

**SIGNAL HEAD CHART**

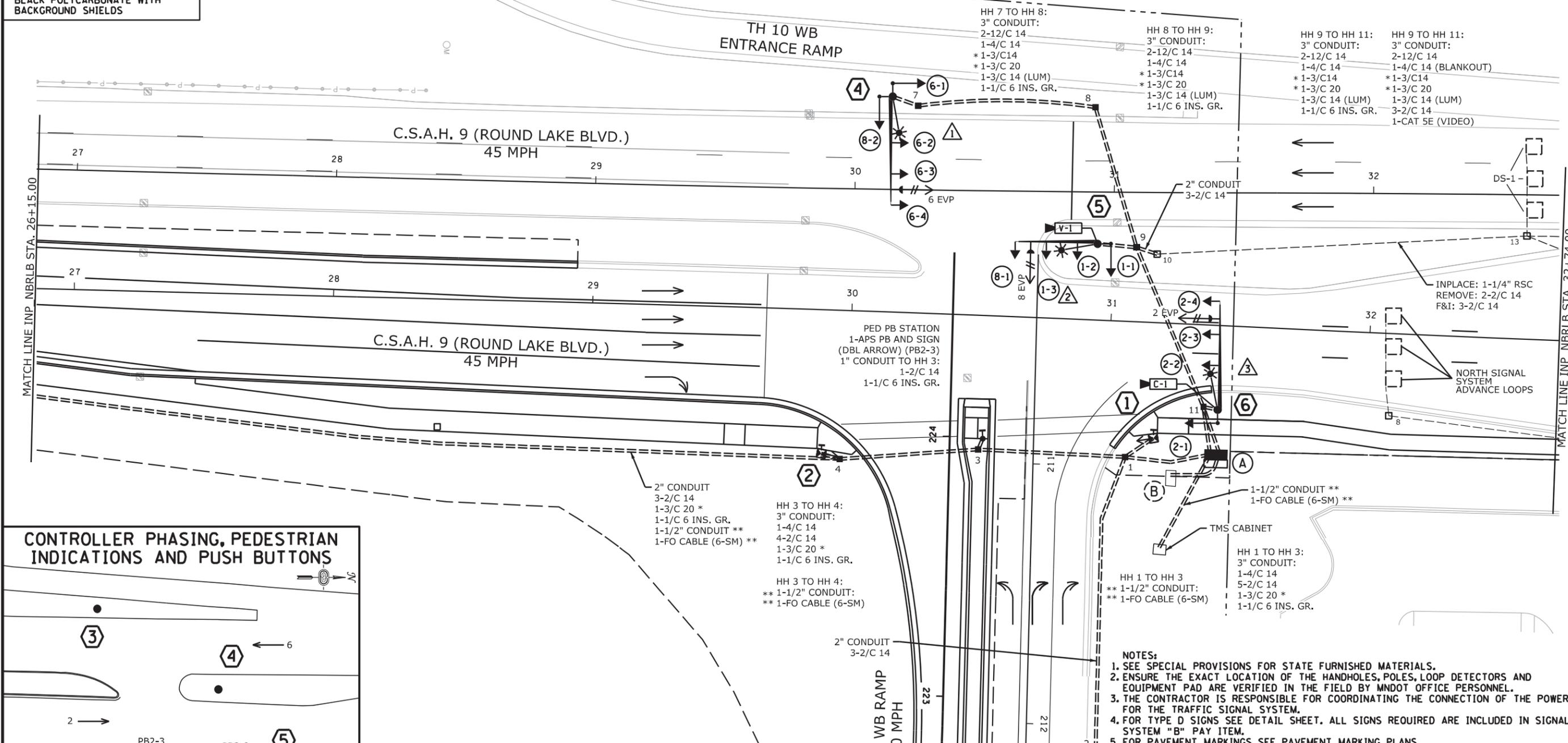
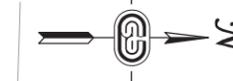
| FACE               | R | Y | G |
|--------------------|---|---|---|
| 1-1, 1-2, 1-3      | → | → | → |
| 2-1, 2-2, 2-3, 2-4 | ● | ● | ● |
| 6-1, 6-2, 6-3      | ● | ● | ● |
| 6-4                | ● | ▲ | ▲ |
| 8-1, 8-2           | ← | ← | ← |

-ALL SIGNAL INDICATIONS SHALL BE 12" LED  
 -ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS

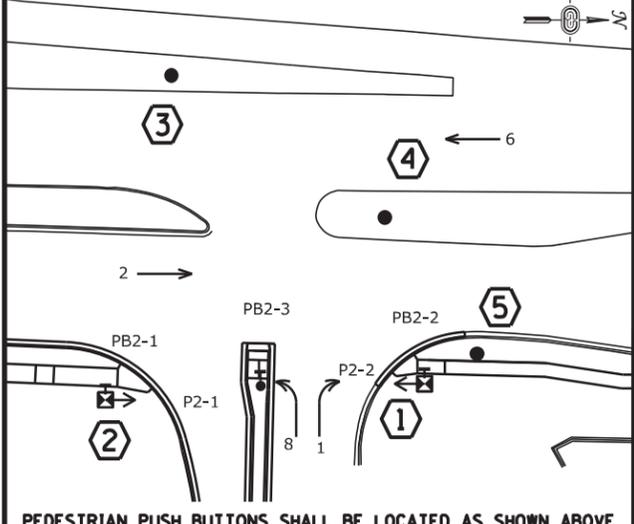
**LOOP DETECTOR CHART**

| NUMBER           | SIZE (FT) | LOCATION | STATUS  |
|------------------|-----------|----------|---------|
| D2-1, D2-2, D2-3 | 6X6       | 300      | F&I     |
| DS-1             | 3-6X6     | 175      | ABANDON |
| 6-1, 6-2, 6-3    | 6X6       | 300      | INPLACE |
| D8-1, D8-2, D8-3 | 6X6       | 120      | F&I     |

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



**CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS**



**SIGNAL SYSTEM OPERATION**

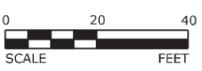
- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 4 PHASE, WITH PHASE 1 BEING OVL A = 1+8.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

SYSTEM ID: 4035907 T.E. 23877  
 METER ADDRESS: 12997 ROUND LAKE BLVD  
 OLD SYSTEM ID: 1735044 (20212)

- NOTES:**
- SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS.
  - ENSURE THE EXACT LOCATION OF THE HANDHOLES, POLES, LOOP DETECTORS AND EQUIPMENT PAD ARE VERIFIED IN THE FIELD BY MNDOT OFFICE PERSONNEL.
  - THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM.
  - FOR TYPE D SIGNS SEE DETAIL SHEET. ALL SIGNS REQUIRED ARE INCLUDED IN SIGNAL SYSTEM "B" PAY ITEM.
  - FOR PAVEMENT MARKINGS SEE PAVEMENT MARKING PLANS.
  - FOR CONSTRUCTION OF PEDESTRIAN CURB RAMPS, CONCRETE WALK AND MEDIAN WORK SEE INTERSECTION DETAIL SHEETS.
  - THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER THE ROADWAYS REQUIRE BORING.
  - USE PVC OR HDPE FOR ALL NEW CONDUIT.
  - CONDUIT SIZES ARE NOMINAL DIAMETER.
  - ALL WIRES LISTED ARE AWG (AMERICAN WIRE GAUGE).
  - ITEMS DENOTED WITH AN \* ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM "B" PAY ITEM.
  - ITEMS DENOTED WITH AN \*\* ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECT SYSTEM "A" PAY ITEM.

USER: mkahl  
 PEN TABLE: cd021577\_planset.tbl  
 FILE: S:\PROJECTS\TRANS\0039\_MNDOT\T-005556\Design\SP021577\_RoundLakeBlvd\_TH10\Road\_Design\Sheets\cd021577\_NBR LB STA. 26+15.00 - Signal Plan B  
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 PLOT DATE: 11/5/2020 9:11:00 AM

| REV. NO. | DATE | BY | CHK | DESCRIPTION |
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I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT 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.

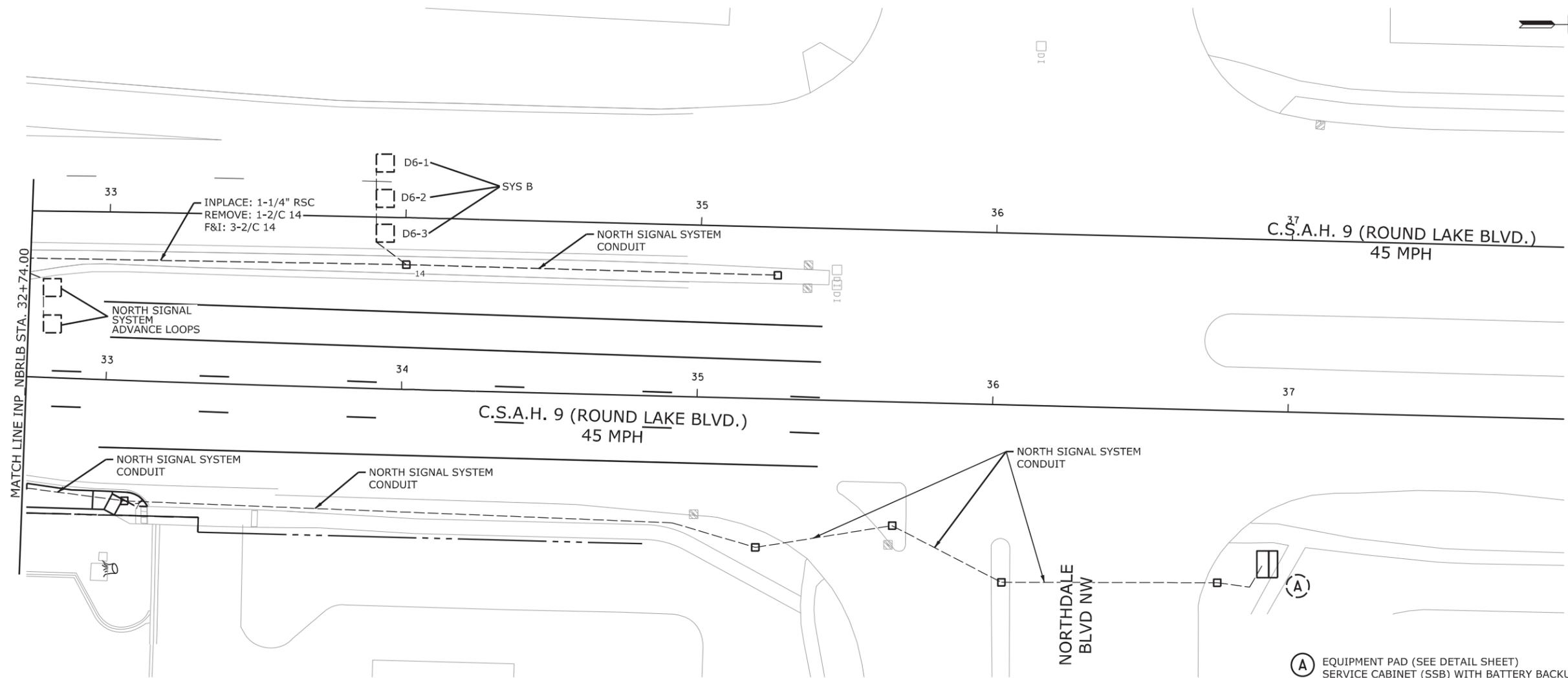
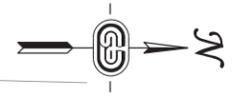
*Brian P. Vitek*  
 NAME: BRIAN P. VITEK LIC. NO. 40444 DATE: 11/05/2020

DESIGNED: BPV  
 DRAWN: BPV  
 CHECKED: KEM



TRAFFIC CONTROL SIGNAL SYSTEM B - NORTH RAMP  
 INTERSECTION LAYOUT PLAN PAGE 13 OF 26  
 S.A.P. 002-609-020, S.A.P. 114-020-056  
 S.P. 0215-77 (TH 10)

SHEET 162 OF 175



- (A) EQUIPMENT PAD (SEE DETAIL SHEET)**  
 SERVICE CABINET (SSB) WITH BATTERY BACKUP AND BATTERIES  
 CONTROLLER AND CABINET (STATE FURNISHED)
- |   |  |
|---|--|
| 3" CONDUIT TO HH 1:<br>2-4/C 14<br>1-4/C 14 (BLANKOUT)<br>9-2/C 14<br>1-1/C 6 INS. GR.        | 3" CONDUIT TO HH 11:<br>2-12/C 14<br>1-4/C 14 (BLANKOUT)<br>* 1-3/C 14<br>* 1-3/C 20<br>3-2/C 14<br>1-CAT 5E (VIDEO) |
| 3" CONDUIT TO HH 11:<br>2-12/C 14<br>1-4/C 14<br>* 1-3/C 14<br>* 1-3/C 20<br>1-1/C 6 INS. GR. | 3" CONDUIT TO HH 11:<br>2-12/C 14<br>1-4/C 14<br>* 1-3/C 14<br>* 1-3/C 20<br>1-CAT 5E (VIDEO)                        |
- GROUND WIRE AND GROUND ROD - MIN 8' OUT FROM PAD  
 2-2" AND 1-3" CONDUIT STUBBED OUT (CAPPED BOTH ENDS)
- \*\* 1-1/2" CONDUIT TO TMS VAULT:  
 \*\* 1-FO PIGTAIL (6-SM)  
 \*\* 1-1/2" CONDUIT TO HH 1:  
 \*\* 1-FO PIGTAIL (6-SM)  
 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 GROUND MOUNTED TRANSFORMER:  
 2" CONDUIT  
 3-1/C 2  
 SERVICE CABINET TO HH 11:  
 3-3/C 14 (LUM)  
 SERVICE CABINET TO EXTERNAL GR. RD:  
 1" CONDUIT  
 1-1/C 6 INS. GR.

- (1)** PEDESTAL FOUNDATION  
 10' PEDESTAL POLE PLUS BASE  
 1-STRAIGHT MOUNT C.D. PED HEAD  
 AT 0 DEG  
 1-APS PB AND SIGN (RT ARROW) (PB2-2)  
 AND APS PB MOUNTING SPACERS  
 1-SIGN (R10-11b) "NO TURN ON RED"  
 FACING EAST  
 3" CONDUIT TO HH 1:  
 1-4/C 14  
 1-4/C 14 (BLANKOUT)  
 1-2/C 14  
 1-1/C 6 INS. GR.
- (2)** PEDESTAL FOUNDATION  
 10' PEDESTAL POLE PLUS BASE  
 1-STRAIGHT MOUNT C.D. PED HEAD  
 AT 0 DEG  
 1-APS PB AND SIGN (LT ARROW) (PB2-1)  
 AND APS PB MOUNTING SPACERS  
 3" CONDUIT TO HH 4:  
 1-4/C 14  
 1-2/C 14  
 1-1/C 6 INS. GR.

- (3)** PEDESTAL FOUNDATION  
 10' PEDESTAL POLE PLUS BASE  
 1-ONE WAY EVP (PHASE 2)  
 2" CONDUIT TO HH 6:  
 \* 1-3/C 20  
 1-1/C 6 INS. GR.
- (4)** PA100 POLE FOUNDATION  
 TYPE PA100-A-40-D40-9 DAVIT AT 350 DEG  
 (STATE FURNISHED)  
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 2-STRAIGHT MOUNT SIGNALS OVERHEAD  
 AT 11' AND 23'  
 2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG  
 1-ONE WAY EVP DETECTOR AND  
 CONFIRMATORY LIGHT (PHASE 6)  
 LUMINAIRE LED (FOR 40' MOUNTING HEIGHT)  
 3" CONDUIT TO HH 7:  
 2-12/C 14  
 1-4/C 14  
 1-4/C 14  
 \* 1-3/C 14  
 \* 1-3/C 20  
 1-3/C 14 (LUM)  
 1-1/C 6 INS. GR.

- (5)** PA90 POLE FOUNDATION  
 TYPE PA90-A-30-D40-9 DAVIT AT 350 DEG  
 (STATE FURNISHED)  
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 2-STRAIGHT MOUNT SIGNALS OVERHEAD  
 AT 11' AND 23'  
 1-ANGLE MOUNT SIGNAL AT 180 DEG  
 1-ONE WAY EVP DETECTOR AND  
 CONFIRMATORY LIGHT (PHASE 8)  
 1-VIDEO DETECTION CAMERA (V-1)  
 (STATE FURNISHED)  
 1-TYPE D SIGN (D-1) (SEE SIGN DETAILS)  
 1-SIGN (R10-11b) "NO TURN ON RED"  
 AT 270 DEG  
 3" CONDUIT TO HH 9:  
 2-12/C 14  
 1-4/C 14 (BLANKOUT)  
 \* 1-3/C 14  
 \* 1-3/C 20  
 1-3/C 14 (LUM)  
 1-CAT 5E (VIDEO)  
 1-1/C 6 INS. GR.

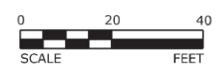
- (6)** PA100 POLE FOUNDATION  
 TYPE PA100-A-40-X350/CAM 400 EXTENSION  
 DAVIT AT 350 DEG (STATE FURNISHED)  
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'  
 2-STRAIGHT MOUNT SIGNALS OVERHEAD  
 AT 11' AND 23'  
 1-ANGLE MOUNT SIGNAL AT 180 DEG  
 1-ONE WAY EVP DETECTOR AND  
 CONFIRMATORY LIGHT (PHASE 2)  
 1-IP CAMERA (C-1) AND CAMERA MOUNT  
 (STATE FURNISHED)  
 LUMINAIRE LED (FOR 40' MOUNTING HEIGHT)  
 3" CONDUIT TO HH 11:  
 2-12/C 14  
 \* 1-3/C 14  
 \* 1-3/C 20  
 1-3/C 14 (LUM)  
 1-CAT 5E (VIDEO)  
 1-1/C 6 INS. GR.

- (B)** SOP - GROUND MOUNTED  
 TRANSFORMER (CONNEXUS ENERGY)  
 2" CONDUIT INTO SERVICE CABINET:  
 3-1/C 2

**SYSTEM ID: 4035907**      **T.E. 23877**  
**METER ADDRESS: 12997 ROUND LAKE BLVD**  
**OLD SYSTEM ID: 1735044 (20212)**

USER: mkahl  
 PEN TABLE: cd021577\_planset.tbl  
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 PLOT DATE: 11/5/2020 9:11:03 AM

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*Brian P. Vitek*  
 NAME: BRIAN P. VITEK      LIC. NO. 40444      DATE: 11/05/2020

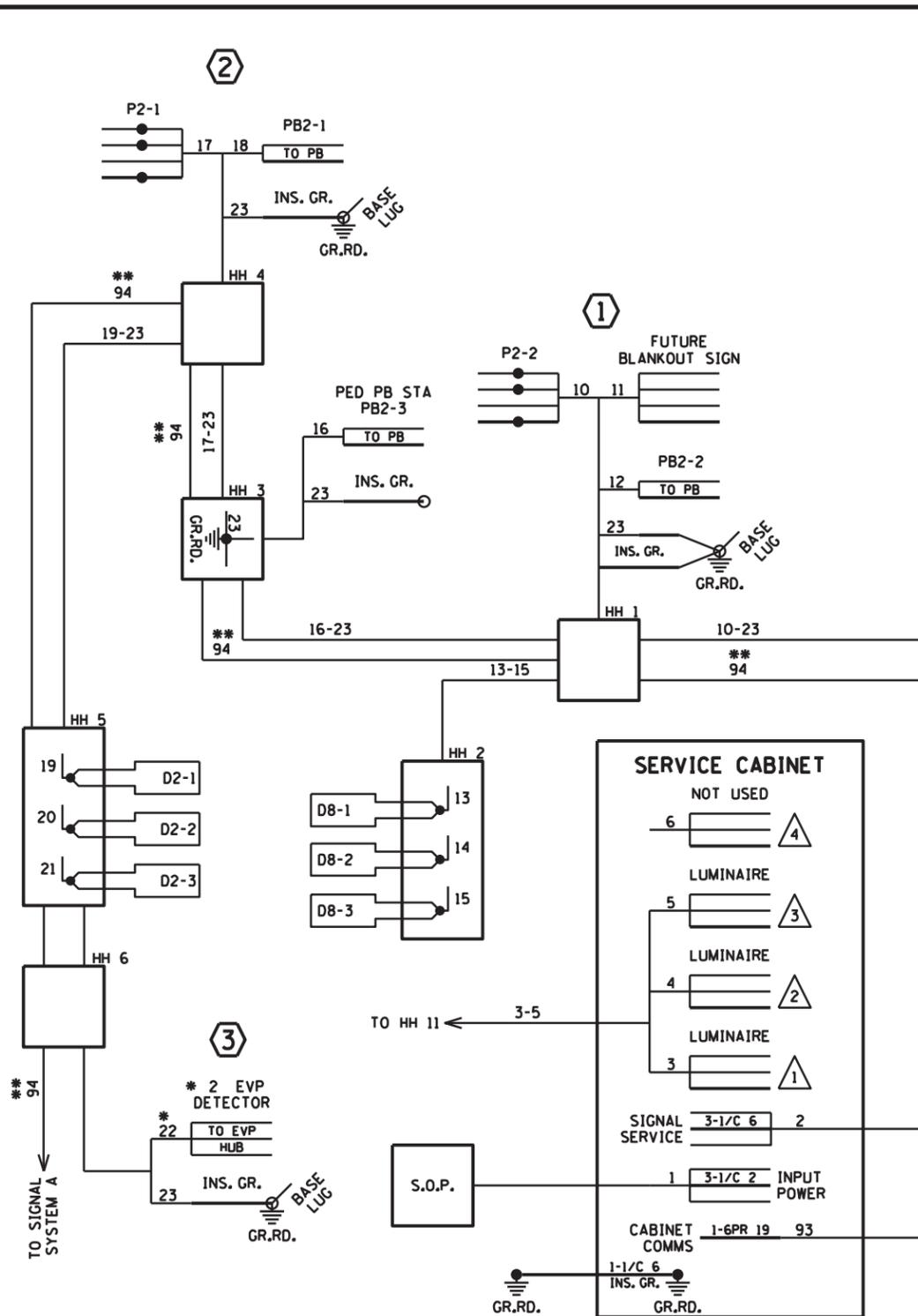
DESIGNED  
 BPV  
 DRAWN  
 BPV  
 CHECKED  
 KEM



**TRAFFIC CONTROL SIGNAL SYSTEM B - NORTH RAMP**  
 INTERSECTION NOTES      PLAN PAGE 14 of 26  
 S.A.P. 002-609-020, S.A.P. 114-020-056  
 S.P. 0215-77 (TH 10)

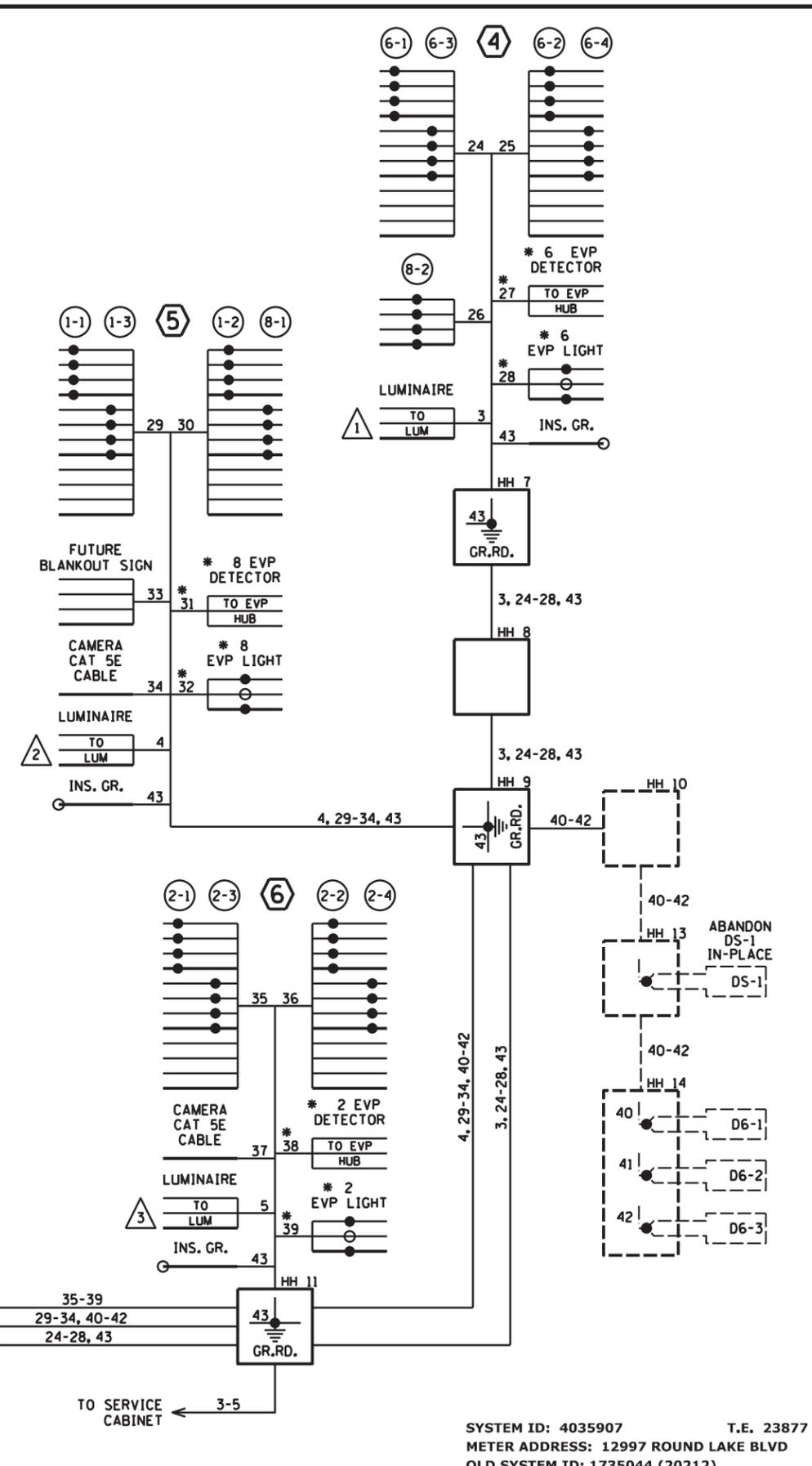
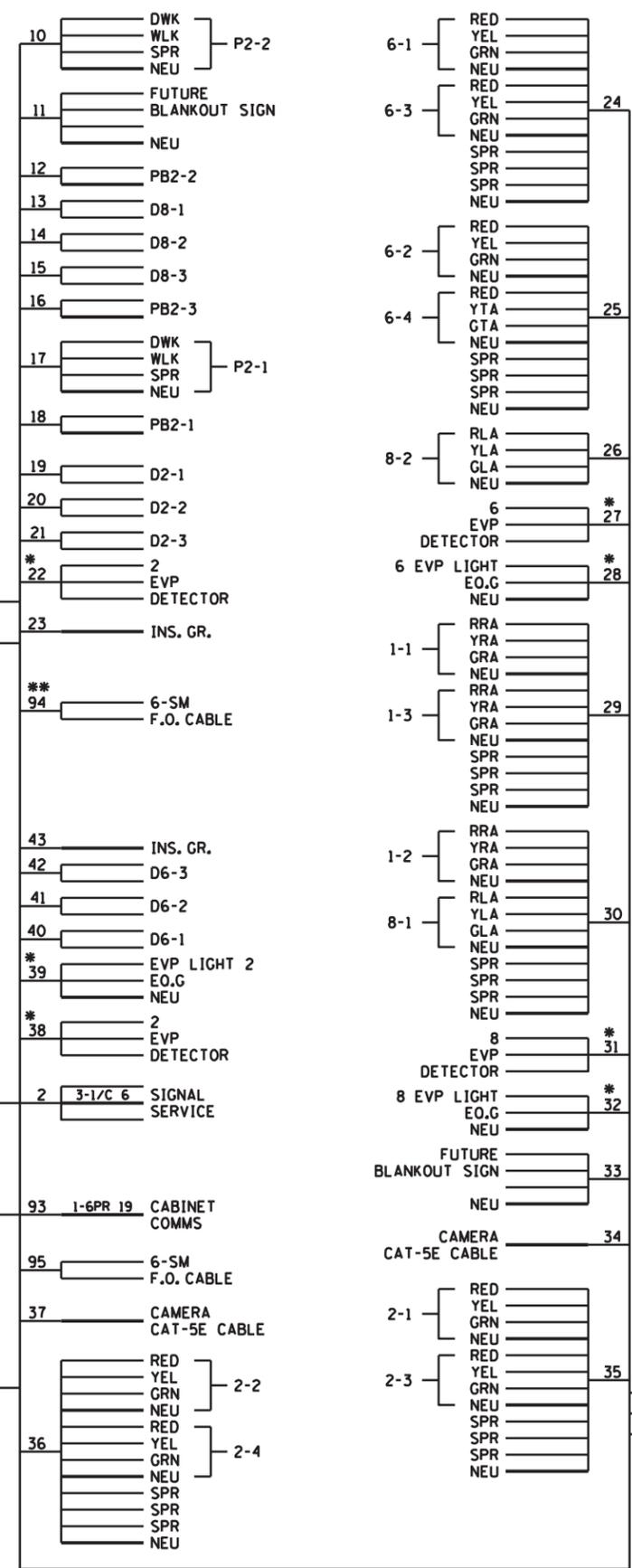
SHEET  
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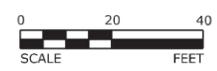
- NOTES:**
1. SIGNAL SYSTEM INCLUDES BATTERY- BACKUP SERVICE CABINET (WITH BATTERIES AND U.P.S.).
  2. FOR CONDUCTOR COLOR CODE SEE TRAFFIC SIGNAL POLE WIRING CONNECTOR DETAIL.
  3. ITEMS DENOTED WITH AN \* ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM B PAY ITEM.
  4. ITEMS DENOTED WITH AN \*\* ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECT SYSTEM A PAY ITEM.

**CONTROLLER CABINET**



SYSTEM ID: 4035907 T.E. 23877  
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 OLD SYSTEM ID: 1735044 (20212)

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DESIGNED: BPV  
 DRAWN: BPV  
 CHECKED: KEM



TRAFFIC CONTROL SIGNAL SYSTEM B - NORTH RAMP  
 FIELD WIRING DIAGRAM  
 S.A.P. 002-609-020, S.A.P. 114-020-056  
 S.P. 0215-77 (TH 10)

SHEET 164 OF 175  
 PLAN PAGE 15 OF 26