

STATEMENT OF ESTIMATED QUANTITIES

ITEM NUMBER	ITEM DESCRIPTION	NOTES	UNIT	TOTAL PROJECT QUANTITIES ESTIMATED
2021.501	MOBILIZATION		LUMP SUM	1
2104.505	REMOVE BITUMINOUS PAVEMENT	1	SQ YD	3932
2104.501	REMOVE PIPE CULVERTS		LIN FT	280
2104.509	REMOVE BITUMINOUS FLUME		EACH	1
2104.513	SAWING BIT PAVEMENT (FULL DEPTH)		LIN FT	1031
2104.523	SALVAGE SIGN TYPE C	19	EACH	9
2105.602	CONSTRUCT BY-PASS LANE (154TH LANE NW) (P)	17	EACH	1
2105.602	CONSTRUCT TURN LANE (155TH LANE NW) (P)	17	EACH	1
2105.602	CONSTRUCT BY-PASS LANE (157TH AVENUE NW) (P)	17	EACH	1
2105.602	CONSTRUCT BY-PASS LANE (163RD LANE NW) (P)	17	EACH	1
2105.602	CONSTRUCT TURN LANE (TIGER STREET NW) (P)	17	EACH	1
2123.503	MOTOR GRADER	2	HOUR	10
2123.509	DOZER	3	HOUR	20
2130.501	WATER		MGAL	637
2211.501	AGGREGATE BASE CLASS 5	4	TON	2080
2215.501	FULL DEPTH RECLAMATION		SQ YD	90960
2215.502	HAUL FULL DEPTH RECLAMATION (LV)	5	CU YD	100
2221.501	SHOULDER BASE AGGREGATE CLASS 5	6	TON	1315
2232.501	MLL BITUMINOUS SURFACE (2.0")		SQ YD	98
2357.502	BITUMINOUS MATERIAL FOR TACK COAT		GAL	4784
2360.501	TYPE SP 12.5 WEARING COURSE MIX (3,B)	7	TON	833
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,E)		TON	18729
2501.515	15" GS PIPE APRON		EACH	12
2501.515	18" GS PIPE APRON		EACH	2
2503.603	15" HDPE PIPE SEWER		LIN FT	210
2503.603	18" HDPE PIPE SEWER		LIN FT	70
2504.602	ADJUST GATE VALVE	14	EACH	4
2531.501	CONCRETE CURB & GUTTER DESIGN B418		LIN FT	604
2531.604	CONCRETE DRAINAGE FLUME		SQ YD	9
2540.602	MAIL BOX SUPPORT	8	EACH	15
2563.601	TRAFFIC CONTROL	9	LUMP SUM	1
2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	10	UNIT DAY	14
2564.531	SIGN PANELS TYPE C	18	SQ FT	15
2573.502	SILT FENCE, TYPE MS	16	LIN FT	3400
2573.531	STORM DRAIN INLET PROTECTION	15	EACH	2
2574.525	COMMON TOPSOIL BORROW (LV)		CU YD	100
2575.523	EROSION CONTROL BLANKETS CATEGORY 0	11	SQ YD	4265
2581.501	REMOVABLE PREFORMED PAVEMENT MARKING TAPE	12	LIN FT	1267
2582.501	PAVT MSSG PREF THERMO	13, 20	SQ FT	222
2582.502	4" SOLID LINE EPOXY	13	LIN FT	53740
2582.502	4" BROKEN LINE EPOXY	13	LIN FT	3110
2582.502	4" DBLE SOLID LINE EPOXY	13	LIN FT	3920

CONSTRUCTION NOTES

1	ITEM FOR BITUMINOUS DRIVEWAYS AND STREET APPROACHES. 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	ITEM FOR EXCAVATING, STOCKPILING, AND PLACING EMBANKMENT MATERIAL BEHIND CURB & GUTTER.
4	GRAVEL BASE FOR BITUMINOUS STREET APPROACHES, DRIVEWAYS, RT TURN LANE AND BY-PASS AREAS, AND TO BRING SHOULDERS UP TO PAVING GRADE.
5	TO BE USED FOR GRADE, PROFILE, & SUPERELEVATION CORRECTION. INCLUDES PLACEMENT, SHAPING, COMPACTION & MAINTENANCE OF MATERIAL.
6	ITEM INCLUDES 7 TONS FOR EACH GRAVEL ENTRANCE AND GRAVEL STREET APPROACH.
7	STREET APPROACHES & DRIVEWAYS. CONTRACTOR IS RESPONSIBLE FOR CONTACTING PROPERTY OWNER 48 HOURS BEFORE STARTING OPERATION.
8	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.
9	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.
10	2 MESSAGE BOARDS, ONE ON THE EACH END OF PROJECT WILL BE INSTALLED 7 DAYS PRIOR TO ANY CONSTRUCTION; REFERENCE STRIPING PLAN FOR DETAILS.
11	TYPE 1 FERTILIZER AND TYPE 25-121 SEED ARE INCIDENTAL TO THIS ITEM. 4" OF TOPSOIL IS INCIDENTAL TO ALL TURF ESTABLISHMENT.
12	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 IS TO REMOVE PRIOR TO FINAL PAINT STRIPING.
13	FINAL STRIPING SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLETION OF MAINLINE WEAR COURSE PAVING.
14	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
15	ALL DRAINAGE STRUCTURES AFFECTED BY THIS PROJECT MUST HAVE INLET PROTECTION.
16	TO BE USED ALONG RIGHT TURN LANE AND BY-PASS LANE CONSTRUCTION AREAS AS WELL AS ALONG GRADE CORRECTION AREAS.
17	ITEMS INCLUDED IN THE RTL/ BY-PASS BY THE EACH ARE-COMMON EXCAVATION, SELECT GRANULAR BORROW, TOPSOIL BORROW AND AGG BASE CL-5. NOTE- BITUMINOUS ITEMS FOR RTL- BY-PASS CONSTRUCTION ARE INCLUDED IN MAIN SEQ.
18	ITEM FOR INSTALLING SIGNS IN RTL AND BY-PASS AREAS AS WELL AS IN EXISTING AREAS. SEE TEMP. SIGNING AND PERMANENT SIGNING SHEETS.
19	ITEM FOR SALVAGING SIGNS IN RTL AND BY-PASS AREAS. SEE TEMP. SIGNING AND PERMANENT SIGNING SHEETS.
20	INCLUDES ALL THERMOPLASTIC STOP BARS, GORE AREA HATCHING, CROSSWALKS, LANE DESIGNATION ARROWS, AND PAVEMENT MESSAGES

MN/DOT STANDARD PLATES

PLATE NUMBER	DESCRIPTION
7100H	CONCRETE CURB AND GUTTER
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

NO	DATE	BY	CKD	APPR	REVISION	
	03/30/2016					10:46:24 AM

NAME: P:\16-01-00\CSAH_83\150th-173rd\Bases\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: 4/7/2016 LICENSE NO. 51639

DRAWN BY: SRK DATE: 03/30/2016
 DESIGN BY: SRK DATE: 03/30/2016
 CHECKED BY: MJJ DATE: 03/30/2016



**ANOKA COUNTY
HIGHWAY DEPT.**

COUNTY PROJECT 16-14-83

STATEMENT OF ESTIMATED QUANTITIES

Sheet 2 of 30 Sheets

GRADE CORRECTION / SUPERELEVATION TAB (STA 92+00 - 107+50)

STATION	FAR LT	OFFSET FROM 12' LT	GRADE	12' LT ELEV	GRADE	CLASS-5 CL	GRADE	12' RT ELEV	GRADE	OFFSET FROM 12' RT	FAR RT	NOTE
92+00	899.22	9.5	-4.00	899.60	-2.00	899.84	-2.00	899.60	-2.00	13.5	899.33	
92+50	899.14	9.5	-4.00	899.52	-2.00	899.76	-0.85	899.66	-2.00	13.5	899.39	
93+00	899.11	9.5	-4.00	899.49	-2.00	899.73	0.29	899.76	-2.00	13.5	899.49	
93+50	898.89	9.5	-4.00	899.27	-2.00	899.51	1.43	899.68	-2.00	13.5	899.41	
93+68	898.70	13.5	-4.00	899.24	-2.00	899.48	1.84	899.70	-2.00	13.5	899.43	
94+00	898.63	13.5	-4.00	899.17	-2.00	899.41	2.58	899.72	-2.00	13.5	899.45	
94+50	898.55	13.5	-4.00	899.09	-2.00	899.33	3.72	899.78	-2.00	13.5	899.51	
95+00	898.31	13.5	-4.00	898.85	-4.00	899.33	4.86	899.91	-1.50	13.5	899.71	
95+50	897.66	13.5	-6.00	898.47	-6.00	899.19	6.00	899.91	-1.00	13.5	899.78	
96+00	897.65	13.5	-6.00	898.46	-6.00	899.18	6.00	899.90	-1.00	13.5	899.77	
96+50	897.57	13.5	-6.00	898.38	-6.00	899.10	6.00	899.82	-1.00	13.5	899.69	
97+00	897.53	13.5	-6.00	898.34	-6.00	899.06	6.00	899.78	-1.00	9.5	899.69	
97+50	897.39	13.5	-6.00	898.20	-6.00	898.92	6.00	899.64	-1.00	9.5	899.55	
98+00	897.15	13.5	-6.00	897.96	-6.00	898.68	6.00	899.40	-1.00	9.5	899.31	
98+50	897.05	13.5	-6.00	897.86	-6.00	898.58	6.00	899.30	-1.00	9.5	899.21	
99+00	896.94	13.5	-6.00	897.75	-6.00	898.47	6.00	899.19	-1.00	9.5	899.10	
99+50	896.80	13.5	-6.00	897.61	-6.00	898.33	6.00	899.05	-1.00	9.5	898.96	
99+88	896.80	13.5	-6.00	897.61	-6.00	898.33	6.00	899.05	-1.00	9.5	898.96	
100+00	896.98	9.5	-6.00	897.55	-6.00	898.27	6.00	898.99	-1.00	9.5	898.90	
100+50	896.94	9.5	-6.00	897.51	-6.00	898.23	6.00	898.95	-1.00	9.5	898.86	
101+00	896.78	9.5	-6.00	897.35	-6.00	898.07	6.00	898.79	-1.00	9.5	898.70	
101+50	896.69	9.5	-6.00	897.26	-6.00	897.98	6.00	898.70	-1.00	9.5	898.61	
102+00	896.66	9.5	-6.00	897.23	-6.00	897.95	6.00	898.67	-1.00	9.5	898.58	
102+50	896.61	9.5	-6.00	897.18	-6.00	897.90	6.00	898.62	-1.00	9.5	898.53	
103+00	896.34	9.5	-6.00	896.91	-6.00	897.63	6.00	898.35	-1.00	9.5	898.26	
103+50	896.28	9.5	-6.00	896.85	-6.00	897.57	6.00	898.29	-1.00	9.5	898.20	
104+00	896.23	9.5	-6.00	896.80	-6.00	897.52	6.00	898.24	-1.00	9.5	898.15	
104+50	896.56	9.5	-4.00	896.94	-4.00	897.42	4.86	898.00	-1.00	9.5	897.91	
105+00	896.69	9.5	-4.00	897.07	-2.00	897.31	3.71	897.76	-1.00	9.5	897.66	
105+50	896.64	9.5	-4.00	897.02	-2.00	897.26	2.57	897.57	-1.00	9.5	897.47	
106+00	896.58	9.5	-4.00	896.96	-2.00	897.20	1.43	897.37	-1.00	9.5	897.28	
106+50	896.47	9.5	-4.00	896.85	-2.00	897.09	0.29	897.12	-1.00	9.5	897.03	
107+00	896.32	9.5	-4.00	896.70	-2.00	896.94	-0.86	896.84	-2.50	9.5	896.60	
107+50	896.31	9.5	-4.00	896.69	-2.00	896.93	-2.00	896.69	-4.00	9.5	896.31	

PROPOSED CL 5 GRADES PROVIDED FOR REFERENCE

GRADE CORRECTION / SUPERELEVATION TAB (STA 128+00 - 139+00)

STATION	FAR LT	OFFSET FROM 12' LT	GRADE	12' LT ELEV	GRADE	CLASS-5 CL	GRADE	12' RT ELEV	GRADE	OFFSET FROM 12' RT	FAR RT	NOTE
128+00	888.57	13.5	-4.00	889.11	-2.00	889.35	-2.00	889.11	-4.00	9.5	888.73	
128+50	887.98	13.5	-4.00	888.52	-0.86	888.62	-2.00	888.38	-4.00	9.5	888.00	
129+00	886.82	13.5	-4.00	887.36	0.29	887.33	-2.00	887.09	-4.00	9.5	886.71	
129+50	885.68	13.5	-4.00	886.22	1.43	886.05	-2.00	885.81	-4.00	9.5	885.43	
130+00	884.39	13.5	-4.00	884.93	2.57	884.62	-2.00	884.38	-4.00	9.5	884.00	
130+50	882.22	13.5	-3.00	883.63	3.71	883.18	-2.00	882.94	-4.00	9.5	882.56	
131+00	882.02	13.5	-2.00	882.29	4.86	881.71	-4.00	881.23	-4.00	9.5	880.85	
131+50	880.62	13.5	-1.00	880.76	6.00	880.04	-6.00	879.32	-6.00	9.5	878.75	BEGIN FULL SUPER
132+00	879.39	13.5	-1.00	879.52	6.00	878.80	-6.00	878.08	-6.00	9.5	877.51	
132+50	878.34	13.5	-1.00	878.47	6.00	877.75	-6.00	877.03	-6.00	9.5	876.46	
133+00	877.23	13.5	-1.00	877.36	6.00	876.64	-6.00	875.92	-6.00	9.5	875.35	
133+05	877.12	13.5	-1.00	877.25	6.00	876.53	-6.00	875.81	-6.00	9.5	875.24	END RTL (LT)
133+50	876.22	9.5	-1.00	876.31	6.00	875.59	-6.00	874.87	-6.00	9.5	874.30	
134+00	875.38	9.5	-1.00	875.47	6.00	874.75	-6.00	874.03	-6.00	9.5	873.46	
134+50	874.58	9.5	-1.00	874.67	6.00	873.95	-6.00	873.23	-6.00	9.5	872.66	
135+00	874.13	9.5	-1.00	874.22	6.00	873.50	-6.00	872.78	-6.00	9.5	872.21	
135+50	873.75	9.5	-1.00	873.84	6.00	873.12	-6.00	872.40	-6.00	9.5	871.83	END FULL SUPER
136+00	873.59	9.5	-2.00	873.78	4.86	873.20	-5.00	872.60	-5.00	13.5	871.93	BEGIN RTL (RT)
136+50	873.48	9.5	-3.00	873.77	3.71	873.32	-4.00	872.84	-4.00	13.5	872.30	
137+00	873.46	9.5	-4.00	873.84	2.57	873.53	-3.00	873.17	-3.00	13.5	872.77	
137+50	873.85	9.5	-4.00	874.23	1.43	874.06	-2.00	873.82	-2.00	13.5	873.55	
138+00	874.26	9.5	-4.00	874.64	0.29	874.61	-2.00	874.37	-2.00	13.5	874.10	
138+50	874.79	9.5	-4.00	875.17	-0.86	875.27	-2.00	875.03	-2.00	13.5	874.76	
139+00	875.73	9.5	-4.00	876.11	-2.00	876.35	-2.00	876.11	-2.00	13.5	875.84	

PROPOSED CL 5 GRADES PROVIDED FOR REFERENCE

GRADE CORRECTION / SUPERELEVATION TAB (STA 142+00 - 157+00)

STATION	FAR LT	OFFSET FROM 12' LT	GRADE	12' LT ELEV	GRADE	CLASS-5 CL	GRADE	12' RT ELEV	GRADE	OFFSET FROM 12' RT	FAR RT	NOTE
142+00	885.73	13.5	-2.00	886.00	-2.00	886.24	-2.00	886.00	-4.00	9.5	885.62	
142+50	887.69	13.5	-2.00	887.96	-2.00	888.20	-1.11	888.07	-3.67	9.5	887.72	
143+00	889.71	13.5	-2.00	889.98	-2.00	890.22	-0.22	890.19	-3.33	9.5	889.88	
143+50	891.61	13.5	-2.00	891.88	-2.00	892.12	0.67	892.20	-3.00	9.5	891.92	
144+00	893.28	13.5	-2.00	893.55	-2.00	893.79	1.56	893.98	-2.67	9.5	893.72	
144+50	894.87	13.5	-2.00	895.14	-2.00	895.38	2.45	895.67	-2.34	9.5	895.45	
145+00	896.03	13.5	-3.00	896.43	-3.00	896.79	3.34	897.19	-2.00	9.5	897.00	END RTL (LT)
145+50	897.31	9.5	-4.00	897.69	-4.00	898.17	4.22	898.68	-1.67	9.5	898.52	
146+00	898.32	9.5	-5.00	898.79	-5.00	899.39	5.11	900.00	-1.34	9.5	899.88	
146+50	899.34	9.5	-6.00	899.91	-6.00	900.63	6.00	901.35	-1.00	9.5	901.25	BEGIN FULL SUPER
147+00	900.36	9.5	-6.00	900.93	-6.00	901.65	6.00	902.37	-1.00	9.5	902.28	
147+50	901.33	9.5	-6.00	901.90	-6.00	902.62	6.00	903.34	-1.00	9.5	903.25	
148+00	902.09	9.5	-6.00	902.66	-6.00	903.38	6.00	904.10	-1.00	9.5	904.01	
148+50	902.80	9.5	-6.00	903.37	-6.00	904.09	6.00	904.81	-1.00	9.5	904.72	
149+00	903.40	9.5	-6.00	903.97	-6.00	904.69	6.00	905.41	-1.00	9.5	905.32	
149+50	903.88	9.5	-6.00	904.45	-6.00	905.17	6.00	905.89	-1.00	9.5	905.80	
150+00	904.38	9.5	-6.00	904.95	-6.00	905.67	6.00	906.39	-1.00	9.5	906.30	
150+50	904.63	9.5	-6.00	905.20	-6.00	905.92	6.00	906.64	-1.00	9.5	906.55	
151+00	904.71	9.5	-6.00	905.28	-6.00	906.00	6.00	906.72	-1.00	9.5	906.63	
151+50	904.72	9.5	-6.00	905.29	-6.00	906.01	6.00	906.73	-1.00	9.5	906.64	
152+00	904.88	9.5	-6.00	905.45	-6.00	906.17	6.00	906.89	-1.00	9.5	906.80	
152+50	904.88	9.5	-6.00	905.45	-6.00	906.17	6.00	906.89	-1.00	9.5	906.80	
153+00	905.09	9.5	-6.00	905.66	-6.00	906.38	6.00	907.10	-1.00	9.5	907.01	
153+50	905.18	9.5	-6.00	905.75	-6.00	906.47	6.00	907.19	-1.00	9.5	907.10	
154+00	905.16	9.5	-6.00	905.73	-6.00	906.45	6.00	907.17	-1.00	9.5	907.08	END FULL SUPER
154+50	905.50	9.5	-5.00	905.97	-5.00	906.57	-5.00	905.97	-1.43	9.5	905.83	
155+00	905.75	9.5	-4.00	906.13	-4.00	906.61	-4.00	906.13	-1.86	9.5	905.95	
155+50	906.15	9.5	-4.00	906.53	-2.00	906.77	-2.00	906.53	-2.29	9.5	906.31	
156+00	906.28	9.5	-4.00	906.66	-2.00	906.90	-2.00	906.66	-2.71	9.5	906.40	
156+50	906.40	9.5	-4.00	906.78	-2.00	907.02	-2.00	906.78	-3.14	9.5	906.48	
157+00	906.50	9.5	-4.00	906.88	-2.00	907.12	-2.00	906.88	-3.57	9.5	906.54	
157+50	906.64	9.5	-4.00	907.02	-2.00	907.26	-2.00	907.02	-4.00	9.5	906.64	

GRADE CORRECTION / SUPERELEVATION TAB (STA 157+00 - 164+00)

STATION	FAR LT	OFFSET FROM 12' LT	GRADE	12' LT ELEV	GRADE	CLASS-5 CL	GRADE	12' RT ELEV	GRADE	OFFSET FROM 12' RT	FAR RT	NOTE
157+00	885.62	9.5	-4.00	886.00	-2.00	886.24	-2.00	886.00	-4.00	9.5	885.62	
157+50	887.89	9.5	-3.25	888.20	0.00	888.20	-2.66	887.88	-4.00	9.5	887.50	
158+00	890.22	9.5	-2.50	890.46	2.00	890.22	-3.33	889.82	-4.00	9.5	889.44	
158+50	892.43	9.5	-1.75	892.60	4.00	892.12	-4.00	891.64	-4.00	9.5	891.26	
158+60	892.76	13.5	-1.60	892.98	4.40	892.45	-4.40	891.92	-4.40	9.5	891.50	BEGIN RTL (LT)
159+00	894.38	13.5	-1.00	894.51	6.00	893.79	-6.00	893.07	-6.00	9.5	892.50	BEGIN FULL SUPER
159+50	895.97	13.5	-1.00	896.10	6.00	895.38	-6.00	894.66	-6.00	9.5	894.09	
160+00	897.38	13.5	-1.00	897.51	6.00	896.79	-6.00	896.07	-6.00	9.5	895.50	
160+50	898.76	13.5	-1.00	898.89	6.00	898.17	-6.00	897.45	-6.00	9.5	896.88	
161+00	899.98	13.5	-1.00	900.11	6.00	899.39	-6.00	898.67	-6.00	9.5	898.10	
161+50	901.22	13.5	-1.00	901.35	6.00	900.63	-6.00	899.91	-6.00	9.5	899.34	END FULL SUPER
161+90	901.78	13.5	-1.48	901.98	4.40	901.45	-4.40	900.92	-4.40	13.5	900.33	BEGIN RTL (RT)
162+00	901.91	13.5	-1.60	902.13	4.00	901.65	-4.00	901.17	-4.00	13.5	900.63	
162+50	902.62	13.5	-2.20	902.92	2.50	902.62	-3.50	902.20	-3.50	13.5	901.73	
163+00	903.12	13.5	-2.80	903.50	1.00	903.38	-3.00	903.02	-3.00	13.5	902.62	
163+15	903.25	13.5	-2.98	903.66	0.55	903.59	-2.85	903.25	-2.85	13.5	902.86	
163+50	903.71	9.5	-3.40	904.03	-0.50	904.09	-2.50	903.79	-2.50	13.5	903.45	END RTL (LT)
164+00	904.07	9.5	-4.00	904.45	-2.00	904.69	-2.00	904.45	-2.00	13.5	904.18	

PROPOSED CL 5 GRADES PROVIDED FOR REFERENCE

GRADE CORRECTION / SUPERELEVATION TAB (STA 188+50 - 200+50)

STATION	FAR LT	OFFSET FROM 12' LT	GRADE	12' LT ELEV	GRADE	CLASS-5 CL	GRADE	12' RT ELEV	GRADE	OFFSET FROM 12' RT	FAR RT	NOTE
188+50	895.74	9.5	-4.00	896.12	-2.00	896.36	-2.00	896.12	-4.00	9.5	895.74	
189+00	896.36	9.5	-3.25	896.67	-0.25	896.70	-2.67	896.38	-4.00	9.5	896.00	
189+50	896.99	9.5	-2.50	897.23	1.50	897.05	-3.33	896.65	-4.00	9.5	896.27	
190+00	897.70	9.5	-1.75	897.87	3.25	897.48	-4.00	897.00	-4.00	9.5	896.62	
190+50	898.41	9.5	-1.00	898.50	5.00	897.90	-5.00	897.30	-5.00	9.5	896.83	BEGIN FULL SUPER
191+00	898.67	9.5	-1.00	898.76	5.00	898.16	-5.00	897.56	-5.00	9.5	897.09	
191+50	899.02	9.5	-1.00	899.11	5.00	898.51	-5.00	897.91	-5.00	9.5	897.44	
192+00	899.27	9.5	-1.00	899.36	5.00	898.76	-5.00	898.16	-5.00	9.5	897.69	
192+50	899.36	9.5	-1.00	899.45	5.00	898.85	-5.00	898.25	-5.00	9.5	897.78	
193+00	899.31	9.5	-1.00	899.40	5.00	898.80	-5.00	898.20	-5.00	9.5	897.73	
193+50	899.26	9.5	-1.00	899.35	5.00	898.75	-5.00	898.15	-5.00	9.5	897.68	
194+00	899.04	9.5	-1.00	899.13	5.00	898.53	-5.00	897.93	-5.00	9.5	897.46	
194+50	898.66	9.5	-1.00	898.75	5.00	898.15	-5.00	897.55	-5.00	9.5	897.08	
195+00	898.20	9.5	-1.00	898.29	5.00	897.69	-5.00	897.09	-5.00	9.5	896.62	
195+50	897.71	9.5	-1.00	897.80	5.00	897.20	-5.00	896.60	-5.00	9.5	896.13	
195+60	897.60	9.5	-1.00	897.69	5.00	897.09	-5.00	896.49	-5.00	13.5	895.82	BEGIN RTL (RT)
196+00	897.14	9.5	-1.00	897.23	5.00	896.63	-5.00	896.03	-5.00	13.5	895.36	
196+50	896.39	9.5	-1.00	896.48	5.00	895.88	-5.00	895.28	-5.00	13.5	894.61	
197+00	895.69	9.5	-1.00	895.78	5.00	895.18	-5.00	894.58	-5.00	13.5	893.91	
197+50	895.04	9.5	-1.00	895.13	5.00	894.53	-5.00	893.93	-5.00	13.5	893.26	
198+00	894.40	9.5	-1.00	894.49	5.00	893.89	-5.00	893.29	-5.00	13.5	892.62	
198+50	893.78	9.5	-1.00	893.87	5.00	893.27	-5.00	892.67	-5.00	13.5	892.00	
199+00	893.28	9.5	-1.00	893.37	5.00	892.77	-5.00	892.17	-5.00	13.5	891.50	
199+50	892.98	9.5	-1.00	893.07	5.00	892.47	-5.00	891.87	-5.00	13.5	891.20	
200+00	892.82	9.5	-1.00	892.91	5.00	892.31	-5.00	891.71	-5.00	13.5	891.04	
200+50	892.78	9.5	-1.00	892.87	5.00	892.27	-5.00	891.67	-5.00	13.5	891.00	

PROPOSED CL 5 GRADES PROVIDED FOR REFERENCE

CURB REPLACEMENT TAB

LOCATION	STATION	BITUMINOUS CURB REMOVAL (LIN FT) (INCIDENTAL TO FULL DEPTH RECLAMATION)	CONCRETE CURB & GUTTER DESIGN B418 (LIN FT)
W. SIDE	12+83 - 15+22	250	250
W. SIDE	15+33 - 16+08	86	86
W. SIDE	25+55 - 26+66	111	111
W. SIDE	155TH LANE NW	31	31
W. SIDE	TIGER ST NW	126	126
TOTALS:		604	604

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\16-01-00\CSAH_83(150th-173rd)\Base\PROPOSED\PROPOSED.dgn

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 CHECKED BY: MJJ DATE: 03/29/2016



**ANOKA COUNTY
HIGHWAY DEPT.**

COUNTY PROJECT 16-14-83

TABULATIONS

Sheet 4 of 30 Sheets

mjohn

CULVERT STAKING TAB														
FROM	STATION	OFFSET	ELEVATION*	TO	STATION	OFFSET	ELEVATION*	REMOVE PIPE CULVERT	15" HDPE PIPE SEWER (LN FT)	18" HDPE PIPE SEWER (LN FT)	15" GS PIPE APRON (EACH)	18" GS PIPE APRON (EACH)	SLOPE %	NOTE
200	35+52.40	38.8' RT	899.15	201	35+88.60	38.4' RT	888.75	36	36		2		1.11	PIPE END
202	39+70.30	35.9' RT	886.63	203	40+12.90	35.3' RT	886.73	42	42		2		0.24	PIPE END
204	47+15.20	36.0' LT	888.65	205	47+47.50	35.7' LT	888.41	32	32		2		0.75	PIPE END
206	48+89.90	33.4' LT	888.83	207	49+21.50	33.6' LT	889.97	32	32		2		3.56	PIPE END
208	50+70.80	34.7' LT	891.95	209	51+02.30	35.6' LT	892.58	32	32		2		1.97	PIPE END
210	53+58.40	37.8' LT	895.91	211	53+94.70	37.6' LT	896.51	36	36		2		1.67	PIPE END
212	166+42.10	46.0' LT	897.11	213	167+12.60	41.8' LT	898.34	70		70		2	1.62	PIPE END
TOTALS								280	210	70	12	2		

* VERIFY ALL FIELD ELEVATIONS ON THIS TABLE AND ADJUST ACCORDINGLY

ESTIMATED AVERAGE DEPTH FOR RT. TURN AND BY-PASS LANES USING ELEVATION AT EDGE OF MAT, SHOULDER PI, AND DITCH BOTTOM.

BY-PASS @ 154TH LANE NW	RTL @ 155TH LANE NW	BY-PASS @ 157TH AVE NW	BY-PASS @ 163RD LANE NW	RTL @ TIGER STREET NW
893.12 892.93 890.91 890.41 890.07 887.49 889.74 889.51 887.77 889.48 889.26 886.97 889.45 889.21 887.29 4452.20 4450.98 4440.43 890.44 890.20 888.09	890.29 890.22 888.55 890.47 890.35 888.45 890.64 890.52 888.60 890.76 890.67 888.61 891.17 891.07 889.09 4453.33 4452.83 4443.30 890.67 890.57 888.66	895.02 894.97 892.91 896.95 896.83 894.36 898.01 897.89 895.66 899.33 899.20 897.44 900.98 900.81 898.83 4490.29 4489.70 4479.20 898.06 897.94 895.84	898.68 898.52 896.13 898.32 898.09 896.11 898.04 897.85 895.82 897.66 897.46 895.75 897.11 896.94 894.57 4489.81 4488.86 4478.38 897.96 897.77 895.68	898.75 898.54 896.55 899.23 898.86 897.16 900.22 899.95 897.76 900.96 900.72 898.94 901.35 901.15 899.32 4500.51 4499.22 4489.73 900.10 899.84 897.95
AVERAGE DEPTH 2.35 minus 0.5' (AGG BASE) 1.85	AVERAGE DEPTH 2.01 minus 0.5' (AGG BASE) 1.51	AVERAGE DEPTH 2.22 minus 0.5' (AGG BASE) 1.72	AVERAGE DEPTH 2.29 minus 0.5' (AGG BASE) 1.79	AVERAGE DEPTH 2.16 minus 0.5' (AGG BASE) 1.66

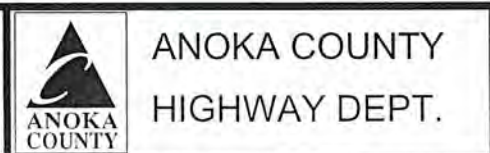
ESTIMATED QUANTITIES FOR RIGHT-TURN LANES AND BYPASS LANES (BY THE EACH)

STREET	STA.	LOC	RTL / BY-PASS	WIDTH	LENGTH	COMMON EXCAVATION 2105.501 (CU YD)	TOPSOIL BORROW (LV) 2105.525 (CU YD)	SELECT GRANULAR BORROW (CV) 2105.522 (CU YD)	AGG BASE CLASS 5 (CV) 2211.501 (TON)
154TH LANE NW	34+54 - 40+74	LNB	BY-PASS	12	620	258	121	659	279
155TH LANE NW	43+00 - 50+52	LSB	RTL	12	752	269	102	652	338
157TH AVENUE NW	50+52 - 56+72	LSB	BY-PASS	12	620	261	123	612	279
163RD LANE NW	93+68 - 99+88	LSB	BY-PASS	12	620	235	98	637	279
TIGER STREET NW	166+25 - 171+78	LSB	RTL	12	553	220	97	527	249
TOTALS						1243	541	3087	1424

NO	DATE	BY	CKD	APPR	REVISION	03/29/2016	2:57:21 PM

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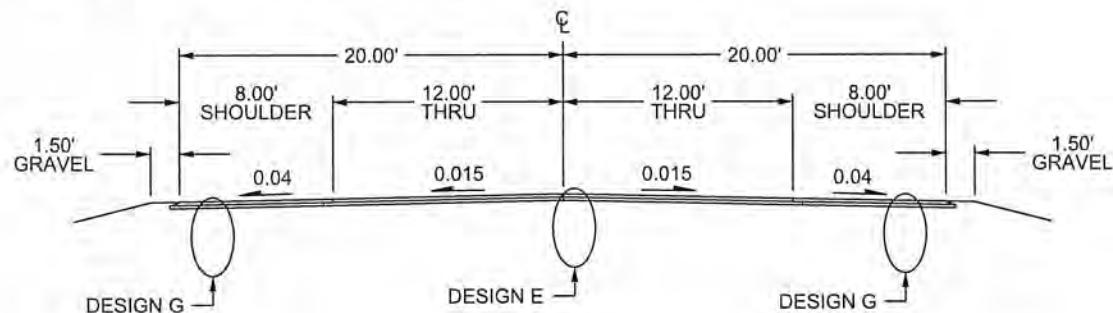


COUNTY PROJECT 16-14-83

TABULATIONS
 Sheet 5 of 30 Sheets

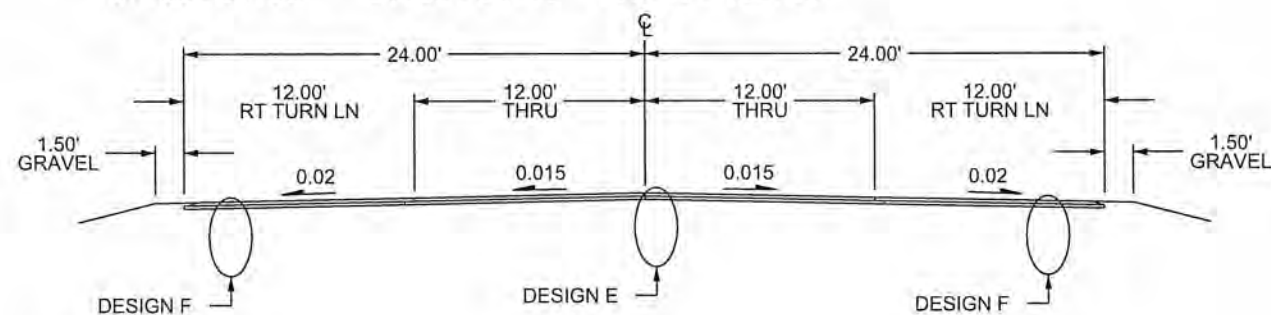
CSAH 83 (ARMSTRONG BLVD)
EXISTING SECTION

10+27 - 17+00	61+30 - 64+60	96+15 - 117+00	166+25 - 195+60
31+80 - 38+60	70+40 - 76+00	133+05 - 136+00	199+95 - 201+41
52+70 - 57+00	84+80 - 91+35	145+00 - 158+60	

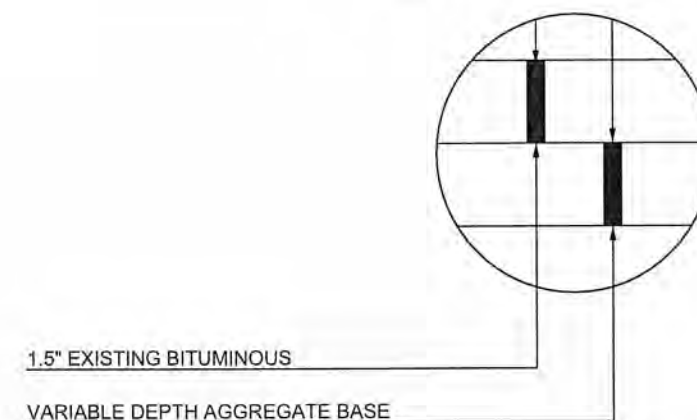


CSAH 83 (ARMSTRONG BLVD)
EXISTING SECTION

17+00 - 31+80	64+60 - 70+40	117+00 - 133+05	195+60 - 199+95
38+60 - 52+70	76+00 - 84+80	136+00 - 145+00	
57+00 - 61+30	91+35 - 96+15	158+60 - 166+25	



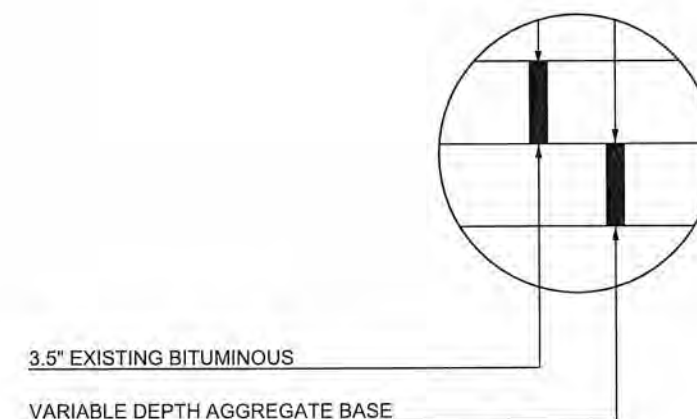
DESIGN G
EXISTING SECTION



1.5" EXISTING BITUMINOUS

VARIABLE DEPTH AGGREGATE BASE

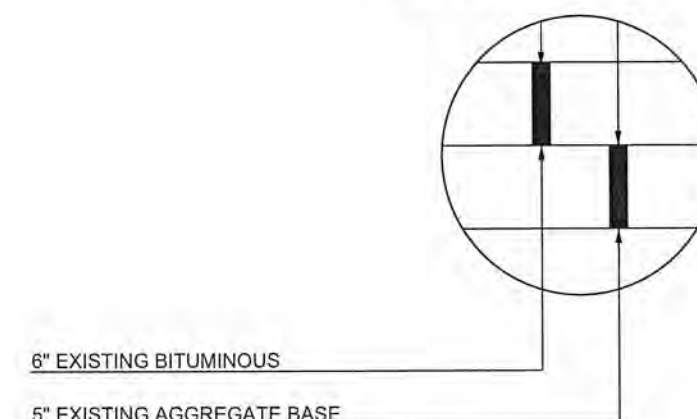
DESIGN F
EXISTING SECTION



3.5" EXISTING BITUMINOUS

VARIABLE DEPTH AGGREGATE BASE

DESIGN E
EXISTING SECTION



6" EXISTING BITUMINOUS


5" EXISTING AGGREGATE BASE

NO	DATE	BY	CKD	APPR	REVISION	
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ANOKA COUNTY
HIGHWAY DEPT.

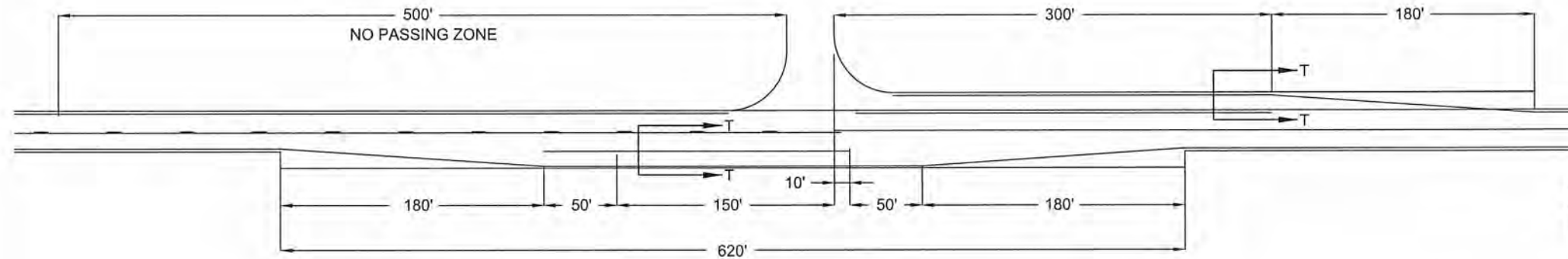
COUNTY PROJECT 16-14-83

TYPICAL SECTIONS

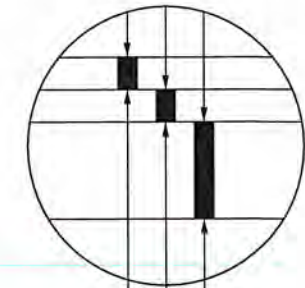
Sheet 6 of 30 Sheets

RIGHT TURN AND BY-PASS LANE

GENERAL LAYOUT
PLAN VIEW

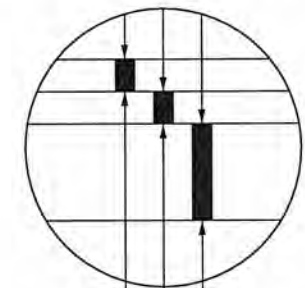


DESIGN R RECLAIM SECTION

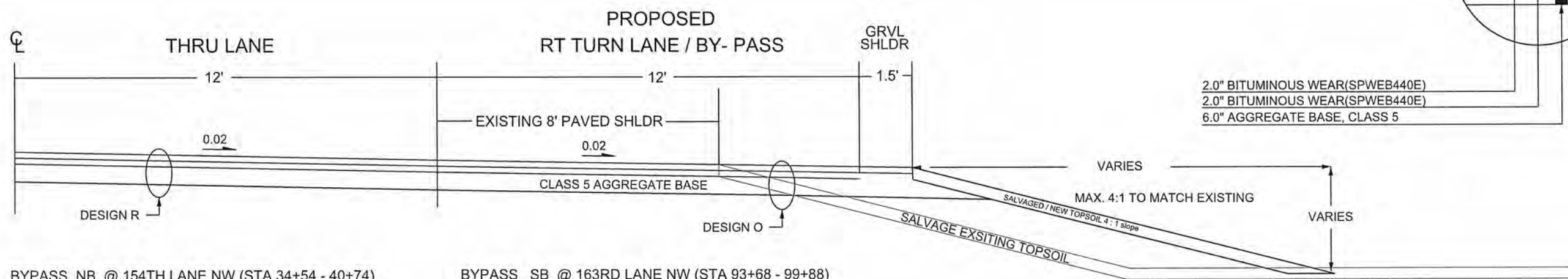


2.0" BITUMINOUS WEAR(SPWEB440E)
2.0" BITUMINOUS WEAR(SPWEB440E)
RECLAIMED BITUMINOUS

DESIGN O RTL / BYPASS SECTION



2.0" BITUMINOUS WEAR(SPWEB440E)
2.0" BITUMINOUS WEAR(SPWEB440E)
6.0" AGGREGATE BASE, CLASS 5



BYPASS NB @ 154TH LANE NW (STA 34+54 - 40+74)
RTL SB @ 155TH LANE NW (STA 43+00 - 50+52)
BYPASS SB @ 157TH AVENUE NW (STA 50+52 - 56+72)

BYPASS SB @ 163RD LANE NW (STA 93+68 - 99+88)
RTL SB @ TIGER STREET NW (STA 166+25 - 171+78)

NO	DATE	BY	CKD	APPR	REVISION	DATE	TIME
						03/29/2016	2:57:07 PM

NAME: P:\16-01-00\CSAH_83(150th-173rd)\Base\PROPOSED\PROPOSED.dgn

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**ANOKA COUNTY
HIGHWAY DEPT.**

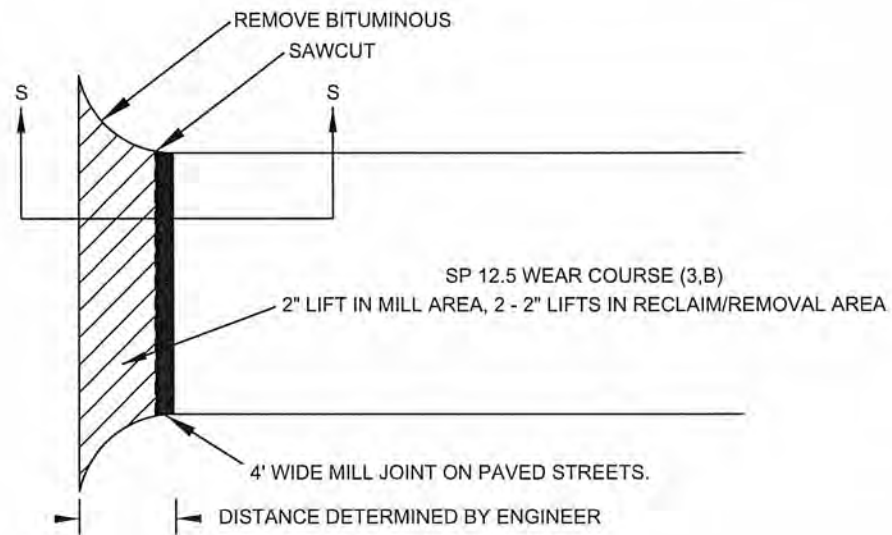
COUNTY PROJECT 16-14-83

TYPICAL SECTIONS
Sheet 8 of 30 Sheets

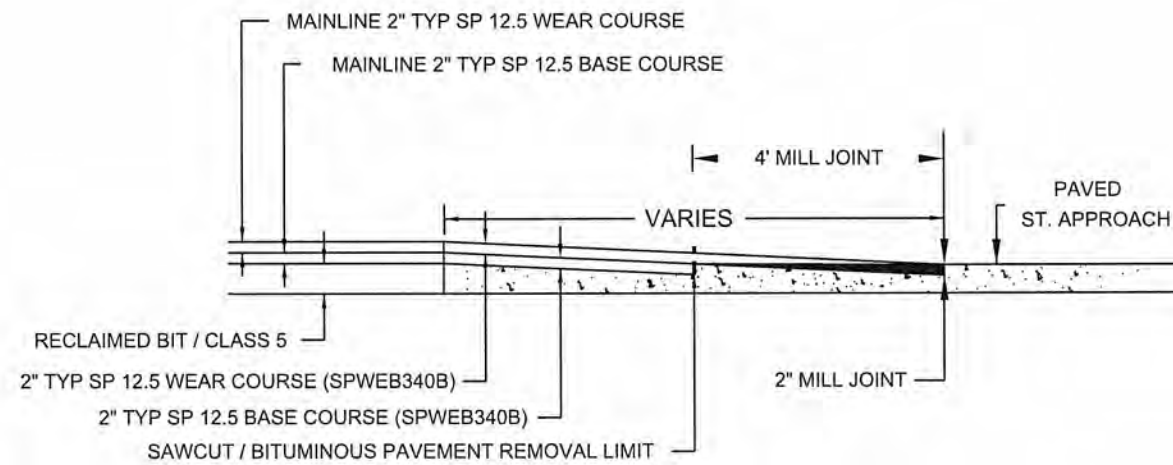
STREET APPROACH DETAIL

BITUMINOUS STREET

PLAN VIEW



SECTION S - S



NO	DATE	BY	CKD	APPR	REVISION	03/29/2016	2:57:27 PM

NAME: P:\16-01-00\CSAH_83(150th-173rd)\Base\PROPOSED\PROPOSED.dgn

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ANOKA COUNTY
HIGHWAY DEPT.

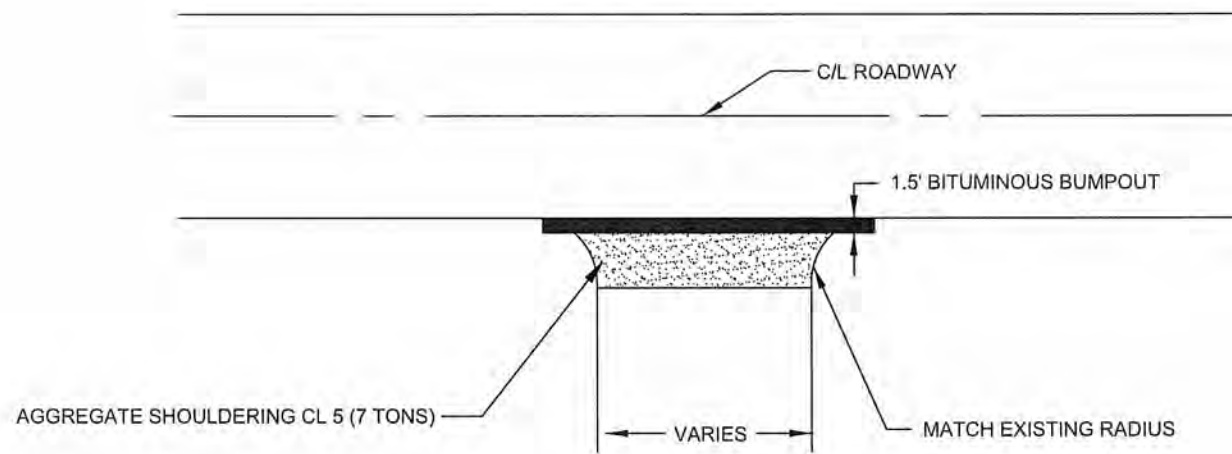
COUNTY PROJECT 16-14-83

DETAILS

Sheet 9 of 30 Sheets

DRIVEWAY DETAIL

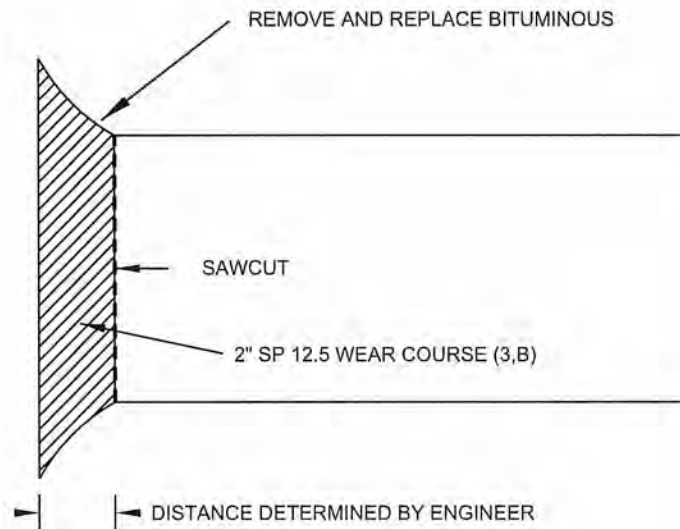
GRAVEL / FIELD ENTRANCE



RECLAIM AREA - DRIVEWAY DETAIL

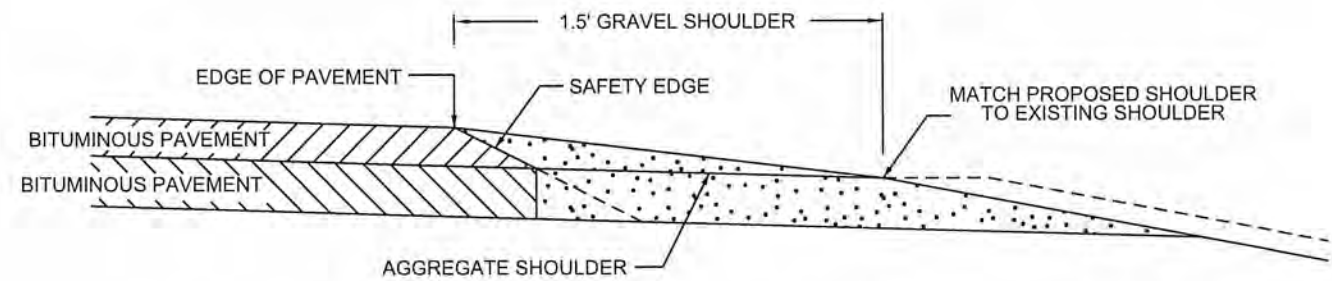
BITUMINOUS ENTRANCE

PLAN VIEW



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	
	03/29/2016					2:57:30 PM

NAME: P:\16-01-00\CSAH_83(150th-173rd)\Base\PROPOSED\PROPOSED.dgn

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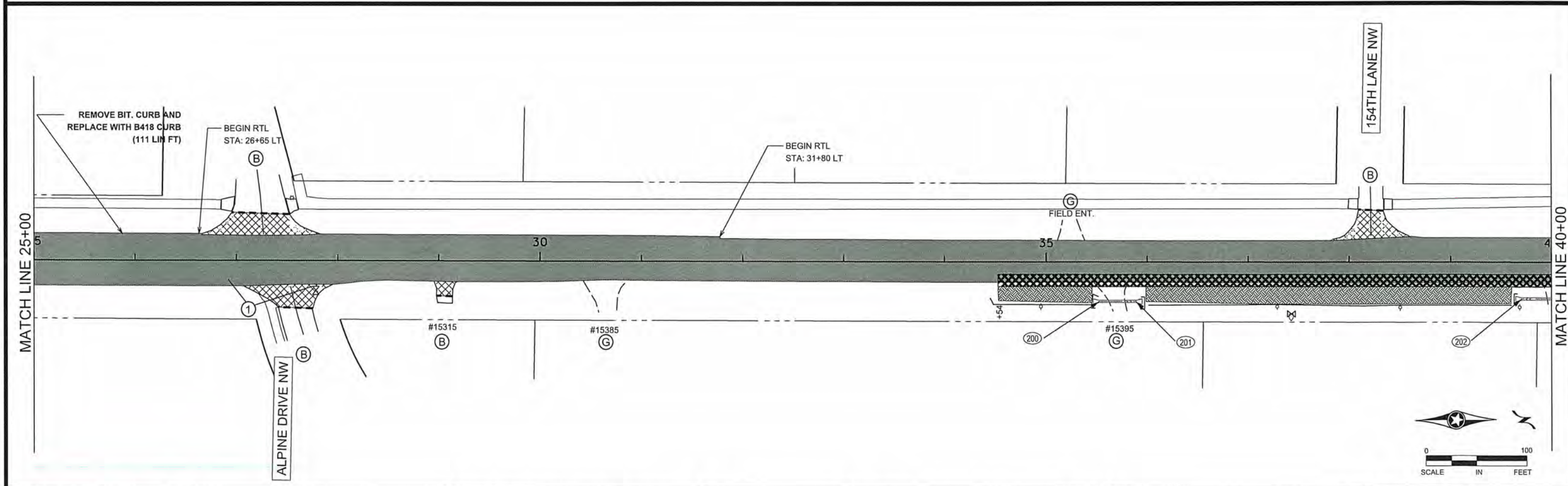
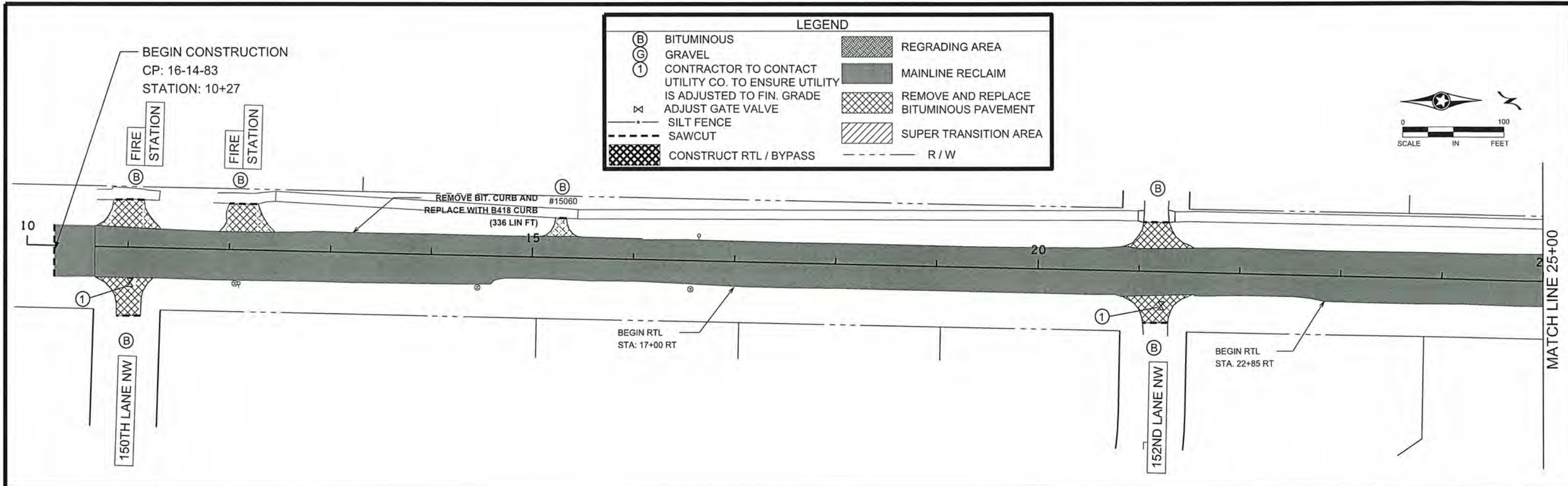


**ANOKA COUNTY
HIGHWAY DEPT.**

COUNTY PROJECT 16-14-83

DETAILS

Sheet 10 of 30 Sheets



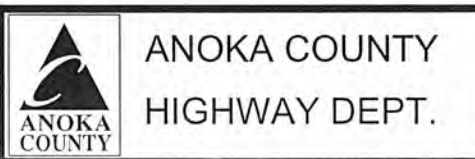
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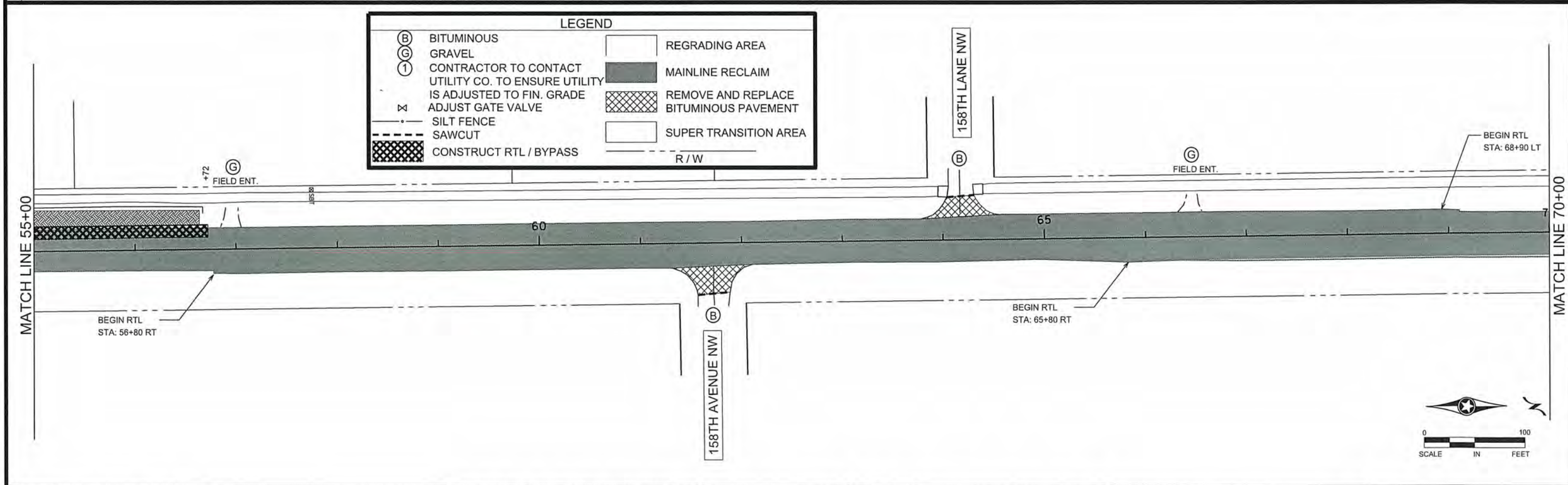
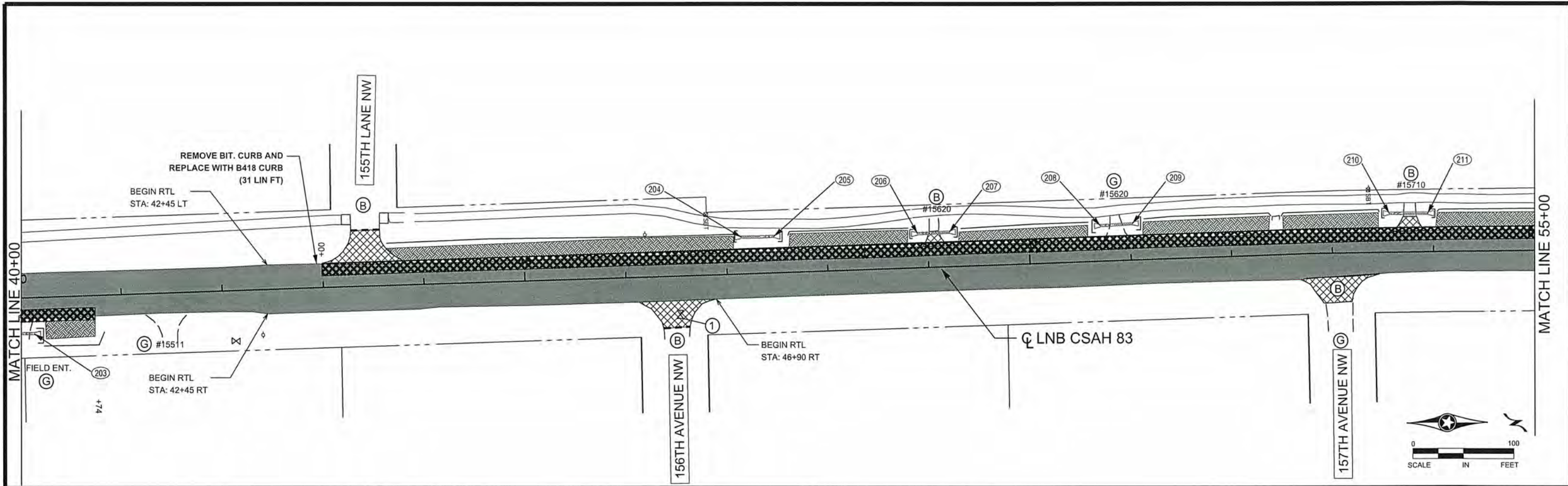
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COUNTY PROJECT 16-14-83

CONSTRUCTION PLAN
 STA 10+67 TO 40+00
 Sheet 11 of 30 Sheets



LEGEND			
(B)	BITUMINOUS	[Hatched Box]	REGRADING AREA
(G)	GRAVEL	[Solid Grey Box]	MAINLINE RECLAIM
(1)	CONTRACTOR TO CONTACT UTILITY CO. TO ENSURE UTILITY IS ADJUSTED TO FIN. GRADE	[Cross-hatched Box]	REMOVE AND REPLACE BITUMINOUS PAVEMENT
[Symbol]	ADJUST GATE VALVE	[Dotted Box]	SUPER TRANSITION AREA
[Symbol]	SILT FENCE	[Dashed Line]	R / W
[Symbol]	SAWCUT		
[Symbol]	CONSTRUCT RTL / BYPASS		

NO	DATE	BY	CKD	APPR	REVISION	03/29/2016	2:57:42 PM
NAME: P:\16-01-00\CSAH_83\150th-173rd\16-01-00\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.

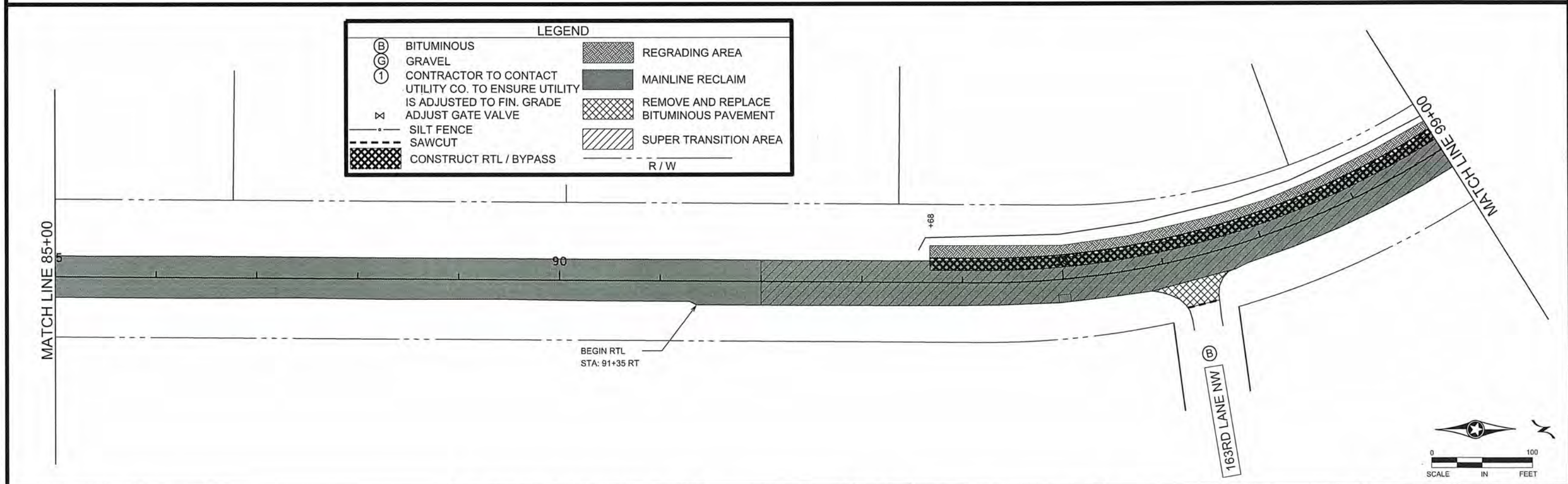
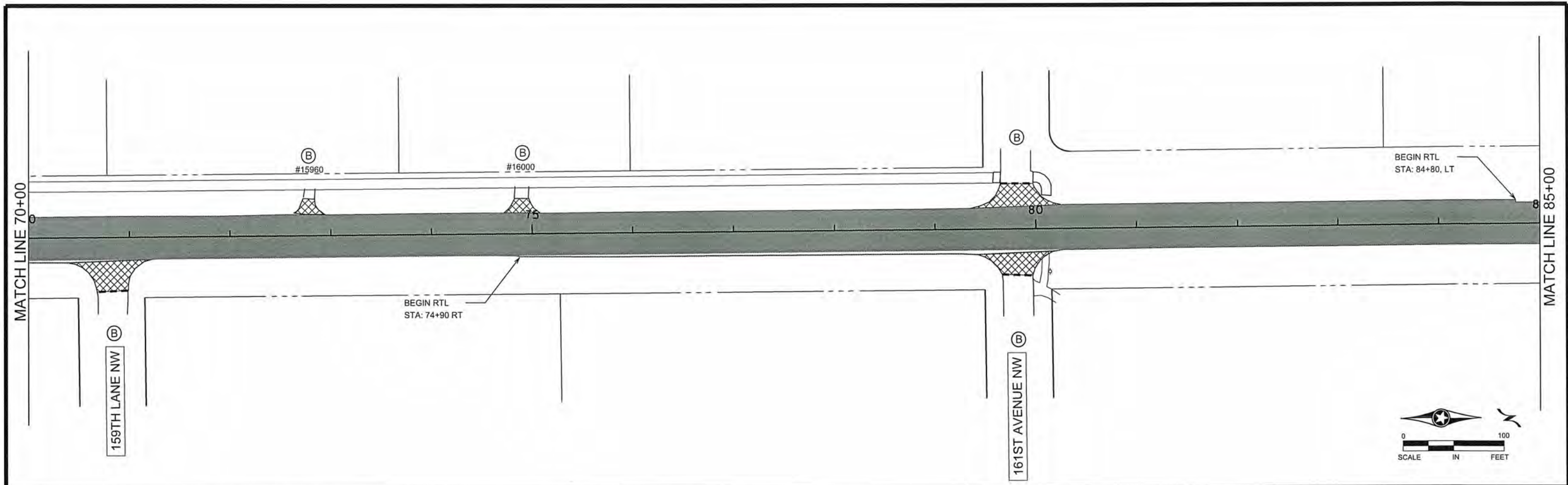
PRINT NAME: MATTHEW J. JOHN
 SIGNATURE: *[Signature]*
 DATE: 4/7/2016 LICENSE NO. 51639

DRAWN BY: SRK DATE: 03/29/2016
 DESIGN BY: SRK DATE: 03/29/2016
 CHECKED BY: MJJ DATE: 03/29/2016

ANOKA COUNTY
HIGHWAY DEPT.

COUNTY PROJECT 16-14-83

CONSTRUCTION PLAN
 STA 40+00 TO 70+00
 Sheet 12 of 30 Sheets



LEGEND			
(B)	BITUMINOUS	[Cross-hatch pattern]	REGRADE AREA
(G)	GRAVEL	[Solid grey fill]	MAINLINE RECLAIM
(1)	CONTRACTOR TO CONTACT UTILITY CO. TO ENSURE UTILITY IS ADJUSTED TO FIN. GRADE	[Diagonal hatch pattern]	REMOVE AND REPLACE BITUMINOUS PAVEMENT
⊗	ADJUST GATE VALVE	[Diagonal hatch pattern]	SUPER TRANSITION AREA
—	SILT FENCE	—	R / W
- - -	SAWCUT		
[Cross-hatch pattern]	CONSTRUCT RTL / BYPASS		

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 SIGNATURE: *[Signature]*
 DATE: 4/7/2016 LICENSE NO. 51639

DRAWN BY SRK DATE 03/29/2016
 DESIGN BY SRK DATE 03/29/2016
 CHECKED BY MJJ DATE 03/29/2016

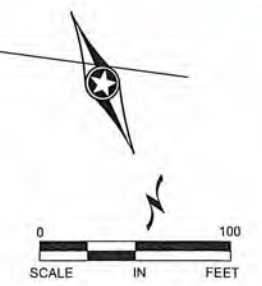
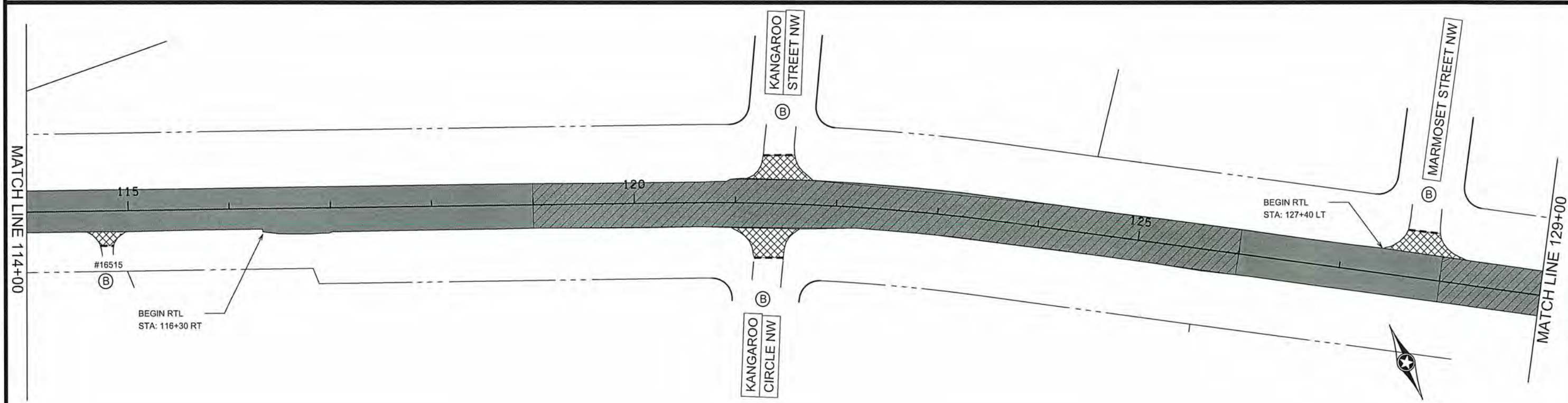
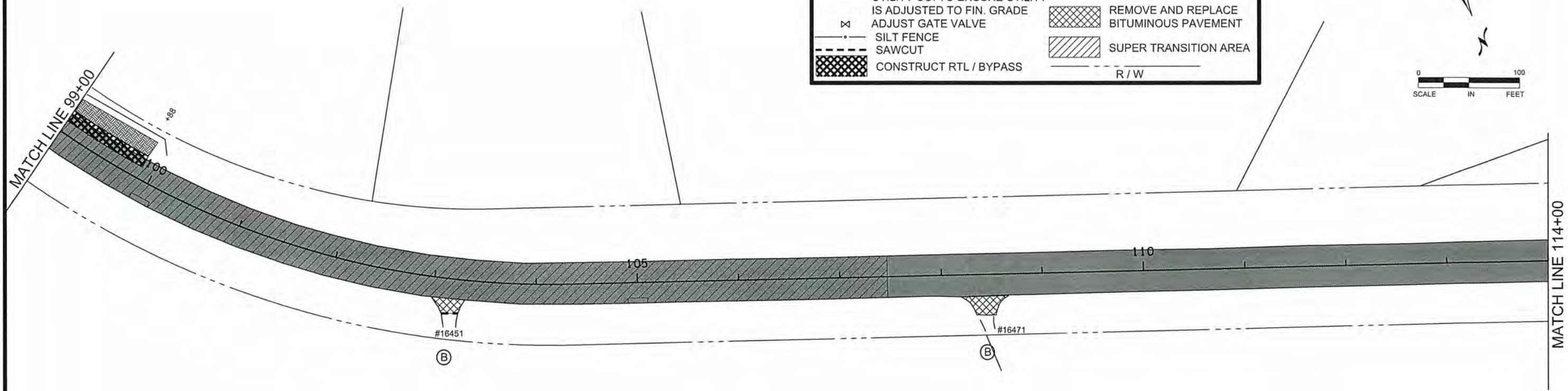
ANOKA COUNTY
HIGHWAY DEPT.

COUNTY PROJECT 16-14-83

CONSTRUCTION PLAN
 STA 70+00 TO 99+00
 Sheet 13 of 30 Sheets

LEGEND

(B)	BITUMINOUS		REGRADE AREA
(G)	GRAVEL		MAINLINE RECLAIM
(1)	CONTRACTOR TO CONTACT UTILITY CO. TO ENSURE UTILITY IS ADJUSTED TO FIN. GRADE		REMOVE AND REPLACE BITUMINOUS PAVEMENT
⊗	ADJUST GATE VALVE		SUPER TRANSITION AREA
- - -	SILT FENCE		
- - -	SAWCUT		
	CONSTRUCT RTL / BYPASS		
		- - -	R / W



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PRINT NAME: MATTHEW J. JOHN
 SIGNATURE: *Matthew J. John*
 DATE: 4/7/2016 LICENSE NO. 51639

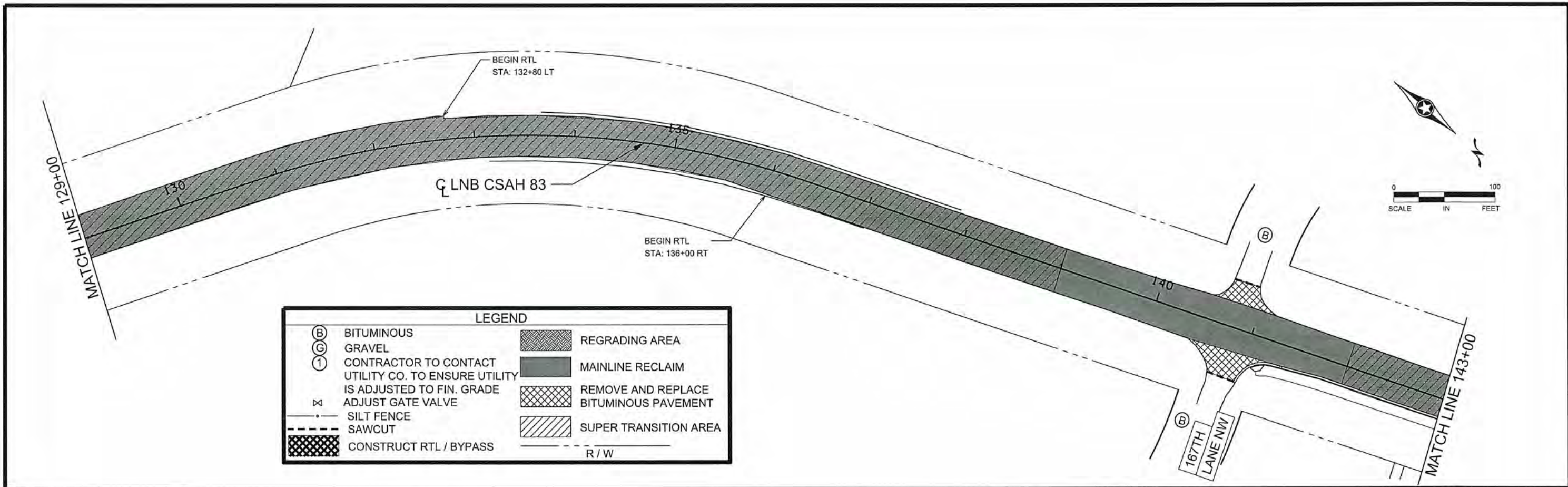
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 CHECKED BY: MJJ DATE: 03/29/2016

COUNTY PROJECT 16-14-83

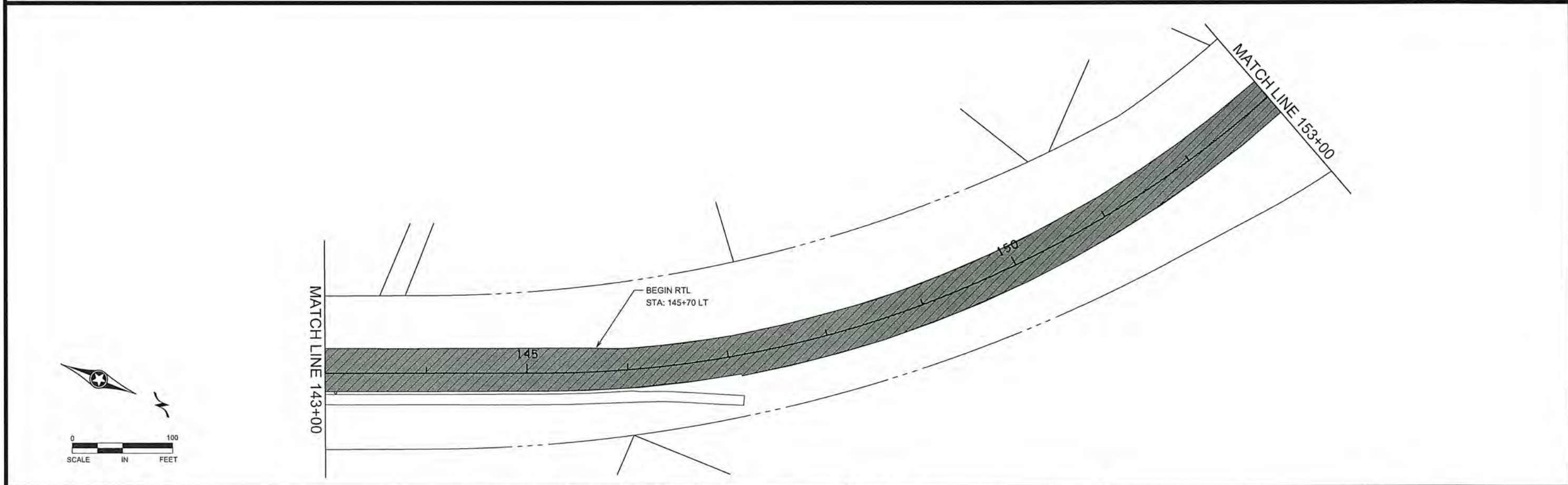
CONSTRUCTION PLAN

STA 99+00 TO 129+00

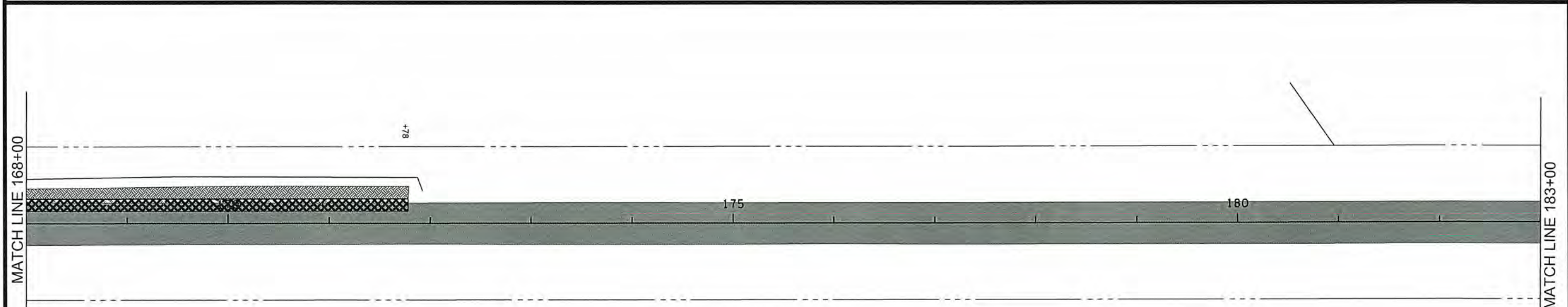
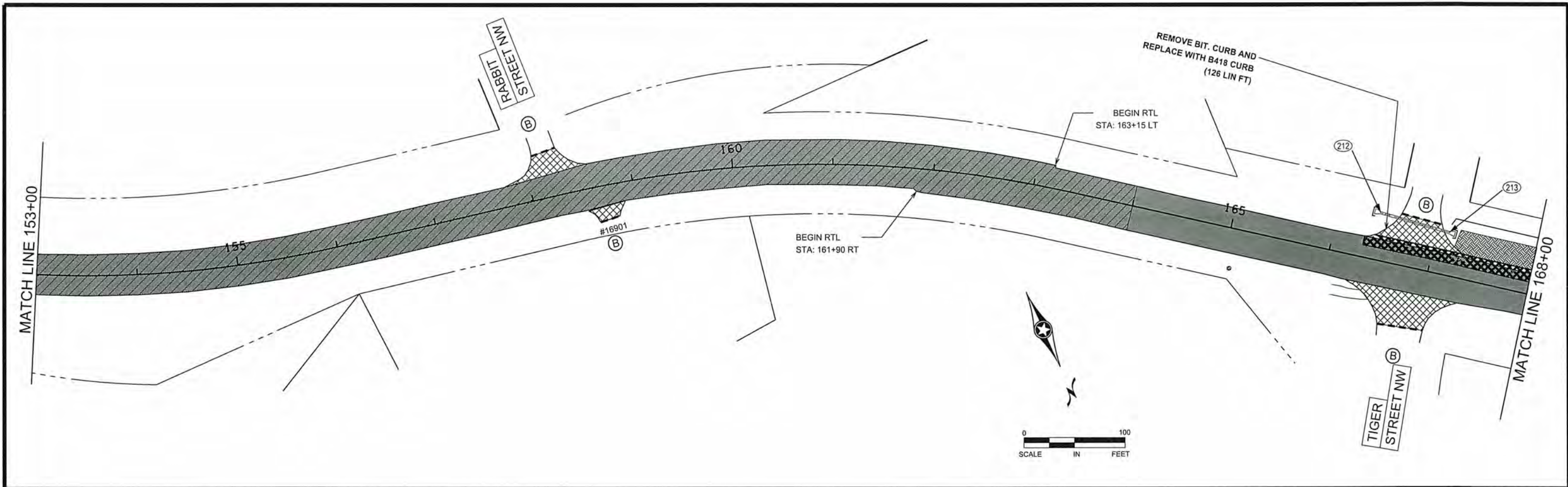
Sheet 14 of 30 Sheets



LEGEND			
(B)	BITUMINOUS	[Hatched pattern]	REGRAIDING AREA
(G)	GRAVEL	[Solid grey]	MAINLINE RECLAIM
(1)	CONTRACTOR TO CONTACT UTILITY CO. TO ENSURE UTILITY IS ADJUSTED TO FIN. GRADE	[Cross-hatched pattern]	REMOVE AND REPLACE BITUMINOUS PAVEMENT
⊗	ADJUST GATE VALVE	[Diagonal hatched pattern]	SUPER TRANSITION AREA
—	SILT FENCE	—	R/W
—	SAWCUT		
[Cross-hatched pattern]	CONSTRUCT RTL / BYPASS		



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: <i>[Signature]</i> DATE: 4/7/2016 LICENSE NO. 51639				DRAWN BY: SRK DATE: 03/29/2016 DESIGN BY: SRK DATE: 03/29/2016 CHECKED BY: MJJ DATE: 03/29/2016		ANOKA COUNTY HIGHWAY DEPT.		CONSTRUCTION PLAN STA 129+00 TO 153+00 Sheet 15 of 30 Sheets	
NO	DATE	BY	CKD	APPR	REVISION	03/29/2016	2:57:56 PM	COUNTY PROJECT 16-14-83	
NAME: P:\16-01-00\CSAH_83(150th-173rd)\Base\PROPOSED\PROPOSED.dgn									



LEGEND			
(B)	BITUMINOUS	[Hatched pattern]	REGRADING AREA
(G)	GRAVEL	[Solid grey]	MAINLINE RECLAIM
(1)	CONTRACTOR TO CONTACT UTILITY CO. TO ENSURE UTILITY IS ADJUSTED TO FIN. GRADE	[Cross-hatched pattern]	REMOVE AND REPLACE BITUMINOUS PAVEMENT
⊗	ADJUST GATE VALVE	[Diagonal hatched pattern]	SUPER TRANSITION AREA
---	SILT FENCE	[Dashed line]	R / W
---	SAWCUT		
[Cross-hatched pattern]	CONSTRUCT RTL / BYPASS		

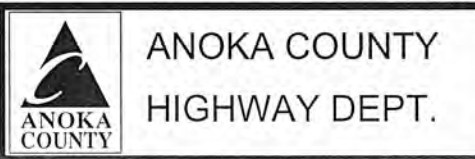
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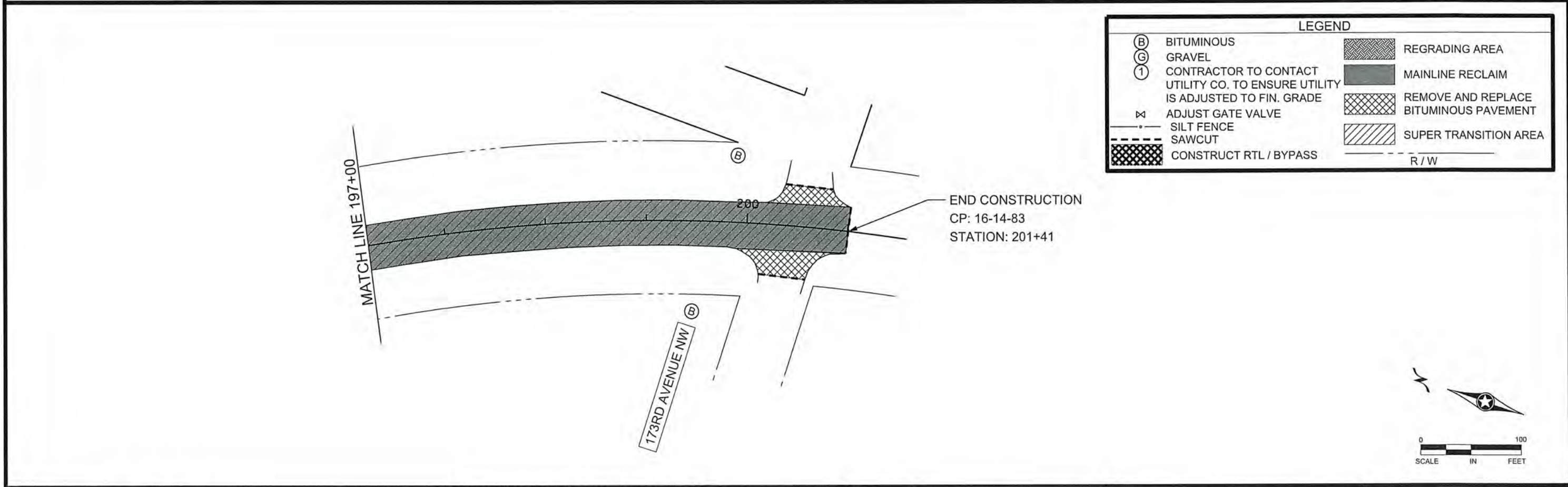
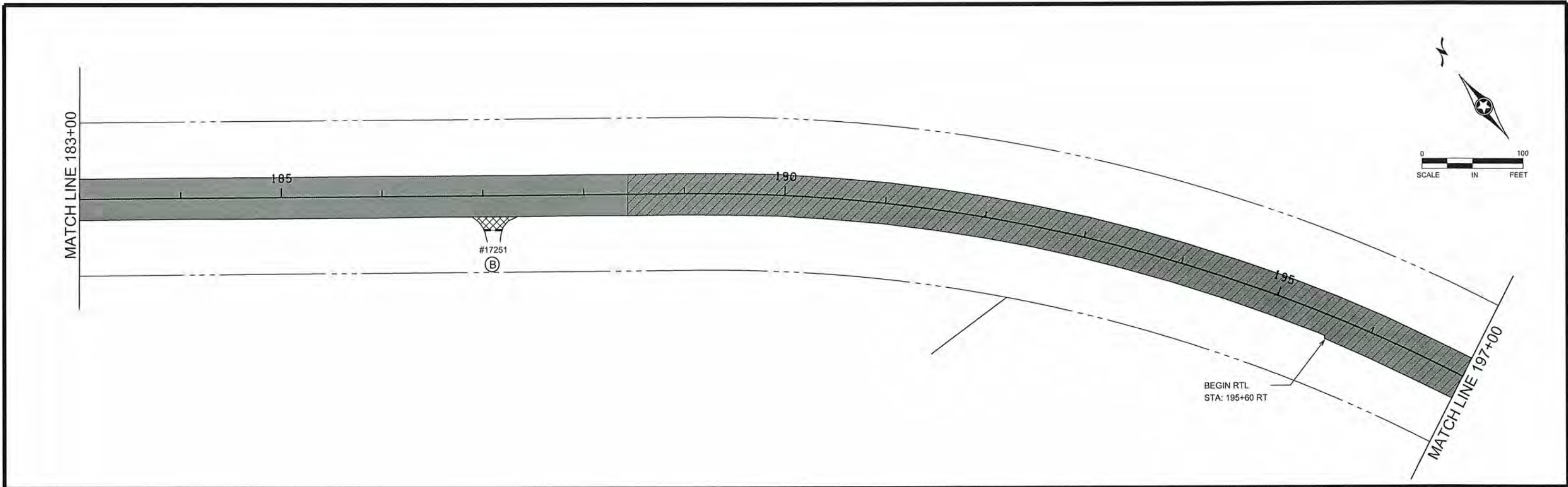
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 SIGNATURE: *[Signature]*
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DRAWN BY: SRK DATE: 03/29/2016
 DESIGN BY: SRK DATE: 03/29/2016
 CHECKED BY: MJJ DATE: 03/29/2016



ANOKA COUNTY
 HIGHWAY DEPT.
 COUNTY PROJECT 16-14-83

CONSTRUCTION PLAN
 STA 153+00 TO 183+00
 Sheet 16 of 30 Sheets



LEGEND			
(B)	BITUMINOUS	[Hatched Box]	REGRAIDING AREA
(G)	GRAVEL	[Solid Grey Box]	MAINLINE RECLAIM
(1)	CONTRACTOR TO CONTACT UTILITY CO. TO ENSURE UTILITY IS ADJUSTED TO FIN. GRADE	[Cross-hatched Box]	REMOVE AND REPLACE BITUMINOUS PAVEMENT
⊗	ADJUST GATE VALVE	[Diagonal Hatched Box]	SUPER TRANSITION AREA
---	SILT FENCE	---	R/W
---	SAWCUT		
[Cross-hatched Box]	CONSTRUCT RTL / BYPASS		

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NAME: P:\16-01-00\CSAH_83(150th-173rd)\Base\PROPOSED\PROPOSED.dgn

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DRAWN BY SRK DATE 03/29/2016
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 CHECKED BY MJJ DATE 03/29/2016

ANOKA COUNTY
HIGHWAY DEPT.

COUNTY PROJECT 16-14-83

CONSTRUCTION PLAN
 STA 183+00 TO 201+01
 Sheet 17 of 30 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 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	44790
4" BROKEN LINE WHITE - EPOXY PAINT	LIN FT	120
4" SOLID LINE YELLOW - EPOXY PAINT	LIN FT	8950
4" BROKEN LINE YELLOW - EPOXY PAINT	LIN FT	2990
4" DOUBLE LINE YELLOW - EPOXY PAINT	LIN FT	3920
24" SOLID LINE WHITE - PREFORMED THERMOPLASTIC	SQ FT	96
3'X6' ZEBRA CROSSWALK - PREFORMED THERMOPLASTIC	SQ FT	126

SYMBOLS & MATERIALS LEGEND

■ CROSSWALK BLOCK WHITE PREFORMED THERMOPLASTIC

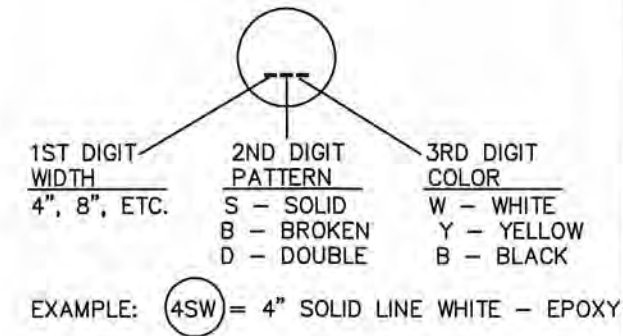
← PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC

STRIPING KEY

○ CIRCLE - EPOXY □ SQUARE PREFORMED THERMOPLASTIC

△ TRIANGLE - PAINT

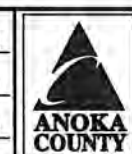
⬠ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



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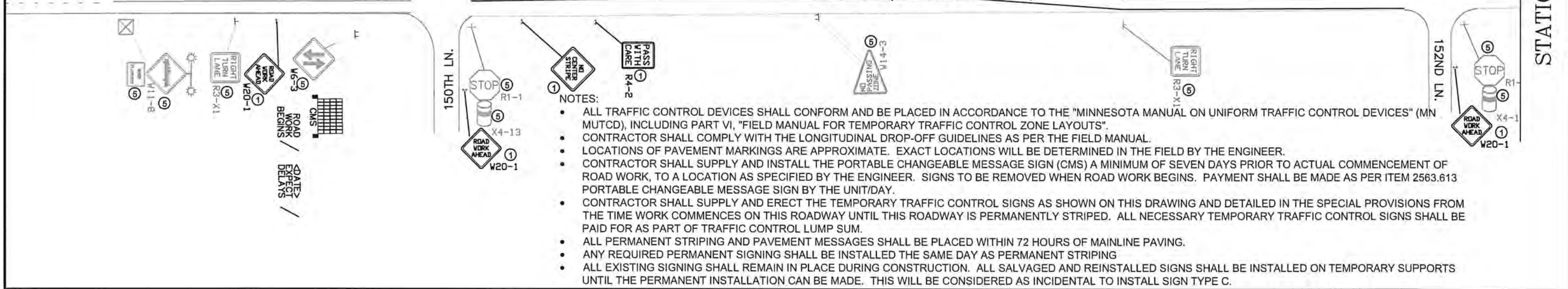
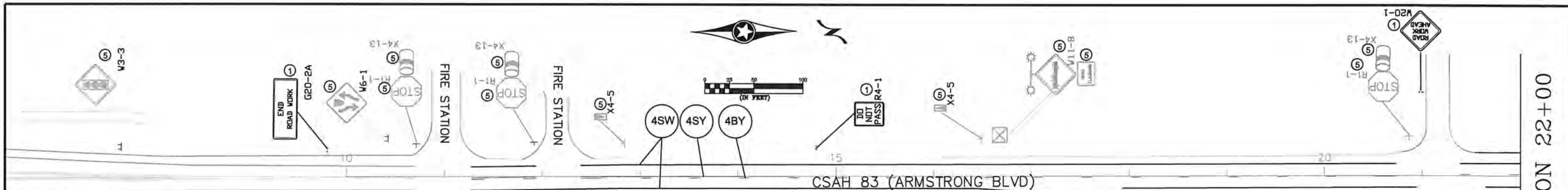
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 CHECKED BY: JR DATE: 2/14/14



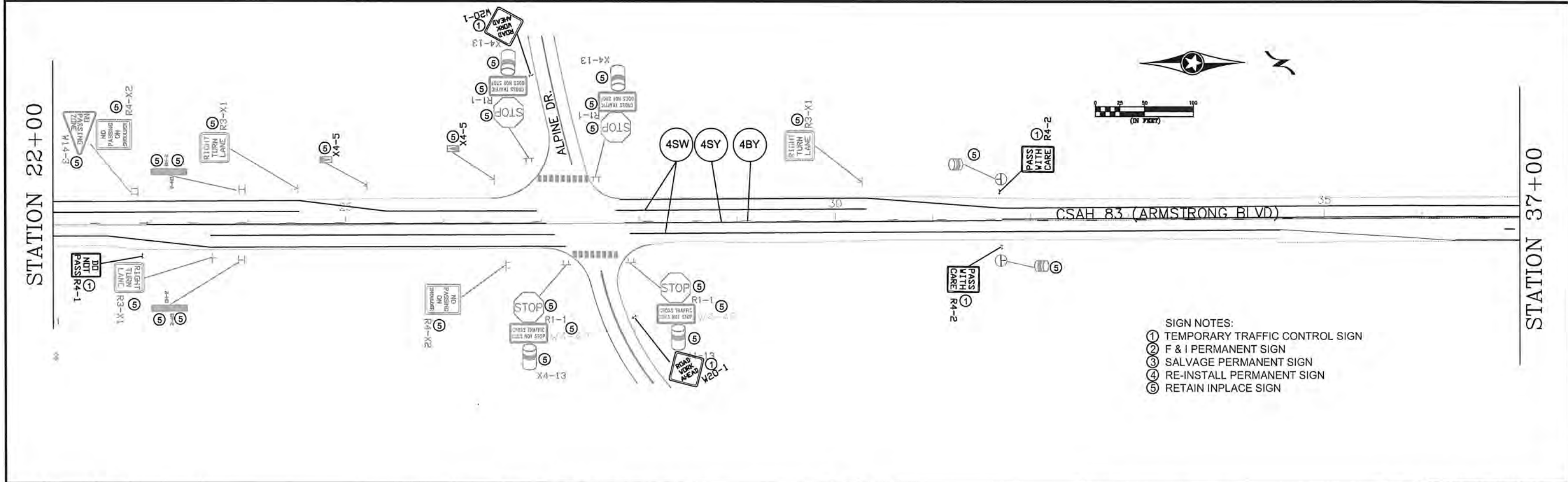
ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 16-14-83

PERMANENT MARKING
TABULATION
 Sheet 18 of 30 Sheets



- NOTES:
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE PLACED IN ACCORDANCE TO THE "MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MN MUTCD), INCLUDING PART VI, "FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS".
 - CONTRACTOR SHALL COMPLY WITH THE LONGITUDINAL DROP-OFF GUIDELINES AS PER THE FIELD MANUAL.
 - LOCATIONS OF PAVEMENT MARKINGS ARE APPROXIMATE. EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD BY THE ENGINEER.
 - CONTRACTOR SHALL SUPPLY AND INSTALL THE PORTABLE CHANGEABLE MESSAGE SIGN (CMS) A MINIMUM OF SEVEN DAYS PRIOR TO ACTUAL COMMENCEMENT OF ROAD WORK, TO A LOCATION AS SPECIFIED BY THE ENGINEER. SIGNS TO BE REMOVED WHEN ROAD WORK BEGINS. PAYMENT SHALL BE MADE AS PER ITEM 2563.613 PORTABLE CHANGEABLE MESSAGE SIGN BY THE UNIT/DAY.
 - CONTRACTOR SHALL SUPPLY AND ERECT THE TEMPORARY TRAFFIC CONTROL SIGNS AS SHOWN ON THIS DRAWING AND DETAILED IN THE SPECIAL PROVISIONS FROM THE TIME WORK COMMENCES ON THIS ROADWAY UNTIL THIS ROADWAY IS PERMANENTLY STRIPED. ALL NECESSARY TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE PAID FOR AS PART OF TRAFFIC CONTROL LUMP SUM.
 - ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
 - ANY REQUIRED PERMANENT SIGNING SHALL BE INSTALLED THE SAME DAY AS PERMANENT STRIPING
 - ALL EXISTING SIGNING SHALL REMAIN IN PLACE DURING CONSTRUCTION. ALL SALVAGED AND REINSTALLED SIGNS SHALL BE INSTALLED ON TEMPORARY SUPPORTS UNTIL THE PERMANENT INSTALLATION CAN BE MADE. THIS WILL BE CONSIDERED AS INCIDENTAL TO INSTALL SIGN TYPE C.



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

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\16-01-00\Bases\Traffic\CSAH 83\Signing_Striplng.dwg

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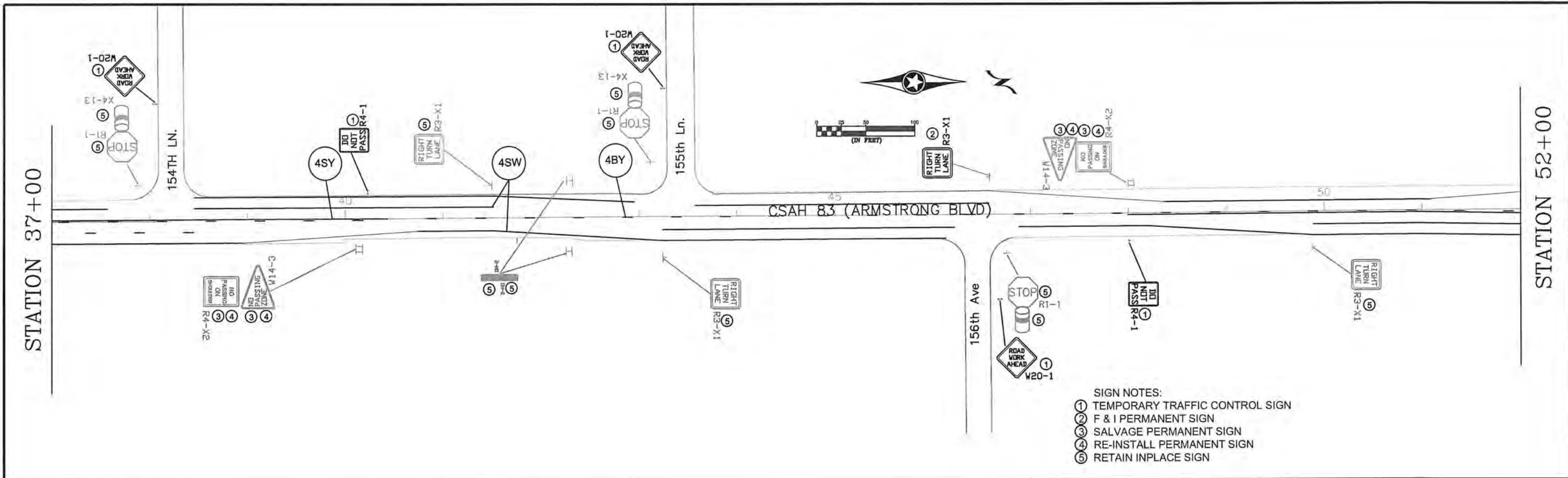
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 DESIGN BY: RLB DATE 1/7/14
 CHECKED BY: JR DATE 1/7/14

ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 16-14-83

TEMPORARY SIGNING,
 PERMANENT SIGNING
 AND STRIPING

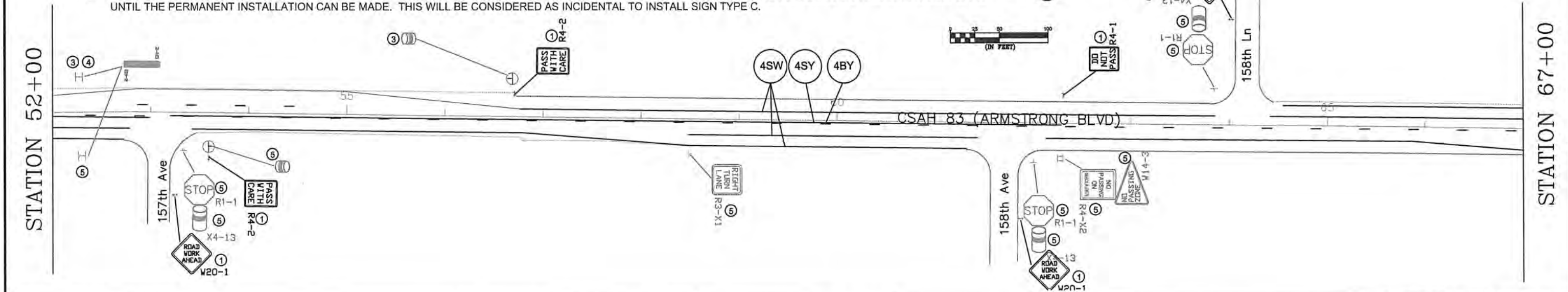
Sheet 19 of 30 Sheets



- SIGN NOTES:
- ① TEMPORARY TRAFFIC CONTROL SIGN
 - ② F & I PERMANENT SIGN
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NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\16-01-00\Bose\Traffic\CSAH 83.Signing_Striping.dwg

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PRINT NAME: MATTHEW J. JOHN

SIGNATURE: *Matthew J. John*

DATE: 4/7/2016 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. _____

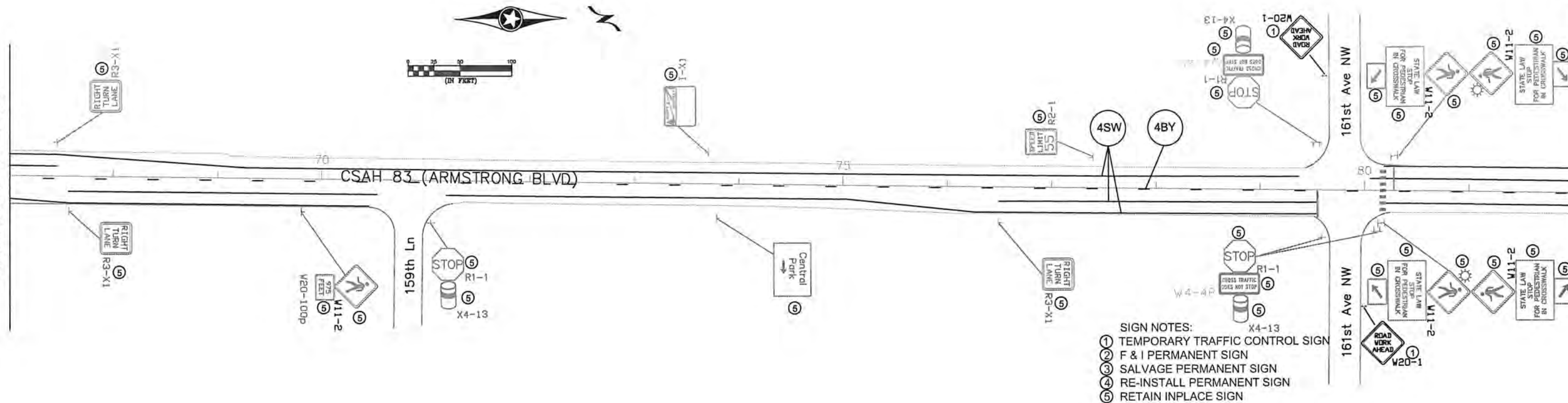
COUNTY PROJECT NO. 16-14-83

TEMPORARY SIGNING,
PERMANENT SIGNING
AND STRIPING

Sheet 20 of 30 Sheets

STATION 67+00

STATION 82+00



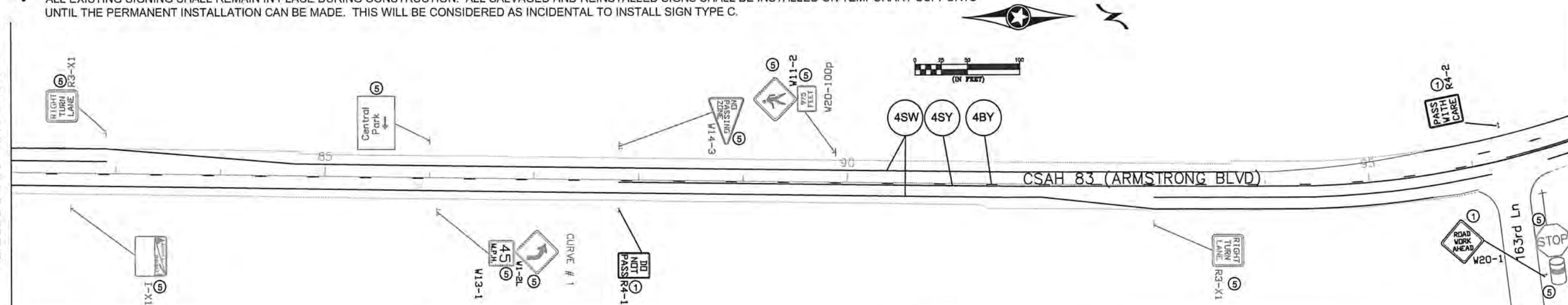
- SIGN NOTES:
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 - ② F & I PERMANENT SIGN
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- ALL PERMANENT STRIPING AND PAVEMENT MESSAGES SHALL BE PLACED WITHIN 72 HOURS OF MAINLINE PAVING.
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- ALL 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.

STATION 82+00

STATION 97+00



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PRINT NAME: MATTHEW J. JOHN

SIGNATURE: *Matthew J. John*

DATE: 4/7/2016 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. _____

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COUNTY PROJECT NO. 16-14-83

TEMPORARY SIGNING,
PERMANENT SIGNING
AND STRIPING

Sheet 21 of 30 Sheets

NO	DATE	BY	CKD	APPR	REVISION

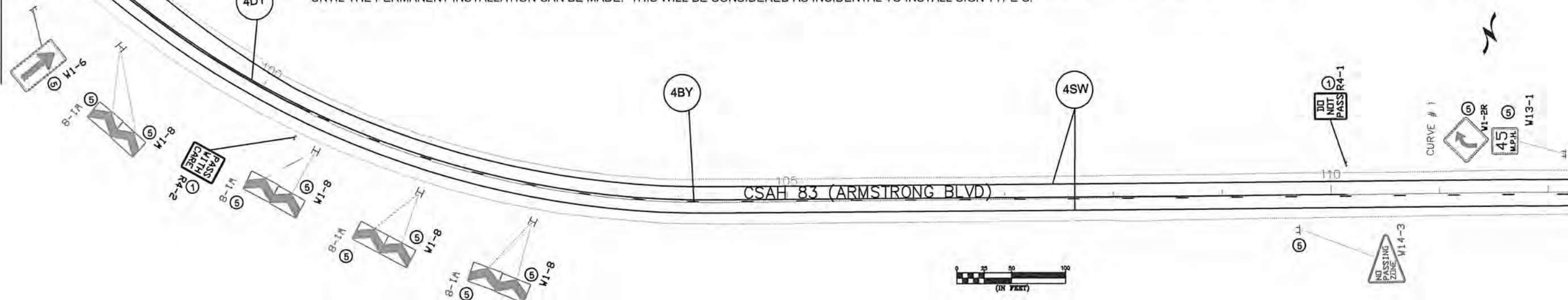
NAME: P:\16-01-00\Bases\Traffic\CSAH 83\Signing_Striping.dwg

STATION 97+00

STATION 113+00

NOTES:

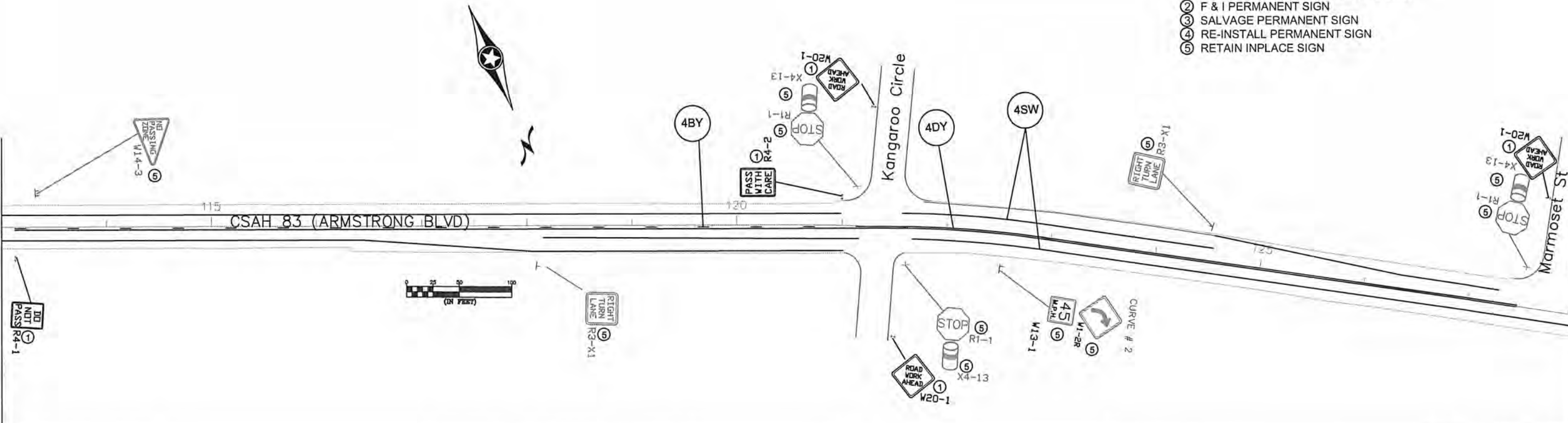
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STATION 113+00

STATION 128+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



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TEMPORARY SIGNING,
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NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\16-01-00\Bose\Traffic\CSAH 83\Signing_Striping.dwg

STATION 128+00

STATION 144+00

NOTES:

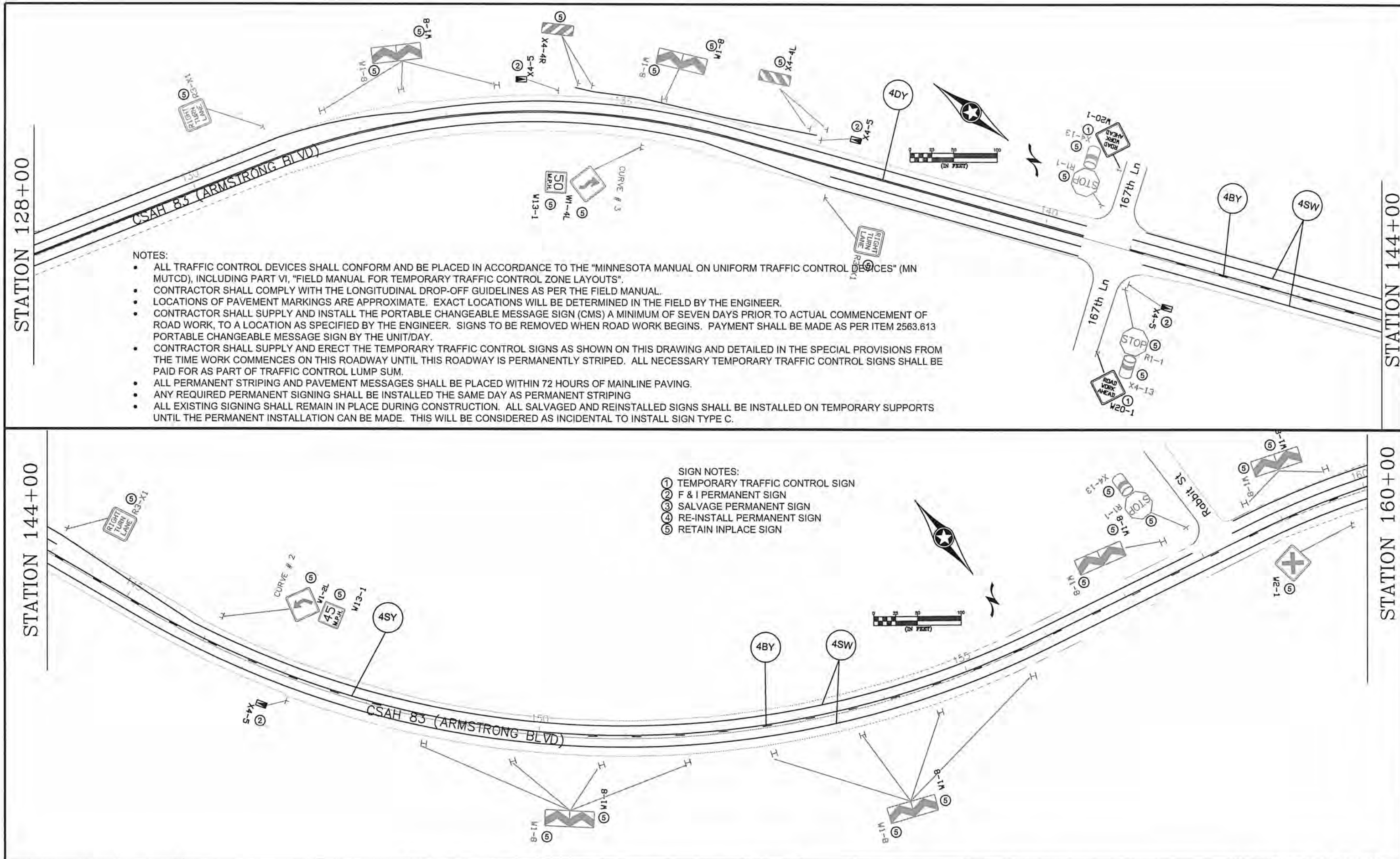
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STATION 144+00

STATION 160+00

SIGN NOTES:

- ① TEMPORARY TRAFFIC CONTROL SIGN
- ② F & I PERMANENT SIGN
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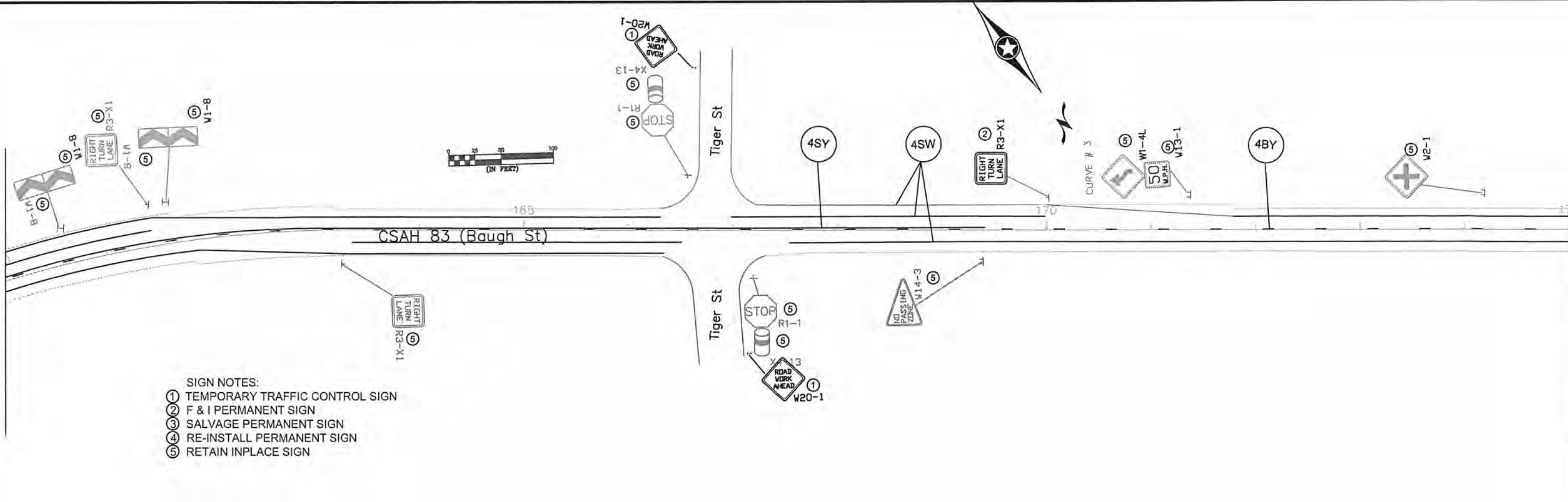
ANOKA COUNTY
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 COUNTY PROJECT NO. 16-14-83

TEMPORARY SIGNING,
 PERMANENT SIGNING
 AND STRIPING
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STATION 160+00

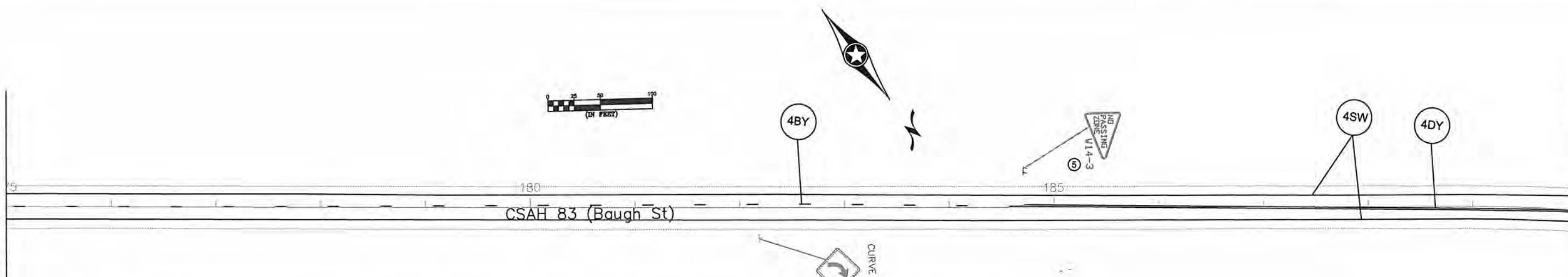
STATION 175+00



- SIGN NOTES:
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 - ② F & I PERMANENT SIGN
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STATION 175+00

STATION 190+00



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ANOKA COUNTY
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TEMPORARY SIGNING,
PERMANENT SIGNING
AND STRIPING

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TEMPORARY TRAFFIC CONTROL SIGNS						
M.U.T.C.D. CODE	SIZE	PANEL AREA FT. ²	INSERT	QUANTITY		MOUNTING HEIGHT TO PAVEMENT (SEE)
					No. POST	
W8-12	48" x 48"	16.00		2	2	7.0'
R4-1	24" x 30"	5.00		9	1	7.0'
R4-2	24" x 30"	5.00		8	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 25)		
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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SIGN PANELS TYPE C							
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"		2	6.25	12.50	1	7.0'
X4-5	6" x 12"		2	0.5	0.50	1	4.0'
X4-5	6" x 12"		2	0.5	0.50	1	4.0'

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.

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\16-01-00\Bose\Traffic\CSAH 83\Signing_Striping.dwg

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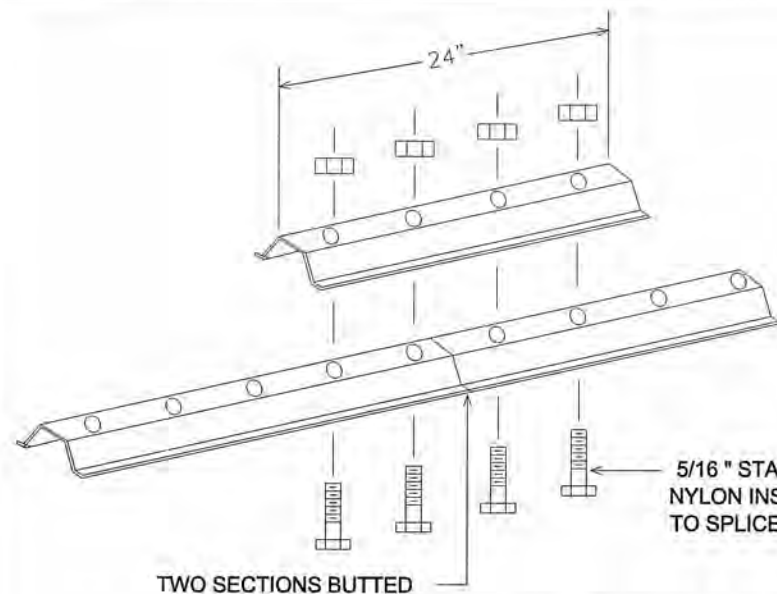
DRAWN BY: RLB DATE: 1/7/14
 DESIGN BY: RLB DATE: 1/7/14
 CHECKED BY: JIR DATE: 1/7/14



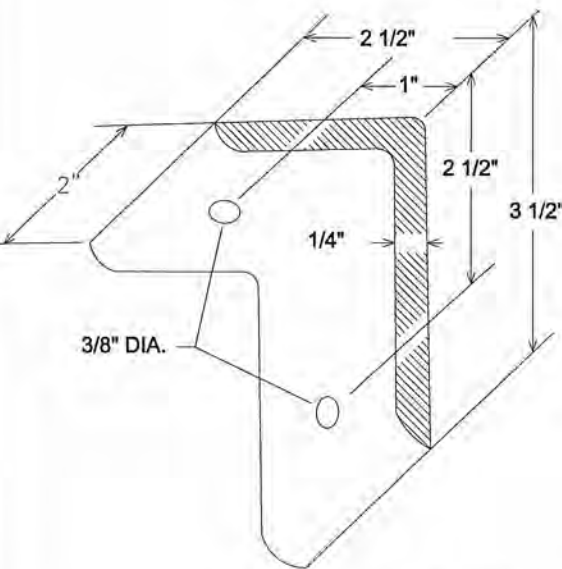
ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
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TRAFFIC CONTROL QUANTITY
 Sheet 26 of 30 Sheets

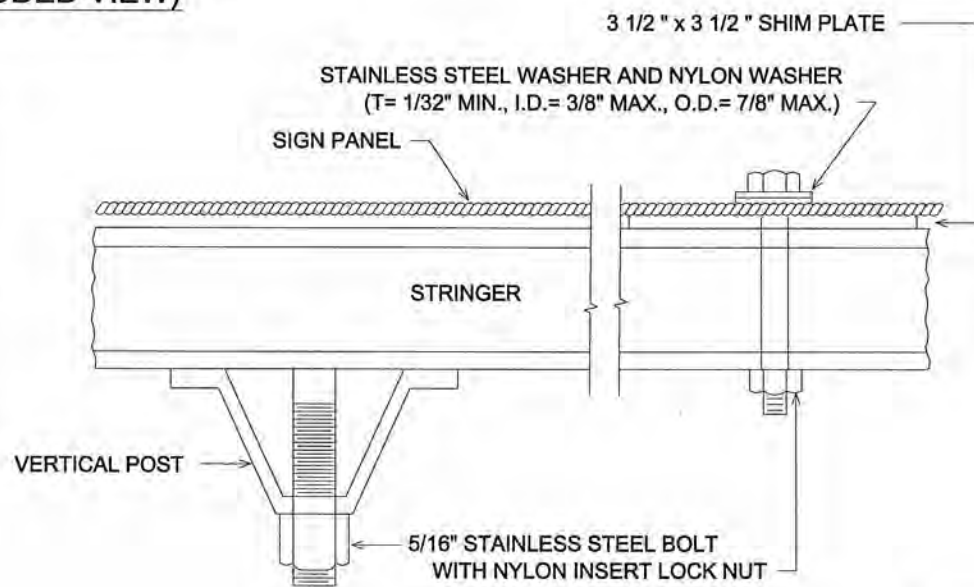


LATERAL BRACE OR STRINGER
SPLICE DETAIL (EXPLODED VIEW)

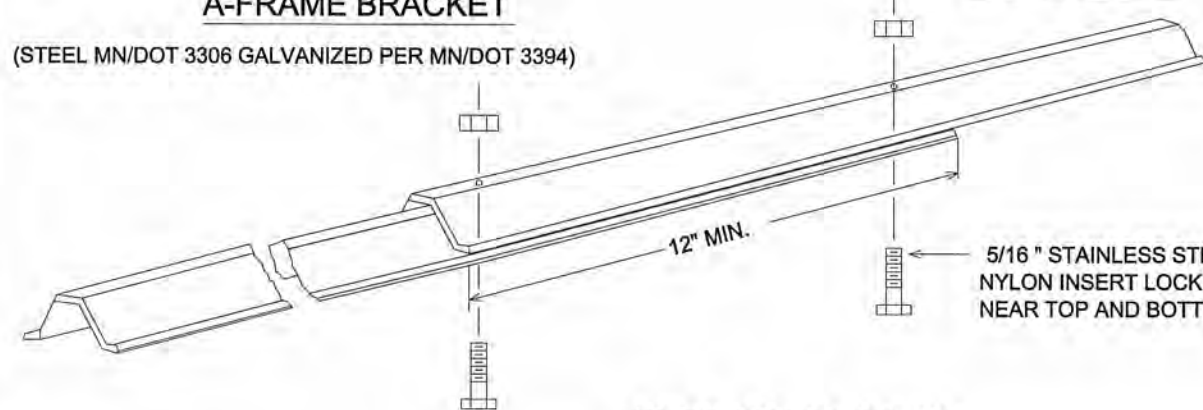


A-FRAME BRACKET

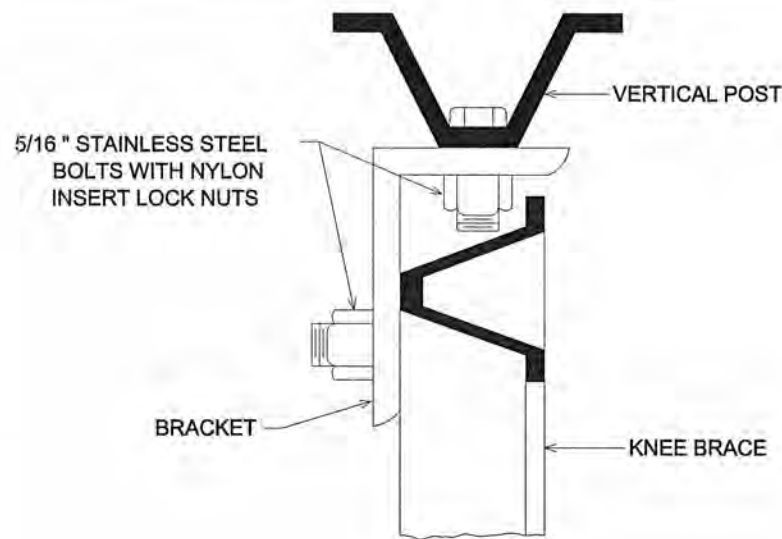
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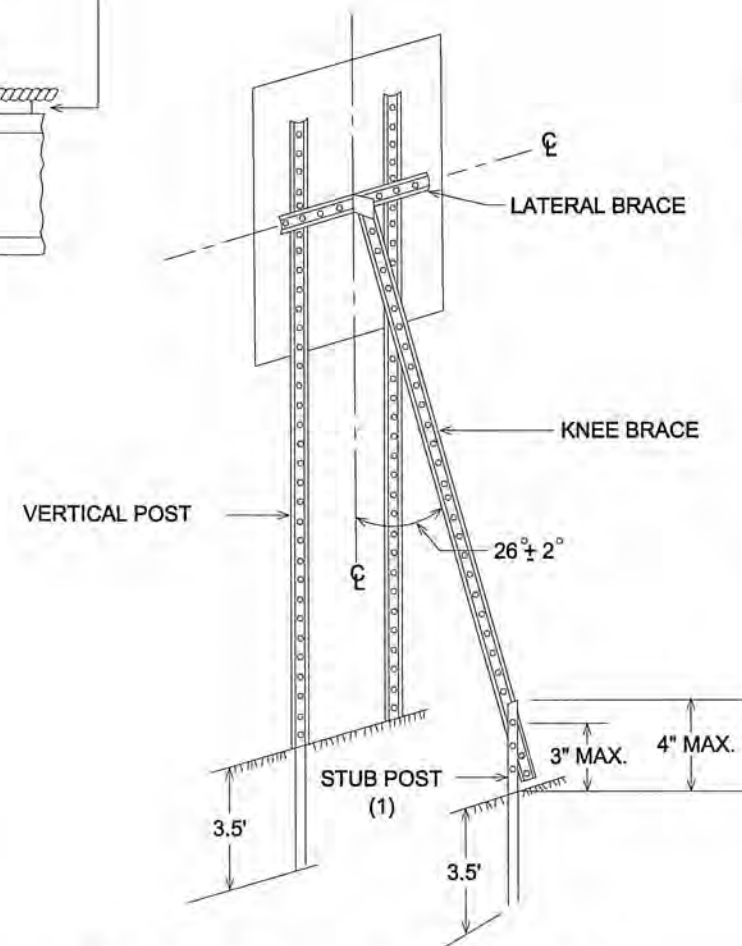
SECTION B-B



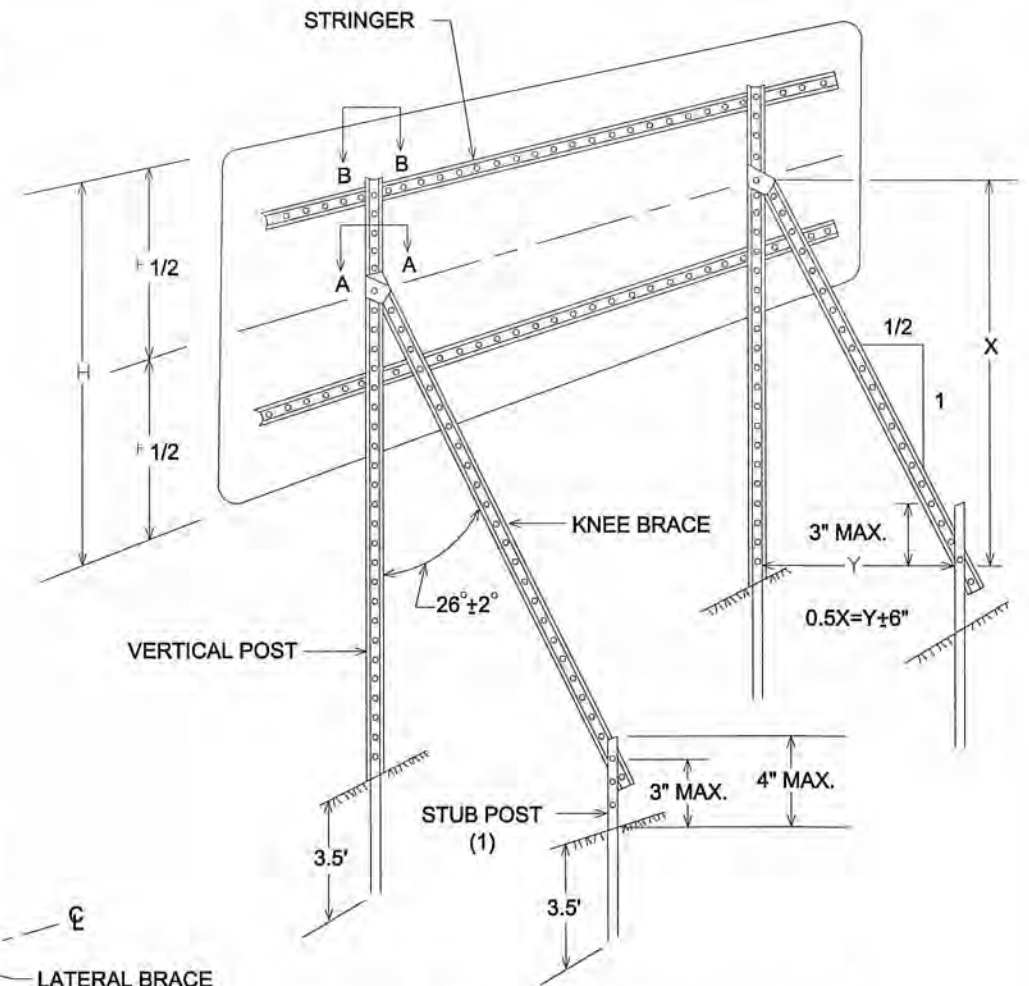
KNEE BRACE SPLICE



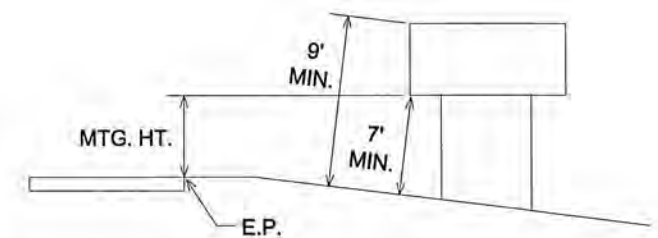
SECTION A-A



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



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



TYPICAL MOUNTING

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

TYPE C & D SIGN
STRUCTURAL DETAILS

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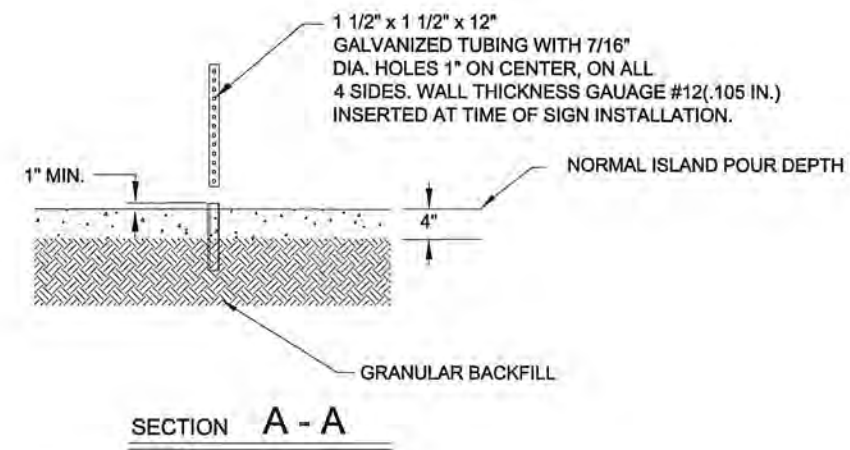
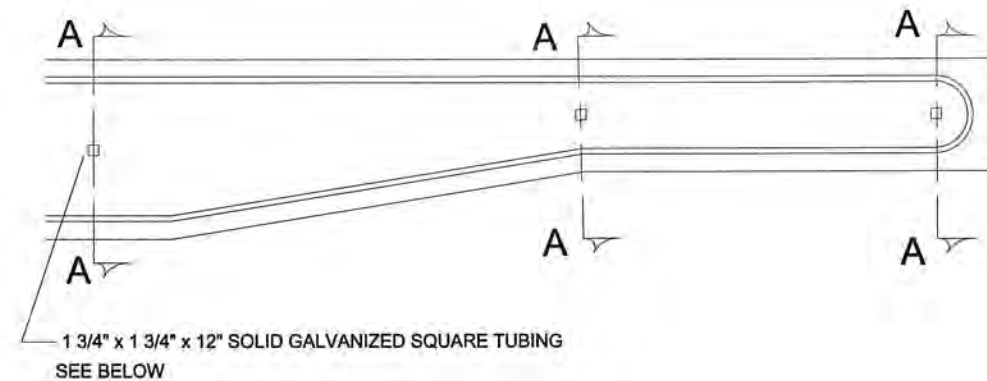


ANOKA COUNTY
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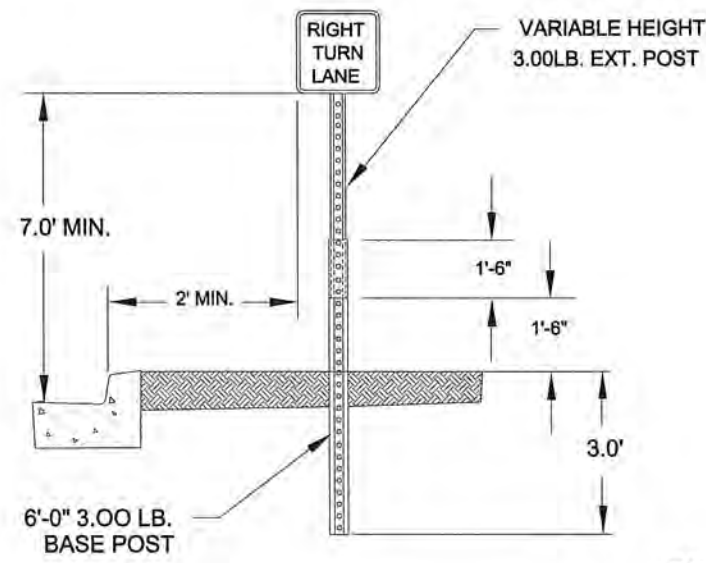
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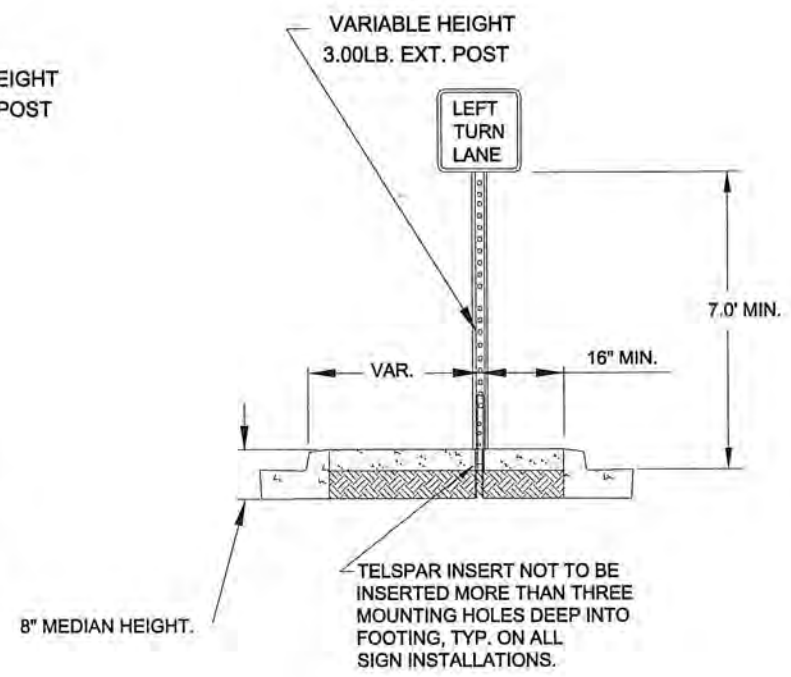
Sheet 27 of 30 Sheets



GROUND POST MOUNT SIGN INSTALLATION TYPICAL



ISLAND MOUNT BREAK-AWAY SIGN INSTALLATION TYPICAL



NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\16-01-00\Base\TRAFFIC\CSAH 83\Perm pvmt mrkg guide notes_guidelines.dwg

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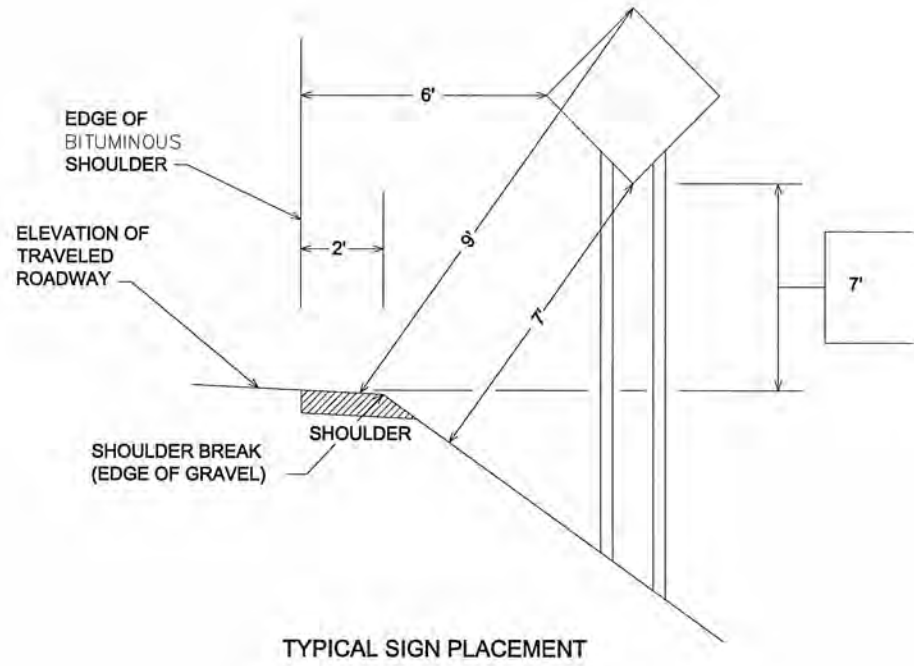
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SIGNING & STRIPING
DETAILS

Sheet 28 of 30 Sheets

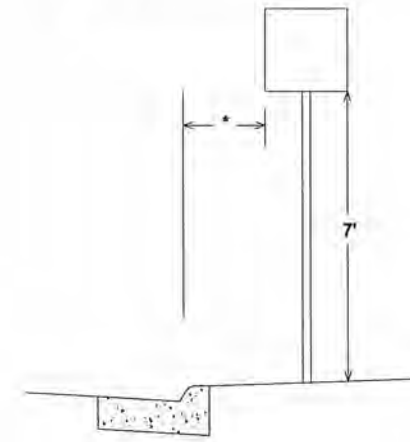
RURAL



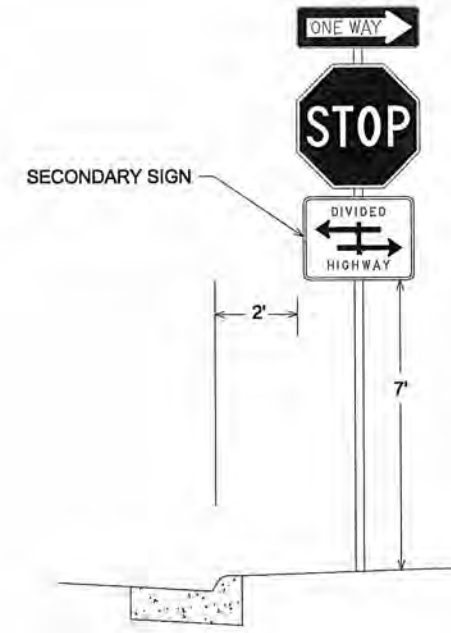
TYPICAL SIGN PLACEMENT

URBAN

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



TYPICAL SIGN PLACEMENT



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

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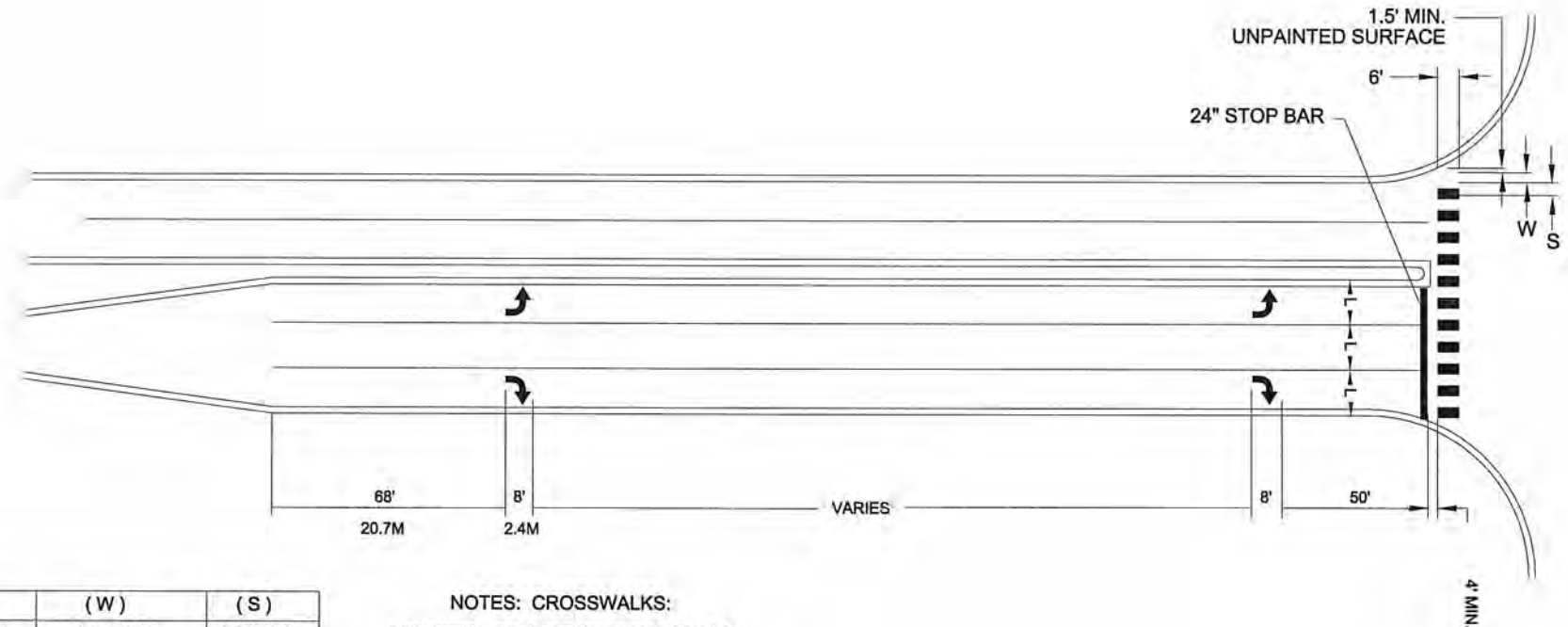


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SIGNING & STRIPING
 DETAILS
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MARKINGS FOR PEDESTRIAN CROSSWALKS



(L)	(W)	(S)
WIDTH OF INSIDE LANE	WIDTH OF PAINTED AREAS	WIDTH OF SPACE
9'	2.0'	2.5'
10'	2.5'	2.5'
11'	2.5'	3.0'
12'	3.0'	3.0'
13'	3.0'	3.5'

- NOTES: CROSSWALKS:**
- 1.) PAINTED AREAS ARE TO BE CENTERED ON CENTER AND LANE LINES, EVEN IF INTERSECTION IS NOT ALIGNED.
 - 2.) LOCATION OF ZEBRA CROSSWALKS AND STOP BARS, SIGNAL LOOPS AND PED RAMPS ARE APPROXIMATE. FINAL LOCATIONS ARE TO BE DETERMINED AND FIELD VERIFIED DURING CONSTRUCTION BY THE FIELD ENGR.
 - 3.) ZEBRA CROSSWALKS ARE TO BE PARALLEL TO THE DRIVING LANE OR LANES, EVEN IF THE STREET IS ON AN ANGLE TO THE INTERSECTION.
 - 4.) A MIN. OF 1.5' (450mm) CLEAR DISTANCE MUST BE LEFT ADJACENT TO THE CURB. IF LAST PAINTED AREA FALLS INTO THIS AREA, IT MUST BE OMITTED.
 - 5.) ON TWO LANE STREETS, USE SPACING SHOWN FOR AN 11' (3.3mm) INSIDE LANE.

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