

PVC LOOP DETECTORS			
NUMBER	SIZE (FT.)	LOCATION	FUNCTION
D1-1	2-8x6	15' & 45'	1
D1-2	2-8x6	0' & 30'	7
D2-1	8x6	180'	1
D4-1	8x6	120'	3,8
D4-2	2-8x6	0' & 15'	7
D4-3	2-8x6	0' & 15'	7
D5-1	2-8x6	15' & 45'	1
D5-2	2-8x6	0' & 30'	7
D6-1	8x6	180'	1
D8-1	8x6	120'	3,8
D8-2	2-8x6	0' & 15'	7
D8-3	2-8x6	15' & 45'	7
D8-4	2-8x6	0' & 30'	7

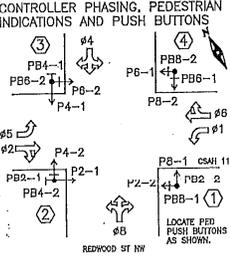
- LOOP DETECTORS FUNCTIONS:**
- 1) CALL AND EXTEND
 - 2) EXTEND ONLY
 - 3) DELAYED CALL
 - 4) IMMEDIATE EXTEND
 - 5) CARRY OVER (STRETCH)

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

- 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. 2565 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 WORK WITH ROAD CONSTRUCTION TO BE COMPLETED BY OTHERS AS PART OF ENTIRE PROJECT.
 - 12) (*) DENOTES ITEMS TO BE FURNISHED AND/OR INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (EMERGENCY VEHICLE PREEMPTION SYSTEM). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
 - 13) SEE DETAILS AND SPECIAL PROVISIONS REGARDING TYPE C AND TYPE D SIGNALS TO BE E & I BY CONTRACTOR (INCLUDED AS PART OF BID ITEM FOR "TRAFFIC CONTROL SIGNAL SYSTEM").
 - 14) CONTRACTOR SHALL COIL & STORE 25 FEET OF SPARE 1-2/c#14 CABLE IN HANDHOLES 4, 10 & 13 (FOR FUTURE APS SYSTEM BY OTHERS) (INCLUDED AS PART OF BID ITEM FOR "TRAFFIC CONTROL SIGNAL SYSTEM").
 - 15) (**) DENOTES CONDUIT AND HANDHOLES TO BE FURNISHED AND INSTALLED BY CONTRACTOR, AND TO BE MEASURED AND PAID FOR SEPARATELY FROM "TRAFFIC CONTROL SIGNAL SYSTEM" PAY ITEM. SEE STATEMENT OF ESTIMATED QUANTITIES & SPECIAL PROVISIONS.
 - 16) SEE SPECIAL PROVISIONS FOR INFORMATION REGARDING THE NEW CONTROLLER AND CABINET TO BE FURNISHED BY THE CONTRACTOR TO THE COUNTY TO REPLACE THE COUNTY PROVIDED CONTROLLER AND CABINET (INCLUDED AS PART OF BID ITEM FOR "TRAFFIC CONTROL SIGNAL SYSTEM").

- (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.
 4-12/c#14
 1-6/c#14
 2-3/c#14
 (*) 12-2/c#14
 (*) 4-3/c#20 (EVP)
 1-1/c#6 (GRD)
- CONTROLLER CABINET TO H.H.13:**
 2-4" R.S.C.
 4-12/c#14
 2-6/c#14
 (*) 2-3/c#14
 (*) 12-2/c#14
 (*) 3-3/c#20
 1-1/c#6 (GRD)
- STUB OUT 2-3" R.S.C. FROM CONTROLLER CABINET TO NORTH (THREAD & CAP BOTH ENDS - FOR FUTURE USE)**

- SERVICE CABINET TO H.H.1:**
 2" R.S.C.
 UNMETERED STREET LIGHT SERVICE
 1-3/c#14 (LUM)
- SERVICE CABINET TO H.H.13:**
 2" R.S.C.
 UNMETERED STREET LIGHT SERVICE
 1-3/c#14 (LUM)
- SERVICE CABINET TO NORTH:**
 2" R.S.C. STUB OUT (FOR SERVICE CABLE INSTALLATION BY OTHERS)
- STUB OUT 1"N.M.C. FROM CONTROLLER CABINET (FOR FUTURE PHONE LINE BY OTHERS)**
- CONTROLLER CABINET TO H.H.1 & H.H.13:**
 2" R.S.C.
 (FOR FUTURE INTERCONNECT BY OTHERS)



SEE NEXT SHEETS FOR MATCH LINES AND DETAILED POLE NOTES.

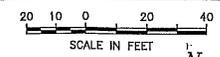
- SIGNAL SYSTEM OPERATIONS:**
- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
 - NORMAL OPERATION SHALL BE 8 PHASE, WITH PHASES 1 AND 6 BEING FLASHING YELLOW ARROW OPERATIONS FLASH BY TIME OF DAY.

LED SIGNAL FACES

SIGNAL FACE	ALL SIGNAL FACES SHALL BE 12"					
	R	Y	FYA	G	Y	G
1-1, 1-2	●	●	●	●	●	●
2-1, 2-2	●	●	●	●	●	●
4-1, 4-2, 4-3	●	●	●	●	●	●
5-1, 5-2	●	●	●	●	●	●
6-1, 6-2	●	●	●	●	●	●
8-1, 8-2, 8-3	●	●	●	●	●	●

FYA = FLASHING YELLOW ARROW.

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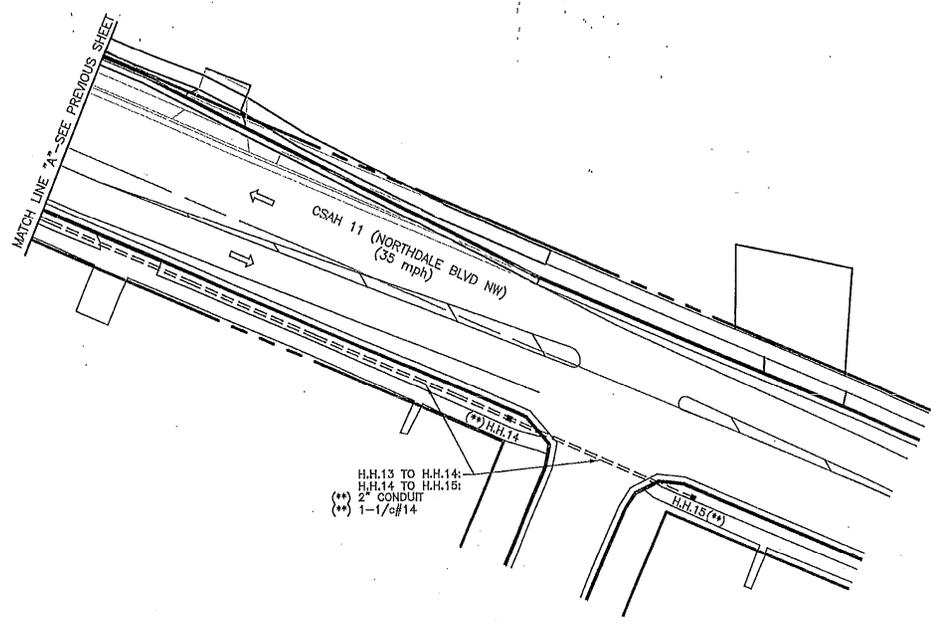


- ① PA100 POLE FOUNDATION
TYPE PA100-A-40-D30-B (DAVIT AT 350')
LUMINAIRE-LED (SEE SPECIAL PROVISIONS)
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'
FROM END OF MAST ARM
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180°
2-ANGLE MOUNT SETS C.D. PEDESTRIAN INDICATIONS-
POLE MOUNTED 90° & 180°
2-PEDESTRIAN PUSH BUTTONS
R10-X12 SIGN PANEL-ADJACENT TO 5-1
TYPE D SIGN PANEL (D-1)
(* INSTALL ONE WAY EVP DETECTOR AND LED CONFIRMATION LIGHT (FURNISHED BY COUNTY) (#2.5)
(* ONE WAY EVP MOUNTING HARDWARE (FOR COUNTY FURNISHED EVP DETECTOR AND CONFIRMATION LIGHT)
EXTEND INTO H.H.1:
3'R.S.C.
2-12/c#14
1-8/c#14
(* 1-3/c#14
2-2/c#14
(* 1-3/c#20
1-3/c#14 (LUM)
2-1/c#6 (GRD)

- ③ PA90 POLE FOUNDATION
TYPE PA90-A-35-D30-B (DAVIT AT 350')
LUMINAIRE-LED (SEE SPECIAL PROVISIONS)
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11'
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 (D-3)
(* INSTALL ONE WAY EVP DETECTOR AND LED CONFIRMATION LIGHT (FURNISHED BY COUNTY) (#6.1)
(* ONE WAY EVP MOUNTING HARDWARE (FOR COUNTY FURNISHED EVP DETECTOR AND CONFIRMATION LIGHT)
EXTEND INTO H.H.8:
3'R.S.C.
2-12/c#14
1-8/c#14
(* 1-3/c#14
2-2/c#14
(* 1-3/c#20
1-3/c#14 (LUM)
1-1/c#6 (GRD)

- ② PA90 POLE FOUNDATION
TYPE PA90-A-30
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
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 4-2
TYPE D SIGN PANEL (D-2)
(* INSTALL ONE WAY EVP DETECTOR AND LED CONFIRMATION LIGHT (FURNISHED BY COUNTY) (#4)-OVERHEAD
INSTALL ONE WAY EVP DETECTOR (FURNISHED BY COUNTY) (#6)-POLE MOUNTED 90°
(* ONE-WAY EVP MOUNTING HARDWARE (FOR BOTH COUNTY FURNISHED EVP DETECTORS AND FOR CONFIRMATION LIGHT)
EXTEND INTO H.H.3:
3'R.S.C.
2-12/c#14
(* 1-3/c#14
2-2/c#14
(* 2-3/c#20
1-1/c#6 (GRD)

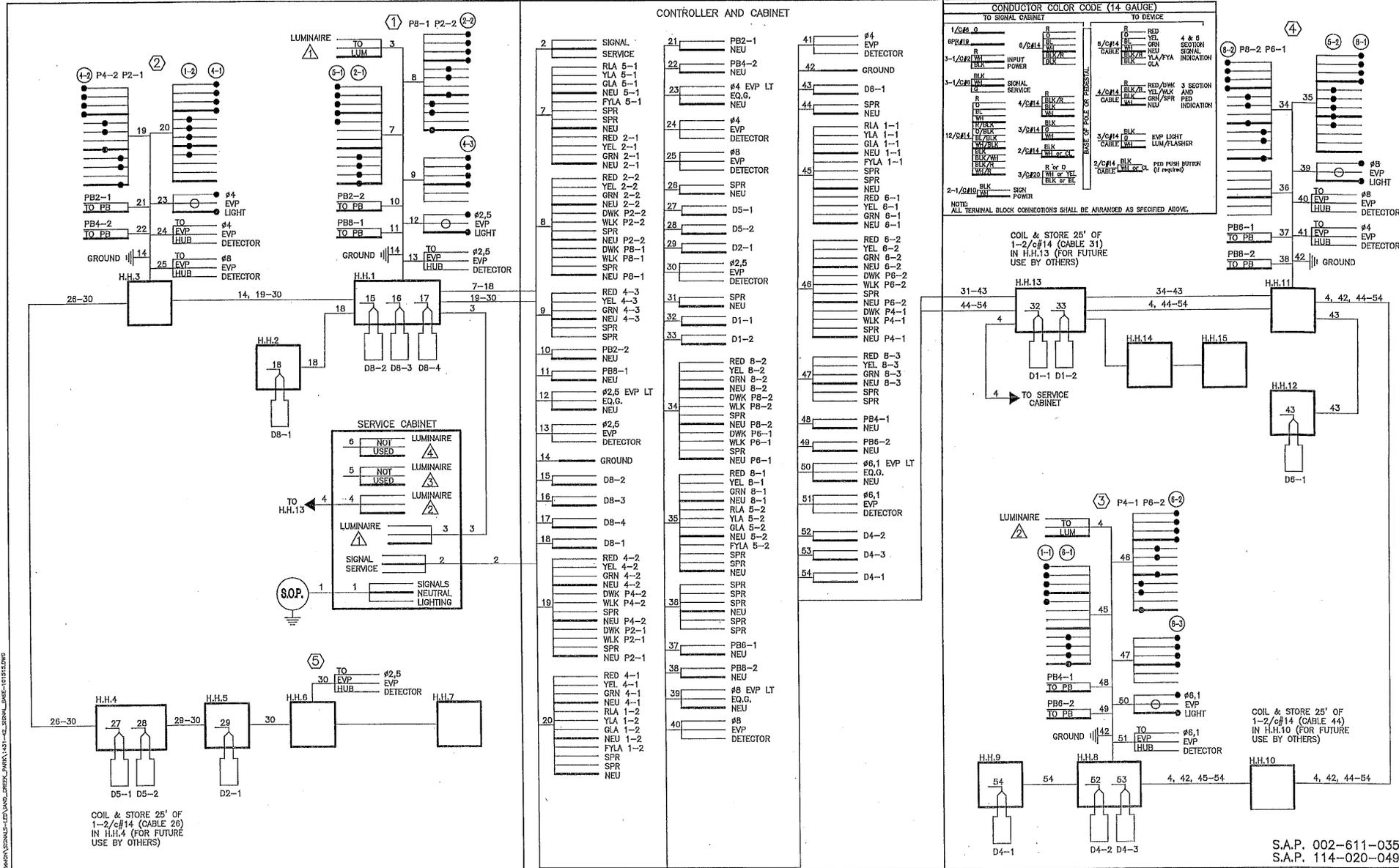
- ④ PA90 POLE FOUNDATION
TYPE PA90-A-30
1-ANGLE MOUNT SIGNAL-OVERHEAD AT 0'
2-ANGLE MOUNT SIGNALS-POLE MOUNTED 90° & 180°
2-ANGLE MOUNT SETS C.D. PEDESTRIAN INDICATIONS-
POLE MOUNTED 90° & 180°
2-PEDESTRIAN PUSH BUTTONS
R10-12 SIGN PANEL-ADJACENT TO 8-2
TYPE D SIGN PANEL (D-4)
(* INSTALL ONE WAY EVP DETECTOR AND LED CONFIRMATION LIGHT (FURNISHED BY COUNTY) (#6)-OVERHEAD
(* INSTALL ONE WAY EVP DETECTOR (FURNISHED BY COUNTY) (#4)-POLE MOUNTED 90°
(* ONE WAY EVP MOUNTING HARDWARE (FOR BOTH COUNTY FURNISHED EVP DETECTORS AND FOR CONFIRMATION LIGHT)
EXTEND INTO H.H.11:
3'R.S.C.
2-12/c#14
1-8/c#14
(* 1-3/c#14
2-2/c#14
(* 2-3/c#20
2-1/c#6 (GRD)



S.A.P. 002-611-035
S.A.P. 114-020-049

DRAWN BY: JMG		DESIGNED BY: JMG		CHECKED BY: JMG		DATE: 10/15/11		NO. BY DATE		REVISIONS		I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA. Date: October 15, 2011 Signature: [Signature] License No. 223302		COON RAPIDS, MINNESOTA ANOKA COUNTY TRAFFIC CONTROL SIGNAL SYSTEM INTERSECTION LAYOUT CSAH 11 (NORTHDALE BLVD NW) AT REDWOOD ST NW/PARK ENTRANCE		FILE NO.: 000AR 129989 SIGNAL SHEET 7 OF 8 78 / 100	
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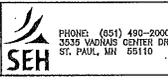
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DESIGNER:	JMG	
CHECKED BY:	JMG	
DATE:		
NO.	BY	DATE

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 H. Gray, P.E.
 License No. 22457
 Date: October 15, 2015



COON RAPIDS, MINNESOTA, ANOKA COUNTY

TRAFFIC CONTROL SIGNAL SYSTEM
 FIELD WIRING DIAGRAM
 CSAH 11 (NORTHDALE BLVD NW)
 AT REDWOOD ST NW/PARK ENTRANCE

FILE NO. COONR. 128989
 SHEET 80 OF 100
 9.08.09

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 S.A.P. 114-020-049