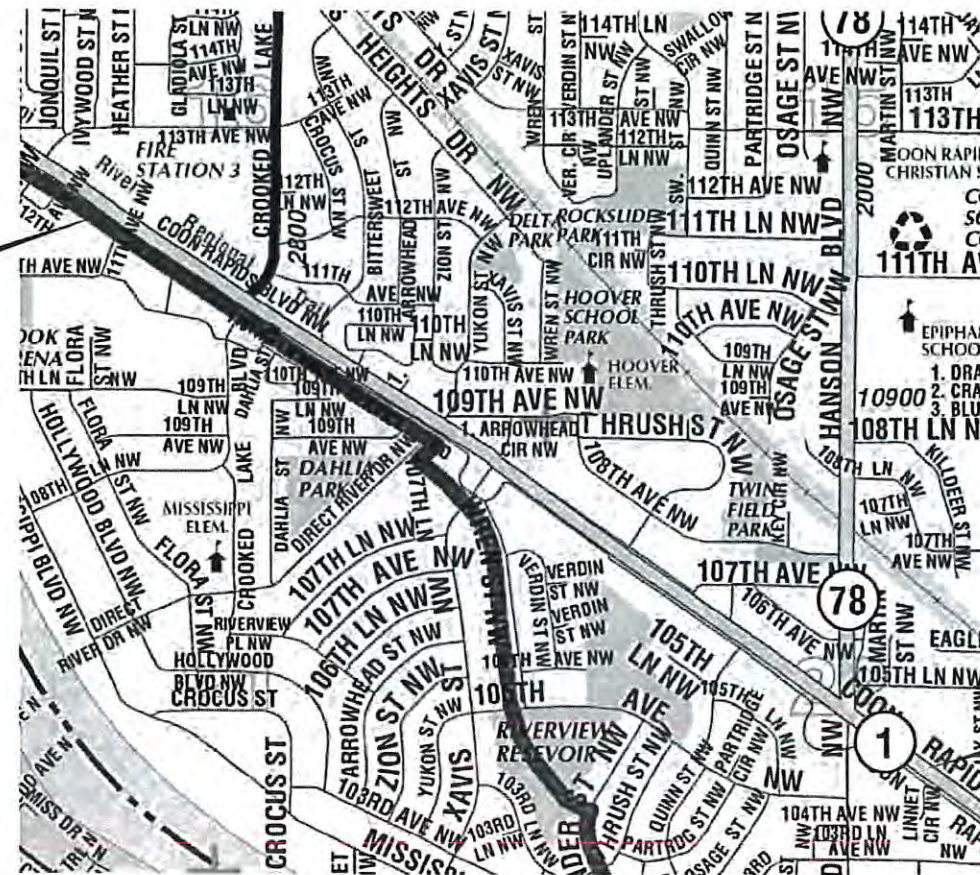


MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

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

LOCATED ON CSAH 01 BETWEEN 620' S OF HANSON BLVD AND 111TH AVE NW

CSAH 01			
GROSS LENGTH	8825 FEET	1.671 MILES	
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES	
NET LENGTH	8825 FEET	1.671 MILES	



BEGIN SAP 002-601-058
CSAH 01, STA: 110+60.00

END SAP 002-601-058
CSAH 01, STA: 198+85.00

PROJECT LOCATION



CITY OF COON RAPIDS
ANOKA COUNTY
MN/DOT TRANSPORTATION DISTRICT - METRO
SECTION 16,21,22
TOWNSHIP 31 NORTH
RANGE 24 WEST

GOVERNING SPECIFICATIONS

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

THIS PLAN CONTAINS 34 SHEETS

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES
3	TABULATIONS
4-5	TYPICAL SECTIONS
6-8	DETAILS
9-12	CONSTRUCTION PLANS
13-18	PEDESTRIAN CURB RAMP DETAILS
19-24	SIGNING AND STRIPING PLANS
25-34	EXISTING SIGNAL PLANS

For Julie Dresel DATE 03/23/2020
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY

For Julie Dresel DATE 03/23/2020
STATE AID ENGINEER: APPROVED FOR STATE AID FUNDING

Approved M.C.A. 3/19/2020
CITY OF COON RAPIDS ENGINEER

Approved [Signature] 3/11/2020
ANOKA COUNTY ENGINEER

DESIGN DESIGNATION (CSAH 01)

ESAL 20	2,338,687	FUNCTIONAL CLASSIFICATION	A MINOR RELIEVER
R VALUE	70	NO. OF TRAFFIC LANES	4
ADT (2020)	21,996	NO. OF PARKING LANES	0
PROJ. ADT (2040)	21,996	DESIGN SPEED	45 MPH
PROJ. HCA DT (2040)	1298	STOPPING SIGHT DISTANCE BASED ON:	
SOIL FACTOR	N/A	HEIGHT OF EYE	3.5'
		HEIGHT OF OBJECT	2.0'
		DESIGN SPEED NOT ACHIEVED AT:	
		STA. _____ TO STA. _____	MPH _____

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\20-01-00\CSAH_01_SofHanson-111in\Bases\Proposed\Proposed.dgn

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: GERALD J. AUGER JR.
SIGNATURE: [Signature]
DATE: 02-21-2020 LICENSE NO. 25511

DRAWN BY: SPH DATE: 01/31/2020
DESIGN BY: KPR DATE: 01/31/2020
CHECKED BY: CO DATE: 03/11/2020



ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-601-058

TITLE SHEET

Sheet 1 of 34 Sheets

STATEMENT OF ESTIMATED QUANTITIES

NOTES	ITEM NUMBER	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITIES ESTIMATED
	2021.501	MOBILIZATION	LUMP SUM	1
	2104.502	REMOVE DRAINAGE STRUCTURE	EACH	17
3	2104.502	SALVAGE SIGN	EACH	18
2	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	711
1,2	2104.503	SAWING BIT PAVEMENT (FULL DEPTH)	LIN FT	3295
1,2	2104.503	REMOVE CURB & GUTTER	LIN FT	1490
	2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	351
	2104.518	REMOVE BITUMINOUS WALK	SQ FT	1720
2	2104.518	REMOVE CONCRETE WALK	SQ FT	4933
2	2104.518	REMOVE CONCRETE MEDIAN	SQ FT	210
4, 5	2211.509	AGGREGATE BASE CLASS 5	TON	221
6	2232.504	MILL BITUMINOUS SURFACE (2.0")	SQ YD	79003
7	2232.604	MILL BITUMINOUS PAVEMENT (SPECIAL)	SQ YD	3151
8	2301.504	CONCRETE PAVEMENT 8.0"	SQ YD	200
	2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	4108
10	2360.509	TYPE SP 12.5 BIT MIXTURE FOR PATCHING	TON	78
9	2360.509	TYPE SP 12.5 WEARING COURSE MIX (4:F)	TON	362
	2360.509	TYPE SP 12.5 WEARING COURSE MIX (4:F)	TON	9085
11	2504.602	ADJUST GATE VALVE	EACH	14
13	2506.502	CASTING ASSEMBLY	EACH	44
12	2506.503	CONST DRAINAGE STRUCTURE DESIGN H	LIN FT	62.40
14	2506.602	GROUT CATCH BASIN OR MANHOLE	EACH	45
15	2521.518	4" CONCRETE WALK	SQ FT	210
5	2521.518	6" CONCRETE WALK	SQ FT	7812
	2531.503	CONCRETE CURB & GUTTER DESIGN B612	LIN FT	24
1	2531.503	CONCRETE CURB & GUTTER DESIGN B618	LIN FT	3020
	2531.602	CONCRETE MEDIAN NOSE-SPECIAL	EACH	20
	2531.618	TRUNCATED DOMES	SQ FT	596
11	2545.602	ADJUST HANDHOLE	EACH	11
16	2550.602	LOOP DETECTOR DESIGN NMC	EACH	72
17, 18	2563.601	TRAFFIC CONTROL	LUMP SUM	1
	2563.610	POLICE OFFICER	hour	60
19	2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	UNIT DAY	30
3	2564.602	INSTALL SIGN	EACH	18.00
11	2565.602	APS RELOCATE PUSH BUTTON	EACH	16
20	2573.502	STORM DRAIN INLET PROTECTION	EACH	77
21	2574.507	COMMON TOPSOIL BORROW	CU YD	168
21	2575.504	EROSION CONTROL BLANKETS CATEGORY 0	SQ YD	1007
22	2581.503	REMOVABLE PREFORM PAVEMENT MARKING TAPE	LIN FT	707
25	2582.503	4" BROKEN LINE PAINT	LIN FT	3536
23	2582.503	4" SOLID LINE MULTI COMP	LIN FT	42771
23	2582.503	4" BROKEN LINE MULTI COMP	LIN FT	3460
23	2582.503	4" DBLE SOLID LINE MULTI COMP	LIN FT	59
24	2582.518	PAVT MSSG PREF THERMO	SQ FT	540
24	2582.518	CROSSWALK PREF THERMO	SQ FT	4464
24	2582.603	PAVEMENT MARKING SPECIAL	LIN FT	729

CONSTRUCTION NOTES

1	INCLUDES CURB REPLACEMENT QUANTITY OF 1500 LIN FT NOT SHOWN ON THE PLAN, TO BE USED TO REPLACE SEGMENTS OF DETERIORATED CURB AS DIRECTED BY THE ENGINEER.
2	REFERENCE DETAILS (PAGE 6 AND 8) FOR REMOVAL DETAILS. INCLUDES CURB, WALK, MEDIAN, AND 8" CONCRETE.
3	ITEM USED FOR SIGNS IN MEDIAN AND/OR PEDESTRIAN RAMP REPLACEMENT AREAS.
4	EXCAVATION AND DISPOSAL OF EXISTING GRADING MATERIAL IS INCIDENTAL TO AGGREGATE BASE CLASS 5.
5	ITEM TO BE USED FOR NEW CONCRETE WALK.
6	DETAIL MILLING AROUND MANHOLES, CATCH BASINS, GATE VALVES, AND ALONG CURB LINE IS INCIDENTAL TO THIS ITEM.
7	ITEM USED FOR MILLING STREET APPROACHES AND/OR DETAIL MILLING AREAS AS IDENTIFIED IN THE PLAN. DETAIL MILLING AROUND MANHOLES, CATCH BASINS, GATE VALVES, AND ALONG CURB LINE IS INCIDENTAL TO THIS ITEM.
8	ITEM INCLUDES REINFORCEMENT BARS DRILLED INTO EXISTING CONCRETE BUS PAD AND ANCHORED WITH EPOXY.
9	STREET APPROACHES SHALL BE PAVED AFTER MAINLINE PAVING BUT BEFORE FINAL STRIPING.
10	ITEM INCLUDES BITUMINOUS PATCHING AROUND NEW CURB, STORM STRUCTURE REPAIRS, AND ANY POTHOLES.
11	ITEM SHALL BE ADJUSTED ONLY AS NECESSARY AS DETERMINED BY THE ENGINEER.
12	PAY HEIGHT IS MEASURED FROM INVERT OF OUTLET PIPE TO TOP OF PRECAST CONCRETE STRUCTURE PLUS AN ALLOWANCE OF 0.70 FEET FOR THE DEPTH OF THE CONCRETE BASE, REGARDLESS OF ITS ACTUAL THICKNESS. CONCRETE ADJUSTMENT RINGS ARE INCIDENTAL. CONNECTIONS TO EXISTING STORM SEWER ARE INCIDENTAL.
13	ITEM INCLUDES FULL REPLACEMENT OF CASTING ADJUSTMENT RINGS. SEE STORM TABULATIONS FOR RING HEIGHTS.
14	ITEM INCLUDES GROUTING OF INVERTS, DOGHOUSES, RINGS, AND CASTINGS AS REQUIRED (SEE DRAINAGE TAB, PAGE 3).
15	ITEM USED FOR CONCRETE MEDIAN.
16	FULL LOOP REPLACEMENT REQUIRED. CONTRACTOR SHALL CONTACT ANOKA COUNTY TO DETERMINE PLACEMENT. SIGNAL PLANS ARE INCLUDED AT THE END OF THIS PLAN. INCLUDES ADVANCE LOOPS ON SIDE STREETS (OUTSIDE OF MILL AREA, NOT SHOWN IN PLANS).
17	CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN TEMPORARY SIGNAGE WHENEVER EXISTING SIGNAGE IS REMOVED. TEMPORARY SIGNAGE SHALL BE INCIDENTAL TO TRAFFIC CONTROL.
18	ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO, AND BE INSTALLED IN ACCORDANCE WITH, THE MOST CURRENT REVISION OF THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES." DO NOT PASS, PASS WITH CARE, NO CENTER STRIPE, AND STOP HERE ON RED SIGNS SHALL BE INPLACE WHENEVER PERMANENT PAVEMENT MARKINGS ARE NOT PRESENT.
19	3 MESSAGE BOARDS, ONE ON THE EACH END OF PROJECT, WILL BE INSTALLED 10 DAYS PRIOR TO ANY CONSTRUCTION; REFERENCE STRIPING PLAN FOR DETAILS.
20	ALL DRAINAGE STRUCTURES AFFECTED BY THIS PROJECT MUST HAVE INLET PROTECTION.
21	TYPE 1 FERTILIZER AND TYPE 25-121 SEED ARE INCIDENTAL TO THIS ITEM.
22	CENTERLINE AND LANE DESIGNATION SKIPS TO BE APPLIED AS SOON AS POSSIBLE ON EACH NEW LIFT OF PAVEMENT; SKIPS MUST BE INPLACE BEFORE THE CONTRACTOR LEAVES FOR THE DAY. CONTRACTOR IS TO REMOVE PRIOR TO FINAL PAINT STRIPING.
23	FINAL STRIPING SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLETION OF MAINLINE WEAR COURSE PAVING.
24	INCLUDES ALL THERMOPLASTIC STOP BARS, GORE AREA HATCHING, CROSSWALKS, LANE DESIGNATION ARROWS, AND PAVEMENT
25	ITEM TO BE USED AS TEMPORARY CENTERLINE STRIPING ON MILLED SURFACE, INSTALLED THE SAME DAY AS MILLING OPERATION.

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


MNDOT STANDARD PLATES

PLATE NO.	DESCRIPTION
3007E	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
4006L	MANHOLE OR CATCH BASIN PRECAST - DESIGNS G AND H
4011E	PRECAST CONCRETE BASE
4020J	MANHOLE OR CATCH BASIN (FOR USE WITH OR WITHOUT TRAFFIC LOADS) (2 SHEETS)
4022A	MANHOLE OR CATCH BASIN COVER (3 FT. X 2 FT. OPENING)
4026A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4110F	COVER CASTING FOR MANHOLE (FOR USE IN ALL TRAFFIC AREAS) - CASTING NO. 715 AND 716
4134A	CURB BOX CASTING FOR CATCH BASIN (FOR DESIGN B CURBS)- CASTING NO. 825
4154B	CATCH BASIN GRATE CASTING - CASTING NO. 816
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
8000J	CHANNELIZERS

BASIS OF PLANNED QUANTITIES

2357	BITUMINOUS MATERIAL FOR TACK COAT	0.05 GAL / SQ YD
2211	AGGREGATE BASE CLASS 5	1.8 TONS / CU YD
2360	ALL BITUMINOUS PAVEMENT	115 LBS / SQ YD / IN THICKNESS
2581	REMOVABLE PREFORM PAVEMENT MARKING TAPE	2' AT 50' INTERVALS
2575	SEED MIXTURE 25-121	61 LBS. / ACRE
2574	FERTILIZER TYPE 3	350 LBS./ ACRE

NO	DATE	BY	CKD	APPR	REVISION	03/19/2020	9:14:43 AM
NAME: P:\20-01-00\CSAH_01_(SofHanson-111th)\Base\Proposed\Proposed.dgn							

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 PRINT NAME: GERALD J. AUGER JR.
 SIGNATURE: 
 DATE: 02-21-2020 LICENSE NO. 26511

DRAWN BY SPH DATE 01/31/2020
 DESIGN BY KPR DATE 01/31/2020
 CHECKED BY CO DATE 03/19/2020



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE AID PROJECT 002-601-058

STATEMENT OF ESTIMATED QUANTITIES


Sheet 2 of 34 Sheets

STORM DRAINAGE TAB										
NUMBER	TYPE	ACTION	NEW CASTING	FURNISH AND INSTALL CASTING ASSEMBLY	RING HEIGHT -INCIDENTAL-	REMOVE STRUCTURE	GROUT CATCH BASIN OR MANHOLE	CONSTRUCT DRAINAGE STRUCTURE DESIGN H	CONCRETE PAVEMENT 8"	NOTES
				EACH	LIN FT	EACH	EACH	LIN FT	SQ YD	
100	CB	RE-RING	B	1	0.9					
101	CB	GROUT					1			
102	CB	RECONST	B	1	0.8	1		3.6		
103	CB	GROUT					1			
104	CB	RE-RING	B	1						
105	CB	RE-RING	B	1	0.4					
106	CB	RE-RING	B	1	0.5					
107	CB	RE-RING	B	1						
108	CB	GROUT					1			
109	CB	GROUT					1			
110	CB	GROUT					1			
111	CB	GROUT					1			
112	CB	RE-RING	B	1						
113	CB	GROUT					1			
114	CB	RECONST	B	1	1.1	1		3.9		
115	CB	RE-RING	B	1						
116	CB	OK								
117	CB	GROUT					1			
119	CB	GROUT					1			
120	CB	RE-RING	B	1	1					
121	CB	GROUT					1			
122	CB	RE-RING	B	1	1					
123	CB	GROUT					1			
124	CB	GROUT					1			
125	CB	GROUT					1			
126	CB	RECONST	B	1	0.5	1		3.9		
127	CB	RECONST	B	1	0.6	1		3.8	50	
128	CB	GROUT					1			
129	CB	RE-RING	B	1	0.6					
130	CB	RE-RING	B	1	1.1					
131	CB	OK								
132	CB	RE-RING	B	1	0.3		1			
133	CB	GROUT					1			
134	CB	OK								
135	CB	RE-RING	B	1	0.6		1		50	
136	CB	RECONST	B	1	0	1		3.7		
137	CB	OK								
138	CB	OK								
139	CB	GROUT					1			
140	CB	GROUT					1			
141	CB	RECONST	B	1	0.6	1		3.7		
142	CB	RECONST	B	1	0.9	1		3.5		
143	CB	GROUT					1			
144	CB	GROUT					1			
145	CB	RECONST	B	1	0.9	1		3.8		
146	CB	RE-RING	B	1	0.9		1			
147	CB	GROUT					1			
148	CB	GROUT					1			
149	CB	RECONST	B	1	0.8	1		3.7		
150	CB	RECONST	B	1	0.7	1		3.9		

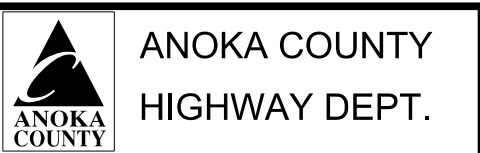
STORM DRAINAGE TAB										
NUMBER	TYPE	ACTION	NEW CASTING	FURNISH AND INSTALL CASTING ASSEMBLY	RING HEIGHT -INCIDENTAL-	REMOVE STRUCTURE	GROUT CATCH BASIN OR MANHOLE	CONSTRUCT DRAINAGE STRUCTURE DESIGN H	CONCRETE PAVEMENT 8"	NOTES
				EACH	LIN FT	EACH	EACH	LIN FT	SQ YD	
151	CB	RE-RING	B	1	0.8				50	
152	CB	GROUT					1			
153	CB	RECONST	B	1	0.5	1		3.8		
154	CB	RECONST	B	1	0.8	1		3.7		
155	CB	GROUT					1			
156	CB	GROUT					1			
157	CB	RECONST	B	1	0.2	1		3.2		
158	CB	RECONST	B	1	1.1	1		4	50	
159	CB	GROUT					1			
160	CB	GROUT					1			
164	CB	GROUT					1			
165	CB	GROUT					1			
167	CB	GROUT					1			
168	CB	RECONST	B	1	0	1		2.8		
169	CB	RECONST	B	1	0.3	1		3.4		
170	CB	RE-RING	A	1	0.7					
171	CB	RE-RING	A	1	0.8					
172	CB	RE-RING	B	1	1		1			
173	CB	GROUT					1			
174	CB	GROUT					1			
175	CB	OK								
176	CB	RE-RING/GROUT	B	1	0.5		1			
177	CB	GROUT					1			
178	CB	RECONST	B	1	0.6	1		4		
179	CB	GROUT					1			
180	CB	GROUT					1			
200	MH	GROUT					1			
201	MH	GROUT					1			
204	MH	OK								
205	MH	RE-RING	A-7D	1	0.7					
206	MH	OK								
300	MH	RE-RING	SAN	1	1.2					WRAP RINGS WITH INFI-SHIELD
302	MH	GROUT					1			
303	MH	GROUT					1			
303A	MH	RE-RING	SAN	1	0.7					WRAP RINGS WITH INFI-SHIELD
304	MH	GROUT					1			
305	MH	RE-RING	SAN	1	0.5					WRAP RINGS WITH INFI-SHIELD
307	MH	RE-RING	SAN	1	0.5					WRAP RINGS WITH INFI-SHIELD
307A	MH	RE-RING	SAN	1	0.5					WRAP RINGS WITH INFI-SHIELD
309	MH	RE-RING	SAN	1	0.8					WRAP RINGS WITH INFI-SHIELD
310	MH	RE-RING	SAN	1	0.4					WRAP RINGS WITH INFI-SHIELD
311	MH	OK								
312	MH SAN	OK								
313	MH	OK								
314	MH	OK								
315	MH	OK								
316	MH SAN	OK								
TOTALS:				44	26.8	17	45	62.4	200	

CASTING ASSEMBLIES SUMMARY							
ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING	CURB BOX	DESCRIPTION	NOTES	NOTE	QUANTITY
A-7D	700-7	715		STD. PLATE: 4101D, 4110F	CASTING COVER STAMPED "STORM SEWER"		1
SAN	NEENAH R-1733	NEENAH R1733-5044		301-CP LID WITH RUBBER GASKET ON BOTTOM	CASTING COVER STAMPED "SANITARY SEWER"		7
A	18" MEDIAN			SEE DETAILS - SHEET 7			2
B	2X3 RECT.	NEENAH R-3067L		WITH ADAPTER PLATE 3067-27 AND BACK			34
ALL CASTING HEIGHTS ARE TO BE VERIFIED IN THE FIELD ALL MANHOLE COVERS SHOULD BE LABELED AS STORM OR SANITARY NEW CASTINGS TO BE INSTALLED AFTER ASPHALT MILLING IS COMPLETED MANHOLE CASTINGS TO BE RECESSED 1/4" FROM TOP OF FINISHED MAT							

NO	DATE	BY	CKD	APPR	REVISION	03/19/2020	9:14:50 AM
NAME: P:\20-01-00\CSAH_01_(SofHanson-111th)\Base\Proposed\Proposed.dgn							

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: GERALD J. AUGER JR.
 SIGNATURE: 
 DATE: 02-21-2020 LICENSE NO. 26511

DRAWN BY: SPH DATE: 01/31/2020
 DESIGN BY: KPR DATE: 01/31/2020
 CHECKED BY: CO DATE: 03/19/2020



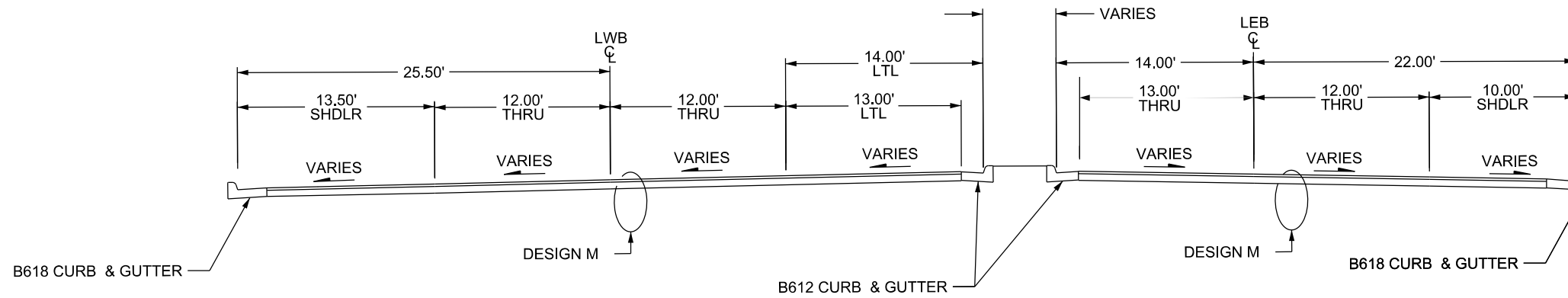
STATE AID PROJECT 002-601-058

TABULATIONS
 Sheet 3 of 34 Sheets

CSAH 1- COON RAPIDS BLVD.

EXISTING / PROPOSED SECTION

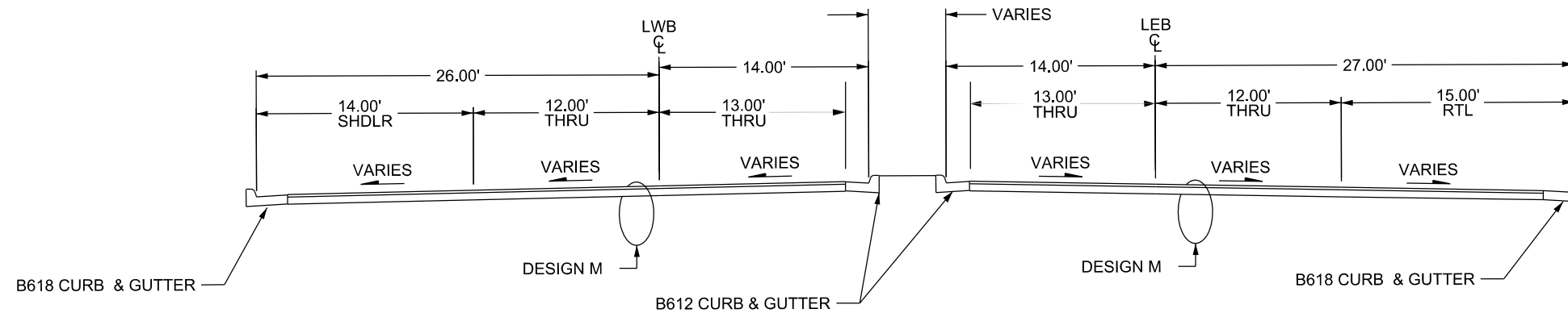
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 34+75.00 - 39+25.00 95+20.00 - 97+07.00
 52+85.00 - 64+00.00



CSAH 1 - COON RAPIDS BLVD.

EXISTING / PROPOSED SECTION

15+52.00 - 21+45.00 26+00.00 - 31+00.00



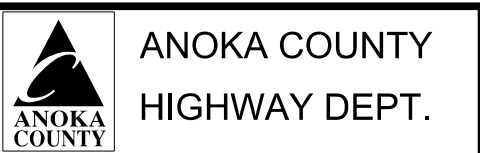
****NOTE: ALL PAVING SHALL BE PULLED IN THE SAME DIRECTION AS TRAFFIC FOR THAT LANE(S) OF TRAVEL.**

NO	DATE	BY	CKD	APPR	REVISION	03/19/2020	9:14:58 AM

NAME: P:\20-01-00\CSAH_01_(SoftHanson-111th)\Base\Proposed\Proposed.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.
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 DATE: 02-21-2020 LICENSE NO. 26511

DRAWN BY SPH DATE 01/31/2020
 DESIGN BY KPR DATE 01/31/2020
 CHECKED BY CO DATE 03/19/2020



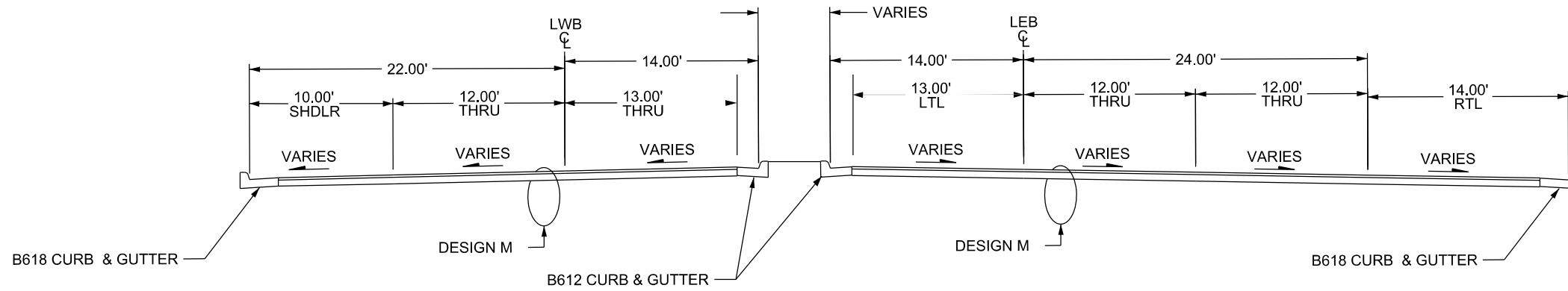
STATE AID PROJECT 002-601-058

TYPICAL SECTIONS
 Sheet 4 of 34 Sheets

CSAH 1 - COON RAPIDS BLVD.

EXISTING / PROPOSED SECTION

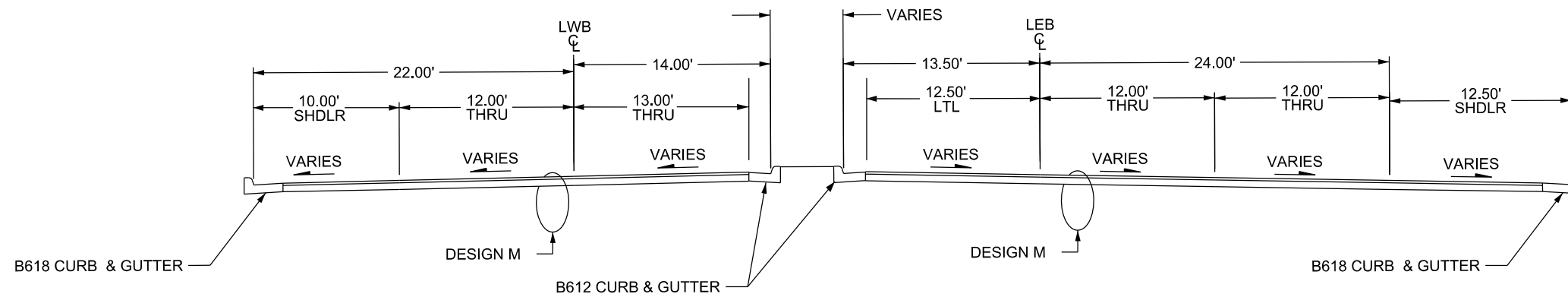
21+45.00 - 26+00.00	64+00.00 - 67+00.00
31+00.00 - 34+75.00	88+85.00 - 95+20.00
39+25.00 - 52+85.00	



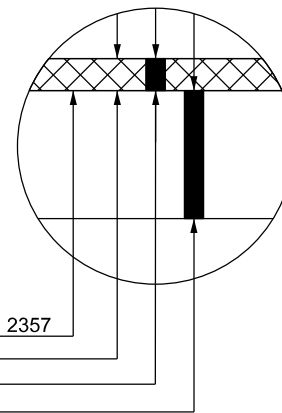
CSAH 1 - COON RAPIDS BLVD.

EXISTING / PROPOSED SECTION

75+80.00 - 88+85.00



DESIGN M MILL SECTION



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

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

NO	DATE	BY	CKD	APPR	REVISION	
	03/19/2020					9:14:59 AM

NAME: P:\20-01-00\CSAH_01_(SofHanson-111th)\Base\Proposed\Proposed.dgn

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 DESIGN BY KPR DATE 01/31/2020
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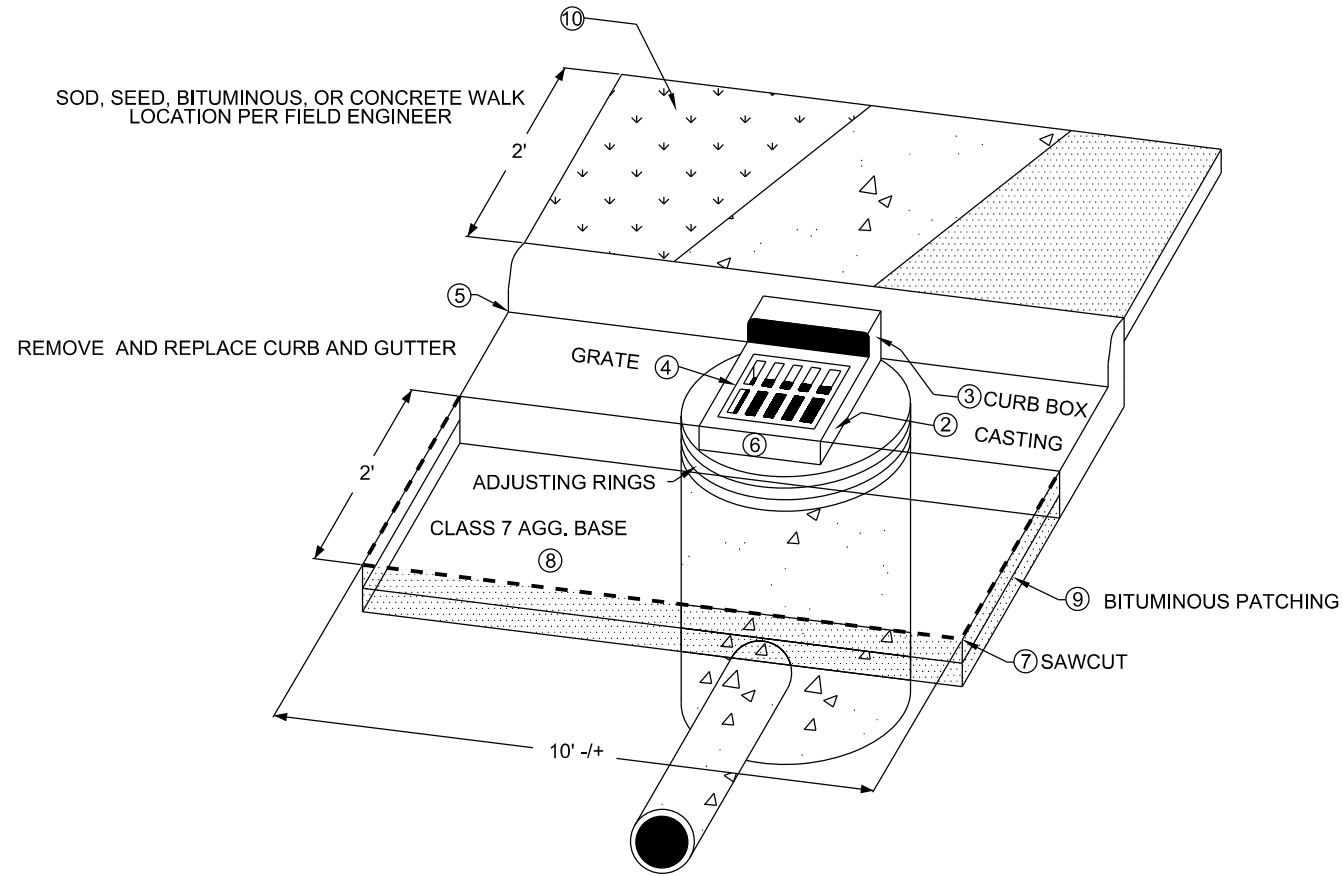
**ANOKA COUNTY
HIGHWAY DEPT.**

STATE AID PROJECT 002-601-058

TYPICAL SECTIONS
 Sheet 5 of 34 Sheets

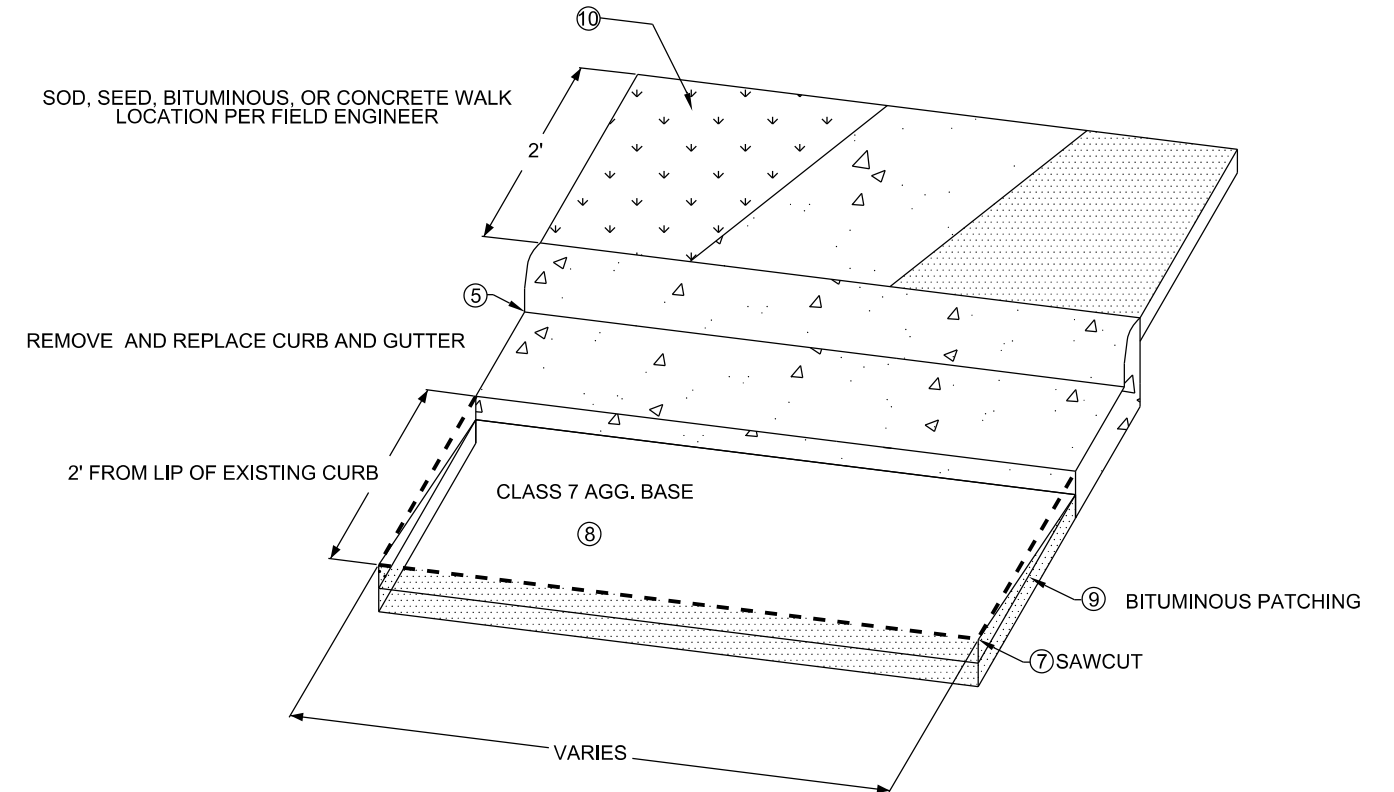
CATCH BASIN DETAIL

SEE STRUCTURE TAB FOR LOCATION
(PAGE 3)



NEW CURB DETAIL

SEE PLAN FOR LOCATION



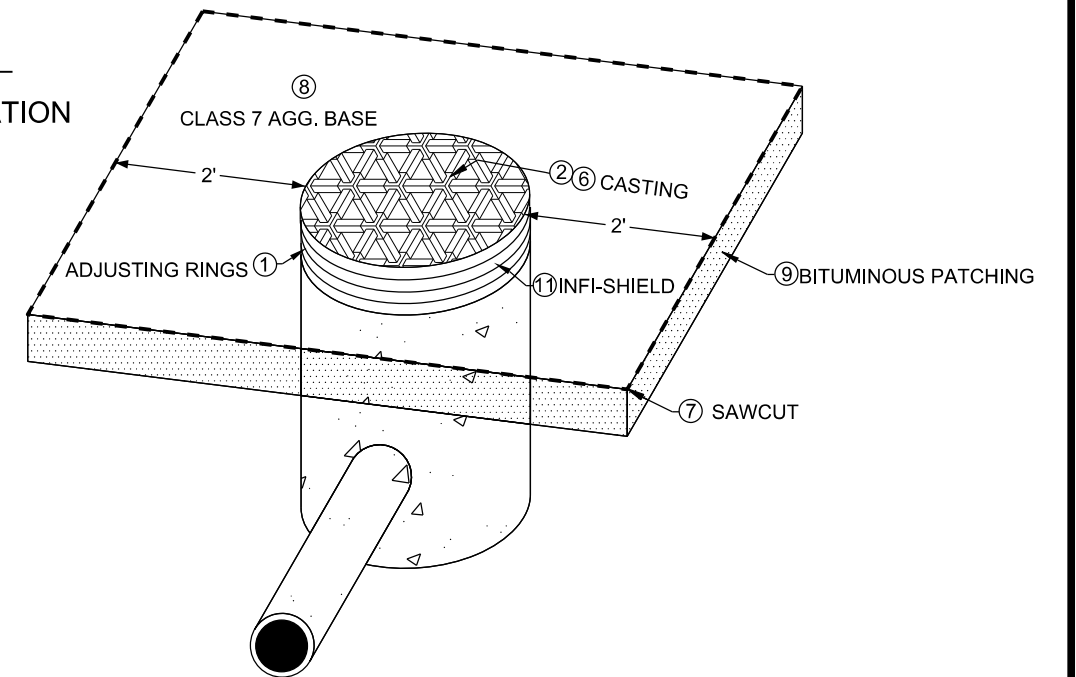
NOTES

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

- ① CONCRETE ENCASED CONCRETE ADJUSTING RINGS STANDARD PLATE 4026A
- ② RING AND FRAME CASTING; REFERENCE CASTING ASSEMBLIES SUMMARY CHART FOR CASTING TYPE
- ③ CURB BOX MATCHES CASTING REFERENCE CHART FOR CASTING TYPE
- ④ GRATE CASTING; REFERENCE CASTING ASSEMBLIES SUMMARY CHART FOR CASTING TYPE
- ⑤ CONCRETE CURB AND GUTTER DESIGN B STANDARD PLATE 7100H, FORM CURB TO FIT CASTING
- ⑥ INSTALLATION OF CATCH BASIN OR MANHOLE CASTINGS; REFERENCE STANDARD PLATE PER TYPE OF CASTING
- ⑦ SAWCUT BITUMINOUS PAVEMENT / CONCRETE CURB FULL DEPTH.
- ⑧ ADD AND COMPACT AGGREGATE BASE CLASS 7 AROUND REPAIRED STRUCTURE. ITEM INCIDENTAL TO ENTIRE STRUCTURE REPAIR
- ⑨ REMOVE VARIABLE DEPTH BITUMINOUS, PATCH WITH 2, 3" LIFTS OF BITUMINOUS, TOP LIFT SHOULD TAPER TO BOTTOM LIFT AT CURB.
- ⑩ REPLACE DISTURBED AREA BEHIND CATCH BASIN WITH EITHER SOD (RESIDENTIAL AREAS), EROSION CONTROL BLANKET, BITUMINOUS, OR CONCRETE
- ⑪ WRAP SANITARY SEWER CONCRETE ADJUSTING RINGS AND CASTINGS WITH INFI-SHIELD SEAL WRAP OR APPROVED EQUIVALENT INSTALL PER MANUFACTURERS RECOMMENDATIONS.

MANHOLE DETAIL

SEE STRUCTURE TAB FOR LOCATION
(PAGE 3)



NO	DATE	BY	CKD	APPR	REVISION	
	03/19/2020					9:14:59 AM

NAME: P:\20-01-00\CSAH_01_(SoftHanson-111th)\Base\Proposed\Proposed.dgn

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: GERALD J. AUGER JR.
 SIGNATURE: *[Signature]*
 DATE: 02-21-2020 LICENSE NO. 26511

DRAWN BY SPH DATE 01/31/2020
 DESIGN BY KPR DATE 01/31/2020
 CHECKED BY CO DATE 03/19/2020



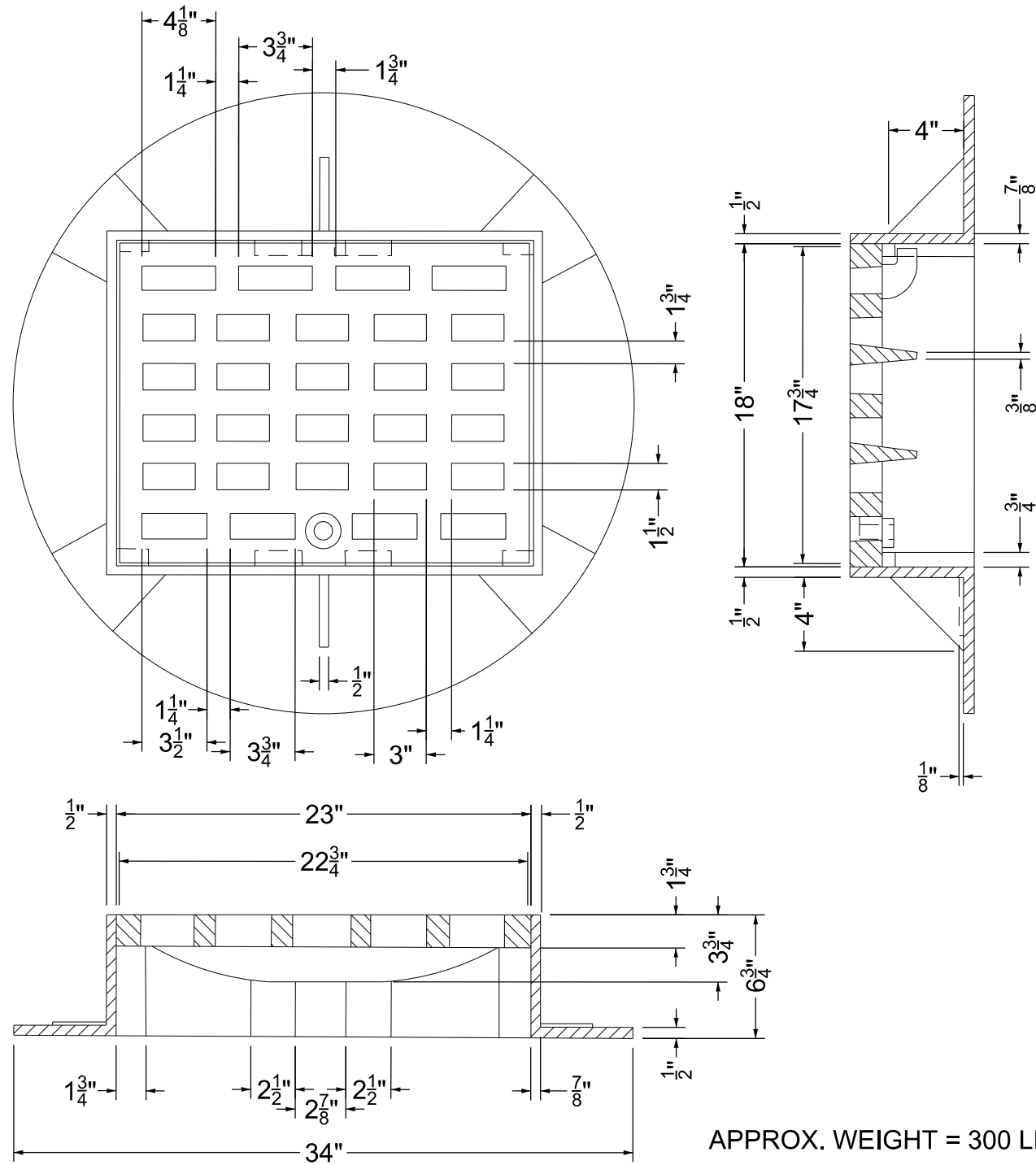
ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-601-058

DETAILS

Sheet 6 of 34 Sheets

FRAME RING AND CASTING TYPE A



APPROX. WEIGHT = 300 LBS.

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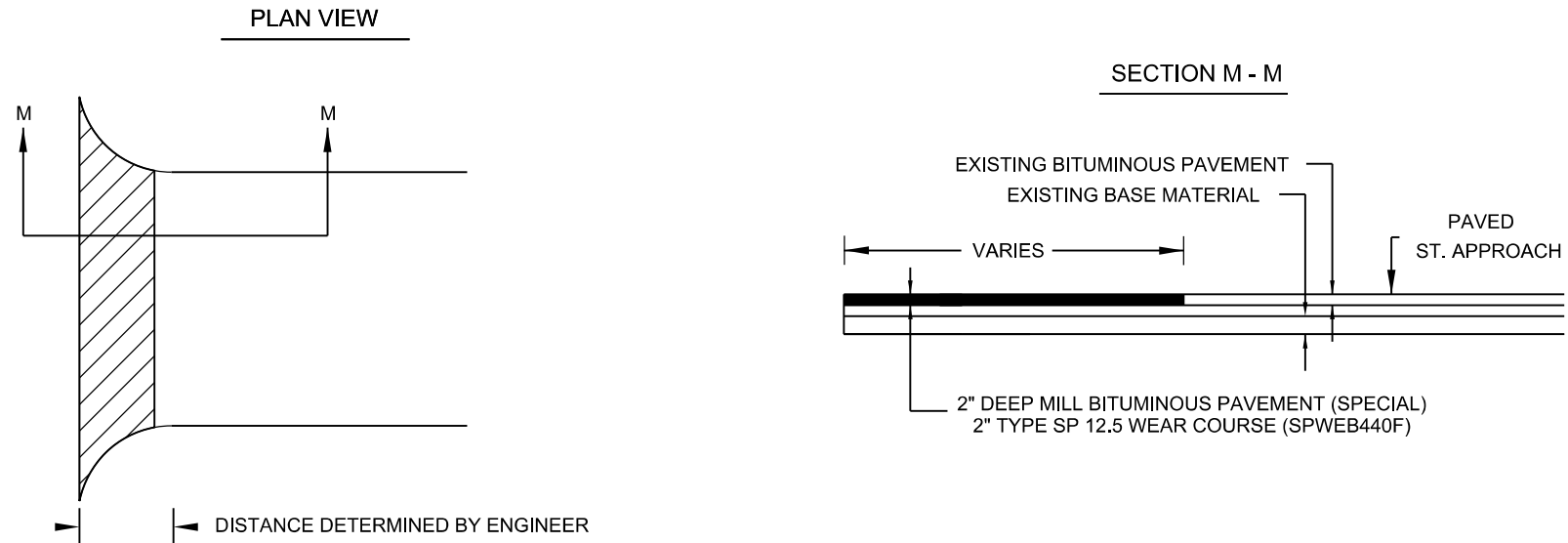
ANOKA COUNTY
 HIGHWAY DEPT.

STATE AID PROJECT 002-601-058

DETAILS
 Sheet 7 of 34 Sheets

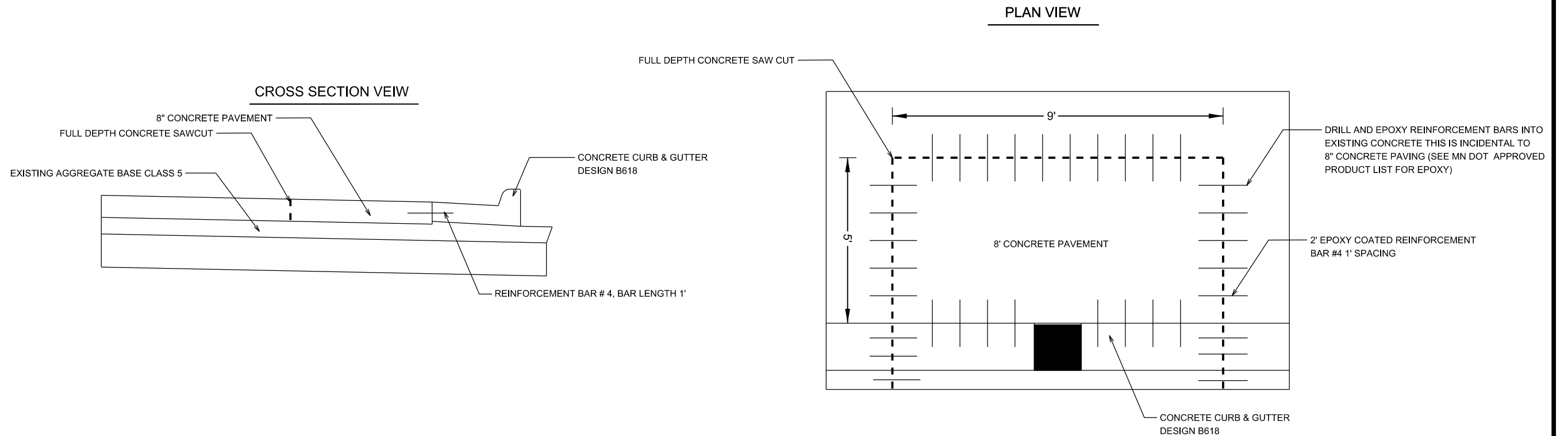
STREET APPROACH DETAIL (MILL & OVERLAY)

BITUMINOUS STREET



REBAR PLACEMENT IN BUS PAD LOCATIONS

(FOR CATCH BASIN REPAIRS)




NO	DATE	BY	CKD	APPR	REVISION	
	03/19/2020					9:15:02 AM

NAME: P:\20-01-00\CSAH_01_(SoftHanson-111th)\Base\Proposed\Proposed.dgn

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DRAWN BY SPH DATE 01/31/2020

DESIGN BY KPR DATE 01/31/2020

CHECKED BY CO DATE 03/19/2020



**ANOKA COUNTY
HIGHWAY DEPT.**

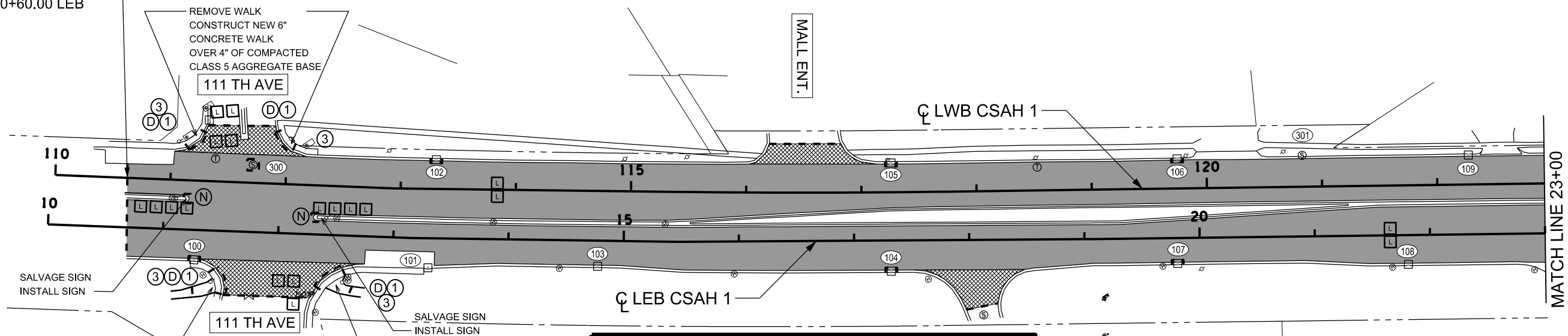
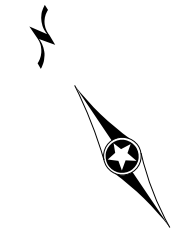
STATE AID PROJECT 002-601-058

DETAILS

Sheet 8 of 34 Sheets

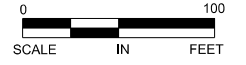
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BEGIN CONSTRUCTION
SAP: 002-601-058
STATION: 110+60.00 LWB
STATION: 10+60.00 LEB



LEGEND

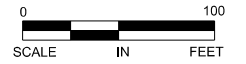
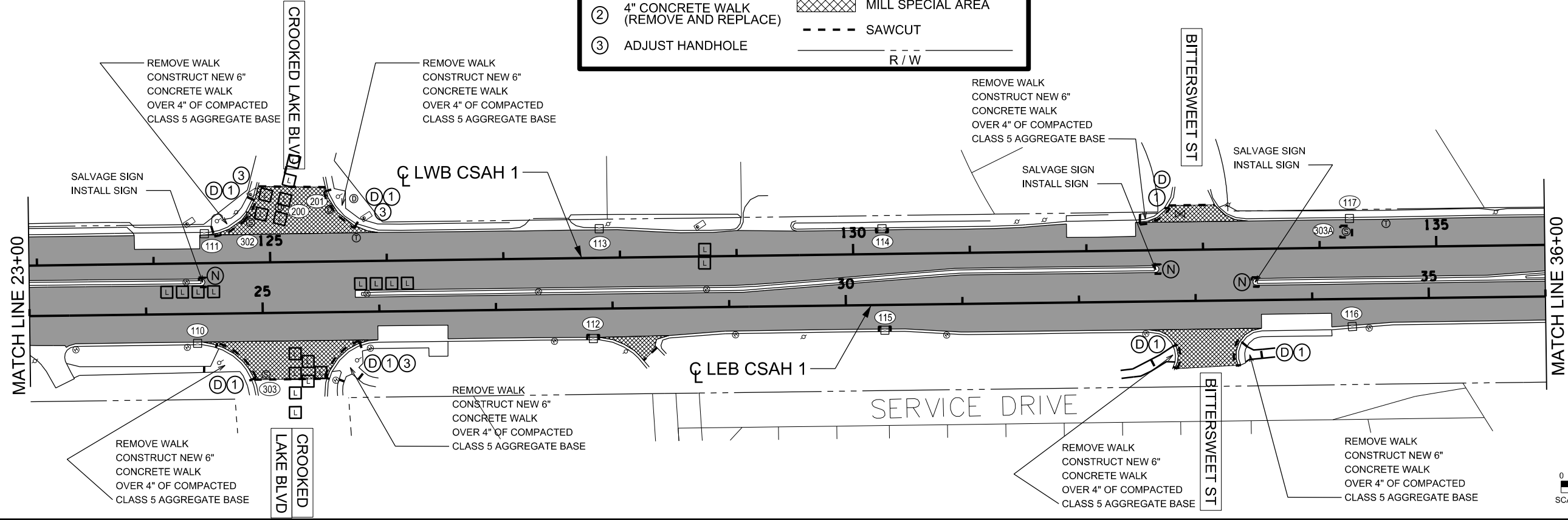
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(D)	TRUNCATED DOMES	L	APRX. LOOP LOCATION
(1)	6" CONCRETE WALK (REMOVE AND REPLACE)	[Hatched Box]	MAINLINE MILL AREA
(2)	4" CONCRETE WALK (REMOVE AND REPLACE)	[Cross-hatched Box]	STREET APPROACH MILL SPECIAL AREA
(3)	ADJUST HANDHOLE	- - -	SAWCUT
		---	R/W



REMOVE WALK
CONSTRUCT NEW 6"
CONCRETE WALK
OVER 4" OF COMPACTED
CLASS 5 AGGREGATE BASE

SALVAGE SIGN
INSTALL SIGN

REMOVE WALK
CONSTRUCT NEW 6"
CONCRETE WALK
OVER 4" OF COMPACTED
CLASS 5 AGGREGATE BASE



NO	DATE	BY	CKD	APPR	REVISION	
	03/19/2020					9:15:03 AM

NAME: P:\20-01-00\CSAH_01_(SofHanson-111th)\Base\Proposed\Proposed.dgn

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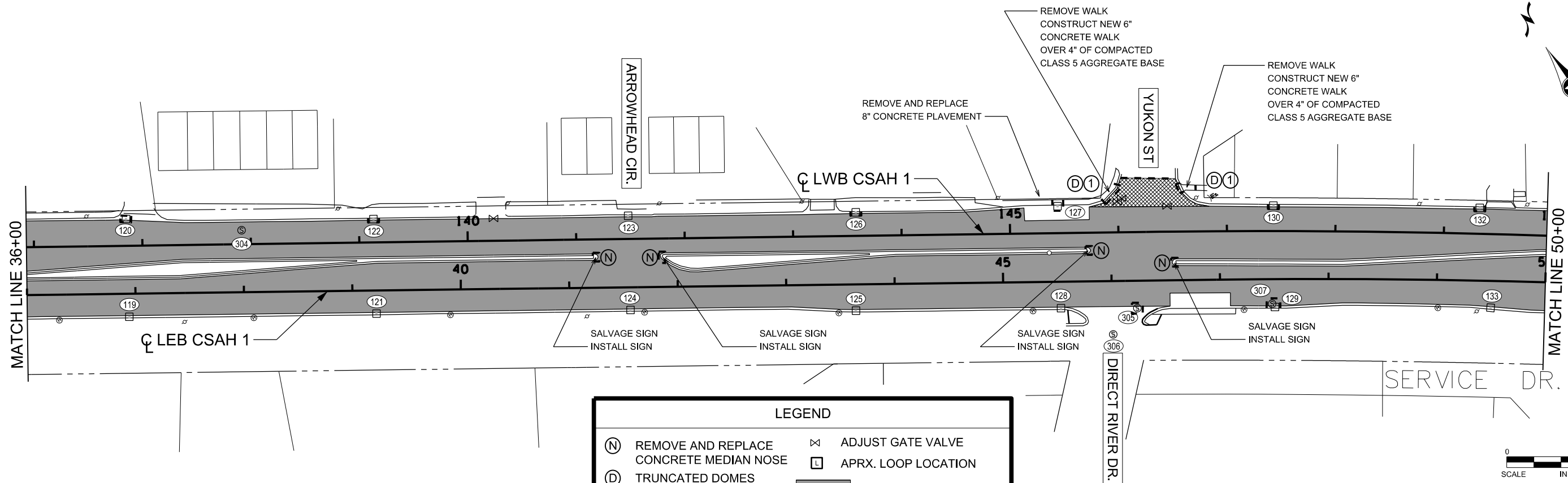
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ANOKA COUNTY
HIGHWAY DEPT.

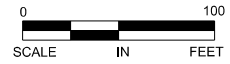
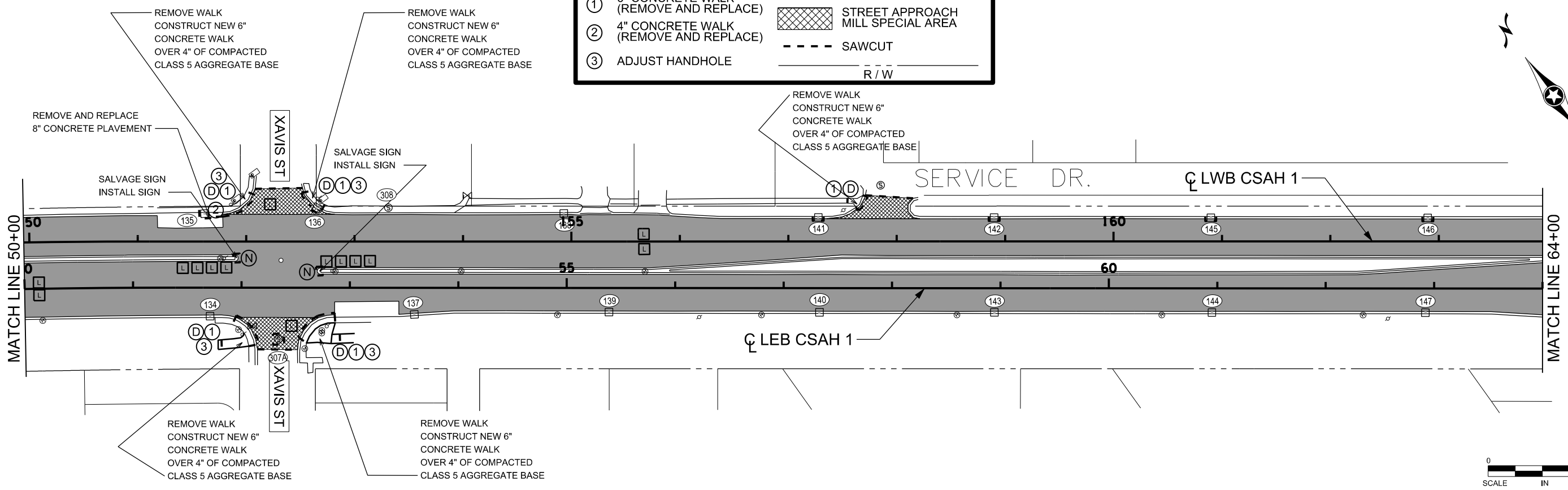
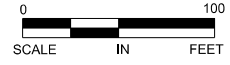
STATE AID PROJECT 002-601-058

CONSTRUCTION PLAN
STA 10+60 TO 36+00
Sheet 9 of 34 Sheets



LEGEND

(N)	REMOVE AND REPLACE CONCRETE MEDIAN NOSE	⊗	ADJUST GATE VALVE
(D)	TRUNCATED DOMES	L	APRX. LOOP LOCATION
(1)	6" CONCRETE WALK (REMOVE AND REPLACE)	[Hatched Box]	MAINLINE MILL AREA
(2)	4" CONCRETE WALK (REMOVE AND REPLACE)	[Cross-hatched Box]	STREET APPROACH MILL SPECIAL AREA
(3)	ADJUST HANDHOLE	- - -	SAWCUT
		---	R/W



NO	DATE	BY	CKD	APPR	REVISION	
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DRAWN BY: SPH DATE: 01/31/2020

DESIGN BY: KPR DATE: 01/31/2020

CHECKED BY: CO DATE: 03/19/2020

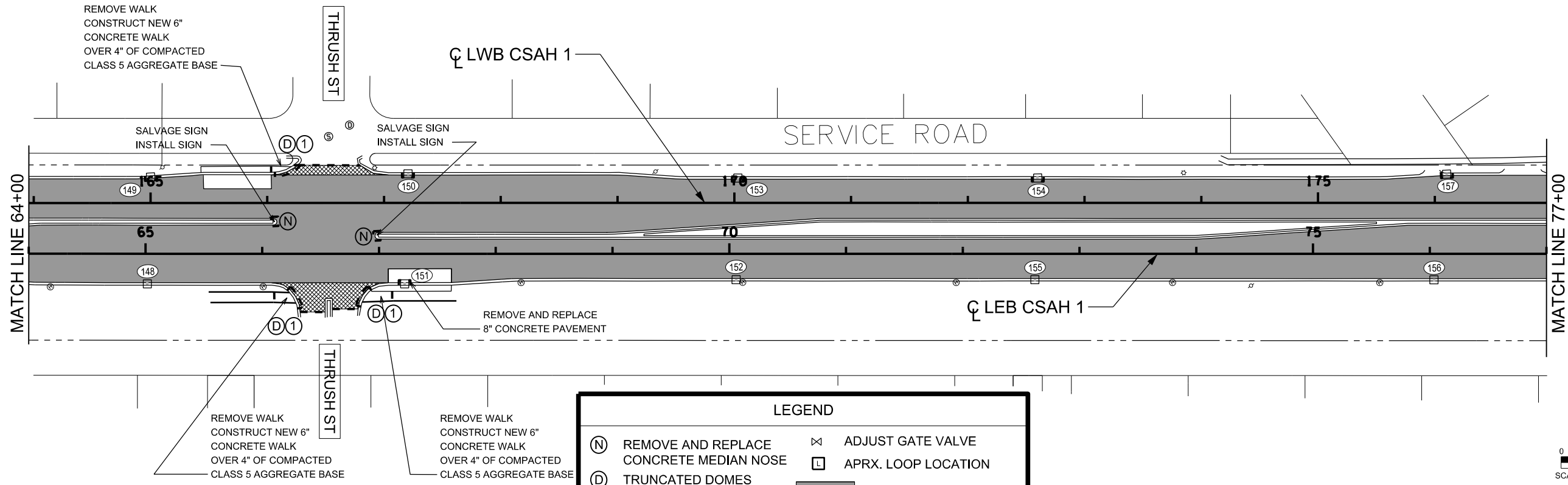
**ANOKA COUNTY
HIGHWAY DEPT.**

STATE AID PROJECT 002-601-058

CONSTRUCTION PLAN

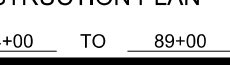
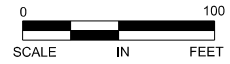
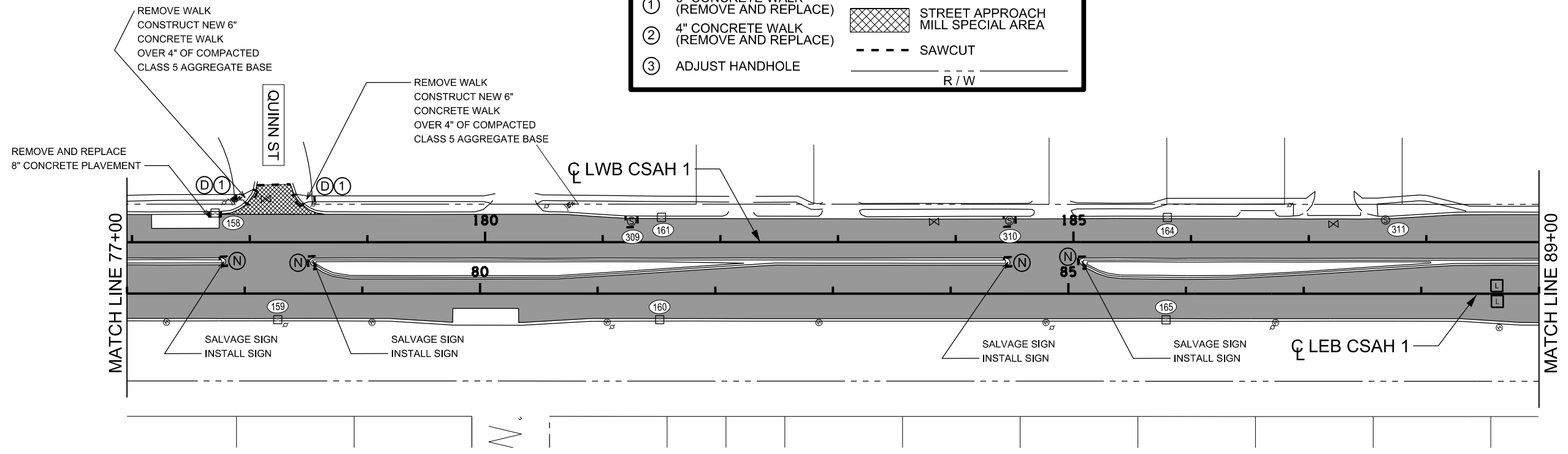
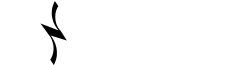
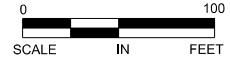
STA 36+00 TO 64+00

Sheet 10 of 34 Sheets



LEGEND

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(D)	TRUNCATED DOMES	□	APRX. LOOP LOCATION
(1)	6" CONCRETE WALK (REMOVE AND REPLACE)	■	MAINLINE MILL AREA
(2)	4" CONCRETE WALK (REMOVE AND REPLACE)	▨	STREET APPROACH MILL SPECIAL AREA
(3)	ADJUST HANDHOLE	- - -	SAWCUT
		—	R/W



NO	DATE	BY	CKD	APPR	REVISION	
	03/19/2020					9:15:04 AM

NAME: P:\20-01-00\CSAH_01_(SofHanson-111th)\Base\Proposed\Proposed.dgn

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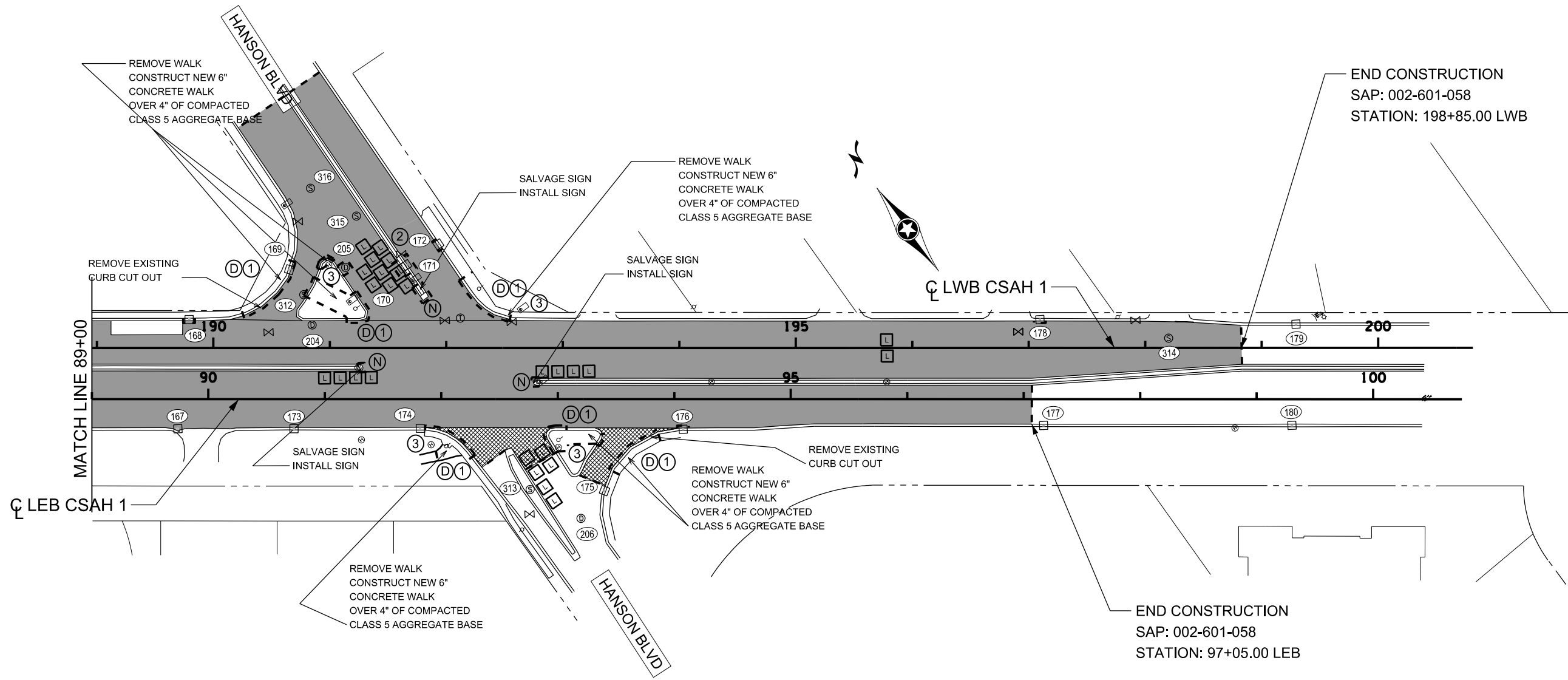
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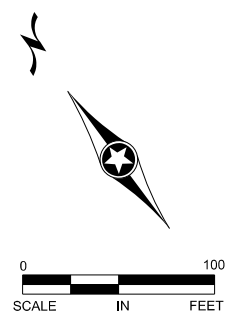
ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-601-058

CONSTRUCTION PLAN
STA 64+00 TO 89+00
Sheet 11 of 34 Sheets



LEGEND	
(N)	REMOVE AND REPLACE CONCRETE MEDIAN NOSE
(D)	TRUNCATED DOMES
(1)	6" CONCRETE WALK (REMOVE AND REPLACE)
(2)	4" CONCRETE WALK (REMOVE AND REPLACE)
(3)	ADJUST HANDHOLE
(X)	ADJUST GATE VALVE
(L)	APRX. LOOP LOCATION
[Solid Grey]	MAINLINE MILL AREA
[Cross-hatched]	STREET APPROACH MILL SPECIAL AREA
[Dashed Line]	SAWCUT
[Dotted Line]	R / W



NO	DATE	BY	CKD	APPR	REVISION	
	03/19/2020					9:15:04 AM

NAME: P:\20-01-00\CSAH_01_(SoftHanson-111th)\Base\Proposed\Proposed.dgn

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DRAWN BY: SPH DATE: 01/31/2020

DESIGN BY: KPR DATE: 01/31/2020

CHECKED BY: CO DATE: 03/19/2020

ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-601-058

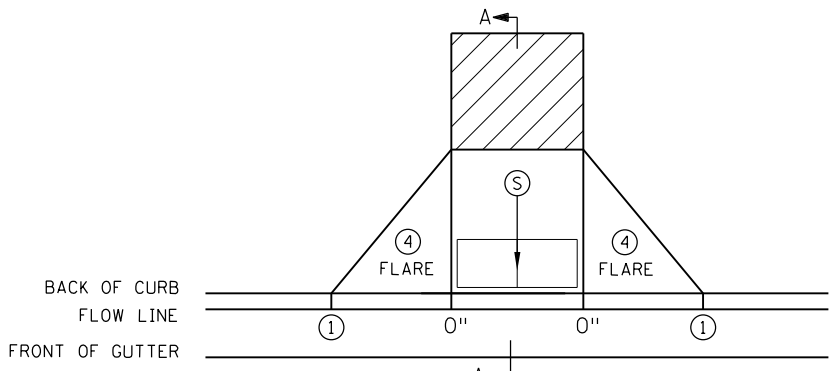
CONSTRUCTION PLAN

STA 89+00 TO 97+05

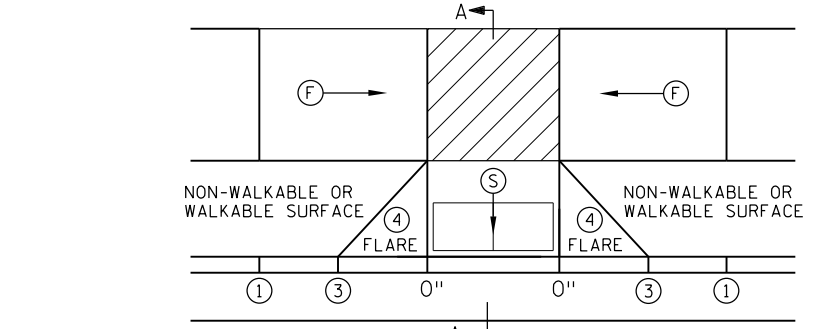
Sheet 12 of 34 Sheets

PLOTTED/REVISED:
03/19/2020

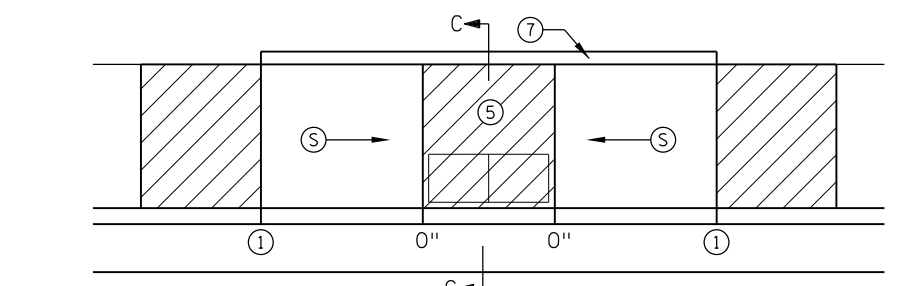
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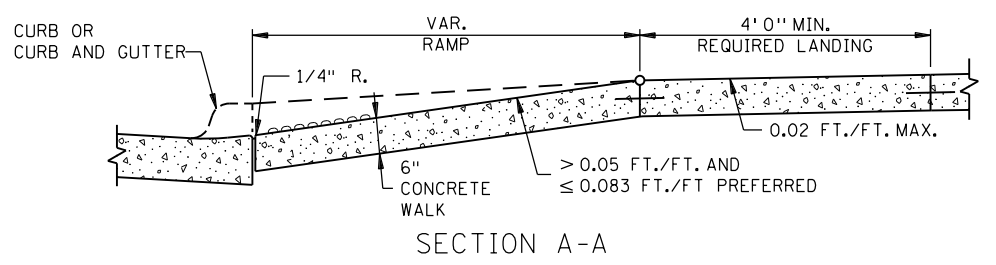
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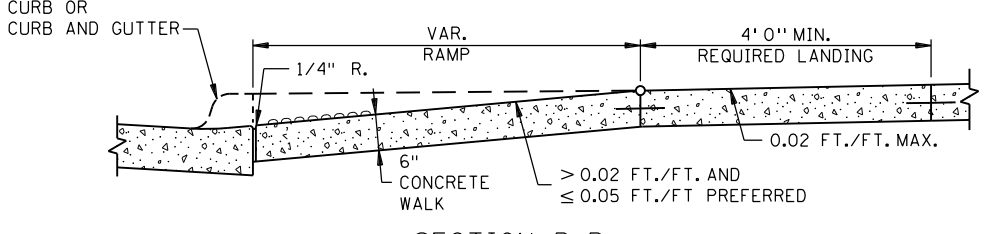
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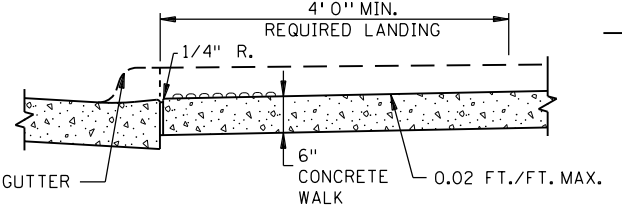
PARALLEL



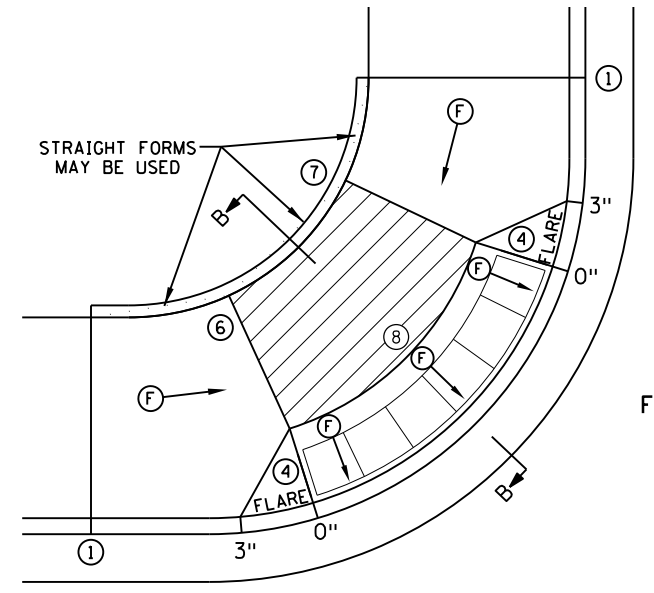
SECTION A-A
PERPENDICULAR/TIERED/DIAGONAL



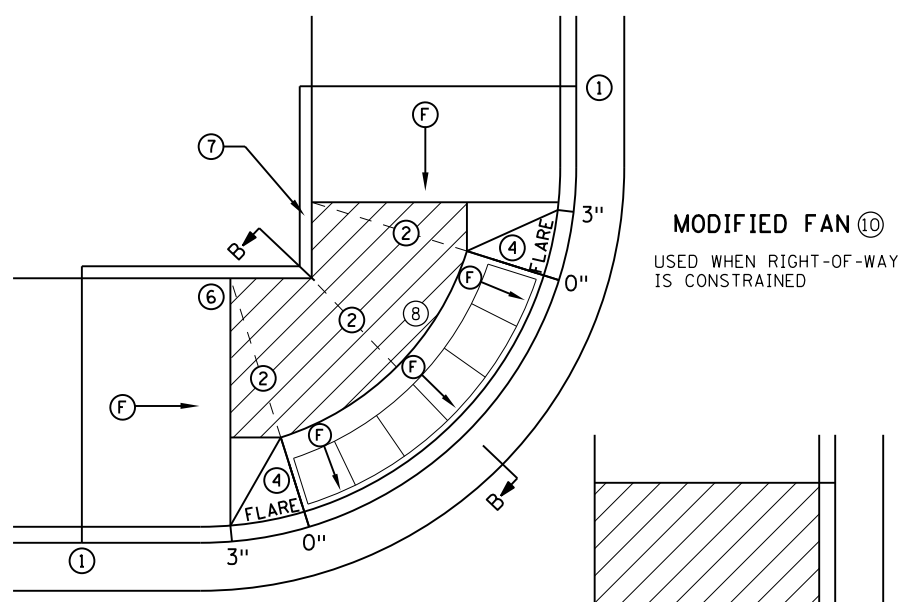
SECTION B-B
FAN



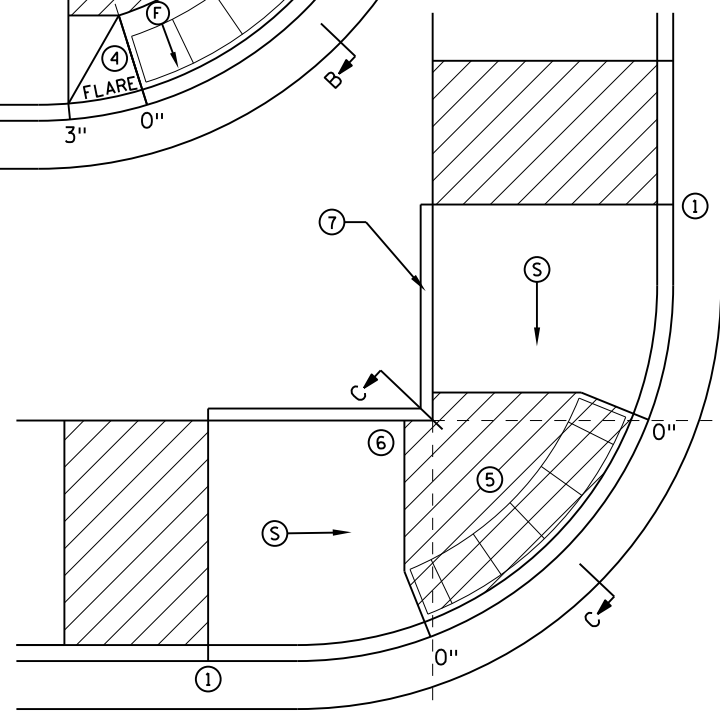
SECTION C-C
PARALLEL/DEPRESSED CORNER



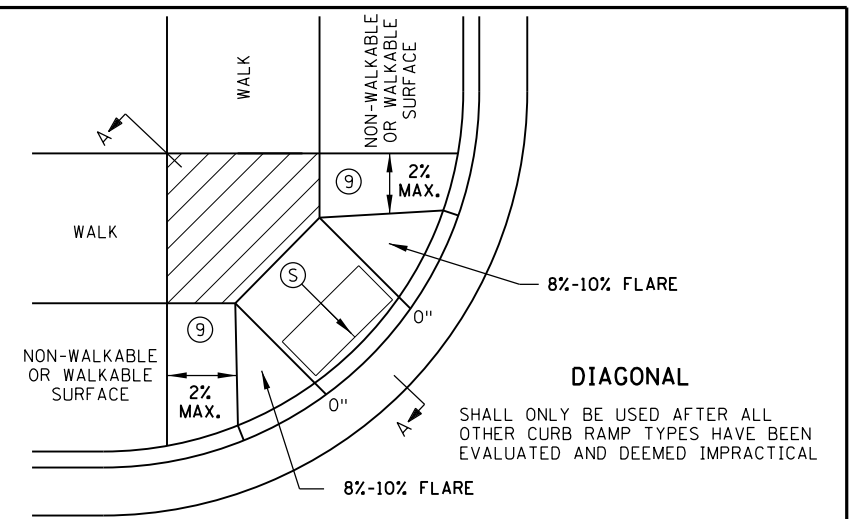
FAN ⑩



MODIFIED FAN ⑩
USED WHEN RIGHT-OF-WAY IS CONSTRAINED



DEPRESSED CORNER



DIAGONAL

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

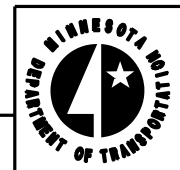
NOTES:

- LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE GREATER THAN 2%.
- INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK OF CURB, WITH 6' FROM THE BACK OF CURB BEING THE PREFERRED DISTANCE, ONLY APPLICABLE WHEN THE INITIAL RAMP RUNNING SLOPE IS OVER 5.0%.
- SECONDARY CURB RAMP LANDINGS ARE REQUIRED FOR EVERY 30' OF VERTICAL RISE WHEN THE LONGITUDINAL RUNNING SLOPE IS GREATER THAN 5.0%.
- CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PAR. 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.
- ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL, THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH. (EXCEPT AS STATED IN ⑥ BELOW.)
- TO ENSURE INITIAL RAMPS AND INITIAL LANDINGS ARE PROPERLY CONSTRUCTED, LANDINGS SHALL BE CAST SEPARATELY, FOLLOW SIDEWALK REINFORCEMENT DETAILS ON SHEET 6 AND THE ADA SPECIAL PROVISIONS - PROSECUTION OF WORK (ADA).
- 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 ENTIRE WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK. DETECTABLE WARNING SHOULD BE 6" LESS THAN THE PAR/TRAIL WIDTH. ARC LENGTH OF 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, WHEN INITIAL LANDING IS AT FULL CURB HEIGHT.
- 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 SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
- ⑧ A 7' MIN TOP RADIUS GRADE BREAK 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.

LEGEND	
⑩	THESE LONGITUDINAL SLOPE RANGES SHALL BE THE STARTING POINT. IF SITE CONDITIONS WARRANT, LONGITUDINAL SLOPES UP TO 8.3% OR FLATTER ARE ALLOWED.
S	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND THE CROSS SLOPE SHALL NOT EXCEED 2.0%.
F	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.
▨	LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PARS.
X"	CURB HEIGHT

REVISION:
APPROVED: JANUARY 23, 2017
Am Sobr
OPERATIONS ENGINEER

SAP 002-601-058



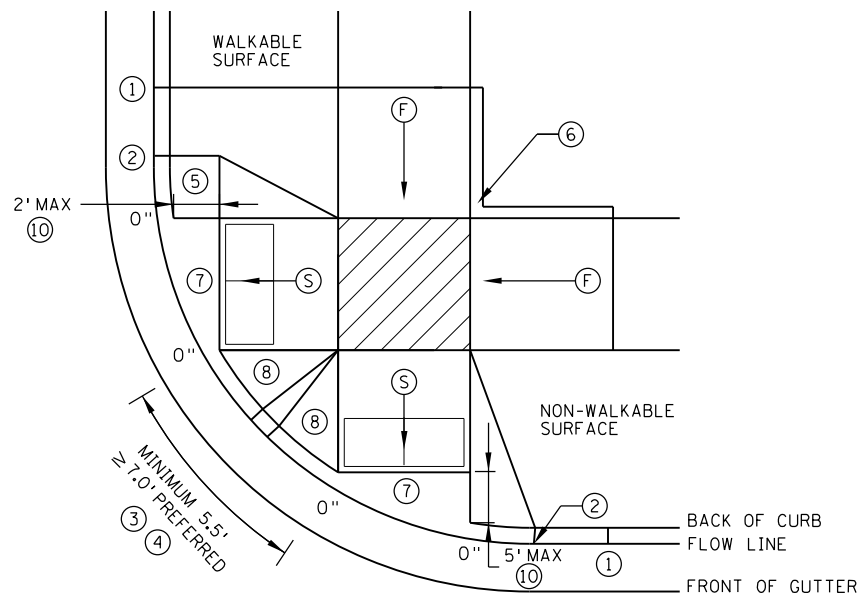
REVISOR:
Tom S...
STATE DESIGN ENGINEER

APPROVED:
1-23-2017

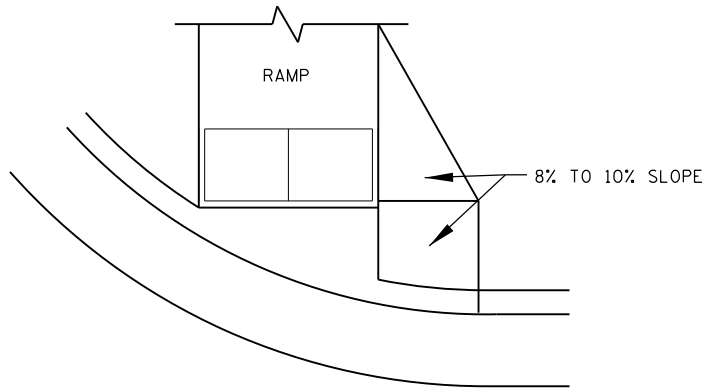
PEDESTRIAN CURB RAMP DETAILS (1 OF 6)
STANDARD PLAN 5-297.250 13 OF 34

PLOTTED/REVISED:
03/19/2020

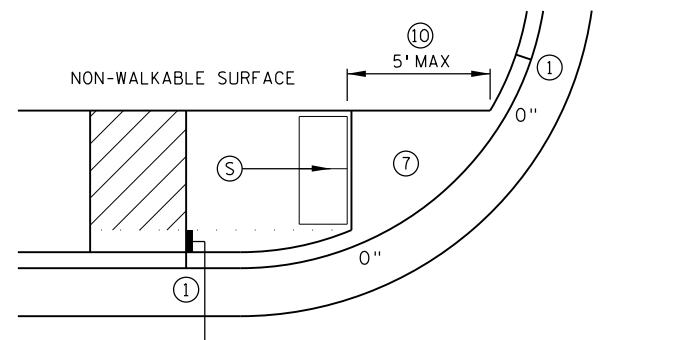
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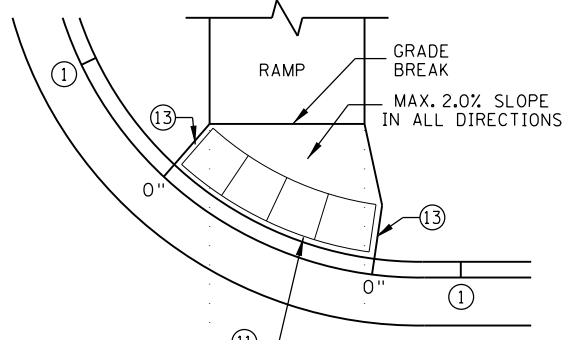
COMBINED DIRECTIONAL ⑨



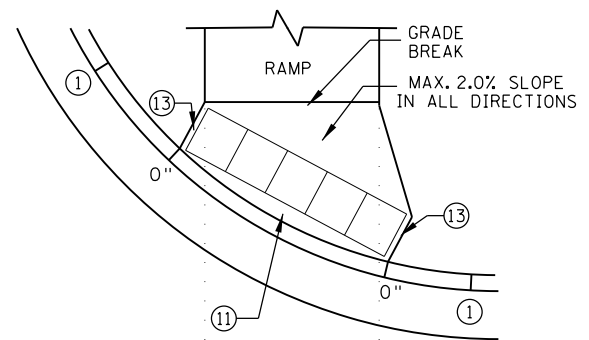
DIRECTIONAL RAMP WALKABLE FLARE



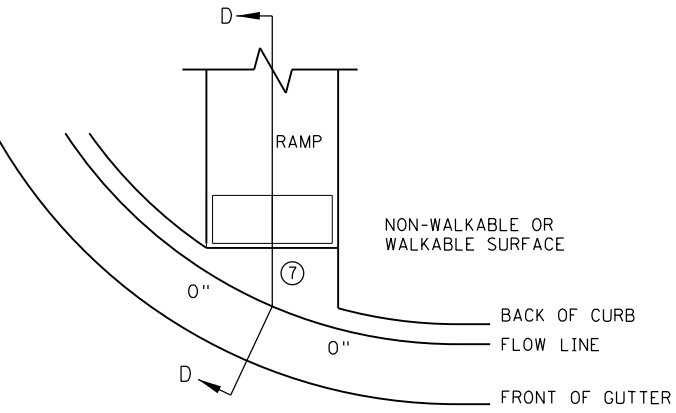
STANDARD ONE-WAY DIRECTIONAL ⑨



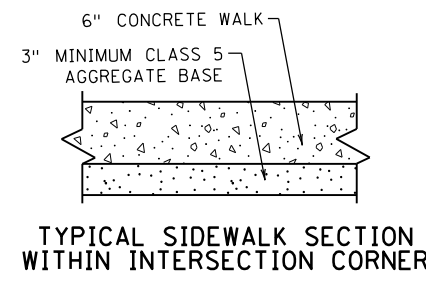
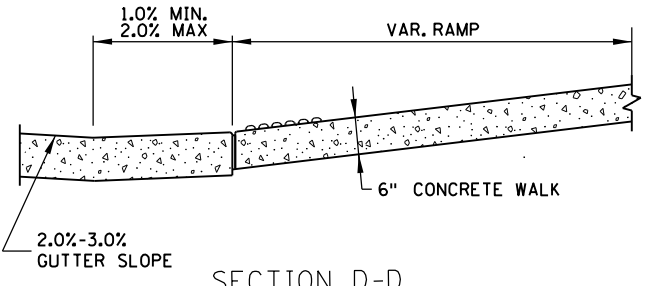
ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB



DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫



CURB FOR DIRECTIONAL RAMPS ⑭



NOTES:

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

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

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

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

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

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

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

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

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

4' MINIMUM WIDTH OF DETECTABLE WARNING IS REQUIRED FOR ALL RAMPS. DETECTABLE WARNINGS SHALL CONTINUOUSLY EXTEND FOR A MIN. OF 24" IN THE PATH OF TRAVEL. DETECTABLE WARNING TO COVER ENTIRE WIDTH OF SHARED-USE PATH AND THE ENTIRE PAR WIDTH OF THE WALK. DETECTABLE WARNING SHOULD BE 6" LESS THAN THE PAR/PATH WIDTH. ARC LENGTH OF 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 SHOULD 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.

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 PAR.
X"	CURB HEIGHT

REVISION:
APPROVED: JANUARY 23, 2017
<i>Ann Sabo</i> OPERATIONS ENGINEER

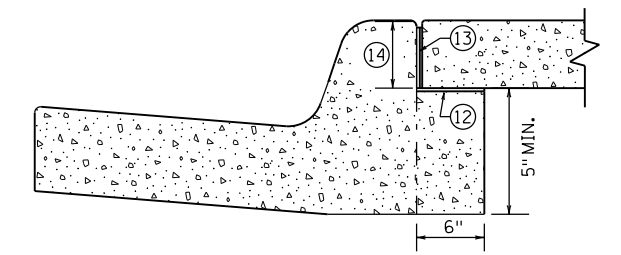
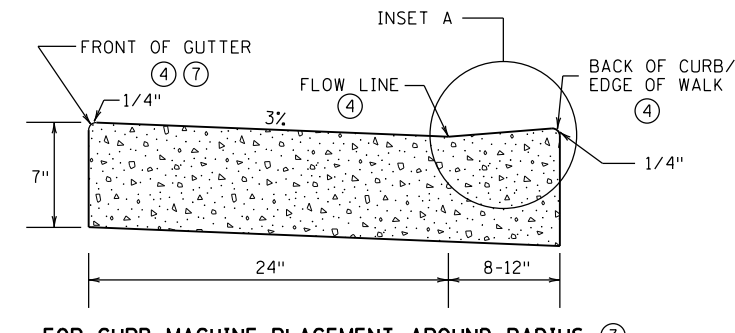
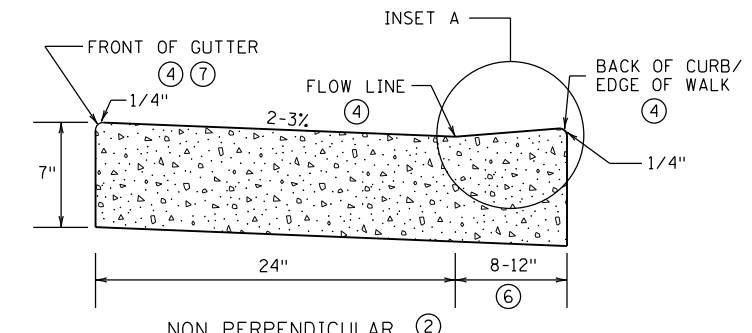
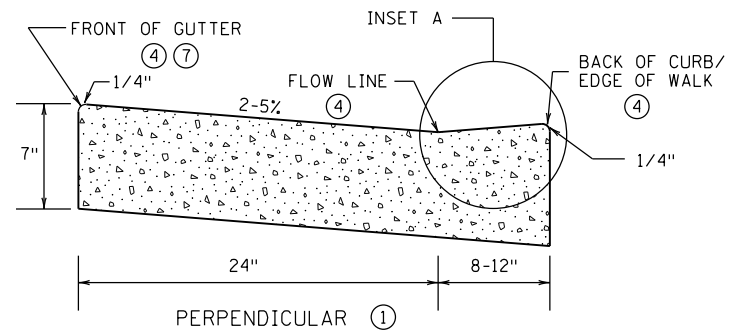
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MINNESOTA DEPARTMENT OF TRANSPORTATION
Tom S...
STATE DESIGN ENGINEER

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APPROVED:
1-23-2017

PLOTTED/REVISED:
03/19/2020

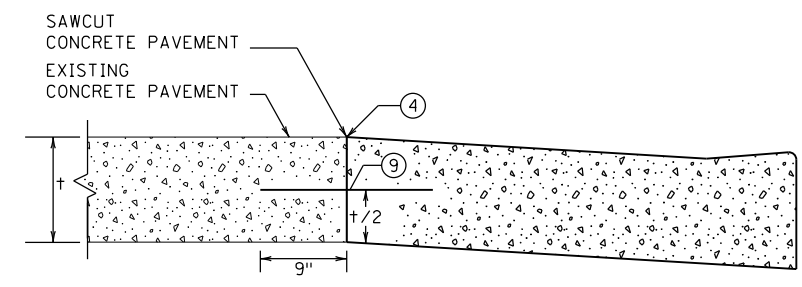
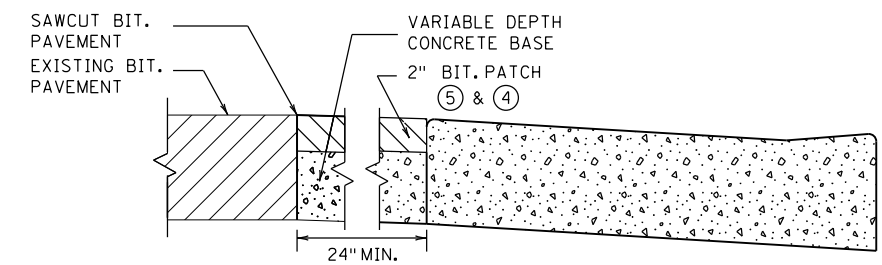
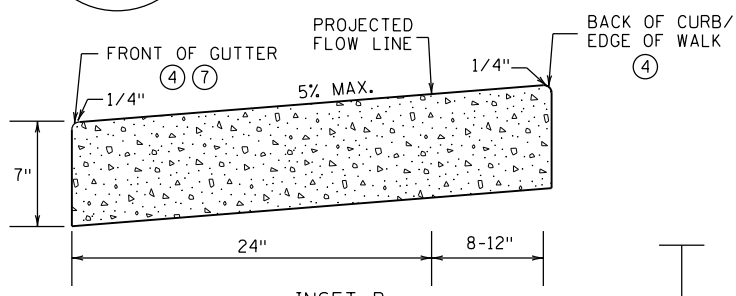
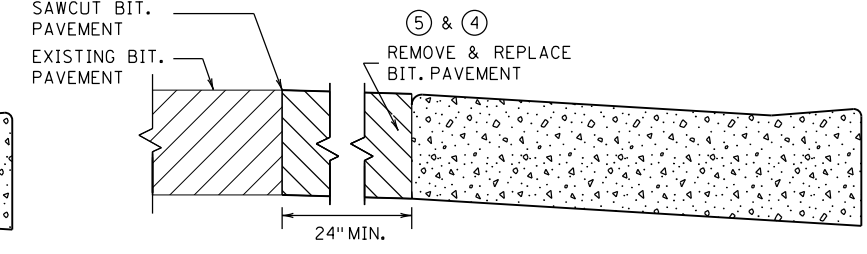
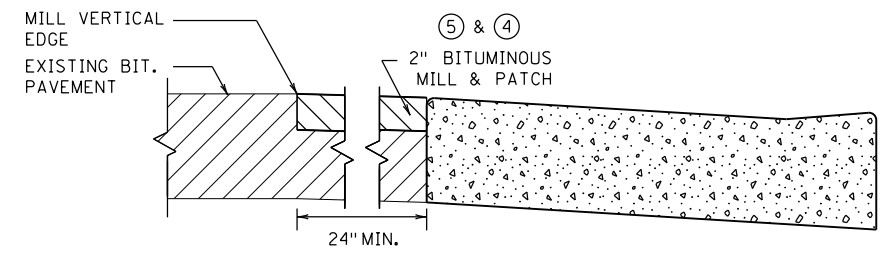
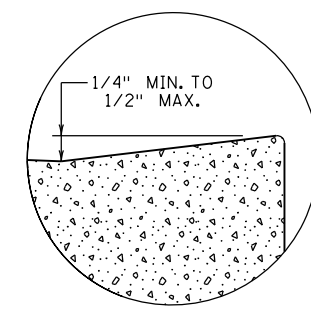
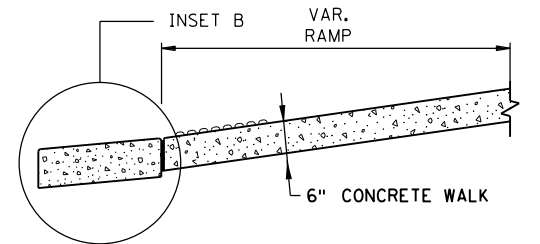
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OPTIONAL SILL CURB WHEN SIDEWALK IS AT BACK OF CURB

CONCRETE SILL TO BE USED ONLY WHEN SPECIFIED IN THE PLAN.

PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL



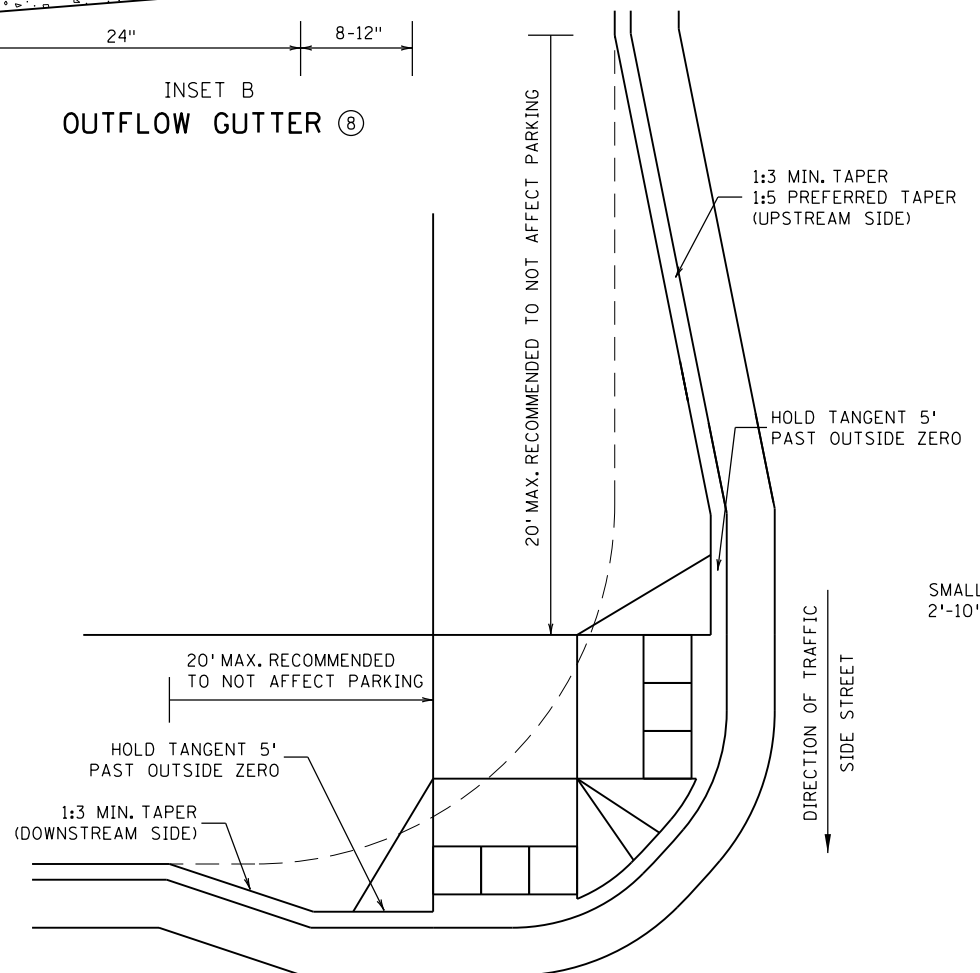
ONLY ALLOWED PER ENGINEER'S APPROVAL

PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER

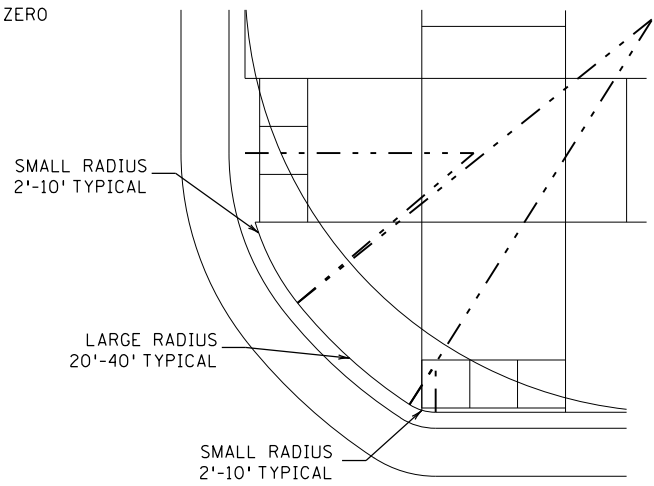
FOR USE ON CURB RAMP RETROFITS

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 RAMP.
- ② FOR USE AT CURB RAMP 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 RAMP.
- 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.
- ⑫ PLACE BOND BREAKER BETWEEN WALK AND TOP OF SILL.
- ⑬ 1/2\" PREFORMED JOINT FILLER PER MNDOT SPEC. 3702.
- ⑭ DIMENSION TO BE SAME AS SIDEWALK THICKNESS, 4\" MIN.

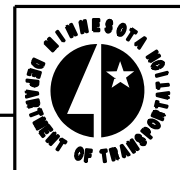


ADA CURB EXTENSION WITH COMPOUND RADIUS (BUMP OUT) ⑪



COMBINED DIRECTIONAL (COMPOUND RADIUS) ⑫

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Tom Johnson
STATE DESIGN ENGINEER

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1-23-2017

PEDESTRIAN CURB RAMP DETAILS (3 OF 6)

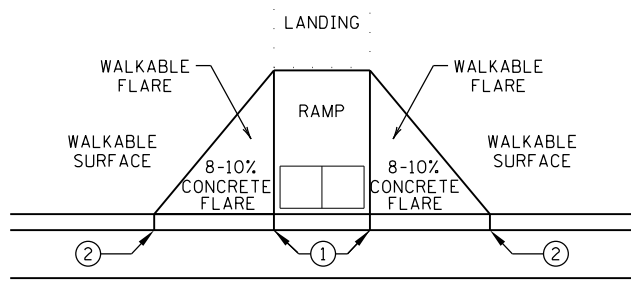
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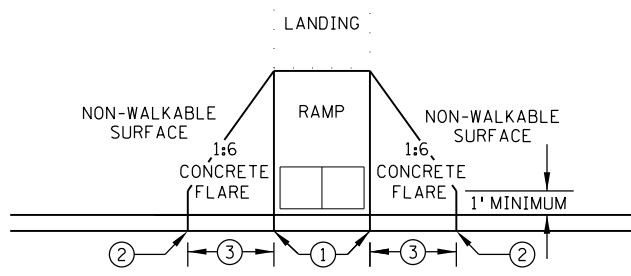
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APPROVED: JANUARY 23, 2017
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OPERATIONS ENGINEER

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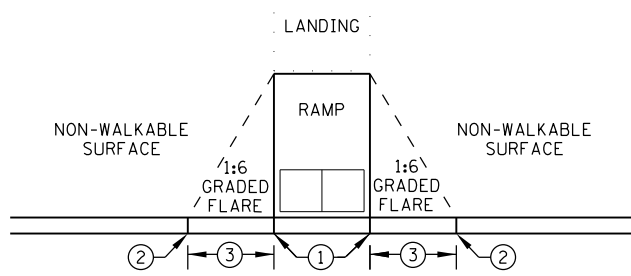
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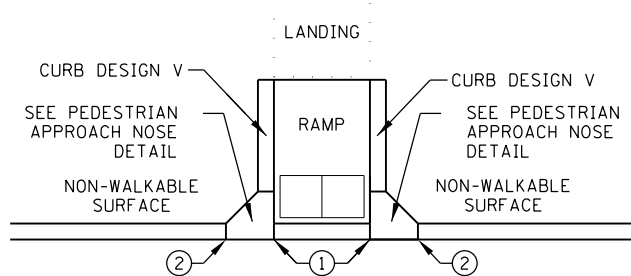
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

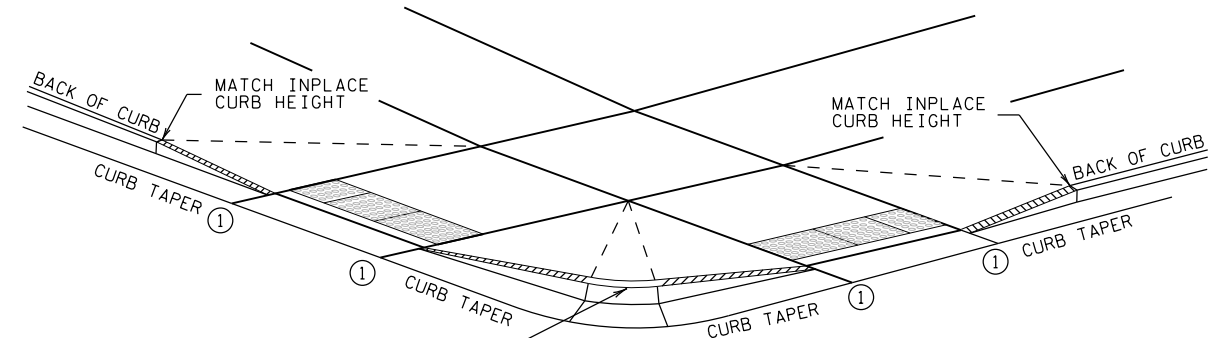


GRADED FLARES



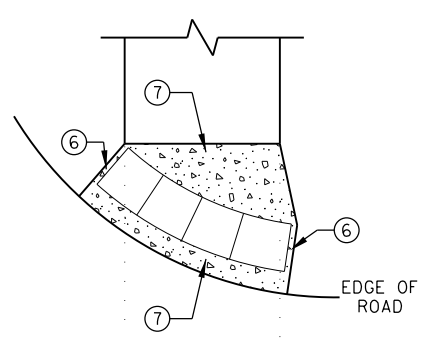
RETURNED CURB

TYPICAL SIDE TREATMENT OPTIONS

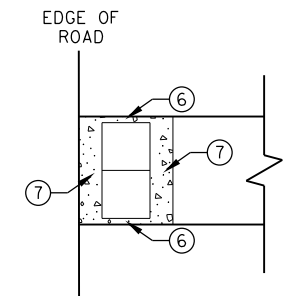


3" MINIMUM CURB HEIGHT, 4" PREFERRED
(MEASURED AT FRONT FACE OF CURB)
FOR A MIN. 6" LENGTH (MEASURED ALONG FLOW LINE)

DETECTABLE EDGE WITH CURB AND GUTTER

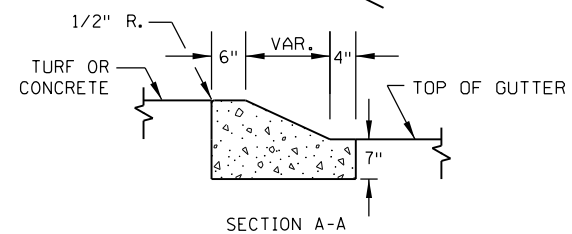
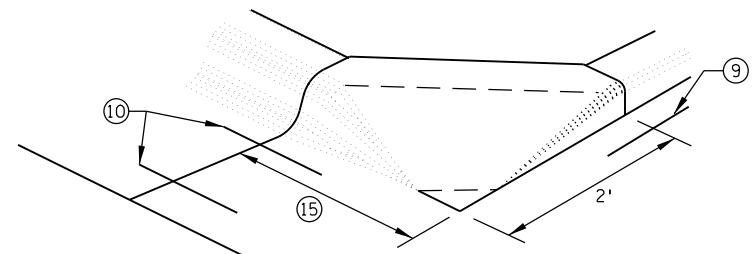


RADIAL DETECTABLE WARNING

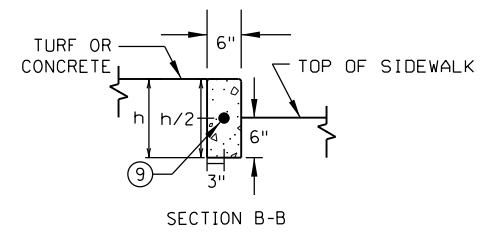


RECTANGULAR DETECTABLE WARNING

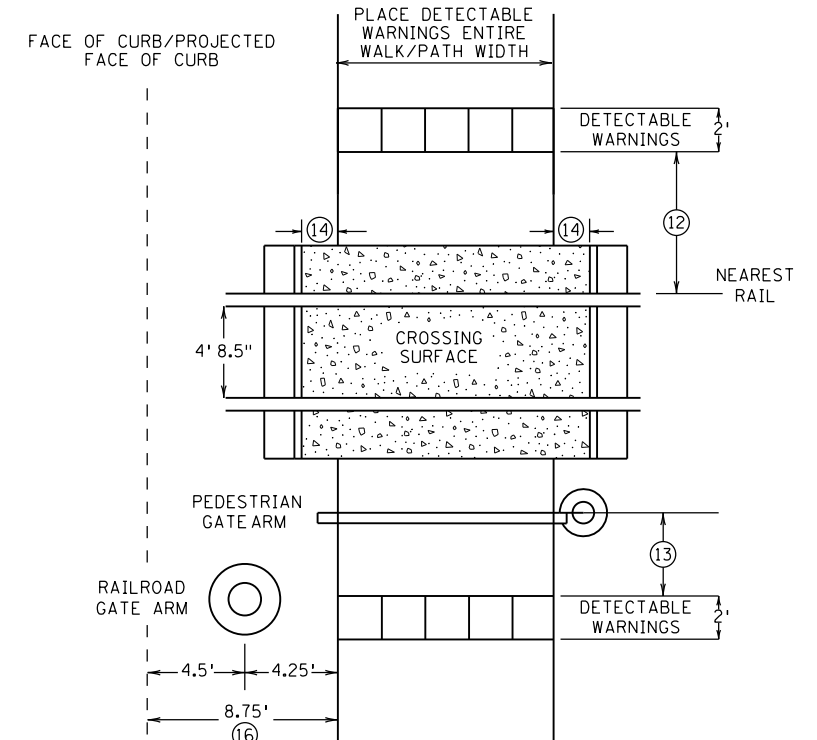
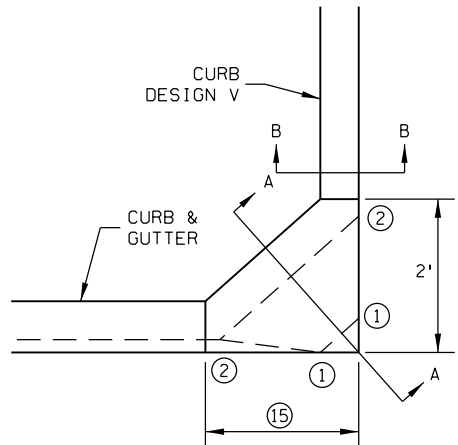
DETECTABLE EDGE WITHOUT CURB AND GUTTER



SECTION A-A



SECTION B-B



RAILROAD CROSSING
PLAN VIEW

NOTES:

- 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.
- ② FULL CURB HEIGHT.
- ③ 2' FOR 4" HIGH CURB AND 3' FOR 6" HIGH CURB.
- ④ 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.
- ⑤ TYPICALLY USED FOR MEDIANS AND ISLANDS.
- ⑥ 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.
- ⑦ 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.
- ⑧ 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.
- ⑨ 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.
- ⑩ 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.
- ⑪ 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.
- ⑫ 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.
- ⑬ 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 ⑫.
- ⑭ CROSSING SURFACE SHALL EXTEND 2' MINIMUM PAST THE OUTSIDE EDGE OF WALK OR SHARED-USE PATH.
- ⑮ 3' FOR MEDIANS AND SPLITTER ISLANDS. NOSE CAN BE REDUCED TO 2' ON FREE RIGHT ISLANDS.
- ⑯ 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.

PEDESTRIAN APPROACH
NOSE DETAIL
(FOR RETURNED CURB
SIDE TREATMENT)

SAP 002-601-058

MINNESOTA
DEPARTMENT OF
TRANSPORTATION
Ron Johnson
STATE DESIGN ENGINEER

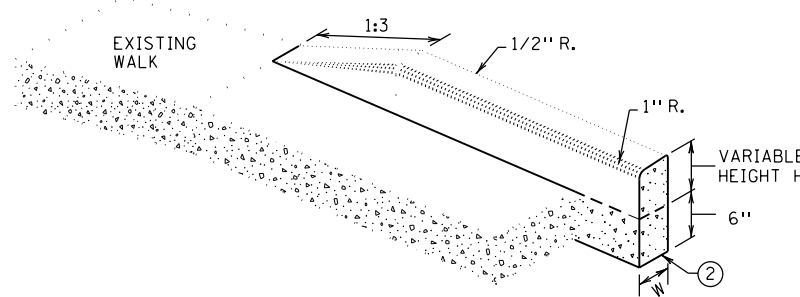
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PEDESTRIAN CURB RAMP DETAILS (4 OF 6)
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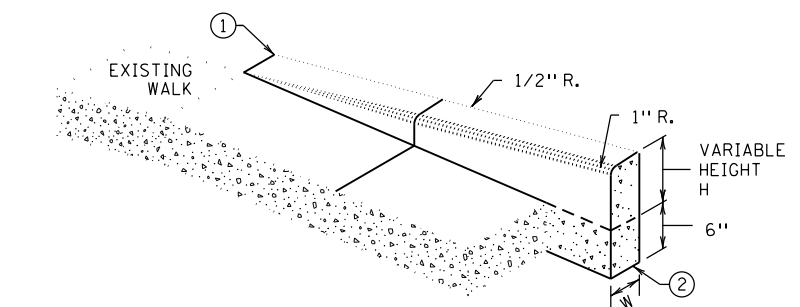
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OPERATIONS ENGINEER

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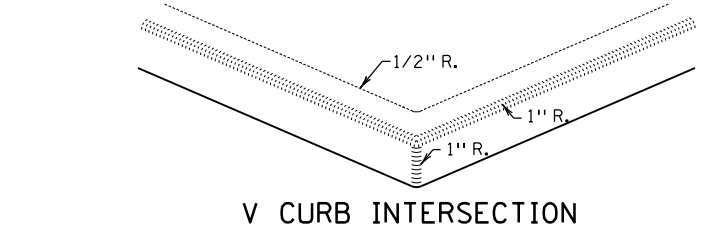
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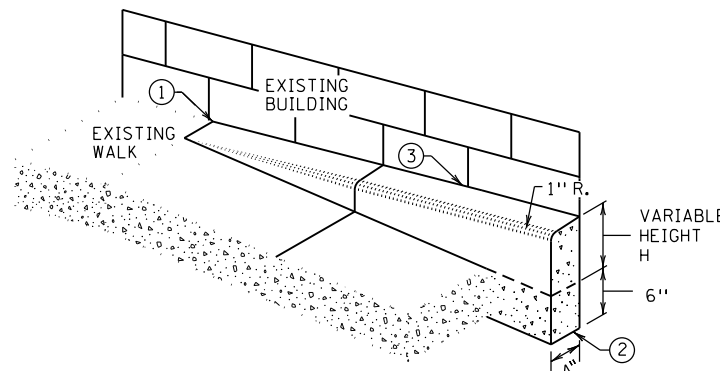
V CURB ADJACENT TO LANDSCAPE
CURB WITHIN SIDEWALK LIMITS



V CURB ADJACENT TO LANDSCAPE
CURB OUTSIDE SIDEWALK LIMITS

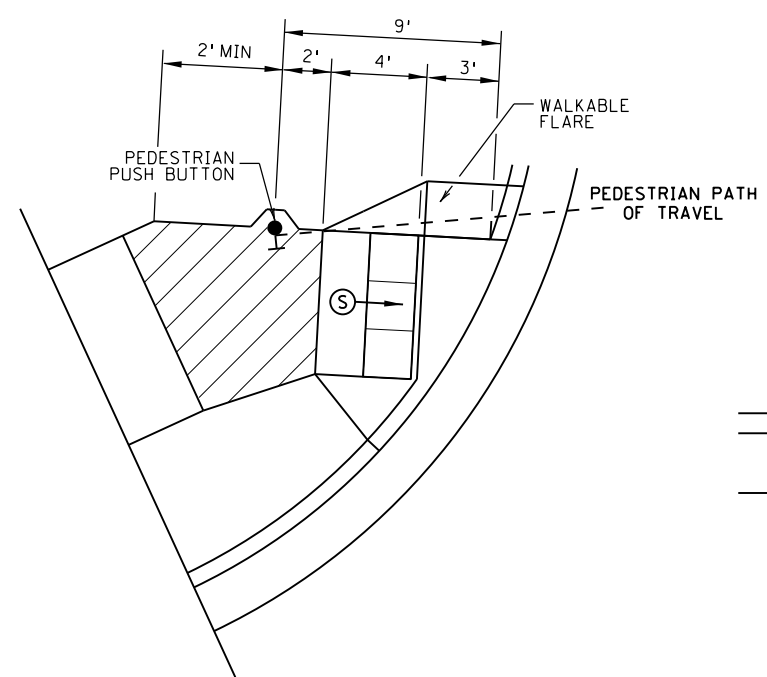


V CURB INTERSECTION



V CURB ADJACENT TO BUILDING
OR BARRIER

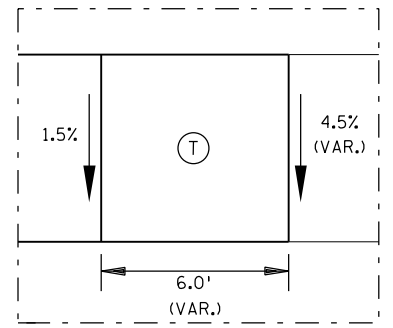
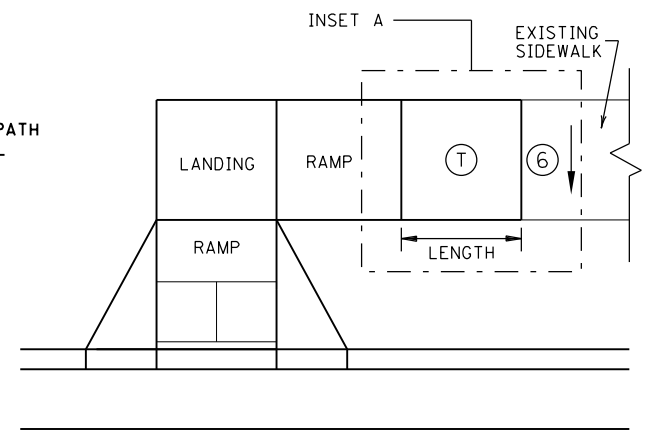
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"



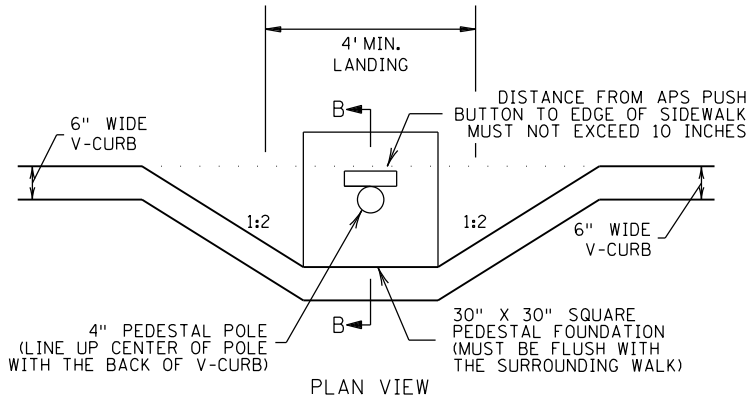
SEMI-DIRECTIONAL RAMP (3,4,9)

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

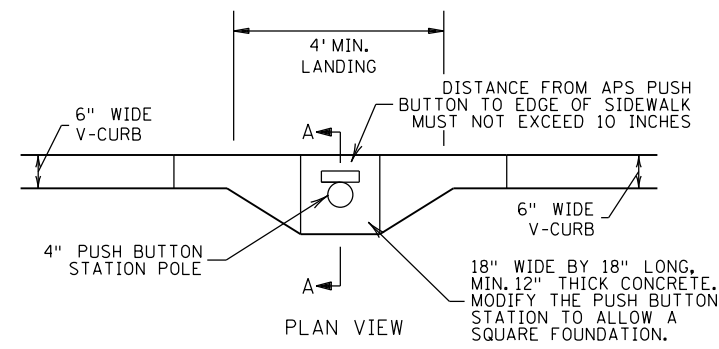
PRIMARYLY USED FOR APS APPLICATIONS
WHERE THE PAR DOES NOT CONTINUE PAST
THE PUSH BUTTON (DEAD-END SIDEWALK)



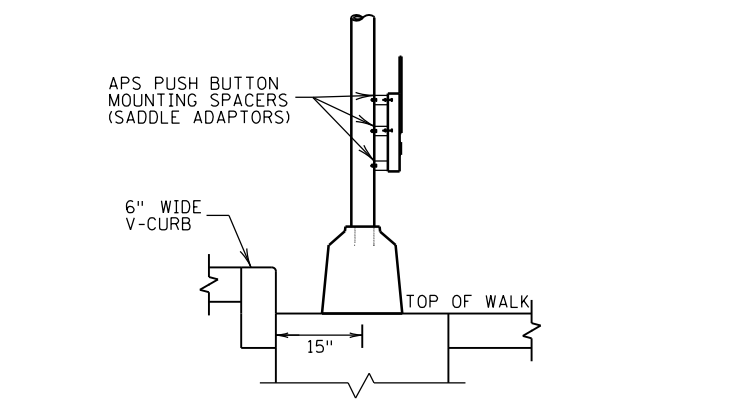
TRANSITION PANEL (4,5)



PLAN VIEW

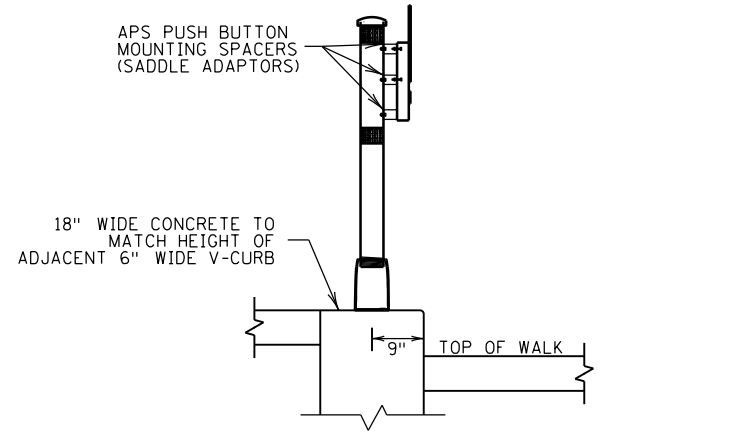


PLAN VIEW



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 EDGE BETWEEN NEW V CURB AND INPLACE STRUCTURE SHALL BE SEALED AND BOND BREAKER SHALL BE USED BETWEEN EXISTING STRUCTURE AND PLACED V-CURB.
- ④ THE MAX. RATE OF CROSS SLOPE TRANSITIONING IS 1' LINEAR FOOT OF SIDEWALK PER HALF PERCENT CROSS SLOPE. WHEN PAR WIDTH IS GREATER THAN 6' OR THE RUNNING SLOPE IS GREATER THAN 5%, DOUBLE THE CALCULATED TRANSITION LENGTH.
- ⑤ TRANSITION PANELS ARE TO ONLY BE USED AFTER THE RAMP, OR IF NEEDED, LANDING ARE AT THE FULL CURB HEIGHT (TYPICAL SECTION).
- ⑥ EXISTING CROSS SLOPE GREATER THAN 2.0%.

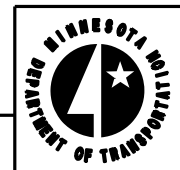
LEGEND

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

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

REVISION:
APPROVED: JANUARY 23, 2017
Am Sobr
OPERATIONS ENGINEER

SAP 002-601-058



REVISOR:
APPROVED:
1-23-2017
Tom Sh
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS (5 OF 6)

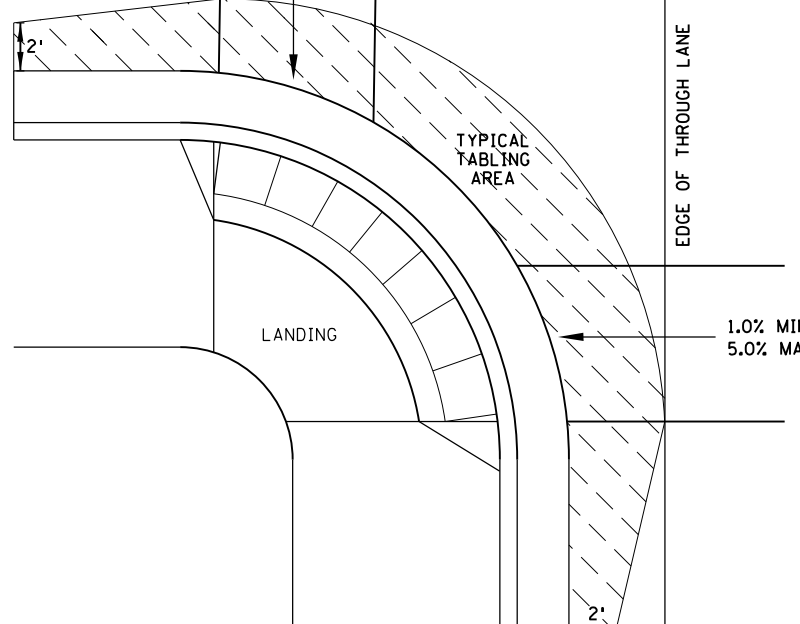
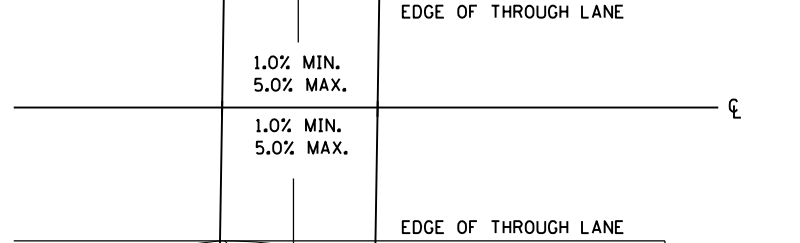
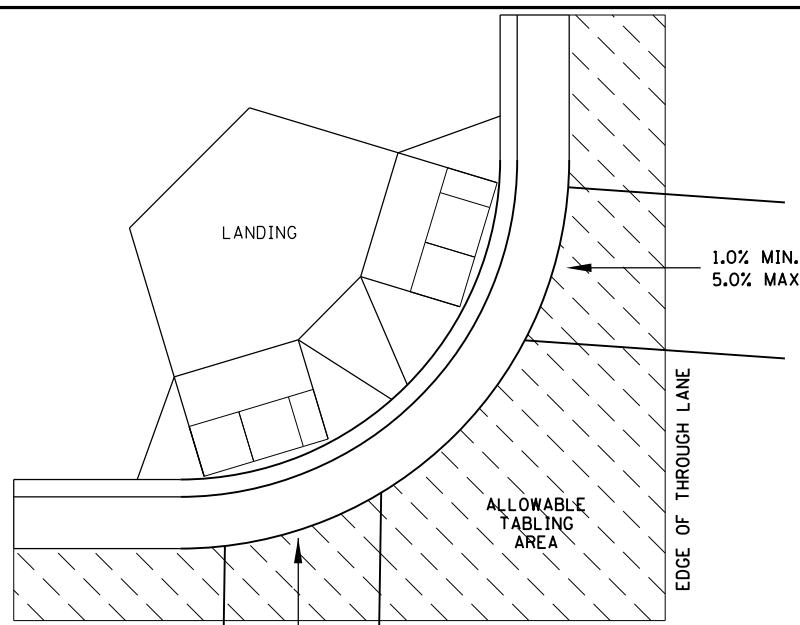
STANDARD PLAN 5-297.250

17 OF 34

PLOTTED/REVISED:
03/19/2020

DISTRICT #: APAnders
USER NAME: APAnders
PATH & FILENAME: P:\20-01-00-CSAH_01\1(SofHanson-11ft)\Base\Proposed\Proposed.dgn

REVISION:
APPROVED: JANUARY 23, 2017
Amr Sabar
OPERATIONS ENGINEER



CURB LINE AND ROAD CROSSING ADJUSTMENTS

"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.

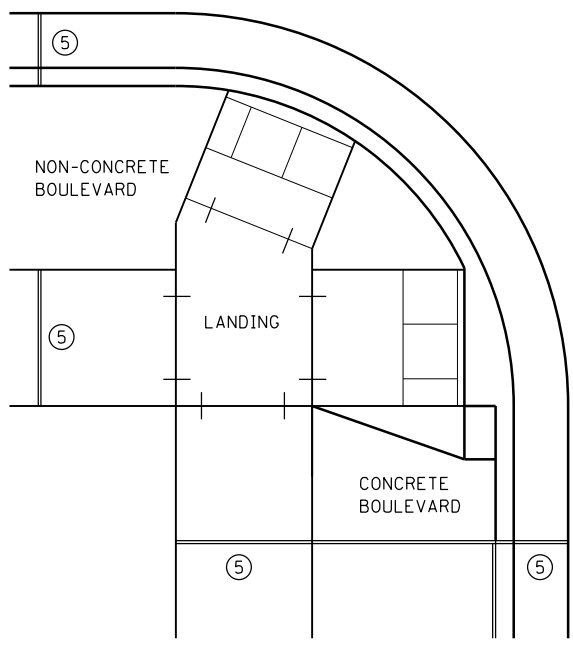
MILL & OVERLAY PROJECTS: "TABLING" OF FLOW LINES, IN FRONT OF THE PEDESTRIAN RAMP, IS REQUIRED WHEN THE EXISTING FLOW LINE IS GREATER THAN 2%. WARPING OF THE BITUMINOUS PAVEMENT CAN NOT EXTEND INTO THE THROUGH LANE. TABLE THE FLOW LINE TO 2% OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:

- 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

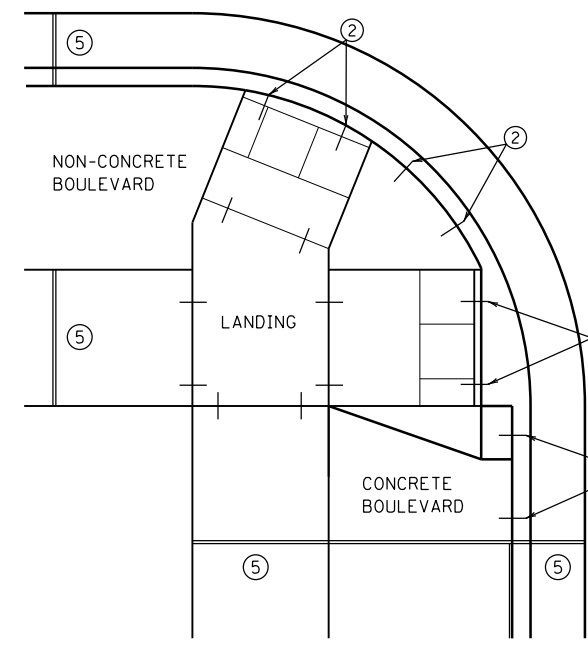
STAND-ALONE ADA RETROFITS: FOLLOW MILL & OVERLAY CRITERIA ABOVE HOWEVER ALL PAVEMENT WARPING IS DONE WITH BITUMINOUS PATCHING ON BITUMINOUS ROADWAYS AND FULL-DEPTH APRON REPLACEMENT ON CONCRETE ROADWAYS.

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:

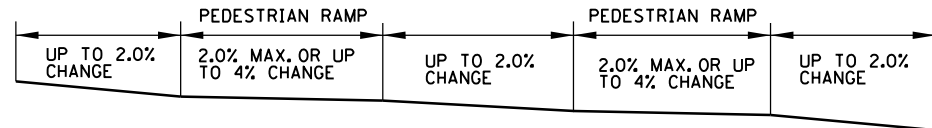
- 1) 1.0% MIN. AND 5.0% MAXIMUM CROSS-SLOPE OF THE ROAD
- 2) 1.0% MIN. FLOW LINE (ON EITHER SIDE OF PEDESTRIAN RAMP) TO MAINTAIN POSITIVE DRAINAGE
- 3) 5.0% RECOMMENDED MAX. FLOW LINE
- 4) LONGITUDINAL THROUGH LANE ROADWAY TAPERS SHOULD BE 1" VERTICAL PER 15' HORIZONTAL



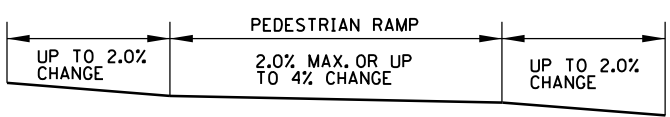
EXPANSION MATERIAL PLACEMENT FOR CONCRETE AND BITUMINOUS ROADWAYS



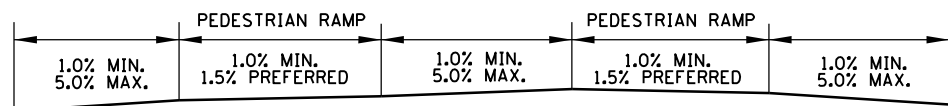
OPTIONAL CURB LINE REINFORCEMENT PLACEMENT ON BITUMINOUS ROADWAYS



FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



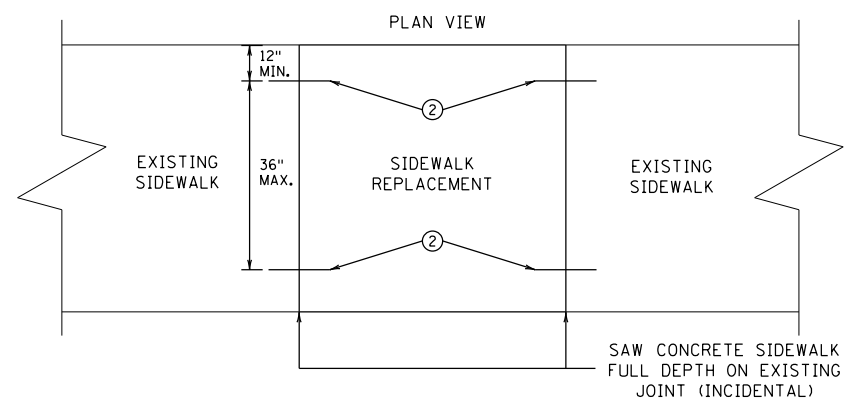
FLOW LINE PROFILE "TABLE" - FAN



FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS

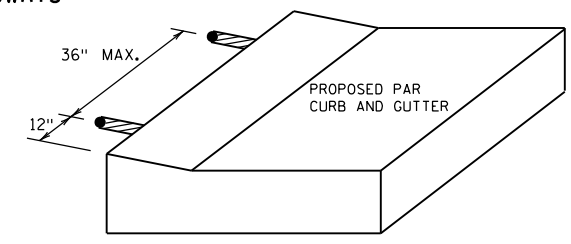


FLOW LINE PROFILE RAISE - FAN

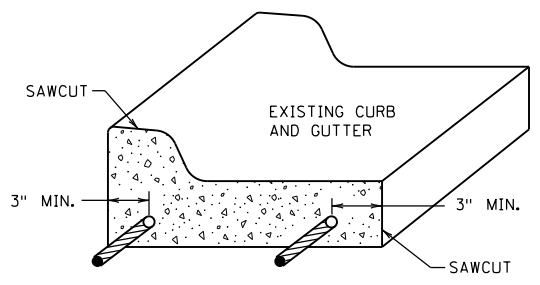


OPTIONAL SIDEWALK REINFORCEMENT

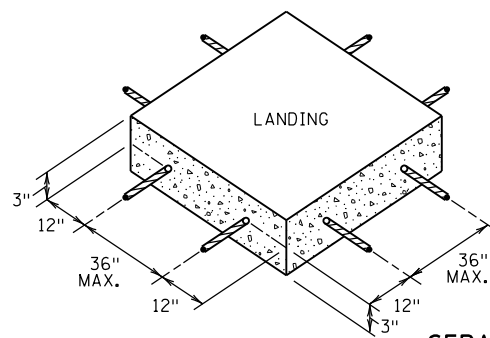
SIDEWALK REINFORCEMENT TO BE USED ONLY WHEN SPECIFIED IN THE PLAN.



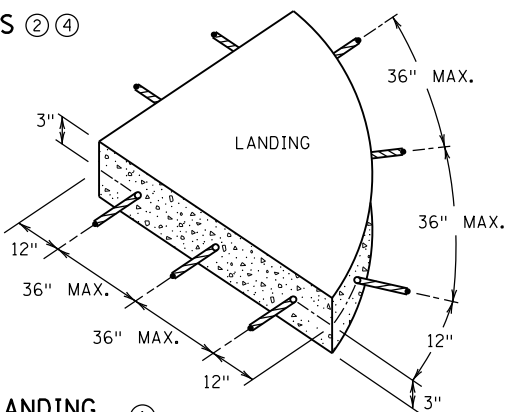
OPTIONAL CURB LINE REINFORCEMENT DETAILS



CURB AND GUTTER REINFORCEMENT



SEPARATE LANDING POUR REINFORCEMENT



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 AT 36" MAXIMUM CENTER TO CENTER (EPOXY COATED). BARS TO BE ADJUSTED TO MATCH RAMP GRADE.
- ③ DRILL AND GROUT 2 - NO. 4 X 12" LONG REINFORCEMENT BARS (EPOXY COATED). REINFORCEMENT REQUIRED FOR ALL CONSTRUCTION JOINTS WITHIN RADIUS.
- ④ THIS OPTIONAL CURB LINE REINFORCEMENT DETAIL SHOULD ONLY BE USED ON BITUMINOUS ROADWAYS WHEN SPECIFIED IN THE PLAN.
- ⑤ 1/2 IN. PREFORMED JOINT FILLER MATERIAL PER MNDOT SPEC. 3702.

SAP 002-601-058



Tom S...
STATE DESIGN ENGINEER

REVISED:
APPROVED:
1-23-2017

**PERMANENT PAVEMENT MARKING PLAN
NOTES AND GUIDELINES**

GENERAL INFORMATION:

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. ANOKA COUNTY HIGHWAY DEPARTMENT WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS. LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

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

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

MULTI COMPONENT (MULTI COMP):

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

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

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

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

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

PREFORMED THERMOPLASTIC:

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

PAINT:



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

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

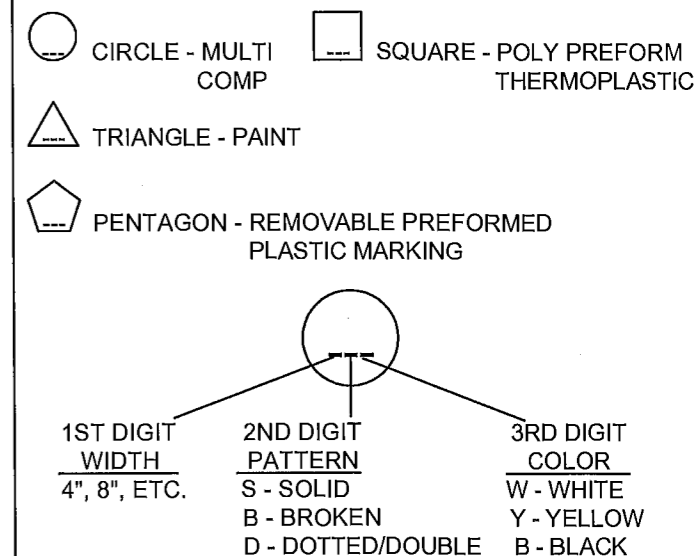
EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR TEMPERATURE IS 50 DEGREES FARHENHEIT OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILD OR DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE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

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

SYMBOLS & MATERIALS LEGEND

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

STRIPING KEY



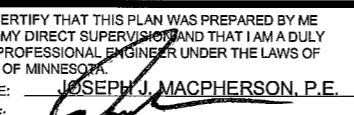
EXAMPLE:  = 4" SOLID LINE WHITE - MULTI COMP

PAVEMENT MARKING TABULATION

ITEM	UNIT	TOTAL QUANTITY
4" SOLID LINE WHITE - MULTI COMP	LIN FT	25938
4" BROKEN LINE WHITE - MULTI COMP **10' STRIPE, 40' GAP**	LIN FT	3460
4" SOLID LINE YELLOW - MULTI COMP	LIN FT	16833
4" DOUBLE LINE YELLOW - MULTI COMP	LIN FT	59
24" SOLID LINE WHITE - PREFORMED THERMOPLASTIC (*PMS)	LIN FT	729
3'x6' ZEBRA CROSSWALK - PREFORMED THERMOPLASTIC	SQ FT	4464
PAVEMENT MESSAGE (LT ARROW) - PREFORMED THERMOPLASTIC	SQ FT	278.1
PAVEMENT MESSAGE (RT ARROW) - PREFORMED THERMOPLASTIC	SQ FT	231.75
PAVEMENT MESSAGE (RCA ARROW) - PREFORMED THERMOPLASTIC	SQ FT	30.09

*PAVEMENT MARKING SPECIAL

NO	DATE	BY	CKD	APPR	REVISION

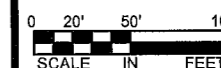
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: JOSEPH J. MACPHERSON, P.E.
 SIGNATURE: 
 DATE: 2-20-20 LICENSE NO. 46732

DRAWN BY: FL DATE: 01/28/20
 DESIGN BY: FL DATE: 01/28/20
 CHECKED BY: DATE:



**ANOKA COUNTY
HIGHWAY DEPT.**

SAP 002-601-058



PERMANENT MARKING
TABULATION

Sheet 19 of 34 Sheets

NOTES: (TYP.)

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

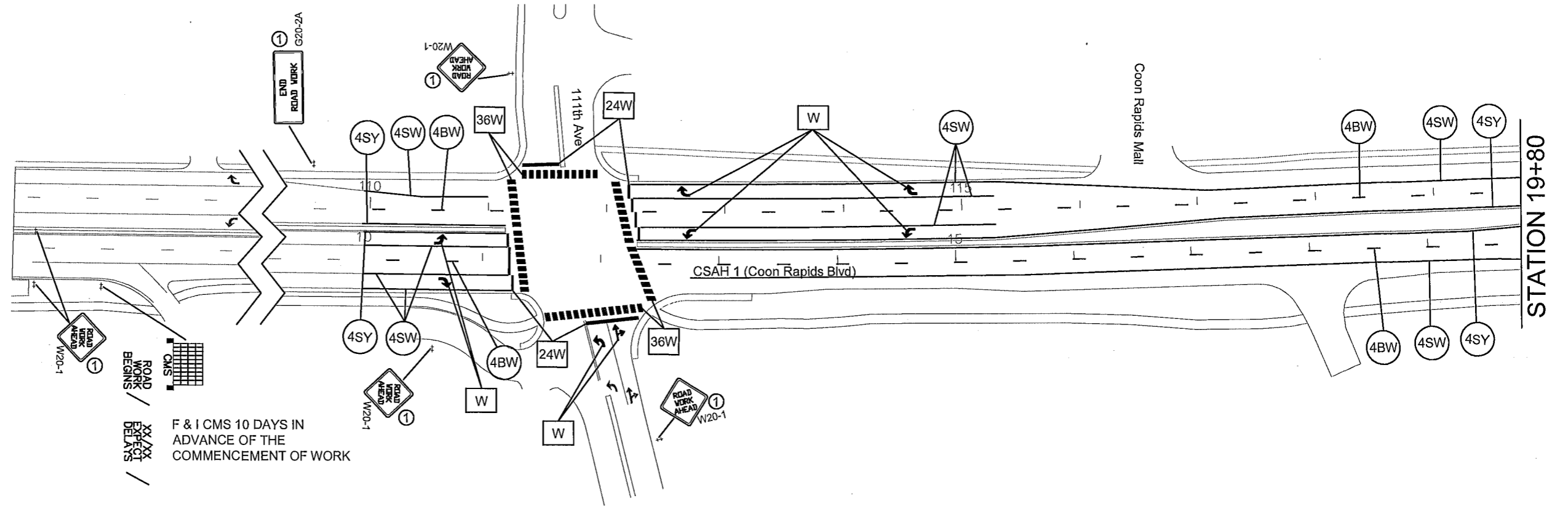
STRIPING KEY:

○ --- CIRCLE - MULTI COMP

□ --- SQUARE - POLY PREFORM

SIGNING NOTES:

① TEMPORARY TRAFFIC CONTROL SIGN



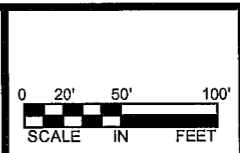
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NAME: P:\20-01-00\CSAH 1\BaselTrafficTemp Signing & Perm Striping.dwg					

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: JOSEPH J. MACPHERSON, P.E.
 SIGNATURE: *[Signature]*
 DATE: 01/30/20 LICENSE NO. 46732

DRAWN BY: FL DATE: 01/30/20
 DESIGN BY: FL DATE: 01/30/20
 CHECKED BY: DATE:



ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-601-058



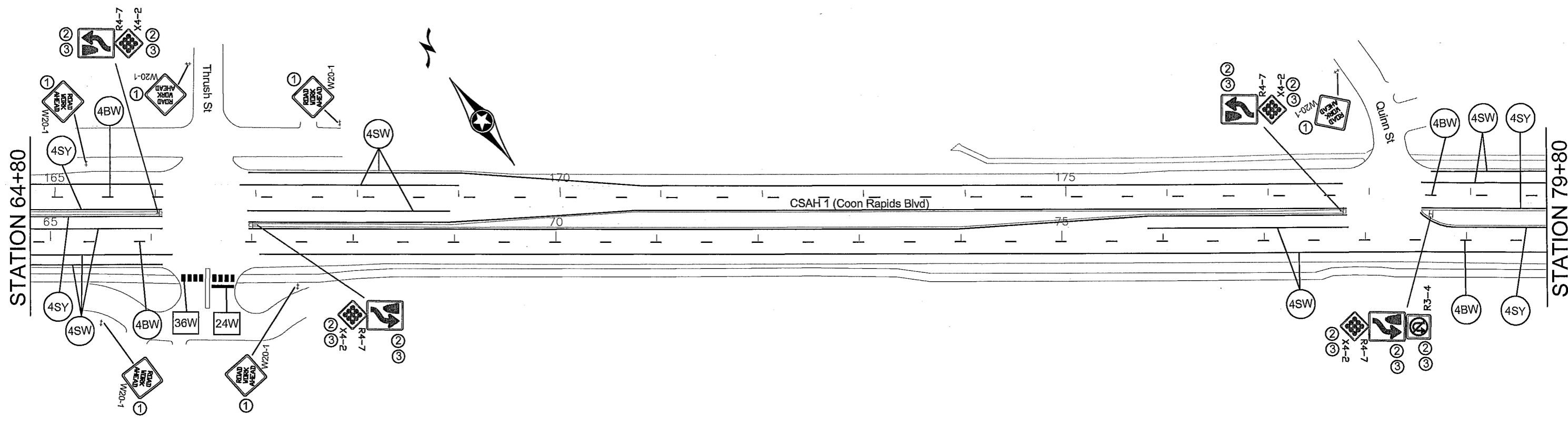
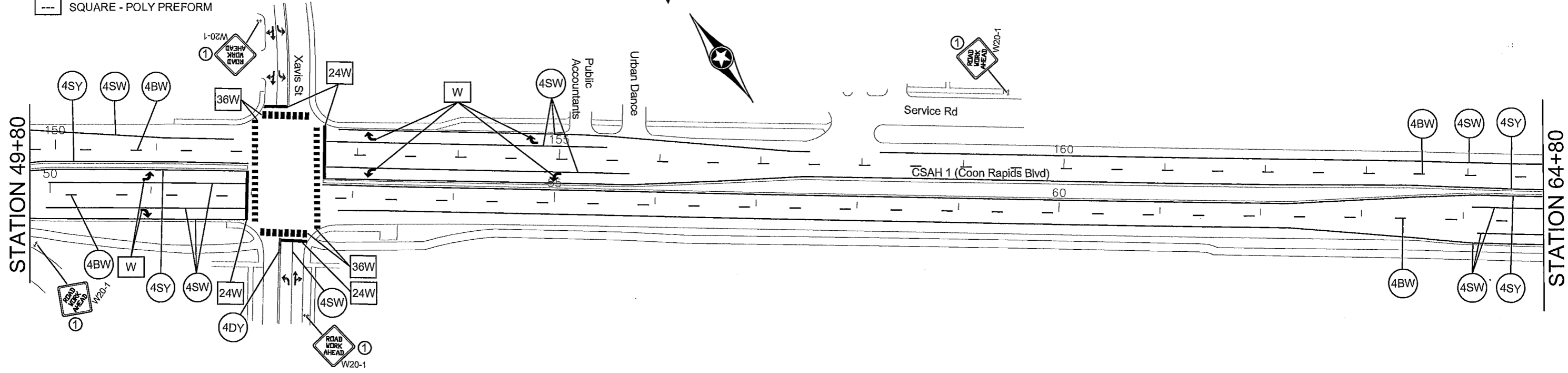
TEMPORARY SIGNING
 PERMANENT STRIPING
 Sheet 20 of 34 Sheets

STRIPING KEY:

-  CIRCLE - MULTI COMP
-  SQUARE - POLY PREFORM

SIGNING NOTES:

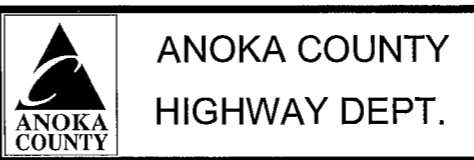
- ① TEMPORARY TRAFFIC CONTROL SIGN
- ② SALVAGE FOR RE-USE ON THIS PROJECT
- ③ INSTALL SALVAGED SIGN



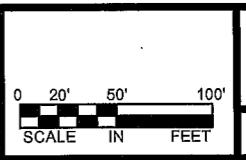
NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: JOSEPH J. MAPHERSON, P.E.
 SIGNATURE: *Joseph J. Mapherston*
 DATE: 2.20.20 LICENSE NO. 46732

DRAWN BY: FL DATE: 01/30/20
 DESIGN BY: FL DATE: 01/30/20
 CHECKED BY: DATE:





SAP 002-601-058



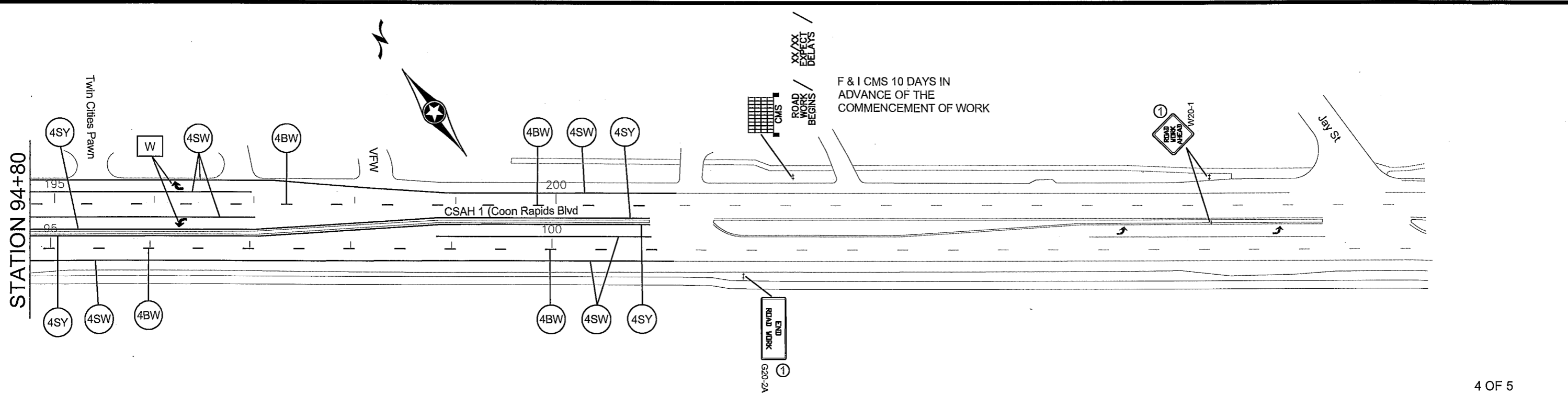
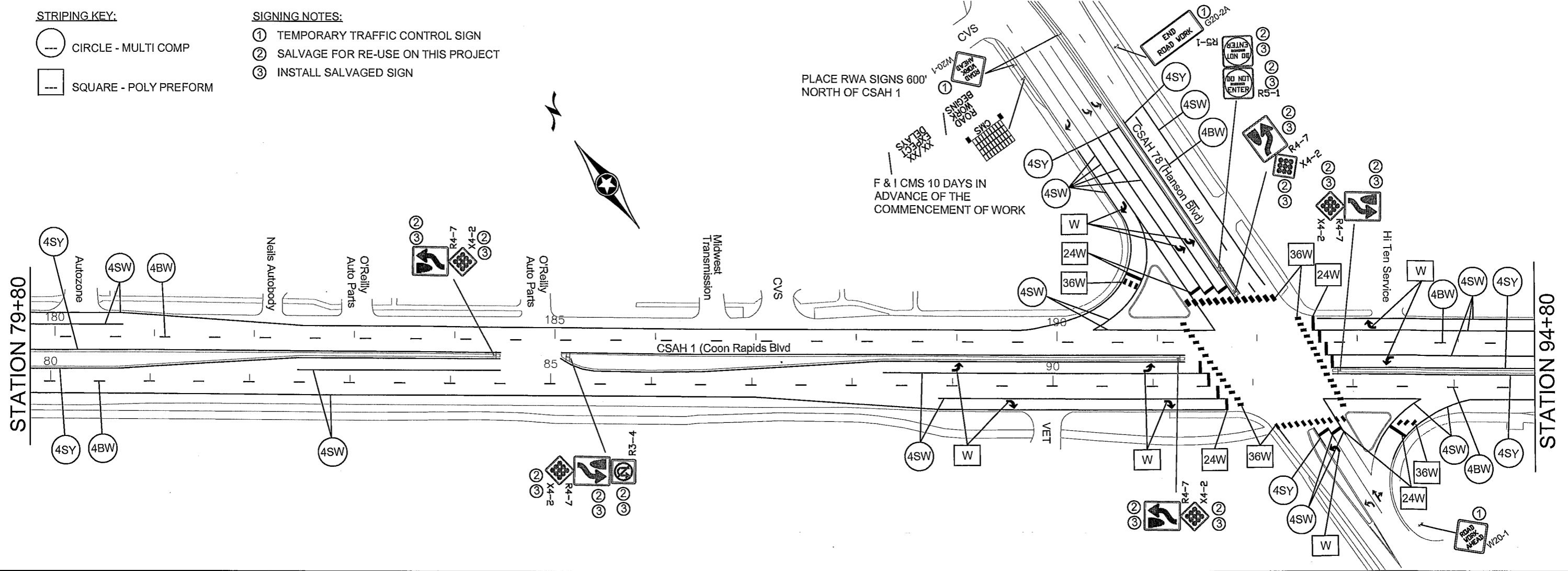
TEMPORARY SIGNING
 PERMANENT STRIPING
 Sheet 22 of 34 Sheets

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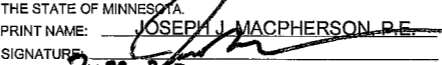
-  CIRCLE - MULTI COMP
-  SQUARE - POLY PREFORM

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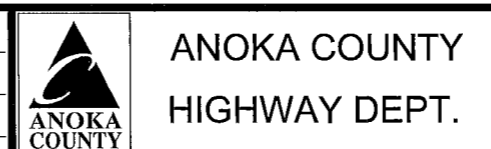
- ① TEMPORARY TRAFFIC CONTROL SIGN
- ② SALVAGE FOR RE-USE ON THIS PROJECT
- ③ INSTALL SALVAGED SIGN



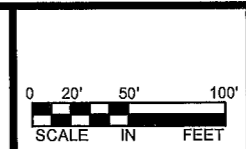
NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: JOSEPH J. MACPHERSON, P.E.
 SIGNATURE: 
 DATE: 2-23-20 LICENSE NO. 46732

DRAWN BY: FL DATE: 01/30/20
 DESIGN BY: FL DATE: 01/30/20
 CHECKED BY: DATE:



SAP 002-601-058



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".

EXISTING SIGN TAB					
STATION	ADDRESS/ DESCRIPTION (NOTES)	SALVAGE SIGN TYPE C	REINSTALL SIGN TYPE C	SIGN NUMBER	SIGN LEGEND
		EACH	EACH		
24+47	Median	1	1	R4-7	Keep Right
				X4-2	Type 1 Object Marker
32+66	Median	1	1	R4-7	Keep Right
				X4-2	Type 1 Object Marker
33+58	Median	1	1	R4-7	Keep Right
				X4-2	Type 1 Object Marker
41+22	Median	1	1	R4-7	Keep Right
				X4-2	Type 1 Object Marker
41+98	Median	1	1	R4-7	Keep Right
				X4-2	Type 1 Object Marker
				R3-4	No U-Turn
45+78	Median	1	1	R4-7	Keep Right
				X4-2	Type 1 Object Marker
46+62	Median	1	1	R4-7	Keep Right
				X4-2	Type 1 Object Marker
66+10	Median	1	1	R4-7	Keep Right
				X4-2	Type 1 Object Marker
67	Median	1	1	R4-7	Keep Right
				X4-2	Type 1 Object Marker
77+80	Median	1	1	R4-7	Keep Right
				X4-2	Type 1 Object Marker
78+66	Median	1	1	R4-7	Keep Right
				X4-2	Type 1 Object Marker
				R3-4	No U-Turn
84+47	Median	1	1	R4-7	Keep Right
				X4-2	Type 1 Object Marker
85+18	Median	1	1	R4-7	Keep Right
				X4-2	Type 1 Object Marker
				R3-4	No U-Turn
91+31	Median	1	1	R4-7	Keep Right
				X4-2	Type 1 Object Marker
92+85	Median	1	1	R4-7	Keep Right
				X4-2	Type 1 Object Marker
NB 78 @ 1	Median	1	1	R4-7	Keep Right
				X4-2	Type 1 Object Marker
NB 78 @ 1	Median	1	1	R5-1	Do Not Enter
				R5-1	Do Not Enter
TOTAL		17	17		

TEMPORARY TRAFFIC CONTROL SIGNS				
M.U.T.C.D. CODE	SIZE	PANEL AREA	INSERT	QUANTITY
		SQ FT		
W3-4	48" x 48"	16.00		AS NEEDED
W8-1	48" x 48"	16.00		AS NEEDED
W16-7P	30" x 18"	3.75		AS NEEDED
W8-1a	48" x 48"	16.00		AS NEEDED
W8-8	48" x 48"	16.00		AS NEEDED
W8-9	48" x 48"	16.00		AS NEEDED
W8-11	48" x 48"	16.00		AS NEEDED
W8-23	48" x 48"	16.00		AS NEEDED
W8-12a	48" x 48"	16.00		AS NEEDED
W20-1	48" x 48"	16.00		AS NEEDED (ESTIMATED 30)
W20-4	48" x 48"	16.00		AS NEEDED
W20-7	48" x 48"	16.00		AS NEEDED
G20-2A	48" x 24"	8.00		3

		QUANTITY
REFLECTORIZED REBOUNDABLE DRUM		AS NEEDED (ESTIMATED 15)
CMS sign to be installed a minimum of ten days prior to actual commencement of road work. Signs to be removed when road work begins.		3 AT 10 DAYS EA

CHANGEABLE MESSAGE BOARD - MESSAGE SEQUENCE LAYOUT

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

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

CMS sign to be installed a minimum of ten days prior to actual commencement of road work. Signs to be removed when road work begins.

NO	DATE	BY	CKD	APPR	REVISION

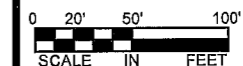
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: JOSEPH J. MACPHERSON, P.E.
 SIGNATURE:
 DATE: 2-20-20 LICENSE NO. 46732

DRAWN BY: FL DATE: 01/30/20
 DESIGN BY: FL DATE: 01/30/20
 CHECKED BY: DATE:



ANOKA COUNTY
 HIGHWAY DEPT.

SAP 002-601-058



TEMPORARY SIGNING
 QUANTITIES

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

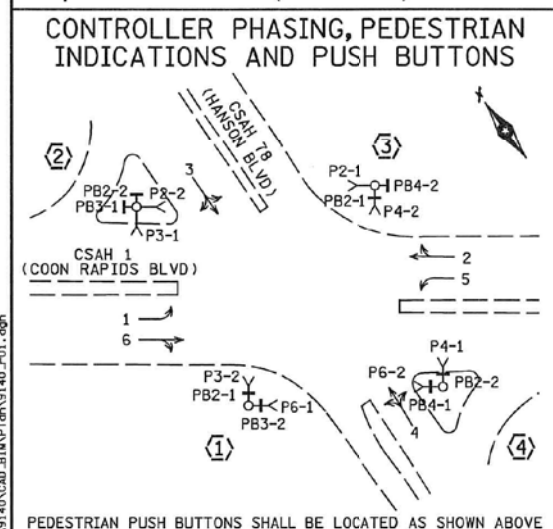
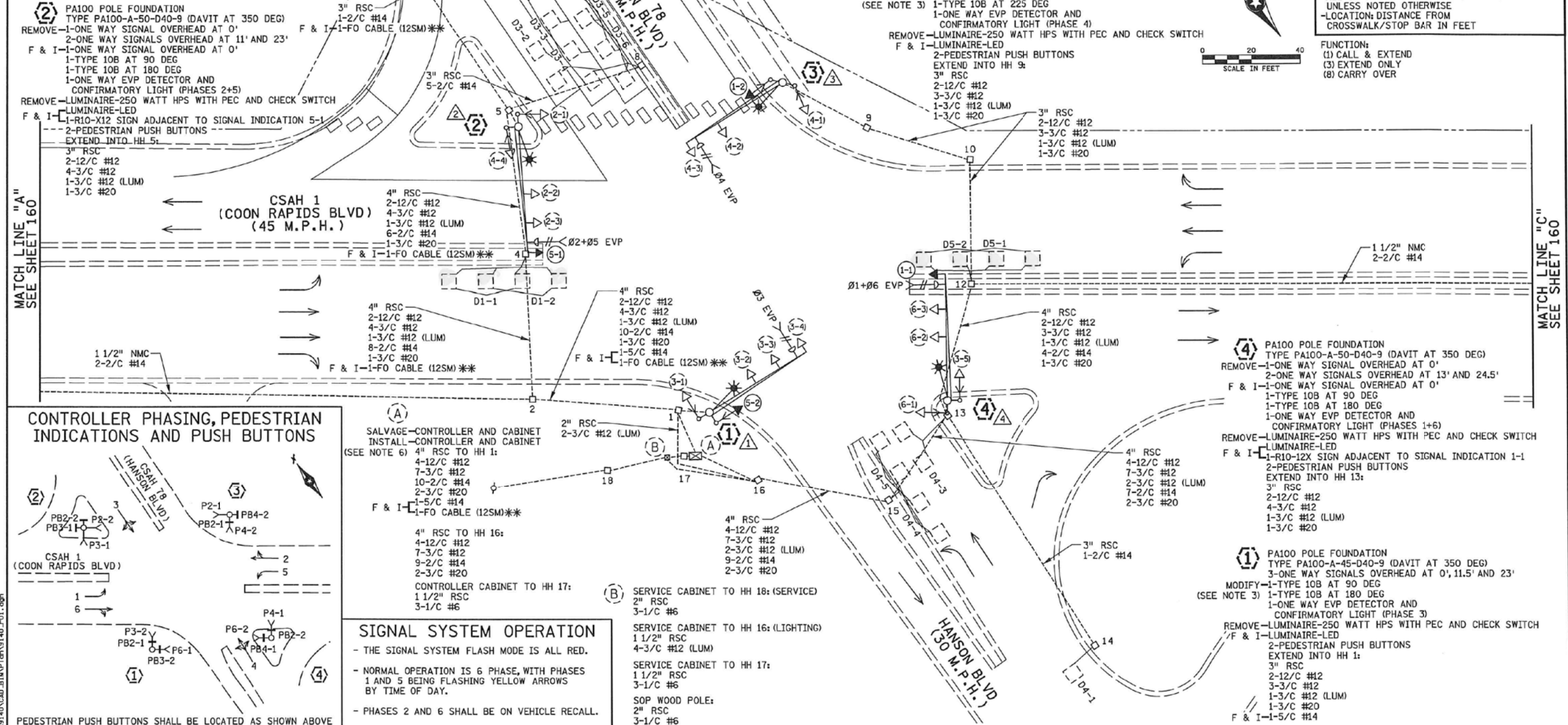
-ALL SIGNAL INDICATIONS SHALL BE 12" LED
 -ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS
 -FYA DENOTES FLASHING YELLOW ARROW

LOOP DETECTOR CHART			
NUMBER	SIZE (FT)	LOCATION	FUNCTION
D1-1	2-6x6	INP.	1
D1-2	2-6x6	INP.	1
D2-1, D2-2	6x6	INP.	1
D3-1	6x6	250	3,8
D3-2	2-6x6	INP.	1
D3-4, D3-6	2-6x6	INP.	1
D3-3, D3-5	2-6x6	INP.	1
D4-1	6x6	INP.	3,8
D4-3	2-6x6	INP.	1
D5-1	2-6x6	INP.	1
D5-2	2-6x6	INP.	1
D6-1, D6-2	6x6	INP.	1

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

FUNCTION:
 (1) CALL & EXTEND
 (3) EXTEND ONLY
 (8) CARRY OVER

- NOTES:
1. ALL ITEMS SHOWN ARE INPLACE AND SHALL REMAIN INPLACE UNLESS NOTED OTHERWISE.
 2. FOR PAVEMENT MARKINGS, SEE SIGNING AND STRIPING PLANS.
 3. THE CONTRACTOR SHALL REMOVE THE VEHICLE HEAD AND SALVAGE THE PEDESTRIAN HEAD. THE CONTRACTOR SHALL FURNISH AND INSTALL A NEW VEHICLE HEAD AS SHOWN IN THE PLANS. THE CONTRACTOR SHALL ADJUST EXISTING BRACKETING OR FURNISH AND INSTALL NEW BRACKETING.
 4. REFER TO "FOR INFORMATION ONLY" SHEETS FOR INPLACE SIGNAL SYSTEMS THAT SHALL BE MODIFIED. THESE SIGNAL MODIFICATIONS ARE INCLUDED IN PAYMENT FOR THE REVISE SIGNAL SYSTEM "A" PAY ITEM.
 5. ITEMS DENOTED WITH ** ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECT PAY ITEM.
 6. SEE SPECIAL PROVISIONS FOR SALVAGING EXISTING CONTROLLER CABINET AND INSTALLING COUNTY FURNISHED CONTROLLER CABINET.



- (A) SALVAGE-CONTROLLER AND CABINET
 INSTALL-CONTROLLER AND CABINET
 (SEE NOTE 6) 4" RSC TO HH 1:
 4-12/C #12
 7-3/C #12
 10-2/C #14
 2-3/C #20
 1-5/C #14
 F & I-1-FO CABLE (12SM)**
- 4" RSC TO HH 16:
 4-12/C #12
 7-3/C #12
 9-2/C #14
 2-3/C #20
 CONTROLLER CABINET TO HH 17:
 1 1/2" RSC
 3-1/C #6

- (B) SERVICE CABINET TO HH 18: (SERVICE)
 2" RSC
 3-1/C #6
- SERVICE CABINET TO HH 16: (LIGHTING)
 1 1/2" RSC
 4-3/C #12 (LUM)
- SERVICE CABINET TO HH 17:
 1 1/2" RSC
 3-1/C #6
- SOP WOOD POLE:
 2" RSC
 3-1/C #6

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

NO	DATE	BY	CKD	APPR	REVISION

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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.

Print Name: SCOTT C. POSKA
 Date: 6/14/2017 License #: 47068

STATE AID PROJECT NO 002-678-023, 114-020-051

DRAWN BY M. BRESSLER
 DESIGNED BY M. BRESSLER
 CHECKED BY S. POSKA
 COMM. NO. 0169140

SRH ENGINEERS PLANNERS DESIGNERS
 Consulting Group, Inc.

ANOKA COUNTY
 TRAFFIC SIGNAL PLANS
 CSAH 78 - BNSF GRADE SEPARATION
 REVISED INTERSECTION LAYOUT (SYSTEM "A")
 CSAH 1 (COON RAPIDS BLVD) AT CSAH 78 (HANSON BLVD)

SHEET 159 OF 175

FOR REFERENCE PURPOSES ONLY

NO	DATE	BY	CKD	APPR	REVISION

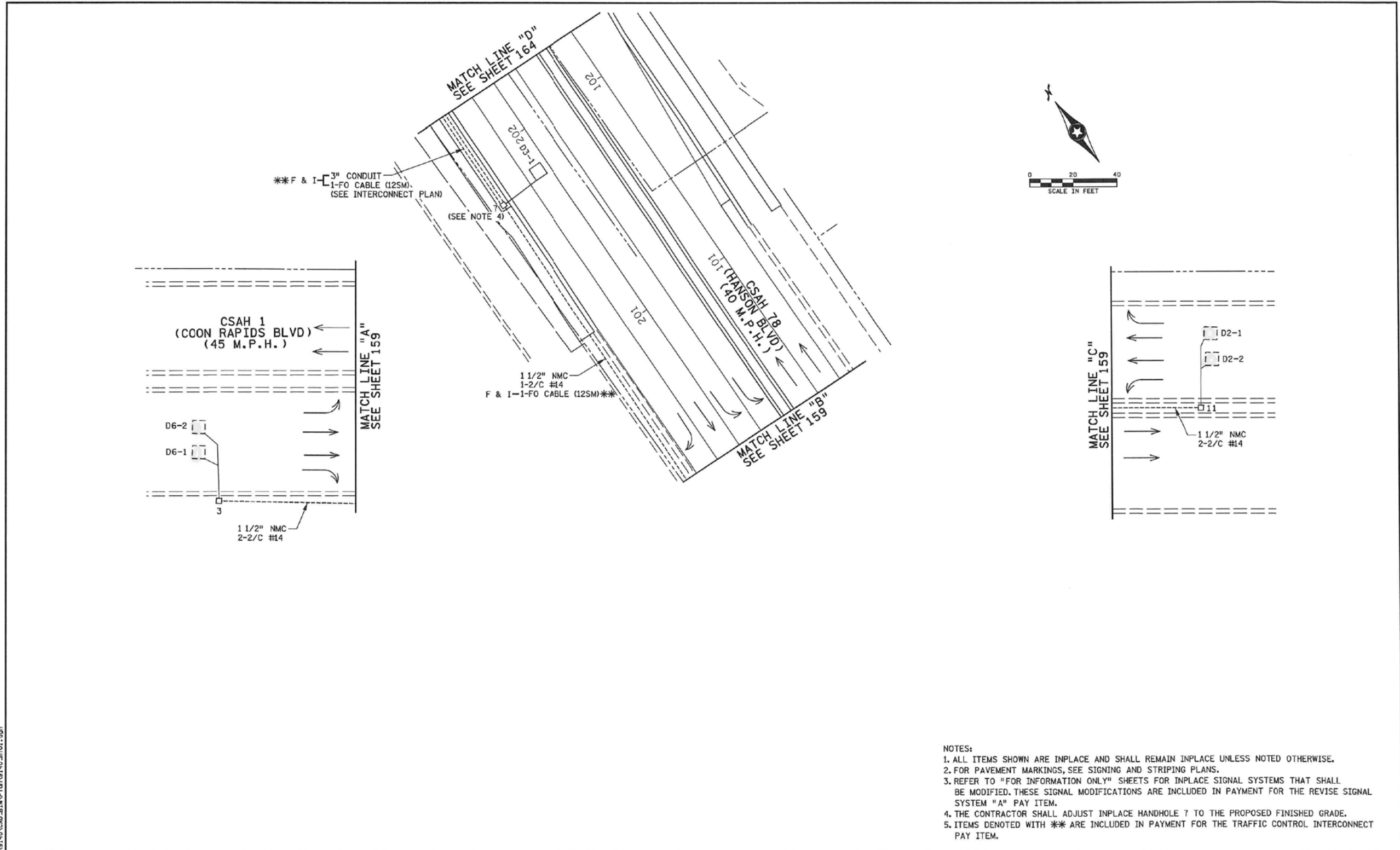
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DRAWN BY SPH DATE 01/31/2020
 DESIGN BY KPR DATE 01/31/2020
 CHECKED BY CO DATE 03/19/2020

ANOKA COUNTY
 HIGHWAY DEPT.

STATE AID PROJECT 002-601-058

EXISTING SIGNAL PLANS
 Sheet 25 of 34 Sheets



- NOTES:
1. ALL ITEMS SHOWN ARE INPLACE AND SHALL REMAIN INPLACE UNLESS NOTED OTHERWISE.
 2. FOR PAVEMENT MARKINGS, SEE SIGNING AND STRIPING PLANS.
 3. REFER TO "FOR INFORMATION ONLY" SHEETS FOR INPLACE SIGNAL SYSTEMS THAT SHALL BE MODIFIED. THESE SIGNAL MODIFICATIONS ARE INCLUDED IN PAYMENT FOR THE REVISE SIGNAL SYSTEM "A" PAY ITEM.
 4. THE CONTRACTOR SHALL ADJUST INPLACE HANDHOLE 7 TO THE PROPOSED FINISHED GRADE.
 5. ITEMS DENOTED WITH ** ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECT PAY ITEM.

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NO	DATE	BY	CKD	APPR	REVISION

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.
 Print Name: SCOTT C. POSKA
 Date: 6/14/2017 License #: 47068

STATE AID PROJECT NO
 002-678-023, 114-020-051

DRAWN BY
 M. BRESSLER
 DESIGNED BY
 M. BRESSLER
 CHECKED BY
 S. POSKA
 COMM. NO. 0169140



ANOKA COUNTY
 TRAFFIC SIGNAL PLANS
 CSAH 78 - BNSF GRADE SEPARATION
 REVISED MATCH LINE LAYOUT (SYSTEM "A")
 CSAH 1 (COON RAPIDS BLVD) AT CSAH 78 (HANSON BLVD)

SHEET
 160
 OF
 175

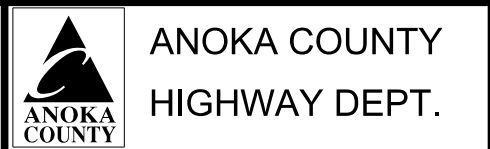
FOR REFERENCE PURPOSES ONLY

NO	DATE	BY	CKD	APPR	REVISION

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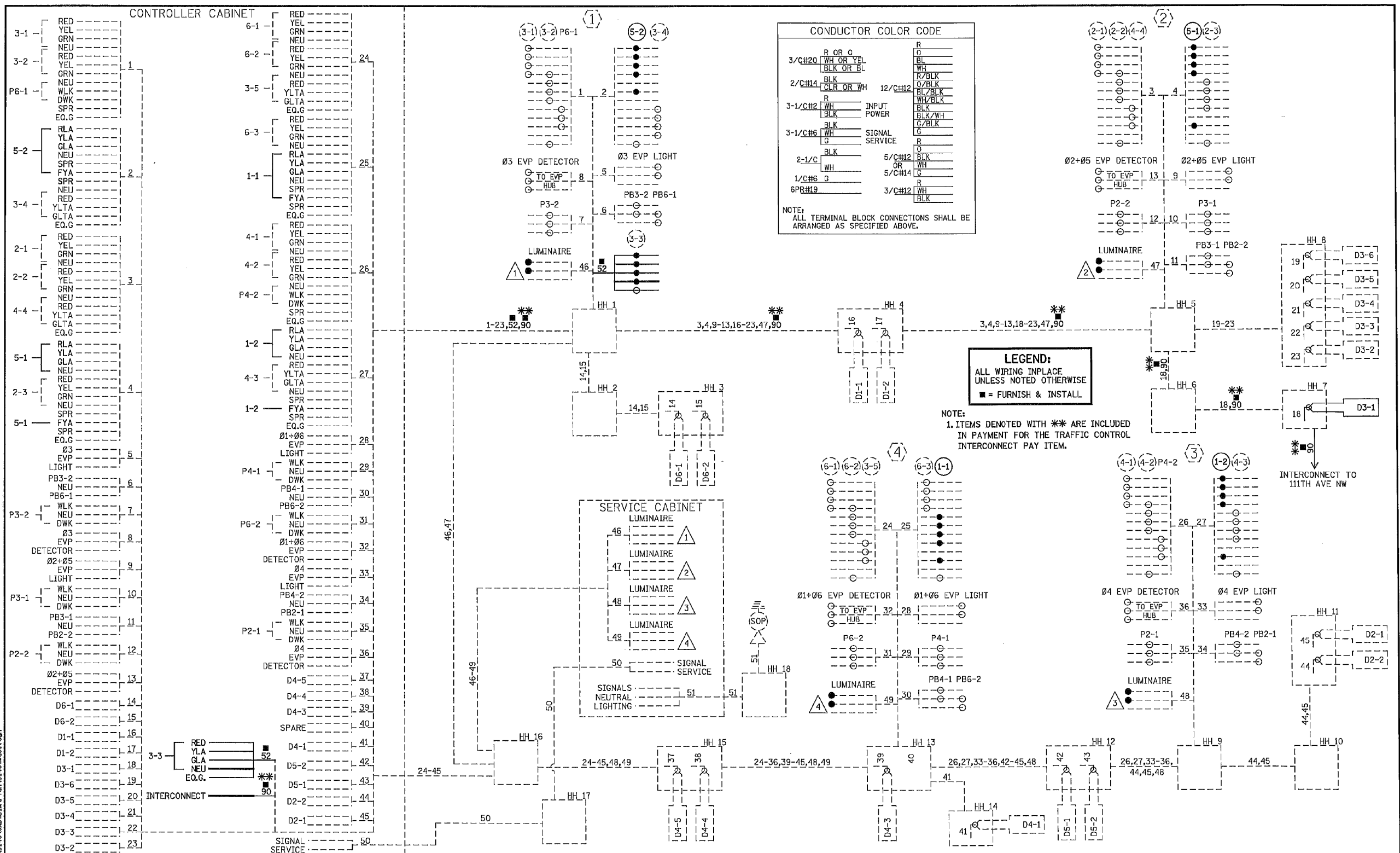
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DRAWN BY SPH DATE 01/31/2020
 DESIGN BY KPR DATE 01/31/2020
 CHECKED BY CO DATE 03/19/2020



STATE AID PROJECT 002-601-058

EXISTING SIGNAL PLANS
 Sheet 26 of 34 Sheets



FOR REFERENCE PURPOSES ONLY

03/19/2020 9:15:40 AM
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NO	DATE	BY	CKD	APPR	REVISION

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.

Print Name: **SCOTT C. POSKA**

Date: **6/14/2017** License # **47068**

STATE AID PROJECT NO
002-616-023, 114-020-051

DRAWN BY
M. BRESSLER

DESIGNED BY
M. BRESSLER

CHECKED BY
S. POSKA

COMM. NO. 0169140



ANOKA COUNTY
TRAFFIC SIGNAL PLANS
CSAH 78 - BNSF GRADE SEPARATION
REVISED FIELD WIRING DIAGRAM (SYSTEM "A")
CSAH 1(COON RAPIDS BLVD) AT CSAH 78(HANSON BLVD)

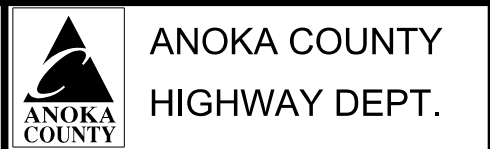
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OF
175

NO	DATE	BY	CKD	APPR	REVISION

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DATE: 03/19/2020 9:15:40 AM

DRAWN BY **SPH** DATE **01/31/2020**
DESIGN BY **KPR** DATE **01/31/2020**
CHECKED BY **CO** DATE **03/19/2020**



STATE AID PROJECT **002-601-058**

EXISTING SIGNAL PLANS
Sheet **27** of **34** Sheets

2014

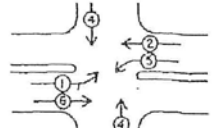
FOR REFERENCE PURPOSES ONLY

- INTERCONNECT NOTES:**
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
 - (*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT "A"). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
 - ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED, PROTECTED AND MAINTAINED INPLACE, EXCEPT WHERE BOXED IN AND DENOTED BY BOTH (*) AND BY EITHER F & I (ITEMS TO BE FURNISHED & INSTALLED BY CONTRACTOR) OR BY REMOVE (ITEMS TO BE REMOVED & DISPOSED OF BY CONTRACTOR).
 - NEW HANDHOLES REQUIRED TO BE FURNISHED & INSTALLED BY THE CONTRACTOR AS PART OF PROJECT SHALL BE PRE-CAST POLYMER CONCRETE STRUCTURES (QUAZITE). SEE DETAILS/SPECIAL PROVISIONS.
 - EXISTING CONCRETE HANDHOLES WITH CONCRETE OR TYPE LD COVERS IN BOULEVARD AREAS (USED WITH INTERCONNECT SYSTEM CABLES) SHALL BE ADJUSTED TO FINISHED SURROUNDING GRADE (TO BE MEASURED AND PAID FOR SEPARATELY-SEE SPECIAL PROVISIONS AND STATEMENT OF ESTIMATED QUANTITIES).
 - FOR EXISTING CONDUITS BEING REUSED AS PART OF THE COMPLETE INTERCONNECT SYSTEM, THE CONTRACTOR SHALL PULL A FISH TAPE THROUGH THESE CONDUITS TO CONFIRM THAT CONDUITS ARE ABLE TO BE REUSED WITH NEW CABLE INSTALLATIONS, PRIOR TO NEW INTERCONNECT CABLES BEING INSTALLED IN THESE CONDUITS.
 - SEPARATE PAY ITEMS ARE INCLUDED FOR NEW 1.5 INCH CONDUITS (BOTH FOR INSTALLATION IN BOULEVARD AREAS AND FOR BORING UNDER EXISTING DRIVEWAYS OR ROADWAYS), SHOULD EXISTING CONDUITS BE FOUND INCAPABLE OF HAVING NEW INTERCONNECT CABLES BE INSTALLED IN THESE CONDUITS. SEE SPECIAL PROVISIONS

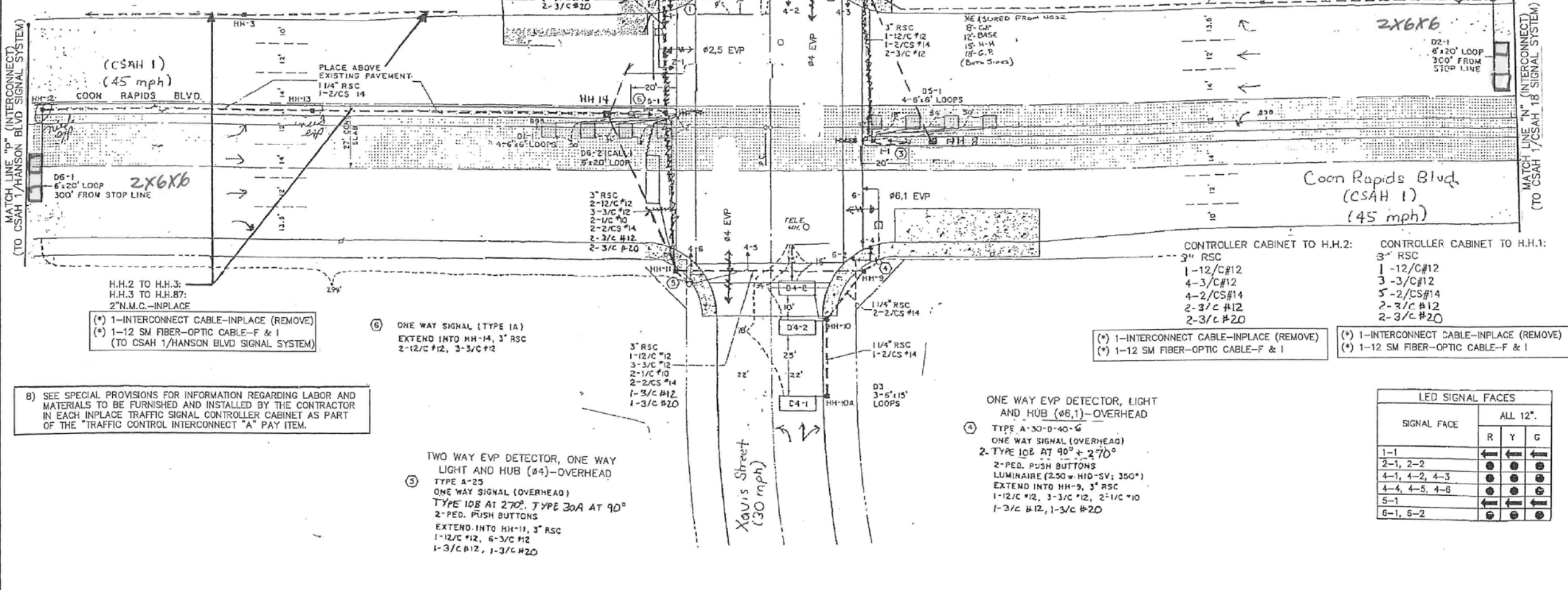
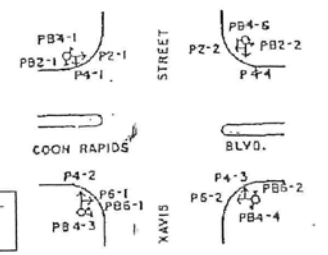
ONE WAY EVP DETECTOR, LIGHT AND HUB (#2,5)-OVERHEAD
 TYPE A-30-D-40-G
 ONE WAY SIGNAL (OVERHEAD)
 2-TYPE 10B AT 90° + 270°
 2-PED. PUSH BUTTONS
 LUMINAIRE (250 W HID-SV; 350°)
 EXTEND INTO HH-1, 3" RSC
 1-12/C #12, 3-3/C #12, 2-1/C #10
 1-3/C #12, 1-3/C #20

ONE WAY EVP DETECTOR, LIGHT AND HUB (#4)-OVERHEAD
 TYPE A-25
 ONE WAY SIGNAL (OVERHEAD)
 TYPE 10B AT 270°, TYPE 30A AT 90°
 2-PED. PUSH BUTTONS
 EXTEND INTO HH-7, 3" RSC
 2-12/C #12, 4-3/C #12
 1-3/C #12, 1-3/C #20

SIGNAL PHASING



PEDESTRIAN SIGNALS AND PUSH BUTTONS



H.H.2 TO H.H.3:
 H.H.3 TO H.H.87:
 2"N.M.C.-INPLACE
 (*) 1-INTERCONNECT CABLE-INPLACE (REMOVE)
 (*) 1-12 SM FIBER-OPTIC CABLE-F & I
 (TO CSAH 1/HANSON BLVD SIGNAL SYSTEM)

(*) ONE WAY SIGNAL (TYPE 1A)
 EXTEND INTO HH-14, 3" RSC
 2-12/C #12, 3-3/C #12

B) SEE SPECIAL PROVISIONS FOR INFORMATION REGARDING LABOR AND MATERIALS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR IN EACH INPLACE TRAFFIC SIGNAL CONTROLLER CABINET AS PART OF THE "TRAFFIC CONTROL INTERCONNECT "A" PAY ITEM.

TWO WAY EVP DETECTOR, ONE WAY LIGHT AND HUB (#4)-OVERHEAD
 TYPE A-25
 ONE WAY SIGNAL (OVERHEAD)
 TYPE 10B AT 270°, TYPE 30A AT 90°
 2-PED. PUSH BUTTONS
 EXTEND INTO HH-11, 3" RSC
 1-12/C #12, 6-3/C #12
 1-3/C #12, 1-3/C #20

ONE WAY EVP DETECTOR, LIGHT AND HUB (#6,1)-OVERHEAD
 TYPE A-30-D-40-G
 ONE WAY SIGNAL (OVERHEAD)
 2-TYPE 10B AT 90° + 270°
 2-PED. PUSH BUTTONS
 LUMINAIRE (250 W HID-SV; 350°)
 EXTEND INTO HH-9, 3" RSC
 1-12/C #12, 3-3/C #12, 2-1/C #10
 1-3/C #12, 1-3/C #20

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

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

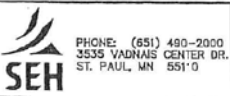
LED SIGNAL FACES

SIGNAL FACE	ALL 12"		
	R	Y	G
1-1	←	●	●
2-1, 2-2	←	●	●
4-1, 4-2, 4-3	●	●	●
4-4, 4-5, 4-6	●	●	●
5-1	←	●	●
6-1, 6-2	●	●	●

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, PE
 Date: July 5, 2018
 Lic. No. 22457



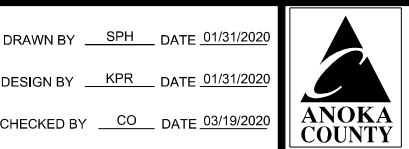
ANOKA COUNTY, MN
 CITY OF COON RAPIDS
 SAP 002-030-010

TRAFFIC SIGNAL INTERCONNECT "A"
 INTERSECTION LAYOUT
 CSAH 1 (COON RAPIDS BLVD)
 AT XAVIS STREET

FILE NO. ANOKC 142312
 24
 115

NO	DATE	BY	CKD	APPR	REVISION	03/19/2020	9:15:52 AM
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DRAWN BY: SPH	DATE: 01/31/2020
DESIGN BY: KPR	DATE: 01/31/2020
CHECKED BY: CO	DATE: 03/19/2020

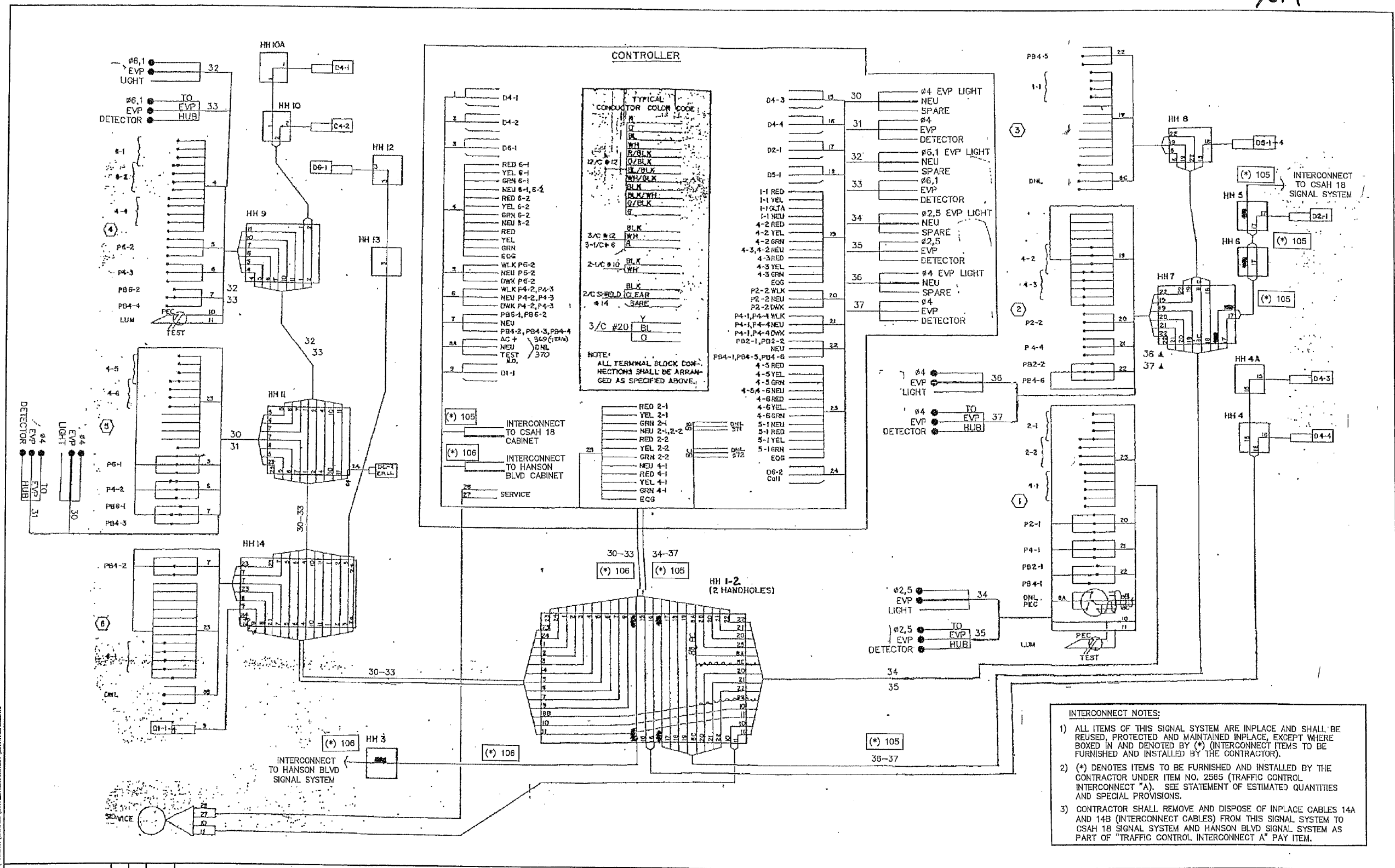


ANOKA COUNTY
 HIGHWAY DEPT.

STATE AID PROJECT 002-601-058

EXISTING SIGNAL PLANS
 Sheet 28 of 34 Sheets

7014



FOR REFERENCE PURPOSES ONLY

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. Date: July 6, 2018 Name: John M. Gray, PE Lic. No. 22457	ANOKA COUNTY, MN CITY OF COON RAPIDS SAP 002-030-010	TRAFFIC SIGNAL INTERCONNECT "A" FIELD WIRING DIAGRAM CSAH 1 (COON RAPIDS BLVD) AT XAVIS STREET	FILE NO. ANOKC 142312	25 115
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ANOKA COUNTY HIGHWAY DEPT. STATE AID PROJECT 002-601-058	EXISTING SIGNAL PLANS Sheet 29 of 34 Sheets
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7015

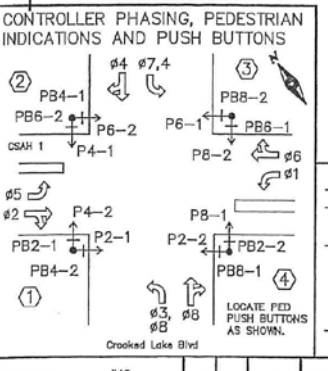
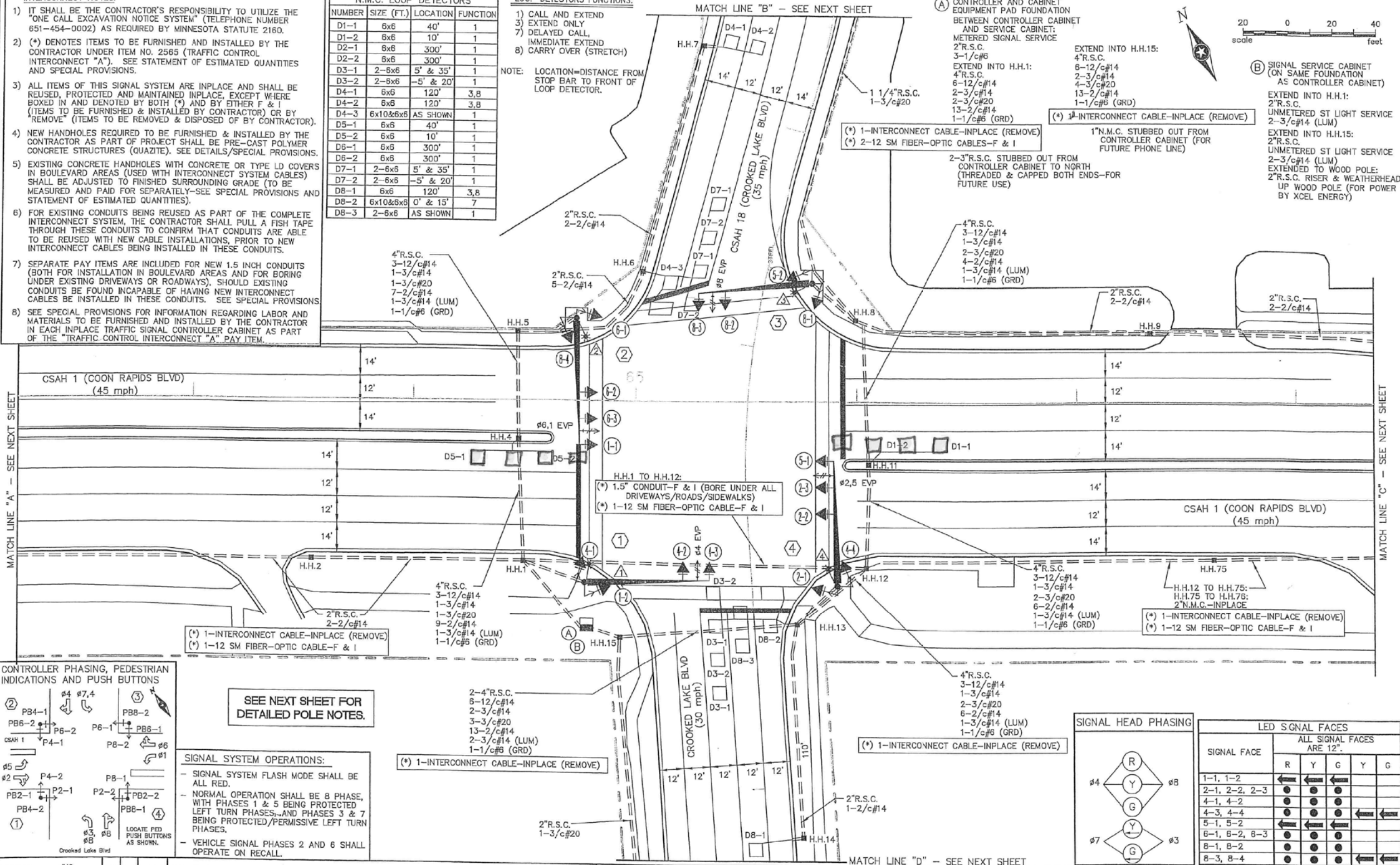
FOR REFERENCE PURPOSES ONLY

- INTERCONNECT NOTES:**
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
 - (*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT "A"). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
 - ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED, PROTECTED AND MAINTAINED INPLACE, EXCEPT WHERE BOXED IN AND DENOTED BY BOTH (*) AND BY EITHER F & I (ITEMS TO BE FURNISHED & INSTALLED BY CONTRACTOR) OR BY "REMOVE" (ITEMS TO BE REMOVED & DISPOSED OF BY CONTRACTOR).
 - NEW HANDHOLES REQUIRED TO BE FURNISHED & INSTALLED BY THE CONTRACTOR AS PART OF PROJECT SHALL BE PRE-CAST POLYMER CONCRETE STRUCTURES (QUAZITE). SEE DETAILS/SPECIAL PROVISIONS.
 - EXISTING CONCRETE HANDHOLES WITH CONCRETE OR TYPE LD COVERS IN BOULEVARD AREAS (USED WITH INTERCONNECT SYSTEM CABLES) SHALL BE ADJUSTED TO FINISHED SURROUNDING GRADE (TO BE MEASURED AND PAID FOR SEPARATELY-SEE SPECIAL PROVISIONS AND STATEMENT OF ESTIMATED QUANTITIES).
 - FOR EXISTING CONDUITS BEING REUSED AS PART OF THE COMPLETE INTERCONNECT SYSTEM, THE CONTRACTOR SHALL PULL A FISH TAPE THROUGH THESE CONDUITS TO CONFIRM THAT CONDUITS ARE ABLE TO BE REUSED WITH NEW CABLE INSTALLATIONS, PRIOR TO NEW INTERCONNECT CABLES BEING INSTALLED IN THESE CONDUITS.
 - SEPARATE PAY ITEMS ARE INCLUDED FOR NEW 1.5 INCH CONDUITS (BOTH FOR INSTALLATION IN BOULEVARD AREAS AND FOR BORING UNDER EXISTING DRIVEWAYS OR ROADWAYS), SHOULD EXISTING CONDUITS BE FOUND INCAPABLE OF HAVING NEW INTERCONNECT CABLES BE INSTALLED IN THESE CONDUITS. SEE SPECIAL PROVISIONS
 - SEE SPECIAL PROVISIONS FOR INFORMATION REGARDING LABOR AND MATERIALS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR IN EACH INPLACE TRAFFIC SIGNAL CONTROLLER CABINET AS PART OF THE "TRAFFIC CONTROL INTERCONNECT "A" PAY ITEM.

N.M.C. LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	6x6	40'	1
D1-2	6x6	10'	1
D2-1	6x6	300'	1
D2-2	6x6	300'	1
D3-1	2-6x6	5' & 35'	1
D3-2	2-6x6	5' & 20'	1
D4-1	6x6	120'	3,8
D4-2	6x6	120'	3,8
D4-3	6x10&6x6	AS SHOWN	1
D5-1	6x6	40'	1
D5-2	6x6	10'	1
D6-1	6x6	300'	1
D6-2	6x6	300'	1
D7-1	2-6x6	5' & 35'	1
D7-2	2-6x6	5' & 20'	1
D8-1	6x6	120'	3,8
D8-2	6x10&6x6	0' & 15'	7
D8-3	2-6x6	AS SHOWN	1

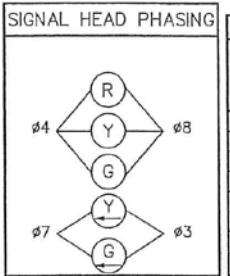
- LOOP DETECTORS FUNCTIONS:**
- CALL AND EXTEND
 - EXTEND ONLY
 - DELAYED CALL, IMMEDIATE EXTEND
 - CARRY OVER (STRETCH)

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



SEE NEXT SHEET FOR DETAILED POLE NOTES.

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



LED SIGNAL FACES

SIGNAL FACE	ALL SIGNAL FACES ARE 12"				
	R	Y	G	Y	G
1-1, 1-2	←	←	←		
2-1, 2-2, 2-3	←	←	←		
4-1, 4-2	←	←	←		
4-3, 4-4	←	←	←		
5-1, 5-2	←	←	←		
6-1, 6-2, 6-3	←	←	←		
8-1, 8-2	←	←	←		
8-3, 8-4	←	←	←		

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
Lic. No. 22457
Date: July 8, 2018

SEH
PHONE: (651) 490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

ANOKA COUNTY, MN
CITY OF COON RAPIDS
SAP 002-030-010

TRAFFIC SIGNAL INTERCONNECT "A"
INTERSECTION LAYOUT
CSAH 1 (COON RAPIDS BLVD)
AT CSAH 18-CROOKED LAKE BLVD

FILE NO.
ANOKC 142312
20
115

NO	DATE	BY	CKD	APPR	REVISION	03/19/2020	9:16:19 AM
NAME: P:\20-01-00\CSAH_01_(SoftHanson-11th)\Base\Proposed\Proposed.dgn							

DRAWN BY:	SPH	DATE	01/31/2020
DESIGN BY:	KPR	DATE	01/31/2020
CHECKED BY:	CO	DATE	03/19/2020

ANOKA COUNTY HIGHWAY DEPT.

STATE AID PROJECT 002-601-058

EXISTING SIGNAL PLANS
Sheet 30 of 34 Sheets

2015

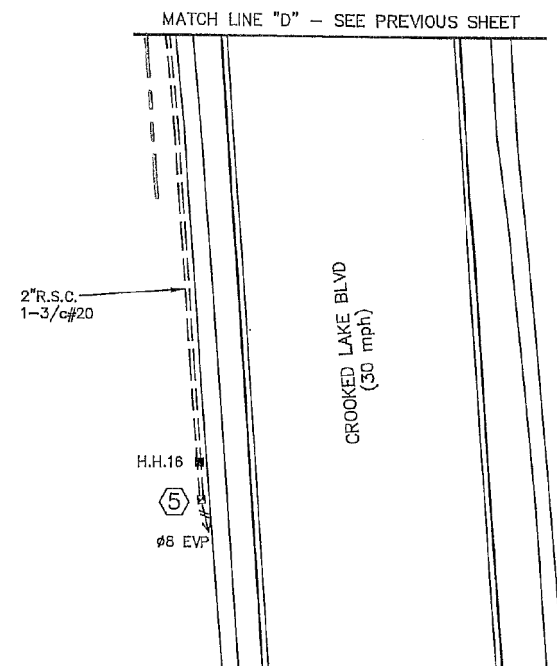
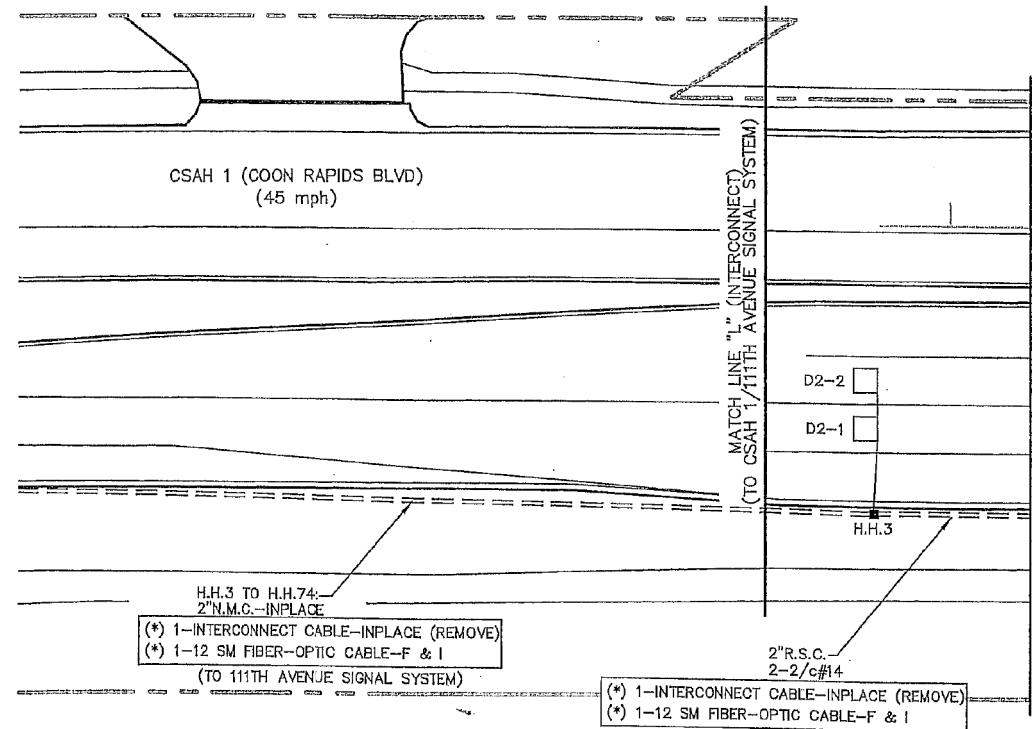
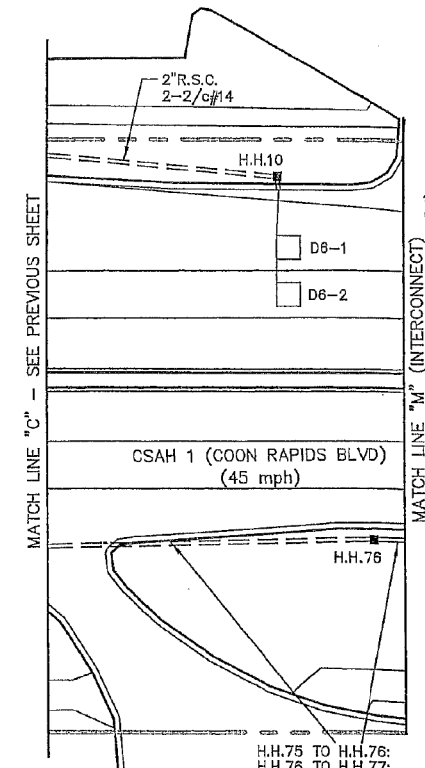
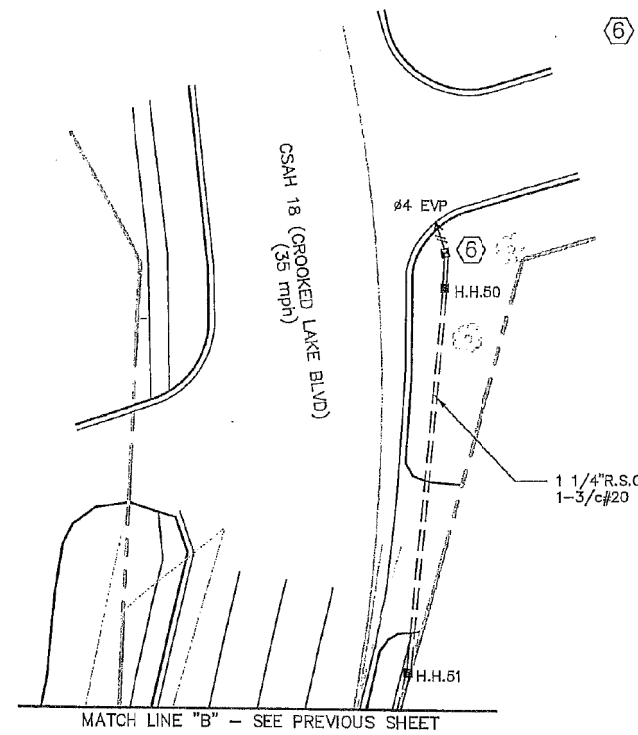
- ① PA100 POLE FOUNDATION
TYPE PA100-A-65-D40-9 (DAVIT AT 270°)
LUMINAIRE-250 W HPS
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0°
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11°
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180°
2-ANGLE MOUNT SETS C.D. PEDESTRIAN INDICATIONS-
POLE MOUNTED 90° & 180°
2-PEDESTRIAN PUSH BUTTONS
R10-12 SIGN PANEL-ADJACENT TO 4-3
TYPE D SIGN PANEL-OVERHEAD
ONE WAY EVP DETECTOR & LIGHT (#4)
EXTEND INTO H.H.1:
3"R.S.C.
3-12/c#14
1-3/c#14
1-3/c#20
2-2/c#14
1-3/c#14 (LUM)
2-1/c#6 (GRD)

- ② PA100 POLE FOUNDATION
TYPE PA100-A-55-D40-9 (DAVIT AT 350°)
LUMINAIRE-250 W HPS
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0°
2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11° & 23°
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180°
2-ANGLE MOUNT SETS C.D. PEDESTRIAN INDICATIONS-
POLE MOUNTED 90° & 180°
2-PEDESTRIAN PUSH BUTTONS
2-R6-1 SIGN PANELS-POLE MOUNTED 0° & 180°
TYPE D SIGN PANEL-OVERHEAD
ONE WAY EVP DETECTOR & LIGHT (#6,1)
EXTEND INTO H.H.5:
3"R.S.C.
3-12/c#14
1-3/c#14
1-3/c#20
2-2/c#14
1-3/c#14 (LUM)
2-1/c#6 (GRD)

- ③ PA100 POLE FOUNDATION
TYPE PA100-A-50-D40-9 (DAVIT AT 350°)
LUMINAIRE-250 W HPS
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0°
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11°
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180°
2-ANGLE MOUNT SETS C.D. PEDESTRIAN INDICATIONS-
POLE MOUNTED 90° & 180°
2-PEDESTRIAN PUSH BUTTONS
R10-12 SIGN PANEL-ADJACENT TO 8-3
TYPE D SIGN PANEL-OVERHEAD
ONE WAY EVP DETECTOR & LIGHT (#8)
EXTEND INTO H.H.8:
3"R.S.C.
3-12/c#14
1-3/c#14
1-3/c#20
2-2/c#14
1-3/c#14 (LUM)
1-1/c#6 (GRD)

- ④ PA100 POLE FOUNDATION
TYPE PA100-A-55-D40-9 (DAVIT AT 350°)
LUMINAIRE-250 W HPS
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0°
2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11° & 23°
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180°
2-ANGLE MOUNT SETS C.D. PEDESTRIAN INDICATIONS-
POLE MOUNTED 90° & 180°
2-PEDESTRIAN PUSH BUTTONS
2-R6-1 SIGN PANELS-POLE MOUNTED 0° & 180°
TYPE D SIGN PANEL-OVERHEAD
ONE WAY EVP DETECTOR & LIGHT (#2,5)
EXTEND INTO H.H.13:
3"R.S.C.
3-12/c#14
1-3/c#14
1-3/c#20
2-2/c#14
1-3/c#14 (LUM)
2-1/c#6 (GRD)

- ⑥ PEDESTAL FOUNDATION
10' PEDESTAL POLE (INCLUDES BASE)
WIND COLLAR FOR PEDESTAL POLE
ONE WAY EVP DETECTOR-MOUNT
ON TOP OF PEDESTAL POLE) (#4)
EXTEND INTO H.H.60:
2"R.S.C.
1-3/c#20



- (*) 1-INTERCONNECT CABLE-INPLACE (REMOVE)
- (*) 1-12 SM FIBER-OPTIC CABLE-F & I (TO HANSON BLVD SIGNAL SYSTEM)

- ⑤ PEDESTAL FOUNDATION
10' PEDESTAL POLE (INCLUDES BASE)
WIND COLLAR FOR PEDESTAL POLE
ONE WAY EVP DETECTOR-MOUNT
ON TOP OF PEDESTAL POLE) (#8)
EXTEND INTO H.H.16:
2"R.S.C.
1-3/c#20

SEE PLAN FOR SIGNAL SYSTEMS, INTERCONNECT, AND TRAFFIC SIGNALS

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.
 Date: July 6, 2018 Name: John M. Gray, PE Lico. No. 22457

SEH
 PHONE: (855) 400-2000
 3335 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY, MN
 CITY OF COON RAPIDS
 SAP 002-030-010

TRAFFIC SIGNAL INTERCONNECT "A"
 INTERSECTION LAYOUT
 CSAH 1 (COON RAPIDS BLVD)
 AT CSAH 18-CROOKED LAKE BLVD

FILE NO.
 ANOKO 142312
 21
 115

NO	DATE	BY	CKD	APPR	REVISION	03/19/2020	9:16:33 AM

NAME: P:\20-01-00\CSAH_01_(Soft\Hanson-111th)\Base\Proposed\Proposed.dgn

DRAWN BY: SPH DATE 01/31/2020
 DESIGN BY: KPR DATE 01/31/2020
 CHECKED BY: CO DATE 03/19/2020

ANOKA COUNTY
 HIGHWAY DEPT.

STATE AID PROJECT 002-601-058

EXISTING SIGNAL PLANS
 Sheet 31 of 34 Sheets

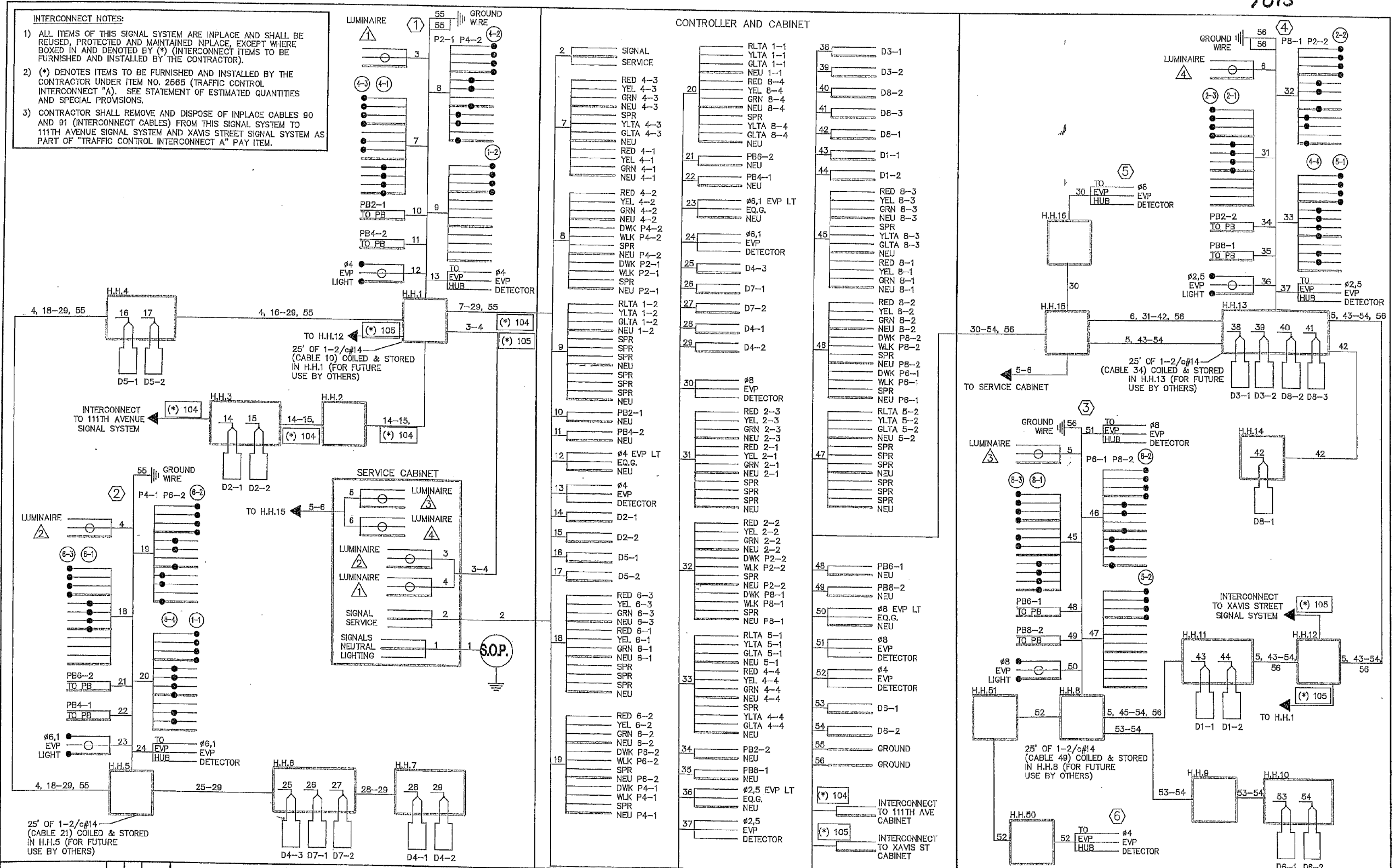
FOR REFERENCE PURPOSES ONLY

7015

FOR REFERENCE PURPOSES ONLY

INTERCONNECT NOTES:

- 1) ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED, PROTECTED AND MAINTAINED INPLACE, EXCEPT WHERE BOXED IN AND DENOTED BY (*) (INTERCONNECT ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR).
- 2) (*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT "A"). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 3) CONTRACTOR SHALL REMOVE AND DISPOSE OF INPLACE CABLES 90 AND 91 (INTERCONNECT CABLES) FROM THIS SIGNAL SYSTEM TO 111TH AVENUE SIGNAL SYSTEM AND XAVIS STREET SIGNAL SYSTEM AS PART OF "TRAFFIC CONTROL INTERCONNECT A" PAY ITEM.



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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: July 6, 2018
 Lic. No.: 22457



PHONE: (651) 490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY, MN
 CITY OF COON RAPIDS
 SAP 002-030-010

TRAFFIC SIGNAL INTERCONNECT "A"
 FIELD WIRING DIAGRAM
 CSAH 1 (COON RAPIDS BLVD)
 AT CSAH 16-CROOKED LAKE BLVD

FILE NO.
 ANOKC 142312
 22
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NO.	DATE	BY	CKD	APPR	REVISION	03/19/2020	9:16:45 AM

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DESIGN TEAM	NO.	BY	DATE	REVISIONS

DRAWN BY: SPH DATE 01/31/2020
 DESIGN BY: KPR DATE 01/31/2020
 CHECKED BY: CO DATE 03/19/2020



ANOKA COUNTY
 HIGHWAY DEPT.

STATE AID PROJECT 002-601-058

EXISTING SIGNAL PLANS
 Sheet 32 of 34 Sheets

7016

FOR REFERENCE PURPOSES ONLY

- INTERCONNECT NOTES:**
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UTILIZE THE "ONE CALL EXCAVATION NOTICE SYSTEM" (TELEPHONE NUMBER 651-454-0002) AS REQUIRED BY MINNESOTA STATUTE 2160.
 - (*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (TRAFFIC CONTROL INTERCONNECT "A"). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
 - ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED, PROTECTED AND MAINTAINED INPLACE, EXCEPT WHERE BOXED IN AND DENOTED BY BOTH (*) AND BY EITHER F & I (ITEMS TO BE FURNISHED & INSTALLED BY CONTRACTOR) OR BY "REMOVE" (ITEMS TO BE REMOVED & DISPOSED OF BY CONTRACTOR).
 - NEW HANDHOLES REQUIRED TO BE FURNISHED & INSTALLED BY THE CONTRACTOR AS PART OF PROJECT SHALL BE PRE-CAST POLYMER CONCRETE STRUCTURES (QUAZITE). SEE DETAILS/SPECIAL PROVISIONS.
 - EXISTING CONCRETE HANDHOLES WITH CONCRETE OR TYPE LD COVERS IN BOULEVARD AREAS (USED WITH INTERCONNECT SYSTEM CABLES) SHALL BE ADJUSTED TO FINISHED SURROUNDING GRADE (TO BE MEASURED AND PAID FOR SEPARATELY—SEE SPECIAL PROVISIONS AND STATEMENT OF ESTIMATED QUANTITIES).
 - FOR EXISTING CONDUITS BEING REUSED AS PART OF THE COMPLETE INTERCONNECT SYSTEM, THE CONTRACTOR SHALL PULL A FISH TAPE THROUGH THESE CONDUITS TO CONFIRM THAT CONDUITS ARE ABLE TO BE REUSED WITH NEW CABLE INSTALLATIONS, PRIOR TO NEW INTERCONNECT CABLES BEING INSTALLED IN THESE CONDUITS.
 - SEPARATE PAY ITEMS ARE INCLUDED FOR NEW 1.5 INCH CONDUITS (BOTH FOR INSTALLATION IN BOULEVARD AREAS AND FOR BORING UNDER EXISTING DRIVEWAYS OR ROADWAYS), SHOULD EXISTING CONDUITS BE FOUND INCAPABLE OF HAVING NEW INTERCONNECT CABLES BE INSTALLED IN THESE CONDUITS. SEE SPECIAL PROVISIONS.
 - SEE SPECIAL PROVISIONS FOR INFORMATION REGARDING LABOR AND MATERIALS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR IN EACH INPLACE TRAFFIC SIGNAL CONTROLLER CABINET AS PART OF THE "TRAFFIC CONTROL INTERCONNECT "A" PAY ITEM.

NUMBER	SIZE (FT.)	LOCATION	FUNCTION	STATUS
D1-1	4-6x6	0',15",30',45'	1	INPLACE
D2-1	6x20	300'	1	INPLACE
D4-3	AS SHOWN	AS SHOWN	7	INPLACE
D4-4	AS SHOWN	AS SHOWN	7	INPLACE
D5-1	4-6x6	0',15",30',45'	1	INPLACE
D6-1	6x20	300'	1	INPLACE
D8-1	2-6x6	80'	3,8	INPLACE
D8-2	2-6x6	0' & 15'	7	INPLACE
D8-3	2-6x6	0' & 15'	1	INPLACE

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

ONE WAY EVP DETECTOR AND LIGHT (#2,5)—OVERHEAD

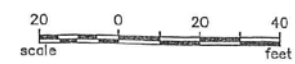
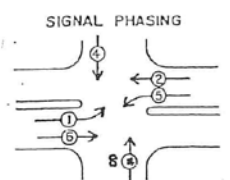
- TYPE A-35-D-40-12 ONE WAY SIGNAL (OVERHEAD)
2. TYPE 10B AT 90° & 270°
2 PED. PUSH BUTTONS
LUMINAIRE (250W HID-SV, 350W)
EXTEND INTO HH1, 3" RSC,
1-12/C #12, 9-3/C #12, 4-1/C #10
1-3/C #12, 1-3/C #20

ONE WAY EVP DETECTOR AND LIGHT (#8,1)—OVERHEAD

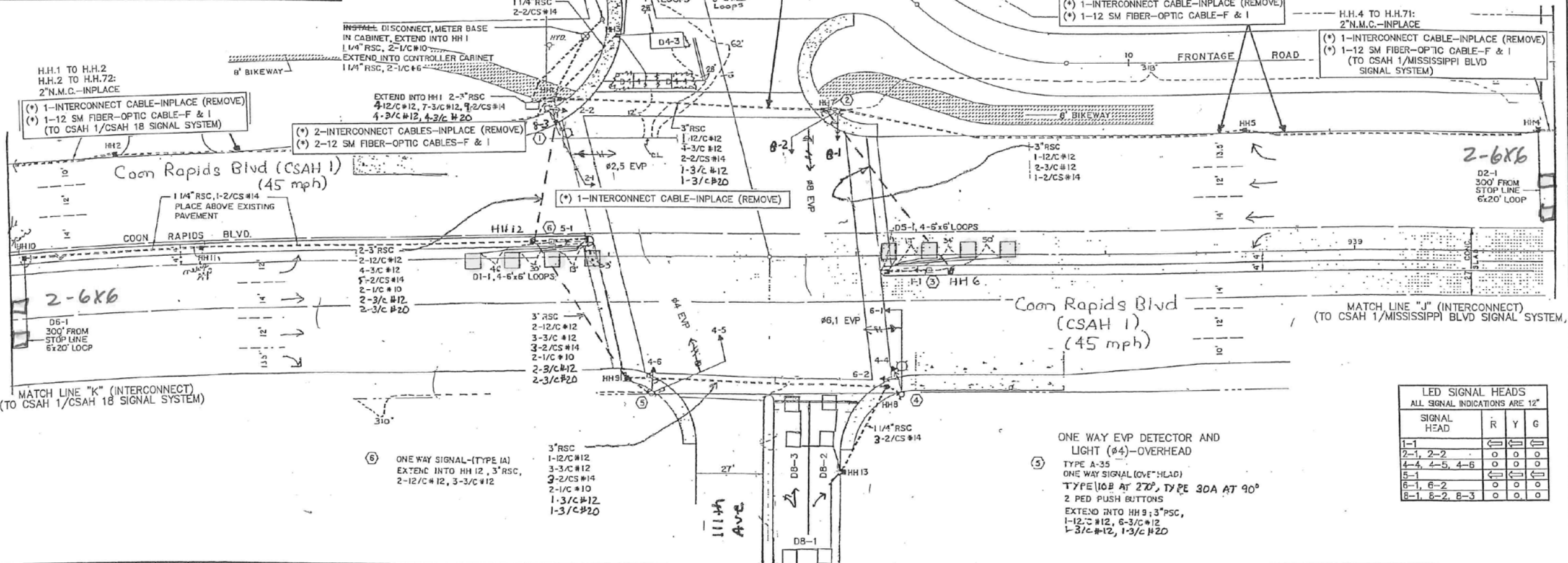
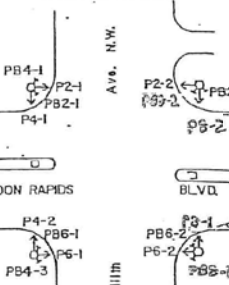
- TYPE A-25 ONE WAY SIGNAL (OVERHEAD)
TYPE 10B AT 270°, TYPE 30A AT 90°
2 PED. PUSH BUTTONS
EXTEND INTO HH7, 3" RSC,
2-12/C #12, 4-3/C #12
1-3/C #12, 1-3/C #20

ONE WAY EVP DETECTOR AND LIGHT (#6,1)—OVERHEAD

- TYPE A-35-D-40-12 ONE WAY SIGNAL (OVERHEAD)
2. TYPE 10B AT 90° & 270°
2 PED. PUSH BUTTONS
LUMINAIRE (250W HID-SV, 350W)
EXTEND INTO HH7, 3" RSC,
1-12/C #12, 3-3/C #10, 2-1/C #10
1-3/C #12, 1-3/C #20



PEDESTRIAN SIGNALS AND PUSH BUTTONS



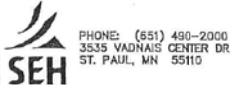
LED SIGNAL HEADS
ALL SIGNAL INDICATIONS ARE 12"

SIGNAL HEAD	R	Y	G
1-1	←	←	←
2-1, 2-2	o	o	o
4-4, 4-5, 4-6	o	o	o
5-1	←	←	←
6-1, 6-2	o	o	o
8-1, 8-2, 8-3	o	o	o

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: July 5, 2018 Name: John M. Gray, PE Lic. No.: 22457



ANOKA COUNTY, MN
CITY OF COON RAPIDS
SAP 002-030-010

TRAFFIC SIGNAL INTERCONNECT "A"
INTERSECTION LAYOUT
CSAH 1 (COON RAPIDS BLVD)
AT 11TH AVENUE NW

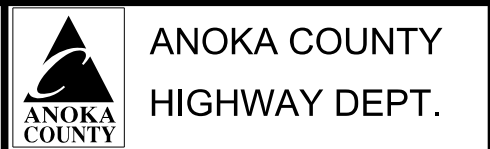
FILE NO. 17
ANOK 142312
115

NO.	DATE	BY	CKD	APPR	REVISION	03/19/2020	9:16:57 AM

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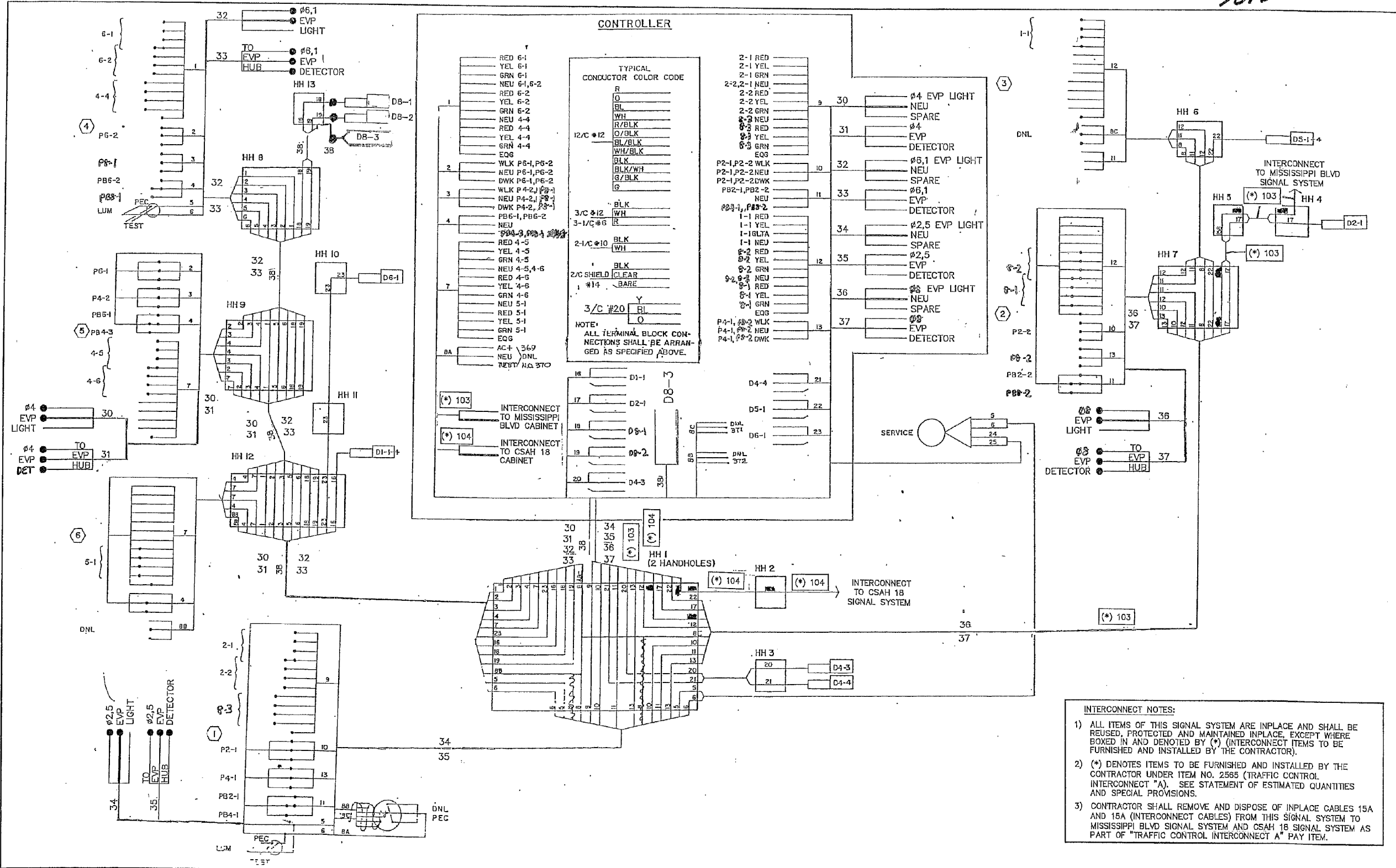
DRAWN BY: SPH DATE: 01/31/2020
DESIGN BY: KPR DATE: 01/31/2020
CHECKED BY: CO DATE: 03/19/2020



STATE AID PROJECT 002-601-058

EXISTING SIGNAL PLANS
Sheet 33 of 34 Sheets

7016



INTERCONNECT NOTES:

- 1) ALL ITEMS OF THIS SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED, PROTECTED AND MAINTAINED INPLACE, EXCEPT WHERE BOXED IN AND DENOTED BY (*) (INTERCONNECT ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR).
- 2) (*) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2585 (TRAFFIC CONTROL INTERCONNECT "A"). SEE STATEMENT OF ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 3) CONTRACTOR SHALL REMOVE AND DISPOSE OF INPLACE CABLES 15A AND 15A (INTERCONNECT CABLES) FROM THIS SIGNAL SYSTEM TO MISSISSIPPI BLVD SIGNAL SYSTEM AND CSAH 18 SIGNAL SYSTEM AS PART OF "TRAFFIC CONTROL INTERCONNECT A" PAY ITEM.

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. Name: John M. Gray, PE Date: July 5, 2018 Lic. No.: 22457	ANOKA COUNTY, MN CITY OF COON RAPIDS SAP 002-030-010	TRAFFIC SIGNAL INTERCONNECT "A" FIELD WIRING DIAGRAM CSAH 1 (COON RAPIDS BLVD) AT 11TH AVENUE NW	FILE NO. ANOKC 142312	18 115
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FOR REFERENCE PURPOSES ONLY