

MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

CONSTRUCTION PLAN FOR MILL BITUMINOUS, BITUMINOUS SURFACING, CURB & GUTTER, BITUMINOUS RECLAMATION, AND SEWER REPAIRS

LOCATED ON CSAH 14 BETWEEN ELBE ST AND 35W BRIDGE

GOVERNING SPECIFICATIONS

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

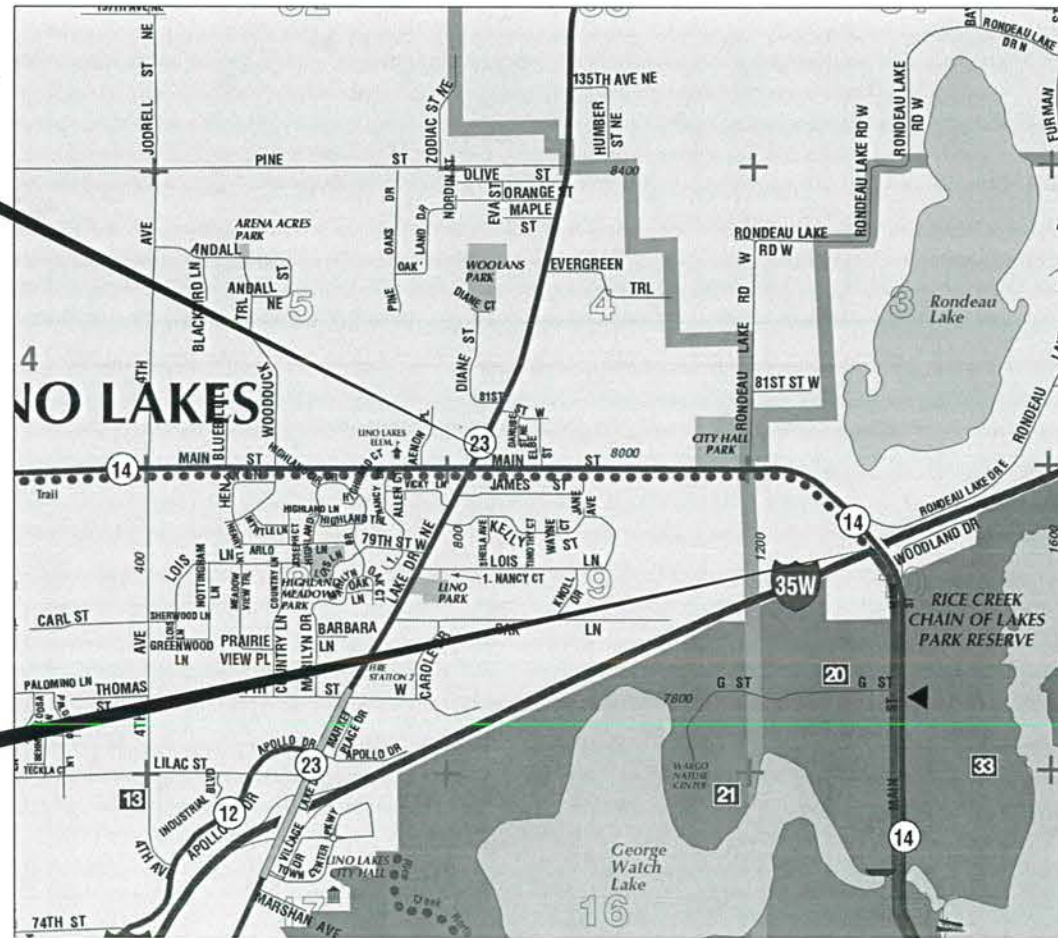
THIS PLAN CONTAINS 17 SHEETS

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2-3	STATEMENT OF ESTIMATED QUANTITIES AND TABULATIONS
4-5	TYPICAL SECTIONS
6-8	DETAILS
9-11	CONSTRUCTION PLAN
12-17	SIGNING AND STRIPING PLANS

BEGIN CP 15-15-14
CSAH 14, STA: 13+89

END CP 15-15-14
CSAH 14, STA: 81+06



PROJECT LOCATION



CITY OF LINO LAKES
ANOKA COUNTY
MN/DOT TRANSPORTATION DISTRICT - METRO
SECTION 35
TOWNSHIP 31 NORTH
RANGE 22 WEST

<u>CSAH 14</u>			
GROSS LENGTH	6617 FEET	1.253 MILES	
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES	
NET LENGTH	6617 FEET	1.253 MILES	
DESIGN SPEED	40 - 50 MPH		
CURRENT ADT	8425 / 2013		

Approved: 4/2/15
ANOKA COUNTY ENGINEER

NO	DATE	BY	CKD	APPR	REVISION

NAME: P:\15-01-00\CSAH_14(EoJames-35W)\Base\PROPOSED\TEMPLATE_PLAN.dgn

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
PRINT NAME: MATTHEW J. JOHN
SIGNATURE:
DATE: 4/2/15 LICENSE NO. 51639

DRAWN BY JJ DATE 03/19/2015
DESIGN BY JJ DATE 03/19/2015
CHECKED BY MJ DATE 03/19/2015



**ANOKA COUNTY
HIGHWAY DEPT.**

COUNTY PROJECT 15-15-14

TITLE SHEET
Sheet 1 of 17 Sheets

STATEMENT OF ESTIMATED QUANTITIES

Table with 5 columns: ITEM NUMBER, ITEM DESCRIPTION, NOTES, UNIT, TOTAL PROJECT QUANTITIES ESTIMATED. Lists various construction items like mobilization, clearing, paving, and drainage structures.

CONSTRUCTION NOTES

Table with 2 columns: Note number and description. Contains 18 numbered notes regarding construction procedures, safety, and material handling.

BASIS OF PLANNED QUANTITIES

Table with 3 columns: Item number, description, and quantity. Lists materials like tack coat, aggregate base, and pavement.

MNDOT STANDARD PLATES

Table with 2 columns: PLATE NUMBER and DESCRIPTION. Lists standard plates like metal safety apron, manhole catchbasin, and concrete curbs.

CASTING ASSEMBLIES SUMMARY

Table with 6 columns: ASSEMBLY, RING OR FRAME CASTING, COVER OR GRATE CASTING, CURB BOX, QUANTITY, DESCRIPTION. Summarizes casting assemblies used in the project.

EARTHWORK BALANCE, CONTINUED

Table with 6 columns: STATION, NOTE, RECLAIM CUT, RECLAIM FILL, COMMON EXCAVATION, COMMON TOPSOIL BORROW. Shows earthwork balance data for various stationing points.

EARTHWORK BALANCE

Table with 6 columns: STATION, NOTE, RECLAIM CUT, RECLAIM FILL, COMMON EXCAVATION, COMMON TOPSOIL BORROW. Shows earthwork balance data for various stationing points.

Table with 7 columns: NO, DATE, BY, CKD, APPR, REVISION, and a date field. Contains project revision information.

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

DRAWN BY JJ DATE 03/19/2015
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ANOKA COUNTY HIGHWAY DEPT.

COUNTY PROJECT 15-15-14

STATEMENT OF ESTIMATED QUANTITIES AND TABULATIONS

Sheet 2 of 17 Sheets

STORM DRAINAGE TAB									
NUMBER	TYPE	ACTION	NEW CASTING	CASTING ASSEMBLY (EACH)	REMOVE DRAINAGE STRUCTURE	RECONSTRUCT DRAINAGE STRUCTURE (EACH)	DRAINAGE STRUCTURE 48-4020 (LN FT)	RING HEIGHT -INCIDENTAL- (LN FT)	GROUT EACH (LOCATION)
104	CB	RECONSTRUCT	R-3250-DVSP	1	1		4		
105	CB	RE-RING	R-3250-DVSP	1				0.6	
106	MH	RE-RING	A-7D	1				1.0	
109	CB	GROUT		1					1.0
110	MH	GROUT		1					1.0
111	CB	RE-RING	R-3250-DVSP	1				1.0	
112	MH	GROUT		1					1.0
113	CB	RE-RING	R-3250-DVSP	1				0.4	
116	MH	RE-RING	A-4D	1		1		0.6	
120	CB	RECONSTRUCT	R-3250-DVSP	1	1		4		
121	CB	RECONSTRUCT	R-3250-DVSP	1	1		4		
TOTALS:				11	3	1	12	3.6	3

GRADE CORRECTION / SUPERELEVATION CORRECTION TAB										
STATION	25.5' LT	GRADE	12' LT	GRADE	CLASS-5 CL	GRADE	12' RT	GRADE	25.5' RT	NOTE
31+00	897.82	-1.5%	898.02	-1.5%	898.20	-1.5%	898.02	-1.5%	897.82	
31+50	897.34	-1.5%	897.54	-1.5%	897.72	-1.5%	897.54	-1.5%	897.34	
32+00	896.87	-1.5%	897.07	-1.5%	897.25	-1.5%	897.07	-1.5%	896.87	
32+50	896.39	-1.5%	896.59	-1.5%	896.77	-1.5%	896.59	-1.5%	896.39	
33+00	895.91	-1.5%	896.11	-1.5%	896.29	-1.5%	896.11	-1.5%	895.91	
33+50	895.43	-1.5%	895.63	-1.5%	895.81	-1.5%	895.63	-1.5%	895.43	
34+00	894.95	-1.5%	895.15	-1.5%	895.33	-1.5%	895.15	-1.5%	894.95	
34+50	894.47	-1.5%	894.67	-1.5%	894.85	-1.5%	894.67	-1.5%	894.47	
35+00	894.00	-1.5%	894.20	-1.5%	894.38	-1.5%	894.20	-1.5%	894.00	
35+50	893.52	-1.5%	893.72	-1.5%	893.90	-1.5%	893.72	-1.5%	893.52	
36+00	893.04	-1.5%	893.24	-1.5%	893.42	-1.5%	893.24	-1.5%	893.04	
36+50	892.60	-1.5%	892.80	-1.5%	892.98	-1.5%	892.80	-1.5%	892.60	
37+00	892.48	-1.5%	892.68	-1.5%	892.86	-1.5%	892.68	-1.5%	892.48	
37+50	892.54	-1.5%	892.74	-1.5%	892.92	-1.5%	892.74	-1.5%	892.54	
38+00	892.60	-1.5%	892.80	-1.5%	892.98	-1.5%	892.80	-1.5%	892.60	
38+50	892.66	-1.5%	892.86	-1.5%	893.04	-1.5%	892.86	-1.5%	892.66	
39+00	892.71	-1.5%	892.91	-1.5%	893.09	-1.5%	892.91	-1.5%	892.71	
39+50	892.77	-1.5%	892.97	-1.5%	893.15	-1.5%	892.97	-1.5%	892.77	
40+00	892.83	-1.5%	893.03	-1.5%	893.21	-1.5%	893.03	-1.5%	892.83	
40+50 - 56+50 : MATCH CURB										

GRADE CORRECTION / SUPERELEVATION CORRECTION TAB										
STATION	25.5' LT	GRADE	12' LT	GRADE	CLASS-5 CL	GRADE	12' RT	GRADE	25.5' RT	NOTE
57+00	893.64	-1.5%	893.82	-1.5%	894.00	-1.5%	893.82	-1.5%	893.64	
57+09	893.62	-1.5%	893.80	-1.5%	893.98	-1.5%	893.80	-1.5%	893.62	BEGIN SUPER LT
57+50	893.81	-0.4%	893.86	-0.4%	893.91	-1.5%	893.73	-1.5%	893.55	
58+00	894.13	0.9%	894.02	0.9%	893.91	-1.5%	893.73	-1.5%	893.55	
58+22	894.27	1.5%	894.09	1.5%	893.91	-1.5%	893.73	-1.5%	893.55	BEGIN SUPER RT
58+50	894.46	2.3%	894.19	2.3%	893.92	-2.3%	893.65	-2.3%	893.38	
58+82	894.49	2.3%	894.22	2.3%	893.95	-2.3%	893.68	-2.3%	893.40	PC
59+00	894.82	3.6%	894.39	3.6%	893.96	-3.6%	893.53	-3.6%	893.10	
59+50	895.14	4.9%	894.55	4.9%	893.96	-4.9%	893.37	-4.9%	892.78	
59+68	895.13	4.9%	894.54	4.9%	893.95	-4.9%	893.36	-4.9%	892.77	BEGIN SUPER
60+00	895.22	5.4%	894.57	5.4%	893.92	-5.4%	893.27	-5.4%	892.62	
60+50	895.26	5.4%	894.61	5.4%	893.96	-5.4%	893.31	-5.4%	892.66	
61+00	895.18	5.4%	894.53	5.4%	893.88	-5.4%	893.23	-5.4%	892.58	
61+50	894.98	5.4%	894.33	5.4%	893.68	-5.4%	893.03	-5.4%	892.38	
62+00	894.78	5.4%	894.13	5.4%	893.48	-5.4%	892.83	-5.4%	892.18	
62+50	894.62	5.4%	893.97	5.4%	893.32	-5.4%	892.67	-5.4%	892.02	
63+00	894.42	5.4%	893.77	5.4%	893.12	-5.4%	892.47	-5.4%	891.82	
63+50	894.22	5.4%	893.57	5.4%	892.92	-5.4%	892.27	-5.4%	891.62	
64+00	894.07	5.4%	893.42	5.4%	892.77	-5.4%	892.12	-5.4%	891.47	
64+50	893.90	5.4%	893.25	5.4%	892.60	-5.4%	891.95	-5.4%	891.30	
65+00	893.67	5.4%	893.02	5.4%	892.37	-5.4%	891.72	-5.4%	891.07	
65+50	893.48	5.4%	892.83	5.4%	892.18	-5.4%	891.53	-5.4%	890.88	
66+00	893.34	5.4%	892.69	5.4%	892.04	-5.4%	891.39	-5.4%	890.74	
66+50	893.10	5.4%	892.45	5.4%	891.80	-5.4%	891.15	-5.4%	890.50	
67+00	892.87	5.4%	892.22	5.4%	891.57	-5.4%	890.92	-5.4%	890.27	
67+20	892.77	5.4%	892.12	5.4%	891.47	-5.4%	890.83	-5.4%	890.18	END FULL SUPER
67+50	892.43	4.6%	891.88	4.6%	891.33	-4.6%	890.78	-4.6%	890.23	
68+00	891.87	3.3%	891.48	3.3%	891.09	-3.3%	890.70	-3.3%	890.31	
68+06	891.81	3.1%	891.44	3.1%	891.06	-3.1%	890.69	-3.1%	890.32	PT
68+50	891.32	1.9%	891.09	1.9%	890.86	-1.9%	890.63	-1.9%	890.40	
68+66	891.19	1.5%	891.01	1.5%	890.83	-1.5%	890.65	-1.5%	890.47	END SUPER RT
69+00	890.90	0.6%	890.83	0.6%	890.76	-1.5%	890.58	-1.5%	890.40	
69+50	890.50	-0.7%	890.59	-0.7%	890.68	-1.5%	890.50	-1.5%	890.32	
69+79	890.28	-1.5%	890.46	-1.5%	890.64	-1.5%	890.46	-1.5%	890.28	END SUPER LT
70+00	890.25	-1.5%	890.43	-1.5%	890.61	-1.5%	890.43	-1.5%	890.25	
70+50	890.17	-1.5%	890.35	-1.5%	890.53	-1.5%	890.35	-1.5%	890.17	
71+00	890.12	-1.5%	890.30	-1.5%	890.48	-1.5%	890.30	-1.5%	890.12	
71+50	890.11	-1.5%	890.29	-1.5%	890.47	-1.5%	890.29	-1.5%	890.11	
71+68	890.11	-1.5%	890.29	-1.5%	890.47	-1.5%	890.29	-1.5%	890.11	BEGIN SUPER LT
72+00	890.32	-0.6%	890.39	-0.6%	890.46	-1.5%	890.28	-1.5%	890.10	
72+50	890.59	0.8%	890.50	0.8%	890.40	-1.5%	890.22	-1.5%	890.04	
72+75	890.69	1.5%	890.51	1.5%	890.33	-1.5%	890.15	-1.5%	889.97	BEGIN SUPER RT
73+00	890.79	2.2%	890.52	2.2%	890.26	-2.2%	890.00	-2.2%	889.73	
73+09	890.82	2.4%	890.53	2.4%	890.24	-2.4%	889.94	-2.4%	889.65	PC
73+50	890.99	3.6%	890.56	3.6%	890.13	-3.6%	889.70	-3.6%	889.27	
73+79	891.19	4.4%	890.66	4.4%	890.13	-4.4%	889.60	-4.4%	889.07	BEGIN FULL SUPER
74+00	891.19	4.4%	890.66	4.4%	890.13	-4.4%	889.60	-4.4%	889.07	
74+50	891.58	4.4%	891.05	4.4%	890.52	-4.4%	889.99	-4.4%	889.46	
75+00	892.38	4.4%	891.85	4.4%	891.32	-4.4%	890.79	-4.4%	890.26	
75+50	893.57	4.4%	893.04	4.4%	892.51	-4.4%	891.98	-4.4%	891.45	
75+75	894.32	4.4%	893.79	4.4%	893.26	-4.4%	892.73	-4.4%	892.20	END FULL SUPER
75+80	895.17	4.4%	894.64	4.4%	894.11	-4.4%	893.58	-4.4%	893.05	
76+00	895.04	3.9%	894.57	3.9%	894.11	-3.9%	893.65	-3.9%	893.19	
76+50	896.69	2.5%	896.39	2.5%	896.10	-2.5%	895.81	-2.5%	895.30	PT
76+84	898.27	2.5%	897.97	2.5%	897.68	-2.5%	897.38	-2.5%	897.03	END SUPER RT
77+00	898.67	1.1%	898.55	1.1%	898.42	-1.5%	898.24	-3.7%	897.85	
77+50	900.69	-0.3%	900.73	-0.3%	900.77	-1.5%	900.59	-4.0%	900.32	
77+91	902.61	-0.3%	902.65	-0.3%	902.69	-1.5%	902.51	-1.6%	902.40	
78+00	902.75	-1.5%	902.93	-1.5%	903.11	-1.5%	902.93	-1.9%	902.80	END SUPER LT

CULVERT AND STORM STAKING TAB														
FROM	STATION	OFFSET	ELEVATION*	TO	STATION	OFFSET	ELEVATION*	REMOVE PIPE CULVERT	48" RC PIPE CULVERT CLASS V (LN FT)	18" CS PIPE CULVERT (LN FT)	48" RC PIPE APRON EACH (FEET)	18" CS SAFETY APRON AND GRATE DESIGN 3128 EACH (FEET)	SLOPE %	NOTE
200	35+71.26	54.70 LT	EXISTING	201	35+85.92	56.34 RT	EXISTING	111	96		2 (8')		EXISTING	APRON END
120	52+37.94	29.52 LT	EXISTING	121									EXISTING	CENTER OF HOLE
	52+38.55	28.97 LT											EXISTING	CENTER OF STRUCTURE
121	52+94.95	26.69 LT	EXISTING	204	57+04.20	40.77 LT	891.50	32		32	2 (6')	0.30	EXISTING	CENTER OF HOLE
	52+94.45	26.01 LT												CENTER OF STRUCTURE
207	54+48.66	61.53 LT	892.27 / EXISTING	206	55+01.41	49.97 LT	892.11	47		42	2 (6')	0.30		APRON END
205	56+60.20	40.4 LT	891.63	204	57+04.20	40.77 LT	891.50	32		32	2 (6')	0.30		APRON END
204				203			891.31 / EXISTING							VERIFY TOUCHDOWN

* VERIFY ALL FIELD ELEVATIONS ON THIS TABLE AND ADJUST ACCORDINGLY

NO	DATE	BY	CKD	APPR	REVISION	03/19/2015	8:25:56 AM
NAME: P:\15-01-00\CSAH_14(EoJJames-35W)\Base\PROPOSED\TEMPLATE_PLAN.dgn							

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CHECKED BY MJ DATE 03/19/2015



ANOKA COUNTY
HIGHWAY DEPT.

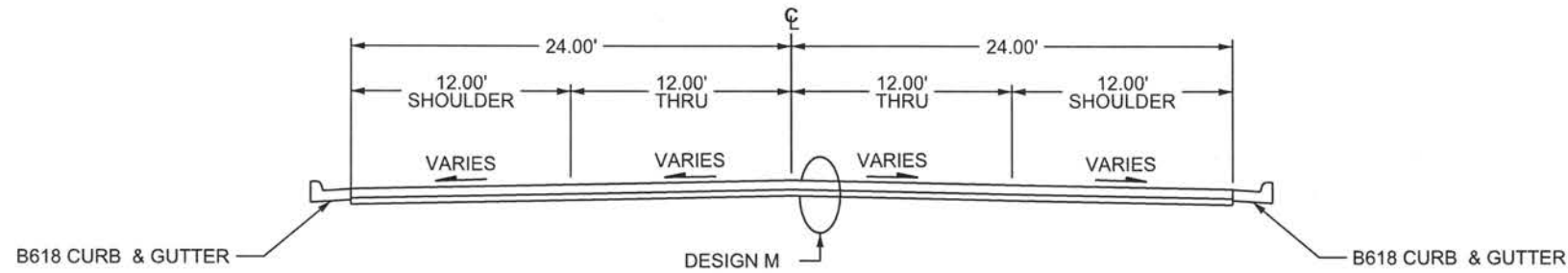
TABULATIONS

COUNTY PROJECT 15-15-14

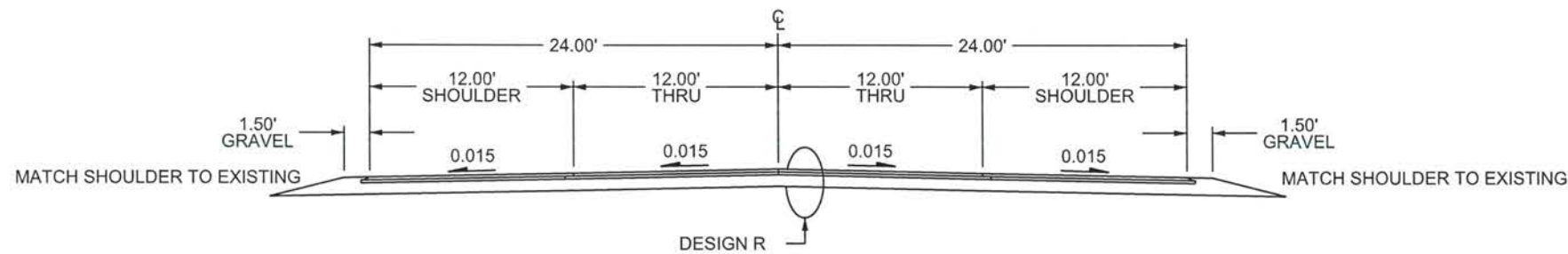
Sheet 3 of 17 Sheets

mjohn

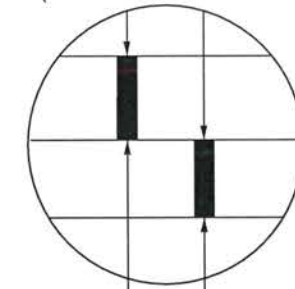
MAIN STREET - CSAH 14 MILL SECTION 13+89 - 30+70



MAIN STREET - CSAH 14 RECLAIM SECTION 30+70 - 43+80 LT, 40+25 RT 54+30 LT, 50+08 RT - 76+00

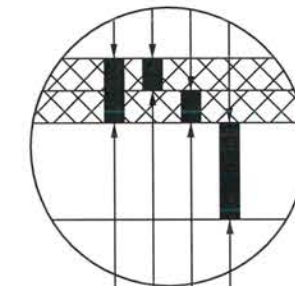


EXISTING SECTION 13+89 - 81+06 (ENTIRE PROJECT)



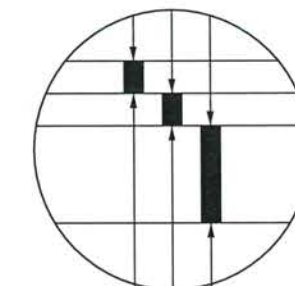
6" EXISTING BITUMINOUS
4" EXISTING BASE

DESIGN M MILL SECTION



4.0" MILL BITUMINOUS
2.0" BITUMINOUS WEAR(SPWEB440E)
2.0" BITUMINOUS WEAR(SPWEB440E)
EXISTING BITUMINOUS

DESIGN R RECLAIM SECTION



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

NO	DATE	BY	CKD	APPR	REVISION	03/19/2015	8:25:57 AM
NAME: P:\15-01-00\CSAH_14(EofJames-35W)\Base\PROPOSED\TEMPLATE_PLAN.dgn							

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ANOKA COUNTY
HIGHWAY DEPT.

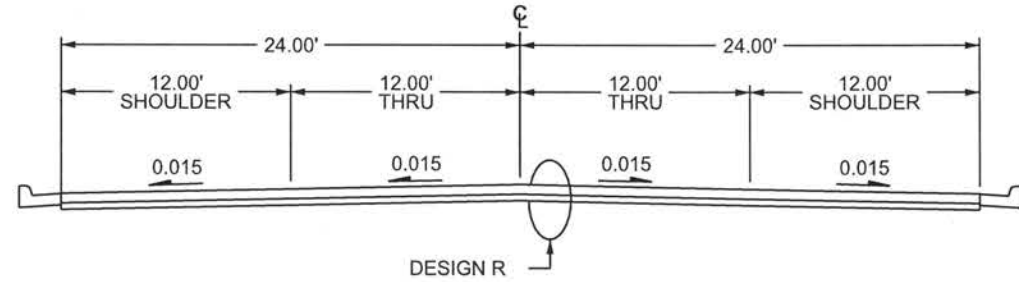
COUNTY PROJECT 15-15-14

TYPICAL SECTIONS
Sheet 4 of 17 Sheets

mjohn

MAIN STREET - CSAH 14 RECLAIM SECTION

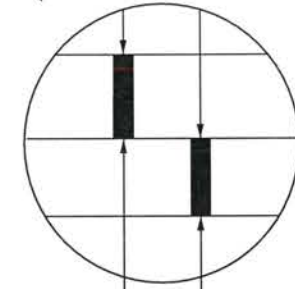
43+80 LT, 40+25 RT - 54+30 LT, 50+08 RT



EXISTING SECTION

13+89 - 81+06

(ENTIRE PROJECT)

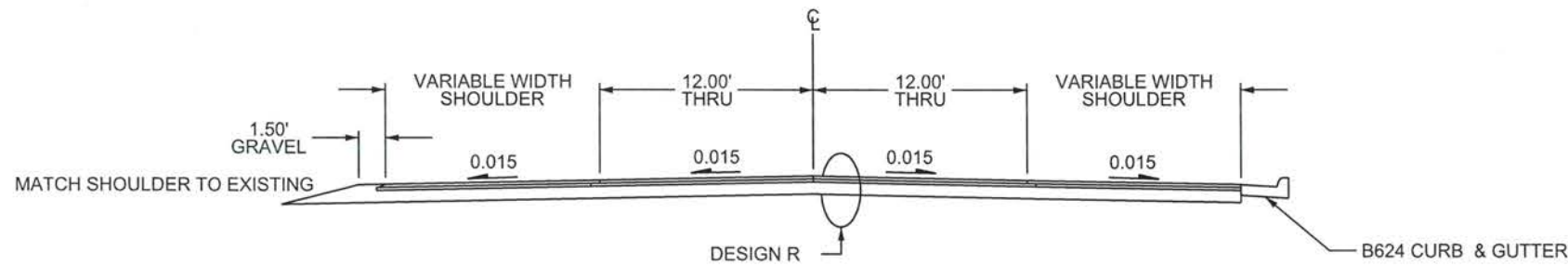


6" EXISTING BITUMINOUS

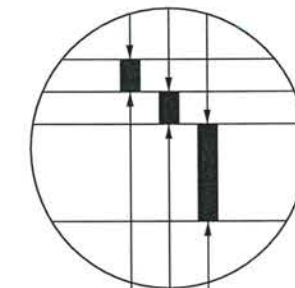
4" EXISTING BASE

MAIN STREET - CSAH 14 RECLAIM SECTION

76+00 - 81+06



DESIGN R RECLAIM SECTION



2.0" BITUMINOUS WEAR(SPWEB440E)

2.0" BITUMINOUS WEAR(SPWEB440E)

RECLAIMED BITUMINOUS

NO	DATE	BY	CKD	APPR	REVISION	DATE	TIME

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HIGHWAY DEPT.

COUNTY PROJECT 15-15-14

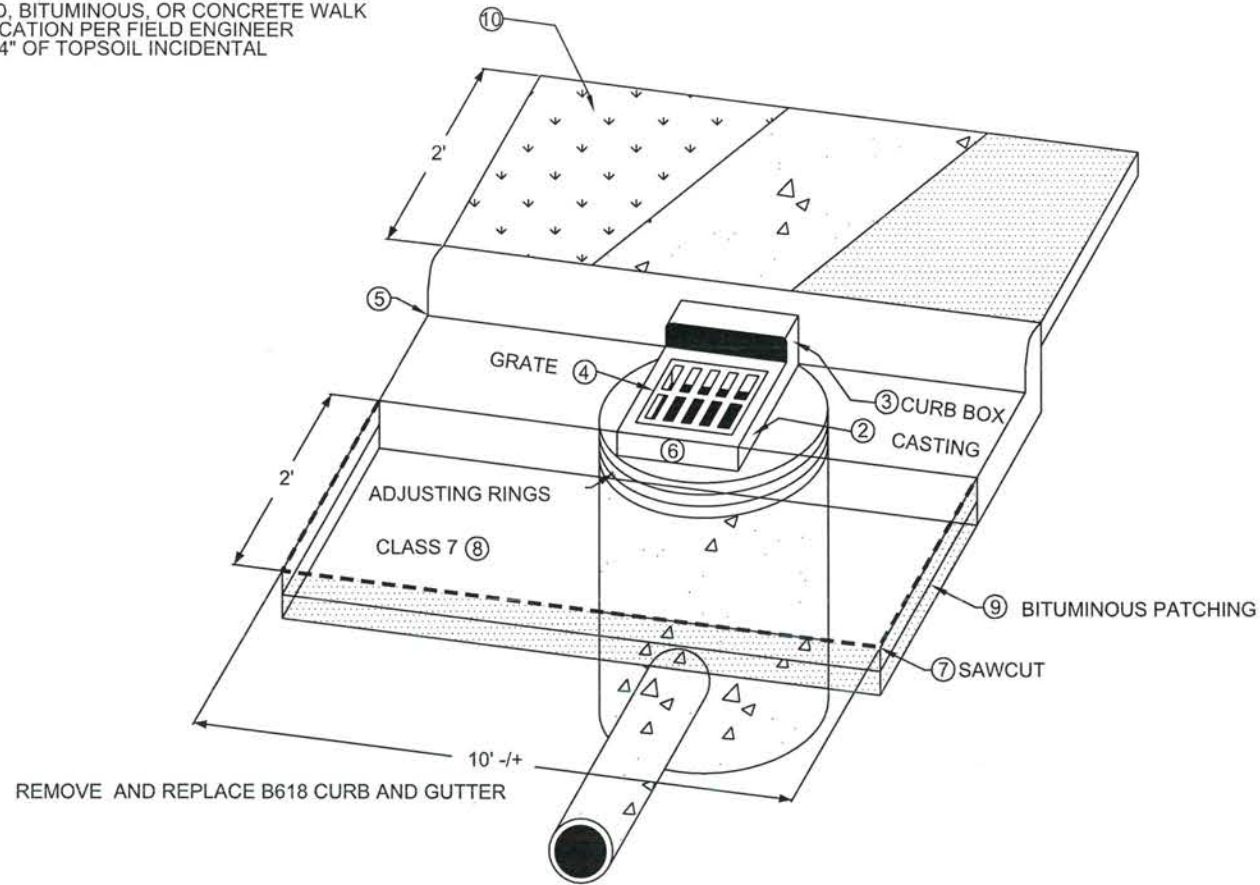
TYPICAL SECTIONS
Sheet 5 of 17 Sheets

mjohn

CATCH BASIN DETAIL

SEE STRUCTURE TAB FOR LOCATION
(PAGE 3)

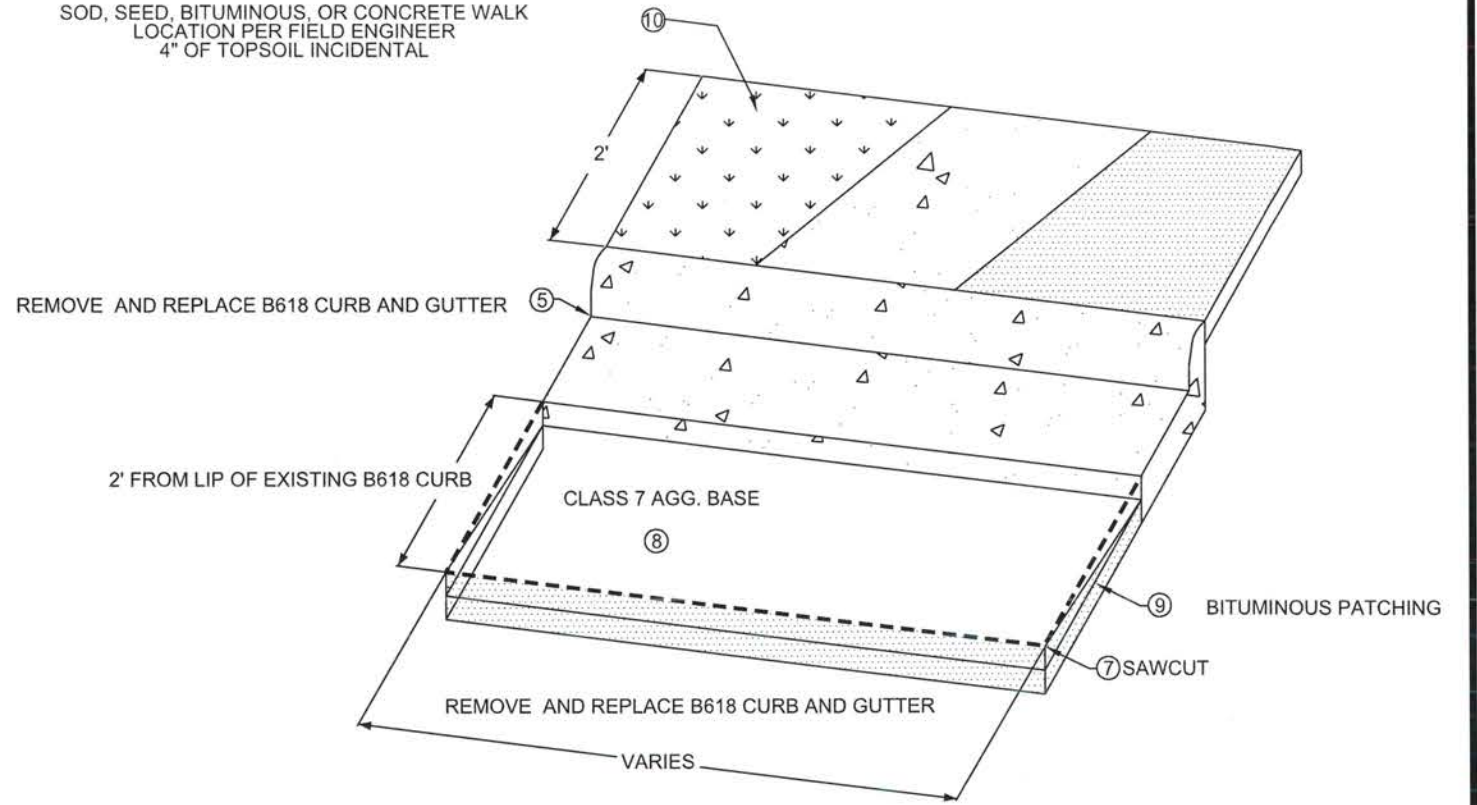
SOD, SEED, BITUMINOUS, OR CONCRETE WALK
LOCATION PER FIELD ENGINEER
4" OF TOPSOIL INCIDENTAL



NEW CURB DETAIL

SEE PLAN FOR LOCATION

SOD, SEED, BITUMINOUS, OR CONCRETE WALK
LOCATION PER FIELD ENGINEER
4" OF TOPSOIL INCIDENTAL



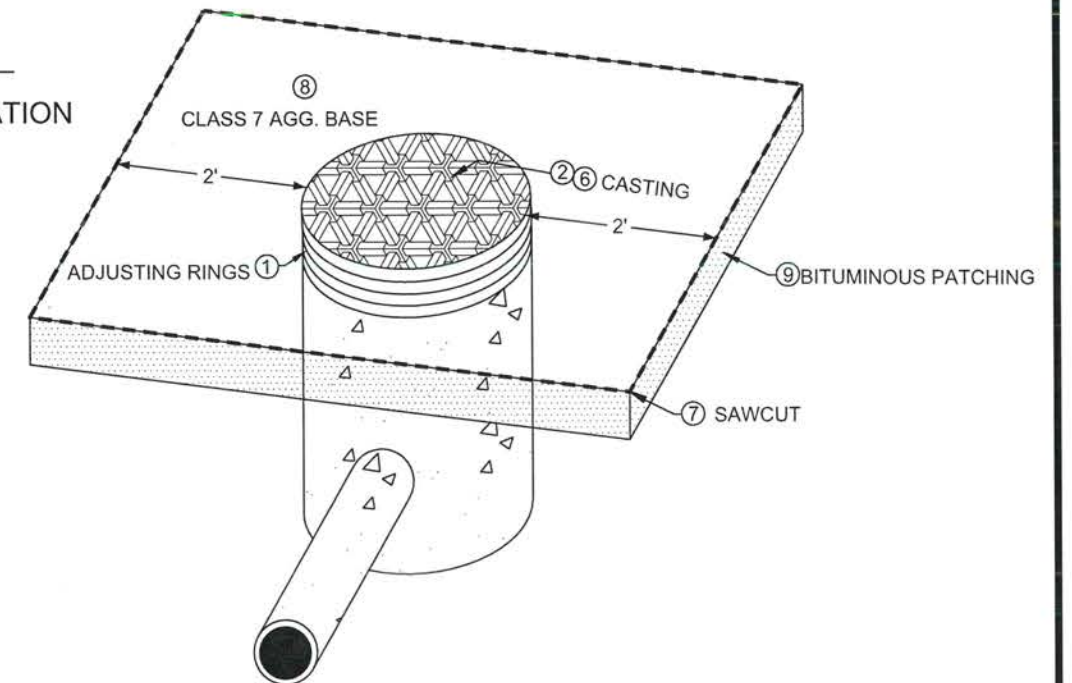
NOTES

FOR TRAFFIC CONTROL AT CATCH BASIN AND MANHOLE REPAIRS REFER TO THE MINNESOTA MANUAL ON TEMPORARY TRAFFIC CONTROL LAYOUTS FIELD MANUAL.

- ① CONCRETE ENCASED CONCRETE ADJUSTING RINGS STANDARD PLATE 4026A
- ② RING AND FRAME CASTING; REFERENCE CASTING ASSEMBLIES SUMMARY CHART FOR CASTING TYPE
- ③ CURB BOX MATCHES CASTING REFERENCE CHART FOR CASTING TYPE
- ④ GRATE CASTING; REFERENCE CASTING ASSEMBLIES SUMMARY CHART FOR CASTING TYPE
- ⑤ CONCRETE CURB AND GUTTER DESIGN B STANDARD PLATE 7100G, FORM CURB TO FIT CASTING
- ⑥ INSTALLATION OF CATCH BASIN OR MANHOLE CASTINGS; REFERENCE STANDARD PLATE PER TYPE OF CASTING
- ⑦ SAWCUT BITUMINOUS PAVEMENT / CONCRETE CURB FULL DEPTH.
- ⑧ ADD AND COMPACT AGGREGATE BASE CLASS 7 AROUND REPAIRED STRUCTURE. ITEM INCIDENTAL TO ENTIRE STRUCTURE REPAIR
- ⑨ REMOVE VARIABLE DEPTH BITUMINOUS, PATCH WITH 2, 3" LIFTS OF BITUMINOUS, TOP LIFT SHOULD TAPER TO BOTTOM LIFT AT CURB.
- ⑩ REPLACE DISTURBED AREA BEHIND CATCH BASIN WITH EITHER SOD (RESIDENTIAL AREAS), EROSION CONTROL BLANKET, BITUMINOUS, OR CONCRETE

MANHOLE DETAIL

SEE STRUCTURE TAB FOR LOCATION
(PAGE 3)

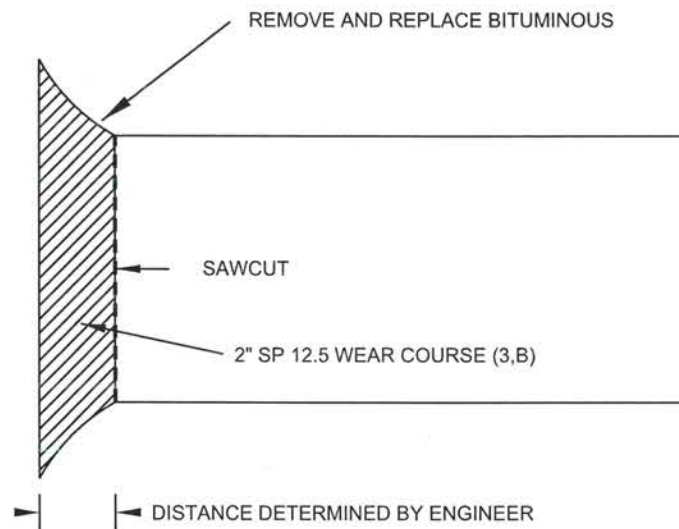


mjohn

RECLAIM AREA - DRIVEWAY DETAIL

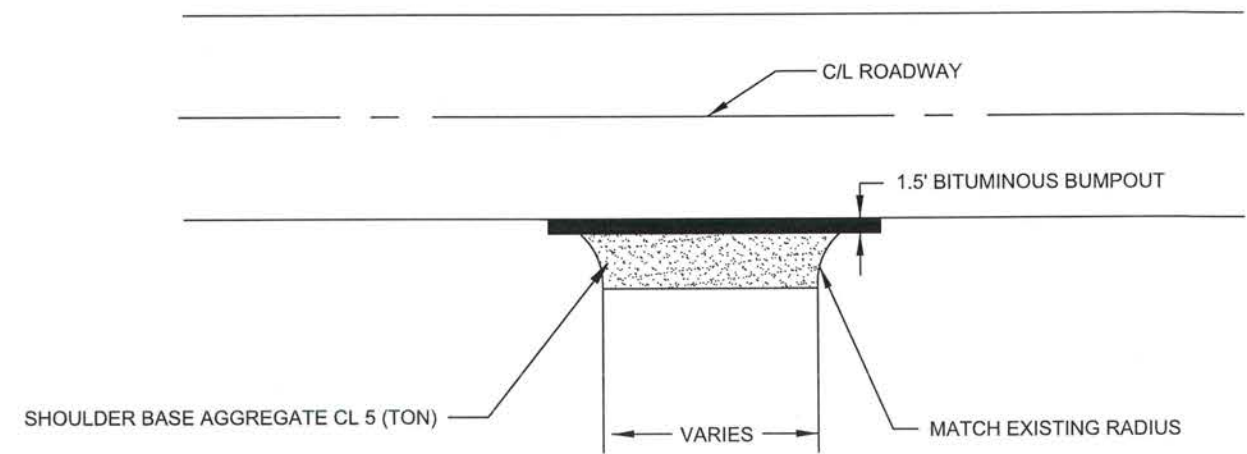
BITUMINOUS

PLAN VIEW



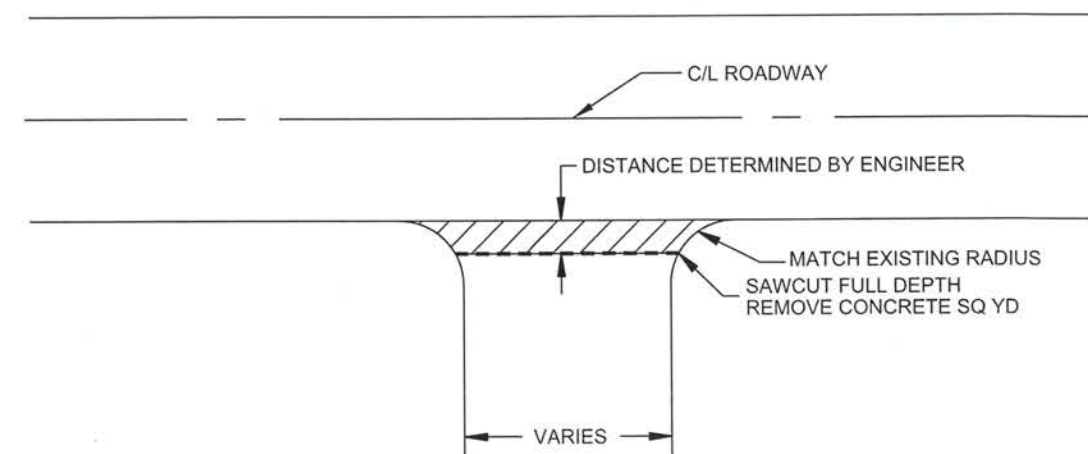
DRIVEWAY DETAIL

GRAVEL / FIELD ENTRANCE



DRIVEWAY DETAIL

CONCRETE DRIVEWAY



NO	DATE	BY	CKD	APPR	REVISION	03/19/2015	8:26:00 AM

NAME: P:\15-01-00\CSAH_14(EoJames-35W)\Base\PROPOSED\TEMPLATE_PLAN.dgn

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

PRINT NAME: MATTHEW J. JOHN
 SIGNATURE: *Matthew J. John*
 DATE: 4/2/15 LICENSE NO. 51639

DRAWN BY JJ DATE 03/19/2015
 DESIGN BY JJ DATE 03/19/2015
 CHECKED BY MJ DATE 03/19/2015



ANOKA COUNTY
HIGHWAY DEPT.

COUNTY PROJECT 15-15-14

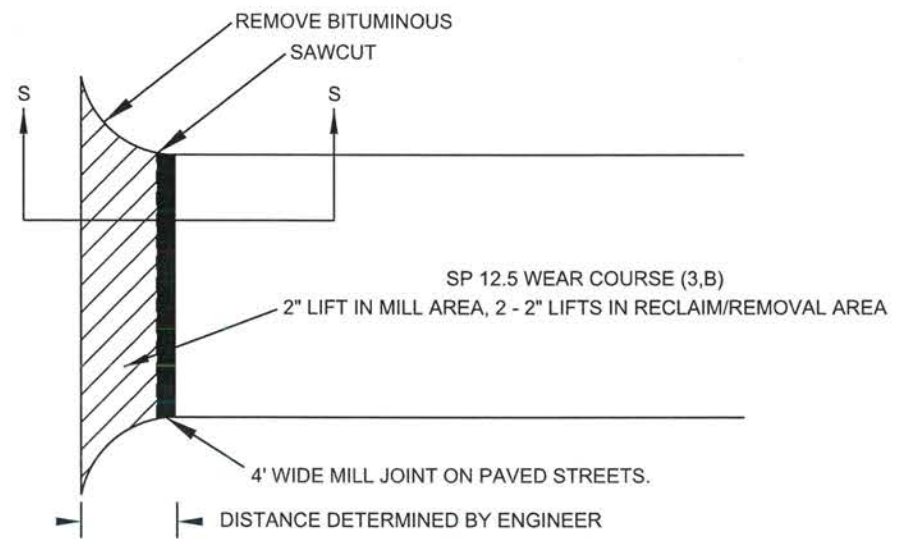
DETAILS
Sheet 7 of 17 Sheets

mjohn

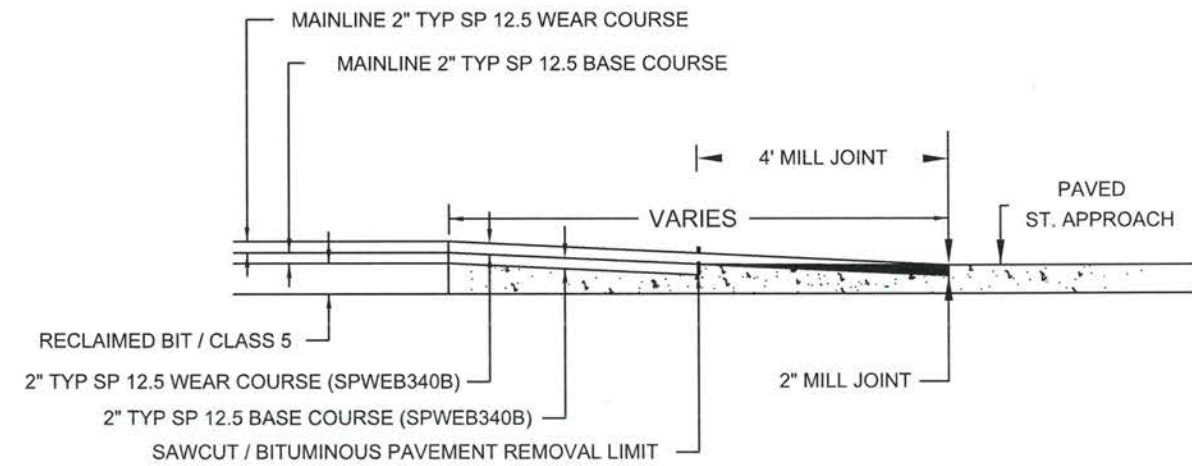
RECLAIM AREA - STREET APPROACH DETAIL

BITUMINOUS STREET

PLAN VIEW

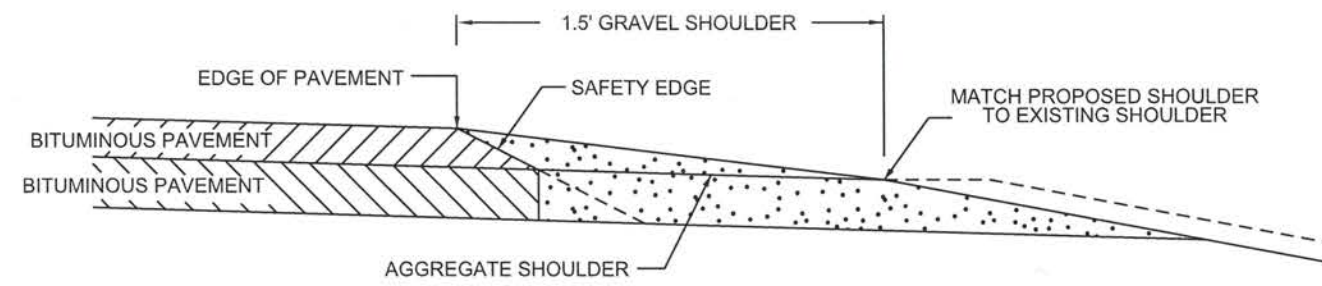


SECTION S - S



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	

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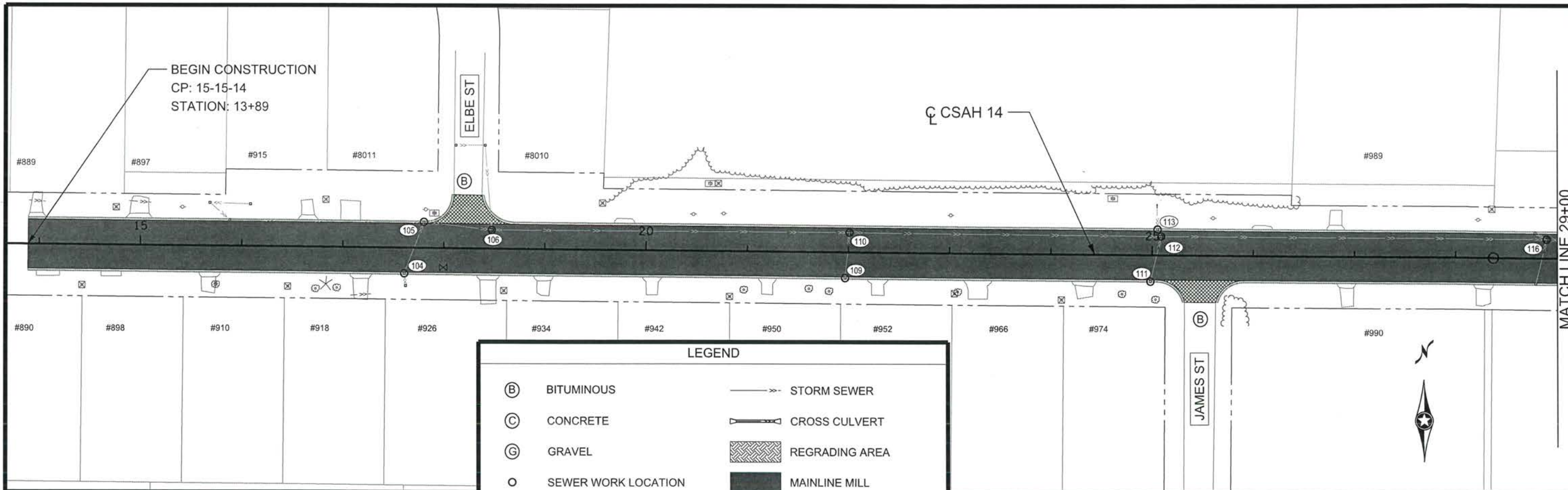
DESIGN BY JJ DATE 03/19/2015

CHECKED BY MJ DATE 03/19/2015

ANOKA COUNTY
HIGHWAY DEPT.

COUNTY PROJECT 15-15-14

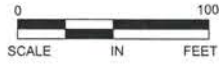
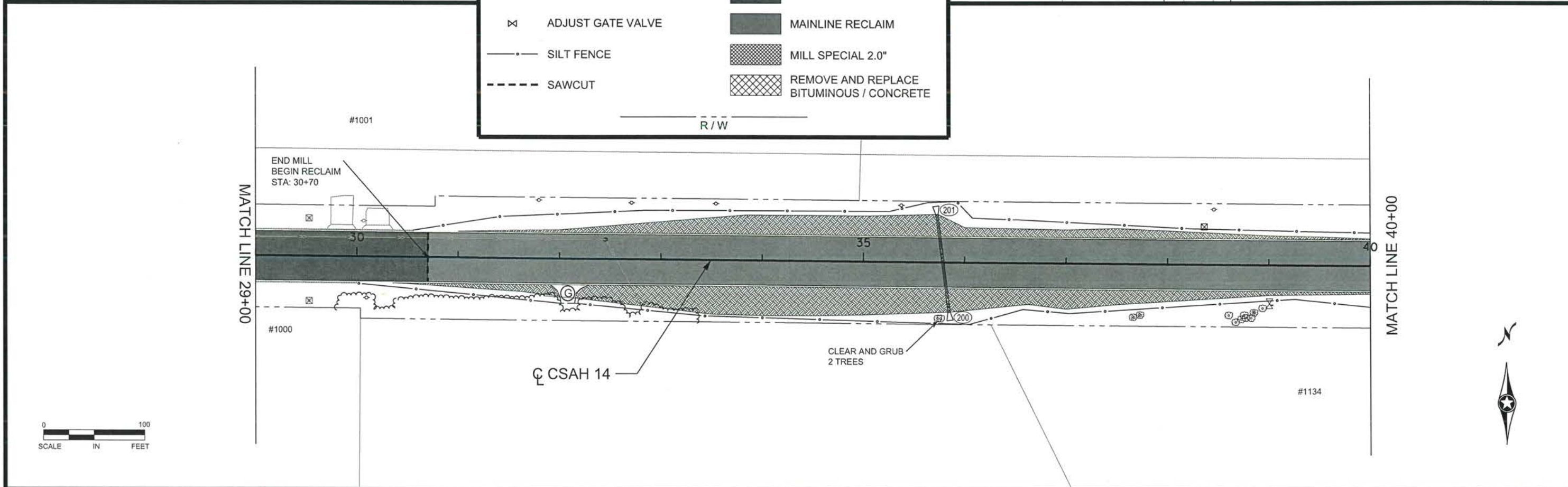
mjohn



LEGEND

(B)	BITUMINOUS	---	STORM SEWER
(C)	CONCRETE	---	CROSS CULVERT
(G)	GRAVEL	[Hatched Box]	REGRAIDING AREA
(O)	SEWER WORK LOCATION	[Solid Black Box]	MAINLINE MILL
(X)	ADJUST GATE VALVE	[Dark Grey Box]	MAINLINE RECLAIM
---	SILT FENCE	[Cross-hatched Box]	MILL SPECIAL 2.0"
- - -	SAWCUT	[Diagonal-hatched Box]	REMOVE AND REPLACE BITUMINOUS / CONCRETE

R / W



NO	DATE	BY	CKD	APPR	REVISION	03/19/2015	8:26:02 AM
NAME: P:\15-01-00\CSAH_14(EofJames-35W)\Base\PROPOSED\TEMPLATE_PLAN.dgn							

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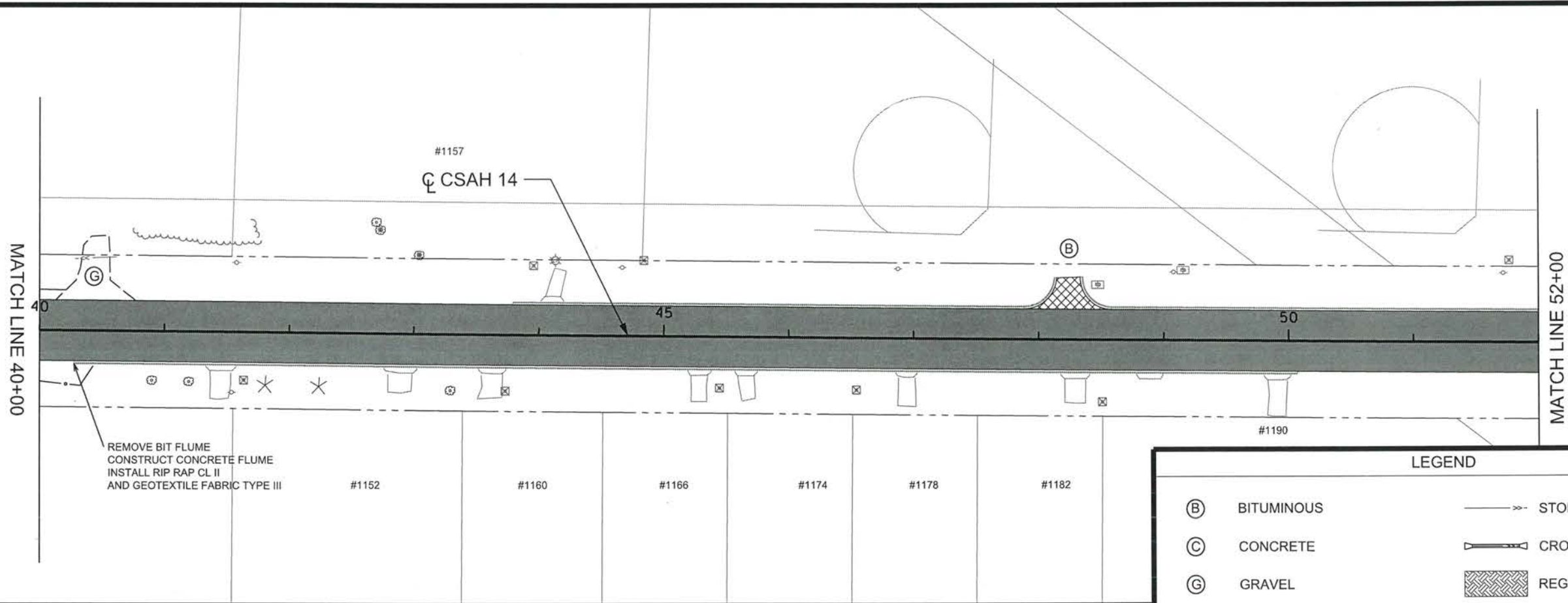


**ANOKA COUNTY
HIGHWAY DEPT.**

COUNTY PROJECT 15-15-14

CONSTRUCTION PLAN
 STA 14+89 TO 40+00
 Sheet 9 of 17 Sheets

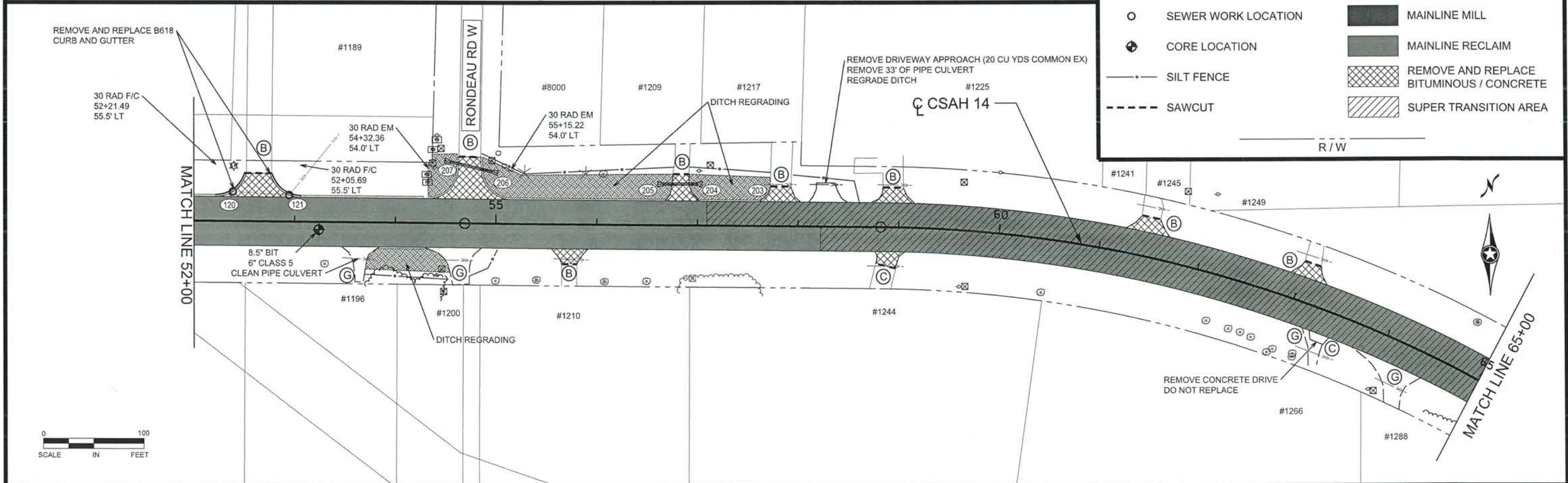
mjohn



LEGEND

(B)	BITUMINOUS	---	STORM SEWER
(C)	CONCRETE	⊥	CROSS CULVERT
(G)	GRAVEL	[Hatched Box]	REGRADE AREA
○	SEWER WORK LOCATION	[Solid Black Box]	MAINLINE MILL
⊙	CORE LOCATION	[Dark Grey Box]	MAINLINE RECLAIM
---	SILT FENCE	[Cross-hatched Box]	REMOVE AND REPLACE BITUMINOUS / CONCRETE
- - -	SAWCUT	[Diagonal Hatched Box]	SUPER TRANSITION AREA

R/W



NO	DATE	BY	CKD	APPR	REVISION	03/19/2015	8:26:03 AM

NAME: P:\15-01-00\CSAH_14(EoJames-35W)\Base\PROPOSED\TEMPLATE_PLAN.dgn

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DRAWN BY JJ DATE 03/19/2015
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 CHECKED BY MJ DATE 03/19/2015

ANOKA COUNTY
HIGHWAY DEPT.

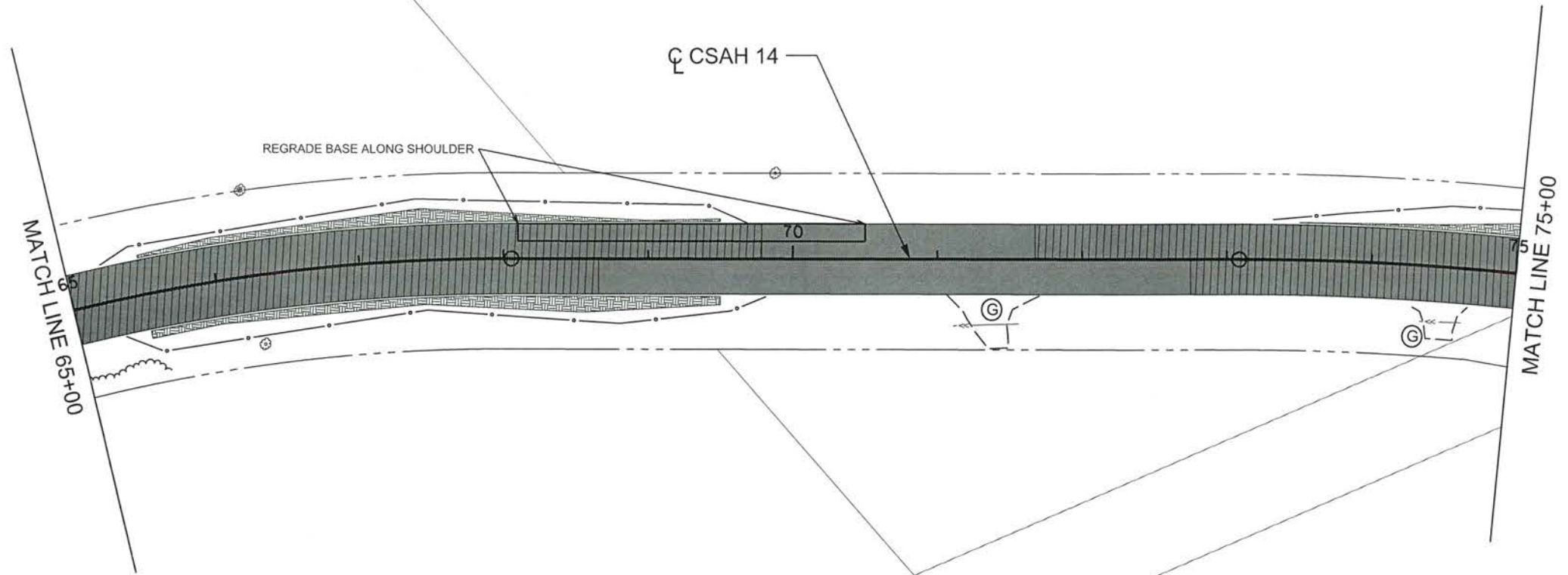
COUNTY PROJECT 15-15-14

CONSTRUCTION PLAN

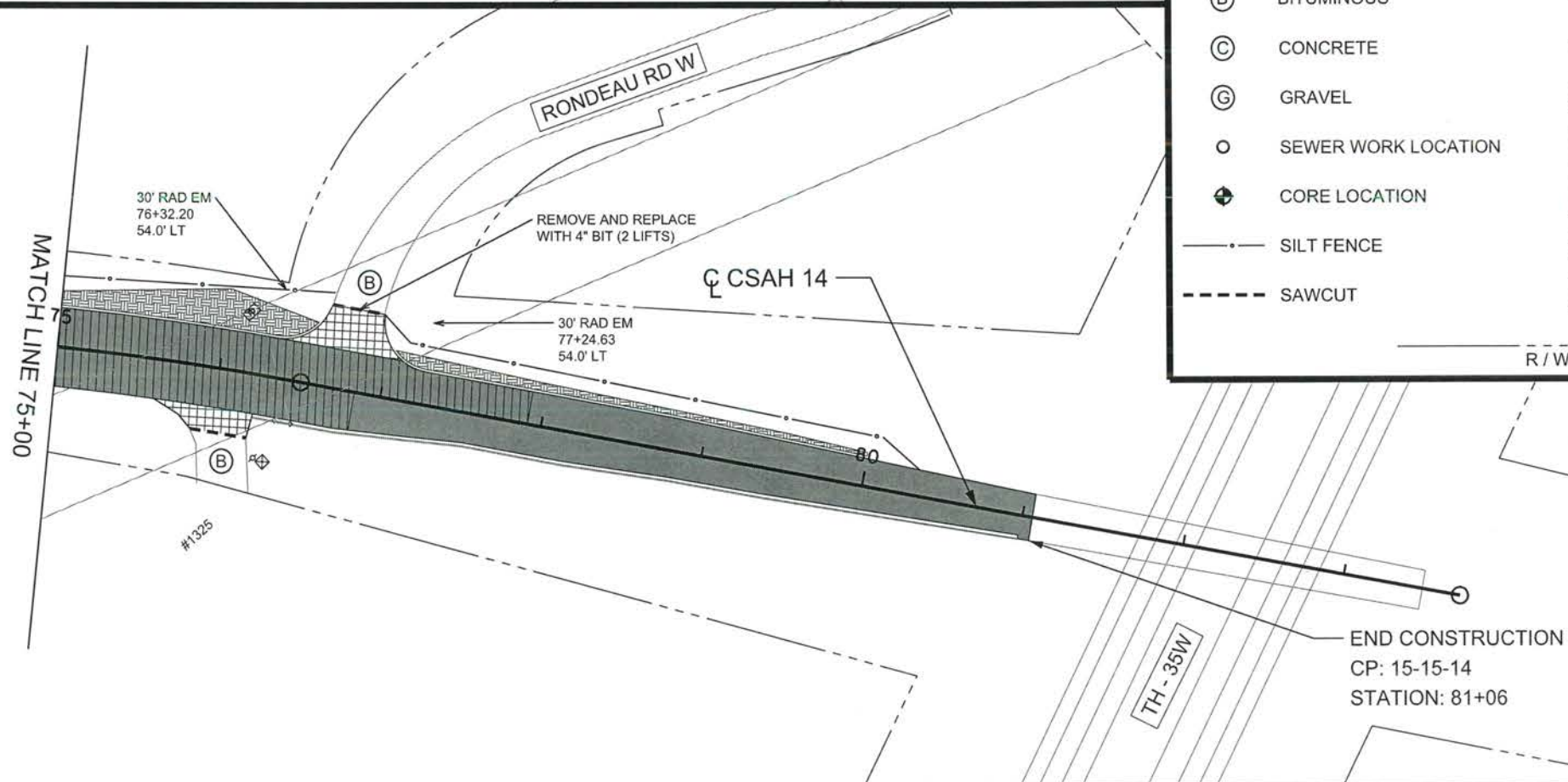
STA 40+00 TO 65+00

Sheet 10 of 17 Sheets

mjohn



LEGEND			
(B)	BITUMINOUS		STORM SEWER
(C)	CONCRETE		CROSS CULVERT
(G)	GRAVEL		REGRAIDING AREA
○	SEWER WORK LOCATION		MAINLINE MILL
⊕	CORE LOCATION		MAINLINE RECLAIM
—	SILT FENCE		REMOVE AND REPLACE BITUMINOUS / CONCRETE
- - -	SAWCUT		SUPER TRANSITION AREA
			R/W



NO	DATE	BY	CKD	APPR	REVISION	03/19/2015	8:26:04 AM

NAME: P:\15-01-00\CSAH_14(EoJames-35W)\Base\PROPOSED\TEMPLATE_PLAN.dgn

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ANOKA COUNTY
HIGHWAY DEPT.

COUNTY PROJECT 15-15-14

CONSTRUCTION PLAN
 STA 65+00 TO 81+06
 Sheet 11 of 17 Sheets

PERMANENT PAVEMENT MARKING PLAN
NOTES AND GUIDELINES

GENERAL INFORMATION:

THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. ANOKA COUNTY HIGHWAY DEPARTMENT WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS, LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.

EDGE LINES AND LANE LINES ARE TO BE BROKEN ONLY AT INTERSECTIONS WITH PUBLIC ROADS AND AT PRIVATE ENTRANCES IF THEY ARE CONTROLLED BY A YIELD SIGN, STOP SIGN OR TRAFFIC SIGNAL. THE BREAK POINT IS TO BE AT THE START OF THE RADIUS FOR THE INTERSECTION OR AT MARKED STOP LINES OR CROSSWALKS.

A TOLERANCE OF 1/4 INCH UNDER OR 1/4 INCH OVER THE SPECIFIED WIDTH WILL BE ALLOWED FOR STRIPING PROVIDED THE VARIATION IS GRADUAL AND DOES NOT DETRACT FROM THE GENERAL APPEARANCE. BROKEN LINE SEGMENTS MAY VARY UP TO ONE-HALF FOOT FROM THE SPECIFIED LENGTHS PROVIDED THE OVER AND UNDER VARIATIONS ARE REASONABLY COMPENSATORY. ALIGNMENT DEVIATIONS FROM THE CONTROL GUIDE SHALL NOT EXCEED 1 INCH. MATERIAL SHALL NOT BE APPLIED OVER LONGITUDINAL JOINTS, ESTABLISHMENT OF APPLICATION TOLERANCES SHALL NOT RELIEVE THE CONTRACTOR OF THEIR RESPONSIBILITY TO COMPLY AS CLOSELY AS PRACTICABLE WITH THE PLANNED DIMENSIONS.

EPOXY:

THE ROAD SURFACE SHALL BE CLEANED AT THE DIRECTION OF THE ENGINEER JUST PRIOR TO APPLICATION. PAVEMENT CLEANING SHALL CONSIST OF AT LEAST BRUSHING WITH A ROTARY BROOM (NON-METALLIC) OR AS RECOMMENDED BY THE MATERIAL MANUFACTURER AND ACCEPTABLE TO THE ENGINEER. NEW PORTLAND CEMENT CONCRETE SURFACES SHALL BE SANDBLAST CLEANED TO REMOVE ANY SURFACE TREATMENT AND/OR LAITANCE ON LOW SPEED (SPEED LIMIT 35 MPH OR LESS) URBAN PORTLAND CEMENT CONCRETE ROADWAYS. SANDBLAST CLEANING SHALL BE USED FOR ALL EPOXY PAVEMENT MARKINGS.

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

AN EPOXY RESIN LINE 4" WIDE AND 15 MILL THICKNESS (WET), REQUIRES AN APPLICATION RATE OF ONE (1) GALLON OF COMPONENTS FOR 320 FEET OF LINE. GLASS BEADS SHALL BE APPLIED AT A POUND PER GALLON RATE SUFFICIENT TO ACHIEVE AN ACCEPTABLE NO-TRACK SYSTEM.

OPERATIONS SHALL BE CONDUCTED ONLY WHEN THE ROAD PAVEMENT SURFACE TEMPERATURES ARE 50 DEGREES FAHRENHEIT OR GREATER.

PERMANENT PAVEMENT MARKINGS SHALL NOT BE PLACED OVER TEMPORARY TAPE MARKINGS.

PREFORMED THERMOPLASTIC:

THE PREFORMED THERMOPLASTIC MARKINGS SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS ON CLEAN AND DRY SURFACES. SEE SPECIAL PROVISIONS FOR PREFORMED THERMOPLASTIC MARKING SPECIFICATIONS.

PAINT:

AT THE TIME OF APPLYING THE MARKING MATERIAL, THE APPLICATION AREA SHALL BE FREE OF CONTAMINATION. THE CONTRACTOR SHALL CLEAN THE ROADWAY SURFACE PRIOR TO THE LINE APPLICATION IN A MANNER AND TO THE EXTENT REQUIRED BY THE ENGINEER.

GLASS BEADS SHALL BE APPLIED IMMEDIATELY AFTER APPLICATION OF THE PAINT LINE.

EXCEPT WHEN USED AS A TEMPORARY MARKING, PAVEMENT MARKINGS SHALL ONLY BE APPLIED IN SEASONABLE WEATHER WHEN AIR TEMPERATURE IS 50 DEGREES FARHENHEIT OR HIGHER AND SHALL NOT BE APPLIED WHEN THE WIND OR OTHER CONDITIONS CAUSE A FILM OR DUST TO BE DEPOSITED ON THE PAVEMENT SURFACE AFTER CLEANING AND BEFORE THE MARKING MATERIAL CAN BE APPLIED.

THE FILLING OF TANKS, POURING OF MATERIALS OR CLEANING OF EQUIPMENT SHALL NOT BE PERFORMED ON UNPROTECTED PAVEMENT SURFACES UNLESS ADEQUATE PROVISIONS ARE MADE TO PREVENT SPILLAGE OF MATERIAL.

PERMANENT MARKING QUANTITIES		
ITEM	UNIT	TOTAL QUANTITY
4" SOLID LINE WHITE - EPOXY PAINT	LIN FT	14625
4" SOLID LINE YELLOW - EPOXY PAINT	LIN FT	1150
4" BROKEN LINE YELLOW - EPOXY PAINT	LIN FT	940
4" DOUBLE SOLID LINE YELLOW - EPOXY PAINT	LIN FT	2450
24" SOLID LINE YELLOW - PREFORMED THERMOPLASTIC	LIN FT	11
PAVEMENT MESSAGE (RT ARROW) - PREFORMED THERMOPLASTIC	EA	1

SYMBOLS & MATERIALS LEGEND

■ CROSSWALK BLOCK WHITE PREFORMED THERMOPLASTIC

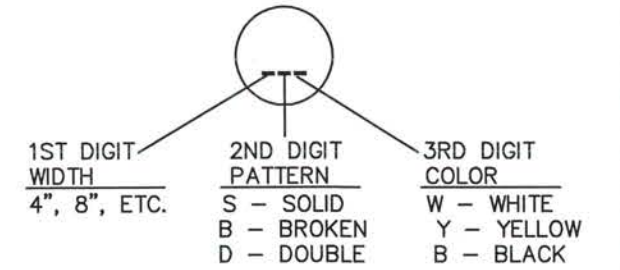
↩ PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC

STRIPING KEY

○ CIRCLE - EPOXY □ SQUARE PREFORMED THERMOPLASTIC

△ TRIANGLE - PAINT

⬠ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



EXAMPLE: (4SW) = 4" SOLID LINE WHITE - EPOXY

NO	DATE	BY	CKD	APPR	REVISION

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 PRINT NAME: MATTHEW J. JOHN
 SIGNATURE: *Matthew J. John*
 DATE: 4/2/15 LICENSE NO. 51639

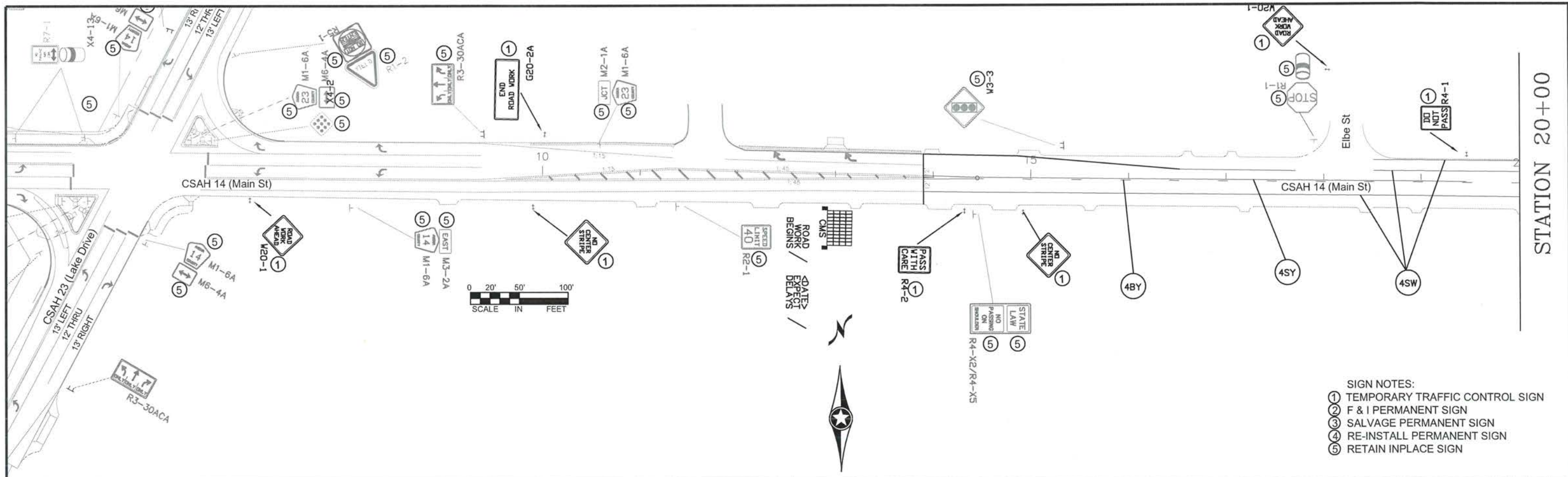
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 DESIGN BY: RLB DATE: 2/14/14
 CHECKED BY: JR DATE: 2/14/14



ANOKA COUNTY
HIGHWAY DEPT.

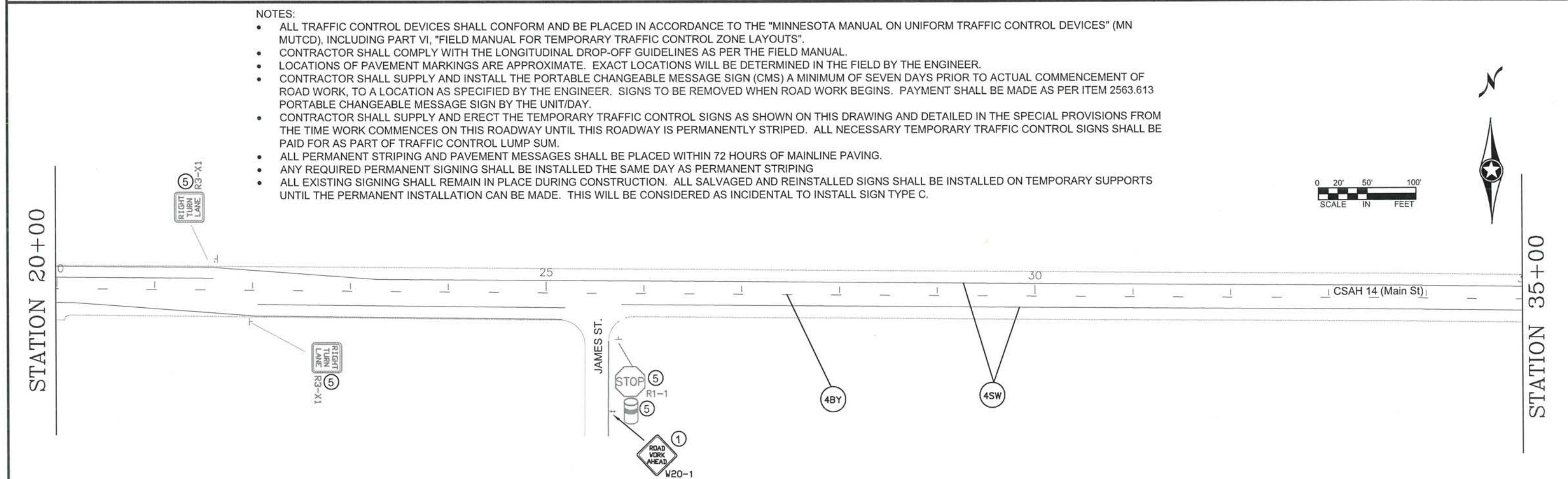
STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 15-15-14

PERMANENT MARKING
TABULATION
 Sheet 12 of 17 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

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



NO	DATE	BY	CKD	APPR	REVISION

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

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

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 SIGNATURE: *Matthew J. John*
 DATE: 4/2/15 REG. NO. 51639

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

ANOKA COUNTY
HIGHWAY DEPT.

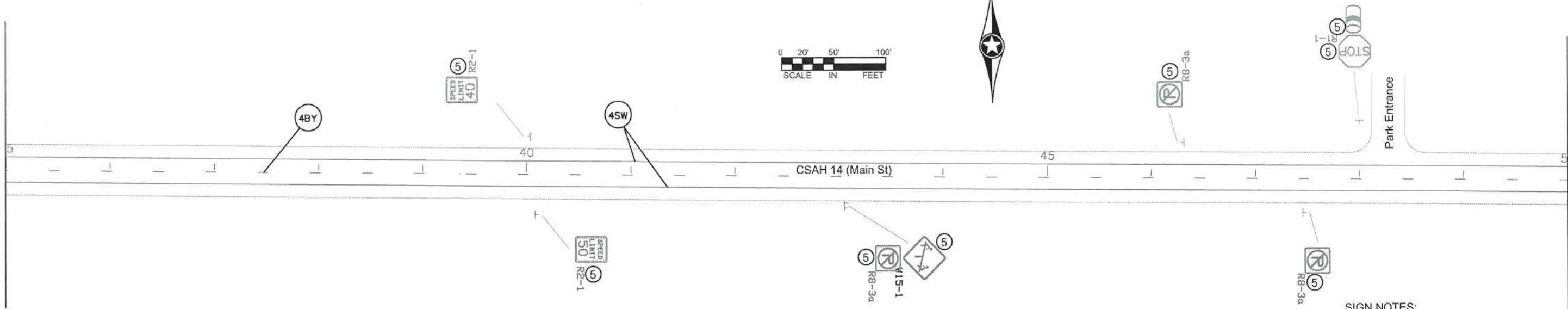
STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 15-15-14

TEMPORARY SIGNING,
 PERMANENT SIGNING
 AND STRIPING

Sheet 13 of 17 Sheets

STATION 35+00

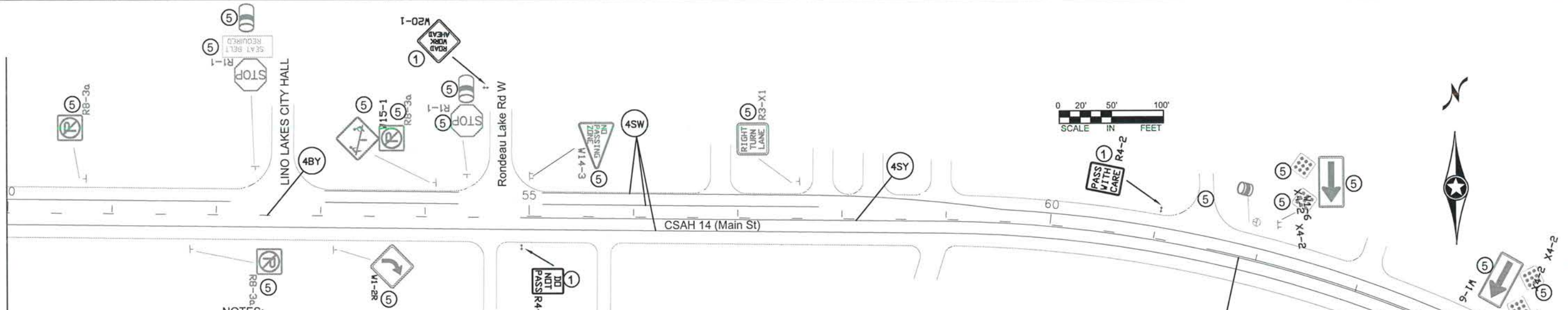
STATION 50+00



- 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

STATION 50+00

STATION 65+00



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



ANOKA COUNTY
 HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 15-15-14

TEMPORARY SIGNING,
 PERMANENT SIGNING
 AND STRIPING

Sheet 14 of 17 Sheets

TEMPORARY TRAFFIC CONTROL SIGNS

M.U.T.C.D. CODE	SIZE	PANEL AREA FT. ²	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		2	1	7.0'
R4-2	24" x 30"	5.00		2	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 6)		
CMS sign to be installed a minimum of seven days prior to actual commencement of road work. Signs to be removed when road work begins.				2		

NOTES:

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

CHANGEABLE MESSAGE BOARD - MESSAGE SEQUENCE LAYOUT

		R	O	A	D		
		W	O	R	K		
	B	E	G	I	N	S	

	<	D	A	T	E	>	
	E	X	P	E	C	T	
	D	E	L	A	Y	S	

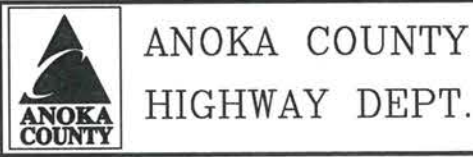
CMS sign to be installed a minimum of seven days prior to actual commencement of road work. Signs to be removed when road work begins.

NO	DATE	BY	CKD	APPR	REVISION

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

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
 PRINT NAME: MATTHEW J. JOHN
 SIGNATURE:
 DATE: 4/2/15 REG. NO. 51639

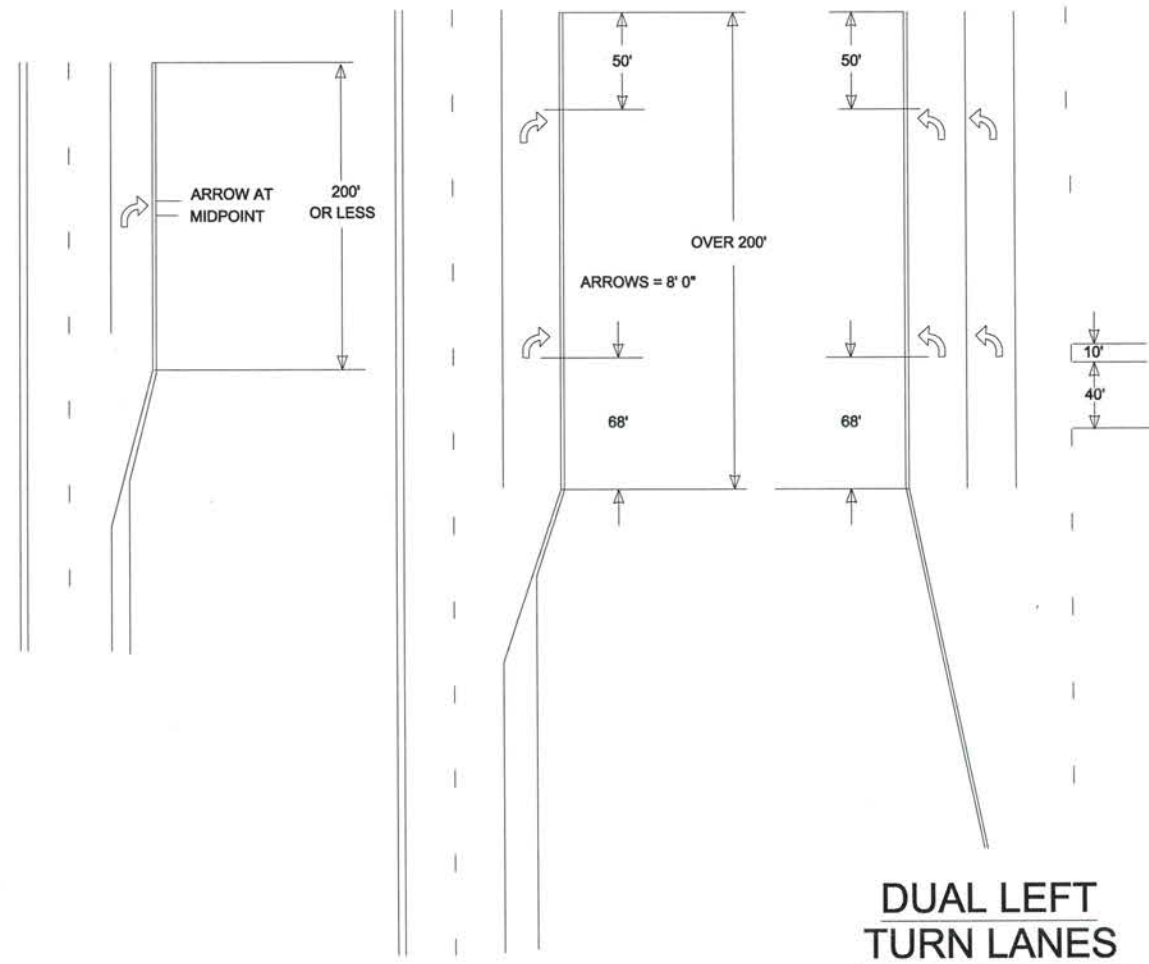
DRAWN BY: RLB DATE 1/7/14
 DESIGN BY: RLB DATE 1/7/14
 CHECKED BY: JR DATE 1/7/14



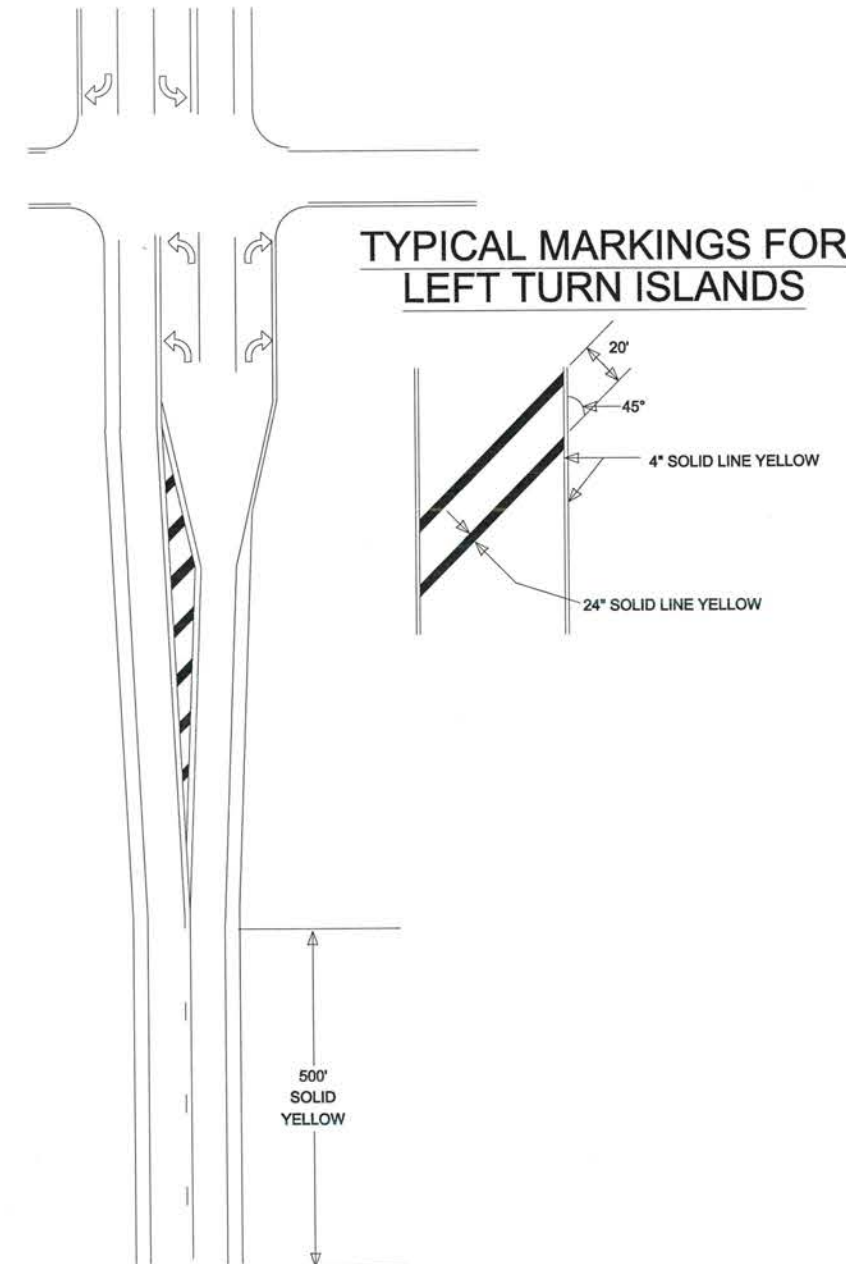
STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 15-15-14

TRAFFIC CONTROL QUANTITY
 Sheet 16 of 17 Sheets

**TYPICAL MESSAGE PLACEMENT
FOR TURN LANES**



**TYPICAL MARKINGS FOR
LEFT TURN ISLANDS**



NO	DATE	BY	CKD	APPR	REVISION

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

PRINT NAME: MATTHEW J. JOHN

SIGNATURE: *[Signature]*

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

DRAWN BY: RLB DATE: 2/6/14

DESIGN BY: RLB DATE: 2/6/14

CHECKED BY: JR DATE: 2/6/14



**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____

STATE AID PROJECT NO. _____

STATE AID PROJECT NO. _____

COUNTY PROJECT NO. 15-15-14

**SIGNING & STRIPING
DETAILS**

Sheet 17 of 17 Sheets