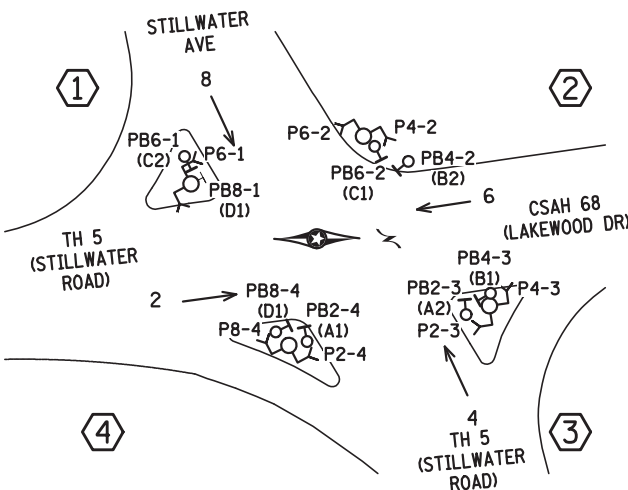


PLOTTED/REVISED: 10-APR-2023

PLOT NAME: 07 of 10  
 FILENAME: Projects\DM\_PROJ\005\0000\Traffic\Signal\75.5 TH5 @ (68) STILLWATER-LAKEWOOD IT-34979-PENDING\IT-34979\_sgl

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



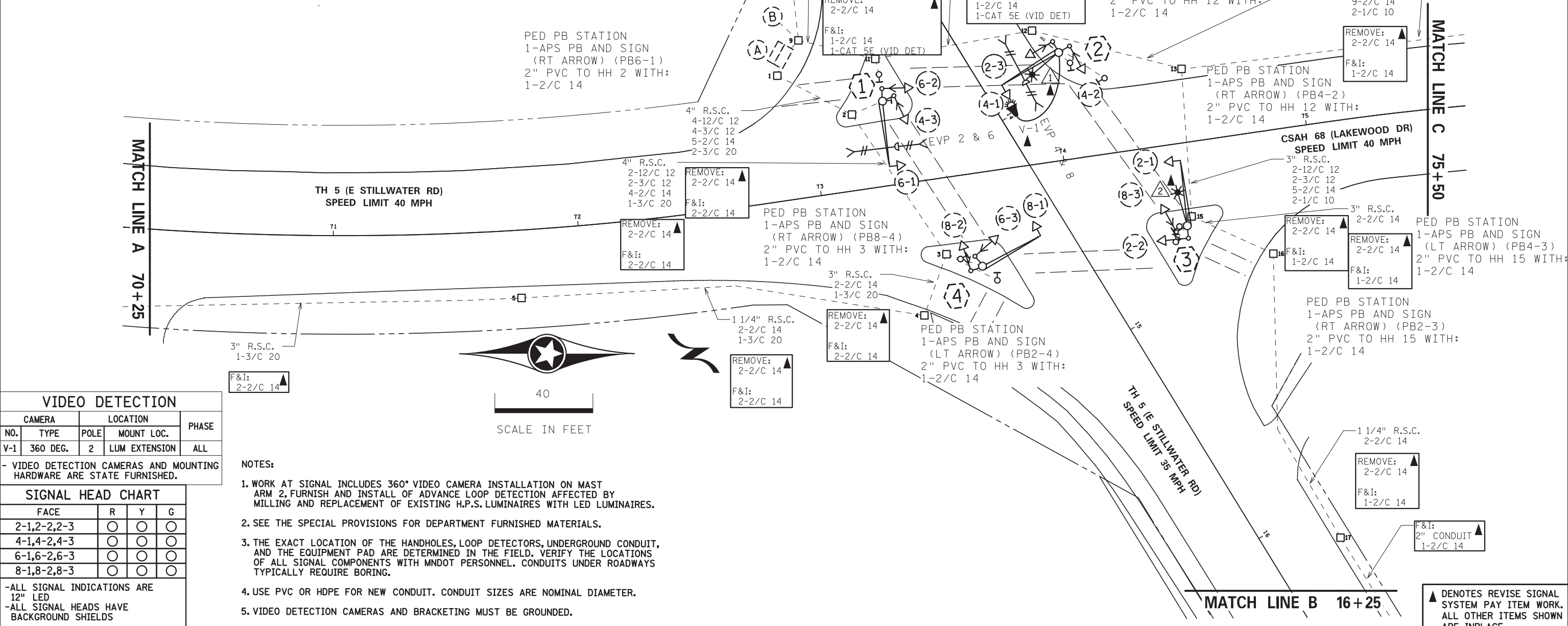
SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 4 PHASE.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

LOOP DETECTOR CHART

NUMBER	SIZE (FT)	LOCATION	TYPE
D2-1 D2-2	6X6	375'	PVC
<del>D2-3 D2-4</del>	<del>2-6X6</del>	<del>5'&amp;20'</del>	<del>PVC</del>
D4-1	6X6	275'	PVC
<del>D4-2</del>	<del>6X6</del>	<del>180'</del>	<del>PVC</del>
<del>D4-3 D4-4</del>	<del>2-6X6</del>	<del>5'&amp;20'</del>	<del>SAWN</del>
D6-1 D6-2	6X6	180'	PVC
<del>D6-3</del>	<del>2-6X6</del>	<del>5'&amp;20'</del>	<del>PVC</del>
D8-1 D8-2	6X6	180'	PVC
<del>D8-3 D8-4</del>	<del>2-6X6</del>	<del>5'&amp;20'</del>	<del>PVC</del>



VIDEO DETECTION

CAMERA		LOCATION		PHASE
NO.	TYPE	POLE	MOUNT LOC.	
V-1	360 DEG.	2	LUM EXTENSION	ALL

- VIDEO DETECTION CAMERAS AND MOUNTING HARDWARE ARE STATE FURNISHED.

SIGNAL HEAD CHART

FACE	R	Y	G
2-1,2-2,2-3	○	○	○
4-1,4-2,4-3	○	○	○
6-1,6-2,6-3	○	○	○
8-1,8-2,8-3	○	○	○

- ALL SIGNAL INDICATIONS ARE 12" LED
- ALL SIGNAL HEADS HAVE BACKGROUND SHIELDS

NOTES:

1. WORK AT SIGNAL INCLUDES 360° VIDEO CAMERA INSTALLATION ON MAST ARM 2, FURNISH AND INSTALL OF ADVANCE LOOP DETECTION AFFECTED BY MILLING AND REPLACEMENT OF EXISTING H.P.S. LUMINAIRES WITH LED LUMINAIRES.
2. SEE THE SPECIAL PROVISIONS FOR DEPARTMENT FURNISHED MATERIALS.
3. THE EXACT LOCATION OF THE HANDHOLES, LOOP DETECTORS, UNDERGROUND CONDUIT, AND THE EQUIPMENT PAD ARE DETERMINED IN THE FIELD. VERIFY THE LOCATIONS OF ALL SIGNAL COMPONENTS WITH MNDOT PERSONNEL. CONDUITS UNDER ROADWAYS TYPICALLY REQUIRE BORING.
4. USE PVC OR HDPE FOR NEW CONDUIT. CONDUIT SIZES ARE NOMINAL DIAMETER.
5. VIDEO DETECTION CAMERAS AND BRACKETING MUST BE GROUNDED.

BY	DATE	REVISIONS

SYSTEM ID: 1734979 T.E. 79796  
 METER ADDRESS: 2372 STILLWATER ROAD  
 OLD SYSTEM ID: 20121

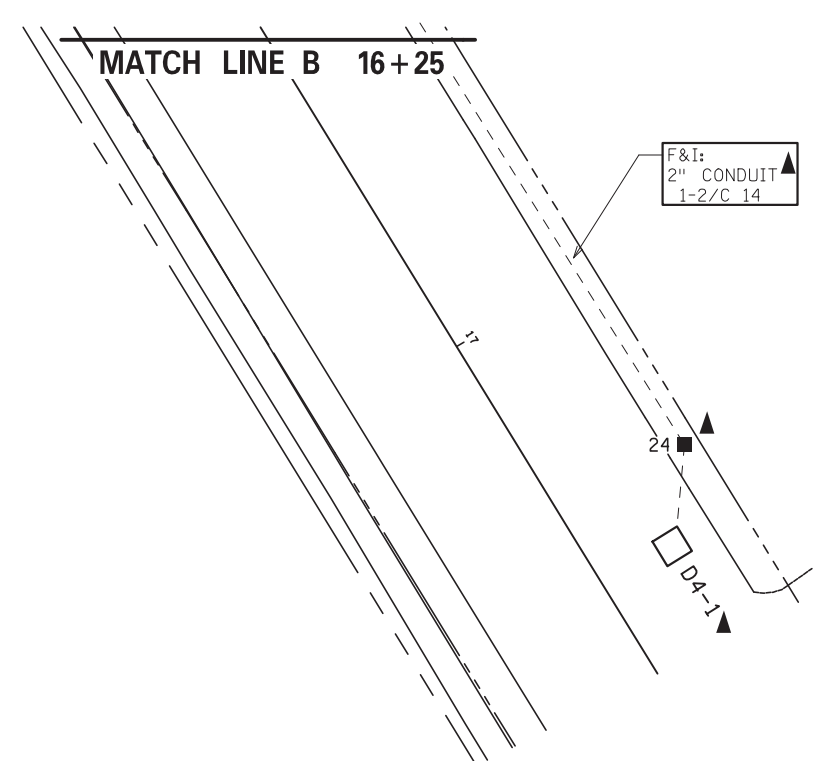
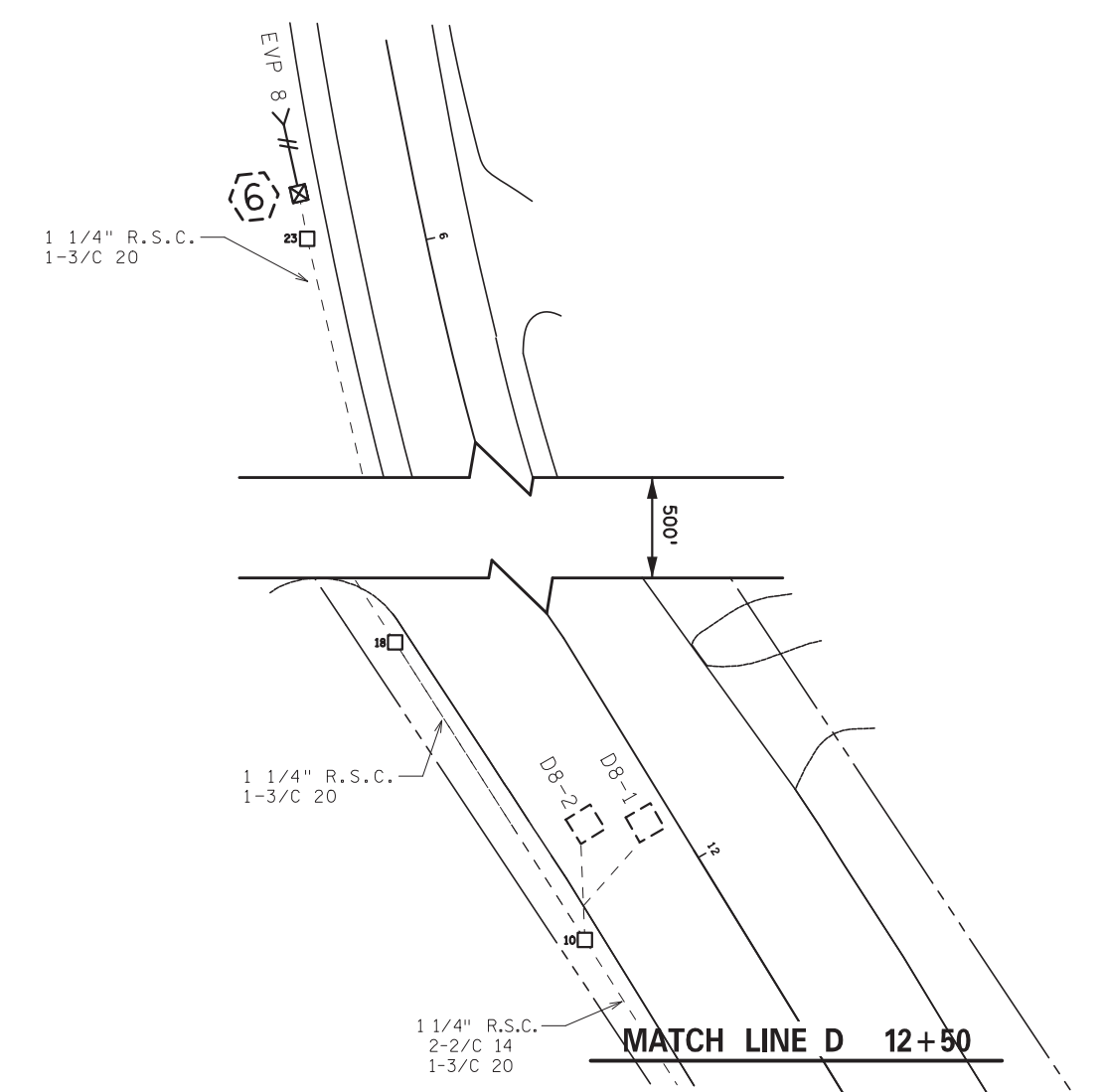
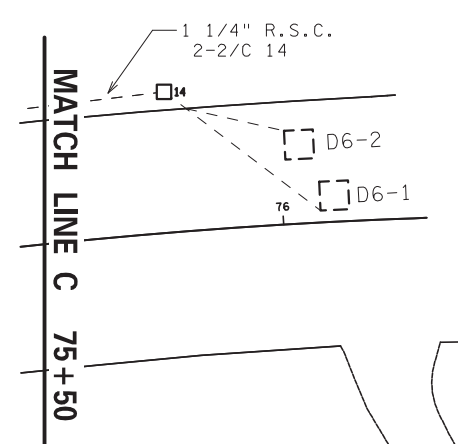
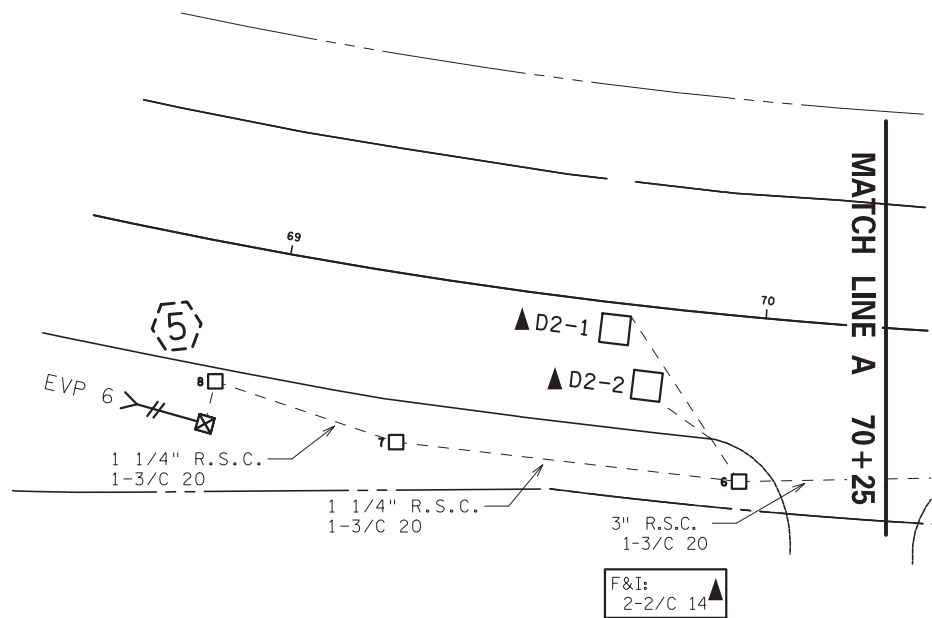
INTERSECTION LAYOUT  
 REVISE SIGNAL SYSTEM B  
 TH 5 (STILLWATER RD) @  
 CSAH 68 (LAKEWOOD DR)/STILLWATER AVE  
 IN MAPLEWOOD, RAMSEY COUNTY

S.A.P. NO. 062-665-062,164-010-082 S.P. 062-664-009,164-010-075  
 DRAWN BY: MJB CKD BY: DATE: 12/09/22  
 CERTIFIED BY: *Gregory Ken* LIC. NO. 26829 DATE: 12/14/22  
 LICENSED PROFESSIONAL ENGINEER  
 STATE PROJ. NO. 6229-37 (T.H.5) SHEET NO. SG7 OF SG10 SHEETS

▲ DENOTES REVISE SIGNAL SYSTEM PAY ITEM WORK. ALL OTHER ITEMS SHOWN ARE IN PLACE.

PLOTTED/REVISED: 10-APR-2023

PLOT NAME: 08 of 10  
 FILENAME: Projects\DM\_FRO\005\0000\Traffic\Signal\TH5 @ (68) STILLWATER-LAKEWOOD IT\34979\FENDING\IT\34979\_sgl



▲ DENOTES REVISE SIGNAL SYSTEM PAY ITEM WORK. ALL OTHER ITEMS SHOWN ARE INPLACE.

BY	DATE	REVISIONS

SYSTEM ID: 1734979 T.E. 79796  
 METER ADDRESS: 2372 STILLWATER ROAD  
 OLD SYSTEM ID: 20121

MATCHLINES  
 REVISE SIGNAL SYSTEM B  
 TH 5 (STILLWATER RD) @  
 CSAH 68 (LAKEWOOD DR)/STILLWATER AVE  
 IN MAPLEWOOD, RAMSEY COUNTY

S.A.P. NO. 062-665-062,164-010-082 S.P. 062-664-009,164-010-075 DRAWN BY: MJB CKD BY: DATE: 12/09/22  
 CERTIFIED BY *Gregory Ken* LIC. NO. 26829 DATE: 12/14/22  
 STATE PROJ. NO. 6229-37 (T.H.5) SHEET NO. S08 OF S010 SHEETS

PLOTTED/REVISED: 10-APR-2023

PLOT NAME: 09 of 10  
FILENAME: Projects\DM\_FRO\S005\00001\Traffic\Signals\75.5 TH5 @ (68) STILLWATER-LAKEWOOD IT-34979\FENDING\IT-34979.sgl

(A) CONTROLLER AND CABINET  
CABINET FOUNDATION  
EXTEND INTO HH 1:  
4" I.M.C.  
4-12/C 12  
4-3/C 12  
2-3/C 20  
5-2/C 14

REMOVE: ▲  
2-2/C 14

F&I:  
2-2/C 14

EXTEND INTO HH 9:  
4" I.M.C.  
4-12/C 12  
4-3/C 12  
13-2/C 14  
2-3/C 20  
2-1/C 6  
1-1/C 6 BR. GR.  
1" R.S.C. STUB OUT AND CAP

REMOVE: ▲  
2-2/C 14

F&I:  
1-2/C 14  
1-CAT 5E (VID DET)

(6) ONE WAY EVP DETECTOR  
MOUNTED ON WOOD POLE  
EXTEND INTO HH 23  
1 1/4" R.S.C.  
1-3/C 20

(1) TYPE P90-A-20  
P90 POLE FOUNDATION  
ONE WAY SIGNAL-OVERHEAD  
TYPE 20C POLE MOUNTED 270°  
2-C.D. PED HEADS  
1-APS PB AND SIGN (PB8-1) (LT ARROW)

TWO WAY EVP DETECTOR AND LIGHTS  
EXTEND INTO HH 2  
3" I.M.C.  
2-12/C 12  
4-3/C 12  
1-3/C 20

(2) TYPE P90-A-25-D40-9 (DAVIT AT 350°)  
P90 POLE FOUNDATION  
ONE WAY SIGNAL-OVERHEAD  
TYPE 20C POLE MOUNTED 270°  
2-C.D. PED HEADS

LUMINAIRE-200 WATT H.P.S.  
TWO WAY EVP DETECTOR AND LIGHTS  
EXTEND INTO HH 12  
3" I.M.C.  
2-12/C 12  
3-3/C 12  
1-3/C 20  
2-1/C 10 (LUM)

REMOVE: ▲  
LUMINAIRE-200 WATT H.P.S.  
FURNISH AND INSTALL:  
LED LUMINAIRE  
1-CAT 5E IN 3" I.M.C.  
1-7/16" GROUNDING BRAID

INSTALL:  
1-360° VIDEO DETECTION CAMERA W/  
EXTENSION ABOVE LUMINAIRE (V-1)  
(STATE FURNISHED)

(B) 45' WOOD POLE  
SERVICE EQUIPMENT  
EXTEND INTO HH 9  
2" R.S.C.  
2-1/C 6  
1-1/C 6 BR. GR.  
4-1/C 10 (LUM)

(4) TYPE P90-A-30-D40-9 (DAVIT AT 350°)  
P90 POLE FOUNDATION  
ONE WAY SIGNAL-OVERHEAD  
TYPE 20C POLE MOUNTED 270°  
2-C.D. PED HEADS

EXTEND INTO HH 3  
3" I.M.C.  
2-12/C 12  
1-3/C 12

(3) TYPE P90-A-20  
P90 POLE FOUNDATION  
ONE WAY SIGNAL-OVERHEAD  
TYPE 20C POLE MOUNTED 270°  
2-C.D. PED HEADS

LUMINAIRE-200 WATT H.P.S.  
EXTEND INTO HH 15  
3" I.M.C.  
2-12/C 12  
1-3/C 12  
2-1/C 10 (LUM)

REMOVE: ▲  
LUMINAIRE-200 WATT H.P.S.  
FURNISH AND INSTALL:  
LED LUMINAIRE

(5) ONE WAY EVP DETECTOR  
PEDESTAL POLE AND BASE  
PEDESTAL FOUNDATION  
EXTEND INTO HH 8  
1 1/4" R.S.C.  
1-3/C 20

▲ DENOTES REVISE SIGNAL  
SYSTEM PAY ITEM WORK.  
ALL OTHER ITEMS SHOWN  
ARE INPLACE.

BY	DATE	REVISIONS

SYSTEM ID: 1734979 T.E. 79796  
METER ADDRESS: 2372 STILLWATER ROAD  
OLD SYSTEM ID: 20121

POLE NOTES  
REVISE SIGNAL SYSTEM B  
TH 5 (STILLWATER RD) @  
CSAH 68 (LAKEWOOD DR)/STILLWATER AVE  
IN MAPLEWOOD, RAMSEY COUNTY

S.A.P. NO. 062-665-062,164-010-082 S.P. 062-664-009,164-010-075 DRAWN BY: MJB CKD BY: DATE: 12/09/22  
CERTIFIED BY *Gregory Ken* LIC. NO. 26829 DATE: 12/14/22  
STATE PROJ. NO. 6229-37 (T.H.5) SHEET NO. SG9 OF SG10 SHEETS



PLOTTED/REVISED: 2/14/2014

DISTRICT #: METRO  
I/PLOT NAME: T2012LMLWR\_sgl  
PATH & FILENAME: IP\_PWP-00779659.T2012LMLWR\_sgl.dgn

SIGNAL HEAD CHART				
FACE	R	Y	G	
2-1 2-2 2-3	○	○	○	
4-1 4-2 4-3	○	○	○	
6-1 6-2 6-3	○	○	○	
8-1 8-2 8-3	○	○	○	

-ALL SIGNAL INDICATIONS ARE 12" LED  
-ALL SIGNAL HEADS HAVE BACKGROUND SHIELDS

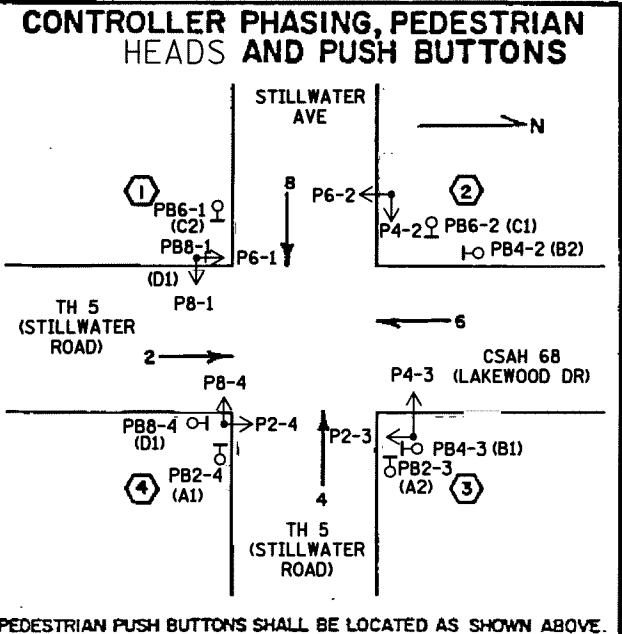
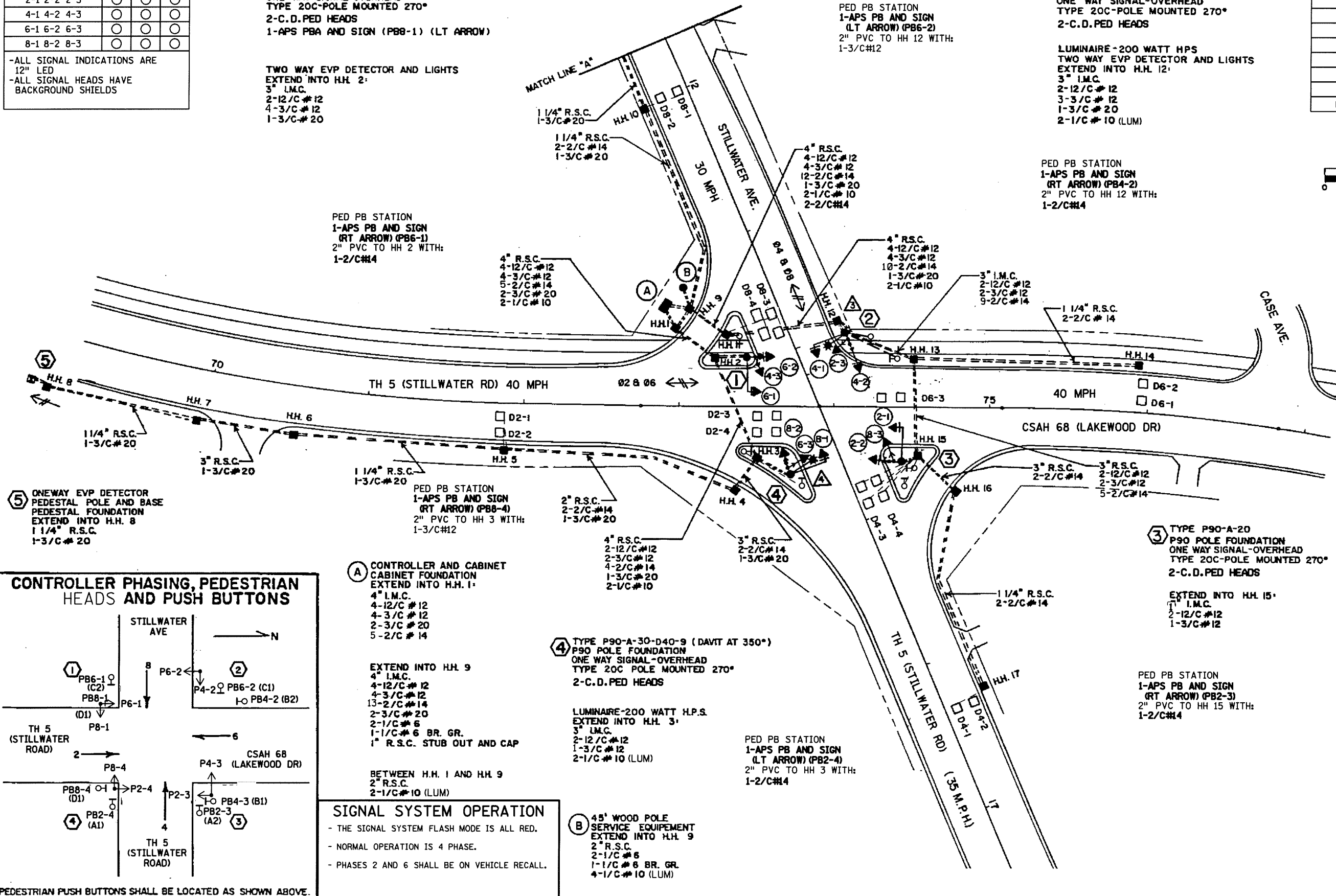
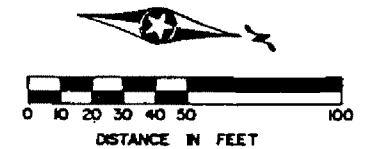
① TYPE P90-A-20  
P90 POLE FOUNDATION  
ONE WAY SIGNAL-OVERHEAD  
TYPE 20C-POLE MOUNTED 270°  
2-C.D. PED HEADS  
1-APS PBA AND SIGN (PB8-1) (LT ARROW)

TWO WAY EVP DETECTOR AND LIGHTS  
EXTEND INTO H.H. 2:  
3" I.M.C.  
2-12/C #12  
4-3/C #12  
1-3/C #20

② TYPE P90-A-25-D40-9 (DAVIT AT 350°)  
P90 POLE FOUNDATION  
ONE WAY SIGNAL-OVERHEAD  
TYPE 20C-POLE MOUNTED 270°  
2-C.D. PED HEADS

LUMINAIRE-200 WATT HPS  
TWO WAY EVP DETECTOR AND LIGHTS  
EXTEND INTO H.H. 12:  
3" I.M.C.  
2-12/C #12  
3-3/C #12  
1-3/C #20  
2-1/C #10 (LUM)

LOOP DETECTOR CHART				
NUMBER	SIZE (FT)	LOCATION	TYPE	
D2-1 D2-2	6X6	180'	SAWN	
D2-3 D2-4	2-6X6	5'x20'	PVC	
D4-1 D4-2	6X6	180'	PVC	
D4-3 D4-4	2-6X6	5'x20'	SAWN	
D6-1 D6-2	6X6	180'	PVC	
D6-3	2-6X6	5'x20'	PVC	
D8-1 D8-2	6X6	180'	PVC	
D8-3 D8-4	2-6X6	5'x20'	PVC	



### SIGNAL SYSTEM OPERATION

- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 4 PHASE.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

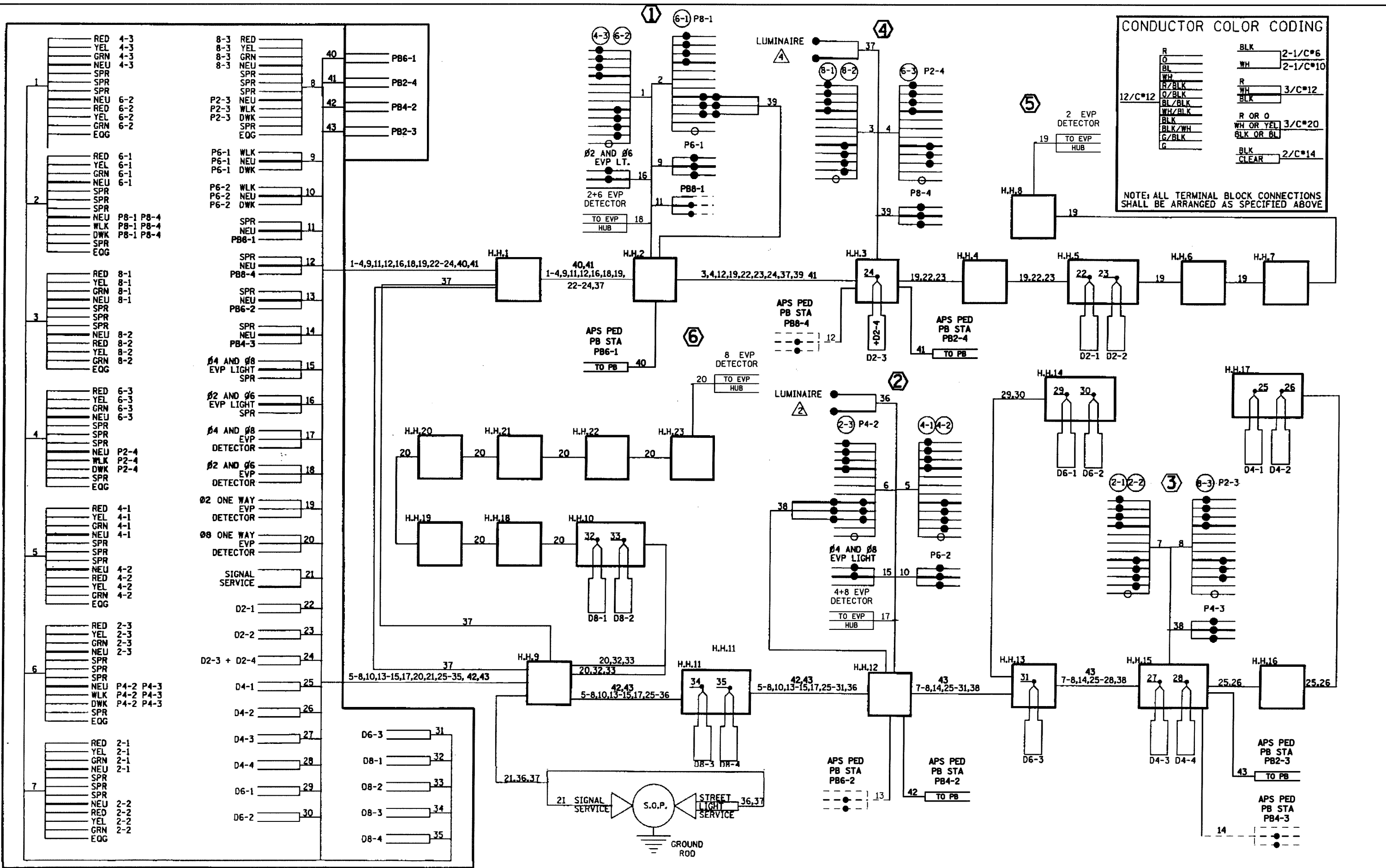
BY: EJA	DATE: 11-16-12	REVISIONS: PB STATIONS ADDED PLUS LOOP CHANGES	SYSTEM ID: 20121	T.E. 5813	S.A.P. NO.	DRAWN BY: MAS	CKD BY: GAK	DATE: 4-12-13
SJK	02-01-14	AS-BUILT PLAN SP 8825-445	METER ADDRESS: 2372 STILLWATER ROAD	T.E.	CERTIFIED BY: _____	LICENSED PROFESSIONAL ENGINEER	LIC. NO. 26829	DATE: _____
			MASTER ID:		STATE PROJ. NO. 8825-445		SHEET NO. 1 OF 2 SHEETS	

## INTERSECTION LAYOUT T.H. 5 AT CSAH 68/(LAKEWOOD DR) IN MAPLEWOOD, RAMSEY COUNTY



PLOTTED/REVISED: 2/14/2014

DISTRICT #: METRO  
IFLOT NAME: T2012LMLWR\_sqd  
PATH & FILENAME: IP\_PWP-90779659T2012LMLWR\_sqd.dgn



BY EJA	DATE 11-16-12	REVISIONS PED STATIONS ADDED PLUS LOOP CHANGES	SYSTEM ID: 20121	T.E. 5813	S.A.P. NO.	DRAWN BY: MAS	CKD BY: GAK	DATE: 4/12/13
SJK	02-01-14	AS-BUILT PLAN SP 8825-445	METER ADDRESS: 2372 STILLWATER ROAD		CERTIFIED BY _____	LIC. NO. 26829	DATE: _____	
			MASTER ID:	T.E.	STATE PROJ. NO.		SHEET NO. 2 OF 2 SHEETS	

**WIRING DIAGRAM**  
T.H. 5 AT CSAH 68/(LAKEWOOD DR)  
IN MAPLEWOOD, RAMSEY COUNTY