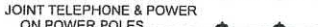
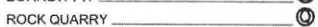
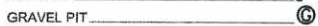
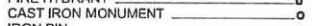
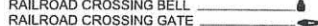
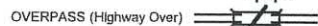
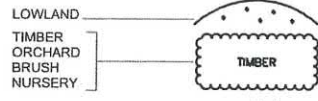
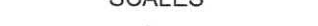
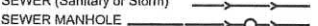
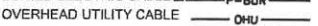
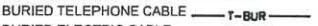
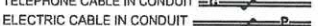
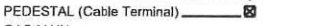
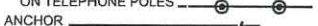
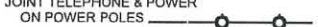
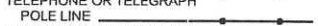


PLAN SYMBOLS

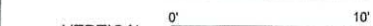
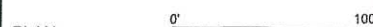
- COUNTY LINE
- TOWNSHIP OR RANGE LINE
- SECTION LINE
- QUARTER LINE
- SIXTEENTH LINE
- RIGHT OF WAY LINE
- SLOPE EASEMENT
- EXISTING RIGHT OF WAY
- PROPERTY LINE
- CORPORATE OR CITY LIMITS
- RETAINING WALL
- RAILROAD
- RAILROAD RIGHT OF WAY
- RIVER OR CREEK
- DRAINAGE DITCH
- CULVERT
- DROP INLET
- GUARD RAIL
- BARBED WIRE FENCE
- WOVEN WIRE FENCE
- CHAIN LINK FENCE
- WOOD FENCE
- STONE WALL OR FENCE
- HEDGE



UTILITY SYMBOLS



SCALES



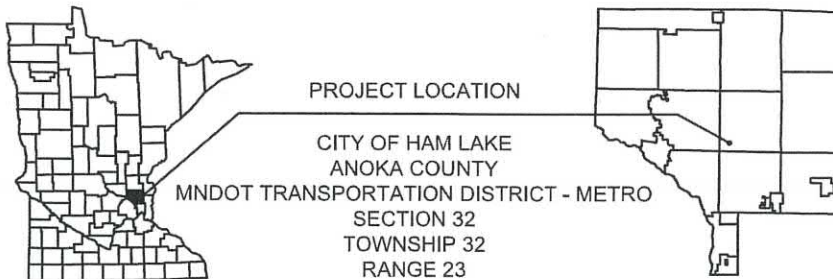
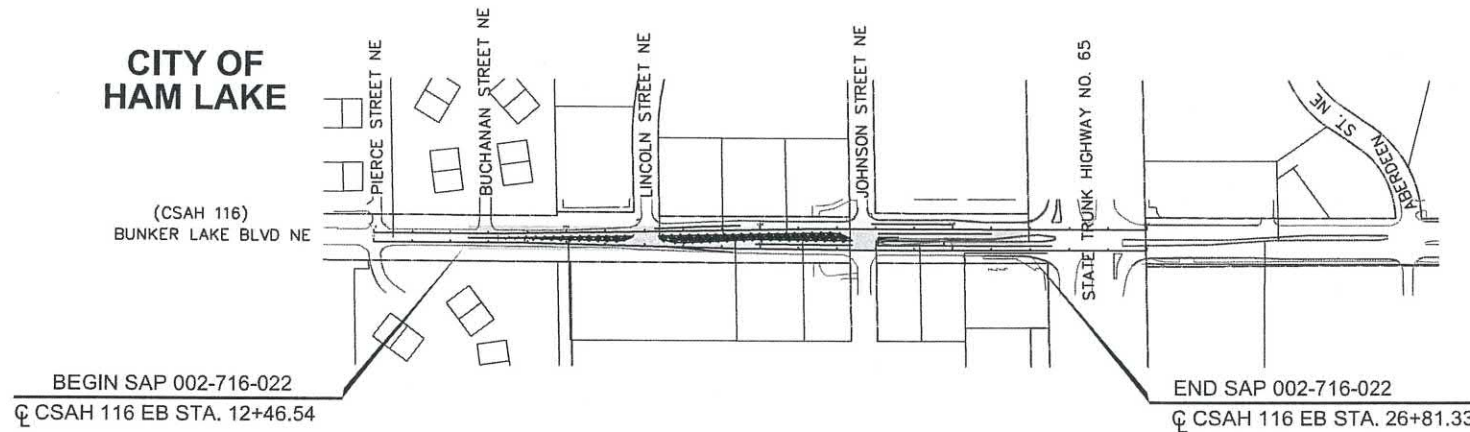
MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

CONSTRUCTION PLAN FOR BITUMINOUS SURFACING, CURB AND GUTTER, AND STORM SEWER

LOCATED ON CSAH 116 BETWEEN BUCHANAN ST NE AND 95 FT WEST OF TH 65

STATE AID PROJ. NO. 002-716-022

GROSS LENGTH	1434.79 FEET	0.272 MILES
BRIDGES-LENGTH	0.00 FEET	0.000 MILES
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES
NET LENGTH	1434.79 FEET	0.272 MILES



PROJECT LOCATION

CITY OF HAM LAKE
ANOKA COUNTY
MNDOT TRANSPORTATION DISTRICT - METRO
SECTION 32
TOWNSHIP 32
RANGE 23

UTILITY QUALITY LEVEL NOTE:

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF C/ASCE 38-02, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

DESIGN DESIGNATION (CSAH 116)

ESAL ₂₀	1,683,119	FUNCTIONAL CLASSIFICATION	A MINOR RELIEVER
R VALUE	60	NO. OF TRAFFIC LANES	2
ADT (2021)	12799	NO. OF PARKING LANES	0
PROJ. ADT (2041)	15617	SPEED	50 MPH
PROJ. HCADT (2041)	921	STOPPING SIGHT DISTANCE BASED ON:	
SOIL FACTOR	NA	HEIGHT OF EYE	3.5'
		HEIGHT OF OBJECT	2.0'
		DESIGN SPEED NOT ACHIEVED AT:	
		STA.	TO STA.
			MPH

GOVERNING SPECIFICATIONS

THE 2018 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN

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

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES
3	PROPOSED TYPICAL SECTION
4	ALIGNMENT TABULATION
5	REMOVAL PLAN
6	CONSTRUCTION PLAN
7	CONSTRUCTION STAGING PLAN
8 - 11	TRAFFIC CONTROL PLAN AND QUANTITIES
12 - 13	PERMANENT SIGNING AND STRIPING
14 - 18	SIGNING & STRIPING DETAILS

THIS PLAN CONTAINS 18 SHEETS

APPROVED  3/3/21
ANOKA COUNTY ENGINEER DATE

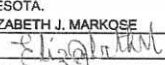
APPROVED  3/3/21
CITY OF HAM LAKE ENGINEER DATE

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

STATE AID ENGINEER: APPROVED FOR STATE AID FUNDING DATE

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-716-022\Plan\002716022_TSH-D.dgn 02/25/2021 2:41:29 PM

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
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SIGNATURE: 
DATE: 02/25/2021 LICENSE NO. 49118

DRAWN BY: EJM DATE: 01/05/21
DESIGN BY: EJM DATE: 12/21/20
CHECKED BY: NJD DATE: 02/24/21



ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-716-022

TITLE SHEET

Sheet 1 of 18 Sheets

STATEMENT OF ESTIMATED QUANTITIES

NOTES	ITEM NO.	ITEM	UNIT	TOTAL QUANTITY	COUNTY OF ANOKA
	2021.501	MOBILIZATION	LUMP SUM	1	1
	2102.503	PAVEMENT MARKING REMOVAL	LIN FT	216	216
(1)	2104.502	REMOVE DRAINAGE STRUCTURE	EACH	1	1
	2104.502	REMOVE SIGN TYPE C	EACH	2	2
	2104.502	SALVAGE SIGN TYPE C	EACH	2	2
	2104.503	SAWING CONCRETE PAVEMENT (FULL DEPTH)	LIN FT	8	8
	2104.503	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	LIN FT	260	260
	2104.503	REMOVE CURB AND GUTTER	LIN FT	224	224
	2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	113	113
	2104.518	REMOVE CONCRETE WALK	SQ FT	1513	1513
	2105.507	SELECT GRANULAR BORROW (CV)	CU YD	10	10
	2130.523	WATER	M GALLON	10	10
	2211.507	AGGREGATE BASE (CV) CLASS 5	CU YD	43	43
	2232.504	MILL BITUMINOUS SURFACE (1.5")	SQ YD	11064	11064
	2357.506	BITUMINOUS MATERIAL FOR TACK COAT	GALLON	579	579
	2360.509	TYPE SP 9.5 NON WEARING COURSE MIXTURE (4,B)	TON	29	29
	2360.509	TYPE SP 9.5 WEARING COURSE MIXTURE (4,C)	TON	1013	1013
	2503.503	15" RC PIPE SEWER CLASS V	LIN FT	37	37
(1)	2503.602	CONNECT TO EXISTING STORM SEWER	EACH	1	1
(2)	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN G	LIN FT	3.5	3.5
(2)	2506.503	CONSTRUCT DRAINAGE STRUCTURE DESIGN H	LIN FT	3.1	3.1
	2506.502	CASTING ASSEMBLY	EACH	2	2
	2521.518	4" CONCRETE WALK	SQ FT	653	653
	2531.503	CONCRETE CURB AND GUTTER DESIGN B418	LIN FT	222	222
	2563.601	TRAFFIC CONTROL SUPERVISOR	LUMP SUM	1	1
	2563.601	TRAFFIC CONTROL	LUMP SUM	1	1
	2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	UNIT DAY	20	20
	2564.502	INSTALL SIGN TYPE C	EACH	2	2
	2564.518	SIGN PANELS TYPE C	SQ FT	11	11
	2573.502	STORM DRAIN INLET PROTECTION	EACH	20	20
	2582.503	4" SOLID LINE PAINT	LIN FT	1528	1528
	2582.503	4" BROKEN LINE PAINT	LIN FT	466	466
	2582.503	4" SOLID LINE MULTI-COMPONENT	LIN FT	5727	5727
	2582.503	4" BROKEN LINE MULTI-COMPONENT	LIN FT	150	150
	2582.503	4" DOUBLE SOLID LINE MULTI-COMPONENT	LIN FT	1729	1729
	2582.503	24" SOLID LINE MULTI-COMPONENT	LIN FT	562	562
	2582.518	PAVEMENT MESSAGE PREFORM THERMOPLASTIC	SQ FT	124	124

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

NO.	STANDARD PLATE TITLE
3000M	REINFORCED CONCRETE PIPE (6 SHEETS)
3006H	GASKET JOINT FOR R.C. PIPE (2 SHEETS)
3007F	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
4006L	MANHOLE OR CATCH BASIN PRECAST - DESIGN G & H
4026A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
8000J	CHANNELIZERS

BASIS OF QUANTITIES

SPEC NO	DESCRIPTION	RATE
2357	BITUMINOUS MATERIAL FOR TACK COAT	0.05 GALLONS / SQ YD / LIFT
2360	TYPE SP12.5 NON WEARING COURSE MIXTURE	115 POUNDS / SQ YD / IN
2360	TYPE SP12.5 WEARING COURSE MIXTURE	115 POUNDS / SQ YD / IN

CONSTRUCTION NOTES

- (1) THE EXISTING PIPE SHALL NOT BE DISTURBED.
- (2) ADJUSTING RINGS ARE INCIDENTAL.

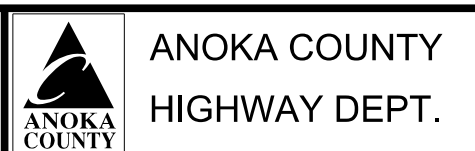
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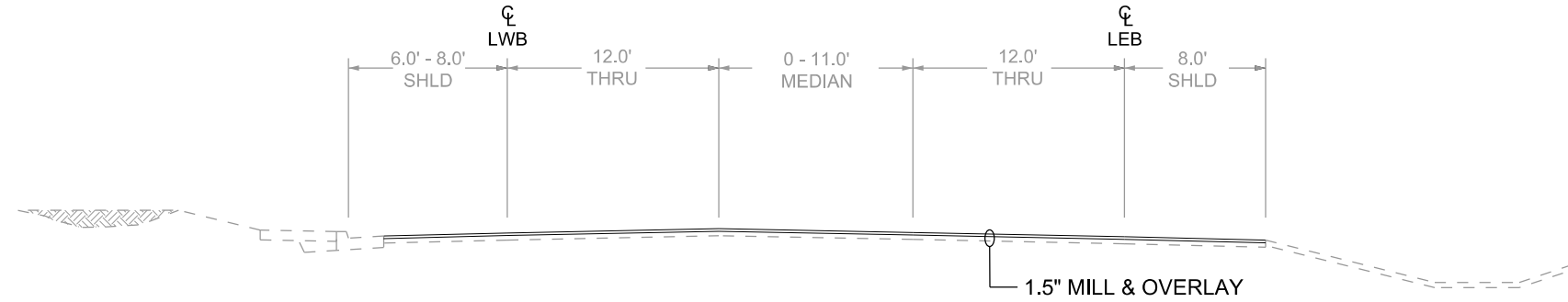
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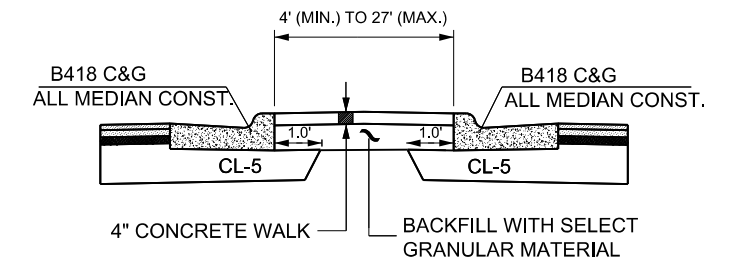
SAP 002-716-022

CSAH 116 (BUNKER LAKE BLVD NE)

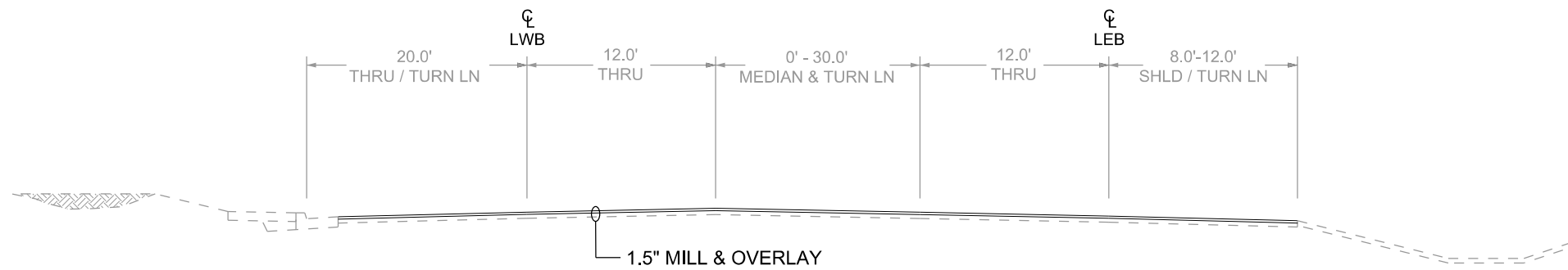
STA 12+46 - STA 17+00



DETAIL 'A'
MEDIAN

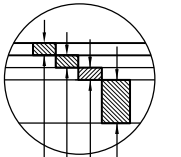


STA 17+00 - STA 23+07

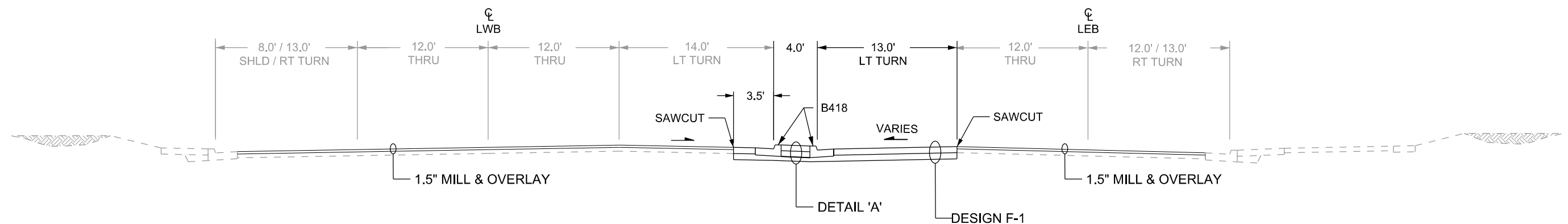


DESIGN F-1

- 2.0" TYPE SP 9.5 WEARING COURSE MIXTURE (4,C) SPWEA440C
- 2.0" TYPE SP 9.5 WEARING COURSE MIXTURE (4,C) SPWEA440C
- 2.0" TYPE SP 9.5 NON-WEARING COURSE MIXTURE (4,B) SPNWA430B
- 6.0" AGGREGATE BASE, CLASS 5 (MNDOT SPEC. 2211) (CRUSHED)



STA 23+07 - STA 26+81

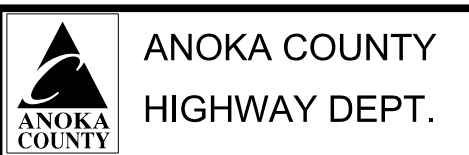


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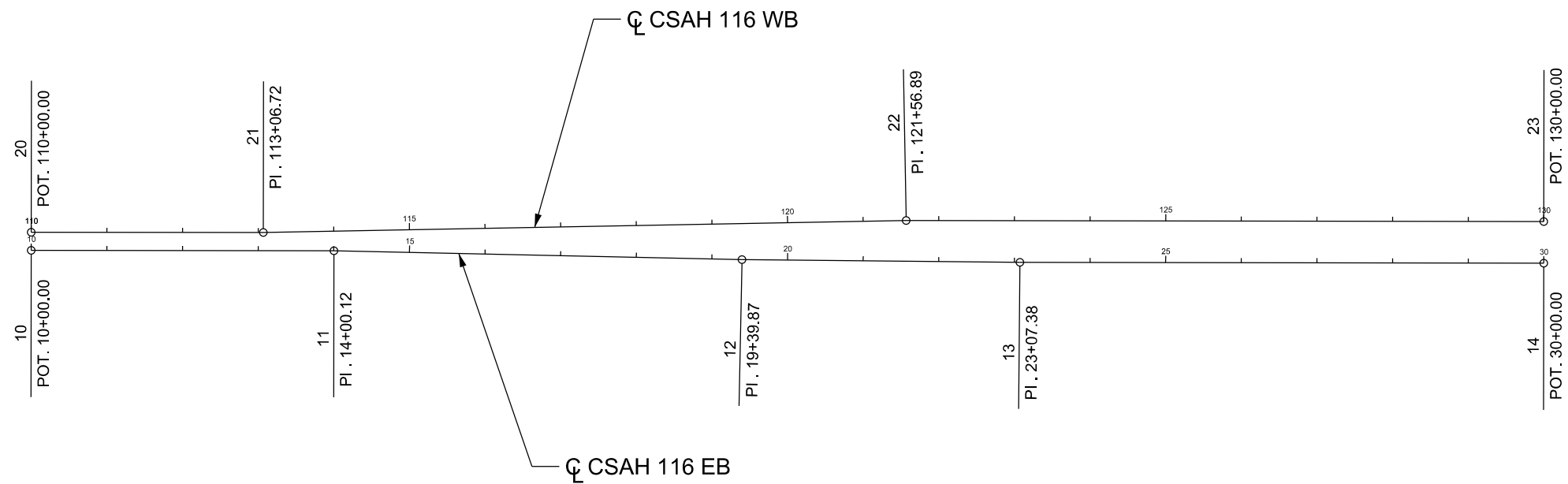
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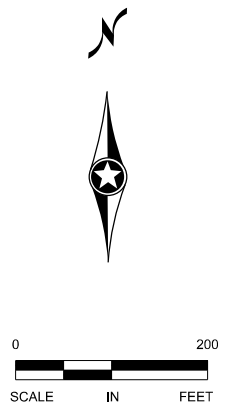


SAP 002-716-022

PROPOSED TYPICAL SECTION
 Sheet 3 of 18 Sheets



ALIGNMENT TABULATION										
POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	E	N	
☉ CSAH 116 EASTBOUND <116IF_EB>										
10	POT	10+00.000						506,425.9057	166,934.9900	
11	POT	14+00.120						506,826.0253	166,934.4180	
12	POT	19+39.875						507,365.6564	166,922.8537	
13	POT	23+07.382						507,733.1440	166,919.1213	
14	POT	30+00.000						508,425.7618	166,918.1312	
☉ CSAH 116 WESTBOUND <116IF_WB>										
20	POT	110+00.000						506,425.9213	166,958.9900	
21	POT	113+06.721						506,732.6424	166,958.5516	
22	POT	121+56.891						507,582.6659	166,974.3365	
23	POT	130+00.000						508,425.7736	166,973.1312	

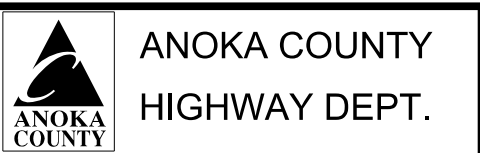


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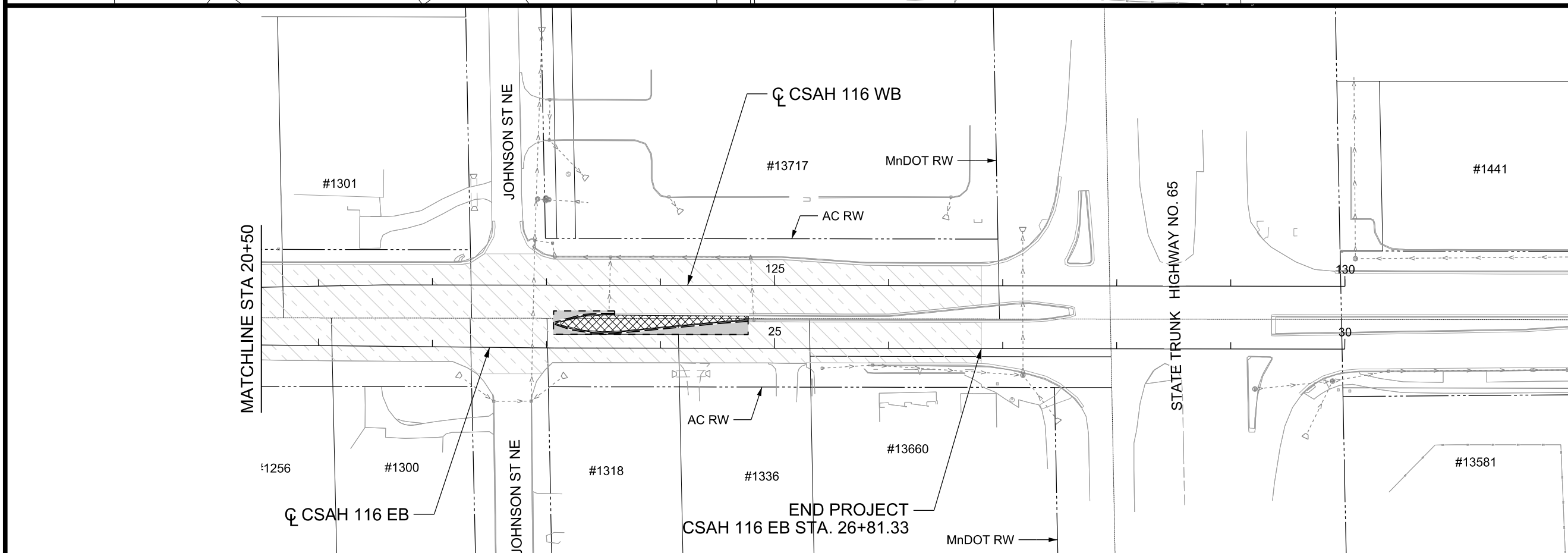
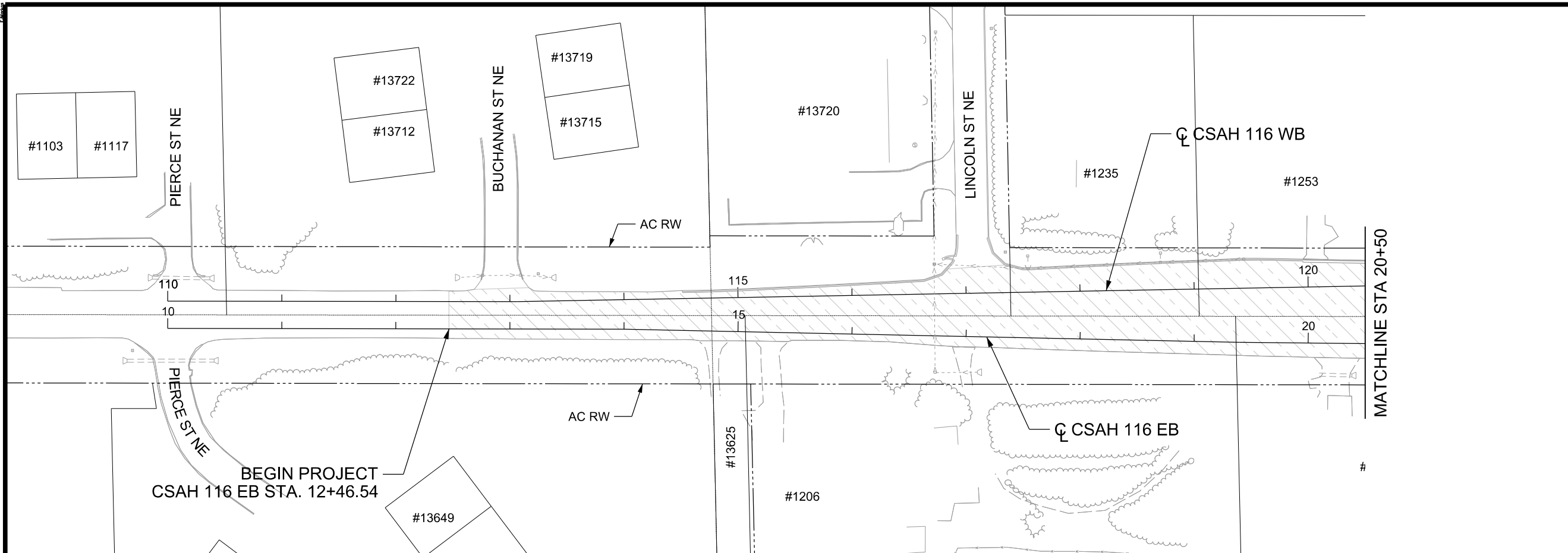
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SAP 002-716-022

ALIGNMENT TABULATION
 Sheet 4 of 18 Sheets



LEGEND

	REMOVE BITUMINOUS PAVEMENT
	1.5" MILL & OVERLAY
	REMOVE CONCRETE MEDIAN
	REMOVE CURB & GUTTER
	SAWCUT

#

SCALE IN FEET

1 OF 1

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-716-022\Plan\002716022_RM-ID.dgn 02/25/2021 2:41:38 PM

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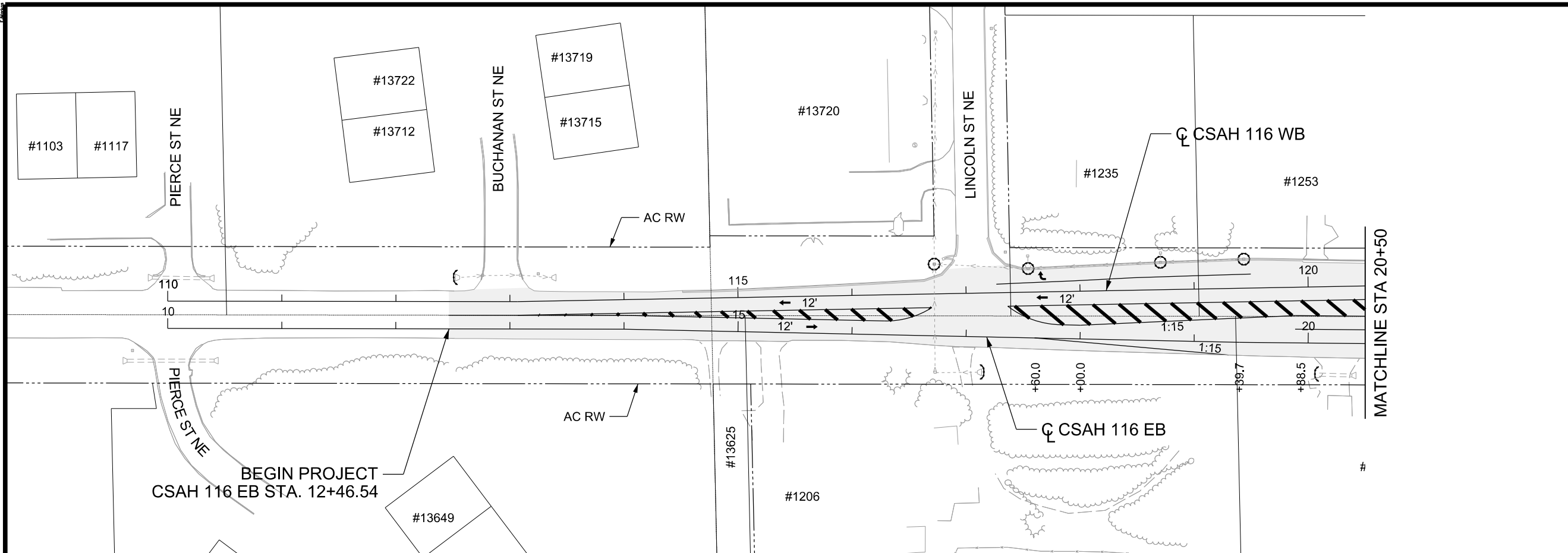
**ANOKA COUNTY
HIGHWAY DEPT.**

SAP 002-716-022

REMOVAL PLAN

STA 12+46.54 TO 26+81.33

Sheet 5 of 18 Sheets

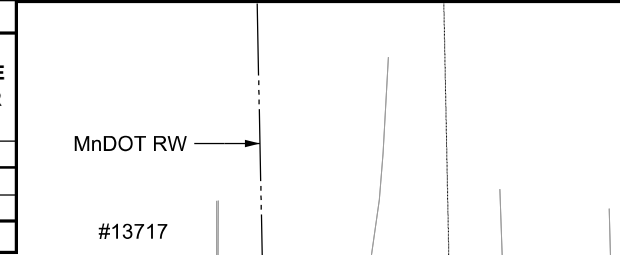


LEGEND

- (A) CONCRETE APPROACH NOSE STD PLATE 7113
- (B) 4" CONCRETE WALK
- (C) B418 CURB & GUTTER
- PROPOSED STORM SEWER
- PROPOSED CATCH BASIN
- INPLACE CATCH BASIN
- (O) INLET PROTECTION
- MILL & OVERLAY BITUMINOUS PAVEMENT

STORM SEWER

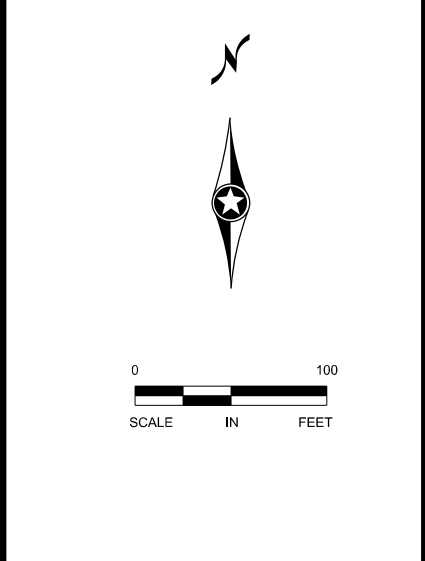
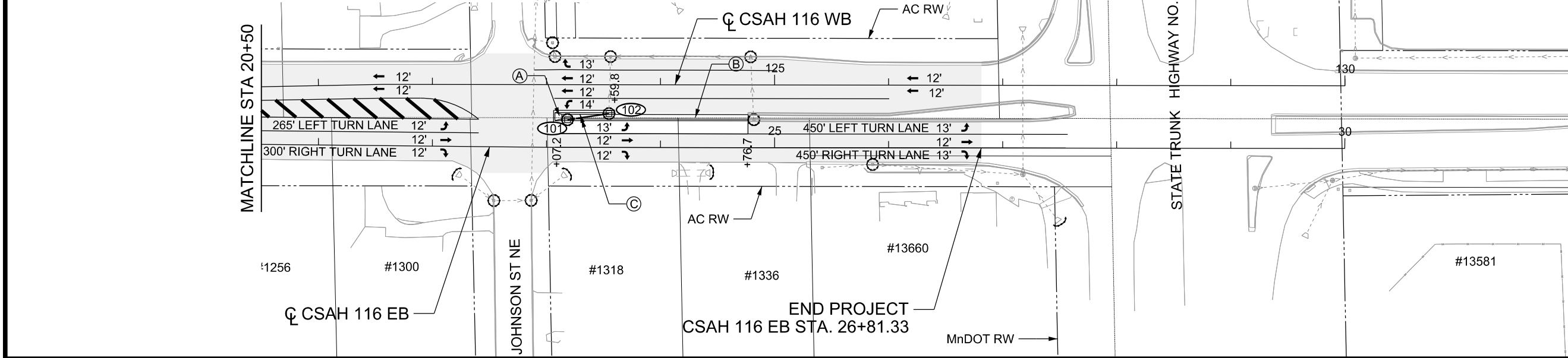
STRUCTURE NO.	CENTER OF CASTING LOCATION			DRAINAGE STRUCTURE				TOP OF CASTING ELEV.	OUTLET ELEV.	DOWN-STREAM INLET ELEV.	SLOPE %	15" RC PIPE SEWER CL V LIN FT		
	FLows FROM	FLows TO	ALIGN.	STATION	OFFSET	TYPE	DESIGN						G LIN FT	H LIN FT
101	102	CSAH 116	23+18.50	-24.25	CB	H		3.1	R-3448-C	899.11	896.16	895.98	0.50	37
102	EX	CSAH 116	23+54.80	-29.75	CB	G		3.5	R-3448-C	899.33	895.98			
TOTAL							3.5	3.1	2					37



CENTER MEDIAN FLOW LINE

STATION	OFFSET	ELEVATION	OFFSET	ELEVATION
23+13	25 LT	899.08	29 LT	899.13
23+25	25 LT	899.17	29 LT	899.19
23+50	25 LT	899.35	29 LT	899.32
23+75	25 LT	899.53		
24+00	25 LT	899.71		
24+25	25 LT	899.89		
24+50	25 LT	900.07		
24+75	25 LT	900.25		

GENERAL NOTES:
 R-3448-C DENOTES NEENAH CASTING ASSEMBLY WITH 17 3/4 x 22 3/4 x 1 3/4 GRATE FOR B418 CURB AND GUTTER.

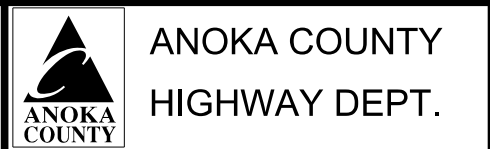


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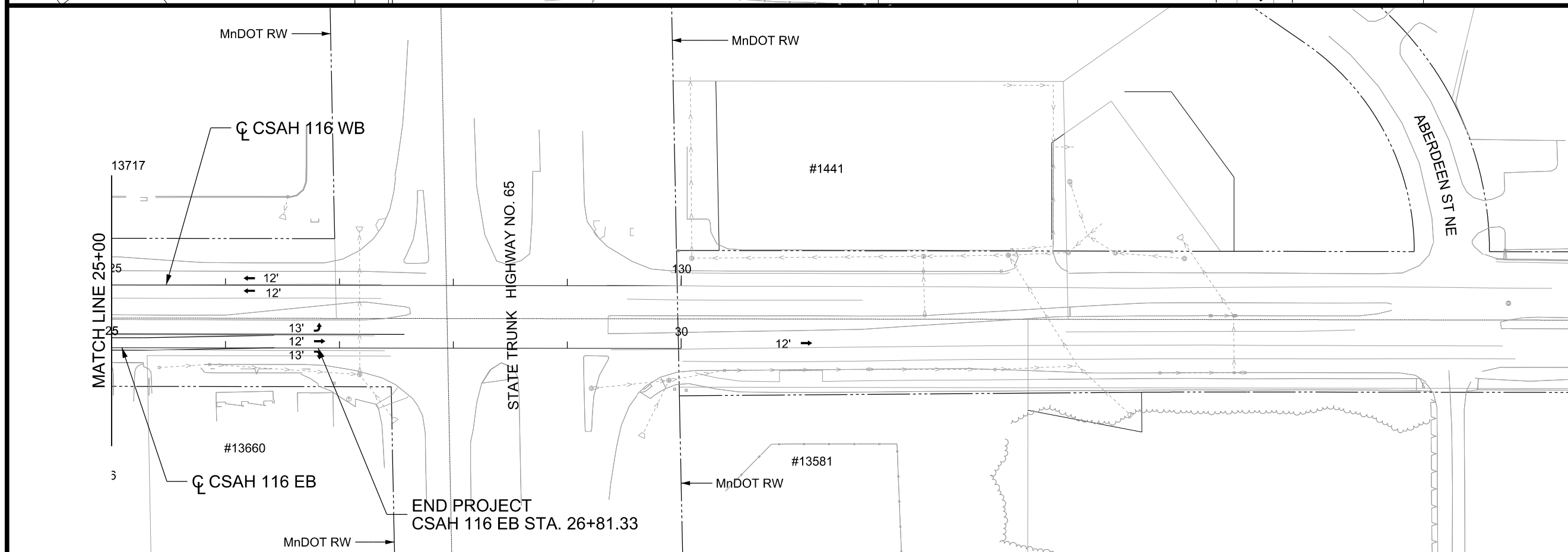
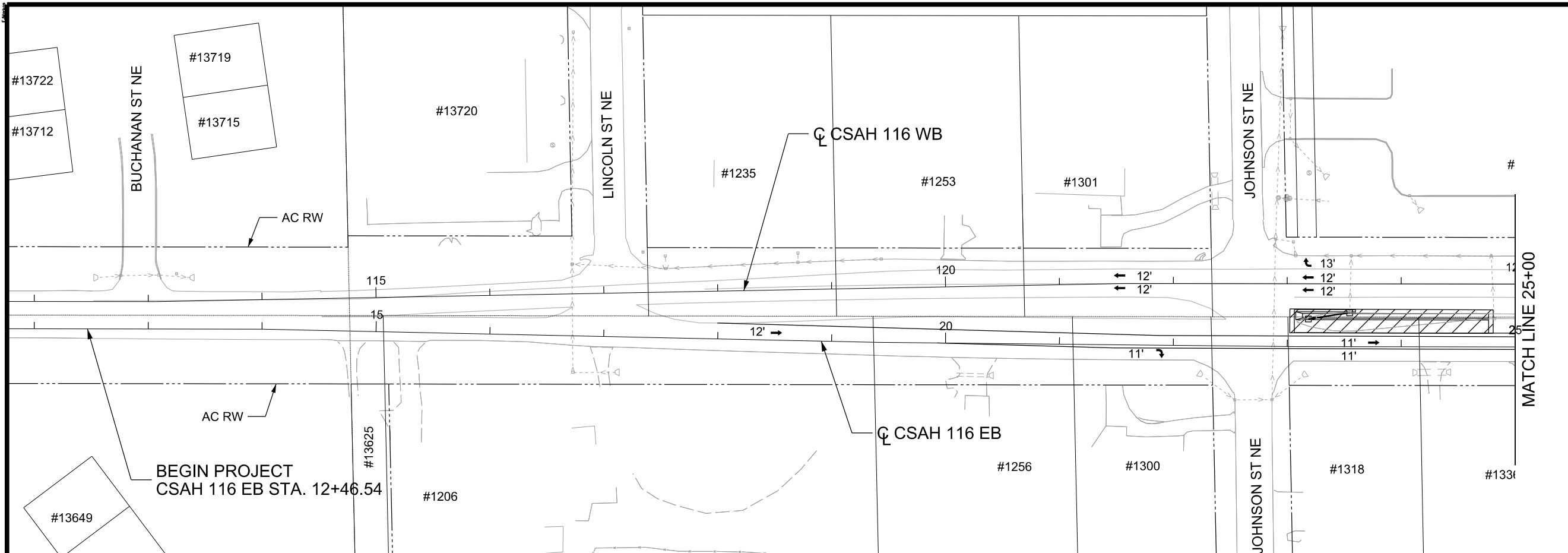


SAP 002-716-022

CONSTRUCTION PLAN

STA 12+46.54 TO 26+81.33

Sheet 6 of 18 Sheets



LEGEND

CONSTRUCTION AREA

STORM SEWER WORK

STAGING NOTES:

REMOVE AND RECONSTRUCT THE MEDIAN, CURB & GUTTER, AND STORM SEWER TO THE EXTENT SHOWN.

EASTBOUND THRU TRAFFIC SHIFTED SOUTH IN THE CONSTRUCTION AREA AS SHOWN.

WESTBOUND THRU TRAFFIC TO REMAIN IN RESPECTIVE LANES.

MILL AND OVERLAY SHALL BE DONE UNDER TRAFFIC.

N

0 100
SCALE IN FEET

1 OF 1

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-716-022\Plan\002716022_STG-ID.dgn 02/25/2021 2:41:44 PM

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: ELIZABETH J. MARKOSE

SIGNATURE:

DATE: 02/25/2021 LICENSE NO. 49118

DRAWN BY: EJM DATE: 01/05/21

DESIGN BY: EJM DATE: 12/21/20

CHECKED BY: NJD DATE: 02/24/21



ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-716-022

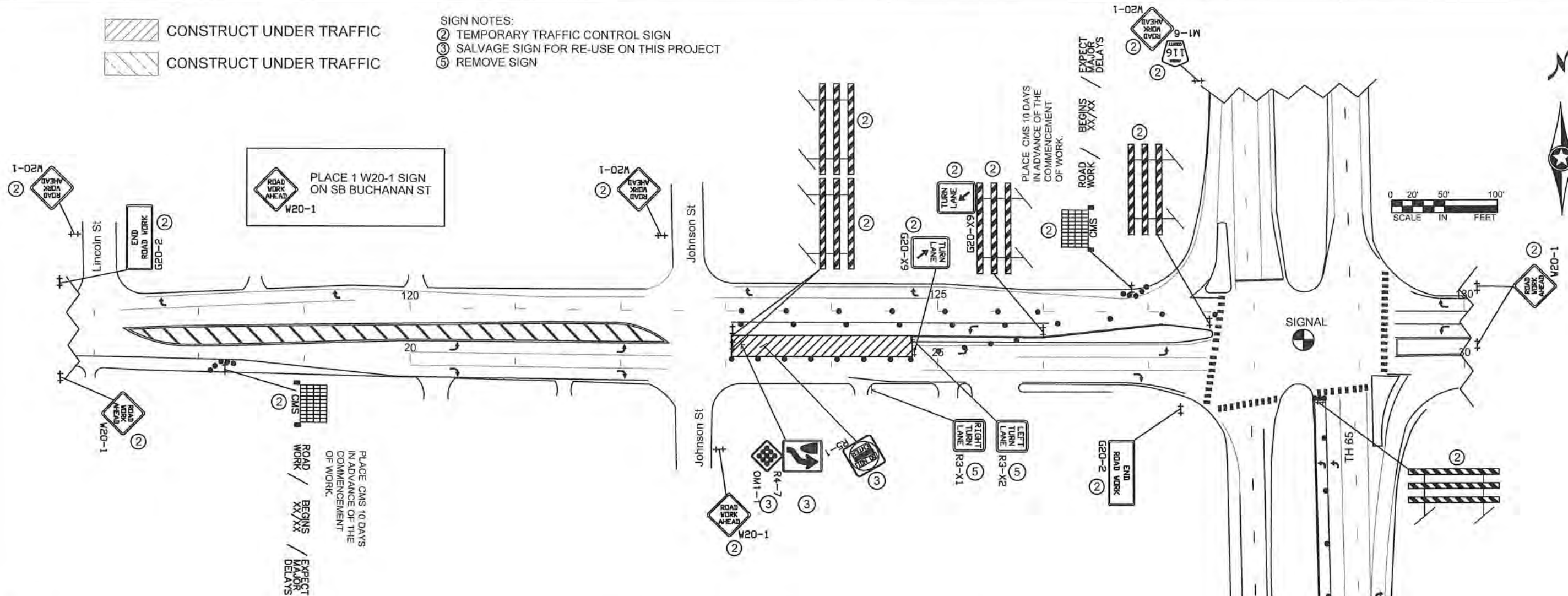
CONSTRUCTION STAGING PLAN

STA 12+46.54 TO 26+81.33

Sheet 7 of 18 Sheets

 CONSTRUCT UNDER TRAFFIC
 CONSTRUCT UNDER TRAFFIC

SIGN NOTES:
 ② TEMPORARY TRAFFIC CONTROL SIGN
 ③ SALVAGE SIGN FOR RE-USE ON THIS PROJECT
 ⑤ REMOVE SIGN



NOTES:

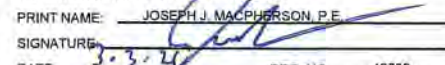
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
- CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.
- CONTRACTOR SHALL SUPPLY AND PLACE THE PORTABLE CHANGEABLE MESSAGE SIGN (CMS) A MINIMUM TEN DAYS PRIOR TO ACTUAL COMMENCEMENT OF ROAD CLOSURE, TO A LOCATION AS SPECIFIED BY THE ENGINEER. SIGNS TO BE REMOVED WHEN ROAD WORK BEGINS. PAYMENT SHALL BE MADE AS PER ITEM 2563.813 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.
- CONSTRUCTION ACTIVITIES FOR THE MEDIAN WORK BETWEEN STA 23+00 & STA 25+00 SHALL BE LIMITED TO THE HOURS OF 9 AM - 3 PM DAILY, WHICH INCLUDES PLACEMENT OF & TAKE DOWN OF TRAFFIC CONTROL DEVICES PLACED ON TH 65. DURING THE HOURS OF 3 PM - 9 AM TRAFFIC CONTROL SETUP SHALL REVERT TO TRAFFIC CONTROL PLAN "B".
- MILLING & PAVING OPERATIONS ON WB CSAH 116 EAST OF STA 120+00 SHALL BE LIMITED TO THE HOURS OF 9 AM - 3 PM DAILY, WHICH INCLUDES PLACEMENT OF & TAKE DOWN OF TRAFFIC CONTROL DEVICES PLACED ON TH 65.
- ACCESS SHALL BE MAINTAINED TO ALL STREETS AND DRIVEWAYS IN CONSTRUCTION AREA AND DURING CONSTRUCTION.
- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION WITH THE EXCEPTION OF THE SALVAGED SIGNS AS INDICATED IN THE PLANS. THIS WILL BE CONSIDERED AS INCIDENTAL TO INSTALL SIGN TYPE C.

TRAFFIC CONTROL SETUP TO BE USED DURING NON-RUSH HOURS (9 AM - 3 PM) ONLY.



1 OF 3

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: JOSEPH J. MACPHERSON, P.E.
 SIGNATURE: 
 DATE: 3-3-24 REG. NO. 48732

DRAWN BY: TMV DATE: 02/10/21
 DESIGN BY: TMV DATE: 02/10/21
 CHECKED BY: DATE:





ANOKA COUNTY
HIGHWAY DEPT.

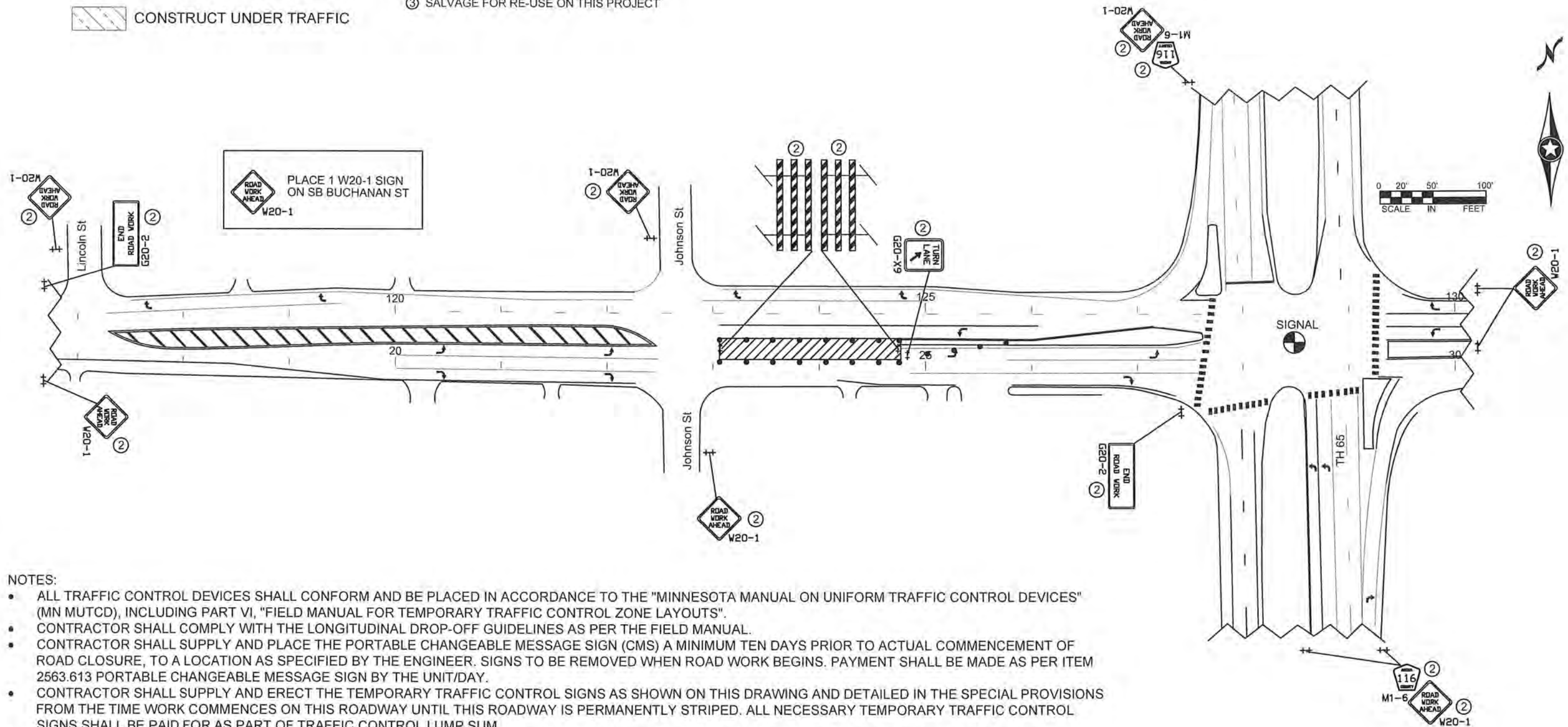
SAP 002-716-022

TRAFFIC CONTROL PLAN "A"

Sheet 8 of 18 Sheets

 CONSTRUCT UNDER TRAFFIC
 CONSTRUCT UNDER TRAFFIC

SIGN NOTES:
 ② TEMPORARY TRAFFIC CONTROL SIGN
 ③ SALVAGE FOR RE-USE ON THIS PROJECT

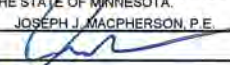


NOTES:


- 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.
- CONTRACTOR SHALL SUPPLY AND PLACE THE PORTABLE CHANGEABLE MESSAGE SIGN (CMS) A MINIMUM TEN DAYS PRIOR TO ACTUAL COMMENCEMENT OF ROAD CLOSURE, 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.
- CONSTRUCTION ACTIVITIES FOR THE MEDIAN WORK BETWEEN STA 23+00 & STA 25+00 SHALL BE LIMITED TO THE HOURS OF 9 AM - 3 PM DAILY, WHICH INCLUDES PLACEMENT OF & TAKE DOWN OF TRAFFIC CONTROL DEVICES PLACED ON TH 65. DURING THE HOURS OF 3 PM - 9 AM TRAFFIC CONTROL SETUP SHALL REVERT TO TRAFFIC CONTROL PLAN "B".
- MILLING & PAVING OPERATIONS ON WB CSAH 116 EAST OF STA 120+00 SHALL BE LIMITED TO THE HOURS OF 9 AM - 3 PM DAILY, WHICH INCLUDES PLACEMENT OF & TAKE DOWN OF TRAFFIC CONTROL DEVICES PLACED ON TH 65.
- ACCESS SHALL BE MAINTAINED TO ALL STREETS AND DRIVEWAYS IN CONSTRUCTION AREA AND DURING CONSTRUCTION.
- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION WITH THE EXCEPTION OF THE SALVAGED SIGNS AS INDICATED IN THE PLANS. THIS WILL BE CONSIDERED AS INCIDENTAL TO INSTALL SIGN TYPE C.

TRAFFIC CONTROL SETUP TO BE USED
 OUTSIDE OF NON-RUSH HOURS (3 PM - 9 AM)
 AND/OR WHEN NO WORK IS BEING PERFORMED
 ON THE MEDIAN AREA.

NO	DATE	BY	CKD	APPR	REVISION

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: JOSEPH J. MACPHERSON, P.E.
 SIGNATURE: 
 DATE: 3-3-24 LICENSE NO. 46732

DRAWN BY: TMV DATE: 02/10/21
 DESIGN BY: TMV DATE: 02/10/21
 CHECKED BY: DATE:

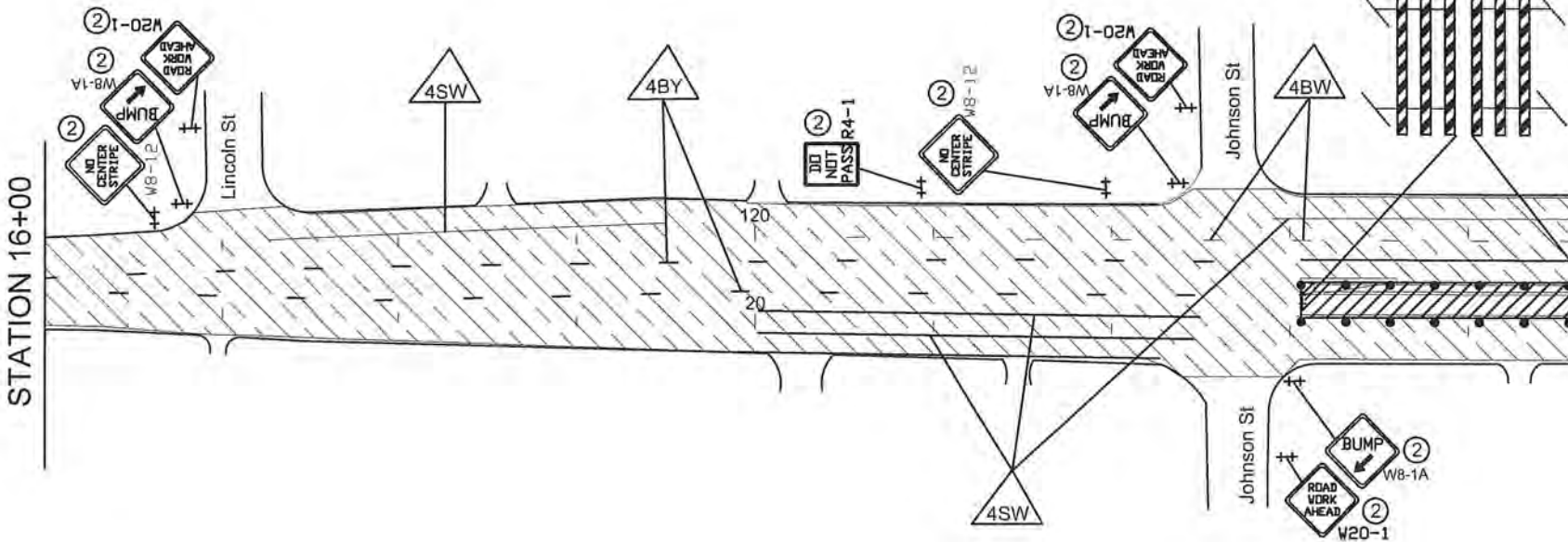
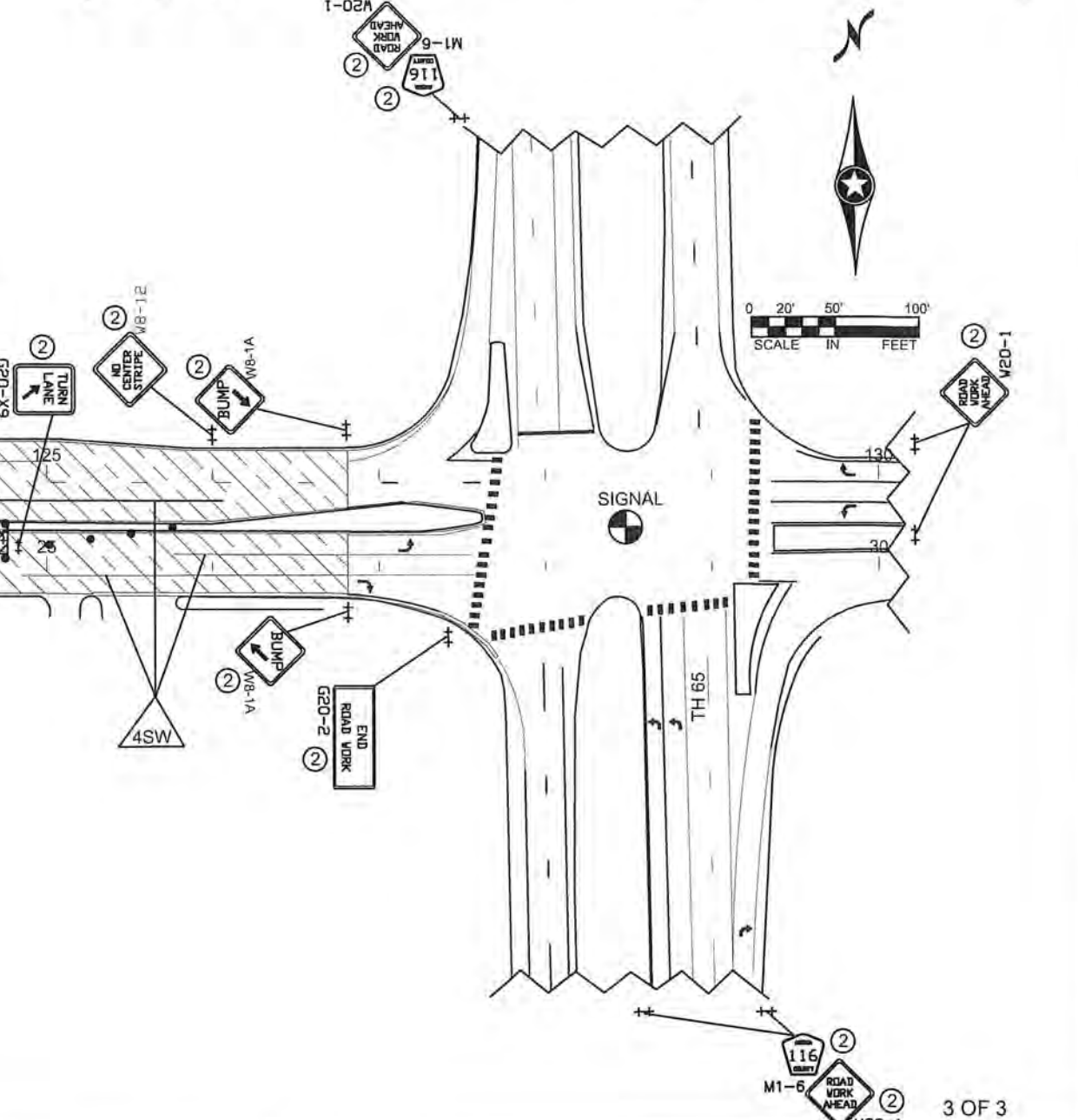
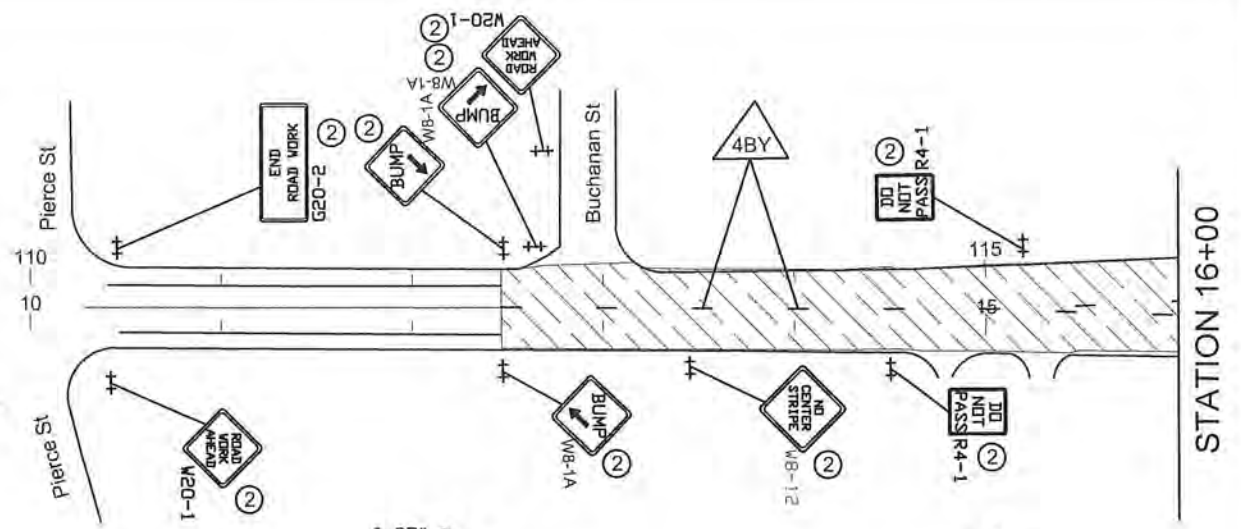
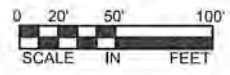

ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-716-022

TRAFFIC CONTROL PLAN "B"
 Sheet 9 of 18 Sheets

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.
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- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION WITH THE EXCEPTION OF THE SALVAGED SIGNS AS INDICATED IN THE PLANS. THIS WILL BE CONSIDERED AS INCIDENTAL TO INSTALL SIGN TYPE C.



CONSTRUCT UNDER TRAFFIC
 CONSTRUCT UNDER TRAFFIC

SIGN NOTES:
 ② TEMPORARY TRAFFIC CONTROL SIGN
 ③ SALVAGE FOR RE-USE ON THIS PROJECT

NO	DATE	BY	CHKD	APPR	REVISION

NAME: P:\002-716-022\Traffic\Basetc Plan.dwg







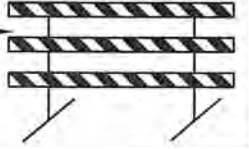


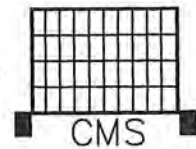
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: JOSEPH J. MACPHERSON, P.E.
 SIGNATURE:
 DATE: 3-3-21 LICENSE NO. 46732

DRAWN BY: TMV DATE: 02/10/21
 DESIGN BY: TMV DATE: 02/10/21
 CHECKED BY: _____ DATE: _____

**ANOKA COUNTY
HIGHWAY DEPT.**

SAP 002-716-022
 3 OF 3

**TRAFFIC CONTROL PLAN
MILLING & PAVING**
 Sheet 10 of 18 Sheets

TEMPORARY TRAFFIC CONTROL SIGNS					
M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY 9 AM - 3 PM	QUANTITY 3 PM - 9 AM	QUANTITY MILLING & PAVING
R4-1	24" x 30"	 R4-1	0	0	3
W8-1A	48" x 48"	 W8-1A	0	0	8
M1-6	24" x 24"		3	3	3
W20-1	48" x 48"		10	10	10
G20-X9	30" x 36"		1	1	1
G20-X9	30" x 36"		1	0	1
TYPE III	8 FOOT		6	2	6
G20-2	36" x 18"		2	2	2
REFLECTORIZED REBOUNDABLE DRUM			52	20	20
CMS sign to be placed a minimum of ten days prior to actual commencement of road work. Signs to be removed when road work begins.			2	0	0
			10 DAYS EACH		

EXISTING SIGN TAB						
STATION	ADDRESS/ DESCRIPTION (NOTES)	SALVAGE SIGN TYPE C	INSTALL SALVAGE SIGN TYPE C	REMOVE SIGN TYPE C	SIGN NUMBER	SIGN LEGEND
		EACH	EACH	EACH		
23+15	MEDIAN	1	1		R4-7	KEEP RIGHT
					OM1-1	9 BUTTON
23+37	MEDIAN	1	1		R5-1	DO NOT ENTER
24+37	RT			1	R3-X1	RIGHT TURN LN
24+75	MEDIAN			1	R3-X1	LEFT TURN LANE
	TOTAL	2	2	2		

TEMPORARY PAVEMENT MARKING TABULATION		
ITEM	UNIT	QUANTITY
PAVEMENT MARKING REMOVAL - 4" SOLID LINE WHITE PAINT	LIN FT	216
4" SOLID LINE WHITE - PAINT	LIN FT	1528
4" BROKEN LINE WHITE - PAINT	LIN FT	122
4" BROKEN LINE YELLOW - PAINT	LIN FT	344

1 - 10' STRIPE 40' GAP

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 PLACED MINIMUM OF TEN DAYS PRIOR TO ACTUAL COMMENCEMENT OF ROAD WORK. SIGNS TO BE REMOVED WHEN ROAD WORK BEGINS.

NOTES:

- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL DATED, JANUARY 2018.
- ADDITIONS OR CHANGES TO THIS PLAN MAY BE MADE AS DETERMINED BY THE ENGINEER.

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: JOSEPH J. MACPHERSON, P.E.
 SIGNATURE: 
 DATE: 3-3-21 LICENSE NO. 48732

DRAWN BY: TMV DATE: 02/10/21
 DESIGN BY: TMV DATE: 02/10/21
 CHECKED BY: DATE:



ANOKA COUNTY
HIGHWAY DEPT.

SAP 002-716-022

TRAFFIC CONTROL
QUANTITIES

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 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 FAHRENHEIT 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	4817
4" SOLID LINE YELLOW - MULTI COMP	LIN FT	910
4" DOUBLE LINE YELLOW - MULTI COMP	LIN FT	1729
4" BROKEN LINE WHITE - MULTI COMP	LIN FT	150
24" SOLID LINE YELLOW - MULTI COMP	LIN FT	562
PAVEMENT MESSAGE (RT ARROW) - PREFORMED THERMOPLASTIC	SQ FT	62
PAVEMENT MESSAGE (LT ARROW) P PREFORMED THERMOPLASTIC	SQ FT	62

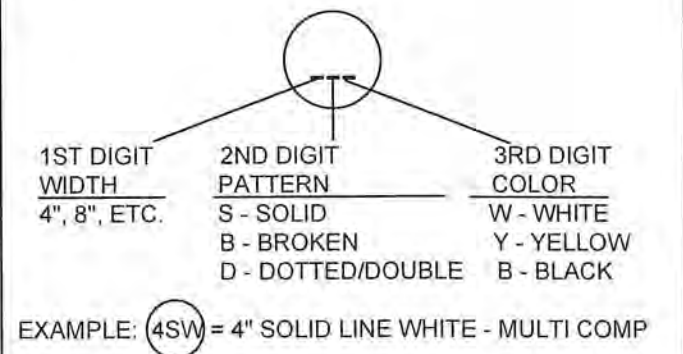
1 - 10 SKIP, 40' GAP

SYMBOLS & MATERIALS LEGEND

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

STRIPING KEY

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



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-716-022\Base\TrafficPerm Pvml Mrkg Guide Notes.dwg

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

PRINT NAME: JOSEPH J. MACPHERSON, P.E.

SIGNATURE: *[Signature]*

DATE: 3.3.21 LICENSE NO. 46732

DRAWN BY: TMV DATE: 02/12/21

DESIGN BY: TMV DATE: 02/12/21

CHECKED BY: DATE:



ANOKA COUNTY
HIGHWAY DEPT.

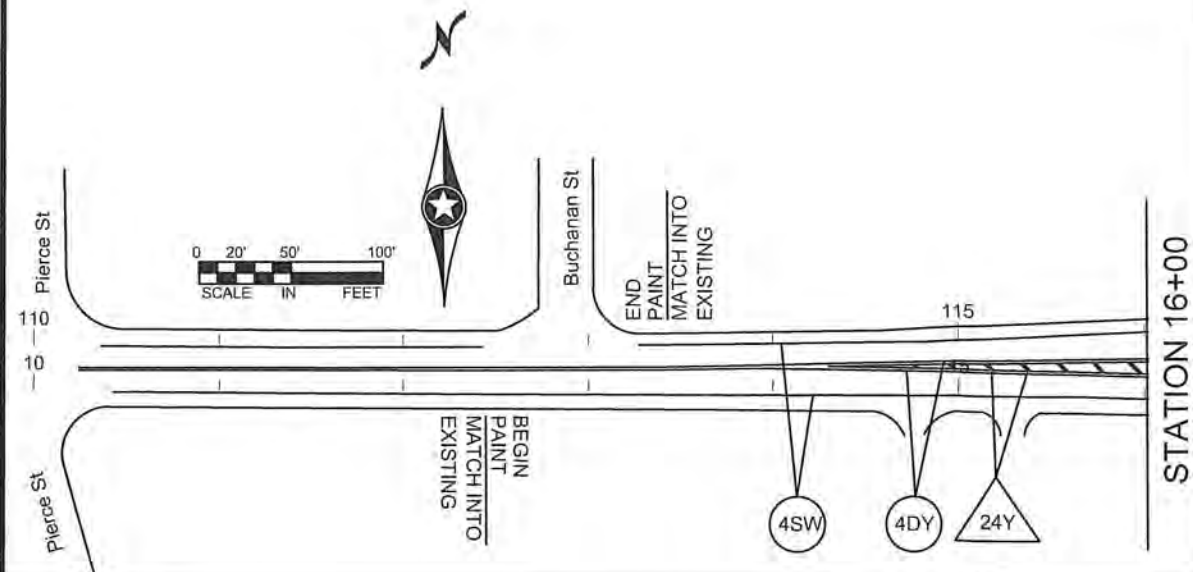
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PERMANENT MARKING
TABULATION

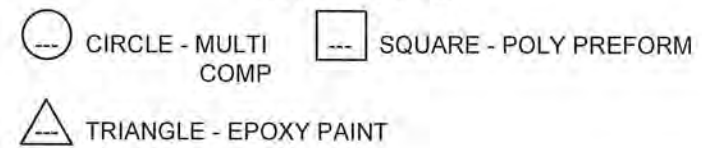
Sheet 12 of 18 Sheets

INSTALL SALVAGED SIGNS						
STATION	LOCATION	SIGN NUMBER	INSERT	ASSEMBLY QUANTITY	MOUNTING POST PER INSTALLATION	MOUNTING HEIGHT
23+15	MEDIAN	R4-7		1	1	7.0'
		OM1-1				
23+37	MEDIAN	R5-1		1	1	7.0'
TOTAL INSTALL SALVAGED TYPE C SIGN ASSEMBLIES				2		

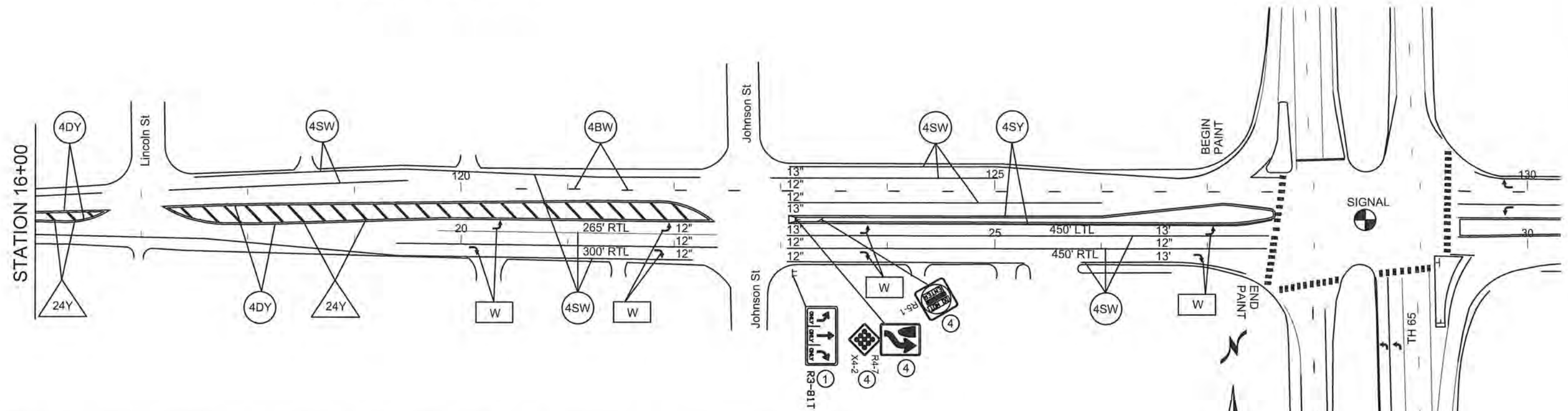
F & I SIGN PANELS TYPE C					
M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY	PANEL AREA	TOTAL AREA
				SQ. FT.	SQ. FT.
R3-8ACA	54" x 30"		1	11.25	11.25
TOTAL TYPE C SIGN SQ FT					11.25



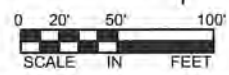
STRIPING KEY



SIGN NOTES:
 ① FURNISH & INSTALL SIGN TYPE C
 ④ INSTALL SALVAGED SIGN TYPE C

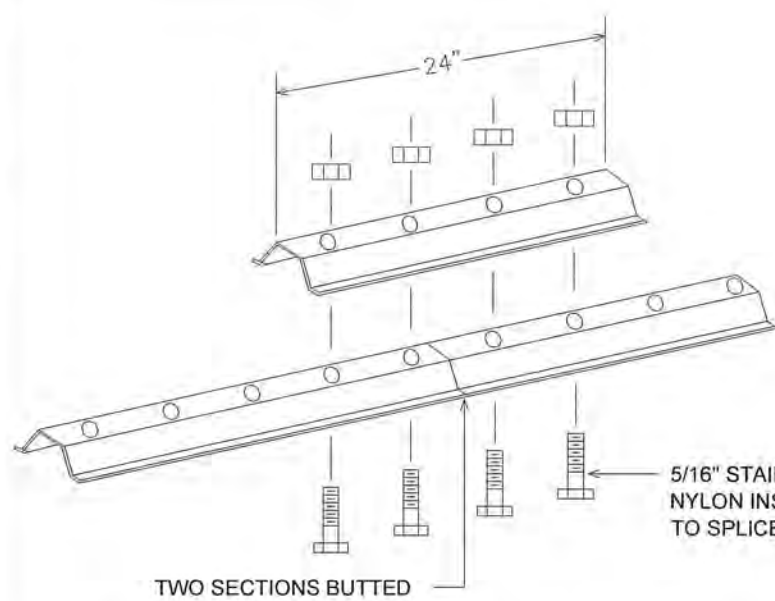


- NOTES:**
- LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
 - ACCESS SHALL BE MAINTAINED TO ALL STREETS AND DRIVEWAYS IN CONSTRUCTION AREA.
 - ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
 - ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING.
 - ALL SALVAGED SIGNS SHALL BE INSTALLED ON NEW POSTS WITH NEW HARDWARE AND INSTALLED THE SAME DAY AS PERMANENT STRIPING.

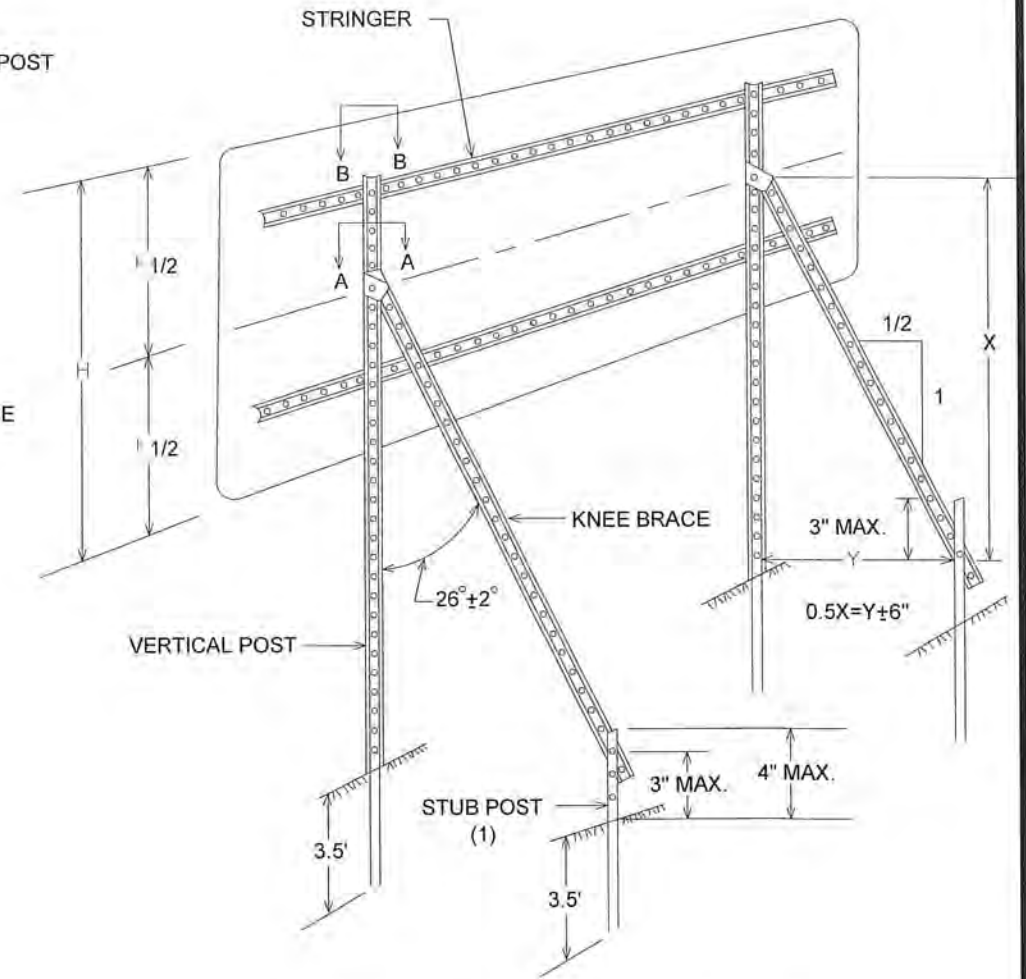
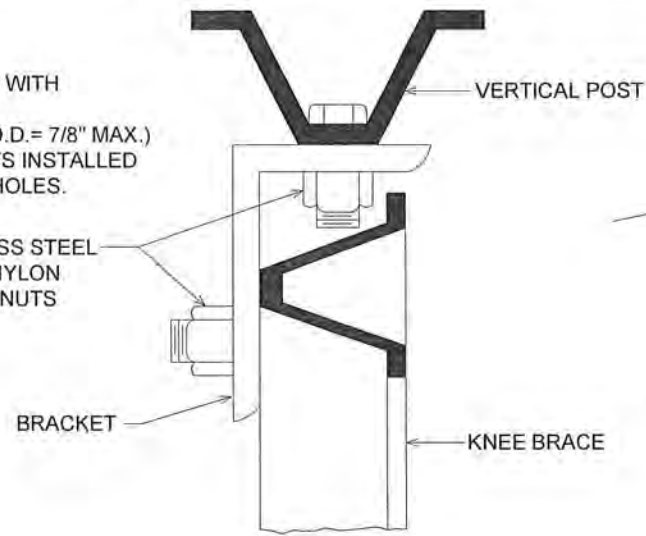
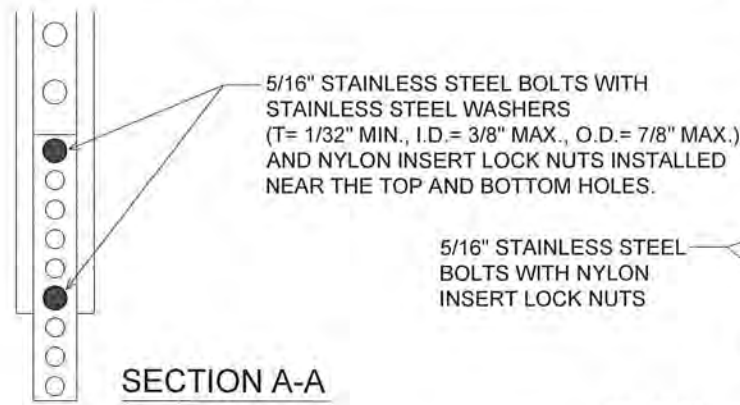


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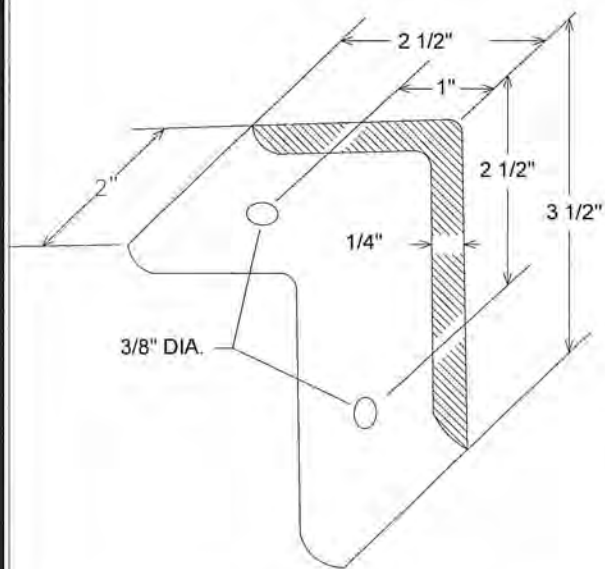
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. PRINT NAME: JOSEPH J. MACPHERSON, P.E. SIGNATURE: DATE: 2.3.21 LICENSE NO: 46732				DRAWN BY: TMV DATE: 02/11/21 DESIGN BY: TMV DATE: 02/11/21 CHECKED BY: DATE:	 ANOKA COUNTY HIGHWAY DEPT.	SAP 002-716-022	PERMANENT SIGNING & STRIPING PLAN Sheet 13 of 18 Sheets
NO. DATE BY CHK APPR REVISION NAME: P:\002-716-022\Base\Traffic\Signing & Striping Plan.dwg MN.							



LATERAL BRACE OR STRINGER SPLICE DETAIL (EXPLODED VIEW)

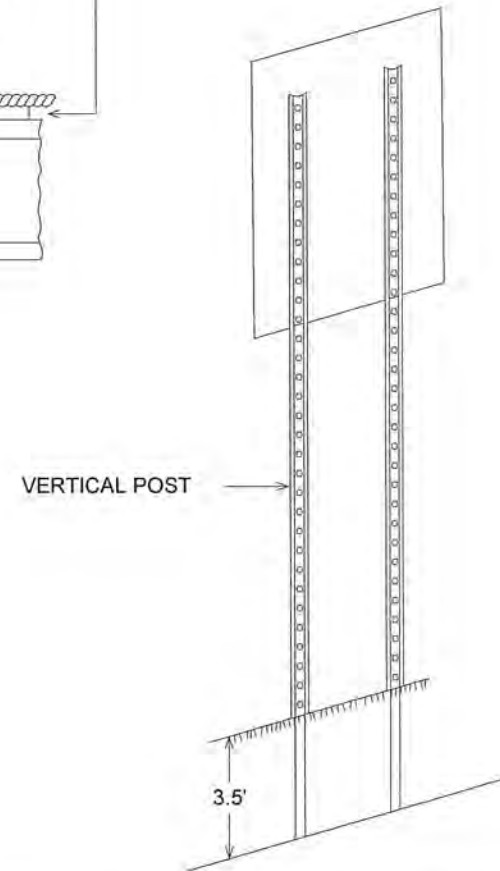
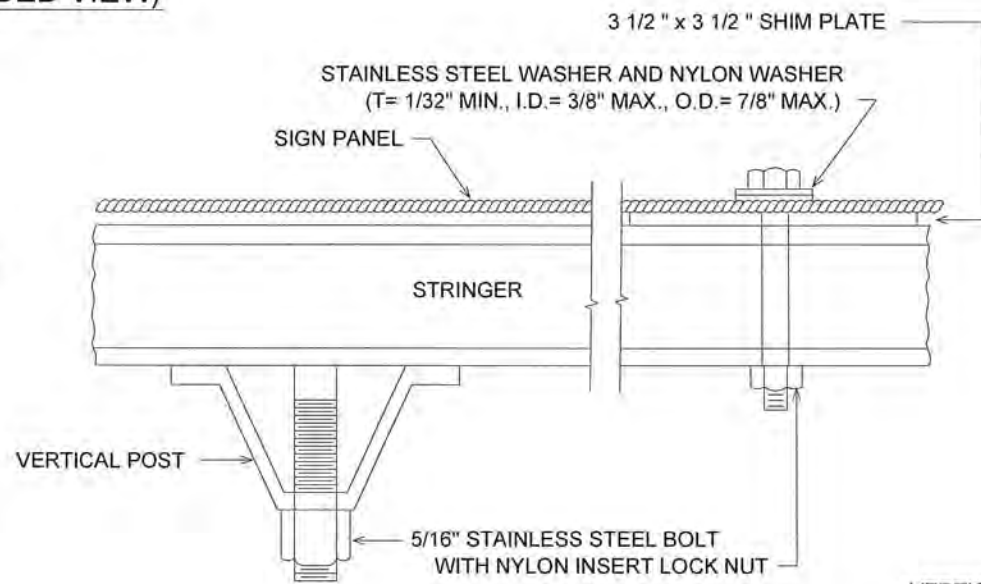


TYPICAL "A-FRAME" INSTALLATION TYPE "D" SIGNS

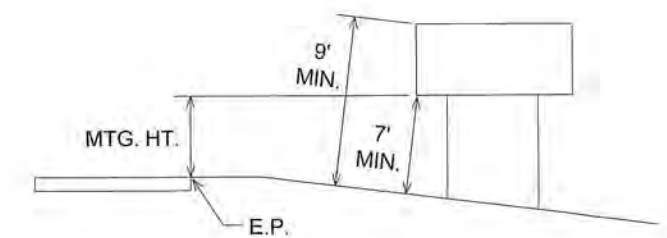


A-FRAME BRACKET

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



TYPICAL INSTALLATION 36" AND LARGER 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

NAME: P:\SAP 002-716-022\Base\Traffic\Sign&Stripe Details.dwg

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PRINT NAME: JOSEPH J. MACPHERSON, P.E.

SIGNATURE: *[Signature]*

DATE: 3-3-20 LICENSE NO. 48732

DRAWN BY: TMV DATE: 02/12/21

DESIGN BY: TMV DATE: 02/12/21

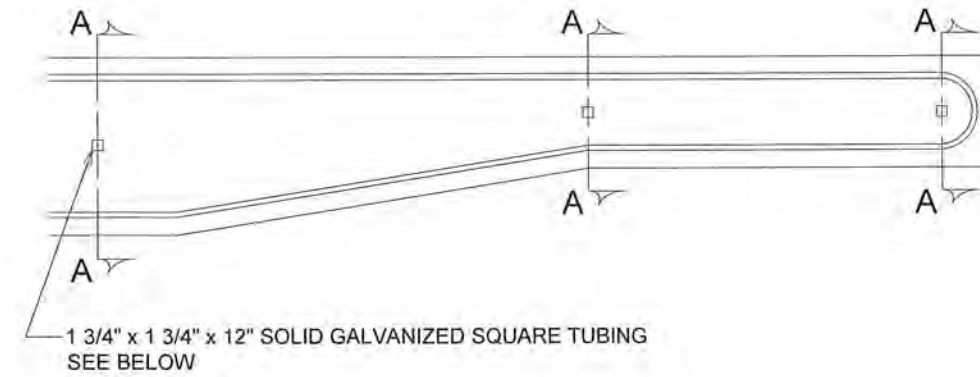
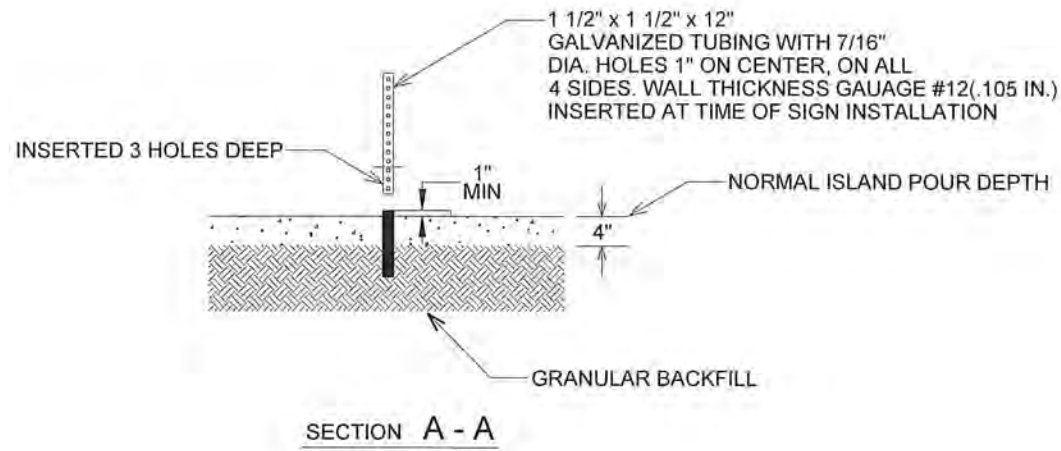
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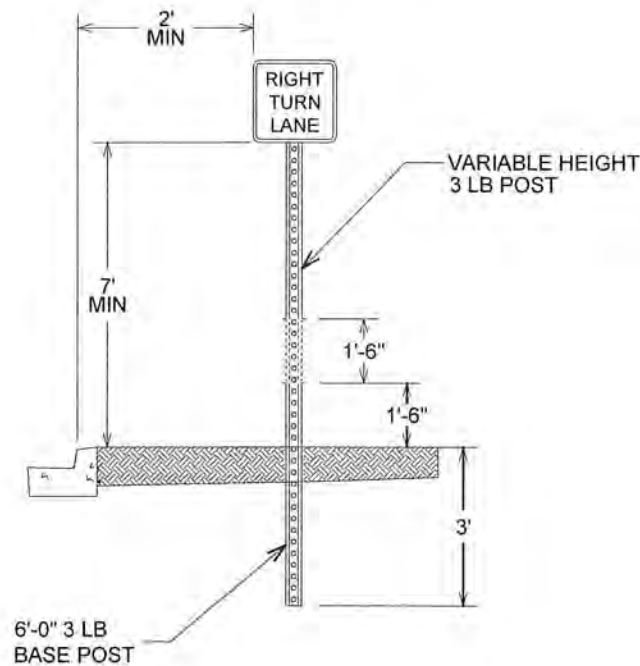
ANOKA COUNTY HIGHWAY DEPT.

SAP 002-716-022

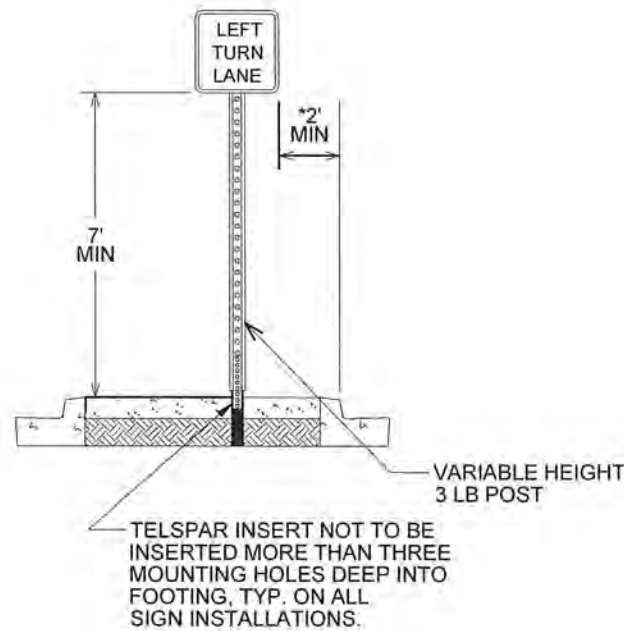
SIGNING & STRIPING DETAILS



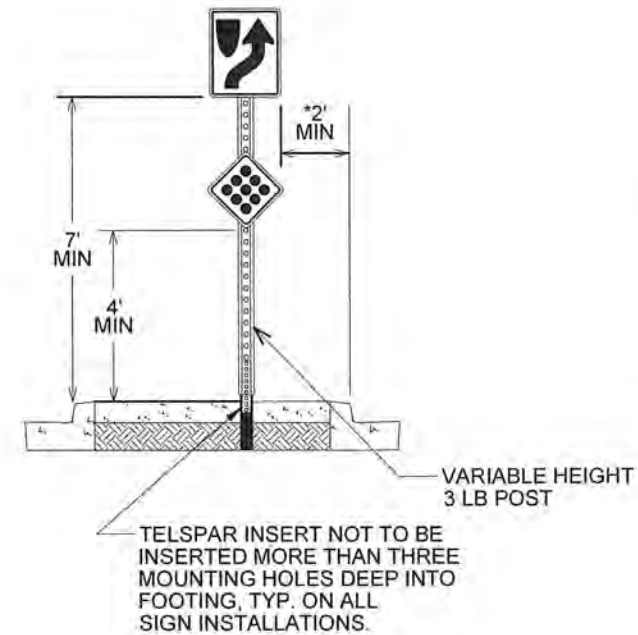
GROUND POST MOUNT SIGN
INSTALLATION TYPICAL



ISLAND MOUNT BREAK-AWAY SIGN
INSTALLATION TYPICAL



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



*1' MIN FOR NARROW URBAN LOCATIONS

INSTALLATION NEAR SIDEWALK (MN MUTCD)
The minimum height, measured vertically from the bottom of the sign to the sidewalk, of signs installed above sidewalks shall be 7 feet. If the bottom of a secondary sign that is mounted below another sign is mounted lower than 7 feet above a pedestrian sidewalk or pathway, the secondary sign shall not project more than 4 inches into the pedestrian facility.

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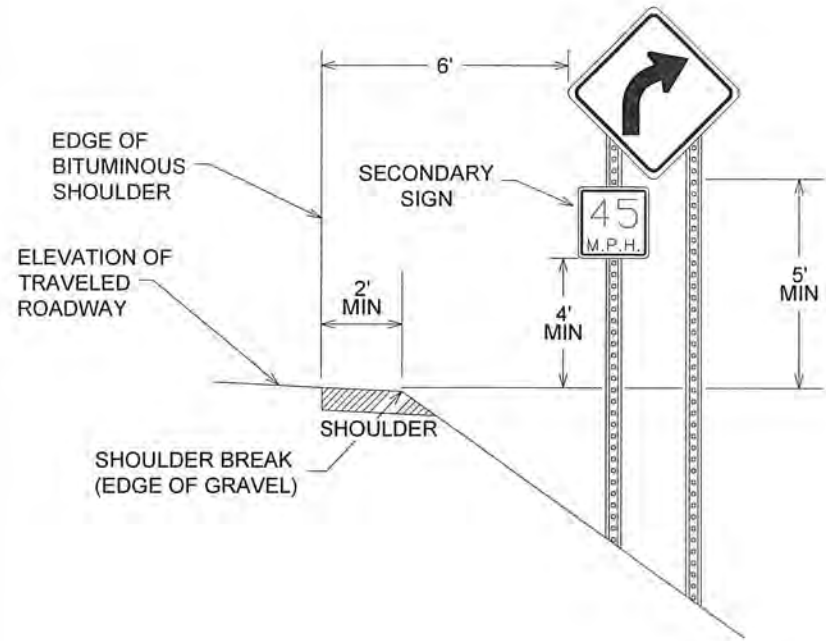


ANOKA COUNTY
HIGHWAY DEPT.

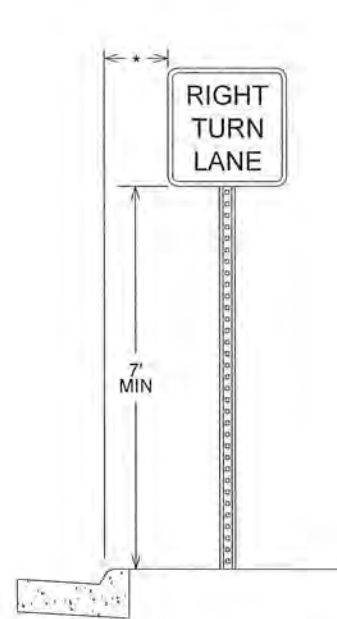
SAP 002-716-022

SIGNING & STRIPING
DETAILS
Sheet 15 of 18 Sheets

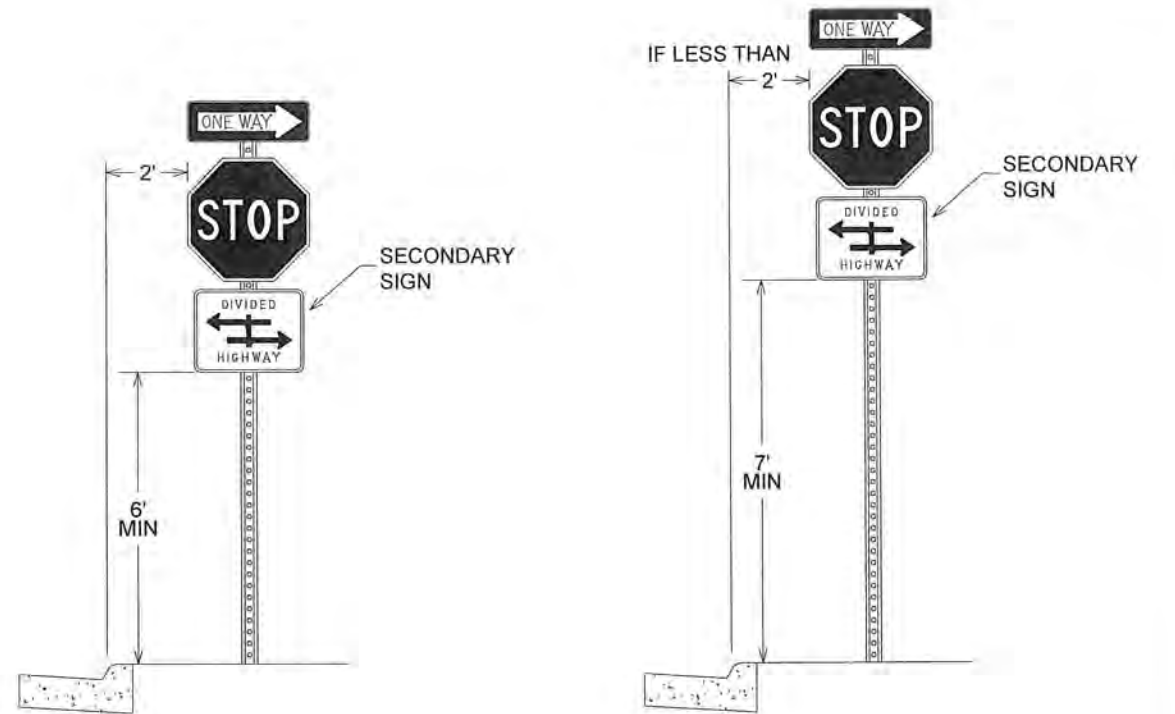
TYPICAL SIGN PLACEMENT
(RURAL)



TYPICAL SIGN PLACEMENT
(URBAN)



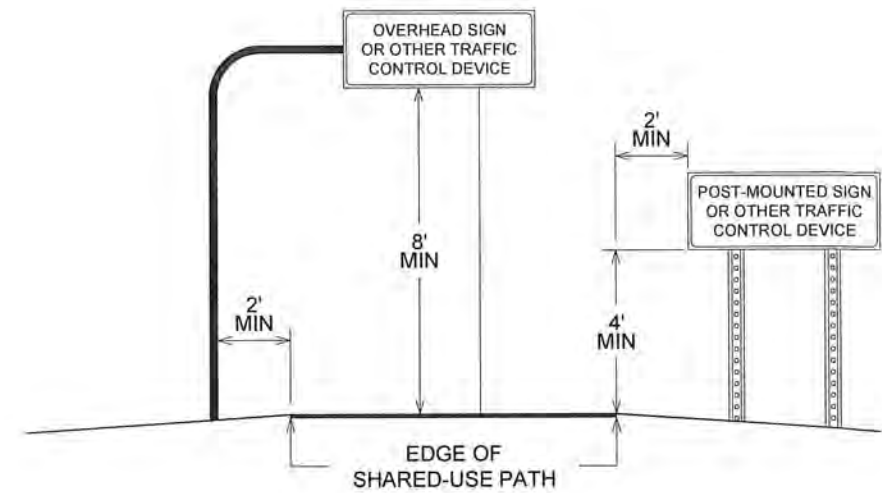
*2' - NARROW BOULEVARD ($\leq 8'$ WIDE)
6' - WIDE BOULEVARD



NOTES:

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

TYPICAL SIGN PLACEMENT
SHARED-USE PATH



NO	DATE	BY	CKD	APPR	REVISION

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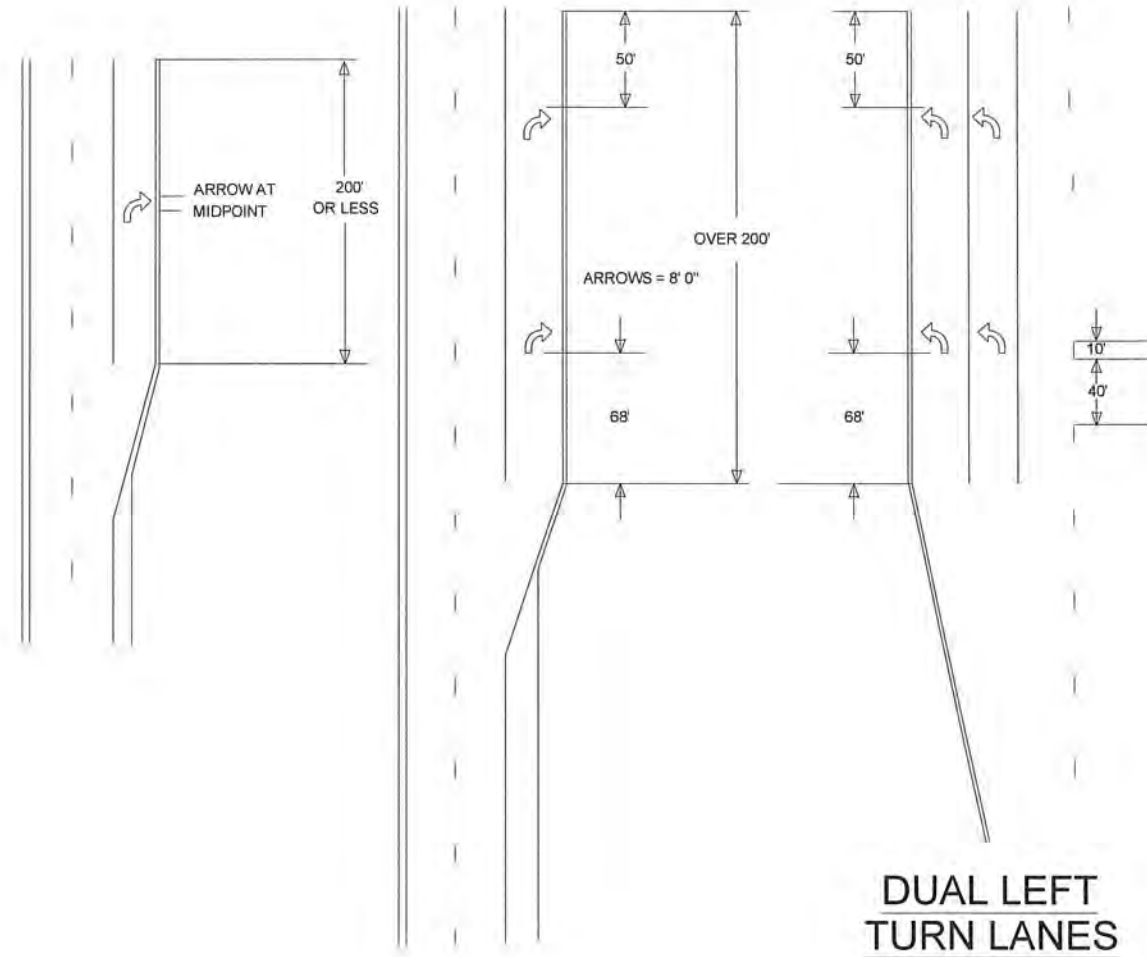


ANOKA COUNTY
HIGHWAY DEPT.

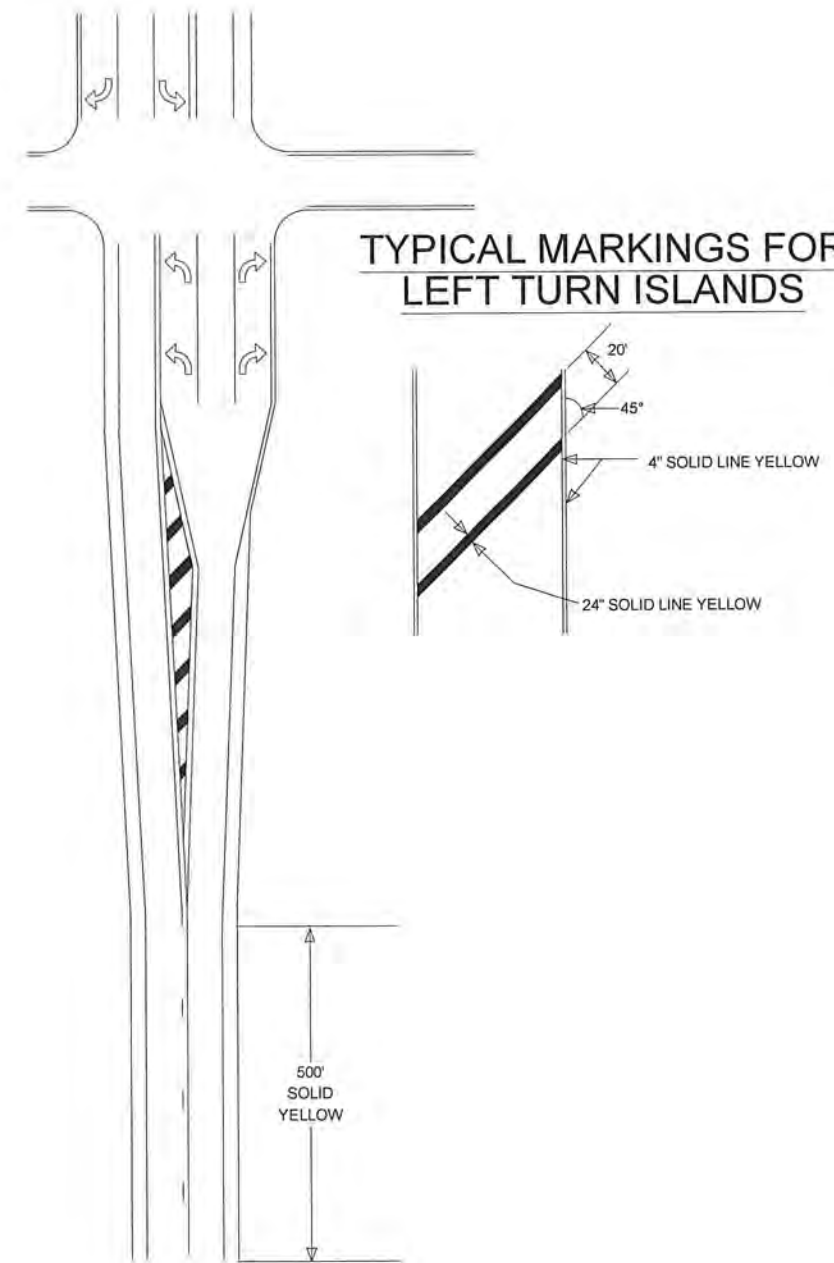
SAP 002-716-022

SIGNING & STRIPING
DETAILS

**TYPICAL MESSAGE PLACEMENT
FOR TURN LANES**



**TYPICAL MARKINGS FOR
LEFT TURN ISLANDS**



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\002-716-022\BaseTraffic\Sign&Stripe Details.dwg

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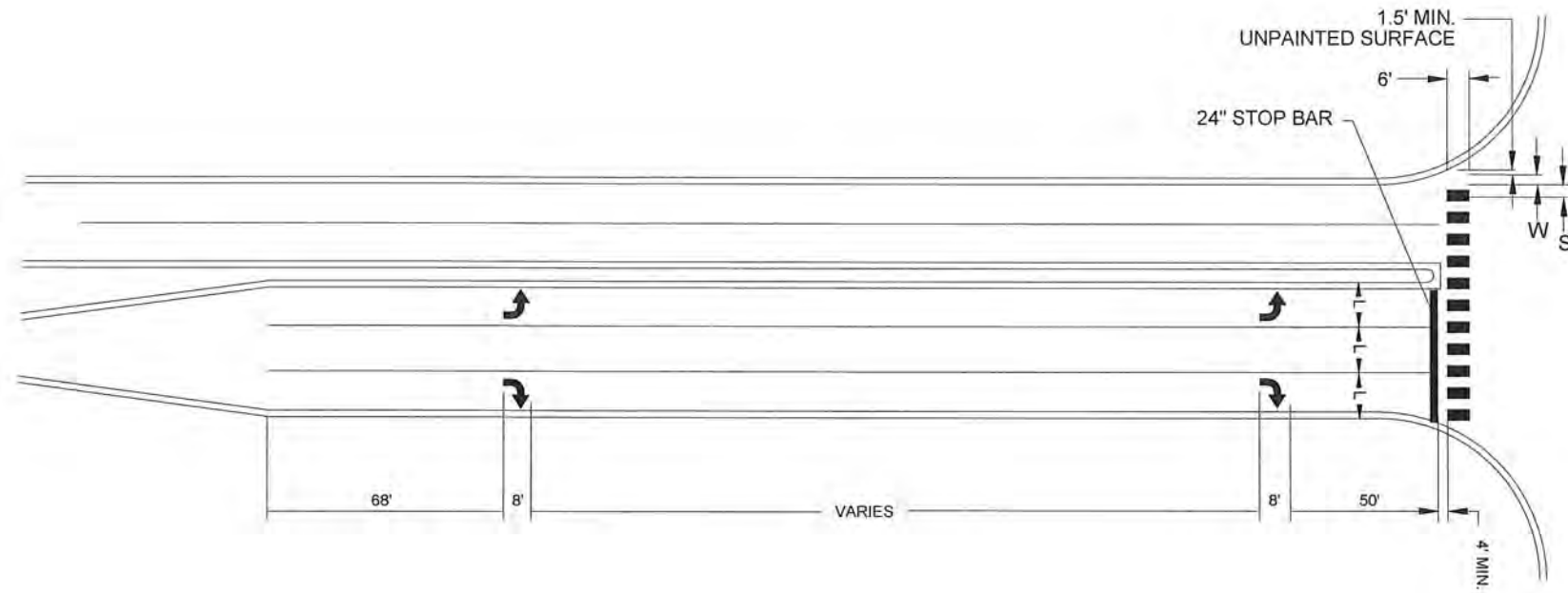
**ANOKA COUNTY
HIGHWAY DEPT.**

SAP 002-716-022

**SIGNING & STRIPING
DETAILS**

Sheet 17 of 18 Sheets

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 RAMPS 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.

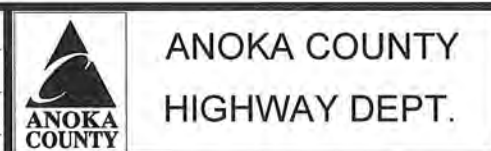
NO	DATE	BY	CKD	APPR	REVISION

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SAP 002-716-022

SIGNING & STRIPING
DETAILS
Sheet 18 of 18 Sheets