

STATEMENT OF ESTIMATED QUANTITIES

ITEM NUMBER	(CODE)	ITEM DESCRIPTION	NOTES	UNIT	TOTAL PROJECT QUANTITIES ESTIMATED
2021.501	00010	MOBILIZATION		LUMP SUM	1
2104.505	00119	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	1	SQ YD	26
2104.505	00120	REMOVE BITUMINOUS PAVEMENT		SQ YD	1071
2104.513	00010	SAWING BITUMINOUS PAVEMENT		LN FT	235
2105.501	00010	COMMON EXCAVATION (EV) (P)	3	CU YD	522
2123.503	00010	MOTOR GRADER	4	HOUR	36
2123.509	00010	DOZER	5	HOUR	36
2130.501	00010	WATER		MGAL	180
2215.501	00010	FULL DEPTH RECLAMATION		SQ YD	12906
2221.501	00050	SHOULDER BASE AGGREGATE CLASS 5	6	TON	306
2232.501	00050	MILL BITUMINOUS SURFACE (2.0")	7	SQ YD	259
2331.607	00010	HAUL BIT PAVEMENT RECLAMATION (LV)	8	CU YD	1068
2357.502	00010	BITUMINOUS MATERIAL FOR TACK COAT		GAL	1238
2360.501	23200	TYPE SP 12.5 WEARING COURSE MIX (3,B)	1,2	TON	168
2360.501	24500	TYPE SP 12.5 WEARING COURSE MIX (4,E)		TON	4210
2506.516	00010	CASTING ASSEMBLY	9	EACH	1
2540.602	00150	MAIL BOX SUPPORT	10	EACH	1
2545.602	00021	ADJUST HANDHOLE	18	EACH	2
2550.602	10000	LOOP DETECTOR DESIGN NMC	11	EACH	1
2563.601	00010	TRAFFIC CONTROL	12	LUMP SUM	1
2563.613	01100	PORTABLE CHANGEABLE MESSAGE SIGN	13	UNIT DAY	14
2564.531	00130	SIGN PANELS TYPE C		SQ FT	43.25
2573.502	00040	SILT FENCE, TYPE MS		LN FT	3851
2574.525	00010	COMMON TOPSOIL BORROW (LV) (P)	5	CU YD	326
2575.523	00009	EROSION CONTROL BLANKETS CATEGORY 0	5, 14	SQ YD	2963
2581.501	00010	REMOVABLE PREFORMED PAVEMENT MARKING TAPE	15	LN FT	274
2582.501	70000	PAVT MSSG PREF THERMO	16, 17	SQ FT	1202
2582.502	30104	4" SOLID LINE EPOXY	16	LN FT	14495
2582.502	30204	4" BROKEN LINE EPOXY	16	LN FT	790
2582.502	42404	4" DBLE SOLID LINE EPOXY	16	LN FT	2680

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

CONSTRUCTION NOTES

1	CONTRACTOR IS RESPONSIBLE FOR CONTACTING PROPERTY OWNER 48 HOURS BEFORE STARTING OPERATION.
2	ITEM FOR BITUMINOUS DRIVEWAYS AND STREET APPROACHES.
3	ITEM INCLUDES EXCAVATION IN GRADE CORRECTION AREAS TO PROVIDE 6" OF BASE MATERIAL FROM RECLAMATION.
4	ITEM USED TO MOVE EXCESS RECLAIM MATERIAL AT THE RECLAIM AREA LIMITS TO CREATE A SMOOTH TRANSITION BETWEEN THE PROPOSED AND EXISTING PAVEMENT.
5	ITEM USED TO STRIP AND REPLACE EXISTING TOPSOIL AND FOR GRADING DITCHES AND INSLOPES ALONG SUPERELEVATION/PROFILE CORRECTION AREAS.
6	ITEM INCLUDES 7 TONS FOR EACH GRAVEL ENTRANCE AND GRAVEL STREET APPROACH.
7	ITEM INCLUDES 2" DEEP MILL AT BEGINNING AND END OF PROJECT, ALL PAVED ST APPROACHES, AND DRIVEWAYS; SEE DETAILS FOR DIMENSIONS.
8	ITEM USED TO MOVE EXCESS RECLAIM TO COMMON EXCAVATION AND SHOULDER AREAS.
9	ITEM INCLUDES FULL REPLACEMENT OF CASTING ADJUSTMENT RINGS.
10	MAILBOXES SHALL BE INSTALLED AT THE EXISTING MAILBOX LOCATION OR AS DIRECTED BY THE LOCAL POSTAL AUTHORITY, CONTRACTOR IS RESPONSIBLE FOR CONTACTING LOCAL POSTAL AUTHORITY. MAILBOX REMOVAL AND ALL MATERIALS ARE INCIDENTAL TO INSTALLATION.
11	CONTRACTOR TO CONTACT ANOKA COUNTY FOR LOOP DETECTOR PLACEMENT LOCATION. ORIGINAL SIGNAL PLANS ARE INCLUDED FOR REFERENCE AT THE END OF THIS PLAN.
12	ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO AND BE INSTALLED IN ACCORDANCE WITH 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.
13	2 MESSAGE BOARDS, ONE ON THE EACH END OF PROJECT WILL BE INSTALLED 7 DAYS PRIOR TO ANY CONSTRUCTION; REFERENCE STRIPING PLAN FOR DETAILS.
14	TYPE 1 FERTILIZER AND TYPE 25-121 SEED ARE INCIDENTAL TO THIS ITEM.
15	CENTERLINE AND LANE DESIGNATION SKIPS TO BE APPLIED AS SOON AS POSSIBLE ON EACH NEW LIFT OF PAVEMENT; SKIPS MUST BE INPLACE BEFORE THE CONTRACTOR LEAVES FOR THE DAY. CONTRACTOR IS TO REMOVE PRIOR TO FINAL PAINT STRIPING.
16	FINAL STRIPING SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLETION OF MAINLINE WEAR COURSE PAVING.
17	INCLUDES ANY THERMOPLASTIC STOP BARS, GORE AREA HATCHING, CROSSWALKS, LANE DESIGNATION ARROWS, AND PAVEMENT MESSAGES.
18	ITEM TO BE ADJUSTED ONLY AS NECESSARY AS DETERMINED BY THE ENGINEER.


NO	DATE	BY	CKD	APPR	REVISION	
	04/08/2016					9:39:20 AM

NAME: P:\16-01-00\CSAH_12(CSAH52-Flanders)\Base\PROPOSED\PLAN.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: *[Signature]*
 DATE: 4/8/2016 LICENSE NO. 51639

DRAWN BY JJ DATE 04/08/2016
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ANOKA COUNTY
HIGHWAY DEPT.

COUNTY PROJECT 16-19-12

STATEMENT OF ESTIMATED QUANTITIES

Sheet 2 of 19 Sheets

MNDOT STANDARD PLATES	
PLATE NUMBER	DESCRIPTION
4026A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4110F	COVER CASTING FOR MANHOLE

CASTING ASSEMBLIES SUMMARY					
ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING	CURB BOX	QUANTITY	DESCRIPTION
A-7D	700-7	715		1	STD. PLATE: 4101D, 4110F
*OR APPROVED EQUAL					
ALL CASTING HEIGHTS ARE TO BE VERIFIED IN THE FIELD.					
ALL MANHOLE COVERS SHOULD BE LABELED AS STORM OR SANITARY					

GRADING TAB					
STATION	COMMON EXCAVATION	RECLAIM CUT (HAUL RECLAIM - LV)	RECLAIM FILL TRAVEL LANES (HAUL RECLAIM - CV)	RECLAIM FILL SHOULDER BASE (HAUL RECLAIM - CV)	
				CU YD - LT	CU YD - RT
	CU YD	CU YD	CU YD	CU YD - LT	CU YD - RT
10+50		0		2	4
11+00		19		2	4
11+50		20		2	
12+00		24		2	
12+50		22		3	
13+00		17		2	
13+50		10	5	2	
13+75		6	7	2	
13+80		2	2	2	
TOWN SQUARE DR	111		111	3	
14+00		8	7		
14+15		11	5		
14+26		11	4		
14+38		12	4		
14+50		12	4		
14+71		20	8		
14+79		7	3		
ENTRANCE TO 2407	31		31		
15+00		12	5		4
15+50		17	5		4
16+00		24			4
16+50		27			4
17+00		25			4
17+50		21			4
18+00		21			4
18+50		27			4
19+00		32			4
19+50		31		4	4
20+00 - 22+70 LT	145		145		
20+00		29		4	4
20+50		34		3	4
21+00		46		3	4
21+50		55		3	4
22+00		52		4	4
22+50		41		3	4
23+00		32		3	4
23+00 - 26+00 RT	133		133		
23+50		27		4	4
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25+00		26	2	3	4
25+50		25	2	4	4
26+00		24	1	3	4
26+21		10		3	4
26+20 - 28+50 LT	102		102		
26+50		14		3	4
27+00		32		4	4
27+50		41		3	4
28+00		41		3	4
28+21		18		4	4
28+50		13		3	4
29+00		23		3	4
29+50		0		3	4
TOTAL	522	1068	589	98	136

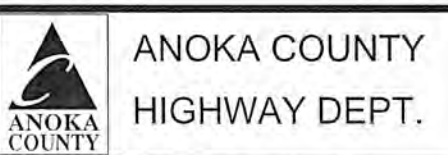
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COUNTY PROJECT 16-19-12

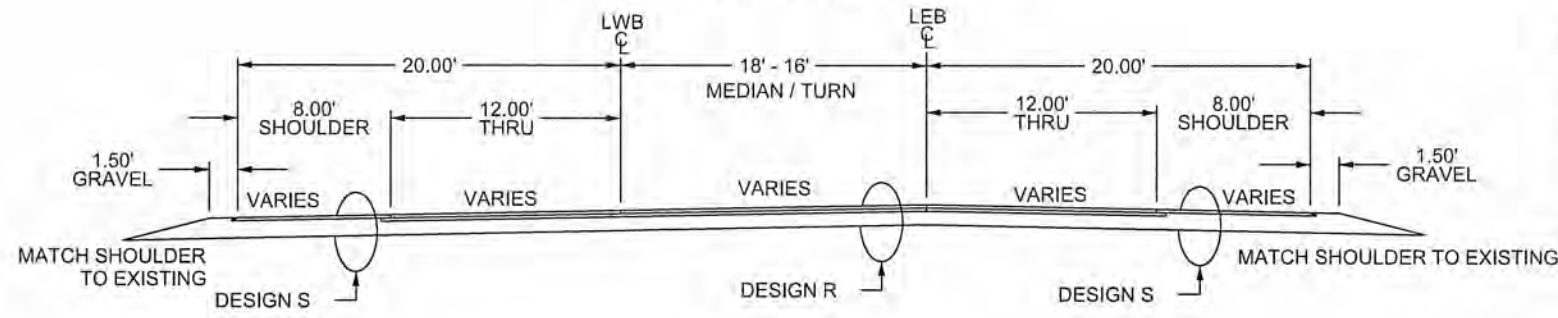
TABULATIONS
 Sheet 3 of 19 Sheets

3-johnso

CSAH 12- 109TH AVE

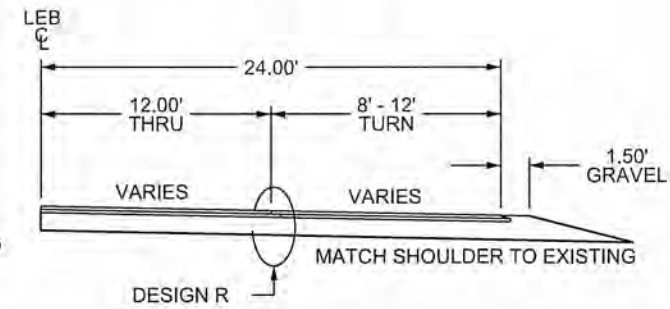
RECLAIM SECTION

10+42 - 14+25



RIGHT TURN LANE

11+04 - 14+25



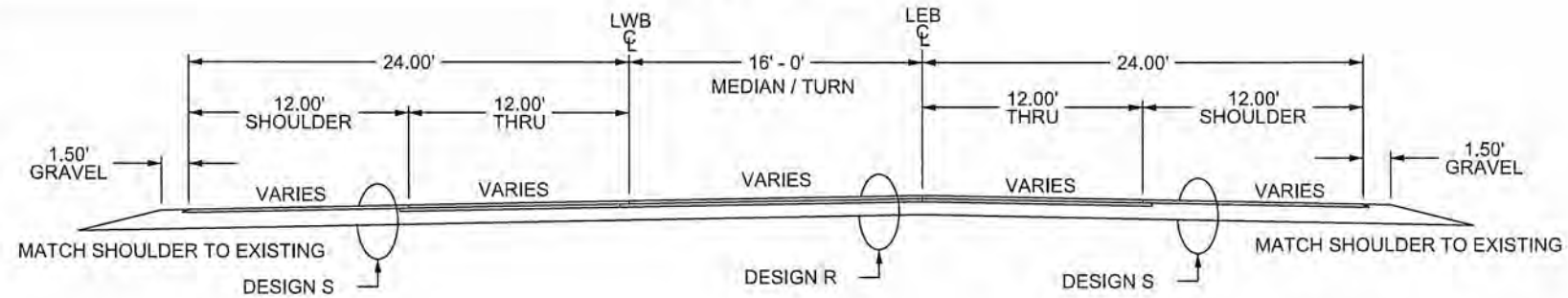
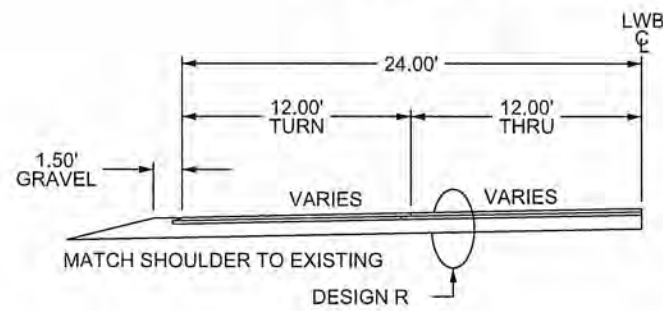
CSAH 12- 109TH AVE

RECLAIM SECTION

RIGHT TURN LANE

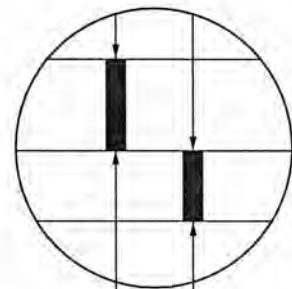
14+25 - 19+40

14+25 - 23+58



EXISTING SECTION

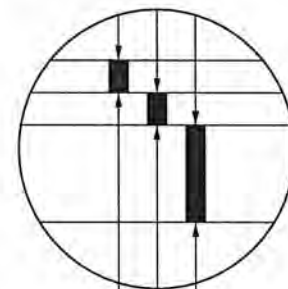
ENTIRE PROJECT



8" EXISTING BITUMINOUS
6" EXISTING AGGREGATE BASE

DESIGN R

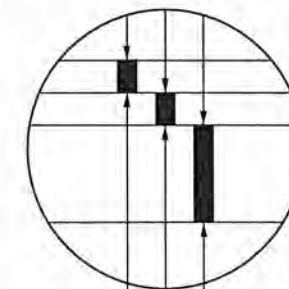
RECLAIM SECTION



2.0" BITUMINOUS WEAR(SPWEB440E)
2.0" BITUMINOUS WEAR(SPWEB440E)
RECLAIMED BITUMINOUS

DESIGN S

SHOULDER SECTION

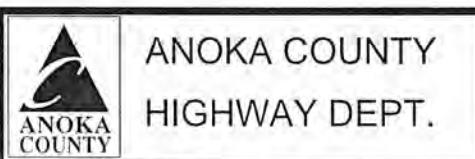


2.0" BITUMINOUS WEAR(SPWEB440E)
2.0" RECLAIMED BITUMINOUS (SEE GRADING TAB)
RECLAIMED BITUMINOUS

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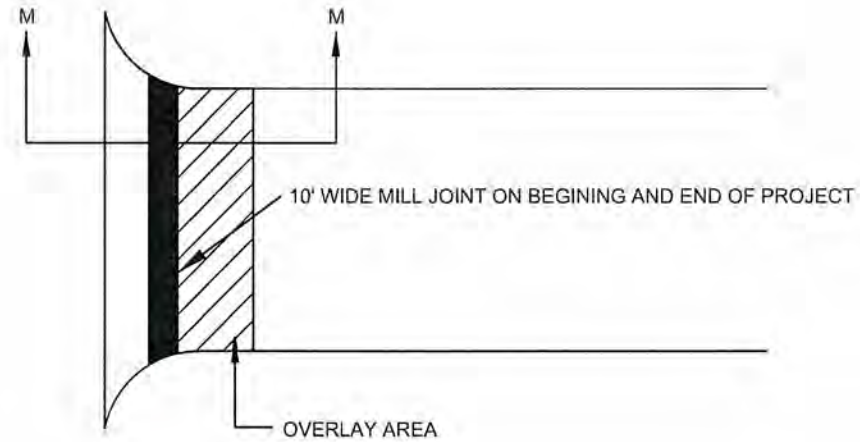


COUNTY PROJECT 16-19-12

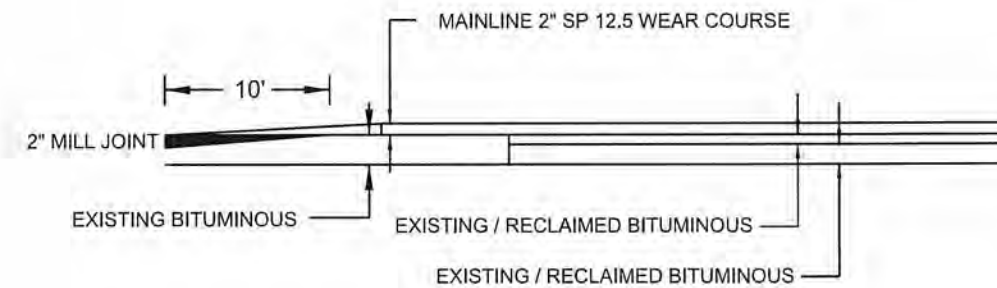
TYPICAL SECTIONS
 Sheet 4 of 19 Sheets

MAINLINE JOINT DETAIL

PLAN VIEW

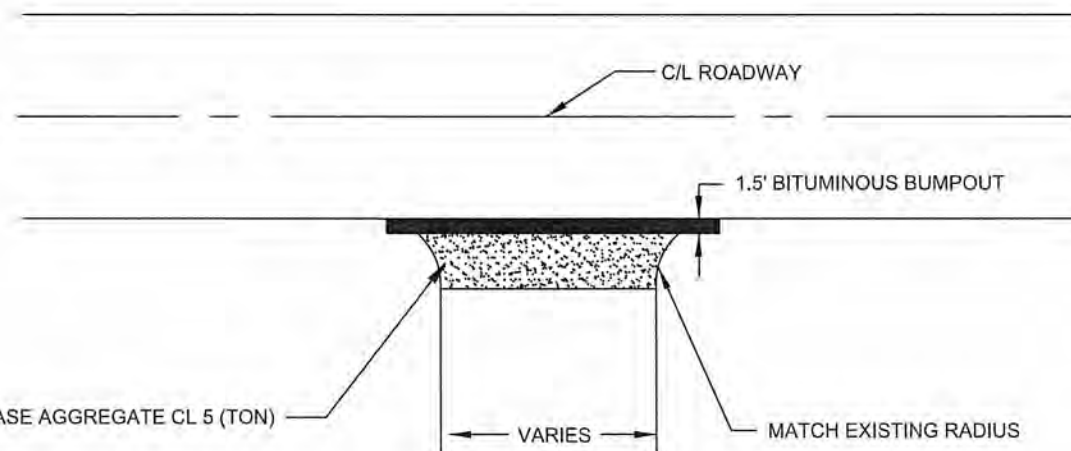


SECTION M - M



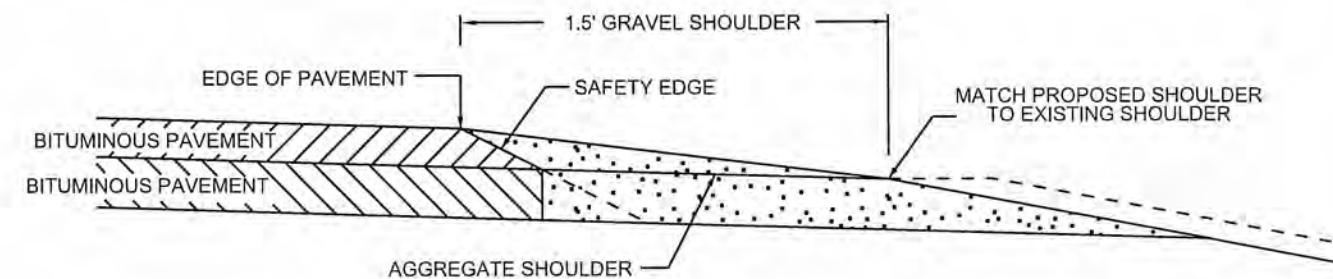
DRIVEWAY DETAIL

GRAVEL / FIELD ENTRANCE



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.

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ANOKA COUNTY
HIGHWAY DEPT.

COUNTY PROJECT 16-19-12

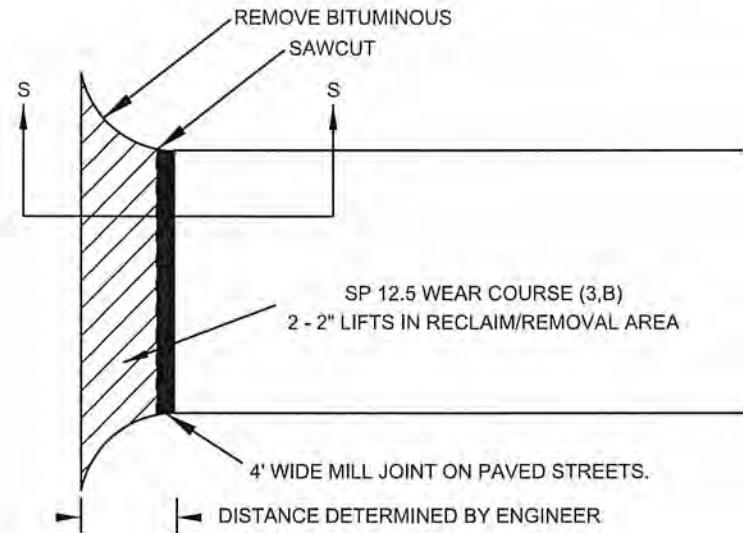
DETAILS

Sheet 6 of 19 Sheets

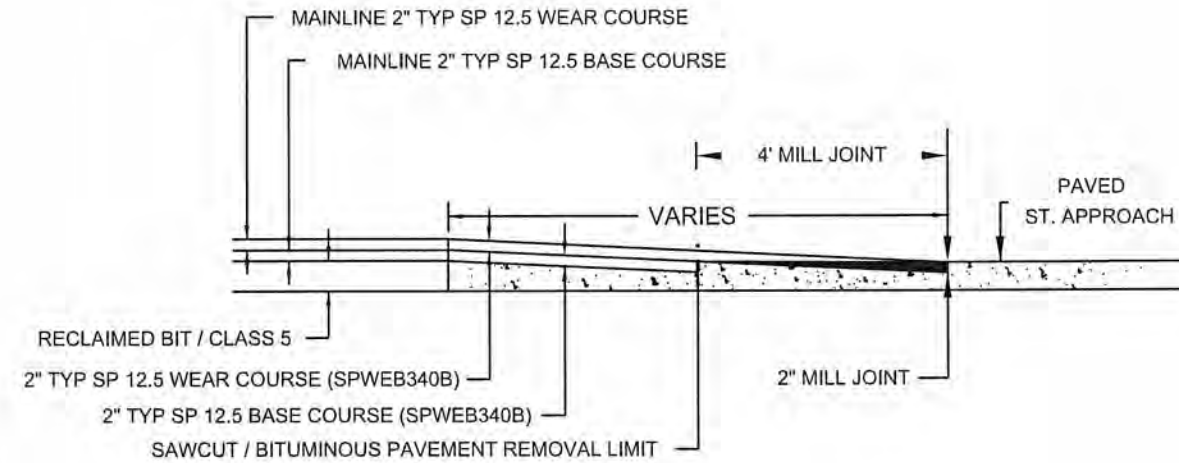
STREET APPROACH DETAIL - RECLAIM

BITUMINOUS STREET

PLAN VIEW



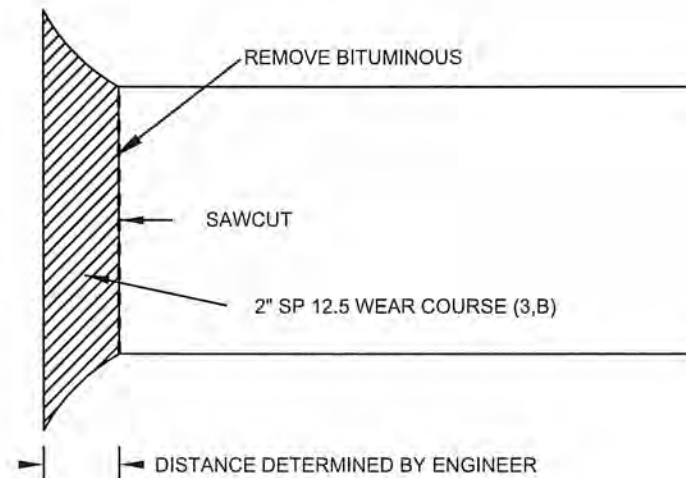
SECTION S - S



DRIVEWAY DETAIL - RECLAIM AREA

BITUMINOUS

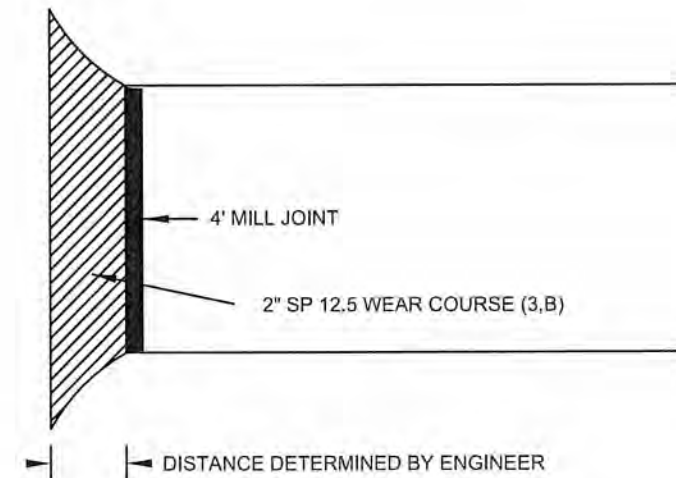
PLAN VIEW



STREET APPROACH DETAIL - OVERLAY AREA

BITUMINOUS

PLAN VIEW

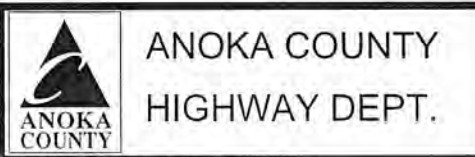


NO	DATE	BY	CHKD	APPR	REVISION

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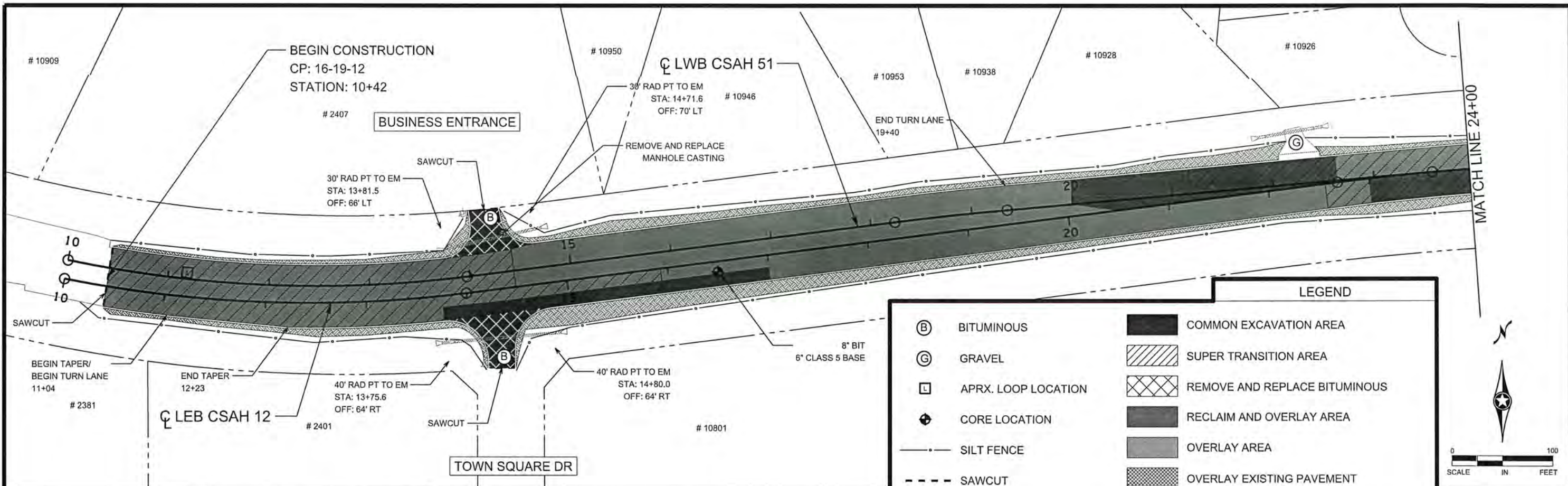
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 DESIGN BY: JJ DATE: 03/24/2016
 CHECKED BY: MJJ DATE: 03/24/2016



ANOKA COUNTY
 HIGHWAY DEPT.
 COUNTY PROJECT 16-19-12

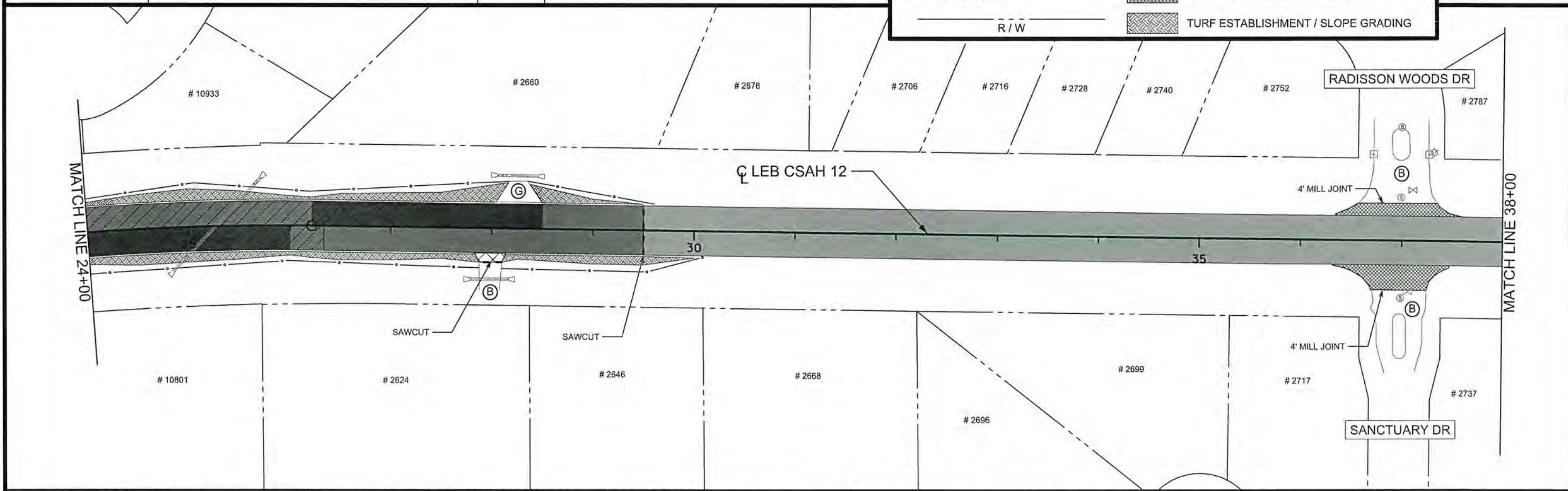
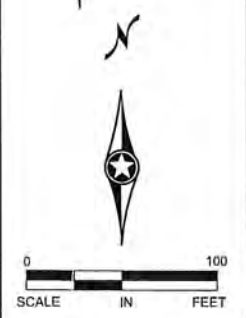
DETAILS
 Sheet 7 of 19 Sheets

jkphnso



LEGEND

(B)	BITUMINOUS	[Solid Black]	COMMON EXCAVATION AREA
(G)	GRAVEL	[Diagonal Hatching]	SUPER TRANSITION AREA
[Square with X]	APRX. LOOP LOCATION	[Cross-hatch]	REMOVE AND REPLACE BITUMINOUS
(C)	CORE LOCATION	[Dark Grey]	RECLAIM AND OVERLAY AREA
---	SILT FENCE	[Light Grey]	OVERLAY AREA
- - -	SAWCUT	[Dotted]	OVERLAY EXISTING PAVEMENT
---	R/W	[Wavy Hatching]	TURF ESTABLISHMENT / SLOPE GRADING




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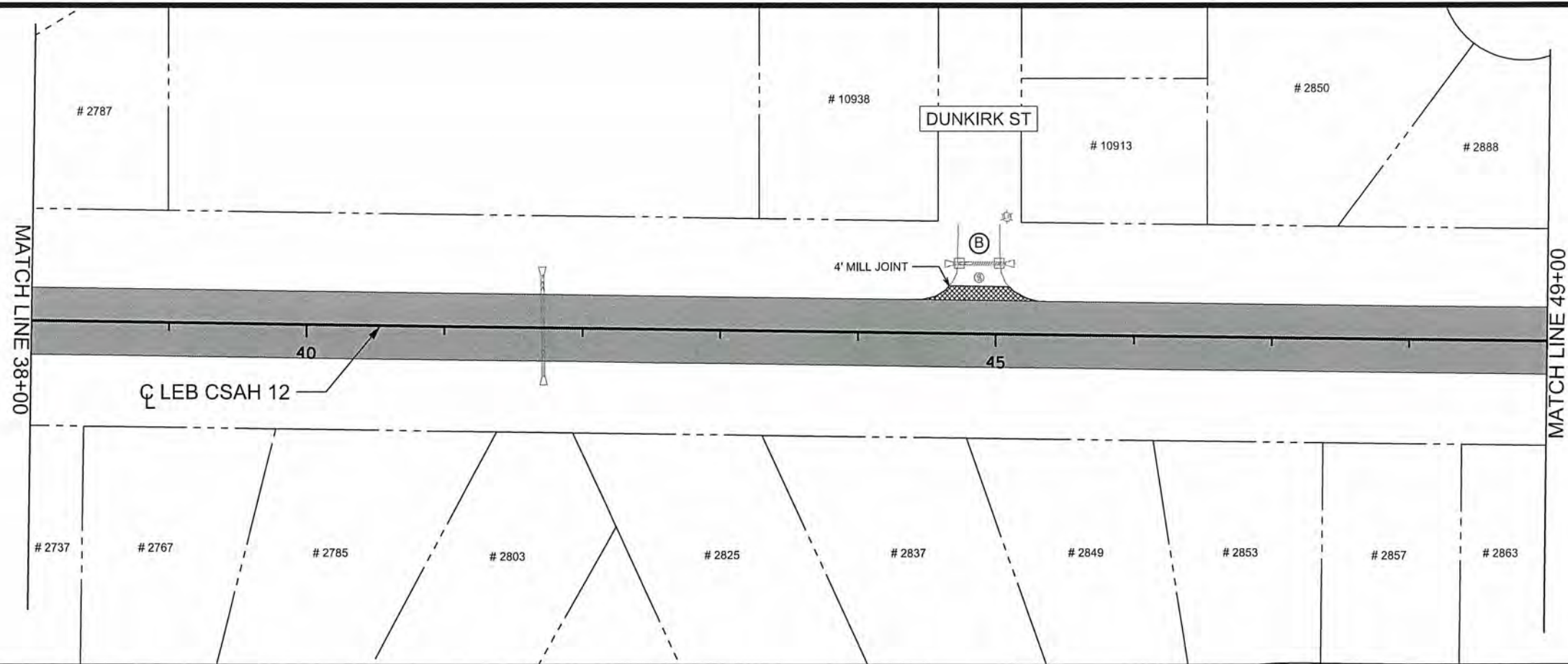


**ANOKA COUNTY
HIGHWAY DEPT.**

COUNTY PROJECT 16-19-12

CONSTRUCTION PLAN
 STA 10+00 TO 38+00
 Sheet 8 of 19 Sheets

jkphnso



MATCH LINE 38+00

MATCH LINE 49+00

CL LEB CSAH 12

DUNKIRK ST

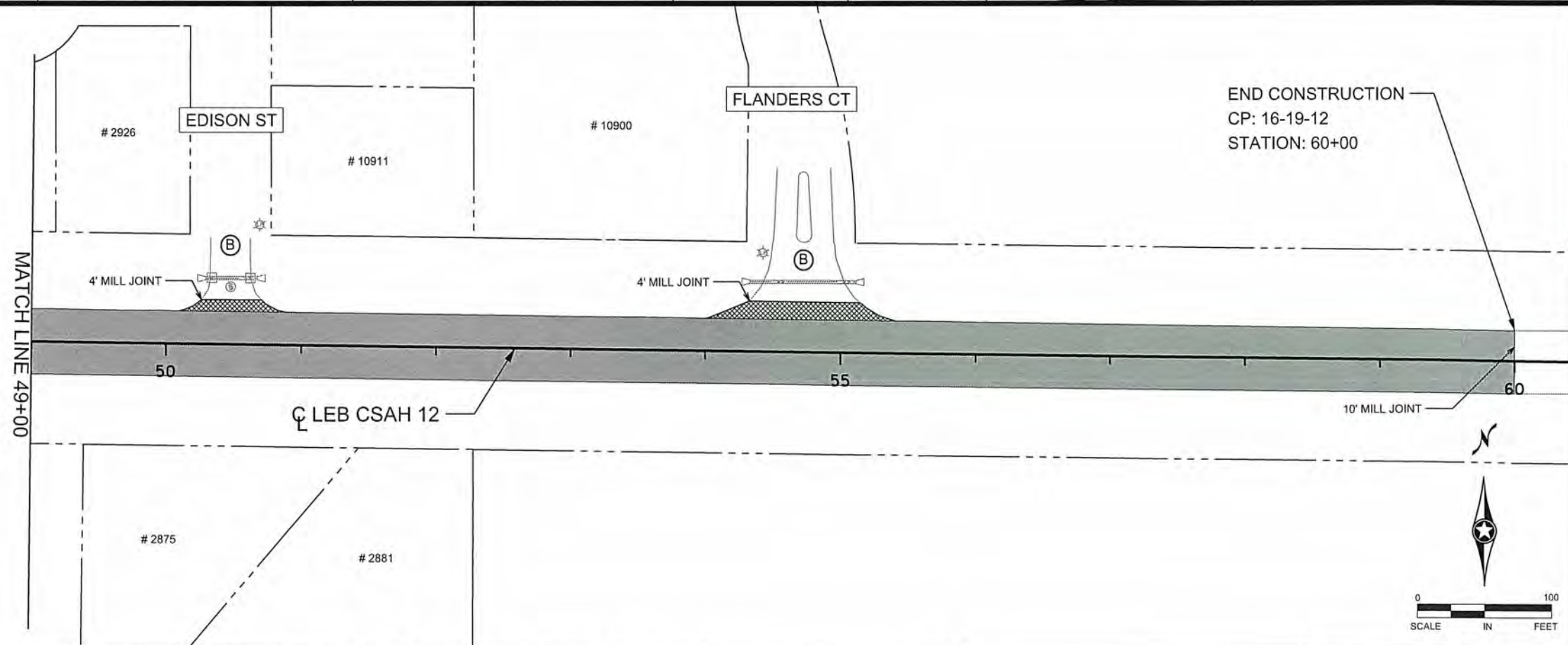
4' MILL JOINT

40

45

LEGEND

- (B) BITUMINOUS
- MAINLINE OVERLAY AREA
- OVERLAY EXISTING PAVEMENT
- R/W



MATCH LINE 49+00

END CONSTRUCTION
CP: 16-19-12
STATION: 60+00

EDISON ST

FLANDERS CT

4' MILL JOINT

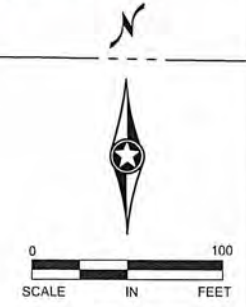
4' MILL JOINT

50

55

CL LEB CSAH 12

10' MILL JOINT




NO	DATE	BY	CHKD	APPR	REVISION	DATE	TIME

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**ANOKA COUNTY
HIGHWAY DEPT.**

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CONSTRUCTION PLAN
 STA 38+00 TO 60+00
 Sheet 9 of 19 Sheets

NAME: P:\16-01-00\CSAH_12(CSAH52-Flanders)\Base\PROPOSED\PLAN.dgn

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 BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE EPOXY RESIN LINE TO PROVIDE AN IMMEDIATE NO-TRACK SYSTEM.

AN EPOXY 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	12355
4" BROKEN LINE WHITE - EPOXY PAINT	LIN FT	80
4" SOLID LINE YELLOW - EPOXY PAINT	LIN FT	2140
4" BROKEN LINE YELLOW - EPOXY PAINT	LIN FT	710
4" DOUBLE SOLID LINE YELLOW - EPOXY PAINT	LIN FT	2680
24" SOLID LINE YELLOW - PREFORMED THERMOPLASTIC	SQ FT	1202

SYMBOLS & MATERIALS LEGEND

■ CROSSWALK BLOCK WHITE PREFORMED THERMOPLASTIC

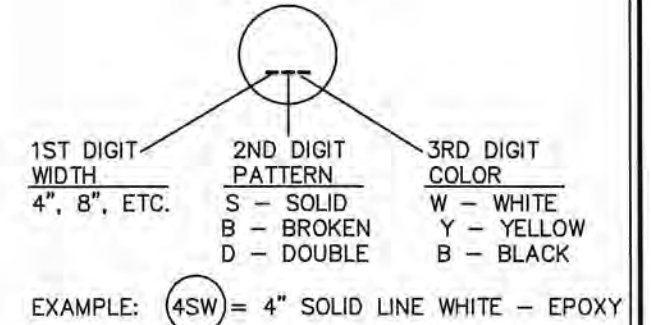
↩ PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC

STRIPING KEY

○ CIRCLE - EPOXY □ SQUARE PREFORMED THERMOPLASTIC

△ TRIANGLE - PAINT

⬠ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\16-01-00\CSAH 12\Base\TRAFFIC\Perm pvmt mrkg guide notes_guidelines.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: MATTHEW J. JOHN
SIGNATURE: *[Signature]*
DATE: 4/8/2016 LICENSE NO. 51639

DRAWN BY: RLB DATE: 2/14/14
DESIGN BY: RLB DATE: 2/14/14
CHECKED BY: JR DATE: 2/14/14



ANOKA COUNTY
HIGHWAY DEPT.

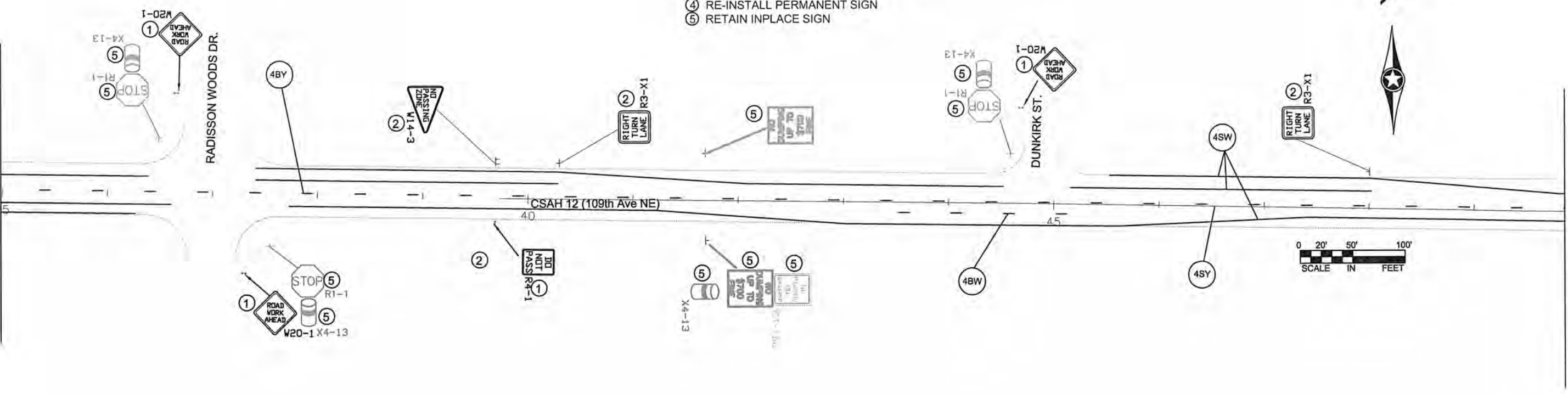
STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. 16-19-12

PERMANENT MARKING TABULATION
Sheet 10 of 19 Sheets

- 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

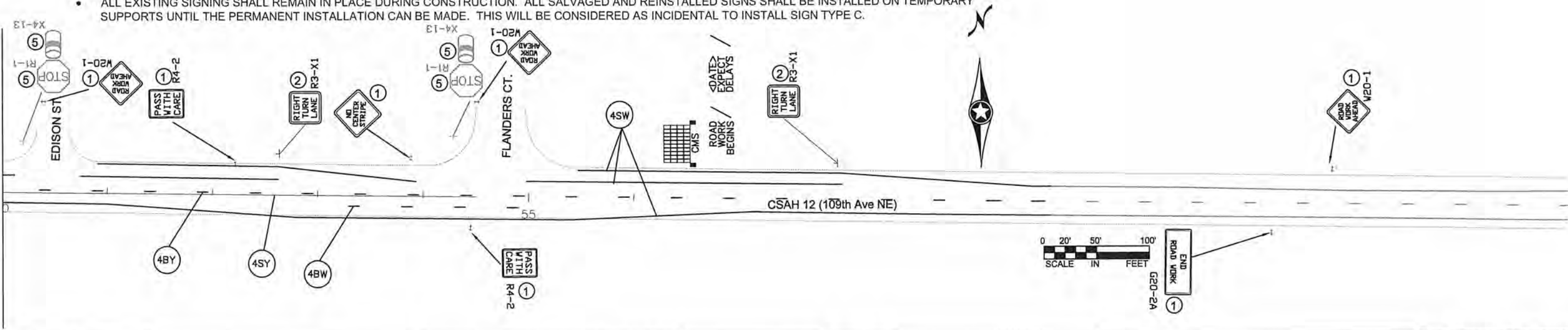
STATION 35+00

STATION 50+00



- 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.

STATION 50+00



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

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

PRINT NAME: MATTHEW J. JOHN
 SIGNATURE: *Matthew J. John*
 DATE: 4/8/2016 REG. NO. 51639

DRAWN BY: RLB DATE: 1/23/15
 DESIGN BY: RLB DATE: 1/23/15
 CHECKED BY: JR DATE: 1/30/15

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 16-19-12

TEMPORARY SIGNING,
 PERMANENT SIGNING
 AND STRIPING

Sheet 12 of 19 Sheets

TEMPORARY TRAFFIC CONTROL SIGNS

M.U.T.C.D. CODE	SIZE	PANEL AREA FT. ²	INSERT	QUANTITY		MOUNTING HEIGHT TO PANEL MOUNTING EDGES FT.
					No. POST	
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		3	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 9)		
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		

NOTES:

- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
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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.

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
R3-X1	30" x 30"		5	6.25	31.25	1	7.0'
R3-X1	48" x 36"		2	6.00	12.00	2	7.0'
TOTAL			7		43.25		

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 PRINT NAME: MATTHEW J. JOHN
 SIGNATURE: *Matthew J. John*
 DATE: 4/8/2016 REG. NO. 51639

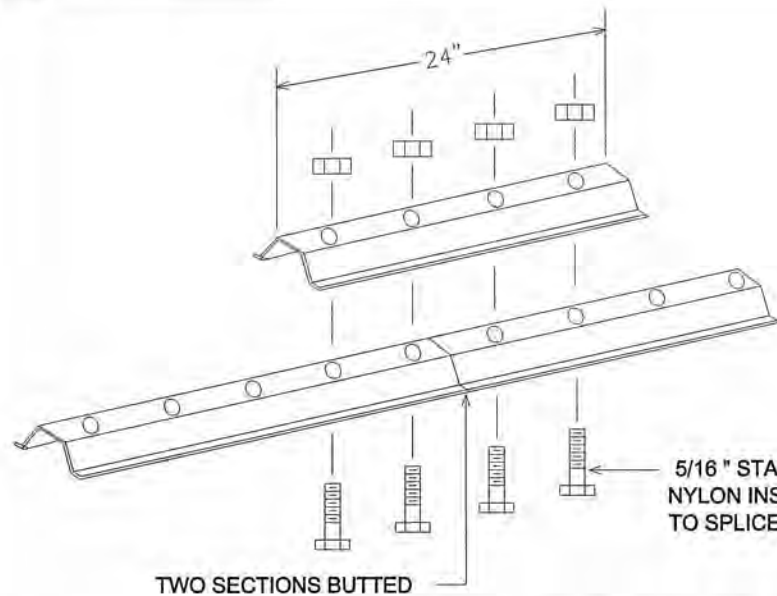
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 DESIGN BY: RLB DATE: 1/23/15
 CHECKED BY: JR DATE: 1/30/15



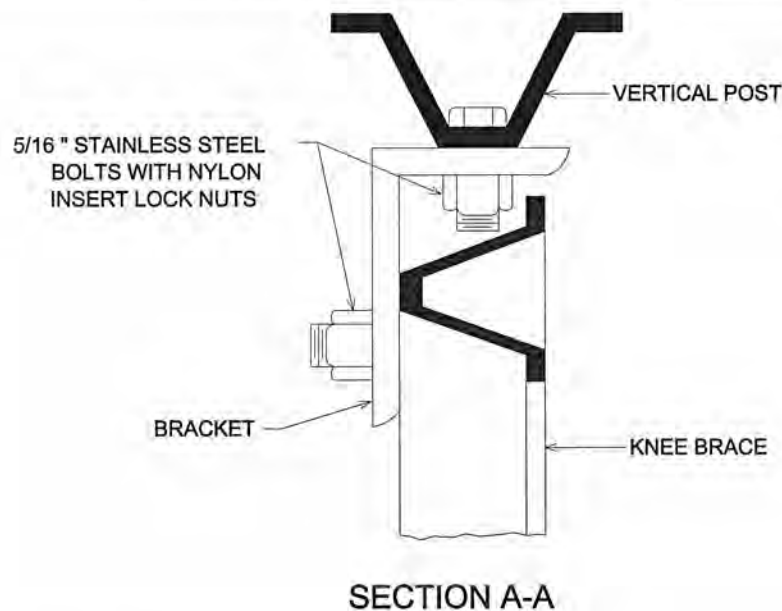
ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 16-19-12

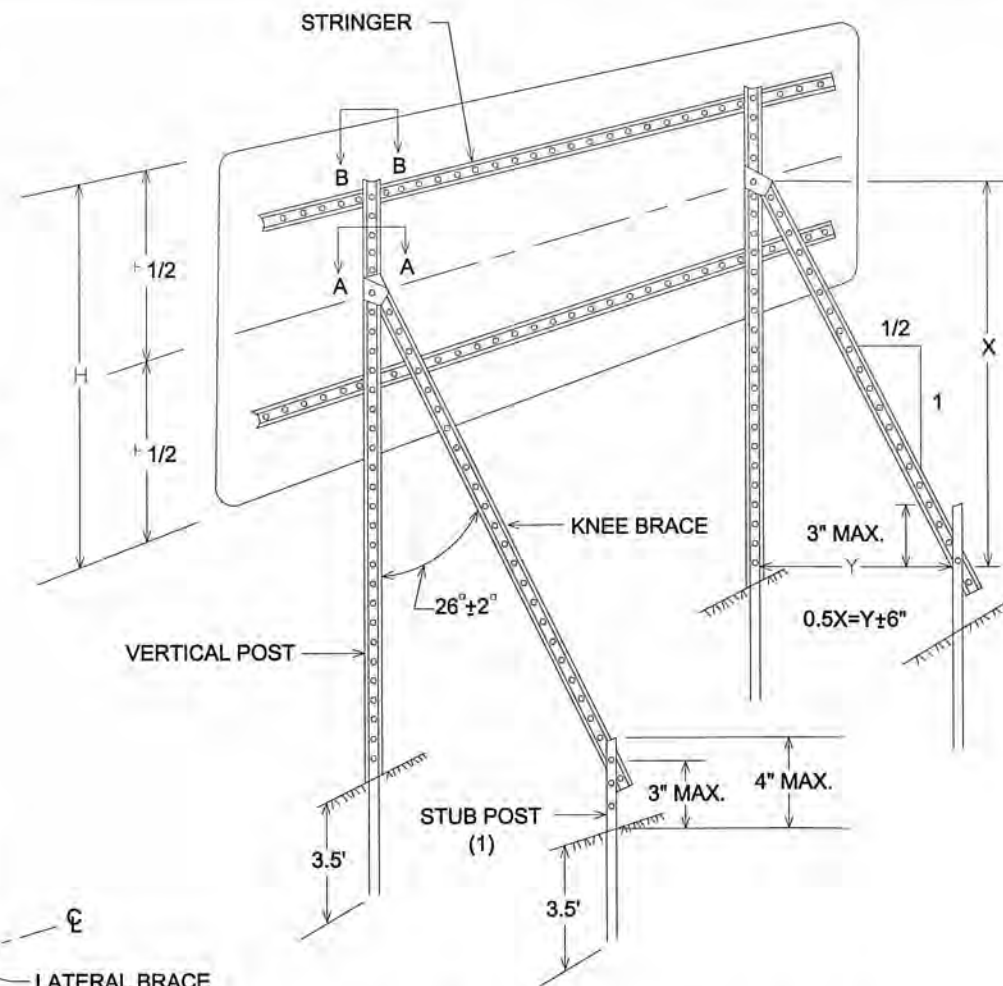
TRAFFIC CONTROL
 QUANTITY



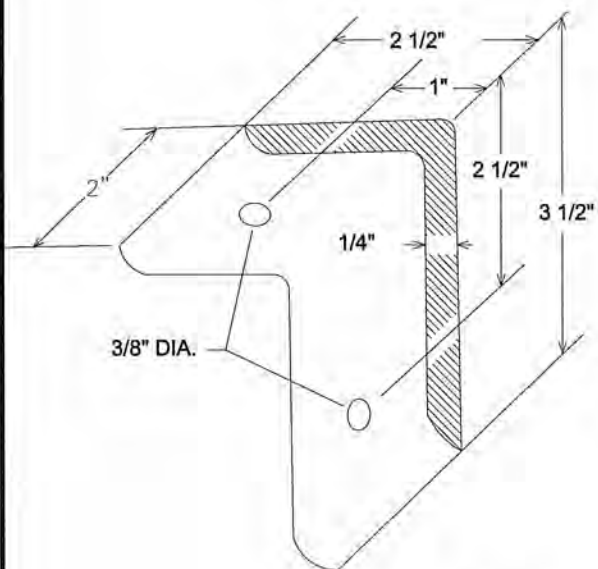
LATERAL BRACE OR STRINGER
SPLICE DETAIL (EXPLODED VIEW)



SECTION A-A

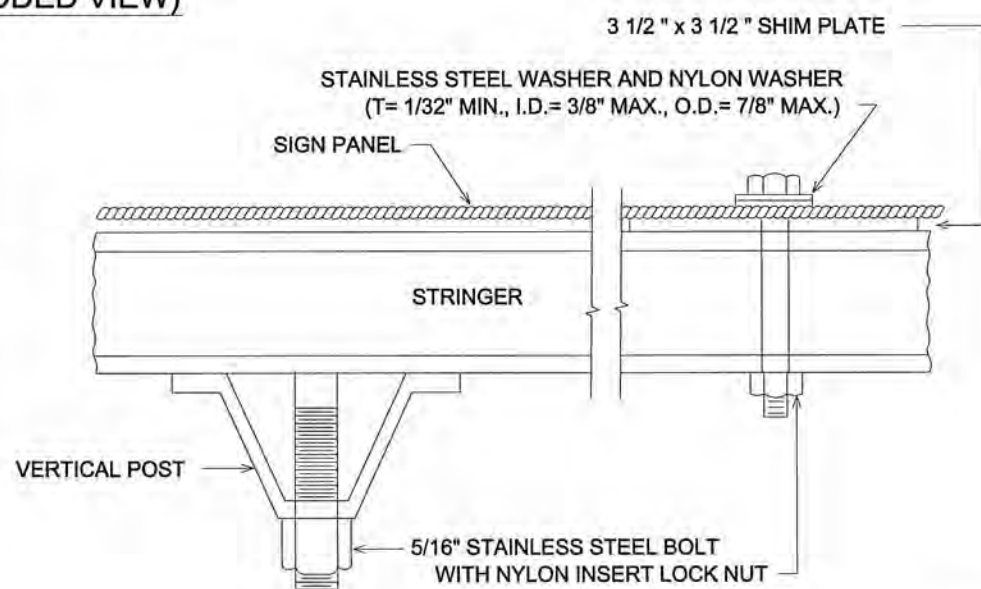


TYPICAL "A-FRAME" INSTALLATION
TYPE "D" SIGNS

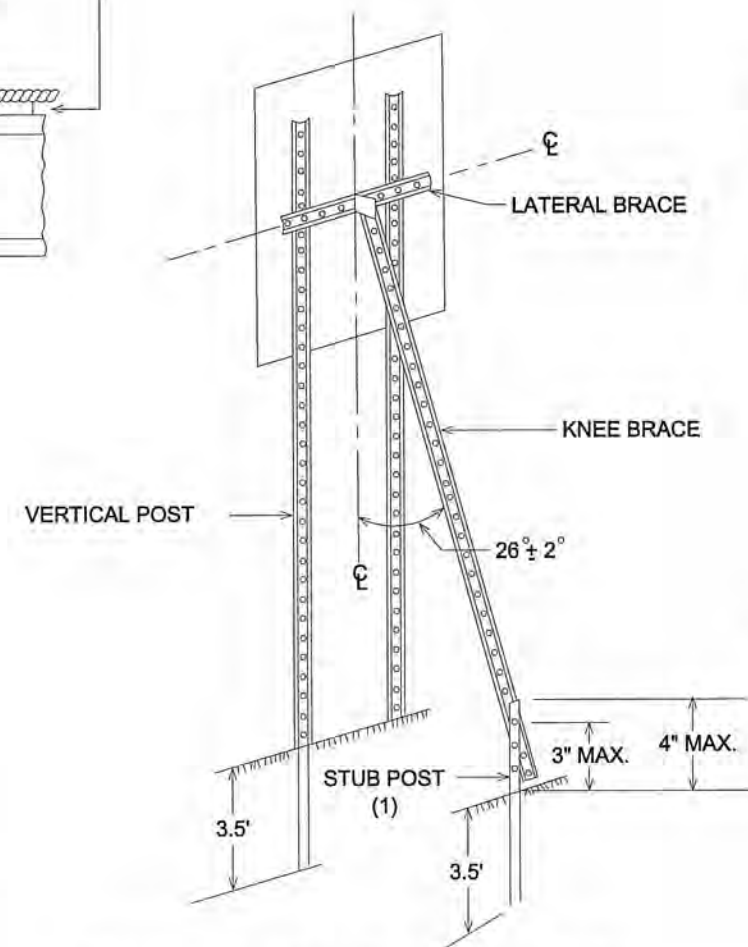


A-FRAME BRACKET

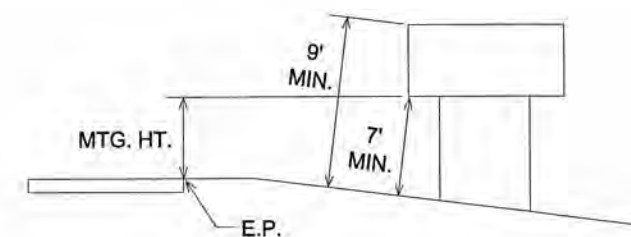
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SECTION B-B



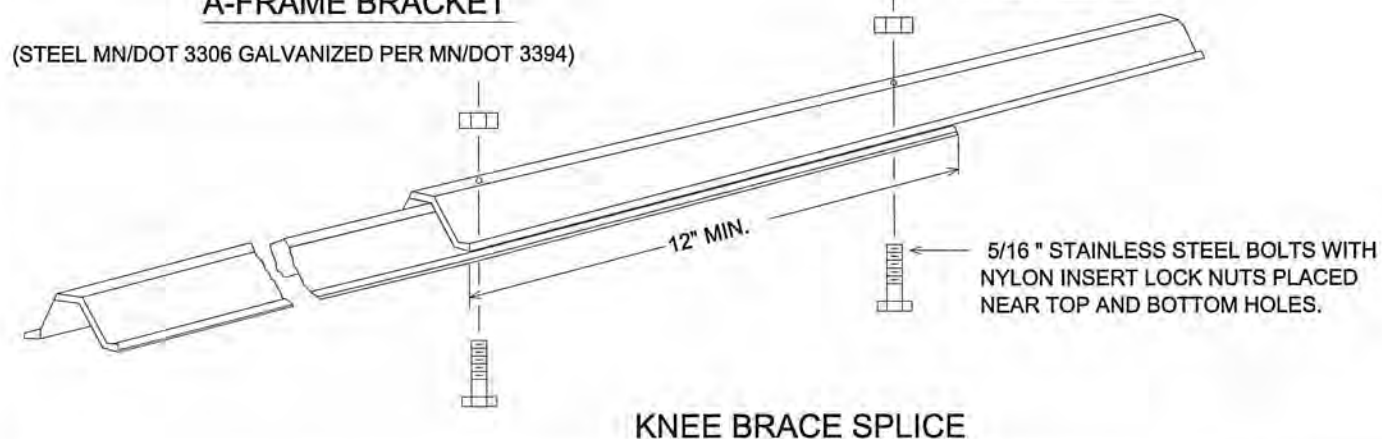
TYPICAL "A-FRAME" INSTALLATION
TYPE "C" SIGNS



TYPICAL MOUNTING

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

TYPE C & D SIGN
STRUCTURAL DETAILS



KNEE BRACE SPLICE

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME
OR UNDER MY DIRECT SUPERVISION AND THAT I AM A
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THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: MATTHEW J. JOHN
SIGNATURE: *Matthew J. John*
DATE: 4/8/2016 REG. NO. 51639

DRAWN BY: RLB DATE: 2/6/14
DESIGN BY: RLB DATE: 2/6/14
CHECKED BY: JR DATE: 2/6/14



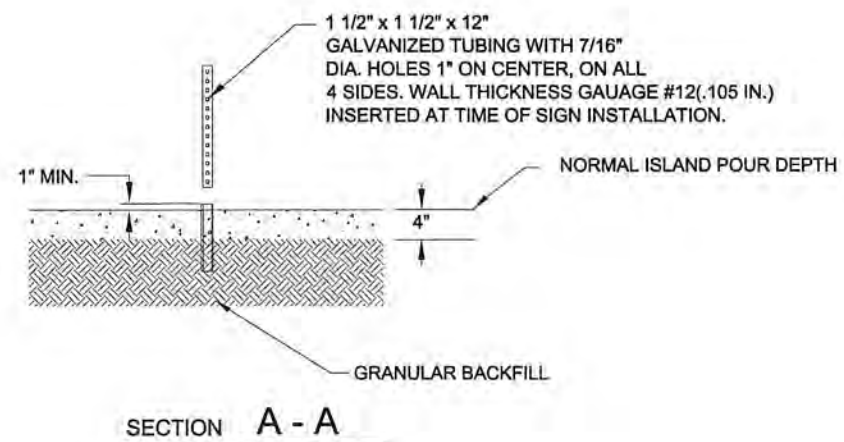
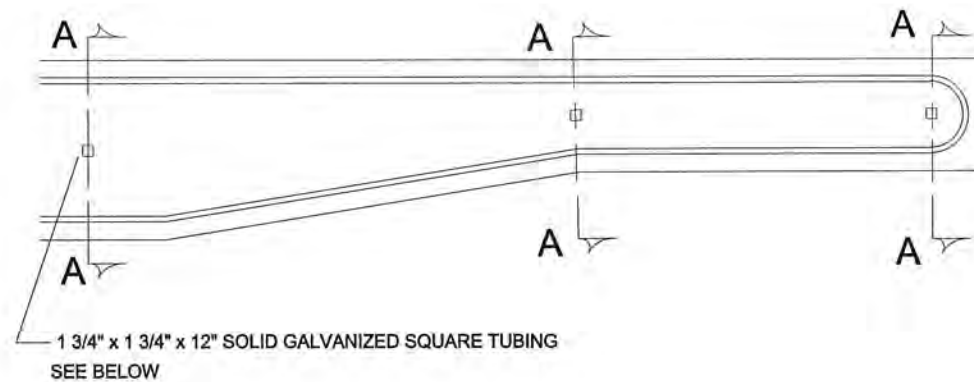
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. 16-19-12

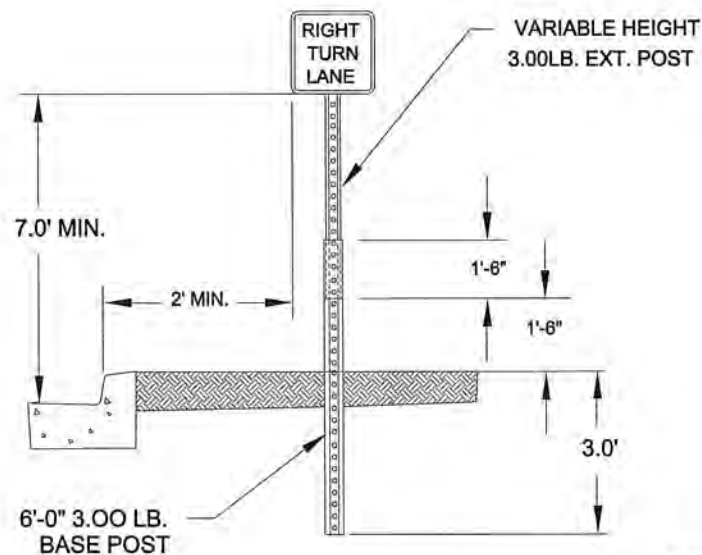
SIGNING & STRIPING
DETAILS

Sheet 14 of 19 Sheets

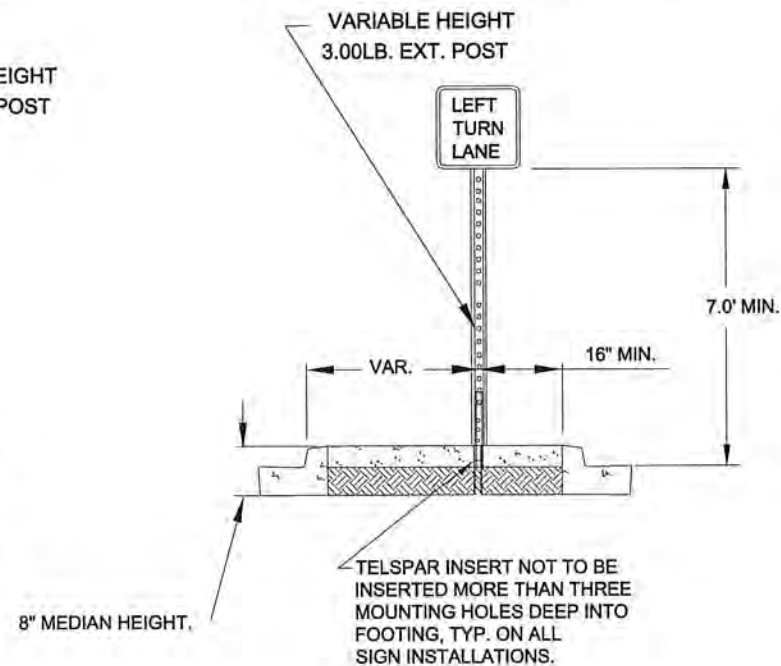
NO	DATE	BY	CKD	APPR	REVISION



GROUND POST MOUNT SIGN
INSTALLATION TYPICAL



ISLAND MOUNT BREAK-AWAY SIGN
INSTALLATION TYPICAL



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ANOKA COUNTY
HIGHWAY DEPT.

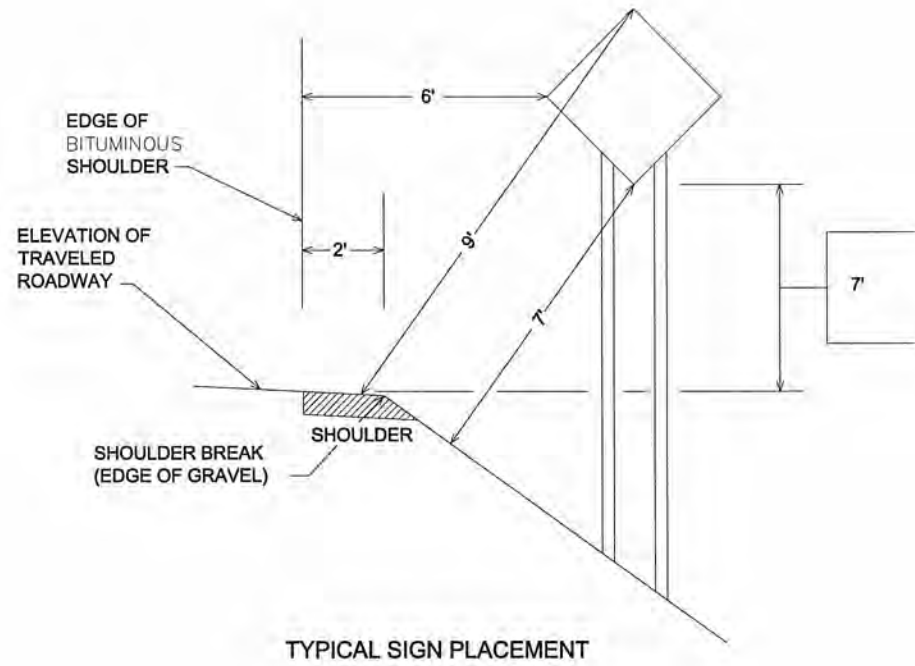
STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 16-19-12

SIGNING & STRIPING
DETAILS

Sheet 15 of 19 Sheets

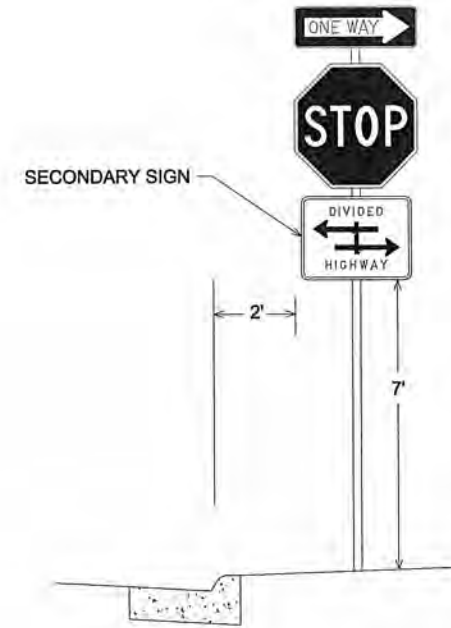
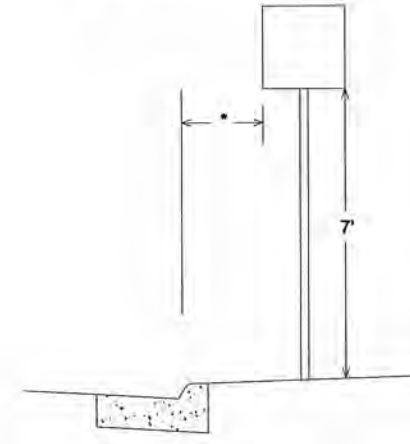
NO	DATE	BY	CKD	APPR	REVISION

RURAL



URBAN

- 2' - NARROW BOULEVARD (< 8' WIDE)
- 6' - WIDE BOULEVARD



NOTE:

- ALL DIMENSIONS ARE MINIMUMS
- MAINTAIN 2' CLEAR FROM SIGNS TO BITUMINOUS TRAIL

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ANOKA COUNTY
 HIGHWAY DEPT.

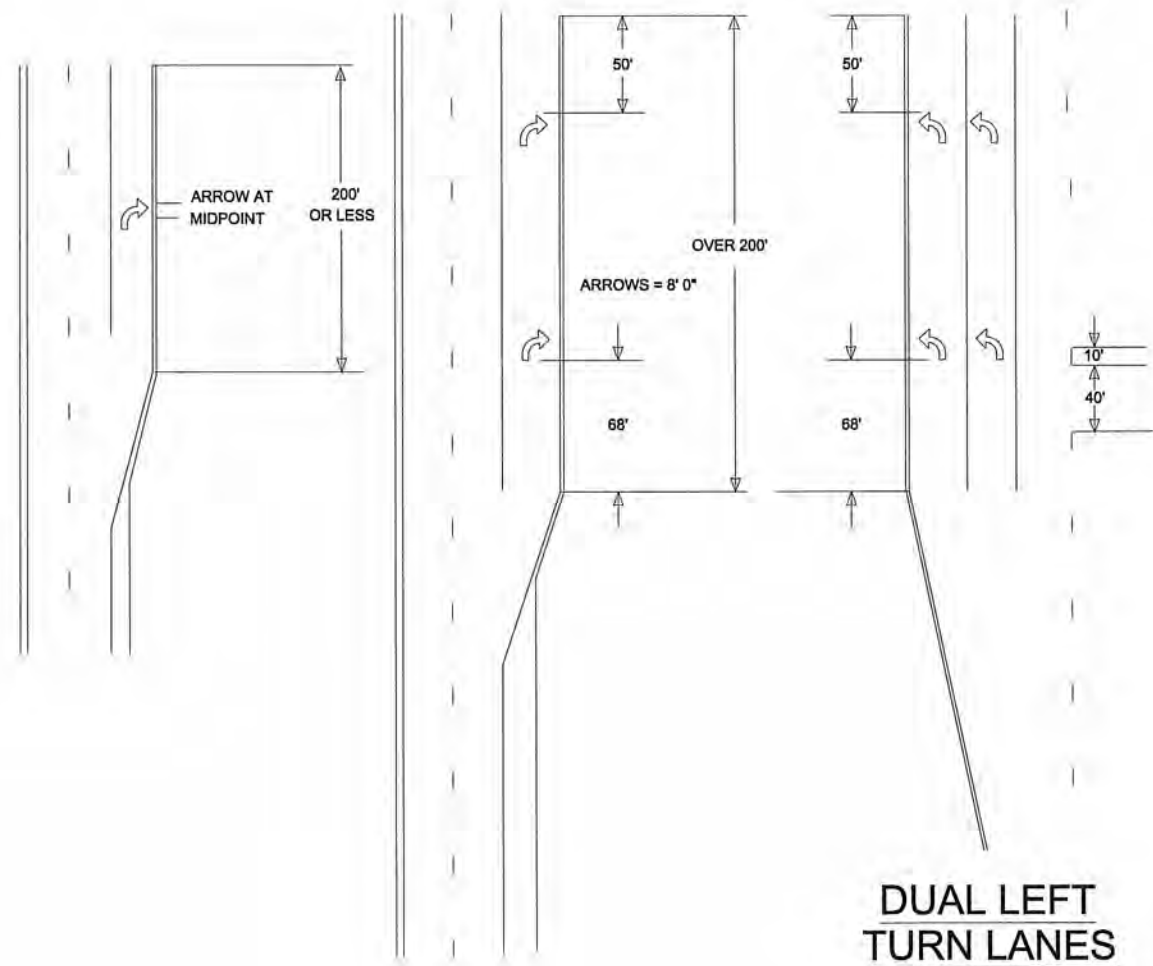
STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 16-19-12

SIGNING & STRIPING
 DETAILS
 Sheet 16 of 19 Sheets

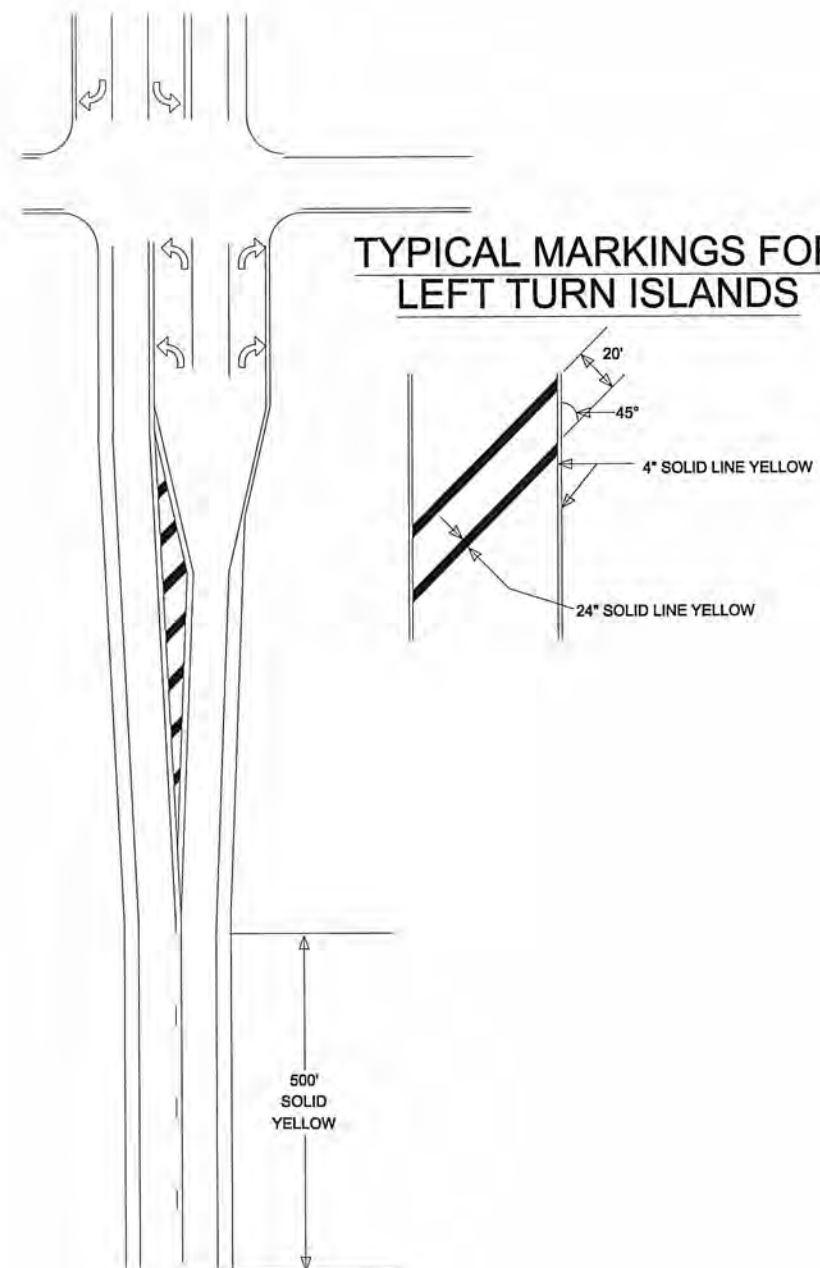
NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\16-01-00\CSAH 12\base\Traffic\Sign&Stripe_Details.dwg

**TYPICAL MESSAGE PLACEMENT
FOR TURN LANES**



**TYPICAL MARKINGS FOR
LEFT TURN ISLANDS**



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

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**SIGNING & STRIPING
DETAILS**

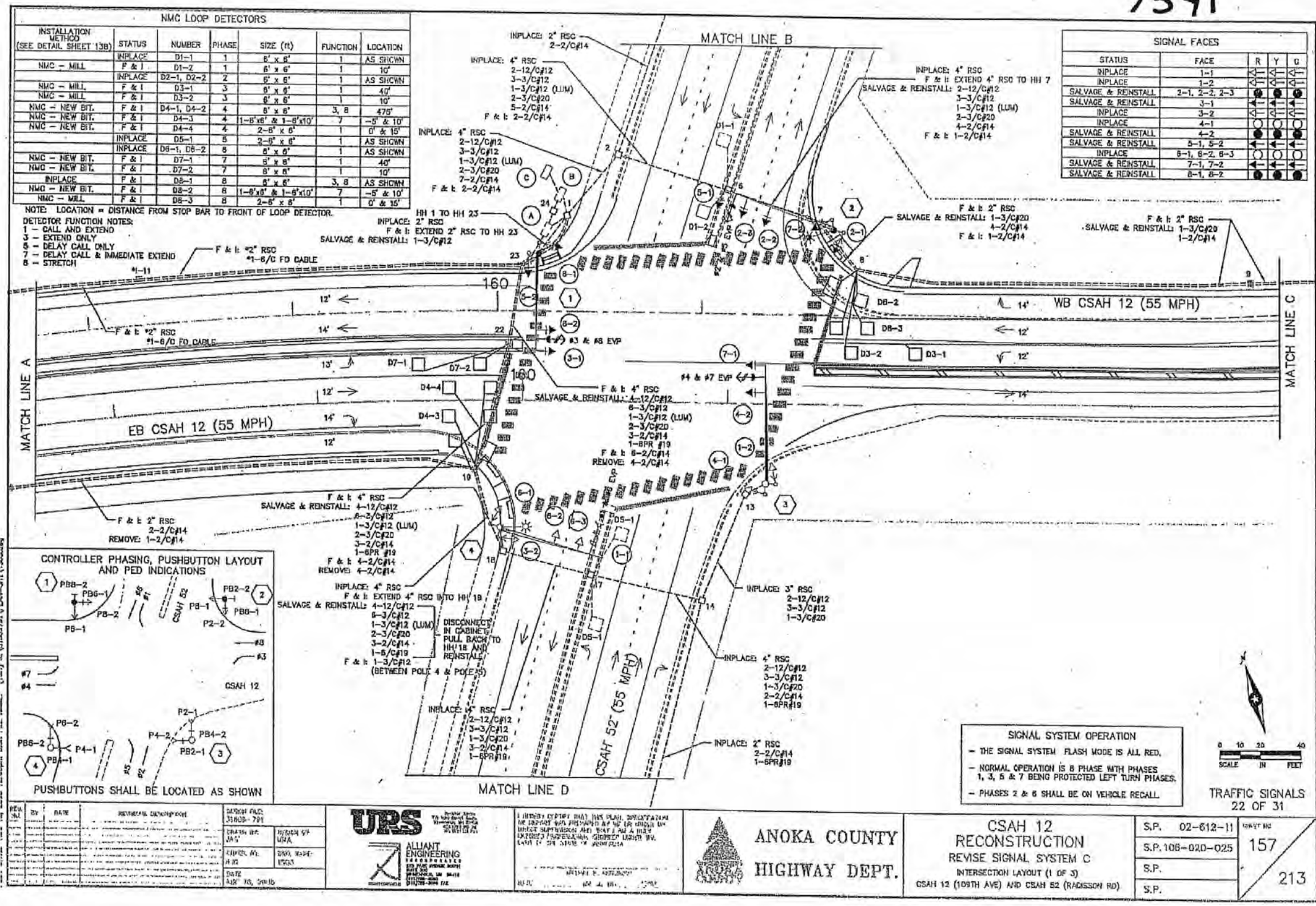
Sheet 17 of 19 Sheets

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\16-01-00\CSAH 12\base\Traffic\Sign&Stripe_Details.dwg

R. Johnson

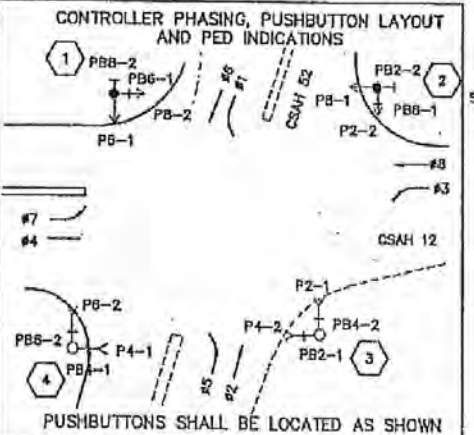
1571



NMC LOOP DETECTORS						
INSTALLATION METHOD (SEE DETAIL SHEET 13B)	STATUS	NUMBER	PHASE	SIZE (ft)	FUNCTION	LOCATION
NMC - MILL	INPLACE	D1-1	1	6' x 6'	1	AS SHOWN
NMC - MILL	F & I	D1-2	1	6' x 6'	1	10'
NMC - MILL	INPLACE	D2-1, D2-2	2	6' x 6'	1	AS SHOWN
NMC - MILL	F & I	D3-1	3	6' x 6'	1	40'
NMC - MILL	F & I	D3-2	3	6' x 6'	1	10'
NMC - NEW BIT.	F & I	D4-1, D4-2	4	6' x 6'	3, 8	475'
NMC - NEW BIT.	F & I	D4-3	4	1-8'x6' & 1-6'x10'	1	-5' & 10'
NMC - NEW BIT.	F & I	D4-4	4	2-6' x 6'	1	0' & 15'
NMC - NEW BIT.	INPLACE	D5-1	5	6' x 6'	1	AS SHOWN
NMC - NEW BIT.	F & I	D7-1	7	6' x 6'	1	40'
NMC - NEW BIT.	F & I	D7-2	7	6' x 6'	1	40'
NMC - NEW BIT.	F & I	D8-1	8	6' x 6'	1	10'
NMC - NEW BIT.	F & I	D8-2	8	6' x 6'	3, 8	AS SHOWN
NMC - MILL	F & I	D8-3	8	1-8'x6' & 1-6'x10'	7	-5' & 10'
NMC - MILL	F & I	D8-4	8	2-6' x 6'	1	0' & 15'

NOTE: LOCATION = DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR.
 DETECTOR FUNCTION NOTES:
 1 - CALL AND EXTEND
 3 - EXTEND ONLY
 5 - DELAY CALL ONLY
 7 - DELAY CALL & IMMEDIATE EXTEND
 8 - STRETCH

SIGNAL FACES				
STATUS	FACE	R	Y	G
INPLACE	1-1	▲	▲	▲
INPLACE	1-2	▲	▲	▲
SALVAGE & REINSTALL	2-1, 2-2, 2-3	▲	▲	▲
SALVAGE & REINSTALL	3-1	▲	▲	▲
INPLACE	3-2	▲	▲	▲
INPLACE	4-1	▲	▲	▲
SALVAGE & REINSTALL	4-2	▲	▲	▲
SALVAGE & REINSTALL	5-1, 5-2	▲	▲	▲
INPLACE	6-1, 6-2, 6-3	▲	▲	▲
SALVAGE & REINSTALL	7-1, 7-2	▲	▲	▲
SALVAGE & REINSTALL	8-1, 8-2	▲	▲	▲



REV	BY	DATE	DESCRIPTION

URS
 ALLIANT ENGINEERING
 1415 1/2 AVENUE
 SUITE 100
 MINNEAPOLIS, MN 55412
 TEL: 612.338.1111
 FAX: 612.338.1112

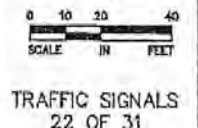
I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

ANOKA COUNTY HIGHWAY DEPT.

CSAH 12 RECONSTRUCTION
 REVISE SIGNAL SYSTEM C
 INTERSECTION LAYOUT (1 OF 3)
 CSAH 12 (109TH AVE) AND CSAH 52 (RACINSON RD)

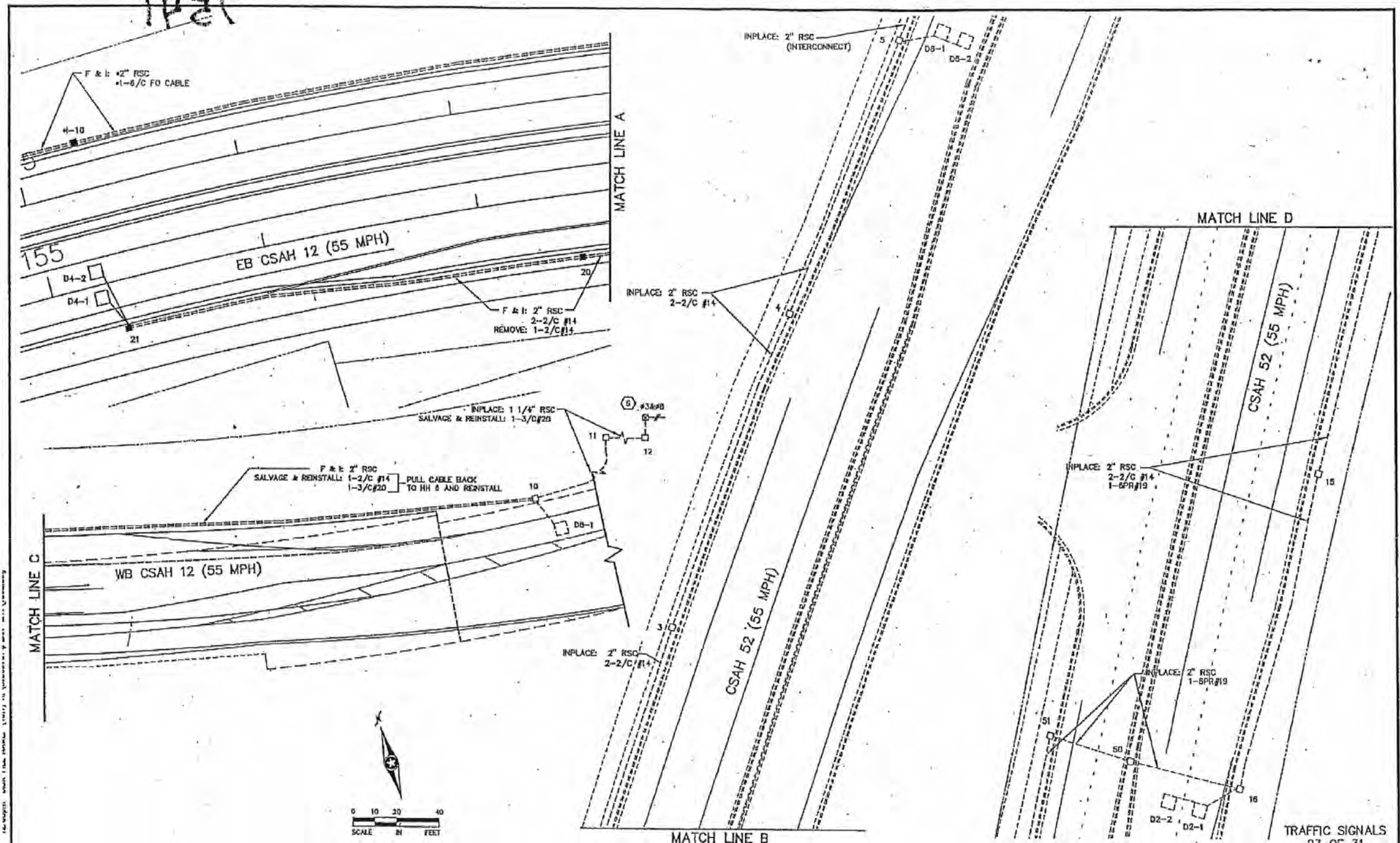
S.P. 02-612-11	157
S.P. 106-020-025	
S.P.	
S.P.	

SIGNAL SYSTEM OPERATION
 - THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
 - NORMAL OPERATION IS B PHASE WITH PHASES 1, 3, 5 & 7 BEING PROTECTED LEFT TURN PHASES.
 - PHASES 2 & 6 SHALL BE ON VEHICLE RECALL.



FOR REFERENCE PURPOSES ONLY

3-johnso



FOR REFERENCE PURPOSES ONLY

<table border="1"> <tr> <th>REV. NO.</th> <th>BY</th> <th>DATE</th> <th>REVISIONS DESCRIPTION</th> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>	REV. NO.	BY	DATE	REVISIONS DESCRIPTION					<table border="1"> <tr> <td>DESIGN FILED 31800-791</td> <td>DESIGN BY MRA</td> </tr> <tr> <td>DRAWN BY JAS</td> <td>CHECKED BY RJM</td> </tr> <tr> <td>DATE: AUG 18, 2005</td> <td>DWG. NAME: T900</td> </tr> </table>	DESIGN FILED 31800-791	DESIGN BY MRA	DRAWN BY JAS	CHECKED BY RJM	DATE: AUG 18, 2005	DWG. NAME: T900	<p>URS CONSULTANTS INCORPORATED</p>	<p>I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT 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.</p> <p><i>Michael R. Janderich</i> MICHAEL R. JANDERICH DATE: 4/23/05 NH LIC. NO. 12833</p>	<p>ANOKA COUNTY HIGHWAY DEPT.</p>	<p>CSAH 12 RECONSTRUCTION REVISE SIGNAL SYSTEM C INTERSECTION LAYOUT (2 OF 3) CSAH 12 (109TH AVE) AND CSAH 52 (RADISSON RD)</p>	<table border="1"> <tr> <td>S.P. 02-812-11</td> <td rowspan="2">SHEET NO. 158</td> </tr> <tr> <td>S.P. 106-020-025</td> </tr> <tr> <td>S.P.</td> <td rowspan="2">213</td> </tr> <tr> <td>S.P.</td> </tr> </table>	S.P. 02-812-11	SHEET NO. 158	S.P. 106-020-025	S.P.	213	S.P.
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NO	DATE	BY	CKD	APPR	REVISION	03/24/2016	9:32:48 AM
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NAME: P:\16-01-00\CSAH_12(CSAH52-Flanders)\Base\PROPOSED\PLAN.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: *Matthew J. John*
DATE: 4/8/2016 LICENSE NO. 51639

DRAWN BY JJ DATE 03/24/2016
DESIGN BY JJ DATE 03/24/2016
CHECKED BY MJJ DATE 03/24/2016

ANOKA COUNTY
HIGHWAY DEPT.

COUNTY PROJECT 16-19-12

ORIGINAL SIGNAL PLANS
Sheet 19 of 19 Sheets