

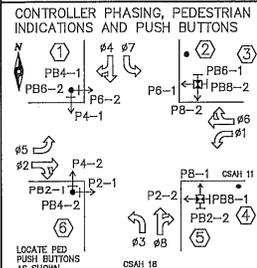
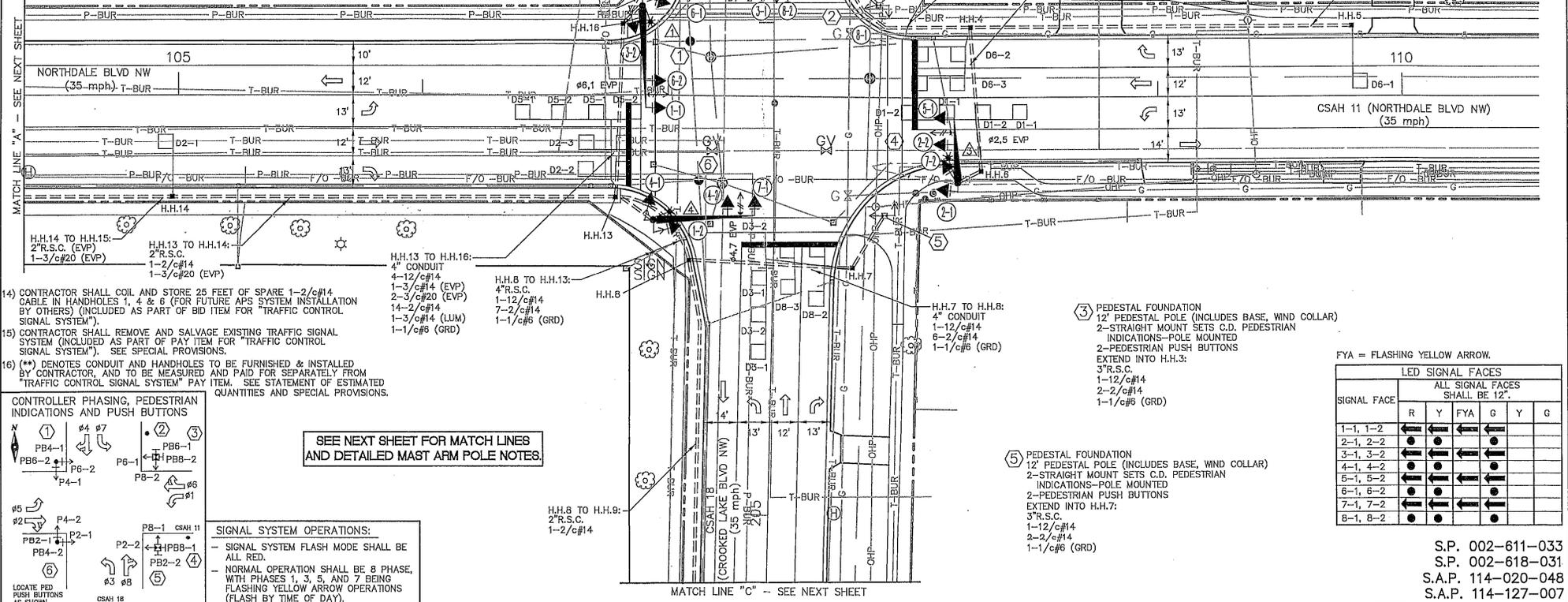
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- NOTES:**
- 1) LOCATION OF FOUNDATIONS, LOOP DETECTORS AND HANDHOLES SHALL BE DETERMINED IN THE FIELD BY THE ENGINEER.
 - 2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
 - 3) LOOP DETECTOR WIRES SHALL BE CROSS-LINKED POLYETHYLENE (XLP) 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" COUNTDOWN TIMER "HAND/WALKING PERSON" INDICATION.
 - 7) ALL VEHICLE SIGNAL INDICATIONS AND ALL PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED.
 - 8) SEE DETAILS, SPECIAL PROVISIONS & STATEMENT OF ESTIMATED QUANTITIES REGARDING BATTERY BACK-UP SIGNAL SERVICE CABINET TO BE FURNISHED AND INSTALLED BY CONTRACTOR (SEPARATE FROM ITEM NO. 2665 FOR THIS SIGNAL SYSTEM).
 - 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 EVP).
 - 10) ALL VEHICLE AND PEDESTRIAN SIGNAL HOUSINGS, BACKGROUND SHIELDS, AND VISORS SHALL BE FABRICATED USING BLACK POLYCARBONATE MATERIALS. SEE SPECIAL PROVISIONS.
 - 11) CONTRACTOR SHALL COORDINATE ALL TRAFFIC SIGNAL INSTALLATION WORK WITH ROAD CONSTRUCTION TO BE COMPLETED BY OTHERS AS PART OF ENTIRE PROJECT.
 - 12) (EVP) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2665 (EMERGENCY VEHICLE PREEMPTION SYSTEM). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
 - 13) SEE DETAILS AND SPECIAL PROVISIONS REGARDING TYPE C AND TYPE D SIGNS TO BE F & I BY CONTRACTOR (INCLUDED AS PART OF BID ITEM FOR "TRAFFIC CONTROL SIGNAL SYSTEM").

PVC LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	2-6x6	10' & 40'	1
D1-2	2-6x6	0' & 25'	7
D2-1	6x6	180'	1
D2-2	2-6x6	0' & 15'	7
D2-3	2-6x6	0' & 15'	1
D3-1	2-6x6	10' & 40'	1
D3-2	2-6x6	0' & 25'	7
D4-1	6x6	150'	3,8
D4-2	2-6x6	0' & 15'	7
D4-3	2-6x6	0' & 15'	1
D5-1	2-6x6	10' & 40'	1
D5-2	2-6x6	0' & 25'	1
D6-1	6x6	180'	1
D6-2	2-6x6	0' & 15'	7
D6-3	2-6x6	0' & 15'	1
D7-1	2-6x6	10' & 40'	1
D7-2	2-6x6	0' & 25'	1
D8-1	6x6	180'	3,8
D8-2	2-6x6	0' & 15'	7
D8-3	2-6x6	0' & 15'	1

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

MATCH LINE "B" - SEE NEXT SHEET



SIGNAL SYSTEM OPERATIONS:

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 8 PHASE, WITH PHASES 1, 3, 5, AND 7 BEING FLASHING YELLOW ARROW OPERATIONS (FLASH BY TIME OF DAY).

SEE NEXT SHEET FOR MATCH LINES AND DETAILED MAST ARM POLE NOTES.

- (A) EQUIPMENT PAD FOUNDATION**
INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY)
BATTERY BACK-UP SIGNAL SERVICE CABINET
BETWEEN CONTROLLER CABINET AND SERVICE CABINET:
METERED SIGNAL SERVICE
2" R.S.C.
3-1/c#6
CONTROLLER CABINET TO H.H.1:
2-4" R.S.C.
5-12/c#14
1-4/c#14
2-3/c#14 (EVP)
9-2/c#14
2-3/c#14 (LUM)
1-1/c#6 (GRD)
- CONTROLLER CABINET TO H.H.16:**
2-4" R.S.C.
7-12/c#14
2-3/c#14 (EVP)
16-2/c#14
2-3/c#20 (EVP)
1-1/c#6 (GRD)
- CONTROLLER CABINET TO H.H.17:**
2" R.S.C. (FOR SERVICE CABLE INSTALLATION BY OTHERS)
- STUB OUT 2-3" R.S.C. FROM CONTROLLER CABINET TO EAST (THREAD & CAP BOTH ENDS- FOR FUTURE USE)**
- STUB OUT 1" N.M.C. FROM CONTROLLER CABINET (FOR FUTURE PHONE LINE BY OTHERS)**

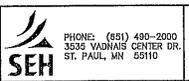


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DESIGNER:	JMG			
CHECKED BY:	JMG			
DESIGN TEAM		NO.	BY	DATE

REVISIONS	
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.

John M. Gray, PE
May 13, 2013
Lic. No. 22452



ANOKA COUNTY, MINNESOTA
CITY OF COON RAPIDS

TRAFFIC SIGNAL SYSTEM INTERSECTION LAYOUT
CSAH 11-NORTHDALE BOULEVARD AT CSAH 18-CROOKED LAKE BOULEVARD

FILE NO. ANOKC 123594
69
SIGNAL SHEET 6 OF 11
98

S.P. 002-611-033
S.P. 002-618-031
S.A.P. 114-020-048
S.A.P. 114-127-007

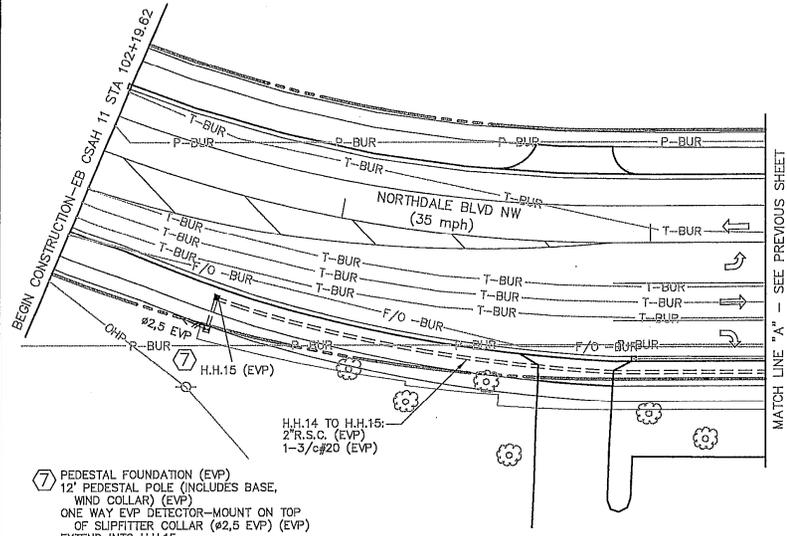
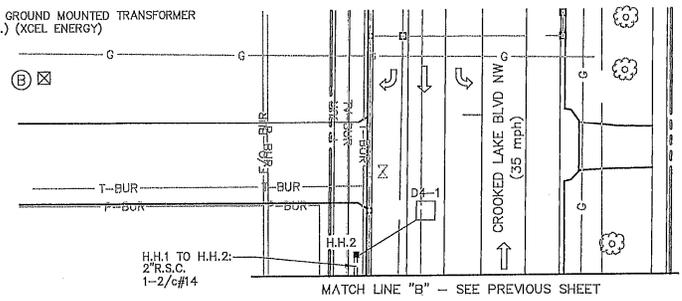
FYA = FLASHING YELLOW ARROW.

SIGNAL FACE	LED SIGNAL FACES				
	R	Y	FYA	G	Y G
1-1, 1-2	●	●	●	●	●
2-1, 2-2	●	●	●	●	●
3-1, 3-2	●	●	●	●	●
4-1, 4-2	●	●	●	●	●
5-1, 5-2	●	●	●	●	●
6-1, 6-2	●	●	●	●	●
7-1, 7-2	●	●	●	●	●
8-1, 8-2	●	●	●	●	●

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(B) INPLACE GROUND MOUNTED TRANSFORMER (S.O.P.) (XCEL ENERGY)

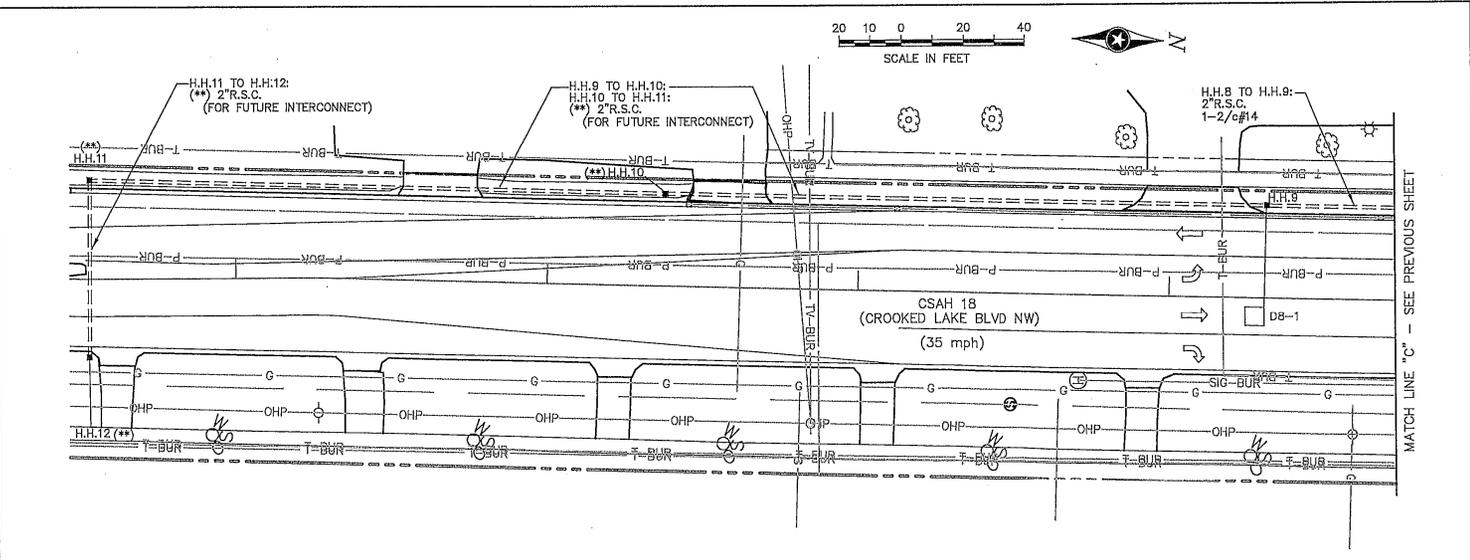
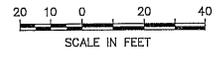


(7) PEDESTAL FOUNDATION (EVP)
12" PEDESTAL POLE (INCLUDES BASE, WIND COLLAR) (EVP)
ONE WAY EVP DETECTOR - MOUNT ON TOP OF SLIPRITER COLLAR (#2,5 EVP) (EVP)
EXTEND INTO H.H.15:
2" R.S.C. (EVP)
1-3/c#20 (EVP)

(1) PA100 POLE FOUNDATION
TYPE PA100-A-40-D40-9 (DAVIT AT 350')
LUMINAIRE-COBRAHEAD LED (SEE SPECIAL PROVISIONS)
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 10'
FROM END OF MAST ARM
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-X12 SIGN PANEL-ADJACENT TO 1-1
TYPE D SIGN PANEL (0-1)
ONE WAY EVP DETECTOR & LIGHT (#6,1) (EVP)
EXTEND INTO H.H.16:
3" R.S.C.
3-12/c#14
1-3/c#14 (EVP)
2-2/c#14
1-3/c#20 (EVP)
1-3/c#14 (LUM)
1-1/c#6 (GRD)

(2) PA100 POLE FOUNDATION
TYPE PA100-A-40-D30-9 (DAVIT AT 350')
LUMINAIRE-COBRAHEAD LED (SEE SPECIAL PROVISIONS)
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 10'
FROM END OF MAST ARM
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180'
R10-X12 SIGN PANEL-ADJACENT TO 3-1
TYPE D SIGN PANEL (0-2)
ONE WAY EVP DETECTOR & LIGHT (#6,3) (EVP)
EXTEND INTO H.H.3:
3" R.S.C.
2-12/c#14
1-3/c#14 (EVP)
1-3/c#20 (EVP)
1-3/c#14 (LUM)
1-1/c#6 (GRD)

(4) PAB5 POLE FOUNDATION
TYPE PAB5-A-25-D30-9 (DAVIT AT 350')
LUMINAIRE-COBRAHEAD LED (SEE SPECIAL PROVISIONS)
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 10'
FROM END OF MAST ARM
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 0° & 180'
R10-X12 SIGN PANEL-ADJACENT TO 5-1
TYPE D SIGN PANEL (0-3)
ONE WAY EVP DETECTOR & LIGHT (#2,5) (EVP)
EXTEND INTO H.H.8:
3" R.S.C.
2-12/c#14
1-4/c#14
1-3/c#14 (EVP)
1-3/c#20 (EVP)
1-3/c#14 (LUM)
1-1/c#6 (GRD)



(6) PA100 POLE FOUNDATION
TYPE PA100-A-40-D40-9 (DAVIT AT 350')
LUMINAIRE-COBRAHEAD LED (SEE SPECIAL PROVISIONS)
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 10'
FROM END OF MAST ARM
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-X12 SIGN PANEL-ADJACENT TO 7-1
TYPE D SIGN PANEL (0-4)
ONE WAY EVP DETECTOR & LIGHT (#4,7) (EVP)
EXTEND INTO H.H.13:
3" R.S.C.
3-12/c#14
1-3/c#14 (EVP)
2-2/c#14
1-3/c#20 (EVP)
1-3/c#14 (LUM)
1-1/c#6 (GRD)

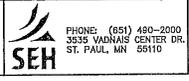
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S.P. 002-618-031
S.A.P. 114-020-048
S.A.P. 114-127-007

DRAWN BY: JMG
DESIGNER: JMG
CHECKED BY: JMG
DESIGN TEAM

1	JMG	12/13
2	JMG	10/14

NO.	BY	DATE	REVISIONS
REVISD TO SHOW MAST ARMS/POLES AS CONTRACTOR FURNISHED			
RECORD DRAWING			

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.
Date: May 13, 2013 Name: John M. Gray, PE Lic. No. 22457

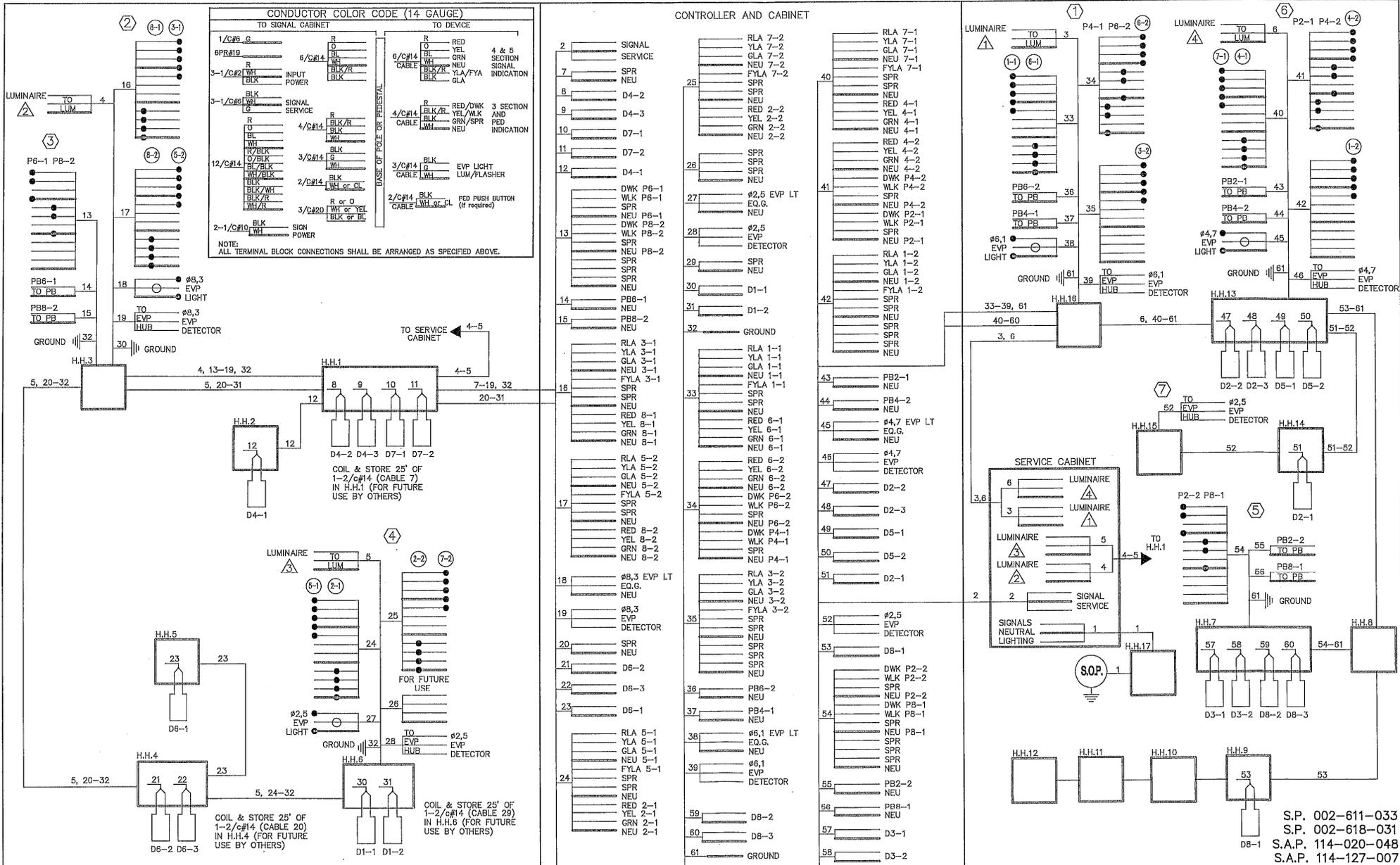


ANOKA COUNTY, MINNESOTA
CITY OF COON RAPIDS

TRAFFIC SIGNAL SYSTEM INTERSECTION LAYOUT
CSAH 11-NORTHDALE BOULEVARD AT
CSAH 18-CROOKED LAKE BOULEVARD

FILE NO. ANOKO 123594
SIGNAL SHEET 7 OF 11
70
98

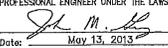
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DESIGNER:	JMG			
CHECKED BY:	JMG			
DESIGN TEAM				

RECORD DRAWING				
NO. BY DATE				
REVISIONS				

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


 Name: John H. Gray, PE
 Lic. No.: 22457

Date: May 13, 2013

ANOKA COUNTY, MINNESOTA
CITY OF COON RAPIDS

TRAFFIC SIGNAL SYSTEM
FIELD WIRING DIAGRAM
CSAH 11-NORTHDALE BOULEVARD AT
CSAH 18-CROOKED LAKE BOULEVARD

FILE NO. ANOKG 123594
SIGNAL SHEET 8 OF 11

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S.P. 002-611-033
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S.A.P. 114-127-007