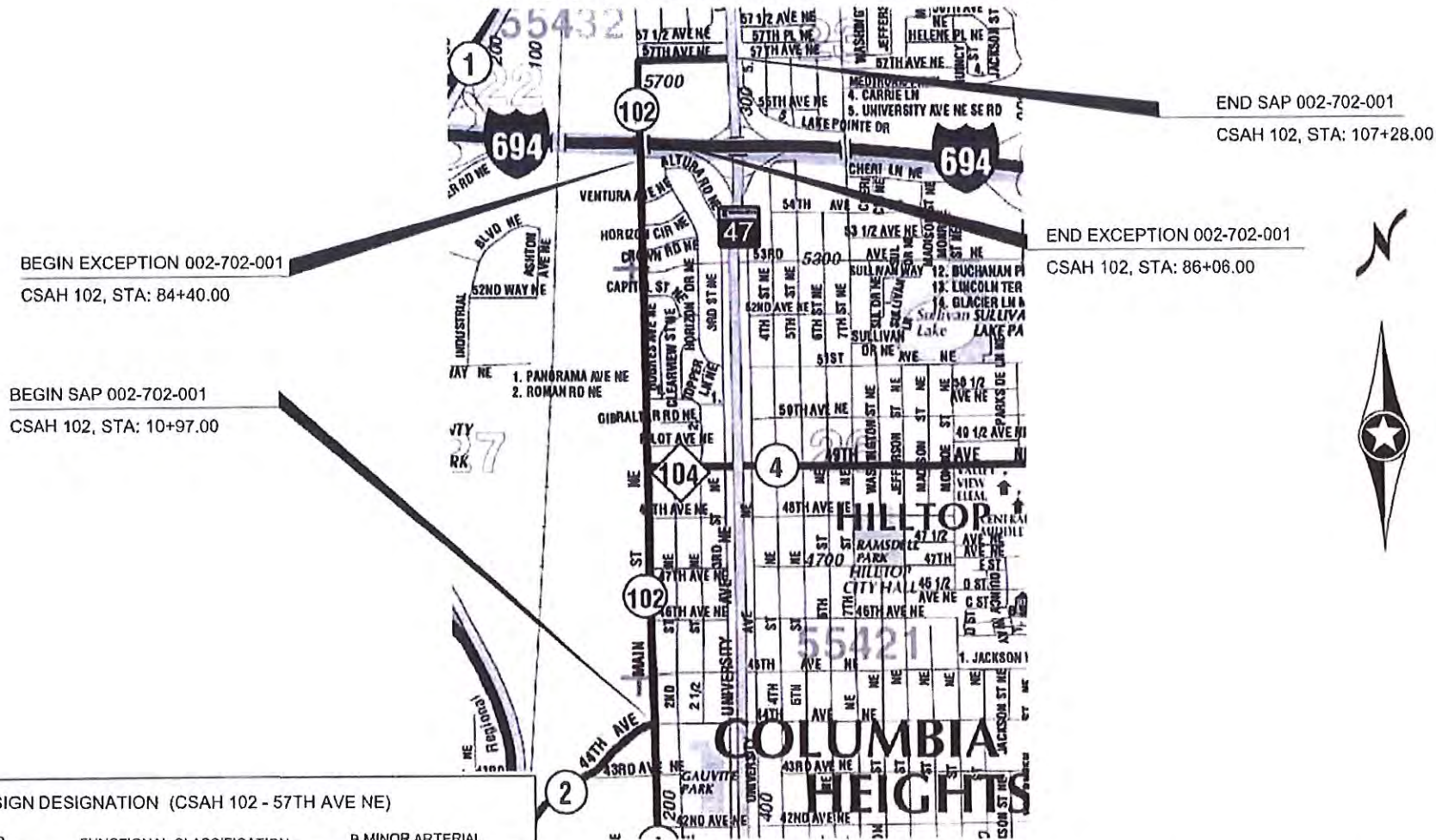


MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

CONSTRUCTION PLAN FOR MILL BITUMINOUS SURFACE, BITUMINOUS SURFACING, CURB & GUTTER, AND SEWER REPAIRS
LOCATED ON CSAH 102 BETWEEN CSAH 2 (44TH AVE NE) AND TH 47 (UNIVERSITY AVE)

GROSS LENGTH	9,631.00 FEET	1.824 MILES
EXCEPTIONS-LENGTH	166.00 FEET	0.031 MILES
NET LENGTH	9,465.00 FEET	1.793 MILES



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 TO 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	CONSTRUCTION NOTES AND INFORMATION
4-5	TABULATIONS
6-7	TYPICAL SECTIONS
8-9	DETAILS
10-13	CONSTRUCTION PLAN
14-19	PEDESTRIAN CURB RAMP DETAILS
20	PERMANENT MARKING TABULATION
21-25	TEMPORARY SIGNING, PERMANENT SIGNING, AND STRIPING
26-30	SIGNING AND STRIPING DETAILS
31-34	EXISTING SIGNAL PLANS



DESIGN DESIGNATION (CSAH 102 - 57TH AVE NE)	
ESAL 20	3,089,329
R VALUE	60
ADT (2019)	16255
PROJ. ADT (2039)	16255
PROJ. HCADT (2039)	1154
SOIL FACTOR	N/A
10 TON DESIGN	
FUNCTIONAL CLASSIFICATION	B MINOR ARTERIAL
NO. OF TRAFFIC LANES	4
NO. OF PARKING LANES	0
DESIGN SPEED	30 MPH
STOPPING SIGHT DISTANCE BASED ON:	
HEIGHT OF EYE	3.5'
HEIGHT OF OBJECT	2.0'
DESIGN SPEED NOT ACHIEVED AT:	
STA. _____ TO STA. _____	MPH _____

DESIGN DESIGNATION (CSAH 102 - MAIN ST NE)	
ESAL 20	2,189,355
R VALUE	60
ADT (2019)	5949
PROJ. ADT (2039)	5949
PROJ. HCADT (2039)	654
SOIL FACTOR	N/A
10 TON DESIGN	
FUNCTIONAL CLASSIFICATION	B MINOR ARTERIAL
NO. OF TRAFFIC LANES	2
NO. OF PARKING LANES	2
DESIGN SPEED	35 MPH
STOPPING SIGHT DISTANCE BASED ON:	
HEIGHT OF EYE	3.5'
HEIGHT OF OBJECT	2.0'
DESIGN SPEED NOT ACHIEVED AT:	
STA. _____ TO STA. _____	MPH _____

PROJECT LOCATION



CITIES OF COLUMBIA HEIGHTS & FRIDLEY
ANOKA COUNTY
MN/DOT TRANSPORTATION DISTRICT - METRO
SECTIONS 23, 26, & 35
TOWNSHIP 30 NORTH
RANGE 24 WEST

Approved: [Signature] 5/3/2019
CITY OF COLUMBIA HEIGHTS ENGINEER

Approved: [Signature] 5/10/2019
CITY OF FRIDLEY ENGINEER

Approved: [Signature] 4/25/2019
ANOKA COUNTY ENGINEER

For [Signature] DATE 5/20/19
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY

For [Signature] DATE 5/20/19
STATE AID ENGINEER: APPROVED FOR STATE AID FUNDING

NO	DATE	BY	CKD	APPR	REVISION
	04/08/2019				6:15:45 AM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: JOSEPH J. MACPHERSON
SIGNATURE: [Signature]
DATE: 4-25-19 LICENSE NO. 46732

DRAWN BY: SRK DATE 04/06/2019
DESIGN BY: SRK DATE 04/06/2019
CHECKED BY: CO DATE 04/08/2019



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE AID PROJECT 002-702-001

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
	2102.503	PAVEMENT MARKING REMOVAL	LIN FT	39
	2102.518	PAVEMENT MARKING REMOVAL	SQ FT	198
2	2104.502	REMOVE CASTING	EACH	50
2	2104.502	REMOVE DRAINAGE STRUCTURE	EACH	2
3	2104.502	REMOVE SIGN PANEL TYPE C	EACH	2
	2104.502	SALVAGE CASTING	EACH	1
1, 2	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	262
1,2	2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	1871
1,2	2104.503	REMOVE CURB & GUTTER	LIN FT	432
	2104.503	REMOVE BITUMINOUS CURB	LIN FT	289
1	2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	453
2	2104.518	REMOVE CONCRETE WALK	SQ FT	400
2	2104.518	REMOVE CONCRETE MEDIAN	SQ FT	1009
4, 5	2211.509	AGGREGATE BASE CLASS 5	TON	74
29	2231.509	BITUMINOUS PATCHING MIXTURE	TON	75
6	2232.504	MILL BITUMINOUS SURFACE (2.0")	SQ YD	46980
6, 7	2232.604	MILL BITUMINOUS PAVEMENT (SPECIAL)	SQ YD	1947
	2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	2446
8	2360.509	TYPE SP 12.5 WEARING COURSE MIXTURE (4,C)	TON	369
26	2360.509	TYPE SP 12.5 WEARING COURSE MIXTURE (4,E)	TON	5403
9	2360.509	TYPE SP 12.5 BITUMINOUS MIXTURE FOR PATCHING	TON	145
	2503.602	CONNECT TO EXISTING STORM SEWER	EACH	3
28	2504.602	ADJUST GATE VALVE	EACH	30
11	2506.502	CASTING ASSEMBLY	EACH	50
	2506.502	INSTALL CASTING	EACH	1
10	2506.503	CONST DRAINAGE STRUCTURE DESIGN H	LIN FT	6.0
	2506.503	RECONSTRUCT DRAINAGE STRUCTURE	LIN FT	11.0
12	2506.602	GROUT AND CLEAN OUT CATCH BASIN OR MANHOLE	EACH	33
13	2521.518	4" CONCRETE WALK	SQ FT	1009
	2521.518	6" CONCRETE WALK	SQ FT	400
1	2531.503	CONCRETE CURB AND GUTTER DESIGN B618	LIN FT	757
	2531.618	TRUNCATED DOMES	SQ FT	48
14	2550.602	LOOP DETECTOR DESIGN NMC	EACH	1
15,16,23	2563.601	TRAFFIC CONTROL (STAGE 1)	LUMP SUM	1
15,16,24	2563.601	TRAFFIC CONTROL (STAGE 2)	LUMP SUM	1
15,16,25	2563.601	TRAFFIC CONTROL (STAGE 3)	LUMP SUM	1
17	2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	UNIT DAY	20
3	2564.518	SIGN PANELS TYPE C	SQ FT	20.75
18	2573.502	STORM DRAIN INLET PROTECTION	EACH	79
	2574.507	COMMON TOPSOIL BORROW	CU YD	26
19	2575.504	EROSION CONTROL BLANKETS CATEGORY 0	SQ YD	76
20	2581.503	REMOVABLE PREFORMED PAVEMENT MARKING TAPE	LIN FT	432
27	2582.503	4" BROKEN LINE PAINT	LIN FT	2160
21	2582.503	4" SOLID LINE MULTI-COMPONENT	LIN FT	23490
21	2582.503	4" BROKEN LINE MULTI-COMPONENT	LIN FT	1340
21	2582.503	8" DOTTED LINE MULTI-COMPONENT	LIN FT	36
21	2582.503	4" DOUBLE SOLID LINE MULTI-COMPONENT	LIN FT	2260
21, 22	2582.518	PAV MSSG PREF THERMO	SQ FT	710

NO	DATE	BY	CKD	APPR	REVISION	04/05/2019	12:04:20 PM
NAME: P:\19-01-00\CSAH_102_(CSAH02-TH05)\BaselProposed\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: JOSEPH J. MACPHERSON
 SIGNATURE: *[Signature]*
 DATE: 9-25-19 LICENSE NO. 46732

DRAWN BY SRK DATE 04/05/2019
 DESIGN BY SRK DATE 04/05/2019
 CHECKED BY CO DATE 04/05/2019



**ANOKA COUNTY
 HIGHWAY DEPT.**

STATE AID PROJECT 002-702-001

STATEMENT OF ESTIMATED QUANTITIES
 Sheet 2 of 34 Sheets

APAnders

CONSTRUCTION NOTES

1	ITEM INCLUDES CURB REPLACEMENT QUANTITIES NOT SHOWN ON THE PLAN, USED TO REPLACE SEGMENTS OF DETERIORATED CURB AS DIRECTED BY THE ENGINEER.
2	REFERENCE SHEET 4,5 AND 8 FOR REMOVAL DETAILS.
3	ITEM USED FOR SIGNS IN MEDIAN REPLACEMENT AREAS.
4	PRIOR TO PLACEMENT, EXCAVATION AND DISPOSAL OF EXISTING GRADING MATERIAL IS INCIDENTAL TO CONCRETE WALK
5	ITEM 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.
8	ITEM FOR STREET APPROACHES. STREET APPROACHES SHALL BE PAVED AFTER MAINLINE, AND BEFORE FINAL STRIPING.
9	ITEM INCLUDES BITUMINOUS PATCHING AROUND NEW CURB, STORM STRUCTURE REPAIRS, AND ANY POTHoles. 6" GRAVEL BASE PLACEMENT INCIDENTAL TO PATCH.
10	PAY HEIGHT IS MEASURED FROM INVERT OF OUTLET PIPE TO BOTTOM OF ADJUSTING RINGS, PLUS AN ALLOWANCE OF 0.70 FEET FOR THE DEPTH OF THE CONCRETE BASE, REGARDLESS OF ITS ACTUAL THICKNESS.
11	ITEM INCLUDES FULL REPLACEMENT OF CASTING ADJUSTMENT RINGS. SEE STORM TABULATIONS FOR RING HEIGHTS.
12	ITEM INCLUDES GROUTING OF INVERTS, DOGHOUSES, RINGS, AND CASTINGS AS REQUIRED (SEE DRAINAGE TAB, PAGE 3-5).
13	ITEM INCLUDES CONCRETE MEDIAN.
14	LOOP REPLACEMENT REQUIRED ONLY IF DAMAGED DURING CONSTRUCTION OPERATIONS. EXISTING SIGNAL PLANS ARE INCLUDED AT THE END OF THIS PLAN.
15	CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN TEMPORARY SIGNAGE WHENEVER EXISTING SIGNAGE IS REMOVED. TEMPORARY SIGNAGE SHALL BE INCIDENTAL TO TRAFFIC CONTROL.
16	ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO, AND BE INSTALLED IN ACCORDANCE WITH, THE MOST CURRENT REVISION OF THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". DO NOT PASS, PASS WITH CARE, NO CENTER STRIPE, AND STOP HERE ON RED SIGNS SHALL BE INPLACE WHENEVER PERMANENT PAVEMENT MARKINGS ARE NOT
17	2 MESSAGE BOARDS, ONE ON THE EACH END OF PROJECT, WILL BE INSTALLED 10 DAYS PRIOR TO ANY CONSTRUCTION; REFERENCE STRIPING PLAN FOR DETAILS.
18	ALL DRAINAGE STRUCTURES AFFECTED BY THIS PROJECT MUST HAVE INLET PROTECTION.
19	TYPE 3 FERTILIZER AND TYPE 25-151 SEED ARE INCIDENTAL TO THIS ITEM.
20	CENTERLINE AND LANE DESIGNATION SKIPS SHALL 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
21	FINAL STRIPING SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLETION OF MAINLINE WEAR COURSE PAVING.
22	INCLUDES ALL THERMOPLASTIC STOP BARS, GORE AREA HATCHING, CROSSWALKS, LANE DESIGNATION ARROWS, AND PAVEMENT MESSAGES.
23	STAGE 1 ENCOMPASSES ALL TRAFFIC CONTROL REQUIRED FOR THE COMPLETION OF WORK ALONG THE LEFT-TURN AND LEFT-THRU LANES (INCLUDING BUT NOT LIMITED TO REPLACEMENT OF CURB, MEDIAN, AND WALK, SIGNAL LOOP DETECTOR REPLACEMENT, PATCHING, AND RESTORATION). NO PERMANENT LEFT-TURN LANE CLOSURES WILL BE ALLOWED. LEFT-TURN LANES MAY ONLY BE CLOSED DURING THOSE TIMES THAT THE SIGNAL SYSTEMS ARE IN "FLASHING OPERATION" (SEE THE SPECIAL PROVISIONS FOR TIME RESTRICTIONS ON "FLASHING OPERATION" OF TRAFFIC SIGNALS). A TRAFFIC CONTROL LAYOUT/PLAN SHALL BE PROVIDED BY THE CONTRACTOR TO THE ENGINEER FOR REVIEW AND APPROVAL AT LEAST 14 DAYS PRIOR TO COMMENCING WORK. ALL TRAFFIC CONTROL MUST BE COMPLIANT WITH THE MOST CURRENT REVISIONS OF BOTH THE MMUTCD AND THE MN/DOT TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS FIELD MANUAL.
24	STAGE 2 ENCOMPASSES ALL TRAFFIC CONTROL REQUIRED FOR THE COMPLETION OF WORK ALONG THE RIGHT-THRU LANES, RIGHT-TURN LANES, AND SHOULDERS (INCLUDING BUT NOT LIMITED TO REPLACEMENT OF CURB, MEDIAN, AND WALK, SIGNAL LOOP DETECTOR REPLACEMENT, PATCHING, AND RESTORATION). NO PERMANENT RIGHT-TURN LANE CLOSURES WILL BE ALLOWED. RIGHT-TURN LANES MAY ONLY BE CLOSED DURING THOSE TIMES THAT THE SIGNAL SYSTEMS ARE IN "FLASHING OPERATION" (SEE THE SPECIAL PROVISIONS FOR TIME RESTRICTIONS ON "FLASHING OPERATION" OF TRAFFIC SIGNALS). A TRAFFIC CONTROL LAYOUT/PLAN SHALL BE PROVIDED BY THE CONTRACTOR TO THE ENGINEER FOR REVIEW AND APPROVAL AT LEAST 14 DAYS PRIOR TO COMMENCING WORK. ALL TRAFFIC CONTROL MUST BE COMPLIANT WITH THE MOST CURRENT REVISIONS OF BOTH THE MMUTCD AND THE MN/DOT TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS FIELD MANUAL.
25	STAGE 3 ENCOMPASSES ALL TRAFFIC CONTROL REQUIRED FOR THE COMPLETION OF MILLING, BITUMINOUS PAVING, RESTORATION, AND ANY AND ALL REMAINING WORK THAT IS NOT INCLUDED IN STAGES 1 OR 2. A TRAFFIC CONTROL LAYOUT/PLAN SHALL BE PROVIDED BY THE CONTRACTOR TO THE ENGINEER FOR REVIEW AND APPROVAL AT LEAST 14 DAYS PRIOR TO COMMENCING WORK. ALL TRAFFIC CONTROL MUST BE COMPLIANT WITH THE MOST CURRENT REVISIONS OF BOTH THE MMUTCD AND THE MN/DOT TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS FIELD MANUAL.
26	ALL PAVING SHALL BE PULLED IN THE SAME DIRECTION AS TRAFFIC FOR THAT LANE(S) OF TRAVEL.
27	ITEM TO BE USED AS TEMPORARY CENTERLINE STRIPING ON MILLED SURFACE AS DETERMINED BY ENGINEER.
28	GATE VALVES TO BE ADJUSTED ONLY AS NECESSARY AS DETERMINED BY THE ENGINEER.
29	ITEM USED FOR PATCHING CRACKS AND POTHoles AFTER MILLING

BASIS OF PLANNED QUANTITIES

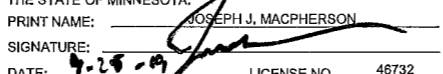
2575	SEED MIXTURE 25-151	200 LBS / ACRE
2357	BITUMINOUS MATERIAL FOR TACK COAT	0.05 GAL / SQ YD
2211	AGGREGATE BASE CLASS 5	1.8 TONS / CU YD
2360	ALL BITUMINOUS PAVEMENT	115 LBS / SQ YD / IN
2574	FERTILIZER TYPE 3	350 LBS/ACRE
2581	REMOVABLE PREFORM PAVEMENT MARKING TAPE	2' AT 50' INTERVALS

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

MNDOT STANDARD PLATES

PLATE NUMBER	DESCRIPTION
4006L	MANHOLE OR CATCH BASIN
4020J	MANHOLE OR CATCH BASIN (2 SHEETS)
4026A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4110F	COVER CASTING FOR MANHOLE
4154B	CATCH BASIN GRATE CASTINGS
7038A	DETECTABLE WARNING SURFACE
7100H	CONCRETE CURB AND GUTTER
7113A	CONCRETE APPROACH NOSE DETAIL
8000J	CHANNELIZERS (3 SHEETS)
9350A	MAILBOX SUPPORT (SWING-AWAY TYPE)

NO	DATE	BY	CKD	APPR	REVISION	04/17/2019	10:39:08 AM
NAME: P:\19-01-00\CSAH_102_(CSAH02-TH65)\BaselProposed\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: JOSEPH J. MACPHERSON
 SIGNATURE: 
 DATE: 4.25.19 LICENSE NO. 46732

DRAWN BY SRK DATE 04/17/2019
 DESIGN BY SRK DATE 04/17/2019
 CHECKED BY CO DATE 04/17/2019



ANOKA COUNTY
 HIGHWAY DEPT.

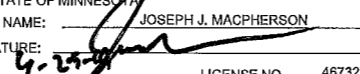
STATE AID PROJECT 002-702-001

CONSTRUCTION NOTES AND INFORMATION
 Sheet 3 of 34 Sheets

STORM DRAINAGE TAB

NUMBER	TYPE	ACTION	NEW CASTING	FURNISH AND INSTALL CASTING ASSEMBLY	RING HEIGHT (INCIDENTIAL)	REMOVE DRAINAGE STRUCTURE	GROUT CATCH BASIN OR MANHOLE	CONSTRUCT DRAINAGE STRUCTURE DESIGN H	RECONSTRUCT DRAINAGE STRUCTURE	SAWING CONCRETE PAVEMENT (FULL DEPTH)	REMOVE CURB & GUTTER	CONNECT TO EXISTING STORM SEWER	SAWING BIT. PAVEMENT (FULL DEPTH)	REMOVE BITUMINOUS PAVEMENT	TYPE SP 12.5 BIT MIXTURE FOR PATCHING	NOTES
				EACH	LIN FT	EACH	EACH	LIN FT	LIN FT	LIN FT	LIN FT	EACH	LIN FT	SQ YD	TON	
101	CB	RE-RING	A	1	1.0					5	10		14	3	1	
102	CB	GROUT STRUCTURE					1									
103	CB	RE-RING	A	1	0.7					5	10		14	3	1	
104	CB	RECONSTRUCT STRUCTURE	A	1		1		3.7		5	10	2	14	3	1	
107	CB	GROUT STRUCTURE					1									
108	CB	GROUT STRUCTURE					1									
109	CB	RE-RING	A	1	1.0					5	10		14	3	1	
110	CB	RE-RING	A	1	0.6					5	10		14	3	1	
111	CB	RE-RING	A	1	0.6					5	10		14	3	1	
113	CB	RE-RING	A	1	0.6					5	10		14	3	1	
116	CB	GROUT STRUCTURE														
117	CB	RECONSTRUCT STRUCTURE	A	1		1		2.3		5	10	1	14	3	1	
118	CB	GROUT STRUCTURE					1									
122	CB	RE-RING	A	1	0.6					5	10		14	3	1	
123	CB	RE-RING	A	1	0.4					5	10		14	3	1	
129	CB	GROUT STRUCTURE					1									
130	CB	GROUT STRUCTURE					1									
135	CB	GROUT STRUCTURE					1									
136	CB	RE-RING	A	1	0.5					5	10		14	3	1	
142	CB	GROUT STRUCTURE					1									
144	CB	GROUT STRUCTURE					1									
145	CB	RE-RING	A	1	1.0					5	10		14	3	1	
148	CB	GROUT STRUCTURE					1									
149	CB	GROUT STRUCTURE					1									
150	CB	GROUT STRUCTURE					1									
151	CB	RE-RING	A	1	0.6					5	10		14	3	1	
152	CB	GROUT STRUCTURE					1									
156	CB	GROUT STRUCTURE					1									
158	CB	GROUT STRUCTURE					1									
160	CB	GROUT STRUCTURE					1									
161	CB	RE-RING	A	1	0.7					5	10		14	3	1	
162	CB	RE-RING	A	1	0.8					5	10		14	3	1	
163	CB	RE-RING	A	1	2.0					5	10		14	3	1	
164	CB	GROUT STRUCTURE					1									
165	CB	RE-RING	A	1	0.5					5	10		14	3	1	
166	CB	GROUT STRUCTURE					1									
167	CB	GROUT STRUCTURE					1									
169	CB	GROUT STRUCTURE					1									
170	CB	RE-RING	B	1	2.0					4	10		14	3	1	
171	CB	GROUT STRUCTURE					1									
172	CB	GROUT STRUCTURE					1									
173	CB	GROUT STRUCTURE					1									
174	CB	RE-RING	B	1	2.0					4	10		14	3	1	
175	CB	RE-RING	B	1	0.9					4	10		14	3	1	
176	CB	GROUT STRUCTURE					1									
177	CB	GROUT STRUCTURE					1									
178	CB	GROUT STRUCTURE					1									
179	CB	GROUT STRUCTURE					1									
SUB-TOTAL				20	16.5	2	27	6.0	0.0	97	200	3	280	60	20	

NO	DATE	BY	CKD	APPR	REVISION	04/05/2019	12:04:32 PM
NAME: P:\19-01-00\CSAH_102_(CSAH02-TH65)\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: JOSEPH J. MACPHERSON
 SIGNATURE: 
 DATE: 4-23-19 LICENSE NO. 46732

DRAWN BY SRK DATE 04/05/2019
 DESIGN BY SRK DATE 04/05/2019
 CHECKED BY CO DATE 04/05/2019



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE AID PROJECT 002-702-001

TABULATIONS
 Sheet 4 of 34 Sheets

APAnders

STORM DRAINAGE TAB

NUMBER	TYPE	ACTION	NEW CASTING	FURNISH AND INSTALL CASTING ASSEMBLY	RING HEIGHT (INCIDENTAL)	REMOVE DRAINAGE STRUCTURE	GROUT CATCH BASIN OR MANHOLE	CONSTRUCT DRAINAGE STRUCTURE DESIGN H	RECONSTRUCT DRAINAGE STRUCTURE	SAWING CONCRETE PAVEMENT (FULL DEPTH)	REMOVE CURB & GUTTER	CONNECT TO EXISTING STORM SEWER	SAWING BIT. PAVEMENT (FULL DEPTH)	REMOVE BITUMINOUS PAVEMENT	TYPE SP 12.5 BIT MIXTURE FOR PATCHING	NOTES
				EACH	LIN FT	EACH	EACH	LIN FT	LIN FT	LIN FT	LIN FT	EACH	LIN FT	SQ YD	TON	
204	STRM MH	RE-RING	A-7D	1	1.5								32	7	2	
208	STRM MH	RE-RING	A-7D	1	0.2								32	7	2	
210	STRM MH	RE-RING	A-7D	1	0.6								32	7	2	
211	STRM MH	GROUT STRUCTURE					1									
212	STRM MH	RE-RING	A-7D	1	0.6								32	7	2	
213	STRM MH	RE-RING	A-7D	1	0.3								32	7	2	
215	STRM MH	RE-RING	A-7D	1	0.3								32	7	2	
216	STRM MH	RE-RING	A-7D	1	0.6								32	7	2	
217	STRM MH	RE-RING	A-7D	1	0.4								32	7	2	
218	STRM MH	RE-RING	A-7D	1	0.6								32	7	2	
219	STRM MH	RE-RING	A-7D	1	0.3								32	7	2	
220	STRM MH	GROUT STRUCTURE					1									
221	STRM MH	RE-RING	A-7D	1	0.5								32	7	2	
222	STRM MH	RE-RING	A-7D	1	0.5								32	7	2	
223	STRM MH	GROUT STRUCTURE					1									
225	STRM MH	RE-RING	A-7D	1	0.7								32	7	2	
226	STRM MH	RE-RING	A-7D	1	0.9								32	7	2	
231	STRM MH	RE-RING	A-7D	1	1.3								32	7	2	
300	SAN MH	RECONSTRUCT STRUCTURE	A-7D	1				4.0					14	3	1	REMOVE TOP 4' OF BRICK, REPLACE WITH BARREL SECTION
300A	SAN MH	RE-RING	A-7D	1	2.0								32	7	2	
301	SAN MH	RE-RING	A-7D	1	2.2								32	7	2	BRICK STRUCTURE
301A	SAN MH	GROUT STRUCTURE					1									
302	SAN MH	RE-RING	A-7D	1	1.7								32	7	2	
303	SAN MH	RE-RING	A-7D	1	0.4								32	7	2	
304	SAN MH	RE-RING	A-7D	1	0.8								32	7	2	
305	SAN MH	RE-RING	A-7D	1	0.7								32	7	2	
306	SAN MH	RE-RING	A-7D	1	0.3								32	7	2	
307	SAN MH	RE-RING	A-7D	1	0.3								32	7	2	
308	SAN MH	RE-RING	A-7D	1	1.5								32	7	2	
309	SAN MH	RE-RING	A-7D	1	1.3								32	7	2	
310	SAN MH	RE-RING	A-7D	1	0.2								32	7	2	
316	SAN MH	RE-RING	A-7D	1	1.0								32	7	2	
318	SAN MH	RE-RING	A-7D	1	1.0								32	7	2	
319	SAN MH	RECONSTRUCT STRUCTURE	A-7D	1				7.0					32	7	2	REMOVE TOP 7' OF RINGS. REPLACE WITH BARREL SECTION.
402	WATER MH	GROUT STRUCTURE					1									
403	WATER MH	GROUT STRUCTURE					1									
404	WATER MH	RE-RING			0.8								32	7	2	SALVAGE CASTING. INSTALL CASTING.
SUB-TOTAL				30	23.5	0	6	0	11.0	0	0	0	974	213	61	
TOTALS				60	40.0	2	33	6.0	11.0	97	200	3	1254	273	81	

CASTING ASSEMBLIES SUMMARY

ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING	CURB BOX	DESCRIPTION	NOTES	QUANTITY
A-7D	700-7	716	-	STD. PLATE: 4101D, 4110F	CASTING COVER STAMPED "STORM SEWER"	15
A-7D	700-7	716	-	STD. PLATE: 4101D, 4110F	CASTING COVER STAMPED "SANITARY SEWER"	15
A	SEE DETAILS - SHEET 9					17
B	SEE DETAILS - SHEET 9					3
ALL CASTING HEIGHTS ARE TO BE FIELD VERIFIED.						
ALL MANHOLE COVERS SHALL BE STAMPED AS STORM SEWER OR SANITARY SEWER.						
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	CHKD	APPR	REVISION	04/05/2019	12:04:41 PM
NAME: P:\19-01-00\CSAH_102_(CSAH02-TH65)\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: JOSEPH J. MACPHERSON
 SIGNATURE: *[Signature]*
 DATE: 7-25-19 LICENSE NO. 46732

DRAWN BY SRK DATE 04/05/2019
 DESIGN BY SRK DATE 04/05/2019
 CHECKED BY CO DATE 04/05/2019



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE AID PROJECT 002-702-001

TABULATIONS

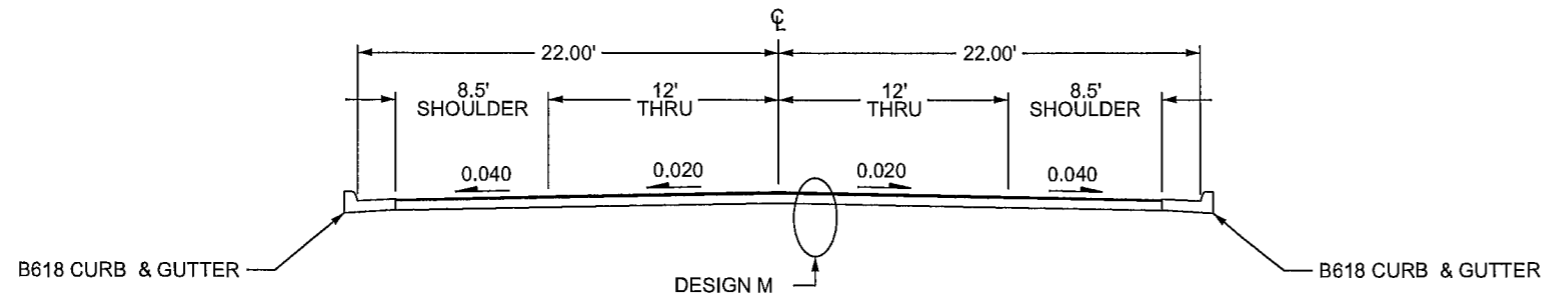
Sheet 5 of 34 Sheets

APAnders

MAIN STREET (CSAH 102)

TYPICAL MAINLINE

10+97.00 - 83+00.00



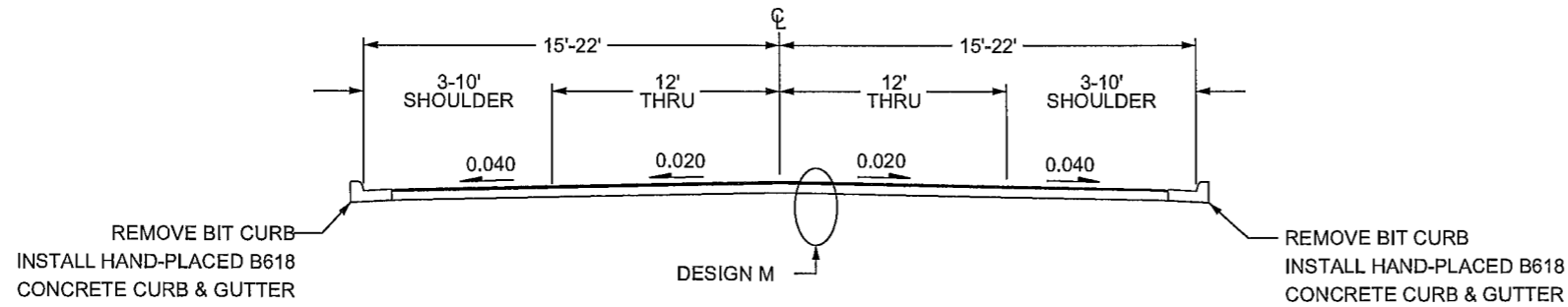
MAIN STREET (CSAH 102)

TYPICAL MAINLINE

83+00.00 - 84+40.00

84+40.00 - 86+06.00 (BRIDGE EXCEPTION)

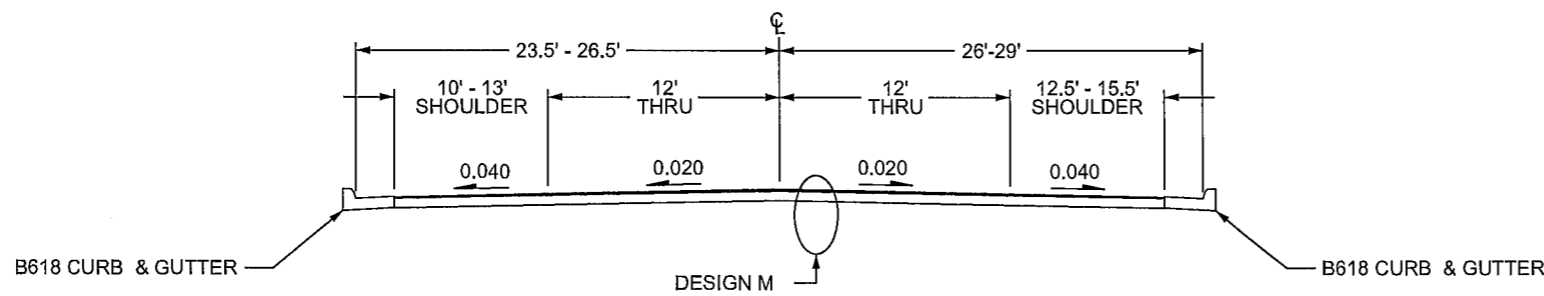
86+06.00 - 87+00.00



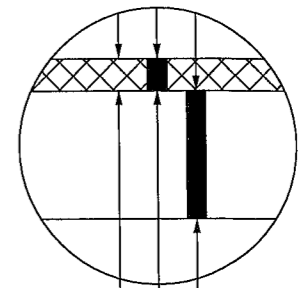
MAIN STREET (CSAH 102)

TYPICAL MAINLINE

87+00.00 - 95+57.00



DESIGN M MILL SECTION



2.0" MILL BITUMINOUS
 2.0" BITUMINOUS WEAR (SPWEB440E)
 REMAINING BITUMINOUS

NO	DATE	BY	CKD	APPR	REVISION
	04/05/2019				

NAME: P:\19-01-00\CSAH_102_CSAH02-TH65\Bases\Proposed\PROPOSED.dgn

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 CHECKED BY: CO DATE: 04/05/2019

ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-702-001

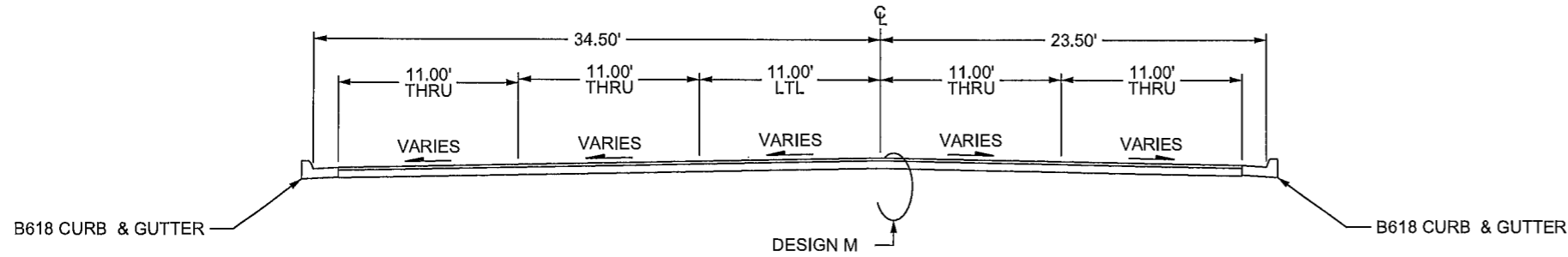
TYPICAL SECTIONS
 Sheet 6 of 34 Sheets

AP-Anders

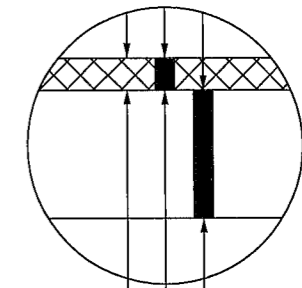
MAIN STREET (CSAH 102)

TYPICAL MAINLINE

95+57.00 - 101+25.00



DESIGN M MILL SECTION

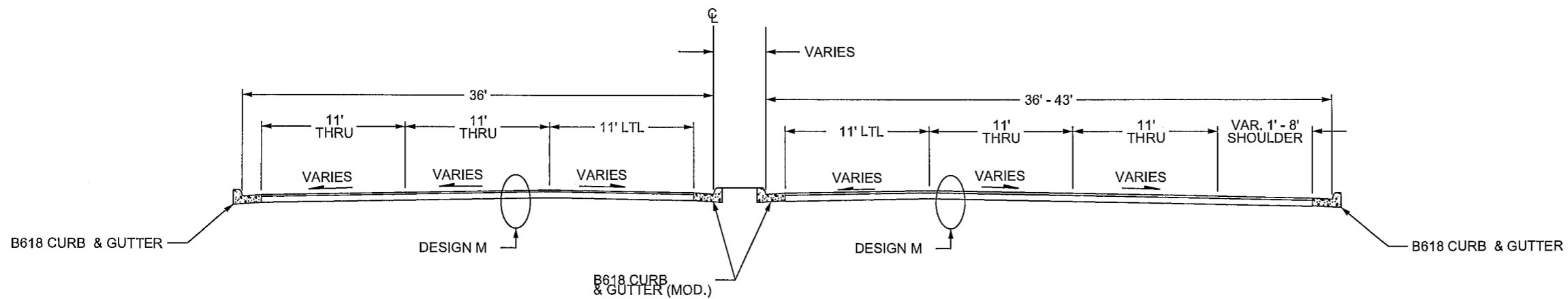


2.0" MILL BITUMINOUS
 2.0" BITUMINOUS WEAR (SPWEB440E)
 REMAINING BITUMINOUS

MAIN STREET (CSAH 102)

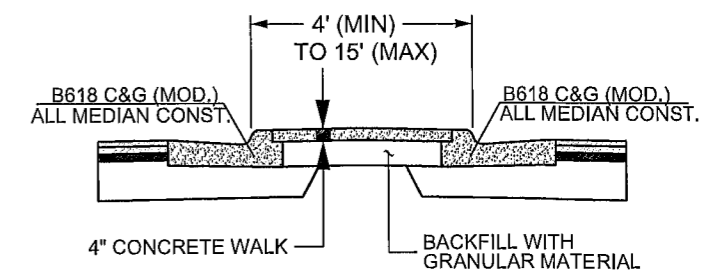
TYPICAL MAINLINE

101+25.00 - 103+92.00



CENTER MEDIAN DETAIL

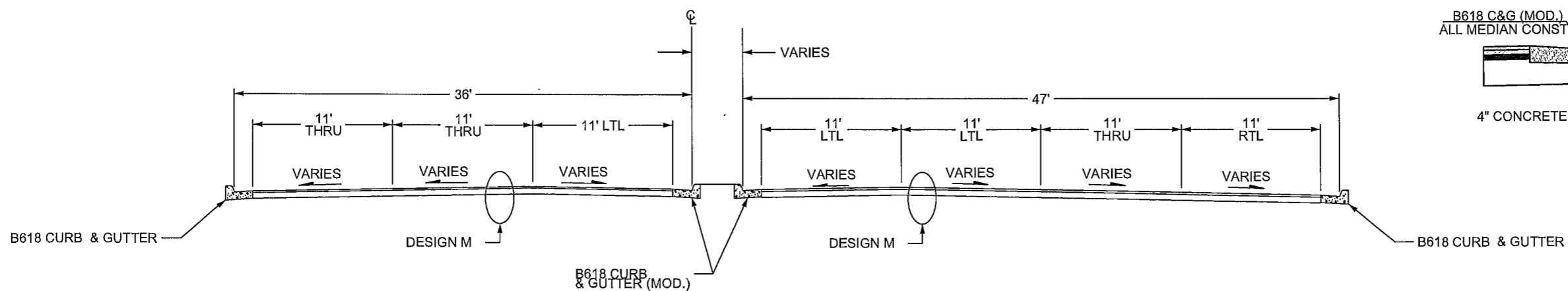
101+25 - 107+09



MAIN STREET (CSAH 102)

TYPICAL MAINLINE

103+92.00 - 107+28.00



NO	DATE	BY	CKD	APPR	REVISION	04/05/2019	12:04:49 PM
NAME: P:\19-01-00\CSAH_102_(CSAH02-TH65)\Base\Proposed\PROPOSED.dgn							

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DRAWN BY: SRK DATE: 04/05/2019
 DESIGN BY: SRK DATE: 04/05/2019
 CHECKED BY: XXX DATE: 04/05/2019



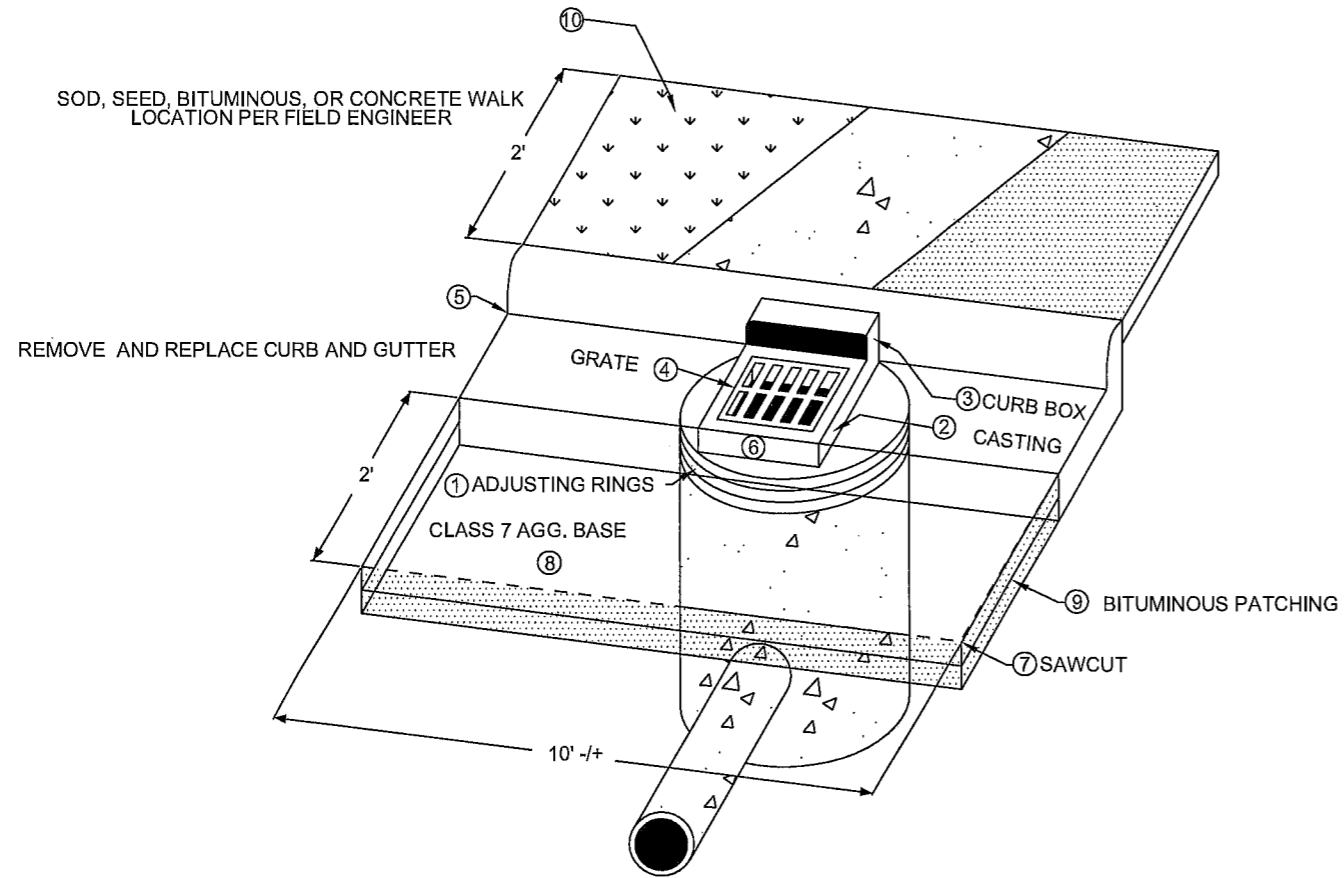
**ANOKA COUNTY
HIGHWAY DEPT.**

STATE AID PROJECT: 002-702-001

TYPICAL SECTIONS
 Sheet 7 of 34 Sheets

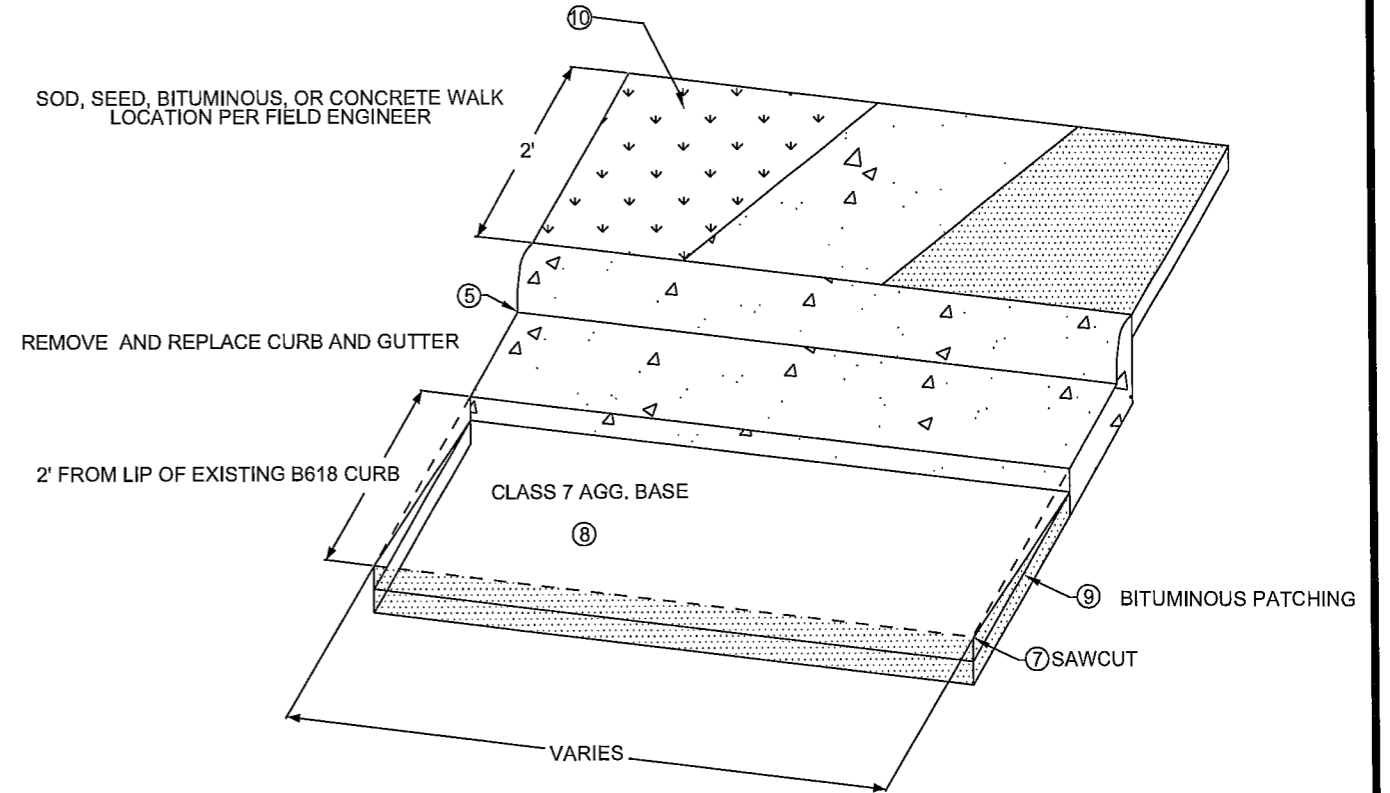
CATCH BASIN DETAIL

SEE STRUCTURE TAB FOR LOCATION
(PAGES 4 - 5)



NEW CURB DETAIL

SEE PLAN FOR LOCATION



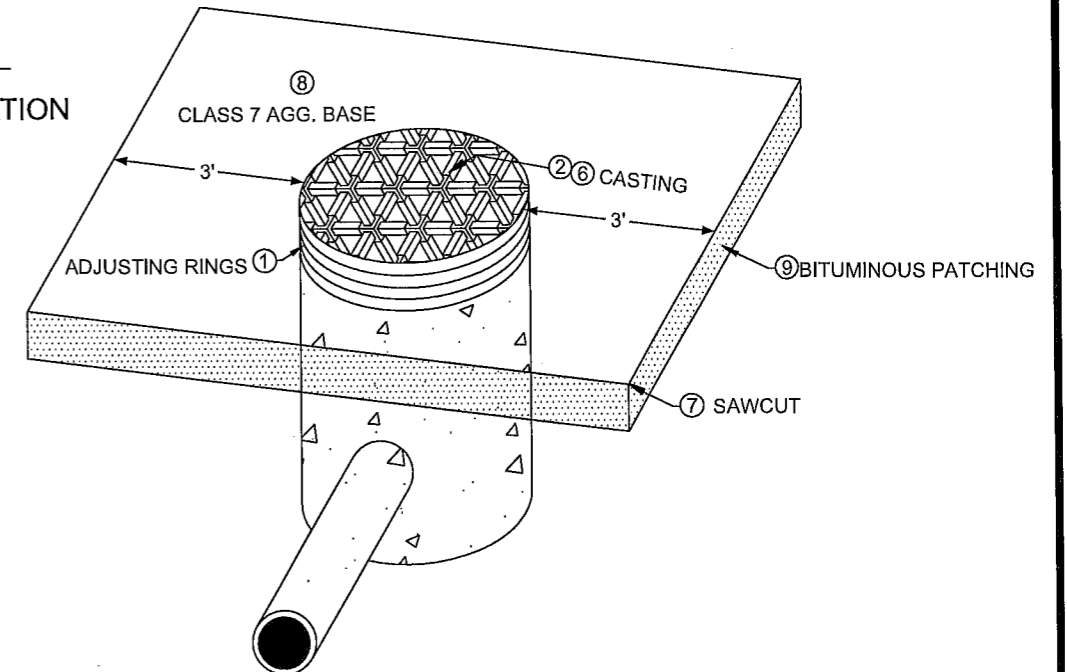
NOTES

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 7100G, 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

MANHOLE DETAIL

SEE STRUCTURE TAB FOR LOCATION
(PAGES 4 - 5)



NO	DATE	BY	CKD	APPR	REVISION
	04/05/2019				

NAME: P:\19-01-00\CSAH_102_(CSAH02-TH65)\Base\Proposed\PROPOSED.dgn

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DRAWN BY: SRK DATE: 04/05/2019
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CHECKED BY: CO DATE: 04/05/2019

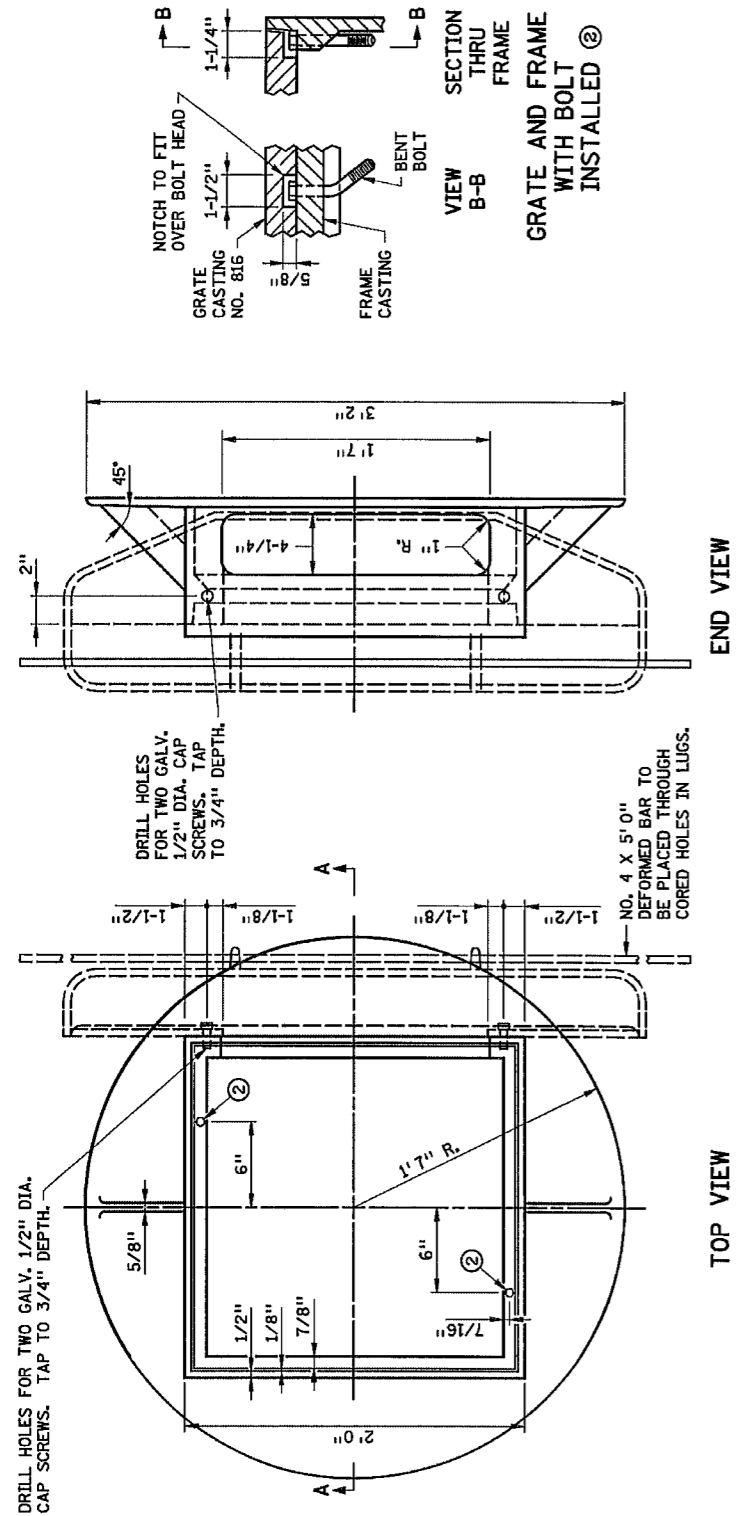


ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-702-001

DETAILS
Sheet 8 of 34 Sheets

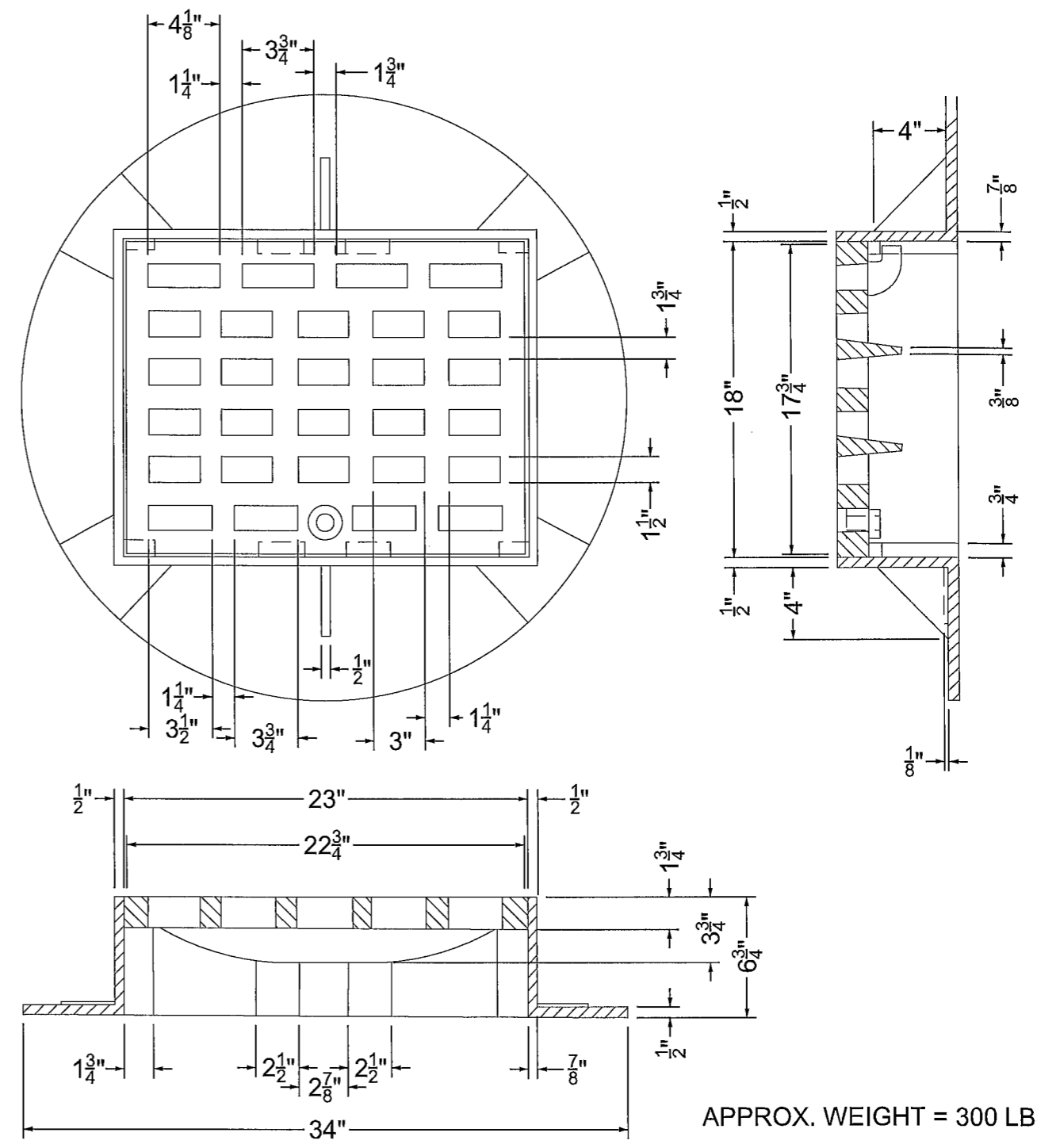
FRAME RING AND CASTING TYPE A



CASTINGS USED FOR ASSEMBLY
 GRATE NO. 816 (MNDOT STD PLATE 4154B)
 CURB BOX ① NO. 823A (MNDOT STD PLATE 4160) OR

NOTES:
 1. USE 1/4" FILLETS IN ALL CORNERS. SEE MNDOT STANDARD PLATE 7111 FOR INSTALLATION REQUIREMENTS. APPLIES TO DESIGN B OR V CURB AND GUTTER.
 2. AT LOCATIONS INDICATED IN TOP VIEW, PROVIDE 9/16" DIA. HOLES WHEN GRATE NO. 816 (MNDOT STD PLATE 4154) IS USED WITH THIS FRAME. FIELD PLACE 1/2" DIA X 4" LONG GALV. BOLT IN UP-STREAM SIDE AND BENT UNDERSIDE TO PREVENT REMOVAL. THIS WILL PREVENT GRATE NO. 816 (MNDOT STD PLATE 4154) FROM BEING PLACED IN WRONG AND NOT BEING BICYCLE SAFE

FRAME RING AND CASTING TYPE B



APPROX. WEIGHT = 300 LBS.

NOTE: THE CONTRATOR SHALL TAPER THE LIP OF CONCRETE CURB AND GUTTER FROM THE LIP OF THE ADJACENT CURB LINE TO THE LIP OF THE CASTING OVER A DISTANCE OF 3' (ON EACH SIDE OF THE CASTING). THIS WORK SHALL BE INCIDENTAL TO THE CONCRETE CURB & GUTTER PAY ITEMS.

NO	DATE	BY	CHKD	APPR	REVISION	04/05/2019	12:04:51 PM
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 DATE: 4-25-19 LICENSE NO. 46732

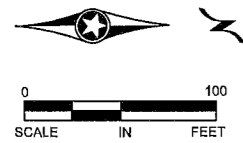
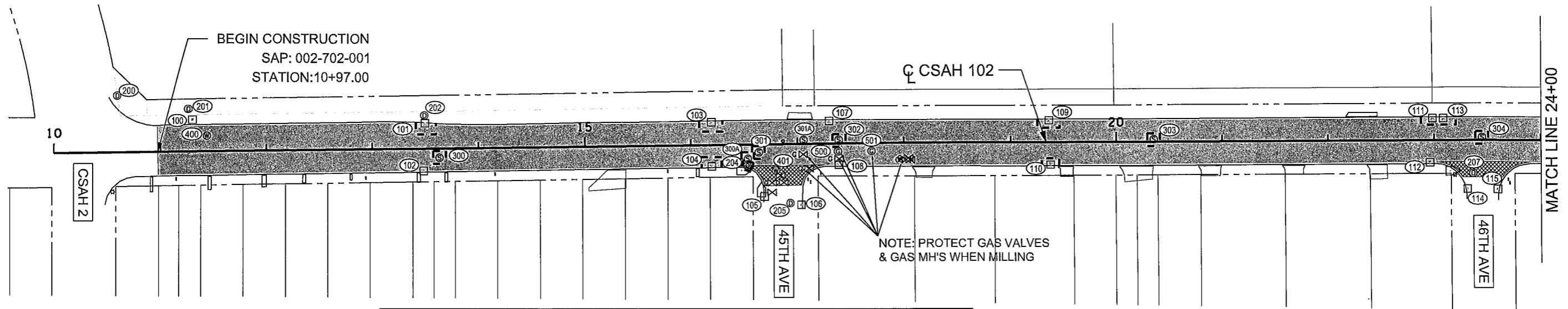
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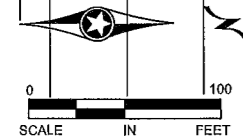
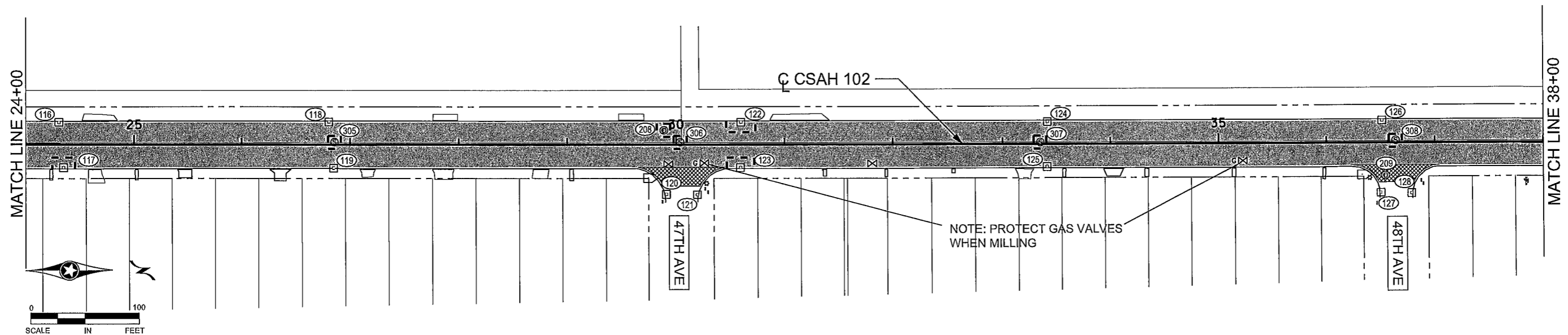
**ANOKA COUNTY
 HIGHWAY DEPT.**

STATE AID PROJECT 002-702-001

DETAILS
 Sheet 9 of 34 Sheets



LEGEND			
—	REMOVE CURB & GUTTER	⊗	ADJUST GATE VALVE
- - -	SAWCUT	[Hatched Box]	REMOVE STAMPED CONCRETE (BRICK PAVERS)
□	CATCH BASIN	[Stippled Box]	MAINLINE MILL AREA
(N)	CONCRETE APPROACH NOSE (STD PLATE 7113)	[Cross-hatched Box]	STREET APPROACH MILL SPECIAL AREA
(D)	TRUNCATED DOMES	—	R / W
(1)	4" CONCRETE WALK (REMOVE AND REPLACE)		
(2)	6" CONCRETE WALK (REMOVE AND REPLACE)		



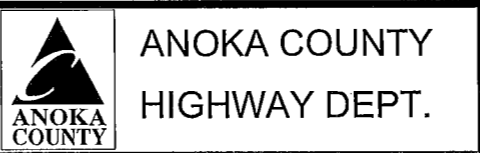
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DRAWN BY: SRK DATE: 04/05/2019
 DESIGN BY: SRK DATE: 04/05/2019
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STATE AID PROJECT 002-702-001

CONSTRUCTION PLAN
 STA 10+97 TO 38+00
 Sheet 10 of 34 Sheets

MATCH LINE 38+00

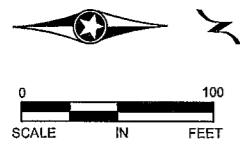
MATCH LINE 52+00

☐ CSAH 102

NOTE: PROTECT GAS VALVES WHEN MILLING

49TH AVE

PILOT AVE



LEGEND

—	REMOVE CURB & GUTTER	⊗	ADJUST GATE VALVE
- - -	SAWCUT	[Hatched Box]	REMOVE STAMPED CONCRETE (BRICK PAVERS)
☐	CATCH BASIN	[Stippled Box]	MAINLINE MILL AREA
(N)	CONCRETE APPROACH NOSE (STD PLATE 7113)	[Cross-hatched Box]	STREET APPROACH MILL SPECIAL AREA
(D)	TRUNCATED DOMES	—	R / W
(1)	4" CONCRETE WALK (REMOVE AND REPLACE)		
(2)	6" CONCRETE WALK (REMOVE AND REPLACE)		

MATCH LINE 52+00

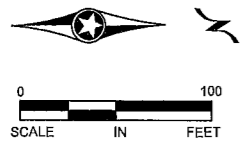
MATCH LINE 66+00

☐ CSAH 102

NOTE: PROTECT GAS VALVES WHEN MILLING

PANORAMA AVE

CAPITOL ST



NO	DATE	BY	CKD	APPR	REVISION	04/05/2019	12:04:57 PM
NAME: P:\19-01-00\CSAH_102_(CSAH02-TH65)\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.
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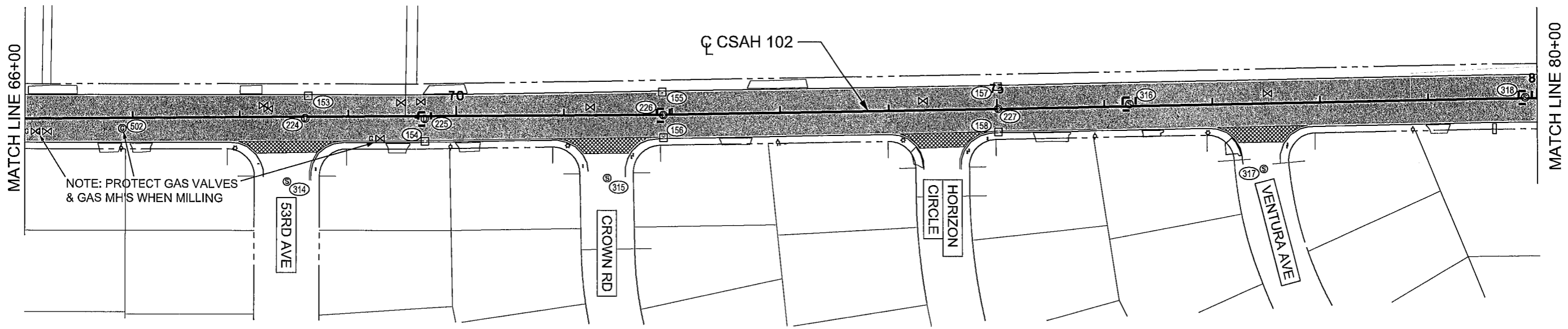
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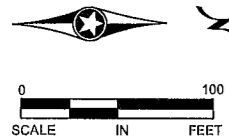
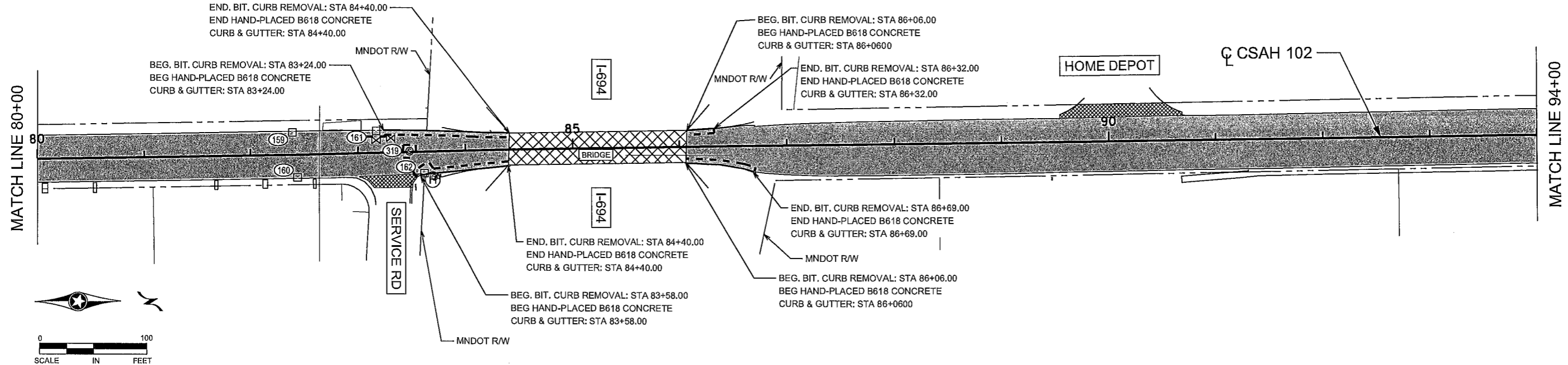
**ANOKA COUNTY
HIGHWAY DEPT.**

STATE AID PROJECT 002-702-001

CONSTRUCTION PLAN
 STA 38+00 TO 66+00
 Sheet 11 of 34 Sheets



LEGEND	
—	REMOVE CURB & GUTTER
- - -	SAWCUT
□	CATCH BASIN
⊙	CONCRETE APPROACH NOSE (STD PLATE 7113)
⊙	TRUNCATED DOMES
①	4" CONCRETE WALK (REMOVE AND REPLACE)
②	6" CONCRETE WALK (REMOVE AND REPLACE)
⊗	ADJUST GATE VALVE
▨	REMOVE STAMPED CONCRETE (BRICK PAVERS)
▩	MAINLINE MILL AREA
▧	STREET APPROACH MILL SPECIAL AREA
— R/W —	R / W



NO	DATE	BY	CKD	APPR	REVISION	04/17/2019	10:39:14 AM
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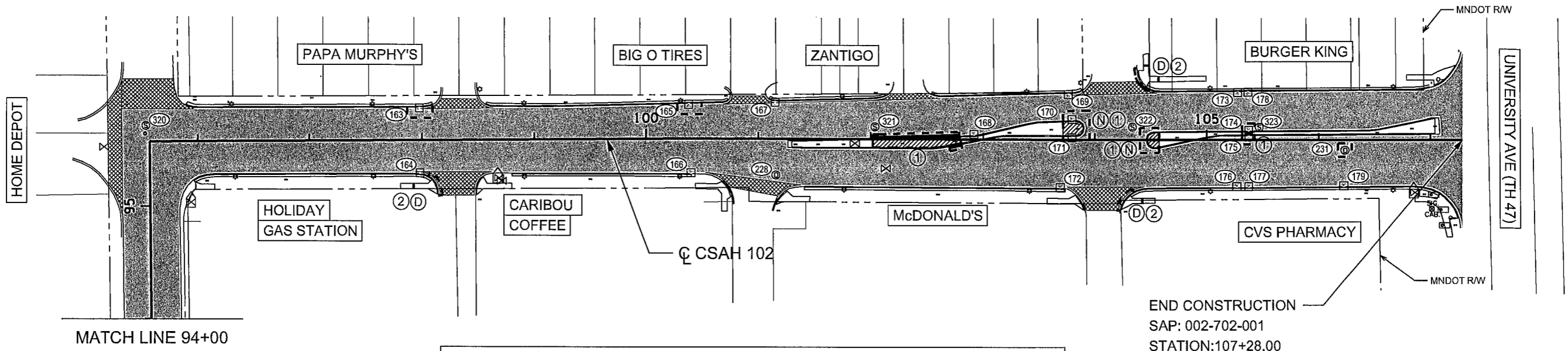


**ANOKA COUNTY
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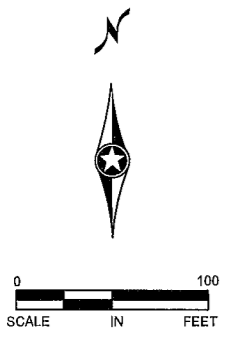
STATE AID PROJECT 002-702-001

CONSTRUCTION PLAN
 STA 66+00 TO 94+00
 Sheet 12 of 34 Sheets

AP Anders



END CONSTRUCTION
 SAP: 002-702-001
 STATION: 107+28.00



LEGEND	
—	REMOVE CURB & GUTTER
---	SAWCUT
□	CATCH BASIN
(N)	CONCRETE APPROACH NOSE (STD PLATE 7113)
(D)	TRUNCATED DOMES
(1)	4" CONCRETE WALK (REMOVE AND REPLACE)
(2)	6" CONCRETE WALK (REMOVE AND REPLACE)
⊠	ADJUST GATE VALVE
[Hatched Box]	REMOVE STAMPED CONCRETE (BRICK PAVERS)
[Stippled Box]	MAINLINE MILL AREA
[Cross-hatched Box]	STREET APPROACH MILL SPECIAL AREA
---	R/W

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

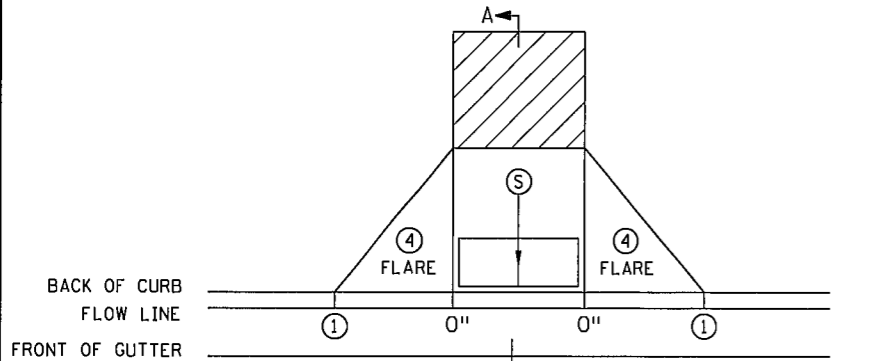
STATE AID PROJECT 002-702-001

CONSTRUCTION PLAN
 STA 94+00 TO 107+28
 Sheet 13 of 34 Sheets

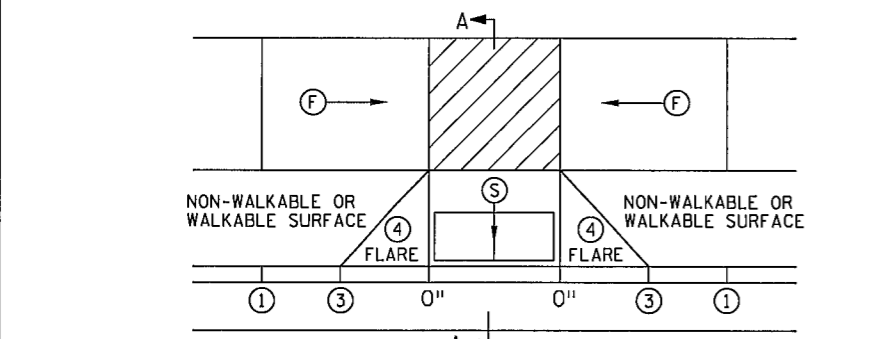
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04/05/2019

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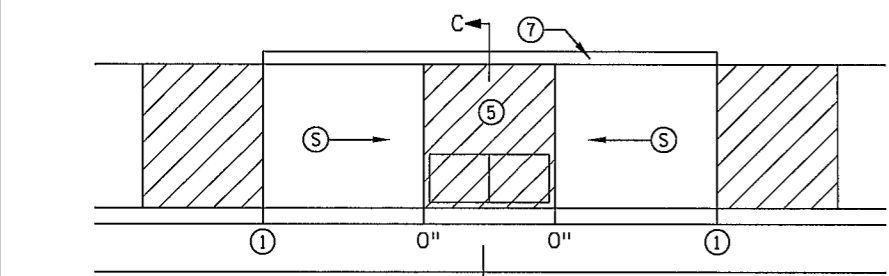
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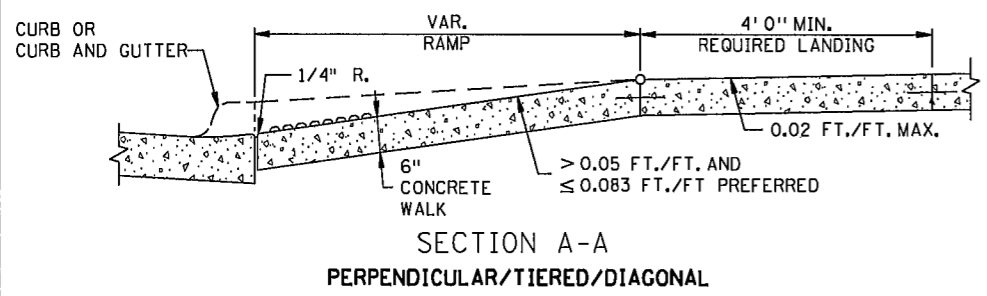
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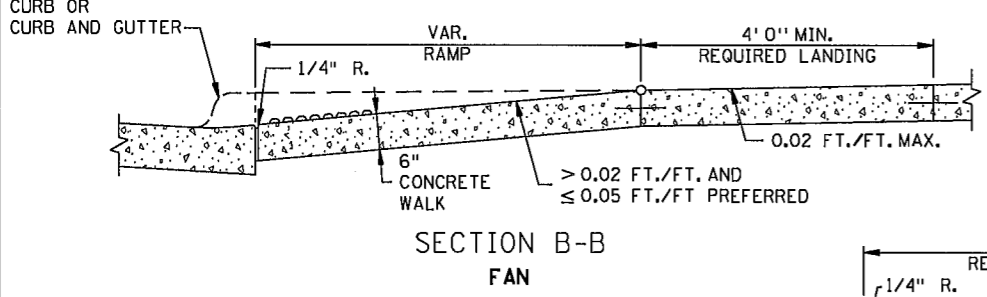
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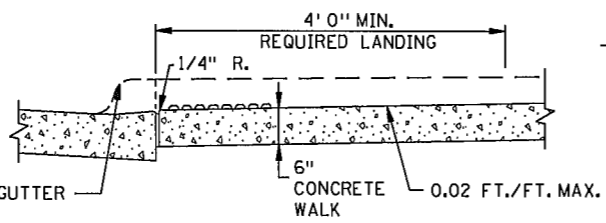
PARALLEL



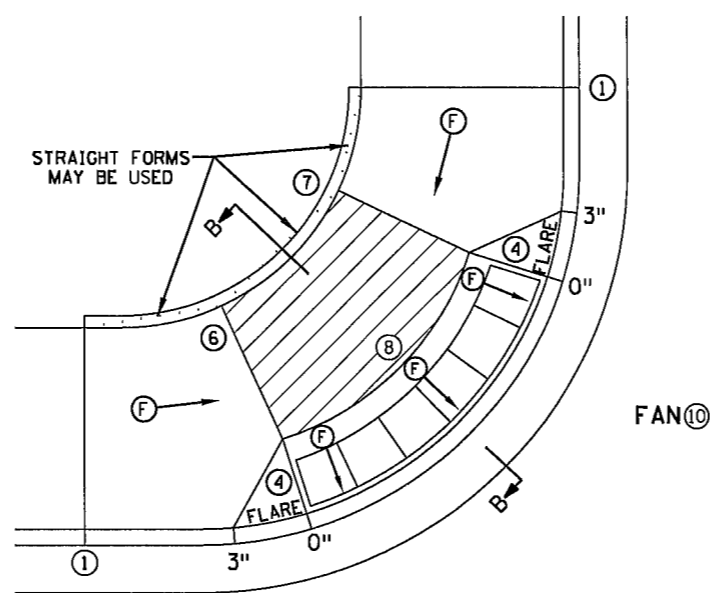
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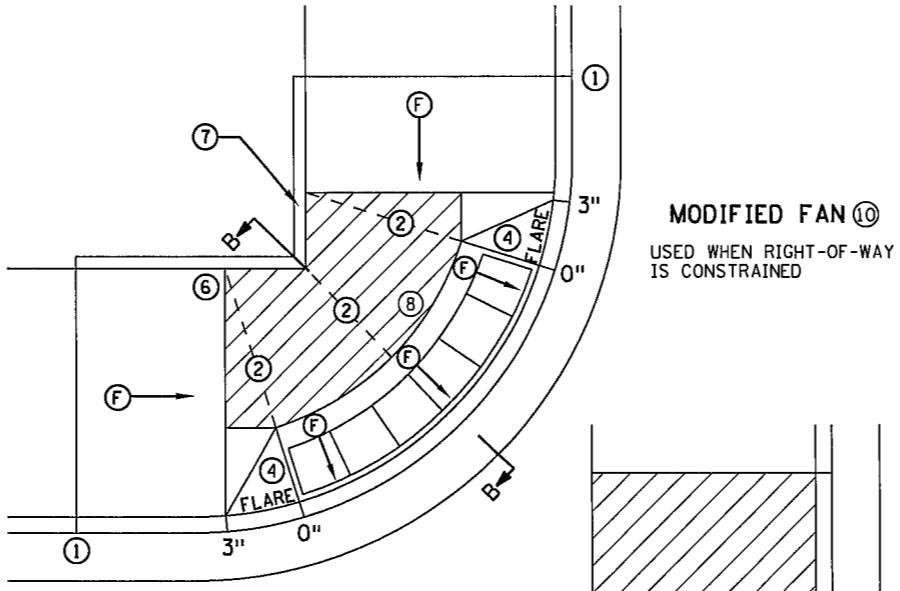
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FAN



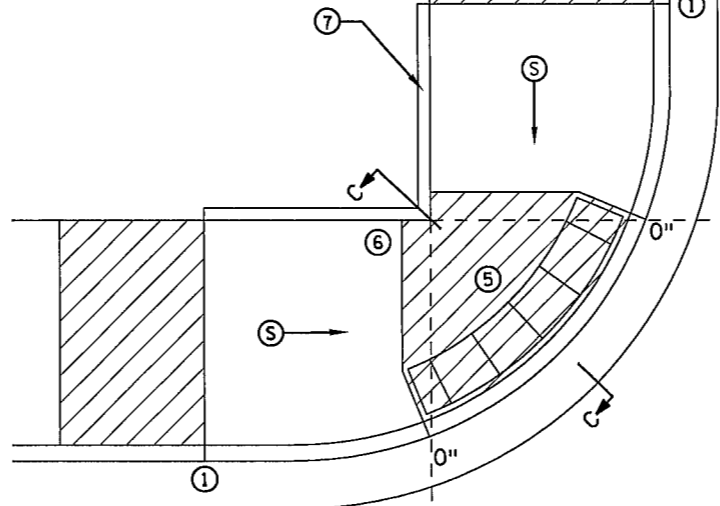
SECTION C-C
PARALLEL/DEPRESSED CORNER



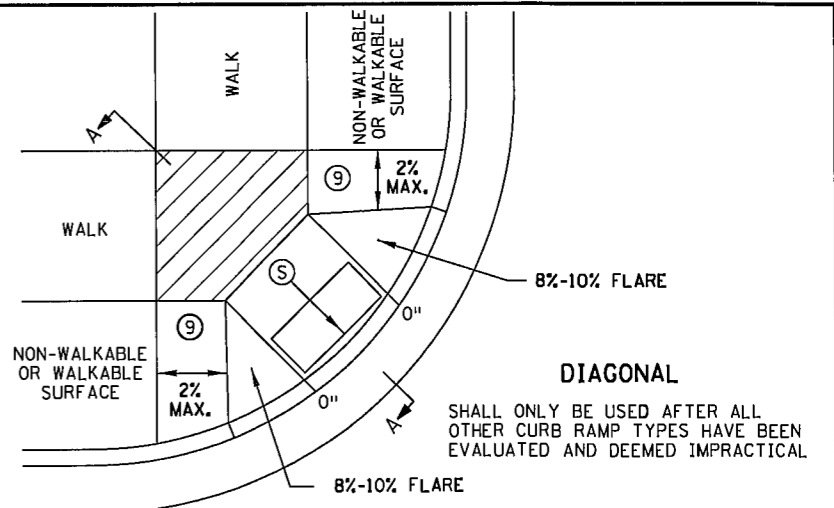
FAN ⑩



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



DEPRESSED CORNER



DIAGONAL

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

REVISION:
APPROVED: JANUARY 23, 2017
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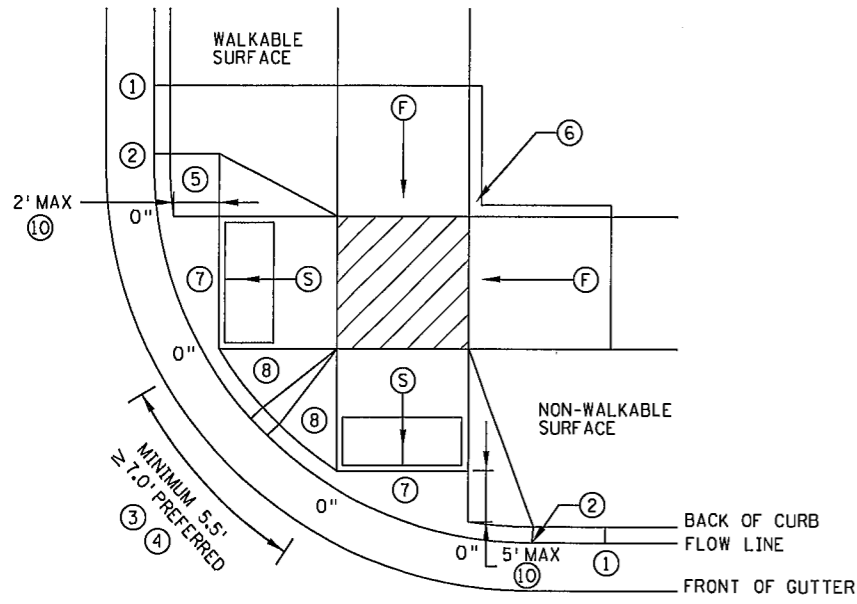
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STATE DESIGN ENGINEER

REVISOR:
APPROVED:
1-23-2017

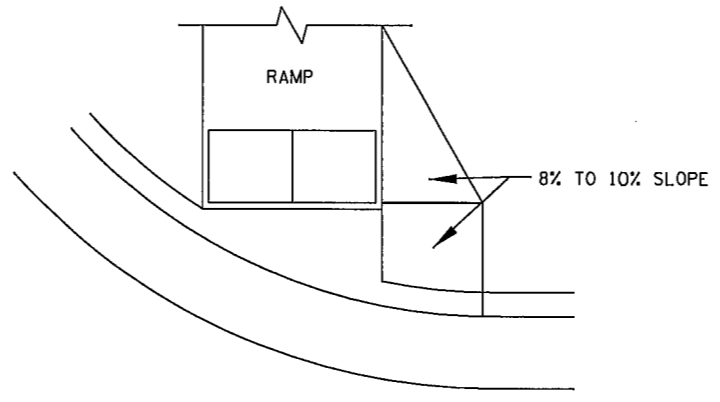
PEDESTRIAN CURB RAMP DETAILS (1 OF 6)
STANDARD PLAN 5-297.250
14 OF 34

PLOTTED/REVISED: 04/05/2019

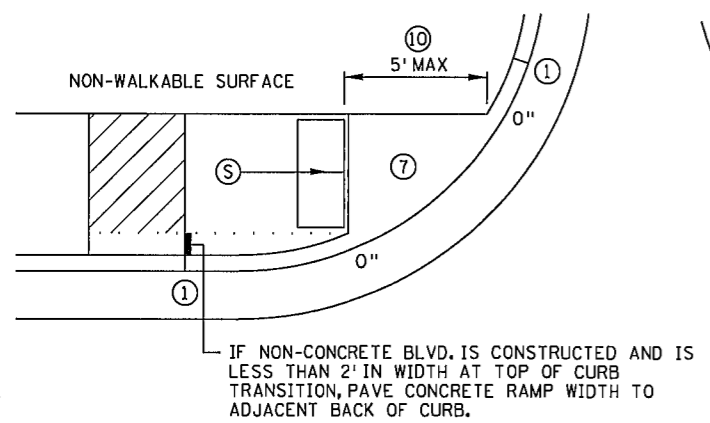
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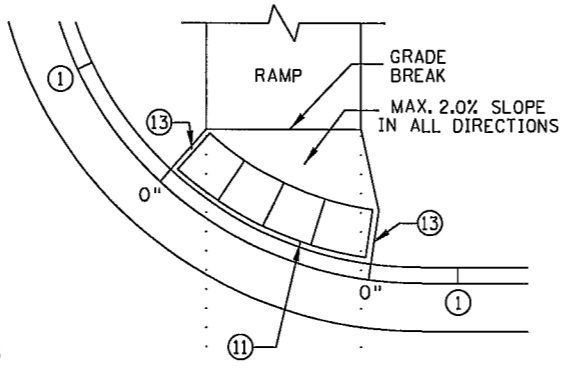
COMBINED DIRECTIONAL ⑨



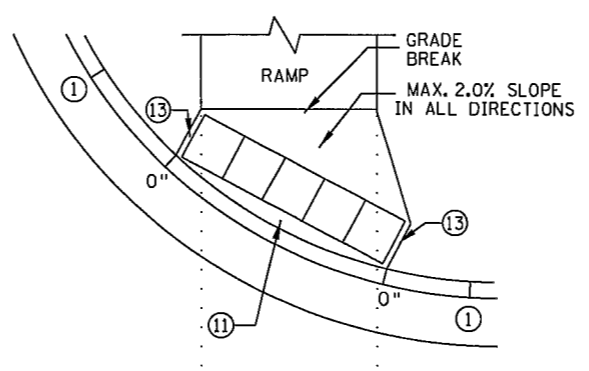
DIRECTIONAL RAMP WALKABLE FLARE



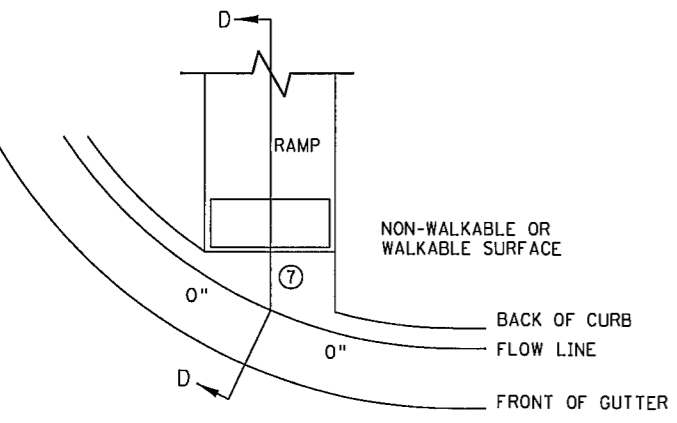
STANDARD ONE-WAY DIRECTIONAL ⑨



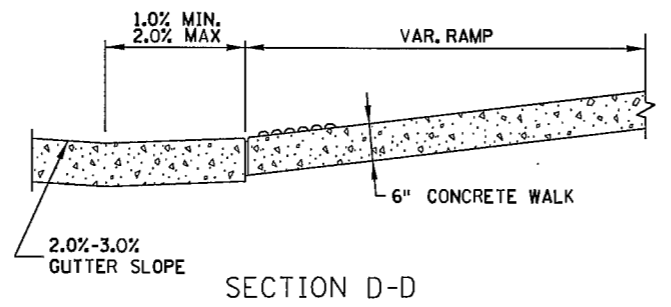
DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫



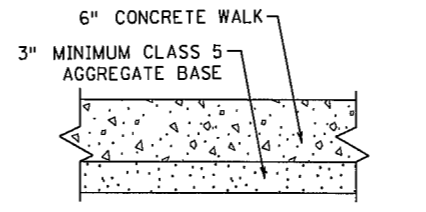
ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB



CURB FOR DIRECTIONAL RAMPS ⑭



SECTION D-D



TYPICAL SIDEWALK SECTION WITHIN INTERSECTION CORNER

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
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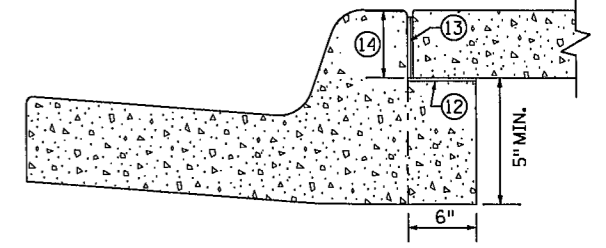
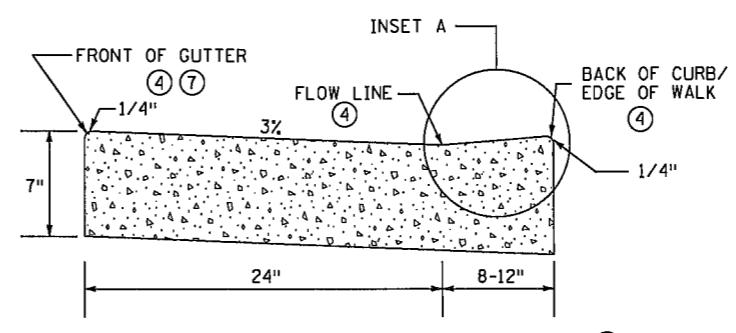
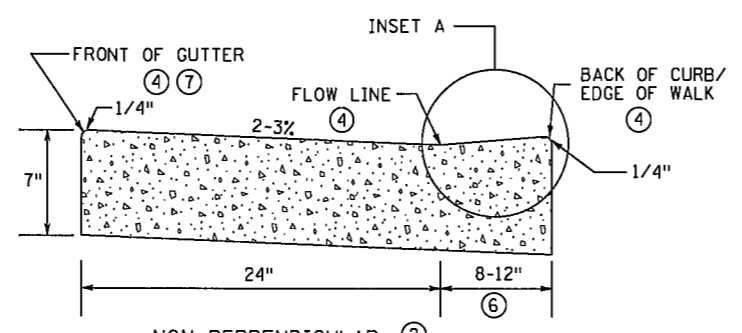
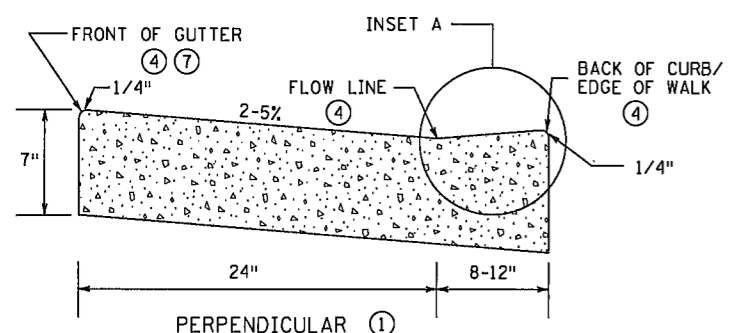
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APPROVED:
1-23-2017

PEDESTRIAN CURB RAMP DETAILS (2 OF 6)	
STANDARD PLAN 5-297.250	15 OF 34

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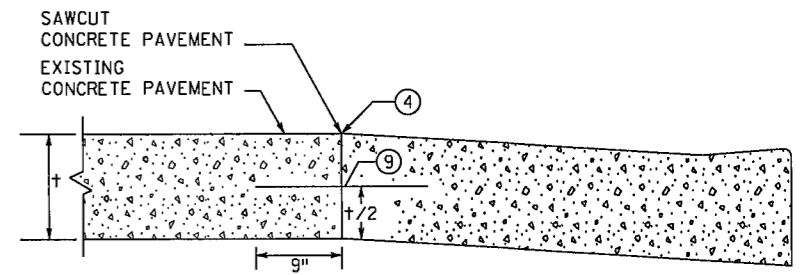
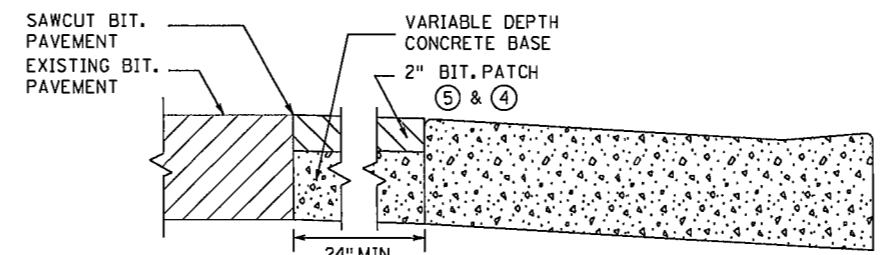
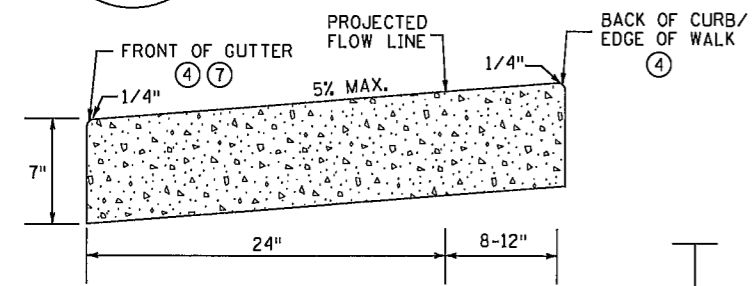
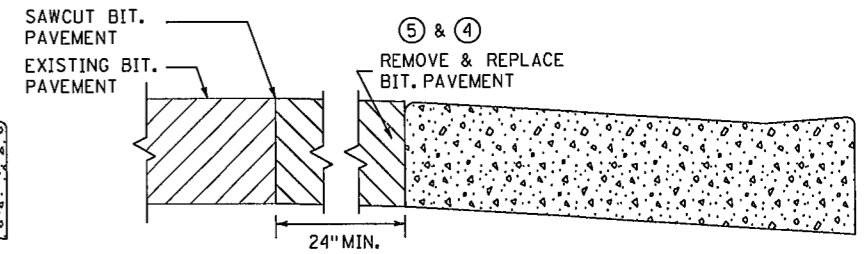
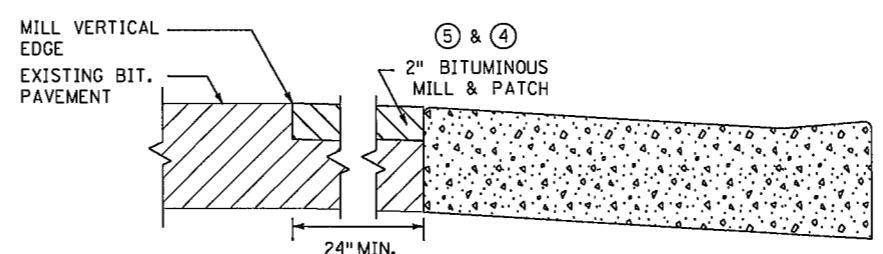
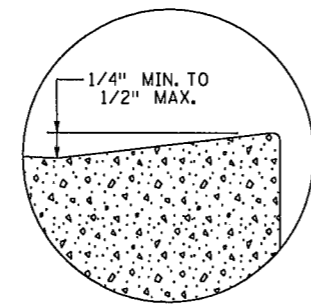
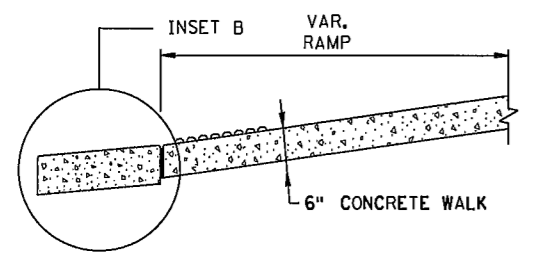
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OPTIONAL SILL CURB WHEN SIDEWALK IS AT BACK OF CURB
CONCRETE SILL TO BE USED ONLY WHEN SPECIFIED IN THE PLAN.

PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL

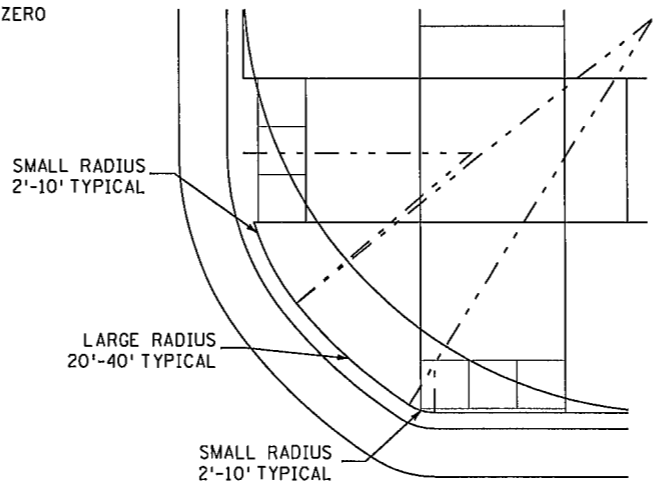
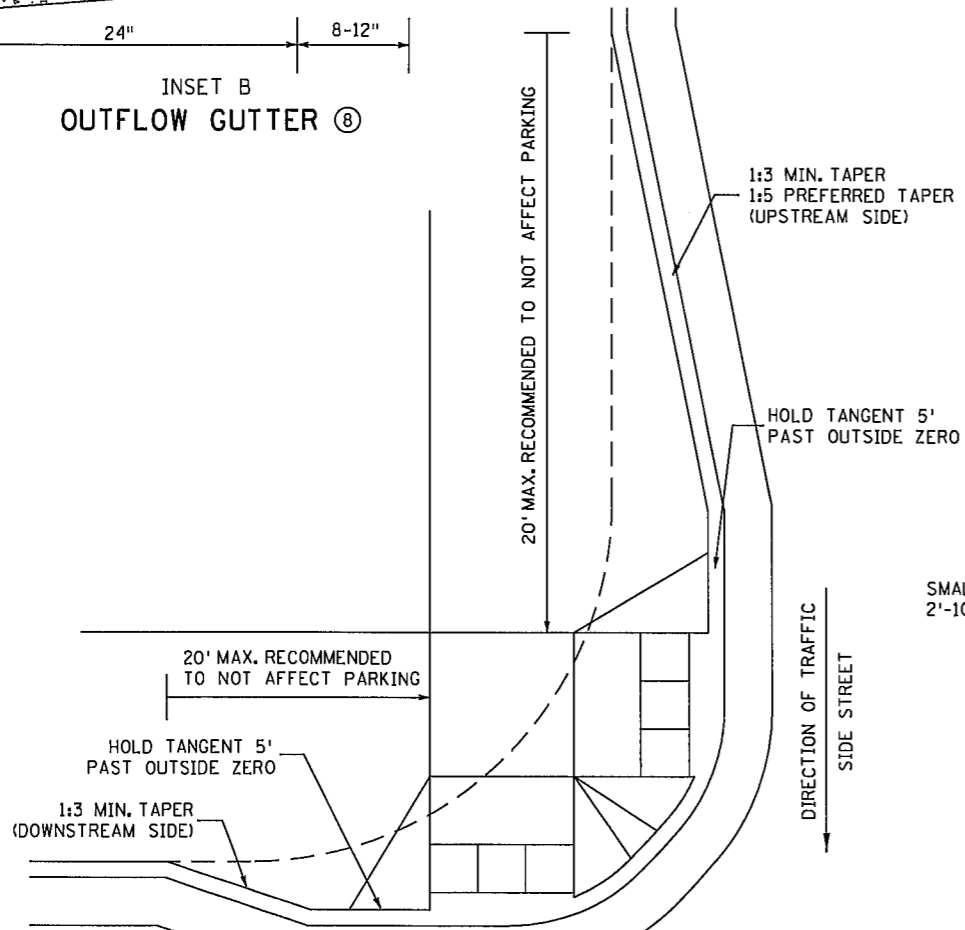


ONLY ALLOWED PER ENGINEER'S APPROVAL

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

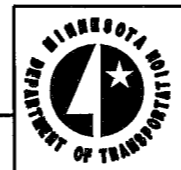


COMBINED DIRECTIONAL (COMPOUND RADIUS)

ADA CURB EXTENSION WITH COMPOUND RADIUS (BUMP OUT)

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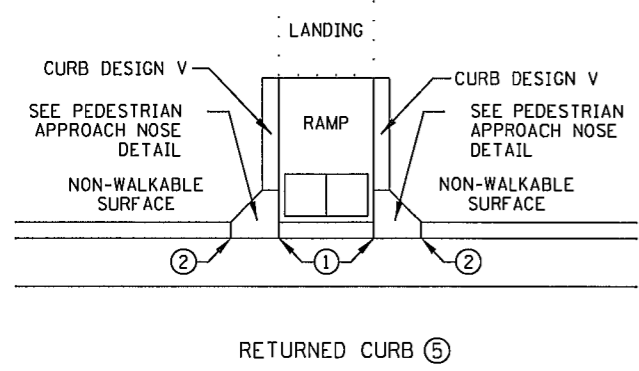
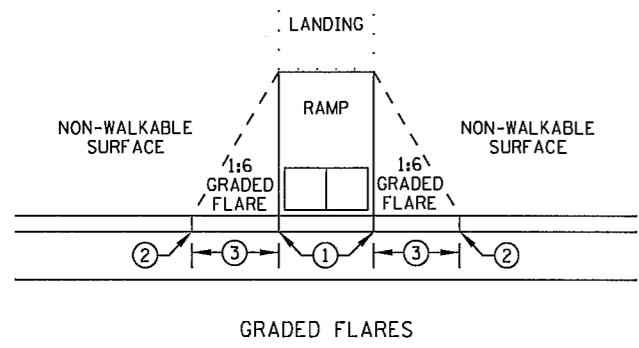
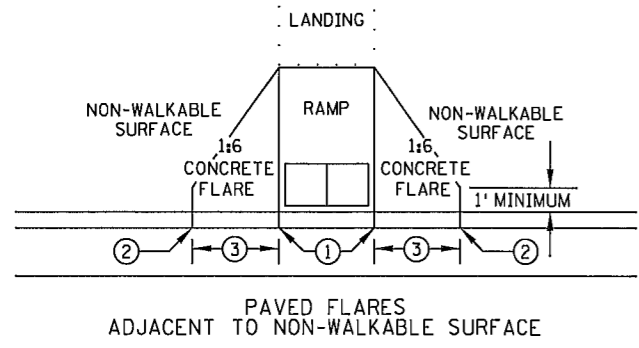
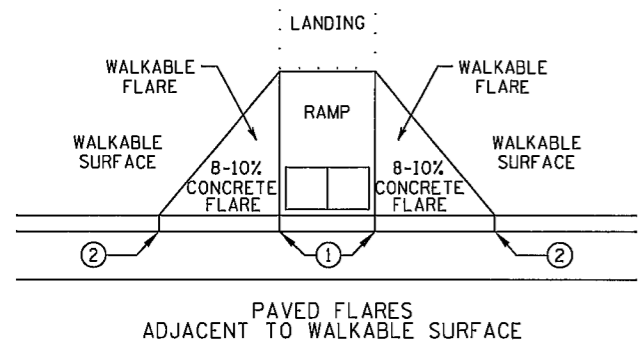
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APPROVED:
1-23-2017

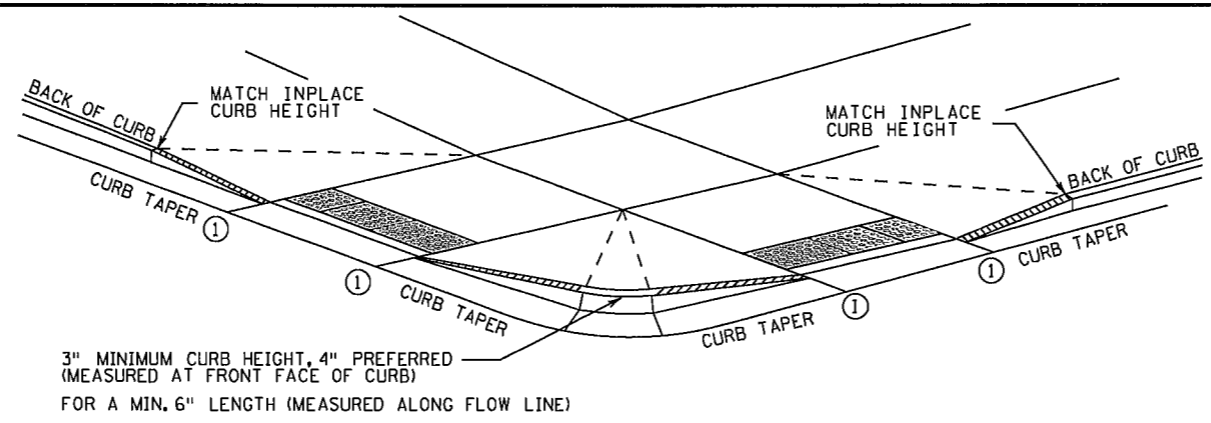
PEDESTRIAN CURB RAMP DETAILS (3 OF 6)	
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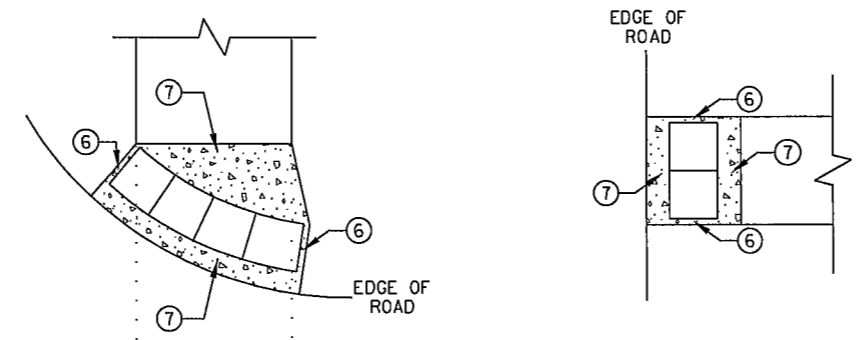
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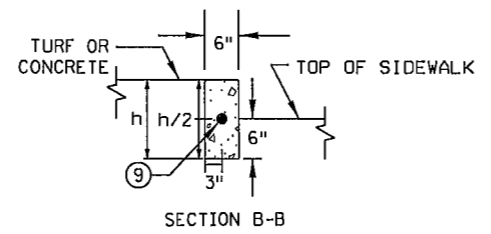
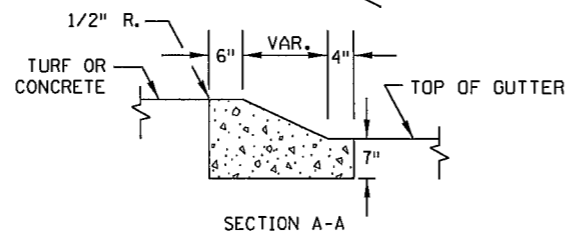
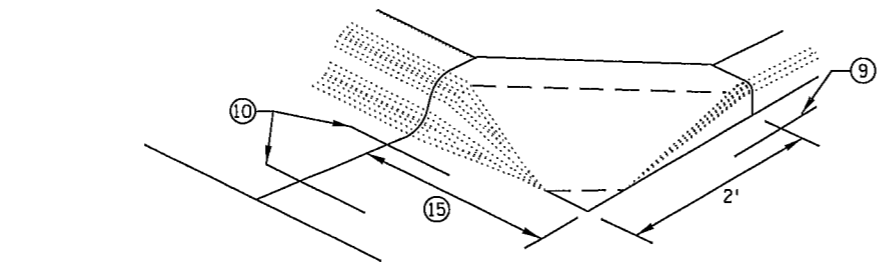
TYPICAL SIDE TREATMENT OPTIONS 4 11



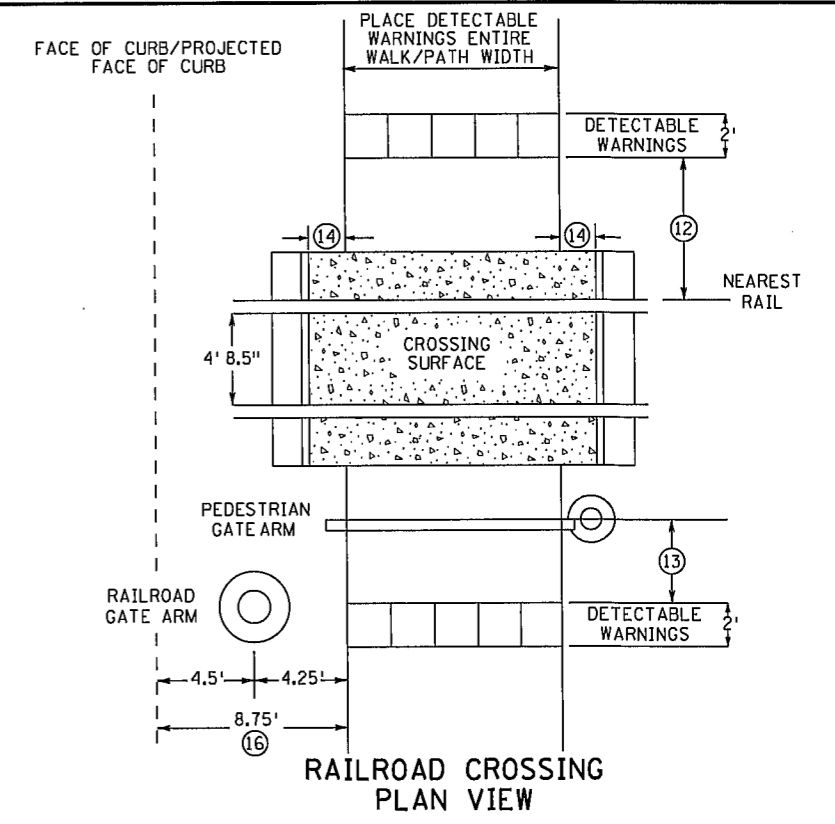
DETECTABLE EDGE WITH 8 CURB AND GUTTER



DETECTABLE EDGE WITHOUT CURB AND GUTTER



PEDESTRIAN APPROACH NOSE DETAIL (FOR RETURNED CURB SIDE TREATMENT)



- 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 RAMP 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 SKEWERED 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.

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<i>[Signature]</i> OPERATIONS ENGINEER

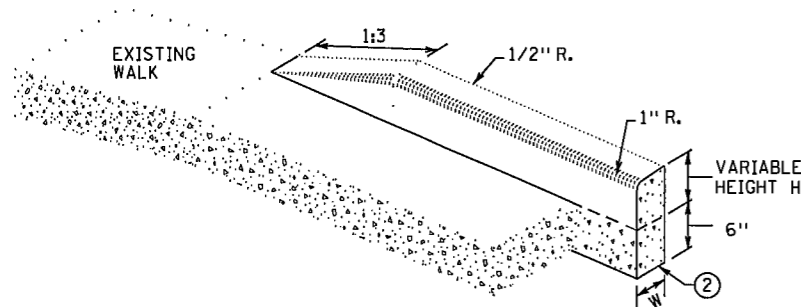
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 APPROVED: 1-23-2017
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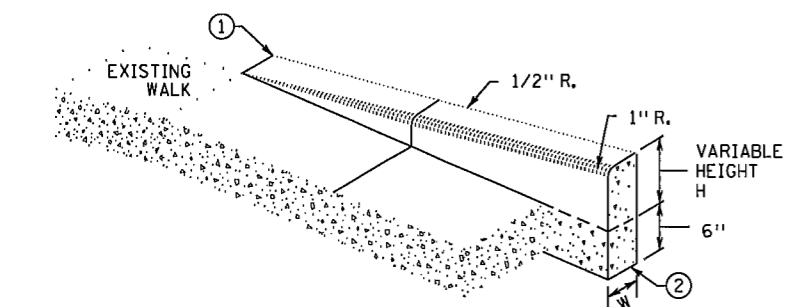
PLOTTED/REVISED:
04/05/2019

DISTRICT #: APAnders
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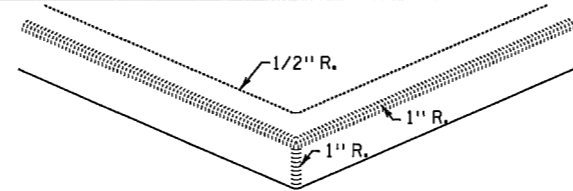
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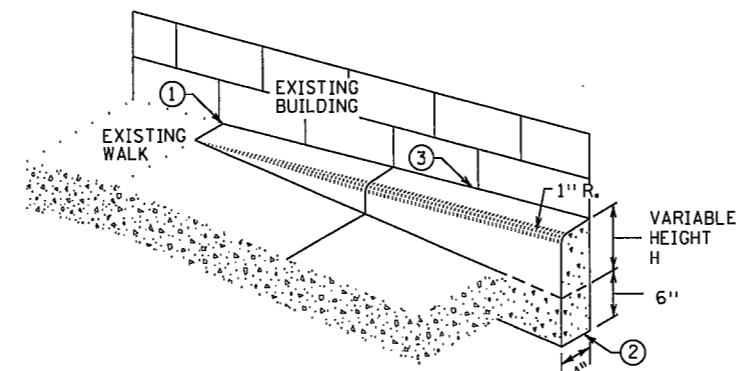
V CURB ADJACENT TO LANDSCAPE
CURB WITHIN SIDEWALK LIMITS



V CURB ADJACENT TO LANDSCAPE
CURB OUTSIDE SIDEWALK LIMITS

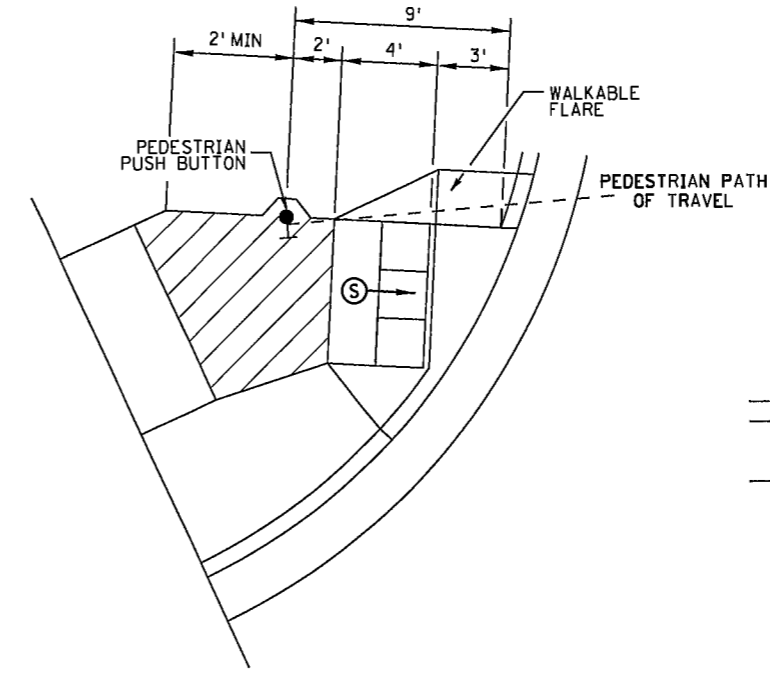


V CURB INTERSECTION



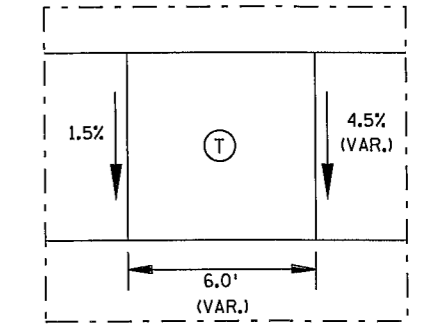
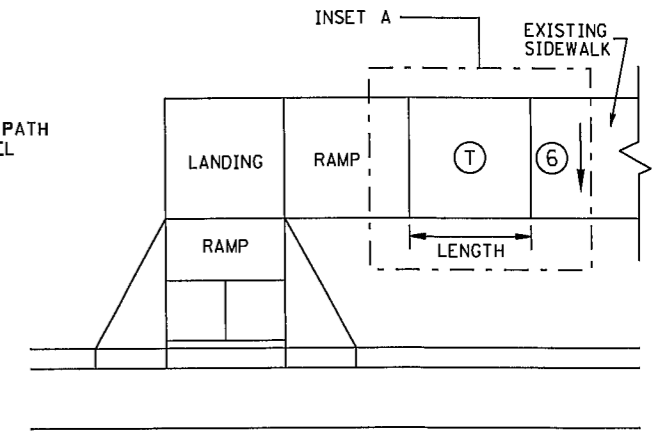
V CURB ADJACENT TO BUILDING OR BARRIER

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

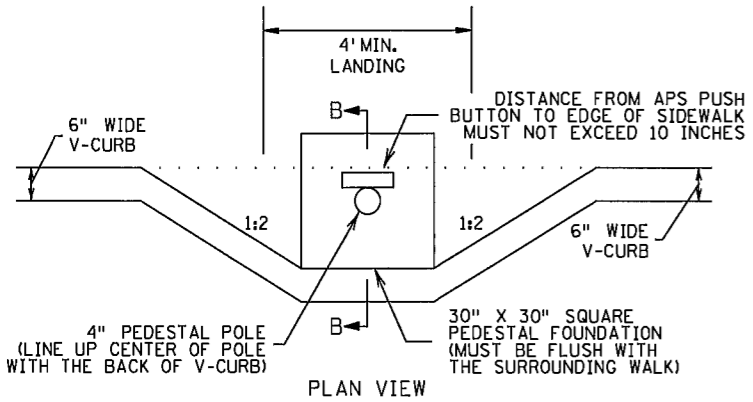


SEMI-DIRECTIONAL RAMP (3,4,9)

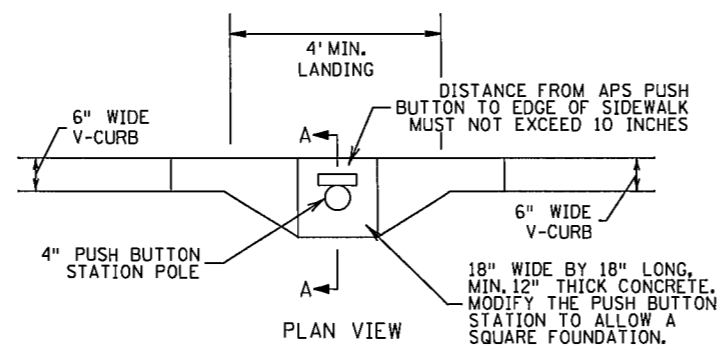
3' DOME SETBACK, 4' LONG RAMP AND PUSH BUTTON 9' FROM THE BACK OF CURB
PRIMARILY USED FOR APS APPLICATIONS WHERE THE PAR DOES NOT CONTINUE PAST THE PUSH BUTTON (DEAD-END SIDEWALK)



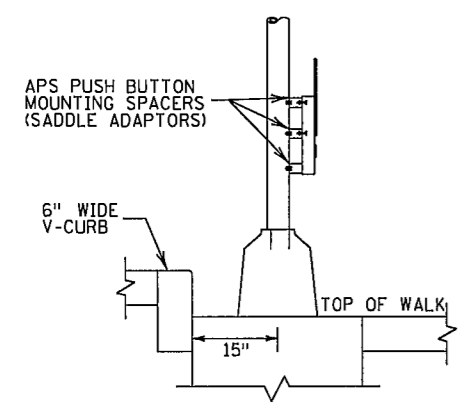
TRANSITION PANEL (4,5)



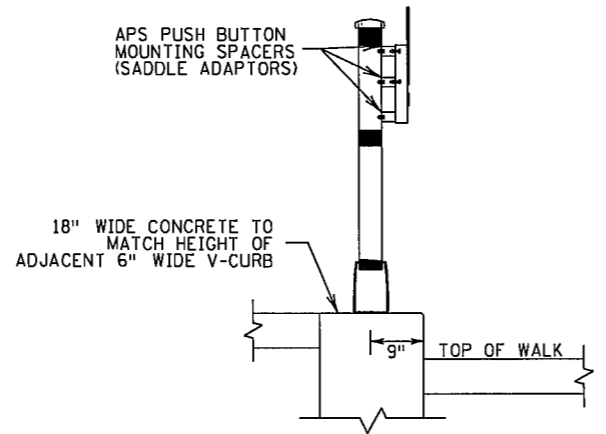
PLAN VIEW



PLAN VIEW



SECTION B-B



SECTION A-A

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)

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%.

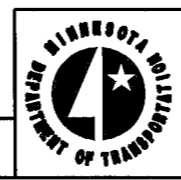
LEGEND

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

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

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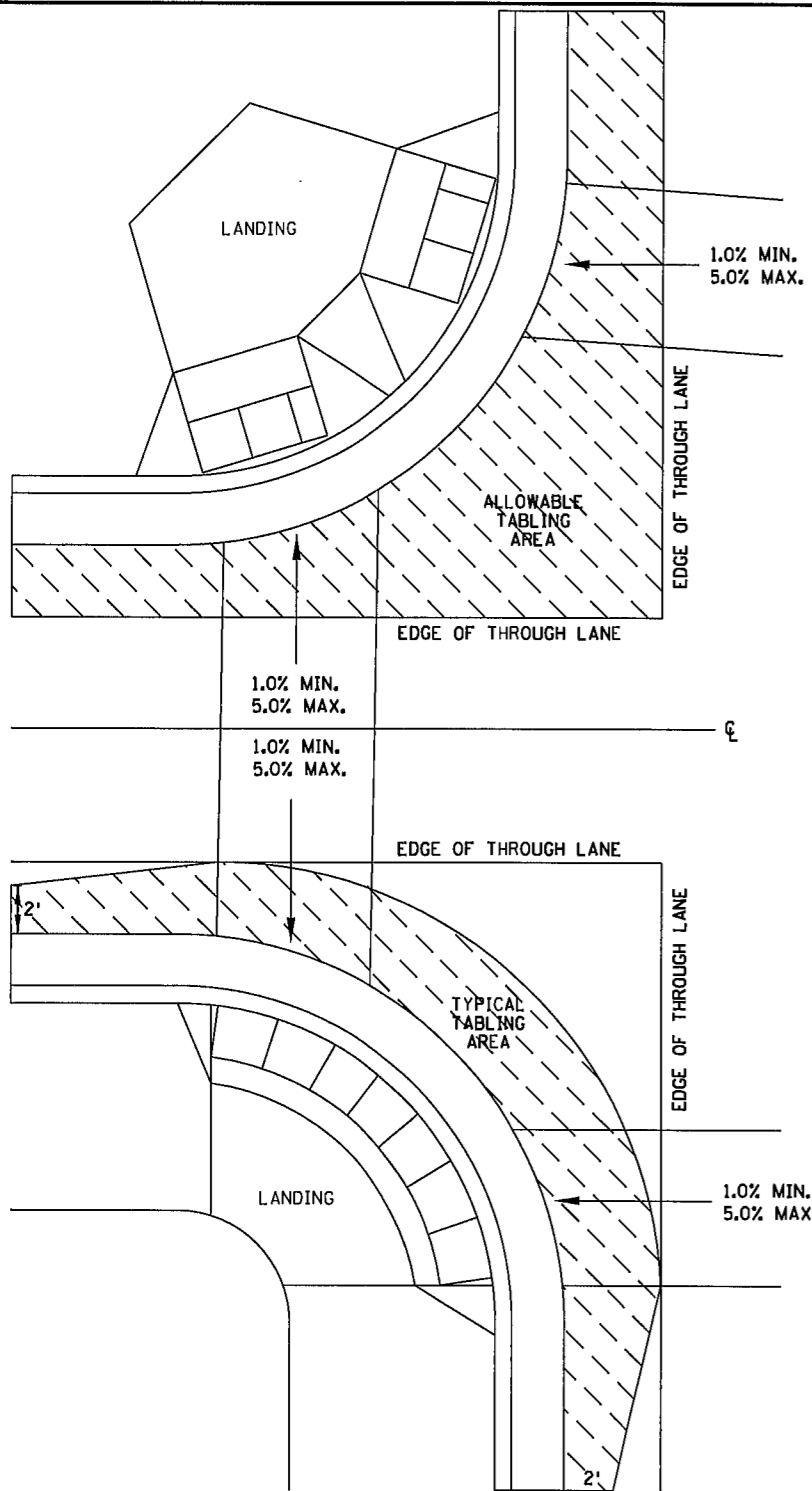
Tom S...
STATE DESIGN ENGINEER

REVISED:
APPROVED:
1-23-2017

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

PLOTTED/REVISED:
04/05/2019

DISTRICT #: USER NAME: APAnders FILE NAME: PED RAMP.dgn
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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.

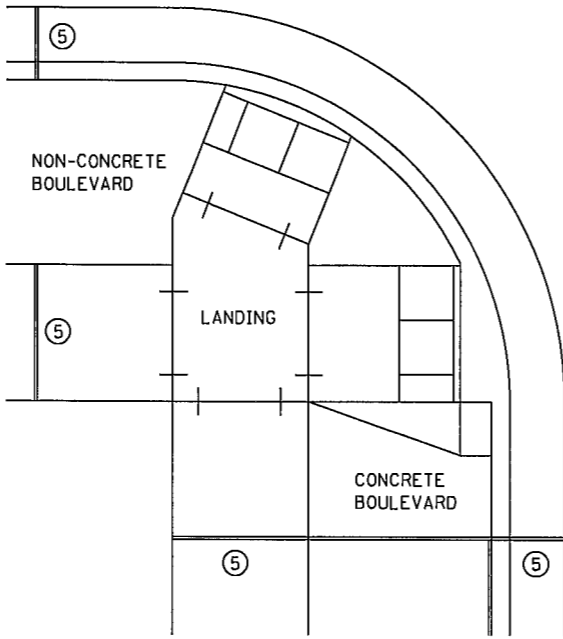
MILL & OVERLAY PROJECTS: "TABLING" OF FLOW LINES, IN FRONT OF THE PEDESTRIAN RAMP, IS REQUIRED WHEN THE EXISTING FLOW LINE IS GREATER THAN 2%. WARPING OF THE BITUMINOUS PAVEMENT CAN NOT EXTEND INTO THE THROUGH LANE. TABLE THE FLOW LINE TO 2% OR AS MUCH AS POSSIBLE WHILE ADHERING TO THE FOLLOWING CRITERIA:

- 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

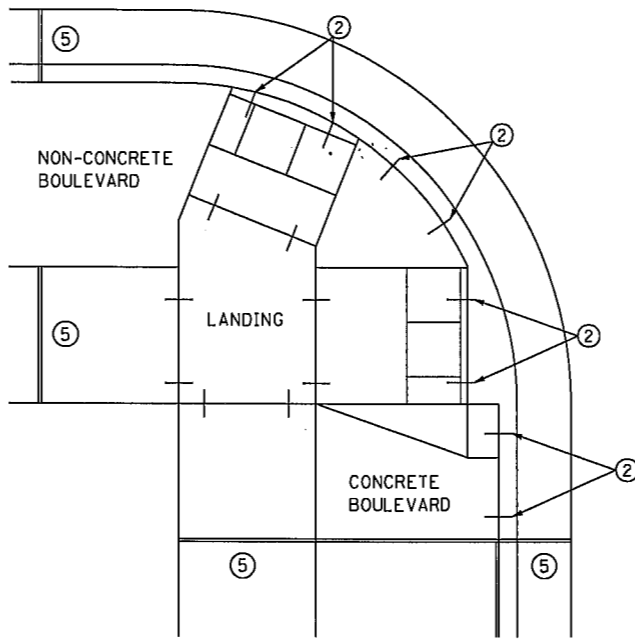
STAND-ALONE ADA RETROFITS: FOLLOW MILL & OVERLAY CRITERIA ABOVE HOWEVER ALL PAVEMENT WARPING IS DONE WITH BITUMINOUS PATCHING ON BITUMINOUS ROADWAYS AND FULL-DEPTH APRON REPLACEMENT ON CONCRETE ROADWAYS.

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:

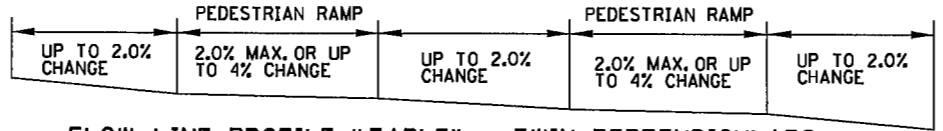
- 1) 1.0% MIN. AND 5.0% MAXIMUM CROSS-SLOPE OF THE ROAD
- 2) 1.0% MIN. FLOW LINE (ON EITHER SIDE OF PEDESTRIAN RAMP) TO MAINTAIN POSITIVE DRAINAGE
- 3) 5.0% RECOMMENDED MAX. FLOW LINE
- 4) LONGITUDINAL THROUGH LANE ROADWAY TAPERS SHOULD BE 1" VERTICAL PER 15' HORIZONTAL



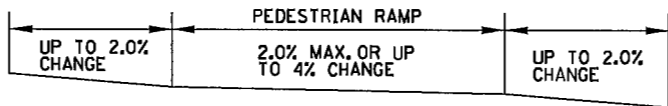
EXPANSION MATERIAL PLACEMENT FOR CONCRETE AND BITUMINOUS ROADWAYS



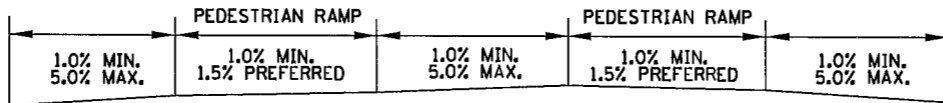
OPTIONAL CURB LINE REINFORCEMENT PLACEMENT ON BITUMINOUS ROADWAYS



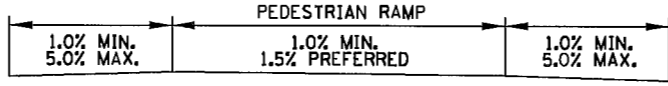
FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS



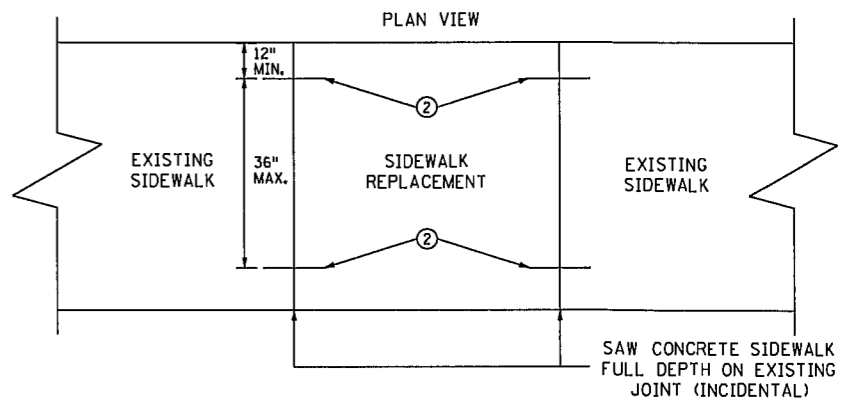
FLOW LINE PROFILE "TABLE" - FAN



FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS

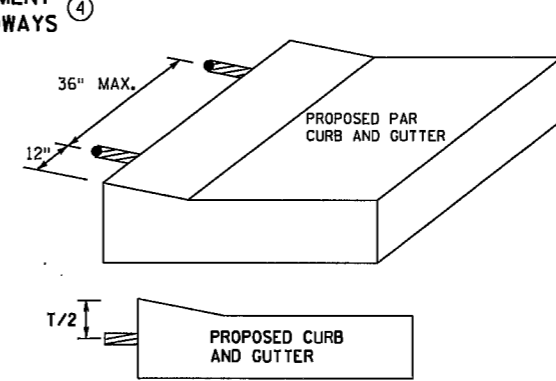


FLOW LINE PROFILE RAISE - FAN

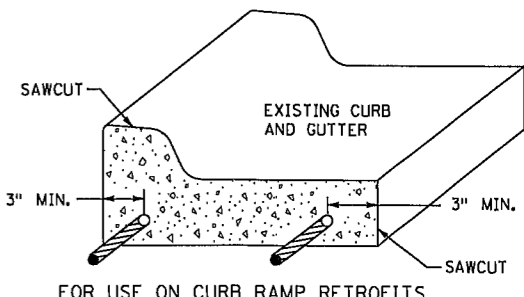


OPTIONAL SIDEWALK REINFORCEMENT

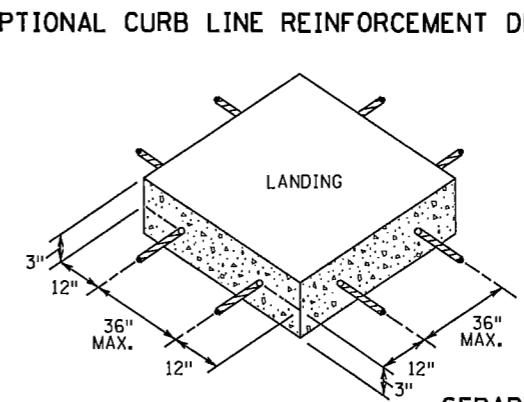
SIDEWALK REINFORCEMENT TO BE USED ONLY WHEN SPECIFIED IN THE PLAN.



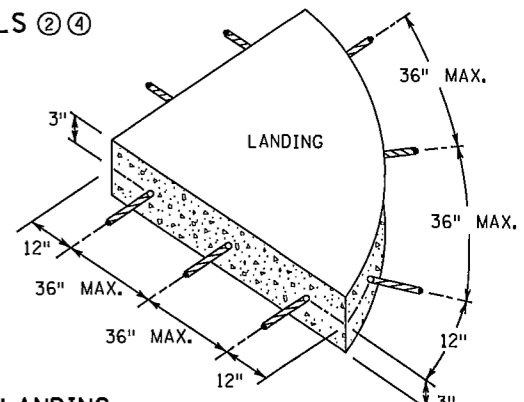
OPTIONAL CURB LINE REINFORCEMENT DETAILS



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.

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REVISION: APPROVED: **Tom Sh...** STATE DESIGN ENGINEER 1-23-2017

PEDESTRIAN CURB RAMP DETAILS (6 OF 6)
STANDARD PLAN 5-297.250 19 OF 34

PERMANENT PAVEMENT MARKING PLAN
NOTES AND GUIDELINES

GENERAL INFORMATION:

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

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

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

MULTI COMPONENT (MULTI COMP):

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

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

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

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

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

PREFORMED THERMOPLASTIC:

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

PAINT:

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

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

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

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

PAVEMENT MARKING TABULATION		
ITEM	UNIT	TOTAL QUANTITY
REMOVALS - 24" SOLID WHITE	LIN FT	39
REMOVALS - 3'x6' ZEBRA CROSSWALK	SQ FT	198
4" SOLID LINE WHITE - MULTI COMP	LIN FT	20290
2 8" DOTTED LINE WHITE - MULTI COMP	LIN FT	36
1 4" BROKEN LINE YELLOW - MULTI COMP	LIN FT	1340
4" SOLID LINE YELLOW - MULTI COMP	LIN FT	3200
4" SOLID DOUBLE LINE YELLOW - MULTI COMP	LIN FT	2260
3'X6' ZEBRA CROSSWALK - PREFORMED THERMOPLASTIC	SQ FT	648
PAVEMENT MESSAGE (LEFT ARROW) - PREFORMED THERMOPLASTIC	SQ FT	62

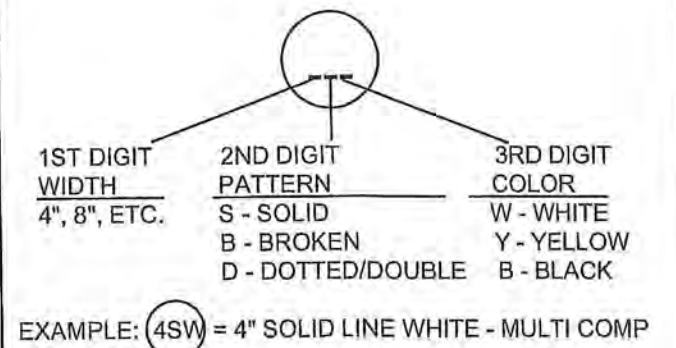
- 1 10' STRIPE, 40' GAP
- 2 3' STRIPE, 12' GAP
- * PAVEMENT MARKING SPECIAL

SYMBOLS & MATERIALS LEGEND

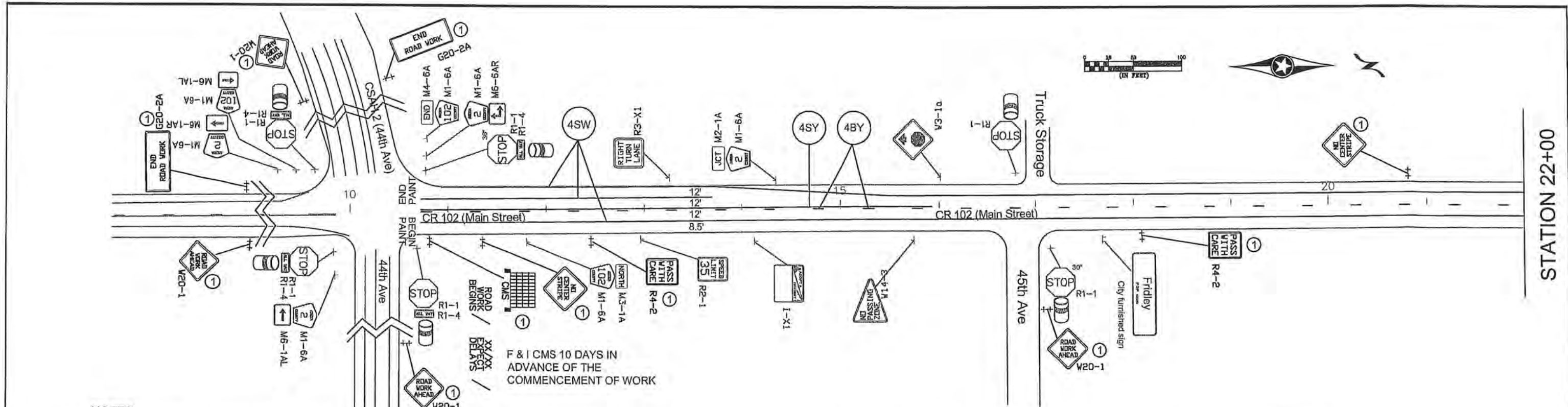
- CROSSWALK BLOCK WHITE-POLY PREFORM
- ↩ PAVEMENT MESSAGE (LEFT ARROW) POLY PREFORM

STRIPING KEY

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



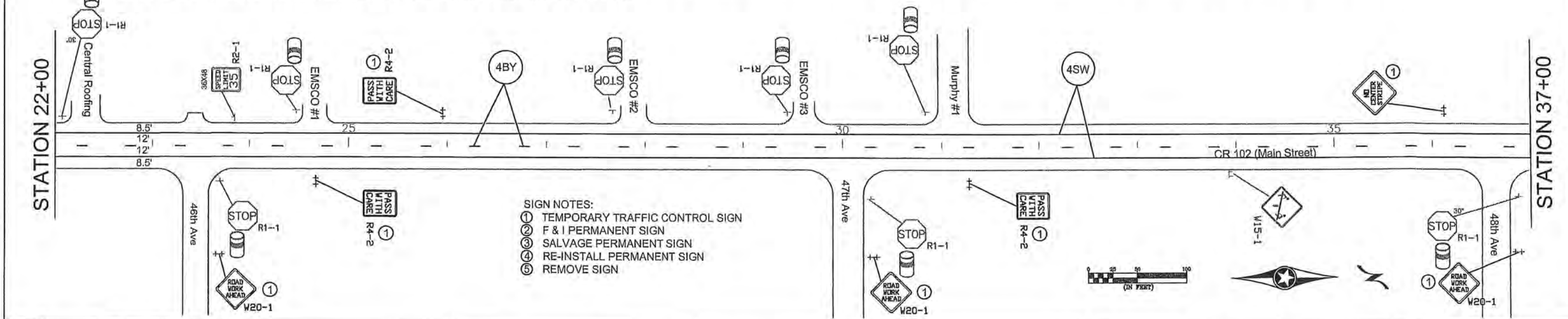
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: DOUGLAS W. FISCHER, P.E. SIGNATURE: <i>[Signature]</i> DATE: 4/25/19 REG. NO. 20235					DRAWN BY: TMV DATE: 02/28/19 DESIGN BY: DATE: CHECKED BY: DATE:		ANOKA COUNTY HIGHWAY DEPT.		STATE PROJECT NO. _____ STATE AID PROJECT NO. 002-702-001 CITY PROJECT NO. _____ COUNTY PROJECT NO. _____		PERMANENT MARKING TABULATION Sheet 20 of 34 Sheets	
NO	DATE	BY	CHKD	APPR	REVISION							
NAME: P:\19-01-00\CR 102 (TH47-TH65)\Base\Traffic\Perm pvmt mrlg guide notes_guidelines.dwg												



F & I CMS 10 DAYS IN ADVANCE OF THE COMMENCEMENT OF WORK

NOTES:

- 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. ALL 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.



- SIGN NOTES:
- ① TEMPORARY TRAFFIC CONTROL SIGN
 - ② F & I PERMANENT SIGN
 - ③ SALVAGE PERMANENT SIGN
 - ④ RE-INSTALL PERMANENT SIGN
 - ⑤ REMOVE SIGN

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\19-01-00\CR 102 (TH47-TH65)\Base\Traffic\Signing & Striping.dwg

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

PRINT NAME: DOUGLAS W. FISCHER

SIGNATURE: *[Signature]*

DATE: 02/26/19 LICENSE NO. 20235

DRAWN BY: TMV DATE: 02/26/19

DESIGN BY: _____ DATE: _____

CHECKED BY: _____ DATE: _____

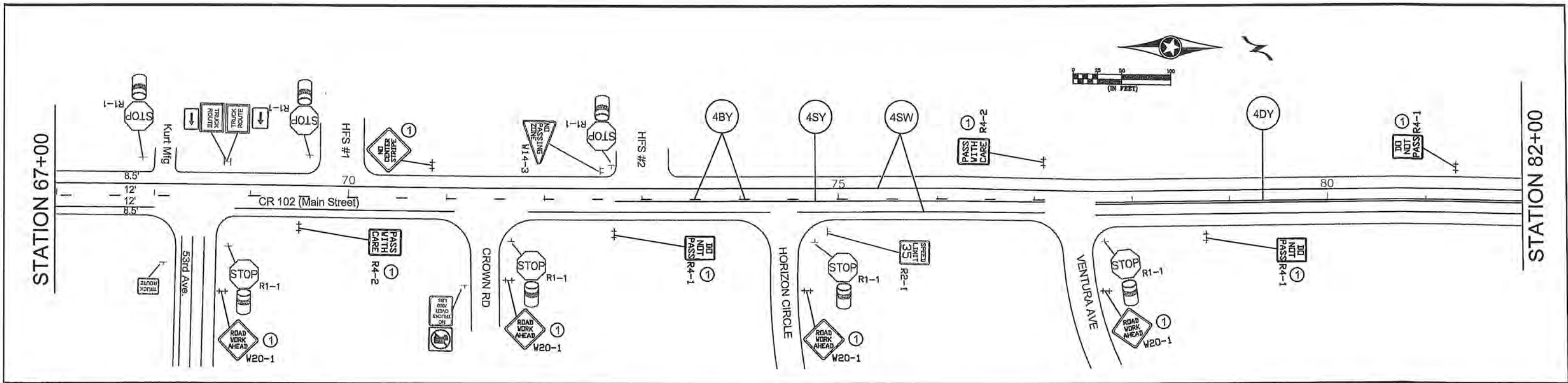
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

STATE AID PROJECT NO. 002-702-001

CITY PROJECT NO. _____

COUNTY PROJECT NO. _____

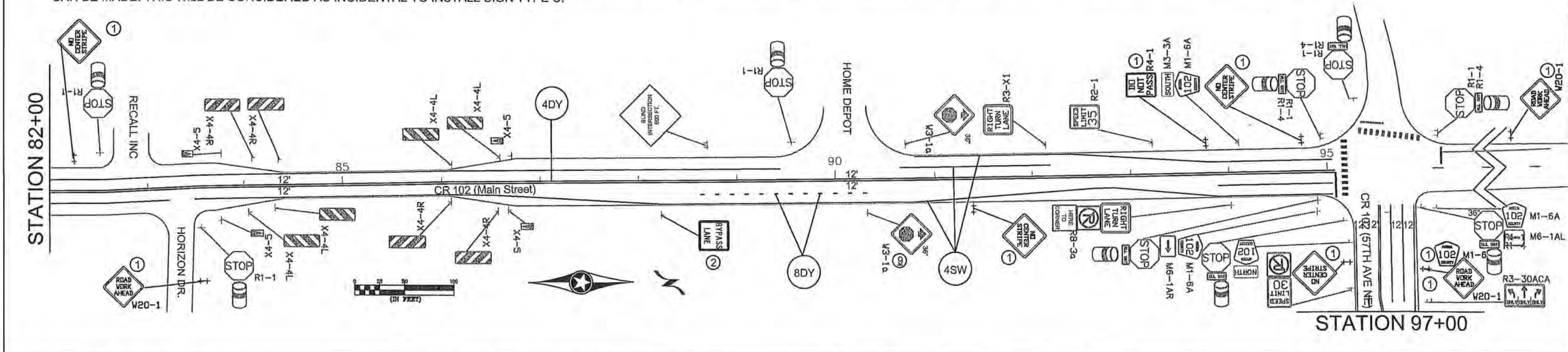


NOTES:

- 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. ALL 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.

SIGN NOTES:

- ① TEMPORARY TRAFFIC CONTROL SIGN
- ② F & I PERMANENT SIGN
- ③ SALVAGE PERMANENT SIGN
- ④ RE-INSTALL PERMANENT SIGN
- ⑤ REMOVE SIGN

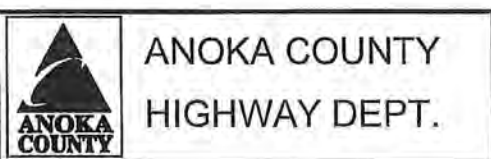


NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\19-01-00\CR 102 (TH47-TH69)\Base\Traffic\Signing & Striping.dwg

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: DOUGLAS W. FISCHER
 SIGNATURE: *[Signature]*
 DATE: 4/25/19 LICENSE NO. 20235

DRAWN BY: XXX DATE: 7/11/08
 DESIGN BY: DATE: _____
 CHECKED BY: DATE: _____



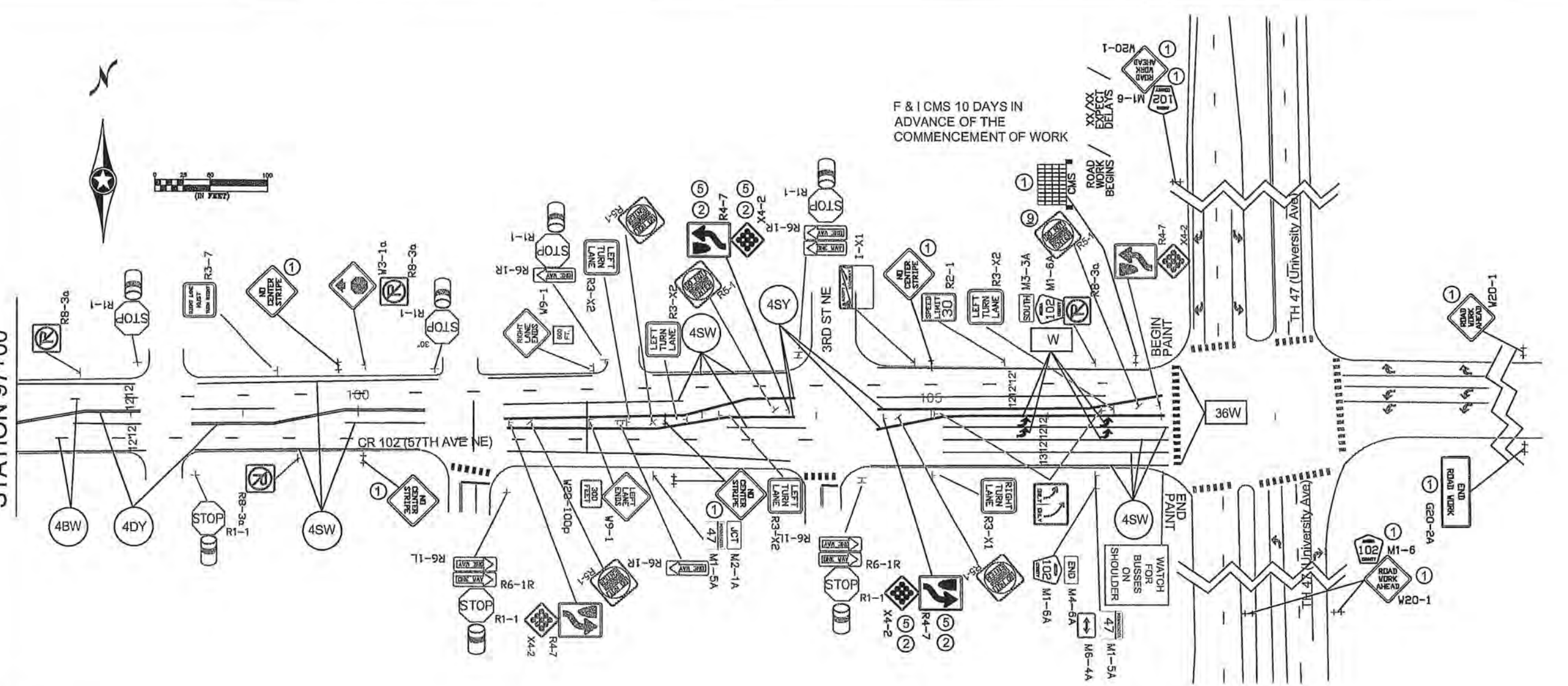
STATE PROJECT NO. _____
 STATE AID PROJECT NO. 002-702-001
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. _____

TEMPORARY SIGNING, PERMANENT SIGNING, AND STRIPING
 Sheet 23 of 34 Sheets

STATION 97+00



F & I CMS 10 DAYS IN ADVANCE OF THE COMMENCEMENT OF WORK



NOTES:

- 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".
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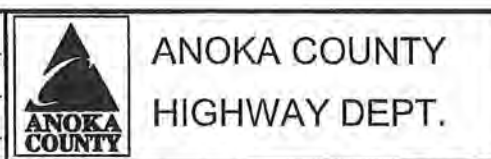
SIGN NOTES:

- ① TEMPORARY TRAFFIC CONTROL SIGN
- ② F & I PERMANENT SIGN
- ③ SALVAGE PERMANENT SIGN
- ④ RE-INSTALL PERMANENT SIGN
- ⑤ REMOVE 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: DOUGLAS W. FISCHER
 SIGNATURE: *[Signature]*
 DATE: 4/26/19 LICENSE NO. 20235

DRAWN BY: TMV DATE: 02/26/19
 DESIGN BY: _____ DATE: _____
 CHECKED BY: _____ DATE: _____



STATE PROJECT NO. _____
 STATE AID PROJECT NO. 002-702-001
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. _____

TEMPORARY SIGNING,
 PERMANENT SIGNING
 AND STRIPING
 Sheet 24 of 34 Sheets

TEMPORARY TRAFFIC CONTROL SIGNS							
M.U.T.C.D. CODE	SIZE	PANEL AREA FT. ²	INSERT	QUANTITY		MOUNTING HEIGHT FT.	No. POSTS
W8-12	48" x 48"	16.00		14	2	7.0'	
R4-1	24" x 30"	5.00		7	1	7.0'	
R4-2	24" x 30"	5.00		13	1	7.0'	
G20-2A	48" x 24"	8.00		3	2	7.0'	
W8-1A	48" x 48"	16.00		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			
	48" x 48"	16.00		AS NEEDED			
W8-11	48" x 48"	16.00		AS NEEDED			
W20-1	48" x 48"	16.00		AS NEEDED (ESTIMATED 18)			
M1-6	24" x 24"	4.00		4	2	7.0'	
W20-1	48" x 48"	16.00		4			
REFLECTORIZED REBOUNDABLE DRUM				AS NEEDED			
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.				2 AT 10 DAYS EA			

EXISTING SIGN TAB				
STATION	ADDRESS/ DESCRIPTION (NOTES)	REMOVE SIGN TYPE C	SIGN NUMBER	SIGN LEGEND
		EACH		
103+75	MEDIAN	1	R4-8	KEEP RIGHT
			X4-2	TYPE 1 MARKER
104+60	MEDIAN	1	R4-8	KEEP RIGHT
			X4-2	TYPE 1 MARKER
TOTAL		2		

SIGN PANELS TYPE C							
M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY	SQ FT PANEL AREA	SQ FT TOTAL AREA	MOUNTING POST PER INSTALLATION	MOUNTING HEIGHT
R3-X1	30" x 30"		1	6.25	6.25	1	7.0'
R4-7	24" x 30"		2	5.00	10.00	1	7.0'
X4-2	18" x 18"		2	2.25	4.50		

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.

NOTES:

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NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\18-01-00\CR 102 (TH47-TH65)\Base\Traffic\Signing & Striping.dwg

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: DOUGLAS W. FISCHER
 SIGNATURE:
 DATE: 11/29/19 LICENSE NO. 20235

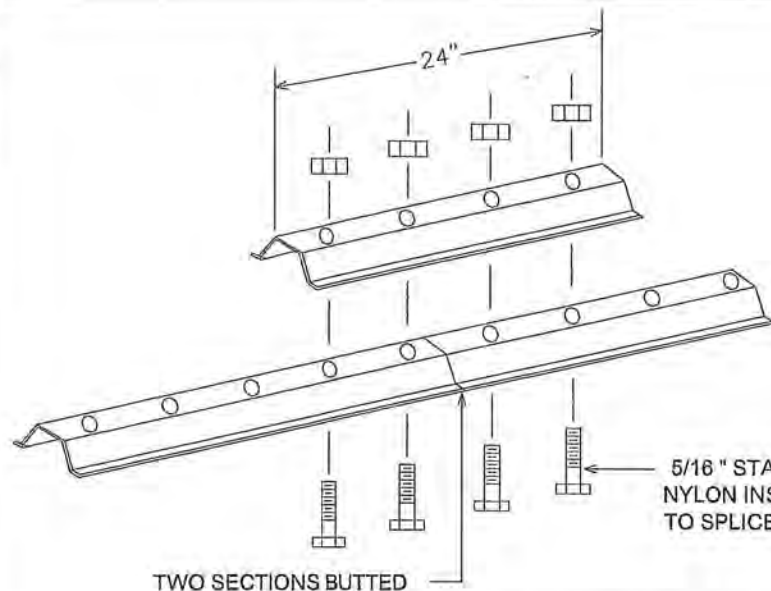
DRAWN BY: TMV DATE: 02/26/19
 DESIGN BY: DATE: _____
 CHECKED BY: DATE: _____



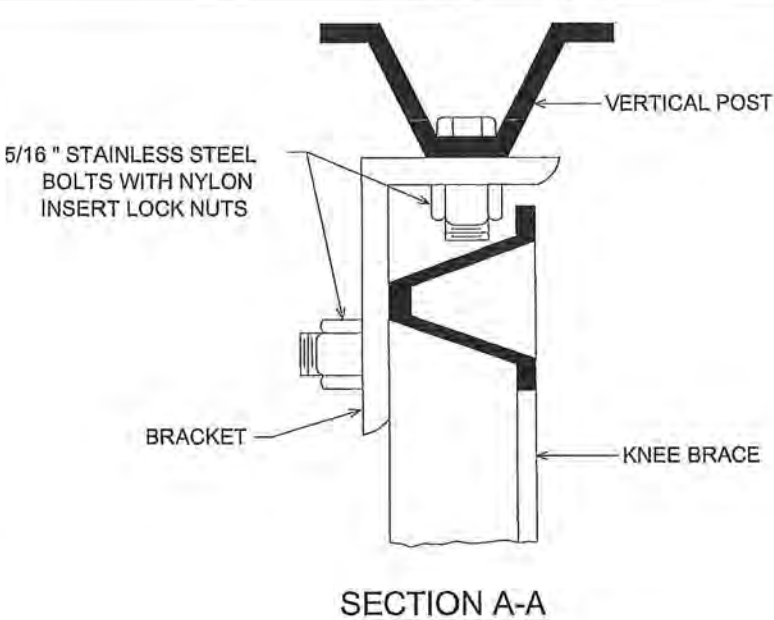
ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 002-702-001
 CITY PROJECT NO. _____
 COUNTY PROJECT NO. _____

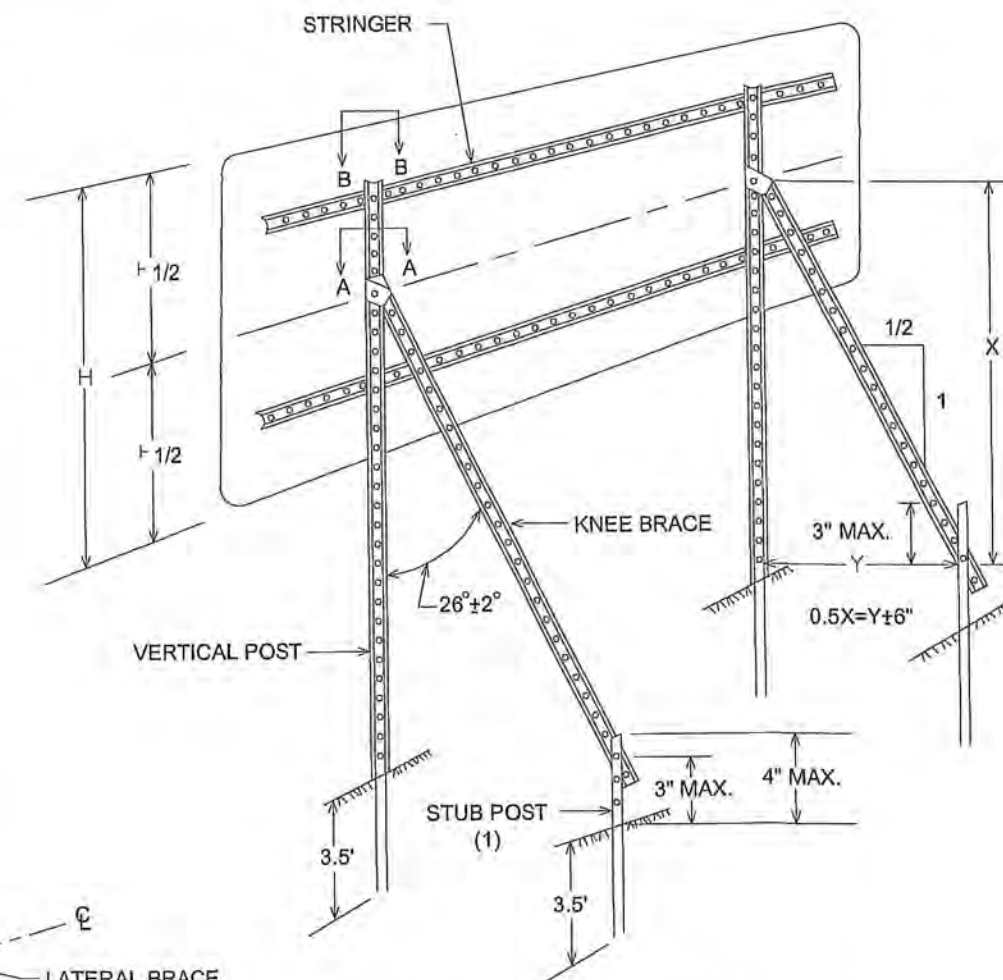
TEMPORARY SIGNING,
 PERMANENT SIGNING &
 STRIPING QUANTITIES
 Sheet 25 of 34 Sheets



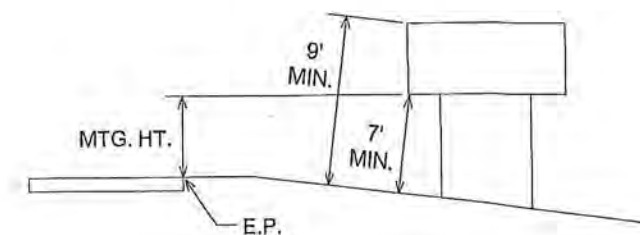
LATERAL BRACE OR STRINGER
SPLICE DETAIL (EXPLODED VIEW)



SECTION A-A



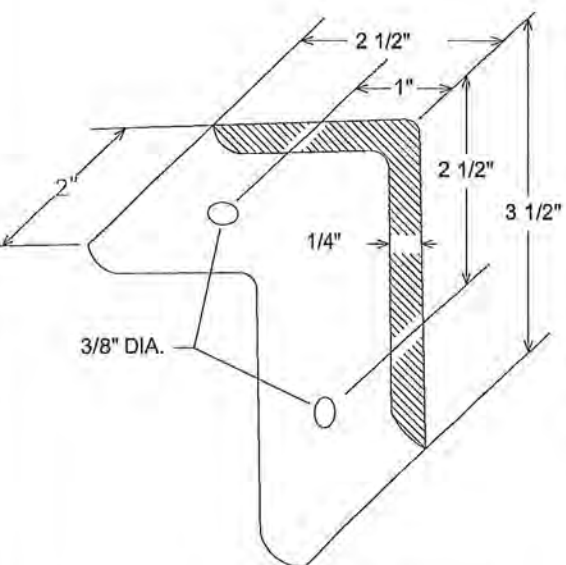
TYPICAL "A-FRAME" INSTALLATION
TYPE "D" SIGNS



TYPICAL MOUNTING

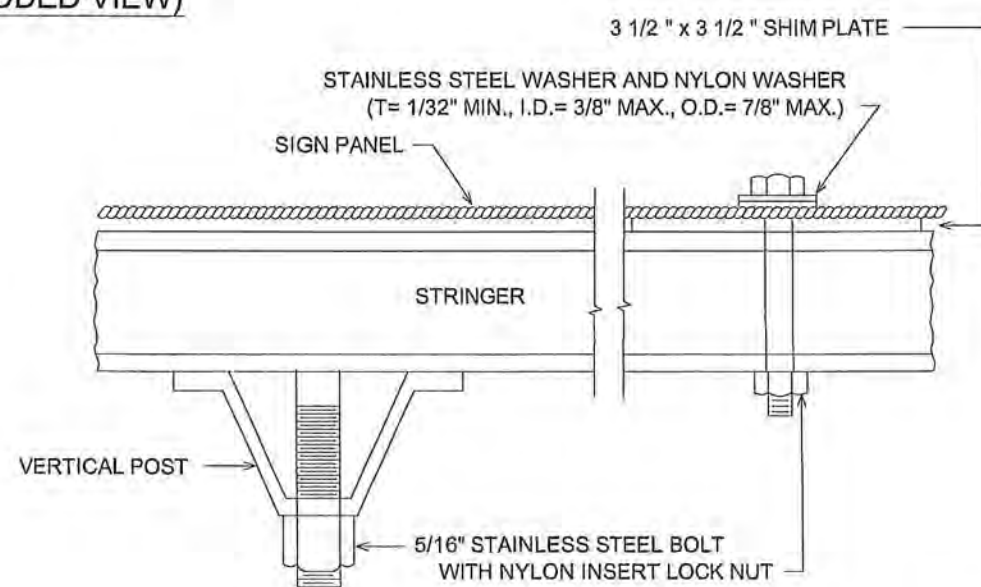
(1) OFFSET STUB POST 1' TOWARD ROADWAY
RELATIVE TO VERTICAL POST.

TYPE C & D SIGN
STRUCTURAL DETAILS

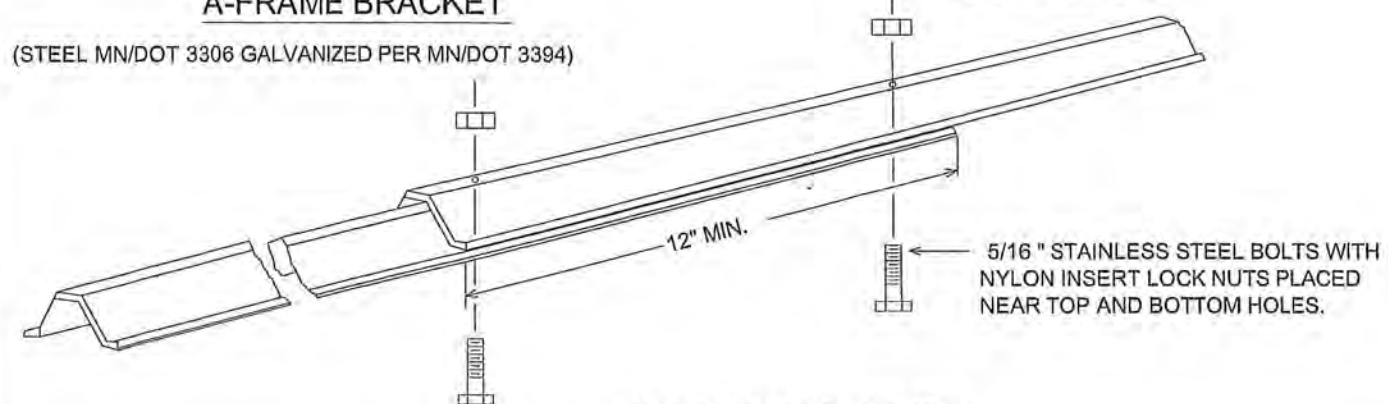


A-FRAME BRACKET

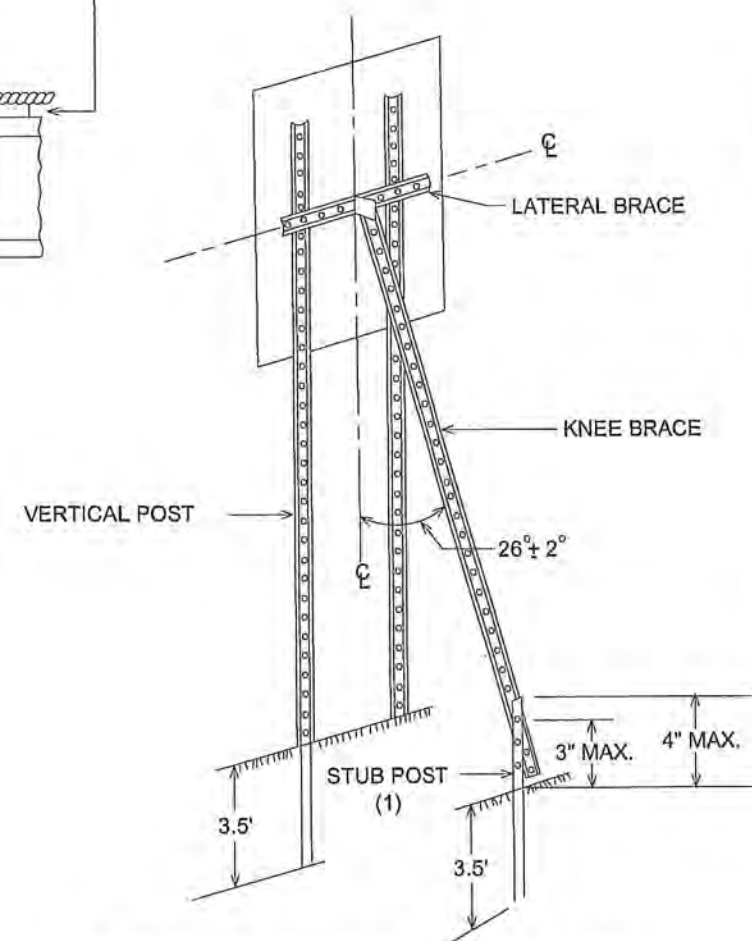
(STEEL MN/DOT 3306 GALVANIZED PER MN/DOT 3394)



SECTION B-B



KNEE BRACE SPLICE



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

NO	DATE	BY	CKD	APPR	REVISION

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PRINT NAME: DOUGLAS W. FISCHER, P.E.
SIGNATURE: *[Signature]*
DATE: 1/25/19 REG. NO. 20235

DRAWN BY: TMV DATE: 02/21/19
DESIGN BY: _____ DATE: _____
CHECKED BY: _____ DATE: _____

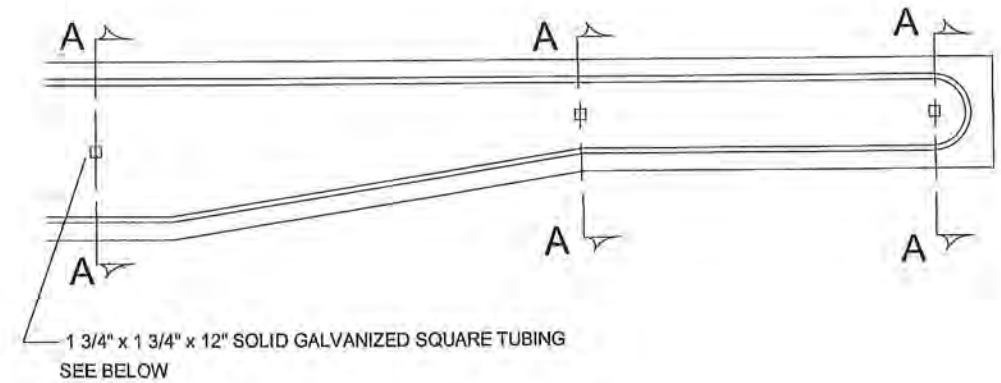
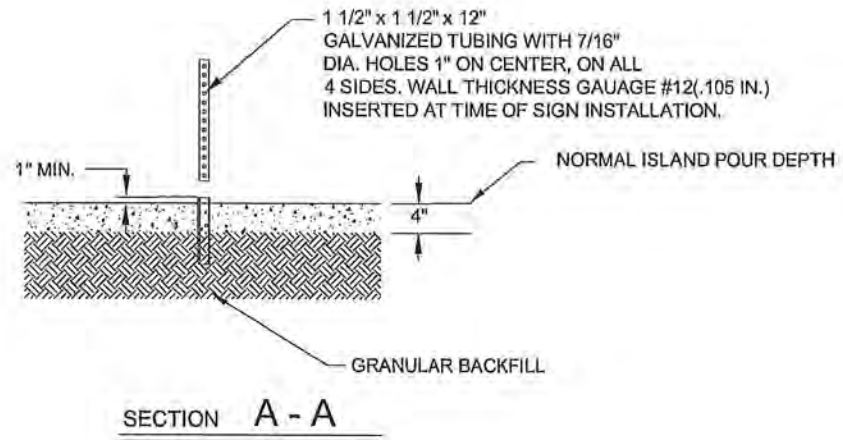


ANOKA COUNTY
HIGHWAY DEPT.

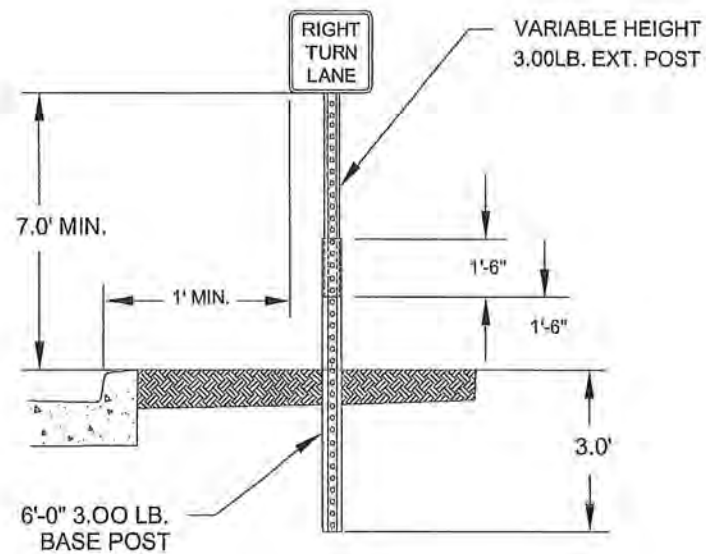
STATE PROJECT NO. _____
STATE AID PROJECT NO. 002-702-001
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

SIGNING & STRIPING
DETAILS

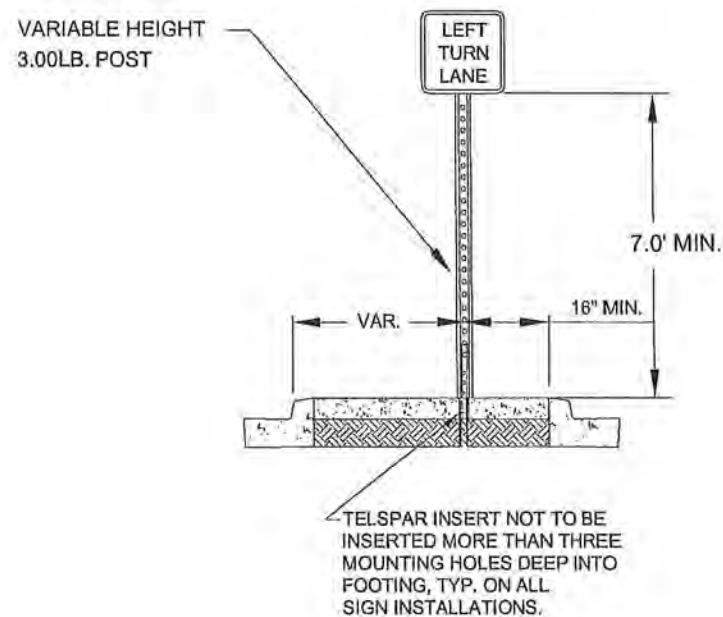
Sheet 26 of 34 Sheets



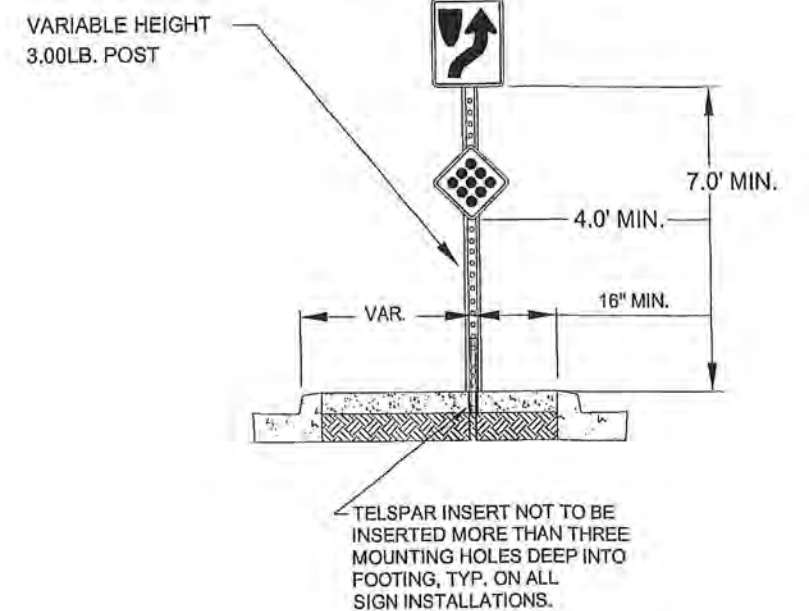
GROUND POST MOUNT SIGN
INSTALLATION TYPICAL



ISLAND MOUNT BREAK-AWAY SIGN
INSTALLATION TYPICAL



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



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\19-01-00\CR 102 (TH47-TH85)\Base\Traffic\Signing & Striping Details.dwg

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

PRINT NAME: DOUGLAS W. FISCHER, P.E.

SIGNATURE: *[Signature]*

DATE: 4/25/19 REG. NO. 20235

DRAWN BY: TMV DATE 02/21/19

DESIGN BY: DATE

CHECKED BY: DATE



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

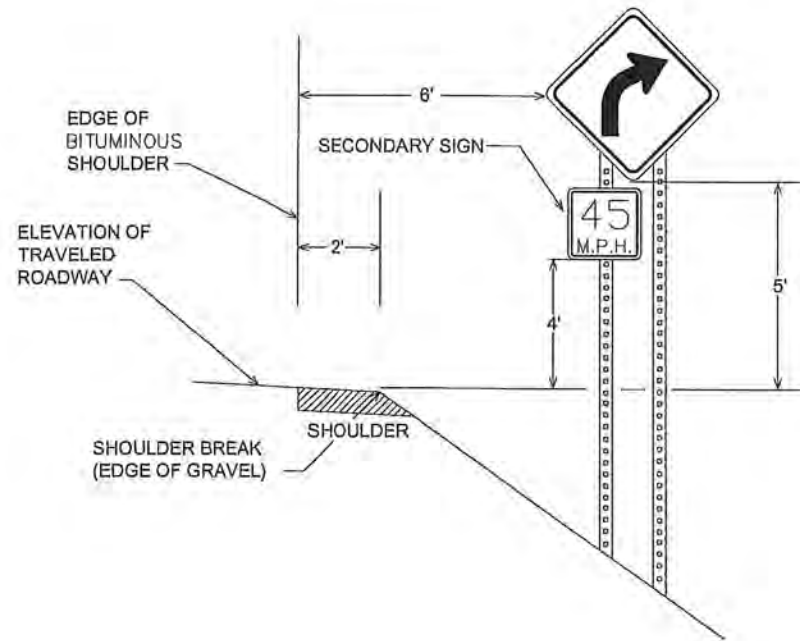
STATE AID PROJECT NO. 002-702-001

STATE AID PROJECT NO. _____

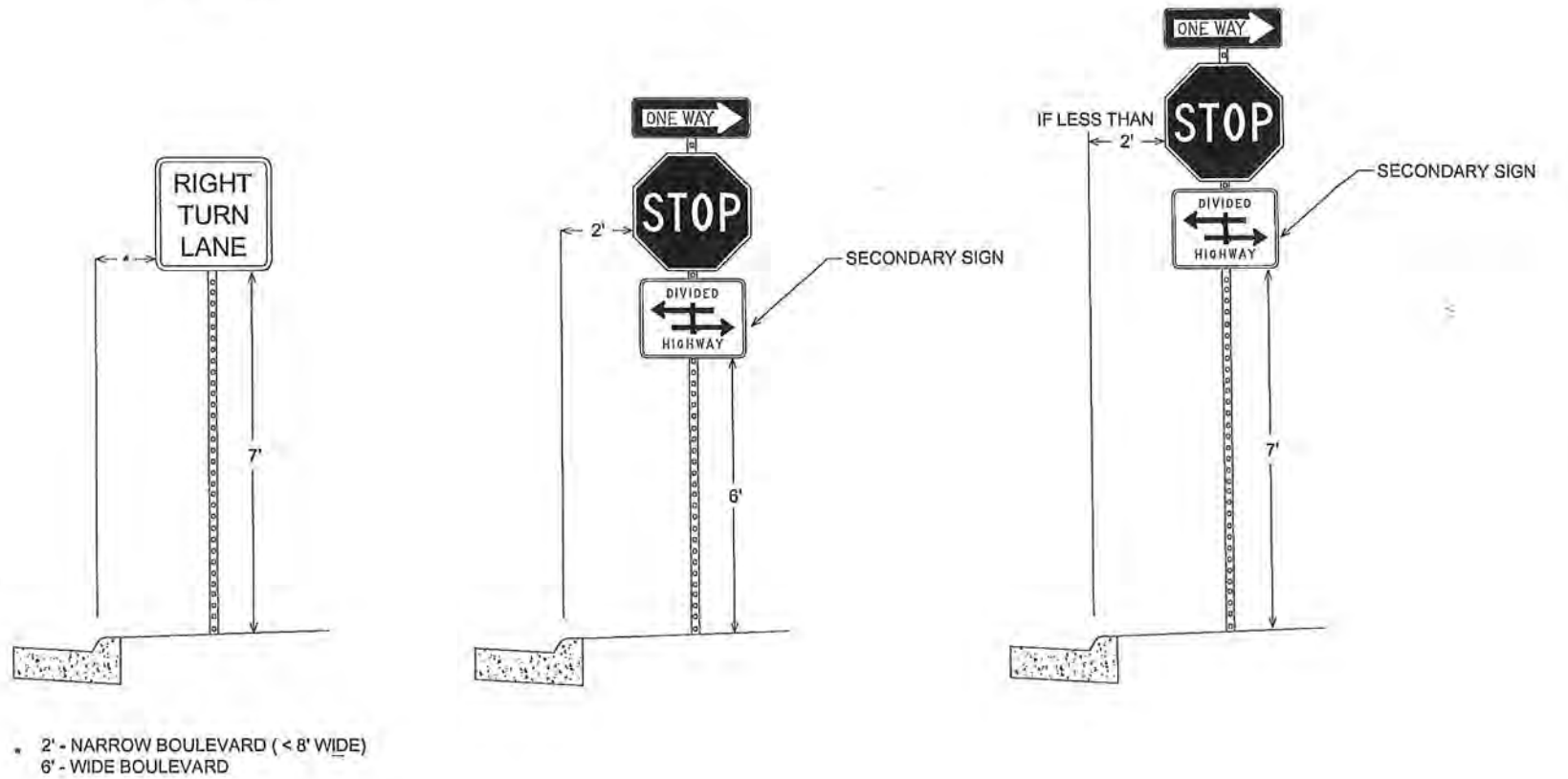
COUNTY PROJECT NO. _____

SIGNING & STRIPING
DETAILS

TYPICAL SIGN PLACEMENT
(RURAL)

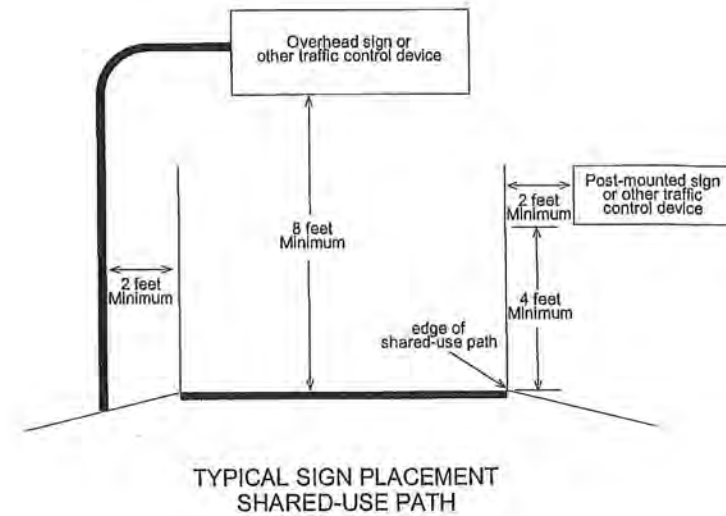


TYPICAL SIGN PLACEMENT
(URBAN)



NOTES:

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



NO	DATE	BY	CKD	APPR	REVISION

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 SIGNATURE: *[Signature]*
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DRAWN BY: JMV DATE 02/21/19
 DESIGN BY: _____ DATE _____
 CHECKED BY: _____ DATE _____

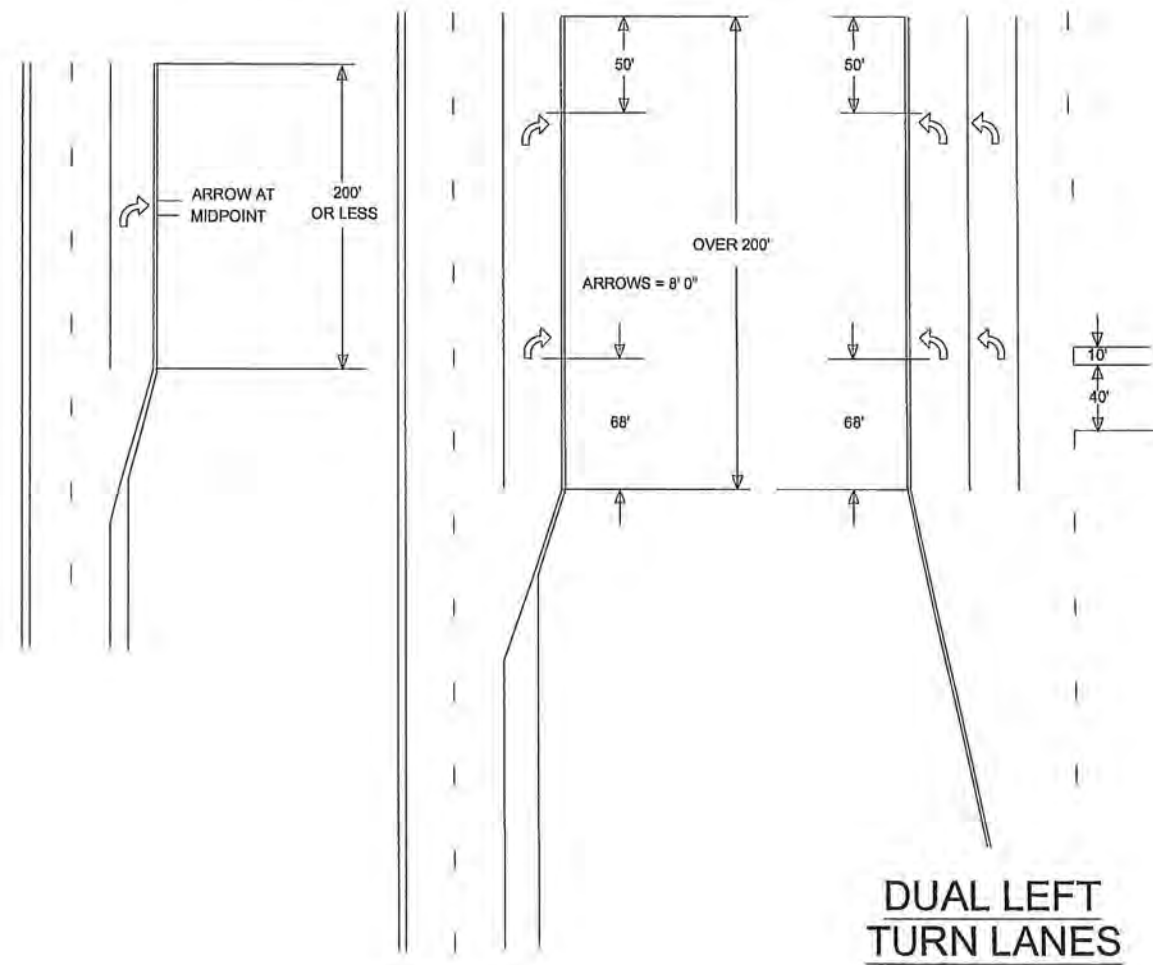


ANOKA COUNTY
HIGHWAY DEPT.

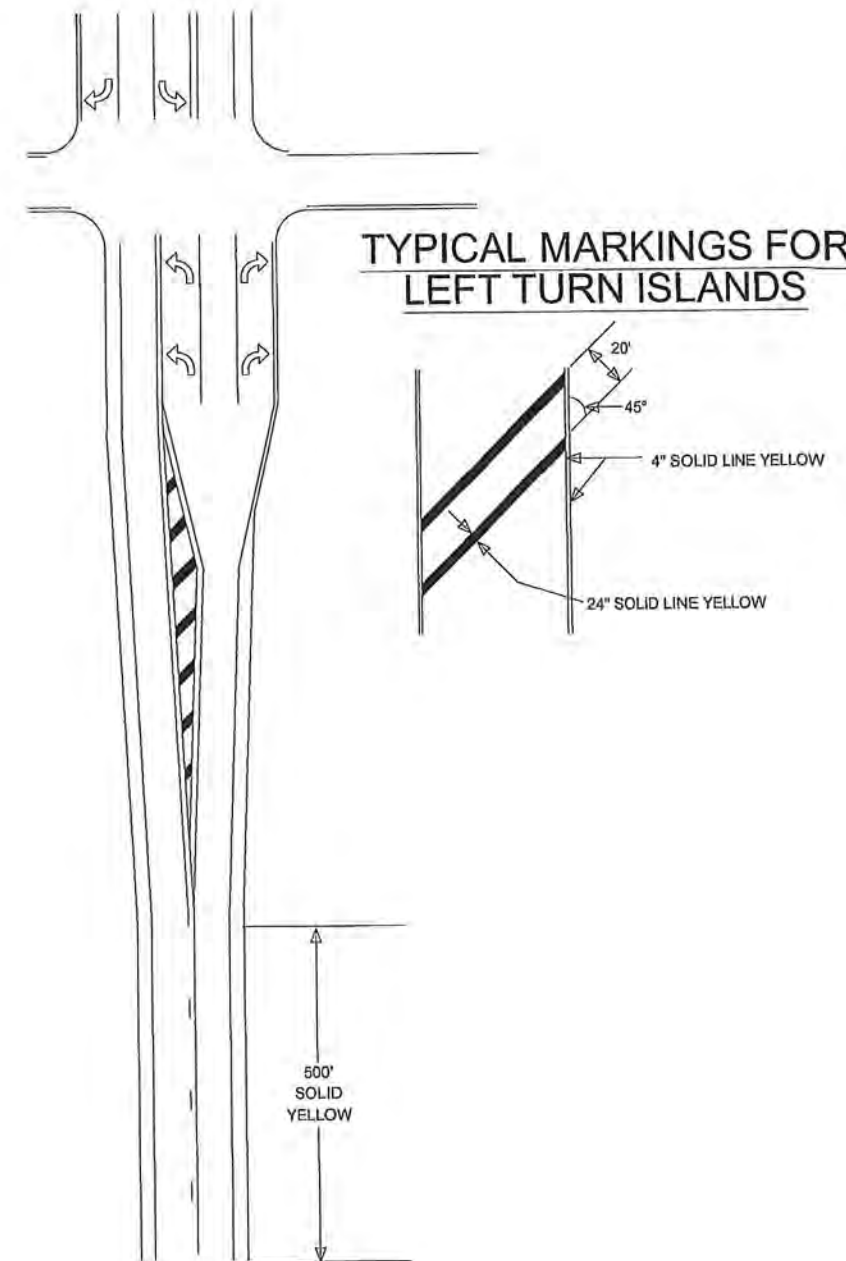
STATE PROJECT NO. _____
 STATE AID PROJECT NO. 002-702-001
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. _____

SIGNING & STRIPING
DETAILS

**TYPICAL MESSAGE PLACEMENT
FOR TURN LANES**



**TYPICAL MARKINGS FOR
LEFT TURN ISLANDS**



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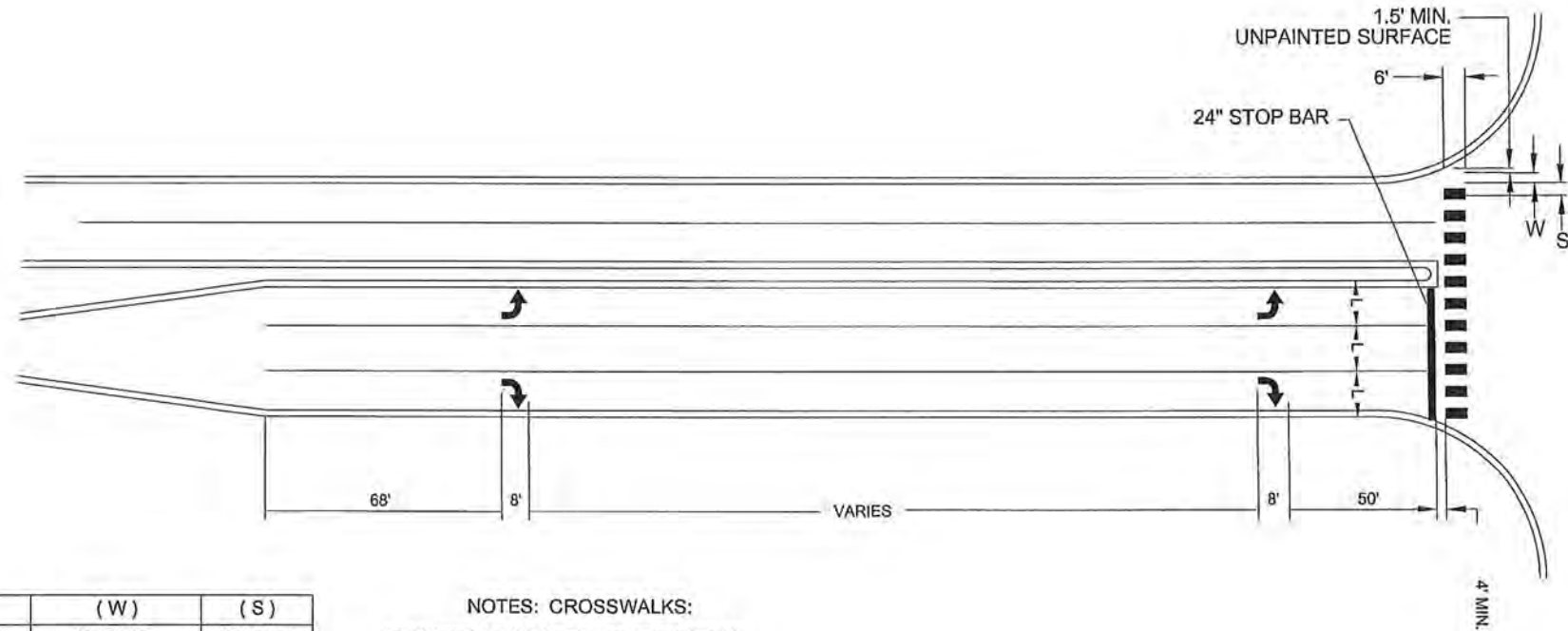
SIGNING & STRIPING
DETAILS

Sheet 29 of 34 Sheets

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\19-01-00\CR 102 (1H47-TH85)\Base\Traffic\Signing & Striping Details.dwg

MARKINGS FOR PEDESTRIAN CROSSWALKS



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

NOTES: CROSSWALKS:

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

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ANOKA COUNTY
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 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. _____

SIGNING & STRIPING
 DETAILS

PLOTTED/REVISED: 14-DEC-2018

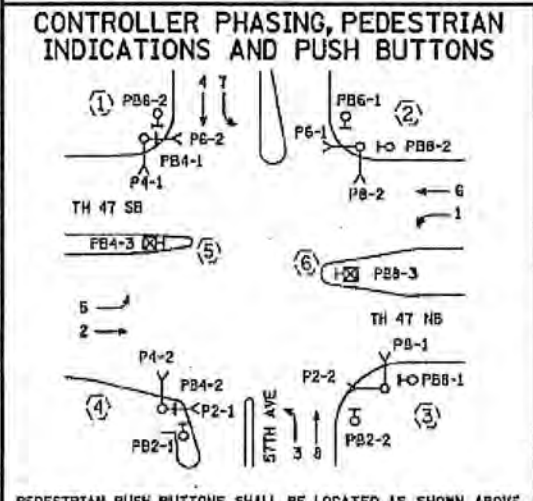
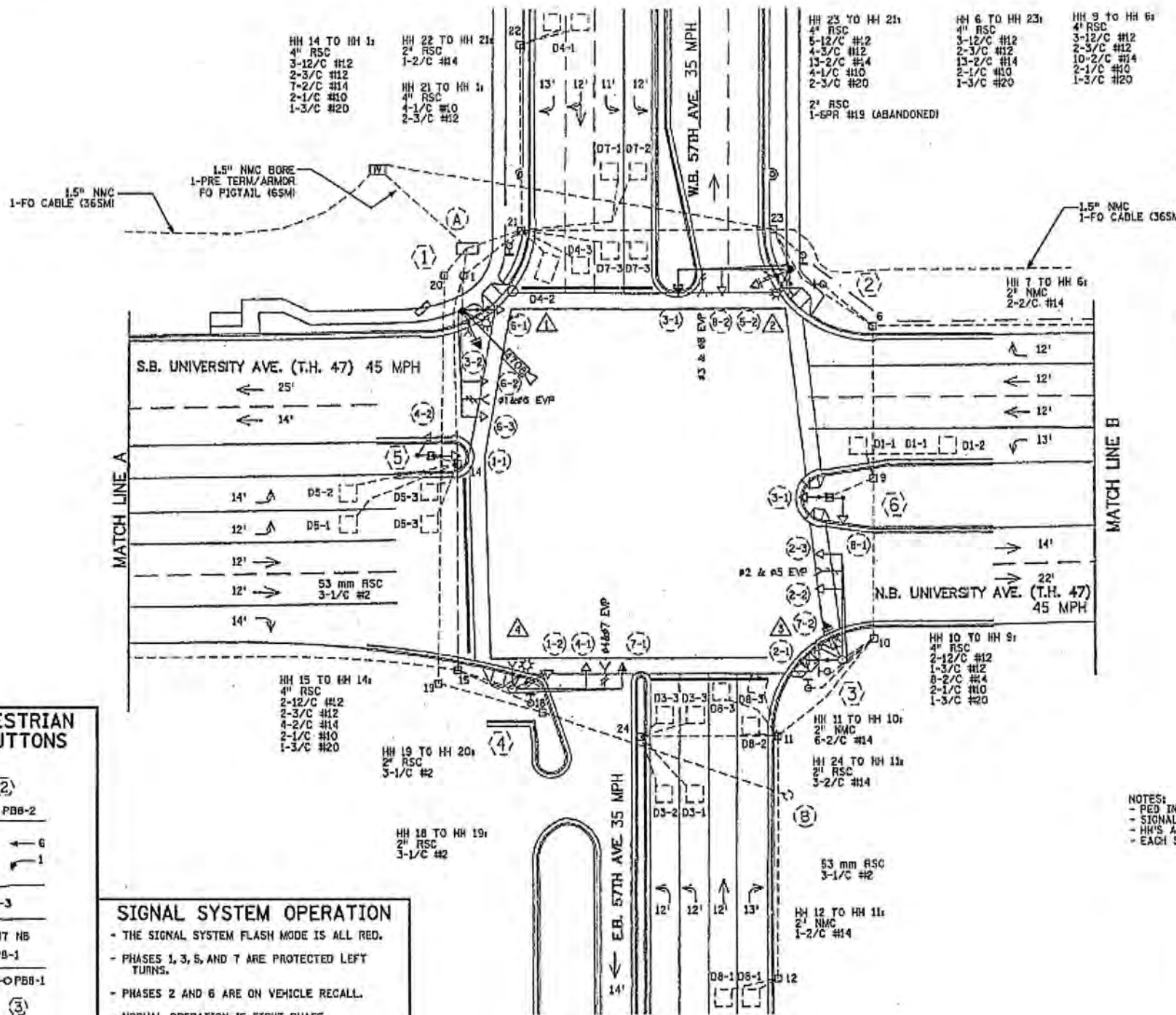
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SIGNAL HEAD CHART				
FACE	R	Y	FYA	G
1-1, 1-2	●	●	●	●
2-1, 2-2, 2-3	●	●	●	●
3-1, 3-2	●	●	●	●
4-1, 4-2	●	●	●	●
5-1, 5-2	●	●	●	●
6-1, 6-2, 6-3	●	●	●	●
7-1, 7-2	●	●	●	●
8-1, 8-2	●	●	●	●

*ALL SIGNAL INDICATIONS ARE 12" LED
*ALL SIGNAL HEADS ARE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS
*FYA DENOTES FLASHING YELLOW ARROW

LOOP DETECTOR CHART				
NUMBER	SIZE (FT)	LOCATION	TYPE	STATUS
D1-1, D1-2	6x6	5, 35	NMC	INPLACE
D2-1, D2-2	6x6	320	NMC	INPLACE
D3-3	2-6x6	10	NMC	INPLACE
D3-1, D3-2	6x6	39	NMC	INPLACE
D4-1	2-6x6	121	NMC	INPLACE
D4-2	6x10	5	NMC	INPLACE
D4-3	6x6	5	NMC	INPLACE
D5-1, D5-2	6x6	39	NMC	INPLACE
D5-3	2-6x6	10	NMC	INPLACE
D6-1, D6-2	6x6	320	NMC	INPLACE
D7-1, D7-2	6x6	39	NMC	INPLACE
D7-3	2-6x6	10	NMC	INPLACE
D8-1	2-6x6	37	NMC	INPLACE
D8-2	2-6x6	5, 36	NMC	INPLACE
D8-3	6x6	5	NMC	INPLACE

*LOCATION, DISTANCE FROM CROSSWALK/STOP BAR IN FEET



SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- PHASES 1, 3, 5, AND 7 ARE PROTECTED LEFT TURNS.
- PHASES 2 AND 6 ARE ON VEHICLE RECALL.
- NORMAL OPERATION IS EIGHT-PHASE.

NOTES:
- PED INDICATIONS ARE 12"X12".
- SIGNAL FLASH MODE IS ALL RED.
- HH'S ARE PVC TYPE WITH METAL FRAMES AND COVERS.
- EACH SIGNAL FACE HAS A BACKGROUND

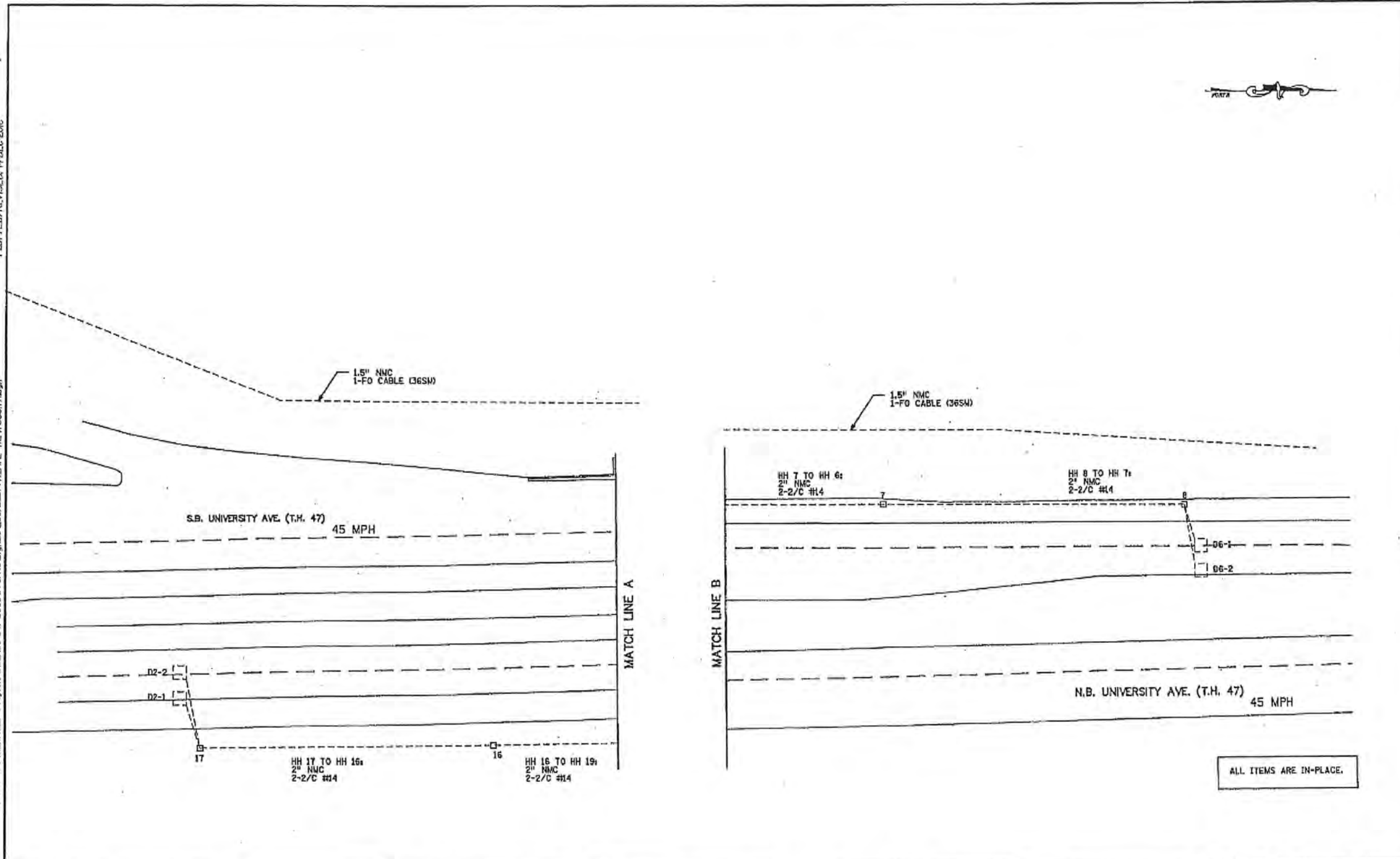
ALL ITEMS ARE IN-PLACE.

BY: JST	DATE: 12-10-18	REVISIONS: AS-BUILT FOR SP 0205-101	SYSTEM ID: I735317	T.E. 266D	S.A.P. NO.	DRAWN BY:	CKD BY:	DATE:
			METER ADDRESS: NE QUAD OF TH 47 & 57TH		CERTIFIED BY:			DATE:
			OLD ID: 20675		STATE PROJ. NO. (T.H.47)	SHEET NO. 1 OF 4 SHEETS		

FOR REFERENCE PURPOSES ONLY

PLOTTED/REVISED: 14-DEC-2019

IPLOT NAME: 1735317
PATH & FILENAME: Projects\DWG_Plan\1735317\1735317.dwg



ALL ITEMS ARE IN-PLACE.

BY	DATE	REVISIONS	SYSTEM ID: 1735317	T.E. 2660	S.A.P. NO.	DRAWN BY:	CKD BY:	DATE:
J3T	12-11-18	AS-BUILT FOR SP 0205-101	METER ADDRESS: NE QUAD OF TH 47 & 57TH	OLD ID: 20675	INTERSECTION LAYOUT (2 OF 2) T.H. 47 AT CO. RD. 102 (57TH AVE. NE) FRIDLEY, ANOKA COUNTY	CERTIFIED BY: _____	LIC. NO. _____	DATE: _____
					STATE PROJ.NO. (T.H.47)	SHEET NO. 2 OF 4 SHEETS		

FOR REFERENCE PURPOSES ONLY

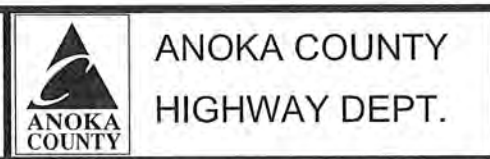
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NAME: P:\19-01-00\CSAH_102_(CSAH02-TH65)\Base\Proposed\PROPOSED.dgn

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: DOUGLAS W. FISCHER
SIGNATURE: *[Signature]*
DATE: 4/25/19 LICENSE NO. 20235

DRAWN BY: SRK DATE: 04/22/2019
DESIGN BY: SRK DATE: 04/22/2019
CHECKED BY: CO DATE: 04/22/2019



STATE AID PROJECT 002-702-001

EXISTING SIGNAL PLANS
Sheet 32 of 34 Sheets

PLOTTED/REVISED: 14-DEC-2018

IPLOT NAME: 17353177
PATH & FILENAME: Projects\UM_R0504\00000\Traffic\Signals\00675_57TH_AVE_NE\17353177.dgn

① P100 POLE FOUNDATION
 TYPE P100-A-40
 1-X6-350/CAM 400 EXTENSION (MOUNTED AT 350 DEG) INCLUDES LIGHTNING ROD
 7/16" GROUND BRAID & GROUND ROD
 1-VIDEO CAMERA WITH MOUNT
 2-ONE WAY SIGNALS OVERHEAD (0' AND 11' FROM END OF MAST ARM)
 TYPE 10B AT 0 AND 270 DEG
 2-C.D. PED INDICATIONS
 1-APS PB AND SIGN (LT ARROW) (PB4-1)
 LUMINAIRE-200W HPS WITH PEC AND CH. SW.
 ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT
 TYPE "D" SIGN (INTERNALLY ILLUMINATED WITH PEC AND SIGN SWITCH ON POLE)
 2-ONE WAY SIGNS (R6-1L AND R6-1R)
 EXTEND TO HH 1:
 2" RSC
 2-12/C #12
 2-3/C #12
 2-1/C #10
 1-3/C #20
 1-7/16" GROUND BRAID TO GROUND ROD
 1-CAT 5E (COM CABLE)

③ P100 POLE FOUNDATION
 TYPE P100-A-40-D40-9 (DAVIT AT 350 DEG)
 2-ONE WAY SIGNALS OVERHEAD (0' AND 11' FROM END OF MAST ARM)
 2-TYPE 10B AT 0 AND 270 DEG
 2-C.D. PED INDICATIONS
 LUMINAIRE-200W HPS WITH PEC AND CH. SW.
 ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT
 TYPE "D" SIGN (INTERNALLY ILLUMINATED WITH PEC AND SIGN SWITCH ON POLE)
 2-ONE WAY SIGNS (R6-1L AND R6-1R)
 EXTEND TO HH 1A:
 3" RSC
 2-12/C #12
 2-3/C #12
 2-1/C #10
 1-3/C #20

⑤ PEDESTAL FOUNDATION
 10' SIGNAL PEDESTAL
 TYPE 2A
 1-PED PB AND SIGN
 1-APS PB AND SIGN (RT AND LT ARROW) (PB4-3)
 EXTEND INTO HH 1A:
 3" RSC
 1-12/C #12
 2-3/C #12

APS PED PB STA (PB6-2)
 1-APS PB AND SIGN (RT ARROW)
 EXTEND INTO HH 2:
 1 1/4" CONDUIT
 1-2/C #14

APS PED PB STA (PB6-1)
 1-APS PB AND SIGN (LT ARROW)
 EXTEND INTO HH 23:
 1 1/4" CONDUIT
 1-2/C #14

APS PED PB STA (PB8-2)
 1-APS PB AND SIGN (RT ARROW)
 EXTEND INTO HH 6:
 1 1/4" CONDUIT
 1-2/C #14

APS PED PB STA (PB8-1)
 1-APS PB AND SIGN (LT ARROW)
 EXTEND INTO HH 10:
 1 1/4" CONDUIT
 1-2/C #14

② P100 POLE FOUNDATION
 TYPE P100-A-40-D40-9 (DAVIT AT 350 DEG)
 2-ONE WAY SIGNALS OVERHEAD (0' AND 11' FROM END OF MAST ARM)
 2-TYPE 10B AT 0 AND 270 DEG
 2-C.D. PED INDICATIONS
 LUMINAIRE-200W HPS WITH PEC AND CH. SW.
 ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT
 TYPE "D" SIGN (INTERNALLY ILLUMINATED WITH PEC AND SIGN SWITCH ON POLE)
 EXTEND TO HH 23:
 3" RSC
 2-12/C #12
 2-3/C #12
 2-1/C #10
 1-3/C #20

④ P100 POLE FOUNDATION
 TYPE P100-A-40-D40-9 (DAVIT AT 350 DEG)
 2-ONE WAY SIGNALS OVERHEAD (0' AND 11' FROM END OF MAST ARM)
 TYPE 10B AT 0 DEG
 TYPE 30A AT 270 DEG
 2-C.D. PED INDICATIONS
 1-APS PB AND SIGN (RT ARROW) (PB4-2)
 LUMINAIRE-200W HPS PED AND CH. SW.
 ONE WAY EVP DETECTOR AND CONFIRMATORY LIGHT
 TYPE "D" SIGN (INTERNALLY ILLUMINATED WITH PEC AND SIGN SWITCH ON POLE)
 EXTEND TO HH 15:
 3" RSC
 2-12/C #12
 2-3/C #12
 2-1/C #10
 1-3/C #20
 1-2/C #14

⑥ PEDESTAL FOUNDATION
 10' SIGNAL PEDESTAL
 TYPE 2A
 1-APS PB AND SIGN (RT AND LT ARROW) (PB6-3)
 EXTEND INTO HH 9:
 3" RSC
 1-12/C #12
 1-3/C #12

APS PED PB STA (PB2-2)
 1-APS PB AND SIGN (RT ARROW)
 EXTEND INTO HH 10:
 1 1/4" CONDUIT
 1-2/C #14

APS PED PB STA (PB2-1)
 1-APS PB AND SIGN (LT ARROW)
 EXTEND INTO HH 15:
 1 1/4" CONDUIT
 1-2/C #14

① EQUIPMENT PAD
 CONTROLLER CABINET AND CONTROLLER
 SERVICE EQUIPMENT (PAD MOUNTED)
 CONTROLLER CABINET TO HH 21:
 4" RSC
 5-12/C #12
 2-3/C #12
 19-2/C #14
 2-3/C #20

CONTROLLER CABINET TO HH1:
 4" RSC
 5-12/C #12
 2-3/C #12
 19-2/C #14
 2-3/C #20
 1-CAT 5E (COM CABLE)

CONTROLLER CABINET TO PULL VAULT
 1.6" NWC (ON SPARE 3")
 1-PRE-TERMINATED ARMORED FO PIGTAIL (65W)

CONTROLLER CABINET TO LOAD CENTER
 2" RSC
 2-1/C #10
 1-1/C #6 BR. GR.

CONTROLLER CABINET TO NORTH
 3" RSC
 1-6FR #19 (ABANDONED)

CONTROLLER CABINET TO SOUTH
 3" RSC
 1-6FR #19 (ABANDONED)

LOAD CENTER TO HH 1:
 4" RSC
 8-1/C #10
 4-3/C #12

② SGP-WOOD POLE (NSPI)
 2" RISER AND WEATHER HEAD
 3-1/C #2
 SGP TO HH 18:
 2" RSC
 3-1/C #2

BY	DATE	REVISIONS	SYSTEM ID: 1735317	T.E. 2660	S.A.P. NO.	DRAWN BY:	CKD BY:	DATE:
JST	12-11-18	AS-BUILT FOR SP 0205-101	METER ADDRESS: NE QUAD OF TH 47 & 57TH		CERTIFIED BY: _____			
			OLD ID: 20675		STATE PROJ. NO. (T.H.47)			SHEET NO. 3 OF 4 SHEETS


INTERSECTION NOTES
 T.H. 47 AT CO. RD. 102 (57TH AVE, NE)
 FRIDLEY, ANOKA COUNTY

NO	DATE	BY	CKD	APPR	REVISION	DATE	TIME

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: DOUGLAS W. FISCHER
 SIGNATURE: *[Signature]*
 DATE: 4/25/19 LICENSE NO. 20235

DRAWN BY: SRK DATE: 04/22/2019
 DESIGN BY: SRK DATE: 04/22/2019
 CHECKED BY: CO DATE: 04/22/2019

ANOKA COUNTY
 HIGHWAY DEPT.



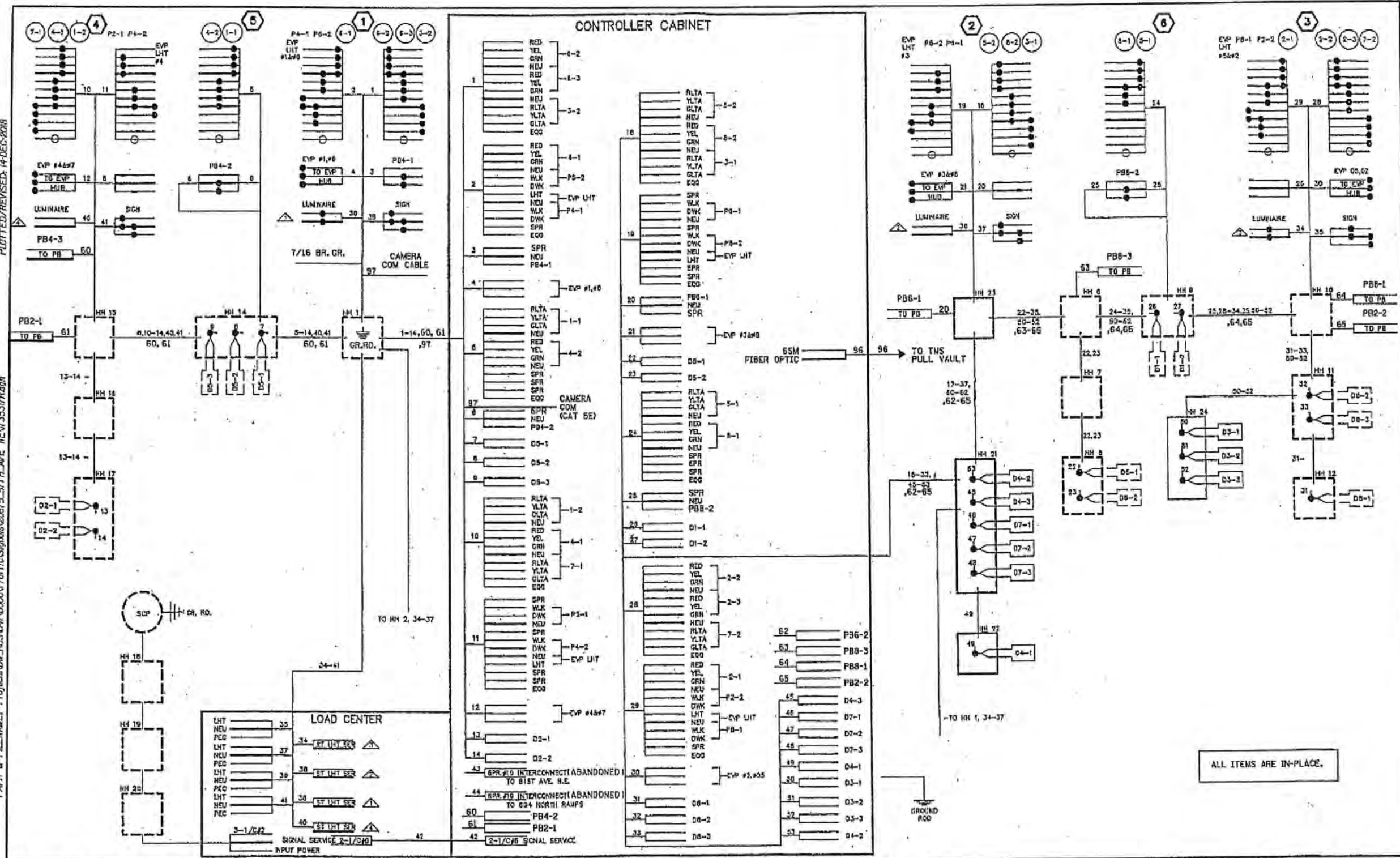
STATE AID PROJECT 002-702-001

EXISTING SIGNAL PLANS
 Sheet 33 of 34 Sheets

FOR REFERENCE PURPOSES ONLY

PLOTTED/REVISED: 14-DEC-2019

PROJECT NAME: 173531R
PATH & FILENAME: Projects\DM_RSS\AP\173531R\173531R.dgn



BY	DATE	REVISIONS
JST	12-11-18	AS-BUILT FOR SP 0205-101

SYSTEM ID: 1735317 T.E. 2660
 METER ADDRESS: NE QUAD OF TH 47 & 57TH
 DLD ID: 20675

FIELD WIRING DIAGRAM
 T.H. 47 AT CO. RD. 102 (57TH AVE. NE)
 FRIDLEY, ANOKA COUNTY

S.A.P. NO.	DRAWN BY:	CRD BY:	DATE:
CERTIFIED BY:	LIC. NO.	DATE:	
STATE PROJ. NO.	(T.H. 47)	SHEET NO. 4 OF 4 SHEETS	

ALL ITEMS ARE IN-PLACE.

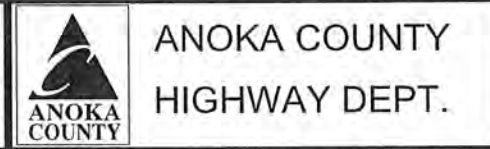
FOR REFERENCE PURPOSES ONLY

NO	DATE	BY	CKD	APPR	REVISION	TIME
	04/22/2019					2:52:33 PM

NAME: P:\19-01-00\CSAH_102_(CSAH02-TH65)\Base\Proposed\PROPOSED.dgn

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 CHECKED BY: CO DATE: 04/22/2019



STATE AID PROJECT 002-702-001

EXISTING SIGNAL PLANS
 Sheet 34 of 34 Sheets