

# MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

CONSTRUCTION PLAN FOR \_\_\_\_\_ BITUMINOUS RECLAMATION AND BITUMINOUS SURFACING \_\_\_\_\_

LOCATED ON CSAH 24 BETWEEN CSAH 13 AND TH 65

### 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 21 SHEETS

### INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES
3	TYPICAL SECTIONS
4 - 7	DETAILS
8 - 10	CONSTRUCTION PLAN
11	PERMANENT MARKING TABULATION
12 - 14	TEMPORARY SIGNING, PERMANENT SIGNING, AND STRIPING
15	TRAFFIC CONTROL QUANTITY
16 - 17	SIGNING AND STRIPING DETAILS
18 - 21	ORIGINAL SIGNAL PLANS (FOR REFERENCE ONLY)



END CP 17-19-24  
CSAH 24, STA: 138+03

BEGIN CP 17-19-24  
CSAH 24, STA: 60+60

### PROJECT LOCATION

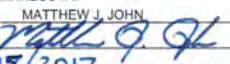
CSAH 24			
GROSS LENGTH	7743 FEET	1.466 MILES	
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES	
NET LENGTH	7743 FEET	1.466 MILES	
DESIGN SPEED	55 MPH		
CURRENT ADT	3123		



CITY OF EAST BETHEL  
ANOKA COUNTY  
MN/DOT TRANSPORTATION DISTRICT - METRO  
SECTION 30  
TOWNSHIP 34 NORTHWEST  
RANGE 23 WEST

Approved:  4/7/2017  
ANOKA COUNTY ENGINEER

NO	DATE	BY	CKD	APPR	REVISION	03/15/2017	8:29:00 AM
NAME: P:\17-01-00\CSAH_24_(CityLimits-TH65)\Base\PROPOSED\PROPOSED.dgn							

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



ANOKA COUNTY  
HIGHWAY DEPT.

COUNTY PROJECT 17-19-24

TITLE SHEET  
Sheet 1 of 21 Sheets



**STATEMENT OF ESTIMATED QUANTITIES**

ITEM NUMBER	ITEM DESCRIPTION	NOTES	UNIT	TOTAL PROJECT QUANTITIES ESTIMATED
2021.501	MOBILIZATION		LUMP SUM	1
2102.501	PAVEMENT MARKING REMOVAL		SQ FT	144
2104.505	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	1	SQ YD	187
2104.505	REMOVE BITUMINOUS PAVEMENT		SQ YD	1116
2104.505	REMOVE CONCRETE DRIVEWAY PAVEMENT	1	SQ YD	34
2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)		LIN FT	16
2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)		LIN FT	439
2104.523	SALVAGE SIGN TYPE C	17	EACH	1
2123.503	MOTOR GRADER	2	HOUR	25
2130.501	WATER		MGAL	155
2211.501	AGGREGATE BASE CLASS 5	3	TON	382
2215.501	FULL DEPTH RECLAMATION		SQ YD	22074
2215.502	HAUL FULL DEPTH RECLAMATION (LV)	4	CU YD	120
2221.501	SHOULDER BASE AGGREGATE CLASS 5	5	TON	640
2231.501	BITUMINOUS PATCHING MIXTURE	6	TON	10
2232.604	MILL BITUMINOUS PAVEMENT (SPECIAL)	7	SQ YD	120
2357.502	BITUMINOUS MATERIAL FOR TACK COAT		GAL	1307
2360.501	TYPE SP 12.5 WEARING COURSE MIX (3,B)	1.8	TON	729
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,C)		TON	5675
2511.501	RANDOM RIPRAP CLASS III		CU YD	13
2515.000	GEOTEXTILE FILTER TYPE IV		SQ YD	27
2531.507	6" CONCRETE DRIVEWAY PAVEMENT	1	SQ YD	34
2540.602	MAIL BOX SUPPORT	9	EACH	23
2550.602	LOOP DETECTOR DESIGN NMC	10	EACH	2
2563.601	TRAFFIC CONTROL	11	LUMP SUM	1
2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	12	UNIT DAY	14
2564.602	INSTALL SIGN	17	EACH	1
2574.525	COMMON TOPSOIL BORROW (LV)	13	CU YD	165
2575.523	EROSION CONTROL BLANKETS CATEGORY 0	14	SQ YD	680
2581.501	REMOVABLE PREFORMED PAVEMENT MARKING TAPE	15	LIN FT	312
2582.501	PAVEMENT MESSAGE PREFORM THERMOPLASTIC	16	SQ FT	195
2582.502	4" SOLID LINE EPOXY	16	LIN FT	19170
2582.502	4" BROKEN LINE EPOXY	16	LIN FT	1090
2582.502	4" DBLE SOLID LINE EPOXY	16	LIN FT	2350

**CONSTRUCTION NOTES**

1	CONTRACTOR IS RESPONSIBLE FOR CONTACTING PROPERTY OWNER 48 HOURS BEFORE STARTING OPERATION.
2	ITEM USED TO MOVE EXCESS RECLAIM MATERIAL AT THE RECLAIM AREA LIMITS TO CREATE A SMOOTH TRANSITION BETWEEN THE PROPOSED AND EXISTING PAVEMENT.
3	GRAVEL BASE FOR CONCRETE, BITUMINOUS STREET APPROACHES, DRIVEWAYS, AND CULVERT PATCHES.
4	MATERIAL SHALL BE HAULED AND USED FOR PROFILE AND SUPERELEVATION CORRECTION AREAS. ITEM INCLUDES PLACEMENT, SHAPING, COMPACTION, AND MAINTENANCE OF MATERIAL. EXCESS MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
5	ITEM INCLUDES 7 TONS FOR EACH GRAVEL ENTRANCE AND GRAVEL STREET APPROACH.
6	ITEM USED FOR PAVING BITUMINOUS FLUMES.
7	ITEM USED FOR MILLING STREET APPROACHES AND/OR DETAIL MILLING AREAS AS IDENTIFIED IN THE PLAN. DETAIL MILLING AROUND MANHOLES, CATCH BASINS, GATE VALVES, AND ALONG CURB LINE IS INCIDENTAL TO THIS ITEM.
8	ITEM FOR BITUMINOUS DRIVEWAY AND STREET APPROACHES. DRIVEWAY AND STREET APPROACHES SHALL BE PAVED AFTER MAINLINE PAVING AND BEFORE FINAL STRIPING.
9	MAILBOXES ARE TO BE INSTALLED AT THE EXISTING MAILBOX LOCATION OR AS DIRECTED BY THE LOCAL POSTAL AUTHORITY, CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE LOCAL POSTAL AUTHORITY. MAILBOX REMOVAL AND ALL MATERIALS ARE INCIDENTAL TO INSTALLATION.
10	LOOP REPLACEMENT REQUIRED ONLY IF DAMAGED DURING CONSTRUCTION OPERATIONS. ORIGINAL SIGNAL PLANS ARE INCLUDED AT THE END OF THIS PLAN.
11	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 IN PLACE WHENEVER PAVEMENT MARKINGS ARE NOT PRESENT.
12	2 MESSAGE BOARDS, ONE ON THE EACH END OF PROJECT, WILL BE INSTALLED 7 DAYS PRIOR TO ANY CONSTRUCTION; REFERENCE STRIPING PLAN FOR DETAILS.
13	ITEM USED AT THE ENGINEER'S DISCRETION FOR THE RESTORATION OF DISTURBED AREAS ALONG DRIVEWAY AND STREET APPROACHES.
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 IN PLACE BEFORE THE CONTRACTOR LEAVES FOR THE DAY. CONTRACTOR SHALL REMOVE PRIOR TO FINAL PAINT STRIPING.
16	FINAL STRIPING SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLETION OF MAINLINE WEAR COURSE PAVING.
17	ITEM FOR SALVAGING SIGNS. SEE TEMP. SIGNING AND PERMANENT SIGNING SHEETS.

**MN/DOT STANDARD PLATES**

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

**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

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CHECKED BY: MJJ DATE: 03/13/2017



**ANOKA COUNTY  
HIGHWAY DEPT.**

COUNTY PROJECT 17-19-24

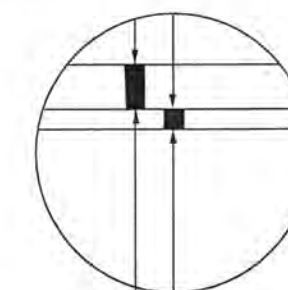
STATEMENT OF ESTIMATED QUANTITIES

Sheet 2 of 21 Sheets



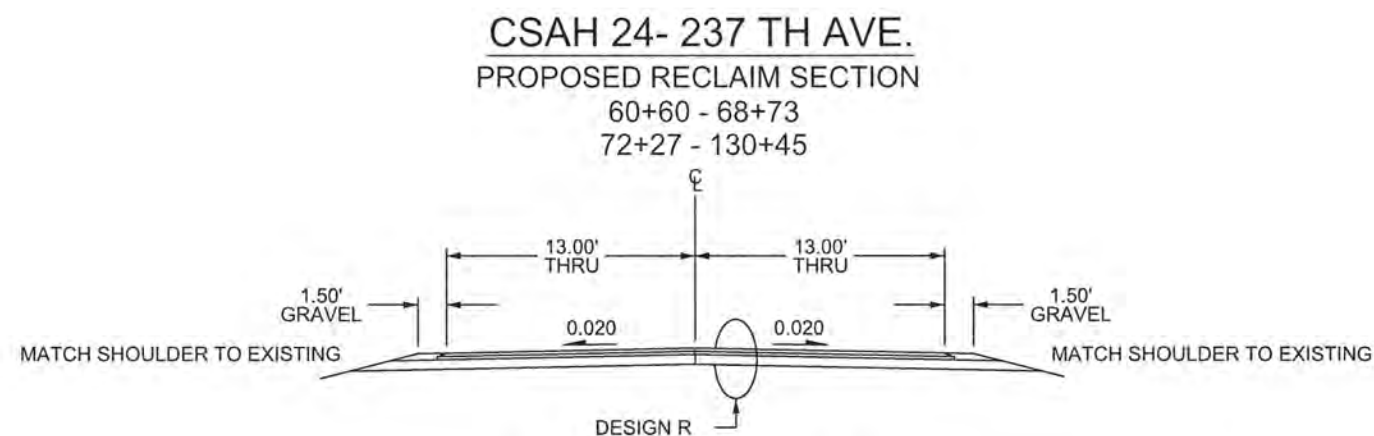
mjohn

### EXISTING SECTION



5.0" EXISTING BITUMINOUS  
2.5" BIT SAND BASE (NO AGGREGATE BASE)

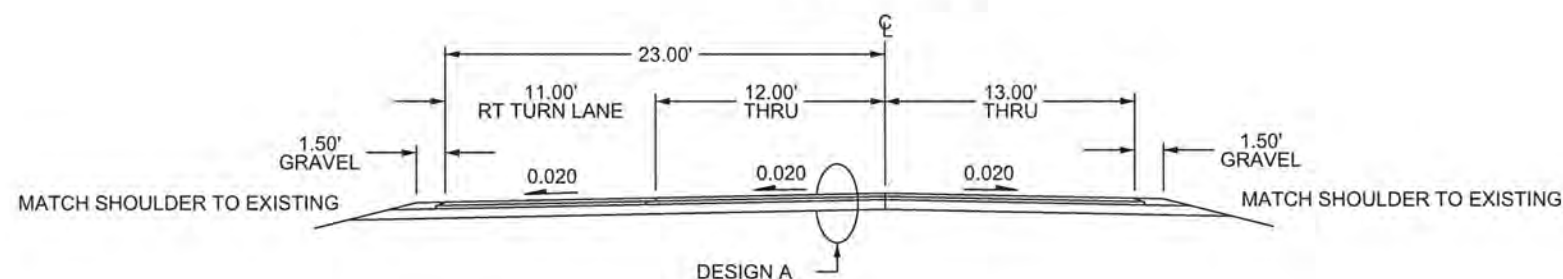
FOR INFORMATIONAL PURPOSES ONLY  
CONTRACTOR SHALL FIELD VERIFY EXISTING SECTION



### CSAH 24- 237 TH AVE.

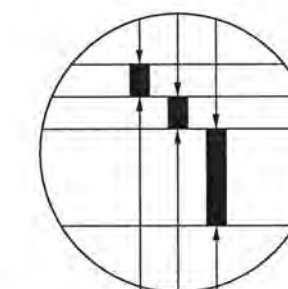
### PROPOSED RECLAIM SECTION

68+73 - 72+27



### DESIGN R

### RECLAIM SECTION

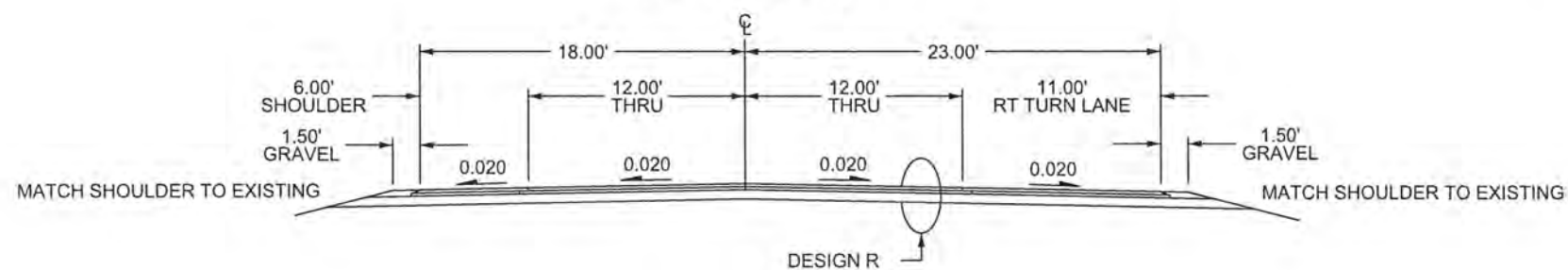


2.0" BITUMINOUS WEAR(SPWEB440C)  
2.0" BITUMINOUS WEAR(SPWEB440C)  
RECLAIMED BITUMINOUS

### CSAH 24- 237 TH AVE.

### PROPOSED RECLAIM SECTION

130+45 - 138+03



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CHECKED BY: M.J.J. DATE: 03/15/2017



ANOKA COUNTY  
HIGHWAY DEPT.

COUNTY PROJECT 17-19-24

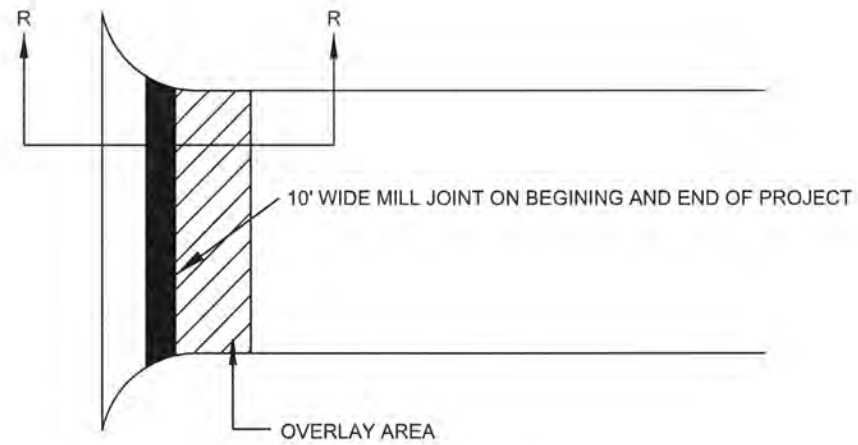
TYPICAL SECTIONS

Sheet 3 of 21 Sheets

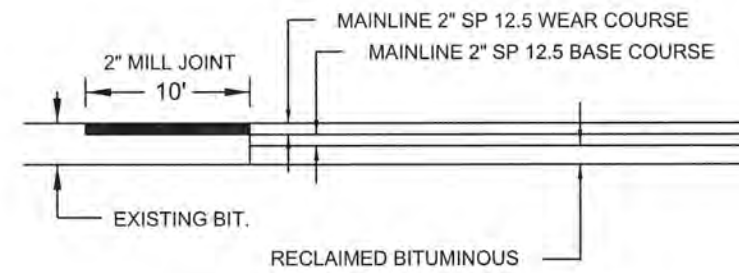
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NAME: P:\17-01-00\CSAH_24_(CityLimits-TH95)\Base\PROPOSED\PROPOSED.dgn							

# MAINLINE JOINT DETAIL (RECLAIM)

PLAN VIEW

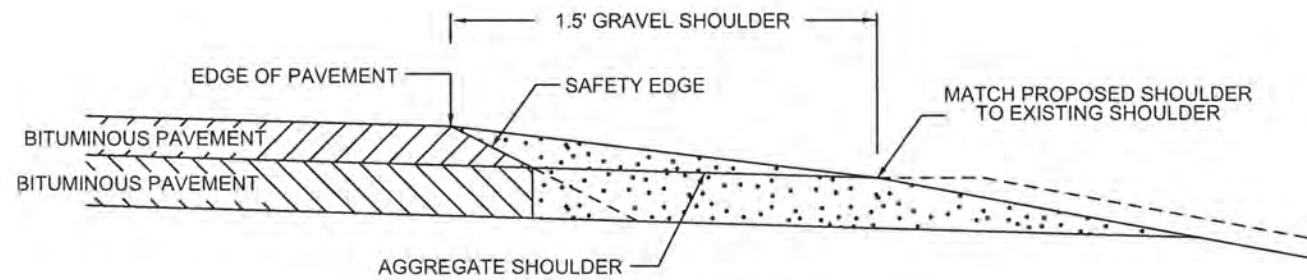


SECTION R - R



## 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.

NO	DATE	BY	CKD	APPR	REVISION	SDATES	\$TIMES

NAME: SDGNS

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

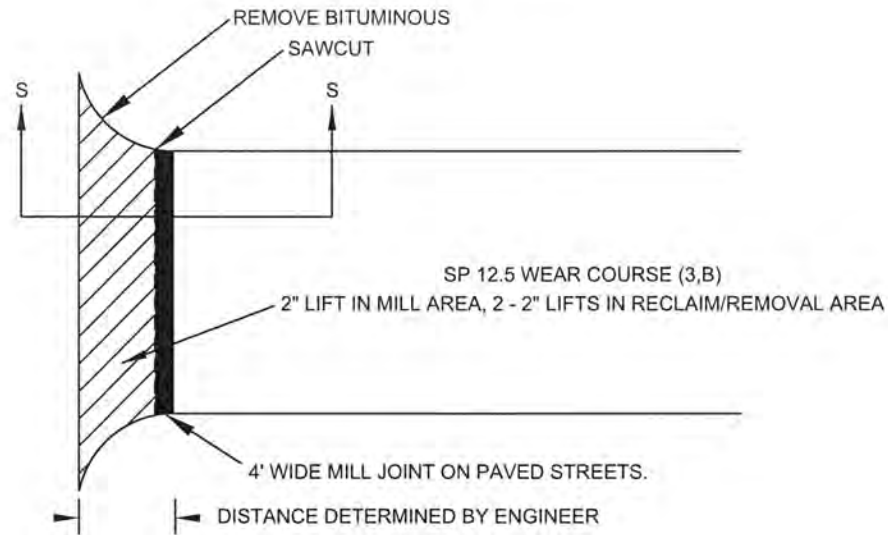
COUNTY PROJECT 17-19-24

\$USERS\$

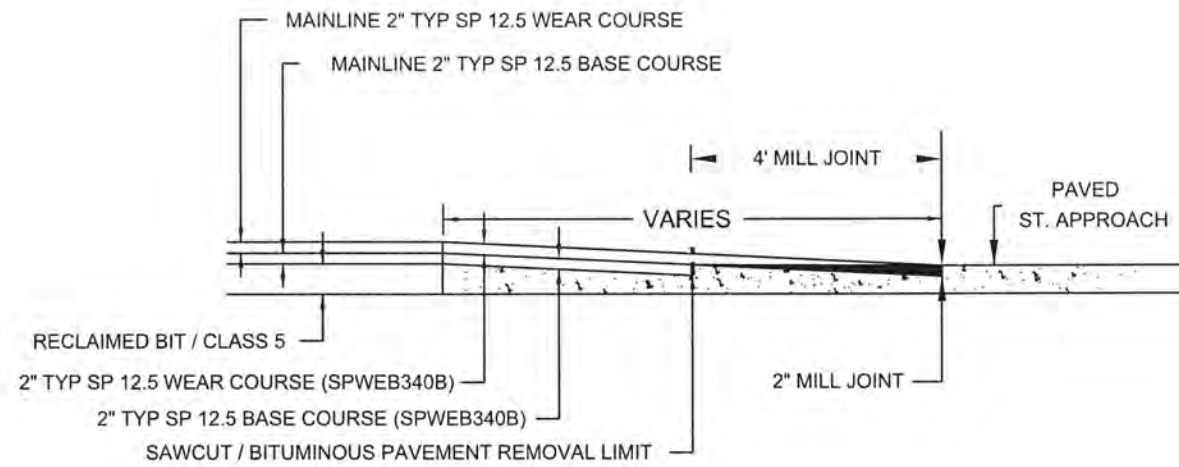
### STREET APPROACH DETAIL

#### BITUMINOUS STREET

PLAN VIEW

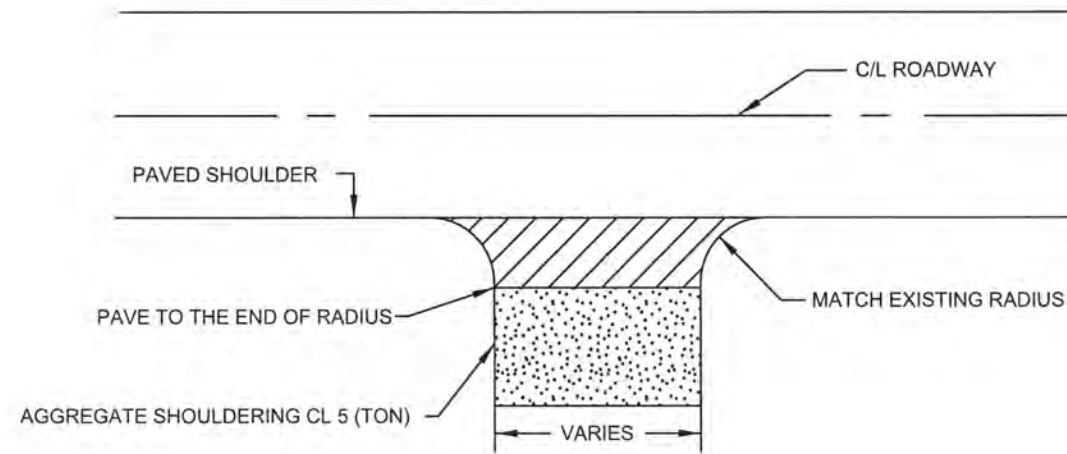


SECTION S - S



### STREET APPROACH DETAIL

#### UNPAVED STREET



UNPAVED STREET APPROCHES, PAVED SEPRATE FROM MAINLINE

NO	DATE	BY	CKD	APPR	REVISION	SDATES	\$TIMES

NAME: SDGN\$

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CHECKED BY: MJJ DATE \$DATES



ANOKA COUNTY  
HIGHWAY DEPT.

COUNTY PROJECT 17-19-24

DETAILS

Sheet 5 of 21 Sheets

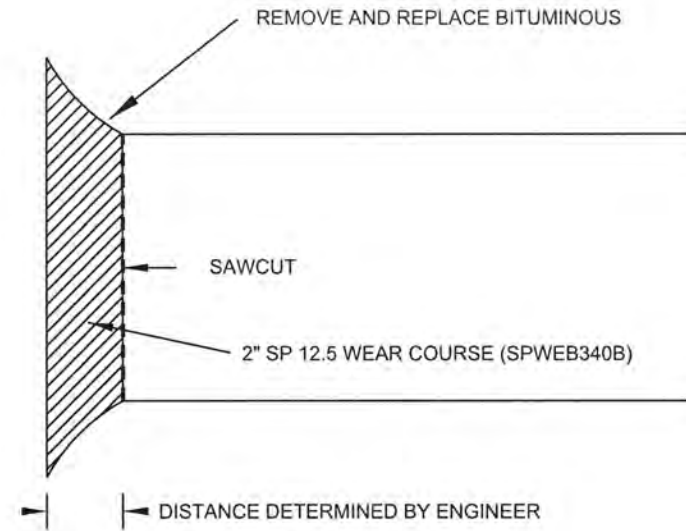


\$USER\$

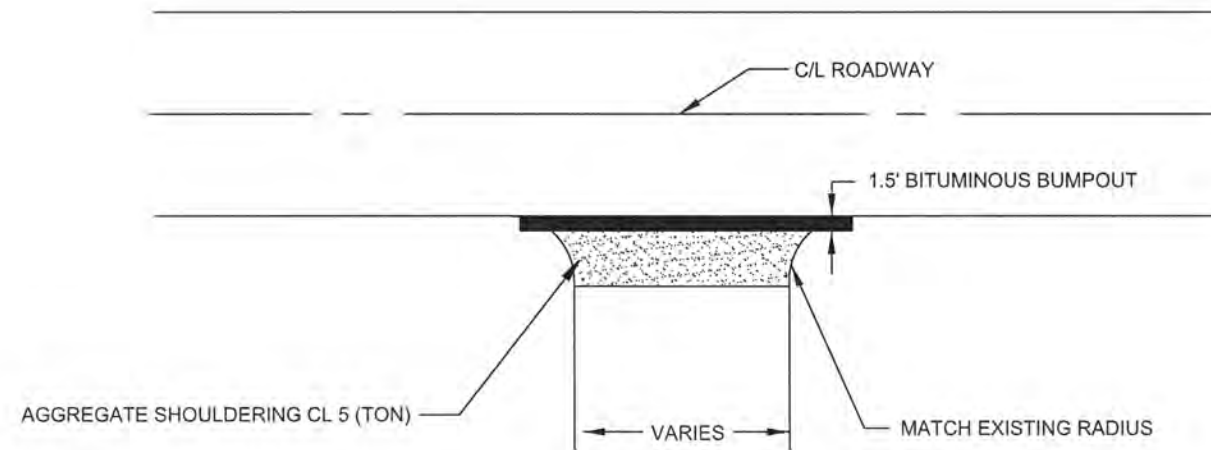
### RECLAIM AREA - DRIVEWAY DETAIL

BITUMINOUS

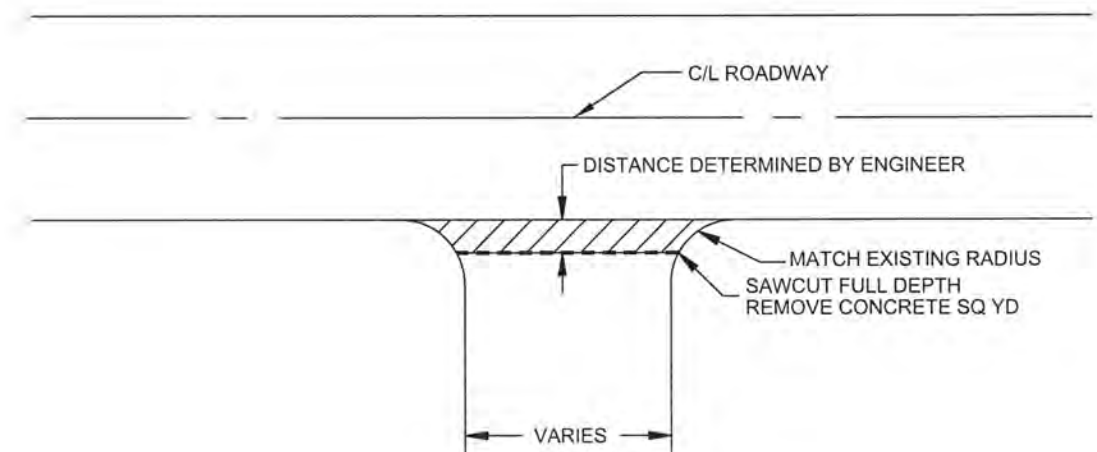
PLAN VIEW



### DRIVEWAY DETAIL GRAVEL / FIELD ENTRANCE



### DRIVEWAY DETAIL CONCRETE DRIVEWAY



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

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ANOKA COUNTY  
 HIGHWAY DEPT.

COUNTY PROJECT 17-19-24

DETAILS  
 Sheet 6 of 21 Sheets



\$USERS

**GRADE CORRECTION / SUPERELEVATION TAB (STA 94+80 - 111+93)**

STATION	14' LT ELEV	GRADE %	CLASS-5 CL	GRADE %	14' RT ELEV	NOTE
94+80	926.00	-2.00	926.28	-2.00	926.00	BEG. TRANS
95+00	926.09	-1.44	926.29	-2.00	926.01	
95+50	926.41	-0.05	926.42	-2.00	926.14	
96+00	926.72	1.34	926.53	-2.00	926.25	
96+25	926.86	2.00	926.58	-2.00	926.30	
96+50	927.10	2.71	926.72	-2.71	926.34	
96+72	927.20	3.33	926.73	-3.33	926.26	PC
97+00	927.33	4.12	926.75	-4.12	926.17	
97+50	927.40	5.53	926.63	-5.53	925.86	
97+67	927.42	6.00	926.58	-6.00	925.74	END TRANS / BEGIN FULL SUPER
98+00	927.39	6.00	926.55	-6.00	925.71	
98+50	927.29	6.00	926.45	-6.00	925.61	
99+00	927.28	6.00	926.44	-6.00	925.60	
99+50	927.31	6.00	926.47	-6.00	925.63	
100+00	927.34	6.00	926.50	-6.00	925.66	
100+50	927.53	6.00	926.69	-6.00	925.85	
101+00	927.61	6.00	926.77	-6.00	925.93	
101+50	927.68	6.00	926.84	-6.00	926.00	
101+67	927.84	6.00	927.00	-6.00	926.16	END FULL SUPER
102+00	927.72	4.97	927.02	-4.97	926.32	
102+50	927.53	3.42	927.05	-3.42	926.57	
103+00	927.36	1.86	927.10	-1.86	926.84	
103+50	927.24	0.31	927.20	-0.31	927.16	
103+60	927.22	0.00	927.22	0.00	927.22	PRC
104+00	927.14	-1.25	927.31	1.25	927.48	
104+50	926.94	-2.80	927.33	2.80	927.72	
105+00	926.76	-4.36	927.37	4.36	927.98	
105+53	926.64	-6.00	927.48	6.00	928.32	BEGIN FULL SUPER
106+00	926.75	-6.00	927.59	6.00	928.43	
106+50	926.71	-6.00	927.55	6.00	928.39	
107+00	926.46	-6.00	927.30	6.00	928.14	
107+50	926.34	-6.00	927.18	6.00	928.02	
108+00	926.34	-6.00	927.18	6.00	928.02	
108+50	926.32	-6.00	927.16	6.00	928.00	
109+05	926.30	-6.00	927.14	6.00	927.98	END FULL SUPER / BEGIN TRANS
109+50	926.46	-4.75	927.12	4.75	927.78	
110+00	926.63	-3.36	927.10	3.36	927.57	PT
110+50	926.66	-2.00	926.94	2.00	927.22	
111+00	926.56	-2.00	926.84	0.61	926.93	
111+50	926.46	-2.00	926.74	-0.78	926.63	
111+93	926.38	-2.00	926.66	-2.00	926.38	END TRANS

PROPOSED CL 5 GRADES PROVIDED FOR REFERENCE

**GRADE CORRECTION / SUPERELEVATION TAB (STA 119+61 - 130+45)**

STATION	14' LT ELEV	GRADE %	CLASS-5 CL	GRADE %	14' RT ELEV	NOTE
119+61	926.91	-2.00	927.19	-2.00	926.91	BEG. TRANS
120+00	927.15	-1.05	927.30	-2.00	927.02	
120+50	927.62	0.16	927.60	-2.00	927.32	
121+00	928.01	1.38	927.82	-2.00	927.54	
121+26	928.18	2.00	927.90	-2.00	927.62	
121+54	928.38	2.69	928.00	-2.69	927.62	PC
122+00	928.66	3.81	928.13	-3.81	927.60	
122+49	928.85	5.00	928.15	-5.00	927.45	BEGIN FULL SUPER / END TRANS
123+00	929.05	5.00	928.35	-5.00	927.65	
123+50	929.45	5.00	928.75	-5.00	928.05	
124+00	929.73	5.00	929.03	-5.00	928.33	
124+50	929.92	5.00	929.22	-5.00	928.52	
125+00	930.09	5.00	929.39	-5.00	928.69	
125+50	930.58	5.00	929.88	-5.00	929.18	
126+00	931.05	5.00	930.35	-5.00	929.65	
126+50	931.50	5.00	930.80	-5.00	930.10	
127+00	931.77	5.00	931.07	-5.00	930.37	
127+57	932.21	5.00	931.51	-5.00	930.81	
128+00	932.20	4.02	931.64	-4.14	931.06	
128+52	932.29	2.83	931.89	-3.10	931.46	
129+00	932.23	1.73	931.99	-2.14	931.69	
129+50	932.28	0.59	932.20	-2.00	931.92	
130+00	932.08	-0.55	932.16	-2.00	931.88	
130+45	931.86	-1.58	932.08	-2.00	931.80	END TRANS.

PROPOSED CL 5 GRADES PROVIDED FOR REFERENCE

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


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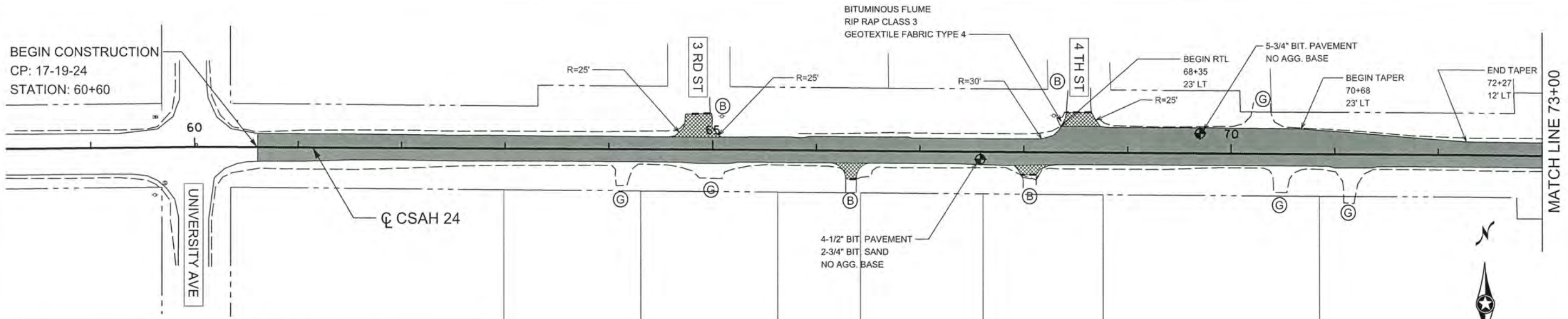


COUNTY PROJECT 17-19-24

DETAILS  
 Sheet 7 of 21 Sheets

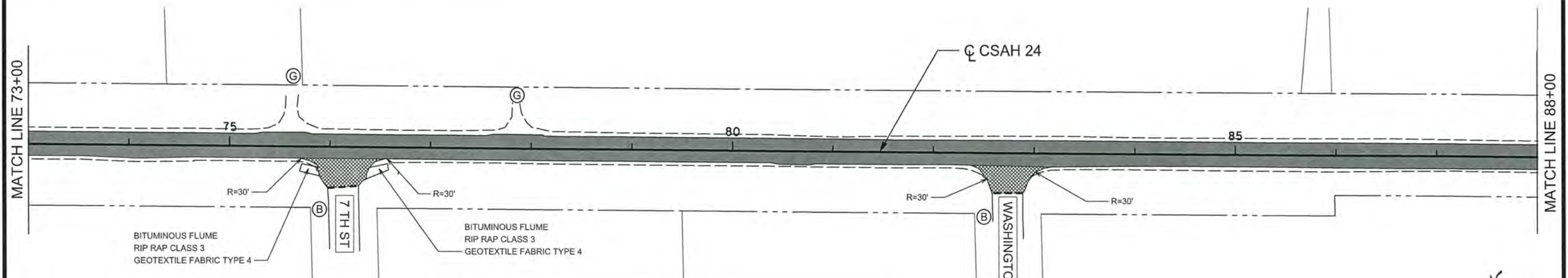


mjohn



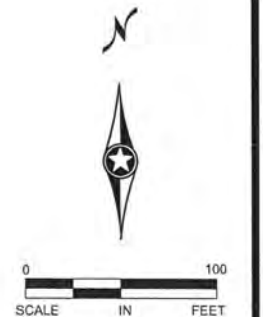
**LEGEND**

(B)	BITUMINOUS	[Solid Grey]	MAINLINE RECLAIM
(C)	CONCRETE	[Cross-hatch]	REMOVE AND REPLACE PAVEMENT
(G)	GRAVEL	[Diagonal Lines]	PAVED SHOULDER
[Square]	APRX. LOOP LOCATION	[Wavy Lines]	SUPER TRANSITION AREA
- - -	SAWCUT	[Star]	CORE LOCATION
- - -	R/W		



**LEGEND**

(B)	BITUMINOUS	[Solid Grey]	MAINLINE RECLAIM
(C)	CONCRETE	[Cross-hatch]	REMOVE AND REPLACE PAVEMENT
(G)	GRAVEL	[Diagonal Lines]	PAVED SHOULDER
[Square]	APRX. LOOP LOCATION	[Wavy Lines]	SUPER TRANSITION AREA
- - -	SAWCUT	[Star]	CORE LOCATION
- - -	R/W		



NO	DATE	BY	CKD	APPR	REVISION		
						03/15/2017	8:29:18 AM

NAME: P:\17-01-00\CSAH\_24\_(CityLimits-TH65)\Base\PROPOSED\PROPOSED.dgn

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

PRINT NAME: MATTHEW J. JOHN


SIGNATURE: *Matthew J. John*

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



**ANOKA COUNTY  
HIGHWAY DEPT.**

COUNTY PROJECT 17-19-24

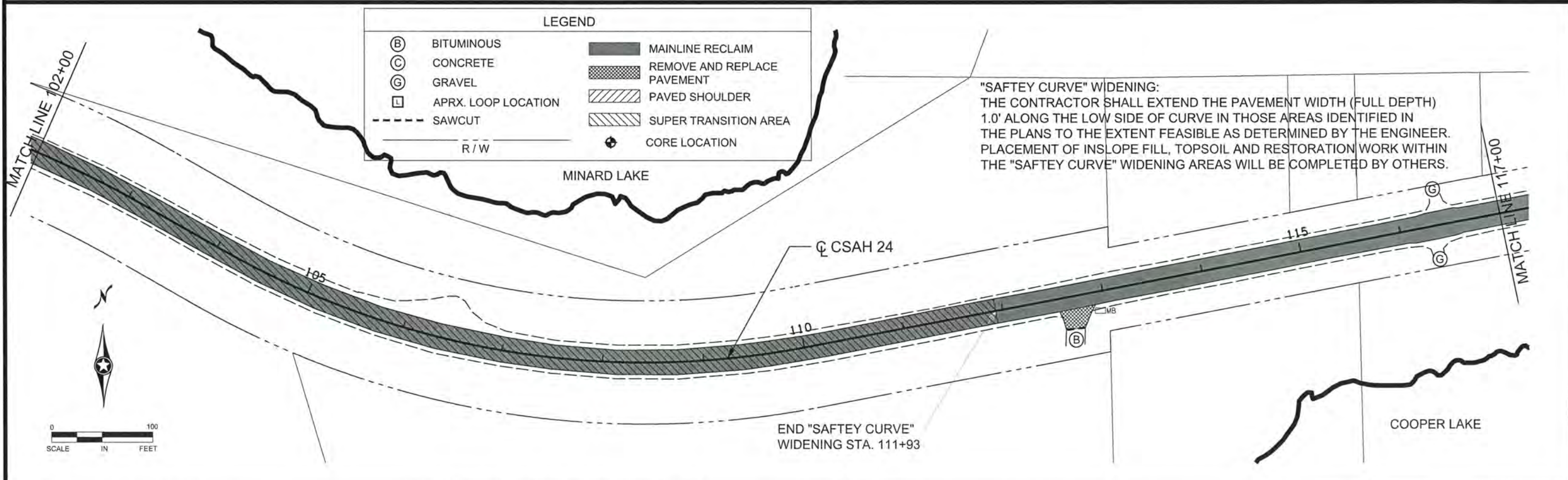
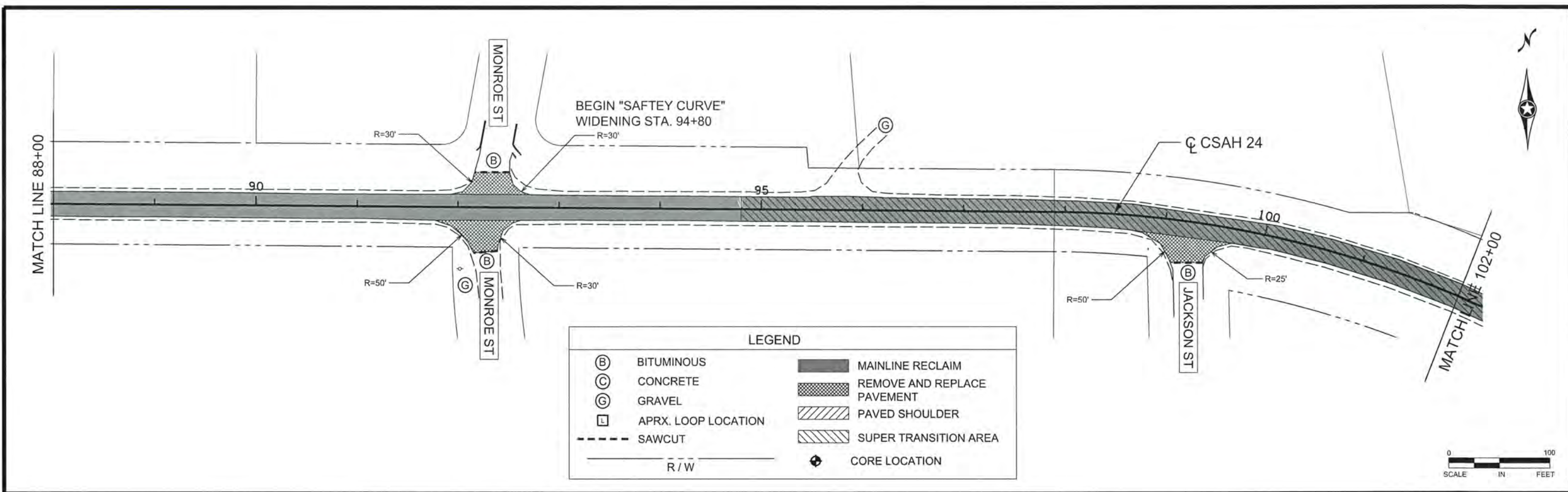
**CONSTRUCTION PLAN**

STA 60+60 TO 88+00

Sheet 8 of 21 Sheets



mjjohn



"SAFETY CURVE" WIDENING:  
 THE CONTRACTOR SHALL EXTEND THE PAVEMENT WIDTH (FULL DEPTH) 1.0' ALONG THE LOW SIDE OF CURVE IN THOSE AREAS IDENTIFIED IN THE PLANS TO THE EXTENT FEASIBLE AS DETERMINED BY THE ENGINEER. PLACEMENT OF INSLOPE FILL, TOPSOIL AND RESTORATION WORK WITHIN THE "SAFETY CURVE" WIDENING AREAS WILL BE COMPLETED BY OTHERS.

NO	DATE	BY	CKD	APPR	REVISION	03/15/2017	8:29:21 AM
NAME: P:\17-01-00\CSAH_24_(CityLimits-TH65)\Base\PROPOSED\PROPOSED.dgn							

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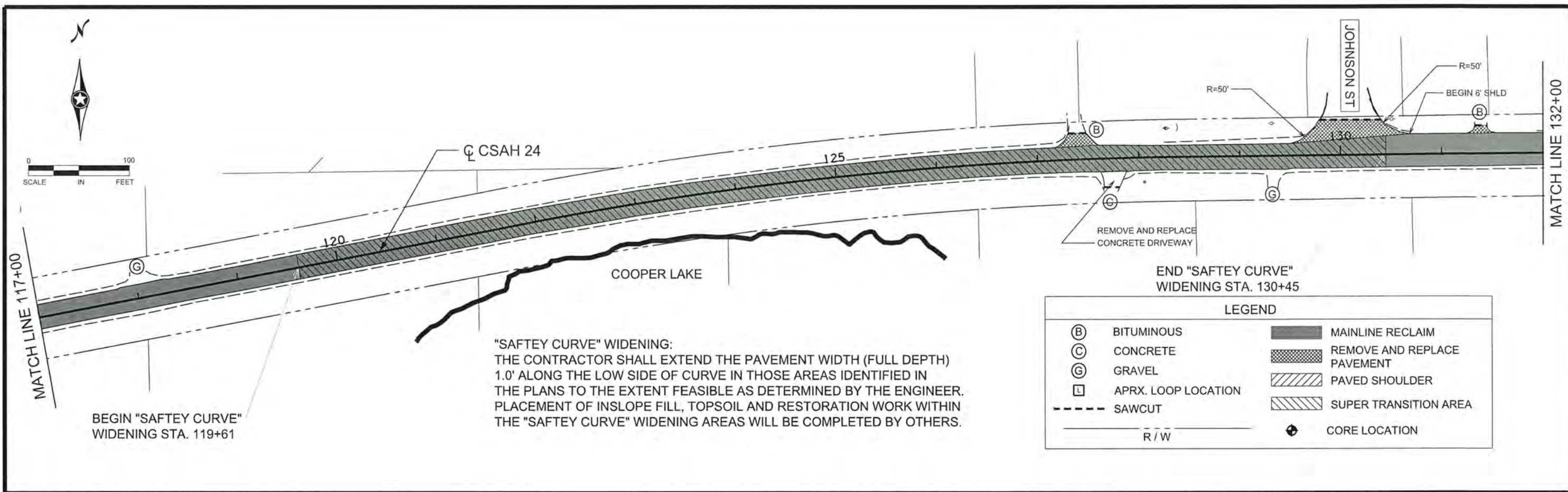
**ANOKA COUNTY**  
**HIGHWAY DEPT.**

COUNTY PROJECT 17-19-24

CONSTRUCTION PLAN  
 STA 88+00 TO 117+00  
 Sheet 9 of 21 Sheets



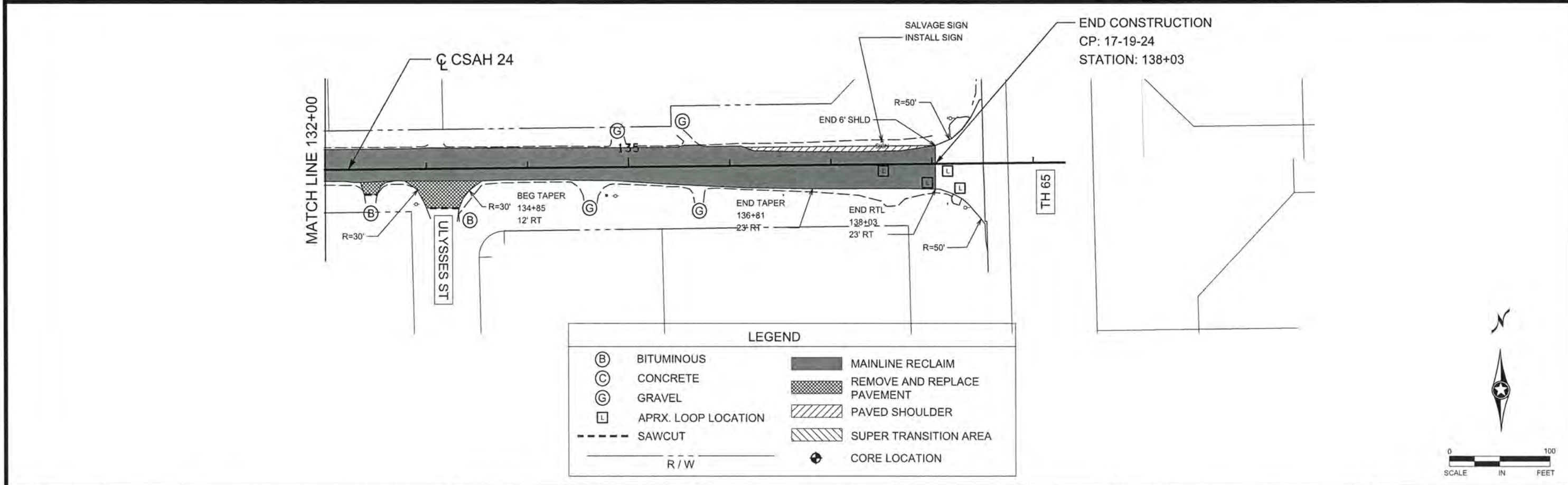
mjjohn



"SAFTEY CURVE" WIDENING:  
 THE CONTRACTOR SHALL EXTEND THE PAVEMENT WIDTH (FULL DEPTH) 1.0' ALONG THE LOW SIDE OF CURVE IN THOSE AREAS IDENTIFIED IN THE PLANS TO THE EXTENT FEASIBLE AS DETERMINED BY THE ENGINEER. PLACEMENT OF INSLOPE FILL, TOPSOIL AND RESTORATION WORK WITHIN THE "SAFTEY CURVE" WIDENING AREAS WILL BE COMPLETED BY OTHERS.

END "SAFTEY CURVE" WIDENING STA. 130+45

LEGEND			
(B)	BITUMINOUS	[Pattern]	MAINLINE RECLAIM
(C)	CONCRETE	[Pattern]	REMOVE AND REPLACE PAVEMENT
(G)	GRAVEL	[Pattern]	PAVED SHOULDER
[L]	APRX. LOOP LOCATION	[Pattern]	SUPER TRANSITION AREA
- - -	SAWCUT	[Symbol]	CORE LOCATION
---	R / W		



LEGEND			
(B)	BITUMINOUS	[Pattern]	MAINLINE RECLAIM
(C)	CONCRETE	[Pattern]	REMOVE AND REPLACE PAVEMENT
(G)	GRAVEL	[Pattern]	PAVED SHOULDER
[L]	APRX. LOOP LOCATION	[Pattern]	SUPER TRANSITION AREA
- - -	SAWCUT	[Symbol]	CORE LOCATION
---	R / W		

NO	DATE	BY	CKD	APPR	REVISION	03/15/2017	8:29:25 AM
NAME: P:\17-01-00\CSAH_24_(CityLimits-TH65)\Base\PROPOSED\PROPOSED.dgn							

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**ANOKA COUNTY HIGHWAY DEPT.**

COUNTY PROJECT 17-19-24

CONSTRUCTION PLAN  
 STA 117+00 TO 138+50  
 Sheet 10 of 21 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	15460
4" SOLID LINE YELLOW - EPOXY PAINT	LIN FT	3710
4" BROKEN LINE YELLOW - EPOXY PAINT	LIN FT	1090
4" DOUBLE SOLID LINE YELLOW - EPOXY PAINT	LIN FT	2350
3'X6' ZEBRA CROSSWALK - PREFORMED THERMOPLASTIC	SQ FT	180
PAVEMENT MESSAGE (RIGHT ARROW)- PREFORMED THERMOPLASTIC	SQ FT	15

**SYMBOLS & MATERIALS LEGEND**

■ CROSSWALK BLOCK WHITE PREFORMED THERMOPLASTIC

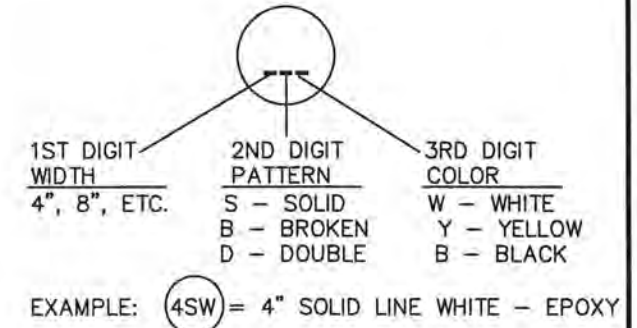
↶ PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC

**STRIPING KEY**

○ CIRCLE - EPOXY      □ SQUARE PREFORMED THERMOPLASTIC

△ TRIANGLE - PAINT

⬠ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



NO	DATE	BY	CKD	APPR	REVISION

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

STATE PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 STATE AID PROJECT NO. \_\_\_\_\_  
 COUNTY PROJECT NO. 17-19-24

PERMANENT MARKING TABULATION  
 Sheet 11 of 21 Sheets



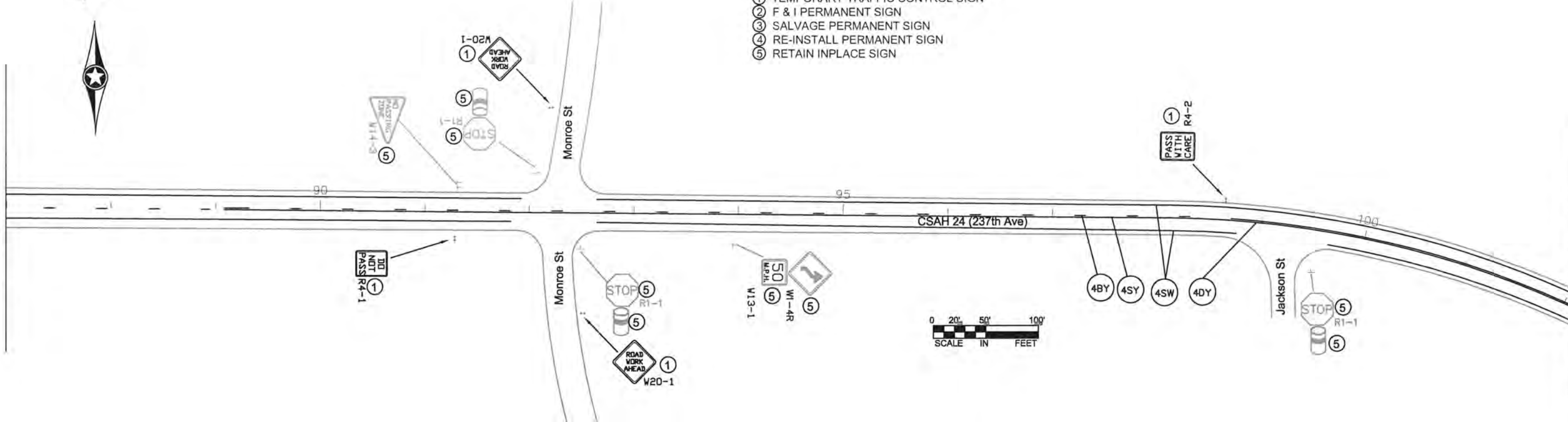




- SIGN NOTES:
- ① TEMPORARY TRAFFIC CONTROL SIGN
  - ② F & I PERMANENT SIGN
  - ③ SALVAGE PERMANENT SIGN
  - ④ RE-INSTALL PERMANENT SIGN
  - ⑤ RETAIN INPLACE SIGN

STATION 87+00

STATION 102+00

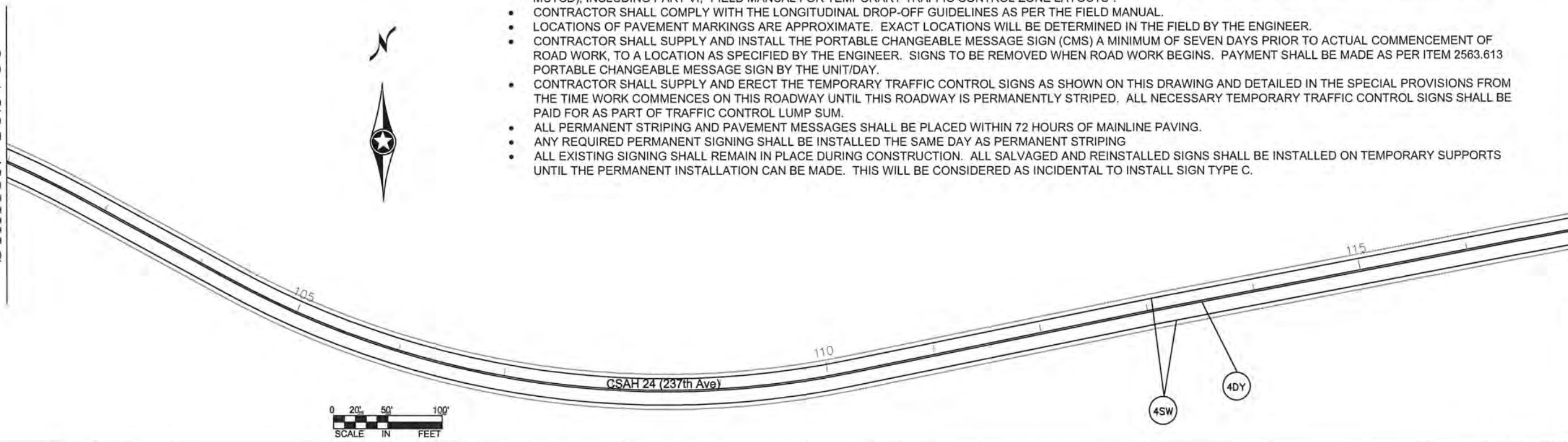


NOTES:

- 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 102+00

STATION 117+00



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\02-617-19\base\Traffic\Curves from CSAH 18 to CSAH 22.dwg

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PRINT NAME: MATTHEW J. JOHN

SIGNATURE: *Matthew J. John*

DATE: 3/13/2017 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. 17-19-24

TEMPORARY SIGNING,  
PERMANENT SIGNING  
AND STRIPING

Sheet 13 of 21 Sheets







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".
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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	

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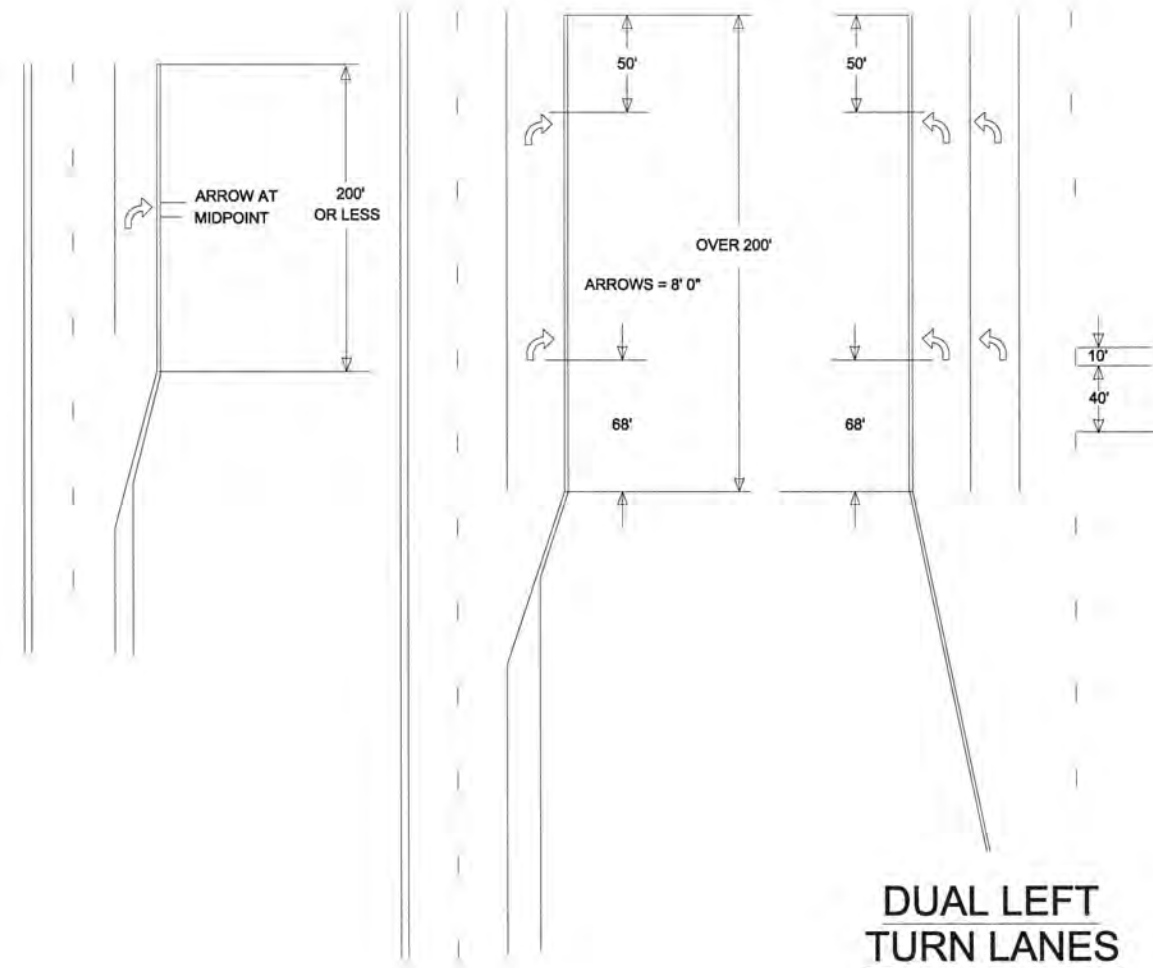
ANOKA COUNTY  
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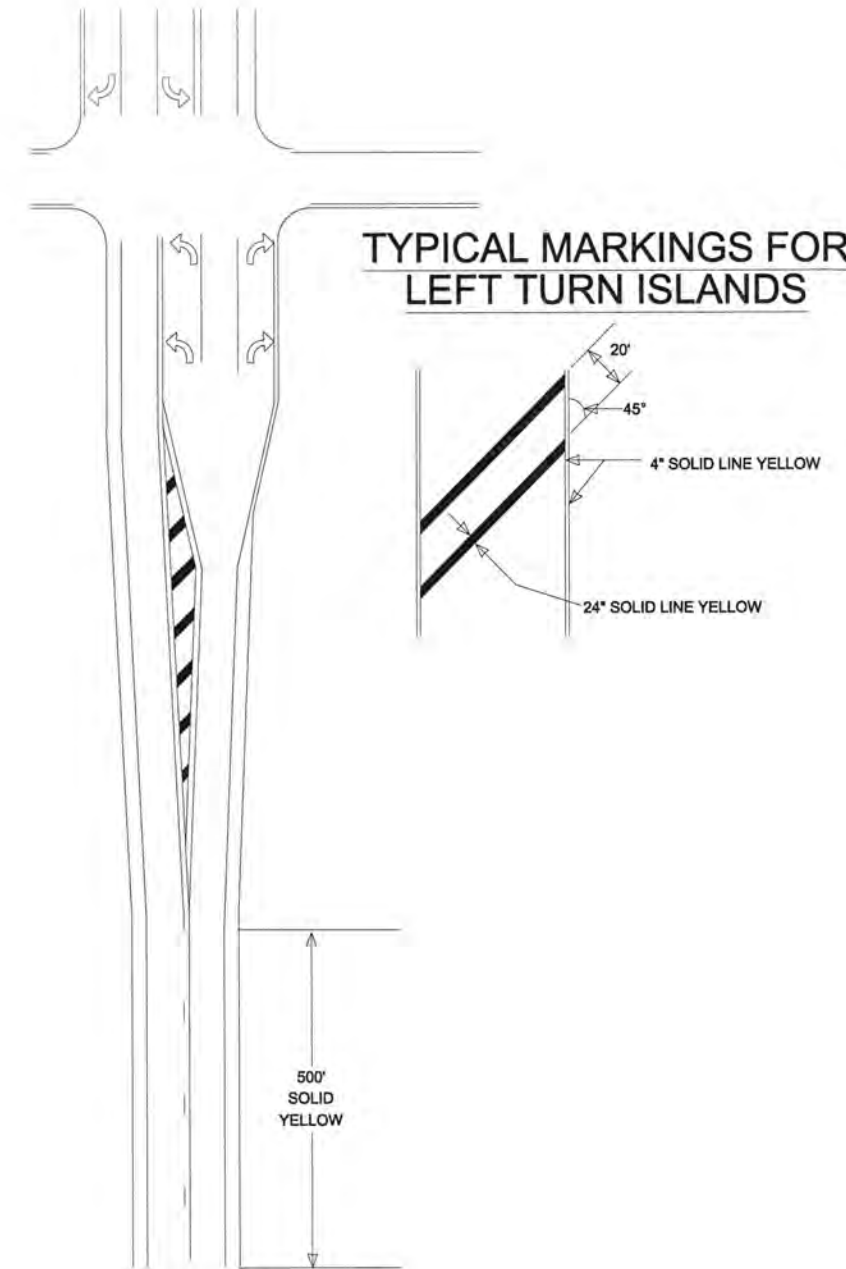
TRAFFIC CONTROL QUANTITY  
 Sheet 15 of 21 Sheets



**TYPICAL MESSAGE PLACEMENT  
FOR TURN LANES**



**TYPICAL MARKINGS FOR  
LEFT TURN ISLANDS**



NO	DATE	BY	CKD	APPR	REVISION

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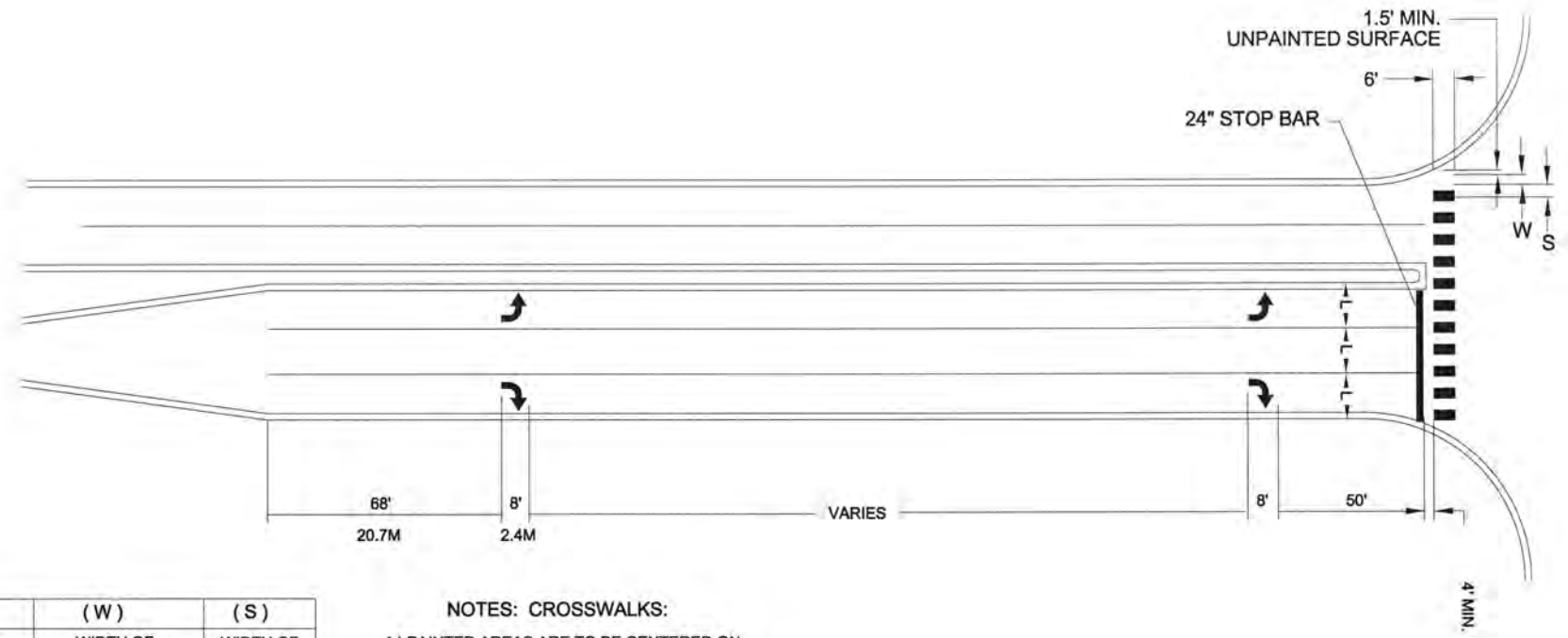
COUNTY PROJECT NO. 17-19-24

SIGNING & STRIPING  
DETAILS

Sheet 16 of 21 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 RAMP ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE DETERMINED AND FIELD VERIFIED DURING CONSTRUCTION BY THE FIELD ENGR.
- 3.) ZEBRA CROSSWALKS ARE TO BE PARALLEL TO THE DRIVING LANE OR LANES, EVEN IF THE STREET IS ON AN ANGLE TO THE INTERSECTION.
- 4.) A MIN. OF 1.5' (450mm) CLEAR DISTANCE MUST BE LEFT ADJACENT TO THE CURB. IF LAST PAINTED AREA FALLS INTO THIS AREA, IT MUST BE OMITTED.
- 5.) ON TWO LANE STREETS, USE SPACING SHOWN FOR AN 11' (3.3mm) INSIDE LANE.

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 STATE AID PROJECT NO. \_\_\_\_\_  
 COUNTY PROJECT NO. 17-19-24

SIGNING & STRIPING  
DETAILS

Sheet 17 of 21 Sheets

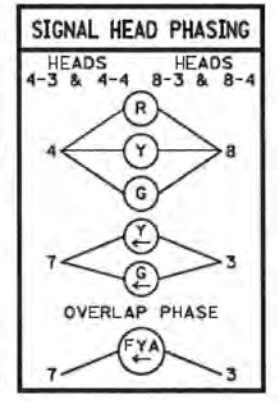


mjohn

PLOTTED/REVISED: 5/20/2015

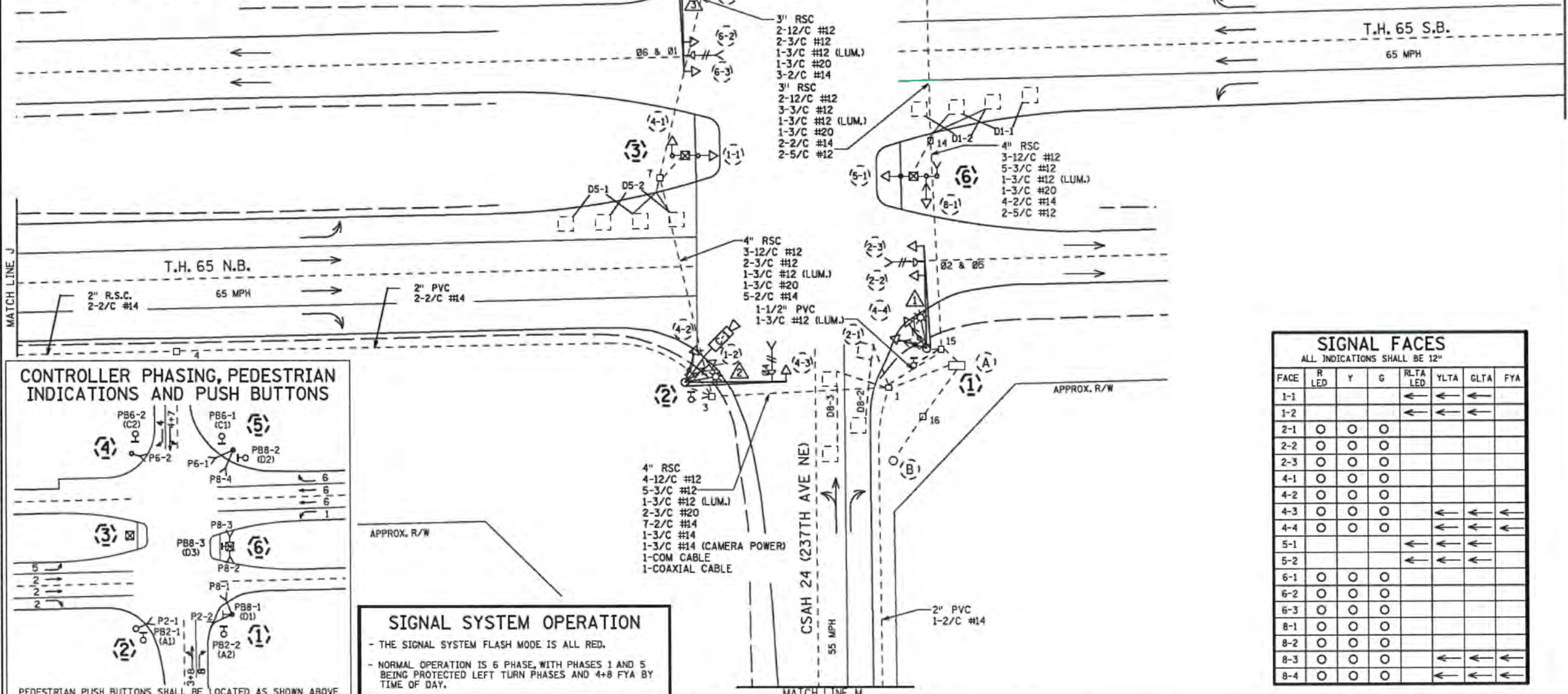
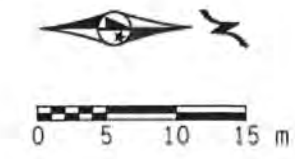
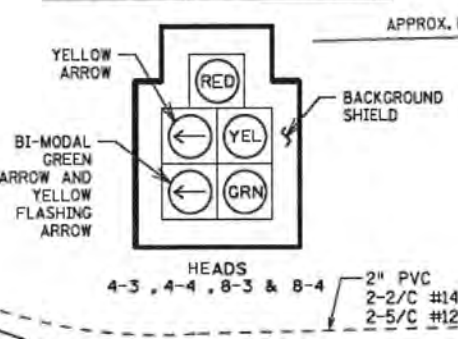
DISTRICT #: METRO  
PLOT NAME: LAYOUT  
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PVC LOOP DETECTORS		
NUMBER	SIZE (FEET)	LOCATION
D1-1	2-6 x 6	20 & 50
D1-2	2-6 x 6	5 & 35
D2-1	6 x 6	625
D2-2	6 x 6	625
D4-1	6 x 6	250
D4-2	2-6 x 6	-5 & 30
D4-3	2-6 x 6	10 & 40
D5-1	6 x 6	20 & 50
D5-2	6 x 6	5 & 35
D6-1	6 x 6	625
D6-2	6 x 6	625
D8-1	6 x 6	250
D8-2	2-6 x 6	-5 & 30
D8-3	2-6 x 6	10 & 40

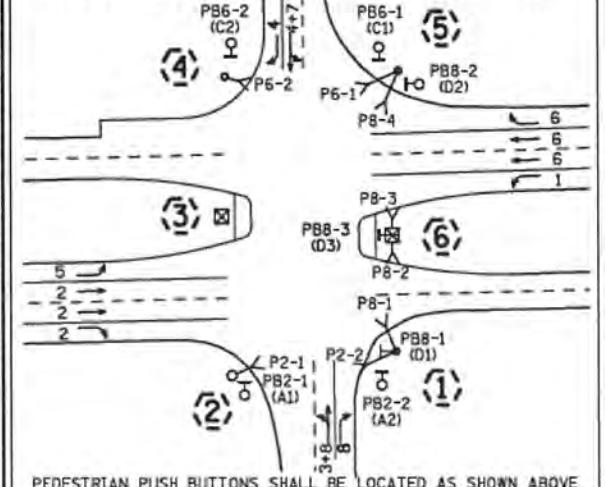


1) LOCATION = DISTANCE FROM STOP LINE OR CROSSWALK TO DETECTOR IN FEET

### 5 SECTION FYA CLUSTER HEAD DETAIL



### CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



**SIGNAL SYSTEM OPERATION**

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 6 PHASE, WITH PHASES 1 AND 5 BEING PROTECTED LEFT TURN PHASES AND 4+8 FYA BY TIME OF DAY.

### SIGNAL FACES

ALL INDICATIONS SHALL BE 12"

FACE	R LED	Y	G	RLTA LED	YLTA	GLTA	FYA
1-1				←	←	←	
1-2				←	←	←	
2-1	○	○	○				
2-2	○	○	○				
2-3	○	○	○				
4-1	○	○	○				
4-2	○	○	○				
4-3	○	○	○	←	←	←	
4-4	○	○	○	←	←	←	
5-1				←	←	←	
5-2				←	←	←	
6-1	○	○	○				
6-2	○	○	○				
6-3	○	○	○				
8-1	○	○	○				
8-2	○	○	○				
8-3	○	○	○	←	←	←	
8-4	○	○	○	←	←	←	

BY	DATE	REVISIONS
EJA	05-08-13	AS-BUILT OF SP 0208-146

SYSTEM ID: 22207 T.E. 5579  
 METER ADDRESS:  
 MASTER ID: T.E.

**INTERSECTION LAYOUT**  
 TH 65 AT CSAH 24 (237TH AVE NE)  
 EAST BETHEL, ANOKA COUNTY

S.A.P. NO. DRAWN BY: BAM CKD BY: CDB DATE: 02-23-12  
 CERTIFIED BY: LICENSED PROFESSIONAL ENGINEER LIC. NO. 19863 DATE: 02-23-12  
 STATE PROJ. NO. (T.H. 65) SHEET NO. 1 OF 4 SHEETS

FOR REFERENCE PURPOSES ONLY

NO	DATE	BY	CKD	APPR	REVISION	03/13/2017	10:03:44 AM
NAME: P:\17-01-00\CSAH_24_(CityLimits-TH65)\Base\PROPOSED\PROPOSED.dgn							

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.  
 PRINT NAME: MATTHEW J. JOHN  
 SIGNATURE: *Matthew J. John*  
 DATE: 3/13/2017 LICENSE NO. 51639

DRAWN BY: KPR DATE: 02/17/2017  
 DESIGN BY: KPR DATE: 02/17/2017  
 CHECKED BY: MJJ DATE: 03/13/2017

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

COUNTY PROJECT 17-19-24

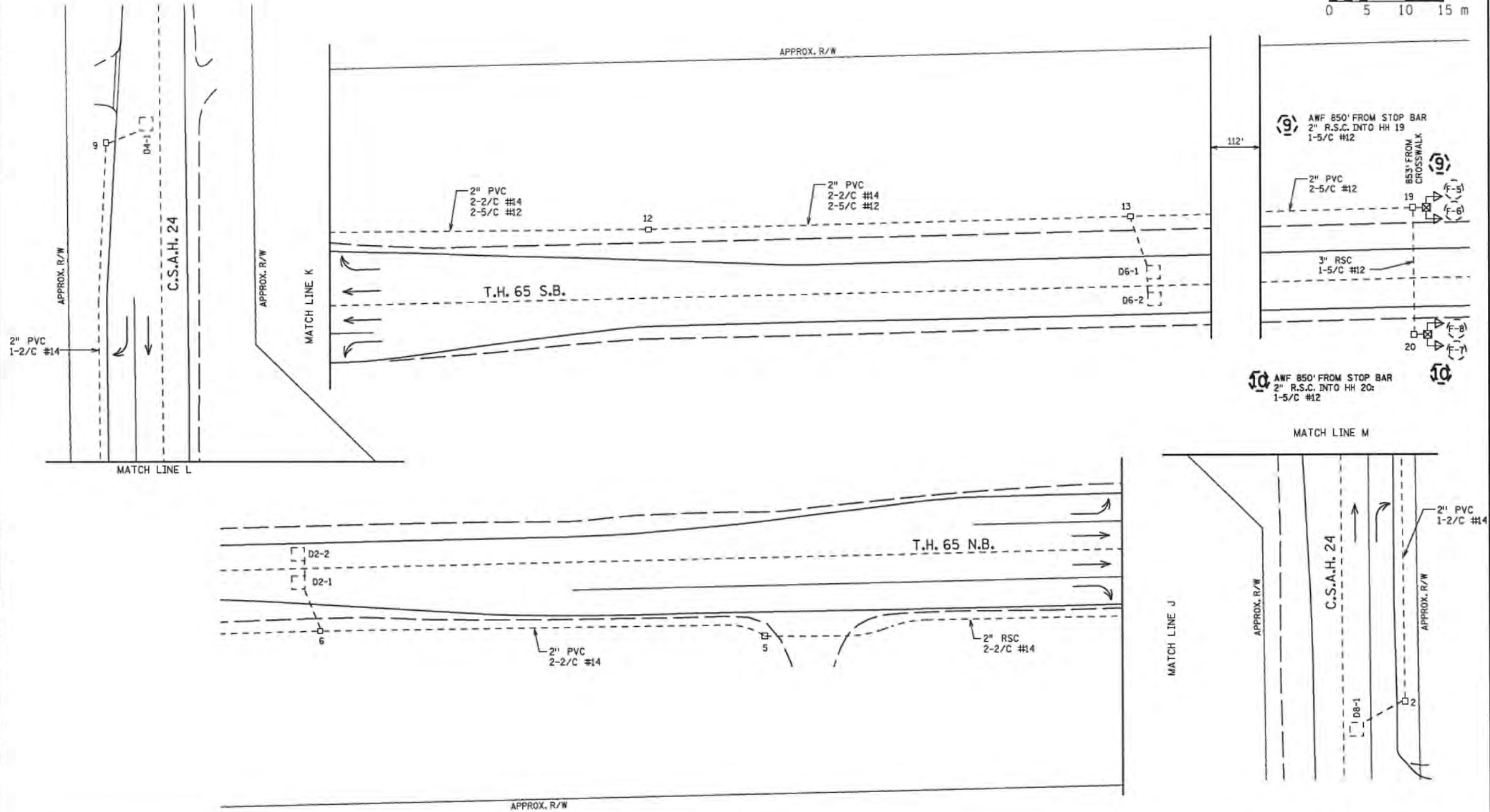
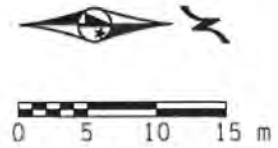
ORIGINAL SIGNAL PLANS  
 Sheet 18 of 21 Sheets



mjohn

PLOTTED/REVISED: 5/20/2015

DISTRICT #: METRO  
PLOT NAME: MATCHLINE  
PATH & FILENAME: IP\_FWP-0781335V122207-spl.dgn



BY	DATE	REVISIONS	SYSTEM ID: 22207	T.E. 5579	S.A.P. NO.	DRAWN BY: BAM	CKD BY: CDB	DATE: 02-23-12
EJA	05-08-13	AS-BUILT OF SP 0208-146	METER ADDRESS:		CERTIFIED BY: _____	LIC. NO. 19863	DATE: 02-23-12	
			MASTER ID:	T.E.	STATE PROJ. NO. 0208-146 (T.H.65) SHEET NO. 2 OF 4 SHEETS			

NO	DATE	BY	CKD	APPR	REVISION	03/13/2017	10:49:36 AM

NAME: P:\17-01-00\CSAH\_24\_(CityLimits-TH65)\Base\PROPOSED\PROPOSED.dgn

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PRINT NAME: MATTHEW J. JOHN  
 SIGNATURE: *[Signature]*  
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DRAWN BY: KPR DATE: 02/17/2017  
 DESIGN BY: KPR DATE: 02/17/2017  
 CHECKED BY: MJJ DATE: 03/13/2017



ANOKA COUNTY  
HIGHWAY DEPT.

COUNTY PROJECT 17-19-24

ORIGINAL SIGNAL PLANS  
Sheet 19 of 21 Sheets

FOR REFERENCE PURPOSES ONLY



PLOTTED/REVISED: 5/20/2015

DISTRICT: METRO  
PLOT NAME: NOTES  
PATH & FILENAME: IP\_FWP-007B1339Y22207.spl.dgn

① PA100 POLE FOUNDATION  
 TYPE PA100-A-40-D40-9 (DAVIT AT 350 DEG)  
 2-SWING AWAY HINGES  
 2-ONE WAY SIGNALS OVERHEAD AT 0' AND 11'  
 2-TYPE 10B POLE MOUNTED AT 0 DEG AND 270 DEG  
 2-C.D. PED IND  
 ONE WAY EVP DETECTOR AND CONFIRMATORY  
 LIGHT PHASES 2&5  
 LUMINAIRE-200 W HPS  
 RADIO INTERCONNECT ANTENNA (ETHERNET)  
 1-APS PB AND SIGN (LT ARROW) (PB8-1)  
 EXTEND INTO HH 15  
 3" RSC  
 2-12/C #12  
 3-3/C #12  
 2-3/C #12 (LUM.)  
 1-3/C #20  
 1-3/C #14  
 1-2/C #14  
 1-COM CABLE (ANTENNA)

APS PED PB STA (PB2-2)  
 1-APS PB AND SIGN (RT ARROW)  
 EXTEND INTO HH 15:  
 1-1/4" PVC  
 1-2/C #14

② PA100 POLE FOUNDATION  
 TYPE PA100-A-40-D40-9 (DAVIT AT 350 DEG)  
 1-X6-350/CAM 400 EXTENSION (MOUNTED AT 350 DEG)  
 (INCLUDES LIGHTNING ROD, 7/16" GROUND BRAID AND GROUND ROD)  
 1-VIDEO CAMERA WITH MOUNT  
 2-SWING AWAY HINGES  
 ONE WAY SIGNAL OVERHEAD AT 0'  
 TYPE 10A POLE MOUNTED AT 270 DEG  
 TYPE 10B POLE MOUNTED AT 0 DEG  
 1-C.D. PED IND  
 ONE WAY EVP DETECTOR AND CONFIRMATORY  
 LIGHT PHASE 4  
 LUMINAIRE-200 W HPS  
 1-R10-X12 SIGN ADJACENT TO HEAD (4-3)  
 EXTEND INTO HH 3  
 3" RSC  
 1-12/C #12  
 3-3/C #12  
 2-3/C #12 (LUM.)  
 1-3/C #20  
 1-3/C #14  
 1-2/C #14  
 1-7/16" GROUNDING BRAID TO GROUND ROD IN HH 3  
 1-3/C #14 (CAMERA POWER)  
 1-COM CABLE  
 1-COAXIAL CABLE

APS PED PB STA (PB2-1)  
 1-APS PB AND SIGN (LT ARROW)  
 EXTEND INTO HH 3:  
 1-1/4" PVC  
 1-2/C #14

③ PEDESTAL FOUNDATION  
 10' PEDESTAL POLE PLUS BASE  
 2-STRAIGHT MOUNT SIGNALS AT 0 AND 180 DEG  
 3" PVC TO HH 7:  
 1-12/C #12

④ PA100 POLE FOUNDATION  
 TYPE PA100-A-45-D40-9 (DAVIT AT 350 DEG)  
 2-SWING AWAY HINGES  
 2-ONE WAY SIGNALS OVERHEAD AT 0 AND 11'  
 TYPE 10A POLE MOUNTED AT 0 DEG  
 TYPE 10B POLE MOUNTED AT 270 DEG  
 1-C.D. PED IND  
 ONE WAY EVP DETECTOR AND CONFIRMATORY  
 LIGHT PHASES 6&1  
 LUMINAIRE-200 W HPS  
 EXTEND INTO HH 8  
 3" RSC  
 2-12/C #12  
 2-3/C #12  
 1-3/C #12 (LUM.)  
 1-2/C #14  
 1-3/C #20

APS PED PB STA (PB6-2)  
 1-APS PB AND SIGN (RT ARROW)  
 EXTEND INTO HH 8:  
 1-1/4" PVC  
 1-2/C #14

④ PEDESTAL FOUNDATION  
 10' PEDESTAL POLE PLUS BASE  
 2-STRAIGHT MOUNT SIGNALS AT 0 AND 180 DEG  
 2-STRAIGHT MOUNT C.D. PED IND AT 90 AND 270 DEG  
 1-APS PB AND SIGN (DLB ARROW) (PB8-3)  
 3" CONDUIT TO HH 14:  
 1-12/C #12  
 2-3/C #12

⑤ PA90 POLE FOUNDATION  
 TYPE PA90-A-35-D40-9 (DAVIT AT 350 DEG)  
 2-SWING AWAY HINGES  
 ONE WAY SIGNAL OVERHEAD AT 0'  
 2-TYPE 10B POLE MOUNTED AT 0 DEG AND 270 DEG  
 2-C.D. PED IND  
 ONE WAY EVP DETECTOR AND CONFIRMATORY  
 LIGHT PHASE 8  
 LUMINAIRE-200 W HPS  
 1-R10-X12 SIGN ADJACENT TO HEAD (8-3)  
 EXTEND INTO HH 10  
 3" RSC  
 2-12/C #12  
 3-3/C #12  
 1-3/C #12 (LUM.)  
 2-2/C #14  
 1-3/C #20

APS PED PB STA (PB6-1)  
 1-APS PB AND SIGN (LT ARROW)  
 EXTEND INTO HH 10:  
 1-1/4" PVC  
 1-2/C #14

APS PED PB STA (PB8-2)  
 1-APS PB AND SIGN (LT ARROW)  
 EXTEND INTO HH 10:  
 1-1/4" PVC  
 1-2/C #14

⑥ SOP - INPLACE WOOD POLE  
 2" RSC RISER WITH WEATHERHEAD  
 2" RSC TO HH 16 WITH 3-1/C #2

⑦ EQUIPMENT PAD  
 CONTROLLER AND CABINET SERVICE EQUIPMENT (PAD MOUNTED)  
 LOAD CENTER TO CABINET  
 1" RSC  
 2-1/C #6  
 1-1/C #6 INS. GR.  
 LOAD CENTER TO HH 15  
 2" RSC  
 2-3/C #12 (LUM.)  
 METER TO HH 16  
 2" RSC  
 3-1/C #2

CONTROLLER CABINET TO HH 15  
 4" RSC  
 5-12/C #12  
 8-3/C #12  
 2-3/C #20  
 4-2/C #14  
 1-3/C #14  
 2-5/C #12  
 1-COM CABLE (ANTENNA)

CONTROLLER CABINET TO HH 1  
 4" RSC  
 4-12/C #12  
 5-3/C #12  
 2-3/C #20  
 10-2/C #14  
 1-3/C #14  
 1-3/C #14 (CAMERA POWER)  
 1-COM CABLE (CAMERA)  
 1-COAXIAL CABLE

STUB OUT THREAD AND CAP  
 3" RSC

BY	DATE	REVISIONS	SYSTEM ID: 22207	T.E. 5579	S.A.P. NO.	DRAWN BY: BAM	CKD BY: CDB	DATE: 02-23-12
EJA	05-08-13	AS-BUILT OF SP 0208-146	METER ADDRESS:		CERTIFIED BY _____	LIC. NO. 19863	DATE: 02-23-12	
			MASTER ID:	T.E.	STATE PROJ. NO.	(T.H. 65)	SHEET NO. 3 OF 4 SHEETS	

NO	DATE	BY	CKD	APPR	REVISION	03/13/2017	10:05:28 AM
NAME: P:\17-01-00\CSAH_24_(CityLimits-TH85)\Base\PROPOSED\PROPOSED.dgn							

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ANOKA COUNTY  
 HIGHWAY DEPT.

COUNTY PROJECT 17-19-24

ORIGINAL SIGNAL PLANS

Sheet 20 of 21 Sheets

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