

# MINNESOTA DEPARTMENT OF TRANSPORTATION

## ANOKA COUNTY

CONSTRUCTION PLAN FOR \_\_\_\_\_ BITUMINOUS RECLAMATION, CURB & GUTTER, BITUMINOUS SURFACING  
 LOCATED ON CSAH 24 BETWEEN KERRY STREET AND NIGHTINGALE STREET

### GOVERNING SPECIFICATIONS

THE 2014 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AND THE 2014 EDITION OF THE "MATERIALS LAB SUPPLEMENTAL SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MNMUTCD), AND PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS."

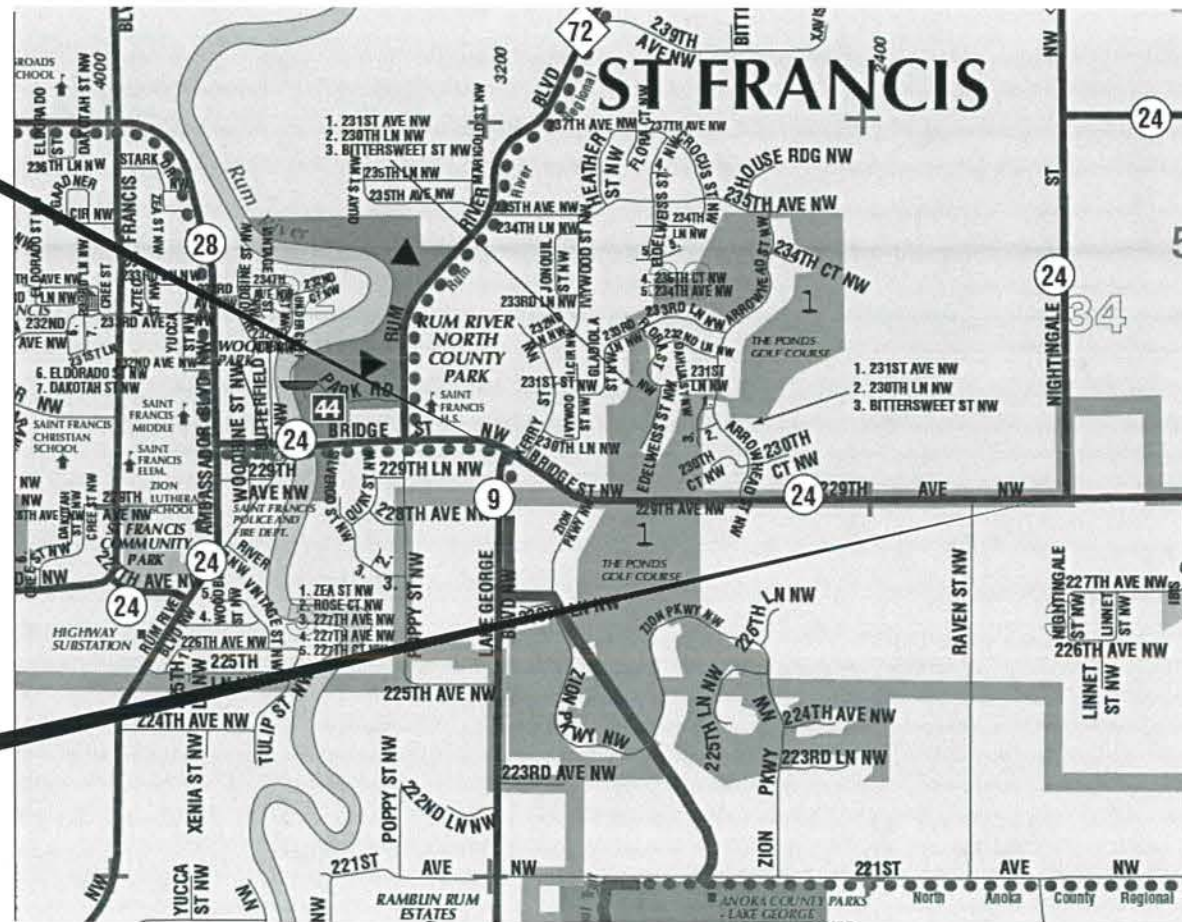
THIS PLAN CONTAINS 17 SHEETS

### INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES
3-5	TYPICAL SECTIONS
6-7	DETAILS
8-10	CONSTRUCTION PLAN
11-12	DETOUR PLANS
13-17	SIGNING AND STRIPING PLANS

BEGIN CP 15-20-24  
 CSAH 24, STA: 12+00

END CP 15-20-24  
 CSAH 24, STA: 84+32





### PROJECT LOCATION



CITY OF ST FRANCIS / OAK GROVE  
 ANOKA COUNTY  
 MN/DOT TRANSPORTATION DISTRICT - METRO  
 SECTION 33, 34  
 TOWNSHIP 34 NORTH  
 RANGE 24 WEST

CSAH 24	
GROSS LENGTH	7232 FEET 1.370 MILES
EXCEPTIONS-LENGTH	0 FEET 0.000 MILES
NET LENGTH	7232 FEET 1.370 MILES
DESIGN SPEED	40 - 55 MPH
CURRENT ADT	7500 / 2013

Approved:  4/2/15  
 ANOKA COUNTY ENGINEER

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.					DRAWN BY: JJ DATE: 04/02/2015	 <b>ANOKA COUNTY HIGHWAY DEPT.</b>	COUNTY PROJECT <u>15-20-24</u>	TITLE SHEET Sheet <u>1</u> of <u>17</u> Sheets
PRINT NAME: MATTHEW J. JOHN SIGNATURE:  DATE: 4/2/15 LICENSE NO. 51639					DESIGN BY: JJ DATE: 04/02/2015			
NO	DATE	BY	CKD	APPR	REVISION			
					04/02/2015	10:00:03 AM		
NAME: P:115-01-00\CSAH_24(LakeGeorge Blvd-Nightingale)\Base\PROPOSED\TEMPLATE_PLAN.dgn								

**STATEMENT OF ESTIMATED QUANTITIES**

ITEM NUMBER	ITEM DESCRIPTION	NOTES	UNIT	TOTAL PROJECT QUANTITIES ESTIMATED
2021.501	MOBILIZATION		LUMP SUM	1
2104.501	REMOVE PIPE CULVERTS	1	LN FT	60
2104.501	REMOVE CURB AND GUTTER	2	LN FT	23
2104.503	REMOVE CONCRETE WALK	2	SQ FT	135
2104.505	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	3	SQ YD	220
2104.505	REMOVE BITUMINOUS PAVEMENT		SQ YD	551
2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)	2	LN FT	10
2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)		LN FT	385
2105.604	GEOTEXTILE FABRIC TYPE III		SQ YD	6
2123.503	MOTOR GRADER	4	HOUR	20
2123.509	DOZER	5	HOUR	10
2130.501	WATER		MGAL	144
2211.501	AGGREGATE BASE CLASS 5	6	TON	595
2215.501	FULL DEPTH RECLAMATION		SQ YD	24966
2221.501	SHOULDER BASE AGGREGATE CLASS 5	7	TON	550
2232.501	MILL BITUMINOUS SURFACE (2.0")		SQ YD	36
2331.607	HAUL BITUMINOUS PAVEMENT RECLAMATION (LV)		CU YD	100
2357.502	BITUMINOUS MATERIAL FOR TACK COAT		GAL	1280
2360.501	TYPE SP 12.5 WEARING COURSE MIXTURE (3,B)	3	TON	152
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,E)		TON	5800
2411.507	CONCRETE FLUME		EACH	1
2501.511	36" RC PIPE CULVERT CLASS V		LN FT	56
2501.515	36" RC PIPE APRON		EACH	2
2504.602	ADJUST GATE VALVE	8	EACH	2
2506.516	CASTING ASSEMBLY	9	EACH	1
2511.501	RANDOM RIPRAP CLASS II		CU YD	6
2521.501	4" CONCRETE WALK	2	SQ FT	62
2521.501	6" CONCRETE WALK	2	SQ FT	135
2531.501	CONCRETE CURB AND GUTTER DESIGN B624		LN FT	130
2531.501	CONCRETE CURB AND GUTTER DESIGN S512	2	LN FT	44
2531.618	TRUNCATED DOMES	2	SQ FT	34
2540.602	MAIL BOX SUPPORT	10	EACH	10
2563.601	TRAFFIC CONTROL	11, 12	LUMP SUM	1
2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	13	UNIT DAY	14
2573.502	SILT FENCE, TYPE MS	5	LN FT	750
2573.530	STORM DRAIN INLET PROTECTION	14	EACH	1
2574.525	COMMON TOPSOIL BORROW	5	CU YD	133
2575.523	EROSION CONTROL BLANKETS CATEGORY 0	5, 15, 16	SQ YD	800
2581.501	REMOVABLE PREFORMED PAVEMENT MARKING TAPE	17	LN FT	580
2582.502	4" SOLID LINE WHITE-EPOXY	18	LN FT	15935
2582.502	4" SOLID LINE YELLOW-EPOXY	18	LN FT	1815
2582.502	4" DOUBLE SOLID LINE YELLOW-EPOXY	18	LN FT	1200
2582.502	4" BROKEN LINE WHITE-EPOXY	18	LN FT	80
2582.502	4" BROKEN LINE YELLOW-EPOXY	18	LN FT	1320

**BASIS OF PLANNED QUANTITIES**

ITEM NUMBER	DESCRIPTION	QUANTITY
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	QUANTITY INCLUDES APRONS
2	ITEM FOR ZION PKWY IMPROVEMENTS
3	ITEM FOR BITUMINOUS DRIVEWAYS AND STREET APPROACHES CONTRACTOR IS RESPONSIBLE FOR CONTACTING PROPERTY OWNER 48 HOURS BEFORE STARTING OPERATION.
4	ITEM USED TO MOVE EXCESS RECLAIM MATERIAL AT THE RECLAIM AREA LIMITS TO CREATE A SMOOTH TRANSITION BETWEEN THE PROPOSED AND EXISTING BITUMINOUS PAVEMENT.
5	TO BE USED OUTSIDE OF ROADWAY ALONG CURVE AND GRADE CORRECTION AREAS AND ALSO DITCH REGRADING
6	ITEM FOR SUPERELEVATION / GRADE CORRECTION, AND FOR BASE UNDER CONCRETE WALK.
7	ITEM INCLUDES 7 TONS FOR EACH GRAVEL ENTRANCE AND GRAVEL STREET APPROACH.
8	EACH ADJUST GATE VALVE INCLUDES TEMPORARY ADJUSTMENT BELOW RECLAIM / AGGREGATE BASE ELEVATION PRIOR TO OR IN CONJUNCTION WITH RECLAIMING OPERATION, AND FINAL ADJUSTMENT TO FINISH GRADE BETWEEN PAVING BASE AND WEAR LIFTS
9	ITEM INCLUDES FULL REPLACEMENT OF CASTING ADJUSTMENT RINGS.
10	MAILBOXES ARE TO BE INSTALLED AT THE EXISTING MAILBOX LOCATION OR AS DIRECTED BY THE LOCAL POSTAL AUTHORITY, CONTRACTOR IS RESPONSIBLE FOR CONTACTING. MAILBOX REMOVAL AND ALL MATERIALS ARE INCIDENTAL TO INSTALLATION.
11	DO NOT PASS, PASS WITH CARE AND NO CENTER STRIPE SIGNS TO BE INPLACE DURING MILLING, RECLAIMING OR PAVING OPERATIONS.
12	DETOUR IS INCIDENTAL TO TRAFFIC CONTROL.
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	ALL DRAINAGE STRUCTURES AFFECTED BY THIS PROJECT MUST HAVE INLET PROTECTION.
15	INCLUDES PIPE REPLACEMENT AREA
16	TYPE 1 FERTILIZER AND TYPE 25-121 SEED AND PLACEMENT OF ADDITIONAL TOPSOIL DUE TO BLANKET ARE INCIDENTAL TO THIS ITEM
17	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.
18	FINAL STRIPING SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLETION OF MAINLINE WEAR COURSE PAVING.

**MNDOT STANDARD PLATES**

PLATE NUMBER	DESCRIPTION
4026A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4035N	CONCRETE WALK
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4110F	COVER CASTING FOR MANHOLE
7038A	DETECTABLE WARNING SURFACE
7100H	CONCRETE CURB AND GUTTER (DESIGN B)
7102J	CONCRETE CURB AND GUTTER (DESIGN S)

NO	DATE	BY	CKD	APPR	REVISION	TIME
					04/02/2015	10:00:04 AM

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**ANOKA COUNTY  
HIGHWAY DEPT.**

COUNTY PROJECT 15-20-24

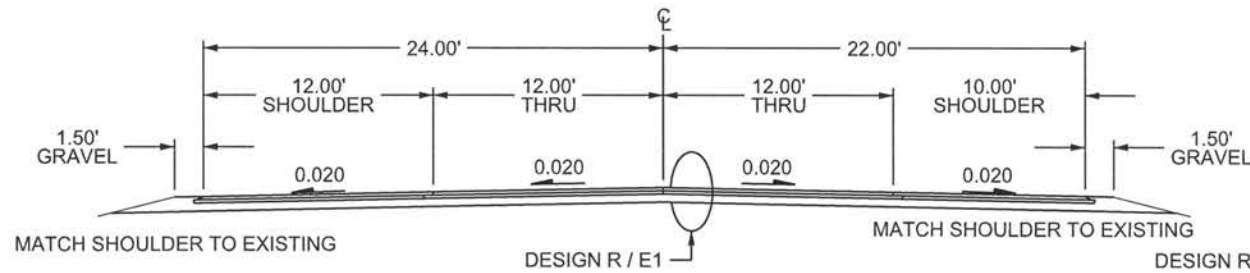
STATEMENT OF ESTIMATED QUANTITIES

Sheet 2 of 17 Sheets

mjohn

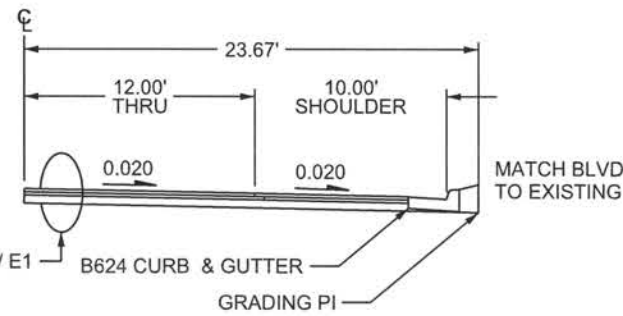
### 229TH AVE NW - CSAH 24 RECLAIM SECTION

12+00 - 15+00

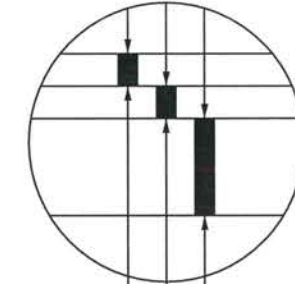


### CURB SECTION

12+86 - 14+82 RT

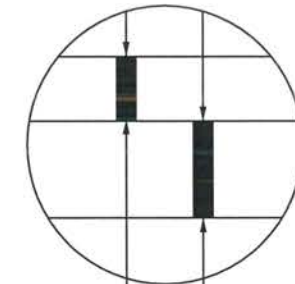


### DESIGN R RECLAIM SECTION



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

### EXISTING SECTION E1

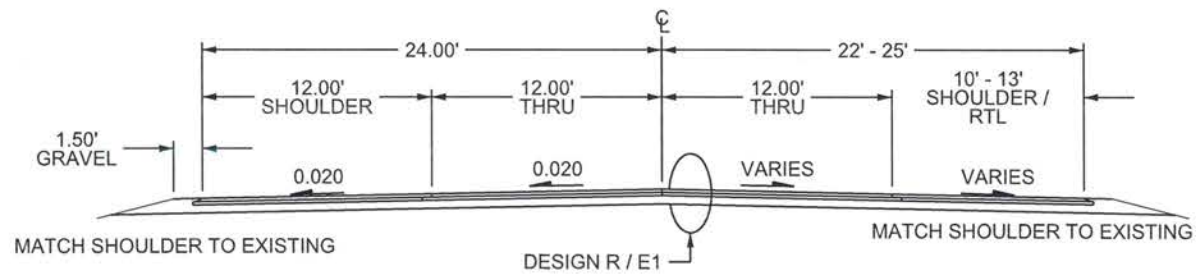


5" EXISTING BITUMINOUS  
 BITUMINOUS STABILIZED SAND

### 229TH AVE NW - CSAH 24 RECLAIM SECTION

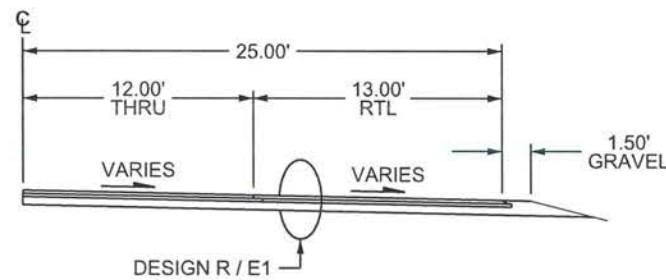
#### TAPERED SECTION

15+00 - 16+80



#### FULL WIDTH SECTION

16+80 - 17+40 RT



NO	DATE	BY	CKD	APPR	REVISION	
					04/02/2015	10:00:06 AM

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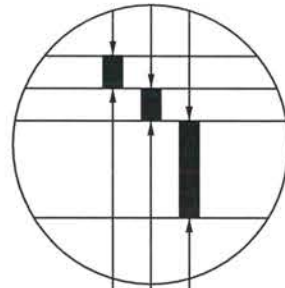
ANOKA COUNTY  
 HIGHWAY DEPT.

COUNTY PROJECT 15-20-24

TYPICAL SECTIONS  
 Sheet 3 of 17 Sheets

mjohn

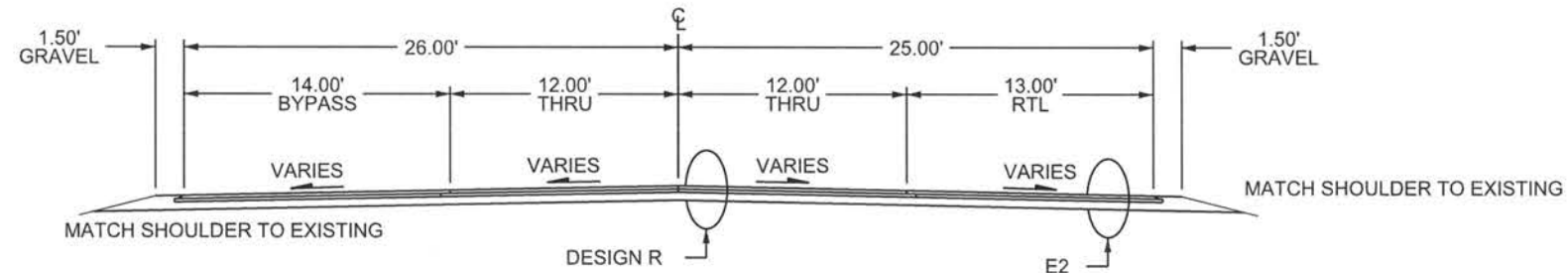
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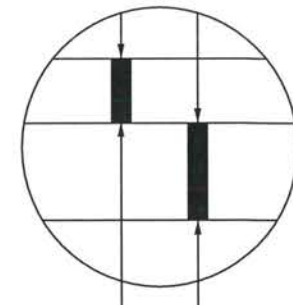
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RECLAIMED BITUMINOUS

### 229TH AVE NW - CSAH 24 RECLAIM SECTION

17+40 - 20+44

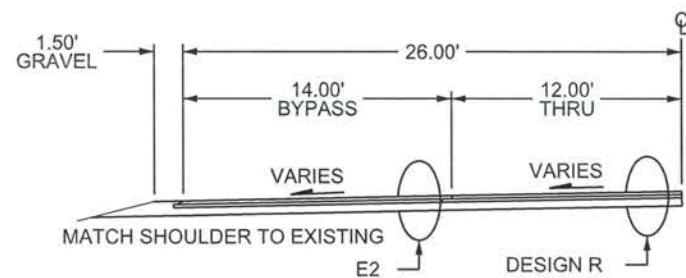


### EXISTING SECTION E1



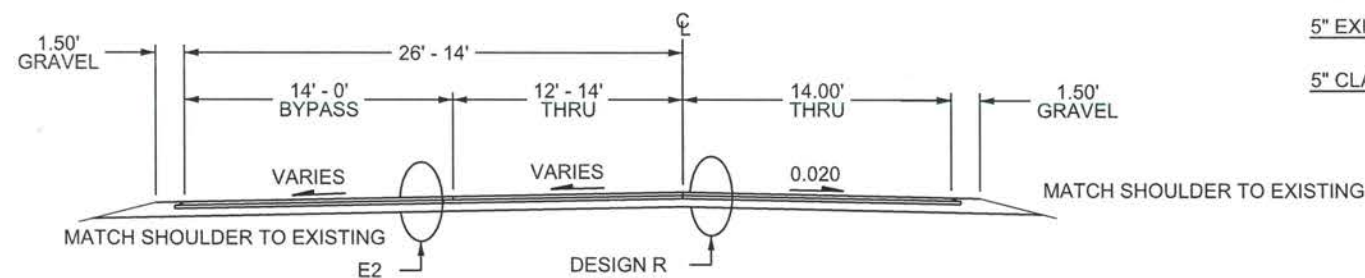
5" EXISTING BITUMINOUS  
BITUMINOUS STABILIZED SAND

### FULL WIDTH SECTION 20+44 - 21+88 LT

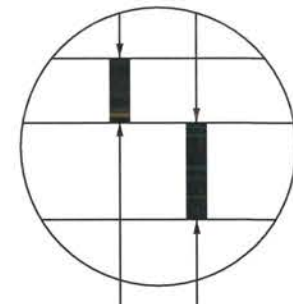


### 229TH AVE NW - CSAH 24 RECLAIM SECTION

TAPERED SECTION  
21+88 - 23+60



### EXISTING SECTION E2



5" EXISTING BITUMINOUS  
5" CLASS 5

NO	DATE	BY	CKD	APPR	REVISION	TIME
	04/02/2015					10:00:07 AM

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ANOKA COUNTY  
HIGHWAY DEPT.

COUNTY PROJECT 15-20-24

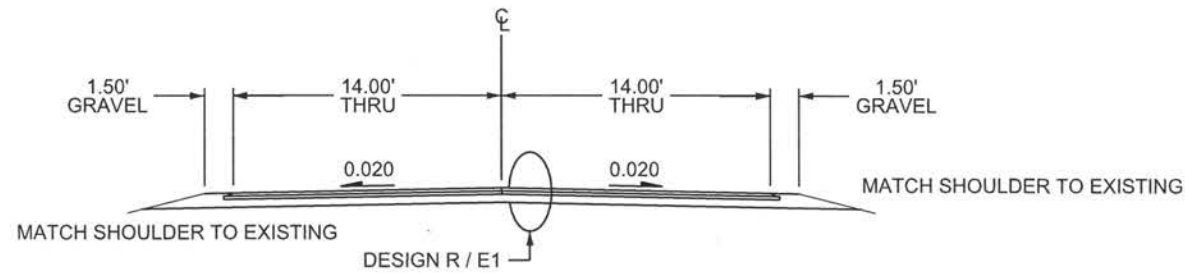
TYPICAL SECTIONS  
Sheet 4 of 17 Sheets

mjohn

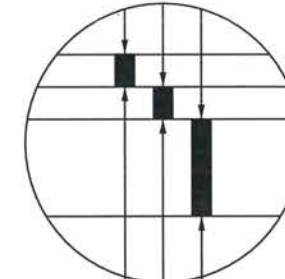
### 229TH AVE NW - CSAH 24

#### RECLAIM SECTION

23+60 - 82+64

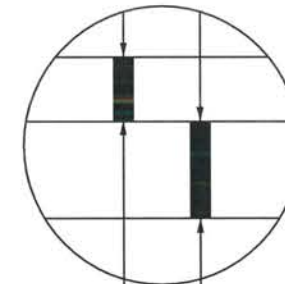


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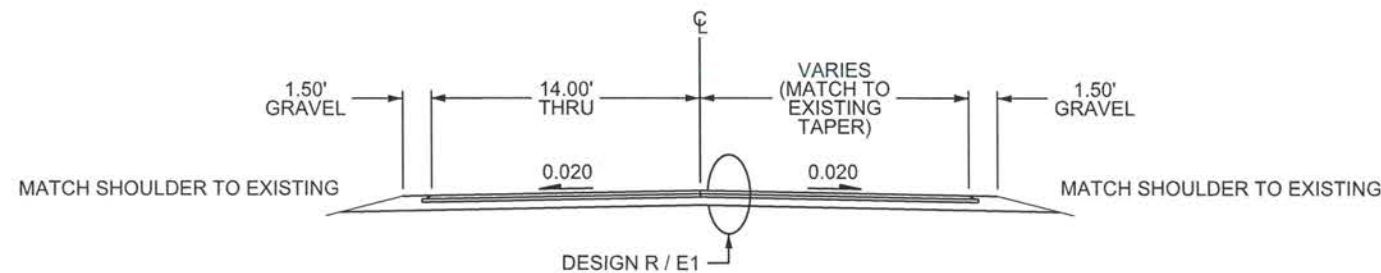


5" EXISTING BITUMINOUS  
 BITUMINOUS STABILIZED SAND

### 229TH AVE NW - CSAH 24

#### RECLAIM SECTION

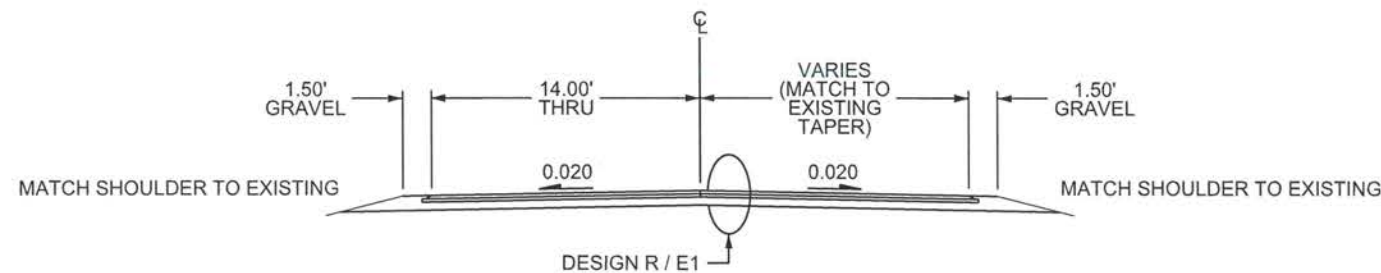
82+64 - 84+32



### 229TH AVE NW - CSAH 24

#### RECLAIM SECTION

82+64 - 84+32



NO	DATE	BY	CKD	APPR	REVISION	TIME
	04/02/2015					10:00:08 AM

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ANOKA COUNTY  
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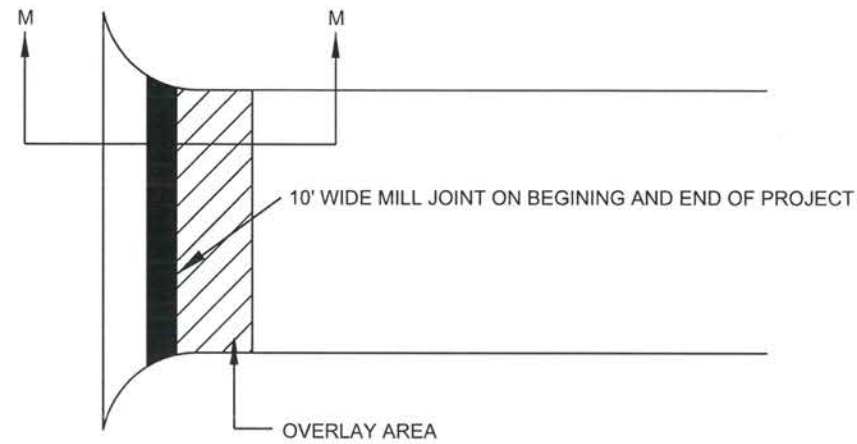
COUNTY PROJECT 15-20-24

TYPICAL SECTIONS  
 Sheet 5 of 17 Sheets

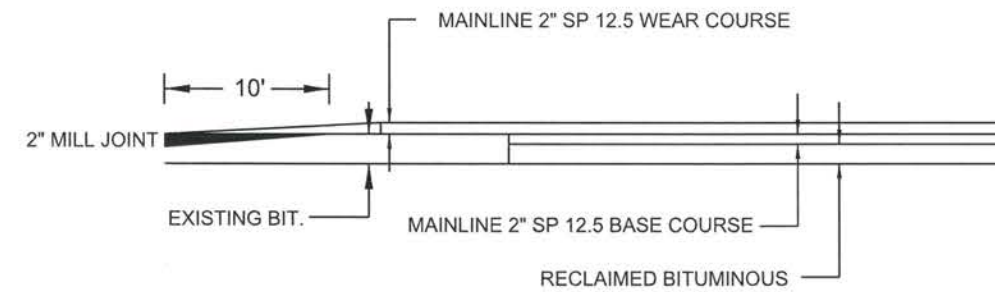
mjohn

### MAINLINE JOINT DETAIL

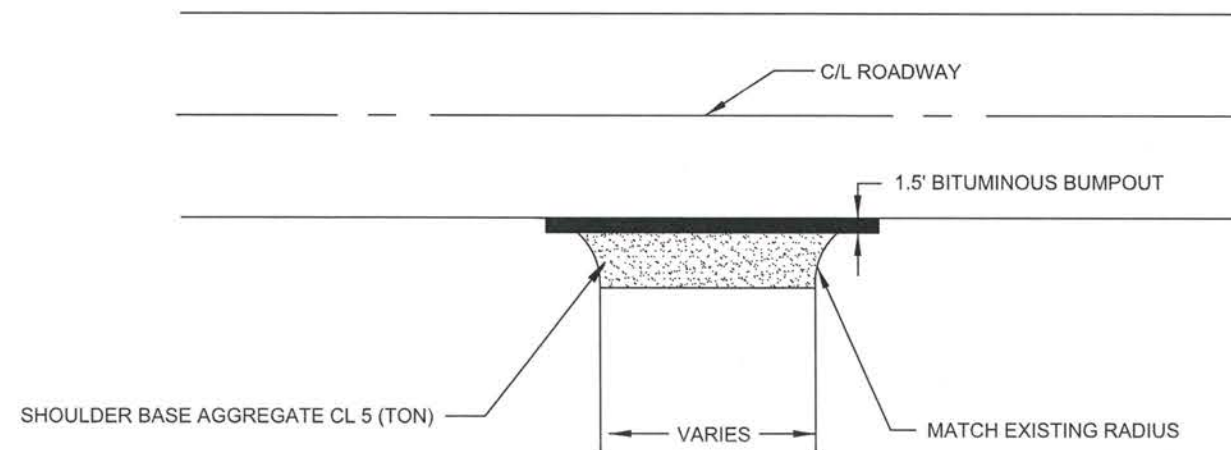
PLAN VIEW



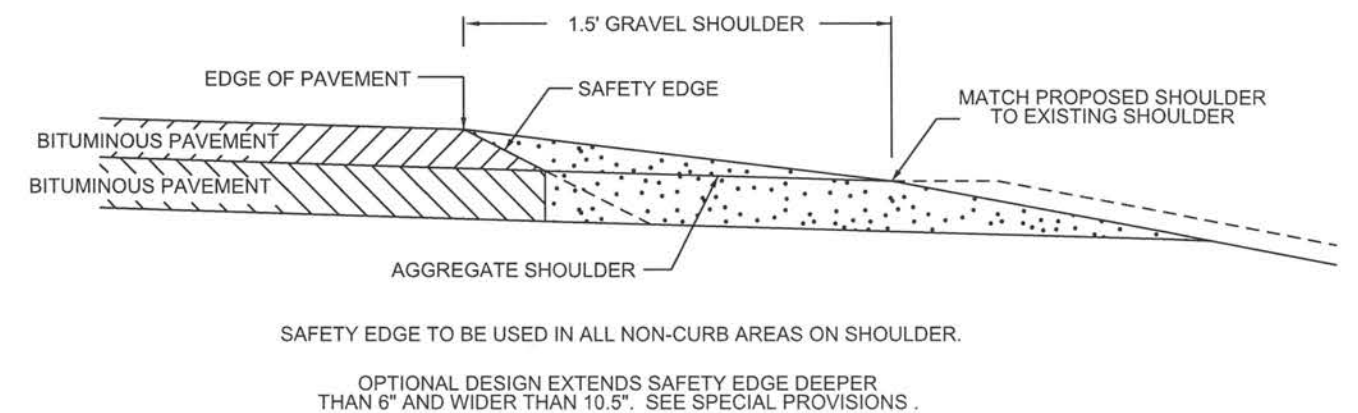
SECTION M - M



### DRIVEWAY DETAIL GRAVEL / FIELD ENTRANCE



### SHOULDER DETAIL BITUMINOUS SAFETY EDGE GRAVEL SHOULDER



NO	DATE	BY	CKD	APPR	REVISION	TIME
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ANOKA COUNTY  
HIGHWAY DEPT.

COUNTY PROJECT 15-20-24

DETAILS

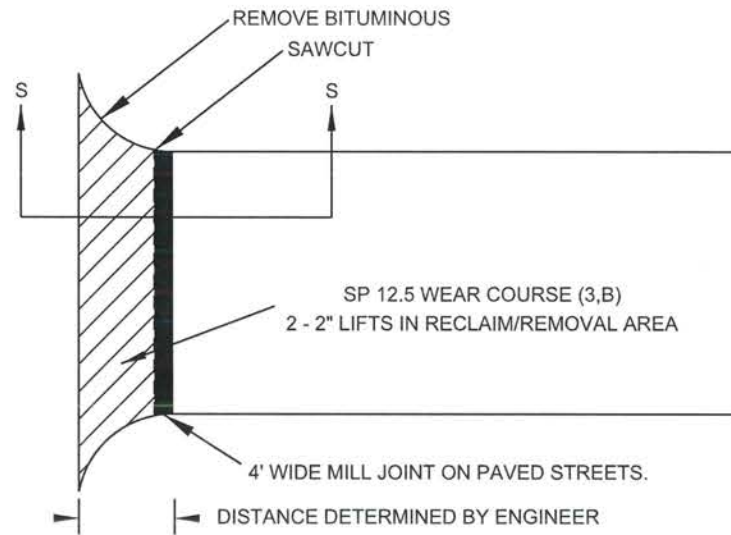
Sheet 6 of 17 Sheets

mjohn

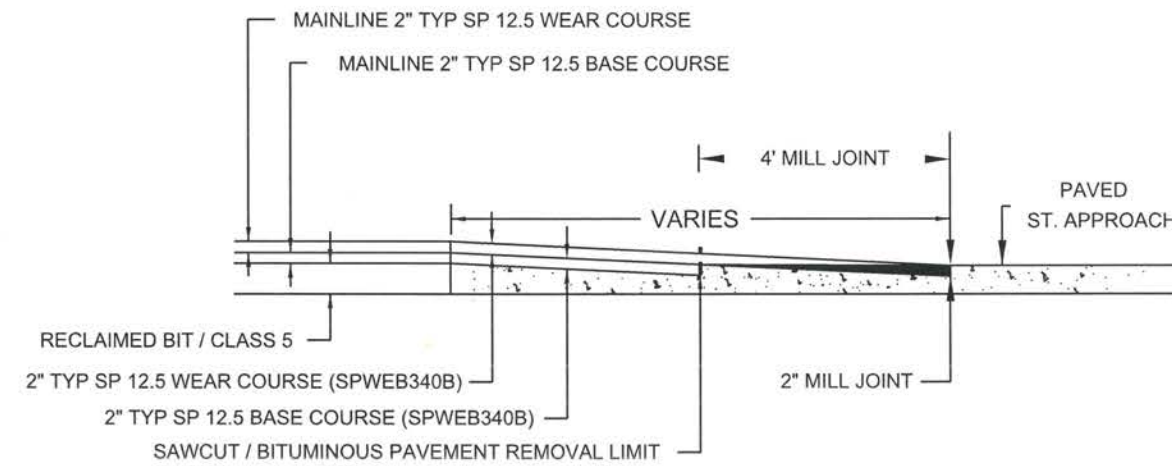
# STREET APPROACH DETAIL

## BITUMINOUS STREET

PLAN VIEW



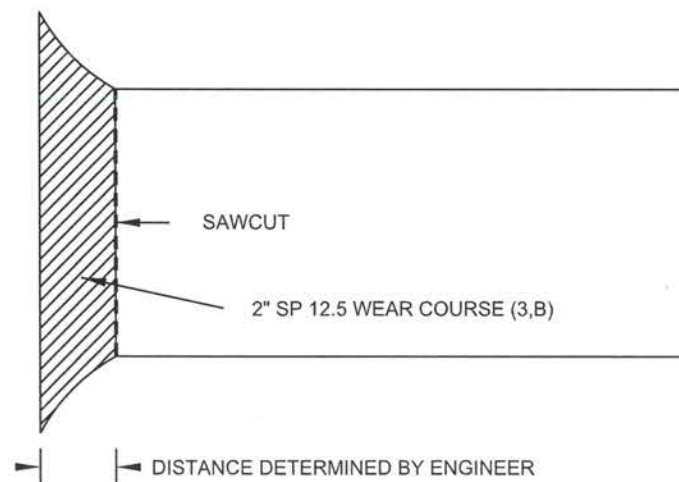
SECTION S - S



# DRIVEWAY DETAIL

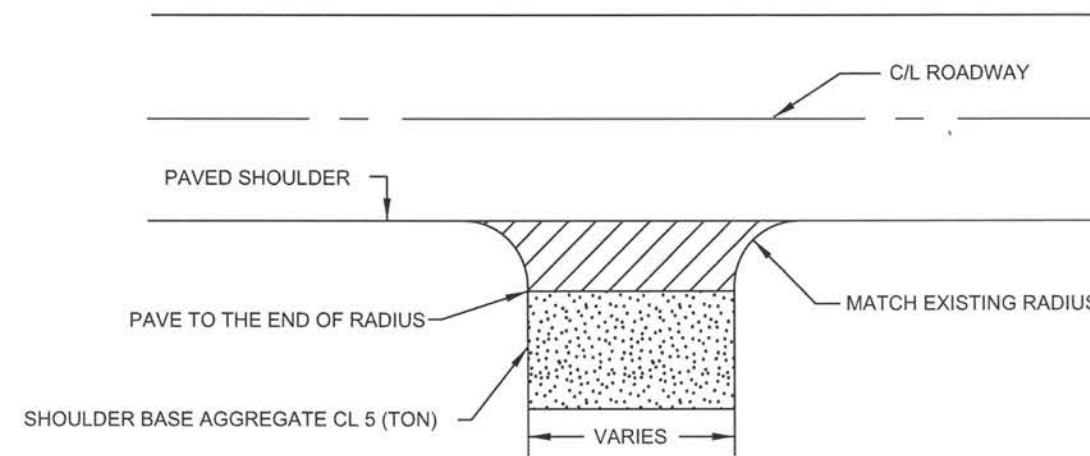
## BITUMINOUS

PLAN VIEW



# STREET APPROACH DETAIL

## UNPAVED STREET



UNPAVED STREET APPROACHES, PAVED SEPRATE FROM MAINLINE

NO	DATE	BY	CKD	APPR	REVISION	DATE	TIME
						04/02/2015	10:00:11 AM

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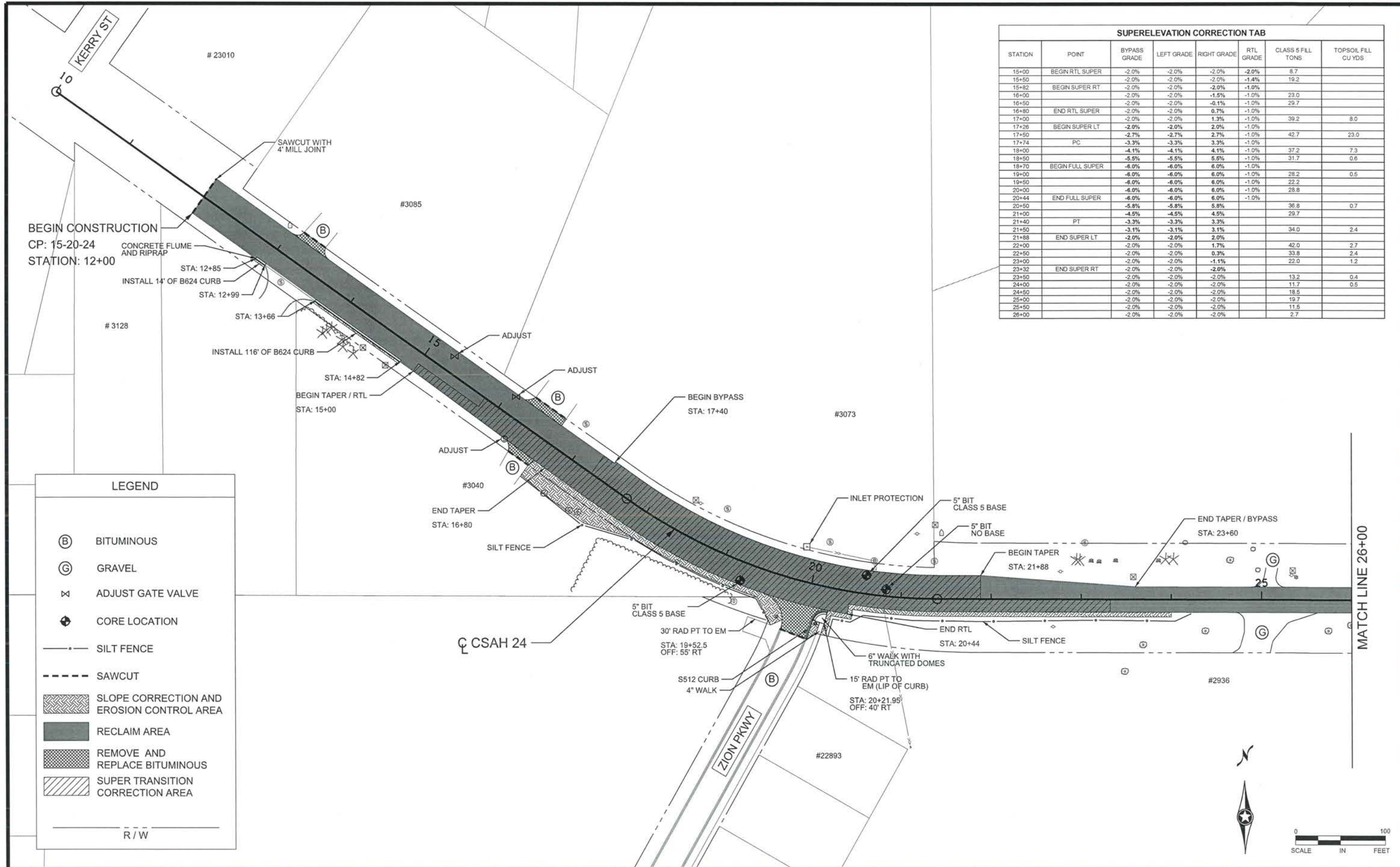
ANOKA COUNTY  
HIGHWAY DEPT.

COUNTY PROJECT 15-20-24

DETAILS

Sheet 7 of 17 Sheets

mjohn



SUPERELEVATION CORRECTION TAB							
STATION	POINT	BYPASS GRADE	LEFT GRADE	RIGHT GRADE	RTL GRADE	CLASS 5 FILL TONS	TOPSOIL FILL CU YDS
15+00	BEGIN RTL SUPER	-2.0%	-2.0%	-2.0%	-2.0%	8.7	
15+50		-2.0%	-2.0%	-2.0%	-1.4%	19.2	
15+82	BEGIN SUPER RT	-2.0%	-2.0%	-2.0%	-1.0%		
16+00		-2.0%	-2.0%	-1.5%	-1.0%	23.0	
16+50		-2.0%	-2.0%	-0.1%	-1.0%	29.7	
16+80	END RTL SUPER	-2.0%	-2.0%	0.7%	-1.0%		8.0
17+00		-2.0%	-2.0%	1.3%	-1.0%	39.2	
17+26	BEGIN SUPER LT	-2.0%	-2.0%	2.0%	-1.0%		23.0
17+50		-2.7%	-2.7%	2.7%	-1.0%	42.7	
17+74	PC	-3.3%	-3.3%	3.3%	-1.0%		
18+00		-4.1%	-4.1%	4.1%	-1.0%	37.2	7.3
18+50		-5.5%	-5.5%	5.5%	-1.0%	31.7	0.6
18+70	BEGIN FULL SUPER	-6.0%	-6.0%	6.0%	-1.0%		
19+00		-6.0%	-6.0%	6.0%	-1.0%	28.2	0.5
19+50		-6.0%	-6.0%	6.0%	-1.0%	22.2	
20+00		-6.0%	-6.0%	6.0%	-1.0%	28.8	
20+44	END FULL SUPER	-6.0%	-6.0%	6.0%	-1.0%		
20+50		-5.8%	-5.8%	5.8%		36.8	0.7
21+00		-4.5%	-4.5%	4.5%		29.7	
21+40	PT	-3.3%	-3.3%	3.3%			
21+50		-3.1%	-3.1%	3.1%		34.0	2.4
21+88	END SUPER LT	-2.0%	-2.0%	2.0%			
22+00		-2.0%	-2.0%	1.7%		42.0	2.7
22+50		-2.0%	-2.0%	0.3%		33.8	2.4
23+00		-2.0%	-2.0%	-1.1%		22.0	1.2
23+32	END SUPER RT	-2.0%	-2.0%	-2.0%			
23+50		-2.0%	-2.0%	-2.0%		13.2	0.4
24+00		-2.0%	-2.0%	-2.0%		11.7	0.5
24+50		-2.0%	-2.0%	-2.0%		18.5	
25+00		-2.0%	-2.0%	-2.0%		19.7	
25+50		-2.0%	-2.0%	-2.0%		11.5	
26+00		-2.0%	-2.0%	-2.0%		2.7	

**LEGEND**

- (B) BITUMINOUS
- (G) GRAVEL
- ⊗ ADJUST GATE VALVE
- ⊕ CORE LOCATION
- SILT FENCE
- - - SAWCUT
- [Hatched Box] SLOPE CORRECTION AND EROSION CONTROL AREA
- [Solid Grey Box] RECLAIM AREA
- [Cross-hatched Box] REMOVE AND REPLACE BITUMINOUS
- [Diagonal Hatched Box] SUPER TRANSITION CORRECTION AREA
- R/W

MATCH LINE 26+00



NO	DATE	BY	CKD	APPR	REVISION	TIME
	04/02/2015					10:00:12 AM

NAME: P:\15-01-00\CSAH\_24(LakeGeorgeBvd-Nightingale)\Base\PROPOSED\TEMPLATE\_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: 4/2/15 LICENSE NO. 51639

DRAWN BY: JJ DATE: 04/02/2015  
 DESIGN BY: JJ DATE: 04/02/2015  
 CHECKED BY: MJ DATE: 04/02/2015



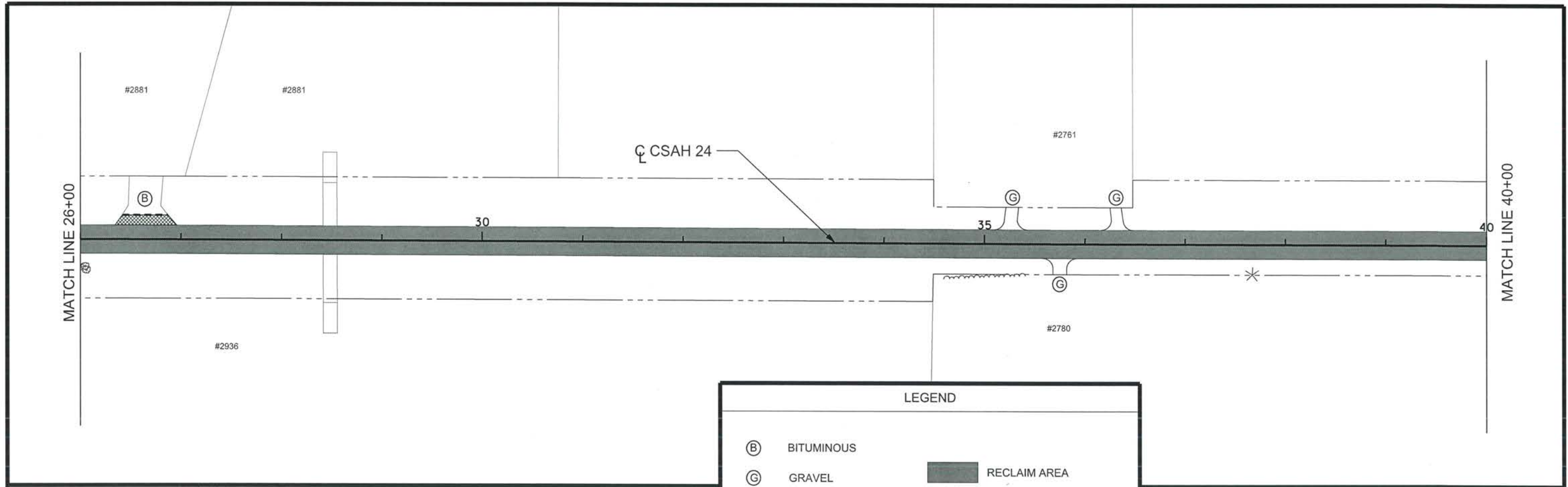
**ANOKA COUNTY  
HIGHWAY DEPT.**

COUNTY PROJECT 15-20-24

CONSTRUCTION PLAN  
 STA 10+00 TO 26+00  
 Sheet 8 of 17 Sheets

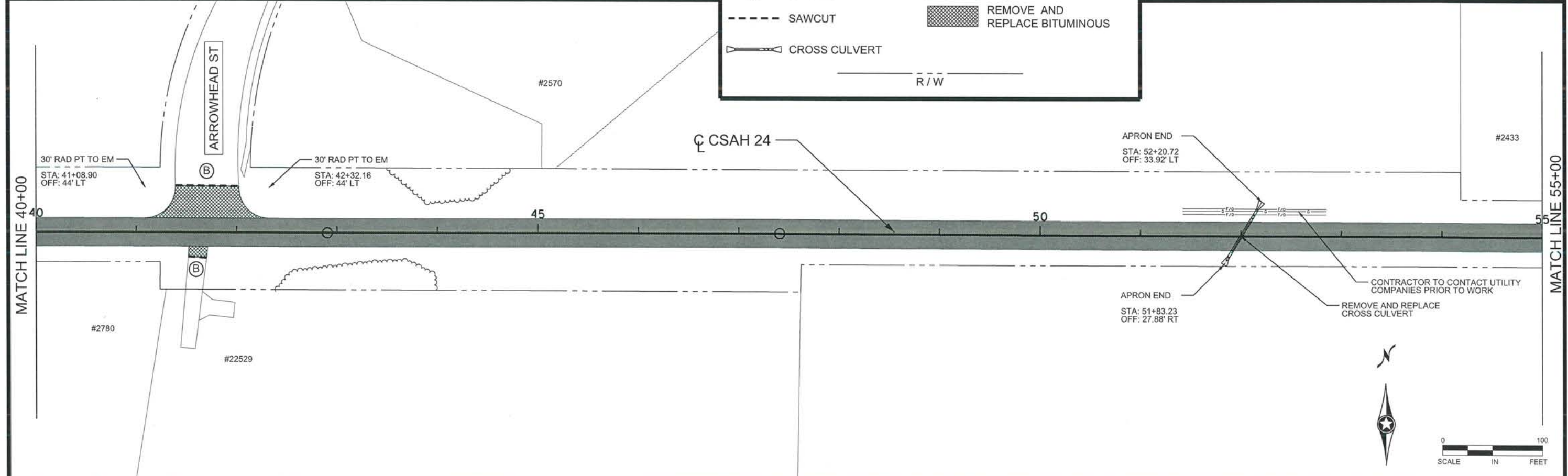


mjohn



**LEGEND**

(B)	BITUMINOUS		RECLAIM AREA
(G)	GRAVEL		REMOVE AND REPLACE BITUMINOUS
- - -	SAWCUT		
	CROSS CULVERT		
			R/W



NO	DATE	BY	CKD	APPR	REVISION	TIME
	04/02/2015					10:00:13 AM

NAME: P:\15-01-00\CSAH\_24(LakeGeorgeBlvd-Nightingale)\Base\PROPOSED\TEMPLATE\_PLAN.dgn

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 SIGNATURE: *[Signature]*  
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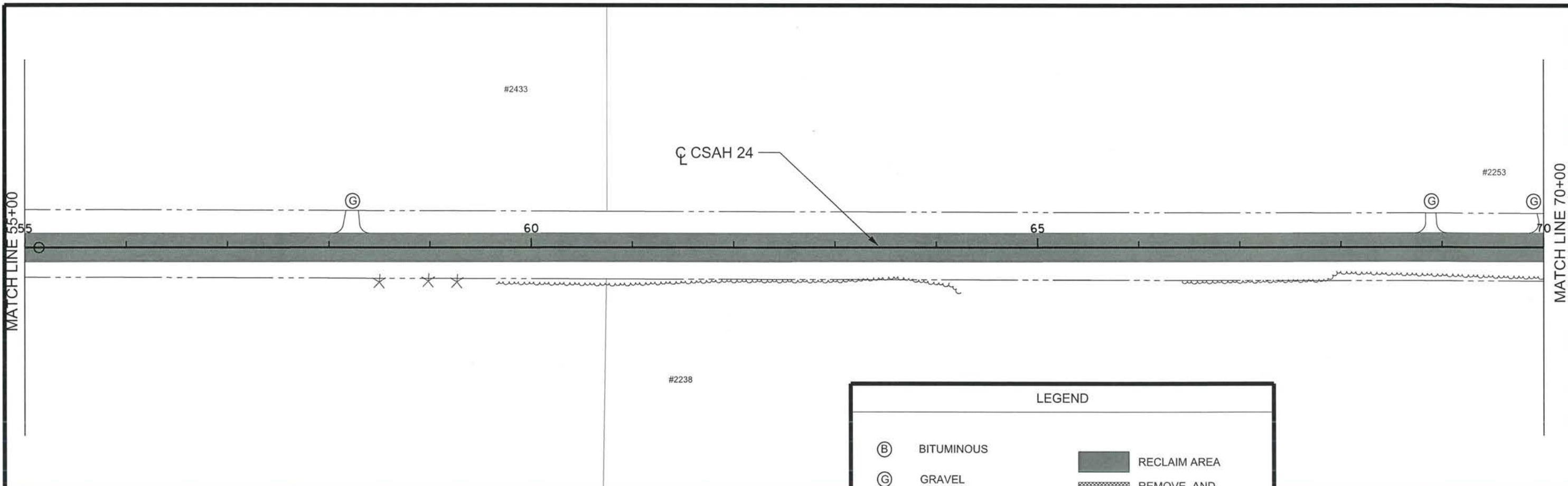


**ANOKA COUNTY  
HIGHWAY DEPT.**

COUNTY PROJECT 15-20-24

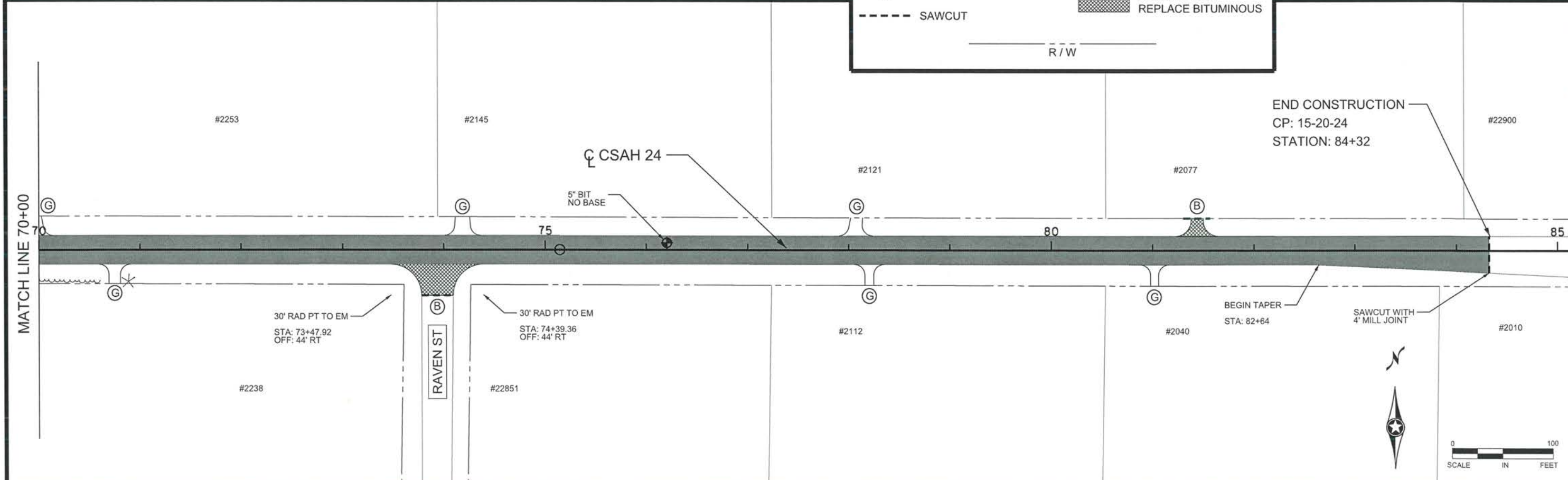
**CONSTRUCTION PLAN**  
 STA 26+00 TO 55+00  
 Sheet 9 of 17 Sheets

mjohn



**LEGEND**

(B)	BITUMINOUS		RECLAIM AREA
(G)	GRAVEL		REMOVE AND REPLACE BITUMINOUS
- - -	SAWCUT		
— R/W —			



END CONSTRUCTION  
 CP: 15-20-24  
 STATION: 84+32



NO	DATE	BY	CKD	APPR	REVISION	TIME

NAME: P:\15-01-00\CSAH\_24(LakeGeorgeBlvd-Nightingale)\Base\PROPOSED\TEMPLATE\_PLAN.dgn

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 SIGNATURE: *[Signature]*  
 DATE: 4/2/15 LICENSE NO. 51639

DRAWN BY JJ DATE 04/02/2015  
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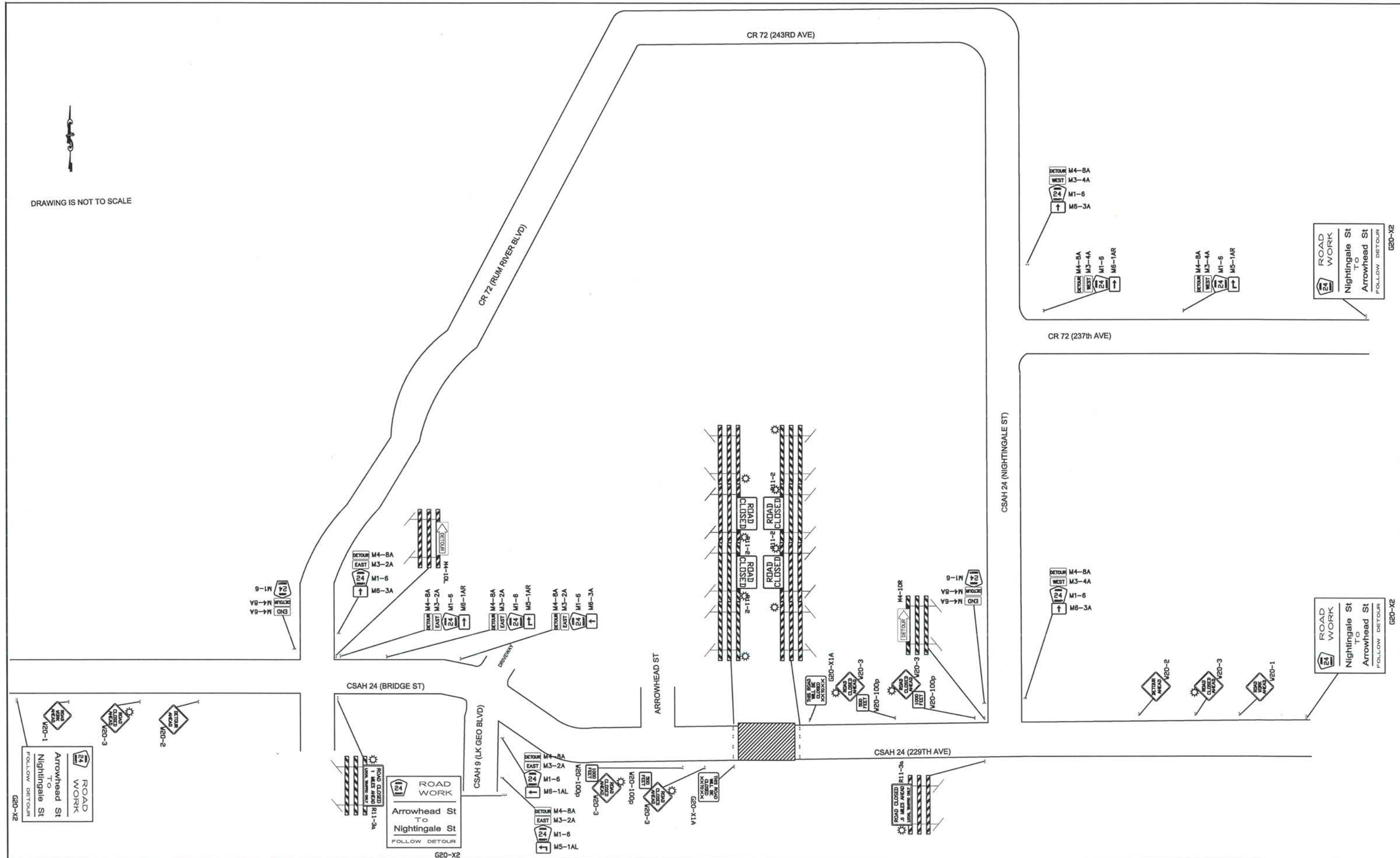


**ANOKA COUNTY  
 HIGHWAY DEPT.**

COUNTY PROJECT 15-20-24

**CONSTRUCTION PLAN**  
 STA 55+00 TO 84+32  
 Sheet 10 of 17 Sheets

DRAWING IS NOT TO SCALE



NO	DATE	BY	CKD	APPR	REVISION

NAME: T:\Traffic\dwg\CR72\from CSAH 24 (Bridge St) to CSAH 24 (237th Ave).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: **4/2/15** LICENSE NO. **51639**

DRAWN BY: **TV** DATE: **02/2015**  
 DESIGN BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

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

STATE PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 CITY PROJECT NO. \_\_\_\_\_  
 COUNTY PROJECT NO. **15-20-24**

**CULVERT**  
**DETOUR PLAN**  
 Sheet **11** of **17** Sheets

M. U. T. C. D. CODE	SIZE	INSERT	QUANTITY
W20-1	48' X 48'		2
W20-2	48' X 48'		2
W20-3	48' X 48'		6
W20-100p	24' X 18'		2
W20-100p	24' X 18'		2
M4-10L	48' X 18'		SEE NOTE
TYPE III	8 FOOT		②
			1
M4-10R	48' X 18'		SEE NOTE
TYPE III	8 FOOT		②
			1
R11-3a	48' X 30'		SEE NOTE
TYPE III	8 FOOT		②
FLASHER			1
R11-3a	48' X 30'		SEE NOTE
TYPE III	8 FOOT		②
FLASHER			1
R11-2	48' X 30'		SEE NOTE
TYPE III	8 FOOT		②
FLASHER			2

M. U. T. C. D. CODE	SIZE	INSERT	QUANTITY
R11-2	48' X 30'		SEE NOTE
TYPE III	8 FOOT		②
FLASHER			2
TYPE III	8 FOOT		SEE NOTE
FLASHER			②
			2
TYPE III	8 FOOT		SEE NOTE
FLASHER			②
			2
G20-X1A	60' X 48'		2
G20-X2	132' X 108'		2
G20-X2	132' X 108'		2

M. U. T. C. D. CODE	SIZE	INSERT	QUANTITY
M4-8A	24' X 12'		6
M3-2A	24' X 12'		6
M1-6	24' X 24'		6
	21' X 15'		M6-1AL
			M5-1AL
			M6-1AR
			M5-1AR
			M6-3A
	24' X 12'		4
	24' X 12'		4
	24' X 24'		4
M4-8A	21' X 15'		M6-1AR
M3-4A			M5-1AR
M1-6			M6-3A
M4-6A	24' X 12'		M4-6A
M4-8A	24' X 12'		M4-8A
M1-6	24' X 24'		M1-6

\* G20-X1A SIGN TO BE INSTALLED A MINIMUM OF SEVEN DAYS PRIOR TO ACTUAL CLOSING DATE OF ROAD CLOSURE AND IMPLEMENTATION OF DETOUR SIGNING. SIGNS TO BE REMOVED AT TIME OF DETOUR INSTALLATION.

NOTES:

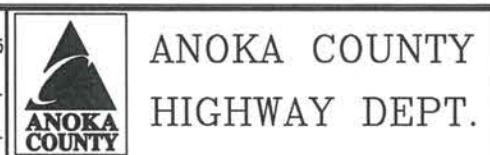
1. ALL BARRICADES SHALL BE PROPERLY WEIGHTED WITH SANDBAGS.
2. ALL BARRICADES SHALL HAVE REFLECTIVE MATERIAL ON BOTH SIDES.
3. ALL BARRICADE MARKINGS SHALL BE SLANTED IN ACCORDANCE WITH THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL, DATED JANUARY 2014.
4. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MOST RECENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE FIELD MANUAL, DATED JANUARY 2014.
5. ADDITIONS OR CHANGES TO THIS PLAN MAY BE MADE AS DETERMINED BY THE ENGINEER.

NO	DATE	BY	CKD	APPR	REVISION

NAME: T:\Traffic\dwg\CR72\from CSAH 24 (Bridge St) to CSAH 24 (237th Ave).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:   
 DATE: 4/2/15 LICENSE NO.: 51639

DRAWN BY: TV DATE: 02/2015  
 DESIGN BY: DATE: \_\_\_\_\_  
 CHECKED BY: DATE: \_\_\_\_\_



STATE PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 CITY PROJECT NO. \_\_\_\_\_  
 COUNTY PROJECT NO. 15-20-24

CULVERT DETOUR  
SIGN QUANTITIES  
Sheet 12 of 17 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 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	15935
4" BROKEN LINE WHITE - EPOXY PAINT	LIN FT	80
4" SOLID LINE YELLOW - EPOXY PAINT	LIN FT	1815
4" BROKEN LINE YELLOW - EPOXY PAINT	LIN FT	1320
4" DOUBLE SOLID LINE YELLOW - EPOXY PAINT	LIN FT	1200

**SYMBOLS & MATERIALS LEGEND**

■ CROSSWALK BLOCK WHITE PREFORMED THERMOPLASTIC

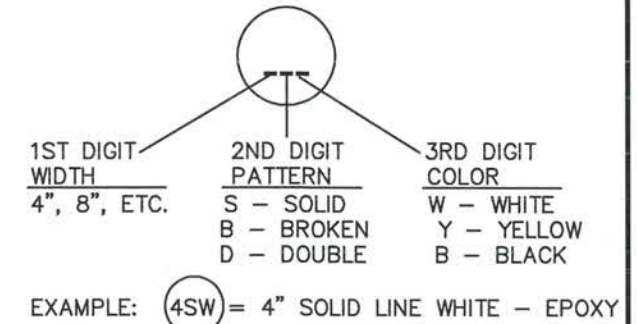
↩ PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC

**STRIPING KEY**

○ CIRCLE - EPOXY    □ SQUARE PREFORMED THERMOPLASTIC

△ TRIANGLE - PAINT

⬠ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



NO	DATE	BY	CKD	APPR	REVISION

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 PRINT NAME: MATTHEW J. JOHN  
 SIGNATURE: *[Signature]*  
 DATE: 4/2/15 LICENSE NO. 51639

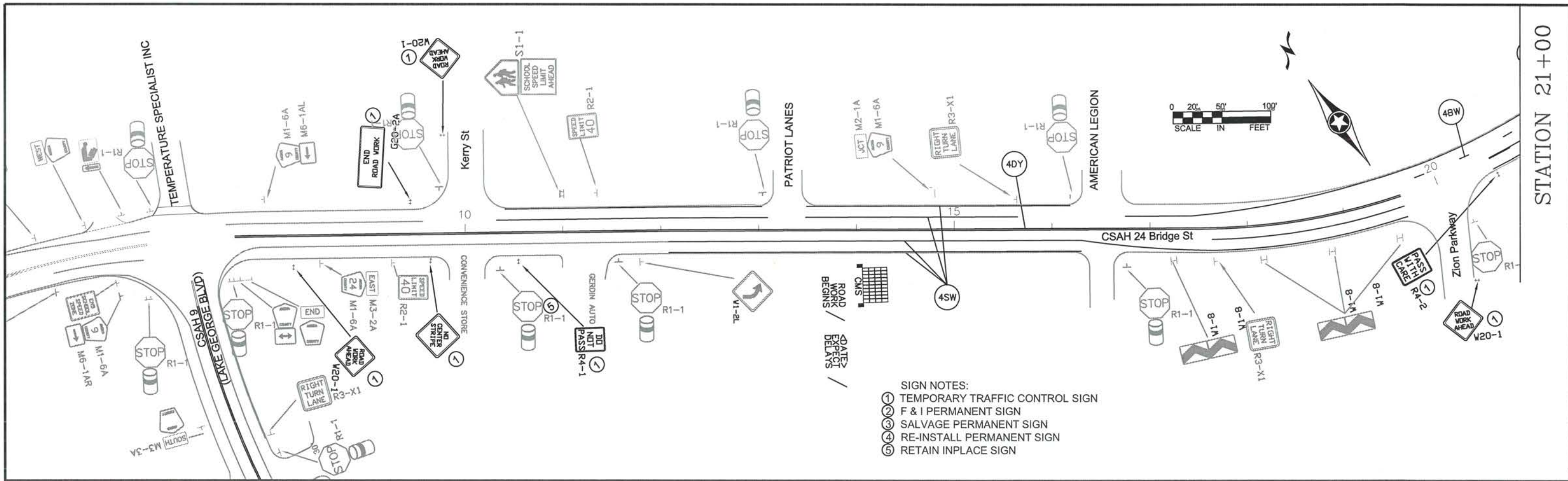
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 DESIGN BY: RLB DATE: 2/14/14  
 CHECKED BY: JR DATE: 2/14/14



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

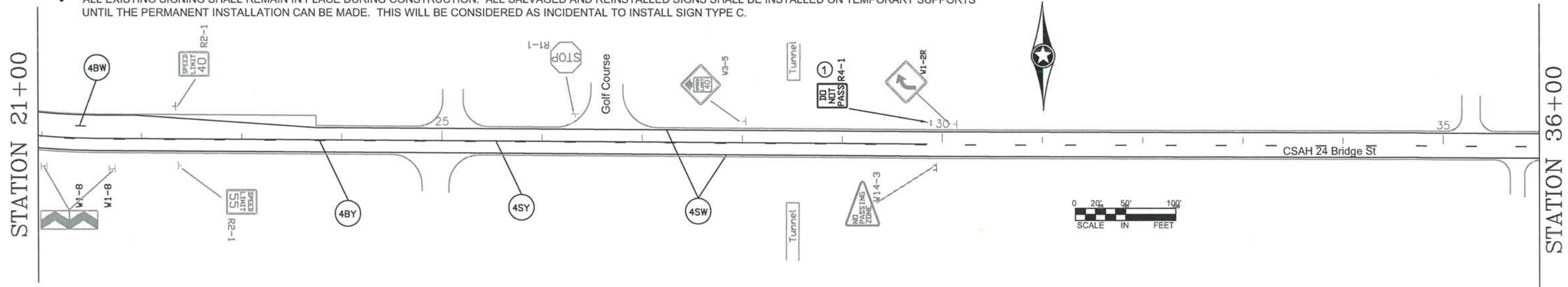
STATE PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 COUNTY PROJECT NO. 15-20-24

PERMANENT MARKING  
TABULATION  
 Sheet 13 of 17 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.



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: *[Signature]*

DATE: 4/2/15 REG. NO. 51639

DRAWN BY: RLB DATE 1/7/14

DESIGN BY: RLB DATE 1/7/14

CHECKED BY: JR DATE 1/7/14

**ANOKA COUNTY**  
HIGHWAY DEPT.

STATE PROJECT NO. \_\_\_\_\_

STATE AID PROJECT NO. \_\_\_\_\_

STATE AID PROJECT NO. \_\_\_\_\_

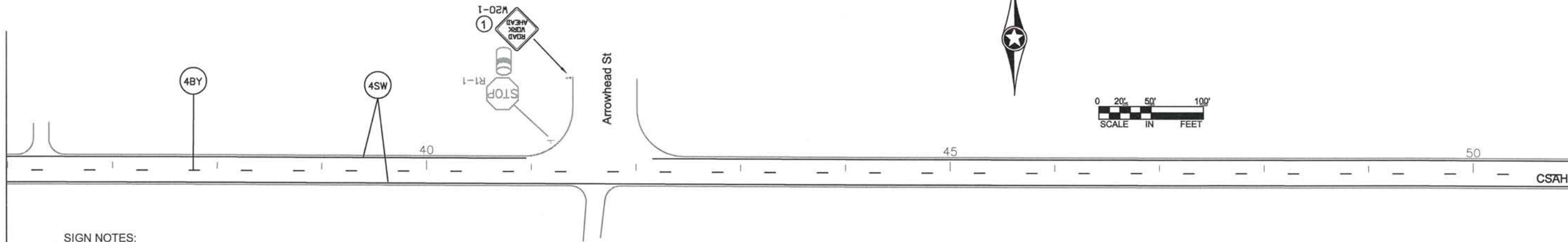
COUNTY PROJECT NO. 15-20-24

TEMPORARY SIGNING,  
PERMANENT SIGNING  
AND STRIPING

Sheet 14 of 17 Sheets

STATION 36+00

STATION 51+00



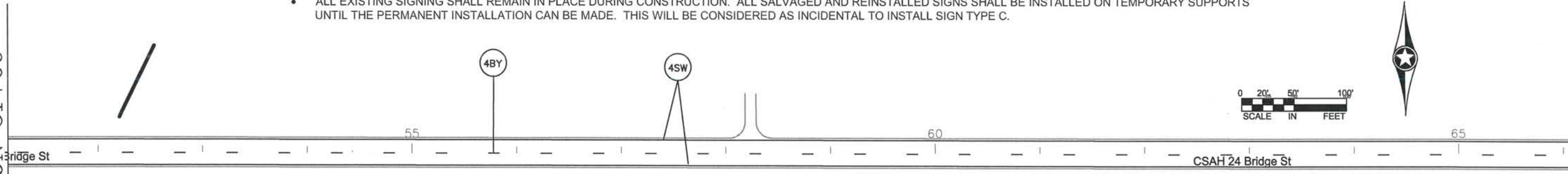
- SIGN NOTES:
- ① TEMPORARY TRAFFIC CONTROL SIGN
  - ② F & I PERMANENT SIGN
  - ③ SALVAGE PERMANENT SIGN
  - ④ RE-INSTALL PERMANENT SIGN
  - ⑤ RETAIN INPLACE SIGN

NOTES:

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STATION 51+00

STATION 66+00



NO	DATE	BY	CKD	APPR	REVISION

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PRINT NAME: MATTHEW J. JOHN

SIGNATURE: *[Signature]*

DATE: 4/2/15 REG. NO. 51639

DRAWN BY: RLB DATE: 1/7/14

DESIGN BY: RLB DATE: 1/7/14

CHECKED BY: JR DATE: 1/7/14



ANOKA COUNTY  
HIGHWAY DEPT.

STATE PROJECT NO. \_\_\_\_\_

STATE AID PROJECT NO. \_\_\_\_\_

STATE AID PROJECT NO. \_\_\_\_\_

COUNTY PROJECT NO. 15-20-24

TEMPORARY SIGNING,  
PERMANENT SIGNING  
AND STRIPING

Sheet 15 of 17 Sheets

NOTES:

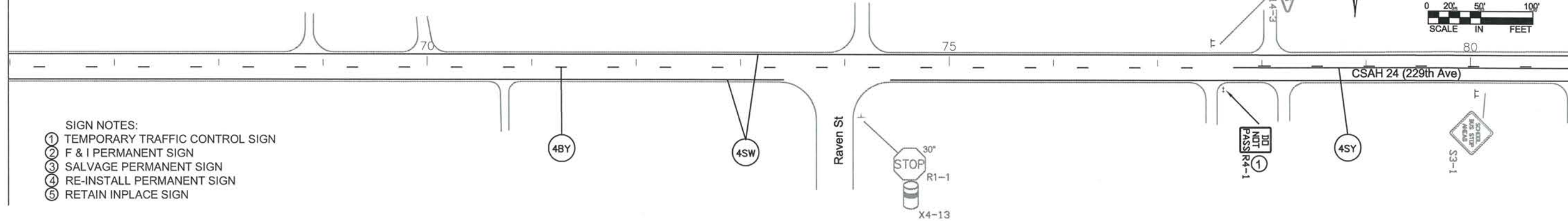
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- ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. ALL SALVAGED AND REINSTALLED SIGNS SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE. THIS WILL BE CONSIDERED AS INCIDENTAL TO INSTALL SIGN TYPE C.

SIGN NOTES:

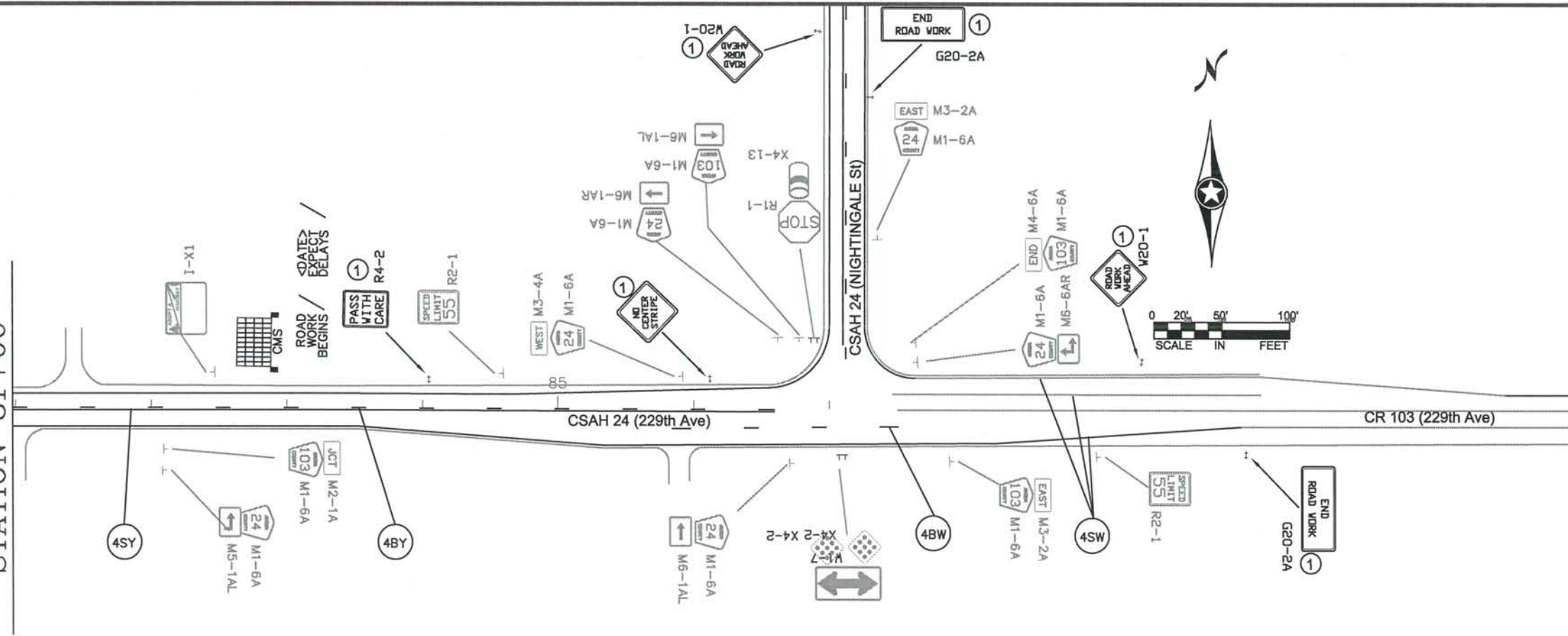
- ① TEMPORARY TRAFFIC CONTROL SIGN
- ② F & I PERMANENT SIGN
- ③ SALVAGE PERMANENT SIGN
- ④ RE-INSTALL PERMANENT SIGN
- ⑤ RETAIN INPLACE SIGN

STATION 66+00

STATION 81+00



STATION 81+00



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: 4/2/15 REG. NO. 51639

DRAWN BY: RLB DATE 1/7/14  
 DESIGN BY: RLB DATE 1/7/14  
 CHECKED BY: JR DATE 1/7/14



ANOKA COUNTY  
 HIGHWAY DEPT.

STATE PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 COUNTY PROJECT NO. 15-20-24

TEMPORARY SIGNING,  
 PERMANENT SIGNING  
 AND STRIPING

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. <sup>2</sup>	INSERT	QUANTITY		MOUNTING HEIGHT TO PAVEMENT EDGE FT.
				No.	POST	
W8-12	48" x 48"	16.00		2	2	7.0'
R4-1	24" x 30"	5.00		3	1	7.0'
R4-2	24" x 30"	5.00		2	1	7.0'
G20-2A	48" x 24"	8.00		3	2	7.0'
W8-1A	48" x 48"	16.00		AS NEEDED		
W8-1A	48" x 48"	16.00		AS NEEDED		
W8-8	48" x 48"	16.00		AS NEEDED		
W8-9	48" x 48"	16.00		AS NEEDED		
	48" x 48"	16.00		AS NEEDED		
W8-11	48" x 48"	16.00		AS NEEDED		
W20-1	48" x 48"	16.00		AS NEEDED (ESTIMATED 6)		
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".
- 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.

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.

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 PRINT NAME: MATTHEW J. JOHN  
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TRAFFIC CONTROL  
 QUANTITY  
 Sheet 17 of 17 Sheets