

NOTES:

- 1) LOCATION OF FOUNDATIONS, LOOP DETECTORS, AND HANDHOLES SHALL BE DETERMINED IN FIELD BY ENGINEER.
- 2) SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
- 3) NEW 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 & SHALL BE FURNISHED & INSTALLED BY CONTRACTOR.
- 5) EACH SIGNAL FACE WILL HAVE BACKGROUND SHIELD.
- 6) EACH PEDESTRIAN INDICATION SHALL BE A ONE SECTION COUNTDOWN TIMER "HAND/WALKING PERSON" INDICATION. SEE SPECIAL PROVISIONS.
- 7) ALL VEHICLE SIGNAL INDICATIONS AND ALL PEDESTRIAN SIGNAL INDICATIONS WILL BE LED.
- 8) SEE SPECIAL PROVISIONS AND DETAILS REGARDING SIGNING, STRIPING, AND CONCRETE WALK TO BE FURNISHED & INSTALLED BY THE CONTRACTOR (SEPARATE FROM ITEM NO. 2565 FOR THIS SIGNAL SYSTEM).
- 9) ALL MAST ARM POLE MOUNTED AND PEDESTAL POLE MOUNTED VEHICLE AND PEDESTRIAN SIGNAL INDICATIONS WILL BE MOUNTED USING COUNTY FURNISHED ONE-WAY SIGNAL HEAD MOUNTS. SEE DETAILS AND SPECIAL PROVISIONS.
- 10) A 3/4" HALF COUPLING, 3/4" PIPE NIPPLE & CONDUIT OUTLET BODY WILL BE FURNISHED AND INSTALLED APPROXIMATELY 6 FEET FROM THE END OF MAST ARMS 3, 5 AND 6; AND APPROX. 18' FROM THE END OF MAST ARM 5 (FOR EVP).
- 11) SEE SPECIAL PROVISIONS & ESTIMATED QUANTITIES REGARDING INPLACE SIGNAL SYSTEM TO BE REMOVED AND SALVAGED BY CONTRACTOR (SEPARATE FROM ITEM NO. 2565).
- 12) CONTRACTOR SHALL MAINTAIN OPERATION OF INPLACE SIGNAL SYSTEM AT ALL TIMES, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- 13) CONTRACTOR SHALL REVISE INPLACE HANDHOLES 3, 5 & 14 TO HAVE NEW METAL FRAMES AND COVERS PER MN/DOT STANDARD PLATE 8114A (REMOVE INPLACE CONCRETE COVERS).
- 14) F & I = MATERIALS & ELECTRICAL EQUIPMENT TO BE FURNISHED AND INSTALLED BY CONTRACTOR AS PART OF THIS PROJECT.
- 15) (EVP) DENOTES ITEMS TO BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNDER ITEM NO. 2565 (EMERGENCY VEHICLE PREEMPTION SYSTEM). SEE ESTIMATED QUANTITIES AND SPECIAL PROVISIONS.
- 16) CONTRACTOR SHALL COORDINATE ALL TRAFFIC SIGNAL INSTALLATION WORK WITH ABLE STREET ROAD WORK TO BE COMPLETED BY OTHERS AS PART OF A SEPARATE CITY OF SPRING LAKE PARK PROJECT.

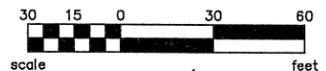
LOOP DETECTORS FUNCTIONS:

- 1) CALL AND EXTEND
- 2) CALL ONLY
- 3) EXTEND ONLY
- 4) CALL ONLY DENSITY
- 5) DELAYED CALL ONLY
- 6) DELAYED CALL ONLY DENSITY
- 7) DELAYED CALL- IMMEDIATE EXTEND
- 8) CARRY OVER (STRETCH)
- 9) ADVISORY DETECTOR
- 10) SAMPLING DETECTOR
- 11) SPECIAL DETECTOR (COUNTING)

F & I NMC LOOP DETECTORS

NUMBER	SIZE (FT.)	LOCATION	FUNCTION
**D1-1	6x6	40'	1
**D1-2	6x6	10'	1
**D2-1	6x6	400'	1
**D2-2	6x6	400'	1
D3-1	6x6	90'	3,8
D3-2	6x6	90'	3,8
D3-3	2-6x12	AS SHOWN	7
D3-4	2-6x6	AS SHOWN	7
D3-5	2-6x6	AS SHOWN	7
D4-1	6x6	110'	3,8
D4-2	6x10&6x6	AS SHOWN	7
D4-3	2-6x6	AS SHOWN	7
D4-4	2-6x6	AS SHOWN	7
D4-5	6x6	5'	7
**D5-1	6x6	40'	1
**D5-2	6x6	10'	1
**D6-1	6x6	400'	1
**D6-2	6x6	400'	1
**D1	6x6	50'	11
**D2	6x6	50'	11
**D3	6x6	50'	11
**D4	6x6	50'	11

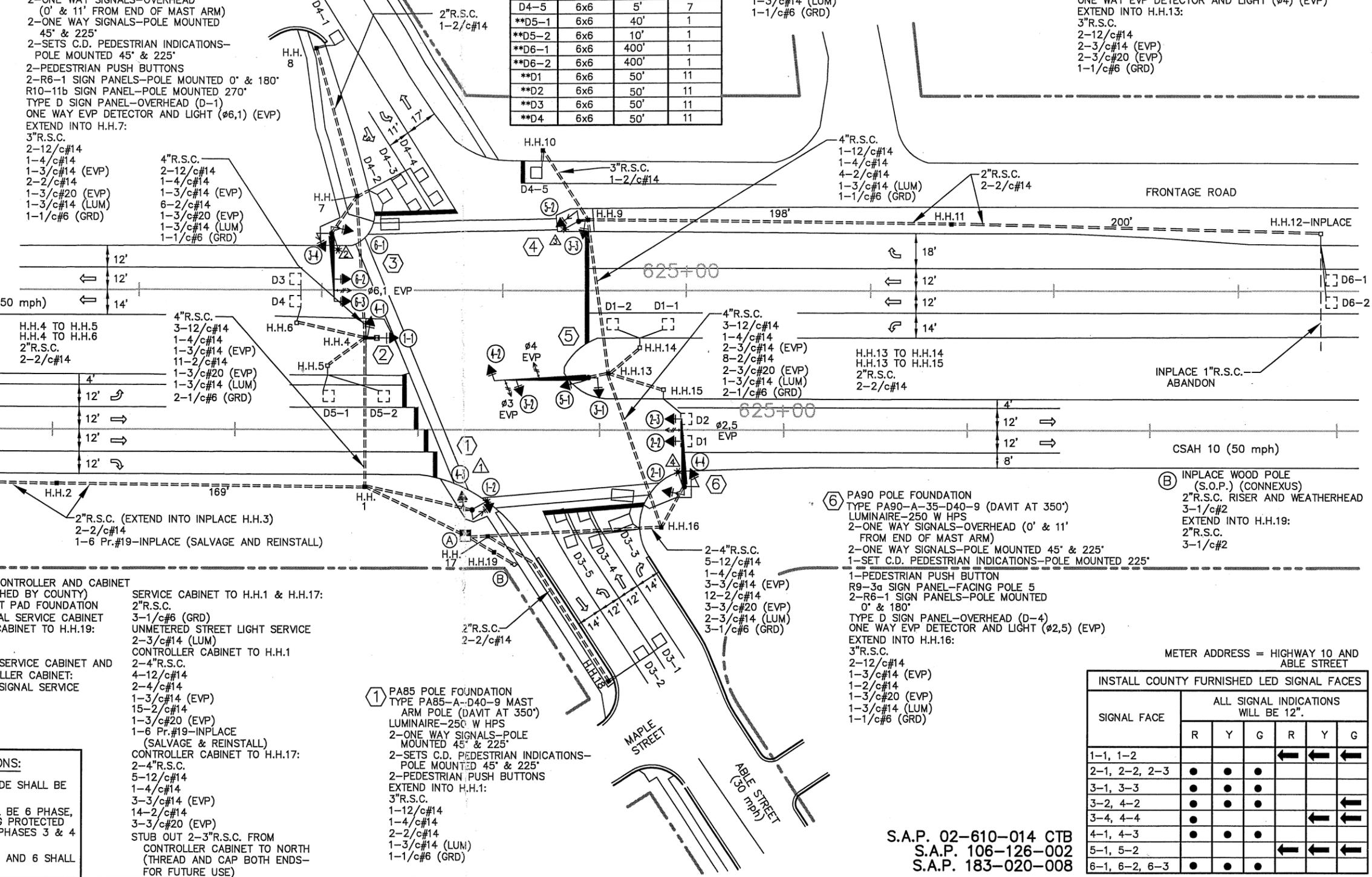
NOTE: LOCATION=DISTANCE FROM STOP BAR TO FRONT OF DETECTOR.
 ** = INPLACE NMC LOOP DETECTOR-REUSE INPLACE AND MAKE OPERATIONAL.



③ PA90 POLE FOUNDATION
 TYPE PA90-A-35-D40-9 (DAVIT AT 350')
 LUMINAIRE-250 W HPS
 2-ONE WAY SIGNALS-OVERHEAD (0' & 11' FROM END OF MAST ARM)
 2-ONE WAY SIGNALS-POLE MOUNTED 45° & 225°
 2-SETS C.D. PEDESTRIAN INDICATIONS-POLE MOUNTED 45° & 225°
 2-PEDESTRIAN PUSH BUTTONS
 2-R6-1 SIGN PANELS-POLE MOUNTED 0° & 180°
 R10-11b SIGN PANEL-POLE MOUNTED 270°
 TYPE D SIGN PANEL-OVERHEAD (D-1)
 ONE WAY EVP DETECTOR AND LIGHT (Ø6,1) (EVP)
 EXTEND INTO H.H.7:
 3"R.S.C.
 2-12/c#14
 1-4/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)

④ PA85 POLE FOUNDATION
 TYPE PA85-A-D40-9
 MAST ARM POLE (DAVIT AT 350')
 LUMINAIRE-250 W HPS
 2-ONE WAY SIGNALS-POLE MOUNTED 45° & 225°
 1-SET C.D. PEDESTRIAN INDICATIONS-POLE MOUNTED 45°
 1-PEDESTRIAN PUSH BUTTON
 R9-3a SIGN PANEL-FACING POLE 5
 R10-11b SIGN PANEL-POLE MOUNTED 180°
 EXTEND INTO H.H.9:
 3"R.S.C.
 1-12/c#14
 1-4/c#14
 4-2/c#14
 1-3/c#14 (LUM)
 1-3/c#14 (LUM)
 1-1/c#6 (GRD)

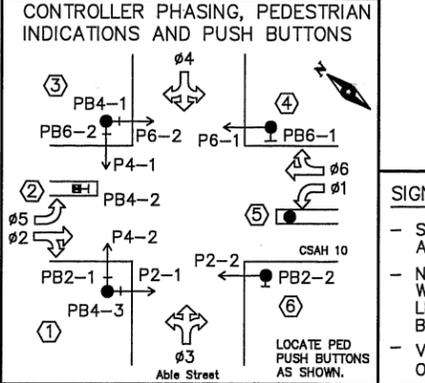
⑤ PA100 POLE FOUNDATION
 TYPE PA100-A-50
 2-ONE WAY SIGNALS-OVERHEAD (0' & 12' FROM END OF MAST ARM)
 2-ONE WAY SIGNALS-POLE MOUNTED 45° & 225°
 R4-7 SIGN PANEL-POLE MOUNTED 0°
 2-TYPE D SIGN PANELS-OVERHEAD (D-2,3)
 ONE WAY EVP DETECTOR AND LIGHT (Ø3) (EVP)
 ONE WAY EVP DETECTOR AND LIGHT (Ø4) (EVP)
 EXTEND INTO H.H.13:
 3"R.S.C.
 2-12/c#14
 2-3/c#14 (EVP)
 2-3/c#20 (EVP)
 1-1/c#6 (GRD)



TO SIGNAL SYSTEM AT CSAH 10/JEFFERSON STREET

② PEDESTAL FOUNDATION
 15' PEDESTAL POLE AND BASE
 TYPE 2A
 1-PEDESTRIAN PUSH BUTTON
 R4-7 SIGN PANEL-POLE MOUNTED
 EXTEND INTO H.H.4:
 3"R.S.C.
 1-12/c#14
 1-2/c#14
 1-1/c#6 (GRD)

① INSTALL CONTROLLER AND CABINET (FURNISHED BY COUNTY)
 EQUIPMENT PAD FOUNDATION
 BBV SIGNAL SERVICE CABINET
 SERVICE CABINET TO H.H.19:
 2"R.S.C.
 3-1/c#2
 BETWEEN SERVICE CABINET AND CONTROLLER CABINET:
 METERED SIGNAL SERVICE
 2"R.S.C.
 3-1/c#6



SIGNAL SYSTEM OPERATIONS:

- SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 6 PHASE, WITH PHASES 1 & 5 BEING PROTECTED LEFT TURN PHASES, AND PHASES 3 & 4 BEING SPLIT PHASES.
- VEHICLE SIGNAL PHASES 2 AND 6 SHALL OPERATE ON RECALL.

METER ADDRESS = HIGHWAY 10 AND ABLE STREET

SIGNAL FACE	ALL SIGNAL INDICATIONS WILL BE 12".					
	R	Y	G	R	Y	G
1-1, 1-2				←	←	←
2-1, 2-2, 2-3	•	•	•			
3-1, 3-3	•	•	•			
3-2, 4-2	•	•	•			←
3-4, 4-4	•	•	•	←	←	
4-1, 4-3	•	•	•			
5-1, 5-2				←	←	←
6-1, 6-2, 6-3	•	•	•			

DESIGN TEAM	1	JMG	12/10
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
 Name: John M. Gray, PE
 Lic. No. 22457
 Date: January 19, 2016

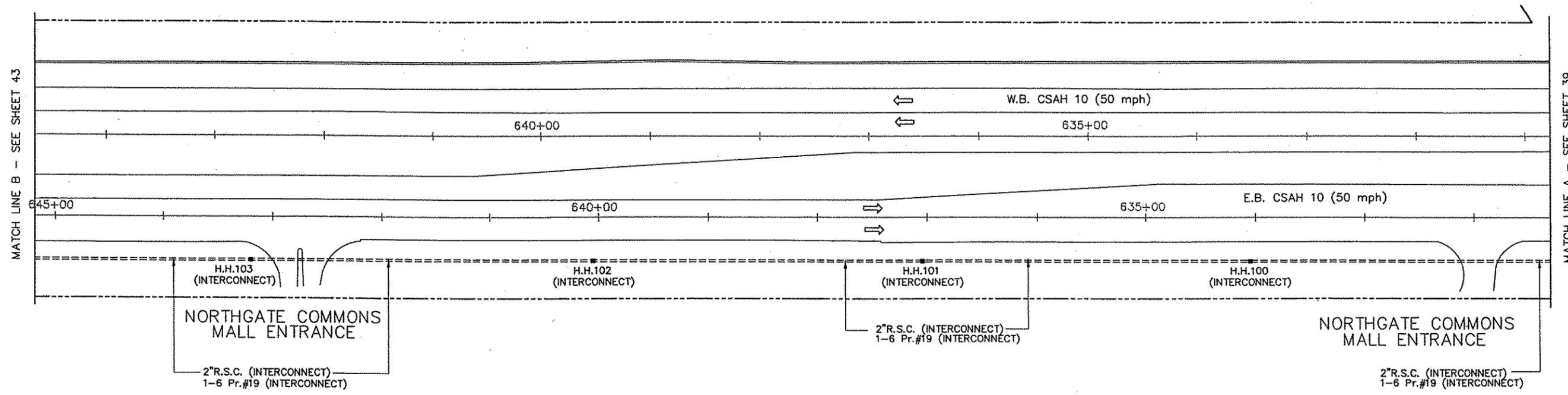


ANOKA COUNTY, MINNESOTA
 CITIES OF BLAINE AND SPRING LAKE PARK

TRAFFIC SIGNAL SYSTEM INTERSECTION LAYOUT
 CSAH 10 AT ABLE STREET

FILE NO.	ANOKC0101.00
DATE	01/19/2010
8	12

S.A.P. 02-610-014 CTB
 S.A.P. 106-126-002
 S.A.P. 183-020-008



S.A.P. 02-610-13

DRAWN BY:	GN			
DESIGNER:	JMG			
CHECKED BY:	JMG			
DESIGN TEAM		NO.	BY	DATE
				REVISIONS

©SHORT ELLIOTT HENDRICKSON 1998. ANY USE OR REUSE OF THIS PLAN/DRAWING AND THE CORRESPONDING COMPUTER AIDED DESIGN/DRAFTING FILES WITHOUT THE EXPRESS WRITTEN CONSENT OF SEH, IS PROHIBITED. SEH SHALL NOT BE RESPONSIBLE FOR ANY UNAUTHORIZED USE OR REUSE OF THESE MATERIALS, OR DAMAGES RESULTING THEREFROM.

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.

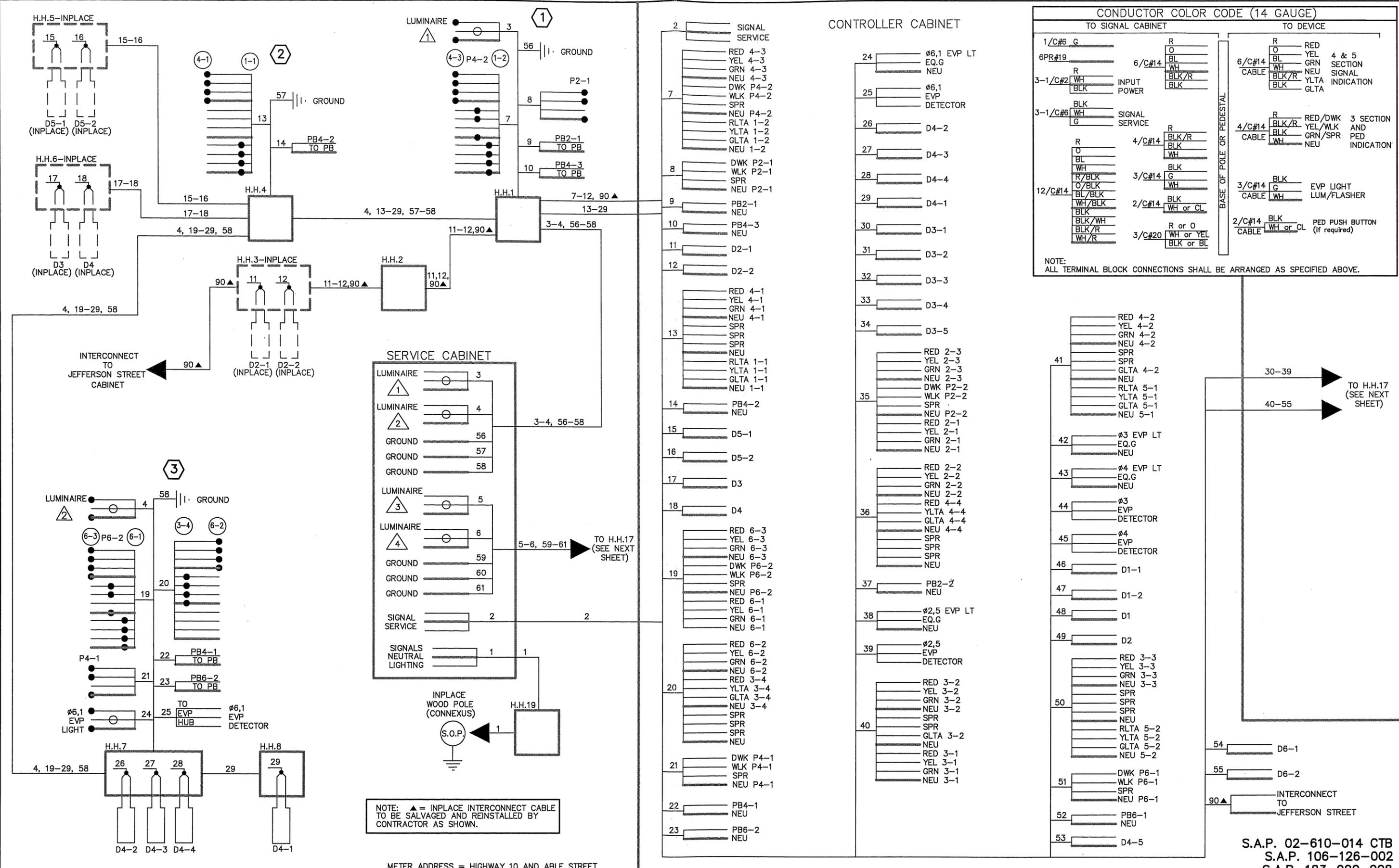
John M. [Signature]
 Date: June 15, 2001 Lic. No. 22457



**ANOKA COUNTY,
MINNESOTA**

**TRAFFIC CONTROL INTERCONNECT
(ABLE TO JEFFERSON)**

FILE NO.	AANOKC0101	42
DATE	06/15/01	84



NOTE: ▲ = INPLACE INTERCONNECT CABLE TO BE SALVAGED AND REINSTALLED BY CONTRACTOR AS SHOWN.

METER ADDRESS = HIGHWAY 10 AND ABLE STREET

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

NO.	BY	DATE	REVISIONS
1	JMG	12/10	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.

JMG
 Name: John M. Gray, PE
 Lic. No. 22457
 Date: January 19, 2010

SEH
 PHONE: (651) 490-2000
 3535 VADNAIS CENTER DR.
 ST. PAUL, MN 55110

ANOKA COUNTY,
 MINNESOTA
 CITIES OF BLAINE
 AND SPRING LAKE PARK

TRAFFIC SIGNAL SYSTEM
 FIELD WIRING DIAGRAM
 CSAH 10 AT ABLE STREET

FILE NO.
 ANOKC0101.00
 DATE
 01/19/2010
 9
 12

