

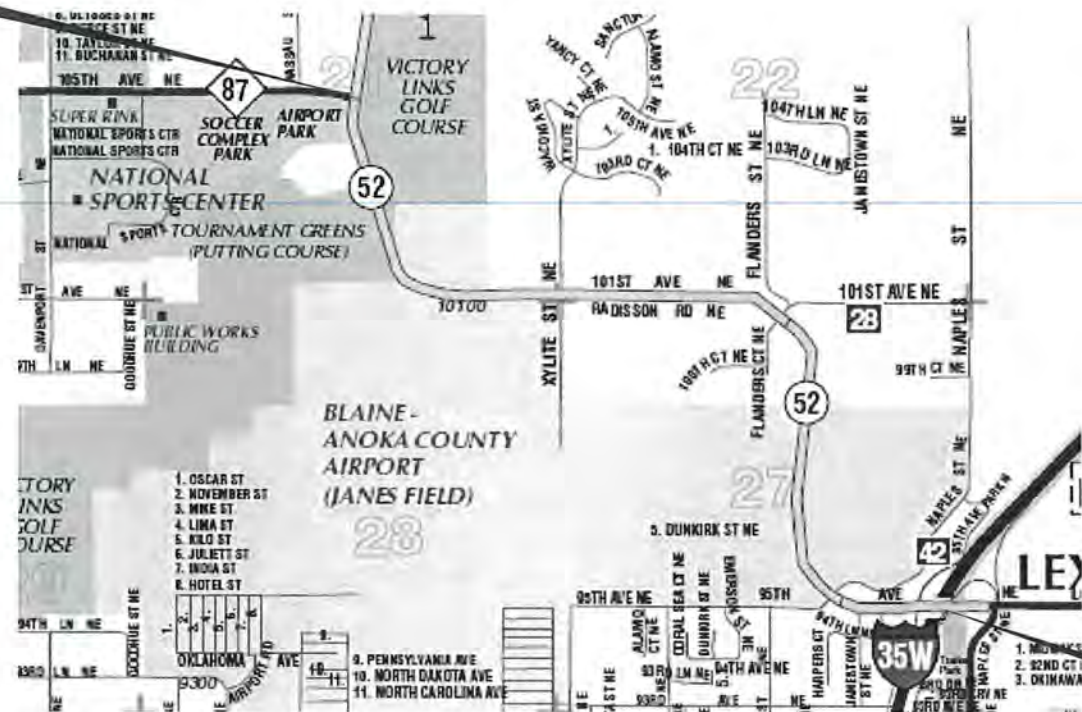
# MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

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

LOCATED ON CSAH 52 BETWEEN NAPLES STREET NE AND 105TH AVENUE NE

	<u>CSAH 52</u>	
GROSS LENGTH	12,615 FEET	2.395 MILES
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES
NET LENGTH	12,615 FEET	2.395 MILES

END SAP 002-652-009  
CSAH 52, STA: 16+56.00



BEGIN SAP 002-652-009  
CSAH 52, STA: 142+71.00

## PROJECT LOCATION



CITY OF BLAINE  
ANOKA COUNTY  
MN/DOT TRANSPORTATION DISTRICT - METRO  
SECTIONS 21, 22, 27 & 28  
TOWNSHIP 31 NORTH  
RANGE 23 WEST

### GOVERNING SPECIFICATIONS

THE 2018 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN ACCORDANCE WITH THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MNMUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS."

THIS PLAN CONTAINS 64 SHEETS

### INDEX

SHEET NO.	DESCRIPTION
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3	TABULATIONS
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10 - 15	CONSTRUCTION PLANS
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42 - 64	EXISTING SIGNAL PLANS

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

DATE \_\_\_\_\_  
STATE AID ENGINEER:  
APPROVED FOR STATE AID FUNDING

Approved Daniel Schluender 3.1, 2021  
CITY OF BLAINE ENGINEER

Approved [Signature] 3-1, 2021  
ANOKA COUNTY ENGINEER

#### DESIGN DESIGNATION (CSAH 52)

ESAL 20	2,227,367	FUNCTIONAL CLASSIFICATION	A-MINOR EXPANDER
R VALUE	71	NO. OF TRAFFIC LANES	4
ADT (2021)	20949	NO. OF PARKING LANES	0
PROJ. ADT (2041)	20949	DESIGN SPEED	50 MPH
PROJ. HCADT (2041)	1236	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 _____

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: 02-24-2021 LICENSE NO. 26511

DRAWN BY: SPH DATE: 02/25/2021  
DESIGN BY: SPH DATE: 02/25/2021  
CHECKED BY: CSO DATE: 02/25/2021



**ANOKA COUNTY  
HIGHWAY DEPT.**

STATE AID PROJECT 002-652-009

TITLE SHEET

Sheet 1 of 64 Sheets

**STATEMENT OF ESTIMATED QUANTITIES**

NOTES	ITEM NUMBER	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITIES ESTIMATED
	2021.501	MOBILIZATION	LUMP SUM	1
1	2104.502	REMOVE CASTING	EACH	19
2	2104.502	SALVAGE SIGN	EACH	3
1	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	360
1	2104.503	SAWING BIT PAVEMENT (FULL DEPTH)	LIN FT	284
	2104.503	REMOVE CURB & GUTTER	LIN FT	180
	2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	47
1	2104.518	REMOVE CONCRETE MEDIAN	SQ FT	360
3	2211.509	AGGREGATE BASE CLASS 5	TON	14
5	2232.504	MILL BITUMINOUS SURFACE (2.0")	SQ YD	103446
6	2232.604	MILL BITUMINOUS PAVEMENT (SPECIAL)	SQ YD	2913
	2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	5318
8	2360.509	TYPE SP 12.5 BIT MIXTURE FOR PATCHING	TON	5
7	2360.509	TYPE SP 12.5 WEARING COURSE MIX (4:F)	TON	335
	2360.509	TYPE SP 12.5 WEARING COURSE MIX (4:F)	TON	11896
9	2504.602	ADJUST GATE VALVE	EACH	5
11	2506.502	CASTING ASSEMBLY	EACH	19
10	2506.503	CONST DRAINAGE STRUCTURE DES 48-4020	LIN FT	6
12	2506.602	GROUT CATCH BASIN OR MANHOLE	EACH	72
4	2521.518	4" CONCRETE WALK	SQ FT	360
	2531.503	CONCRETE CURB & GUTTER DESIGN B412	LIN FT	180
13	2550.602	LOOP DETECTOR DESIGN NMC	EACH	16
14, 15	2563.601	TRAFFIC CONTROL	LUMP SUM	1
16	2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	UNIT DAY	20
2	2564.602	INSTALL SIGN	EACH	3
17	2573.502	STORM DRAIN INLET PROTECTION	EACH	64
18	2581.503	REMOVABLE PREFORM PAVEMENT MARKING TAPE	LIN FT	5046
21	2582.503	4" SOLID LINE PAINT	LIN FT	2000
21	2582.503	4" BROKEN LINE PAINT	LIN FT	5046
19	2582.503	4" SOLID LINE MULTI COMP	LIN FT	57940
19	2582.503	4" BROKEN LINE MULTI COMP	LIN FT	5100
19	2582.503	4" DBLE SOLID LINE MULTI COMP	LIN FT	128
20	2582.518	CROSSWALK PREF THERMO	SQ FT	1584
20	2582.518	PAVT MSSG PREF THERMO	SQ FT	144
20	2582.603	PAVEMENT MARKING SPECIAL	LIN FT	465

**CONSTRUCTION NOTES**

1	REFERENCE DETAILS (PAGE 9) FOR REMOVAL DETAILS. INCLUDES CURB, AND MEDIAN.
2	ITEM USED FOR SIGNS IN MEDIAN AND/OR CURB REPLACEMENT AREAS.
3	EXCAVATION AND DISPOSAL OF EXISTING GRADING MATERIAL IS INCIDENTAL TO AGGREGATE BASE CLASS 5.
4	ITEM USED FOR CONCRETE MEDIAN.
5	DETAIL MILLING AROUND MANHOLES, CATCH BASINS, GATE VALVES, AND ALONG CURB LINE IS INCIDENTAL TO THIS ITEM.
6	ITEM USED FOR MILLING STREET APPROACHES AND/OR DETAIL MILLING AREAS AS IDENTIFIED IN THE PLAN. DETAIL MILLING AROUND MANHOLES, CATCH BASINS, GATE VALVES, AND ALONG CURB LINE IS INCIDENTAL TO THIS ITEM.
7	STREET APPROACHES SHALL BE PAVED AFTER MAINLINE PAVING BUT BEFORE FINAL STRIPING.
8	ITEM INCLUDES BITUMINOUS PATCHING AROUND NEW CURB, STORM STRUCTURE REPAIRS, AND ANY POTHOLES.
9	ITEM SHALL BE ADJUSTED ONLY AS NECESSARY AS DETERMINED BY THE ENGINEER.
10	PAY HEIGHT IS MEASURED FROM INVERT OF OUTLET PIPE TO TOP OF PRECAST CONCRETE STRUCTURE PLUS AN ALLOWANCE OF 0.70 FEET FOR THE DEPTH OF THE CONCRETE BASE, REGARDLESS OF ITS ACTUAL THICKNESS. CONCRETE ADJUSTMENT RINGS ARE INCIDENTAL. CONNECTIONS TO EXISTING STORM SEWER ARE INCIDENTAL.
11	ITEM INCLUDES FULL REPLACEMENT OF CASTING ADJUSTMENT RINGS. SEE STORM TABULATIONS FOR RING HEIGHTS.
12	ITEM INCLUDES GROUTING OF INVERTS, DOGHOUSES, RINGS, AND CASTINGS AS REQUIRED (SEE DRAINAGE TAB, PAGE 3).
13	FULL LOOP REPLACEMENT REQUIRED IF DAMAGED DURING CONSTRUCTION. CONTRACTOR SHALL CONTACT ANOKA COUNTY TO DETERMINE PLACEMENT. SIGNAL PLANS ARE INCLUDED AT THE END OF THIS PLAN. INCLUDES ADVANCE LOOPS ON SIDE STREETS (OUTSIDE OF MILL AREA, NOT SHOWN IN PLANS).
14	CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN TEMPORARY SIGNAGE WHENEVER EXISTING SIGNAGE IS REMOVED. TEMPORARY SIGNAGE SHALL BE INCIDENTAL TO TRAFFIC CONTROL.
15	ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO, AND BE INSTALLED IN ACCORDANCE WITH, THE MOST CURRENT REVISION OF THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES." DO NOT PASS, PASS WITH CARE, NO CENTER STRIPE, AND STOP HERE ON RED SIGNS SHALL BE IN PLACE WHENEVER PERMANENT PAVEMENT MARKINGS ARE NOT PRESENT.
16	2 MESSAGE BOARDS, ONE ON EACH END OF PROJECT, WILL BE INSTALLED 10 DAYS PRIOR TO ANY CONSTRUCTION; REFERENCE STRIPING PLAN FOR DETAILS.
17	ALL DRAINAGE STRUCTURES AFFECTED BY THIS PROJECT MUST HAVE INLET PROTECTION.
18	CENTERLINE AND LANE DESIGNATION SKIPS TO BE APPLIED AS SOON AS POSSIBLE ON EACH NEW LIFT OF PAVEMENT; SKIPS MUST BE IN PLACE BEFORE THE CONTRACTOR LEAVES FOR THE DAY. CONTRACTOR IS TO REMOVE PRIOR TO FINAL PAINT STRIPING.
19	FINAL STRIPING SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLETION OF MAINLINE WEAR COURSE PAVING.
20	INCLUDES ALL THERMOPLASTIC STOP BARS, GORE AREA HATCHING, CROSSWALKS, LANE DESIGNATION ARROWS, AND PAVEMENT
21	ITEM TO BE USED AS TEMPORARY CENTERLINE STRIPING ON MILLED SURFACE, INSTALLED THE SAME DAY AS MILLING OPERATION.

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

**MNDOT STANDARD PLATES**

PLATE NO.	DESCRIPTION
3007E	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
4011E	PRECAST CONCRETE BASE
4020J	MANHOLE OR CATCH BASIN (FOR USE WITH OR WITHOUT TRAFFIC LOADS) (2 SHEETS)
4024A	48" DIA. PRECAST SHALLOW DEPTH CATCH BASIN - DESIGN SD
4026A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4110F	COVER CASTING FOR MANHOLE (FOR USE IN ALL TRAFFIC AREAS) - CASTING NO. 715 AND 716
4154B	CATCH BASIN GRATE CASTING - CASTING NO. 816
7100H	CONCRETE CURB AND GUTTER (DESIGN B AND DESIGN V)
7111J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB AND GUTTER)
8000J	CHANNELIZERS

**BASIS OF PLANNED QUANTITIES**

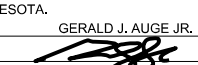
2357	BITUMINOUS MATERIAL FOR TACK COAT	0.05 GAL / SQ YD
2211	AGGREGATE BASE CLASS 5	1.8 TONS / CU YD
2360	ALL BITUMINOUS PAVEMENT	115 LBS / SQ YD / IN THICKNESS
2581	REMOVABLE PREFORM PAVEMENT MARKING TAPE	2' AT 50' INTERVALS

NO	DATE	BY	CKD	APPR	REVISION	
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STATE AID PROJECT 002-652-009

STATEMENT OF ESTIMATED QUANTITIES

Sheet 2 of 64 Sheets

STORM DRAINAGE TAB										
NUMBER	TYPE	ACTION	NEW CASTING	FURNISH AND INSTALL CASTING ASSEMBLY	RING HEIGHT -INCIDENTAL-	REMOVE STRUCTURE	GROUT CATCH BASIN OR MANHOLE	CONSTRUCT DRAINAGE STRUCTURE 48-4020	CONNECT TO EXISTING STORM SEWER	NOTES
				EACH	LIN FT	EACH	EACH	LIN FT	EACH	
100	CB	GROUT					1			
101	CB	GROUT					1			
102	CB	GROUT					1			
103	CB	GROUT					1			
104	CB	GROUT					1			
105	CB	GROUT					1			
106	CB	RE-RING	A	1	0.3					
107	CB	GROUT					1			
108	CB	GROUT					1			
109	CB	RE-RING	A	1	0.35					
110	CB	RE-RING	A	1	0.0					
111	CB	GROUT					1			
112	CB	RE-RING	A	1	0.5					
114	CB	RE-RING	A	1	0.5					
116	CB	GROUT					1			
117	CB	GROUT					1			
118	CB	GROUT					1			
119	CB	GROUT					1			
120	CB	RE-RING	A	1	0.3					
121	CB	RE-RING	A	1	0.3					
122	CB	RE-RING	A	1	0.2					
123	CB	RE-CONST	A	1	0.5	1		5.5		
124	CB	GROUT					1			
125	CB	GROUT					1			
126	CB	RE-RING	A	1	0.4					
127	CB	GROUT					1			
128	CB	GROUT					1			
129	CB	GROUT					1			
130	CB	GROUT					1			
131	CB	GROUT					1			
132	CB	GROUT					1			
133	CB	GROUT					1			
135	CB	GROUT					1			
136	CB	GROUT					1			
138	CB	GROUT					1			
140	CB	GROUT					1			
141	CB	GROUT					1			
143	CB	GROUT					1			
144	CB	RE-RING	A	1	0.6					
145	CB	RE-RING	A	1	0.7					
146	CB	GROUT					1			
147	CB	GROUT					1			
148	CB	RE-RING	A	1	0.5					
149	CB	GROUT					1			
150	CB	GROUT					1			
151	CB	GROUT					1			
152	CB	GROUT					1			
153	CB	RE-RING	A	1	0.5					
154	CB	GROUT					1			

STORM DRAINAGE TAB										
NUMBER	TYPE	ACTION	NEW CASTING	FURNISH AND INSTALL CASTING ASSEMBLY	RING HEIGHT -INCIDENTAL-	REMOVE STRUCTURE	GROUT CATCH BASIN OR MANHOLE	CONSTRUCT DRAINAGE STRUCTURE 48-4020	CONNECT TO EXISTING STORM SEWER	NOTES
155	CB	RE-RING	A	1	0.3					
158	CB	RE-RING	A	1	0.5					
159	CB	RE-RING	A	1	0.5					
160	CB	GROUT					1			
161	CB	GROUT					1			
162	CB	RE-RING	A	1	0.5					
300	MH	GROUT					1			
301	MH	GROUT					1			
302	MH	RE-RING	SAN	1	0.4					WRAP RINGS WITH INF-SHIELD (INCIDENTAL)
303	MH	GROUT					1			
305	MH	GROUT					1			
306	MH	GROUT					1			
307	MH	GROUT					1			
308	MH	GROUT					1			
100A	CB	GROUT					1			
101A	CB	GROUT					1			
102A	CB	GROUT					1			
102B	CB	GROUT					1			
103A	CB	GROUT					1			
104A	CB	GROUT					1			
104B	CB	GROUT					1			
108A	CB	GROUT					1			
121A	CB	GROUT					1			
306A	MH	OK								
<b>TOTALS:</b>				<b>19</b>	<b>7.9</b>	<b>1</b>	<b>53</b>	<b>6</b>	<b>0</b>	

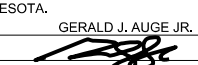
CASTING ASSEMBLIES SUMMARY						
ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING	CURB BOX	DESCRIPTION	NOTES	QUANTITY
SAN	NEENAH R-1733	NEENAH R-1733- 5044		301-CP LID WITH RUBBER GASKET ON BOTTOM	CASTING COVER STAMPED "SANITARY SEWER"	1
A	NEENAH R-3448-C OR Equivalent					18
ALL CASTING HEIGHTS ARE TO BE VERIFIED IN THE FIELD						
ALL MANHOLE COVERS SHOULD BE LABELED AS STORM OR SANITARY						
NEW CASTINGS TO BE INSTALLED AFTER ASPHALT MILLING IS COMPLETED						
MANHOLE CASTINGS TO BE RECESSED 1/4" FROM TOP OF FINISHED MAT						

NO	DATE	BY	CKD	APPR	REVISION	TIME
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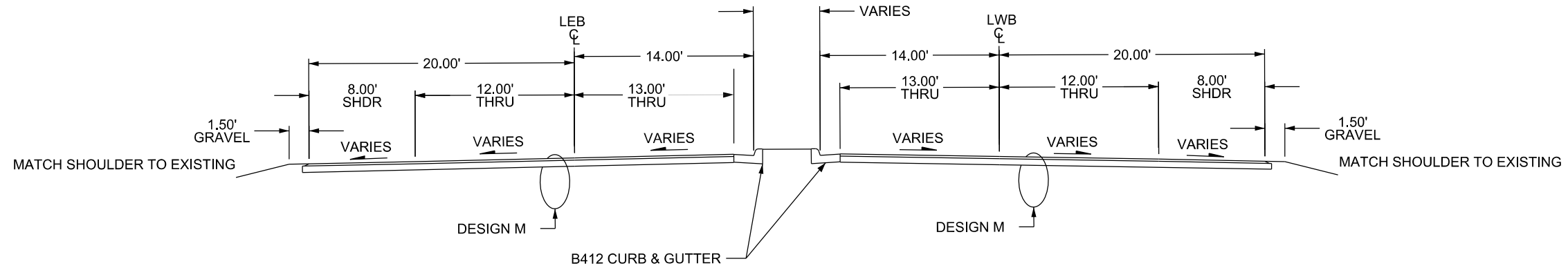
STATE AID PROJECT 002-652-009

TABULATIONS

Sheet 3 of 64 Sheets

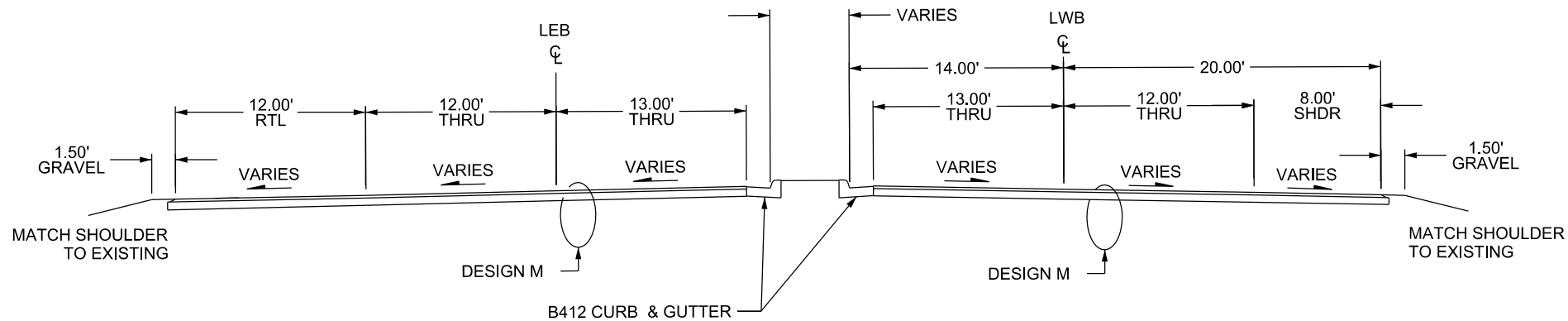
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16+56.00 - 18+42.00	84+74.00 - 88+00.00	121+74.00 - 123+33.00	183+00.00 - 196+63.00
24+50.00 - 29+50.00	91+38.00 - 96+75.00	125+81.00 - 128+65.00	200+00.00 - 217+51.00
33+11.00 - 58+50.00	100+17.00 - 117+50.00	132+50.00 - 168+40.00	220+70.00 - 240+77.00
63+26.00 - 68+00.00	121+19.00 - 141+75.00	171+00.00 - 179+53.00	244+50.00 - 245+36.00
71+39.00 - 79+50.00			

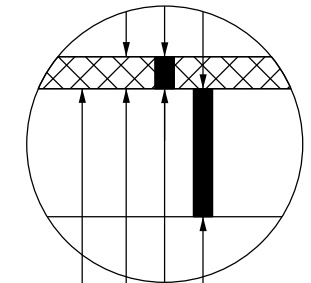


### CSAH 52 - RADISSON ROAD EXISTING / PROPOSED SECTION

18+42.00 - 24+50.00
79+50.00 - 84+74.00
117+50.00 - 121+19.00
141+75.00 - 142+71.00



### DESIGN M MILL SECTION



BIT MATERIAL FOR TACK MN DOT SPEC. 2357  
2.0" MILL BITUMINOUS  
2.0" BITUMINOUS WEAR(SPWEB440F)  
REMAINING BITUMINOUS

**\*\*NOTE: ALL PAVING SHALL BE PULLED IN THE SAME DIRECTION AS TRAFFIC FOR THAT LANE(S) OF TRAVEL.**

NO	DATE	BY	CKD	APPR	REVISION	
	02/25/2021					11:49:55 AM

NAME: P:\21-01-00\CSAH\_52\_(105th-Naples)\Base\Proposed\CSAH\_52\_TYPICALS.dgn

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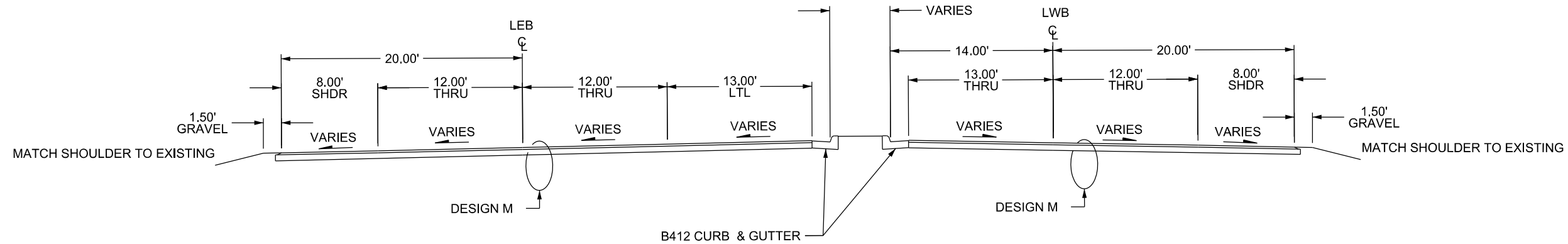
ANOKA COUNTY  
HIGHWAY DEPT.

STATE AID PROJECT 002-652-009

TYPICAL SECTIONS  
Sheet 4 of 64 Sheets

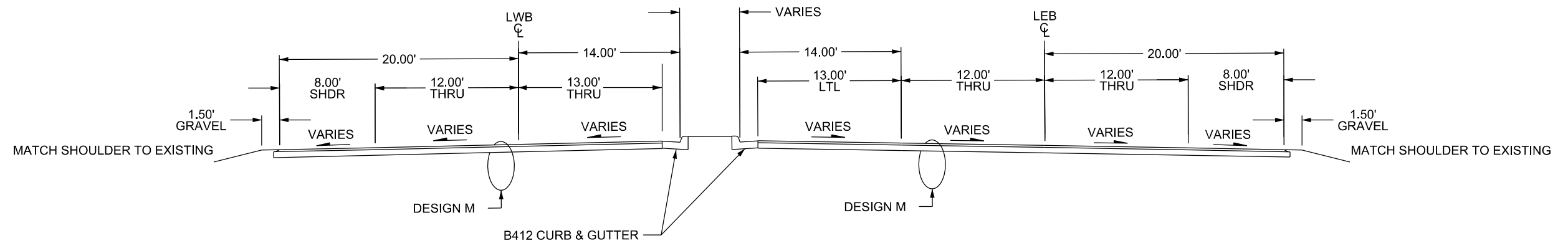
### CSAH 52 - RADISSON ROAD EXISTING / PROPOSED SECTION

58+50.00 - 63+26.00  
88+00.00 - 91+38.00



### CSAH 52 - RADISSON ROAD EXISTING / PROPOSED SECTION

119+88.00 - 121+74.00  
123+34.00 - 125+81.00  
179+53.00 - 183+00.00  
217+51.00 - 220+70.00  
240+77.00 - 244+50.00



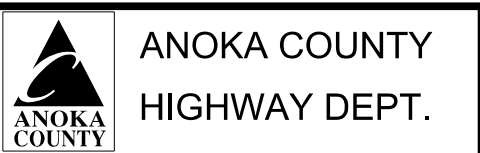
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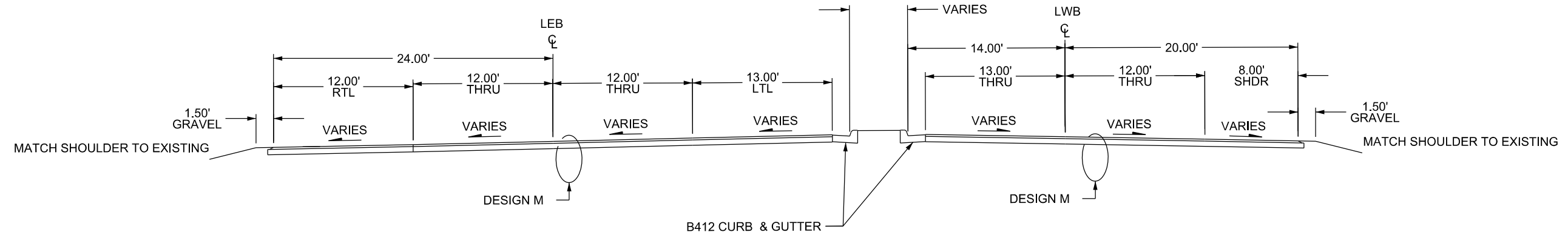
STATE AID PROJECT 002-652-009

TYPICAL SECTIONS  
 Sheet 5 of 64 Sheets

### CSAH 52 - RADISSON ROAD

EXISTING / PROPOSED SECTION

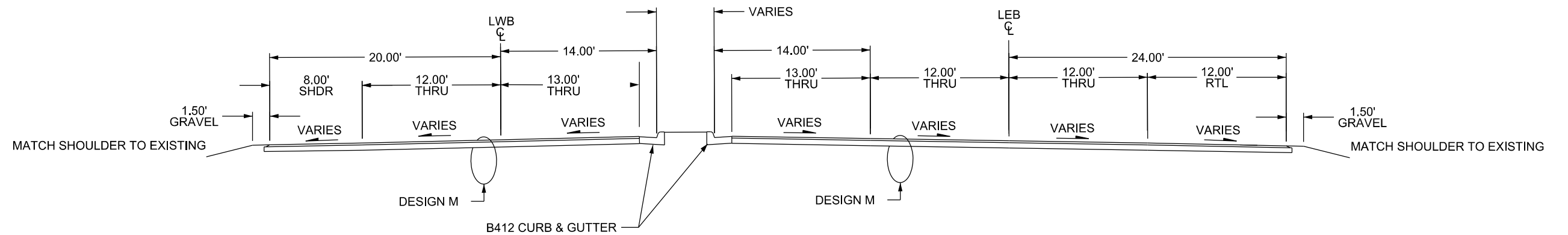
29+50.00 - 33+11.00  
 68+00.00 - 71+39.00  
 96+75.00 - 100+17.00



### CSAH 52 - RADISSON ROAD

EXISTING / PROPOSED SECTION

128+65.00 - 132+50.00  
 168+40.00 - 171+00.00  
 196+63.00 - 200+00.00

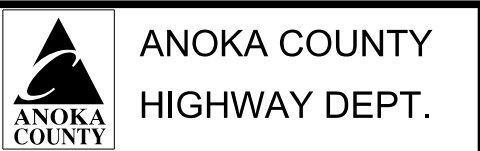


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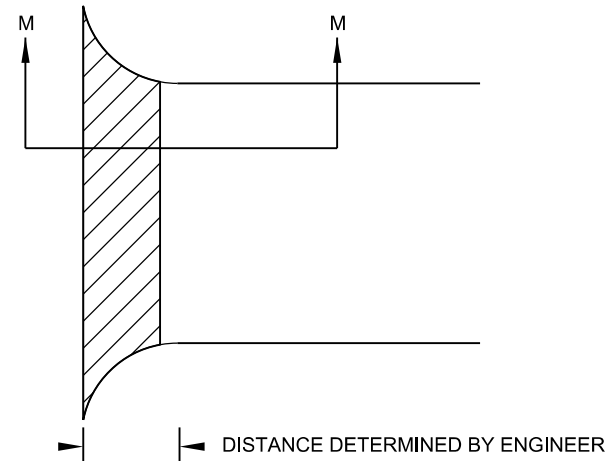
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TYPICAL SECTIONS  
 Sheet 6 of 64 Sheets

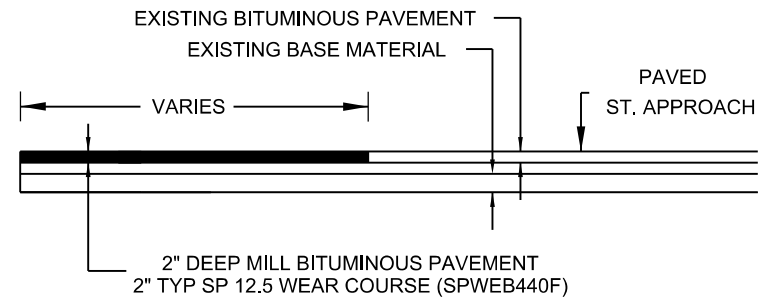
# STREET APPROACH DETAIL (MILL & OVERLAY)

## BITUMINOUS STREET

PLAN VIEW

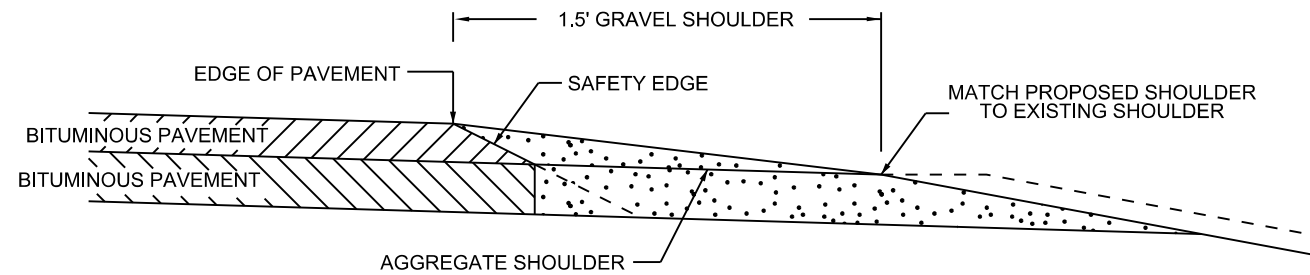


SECTION M - M



## SHOULDER DETAIL

### BITUMINOUS SAFETY EDGE GRAVEL SHOULDER



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

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

NO	DATE	BY	CKD	APPR	REVISION	02/25/2021	11:49:59 AM
NAME: P:\21-01-00\CSAH_52_(105th-Naples)\Base\Proposed\CSAH_52_DETAILS.dgn							

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

PRINT NAME: GERALD J. AUGER JR.

SIGNATURE:

DATE: 02-24-2021 LICENSE NO. 26511

DRAWN BY SPH DATE 02/25/2021

DESIGN BY SPH DATE 02/25/2021

CHECKED BY CSO DATE 02/25/2021



ANOKA COUNTY  
HIGHWAY DEPT.

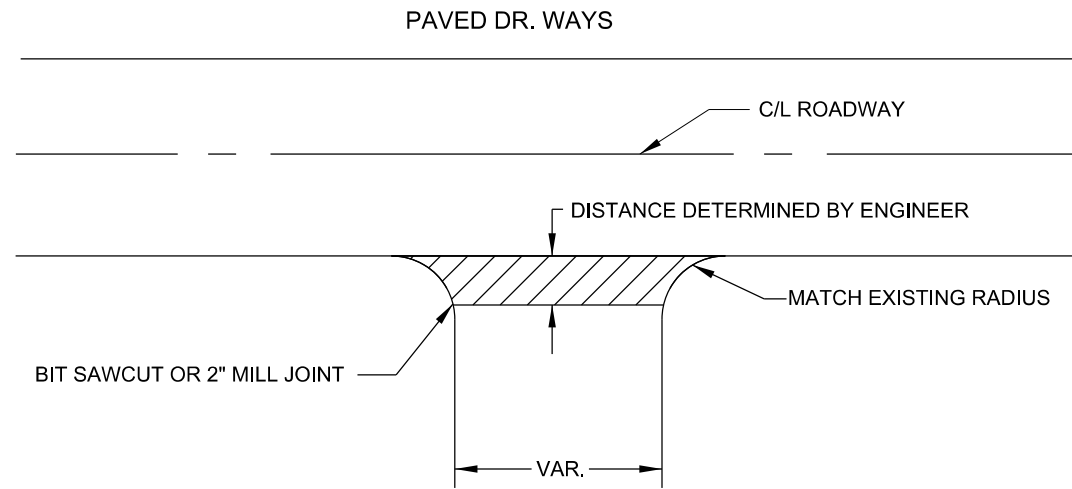
STATE AID PROJECT 002-652-009

DETAILS

Sheet 7 of 64 Sheets

### DRIVEWAY DETAIL

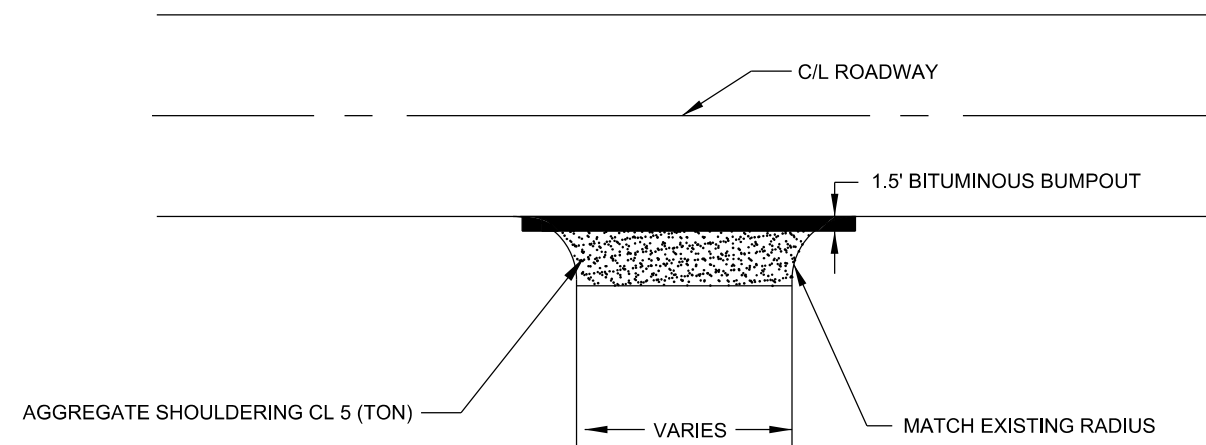
#### BITUMINOUS DRIVEWAY



DRIVEWAYS BUMPED OUT AND PAVED WITH MAINLINE PAID AS MAINLINE.  
 DRIVEWAYS PAVED IN DIFFERENT OPERATION FROM MAIN LINE PAVING PAID AS DRIVEWAY OR STREET APPROACH.

### DRIVEWAY DETAIL

#### GRAVEL / FIELD ENTRANCE



NO	DATE	BY	CKD	APPR	REVISION	02/25/2021	11:49:59 AM
NAME: P:\21-01-00\CSAH_52_(105th-Naples)\Base\Proposed\CSAH_52_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: 02-24-2021 LICENSE NO. 26511

DRAWN BY SPH DATE 02/25/2021  
 DESIGN BY SPH DATE 02/25/2021  
 CHECKED BY CSO DATE 02/25/2021



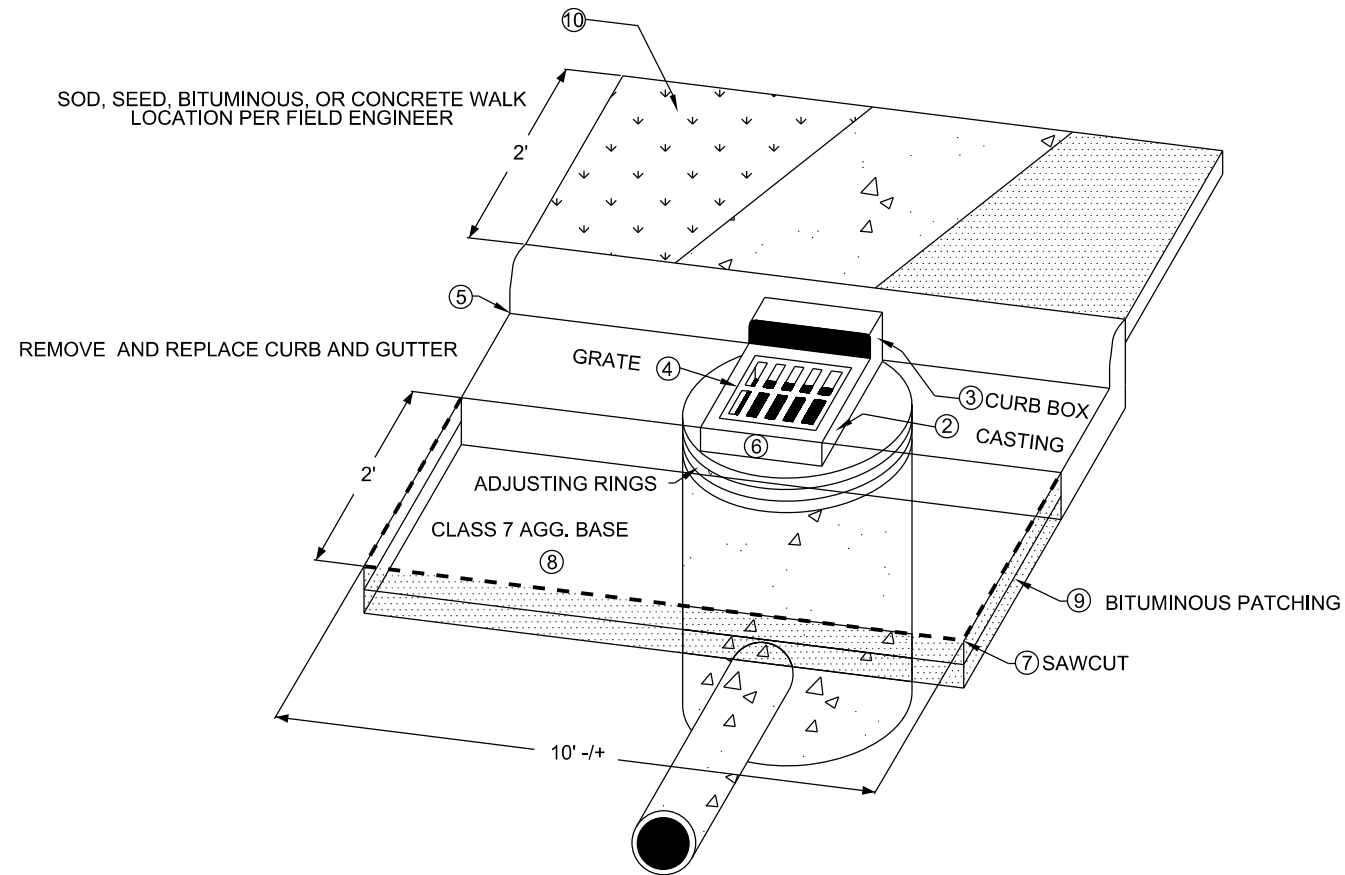
STATE AID PROJECT 002-652-009

DETAILS  
 Sheet 8 of 64 Sheets



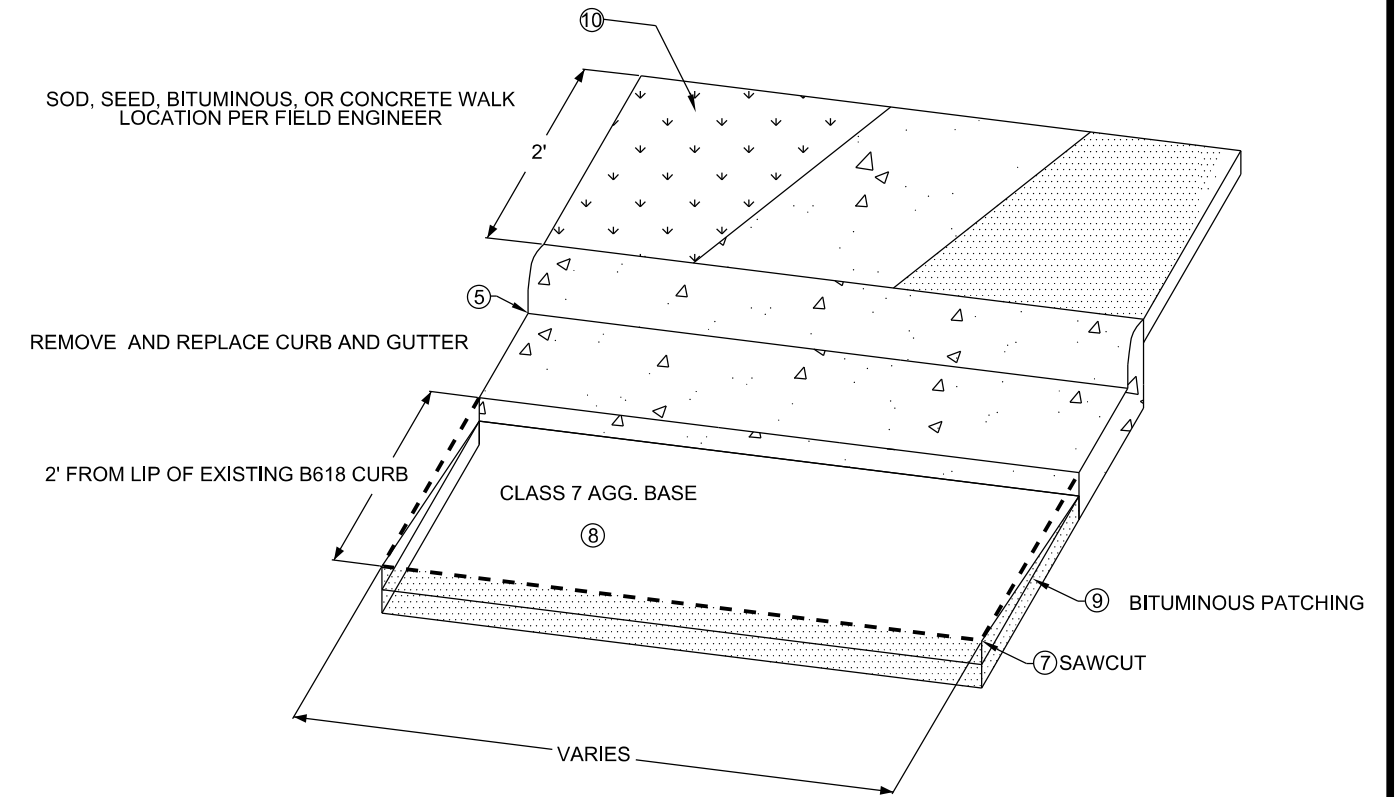
### CATCH BASIN DETAIL

SEE STRUCTURE TAB FOR LOCATION  
(PAGE 3)



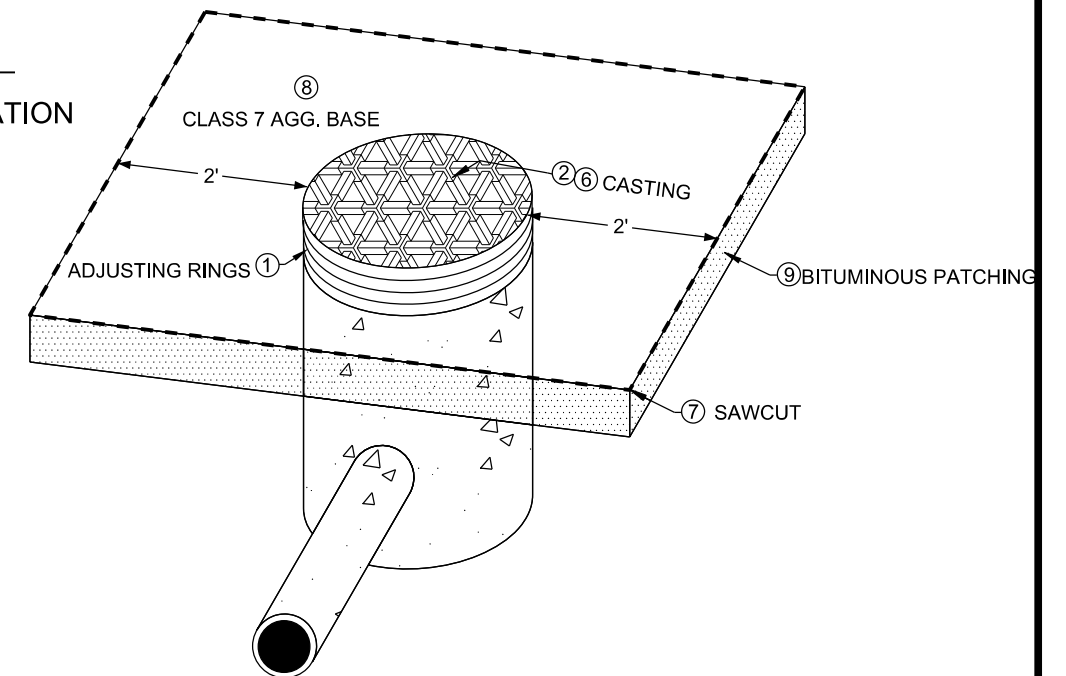
### NEW CURB DETAIL

SEE PLAN FOR LOCATION



### MANHOLE DETAIL

SEE STRUCTURE TAB FOR LOCATION  
(PAGE 3)



### NOTES

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

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

NO	DATE	BY	CKD	APPR	REVISION	DATE	TIME
	02/25/2021						11:50:00 AM

NAME: P:\21-01-00\CSAH\_52\_(105th-Naples)\Base\Proposed\CSAH\_52\_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: 02-24-2021 LICENSE NO. 26511

DRAWN BY SPH DATE 02/25/2021  
DESIGN BY SPH DATE 02/25/2021  
CHECKED BY CSO DATE 02/25/2021



ANOKA COUNTY  
HIGHWAY DEPT.

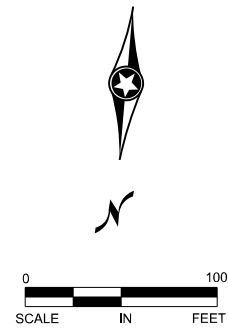
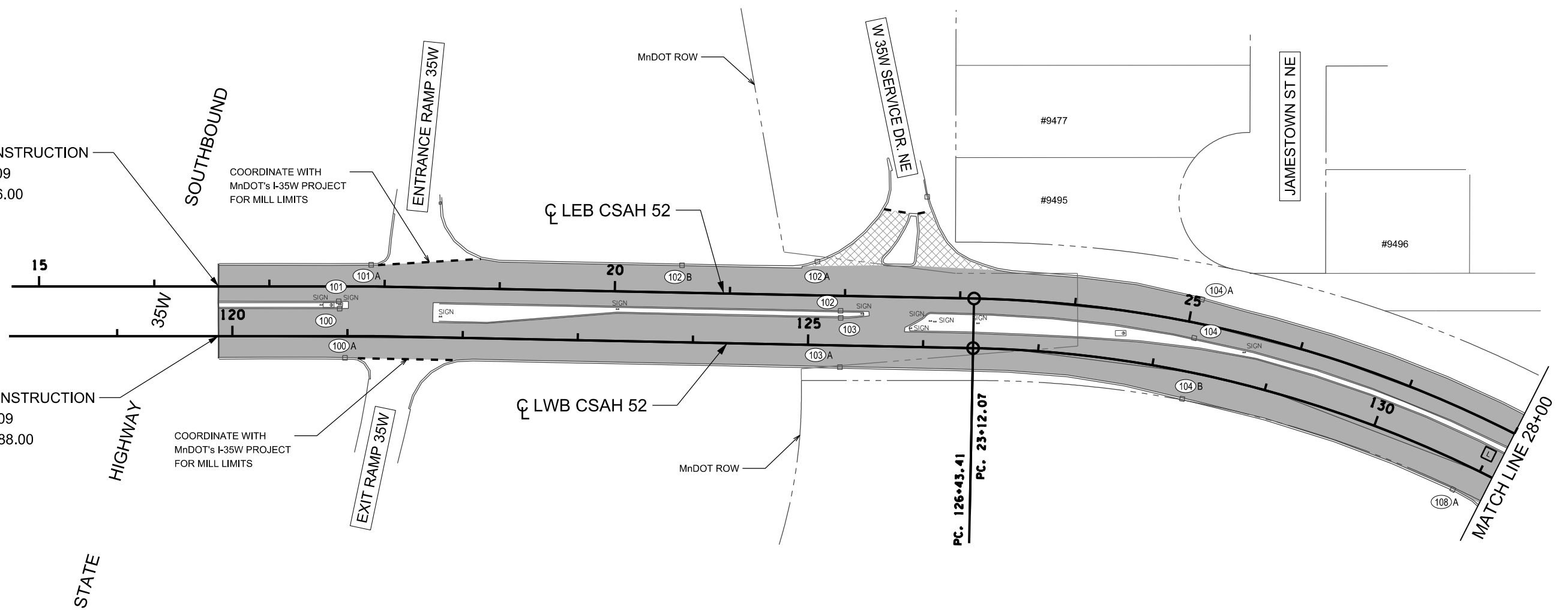
STATE AID PROJECT 002-652-009

DETAILS

Sheet 9 of 64 Sheets

BEGIN LEB CONSTRUCTION  
SAP: 002-652-009  
STATION: 16+56.00

BEGIN LWB CONSTRUCTION  
SAP: 002-652-009  
STATION: 119+88.00



LEGEND			
(B)	BITUMINOUS	--- --	CROSS CULVERT
(G)	GRAVEL	[Solid Grey Box]	MAINLINE MILL AREA
⊗	ADJUST GATE VALVE	[Cross-hatched Box]	STREET APPROACH MILL SPECIAL AREA
- - - -	SAWCUT	---	R/W
[Square]	APRX. LOOP LOCATION		

NO	DATE	BY	CKD	APPR	REVISION	
	02/25/2021					11:50:04 AM

NAME: P:\21-01-00\CSAH\_52\_(105th-Naples)\Base\Proposed\CSAH\_52\_CP1.dgn

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

PRINT NAME: GERALD J. AUGER JR.

SIGNATURE: *[Signature]*

DATE: 02-24-2021 LICENSE NO. 26511

DRAWN BY: SPH DATE: 02/25/2021

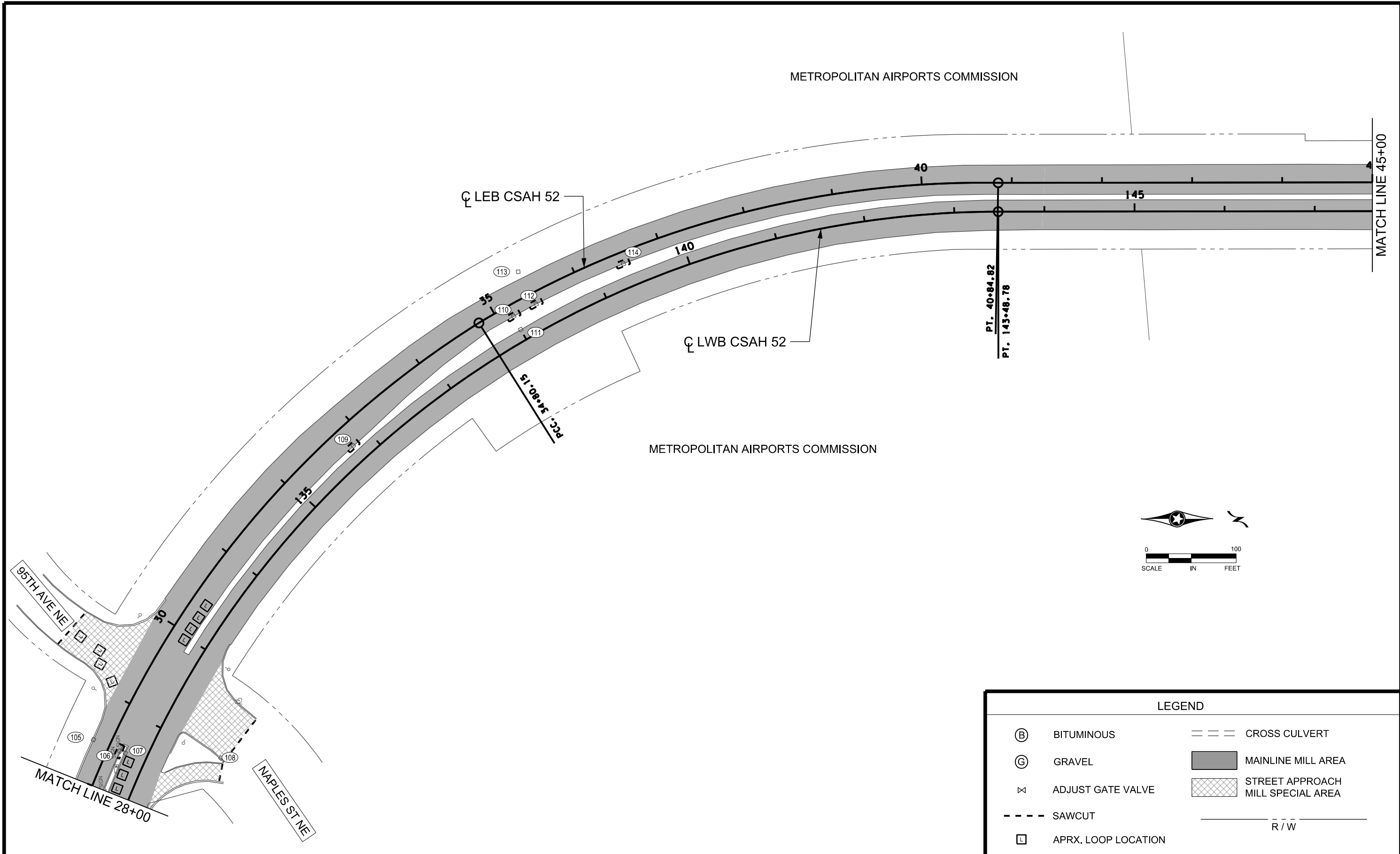
DESIGN BY: SPH DATE: 02/25/2021

CHECKED BY: CSO DATE: 02/25/2021

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

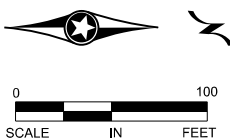
STATE AID PROJECT 002-652-009

CONSTRUCTION PLAN  
STA 16+58 TO 28+00  
Sheet 10 of 64 Sheets



METROPOLITAN AIRPORTS COMMISSION

METROPOLITAN AIRPORTS COMMISSION



LEGEND	
(B)	BITUMINOUS
(G)	GRAVEL
⊗	ADJUST GATE VALVE
- - -	SAWCUT
[ ]	APRX. LOOP LOCATION
- - -	CROSS CULVERT
[ ]	MAINLINE MILL AREA
[ ]	STREET APPROACH MILL SPECIAL AREA
- - -	R/W

NO	DATE	BY	CHKD	APPR	REVISION	TIME
	02/25/2021					11:50:07 AM

NAME: P:\21-01-00\CSAH\_52\_(105th-Naples)\Base\Proposed\CSAH\_52\_CP2.dgn

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

PRINT NAME: GERALD J. AUGER JR.  
 SIGNATURE: *[Signature]*  
 DATE: 02-24-2021 LICENSE NO. 26511

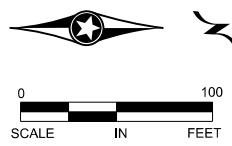
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 DESIGN BY: SPH DATE: 02/25/2021  
 CHECKED BY: CSO DATE: 02/25/2021

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

STATE AID PROJECT 002-652-009

CONSTRUCTION PLAN  
 STA 28+00 TO 45+00  
 Sheet 11 of 64 Sheets

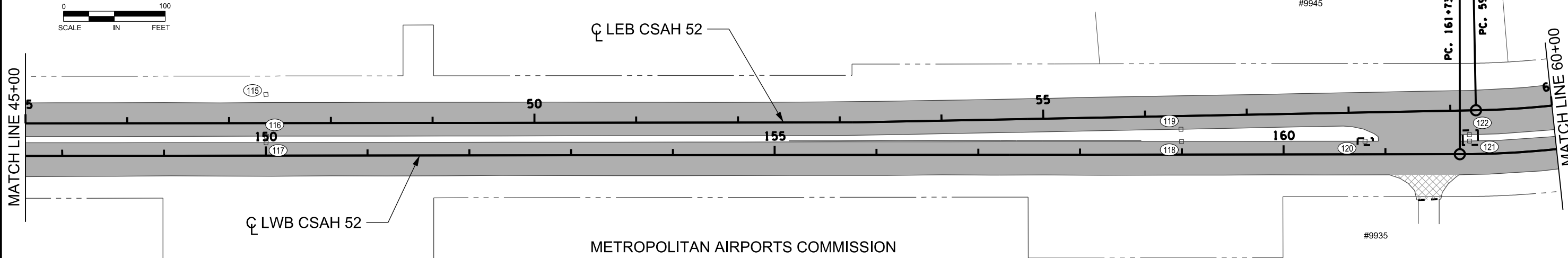
APAnders



METROPOLITAN AIRPORTS COMMISSION

MATCH LINE 45+00

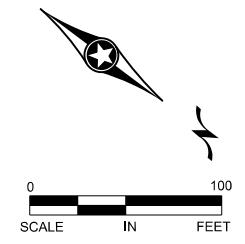
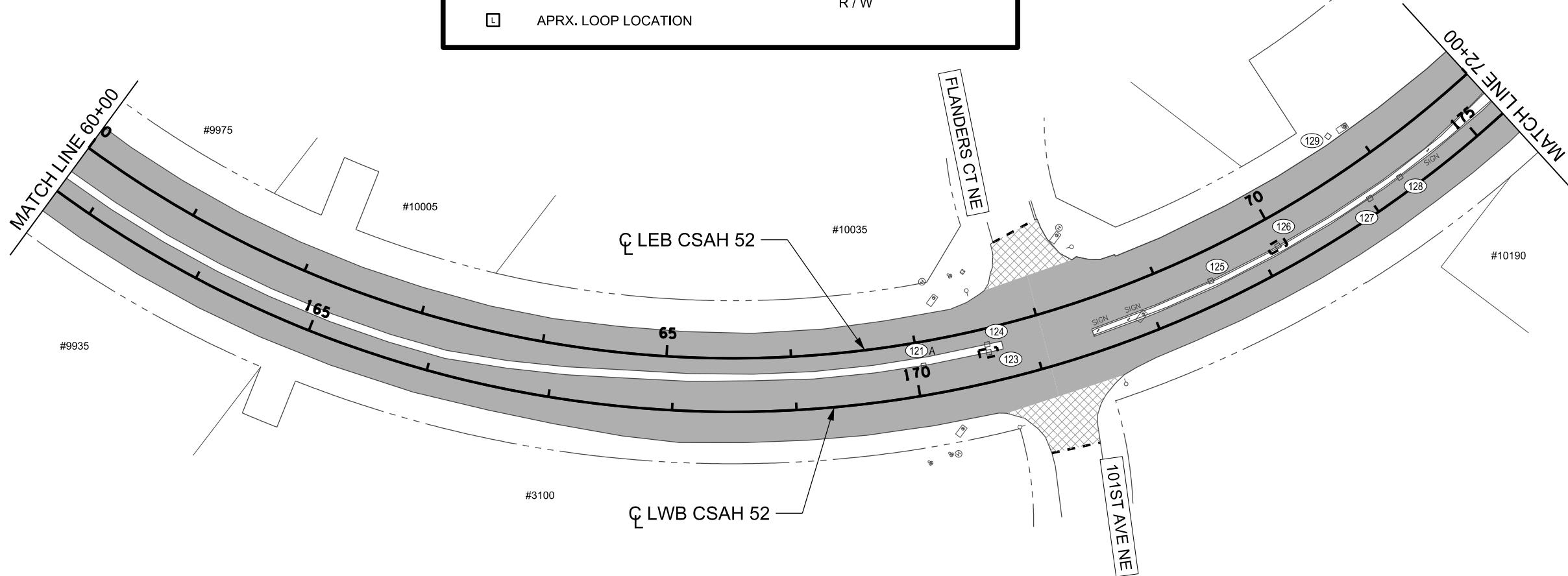
MATCH LINE 60+00



METROPOLITAN AIRPORTS COMMISSION

**LEGEND**

(B)	BITUMINOUS	---	CROSS CULVERT
(G)	GRAVEL	[Shaded Box]	MAINLINE MILL AREA
⊗	ADJUST GATE VALVE	[Cross-hatched Box]	STREET APPROACH MILL SPECIAL AREA
- - -	SAWCUT	---	R / W
[L]	APRX. LOOP LOCATION		



NO	DATE	BY	CKD	APPR	REVISION	
	02/25/2021					11:50:09 AM

NAME: P:\21-01-00\CSAH\_52\_(105th-Naples)\Base\Proposed\CSAH\_52\_CP3.dgn

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

PRINT NAME: GERALD J. AUGER JR.

SIGNATURE: *[Signature]*

DATE: 02-24-2021 LICENSE NO. 26511

DRAWN BY: SPH DATE: 02/25/2021

DESIGN BY: SPH DATE: 02/25/2021

CHECKED BY: CSO DATE: 02/25/2021

**ANOKA COUNTY HIGHWAY DEPT.**

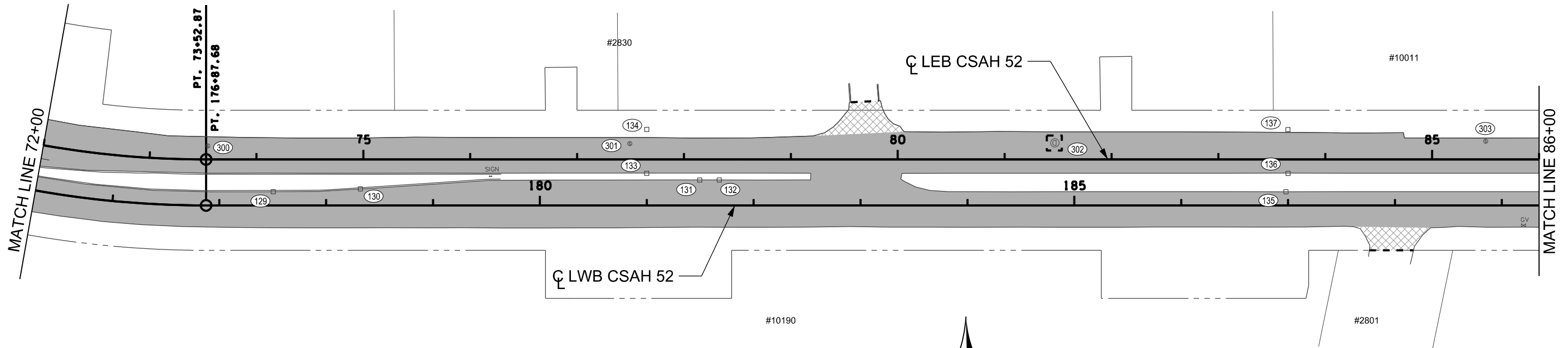
STATE AID PROJECT 002-652-009

**CONSTRUCTION PLAN**

STA 45+00 TO 72+00

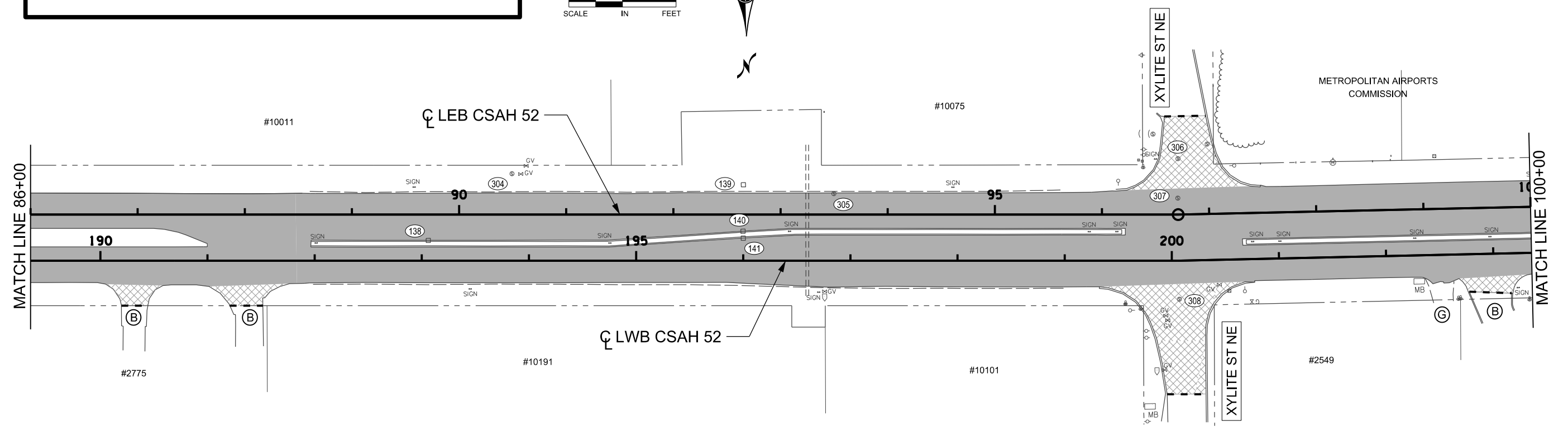
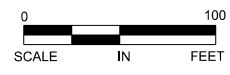
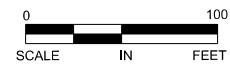
Sheet 12 of 64 Sheets

APAnders



**LEGEND**

(B) BITUMINOUS	--- CROSS CULVERT
(C) GRAVEL	█ MAINLINE MILL AREA
⊗ ADJUST GATE VALVE	▨ STREET APPROACH MILL SPECIAL AREA
- - - SAWCUT	— R / W
□ APRX. LOOP LOCATION	



NO	DATE	BY	CKD	APPR	REVISION	
	02/25/2021					11:50:11 AM

NAME: P:\21-01-00\CSAH\_52\_(105th-Naples)\Base\Proposed\CSAH\_52\_CP4.dgn

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

PRINT NAME: GERALD J. AUGER JR.  
 SIGNATURE: *[Signature]*  
 DATE: 02-24-2021 LICENSE NO. 26511

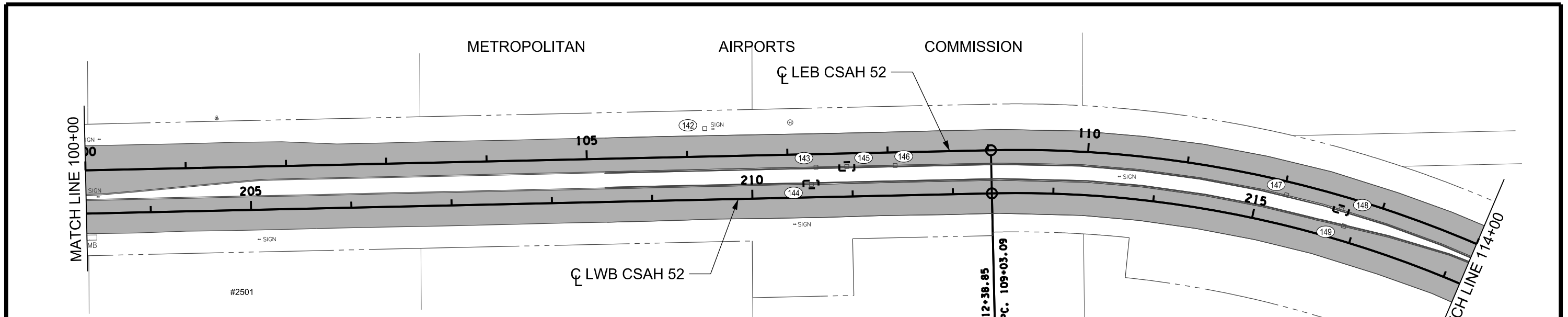
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 DESIGN BY: SPH DATE: 02/25/2021  
 CHECKED BY: CSO DATE: 02/25/2021

**ANOKA COUNTY  
HIGHWAY DEPT.**

STATE AID PROJECT 002-652-009

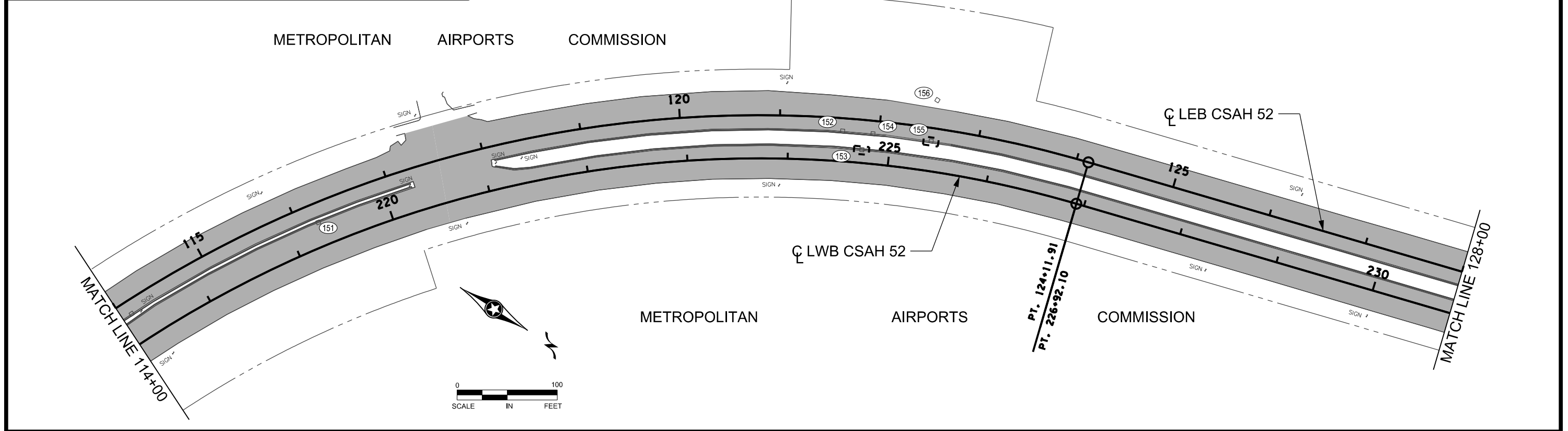
**CONSTRUCTION PLAN**  
 STA 72+00 TO 100+00  
 Sheet 13 of 64 Sheets

APAnders



**LEGEND**

(B)	BITUMINOUS	---	CROSS CULVERT
(G)	GRAVEL	█	MAINLINE MILL AREA
⊕	CORE LOCATION	▨	STREET APPROACH MILL SPECIAL AREA
- - -	SAWCUT	---	R / W



NO	DATE	BY	CKD	APPR	REVISION	TIME
	02/25/2021					11:50:13 AM

NAME: P:\21-01-00\CSAH\_52\_(105th-Naples)\Base\Proposed\CSAH\_52\_CP5.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: 02-24-2021 LICENSE NO. 26511

DRAWN BY: SPH DATE: 02/25/2021

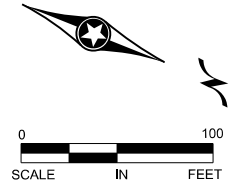
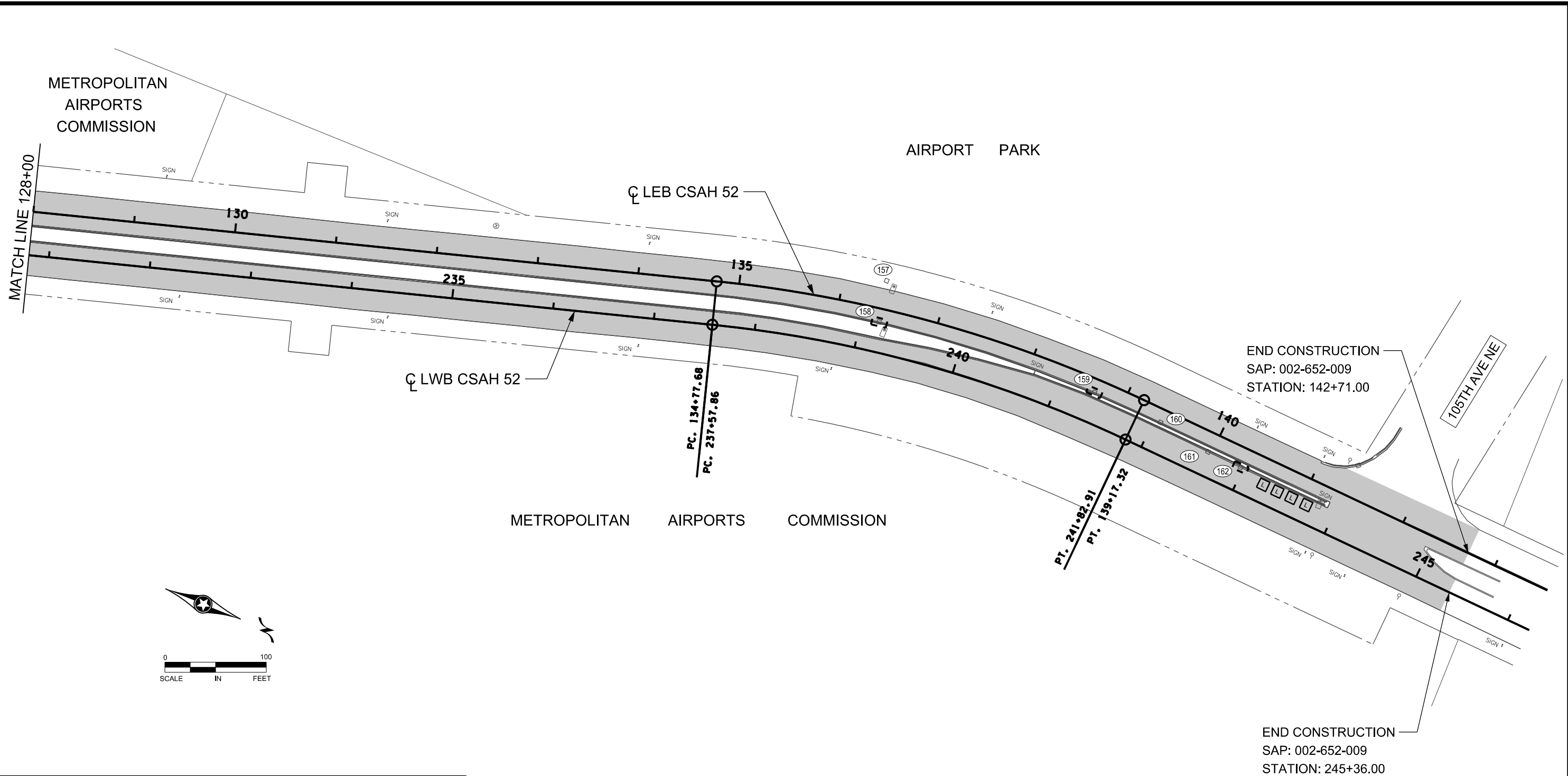
DESIGN BY: SPH DATE: 02/25/2021

CHECKED BY: CSO DATE: 02/25/2021

**ANOKA COUNTY**  
HIGHWAY DEPT.

STATE AID PROJECT 002-652-009

CONSTRUCTION PLAN  
STA 100+00 TO 128+00  
Sheet 14 of 64 Sheets



LEGEND	
(B) BITUMINOUS	--- CROSS CULVERT
(G) GRAVEL	█ MAINLINE MILL AREA
⊗ ADJUST GATE VALVE	▨ STREET APPROACH MILL SPECIAL AREA
--- SAWCUT	— R / W
□ APRX. LOOP LOCATION	

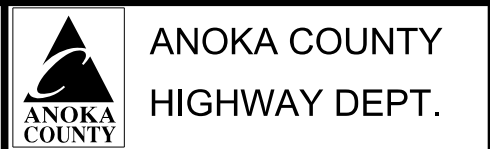
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NAME: P:\21-01-00\CSAH\_52\_(105th-Naples)\Base\Proposed\CSAH\_52\_CP6.dgn

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: 02-24-2021 LICENSE NO. 26511

DRAWN BY: SPH DATE: 02/25/2021  
 DESIGN BY: SPH DATE: 02/25/2021  
 CHECKED BY: CSO DATE: 02/25/2021

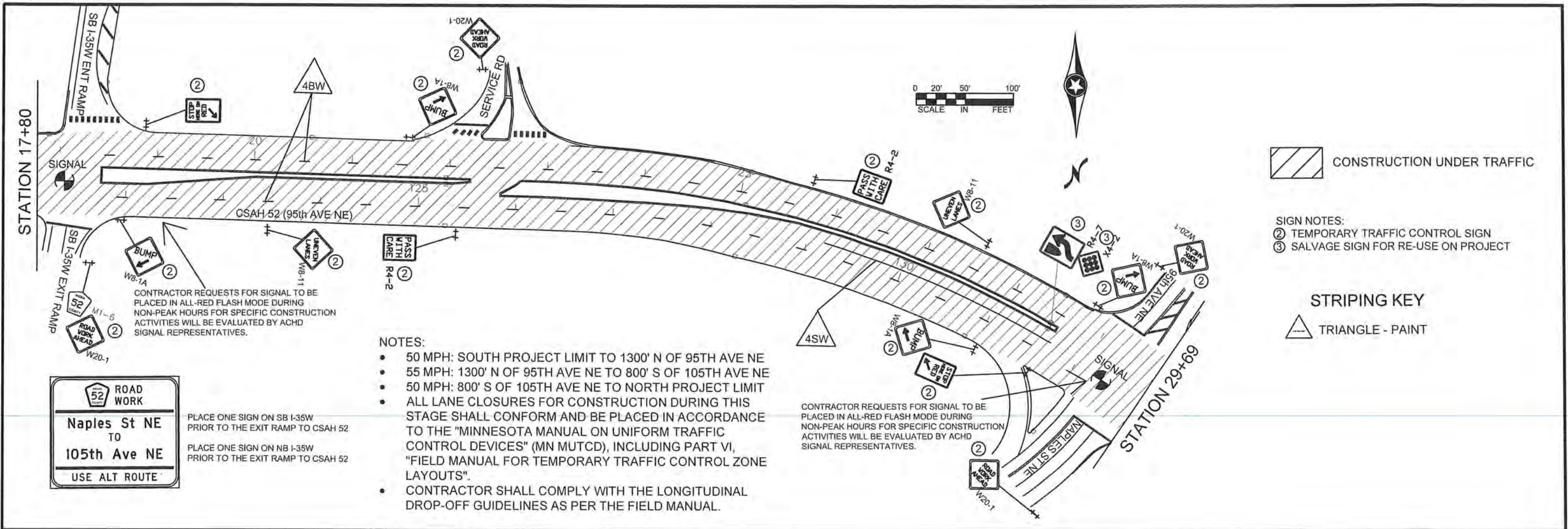


STATE AID PROJECT 002-652-009

CONSTRUCTION PLAN  
 STA 128+00 TO 142+71  
 Sheet 15 of 64 Sheets



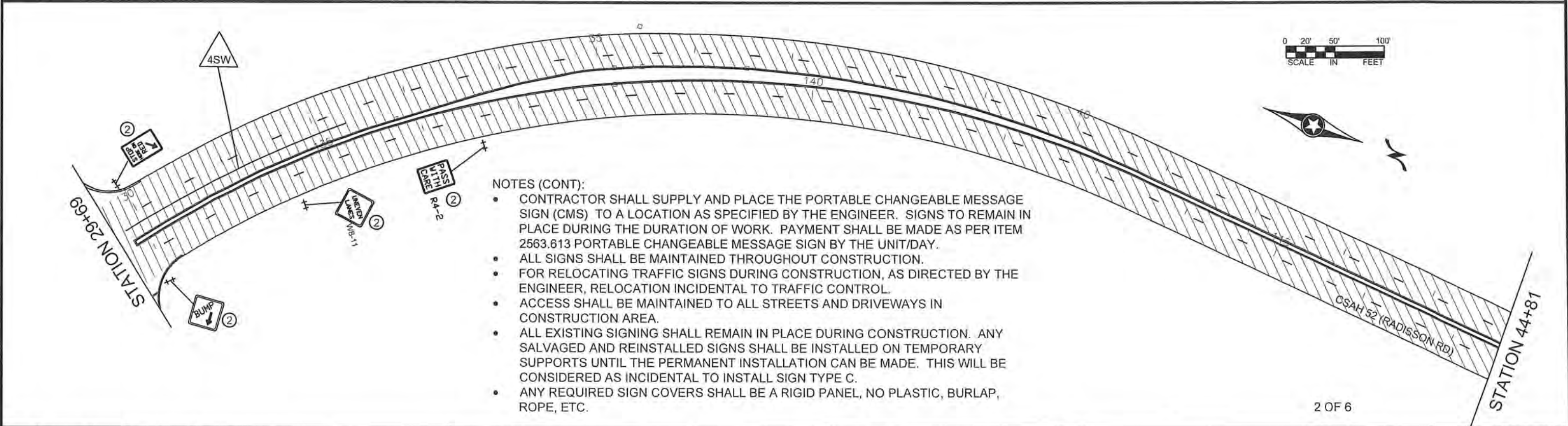





**ROAD WORK**  
**52**  
**Naples St NE**  
**TO**  
**105th Ave NE**  
**USE ALT ROUTE**

PLACE ONE SIGN ON SB I-35W  
 PRIOR TO THE EXIT RAMP TO CSAH 52  
 PLACE ONE SIGN ON NB I-35W  
 PRIOR TO THE EXIT RAMP TO CSAH 52


- NOTES:**
- 50 MPH: SOUTH PROJECT LIMIT TO 1300' N OF 95TH AVE NE
  - 55 MPH: 1300' N OF 95TH AVE NE TO 800' S OF 105TH AVE NE
  - 50 MPH: 800' S OF 105TH AVE NE TO NORTH PROJECT LIMIT
  - 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 COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.



- NOTES (CONT):**
- CONTRACTOR SHALL SUPPLY AND PLACE THE PORTABLE CHANGEABLE MESSAGE SIGN (CMS) TO A LOCATION AS SPECIFIED BY THE ENGINEER. SIGNS TO REMAIN IN PLACE DURING THE DURATION OF WORK. PAYMENT SHALL BE MADE AS PER ITEM 2563.613 PORTABLE CHANGEABLE MESSAGE SIGN BY THE UNIT/DAY.
  - ALL SIGNS SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
  - FOR RELOCATING TRAFFIC SIGNS DURING CONSTRUCTION, AS DIRECTED BY THE ENGINEER, RELOCATION INCIDENTAL TO TRAFFIC CONTROL.
  - ACCESS SHALL BE MAINTAINED TO ALL STREETS AND DRIVEWAYS IN CONSTRUCTION AREA.
  - 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.
  - ANY REQUIRED SIGN COVERS SHALL BE A RIGID PANEL, NO PLASTIC, BURLAP, ROPE, ETC.

 CONSTRUCTION UNDER TRAFFIC

STRIPING KEY

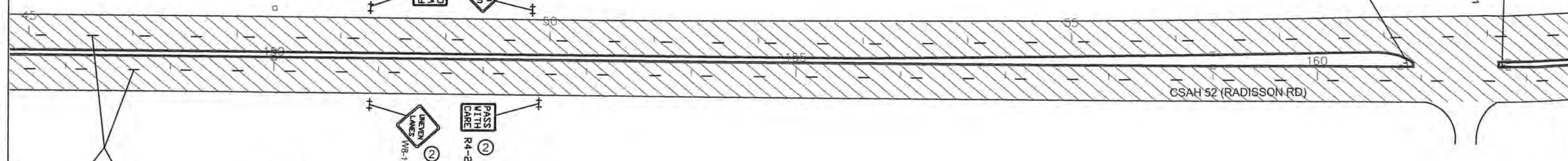
 TRIANGLE - PAINT

SIGN NOTES:  
 ② TEMPORARY TRAFFIC CONTROL SIGN  
 ③ SALVAGE SIGN FOR RE-USE ON PROJECT

0 20' 50' 100'  
 SCALE IN FEET

STATION 44+81

STATION 59+82

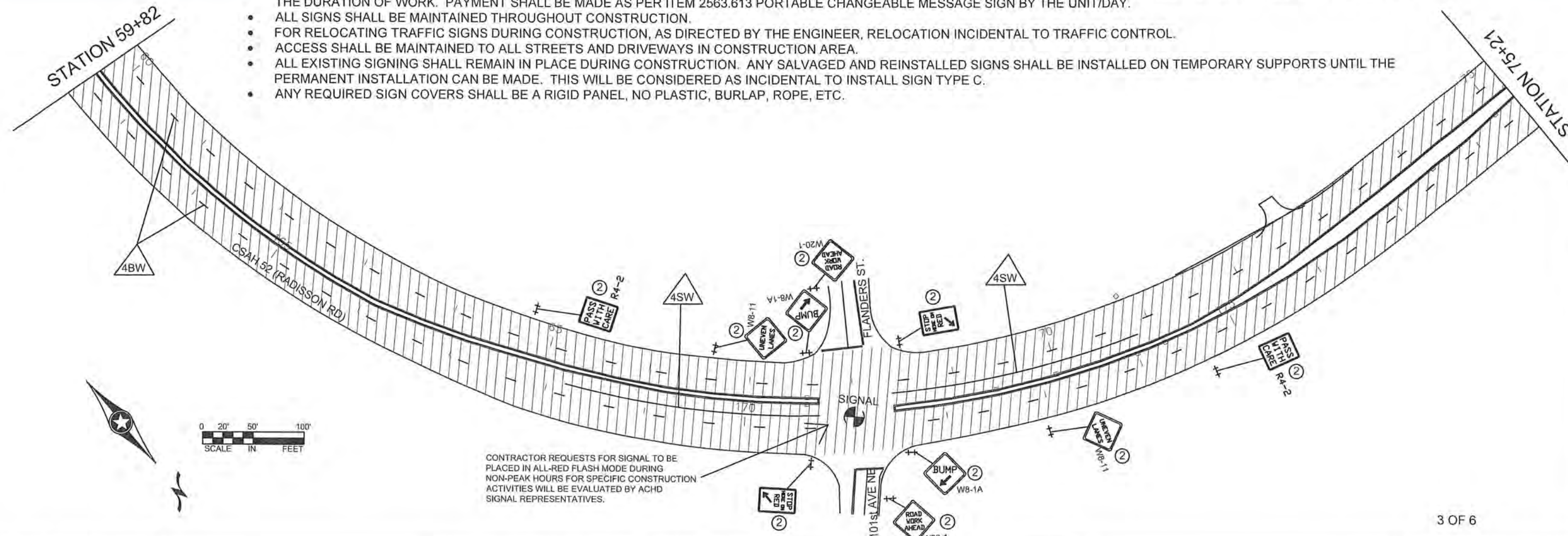


NOTES:

- 50 MPH: SOUTH PROJECT LIMIT TO 1300' N OF 95TH AVE NE
- 55 MPH: 1300' N OF 95TH AVE NE TO 800' S OF 105TH AVE NE
- 50 MPH: 800' S OF 105TH AVE NE TO NORTH PROJECT LIMIT
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- ANY REQUIRED SIGN COVERS SHALL BE A RIGID PANEL, NO PLASTIC, BURLAP, ROPE, ETC.

STATION 59+82

STATION 75+21

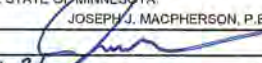


CONTRACTOR REQUESTS FOR SIGNAL TO BE PLACED IN ALL-RED FLASH MODE DURING NON-PEAK HOURS FOR SPECIFIC CONSTRUCTION ACTIVITIES WILL BE EVALUATED BY ACHD SIGNAL REPRESENTATIVES.

3 OF 6

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\21-01-00\CSAH\_52\_(105th-Naples)\Base\Traffic\TC Milling.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: JOSEPH J. MACPHERSON, P.E.  
 SIGNATURE:   
 DATE: 3-1-21 LICENSE NO. 46732

DRAWN BY: TMV DATE: 12/10/20  
 DESIGN BY: TMV DATE: 12/10/20  
 CHECKED BY: DATE:



ANOKA COUNTY  
 HIGHWAY DEPT.

STATE AID PROJECT 002-652-009

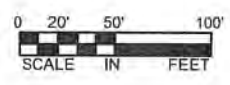
TRAFFIC CONTROL PLAN  
 STAGE 1 - MILLING

Sheet 18 of 64 Sheets

STATION 75+21

STATION 90+23

CONSTRUCTION UNDER TRAFFIC



STRIPING KEY

TRIANGLE - PAINT

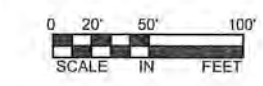
SIGN NOTES:  
② TEMPORARY TRAFFIC CONTROL SIGN  
③ SALVAGE SIGN FOR RE-USE ON PROJECT

NOTES:

- 50 MPH: SOUTH PROJECT LIMIT TO 1300' N OF 95TH AVE NE
- 55 MPH: 1300' N OF 95TH AVE NE TO 800' S OF 105TH AVE NE
- 50 MPH: 800' S OF 105TH AVE NE TO NORTH PROJECT LIMIT
- 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".
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- ANY REQUIRED SIGN COVERS SHALL BE A RIGID PANEL, NO PLASTIC, BURLAP, ROPE, ETC.

STATION 90+23

STATION 105+23



CONTRACTOR REQUESTS FOR SIGNAL TO BE PLACED IN ALL-RED FLASH MODE DURING NON-PEAK HOURS FOR SPECIFIC CONSTRUCTION ACTIVITIES WILL BE EVALUATED BY ACHD SIGNAL REPRESENTATIVES.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\21-01-00\CSAH\_52\_(105th-Naples)\Base\Traffic\TC Milling.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: JOSEPH J. MACPHERSON, P.E.  
SIGNATURE:   
DATE: 3-1-21 LICENSE NO.: 48732

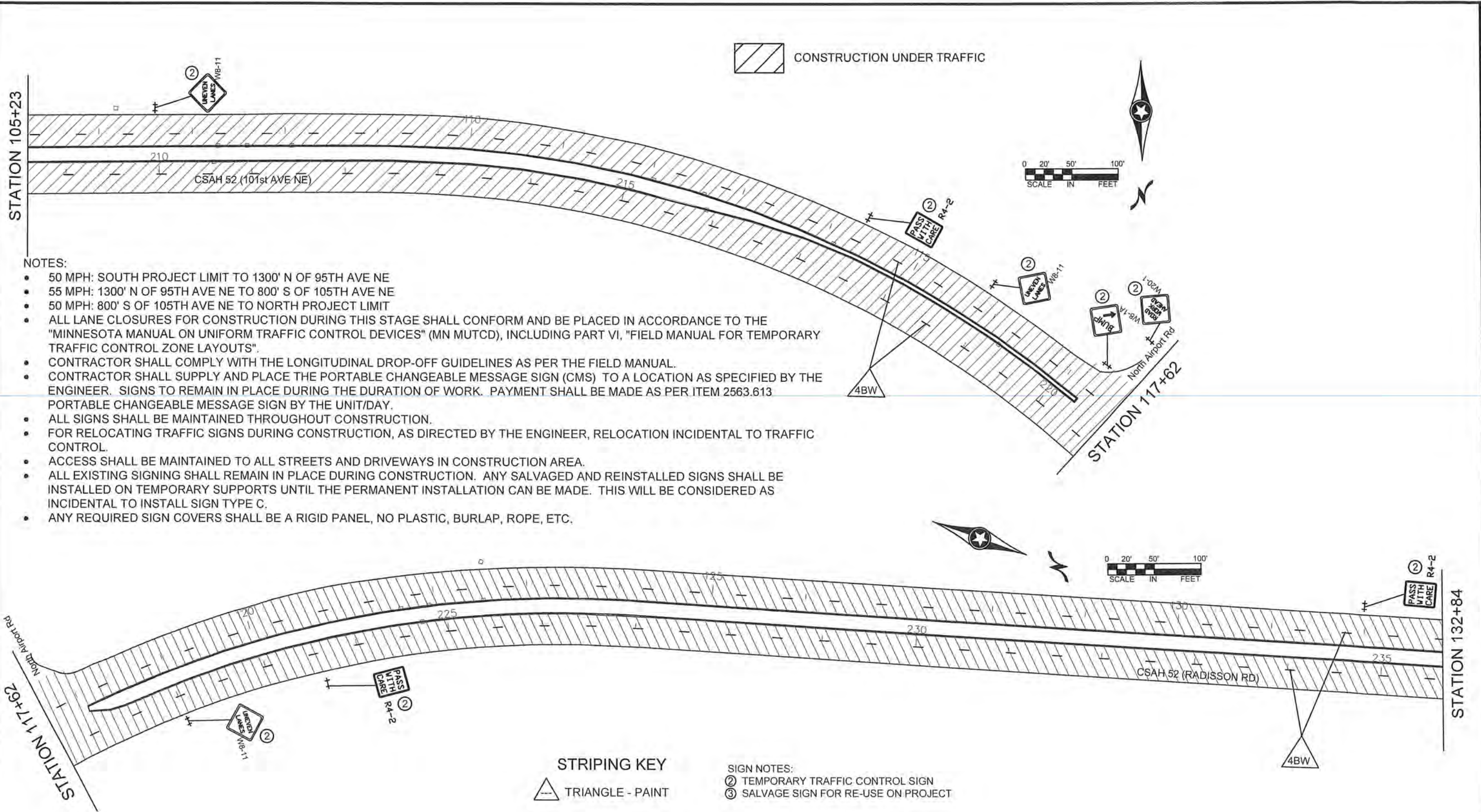
DRAWN BY: TMV DATE: 12/10/20  
DESIGN BY: TMV DATE: 12/10/20  
CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_



ANOKA COUNTY  
HIGHWAY DEPT.

STATE AID PROJECT 002-652-009

TRAFFIC CONTROL PLAN  
STAGE 1 - MILLING  
Sheet 19 of 64 Sheets



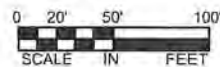
- NOTES:
- 50 MPH: SOUTH PROJECT LIMIT TO 1300' N OF 95TH AVE NE
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  - ANY REQUIRED SIGN COVERS SHALL BE A RIGID PANEL, NO PLASTIC, BURLAP, ROPE, ETC.

**STRIPING KEY**  
 △ TRIANGLE - PAINT

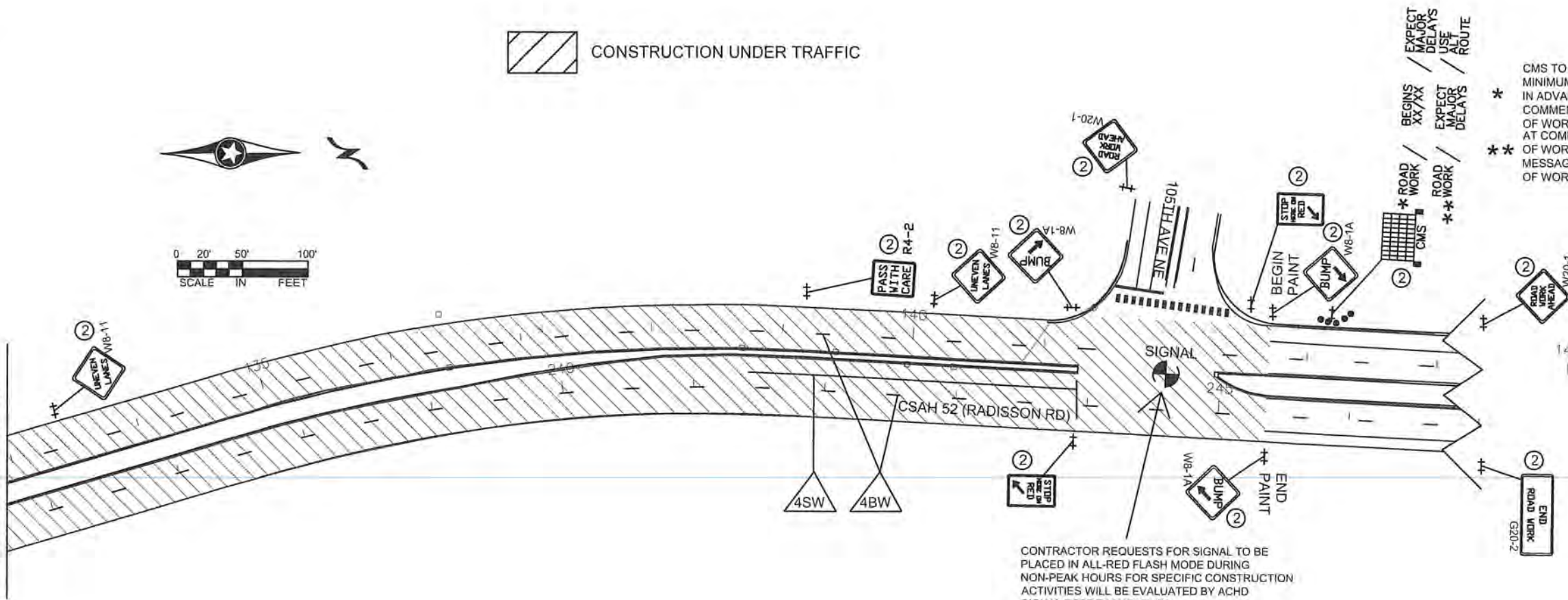
**SIGN NOTES:**  
 ② TEMPORARY TRAFFIC CONTROL SIGN  
 ③ SALVAGE SIGN FOR RE-USE ON PROJECT

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: JOSEPH J. MACPHERSON, P.E. SIGNATURE: <i>[Signature]</i> DATE: 5-1-21 LICENSE NO. 46732					DRAWN BY: TMV DATE: 12/10/20 DESIGN BY: TMV DATE: 12/10/20 CHECKED BY: DATE:		<b>ANOKA COUNTY</b> <b>HIGHWAY DEPT.</b>		STATE AID PROJECT 002-652-009		TRAFFIC CONTROL PLAN STAGE 1 - MILLING Sheet 20 of 64 Sheets	
NO	DATE	BY	CKD	APPR	REVISION	NAME: P:121-01-00\CSAH_52_(105th-Naples)\Base\Traffic\TC Milling.dwg						

 CONSTRUCTION UNDER TRAFFIC



STATION 132+84




CONTRACTOR REQUESTS FOR SIGNAL TO BE PLACED IN ALL-RED FLASH MODE DURING NON-PEAK HOURS FOR SPECIFIC CONSTRUCTION ACTIVITIES WILL BE EVALUATED BY ACHD SIGNAL REPRESENTATIVES.

EXPECT MAJOR DELAYS / USE ALT ROUTE  
 BEGINS XX/XX / EXPECT MAJOR DELAYS  
 \* ROAD WORK / ROAD WORK  
 \*\* ROAD WORK / ROAD WORK

\* CMS TO BE PLACED A MINIMUM TEN DAYS IN ADVANCE OF THE COMMENCEMENT OF WORK.  
 \*\* AT COMMENCEMENT OF WORK, CHANGE MESSAGE FOR DURATION OF WORK.


NOTES:

- 50 MPH: SOUTH PROJECT LIMIT TO 1300' N OF 95TH AVE NE
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STRIPING KEY  
 TRIANGLE - PAINT

SIGN NOTES:  
 ② TEMPORARY TRAFFIC CONTROL SIGN  
 ③ SALVAGE SIGN FOR RE-USE ON PROJECT

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: JOSEPH J. MACPHERSON, P.E.  
 SIGNATURE:   
 DATE: 3-1-24 LICENSE NO. 46732

DRAWN BY: TMV DATE: 12/10/20  
 DESIGN BY: TMV DATE: 12/10/20  
 CHECKED BY: DATE:

ANOKA COUNTY HIGHWAY DEPT.  


STATE AID PROJECT 002-652-009

TRAFFIC CONTROL PLAN  
 STAGE 1 - MILLING  
 Sheet 21 of 64 Sheets

NOTES:

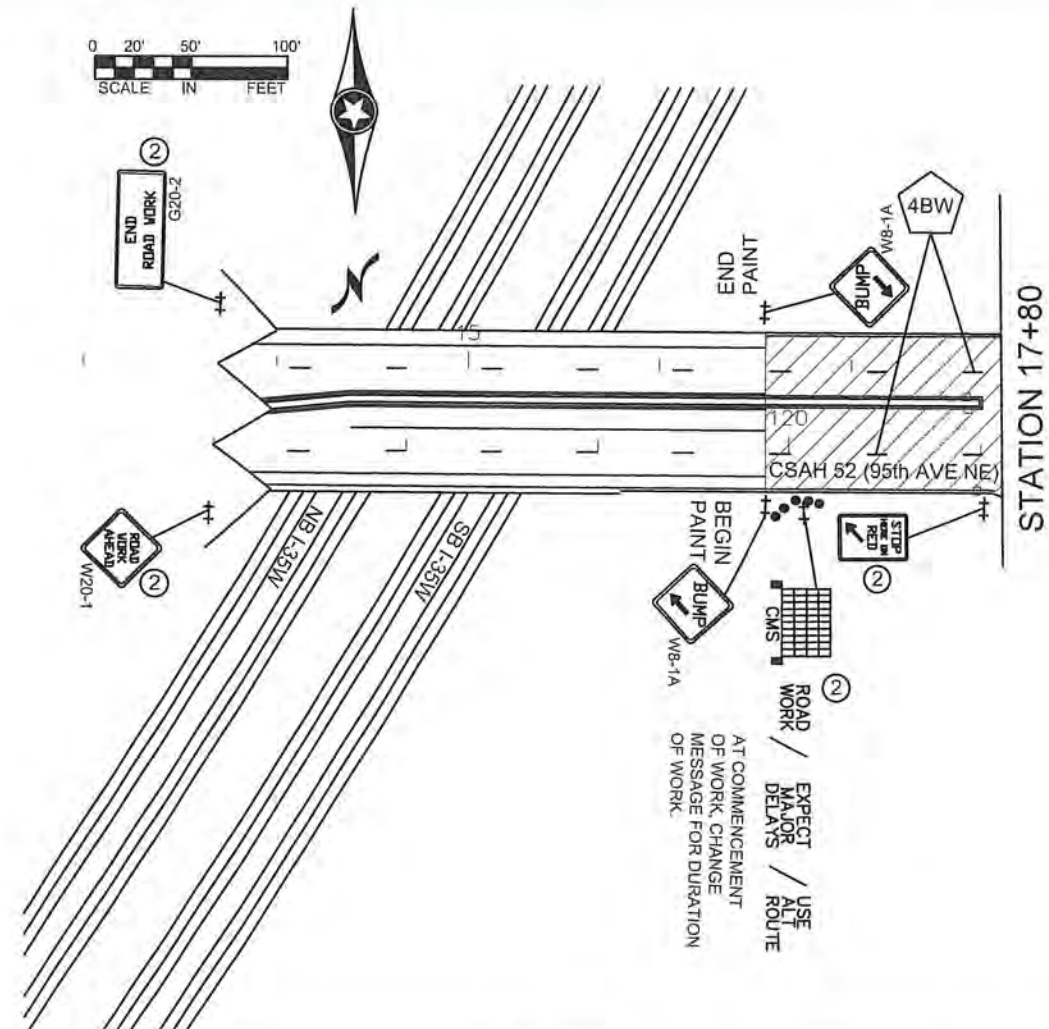
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 CONSTRUCTION UNDER TRAFFIC

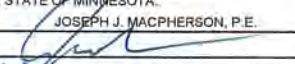
SIGN NOTES:  
 ② TEMPORARY TRAFFIC CONTROL SIGN  
 ③ SALVAGE SIGN FOR RE-USE ON PROJECT

STRIPING KEY

 PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



NO	DATE	BY	CKD	APPR	REVISION

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 PRINT NAME: JOSEPH J. MACPHERSON, P.E.  
 SIGNATURE:   
 DATE: 3-1-20 LICENSE NO. 46732

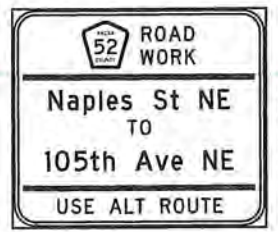
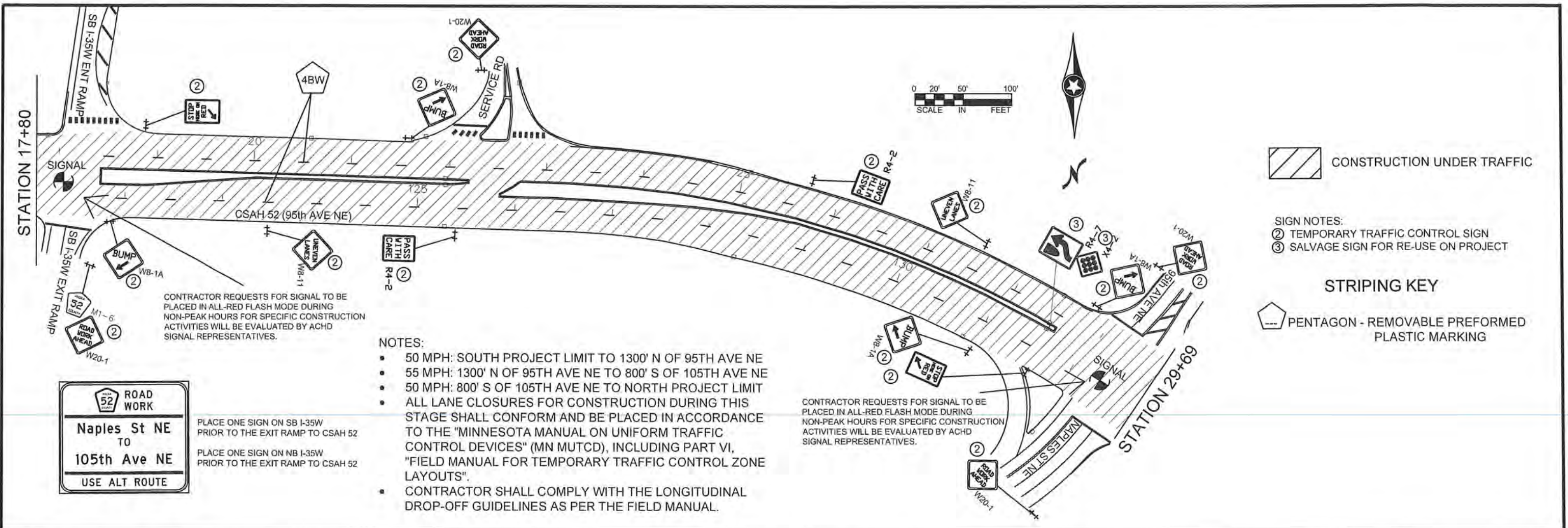
DRAWN BY: TMV DATE: 12/10/20  
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ANOKA COUNTY  
 HIGHWAY DEPT.

SAP 002-652-009

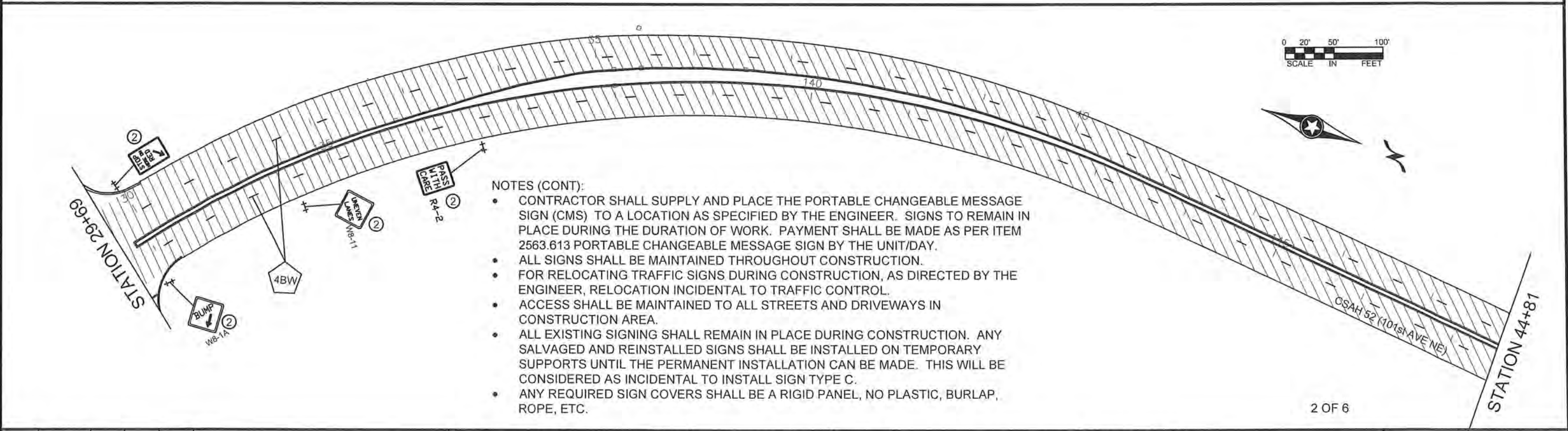
TRAFFIC CONTROL PLAN  
 STAGE 2 - PAVING  
 Sheet 22 of 64 Sheets



PLACE ONE SIGN ON SB I-35W PRIOR TO THE EXIT RAMP TO CSAH 52  
 PLACE ONE SIGN ON NB I-35W PRIOR TO THE EXIT RAMP TO CSAH 52

- NOTES:**
- 50 MPH: SOUTH PROJECT LIMIT TO 1300' N OF 95TH AVE NE
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**CONTRACTOR REQUESTS FOR SIGNAL TO BE PLACED IN ALL-RED FLASH MODE DURING NON-PEAK HOURS FOR SPECIFIC CONSTRUCTION ACTIVITIES WILL BE EVALUATED BY ACHD SIGNAL REPRESENTATIVES.**



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\21-01-00\CSAH\_52\_(105th-Naples)\Base\Traffic\Stage 2 Paving.dwg

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DRAWN BY: TMV DATE: 12/10/20  
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 CHECKED BY: DATE:



ANOKA COUNTY  
 HIGHWAY DEPT.

SAP 002-652-009

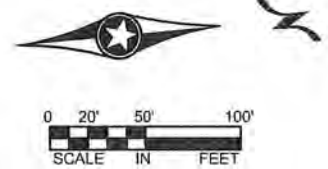
TRAFFIC CONTROL PLAN  
 STAGE 2 - PAVING  
 Sheet 23 of 64 Sheets

 CONSTRUCTION UNDER TRAFFIC

STRIPING KEY

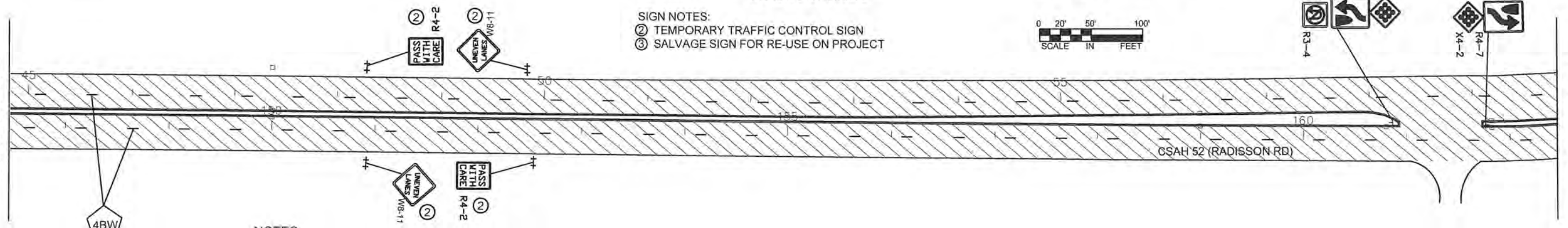
 PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING

SIGN NOTES:  
 (2) TEMPORARY TRAFFIC CONTROL SIGN  
 (3) SALVAGE SIGN FOR RE-USE ON PROJECT



STATION 44+81

STATION 59+82

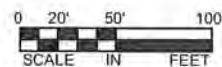
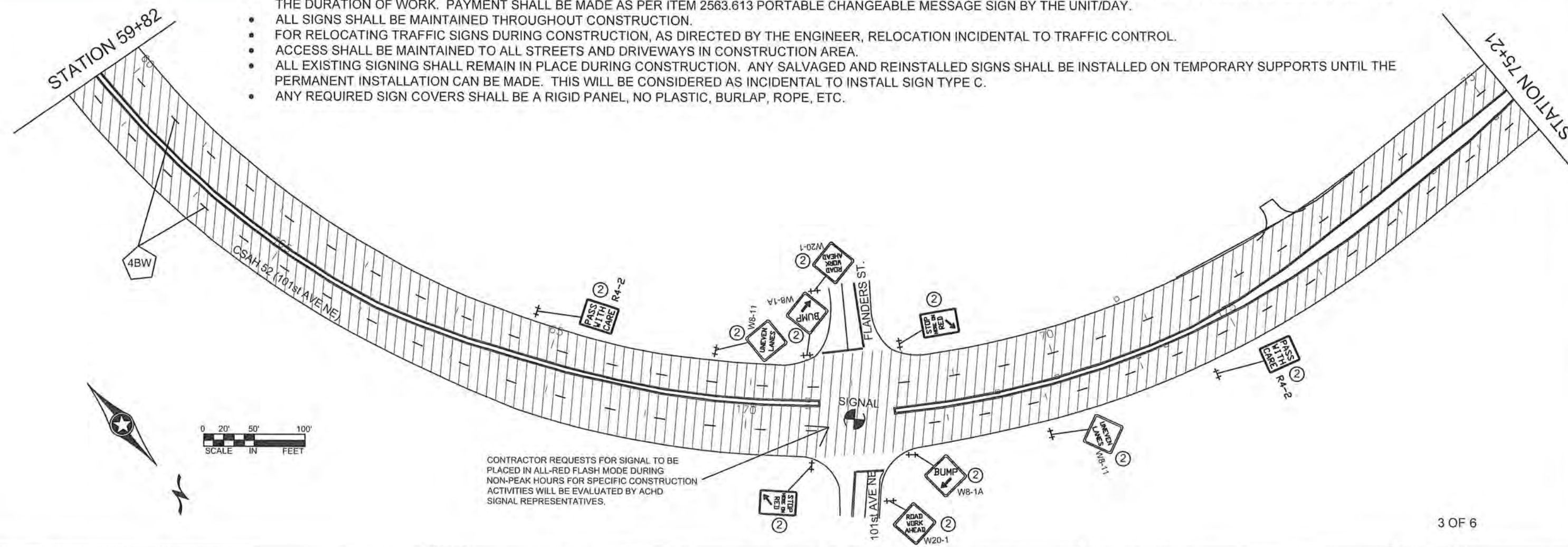


NOTES:

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STATION 59+82

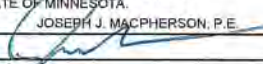
STATION 75+21




CONTRACTOR REQUESTS FOR SIGNAL TO BE PLACED IN ALL-RED FLASH MODE DURING NON-PEAK HOURS FOR SPECIFIC CONSTRUCTION ACTIVITIES WILL BE EVALUATED BY ACHD SIGNAL REPRESENTATIVES.

3 OF 6

NO	DATE	BY	CHKD	APPR	REVISION

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 PRINT NAME: JOSEPH J. MACPHERSON, P.E.  
 SIGNATURE:   
 DATE: 11-21 LICENSE NO. 48732

DRAWN BY: TMV DATE: 12/10/20  
 DESIGN BY: TMV DATE: 12/10/20  
 CHECKED BY: DATE:

 ANOKA COUNTY  
 HIGHWAY DEPT.

SAP 002-652-009

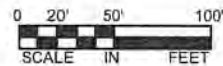
TRAFFIC CONTROL PLAN  
 STAGE 2 - PAVING  
 Sheet 24 of 64 Sheets



STATION 75+21

STATION 90+23

CONSTRUCTION UNDER TRAFFIC



STRIPING KEY

PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING

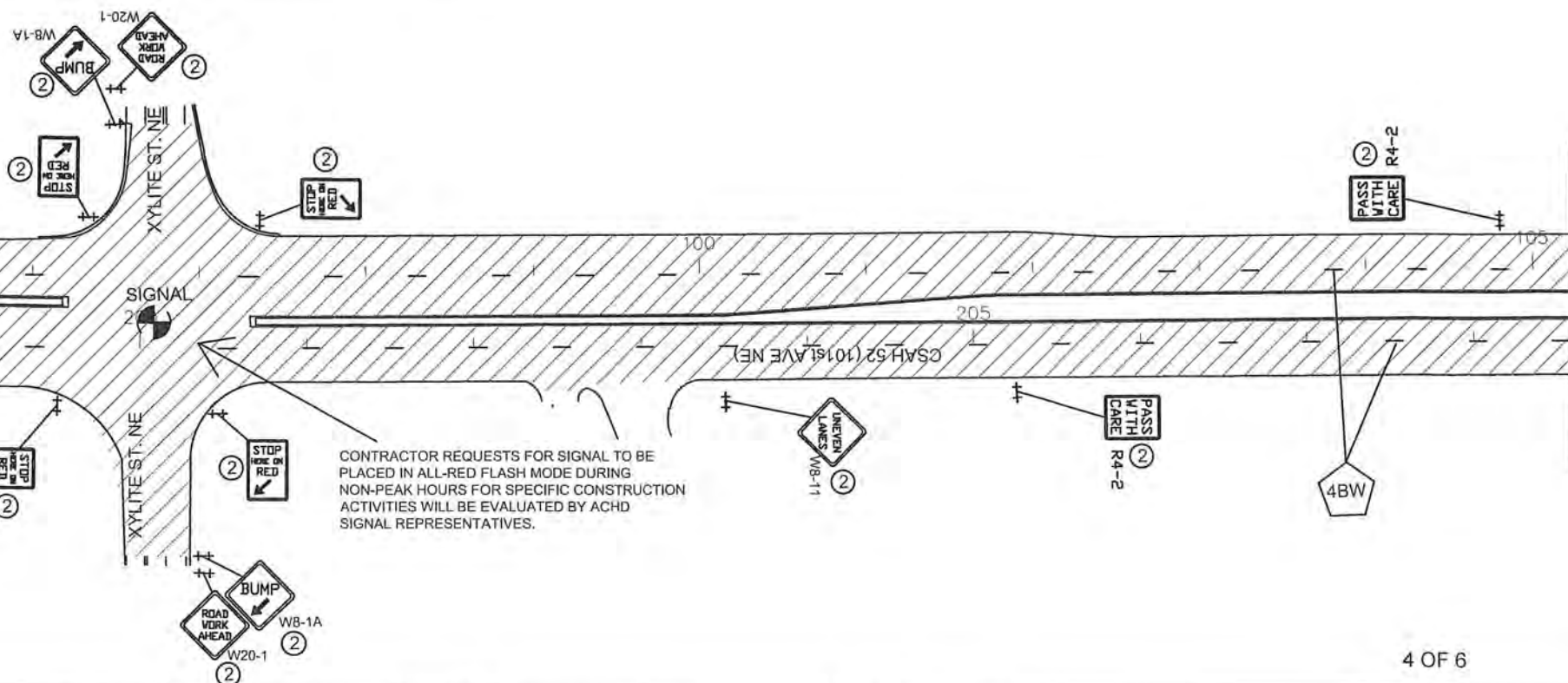
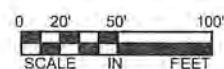
SIGN NOTES:  
② TEMPORARY TRAFFIC CONTROL SIGN  
③ SALVAGE SIGN FOR RE-USE ON PROJECT

NOTES:

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STATION 90+23

STATION 105+23



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\21-01-00\CSAH\_52\_(105th-Naples)\Base\Traffic\Stage 2 Paving.dwg

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PRINT NAME: JOSEPH J. MACGHERSON, P.E.  
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DRAWN BY: TMV DATE: 12/10/20  
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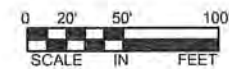
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-652-009

TRAFFIC CONTROL PLAN  
 STAGE 2 - PAVING  
 Sheet 25 of 64 Sheets

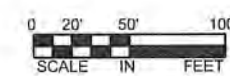
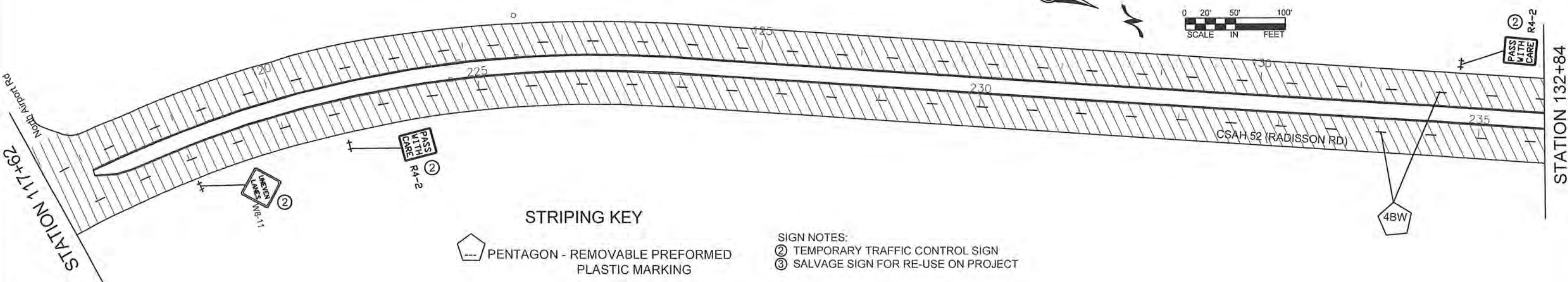
STATION 105+23

 CONSTRUCTION UNDER TRAFFIC



NOTES:

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STRIPING KEY

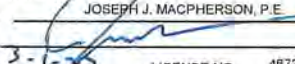
 PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING

SIGN NOTES:  
 ② TEMPORARY TRAFFIC CONTROL SIGN  
 ③ SALVAGE SIGN FOR RE-USE ON PROJECT

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\21-01-00\CSAH\_52\_(105th-Naples)\Base\Traffic\TC Paving.dwg

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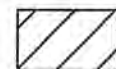
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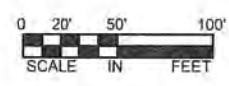


ANOKA COUNTY  
 HIGHWAY DEPT.

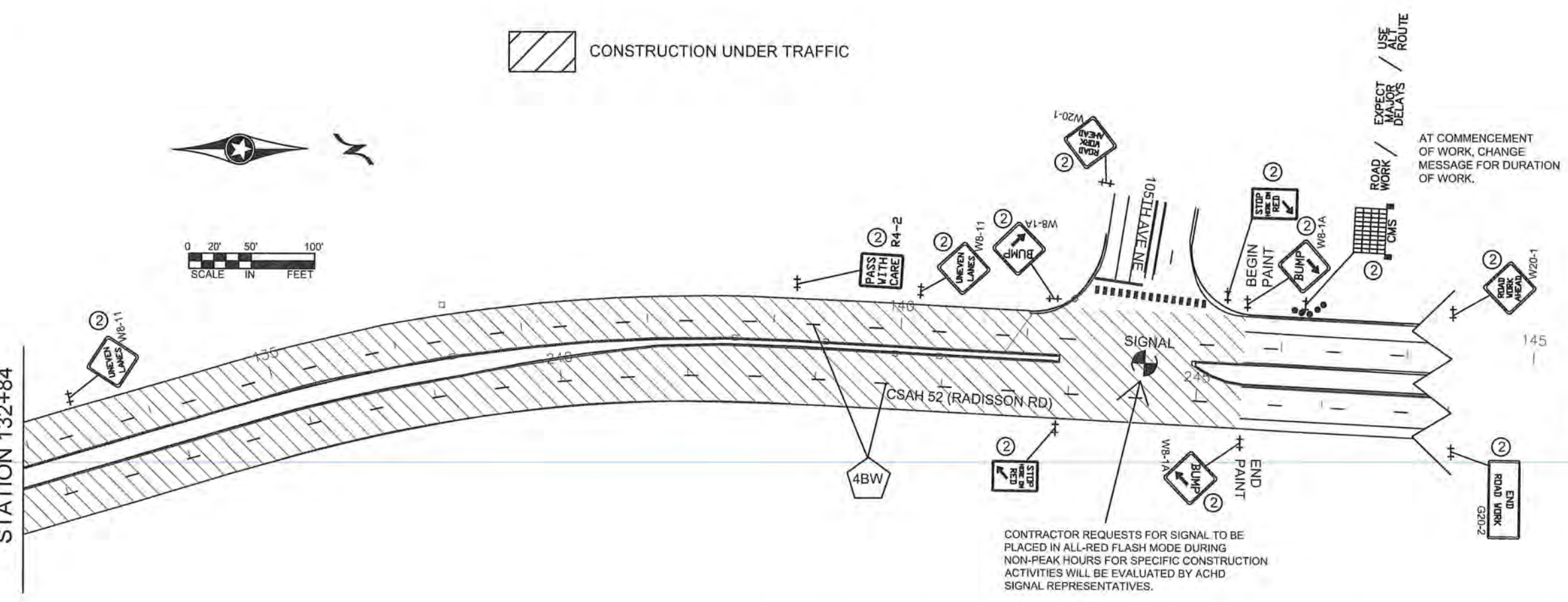
SAP 002-652-009

TRAFFIC CONTROL PLAN  
 STAGE 2 - PAVING

 CONSTRUCTION UNDER TRAFFIC



STATION 132+84



CONTRACTOR REQUESTS FOR SIGNAL TO BE PLACED IN ALL-RED FLASH MODE DURING NON-PEAK HOURS FOR SPECIFIC CONSTRUCTION ACTIVITIES WILL BE EVALUATED BY ACHD SIGNAL REPRESENTATIVES.

USE ALT ROUTE / EXPECT MAJOR DELAYS / ROAD WORK

AT COMMENCEMENT OF WORK, CHANGE MESSAGE FOR DURATION OF WORK.

**NOTES:**

- 50 MPH: SOUTH PROJECT LIMIT TO 1300' N OF 95TH AVE NE
- 55 MPH: 1300' N OF 95TH AVE NE TO 800' S OF 105TH AVE NE
- 50 MPH: 800' S OF 105TH AVE NE TO NORTH PROJECT LIMIT
- 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 COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.
- CONTRACTOR SHALL SUPPLY AND PLACE THE PORTABLE CHANGEABLE MESSAGE SIGN (CMS) TO A LOCATION AS SPECIFIED BY THE ENGINEER. SIGNS TO REMAIN IN PLACE DURING THE DURATION OF WORK. PAYMENT SHALL BE MADE AS PER ITEM 2563.613 PORTABLE CHANGEABLE MESSAGE SIGN BY THE UNIT/DAY.
- ALL SIGNS SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
- FOR RELOCATING TRAFFIC SIGNS DURING CONSTRUCTION, AS DIRECTED BY THE ENGINEER, RELOCATION INCIDENTAL TO TRAFFIC CONTROL.
- ACCESS SHALL BE MAINTAINED TO ALL STREETS AND DRIVEWAYS IN CONSTRUCTION AREA.
- 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.
- ANY REQUIRED SIGN COVERS SHALL BE A RIGID PANEL, NO PLASTIC, BURLAP, ROPE, ETC.

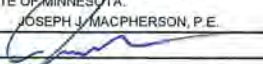
**STRIPING KEY**

 PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING

**SIGN NOTES:**  
 ② TEMPORARY TRAFFIC CONTROL SIGN  
 ③ SALVAGE SIGN FOR RE-USE ON PROJECT

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: JOSEPH J. MACPHERSON, P.E.  
 SIGNATURE:   
 DATE: 3-1-21 LICENSE NO. 46732

DRAWN BY: TMV DATE: 12/10/20  
 DESIGN BY: TMV DATE: 12/10/20  
 CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_



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

SAP 002-652-009

TRAFFIC CONTROL PLAN  
 STAGE 2 - PAVING

Sheet 27 of 64 Sheets

TEMPORARY TRAFFIC CONTROL SIGNS

M.U.T.C.D. CODE	SIZE	INSERT	STAGE 1 QTY	STAGE 2 QTY	M.U.T.C.D. CODE	SIZE	INSERT	STAGE 1 QTY	STAGE 2 QTY
FLASHER			*	*	W20-X18	48" x 48"		AS NEEDED	AS NEEDED
R1-1	48"		*	*	W4-2R	48" x 48"		AS NEEDED	AS NEEDED
R1-3P	18" X 6"		*	*	W4-2R	48" x 48"		AS NEEDED	AS NEEDED
R4-2	24" x 30"		14	14	W20-X3R	48" x 48"		AS NEEDED	AS NEEDED
R10-6	24" x 36"		12	12	W20-X3L	48" x 48"		AS NEEDED	AS NEEDED
W3-1a	48" x 48"		*	*	W20-X5	48" x 48"		AS NEEDED	AS NEEDED
W8-1A	48" x 48"		AS NEEDED (EST. 15)	AS NEEDED (EST. 15)	W20-X5	48" x 48"		AS NEEDED	AS NEEDED
W8-11	48" x 48"		14	14	G20-X9	30" x 36"		AS NEEDED	AS NEEDED
W8-12	48" x 48"		AS NEEDED	AS NEEDED	G20-X9	30" x 36"		AS NEEDED	AS NEEDED
M1-6	24" x 24"		1	1	R3-2	24" x 24"		AS NEEDED	AS NEEDED
W20-1	48" x 48"		12	12	R11	48" x 30"		AS NEEDED	AS NEEDED
G20-2	36" x 18"		2	2	TYPE III	8 FOOT		AS NEEDED	AS NEEDED
G20-X9	132" x 114"		2	2	TYPE III	8 FOOT		AS NEEDED	AS NEEDED
CMS sign to be placed a minimum of ten days prior to actual commencement of road work. At commencement of work, signs to remain in place for the duration of work.			2	2	ARROWBOARD			AS NEEDED	AS NEEDED
					REFLECTORIZED REBOUNDABLE DRUM			AS NEEDED (MIN 10)	AS NEEDED (MIN 10)

EXISTING SIGN TAB					
STATION	ADDRESS/ DESCRIPTION (NOTES)	SALVAGE SIGN TYPE C	REINSTALL SIGN TYPE C	SIGN NUMBER	SIGN LEGEND
		EACH	EACH		
28+50	Median	1	1	R4-7	Keep Right
				OM1-1	9 Button
58+20	Median	1	1	R3-4	No U Turn
				R4-7	Keep Right
59+20	Median	1	1	OM1-1	9 Button
				R4-7	Keep Right
TOTAL		3	3		

TEMPORARY PAVEMENT MARKING TABULATION		
ITEM	UNIT	QUANTITY
1 4" BROKEN LINE WHITE PAINT	LIN FT	5046
4" SOLID LINE WHITE PAINT	LIN FT	2000
1 REMOVABLE POLY PREFORM MARKING (4" BROKEN WHITE)	LIN FT	5046

1 - SPACED EVERY 10 FEET

\* AS NEEDED FOR WHEN SIGNALS ARE IN ALL-WAY FLASH MODE

NOTES:

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

NO	DATE	BY	CKD	APPR	REVISION

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 PRINT NAME: JOSEPH J. MACPHERSON, P.E.  
 SIGNATURE:   
 DATE: 3.1.24 LICENSE NO. 46732

DRAWN BY: TMV DATE: 12/10/20  
 DESIGN BY: TMV DATE: 12/10/20  
 CHECKED BY: DATE:

ANOKA COUNTY  
 HIGHWAY DEPT.

SAP 002-652-009

TRAFFIC CONTROL QUANTITIES  
 Sheet 28 of 64 Sheets

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	

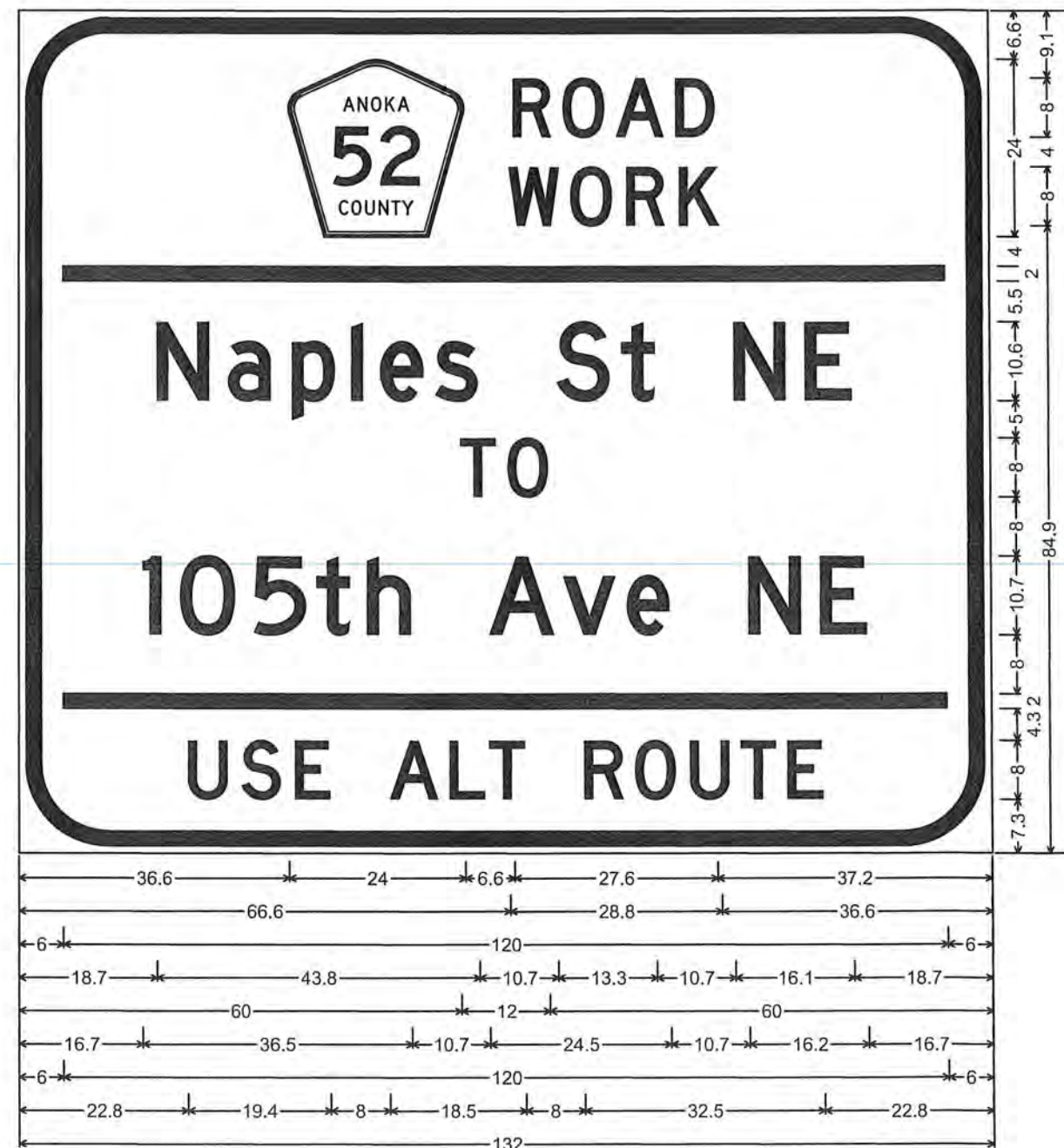
CMS sign to be placed a minimum of ten days prior to actual commencement of road work.

		R	O	A	D		
		W	O	R	K		

At commencement of work, change CMS sign message & remain in place or at a location designated by the Engineer during the duration of project.

	E	X	P	E	C	T	
		M	A	J	O	R	
	D	E	L	A	Y	S	

		U	S	E			
		A	L	T			
	R	O	U	T	E		



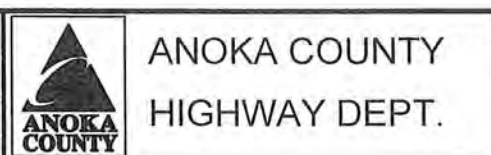
G20-X2\_132x108;  
 12.0" Radius, 2.0" Border, 1.0" Indent, Black on, Orange;  
 Pentagonal County 52 M1-6; "ROAD", D; "WORK", D; "Naples St NE", D; "TO", D;  
 "105th Ave NE", D; "USE ALT ROUTE", D;

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\21-01-00\CSAH\_52\_(105th-Naples)\Base\Traffic\TC Quantities Mill & Pave.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.  
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DRAWN BY: TMV DATE: 12/10/20  
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 CHECKED BY: DATE:



SAP 002-652-009

TRAFFIC CONTROL QUANTITIES  
 Sheet 29 of 64 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 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.

**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 BEANS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE MULTI COMP RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

A MULTI COMP RESIN 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 APPLICATION 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
1 4" SOLID LINE WHITE - MULTI COMP	LIN FT	32440
4" BROKEN LINE WHITE - MULTI COMP	LIN FT	5100
4" SOLID LINE YELLOW - MULTI COMP	LIN FT	25500
4" DOUBLE LINE YELLOW - MULTI COMP	LIN FT	128
24" SOLID LINE WHITE - THERMOPLASTIC (PMS*)	LIN FT	449
3'x6' ZEBRA CROSSWALK - PREFORMED THERMOPLASTIC	SQ FT	1584
PAVEMENT MESSAGE (THRU/RT ARROW) - PREFORMED THERMOPLASTIC	SQ FT	31
PAVEMENT MESSAGE (RT ARROW) - PREFORMED THERMOPLASTIC	SQ FT	186
PAVEMENT MESSAGE (LT ARROW) - PREFORMED THERMOPLASTIC	SQ FT	248

1 10' STRIPE 40' GAP

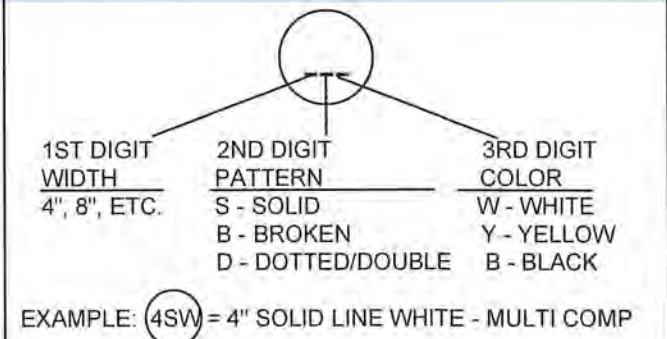
\* PAVEMENT MARKING SPECIAL

**SYMBOLS & MATERIALS LEGEND**

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

**STRIPING KEY**

- CIRCLE - MULTI COMP
- SQUARE - POLY PREFORM THERMOPLASTIC
- △ TRIANGLE - PAINT
- ⬠ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\21-01-00\CSAH_52 (105th-Flanders)\Base\Traffic\Perm Pvmr Mrkg Guide Notes.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: JOSEPH J. MACPHERSON, P.E.  
 SIGNATURE: *[Signature]*  
 DATE: 2-1-21 LICENSE NO: 48732

DRAWN BY: TMV DATE: 12/11/20  
 DESIGN BY: TMV DATE: 12/11/20  
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**ANOKA COUNTY**  
**HIGHWAY DEPT.**

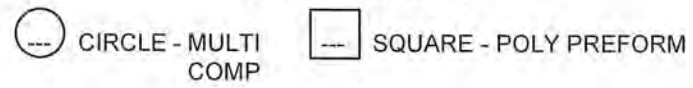
STATE AID PROJECT 002-652-009

PERMANENT MARKING  
TABULATION  
Sheet 30 of 64 Sheets

NOTES:

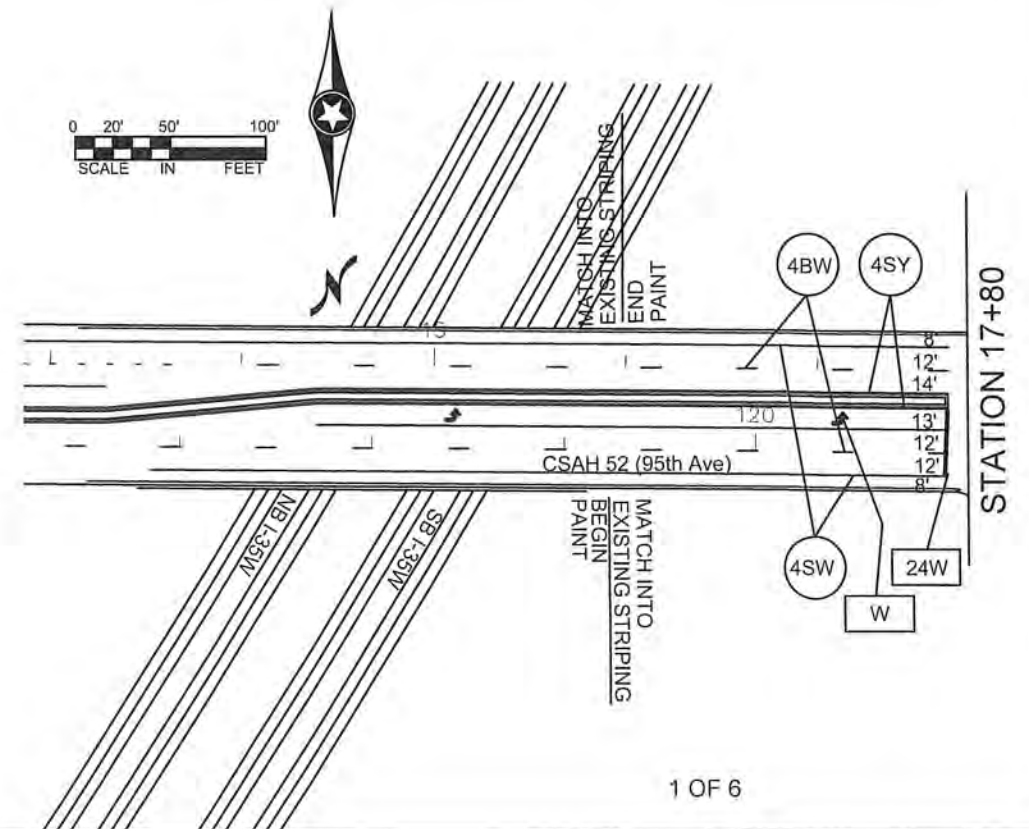
- LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
- ACCESS SHALL BE MAINTAINED TO ALL STREETS AND DRIVEWAYS IN CONSTRUCTION AREA.
- ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
- ANY REQUIRED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

STRIPING KEY



SIGN NOTES:

- ④ REINSTALL SALVAGED SIGN



1 OF 6

NO	DATE	BY	CKD	APPR	REVISION

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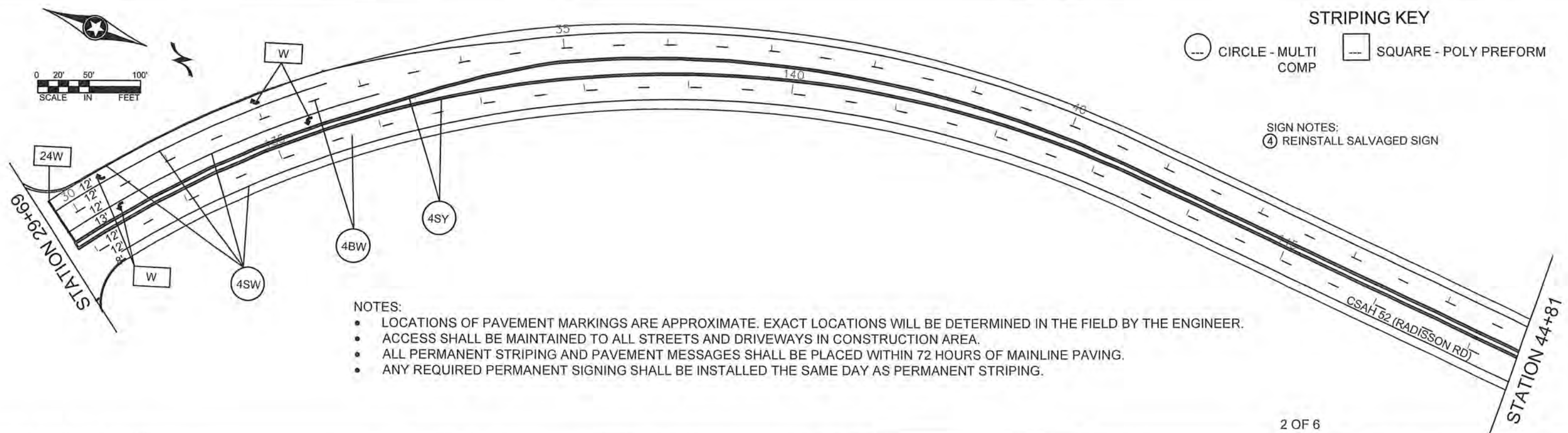
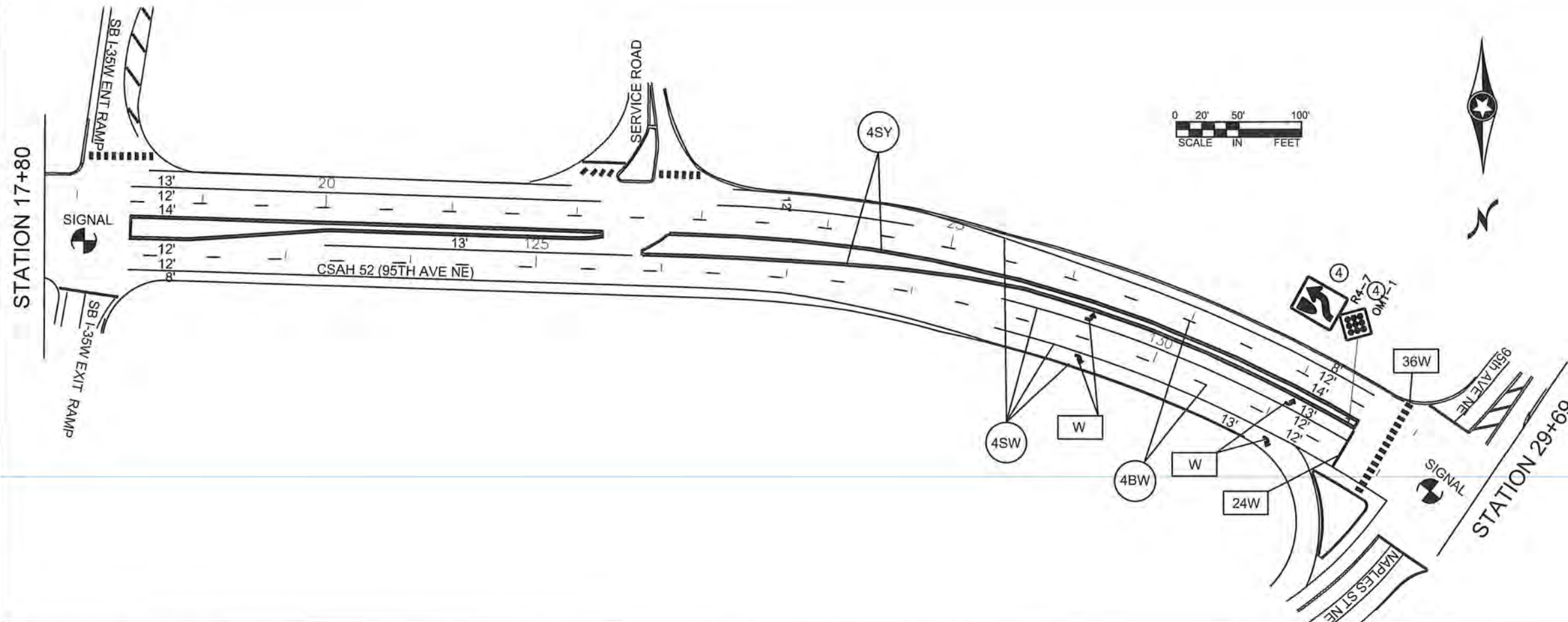
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ANOKA COUNTY  
 HIGHWAY DEPT.

STATE AID PROJECT 002-652-009

PERMANENT SIGNING &  
 STRIPING PLAN  
 Sheet 31 of 64 Sheets



**STRIPING KEY**

○ CIRCLE - MULTI COMP  
 □ SQUARE - POLY PREFORM

**SIGN NOTES:**  
 ④ REINSTALL SALVAGED SIGN

- NOTES:**
- LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
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NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\21-01-00\CSAH_52_(105th-Naples)\BaseTrafficSigning & Striping.dwg					

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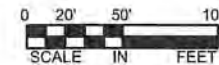
**ANOKA COUNTY**  
**HIGHWAY DEPT.**

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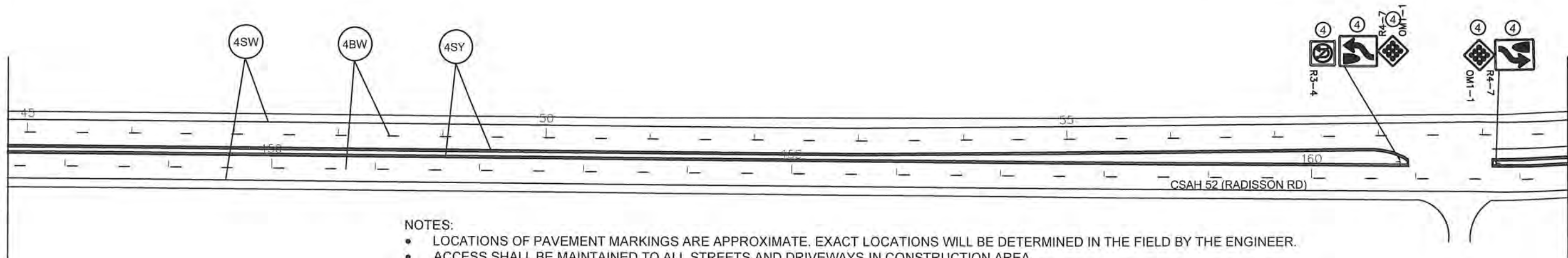
**PERMANENT SIGNING & STRIPING PLAN**

Sheet 32 of 64 Sheets



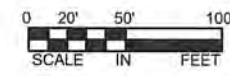
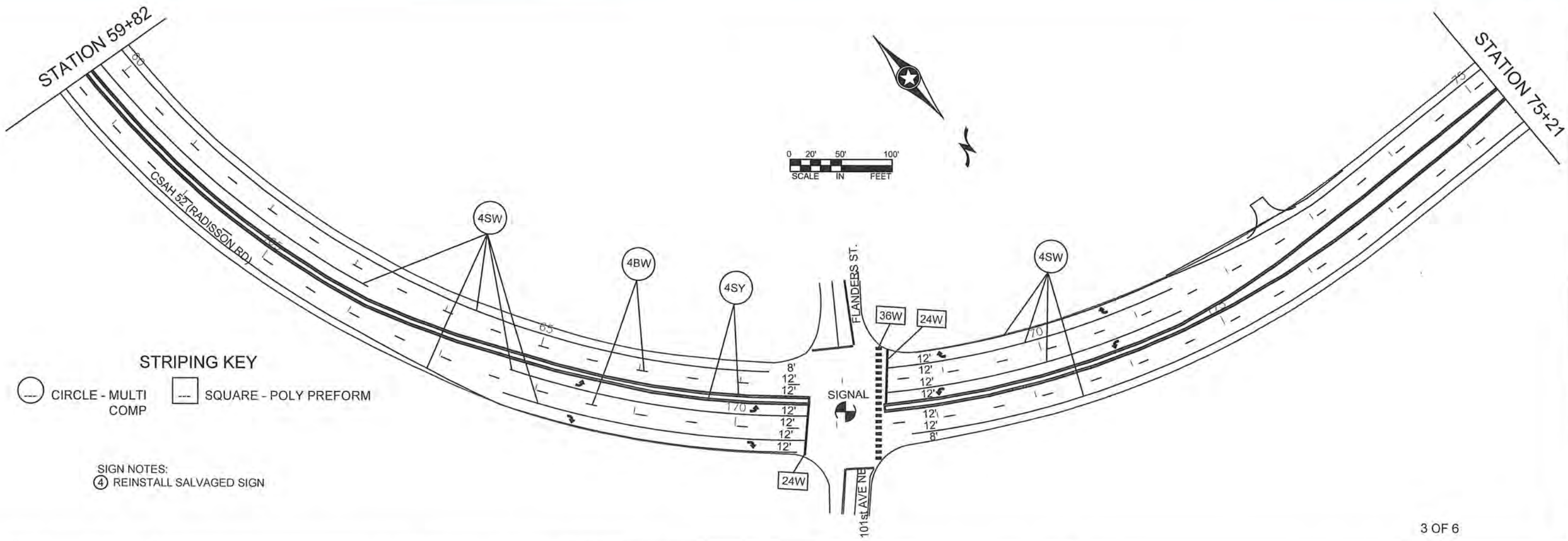


STATION 44+81



STATION 59+82

- NOTES:
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  - ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING.



STRIPING KEY

- CIRCLE - MULTI COMP
- SQUARE - POLY PREFORM

SIGN NOTES:  
④ REINSTALL SALVAGED SIGN

3 OF 6

NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\21-01-00\CSAH_52_(105th-Naples)\Base\Traffic\Signing & Striping.dwg					

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ANOKA COUNTY  
HIGHWAY DEPT.

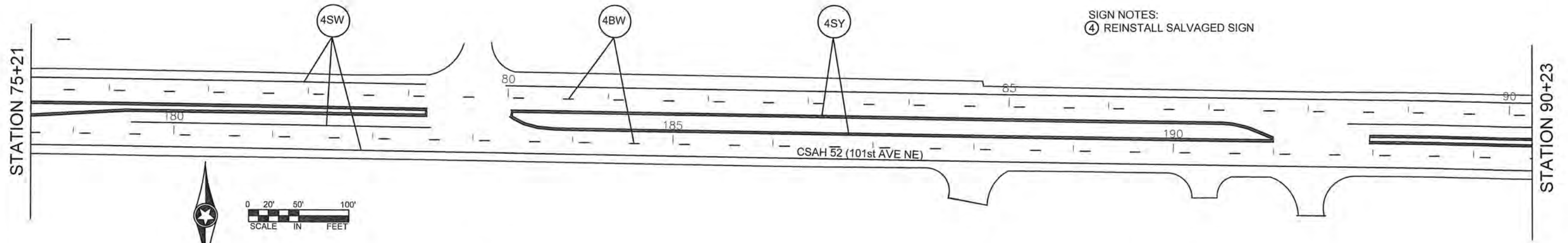
STATE AID PROJECT 002-652-009

PERMANENT SIGNING & STRIPING PLAN  
Sheet 33 of 64 Sheets

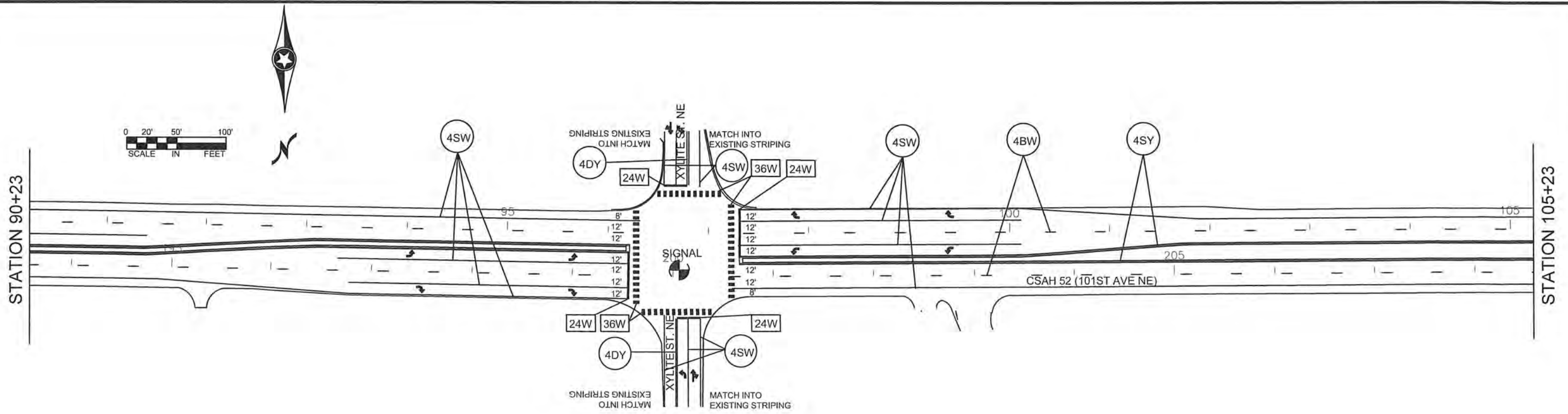
STRIPING KEY

○ CIRCLE - MULTI COMP  
 □ SQUARE - POLY PREFORM

SIGN NOTES:  
 ④ REINSTALL SALVAGED SIGN



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NO	DATE	BY	CKD	APPR	REVISION
NAME: P:\21-01-00\CSAH_52_(105th-Naples)\BaseTraffic\Signing & Striping.dwg					

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**ANOKA COUNTY**  
 HIGHWAY DEPT.



STATE AID PROJECT 002-652-009

PERMANENT SIGNING & STRIPING PLAN  
 Sheet 34 of 64 Sheets

STATION 105+23

CSAH 52 (101ST AVE NE)

4BW

4SY

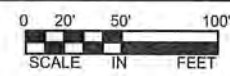
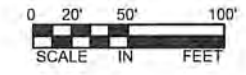
4SW

NORTH AIRPORT RD  
STATION 117+62

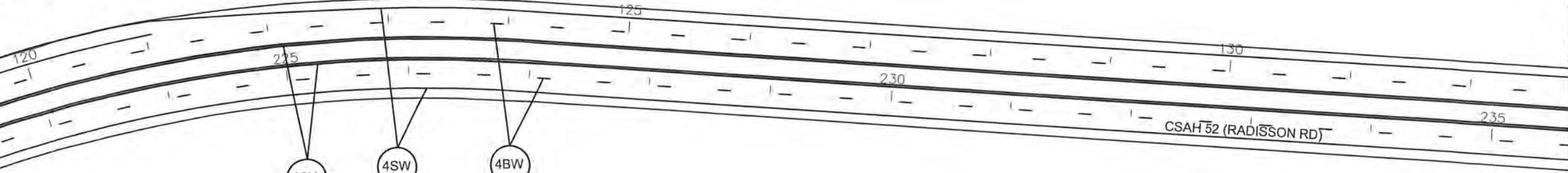
STRIPING KEY

CIRCLE - MULTI COMP  
SQUARE - POLY PREFORM

SIGN NOTES:  
④ REINSTALL SALVAGED SIGN



NORTH AIRPORT RD  
STATION 117+62



STATION 132+84

NOTES:

- 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.
- 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	CHKD	APPR	REVISION
NAME: P:\21-01-00\CSAH_52_(105th-Naples)\Base\Traffic\Signing & Striping.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: JOSEPH J. MACPHERSON, P.E.  
SIGNATURE:   
DATE: 3-1-21 LICENSE NO: 46732

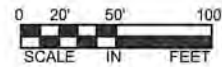
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DESIGN BY: TMV DATE: 12/11/20  
CHECKED BY: DATE:



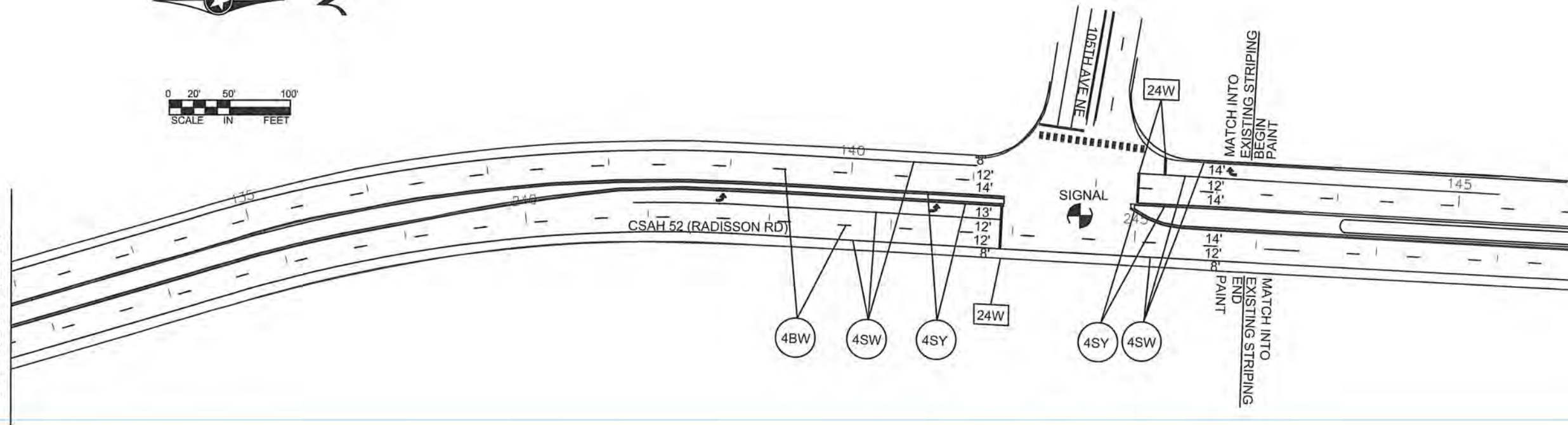
ANOKA COUNTY  
HIGHWAY DEPT.

STATE AID PROJECT 002-652-009

PERMANENT SIGNING & STRIPING PLAN  
Sheet 35 of 64 Sheets



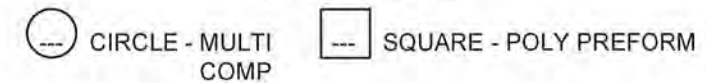
STATION 132+84



REINSTALL SALVAGE SIGNS

STATION	LOCATION	SIGN NUMBER	INSERT	ASSEMBLY QUANTITY	MOUNTING POST PER INSTALLATION	MOUNTING HEIGHT To pavement edge
28+50	MEDIAN	R4-7		1	1	7.0'
		OM1-1				
58+20	MEDIAN	R3-4		1	1	7.0'
		R4-7				
59+20	MEDIAN	OM1-1				
		R4-7		1	1	7.0'
TOTAL REINSTALL TYPE C SIGN ASSEMBLIES				3		

STRIPING KEY



SIGN NOTES:  
 ④ REINSTALL SALVAGED SIGN

NOTES:

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- ACCESS SHALL BE MAINTAINED TO ALL STREETS AND DRIVEWAYS IN CONSTRUCTION AREA.
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- ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING.

NO	DATE	BY	CKD	APPR	REVISION

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 PRINT NAME: JOSEPH J. MACPHERSON, P.E.  
 SIGNATURE:   
 DATE: 3-1-20 LICENSE NO. 46732

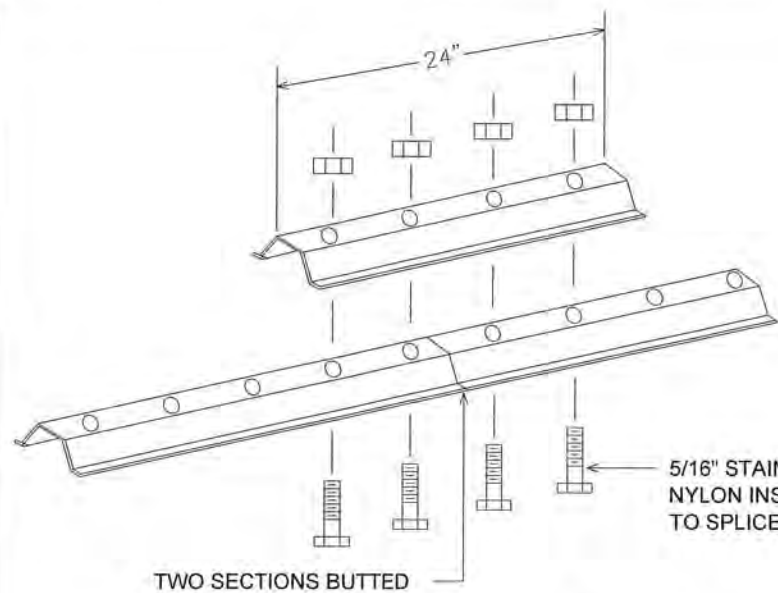
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 DESIGN BY: TMV DATE: 12/11/20  
 CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_



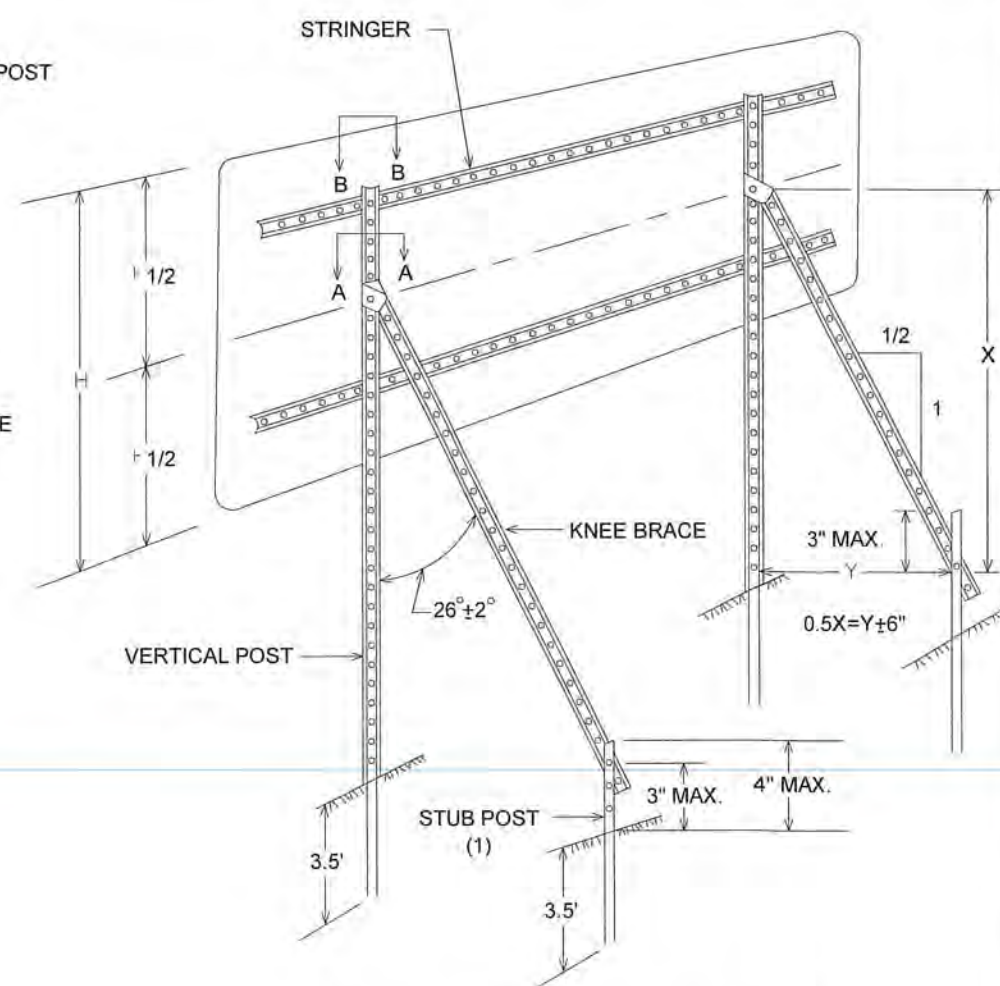
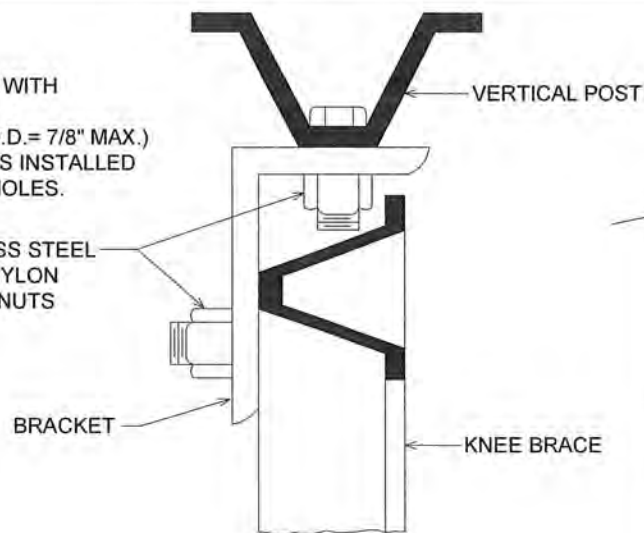
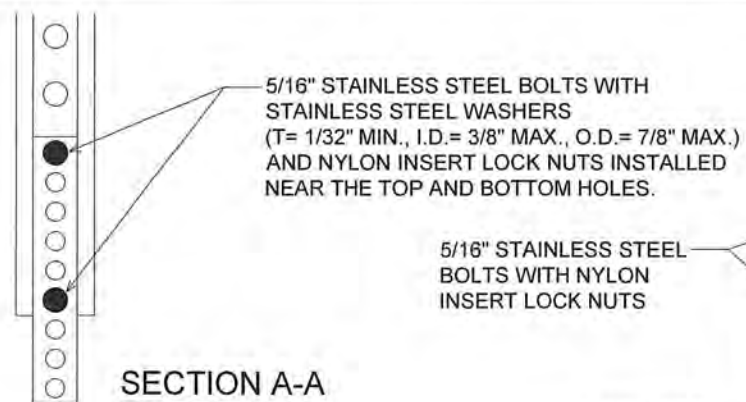
ANOKA COUNTY  
 HIGHWAY DEPT.

STATE AID PROJECT 002-652-009

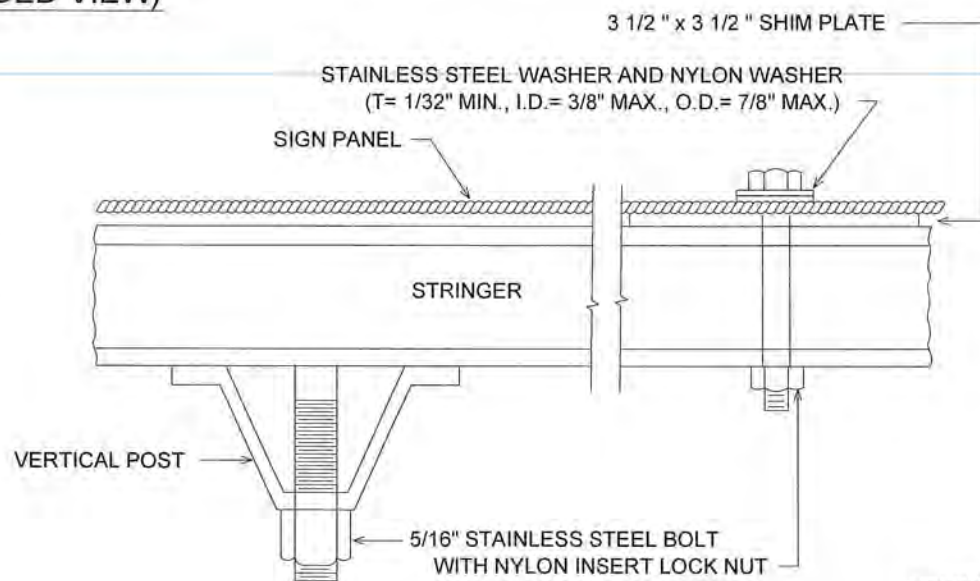
PERMANENT SIGNING & STRIPING PLAN  
 Sheet 36 of 64 Sheets



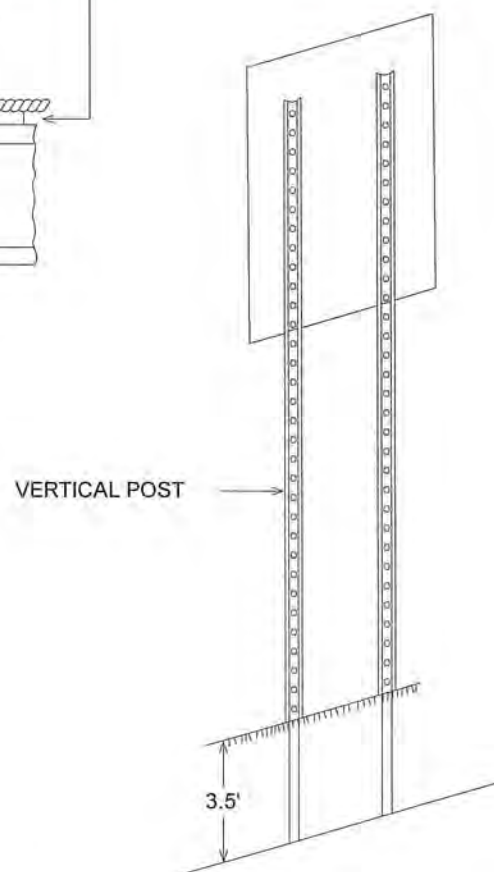
LATERAL BRACE OR STRINGER SPLICE DETAIL (EXPLODED VIEW)



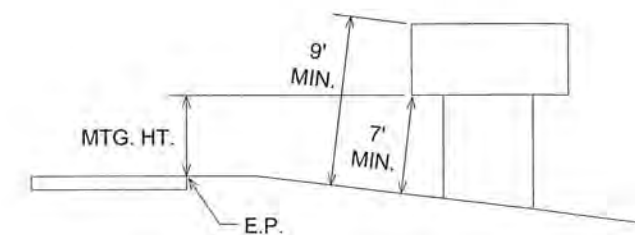
TYPICAL "A-FRAME" INSTALLATION TYPE "D" SIGNS



SECTION B-B



TYPICAL INSTALLATION 36" AND LARGER TYPE "C" SIGNS



TYPICAL MOUNTING

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

TYPE C & D SIGN STRUCTURAL DETAILS

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\21-01-00\CSAH\_52 (105th-Napies)Base\Traffic\Sign&Stripe Details.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: JOSEPH J. MACPHERSON, P.E.

SIGNATURE:

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DRAWN BY: TMV DATE: 12/11/20

DESIGN BY: TMV DATE: 12/11/20

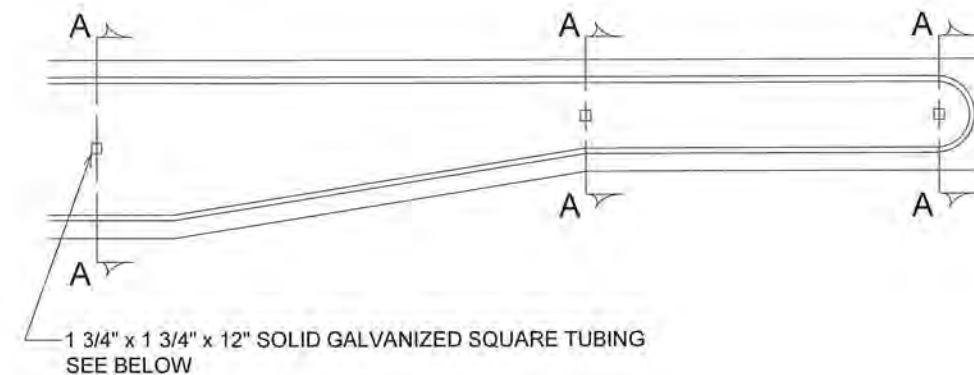
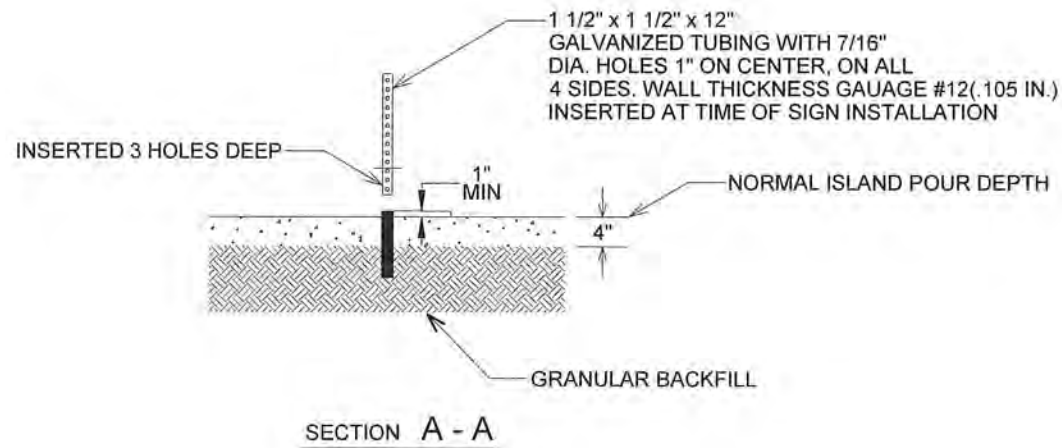
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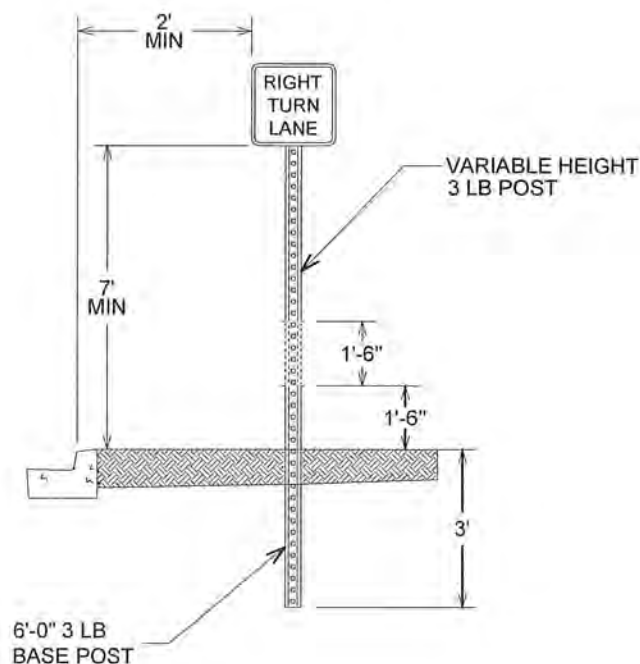
ANOKA COUNTY HIGHWAY DEPT.

STATE AID PROJECT 002-652-009

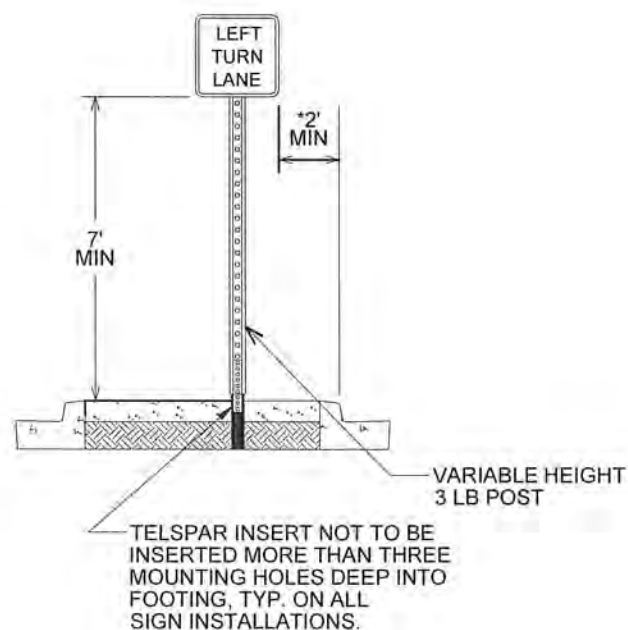
SIGNING & STRIPING DETAILS



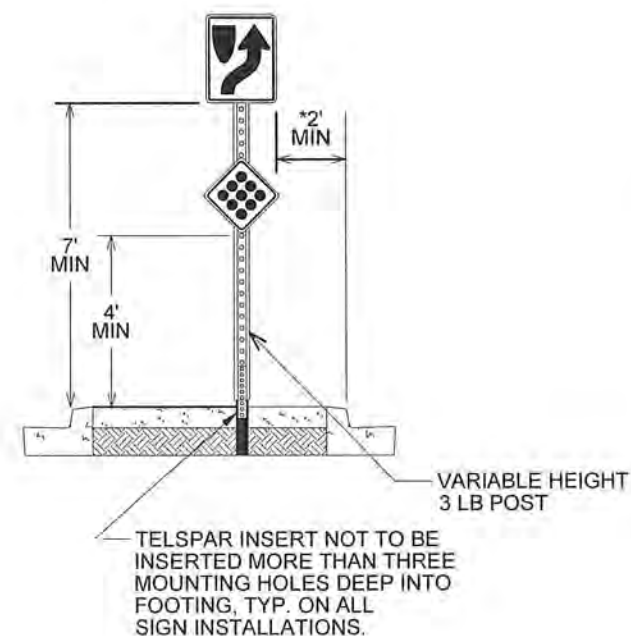
GROUND POST MOUNT SIGN  
INSTALLATION TYPICAL



ISLAND MOUNT BREAK-AWAY SIGN  
INSTALLATION TYPICAL



ISLAND MOUNT BREAK-AWAY 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	CHKD	APPR	REVISION

NAME: P:\21-01-00\CSAH\_52\_(105th-Naples)\Base\Traffic\Sign&Stripe Details.dwg

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CHECKED BY: DATE:

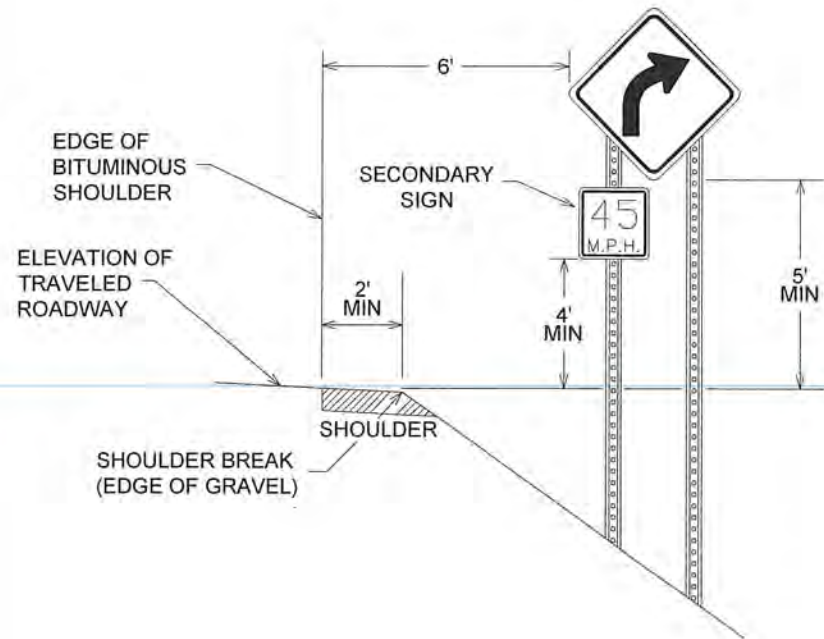


ANOKA COUNTY  
HIGHWAY DEPT.

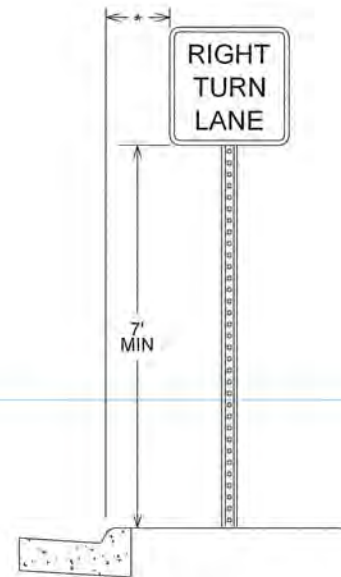
STATE AID PROJECT 002-652-009

SIGNING & STRIPING  
DETAILS

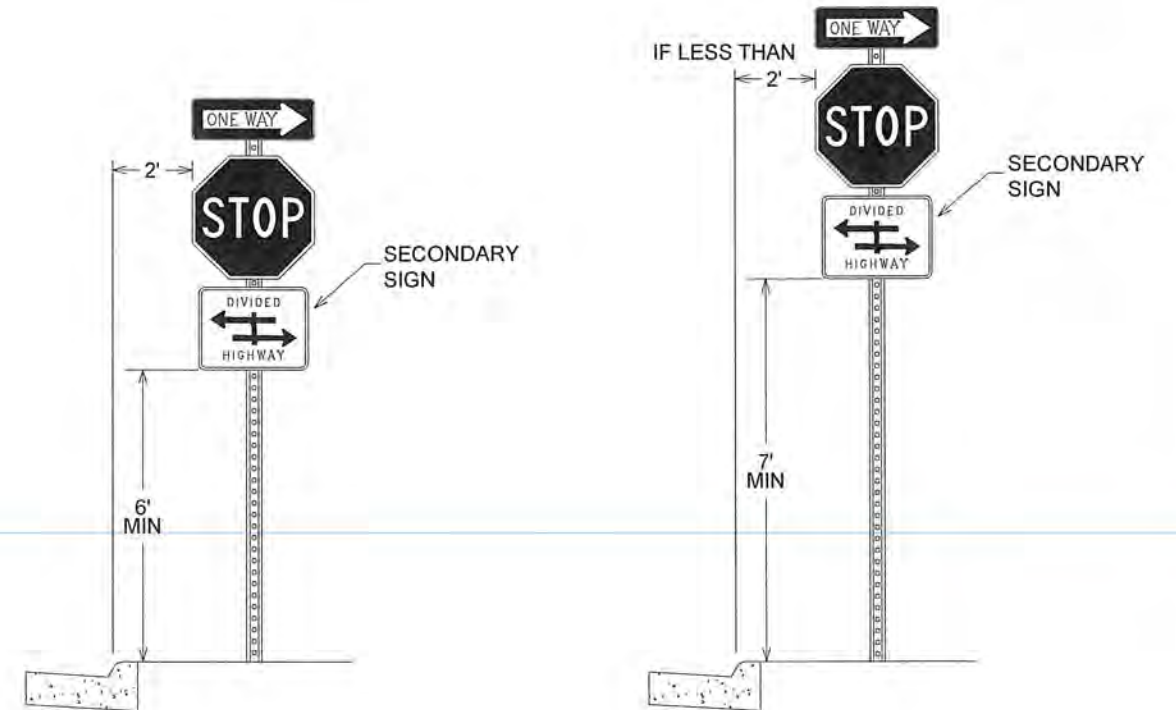
TYPICAL SIGN PLACEMENT  
(RURAL)



TYPICAL SIGN PLACEMENT  
(URBAN)



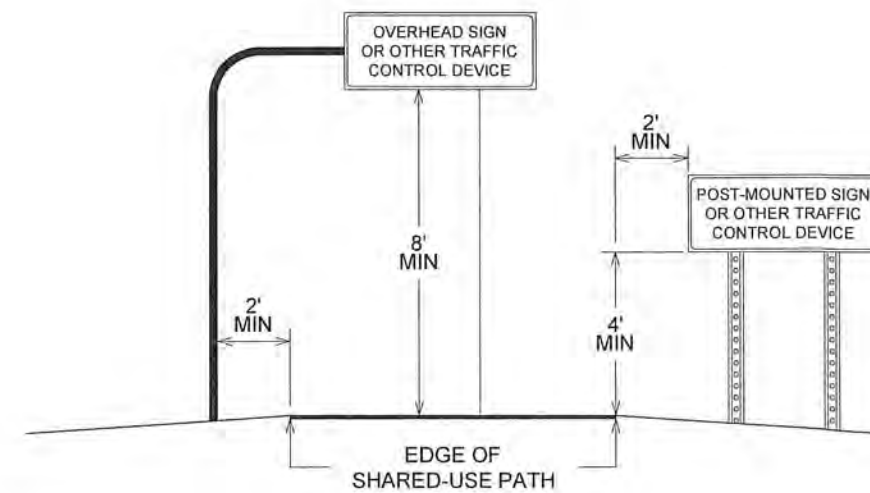
\*2' - NARROW BOULEVARD ( ≤ 8' WIDE)  
6' - WIDE BOULEVARD



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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 PRINT NAME: JOSEPH J. MACPHERSON, P.E.  
 SIGNATURE: *[Signature]*  
 DATE: 2-1-21 LICENSE NO. 46732

DRAWN BY: TMV DATE: 12/11/20  
 DESIGN BY: TMV DATE: 12/11/20  
 CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

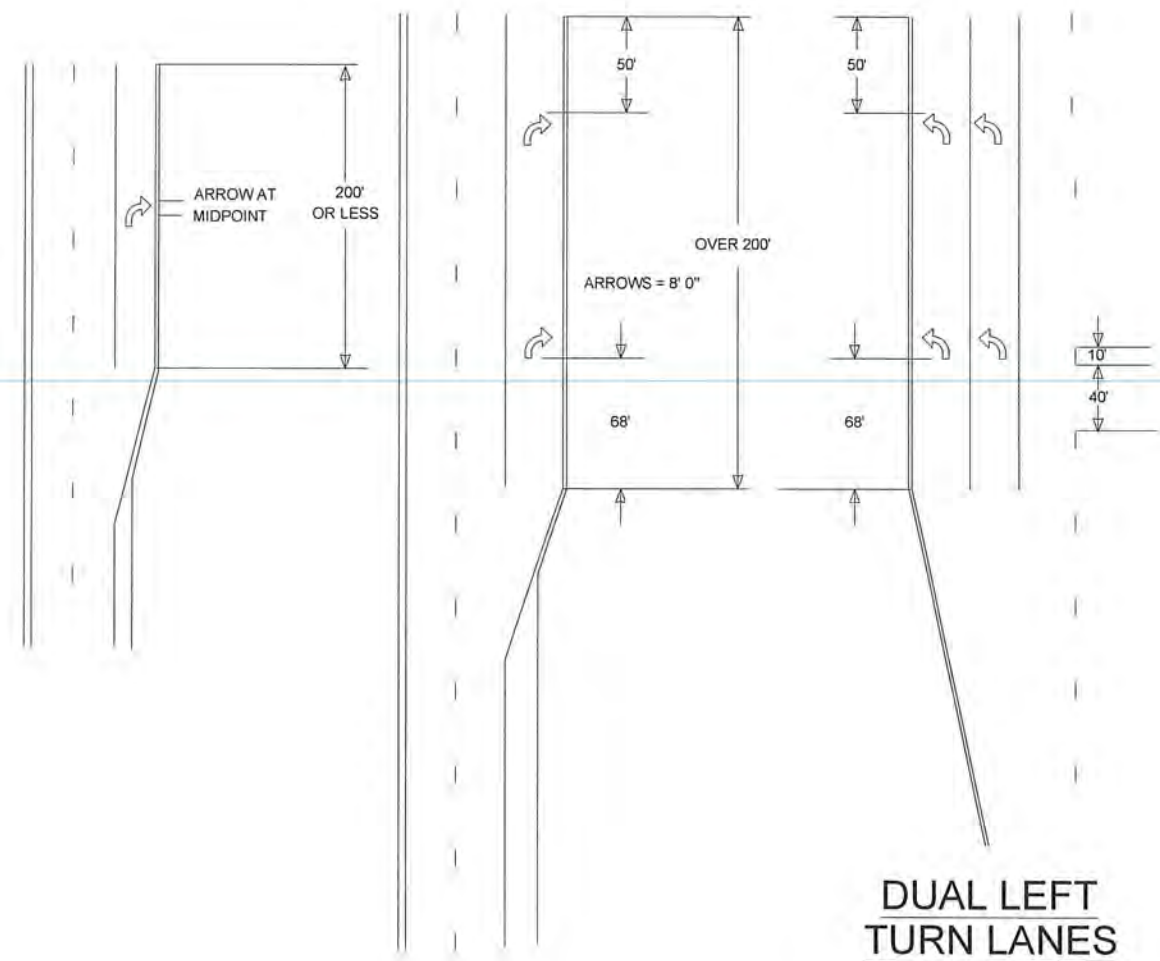


ANOKA COUNTY  
HIGHWAY DEPT.

STATE AID PROJECT 002-652-009

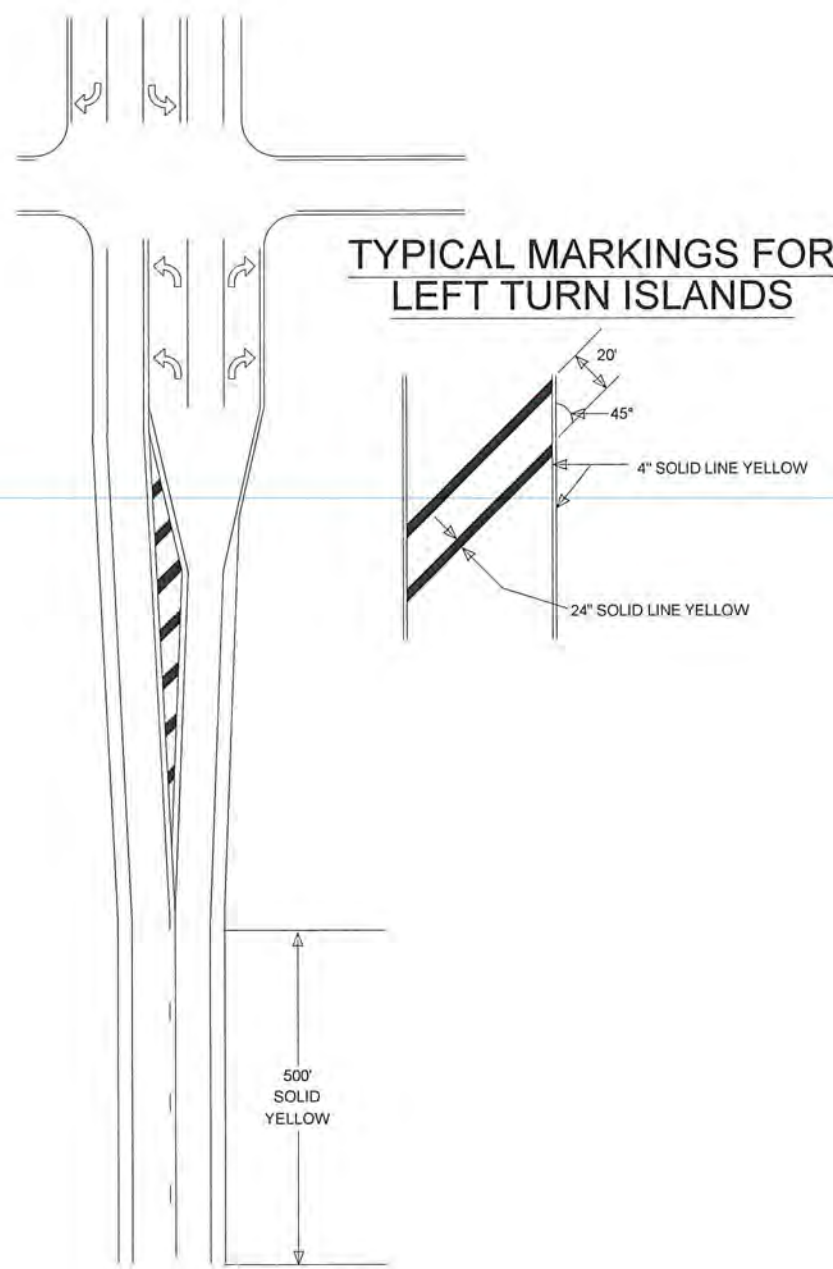
SIGNING & STRIPING  
DETAILS  
Sheet 39 of 64 Sheets

**TYPICAL MESSAGE PLACEMENT  
FOR TURN LANES**



**DUAL LEFT  
TURN LANES**

**TYPICAL MARKINGS FOR  
LEFT TURN ISLANDS**



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\21-01-00\CSAH\_52\_(105th-Naples)\BaseTraffic\Sign&Stripe Details.dwg

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SIGNATURE: *[Signature]*

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DRAWN BY: TMV DATE: 12/11/20

DESIGN BY: TMV DATE: 12/11/20

CHECKED BY: DATE:



**ANOKA COUNTY  
HIGHWAY DEPT.**

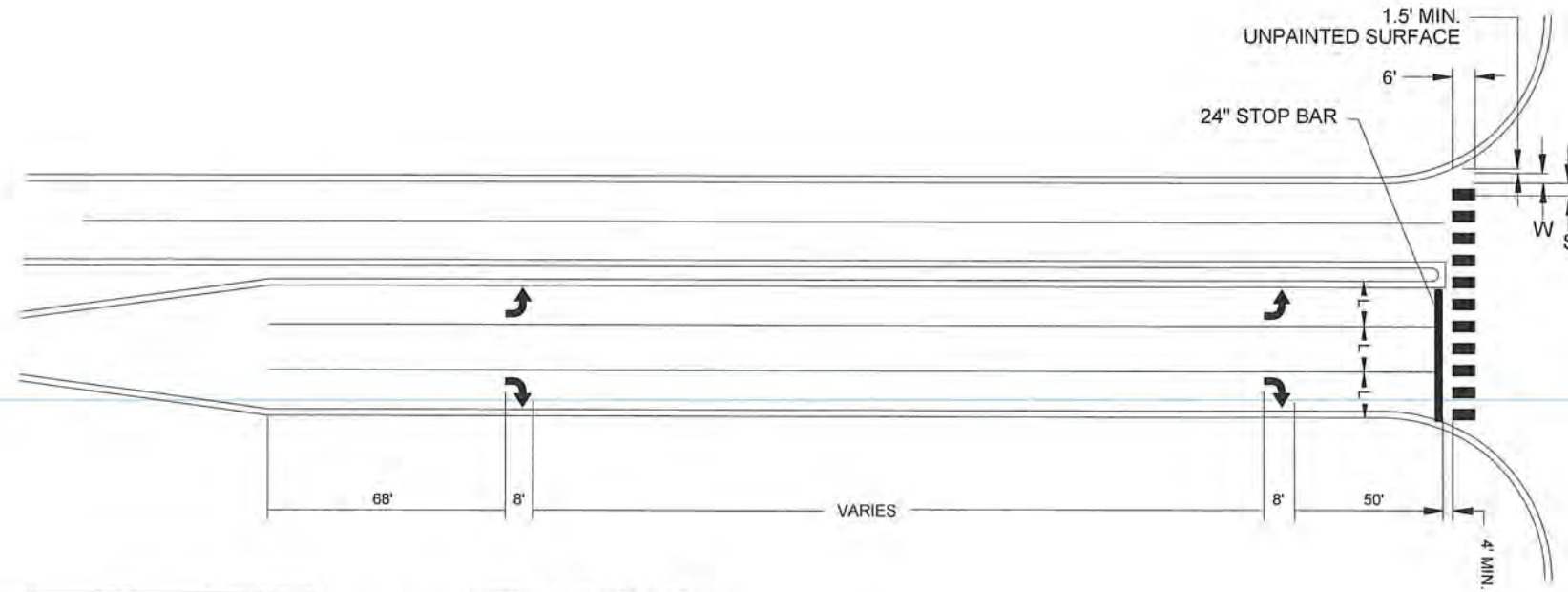
STATE AID PROJECT 002-652-009

**SIGNING & STRIPING  
DETAILS**

Sheet 40 of 64 Sheets



# MARKINGS FOR PEDESTRIAN CROSSWALKS



(L)	(W)	(S)
WIDTH OF INSIDE LANE	WIDTH OF PAINTED AREAS	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'

**NOTES: CROSSWALKS:**

- 1.) PAINTED AREAS ARE TO BE CENTERED ON CENTER AND LANE LINES, EVEN IF INTERSECTION IS NOT ALIGNED.
- 2.) LOCATION OF ZEBRA CROSSWALKS AND STOP BARS, SIGNAL LOOPS AND PED RAMP ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE DETERMINED AND FIELD VERIFIED DURING CONSTRUCTION BY THE FIELD ENGR.
- 3.) ZEBRA CROSSWALKS ARE TO BE PARALLEL TO THE DRIVING LANE OR LANES, EVEN IF THE STREET IS ON AN ANGLE TO THE INTERSECTION.
- 4.) A MIN. OF 1.5' (450mm) CLEAR DISTANCE MUST BE LEFT ADJACENT TO THE CURB. IF LAST PAINTED AREA FALLS INTO THIS AREA, IT MUST BE OMITTED.
- 5.) ON TWO LANE STREETS, USE SPACING SHOWN FOR AN 11' (3.3mm) INSIDE LANE.

NO	DATE	BY	CKD	APPR	REVISION

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PRINT NAME: JOSEPH J. MACPHERSON, P.E.  
 SIGNATURE: *[Signature]*  
 DATE: 3-1-21 LICENSE NO. 46732

DRAWN BY: TMV DATE: 12/11/20  
 DESIGN BY: TMV DATE: 12/11/20  
 CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

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

STATE AID PROJECT 002-652-009

SIGNING & STRIPING  
 DETAILS

Sheet 41 of 64 Sheets

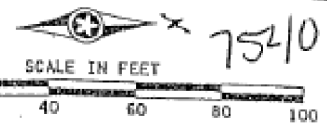
LOOP DETECTORS				
NUMBER	SIZE (FEET)	FUNCTION	LOCATION	ACTION
D2-1	6 x 6	1	475'	2
D2-2	6 x 6	1	475'	2
D4-1	2-6 x 6	3,8	EXISTING	1
D4-2	14 x 6	3,8	EXISTING	1
D4-3	2-6 x 6	7	AS SHOWN	2
D4-4	2-6 x 6	7	AS SHOWN	2
D4-5	2-14 x 6	1	10' & 40'	2
D5-1	2-6 x 6	1	10' & 40'	2
D6-1	6 x 6	1	475'	2
D6-2	6 x 6	1	475'	2

**LOOP DETECTORS FUNCTIONS      LOOP DETECTORS ACTION**

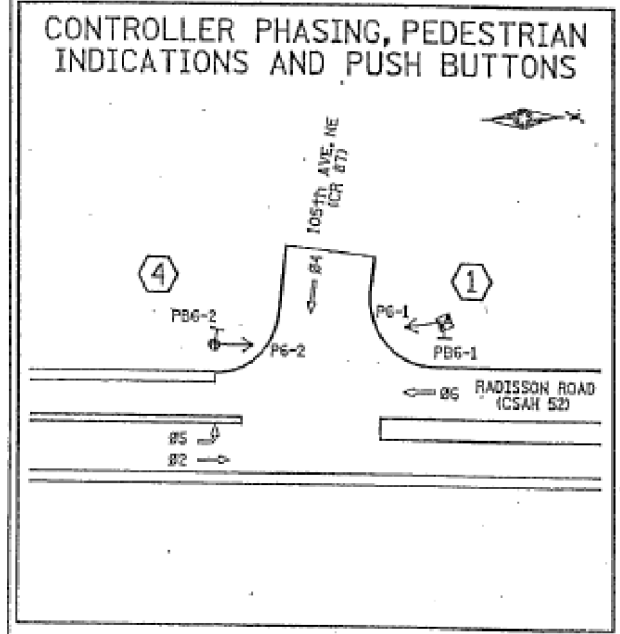
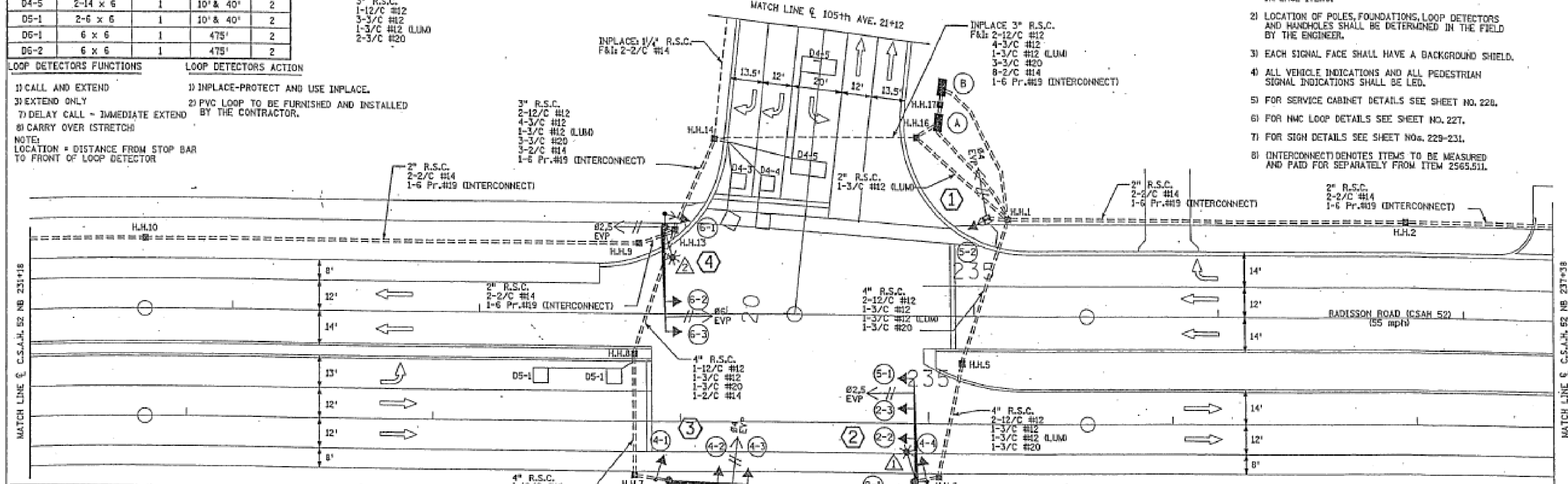
- 1) CALL AND EXTEND      1) INPLACE-PROTECT AND USE INPLACE.  
 2) EXTEND ONLY      2) PVC LOOP TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR.  
 3) DELAY CALL - IMMEDIATE EXTEND      3) CARRY OVER (STRETCH)  
 4) CARRY OVER (STRETCH)
- NOTE:  
 LOCATION = DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR

④ PA100 POLE FOUNDATION  
 TYPE PA100-A-40-D40-9 (DAVIT AT 350")  
 LUMINAIRE-200 WATT H.P.S. WITH PEC AND CHECK SWITCH  
 2-ONE WAY SIGNALS-OVERHEAD 10' AND 11' FROM LEFT END OF MAST ARM  
 TYPE 10A-POLE MOUNTED AT 180"  
 PEDESTRIAN PUSH BUTTON  
 TYPE "D" SIGN PANEL (102" x 24")-OVERHEAD (D-14)  
 R6-1 SIGN PANEL (36"x12")-POLE MOUNTED 180"  
 R9-3A SIGN (NO PEDI) FACING POLE 3  
 (S&R) ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (02,5)  
 EXTEND INTO H.H.13:  
 3" R.S.C.  
 1-12/C #12  
 3-3/C #12  
 1-3/C #12 (LUM)  
 2-3/C #20

① PEDESTAL FOUNDATION  
 10' PEDESTAL POLE AND BASE (TYPE 1C)  
 PEDESTRIAN PUSH BUTTON  
 R9-3A SIGN (NO PEDI) FACING POLE 2  
 (S&R) ONE WAY EVP DETECTOR-PEDESTAL MOUNTED (04)  
 EXTEND INTO H.H.1:  
 3" R.S.C.  
 1-12/C #12  
 1-3/C #12  
 1-3/C #20



- NOTES:**
- ITEMS INDICATED WITH (S&R) SHALL BE SALVAGED AND REINSTALLED. SEE SPECIAL PROVISIONS FOR ALL OTHER INPLACE ITEMS.
  - LOCATION OF POLES, FOUNDATIONS, LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
  - EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
  - ALL VEHICLE INDICATIONS AND ALL PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
  - FOR SERVICE CABINET DETAILS SEE SHEET NO. 220.
  - FOR NMC LOOP DETAILS SEE SHEET NO. 227.
  - FOR SIGN DETAILS SEE SHEET NOS. 229-231.
  - INTERCONNECT DENOTES ITEMS TO BE MEASURED AND PAID FOR SEPARATELY FROM ITEM 2565.511.

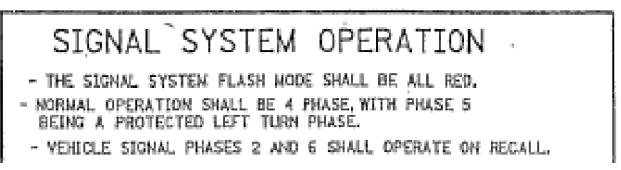


③ PA90 POLE FOUNDATION  
 TYPE PA90-A-30  
 2-ONE WAY SIGNALS-OVERHEAD 10' AND 11' FROM LEFT END OF MAST ARM  
 TYPE 10A-POLE MOUNTED AT 270"  
 TYPE "D" SIGN PANEL (108" x 24")-OVERHEAD (D-13)  
 R6-1 SIGN PANEL (36"x12")-POLE MOUNTED 270"  
 R9-3A SIGN (NO PEDI) FACING POLE 4  
 (S&R) ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (04)  
 EXTEND INTO H.H.7:  
 3" R.S.C.  
 1-12/C #12  
 1-3/C #12  
 1-3/C #20

② PA100 POLE FOUNDATION  
 TYPE PA100-A-40-D40-9 (DAVIT AT 350")  
 LUMINAIRE-200 WATT H.P.S. WITH PEC AND CHECK SWITCH  
 3-ONE WAY SIGNALS-OVERHEAD 10', 11' AND 23' FROM LEFT END OF MAST ARM  
 2-TYPE 10A-POLE MOUNTED AT 90' AND 180"  
 TYPE "D" SIGN PANEL (102" x 24")-OVERHEAD (D-12)  
 R6-1 SIGN PANEL (36"x12")-POLE MOUNTED 0"  
 R9-3A SIGN (NO PEDI) FACING POLE 1  
 (S&R) ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (02,5)  
 EXTEND INTO H.H.6:  
 3" R.S.C.  
 2-12/C #12  
 1-3/C #12  
 1-3/C #12 (LUM)  
 1-3/C #20

A) INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY) CABINET AND FOUNDATION EXTEND INTO H.H.17 METERED SIGNAL SERVICE 1/2" R.S.C. 3-1/C #6 EXTEND INTO H.H.1: 4" R.S.C. 3-12/C #12 2-3/C #12 2-3/C #20 2-3/C #20 2-2/C #14 1-6 Pr.#19 (INTERCONNECT) EXTEND INTO H.H.16: 4" R.S.C. 2-12/C #12 4-3/C #12 3-3/C #20 8-2/C #14 1-6 Pr.#19 (INTERCONNECT) STUB OUT 2-3" R.S.C. (THREAD AND CAP BOTH ENDS-FOR FUTURE USE)

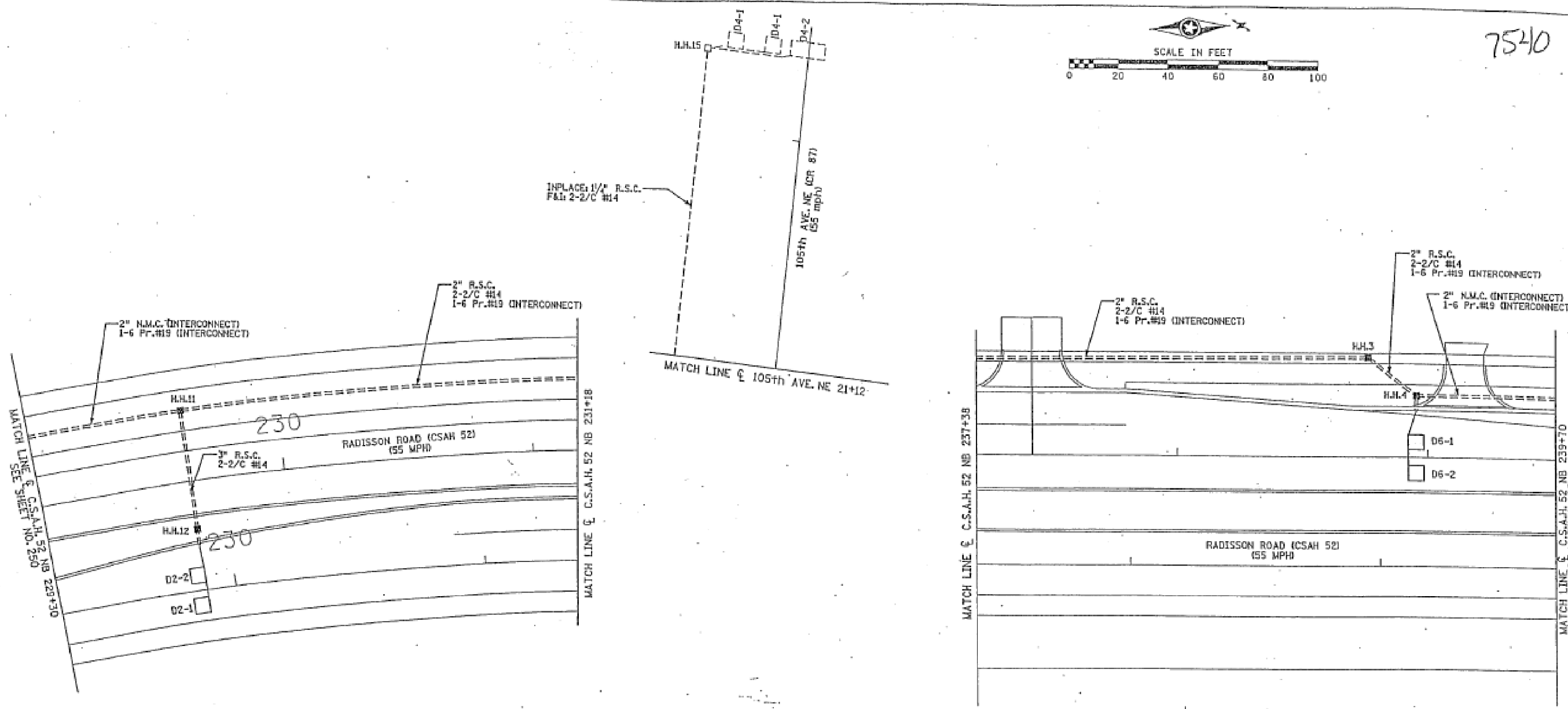
B) SERVICE CABINET CABINET FOUNDATION EXTEND INTO H.H.1: 1/2" R.S.C. 2-3/C #12 (LUM) EXTEND INTO H.H.17: METERED SIGNAL SERVICE 1/2" R.S.C. 3-1/C #6 STUB OUT 2" R.S.C. (FOR SERVICE BY CONNEXUS)



SIGNAL INDICATIONS						
ALL INDICATIONS SHALL BE 12" LED						
FACE	R	Y	G	RLTA	YLTA	GLTA
2-1, 2-2, 2-3	●	●	●			
4-1, 4-2, 4-3, 4-4	●	●	●			
5-1, 5-2				←	←	←
6-1, 6-2, 6-3	●	●	●			

FOR REFERENCE PURPOSES ONLY

75410



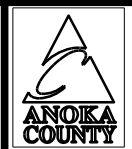
NOTE:  
 (INTERCONNECT) DENOTES ITEMS TO BE MEASURED  
 AND PAID FOR SEPARATELY FROM ITEM 2565.511.

FOR REFERENCE PURPOSES ONLY

NO	DATE	BY	CKD	APPR	REVISION	02/02/2021	1:25:34 PM
NAME: P:\21-01-00\CSAH_52_(105th-Naples)\Base\Proposed\CSAH_52_SIGNALS.dgn							

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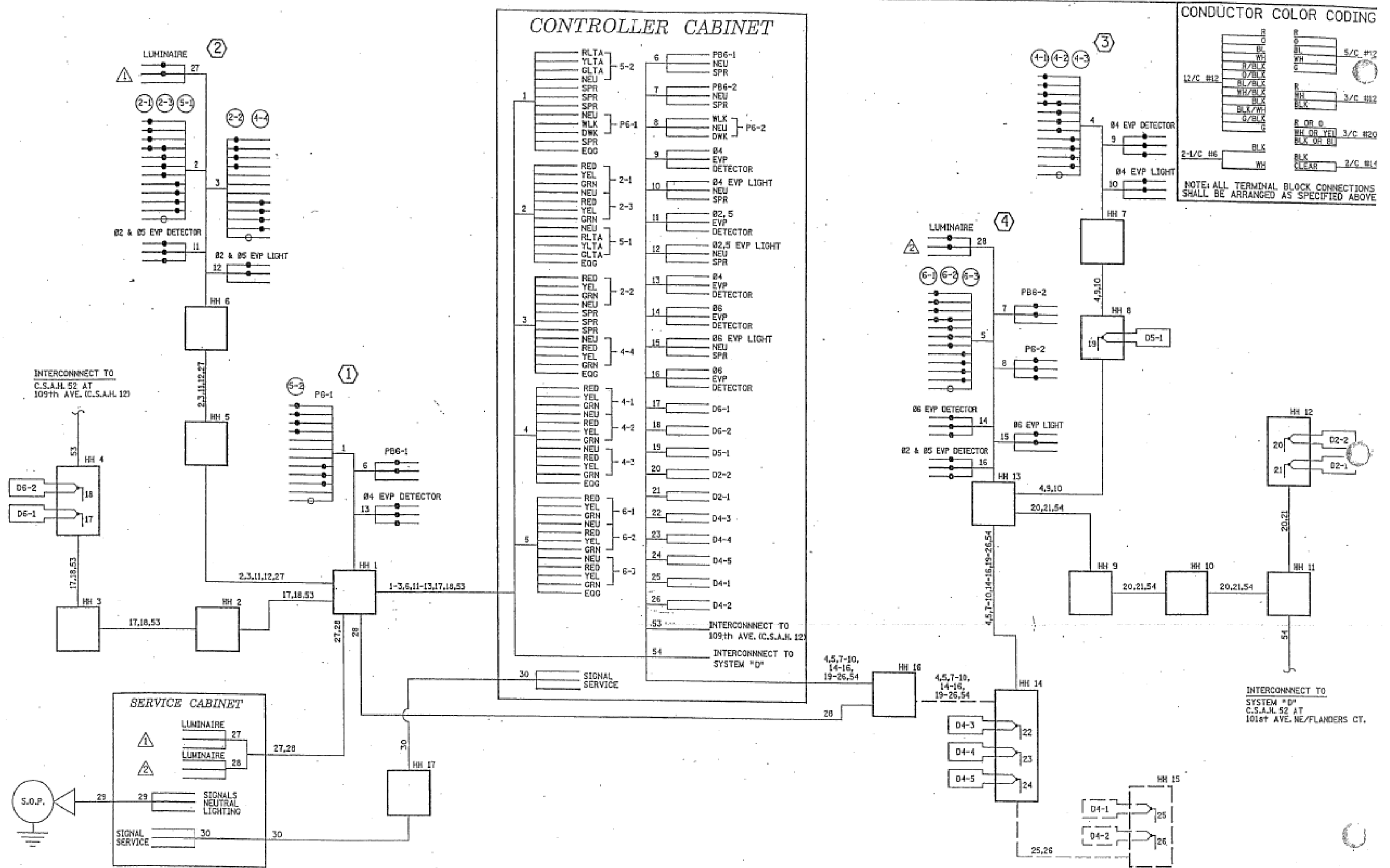
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 DESIGN BY SPH DATE 02/02/2021  
 CHECKED BY CSO DATE 02/02/2021



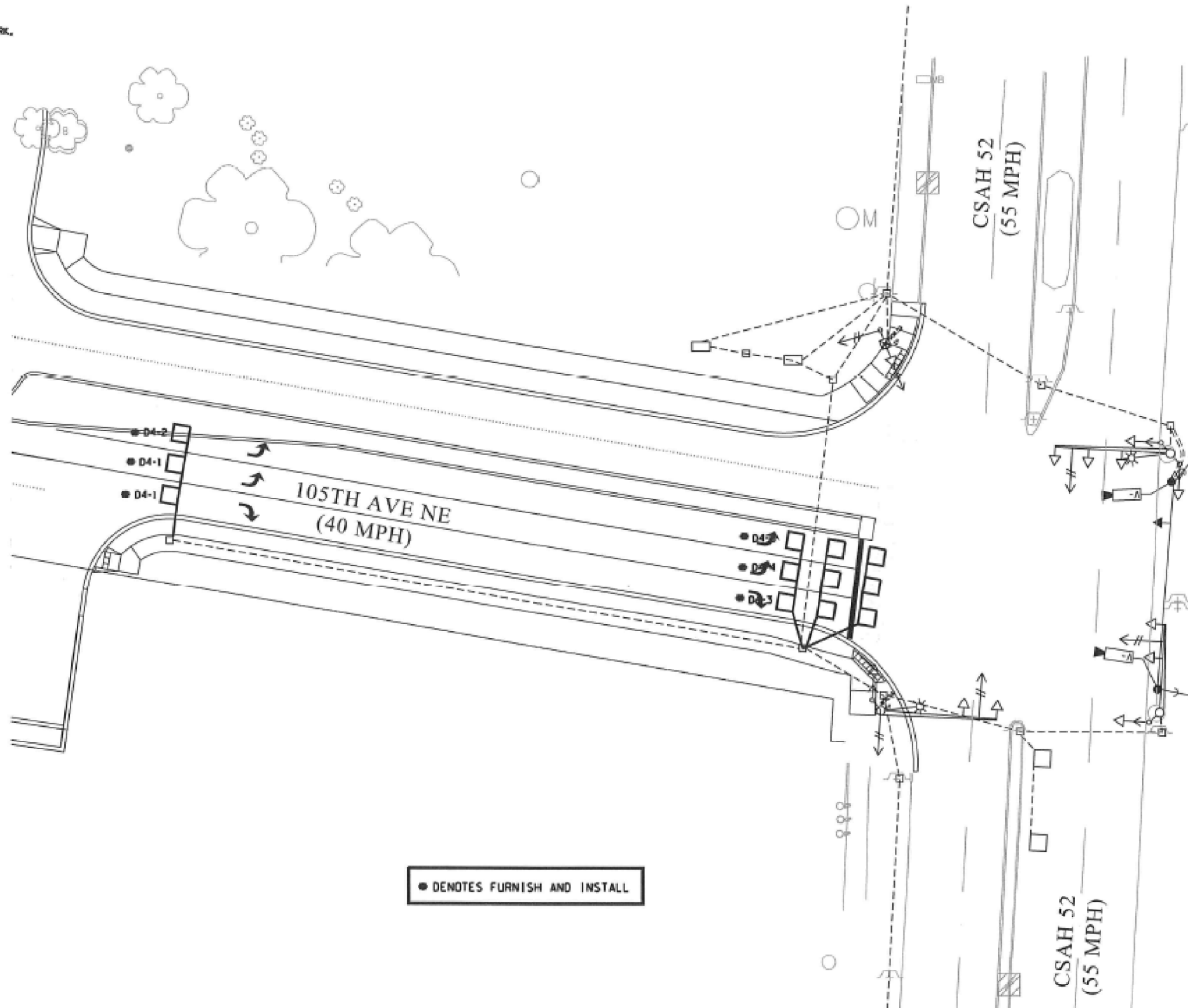
ANOKA COUNTY  
 HIGHWAY DEPT.

STATE AID PROJECT 002-652-009

EXISTING SIGNAL PLANS  
 Sheet 43 of 64 Sheets



- NOTES:**
1. CONTRACTOR SHALL FURNISH AND INSTALL NMC LOOP DETECTORS D4-1, D4-2, D4-3, D4-4 AND D4-5.
  2. CONTRACTOR SHALL FURNISH AND INSTALL SPLICE KITS IN EXISTING HH'S.
  3. CONTRACTOR SHALL CONTACT COUNTY PRIOR TO ANY SIGNAL WORK.



N.M.C. LOOP DETECTORS		
NUMBER	SIZE (FT.)	LOCATION
D2-1	6 X 6	INP
D2-2	6 X 6	INP
D4-1	6 X 6	250
D4-2	6 X 6	250
D4-3	6 X 6	-5, 5 & 20
D4-2	6 X 6	-5, 5 & 20
D4-3	6 X 6	-5, 5 & 20
D5-1	6 X 6	INP
D6-1	6 X 6	INP
D6-2	6 X 6	INP

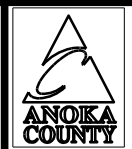
NOTE: LOCATION=DISTANCE FROM CROSSWALK TO FRONT OF DETECTOR.  
 ● FURNISH AND INSTALL NMC LOOPS

● DENOTES FURNISH AND INSTALL

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NO	DATE	BY	CKD	APPR	REVISION	02/02/2021	1:25:49 PM
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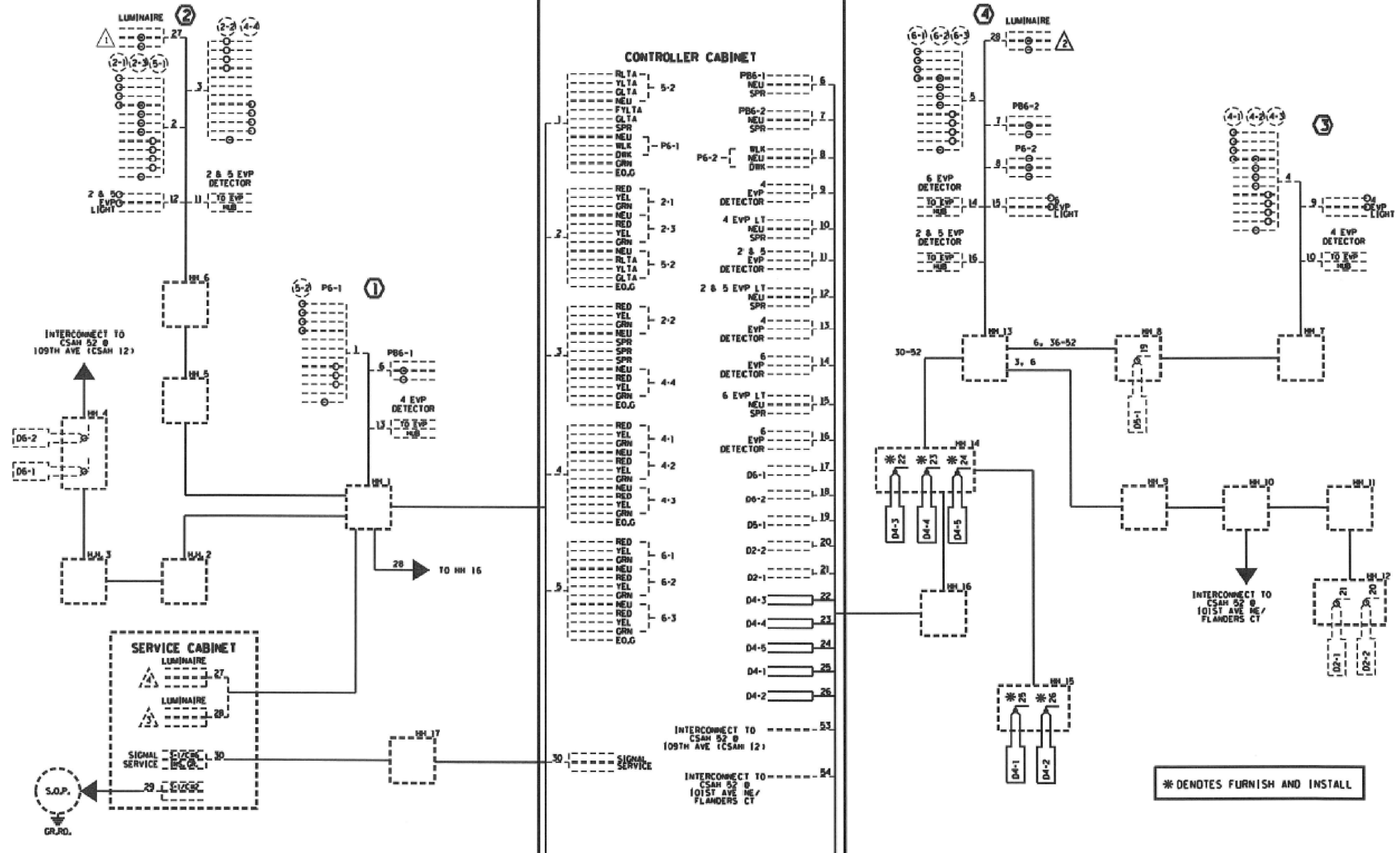
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**ANOKA COUNTY  
 HIGHWAY DEPT.**

STATE AID PROJECT 002-652-009

EXISTING SIGNAL PLANS  
 Sheet 45 of 64 Sheets



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ANOKA COUNTY  
HIGHWAY DEPT.

STATE AID PROJECT 002-652-009

EXISTING SIGNAL PLANS  
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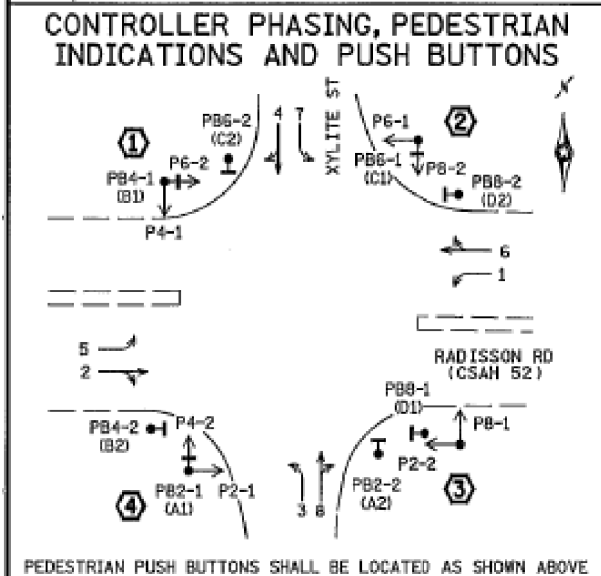
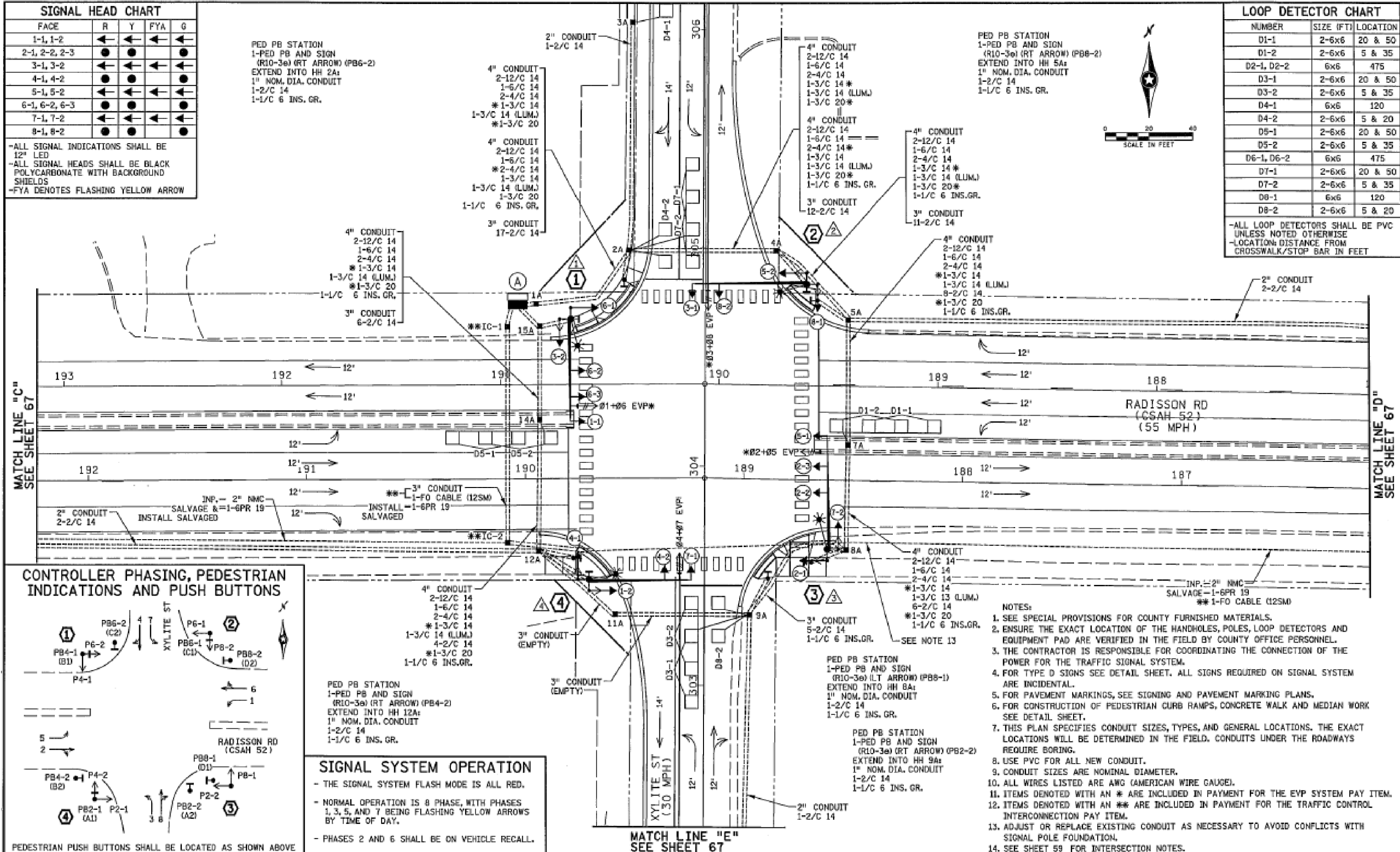
SIGNAL HEAD CHART				
FACE	R	Y	FYA	G
1-1, 1-2	←	←	←	←
2-1, 2-2, 2-3	●	●	●	●
3-1, 3-2	←	←	←	←
4-1, 4-2	●	●	●	●
5-1, 5-2	←	←	←	←
6-1, 6-2, 6-3	●	●	●	●
7-1, 7-2	←	←	←	←
8-1, 8-2	●	●	●	●

-ALL SIGNAL INDICATIONS SHALL BE 12" LED  
 -ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS  
 -FYA DENOTES FLASHING YELLOW ARROW

PED PB STATION  
 1-PED PB AND SIGN (R10-36) (RT ARROW) (PB6-2)  
 EXTEND INTO HH 2A:  
 1" NOM. DIA. CONDUIT  
 1-2/C 14  
 1-1/2 6 INS. GR.

LOOP DETECTOR CHART		
NUMBER	SIZE (FT)	LOCATION
D1-1	2-6x6	20 & 50
D1-2	2-6x6	5 & 35
D2-1, D2-2	6x6	475
D3-1	2-6x6	20 & 50
D3-2	2-6x6	5 & 35
D4-1	6x6	120
D4-2	2-6x6	5 & 20
D5-1	2-6x6	20 & 50
D5-2	2-6x6	5 & 35
D6-1, D6-2	6x6	475
D7-1	2-6x6	20 & 50
D7-2	2-6x6	5 & 35
D8-1	6x6	120
D8-2	2-6x6	5 & 20

-ALL LOOP DETECTORS SHALL BE PVC UNLESS NOTED OTHERWISE  
 -LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET



### SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASES 1, 3, 5, AND 7 BEING FLASHING YELLOW ARROWS BY TIME OF DAY.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

- NOTES:
1. SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
  2. ENSURE THE EXACT LOCATION OF THE HANDHOLES, POLES, LOOP DETECTORS AND EQUIPMENT PAD ARE VERIFIED IN THE FIELD BY COUNTY OFFICE PERSONNEL.
  3. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM.
  4. FOR TYPE D SIGNS SEE DETAIL SHEET. ALL SIGNS REQUIRED ON SIGNAL SYSTEM ARE INCIDENTAL.
  5. FOR PAVEMENT MARKINGS, SEE SIGNING AND PAVEMENT MARKING PLANS.
  6. FOR CONSTRUCTION OF PEDESTRIAN CURB RAMPS, CONCRETE WALK AND MEDIAN WORK SEE DETAIL SHEET.
  7. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER THE ROADWAYS REQUIRE BORING.
  8. USE PVC FOR ALL NEW CONDUIT.
  9. CONDUIT SIZES ARE NOMINAL DIAMETER.
  10. ALL WIRES LISTED ARE AWG (AMERICAN WIRE GAUGE).
  11. ITEMS DENOTED WITH AN \* ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
  12. ITEMS DENOTED WITH AN \*\* ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.
  13. ADJUST OR REPLACE EXISTING CONDUIT AS NECESSARY TO AVOID CONFLICTS WITH SIGNAL POLE FOUNDATION.
  14. SEE SHEET 59 FOR INTERSECTION NOTES.

FOR REFERENCE PURPOSES ONLY

**INTERSECTION NOTES**

① PA100 POLE FOUNDATION  
 INSTALL—TYPE PA100-A-45-030-9 (DAVIT AT 350 DEG)  
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 2-STRAIGHT MOUNT SIGNALS OVERHEAD AT 10' AND 22'  
 2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG  
 2-ANGLE MOUNT C. D. PED HEADS AT 90 AND 180 DEG  
 INSTALL—1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 1+6)  
 LUMINAIRE-LED (FOR 30' MOUNTING HEIGHT)  
 1-PED PB AND SIGN (R10-3a) (LT ARROW) (PB4-1)  
 1-R10-X12 SIGN ADJACENT TO HEAD (1-1)  
 1-TYPE D SIGN (D-2) (SEE SIGN DETAILS)  
 2-R6-1 SIGNS POLE MOUNTED  
 3" CONDUIT TO HH 15A:  
 2-12/C 14  
 1-6/C 14  
 2-4/C 14  
 \* 1-3/C 14  
 1-3/C 14 (LUM.)  
 1-2/C 14  
 \* 1-3/C 20  
 1-1/C 6 INS. GR.

③ PA100 POLE FOUNDATION  
 INSTALL—TYPE PA100-A-50-025-9 (DAVIT AT 350 DEG)  
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 2-STRAIGHT MOUNT SIGNALS OVERHEAD AT 12' AND 24'  
 2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG  
 2-ANGLE MOUNT C. D. PED HEADS AT 90 AND 180 DEG  
 INSTALL—1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 2+5)  
 LUMINAIRE-LED (FOR 25' MOUNTING HEIGHT)  
 1-R10-X12 SIGN ADJACENT TO HEAD (5-1)  
 1-TYPE D SIGN (D-2) (SEE SIGN DETAILS)  
 2-R6-1 SIGNS POLE MOUNTED  
 3" CONDUIT TO HH 8A:  
 2-12/C 14  
 1-6/C 14  
 2-4/C 14  
 \* 1-3/C 14  
 1-3/C 14 (LUM.)  
 \* 1-3/C 20  
 1-1/C 6 INS. GR.

② PA100 POLE FOUNDATION  
 INSTALL—TYPE PA100-A-50-025-9 (DAVIT AT 350 DEG)  
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 11'  
 2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG  
 2-ANGLE MOUNT C. D. PED HEADS AT 90 AND 180 DEG  
 INSTALL—1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 3+8)  
 LUMINAIRE-LED (FOR 25' MOUNTING HEIGHT)  
 1-PED PB AND SIGN (R10-3a) (LT ARROW) (PB6-1)  
 1-R10-X12 SIGN ADJACENT TO HEAD (3-1)  
 1-TYPE D SIGN (D-1) (SEE SIGN DETAILS)  
 3" CONDUIT TO HH 4A:  
 2-12/C 14  
 1-6/C 14  
 2-4/C 14  
 \* 1-3/C 14  
 1-3/C 14 (LUM.)  
 1-2/C 14  
 \* 1-3/C 20  
 1-1/C 6 INS. GR.

④ PA100 POLE FOUNDATION  
 INSTALL—TYPE PA100-A-45-030-9 (DAVIT AT 350 DEG)  
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 11'  
 2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG  
 2-ANGLE MOUNT C. D. PED HEADS AT 90 AND 180 DEG  
 INSTALL—1-ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT (PHASES 4+7)  
 LUMINAIRE-LED (FOR 30' MOUNTING HEIGHT)  
 1-PED PB AND SIGN (R10-3a) (LT ARROW) (PB2-1)  
 1-R10-X12 SIGN ADJACENT TO HEAD (7-1)  
 1-TYPE D SIGN (D-1) (SEE SIGN DETAILS)  
 3" CONDUIT TO HH 12A:  
 2-12/C 14  
 1-6/C 14  
 2-4/C 14  
 \* 1-3/C 14  
 1-3/C 14 (LUM.)  
 1-2/C 14  
 \* 1-3/C 20  
 1-1/C 6 INS. GR.

Ⓐ EQUIPMENT PAD (SEE DETAIL SHEET)  
 SERVICE CABINET (SSB)  
 INSTALL—CONTROLLER AND CABINET (COUNTY FURNISHED)  
 4" CONDUIT TO HH 1A:  
 2-12/C 14  
 1-6/C 14  
 2-4/C 14  
 \* 1-3/C 14  
 \* 1-3/C 20  
 4" CONDUIT TO HH 1A:  
 2-12/C 14  
 1-6/C 14  
 2-4/C 14  
 \* 1-3/C 14  
 \* 1-3/C 20  
 1-1/C 6 INS. GR.  
 3" CONDUIT TO HH 1A:  
 17-2/C 14  
 \*\*—2" CONDUIT TO IC-1:  
 1-F0 CABLE (125M)  
 INSTALL SALVAGED—1-6PR 19

GROUND WIRE AND GROUND ROD - MIN 8' OUT FROM PAD  
 2-3" AND 1-1" CONDUIT STUBBED OUT (CAPPED BOTH ENDS)  
 CONTROLLER CABINET TO SERVICE CABINET:  
 2" CONDUIT  
 3-1/C 6  
 CONTROLLER CABINET TO SERVICE CABINET (COMMS):  
 2" CONDUIT  
 1-4/C 14  
 1-6PR 19  
 SERVICE CABINET TO HH 16A TO POLE MOUNTED TRANSFORMER:  
 2" CONDUIT  
 3-1/C 2  
 SERVICE CABINET TO HH 1A:  
 1 1/4" CONDUIT  
 2-3/C 14 (LUM.)  
 SERVICE CABINET TO HH 15A:  
 1 1/4" CONDUIT  
 2-3/C 14 (LUM.)  
 SERVICE CABINET TO EXTERNAL GR. RD.:  
 1" CONDUIT  
 1-1/C 6 INS. GR.  
 (SEE EQUIPMENT PAD LAYOUT)

Ⓑ SOP-WOOD POLE MOUNTED  
 TRANSFORMER (LOCATION TO BE DETERMINED)  
 2" CONDUIT TO HH 16A TO SERVICE CABINET:  
 3-1/C 2

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ANOKA COUNTY  
 HIGHWAY DEPT.

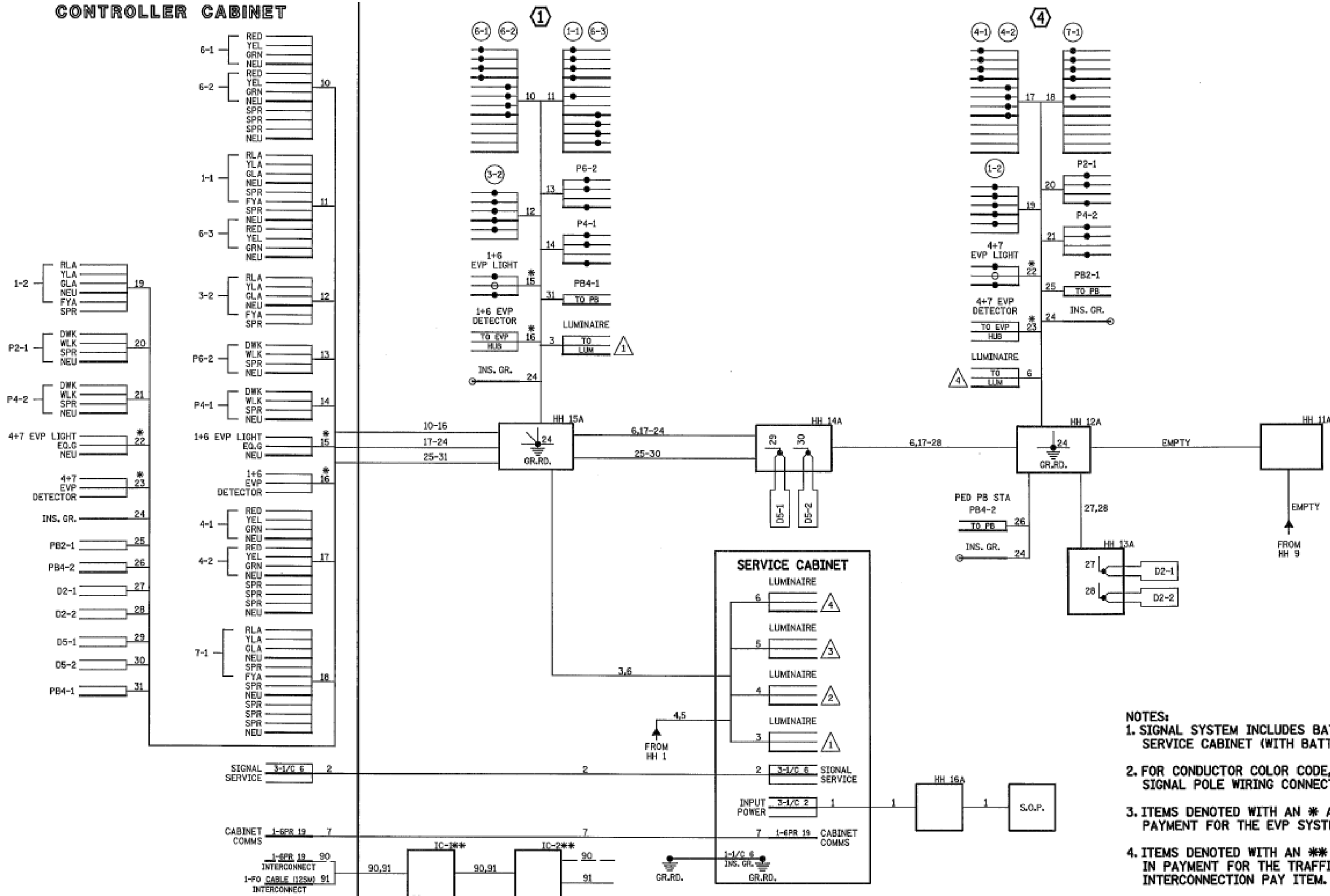
STATE AID PROJECT 002-652-009

EXISTING SIGNAL  
 PLANS

Sheet 48 of 64 Sheets



### CONTROLLER CABINET



- NOTES:**
1. SIGNAL SYSTEM INCLUDES BATTERY BACKUP SERVICE CABINET (WITH BATTERIES & UPS).
  2. FOR CONDUCTOR COLOR CODE, SEE TRAFFIC SIGNAL POLE WIRING CONNECTOR DETAIL.
  3. ITEMS DENOTED WITH AN \* ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
  4. ITEMS DENOTED WITH AN \*\* ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

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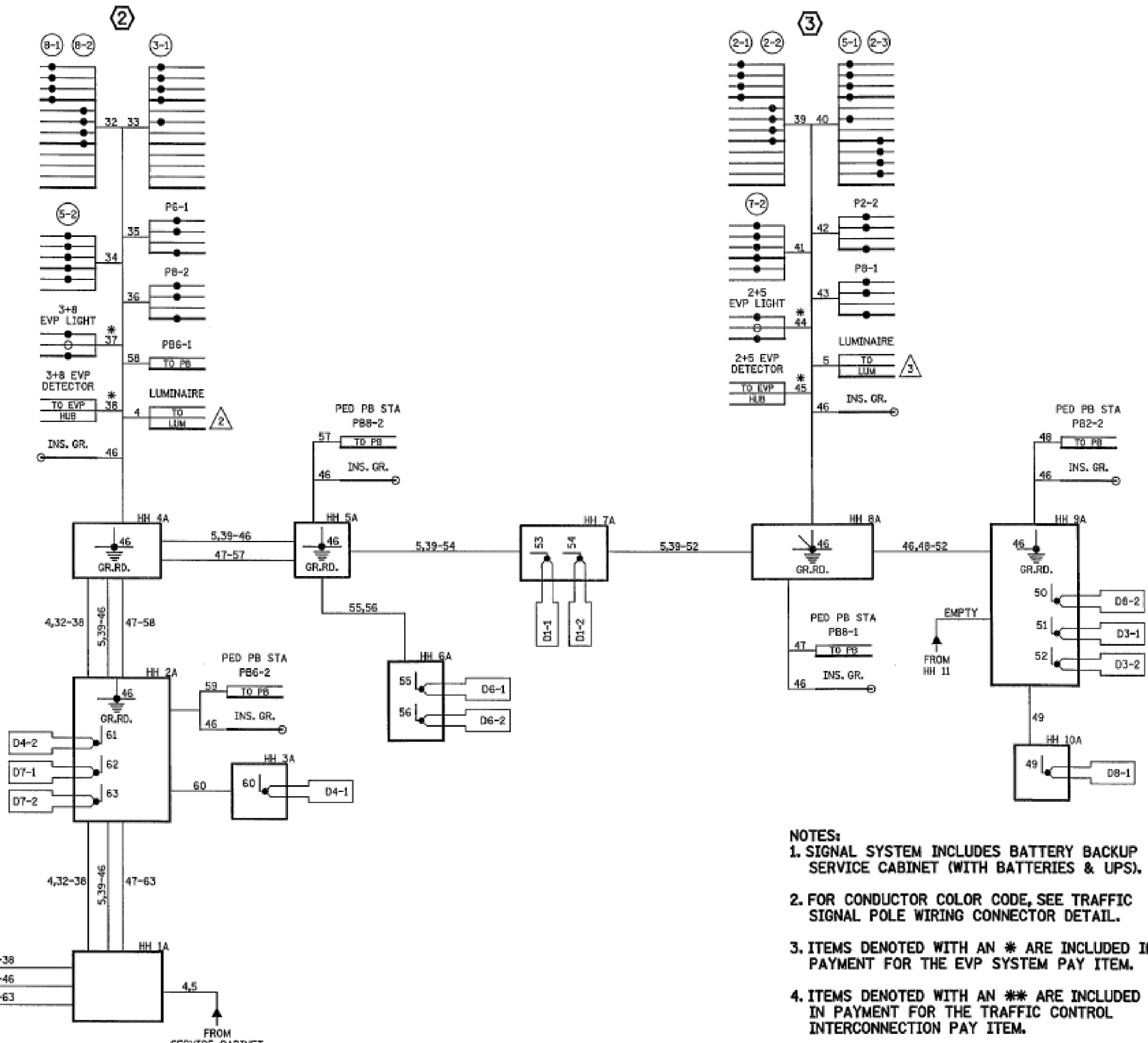
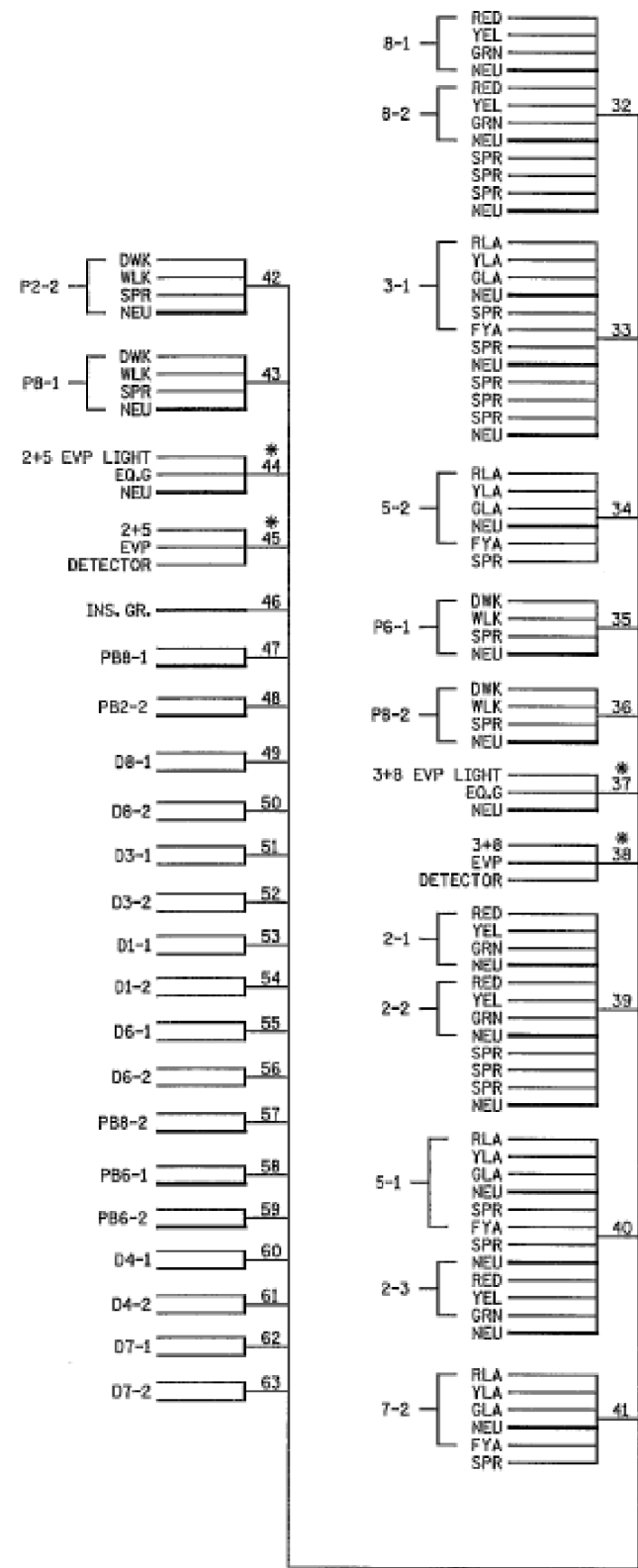
ANOKA COUNTY  
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STATE AID PROJECT 002-652-009

EXISTING SIGNAL PLANS

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### CONTROLLER CABINET

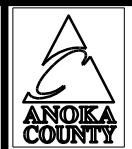


- NOTES:**
1. SIGNAL SYSTEM INCLUDES BATTERY BACKUP SERVICE CABINET (WITH BATTERIES & UPS).
  2. FOR CONDUCTOR COLOR CODE, SEE TRAFFIC SIGNAL POLE WIRING CONNECTOR DETAIL.
  3. ITEMS DENOTED WITH AN \* ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
  4. ITEMS DENOTED WITH AN \*\* ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

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NO	DATE	BY	CKD	APPR	REVISION	02/02/2021	1:28:23 PM
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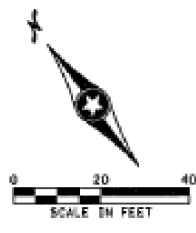
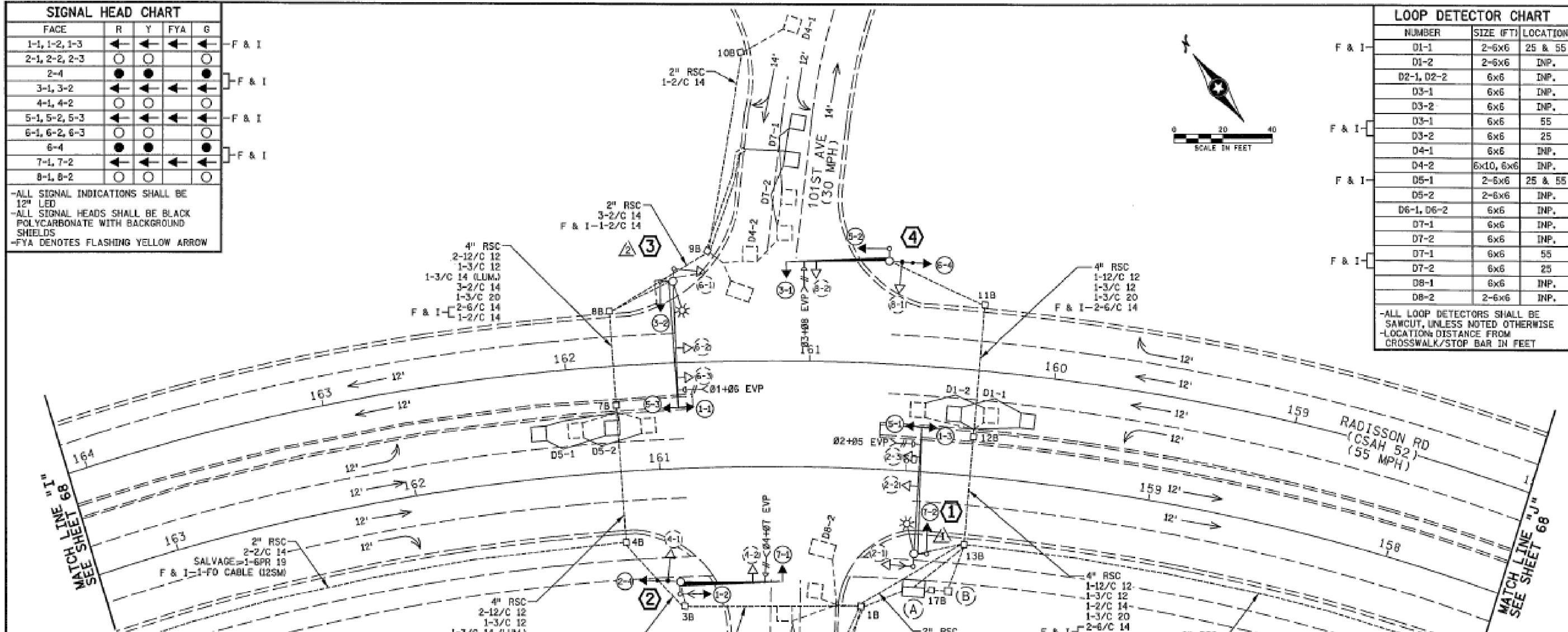
EXISTING SIGNAL PLANS  
Sheet 50 of 64 Sheets

SIGNAL HEAD CHART				
FACE	R	Y	FYA	G
1-1, 1-2, 1-3	←	←	←	←
2-1, 2-2, 2-3	○	○	○	○
2-4	●	●	●	●
3-1, 3-2	←	←	←	←
4-1, 4-2	○	○	○	○
5-1, 5-2, 5-3	←	←	←	←
6-1, 6-2, 6-3	○	○	○	○
6-4	●	●	●	●
7-1, 7-2	←	←	←	←
8-1, 8-2	○	○	○	○

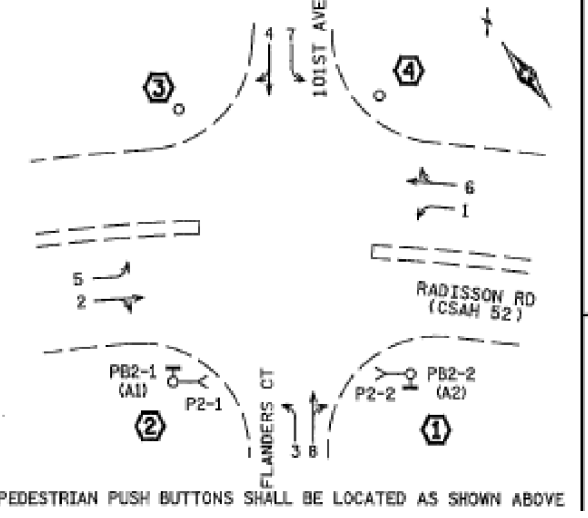
-ALL SIGNAL INDICATIONS SHALL BE 12" LED  
 -ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS  
 -FYA DENOTES FLASHING YELLOW ARROW

LOOP DETECTOR CHART		
NUMBER	SIZE (FT)	LOCATION
D1-1	2-6x6	25 & 55
D1-2	2-6x6	INP.
D2-1, D2-2	6x6	INP.
D3-1	6x6	INP.
D3-2	6x6	INP.
D3-1	6x6	55
D3-2	6x6	25
D4-1	6x6	INP.
D4-2	6x10, 6x6	INP.
D5-1	2-6x6	25 & 55
D5-2	2-6x6	INP.
D6-1, D6-2	6x6	INP.
D7-1	6x6	INP.
D7-2	6x6	INP.
D7-1	6x6	55
D7-2	6x6	25
D8-1	6x6	INP.
D8-2	2-6x6	INP.

-ALL LOOP DETECTORS SHALL BE SAWCUT, UNLESS NOTED OTHERWISE  
 -LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET



**CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS**



**SIGNAL SYSTEM OPERATION**

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASES 1, 3, 5, AND 7 BEING FLASHING YELLOW ARROWS BY TIME OF DAY.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

- NOTES:**
1. ALL ITEMS SHOWN ARE INPLACE AND SHALL REMAIN INPLACE UNLESS NOTED OTHERWISE.
  2. SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
  3. ENSURE THE EXACT LOCATION OF THE LOOP DETECTORS ARE VERIFIED IN THE FIELD BY COUNTY OFFICE PERSONNEL.
  4. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM.
  5. USE PVC FOR ALL NEW CONDUIT.
  6. CONDUIT SIZES ARE NOMENAL DIAMETER.
  7. ALL WIRES LISTED ARE AWG (AMERICAN WIRE GAUGE).
  8. REMOVE INPLACE SIGNAL INDICATION, FURNISH AND INSTALL NEW SIGNAL INDICATION AND ANY BRACKETING TO ACCOMMODATE NEW SIGNAL INDICATION.
  9. REMOVE INPLACE BRACKETING, SALVAGE INPLACE SIGNAL INDICATION AND INSERT ON FURNISHED TYPE 20A WITH FURNISHED SIGNAL INDICATION.
  10. ADJUST LEVELING NUTS FOR EXISTING SIGNAL POLES AS DIRECTED BY THE ENGINEER.
  11. SEE SHEET 63 FOR REVISED INTERSECTION NOTES.

FOR REFERENCE PURPOSES ONLY

REVISED INTERSECTION NOTES

① PA100 POLE FOUNDATION  
 TYPE PA100-A-50-D40-9 (DAVIT AT 350 DEG)  
 REMOVE-1-ONE WAY SIGNAL OVERHEAD AT 0'  
 F & I-2-ONE WAY SIGNALS OVERHEAD AT 0'  
 2-ONE WAY SIGNALS OVERHEAD AT  
 11' AND 23' FROM END OF MAST ARM  
 (SEE NOTE 8)-TYPE 10A POLE MOUNTED AT 90 DEG  
 TYPE 10B POLE MOUNTED AT 180 DEG  
 1-PEDESTRIAN PUSH BUTTON (PB2-2)  
 1-ONE WAY EVP DETECTOR AND  
 CONFIRMATORY LIGHT (PHASES 2+5)  
 LUMINAIRE-200 WATT H.P.S. WITH PEC  
 AND CHECK SWITCH  
 F & I-1-R10-X12 SIGN ADJACENT TO HEAD (5-1)  
 1-TYPE D SIGN  
 2-R6-1 SIGNS POLE MOUNTED  
 R9-3a SIGN FACING POLE 4  
 3" RSC TO HH 13B  
 2-12/C 12  
 2-3/C 12  
 1-3/C 12 (LUM)  
 1-3/C 20  
 F & I-2-6/C 14

③ PA100 POLE FOUNDATION  
 TYPE PA100-A-50-D40-9 (DAVIT AT 350 DEG)  
 REMOVE-1-ONE WAY SIGNAL OVERHEAD AT 0'  
 F & I-2-ONE WAY SIGNALS OVERHEAD AT 0'  
 2-ONE WAY SIGNALS OVERHEAD AT  
 11' AND 23' FROM END OF MAST ARM  
 (SEE NOTE 8)-TYPE 10A POLE MOUNTED AT 90 DEG  
 TYPE 10A POLE MOUNTED AT 180 DEG  
 1-ONE WAY EVP DETECTOR AND  
 CONFIRMATORY LIGHT (PHASES 1+6)  
 LUMINAIRE-200 WATT H.P.S. WITH PEC  
 AND CHECK SWITCH  
 F & I-1-R10-X12 SIGN ADJACENT TO HEAD (1-1)  
 RELOCATE-1-TYPE D SIGN  
 2-R6-1 SIGNS POLE MOUNTED  
 2-R9-3a SIGN FACING POLES 2 AND 4  
 3" RSC TO HH 8B  
 2-12/C 12  
 1-3/C 12  
 1-3/C 12 (LUM)  
 1-3/C 20  
 F & I-2-6/C 14

② PA90 POLE FOUNDATION  
 TYPE PA90-A  
 REMOVE-35' MAST ARM  
 INSTALL-40' MAST ARM  
 SALVAGE-1-ONE WAY SIGNAL OVERHEAD AT 0'  
 F & I-1-ONE WAY SIGNAL OVERHEAD AT 0'  
 INSTALL SALVAGED-1-ONE WAY SIGNAL OVERHEAD AT 11'  
 (SEE NOTE 8)-TYPE 10B POLE MOUNTED AT 90 DEG  
 (SEE NOTE 9)-TYPE 10A POLE MOUNTED AT 180 DEG  
 1-PEDESTRIAN PUSH BUTTON (PB2-1)  
 SALVAGE AND-1-ONE WAY EVP DETECTOR AND  
 CONFIRMATORY LIGHT (PHASES 4+7)  
 F & I-1-R10-X12 SIGN ADJACENT TO HEAD (7-1)  
 SALVAGE AND-1-TYPE D SIGN  
 INSTALLED SALVAGED 1-R6-1 SIGN POLE MOUNTED  
 R9-3a SIGN FACING POLE 3  
 3" RSC TO HH 3B  
 1-12/C 12  
 3-3/C 12  
 F & I-1-3/C 20  
 2-6/C 14

④ PA90 POLE FOUNDATION  
 TYPE PA90-A  
 REMOVE-35' MAST ARM  
 INSTALL-40' MAST ARM  
 SALVAGE-1-ONE WAY SIGNAL OVERHEAD AT 0'  
 F & I-1-ONE WAY SIGNAL OVERHEAD AT 0'  
 INSTALL SALVAGED-1-ONE WAY SIGNAL OVERHEAD AT 11'  
 (SEE NOTE 8)-TYPE 10A POLE MOUNTED AT 90 DEG  
 (SEE NOTE 9)-TYPE 10A POLE MOUNTED AT 180 DEG  
 1-PEDESTRIAN PUSH BUTTON (PB2-1)  
 SALVAGE AND-1-ONE WAY EVP DETECTOR AND  
 CONFIRMATORY LIGHT (PHASES 3+8)  
 F & I-1-R10-X12 SIGN ADJACENT TO HEAD (3-1)  
 SALVAGE AND-1-TYPE D SIGN  
 INSTALLED SALVAGED 1-R6-1 SIGN POLE MOUNTED  
 2-R9-3a SIGN FACING POLES 1 AND 3  
 3" RSC TO HH 11B  
 1-12/C 12  
 1-3/C 12  
 1-3/C 20  
 F & I-2-6/C 14

(A) EQUIPMENT PAD (SEE DETAIL SHEET)  
 SERVICE CABINET (SSB)  
 CONTROLLER AND CABINET (COUNTY FURNISHED)  
 4" RSC TO HH 18a  
 3-12/C 12  
 4-3/C 12  
 2-3/C 20  
 9-2/C 14  
 SALVAGE-1-6PR 19  
 F & I-4-6/C 14  
 3-2/C 14  
 1-FO CABLE (125M)  
 4" RSC TO HH 13B  
 3-12/C 12  
 3-3/C 12  
 2-3/C 20  
 3-2/C 14  
 1-6PR 19  
 STUB OUT 2-3" RSC  
 (THREAD AND CAP BOTH  
 ENDS-FOR FUTURE USE)  
 F & I-4-6/C 14  
 1-2/C 14

(B) SERVICE CABINET  
 CABINET FOUNDATION  
 EXTEND INTO HH 13B  
 UNMETERED STREET LIGHT SERVICE  
 1 1/4" RSC  
 2-3/C 14 (LUM)  
 EXTEND INTO HH 17B  
 METERED SIGNAL SERVICE  
 1 1/4" RSC  
 3-1/C 6  
 STUBOUT 2" RSC (FOR  
 SERVICE BY CONNEXUS)

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 DESIGN BY SPH DATE 02/02/2021  
 CHECKED BY CSO DATE 02/02/2021



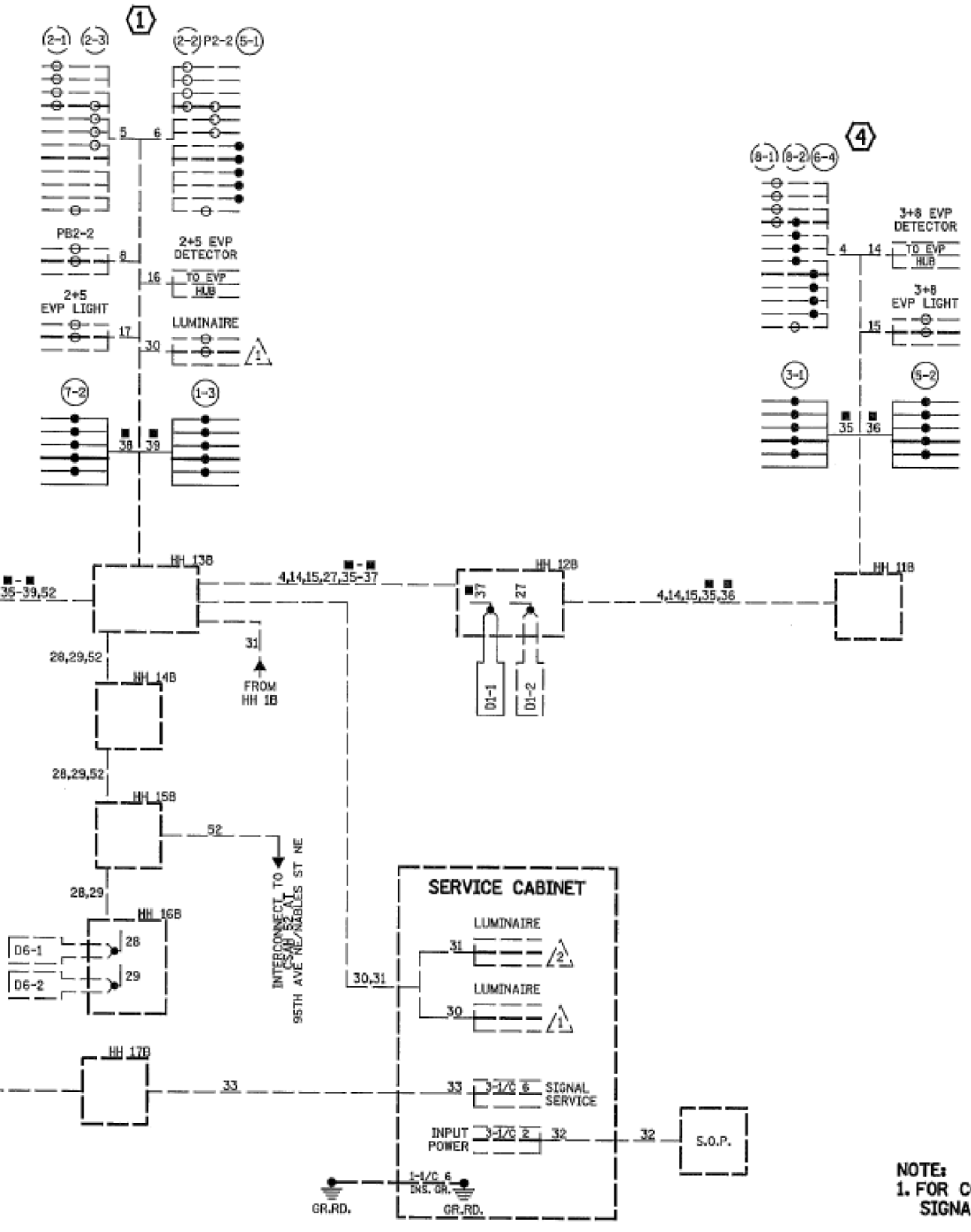
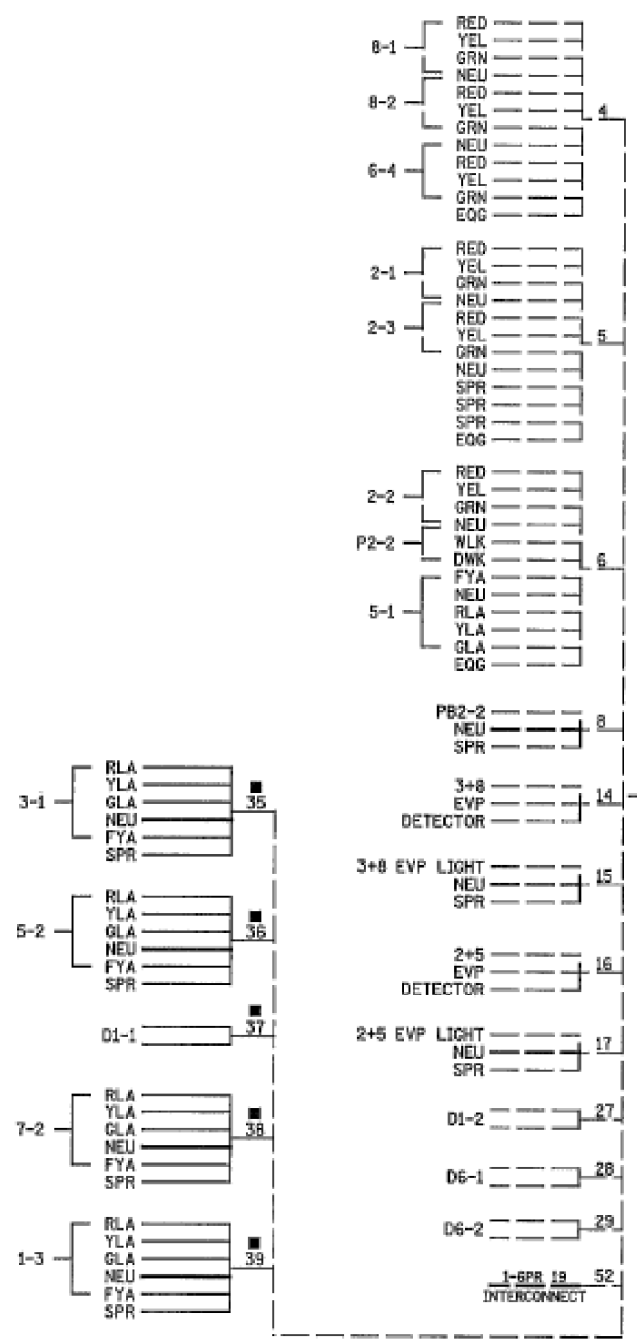
ANOKA COUNTY  
 HIGHWAY DEPT.

STATE AID PROJECT 002-652-009

EXISTING SIGNAL  
 PLANS

Sheet 52 of 64 Sheets

### CONTROLLER CABINET



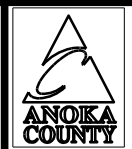
**LEGEND:**  
 ALL WIRING INPLACE  
 UNLESS NOTED OTHERWISE  
 ■ = FURNISH & INSTALL

**NOTE:**  
 1. FOR CONDUCTOR COLOR CODE, SEE TRAFFIC SIGNAL POLE WIRING CONNECTOR DETAIL.

FOR REFERENCE PURPOSES ONLY

NO	DATE	BY	CKD	APPR	REVISION	02/02/2021	1:26:45 PM
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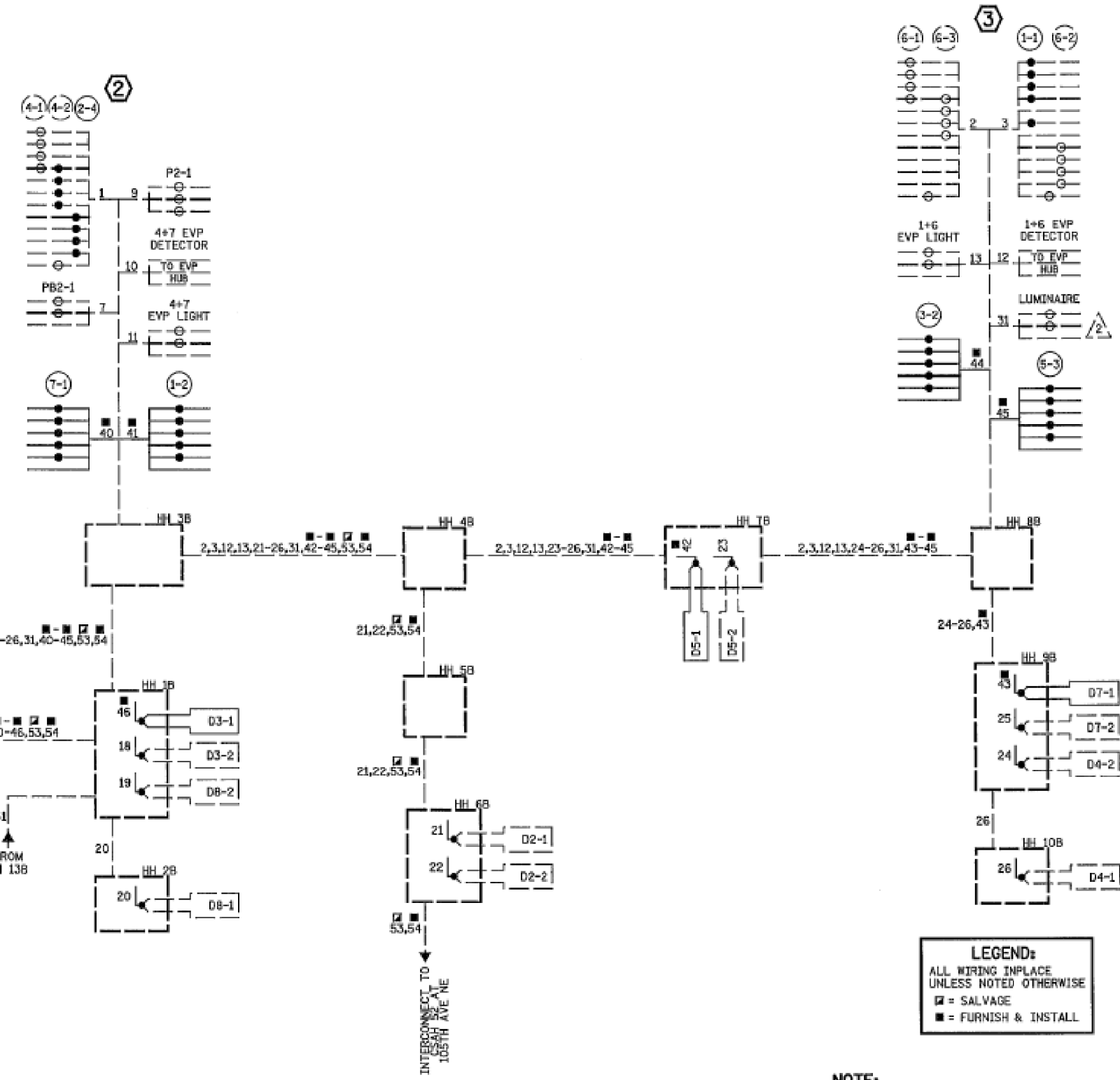
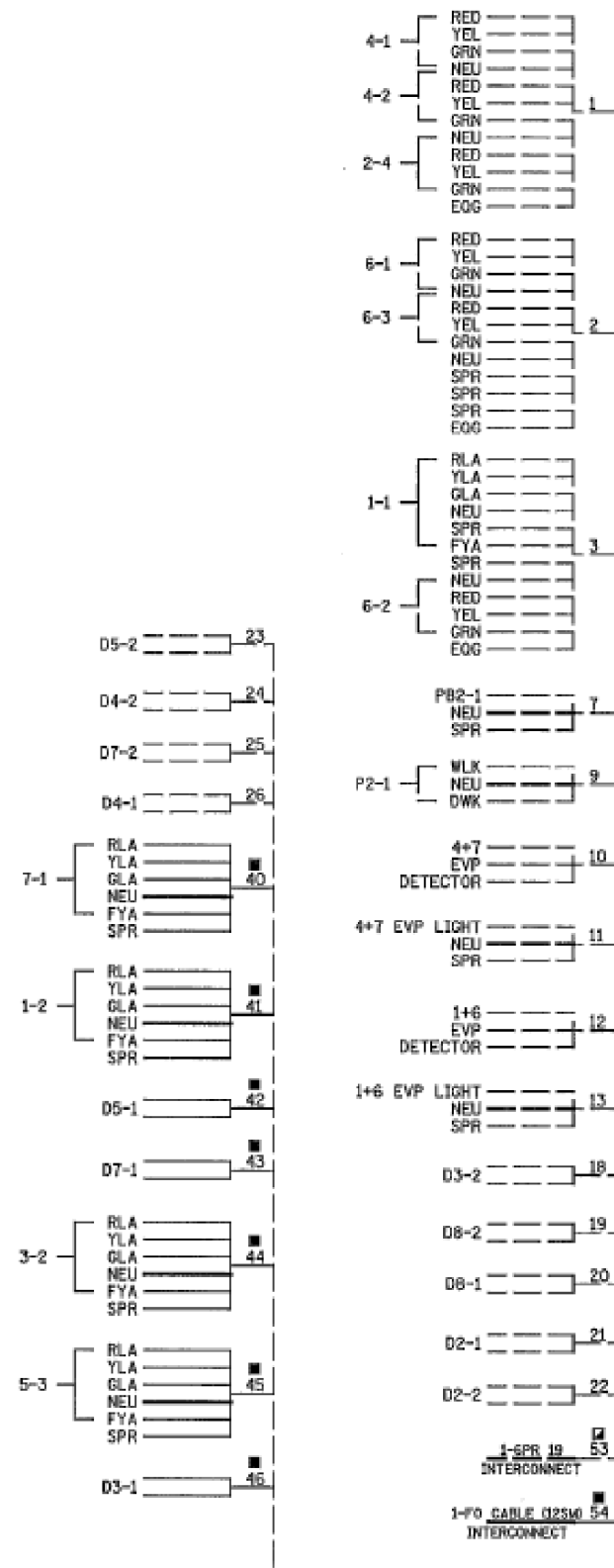


ANOKA COUNTY  
 HIGHWAY DEPT.

STATE AID PROJECT 002-652-009

EXISTING SIGNAL PLANS  
 Sheet 53 of 64 Sheets

### CONTROLLER CABINET



**LEGEND:**  
 ALL WIRING INPLACE UNLESS NOTED OTHERWISE  
 □ = SALVAGE  
 ■ = FURNISH & INSTALL

**NOTE:**  
 1. FOR CONDUCTOR COLOR CODE, SEE TRAFFIC SIGNAL POLE WIRING CONNECTOR DETAIL.

FOR REFERENCE PURPOSES ONLY

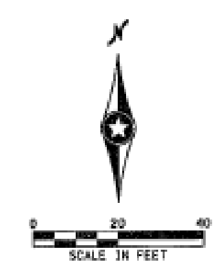
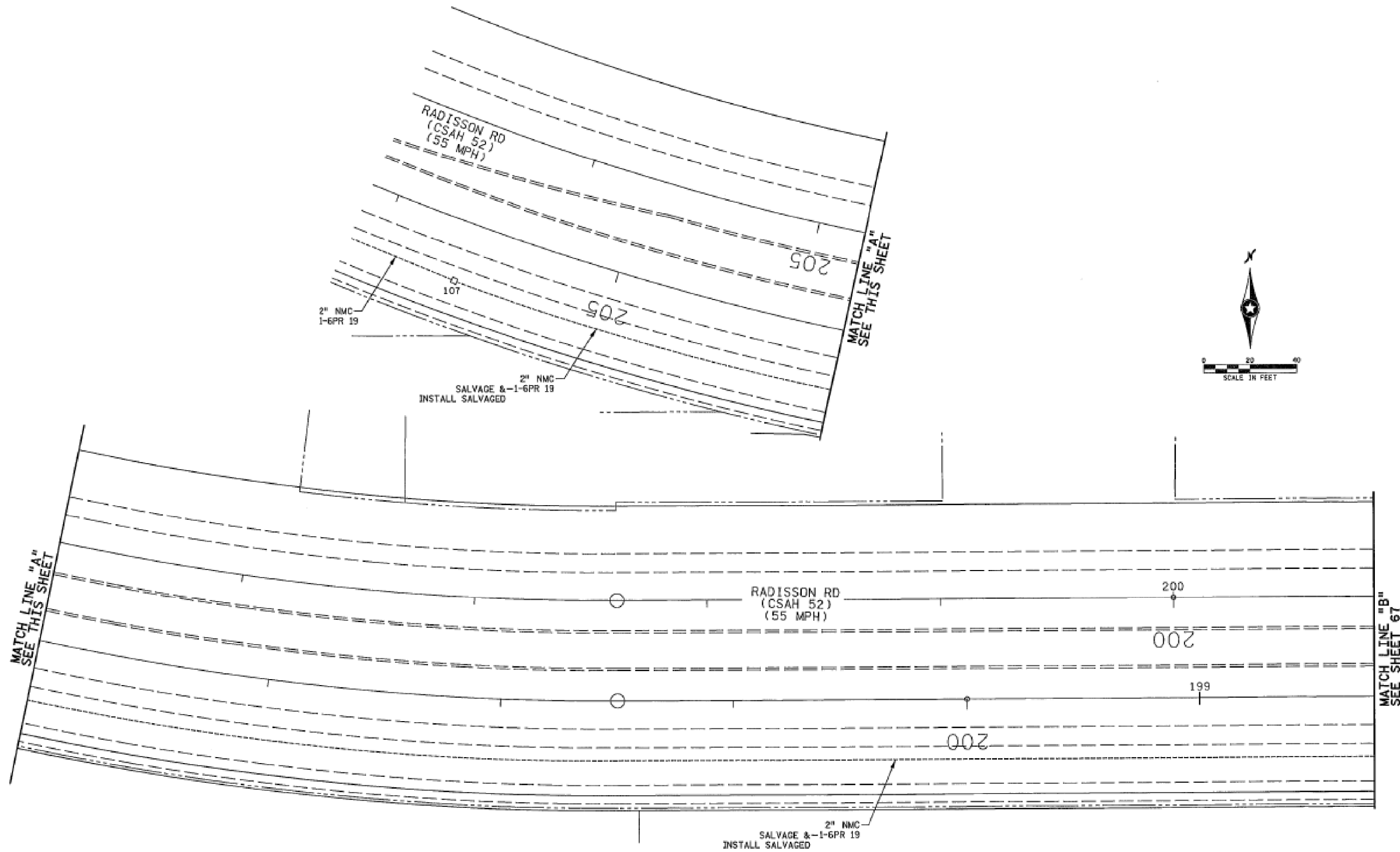
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 DESIGN BY SPH DATE 02/02/2021  
 CHECKED BY CSO DATE 02/02/2021



STATE AID PROJECT 002-652-009

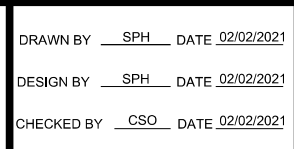
EXISTING SIGNAL PLANS  
 Sheet 54 of 64 Sheets



FOR REFERENCE PURPOSES ONLY

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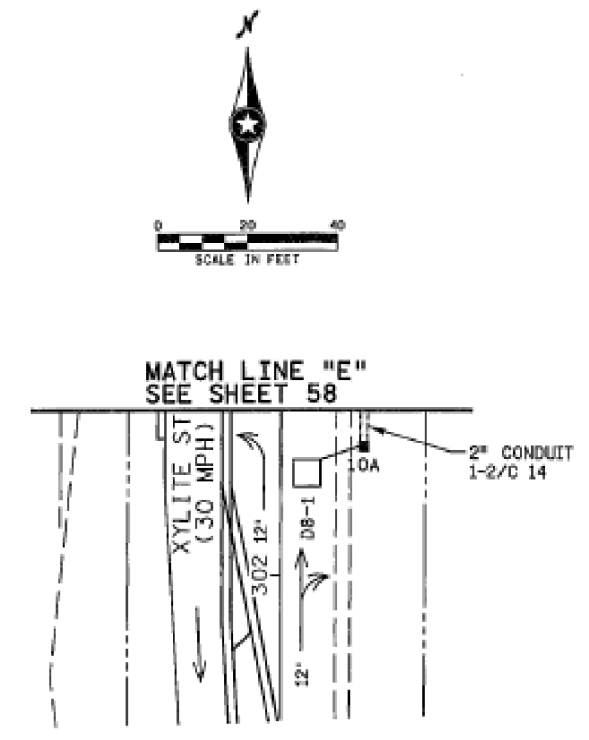
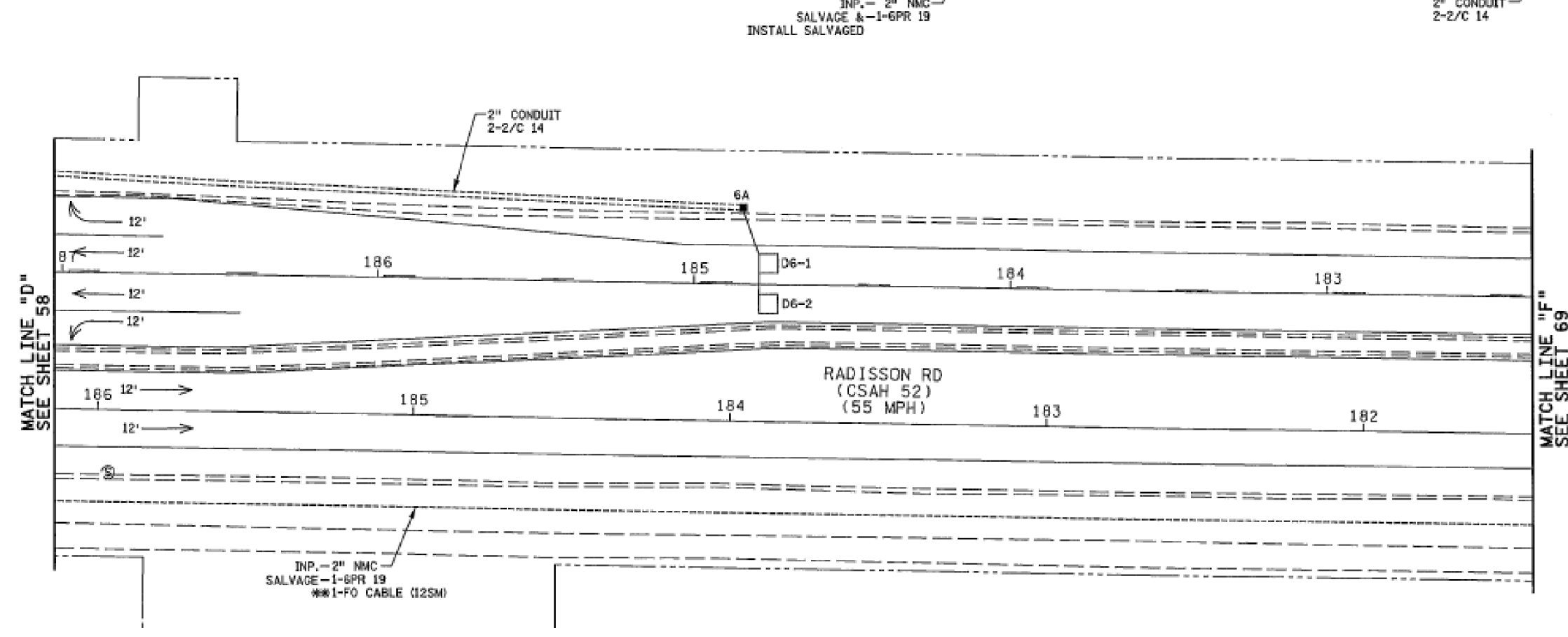
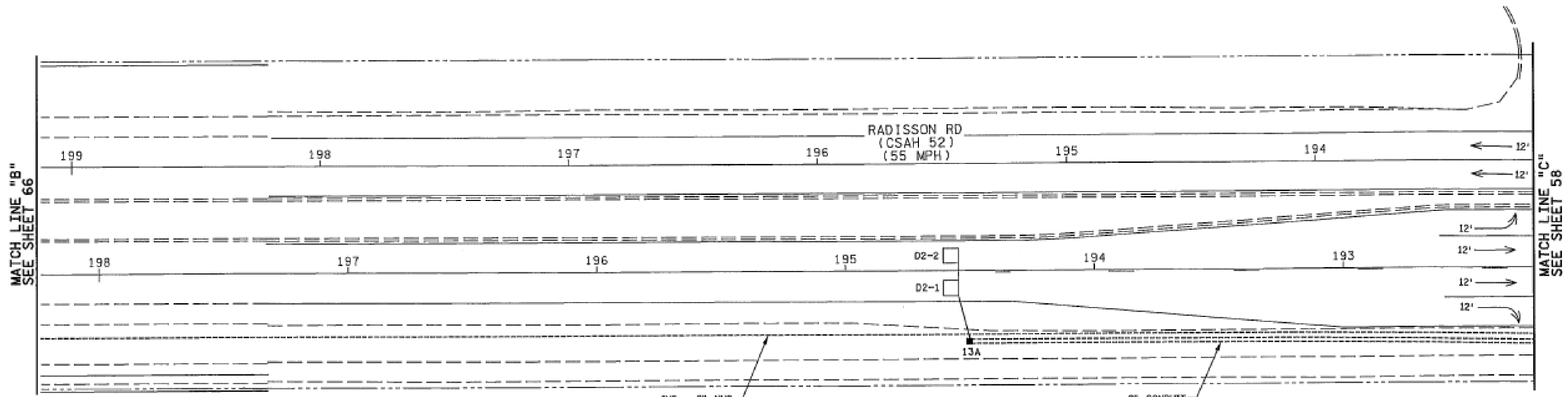
DRAWN BY SPH DATE 02/02/2021  
 DESIGN BY SPH DATE 02/02/2021  
 CHECKED BY CSO DATE 02/02/2021



ANOKA COUNTY  
HIGHWAY DEPT.

STATE AID PROJECT 002-652-009

EXISTING SIGNAL PLANS  
Sheet 55 of 64 Sheets



FOR REFERENCE PURPOSES ONLY

NO	DATE	BY	CKD	APPR	REVISION	02/02/2021	1:27:05 PM
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CHECKED BY	CSO	DATE	02/02/2021

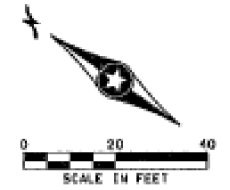
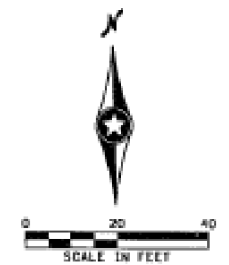
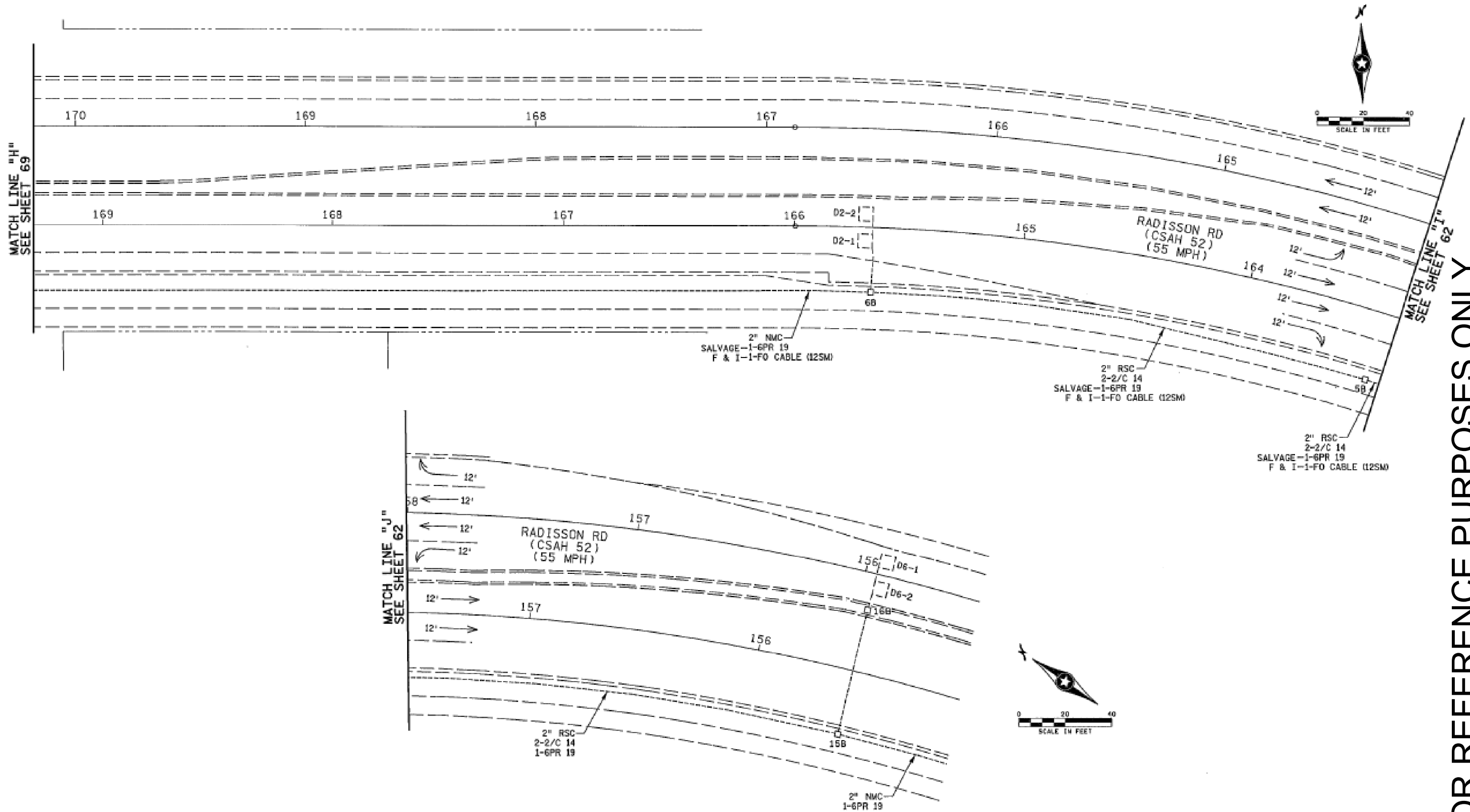
ANOKA COUNTY  
HIGHWAY DEPT.

STATE AID PROJECT 002-652-009

EXISTING SIGNAL PLANS

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FOR REFERENCE PURPOSES ONLY

NO	DATE	BY	CHKD	APPR	REVISION	TIME
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 DESIGN BY SPH DATE 02/02/2021  
 CHECKED BY CSO DATE 02/02/2021

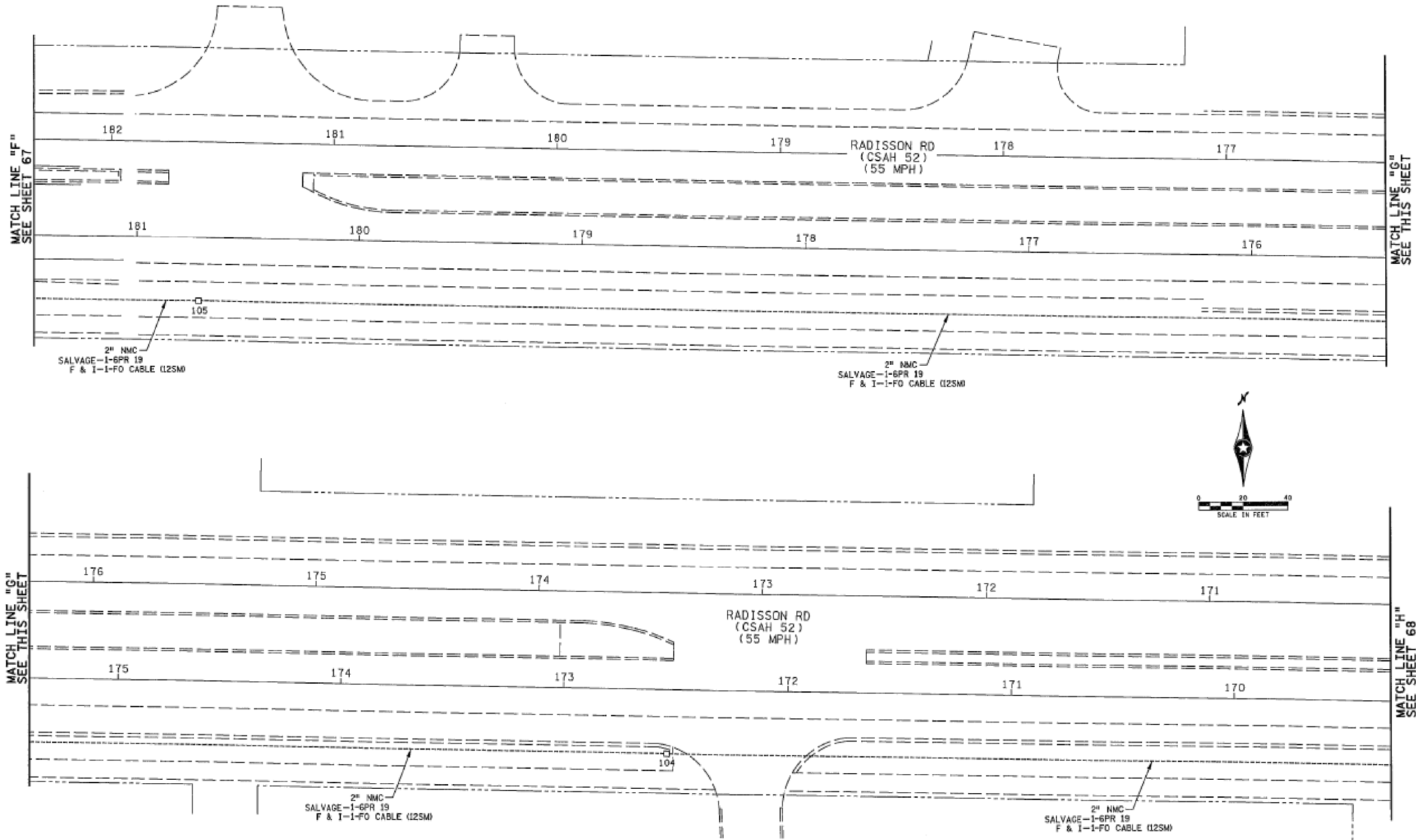
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 CHECKED BY CSO DATE 02/02/2021



ANOKA COUNTY  
 HIGHWAY DEPT.

STATE AID PROJECT 002-652-009

EXISTING SIGNAL PLANS  
 Sheet 57 of 64 Sheets



FOR REFERENCE PURPOSES ONLY

NO	DATE	BY	CKD	APPR	REVISION	02/02/2021	1:27:21 PM
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DRAWN BY SPH DATE 02/02/2021  
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 CHECKED BY CSO DATE 02/02/2021



ANOKA COUNTY  
 HIGHWAY DEPT.

STATE AID PROJECT 002-652-009

EXISTING SIGNAL PLANS

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INPLACE LOOP DETECTORS			
NUMBER	SIZE (FEET)	FUNCTION	LOCATION
D1-1	2-6 x 6	1	10' & 40'
D2-1	6 x 6	1	475'
D2-2	6 x 6	1	475'
D3-1	2-6 x 6	1	10' & 40'
D4-1	6 x 6	3,8	120'
D4-2	6 x 6, 6 x 10	1	AS SHOWN
D5-1	2-6 x 6	1	10' & 40'
D6-1	6 x 6	1	400'
D6-2	6 x 6	1	400'
D7-1	2-6 x 6	1	10' & 40'
D7-2	2-6 x 6	1	10' & 40'
D8-1	6 x 6	3,8	400'
D8-2	6 x 6, 6 x 10	1	AS SHOWN

LOOP DETECTORS FUNCTIONS

- 1) CALL AND EXTEND
  - 3) EXTEND ONLY
  - 7) DELAY CALL - IMMEDIATE EXTEND
  - 8) CARRY OVER (STRETCH)
- NOTE:  
LOCATION = DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR

③ INPLACE (MAINTAIN INPLACE)  
PA100 POLE FOUNDATION  
TYPE PA100-A-50-D40-9 (DAMT AT 350')  
LUMINAIRE-200 W HPS  
3-ONE WAY SIGNALS-OVERHEAD (0, 11' AND 23' FROM LEFT END OF MAST ARM)  
2-TYPE 10A-POLE MOUNTED 90° AND 180°  
TYPE "D" SIGN PANEL-OVERHEAD  
2-R9-3a SIGN PANELS-POLE MOUNTED 0° AND 180°  
2-R9-3a SIGN-FACING POLES 2 AND 4  
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (#6,1) EXTENDED INTO H.H.5:  
3" R.S.C.  
2-12/C #12  
1-3/C #12  
1-3/C #12 (LUM)  
1-3/C #20

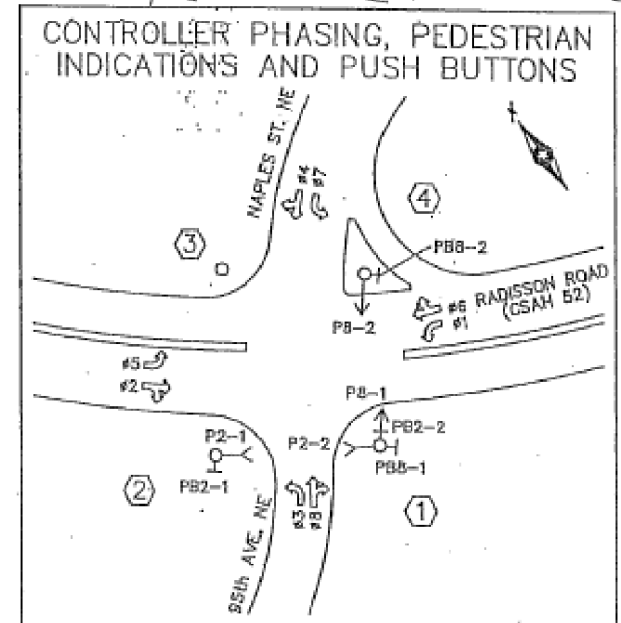
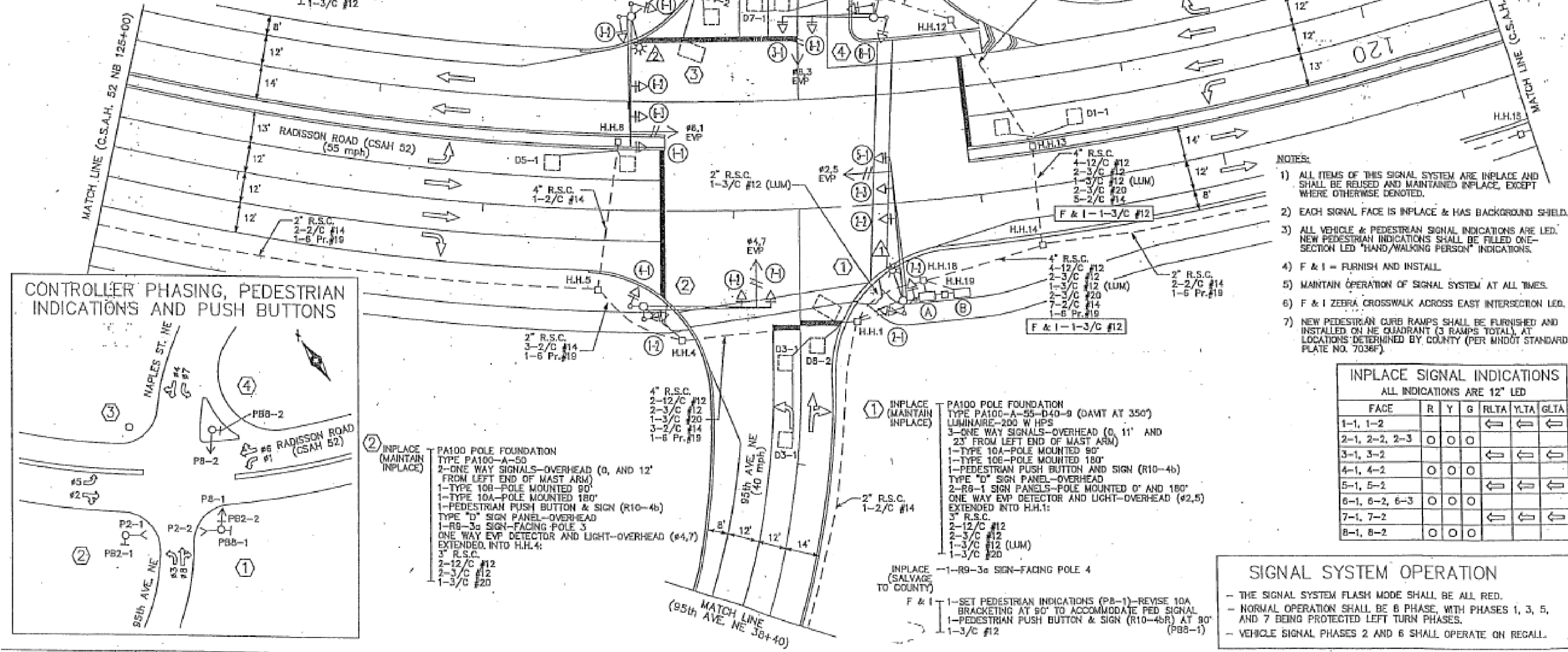
④ INPLACE (MAINTAIN INPLACE)  
PA90 POLE FOUNDATION  
TYPE PA90-A-35  
2-ONE WAY SIGNALS-OVERHEAD (0, AND 11' FROM LEFT END OF MAST ARM)  
2-TYPE 10A-POLE MOUNTED 90° AND 180°  
TYPE "D" SIGN PANEL-OVERHEAD  
1-R9-3a SIGN-FACING POLE 3  
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (#6,3) EXTENDED INTO H.H.11:  
3" R.S.C.  
2-12/C #12  
1-3/C #12  
1-3/C #20

INPLACE (SALVAGE TO COUNTY)  
F & I 1-1-R9-3a SIGN-FACING POLE 1  
1-SET PEDESTRIAN INDICATIONS (PB-2)-REVISE 10A BRACKETING AT 180° TO ACCOMMODATE PED SIGNAL  
1-PEDESTRIAN PUSH BUTTON & SIGN (R10-4bL) AT 180° (PBB-2)  
1-3/C #12

① INPLACE (MAINTAIN INPLACE)  
CONTROLLER AND CABINET EXTENDED INTO H.H.18  
METERED SIGNAL SERVICE  
1 1/4" R.S.C.  
3-1/C #6  
EXTENDED INTO H.H.1  
4" R.S.C.  
4-12/C #12  
4-3/C #12  
2-3/C #20  
6-2/C #14  
1-6 Pr.#19  
F & I 1-1-3/C #12

INPLACE (MAINTAIN INPLACE)  
EXTENDED INTO H.H.18  
4" R.S.C.  
4-12/C #12  
4-3/C #12  
2-3/C #20  
7-2/C #14  
1-6 Pr.#19  
F & I 1-1-3/C #12

② INPLACE (MAINTAIN INPLACE)  
SERVICE CABINET  
CABINET FOUNDATION  
EXTENDED INTO H.H.18  
UNMETERED STREET LIGHT SERVICE  
1 1/4" R.S.C.  
2-3/C #12 (LUM)  
EXTENDED INTO H.H.18  
METERED SIGNAL SERVICE  
1 1/4" R.S.C.  
3-1/C #6  
STUB OUT 2" R.S.C. (FOR SERVICE BY CONNEXUS)



- NOTES:
- 1) ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, EXCEPT WHERE OTHERWISE DENOTED.
  - 2) EACH SIGNAL FACE IS INPLACE & HAS BACKGROUND SHIELD.
  - 3) ALL VEHICLE & PEDESTRIAN SIGNAL INDICATIONS ARE LED. NEW PEDESTRIAN INDICATIONS SHALL BE FILLED ONE-SECTION LED "HAND/WALKING PERSON" INDICATIONS.
  - 4) F & I = FURNISH AND INSTALL.
  - 5) MAINTAIN OPERATION OF SIGNAL SYSTEM AT ALL TIMES.
  - 6) F & I ZEBRA CROSSWALK ACROSS EAST INTERSECTION LEB.
  - 7) NEW PEDESTRIAN CURB RAMPS SHALL BE FURNISHED AND INSTALLED ON NE QUADRANT (3 RAMPS TOTAL, AT LOCATIONS DETERMINED BY COUNTY (PER MHDOT STANDARD PLATE NO. 7036F).

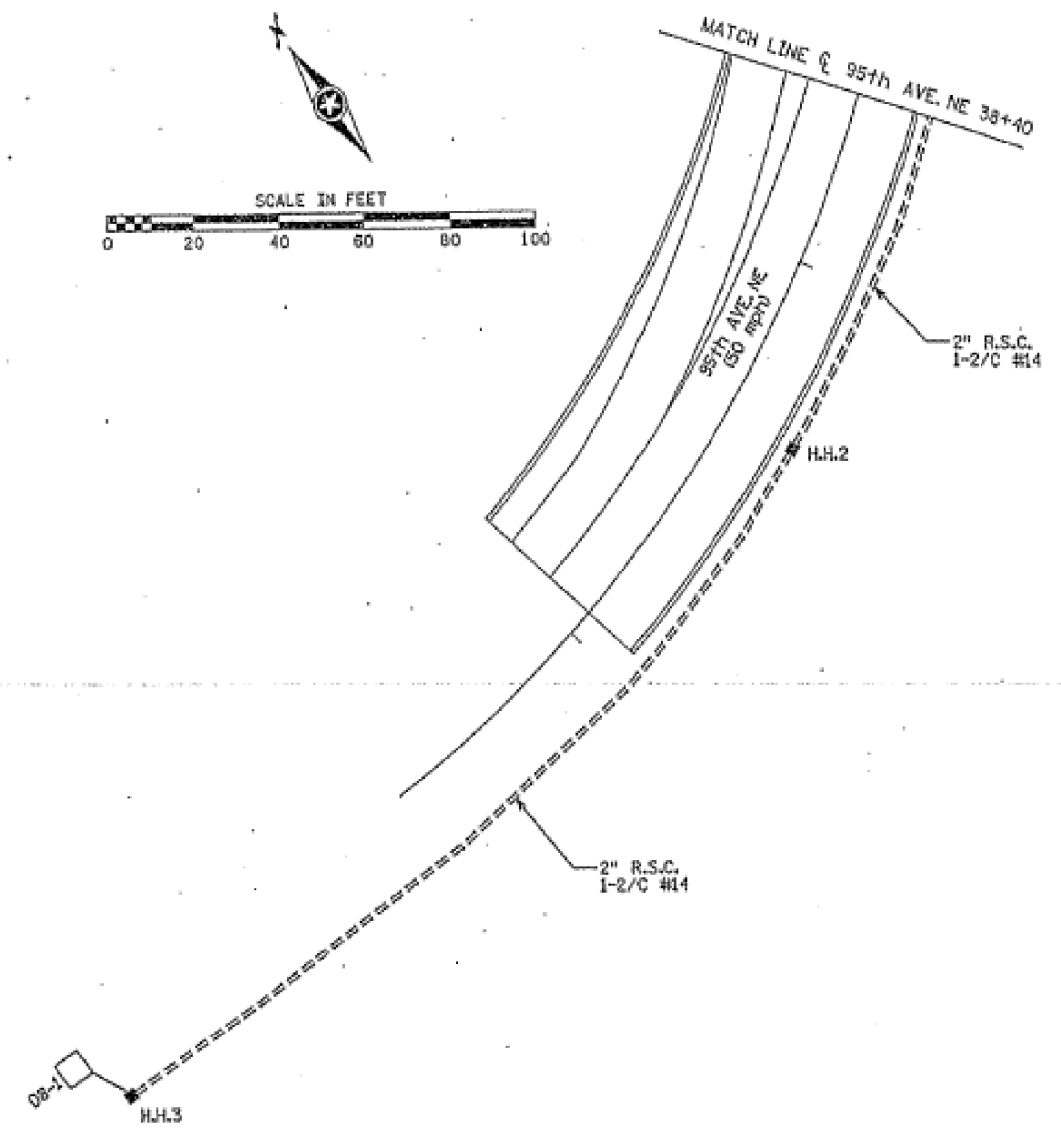
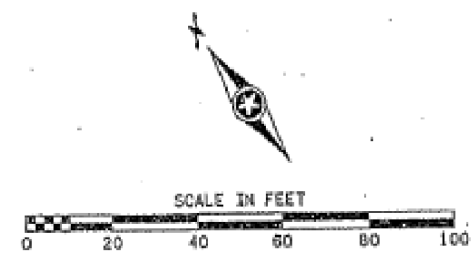
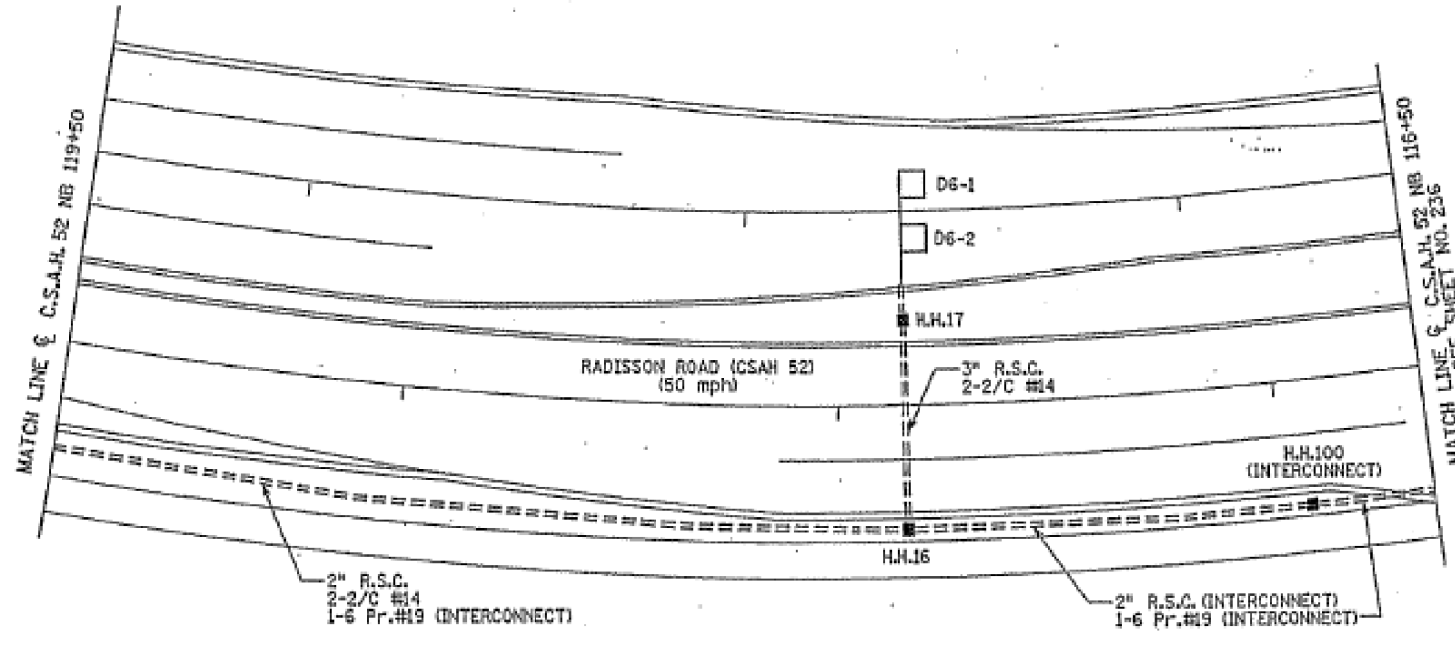
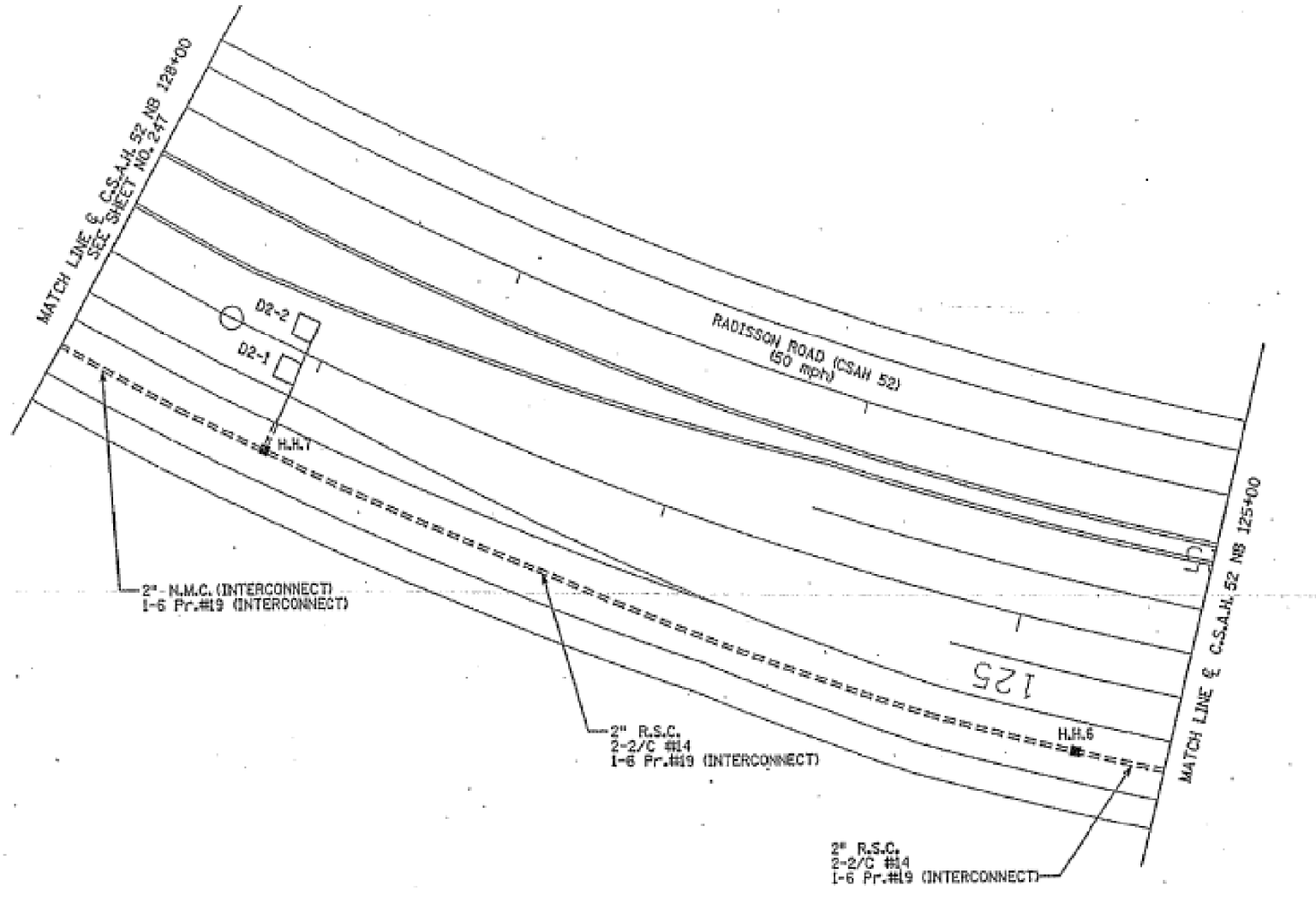
INPLACE SIGNAL INDICATIONS						
ALL INDICATIONS ARE 12" LED						
FACE	R	Y	G	RLTA	YLTA	GLTA
1-1, 1-2			←	←	←	
2-1, 2-2, 2-3	○	○	○			
3-1, 3-2			←	←	←	
4-1, 4-2	○	○	○			
5-1, 5-2			←	←	←	
6-1, 6-2, 6-3	○	○	○			
7-1, 7-2			←	←	←	
8-1, 8-2	○	○	○			

**SIGNAL SYSTEM OPERATION**

- THE SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 8 PHASE, WITH PHASES 1, 3, 5, AND 7 BEING PROTECTED LEFT TURN PHASES.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

FOR REFERENCE PURPOSES ONLY

FOR REFERENCE PURPOSES ONLY

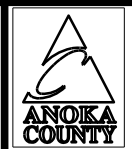


NOTE:  
 (INTERCONNECT) DENOTES ITEMS TO BE MEASURED  
 AND PAID FOR SEPARATELY FROM ITEM 2565.511.

NO	DATE	BY	CKD	APPR	REVISION	02/02/2021	1:27:38 PM

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ANOKA COUNTY  
 HIGHWAY DEPT.

STATE AID PROJECT 002-652-009

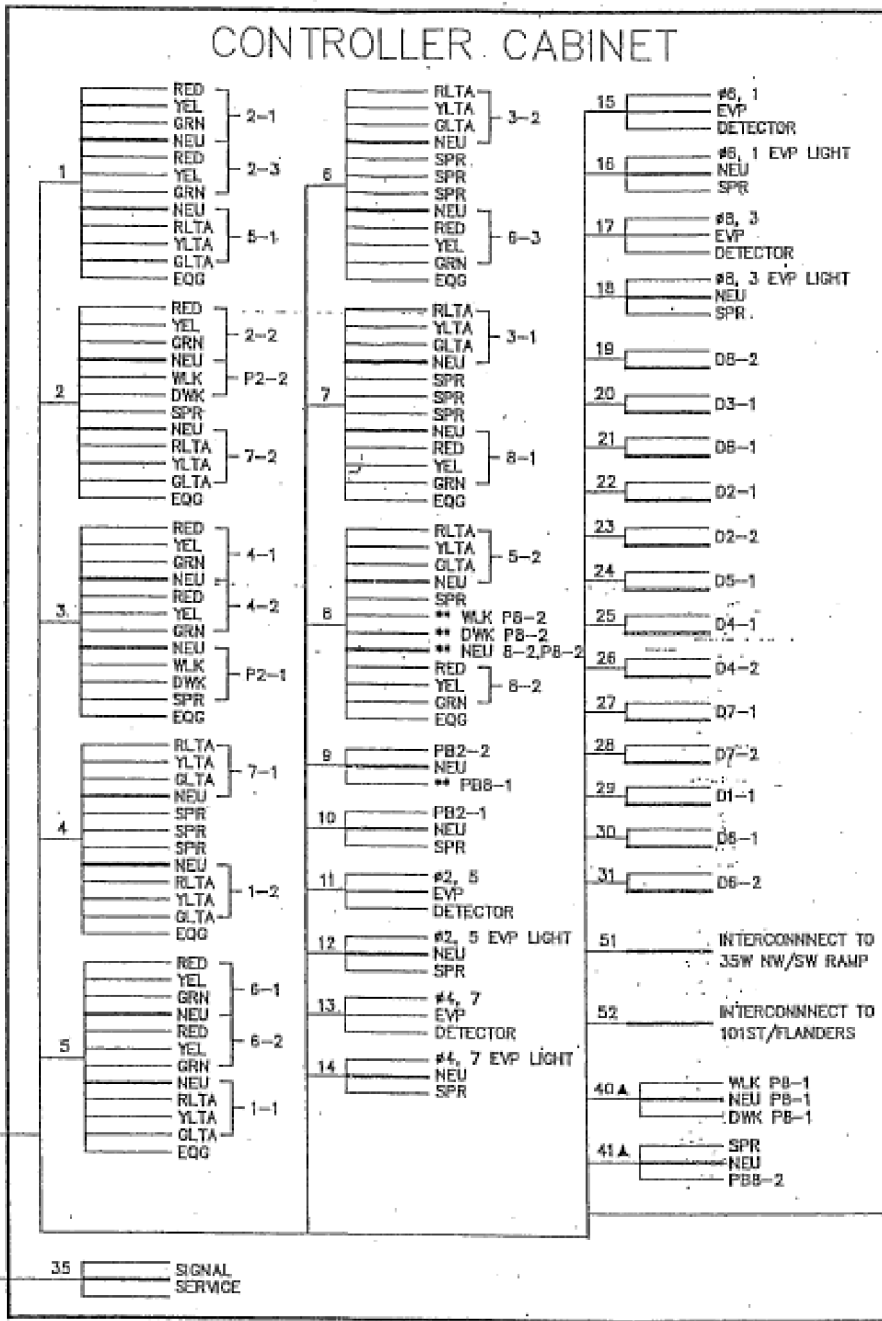
EXISTING SIGNAL PLANS  
 Sheet 60 of 64 Sheets

INTERCONNECT TO  
C.S.A.H. 52 AT  
101st AVE. NE/FLANDERS CT.

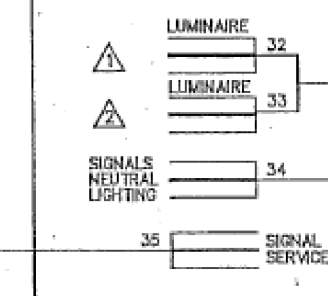
REVISED SIGNAL NOTES:

- 1) ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, EXCEPT WHERE OTHERWISE DENOTED.
- 2) ▲ = NEW CABLE TO BE F & I BY CONTRACTOR.
- 3) ALL HANDHOLES AND LOOP DETECTORS ARE INPLACE (REUSE AND PROTECT INPLACE).
- 4) \*\* = NEW TERMINATION ON INPLACE CABLE.
- 5) ● = INPLACE TERMINATION ON INPLACE CABLE.
- 6) ⊙ = NEW TERMINATION ON INPLACE OR NEW CABLE.

CONTROLLER CABINET



SERVICE CABINET



CONDUCTOR COLOR CODING

12/C #12	BLK	5/C #12	BLK
	WH		WH
	R/BLK		R
	O/BLK		WH
	BL/BLK		BLK
	WH/BLK		BLK
	BLK/WH		R OR O
	C/BLK		WH OR YEL
	G		BLK OR BL
2-1/C #6	BLK		BLK
	WH		BLK

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE

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NO	DATE	BY	CKD	APPR	REVISION	02/02/2021	1:27:47 PM
NAME: P:\21-01-00\CSAH_52_(105th-Naples)\Base\Proposed\CSAH_52_SIGNALS.dgn							

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 CHECKED BY CSO DATE 02/02/2021



ANOKA COUNTY  
HIGHWAY DEPT.

STATE AID PROJECT 002-652-009

EXISTING SIGNAL PLANS  
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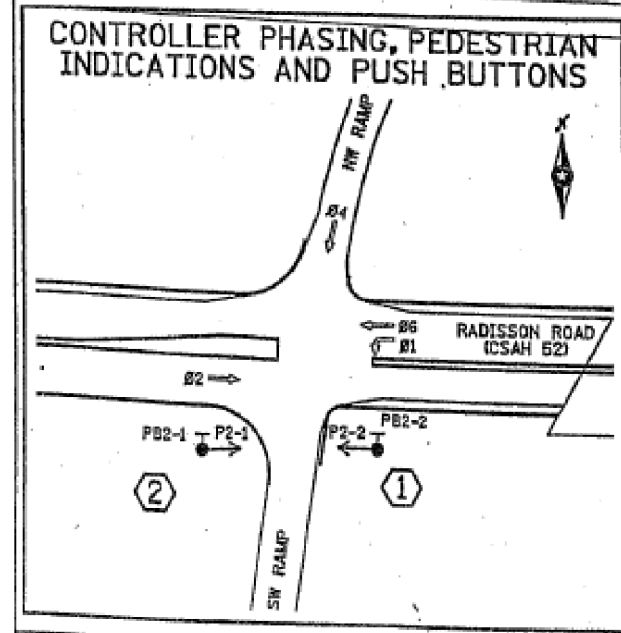
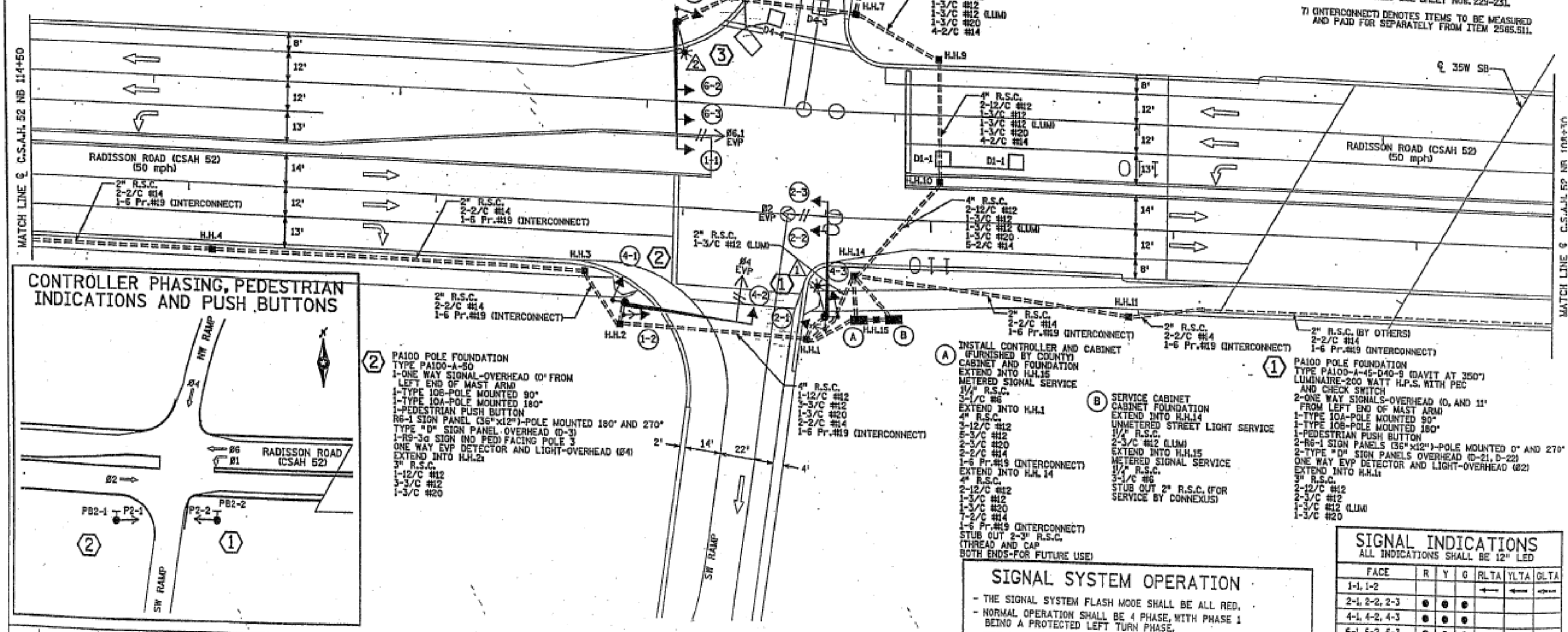
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LOOP DETECTORS			
NUMBER	SIZE (FEET)	FUNCTION	LOCATION
D1-1	2-6 x 6	1	10' & 40'
D2-1	6 x 6	1	350'
D2-2	6 x 6	1	350'
D4-1	6 x 6	3,8	180'
D4-2	6 x 6	3,8	180'
D4-3	2-6 x 6	1	10' & 40'
D4-4	6 x 6, 6 x 10	1	AS SHOWN
D6-1	6 x 6	1	415'
D6-2	6 x 6	1	415'

LOOP DETECTORS FUNCTIONS

- 1) CALL AND EXTEND
  - 3) EXTEND ONLY
  - 8) CARRY OVER (STRETCH)
- NOTE:  
LOCATION = DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR

- ③ PA100 POLE FOUNDATION  
TYPE PA100-A-50-D40-9 (DAVIT AT 350')  
LUMINAIRE-200 WATT H.P.S. WITH PEC  
AND CHECK SWITCH  
3-ONE WAY SIGNALS-OVERHEAD (0, 11' AND 23' FROM LEFT END OF MAST ARM)  
1-TYPE 10A-POLE MOUNTED 180°  
R6-1 SIGN PANEL (36"x12")-POLE MOUNTED 0° AND 180°  
TYPE "D" SIGN PANEL OVERHEAD (D-20)  
1-R9-3a SIGN (NO PEDI) FACING POLE 2  
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (06,1)  
EXTEND INTO H.H.6:  
3" R.S.C.  
2-12/C #12  
1-3/C #12  
1-3/C #12 (LUM)  
1-3/C #20  
1-2/C #4



- ② PA100 POLE FOUNDATION  
TYPE PA100-A-50  
1-ONE WAY SIGNAL-OVERHEAD (0' FROM LEFT END OF MAST ARM)  
1-TYPE 10A-POLE MOUNTED 90°  
1-TYPE 10A-POLE MOUNTED 180°  
1-PEDESTRIAN PUSH BUTTON  
R6-1 SIGN PANEL (36"x12")-POLE MOUNTED 180° AND 270°  
TYPE "D" SIGN PANEL OVERHEAD (D-3)  
1-R9-3a SIGN (NO PEDI) FACING POLE 3  
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (04)  
EXTEND INTO H.H.2:  
3" R.S.C.  
1-12/C #12  
3-3/C #12  
1-3/C #20

- A INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY)  
CABINET AND FOUNDATION  
EXTEND INTO H.H.15  
METERED SIGNAL SERVICE  
1/4" R.S.C.  
3-1/C #6  
EXTEND INTO H.H.1  
4" R.S.C.  
3-12/C #12  
5-3/C #12  
2-3/C #20  
2-2/C #4  
1-6 Pr.#19 (INTERCONNECT)  
EXTEND INTO H.H.14  
4" R.S.C.  
2-12/C #12  
1-3/C #12  
1-3/C #20  
1-2/C #14  
1-6 Pr.#19 (INTERCONNECT)  
STUB OUT 2-3" R.S.C. (THREAD AND CAP (BOTH ENDS-FOR FUTURE USE))

- B SERVICE CABINET FOUNDATION  
CABINET FOUNDATION  
EXTEND INTO H.H.14  
UNMETERED STREET LIGHT SERVICE  
1/4" R.S.C.  
2-3/C #12 (LUM)  
EXTEND INTO H.H.15  
METERED SIGNAL SERVICE  
1/4" R.S.C.  
3-1/C #6  
STUB OUT 2" R.S.C. (FOR SERVICE BY CONNEXUS)

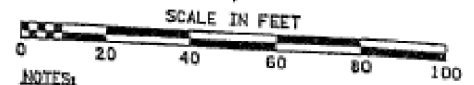
- ① PA100 POLE FOUNDATION  
TYPE PA100-A-45-D40-9 (DAVIT AT 350')  
LUMINAIRE-200 WATT H.P.S. WITH PEC  
AND CHECK SWITCH  
2-ONE WAY SIGNALS-OVERHEAD (0, AND 11' FROM LEFT END OF MAST ARM)  
1-TYPE 10A-POLE MOUNTED 90°  
1-TYPE 10A-POLE MOUNTED 180°  
1-PEDESTRIAN PUSH BUTTON  
R6-1 SIGN PANEL (36"x12")-POLE MOUNTED 0° AND 270°  
2-TYPE "D" SIGN PANELS OVERHEAD (D-21, D-22)  
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (02)  
EXTEND INTO H.H.1:  
3" R.S.C.  
2-12/C #12  
2-3/C #12  
1-3/C #12 (LUM)  
1-3/C #20  
1-3/C #12

**SIGNAL SYSTEM OPERATION**

- THE SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 4 PHASE, WITH PHASE 1 BEING A PROTECTED LEFT TURN PHASE.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

**SIGNAL INDICATIONS**  
ALL INDICATIONS SHALL BE 12" LED

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



- NOTES:
- 1) LOCATION OF POLES, FOUNDATIONS, LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
  - 2) EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
  - 3) ALL VEHICLE INDICATIONS AND ALL PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED. SEE SPECIAL PROVISIONS.
  - 4) FOR SERVICE CABINET DETAILS SEE SHEET NO. 228.
  - 5) FOR NMC LOOP DETAILS SEE SHEET NO. 227.
  - 6) FOR SIGN DETAILS SEE SHEET NO. 229-231.
  - 7) INTERCONNECT DENOTES ITEMS TO BE MEASURED AND PAID FOR SEPARATELY FROM ITEM 2585.511.

FOR REFERENCE PURPOSES ONLY

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER

DRAWN BY SPH DATE 02/02/2021 S.P. 0280-50 (TH 35W)

NO	DATE	BY	CKD	APPR	REVISION	02/02/2021	1:27:57 PM
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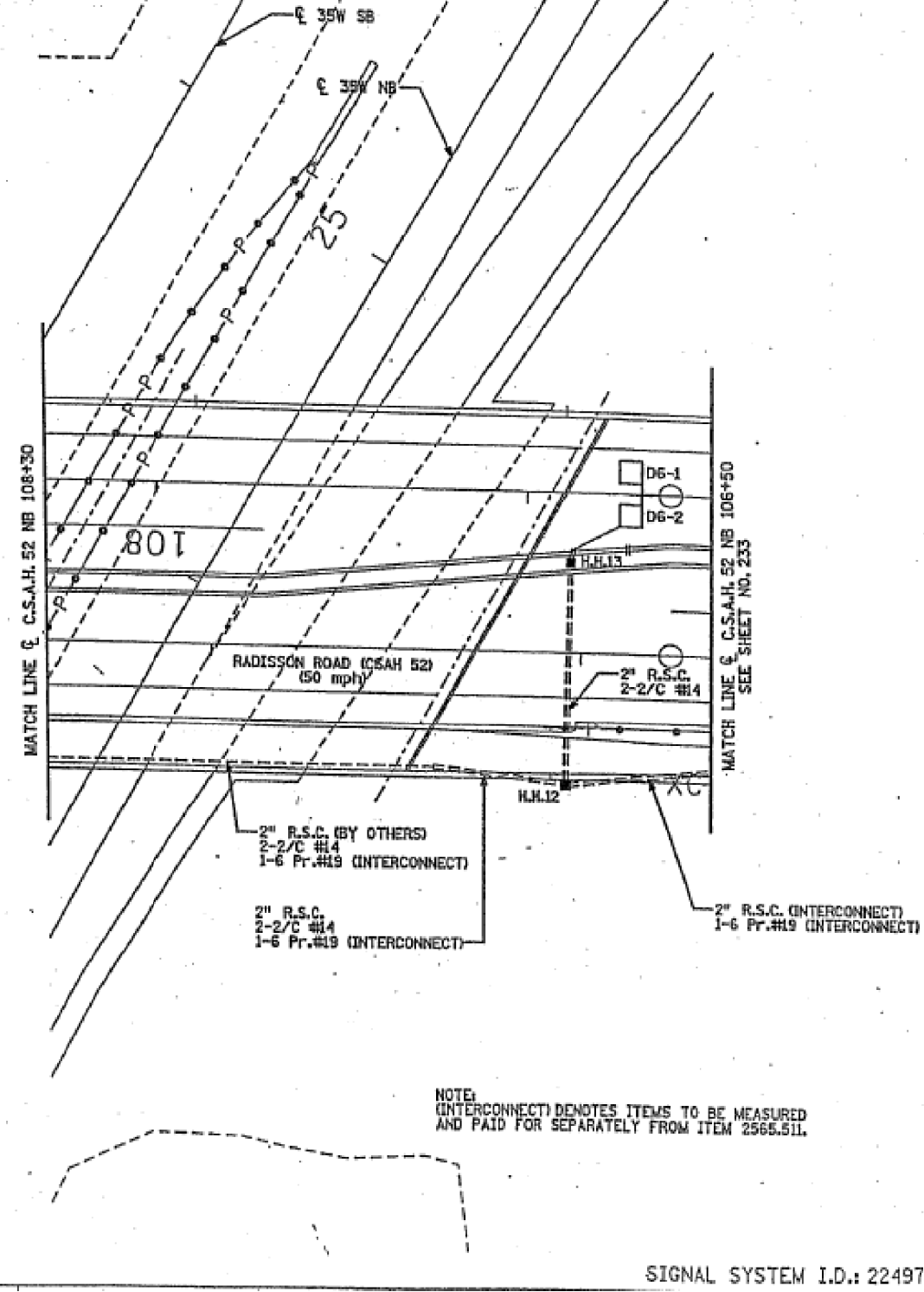
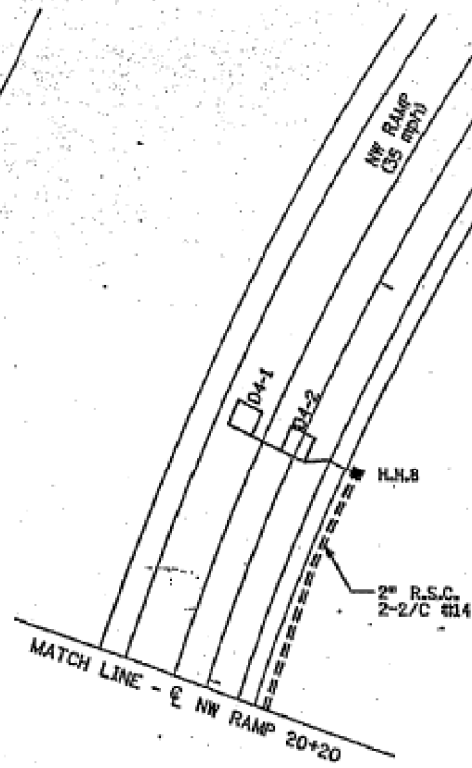
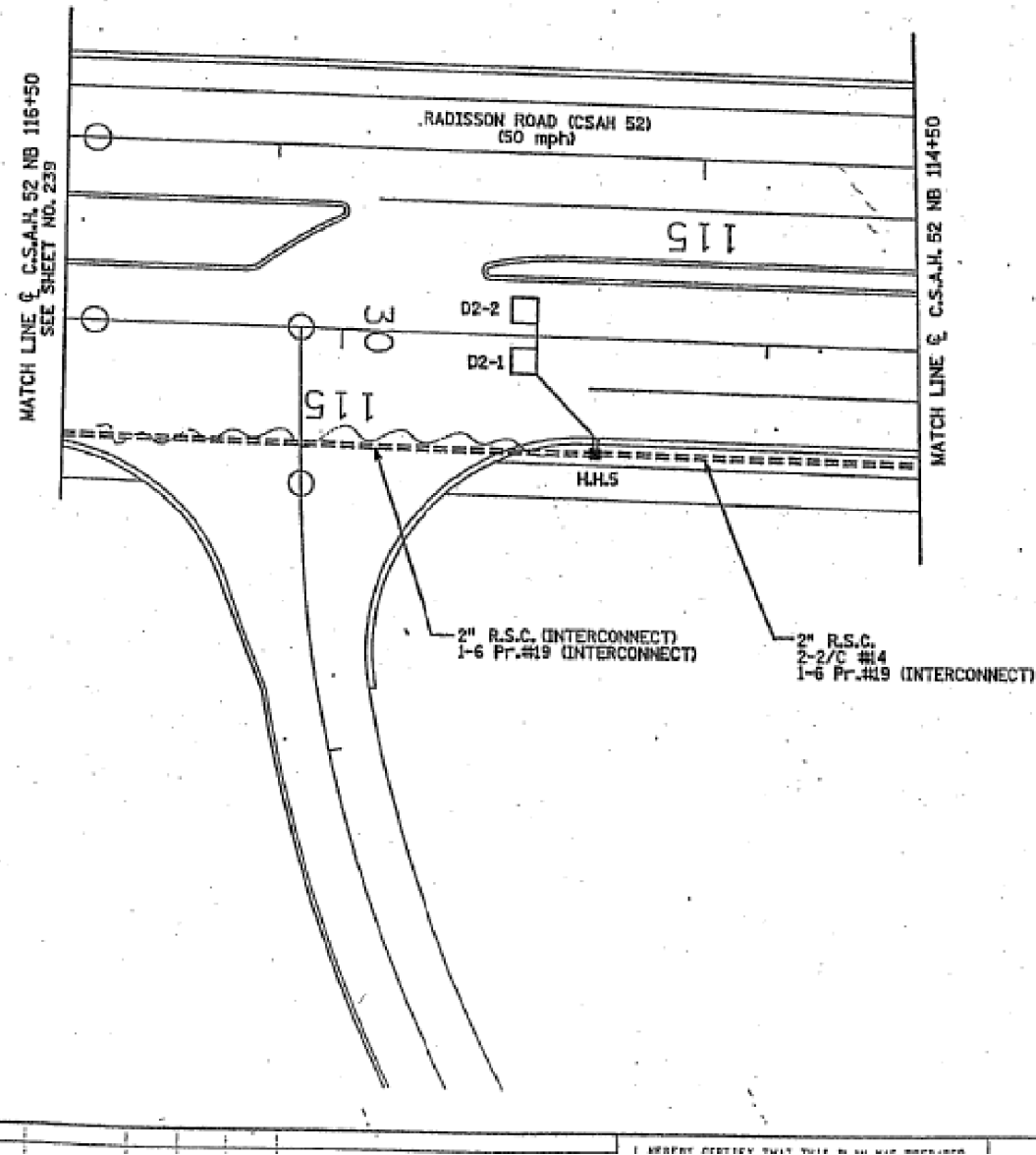
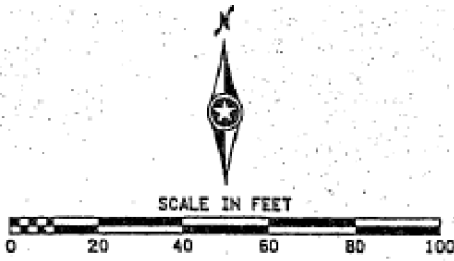
DRAWN BY SPH DATE 02/02/2021  
 DESIGN BY SPH DATE 02/02/2021  
 CHECKED BY CSO DATE 02/02/2021



ANOKA COUNTY HIGHWAY DEPT.

STATE AID PROJECT 002-652-009

EXISTING SIGNAL PLANS  
 Sheet 62 of 64 Sheets



NOTE:  
(INTERCONNECT) DENOTES ITEMS TO BE MEASURED  
AND PAID FOR SEPARATELY FROM ITEM 2565.511.

SIGNAL SYSTEM I.D.: 22497

FOR REFERENCE PURPOSES ONLY

NO	DATE	BY	CKD	APPR	REVISION	02/02/2021	1:28:05 PM
NAME: P:\21-01-00\CSAH_52_(105th-Naples)\Base\Proposed\CSAH_52_SIGNALS.dgn							

DRAWN BY SPH DATE 02/02/2021  
 DESIGN BY SPH DATE 02/02/2021  
 CHECKED BY CSO DATE 02/02/2021



ANOKA COUNTY  
HIGHWAY DEPT.

STATE AID PROJECT 002-652-009

EXISTING SIGNAL  
PLANS

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