

MINNESOTA DEPARTMENT OF TRANSPORTATION ANOKA COUNTY

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

LOCATED ON CSAH 18 BETWEEN COON RAPIDS BOULEVARD AND BNSF RR TRACKS

GOVERNING SPECIFICATIONS

THE 2016 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD 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 23 SHEETS

INDEX

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END CP 16-18-18

CSAH 18, STA: 45+90



BEGIN CP 16-18-18

CSAH 18, STA: 10+89

PROJECT LOCATION



CSAH 18			
GROSS LENGTH	3501 FEET	0.663 MILES	
EXCEPTIONS-LENGTH	0.00 FEET	0.000 MILES	
NET LENGTH	3501 FEET	0.663 MILES	
DESIGN SPEED	35 MPH		
CURRENT ADT	5619		

CITY OF COON RAPIDS
ANOKA COUNTY
MN/DOT TRANSPORTATION DISTRICT - METRO
SECTION 16
TOWNSHIP 31 NORTH
RANGE 24 WEST

Approved: 4/11/2016
ANOKA COUNTY ENGINEER

<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>NO</th> <th>DATE</th> <th>BY</th> <th>CKD</th> <th>APPR</th> <th>REVISION</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> <p>NAME: P:\16-01-00\CSAH_18(CRB-RR)\Base\PROPOSED\TEMPLATE_PLAN.dgn</p>	NO	DATE	BY	CKD	APPR	REVISION							<p>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.</p> <p>PRINT NAME: <u>MATTHEW J. JOHN</u></p> <p>SIGNATURE: </p> <p>DATE: <u>4/8/2016</u> LICENSE NO. <u>51639</u></p>	<p>DRAWN BY <u>SRK</u> DATE <u>04/08/2016</u></p> <p>DESIGN BY <u>SRK</u> DATE <u>04/08/2016</u></p> <p>CHECKED BY <u>MJJ</u> DATE <u>04/08/2016</u></p>	 ANOKA COUNTY HIGHWAY DEPT.	<p>COUNTY PROJECT <u>16-18-18</u></p> <p>TITLE SHEET</p> <p>Sheet <u>1</u> of <u>23</u> Sheets</p>
NO	DATE	BY	CKD	APPR	REVISION											

STATEMENT OF ESTIMATED QUANTITIES

ITEM NUMBER	ITEM DESCRIPTION	NOTES	UNIT	TOTAL PROJECT QUANTITIES ESTIMATED
2021.501	MOBILIZATION		LUMP SUM	1
2021.601	RAILROAD PROTECTIVE SERVICES	19	LUMP SUM	1
2104.501	REMOVE CONCRETE CURB		LN FT	1259
2104.503	REMOVE CONCRETE WALK		SQ FT	639
2104.505	REMOVE BITUMINOUS PAVEMENT		SQ YD	251
2104.509	REMOVE MANHOLE OR CATCH BASIN		EACH	10
2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)		LN FT	234
2104.513	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)		LN FT	1711
2231.501	BITUMINOUS PATCHING MIXTURE	8	TON	38
2232.501	MILL BITUMINOUS SURFACE (2.0")	1	SQ YD	19062
2232.604	MILL BITUMINOUS PAVEMENT (SPECIAL)	2	SQ YD	1720
2357.502	BITUMINOUS MATERIAL FOR TACK COAT		GALLON	912
2360.501	TYPE SP 12.5 WEARING COURSE MIX (3,B)	3, 4	TON	198
2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,E)		TON	2193
2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN G	14	LN FT	5.4
2506.501	CONSTRUCT DRAINAGE STRUCTURE DESIGN H	14	LN FT	21.3
2506.501	CONSTRUCT DRAINAGE STRUCTURE DES 48-4020	14	LN FT	9.6
2506.516	CASTING ASSEMBLY	15	EACH	23
2506.602	GROUT CATCH BASIN OR MANHOLE	16	EACH	3
2521.501	6" CONCRETE WALK		SQ FT	639
2531.501	CONCRETE CURB AND GUTTER DESIGN B618		LN FT	1129
2531.618	TRUNCATED DOMES		SQ FT	72
2545.602	ADJUST HANDHOLE	18	EACH	9
2550.602	LOOP DETECTOR DESIGN NMC	13	EACH	28
2563.601	TRAFFIC CONTROL	6	LUMP SUM	1
2563.613	PORTABLE CHANGEABLE MESSAGE SIGN	5	UDAY	14
2565.602	RELOCATE PUSH BUTTON	18	EACH	10
2573.530	STORM DRAIN INLET PROTECTION	9	EACH	22
2574.525	COMMON TOPSOIL BORROW		CU YD	65
2575.523	EROSION CONTROL BLANKETS CATEGORY 0	7	SQ YD	755
2581.501	REMOVABLE PREFORMED PAVEMENT MARKING TAPE	10	LN FT	402
2582.501	PAVT MSSG PREF THERMO	11, 12	SQ FT	3878
2582.502	4" SOLID LINE PAINT	17	LN FT	8510
2582.502	4" DBLE SOLID LINE PAINT	17	LN FT	5020
2582.502	4" SOLID LINE EPOXY	11	LN FT	8510
2582.502	4" DBLE SOLID LINE EPOXY	11	LN FT	5020

CONSTRUCTION NOTES

1	DETAIL MILLING AROUND MANHOLES, CATCH BASINS, GATE VALVES, AND ALONG CURB LINE IS INCIDENTAL TO THIS ITEM.
2	TO BE USED FOR MILLING STREET APPROACHES AND/OR DETAIL MILLING AREAS AS IDENTIFIED IN THE PLAN. DETAIL MILLING AROUND MANHOLES, CATCH BASINS, GATE VALVES, AND ALONG CURB LINE IS INCIDENTAL TO THIS ITEM.
3	FOR SIDE STREET APPROACH PAVING. CONTRACTOR IS RESPONSIBLE FOR CONTRACTING PROPERTY OWNER 48 HOURS BEFORE STARTING OPERATION.
4	STREET APPROACHES ARE TO BE PAVED AFTER MAINLINE PAVING BUT BEFORE FINAL STRIPING.
5	2 MESSAGE BOARDS, ONE ON EACH END OF PROJECT WILL BE INSTALLED 7 DAYS PRIOR TO ANY CONSTRUCTION; REFERENCE STRIPING PLAN FOR DETAILS.
6	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.
7	TYPE 1 FERTILIZER AND TYPE 25-121 SEED ARE INCIDENTAL TO THIS ITEM.
8	ITEM INCLUDES BITUMINOUS PATCHING AROUND NEW CURB, STORM STRUCTURE REPAIRS, AND ANY POTHOLES.
9	ALL DRAINAGE STRUCTURES AFFECTED BY THIS PROJECT MUST HAVE INLET PROTECTION.
10	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.
11	FINAL STRIPING SHALL BE INSTALLED WITHIN 72 HOURS OF COMPLETION OF MAINLINE WEAR COURSE PAVING.
12	INCLUDES ANY THERMOPLASTIC STOP BARS, GORE AREA HATCHING, CROSSWALKS, LANE DESIGNATION ARROWS AND PAVEMENT MESSAGES.
13	FULL LOOP REPLACEMENT REQUIRED AT 113TH & 115TH SIGNAL. CONTRACTOR SHALL CONTACT ANOKA COUNTY TO DETERMINE PLACEMENT. SIGNAL PLANS ARE INCLUDED AT THE END OF THIS PLAN. THE LOOPS AT CSAH 1 SHALL BE REPLACED ONLY IF DAMAGED DURING MILLING OPERATION.
14	PAY HEIGHT IS MEASURED FROM INVERT OF OUTLET PIPE TO TOP OF RECAST CONCRETE STRUCTURE PLUS AN ALLOWANCE OF 0.7 FEET FOR THE DEPTH OF THE CONCRETE BASE, REGARDLESS OF ITS ACTUAL THICKNESS. CONCRETE ADJUSTMENT RINGS ARE INCIDENTAL. CONNECTION TO EXISTING STORM SEWER IS INCIDENTAL.
15	ITEM INCLUDES FULL REPLACEMENT OF CASTING ADJUSTMENT RINGS. SEE STORM TABULATION FOR RING HEIGHT.
16	ITEM INCLUDES GROUTING OF INVERTS, DOGHOUSES, RINGS AND CASTING AS REQUIRED. SEE STORM TABULATION.
17	ITEM FOR TEMPORARY PAINT. SHALL BE INSTALLED THE SAME DAY, AFTER MILLING OPERATION.
18	ITEM TO BE ADJUSTED ONLY AS NECESSARY AS DETERMINED BY THE ENGINEER.
19	THE CONTRACTOR IS RESPONSIBLE TO ESTABLISH AND COORDINATE RAILROAD PROTECTIVE SERVICES THROUGH THE AUTHORIZED RAILWAY OWNER. PROTECTIVE SERVICES ARE REQUIRED WHENEVER WORKING WITHIN RAILROAD RIGHT OF WAY.

BASIS OF PLANNED QUANTITIES

2357	BITUMINOUS MATERIAL FOR TACK COAT	0.05 GAL / SQ YD
2360	ALL BITUMINOUS PAVEMENT	115 LBS / SQ YD / IN THICKNESS
2581	REMOVABLE PREFORM PAVEMENT MARKING TAPE	2' AT 50' INTERVALS


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NAME: P:\116-01-00\CSAH_18\CRB-RR\Bases\PROPOSED\TEMPLATE_PLAN.dgn

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**ANOKA COUNTY
HIGHWAY DEPT.**

COUNTY PROJECT 16-18-18

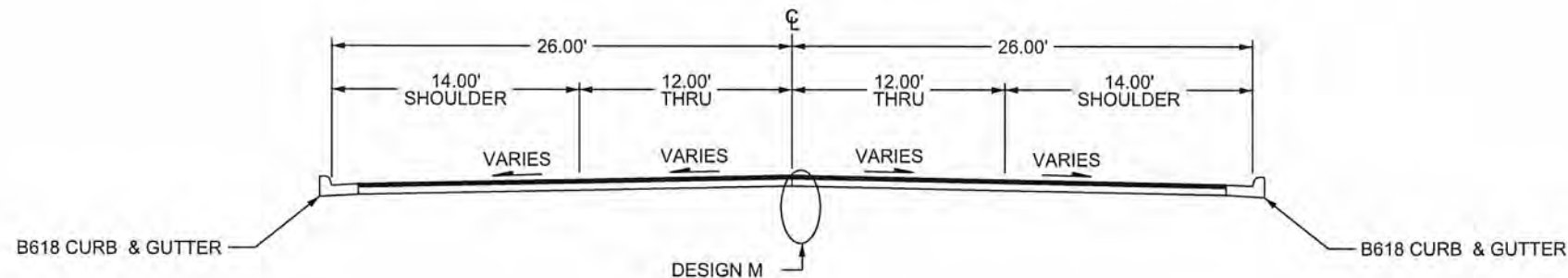
STATEMENT OF ESTIMATED QUANTITIES

Sheet 2 of 23 Sheets

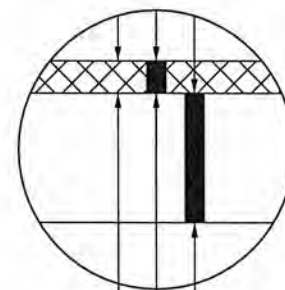
CROOKED LAKE BOULEVARD (CSAH 18)

PROPOSED SECTION

10+89 - 44+37



DESIGN M MILL SECTION



2.0" MILL BITUMINOUS
2.0" BITUMINOUS WEAR (SPWEB440E)
REMAINING BITUMINOUS

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ANOKA COUNTY
HIGHWAY DEPT.

COUNTY PROJECT 16-18-18

TYPICAL SECTION

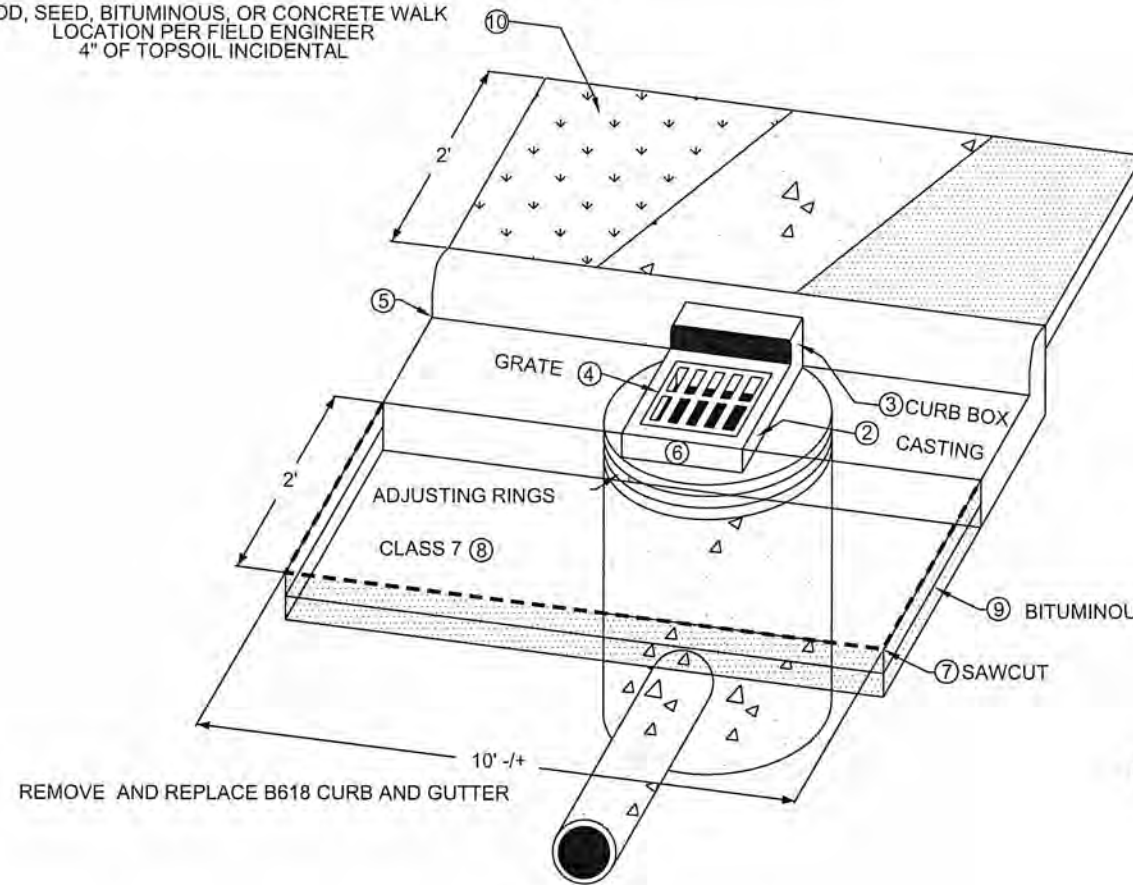
Sheet 3 of 23 Sheets

CATCH BASIN DETAIL

SEE STRUCTURE TAB FOR LOCATION

(PAGE 3)

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



REMOVE AND REPLACE B618 CURB AND GUTTER

NOTES

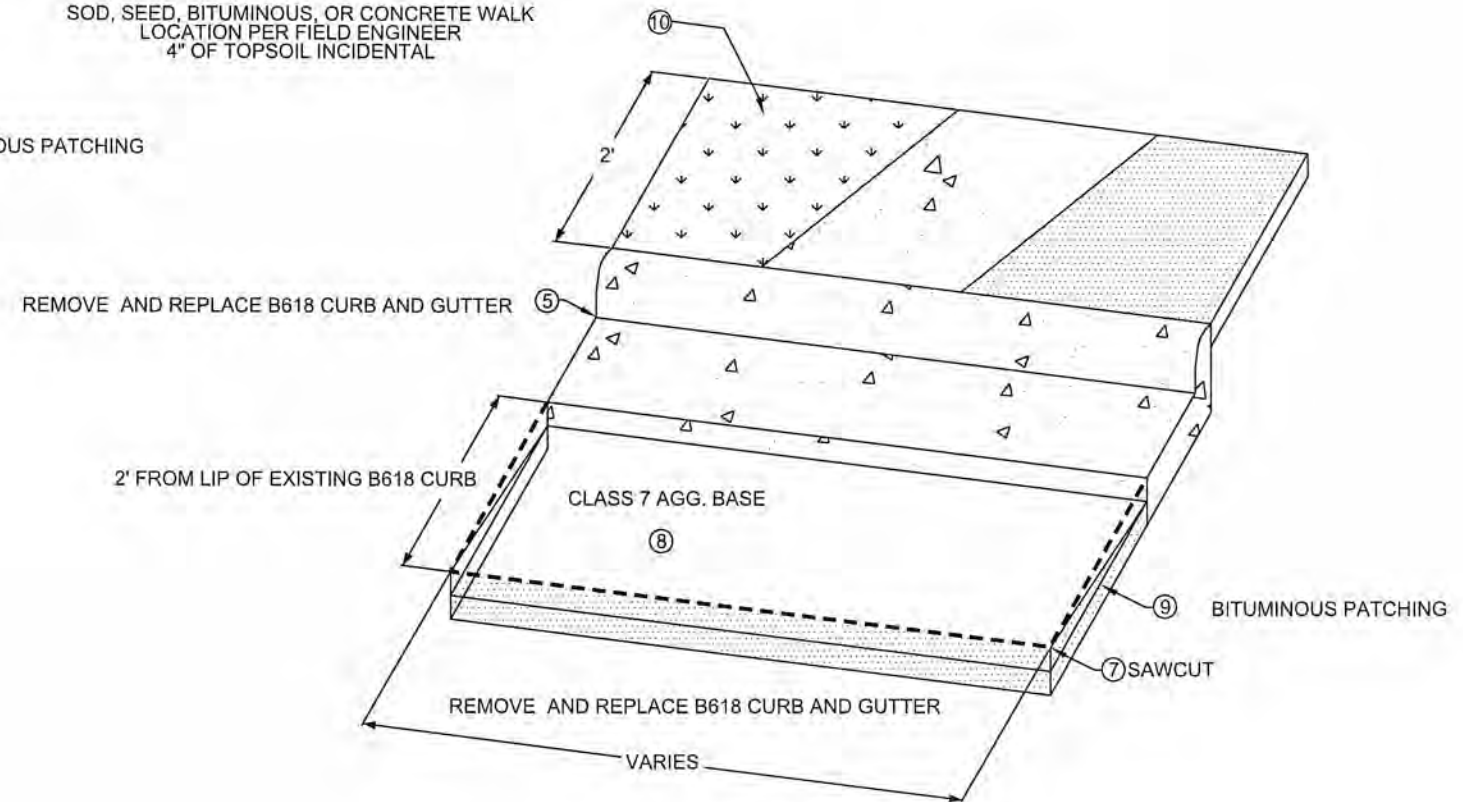
FOR TRAFFIC CONTROL AT CATCH BASIN AND MANHOLE REPAIRS REFER TO THE MINNESOTA MANUAL ON TEMPORARY TRAFFIC CONTROL LAYOUTS FIELD MANUAL.

- 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

NEW CURB DETAIL

SEE PLAN FOR LOCATION

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



REMOVE AND REPLACE B618 CURB AND GUTTER

2' FROM LIP OF EXISTING B618 CURB

REMOVE AND REPLACE B618 CURB AND GUTTER

VARIES

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ANOKA COUNTY
HIGHWAY DEPT.

COUNTY PROJECT 16-18-18

DETAILS

Sheet 4 of 23 Sheets

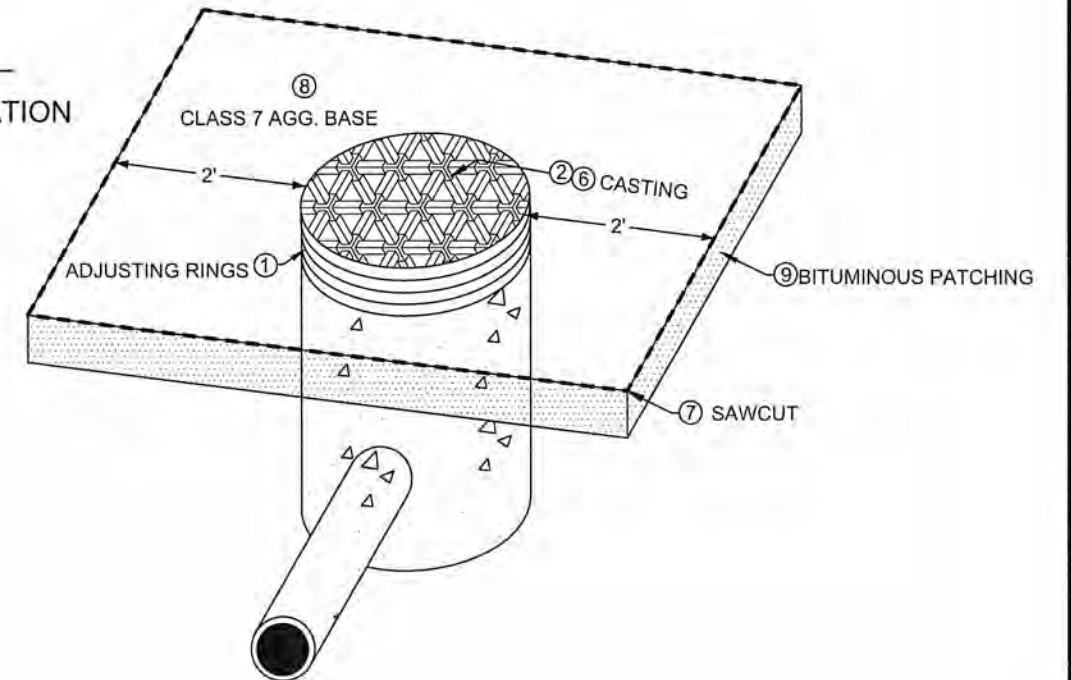
NOTES

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- 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 6)



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ANOKA COUNTY
HIGHWAY DEPT.

COUNTY PROJECT 16-18-18

DETAILS
Sheet 5 of 23 Sheets

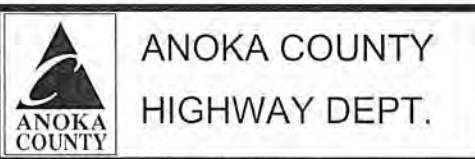
STORM AND SANITARY SEWER TAB

NUMBER	MH/CB?	NEW CASTING	STR TYPE	RING HT	INV'S and PIPES	GROUT (EACH)	CASTING / RE-RING (EACH)	REMOVE STRUCTURE (EACH)	CONST DRAIN STR DESIGN H (LIN FT)	CONST DRAIN STR DESIGN G (LIN FT)	CONST DRAIN STR 48-4020 (LIN FT)	REMOVE CURB & GUTTER (LIN FT)	INSTALL B618 C & G (LIN FT)	SAW CONCRETE (LIN FT)	REMOVE BITUMINOUS PAVEMENT (SQ YD)	BITUMINOUS PATCHING (TON)	SAW BITUMINOUS (LIN FT)	OTHER
101	CB			0.0														OUT OF MILL--NOT INSPECTED
102	WATER MH	R-1733		0.9	BUILD = 8.3'		1								4	0.5	24	STRUCTURE OK, RE-RING STRUCTURE
103	SAN MH	R-1733		0.0			1								4	0.5	24	RE-RING STRUCTURE, CONTRACTOR VERIFY STRUCTURE--COULDN'T REMOVE CASTING
104	STRM MH		BLOCK STR-48-4020	1.4	6.0' NORTH (24"), 6.0' WEST (24")													STRUCTURE OK
105	CB		BLOCK STR	0.0	2.8' NORTH (12")													STRUCTURE OK
106	STRM MH		BLOCK STR-48-4020	1.4	4.0' SOUTHEAST (12" PVC), 6.0' NORTH (24"), 6.0' SOUTH (24"), 5.7' WEST (12")													STRUCTURE OK
107	CB	R-3250-1	BLOCK STR-48-4020	0.8	4.8' EAST (12"), 4.8' WEST (12")		1					10	10	4	2.2	0.3	14	RE-RING STRUCTURE, STRUCTURE OK
108	CB	R-3250-1		0.0	2.8' EAST (12")			1	3.5			10	10	4	2.2	0.3	14	RECONSTRUCT STRUCTURE AS AN "H"
109	STRM MH	R-1733		0.0			1					0	0	0	4	0.5	24	MANHOLE PAVED OVER--CONTRACTOR VERIFY CONDITION, RE-RING STRUCTURE
110	SAN MH			0.0														STRUCTURE OK
111	STRM MH		48-4020	1.1	BUILD = 12.4', CONE ON TOP													STRUCTURE OK
112	CB			0.9	5.2' NORTH (15")													STRUCTURE OK
113	CB		48-4020	1.4	6.0' SOUTH (15"), 12.0' NORTHWEST (24"), 12.0' EAST (24"), 12.0' SOUTHWEST (24")													STRUCTURE OK
114	SAN MH			1.1														STRUCTURE OK, RINGS ARE PLASTIC
115	SAN MH	R-1733		0.0			1					0	0	0	4	0.5	24	MANHOLE PAVED OVER--CONTRACTOR VERIFY CONDITION, RE-RING STRUCTURE
116	SAN MH			1.1														STRUCTURE OK, 1.8' OF RINGS WITH 0.4' BEING PLASTIC
117	SAN MH	R-1733		0.0			1					0	0	0	4	0.5	24	MANHOLE PAVED OVER--CONTRACTOR VERIFY CONDITION, RE-RING STRUCTURE
118	CB	R-3250-1		-0.8	BUILD = 3.2'			1	3.9			10	10	4	2.2	0.3	14	RECONSTRUCT STRUCTURE AS AN "H"
119	CB	R-3250-1		0.0	4.7' NORTH (15")			1		5.4		10	10	4	2.2	0.3	14	RECONSTRUCT STRUCTURE AS A "G"
120	STRM MH	R-1733		0.0	2.6' NORTH (15"), 2.6' SOUTHEAST (12"), 2.6' WEST (12")			1				0	0	0	7.1	0.8	32	RECONSTRUCT STRUCTURE AS A "BLOCK STR"
121	CB	R-3250-1		0.0	BUILD = 2.0'			1	2.7			10	10	4	2.2	0.3	14	RECONSTRUCT STRUCTURE AS AN "H"
122	MH			0.0														OUT OF MILL / RECLAIM AREA--NOT INSPECTED
123	CB	R-3250-1		0.0	BUILD = 3.5'			1	4.2			10	10	4	2.2	0.3	14	RECONSTRUCT STRUCTURE AS AN "H"
124	CB	R-3250-1		1.2	(12"), 4.8' SOUTH (15"), 4.8' WEST (18")			1			5.5	10	10	4	2.2	0.3	14	RECONSTRUCT STRUCTURE AS A "48-4020"
125	SAN MH			1.5														STRUCTURE OK
126	STRM MH		48-4020	1.8	6.0' SOUTH (15"), 10.4' EAST (36"), 10.4' NORTH (36")													STRUCTURE OK, CONE ON TOP
127	CB	R-3250-1	72-4020	1.1	4.8' WEST (12"), 10.0' NORTH (36"), 10.0' SOUTH (36")		1					10	10	4	2.2	0.3	14	RE-RING STRUCTURE, BLK STRUCTURE (CONE ON TOP)
128	CB	R-3250-1		0.0	3.0' EAST (12")			1	3.7			10	10	4	2.2	0.3	14	RECONSTRUCT STRUCTURE AS AN "H"

NO	DATE	BY	CKD	APPR	REVISION	03/31/2016	1:46:46 PM
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 CHECKED BY: MJJ DATE: 03/31/2016



COUNTY PROJECT 16-18-18

TABULATIONS
 Sheet 6 of 23 Sheets

NUMBER	MH/CB?	CASTING	STR TYPE	ADJUSTED RING HT	INV'S and PIPES	GROUT (EACH)	CASTING / RE-RING (EACH)	REMOVE STRUCTURE (EACH)	CONST DRAIN STR DESIGN H (LIN FT)	CONST DRAIN STR DESIGN G (LIN FT)	CONST DRAIN STR 48-4020 (LIN FT)	REMOVE CURB & GUTTER (LIN FT)	INSTALL B618 C & G (LIN FT)	SAW CONCRETE (LIN FT)	REMOVE BITUMINOUS PAVEMENT (SQ YD)	BITUMINOUS PATCHING (TON)	SAW BITUMINOUS (LIN FT)	OTHER
129	SAN MH	R-1733		0.0			1					0	0	0	4	0.5	24	CONTRACTOR VERIFY CONDITION, RE-RING STRUCTURE, CASTING SHIFTING
130	CB	R-3250-1	72-4020, BLOCK STR	0.6	10.4' NORTH (36"), 10.4' SOUTH (36"), 10.4' WEST (30")		1					10	10	4	2.2	0.3	14	RE-RING STRUCTURE
131	CB	R-3250-1	72-4020	0.5	10.4' WEST (30"), 10.4' EAST (30")		1					10	10	4	2.2	0.3	14	RE-RING STRUCTURE
132	SAN MH	R-1733		0.0			1					0	0	0	4	0.5	24	CONTRACTOR VERIFY CONDITION, RE-RING STRUCTURE
133	CB		72-4020, BLOCK STR	0.7	4.8' WEST (12"), 10.9' SOUTH (30"), 10.9' NORTH (30")	1												GROUT INVERT (WEST), STRUCTURE OK
134	CB	R-3250-1		0.0	BUILD = 3.4'			1			4.1	10	10	4	2.2	0.3	14	RECONSTRUCT STRUCTURE AS A "48-4020"
135	CB	R-3250-1		0.0	BUILD = 2.6'			1	3.3			10	10	4	2.2	0.3	14	RECONSTRUCT STRUCTURE AS AN "H"
136	SAN MH			0.9														STRUCTURE OK
137	SAN MH			0.5														STRUCTURE OK, 2.2' BARREL SECTION BELOW RINGS
138	CB		H	0.0	4.5' NORTH (12")													STRUCTURE OK
139	CB		72-4020, BLOCK STR	0.4	5.5' SOUTH (12"), 10.2' WEST (24"), 10.2' EAST (24")													STRUCTURE OK, CONE ON TOP
140	CB		BLOCK STR	0.0	4.0' NORTH (12")	1												GROUT INVERT & STRUCTURE
141	CB		72-4020, BLOCK STR	2.6	5.0' SOUTH (12"), 11.1' WEST (24"), 11.1' SOUTH (30")													STRUCTURE OK
142	SAN MH			1.9		1												GROUT RINGS
143	WATER MH	R-1733		2.3	BUILD = 11.0'		1					0	0	0	4	0.5	24	RE-RING STRUCTURE
144	WATER MH	R-1733		2.8	BUILD = 11.0'		1					0	0	0	4	0.5	24	RE-RING STRUCTURE
TOTALS		23				3	13	10	21.3	5.4	9.6	130	130	52	72	8.3	430	

CASTING ASSEMBLIES SUMMARY					
ASSEMBLY	RING OR FRAME CASTING	COVER OR GRATE CASTING	CURB BOX	QUANTITY	DESCRIPTION
NEENAH*	R-1733			10	STD. PLATE: 4101D, 4110F
NEENAH*	R-3250-1	K	YES	13	
*OR APPROVED EQUAL					
ALL CASTING HEIGHTS ARE TO BE VERIFIED IN THE FIELD.					
ALL MANHOLE COVERS SHOULD BE LABELED AS STORM OR SANITARY					

MNDOT STANDARD PLATES	
PLATE NUMBER	DESCRIPTION
4006L	MANHOLE OR CATCHBASIN PRECAST - DESIGNS G AND H
4020J	MANHOLE OR CATCHBASIN (FOR USE WITH OR WITHOUT TRAFFIC LOADS)
4026A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4035N	CONCRETE WALK
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4110F	COVER CASTING FOR MANHOLE
7038A	DETECTABLE WARNING SURFACE
7100H	CONCRETE CURB AND GUTTER

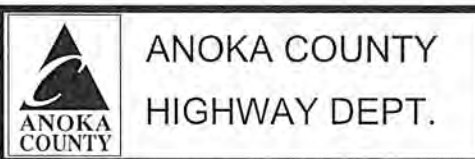
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	03/31/2016					1:46:49 PM

NAME: P:\16-01-00\CSAH_18(CRB-RR)\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: 4/8/2016 LICENSE NO. 51639

DRAWN BY: SRK DATE: 03/31/2016
DESIGN BY: SRK DATE: 03/31/2016
CHECKED BY: MJJ DATE: 03/31/2016



COUNTY PROJECT 16-18-18

TABULATIONS
Sheet 7 of 23 Sheets

REMOVAL AND INSTALLATION TAB											
LOCATION			REMOVE CURB & GUTTER (LIN FT)	REMOVE CONCRETE WALK (SQ FT)	INSTALL B618 C & G (LIN FT)	SAWIING CONCRETE (LIN FT)	REMOVE BITUMINOUS PAVEMENT (SQ YD)	BITUMINOUS PATCHING (TON)	SAW BITUMINOUS (LIN FT)	TRUNCATED DOMES (SQ FT)	6" CONCRETE WALK (SQ FT)
STATION TO STATION											
27+00	113TH AVE SW QUAD		22.0	152.0	22.0	9.0	4.9	0.6	26.0	12.0	152.0
27+00	113TH AVE SE QUAD		20.0	70.0	20.0	9.0	4.4	0.5	24.0	12.0	70.0
27+50	113TH AVE NW QUAD		27.0	105.0	27.0	9.0	6.0	0.7	31.0	12.0	105.0
27+50	113TH AVE NE QUAD		30.0	80.0	30.0	9.0	6.7	0.8	34.0	12.0	80.0
40+25	115TH AVE SW QUAD		30.0	130.0	30.0	9.0	6.7	0.8	34.0	12.0	130.0
40+75	115TH AVE NW QUAD		31.0	102.0	31.0	9.0	6.9	0.8	35.0	12.0	102.0
19+03	19+33	EASE SIDE	30.0		30.0	4.0	6.7	0.8	34.0		
20+41	20+52	WEST SIDE	11.0		11.0	4.0	2.4	0.3	15.0		
21+95	22+55	WEST SIDE	60.0		60.0	4.0	13.3	1.5	64.0		
22+04	22+72	EASE SIDE	68.0		68.0	4.0	15.1	1.7	72.0		
23+98	24+52	EASE SIDE	54.0		54.0	4.0	12.0	1.4	58.0		
24+24	24+48	WEST SIDE	24.0		24.0	4.0	5.3	0.6	28.0		
26+02	26+21	EASE SIDE	19.0		19.0	4.0	4.2	0.5	23.0		
26+83	27+00	SOUTH RAD @113TH AVE WEST SIDE	37.0		37.0	4.0	8.2	0.9	41.0		
27+44	28+07	NORTH RAD @113TH AVE WEST SIDE	82.0		82.0	4.0	18.2	2.1	86.0		
28+01	28+21	EASE SIDE	20.0		20.0	4.0	4.4	0.5	24.0		
29+47	29+96	EASE SIDE	49.0		49.0	4.0	10.9	1.3	53.0		
30+06	30+26	WEST SIDE	20.0		20.0	4.0	4.4	0.5	24.0		
31+15	31+35	EASE SIDE	20.0		20.0	4.0	4.4	0.5	24.0		
31+53	31+70	WEST SIDE	17.0		17.0	4.0	3.8	0.4	21.0		
31+95	32+19	WEST SIDE	24.0		24.0	4.0	5.3	0.6	28.0		
32+02	32+42	EASE SIDE	40.0		40.0	4.0	8.9	1.0	44.0		
35+73	35+93	WEST SIDE	20.0		20.0	4.0	4.4	0.5	24.0		
36+31	36+72	EASE SIDE	41.0		41.0	4.0	9.1	1.0	45.0		
36+95	37+37	EASE SIDE	42.0		42.0	4.0	9.3	1.1	46.0		
37+36	37+55	WEST SIDE	19.0		19.0	4.0	4.2	0.5	23.0		
37+57	37+76	EASE SIDE	19.0		19.0	4.0	4.2	0.5	23.0		

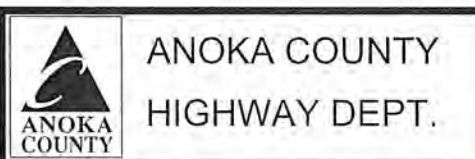
REMOVAL AND INSTALLATION TAB											
LOCATION			REMOVE CURB & GUTTER (LIN FT)	REMOVE CONCRETE WALK (SQ FT)	INSTALL B618 C & G (LIN FT)	SAWIING CONCRETE (LIN FT)	REMOVE BITUMINOUS PAVEMENT (SQ YD)	BITUMINOUS PATCHING (TON)	SAW BITUMINOUS (LIN FT)	TRUNCATED DOMES (SQ FT)	6" CONCRETE WALK (SQ FT)
STATION TO STATION											
38+49	38+71	NORTH RAD @ ANOKA LIB ENT	34.0		34.0	4.0	7.6	0.9	38.0		
40+25	40+37	EASE SIDE	12.0		12.0	4.0	2.7	0.3	16.0		
41+05	41+46	EASE SIDE	41.0		41.0	4.0	9.1	1.0	45.0		
14+23	41+69	WEST SIDE	46.0		46.0	4.0	10.2	1.2	50.0		
41+86	41+97	EASE SIDE	11.0		11.0	4.0	2.4	0.3	15.0		
42+19	42+29	EASE SIDE	10.0		10.0	4.0	2.2	0.3	14.0		
42+91	43+07	EASE SIDE	16.0		16.0	4.0	3.6	0.4	20.0		
43+04	43+25	WEST SIDE	21.0		21.0	4.0	4.7	0.5	25.0		
43+75	43+85	WEST SIDE	10.0		10.0	4.0	2.2	0.3	14.0		
44+32	44+63	WEST SIDE	31.0		31.0	4.0	6.9	0.8	35.0		
45+12	45+33	WEST SIDE	21.0		21.0	4.0	4.7	0.5	25.0		
TOTALS			1129.0	639.0	1129.0	182.0	250.9	28.9	1281.0	72.0	639.0

NO	DATE	BY	CKD	APPR	REVISION	03/31/2016	1:46:53 PM
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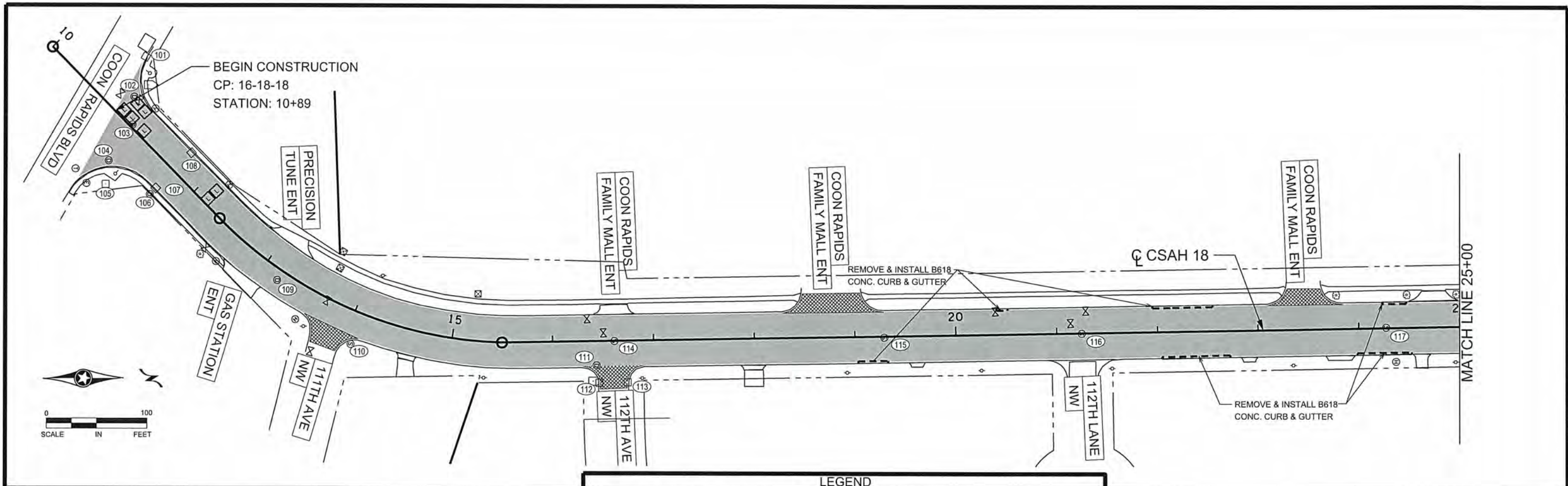
PRINT NAME: MATTHEW J. JOHN
SIGNATURE: *[Signature]*
DATE: 4/8/2016 LICENSE NO. 51639

DRAWN BY: SRK DATE: 03/31/2016
DESIGN BY: SRK DATE: 03/31/2016
CHECKED BY: MJJ DATE: 03/31/2016



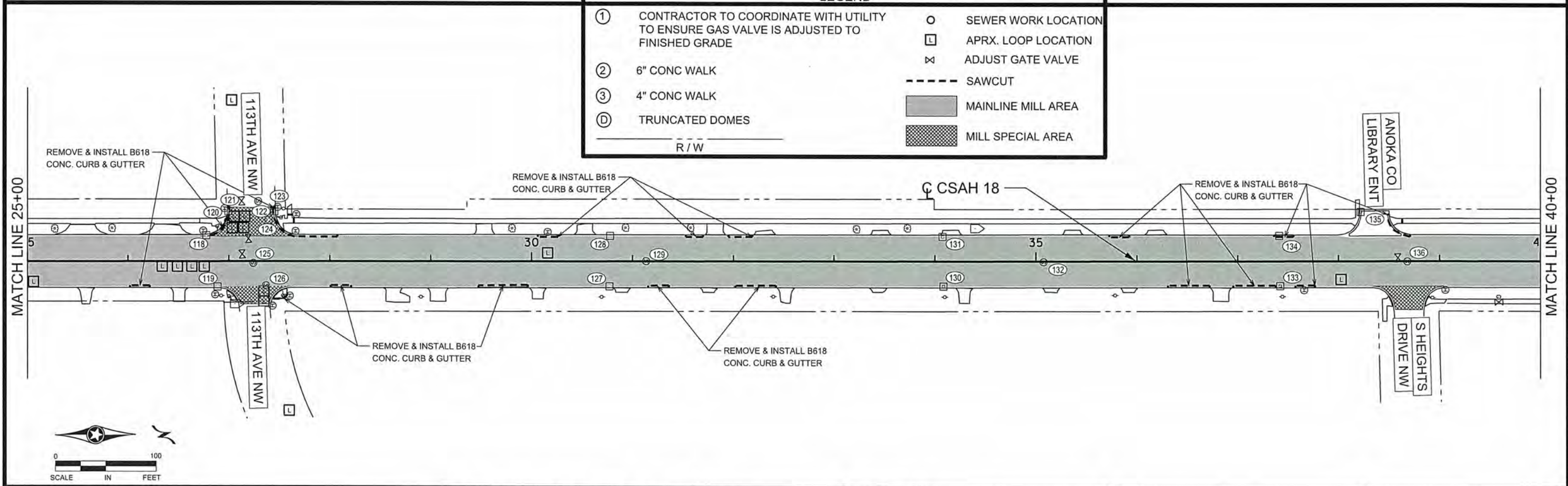
ANOKA COUNTY
HIGHWAY DEPT.
COUNTY PROJECT 16-18-18

TABLATIONS
Sheet 8 of 23 Sheets



LEGEND

①	CONTRACTOR TO COORDINATE WITH UTILITY TO ENSURE GAS VALVE IS ADJUSTED TO FINISHED GRADE	○	SEWER WORK LOCATION
②	6" CONC WALK	□	APRX. LOOP LOCATION
③	4" CONC WALK	⊗	ADJUST GATE VALVE
④	TRUNCATED DOMES	- - -	SAWCUT
	R / W	■	MAINLINE MILL AREA
		■	MILL SPECIAL AREA



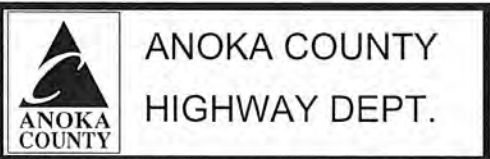
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PRINT NAME: MATTHEW J. JOHN
 SIGNATURE: *Matthew J. John*
 DATE: 4/8/2016 LICENSE NO. 51639

DRAWN BY: SRK DATE: 04/08/2016
 DESIGN BY: SRK DATE: 04/08/2016
 CHECKED BY: MJJ DATE: 04/08/2016

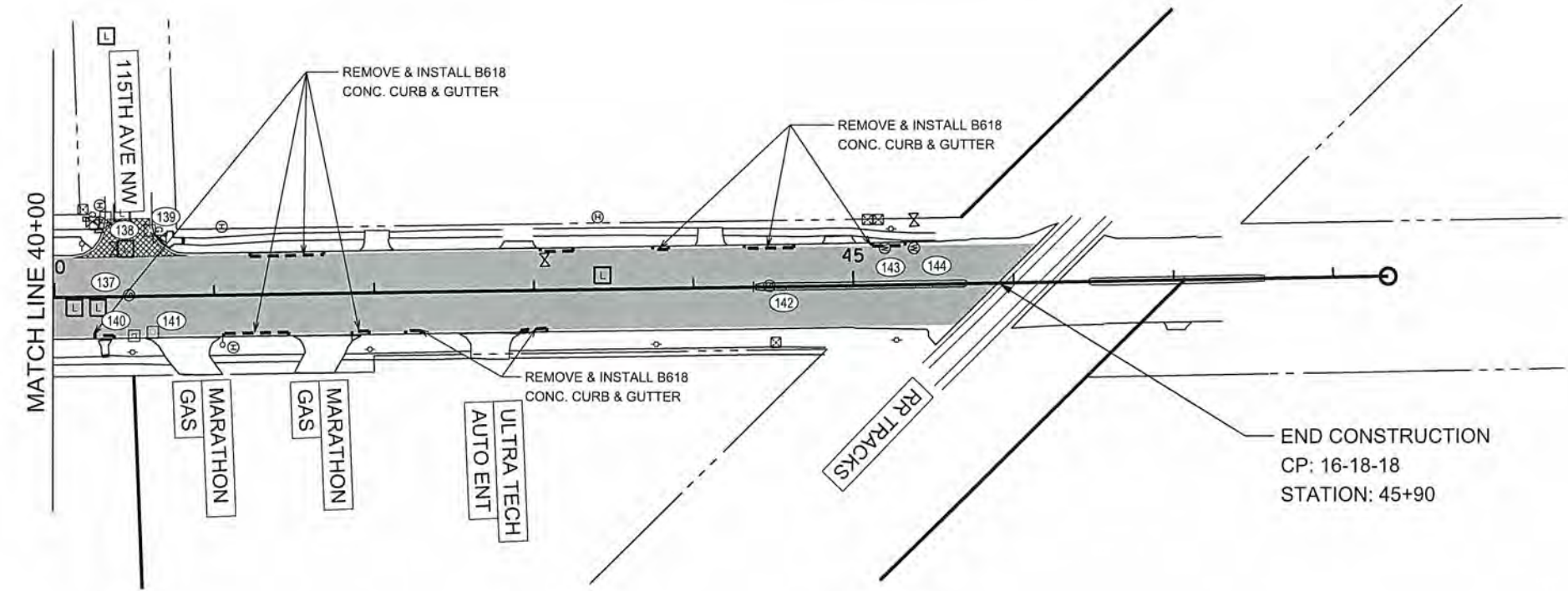
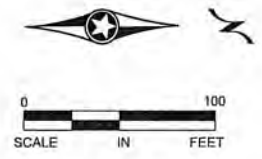


COUNTY PROJECT 16-18-18

CONSTRUCTION PLAN

STA 10+89 TO 40+00

Sheet 9 of 23 Sheets



LEGEND	
①	CONTRACTOR TO COORDINATE WITH UTILITY TO ENSURE GAS VALVE IS ADJUSTED TO FINISHED GRADE
②	6" CONC WALK
③	4" CONC WALK
ⓓ	TRUNCATED DOMES
— R / W —	
○	SEWER WORK LOCATION
□	APRX. LOOP LOCATION
⊗	ADJUST GATE VALVE
---	SAWCUT
■	MAINLINE MILL AREA
▨	MILL SPECIAL AREA

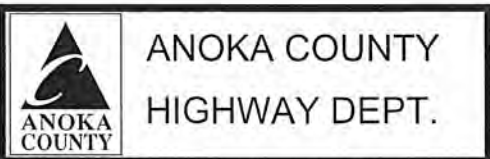
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NAME: P:\16-01-00\CSAH_18(CRB-RR)\Base\PROPOSED\TEMPLATE_PLAN.dgn

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 SIGNATURE: *[Signature]*
 DATE: 4/8/2016 LICENSE NO. 51639

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 DESIGN BY: SRK DATE: 04/08/2016
 CHECKED BY: MJJ DATE: 04/08/2016



COUNTY PROJECT 16-18-18

CONSTRUCTION PLAN
 STA 40+00 TO 45+90
 Sheet 10 of 23 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.

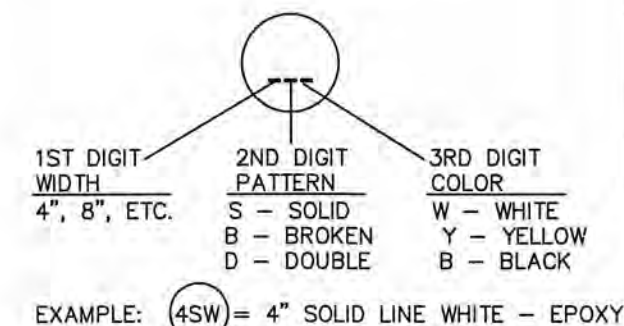
PERMANENT MARKING QUANTITIES		
ITEM	UNIT	TOTAL QUANTITY
4" SOLID LINE WHITE - EPOXY PAINT	LIN FT	8030
4" SOLID LINE YELLOW - EPOXY PAINT	LIN FT	480
4" DOUBLE SOLID LINE YELLOW - EPOXY PAINT	LIN FT	5020
24" SOLID LINE YELLOW - PREFORMED THERMOPLASTIC	SQ FT	1956
24" SOLID LINE WHITE - PREFORMED THERMOPLASTIC	SQ FT	306
3'x6' ZEBRA CROSSWALK - PREFORMED THERMOPLASTIC	SQ FT	1206
LEFT ARROW - PREFORMED THERMOPLASTIC	SQ FT	90
LEFT/THRU ARROW - PREFORMED THERMOPLASTIC	SQ FT	53
RIGHT ARROW - PREFORMED THERMOPLASTIC	SQ FT	60
RIGHT/THRU ARROW - PREFORMED THERMOPLASTIC	SQ FT	105
R x R CROSSING - PREFORMED THERMOPLASTIC	SQ FT	102

SYMBOLS & MATERIALS LEGEND

- CROSSWALK BLOCK WHITE PREFORMED THERMOPLASTIC
- ↩ PAVEMENT MESSAGE (LEFT ARROW) PREFORMED THERMOPLASTIC

STRIPING KEY

- CIRCLE - EPOXY
- SQUARE PREFORMED THERMOPLASTIC
- △ TRIANGLE - PAINT
- ⬠ PENTAGON - REMOVABLE PREFORMED PLASTIC MARKING



NO	DATE	BY	CKD	APPR	REVISION

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

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



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 16-18-18

PERMANENT MARKING
TABULATION
 Sheet 11 of 23 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		0	1	7.0'
G20-2A	48" x 24"	8.00		4	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 12)		
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.
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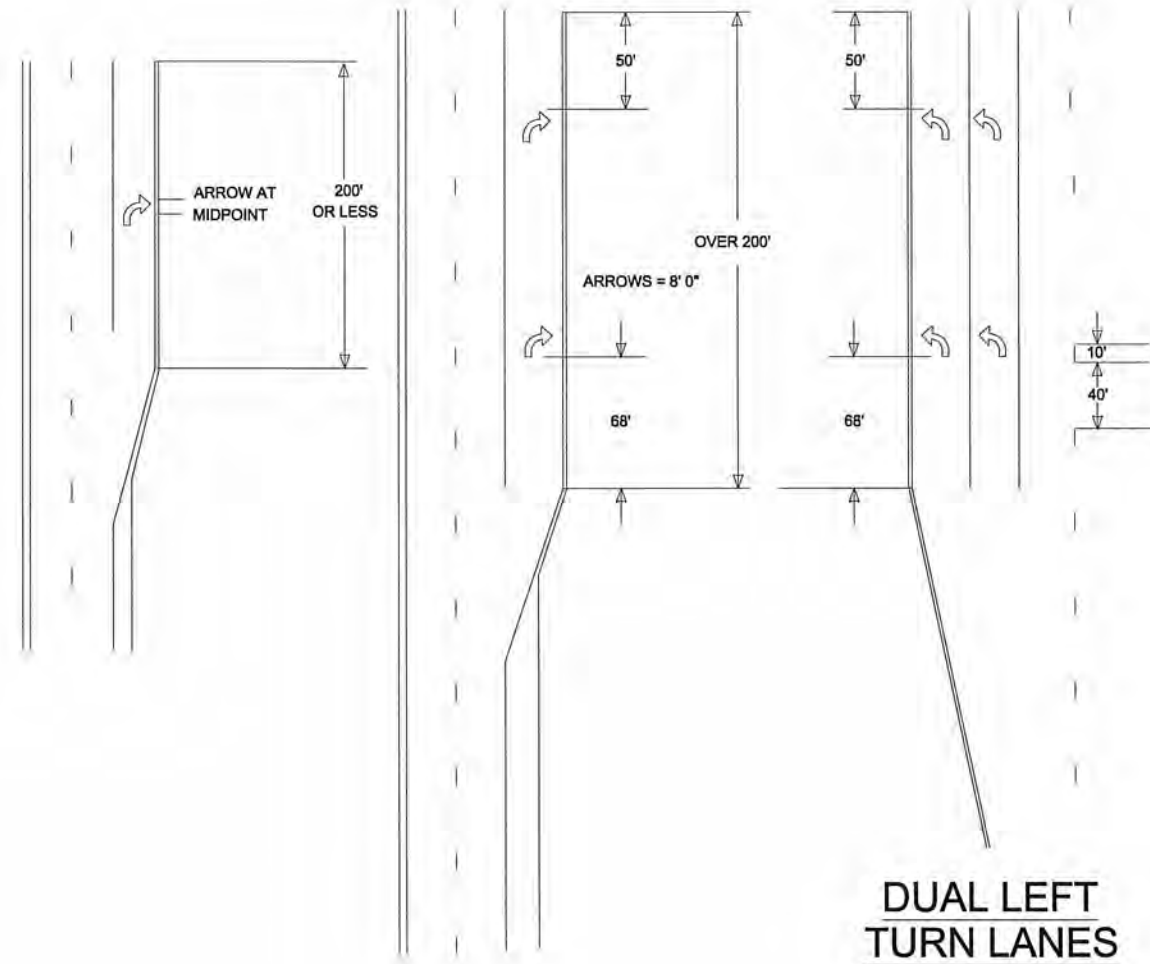


ANOKA COUNTY
 HIGHWAY DEPT.

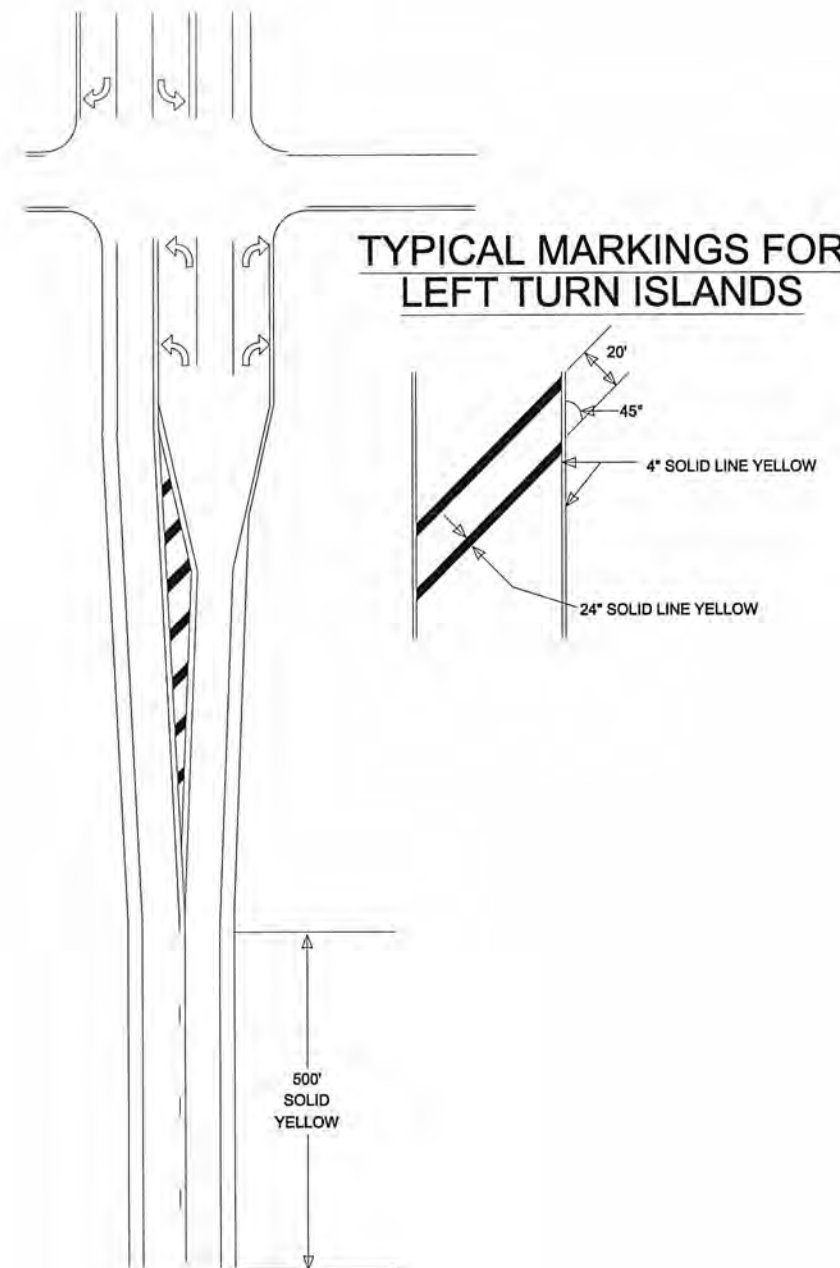
STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 16-18-18

TRAFFIC CONTROL QUANTITY
 Sheet 14 of 23 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: 4/8/2016 REG. NO. 51639

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

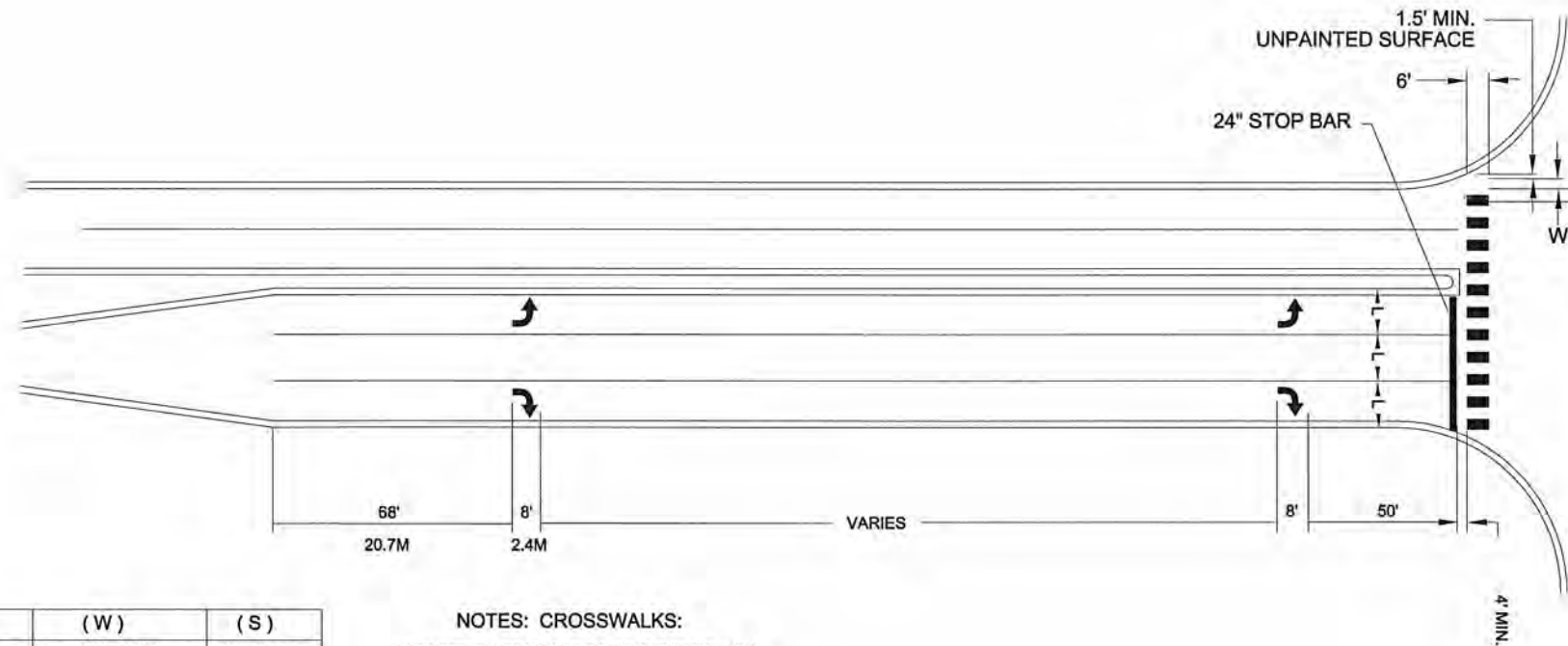


**ANOKA COUNTY
HIGHWAY DEPT.**

STATE PROJECT NO. _____
 STATE AID PROJECT NO. _____
 STATE AID PROJECT NO. _____
 COUNTY PROJECT NO. 16-18-18

**SIGNING & STRIPING
DETAILS**

MARKINGS FOR PEDESTRIAN CROSSWALKS

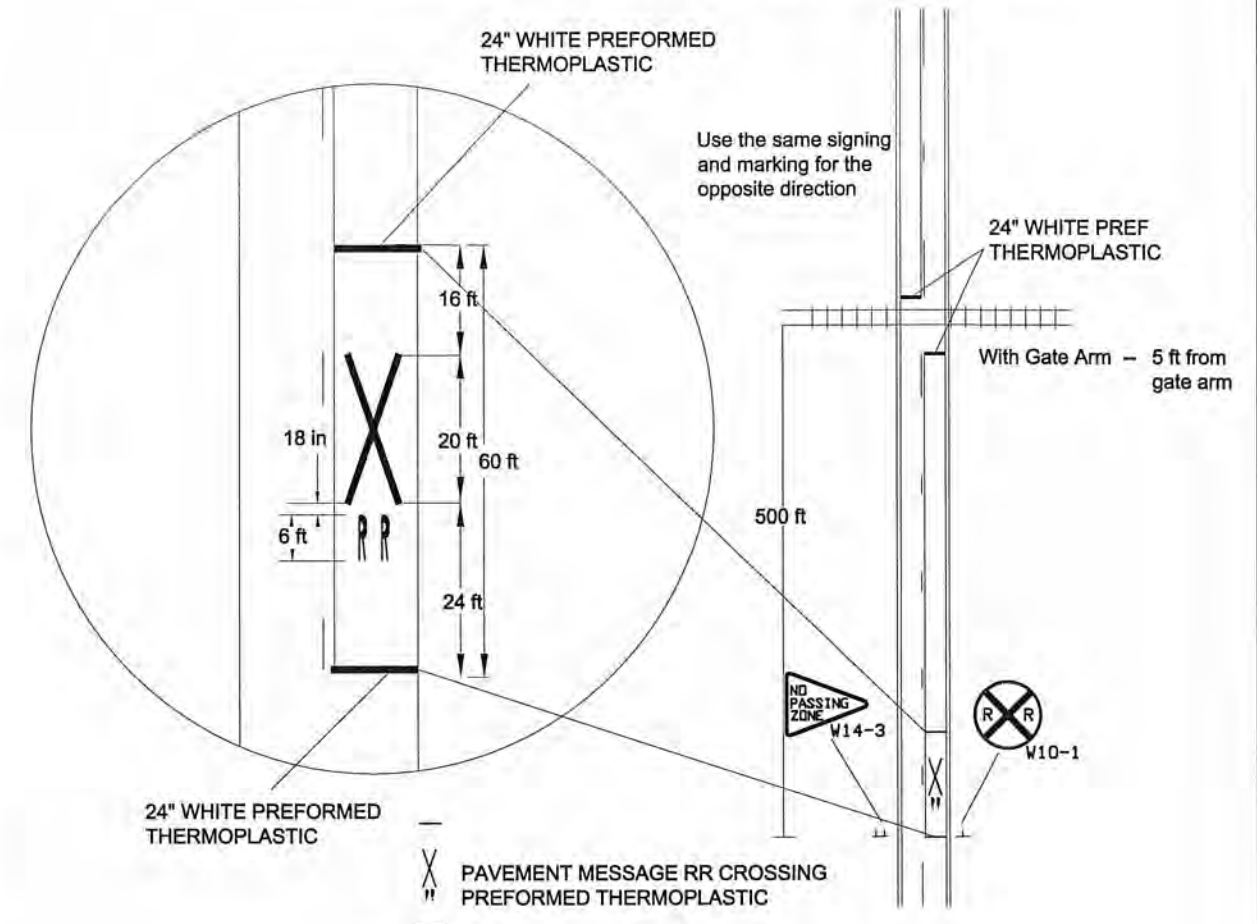


(L)	(W)	(S)
WIDTH OF INSIDE LANE	WIDTH OF PAINTED AREAS	WIDTH OF SPACE
9'	2.0'	2.5'
10'	2.5'	2.5'
11'	2.5'	3.0'
12'	3.0'	3.0'
13'	3.0'	3.5'

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.

RAILROAD CROSSING ROADWAY PAVEMENT MARKINGS



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: 4/8/2016 REG. NO. 51639

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



ANOKA COUNTY
HIGHWAY DEPT.

STATE PROJECT NO. _____
STATE AID PROJECT NO. _____
STATE AID PROJECT NO. _____
COUNTY PROJECT NO. 16-18-18

SIGNING & STRIPING
DETAILS

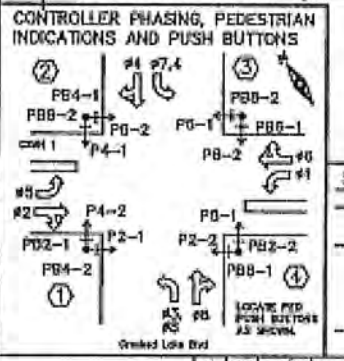
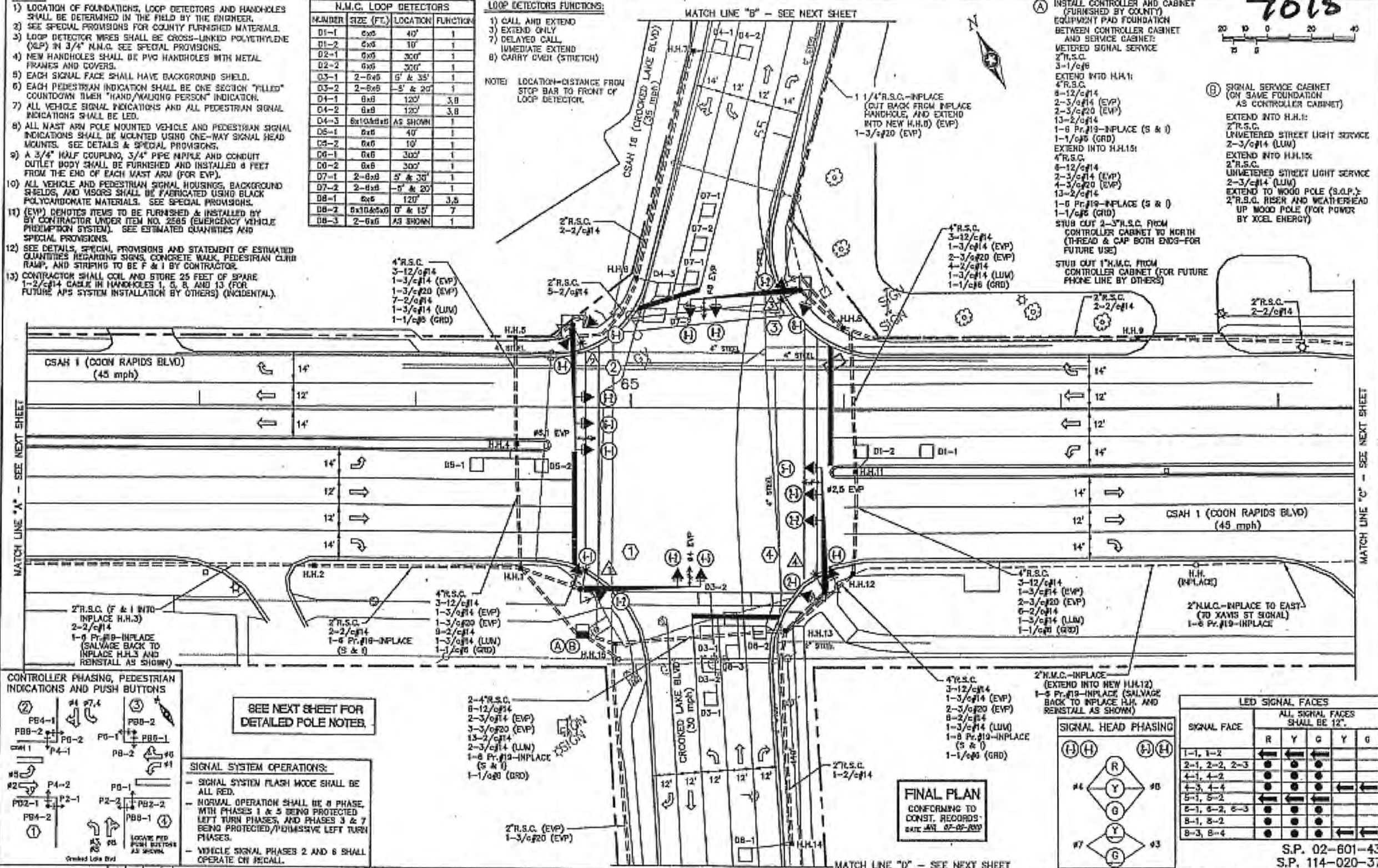
Sheet 16 of 23 Sheets

FOR REFERENCE PURPOSES ONLY

- NOTES:**
- 1) LOCATION OF FOUNDATIONS, LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
 - 2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
 - 3) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLPE) IN 3/4" N.M.C. SEE SPECIAL PROVISIONS.
 - 4) NEW HANDHOLES SHALL BE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
 - 5) EACH SIGNAL FACE SHALL HAVE BACKGROUND SHIELD.
 - 6) EACH PEDESTRIAN INDICATION SHALL BE ONE SECTION "FILLED" COUNTERDOWN THEN "HAND/WALKING PERSON" INDICATION.
 - 7) ALL VEHICLE SIGNAL INDICATIONS AND ALL PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
 - 8) ALL MAST ARM POLE MOUNTED VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS SHALL BE MOUNTED USING ONE-MAY SIGNAL HEAD MOUNTS. SEE DETAILS & SPECIAL PROVISIONS.
 - 9) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE AND CONDUIT OUTLET BODY SHALL BE FURNISHED AND INSTALLED 6 FEET FROM THE END OF EACH MAST ARM (FOR E.V.P.).
 - 10) ALL VEHICLE AND PEDESTRIAN SIGNAL HOUSINGS, BACKGROUND SHIELDS, AND MOUNTS SHALL BE FABRICATED USING BLACK POLYCARBONATE MATERIALS. SEE SPECIAL PROVISIONS.
 - 11) (E.V.P.) DENOTES ITEMS TO BE FURNISHED & INSTALLED BY CONTRACTOR UNDER ITEM NO. 2585 (EMERGENCY VEHICLE PROTECTION SYSTEM). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
 - 12) SEE DETAILS, SPECIAL PROVISIONS AND STATEMENT OF ESTIMATED QUANTITIES REGARDING SIGNS, CONCRETE WALK, PEDESTRIAN CURB RAMP, AND STRIPING TO BE F & I BY CONTRACTOR.
 - 13) CONTRACTOR SHALL COIL AND STORE 25 FEET OF SPARE 1-2/c#14 CABLE IN HANDHOLES 1, 5, 8, AND 13 (FOR FUTURE APS SYSTEM INSTALLATION BY OTHERS) (INCIDENTAL).

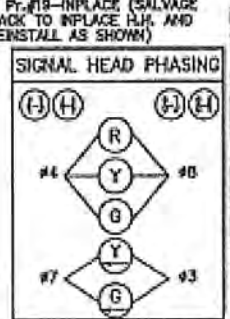
HEADER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	6x6	40'	1
D1-2	6x6	10'	1
D2-1	6x6	200'	1
D2-2	6x6	200'	1
D3-1	2-6x6	5' & 35'	1
D3-2	2-6x6	-5' & 20'	1
D4-1	6x6	120'	3,8
D4-2	6x6	120'	3,8
D4-3	6x10x6x6	AS SHOWN	1
D5-1	6x6	40'	1
D5-2	6x6	10'	1
D6-1	6x6	300'	1
D6-2	6x6	300'	1
D7-1	2-6x6	5' & 35'	1
D7-2	2-6x6	-5' & 20'	1
D8-1	6x6	120'	3,8
D8-2	6x10x6x6	0' & 15'	7
D8-3	2-6x6	AS SHOWN	1

- LOOP DETECTOR FUNCTIONS:**
- 1) CALL AND EXTEND
 - 3) EXTEND ONLY
 - 7) DELAYED CALL
 - IMMEDIATE EXTEND
 - 8) CARRY OVER (STRETCH)
- NOTE: LOCATION-DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR.



SEE NEXT SHEET FOR DETAILED POLE NOTES.

- SIGNAL SYSTEM OPERATIONS:**
- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
 - NORMAL OPERATION SHALL BE 8 PHASE, WITH PHASES 1 & 5 BEING PROTECTED LEFT TURN PHASES, AND PHASES 3 & 7 BEING PROTECTED/PERMISSIVE LEFT TURN PHASES.
 - VEHICLE SIGNAL PHASES 2 AND 8 SHALL OPERATE ON RECALL.



LED SIGNAL FACES

ALL SIGNAL FACES SHALL BE 12".

SIGNAL FACE	R	Y	G	Y	G
1-1, 1-2	●	●	●	●	●
2-1, 2-2, 2-3	●	●	●	●	●
4-1, 4-2	●	●	●	●	●
4-3, 4-4	●	●	●	●	●
5-1, 5-2	●	●	●	●	●
6-1, 6-2, 6-3	●	●	●	●	●
8-1, 8-2	●	●	●	●	●
8-3, 8-4	●	●	●	●	●

FINAL PLAN
CONFORMING TO CONST. RECORDS
DATE: 02-25-2019

DRAWN BY: SRK DESIGNER: SRK CHECKED BY: MJJ	RECORD DRAWING NO. 07/19 DATE: 03/29/2016	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. Matthew J. John SIGNATURE: <i>Matthew J. John</i> DATE: 4/8/2016 LICENSE NO.: 51639	ANOKA COUNTY, MINNESOTA CITY OF COON RAPIDS	TRAFFIC SIGNAL SYSTEM INTERSECTION LAYOUT CSAH 1 (COON RAPIDS BOULEVARD) AT CSAH 18 (CROOKED LAKE BOULEVARD)	FILE NO. 15 DATE 05/03/2020
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7015

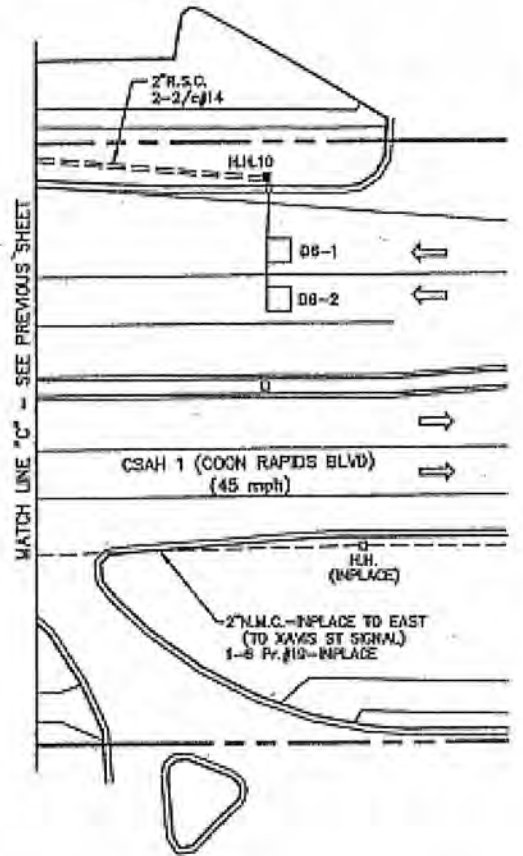
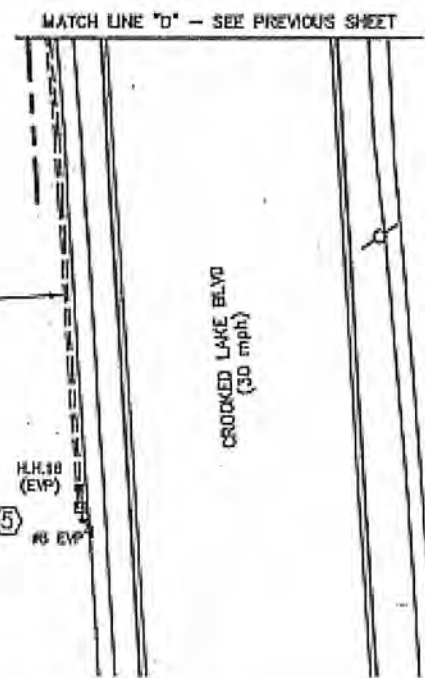
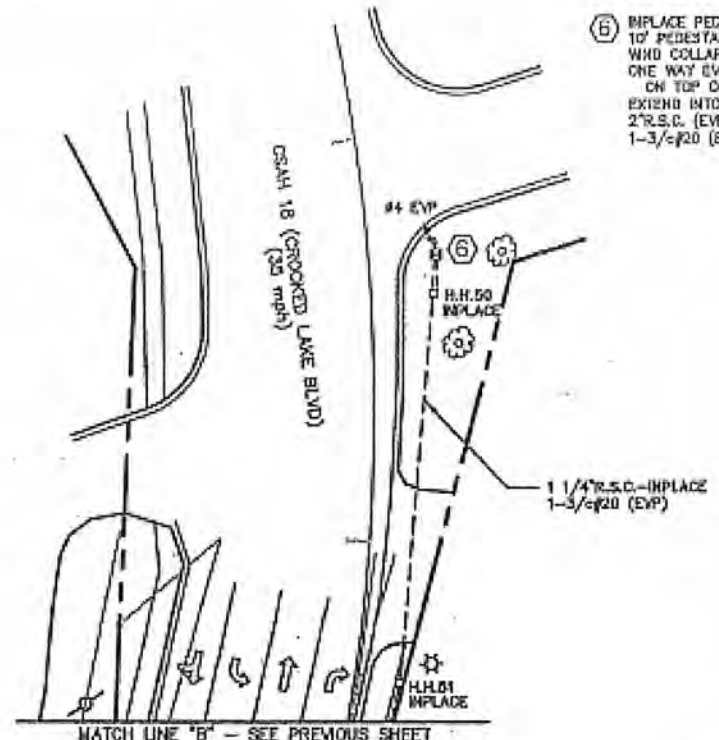
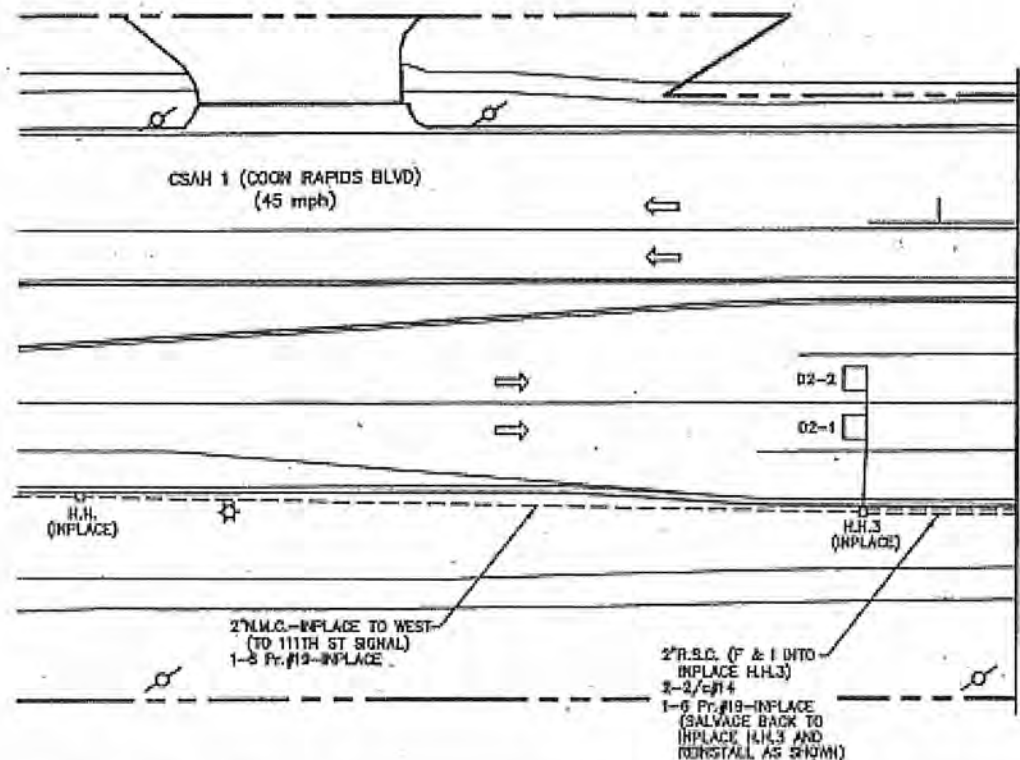
- ① PA100 POLE FOUNDATION
TYPE PA100-A-65-D40-9 (DAMT AT 270°)
LUMINAIRE-250 W HPS
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0°
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11°
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180°
2-ANGLE MOUNT SETS C.D. PEDESTRIAN INDICATIONS-POLE MOUNTED 90° & 180°
2-PEDESTRIAN PUSH BUTTONS
R10-12 SIGN PANEL-ADJACENT TO 4-3
TYPE D SIGN PANEL-OVERHEAD (D-1)
ONE WAY EWP DETECTOR & LIGHT (#4) (EVP)
EXTEND INTO H.H.1:
3'R.S.C.
3-12/c#14
1-3/c#14 (EVP)
1-3/c#20 (EVP)
2-2/c#14
1-3/c#14 (LUM)
2-1/c#18 (GRD)

- ② PA100 POLE FOUNDATION
TYPE PA100-A-65-D40-9 (DAMT AT 350°)
LUMINAIRE-250 W HPS
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0°
2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11° & 23°
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180°
2-ANGLE MOUNT SETS C.D. PEDESTRIAN INDICATIONS-POLE MOUNTED 90° & 180°
2-PEDESTRIAN PUSH BUTTONS
2-R8-1 SIGN PANELS-POLE MOUNTED 0° & 180°
TYPE D SIGN PANEL-OVERHEAD (D-2)
ONE WAY EWP DETECTOR & LIGHT (#4,1) (EVP)
EXTEND INTO H.H.1:
3'R.S.C.
3-12/c#14
1-3/c#14 (EVP)
1-3/c#20 (EVP)
2-2/c#14
1-3/c#14 (LUM)
1-1/c#18 (GRD)

- ③ PA100 POLE FOUNDATION
TYPE PA100-A-60-D40-9 (DAMT AT 350°)
LUMINAIRE-250 W HPS
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0°
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11°
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180°
2-ANGLE MOUNT SETS C.D. PEDESTRIAN INDICATIONS-POLE MOUNTED 90° & 180°
2-PEDESTRIAN PUSH BUTTONS
R10-12 SIGN PANEL-ADJACENT TO 8-3
TYPE D SIGN PANEL-OVERHEAD (D-3)
ONE WAY EWP DETECTOR & LIGHT (#4) (EVP)
EXTEND INTO H.H.1:
3'R.S.C.
3-12/c#14
1-3/c#14 (EVP)
1-3/c#20 (EVP)
2-2/c#14
1-3/c#14 (LUM)
1-1/c#18 (GRD)

- ④ PA100 POLE FOUNDATION
TYPE PA100-A-65-D40-9 (DAMT AT 350°)
LUMINAIRE-250 W HPS
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0°
2-STRAIGHT MOUNT SIGNALS-OVERHEAD AT 11° & 23°
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180°
2-ANGLE MOUNT SETS C.D. PEDESTRIAN INDICATIONS-POLE MOUNTED 90° & 180°
2-PEDESTRIAN PUSH BUTTONS
2-R8-1 SIGN PANELS-POLE MOUNTED 0° & 180°
TYPE D SIGN PANEL-OVERHEAD (D-4)
ONE WAY EWP DETECTOR & LIGHT (#2,5) (EVP)
EXTEND INTO H.H.1:
3'R.S.C.
3-12/c#14
1-3/c#14 (EVP)
1-3/c#20 (EVP)
2-2/c#14
1-3/c#14 (LUM)
2-1/c#18 (GRD)

- ⑤ IMPLACE PEDESTAL FOUNDATION
10' PEDESTAL POLE (INCLUDES BASE) (EVP)
WHD COLLAR FOR PEDESTAL POLE (EVP)
ONE WAY EWP DETECTOR-MOUNT ON TOP OF PEDESTAL POLE (#4) (EVP)
EXTEND INTO H.H.5:
2'R.S.C. (EVP)
1-3/c#20 (EVP)



FINAL PLAN
CONFORMING TO
CONST. RECORDS
DATE 02-02-2016

- ⑤ PEDESTAL FOUNDATION (EVP)
10' PEDESTAL POLE (INCLUDES BASE) (EVP)
WHD COLLAR FOR PEDESTAL POLE (EVP)
ONE WAY EWP DETECTOR-MOUNT ON TOP OF PEDESTAL POLE (#4) (EVP)
EXTEND INTO H.H.16:
2'R.S.C. (EVP)
1-3/c#20 (EVP)

S.P. 02-601. 3
S.P. 114-020-37

FOR REFERENCE PURPOSES ONLY

DESIGNER	JMS	DATE	07/18	
CHECKED BY	JMS			
DESIGN TEAM		NO.	BY	DATE

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.

Signature: *John M. Gray, PE*
Name: John M. Gray, PE
Date: May 6, 2016
Lic. No.: 21457



ANOKA COUNTY,
MINNESOTA
CITY OF COON RAPIDS

TRAFFIC SIGNAL SYSTEM
INTERSECTION LAYOUT
CSAH 1 (COON RAPIDS BOULEVARD) AT
CSAH 18-CROOKED LAKE BOULEVARD

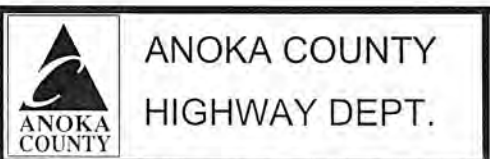
FILE NO.	16
DATE	05/03/2016

NO.	DATE	BY	CKD	APPR	REVISION	03/29/2016	10:40:49 AM
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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

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

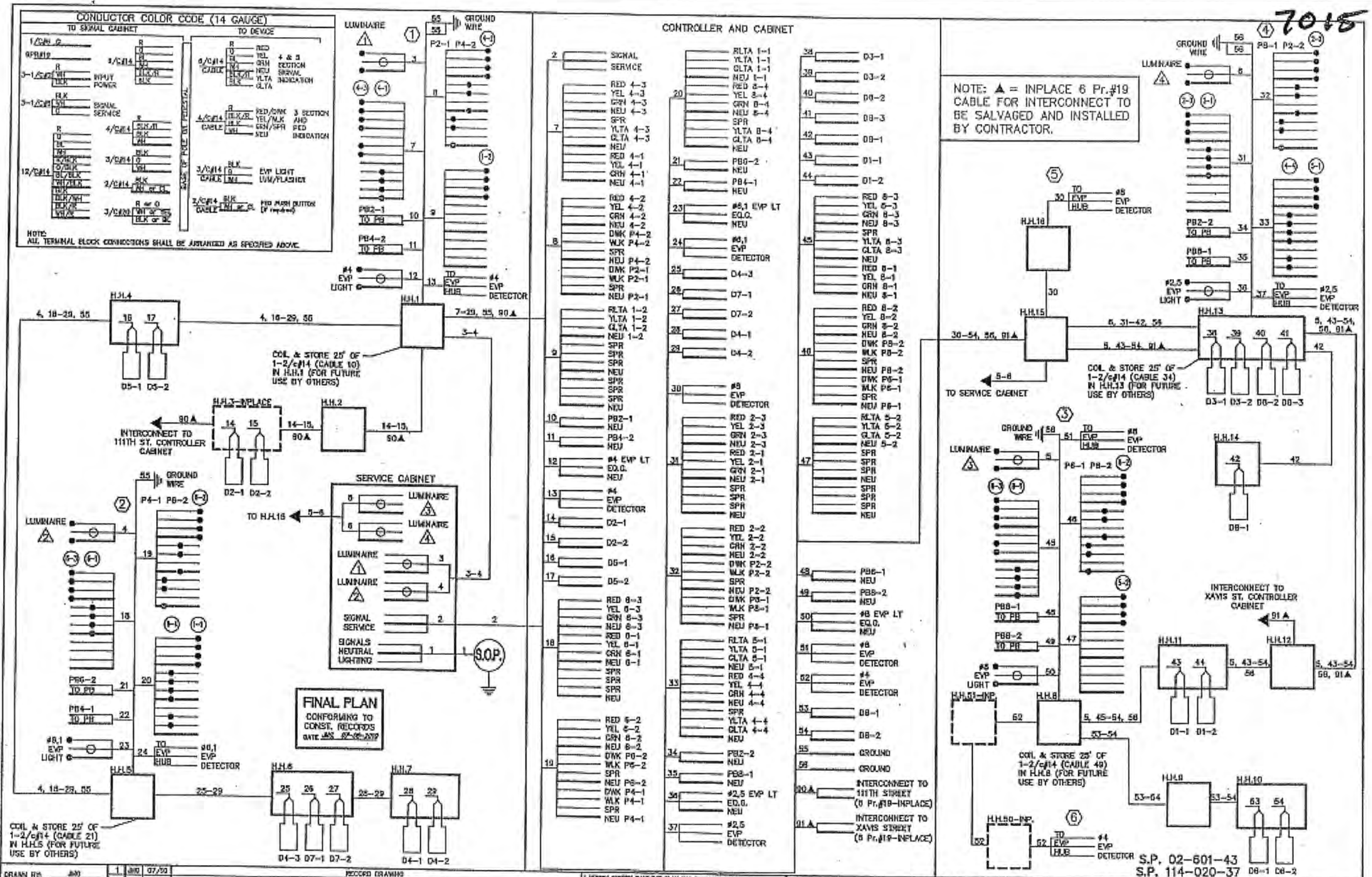
DRAWN BY: SRK DATE: 03/29/2016
DESIGN BY: SRK DATE: 03/29/2016
CHECKED BY: MJJ DATE: 03/29/2016



COUNTY PROJECT 16-18-18

ORIGINAL SIGNAL PLANS
Sheet 18 of 23 Sheets

2015



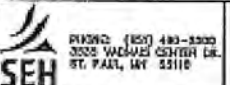
FOR REFERENCE PURPOSES ONLY

DESIGN TEAM	NO.	BY	DATE
	1	JMJ	07/20

RECORD DRAWING	NO.	BY	DATE

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.

Matthew J. John
 DATE: MAY 3, 2015
 License No. 51639



ANOKA COUNTY,
 MINNESOTA
 CITY OF COON RAPIDS

TRAFFIC SIGNAL SYSTEM
 FIELD WIRING DIAGRAM
 CSAH 1 (COON RAPIDS BOULEVARD) AT
 CSAH B-CROOKED LAKE BOULEVARD

FILE NO.	17
DATE	06/03/2009

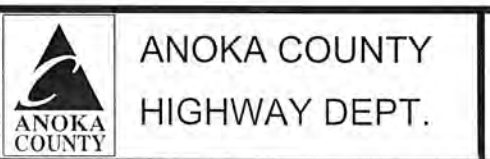
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	03/29/2016					10:40:53 AM

NAME: P:\16-01-00\CSAH_18\CRB-RRY\Bases\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: 4/8/2016
 LICENSE NO. 51639

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



COUNTY PROJECT 16-18-18

ORIGINAL SIGNAL PLANS
 Sheet 19 of 23 Sheets

7158

- LED RETROFIT-SYSTEM "QQ" NOTES**
- 1) ALL ITEMS OF SIGNAL SYSTEM ARE IN PLACE AND SHALL BE REUSED AND MAINTAINED IN PLACE, UNLESS OTHERWISE NOTED ON PLANS.
 - 2) CONTRACTOR SHALL REMOVE ALL IN PLACE 12" X 12" 2-SECTION PED SIGNAL INDICATORS & HOUSINGS, AND SHALL FURNISH AND INSTALL NEW ONE SECTION COUNTERDOWN LOWER LED "HAND/WALKING PERSON" PED SIGNALS (HOUSING, VISOR, LENS) IN THEIR PLACE.
 - 3) CONTRACTOR SHALL REMOVE THE IN PLACE TYPE 100 BRACKETING (90° & 270°) ON POLES 1, 2, 3, AND 4. SHALL FURNISH & INSTALL NEW TYPE 100 BRACKETING (90° & 180°) IN THEIR PLACE. SHALL SALVAGE, INSTALL, AND MAKE OPERATIONAL SIGNAL HEADS 2-1, 2-4, 4-1, 4-2, 6-1, 6-3, 8-1, AND 8-3. AND SHALL INCORPORATE NEW ONE SECTION PEDESTRIAN SIGNALS WITH NEW BRACKETINGS. CAP UNUSED HUBS AT 270°. ALL WORK LISTED ABOVE SHALL BE CONSIDERED INCIDENTAL TO THE PEDESTRIAN INDICATION PAY ITEM.
 - 4) CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MODIFICATIONS TO IN PLACE POLE MOUNTED BRACKETING ON EACH TRAFFIC SIGNAL POLE TO ACCOMMODATE INSTALLATION OF NEW ONE SECTION PEDESTRIAN SIGNAL INDICATORS (INCLUDING THE REPLACEMENT OF THE POLE MOUNTED BRACKETING F NEEDED TO ACCOMMODATE EACH PEDESTRIAN SIGNAL INDICATION INSTALLATION) (INCIDENTAL).
 - 5) ANY DAMAGE TO IN PLACE TRAFFIC SIGNAL POLES OR VEHICLE SIGNAL HEADS DUE TO WORK ON THIS PROJECT SHALL BE REPAIRED BY CONTRACTOR TO THE SATISFACTION OF THE ENGINEER, AT NO EXPENSE TO THE CITY.
 - 6) NEW PEDESTRIAN HOUSINGS AND VISORS SHALL BE FABRICATED USING NEW POLYCARBONATE MATERIALS.
 - 7) CONTRACTOR SHALL REMOVE ALL IN PLACE INCANDESCENT "RED", "YELLOW", AND "GREEN" VEHICLE SIGNAL INDICATION LENSES, AND SHALL FURNISH AND INSTALL NEW LED INDICATORS IN THEIR PLACE.
 - 8) CONTRACTOR SHALL REMOVE ALL IN PLACE PEDESTRIAN PUSH BUTTONS (8 TOTAL), R10-4b STICKER SIGNS, AND "MEANING OF WALK" STICKER SIGNS, & SHALL FURNISH & INSTALL NEW SOLID STATE PED PUSH BUTTONS AND R10-3a SIGNS IN THEIR PLACE.
 - 9) CONTRACTOR SHALL MAINTAIN OPERATION OF THE SIGNAL SYSTEM AT ALL TIMES, EXCEPT AS OTHERWISE APPROVED BY THE ENGINEER.
 - 10) SEE STATEMENT OF ESTIMATED QUANTITIES FOR BID ITEMS FOR WORK AT THIS SIGNAL SYSTEM.

LOOP DETECTORS

NUMBER	SIZE	FUNCTION	LOCATION
D2-1	6' X 6'	1	200'
D4-1	6' X 6'	3/8	120'
D4-2	6' X 6'	7	5'
D4-3	2-6' X 6'	1	5'
D5-1	2-6' X 6'	10/11	20' 50'
D5-2	2-6' X 6'	10/11	5' 35'
D6-1	6' X 6'	1	200'
D8-1	6' X 6'	3/8	120'
D8-2	2-6' X 6'	7	5'

- FUNCTIONS:**
- 1 - CALL AND EXTEND
 - 2 - CALL ONLY
 - 3 - EXTEND ONLY
 - 7 - DRY CALL INACC EXTEND
 - 8 - CARRY OVER
 - 9 - ADVISORY
 - 10 - CALL BS DURING R4 & R8 CRN
 - 11 - EXTEND R2 & R5

- 4) TYPE PA90-A25-D30-9 PA90 POLE FOUNDATION ONEWAY SIGNALS OVERHEAD ONEWAY EVP DETECTOR AND LIGHT (6' FROM END OF MAST ARM). TYPE 10B - AT 90° TYPE 10B - AT 180° 2-PEDESTRIAN PUSH BUTTONS EXTEND INTO HH 10**
- 3" RSC
2-12/C #12
2-3/C #12
1-3/C #14 (LUM)
LUMINAIRE-200 W HPS

- 3) TYPE PA90-A20-PA90 POLE FOUNDATION ONEWAY SIGNAL OVERHEAD ONEWAY EVP DETECTOR AND ONEWAY EVP LIGHT (6' FROM END OF MAST ARM). TYPE 10B - AT 90° TYPE 10B - AT 180° 2-PEDESTRIAN PUSH BUTTONS EXTEND INTO HH 7**
- 3" RSC
2-12/C #12
2-3/C #12
2-3/C #20

- 2) TYPE PA90-A30-D30-9 PA90 POLE FOUNDATION TWO ONEWAY SIGNALS OVERHEAD (0' AND 12' FROM END OF MAST ARM) ONEWAY EVP DETECTOR AND LIGHT (6' FROM END OF MAST ARM) TYPE 10B - AT 90° TYPE 10B - AT 180° R10-12 SIGN (24x30) MOUNTED 3' END OF MAST ARM 2-PEDESTRIAN PUSH BUTTONS EXTEND INTO HH 4**
- 3" RSC
2-12/C #12
3-3/C #12
1-3/C #20
LUMINAIRE-200 W HPS.

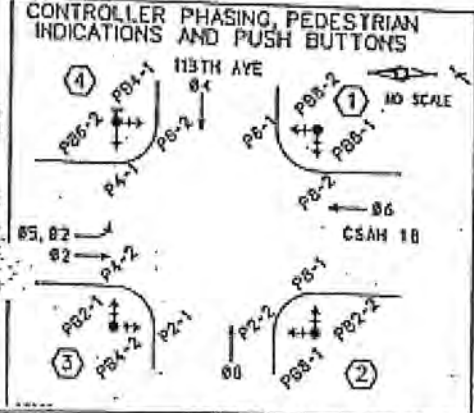
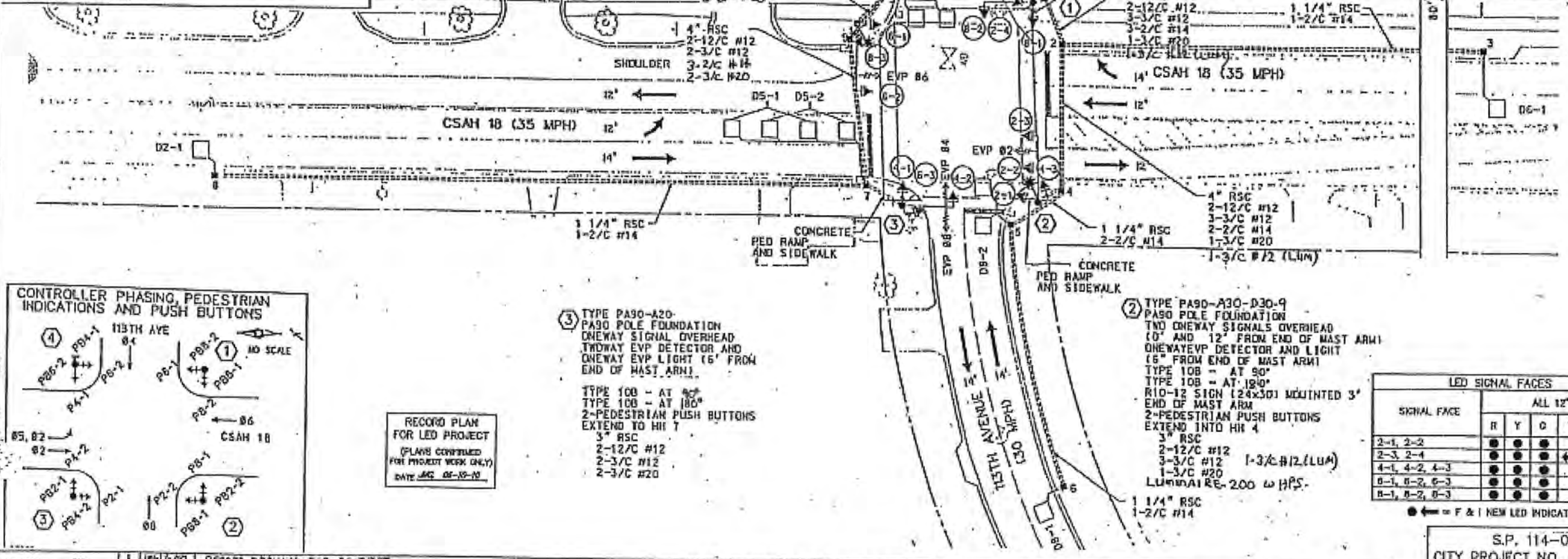
- A) CONTROLLER AND CABINET CONTROLLER CABINET TO HH 1**
- 4" RSC
4-12/C #12
5-3/C #12
3-2/C #14
1-3/C #20
- CONTROLLER CABINET TO HH 12**
- 4" RSC
4-12/C #12
4-3/C #12
6-2/C #14
3-3/C #20
- CONTROLLER CABINET TO HH 13**
- 1 1/4" RSC
3-1/C #6
STUBOUT 2-3" RSC FOR FUTURE USE
- B) SERVICE CABINET FOUNDATION SERVICE CABINET TO HH 14**
- 3" RSC
3-1/C #6
SERVICE CABINET TO HH 13 (SERVICE)
1 1/4" RSC
3-1/C #6
SERVICE CABINET TO HH 12 (LIGHTING)
1 1/4" RSC
2-3/C #12 (LUM)

- 1) TYPE PA90-A20-PA90 POLE FOUNDATION ONEWAY SIGNAL OVERHEAD ONEWAY EVP LIGHT (6' FROM END OF MAST ARM) TYPE 10B - AT 90° TYPE 10B - AT 180° 2-PEDESTRIAN PUSH BUTTONS EXTEND INTO HH 1**
- 3" RSC
2-12/C #12
2-3/C #12

LED SIGNAL FACES

SIGNAL FACE	ALL 12"				
	R	Y	C	Y	G
2-1, 2-2	●	●	●		
2-3, 2-4	●	●	●	←	←
4-1, 4-2, 4-3	●	●	●		
6-1, 6-2, 6-3	●	●	●		
8-1, 8-2, 8-3	●	●	●		

● ← = F & I NEW LED INDICATION.



RECORD PLAN FOR LED PROJECT
(PLANS CONTINUED FOR PROJECT WORK ONLY)
DATE: 05-10-18

NO.	DATE	BY	CHKD	APPR	REVISION

DESIGN TEAM: FEYERSONE

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.

Signature: *John H. Aug PC*
Date: May 28, 2016 License No. 21457

SEH
PHONO (612) 480-2066
3535 WISCONSIN AVENUE
ST. PAUL, MN 55125

COON RAPIDS, MINNESOTA

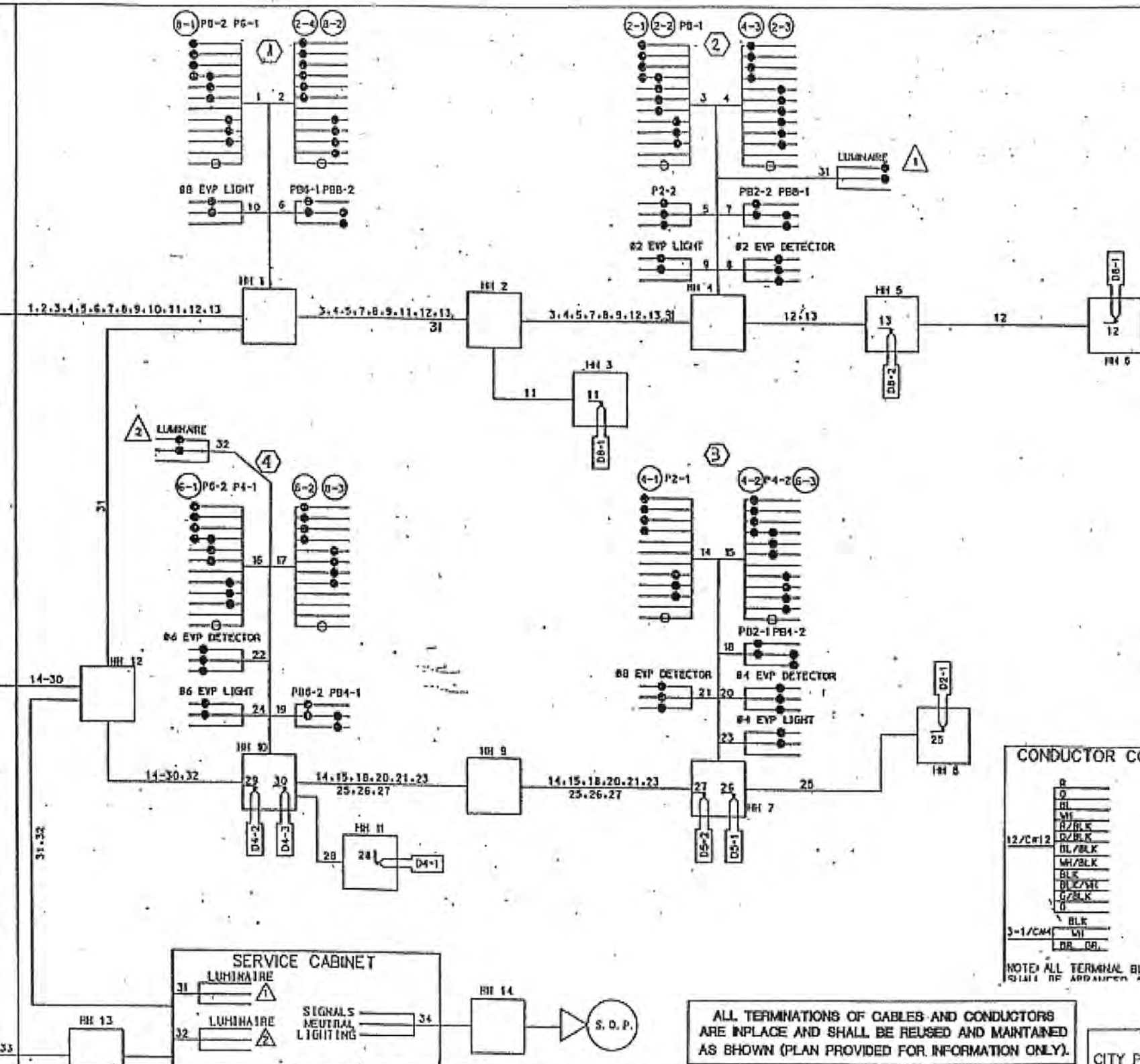
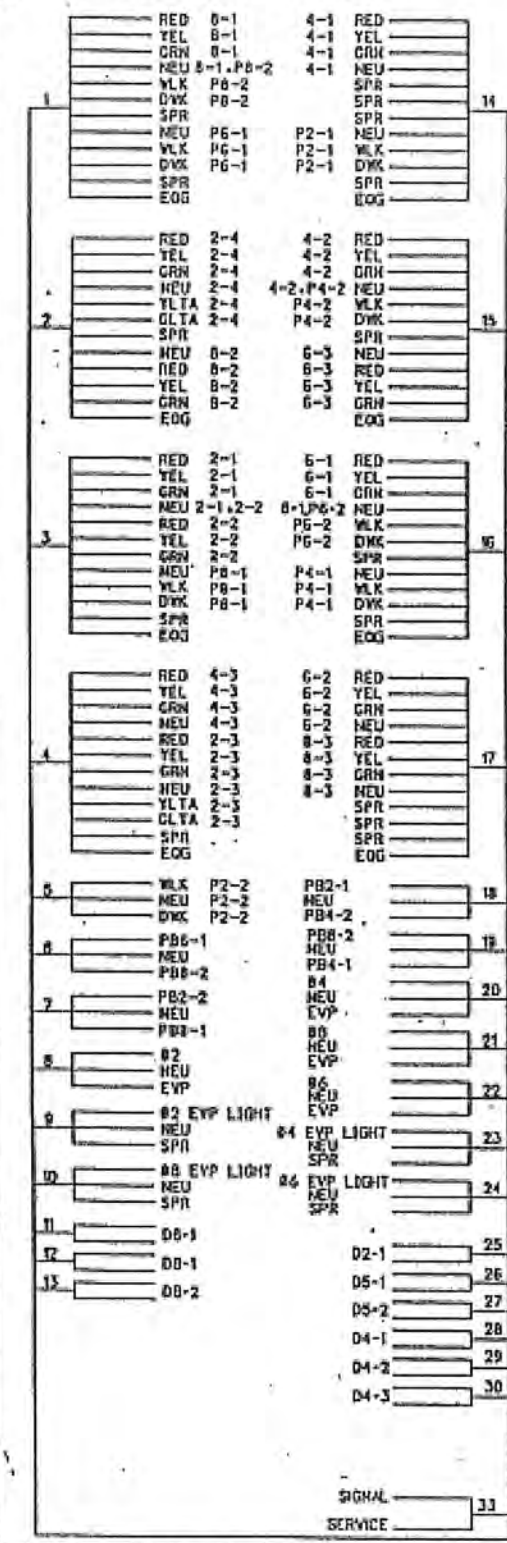
LED RETROFIT-SYSTEM "QQ" INTERSECTION LAYOUT CSAH 18 AT 113TH AVENUE

S.P. 114-030-10
CITY PROJECT NO. 09-18

FILE NO. 107410
DATE 05/15/2018

FOR REFERENCE PURPOSES ONLY

7155 CONTROLLER CABINET



CONDUCTOR COLOR CODING

R	BLK	2-1/CW10
O	WH	
BL	R	3/CW12
12/CW12	WH/BLK	
	BL/BLK	BLK
	WH/BLK	R OR O
	BLK	WH OR YEL 3/CW20
	BLK/WH	BLK OR R
	O/BLK	
	BLK	BLK
3-1/CW4	WH	CLEAR 2/CW14
	DR	DR

NOTE: ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SHOWN.

ALL TERMINATIONS OF CABLES AND CONDUCTORS ARE IN PLACE AND SHALL BE REUSED AND MAINTAINED AS SHOWN (PLAN PROVIDED FOR INFORMATION ONLY).

S.P. 114-030- CITY PROJECT NO. 09-18

DESIGN TEAM

NO.	DATE	BY	CHKD	APPR	REVISION

REVISIONS

NO.	DATE	BY	CHKD	APPR	REVISION

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.

Signature: *Matthew J. John*
 Date: 4/8/2016 License No. 51639

SEH
 PHONE: (612) 402-3000
 3033 VANDERBILT CENTER DR.
 ST. PAUL, MN 55121

COON RAPIDS, MINNESOTA

LED RETROFIT-SYSTEM "OO"
 FIELD WIRING DIAGRAM
 CSAH 18 AT 113TH AVENUE

FILE NO. 107410
 DATE 05/18/2022
 102
 131

FOR REFERENCE PURPOSES ONLY

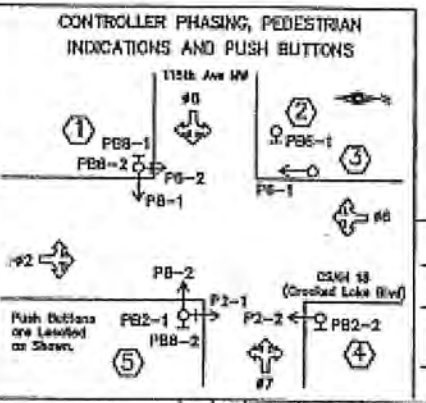
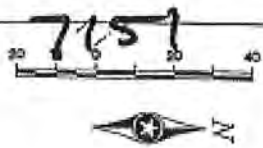
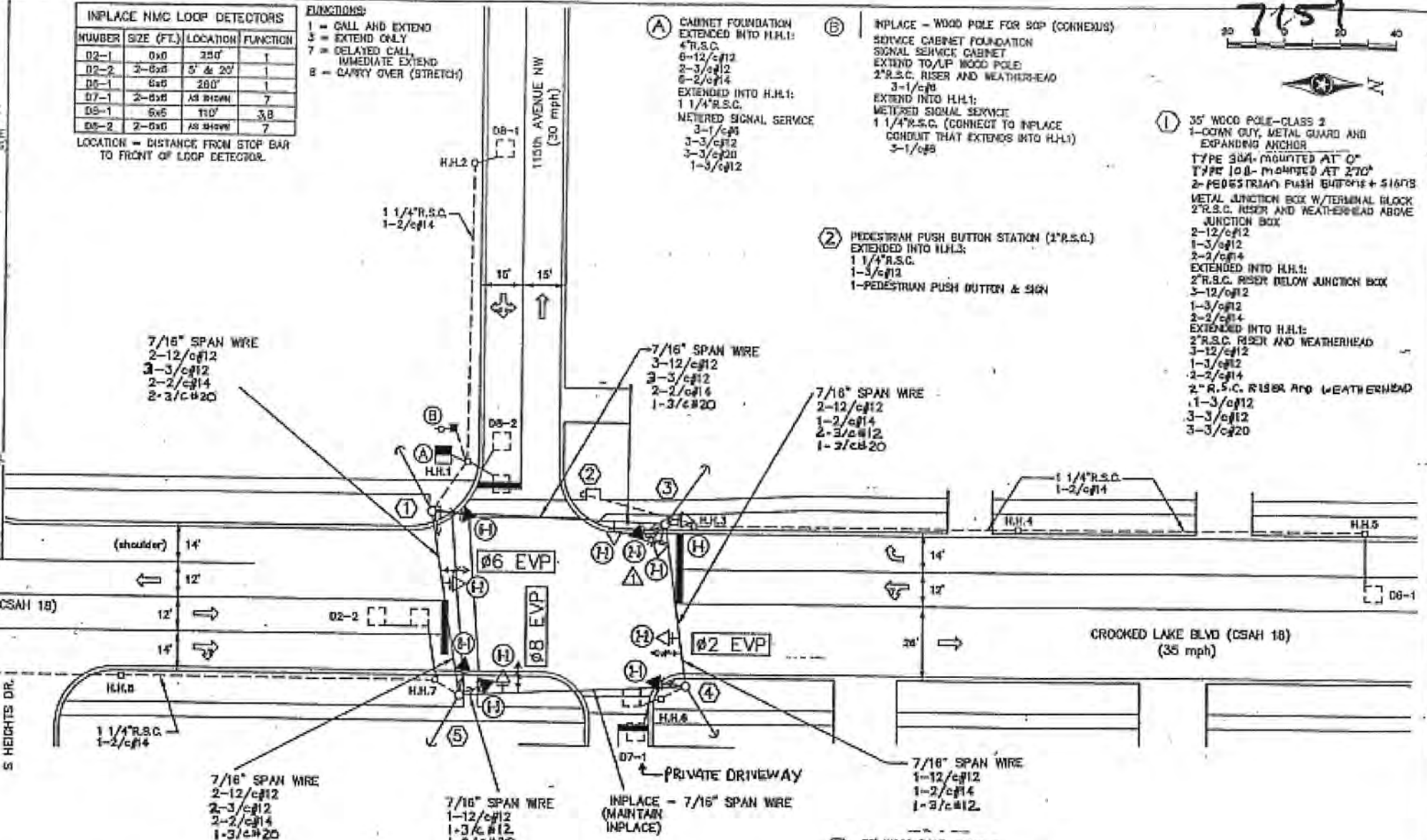
- LED RETROFIT-SYSTEM 'RR' NOTES**
- ALL ITEMS OF SIGNAL SYSTEM ARE IN PLACE AND SHALL BE REUSED AND MAINTAINED IN PLACE, UNLESS OTHERWISE NOTED ON PLANS.
 - CONTRACTOR SHALL REMOVE THE INPLACE "HAND/WALKING PERSON" LENS FROM EACH INPLACE ONE SECTION PED SIGNAL INDICATION, AND SHALL FURNISH & INSTALL A NEW COUNTERDOWN OVER LED "HAND/WALKING PERSON" LENS IN ITS PLACE.
 - CONTRACTOR SHALL PROTECT AND MAINTAIN EACH INPLACE ONE SECTION PEDESTRIAN SIGNAL HOUSING & VISOR WHEN REMOVING AND REPLACING EACH LENS, AND SHALL REPLACE THE COMPLETE PEDESTRIAN SIGNAL INDICATION UNIT (HOUSING, VISOR, AND LENS) SHOULD ANY DAMAGE BE DONE TO THE UNIT BY CONTRACTOR DURING WORK ON THIS PROJECT (INCIDENTAL).
 - IN LIEU OF THE LENS REPLACEMENT WORK DESCRIBED ABOVE, THE CONTRACTOR ALSO HAS THE OPTION OF REMOVING EACH INPLACE ONE SECTION PEDESTRIAN SIGNAL INDICATION (HOUSING, VISOR, AND LENS) AND REPLACING THEM WITH NEW ONE SECTION PEDESTRIAN SIGNAL INDICATIONS (HOUSING, VISOR, AND LED LENSES), AT NO ADDITIONAL COST TO THE PROJECT.
 - CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MODIFICATIONS TO INPLACE POLE MOUNTED BRACKETING ON EACH TRAFFIC SIGNAL POLE TO ACCOMMODATE INSTALLATION OF NEW ONE SECTION PEDESTRIAN SIGNAL INDICATIONS (INCLUDING THE REPLACEMENT OF THE POLE MOUNTED BRACKETING IF NEEDED TO ACCOMMODATE EACH PEDESTRIAN SIGNAL INDICATION INSTALLATION) (INCIDENTAL).
 - ANY DAMAGE TO INPLACE TRAFFIC SIGNAL POLES OR VEHICLE SIGNAL HEADS & BRACKETING DUE TO WORK ON THIS PROJECT SHALL BE REPAIRED BY CONTRACTOR TO THE SATISFACTION OF THE ENGINEER, AT NO EXPENSE TO THE CITY.
 - IF NEW PEDESTRIAN HOUSINGS AND VISORS ARE USED, THEY SHALL BE FABRICATED USING NEW POLYCARBONATE MATERIALS.
 - ALL VEHICULAR SIGNAL INDICATIONS ARE LED AND ARE IN PLACE (MAINTAIN AND REUSE INPLACE AS SHOWN).
 - CONTRACTOR SHALL REMOVE ALL INPLACE R10-4b STICKER/METAL SIGNS, AND "MEANING OF WALK" STICKER SIGNS, AND SHALL FURNISH & INSTALL NEW R10-3a SIGNS IN THEIR PLACE. ALL PUSH BUTTONS ARE ADA COMPLIANT AND ARE IN PLACE (REUSE).
 - CONTRACTOR SHALL MAINTAIN OPERATION OF THE SIGNAL SYSTEM AT ALL TIMES, EXCEPT AS OTHERWISE APPROVED BY ENGINEER.
 - SEE STATEMENT OF ESTIMATED QUANTITIES FOR BID ITEMS FOR WORK AT THIS SIGNAL SYSTEM.

INPLACE NMC LOOP DETECTORS

NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D2-1	0x0	250'	1
D2-2	3-8x8	5' & 20'	1
D2-1	8x8	280'	1
D7-1	2-8x8	AS SHOWN	7
D5-1	6x6	110'	3, B
D5-2	2-6x0	AS SHOWN	7

LOCATION = DISTANCE FROM STOP BAR TO FRONT OF LOOP DETECTOR.

- FUNCTIONS:**
- 1 = CALL AND EXTEND
 - 3 = EXTEND ONLY
 - 7 = DELAYED CALL, IMMEDIATE EXTEND
 - 8 = CARRY OVER (STRETCH)



RECORD PLAN FOR LED PROJECT
(PLANS CONFIRMED FOR PROJECT WORK ONLY)
DATE: 09-18-18

- SIGNAL SYSTEM OPERATIONS:**
- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
 - NORMAL OPERATION SHALL BE 4 PHASE WITH ALL PHASES BEING PERMISSIVE PHASES.
 - VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

- ⑤ 35' WOOD POLE-CLASS 2**
1-DOWN GUY, METAL GUARD AND EXPANDING ANCHOR
2-TYPE 10A-WOOD POLE MOUNTED AT 270°
2-PEDESTRIAN PUSH BUTTONS, SIGNS & RISERS
METAL JUNCTION BOX W/TERMINAL BLOCK
2'R.S.C. RISER AND WEATHERHEAD ABOVE JUNCTION BOX
3-12/c#12
1-3/c#14
2-2/c#14
EXTENDED INTO H.H.7;
1 1/4'R.S.C. RISER BELOW JUNCTION BOX
2-2/c#14

- ④ 35' WOOD POLE-CLASS 2**
1-DOWN GUY, METAL GUARD AND EXPANDING ANCHOR
2-TYPE 10A-WOOD POLE MOUNTED AT 270°
1-PEDESTRIAN PUSH BUTTON, SIGN & RISER
1-R10-3a SIGN PANEL-FACING POLE 3
METAL JUNCTION BOX W/TERMINAL BLOCK
2'R.S.C. RISER AND WEATHERHEAD ABOVE JUNCTION BOX
3-12/c#12
1-3/c#14
EXTENDED INTO H.H.4;
1 1/4'R.S.C. RISER BELOW JUNCTION BOX
1-2/c#14

- ③ 35' WOOD POLE-CLASS 2**
1-DOWN GUY, METAL GUARD AND EXPANDING ANCHOR
LUMBAIRE-250 W FPS AND MAST ARM
2-TYPE 10A-WOOD POLE MOUNTED AT 270°
1-R10-3a SIGN PANEL-FACING POLE 4
METAL JUNCTION BOX W/TERMINAL BLOCK
2'R.S.C. RISER AND WEATHERHEAD ABOVE JUNCTION BOX
3-12/c#12
1-3/c#12
1-2/c#14
EXTENDED INTO H.H.3;
1 1/4'R.S.C. RISER BELOW JUNCTION BOX
1-3/c#12
1-2/c#14

LED SIGNAL FACES

SIGNAL FACE	ALL 12"		
	R	Y	G
2-1, 2-2, 2-3	○	○	○
6-1, 6-2, 6-3, 6-4	○	○	○
7-1, 7-2	○	○	○
8-1, 8-2	○	○	○

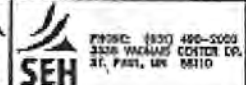
○ = INPLACE LED INDICATION, REUSE INPLACE

RECORD DRAWING FOR PROJECT

NO.	DATE	BY	CHKD	APPR	REVISION
1	03/29/2016	SRK	MJJ	JLW	

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.

Signature: John M. Coon, PE
Date: Nov 15, 2022
Lic. No.: 22407



COON RAPIDS, MINNESOTA

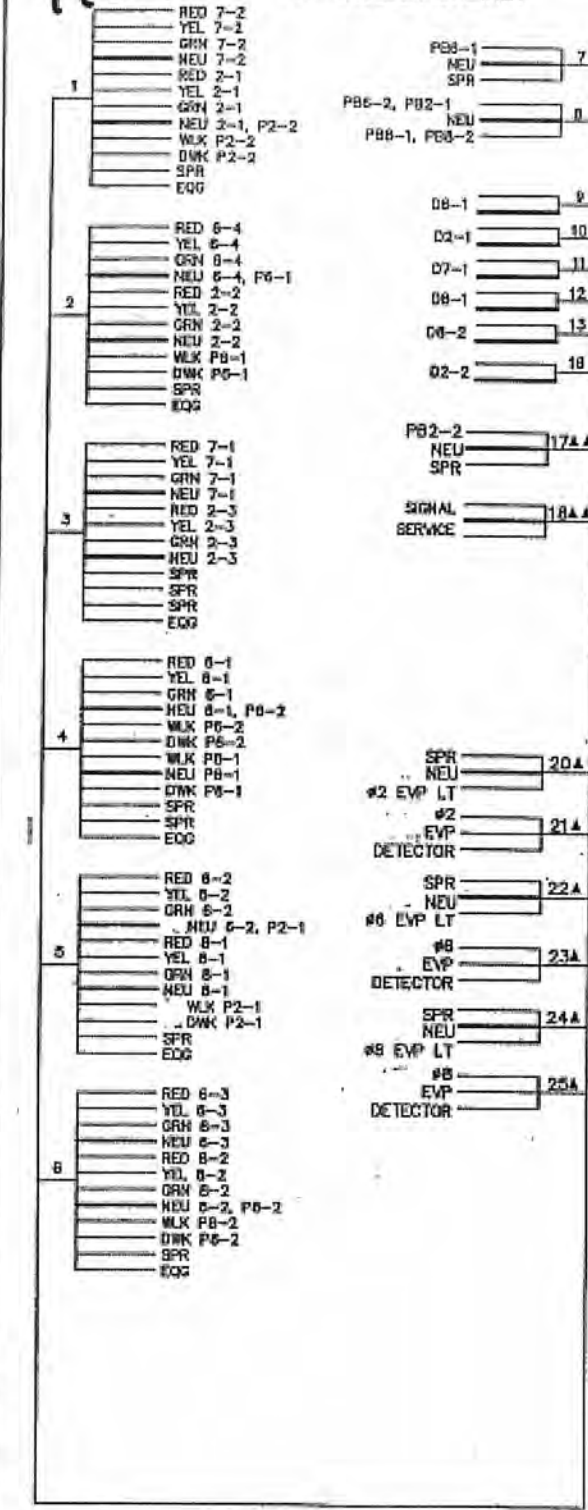
LED RETROFIT-SYSTEM 'RR' INTERSECTION LAYOUT
CSAH 18 AT 115TH AVENUE NW

S.P. 114-030-10
CITY PROJECT NO. 09-18

FILE NO. 10748
DATE: 09/18/2009
103
131

FOR REFERENCE PURPOSES ONLY

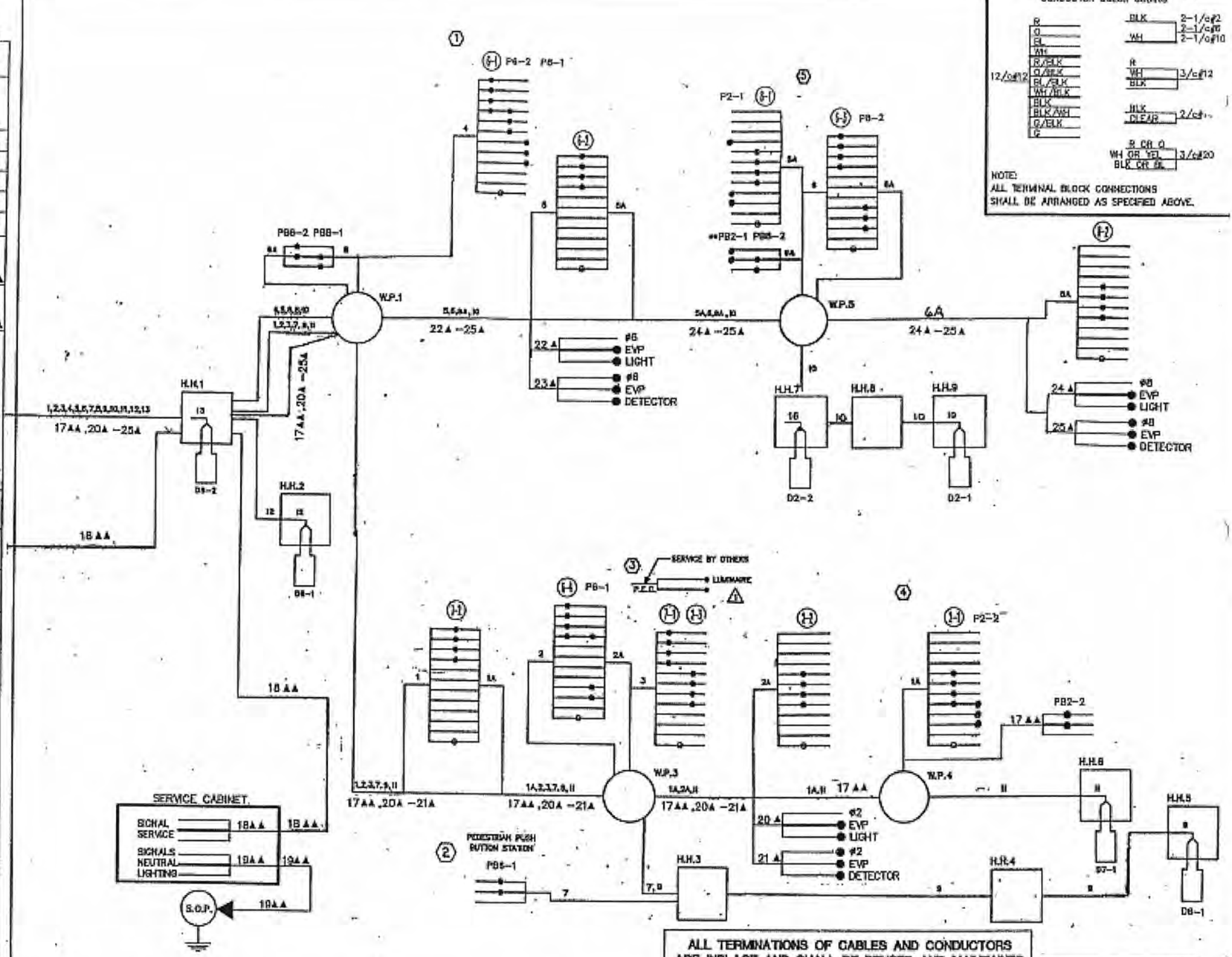
7151 CONTROLLER CABINET



CONDUCTOR COLOR CODING

R	BLK	2-1/ø2
O	WH	2-1/ø10
CL	WH	2-1/ø10
WH		
R/BLK	R	3/ø12
O/BLK	WH	3/ø12
BL/BLK	BLK	
WH/BLK		
BLK	BLK	2/ø11
BLK/WH	CL/BLK	
O/YELK		
O	R OR O	3/ø20
	WH OR YEL	
	BLK OR BL	

NOTE:
ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.



ALL TERMINATIONS OF CABLES AND CONDUCTORS ARE IN PLACE AND SHALL BE REUSED AND MAINTAINED AS SHOWN (PLAN PROVIDED FOR INFORMATION ONLY).

S.P. 114-03L
CITY PROJECT NO. 09-18

DRAWN BY: JMG	DATE: 03/29/2016
CHECKED BY: JMG	DATE: 03/29/2016
CHECKED BY: JMG	DATE: 03/29/2016
DESIGN TEAM	REVISION

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.

Signature: *Matthew J. John*
Date: 4/8/2016
License No. 51639

SEH
PHONE: (251) 460-3000
3033 UNION CENTER BL.
ST. PAUL, MN 55113

COON RAPIDS, MINNESOTA

LED RETROFIT-SYSTEM 'RR'
FIELD WIRING DIAGRAM
CSAH 18 AT 115TH AVENUE NW

PKG NO. 104
DATE 03/18/2016
131

FOR REFERENCE PURPOSES ONLY

NO	DATE	BY	CKD	APPR	REVISION	TIME
	03/29/2016	JMG				10:41:21 AM

NAME: P:\16-01-00\CSAH_18(CRB-RR)\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: 4/8/2016
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 16-18-18

ORIGINAL SIGNAL PLANS
Sheet 23 of 23 Sheets