

MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

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

LOCATED ON CSAH 52 BETWEEN 105TH AVE NE AND MAIN STREET

	<u>LSB CSAH 52</u>		<u>LNB CSAH 52</u>		
GROSS LENGTH	15865.00 FEET	3.005 MILES	GROSS LENGTH	15837.00 FEET	2.999 MILES
EXCEPTIONS-LENGTH	222.00 FEET	0.042 MILES	EXCEPTIONS-LENGTH	222.00 FEET	0.042 MILES
NET LENGTH	15643.00 FEET	2.963 MILES	NET LENGTH	15615.00 FEET	2.957 MILES

GOVERNING SPECIFICATIONS

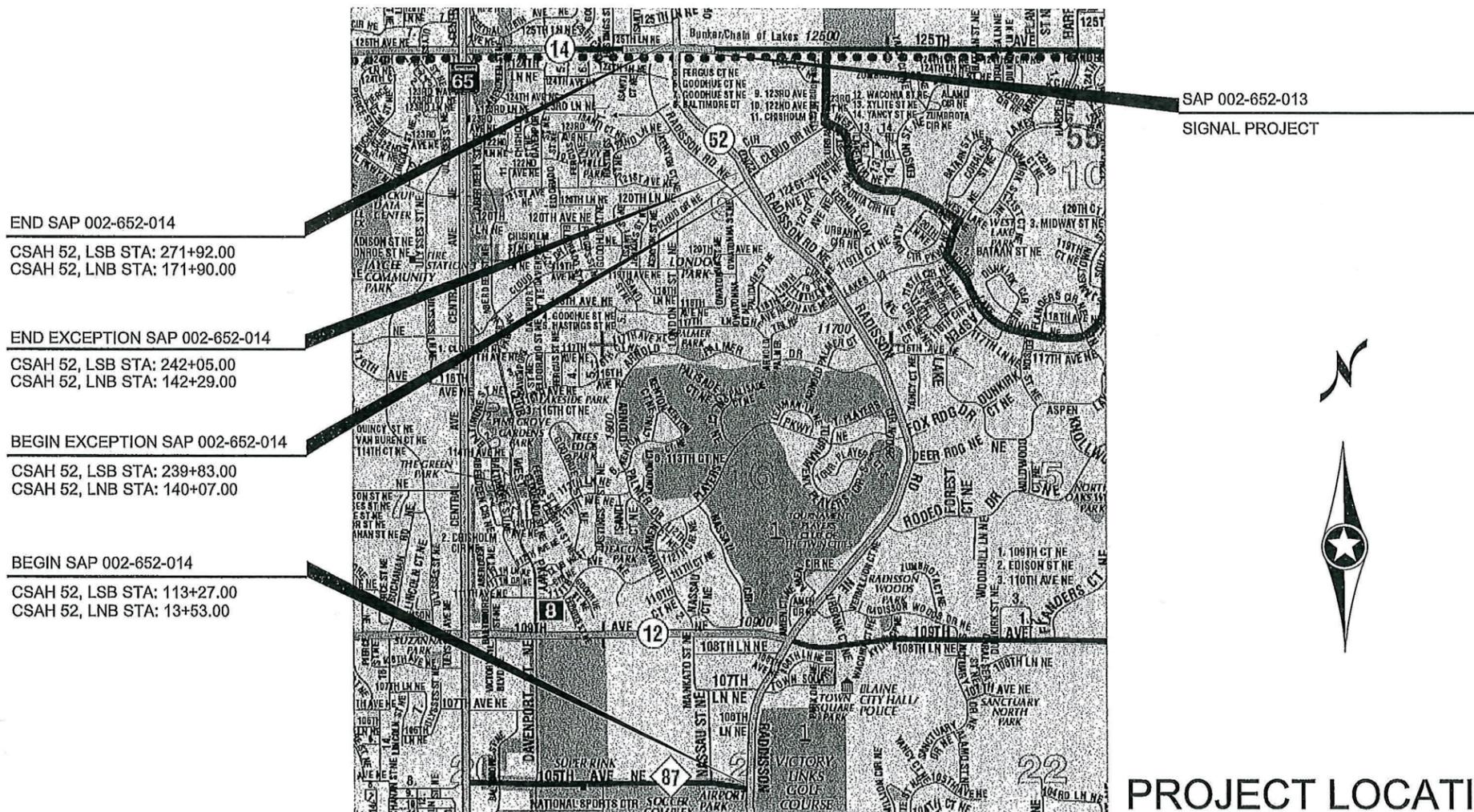
THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

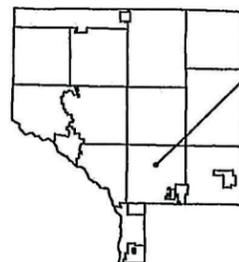
THIS PLAN CONTAINS 87 SHEETS

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PROJECT LOCATION



CITY OF BLAINE
ANOKA COUNTY
MN/DOT TRANSPORTATION DISTRICT - METRO
SECTION 9, 15, 16, 21
TOWNSHIP 31 NORTH
RANGE 23 WEST

Approved 2-27, 2025
ANOKA COUNTY ENGINEER

Approved 3-4, 2025
CITY OF BLAINE ENGINEER

DESIGN DESIGNATION (CSAH 52)

ESAL 20	2,129,230	FUNCTIONAL CLASSIFICATION	A MINOR EXPANDER
R VALUE	70	NO. OF TRAFFIC LANES	4
ADT (2025)	20026	NO. OF PARKING LANES	0
PROJ. ADT (2045)	20026	DESIGN SPEED	50 MPH
PROJ. HCADT (2025)	1182	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:
DATE: 01/30/2025 LICENSE NO. 28511

DRAWN BY MR DATE 11/30/2022
DESIGN BY MR DATE 11/30/2022
CHECKED BY CO DATE 02/04/2025



**ANOKA COUNTY
HIGHWAY DEPT.**

NO	DATE	BY	CHKD	APPR	REVISION	02/04/2025	10:21:47 AM

NAME: P:\24-01-00\CSAH_52_(MAIN ST-105TH)\Base\Proposed\CSAH_52_TITLE.dgn

STATE AID PROJECT 002-652-013
002-652-014

TITLE SHEET
Sheet 1 of 87 Sheets

STATEMENT OF ESTIMATED QUANTITIES

Table with columns: Notes, Item Number, ITEM DESCRIPTION, Unit, SAP 002-652-014 QUANTITIES ESTIMATED, SIGNAL PLAN SAP 002-652-013. Includes items like MOBILIZATION, REMOVE DRAINAGE STRUCTURE, SAWING CONCRETE PAVEMENT, etc.

CONSTRUCTION NOTES

Table with columns: Item Number, Description. Includes notes like REFERENCE DETAILS FOR REMOVAL DETAILS, CONTRACTOR IS RESPONSIBLE FOR CONTACTING PROPERTY OWNER, etc.

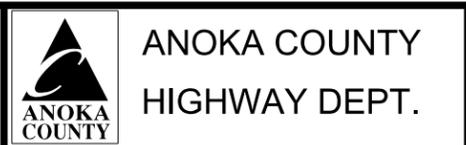
BASIS OF PLANNED QUANTITIES

Table with columns: Item Number, Description, Quantity. Includes items like BITUMINOUS MATERIAL FOR TACK COAT, AGGREGATE BASE CLASS 5, etc.

Table with columns: NO, DATE, BY, CKD, APPR, REVISION. Includes project details like 03/24/2025, 8:57:30 AM.

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

DRAWN BY: MR. DATE 11/30/2022. DESIGN BY: MR. DATE 11/30/2022. CHECKED BY: CO. DATE 03/24/2025



STATE AID PROJECT 002-652-013 002-652-014

STATEMENT OF ESTIMATED QUANTITIES Sheet 2 of 87 Sheets

CASTING ASSEMBLIES SUMMARY						
ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING	CURB BOX	DESCRIPTION	NOTES	QUANTITY
A-7D	700-7	715		301-CP LID WITH RUBBER GASKET ON	CASTING COVER STAMPED "STORM SEWER" (NEENAH R-1733 WITH LID 301-CP)	5
A-7D	700-7	715		301-CP LID WITH RUBBER GASKET ON	CASTING COVER STAMPED "SANITARY SEWER" (NEENAH R-1733 WITH LID 301-CP)	3
A	NEENAH R-3030	L	YES	NEENAH R-3030-L		3
B	NEENAH R-3030	L	NO	NEENAH R-3030-L	CURB PLATE NEEDED	31
C	NEENAH R-3250-DVSP	V	YES	NEENAH R-3250-DVSP		15
D	NEENAH R-3250-DVSP	V	NO	NEENAH R-3250-DVSP	CURB PLATE NEEDED	24
ALL CASTING HEIGHTS ARE TO BE VERIFIED IN THE FIELD ALL MANHOLE COVERS SHOULD BE LABELED AS STORM OR SANITARY NEW MANHOLE CASTINGS TO BE INSTALLED FLUSH WITH THE MILLED ASPHALT SURFACE. ALL MANHOLES TO BE WRAPPED WITH INF- SHIELD. THIS WORK IS INCIDENTAL TO THE CASTING ASSEMBLY. ADJUSTING RINGS TO BE INSTALLED AND GLUED DURING THE PAVING OPERATION. ADJUSTING RINGS TO BE RECESSED 1/4" FROM TOP OF FINISHED MAT						

GATE VALVE TAB			
NUMBER	STATION	OFFSET	ADJUST
500	124+33.16	49.5' LT	1
501	130+09.28	12.0' LT	1
502	130+39.25	16.5' LT	1
503	130+67.13	12.0' LT	1
504	156+77.06	36.0' LT	1
505	84+81.90	28.0' RT	1
506	212+62.02	34.5' LT	1
507	212+63.85	31.0' LT	1
508	212+68.98	36.0' LT	1
509	212+63.85	68.0' LT	1
TOTAL			10
GATE VALVES TO BE ADJUSTED ONLY AS NECESSARY AS DETERMINED BY THE ENGINEER.			

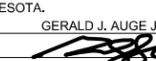
THE FOLLOWING STANDARD PLATES, APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION, SHALL APPLY ON THIS PROJECT

MNDOT STANDARD PLATES	
PLATE NO.	DESCRIPTION
3007F	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
4011E	PRECAST CONCRETE BASE
4020J	MANHOLE OR CATCH BASIN (FOR USE WITH OR WITHOUT TRAFFIC LOADS) (2 SHEETS)
4024A	48" DIA. PRECAST SHALLOW DEPTH CATCH BASIN - DESIGN SD
4026B	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4110F	COVER CASTING FOR MANHOLE (FOR USE IN ALL TRAFFIC AREAS) - CASTING NO. 715
4134A	CURB BOX CASTING FOR CATCH BASIN (FOR DESIGN B CURBS)- CASTING NO. 825
7038A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
7100H	CONCRETE CURB AND GUTTER (DESIGN B AND DESIGN V)
7111J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB AND GUTTER)
7113A	CONCRETE APPROACH NOSE DETAIL
8000K	TEMPORARY CHANNELIZERS (3 SHEETS)
8132B	PREFORMED RIGID PVC CONDUIT LOOP DETECTOR (LAYOUT DETAILS, LAYOUT NOTES, TYPICAL INSTALLATION) (3 SHEETS)

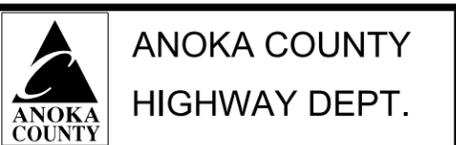
BITUMINOUS STREET SUMMARY		
LOCATION	BITUMINOUS	
	2360 TYPE SP 12.5 WEAR (4,F)	NOTES
	TON	
Lakes Parkway	56	[1]
119th Ave NE	39	[1]
116th Ave NE	25	[1]
Arnold Palmer Dr	26	[1]
Fox Ridge NE	21	[1]
Tournament Players Pkwy	39	[1]
Deer Ridge NE	25	[1]
Rodeo Dr NE	17	[1]
110th Ct NE	10	[1]
Amen Circle NE	7	[1]
Amen Dr	17	[1]
Radisson Woods Dr NE	8	[1]
109th Ave NE East Side	58	[1]
109th Ave NE West Side	68	[1]
108th Ln NE	25	[1]
108th Ave	13	[1]
107th Ln NE	25	[1]
Town Square Dr NE	10	[1]
106th Ln NE	24	[1]
PROJECT TOTAL	513	

BITUMINOUS SUMMARY NOTES:
 [1] QUANTITY ESTIMATED FOR 1 LIFT

NO	DATE	BY	CKD	APPR	REVISION	02/04/2025	10:21:52 AM
NAME: P:\24-01-00\CSAH_52 (MAIN ST-105TH)\Base\Proposed\CSAH_52_SEQ.dgn							

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002-652-013
 STATE AID PROJECT 002-652-014

TABULATIONS

Sheet 3 of 87 Sheets

SPH005

STORM DRAINAGE TAB

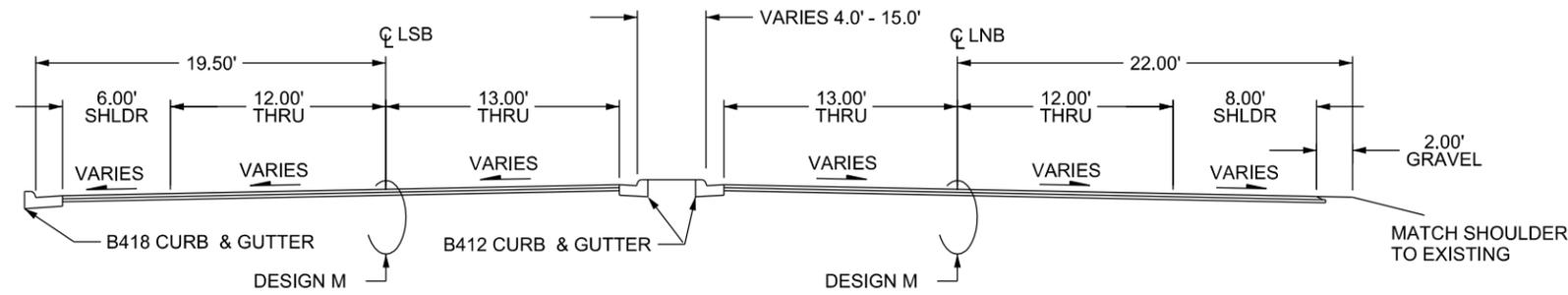
NUMBER	TYPE	ACTION	NEW CASTING TYPE	FURNISH AND INSTALL CASTING ASSEMBLY	RING HEIGHT (INCIDENTAL)	REMOVE STRUCTURE	GROUT CATCH BASIN OR MANHOLE	CONSTRUCT DRAINAGE STRUCTURE DESIGN G	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48"	CONNECT TO EXISTING STORM SEWER (INCIDENTAL)	NOTES
				EACH	LIN FT	EACH	EACH	LIN FT	LIN FT	EACH	
105	CB	RE-RING	B	1	0.5						
106	CB	GROUT					1				
107	CB	GROUT					1				
108	CB	RE-RING	B	1	0.4						Grout doghouse and clean out
109	CB	GROUT					1				
110	CB	RE-RING	D	1	0.7						
111	CB	RE-RING	B	1	0.8						
112	CB	RE-RING	D	1	0.7						
113	CB	GROUT					1				
114	CB	RE-RING	B	1	0.9						
115	CB	RECONSTRUCT	B	1		1		5.2	2		12" South 5.9' Inv., 12" East 5.0' Inv.
116	CB	RE-RING	C	1	0.4						
117	CB	GROUT					1				
118	CB	GROUT					1				
119	CB	GROUT					1				
120	CB	GROUT					1				
121	CB	RE-RING	D	1	0.7						
122	CB	RE-RING	B	1	0.5						Grout Structure
123	CB	RE-RING	B	1	0.6						
124	CB	RE-RING	C	1	0.2						Clean and grout doghouse
125	CB	RE-RING	C	1	0.2						
126	CB	GROUT					1				
127	CB	GROUT					1				
128	CB	RE-RING	D	1	0.6						
129	CB	GROUT					1				
130	CB	RE-RING	D	1	0.7						
131	CB	GROUT					1				
132	CB	GROUT					1				
133	CB	GROUT					1				
134	CB	RE-RING	D	1	0.9						Grout invert and doghouse
135	CB	RE-RING	D	1	0.5						
136	CB	RE-RING	D	1	0.8						
137	CB	RE-RING	D	1	0.8						
138	CB	GROUT					1				
139	CB	RE-RING	B	1	0.9						
140	CB	OK									
141	CB	RE-RING	C	1	0.8						
142	CB	RE-RING	D	1	0.3						
143	CB	GROUT					1				
144	CB	GROUT					1				
145	CB	RE-RING	D	1	1.0						Grout doghouse
146	CB	RE-RING	D	1	0.9						
146A	CB	RE-RING	D	1	0.8						
147	CB	GROUT					1				
148	CB	GROUT					1				
149	CB	RE-RING	D	1	0.6						
150	CB	GROUT					1				
151	CB	RE-RING	D	1	0.6						
152	CB	RE-RING	D	1	0.5						
153	CB	RE-RING	C	1	0.7						
154	CB	OK									
155	CB	GROUT					1				
156	CB	RE-RING	C	1	0.5						
157	CB	GROUT					1				
158	CB	RE-RING	B	1	0.9						
159	CB	GROUT					1				Clean
160	CB	GROUT					1				
161	CB	GROUT					1				
162	CB	GROUT					1				
163	CB	RE-RING	B	1	0.6						
164	CB	GROUT					1				
165	CB	RE-RING	B	1	0.5						
166	CB	RE-RING	C	1	0.6						
167	CB	GROUT					1				
168	CB	GROUT					1				
169	CB	GROUT					1				
170	CB	RE-RING	D	1	0.5						
171	CB	GROUT					1				
172	CB	RECONSTRUCT	B	1		1		3.1	2		12" West 3.8' Inv., 12" East 3.8' Inv.
173	CB	GROUT					1				
174	CB	RE-RING	D	1	0.5						
175	CB	GROUT					1				
176	CB	RE-RING	B	1	0.3						
177	CB	RE-RING	D	1	0.5						
178	CB	GROUT					1				
179	CB	GROUT					1				
180	CB	RE-RING	B	1	0.7						
181	CB	RE-RING	B	1	0.3						
182	CB	RE-RING	C	1	0.7						
183	CB	GROUT					1				
184	CB	RE-RING	C	1	0.9						
185	CB	GROUT					1				
186	CB	RE-RING	A	1	0.5						
187	CB	RE-RING	D	1	0.7						
188	CB	GROUT	C	1	0.9						
189	CB	RE-RING	C	1	0.1						
190	CB	GROUT					1				
191	CB	RE-RING	A	1	0.4						
SUBTOTALS				48	28.1	2	38	3.1	5.2	4	

STORM DRAINAGE TAB

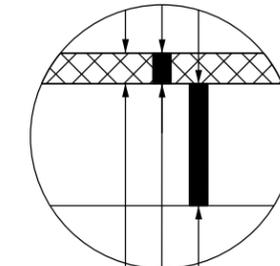
NUMBER	TYPE	ACTION	NEW CASTING TYPE	FURNISH AND INSTALL CASTING ASSEMBLY	RING HEIGHT (INCIDENTAL)	REMOVE STRUCTURE	GROUT CATCH BASIN OR MANHOLE	CONSTRUCT DRAINAGE STRUCTURE DESIGN G	CONSTRUCT DRAINAGE STRUCTURE DESIGN 48"	CONNECT TO EXISTING STORM SEWER (INCIDENTAL)	NOTES
				EACH	LIN FT	EACH	EACH	LIN FT	LIN FT	EACH	
192	CB	GROUT					1				
193	CB	GROUT					1				
194	CB	GROUT					1				
195	CB	GROUT					1				
196	CB	GROUT					1				
197	CB	GROUT					1				
198	CB	RE-RING	D	1	0.6						
199	CB	GROUT					1				
200	CB	OK									
201	CB	GROUT					1				
202	CB	RE-RING	B	1	1.0						
203	CB	GROUT					1				
204	CB	GROUT					1				
205	CB	GROUT					1				
206	CB	OK									
207	CB	OK									
208	CB	GROUT					1				
209	CB	GROUT					1				
210	CB	GROUT					1				
211	CB	GROUT					1				
212	CB	GROUT					1				
213	CB	GROUT					1				
214	CB	RE-RING	A	1	0.5						
215	CB	RE-RING	B	1	0.5						
216	CB	RE-RING	D	1	0.7						
217	CB	GROUT					1				
218	CB	GROUT					1				
219	CB	GROUT					1				
220	CB	RE-RING	C	1	0.4						
221	CB	OK									
222	CB	GROUT					1				
223	CB	RE-RING	B	1	0.5						
224	CB	GROUT					1				
225	CB	GROUT					1				
226	CB	GROUT					1				
227	CB	GROUT					1				
228	CB	GROUT					1				
229	CB	GROUT					1				
230	CB	GROUT					1				Grout doghouse
231	CB	RE-RING	B	1	0.2						
232	CB	OK									
233	CB	RE-RING	B	1	0.6						
234	CB	RE-RING	B	1	0.3						
235	CB	RE-RING	D	1	0						Grout doghouse
236	CB	GROUT					1				Grout doghouse
237	CB	RE-RING	C	1	0.4						
238	CB	GROUT					1				
239	CB	RE-RING	C	1	0.2						
240	CB	RE-RING	D	1	0.4						
241	CB	RE-RING	B	1	0.7						Grout doghouse
242	CB	GROUT					1				
243	CB	GROUT					1				
244	CB	GROUT					1				
245	CB	GROUT					1				Grout doghouse
246	CB	RE-RING	B	1	0.8						
247	CB	GROUT					1				
248	CB	RE-RING	B	1	0.5						
249	CB	RE-RING	B	1	0.6						
250	CB	RE-RING	B	1	1.0						
250A	CB	RE-RING	B	1	0.2						Clean
251	CB	RE-RING	C	1	0.6						
251A	CB	GROUT					1				
252	CB	RE-RING	B	1	0.5						
253	CB	GROUT					1				
254	CB	RE-RING	B	1	0.6						
255	CB	RE-RING	B	1	0.6						
256	CB	GROUT					1				
257	CB	RE-RING	B	1	0.9						
258	CB	GROUT					1				Grout doghouse
259	CB	GROUT					1				
259A	CB	GROUT					1				
300	MH	OK									
301	MH	GROUT					1				
302	MH	RE-RING	A-7D	1	0.4						
303	MH	RE-RING	A-7D	1	1.8						Clean
304	MH	GROUT					1				Grout tophat
305	MH	RE-RING	A-7D	1	0.4						
306	MH	GROUT					1				Grout tophat
308	MH	OK									
309	MH	GROUT					1				
310	MH	GROUT					1				
311	MH	RE-RING	A-7D	1	0.8						Grout doghouse
312	MH	RE-RING	A-7D	1	0.7						Grout doghouse
313	MH	OK									
314	MH	GROUT					1				

CSAH 52 - Radisson Road
(EXISTING/PROPOSED) SECTION

13+26.78 - 34+73.00
127+86.50 - 130+12.50



DESIGN M
MILL SECTION

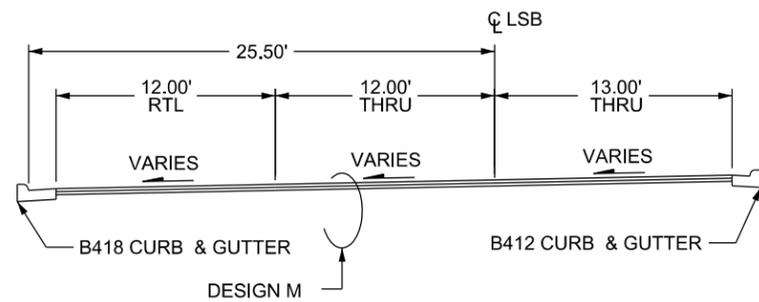


2.0" MILL BITUMINOUS
2.0" BITUMINOUS WEAR (SPWEB440F)
REMAINING BITUMINOUS (4.0")

CSAH 52 - Radisson Road
TYPICAL LSB TURN LANES

LEFT TURN LANE

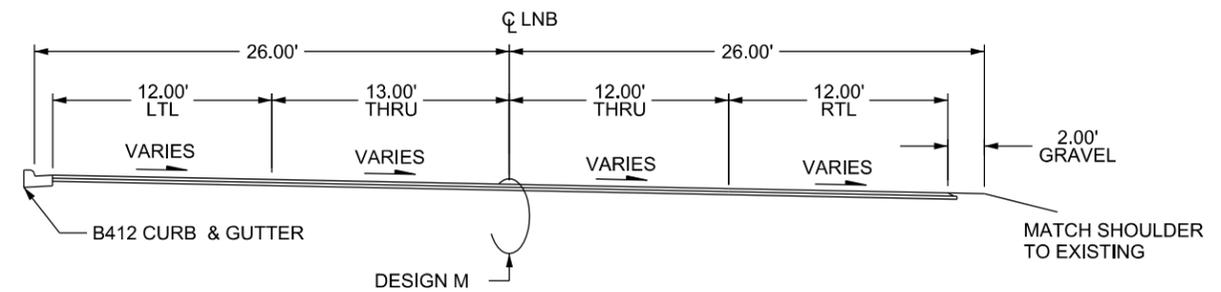
13+26.78 - 21+05.00
113+26.78 - 119+94.00



CSAH 52 - Radisson Road
TYPICAL LNB TURN LANES

LEFT TURN LANE

21+05.00 - 24+10.00
27+19.00 - 29+97.00

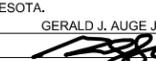


RIGHT TURN LANE

27+67.00 - 29+97.00
33+20.50 - 34+16.00

NO	DATE	BY	CKD	APPR	REVISION	TIME
	02/26/2025					8:43:50 AM

NAME: P:\24-01-00\CSAH_52 (MAIN ST-105TH)\Base\Proposed\CSAH_52_TYPICALS.dgn

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

DRAWN BY MR DATE 11/30/2022
DESIGN BY MR DATE 11/30/2022
CHECKED BY CO DATE 02/26/2025



ANOKA COUNTY
HIGHWAY DEPT.

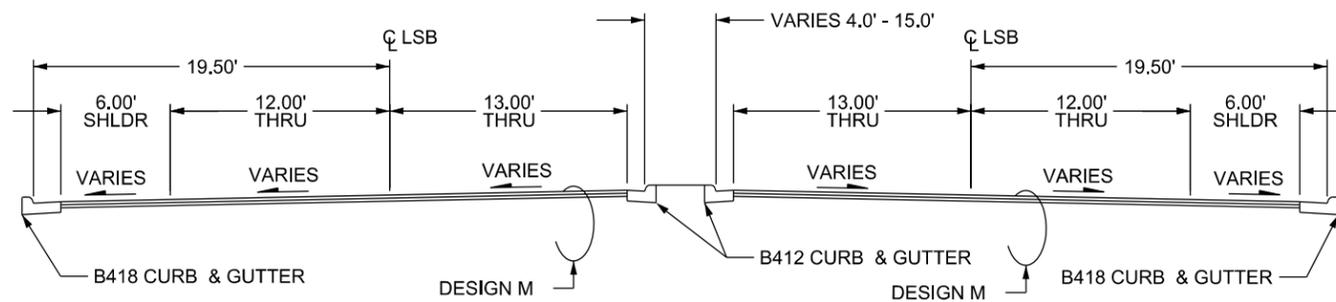
STATE AID PROJECT 002-652-013
002-652-014

TYPICAL SECTIONS

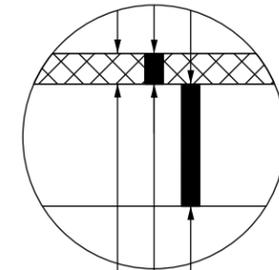
Sheet 5 of 87 Sheets

CSAH 52 - Radisson Road (EXISTING/PROPOSED) SECTION

34+73.00 - 127+86.50



DESIGN M MILL SECTION



2.0" MILL BITUMINOUS
2.0" BITUMINOUS WEAR(SPWEB440F)
REMAINING BITUMINOUS (4.0")

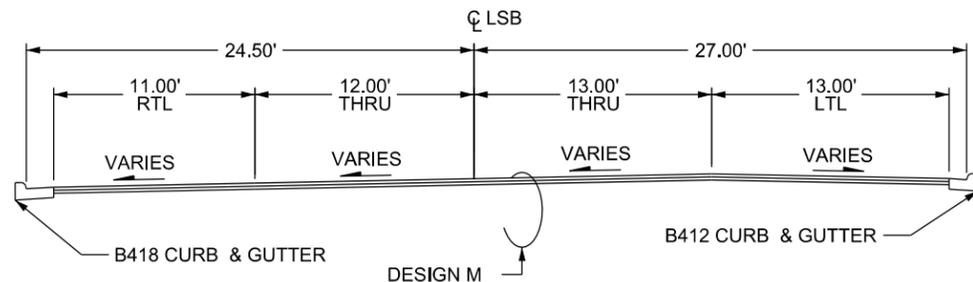
CSAH 52 - Radisson Road TYPICAL LSB TURN LANES

LEFT TURN LANE

- 138+27.00 - 139+80.00
- 141+78.00 - 144+68.00
- 148+80.00 - 151+83.00
- 157+20.00 - 160+40.00
- 185+82.00 - 188+52.00
- 200+02.00 - 203+00.00
- 213+13.00 - 216+10.00
- 241+65.00 - 244+63.00

RIGHT TURN LANE

- 141+78.00 - 145+17.00
- 149+02.00 - 151+83.00
- 157+20.00 - 160+40.00
- 169+25.00 - 172+26.00
- 185+50.00 - 188+52.00
- 200+02.00 - 203+00.00
- 213+13.00 - 216+10.00
- 241+65.00 - 244+63.00



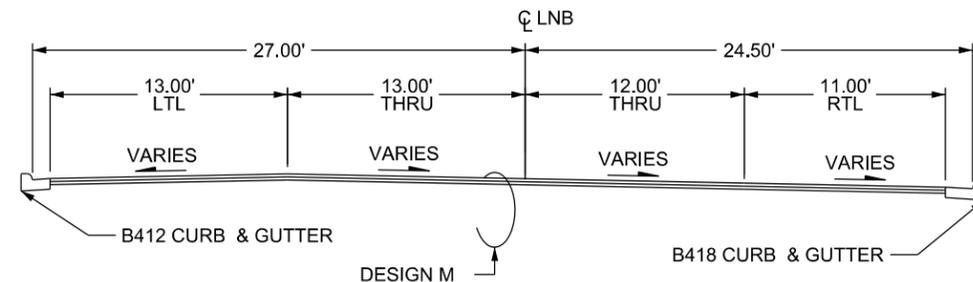
CSAH 52 - Radisson Road TYPICAL LNB TURN LANES

RIGHT TURN LANE

- 36+43.00 - 40+26.00
- 46+06.00 - 47+58.00
- 53+28.00 - 55+93.00
- 64+94.00 - 67+98.00
- 81+63.00 - 84+60.00
- 96+21.00 - 99+22.00
- 109+28.00 - 112+28.00
- 133+66.00 - 140+62.00

LEFT TURN LANE

- 37+20.00 - 40+26.00
- 46+62.00 - 47+58.00
- 53+05.00 - 55+93.00
- 64+94.00 - 67+98.00
- 77+18.00 - 80+05.00
- 84+10.00 - 84+60.00
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- 133+66.00 - 140+62.00

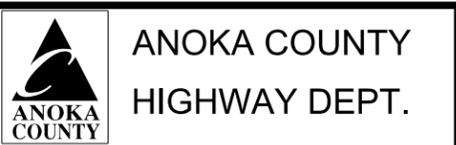


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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: GERALD J. AUGER JR.
 SIGNATURE:
 DATE: 01/30/2025 LICENSE NO.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

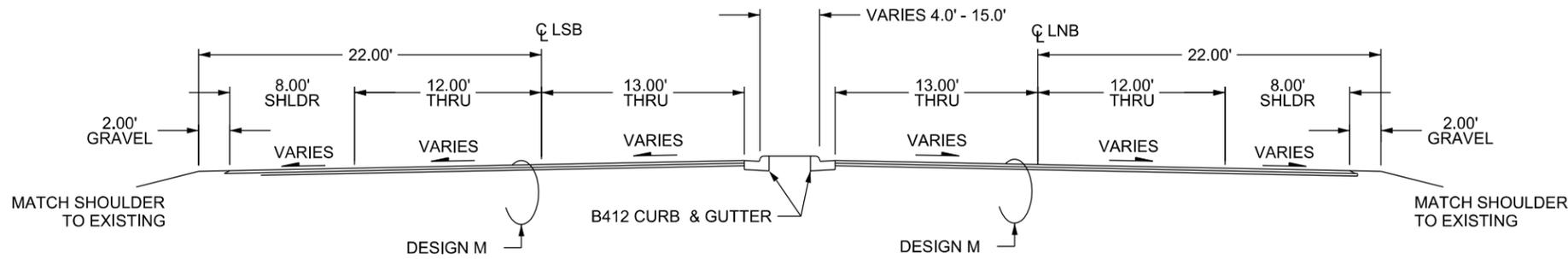
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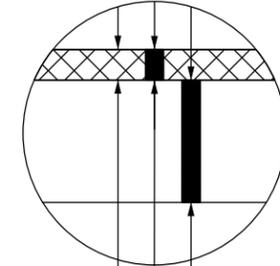
STATE AID PROJECT 002-652-013
 002-652-014

CSAH 52 - Radisson Road (EXISTING/PROPOSED) SECTION

130+12.50 - 164+00.00



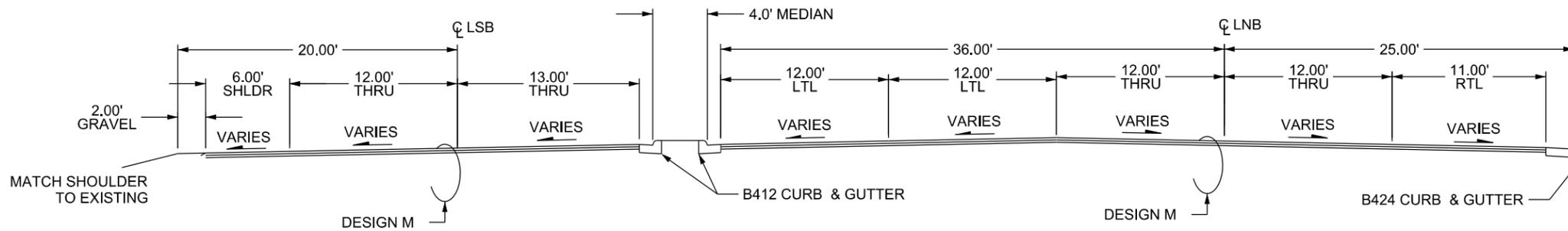
DESIGN M MILL SECTION



2.0" MILL BITUMINOUS
 2.0" BITUMINOUS WEAR(SPWEB440F)
 REMAINING BITUMINOUS (4.0")

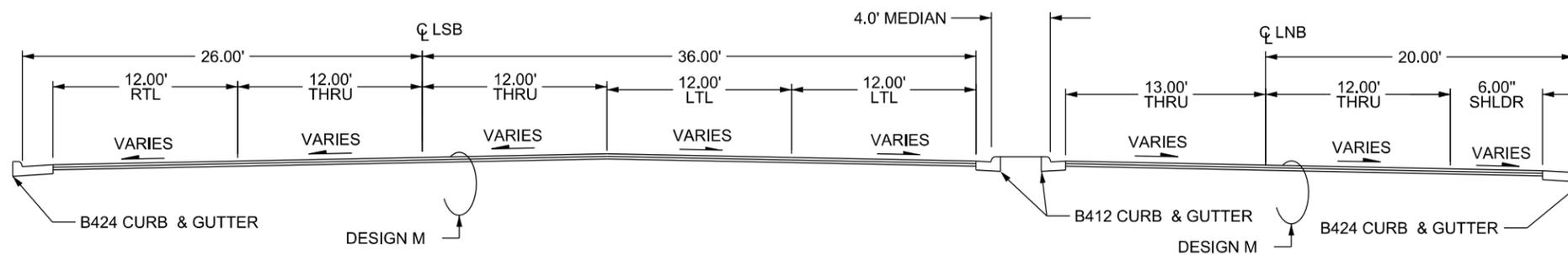
CSAH 52 - Radisson Road (EXISTING/PROPOSED) SECTION

164+00.00 - 169+00.00



CSAH 52 - Radisson Road (EXISTING/PROPOSED) SECTION

169+00.00 - 172+92.40



NO	DATE	BY	CKD	APPR	REVISION	TIME
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NAME: P:\24-01-00\CSAH_52_(MAIN ST-105TH)\Base\Proposed\CSAH_52_TYPICALS.dgn

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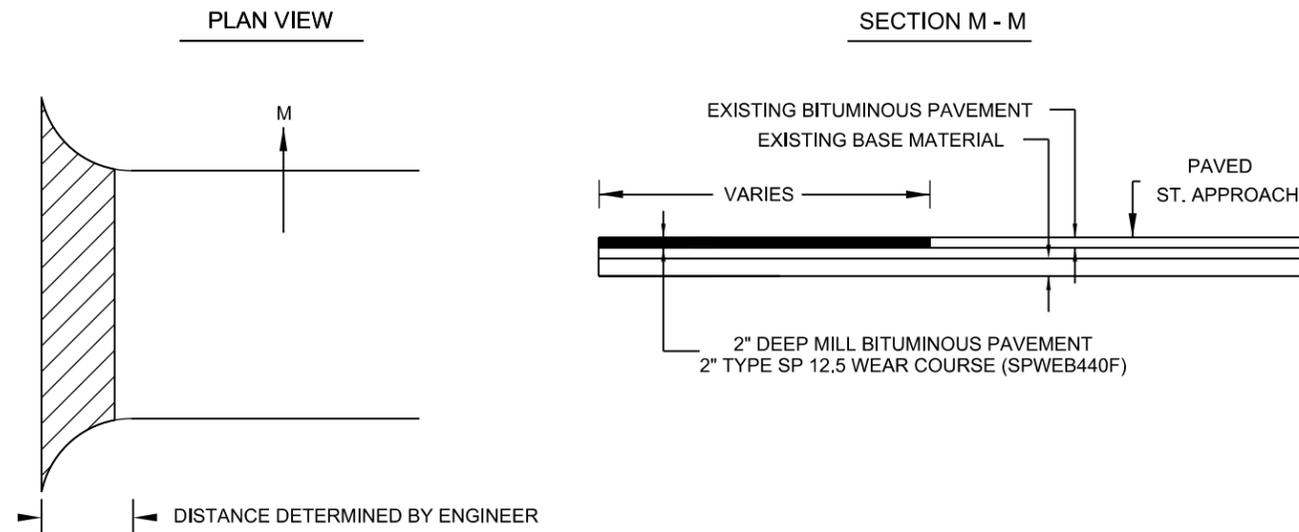
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ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-652-013
 002-652-014

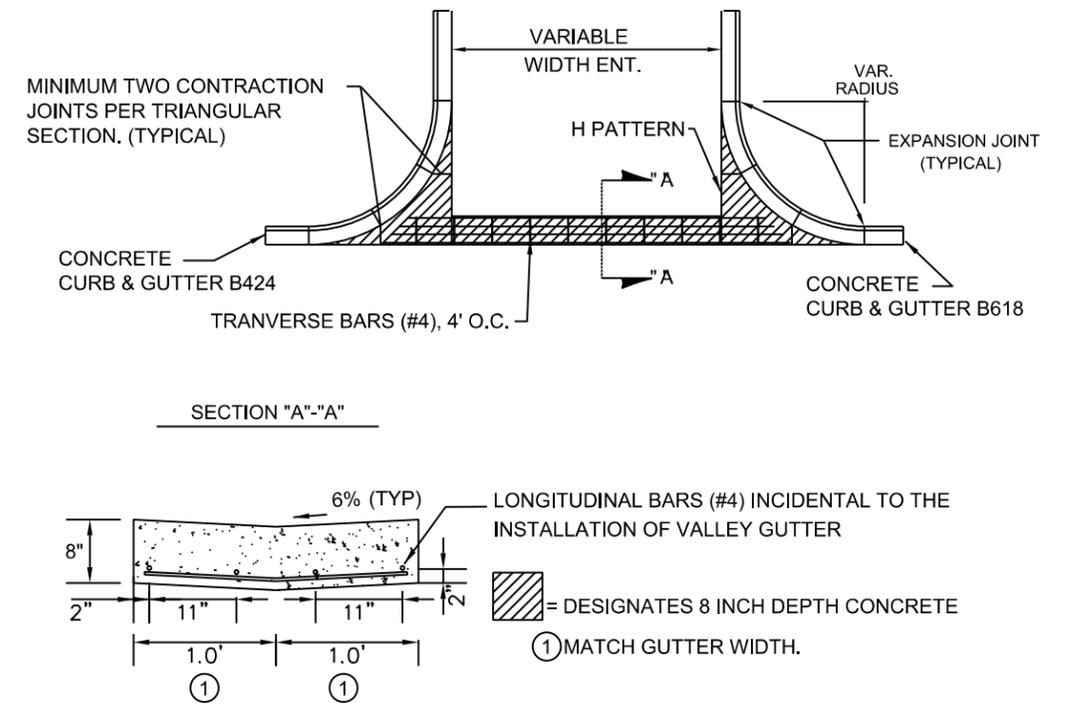
STREET APPROACH DETAIL (MILL & OVERLAY)

BITUMINOUS STREET



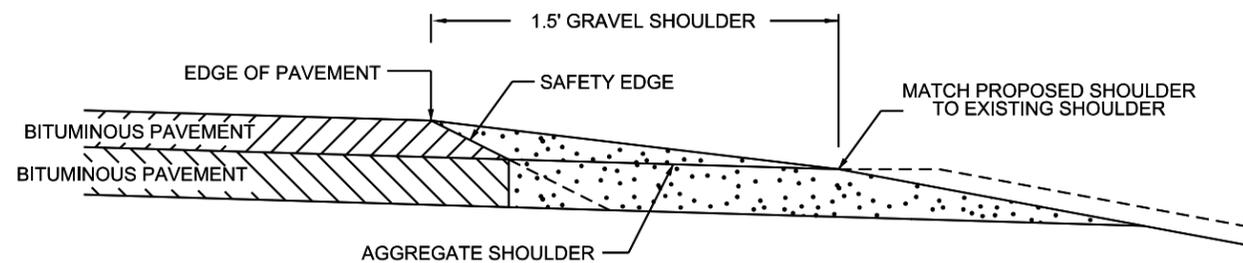
CROSS GUTTER DETAIL

PAID FOR AS 8" VALLEY GUTTER



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	CHKD	APPR	REVISION	TIME
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NAME: P:\24-01-00\CSAH_52 (MAIN ST-105TH)\Base\Proposed\CSAH_52 DETAILS.dgn

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DRAWN BY MR DATE 11/30/2022
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ANOKA COUNTY
HIGHWAY DEPT.

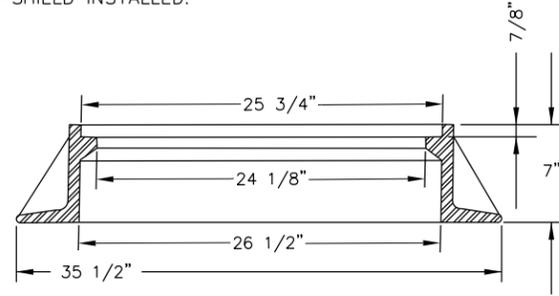
STATE AID PROJECT 002-652-013
002-652-014

DETAILS

Sheet 8 of 87 Sheets

STANDARD MANHOLE CASTING

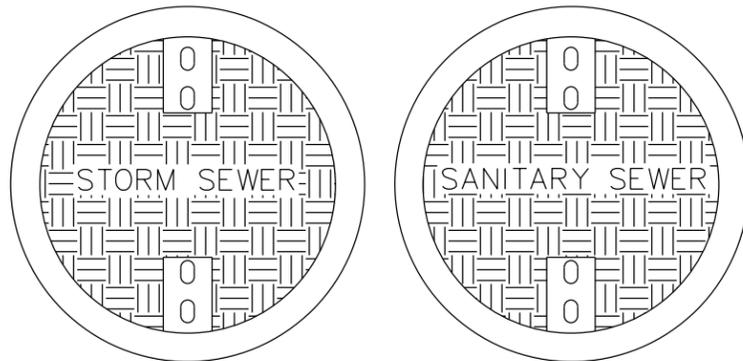
CASTING - NEENAH FOUNDRY NO. R-1733 SERIES MANHOLE FRAME OR APPROVED EQUAL. CASTING & RINGS TO HAVE INFI-SHIELD INSTALLED.



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

NEENAH R1733-5044

NEENAH R1733-5044



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

NO	DATE	BY	CKD	APPR	REVISION
	02/04/2025				10:21:57 AM

NAME: P:\24-01-00\CSAH_52 (MAIN ST-105TH)\Base\Proposed\CSAH_52_DETAILS.dgn

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ANOKA COUNTY
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STATE AID PROJECT 002-652-013
002-652-014

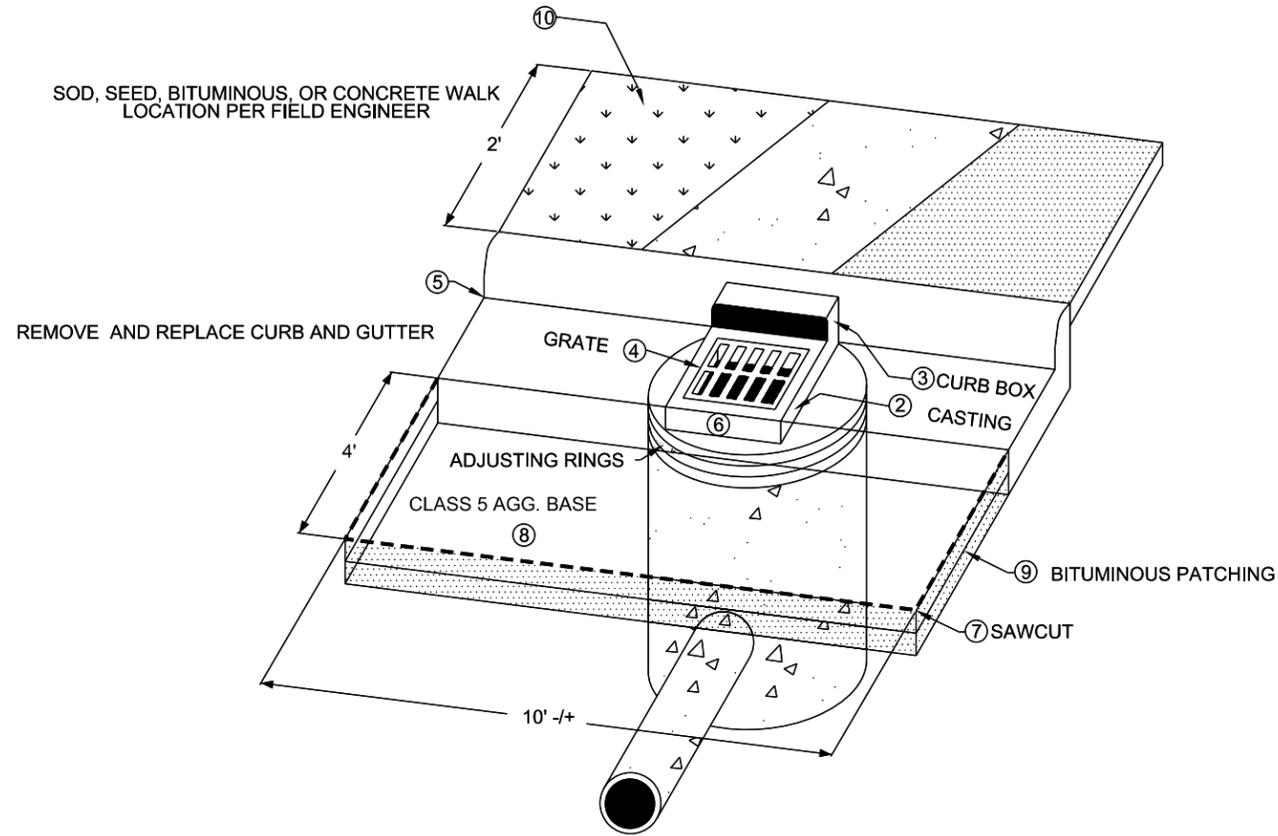
DETAILS

Sheet 9 of 87 Sheets

CATCH BASIN DETAIL

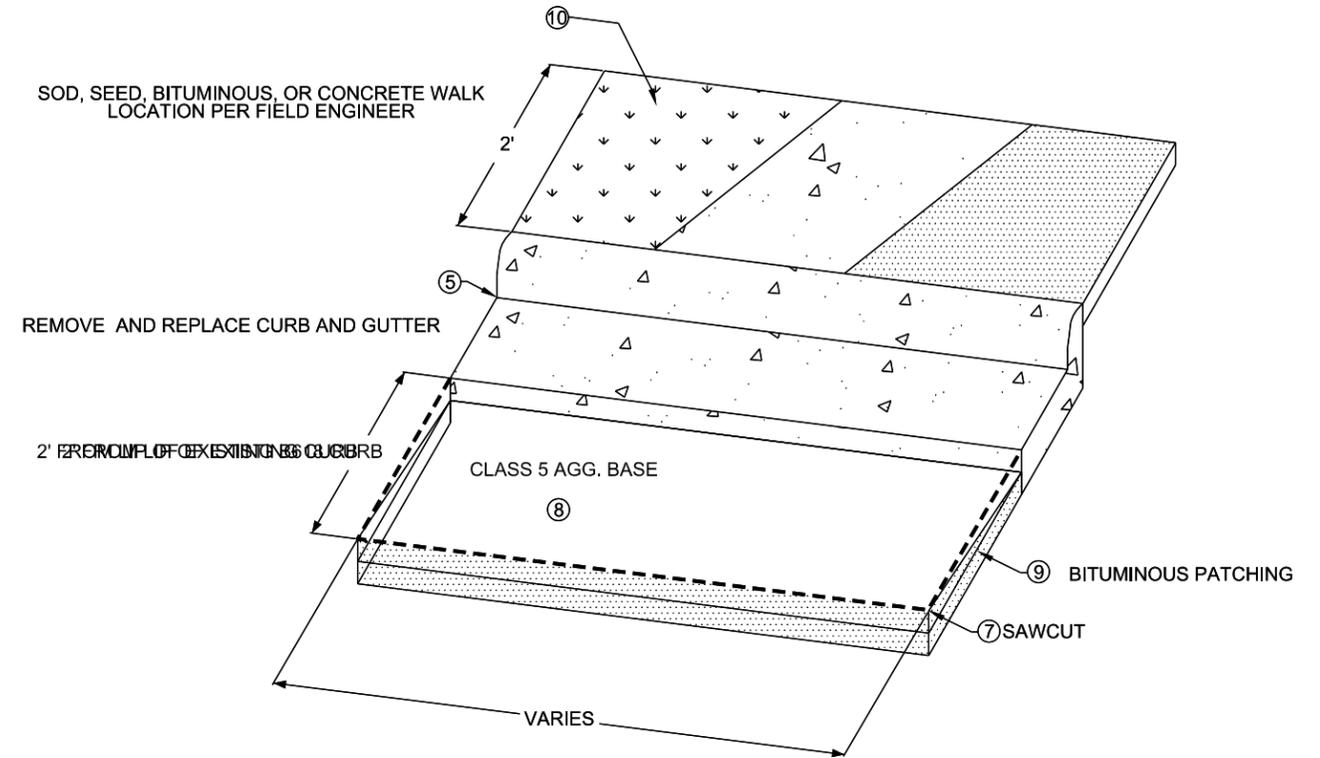
SEE STRUCTURE TAB FOR LOCATION

(PAGE 4)



NEW CURB DETAIL

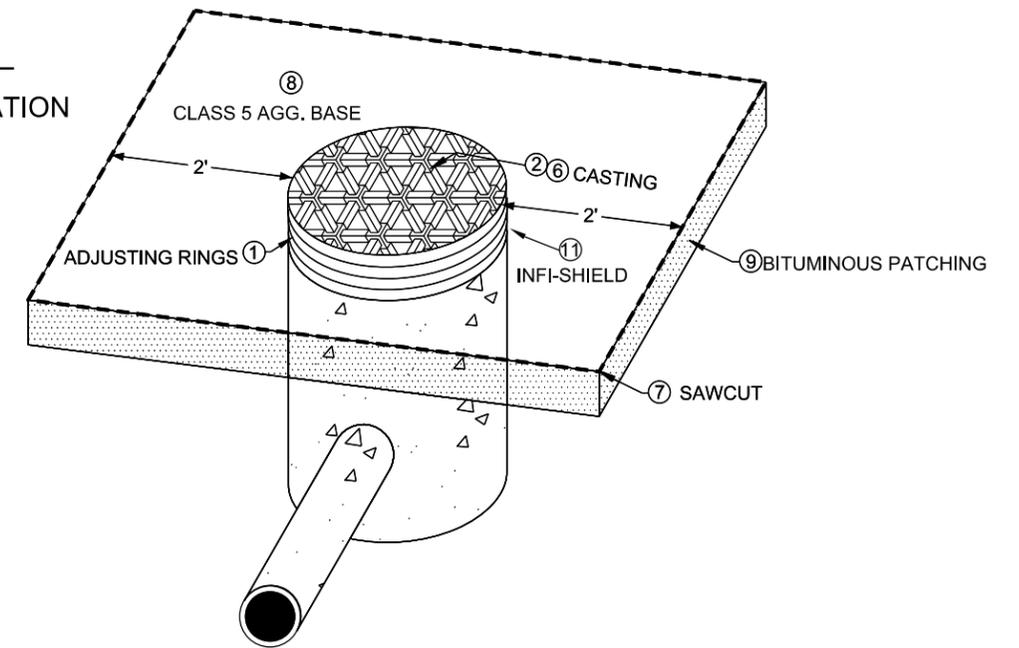
SEE PLAN FOR LOCATION



MANHOLE DETAIL

SEE STRUCTURE TAB FOR LOCATION

(PAGE 4)



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 4026B
- ② RING AND FRAME CASTING; REFERENCE CASTING ASSEMBLIES SUMMARY CHART FOR CASTING TYPE
- ③ CURB BOX MATCHES CASTING REFERENCE CHART FOR CASTING TYPE
- ④ GRATE CASTING; REFERENCE CASTING ASSEMBLIES SUMMARY CHART FOR CASTING TYPE
- ⑤ CONCRETE CURB AND GUTTER DESIGN B STANDARD PLATE 7100H, FORM CURB TO FIT CASTING
- ⑥ INSTALLATION OF CATCH BASIN OR MANHOLE CASTINGS; REFERENCE STANDARD PLATE PER TYPE OF CASTING
- ⑦ SAWCUT BITUMINOUS PAVEMENT / CONCRETE CURB FULL DEPTH.
- ⑧ ADD AND COMPACT AGGREGATE BASE CLASS 5 AROUND REPAIRED STRUCTURE, ITEM INCIDENTAL TO ENTIRE STRUCTURE REPAIR
- ⑨ REMOVE VARIABLE DEPTH BITUMINOUS, PATCH WITH 2, 3" LIFTS OF BITUMINOUS, TOP LIFT SHOULD TAPER TO BOTTOM LIFT AT CURB.
- ⑩ REPLACE DISTURBED AREA BEHIND CATCH BASIN WITH EITHER SOD (RESIDENTIAL AREAS), EROSION CONTROL BLANKET, BITUMINOUS, OR CONCRETE
- ⑪ WRAP STORM SEWER MANHOLE AND SANITARY SEWER MANHOLE CONCRETE ADJUSTING RINGS & CASTING WITH INFI-SHIELD SEAL WRAP OR APPROVED EQUIVALENT, INSTALL PER MANUFACTURER'S RECOMMENDATIONS, INFI-SHIELD WRAP INCIDENTAL TO ADJUSTMENT.

NO	DATE	BY	CKD	APPR	REVISION	TIME
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NAME: P:\24-01-00\CSAH_52 (MAIN ST-105TH)\Base\Proposed\CSAH_52_DETAILS.dgn

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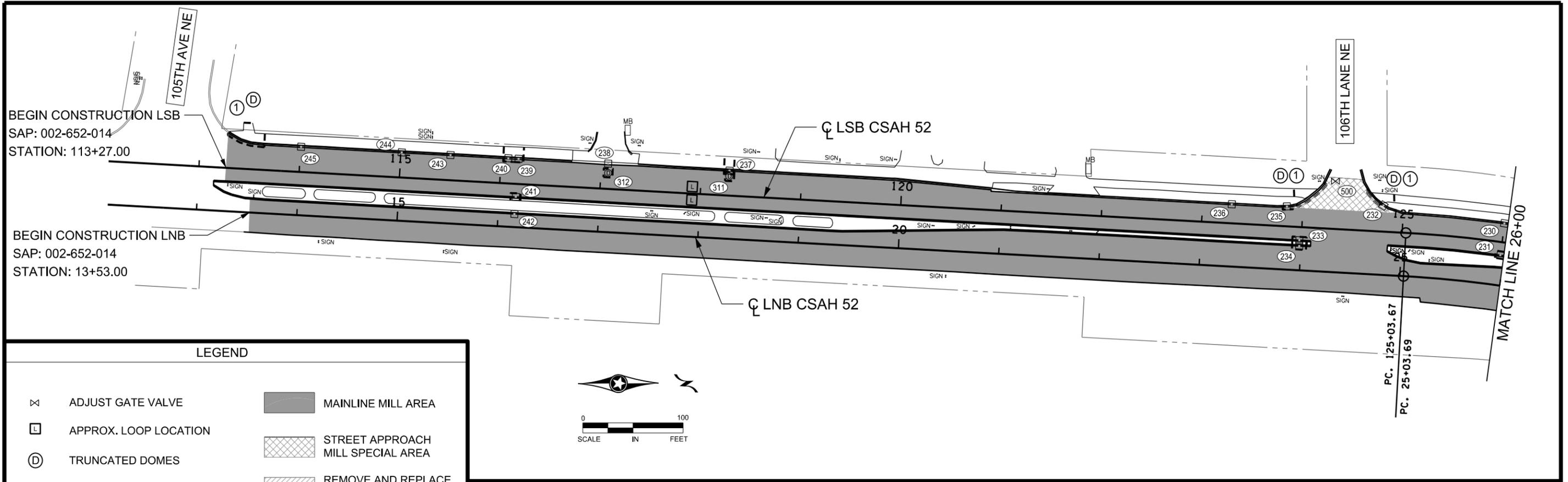
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ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-652-013
002-652-014

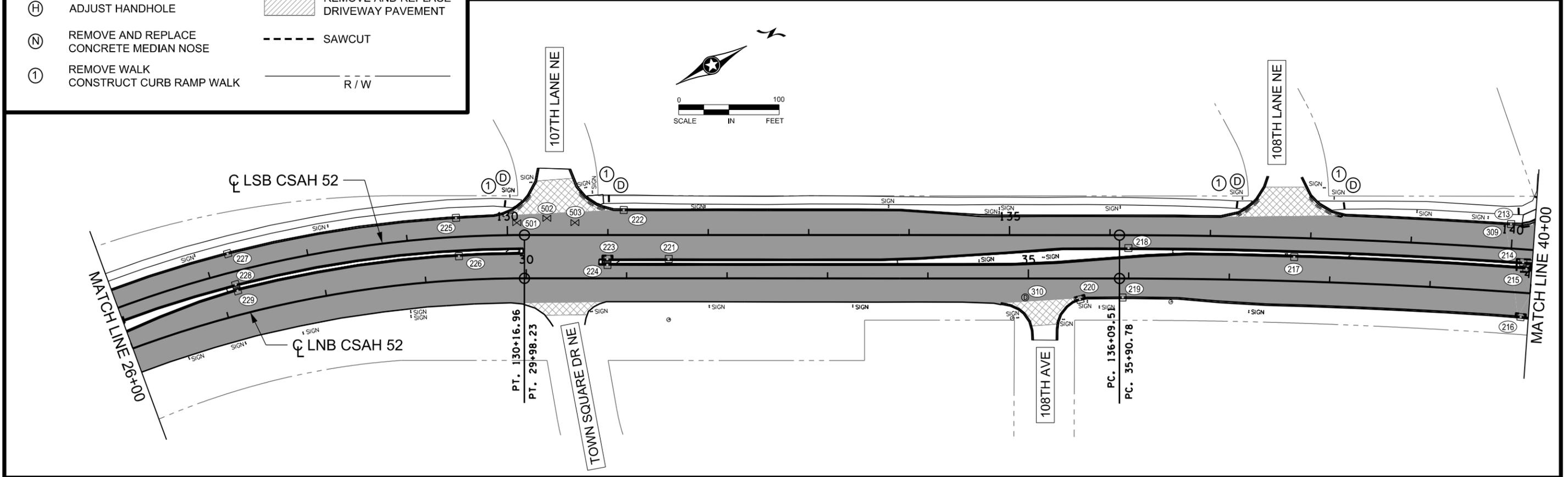
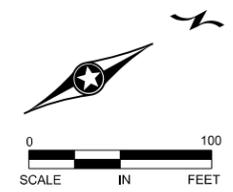
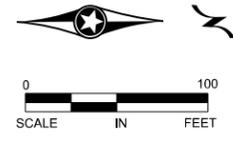
DETAILS

Sheet 10 of 87 Sheets



LEGEND

- ⊗ ADJUST GATE VALVE
- APPROX. LOOP LOCATION
- Ⓧ TRUNCATED DOMES
- Ⓜ ADJUST HANDHOLE
- Ⓝ REMOVE AND REPLACE CONCRETE MEDIAN NOSE
- ① REMOVE WALK CONSTRUCT CURB RAMP WALK
- MAINLINE MILL AREA
- ▨ STREET APPROACH MILL SPECIAL AREA
- ▩ REMOVE AND REPLACE DRIVEWAY PAVEMENT
- - - SAWCUT
- R/W



NO	DATE	BY	CKD	APPR	REVISION	
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DRAWN BY MR DATE 12/05/2022

DESIGN BY MR DATE 12/05/2022

CHECKED BY CO DATE 02/04/2025

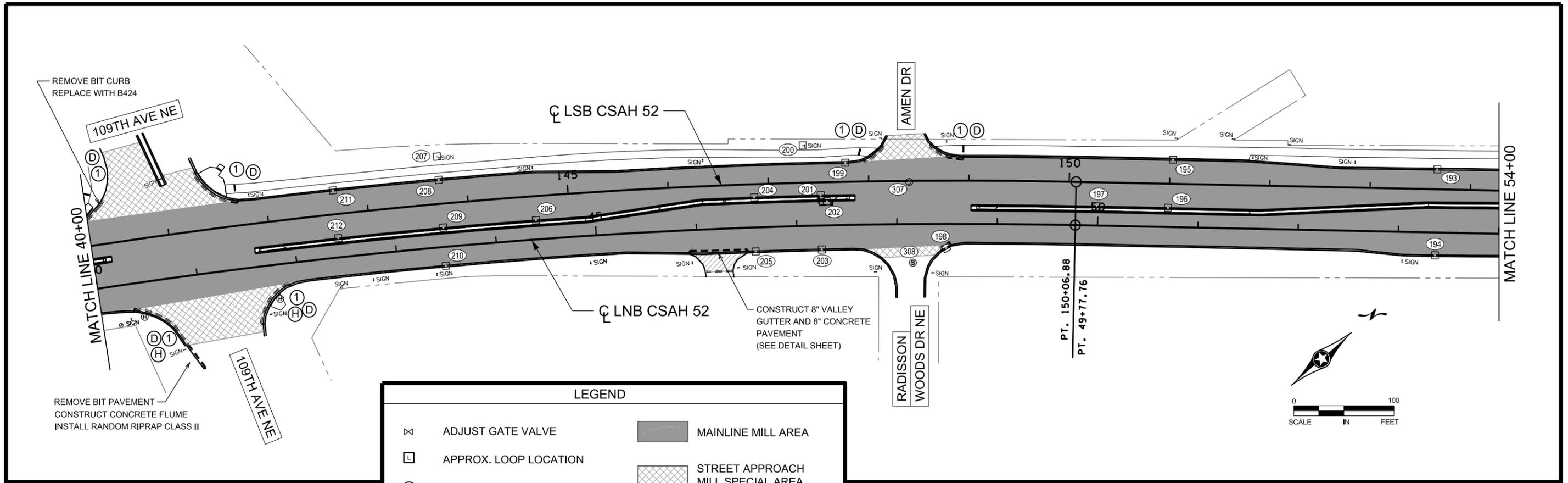
**ANOKA COUNTY
HIGHWAY DEPT.**

STATE AID PROJECT 002-652-014

CONSTRUCTION PLAN

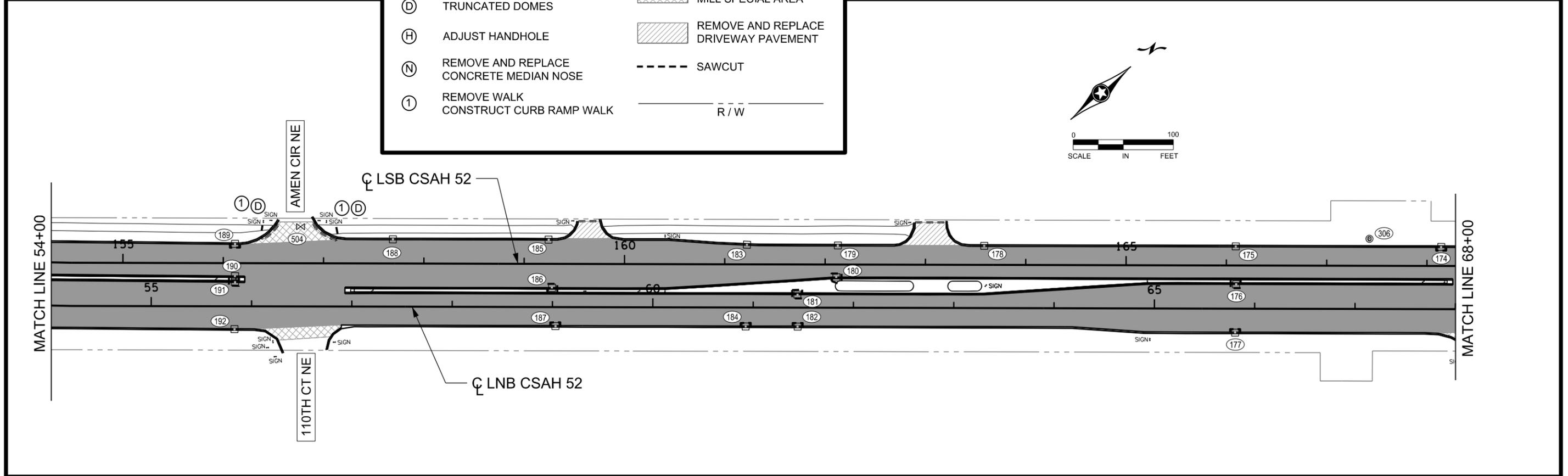
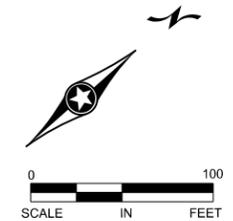
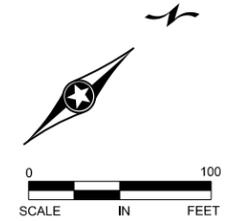
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Sheet 11 of 87 Sheets



LEGEND

⊗	ADJUST GATE VALVE	▒	MAINLINE MILL AREA
⊠	APPROX. LOOP LOCATION	▨	STREET APPROACH MILL SPECIAL AREA
⊙	TRUNCATED DOMES	▧	REMOVE AND REPLACE DRIVEWAY PAVEMENT
⊕	ADJUST HANDHOLE	---	SAWCUT
⊖	REMOVE AND REPLACE CONCRETE MEDIAN NOSE	---	R / W
Ⓛ	REMOVE WALK CONSTRUCT CURB RAMP WALK		



NO	DATE	BY	CKD	APPR	REVISION	TIME
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NAME: P:\24-01-00\CSAH_52 (MAIN ST-105TH)\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.

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SIGNATURE: *[Signature]*

DATE: 01/30/2025 LICENSE NO. 26511

DRAWN BY: MR. DATE 12/05/2022

DESIGN BY: MR. DATE 12/05/2022

CHECKED BY: CO. DATE 02/04/2025

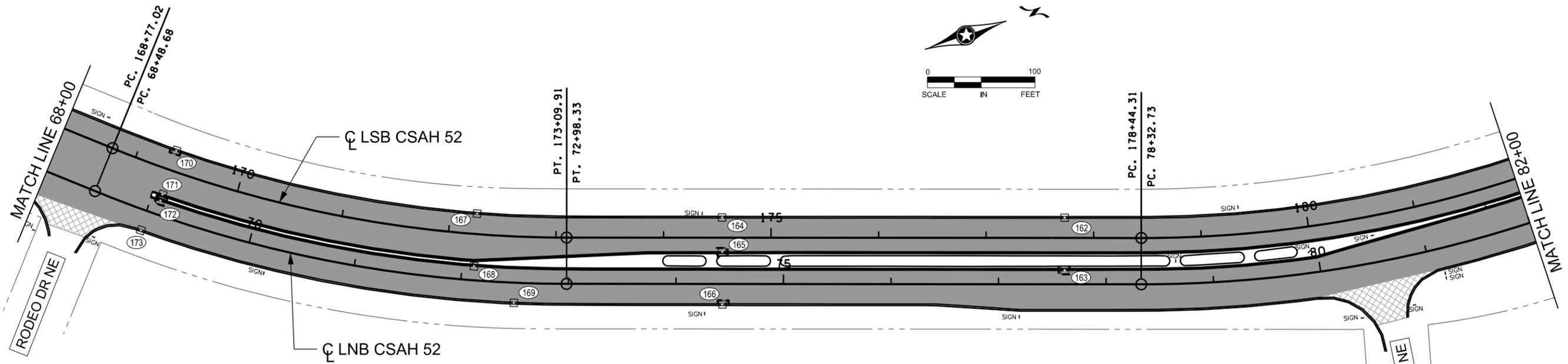
**ANOKA COUNTY
HIGHWAY DEPT.**

STATE AID PROJECT 002-652-014

CONSTRUCTION PLAN

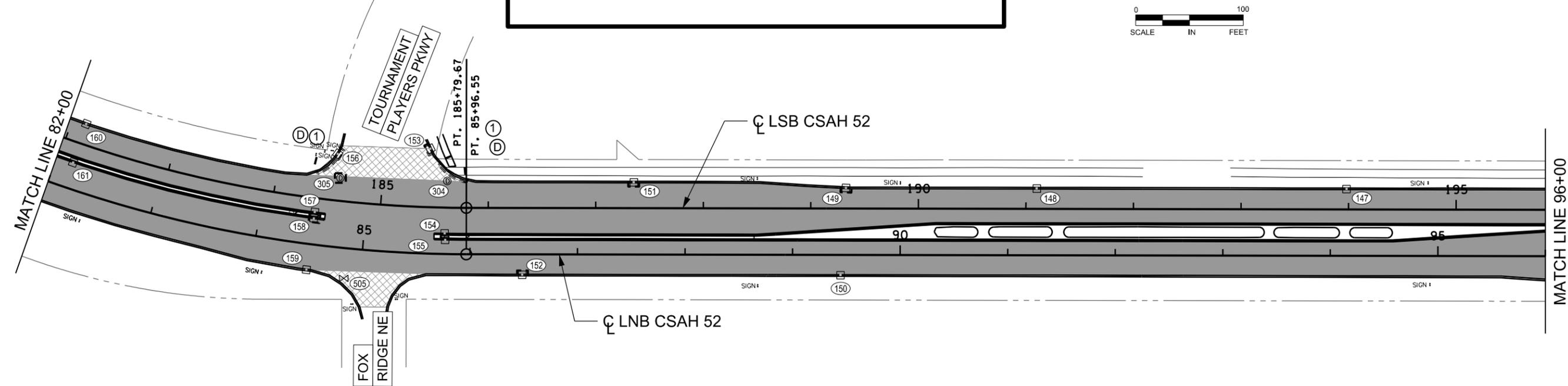
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Sheet 12 of 87 Sheets



LEGEND

⊗	ADJUST GATE VALVE	■	MAINLINE MILL AREA
□	APPROX. LOOP LOCATION	▨	STREET APPROACH MILL SPECIAL AREA
⊙	TRUNCATED DOMES	▧	REMOVE AND REPLACE DRIVEWAY PAVEMENT
⊕	ADJUST HANDHOLE	---	SAWCUT
⊖	REMOVE AND REPLACE CONCRETE MEDIAN NOSE	—	R / W
①	REMOVE WALK		
②	CONSTRUCT CURB RAMP WALK		



NO	DATE	BY	CKD	APPR	REVISION	TIME
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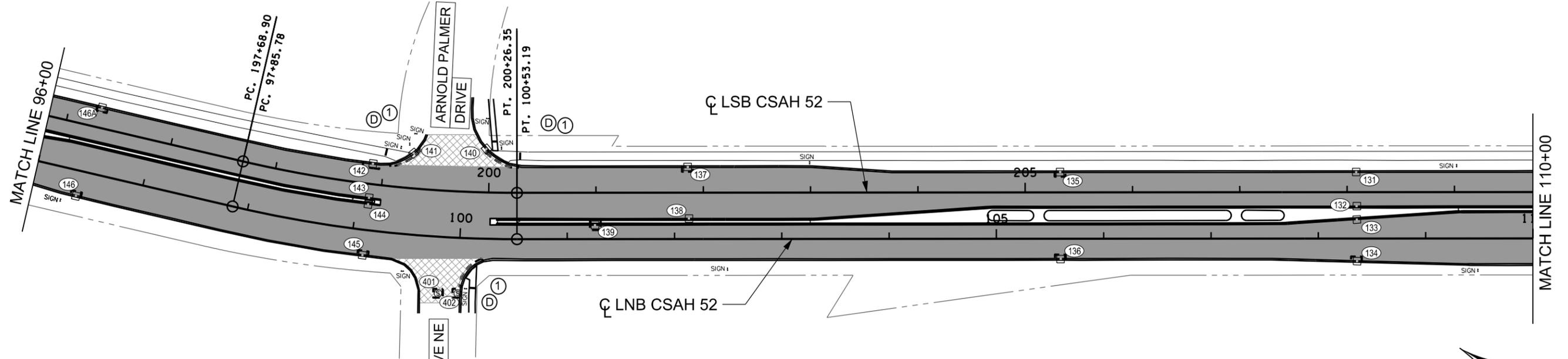
**ANOKA COUNTY
HIGHWAY DEPT.**

STATE AID PROJECT 002-652-014

CONSTRUCTION PLAN

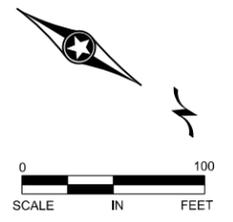
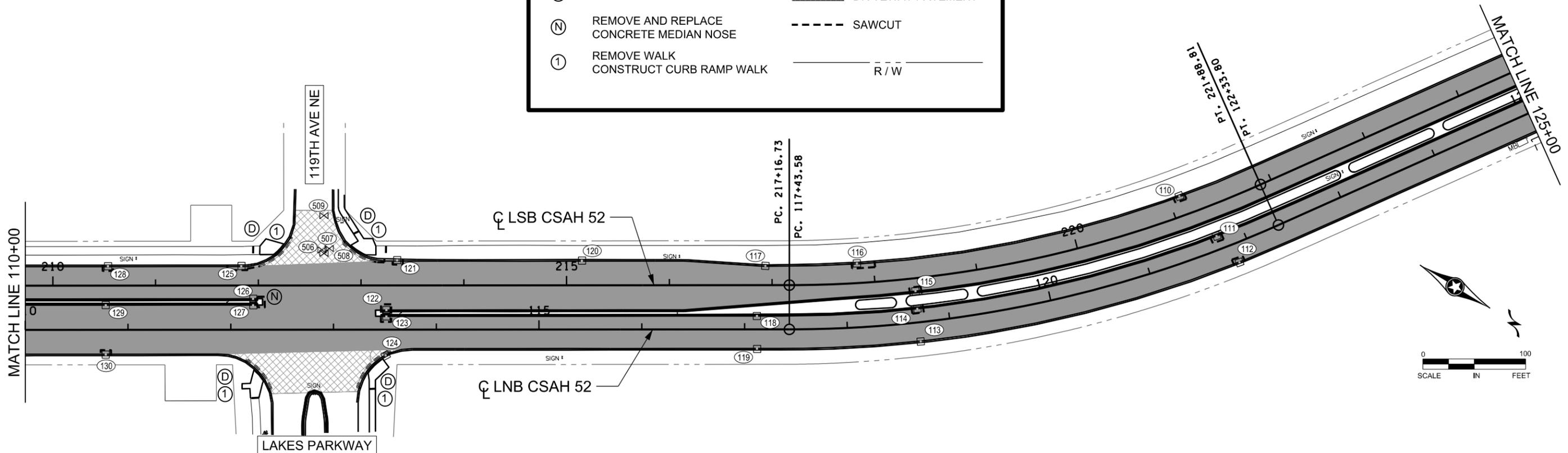
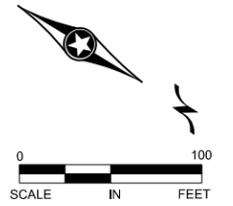
STA 68+00.00 TO 00+00

Sheet 13 of 87 Sheets



LEGEND

⊗	ADJUST GATE VALVE	■	MAINLINE MILL AREA
□	APPROX. LOOP LOCATION	▨	STREET APPROACH MILL SPECIAL AREA
⊙	TRUNCATED DOMES	▧	REMOVE AND REPLACE DRIVEWAY PAVEMENT
⊕	ADJUST HANDHOLE	- - -	SAWCUT
⊖	REMOVE AND REPLACE CONCRETE MEDIAN NOSE	—	R / W
⓪	REMOVE WALK CONSTRUCT CURB RAMP WALK		



NO	DATE	BY	CKD	APPR	REVISION	
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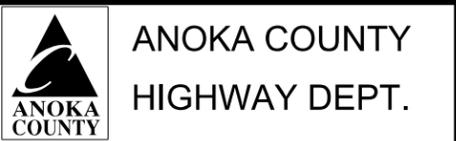
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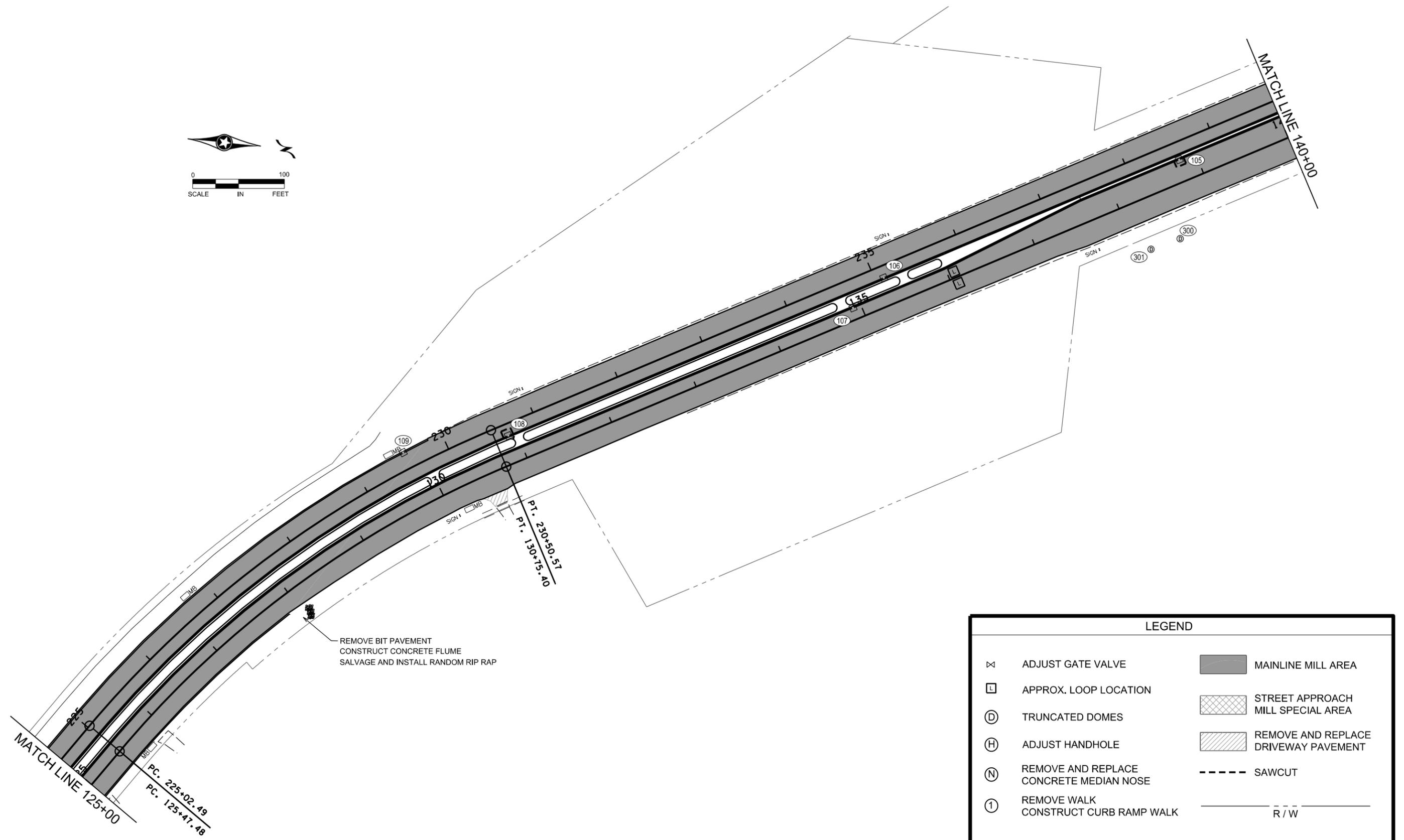
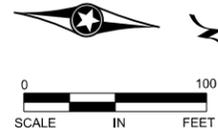


STATE AID PROJECT 002-652-014

CONSTRUCTION PLAN

STA 96+00 TO 125+00

Sheet 14 of 87 Sheets



REMOVE BIT PAVEMENT
CONSTRUCT CONCRETE FLUME
SALVAGE AND INSTALL RANDOM RIP RAP

LEGEND

⊗	ADJUST GATE VALVE	■	MAINLINE MILL AREA
□	APPROX. LOOP LOCATION	▨	STREET APPROACH MILL SPECIAL AREA
⊙	TRUNCATED DOMES	▧	REMOVE AND REPLACE DRIVEWAY PAVEMENT
⊕	ADJUST HANDHOLE	---	SAWCUT
Ⓝ	REMOVE AND REPLACE CONCRETE MEDIAN NOSE	---	R/W
①	REMOVE WALK CONSTRUCT CURB RAMP WALK		

NO	DATE	BY	CKD	APPR	REVISION	
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NAME: P:\24-01-00\CSAH_52 (MAIN ST-105TH)\Base\Proposed\CSAH_52_CP5.dgn

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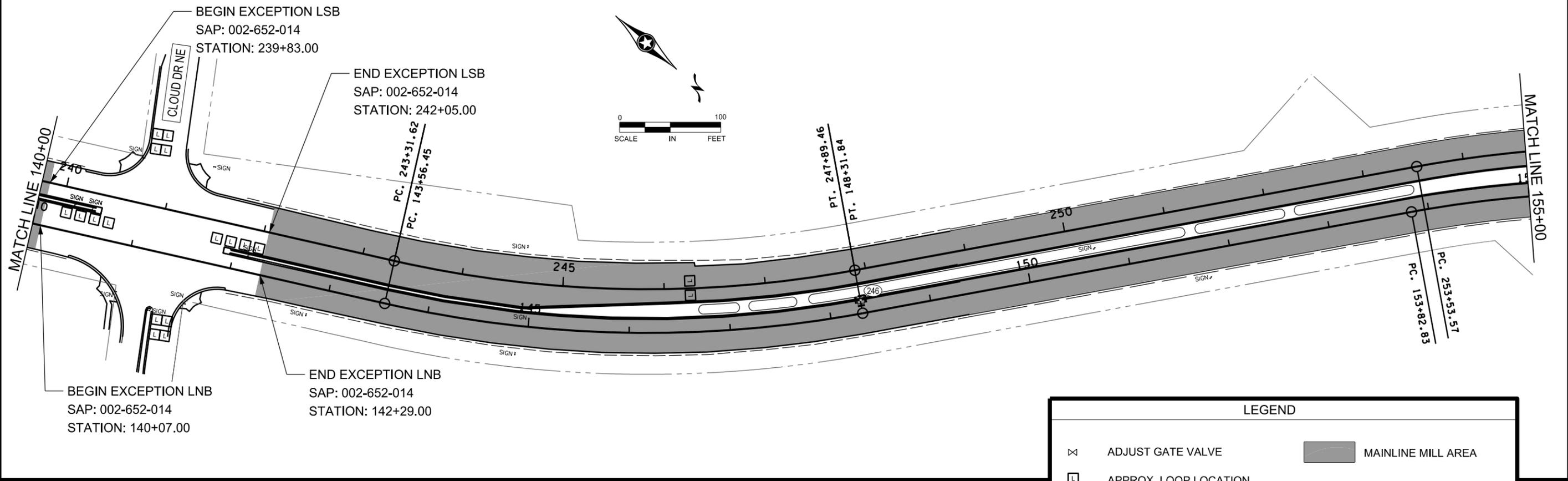
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SIGNATURE: *[Signature]*
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ANOKA COUNTY
HIGHWAY DEPT.

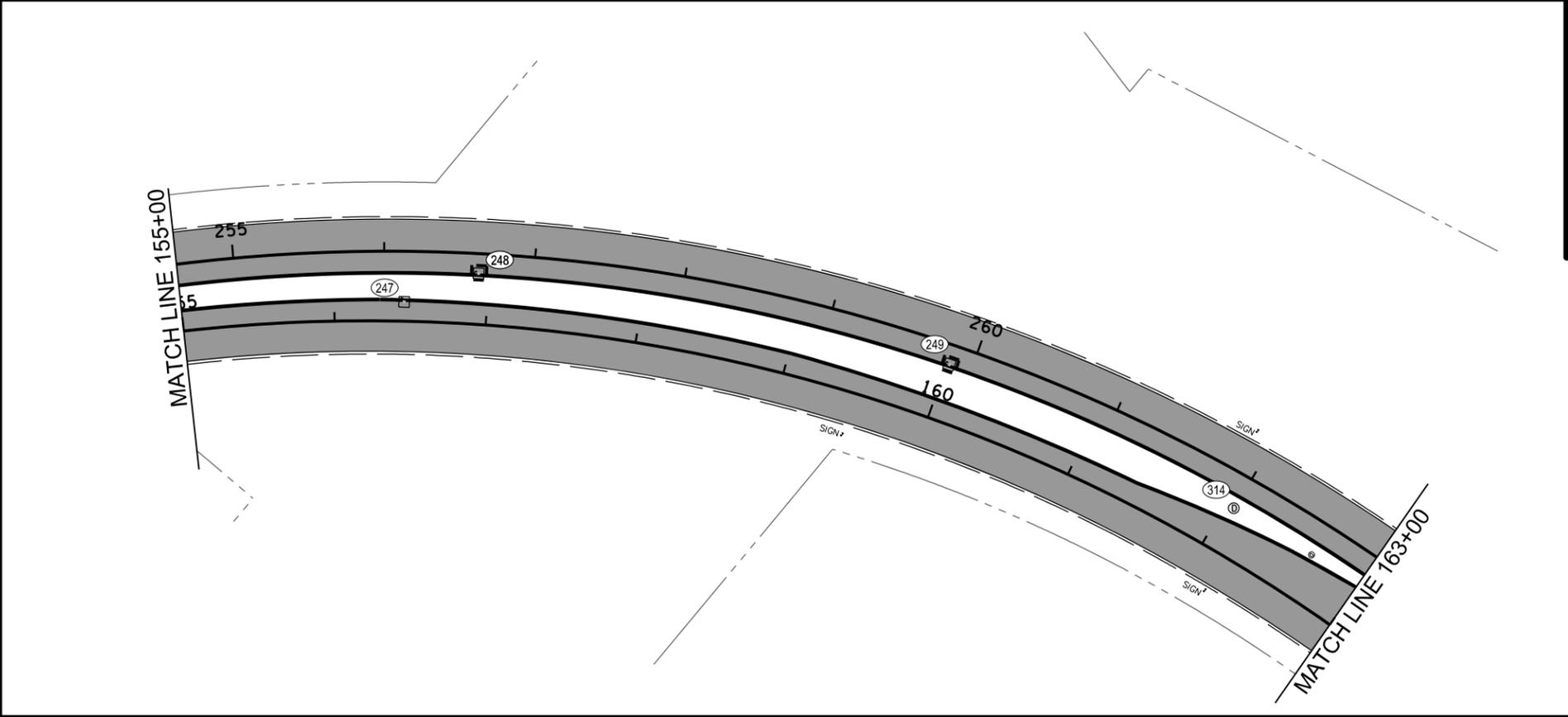
STATE AID PROJECT 002-652-014

CONSTRUCTION PLAN
STA 125+00 TO 140+00
Sheet 15 of 87 Sheets



LEGEND

⊗	ADJUST GATE VALVE	▒	MAINLINE MILL AREA
⊠	APPROX. LOOP LOCATION	▨	STREET APPROACH MILL SPECIAL AREA
⊙	TRUNCATED DOMES	▧	REMOVE AND REPLACE DRIVEWAY PAVEMENT
⊕	ADJUST HANDHOLE	---	SAWCUT
⊖	REMOVE AND REPLACE CONCRETE MEDIAN NOSE	—	R / W
⓪	REMOVE WALK CONSTRUCT CURB RAMP WALK		



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NAME: P:\24-01-00\CSAH_52 (MAIN ST-105TH)\Base\Proposed\CSAH_52_CP6&7.dgn

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DESIGN BY MR DATE 02/21/2023

CHECKED BY CO DATE 02/04/2025

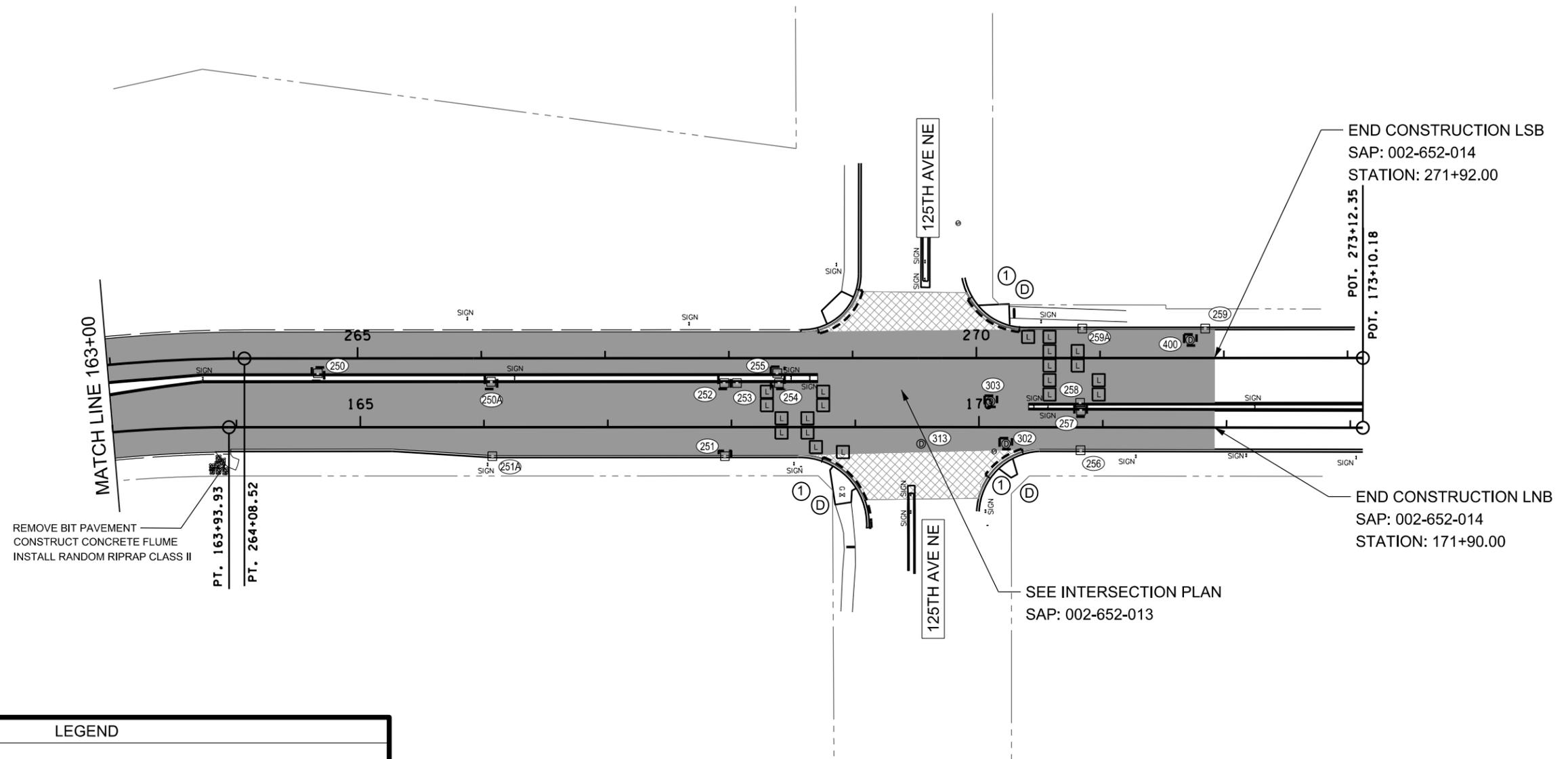
**ANOKA COUNTY
HIGHWAY DEPT.**

STATE AID PROJECT 002-652-014

CONSTRUCTION PLAN

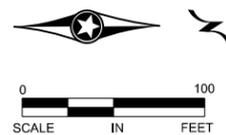
STA 140+00 TO 163+00

Sheet 16 of 87 Sheets



LEGEND

⊗	ADJUST GATE VALVE	■	MAINLINE MILL AREA
□	APPROX. LOOP LOCATION	▨	STREET APPROACH MILL SPECIAL AREA
Ⓧ	TRUNCATED DOMES	▩	REMOVE AND REPLACE DRIVEWAY PAVEMENT
Ⓜ	ADJUST HANDHOLE	- - -	SAWCUT
Ⓝ	REMOVE AND REPLACE CONCRETE MEDIAN NOSE	— — —	R / W
①	REMOVE WALK CONSTRUCT CURB RAMP WALK		



NO	DATE	BY	CKD	APPR	REVISION	
	02/26/2025					8:35:54 AM

NAME: P:\24-01-00\CSAH_52 (MAIN ST-105TH)\Base\Proposed\CSAH_52_CP6&7.dgn

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

PRINT NAME: GERALD J. AUGER JR.

SIGNATURE: *[Signature]*

DATE: 01/30/2025 LICENSE NO. 26511

DRAWN BY MR DATE 02/21/2023

DESIGN BY MR DATE 02/21/2023

CHECKED BY CO DATE 02/26/2025

**ANOKA COUNTY
HIGHWAY DEPT.**

STATE AID PROJECT 002-652-014

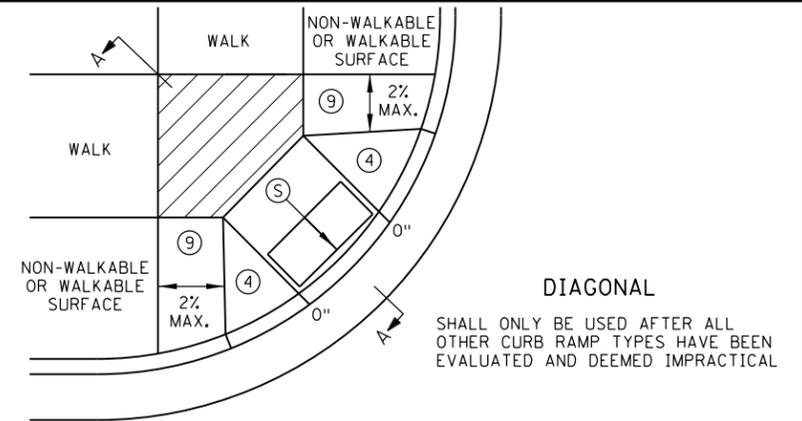
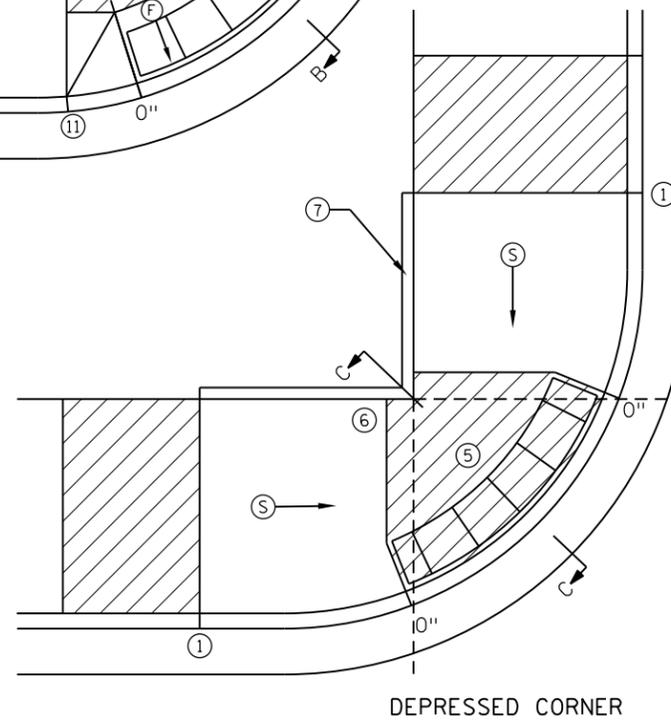
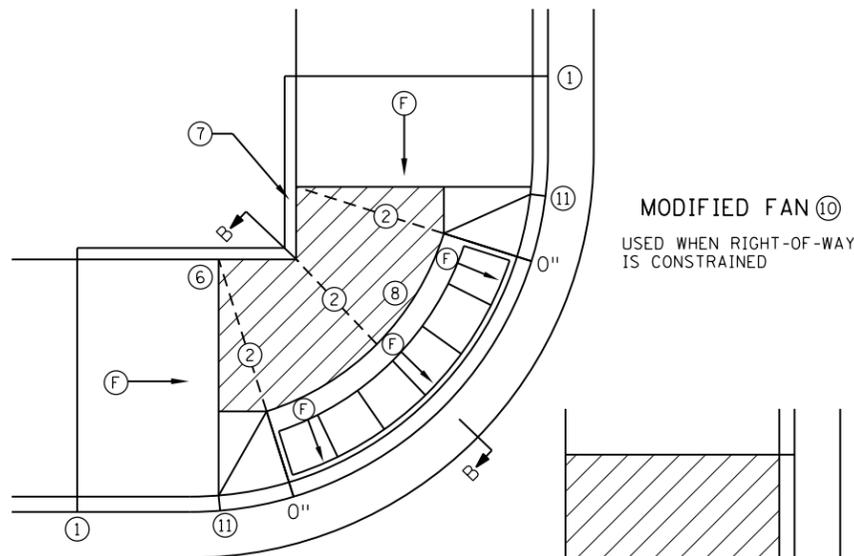
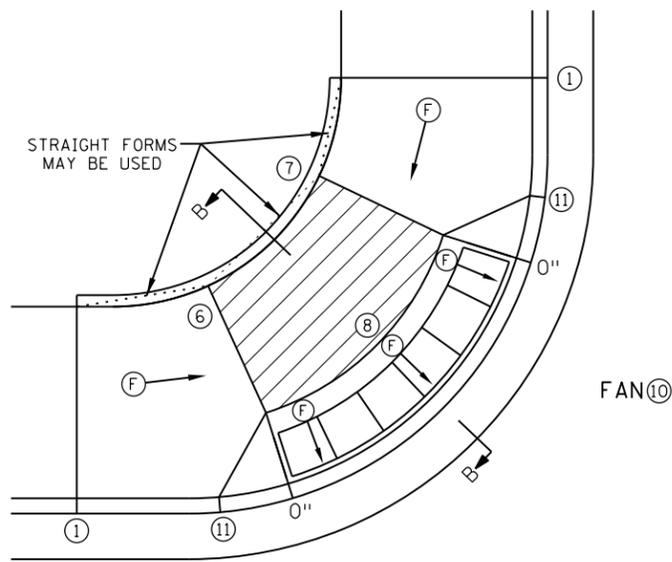
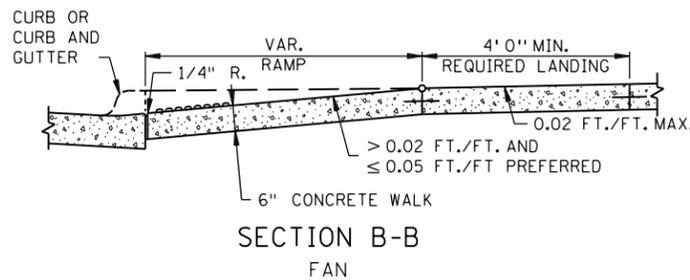
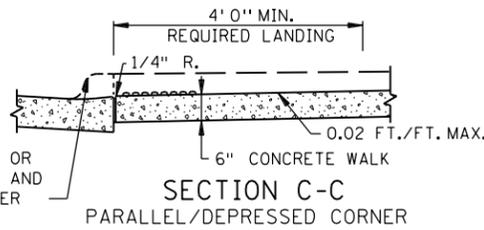
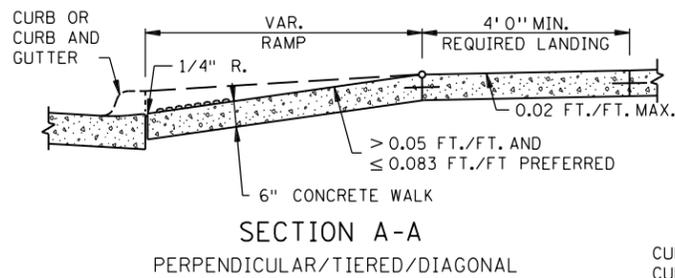
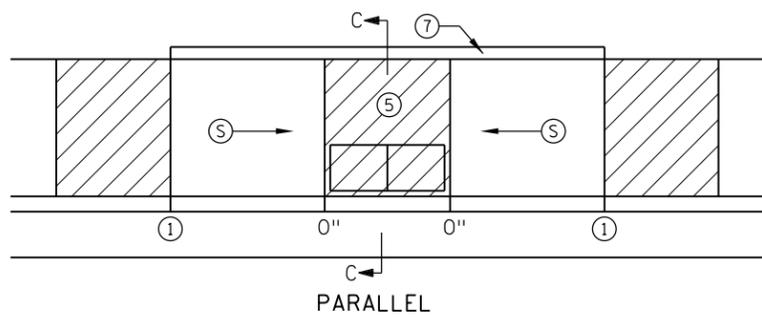
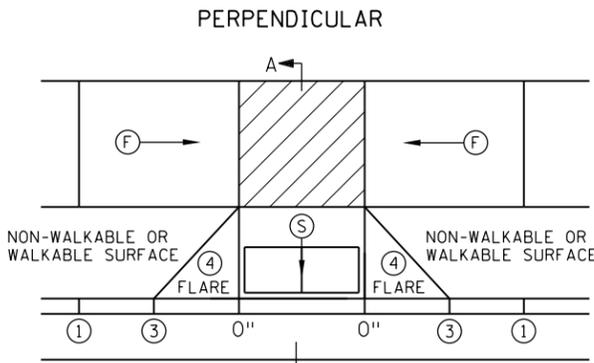
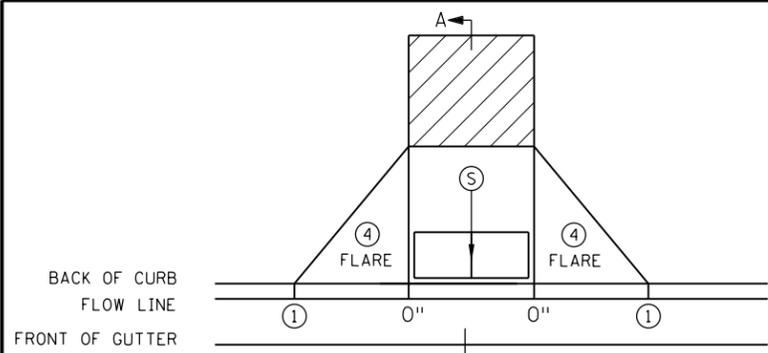
CONSTRUCTION PLAN

STA 163+00 TO 171+90.00

Sheet 17 of 87 Sheets

PLOTTED/REVISED: 02/04/2025

DISTRICT #: PLOT NAME: \$\$\$\PLOT\NAME\$\$\$ PATH & FILENAME: P:\24-01-00\CSAH-52-ADA.dgn



NOTES:

- LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE GREATER THAN 2%.
- INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.
- SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30" OF VERTICAL RISE WHEN THE LONGITUDINAL RUNNING SLOPE IS GREATER THAN 5.0%.
- CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.
- ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL, THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH. (EXCEPT AS STATED IN 6) BELOW.
- TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 OF 6 FOR ALL SEPARATELY POURED INITIAL LANDINGS.
- WHEN SIDEWALK IS AT BACK OF CURB, TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE. MAINTAIN POSITIVE BOULEVARD DRAINAGE TO TOP OF CURB.
- ALL RAMP TYPES SHOULD HAVE A MINIMUM 3' LONG RAMP LENGTH.
- 4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0" - 3" OFFSET IS ALLOWED.
- WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE RADIAL DETECTABLE WARNINGS SHOULD NOT BE GREATER THAN 20 FEET.
- RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.

- 1 MATCH FULL HEIGHT CURB.
- 2 4' MINIMUM DEPTH LANDING REQUIRED ACROSS TOP OF RAMP.
- 3 3" HIGH CURB WHEN USING A 3' LONG RAMP, 4" HIGH CURB WHEN USING A 4' LONG RAMP.
- 4 SEE SHEET 4 OF 6, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS.
- 5 DETECTABLE WARNINGS MAY BE PART OF THE 4' X 4' MIN. LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.
- 6 THE GRADE BREAK SHALL BE PERPENDICULAR TO THE BACK OF WALK. THIS WILL ENSURE THAT THE GRADE BREAK IS PERPENDICULAR TO THE DIRECTION OF TRAVEL. (TYPICAL FOR ALL)
- 7 WHEN ADJACENT TO GRASS, GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS LESS THAN 5% RUNNING SLOPE SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
- 8 A 7' MIN TOP RADIUS GRADE BREAK IS REQUIRED TO BE CONSTRUCTIBLE.
- 9 PAVE FULL WALK WIDTH.
- 10 "S" SLOPES ON FANS SHALL ONLY BE USED WHEN ALL OTHER FEASIBLE OPTIONS HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.
- 11 INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10% TO A MINIMUM 3" CURB HEIGHT. REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

LEGEND	
	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
	LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PAR.
	X" CURB HEIGHT

REVISION:
 APPROVED: 11-04-2021

 JEFFREY PERKINS
 OPERATIONS DIVISION

STANDARD PLAN 5-297.250 1 OF 6

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

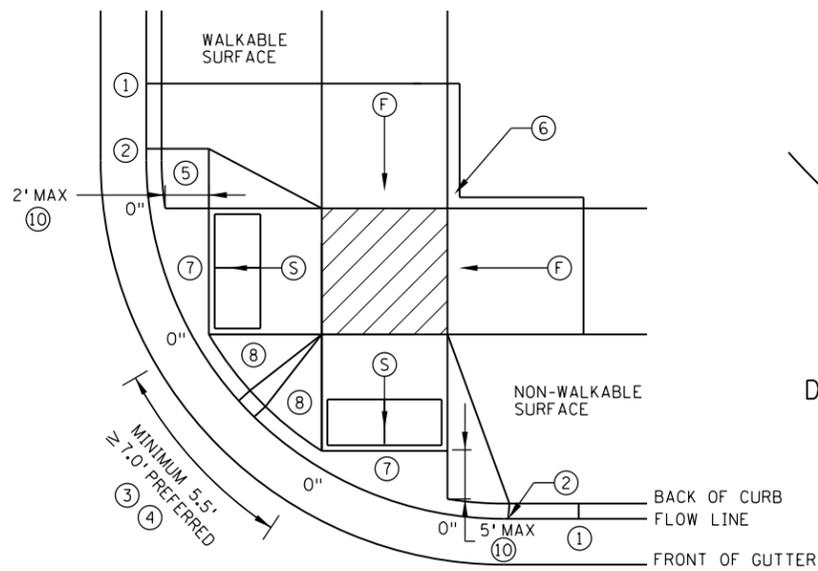
PEDESTRIAN CURB RAMP DETAILS

STATE AID PROJ. NO. 002-652-014

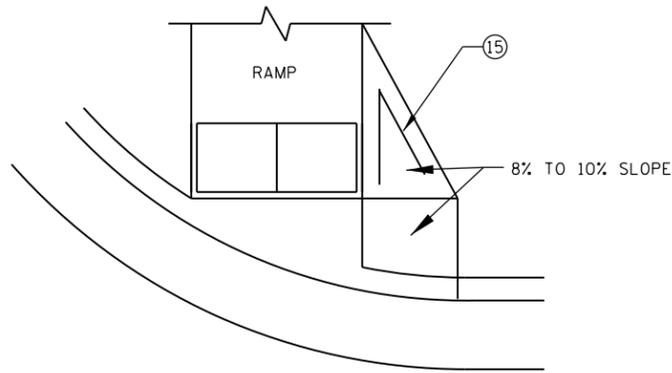
SHEET NO. 18 OF 87 SHEETS

PLOTTED/REVISED: 02/04/2025

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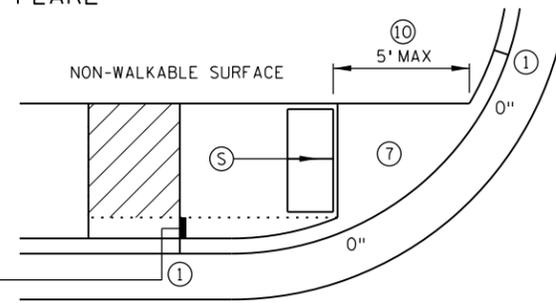


COMBINED DIRECTIONAL

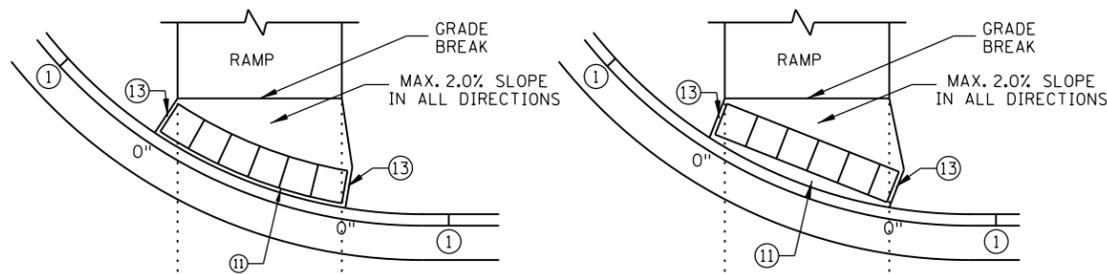


DIRECTIONAL RAMP WALKABLE FLARE

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

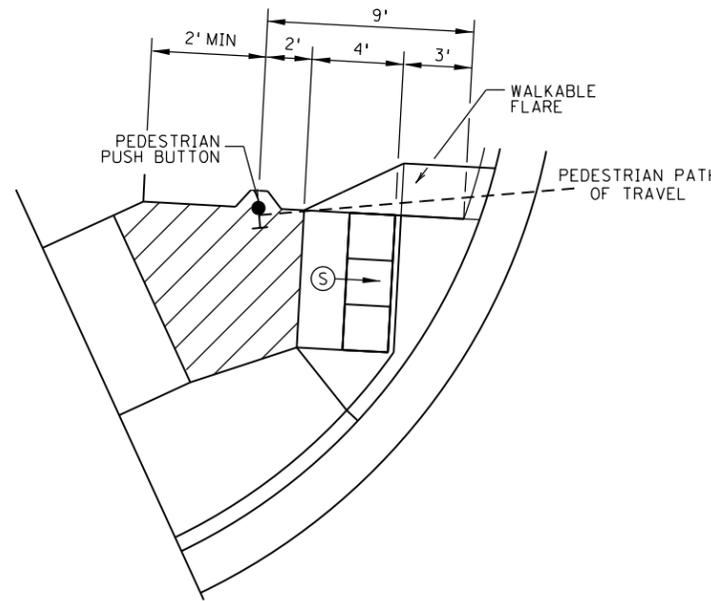


STANDARD ONE-WAY DIRECTIONAL ⑨



DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫

ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB



SEMI-DIRECTIONAL RAMP ③④⑨

3' DOME SETBACK, 4' LONG RAMP AND PUSH BUTTON 9' FROM THE BACK OF CURB
 PRIMARILY USED FOR APS APPLICATIONS WHERE THE PAR DOES NOT CONTINUE PAST THE PUSH BUTTON (DEAD-END SIDEWALK)

NOTES:

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

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

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

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

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

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

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

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

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

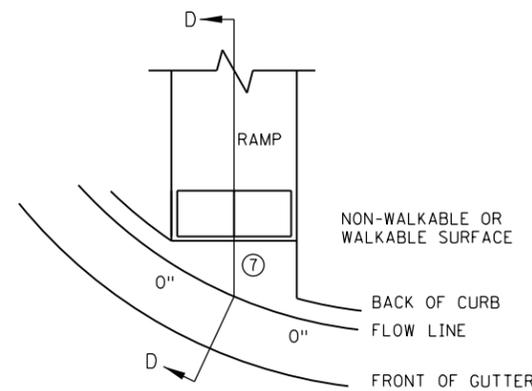
4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE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

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

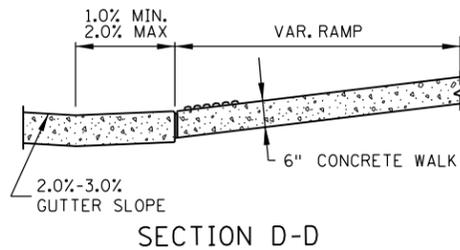
RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB. SEE NOTES ⑩ & ⑪ FOR INFORMATION REGARDING RECTANGULAR DETECTABLE WARNING PLACEMENT.

- ① MATCH FULL CURB HEIGHT.
- ② 3" HIGH CURB WHEN USING A 3' LONG RAMP
4" HIGH CURB WHEN USING A 4' LONG RAMP.
- ③ 3" MINIMUM CURB HEIGHT (5.5' MIN. DISTANCE REQUIRED BETWEEN DOMES)
4" PREFERRED (7' MIN. DISTANCE REQUIRED BETWEEN DOMES).
- ④ THE "BUMP" IN BETWEEN THE RAMPS SHOULD NOT BE IN THE PATH OF TRAVEL FOR COMBINED DIRECTIONAL RAMPS. IF THIS OCCURS MODIFY THE RAMP LOCATION OR SWITCH RAMP TO A FAN/DEPRESSED CORNER.
- ⑤ WHEN USING CONCRETE PAVED FLARES ON THE OUTSIDE OF DIRECTIONAL RAMPS, AND ADJACENT TO A WALKABLE SURFACE, DIRECTIONAL RAMP FLARES SHALL BE USED. SEE THE DETAIL ON THIS SHEET.
- ⑥ GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
- ⑦ MAX. 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.
- ⑧ 8% TO 10% WALKABLE FLARE.
- ⑨ PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.
- ⑩ FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.
- ⑪ RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK UP TO 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.
- ⑫ FOR DIRECTIONAL RAMPS WITH THE DETECTABLE WARNINGS PLACED AT THE BACK OF CURB, THE DETECTABLE WARNINGS SHALL COVER THE ENTIRE WIDTH OF THE WALK/PATH. THIS ENSURES A DETECTABLE EDGE AND HELPS ELIMINATE THE CURB TAPER OBSTRUCTING THE PATH OF PEDESTRIAN TRAVEL.
- ⑬ THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
- ⑭ TO BE USED FOR ALL DIRECTIONAL RAMPS, EXCEPT WHERE DOMES ARE PLACED ALONG THE BACK OF CURB.
- ⑮ PLACE 2 NO. 4 BARS 4 INCHES FROM SIDE OF FORMS WITH A MINIMUM 2 INCHES OF CONCRETE COVER ALONG EACH SIDE OF FLARE (INCIDENTAL).

LEGEND	
THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.	
(S)	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
(F)	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
[Hatched Box]	LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.
X"	CURB HEIGHT



CURB FOR DIRECTIONAL RAMPS ⑭



SECTION D-D

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

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

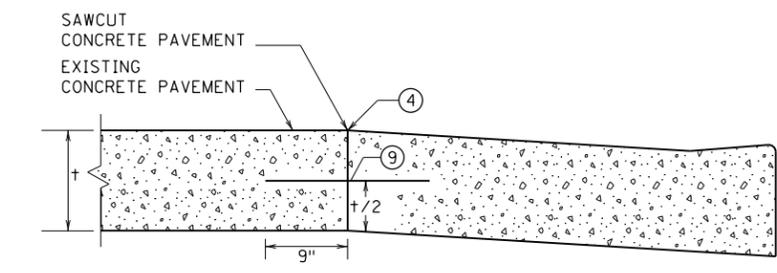
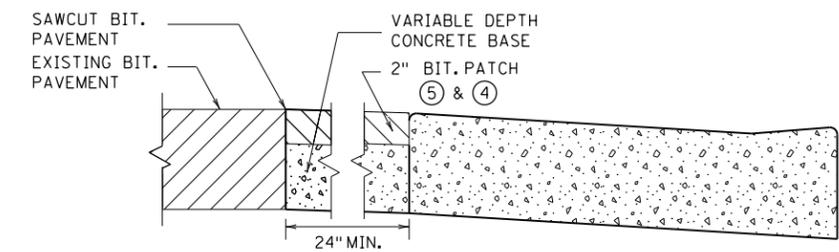
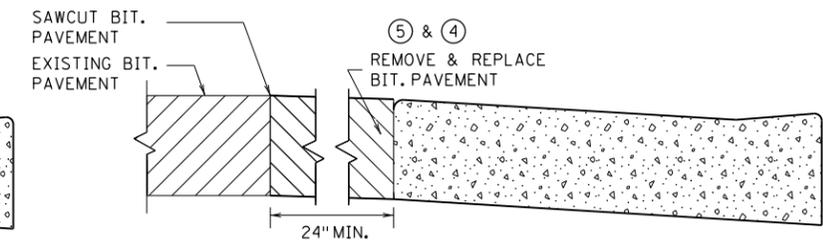
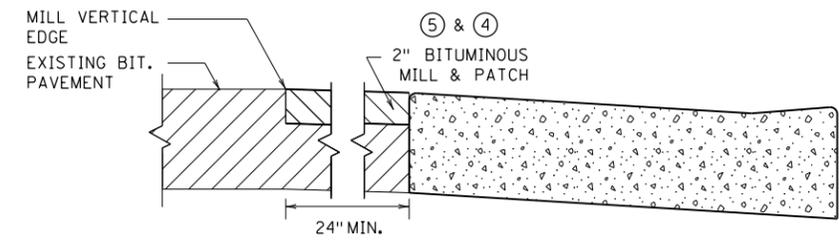
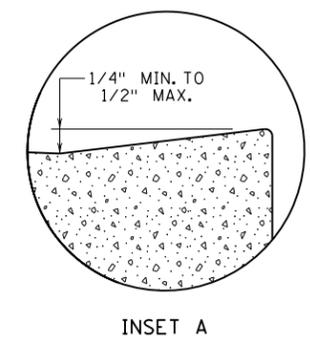
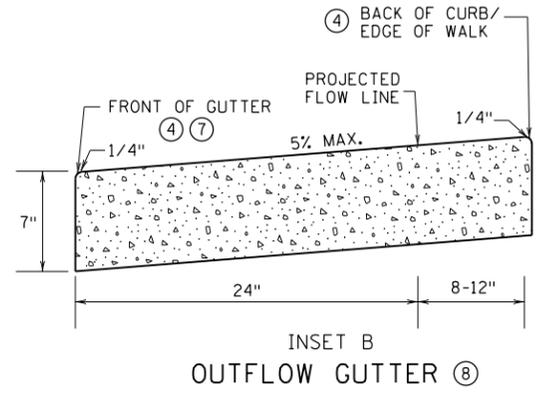
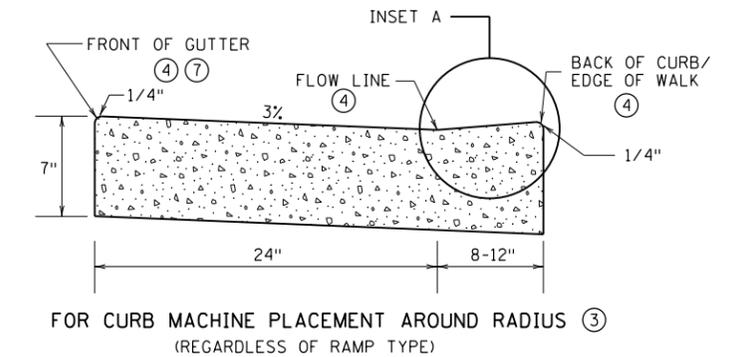
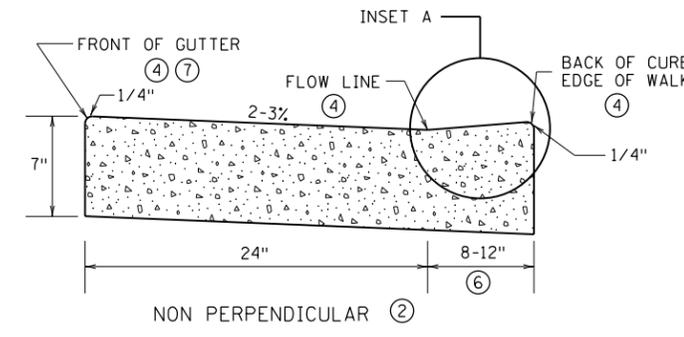
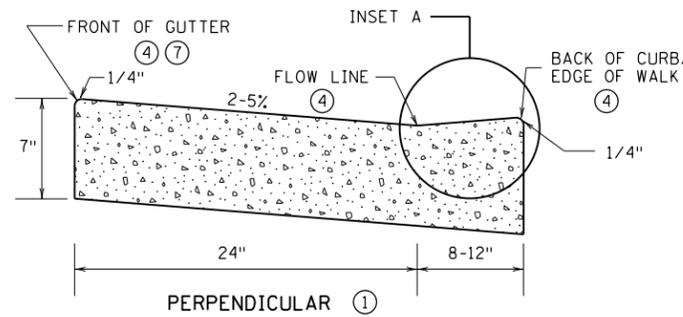
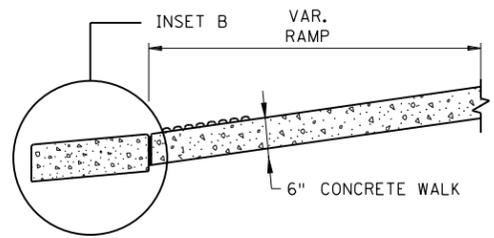
PEDESTRIAN CURB RAMP DETAILS

STATE AID PROJ. NO. 002-652-014

SHEET NO. 19 OF 87 SHEETS

PLOTTED/REVISED: 02/04/2025

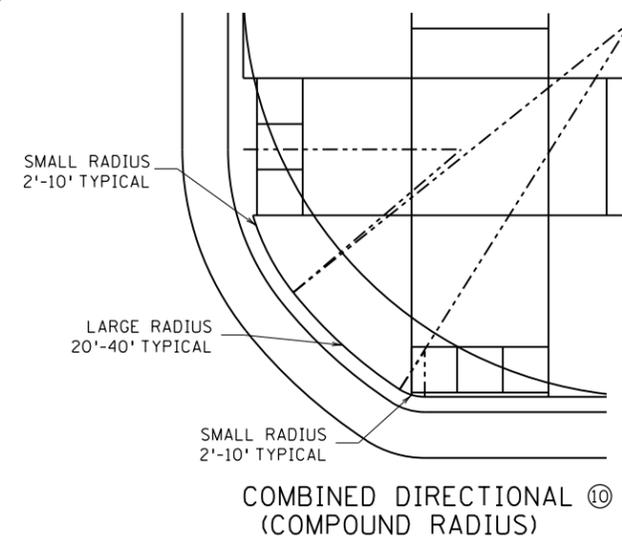
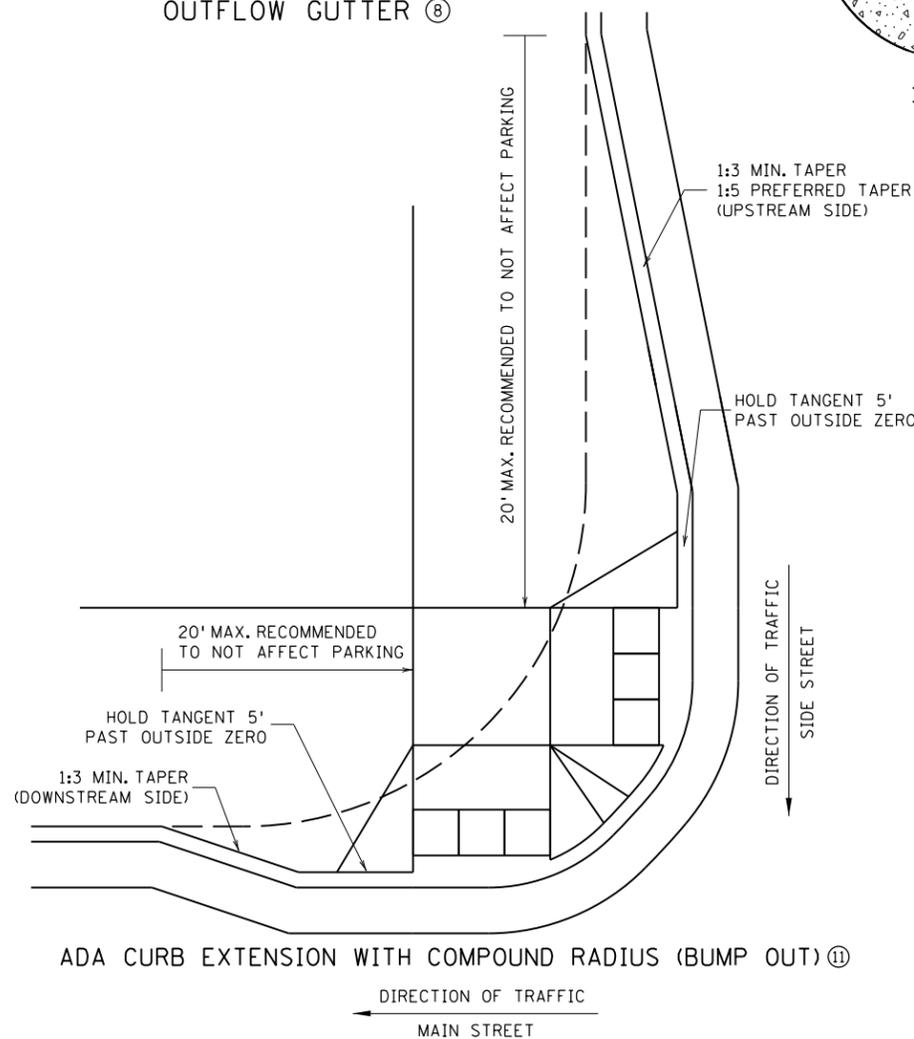
DISTRICT #: PLOTNAME: \$\$\$\PLOTNAME\$\$\$
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ONLY ALLOWED PER ENGINEER'S APPROVAL

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

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



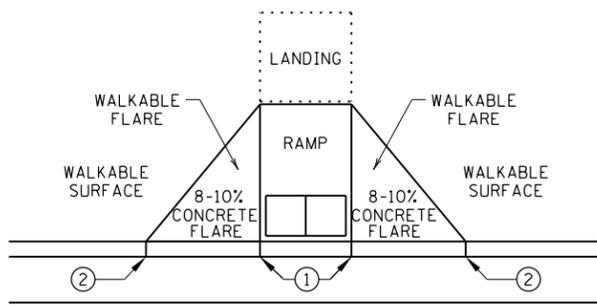
REVISION:
APPROVED: 11-04-2021
Jeffrey D. Perkins
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION
STANDARD PLAN 5-297.250 3 OF 6
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REVISOR:
THOMAS STYRBICKI
STATE DESIGN ENGINEER

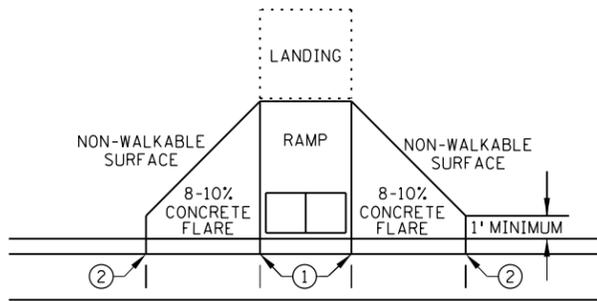
PEDESTRIAN CURB RAMP DETAILS
STATE AID PROJ. NO. 002-652-014
SHEET NO. 20 OF 87 SHEETS

PLOTTED/REVISED: 02/04/2025

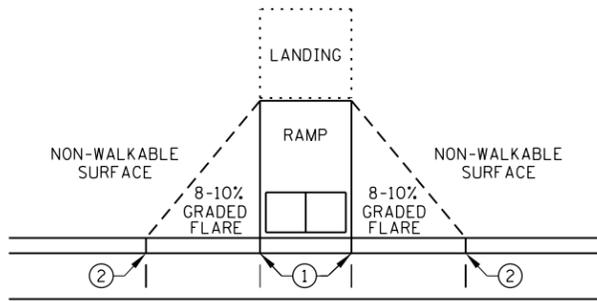
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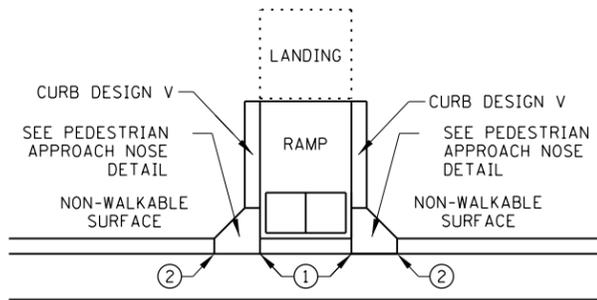
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

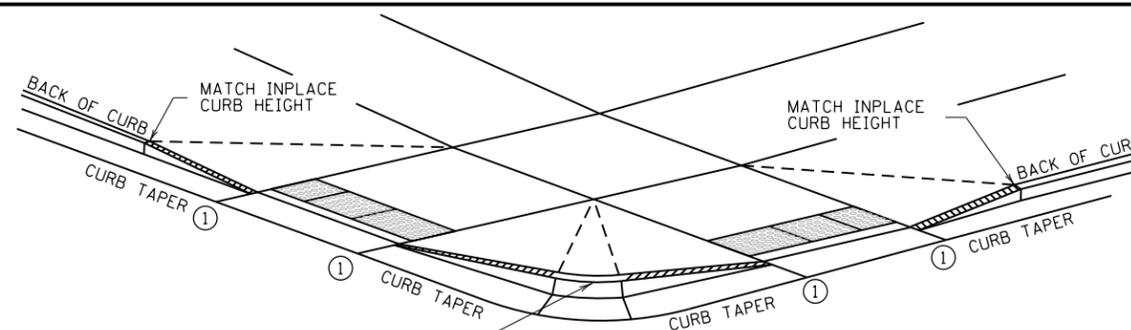


GRADED FLARES



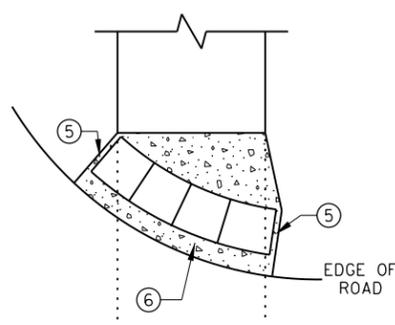
RETURNED CURB ④

TYPICAL SIDE TREATMENT OPTIONS ③ ⑩

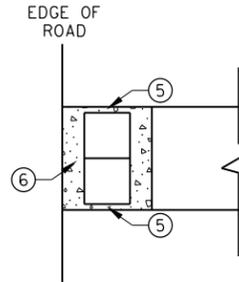


3" MINIMUM CURB HEIGHT, 4" PREFERRED
(MEASURED AT FRONT FACE OF CURB)
FOR A MIN. 6" LENGTH (MEASURED ALONG FLOW LINE)

DETECTABLE EDGE WITH
CURB AND GUTTER ⑦

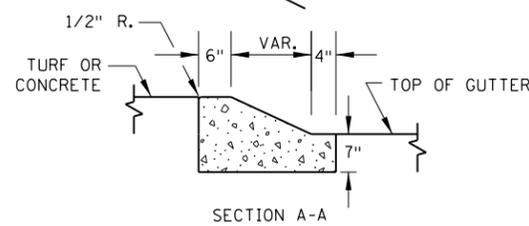
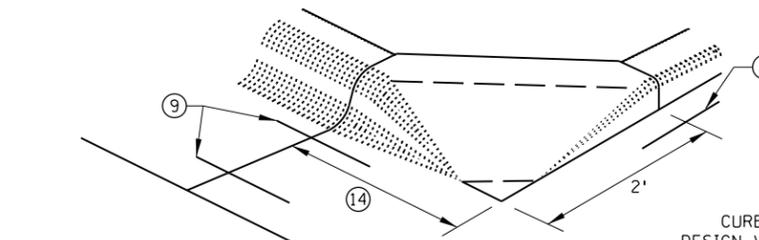


RADIAL DETECTABLE WARNING

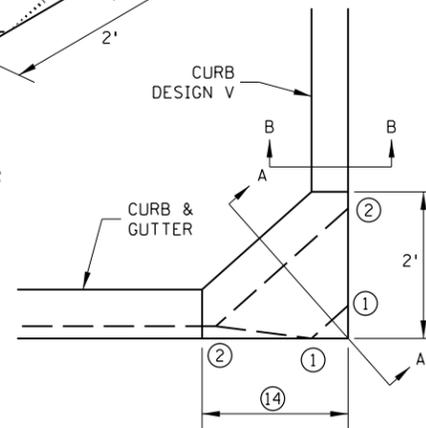


RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

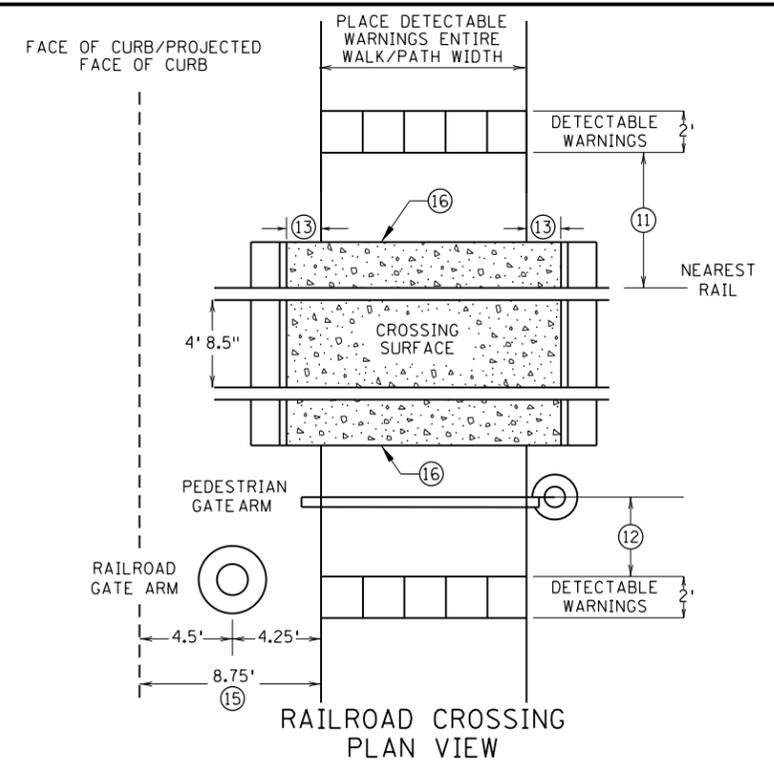


SECTION A-A



SECTION B-B

PEDESTRIAN APPROACH
NOSE DETAIL
(FOR RETURNED CURB
SIDE TREATMENT)



NOTES:

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

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m MINNESOTA
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STANDARD PLAN 5-297.250 4 OF 6

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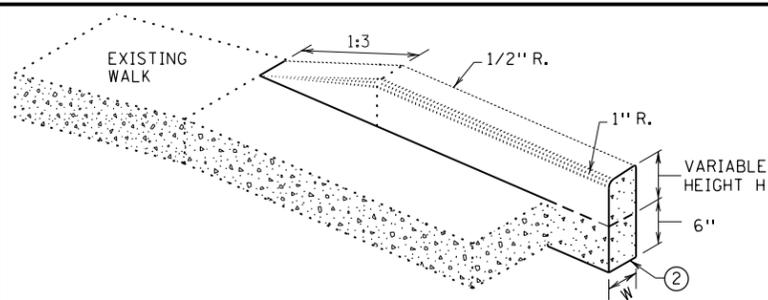
PEDESTRIAN CURB RAMP DETAILS

STATE AID PROJ. NO. 002-652-014

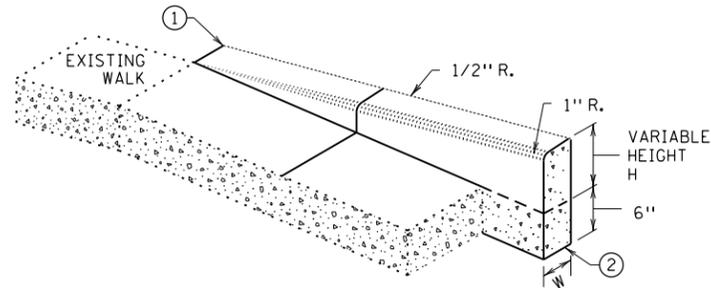
SHEET NO. 21 OF 87 SHEETS

PLOTTED/REVISED: 02/04/2025

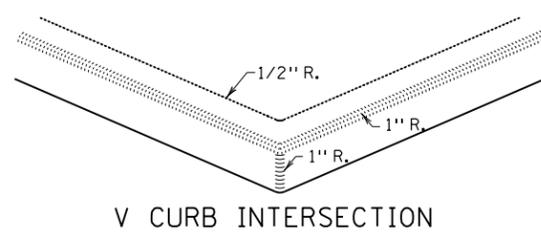
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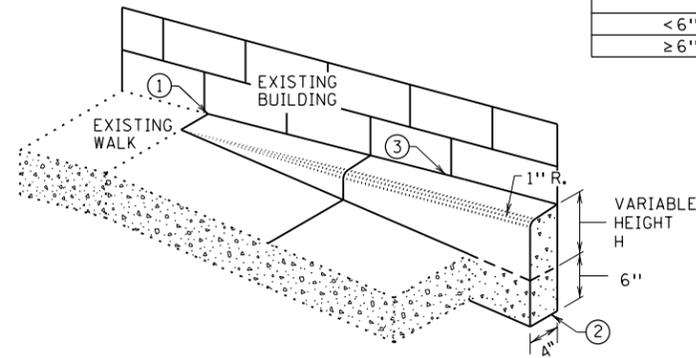
V CURB ADJACENT TO LANDSCAPE
CURB WITHIN SIDEWALK LIMITS



V CURB ADJACENT TO LANDSCAPE
CURB OUTSIDE SIDEWALK LIMITS

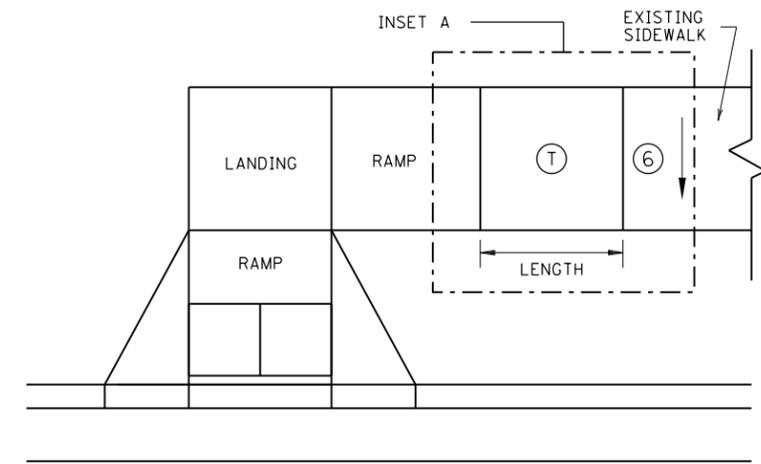


V CURB INTERSECTION

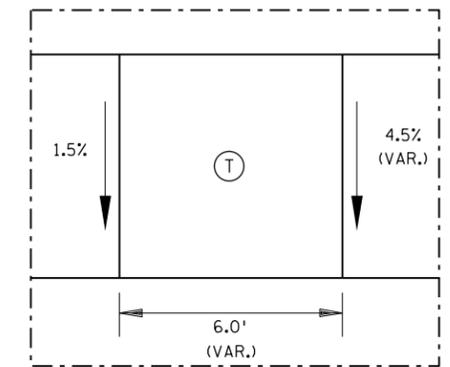


V CURB ADJACENT TO BUILDING
OR BARRIER

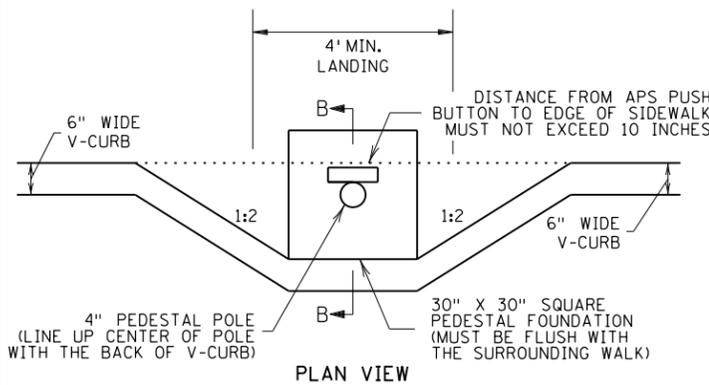
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"



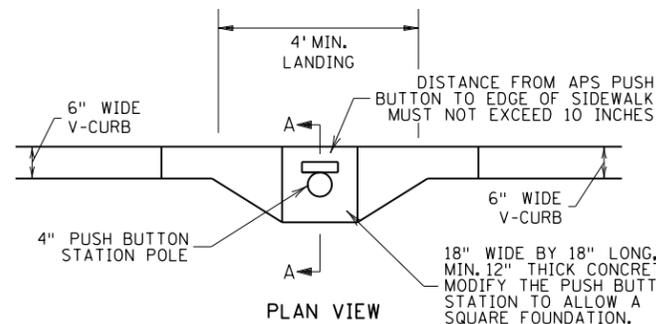
TRANSITION PANEL ④ ⑤



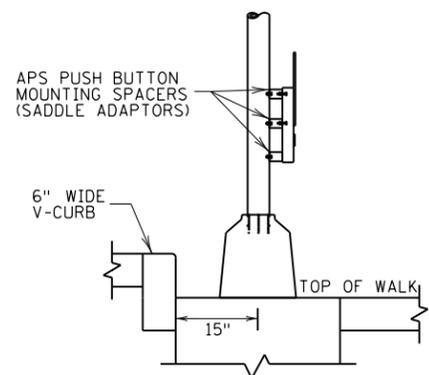
INSET A



PLAN VIEW

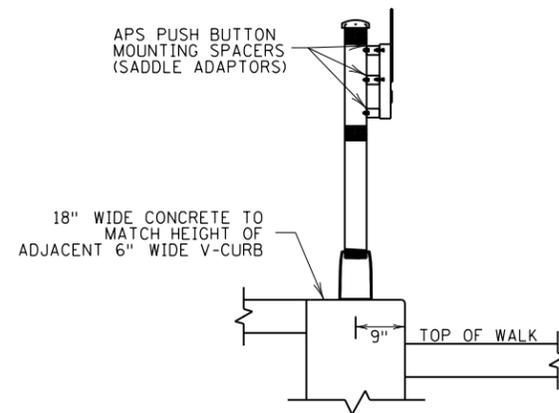


PLAN VIEW



SECTION B-B

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)



SECTION A-A

PUSH BUTTON STATION (V-CURB)

NOTES:

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

ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.

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

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

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

- ① END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.
- ② ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.
- ③ CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A-E EXPANSION. LEAVE A MINIMUM 1/2" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.
- ④ THE MAX. RATE OF CROSS SLOPE TRANSITIONING IS 1' LINEAR FOOT OF SIDEWALK PER HALF PERCENT CROSS SLOPE. WHEN PAR WIDTH IS GREATER THAN 6' OR THE RUNNING SLOPE IS GREATER THAN 5%, DOUBLE THE CALCULATED TRANSITION LENGTH.
- ⑤ TRANSITION PANELS ARE TO ONLY BE USED AFTER THE RAMP, OR IF NEEDED, LANDING ARE AT THE FULL CURB HEIGHT (TYPICAL SECTION).
- ⑥ EXISTING CROSS SLOPE GREATER THAN 2.0%.

LEGEND

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

- Ⓢ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
- ▨ LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.
- Ⓣ TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK. SEE THIS SHEET FOR ADDITIONAL INFORMATION.

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DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5-297.250 5 OF 6

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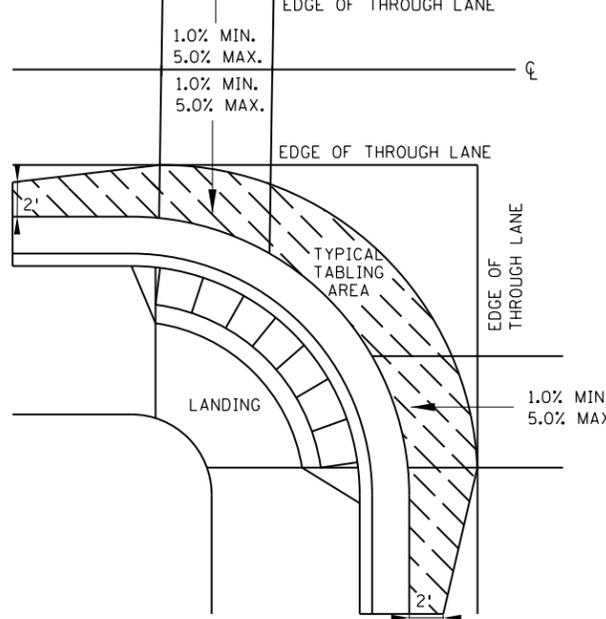
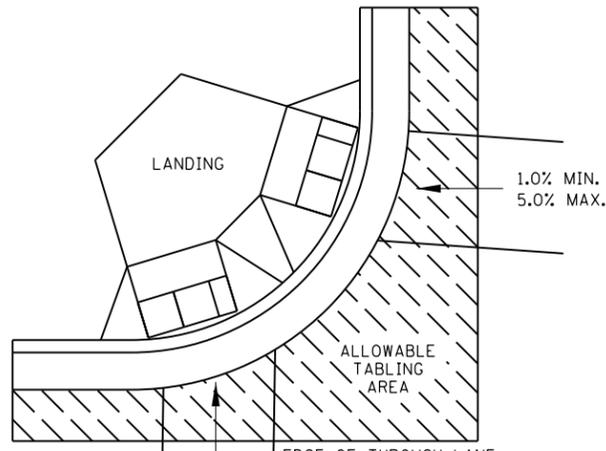
PEDESTRIAN CURB RAMP DETAILS

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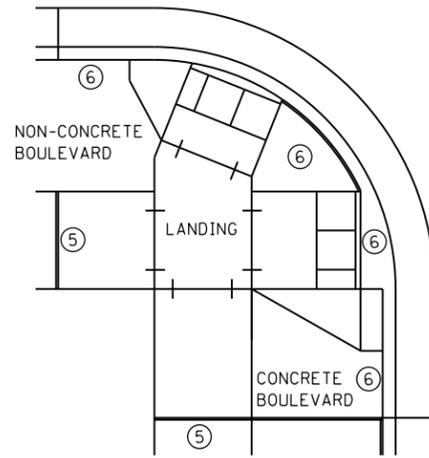
SHEET NO.22 OF 87 SHEETS

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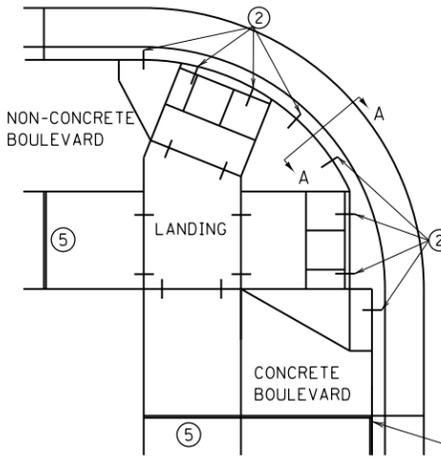
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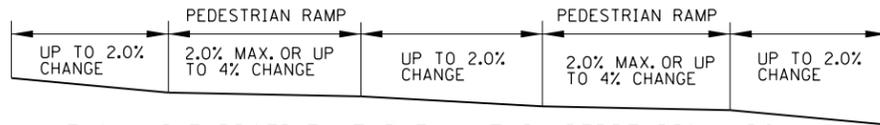
CURB LINE AND ROAD CROSSING ADJUSTMENTS



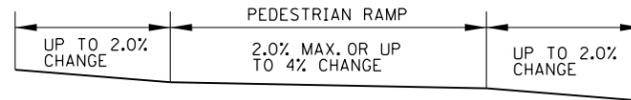
EXPANSION MATERIAL PLACEMENT FOR CONCRETE ROADWAYS



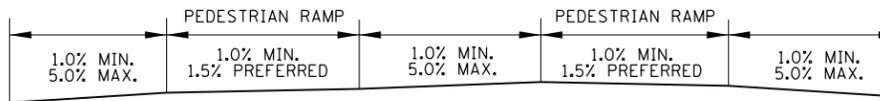
CURB LINE REINFORCEMENT PLACEMENT ON BITUMINOUS ROADWAYS



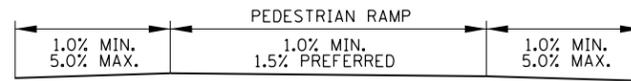
FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



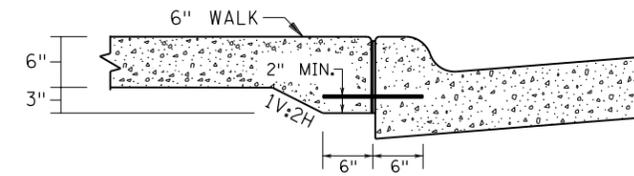
FLOW LINE PROFILE "TABLE" - FAN



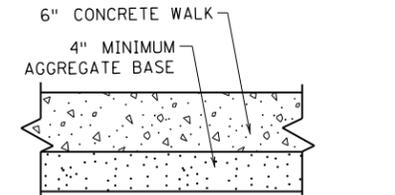
FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS



FLOW LINE PROFILE RAISE - FAN

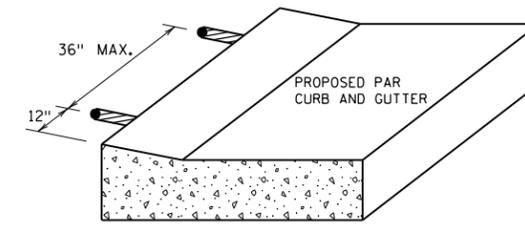


SECTION VIEW A-A THICKENED SECTION THROUGH CURB RAMP FLARES

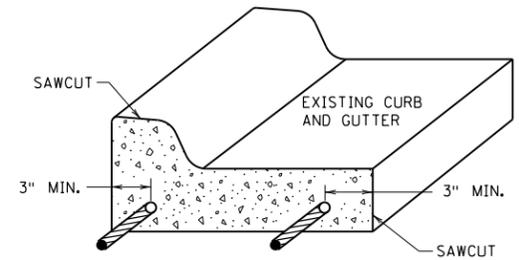


TYPICAL SIDEWALK SECTION WITHIN INTERSECTION CORNER

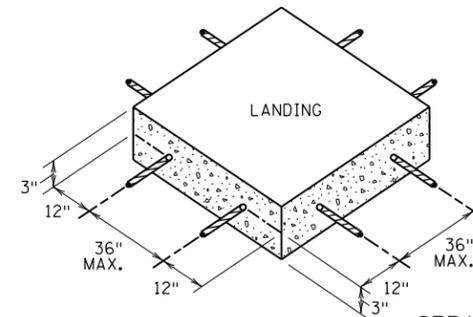
END SILL CURB AT TOP OF CURB RAMP AND DRIVEWAY FLARES.



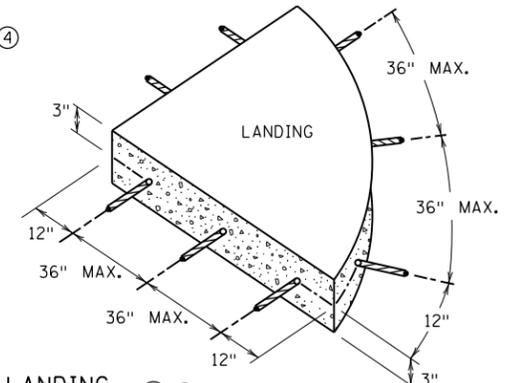
CURB RAMP REINFORCEMENT DETAILS



CURB AND GUTTER REINFORCEMENT



SEPARATE LANDING POUR REINFORCEMENT



GENERAL NOTES:

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

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

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

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

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

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

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

NOTES:

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

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STANDARD PLAN 5-297.250 6 OF 6

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PEDESTRIAN CURB RAMP DETAILS

STATE AID PROJ. NO. 002-652-014

SHEET NO.23 OF 87 SHEETS

LEGEND

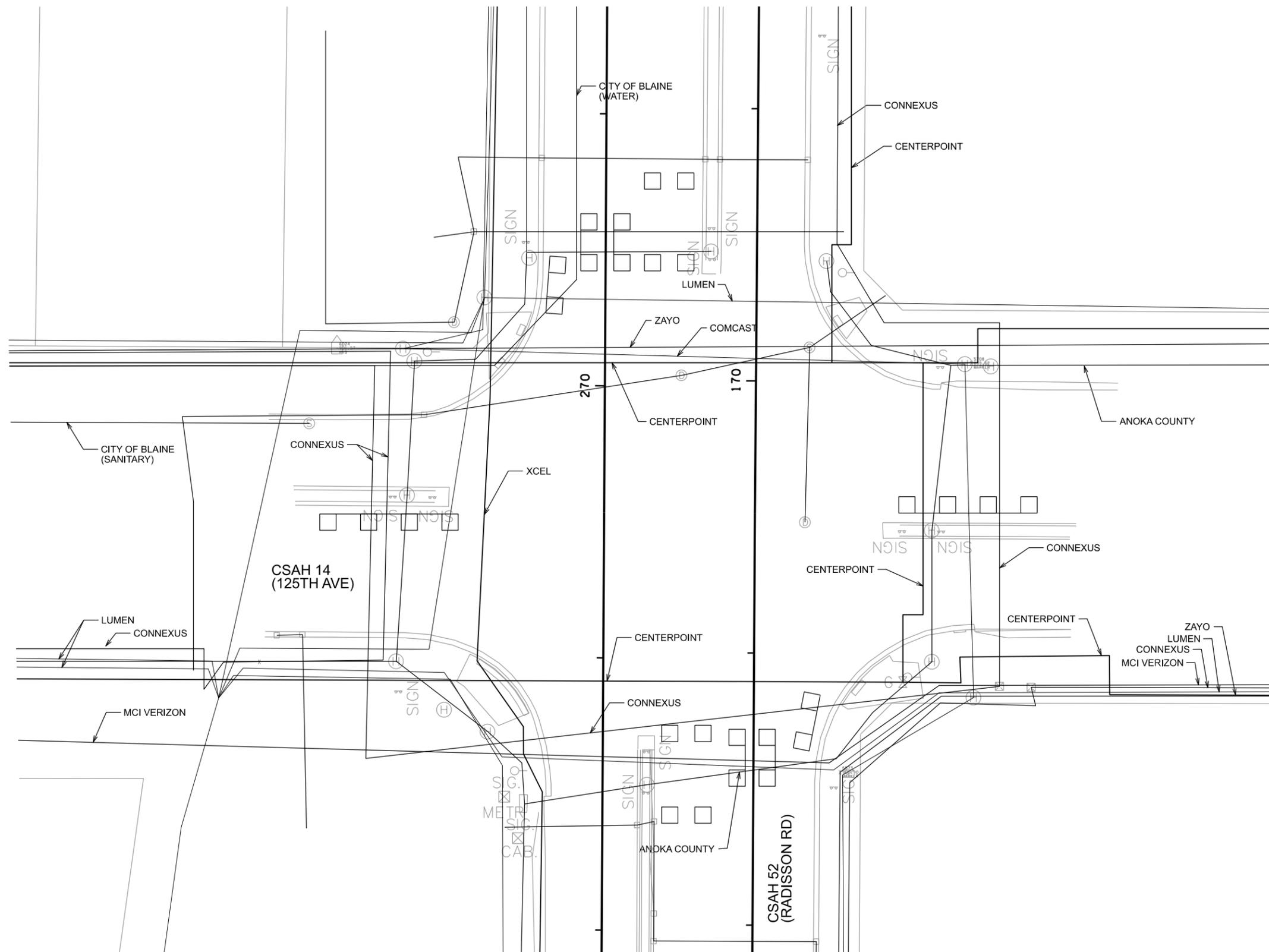
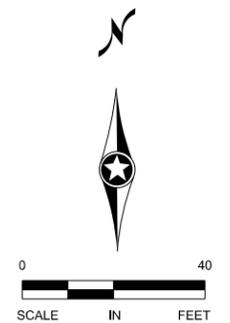
	GAS MAIN (CENTERPOINT & XCEL)
	ZAYO
	CONNEXUS ENERGY
	COMCAST
	TRAFFIC SIGNAL
	MCI VERIZON
	LUMEN
	EXISTING STORM SEWER
	EXISTING SAN SEWER
	EXISTING WATER MAIN
	EXISTING R/W
	INPLACE PERM ESMT

GENERAL NOTES:

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO GUIDELINES OF ASCE/JESI/CI 38-22 ENTITLED "STANDARD GUIDELINE FOR INVESTIGATING AND DOCUMENTING EXISTING UTILITIES".

THE CONTRACTOR SHALL CALL GOPHER STATE ONE CALL (GSOC) AT LEAST 48 HOURS PRIOR TO EXCAVATION OR CONSTRUCTION.

THE CONTRACTOR SHALL COORDINATE THEIR WORK AND COOPERATE WITH THE UTILITY OWNERS AND THEIR FORCES. SOME UTILITIES MAY NEED TO BE RELOCATED CONCURRENTLY WITH THE CONTRACTOR'S WORK.



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-652-013 ADA Upgrades\Plan\002652013_top01.dgn 02/26/2025 8:24:44 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: AARON ANDERSON
 SIGNATURE:
 DATE: 01/13/25 LICENSE NO. 58657

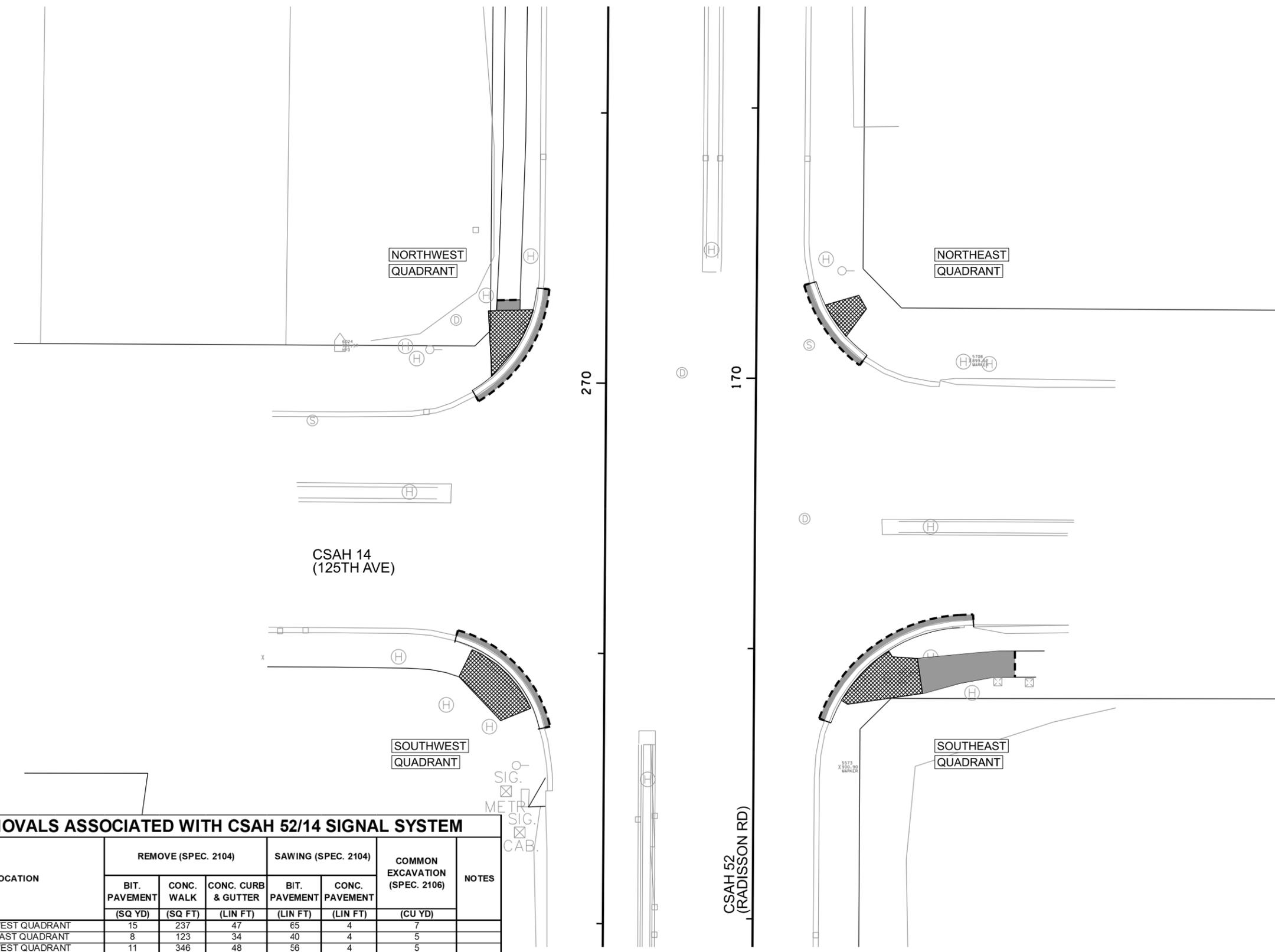
DRAWN BY AA DATE 11/06/24
 DESIGN BY AA DATE 11/06/24
 CHECKED BY ST DATE 11/06/24

ANOKA COUNTY HIGHWAY DEPT.

SAP 002-652-014
 SAP 002-652-013

LEGEND	
	REMOVE BITUMINOUS PAVEMENT
	REMOVE CONCRETE PAVEMENT
	REMOVE CURB AND GUTTER
	SAWING BITUMINOUS/ CONCRETE PAVEMENT
	R/W

REMOVAL NOTES:
 REFER TO TRAFFIC SIGNAL PLANS FOR TRAFFIC SIGNAL REMOVALS.
 ALL ROADWAY SIGNS WITHIN THE CONSTRUCTION LIMITS AND CONFLICTING SIGNS SHALL BE SALVAGED BY THE CONTRACTOR.



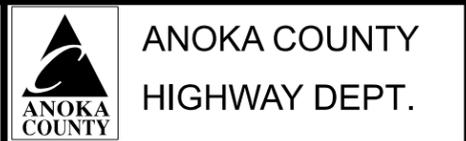
REMOVALS ASSOCIATED WITH CSAH 52/14 SIGNAL SYSTEM							
LOCATION	REMOVE (SPEC. 2104)			SAWING (SPEC. 2104)		COMMON EXCAVATION (SPEC. 2106) (CU YD)	NOTES
	BIT. PAVEMENT	CONC. WALK	CONC. CURB & GUTTER	BIT. PAVEMENT	CONC. PAVEMENT		
	(SQ YD)	(SQ FT)	(LIN FT)	(LIN FT)	(LIN FT)		
NORTHWEST QUADRANT	15	237	47	65	4	7	
NORTHEAST QUADRANT	8	123	34	40	4	5	
SOUTHWEST QUADRANT	11	346	48	56	4	5	
SOUTHEAST QUADRANT	58	358	63	88	4	10	
PROJECT TOTAL	92	1064	192	249	16	27	

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NAME: P:\002-652-013 ADA Upgrades\Plan\002652013_rem01.dgn 01/13/2025 10:37:27 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
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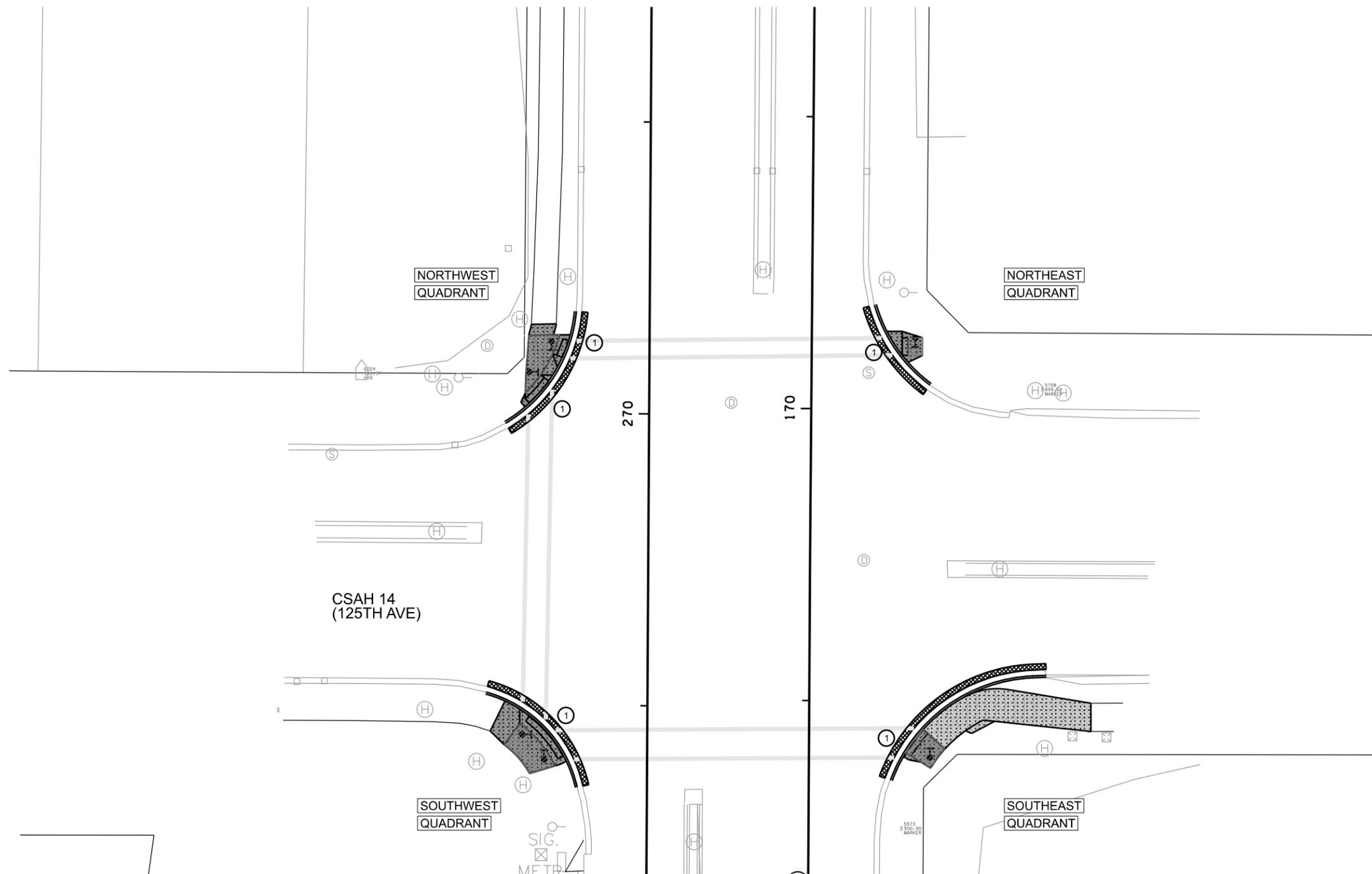
DRAWN BY AA DATE 11/06/24
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LEGEND	
	BITUMINOUS PATCHING
	6" CONCRETE WALK
	4" CONCRETE WALK
	CONCRETE CURB & GUTTER
	TRUNCATED DOMES
	R/W

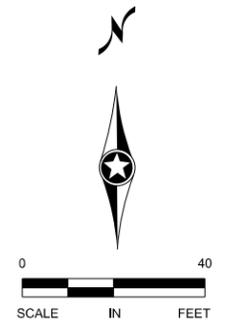
NOTES:
 BITUMINOUS PATCHING TO MATCH THICKNESS OF ADJACENT PAVEMENT



PED RAMP & SIDEWALK ASSOCIATED WITH CSAH 52/14 SIGNAL SYSTEM

LOCATION	2211.509	2360.509	2521.518	2521.518	2531.503	2531.618	2574.507	NOTES
	AGGREGATE BASE CLASS 5	TYPE SP 12.5 BITUMINOUS MIXTURE FOR PATCHING	4" CONCRETE WALK	6" CONCRETE WALK	CONCRETE CURB & GUTTER DESIGN B418	TRUNCATED DOMES	COMMON TOPSOIL BORROW	
	(TON)	(TON)	(SQ FT)	(SQ FT)	(LIN FT)	(SQ FT)	(CU YD)	
NORTHWEST QUADRANT	9.0	4			47	32	15	
NORTHEAST QUADRANT	3	3			81	12	10	
SOUTHWEST QUADRANT	11	4			325	48	15	
SOUTHEAST QUADRANT	24	6	620	98	70	20	20	
PROJECT TOTAL	47	17	620	762	199	100	60	

CSAH 52 (RADISSON RD)



NO	DATE	BY	CKD	APPR	REVISION

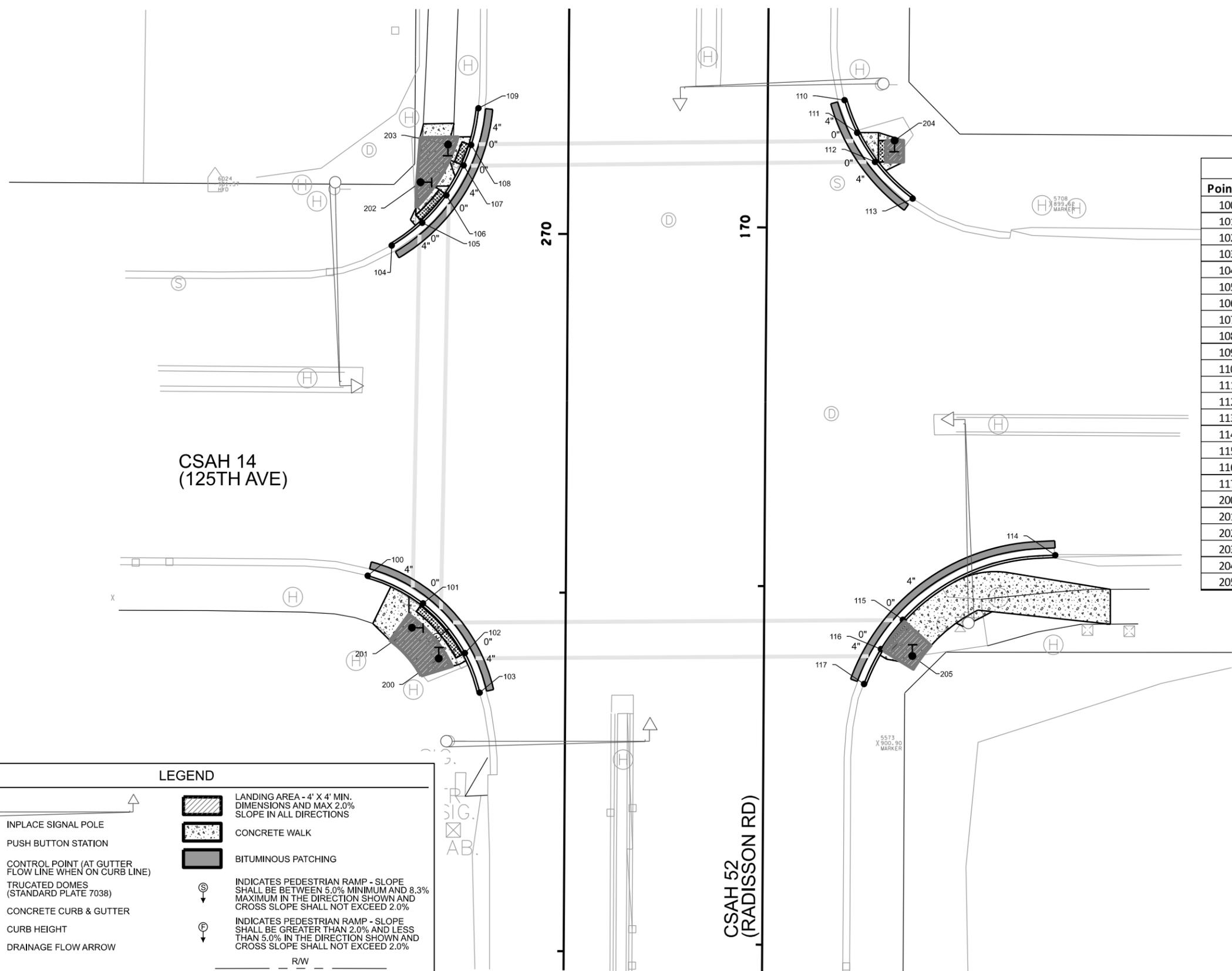
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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: AARON ANDERSON
 SIGNATURE:
 DATE: 01/13/25 LICENSE NO. 58657

DRAWN BY: AA DATE: 11/06/24
 DESIGN BY: AA DATE: 11/06/24
 CHECKED BY: ST DATE: 11/06/24

ANOKA COUNTY HIGHWAY DEPT.

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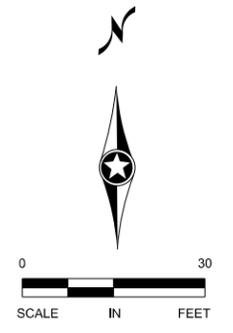
Point Table				
Point #	Description	Elevation	X	Y
100	GUTTER (TIE IN)	900.40	512116.5790	158997.8090
101	GUTTER, 0"	900.26	512132.0589	158990.1134
102	GUTTER, 0"	900.19	512143.7659	158976.2648
103	GUTTER (TIE IN)	900.16	512147.9015	158965.1960
104	GUTTER (TIE IN)	900.53	512123.2870	159089.8880
105	GUTTER	900.55	512131.8418	159096.2426
106	GUTTER	900.58	512138.5788	159103.9027
107	GUTTER	900.62	512143.4117	159112.2149
108	GUTTER	900.64	512145.5287	159117.9291
109	GUTTER (TIE IN)	900.56	512147.5695	159128.2230
110	GUTTER (TIE IN)	900.72	512249.9000	159130.4750
111	GUTTER	900.78	512253.4500	159121.3409
112	GUTTER	900.90	512258.4260	159113.1965
113	GUTTER (TIE IN)	901.11	512268.9770	159102.9440
114	GUTTER (TIE IN)	901.28	512308.8834	159003.5563
115	GUTTER	900.60	512266.2288	158985.5433
116	GUTTER	900.50	512260.0728	158977.3422
117	GUTTER (TIE IN)	900.44	512255.3695	158967.6235
200	PUSH BUTTON		512136.4416	158974.7372
201	PUSH BUTTON		512128.9687	158983.3177
202	PUSH BUTTON		512131.3568	159107.5504
203	PUSH BUTTON		512139.0631	159118.0438
204	PUSH BUTTON		512263.9188	159119.1590
205	PUSH BUTTON		512268.8709	158975.4335

CSAH 14
(125TH AVE)

CSAH 52
(RADISSON RD)

LEGEND

- INPLACE SIGNAL POLE
- PUSH BUTTON STATION
- CONTROL POINT (AT GUTTER FLOW LINE WHEN ON CURB LINE)
- TRUNCATED DOMES (STANDARD PLATE 7038)
- CONCRETE CURB & GUTTER
- X" CURB HEIGHT
- DRAINAGE FLOW ARROW
- LANDING AREA - 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- CONCRETE WALK
- BITUMINOUS PATCHING
- INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
- INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%



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NAME: P:\002-652-013 ADA Upgrades\Plan\002652013_in01.dgn 01/13/2025 10:37:29 AM

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LEGEND OF SYMBOLS

CONTROLLER AND SERVICE EQUIP. NO's	(A)
SIGNAL BASE NO.	(1)
SIGNAL FACE NO.	(M)
LUMINAIRE NO.	(L)
CONTROLLER AND CABINET	(C)
CONTROLLER AND CABINET - IN PLACE	(C)
HANDHOLE	(H)
HANDHOLE - IN PLACE	(H)
SCHEDULE 80 PVC CONDUIT	(S)
RIGID STEEL CONDUIT (RSC) - IN PLACE	(R)
SIGNAL FACE WITH BACKGROUND SHIELD	(S)
SIGNAL FACE W/O BACKGROUND SHIELD	(S)
SIGNAL FACE - IN PLACE	(S)
PEDESTRIAN INDICATORS	(P)
PEDESTRIAN INDICATORS - IN PLACE	(P)
PEDESTRIAN PUSH BUTTONS ON PEDESTAL OR POLE	(P)
PEDESTRIAN PUSH BUTTON STATION	(P)
TRAFFIC SIGNAL PEDESTAL	(T)
TRAFFIC SIGNAL PEDESTAL - INPLACE	(T)
TRAFFIC SIGNAL POLE AND MAST ARM	(T)
TRAFFIC SIGNAL POLE AND MAST ARM - IN PLACE	(T)
STREET LIGHT POLE AND LUMINAIRE	(S)
STREET LIGHT POLE AND LUMINAIRE - IN PLACE	(S)
MAST ARM AND LUMINAIRE	(S)
MAST ARM AND LUMINAIRE - INPLACE	(S)
WOOD POLE	(W)
WOOD POLE - IN PLACE	(W)
SOURCE OF POWER	(S)
RAILROAD SIGNAL - IN PLACE	(R)
RIGHT OF WAY LINE	(R)
CENTERLINE	(C)
EDGE OF ROADWAY	(E)
SHOULDERLINE	(S)
CURB LINE	(C)
STOP BAR	(S)
EMERGENCY VEHICLE PREEMPTION DETECTOR	(E)

ABBREVIATIONS

3-1(EG) SIGNAL HEAD PHASE "3" - NO. "1"	P2-1(EG) PED INDICATION PHASE "2" - NO. "1"
BR. GR. BARE GROUND	PB PUSH BUTTON
CH. SW. CHECK SWITCH	PB2-1(EG) PUSH BUTTON PHASE "2" - NO. "1"
CLR. CLEAR	PEC PHOTOELECTRIC CELL
D2-1(EG) DETECTOR PHASE "2" - NO. "1"	PED PEDESTRIAN
DWK DON'T WALK	R RED
EQG EQUIPMENT GROUND	R&S REMOVE AND SALVAGE
EVP EMERGENCY VEHICLE PRE-EMPTION	RLTA RED LEFT TURN ARROW
F&I FURNISH AND INSTALL	RRTA RED RIGHT TURN ARROW
FL FLASH/FLASHING	RSC RIGID STEEL CONDUIT
G GREEN	SOP SOURCE OF POWER
GLTA GREEN LEFT TURN ARROW	SPR SPARE
GRN GREEN	ST. LHT STREET LIGHT
GR. R GROUND ROD	STA STATION
GRTA GREEN RIGHT TURN ARROW	SW SWITCH
GTHA GREEN THRU ARROW	SWD SWITCHED
HH HANDHOLE	S&R SALVAGE AND REINSTALL
HPS HIGH PRESSURE SODIUM	TDW TELEPHONE DROP WIRE
JB JUNCTION BOX	WLK WALK
LUM LUMINAIRE	YEL YELLOW
NEU NEUTRAL	YLTA YELLOW LEFT TURN ARROW
NMC NONMETALLIC CONDUIT	YRTA YELLOW RIGHT TURN ARROW
	YTHA YELLOW THRU ARROW

CONDUCTOR COLOR CODE

R	RED
O	ORANGE
BL	BLUE
WH	WHITE
R/BLK	RED WITH BLACK TRACER
O/BLK	ORANGE WITH BLACK TRACER
BL/BLK	BLUE WITH BLACK TRACER
WH/BLK	WHITE WITH BLACK TRACER
BLK	BLACK
BLK/WH	BLACK WITH WHITE TRACER
G/BLK	GREEN WITH BLACK TRACER
G	GREEN

TABULATION OF SIGNAL QUANTITIES

NOTE	ITEM NUMBER	ITEM	UNIT	TOTAL ESTIMATED QUANTITY
	2565.602/00037	ADJUST HANDHOLE	EACH	1
[1]	2565.602/51717	RIGID PVC LOOP DETECTOR 6'x6'	EACH	4
	2565.616/00100	REVISE SIGNAL SYSTEM	SYSTEM	1

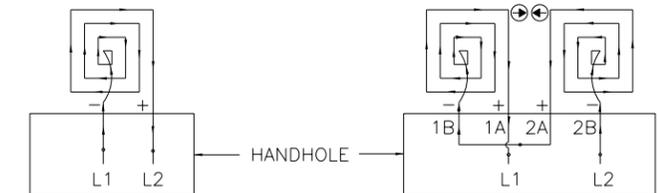
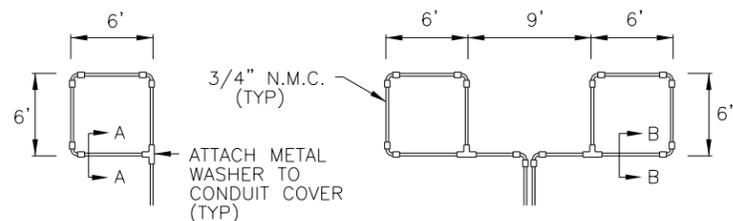
NOTES

[1] TO BE USED AT THE ENGINEER'S DISCRETION, OVER AND BEYOND LOOPS THAT ARE ALREADY CALLED OUT FOR INSTALLATION/REPLACEMENT IN THE SIGNAL PLAN. LOOPS IDENTIFIED IN THE SIGNAL PLAN FOR REMOVAL OR REPLACEMENT WILL BE PAID UNDER REVISE SIGNAL SYSTEM ITEM.

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

MNDOT STANDARD PLATES - SIGNAL SYSTEMS	
PLATE NO.	DESCRIPTION
8132B	PREFORMED RIGID PVC CONDUIT LOOP DETECTOR - LAYOUT DETAILS, LAYOUT NOTES, TYPICAL INSTALLATION (3 SHEETS)

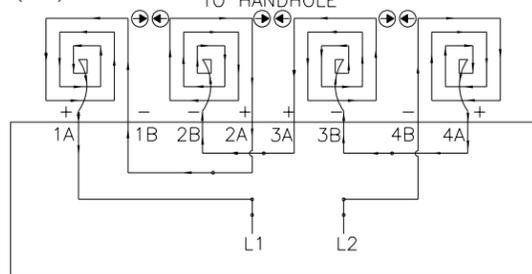
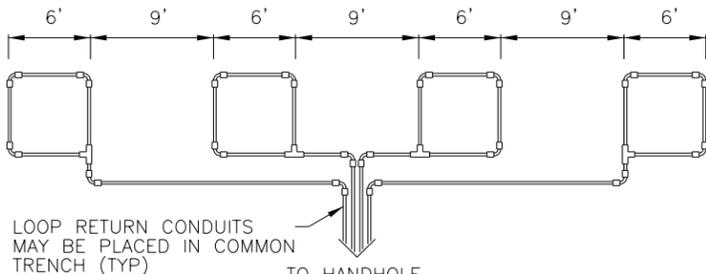
SEE TRAFFIC CONTROL SIGNAL SYSTEM PLANS ON PAGE 29 FOR MORE STANDARD PLATES



LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:

- L1 TO 1A
- 1B TO 2A
- 2B TO L2

LOOP DETECTOR DETAIL 'B'
(LOOP PHASING FOR SERIES CONNECTION)

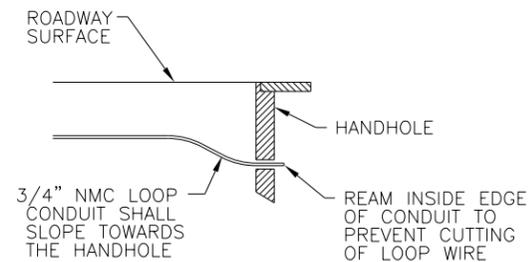
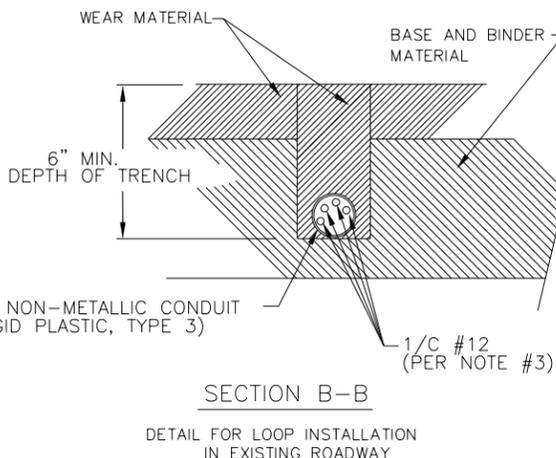
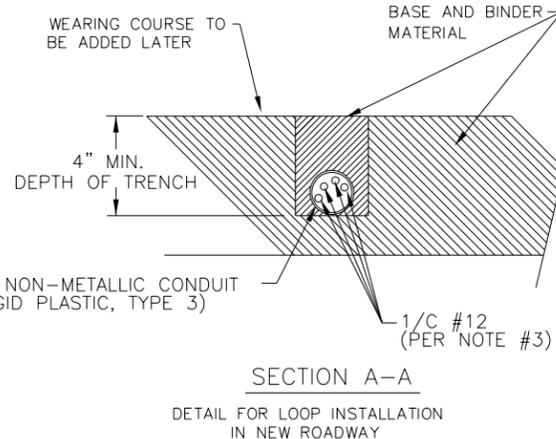


LOOP CONNECTIONS SHALL BE LABELED AND SPLICED IN THE HANDHOLE AS FOLLOWS:

- L1 TO 1A
- 1B TO 2A
- 2B TO 3A
- 3B TO 4A
- 4B TO L2

SPLICE CONTROL CABLE TO L1 & L2 IN HANDHOLE. ALL CONDUCTORS SHALL BE TAGGED IN HANDHOLE (1A, 1B, ECT)

LOOP DETECTOR DETAIL 'C'
(LOOP PHASING FOR SERIES CONNECTION)



DRAINAGE DETAIL

LOOP DETECTOR WIRING

- 1) ALL CORNERS SHALL BE 90° CONDUIT BENDS.
- 2) CONNECT WIRES IN HANDHOLES USING SPLICE KIT METHOD DESCRIBED IN THE SPECIAL PROVISIONS.
- 3) LOOP DETECTOR WIRES SHALL BE #12 AWG CROSSED LINKED POLYETHYLENE (XLP). SEE SPECIAL PROVISIONS.
- 4) LOOP LEAD IN WIRES SHALL BE TWISTED A MIN. OF (5) TURNS PER FOOT THROUGH THE CONDUIT TO THE HANDHOLE.
- 5) NMC DESIGNATES NON-METALLIC CONDUIT (SPEC. 3803)
- 6) LOOPS 6' x 6' THRU 6' x 14' SHALL HAVE (4) TURNS.
- 7) LOOPS 6' x 15' AND LARGER SHALL HAVE (2) TURNS.

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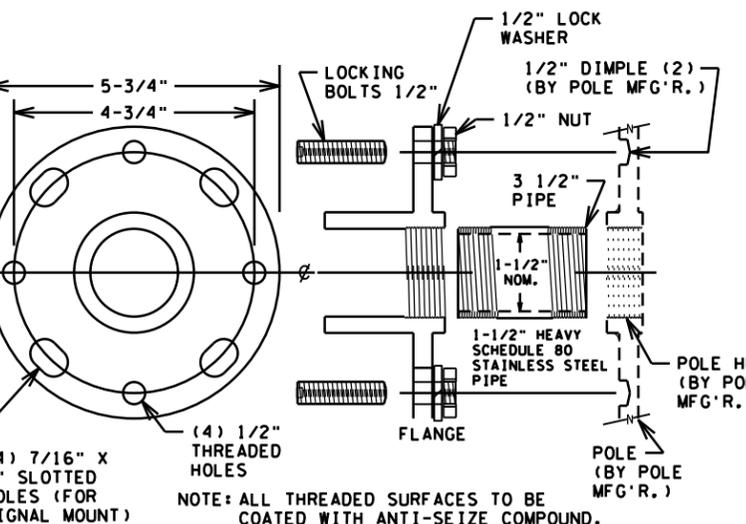
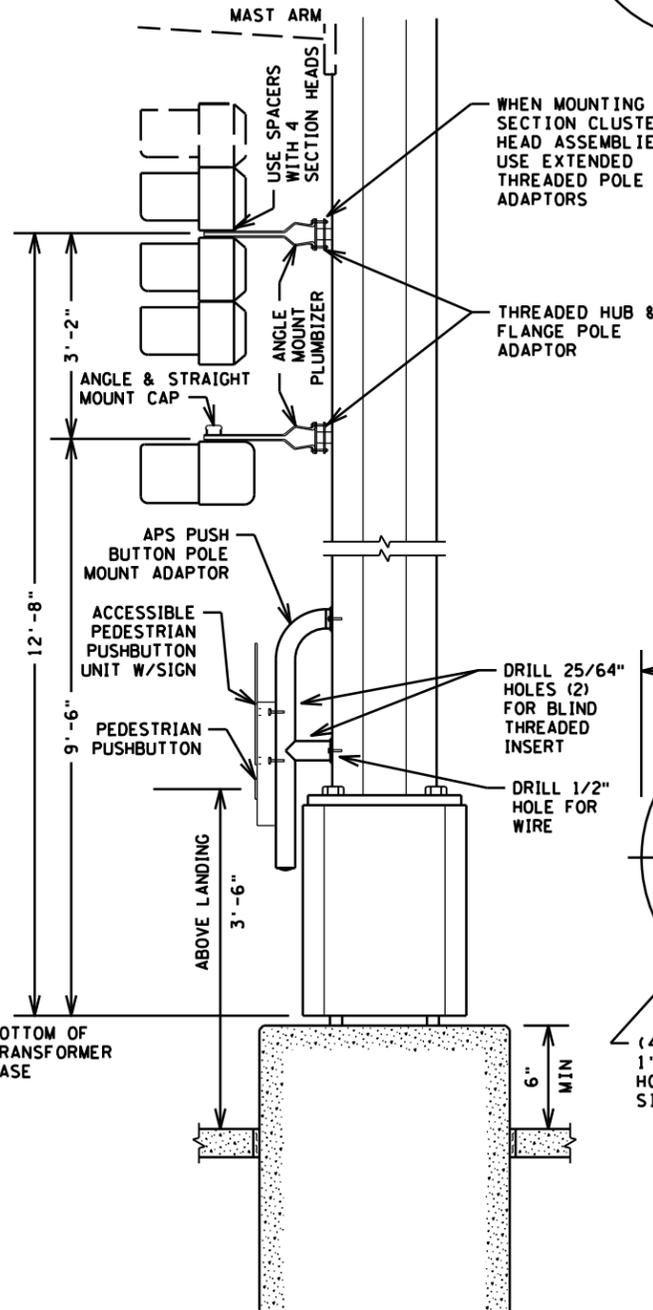
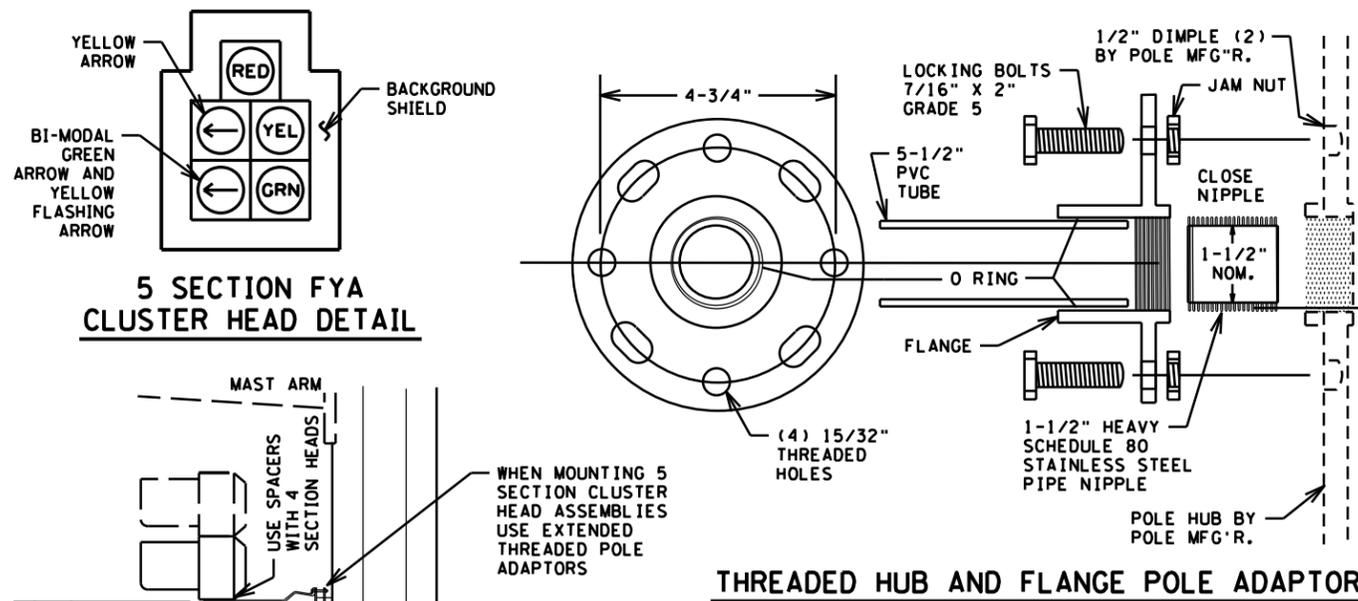
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DESIGN BY: AA DATE: 11/06/24

CHECKED BY: ST DATE: 11/06/24

ANOKA COUNTY
HIGHWAY DEPT.

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SAP 002-652-013



- NOTES:**
1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
 2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 SECTION POLY HEADS.
 3. SEE STANDARD PLATE NUMBER 8123 FOR ADDITIONAL SIGNAL POLE DETAILS.
 4. EXTENDED THREADED POLE ADAPTOR ONLY USED WITH 5 SECTION CLUSTER HEADS.

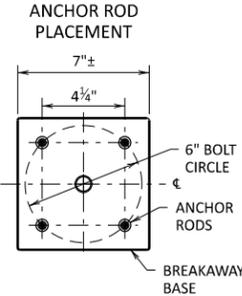
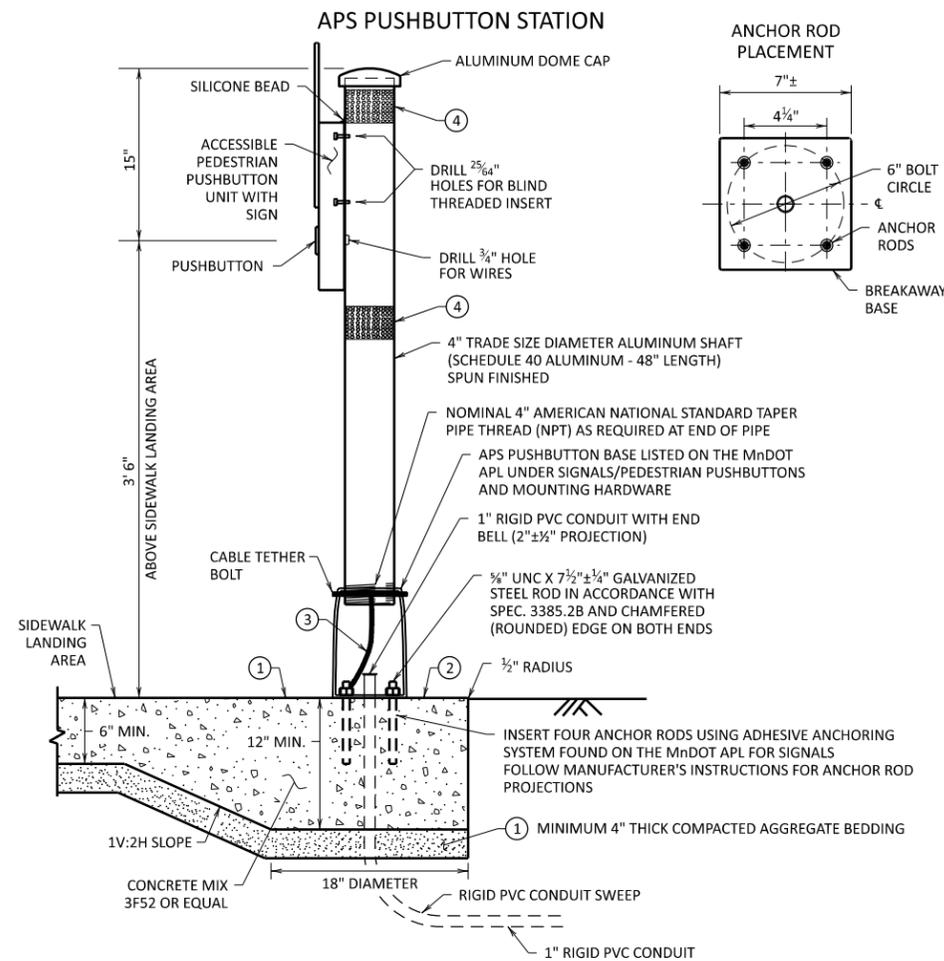
CONDUCTOR COLOR CODE	
FROM	TO DEVICE
SIGNAL SERVICE	1/C 6 EGC AS SHOWN ON PLAN
SOP	3-1/C 2 R WH BLK SIGNAL SERVICE
SIGNAL SERVICE	3-1/C 6 BLK WH G SIGNAL CABINET
SIGNAL CABINET	(6SM) CABLE SIGNAL CABINET
SIGNAL CABINET TO DEVICE	
6PR 19	AS SHOWN ON PLAN
COAXIAL CABLE	AS SHOWN ON PLAN
4/C 18 CABLE	R BLK WH AS SHOWN ON PLAN
2/C 14 CABLE	BLK WH OR CLR AS SHOWN ON PLAN
3/C 20 CABLE	R OR O WH OR YEL BLK OR BL AS SHOWN ON PLAN
CAT 5	AS SHOWN ON PLAN
SIGNAL CABINET TO DEVICE	
6/C 16 CABLE	R RED/RLA YEL/YLA 4 AND 5 SECTION SIGNAL HEADS
4/C 16 CABLE	R BLK/R RED/DWK YEL/WLK 3 SECTION HEAD PED HEADS
4/C 16 CABLE	R BLK/R YEL GRN NEU 5 SECTION (CLUSTER HEADS ONLY)
4/C 16 CABLE	R BLK/R FYA YLA GLA NEU
3/C 16 CABLE	BLK EVP LIGHT/AWF LUMINAIRE VIDEO CAMERA ENFORCEMENT LIGHT

WIRE COLOR CODE KEY	
R	Red
O	Orange
BL	Blue
WH	White
BLK	Black
BRN	Brown
CL	Clear
G	Green
R/BLK	Red with Black Stripe
O/BLK	Orange with Black Stripe
BL/BLK	Blue with Black Stripe
WH/BLK	White with Black Stripe
WH/R	White with Red Stripe
BLK/WH	Black with White Stripe
BLK/R	Black with Red Stripe

CONDUCTOR AND CABLE SPECIFICATION CHART		
NUMBER OF CONDUCTORS & AWG SIZE	TYPE	Specification Number
1/C 2	INDIVIDUAL SERVICE CONDUCTORS	3815.2B.1
1/C 6	FEEDER AND BRANCH CONDUCTORS	3815.2B.1
1/C 6 INS.GR.	Grounding Conductors	3815.2B.5
2/C 14	Loop Detector Lead-In Cable	3815.2C.4
3/C 16	Signal Control Cable	SPEC. PROV.
4/C 16	Signal Control Cable	SPEC. PROV.
6/C 16	Signal Control Cable	SPEC. PROV.
4PR 24	ETHERNET CABLE	3815.2C.6.d
6PR 19	Telephone Cables Outdoor	3815.2C.6.b
3/C 20	EVP Detector Cable	3815.2C.5

CABLE LABELING ABBREVIATIONS		
ABBREVIATION	LABEL REFERENCE DSICRIPTION & EXAMPLE	COMPONENT
X-Y	INDICATION NUMBER 2-1	SIGNAL HEAD
X-Y	LOOP NUMBER D2-1	DETECTOR
X-Y	PUSH BUTTON NUMBER PB2-1	PUSH BUTTON
X-Y	PED INDICATION NUMBER P2-1	PED INDICATION
X-Y	LUMINAIRE NUMBER L1	LUMINAIRE
X-Y	EVP PHASE NUMBER EVP 2+5	EVP DETECTOR
X-Y	EVP LIGHT PHASE NUMBER EVPL 2+5	EVP CON. LIGHT
X-Y	VIDEO DETECTION PHASE V2-1	VIDEO DETECTION
X-Y	RADAR DETECTION PHASE R02-1	RADAR DETECTION
SS	SIGNAL SERVICE	SERVICE WIRE
CC	CABINET COMMS	COMMS CABLE
FO	FIBER OPTIC	FIBER CABLE
SPARE Y	SPARE WIRE TO POLE NUMB, SPARE1	SPARE WIRE
ELYZ *	ENFORC. LIGHT POLE & DIRECTION	ENFORCEMENT LIGHT
PTZ1	PTZ CAMERA POLE NUMBER PTZ1	PTZ CAMERA
IC	INTERCONNECT CABLE	INTERCONNECT
EGC	EQUIPMENT GROUNDING CONDUCTOR	GROUND

X = SIGNAL SYSTEM PHASE NUMBER; REFER TO THE PLAN
Y = SIGNAL SYSTEM ASSIGNED COMPONENT NUMBER; REFER TO THE PLAN
Z * = DIRECTION
FURNISH AND INSTALL LABELS ON CABLES WITH ABBREVIATIONS SHOWN ON THIS TABLE AND IN ACCORDANCE WITH THE WIRING DIAGRAM.



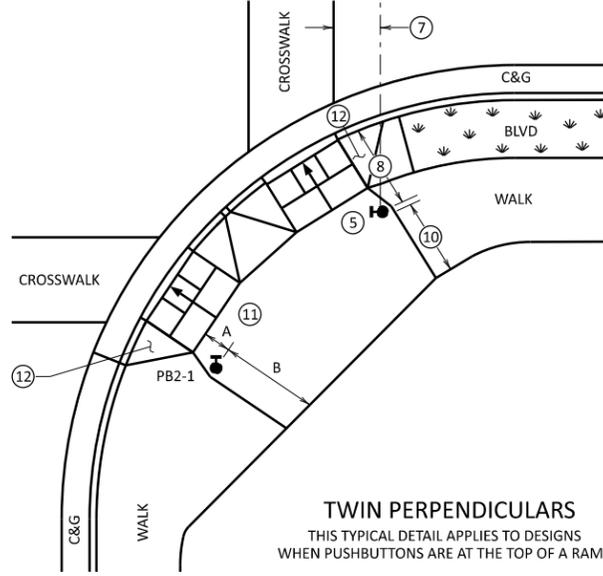
NOTES:

- ⑤ POSITION THE FACE OF THE PUSHBUTTON PARALLEL WITH THE OUTSIDE EDGE OF THE CROSSWALK.
- ⑥ CONSTRUCT A MINIMUM 4'x4' LANDING AREA ADJACENT TO EACH PUSHBUTTON, WITH A 2% MAXIMUM SLOPE IN ALL DIRECTIONS.
- ⑦ POSITION PUSHBUTTONS WITHIN 5' OF THE OUTSIDE EDGE OF THE CROSSWALK. DISTANCE IS MEASURED PERPENDICULARLY FROM EXTENSION OF CROSSWALK.
- ⑧ POSITION PUSHBUTTONS BETWEEN 1.5' AND 10' FROM THE BACK OF CURB OR EDGE OF ROADWAY, MEASURED IN THE DIRECTION OF TRAVEL. STANDALONE PUSHBUTTON STATIONS SHOULD BE 4' MINIMUM FROM THE BACK OF CURB TO AVOID KNOCKDOWNS.
- ⑨ POSITION PUSHBUTTONS AT LEAST 10' APART (PUSHBUTTON FACE TO PUSHBUTTON FACE).
- ⑩ PROVIDE A MAINTENANCE ACCESS ROUTE (MAR) WHEREVER POSSIBLE FOR SNOW REMOVAL PURPOSES. A MAR REQUIRES A 6' MINIMUM CLEAR DISTANCE FOR SIDEWALKS (10' FOR SHARED-USE PATHS) BETWEEN A PUSHBUTTON AND ANY OBSTRUCTIONS, INCLUDING BUILDINGS, V-CURB, ELECTRICAL FOUNDATIONS, SIGNAL CABINETS, OR ANOTHER PUSHBUTTON.
- ⑪ POSITION PUSHBUTTON 2' MINIMUM FROM CURB RAMP GRADE BREAK AND BACK OF SIDEWALK.
- ⑫ CONSTRUCT AN 8%-10% WALKABLE CONCRETE FLARE WHEN THE PUSHBUTTON IS OFFSET FROM THE EDGE OF THE CROSSWALK SO USERS DEPARTING FROM THE PUSHBUTTON WILL TRAVERSE A CONCRETE SURFACE.

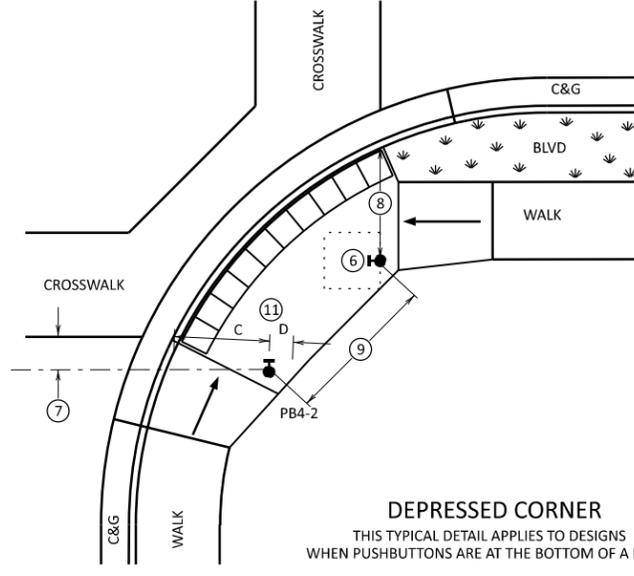
APS PEDESTRIAN PUSHBUTTON LOCATION

SAMPLE TABLE				
SIGNAL CONTROL POINTS			DISTANCE TO FRONT OF LANDING (FT)	DISTANCE TO BACK OF LANDING (FT)
SIGNAL NO.	X	Y		
PB2-1	-	-	A	B
PB4-2	-	-	C	D

- A - DISTANCE MEASURED FROM THE PUSHBUTTON TO THE FRONT OF LANDING/TOP OF RAMP
- B - CLEAR DISTANCE MEASURED FROM THE PUSHBUTTON TO THE BACK OF LANDING/EDGE OF WALK
- C - DISTANCE MEASURED FROM THE PUSHBUTTON TO THE OUTSIDE EDGE OF DOMES IN THE DIRECTION OF TRAVEL
- D - CLEAR DISTANCE FROM THE PUSHBUTTON TO THE BACK OF LANDING MEASURED IN THE OPPOSITE DIRECTION OF TRAVEL



TWIN PERPENDICULARS
THIS TYPICAL DETAIL APPLIES TO DESIGNS WHEN PUSHBUTTONS ARE AT THE TOP OF A RAMP



DEPRESSED CORNER
THIS TYPICAL DETAIL APPLIES TO DESIGNS WHEN PUSHBUTTONS ARE AT THE BOTTOM OF A RAMP

NOTES:

MOUNT THE BUTTON SO THAT THE FACE IS PARALLEL WITH THE ASSOCIATED CROSSWALK. SCREW IN SHAFT TO A TIGHTENED POSITION BEFORE MOUNTING ACCESSIBLE PEDESTRIAN PUSHBUTTON UNIT TO THE SHAFT.

ORIENT THE BASE ACCESS OPENING DIRECTLY BELOW THE APS BUTTON.

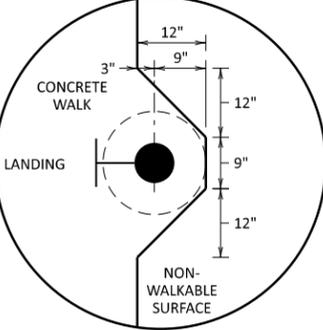
PLUMB AND LEVEL APS PUSHBUTTON STATIONS, AND TIGHTEN ANCHOR RODS IN ACCORDANCE WITH CONTRACT DOCUMENTS.

FURNISH AND INSTALL BLIND THREADED INSERTS USING MANUFACTURER'S SPECIFIC INSERTION TOOL.

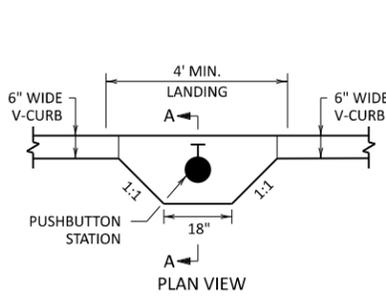
USE APS 3/4"-20 STAINLESS STEEL MOUNTING BOLTS. APPLY BRUSH-ON ANTI-SEIZE COMPOUND TO BOLTS BEFORE ASSEMBLY.

APPLY A BEAD OF 100% SILICONE SEALANT ALONG THE TOP OF THE PUSHBUTTON UNIT WHERE IT CONTACTS THE 4" SHAFT.

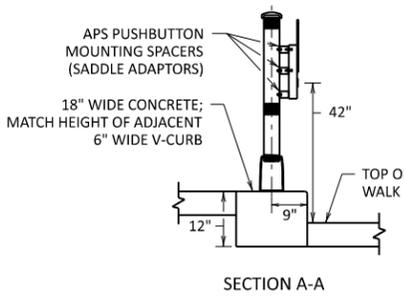
- ① THE PUSHBUTTON STATION FOUNDATION IS MONOLITHIC (POURED AT ONE TIME) WITH THE SIDEWALK. PROVIDE A 1V:2H SLOPE GRADE WHERE THE 6" MINIMUM SIDEWALK DEPTH TRANSITIONS TO THE 12" MINIMUM FOUNDATION DEPTH. MAINTAIN THE COMPACTED AGGREGATE BEDDING AND THICKNESS USED FOR THE SIDEWALK THROUGHOUT THE SLOPE AND FOUNDATION GRADING. PROVIDE 1V:2H SLOPE GRADING 360 DEGREES FOR THE TRANSITION FROM THE SIDEWALK TO THE FOUNDATION WHEN THE FOUNDATION IS NOT LOCATED NEAR EDGE OF SIDEWALK AND IS SURROUNDED BY CONCRETE WALK.
- ② ENSURE CONCRETE CONTROL JOINTS AND EDGE OF CONCRETE WALK ARE A MINIMUM OF 9" FROM THE CENTER OF THE PUSHBUTTON FOUNDATION.
- ③ FURNISH AND INSTALL THE MANUFACTURER-PROVIDED CABLE TETHER ASSEMBLY IN ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- ④ FURNISH AND INSTALL 3" WIDE TUBULAR DELINEATOR/MARKER SHEETING FROM MnDOT'S APL FOR SIGNING/SHEETING MATERIALS THAT MATCHES THE COLOR OF THE NEAREST EDGE LINE.



PUSHBUTTON STATION FOUNDATION FORMING



INTEGRAL PUSHBUTTON STATION WITH V-CURB



LEAD EXPERT OFFICE
JEFF PERKINS
ASSISTANT DIVISION DIRECTOR
OPERATIONS DIVISION

ACCESSIBLE PEDESTRIAN SIGNAL (APS) PUSHBUTTON STATION AND LOCATION

APPROVED: 02-21-2024
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD PLAN
5-297.885

1 OF 2

NO	DATE	BY	CKD	APPR	REVISION

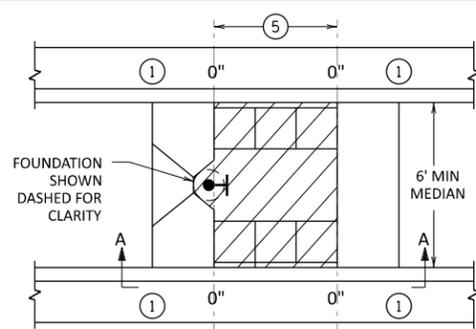
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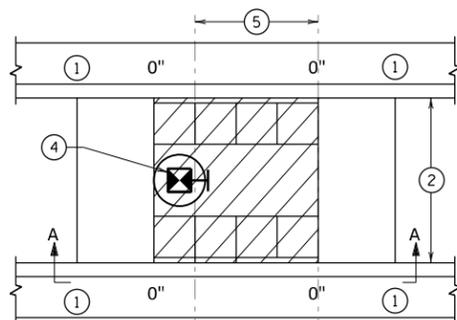
**ANOKA COUNTY
HIGHWAY DEPT.**

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SAP 002-652-013

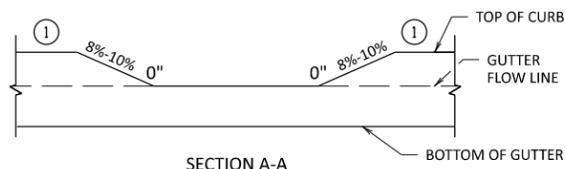
**APS PUSH BUTTON
STATION DETAILS**



PEDESTRIAN PUSHBUTTON STATION DETAIL



SIGNAL PEDESTAL DETAIL



SECTION A-A

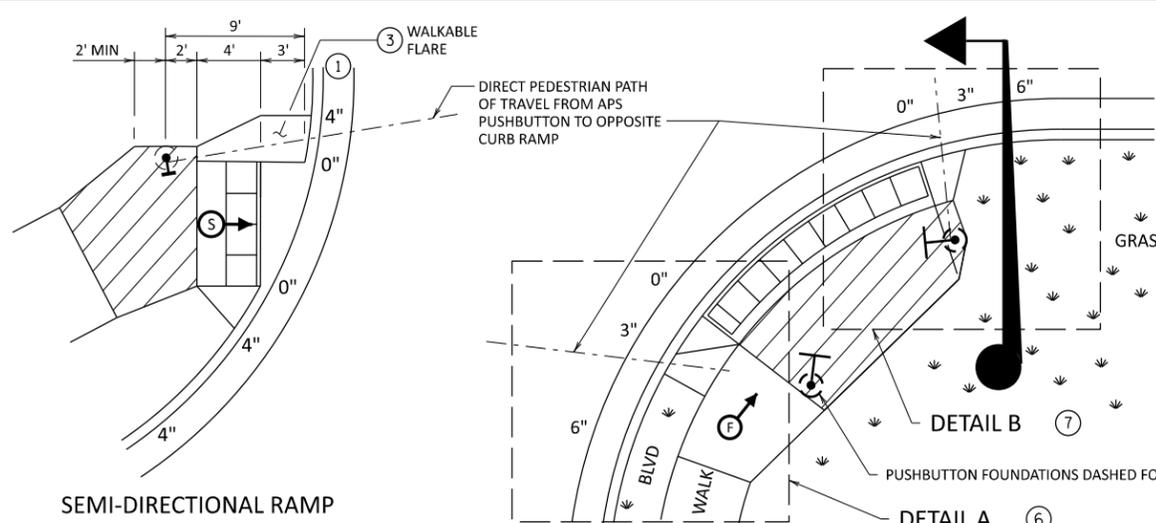
MEDIAN FLARE THROUGH

IF NEEDED DUE TO DIFFERENCE OF FLOW LINE ELEVATIONS, THE LOW SIDE OF THE REFUGE MAY BE RAMPED IF THE MEDIAN WIDTH IS SUFFICIENT TO PROVIDE BOTH A RAMP AND A LANDING ADJACENT TO THE PUSHBUTTON.

IF 6' MEDIAN IS ACHIEVED FROM FACE OF CURB TO FACE OF CURB, CONSTRUCT THE FLARE THROUGH INTEGRAL TO THE CURB. 6' MINIMUM DISTANCE IS REQUIRED TO CONSTRUCT REFUGE WITH 2' MINIMUM DETECTABLE WARNING SURFACE SEPARATION.

NOTES:

- ① CONSTRUCT FULL CURB HEIGHT.
- ② 7' MINIMUM DISTANCE (BACK OF CURB TO BACK OF CURB) IS REQUIRED TO ACCOMMODATE 2.5' DIAMETER PEDESTAL FOUNDATION, 2' DETECTABLE WARNING WIDTH, AND 3' DETECTABLE WARNING SETBACK.
- ③ CONSTRUCT AN 8%-10% WALKABLE CONCRETE FLARE WHEN THE PUSHBUTTON IS OFFSET FROM THE EDGE OF THE CROSSWALK SO USERS DEPARTING FROM THE PUSHBUTTON WILL TRAVERSE ON A CONCRETE SURFACE.
- ④ CONSTRUCT FOUNDATION FLUSH WITH ADJACENT LANDING (WITHIN 1/4"). SEE STANDARD PLATE 8112.
- ⑤ PEDESTRIAN ACCESS ROUTE/MAINTENANCE ACCESS ROUTE.



SEMI-DIRECTIONAL RAMP

3' DOME SETBACK, 4' LONG RAMP, AND PUSHBUTTON 9' FROM THE BACK OF CURB (SHOWN).

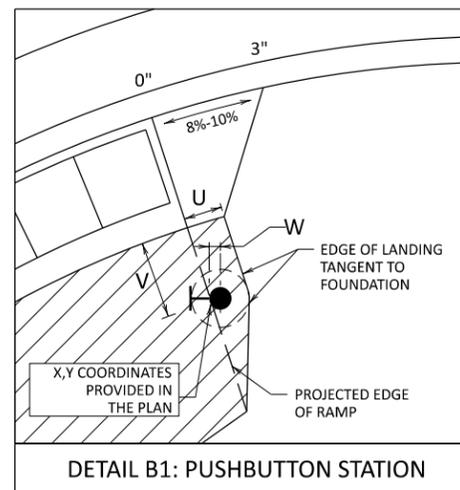
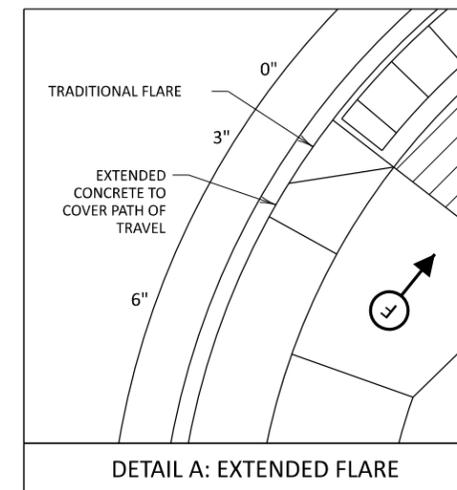
USED FOR APS APPLICATIONS WHERE THE PAR DOES NOT CONTINUE PAST THE PUSHBUTTON.

PUSHBUTTON LANDING AND EXTENDED WALKABLE FLARE REQUIREMENTS
FAN RAMP SHOWN IN DETAIL, APPLIES TO ALL RAMPS WITH PUSHBUTTONS

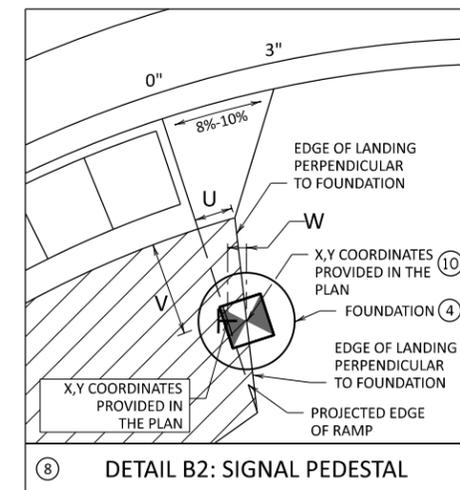
ADA LEGEND	
	PEDESTRIAN PUSHBUTTON STATION WITH FOUNDATION
	SIGNAL PEDESTAL WITH FOUNDATION
	PROPOSED SIGNAL POLE
	CURB HEIGHT
	LANDING AREA - 4'x4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%

⑦ DETAIL B TABLE				
POINT	DESCRIPTION	PUSHBUTTON STATION	SIGNAL PEDESTAL	SIGNAL POLE
U	LANDING EXTENSION	12"	12"	18"
V	PUSHBUTTON OFFSET FROM FRONT OF LANDING (MIN)	24"	30"	30"
W	OFFSET (PARALLEL TO ROADWAY) FROM PROJECTED EDGE OF RAMP TO CENTER OF FOUNDATION	3"	6" ⑩	18" ⑩

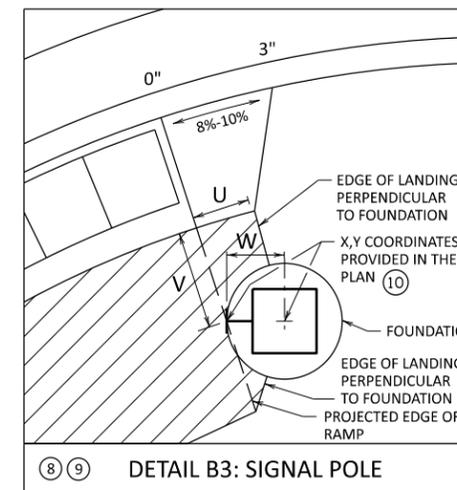
- ⑥ USE AS THE PEDESTRIAN FACILITY APPROACHES FROM THE SAME SIDE AS THE PUSHBUTTON.
- ⑦ USE WHEN PEDESTRIAN FACILITIES DO NOT CONTINUE PAST THE PUSHBUTTON.
- ⑧ WHEN SIGNAL PEDESTALS (INCLUDING RRFBS) AND SIGNAL POLES ARE USED FOR PUSHBUTTON LOCATIONS, PLACE WITHIN THE PEDESTRIAN RAMP LANDING AREA AS SHOWN.
- ⑨ EVALUATE EXISTING SIGNAL MAST ARM POLES FOR PLACING PUSHBUTTONS. FOR NEW SIGNAL MAST ARM POLES, CONSTRUCT OUTSIDE OF PEDESTRIAN RAMP LIMITS DUE TO IMPRECISE CONSTRUCTION PRACTICES, FIELD UNCERTAINTIES, AND COMPETING REQUIREMENTS OF ADA PUSHBUTTON AND TRAFFIC SIGNAL MAST ARM POLE LOCATIONS. EXCEPTIONS ARE CONGESTED URBAN AREAS AND RURAL ROADWAY INTERSECTIONS.
- ⑩ X, Y COORDINATES GIVEN IN DESIGN ARE AT ALL FACE-OF-PUSHBUTTON LOCATIONS. PROVIDE ADDITIONAL X, Y COORDINATES FOR CENTER OF FOUNDATION AT NEW SIGNAL POLES AND PEDESTALS THAT CONTAIN PUSHBUTTONS. SEE OFFSET WIDTH, "W", IN THE TABLE FOR THE OFFSET OF THE PUSHBUTTON FACE TO THE CENTER OF THE SIGNAL COMPONENT.



DETAIL B1: PUSHBUTTON STATION



DETAIL B2: SIGNAL PEDESTAL



DETAIL B3: SIGNAL POLE

LEAD EXPERT OFFICE
JEFF PERKINS
ASSISTANT DIVISION DIRECTOR
OPERATIONS DIVISION

ACCESSIBLE PEDESTRIAN SIGNAL (APS)
PUSHBUTTON STATION AND LOCATION

APPROVED: 02-21-2024
REVISED:

THOMAS STYRBICKI
STATE DESIGN ENGINEER

STANDARD PLAN
5-297.885

2 OF 2

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ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-652-014
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APS PUSH BUTTON
STATION DETAILS

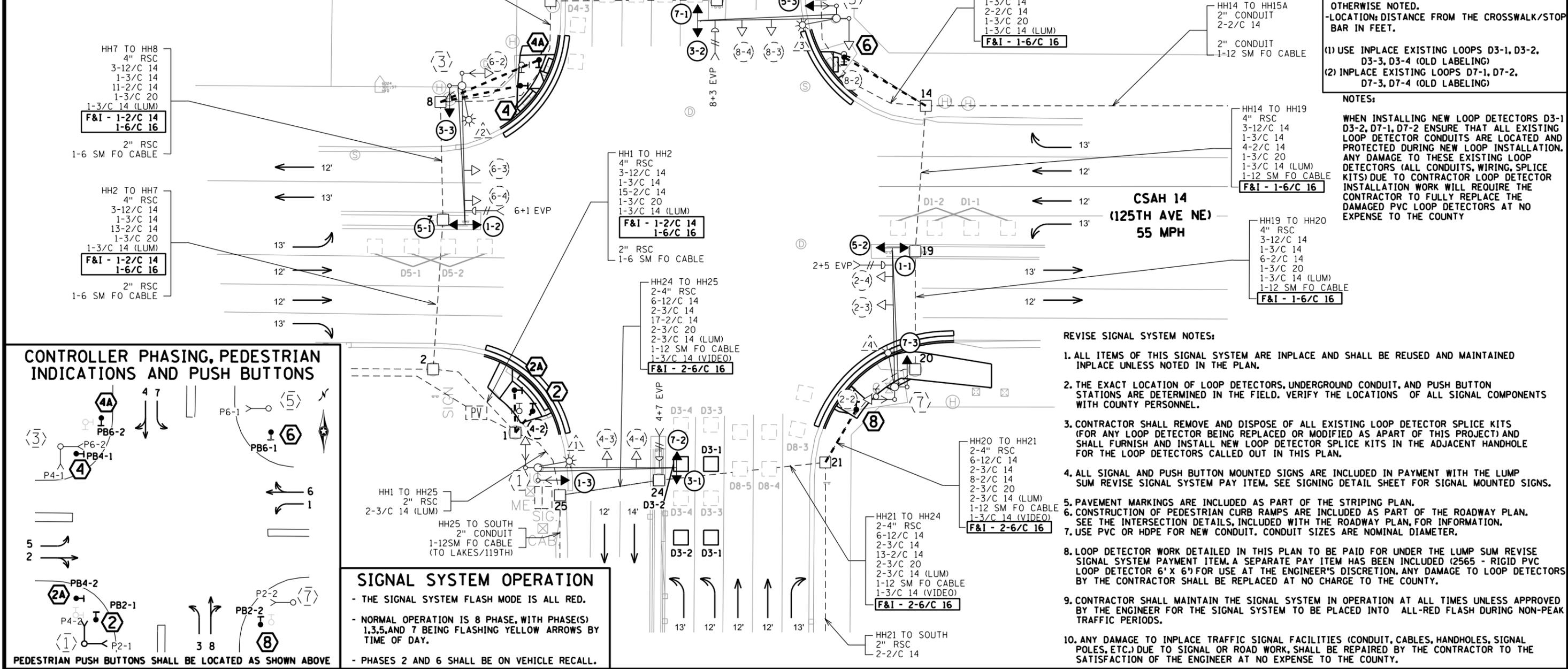
SIGNAL HEAD CHART					
FACE	R	Y	FYA	G	STATUS
1-1, 1-2	←	←	←	←	1
1-3	←	←	←	←	2
2-2, 2-3, 2-4	○	○	○	○	INPLACE
3-1, 3-2	←	←	←	←	1
3-3	←	←	←	←	2
4-2, 4-3, 4-4	○	○	○	○	INPLACE
5-1, 5-2	←	←	←	←	1
5-3	←	←	←	←	2
6-2, 6-3, 6-4	○	○	○	○	INPLACE
7-1, 7-2	←	←	←	←	1
7-3	←	←	←	←	2
8-1, 8-2, 8-3	○	○	○	○	INPLACE

1 = REMOVE INPLACE OVERHEAD 3-SECTION SIGNAL AND F&I NEW OVERHEAD 4-SECTION SIGNAL ON END OF EXISTING MAST ARM
 2 = REMOVE INPLACE POLE MOUNTED 3-SECTION SIGNAL AND F&I NEW POLE MOUNTED 4-SECTION SIGNAL ON END OF EXISTING MAST ARM (ON NEW ONE-WAY ANGLE MOUNT)

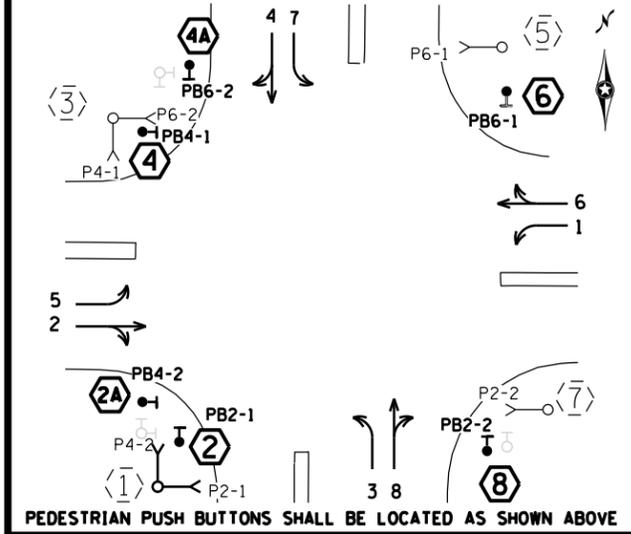
LOOP DETECTOR CHART				
NUMBER	SIZE (FT)	LOCATION	STATUS	
D1-1	2-6x6	20 & 50	INPLACE	
D1-2	2-6x6	5 & 35	INPLACE	
D2-1, D2-2	6x6	475	INPLACE	
D3-1, D3-2	2-6x6	15 & 45	F & I	(1)
D3-3, D3-4	6x6	0 & 30	INPLACE	
D4-1, D4-2	6x6	475	INPLACE	
D4-3	2-6x6	AS SHOWN	INPLACE	
D4-4, D4-5	2-6x6	5 & 20	INPLACE	
D5-1	2-6x6	20 & 50	INPLACE	
D5-2	2-6x6	5 & 35	INPLACE	
D6-1, D6-2	6x6	475	INPLACE	
D7-1, D7-2	2-6x6	15 & 45	F & I	(2)
D7-3, D7-4	6x6	0	INPLACE	
D8-1, D8-2	6x6	475	INPLACE	
D8-3	2-6x6	AS SHOWN	INPLACE	
D8-4, D8-5	2-6x6	5 & 20	INPLACE	

- ALL LOOP DETECTORS SHALL BE PVC UNLESS OTHERWISE NOTED.
 - LOCATION: DISTANCE FROM THE CROSSWALK/STOP BAR IN FEET.
 (1) USE INPLACE EXISTING LOOPS D3-1, D3-2, D3-3, D3-4 (OLD LABELING)
 (2) INPLACE EXISTING LOOPS D7-1, D7-2, D7-3, D7-4 (OLD LABELING)

NOTES:
 WHEN INSTALLING NEW LOOP DETECTORS D3-1, D3-2, D7-1, D7-2 ENSURE THAT ALL EXISTING LOOP DETECTOR CONDUITS ARE LOCATED AND PROTECTED DURING NEW LOOP INSTALLATION. ANY DAMAGE TO THESE EXISTING LOOP DETECTORS (ALL CONDUITS, WIRING, SPLICE KITS) DUE TO CONTRACTOR LOOP DETECTOR INSTALLATION WORK WILL REQUIRE THE CONTRACTOR TO FULLY REPLACE THE DAMAGED PVC LOOP DETECTORS AT NO EXPENSE TO THE COUNTY



CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



SIGNAL SYSTEM OPERATION

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

REVISE SIGNAL SYSTEM NOTES:

1. ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE UNLESS NOTED IN THE PLAN.
2. THE EXACT LOCATION OF LOOP DETECTORS, UNDERGROUND CONDUIT, AND PUSH BUTTON STATIONS ARE DETERMINED IN THE FIELD. VERIFY THE LOCATIONS OF ALL SIGNAL COMPONENTS WITH COUNTY PERSONNEL.
3. CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL EXISTING LOOP DETECTOR SPLICE KITS (FOR ANY LOOP DETECTOR BEING REPLACED OR MODIFIED AS PART OF THIS PROJECT) AND SHALL FURNISH AND INSTALL NEW LOOP DETECTOR SPLICE KITS IN THE ADJACENT HANDHOLE FOR THE LOOP DETECTORS CALLED OUT IN THIS PLAN.
4. ALL SIGNAL AND PUSH BUTTON MOUNTED SIGNS ARE INCLUDED IN PAYMENT WITH THE LUMP SUM REVISE SIGNAL SYSTEM PAY ITEM. SEE SIGNING DETAIL SHEET FOR SIGNAL MOUNTED SIGNS.
5. PAVEMENT MARKINGS ARE INCLUDED AS PART OF THE STRIPING PLAN.
6. CONSTRUCTION OF PEDESTRIAN CURB RAMPS ARE INCLUDED AS PART OF THE ROADWAY PLAN. SEE THE INTERSECTION DETAILS, INCLUDED WITH THE ROADWAY PLAN, FOR INFORMATION.
7. USE PVC OR HDPE FOR NEW CONDUIT. CONDUIT SIZES ARE NOMINAL DIAMETER.
8. LOOP DETECTOR WORK DETAILED IN THIS PLAN TO BE PAID FOR UNDER THE LUMP SUM REVISE SIGNAL SYSTEM PAYMENT ITEM. A SEPARATE PAY ITEM HAS BEEN INCLUDED (2565 - RIGID PVC LOOP DETECTOR 6' X 6') FOR USE AT THE ENGINEER'S DISCRETION. ANY DAMAGE TO LOOP DETECTORS BY THE CONTRACTOR SHALL BE REPLACED AT NO CHARGE TO THE COUNTY.
9. CONTRACTOR SHALL MAINTAIN THE SIGNAL SYSTEM IN OPERATION AT ALL TIMES UNLESS APPROVED BY THE ENGINEER FOR THE SIGNAL SYSTEM TO BE PLACED INTO ALL-RED FLASH DURING NON-PEAK TRAFFIC PERIODS.
10. ANY DAMAGE TO INPLACE TRAFFIC SIGNAL FACILITIES (CONDUIT, CABLES, HANDHOLES, SIGNAL POLES, ETC.) DUE TO SIGNAL OR ROAD WORK, SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER AT NO EXPENSE TO THE COUNTY.

① INPLACE (MAINTAIN) PA100 POLE FOUNDATION
 TYPE PA100-A-55-D40-9 (DAVIT AT 350 DEG)
 LUMINAIRE-LED
 2-ONE WAY SIGNALS-OVERHEAD AT 17' AND 29'
 FROM END OF MAST ARM
 1-ONE WAY SIGNALS-POLE MOUNTED 180 DEG
 2-SETS CD PED SIGNALS - POLE MOUNTED 90/180 DEG
 ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD AT 6'(4+7)
 2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG
 TYPE D SIGN PANEL-OVERHEAD AT 32'
 EXTENDED INTO HH1
 3" RSC
 3-12/C 14
 1-3/C 14
 1-3/C 20
 1-3/C 14 (LUM)

INPLACE (REMOVE) 2-ONE WAY SIGNALS-OVERHEAD AT 0' AND 0'
 FROM END OF MAST ARM (OLD 3-1 & OLD 7-2)
 1-ONE WAY SIGNALS-POLE MOUNTED 90 DEG (OLD 1-3)
 F&I 2-ONE WAY SIGNALS-OVERHEAD AT 0' AND 0'
 FROM END OF MAST ARM (NEW 3-1 & NEW 7-2)
 1-ONE WAY SIGNALS-POLE MOUNTED 90 DEG (NEW 1-3)
 2-R10-X12 SIGN PANEL - ADJACENT TO (NEW 3-1 & NEW 7-2)
 1-6/C 16

⑤ INPLACE (MAINTAIN) PA100 POLE FOUNDATION
 TYPE PA100-A-55-D40-9 (DAVIT AT 350 DEG)
 LUMINAIRE-LED
 2-ONE WAY SIGNALS-OVERHEAD AT 17' AND 29'
 FROM END OF MAST ARM
 1-ONE WAY SIGNALS-POLE MOUNTED 180 DEG
 2-SETS CD PED SIGNALS - POLE MOUNTED 90/180 DEG
 ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD AT 6'(8+3)
 2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG
 TYPE D SIGN PANEL-OVERHEAD AT 32'
 EXTENDED INTO HH13
 3" RSC
 3-12/C 14
 1-3/C 14
 1-3/C 20
 1-3/C 14 (LUM)

INPLACE (REMOVE) 2-ONE WAY SIGNALS-OVERHEAD AT 0' AND 0'
 FROM END OF MAST ARM (OLD 3-2 & OLD 7-1)
 1-ONE WAY SIGNALS-POLE MOUNTED 90 DEG (OLD 5-3)
 F&I 2-ONE WAY SIGNALS-OVERHEAD AT 0' AND 0'
 FROM END OF MAST ARM (NEW 3-2 & NEW 7-1)
 1-ONE WAY SIGNALS-POLE MOUNTED 90 DEG (NEW 5-3)
 2-R10-X12 SIGN PANEL - ADJACENT TO (NEW 3-2 & NEW 7-1)
 1-6/C 16

(A) EQUIPMENT PAD FOUNDATION
 CONTROLLER AND CABINET
 SIGNAL SERVICE CABINET
 CONTROLLER CABINET TO HH 1:
 4" RSC 4" RSC
 3-12/C 14 3-12/C 14
 1-3/C 14 1-3/C 14
 13-2/C 14 2-2/C 14
 1-3/C 20 1-3/C 20

F&I - 2-6/C 16
 2-2/C 14

2" RSC
 1-6 SM FO CABLE

CONTROLLER CABINET TO HH 25:
 4" RSC 4" RSC
 3-12/C 14 3-12/C 14
 1-3/C 14 1-3/C 14
 10-2/C 14 7-2/C 14
 1-3/C 20 1-3/C 20
 1-12 SM FO CABLE 1-12 SM FO CABLE

F&I - 2-6/C 16

SERVICE CABINET TO CONTROLLER CABINET:
 2" RSC (METERED SIGNAL SERVICE)
 3-1/C 6
 SERVICE CABINET TO HH25
 2" RSC (UNMETERED ST LIGHT SERVICE)
 4-3/C 14
 2" RSC STUB OUT FROM SERVICE CABINET
 (FOR POWER BY CONNEXUS)

③ INPLACE (MAINTAIN) PA100 POLE FOUNDATION
 TYPE PA100-A-55-D40-9 (DAVIT AT 350 DEG)
 LUMINAIRE-LED
 2-ONE WAY SIGNALS-OVERHEAD AT 17' AND 29'
 FROM END OF MAST ARM
 2-ONE WAY SIGNALS-POLE MOUNTED 90/180 DEG
 2-SETS CD PED SIGNALS - POLE MOUNTED 90/180 DEG
 ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD AT 6'(6+1)
 2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG
 TYPE D SIGN PANEL-OVERHEAD AT 32'
 EXTENDED INTO HH8
 3" RSC
 3-12/C 14
 1-3/C 14
 1-3/C 20
 1-3/C 14 (LUM)

INPLACE (REMOVE) 2-ONE WAY SIGNALS-OVERHEAD AT 0' AND 0'
 FROM END OF MAST ARM (OLD 1-2 & OLD 5-1)
 1-ONE WAY SIGNALS-POLE MOUNTED 90 DEG (OLD 3-3)
 F&I 2-ONE WAY SIGNALS-OVERHEAD AT 0' AND 0'
 FROM END OF MAST ARM (NEW 1-2 & NEW 5-1)
 1-ONE WAY SIGNALS-POLE MOUNTED 90 DEG (NEW 3-3)
 2-R10-X12 SIGN PANEL - ADJACENT TO (NEW 1-2 & NEW 5-1)
 1-6/C 16

③ INPLACE (MAINTAIN) PA100 POLE FOUNDATION
 TYPE PA100-A-55-D40-9 (DAVIT AT 350 DEG)
 LUMINAIRE-LED
 2-ONE WAY SIGNALS-OVERHEAD AT 17' AND 29'
 FROM END OF MAST ARM
 2-ONE WAY SIGNALS-POLE MOUNTED 90/180 DEG
 1-SETS CD PED SIGNALS - POLE MOUNTED 90 DEG
 ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD AT 6'(8+3)
 2-R6-1 SIGN PANELS-POLE MOUNTED 0/180 DEG
 TYPE D SIGN PANEL-OVERHEAD AT 32'
 EXTENDED INTO HH8
 3" RSC
 3-12/C 14
 1-3/C 14
 1-3/C 20
 1-3/C 14 (LUM)

INPLACE (REMOVE) 2-ONE WAY SIGNALS-OVERHEAD AT 0' AND 0'
 FROM END OF MAST ARM (OLD 3-2 & OLD 7-1)
 1-ONE WAY SIGNALS-POLE MOUNTED 90 DEG (OLD 5-3)
 F&I 2-ONE WAY SIGNALS-OVERHEAD AT 0' AND 0'
 FROM END OF MAST ARM (NEW 3-2 & NEW 7-1)
 1-ONE WAY SIGNALS-POLE MOUNTED 90 DEG (NEW 5-3)
 2-R10-X12 SIGN PANEL - ADJACENT TO (NEW 3-2 & NEW 7-1)
 1-6/C 16

(B) INPLACE - SOP (CONNEXUS)
 MAINTAIN INPLACE

② INPLACE (REMOVE) PEDESTAL PUSH BUTTON STATION (4" RSC)
 2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-4b)
 1 1/4" RSC BACK TO HH1
 INPLACE (S & I) 2-2/C 14 (SALVAGE INPLACE PB CABLES BACK
 TO HH1 AND REINSTALL TO PB2-1)
 F & I PED PB STATION
 1-APS PB AND SIGN
 (LT ARROW) (PB2-1)
 EXTEND INTO INP HH1
 1" CONDUIT

②A F & I PED PB STATION
 1-APS PB AND SIGN
 (RT ARROW) (PB4-2)
 EXTEND INTO INP HH1
 1" CONDUIT
 1-2/C 14

④ INPLACE (REMOVE) PEDESTAL PUSH BUTTON STATION (4" RSC)
 2-PEDESTRIAN PUSH BUTTONS & SIGNS (R10-4b)
 1 1/4" RSC BACK TO HH8
 INPLACE (S & I) 2-2/C 14 (SALVAGE INPLACE PB CABLES BACK
 TO HH8 AND REINSTALL TO PB4-1)
 F & I PED PB STATION
 1-APS PB AND SIGN
 (LT ARROW) (PB4-1)
 EXTEND INTO INP HH8
 1" CONDUIT

④A F & I PED PB STATION
 1-APS PB AND SIGN
 (RT ARROW) (PB6-2)
 EXTEND INTO INP HH8
 1" CONDUIT
 1-2/C 14

⑥ INPLACE (REMOVE) PEDESTAL PUSH BUTTON STATION (4" RSC)
 1-PEDESTRIAN PUSH BUTTONS & SIGN (R10-4b)
 1 1/4" RSC BACK TO HH14
 INPLACE (S & I) 1-2/C 14 (SALVAGE INPLACE PB CABLES BACK
 TO HH14 AND REINSTALL TO PB6-1)
 F & I PED PB STATION
 1-APS PB AND SIGN
 (LT ARROW) (PB6-1)
 EXTEND INTO INP HH14
 1" CONDUIT

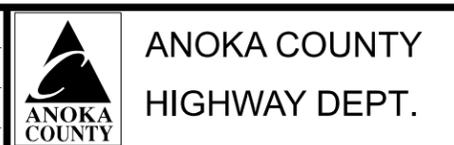
⑧ INPLACE (REMOVE) PEDESTAL PUSH BUTTON STATION (4" RSC)
 1-PEDESTRIAN PUSH BUTTONS & SIGN (R10-4b)
 1 1/4" RSC BACK TO HH20
 INPLACE (S & I) 1-2/C 14 (SALVAGE INPLACE PB CABLES BACK
 TO HH21 AND REINSTALL TO PB2-2)
 F & I PED PB STATION
 1-APS PB AND SIGN
 (RT ARROW) (PB2-2)
 EXTEND INTO INP HH20
 1" CONDUIT

NO	DATE	BY	CKD	APPR	REVISION

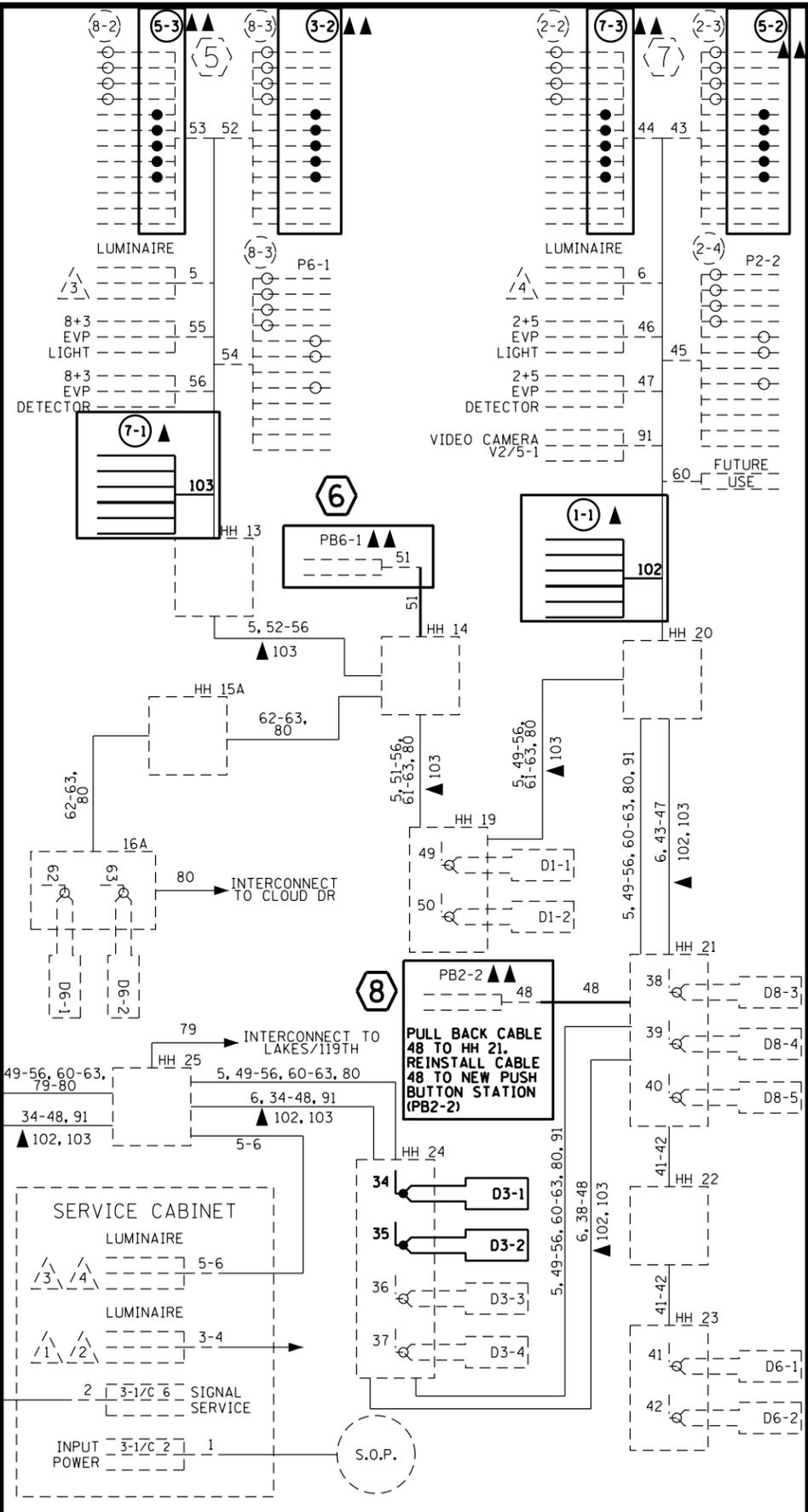
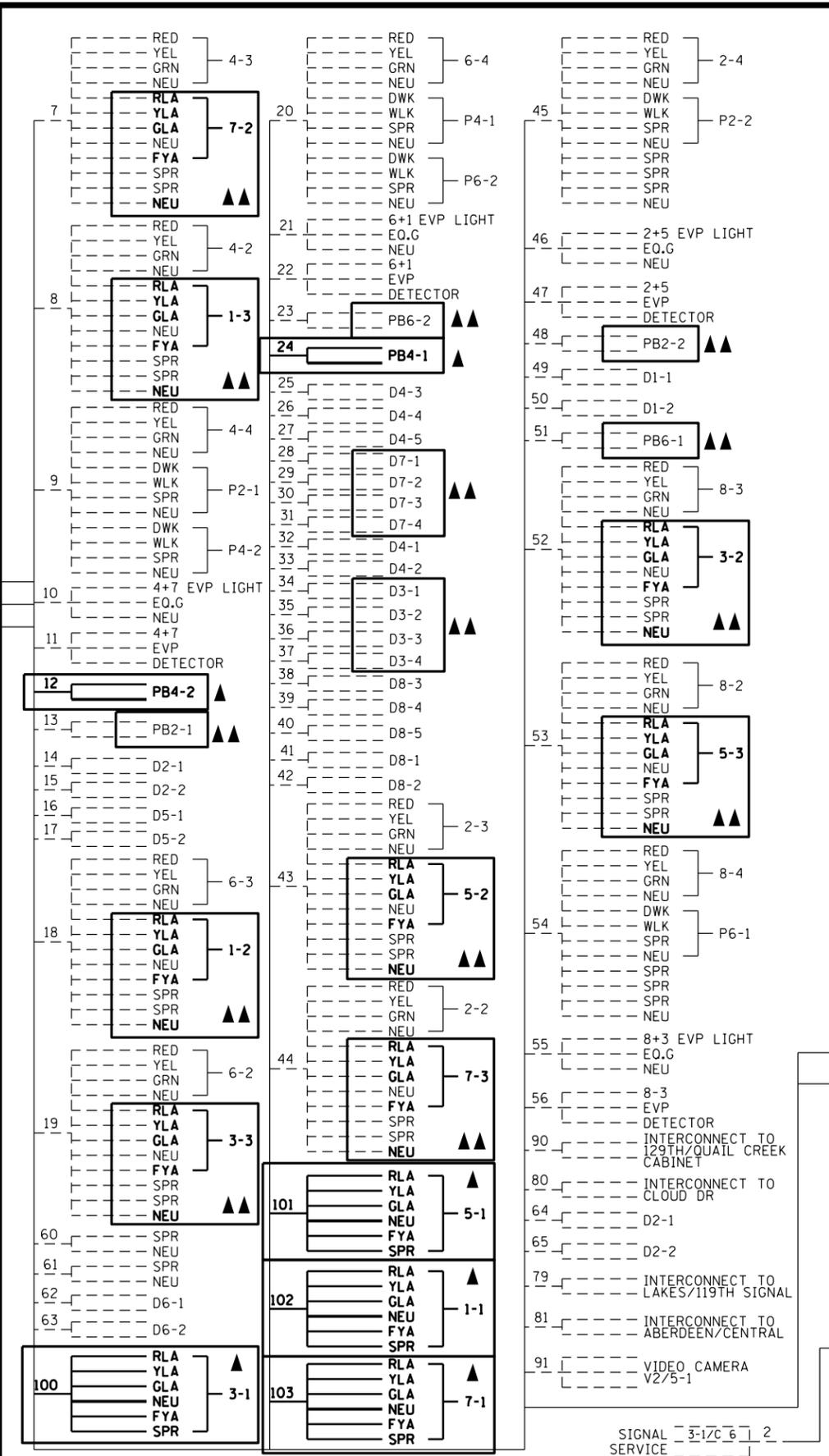
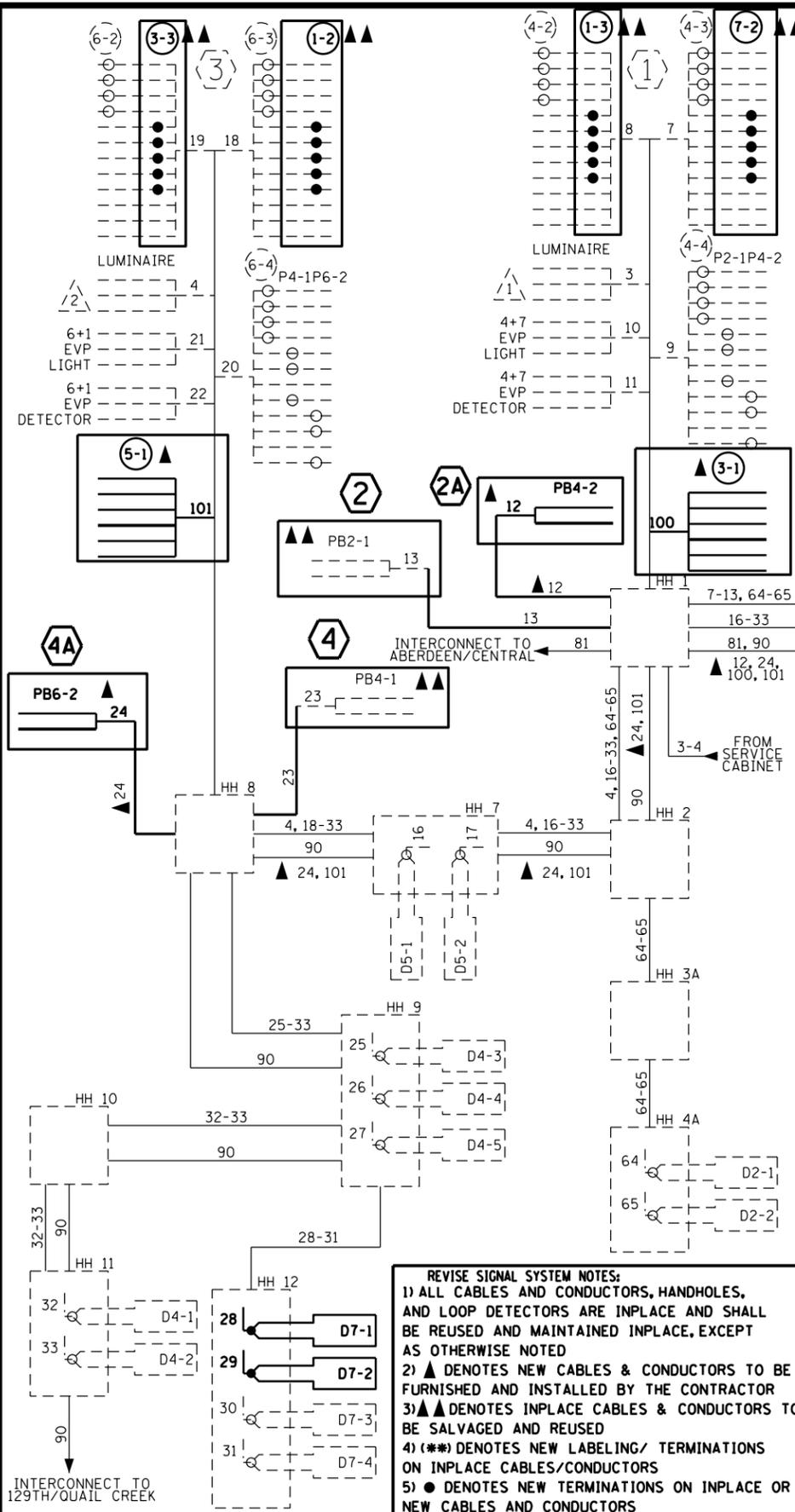
NAME: P:\002-652-013 ADA Upgrades\Plan\002652013_sq02.dgn 01/13/25 10:37:40 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: AARON ANDERSON
 SIGNATURE: 
 DATE: 01/13/25 LICENSE NO. 58657

DRAWN BY AA DATE 11/06/24
 DESIGN BY AA DATE 11/06/24
 CHECKED BY ST DATE 11/06/24



SAP 002-652-014
 SAP 002-652-013



REVISE SIGNAL SYSTEM NOTES:

- 1) ALL CABLES AND CONDUCTORS, HANDHOLES, AND LOOP DETECTORS ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, EXCEPT AS OTHERWISE NOTED
- 2) ▲ DENOTES NEW CABLES & CONDUCTORS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR
- 3) ▲▲ DENOTES INPLACE CABLES & CONDUCTORS TO BE SALVAGED AND REUSED
- 4) (***) DENOTES NEW LABELING/ TERMINATIONS ON INPLACE CABLES/CONDUCTORS
- 5) ● DENOTES NEW TERMINATIONS ON INPLACE OR NEW CABLES AND CONDUCTORS

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-652-013 ADA Upgrades\Plan\002652013_wd01A.dgn 01/13/2025 10:37:41 AM

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

PRINT NAME: AARON ANDERSON

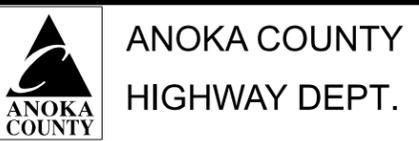
SIGNATURE:

DATE: 01/13/25 LICENSE NO. 58657

DRAWN BY: AA DATE: 11/06/24

DESIGN BY: AA DATE: 11/06/24

CHECKED BY: ST DATE: 11/06/24



SAP 002-652-014
SAP 002-652-013

CSAH 52 & CSAH 14
REVISE TRAFFIC CONTROL
SIGNAL SYSTEM

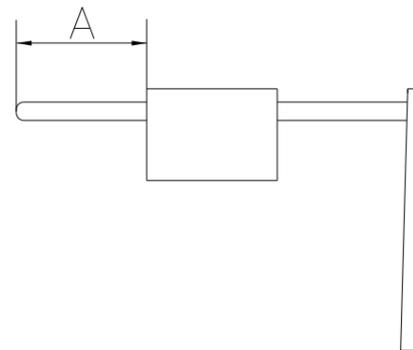
Sheet 34 of 87 Sheets

SIGN PANELS ON SIGNALS

POLE NUMBER	"A" DISTANCE (FEET) OR POLE	PANEL			
		CODE NUMBER	LEGEND	SIZE (INCHES)	AREA (SQ FT)
1	0	R10-X12	LEFT TURN YIELD ON FLASHING YELLOW ARROW	36 x 42	10.50
3	0	R10-X12	LEFT TURN YIELD ON FLASHING YELLOW ARROW	36 x 42	10.50
5	0	R10-X12	LEFT TURN YIELD ON FLASHING YELLOW ARROW	36 x 42	10.50
7	0	R10-X12	LEFT TURN YIELD ON FLASHING YELLOW ARROW	36 x 42	10.50

GENERAL NOTE(S):

1. SEE MnDOT STANDARD SIGNS AND MARKINGS MANUAL FOR STANDARD SIGN DESIGNS, ARROW DETAILS AND SPLICE PLATE DETAILS.
2. FOR NON STANDARD SIGN DESIGNS, LAYOUTS ARE INCLUDED. SIGN PANEL DIMENSIONS ARE IN INCHES.
3. SEE STANDARD PLAN 5-297.731 FOR SIGN MOUNTING TO MAST ARM.
4. SEE STANDARD PLAN 5-297.730 FOR SIGN MOUNTING TO ROUND POST.
5. MOUNTING HEIGHT OF POLE MOUNTED SIGN PANELS MUST BE 7 FOOT MINIMUM.
MOUNTING HEIGHT IS MEASURED FROM BOTTOM OF SIGN PANEL TO SURFACE IMMEDIATELY BELOW THE SIGN PANEL.
6. "A" DISTANCE = DISTANCE FROM THE END OF THE MAST ARM TO THE EDGE OF EACH SIGN PANEL.
7. SEE INTERSECTION LAYOUT FOR SIGN PLACEMENT OF POLE MOUNTED SIGNS.



"A" DENOTES DISTANCE FROM END OF MAST ARM TO LEFT EDGE OF MAST ARM MOUNTED SIGN PANEL IN FEET

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-652-013 ADA Upgrades\Plan\002652013_s101.dgn 01/13/2025 10:37:42 AM

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PRINT NAME: AARON ANDERSON

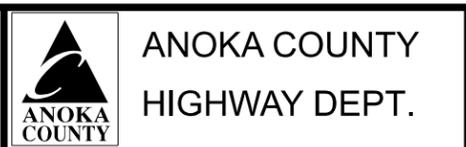
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DATE: 01/13/25 LICENSE NO. 58657

DRAWN BY AA DATE 11/06/24

DESIGN BY AA DATE 11/06/24

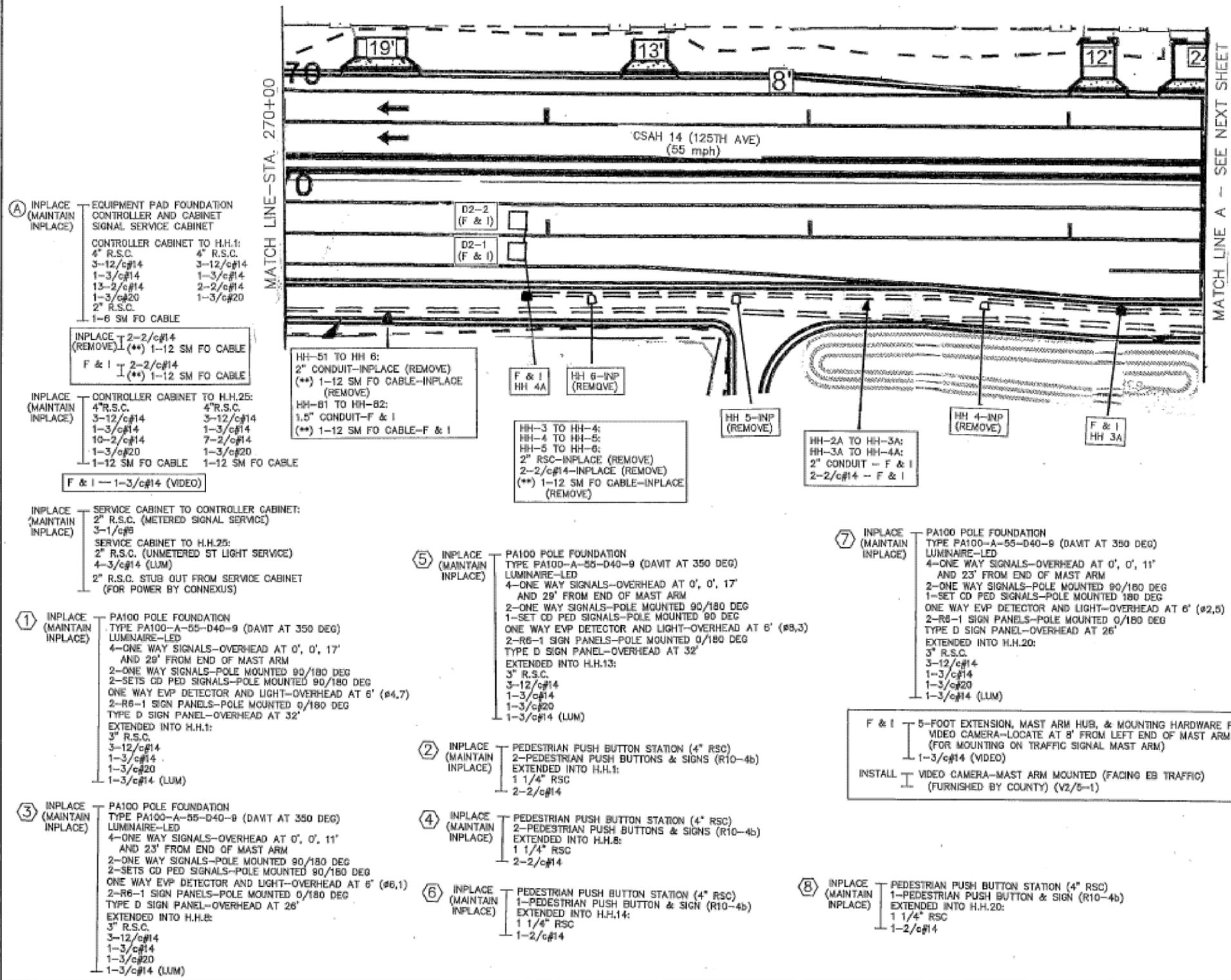
CHECKED BY ST DATE 11/06/24



SAP 002-652-014
SAP 002-652-013



- NOTES:**
- ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS OTHERWISE NOTED ON PLANS.
 - LOCATION OF NEW HANDHOLES/VOLTS AND LOOP DETECTORS SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
 - CONTRACTOR SHALL PROTECT AND MAINTAIN ALL EXISTING HANDHOLES IN THE VICINITY OF CONSTRUCTION; SHALL ADJUST HANDHOLES 1, 2, 7, 8, AND 25 TO MATCH FINISHED SURROUNDING SIDEWALK/MEDIAN/BOULEVARD GRADE; SHALL REMOVE INPLACE HANDHOLES 3, 4, 5, AND 6; AND SHALL FURNISH AND INSTALL NEW HANDHOLES 3A AND 4A (PVC HANDHOLES WITH METAL FRAMES AND COVERS). HANDHOLE WORK NOTED ABOVE WILL BE MEASURED & PAID FOR SEPARATELY (SEE SPECIAL PROVISIONS & STATEMENT OF ESTIMATED QUANTITIES).
 - ALL LOOP DETECTORS ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE AND OPERATIONAL, EXCEPT AS FOLLOWS: CONTRACTOR SHALL FURNISH AND INSTALL NEW LOOP DETECTORS D2-1, D2-2, D5-1, AND D5-2 IN PVC PER DETAILS INCLUDED ELSEWHERE IN THESE PLANS. LOOP DETECTOR WIRES FOR NEW LOOP DETECTORS SHALL BE CROSS-LINKED POLY-ETHYLENE (XLP) #12 AWG IN 3/4" NMC. LOOP DETECTOR WORK NOTED ABOVE WILL BE MEASURED AND PAID FOR SEPARATELY (SEE SPECIAL PROVISIONS AND STATEMENT OF ESTIMATED QUANTITIES).
THE PAY ITEM FOR CONDUIT WORK RELATED TO LOOP DETECTORS WILL INCLUDE ALL LABOR AND MATERIALS NEEDED TO REMOVE AND DISPOSE OF EXISTING 2/C#14 CABLES.
ALL REMOVALS OF INPLACE CONDUIT (FOR BOTH LOOP DETECTOR AND INTERCONNECT WORK) WILL ALSO BE MEASURED AND PAID FOR SEPARATELY.
 - ANY DAMAGE TO INPLACE TRAFFIC SIGNAL FACILITIES (CONDUIT, CABLES, HANDHOLES, SIGNAL POLES, ETC.), EITHER DUE TO TRAFFIC SIGNAL REVISION WORK OR SIDEWALK/MEDIAN/ROAD CONSTRUCTION WORK, SHALL BE REPAIRED BY CONTRACTOR TO SATISFACTION OF THE ENGINEER, AT NO EXPENSE TO THE COUNTY.
 - CONTRACTOR SHALL MAINTAIN OPERATION OF THE SIGNAL SYSTEM AT ALL TIMES, EXCEPT AS OTHERWISE APPROVED BY ENGINEER.
 - ALL VEHICULAR SIGNAL HEADS ARE INPLACE AND SHALL BE REUSED AND MAINTAINED AS NOTED IN THE "LED SIGNAL HEADS" CHART FOR EACH STAGE OF CONSTRUCTION (ANY MODIFICATIONS TO THESE SIGNAL HEADS DUE TO APPLICABLE TRAFFIC CONTROL AND STAGING WILL BE INCLUDED AS PART OF THE BID ITEM FOR "TEMPORARY SIGNAL SYSTEM B"). SEE SPECIAL PROVISIONS.
 - EACH SIGNAL HEAD HAS A BACKGROUND SHIELD.
 - F & I = NEW, FURNISH AND INSTALL.
S & I = INPLACE, SALVAGE AND INSTALL.
 - ALL CONDUIT, CABLES AND CONDUCTORS, HANDHOLES, AND LOOP DETECTORS ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, EXCEPT WHERE BOXED IN AND DENOTED OTHERWISE.
 - (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR (OR REMOVED AND DISPOSED OF BY CONTRACTOR) UNDER ITEM NO. 2965 (TRAFFIC CONTROL, INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
REMOVAL OF INTERCONNECT CONDUIT AND HANDHOLES WILL BE MEASURED AND PAID FOR SEPARATELY, AND FURNISHING AND INSTALLING NEW FIBER OPTIC CONDUIT & HANDHOLES (PULL VAULTS) WILL ALSO BE MEASURED AND PAID FOR SEPARATELY.
 - SEE SPECIAL PROVISIONS REGARDING VIDEO DETECTION SYSTEM TO BE FURNISHED BY COUNTY, INSTALLED AND MADE OPERATIONAL BY CONTRACTOR DURING CONSTRUCTION, AND SALVAGED BY THE CONTRACTOR BACK TO COUNTY AFTER PERMANENT LOOP DETECTORS ARE MADE OPERATIONAL (INCLUDED AS PART OF PAY ITEM FOR "TEMPORARY SIGNAL SYSTEM B").
 - VIDEO DETECTOR CABLES (3/C#14) TO BE FURNISHED & INSTALLED BY CONTRACTOR FOR USE DURING CONSTRUCTION SHALL BE COILED IN EACH POLE BASE BY CONTRACTOR AFTER VIDEO DETECTORS ARE SALVAGED BY CONTRACTOR (FOR FUTURE USE BY OTHERS). ALL VIDEO DETECTOR CABLE INSTALLATION WORK IS INCLUDED AS PART OF PAY ITEM FOR "TEMPORARY SIGNAL SYSTEM B".
 - MOVEMENT/REAMING OF VIDEO CAMERAS, BAGGING AND UNBAGGING SIGNAL HEADS AS NOTED, AND ALL LABOR AND MATERIALS NEEDED TO REVISE SIGNAL SYSTEM DURING CONSTRUCTION SHALL BE INCLUDED IN THE PAY ITEM FOR "TEMPORARY SIGNAL SYSTEM B".
 - SEE CHART ON THIS PLAN SHEET FOR INPLACE SIGNAL HEADS TO BE COVERED AND MADE OPERATIONAL DURING VARIOUS STAGES OF CONSTRUCTION, FOR SIGNAL LENSES TO BE REPLACED DURING EACH STAGE OF CONSTRUCTION AS NOTED IN PLANS, AND FOR THESE SAME SIGNAL HEADS TO HAVE EXISTING LENSES BE REINSTALLED AND HEADS UNCOVERED AND MADE OPERATIONAL PRIOR TO NEXT STAGE OF CONSTRUCTION (INCLUDED AS PART OF THE "TEMPORARY SIGNAL SYSTEM B" PAY ITEM).



DRAWN BY: JMG DESIGNER: JMG CHECKED BY: JMG	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. Name: John M. Gray, PE Lic. No.: 22457	 PHONE: (651) 490-2000 3535 WADSWORTH CENTER DR. ST. PAUL, MN 55110	ANOKA COUNTY CITY OF BLAINE STATE AID PROJ. 002-614-041 STATE AID PROJ. 106-020-036 BLAINE CITY PROJECT 18-10	SIGNAL REVISIONS AND INTERCONNECT INTERSECTION LAYOUT CSAH 14 (125TH AVE) AT CSAH 52 (RADISSON RD)	FILE NO. 159 ANOKA 122928 SIGNAL SHEET 9 OF 11 200
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FOR INFORMATION ONLY

PVC LOOP DETECTORS				
NUMBER	SIZE (FT.)	LOCATION	FUNCTION	STATUS
D1-1	2-8x6	20' & 50'	1	INPLACE
D1-2	2-8x6	5' & 35'	1	INPLACE
D2-1, D2-2	6x6	475'	1	F & I
D3-1, D3-2	6x6	30'	1	INPLACE
D3-3, D3-4	6x6	0'	1	INPLACE
D4-1, D4-2	6x6	475'	3,8	INPLACE
D4-3	2-8x6	AS SHOWN	7	INPLACE
D4-4, D4-5	2-8x6	5' & 20'	1	INPLACE
D5-1	2-8x6	20' & 50'	1	F & I
D5-2	2-8x6	5' & 35'	1	F & I
D6-1, D6-2	6x6	475'	1	INPLACE
D7-1, D7-2	6x6	30'	1	INPLACE
D7-3, D7-4	6x6	0'	1	INPLACE
D8-1, D8-2	6x6	475'	3,8	INPLACE
D8-3	2-8x6	AS SHOWN	7	INPLACE
D8-4, D8-5	2-8x6	5' & 20'	1	INPLACE

LOCATION = DISTANCE FROM STOP BAR TO FRONT OF DETECTOR.

LOOP DETECTORS FUNCTIONS:

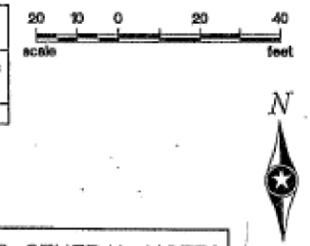
- 1) CALL AND EXTEND
- 3) EXTEND ONLY
- 7) DELAYED CALL, IMMEDIATE EXTEND
- 8) CARRY OVER (STRETCH)

INSTALL VIDEO DETECTORS (FURNISHED BY COUNTY)

CAMERA NO.	INTERSECTION APPROACH FACING	SIGNAL POLE (CAMERA) LOCATION	CAMERA MOUNTED AT	MOUNTING HEIGHT
V2/5-1	EB CSAH 14	MAST ARM 7 (ON MAST ARM (6' FROM LEFT END))		25'

NOTE: MOUNTING HEIGHT = APPROXIMATE HEIGHT ABOVE ADJACENT GROUND LINE.
TURN OFF INPLACE LOOP DETECTORS (FOR PHASES 2 & 5) IN CONTROLLER CABINET DURING OPERATION OF VIDEO DETECTION (DURING CONSTRUCTION ONLY).
SALVAGE CAMERA BACK TO COUNTY AFTER ALL PERMANENT PHASE 2 & 5 LOOP DETECTORS ARE ABLE TO BE MADE OPERATIONAL.

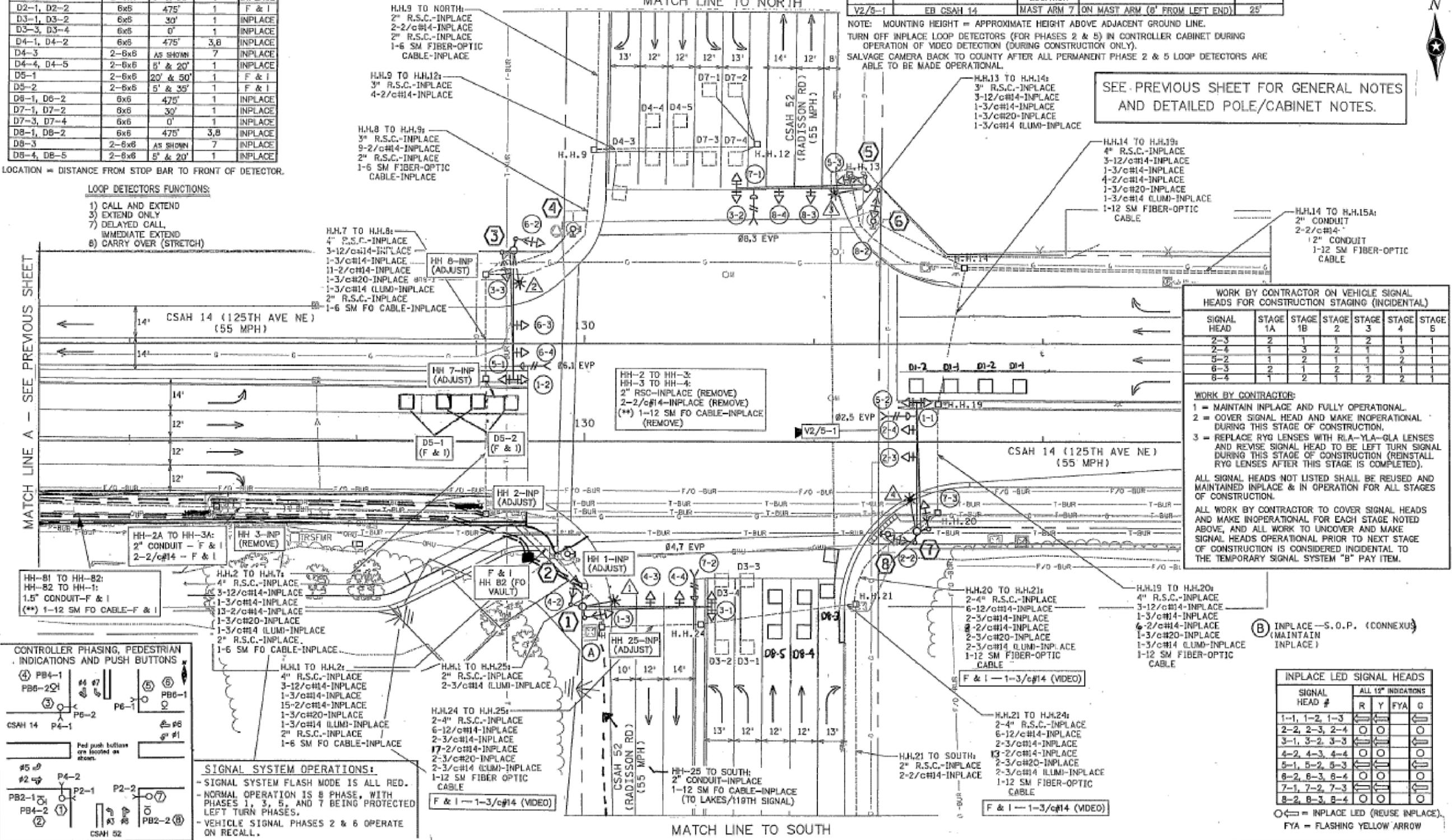
SEE PREVIOUS SHEET FOR GENERAL NOTES AND DETAILED POLE/CABINET NOTES.



MATCH LINE A - SEE PREVIOUS SHEET

MATCH LINE TO NORTH

MATCH LINE TO SOUTH



WORK BY CONTRACTOR ON VEHICLE SIGNAL HEADS FOR CONSTRUCTION STAGING (INCIDENTAL)

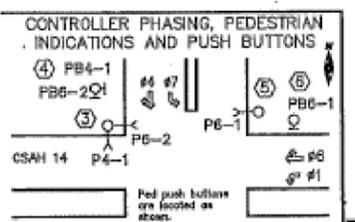
SIGNAL HEAD	STAGE 1A	STAGE 1B	STAGE 2	STAGE 3	STAGE 4	STAGE 5
2-3	2	1	1	2	1	1
2-4	1	3	2	1	3	1
5-2	1	2	1	1	2	1
6-3	2	1	2	1	1	1
6-4	1	2	1	2	2	1

- WORK BY CONTRACTOR:**
- 1 = MAINTAIN INPLACE AND FULLY OPERATIONAL.
 - 2 = COVER SIGNAL HEAD AND MAKE INOPERATIONAL DURING THIS STAGE OF CONSTRUCTION.
 - 3 = REPLACE RYG LENSES WITH R1A-Y1A-G1A LENSES AND REVISE SIGNAL HEAD TO BE LEFT TURN SIGNAL DURING THIS STAGE OF CONSTRUCTION (REINSTALL RYG LENSES AFTER THIS STAGE IS COMPLETED).
- ALL SIGNAL HEADS NOT LISTED SHALL BE REUSED AND MAINTAINED INPLACE & IN OPERATION FOR ALL STAGES OF CONSTRUCTION.
- ALL WORK BY CONTRACTOR TO COVER SIGNAL HEADS AND MAKE INOPERATIONAL FOR EACH STAGE NOTED ABOVE, AND ALL WORK TO UNCOVER AND MAKE SIGNAL HEADS OPERATIONAL PRIOR TO NEXT STAGE OF CONSTRUCTION IS CONSIDERED INCIDENTAL TO THE TEMPORARY SIGNAL SYSTEM "B" PAY ITEM.

INPLACE LED SIGNAL HEADS

SIGNAL HEAD #	ALL 12" INDICATORS			
	R	Y	FYA	G
1-1, 1-2, 1-3	◀	◀	◀	◀
2-2, 2-3, 2-4	◀	◀	◀	◀
3-1, 3-2, 3-3	◀	◀	◀	◀
4-2, 4-3, 4-4	◀	◀	◀	◀
5-1, 5-2, 5-3	◀	◀	◀	◀
6-2, 6-3, 6-4	◀	◀	◀	◀
7-1, 7-2, 7-3	◀	◀	◀	◀
8-2, 8-3, 8-4	◀	◀	◀	◀

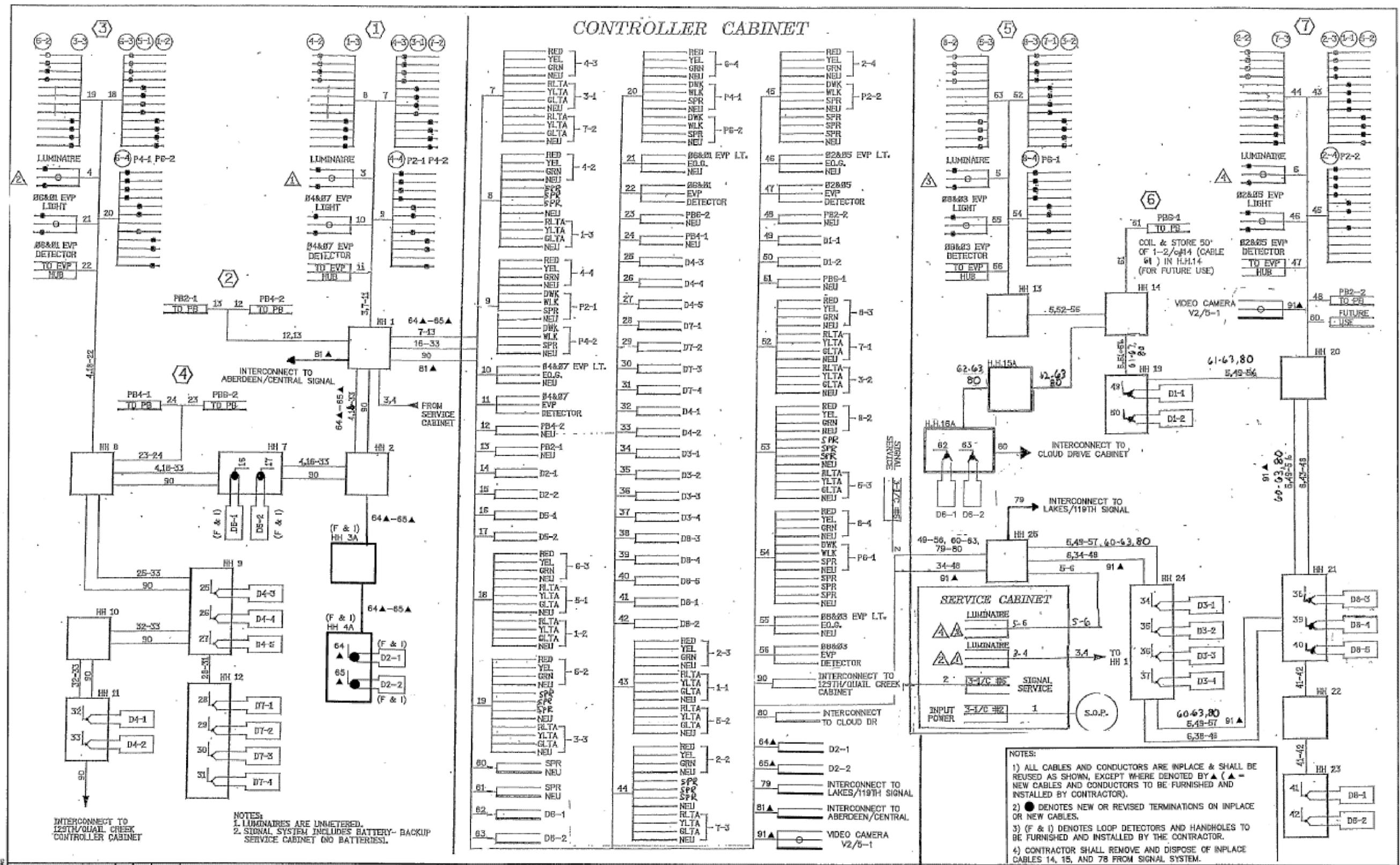
◀ = INPLACE LED (REUSE INPLACE), FYA = FLASHING YELLOW ARROW



SIGNAL SYSTEM OPERATIONS:

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

DRAWN BY: JMC DESIGNER: JMG CHECKED BY: JMG	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. Date: November 15, 2018 Name: John M. Gray, PE Lic. No. 22457	ANOKA COUNTY CITY OF BLAINE STATE AID PROJ. 002-014-041 STATE AID PROJ. 106-020-036 BLAINE CITY PROJECT 18-10	SIGNAL REVISIONS AND INTERCONNECT INTERSECTION LAYOUT CSAH 14 (125TH AVE) AT CSAH 52 (RADISSON RD)	FILE NO. ANOKC 122928 SIGNAL SHEET 10 OF 11 160 200
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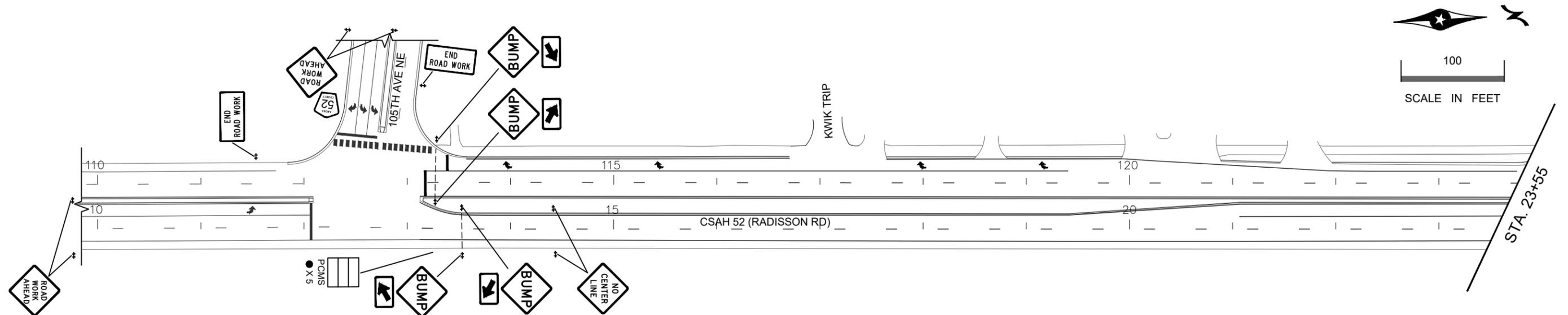
DRAWN BY: JMG DESIGNER: JMG CHECKED BY: JMG	NO. BY DATE REVISIONS	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. Date: November 18, 2019 Name: John V. Gray, PE Lic. No. 22457	ANOKA COUNTY CITY OF BLAINE STATE AID PROJ. 002-614-041 STATE AID PROJ. 106-020-036 BLAINE CITY PROJECT 18-10	SIGNAL REVISIONS AND INTERCONNECT FIELD WIRING DIAGRAM CSAH 14 (125TH AVE) AT CSAH 52 (RADSSON RD)	FILE NO. ANOKC 122926 SIGNAL SHEET 11 OF 11 161 200
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NOTES: (TYP.)

- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS."
- CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.
- CONTRACTOR SHALL SUPPLY AND PLACE THE PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) A MINIMUM TEN DAYS PRIOR TO ACTUAL COMMENCEMENT OF ROAD WORK, TO A LOCATION AS SPECIFIED BY THE ENGINEER. SIGNS TO BE REMOVED WHEN ROAD WORK BEGINS. PAYMENT SHALL BE MADE AS PER ITEM 2563.613 PORTABLE CHANGEABLE MESSAGE SIGN BY THE UNIT/DAY.
- CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN ON THIS DRAWING AND DETAILED IN THE SPECIAL PROVISIONS FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THIS ROADWAY IS PERMANENTLY STRIPED. ALL NECESSARY TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.
- ACCESS SHALL BE MAINTAINED TO ALL STREETS AND DRIVEWAYS IN CONSTRUCTION AREA.

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

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



NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\24-01-00\CS&H 52 (MAIN ST-105TH)\Base\Traffic\Temporary Signing and Tabulations.dwg

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

PRINT NAME: SEAN R. THIEL
 SIGNATURE: *Sean R. Thiel*
 DATE: 2/7/2025 LICENSE NO. 45129

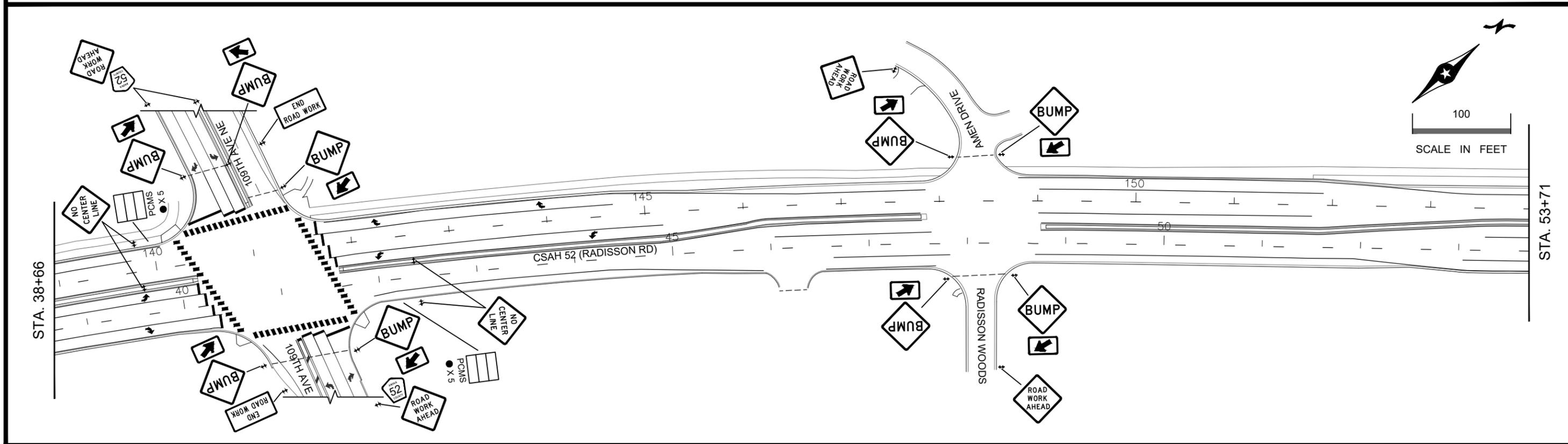
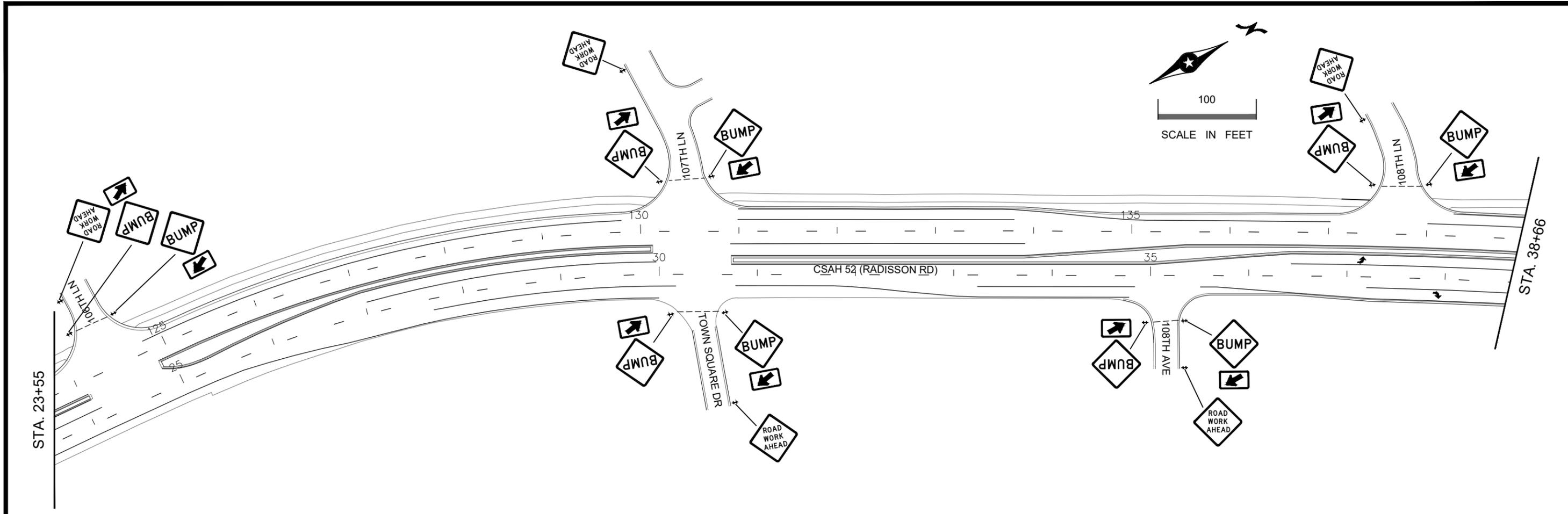
DRAWN BY: FL DATE: 01/06/25
 DESIGN BY: DATE:
 CHECKED BY: SRT DATE:

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-652-014

TEMPORARY SIGNING AND TABULATIONS

Sheet 39 of 87 Sheets



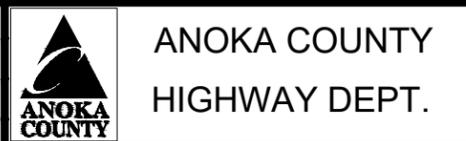
NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\24-01-00\CSAH 52 (MAIN ST-105TH)\Base\Traffic\Temporary Signing and Tabulations.dwg

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

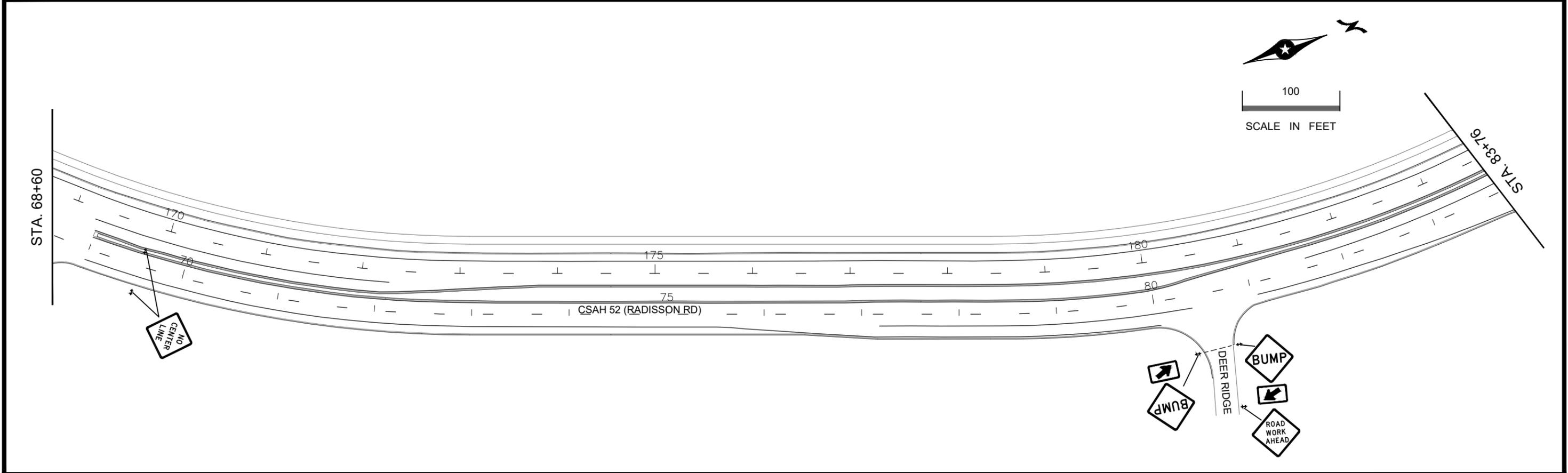
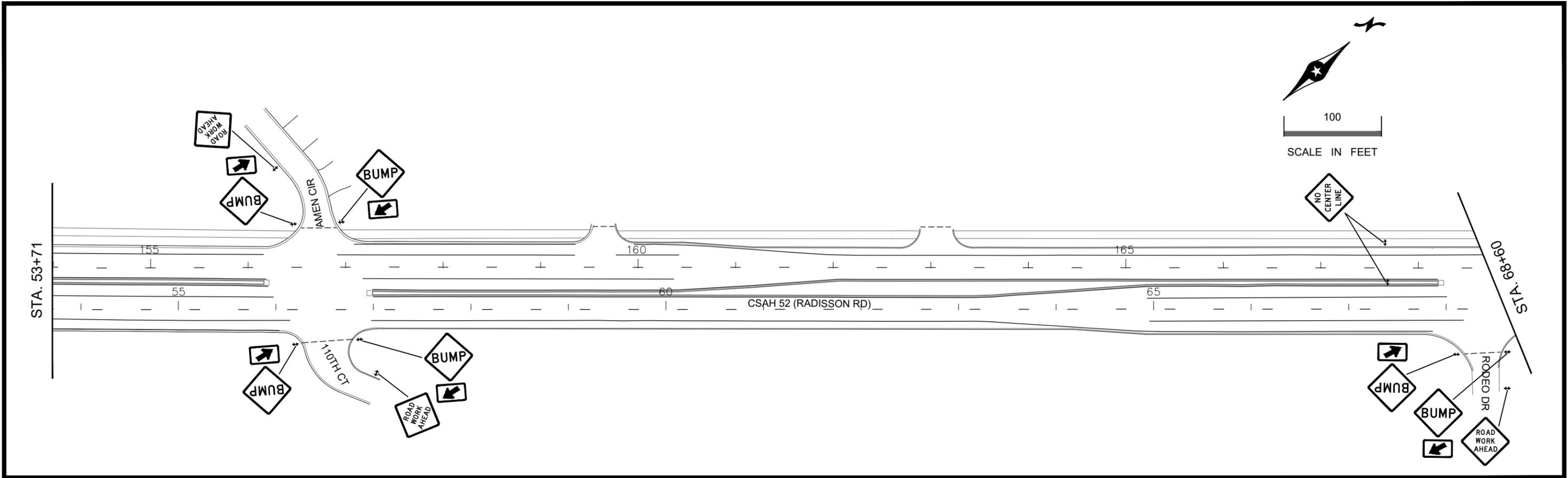
PRINT NAME: SEAN R. THIEL
 SIGNATURE: *Sean R. Thiel*
 DATE: 2/7/2025 LICENSE NO. 45129

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TEMPORARY SIGNING AND TABULATIONS
 Sheet 40 of 87 Sheets



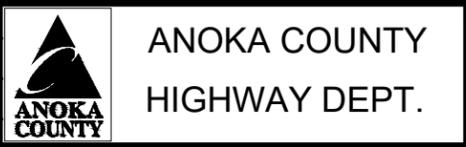
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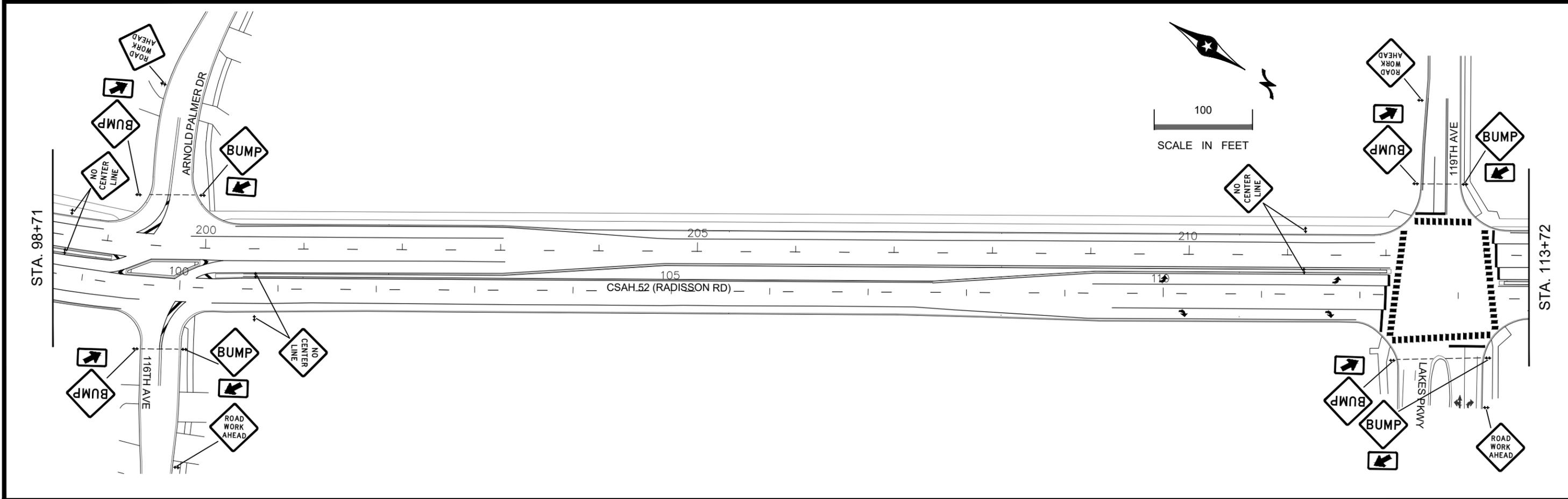
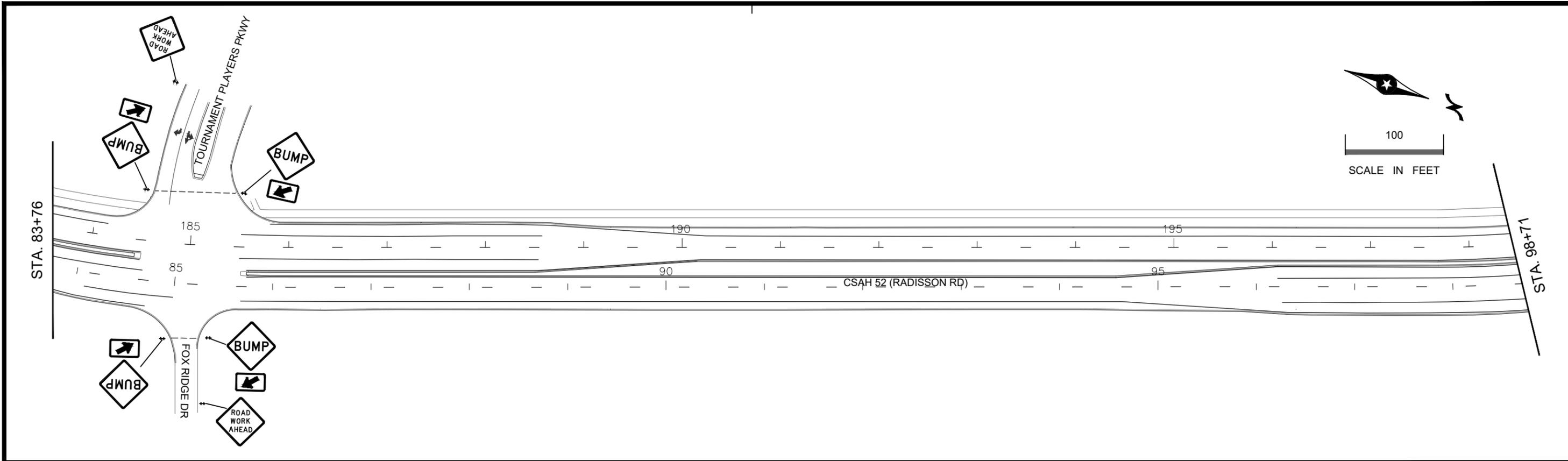
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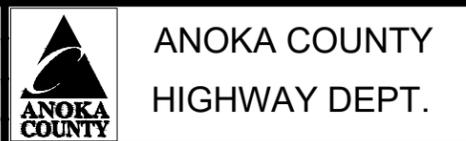
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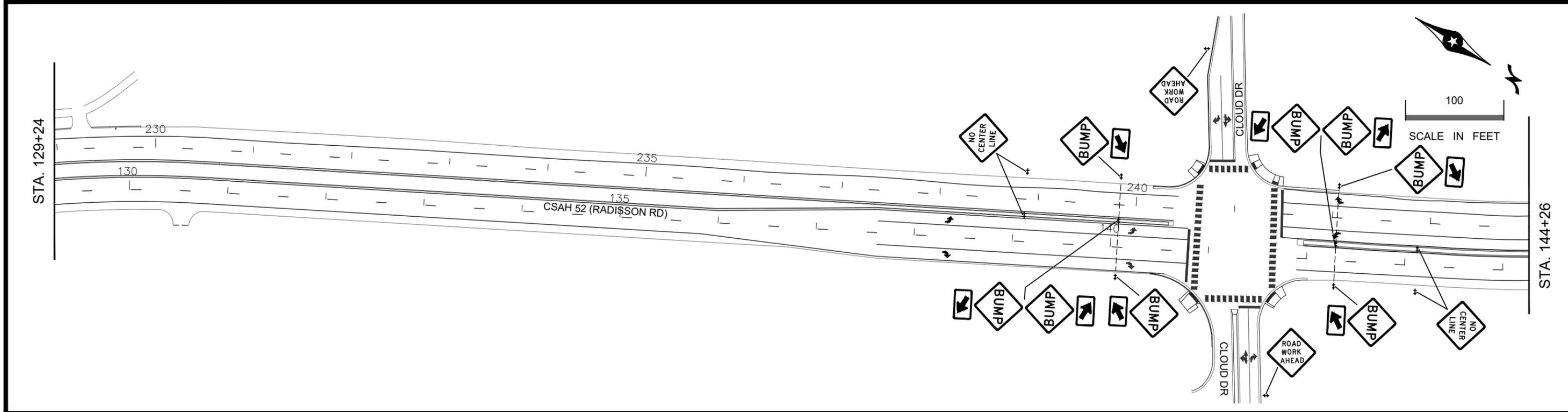
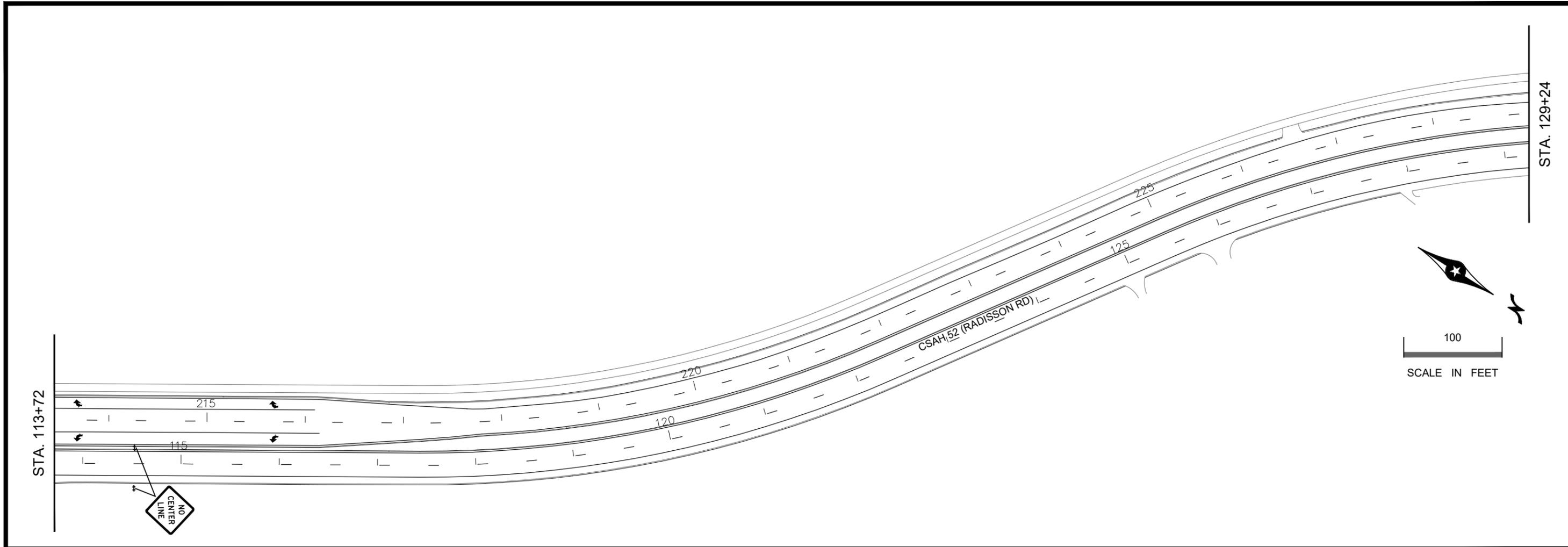
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Sheet 42 of 87 Sheets

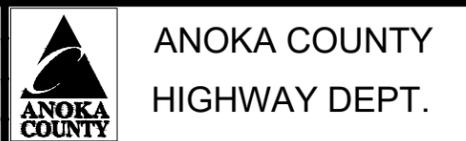


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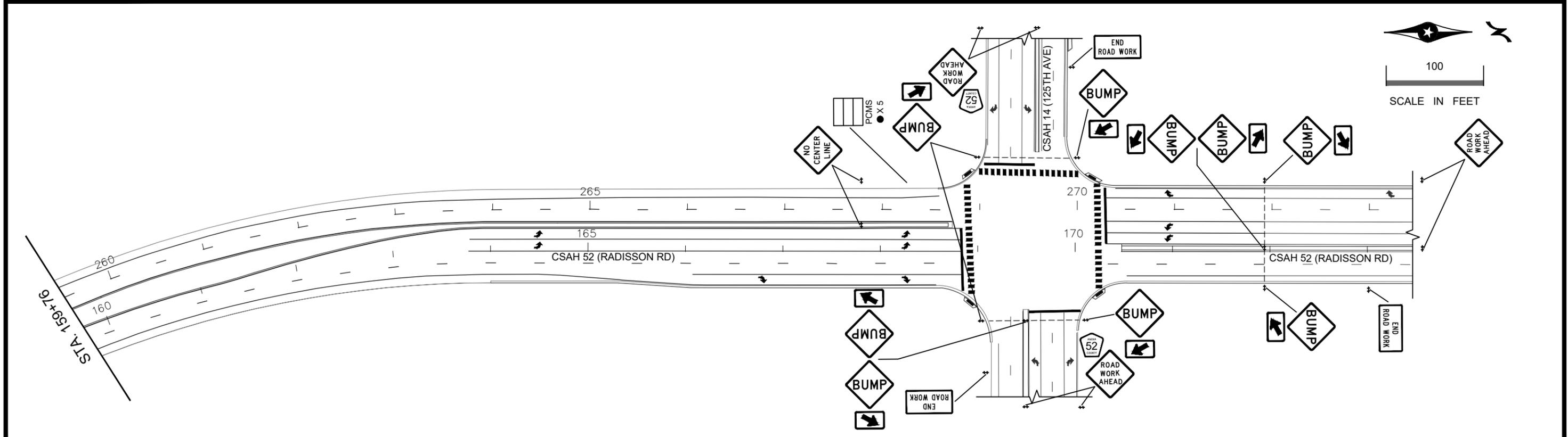
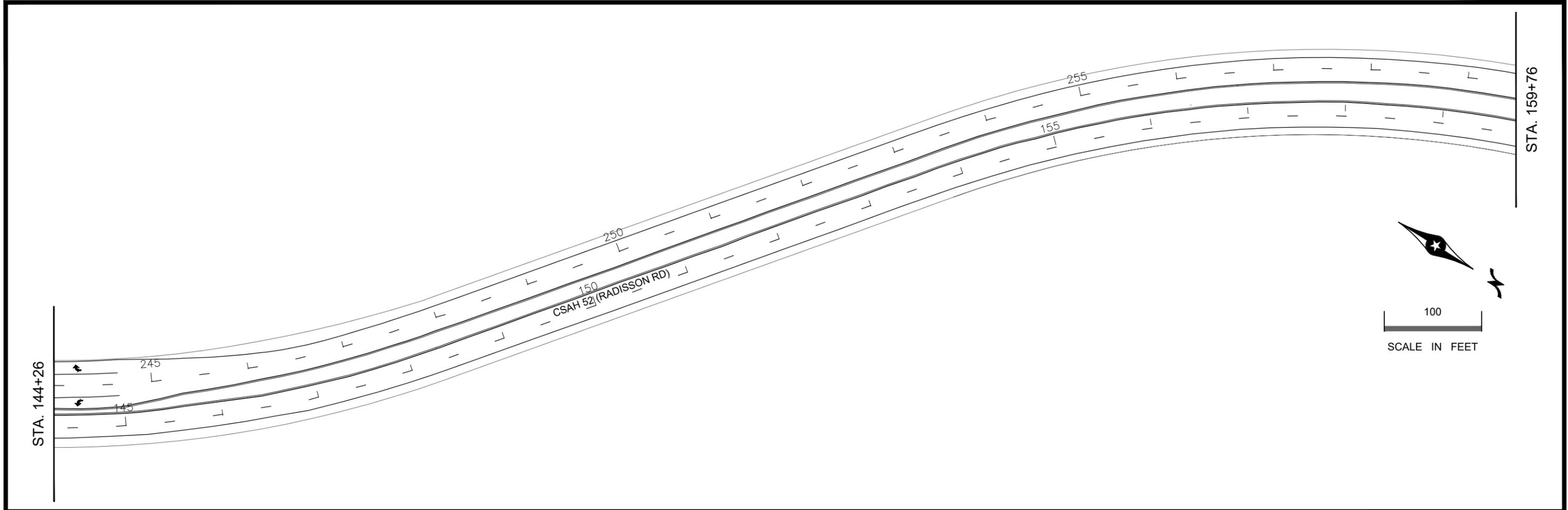
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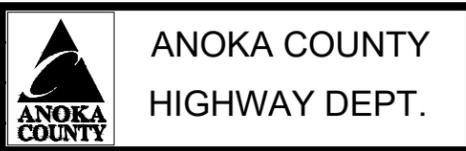
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TEMPORARY SIGNING AND TABULATIONS

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TEMPORARY TRAFFIC CONTROL SIGNS AND DEVICES

"W" SERIES				
SIGN	MUTCD CODE	COLOR	SIZE	QUANTITY
	W3-4	BLACK ON ORANGE	48" X 48"	AS NEEDED
	W8-1	BLACK ON ORANGE	48" X 48"	61
	W16-7PL	BLACK ON ORANGE	30" X 18"	50
	W16-7PR	BLACK ON ORANGE	30" X 18"	11
	W8-8	BLACK ON ORANGE	48" X 48"	AS NEEDED
	W8-9	BLACK ON ORANGE	48" X 48"	AS NEEDED
	W8-11	BLACK ON ORANGE	48" X 48"	AS NEEDED
	W8-12	BLACK ON ORANGE	36" X 36"	11
			48" X 48"	13
	W8-23	BLACK ON ORANGE	48" X 48"	AS NEEDED
	M1-6M	WHITE AND YELLOW ON BLUE	24 X 24	9
	W20-1	BLACK ON ORANGE	36" X 36"	1
			48" X 48"	31

"W" SERIES				
SIGN	MUTCD CODE	COLOR	SIZE	QUANTITY
	W20-4	BLACK ON ORANGE	48" X 48"	AS NEEDED
	W20-7	BLACK ON ORANGE	48" X 48"	AS NEEDED

"G" SERIES				
SIGN	MUTCD CODE	COLOR	SIZE	QUANTITY
	G20-2	BLACK ON ORANGE	48" X 24"	7

DEVICES		
ITEM	MUTCD CODE	QUANTITY
	DRUM	AS NEEDED (ESTIMATED 20)
(1)	TYPE C	4 (10 DAYS EACH)

PCMS - MESSAGE SEQUENCE LAYOUT

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

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

NOTES:

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

SPECIFIC NOTES:

1. PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) TO BE INSTALLED A MINIMUM OF 10 DAYS PRIOR TO ACTUAL COMMENCEMENT OF ROAD WORK. SIGNS TO BE REMOVED WHEN ROAD WORK BEGINS.

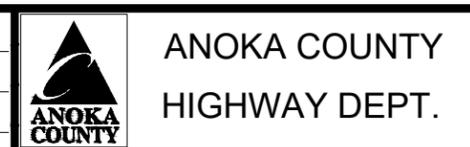
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TEMPORARY SIGNING AND TABULATIONS
 Sheet 45 of 87 Sheets

PERMANENT PAVEMENT MARKING PLAN NOTES & GUIDELINES

GENERAL INFORMATION:

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

MULTI-COMPONENT (MULTI-COMP):

1. THE ROAD SURFACE SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER JUST PRIOR TO APPLICATION. PAVEMENT CLEANING SHALL CONSIST OF AT LEAST BRUSHING WITH A ROTARY BROOM (NON-METALLIC) OR AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. NEW PORTLAND CEMENT CONCRETE SURFACES SHALL BE SANDBLAST CLEANED TO REMOVE ANY SURFACE TREATMENT AND/OR LAITANCE ON LOW SPEED (SPEED LIMIT 35 MPH OR LESS) URBAN PORTLAND CEMENT CONCRETE ROADWAYS. SANDBLAST CLEANING SHALL BE USED FOR ALL MULTI-COMP PAVEMENT MARKINGS.
2. THE MULTI-COMP MARKING APPLICATION SHALL IMMEDIATELY FOLLOW THE PAVEMENT CLEANING. GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE MULTI-COMP LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.
3. A MULTI-COMP LINE SHALL BE APPLIED WITH A MINIMUM THICKNESS OF 20 MILS (WET) AND 4" WIDE. GLASS BEADS SHALL BE APPLIED AT A MINIMUM RATE OF 25 LBS POUNDS PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.
4. PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR AND PAVEMENT SURFACE TEMPERATURES ARE 40° OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILM OR DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

PREFORMED THERMOPLASTIC:

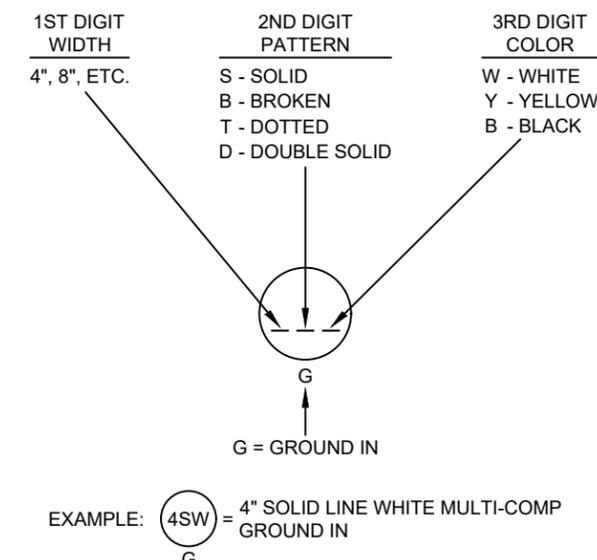
1. THE PREFORMED THERMOPLASTIC MARKINGS SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS ON CLEAN AND DRY SURFACES. SEE SPECIAL PROVISIONS FOR PREFORMED THERMOPLASTIC MARKING SPECIFICATIONS.

PAVEMENT MARKING SYMBOLS & MATERIALS LEGEND

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

STRIPING KEY

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



PERMANENT PAVEMENT MARKING TABULATION

ITEM DESCRIPTION	UNIT	TOTAL QUANTITY		CSAH 52 (RADISSON RD)		CSAH 12 (109TH AVE)		TOURNAMENT PLAYERS PKWY		ARNOLD PALMER DR		116TH AVE		119TH AVE		LAKES PKWY		CSAH 14 (125TH AVE)	
		WHITE	YELLOW	WHITE	YELLOW	WHITE	YELLOW	WHITE	YELLOW	WHITE	YELLOW	WHITE	YELLOW	WHITE	YELLOW	WHITE	YELLOW	WHITE	YELLOW
4" SOLID LINE MULTI-COMPONENT	LIN FT	1488.00	417.00			707.00	210.00	122.00						149.00		155.00		355.00	207.00
4" BROKEN LINE MULTI-COMPONENT	LIN FT	80.00				20.00								10.00				50.00	
4" DOUBLE SOLID LINE MULTI-COMPONENT	LIN FT		393.00				160.00					79.00	37.00		117.00				
4" SOLID LINE PREFORM TAPE GROUND IN	LIN FT	43507.00	30156.00	43507.00	29953.00							96.00	107.00						
4" BROKEN LINE PREFORM TAPE GROUND IN	LIN FT	6300.00		6300.00															
24" SOLID LINE PREFORM THERMO GROUND IN	LIN FT	648.00	265.00	372.00	12.00	106.00	4.00					21.90	24.32	30.00		36.00		104.00	
CROSSWALK PREFORM THERMOPLASTIC GROUND IN	SQ FT	3978.00		2370.00		612.00								180.00		306.00		510.00	
PAVEMENT MESSAGE PREFORM THERMOPLASTIC	SQ FT	540.75		540.75															

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**ANOKA COUNTY
HIGHWAY DEPT.**

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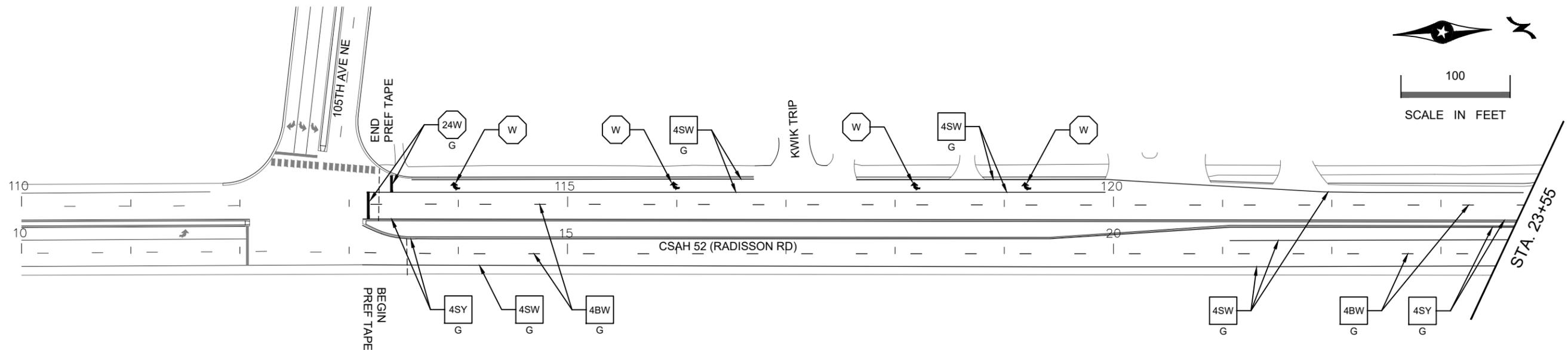
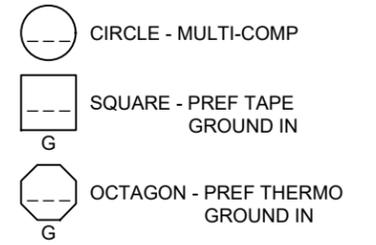
PERMANENT PAVEMENT
MARKING PLAN
NOTES & TABULATIONS

Sheet 46 of 87 Sheets

STRIPING NOTES: (TYP.)

1. LOCATIONS OF ALL PERMANENT STRIPING AND PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. ALL MAINLINE PERMANENT STRIPING AND PAVEMENT MARKINGS SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
3. APPLY ALL PAVEMENT MARKINGS AS RECOMMENDED BY THE MATERIAL MANUFACTURER.
4. PERMANENT PAVEMENT MARKINGS AND STRIPING SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.
5. MAINLINE PREFORMED TAPE LANE LINE MARKINGS SHALL MATCH INTO EXISTING MARKINGS.
6. PAVEMENT MARKINGS OUTSIDE OF WORK AREA AFFECTED BY CONSTRUCTION ACTIVITIES SHALL BE REMARKED WITH ORIGINAL MATERIAL OR AS SPECIFIED ON PLAN.

STRIPING KEY



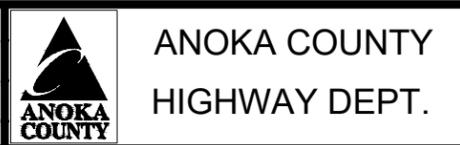
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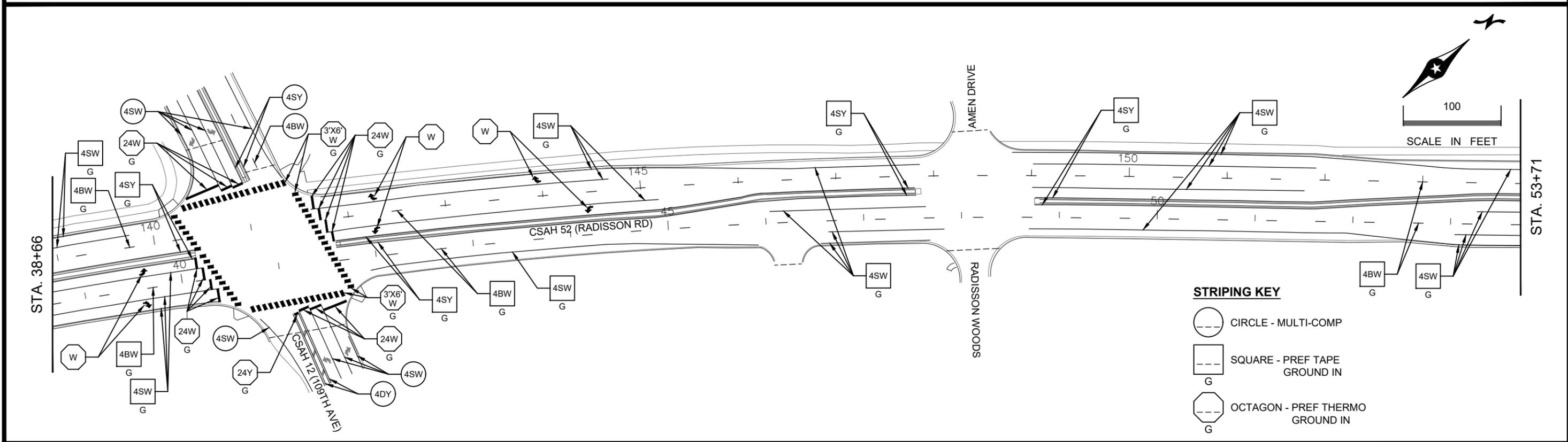
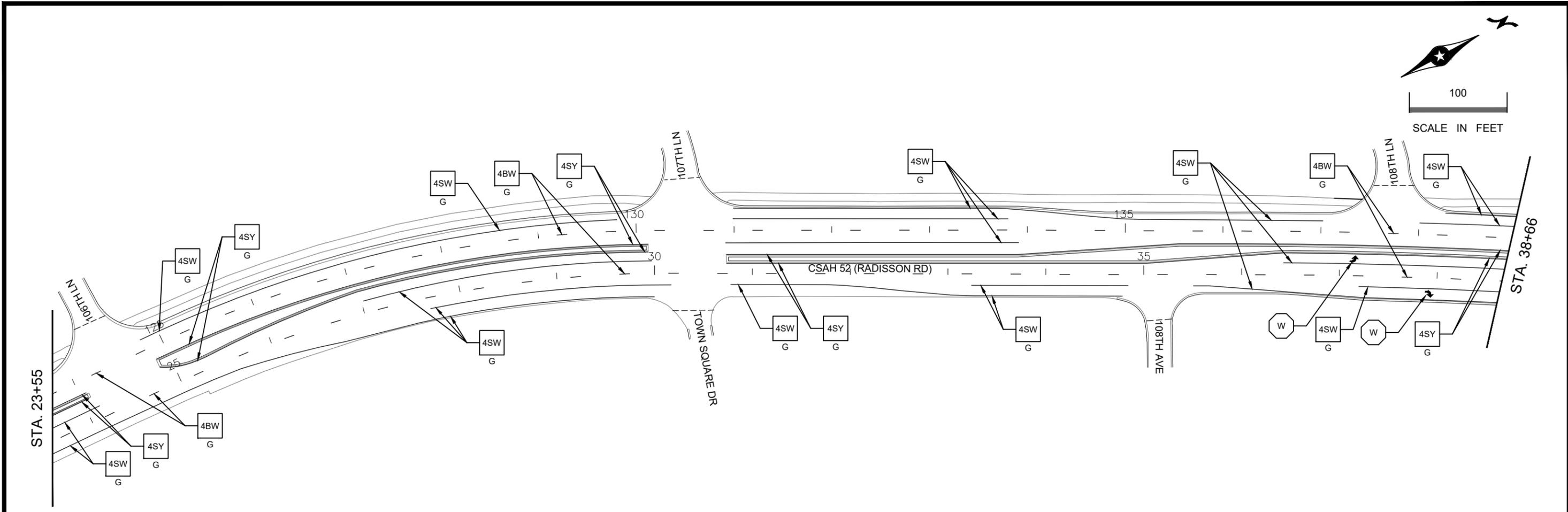
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PERMANENT PAVEMENT MARKING PLAN
 Sheet 47 of 87 Sheets



STRIPING KEY

	CIRCLE - MULTI-COMP
	SQUARE - PREF TAPE GROUND IN
	OCTAGON - PREF THERMO GROUND IN

NO	DATE	BY	CKD	APPR	REVISION

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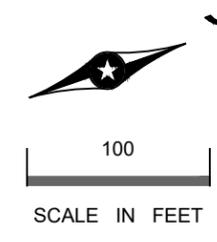
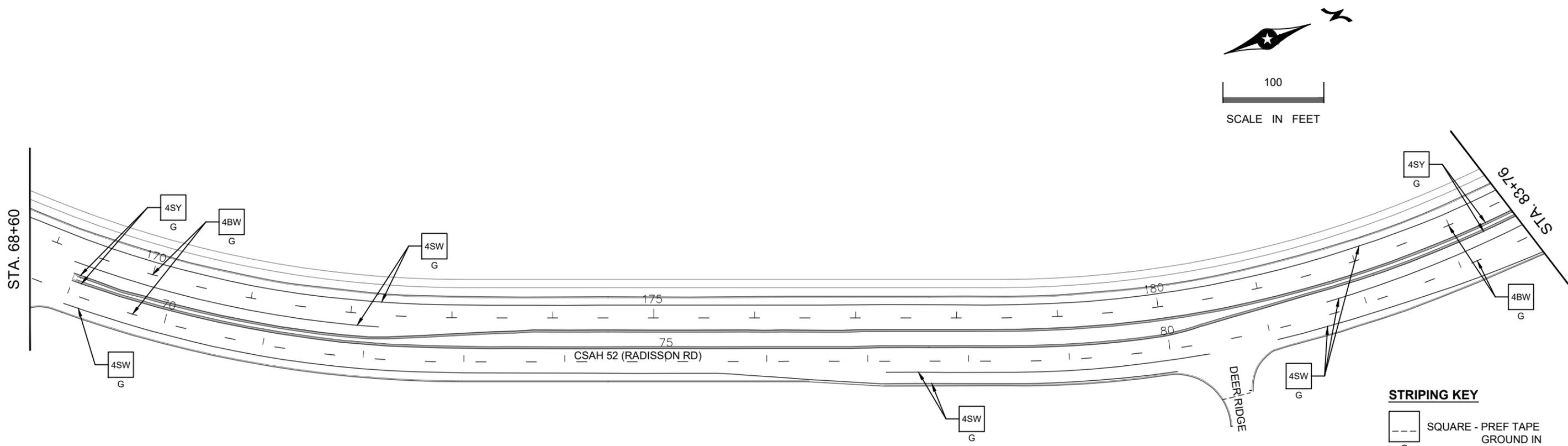
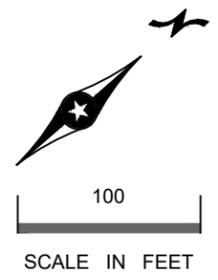
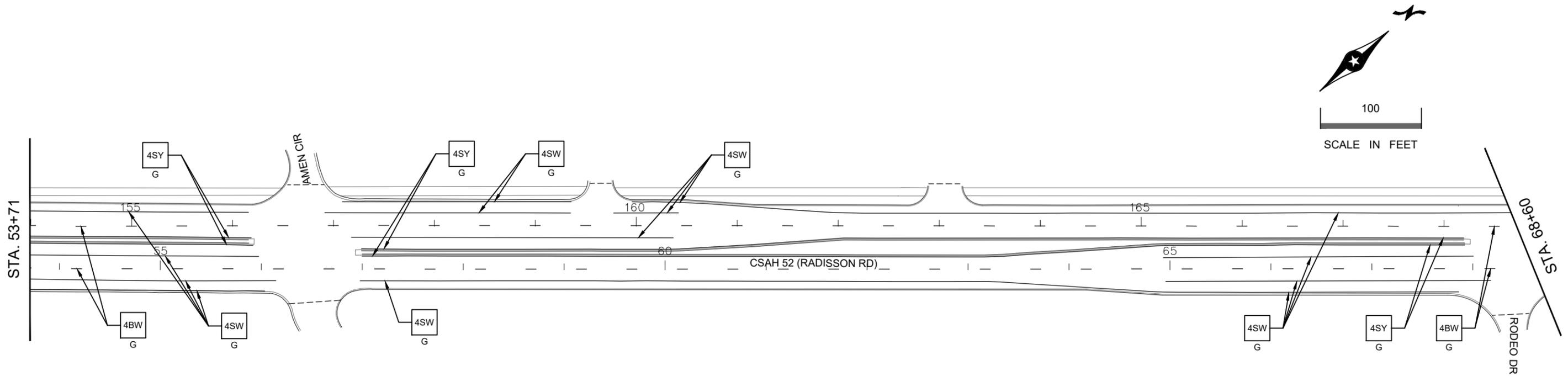
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ANOKA COUNTY
HIGHWAY DEPT.

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PERMANENT PAVEMENT MARKING PLAN
 Sheet 48 of 87 Sheets



STRIPING KEY
 [Square with 'G' inside] SQUARE - PREF TAPE GROUND IN

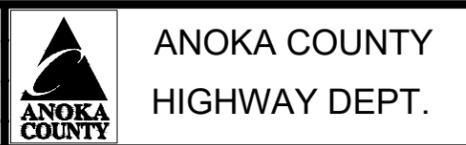
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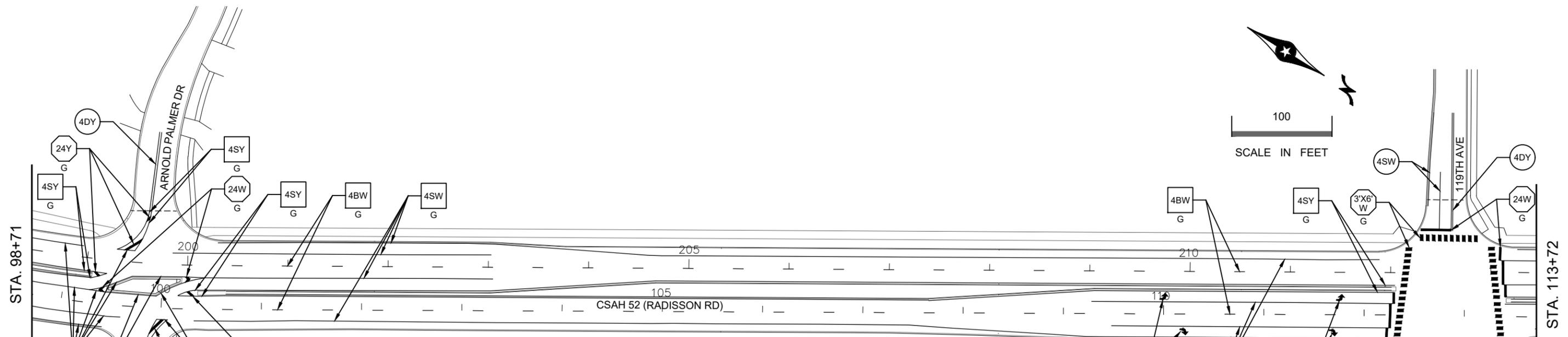
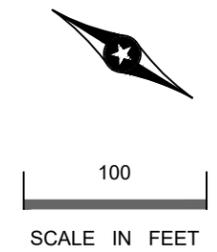
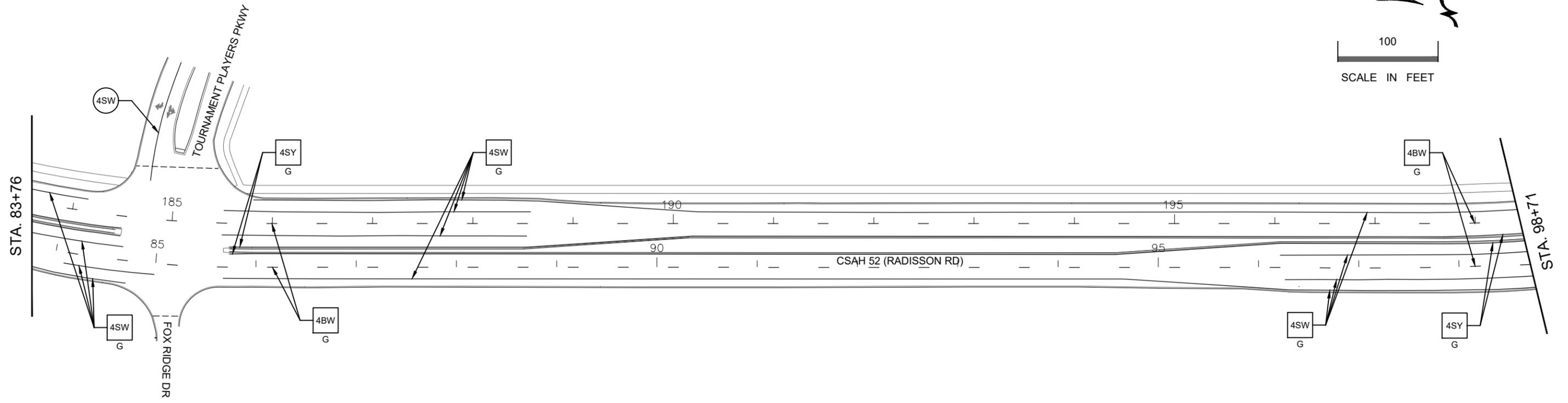
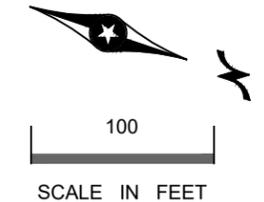
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PERMANENT PAVEMENT MARKING PLAN
 Sheet 49 of 87 Sheets



STRIPING KEY

-  CIRCLE - MULTI-COMP
-  SQUARE - PREF TAPE GROUND IN
-  OCTAGON - PREF THERMO GROUND IN

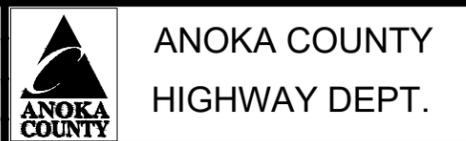
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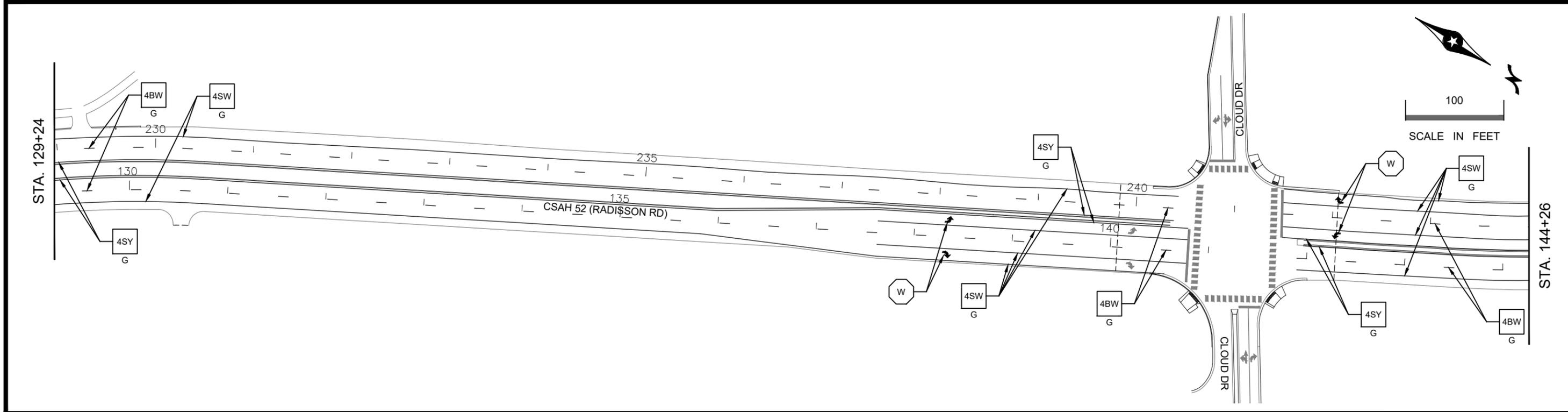
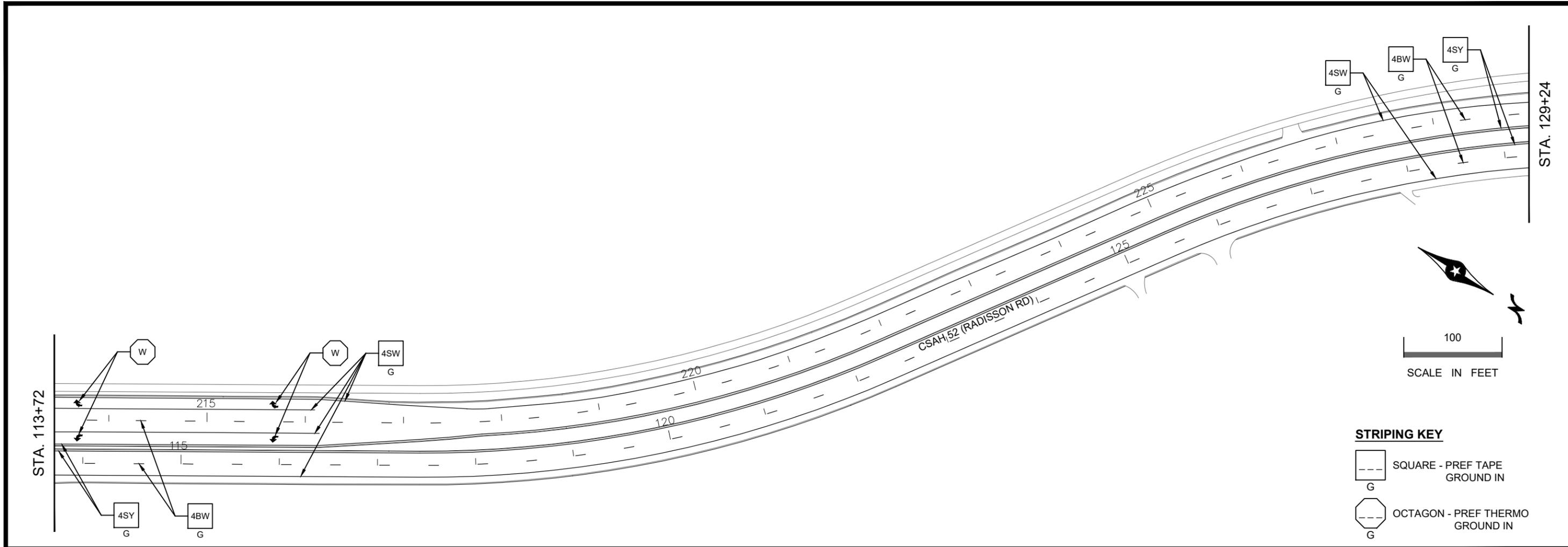
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Sheet 50 of 87 Sheets

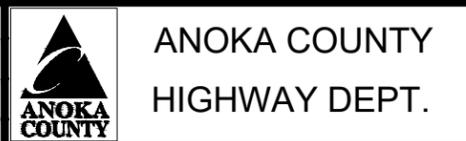


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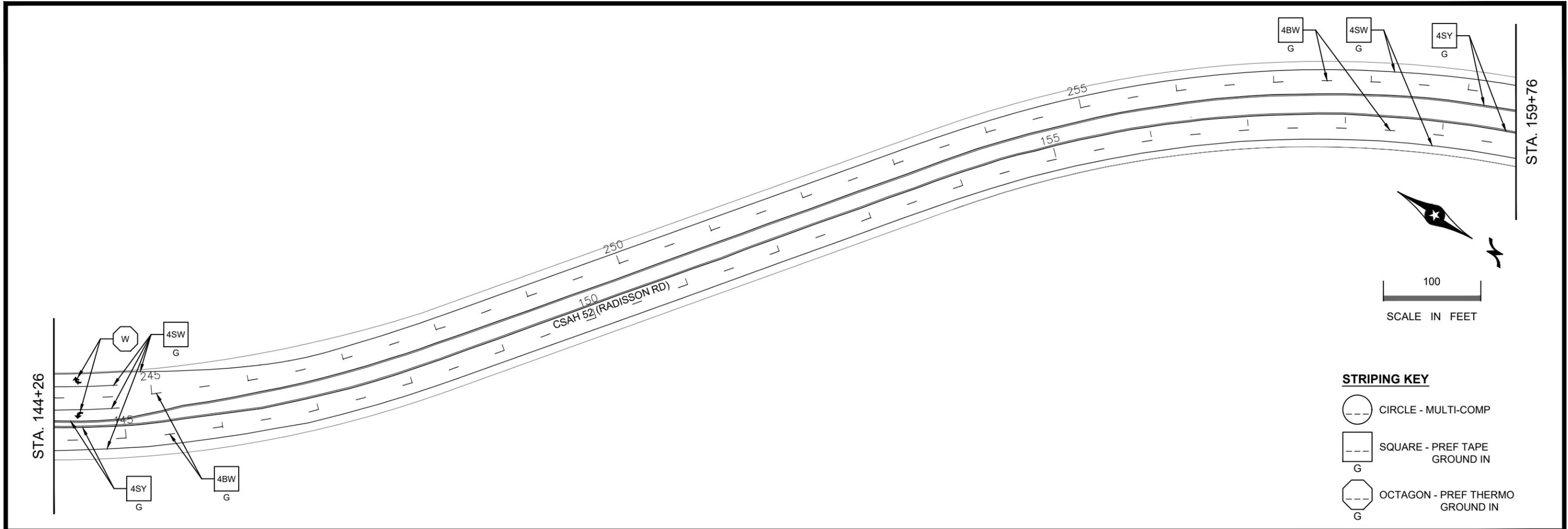
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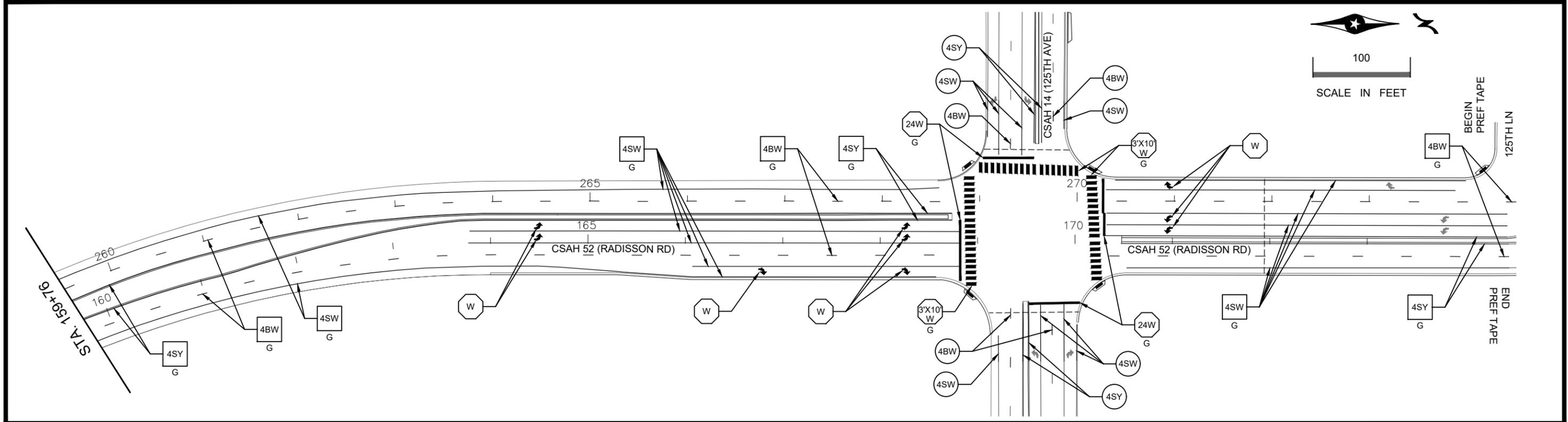
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PERMANENT PAVEMENT MARKING PLAN

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- STRIPING KEY**
- CIRCLE - MULTI-COMP
 - SQUARE - PREF TAPE GROUND IN
 - OCTAGON - PREF THERMO GROUND IN



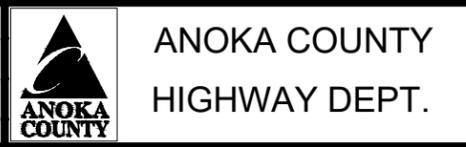
NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\24-01-00\CSAH 52 (MAIN ST-105TH)\Base\Traffic\Permanent Pavement Marking Plan.dwg

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

PRINT NAME: SEAN R. THIEL
 SIGNATURE: *Sean R. Thiel*
 DATE: 2/7/2025 LICENSE NO. 45129

DRAWN BY: FL DATE: 01/07/25
 DESIGN BY: DATE:
 CHECKED BY: SRT DATE:
 DATE: 2/7/2025



SAP 002-652-014

PERMANENT PAVEMENT MARKING PLAN

Sheet 52 of 87 Sheets

TRAFFIC CONTROL NOTES: (TYP.)

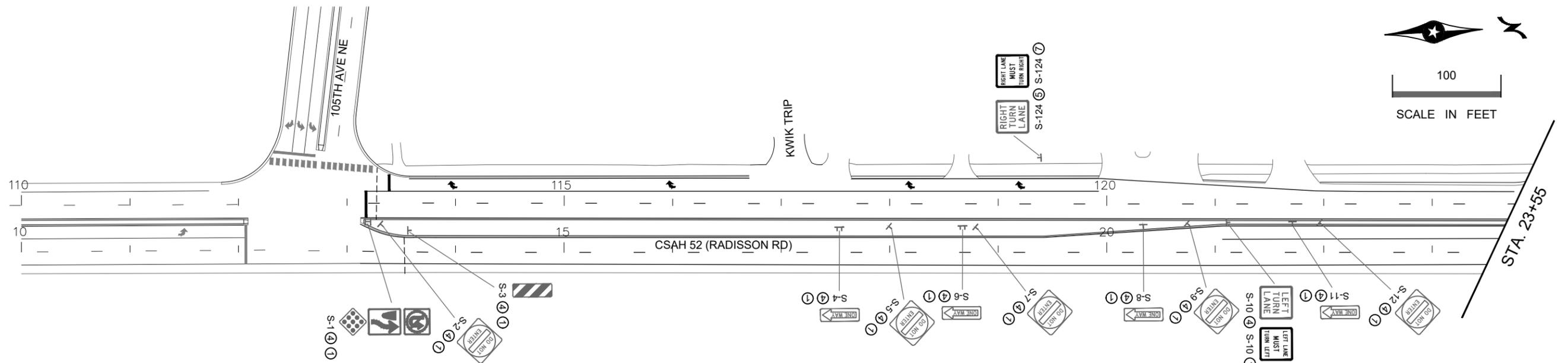
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE WITH THE MOST RECENT EDITION OF THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART 6, "FIELD MANUAL", DATED SEPTEMBER 2020.
- ALL SIGNS SHALL BE FURNISHED AND INSTALLED UNLESS OTHERWISE NOTED.
- ALL CENTER MEDIAN SIGNS NOTED BETWEEN STA. 13+00 AND STA. 171+00, SHALL BE REMOVED, FABRICATED AND INSTALLED UTILIZING THE SQUARE TUBE SHEAR BOLT BASE IN ACCORDANCE TO MnDOT SPEC. 3402 AND THE ANOKA COUNTY SIGNING DETAILS.
- INPLACE SIGNS NOT AFFECTED BY CONSTRUCTION HAVE BEEN OMITTED FROM PLAN SHEETS TO REDUCE CLUTTER.

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

SYMBOL	DESCRIPTION
+	TRAFFIC CONTROL SIGN (SINGLE POST)
±	TRAFFIC CONTROL SIGN (SINGLE POST, BACK TO BACK)
++	TRAFFIC CONTROL SIGN (DOUBLE POST)

SIGNING NOTES

- ① F. & I.
- ③ SALVAGE
- ④ REMOVE
- ⑤ REMOVE SIGN PANEL
- ⑥ INSTALL
- ⑦ F. & I. SIGN PANEL
- ⑧ RETAIN INPLACE
- ⑨ INSTALL SALVAGED SIGN



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\24-01-00\CSAH 52 (MAIN ST-105TH)\Base\Traffic\Permanent Signing and Tabulations.dwg

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

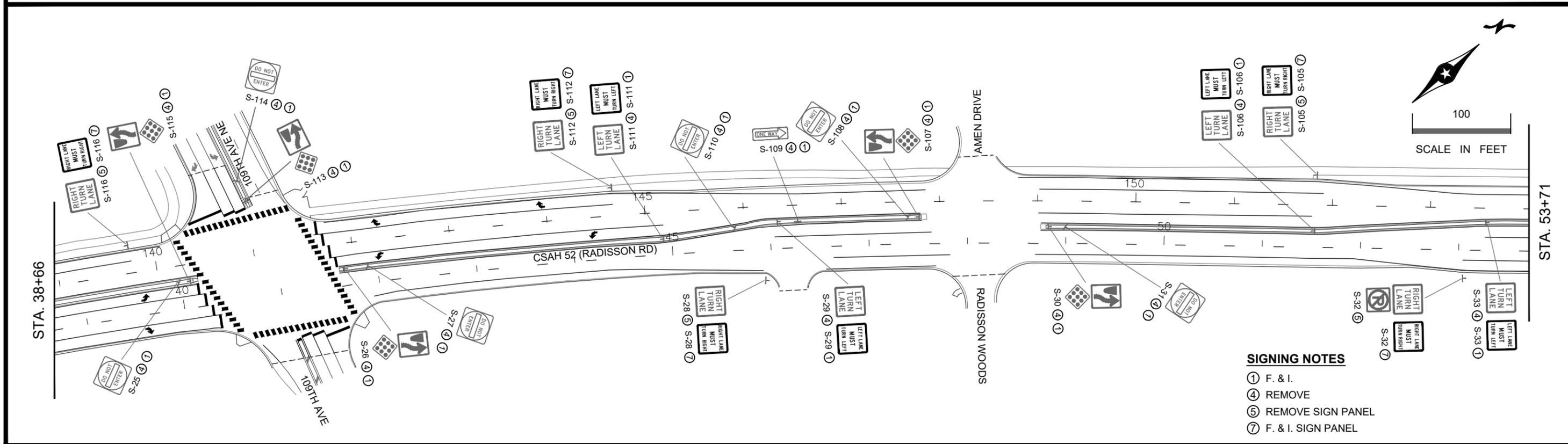
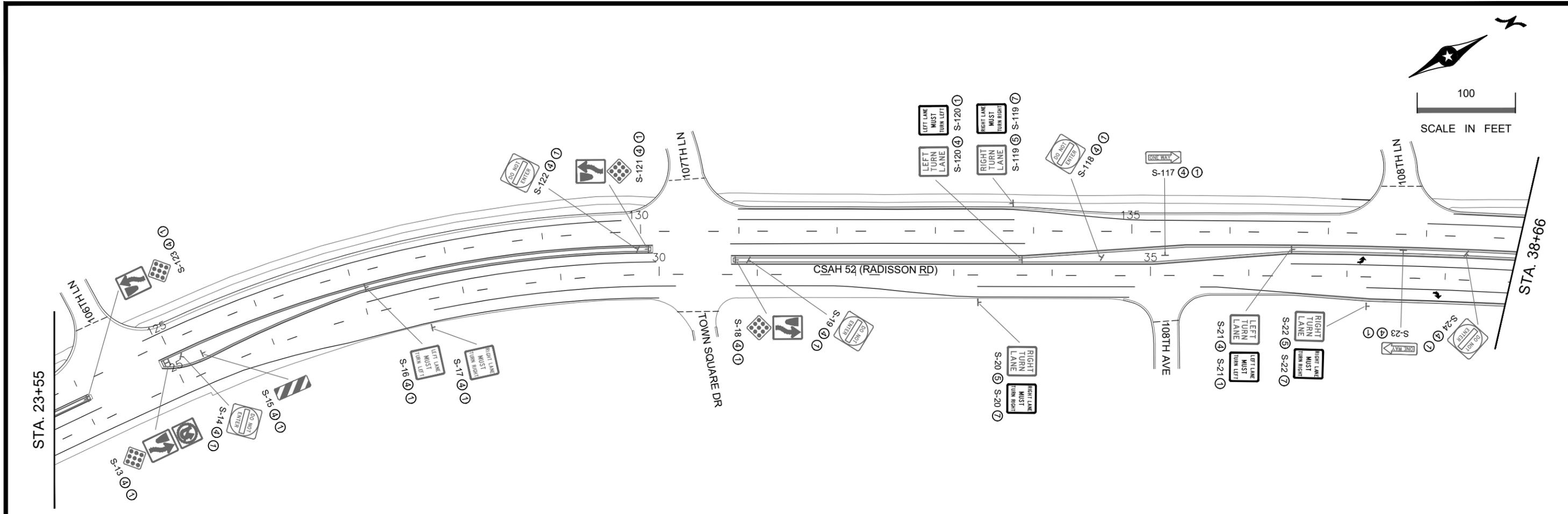
PRINT NAME: SEAN R. THIEL
 SIGNATURE: *Sean R. Thiel*
 DATE: 2/7/2025 LICENSE NO. 45129

DRAWN BY: FL DATE: 01/06/25
 DESIGN BY: DATE:
 CHECKED BY: SRT DATE:
 ANOKA COUNTY

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-652-014

PERMANENT SIGNING AND TABULATIONS
 Sheet 53 of 87 Sheets



- SIGNING NOTES**
- ① F. & I.
 - ④ REMOVE
 - ⑤ REMOVE SIGN PANEL
 - ⑦ F. & I. SIGN PANEL

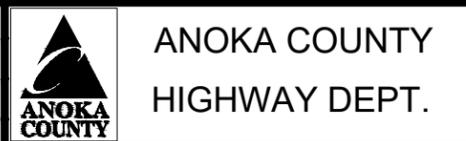
NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\24-01-00\CSAH 52 (MAIN ST-105TH)\Base\Traffic\Permanent Signing and Tabulations.dwg

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

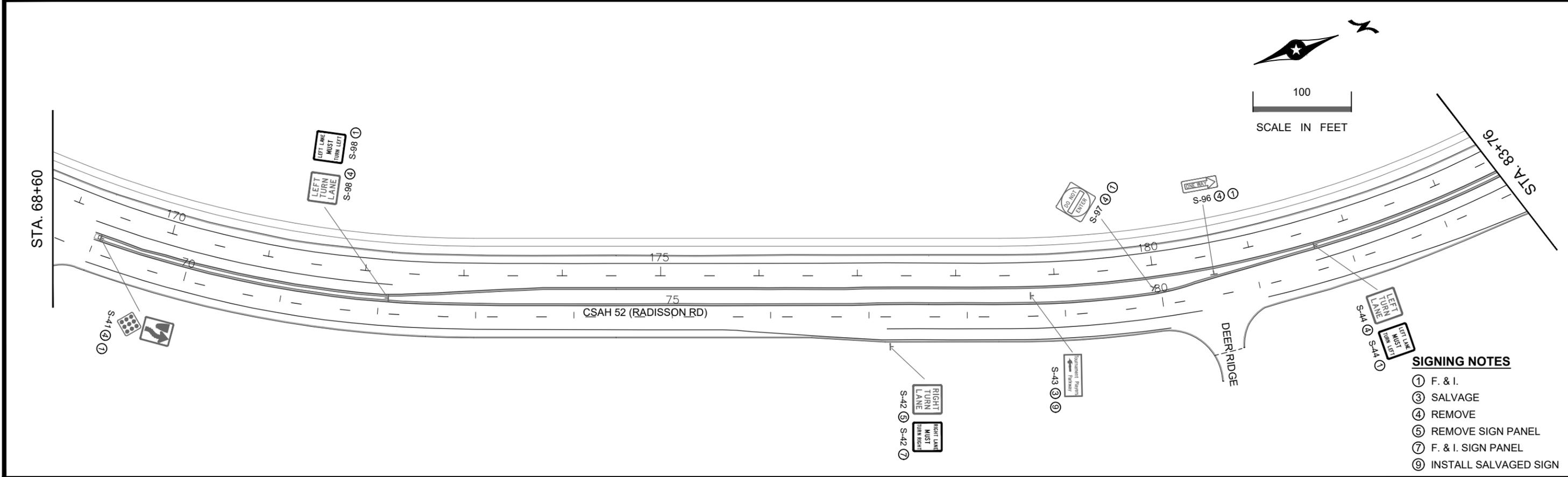
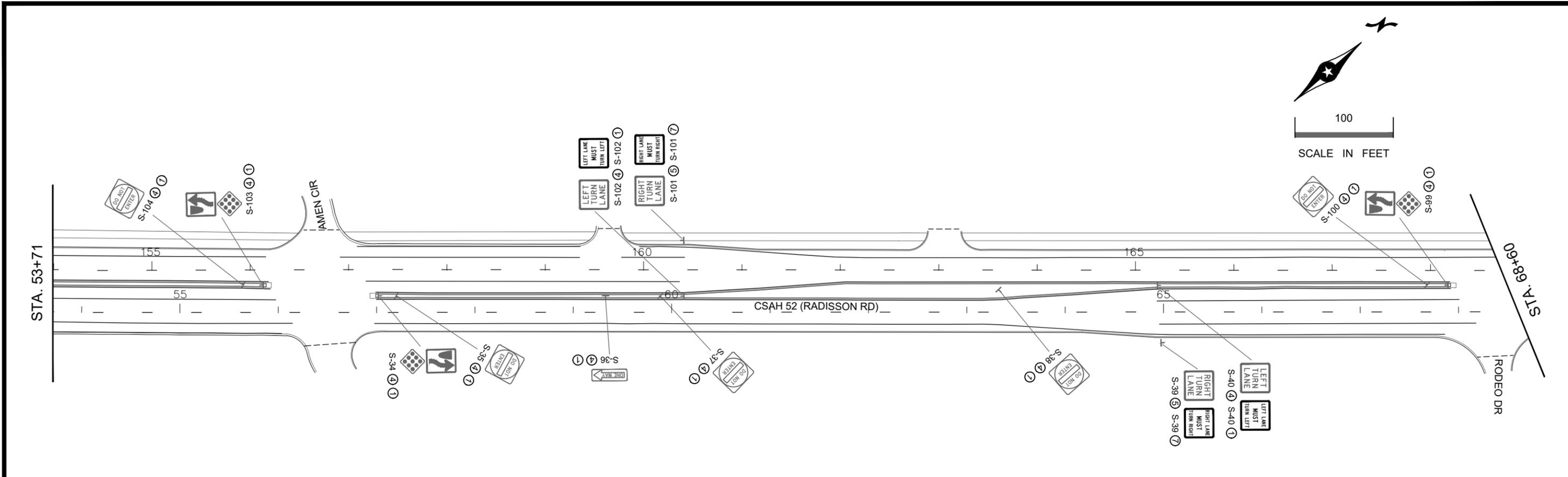
PRINT NAME: SEAN R. THIEL
 SIGNATURE: *Sean R. Thiel*
 DATE: 2/7/2025 LICENSE NO. 45129

DRAWN BY: FL DATE: 01/06/25
 DESIGN BY: DATE: _____
 CHECKED BY: SRT DATE: _____



SAP 002-652-014

PERMANENT SIGNING AND TABULATIONS
 Sheet 54 of 87 Sheets



- SIGNING NOTES**
- ① F. & I.
 - ③ SALVAGE
 - ④ REMOVE
 - ⑤ REMOVE SIGN PANEL
 - ⑦ F. & I. SIGN PANEL
 - ⑨ INSTALL SALVAGED SIGN

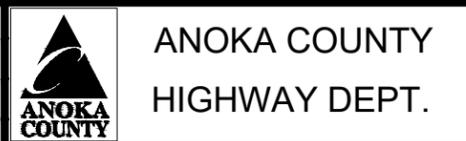
NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\24-01-00\CSAH 52 (MAIN ST-105TH)\Base\Traffic\Permanent Signing and Tabulations.dwg

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

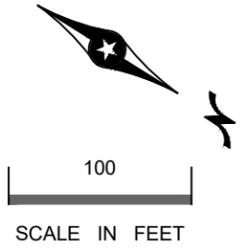
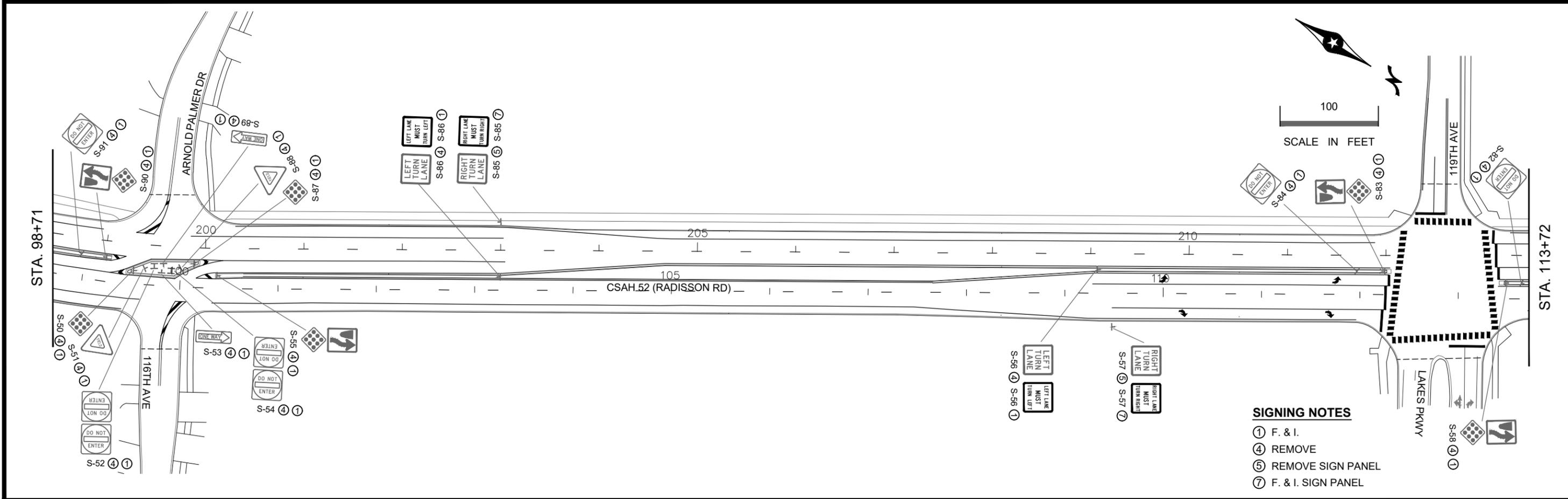
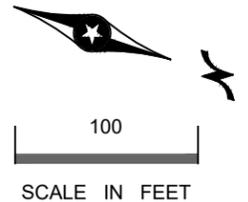
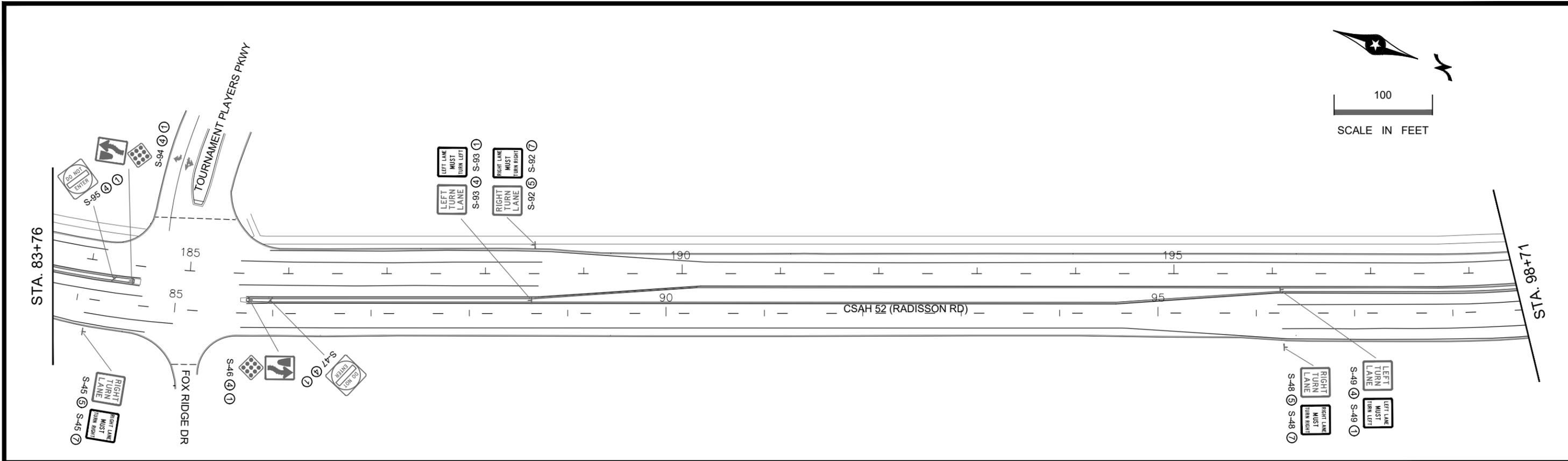
PRINT NAME: SEAN R. THIEL
 SIGNATURE: *Sean R. Thiel*
 DATE: 2/7/2025 LICENSE NO. 45129

DRAWN BY FL DATE 01/06/25
 DESIGN BY DATE
 CHECKED BY SRT DATE



SAP 002-652-014

PERMANENT SIGNING AND TABULATIONS
 Sheet 55 of 87 Sheets



- SIGNING NOTES**
- ① F. & I.
 - ④ REMOVE
 - ⑤ REMOVE SIGN PANEL
 - ⑦ F. & I. SIGN PANEL

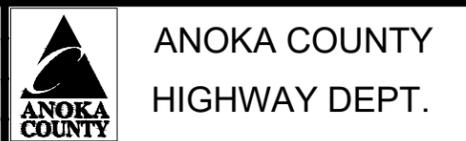
NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\24-01-00\CSAH 52 (MAIN ST-105TH)\Base\Traffic\Permanent Signing and Tabulations.dwg

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

PRINT NAME: SEAN R. THIEL
 SIGNATURE: *Sean R. Thiel*
 DATE: 2/7/2025 LICENSE NO. 45129

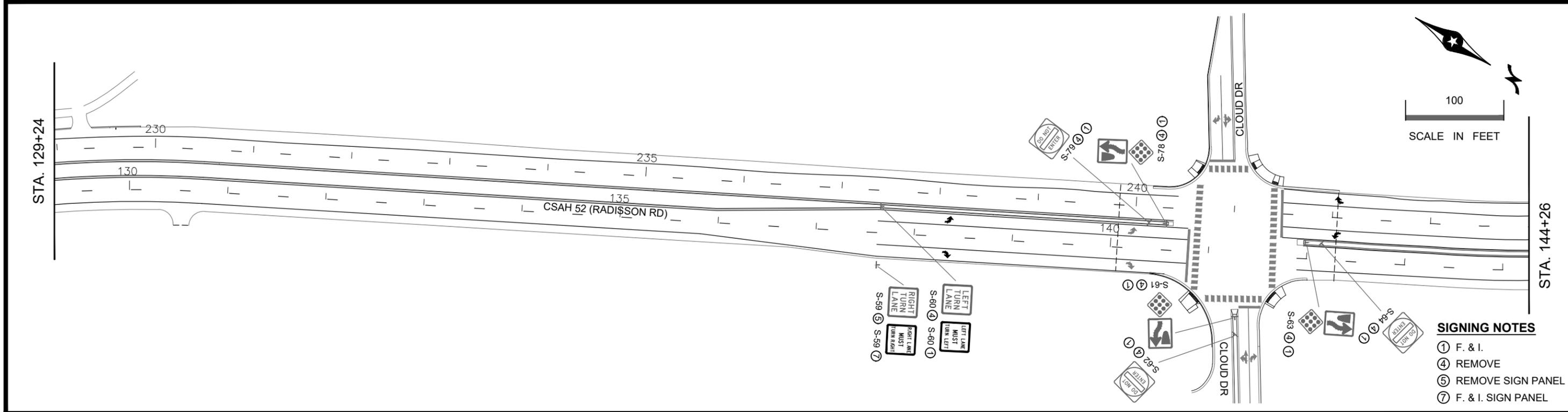
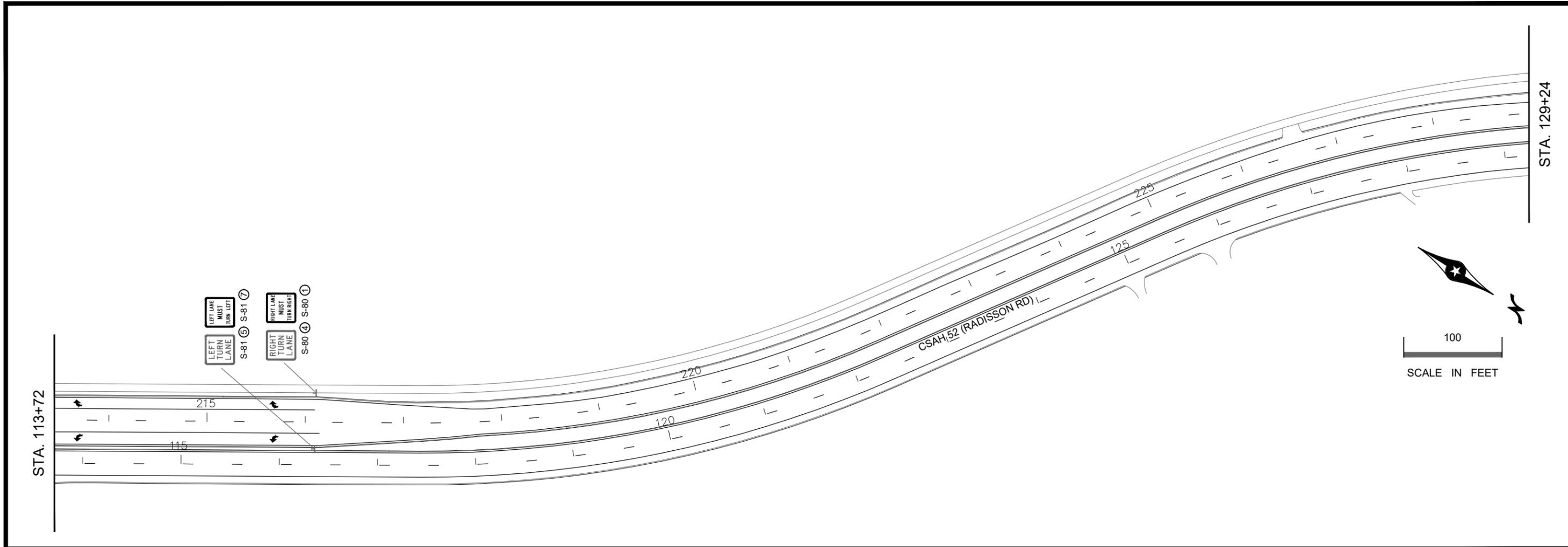
DRAWN BY: FL DATE: 01/06/25
 DESIGN BY: DATE: _____
 CHECKED BY: SRT DATE: _____



SAP 002-652-014

PERMANENT SIGNING AND TABULATIONS

Sheet 56 of 87 Sheets



- SIGNING NOTES**
- ① F. & I.
 - ④ REMOVE
 - ⑤ REMOVE SIGN PANEL
 - ⑦ F. & I. SIGN PANEL

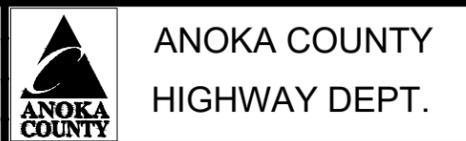
NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\24-01-00\CSAH 52 (MAIN ST-105TH)\Base\Traffic\Permanent Signing and Tabulations.dwg

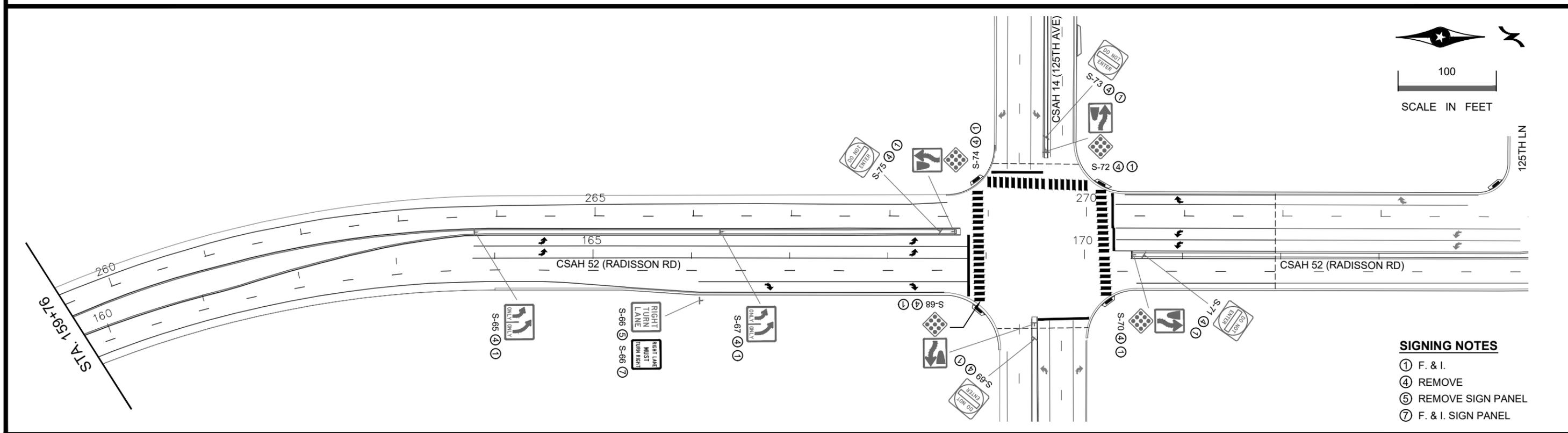
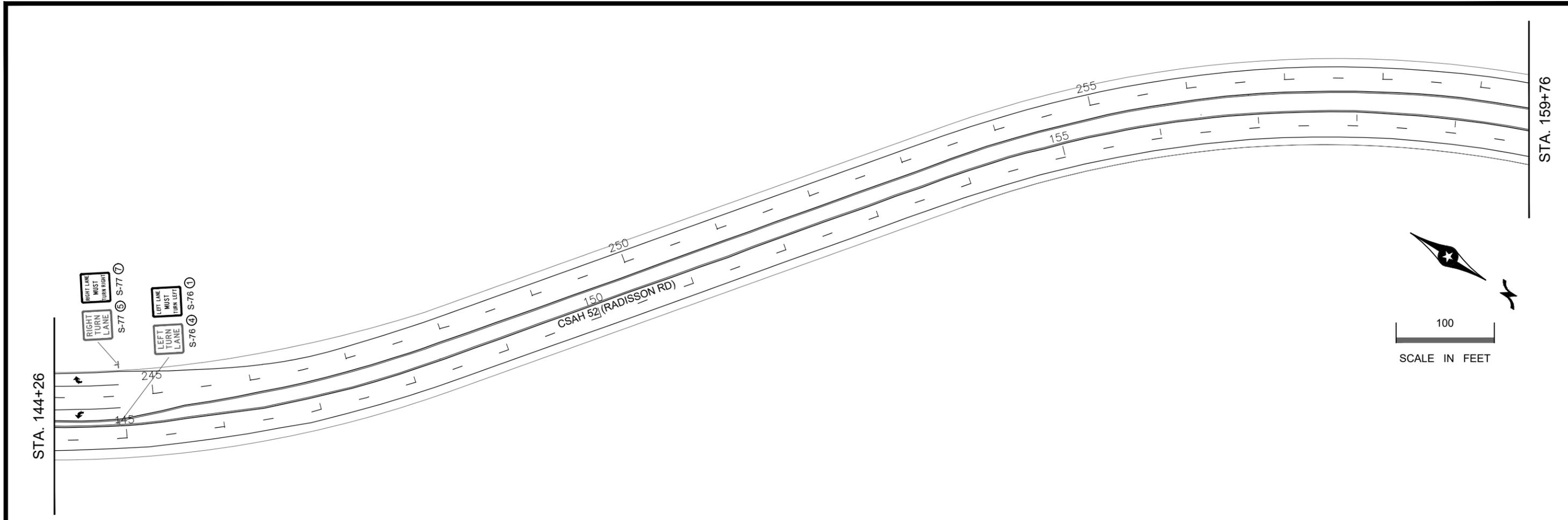
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: SEAN R. THIEL
 SIGNATURE: *Sean R. Thiel*
 DATE: 2/7/2025 LICENSE NO. 45129

DRAWN BY: FL DATE: 01/06/25
 DESIGN BY: DATE:
 CHECKED BY: SRT DATE:



SAP 002-652-014



- SIGNING NOTES**
- ① F. & I.
 - ④ REMOVE
 - ⑤ REMOVE SIGN PANEL
 - ⑦ F. & I. SIGN PANEL

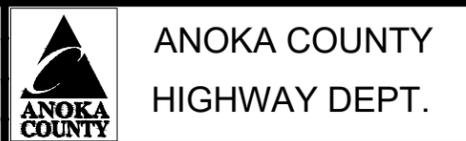
NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\24-01-00\CSAH 52 (MAIN ST-105TH)\Base\Traffic\Permanent Signing and Tabulations.dwg

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PRINT NAME: SEAN R. THIEL
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DRAWN BY: FL DATE: 01/06/25
 DESIGN BY: DATE:
 CHECKED BY: SRT DATE:



SAP 002-652-014

PERMANENT SIGNING AND TABULATIONS
 Sheet 58 of 87 Sheets

SIGN AND DELINEATOR / MARKER															ST-A							
SIGN NUMBER	PANEL				SUPPORT		REMOVE SIGN TYPE C	REMOVE SIGN TYPE C PANEL	SIGN	SALVAGE SIGN TYPE D	INSTALL SIGN TYPE C	INSTALL SIGN TYPE C PANEL	INSTALL SALVAGE SIGN TYPE D	DELINEATOR / MARKER	EACH							
	PANEL CODE	LEGEND	SIZE (W x H)	MOUNTING HEIGHT	TYPE (1)	NUMBER OF POSTS	EACH	EACH	SQ FEET	EACH	EACH	EACH	EACH									
			INCHES	FEET																		
(2) S-1	R3-4	NO U-TURN	24 x 24		S-CONC	1			4.00													
	R4-7	KEEP RIGHT	24 x 30	7				1		5.00		1										
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4											1							
S-2	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1											
S-3	OM3-L	TYPE 3 OBJECT MARKER	12 x 36	4	S-CONC	1			3.00					1								
S-4	R6-1R	ONE WAY RIGHT	36 x 12		U-SOIL	2	1		6.75		1											
			54 x 18	7																		
S-5	R5-1	DO NOT ENTER	30 x 30	7	U-SOIL	1	1		6.25		1											
S-6	R6-1R	ONE WAY RIGHT	36 x 12		U-SOIL	2	1		6.75		1											
			54 x 18	7																		
S-7	R5-1	DO NOT ENTER	30 x 30	7	U-SOIL	1	1		6.25		1											
S-8	R6-1R	ONE WAY RIGHT	36 x 12		S-CONC	1	1		6.75		1											
			54 x 18	7																		
S-9	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1											
S-10	R3-X1L	LEFT TURN LANE	30 x 30		S-CONC	1	1		6.25		1											
	R3-7L	LEFT LANE MUST TURN LEFT	30 x 30	7																		
S-11	R6-1R	ONE WAY RIGHT	36 x 12		S-CONC	1	1		6.75		1											
			54 x 18	7																		
S-12	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1											
(2) S-13	R3-4	NO U-TURN	24 x 24		S-CONC	1	1		4.00		1											
	R4-7	KEEP RIGHT	24 x 30	7												1		5.00				
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4																		
S-14	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1											
S-15	OM3-L	TYPE 3 OBJECT MARKER	12 x 36	4	S-CONC	1			3.00					1								
S-16	R3-7L	LEFT LANE MUST TURN LEFT	30 x 30	7	S-CONC	1	1		6.25		1											
S-17	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7	U-SOIL	1	1		6.25		1											
S-18	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00		1											
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4																		
S-19	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1											
S-20	R3-X1R	RIGHT TURN LANE	30 x 30		U-SOIL	1	1		6.25		1											
	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7																		
S-21	R3-X1L	LEFT TURN LANE	30 x 30		S-CONC	1	1		6.25		1											
	R3-7L	LEFT LANE MUST TURN LEFT	30 x 30	7																		
S-22	R3-X1R	RIGHT TURN LANE	30 x 30		S-CONC	1	1		6.25		1											
	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7																		
S-23	R6-1R	ONE WAY RIGHT	36 x 12		S-CONC	1	1		6.75		1											
			54 x 18	7																		
S-24	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1											
S-25	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1											
S-26	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00		1											
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4																		
S-27	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1											
S-28	R3-X1R	RIGHT TURN LANE	30 x 30		S-CONC	1	1		6.25		1											
	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7																		
S-29	R3-X1L	LEFT TURN LANE	30 x 30		S-CONC	1	1		6.25		1											
	R3-7L	LEFT LANE MUST TURN LEFT	30 x 30	7																		
S-30	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00		1											
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4																		
S-31	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1											
S-32	R3-X1R	RIGHT TURN LANE	30 x 30		U-SOIL	1	1		6.25		1											
	R8-3	NO PARKING	24 x 24																			
	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7																		
S-33	R3-X1L	LEFT TURN LANE	30 x 30		S-CONC	1	1		6.25		1											
	R3-7L	LEFT LANE MUST TURN LEFT	30 x 30	7																		
S-34	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00		1											
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4																		
S-35	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1											
S-36	R6-1R	ONE WAY RIGHT	48 x 18		S-CONC	2	1		6.75		1											
			54 x 18	7																		
S-37	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1											
S-38	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1											

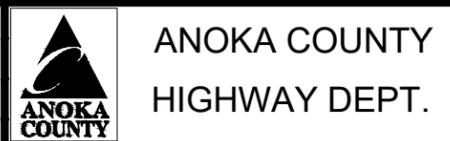
SPECIFIC NOTES:
(1) S-CONC: 2" POST
U-CHANNEL: 3 LBS PER FOOT BLACK POST
(2) BACK TO BACK

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\24-01-00\CSAH 52 (MAIN ST-105TH)\Base\Traffic\Permanent Signing and Tabulations.dwg

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: SEAN R. THIEL
SIGNATURE: *Sean R. Thiel*
DATE: 2/11/2025 LICENSE NO. 45129

DRAWN BY: FL DATE: 01/06/25
DESIGN BY: DATE: _____
CHECKED BY: SRT DATE: _____



SAP 002-652-014

Sean R. Thiel

SIGN AND DELINEATOR / MARKER														ST-A
SIGN NUMBER	PANEL				SUPPORT		REMOVE SIGN TYPE C	REMOVE SIGN TYPE C PANEL	SIGN	SALVAGE SIGN TYPE D	INSTALL SIGN TYPE C	INSTALL SIGN TYPE C PANEL	INSTALL SALVAGE SIGN TYPE D	DELINEATOR / MARKER EACH
	PANEL CODE	LEGEND	SIZE (W x H)	MOUNTING HEIGHT	TYPE (1)	NUMBER OF POSTS	EACH	EACH	SQ FEET	EACH	EACH	EACH		
			INCHES	FEET										
S-39	R3-X1R	RIGHT TURN LANE	30 x 30			1		1						
	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7	S-CONC				6.25			1		
S-40	R3-X1L	LEFT TURN LANE	30 x 30			1	1							
	R3-7L	LEFT LANE MUST TURN LEFT	30 x 30	7	S-CONC				6.25		1			
S-41	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00		1			
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4										1
S-42	R3-X1R	RIGHT TURN LANE	30 x 30		U-SOIL			1						
	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7					6.25			1		
S-43	DESIGN	TOURNAMENT PLAYERS PARKWAY	48 x 18	7	S-CONC	1				1			1	
S-44	R3-X1L	LEFT TURN LANE	30 x 30			1	1							
	R3-7L	LEFT LANE MUST TURN LEFT	30 x 30	7	S-CONC				6.25		1			
S-45	R3-X1R	RIGHT TURN LANE	30 x 30		U-SOIL	1		1						
	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7					6.25			1		
S-46	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00		1			
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4										1
S-47	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1			
S-48	R3-X1R	RIGHT TURN LANE	30 x 30		U-SOIL			1						
	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7					6.25			1		
S-49	R3-X1L	LEFT TURN LANE	30 x 30			1	1							
	R3-7L	LEFT LANE MUST TURN LEFT	30 x 30	7	S-CONC				6.25		1			
S-50	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4	S-CONC	1							1	
S-51	R1-2	YIELD	30 x 30	7	S-CONC	1	1		6.25		1			
(2) S-52	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1			
	R5-1	DO NOT ENTER	30 x 30	7					6.25			1		
S-53	R6-1R	ONE WAY	48 x 18			1	1							
	R6-1R	ONE WAY	54 x 18	7	S-CONC				6.75		1			
(2) S-54	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1			
	R5-1	DO NOT ENTER	30 x 30	7					6.25			1		
S-55	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00		1			
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4										1
S-56	R3-X1L	LEFT TURN LANE	30 x 30			1	1							
	R3-7L	LEFT LANE MUST TURN LEFT	30 x 30	7	S-CONC				6.25		1			
S-57	R3-X1R	RIGHT TURN LANE	30 x 30		U-SOIL	1		1						
	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7					6.25			1		
S-58	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00		1			
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	5										1
S-59	R3-X1R	RIGHT TURN LANE	30 x 30		U-SOIL	1		1						
	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7					6.25			1		
S-60	R3-X1L	LEFT TURN LANE	30 x 30		S-CONC	1	1							
	R3-7L	LEFT LANE MUST TURN LEFT	30 x 30	7					6.25		1			
S-61	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00		1			
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4										1
S-62	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1			
S-63	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00		1			
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4										1
S-64	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1			
S-65	R3-8AB	DOUBLE LEFT TURN LANE	36 x 30	7	S-CONC	1	1		7.50		1			
S-66	R3-X1R	RIGHT TURN LANE	30 x 30		U-SOIL	1		1						
	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7					6.25			1		
S-67	R3-8AB	DOUBLE LEFT TURN LANE	36 x 30	7	S-CONC	1	1		7.50		1			
S-68	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00		1			
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4										1
S-69	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1			
S-70	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00		1			
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4										1
S-71	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1			
S-72	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00		1			
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4										1
S-73	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1			
S-74	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00		1			
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4										1

SPECIFIC NOTES:
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(2) BACK TO BACK

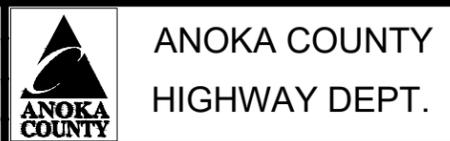
NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\24-01-00\CSAH 52 (MAIN ST-105TH)\Base\Traffic\Permanent Signing and Tabulations.dwg

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DESIGN BY: DATE: _____
CHECKED BY: SRT DATE: _____



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PERMANENT SIGNING AND TABULATIONS
Sheet 60 of 87 Sheets

Sean R. Thiel

SIGN AND DELINEATOR / MARKER														ST-A
SIGN NUMBER	PANEL			SUPPORT		REMOVE SIGN TYPE C	REMOVE SIGN TYPE C PANEL	SIGN	SALVAGE SIGN TYPE D	INSTALL SIGN TYPE C	INSTALL SIGN TYPE C PANEL	INSTALL SALVAGE SIGN TYPE D	DELINEATOR / MARKER	
	PANEL CODE	LEGEND	SIZE (W x H) INCHES	MOUNTING HEIGHT FEET	TYPE (1)	NUMBER OF POSTS	EACH	EACH	SQ FEET	EACH	EACH	EACH		
S-75	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1			
S-76	R3-X1L	LEFT TURN LANE	30 x 30		S-CONC	1	1							
	R3-7L	LEFT LANE MUST TURN LEFT	30 x 30	7					6.25		1			
S-77	R3-X1R	RIGHT TURN LANE	30 x 30		U-SOIL	1		1						
	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7					6.25			1		
S-78	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00		1			
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4										1
S-79	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1			
S-80	R3-X1R	RIGHT TURN LANE	30 x 30		U-SOIL	1		1						
	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7					6.25			1		
S-81	R3-X1L	LEFT TURN LANE	30 x 30		S-CONC	1	1							
	R3-7L	LEFT LANE MUST TURN LEFT	30 x 30	7					6.25		1			
S-82	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1			
S-83	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00		1			
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4										1
S-84	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1			
S-85	R3-X1R	RIGHT TURN LANE	30 x 30		U-SOIL	1		1						
	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7					6.25			1		
S-86	R3-X1L	LEFT TURN LANE	30 x 30		S-CONC	1	1							
	R3-7L	LEFT LANE MUST TURN LEFT	30 x 30	7					6.25		1			
S-87	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4	S-CONC	1							1	
S-88	R1-2	YIELD	30 x 30	7	S-CONC	1	1		6.25		1			
S-89	R6-1R	ONE WAY RIGHT	48 x 18		S-CONC	1	2	1						
			54 x 18	7			1		6.75		1			
S-90	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00		1			
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4										1
S-91	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1			
S-92	R3-X1R	RIGHT TURN LANE	30 x 30		U-SOIL	1		1						
	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7					6.25			1		
S-93	R3-X1L	LEFT TURN LANE	30 x 30		S-CONC	1	1							
	R3-7L	LEFT LANE MUST TURN LEFT	30 x 30	7					6.25		1			
S-94	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00		1			
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4										1
S-95	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1			
S-96	R6-1R	ONE WAY RIGHT	48 x 18		S-CONC	1	1							
			54 x 18	7			1		6.75		1			
S-97	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1			
S-98	R3-X1L	LEFT TURN LANE	30 x 30		S-CONC	1	1							
	R3-7L	LEFT LANE MUST TURN LEFT	30 x 30	7					6.25		1			
S-99	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00		1			
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4										1
S-100	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1			
S-101	R3-X1R	RIGHT TURN LANE	30 x 30		U-SOIL	1		1						
	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7					6.25			1		
S-102	R3-X1L	LEFT TURN LANE	30 x 30		S-CONC	1	1							
	R3-7L	LEFT LANE MUST TURN LEFT	30 x 30	7					6.25		1			
S-103	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00		1			
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4										1
S-104	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1			
S-105	R3-X1R	RIGHT TURN LANE	30 x 30		U-SOIL	1		1						
	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7					6.25			1		
S-106	R3-X1L	LEFT TURN LANE	30 x 30		S-CONC	1	1							
	R3-7L	LEFT LANE MUST TURN LEFT	30 x 30	7					6.25		1			
S-107	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00		1			
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4										1
S-108	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1			
S-109	R6-1R	ONE WAY RIGHT	36 x 12		S-CONC	1	1							
			54 x 12	7			1		6.75		1			
S-110	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1			
S-111	R3-X1L	LEFT TURN LANE	30 x 30		S-CONC	1	1							
	R3-7L	LEFT LANE MUST TURN LEFT	30 x 30	7					6.25		1			

SPECIFIC NOTES:
(1) S-CONC: 2" POST
U-CHANNEL: 3 LBS PER FOOT BLACK POST
(2) BACK TO BACK

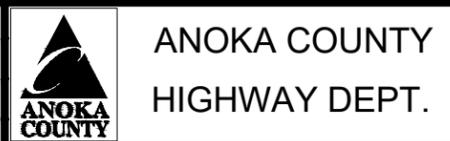
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PERMANENT SIGNING AND TABULATIONS
Sheet 61 of 87 Sheets

Sean R. Thiel

SIGN AND DELINEATOR / MARKER														ST-A
SIGN NUMBER	PANEL				SUPPORT		REMOVE SIGN TYPE C	REMOVE SIGN TYPE C PANEL	SIGN	SALVAGE SIGN TYPE D	INSTALL SIGN TYPE C	INSTALL SIGN TYPE C PANEL	INSTALL SALVAGE SIGN TYPE D	DELINEATOR / MARKER
	PANEL CODE	LEGEND	SIZE (W x H)	MOUNTING HEIGHT	TYPE (1)	NUMBER OF POSTS	EACH	EACH	SQ FEET	EACH	EACH	EACH	EACH	EACH
			INCHES	FEET										
S-112	R3-X1R	RIGHT TURN LANE	30 x 30		U-SOIL	1		1						
	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7					6.25			1		
S-113	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00		1			
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4										
S-114	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1			
S-115	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00		1			
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4										
S-116	R3-X1R	RIGHT TURN LANE	30 x 30		U-SOIL	1		1						
	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7					6.25			1		
S-117	R6-1R	ONE WAY RIGHT	36 x 12		S-CONC	1	1							
			54 x 18	7					6.75			1		
S-118	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1			
S-119	R3-X1R	RIGHT TURN LANE	30 x 30		U-SOIL	1		1						
	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7					6.25			1		
S-120	R3-X1L	LEFT TURN LANE	30 x 30		S-CONC	1	1							
	R3-7L	LEFT LANE MUST TURN LEFT	30 x 30	7					6.25			1		
S-121	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00		1			
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4										
S-122	R5-1	DO NOT ENTER	30 x 30	7	S-CONC	1	1		6.25		1			
S-123	R4-7	KEEP RIGHT	24 x 30	7	S-CONC	1	1		5.00		1			
	OM1-1	TYPE 1 OBJECT MARKER	18 x 18	4										
S-124	R3-X1R	RIGHT TURN LANE	30 x 30		U-SOIL	1		1						
	R3-7R	RIGHT LANE MUST TURN RIGHT	30 x 30	7					6.25			1		
TOTAL							103	19	750.75	1	102	19	1	31

Sean R. Thiel

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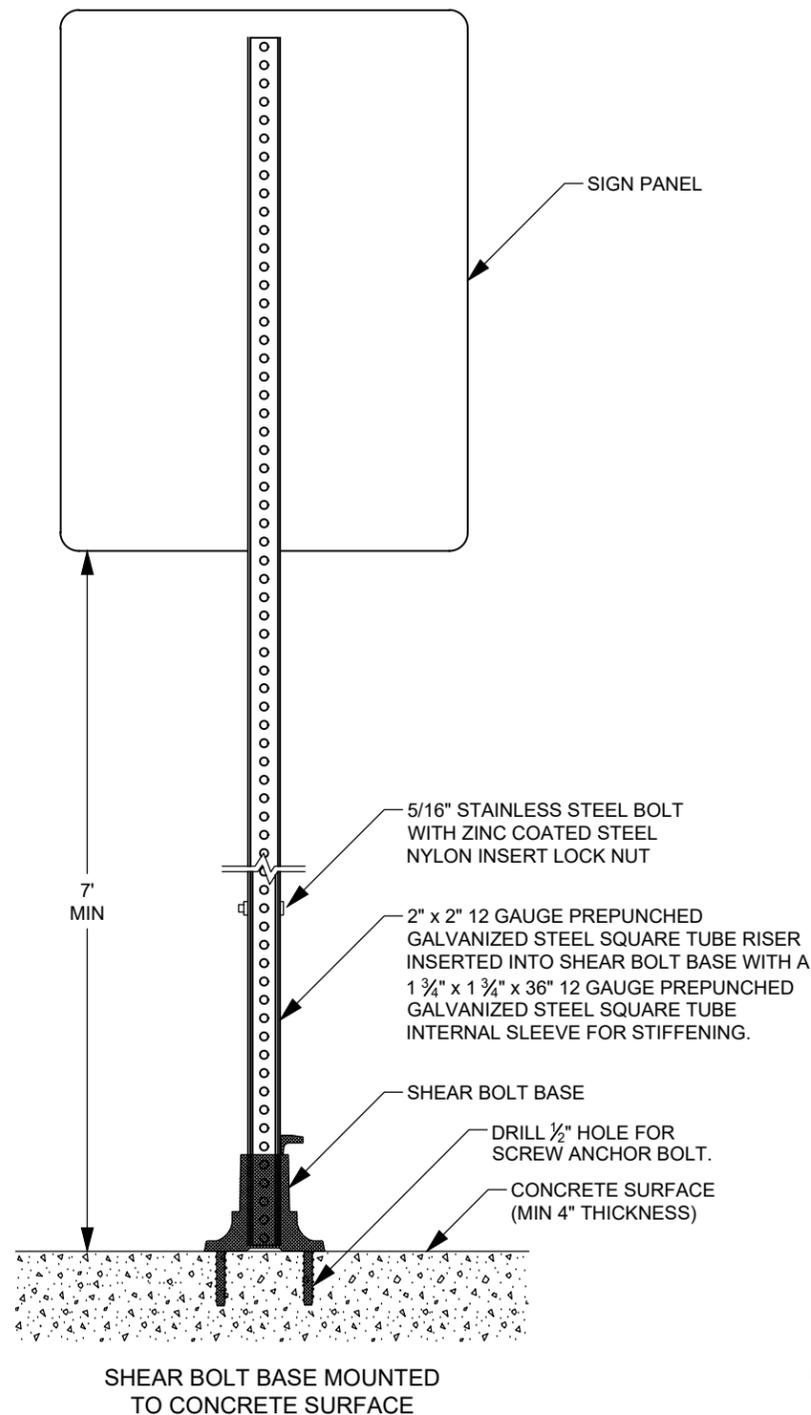
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HIGHWAY DEPT.

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PERMANENT SIGNING AND TABULATIONS
Sheet 62 of 87 Sheets

SIGN INSTALLATION TYPICALS

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

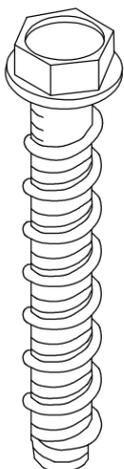


SIGN NOTES:

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

INSTALLATION NEAR SHARED-USE PATHWAY (MN MUTCD):

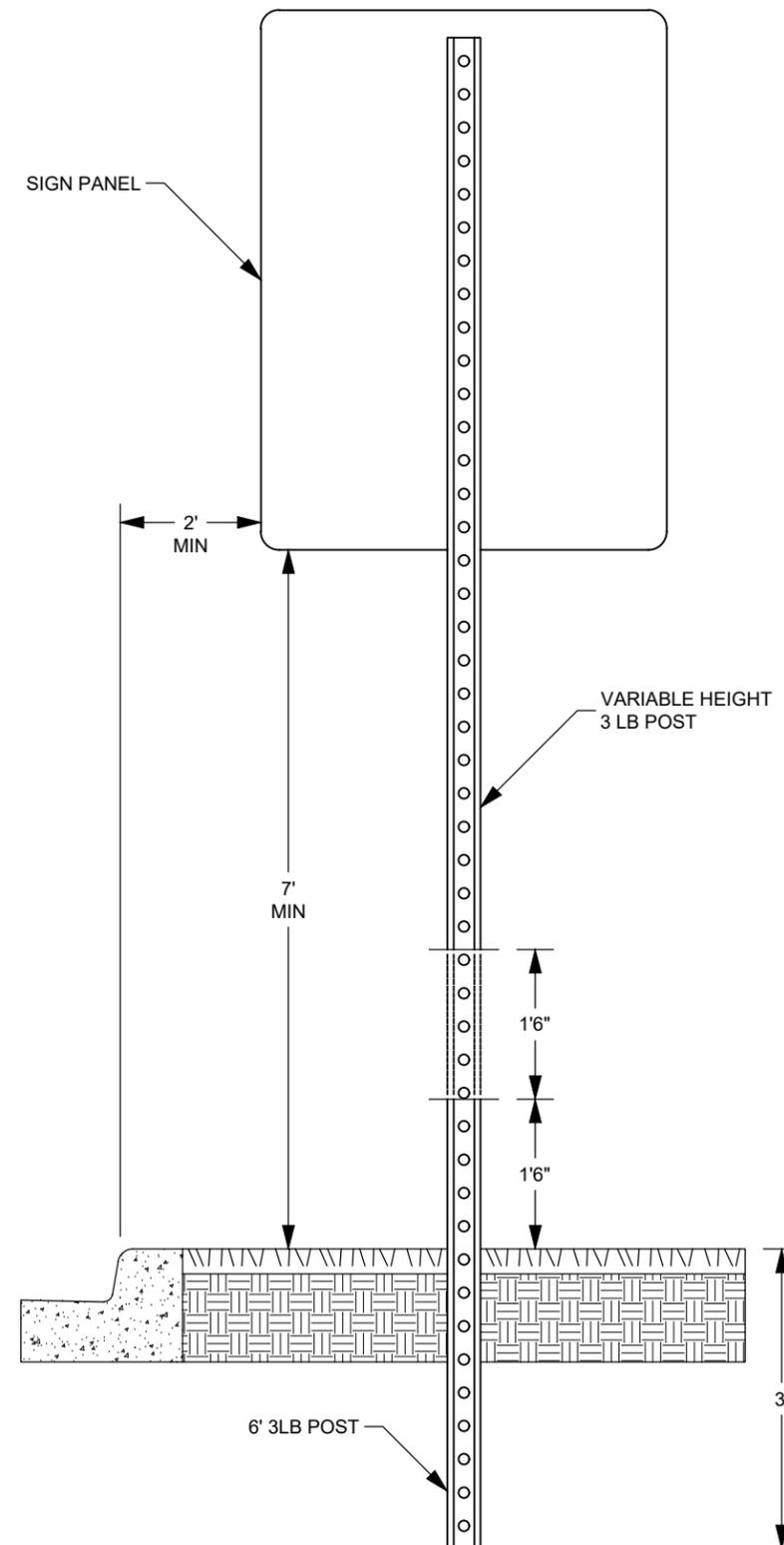
- THE MINIMUM HEIGHT MEASURED VERTICALLY FROM THE SHARED-USE PATHWAY TO THE BOTTOM OF THE SIGN SHALL BE 7 FEET. IF A SECONDARY SIGN IS MOUNTED BELOW THE PRIMARY SIGN AND IS MOUNTED LESS THAN 7 FEET, IT SHALL NOT PROJECT MORE THAN 4 INCHES INTO THE SHARED-USE PATHWAY.



SCREW ANCHOR BOLT

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

**GROUND POST MOUNT
SIGN INSTALLATION TYPICAL**



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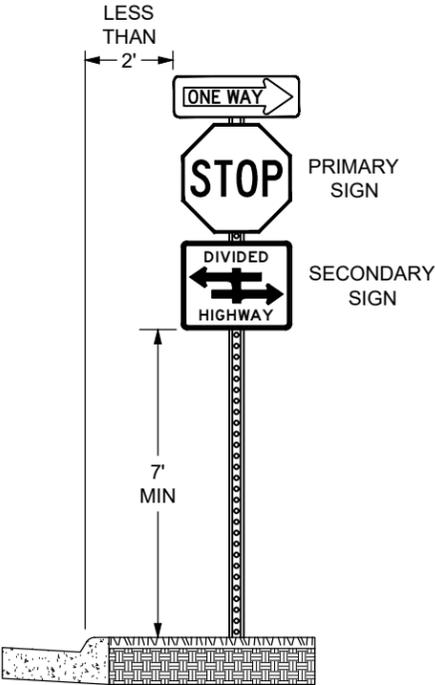
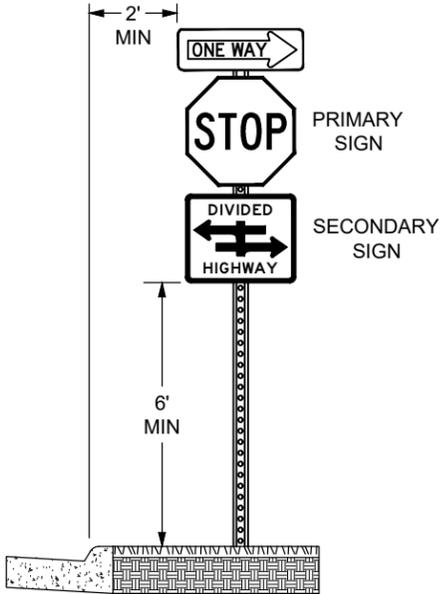
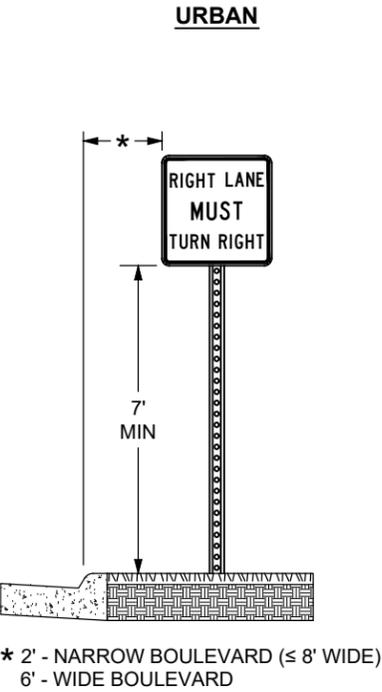
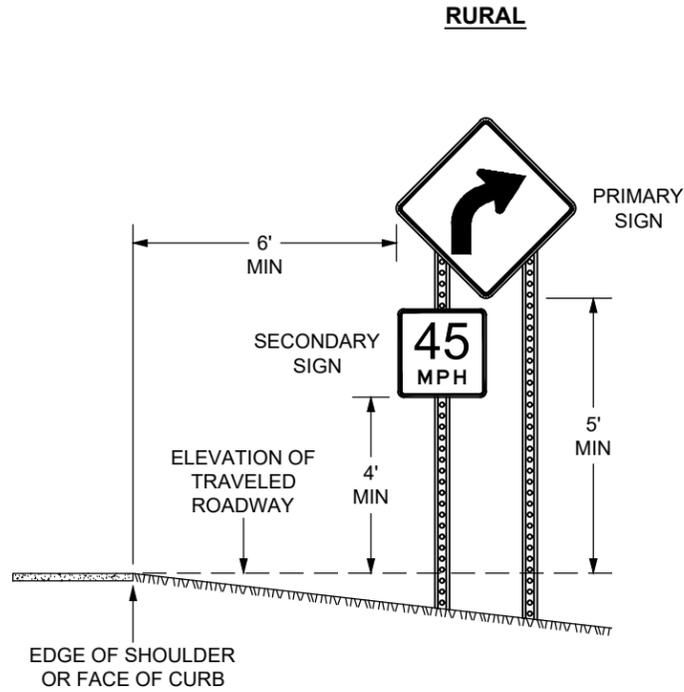
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 ANOKA COUNTY

**ANOKA COUNTY
HIGHWAY DEPT.**

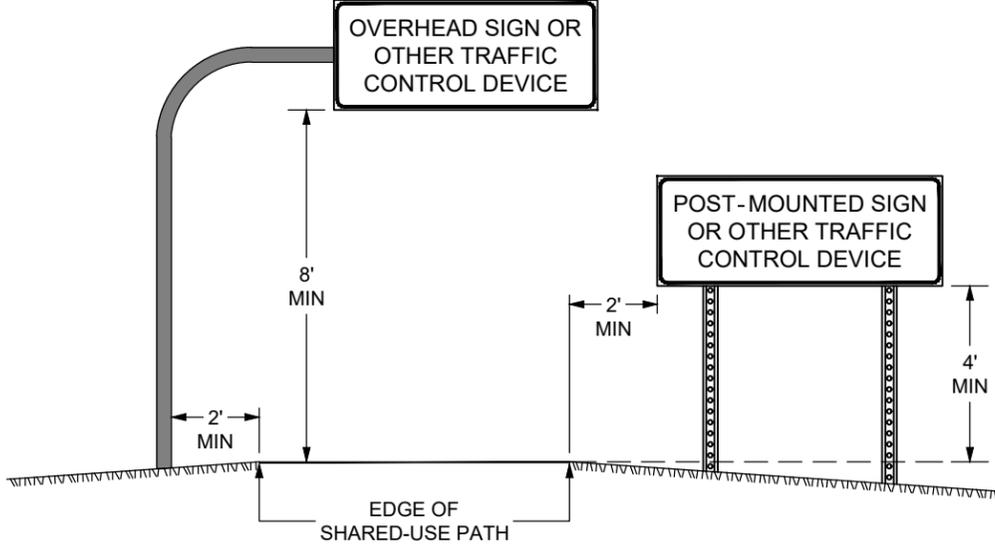
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**SIGNING & STRIPING
DETAILS**
 Sheet 63 of 87 Sheets

SIGN PLACEMENT TYPICALS



SHARED-USE PATH



- NOTES:**
- ALL DIMENSIONS ARE MINIMUMS.
 - MAINTAIN A DISTANCE OF 2' BETWEEN TRAFFIC CONTROL DEVICE AND SHARED-USE PATH.
 - 7' SIGN CLEARANCE IF 2' DISTANCE BETWEEN SIGN AND SHARED-USE PATH CANNOT BE MAINTAINED.

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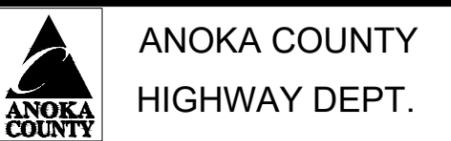
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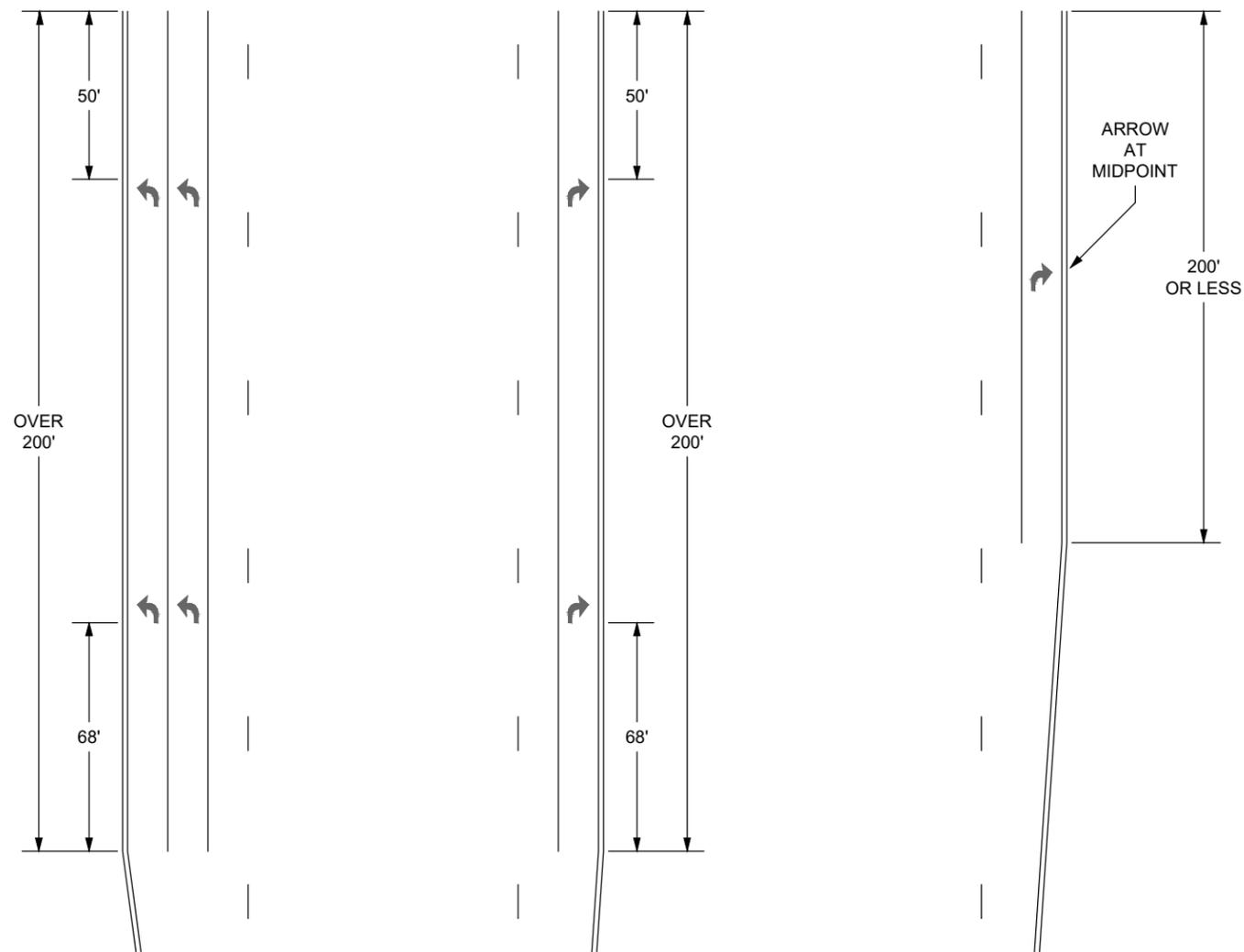
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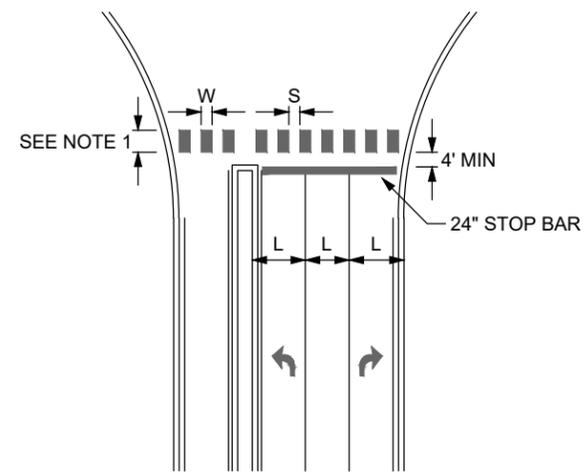
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PAVEMENT MARKING TYPICALS

TURN LANE ARROW PLACEMENT

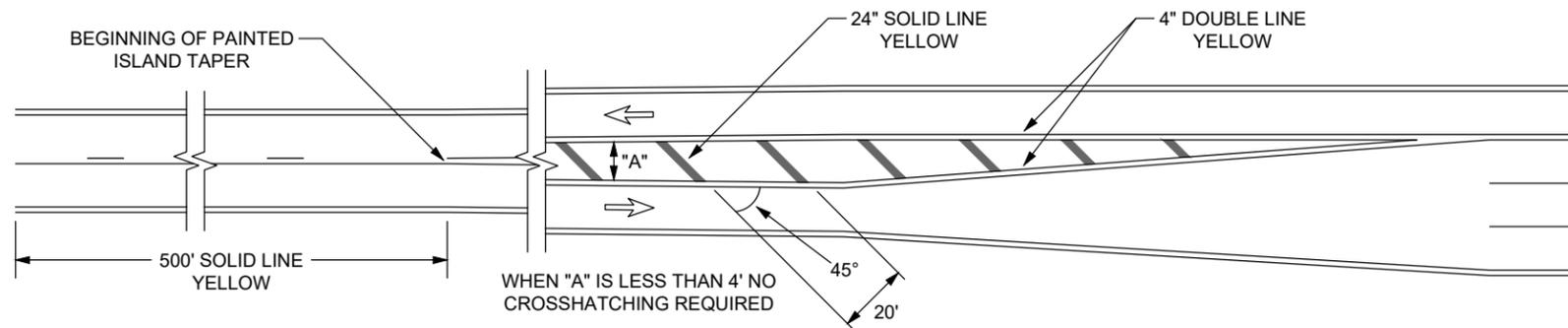


PEDESTRIAN CROSSWALK



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

LEFT TURN ISLAND MARKINGS



CROSSWALK NOTES:

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

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HIGHWAY DEPT.

SAP 002-652-014

SIGNING & STRIPING
 DETAILS

Sheet 65 of 87 Sheets

INPLACE PVC LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D2-1	6x6	475'	1
D2-2	6x6	475'	1
D4-1	6x6	250'	3,8
D4-3	3-6x6	-5', 5', 20'	7
D4-4	4-6x6	-5', 5', 20', 35'	1
D4-5	4-6x6	-5', 5', 20', 35'	1
D5-1	6x6	40'	1
D5-2	6x6	10'	1
D6-1	6x6	475'	1
D6-2	6x6	475'	1

- LOOP DETECTOR FUNCTIONS:**
- 1) CALL AND EXTEND.
 - 3) EXTEND ONLY.
 - 7) DELAYED CALL, IMMEDIATE EXTEND.
 - 8) CARRY OVER (STRETCH).

(A) INPLACE (MAINTAIN INPLACE)

CABINET FOUNDATION
CONTROLLER AND CABINET
2-3" RSC STUBBED OUT FROM
CABINET (BOTH ENDS THREADED
AND CAPPED-FOR FUTURE USE)

EXTENDED INTO HH 17:
METERED SIGNAL SERVICE
1.25" RSC
3 - 1/C 6

EXTENDED INTO HH 1:
4" RSC
3 - 12/C 12
2 - 3/C 12
2 - 3/C 20
2 - 2/C 14
1 - 6 Pr 19

EXTENDED INTO HH 16:
4" RSC
2 - 12/C 12
4 - 3/C 12
1 - 3/C 12 (LUM)
3 - 3/C 20
4 - 2/C #14
1 - 6 Pr #19

HH 13 TO HH 14:
F & I 3" CONDUIT
2 - 4/C 14
2 - 2/C 14

F & I 2 - 4/C 14
2 - 2/C 14

3" R.S.C.
2-12/C #12
4-3/C #12
1-3/C #12 (LUM)
3-3/C #20
4-2/C #14
1-6 Pr.#19

(B) INPLACE (MAINTAIN INPLACE)

CABINET FOUNDATION
SIGNAL SERVICE CABINET
EXTENDED INTO HH 1:
1.25" RSC
2 - 3/C 12 (LUM)
EXTENDED INTO HH 17:
METERED SIGNAL SERVICE
1.25" RSC
3 - 1/C 6
2" RSC STUBBED OUT (FOR
SERVICE BY CONNEXUS)

HH 14 TO HH 16:
F & I 3" CONDUIT (BORE
UNDER ROADWAY)
2 - 4/C 14
2 - 2/C 14

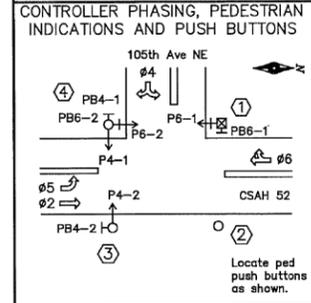
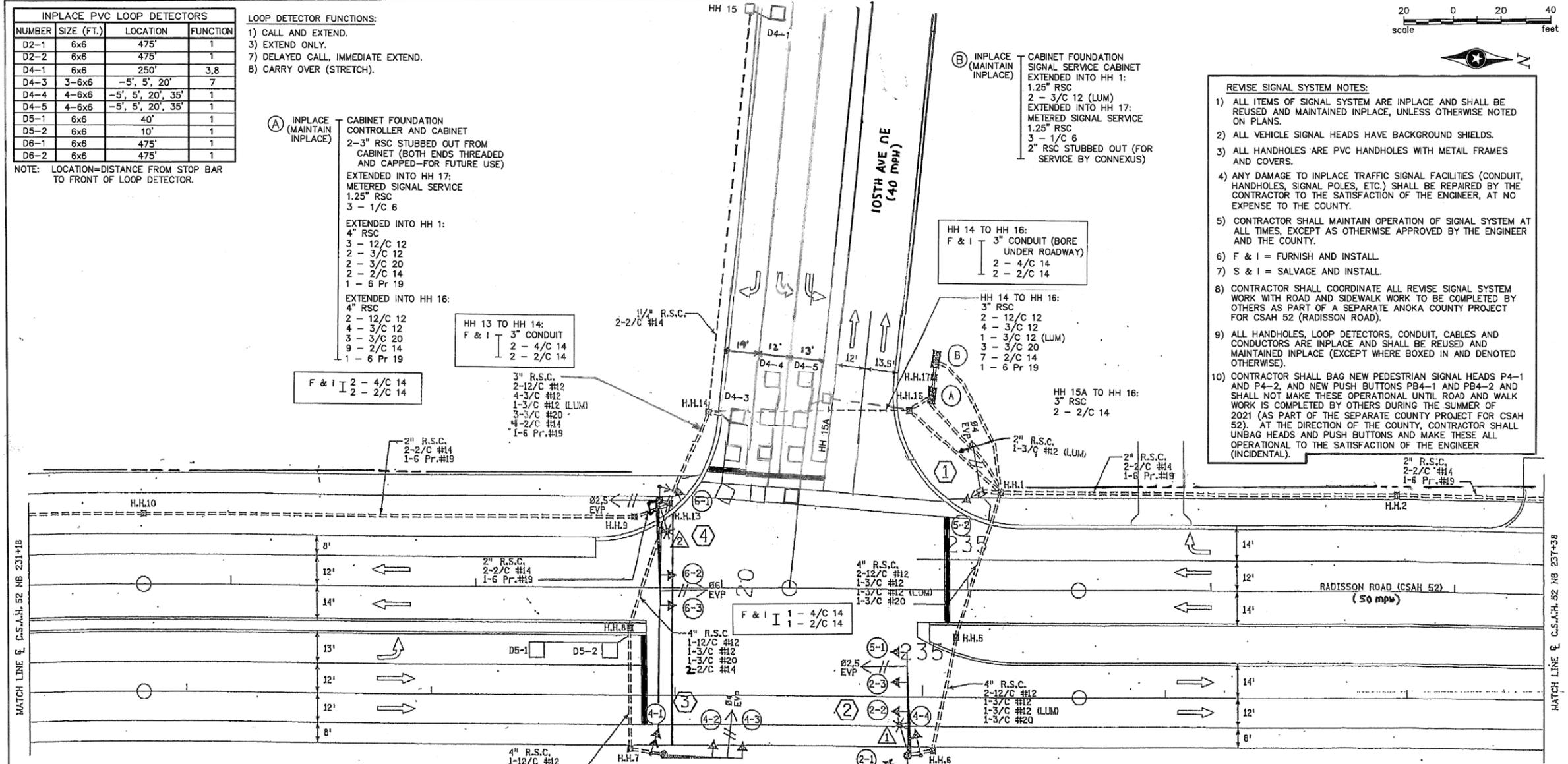
HH 14 TO HH 16:
3" RSC
2 - 12/C 12
4 - 3/C 12
1 - 3/C 12 (LUM)
3 - 3/C 20
7 - 2/C 14
1 - 6 Pr 19

HH 15A TO HH 16:
3" RSC
2 - 2/C 14

- REVISE SIGNAL SYSTEM NOTES:**
- 1) ALL ITEMS OF SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS OTHERWISE NOTED ON PLANS.
 - 2) ALL VEHICLE SIGNAL HEADS HAVE BACKGROUND SHIELDS.
 - 3) ALL HANDHOLES ARE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
 - 4) ANY DAMAGE TO INPLACE TRAFFIC SIGNAL FACILITIES (CONDUIT, HANDHOLES, SIGNAL POLES, ETC.) SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER, AT NO EXPENSE TO THE COUNTY.
 - 5) CONTRACTOR SHALL MAINTAIN OPERATION OF SIGNAL SYSTEM AT ALL TIMES, EXCEPT AS OTHERWISE APPROVED BY THE ENGINEER AND THE COUNTY.
 - 6) F & I = FURNISH AND INSTALL.
 - 7) S & I = SALVAGE AND INSTALL.
 - 8) CONTRACTOR SHALL COORDINATE ALL REVISE SIGNAL SYSTEM WORK WITH ROAD AND SIDEWALK WORK TO BE COMPLETED BY OTHERS AS PART OF A SEPARATE ANOKA COUNTY PROJECT FOR CSAH 52 (RADISSON ROAD).
 - 9) ALL HANDHOLES, LOOP DETECTORS, CONDUIT, CABLES AND CONDUCTORS ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE (EXCEPT WHERE BOXED IN AND DENOTED OTHERWISE).
 - 10) CONTRACTOR SHALL BAG NEW PEDESTRIAN SIGNAL HEADS P4-1 AND P4-2, AND NEW PUSH BUTTONS PB4-1 AND PB4-2 AND SHALL NOT MAKE THESE OPERATIONAL UNTIL ROAD AND WALK WORK IS COMPLETED BY OTHERS DURING THE SUMMER OF 2021 (AS PART OF THE SEPARATE COUNTY PROJECT FOR CSAH 52). AT THE DIRECTION OF THE COUNTY, CONTRACTOR SHALL UNBAG HEADS AND PUSH BUTTONS AND MAKE THESE ALL OPERATIONAL TO THE SATISFACTION OF THE ENGINEER (INCIDENTAL).



NOTE: LOCATION=DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR.



- SIGNAL SYSTEM OPERATIONS:**
- SIGNAL SYSTEM FLASH MODE IS ALL RED.
 - NORMAL OPERATION IS 5 PHASE, WITH PHASE 5 BEING A PROTECTED LEFT TURN PHASE.
 - VEHICLE SIGNAL PHASES 2 & 6 OPERATE ON RECALL.

SEE NEXT SHEET FOR DETAILED POLE NOTES.

SIGNAL HEAD	SIGNAL INDICATIONS ARE 12" LED.			
	R	Y	FYA	G
2-1, 2-2, 2-3	○	○	○	○
4-1, 4-2, 4-3, 4-4	○	○	○	○
5-1, 5-2	←	←	←	←
6-1, 6-2, 6-3	○	○	○	○

DRAWN BY: JMG	NO.	BY	DATE
DESIGNER: JMG			
CHECKED BY: JMG			

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.

Name: John M. Gray, PE
Lic. No. 22457
Date: February 2, 2021



ANOKA COUNTY, MN
CITY OF BLAINE
SAP 002-652-010

REVISE SIGNAL SYSTEM
INTERSECTION LAYOUT
CSAH 52 (RADISSON ROAD)
AT 105TH AVENUE NE

FILE NO. ANOKC 122928
3
5

FOR REFERENCE PURPOSES ONLY

NO	DATE	BY	CKD	APPR	REVISION	02/04/2025	10:22:29 AM

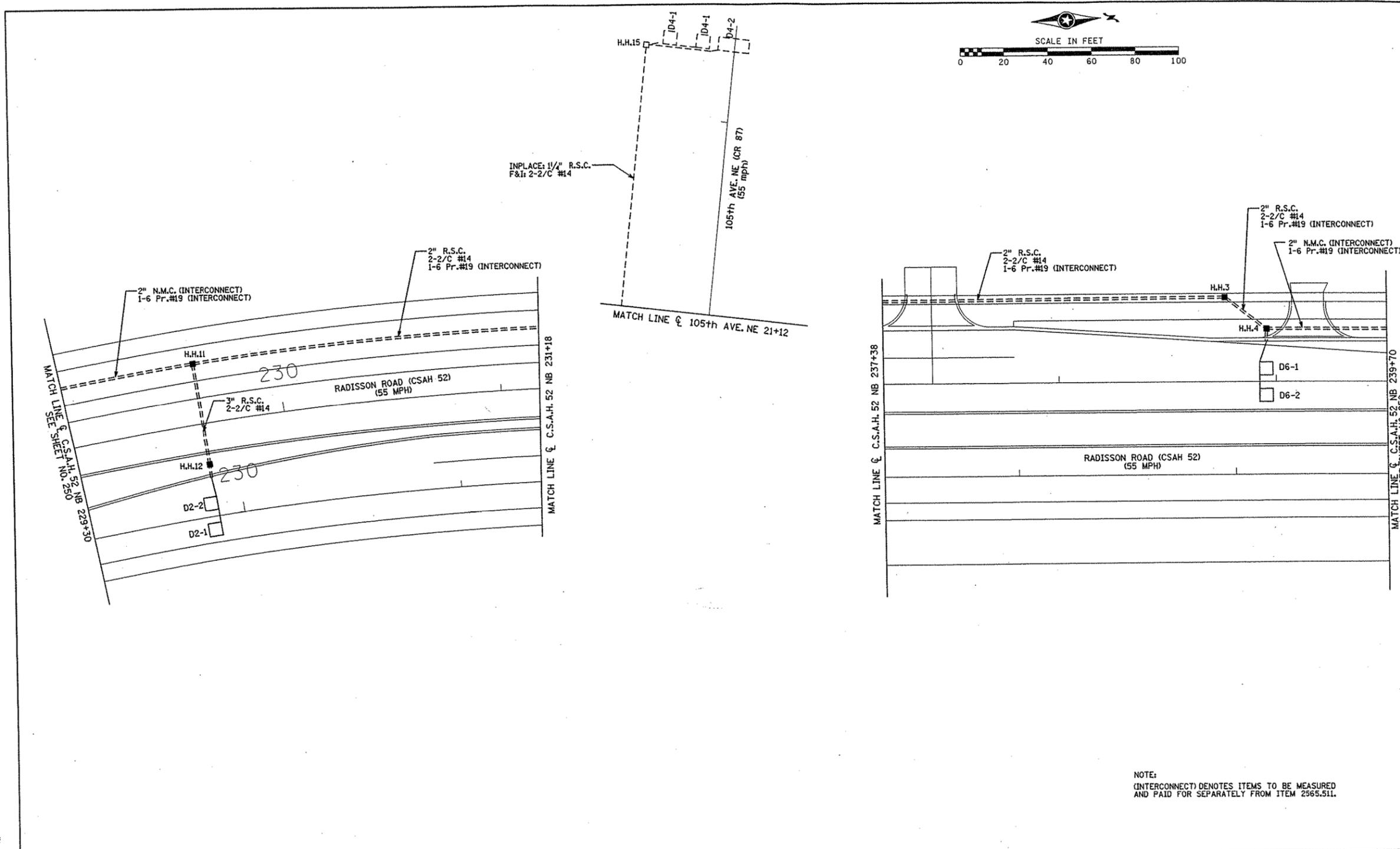
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DRAWN BY: MR	DATE 11/30/2022
DESIGN BY: MR	DATE 11/30/2022
CHECKED BY: CO	DATE 12/10/2024

ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-652-013
002-652-014

EXISTING SIGNAL PLANS
Sheet 66 of 87 Sheets



NOTE:
(INTERCONNECT) DENOTES ITEMS TO BE MEASURED AND PAID FOR SEPARATELY FROM ITEM 2965.511.

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.
Garrett O. Paulson
DATE 11-20-01 LIC. NO. 26880

DRAWN BY _____ DATE _____
DESIGN BY _____ DATE _____
CHECKED BY _____ DATE _____

S.P. 0280-50 (TH 35W)
S.P. 90-080-11
S.A.P. 02-652-02
S.A.P. 02-652-03
S.A.P. 02-652-04
S.A.P. 106-020-021, 106-020-022

TKDA
TOLTZ, KING, DUVAL, ANDERSON AND ASSOCIATES, INCORPORATED
ENGINEERS-ARCHITECTS-PLANNERS SAINT PAUL, MINNESOTA

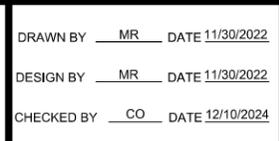
ANOKA COUNTY
MATCH LINES - SYSTEM "E"
C.S.A.H. 52 RECONSTRUCTION
C.S.A.H. 52 AT 105th AVE. NE

SHEET 274 OF 559

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\24-01-00\CSAH_52 (MAIN ST-105TH)\Base\Proposed\CSAH_52_SIGNALS.dgn

DRAWN BY MR DATE 11/30/2022
DESIGN BY MR DATE 11/30/2022
CHECKED BY CO DATE 12/10/2024



ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-652-013
002-652-014

EXISTING SIGNAL PLANS
Sheet 67 of 87 Sheets

FOR REFERENCE PURPOSES ONLY

- REVISE SIGNAL SYSTEM NOTES:**
- 1) ALL ITEMS OF SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS OTHERWISE NOTED ON PLANS.
 - 2) ALL VEHICLE SIGNAL HEADS HAVE BACKGROUND SHIELDS.
 - 3) ALL HANDHOLES ARE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
 - 4) ANY DAMAGE TO INPLACE TRAFFIC SIGNAL FACILITIES (CONDUIT, HANDHOLES, SIGNAL POLES, ETC.) SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER, AT NO EXPENSE TO THE COUNTY.
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 - 7) S & I = SALVAGE AND INSTALL.
 - 8) CONTRACTOR SHALL COORDINATE ALL REVISE SIGNAL SYSTEM WORK WITH ROAD AND SIDEWALK WORK TO BE COMPLETED BY OTHERS AS PART OF A SEPARATE ANOKA COUNTY PROJECT FOR CSAH 52 (RADISSON ROAD).
 - 9) ALL HANDHOLES, LOOP DETECTORS, CONDUIT, CABLES AND CONDUCTORS ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE (EXCEPT WHERE BOXED IN AND DENOTED OTHERWISE).
 - 10) CONTRACTOR SHALL BAG NEW PEDESTRIAN SIGNAL HEADS P4-1 AND P4-2, AND NEW PUSH BUTTONS PB4-1 AND PB4-2 AND SHALL NOT MAKE THESE OPERATIONAL UNTIL ROAD AND WALK WORK IS COMPLETED BY OTHERS DURING THE SUMMER OF 2021 (AS PART OF THE SEPARATE COUNTY PROJECT FOR CSAH 52). AT THE DIRECTION OF THE COUNTY, CONTRACTOR SHALL UNBAG HEADS AND PUSH BUTTONS AND MAKE THESE ALL OPERATIONAL TO THE SATISFACTION OF THE ENGINEER (INCIDENTAL).

① INPLACE (MAINTAIN INPLACE) PEDESTAL FOUNDATION
 10' PEDESTAL POLE AND BASE
 TYPE 1C
 1-PEDESTRIAN PUSH BUTTON
 R9-3 (NO PED XING) SIGN-FACING POLE 2
 ONE WAY EVP DETECTOR-MOUNTED ATOP
 SLIPFITTER COLLAR (#4)
 EXTENDED INTO HH 1:
 3" RSC
 1 - 12/C 12
 1 - 3/C 12
 1 - 3/C 20

INPLACE (REMOVE) "HAND/WALKING PERSON" LENS (LEAVE HOUSING AND VISOR INPLACE)
 1-PED INSTRUCTION (STICKER) SIGN
 F & I 1-CD PED SIGNAL LENS (INSTALL WITHIN EXISTING MCCAIN HOUSING) (P6-1)
 1-R10-3e PED INSTRUCTION SIGN

② INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION
 TYPE PA100-A-40-D40-9 (DAVIT AT 350 DEG)
 LUMINAIRE-LED
 3-ONE WAY SIGNALS-OVERHEAD AT 0', 11', AND 23' FROM LEFT END OF MAST ARM
 2-TYPE 10A-POLE MOUNTED 90/180 DEG
 R6-1L (ONE WAY LEFT) SIGN-POLE MTD 0 DEG
 R9-3 (NO PED XING) SIGN-FACING POLE 1
 TYPE D SIGN (102" x 24")-OVERHEAD
 ONE WAY EVP DETECTOR & LIGHT AT 6' (#2,5)
 VIDEO DETECTOR CAMERA-ATOP LUM EXTENSION
 EXTENDED INTO HH 6:
 3" RSC
 2 - 12/C 12
 1 - 3/C 12
 1 - 3/C 20
 1 - 3/C 12 (LUM)

③ INPLACE (MAINTAIN INPLACE) PA90 POLE FOUNDATION
 TYPE PA90-A-30
 2-ONE WAY SIGNALS-OVERHEAD AT 0' AND 11' FROM LEFT END OF MAST ARM
 TYPE D SIGN (108" x 24")-OVERHEAD
 ONE WAY EVP DETECTOR & LIGHT AT 6' (#4)
 EXTENDED INTO HH 7:
 3" RSC
 1 - 12/C 12
 1 - 3/C 12
 1 - 3/C 20

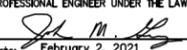
INPLACE (REMOVE) TYPE 10A BRACKETING AT 180 DEG
 R9-3 (NO PED XING) SIGN-FACING POLE 4
 INPLACE - ONE WAY SIGNAL-POLE MOUNTED 180 DEG (4-1) (S & I)

F & I TYPE 10B BRACKETING-POLE MOUNTED 180 DEG (FOR 4-1, P4-2)
 1-SET CD PED SIGNAL (HOUSING, VISOR, AND LENS) AT 180 DEG (NEW P4-2)
 1-PEDESTRIAN PUSH BUTTON & R10-3e SIGN
 1 - 4/C 14
 1 - 2/C 14

④ INPLACE (MAINTAIN INPLACE) PA100 POLE FOUNDATION
 TYPE PA100-A-40-D40-9 (DAVIT AT 315 DEG)
 LUMINAIRE-200 W HPS WITH PEC
 2-ONE WAY SIGNALS-OVERHEAD AT 0' AND 11' FROM LEFT END OF MAST ARM
 TYPE 10B-POLE MOUNTED 180 DEG
 1-PEDESTRIAN PUSH BUTTON AT 180 DEG (PB6-2)
 R6-1R (ONE WAY RIGHT) SIGN-POLE MTD 180 DEG
 TYPE D SIGN (102" x 24")-OVERHEAD
 ONE WAY EVP DETECTOR & LIGHT AT 6' (#6)
 ONE WAY EVP DETECTOR-POLE MOUNTED 135 DEG (#2,5)
 EXTENDED INTO HH 13:
 3" RSC
 1 - 12/C 12
 3 - 3/C 12
 2 - 3/C 20
 1 - 3/C 12 (LUM)

INPLACE (REMOVE) "HAND/WALKING PERSON" LENS (LEAVE HOUSING AND VISOR INPLACE) (P6-2)
 1-PED INSTRUCTION (STICKER) SIGN
 R9-3 (NO PED XING) SIGN-FACING POLE 3

F & I TYPE 30A BRACKETING-POLE MOUNTED 90 DEG (FOR P4-1)
 1-SET CD PED SIGNAL (HOUSING, VISOR, AND LENS) AT 90 DEG (NEW P4-1)
 1-CD PED SIGNAL LENS (INSTALL WITHIN EXISTING MCCAIN HOUSING) (P6-2)
 1-R10-3e PED INSTRUCTION SIGN (FOR PB6-2)
 1-PEDESTRIAN PUSH BUTTON & R10-3e SIGN (PB4-1)
 1 - 4/C 14
 1 - 2/C 14

DRAWN BY: JMG DESIGNER: JMG CHECKED BY: JMG	NO. BY DATE _____ _____ _____	REVISIONS _____ _____ _____	I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  Name: John M. Gray, PE Lic. No. 22457 Date: February 2, 2021	 PHONE: (651) 490-2000 3535 VADNAIS CENTER DR. ST. PAUL, MN 55110	ANOKA COUNTY, MN CITY OF BLAINE SAP 002-652-010	REVISE SIGNAL SYSTEM POLE NOTES CSAH 52 (RADISSON ROAD) AT 105TH AVENUE NE	FILE NO. ANOKC 122928	4 5
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NO	DATE	BY	CKD	APPR	REVISION	02/04/2025	10:22:24 AM
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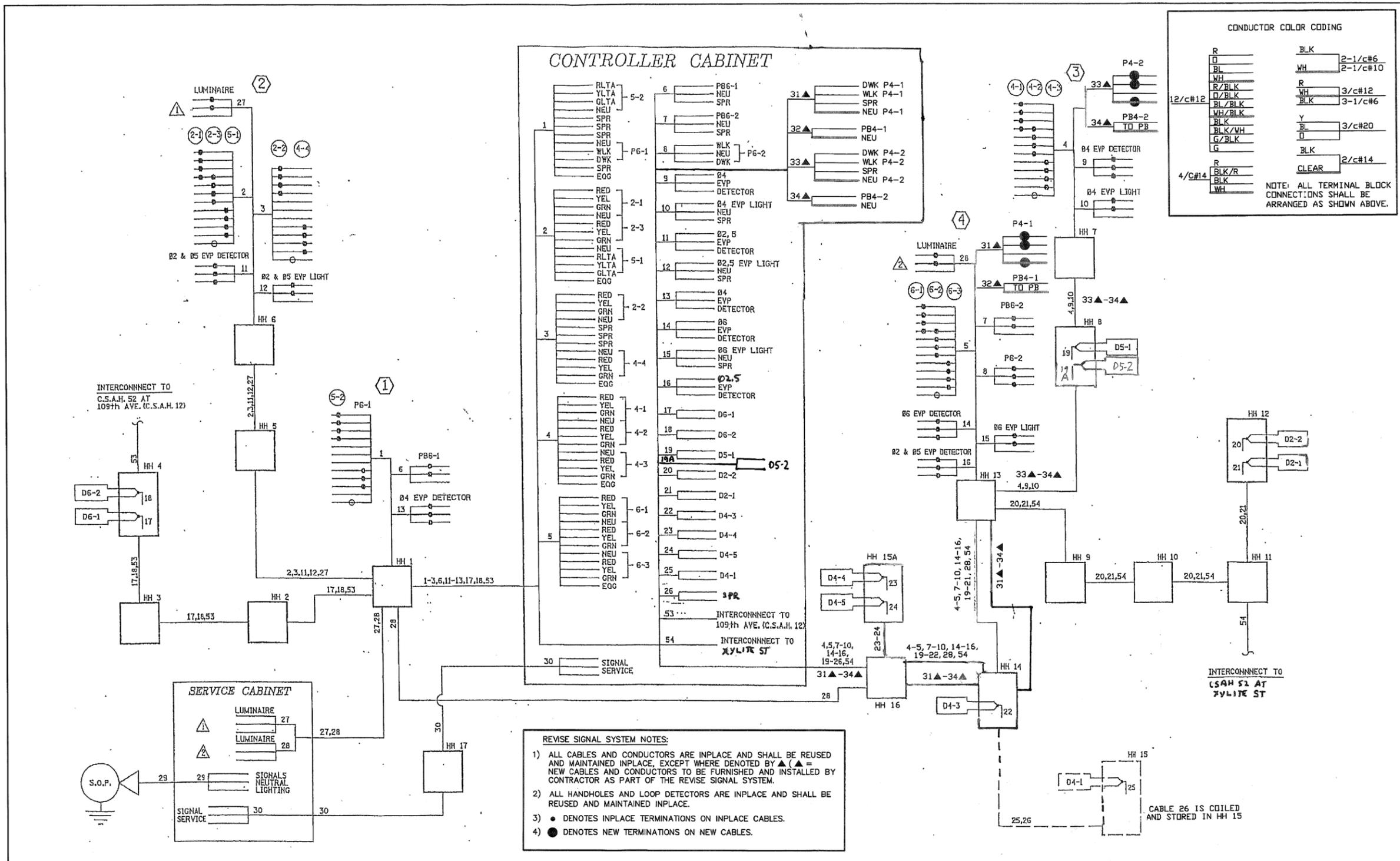
DRAWN BY	MR	DATE	11/30/2022
DESIGN BY	MR	DATE	11/30/2022
CHECKED BY	CO	DATE	12/10/2024

ANOKA COUNTY
 HIGHWAY DEPT.

STATE AID PROJECT 002-652-013
 002-652-014

EXISTING SIGNAL PLANS
 Sheet 68 of 87 Sheets

FOR REFERENCE PURPOSES ONLY



CONDUCTOR COLOR CODING

R	BLK	2-1/c#6
D	WH	2-1/c#10
BL		
R/BLK		
W/BLK		
D/BLK	R	3/c#12
BL/BLK	WH	3-1/c#6
WH/BLK		
BLK	Y	3/c#20
BLK/WH	D	
G/BLK		
	BLK	2/c#14
	CLEAR	

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SHOWN ABOVE.

- REVISE SIGNAL SYSTEM NOTES:
- 1) ALL CABLES AND CONDUCTORS ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, EXCEPT WHERE DENOTED BY ▲ (▲ = NEW CABLES AND CONDUCTORS TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THE REVISE SIGNAL SYSTEM).
 - 2) ALL HANDHOLES AND LOOP DETECTORS ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE.
 - 3) ● DENOTES INPLACE TERMINATIONS ON INPLACE CABLES.
 - 4) ● DENOTES NEW TERMINATIONS ON NEW CABLES.

DRAWN BY:	JMG		
DESIGNER:	JMG		
CHECKED BY:	JMG		
DESIGN TEAM			
NO.	BY	DATE	REVISIONS

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

John M. Gray
Name: John M. Gray, PE
Date: February 2, 2021
Lic. No. 22457

SEH
PHONE: (851) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CITY OF BLAINE
SAP 002-652-010

REVISE SIGNAL SYSTEM
FIELD WIRING DIAGRAM
CSAH 52 (RADISSON ROAD)
AT 105TH AVENUE NE

FILE NO.
ANOKC 12292B
5
5

FOR REFERENCE PURPOSES ONLY

NO	DATE	BY	CKD	APPR	REVISION	02/04/2025	10:22:32 AM

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DRAWN BY: MR DATE 11/30/2022
DESIGN BY: MR DATE 11/30/2022
CHECKED BY: CO DATE 12/10/2024

ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-652-013
002-652-014

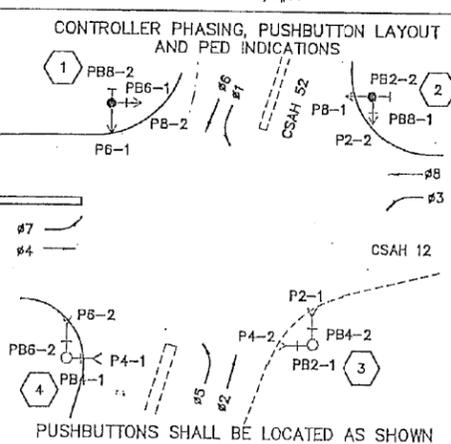
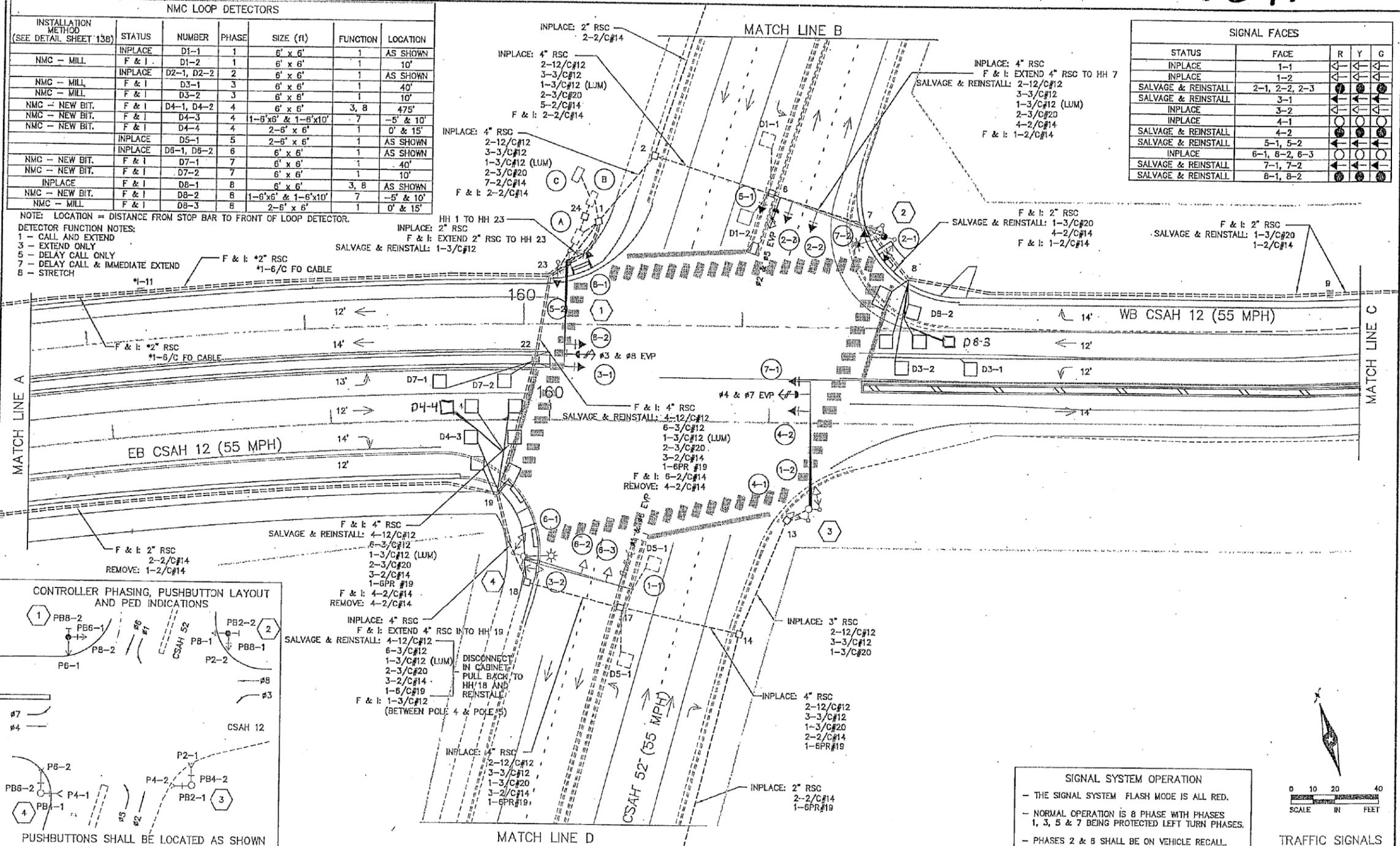
EXISTING SIGNAL PLANS
Sheet 69 of 87 Sheets

7541

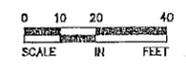
NMC LOOP DETECTORS					
INSTALLATION METHOD (SEE DETAIL SHEET 13B)	STATUS	NUMBER	PHASE	SIZE (ft)	FUNCTION LOCATION
NMC - MILL	F & I	D1-1	1	6' x 6'	1 AS SHOWN
NMC - MILL	F & I	D1-2	1	6' x 6'	1 10'
NMC - MILL	F & I	D2-1, D2-2	2	6' x 6'	1 AS SHOWN
NMC - MILL	F & I	D3-1	3	6' x 6'	1 AS SHOWN
NMC - MILL	F & I	D3-2	3	6' x 6'	1 10'
NMC - NEW BIT.	F & I	D4-1, D4-2	4	6' x 6'	3, 8 475'
NMC - NEW BIT.	F & I	D4-3	4	1-6'x6' & 1-6'x10'	7 -5' & 10'
NMC - NEW BIT.	F & I	D4-4	4	2-6' x 6'	1 0' & 15'
NMC - NEW BIT.	F & I	D5-1	5	2-6' x 6'	1 AS SHOWN
NMC - NEW BIT.	F & I	D6-1, D6-2	6	6' x 6'	1 AS SHOWN
NMC - NEW BIT.	F & I	D7-1	7	6' x 6'	1 40'
NMC - NEW BIT.	F & I	D7-2	7	6' x 6'	1 10'
NMC - NEW BIT.	F & I	D8-1	8	6' x 6'	3, 8 AS SHOWN
NMC - NEW BIT.	F & I	D8-2	8	1-6'x6' & 1-6'x10'	7 -5' & 10'
NMC - MILL	F & I	D8-3	8	2-6' x 6'	1 0' & 15'

NOTE: LOCATION = DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR.
 DETECTOR FUNCTION NOTES:
 1 - CALL AND EXTEND
 3 - EXTEND ONLY
 5 - DELAY CALL ONLY
 7 - DELAY CALL & IMMEDIATE EXTEND
 8 - STRETCH

SIGNAL FACES				
STATUS	FACE	R	Y	G
INPLACE	1-1	▲	▲	▲
INPLACE	1-2	▲	▲	▲
SALVAGE & REINSTALL	2-1, 2-2, 2-3	▲	▲	▲
SALVAGE & REINSTALL	3-1	▲	▲	▲
INPLACE	3-2	▲	▲	▲
INPLACE	4-1	▲	▲	▲
SALVAGE & REINSTALL	4-2	▲	▲	▲
SALVAGE & REINSTALL	5-1, 5-2	▲	▲	▲
INPLACE	6-1, 6-2, 6-3	▲	▲	▲
SALVAGE & REINSTALL	7-1, 7-2	▲	▲	▲
SALVAGE & REINSTALL	8-1, 8-2	▲	▲	▲



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



TRAFFIC SIGNALS
22 OF 31

REV	BY	DATE	REVISION/DESCRIPTION	DESIGN FILE



I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A duly LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.

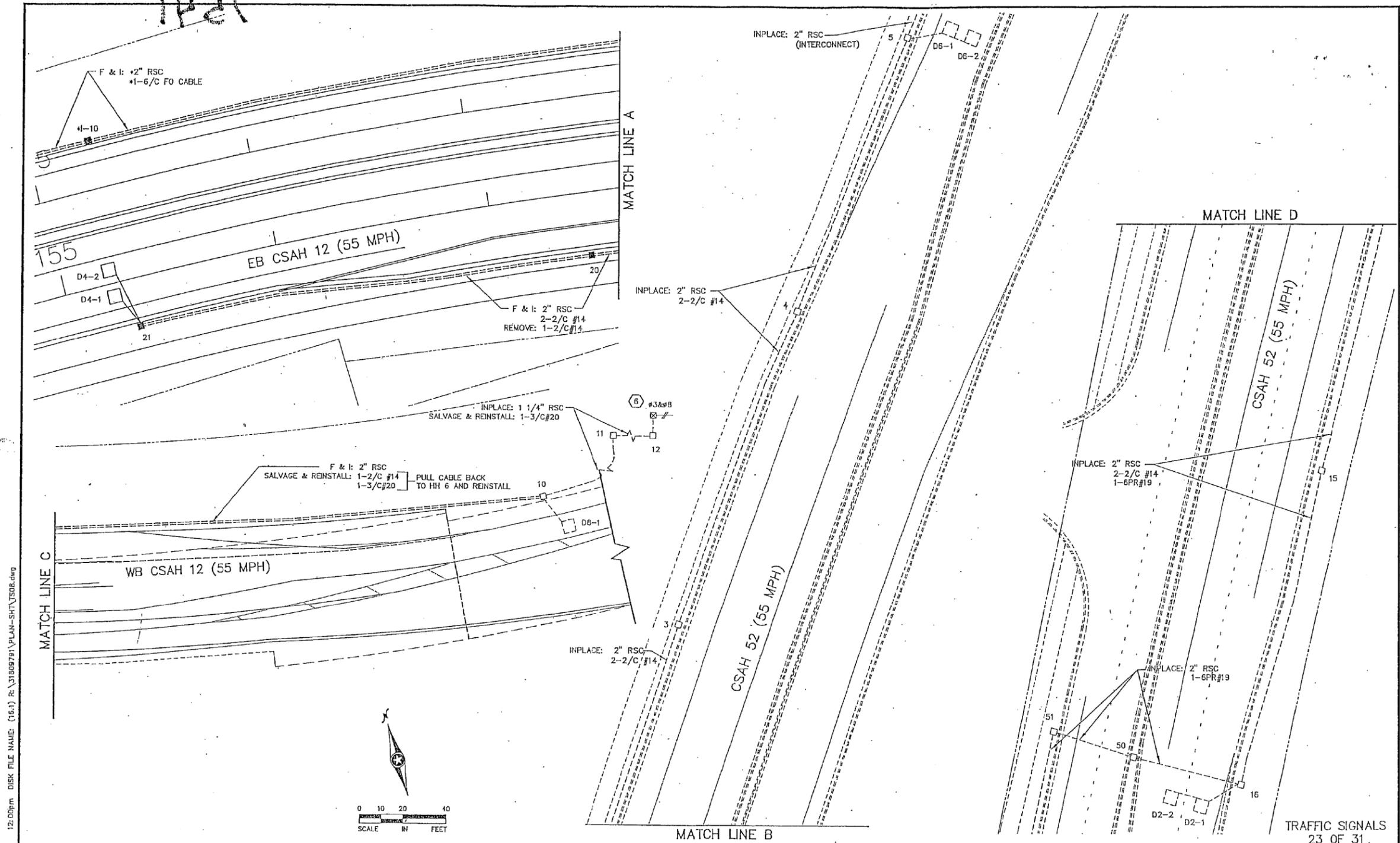
ANOKA COUNTY HIGHWAY DEPT.

CSAH 12 RECONSTRUCTION REVISE SIGNAL SYSTEM C INTERSECTION LAYOUT (1 OF 3)

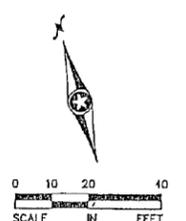
S.P.	02-612-11	SHEET NO	157
S.P.	106-020-025		
S.P.			213

FOR REFERENCE PURPOSES ONLY

1423



T DATE: AUG 18, 2024 12:00pm DISK FILE NAME: (16.1) R:\31809791\PLAN-SHT\1506.dwg



REV. NO.	BY	DATE	REVISIONS DESCRIPTION

URS
 725 Third Street South
 Minneapolis, MN 55415
 612.339.7000

ALLIANT ENGINEERING
 1100 FORT AVE
 233 PARK AVENUE SOUTH
 SUITE 200
 MINNEAPOLIS, MN 55425

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

Michael R. Anderson
 MICHAEL R. ANDERSON

ANOKA COUNTY
HIGHWAY DEPT.

CSAH 12 RECONSTRUCTION
 REVISE SIGNAL SYSTEM C
 INTERSECTION LAYOUT (2 OF 3)

S.P. 02-612-11	SHEET NO. 158
S.P. 106-020-025	
S.P.	

213

NO	DATE	BY	CKD	APPR	REVISION	02/04/2025	10:22:40 AM

NAME: P:\24-01-00\CSAH_52 (MAIN ST-105TH)\Base\Proposed\CSAH_52_SIGNALS.dgn

DRAWN BY MR DATE 11/30/2022
 DESIGN BY MR DATE 11/30/2022
 CHECKED BY CO DATE 12/10/2024

ANOKA COUNTY
HIGHWAY DEPT.

ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-652-013
 002-652-014

EXISTING SIGNAL PLANS
 Sheet 71 of 87 Sheets

FOR REFERENCE PURPOSES ONLY

1425

FOR REFERENCE PURPOSES ONLY

1 REMOVE: PA100 POLE FOUNDATION
 SALVAGE: 2-PEDESTRIAN PUSH BUTTONS
 SALVAGE & REINSTALL: TYPE PA100-A-45
 2-ONE WAY SIGNALS-OVERHEAD (0, 9' FROM END OF MAST ARM)
 2-TYPE 10B-POLE MOUNTED 90° AND 180°
 1-TYPE D SIGN PANEL OVERHEAD (D-6)
 1-ONE WAY EVP DETECTOR AND INDICATOR LIGHT OVERHEAD (#8 & #3)
 F & I: PA100 POLE FOUNDATION (WB CSAH 12 STA. 150+20.7, 27.5'L.T.)
 1-TYPE R6-1L (ONE-WAY) POLE MOUNTED
 1-TYPE R6-1R (ONE-WAY) POLE MOUNTED
 2-PEDESTRIAN PUSH BUTTONS
 EXTEND INTO HH 1:
 F & I: 3" RSC
 SALVAGE & REINSTALL: 2-12/C#12 } PULL CABLE
 3-3/C#12 } BACK TO HH 1
 1-3/C#20 } & REINSTALL

2 REMOVE: PA100 POLE FOUNDATION
 SALVAGE: 2-PEDESTRIAN PUSH BUTTONS
 SALVAGE & REINSTALL: TYPE PA100-A-55-D30-9 (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)
 2-TYPE 10B-POLE MOUNTED 90° AND 180°
 1-TYPE R6-1L (ONE-WAY) POLE MOUNTED
 1-TYPE R6-1R (ONE-WAY) POLE MOUNTED
 1-TYPE D SIGN PANEL OVERHEAD (D-5)
 1-ONE WAY EVP DETECTOR AND INDICATOR LIGHT OVERHEAD (#2 & #5)
 F & I: PA100 POLE FOUNDATION (WB CSAH 12 STA. 161+63.9, 40.9'L.T.)
 2-PEDESTRIAN PUSH BUTTONS
 EXTEND INTO HH 7:
 F & I: 3" RSC
 SALVAGE & REINSTALL: 2-12/C#12 } PULL CABLE
 3-3/C#12 } BACK TO HH 6
 1-3/C#12 (LUM) } & REINSTALL
 1-3/C#20 }

3 INPLACE: PA100 POLE FOUNDATION
 TYPE PA100 (POLE SHAFT & TRANSFORMER BASE)
 2-TYPE 10B-POLE MOUNTED 90° AND 180°
 SALVAGE: 1-TYPE A50 MAST ARM
 2-PEDESTRIAN PUSH BUTTONS
 SALVAGE & REINSTALL: 2-ONE WAY SIGNALS OVERHEAD
 1-TYPE D SIGN PANEL OVERHEAD (D-6)
 1-ONE WAY EVP DETECTOR AND INDICATOR LIGHT OVERHEAD (#4 & #7)
 F & I: 1-TYPE A-55 MAST ARM WITH OVERHEADS AT 0' & 11' FROM END OF MAST ARM
 1-WELD OVERHEAD MID MOUNT AND PLUG AT 23' FROM END OF MASTARM (FUTURE SIGNAL OVERHEAD)
 2-PEDESTRIAN PUSH BUTTONS
 EXTEND INTO HH 13:
 INPLACE: 3" RSC
 SALVAGE & REINSTALL: 2-12/C#12
 3-3/C#12
 1-3/C#20

4 INPLACE: 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 END OF MAST ARM)
 2-TYPE 10B-POLE MOUNTED 90° AND 180°
 1-PEDESTRIAN PUSH BUTTON AND SIGN
 1-TYPE R6-1L (ONE-WAY) POLE MOUNTED
 1-TYPE R6-1R (ONE-WAY) POLE MOUNTED
 1-TYPE "D" SIGN PANEL OVERHEAD (D-5)
 1-ONE WAY EVP DETECTOR AND INDICATOR LIGHT OVERHEAD (#6 & #1)
 SALVAGE: 2-PEDESTRIAN PUSH BUTTONS
 F & I: 2-PEDESTRIAN PUSH BUTTONS
 EXTEND INTO HH 18:
 INPLACE: 3" RSC
 SALVAGE & REINSTALL: 2-12/C#12
 3-3/C#12
 1-3/C#12 (LUM)
 1-3/C#20
 F & I: 1-3/C#12 (TO POLE 5)

5 F & I: PEDESTRIAN PUSH BUTTON STATION FOUNDATION (EB CSAH 12 STA. 159+86.2, 43'RT.)
 PEDESTRIAN PUSH BUTTON STATION (MNDOT STD. PLATE 8115)
 1-PEDESTRIAN PUSH BUTTON
 F & I: EXTEND INTO HH 19
 1 1/4" RSC
 1-3/C#12 (TO POLE 4)

A INPLACE: EQUIPMENT PAD FOUNDATION
 CONTROLLER CABINET AND CONTROLLER
 INPLACE: METERED SIGNAL SERVICE
 1 1/4" RSC TO HH 24:
 3-1/C#6
 INPLACE: 4" RSC TO HH 1:
 4-12/C #12
 6-3/C #12
 2-3/C #20
 7-2/C #14
 F & I: 2-2/C#14
 INPLACE: 4" RSC
 F & I: EXTEND 4" RSC INTO HH 23
 6-2/C#14
 1-6/C FO CABLE
 SALVAGE & REINSTALL: 4-12/C#12 } DISCONNECT AND
 6-3/C#12 } PULL CABLE BACK
 2-3/C#20 } TO HH 18
 3-2/C#14 } & REINSTALL
 1-6PR#19 }
 REMOVE: 4-2/C#14

B INPLACE: SERVICE CABINET
 SERVICE CABINET FOUNDATION
 EXTEND INTO HH 1:
 UNMETERED STREET LIGHT SERVICE
 INPLACE: 1 1/4" RSC
 1-3/C #12 (LUM)
 SALVAGE & REINSTALL: 1-3/C#12 (LUM)
 (DISCONNECT & PULL BACK TO HH 18 AND REINSTALL)
 EXTEND INTO HH 24:
 METERED SIGNAL SERVICE
 INPLACE: 1 1/4" RSC
 3-1/C#6
 INPLACE: STUB OUT 2" RSC
 POWER CABLES TO POLE C

C SOP-GROUND MOUNTED TRANSFORMER PAD (INPLACE)

6 INPLACE: PEDESTAL FOUNDATION
 PEDESTAL POLE AND BASE
 1-ONE WAY EVP DETECTOR (#3 & #8)
 INPLACE: 2" RSC TO HH 12
 SALVAGE & REINSTALL: 1-3/C#20-PULL CABLE BACK TO HH 6 AND REINSTALL

INPLACE: 1-2" RSC AND 1-3" RSC CONDUIT STUB OUTS (BOTH ENDS THREADED AND CAPPED)

NOTES:

- ALL ITEMS OF SIGNAL SYSTEM ARE INPLACE AND SHALL BE USED INPLACE UNLESS OTHERWISE DENOTED BY "F & I", "REMOVE" OR "SALVAGE & REINSTALL".
- EXACT LOCATION OF LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
- A 3/4" HALF COUPLING, A 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY FOR EMERGENCY VEHICLE PREEMPTION EQUIPMENT SHALL BE FURNISH & INSTALL 6' FROM END OF MASTARM.
- THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION OF THE SIGNAL SYSTEM WITH THE CONSTRUCTION OF THE ROADWAY. SIGNAL REVISION WORK SHALL BE COORDINATED TO MINIMIZE THE OPERATIONAL DOWN TIME OF THE SIGNAL SYSTEM. SEE SPECIAL PROVISIONS.
- LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" NMC (SEE DETAIL SHEET 138). SEE SPECIAL PROVISIONS.
- NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS PER MN/DOT STANDARD PLATE 8114. INPLACE HANDHOLES UTILIZED IN THE REVISED SIGNAL SYSTEM SHALL BE ADJUSTED TO THE APPROPRIATE GRADE WHERE NECESSARY AND AS DIRECTED BY THE ENGINEER.
- REINSTALLING SALVAGED OR FURNISHING AND INSTALLING POLE AND MAST ARM MOUNTED TYPE C AND TYPE D SIGNS SHALL BE INCIDENTAL TO THE REVISE SIGNAL SYSTEM C PAY ITEM.
- THE CONTRACTOR SHALL REMOVE AND FURNISH & INSTALL NEW INTERNAL POLE WIRING (POLE 3) AS NECESSARY TO ACCOMMODATE THE NEW LENGTHENED MAST ARM.
- THE CONTRACTOR SHALL VERIFY ALL UTILITIES PRIOR TO COMMENCING WORK.
- ITEMS DENOTE BY AN * ARE INCIDENTAL TO THE INTERCONNECT PAY ITEM.
- ALL LOOP DETECTORS SHALL BE PREFORMED NMC LOOP DETECTORS. SEE DETAIL SHEET.
- WHEN DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL REMOVE OR REMOVE AND SALVAGE ITEMS OF THE INPLACE TRAFFIC SIGNAL SYSTEM NOT REUSED IN THE REVISE SIGNAL SYSTEM. REMOVAL AND SALVAGING SIGNAL SYSTEM ITEMS SHALL BE INCIDENTAL TO THE REVISE SIGNAL SYSTEM C PAY ITEM.
- HAULING OF SALVAGED MATERIAL SHALL BE INCIDENTAL TO THE HAUL SALVAGED MATERIAL PAY ITEM.

TRAFFIC SIGNALS
24 OF 31

DATE: AUG 18, 2022 12:00pm DISK FILE NAME: (16.1) R:\31808781\PLAN-SHT\TS14.dwg

REV. NO.	BY	DATE	REVISION DESCRIPTION

URS
 URS CORPORATION
 10000 Grand Ave
 Minneapolis, MN 55412
 612.345.4321

ALLIANT ENGINEERING
 INCORPORATED
 225 PINE AVENUE SOUTH

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

[Signature]



ANOKA COUNTY
 HIGHWAY DEPT

CSAH 12
 RECONSTRUCTION
 REVISE SIGNAL SYSTEM C

S.P. 02-612-11	SHEET NO.
S.P.106-020-025	159
S.P.	

NO	DATE	BY	CKD	APPR	REVISION	02/04/2025	10:22:45 AM

NAME: P:\24-01-00\CSAH_52 (MAIN ST-105TH)\Base\Proposed\CSAH_52_SIGNALS.dgn

DRAWN BY	MR	DATE	11/30/2022
DESIGN BY	MR	DATE	11/30/2022
CHECKED BY	CO	DATE	12/10/2024

ANOKA COUNTY
 HIGHWAY DEPT.

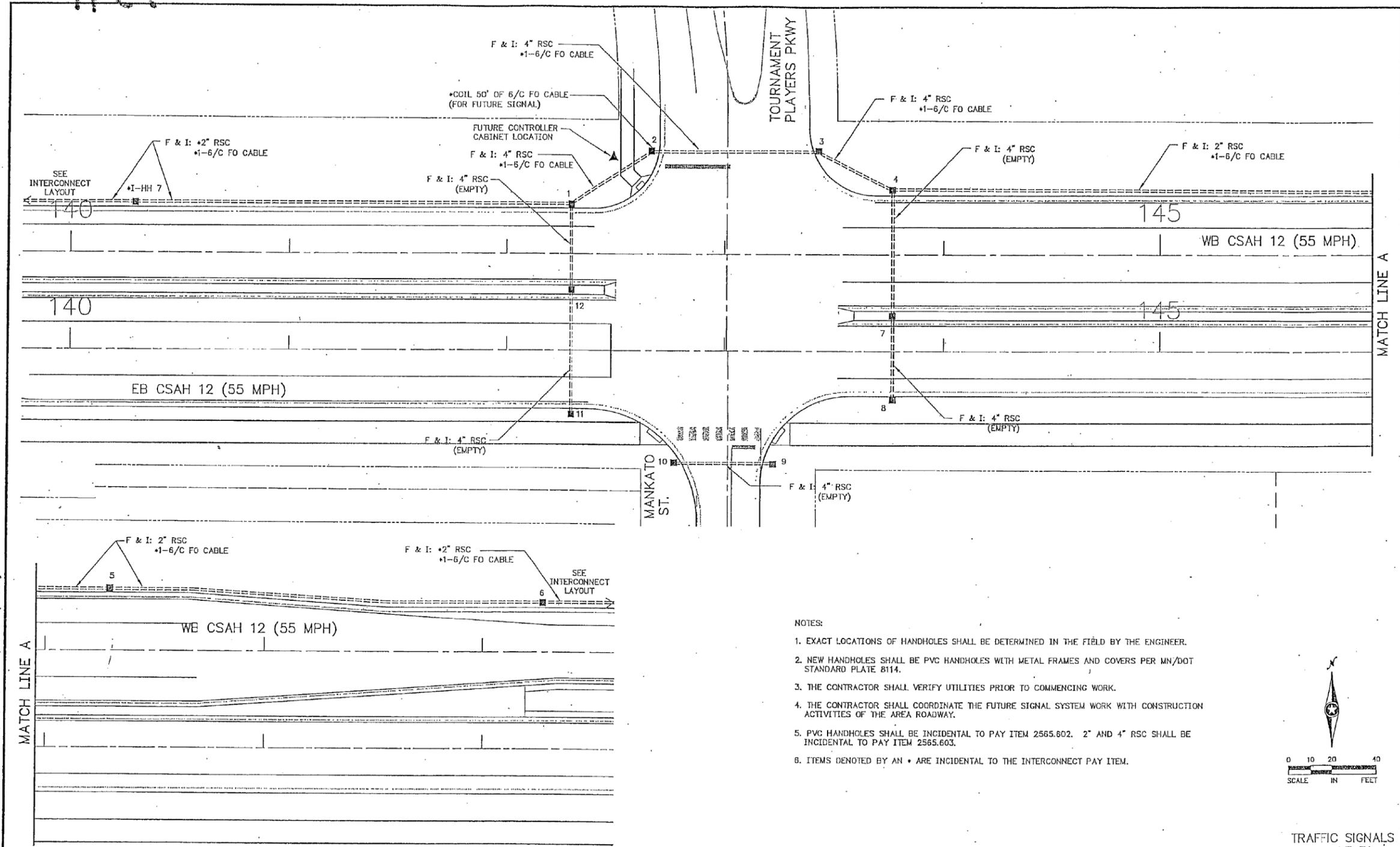
ANOKA COUNTY

ANOKA COUNTY
 HIGHWAY DEPT.

STATE AID PROJECT 002-652-013
 002-652-014

EXISTING SIGNAL PLANS
 Sheet 73 of 87 Sheets

1425

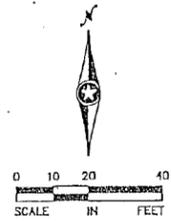


MATCH LINE A

MATCH LINE A

NOTES:

1. EXACT LOCATIONS OF HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS PER MN/DOT STANDARD PLATE 8114.
3. THE CONTRACTOR SHALL VERIFY UTILITIES PRIOR TO COMMENCING WORK.
4. THE CONTRACTOR SHALL COORDINATE THE FUTURE SIGNAL SYSTEM WORK WITH CONSTRUCTION ACTIVITIES OF THE AREA ROADWAY.
5. PVC HANDHOLES SHALL BE INCIDENTAL TO PAY ITEM 2565.602. 2" AND 4" RSC SHALL BE INCIDENTAL TO PAY ITEM 2565.603.
6. ITEMS DENOTED BY AN * ARE INCIDENTAL TO THE INTERCONNECT PAY ITEM.



TRAFFIC SIGNALS
29 OF 31

DT DATE: AUG 16, 2005 12:00pm DISK FILE NAME: (16.1) R:\31809761\PLAN-SHT\TS31.dwg

REV. NO.	BY	DATE	REVISIONS DESCRIPTION

DESIGN FILE:
31809-791

DRAWN BY: JAS
DESIGN BY: MRA

CHECKED BY: RJG
DWG. NAME: TS31

DATE:

URS
200 Third Street South
Minneapolis, MN 55410
612.375.0700 Fax 612.375.0719

ALLIANT ENGINEERING
INCORPORATED
235 PARK AVENUE SOUTH
SUITE 200
MINNEAPOLIS, MN 55412
(612) 554-3000

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Michael R. Anderson
MICHAEL R. ANDERSON



ANOKA COUNTY
HIGHWAY DEPT.

CSAH 12
RECONSTRUCTION
FUTURE SIGNAL SYSTEM
INTERSECTION LAYOUT
CSAH 12 (NORTH AVE) & MANKATO ST

S.P. 02-612-11	SHEET NO.
S.P. 106-020-025	164
S.P.	213

NO	DATE	BY	CKD	APPR	REVISION	02/04/2025	10:22:56 AM

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DRAWN BY	MR	DATE	11/30/2022
DESIGN BY	MR	DATE	11/30/2022
CHECKED BY	CO	DATE	12/10/2024

ANOKA COUNTY
HIGHWAY DEPT.

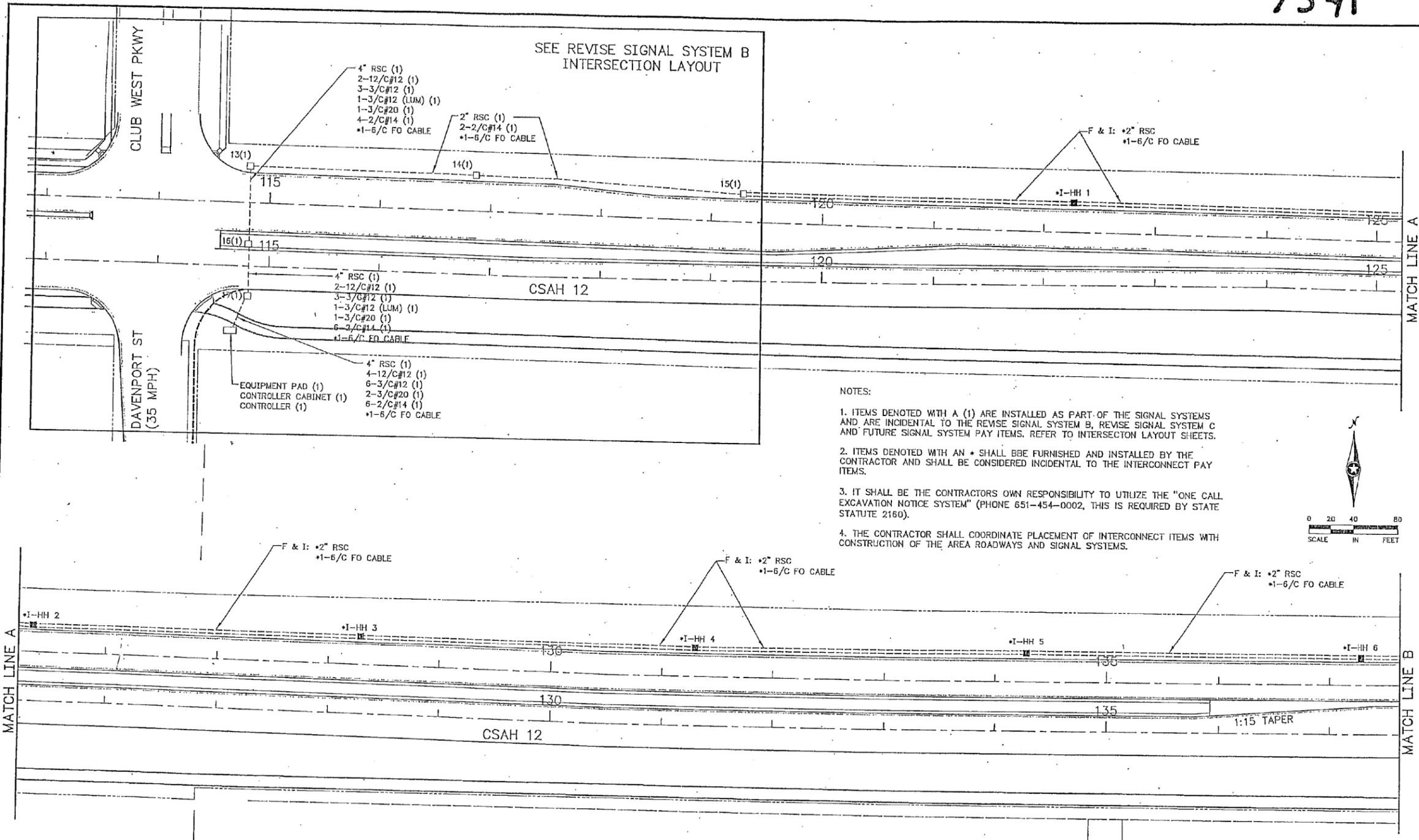
ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-652-013
002-652-014

EXISTING SIGNAL PLANS
Sheet 74 of 87 Sheets

FOR REFERENCE PURPOSES ONLY

7541



NOTES:

1. ITEMS DENOTED WITH A (1) ARE INSTALLED AS PART OF THE SIGNAL SYSTEMS AND ARE INCIDENTAL TO THE REVISE SIGNAL SYSTEM B, REVISE SIGNAL SYSTEM C AND FUTURE SIGNAL SYSTEM PAY ITEMS. REFER TO INTERSECTION LAYOUT SHEETS.
2. ITEMS DENOTED WITH AN * SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AND SHALL BE CONSIDERED INCIDENTAL TO THE INTERCONNECT PAY ITEMS.
3. IT SHALL BE THE CONTRACTORS OWN RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (PHONE 651-454-0002, THIS IS REQUIRED BY STATE STATUTE 2160).
4. THE CONTRACTOR SHALL COORDINATE PLACEMENT OF INTERCONNECT ITEMS WITH CONSTRUCTION OF THE AREA ROADWAYS AND SIGNAL SYSTEMS.

PLOT DATE: AUG 15, 2005 12:00pm DISK FILE NAME: (16.1) R:\31809781\PLAN-SHT\TS16.dwg

REV. NO.	BY	DATE	REVISIONS DESCRIPTION

DESIGN FILE:
31809-791

DRAWN BY:
JAS

DESIGN BY:
MRA

CHECKED BY:
RJC

DWG. NAME:
TS16

DATE:
AUG 15, 2005

URS
200 Third Street South
Minneapolis, MN 55415
612.345.4321

ALLIANT ENGINEERING
CORPORATION
225 PARK JORDAN SOUTH
SUITE 200
MINNEAPOLIS, MN 55415
(612) 345-3344 FAX
(612) 345-3344 FAX

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

Michael R. Anderson
MICHAEL R. ANDERSON
DATE: 11/23/05 MN LIC. NO. 42828

ANOKA COUNTY
HIGHWAY DEPT.

CSAH 12
RECONSTRUCTION
DAVENPORT ST TO RADISSON RD
TRAFFIC CONTROL SIGNAL SYSTEM
INTERCONNECT LAYOUT (1 OF 2)

S.P. 02-612-11	SHEET NO.
S.P. 106-020-025	165
S.P.	213

TRAFFIC SIGNALS
30 OF 31

FOR REFERENCE PURPOSES ONLY

NO	DATE	BY	CKD	APPR	REVISION	202/04/2025	10:22:52 AM

NAME: P:\24-01-00\CSAH_52 (MAIN ST-105TH)\Base\Proposed\CSAH_52_SIGNALS.dgn

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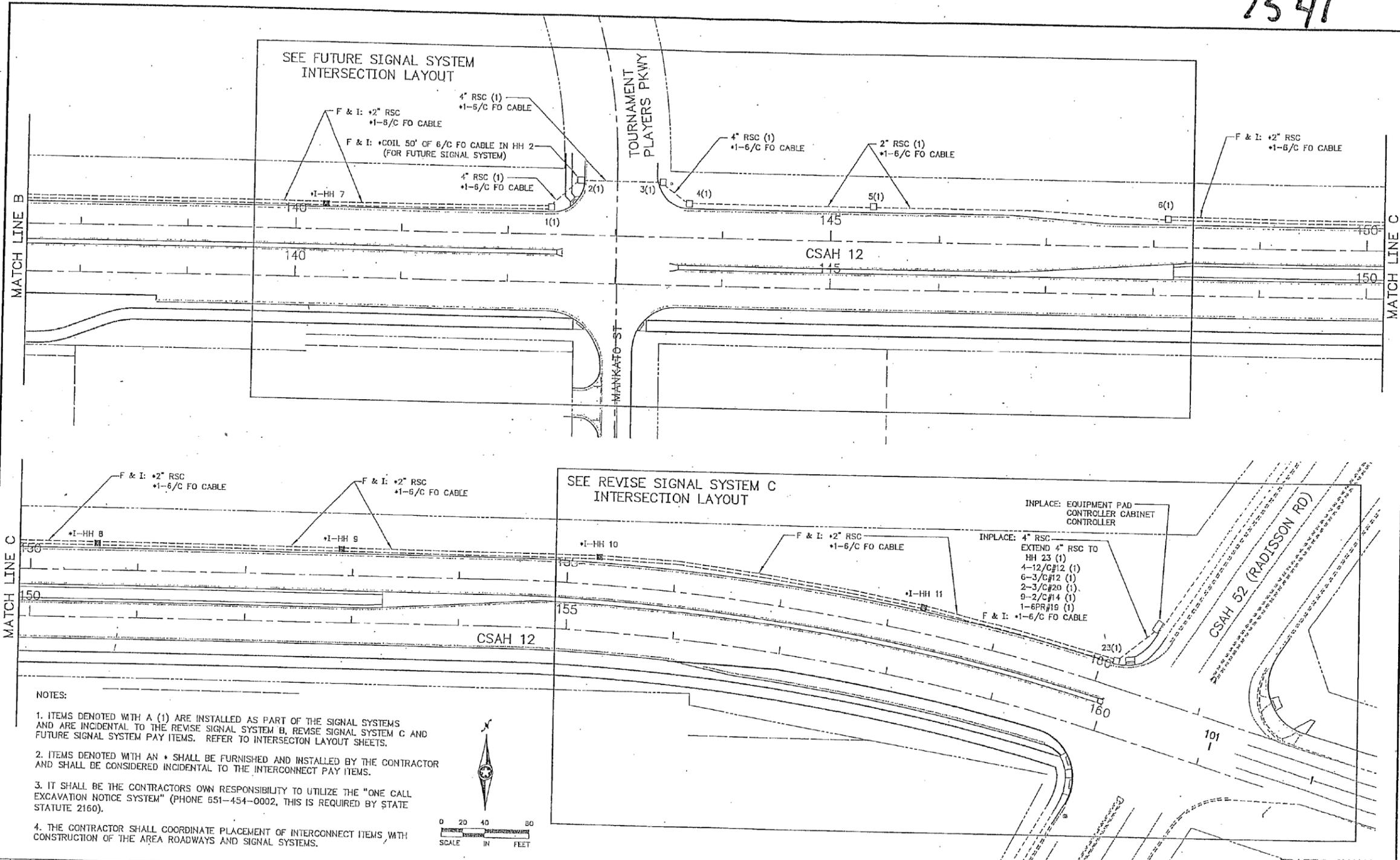
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DESIGN BY MR DATE 11/30/2022
CHECKED BY CO DATE 12/10/2024

ANOKA COUNTY
HIGHWAY DEPT.

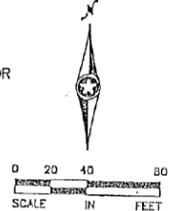
STATE AID PROJECT 002-652-013
002-652-014

EXISTING SIGNAL PLANS
Sheet 75 of 87 Sheets

7541



- NOTES:
1. ITEMS DENOTED WITH A (1) ARE INSTALLED AS PART OF THE SIGNAL SYSTEMS AND ARE INCIDENTAL TO THE REVISE SIGNAL SYSTEM B, REVISE SIGNAL SYSTEM C AND FUTURE SIGNAL SYSTEM PAY ITEMS. REFER TO INTERSECTION LAYOUT SHEETS.
 2. ITEMS DENOTED WITH AN * SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR AND SHALL BE CONSIDERED INCIDENTAL TO THE INTERCONNECT PAY ITEMS.
 3. IT SHALL BE THE CONTRACTORS OWN RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (PHONE 651-454-0002, THIS IS REQUIRED BY STATE STATUTE 2160).
 4. THE CONTRACTOR SHALL COORDINATE PLACEMENT OF INTERCONNECT ITEMS WITH CONSTRUCTION OF THE AREA ROADWAYS AND SIGNAL SYSTEMS.



LOT DATE: AUG 13, 12:00pm DISK FILE NAME: (16.1) R:\1809791\PLAN-SIT\1809791.dwg

REV. NO.	BY	DATE	REVISIONS DESCRIPTION

DESIGN FILE:
31809-791

DRAWN BY:
JAS

DESIGN BY:
MRA

CHECKED BY:
RJC

DWG. NAME:
TS17

DATE:



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

Michael R. Anderson

MICHAEL R. ANDERSON



ANOKA COUNTY HIGHWAY DEPT

CSAH 12 RECONSTRUCTION
DAVENPORT ST TO RADISSON RD

S.P. 02-612-11 SHEET NO. 166
S.P.106-020-025

NO	DATE	BY	CKD	APPR	REVISION	

02/04/2025 10:22:49 AM

NAME: P:\24-01-00\CSAH_52 (MAIN ST-105TH)\Base\Proposed\CSAH_52_SIGNALS.dgn

DRAWN BY MR DATE 11/30/2022
DESIGN BY MR DATE 11/30/2022
CHECKED BY CO DATE 12/10/2024



ANOKA COUNTY HIGHWAY DEPT.

STATE AID PROJECT 002-652-013 002-652-014

EXISTING SIGNAL PLANS
Sheet 76 of 87 Sheets

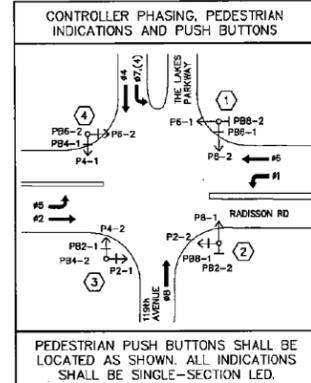
FOR REFERENCE PURPOSES ONLY

NOTES:

1. LOCATION OF POLES, CONTROLLER CABINET, SERVICE CABINET, LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
3. LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
4. NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
5. EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.
6. PEDESTRIAN INDICATIONS SHALL BE SINGLE-SECTION.
7. ALL VEHICLE SIGNAL INDICATIONS AND ALL PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
8. SEE SPECIAL PROVISIONS, DETAILS AND ESTIMATED QUANTITIES REGARDING SIGNING, STRIPING AND CONCRETE WALK TO BE FURNISHED AND INSTALLED BY CONTRACTOR (TO BE MEASURED AND PAID FOR SEPARATELY FROM ITEM NO. 2585.511 - F&I FULLY-ACTUATED TRAFFIC SIGNAL SYSTEM).
9. ALL MAST ARM POLE AND PEDESTAL POLE MOUNTED VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE MOUNTED USING ONE-WAY SIGNAL HEAD MOUNTS. SEE SPECIAL PROVISIONS.
10. A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF EACH MAST ARM (FOR EVP).
11. PEDESTRIAN RAMPS SHALL BE CONSTRUCTED PER CURRENT MnDOT TRUNCATED DOME SPECIFICATIONS. SEE MnDOT STANDARD PLATE 7036F.
12. ALL POLE MOUNTED SIGNALS SHALL BE PLUMBIZER MOUNTED.
13. SEE LEGEND ON SHEET 2.

SIGNAL SYSTEM OPERATION

THE SIGNAL SYSTEM FLASH MODE IS ALL RED. PHASES 1 & 5 ARE PROTECTED LEFT TURNS. PHASES 4/7 ARE A PROTECTED/PERMITTED LEFT TURN. PHASES 2 & 6 ARE ON VEHICLE RECALL.



NMC LOOP DETECTORS

TYPE	NUMBER	SIZE (FT)	LOCATION
1	D1-1	6'x6'	40'
1	D1-2	6'x6'	10'
1	D2-1, D2-2	2-6'x6'	475'
3	D4-1	6'x6'	180'
7	D4-2	2-6'x6'	5' & 20'
1	D5-1	6'x6'	40'
1	D5-2	6'x6'	10'
1	D6-1, D6-2	2-6'x6'	475'
1	D7-1	2-6'x6'	10' & 40'
1	D7-2	2-6'x6'	-5' & 25'
3	D8-1	6'x6'	100'
7	D8-2	6'x6'	20'
		6'x10'	5'
1	D8-3	2-6'x6'	10' & 40'
1	D8-4	6'x6'	-5' & 25'

LOCATION: DISTANCE INDICATED IS FROM TRAILING EDGE OF STOP BAR TO LEADING EDGE OF LOOP DETECTOR.

TYPE 1: CALL AND EXTEND
TYPE 3: EXTEND ONLY
TYPE 7: DELAY CALL, IMMEDIATE EXTEND

SIGNAL FACES

ALL INDICATIONS SHALL BE 12" LED.

SIGNAL FACE	LED R	LED Y	LED G	LED R	LED Y	LED G
1-1,1-2				←	←	←
2-1,2-2,2-3	●	●	●			
4-1,4-2	●	●	●			
7-1,7-2	●	●	●	←	←	←
5-1,5-2				←	←	←
6-1,6-2,6-3	●	●	●			
8-1,8-2,8-3,8-4	●	●	●			

REVISIONS

NO.	DATE	DESCRIPTION
10/12/05		CHANGED PED WIRES TO #12
10/18/05		CHANGED MAST ARM #2 LENGTH TO 55'

RLK
KULUSIETO LTD.
6110 Blue Circle Dr., Suite #100, Minneapolis, MN 55463

Design: (952) 935-0972
Fax: (952) 935-1153
www.rlk-kulusieto.com

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.
Vernon E. Swing
DATE: 12/2/05 LIC. NO. 41417

DESIGNED: NJE
DRAWN: NJE
CHECKED: [Signature]
RLK PROJECT NO. 2002-192-M
DATE: 12/2/05

TITLE: TRAFFIC SIGNAL SYSTEM INTERSECTION LAYOUT
CSAH 52 AND THE LAKES PARKWAY/119TH AVENUE NE
CITY OF BLAINE, ANOKA COUNTY

EXTEND INTO HH 4:
4" RSC
3-12/C#12 (SIG)
1-3/C#12, 1-3/C#20 (EVP)
2-3/C#12 (PED)
12-2/C#14 (DET)
1-6 Pr.#19 (INT)

EXTEND INTO HH 6:
2" RSC
3-1/C#6 (SIGNAL SERVICE)

SCALE: 0 20 40
IN FEET
CP 05-30-52

④ PA100 POLE FOUNDATION
TYPE PA100-A55-D40-9 (DAVIT AT 350')
1-ONE-WAY SIGNAL (END MOUNTED)
2-ONE-WAY SIGNALS (MID-MAST ARM MOUNTED 11' & 23' FROM END OF MAST ARM)
2-TYPE 10B (POLE MOUNTED AT 45' & 225')
ONE-WAY EVP DETECTOR AND CONFIRMATORY LIGHT (#1.6; MOUNTED 16' FROM END OF MAST ARM)
1-LUMINAIRE (200W HPS, MOUNTED AT 350')
2-PED PUSH BUTTONS & SIGNS (R10-4b, POLE MOUNTED AT 0' & 270')
2-ONE-WAY SIGNS (R6-1, POLE MOUNTED AT 0' & 180')

EXTEND INTO HH 2:
4" RSC
3-12/C#12 (SIG)
1-3/C#12, 1-3/C#20 (EVP)
2-3/C#12 (PED)
1-3/C#12 (LUM)

4" RSC
2-12/C#12 (SIG)
1-3/C#20 (EVP)
2-3/C#12 (PED)
6-2/C#14 (DET)
1-3/C#12 (LUM)

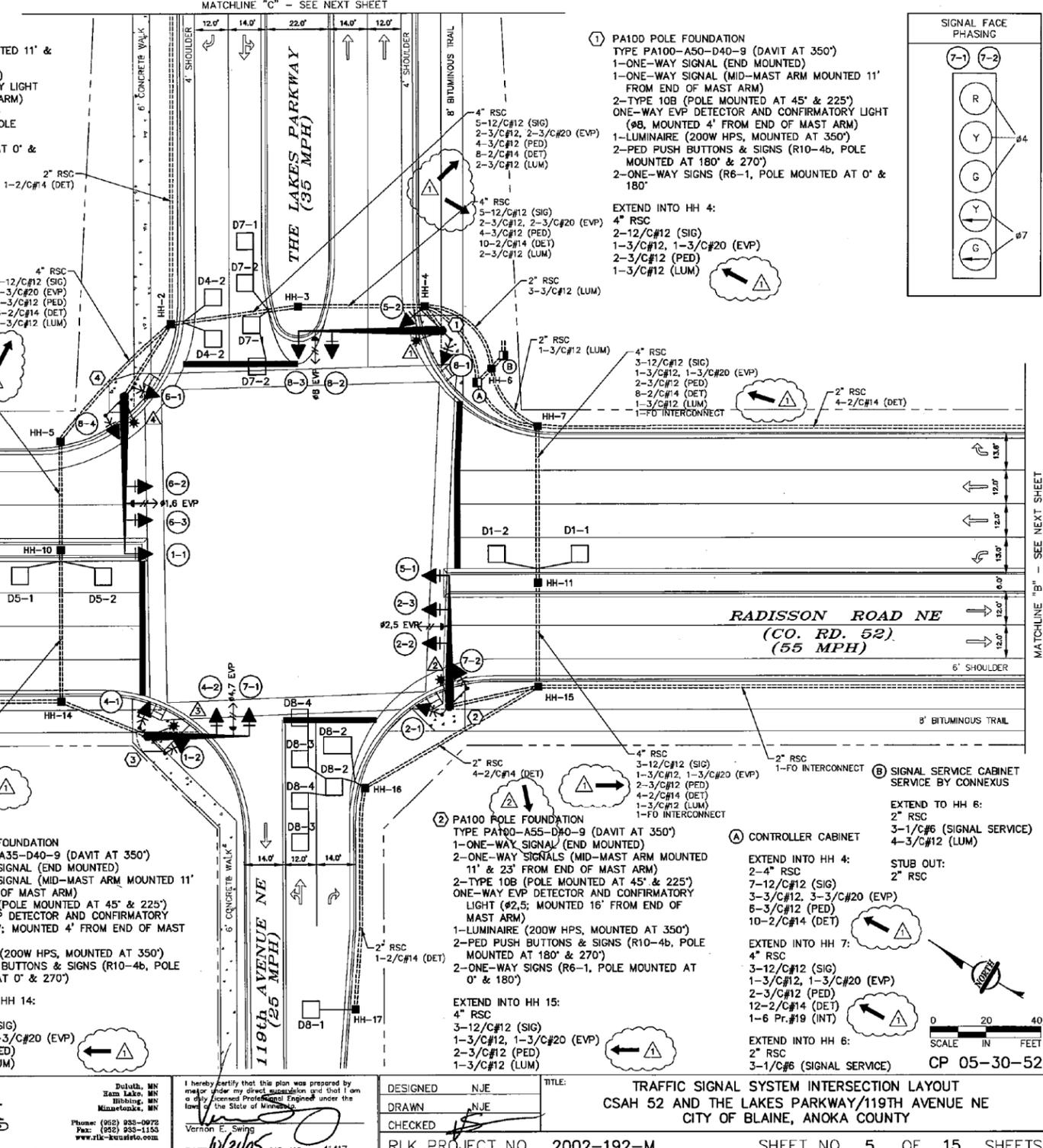
4" RSC
2-12/C#12 (SIG)
1-3/C#20 (EVP)
2-3/C#12 (PED)
6-2/C#14 (DET)
1-3/C#12 (LUM)

4" RSC
2-12/C#12 (SIG)
1-3/C#20 (EVP)
2-3/C#12 (PED)
6-2/C#14 (DET)
1-3/C#12 (LUM)

4" RSC
2-12/C#12 (SIG)
1-3/C#20 (EVP)
2-3/C#12 (PED)
6-2/C#14 (DET)
1-3/C#12 (LUM)

③ PA100 POLE FOUNDATION
TYPE PA100-A35-D40-9 (DAVIT AT 350')
1-ONE-WAY SIGNAL (END MOUNTED)
1-ONE-WAY SIGNAL (MID-MAST ARM MOUNTED 11' FROM END OF MAST ARM)
2-TYPE 10B (POLE MOUNTED AT 45' & 225')
ONE-WAY EVP DETECTOR AND CONFIRMATORY LIGHT (#4.7; MOUNTED 4' FROM END OF MAST ARM)
1-LUMINAIRE (200W HPS, MOUNTED AT 350')
2-PED PUSH BUTTONS & SIGNS (R10-4b, POLE MOUNTED AT 0' & 270')

EXTEND INTO HH 14:
4" RSC
2-12/C#12 (SIG)
1-3/C#12, 1-3/C#20 (EVP)
2-3/C#12 (PED)
1-3/C#12 (LUM)



① PA100 POLE FOUNDATION
TYPE PA100-A50-D40-9 (DAVIT AT 350')
1-ONE-WAY SIGNAL (END MOUNTED)
1-ONE-WAY SIGNAL (MID-MAST ARM MOUNTED 11' FROM END OF MAST ARM)
2-TYPE 10B (POLE MOUNTED AT 45' & 225')
ONE-WAY EVP DETECTOR AND CONFIRMATORY LIGHT (#8; MOUNTED 4' FROM END OF MAST ARM)
1-LUMINAIRE (200W HPS, MOUNTED AT 350')
2-PED PUSH BUTTONS & SIGNS (R10-4b, POLE MOUNTED AT 0' & 270')
2-ONE-WAY SIGNS (R6-1, POLE MOUNTED AT 0' & 180')

EXTEND INTO HH 4:
4" RSC
2-12/C#12 (SIG)
1-3/C#12, 1-3/C#20 (EVP)
2-3/C#12 (PED)
1-3/C#12 (LUM)

4" RSC
3-12/C#12 (SIG)
1-3/C#12, 1-3/C#20 (EVP)
2-3/C#12 (PED)
8-2/C#14 (DET)
1-3/C#12 (LUM)
1-FD INTERCONNECT

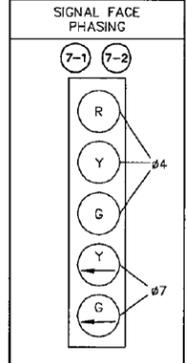
4" RSC
3-12/C#12 (SIG)
1-3/C#12, 1-3/C#20 (EVP)
2-3/C#12 (PED)
4-2/C#14 (DET)
1-3/C#12 (LUM)
1-FD INTERCONNECT

4" RSC
3-12/C#12 (SIG)
1-3/C#12, 1-3/C#20 (EVP)
2-3/C#12 (PED)
4-2/C#14 (DET)
1-3/C#12 (LUM)
1-FD INTERCONNECT

② PA100 POLE FOUNDATION
TYPE PA100-A55-D40-9 (DAVIT AT 350')
1-ONE-WAY SIGNAL (END MOUNTED)
2-ONE-WAY SIGNALS (MID-MAST ARM MOUNTED 11' & 23' FROM END OF MAST ARM)
2-TYPE 10B (POLE MOUNTED AT 45' & 225')
ONE-WAY EVP DETECTOR AND CONFIRMATORY LIGHT (#2.5; MOUNTED 16' FROM END OF MAST ARM)
1-LUMINAIRE (200W HPS, MOUNTED AT 350')
2-PED PUSH BUTTONS & SIGNS (R10-4b, POLE MOUNTED AT 0' & 270')
2-ONE-WAY SIGNS (R6-1, POLE MOUNTED AT 0' & 180')

EXTEND INTO HH 15:
4" RSC
3-12/C#12 (SIG)
1-3/C#12, 1-3/C#20 (EVP)
2-3/C#12 (PED)
1-3/C#12 (LUM)

4" RSC
3-12/C#12 (SIG)
1-3/C#12, 1-3/C#20 (EVP)
2-3/C#12 (PED)
1-3/C#12 (LUM)



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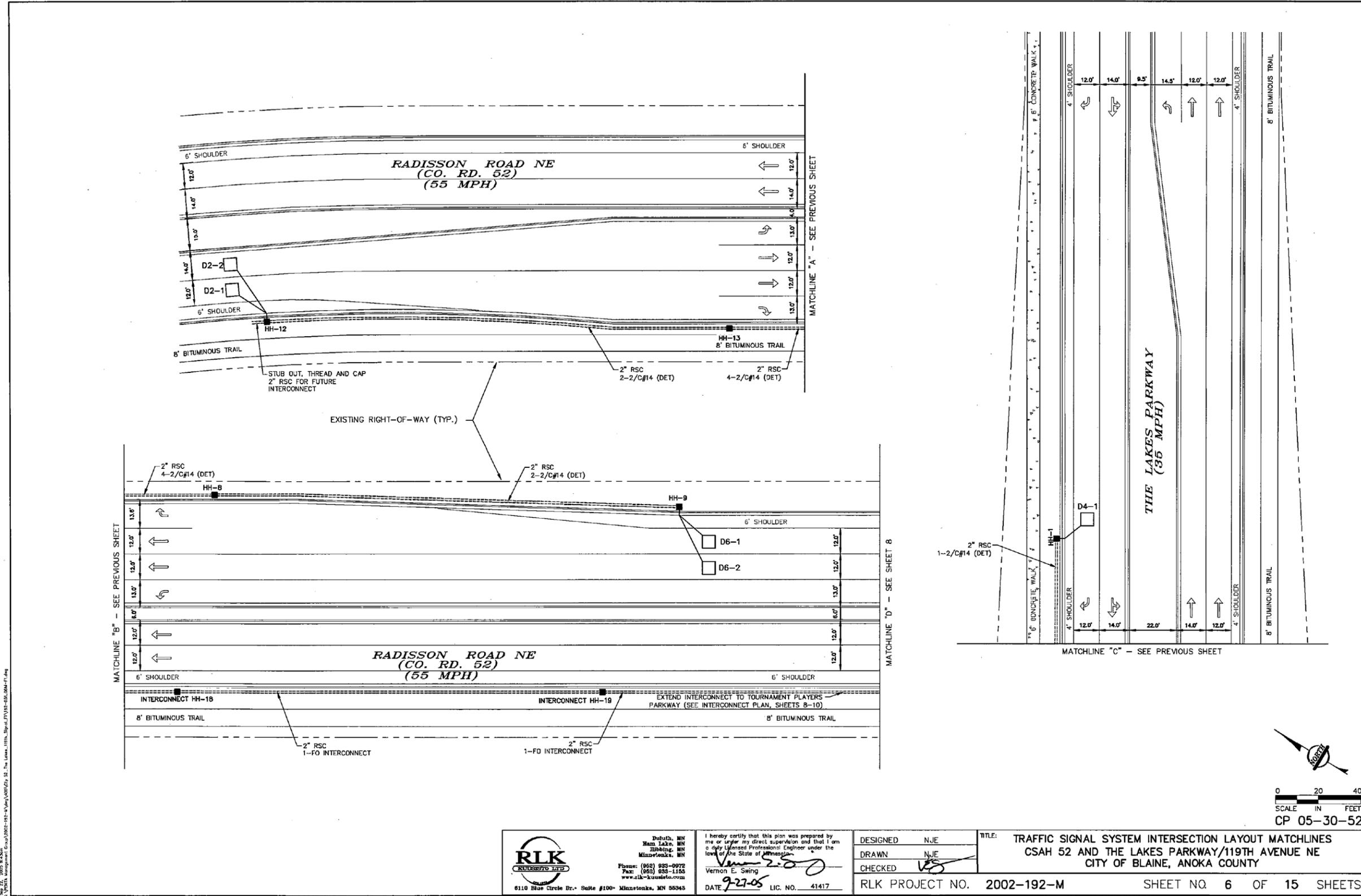


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I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Vernon E. Swing
Vernon E. Swing
DATE 9-27-05 LIC. NO. 41417

DESIGNED	NJE	TITLE:	TRAFFIC SIGNAL INTERSECTION LAYOUT MATCHLINES CSAH 52 AND THE LAKES PARKWAY/119TH AVENUE NE CITY OF BLAINE, ANOKA COUNTY
DRAWN	NJE	RLK PROJECT NO.	2002-192-M
CHECKED	VS	SHEET NO.	6 OF 15 SHEETS

NO	DATE	BY	CKD	APPR	REVISION	02/04/2025	10:23:13 AM

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DESIGN BY	MR	DATE	11/30/2022
CHECKED BY	CO	DATE	12/10/2024

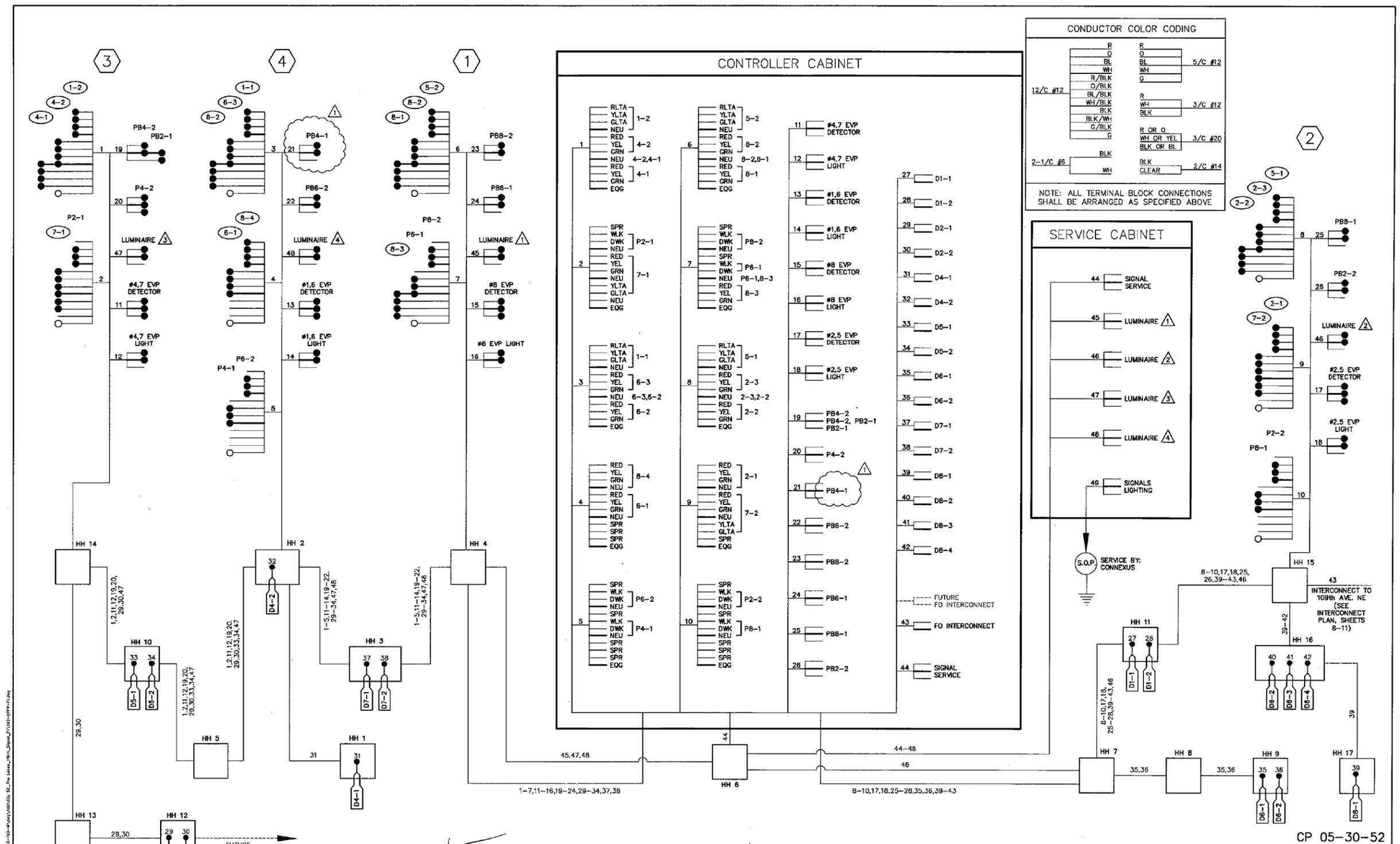
ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-652-013
002-652-014

EXISTING SIGNAL PLANS

Sheet 78 of 87 Sheets

FOR REFERENCE PURPOSES ONLY



FOR REFERENCE PURPOSES ONLY

CP 05-30-52

REVISIONS
10/7/05 CHANGED FROM PB4-4

FUTURE INTERCONNECT TO NORTH

RLK
REGISTERED EITD

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Minnetonka, MN

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Vernon E. Swing
DATE: 6-11-05 LIC. NO. _____

DESIGNED NJE
DRAWN ECL
CHECKED _____

TITLE: FIELD WIRING DIAGRAM
CSAH 52 AND THE LAKES PARKWAY/119TH AVENUE NE
CITY OF BLAINE, ANOKA COUNTY

RLK PROJECT NO. 2002-192-M SHEET NO. 7 OF 15 SHEETS

NO	DATE	BY	CKD	APPR	REVISION	02/04/2025	10:23:16 AM

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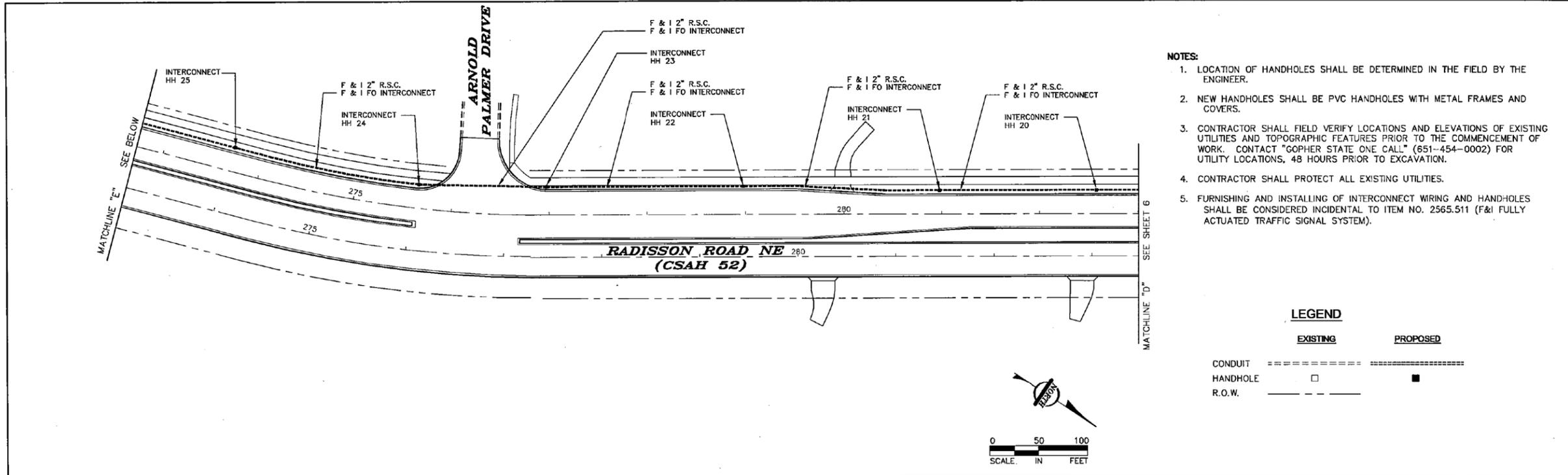
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DESIGN BY MR DATE 11/30/2022
CHECKED BY CO DATE 12/10/2024

ANOKA COUNTY
HIGHWAY DEPT.

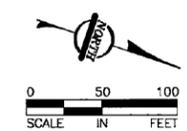
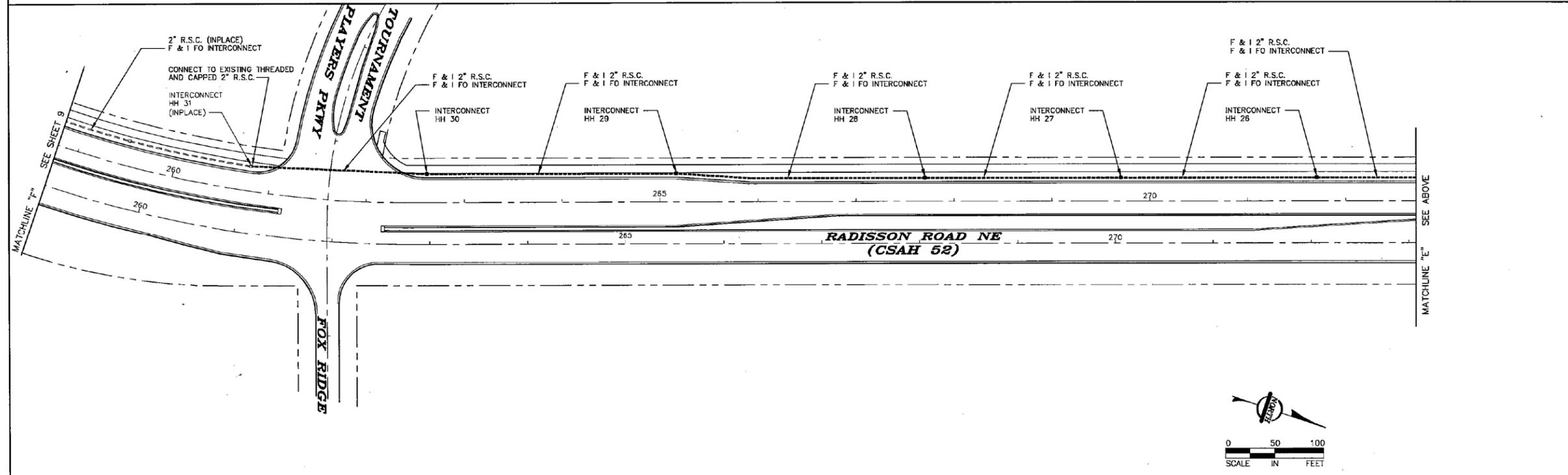
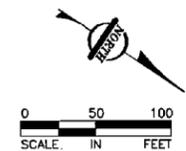
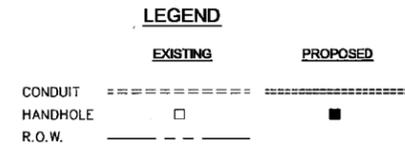
EXISTING SIGNAL PLANS

STATE AID PROJECT 002-652-013
002-652-014

Sheet 79 of 87 Sheets



- NOTES:**
1. LOCATION OF HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
 2. NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
 3. CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES AND TOPOGRAPHIC FEATURES PRIOR TO THE COMMENCEMENT OF WORK. CONTACT "GOPHER STATE ONE CALL" (651-454-0002) FOR UTILITY LOCATIONS, 48 HOURS PRIOR TO EXCAVATION.
 4. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES.
 5. FURNISHING AND INSTALLING OF INTERCONNECT WIRING AND HANDHOLES SHALL BE CONSIDERED INCIDENTAL TO ITEM NO. 2565.511 (F&I FULLY ACTUATED TRAFFIC SIGNAL SYSTEM).



<p>6110 Blue Circle Dr. Suite #100 • Minnetonka, MN 55943</p>	<p>Duluth, MN Ham Lake, MN Hibbing, MN Minnetonka, MN</p> <p>Phone: (652) 833-0972 Fax: (652) 938-1158 www.rlk-engineers.com</p>	<p>I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.</p> <p>Vernon E. Swing DATE 7-27-05 LIC. NO. 41417</p>	DESIGNED NJE	<p>TITLE: INTERCONNECT PLAN (1 OF 3) CSAH 52 AND THE LAKES PARKWAY/119TH AVENUE NE CITY OF BLAINE, ANOKA COUNTY</p>
			DRAWN NJE	

NO	DATE	BY	CKD	APPR	REVISION	
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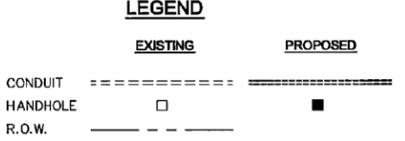
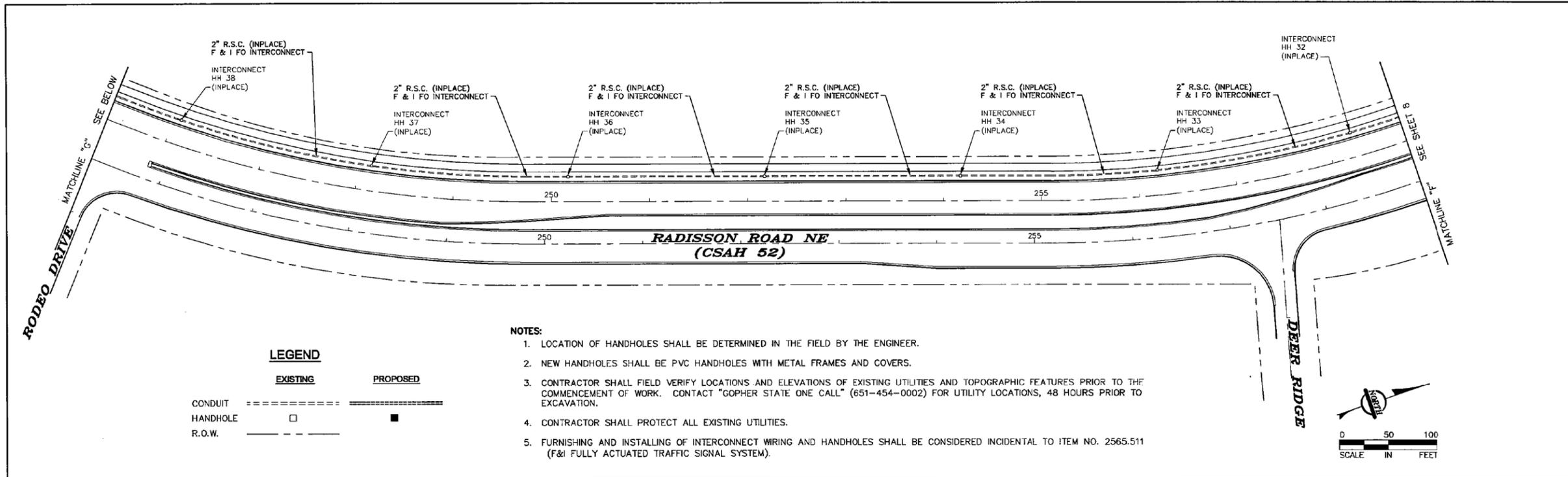
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DESIGN BY	MR	DATE	11/30/2022
CHECKED BY	CO	DATE	12/10/2024

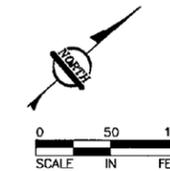
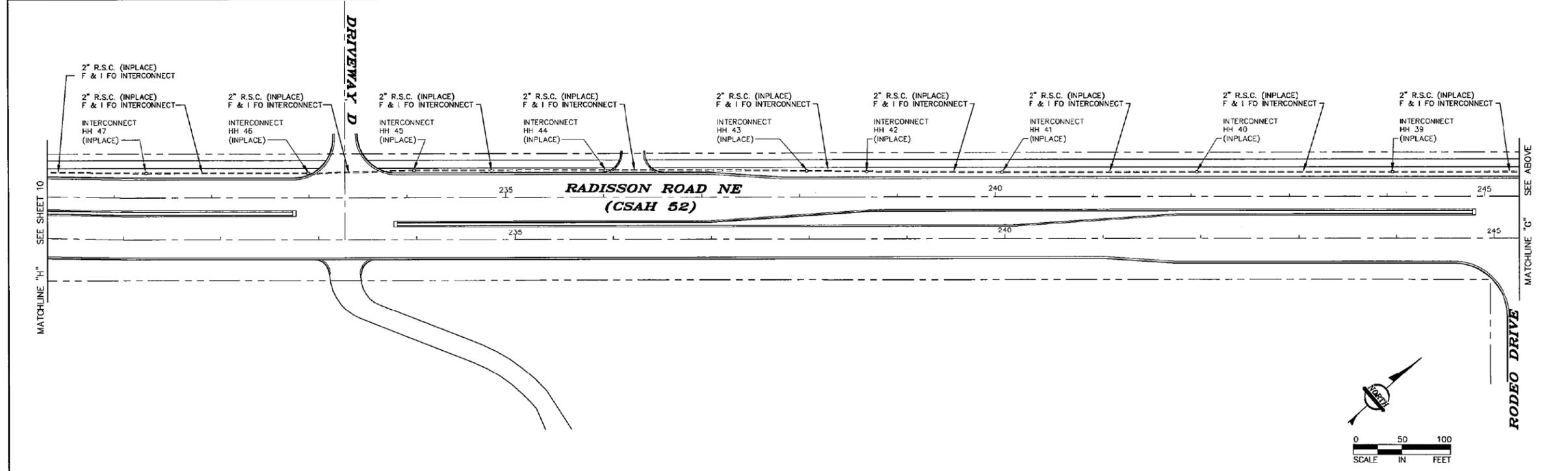
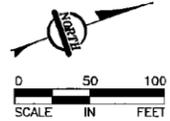
ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-652-013
002-652-014

EXISTING SIGNAL PLANS
Sheet 80 of 87 Sheets



- NOTES:**
1. LOCATION OF HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
 2. NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
 3. CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES AND TOPOGRAPHIC FEATURES PRIOR TO THE COMMENCEMENT OF WORK. CONTACT "GOPHER STATE ONE CALL" (651-454-0002) FOR UTILITY LOCATIONS, 48 HOURS PRIOR TO EXCAVATION.
 4. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES.
 5. FURNISHING AND INSTALLING OF INTERCONNECT WIRING AND HANDHOLES SHALL BE CONSIDERED INCIDENTAL TO ITEM NO. 2565.511 (F&I FULLY ACTUATED TRAFFIC SIGNAL SYSTEM).



 RLK <small>REGISTERED LANDSCAPE ARCHITECT</small> 8110 Blue Circle Dr. Suite #100 • Minneapolis, MN 55443	Duluth, MN Ham Lake, MN Hibbing, MN Minneapolis, MN Phone: (952) 933-0972 Fax: (952) 933-1153 www.rlk-kuusisto.com	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. Vernon E. Swing DATE <u>7-27-05</u> LIC. NO. <u>41417</u>	DESIGNED <u>NJE</u> DRAWN <u>NJE</u> CHECKED <u>VES</u>	TITLE: INTERCONNECT PLAN (2 OF 3) CSAH 52 AND THE LAKES PARKWAY/119TH AVENUE NE CITY OF BLAINE, ANOKA COUNTY
	RLK PROJECT NO. 2002-192-M		SHEET NO. 9 OF 15 SHEETS	

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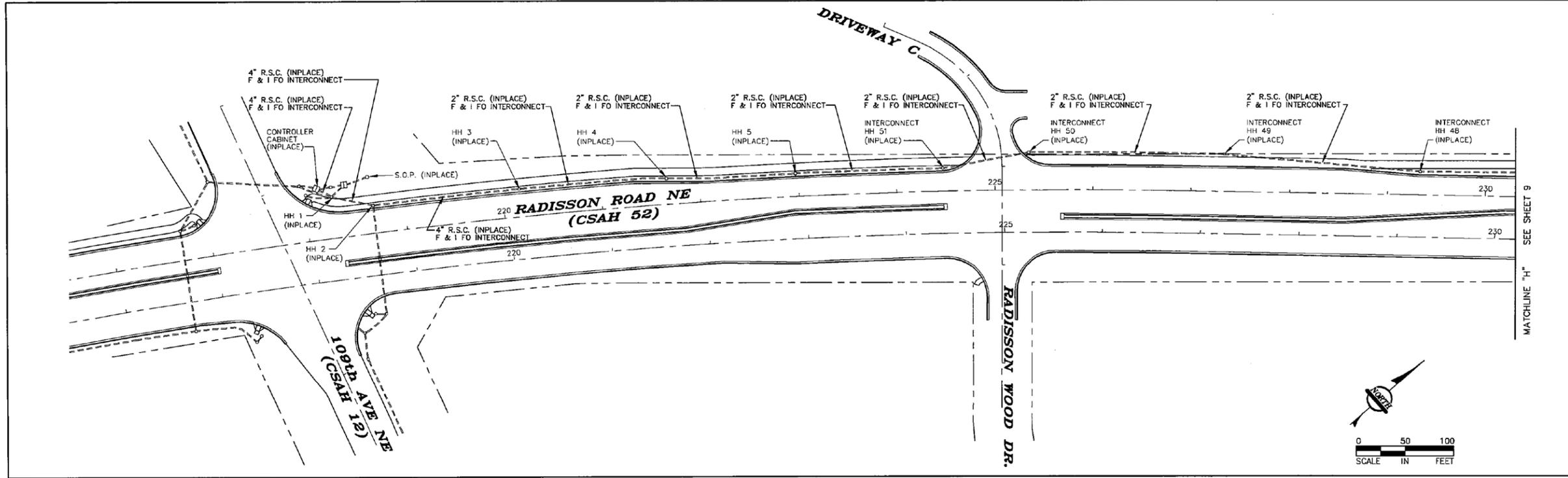
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DESIGN BY <u>MR</u> DATE <u>11/30/2022</u>
CHECKED BY <u>CO</u> DATE <u>12/10/2024</u>

ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-652-013
002-652-014

EXISTING SIGNAL PLANS

Sheet 81 of 87 Sheets



LEGEND

	EXISTING	PROPOSED
CONDUIT	=====	-----
HANDHOLE	□	■
R.O.W.	-----	-----

NOTES:

1. LOCATION OF HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
2. NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
3. CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES AND TOPOGRAPHIC FEATURES PRIOR TO THE COMMENCEMENT OF WORK. CONTACT "GOPHER STATE ONE CALL" (651-454-0002) FOR UTILITY LOCATIONS, 48 HOURS PRIOR TO EXCAVATION.
4. CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES.
5. FURNISHING AND INSTALLING OF INTERCONNECT WIRING AND HANDHOLES SHALL BE CONSIDERED INCIDENTAL TO ITEM NO. 2565.511 (F&I FULLY ACTUATED TRAFFIC SIGNAL SYSTEM).
6. SEE SHEET 11 FOR CSAH 52/109th AVENUE NE WIRING DIAGRAM.

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 Vernon E. Swing
 DATE 9-27-05 LIC. NO. 41417

DESIGNED	NJE
DRAWN	NJE
CHECKED	VES

TITLE: INTERCONNECT PLAN (3 OF 3)
 CSAH 52 AND THE LAKES PARKWAY/119TH AVENUE NE
 CITY OF BLAINE, ANOKA COUNTY
 RLK PROJECT NO. 2002-192-M SHEET NO. 10 OF 15 SHEETS

NO	DATE	BY	CKD	APPR	REVISION	02/04/2025	10:23:08 AM
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DRAWN BY	MR	DATE	11/30/2022
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CHECKED BY	CO	DATE	12/10/2024

ANOKA COUNTY
 HIGHWAY DEPT.

STATE AID PROJECT 002-652-013
 002-652-014

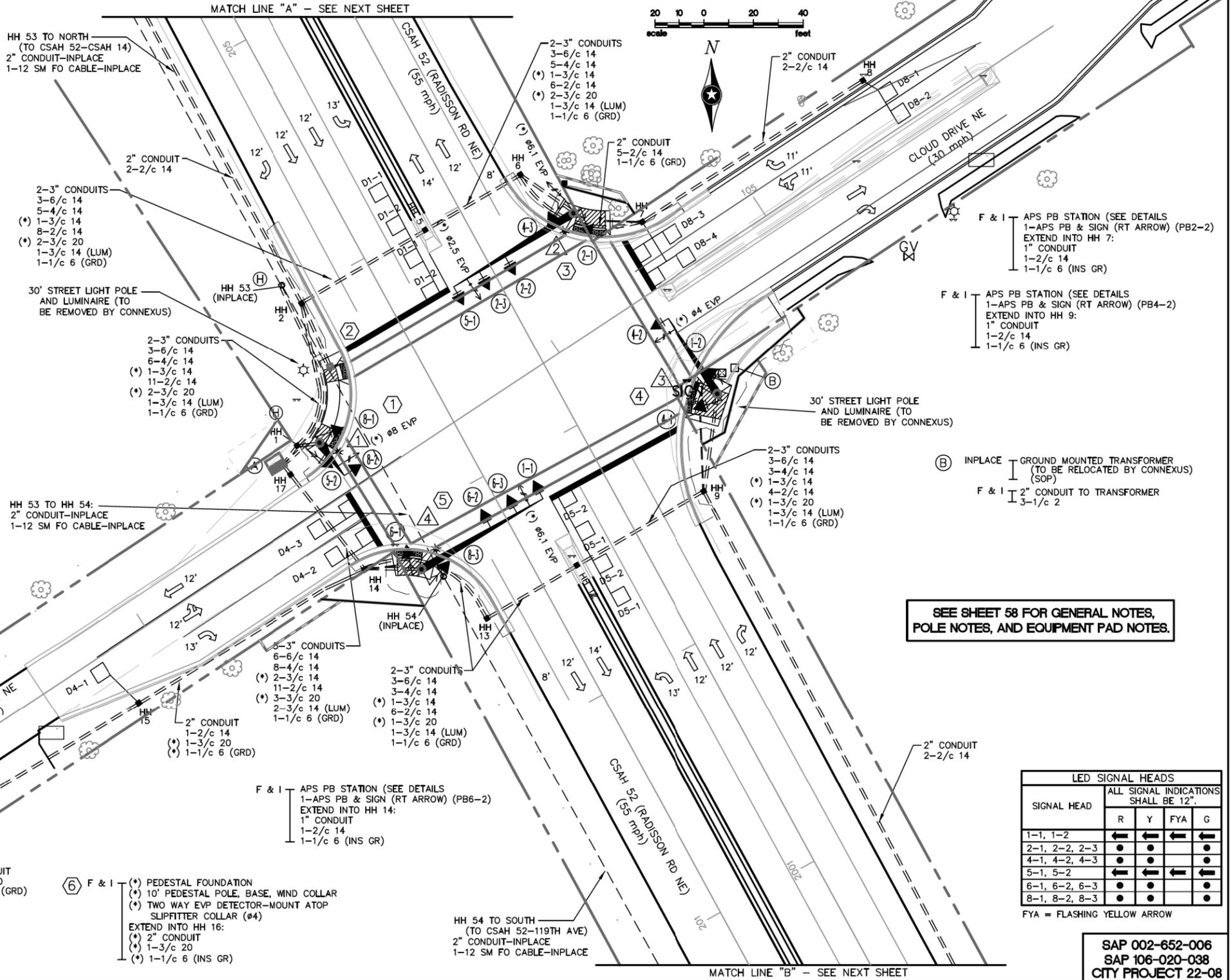
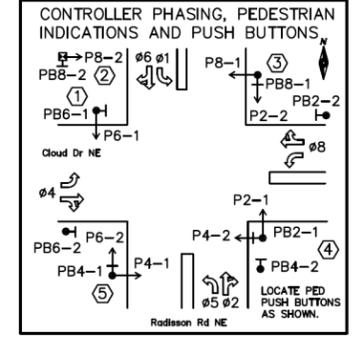
EXISTING SIGNAL PLANS
 Sheet 82 of 87 Sheets

PVC LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	2-6x6	15' & 45'	1
D1-2	2-6x6	0' & 30'	7
D2-1	6x6	475'	1
D2-2	6x6	475'	1
D4-1	6x6	120'	3,8
D4-2	2-6x6	0' & 15'	7
D4-3	2-6x6	0' & 15'	1
D5-1	2-6x6	15' & 45'	1
D5-2	2-6x6	0' & 30'	1
D6-1	6x6	475'	1
D6-2	6x6	475'	1
D8-1	6x6	120'	3,8
D8-2	6x6	120'	3,8
D8-3	2-6x6	0' & 15'	7
D8-4	2-6x6	0' & 15'	1

LOOP DETECTORS FUNCTIONS:
 1) CALL AND EXTEND
 3) EXTEND ONLY
 7) DELAYED CALL
 IMMEDIATE EXTEND
 8) CARRY OVER (STRETCH)

NOTE: LOCATION=DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR.

SIGNAL SYSTEM OPERATIONS:
 - SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
 - NORMAL OPERATION SHALL BE 6 PHASE, WITH PHASES 1 & 5 BEING FLASHING YELLOW ARROWS (BY TIME-OF-DAY PROGRAMMING).
 - VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.



SEE SHEET 58 FOR GENERAL NOTES, POLE NOTES, AND EQUIPMENT PAD NOTES.

LED SIGNAL HEADS				
SIGNAL HEAD	ALL SIGNAL INDICATIONS SHALL BE 12".			
	R	Y	FYA	G
1-1, 1-2	●	●	●	●
2-1, 2-2, 2-3	●	●	●	●
4-1, 4-2, 4-3	●	●	●	●
5-1, 5-2	●	●	●	●
6-1, 6-2, 6-3	●	●	●	●
8-1, 8-2, 8-3	●	●	●	●

FYA = FLASHING YELLOW ARROW

SAP 002-652-006
 SAP 106-020-038
 CITY PROJECT 22-08

SEH Project	ANOKC 163661	Rev.#	Revision Issue Description	Date	Rev.#	Revision Issue Description	Date
Drawn By	JMG						
Designed By	JMG						
Checked By	JMG						

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.

SEH
 Date: November 17, 2022
 Name: John M. Gray, PE
 Lic. No. 22457

CSAH 52 AT CLOUD DRIVE NE
 ANOKA COUNTY, MINNESOTA
 CITY OF BLAINE

TRAFFIC CONTROL SIGNAL SYSTEM INTERSECTION LAYOUT
 CSAH 52 (RADISSON RD NE) AT CLOUD DR NE

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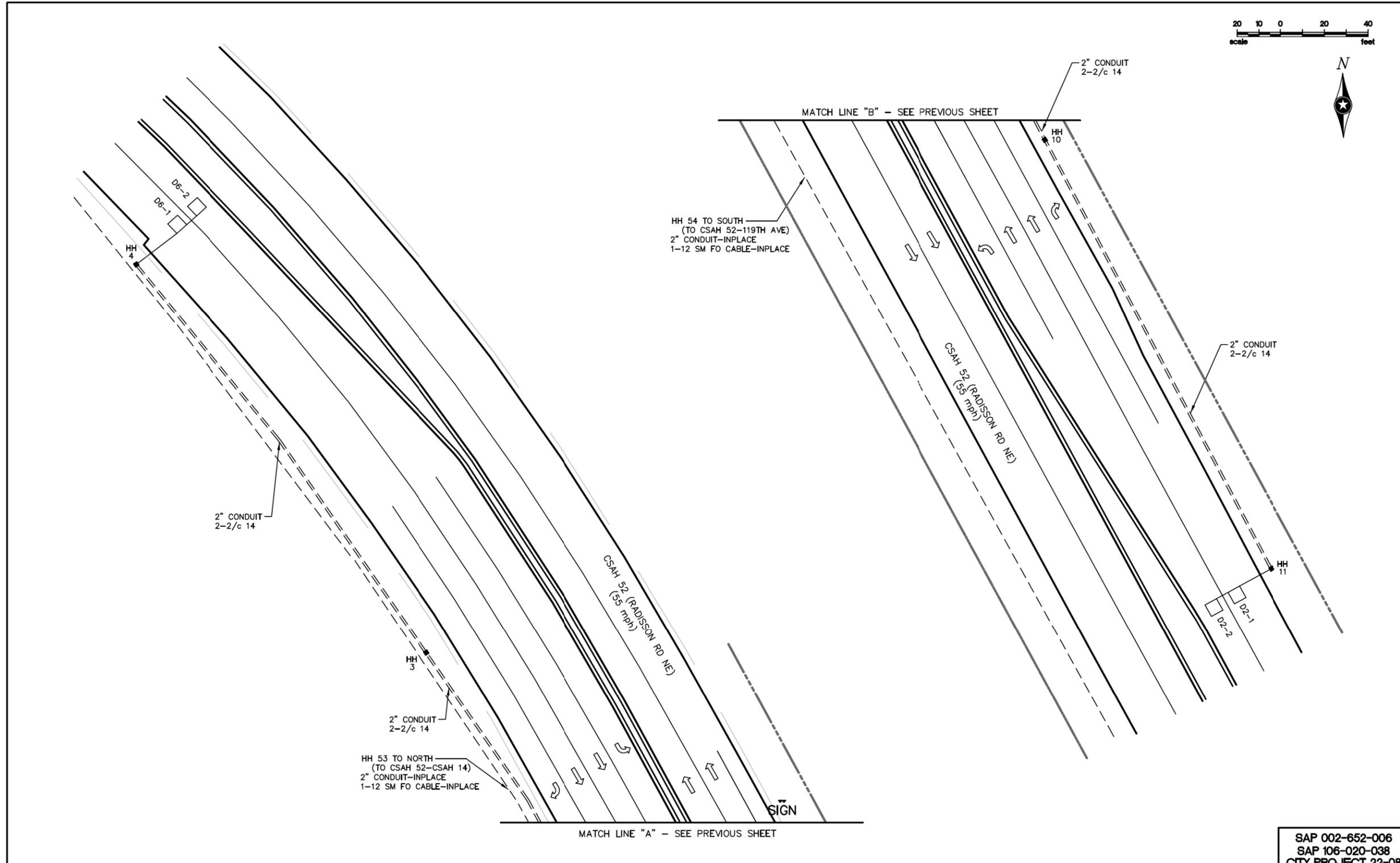
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DESIGN BY	MR	DATE	11/30/2022
CHECKED BY	CO	DATE	12/10/2024

ANOKA COUNTY HIGHWAY DEPT.

STATE AID PROJECT 002-652-013
 002-652-014

EXISTING SIGNAL PLANS
 Sheet 83 of 87 Sheets



SAP 002-652-006
 SAP 106-020-038
 CITY PROJECT 22-08

SEH Project	ANOKC 163661	Rev.#	Revision Issue Description	Date	Rev.#	Revision Issue Description	Date
Drawn By	JMG						
Designed By	JMG						
Checked By	JMG						

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.

John M. Gray
 Name: John M. Gray, PE
 Lic. No. 22457
 Date: November 17, 2022

CSAH 52 AT CLOUD DRIVE NE
 ANOKA COUNTY, MINNESOTA
 CITY OF BLAINE

TRAFFIC CONTROL SIGNAL SYSTEM
 INTERSECTION LAYOUT MATCH LINES
 CSAH 52 (RADISSON RD NE) AT CLOUD DR NE

57
 of 62

NO	DATE	BY	CHKD	APPR	REVISION	DATE	TIME
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ANOKA COUNTY
 HIGHWAY DEPT.

STATE AID PROJECT 002-652-013
 002-652-014

EXISTING SIGNAL PLANS

Sheet 84 of 87 Sheets

FOR REFERENCE PURPOSES ONLY

NOTES:

- 1) LOCATION OF FOUNDATIONS, LOOP DETECTORS, HANDHOLES, AND PUSH BUTTON STATIONS SHALL BE DETERMINED IN FIELD BY THE ENGINEER.
- 2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
- 3) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS (SEE SPECIAL PROVISIONS).
- 4) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE & CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF EACH MAST ARM (FOR EVP).
- 5) THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE POWER COMPANY TO ARRANGE FOR THE POWER CONNECTION (CONNEXUS). SEE SPECIAL PROVISIONS.
- 6) SEE SPECIAL PROVISIONS & DETAILS REGARDING SIGNS TO BE FURNISHED AND INSTALLED BY CONTRACTOR (INCLUDED AS PART OF THE "TRAFFIC CONTROL SIGNAL SYSTEM" PAY ITEM).
- 7) EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION LED COUNTDOWN TIMER "HAND/WALKING PERSON" INDICATION.
- 8) EACH SIGNAL FACE SHALL HAVE A BACKGROUND SHIELD.
- 9) SEE DETAILS, SPECIAL PROVISIONS & STATEMENT OF ESTIMATED QUANTITIES REGARDING BATTERY BACK-UP SIGNAL SERVICE CABINET TO BE FURNISHED AND INSTALLED BY CONTRACTOR (SEPARATE FROM ITEM NO. 2565 FOR THIS SIGNAL SYSTEM).
- 10) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) #12 AWG IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
- 11) (*) DENOTES ITEMS TO BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM INO. 2565 (EMERGENCY VEHICLE PREEMPTION SYSTEM). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 12) (**) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 13) ALL CABLES AND CONDUCTORS SHALL BE NEW (FURNISHED AND INSTALLED BY THE CONTRACTOR).
- 14) NO SPLICING IS ALLOWED ON ANY CABLE OR CONDUCTOR BETWEEN THE CONTROLLER/SERVICE CABINETS AND EACH POLE OR MAST ARM MOUNTED COMPONENT (EXCEPT THAT LOOP DETECTORS SPLICES ARE ALLOWED IN ADJACENT HANDHOLES ONLY).

- ① F & I PA100 POLE FOUNDATION
 TYPE PA100-A-15-D30-9 (DAVIT AT 350 DEG)
 LUMINAIRE-LED
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
 1-ANGLE MOUNT C.D. PED INDICATION-POLE MOUNTED AT 90 DEG (P6-1)
 1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB6-1)
 TYPE D SIGN PANEL-OVERHEAD (D-1)
 (*) ONE WAY EVP DETECTOR & LED CONFIRMATION LIGHT (#8)
 EXTEND INTO HH 1:
 3" CONDUIT
 3-6/c 14 (INCLUDING 1 SPARE)
 2-4/c 14
 (*) 1-3/c 14
 1-2/c 14
 (*) 1-3/c 20
 1-3/c 14 (LUM)
 2-1/c 6 (GRD)

- ② F & I PEDESTAL FOUNDATION
 13' PEDESTAL POLE, BASE, WIND COLLAR
 1-STRAIGHT MOUNT C.D. PED INDICATION (PB-2)
 1-APS PB, SIGN (RT ARROW), AND POLE SPACERS (PB8-2)
 EXTEND INTO HH 2:
 3" CONDUIT
 1-4/c 14
 1-2/c 14
 2-1/c 6 (GRD)

- ③ F & I PA100 POLE FOUNDATION
 TYPE PA100-A-55-D30-9 (DAVIT AT 350 DEG)
 LUMINAIRE-LED
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
 2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' & 23'
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90 DEG AND 180 DEG
 1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB8-1)
 R6-1L (ONE WAY LEFT) SIGN-POLE MOUNTED 0 DEG
 R6-1R (ONE WAY RIGHT) SIGN-POLE MOUNTED 180 DEG
 R10-X12 SIGN PANEL-ADJACENT TO 5-1
 TYPE D SIGN PANEL-OVERHEAD (D-2)
 (*) ONE WAY EVP DETECTOR & LED CONFIRMATION LIGHT (#2,5)
 (*) ONE WAY EVP DETECTOR-POLE MOUNTED 90 DEG (#6,1)
 EXTEND INTO HH 6:
 3" CONDUIT
 3-6/c 14 (INCLUDING 1 SPARE)
 5-4/c 14
 (*) 1-3/c 14
 1-2/c 14
 (*) 2-3/c 20
 1-3/c 14 (LUM)
 2-1/c 6 (GRD)

- ④ F & I PA100 POLE FOUNDATION
 TYPE PA100-A-35-D30-9 (DAVIT AT 350 DEG)
 LUMINAIRE-LED
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90 DEG AND 180 DEG
 1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB2-1)
 TYPE D SIGN PANEL-OVERHEAD (D-3)
 (*) ONE WAY EVP DETECTOR & LED CONFIRMATION LIGHT (#4)
 EXTEND INTO HH 9:
 3" CONDUIT
 3-6/c 14 (INCLUDING 1 SPARE)
 3-4/c 14
 (*) 1-3/c 14
 1-2/c 14
 (*) 1-3/c 20
 1-3/c 14 (LUM)
 1-1/c 6 (GRD)

- ⑤ F & I PA100 POLE FOUNDATION
 TYPE PA100-A-55-D30-9 (DAVIT AT 350 DEG)
 LUMINAIRE-LED
 1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
 2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11' & 23'
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90 DEG AND 180 DEG
 2-ANGLE MOUNT C.D. PED INDICATIONS-POLE MOUNTED 90 DEG AND 180 DEG
 1-APS PB, SIGN (LT ARROW) AND APS MAST ARM POLE ADAPTOR (PB4-1)
 R6-1L (ONE WAY LEFT) SIGN-POLE MOUNTED 0 DEG
 R6-1R (ONE WAY RIGHT) SIGN-POLE MOUNTED 180 DEG
 R10-X12 SIGN PANEL-ADJACENT TO 1-1
 TYPE D SIGN PANEL-OVERHEAD (D-4)
 (*) ONE WAY EVP DETECTOR & LED CONFIRMATION LIGHT (#6,1)
 EXTEND INTO HH 14:
 3" CONDUIT
 3-6/c 14 (INCLUDING 1 SPARE)
 5-4/c 14
 (*) 1-3/c 14
 1-2/c 14
 (*) 1-3/c 20
 1-3/c 14 (LUM)
 2-1/c 6 (GRD)

(A) INSTALL - CONTROLLER AND CABINET (FURNISHED BY COUNTY)

- F & I EQUIPMENT PAD FOUNDATION
 BBU SIGNAL SERVICE CABINET
 BETWEEN CONTROLLER CABINET AND SERVICE CABINET:
 METERED SIGNAL SERVICE
 2" CONDUIT
 3-1/c 6
 CONTROLLER CABINET TO HH 1:
 2-3" CONDUITS 3" CONDUIT
 3-6/c 14 3-6/c 14
 5-4/c 14 3-4/c 14
 (*) 1-3/c 14 (*) 1-3/c 14
 8-2/c 14 4-2/c 14
 (*) 2-3/c 20 (*) 1-3/c 20
 1-1/c 6 (GRD)
 CONTROLLER CABINET TO HH 17:
 3" CONDUIT 2-3" CONDUITS
 3-6/c 14 3-6/c 14
 3-4/c 14 5-4/c 14
 (*) 1-3/c 14 (*) 1-3/c 14
 6-2/c 14 5-2/c 14
 (*) 1-3/c 20 (*) 2-3/c 20
 1-1/c 6 (GRD)

- F & I SERVICE CABINET TO HH 1:
 1.25" CONDUIT
 UNMETERED STREET LIGHT SERVICE
 2-3/c 14 (LUM)
 SERVICE CABINET TO HH 17:
 1.25" CONDUIT
 UNMETERED STREET LIGHT SERVICE
 2-3/c 14 (LUM)
 STUB OUT 2" CONDUIT FROM SERVICE CABINET (FOR POWER CONNECTION BY CONNEXUS)
 STUB OUT 2-3" CONDUITS FROM CONTROLLER CABINET TO EAST (CAP BOTH ENDS- FOR FUTURE USE)
 CONTROLLER CABINET TO FO HH 53:
 (**) 2" CONDUIT
 (**) 1-6 SM FO PIGTAIL CABLE

SAP 002-652-006
SAP 106-020-038
CITY PROJECT 22-08

SEH Project	ANOKC 163661	Rev.#	Revision Issue Description	Date	Rev.#	Revision Issue Description	Date
Drawn By	JMG						
Designed By	JMG						
Checked By	JMG						

SEH 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.
 Date: November 17, 2022 Name: John M. Gray, PE Lic. No. 22457

CSAH 52 AT CLOUD DRIVE NE
ANOKA COUNTY, MINNESOTA
CITY OF BLAINE

TRAFFIC CONTROL SIGNAL SYSTEM
SIGNAL SYSTEM NOTES
CSAH 52 (RADISSON RD NE) AT CLOUD DR NE

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of 62

NO	DATE	BY	CKD	APPR	REVISION	02/04/2025	10:22:11 AM

NAME: P:\24-01-00\CSAH_52 (MAIN ST-105TH)\Base\Proposed\CSAH_52_SIGNALS.dgn

DRAWN BY MR DATE 11/30/2022
 DESIGN BY MR DATE 11/30/2022
 CHECKED BY CO DATE 12/10/2024



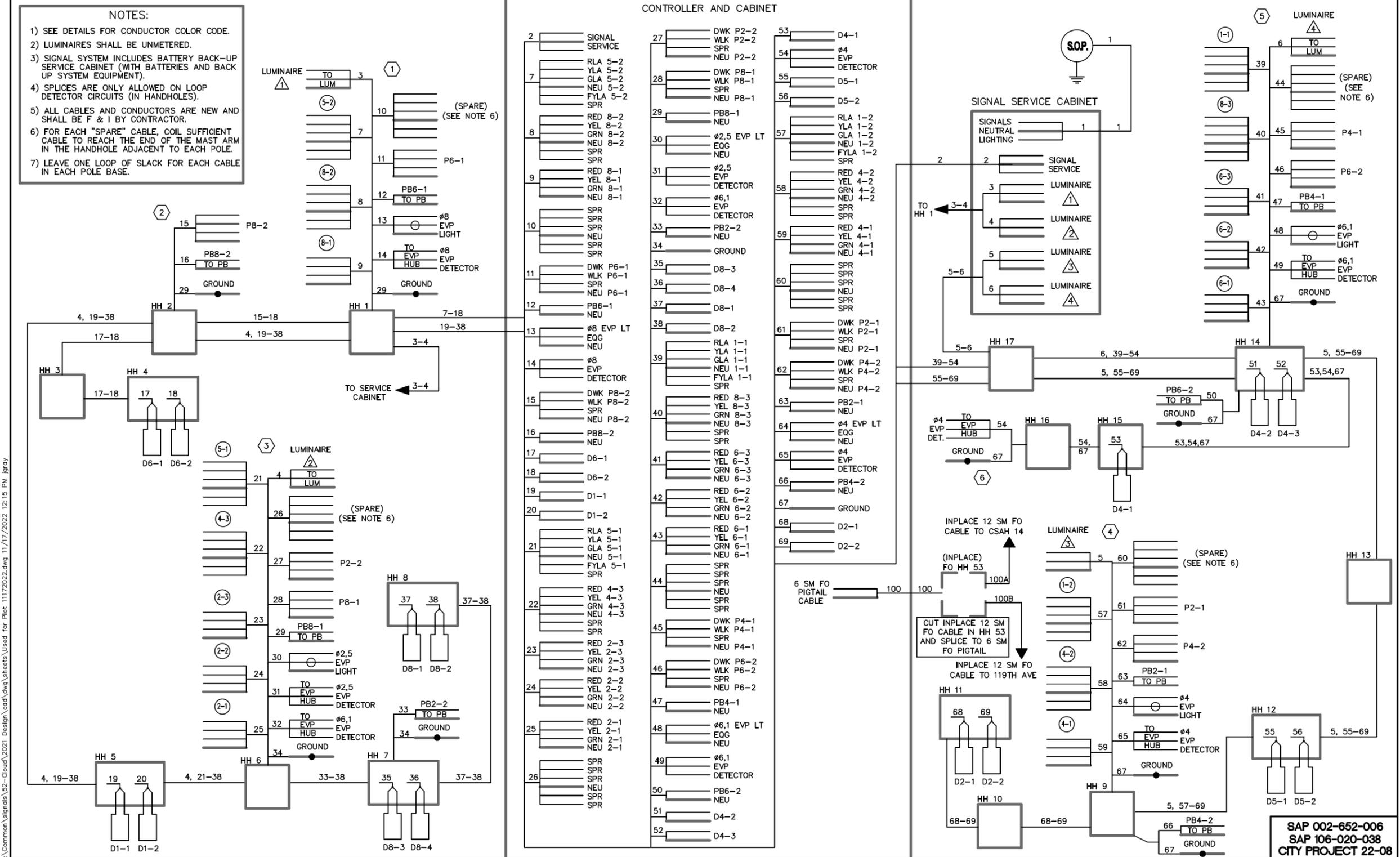
ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-652-013
002-652-014

EXISTING
SIGNAL PLANS

Sheet 85 of 87 Sheets

- NOTES:**
- 1) SEE DETAILS FOR CONDUCTOR COLOR CODE.
 - 2) LUMINAIRES SHALL BE UNMETERED.
 - 3) SIGNAL SYSTEM INCLUDES BATTERY BACK-UP SERVICE CABINET (WITH BATTERIES AND BACK UP SYSTEM EQUIPMENT).
 - 4) SPLICES ARE ONLY ALLOWED ON LOOP DETECTOR CIRCUITS (IN HANDHOLES).
 - 5) ALL CABLES AND CONDUCTORS ARE NEW AND SHALL BE F & I BY CONTRACTOR.
 - 6) FOR EACH "SPARE" CABLE, COIL SUFFICIENT CABLE TO REACH THE END OF THE MAST ARM IN THE HANDHOLE ADJACENT TO EACH POLE.
 - 7) LEAVE ONE LOOP OF SLACK FOR EACH CABLE IN EACH POLE BASE.



- CONTROLLER AND CABINET**
- 2 SIGNAL SERVICE
 - 7 RLA 5-2, YLA 5-2, GLA 5-2, NEU 5-2, FYLA 5-2, SPR
 - 8 RED 8-2, YEL 8-2, GRN 8-2, NEU 8-2, SPR
 - 9 RED 8-1, YEL 8-1, GRN 8-1, NEU 8-1, SPR
 - 10 DWK P6-1, WLK P6-1, SPR, NEU P6-1
 - 11 PB6-1
 - 12 #8 EVP LT, EQG, NEU
 - 13 #8 EVP DETECTOR
 - 14 DWK P8-2, WLK P8-2, SPR, NEU P8-2
 - 15 PB8-2
 - 16 #4 EVP DET.
 - 17 D6-1, D6-2
 - 18 D1-1, D1-2
 - 19 RLA 5-1, YLA 5-1, GLA 5-1, NEU 5-1, FYLA 5-1, SPR
 - 20 RED 4-3, YEL 4-3, GRN 4-3, NEU 4-3, SPR
 - 21 RED 2-3, YEL 2-3, GRN 2-3, NEU 2-3, SPR
 - 22 RED 2-2, YEL 2-2, GRN 2-2, NEU 2-2, SPR
 - 23 RED 2-1, YEL 2-1, GRN 2-1, NEU 2-1, SPR
 - 24 SPR, SPR, NEU, SPR
 - 25 SPR, SPR, NEU, SPR
 - 26 DWK P2-2, WLK P2-2, SPR, NEU P2-2
 - 27 DWK P8-1, WLK P8-1, SPR, NEU P8-1
 - 28 PB8-1
 - 29 #2.5 EVP LT, EQG, NEU
 - 30 #2.5 EVP DETECTOR
 - 31 #6.1 EVP DETECTOR
 - 32 PB2-2, NEU
 - 33 GROUND
 - 34 D8-3, D8-4, D8-1, D8-2
 - 35 RLA 1-1, YLA 1-1, GLA 1-1, NEU 1-1, FYLA 1-1, SPR
 - 36 RED 8-3, YEL 8-3, GRN 8-3, NEU 8-3, SPR
 - 37 RED 6-3, YEL 6-3, GRN 6-3, NEU 6-3, SPR
 - 38 RED 6-2, YEL 6-2, GRN 6-2, NEU 6-2, SPR
 - 39 RED 6-1, YEL 6-1, GRN 6-1, NEU 6-1, SPR
 - 40 DWK P4-1, WLK P4-1, SPR, NEU P4-1
 - 41 DWK P6-2, WLK P6-2, SPR, NEU P6-2
 - 42 PB4-1, NEU
 - 43 #6.1 EVP LT, EQG, NEU
 - 44 #6.1 EVP DETECTOR
 - 45 PB6-2, NEU
 - 46 D4-2, D4-3
 - 47 D4-1
 - 48 D2-1, D2-2
 - 49 D4-1
 - 50 D4-2, D4-3
 - 51 D4-1
 - 52 D4-2, D4-3
 - 53 D4-1
 - 54 #4 EVP DETECTOR
 - 55 D5-1
 - 56 D5-2
 - 57 RLA 1-2, YLA 1-2, GLA 1-2, NEU 1-2, FYLA 1-2, SPR
 - 58 RED 4-2, YEL 4-2, GRN 4-2, NEU 4-2, SPR
 - 59 RED 4-1, YEL 4-1, GRN 4-1, NEU 4-1, SPR
 - 60 DWK P2-1, WLK P2-1, SPR, NEU P2-1
 - 61 DWK P4-2, WLK P4-2, SPR, NEU P4-2
 - 62 PB2-1, NEU
 - 63 #4 EVP LT, EQG, NEU
 - 64 #4 EVP DETECTOR
 - 65 PB4-2, NEU
 - 66 GROUND
 - 67 D2-1, D2-2
 - 68 D2-1, D2-2
 - 69 D2-1, D2-2

SEH Project	ANOKA 163661	Rev.#	Revision Issue Description	Date	Rev.#	Revision Issue Description	Date
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SEH

Date: November 17, 2022 Name: John M. Gray, PE Lic. No. 22457

CSAH 52 AT CLOUD DRIVE NE
 ANOKA COUNTY, MINNESOTA
 CITY OF BLAINE

TRAFFIC CONTROL SIGNAL SYSTEM
 FIELD WIRING DIAGRAM
 CSAH 52 (RADISSON RD NE) AT CLOUD DR NE

SAP 002-652-006
 SAP 106-020-038
 CITY PROJECT 22-08

59 of 62

NO	DATE	BY	CKD	APPR	REVISION	02/04/2025	10:22:21 AM

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ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-652-013
 002-652-014

EXISTING SIGNAL PLANS

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FOR REFERENCE PURPOSES ONLY

