

PLOTTED/REVISED: 14-DEC-2023

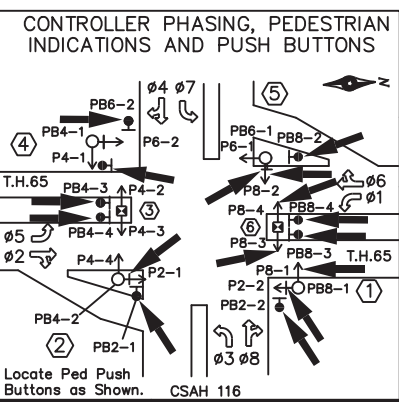
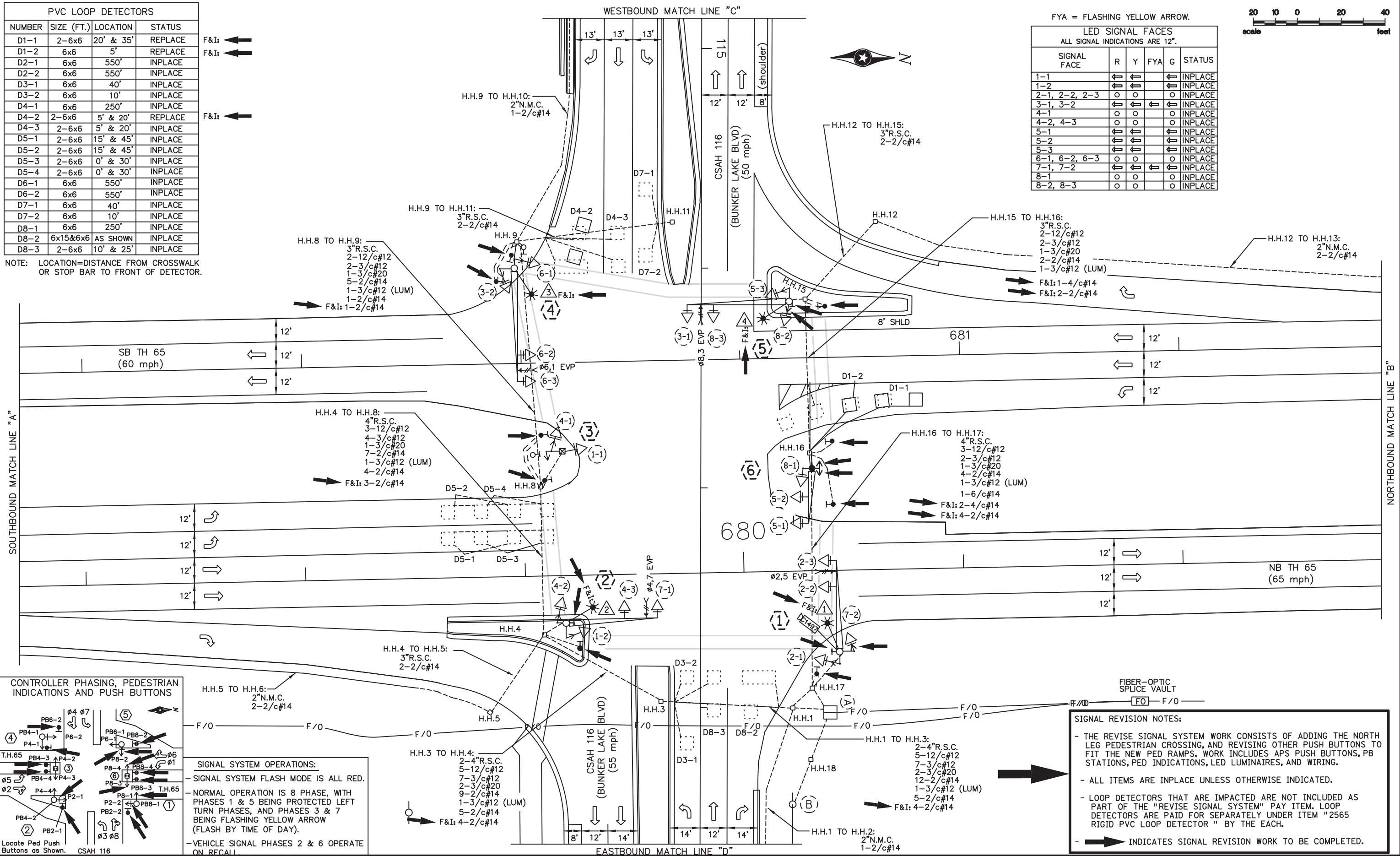
DISTRICT *: Metro
PLOT NAME: I735545sgl_40
FILE NAME: Projects\DM_P05\06500000\Traffic\Signals\8.50_2\180_BunkerLake Blvd_CSAH J16 I735545-PENDING\I735545sgl.dgn

| PVC LOOP DETECTORS | | | |
|--------------------|------------|-----------|---------|
| NUMBER | SIZE (FT.) | LOCATION | STATUS |
| D1-1 | 2-6x6 | 20' & 35' | REPLACE |
| D1-2 | 6x6 | 5' | REPLACE |
| D2-1 | 6x6 | 550' | INPLACE |
| D2-2 | 6x6 | 550' | INPLACE |
| D3-1 | 6x6 | 40' | INPLACE |
| D3-2 | 6x6 | 10' | INPLACE |
| D4-1 | 6x6 | 250' | INPLACE |
| D4-2 | 2-6x6 | 5' & 20' | REPLACE |
| D4-3 | 2-6x6 | 5' & 20' | INPLACE |
| D5-1 | 2-6x6 | 15' & 45' | INPLACE |
| D5-2 | 2-6x6 | 15' & 45' | INPLACE |
| D5-3 | 2-6x6 | 0' & 30' | INPLACE |
| D5-4 | 2-6x6 | 0' & 30' | INPLACE |
| D6-1 | 6x6 | 550' | INPLACE |
| D6-2 | 6x6 | 550' | INPLACE |
| D7-1 | 6x6 | 40' | INPLACE |
| D7-2 | 6x6 | 10' | INPLACE |
| D8-1 | 6x6 | 250' | INPLACE |
| D8-2 | 6x15&6x6 | AS SHOWN | INPLACE |
| D8-3 | 2-6x6 | 10' & 25' | INPLACE |

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

FYA = FLASHING YELLOW ARROW.

| LED SIGNAL FACES | | | | | |
|---------------------------------|---|---|-----|---|---------|
| ALL SIGNAL INDICATIONS ARE 12". | | | | | |
| SIGNAL FACE | R | Y | FYA | G | STATUS |
| 1-1 | ← | ← | ← | ← | INPLACE |
| 1-2 | ← | ← | ← | ← | INPLACE |
| 2-1, 2-2, 2-3 | ○ | ○ | ○ | ○ | INPLACE |
| 3-1, 3-2 | ← | ← | ← | ← | INPLACE |
| 4-1 | ○ | ○ | ○ | ○ | INPLACE |
| 4-2, 4-3 | ○ | ○ | ○ | ○ | INPLACE |
| 5-1 | ← | ← | ← | ← | INPLACE |
| 5-2 | ← | ← | ← | ← | INPLACE |
| 5-3 | ← | ← | ← | ← | INPLACE |
| 6-1, 6-2, 6-3 | ○ | ○ | ○ | ○ | INPLACE |
| 7-1, 7-2 | ← | ← | ← | ← | INPLACE |
| 8-1 | ○ | ○ | ○ | ○ | INPLACE |
| 8-2, 8-3 | ○ | ○ | ○ | ○ | INPLACE |



SIGNAL SYSTEM OPERATIONS:

- SIGNAL SYSTEM FLASH MODE IS ALL RED.
- NORMAL OPERATION IS 8 PHASE, WITH PHASES 1 & 5 BEING PROTECTED LEFT TURN PHASES, AND PHASES 3 & 7 BEING FLASHING YELLOW ARROW (FLASH BY TIME OF DAY).
- VEHICLE SIGNAL PHASES 2 & 6 OPERATE ON RECALL.

SIGNAL REVISION NOTES:

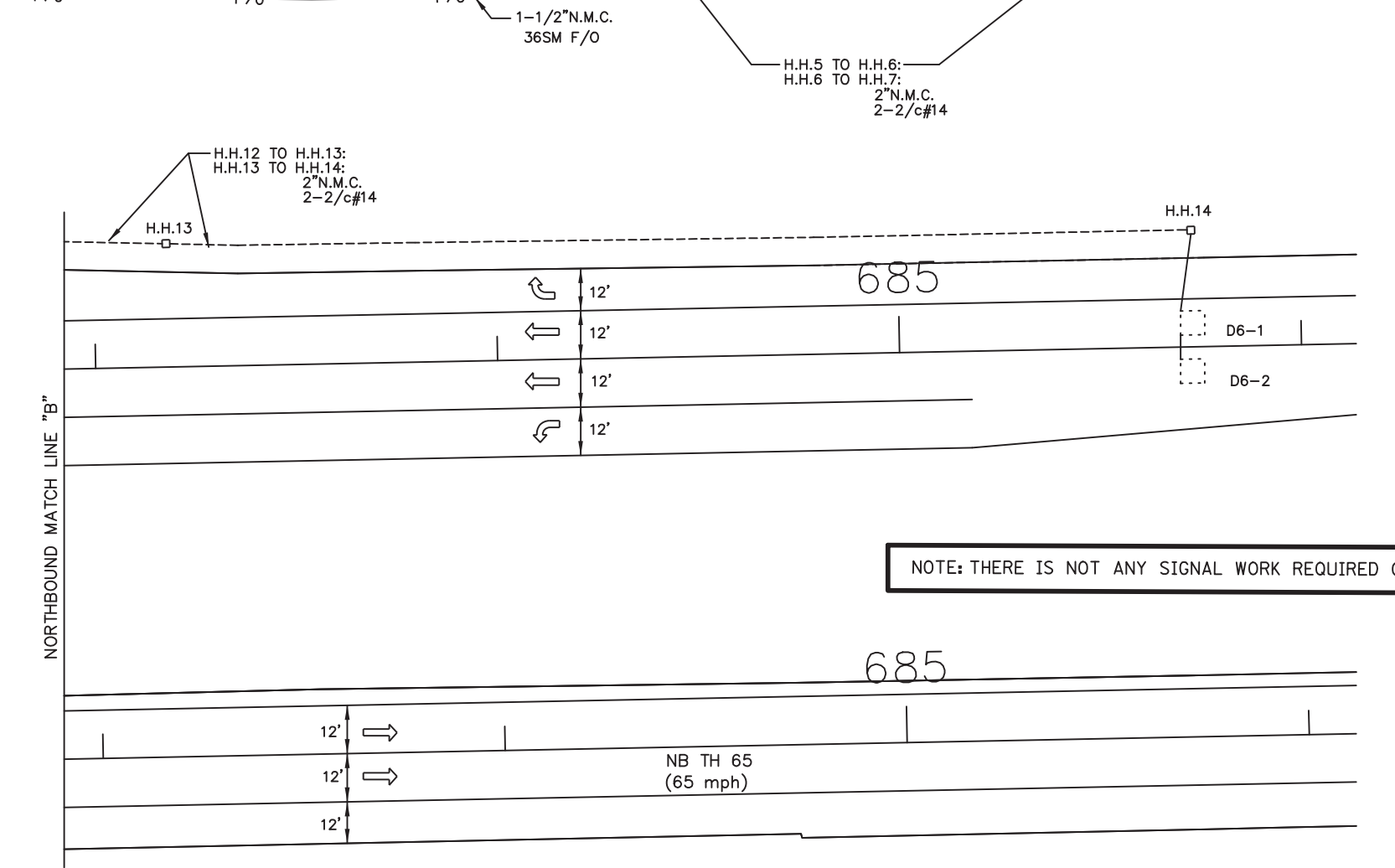
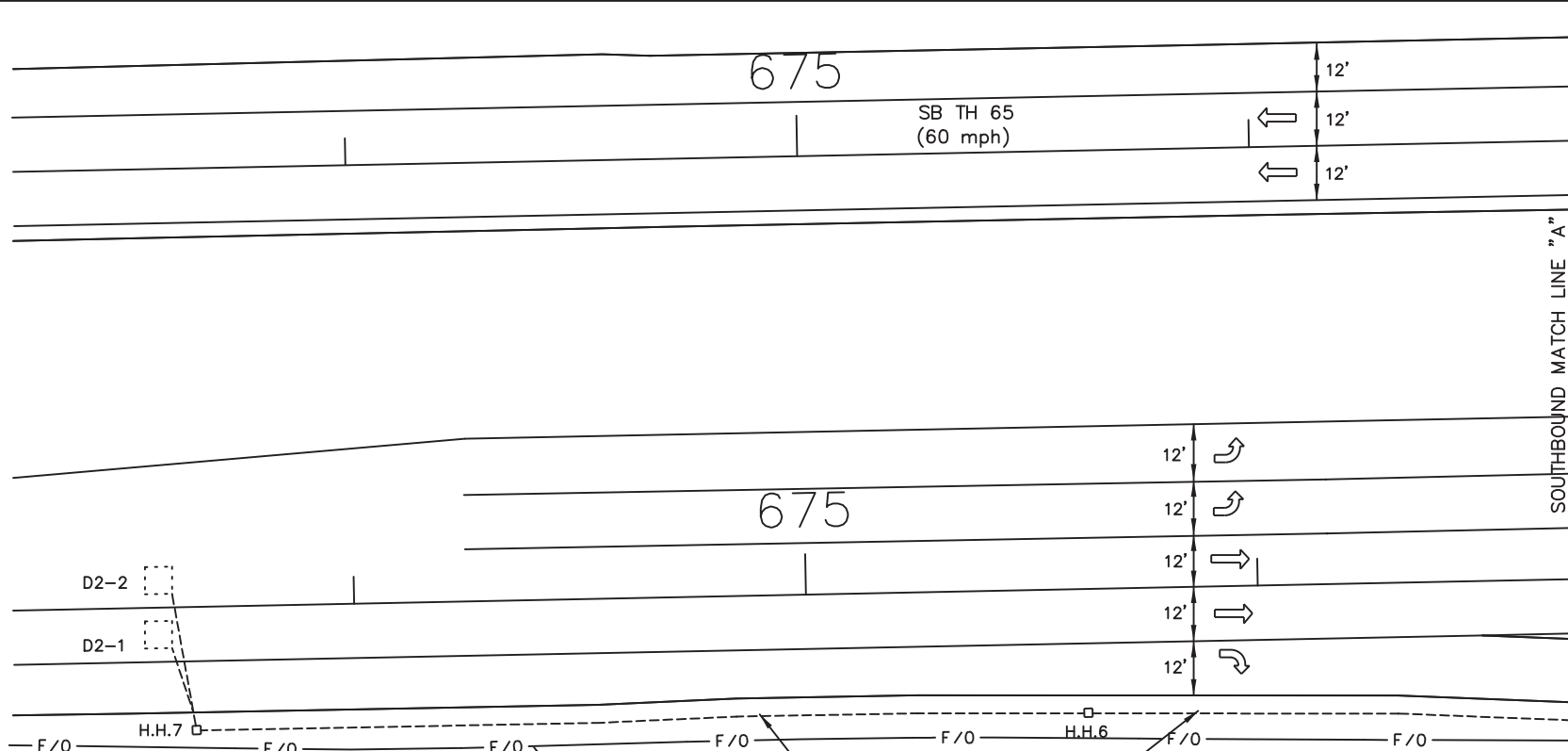
- THE REVISE SIGNAL SYSTEM WORK CONSISTS OF ADDING THE NORTH LEG PEDESTRIAN CROSSING, AND REVISING OTHER PUSH BUTTONS TO FIT THE NEW PED RAMPS. WORK INCLUDES APS PUSH BUTTONS, PB STATIONS, PED INDICATIONS, LED LUMINAIRES, AND WIRING.
- ALL ITEMS ARE INPLACE UNLESS OTHERWISE INDICATED.
- LOOP DETECTORS THAT ARE IMPACTED ARE NOT INCLUDED AS PART OF THE "REVISE SIGNAL SYSTEM" PAY ITEM. LOOP DETECTORS ARE PAID FOR SEPARATELY UNDER ITEM "2565 RIGID PVC LOOP DETECTOR" BY THE EACH.
- INDICATES SIGNAL REVISION WORK TO BE COMPLETED.

| BY | DATE | REVISIONS | SYSTEM ID: 1735545 | T.E. 103232 | REVISE SIGNAL SYSTEM "K" INTERSECTION LAYOUT (T.H. 65 AT C.S.A.H. 116 (BUNKER LAKE BLVD.) IN THE CITY OF HAM LAKE) | S.P. 002-632-021, S.P. 106-020-040, S.P. 106-125-009 | DRAWN BY: HRL | CKD BY: CDB | DATE: 10/10/23 |
|----|------|-----------|-----------------------------|-------------|--|--|----------------|-------------|----------------|
| | | | METER ADDRESS: 13701 HWY 65 | | | CERTIFIED BY: <i>Gregory Ken</i> | LIC. NO. 26829 | | DATE: 12/8/23 |
| | | | OLD SYSTEM ID: 21180 | | | STATE PROJ. NO. 0208-165 (T.H. 65) SHEET NO. SS44 OF SS87 SHEETS | | | |

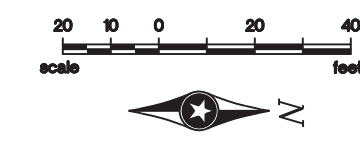
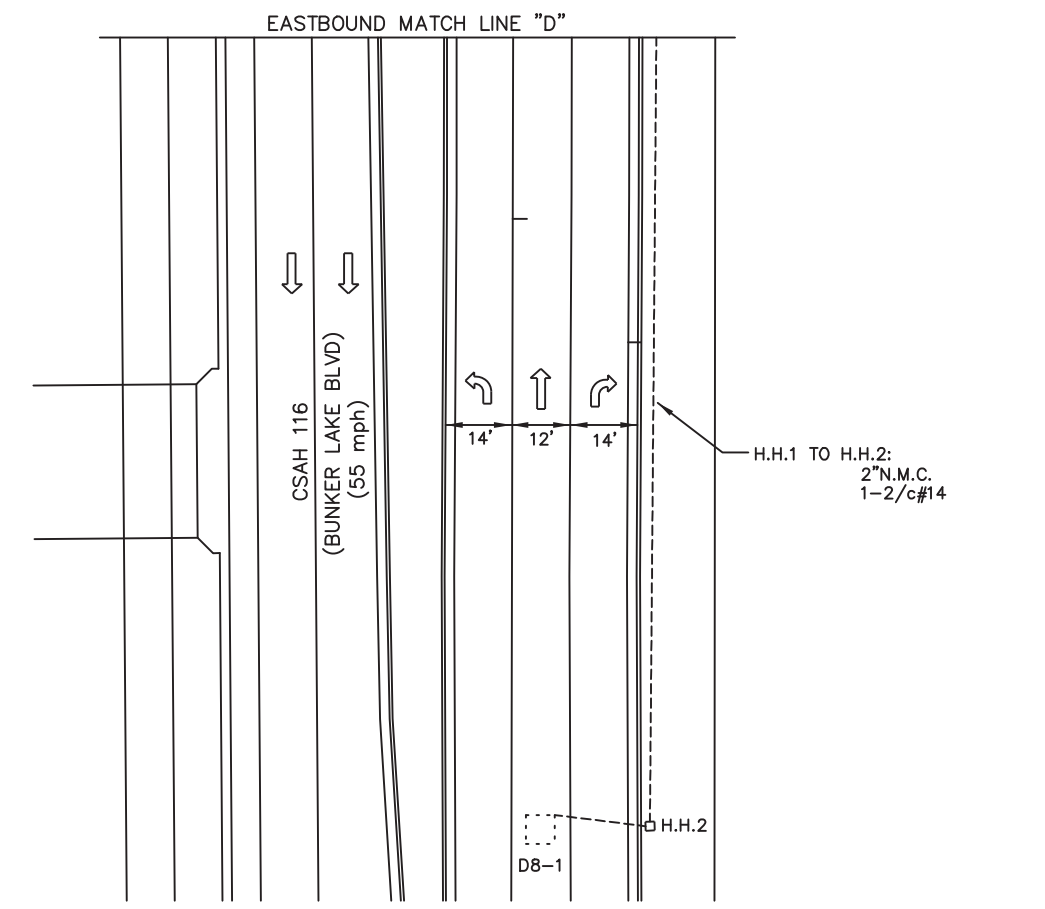
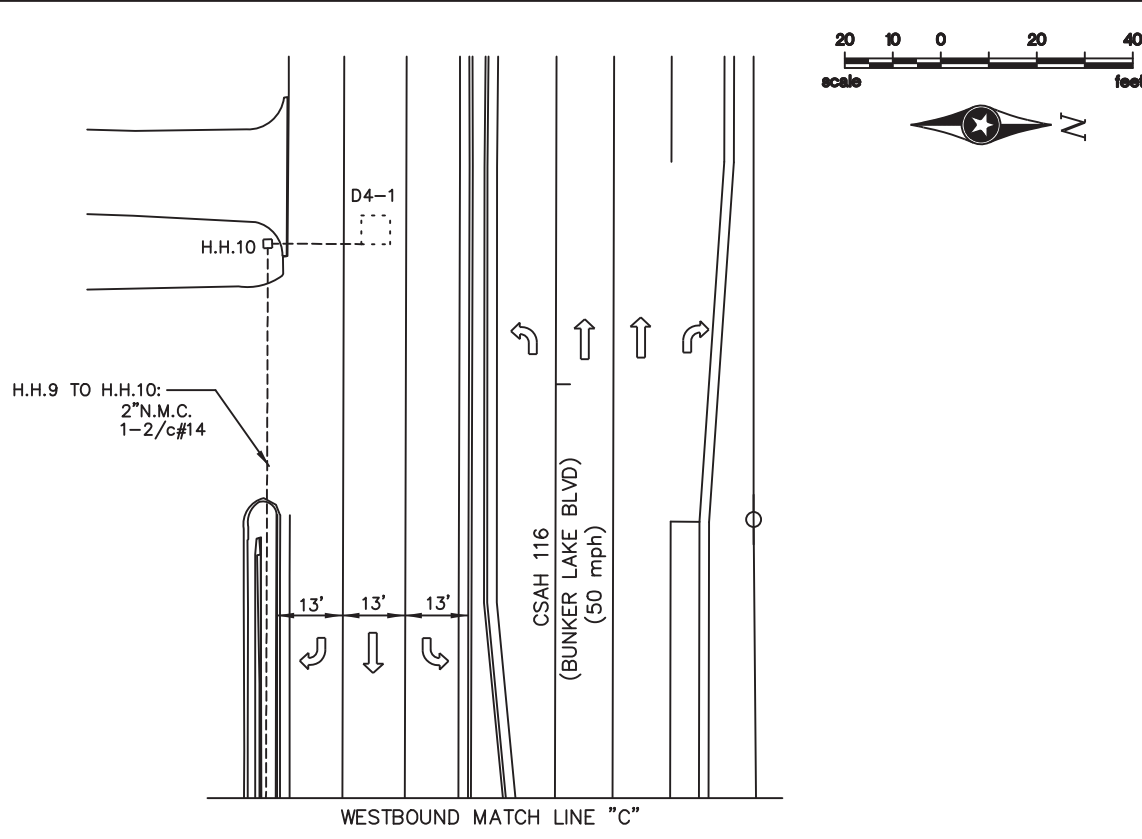
DISTRICT #: Metro DISTRICT #: Metro
 IPLOT NAME: I735545sgl_41 LOT NAME: I735545sgl_41
 FILENAME: Projects\DM_Plan\I735545sgl_41.dwg PLOTNAME: I735545sgl_41

PLOTTED/REVISED: 3-NOV-2023

I735545 PENDING\735545.dwg I735545 PENDING\735545.dwg I735545 PENDING\735545.dwg I735545 PENDING\735545.dwg I735545 PENDING\735545.dwg



NOTE: THERE IS NOT ANY SIGNAL WORK REQUIRED ON THIS SHEET.



| BY | DATE | REVISIONS | SYSTEM ID: 1735545 METER ADDRESS: 13701 HWY 65 OLD SYSTEM ID: 21180 | T.E. 103232 | REVISE SIGNAL SYSTEM "K" INTERSECTION MATCHLINE LAYOUT T.H. 65 AT C.S.A.H. 116 (BUNKER LAKE BLVD.) IN THE CITY OF HAM LAKE | S.P. 002-632-021, S.P. 106-020-040, S.P. 106-125-009 CERTIFIED BY LIC. NO. 26829 DATE: 10/12/23 | DRAWN BY: HRL | CKD BY: CDB | DATE: 10/10/23 |
|----|------|-----------|---|-------------|---|---|---------------|-------------|----------------|
| | | | | | | | | | |

PLOTTED/REVISED: 3-NOV-2023

DISTRICT #: Metro
PLOT NAME: IT35545Sgl_42
FILENAME: Projects\DM_FOS\0650000\Traffic\Signal\8.50_2\180_BunkerLake Blvd_CSAH J16 IT35545-PENDING\IT35545Sgl.dgn

(4) PA100 POLE FOUNDATION
TYPE PA100-A-50-D40-9 (DAVIT AT 350 DEG.)
PA100 SWING-AWAY HINGES
REMOVE: LUMINAIRE-250 W HPS
F&I: 1-LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
2-ONE WAY SIGNALS-OVERHEAD (0', 12')
TYPE 10B-POLE MOUNTED AT 180 DEG. (6-1, P6-2)
2-R6-1 SIGN PANELS AT 0 DEG. & 180 DEG.
ONE WAY EVP DETECTOR AND LIGHT (Ø6,1)
TYPE D SIGN PANEL-OVERHEAD (CSAH 116)
1-SET PEDESTRIAN INDICATIONS (HOUSING AND VISOR)-
POLE MOUNTED AT 90 DEG. (FOR P4-1)
TYPE 10B BRACKETING-POLE MOUNTED AT 90 DEG.
ONE WAY SIGNAL-POLE MOUNTED AT 90 DEG.
(4-SECTION SIGNAL) (3-2)
2-C.D. LED PEDESTRIAN SIGNAL LENSES AT 90 DEG./180 DEG.
REMOVE: 1-APS PUSH BUTTON & SIGN (LT ARROW) (PB4-1)
TYPE D SIGN PANEL-OVERHEAD (D-3)
EXTENDED INTO H.H.9:
3"R.S.C.
2-12/c#12
2-3/c#12
1-3/c#20
1-3/c#12 (LUM)

F&I: PED PB STATION
1-APS PB AND SIGN
(RT ARROW) (PB6-2)
EXTEND INTO HH 9:
1" CONDUIT
1-2/C 14 S&I: (CABLE 54)
1-1/C 6 INS. GR.

(3) PEDESTAL FOUNDATION
10' PEDESTAL POLE, BASE, AND WIND COLLAR
TYPE 6D
2-C.D. LED PEDESTRIAN SIGNAL LENSES
EXTEND INTO H.H.8:
3"R.S.C.
1-12/c#12
2-3/c#12

F&I: PED PB STATION
1-APS PB AND SIGN
(LT ARROW) (PB4-1)
EXTEND INTO HH 9:
1" CONDUIT
1-2/C 14
1-1/C 6 INS. GR.

F&I: PED PB STATION
1-APS PB AND SIGN
(LT ARROW) (PB4-4)
EXTEND INTO HH 8:
1" CONDUIT
1-2/C 14
1-1/C 6 INS. GR.

REMOVE: PED PB STATION
1-APS PB AND SIGN
(DBL ARROW) (PB4-2)
EXTEND INTO HH 8:
2" CONDUIT
1-2/C 14

F&I: PED PB STATION
1-APS PB AND SIGN
(RT ARROW) (PB4-2) NOW (PB4-3)
EXTEND INTO HH 8:
1" CONDUIT
1-2/C 14
1-1/C 6 INS. GR.

(A) EQUIPMENT PAD
CONTROLLER AND CABINET (NOTE-STATE
FORCES WILL REPLACE EXISTING
CONTROLLER AND CABINET AT NO
EXPENSE TO CONTRACTOR)
SIGNAL SERVICE CABINET
CONTROLLER CABINET TO H.H.1:
2-4"R.S.C.
5-12/c#12
7-3/c#12
2-3/c#20
14-2/c#14
F&I: 4-2/c#14

CONTROLLER CABINET TO H.H.17:
2-4"R.S.C.
5-12/c#12
4-3/c#12
2-3/c#20
4-2/c#14
1-CAT 5E (PTZ CAMERA)
F&I: 2-4/c#14
F&I: 6-2/c#14

SERVICE CABINET TO CONTROLLER CABINET:
2"R.S.C.
2-1/c#6
1-1/c#6 INS.GR.

SERVICE CABINET TO H.H.17:
2"R.S.C.
2-3/c#12 (LUM)

BETWEEN H.H.1 & H.H.17:
1-3/c#12 (LUM)
3"R.S.C.

SERVICE CABINET TO H.H.18:
2"R.S.C.
3-1/c#2

CONTROL CABINET TO TMS SPLICE VAULT:
1 1/2"N.M.C. INSERTED INTO EXISTING
3"R.S.C. STUB OUT FROM CONTROLLER CABINET
1-6 SM FO PIGTAIL (TO SPLICE VAULT)

(B) WOOD POLE (S.O.P.)
2"R.S.C. RISER AND WEATHERHEAD
3-1/c#2
EXTENDED INTO H.H.18:
2"R.S.C.
3-1/c#2

(5) PA100 POLE FOUNDATION
TYPE PA100-A-45-D30-9 (DAVIT AT 350 DEG.)
LUMINAIRE-250 W HPS
REMOVE: LUMINAIRE-250 W HPS
F&I: 1-LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
1-ONE WAY SIGNAL-OVERHEAD AT 0' (4-SECTION SIGNAL) (3-1)
1-ONE WAY SIGNAL-OVERHEAD AT 12' (8-3)
ONE WAY EVP DETECTOR AND LIGHT (Ø8,3)
TYPE 10B BRACKETING-POLE MOUNTED 90 DEG.(5-3, P6-1)
TYPE 10A-POLE MOUNTED AT 270 DEG. (8-2)
F&I: 1-C.D. PED HEAD AT 90 DEG (P8-4)
(MODIFY TYPE 10A TO TYPE 10B)
REMOVE: 1-APS PUSH BUTTON & SIGN (LT ARROW) (PB6-1)
F&I: 1-APS PUSH BUTTON & SIGN (LT ARROW) (PB6-1)
F&I: 1-APS MOUNTING ADAPTOR
REMOVE: R9-3a SIGN PANEL-FACING POLE 6
R6-1L SIGN PANEL AT 0 DEG.
R10-X12 SIGN PANEL-ADJACENT TO 3-1
TYPE D SIGN PANEL-OVERHEAD (D-4)
EXTENDED INTO H.H.15:
3"R.S.C.
2-12/c#12
2-3/c#12
1-3/c#20
1-3/c#12 (LUM)
F&I: 1-4/C 14 (P8-2)
F&I: 1-2/C 14 (PB6-1)

F&I: PED PB STATION
1-APS PB AND SIGN
(RT ARROW) (PB8-2)
EXTEND INTO HH 15:
1" CONDUIT
1-2/C 14
1-1/C 6 INS. GR.

(6) PA85 POLE FOUNDATION
TYPE PA85-A-25
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'(5-1)
1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 11'(5-2)
1-ANGLE MOUNT-POLE MOUNTED 90 DEG.(8-1)
F&I: 2-ANGLE MOUNT C. D. PED HEADS AT 90 AND 180 DEG (P8-3, P8-4)
REMOVE: 1-TYPE R9-3 SIGN (NO PEDS) FACING POLES 1 & 5
3" CONDUIT INTO HH 16:
1-12/C 12
1-6/C 12
F&I: 1-4/C 14 (P8-4)

F&I: PED PB STATION
1-APS PB AND SIGN
(RT ARROW) (PB8-3)
EXTEND INTO HH 16:
1" CONDUIT
1-2/C 14
1-1/C 6 INS. GR.

F&I: PED PB STATION
1-APS PB AND SIGN
(LT ARROW) (PB8-4)
EXTEND INTO HH 16:
1" CONDUIT
1-2/C 14
1-1/C 6 INS. GR.

(2) PA100 POLE FOUNDATION
TYPE PA100-A-40-X6-350/CAM 400 (DAVIT AT 350 DEG.)
LUMINAIRE-250 W HPS
REMOVE: LUMINAIRE-250 W HPS
F&I: 1-LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
1-ONE WAY SIGNAL-OVERHEAD AT 15' (4-3)
2-TYPE 10B-POLE MOUNTED AT 90 DEG. & 180 DEG.
R6-1L SIGN PANEL AT 0 DEG.
ONE WAY EVP DETECTOR AND LIGHT (Ø4,7)
1-ONE WAY SIGNAL-OVERHEAD AT 0' (4-SECTION SIGNAL) (7-1)
2-C.D. LED PEDESTRIAN SIGNAL HEADS AT 90 DEG./180 DEG.
REMOVE: 1-APS PUSH BUTTON & SIGN (RT ARROW) (PB4-3)
F&I: 1-APS PUSH BUTTON & SIGN (LT ARROW) (PB4-2)
F&I: 1-APS MOUNTING ADAPTOR
R10-X12 SIGN PANEL-ADJACENT TO 7-1
TYPE D SIGN PANEL-OVERHEAD (D-2)
EXTENDED INTO H.H.4:
3"R.S.C.
2-12/c#12
3-3/c#12
1-3/c#20
2-3/c#12 (LUM)
F&I: 1-2/C 14 (PB4-2)

F&I: PED PB STATION
1-APS PB AND SIGN
(LT ARROW) (PB2-1)
EXTEND INTO HH 4:
1" CONDUIT
1-2/C 14
1-1/C 6 INS. GR.

SIGNAL REVISION NOTES:

- THE REVISE SIGNAL SYSTEM WORK CONSISTS OF ADDING THE NORTH LEG PEDESTRIAN CROSSING, AND REVISING OTHER PUSH BUTTONS TO FIT THE NEW PED RAMPS. WORK INCLUDES APS PUSH BUTTONS, PB STATIONS, PED INDICATIONS, LED LUMINAIRES, AND WIRING.
- ALL ITEMS ARE INPLACE UNLESS OTHERWISE INDICATED.
- LOOP DETECTORS THAT ARE IMPACTED ARE NOT INCLUDED AS PART OF THE "REVISE SIGNAL SYSTEM" PAY ITEM. LOOP DETECTORS ARE PAID FOR SEPARATELY UNDER ITEM "2565 RIGID PVC LOOP DETECTOR " BY THE EACH.
- INDICATES SIGNAL REVISION WORK TO BE COMPLETED.

(1) PA100 POLE FOUNDATION
TYPE PA100-A-40-X6-350/CAM 400 (DAVIT AT 350 DEG.)
LUMINAIRE-250 W HPS
REMOVE: LUMINAIRE-250 W HPS
F&I: 1-LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
2-ONE WAY SIGNALS-OVERHEAD (0', 12')
TYPE 10B-POLE MOUNTED AT 180 DEG.(2-1, P2-2) (C. D. PED HEAD)
TYPE 10A BRACKETING-POLE MOUNTED AT 90 DEG.
(4-SECTION SIGNAL) (7-2)
F&I: 1-C. D. PED HEAD AT 90 (P8-1)(USING SPARE CONDUCTORS ON CABLE NO. 7.)
(MODIFY TYPE 10A TO TYPE 10B)
REMOVE: R9-3a SIGN PANEL-FACING POLE 6
2-R6-1 SIGN PANELS AT 0 DEG. & 180 DEG.
ONE WAY EVP DETECTOR AND LIGHT (Ø2,5)
TYPE D SIGN PANEL-OVERHEAD (CSAH 116)
1-VIDEO CAMERA-MOUNTED ON CAMERA EXTENSION
(WITH POWER SUPPLY)
REMOVE: 1-APS PUSH BUTTON & SIGN (RT ARROW) (PB2-2)
F&I: 1-APS PUSH BUTTON & SIGN (LT ARROW) (PB8-1)
F&I: 1-APS MOUNTING ADAPTOR
TYPE D SIGN PANEL-OVERHEAD (D-1)
EXTENDED INTO H.H.17:
3"R.S.C.
2-12/c#12
2-3/c#12
1-3/c#20
2-3/c#12 (LUM)
1-CAT 5E (PTZ CAMERA)
F&I: 1-2/C 14 (PB8-1)

F&I: PED PB STATION
1-APS PB AND SIGN
(RT ARROW) (PB2-2)
EXTEND INTO HH 17:
1" CONDUIT
1-2/C 14
1-1/C 6 INS. GR.

| BY | DATE | REVISIONS |
|----|------|-----------|
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SYSTEM ID: 1735545 T.E. 103232
METER ADDRESS: 13701 HWY 65
OLD SYSTEM ID: 21180

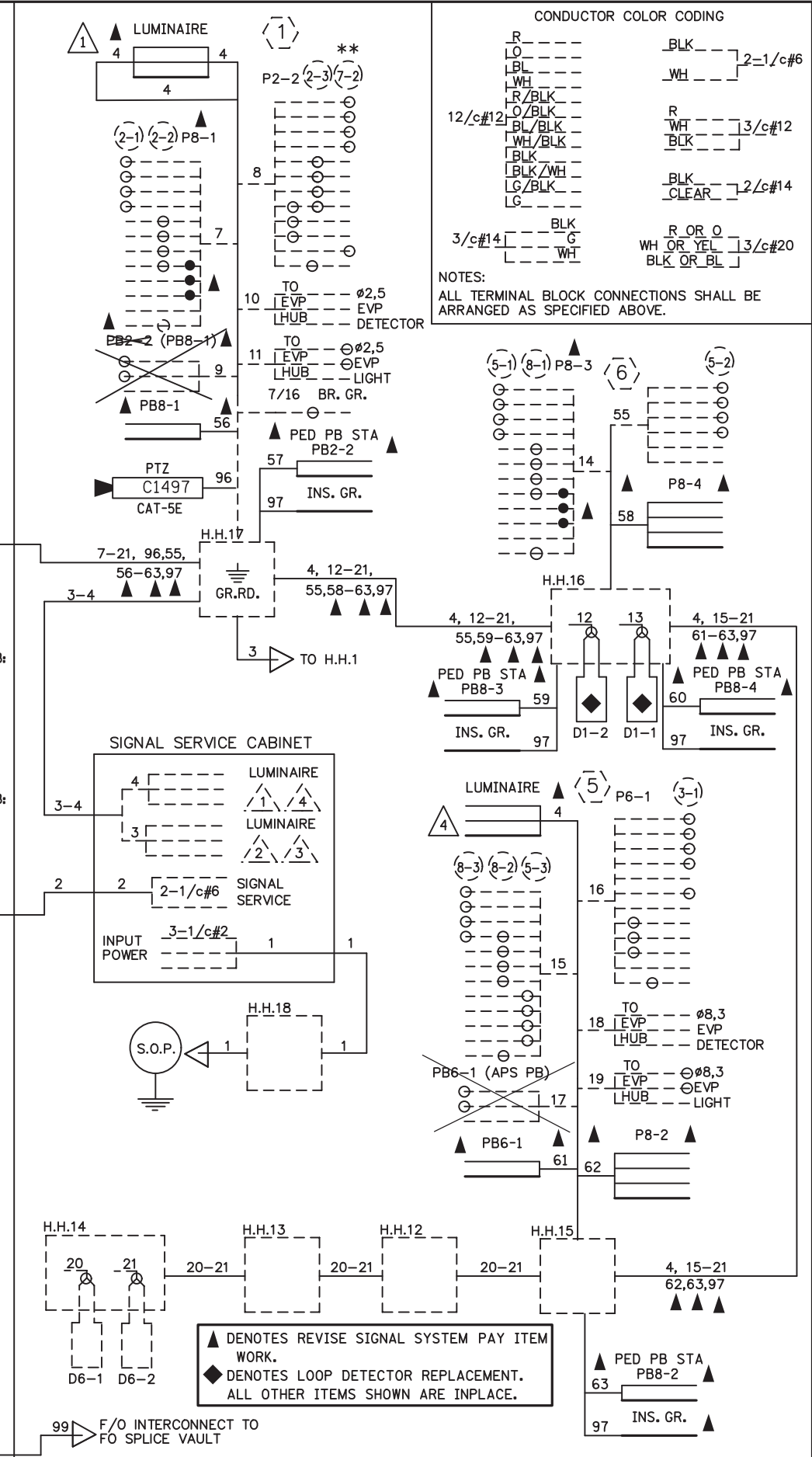
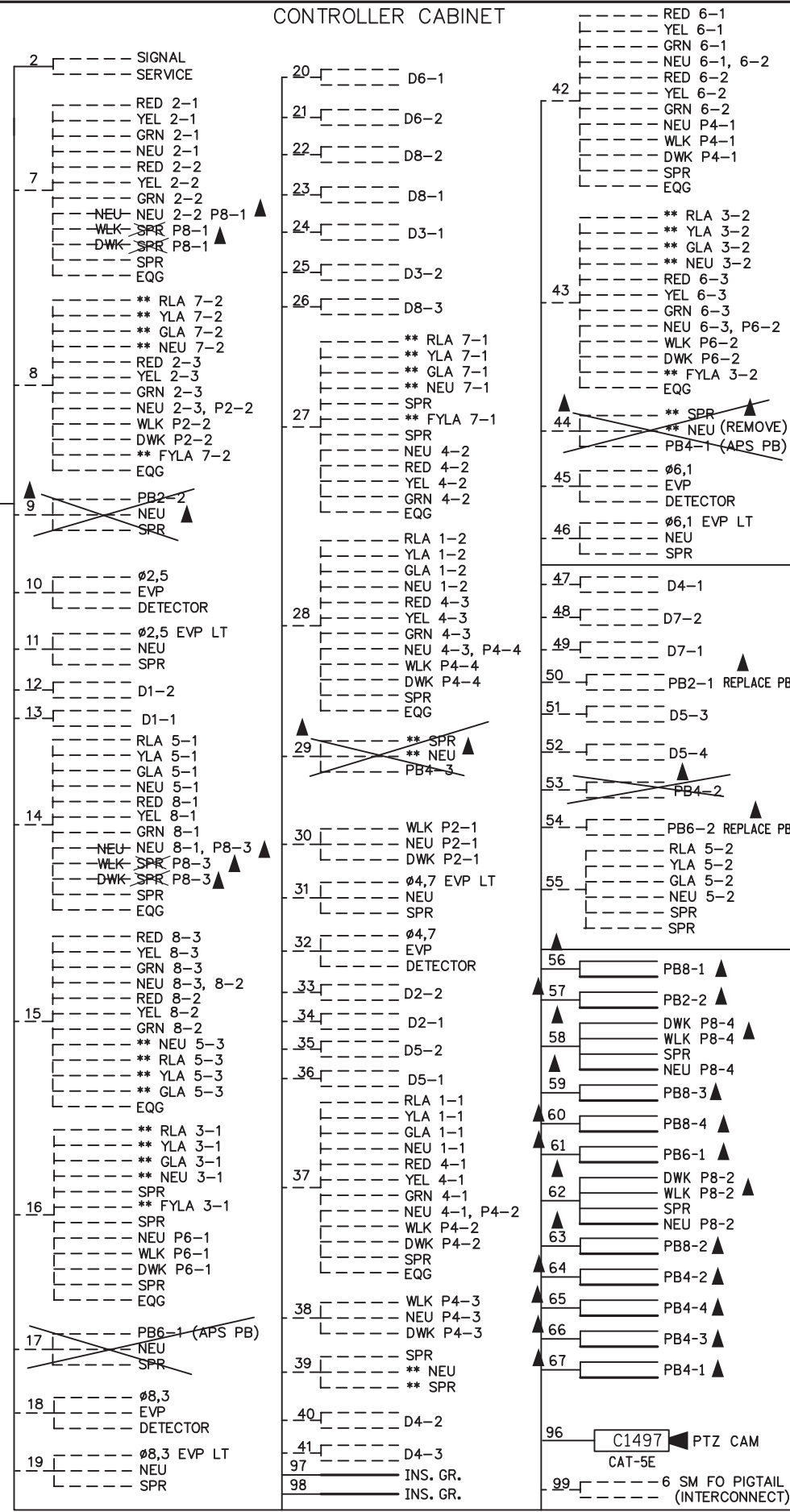
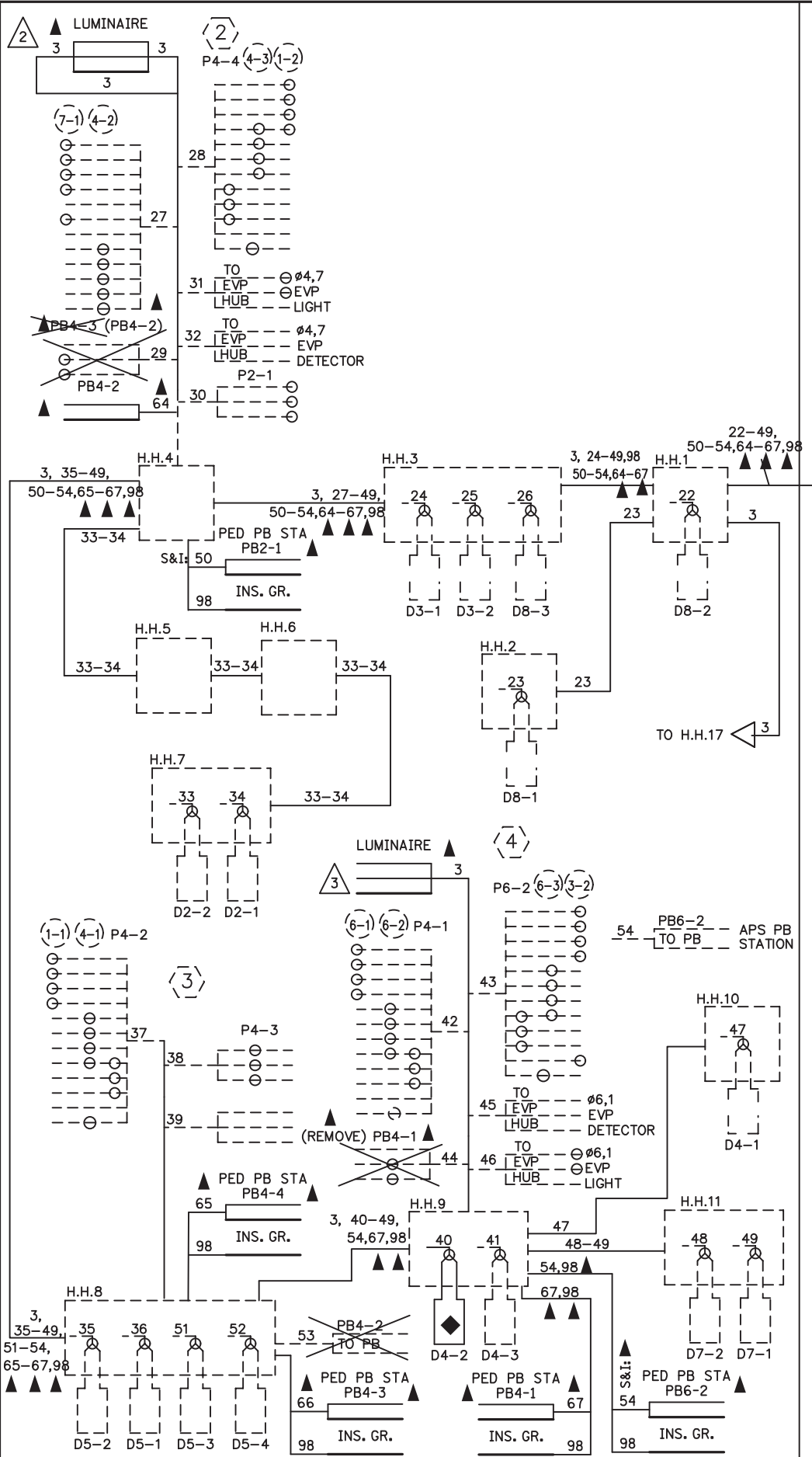
**REVISE SIGNAL SYSTEM "K"
INTERSECTION LAYOUT POLE NOTES
T.H. 65 AT C.S.A.H. 116 (BUNKER LAKE BLVD.)
IN THE CITY OF HAM LAKE**

S.P.002-632-021, S.P.106-020-040, S.P.106-125-009
DRAWN BY:HRL CKD BY:CDB DATE:10/10/23
CERTIFIED BY *Gregory Kern* LIC. NO. 26829 DATE: 10/12/23
STATE PROJ.NO. 0208-165 (T.H.65) SHEET NO. SS46 OF SS87 SHEETS

PLOTTED/REVISED: 14-DEC-2023

DISTRICT #: Metro
PLOT NAME: 1735545sgl_43
FILENAME: Projects\DM_POS\06500000\Traffic\Signals\8.50_2\180_BunkerLake Blvd_CSAH\116 IT 35545-PENDING\VT 35545sgl.dgn

CONTROLLER CABINET



CONDUCTOR COLOR CODING

| | | |
|--------|-----------|---------|
| R | BLK | 2=1/c#6 |
| LO | WH | |
| BL | | |
| WH | | |
| R/BLK | R | 3/c#12 |
| O/BLK | WH | |
| BL/BLK | BLK | |
| WH/BLK | | |
| BLK | | |
| BLK/WH | BLK | 2/c#14 |
| LG/BLK | CLEAR | |
| LG | | |
| | BLK | |
| 3/c#14 | G | |
| | WH | |
| | R OR O | 3/c#20 |
| | WH OR YEL | |
| | BLK OR BL | |

NOTES:
ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.

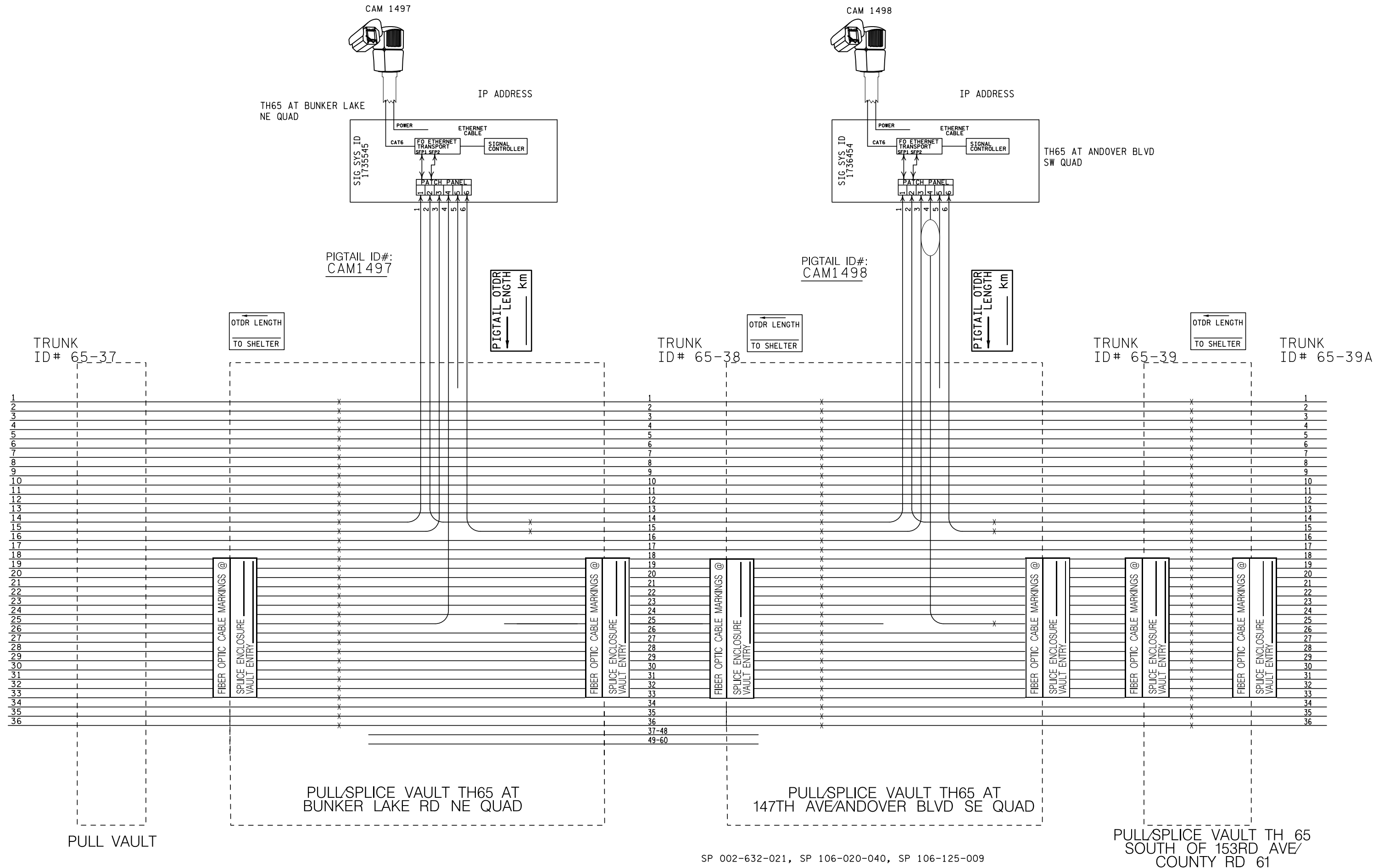
▲ DENOTES REVISE SIGNAL SYSTEM PAY ITEM WORK.
◆ DENOTES LOOP DETECTOR REPLACEMENT. ALL OTHER ITEMS SHOWN ARE INPLACE.

| BY | DATE | REVISIONS |
|----|------|-----------|
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| | | |

SYSTEM ID: 1735545 T.E. 103232
METER ADDRESS: 13701 HWY 65
OLD SYSTEM ID: 21180

REVISE SIGNAL SYSTEM "K"
FIELD WIRING DIAGRAM
T.H. 65 AT C.S.A.H. 116 (BUNKER LAKE BLVD.)
IN THE CITY OF HAM LAKE

S.P. 002-632-021, S.P. 106-020-040, S.P. 106-125-009
DRAWN BY: HRL CKD BY: CDB DATE: 10/10/23
CERTIFIED BY: *Gregory Kern* LIC. NO. 26829 DATE: 12/8/23
STATE PROJ. NO. 0208-165 (T.H. 65) SHEET NO. SS47 OF SS87 SHEETS



SP 002-632-021, SP 106-020-040, SP 106-125-009

| PVC LOOP DETECTORS | | | |
|--------------------|------------|-----------|---------|
| NUMBER | SIZE (FT.) | LOCATION | STATUS |
| D1-1 | 2-6x6 | 15' & 45' | INPLACE |
| D1-2 | 2-6x6 | 0' & 30' | INPLACE |
| D2-1 | 6x6 | 550' | INPLACE |
| D2-2 | 6x6 | 550' | INPLACE |
| D3-1 | 6x6 | 40' | INPLACE |
| D3-2 | 6x6 | 10' | INPLACE |
| D4-1 | 6x6 | 250' | INPLACE |
| D4-2 | 6x15&6x6 | AS SHOWN | INPLACE |
| D4-3 | 2-6x6 | 5' & 20' | INPLACE |
| D5-1 | 2-6x6 | 15' & 45' | INPLACE |
| D5-2 | 2-6x6 | 15' & 45' | INPLACE |
| D5-3 | 2-6x6 | 0' & 30' | INPLACE |
| D5-4 | 2-6x6 | 0' & 30' | INPLACE |
| D6-1 | 6x6 | 550' | INPLACE |
| D6-2 | 6x6 | 550' | INPLACE |
| D7-1 | 6x6 | 40' | INPLACE |
| D7-2 | 6x6 | 10' | INPLACE |
| D8-1 | 6x6 | 250' | INPLACE |
| D8-2 | 6x15&6x6 | AS SHOWN | INPLACE |
| D8-3 | 2-6x6 | 10' & 25' | INPLACE |

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

APS PUSH BUTTON STATION
1-APS PUSH BUTTON & SIGN (RT ARROW) (PB6-2)
EXTEND INTO H.H.9:
2" CONDUIT
1-2/c#14

APS PUSH BUTTON STATION
1-APS PUSH BUTTON & SIGN (DBL ARROW) (PB4-2)
EXTEND INTO H.H.8:
2" CONDUIT
1-2/c#14

(A) EQUIPMENT PAD
CONTROLLER AND CABINET (NOTE-STATE FORCES WILL REPLACE EXISTING CONTROLLER AND CABINET AT NO EXPENSE TO CONTRACTOR)

SIGNAL SERVICE CABINET
CONTROLLER CABINET TO H.H.1:
2-4"R.S.C.
5-12/c#12
7-3/c#12
2-3/c#20
14-2/c#14
5-2/c#14

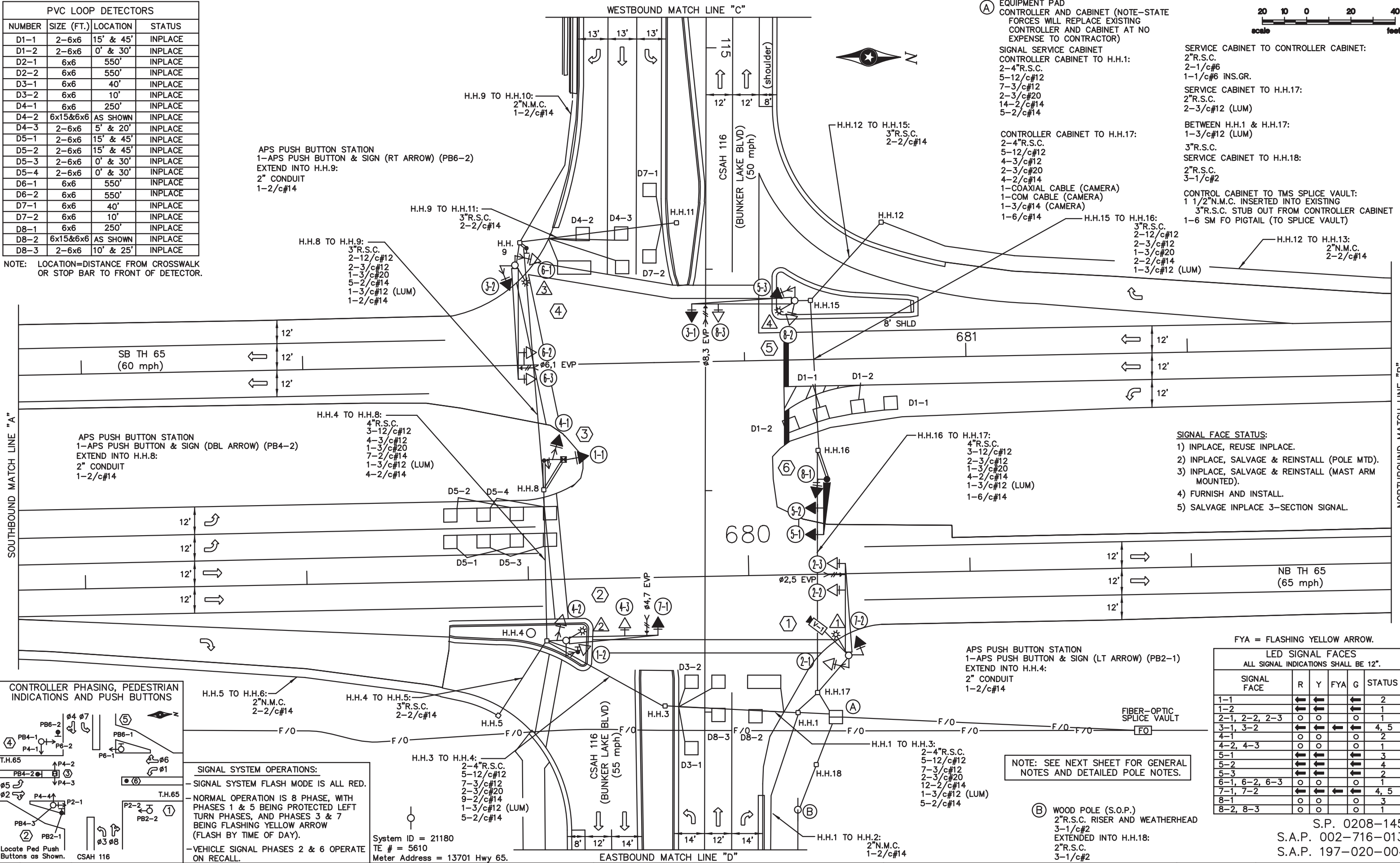
CONTROLLER CABINET TO H.H.17:
2-4"R.S.C.
5-12/c#12
4-3/c#12
2-3/c#20
4-2/c#14
1-COAXIAL CABLE (CAMERA)
1-COM CABLE (CAMERA)
1-3/c#14 (CAMERA)
1-6/c#14

SERVICE CABINET TO CONTROLLER CABINET:
2"R.S.C.
2-1/c#6
1-1/c#6 INS.GR.

SERVICE CABINET TO H.H.17:
2"R.S.C.
2-3/c#12 (LUM)

BETWEEN H.H.1 & H.H.17:
1-3/c#12 (LUM)
3"R.S.C.
SERVICE CABINET TO H.H.18:
2"R.S.C.
3-1/c#2

CONTROL CABINET TO TMS SPLICE VAULT:
1 1/2"N.M.C. INSERTED INTO EXISTING
3"R.S.C. STUB OUT FROM CONTROLLER CABINET
1-6 SM FO PIGTAIL (TO SPLICE VAULT)



- SIGNAL FACE STATUS:
- 1) INPLACE, REUSE INPLACE.
 - 2) INPLACE, SALVAGE & REINSTALL (POLE MTD).
 - 3) INPLACE, SALVAGE & REINSTALL (MAST ARM MOUNTED).
 - 4) FURNISH AND INSTALL.
 - 5) SALVAGE INPLACE 3-SECTION SIGNAL.

APS PUSH BUTTON STATION
1-APS PUSH BUTTON & SIGN (LT ARROW) (PB2-1)
EXTEND INTO H.H.4:
2" CONDUIT
1-2/c#14

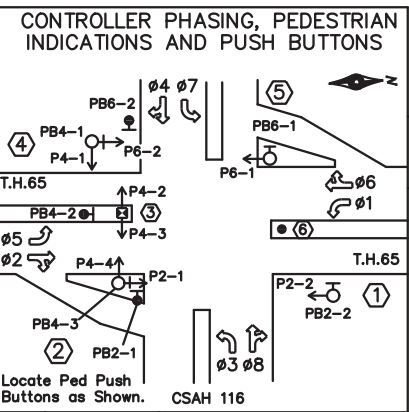
FYA = FLASHING YELLOW ARROW.

LED SIGNAL FACES
ALL SIGNAL INDICATIONS SHALL BE 12".

| SIGNAL FACE | R | Y | FYA | G | STATUS |
|---------------|---|---|-----|---|--------|
| 1-1 | ← | ← | ← | ← | 2 |
| 1-2 | ← | ← | ← | ← | 1 |
| 2-1, 2-2, 2-3 | ○ | ○ | ○ | ○ | 1 |
| 3-1, 3-2 | ← | ← | ← | ← | 4, 5 |
| 4-1 | ○ | ○ | ○ | ○ | 2 |
| 4-2, 4-3 | ○ | ○ | ○ | ○ | 1 |
| 5-1 | ← | ← | ← | ← | 3 |
| 5-2 | ← | ← | ← | ← | 4 |
| 5-3 | ← | ← | ← | ← | 2 |
| 6-1, 6-2, 6-3 | ○ | ○ | ○ | ○ | 1 |
| 7-1, 7-2 | ← | ← | ← | ← | 4, 5 |
| 8-1 | ○ | ○ | ○ | ○ | 3 |
| 8-2, 8-3 | ○ | ○ | ○ | ○ | 1 |

NOTE: SEE NEXT SHEET FOR GENERAL NOTES AND DETAILED POLE NOTES.

(B) WOOD POLE (S.O.P.)
2"R.S.C. RISER AND WEATHERHEAD
3-1/c#2
EXTENDED INTO H.H.18:
2"R.S.C.
3-1/c#2



SIGNAL SYSTEM OPERATIONS:
-SIGNAL SYSTEM FLASH MODE IS ALL RED.
-NORMAL OPERATION IS 8 PHASE, WITH PHASES 1 & 5 BEING PROTECTED LEFT TURN PHASES, AND PHASES 3 & 7 BEING FLASHING YELLOW ARROW (FLASH BY TIME OF DAY).
-VEHICLE SIGNAL PHASES 2 & 6 OPERATE ON RECALL.

System ID = 21180
TE # = 5610
Meter Address = 13701 Hwy 65.

| | | | | | | | | |
|----|------|-----------|-----------------------------|-----------|----------------|-----------|-----------|-----------|
| BY | DATE | REVISIONS | SYSTEM ID: 21180 | T.E. 5610 | S.A.P. NO. | DRAWN BY: | CKD BY: | DATE: |
| | | | METER ADDRESS: 13701 Hwy 65 | | CERTIFIED BY | LIC. NO. | | DATE: |
| | | | MASTER ID: | T.E. | STATE PROJ.NO. | (T.H. | SHEET NO. | OF SHEETS |

INTERSECTION LAYOUT
T.H. 65 AT C.S.A.H. 116 (BUNKER LAKE BLVD.)
IN THE CITY OF HAM LAKE

S.P. 0208-145
S.A.P. 002-716-013
S.A.P. 197-020-004

PLOTTED/REVISED: 6/11/2013

DISTRICT #: METRO
PLOT NAME: LAYOUT
PATH & FILENAME: IP_PWP-d0781322v2180.dgn

PLOTTED/REVISED: 6/11/2013

DISTRICT #: METRO
IPLOT NAME: NOTES
PATH & FILENAME: IP_PWP-d0781322v21180.dgn

NOTES:

- 1) EACH SIGNAL FACE HAS A BACKGROUND SHIELD.
- 2) ALL LOOP DETECTORS ARE PVC.
- 3) ALL HANDHOLES ARE PVC HANDHOLES WITH METAL FRAMES AND COVERS.
- 4) ALL VEHICLE SIGNAL INDICATIONS ARE LED.
- 5) ALL PEDESTRIAN INDICATIONS (McCAIN HOUSINGS AND VISORS) ARE INPLACE ONE-SECTION INDICATIONS - LED COUNTDOWN TIMER "HAND/WALKING PERSON".

② PA100 POLE FOUNDATION
 TYPE PA100-A-40-D40-9 (DAVIT AT 350 DEG.)
 LUMINAIRE-250 W HPS
 1-ONE WAY SIGNAL-OVERHEAD AT 15' (4-3)
 2-TYPE 10B-POLE MOUNTED AT 90 DEG. & 180 DEG.
 R6-1L SIGN PANEL AT 0 DEG.
 ONE WAY EVP DETECTOR AND LIGHT (Ø4,7)
 EXTENDED INTO H.H.4:
 3"R.S.C.
 2-12/c#12
 3-3/c#12
 1-3/c#20
 2-3/c#12 (LUM)
 1-ONE WAY SIGNAL-OVERHEAD AT 0' (4-SECTION SIGNAL) (7-1)
 2-C.D. LED PEDESTRIAN SIGNAL LENSES AT 90 DEG./180 DEG.
 1-APS PUSH BUTTON & SIGN (RT ARROW) (PB4-3)
 R10-X12 SIGN PANEL-ADJACENT TO 7-1
 TYPE D SIGN PANEL-OVERHEAD (D-2)

⑤ PA100 POLE FOUNDATION
 TYPE PA100-A-45-D30-9 (DAVIT AT 350 DEG.)
 LUMINAIRE-250 W HPS
 1-ONE WAY SIGNAL-OVERHEAD AT 12' (8-3)
 TYPE 10A-POLE MOUNTED AT 270 DEG. (8-2)
 R9-3a SIGN PANEL-FACING POLE 6
 R6-1L SIGN PANEL AT 0 DEG.
 ONE WAY EVP DETECTOR AND LIGHT (Ø8,3)
 EXTENDED INTO H.H.15:
 3"R.S.C.
 2-12/c#12
 2-3/c#12
 1-3/c#20
 1-3/c#12 (LUM)
 ONE WAY VEHICLE SIGNAL FACE (RELABEL FROM 5-2 TO 5-3)-RELOCATE FROM 0 DEG. TO 90 DEG. SIDE OF POLE
 1-SET PEDESTRIAN SIGNAL HOUSING AND VISOR-RELOCATE FROM 0 DEG. TO 90 DEG. SIDE OF POLE (P6-1)
 1-ONE WAY SIGNAL-OVERHEAD AT 0' (4-SECTION SIGNAL) (3-1)
 TYPE 10B BRACKETING-POLE MOUNTED 90 DEG.
 CAP OPEN HUB ON 0 DEG. SIDE OF POLE
 1-C.D. LED PEDESTRIAN SIGNAL LENS AT 90 DEG.
 PLUG/CAP HOLES ON 90 DEG. SIDE OF POLE (WHERE PUSH BUTTON USED TO BE)
 1-APS PUSH BUTTON & SIGN (RT ARROW) (PB6-1)
 R10-X12 SIGN PANEL-ADJACENT TO 3-1
 TYPE D SIGN PANEL-OVERHEAD (D-4)

③ 10' PEDESTAL POLE, BASE, AND WIND COLLAR
 TYPE 6D
 1-12/c#12
 2-3/c#12
 PEDESTAL FOUNDATION
 2-C.D. LED PEDESTRIAN SIGNAL LENSES
 PLUG/CAP HOLE ON NORTH SIDE OF POLE (WHERE PUSH BUTTON USED TO BE)
 EXTEND INTO H.H.8:
 3"R.S.C.

⑥ ONE WAY VEHICLE SIGNAL FACE (5-1)-RELOCATE FROM PEDESTAL POLE TO OVERHEAD (END OF MAST ARM)
 ONE WAY VEHICLE SIGNAL FACE (8-1)-RELOCATE FROM PEDESTAL POLE TO MAST ARM POLE AT 90 DEG.
 2-R9-3a SIGN PANELS-FACING POLES 1 & 5
 1-12/c#12
 PA85 POLE FOUNDATION
 TYPE PA85-A-25
 1-ANGLE MOUNT-OVERHEAD AT 0' (FOR INPLACE RELOCATED SIGNAL FACE 5-1)
 1-STRAIGHT MOUNT SIGNAL-OVERHEAD AT 11' (5-2)
 1-ANGLE MOUNT-POLE MOUNTED 90 DEG. (FOR INPLACE RELOCATED SIGNAL FACE 8-1)
 EXTEND INTO H.H.16:
 3"R.S.C.
 1-6/c#14

① PA100 POLE FOUNDATION
 TYPE PA100-A-40-X6-350/CAM 400 (DAVIT AT 350 DEG.)
 PA100 SWING-AWAY HINGES
 LUMINAIRE-250 W HPS
 2-ONE WAY SIGNALS-OVERHEAD (0', 12')
 TYPE 10B-POLE MOUNTED AT 180 DEG.
 R9-3a SIGN PANEL-FACING POLE 6
 2-R6-1 SIGN PANELS AT 0 DEG. & 180 DEG.
 ONE WAY EVP DETECTOR AND LIGHT (Ø2,5)
 TYPE D SIGN PANEL-OVERHEAD (CSAH 116)
 1-VIDEO CAMERA-MOUNTED ON CAMERA EXTENSION (WITH POWER SUPPLY)
 EXTENDED INTO H.H.17:
 3"R.S.C.
 2-12/c#12
 2-3/c#12
 1-3/c#20
 2-3/c#12 (LUM)
 1-COAX CABLE (CAMERA)
 1-COM CABLE (CAMERA)
 1-3/c#14 (CAMERA)

④ PA100 POLE FOUNDATION
 TYPE PA100-A-50-D40-9 (DAVIT AT 350 DEG.)
 PA100 SWING-AWAY HINGES
 LUMINAIRE-250 W HPS
 2-ONE WAY SIGNALS-OVERHEAD (0', 12')
 TYPE 10B-POLE MOUNTED AT 180 DEG. (6-1, P6-2)
 2-R6-1 SIGN PANELS AT 0 DEG. & 180 DEG.
 ONE WAY EVP DETECTOR AND LIGHT (Ø6,1)
 TYPE D SIGN PANEL-OVERHEAD (CSAH 116)
 EXTENDED INTO H.H.9:
 3"R.S.C.
 2-12/c#12
 2-3/c#12
 1-3/c#20
 1-3/c#12 (LUM)
 1-SET PEDESTRIAN INDICATIONS (HOUSING AND VISOR)-POLE MOUNTED AT 90 DEG. (FOR P4-1)
 TYPE 10B BRACKETING-POLE MOUNTED AT 90 DEG.
 ONE WAY SIGNAL-POLE MOUNTED AT 90 DEG.
 (4-SECTION SIGNAL) (3-2)
 2-C.D. LED PEDESTRIAN SIGNAL LENSES AT 90 DEG./180 DEG.
 1-APS PUSH BUTTON & SIGN (LT ARROW) (PB4-1)
 PLUG/CAP HOLES WHERE PUSH BUTTONS USED TO BE
 TYPE D SIGN PANEL-OVERHEAD (D-3)

TYPE 10A BRACKETING-POLE MOUNTED AT 90 DEG.
 ONE WAY SIGNAL-POLE MOUNTED AT 90 DEG.
 (4-SECTION SIGNAL) (7-2)
 1-C.D. LED PEDESTRIAN SIGNAL LENS AT 180 DEG.
 1-APS PUSH BUTTON & SIGN (RT ARROW) (PB2-2)
 TYPE D SIGN PANEL-OVERHEAD (D-1)

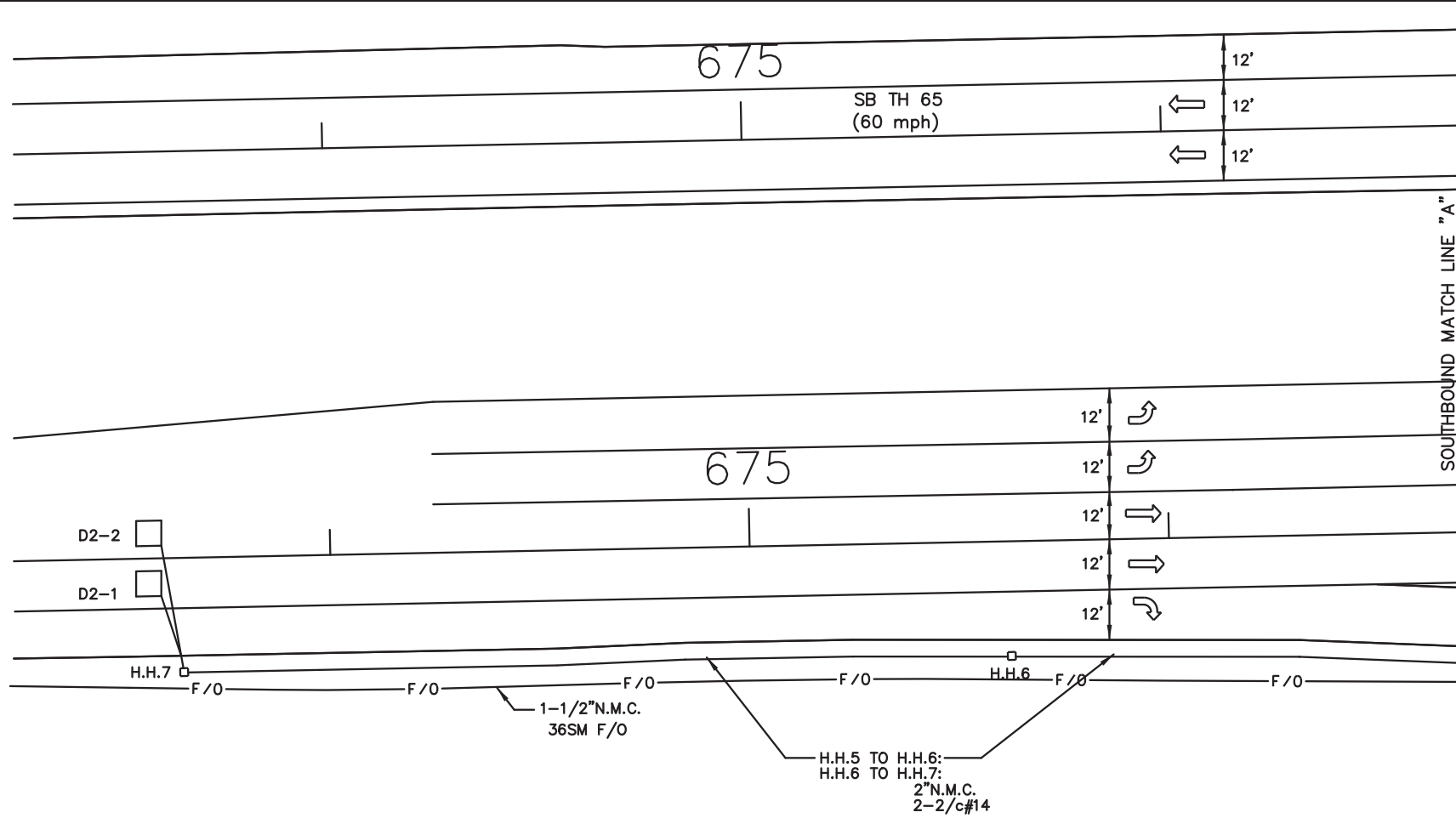
System ID = 21180
 TE # = 5610
 Meter Address = 13701 Hwy 65.

S.P. 0208-145
 S.A.P. 002-716-013
 S.A.P. 197-020-004

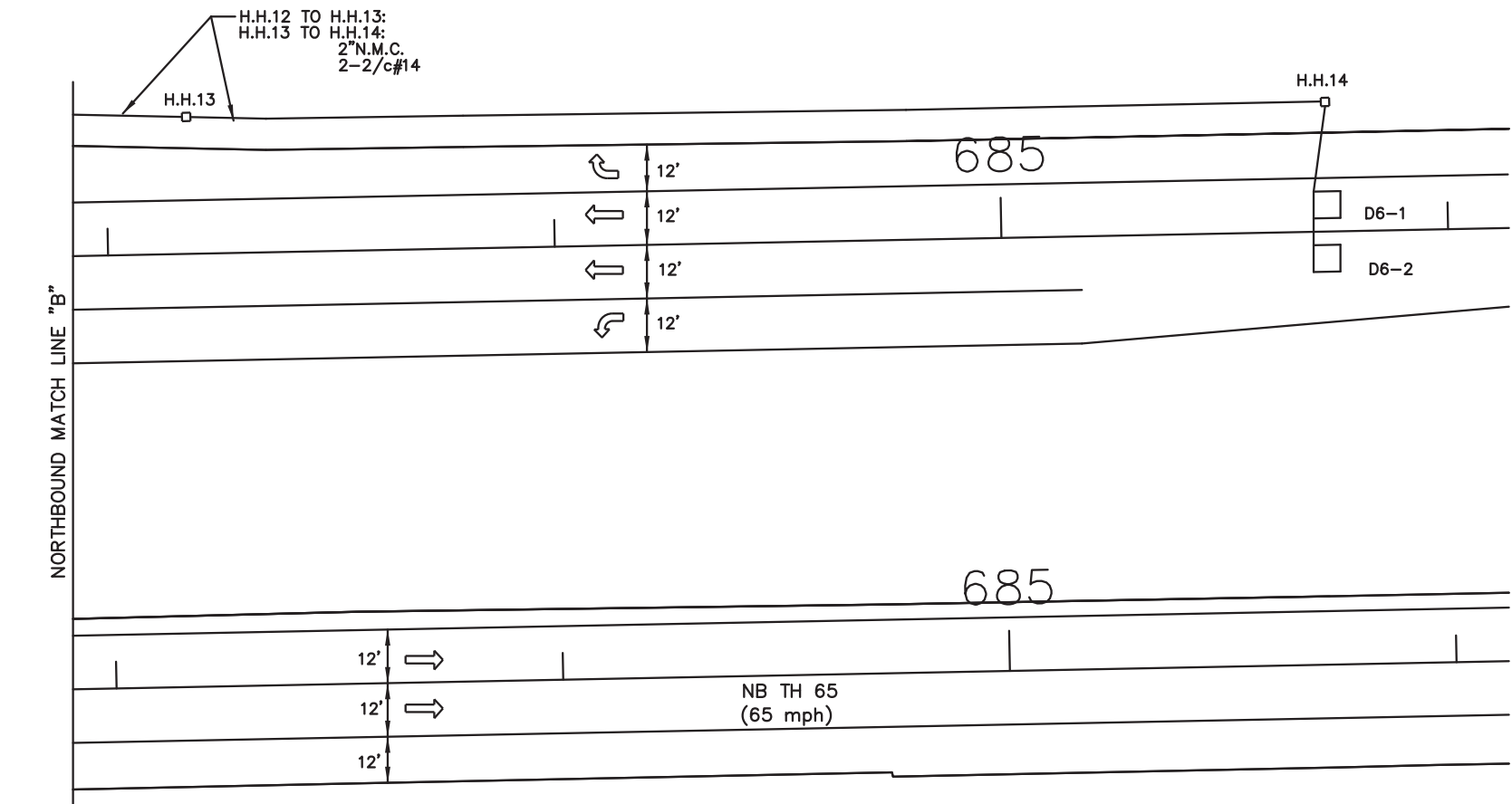
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|----|------|-----------|-----------------------------|-----------|---|--------------------|----------------|-------------|-------|
| BY | DATE | REVISIONS | SYSTEM ID: 21180 | T.E. 5610 | INTERSECTION LAYOUT POLE NOTES .H. 65 AT C.S.A.H. 116 (BUNKER LAKE BLVD.) IN THE CITY OF HAM LAKE | S.A.P. NO. | DRAWN BY: | CKD BY: | DATE: |
| | | | METER ADDRESS: 13701 Hwy 65 | | | CERTIFIED BY _____ | LIC. NO. _____ | DATE: _____ | |
| | | | MASTER ID: | T.E. | | STATE PROJ.NO. | (T.H. | SHEET NO. | OF |

PLOTTED/REVISED: 6/11/2013

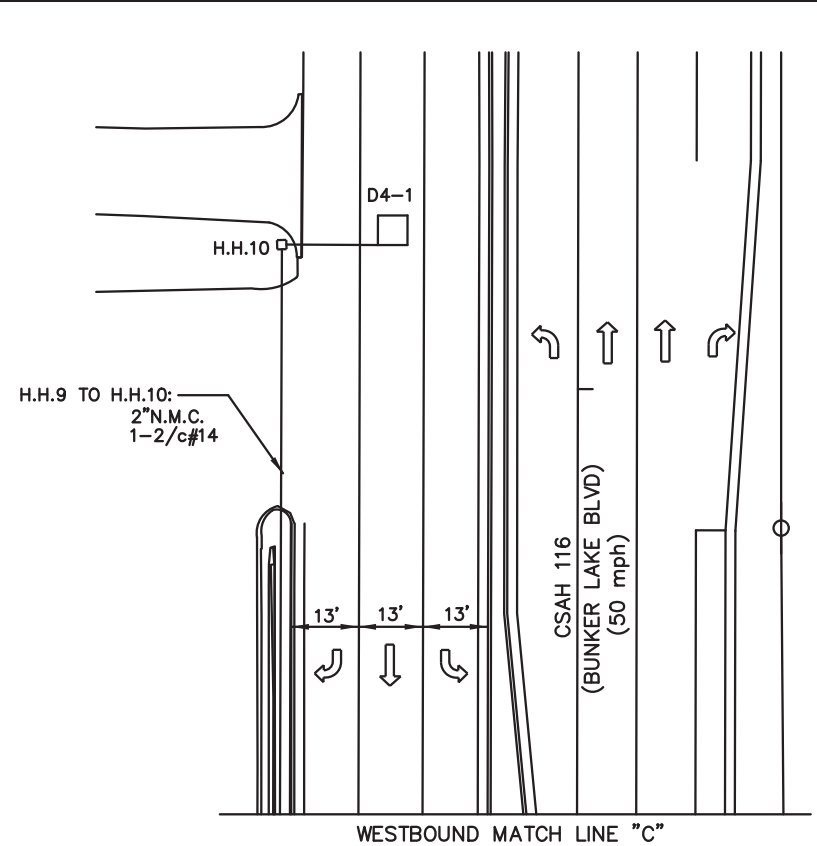
DISTRICT #: METRO
 IPLOT NAME: MATCHLINE
 PATH & FILENAME: IP_PWP-d0781322v2180.dgn



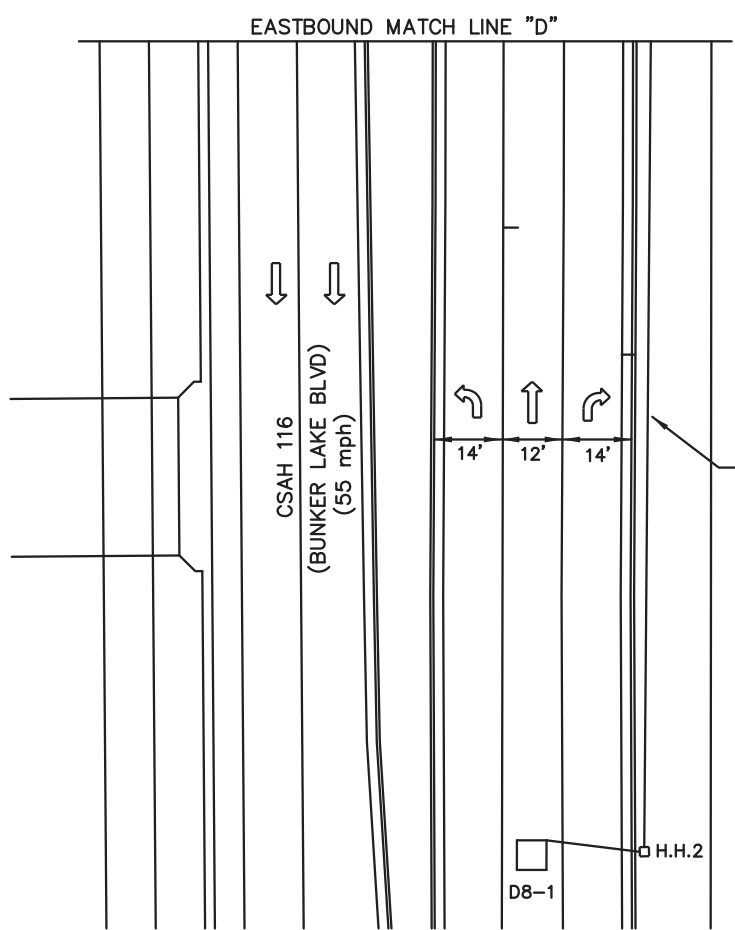
SOUTHBOUND MATCH LINE "A"



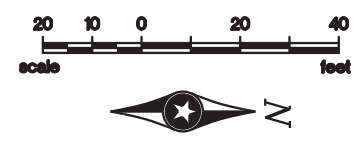
NORTHBOUND MATCH LINE "B"



WESTBOUND MATCH LINE "C"



EASTBOUND MATCH LINE "D"



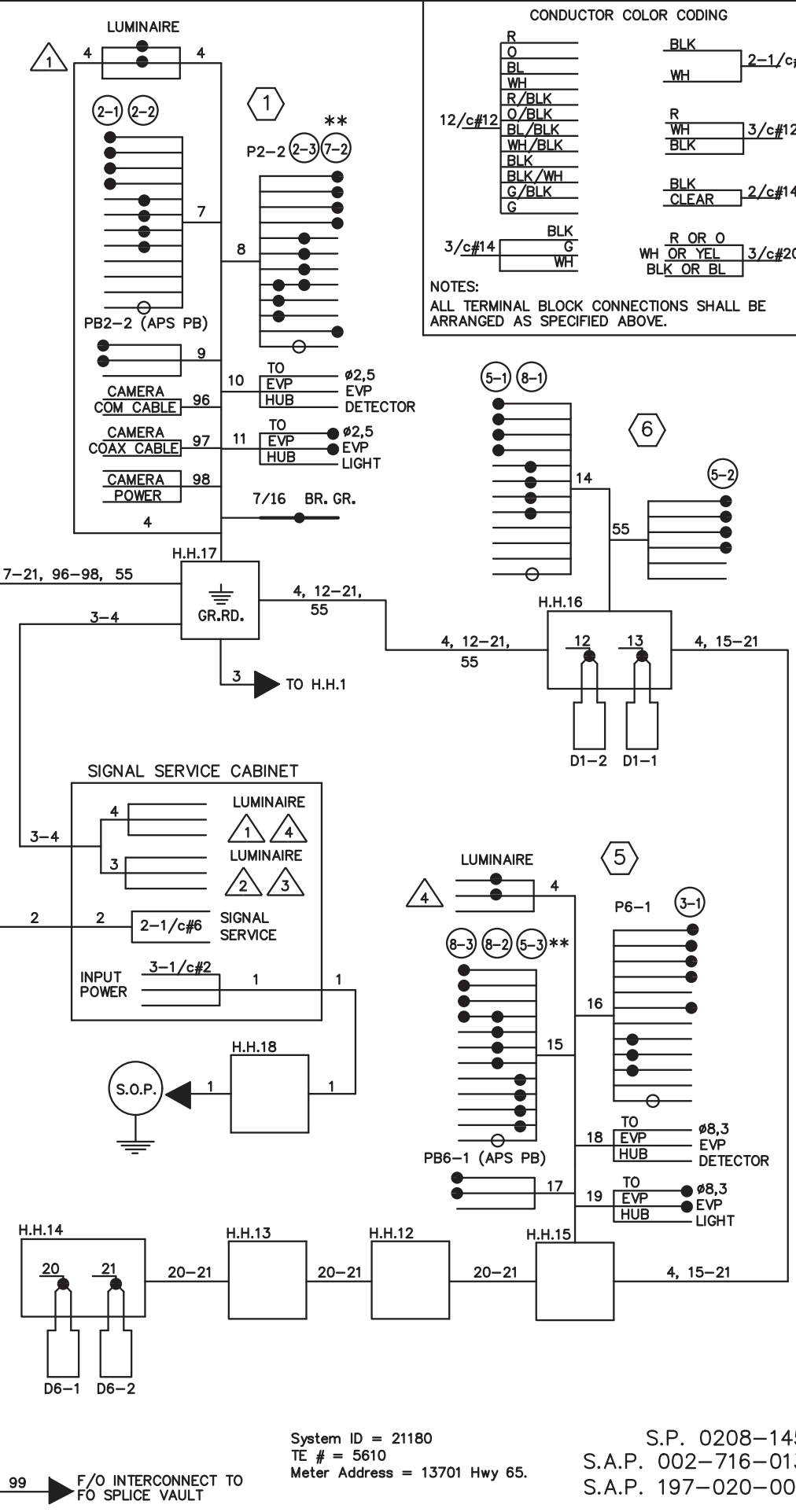
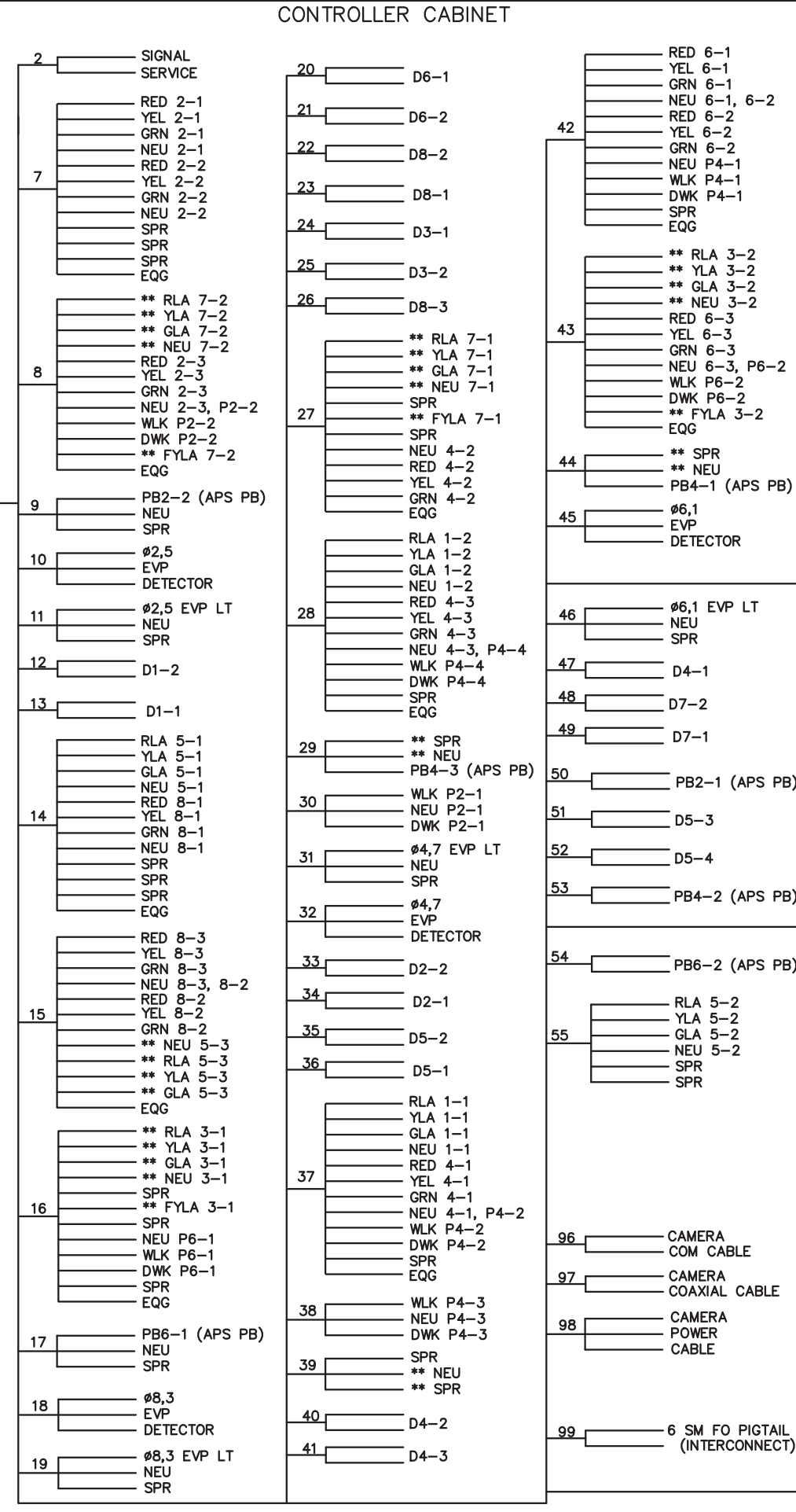
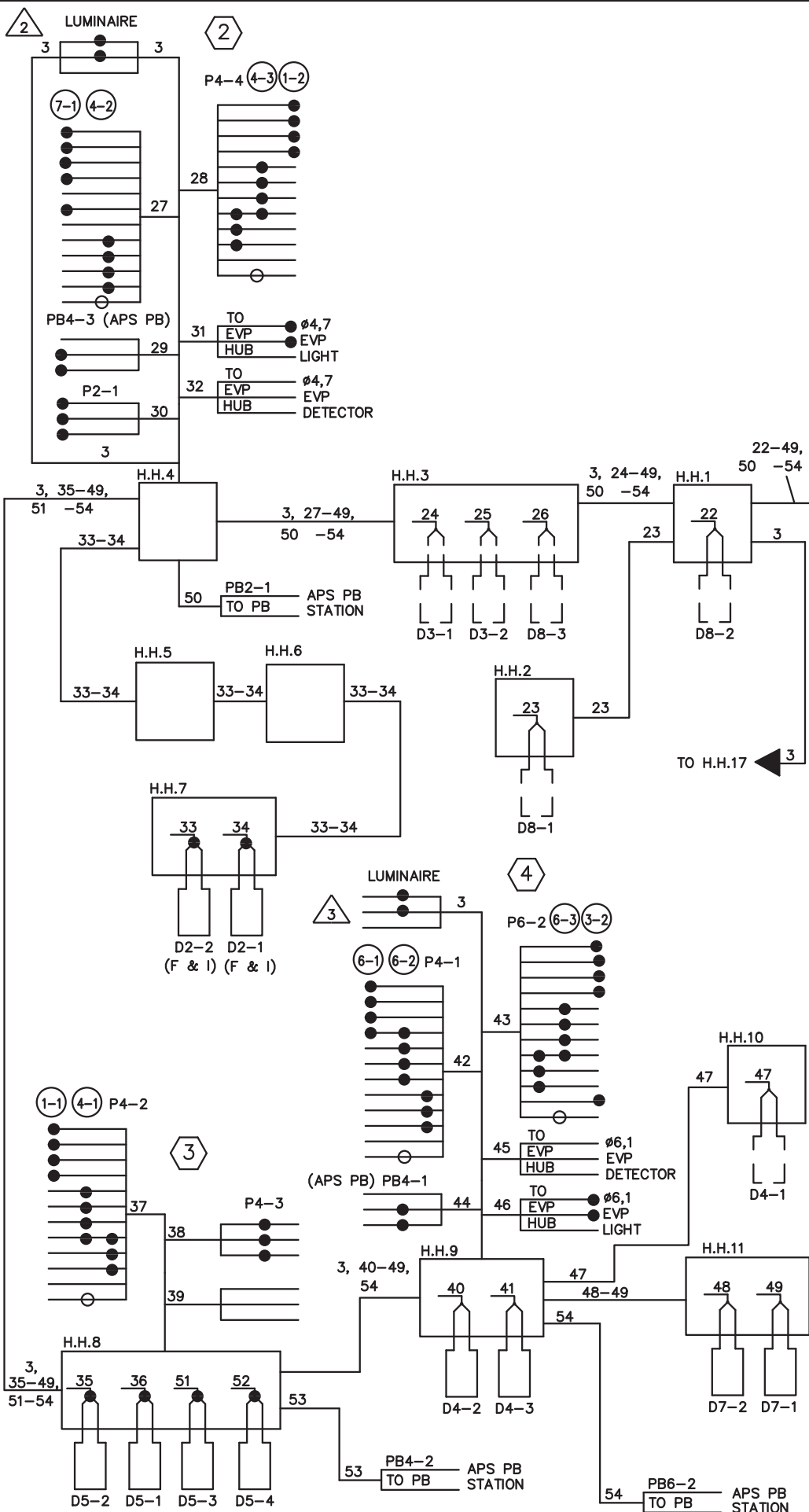
System ID = 21180
 TE # = 5610
 Meter Address = 13701 Hwy 65.

S.P. 0208-145
 S.A.P. 002-716-013
 S.A.P. 197-020-004

| | | | | | | | | |
|---|------|-----------|-----------------------------|-----------|--------------------------------|-----------|-----------|-----------|
| BY | DATE | REVISIONS | SYSTEM ID: 21180 | T.E. 5610 | S.A.P. NO. | DRAWN BY: | CKD BY: | DATE: |
| | | | METER ADDRESS: 13701 Hwy 65 | | CERTIFIED BY | LIC. NO. | | DATE: |
| | | | MASTER ID: | T.E. | LICENSED PROFESSIONAL ENGINEER | | | |
| INTERSECTION MATCHLINE LAYOUT T.H. 65 AT C.S.A.H. 116 (BUNKER LAKE BLVD.) IN THE CITY OF HAM LAKE | | | | | STATE PROJ. NO. | (T.H.) | SHEET NO. | OF SHEETS |

PLOTTED/REVISED: 6/11/2013

DISTRICT #: METRO
IPLOT NAME: WIRING
PATH & FILENAME: IP_PWF-d0781322v2180.dgn



CONDUCTOR COLOR CODING

| | | |
|--------|-----------|---------|
| R | BLK | 2-1/c#6 |
| BL | WH | |
| WH | | |
| R/BLK | R | 3/c#12 |
| O/BLK | WH | |
| BL/BLK | BLK | |
| WH/BLK | | |
| BLK | BLK | 2/c#14 |
| BLK/WH | CLEAR | |
| G/BLK | | |
| G | | |
| BLK | R OR O | 3/c#20 |
| G | WH OR YEL | |
| WH | BLK OR BL | |

NOTES:
ALL TERMINAL BLOCK CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.

System ID = 21180
TE # = 5610
Meter Address = 13701 Hwy 65.

S.P. 0208-145
S.A.P. 002-716-013
S.A.P. 197-020-004

| | | | | | | | | |
|----|------|-----------|-----------------------------|-----------|--|----------------|-------------|-----------|
| BY | DATE | REVISIONS | SYSTEM ID: 21180 | T.E. 5610 | S.A.P. NO. | DRAWN BY: | CKD BY: | DATE: |
| | | | METER ADDRESS: 13701 Hwy 65 | | CERTIFIED BY _____ | LIC. NO. _____ | DATE: _____ | |
| | | | MASTER ID: | T.E. | FIELD WIRING DIAGRAM T.H. 65 AT C.S.A.H. 116 (BUNKER LAKE BLVD.) IN THE CITY OF HAM LAKE | | | |
| | | | | | STATE PROJ. NO. | (T.H. | SHEET NO. | OF SHEETS |