

MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

CONSTRUCTION PLAN FOR _____ BYPASS LANE CONSTRUCTION
LOCATED ON CSAH 24 BETWEEN 380' WEST OF ARROWHEAD ST NW AND 240' EAST OF ARROWHEAD ST NW

GOVERNING SPECIFICATIONS

THE 2016 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.

THIS PLAN CONTAINS 9 SHEETS

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES
3	TYPICAL SECTIONS
4-5	DETAILS
6	CONSTRUCTION PLAN
7	PERMANENT MARKING TABULATION
8	TEMPORARY SIGNING, PERMANENT SIGNING, AND STRIPING
9	TRAFFIC CONTROL QUANTITY



BEGIN CP 17-31-24
CSAH 24, STA: 10+26

END CP 17-31-24
CSAH 24, STA: 16+46



PROJECT LOCATION

<u>CSAH 24</u>	
GROSS LENGTH	620 FEET 0.117 MILES
EXCEPTIONS-LENGTH	0.00 FEET 0.000 MILES
NET LENGTH	620 FEET 0.117 MILES
DESIGN SPEED	55 MPH
CURRENT ADT	8007



CITY OF ST FRANCIS
ANOKA COUNTY
MN/DOT TRANSPORTATION DISTRICT - METRO
SECTION 35
TOWNSHIP 32 NORTHWEST
RANGE 24 WEST

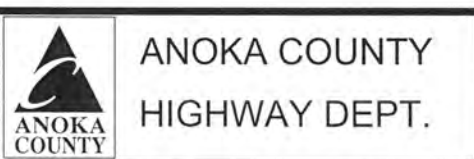
Approved: 4/7/2017
ANOKA COUNTY ENGINEER

NO	DATE	BY	CKD	APPR	REVISION	

NAME: P:\17-01-00\CSAH_24 (ARROWHEAD)\Base\PROPOSED\IGM.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: MATTHEW J. JOHN
SIGNATURE:
DATE: 3/15/2017 LICENSE NO. 51639

DRAWN BY: KPR DATE: 02/17/2017
DESIGN BY: KPR DATE: 02/17/2017
CHECKED BY: MJJ DATE: 03/15/2017



COUNTY PROJECT 17-31-24

TITLE SHEET
Sheet 1 of 9 Sheets

STATEMENT OF ESTIMATED QUANTITIES

ITEM NUMBER	ITEM DESCRIPTION	NOTES	UNIT	TOTAL PROJECT QUANTITIES ESTIMATED
2021.501	MOBILIZATION		LUMP SUM	1
2104.505	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	1	SQ YD	66
2104.505	REMOVE BITUMINOUS PAVEMENT		SQ YD	138
2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)		LN FT	636
2104.509	REMOVE SIGN TYPE C		EACH	1
2105.522	SELECT GRANULAR BORROW (LV)	4	CU YD	33
2105.602	CONSTRUCT BYPASS LANE (ARROWHEAD) (P)	3	EACH	1
2123.509	DOZER	5	HOUR	5
2221.501	SHOULDER BASE AGGREGATE CLASS 5	2	TON	42
2232.604	MILL BITUMINOUS PAVEMENT (SPECIAL)	6	SQ YD	69
2357.502	BITUMINOUS MATERIAL FOR TACK COAT		GAL	42
2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE (3,B)	1	TON	15
2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE (4,C)		TON	178
2563.601	TRAFFIC CONTROL	7	LUMP SUM	1
2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	8	UNIT DAY	14
2564.531	SIGN PANELS TYPE C		SQ FT	6
2573.502	SILT FENCE, TYPE MS		LN FT	730
2575.523	EROSION CONTROL BLANKETS CATEGORY 0	9	SQ YD	867
2582.502	4" SOLID LINE EPOXY	10	LN FT	1120
2582.502	4" BROKEN LINE EPOXY	10	LN FT	40

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 (LV)
2360	ALL BITUMINOUS PAVEMENT	115 LBS / SQ YD / IN THICKNESS

CONSTRUCTION NOTES

1	CONTRACTOR IS RESPONSIBLE FOR CONTACTING PROPERTY OWNER 48 HOURS BEFORE STARTING OPERATION.
2	ITEM INCLUDES 7 TONS FOR EACH GRAVEL ENTRANCE AND GRAVEL STREET APPROACH.
3	ITEMS INCLUDED IN THE BYPASS BY THE EACH ARE - COMMON EXCAVATION, SELECT GRANULAR BORROW, TOPSOIL AND AGG BASE CL-5.
4	ITEM TO BE USED FOR RECONSTRUCTING THE ENTRANCE AT STA. 13+70.
5	ITEM TO BE USED FOR DITCH GRADING FOLLOWING CONSTRUCTION OF THE BYPASS LANE. ITEM SHALL BE USED ONLY AS NECESSARY AS DETERMINED BY THE ENGINEER.
6	MILL LONGITUDINAL JOINT (1.0' WIDE X 2.0' DEEP) ENTIRE LENGTH OF THE BY PASS LANE.
7	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.
8	2 MESSAGE BOARDS, ONE ON THE EACH END OF PROJECT WILL BE INSTALLED 7 DAYS PRIOR TO ANY CONSTRUCTION; REFERENCE STRIPING PLAN FOR DETAILS.
9	TYPE 1 FERTILIZER, TYPE 25-121 SEED ARE INCIDENTAL
10	FINAL STRIPING SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLETION OF MAINLINE WEAR COURSE PAVING.

MNDOT STANDARD PLATES

PLATE NUMBER	DESCRIPTION
8000J	CHANNELIZERS (3 SHEETS)
9350A	MAILBOX SUPPORT (SWING-AWAY TYPE)

NO	DATE	BY	CKD	APPR	REVISION	\$DATES	\$TIMES

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 PRINT NAME: MATTHEW J. JOHN
 SIGNATURE: *[Signature]*
 DATE: 3/12/2017 LICENSE NO. 51639

DRAWN BY: KPR DATE: 02/17/2017
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 CHECKED BY: MJJ DATE: \$DATES



**ANOKA COUNTY
HIGHWAY DEPT.**

COUNTY PROJECT 17-31-24

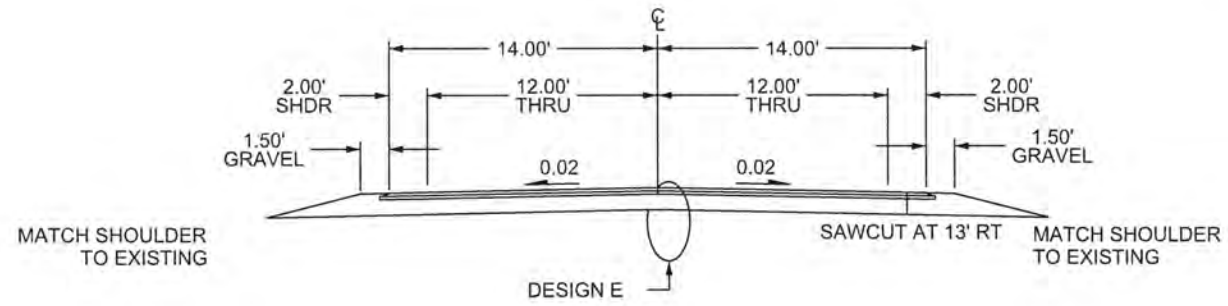
STATEMENT OF ESTIMATED QUANTITIES

Sheet 2 of 9 Sheets

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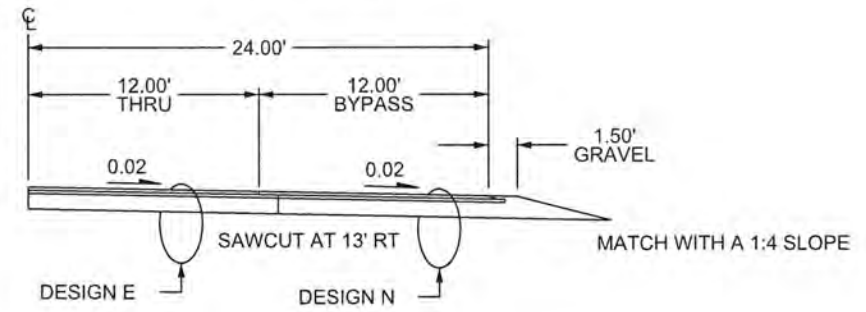
CSAH 24 EXISTING SECTION

10+26 - 16+26

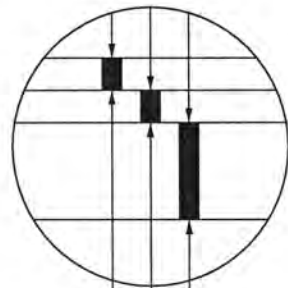


BYPASS SECTION

10+26 - 16+26

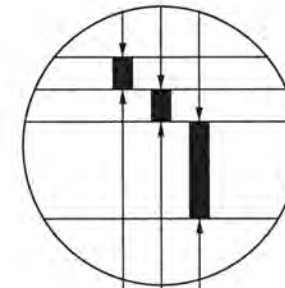


DESIGN E EXISTING SECTION



2.0" BITUMINOUS WEAR(SPWEB440C)
 2.0" BITUMINOUS WEAR(SPWEB440C)
 EXISTING AGGREGATE BASE

DESIGN N BYPASS LANE



2.0" BITUMINOUS WEAR(SPWEB440C)
 2.0" BITUMINOUS WEAR(SPWEB440C)
 6" AGGREGATE BASE, CLASS 5

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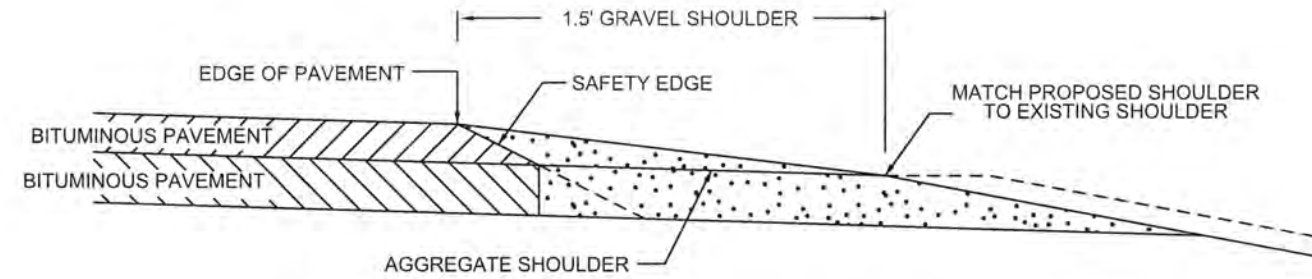
ANOKA COUNTY
 HIGHWAY DEPT.

COUNTY PROJECT 17-31-24

TYPICAL SECTIONS
 Sheet 3 of 9 Sheets

SHOULDER DETAIL

BITUMINOUS SAFETY EDGE
GRAVEL SHOULDER



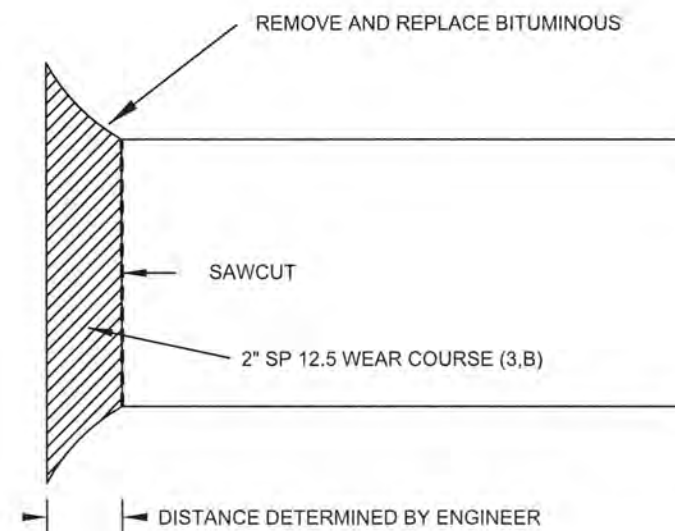
SAFETY EDGE TO BE USED IN ALL NON-CURB AREAS ON SHOULDER.

OPTIONAL DESIGN EXTENDS SAFETY EDGE DEEPER THAN 6" AND WIDER THAN 10.5". SEE SPECIAL PROVISIONS.

RECLAIM AREA - DRIVEWAY DETAIL

BITUMINOUS

PLAN VIEW



NO	DATE	BY	CKD	APPR	REVISION	SDATES	\$TIMES

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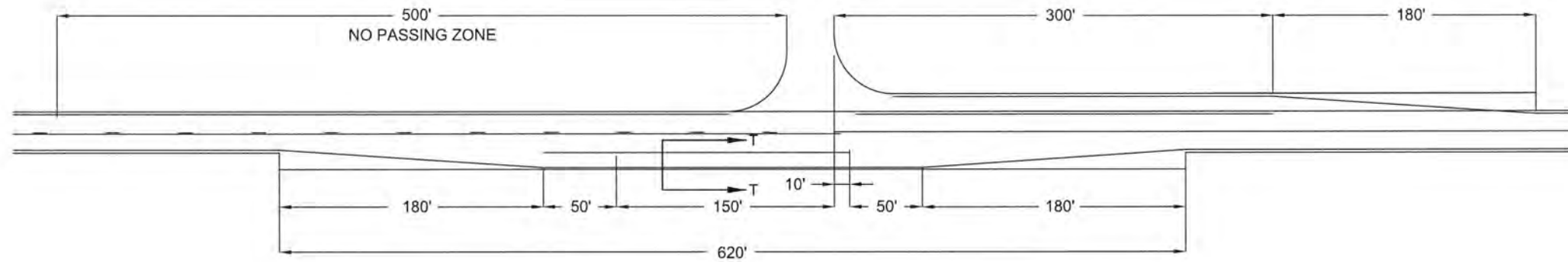
ANOKA COUNTY
HIGHWAY DEPT.

COUNTY PROJECT 17-31-24

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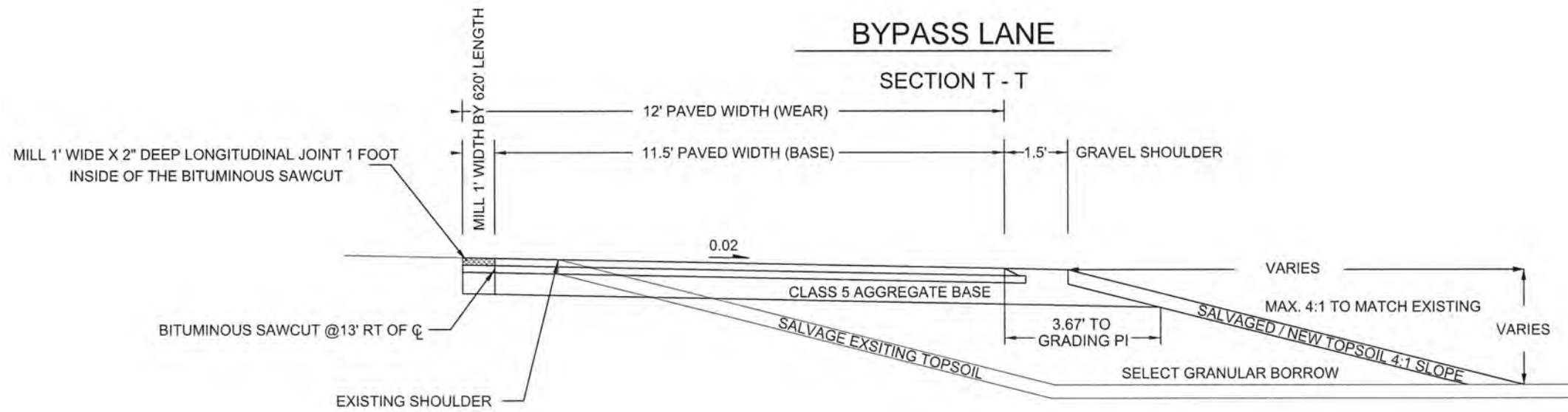
BYPASS LANE

GENERAL LAYOUT PLAN VIEW



BYPASS LANE

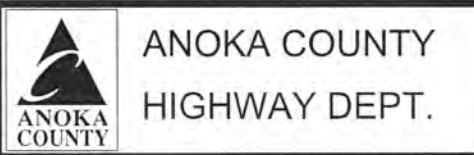
SECTION T - T



NO	DATE	BY	CKD	APPR	REVISION	SDATES	STIMES

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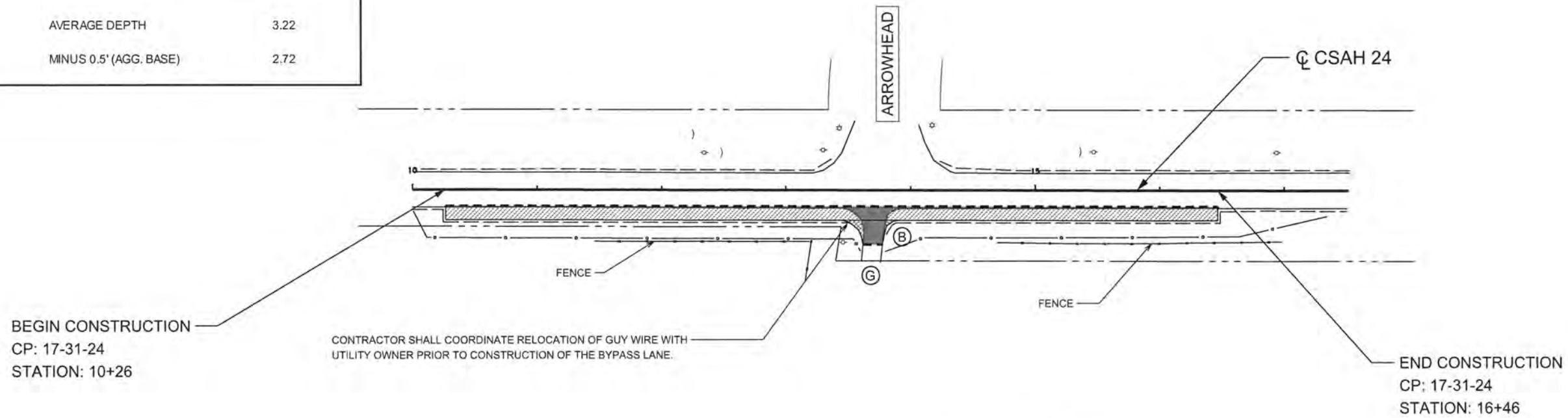
COUNTY PROJECT 17-31-24

DETAILS
 Sheet 5 of 9 Sheets

ESTIMATED AVERAGE DEPTH FOR BYPASSES USING ELEVATION AT EDGE OF MAT, SHOULDER PI AND DITCH BOTTOM

ARROWHEAD		
EM	SH PI	BOTTOM
918.23	918.06	915.16
918.10	917.84	915.04
917.86	917.62	914.68
916.74	916.61	913.88
915.97	915.43	912.04
<hr/>		
4586.90	4585.56	4570.80
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917.38	917.11	914.16
<hr/>		
AVERAGE DEPTH		3.22
MINUS 0.5' (AGG. BASE)		2.72

NEW BYPASS LANE LOCATIONS (BY THE EACH)									
STREET	STATION RANGE	DIR	RTL / BYPASS	WIDTH	LENGTH	COMMON EXCAVATION (CU YDS)	SELECT GRANULAR BORROW (CV) (CU YDS)	TOPSOIL BORROW (LV) (CU YDS)	AGGREGATE BASE CLASS 5 (TON)
ARROWHEAD	10+26 - 16+46	NB	BYPASS	12	620	334	924	82	290
TOTALS:						334	924	82	290



LEGEND	
(B)	BITUMINOUS
(G)	GRAVEL
— · —	SILT FENCE
- - - -	SAWCUT
■	REMOVE BITUMINOUS PAVEMENT
▨	CONSTRUCT DRIVEWAY
▩	CONSTRUCT BYPASS LANE
R / W	


NO	DATE	BY	CKD	APPR	REVISION	\$DATES	\$TIMES

NAME: SDGNS

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**ANOKA COUNTY
HIGHWAY DEPT.**

COUNTY PROJECT 17-31-24

CONSTRUCTION PLAN

STA 10+26 TO 16+26

Sheet 6 of 9 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.

EPOXY:

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 EPOXY PAVEMENT MARKINGS.

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

AN EPOLY RESIN LINE 4" WIDE AND 15 MILL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF ONE (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEADS SHALL BE APPLIED AT A POUND 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 FILM 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.

PERMANENT MARKING QUANTITIES		
ITEM	UNIT	TOTAL QUANTITY
4" SOLID LINE WHITE -EPOXY PAINT	LIN FT	620
4" SOLID LINE YELLOW - EPOXY PAINT	LIN FT	500
4" BROKEN LINE WHITE - EPOXY PAINT	LIN FT	40

SYMBOLS & MATERIALS LEGEND

■ CROSSWALK BLOCK WHITE PREFORMED THERMOPLASTIC

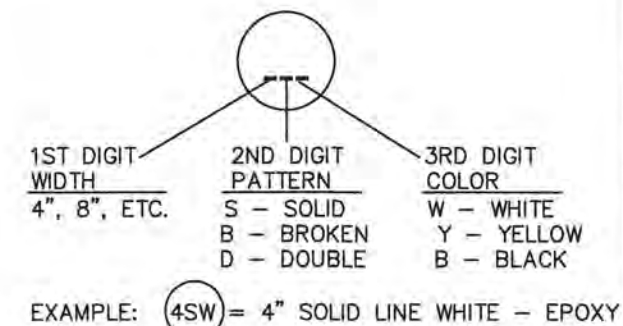
↩ PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC

STRIPING KEY

○ CIRCLE - EPOXY □ SQUARE PREFORMED THERMOPLASTIC

△ TRIANGLE - PAINT

⬠ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



NO	DATE	BY	CKD	APPR	REVISION

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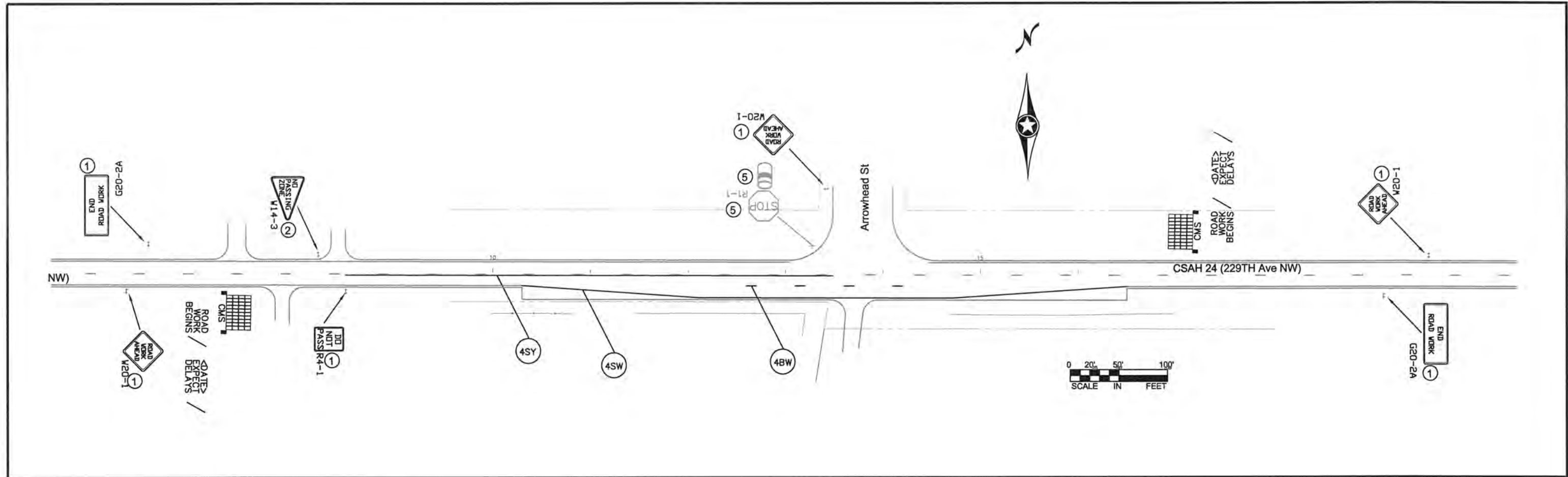
DRAWN BY: RLB DATE: 3/1/17
 DESIGN BY: RLB DATE: 3/1/17
 CHECKED BY: JR DATE: 3/1/17



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 17-31-24

PERMANENT MARKING
TABULATION
 Sheet 7 of 9 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.
- 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 OF SEVEN 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.
- ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
- ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING
- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. ALL SALVAGED AND REINSTALLED SIGNS SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE. THIS WILL BE CONSIDERED AS INCIDENTAL TO INSTALL SIGN TYPE C.

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

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NO	DATE	BY	CKD	APPR	REVISION							
NAME: P:\02-617-19\base\Traffic\Curves from CSAH 18 to CSAH 22.dwg												

TEMPORARY TRAFFIC CONTROL SIGNS						
M.U.T.C.D. CODE	SIZE	PANEL AREA FT. ²	INSERT	QUANTITY		MOUNTING HEIGHT TO POST (SEE) FT.
				No.	POST	
W8-12	48" x 48"	16.00		0	2	7.0'
R4-1	24" x 30"	5.00		1	1	7.0'
R4-2	24" x 30"	5.00		0	1	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		
W8-11	48" x 48"	16.00		AS NEEDED		
W20-1	48" x 48"	16.00		AS NEEDED (ESTIMATED 3)		
CMS sign to be installed a minimum of seven days prior to actual commencement of road work. Signs to be removed when road work begins.				2		

SIGN PANELS TYPE C							E
M.U.T.C.D. CODE	SIZE	INSERT	QUANTITY	SQ FT PANEL AREA	SQ FT TOTAL AREA	MOUNTING POST PER INSTALLATION	MOUNTING HEIGHT
W14-3	48" x 36"		1	6.0	6.0	2	7.0'

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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 seven days prior to actual commencement of road work. Signs to be removed when road work begins.

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: MATTHEW J. JOHN
 SIGNATURE:
 DATE: 3/18/2017 REG. NO. 51639

DRAWN BY: RLB DATE: 1/9/17
 DESIGN BY: RLB DATE: 1/9/17
 CHECKED BY: JR DATE: 1/9/17



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 17-31-24

TRAFFIC CONTROL
 QUANTITY
 Sheet 9 of 9 Sheets