

# MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

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

LOCATED ON CR 104 BETWEEN MAIN ST NE (CSAH 102) AND TH 47

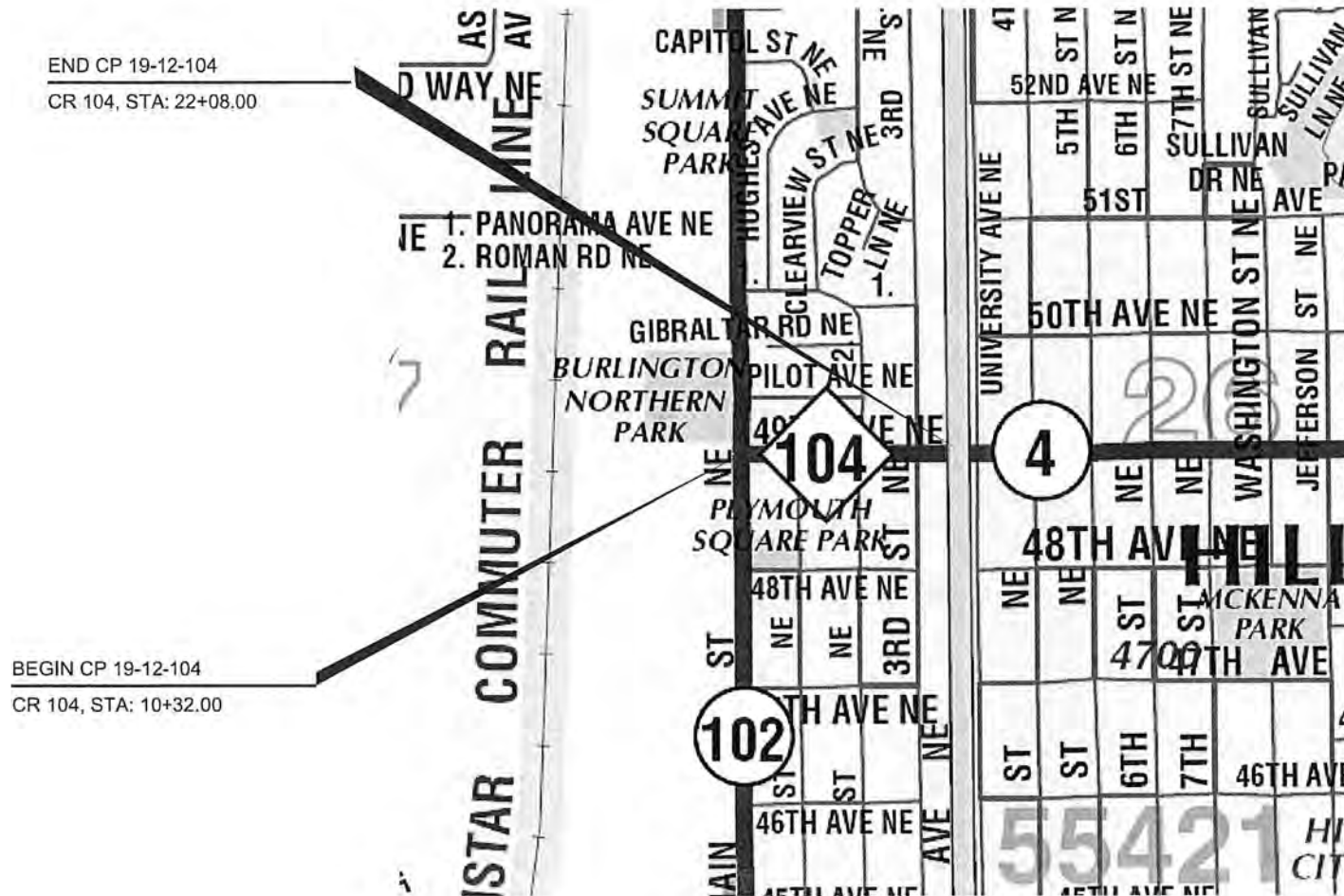
GROSS LENGTH	1176.00 FEET	0.223 MILES
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES
NET LENGTH	1176.00 FEET	0.223 MILES

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 WITH THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MNMUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS."

THIS PLAN CONTAINS 19 SHEETS

### INDEX

SHEET NO.	DESCRIPTION
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PROJECT LOCATION



CITY OF FRIDLEY  
ANOKA COUNTY  
MN/DOT TRANSPORTATION DISTRICT - METRO  
SECTION 26  
TOWNSHIP 30 NORTH  
RANGE 24 WEST

Approved: 4/25/19  
ANOKA COUNTY ENGINEER

DESIGN DESIGNATION ( CR 104 )			
ESAL	20	441,596	FUNCTIONAL CLASSIFICATION
R VALUE	60		MINOR ARTERIAL
ADT (2018)	3738		NO. OF TRAFFIC LANES
ADT (2038)	3738		2
PROJ. HCA DT (2038)	221		NO. OF PARKING LANES
SOIL FACTOR	N/A		0
TON DESIGN	10		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 _____

NO	DATE	BY	CHKD	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: JOSEPH J. MACPHERSON  
 SIGNATURE:   
 DATE: 4-25-19 LICENSE NO. 48732

DRAWN BY: APA DATE: 03/27/2019  
 DESIGN BY: APA DATE: 03/27/2019  
 CHECKED BY: SAT DATE: 03/27/2019

ANOKA COUNTY  
HIGHWAY DEPT.

COUNTY PROJECT 19-12-104

TITLE SHEET  
Sheet 1 of 19 Sheets

**STATEMENT OF ESTIMATED QUANTITIES**

NOTES	ITEM NUMBER	ITEM DESCRIPTION	UNIT	TOTAL PROJECT QUANTITIES ESTIMATED
	2021.501	MOBILIZATION	LUMP SUM	1
1	2104.502	REMOVE CASTING	EACH	9
1	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	43
1	2104.503	SAWING BIT PAVEMENT (FULL DEPTH)	LIN FT	901
	2104.503	REMOVE CURB & GUTTER	LIN FT	826
2	2104.504	REMOVE CONCRETE DRIVEWAY PAVEMENT	SQ YD	6
3	2104.504	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	SQ YD	16
	2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	236
4	2211.509	AGGREGATE BASE CLASS 5	TON	68
5	2232.504	MILL BITUMINOUS SURFACE (2.0")	SQ YD	5406
6	2232.604	MILL BITUMINOUS PAVEMENT (SPECIAL)	SQ YD	202
	2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	280
7	2360.509	TYPE SP 9.5 WEARING COURSE MIX (3;B)	TON	5
8	2360.509	TYPE SP 12.5 BIT MIXTURE FOR PATCHING	TON	27
9	2360.509	TYPE SP 12.5 WEARING COURSE MIX (4;C)	TON	23
	2360.509	TYPE SP 12.5 WEARING COURSE MIX (4;E)	TON	622
10	2504.602	ADJUST GATE VALVE	EACH	7
11	2506.502	CASTING ASSEMBLY	EACH	9
	2531.503	CONCRETE CURB & GUTTER DESIGN B618	LIN FT	826
2	2531.504	6" CONCRETE DRIVEWAY PAVEMENT	SQ YD	6
12	2550.602	LOOP DETECTOR DESIGN NMC	EACH	1
13	2563.601	TRAFFIC CONTROL	LUMP SUM	1
14	2563.602	PORTABLE CHANGEABLE MESSAGE SIGN	EACH	20
15	2573.502	STORM DRAIN INLET PROTECTION	EACH	8
1	2574.507	COMMON TOPSOIL BORROW	CU YD	46
16	2575.504	EROSION CONTROL BLANKETS CATEGORY 0	SQ YD	275
17	2581.503	REMOVABLE PREFORM PAVEMENT MARKING TAPE	LIN FT	47
19	2582.503	4" BROKEN LINE PAINT	LIN FT	235
18	2582.503	4" SOLID LINE MULTI COMP	LIN FT	3190
18	2582.503	4" BROKEN LINE MULTI COMP	LIN FT	230
18	2582.518	PAVT MSSG PREF THERMO	SQ FT	144
18	2582.603	PAVEMENT MARKING SPECIAL	LIN FT	20

**CONSTRUCTION NOTES**

1	REFERENCE DETAILS (SHEET 5)
2	ITEM FOR CONCRETE DRIVEWAYS. CONTRACTOR IS RESPONSIBLE FOR CONTACTING PROPERTY OWNER 48 HOURS BEFORE STARTING OPERATION.
3	ITEM FOR BITUMINOUS DRIVEWAYS AND STREET APPROACHES. CONTRACTOR IS RESPONSIBLE FOR CONTACTING PROPERTY OWNER 48 HOURS BEFORE STARTING OPERATION.
4	GRAVEL BASE FOR BITUMINOUS DRIVEWAYS, AND CURB PATCHES.
5	DETAIL MILLING AROUND MANHOLES, CATCH BASINS, GATE VALVES, AND ALONG CURB LINE IS INCIDENTAL TO THIS ITEM.
6	TO BE USED FOR MILLING STREET APPROACHES AND/OR DETAIL MILLING AREAS AS IDENTIFIED IN THE PLAN. DETAIL MILLING AROUND MANHOLES, CATCH BASINS, GATE VALVES, AND ALONG CURB LINE IS INCIDENTAL TO THIS ITEM.
7	ITEM FOR BITUMINOUS DRIVEWAYS. DRIVEWAYS SHALL BE PAVED AFTER MAINLINE AND BEFORE FINAL STRIPING.
8	ITEM INCLUDES BITUMINOUS PATCHING AROUND NEW CURB, STORM STRUCTURE REPAIRS, AND ANY POTHOLES
9	ITEM FOR STREET APPROACHES. STREET APPROACHES SHALL BE PAVED AFTER MAINLINE, AND BEFORE FINAL STRIPING
10	GATE VALVES TO BE ADJUSTED ONLY AS NECESSARY AS DETERMINED BY THE ENGINEER.
11	ITEM INCLUDES FULL REPLACEMENT OF CASTING ADJUSTMENT RINGS. SEE STORM TABULATIONS FOR RING HEIGHTS. CASTINGS IN ROADWAY SHALL BE INSTALLED BETWEEN BASE AND WEAR LIFT PAVING
12	LOOP REPLACEMENT REQUIRED ONLY IF DAMAGED DURING CONSTRUCTION OPERATIONS. EXISTING SIGNAL PLANS ARE INCLUDED AT THE END OF THIS PLAN.
13	ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO, AND BE INSTALLED IN ACCORDANCE WITH, THE MOST CURRENT REVISION OF THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES". "DO NOT PASS, PASS WITH CARE, NO CENTER STRIPE, AND STOP HERE ON RED SIGNS SHALL BE INPLACE WHENEVER PERMANENT PAVEMENT MARKINGS ARE NOT PRESENT.
14	2 MESSAGE BOARDS, ONE ON THE EACH END OF PROJECT, SHALL BE INSTALLED 10 DAYS PRIOR TO ANY CONSTRUCTION; REFERENCE STRIPING PLAN FOR DETAILS.
15	ALL DRAINAGE STRUCTURES AFFECTED BY THIS PROJECT MUST HAVE INLET PROTECTION.
16	TYPE 3 FERTILIZER AND TYPE 25-121 SEED ARE INCIDENTAL TO THIS ITEM. SEE "BASIS OF PLANNED QUANTITIES" FOR APPLICATION RATES.
17	CENTERLINE AND LANE DESIGNATION SKIPS TO BE APPLIED AS SOON AS POSSIBLE ON MILLED SURFACE AND EACH NEW LIFT OF PAVEMENT; SKIPS MUST BE INPLACE BEFORE THE CONTRACTOR LEAVES FOR THE DAY. CONTRACTOR IS TO REMOVE PRIOR TO FINAL STRIPING.
18	FINAL STRIPING SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLETION OF MAINLINE WEAR COURSE PAVING.
19	ITEM TO BE USED AS TEMPORARY CENTERLINE STRIPING ON MILLED SURFACE, INSTALLED THE SAME DAY AS MILLING OPERATION.

**BASIS OF PLANNED QUANTITIES**

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

**MNDOT STANDARD PLATES**

PLATE NO.	DESCRIPTION
4006L	MANHOLE OR CATCH BASIN PRECAST - DESIGNS G AND H
4020J	MANHOLE OR CATCH BASIN (FOR USE WITH OR WITHOUT TRAFFIC LOADS) (2 SHEETS)
4026A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4110F	COVER CASTING FOR MANHOLE (FOR USE IN ALL TRAFFIC AREAS) - CASTING NO. 715 AND 716
4154B	CATCH BASIN GRATE CASTING - CASTING NO. 816
7100H	CONCRETE CURB AND GUTTER (DESIGN B AND DESIGN V)
8000J	CHANNELIZERS

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PRINT NAME: JOSEPH J. MACPHERSON  
 SIGNATURE: *[Signature]*  
 DATE: 4-24-19 LICENSE NO. 46732

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**ANOKA COUNTY  
HIGHWAY DEPT.**

COUNTY PROJECT 19-12-104

STATEMENT OF ESTIMATED QUANTITIES

Sheet 2 of 19 Sheets

STORM DRAINAGE TAB						
NUMBER	TYPE	ACTION	NEW CASTING	FURNISH AND INSTALL CASTING ASSEMBLY	RING HEIGHT -INCIDENTAL-	NOTES
				EACH	LIN FT	
101	CB	OK				
102	CB	RE-RING	A	1	0.3	
105	CB	RE-RING	A	1	0	
106	CB	RE-RING	A	1	0	
107	CB	RE-RING	A	1	0.6	
108	CB	OK				
200	MH	OK				
201	MH	OK				
202	MH	RE-RING	A-7D	1	0.3	
203	MH	RE-RING	A-7D	1	0.7	
300	MH SAN	OK				
301	MH SAN	RE-RING	A-7D	1	1.4	
302	MH SAN	RE-RING	A-7D	1	1.1	
303	MH SAN	RE-RING	A-7D	1	1.1	
<b>TOTALS:</b>				<b>9</b>	<b>5.5</b>	

CASTING ASSEMBLIES SUMMARY						
ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING	CURB BOX	DESCRIPTION	NOTES	QUANTITY
A-7D	700-7	715		STD. PLATE: 4101D, 4110F	CASTING COVER STAMPED "STORM SEWER"	2
A-7D	700-7	715		STD. PLATE: 4101D, 4110F	CASTING COVER STAMPED "SANITARY SEWER"	3
TYPE A	SEE DETAILS - SHEET 7					4
ALL CASTING HEIGHTS ARE TO BE VERIFIED IN THE FIELD						
ALL MANHOLE COVERS SHOULD BE LABELED AS STORM OR SANITARY						
NEW CASTINGS TO BE INSTALLED AFTER ASPHALT MILLING IS COMPLETED						
MANHOLE CASTINGS TO BE RECESSED 1/4" FROM TOP OF FINISHED MAT						

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PRINT NAME: JOSEPH J. MACPHERSON

SIGNATURE: *[Signature]*

DATE: 7-26-19 LICENSE NO. 48732

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**ANOKA COUNTY  
HIGHWAY DEPT.**

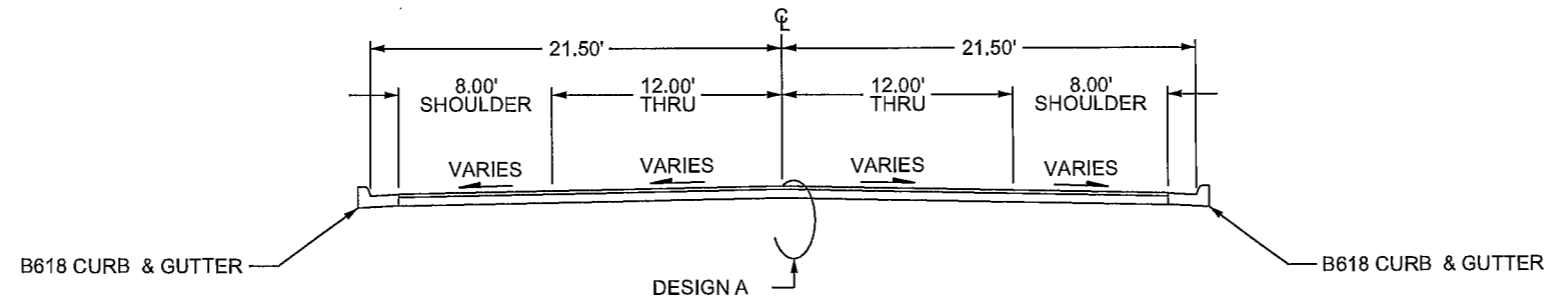
COUNTY PROJECT 19-12-104

TABULATIONS

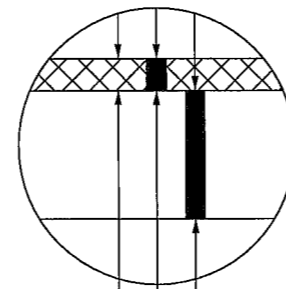
Sheet 3 of 19 Sheets

**49TH AVE NE (CR 104)**  
**(EXISTING/PROPOSED) SECTION**

10+32.00 - 22+08.00



**DESIGN A**  
**MILL SECTION**



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

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

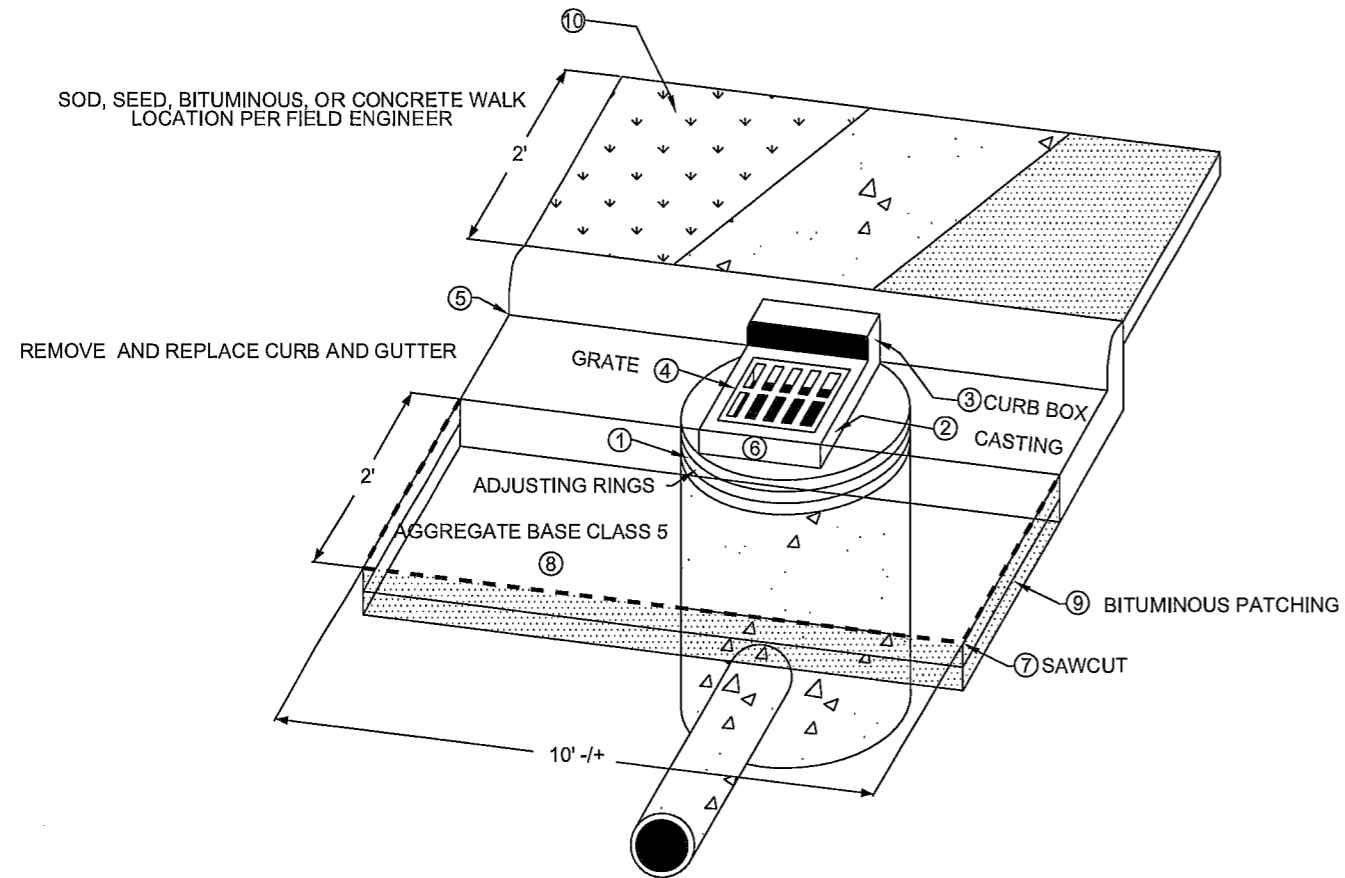
COUNTY PROJECT 19-12-104

TYPICAL SECTIONS  
 Sheet 4 of 19 Sheets



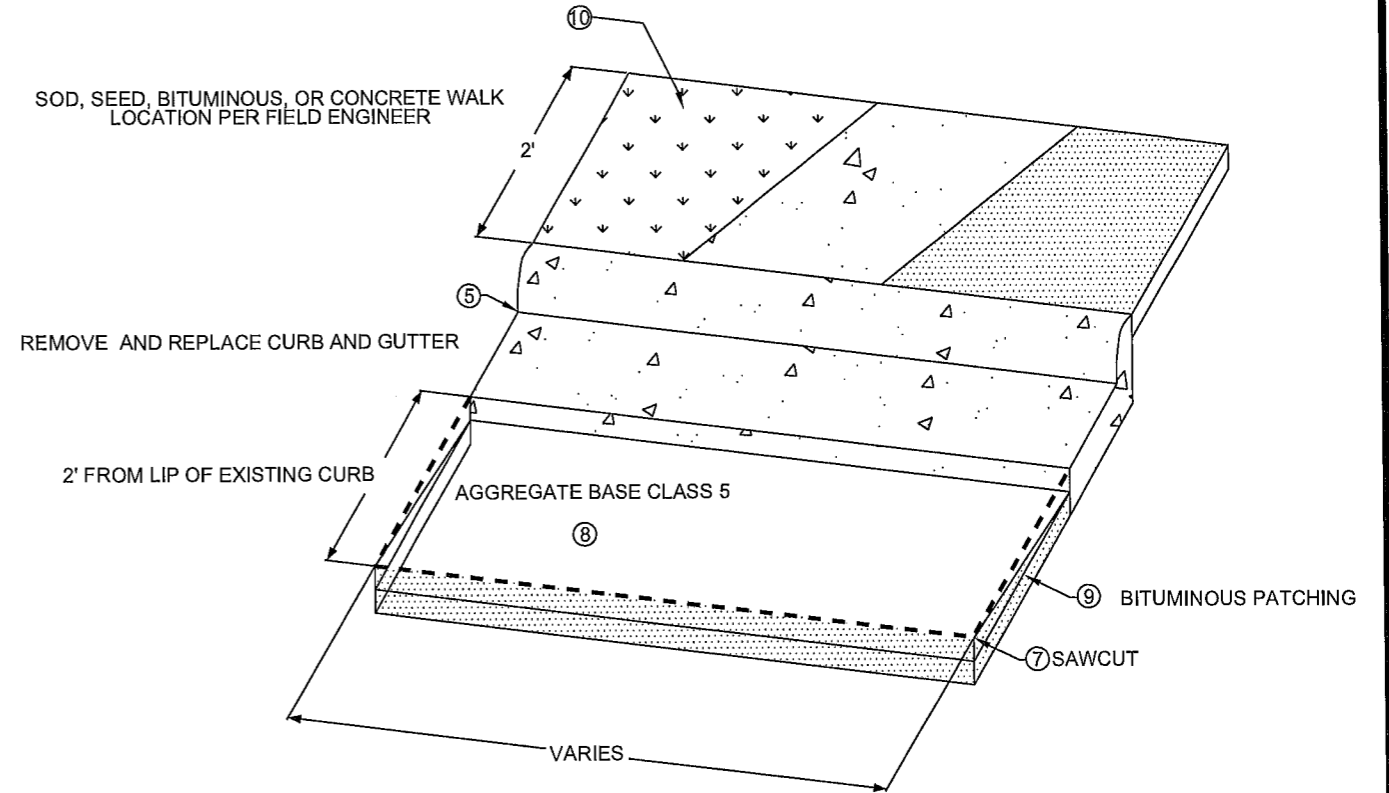
### CATCH BASIN DETAIL

SEE STORM DRAINAGE TAB FOR LOCATION  
(SHEET 3)



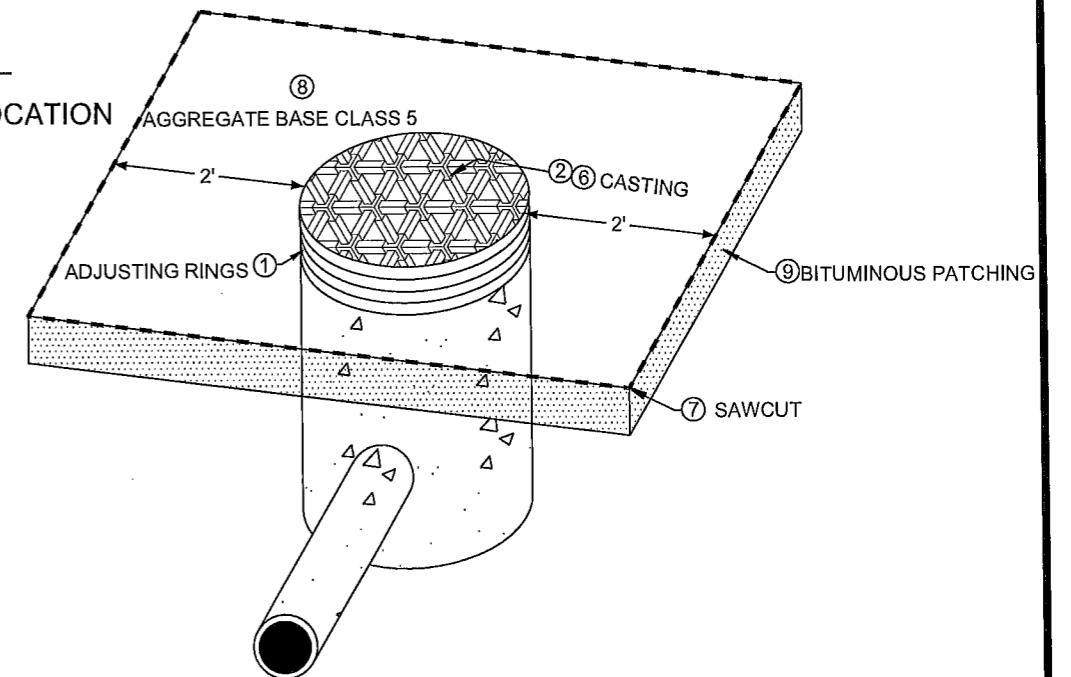
### NEW CURB DETAIL

SEE PLAN FOR LOCATION



### MANHOLE DETAIL

SEE STORM DRAINAGE TAB FOR LOCATION  
(SHEET 3)



### NOTES

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

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

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ANOKA COUNTY  
HIGHWAY DEPT.

COUNTY PROJECT 19-12-104

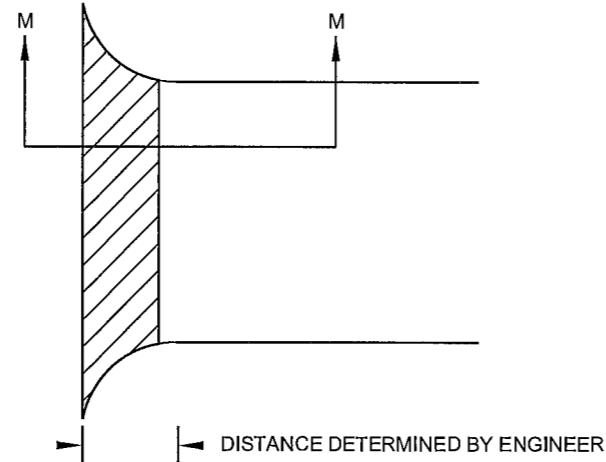
DETAILS

Sheet 5 of 19 Sheets

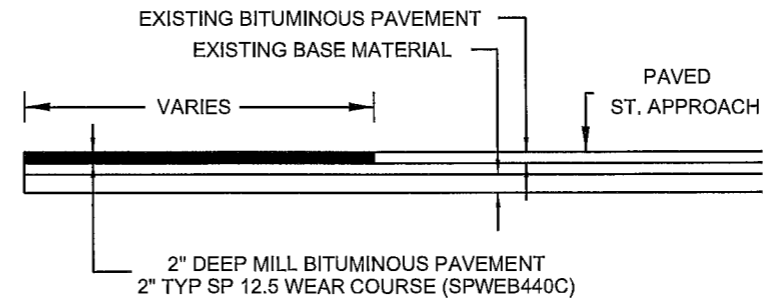
# STREET APPROACH DETAIL (MILL & OVERLAY)

## BITUMINOUS STREET

PLAN VIEW



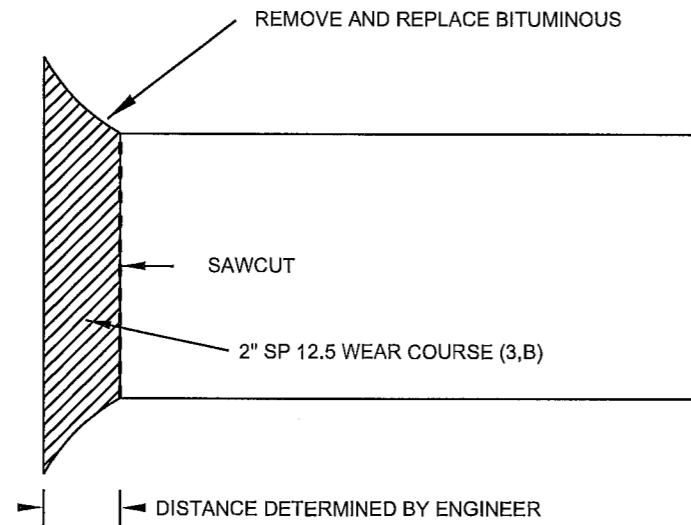
SECTION M - M



## DRIVEWAY DETAIL

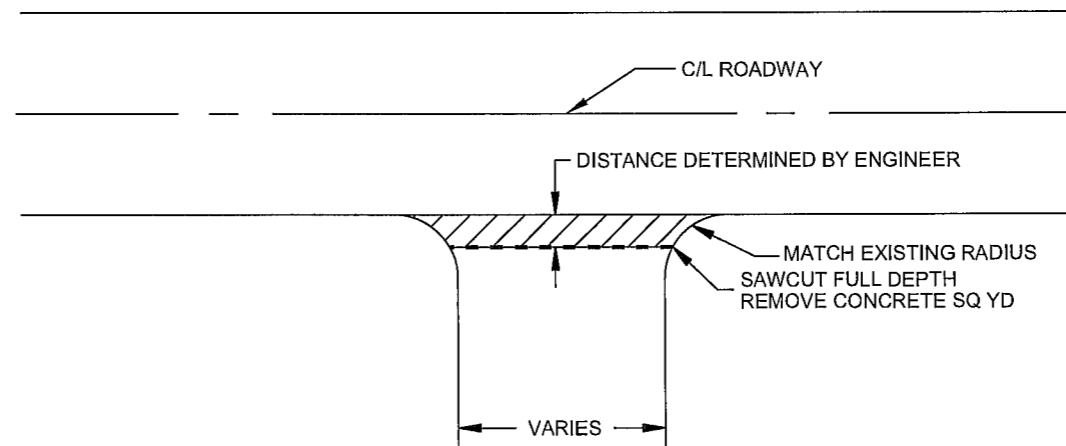
### BITUMINOUS DRIVEWAY

PLAN VIEW



## DRIVEWAY DETAIL

### CONCRETE DRIVEWAY



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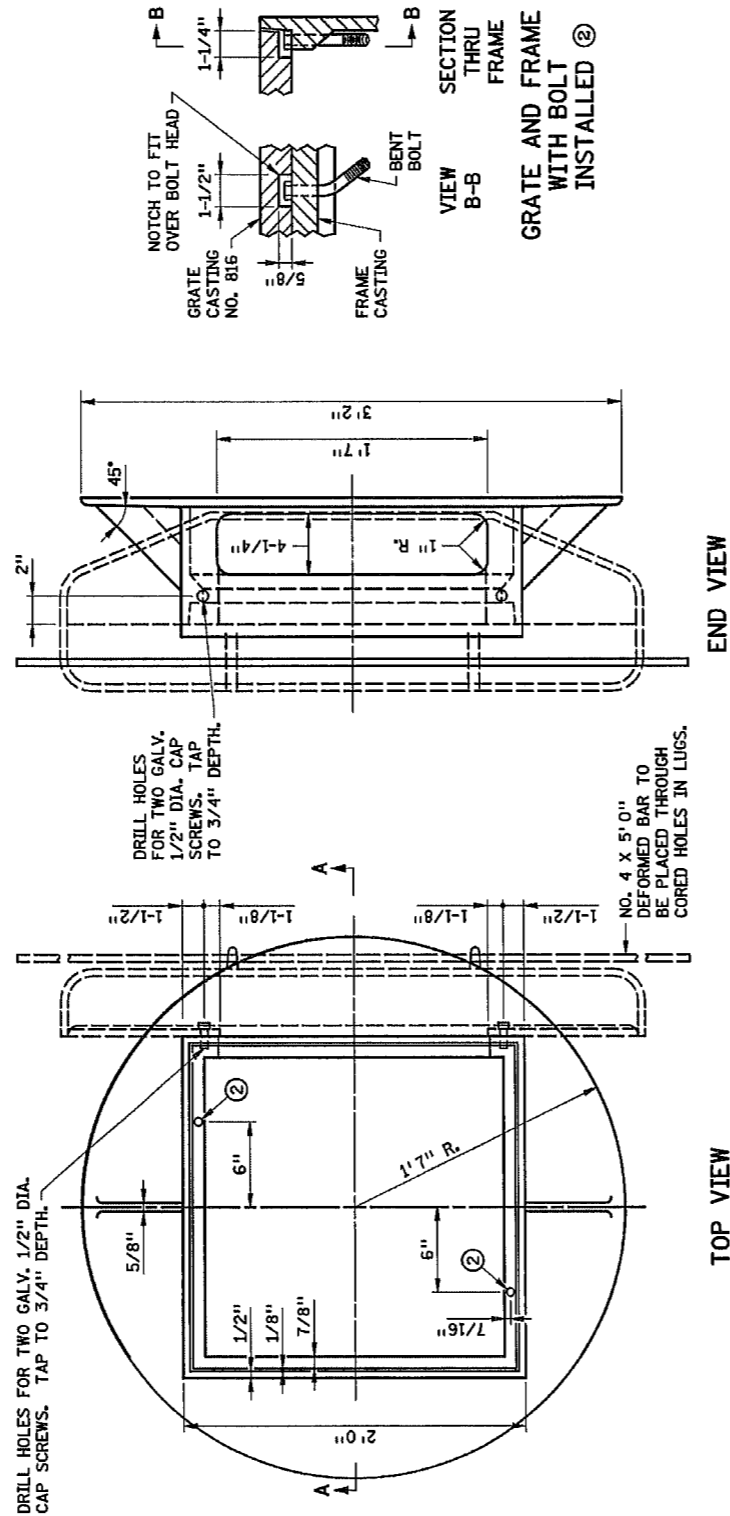


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COUNTY PROJECT 19-12-104

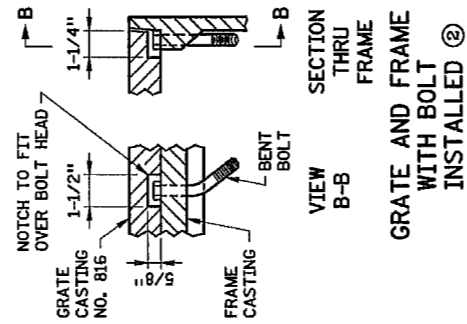
DETAILS  
 Sheet 6 of 19 Sheets

# FRAME RING AND CASTING TYPE A



END VIEW

TOP VIEW

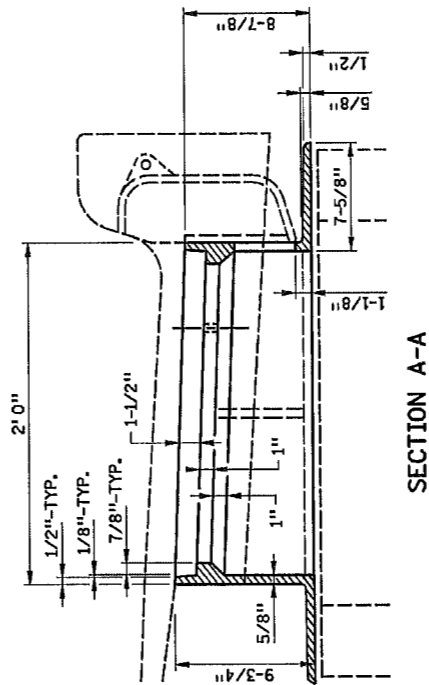


SECTION THRU FRAME WITH BOLT INSTALLED

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

**NOTES:**

- USE 1/4" FILLETS IN ALL CORNERS. SEE MNDOT STANDARD PLATE 7111 FOR INSTALLATION REQUIREMENTS. APPLIES TO DESIGN B OR V CURB AND GUTTER AND CURB AND GUTTER.
- ① 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 PLATE 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



SECTION A-A

**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.**

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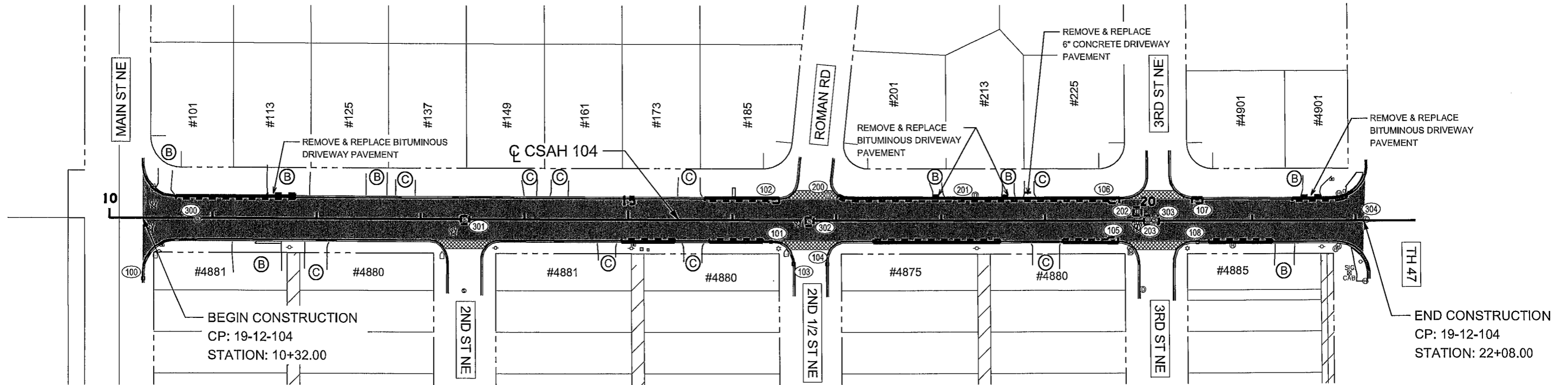
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 PRINT NAME: JOSEPH J. MACPHERSON  
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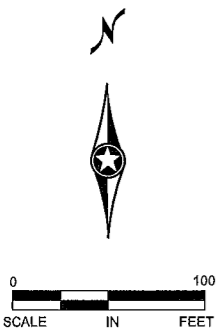
**ANOKA COUNTY**  
**HIGHWAY DEPT.**

COUNTY PROJECT 19-12-104

DETAILS  
 Sheet 7 of 19 Sheets



LEGEND	
(B)	BITUMINOUS
(C)	CONCRETE
⊗	ADJUST GATE VALVE
---	SAWCUT
—	REMOVE CURB & GUTTER
■	MAINLINE MILL AREA
▨	STREET APPROACH MILL BITUMINOUS PAVEMENT (SPECIAL)
R / W	



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**ANOKA COUNTY**  
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COUNTY PROJECT 19-12-104

**CONSTRUCTION PLAN**  
 STA 10+32 TO 22+08  
 Sheet 8 of 19 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 20MILS (WET) AND 4" WIDE. GLASS BEANS 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	2270
4" BROKEN LINE YELLOW - MULTI COMP	LIN FT	230
4" SOLID LINE YELLOW - MULTI COMP	LIN FT	920
24" SOLID LINE WHITE - PREFORMED THERMOPLASTIC (PMS*)	LIN FT	20
3'x6' ZEBRA CROSSWALK - PREFORMED THERMOPLASTIC	SQ FT	144

1

1 10' STRIPE, 40' GAP

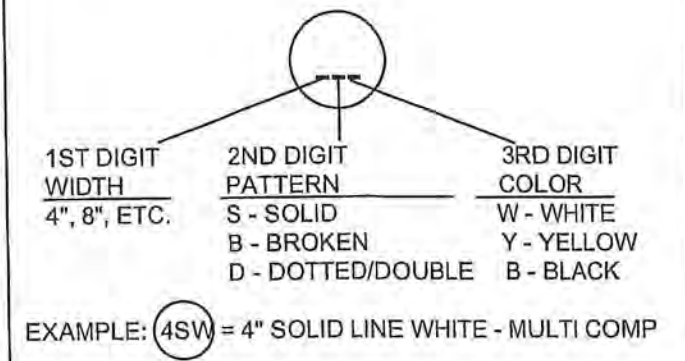
\* PAVEMENT MARKING SPECIAL

**SYMBOLS & MATERIALS LEGEND**

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

**STRIPING KEY**

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

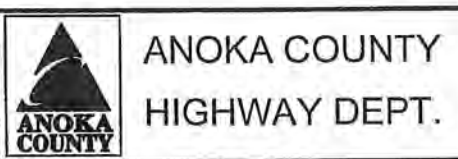


NO	DATE	BY	CHKD	APPR	REVISION

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: 4/25/19 REG. NO. 20235

DRAWN BY: TMV DATE: 02/22/19  
DESIGN BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

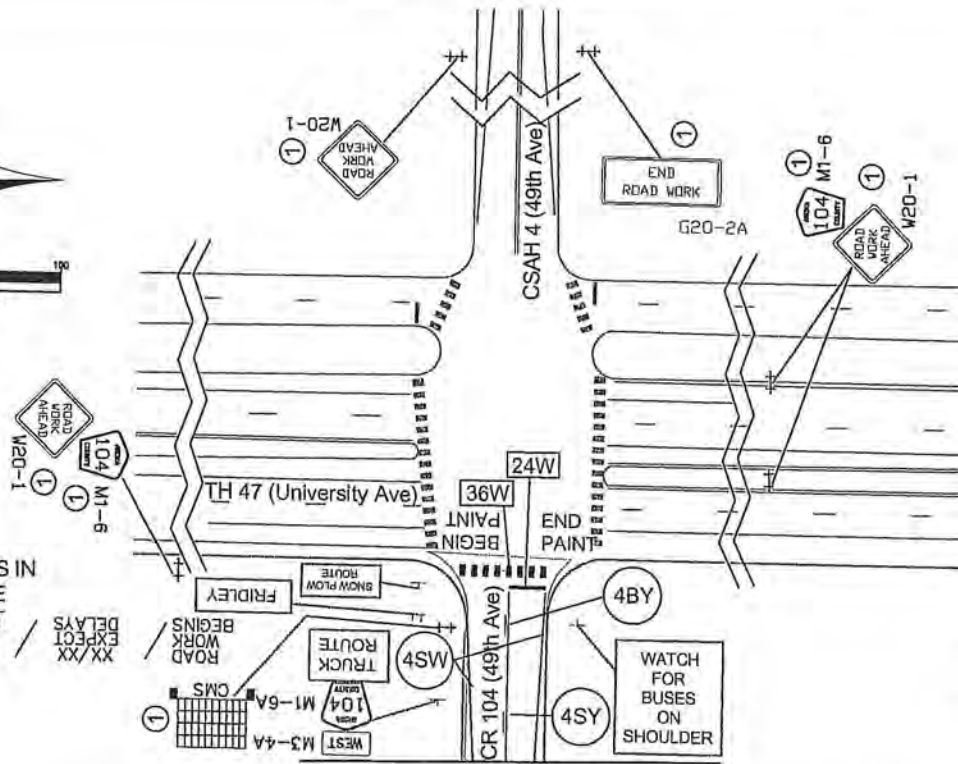
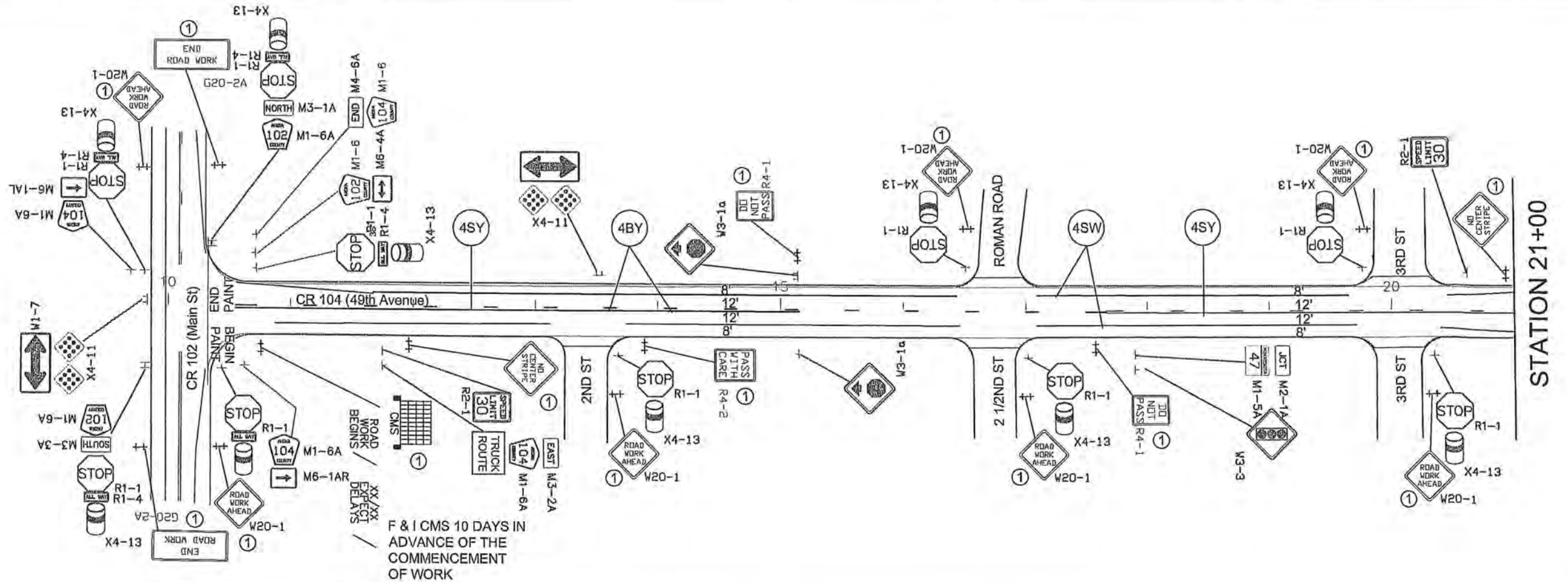


STATE PROJECT NO. \_\_\_\_\_  
STATE AID PROJECT NO. \_\_\_\_\_  
CITY PROJECT NO. \_\_\_\_\_  
COUNTY PROJECT NO. 19-12-104

PERMANENT MARKING TABULATION

Sheet 9 of 19 Sheets





STATION 21+00

- 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	CKD	APPR	REVISION

NAME: P:\19-01-09\CR 104 (CR102-TH47)\Base\Traffic\Signing & Striping.dwg

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 CHECKED BY: DATE: \_\_\_\_\_



ANOKA COUNTY  
 HIGHWAY DEPT.

STATE PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 CITY PROJECT NO. \_\_\_\_\_  
 COUNTY PROJECT NO. 19-12-104

TEMPORARY SIGNING,  
 PERMANENT SIGNING  
 AND STRIPING



TEMPORARY TRAFFIC CONTROL SIGNS						
M.U.T.C.D. CODE	SIZE	PANEL AREA FT. <sup>2</sup>	INSERT	QUANTITY	No. POST	MOUNTING HEIGHT To Post Center Eyes FT.
W8-12	48" x 48"	16.00		2	2	7.0'
R4-1	24" x 30"	5.00		2	1	7.0'
R4-2	24" x 30"	5.00		1	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 8)		
M1-6	24" x 24"	4.00		3	2	7.0'
W20-1	48" x 48"	16.00		3		
REFLECTORIZED REBOUNDBLE 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	

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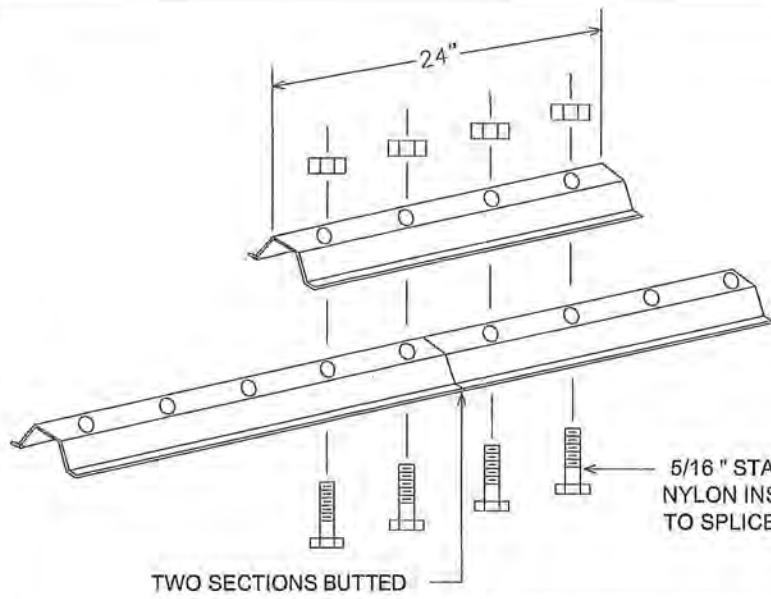


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 HIGHWAY DEPT.

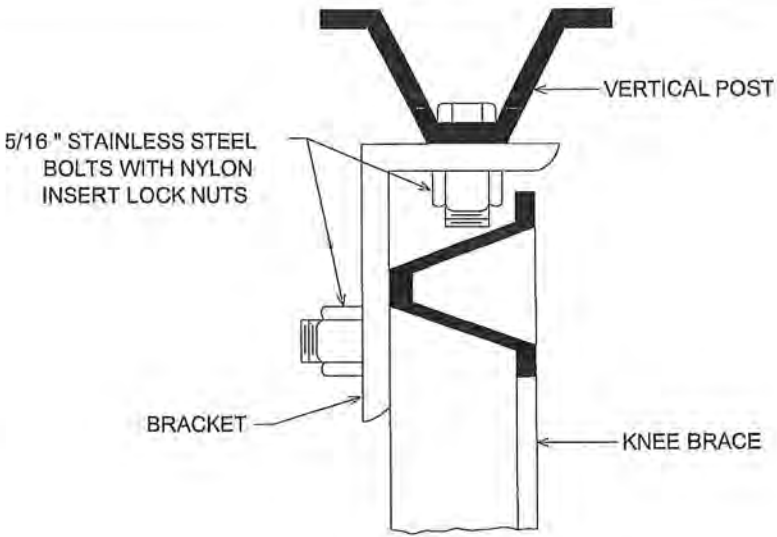
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 CITY PROJECT NO. \_\_\_\_\_  
 COUNTY PROJECT NO. 19-12-104

TEMPORARY SIGNING,  
 PERMANENT SIGNING &  
 STRIPING QUANTITIES  
 Sheet 11 of 19 Sheets

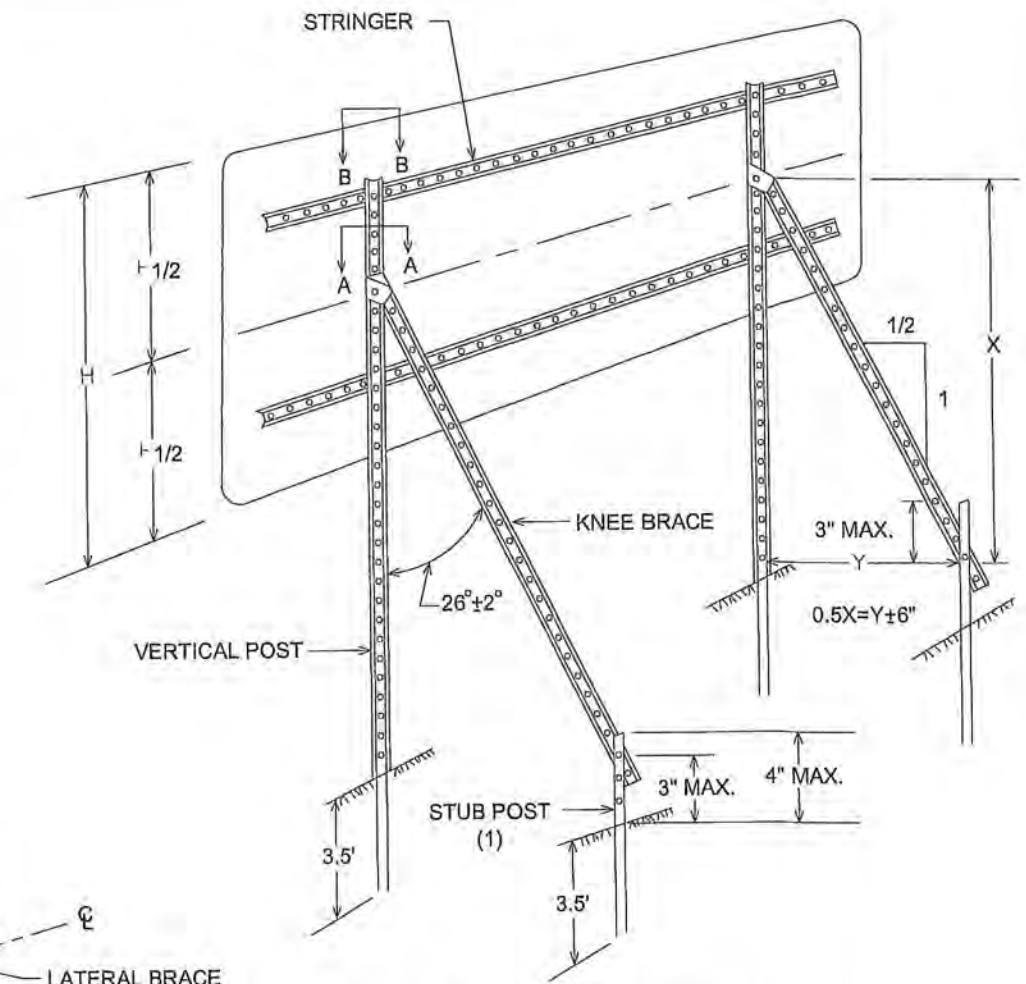




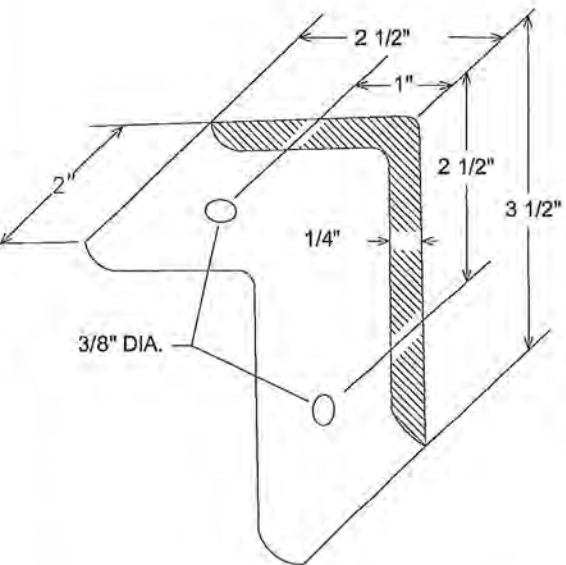
LATERAL BRACE OR STRINGER  
SPLICE DETAIL (EXPLODED VIEW)



SECTION A-A

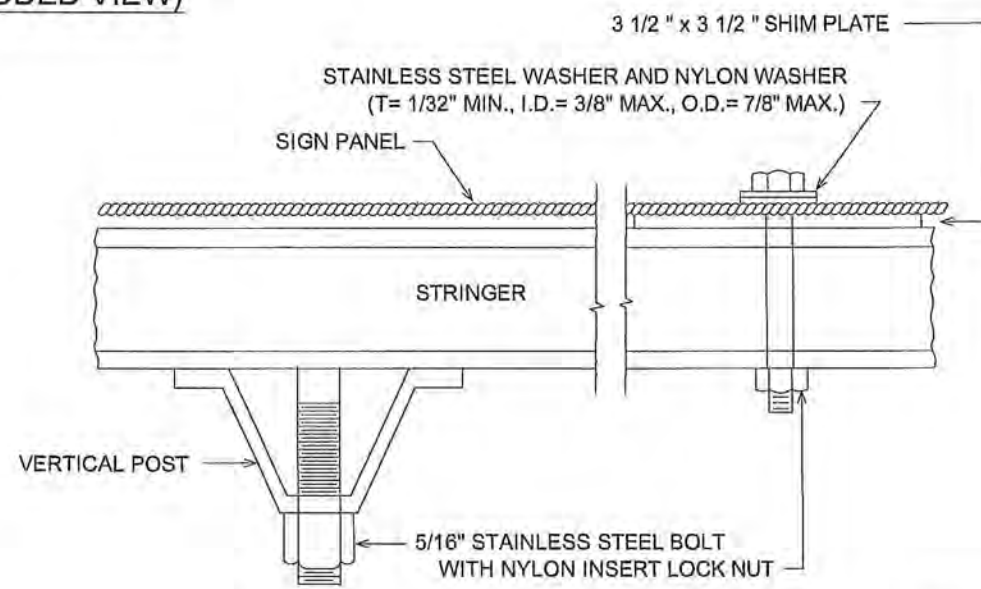


TYPICAL "A-FRAME" INSTALLATION  
TYPE "D" SIGNS

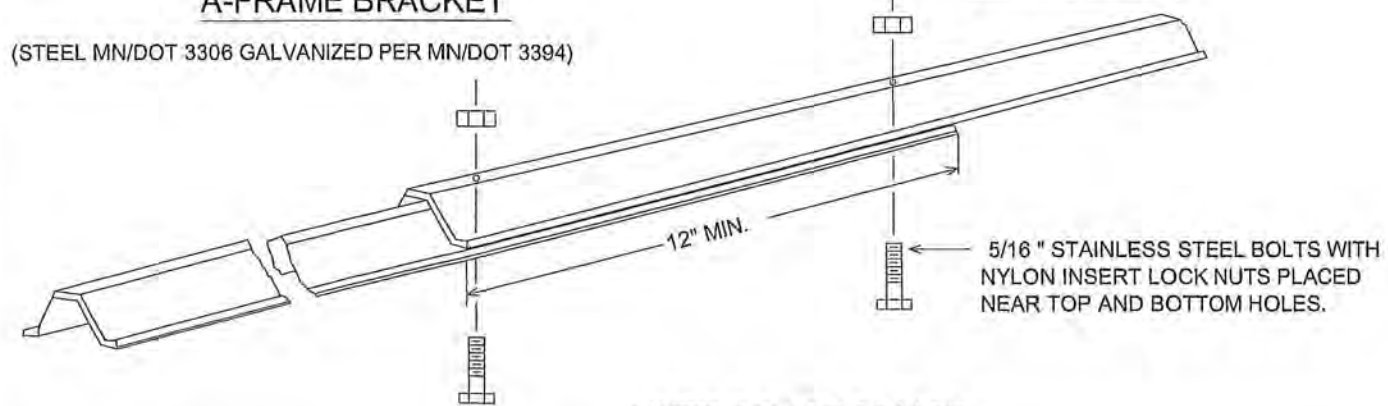


A-FRAME BRACKET

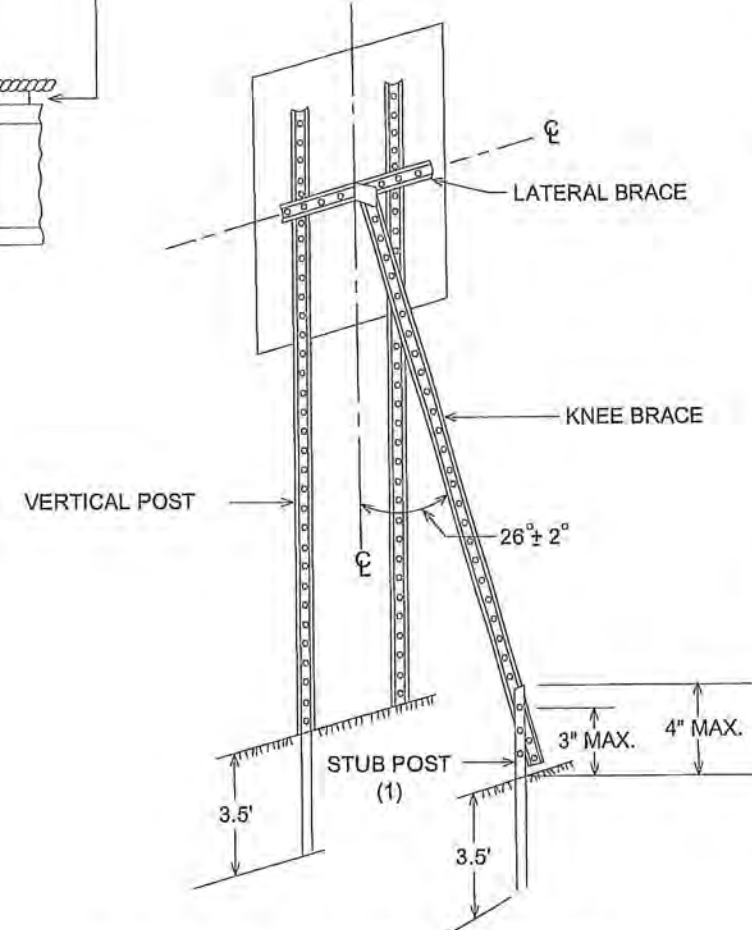
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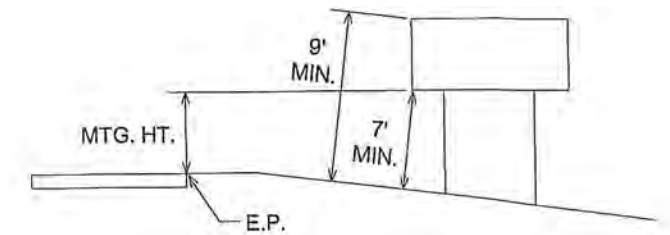
SECTION B-B



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	CKD	APPR	REVISION

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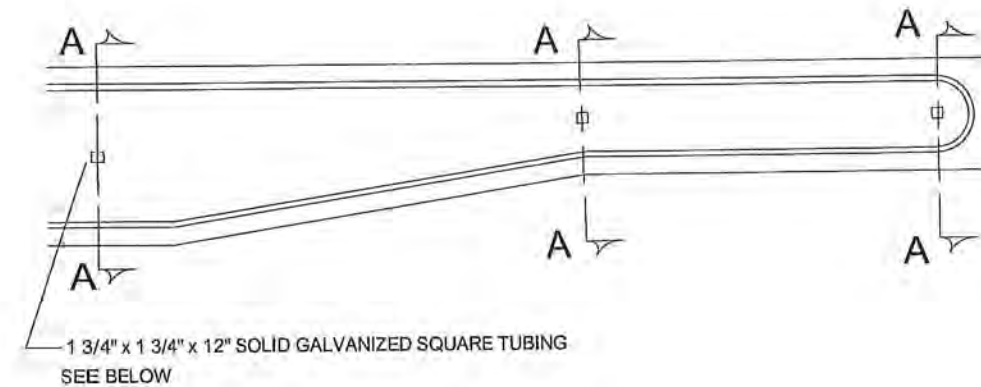
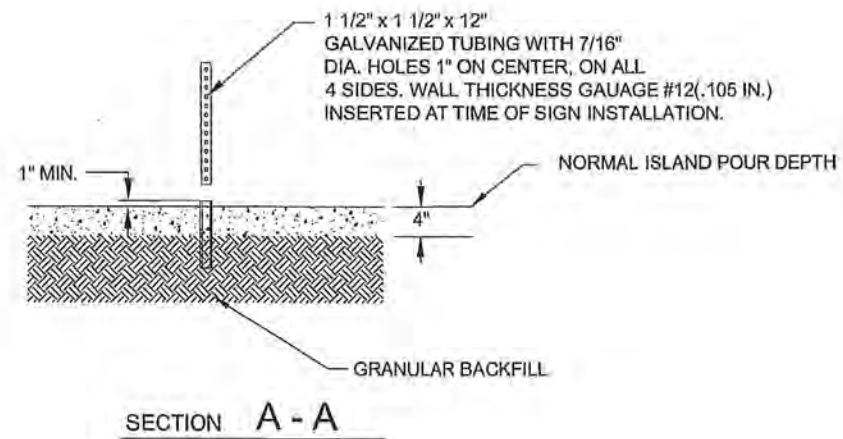


ANOKA COUNTY  
HIGHWAY DEPT.

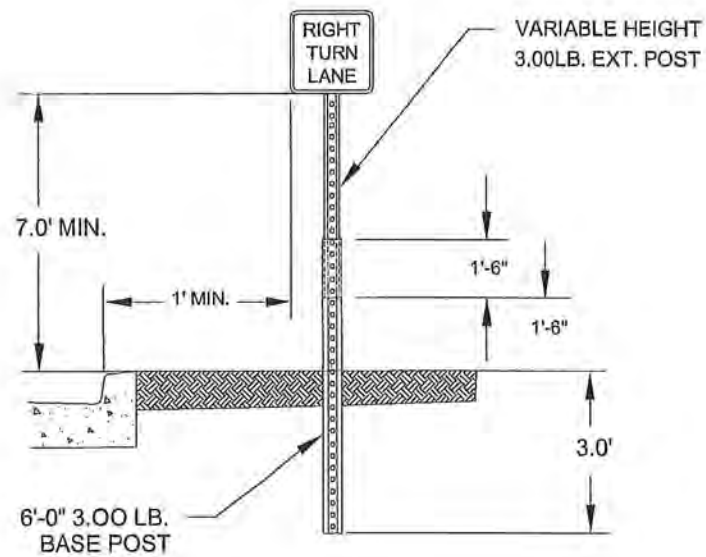
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 STATE AID PROJECT NO. \_\_\_\_\_  
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 COUNTY PROJECT NO. 19-12-104

SIGNING & STRIPING  
DETAILS

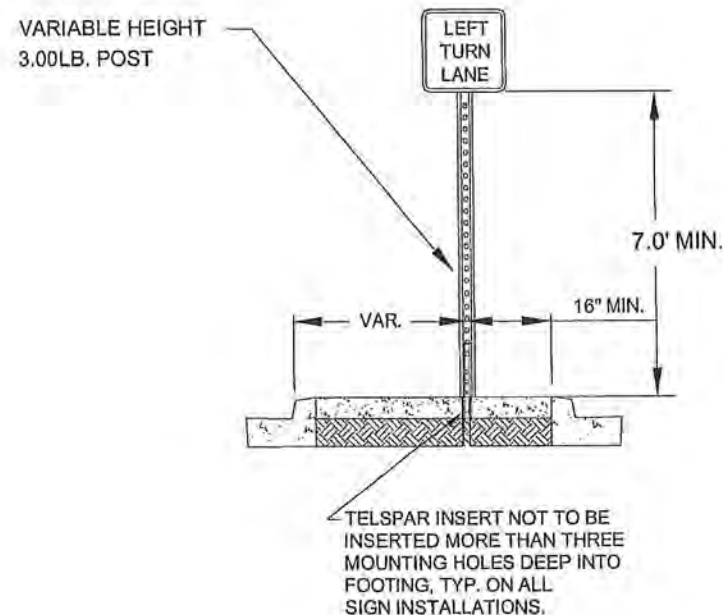




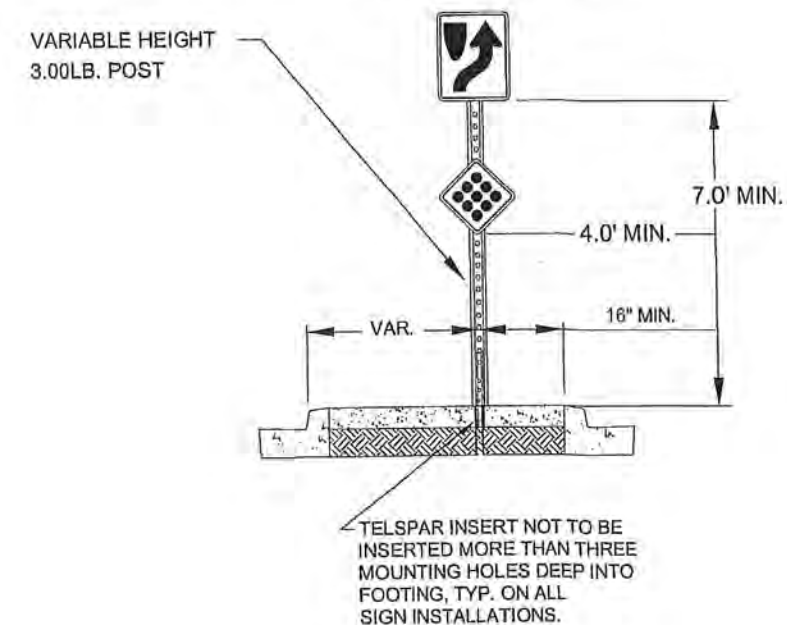
GROUND POST MOUNT SIGN  
INSTALLATION TYPICAL



ISLAND MOUNT BREAK-AWAY SIGN  
INSTALLATION TYPICAL



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



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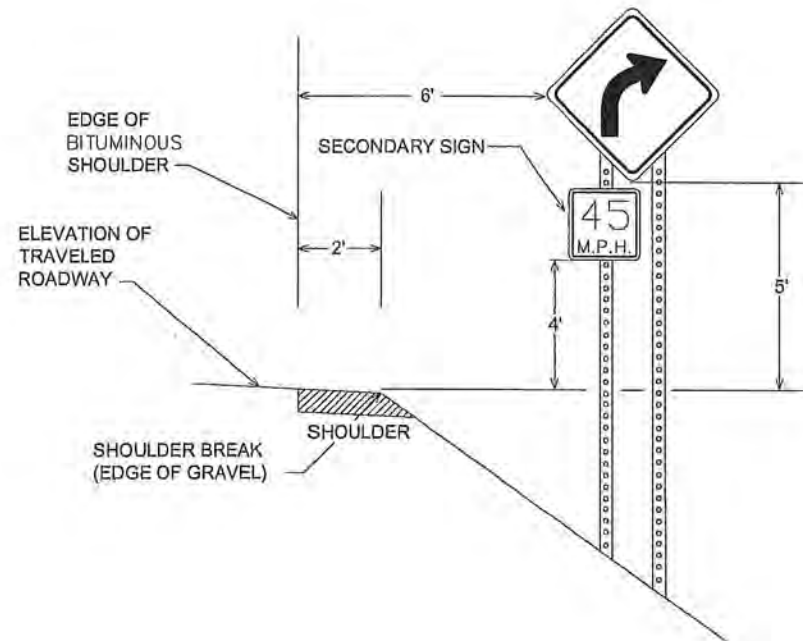
SIGNING & STRIPING  
DETAILS

Sheet 13 of 19 Sheets

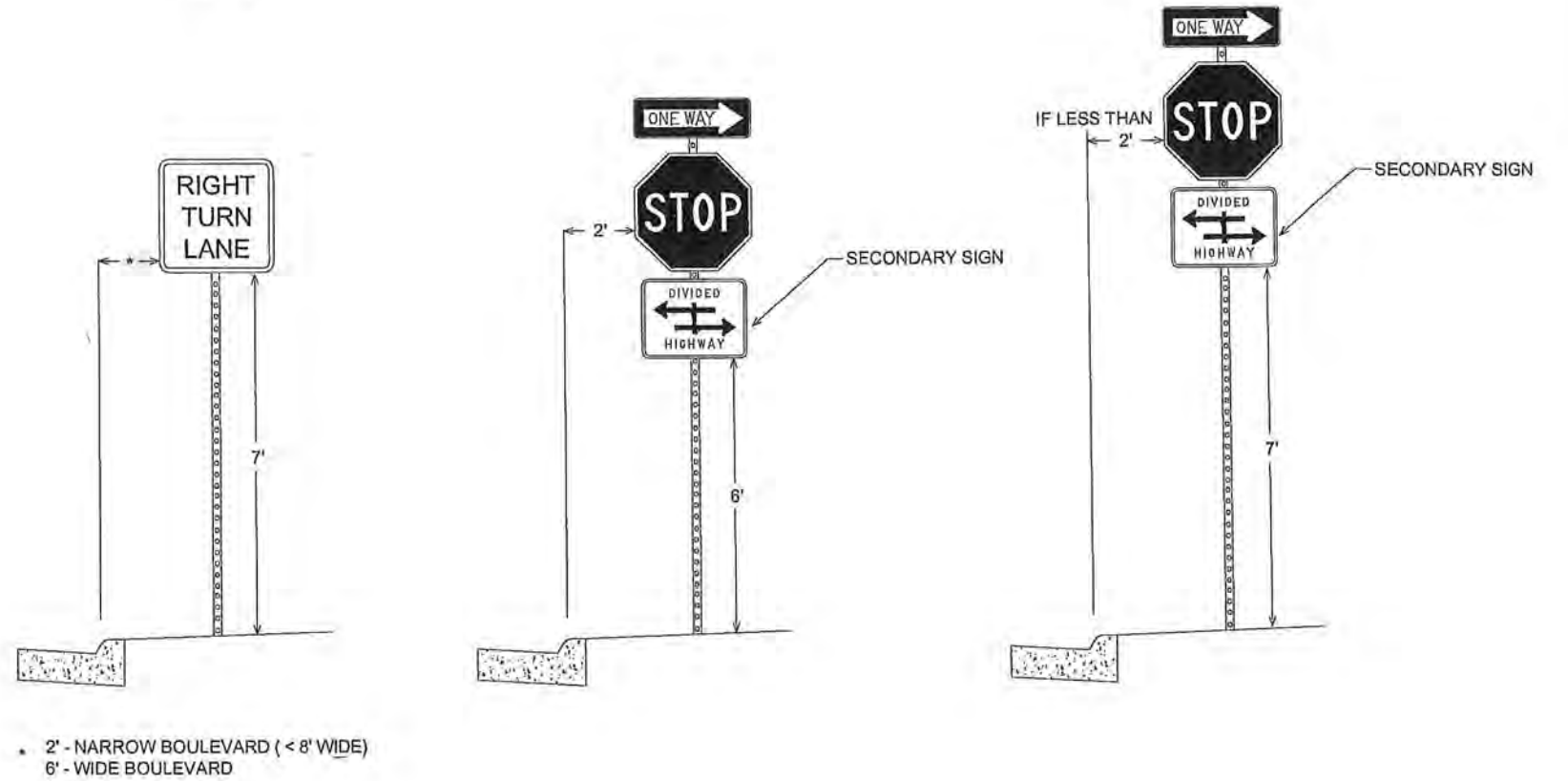
NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\19-01-00\CR 104 (CR102-TH47)\Base\Traffic\Signing & Striping\Detaila.dwg

TYPICAL SIGN PLACEMENT  
(RURAL)

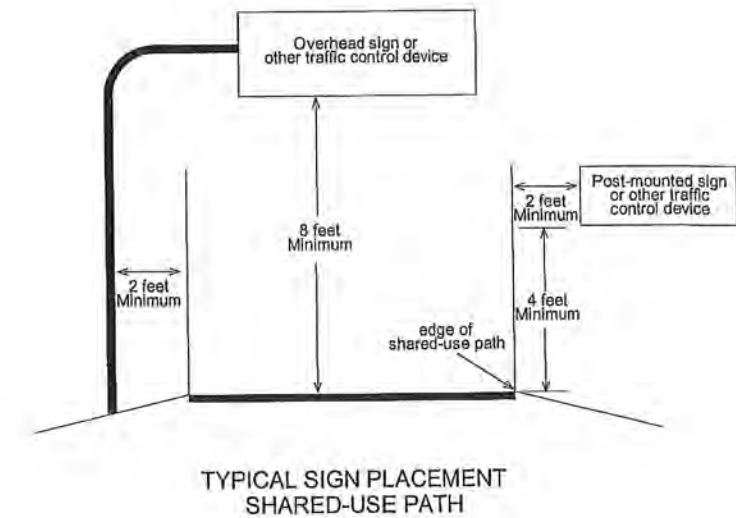


TYPICAL SIGN PLACEMENT  
(URBAN)



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

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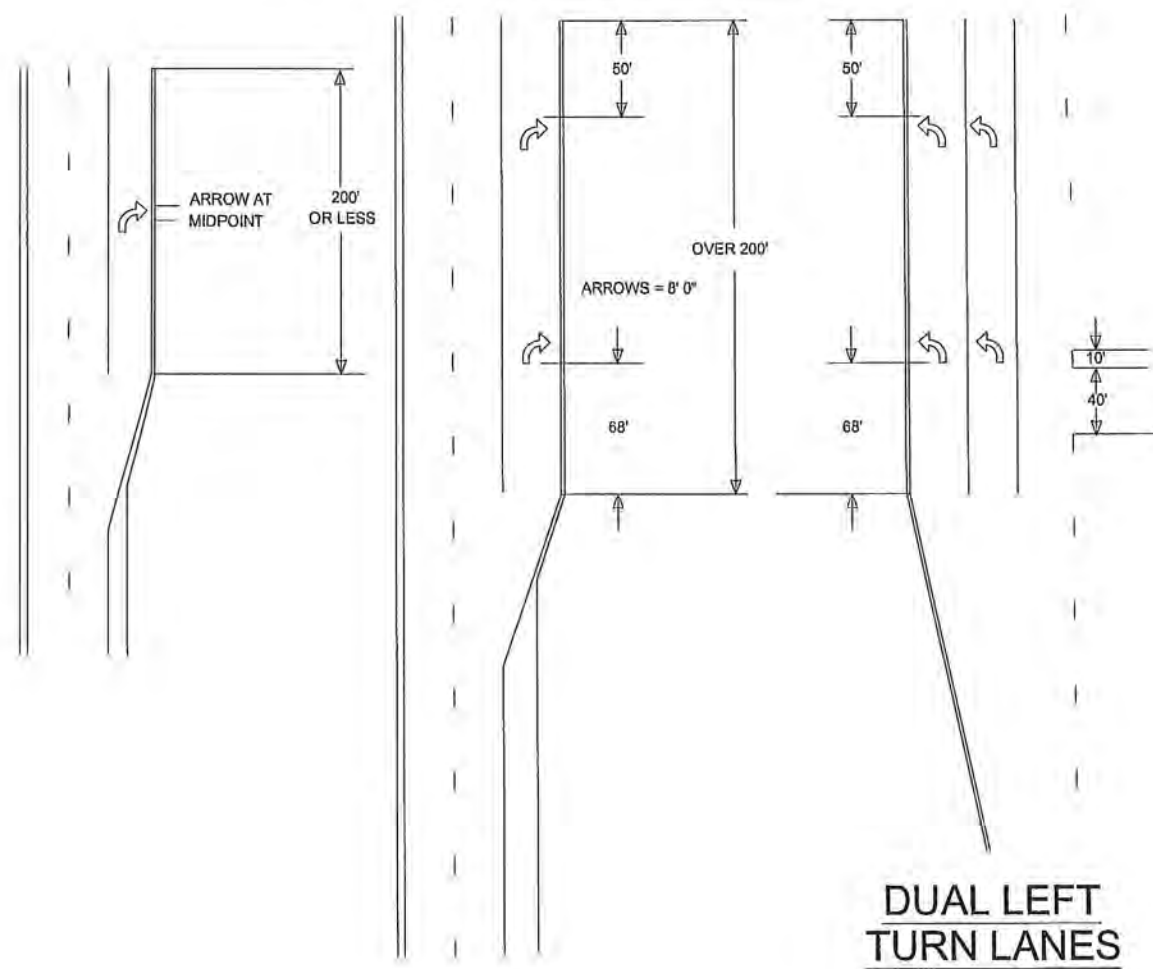
**ANOKA COUNTY**  
**HIGHWAY DEPT.**

STATE PROJECT NO. \_\_\_\_\_  
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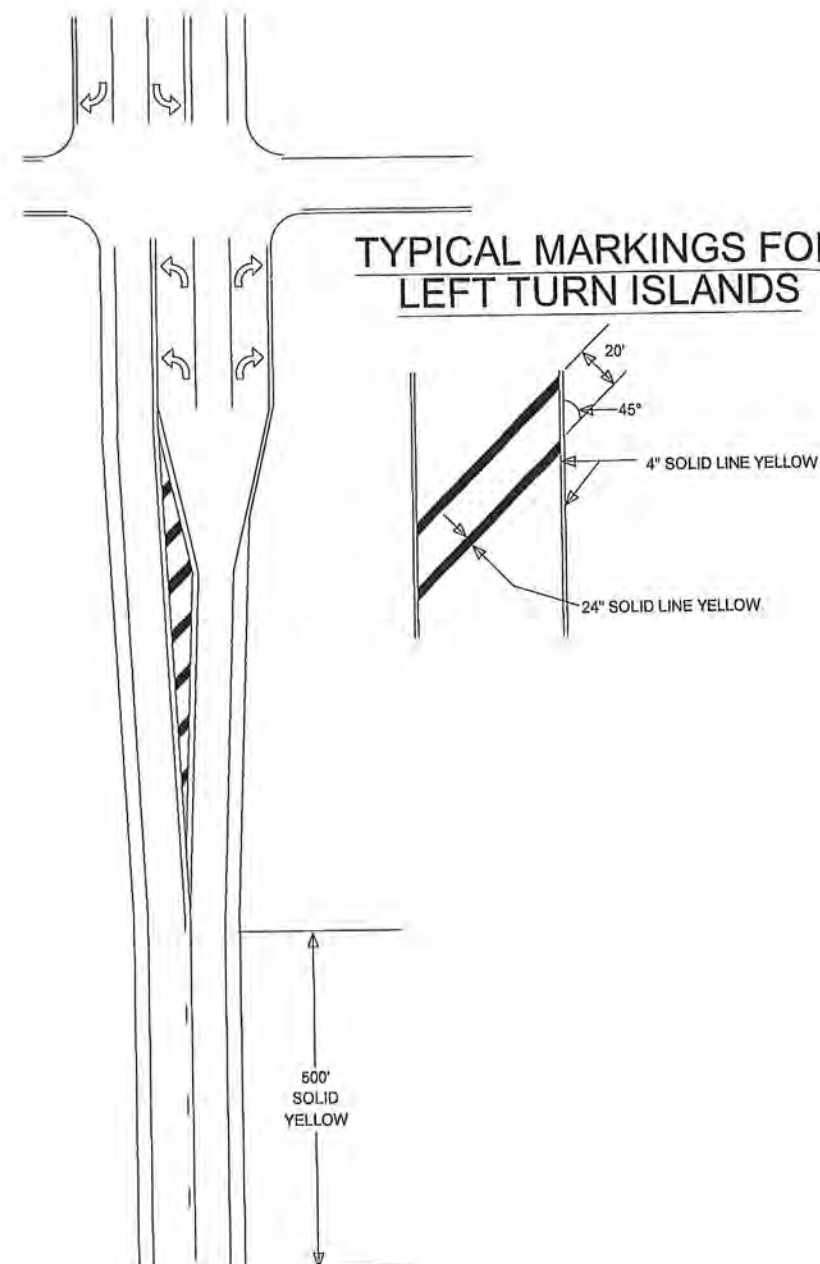
SIGNING & STRIPING  
 DETAILS  
 Sheet 14 of 19 Sheets



**TYPICAL MESSAGE PLACEMENT  
FOR TURN LANES**



**TYPICAL MARKINGS FOR  
LEFT TURN ISLANDS**



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**ANOKA COUNTY  
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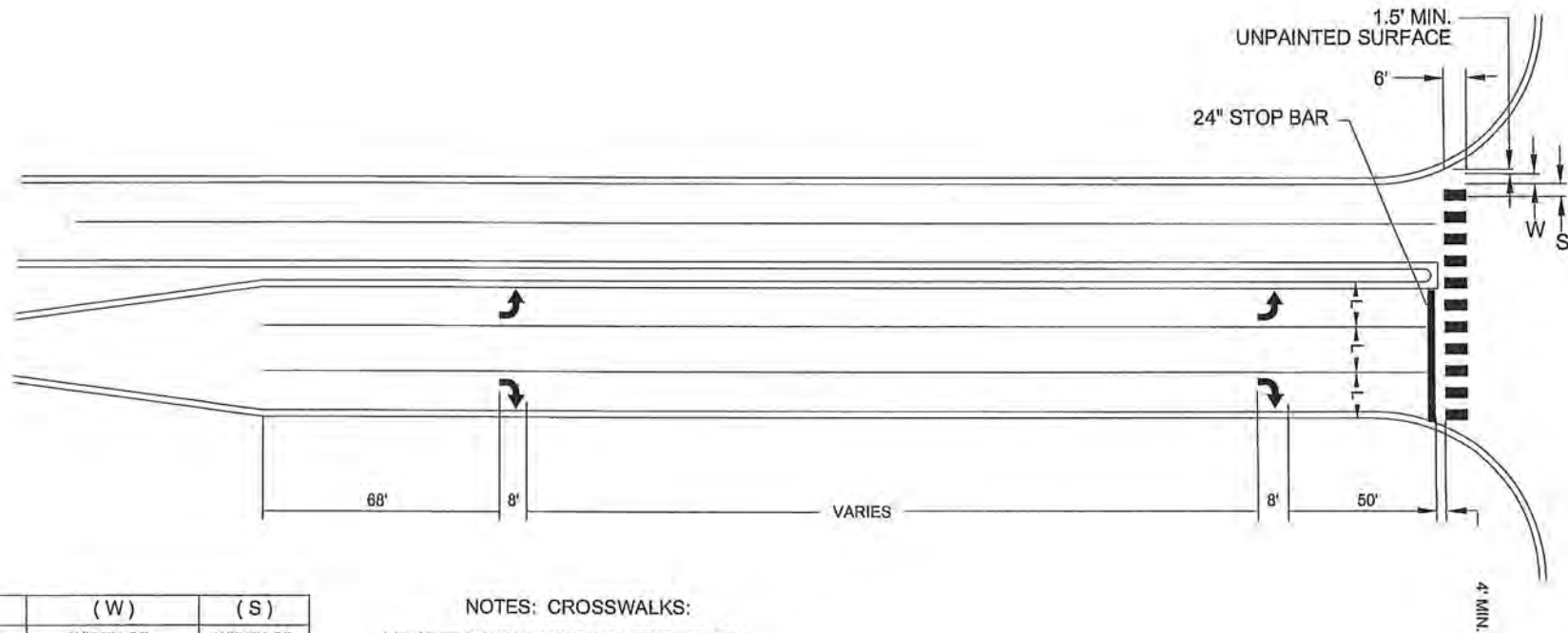
**SIGNING & STRIPING  
DETAILS**

Sheet 15 of 19 Sheets

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\18-01-00\CR 104 (CR102-TH47)\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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SIGNING & STRIPING  
 DETAILS



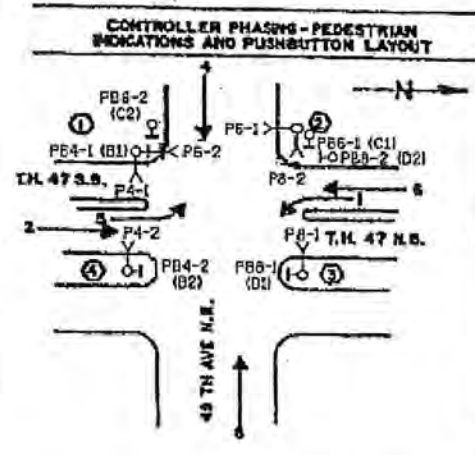
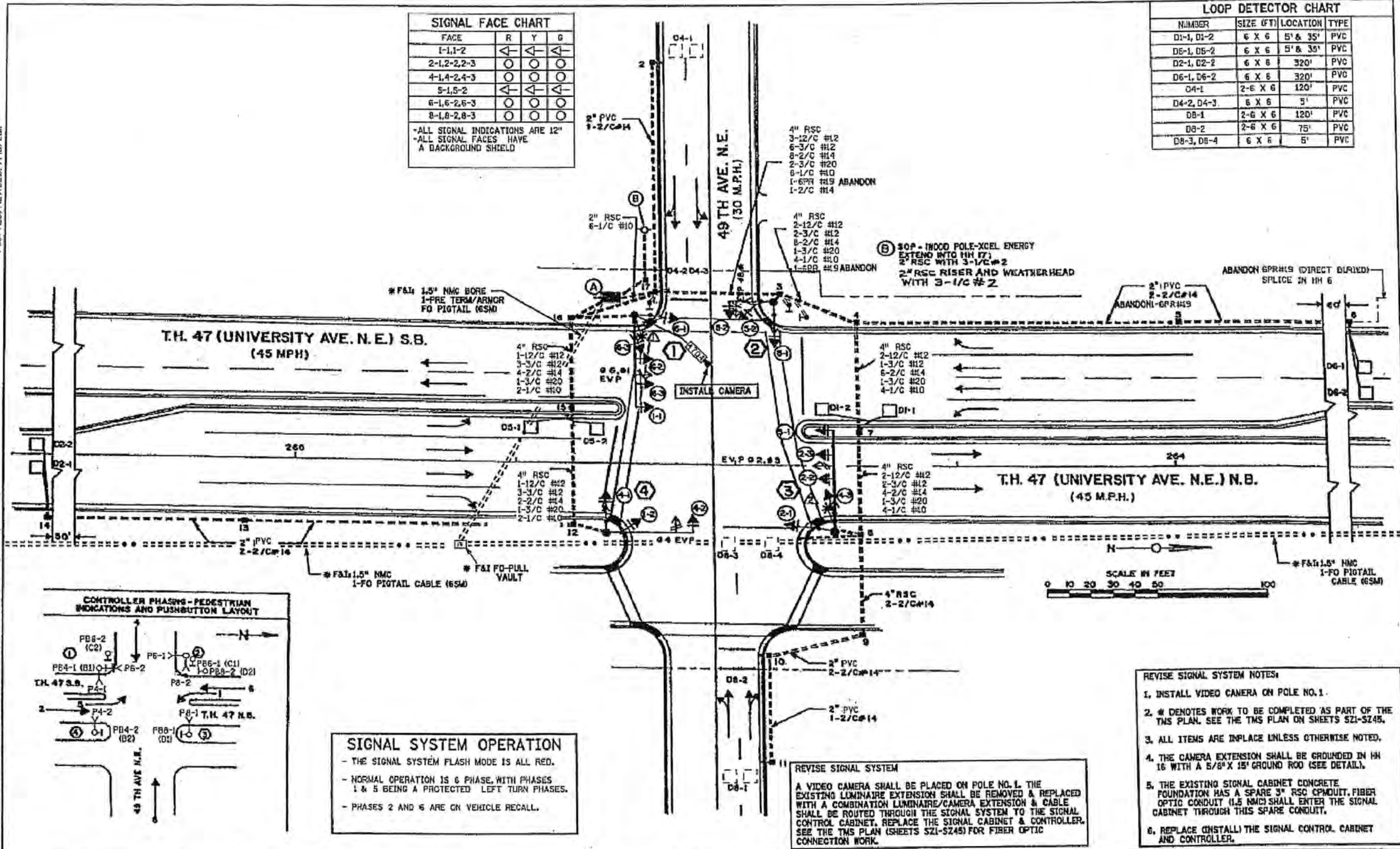
PLOTTED/REVISED: 7/18/2019

DISTRICT 4: METRO  
PLOT NAME: 49TH AVE LAYOUT  
PATH & FILENAME: IP\_SWP-005520120572A\_SCL.dwg

SIGNAL FACE CHART			
FACE	R	Y	G
1-1,1-2	◀	◀	◀
2-1,2-2,2-3	○	○	○
4-1,4-2,4-3	○	○	○
5-1,5-2	◀	◀	◀
6-1,6-2,6-3	○	○	○
8-1,8-2,8-3	○	○	○

-ALL SIGNAL INDICATIONS ARE 12"  
-ALL SIGNAL FACES HAVE  
A BACKGROUND SHIELD

LOOP DETECTOR CHART			
NUMBER	SIZE (FT)	LOCATION	TYPE
D1-1, D1-2	6 X 6	5' & 35'	PVC
D6-1, D6-2	6 X 6	5' & 35'	PVC
D2-1, D2-2	6 X 6	320'	PVC
D6-1, D6-2	6 X 6	320'	PVC
O4-1	2-6 X 6	120'	PVC
D4-2, D4-3	6 X 6	5'	PVC
D8-1	2-6 X 6	120'	PVC
D8-2	2-6 X 6	75'	PVC
D8-3, D8-4	6 X 6	5'	PVC



**SIGNAL SYSTEM OPERATION**

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

- REVISE SIGNAL SYSTEM NOTES:**
1. INSTALL VIDEO CAMERA ON POLE NO. 1.
  2. # DENOTES WORK TO BE COMPLETED AS PART OF THE TMS PLAN. SEE THE TMS PLAN ON SHEETS S21-S245.
  3. ALL ITEMS ARE IN PLACE UNLESS OTHERWISE NOTED.
  4. THE CAMERA EXTENSION SHALL BE GROUNDED IN HH 16 WITH A 5/8\" X 18\" GROUND ROD (SEE DETAIL).
  5. THE EXISTING SIGNAL CABINET CONCRETE FOUNDATION HAS A SPARE 3\" RSC CPDQUIT. FIBER OPTIC CONDUIT (1.5 NMC) SHALL ENTER THE SIGNAL CABINET THROUGH THIS SPARE CONDUIT.
  6. REPLACE (INSTALL) THE SIGNAL CONTROL CABINET AND CONTROLLER.

**REVISE SIGNAL SYSTEM**

A VIDEO CAMERA SHALL BE PLACED ON POLE NO. 1. THE EXISTING LUMINAIRE EXTENSION SHALL BE REMOVED & REPLACED WITH A COMBINATION LUMINAIRE/CAMERA EXTENSION & CABLE SHALL BE ROUTED THROUGH THE SIGNAL SYSTEM TO THE SIGNAL CONTROL CABINET. REPLACE THE SIGNAL CABINET & CONTROLLER. SEE THE TMS PLAN (SHEETS S21-S245) FOR FIBER OPTIC CONNECTION WORK.

BY	DATE	REVISIONS	SYSTEM ID: 1735315	T.E. 2656	S.A.P. NO.	DRAWN BY: BSM	CKD BY: CDB	DATE: 6-19-17
			METER ADDRESS: 4898 UNIVERSITY AVE. NE	T.H. 47 (UNIVERSITY AVE.) AT CSAH 4/CR 104	CERTIFIED BY: <i>Michael P. Selinsky</i>		LIC. NO. 19963	DATE: 6-23-17
			OLD ID: 20672	IN COLUMBIA HEIGHTS, ANOKA COUNTY			STATE PROJ. NO. 0205-101 (T.H.47)	SHEET NO. SS14 OF SS60 SHEETS

FOR REFERENCE PURPOSES ONLY

NO	DATE	BY	CKD	APPR	REVISION	TIME

NAME: P:\19-01-00\CR\_104\_CR102-TH47\Bases\PROPOSED\PROPOSED.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: *Douglas W. Fischer*

DATE: 4/25/19

LICENSE NO. 20235

DRAWN BY: APA DATE: 03/27/2019

DESIGN BY: APA DATE: 03/27/2019

CHECKED BY: SAT DATE: 03/27/2019

**ANOKA COUNTY HIGHWAY DEPT.**

COUNTY PROJECT 19-12-104

EXISTING SIGNAL PLAN

Sheet 17 of 19 Sheets



PLOTTED/REVISED: 7/18/2017

DISTRICT: METRO  
PLOT NAME: 49TH AVE NOTES  
PATH & FILENAME: IP\_PWP\0826624720672A\_SGL.dgn

- ① P100 POLE FOUNDATION  
TYPE P100-A-45
- REMOVE D40-9 (DAVIT AT 350 DEG)
- INSTALL 1-X8-350/CAM 400 EXTENSION (MOUNTED AT 350 DEG)  
(INCLUDES LIGHTNING ROD)
- F&I 7/16" GROUND BRAID & GROUND ROD
- INSTALL 1-VIDEO CAMERA WITH MOUNT  
3-ONE WAY SIGNALS (OVERHEAD)
- S&I MID ARM MOUNTER 12' & 24' FROM END  
LUMINAIRE - 200 WATT HPS WITH PEC  
ONE WAY EVP DETECTOR AND LIGHT (6&1)
- 2-TYPE 10B AT 0 AND 270 DEG
- 2-C.D. PED INDICATIONS
- 1-APS PB AND SIGN (RT ARROW) (PB4-1)
- INTERNALLY LIT SIGN WITH PEC
- EXTEND INTO HH 16
- 3" RSC
- 2-12/C #12
- 3-3/C #12
- 4-1/C #10
- 1-3/C #20
- F&I 1-7/16" GROUND BRAID  
TO GROUND ROD
- 1-COM CABLE (CAT 5E)
- APS PED PB STA (PB6-2)
- 1-APS PB AND SIGN (RT ARROW)
- EXTEND INTO HH 1
- 1 1/4" PVC
- 1-2/C #14

- Ⓐ REPLACE (INSTALL) EQUIPMENT PAD  
CONTROLLER AND CABINET  
SERVISE EQUIPMENT (PAD MOUNTED)  
CABINET TO HH 1
- 4" RSC
- 3-12/C #12
- 7-3/C #12
- 11-2/C #14
- 1-3/C #20
- 1-6PR #19
- 1-2/C #14
- CABINET TO HH 16
- 3-12/C #12
- 6-3/C #12
- 4-2/C #14
- 2-3/C #20
- 1-2/C #14
- F&I 1-COM CABLE (CAT 5E)
- STUB OUT 3" RSC NORTH
- ABANDON 1-6PR #19 (TO 53RD AVE NE)
- STUB OUT 3" RSC
- ABANDON 1-6PR #19 (TO 44TH AVE NE)
- CONTROLLER CABINET  
TO PULL VAULT
- \*F&I 1-1.5" NMC (ON SPARE 3")
- 1-PRE TERMINATED ARMORED  
FD PIGTAIL (65M)

- Ⓑ METER TO HH 17
- 2" RSC
- 3-1/C #2
- LOAD CENTER TO CABINET
- 1 1/4" RSC
- 2-1/C #6
- 1-1/C #6 BR. CR.
- LOAD CENTER TO HH 1
- 1 1/4" RSC
- 12-1/C #10

- ② P90 POLE FOUNDATION  
TYPE P90-A-20
- ONE WAY SIGNALS (OVERHEAD)
- ONE WAY EVP DETECTOR AND LIGHT (6)
- 2-TYPE 10B AT 0° AND 270 DEG
- 2-C.D. PED INDICATIONS
- INTERNALLY LIT SIGN WITH PEC
- EXTEND INTO HH 3
- 3" RSC
- 1-12/C #12
- 4-3/C #12
- 2-1/C #10
- 1-3/C #20
- 1-2/C #14
- APS PED PB STA (PB6-1)
- 1-APS PB AND SIGN (LT ARROW)
- EXTEND INTO HH 3
- 1 1/4" PVC
- 1-2/C #14 (FROM POLE 2)
- APS PED PB STA (PB6-2)
- 1-APS PB AND SIGN (RT ARROW)
- EXTEND INTO HH 3
- 1 1/4" PVC
- 1-2/C #14

- ④ P90 POLE FOUNDATION  
TYPE P90-A-40
- ONE WAY SIGNALS (OVERHEAD)
- ONE WAY EVP DETECTOR AND LIGHT (4)
- 1-TYPE 10B AT 270 DEG
- 1-TYPE 10A AT 0 DEG
- 1-C.D. PED INDICATION
- 1-APS PB AND SIGN (RT ARROW) (PB4-2)
- INTERNALLY LIT SIGN WITH PEC
- EXTEND INTO HH 12
- 3" RSC
- 1-12/C #12
- 3-3/C #12
- 2-1/C #10
- 1-3/C #20

- ③ A800 POLE FOUNDATION  
TYPE A100-A-50-D40-9 (DAVIT AT 350 DEG)
- 3-ONE WAY SIGNALS (OVERHEAD)
- MID ARM MOUNTER 12' & 24' FROM END
- LUMINAIRE - 200 WATT HPS WITH PEC
- ONE WAY EVP DETECTOR AND LIGHT (2&5)
- 1-TYPE 10B AT 0 DEG
- 1-TYPE 10A AT 270 DEG
- 1-C.D. PED INDICATIONS
- 1-APS PB AND SIGN (RT ARROW) (PB6-1)
- INTERNALLY LIT SIGN WITH PEC
- EXTEND INTO HH 8
- 3" RSC
- 2-12/C #12
- 3-3/C #12
- 4-1/C #10
- 1-3/C #20

REVISE SIGNAL SYSTEM NOTES:

1. INSTALL VIDEO CAMERA ON POLE NO. 1
2. \* DENOTES WORK TO BE COMPLETED AS PART OF THE TMS PLAN. SEE THE TMS PLAN ON SHEETS SZ1-SZ45.
3. ALL ITEMS ARE IN PLACE UNLESS OTHERWISE NOTED.
4. THE CAMERA EXTENSION SHALL BE GROUNDED IN HH 16 WITH A 5/8" X 15" GROUND ROD (SEE DETAIL).
5. THE EXISTING SIGNAL CABINET CONCRETE FOUNDATION HAS A SPARE 3" RSC CONDUIT. FIBER OPTIC CONDUIT (1.5 NMC) SHALL ENTER THE SIGNAL CABINET THROUGH THIS SPARE CONDUIT.
6. REPLACE (INSTALL) THE SIGNAL CONTROL CABINET & CONTROLLER.

BY	DATE	REVISIONS	SYSTEM ID: 1735315	T.E. 2656	INTERSECTION LAYOUT REVISE SIGNAL SYSTEM "D"	S.A.P. NO.	DRAWN BY: BAM	CKD BY: CDB	DATE: 6-19-17
			METER ADDRESS: 4898 UNIVERSITY AVE. NE		T.H. 47 (UNIVERSITY AVE.) AT CSAH 4/CR 104 (49TH AVE. NE.)	CERTIFIED BY: <i>Michael P. Salas</i>		LIC. NO. 19863	DATE: 6-23-17
			OLD ID: 20672		IN COLUMBIA HEIGHTS, ANOKA COUNTY			STATE PROJ. NO. 0205-101 (T.H.47)	SHEET NO. SS15 OF SS60 SHEETS

NO	DATE	BY	CKD	APPR	REVISION	03/27/2019	11:36:53 AM

NAME: P:\19-01-00\CR\_104\_CR102-TH47\Bases\PROPOSED\PROPOSED.dgn

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

PRINT NAME: DOUGLAS W. FISCHER

SIGNATURE: *[Signature]*

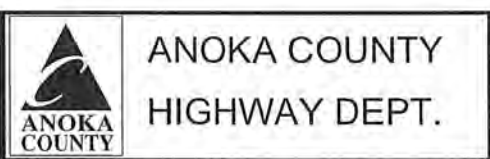
DATE: 4/25/19

LICENSE NO. 20235

DRAWN BY: APA DATE: 03/27/2019

DESIGN BY: APA DATE: 03/27/2019

CHECKED BY: SAT DATE: 03/27/2019



COUNTY PROJECT 19-12-104

EXISTING SIGNAL PLAN

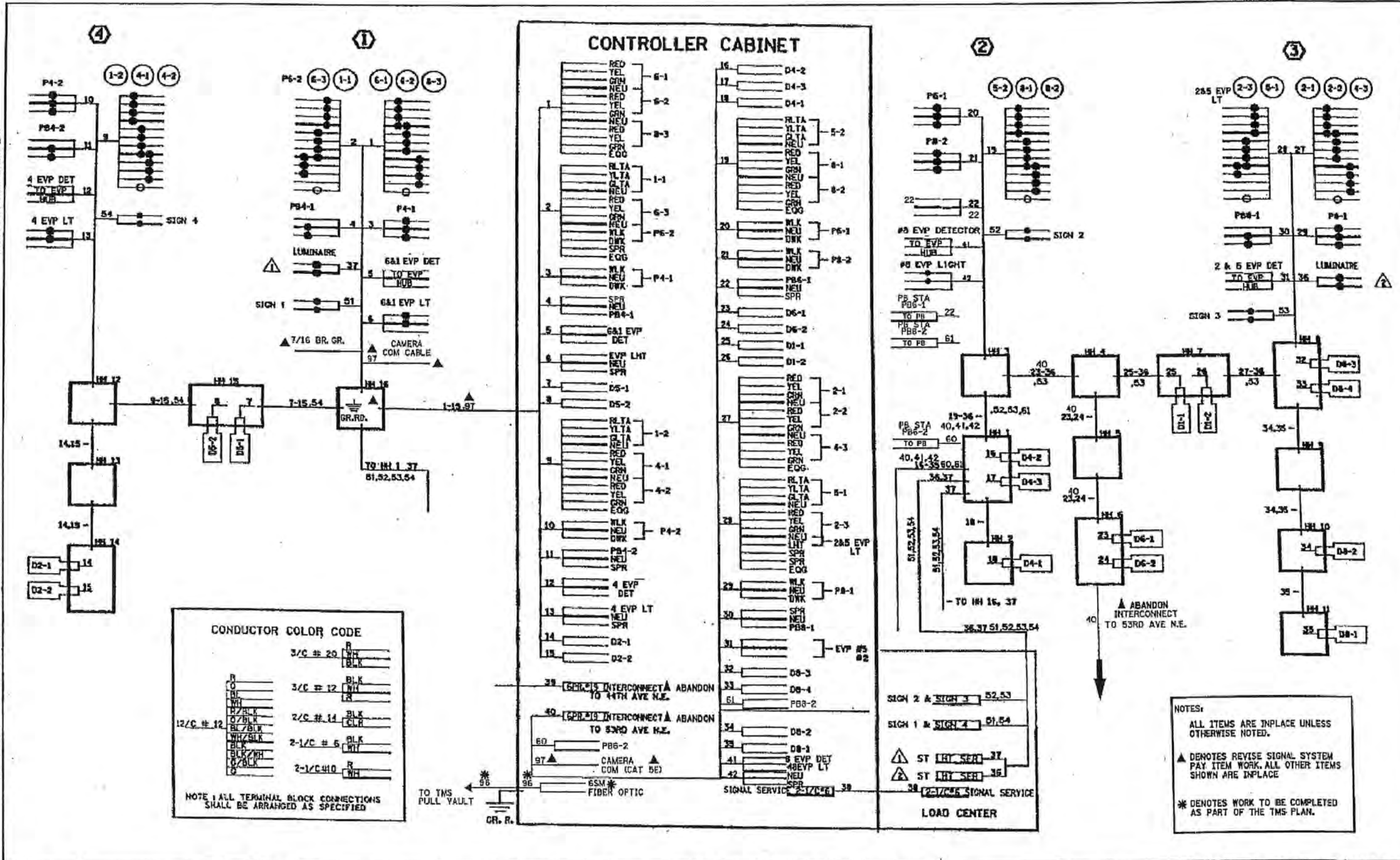
Sheet 18 of 19 Sheets

FOR REFERENCE PURPOSES ONLY



PLOTTED/REVISED: 8/7/2017

DISTRICT 5, METRO  
PLOT NAME: 48TH AVE WIRE  
PATH & FILENAME: IP\_PWP-0192662-AT-20672A\_SGI.dgn

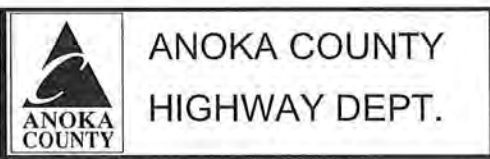


BY	DATE	REVISIONS	SYSTEM ID: 1736315	T.E. 2656	FIELD WIRING DIAGRAM	S.A.P. NO.	DRAWN BY: BAW	CKD BY: CDB	DATE: 6-19-17
			METER ADDRESS: 4898 UNIVERSITY AVE. NE	T.H. 47 (UNIVERSITY AVE.) AT CSAH 4/CR 104	REVISE SIGNAL SYSTEM "D"	CERTIFIED BY: <i>Michael P. Silvanich</i>	LTC. NO. 19863	DATE: 6-23-17	
			OLD ID: 20672	(49TH AVE. NE.)	IN COLUMBIA HEIGHTS, ANOKA COUNTY	STATE PROJ. NO. 0205-101 (T.H. 47)	SHEET NO. SS16 OF SS60 SHEETS		

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: APA DATE: 03/27/2019  
 DESIGN BY: APA DATE: 03/27/2019  
 CHECKED BY: SAT DATE: 03/27/2019



COUNTY PROJECT 19-12-104

EXISTING SIGNAL PLAN  
 Sheet 19 of 19 Sheets

FOR REFERENCE PURPOSES ONLY