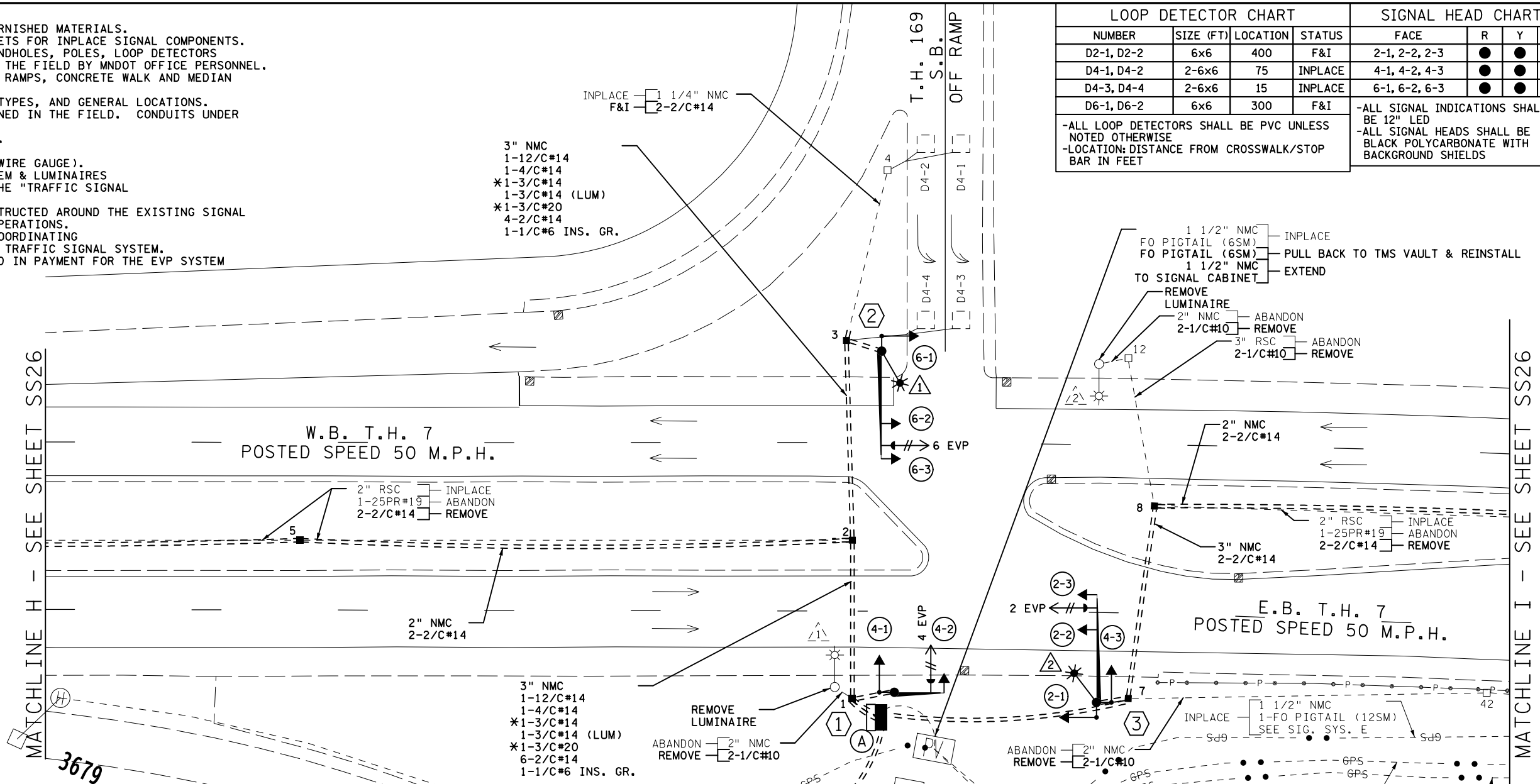


- NOTES:
- SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS.
 - REFER TO "FOR INFORMATION ONLY" SHEETS FOR INPLACE SIGNAL COMPONENTS.
 - ENSURE THE EXACT LOCATION OF THE HANDHOLES, POLES, LOOP DETECTORS AND EQUIPMENT PAD ARE VERIFIED IN THE FIELD BY MNDOT OFFICE PERSONNEL.
 - FOR CONSTRUCTION OF 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).
 - REMOVAL OF THE EXISTING SIGNAL SYSTEM & LUMINAIRES SHALL BE CONSIDERED INCIDENTAL TO THE "TRAFFIC SIGNAL SYSTEM D" PAY ITEM.
 - THE NEW SIGNAL SYSTEM SHALL BE CONSTRUCTED AROUND THE EXISTING SIGNAL SYSTEM TO MAINTAIN TRAFFIC SIGNAL OPERATIONS.
 - THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM.
 - ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.

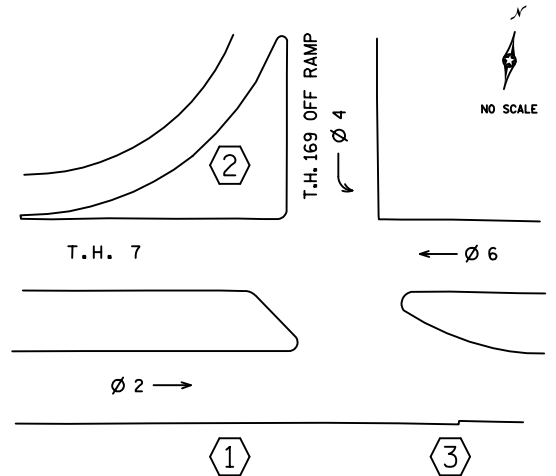
LOOP DETECTOR CHART				SIGNAL HEAD CHART			
NUMBER	SIZE (FT)	LOCATION	STATUS	FACE	R	Y	G
D2-1, D2-2	6x6	400	F&I	2-1, 2-2, 2-3	●	●	●
D4-1, D4-2	2-6x6	75	INPLACE	4-1, 4-2, 4-3	●	●	●
D4-3, D4-4	2-6x6	15	INPLACE	6-1, 6-2, 6-3	●	●	●
D6-1, D6-2	6x6	300	F&I				

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

-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 3 PHASE(S).

PEDESTRIAN PUSH BUTTONS SHALL BE LOCATED AS SHOWN ABOVE

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.

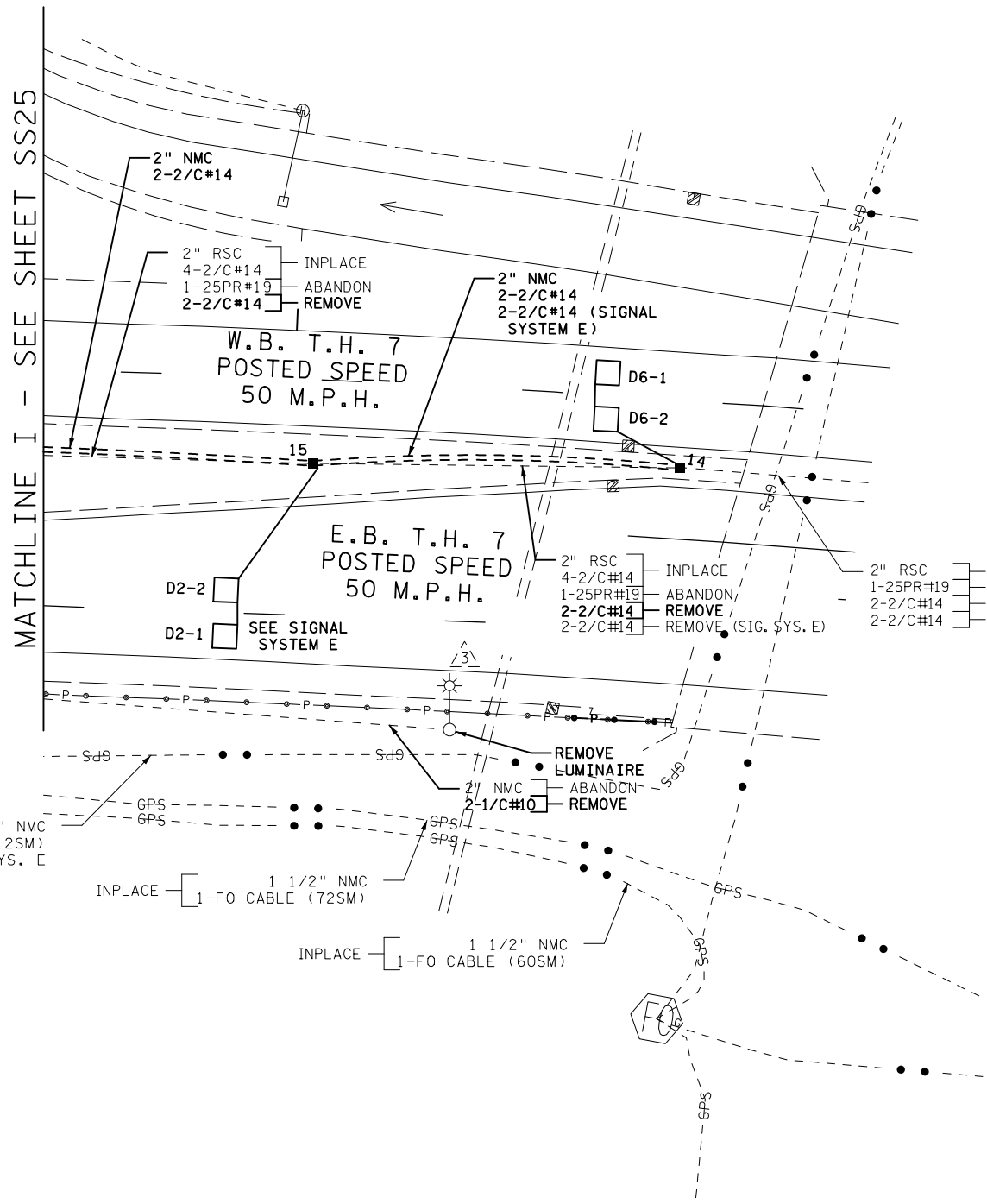
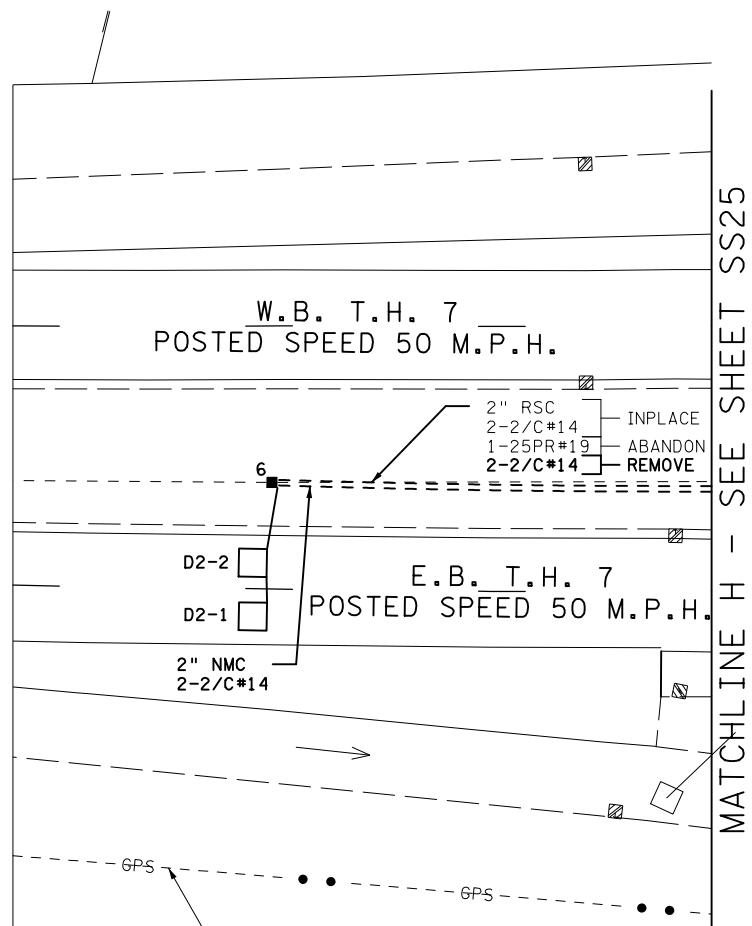
PRINT NAME: _____
 SIGNATURE: _____
 DATE: _____ LICENSE # _____

TRAFFIC SIGNAL SYSTEM D LAYOUT
 T.H. 7 AT T.H. 169 WEST RAMP

SYSTEM ID: 2033384 T.E. 3490
 METER ADDRESS: 107 WAYSIDE ROAD WEST
 OLD SYSTEM ID: 21502

NO	DATE	DWN	CKD	REVISIONS

REVISED AT MN/DOT
 RED LINE AS BUILT
 BY JBA 4/5/19



- (A) EQUIPMENT PAD (SEE DETAIL SHEET)
SERVICE CABINET (SSB) NO BATTERY BACKUP SYSTEM OR BATTERIES
CONTROLLER AND CABINET (STATE FURNISHED)
- | | |
|-------------------|-------------------|
| 2-3" NMC TO HH 1: | 2-3" NMC TO HH 7: |
| 2-12/C#14 | 2-12/C#14 |
| 2-4/C#14 | *1-3/C#14 |
| *2-3/C#14 | *1-3/C#20 |
| *2-3/C#20 | 2-2/C#14 |
| 6-2/C#14 | 1-1/C#6 INS. GR. |
| 1-1/C#6 INS. GR. | |

GROUND WIRE AND GROUND ROD - MIN 8' OUT FROM PAD
1-2" AND 1-3" CONDUIT STUBBED OUT (CAPPED BOTH ENDS)
EXTEND 1 1/2" CONDUIT TO TMS VAULT;
PULLBACK TO TMS SHELTER & REINSTALL 1-FO PIGTAIL (6SM)
CONTROLLER CABINET TO SERVICE CABINET:
2" NMC
3-1/C#6
CONTROLLER CABINET TO SERVICE CABINET (COMM):
2" NMC
1-6PR#19
SERVICE CABINET TO GROUND MOUNTED TRANSFORMER:
2" NMC
3-1/C#2
SERVICE CABINET TO HH1:
2" NMC
1-3/C#14 (LUM)
SERVICE CABINET TO HH7:
2" NMC
1-3/C#14 (LUM)
SERVICE CABINET TO EXTERNAL GR. RD.:
1" NMC
1-1/C#6 INS. GR.
(SEE EQUIPMENT PAD LAYOUT)



40
SCALE IN FEET

- ① PA85 POLE FOUNDATION
TYPE PA85-A-15
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
1-ANGLE MOUNT SIGNAL AT 180 DEG
*1-ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASE 4)
1-R9-3A NO PED SIGN (FACING POLE 2)
3" NMC TO HH 1:
1-12/C#14
*1-3/C#14
*1-3/C#20
1-1/C#6 INS. GR.

- ② PA90 POLE FOUNDATION
TYPE PA90-A-35-D40-9 (DAVIT AT 350 DEG)
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL OVERHEAD
AT 11'
1-ANGLE MOUNT SIGNALS AT 180 DEG
*1-ONE WAY EVP DETECTOR AND
CONFIRMATORY LIGHT (PHASE 6)
LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
1-R9-3A SIGN (FACING POLE 1)
3" NMC TO HH 3:
1-12/C#14
1-4/C#14
*1-3/C#14
1-3/C#14 (LUM)
*1-3/C#20
1-1/C#6 INS. GR.

- ③ PA90 POLE FOUNDATION
TYPE PA90-A-35-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 (PHASE 2)
LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
1-R3-9A SIGN (FACING NORTH)
3" NMC TO HH 7:
2-12/C#14
*1-3/C#14
1-3/C#14 (LUM)
*1-3/C#20
1-1/C#6 INS. GR.

- (B)
INPLACE INPLACE SOP - GROUND MOUNT TRANSFORMER
(BY XCEL ENERGY)
F&I F&I 2" NMC INTO SERVICE CABINET
3-1/C#2

SYSTEM ID: 2033384 T.E. 3490
METER ADDRESS: 107 WAYSIDE ROAD WEST
OLD SYSTEM ID: 21502

NO	DATE	DWN	CKD	REVISIONS

REVISED AT MN/DOT
RED LINE AS BUILT
BY JBA 4/5/19

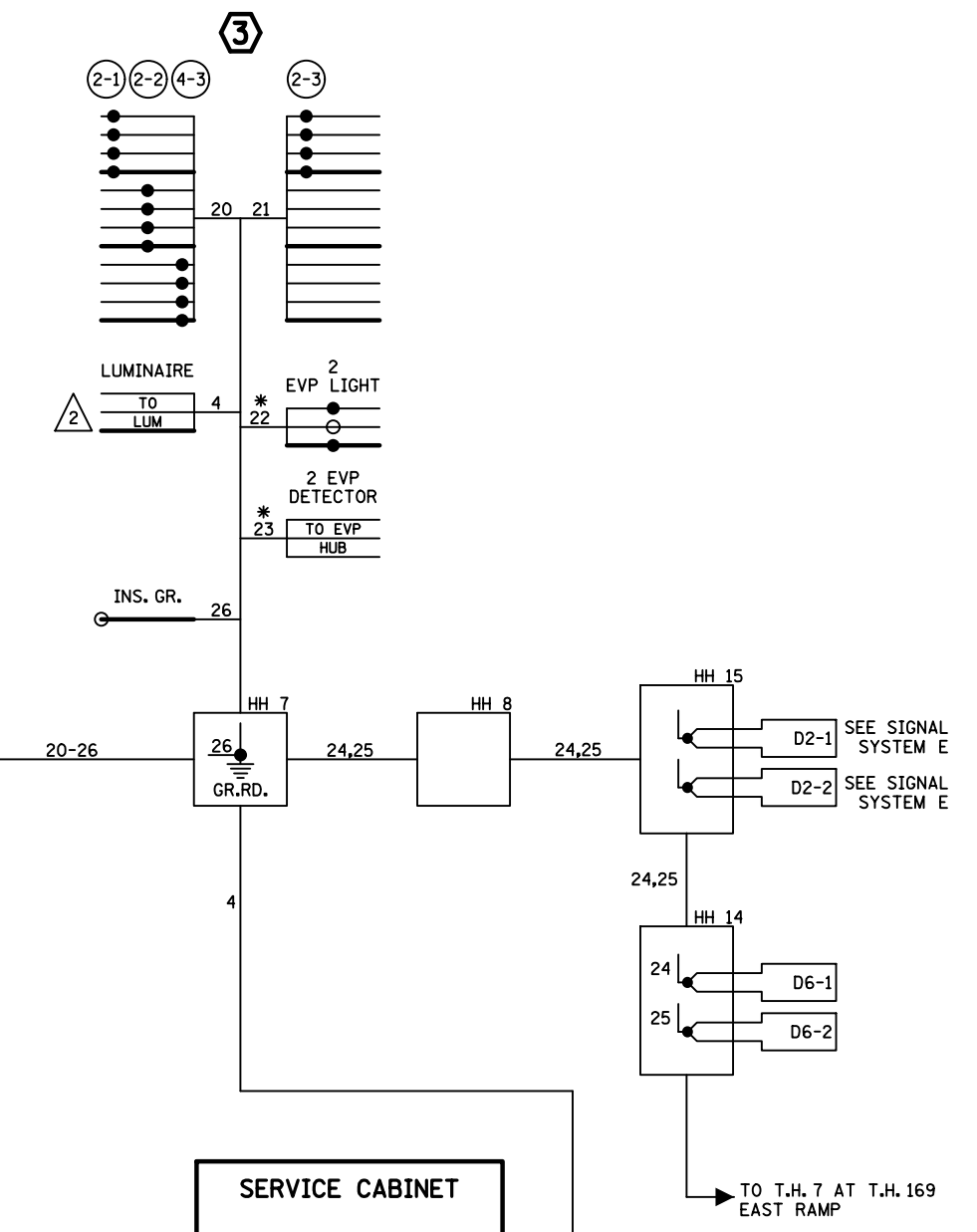
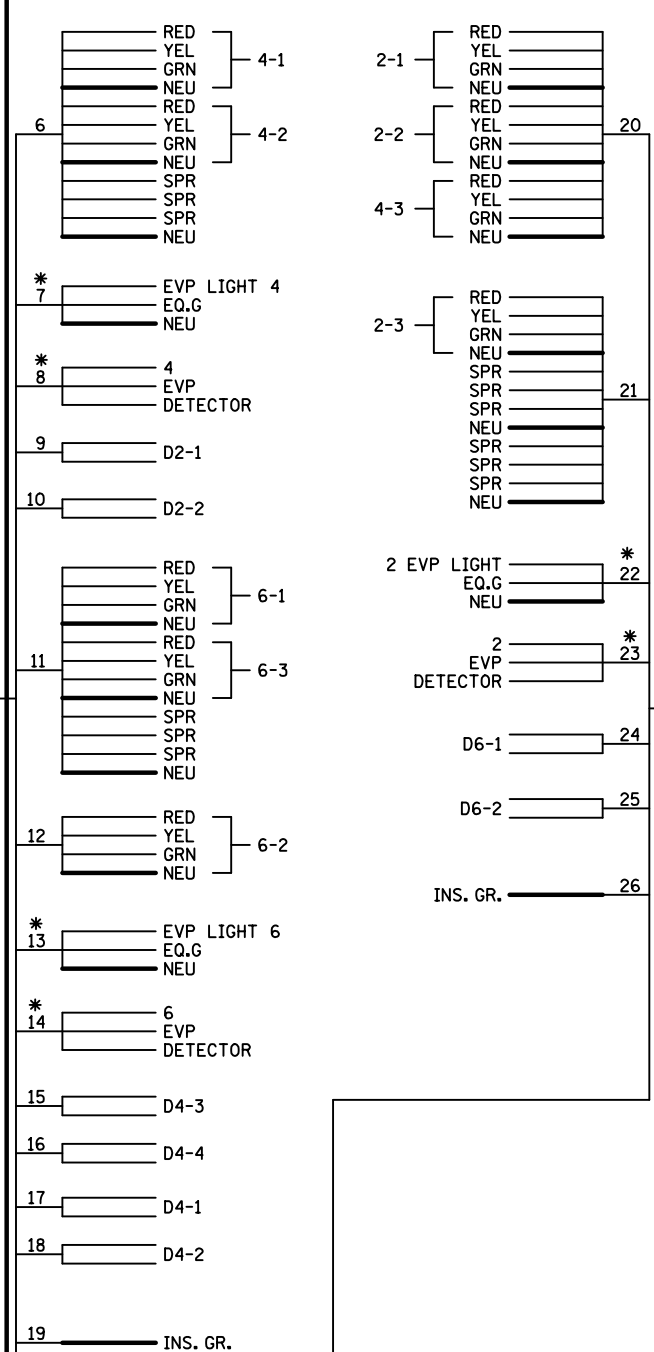
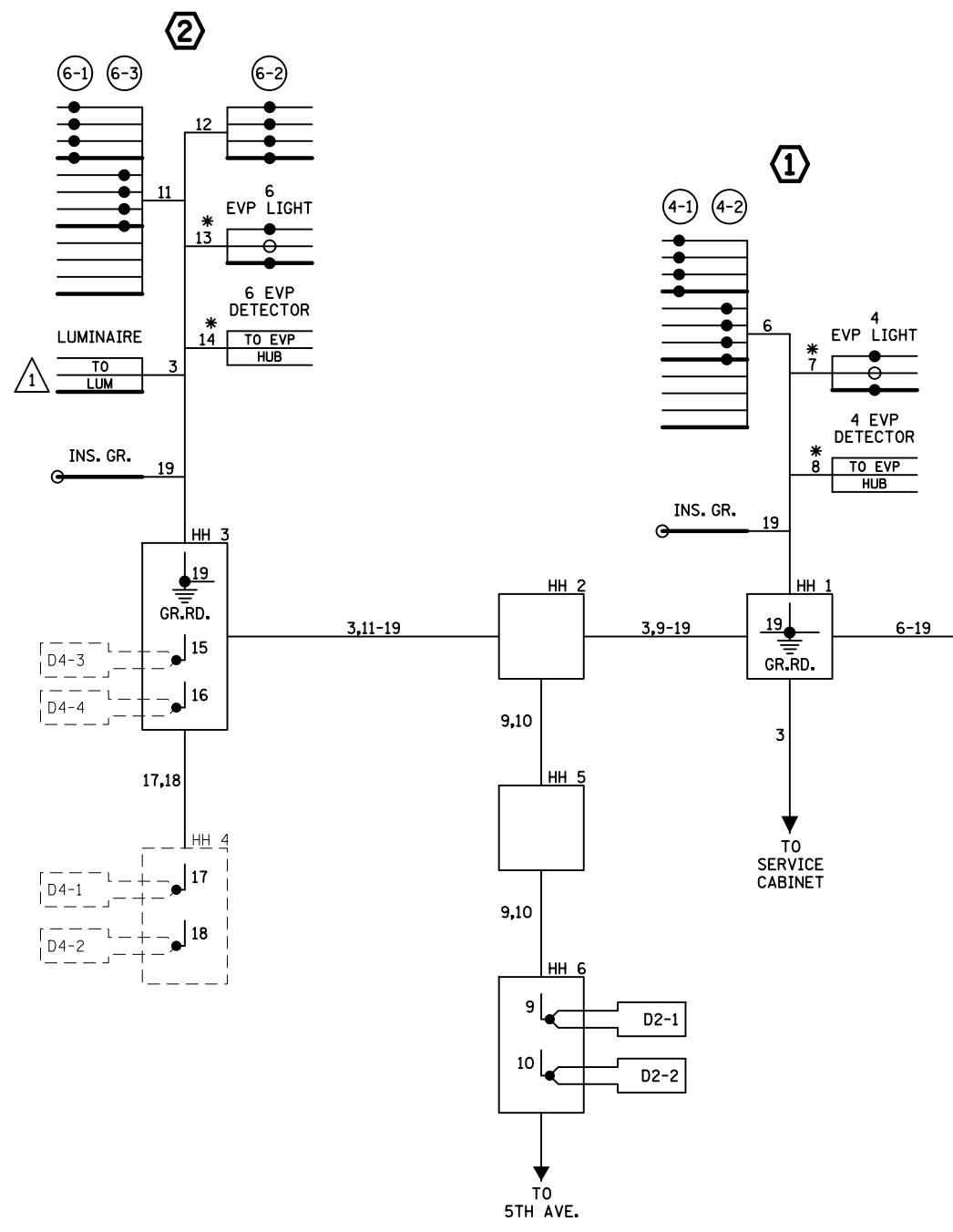
I HEREBY CERTIFY THAT THIS SHEET WAS PREPARED
BY ME OR UNDER MY DIRECT SUPERVISION AND THAT
I AM A DULY LICENSED PROFESSIONAL ENGINEER
UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINT NAME: _____
SIGNATURE: _____
DATE _____ LICENSE # _____

SIGNAL SYSTEM D MATCHLINES AND NOTES
T.H. 7 AT T.H. 169 WEST RAMP

S.P. 2706-237 (T.H.7)
SHEET NO. SS26 OF SS61 SHEETS

CONTROLLER CABINET



- NOTES:**
1. SIGNAL SYSTEM INCLUDES BATTERY BACKUP SERVICE CABINET (NO BATTERIES).
 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 PAY ITEM.

NO	DATE	DWN	CKD	REVISIONS

**REVISED AT MN/DOT
RED LINE AS BUILT
BY JBA 4/5/19**

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.

PRINT NAME: _____
SIGNATURE: _____
DATE _____ LICENSE # _____

SIGNAL SYSTEM D FIELD WIRING DIAGRAM
T.H. 7 AT T.H. 169 WEST RAMP

S.P. 2706-237 (T.H.7)
SHEET NO. SS27 OF SS61 SHEETS

SYSTEM ID: 2033384 T.E. 3490
METER ADDRESS: 107 WAYSIDE ROAD WEST
OLD SYSTEM ID: 21502