

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

-ALL SIGNAL INDICATIONS SHALL BE 12" LED
 -ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS
 -FYA DENOTES FLASHING YELLOW ARROW

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

PED PB STATION
 1-APS PB AND SIGN (RT ARROW) (PB6-2)
 EXTEND INTO HH 9B:
 1" NOM DIA. CONDUIT
 1-2/C #14
 1-1/C #6 INS. GR.

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

PED PB STATION
 1-APS PB AND SIGN (RT ARROW) (PB4-2)
 EXTEND INTO HH 5:
 1" NOM DIA. CONDUIT
 1-2/C #14
 1-1/C #6 INS. GR.

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

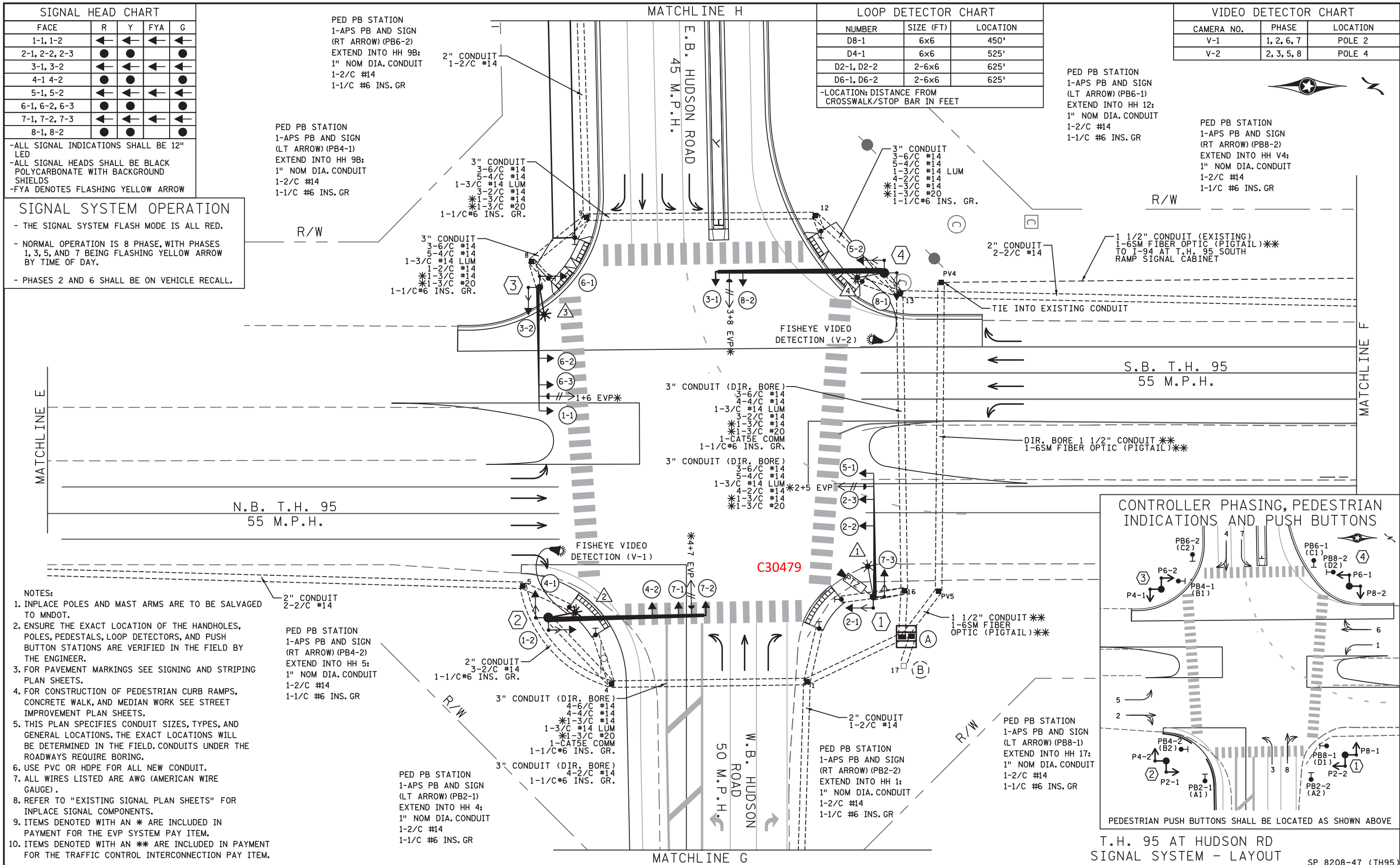
LOOP DETECTOR CHART		
NUMBER	SIZE (FT)	LOCATION
D8-1	6x6	450'
D4-1	6x6	525'
D2-1, D2-2	2-6x6	625'
D6-1, D6-2	2-6x6	625'

-LOCATION: DISTANCE FROM CROSSWALK/STOP BAR IN FEET

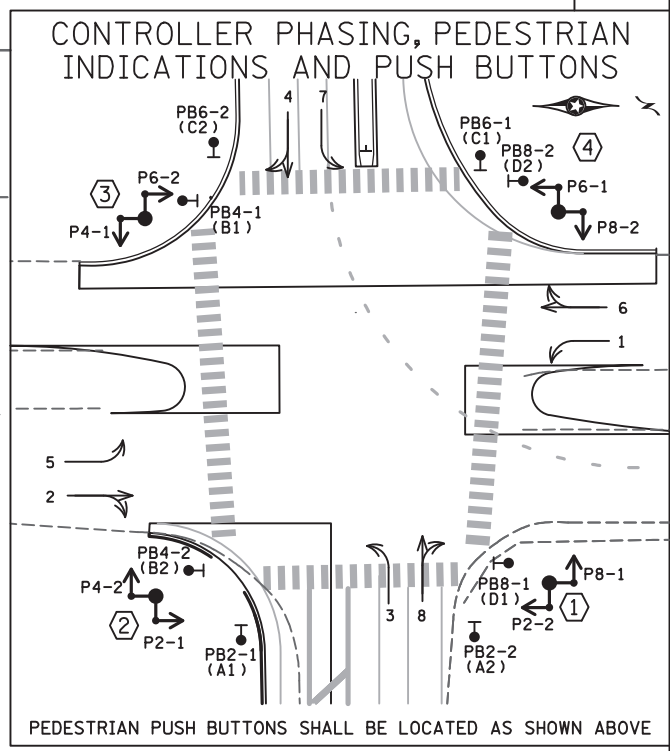
VIDEO DETECTOR CHART		
CAMERA NO.	PHASE	LOCATION
V-1	1, 2, 6, 7	POLE 2
V-2	2, 3, 5, 8	POLE 4

PED PB STATION
 1-APS PB AND SIGN (LT ARROW) (PB6-1)
 EXTEND INTO HH 12:
 1" NOM DIA. CONDUIT
 1-2/C #14
 1-1/C #6 INS. GR.

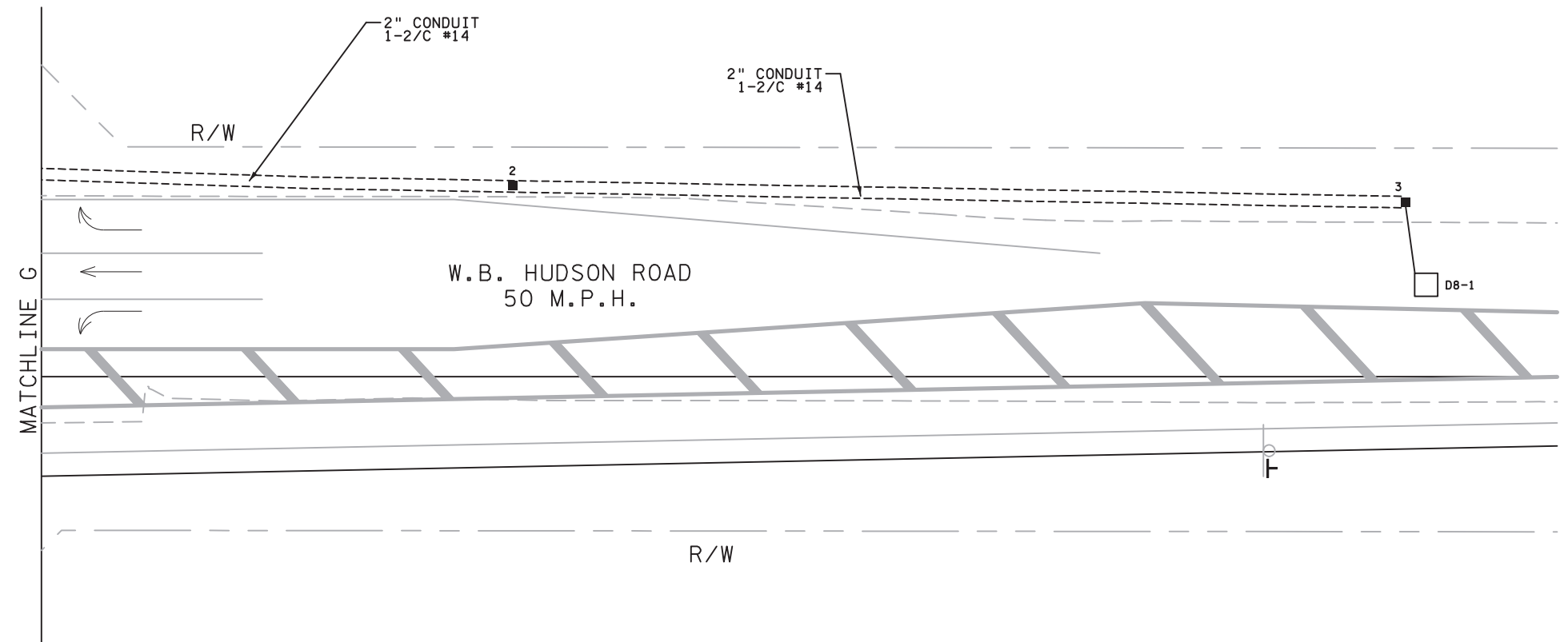
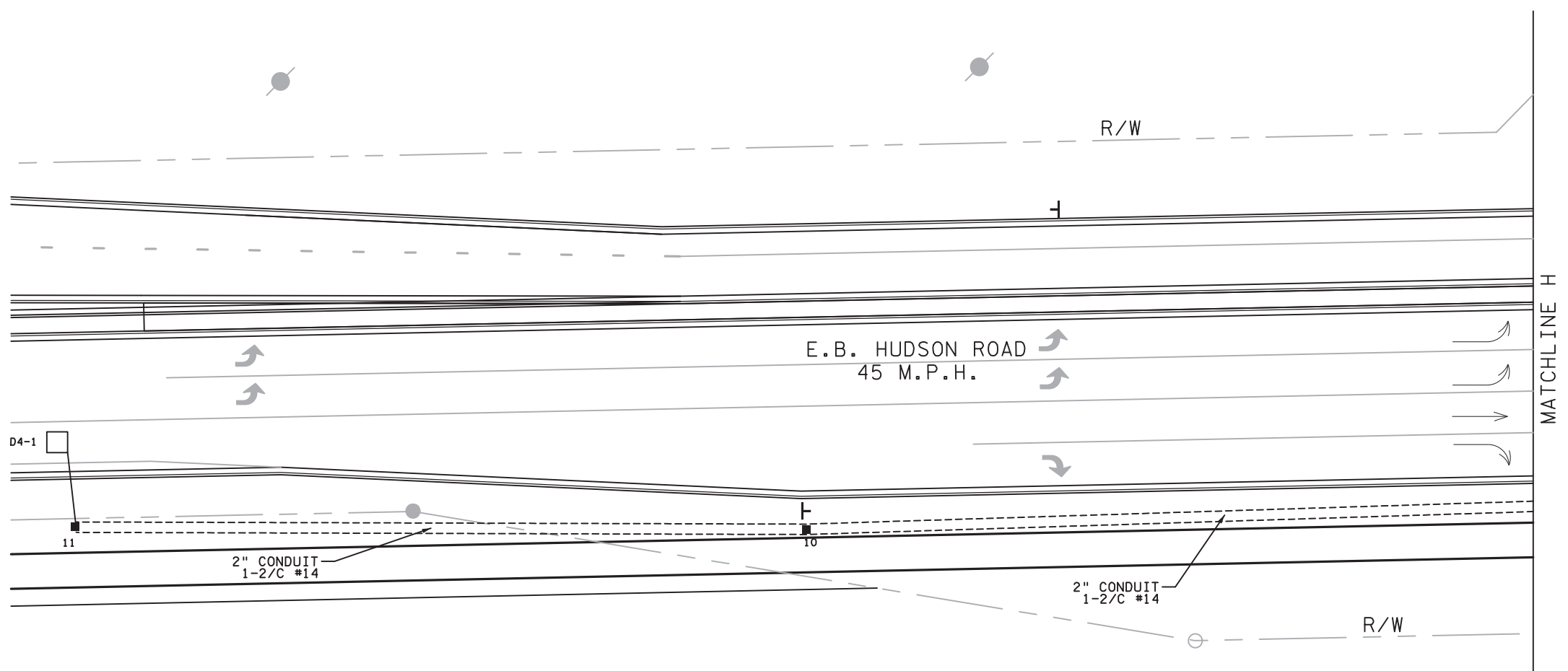
PED PB STATION
 1-APS PB AND SIGN (RT ARROW) (PB8-2)
 EXTEND INTO HH V4:
 1" NOM DIA. CONDUIT
 1-2/C #14
 1-1/C #6 INS. GR.



- NOTES:**
1. INPLACE POLES AND MAST ARMS ARE TO BE SALVAGED TO MNDOT.
 2. ENSURE THE EXACT LOCATION OF THE HANDHOLES, POLES, PEDESTALS, LOOP DETECTORS, AND PUSH BUTTON STATIONS ARE VERIFIED IN THE FIELD BY THE ENGINEER.
 3. FOR PAVEMENT MARKINGS SEE SIGNING AND STRIPING PLAN SHEETS.
 4. FOR CONSTRUCTION OF PEDESTRIAN CURB RAMPS, CONCRETE WALK, AND MEDIAN WORK SEE STREET IMPROVEMENT PLAN SHEETS.
 5. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER THE ROADWAYS REQUIRE BORING.
 6. USE PVC OR HDPE FOR ALL NEW CONDUIT.
 7. ALL WIRES LISTED ARE AWG (AMERICAN WIRE GAUGE).
 8. REFER TO "EXISTING SIGNAL PLAN SHEETS" FOR INPLACE SIGNAL COMPONENTS.
 9. ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
 10. ITEMS DENOTED WITH AN ** ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.



T.H. 95 AT HUDSON RD
 SIGNAL SYSTEM - LAYOUT
 SP 8208-47 (TH95)



T.H. 95 AT HUDSON RD
SIGNAL SYSTEM - LAYOUT

SP 8208-47 (TH95)

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SYSTEM ID: 4335931
TE: 47000
METER ADDRESS: 205 MANNING AVE S.
OLD SYSTEM ID: 1736708
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RELSEY E. BETHERFORD
LIC. NO. 57829 DATE 12-03-2021

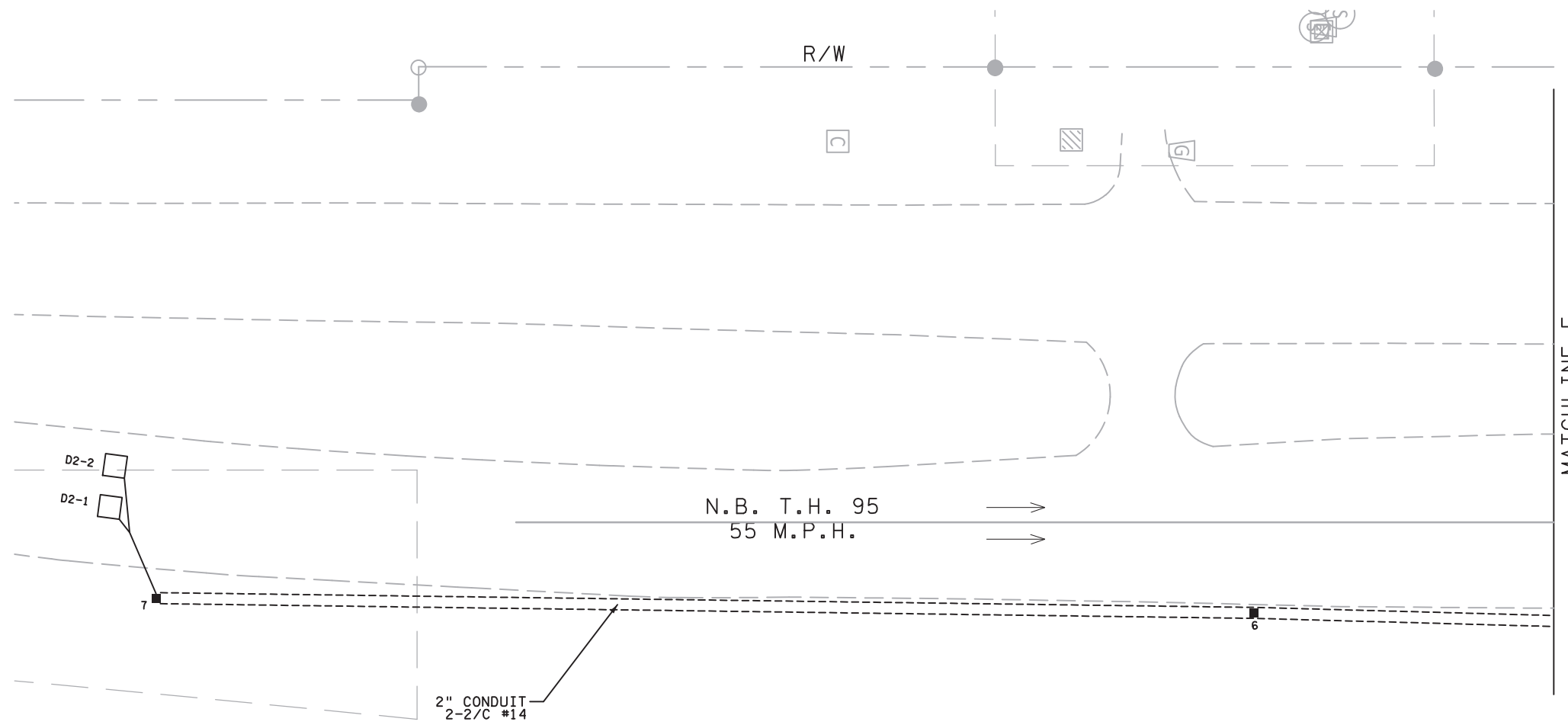


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WOODBURY, MINNESOTA
MANNING AVE (TH 95) & HUDSON RD SIGNAL MODIFICATION AND ROADWAY WIDENING
SIGNAL PLAN

SHEET
37
OF
58

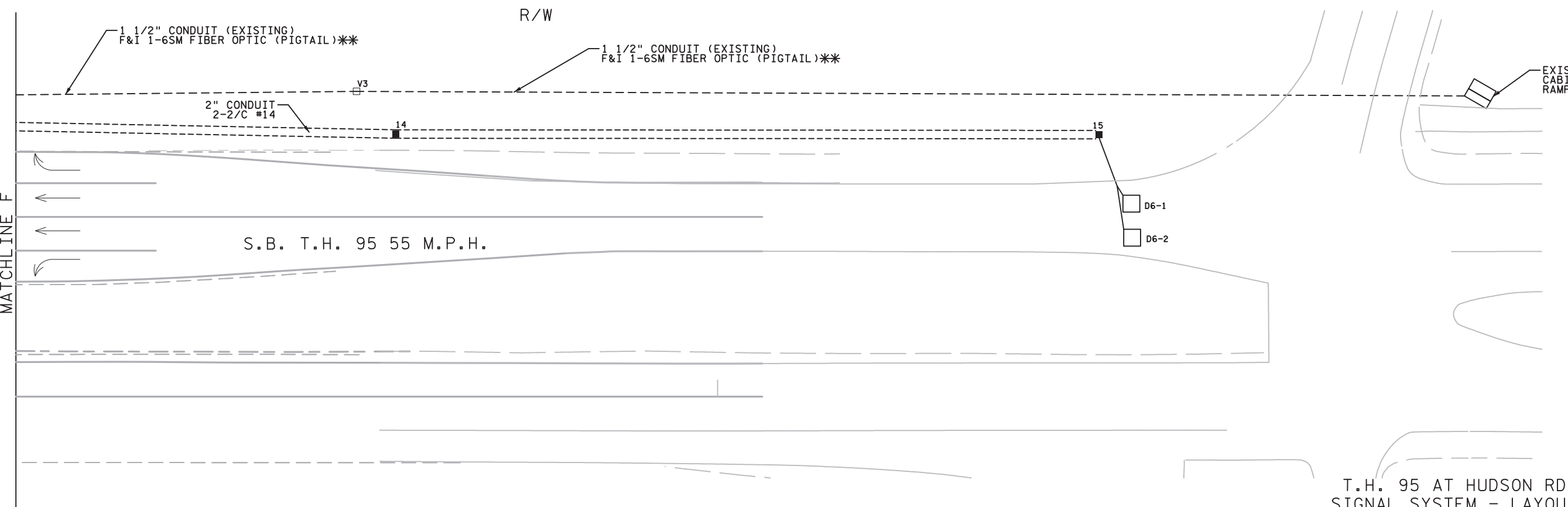


MATCHLINE E

N.B. T.H. 95
55 M.P.H.

2" CONDUIT
2-2/C #14

D2-2
D2-1



MATCHLINE F

S.B. T.H. 95 55 M.P.H.

1 1/2" CONDUIT (EXISTING)
F&I 1-6SM FIBER OPTIC (PIGTAIL)**

1 1/2" CONDUIT (EXISTING)
F&I 1-6SM FIBER OPTIC (PIGTAIL)**

2" CONDUIT
2-2/C #14

EXISTING SIGNAL
CABINET AT SOUTH
RAMP TH 94 @ TH 95

D6-1

D6-2

T.H. 95 AT HUDSON RD
SIGNAL SYSTEM - LAYOUT

SP 8208-47 (TH95)

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SCALE FEET

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REBEKAH WETHERFORD
LIC. NO. 57829 DATE 12-03-2021



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WOODBURY, MINNESOTA
MANNING AVE (TH 95) & HUDSON RD SIGNAL MODIFICATION AND ROADWAY WIDENING
SIGNAL PLAN

SHEET
38
OF
58

- (A) EQUIPMENT PAD
SERVICE CABINET
CONTROLLER AND CABINET
(STATE FURNISHED)
- GROUND WIRE AND GROUND ROD - 8' OUT FROM PAD
2-2" AND 1-3" CONDUIT STUBBED OUT (CAPPED BOTH ENDS)
1 1/2" CONDUIT STUBBED OUT (FOR PHONE LINE)
- **1 1/2" CONDUIT TO PV 5
**1-6SM FIBER OPTIC PIGTAIL
- 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 1:
2" CONDUIT
4-3/C #14 (LUM)
- SERVICE CABINET TO EXTERNAL GR. RD.:
1" CONDUIT
1-1/C #6 INS. GR.
(SEE EQUIPMENT PAD LAYOUT)
- HH 1 TO HH 16:
2" CONDUIT
3-3/C #14 (LUM)
- 3" CONDUIT TO HH 1 (POLE 2):
4-6/C #14
4-4/C #14
*1-3/C #14
*1-3/C #20
1-CAT5E COMM
1-1/C #6 INS. GR.
- 3" CONDUIT TO HH 16 (POLE 1):
3-6/C #14
5-4/C #14
1-2/C #14
*1-3/C #14
*1-3/C #20
1-CAT5E COMM (PTZ CAMERA)
1-1/C #6 INS. GR.
- 3" CONDUIT TO HH 16 (POLE 4):
3-6/C #14
4-4/C #14
3-2/C #14
*1-3/C #14
*1-3/C #20
1-CAT5E COMM
- 3" CONDUIT TO HH 16 (POLE 3):
3-6/C #14
5-4/C #14
*1-3/C #14
*1-3/C #20
4-2/C #14
- (B) SOP WOOD POLE (BY EXCEL ENERGY)
2" CONDUIT RISER, WEATHERHEAD AND
CONDUIT TO HH 18:
3-1/C #2

- ① X=492530.17
Y=172878.97
PA100 POLE FOUNDATION
TYPE PA100-A-55-D40-9 (DAVIT AT 350 DEG)
2-SWING AWAY HINGES
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 (PHASES 2 & 5) AT 6'
- LUMINAIRE LED
1-TYPE D SIGN (D-1) (SEE SIGN DETAILS)
1-R10-X12 (LT TURN YIELD ON FYA) ADJACENT TO HEAD 5-1
2-ANGLE MOUNT C.D. PED HEADS AT 90 AND 180 DEG
1-PTZ (C2) CAMERA ON X6-350/CAM EXTENSION (SEE CAMERA DETAIL SHEET)
(STATE FURNISHED)
1-R6-1R AT 0 DEG
1-R6-1L AT 270 DEG
3" CONDUIT TO HH 16:
3-6/C #14
5-4/C #14
1-3/C #14 LUM
*1-3/C #14
*1-3/C #20
1-CAT5E COMM (PTZ CAMERA)
1-1/C #6 INS. GR.

- ② X=492539.67
Y=172730.05
BA70 POLE FOUNDATION
TYPE BA70-A-70-D40-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 11'
1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 24.5'
2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
*1-ONE WAY EVP DETECTOR AND CONFIRMATORY
LIGHT (PHASES 4 & 7) AT 6'
- LUMINAIRE LED
2-TYPE D SIGNS (D-2)(D-3) (SEE SIGN DETAILS)
1-R10-X12 (LT YIELD ON FYA) ADJACENT TO HEAD 7-1
2-ANGLE MOUNT C.D. PED HEADS AT 90 AND 180 DEG
1-FISHEYE VIDEO DETECTION CAMERA (V-1)
(STATE FURNISHED) MOUNTED ON LUMINAIRE
AT 2-4' FROM END
- 3" CONDUIT TO HH 4:
4-6/C #14
4-4/C #14
1-3/C #14 LUM
*1-3/C #14
*1-3/C #20
1-CAT5E COMM
1-1/C #6 INS. GR.

- ③ X=492388.41
Y=172726.04
PA100 POLE FOUNDATION
TYPE PA100-A-55-D40-9 (DAVIT AT 350 DEG)
2-SWING AWAY HINGES
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 (PHASES 1 & 6) AT 6'
- LUMINAIRE LED
1-TYPE D SIGN (D-1) (SEE SIGN DETAILS)
1-R10-X12 (LET TURN YIELD ON FYA) ADJACENT TO HEAD 1-1
2-ANGLE MOUNT C.D. PED HEADS AT 90 AND 180 DEG
1-R6-1R AT 0 DEG
1-R6-1L AT 270 DEG
3" CONDUIT TO HH 8:
3-6/C #14
5-4/C #14
1-3/C #14 LUM
*1-3/C #14
*1-3/C #20
1-1/C#6 INS. GR.

- ④ X=492392.28
Y=172883.59
BA75 POLE FOUNDATION
TYPE BA75-A-75-D40-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 11'
2-ANGLE MOUNT SIGNALS AT 90 AND 180 DEG
*1-ONE WAY EVP DETECTOR AND CONFIRMATORY
LIGHT (PHASES 3 & 8) AT 6'
- LUMINAIRE LED
2-TYPE D SIGN (D-2)(D-3) (SEE SIGN DETAILS)
1-R10-X12 (LT TURN YIELD ON FYA) ADJACENT TO HEAD 3-1
2-ANGLE MOUNT C.D. PED HEADS AT 90 AND 180 DEG
1-FISHEYE VIDEO DETECTION CAMERA (V-2)
(STATE FURNISHED) MOUNTED ON LUMINAIRE
AT 2-4' FROM END
- 3" CONDUIT TO HH 13:
3-6/C #14
4-4/C #14
1-3/C #14 LUM
*1-3/C #14
*1-3/C #20
1-CAT5E COMM
1-1/C #6 INS. GR.

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T.H. 95 AT HUDSON RD
SIGNAL SYSTEM - DETAILS

SP 8208-47 (TH95)

SYSTEM ID: 4335931
TE: 47000
METER ADDRESS: 205 MANNING AVE S.
OLD SYSTEM ID: 1736708
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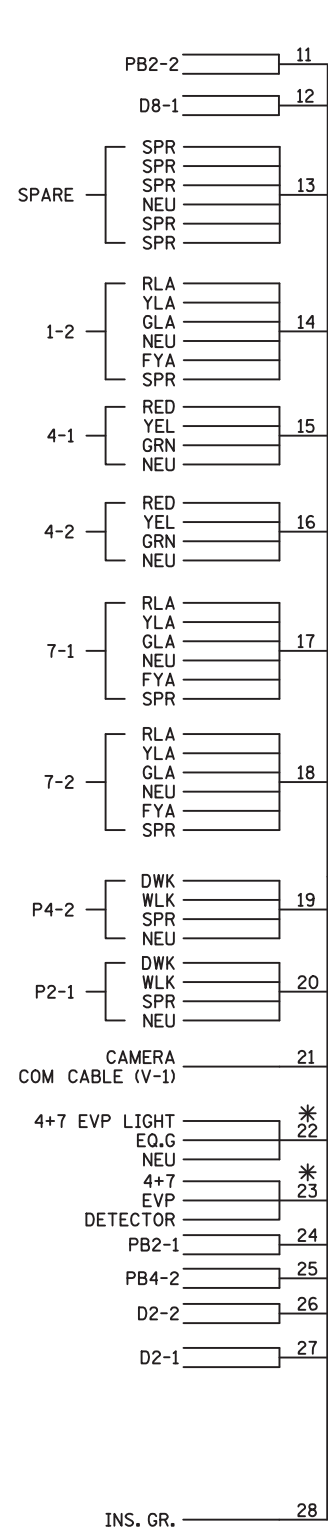
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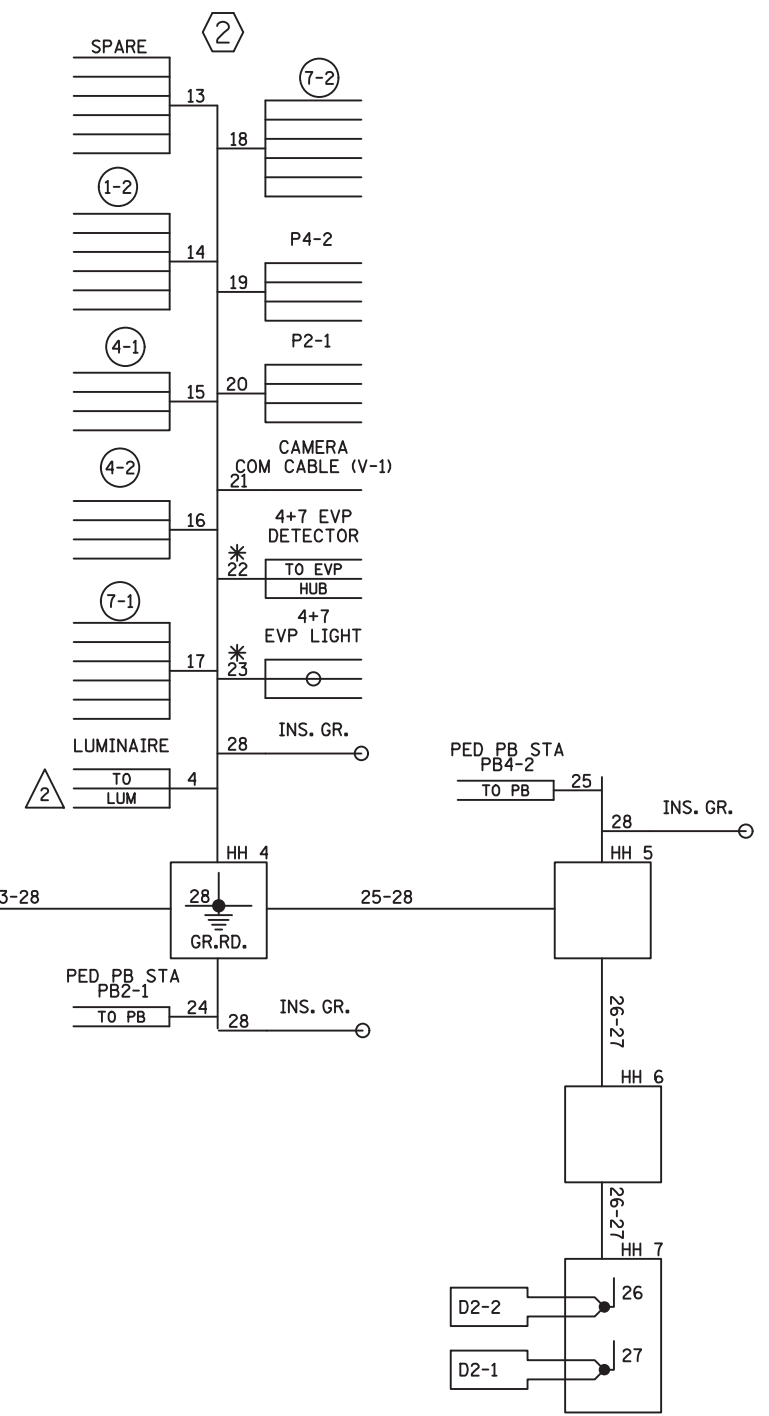
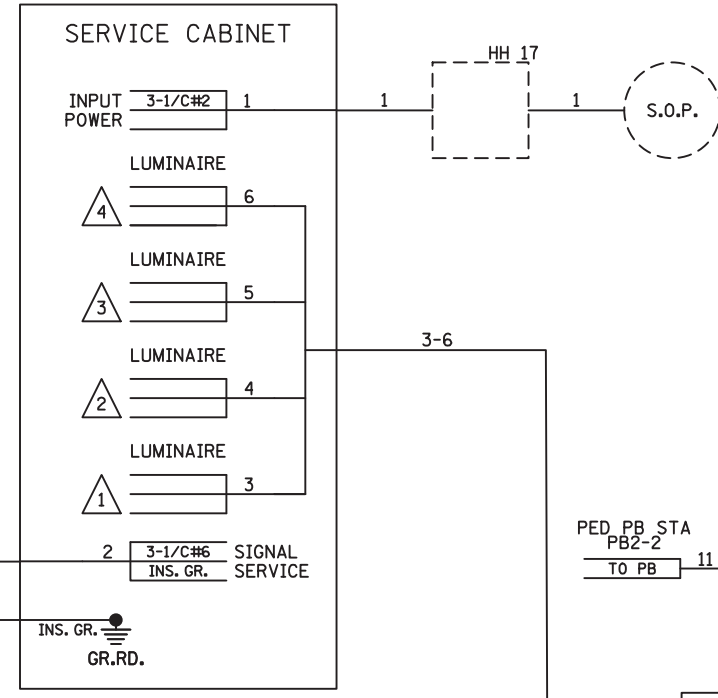
WOODBURY, MINNESOTA
MANNING AVE (TH 95) & HUDSON RD SIGNAL MODIFICATION AND ROADWAY WIDENING
SIGNAL PLAN

SHEET
39
OF
58

CONTROLLER CABINET



SIGNAL SERVICE 3-1/C 6 2



- NOTES:
1. SPLICES ONLY ALLOWED IN LOOP DETECTOR CIRCUITS.
 2. SIGNAL SYSTEM INCLUDES BATTERY- BACKUP SERVICE CABINET (WITH NO BATTERIES).
 3. FOR CONDUCTOR COLOR CODE SEE TRAFFIC SIGNAL POLE WIRING CONNECTOR DETAIL.
 4. ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
 5. FOR EACH "SPARE" WIRE, COIL ENOUGH WIRE TO REACH THE END OF THE MAST ARM IN THE HAND HOLE NEAREST EACH POLE.
 6. LEAVE ONE LOOP OF SLACK FOR EACH CABLE IN THE POLE BASE.
 7. ITEMS DENOTED WITH AN ** ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

T.H. 95 AT HUDSON RD
SIGNAL SYSTEM - WIRING DIAGRAM SP 8208-47 (TH95)

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OLD SYSTEM ID: 1736708
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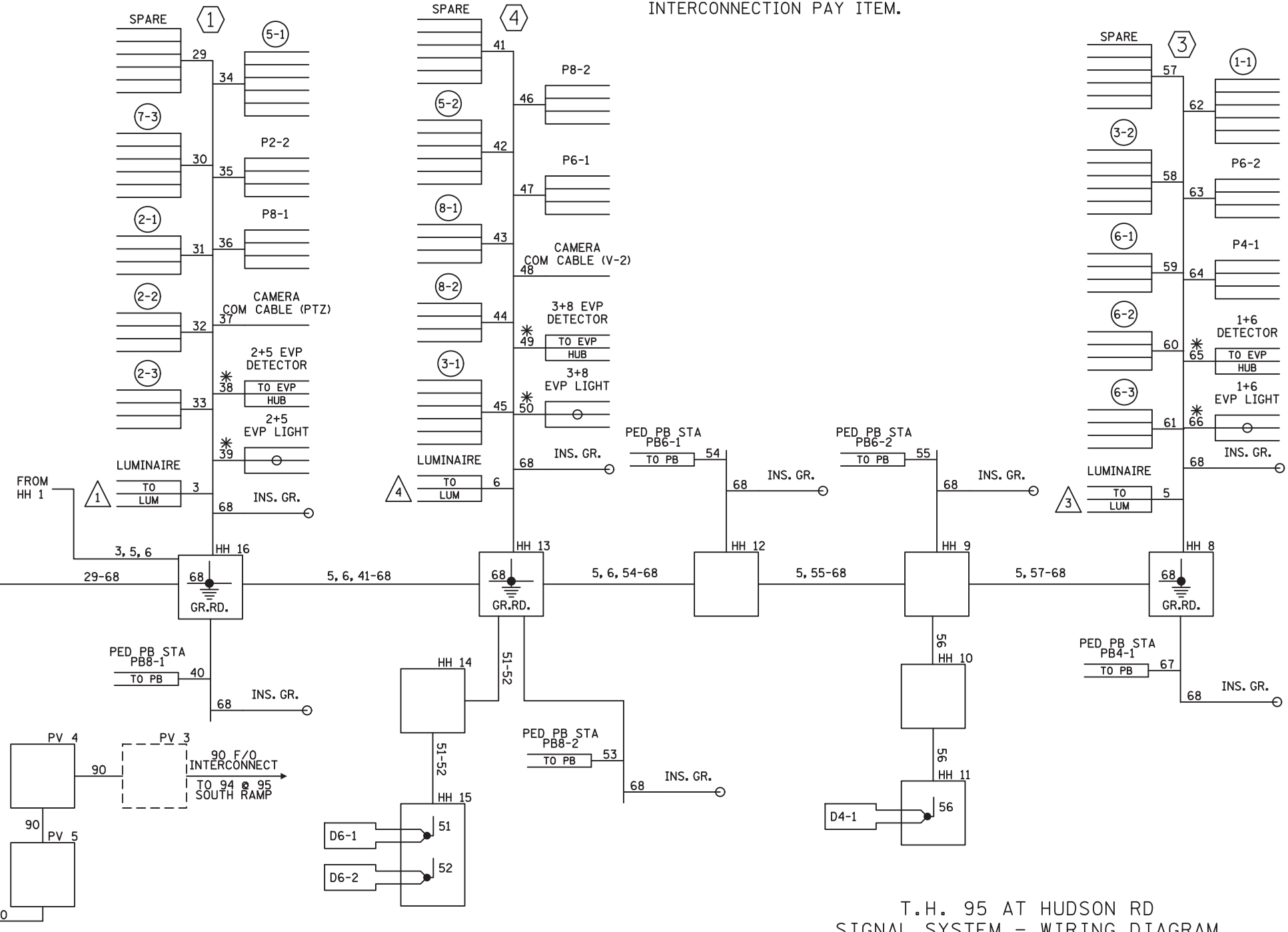
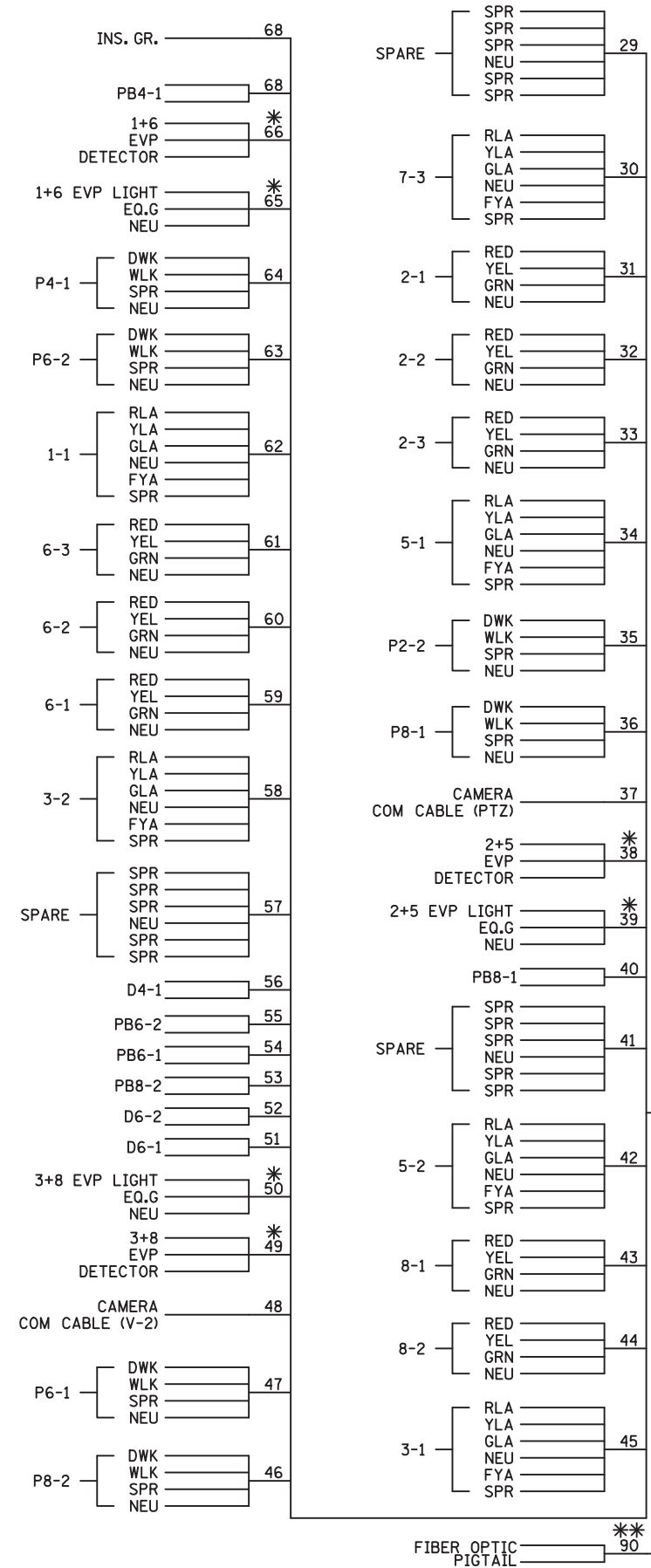
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WOODBURY, MINNESOTA
MANNING AVE (TH 95) & HUDSON RD SIGNAL MODIFICATION AND ROADWAY WIDENING
SIGNAL PLAN

SHEET
40
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CONTROLLER CABINET

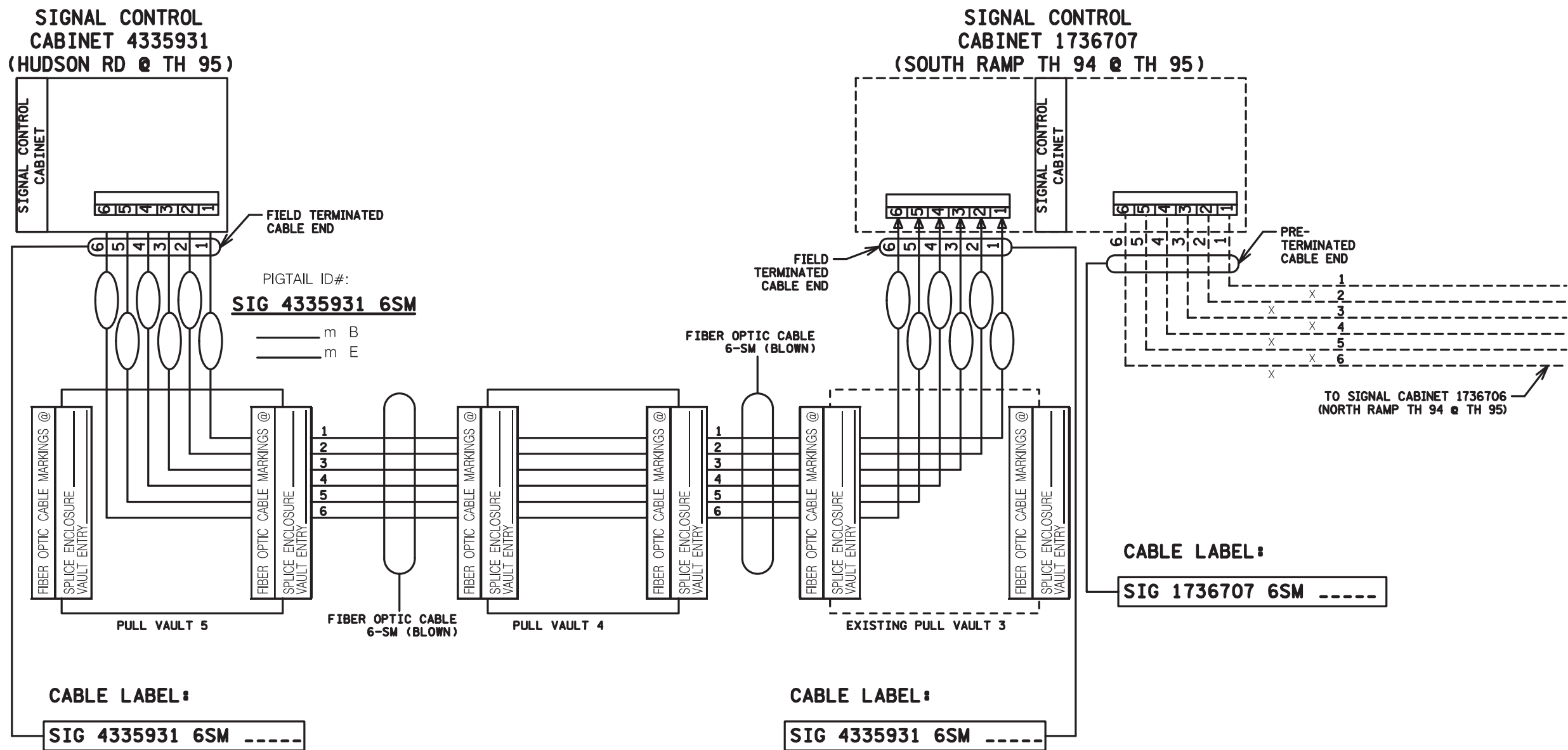


- NOTES:**
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 2. SIGNAL SYSTEM INCLUDES BATTERY- BACKUP SERVICE CABINET (WITH NO BATTERIES).
 3. FOR CONDUCTOR COLOR CODE SEE TRAFFIC SIGNAL POLE WIRING CONNECTOR DETAIL.
 4. ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
 5. FOR EACH "SPARE" WIRE, COIL ENOUGH WIRE TO REACH THE END OF THE MAST ARM IN THE HAND HOLE NEAREST EACH POLE.
 6. LEAVE ONE LOOP OF SLACK FOR EACH CABLE IN THE POLE BASE.
 7. ITEMS DENOTED WITH AN ** ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

T.H. 95 AT HUDSON RD
SIGNAL SYSTEM - WIRING DIAGRAM
SP 8208-47 (TH95)

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FIBER OPTIC SCHEMATIC (FOR SIGNAL COMMUNICATIONS)



NOTE:
SEE SPECIAL PROVISIONS FOR DETAILS ON
CONNECTING, TESTING, AND SPLICING.

T.H. 95 AT HUDSON RD
SIGNAL SYSTEM - FIBER SCHEMATIC

SP 8208-47 (TH95)

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SHEET
31
OF
58