

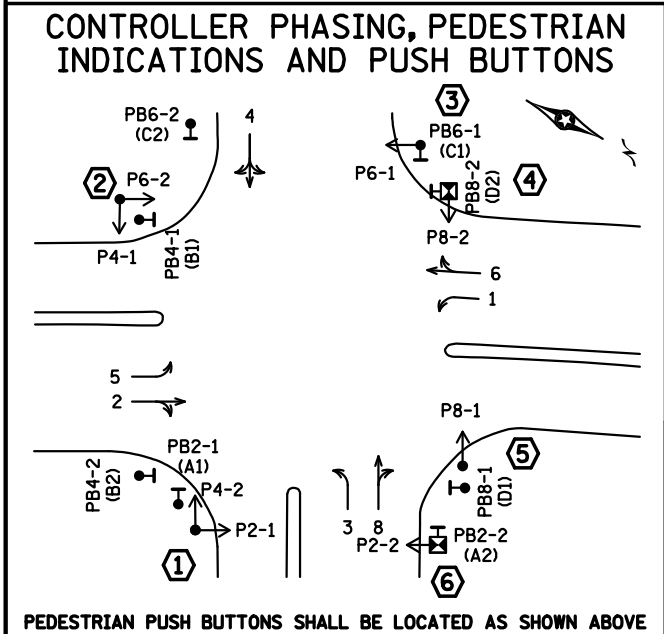
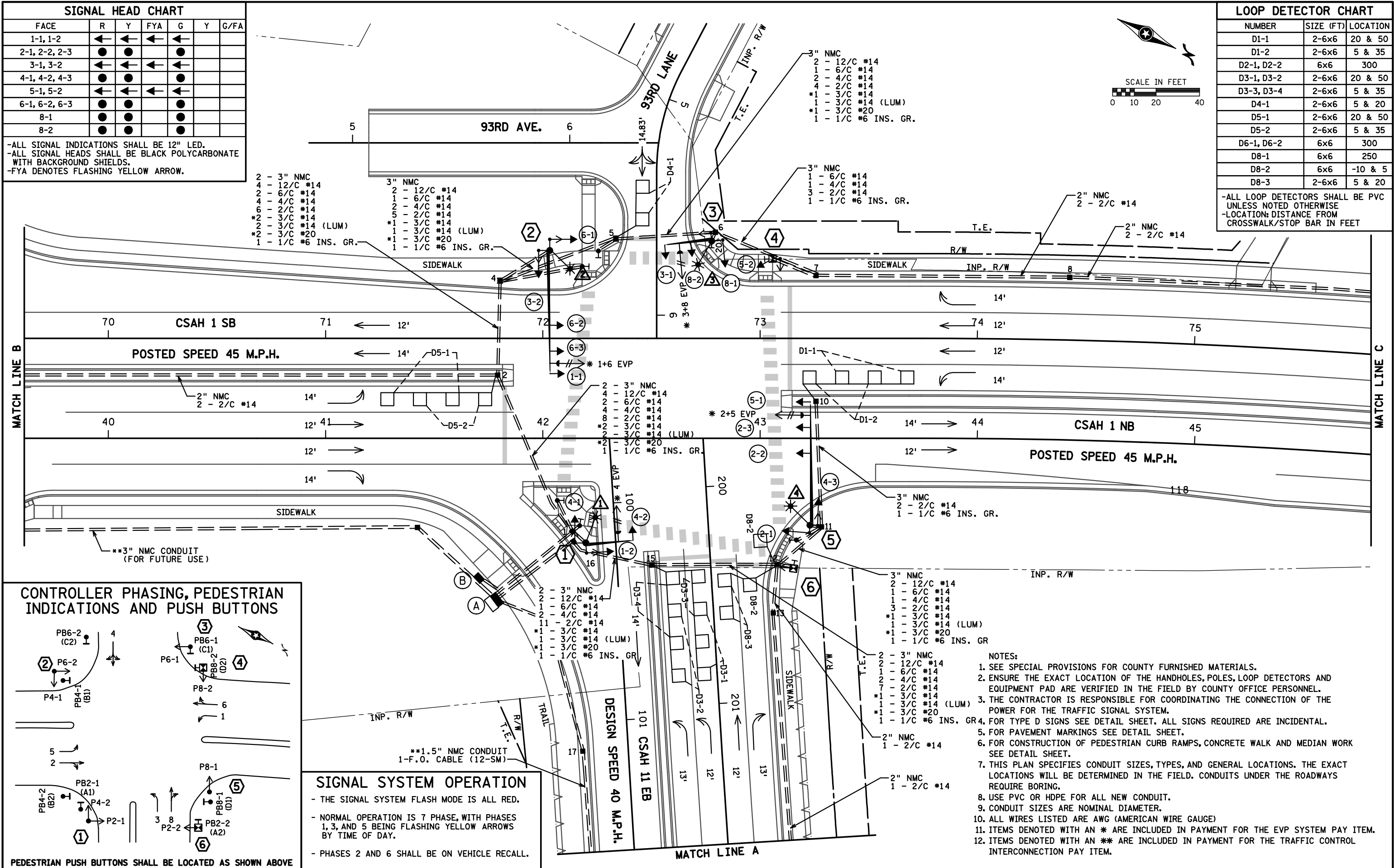
DATE: 12/14/2020 TIME: 12:47:07 PM  
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| SIGNAL HEAD CHART |   |   |     |   |   |      |
|-------------------|---|---|-----|---|---|------|
| FACE              | R | Y | FYA | G | Y | G/FA |
| 1-1, 1-2          | ← | ← | ←   | ← |   |      |
| 2-1, 2-2, 2-3     | ● | ● | ●   | ● |   |      |
| 3-1, 3-2          | ← | ← | ←   | ← |   |      |
| 4-1, 4-2, 4-3     | ● | ● | ●   | ● |   |      |
| 5-1, 5-2          | ← | ← | ←   | ← |   |      |
| 6-1, 6-2, 6-3     | ● | ● | ●   | ● |   |      |
| 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.

| LOOP DETECTOR CHART |           |          |
|---------------------|-----------|----------|
| NUMBER              | SIZE (FT) | LOCATION |
| D1-1                | 2-6x6     | 20 & 50  |
| D1-2                | 2-6x6     | 5 & 35   |
| D2-1, D2-2          | 6x6       | 300      |
| D3-1, D3-2          | 2-6x6     | 20 & 50  |
| D3-3, D3-4          | 2-6x6     | 5 & 35   |
| D4-1                | 2-6x6     | 5 & 20   |
| D5-1                | 2-6x6     | 20 & 50  |
| D5-2                | 2-6x6     | 5 & 35   |
| D6-1, D6-2          | 6x6       | 300      |
| D8-1                | 6x6       | 250      |
| D8-2                | 6x6       | -10 & 5  |
| D8-3                | 2-6x6     | 5 & 20   |

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

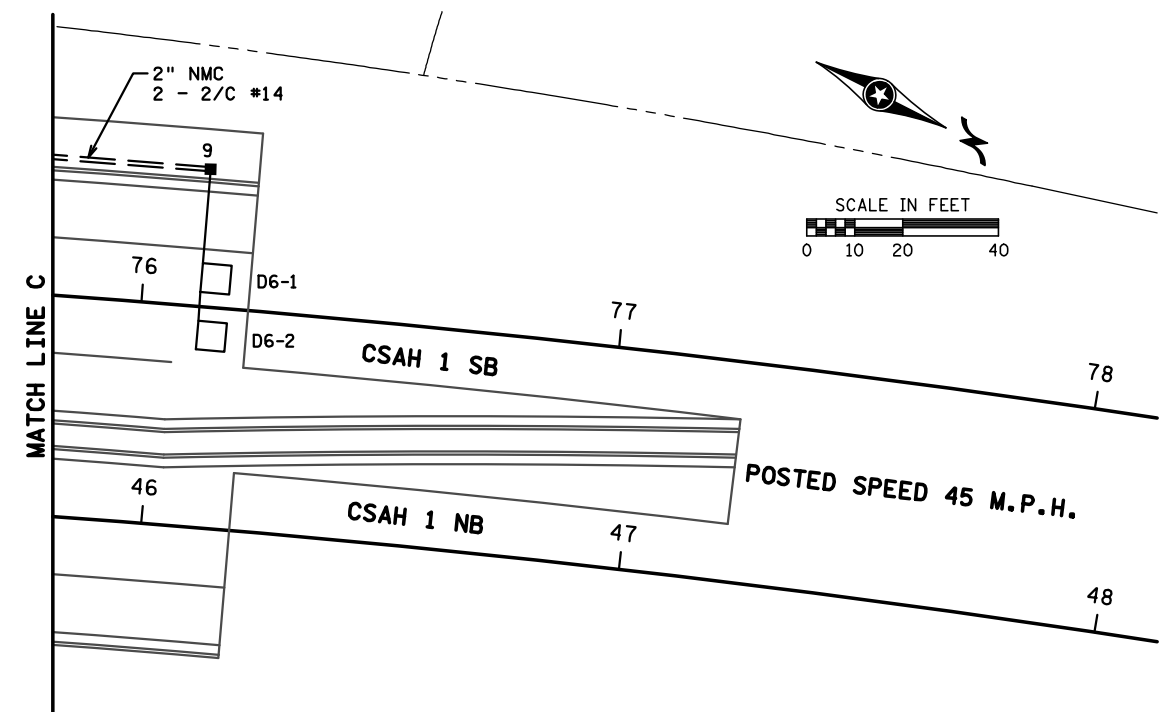
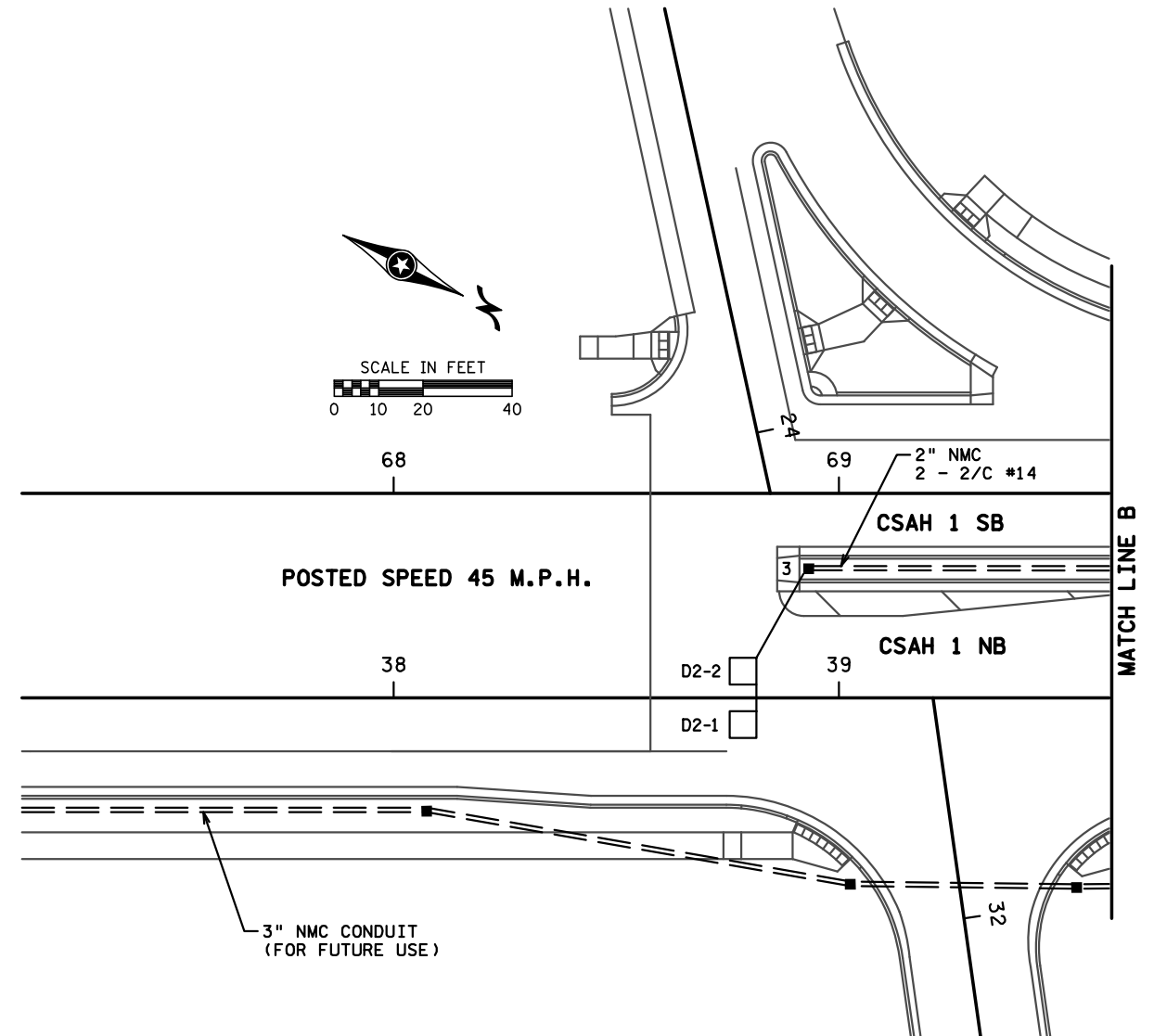
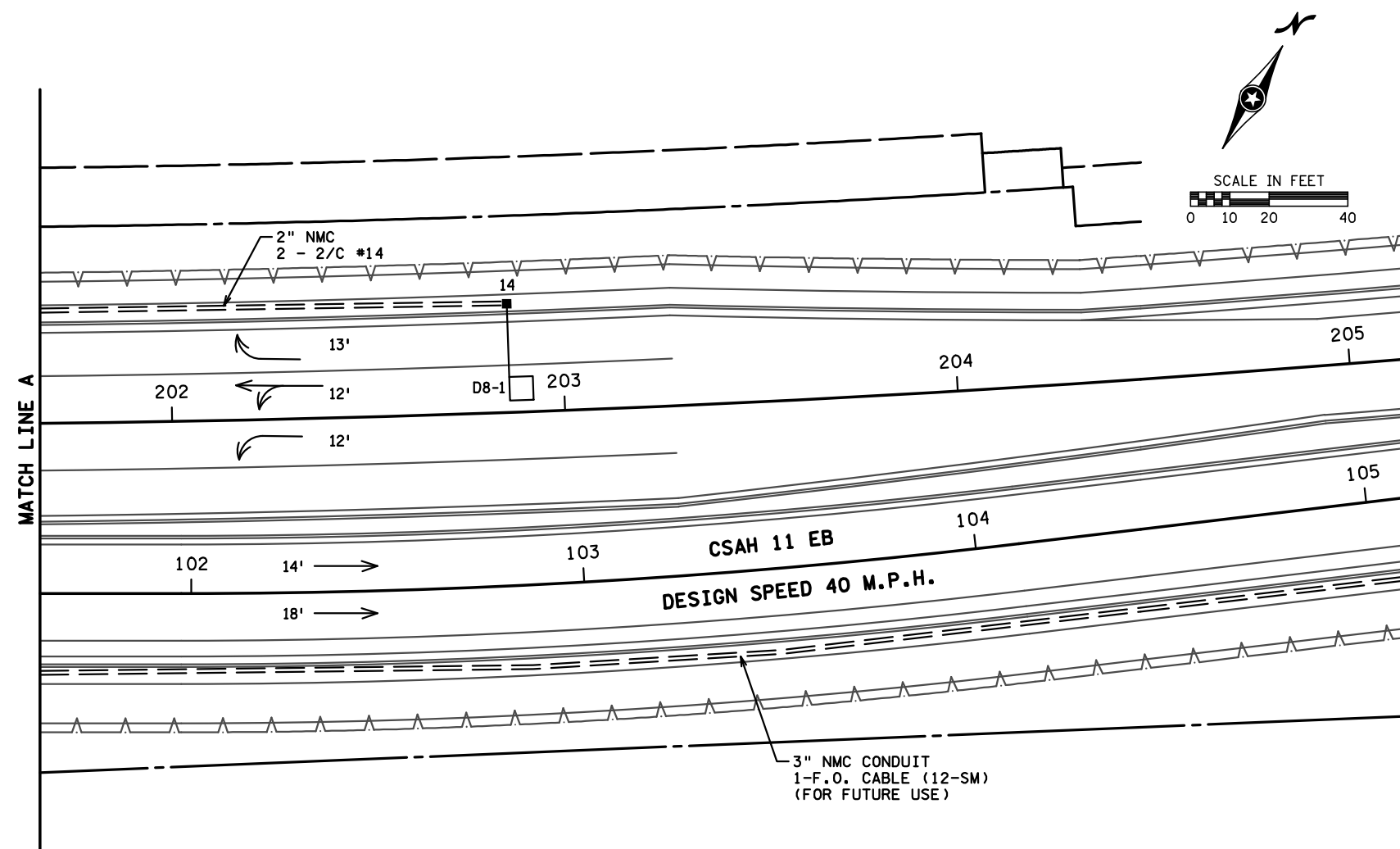


**SIGNAL SYSTEM OPERATION**

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

- NOTES:
- SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
  - ENSURE THE EXACT LOCATION OF THE HANDHOLES, POLES, LOOP DETECTORS AND EQUIPMENT PAD ARE VERIFIED IN THE FIELD BY COUNTY 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 INCIDENTAL.
  - FOR PAVEMENT MARKINGS SEE DETAIL SHEET.
  - FOR CONSTRUCTION OF PEDESTRIAN CURB RAMPS, CONCRETE WALK AND MEDIAN WORK SEE DETAIL SHEET.
  - 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 PAY ITEM.
  - ITEMS DENOTED WITH AN \*\* ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

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|     |      |    |                          |          |                                                                                                                                                                                                                                                                                                |                                                                                       |                                                        |  |                     |  |  |                             |  |
|-----|------|----|--------------------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------|--|---------------------|--|--|-----------------------------|--|
|     |      |    |                          | DES: JSB | I HEREBY CERTIFY THAT THIS SHEET 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.<br><br>SIGNATURE: <u>Jeffrey A. Hilden</u> LIC. NO. <u>20781</u> DATE: <u>11/25/2020</u><br>JEFFREY A. HILDEN |  | SIGNAL SYSTEM A MATCH LINE LAYOUT<br>CSAH 1 AT CSAH 11 |  | TRAFFIC SIGNAL PLAN |  |  |                             |  |
|     |      |    |                          | DRW: RRC |                                                                                                                                                                                                                                                                                                |                                                                                       | STATE PROJ. NO. 002-611-036                            |  |                     |  |  | SHEET NO. 394 OF 416 SHEETS |  |
|     |      |    |                          | CHK: JAH |                                                                                                                                                                                                                                                                                                |                                                                                       |                                                        |  |                     |  |  |                             |  |
| NO. | DATE | BY | DESCRIPTION OF REVISIONS |          |                                                                                                                                                                                                                                                                                                |                                                                                       |                                                        |  |                     |  |  |                             |  |

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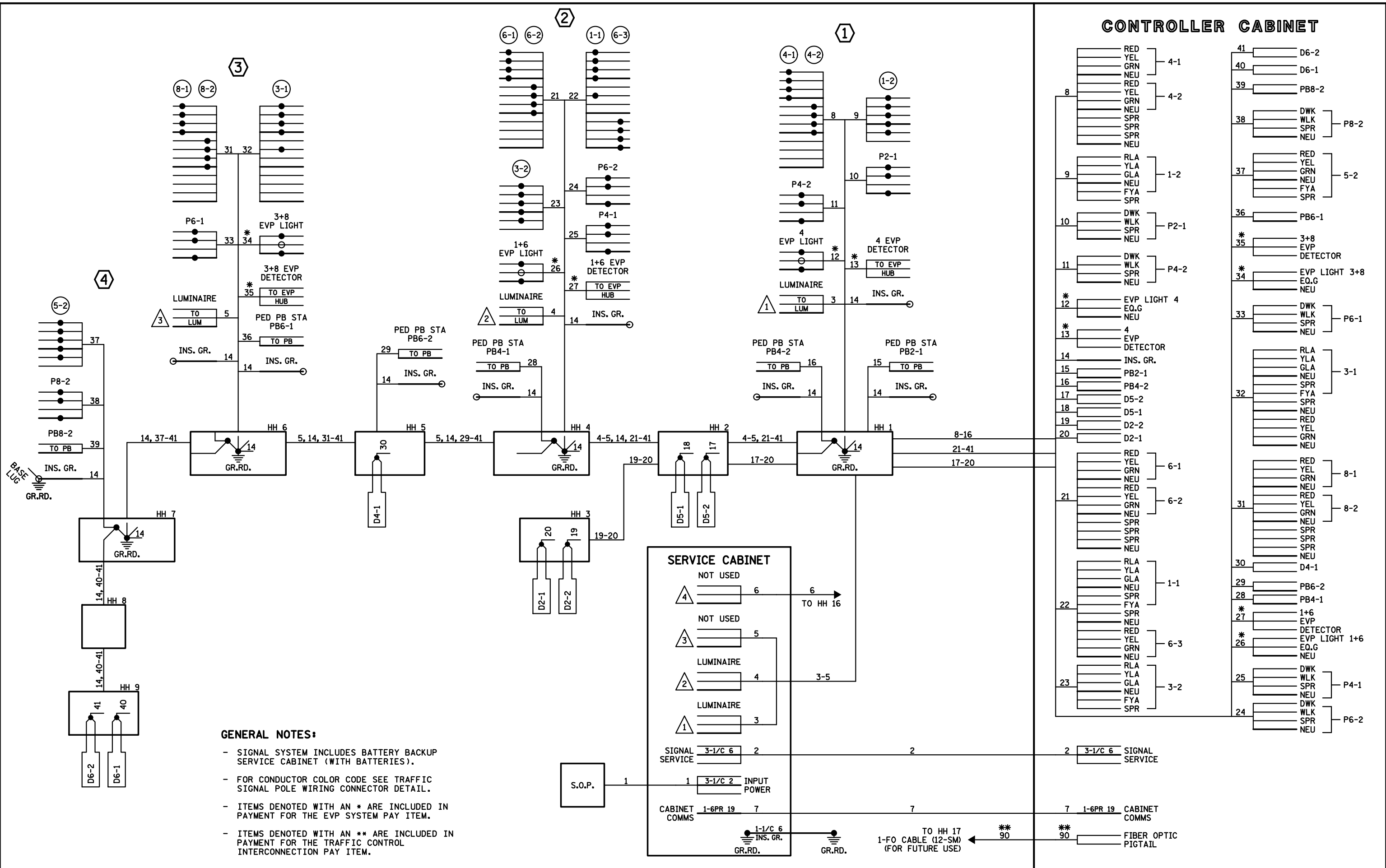


**GEN**

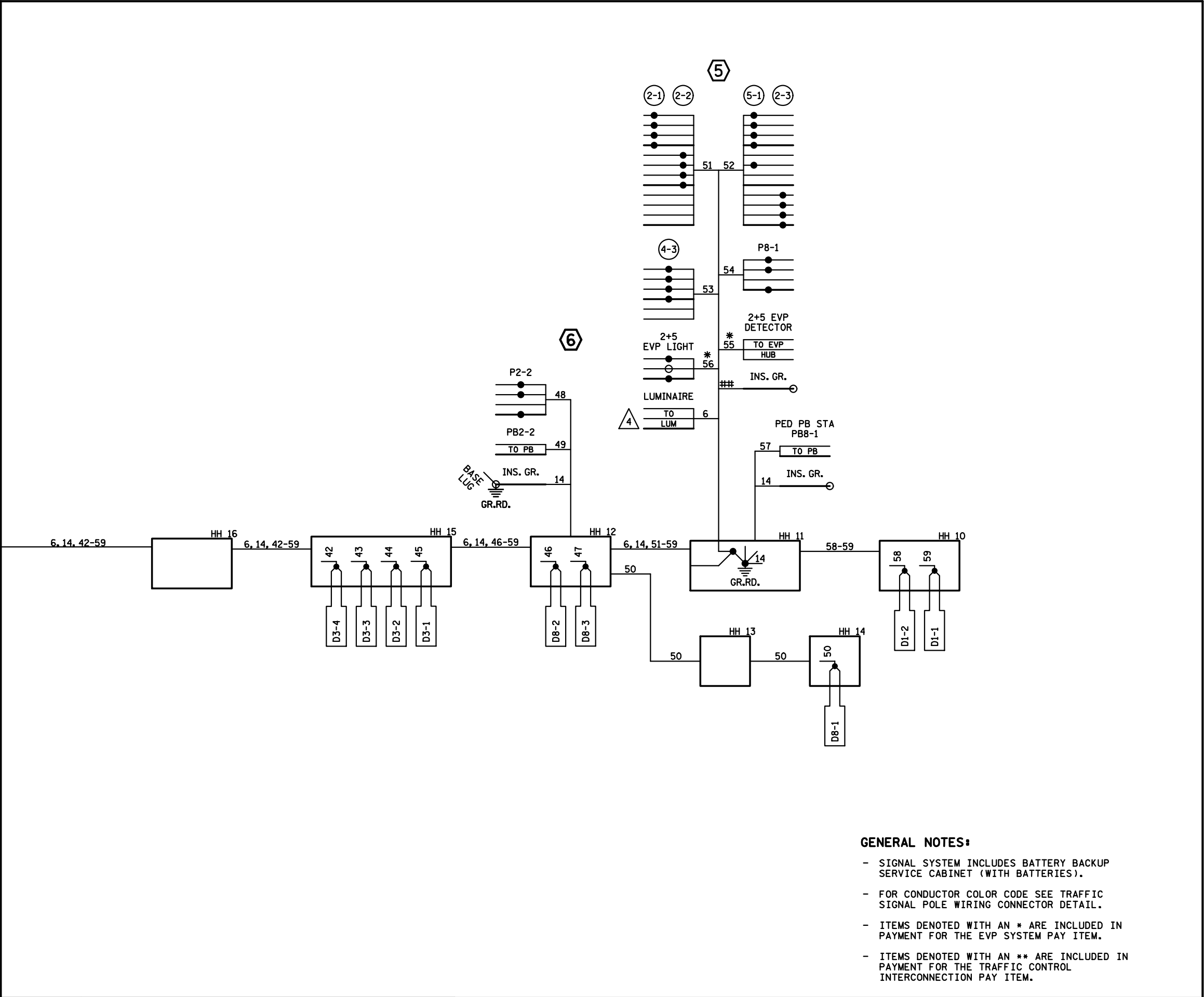
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|     |      |    |                          | DES: JSB | I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.<br> | SIGNAL SYSTEM A POLE NOTES<br>CSAH 1 AT CSAH 11                                                                                                                     |                             | TRAFFIC SIGNAL PLAN |                             |  |
|     |      |    |                          | DRW: RRC |                                                                                                                                                                                                                                                                           | SIGNATURE:  LIC. NO. <u>20781</u> DATE: <u>12/18/2020</u><br>JEFFREY A. HILDEN | STATE PROJ. NO. 002-611-036 |                     | SHEET NO. 395 OF 416 SHEETS |  |
| NO. | DATE | BY | DESCRIPTION OF REVISIONS | CHK: JAH |                                                                                                                                                                                                                                                                           |                                                                                                                                                                     |                             |                     |                             |  |

DATE: 11/25/2020 TIME: 8:00:28 AM  
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## CONTROLLER CABINET



DATE: 11/25/2020 TIME: 8:00:45 AM  
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|     |      |    |                          |          |                                                                                                                                                                                                                                                                                                |                                                                                       |                                                     |  |                             |  |
|-----|------|----|--------------------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-----------------------------------------------------|--|-----------------------------|--|
|     |      |    |                          | DES: JSB | I HEREBY CERTIFY THAT THIS SHEET 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.<br><br>SIGNATURE: <u>Jeffrey A. Hilden</u> LIC. NO. <u>20781</u> DATE: <u>11/25/2020</u><br>JEFFREY A. HILDEN |  | SIGNAL SYSTEM A WIRING DIAGRAM<br>CSAH 1 AT CSAH 11 |  | TRAFFIC SIGNAL PLAN         |  |
|     |      |    |                          | DRW: JSB |                                                                                                                                                                                                                                                                                                |                                                                                       | STATE PROJ. NO. 002-611-036                         |  | SHEET NO. 397 OF 416 SHEETS |  |
|     |      |    |                          | CHK: JAH |                                                                                                                                                                                                                                                                                                |                                                                                       |                                                     |  |                             |  |
| NO. | DATE | BY | DESCRIPTION OF REVISIONS |          |                                                                                                                                                                                                                                                                                                |                                                                                       |                                                     |  |                             |  |