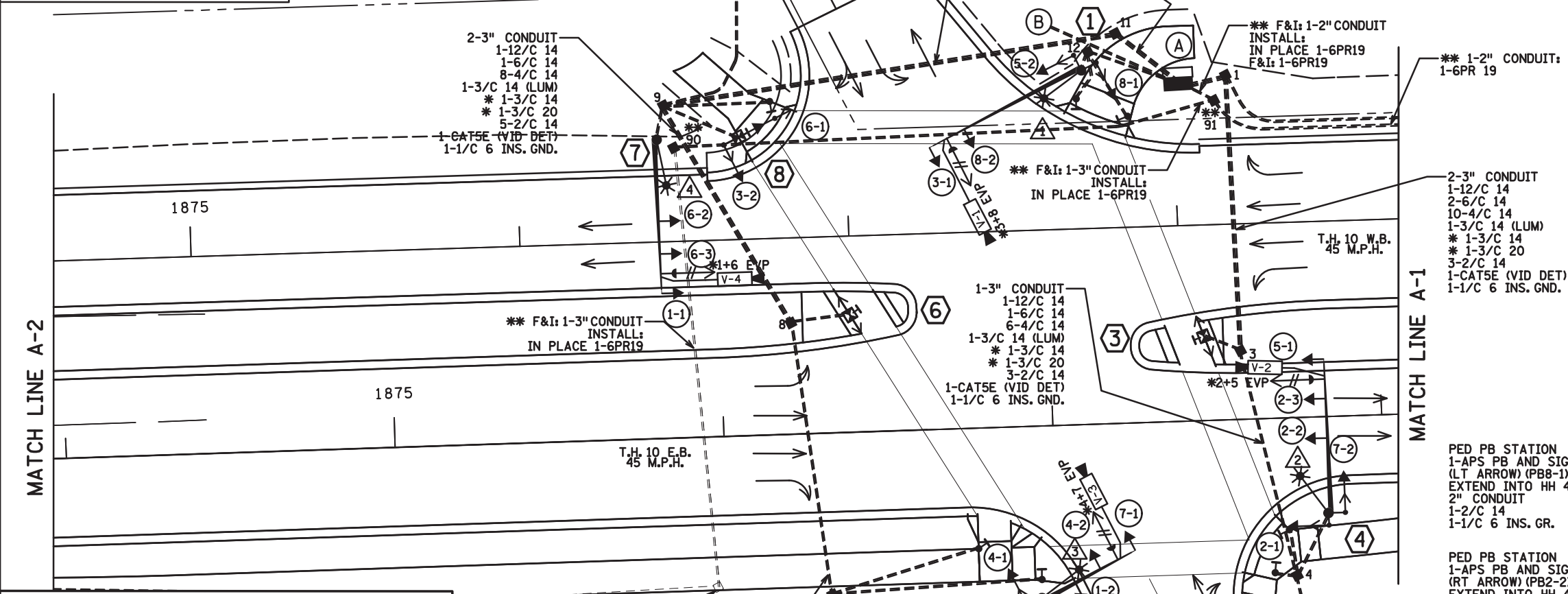


DISTRICT #: DISTRICT 3 - BAXTER, MN  
 IPLOT NAME: T\_spt102-135\_sgl.dgn  
 PATH & FILENAME: Projects\0102\135\Traffic\Signals\T\_spt102-135\_sgl.dgn  
 PLOTTED/REVISED: 17-NOV-2020

SIGNAL HEAD CHART				
FACE	R	Y	FYA	G
1-1, 1-2, 3-1, 3-2	←	←	←	←
5-1, 5-2, 7-1, 7-2	←	←	←	←
2-1, 6-1	●	●		●
2-2, 2-3, 6-2, 6-3	●	●		●
8-1, 8-2	●	●		●
4-1, 4-2	●	●		●

**SIGNAL SYSTEM OPERATION**

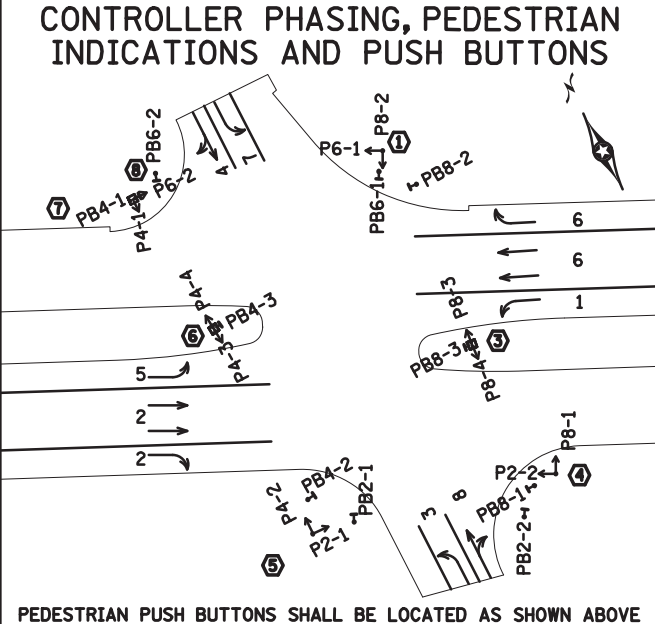
- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASE(S) 1, 3, 5, AND 7 BEING FLASHING YELLOW ARROWS BY TIME OF DAY.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.



LOOP DETECTOR CHART			VIDEO DETECTOR CHART		
NUMBER	SIZE (FT)	LOCATION	CAMERA NO.	LOCATION	PHASE
D4-1	6x6	180	V-1	POLE 1	3 & 8
D8-1	6x6	120	V-2	POLE 4	2 & 5
D2-1, D2-2	2-6x6	300	V-3	POLE 5	4 & 7
D6-1, D6-2	2-6x6	300	V-4	POLE 7	1 & 6

-ALL LOOP DETECTORS SHALL BE PVC UNLESS NOTED OTHERWISE  
 -LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET

-ALL VIDEO DETECTORS SHALL BE MAST ARM MOUNTED UNLESS NOTED OTHERWISE



PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

- NOTES:**
1. SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS.
  2. ENSURE THE EXACT LOCATION OF THE HANDHOLES, POLES, LOOP DETECTORS AND EQUIPMENT PAD ARE VERIFIED IN THE FIELD BY MNDOT OFFICE PERSONNEL.
  3. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM.
  4. FOR TYPE D SIGNS SEE SIGNING PLAN.
  5. FOR PAVEMENT MARKINGS SEE PAVEMENT MARKING PLAN.
  6. FOR CONSTRUCTION OF PEDESTRIAN CURB RAMPS, CONCRETE WALK AND MEDIAN WORK SEE ADA CONSTRUCTION PLAN.
  7. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER THE ROADWAYS REQUIRE BORING.
  8. USE PVC OR HDPE FOR ALL NEW CONDUIT.
  9. CONDUIT SIZES ARE NOMINAL DIAMETER.
  10. ALL WIRES LISTED ARE AWG (AMERICAN WIRE GAUGE).
  11. ITEMS DENOTED WITH AN \* ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
  12. ITEMS DENOTED WITH AN \*\* ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

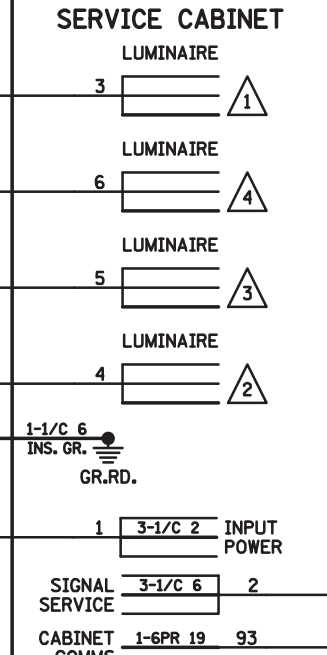
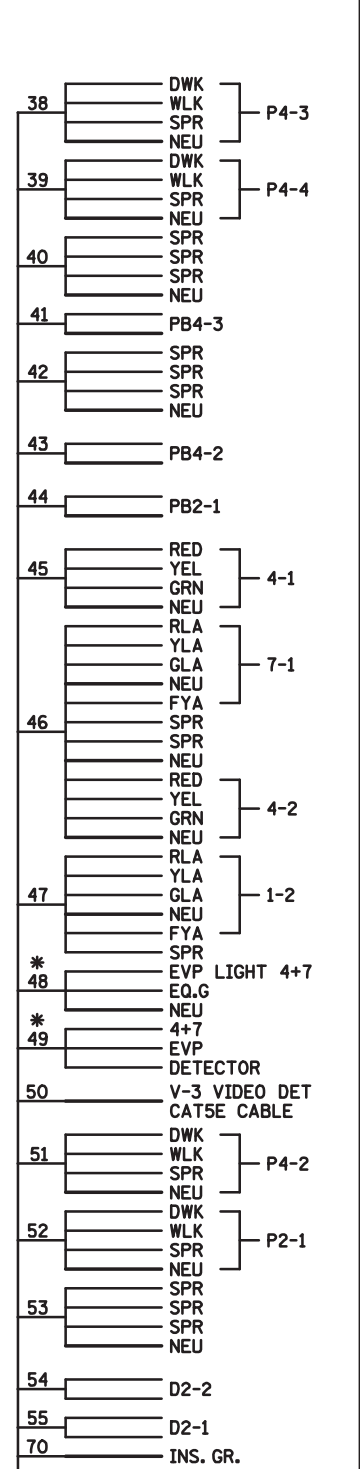
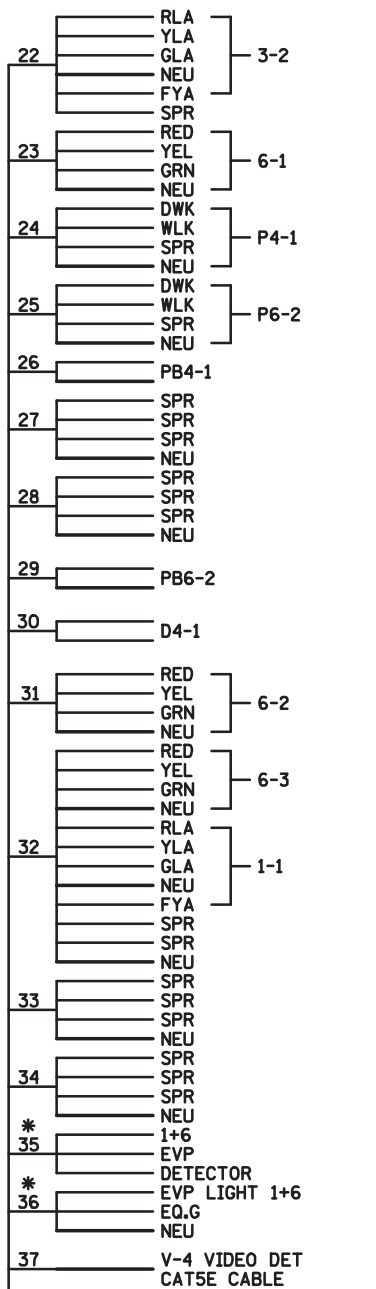
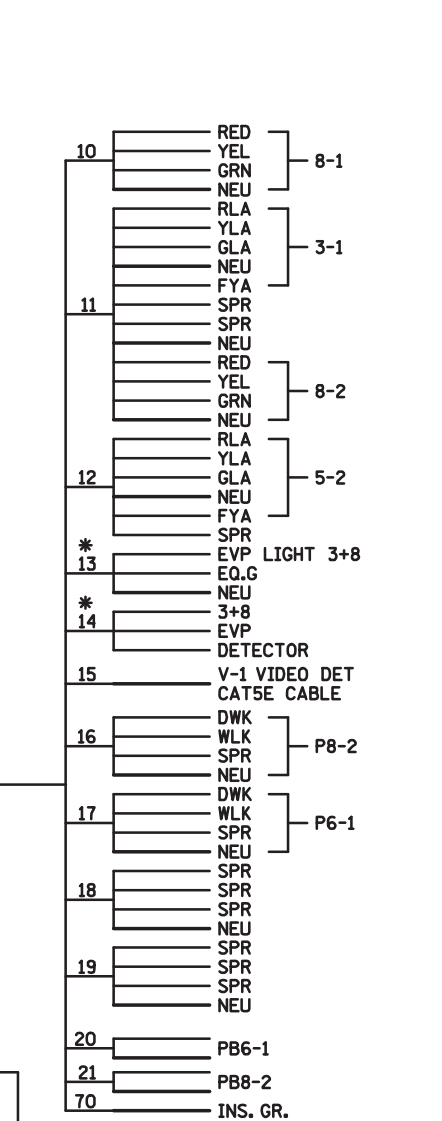
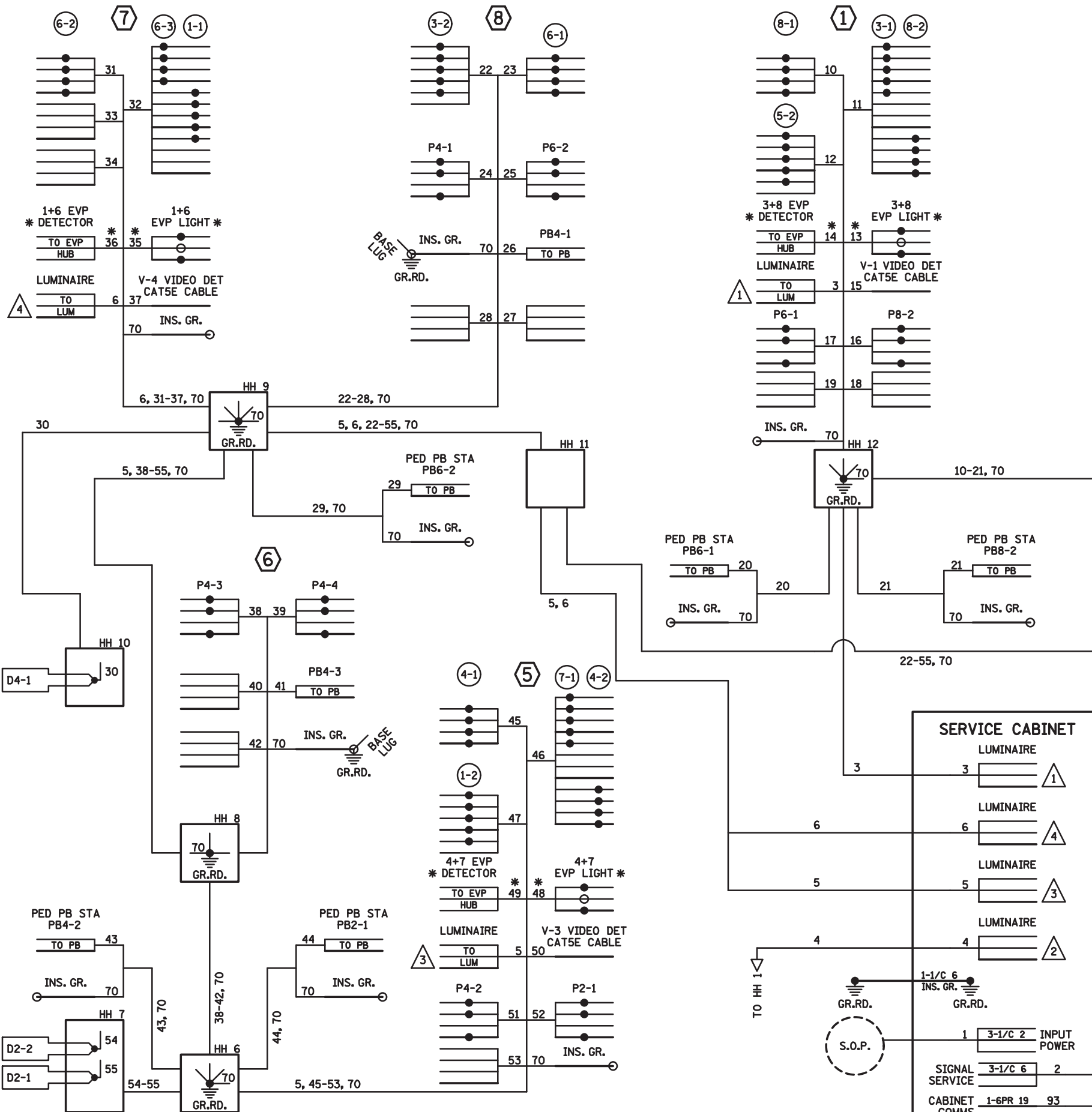
BY	DATE	REVISIONS

SYSTEM ID: 1736166      T.E.26121  
 METER ADDRESS:  
 OLD SYSTEM ID: 22249  
**INTERSECTION LAYOUT**  
**TRAFFIC CONTROL SIGNAL SYSTEM A**  
**TH 10 AT UPLAND AVENUE**  
**IN ELK RIVER, SHERBURNE COUNTY**

S.A.P. NO. 204-122-002, 071-601-025, 204-101-001      DRAWN BY: JBA      CKD BY: RFD      DATE: 06/29/20  
 S.P. 204-090-004  
 CERTIFIED BY: *[Signature]*      LIC. NO. 22762      DATE: 11/17/2020  
 LICENSED PROFESSIONAL ENGINEER  
**STATE PROJ. NO. 7102-135 (T.H.10)      SHEET NO. SS19 OF SS30 SHEETS**

PLOTTED/REVISED: 17-NOV-2020

DISTRICT #: DISTRICT 3 - BAXTER, MN  
I/PLOT NAME: T\_spt102-135\_sgl.dgn  
PATH & FILENAME: Projects\0102\135\Traffic\Signals\T\_spt102-135\_sgl.dgn



### CONTROLLER CABINET



- NOTES:**
1. FOR CONDUCTOR COLOR CODE SEE TRAFFIC SIGNAL POLE WIRING CONNECTOR DETAIL.
  2. ITEMS DENOTED WITH AN \* ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
  3. ITEMS DENOTED WITH AN \*\* ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

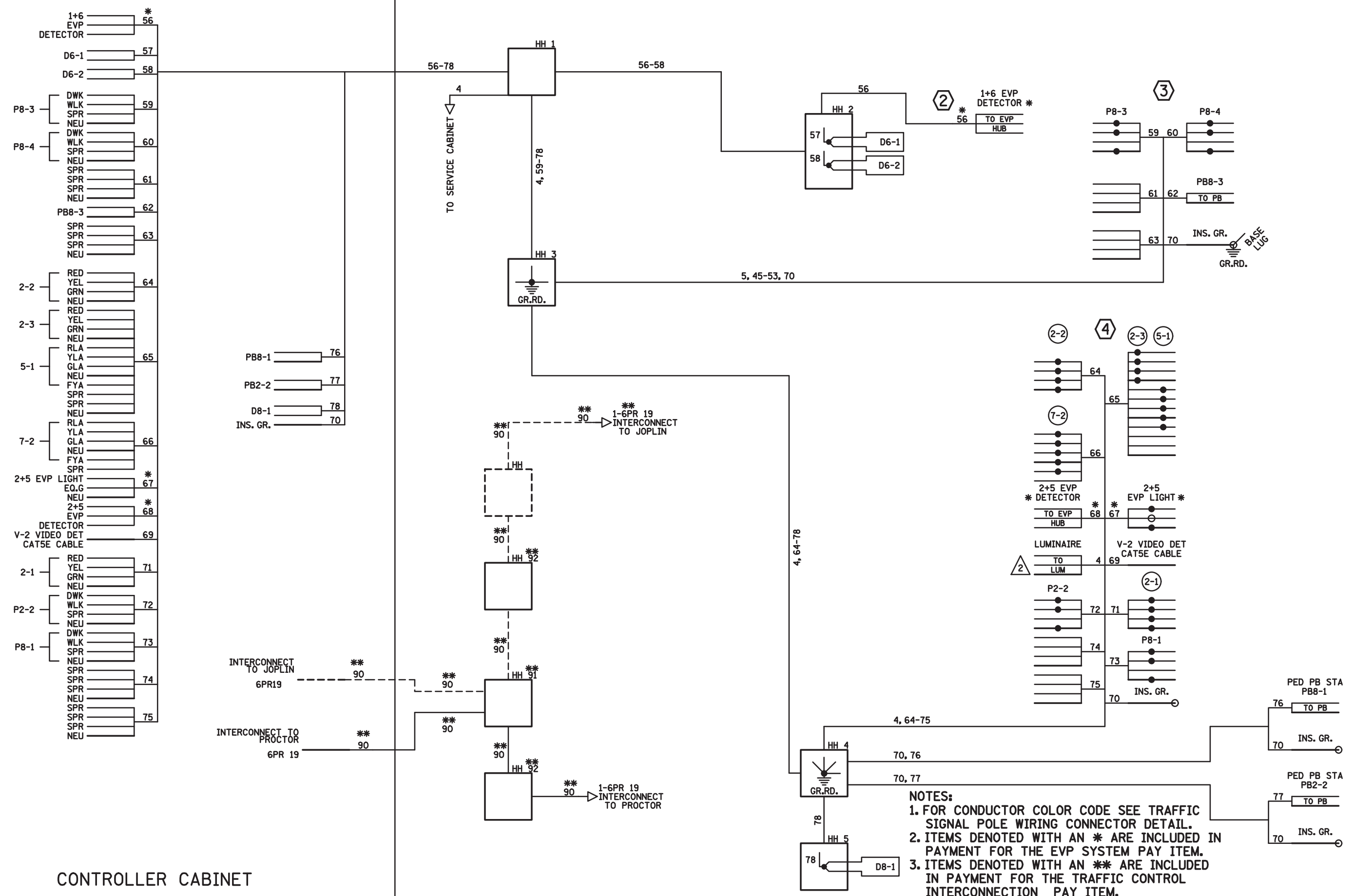
BY	DATE	REVISIONS

SYSTEM ID: 1736166  
METER ADDRESS:  
T.E.26121  
OLD SYSTEM ID: 22249

**WIRING DIAGRAM 1 OF 2**  
**TRAFFIC CONTROL SIGNAL SYSTEM A**  
**TH 10 AT UPLAND AVENUE**  
**IN ELK RIVER, SHERBURNE COUNTY**

S.A.P. NO. 204-122-002, 071-601-025, 204-101-001  
S.P. 204-090-004  
DRAWN BY: JBA  
CKD BY: RFD  
DATE: 06/29/20  
CERTIFIED BY: *Rhonda Hoge*  
LIC. NO. 22762  
DATE: 11/17/2020  
STATE PROJ. NO. 7102-135 (T.H.10)  
SHEET NO. SS20 OF SS30 SHEETS

DISTRICT \*: DISTRICT 3 - BAXTER, MN  
 IPLOT NAME: T\_sp7102-135\_sgl.dgn  
 PATH & FILENAME: Projects\07102\135\Traffic\Signals\T\_sp7102-135\_sgl.dgn  
 PLOTTED/REVISED: 17-NOV-2020



**CONTROLLER CABINET**

- NOTES:**
1. FOR CONDUCTOR COLOR CODE SEE TRAFFIC SIGNAL POLE WIRING CONNECTOR DETAIL.
  2. ITEMS DENOTED WITH AN \* ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
  3. ITEMS DENOTED WITH AN \*\* ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

BY	DATE	REVISIONS	SYSTEM ID: 1736166	T.E.26121	S.A.P. NO. 204-122-002, 071-601-025, 204-101-001	DRAWN BY: JBA	CKD BY: RFD	DATE: 06/29/20
			METER ADDRESS:		S.P. 204-090-004			
			OLD SYSTEM ID: 22249		CERTIFIED BY: <i>Robert D. Hays</i>	LIC. NO. 22762		DATE: 11/17/2020
					STATE PROJ. NO. 7102-135 (T.H.10) SHEET NO. SS21 OF SS30 SHEETS			

PLOTTED/REVISED: 17-NOV-2020

DISTRICT #: DISTRICT 3 - BAXTER, MN  
IPLOT NAME: T\_spt102-135\_sgl.dgn  
PATH & FILENAME: Projects\102\135\Traffic\Signals\T\_spt102-135\_sgl.dgn

⑦ PA100 POLE FOUNDATION  
 TYPE PA100-A-45-D40-9 (DAVIT AT 350 DEG)  
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 2-STRAIGHT MOUNT SIGNALS OVERHEAD AT 12' AND 24'  
 WELDED HUB AT 36'  
 1-ONE WAY EVP DETECTOR AND  
 CONFIRMATORY LIGHT (PHASE 1+6)  
 1-VIDEO DETECTION CAMERA ON 6' EXTENSION  
 MOUNTED AT 5'  
 LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)  
 1-TYPE D SIGN (D-1) (SEE SIGN DETAILS)  
 3" CONDUIT TO HH 9:  
 1-12/C 14  
 3-4/C 14  
 \* 1-3/C 14  
 1-3/C 14 (LUM)  
 1-CAT5E (VIDEO)  
 \* 1-3/C 20  
 1-1/C 6 INS. GR.

⑧ PEDESTAL FOUNDATION  
 13' PEDESTAL POLE PLUS BASE  
 2-ANGLE MOUNT SIGNALS AT 0 AND 180 DEG  
 2-ANGLE MOUNT C.D. PED HEADS AT 0 AND 180 DEG  
 1-APS PB AND SIGN  
 (LT ARROW) (PB4-1)  
 3" CONDUIT TO HH 9:  
 1-6/C 14  
 5-4/C 14  
 1-2/C 14  
 1-1/C 6 INS. GR.

① PA100 POLE FOUNDATION  
 TYPE PA100-A-50-D40-9 (DAVIT AT 350 DEG)  
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 1-STRAIGHT MOUNT SIGNAL OVERHEAD  
 AT 12'  
 2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG  
 2-ANGLE MOUNT C.D. PED HEADS AT 90 AND 180 DEG  
 1-ONE WAY EVP DETECTOR AND  
 CONFIRMATORY LIGHT (PHASE 3+8)  
 1-VIDEO DETECTION CAMERA ON 6' EXTENSION  
 MOUNTED AT 5'  
 LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)  
 1-TYPE D SIGN (D-1) (SEE SIGN DETAILS)  
 3" CONDUIT TO HH 12:  
 1-12/C 14  
 1-6/C 14  
 5-4/C 14  
 \* 1-3/C 14  
 1-3/C 14 (LUM)  
 1-CAT5E (VIDEO)  
 \* 1-3/C 20  
 1-1/C 6 INS. GR.

Ⓐ EQUIPMENT PAD (SEE DETAIL SHEET)  
 SERVICE CABINET (SSB) NO BATTERY BACKUP SYSTEM OR BATTERIES  
 CONTROLLER AND CABINET (STATE FURNISHED)

3" CONDUIT TO HH 1:  
 1-12/C 14  
 1-6/C 14  
 6-4/C 14  
 \* 1-3/C 14  
 \* 1-3/C 20  
 3-2/C 14  
 1-CAT5E (VIDEO)  
 1-1/C 6 INS. GND.

3" CONDUIT TO HH 1:  
 4-4/C 14  
 \* 1-3/C 20  
 3-2/C 14  
 \*\* 2" CONDUIT TO HH 91:  
 1-6PR19  
 INSTALL:  
 IN PLACE 1-6PR19

3" CONDUIT TO HH 11:  
 1-12/C 14  
 1-6/C 14  
 4-4/C 14  
 \* 1-3/C 14  
 \* 1-3/C 20  
 4-2/C 14  
 1-CAT5E (VIDEO)  
 1-1/C 6 INS. GND.

3" CONDUIT TO HH 11:  
 1-12/C 14  
 3-4/C 14  
 \* 1-3/C 14  
 \* 1-3/C 20  
 1-2/C 14  
 1-CAT5E (VIDEO)  
 1-1/C 6 INS. GR.

3" CONDUIT TO HH 12:  
 1-12/C 14  
 1-6/C 14  
 5-4/C 14  
 \* 1-3/C 14  
 2-2/C 14  
 1-CAT5E (VIDEO)  
 \* 1-3/C 20  
 1-1/C 6 INS. GR.

3" CONDUIT TO HH 11:  
 1-6/C 14  
 9-4/C 14  
 3-2/C 14  
 1-1/C 6 INS. GR.

GROUND WIRE AND GROUND ROD - MIN 8' OUT FROM PAD  
 2-2" AND 1-3" CONDUIT STUBBED OUT (CAPPED BOTH ENDS)  
 1-2" CONDUIT TO HH \*\*91:  
 \*\* 1-6PR 19  
 CONTROLLER CABINET TO SERVICE CABINET:  
 2" CONDUIT  
 3-1/C 6  
 CONTROLLER CABINET TO SERVICE CABINET (COMMS):  
 2" CONDUIT  
 \*\* 1-6PR 19

SERVICE CABINET TO POLE MOUNTED TRANSFORMER:  
 2" CONDUIT  
 3-1/C 2  
 SERVICE CABINET TO HH 1:  
 2" CONDUIT  
 1-3/C 14 (LUM)  
 SERVICE CABINET TO HH 11:  
 2" CONDUIT  
 2-3/C 14 (LUM)  
 SERVICE CABINET TO HH 12:  
 2" CONDUIT  
 1-3/C 14 (LUM)  
 SERVICE CABINET TO EXTERNAL GR. RD.:  
 1" CONDUIT  
 1-1/C 6 INS. GR.

Ⓑ SOP-INPLACE WOOD POLE MOUNTED  
 TRANSFORMER (ELK RIVER ENERGY)  
 F&I:  
 2" CONDUIT, RISER, AND WEATHERHEAD INTO SERVICE CABINET:  
 3-1/C 2

⑥ PEDESTAL FOUNDATION  
 13' PEDESTAL POLE PLUS BASE  
 2-STRAIGHT MOUNT C.D. PED HEADS AT 0 AND 180 DEG  
 1-APS PB AND SIGN  
 (DOUBLE ARROW) (PB4-3)  
 3" CONDUIT TO HH 3:  
 4-4/C 14  
 1-2/C 14  
 1-1/C 6 INS. GR.

③ PEDESTAL FOUNDATION  
 13' PEDESTAL POLE PLUS BASE  
 2-STRAIGHT MOUNT C.D. PED HEADS AT 0 AND 180 DEG  
 1-APS PB AND SIGN  
 (DOUBLE ARROW) (PB8-3)  
 3" CONDUIT TO HH 3:  
 4-4/C 14  
 1-2/C 14  
 1-1/C 6 INS. GR.

⑤ PA100 POLE FOUNDATION  
 TYPE PA100-A-30-D40-9 (DAVIT AT 350 DEG)  
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 1-STRAIGHT MOUNT SIGNAL OVERHEAD  
 AT 12'  
 2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG  
 2-ANGLE MOUNT C.D. PED HEADS AT 90 AND 180 DEG  
 1-ONE WAY EVP DETECTOR AND  
 CONFIRMATORY LIGHT (PHASE 4+7)  
 1-VIDEO DETECTION CAMERA ON 6' EXTENSION  
 MOUNTED AT 5'  
 LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)  
 1-TYPE D SIGN (D-1) (SEE SIGN DETAILS)  
 3" CONDUIT TO HH 6:  
 1-12/C 14  
 1-6/C 14  
 4-4/C 14  
 \* 1-3/C 14  
 1-3/C 14 (LUM)  
 1-CAT5E (VIDEO)  
 \* 1-3/C 20  
 1-1/C 6 INS. GR.

④ PA100 POLE FOUNDATION  
 TYPE PA100-A-45-D40-9 (DAVIT AT 315 DEG)  
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 2-STRAIGHT MOUNT SIGNALS OVERHEAD AT 12' AND 24'  
 WELDED HUB AT 36'  
 2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG  
 2-ANGLE MOUNT C.D. PED HEADS AT 90 AND 180 DEG  
 1-ONE WAY EVP DETECTOR AND  
 CONFIRMATORY LIGHT (PHASE 2+5)  
 1-VIDEO DETECTION CAMERA ON 6' EXTENSION  
 MOUNTED AT 5'  
 LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)  
 1-TYPE D SIGN (D-1) (SEE SIGN DETAILS)  
 3" CONDUIT TO HH 4:  
 1-12/C 14  
 1-6/C 14  
 6-4/C 14  
 \* 1-3/C 14  
 1-3/C 14 (LUM)  
 1-CAT5E (VIDEO)  
 \* 1-3/C 20  
 1-1/C 6 INS. GR.

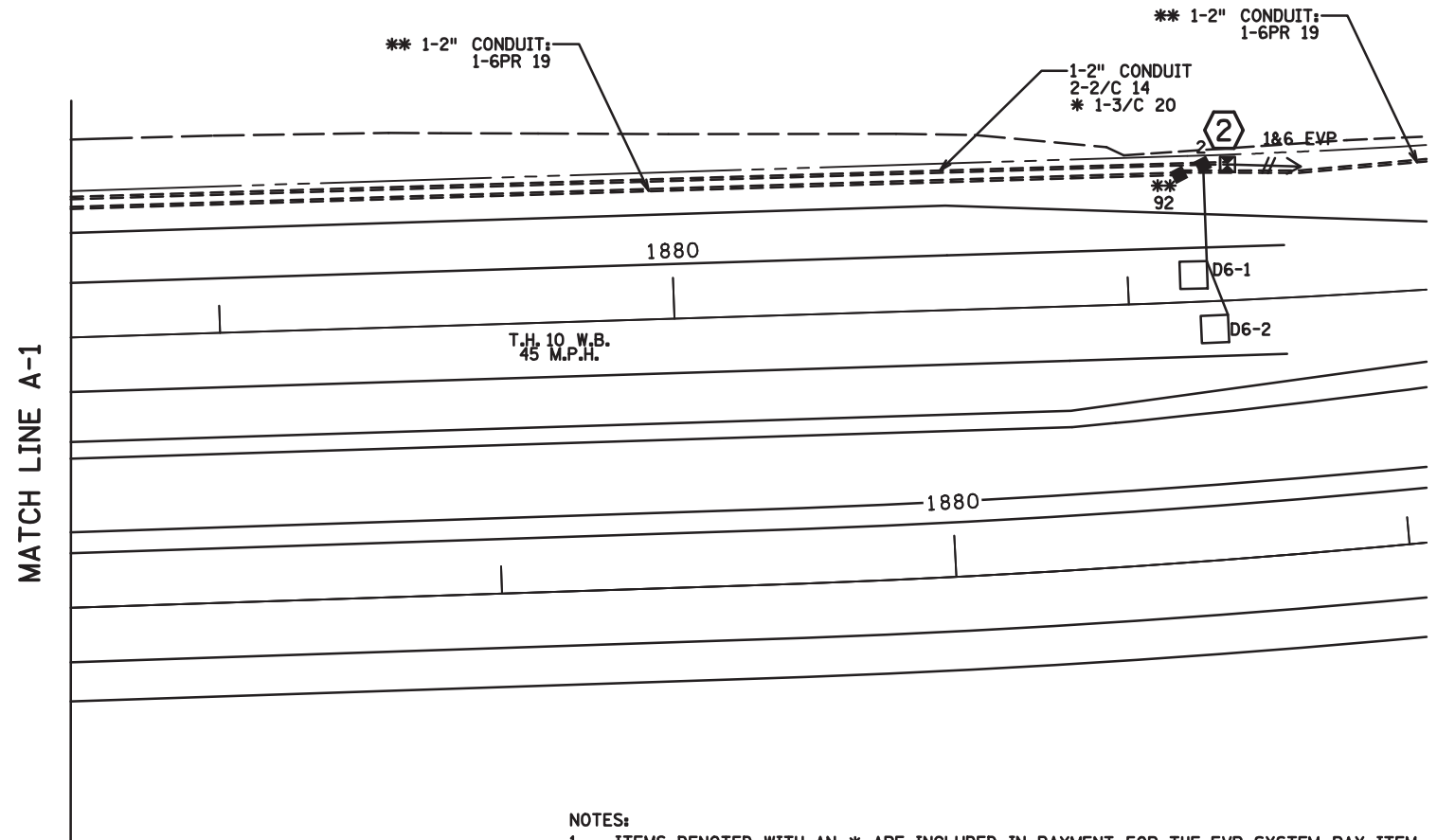
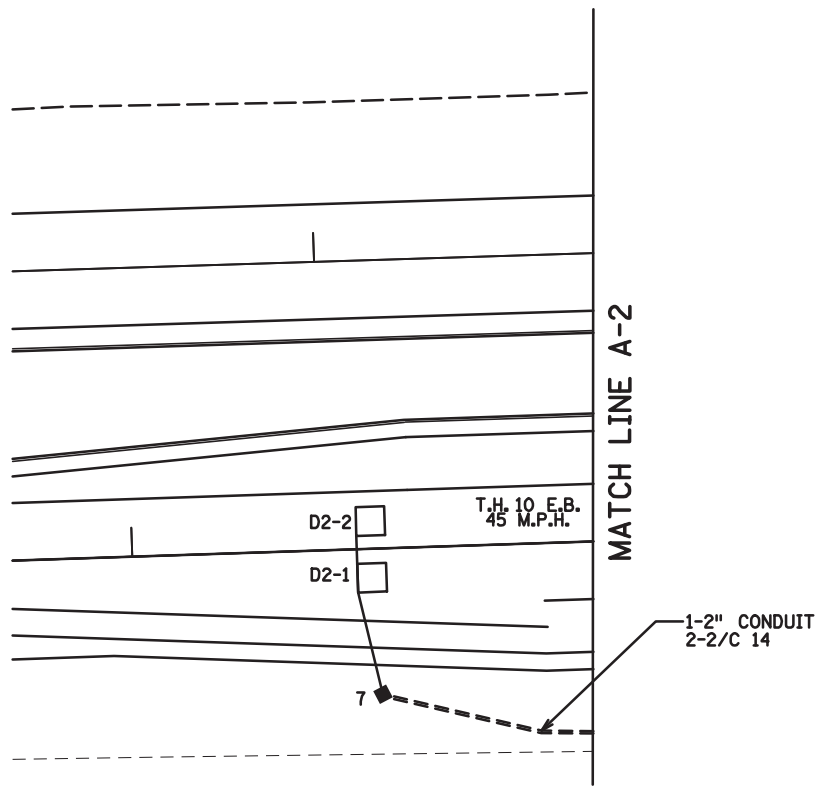
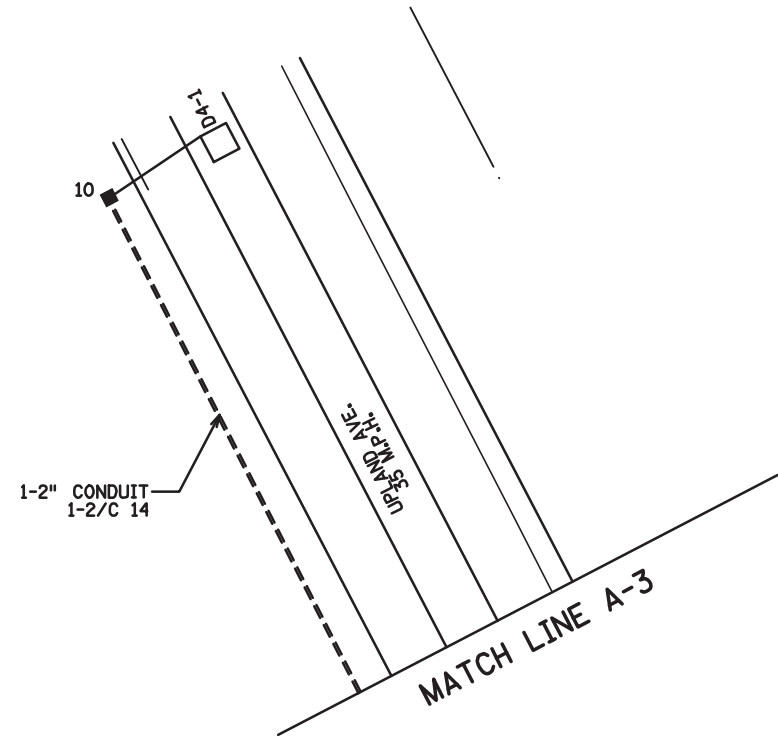
② PEDESTAL FOUNDATION  
 13' PEDESTAL POLE PLUS BASE  
 1-ONE WAY EVP DETECTOR  
 2" CONDUIT TO HH 2:  
 \* 1-3/C 20

- NOTES:  
 1. ITEMS DENOTED WITH AN \* ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.  
 2. ITEMS DENOTED WITH AN \*\* ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

BY	DATE	REVISIONS	SYSTEM ID: 1736166	T.E.26121	<b>POLE NOTES</b> <b>TRAFFIC CONTROL SIGNAL SYSTEM A</b> <b>TH 10 AT UPLAND AVENUE</b> <b>IN ELK RIVER, SHERBURNE COUNTY</b>	S.A.P. NO. 204-122-002, 071-601-025, 204-101-001	DRAWN BY: JBA	CKD BY: RFD	DATE: 06/29/20	
			METER ADDRESS:			S.P. 204-090-004				
			OLD SYSTEM ID: 22249			CERTIFIED BY: <i>Rh7Dhge</i>	LIC. NO. 22762			DATE: 11/17/2020
						STATE PROJ. NO. 7102-135 (T.H.10)	SHEET NO. SS22 OF SS30 SHEETS			

PLOTTED/REVISED: 17-NOV-2020

DISTRICT #: DISTRICT 3 - BAXTER, MN  
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- NOTES:
1. ITEMS DENOTED WITH AN \* ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
  2. ITEMS DENOTED WITH AN \*\* ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

BY	DATE	REVISIONS

SYSTEM ID: 1736166 T.E.26121  
 METER ADDRESS:  
 OLD SYSTEM ID: 22249

**MATCHLINES**  
**TRAFFIC CONTROL SIGNAL SYSTEM A**  
**TH 10 AT UPLAND AVENUE**  
**IN ELK RIVER, SHERBURNE COUNTY**

S.A.P. NO. 204-122-002, 071-601-025, 204-101-001  
 S.P. 204-090-004  
 CERTIFIED BY: *Robt D. Hayes* LIC. NO. 22762 DATE: 11/17/2020  
 STATE PROJ. NO. 7102-135 (T.H.10) SHEET NO. SS23 OF SS30 SHEETS