF MAST ARM) (PHASE 4)  
3" RSC TO HH 14:  
2-12/C #12  
2-3/C #12  
1-3/C #20

- ③ PA90 POLE FOUNDATION  
TYPE PA90-A-25-D40-9 (DAVIT AT 350 DEG)  
ONE WAY SIGNAL OVERHEAD  
2-TYPE 10B WITH CD PED HEADS AT 0 & 270 DEG  
LUMINAIRE-200W HPS  
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT  
(4' FROM END OF MAST ARM) (PHASE B)  
1-APS PB AND SIGN (LT ARROW) (PB6-1)  
3" RSC TO HH 6:  
2-12/C #12  
2-3/C #12  
1-3/C #20

- ④ PA100 POLE FOUNDATION  
TYPE PA100-A-40-D40-9 (DAVIT AT 350 DEG)  
3-ONE WAY SIGNALS OVERHEAD  
(0', 11' AND 23' FROM END OF MAST ARM)  
2-TYPE 10B WITH CD PED HEADS AT 0 & 270 DEG  
TYPE 10B WITH C.D. PED IND AT 270 DEG  
LUMINAIRE-200W HPS  
ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT  
(4' FROM END OF MAST ARM) (PHASES 2+5)  
1-APS PB AND SIGN (LT ARROW) (PB8-1)  
1-SIGN (R6-1L) ONE WAY  
1-SIGN (R6-1R) ONE WAY  
3" RSC TO HH 10:  
2-12/C #12  
3-3/C #12  
1-3/C #20

- Ⓐ EQUIPMENT PAD  
SERVICE CABINET  
MASTER CONTROLLER, CONTROLLER AND CABINET  
4" RSC TO HH 14: 4" RSC TO HH 1:  
4-12/C #12 4-12/C #12  
3-3/C #12 3-3/C #12  
8-2/C #14 12-2/C #14  
2-3/C #20 2-3/C #20  
1-6PR #19

- 3" RSC STUBBED OUT (THREADED AND CAPPED BOTH ENDS)  
SERVICE CABINET TO CONTROLLER CABINET:  
2" RSC  
2-1/C #6  
1-1/C #6 INS. GR.  
SERVICE CABINET TO HH 1:  
2" RSC  
4-3/C #12  
SERVICE CABINET TO TRANSFORMER:  
2" RSC  
3-1/C #2  
HH 1 TO HH 14:  
2" RSC  
2-3/C #12  
CONTROLLER CABINET TO PULL VAULT  
1-1.5" NMC (IN SPARE 3")  
1-PRE TERMINATED ARMORED FO PIGTAIL (12SM)

- Ⓑ GROUND MOUNT TRANSFORMER  
2" RSC TO SERVICE CABINET:  
3-1/C #2

BY	DATE	REVISIONS	SYSTEM ID: 1736078	T.E. 2669	WIRING DIAGRAM	S.A.P. NO.	DRAWN BY: BAM	CKD BY: CDB	DATE: 6-19-17
JBA	1/23/19	GENERAL DRAWING CLEAN UP	METER ADDRESS: 9401 UNIVERSITY AVE. NE	T.H. 610/10 AT UNIVERSITY AVE. NE (C.S.A.H. 51)	TRAFFIC CONTROL SIGNAL SYSTEM	CERTIFIED BY _____	LIC. NO. 19863	DATE: 6-23-17	
			OLD SYSTEM ID: 22124	SOUTH RAMP	IN BLAINE & COON RAPIDS, ANOKA COUNTY	STATE PROJ. NO. 0205-101 (T.H. 47)	SHEET NO. _____	OF _____	SHEETS

NO	DATE	BY	CKD	APPR	REVISION	02/04/2025	8:02:24 AM
NAME: P:\25-01-00\CSAH_51_(250 N. 92ND-97TH AVE)\Base\Proposed\CSAH 51_Signal plans.dgn							

DRAWN BY	SPH	DATE	9/30/2024
DESIGN BY	SPH	DATE	9/30/2024
CHECKED BY	CSO	DATE	10/30/2024

ANOKA COUNTY  
HIGHWAY DEPT.

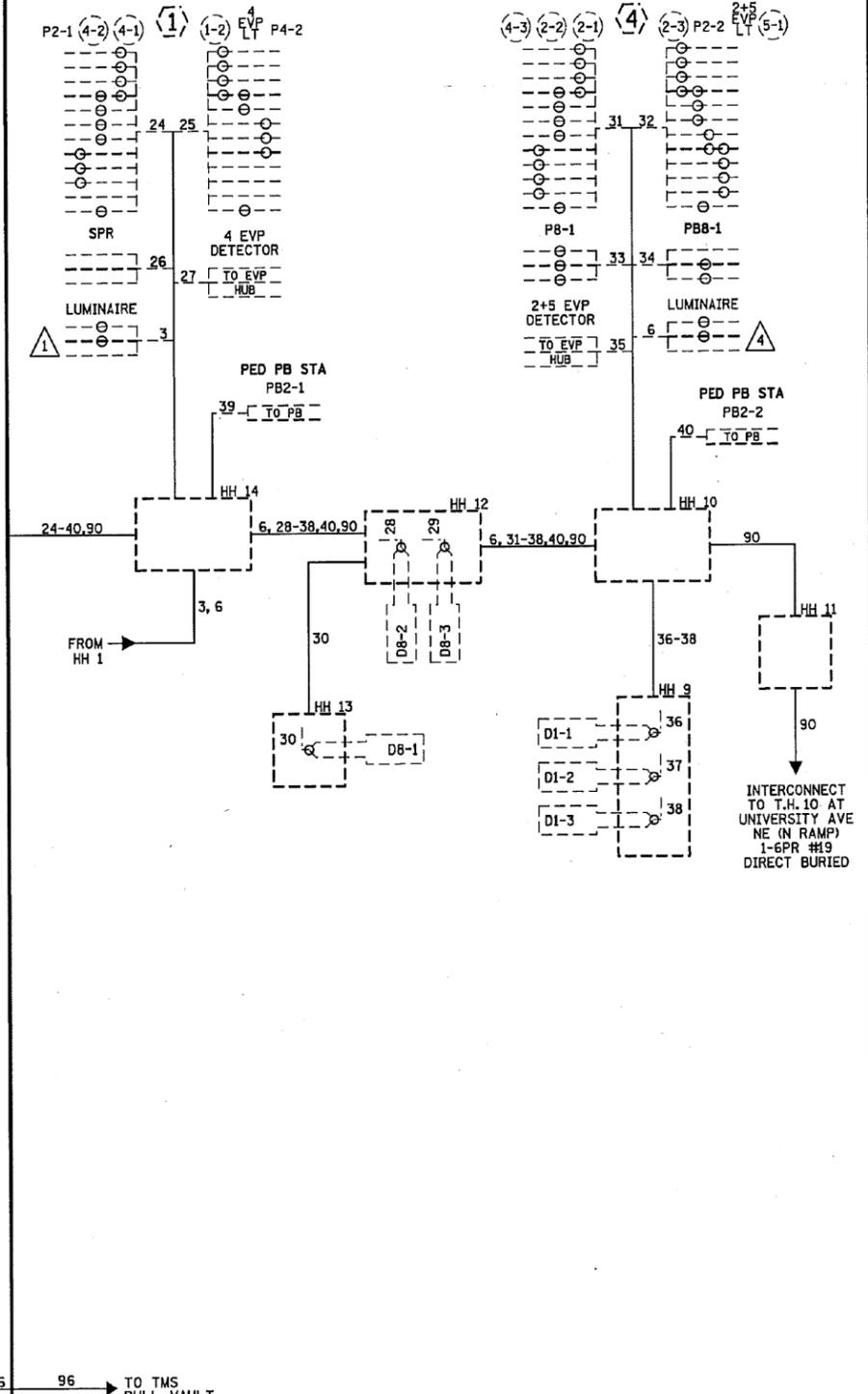
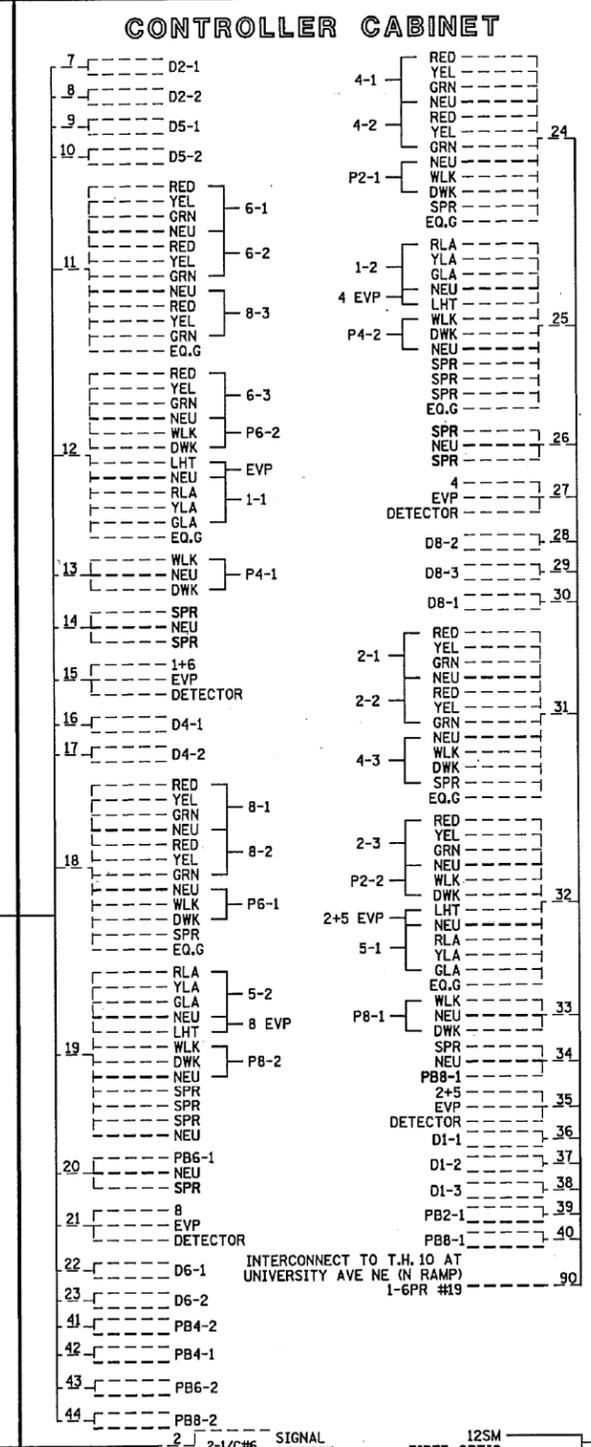
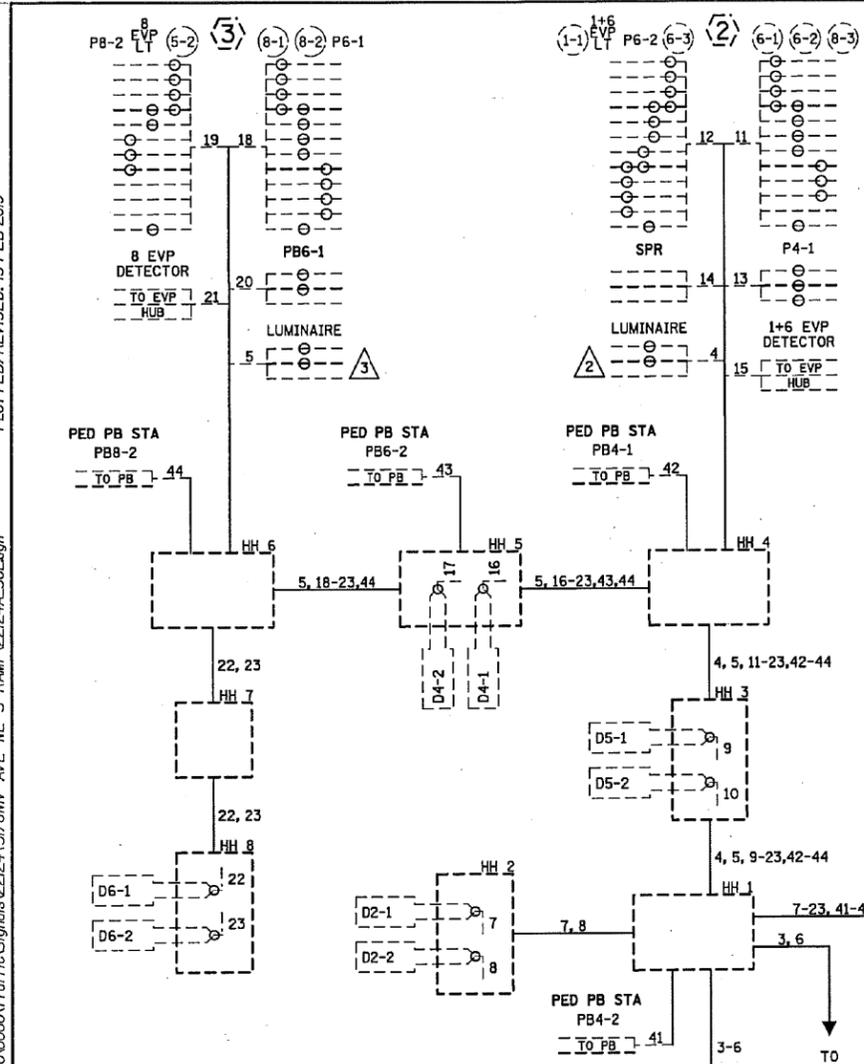
STATE AID PROJECT 002-651-009

EXISTING SIGNAL PLANS  
Sheet 20 of 24 Sheets

FOR REFERENCE PURPOSES ONLY!

PLOTTED/REVISED: 13-FEB-2019

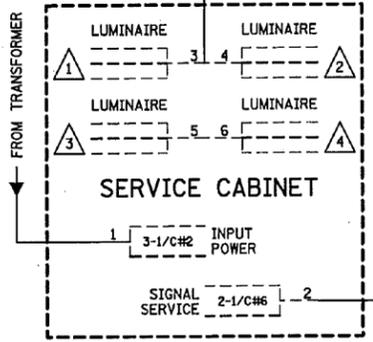
DISTRICT #: Metro  
PLOT NAME: 22124A\_SGL  
PATH & FILENAME: Projects\01000007\TrafficSignals\22124A\_SGL.dgn



**CONDUCTOR COLOR CODE**

R	3/C#12	R
BL	WH	BLK
WH	2/C#14	BLK
TR/BLK	O/BLK	CLR
O/BLK	BL/BLK	R
BL/BLK	WH/BLK	BLK
WH/BLK	BLK	WH
BLK	3/C#20	BLK
BLK/WH	BLK/WH	WH
G/BLK	G	BLK
G	2-1/C#4	BLK
R	2-1/C#6	WH
BL		
WH		
G		

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED



BY	DATE	REVISIONS	SYSTEM ID: 1736078	T.E. 2669	FIELD WIRING DIAGRAM	S.A.P. NO.	DRAWN BY: BAM	CKD BY: CDB	DATE: 6-19-17
JBA	1/23/19	GENERAL DRAWING CLEAN UP	METER ADDRESS: 9401 UNIVERSITY AVE. NE	T.H. 610/10 AT UNIVERSITY AVE. NE (C.S.A.H. 51)	TRAFFIC CONTROL SIGNAL SYSTEM	CERTIFIED BY	LIC. NO. 19863	DATE: 6-23-17	
			OLD SYSTEM ID: 22124	SOUTH RAMP	IN BLAINE & COON RAPIDS, ANOKA COUNTY	STATE PROJ. NO. 0205-101 (T.H. 47)	SHEET NO.	OF	SHEETS

NO	DATE	BY	CKD	APPR	REVISION	02/04/2025	8:02:30 AM
NAME: P:\25-01-00\CSAH_51_(250 N. 92ND-97TH AVE)\Base\Proposed\CSAH 51_Signal plans.dgn							

DRAWN BY	SPH	DATE	9/30/2024
DESIGN BY	SPH	DATE	9/30/2024
CHECKED BY	CSO	DATE	10/30/2024

**ANOKA COUNTY HIGHWAY DEPT.**

STATE AID PROJECT 002-651-009

EXISTING SIGNAL PLANS  
Sheet 21 of 24 Sheets

FOR REFERENCE PURPOSES ONLY

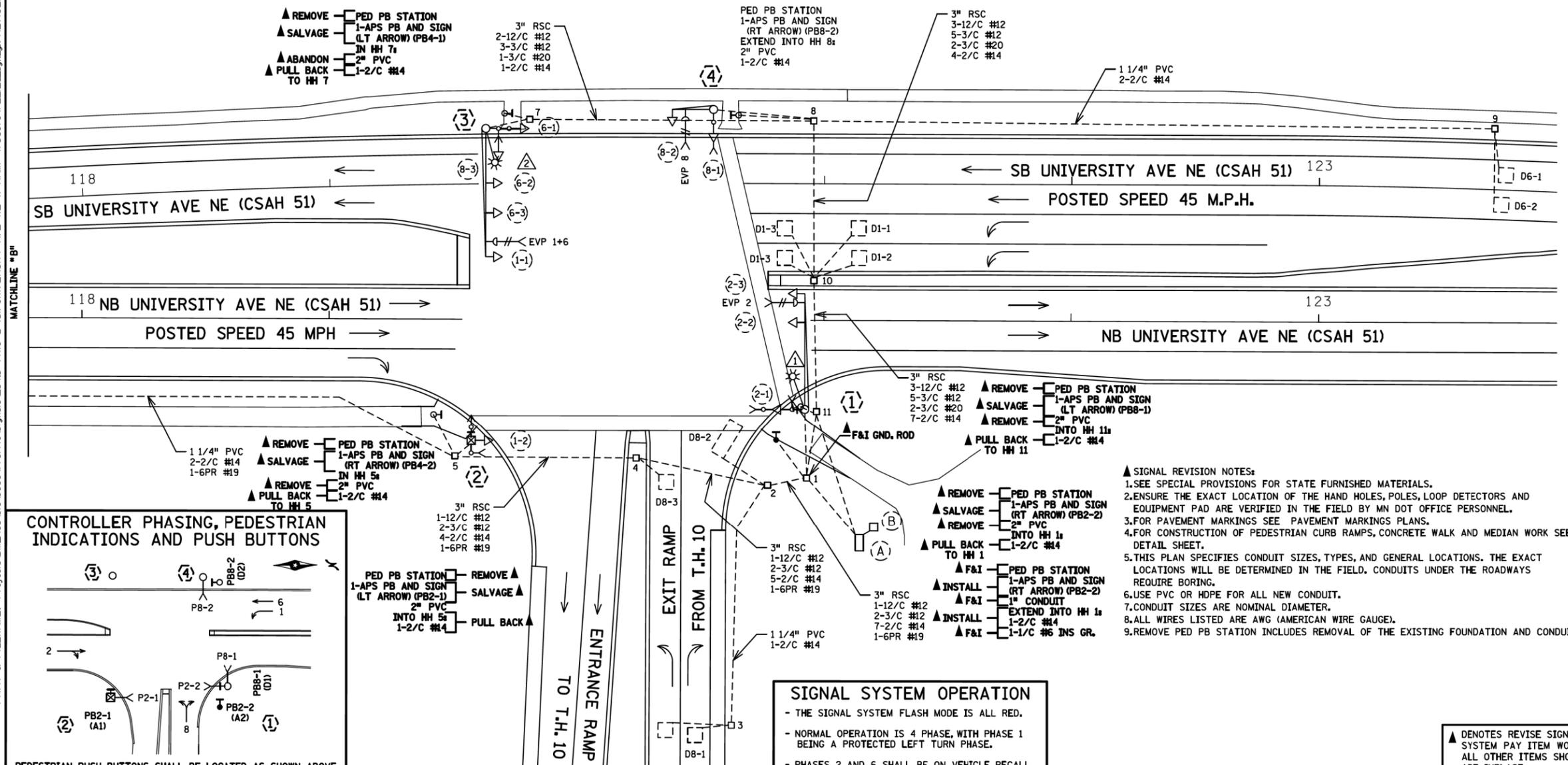
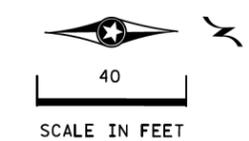
FOR REFERENCE PURPOSES ONLY!!

LOOP DETECTOR CHART		
NUMBER	SIZE (FT)	LOCATION
D1-1, D1-2	6x6	37
D1-3	2-6x6	7
D2-1, D2-2	6x6	293
D6-1, 6-2	6x6	302
D8-1	2-6x6	118
D8-2	6x15	-3
D8-3	6x6	18

-ALL LOOP DETECTORS ARE PVC  
-LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET

SIGNAL HEAD CHART			
FACE	R	Y	G
1-1, 1-2	←	←	←
2-1, 2-2, 2-3	○	○	○
6-1, 6-2, 6-3	○	○	○
8-1, 8-2, 8-3	○	○	○

-ALL SIGNAL INDICATIONS ARE 12" LED  
-ALL SIGNAL HEADS HAVE BACKGROUND SHIELDS



- SIGNAL REVISION NOTES:**
- SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS.
  - ENSURE THE EXACT LOCATION OF THE HAND HOLES, POLES, LOOP DETECTORS AND EQUIPMENT PAD ARE VERIFIED IN THE FIELD BY MN DOT OFFICE PERSONNEL.
  - FOR PAVEMENT MARKINGS SEE PAVEMENT MARKINGS PLANS.
  - FOR CONSTRUCTION OF PEDESTRIAN CURB RAMPS, CONCRETE WALK AND MEDIAN WORK SEE DETAIL SHEET.
  - THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER THE ROADWAYS REQUIRE BORING.
  - USE PVC OR HDPE FOR ALL NEW CONDUIT.
  - CONDUIT SIZES ARE NOMINAL DIAMETER.
  - ALL WIRES LISTED ARE AWG (AMERICAN WIRE GAUGE).
  - REMOVE PED PB STATION INCLUDES REMOVAL OF THE EXISTING FOUNDATION AND CONDUIT.

▲ DENOTES REVISE SIGNAL SYSTEM PAY ITEM WORK. ALL OTHER ITEMS SHOWN ARE IN PLACE.

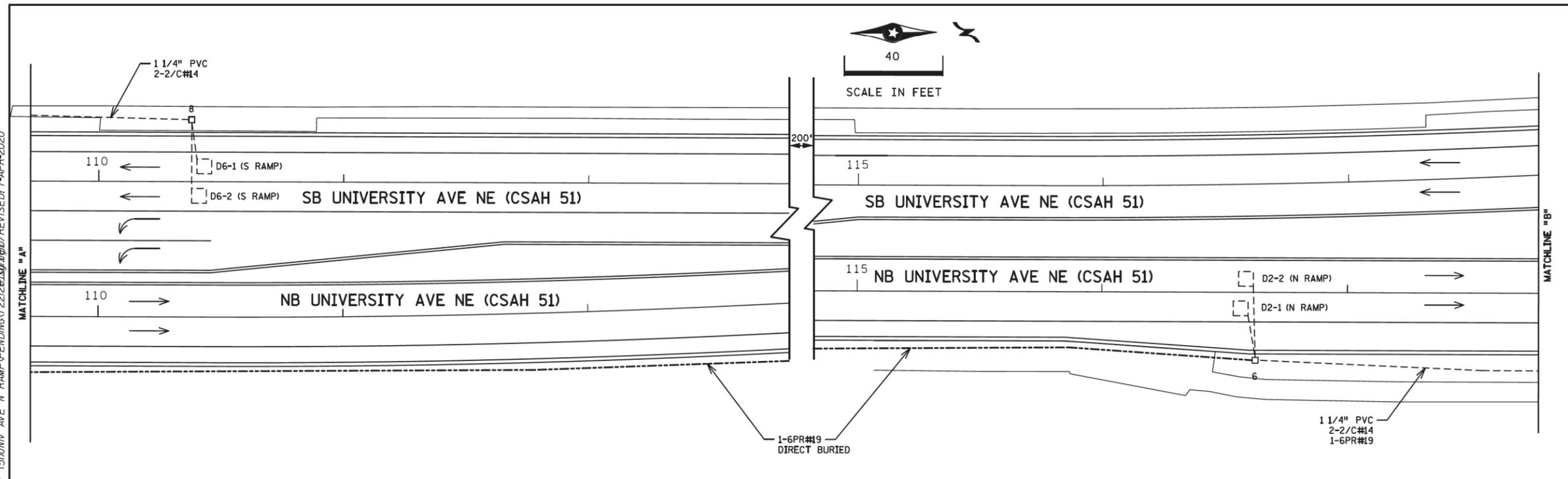
BY	DATE	REVISIONS

SYSTEM ID: 1736079 T.E. 21503  
 METER ADDRESS: 9401 UNIVERSITY AVE. NE  
 OLD SYSTEM ID: 22126

**INTERSECTION LAYOUT**  
 REVISE TRAFFIC CONTROL SIGNAL SYSTEM D  
 T.H. 610/10 AT UNIVERSITY AVE NE (CSAH 51)  
 NORTH RAMP  
 IN BLAINE & COON RAPIDS, ANOKA COUNTY

S.A.P. NO. \_\_\_\_\_ DRAWN BY: JBA CKD BY: JDC DATE: 04/06/20  
 CERTIFIED BY: *Michael P. Selinsky* LIC. NO. 19863 DATE: 04/07/2020  
 STATE PROJ. NO. 0214-48 (T.H.10) SHEET NO. SS15 OF SS27 SHEETS

FOR REFERENCE PURPOSES ONLY!



- (3) PA100 POLE FOUNDATION  
TYPE PA100-A-50-D40-9 (DAVIT AT 350 DEG)  
3-ONE WAY SIGNALS OVERHEAD  
(0', 17' AND 29' FROM END OF MAST ARM)  
TYPE 20B  
1-CD PED HEAD MOUNTED AT 270 DEG  
LUMINAIRE-200W HPS  
ONE WAY EVP DETECTOR AND  
CONFIRMATORY LIGHT (PHASES 1+6)  
▲ REMOVE [ ] 1-SIGN (R9-3)  
3" RSC TO HH 7:  
2-12/C #12  
3-3/C #12  
1-3/C #20
- (2) PEDESTAL FOUNDATION  
10' SIGNAL PEDESTAL POLE PLUS BASE  
TYPE 1F WITH 1-CD PED HEAD  
▲ REMOVE [ ] 1-CD PED HEAD  
1-SIGN (R6-1L) ONE WAY  
1-SIGN (R6-1R) ONE WAY  
▲ F&I [ ] 1-APS PB AND APS PB MOUNTING SPACERS  
1-SIGN (R9-3)  
▲ INSTALL [ ] 1-APS PB (PB2-1)  
3" RSC TO HH 5:  
1-12/C #12  
2-3/C #12  
INTO HH 5:  
▲ INSTALL [ ] 1-2/C #14 (PB2-1)

- (4) PA85 POLE FOUNDATION  
TYPE PA85-A-15  
ONE WAY SIGNAL OVERHEAD  
TYPE 10B WITH CD PED HEAD AT 270 DEG  
ONE WAY EVP DETECTOR AND  
CONFIRMATORY LIGHT (PHASE B)  
3" RSC TO HH 8:  
1-12/C #12  
2-3/C #12  
1-3/C #20
- (1) PA100 POLE FOUNDATION  
TYPE PA100-A-45-D40-9 (DAVIT AT 350 DEG)  
2-ONE WAY SIGNALS OVERHEAD  
(0' AND 11' FROM END OF MAST ARM)  
TYPE 10C AT WITH 2-CD PED HEADS AT 270 DEG  
LUMINAIRE-200W HPS  
ONE WAY EVP DETECTOR AND  
CONFIRMATORY LIGHT (PHASE 2)  
1-SIGN (R6-1R) ONE WAY  
1-SIGN (R6-1L) ONE WAY  
▲ F&I [ ] 1-APS POLE MOUNTING ADAPTOR  
1-APS PUSH BUTTON & SIGN  
(LT ARROW) (PB8-1)  
3" RSC TO HH 1:  
2-12/C #12  
2-3/C #12  
1-3/C #20  
▲ F&I [ ] 1-2/C #14 (PB8-1)

- (A) EQUIPMENT PAD  
SERVICE CABINET  
CONTROLLER AND CABINET  
4" RSC TO HH 1: 4" RSC TO HH 11:  
3-12/C #12 3-12/C #12  
3-3/C #12 4-3/C #12  
1-3/C #20 2-3/C #20  
8-2/C #14 8-2/C #14  
1-6PR #19 1-2/C #14 (PB8-1) [ ] REMOVE ▲  
▲ F&I [ ] 1-2/C #14 (PB8-1)  
3" RSC STUBBED OUT (THREADED  
AND CAPPED BOTH ENDS)  
SERVICE CABINET TO CONTROLLER CABINET:  
2" RSC  
2-1/C #6  
1-1/2" #6 INS. GR.  
SERVICE CABINET TO HH 1:  
2" RSC  
2-3/C #12  
SERVICE CABINET TO TRANSFORMER:  
2" RSC  
3-1/C #2  
HH 2 TO HH 11:  
2" RSC  
1-3/C #12
- (B) GROUND MOUNT TRANSFORMER  
2" RSC TO SERVICE CABINET:  
3-1/C #2

▲ DENOTES REVISE SIGNAL SYSTEM PAY ITEM WORK. ALL OTHER ITEMS SHOWN ARE IN PLACE.

DISTRICT #: Metro  
PILOT NAME: T22126\_sgl\_systemD\_M  
PATH & FILENAME: Proj\acts\DLR\_R05\01000000\Traffic\Signals\22126-T.H.10&slsh610 AT (5)UNIV AVE N RAMP\PEND\ING\T22126\610\610\REVISED: 7-APR-2020

BY	DATE	REVISIONS	SYSTEM ID: 1736079	T.E. 21503	S.A.P. NO.	DRAWN BY: JBA	CKD BY: JDC	DATE: 04/06/20
			METER ADDRESS: 9401 UNIVERSITY AVE. NE		CERTIFIED BY: <i>Michael P. Blunsky</i>			DATE: 04/07/2020
			OLD SYSTEM ID: 22126		STATE PROJ. NO. 0214-48 (T.H.10) SHEET NO. SS16 OF SS27 SHEETS			

MATCH LINE/INTERSECTION NOTES  
REVISE TRAFFIC CONTROL SIGNAL SYSTEM D  
T.H. 610/10 AT UNIVERSITY AVE NE (CSAH 51)  
NORTH RAMP  
IN BLAINE & COON RAPIDS, ANOKA COUNTY

NO	DATE	BY	CKD	APPR	REVISION	02/04/2025	8:02:27 AM

NAME: P:\25-01-00\CSAH\_51\_(250 N. 92ND-97TH AVE)\Base\Proposed\CSAH 51\_Signal plans.dgn

DRAWN BY: SPH	DATE: 9/30/2024
DESIGN BY: SPH	DATE: 9/30/2024
CHECKED BY: CSO	DATE: 10/30/2024

**ANOKA COUNTY**  
**HIGHWAY DEPT.**

STATE AID PROJECT 002-651-009

EXISTING SIGNAL PLANS  
Sheet 23 of 24 Sheets

