

MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

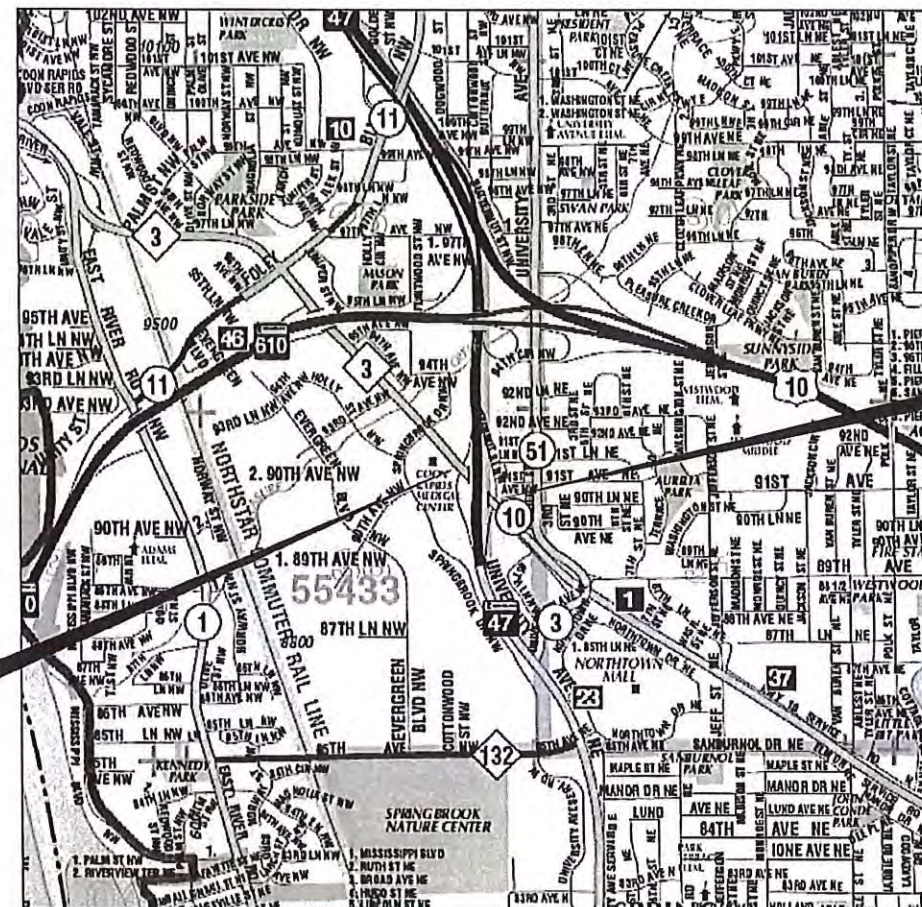
CONSTRUCTION PLAN FOR _____ MILL BITUMINOUS AND BITUMINOUS SURFACING _____
LOCATED ON CSAH 10 BETWEEN WEST HWY 47 RAMP AND EAST HWY 47 RAMP

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

THIS PLAN CONTAINS 15 SHEETS

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES
3	TYPICAL SECTIONS
4	DETAILS
5	CONSTRUCTION PLAN
6-7	EXISTING SIGNAL PLANS
8-15	SIGNING AND STRIPING PLANS



BEGIN SAP 002-610-016
CSAH 10, STA: 11+67.00

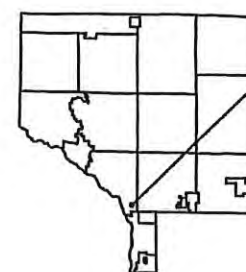
END SAP 002-610-016
CSAH 10, STA: 20+96.00



CSAH 10

GROSS LENGTH	929.00 FEET	0.176 MILES
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES
NET LENGTH	929.00 FEET	0.176 MILES

PROJECT LOCATION



CITY OF COON RAPIDS
ANOKA COUNTY
MN/DOT TRANSPORTATION DISTRICT - METRO
SECTION 36
TOWNSHIP 31 NORTH
RANGE 24 WEST

Approved 5/3/2019
CITY OF COON RAPIDS ENGINEER

Approved 4/25/2019
ANOKA COUNTY ENGINEER

DATE 5/7/19
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY

DATE 5/7/19
STATE AID ENGINEER:
APPROVED FOR STATE AID FUNDING

DESIGN DESIGNATION (CSAH 10)			
ESAL 20	2,562,391	FUNCTIONAL CLASSIFICATION	A MINOR ARTERIAL
R VALUE	60	NO. OF TRAFFIC LANES	4
ADT (2019)	24100	NO. OF PARKING LANES	0
PROJ. ADT (2039)	24100	DESIGN SPEED	50 MPH
PROJ. HCA DT (2039)	1422	STOPPING SIGHT DISTANCE BASED ON:	
SOIL FACTOR	N/A	HEIGHT OF EYE	3.5'
		HEIGHT OF OBJECT	2.0'
		DESIGN SPEED NOT ACHIEVED AT:	
		STA.	N/A
		TO STA.	N/A
		MPH	N/A
		TON DESIGN	

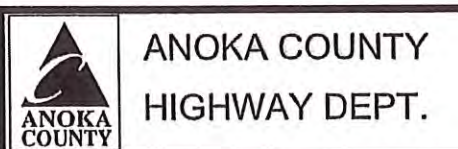
NO	DATE	BY	CKD	APPR	REVISION	

NAME: P:\19-01-00\CR_3_CSAH_10 (200'W-200'E 47 Ramps)\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: 4-25-19 LICENSE NO. 46732

DRAWN BY: SPH DATE 04/17/2019
DESIGN BY: SPH DATE 04/17/2019
CHECKED BY: HG DATE 04/17/2019



ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-610-016

TITLE SHEET

Sheet 1 of 15 Sheets

STATEMENT OF ESTIMATED QUANTITIES

NOTES	ITEM NUMBER	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITIES ESTIMATED
	2021.501	MOBILIZATION	LUMP SUM	1
	2221.509	SHOULDER BASE AGGREGATE CLASS 5	TON	40
6	2231.509	BITUMINOUS PATCHING MIXTURE	TON	50
1	2232.504	MILL BITUMINOUS SURFACE (2.0")	SQ YD	7925
	2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GAL	396
	2360.509	TYPE SP 12.5 WEARING COURSE MIXTURE (4,E)	TON	911
8	2550.602	LOOP DETECTOR DESIGN NMC	EACH	1
2	2563.601	TRAFFIC CONTROL	LUMP SUM	1
3	2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	UNIT DAY	20
4	2581.503	REMOVABLE PREFORMED PAVEMENT MARKING TAPE	LIN FT	73
7	2582.503	4" BROKEN LINE PAINT	LIN FT	372
5	2582.503	4" BROKEN LINE MULTI COMP	LIN FT	700
5	2582.503	4" SOLID LINE MULTI COMP	LIN FT	8775
5	2582.503	4" DOTTED LINE MULTI COMP	LIN FT	60
5	2582.518	PAVT MSSG PREF THERMO	SQ FT	564
5	2582.603	PAVEMENT MARKING SPECIAL	LIN FT	154

CONSTRUCTION NOTES

1	DETAIL MILLING AROUND MANHOLES, CATCH BASINS, GATE VALVES, AND ALONG CURB LINE IS INCIDENTAL TO THIS ITEM.
2	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 PAVEMENT MARKINGS ARE NOT PRESENT.
3	2 MESSAGE BOARDS, ONE ON EACH END OF PROJECT, WILL BE INSTALLED 10 DAYS PRIOR TO ANY CONSTRUCTION; REFERENCE STRIPING PLAN FOR DETAILS.
4	CENTERLINE AND LANE DESIGNATION SKIPS TO BE APPLIED AS SOON AS POSSIBLE ON EACH NEW LIFT OF PAVEMENT; SKIPS MUST BE INPLACE BEFORE THE CONTRACTOR LEAVES FOR THE DAY. CONTRACTOR IS TO REMOVE PRIOR TO FINAL PAINT STRIPING.
5	FINAL STRIPING SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLETION OF MAINLINE WEAR COURSE PAVING.
6	ITEM USED AT ENGINEER'S DISCRETION FOR PATCHING AFTER MILLING AND BEFORE FINAL PAVING.
7	ITEM TO BE USED AS TEMPORARY CENTERLINE STRIPING ON MILLED SURFACE AS DETERMINED BY ENGINEER.
8	LOOP REPLACEMENT REQUIRED ONLY IF DAMAGED DURING CONSTRUCTION OPERATIONS. EXISTING SIGNAL PLANS ARE INCLUDED AT THE END OF THIS PLAN.

BASIS OF PLANNED QUANTITIES

2357	BITUMINOUS MATERIAL FOR TACK COAT	0.05 GAL / SQ YD
2360	ALL BITUMINOUS PAVEMENT	115 LBS / SQ YD / IN THICKNESS
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

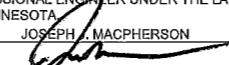
MNDOT STANDARD PLATES

PLATE NUMBER	DESCRIPTION
8000J	CHANNELIZERS (3 SHEETS)

NO	DATE	BY	CKD	APPR	REVISION
	04/17/2019				7:56:49 AM

NAME: P:\19-01-00\CR_3_CSAH_10 (200'W-200'E 47 Ramps)\Base\PROPOSED\PROPOSED.dgn

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PRINT NAME: JOSEPH J. MACPHERSON
 SIGNATURE: 
 DATE: 4-25-19 LICENSE NO. 46732

DRAWN BY: SPH DATE 04/17/2019
 DESIGN BY: SPH DATE 04/17/2019
 CHECKED BY: HG DATE 04/17/2019



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE AID PROJECT 002-610-016

STATEMENT OF ESTIMATED QUANTITIES

Sheet 2 of 15 Sheets

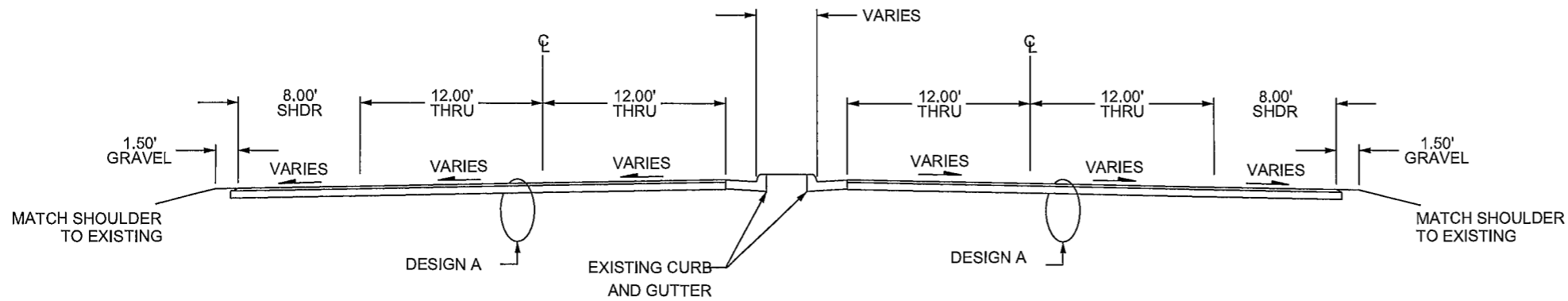
CSAH 10 - COON RAPIDS BLVD

(PROPOSED) MILL SECTION

11+67 - 13+26

15+28 - 17+48

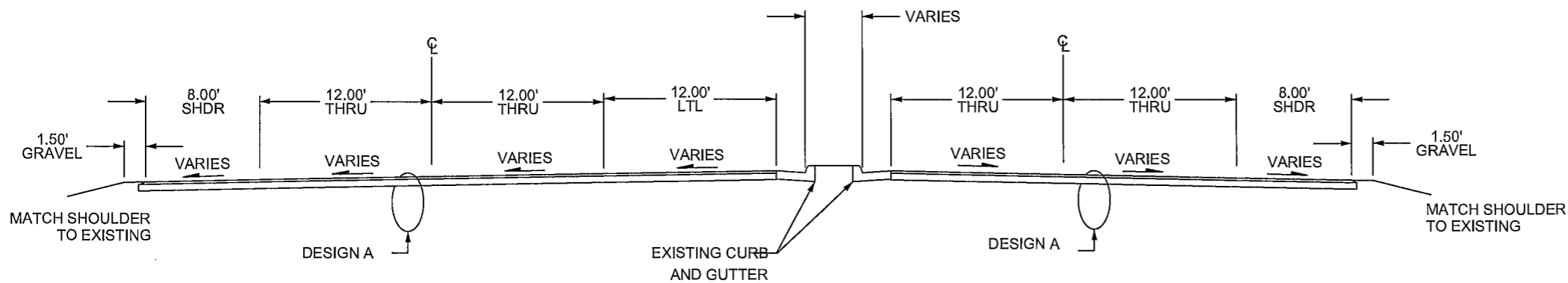
19+23 - 20+96



CSAH 10 - COON RAPIDS BLVD

(PROPOSED) MILL SECTION

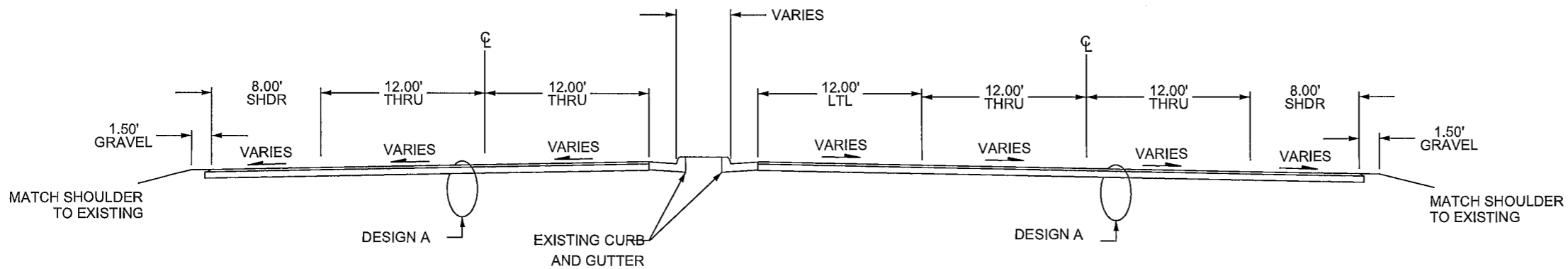
13+26 - 15+28



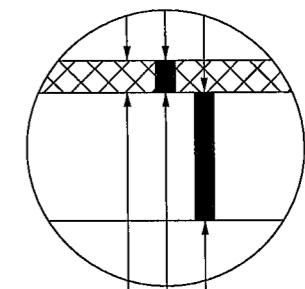
CSAH 10 - COON RAPIDS BLVD

(PROPOSED) MILL SECTION

17+48 - 19+23



DESIGN A MILL SECTION



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

NO	DATE	BY	CKD	APPR	REVISION	04/02/2019	12:04:43 PM
NAME: P:\19-01-00\CR_3_CSAH_10 (200'W-200'E 47 Ramps)\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: 4-25-19 LICENSE NO. 46732

DRAWN BY SPH DATE 04/02/2019
 DESIGN BY SPH DATE 04/02/2019
 CHECKED BY HG DATE 04/02/2019



ANOKA COUNTY
 HIGHWAY DEPT.

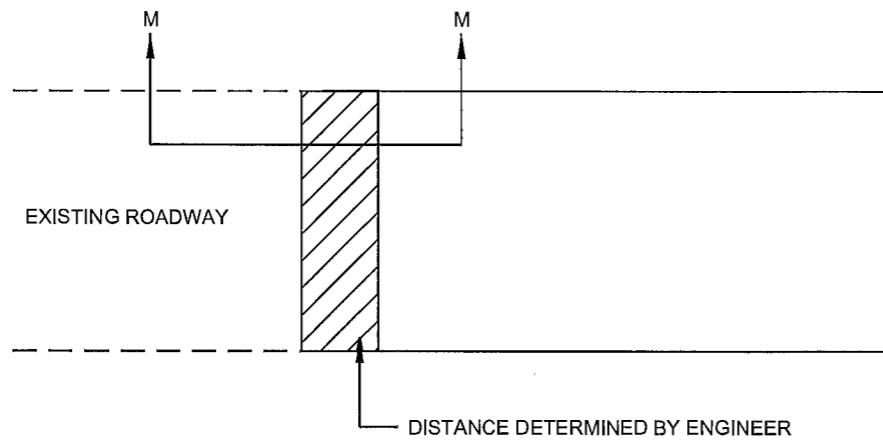
STATE AID PROJECT 002-610-016

TYPICAL SECTIONS
 Sheet 3 of 15 Sheets

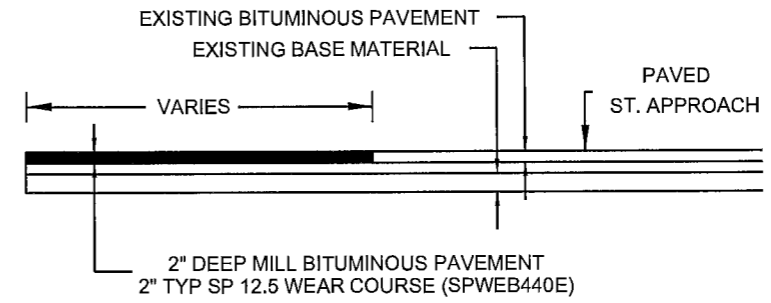
MAINLINE JOINT DETAIL (MILL AND OVERLAY)

BITUMINOUS STREET/ ON - OFF RAMPS

PLAN VIEW



SECTION M - M



NO	DATE	BY	CKD	APPR	REVISION	
	04/02/2019					12:04:43 PM
NAME: P:\19-01-00\CR_3_CSAH_10 (200'W-200'E 47 Ramps)\Basel\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: 4-26-19 LICENSE NO. 46732

DRAWN BY SPH DATE 04/02/2019

DESIGN BY SPH DATE 04/02/2019

CHECKED BY HG DATE 04/02/2019

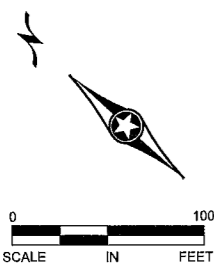
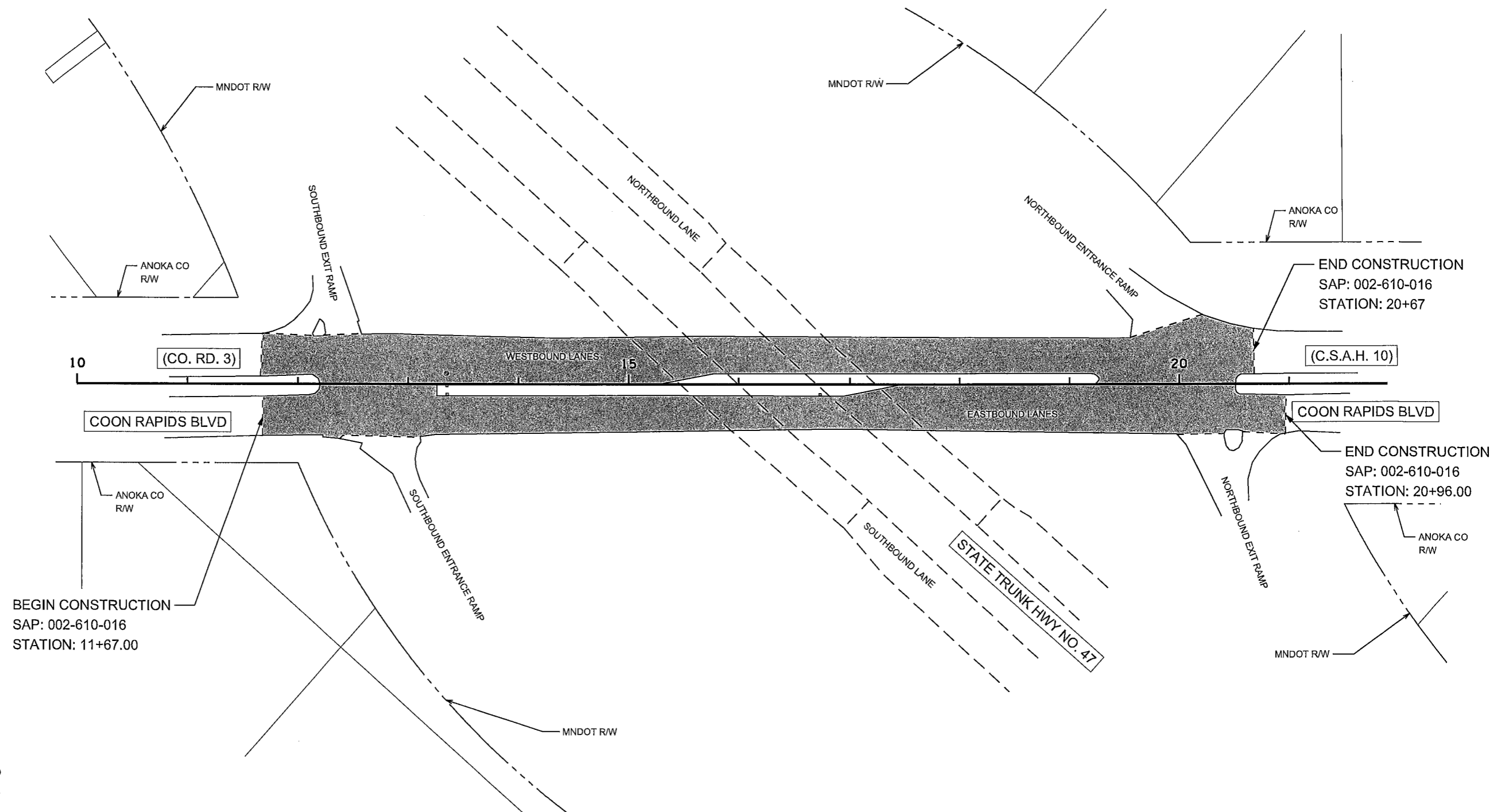


ANOKA COUNTY
HIGHWAY DEPT.

STATE AID PROJECT 002-610-016

DETAILS

Sheet 4 of 15 Sheets



LEGEND	
⊙	STORM MANHOLE
□	CATCH BASIN
- - - -	MILL LIMIT
█	MAINLINE MILL AREA
- - - -	R / W

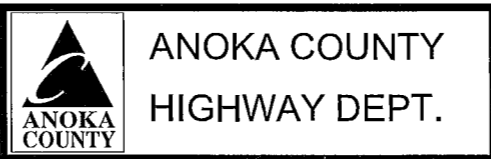
NO	DATE	BY	CKD	APPR	REVISION	DATE	TIME
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NAME: P:\19-01-00\CR_3_CSAH_10 (200'W-200'E 47 Ramps)\Base\PROPOSED\PROPOSED.dgn

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: 4-25-19 LICENSE NO. 46732

DRAWN BY: SPH DATE 04/17/2019
 DESIGN BY: SPH DATE 04/17/2019
 CHECKED BY: HG DATE 04/17/2019



STATE AID PROJECT 002-610-016

CONSTRUCTION PLAN
 STA 11+67 TO 20+96
 Sheet 5 of 15 Sheets

7504

- LED RETROFIT-SYSTEM "W" NOTES:**
- 1) ALL ITEMS OF SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS OTHERWISE NOTED ON PLANS.
 - 2) CONTRACTOR SHALL REMOVE THE INPLACE "HAND/WALKING PERSON" LENS FROM EACH INPLACE ONE SECTION PED SIGNAL INDICATION, AND SHALL FURNISH & INSTALL A NEW COUNTDOWN TIMER LED "HAND/WALKING PERSON" LENS IN ITS PLACE.
 - 3) CONTRACTOR SHALL PROTECT AND MAINTAIN EACH INPLACE ONE SECTION PEDESTRIAN SIGNAL HOUSING & VISOR WHEN REMOVING AND REPLACING EACH LENS, AND SHALL REPLACE THE COMPLETE PEDESTRIAN SIGNAL INDICATION UNIT (HOUSING, VISOR, AND LENS) SHOULD ANY DAMAGE BE DONE TO THE UNIT BY CONTRACTOR DURING WORK ON THIS PROJECT (INCIDENTAL).
 - 4) IN LIEU OF THE LENS REPLACEMENT WORK DESCRIBED ABOVE, THE CONTRACTOR ALSO HAS THE OPTION OF REMOVING EACH INPLACE ONE SECTION PEDESTRIAN SIGNAL INDICATION (HOUSING, VISOR AND LENS) AND REPLACING THEM WITH NEW ONE SECTION PEDESTRIAN SIGNAL INDICATIONS (HOUSING, VISOR, AND LED LENSES), AT NO ADDITIONAL COST TO THE PROJECT.
 - 5) CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MODIFICATIONS TO INPLACE POLE MOUNTED BRACKETING ON EACH TRAFFIC SIGNAL POLE TO ACCOMMODATE INSTALLATION OF NEW ONE SECTION PEDESTRIAN SIGNAL INDICATIONS (INCLUDING THE REPLACEMENT OF THE POLE MOUNTED BRACKETING IF NEEDED TO ACCOMMODATE EACH PEDESTRIAN SIGNAL INDICATION INSTALLATION) (INCIDENTAL).

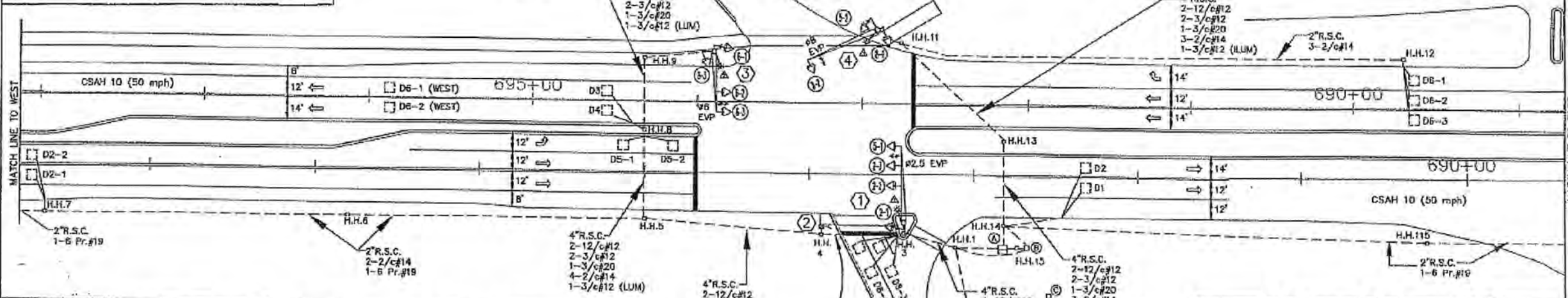
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
DZ-1	6x6	400'	1
DZ-2	6x6	400'	1
D5-1	6x6	10'	1
D5-2	6x6	10'	1
D6-1	6x6	300'	1
D6-2	6x6	300'	1
D6-3	6x6	300'	1
D8-1	8x8	250'	3,8
D8-2	8x8	250'	3,8
D8-3	2-8x8	5' & 20'	1
D8-4	2-8x8	5' & 20'	1
D1	6x6	100'	11
D2	6x6	100'	11
D3	6x6	50'	11
D4	6x6	50'	11

- LOOP DETECTORS FUNCTIONS:**
- 1) CALL AND EXTEND
 - 2) CALL ONLY
 - 3) EXTEND ONLY
 - 4) CALL ONLY DENSITY
 - 5) DELAYED CALL ONLY
 - 6) DELAYED CALL ONLY DENSITY
 - 7) DELAYED CALL - INEBATE EXTEND
 - 8) CARRY OVER (STRETCH)
 - 9) ADVISORY DETECTOR
 - 10) SAMPLING DETECTOR
 - 11) SPECIAL DETECTOR (COUNTING)

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

- 3) PABO POLE FOUNDATION**
 TYPE PA00-A-35-D40-9 (DAWT AT 350')
 LUMINAIRE-200 W HPS W/PEC & CHECK SWITCH
 2-ONE WAY SIGNALS-OVERHEAD (0' & 11' FROM END OF MAST ARM)
 TYPE 10A-POLE MOUNTED 80"
 TYPE 10B-POLE MOUNTED 180"
 1-PEDESTRIAN PUSH BUTTON & SIGN
 RS-3a SIGN PANEL-FACING POLE 2
 2-TYPE D SIGN PANELS-OVERHEAD
 ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (08)
 EXTEND INTO H.H.9:
 3'R.S.C.
 2-12/c#12
 2-3/c#12
 1-3/c#20
 1-3/c#12 (LUM)

- 4) PA100 POLE FOUNDATION**
 TYPE PA100-A-45-D40-9 (DAWT AT 350')
 LUMINAIRE-200 W HPS W/PEC & CHECK SWITCH
 ONE WAY SIGNAL-OVERHEAD
 TYPE 10B-POLE MOUNTED 80"
 TYPE 10A-POLE MOUNTED 180"
 1-PEDESTRIAN PUSH BUTTON & SIGN
 RS-3a SIGN PANEL-FACING POLE 1
 TYPE D SIGN PANEL-OVERHEAD
 ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (08)
 EXTEND INTO H.H.11:
 3'R.S.C.
 2-12/c#12
 2-3/c#12
 1-3/c#20
 1-3/c#12 (LUM)



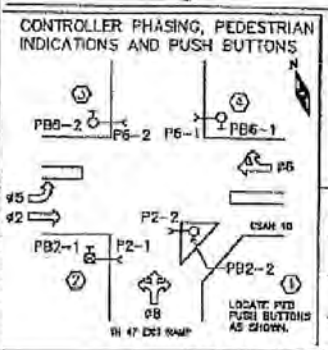
- 6) ANY DAMAGE TO INPLACE TRAFFIC SIGNAL POLES OR VEHICLE SIGNAL HEADS & BRACKETING DUE TO WORK ON THIS PROJECT SHALL BE REPAIRED BY CONTRACTOR TO THE SATISFACTION OF THE ENGINEER, AT NO EXPENSE TO THE CITY.
- 7) IF NEW PEDESTRIAN HOUSINGS AND VISORS ARE USED, THEY SHALL BE FABRICATED USING NEW POLYCARBONATE MATERIALS.
- 8) ALL VEHICULAR SIGNAL INDICATIONS ARE LED AND ARE INPLACE (MAINTAIN AND REUSE INPLACE AS SHOWN).
- 9) CONTRACTOR SHALL REMOVE ALL INPLACE R10-4b STICKER SIGNS, AND "MEANING OF WALK" STICKER SIGNS, AND SHALL FURNISH & INSTALL NEW R10-3a SIGNS IN THEIR PLACE. ALL PUSH BUTTONS ARE ADA COMPLIANT AND ARE INPLACE (REUSE).

- 10) CONTRACTOR SHALL MAINTAIN OPERATION OF THE SIGNAL SYSTEM AT ALL TIMES, EXCEPT AS OTHERWISE APPROVED BY ENGINEER.
- 11) SEE STATEMENT OF ESTIMATED QUANTITIES FOR BID ITEMS FOR WORK AT THIS SIGNAL SYSTEM.

- B) SIGNAL SERVICE CABINET**
 CABINET FOUNDATION
 EXTEND INTO H.H.15:
 METERED SIGNAL SERVICE
 2'R.S.C.
 3-1/c#6
 EXTEND INTO H.H.1:
 UNMETERED STREET LIGHT SERVICE
 2'R.S.C.
 2-3/c#12 (LUM)
 EXTEND INTO H.H.14:
 UNMETERED STREET LIGHT SERVICE
 2'R.S.C.
 1-3/c#12 (LUM)
 STUB OUT 2'R.S.C. TO SOUTH
 (FOR SERVICE CONNECTION BY CONNEXUS)

- A) CONTROLLER AND CABINET**
 CABINET FOUNDATION
 EXTEND INTO H.H.15:
 METERED SIGNAL SERVICE
 2'R.S.C.
 3-1/c#6
 EXTEND INTO H.H.1:
 4'R.S.C.
 4-12/c#12
 2-3/c#12
 2-3/c#20
 10-3/c#14
 1-8 Pr.#19
 EXTEND INTO H.H.14:
 4'R.S.C.
 2-12/c#12
 2-3/c#12
 1-3/c#20
 5-2/c#14
 1-8 Pr.#19
 2-3'R.S.C. STUBBED OUT FROM CABINET TO NORTH (THREADED AND CAPPED BOTH ENDS- FOR FUTURE USE)

- 1) P90 POLE FOUNDATION**
 TYPE PA100-A-45-D40-9 (DAWT AT 350')
 LUMINAIRE-200 W HPS W/PEC & CHECK SWITCH
 3-ONE WAY SIGNALS-OVERHEAD (0', 11' AND 23' FROM END OF MAST ARM)
 TYPE 10B-POLE MOUNTED 180"
 1-PEDESTRIAN PUSH BUTTON & SIGN
 RS-3a SIGN PANEL-FACING POLE 4
 TYPE D SIGN PANEL-OVERHEAD
 ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (#2,5)
 EXTEND INTO H.H.3:
 3'R.S.C.
 2-12/c#12
 3-3/c#12
 1-3/c#20
 1-3/c#12 (LUM)



LED SIGNAL FACES			
SIGNAL FACE	ALL 12"		
	R	Y	G
2-1, 2-2, 2-3	○	○	○
5-1, 5-2	○	○	○
6-1, 6-2, 6-3	○	○	○
8-1, 8-2, 8-3	○	○	○

○ ← = INPLACE LED INDICATION, REUSE INPLACE.

DESIGNER	DATE
JMG	04/23/2019

NO.	DATE	BY	CKD	APPR	REVISION

SYSTEM ID = 20220
 METER ADDRESS = HIGHWAY 10 AND HIGHWAY 47

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

DATE: 04/23/2019
 SIGNATURE: Douglas W. Fischer
 LICENSE NO. 20235

SEH
 PHONE: (651) 480-3000
 3535 WILKINSON CENTER DR.
 ST. PAUL, MN 55110

COON RAPIDS, MINNESOTA

LED RETROFIT-SYSTEM "W"
 INTERSECTION LAYOUT
 CSAH 10 AT TH 47 EAST RAMPS

S.P. 114-030-10
 CITY PROJECT NO. 09-18;
 FILE NO. 107418
 DATE 05/18/2009
 54
 131

REFERENCES PURPOSES ONLY

NO.	DATE	BY	CKD	APPR	REVISION

NAME: P:\19-01-00\CR_3_CSAH_10 (200'W-200'E 47 Ramps)\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: SPH DATE 04/23/2019
 DESIGN BY: SPH DATE 04/23/2019
 CHECKED BY: HG DATE 04/23/2019

ANOKA COUNTY
 HIGHWAY DEPT.

STATE AID PROJECT 002-610-016

EXISTING SIGNAL PLAN
 Sheet 6 of 15 Sheets

REFERENCES PURPOSES ONLY

- LED RETROFIT-SYSTEM "X" NOTES**
- ALL ITEMS OF SIGNAL SYSTEM ARE INPLACE AND SHALL BE REUSED AND MAINTAINED INPLACE, UNLESS OTHERWISE NOTED ON PLANS.
 - CONTRACTOR SHALL REMOVE THE INPLACE "HAND/WALKING PERSON" LENS FROM EACH INPLACE ONE SECTION PED SIGNAL INDICATION, AND SHALL FURNISH & INSTALL A NEW COUNTDOWN TIMER LED "HAND/WALKING PERSON" LENS IN ITS PLACE.
 - CONTRACTOR SHALL PROTECT AND MAINTAIN EACH INPLACE ONE SECTION PEDESTRIAN SIGNAL HOUSING & VISOR WHEN REMOVING AND REPLACING EACH LENS, AND SHALL REPLACE THE COMPLETE PEDESTRIAN SIGNAL INDICATION UNIT (HOUSING, VISOR, AND LENS) SHOULD ANY DAMAGE BE DONE TO THE UNIT BY CONTRACTOR DURING WORK ON THIS PROJECT (INCIDENTAL).
 - IN LIEU OF THE LENS REPLACEMENT WORK DESCRIBED ABOVE, THE CONTRACTOR ALSO HAS THE OPTION OF REMOVING EACH INPLACE ONE SECTION PEDESTRIAN SIGNAL INDICATION (HOUSING, VISOR AND LENS) AND REPLACING THEM WITH NEW ONE SECTION PEDESTRIAN SIGNAL INDICATIONS (HOUSING, VISOR, AND LED LENSES), AT NO ADDITIONAL COST TO THE PROJECT.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MODIFICATIONS TO INPLACE POLE MOUNTED BRACKETING ON EACH TRAFFIC SIGNAL POLE TO ACCOMMODATE INSTALLATION OF NEW ONE SECTION PEDESTRIAN SIGNAL INDICATIONS (INCLUDING THE REPLACEMENT OF THE POLE MOUNTED BRACKETING IF NEEDED TO ACCOMMODATE EACH PEDESTRIAN SIGNAL INDICATION INSTALLATION) (INCIDENTAL).
 - ANY DAMAGE TO INPLACE TRAFFIC SIGNAL POLES OR VEHICLE SIGNAL HEADS & BRACKETING DUE TO WORK ON THIS PROJECT SHALL BE REPAIRED BY CONTRACTOR TO THE SATISFACTION OF THE ENGINEER, AT NO EXPENSE TO THE CITY.
 - IF NEW PEDESTRIAN HOUSINGS AND VISORS ARE USED, THEY SHALL BE FABRICATED USING NEW POLYCARBONATE MATERIALS.
 - ALL VEHICULAR SIGNAL INDICATIONS ARE LED AND ARE INPLACE (MAINTAIN AND REUSE INPLACE AS SHOWN).
 - CONTRACTOR SHALL REMOVE ALL INPLACE R10-4b STICKER SIGNS, AND "MEANING OF WALK" STICKER SIGNS, AND SHALL FURNISH & INSTALL NEW R10-3a SIGNS IN THEIR PLACE. ALL PUSH BUTTONS ARE ADA COMPLIANT AND ARE INPLACE (REUSE).

INPLACE NMC LOOP DETECTORS

NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	6x6	40'	1
D1-2	6x6	10'	1
D2-1	6x6	400'	1
D2-2	6x6	400'	1
D4-1	6x6	250'	3,6
D4-2	6x6	250'	3,6
D4-3	2-6x6	5' & 20'	1
D4-4	2-6x6	5' & 20'	1
D6-1	6x6	400'	1
D6-2	6x6	400'	1
D1	6x6	50'	11
D2	6x6	50'	11
D3	6x6	100'	11
D4	6x6	100'	11

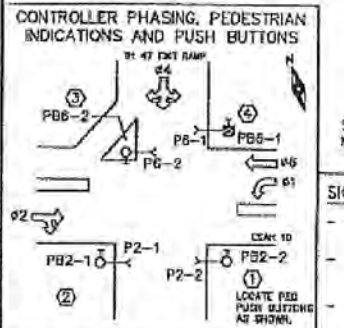
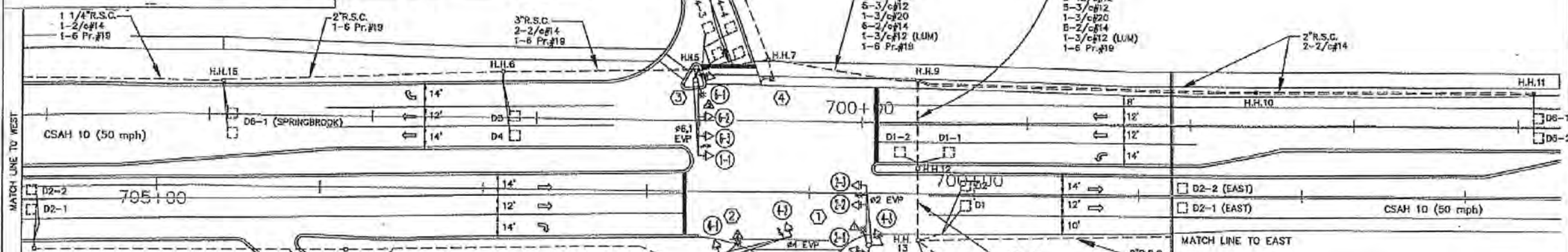
LOCATION-DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR.

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

- PEDESTAL FOUNDATION**
B PEDESTAL POLE AND BASE
TYPE 4A
1-PEDESTRIAN PUSH BUTTON & SIGN
R9-3a SIGN PANEL-FACING POLE 1
EXTEND INTO H.H.7
3'R.S.C.
2-3/c#12

- PA80 POLE FOUNDATION**
TYPE PA80-A-35-D40-9 (DAWT AT 350')
LUMINAIRE-200 W HPS W/PEC & CHECK SWITCH
2-ONE WAY SIGNALS-OVERHEAD (0' & 11' FROM END OF MAST ARM)
TYPE 10A-POLE MOUNTED 90°
TYPE 10B-POLE MOUNTED 180°
1-PEDESTRIAN PUSH BUTTON & SIGN
R9-3a SIGN PANEL-FACING POLE 5
2-TYPE D SIGN PANELS-OVERHEAD
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (#2)
EXTEND INTO H.H.11
3'R.S.C.
2-12/c#12
2-3/c#12
1-3/c#20
1-3/c#12 (LUM)

- A100 POLE FOUNDATION**
TYPE PA100-A-45-D40-9 (DAWT AT 350')
LUMINAIRE-200 W HPS W/PEC & CHECK SWITCH
3-ONE WAY SIGNALS-OVERHEAD (0', 11' AND 23' FROM END OF MAST ARM)
TYPE 10B-POLE MOUNTED 180°
1-PEDESTRIAN PUSH BUTTON & SIGN
R9-3a SIGN PANEL-FACING POLE 2
TYPE D SIGN PANEL-OVERHEAD
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (#6.1)
EXTEND INTO H.H.5
3'R.S.C.
2-12/c#12
3-3/c#20
3-2/c#14
1-3/c#12 (LUM)
1-6 Pr.#19



- PA100 POLE FOUNDATION**
TYPE PA100-A-40-D40-9 (DAWT AT 350')
LUMINAIRE-200 W HPS W/PEC & CHECK SWITCH
ONE WAY SIGNAL-OVERHEAD
TYPE 10B-POLE MOUNTED 90°
TYPE 10A-POLE MOUNTED 180°
1-PEDESTRIAN PUSH BUTTON & SIGN
R9-3a SIGN PANEL-FACING POLE 3
TYPE D SIGN PANEL-OVERHEAD
ONE WAY EVP DETECTOR AND LIGHT-OVERHEAD (#4)
EXTEND INTO H.H.2
3'R.S.C.
2-12/c#12
2-3/c#12
1-3/c#20
1-3/c#14
1-3/c#12 (LUM)

- INPLACE GROUND MOUNTED TRANSFORMER**
(S.O.P.) (CONNEXUS)

- SIGNAL SERVICE CABINET**
CABINET FOUNDATION
EXTEND INTO H.H.14.
METERED SIGNAL SERVICE
2'R.S.C.
3-1/c#6
EXTEND INTO H.H.1:
4'R.S.C.
4-12/c#12
4-3/c#12
2-3/c#20
2-2/c#14
EXTEND INTO H.H.13:
4'R.S.C.
2-12/c#12
5-3/c#12
1-3/c#20
12-2/c#14
2-6 Pr.#19
2-3'R.S.C. STUBBED OUT FROM CABINET TO NORTH (THREADED AND CAPPED BOTH ENDS- FOR FUTURE USE)

- CONTROLLER AND CABINET**
CABINET FOUNDATION
EXTEND INTO H.H.14:
METERED SIGNAL SERVICE
2'R.S.C.
3-1/c#6
EXTEND INTO H.H.1:
4'R.S.C.
4-12/c#12
4-3/c#12
2-3/c#20
2-2/c#14
EXTEND INTO H.H.13:
4'R.S.C.
2-12/c#12
5-3/c#12
1-3/c#20
12-2/c#14
2-6 Pr.#19
2-3'R.S.C. STUBBED OUT FROM CABINET TO NORTH (THREADED AND CAPPED BOTH ENDS- FOR FUTURE USE)

RECORD PLAN FOR LED PROJECT
(PLANS CONFIRMED FOR PROJECT WORK ONLY)
DATE 08-08-10

LED SIGNAL FACES

SIGNAL FACE	ALL 12"		
	R	Y	G
1-1, 1-2	○	○	○
2-1, 2-2, 2-3	○	○	○
4-1, 4-2, 4-3	○	○	○
8-1, 8-2, 8-3	○	○	○

○ ↔ = INPLACE LED INDICATION, REUSE INPLACE.

S.P. 114-030-10
CITY PROJECT NO. 09-18

RECORD DRAWING FOR PROJECT

NO.	DATE	BY	CHKD	APPR	REVISION
1	04/23/2019	JMG	JMG	JMG	

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

John M. Gray P.E.
Date: May 18, 2022
Lic. No. 22457



COON RAPIDS, MINNESOTA

LED RETROFIT-SYSTEM "X" INTERSECTION LAYOUT
CSAH 10 AT TH 47 WEST RAMPS

FILE NO. 107418	56
DATE 05/10/2009	131

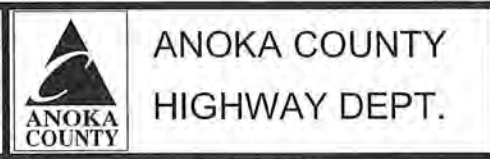
NO.	DATE	BY	CHKD	APPR	REVISION
1	04/23/2019	JMG	JMG	JMG	

NAME: P:\19-01-00\CR_3_CSAH_10 (200'W-200'E 47 Ramps)\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.

DOUGLAS W. FISHER
Signature: [Signature]
Date: 4/25/19
License No. 20235

DRAWN BY: SPH DATE: 04/23/2019
DESIGN BY: SPH DATE: 04/23/2019
CHECKED BY: HG DATE: 04/23/2019



STATE AID PROJECT 002-610-016

EXISTING SIGNAL PLAN
Sheet 7 of 15 Sheets

PERMANENT PAVEMENT MARKING PLAN
NOTES AND GUIDELINES

GENERAL INFORMATION:

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

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

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

MULTI COMPONENT (MULTI COMP):

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

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

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

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

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

PREFORMED THERMOPLASTIC:

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

PAINT:

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

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

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

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

PAVEMENT MARKING TABULATION		
ITEM	UNIT	TOTAL QUANTITY
4" SOLID LINE WHITE - MULTI COMP	LIN FT	5135
1 4" BROKEN LINE WHITE - MULTI COMP	LIN FT	700
2 4" DOTTED LINE WHITE - MULTI COMP	LIN FT	60
4" SOLID LINE YELLOW - MULTI COMP	LIN FT	3640
24" SOLID LINE WHITE - PREFORMED THERMOPLASTIC (PMS*)	LIN FT	154
3'x6' ZEBRA CROSSWALK - PREFORMED THERMOPLASTIC	SQ FT	486
PAVEMENT MESSAGE (LT ARROW) - PREFORMED THERMOPLASTIC	SQ FT	31
PAVEMENT MESSAGE (RT ARROW) - PREFORMED THERMOPLASTIC	SQ FT	47

1 10' STRIPE, 40' GAP

2 2' STRIPE, 6' GAP

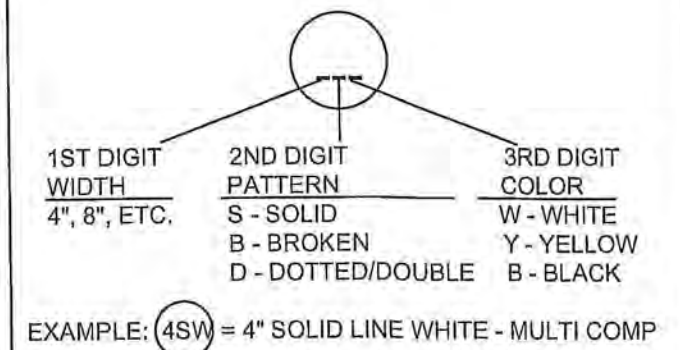
* PAVEMENT MARKING SPECIAL

SYMBOLS & MATERIALS LEGEND

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

STRIPING KEY

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



NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\19-01-00\CR 3 CSAH 10 (200'W 200'E 47 RAMPS)\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, P.E.

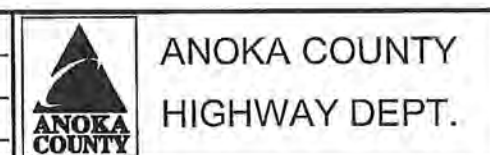
SIGNATURE: *[Signature]*

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

DRAWN BY: TMV DATE: 03/04/19

DESIGN BY: DATE:

CHECKED BY: DATE:



STATE PROJECT NO. _____

STATE AID PROJECT NO. 002-610-016

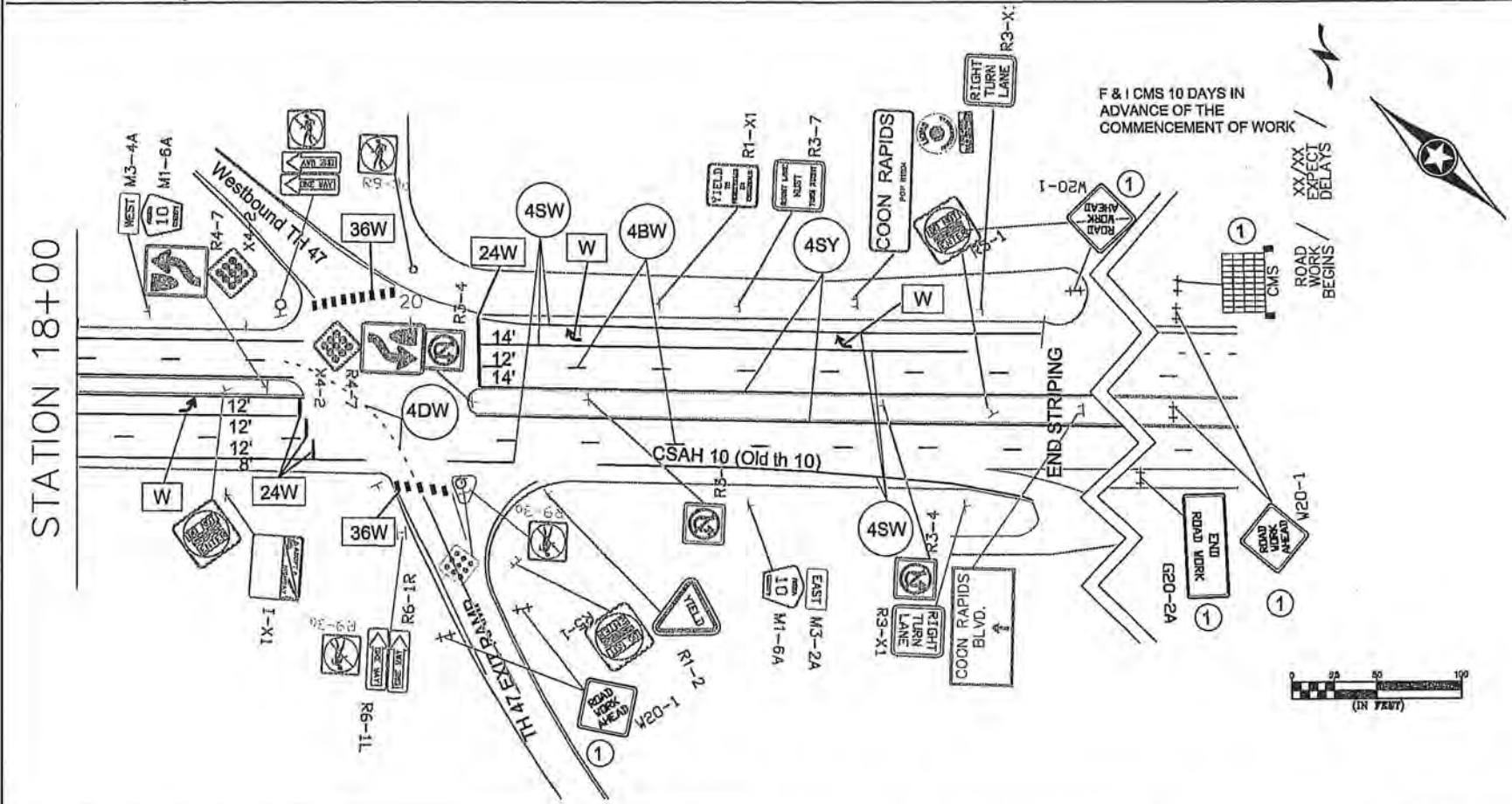
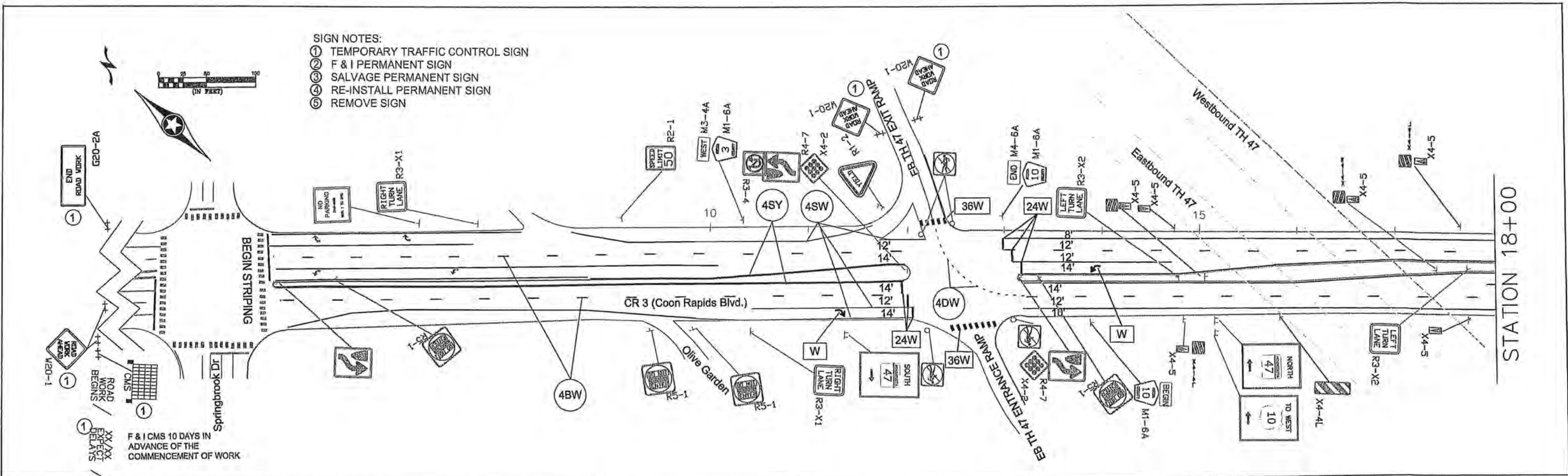
CITY PROJECT NO. _____

COUNTY PROJECT NO. _____

PERMANENT MARKING TABULATION

Sheet 8 of 15 Sheets

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



- 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.

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\19-01-00\CR 3 CSAH 10 (200'W 200'E 47 RAMPS)\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 REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: DOUGLAS W. FISCHER

SIGNATURE: *[Signature]*

DATE: 4/23/19 REG. NO. 20235

DRAWN BY: TMV DATE: 03/04/19

DESIGN BY: DATE: _____

CHECKED BY: DATE: _____

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____

STATE AID PROJECT NO. 002-610-016

STATE AID PROJECT NO. _____

COUNTY PROJECT NO. _____

TEMPORARY SIGNING,
PERMANENT SIGNING
AND STRIPING

Sheet 9 of 15 Sheets

TEMPORARY TRAFFIC CONTROL SIGNS						
M.U.T.C.D. CODE	SIZE	PANEL AREA	INSERT	QUANTITY		MOUNTING HEIGHT (to post top) FT.
		FT. ²			No. POST	
W8-12	48" x 48"	16.00		0	2	7.0'
G20-2A	48" x 24"	8.00		2	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 (ESTIMATED 5)		
W8-11	48" x 48"	16.00		AS NEEDED		
W20-1	48" x 48"	16.00		AS NEEDED (ESTIMATED 7)		
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		

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	CHKD	APPR	REVISION

NAME: P:\19-01-00\CR 3 CSAH 10 (200'W 200'E 47 RAMP)\Base\Traffic\Signing & Striping.dwg

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PRINT NAME: DOUGLAS W. FISCHER

SIGNATURE:

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

DRAWN BY: TMV DATE: 03/04/19

DESIGN BY: DATE:

CHECKED BY: DATE:

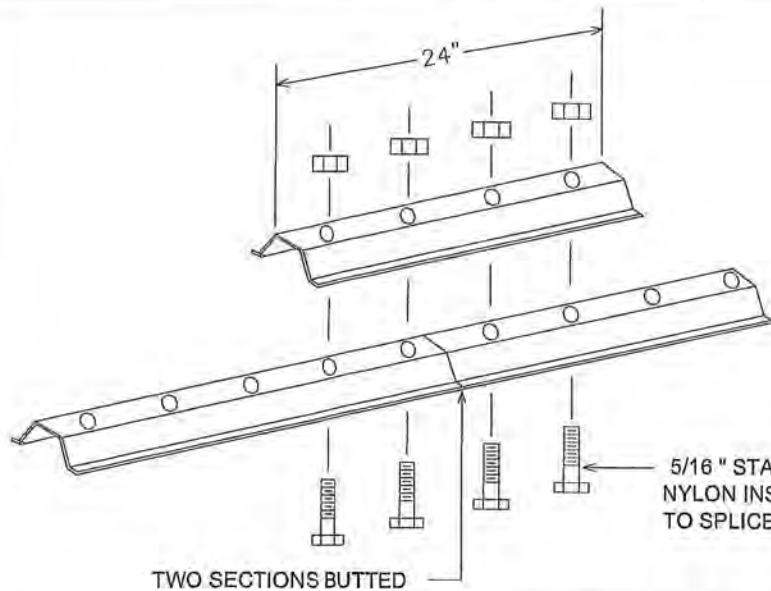


ANOKA COUNTY
HIGHWAY DEPT.

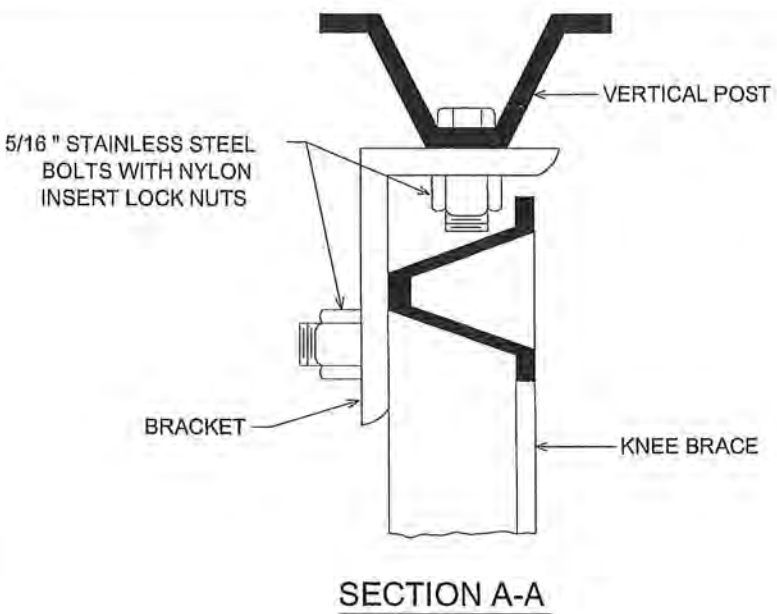
STATE PROJECT NO. _____
STATE AID PROJECT NO. 002-610-016
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

TEMPORARY SIGNING,
PERMANENT SIGNING
AND STRIPING

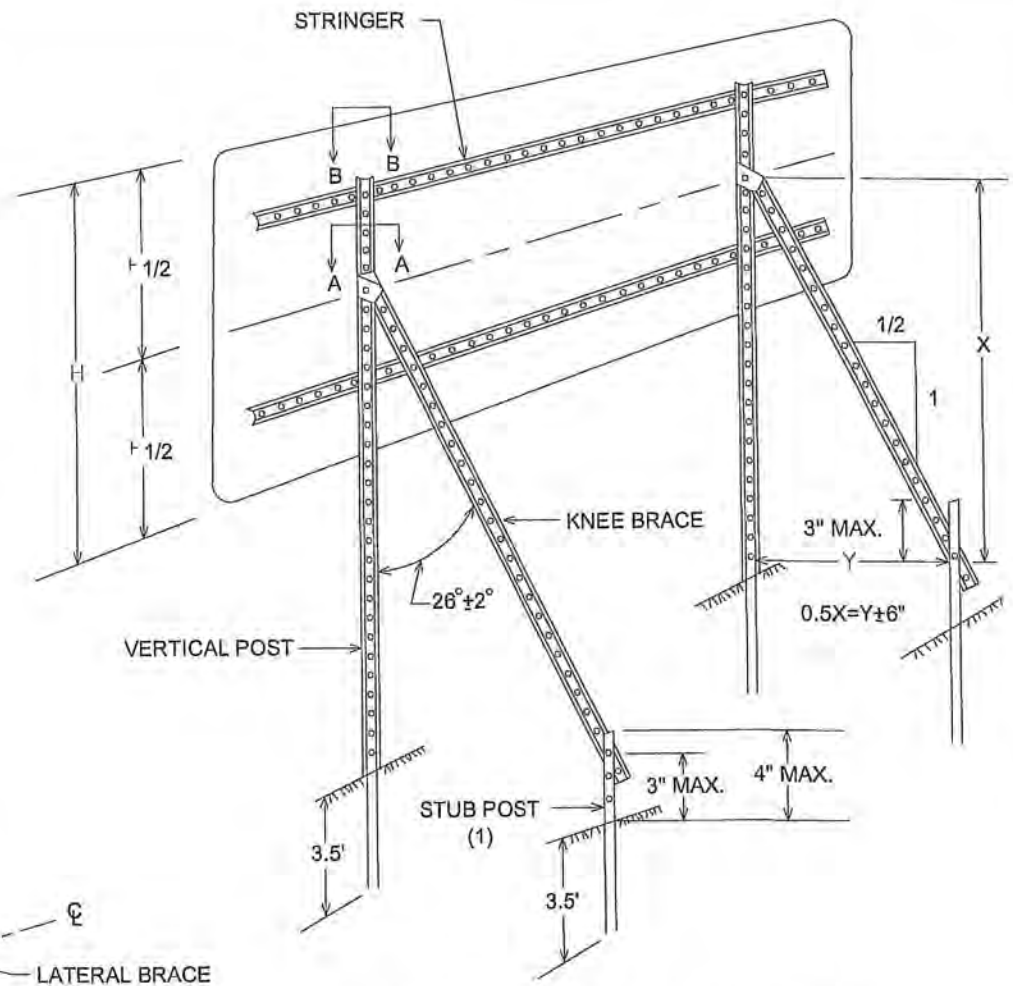
Sheet 10 of 15 Sheets



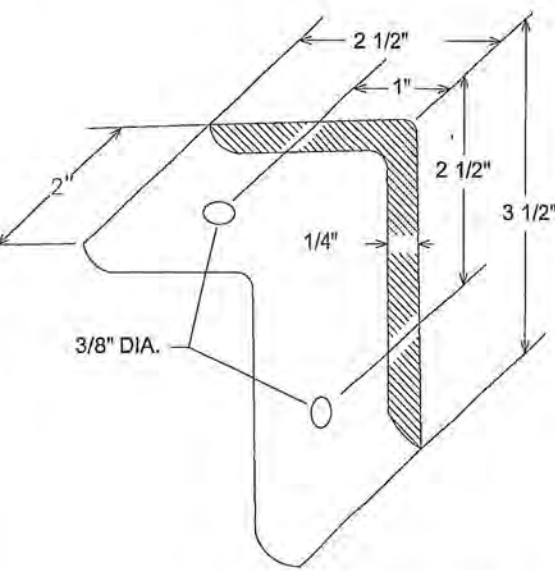
**LATERAL BRACE OR STRINGER
SPLICE DETAIL (EXPLODED VIEW)**



SECTION A-A

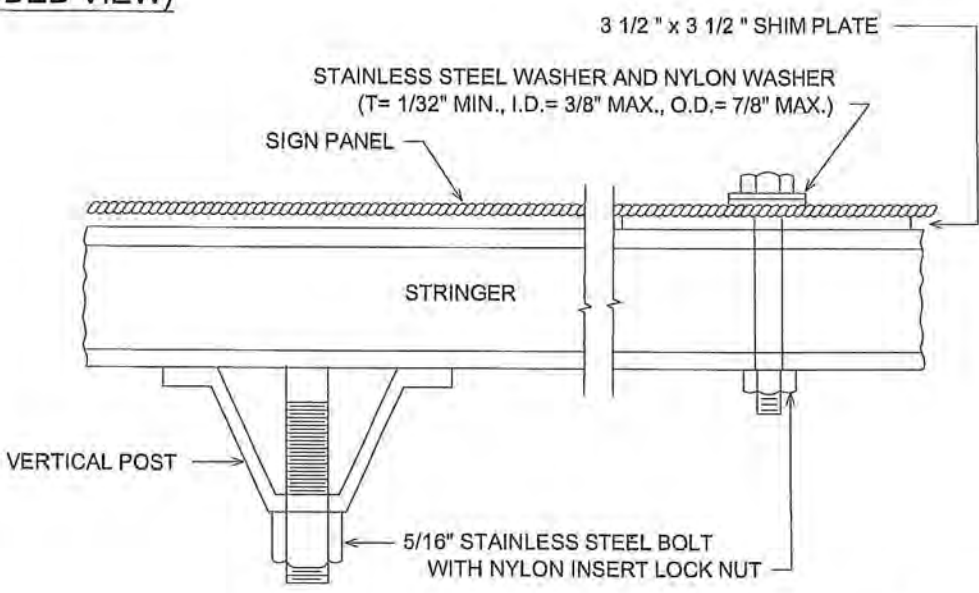


**TYPICAL "A-FRAME" INSTALLATION
TYPE "D" SIGNS**

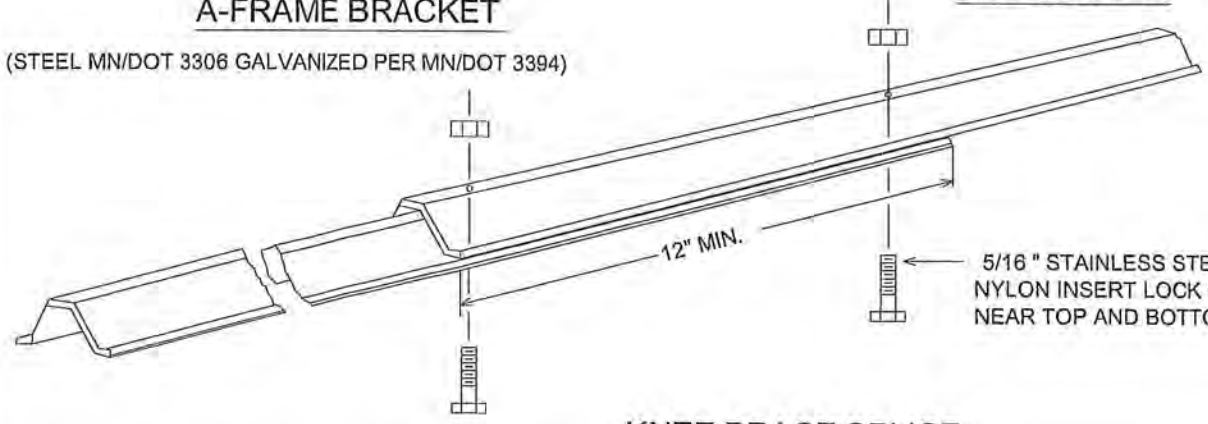


A-FRAME BRACKET

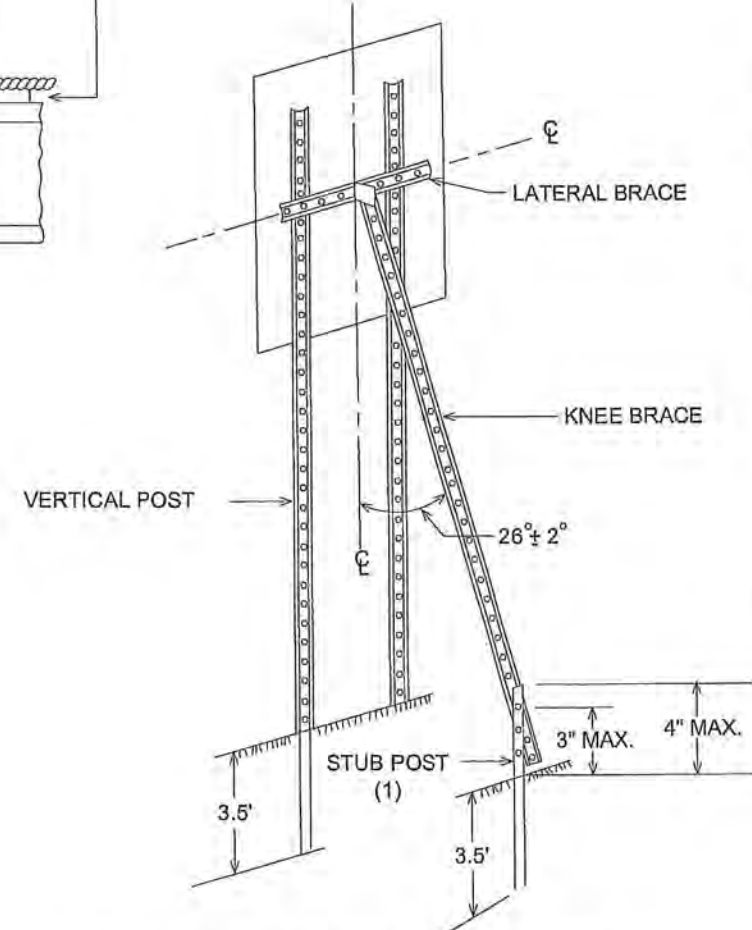
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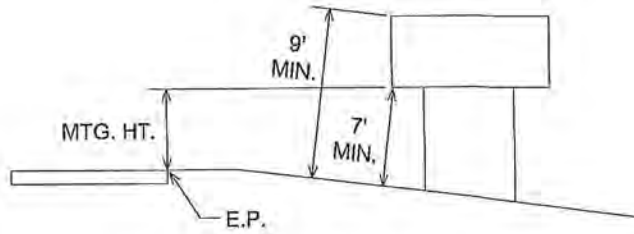
SECTION B-B



KNEE BRACE SPLICE



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



TYPICAL MOUNTING

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

**TYPE C & D SIGN
STRUCTURAL DETAILS**

NO	DATE	BY	CHKD	APPR	REVISION

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

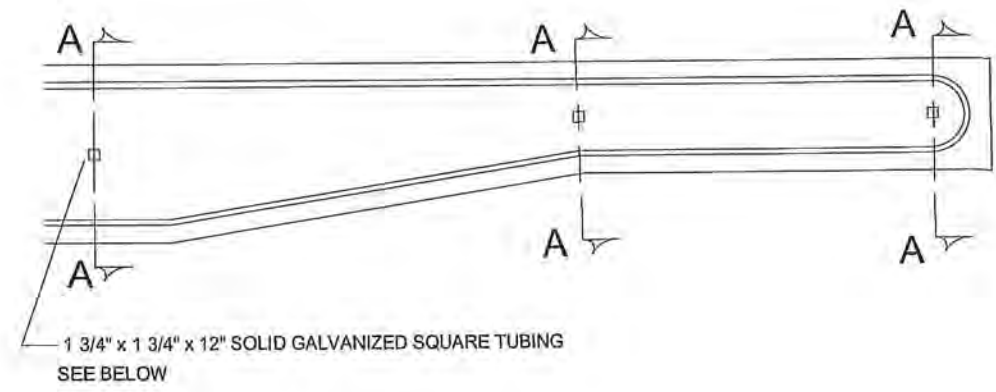
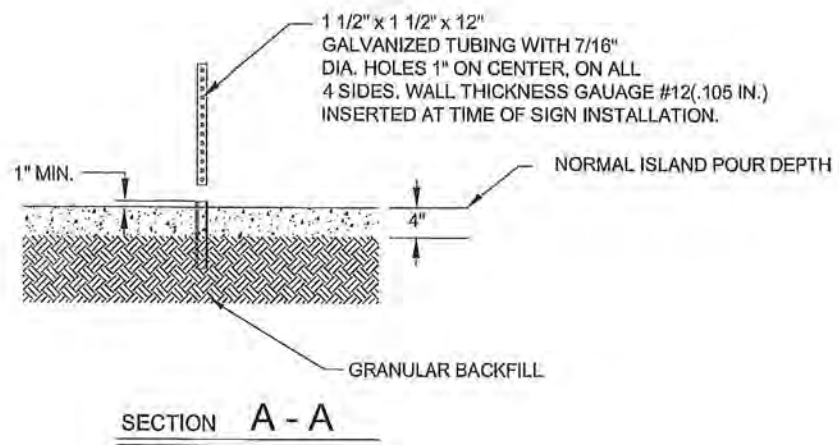
DRAWN BY: TMV DATE 02/21/19
 DESIGN BY: DATE
 CHECKED BY: DATE



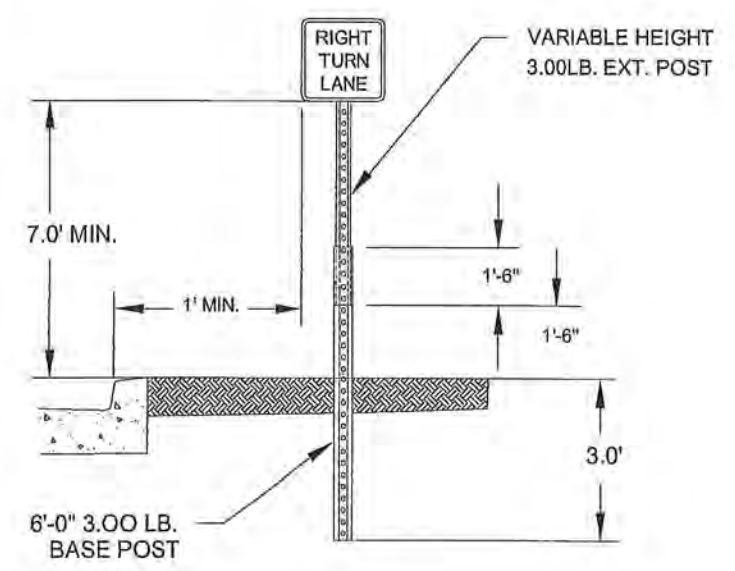
**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____
 STATE AID PROJECT NO. 002-610-016
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. _____

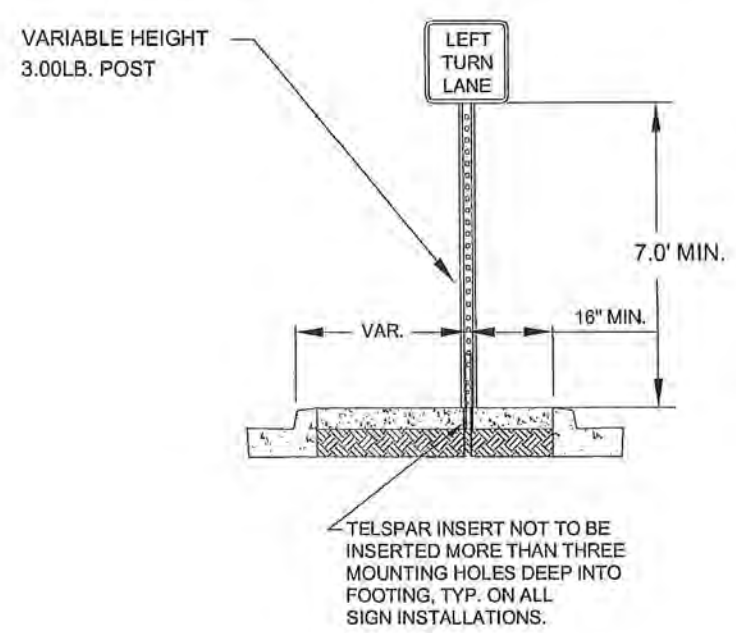
SIGNING & STRIPING
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 Sheet 11 of 15 Sheets



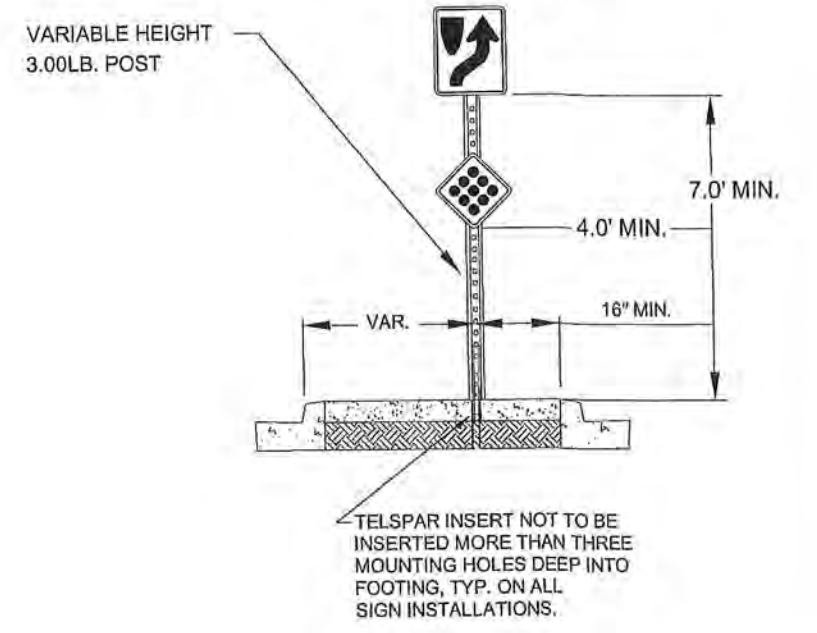
GROUND POST MOUNT SIGN
INSTALLATION TYPICAL



ISLAND MOUNT BREAK-AWAY SIGN
INSTALLATION TYPICAL



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



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: TAYLOR DATE: 02/21/19
DESIGN BY: DATE:
CHECKED BY: DATE:



ANOKA COUNTY
HIGHWAY DEPT.

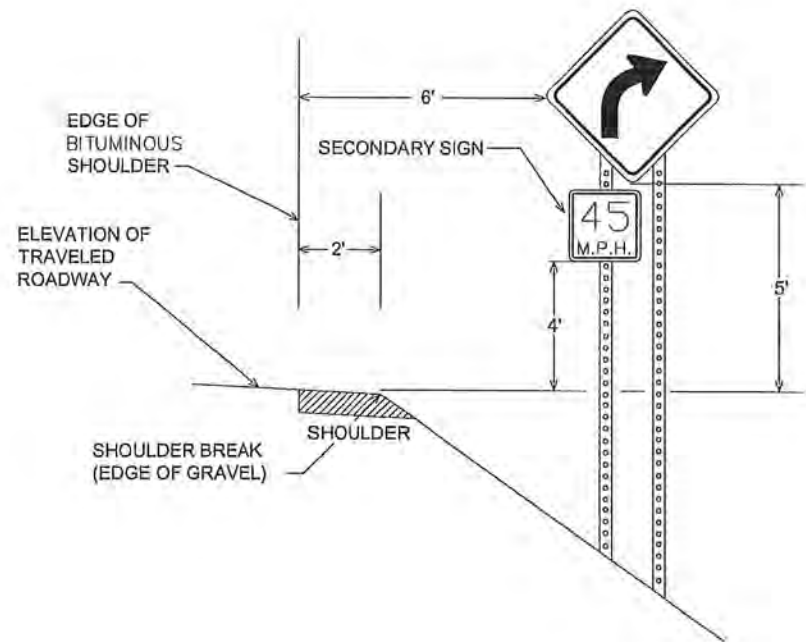
STATE PROJECT NO. _____
STATE AID PROJECT NO. 002-610-016
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. _____

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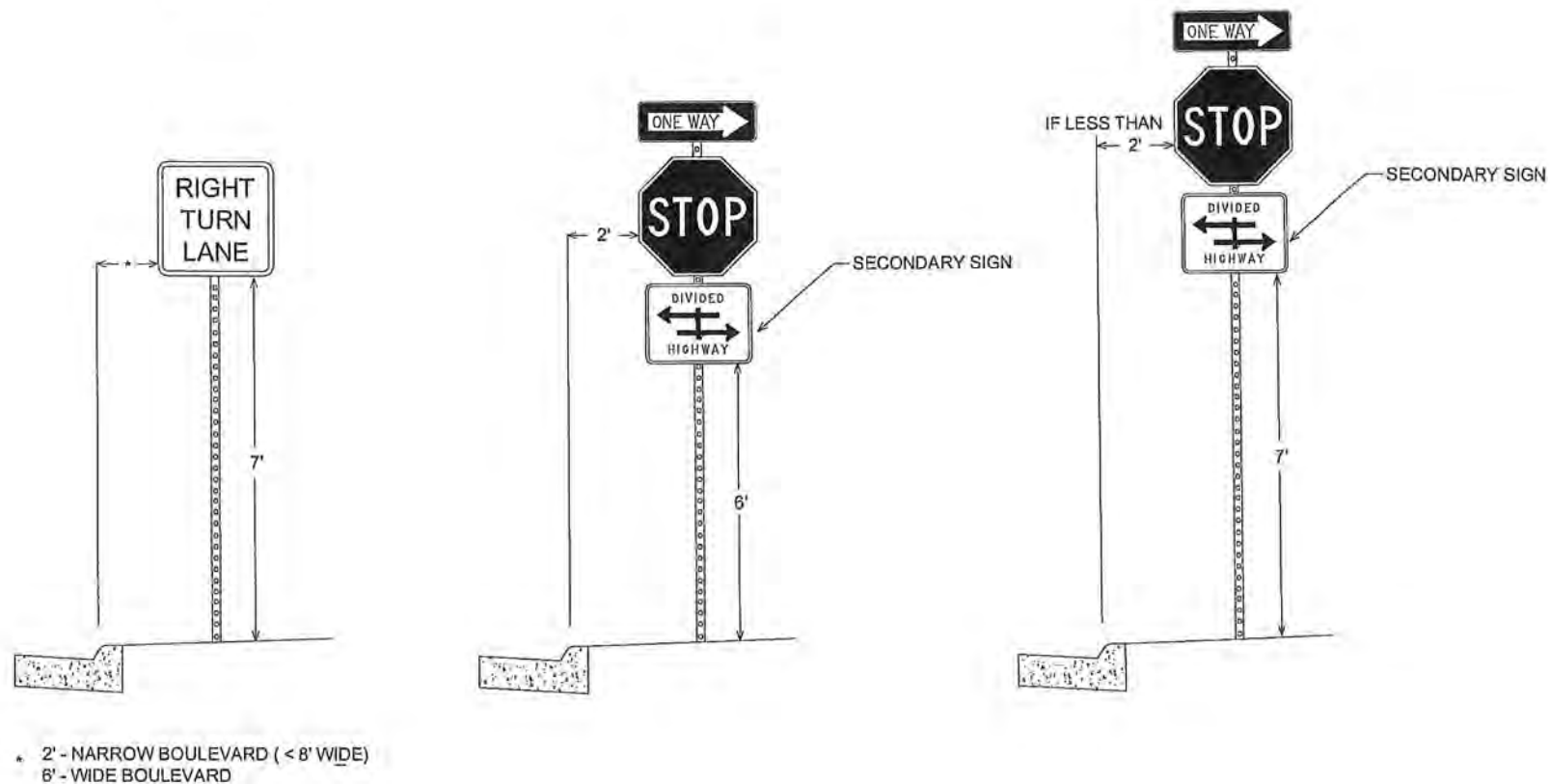
NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\19-01-00\CR 3 CSAH 10 (200'W 200'E 47 RAMPS)\Base\Traffic\Signing & Striping Details.dwg

TYPICAL SIGN PLACEMENT
(RURAL)

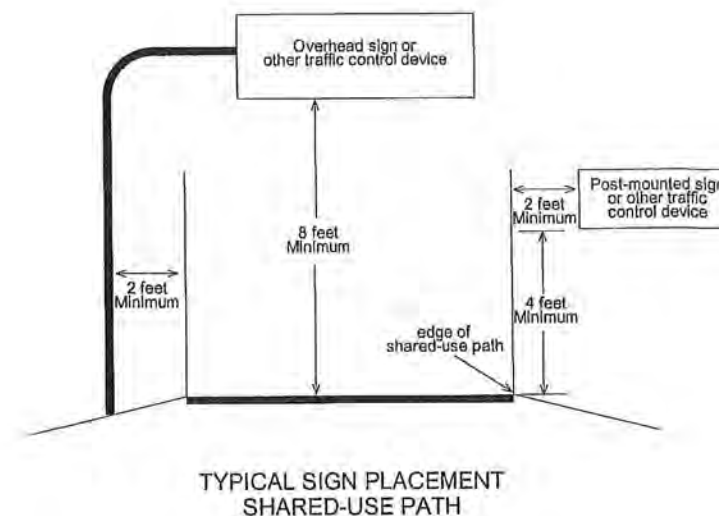


TYPICAL SIGN PLACEMENT
(URBAN)



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

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: _____

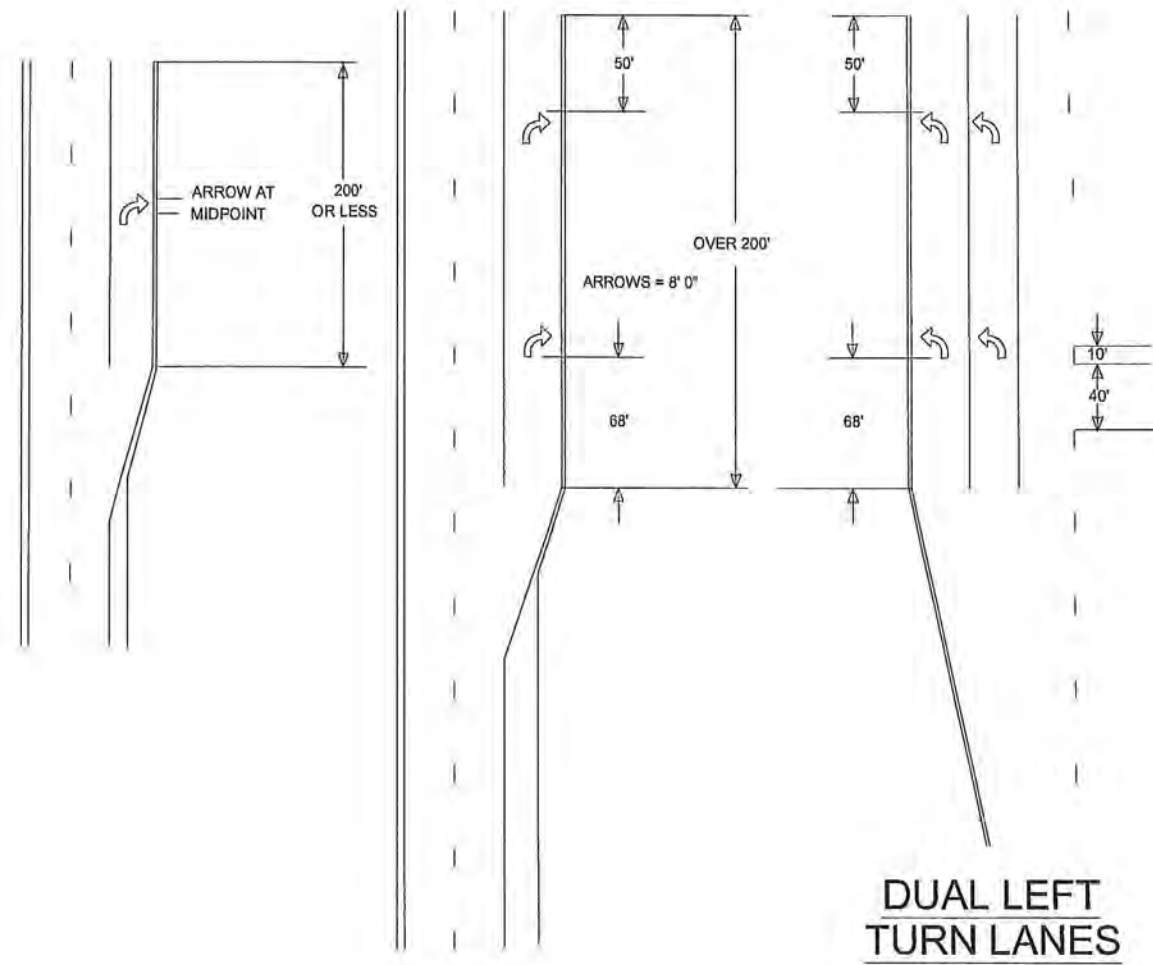


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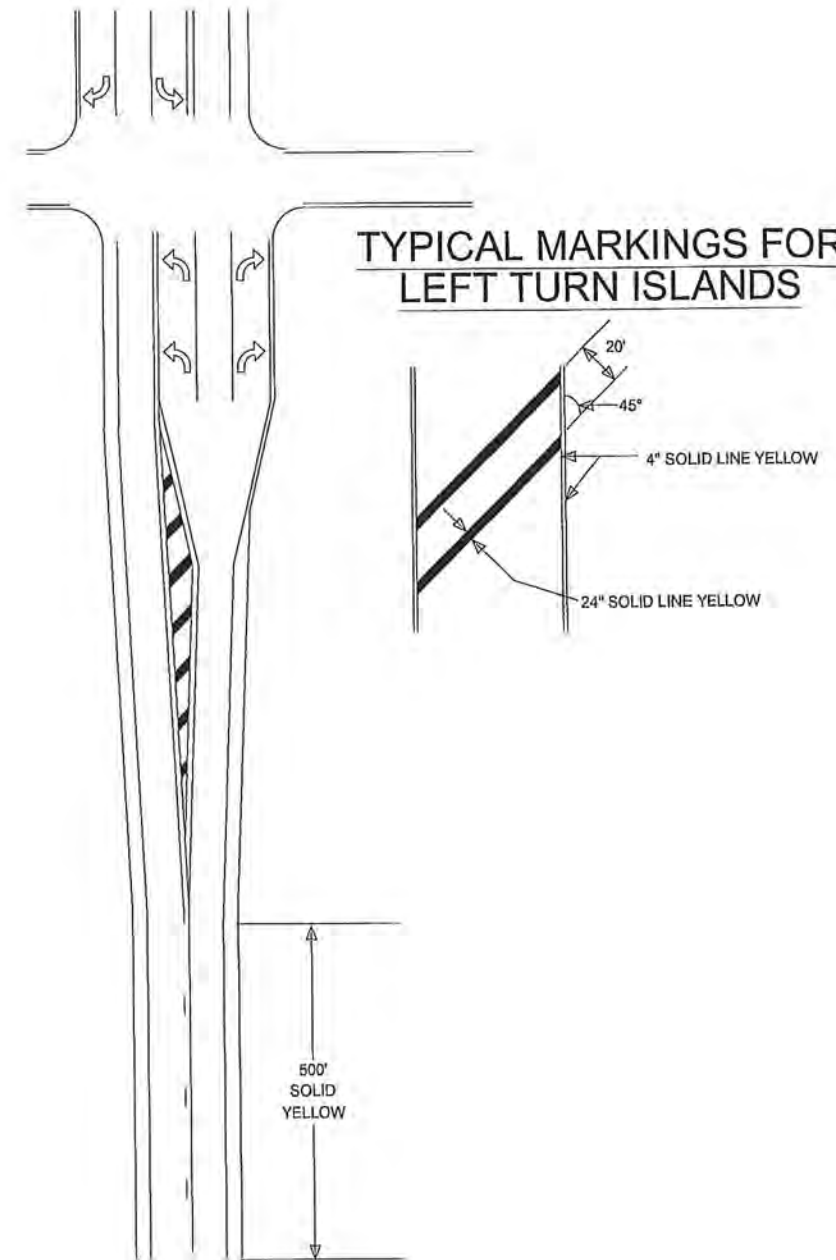
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 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. _____

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**TYPICAL MESSAGE PLACEMENT
FOR TURN LANES**



**TYPICAL MARKINGS FOR
LEFT TURN ISLANDS**



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\19-01-00\CR 3 CSAH 10 (200'W 200'E 47 RAMP)\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 _____



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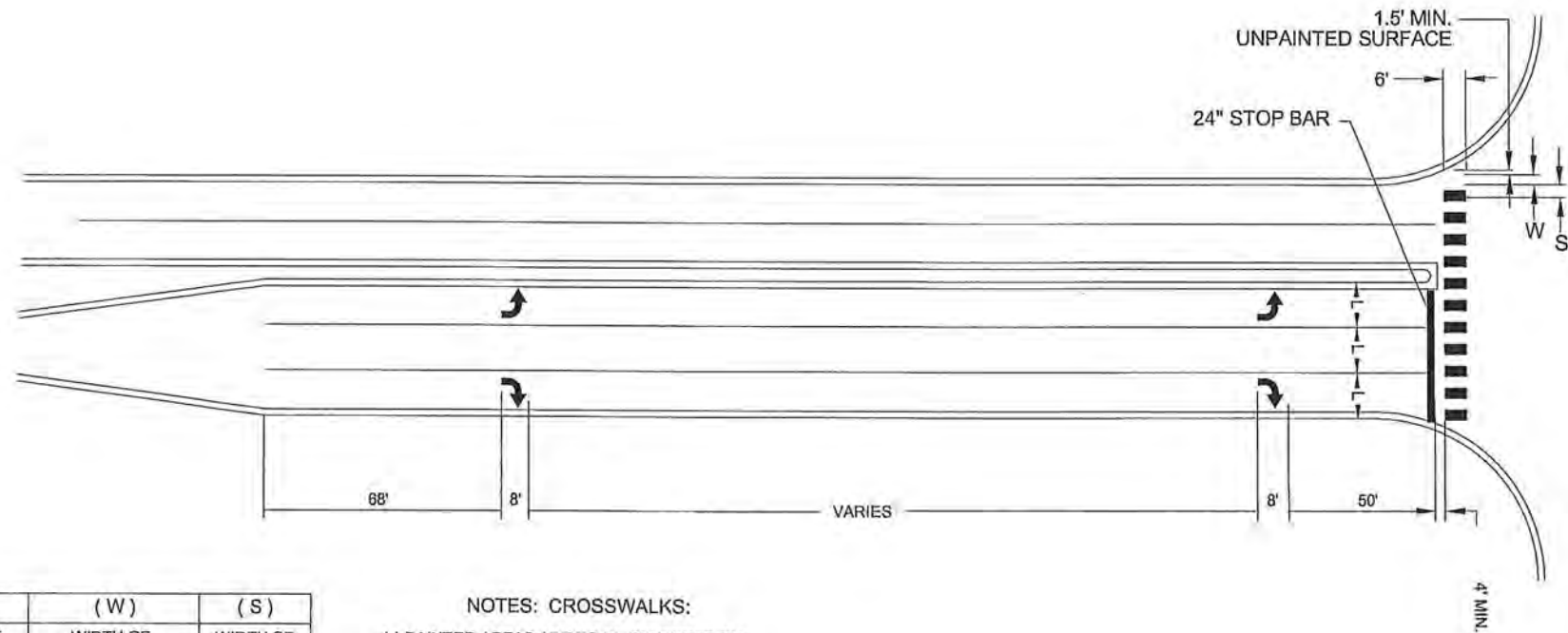
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MARKINGS FOR PEDESTRIAN CROSSWALKS



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

NOTES: CROSSWALKS:

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

NO	DATE	BY	CKD	APPR	REVISION
1	12/21/19	TMV			BASELINE

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: 12/21/19 REG. NO. 20235

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



ANOKA COUNTY
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STATE PROJECT NO. _____
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