

- NOTES:
1. THE EXISTING SIGNAL IS TO BE REMOVED. THE TRAFFIC CONTROL IS INCLUDED WITH THE ROADWAY PORTION OF THE PLAN.
 2. SEE THE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS.
 3. THE EXACT LOCATION OF HANDHOLES, POLES, LOOP DETECTORS, EQUIPMENT PAD, AND PEDESTRIAN CURB RAMPS SHALL BE VERIFIED IN THE FIELD BY TRAFFIC OFFICE PERSONNEL.
 4. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM.
 5. THE CONSTRUCTION OF PEDESTRIAN CURB RAMPS ARE PART OF THE ROADWAY SECTION OF THE PLAN.
 6. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD.
 7. ALL NEW CONDUIT SHALL BE PVC-SCHEDULE 80 OR HDPE SCHEDULE 80 AND SHALL CARRY 1/C 6 GREEN INSULATED GROUNDING CONDUCTOR AS SHOWN IN THE PLAN.
 8. ITEMS DENOTED WITH AN * ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
 9. REFER TO "FOR INFORMATION ONLY" SHEETS FOR INPLACE SIGNAL COMPONENTS.
 10. HEADS 4-3, 4-4, 4-6, AND 4-7 REQUIRE 45 DEGREE ANGLE VISORS.
 11. USE PVC OR HDPE FOR ALL NEW CONDUIT.
 12. CONDUIT SIZES ARE NOMINAL DIAMETER.
 13. ALL WIRES LISTED ARE AWG (AMERICAN WIRE GAUGE)
 14. ITEMS DENOTED WITH AN ** ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

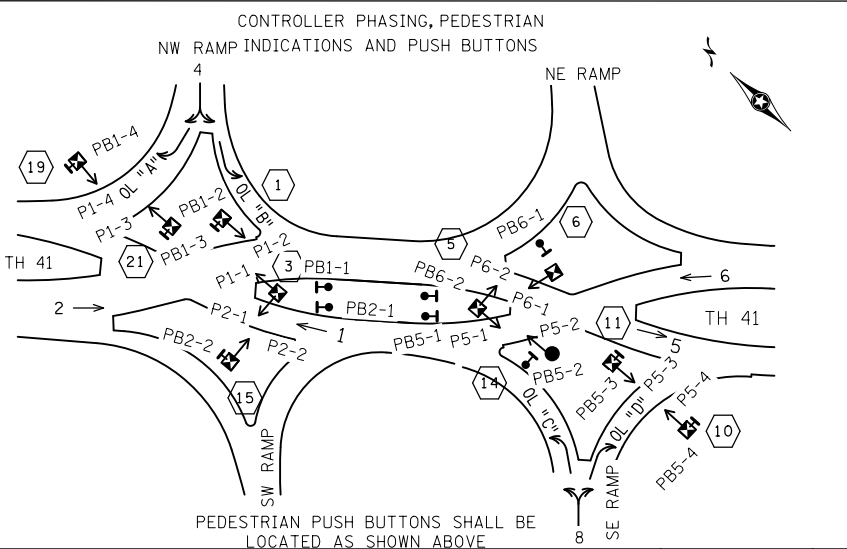
LOOP DETECTOR CHART		
NUMBER	SIZE (FT)	LOCATION
D1-3, D1-4	2-6x6	5 & 20
D2-1, D2-2, D2-3	6x6	180
D2-4, D2-5, D2-6	2-6x6	5 & 20
D4-1, D4-3, D4-4	6x6	120
D4-2	2-6x10	5 & 20
D4-5, D4-6	2-6x6	5 & 20
D5-1, D5-2	6x6	120

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

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

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

** 1-1/2" CONDUIT
1-6PR 19
SEE INTERCONNECT
PLAN SHEET



- SIGNAL SYSTEM OPERATIONS**
- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
 - NORMAL OPERATION IS 8 PHASE.
 - ANY PHASE ON RING 1 MAY RUN CONCURRENTLY WITH ANY PHASE ON RING 2.
 - PHASES 1 AND 2 MAY BE REVERSED.
 - PHASES 5 AND 6 MAY BE REVERSED.
 - PHASES 4 OR 8 (OR BOTH) MAY BE OMITTED.
 - OVERLAP "A" = PHASES 2 AND 4.
 - OVERLAP "B" = PHASES 1 AND 4.
 - OVERLAP "C" = PHASES 5 AND 8.
 - OVERLAP "D" = PHASES 6 AND 8.

RING AND BARRIER STRUCTURE

RING 1	1	2	4
RING 2	5	6	8

** 1 1/2" CONDUIT
1-6PR 19
SEE INTERCONNECT
PLAN SHEET

- APS PEDESTRIAN PUSH BUTTON STATION (PB1-1) (SEE DETAILS)**
1-APS PUSH BUTTON & SIGN (LT ARROW)
EXTEND INTO HH 3:
1" CONDUIT
1-2/C 14
1-1/C 6 INS. GR.
- APS PEDESTRIAN PUSH BUTTON STATION (PB2-1) (SEE DETAILS)**
1-APS PUSH BUTTON & SIGN (RT ARROW)
EXTEND INTO HH 3:
1" CONDUIT
1-2/C 14
1-1/C 6 INS. GR.

AS-BUILT PLAN
SP 7005-21

SYSTEM ID: 2079511
TE NO: 3965
ADDRESS: HWY 41/169 SIGNAL



DATE: \$DATE\$ \$TIME\$
PATH & FILENAME: \$FILE\$

NO.	DATE	BY	CHK	REVISIONS

Design By: MS
Plan By: MS
Checked By: JT
Approved By: SD

I HEREBY CERTIFY THAT THIS PLAN 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.

LICENSED PROFESSIONAL ENGINEER - SEAN DELMORE, PE
DATE: 03/23/2018 40945



TH 169/TH 41/CSAH 78 DDI
147th St. Overpass
Scott County, Minnesota

INTERSECTION LAYOUT-TH 41 & TH 169 W RAMPS - "SYSTEM B"
TRAFFIC CONTROL SIGNAL SYSTEM
S.P.7005-121 (TH 169), S.P.070-596-013, ET AL

SHEET
\$SL18
OF
\$TOT11
SHEETS

INTERSECTION NOTES

① X: 431951.5886, Y: 207316.0362
 PEDESTAL FOUNDATION
 14' PEDESTAL POLE (INCLUDES BASE)
 1-STRAIGHT MOUNT SIGNAL-POLE MOUNTED
 (FACING SOUTHBOUND TRAFFIC)
 1- C.D. PED INDICATION-POLE MOUNTED
 1-APS PB AND SIGN (RT ARROW),
 AND PEDESTAL POLE ADAPTOR (PB1-2)
 EXTEND INTO HH 1:
 3" CONDUIT
 2-4/C 14
 1-2/C 14
 1-1/C 6 INS. GR.

⑬ X: 431860.4873, Y: 207315.5462
 PEDESTAL FOUNDATION
 14' PEDESTAL POLE (INCLUDES BASE)
 1-STRAIGHT MOUNT SIGNAL-POLE MOUNTED
 (FACING EASTBOUND TRAFFIC)
 EXTEND INTO HH 18:
 1-4/C 14
 1-1/C 6 INS. GR.

⑯ X: 432039.3418, Y: 207463.4030
 PEDESTAL FOUNDATION
 10' PEDESTAL POLE (INCLUDES BASE)
 *ONE WAY EVP DETECTOR-MOUNT ON TOP OF
 PEDESTAL POLE (PHASE 4)
 EXTEND INTO HH 22:
 3" CONDUIT
 *1-3/C 20
 1-1/C 6 INS. GR.

Ⓐ EQUIPMENT PAD (SEE DETAIL SHEET)
 SERVICE CABINET (SSB) NO BATTERY BACKUP SYSTEM OR BATTERIES
 CONTROLLER AND CABINET (STATE FURNISHED)
 3" CONDUIT TO HH 23:
 1-12/C 14
 2-4/C 14
 4-2/C 14
 *2-3/C 14
 *2-3/C 20
 1-1/C 6 INS. GR.
 3" CONDUIT TO HH 23:
 2-12/C 14
 1-4/C 14
 1-1/C 6 INS. GR.
 3" CONDUIT TO HH 23:
 1-12/C 14
 3-4/C 14
 9-2/C 14
 *1-3/C 14
 *1-3/C 20
 1-1/C 6 INS. GR.
 3" CONDUIT TO HH 23:
 2-4/C 14
 1-2/C 14
 1-1/C 6 INS. GR.
 3" CONDUIT TO HH 1:
 1-12/C 14
 3-4/C 14
 8-2/C 14
 *1-3/C 14
 1-1/C 6 INS. GR.
 3" CONDUIT TO HH 1:
 2-4/C 14
 2-2/C 14
 1-1/C 6 INS. GR.

② X: 432012.5319, Y: 207284.5319
 PA85 POLE FOUNDATION
 TYPE PA85-A-15-D40-9 (DAVIT AT 335 DEG)
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
 1-ANGLE MOUNT SIGNAL-POLE MOUNTED 180 DEG
 *1-ONE WAY LED CONFIRMATORY LIGHT (PHASE 4)
 LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
 1-SIGN R3-5L (48 X 60)
 EXTEND INTO HH 2:
 3" CONDUIT
 1-12/C 14
 1-3/C 14 (LUM)
 *1-3/C 14
 1-1/C 6 INS. GR.

⑰ X: 431853.7626, Y: 207381.3831
 PEDESTAL FOUNDATION
 14' PEDESTAL POLE (INCLUDES BASE)
 1-STRAIGHT MOUNT SIGNAL-POLE MOUNTED
 (FACING EASTBOUND TRAFFIC)
 EXTEND INTO HH 20:
 1-4/C 14
 1-1/C 6 INS. GR.

⑰ X: 431924.1175, Y: 207376.1071
 PEDESTAL FOUNDATION
 14' PEDESTAL POLE (INCLUDES BASE)
 1-STRAIGHT MOUNT SIGNAL-POLE MOUNTED
 (FACING SOUTHBOUND TRAFFIC)
 1- C.D. PED INDICATION-POLE MOUNTED
 1-APS PB AND SIGN (LT ARROW),
 AND PEDESTAL POLE ADAPTOR (PB1-3)
 EXTEND INTO HH 23:
 3" CONDUIT
 2-4/C 14
 1-2/C 14
 1-1/C 6 INS. GR.

3" CONDUIT TO HH 23:
 1-12/C 14
 3-4/C 14
 9-2/C 14
 *1-3/C 14
 *1-3/C 20
 1-1/C 6 INS. GR.
 3" CONDUIT TO HH 23:
 2-4/C 14
 1-2/C 14
 1-1/C 6 INS. GR.

③ X: 431948.4032, Y: 207260.7171
 PEDESTAL FOUNDATION
 14' PEDESTAL POLE (INCLUDES BASE)
 1-STRAIGHT MOUNT SIGNAL-POLE MOUNTED
 (FACING WESTBOUND TRAFFIC)
 2- C.D. PED INDICATION-POLE MOUNTED
 EXTEND INTO HH 3:
 3" CONDUIT
 3-4/C 14
 1-1/C 6 INS. GR.

⑱ X: 431840.0079, Y: 207411.1301
 PA85 POLE FOUNDATION
 TYPE PA85-A-10(2)-D40-9 (DAVIT AT 270 DEG)
 2-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
 *1-ONE WAY LED CONFIRMATORY LIGHT (PHASE 4)
 LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
 2-SIGNS R3-5R (48 X 60)
 EXTEND INTO HH 20:
 1-12/C 14
 1-3/C 14 (LUM)
 *1-3/C 14
 1-1/C 6 INS. GR.

⑳ X: 431912.2390, Y: 207360.0179
 PA85 POLE FOUNDATION
 TYPE PA85-A-25-D40-9 (DAVIT AT 350 DEG)
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
 1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 12'
 1-ANGLE MOUNT SIGNAL-POLE MOUNTED 180 DEG
 *1-ONE WAY LED CONFIRMATORY LIGHT (PHASE 1)
 LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
 2-SIGNS R3-5a (48 X 60)
 EXTEND INTO HH 24:
 3" CONDUIT
 1-12/C 14
 1-3/C 14 (LUM)
 *1-3/C 14
 1-1/C 6 INS. GR.

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:
 6PR 19
 CONTROLLER CABINET TO SERVICE CABINET:
 2" CONDUIT
 3-1/C 6
 CONTROLLER CABINET TO SERVICE CABINET:
 2" CONDUIT
 1-6PR 19 (COMMS)
 SERVICE CABINET TO GROUND MOUNTED TRANSFORMER:
 2" CONDUIT
 3-1/C 2
 SERVICE CABINET TO HH 1:
 2" CONDUIT
 1-3/C 14 (LUM)
 SERVICE CABINET TO HH 23:
 2" CONDUIT
 3-3/C 14 (LUM)
 SERVICE CABINET TO EXTERNAL GR. RD.:
 1" CONDUIT
 1-1/2" 6 INS. GR.
 (SEE EQUIPMENT PAD LAYOUT)

⑮ X: 431909.7755, Y: 207237.2885
 PEDESTAL FOUNDATION
 14' PEDESTAL POLE (INCLUDES BASE)
 1-STRAIGHT MOUNT SIGNAL-POLE MOUNTED
 (FACING WESTBOUND TRAFFIC)
 *1-ONE WAY EVP DETECTOR-MOUNT ON TOP
 OF PEDESTAL POLE (PHASE 1)
 1-C. D. PED INDICATION-POLE MOUNTED
 1-APS PF AND SIGN (LT ARROW),
 AND PEDESTAL POLE ADAPTOR (PB2-2)
 EXTEND INTO HH 17:
 2-4/C 14
 1-2/C 14
 *1-3/C 20
 1-1/C 6 INS. GR.

⑲ X: 431922.0065, Y: 207427.7059
 PEDESTAL FOUNDATION
 14' PEDESTAL POLE (INCLUDES BASE)
 1-STRAIGHT MOUNT SIGNAL-POLE MOUNTED
 (FACING SOUTHBOUND TRAFFIC)
 1- C.D. PED INDICATION-POLE MOUNTED
 1-APS PB AND SIGN (RT ARROW),
 AND PEDESTAL POLE ADAPTOR (PB1-4)
 EXTEND INTO HH 21:
 3" CONDUIT
 2-4/C 14
 1-2/C 14
 1-1/C 6 INS. GR.

㉓ X: 431951.5886, Y: 207325.2842
 PA90 POLE FOUNDATION
 TYPE PA90-A-40-D40-9 (DAVIT AT 350 DEG)
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
 2-STRAIGHT MOUNT SIGNALS OVERHEAD
 AT 11' AND 23'
 1-ANGLE MOUNT SIGNAL-POLE MOUNTED 180 DEG
 *1-ONEWAY EVP DETECTOR AND LED CONFIRMATORY
 LIGHT (PHASE 2)
 LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
 3-SIGNS R3-5a (48 X 60)
 EXTEND INTO HH 24:
 2-12/C 14
 1-3/C 14 (LUM)
 *1-3/C 14
 *1-3/C 20
 1-1/C 6 INS. GR.

3" CONDUIT TO HH 25 (SYSTEM 'C'):
 2-12/C 14
 1-4/C 14
 5-2/C 14
 *1-3/C 14
 1-1/C 6 INS. GR.
 3" CONDUIT TO HH 25 (SYSTEM 'C'):
 3-12/C 14
 1-4/C 14
 3-2/C 14
 *1-3/C 14
 *1-3/C 20
 1-1/C 6 INS. GR.
 3" CONDUIT TO HH 25 (SYSTEM 'C'):
 1-12/C 14
 2-4/C 14
 4-2/C 14
 *1-3/C 14
 *1-3/C 20
 1-1/C 6 INS. GR.
 3" CONDUIT TO HH 25 (SYSTEM 'C'):
 1-12/C 14
 3-4/C 14
 4-2/C 14
 *1-3/C 14
 *1-3/C 20
 1-1/C 6 INS. GR.

Ⓑ SOP-GROUND MOUNTED
 TRANSFORMER (MN VALLEY)
 2" CONDUIT INTO SERVICE CABINET:
 3-1/C 2

AS-BUILT PLAN
 SP 7005-21

SYSTEM ID: 2079511
 TE NO: 3965
 ADDRESS: HWY 41/169 SIGNAL

DATE: \$DATE\$
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 Plan By: MS
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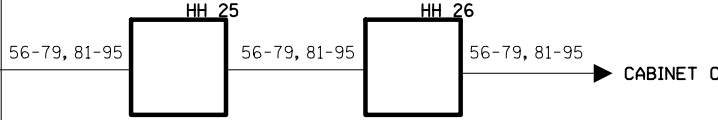
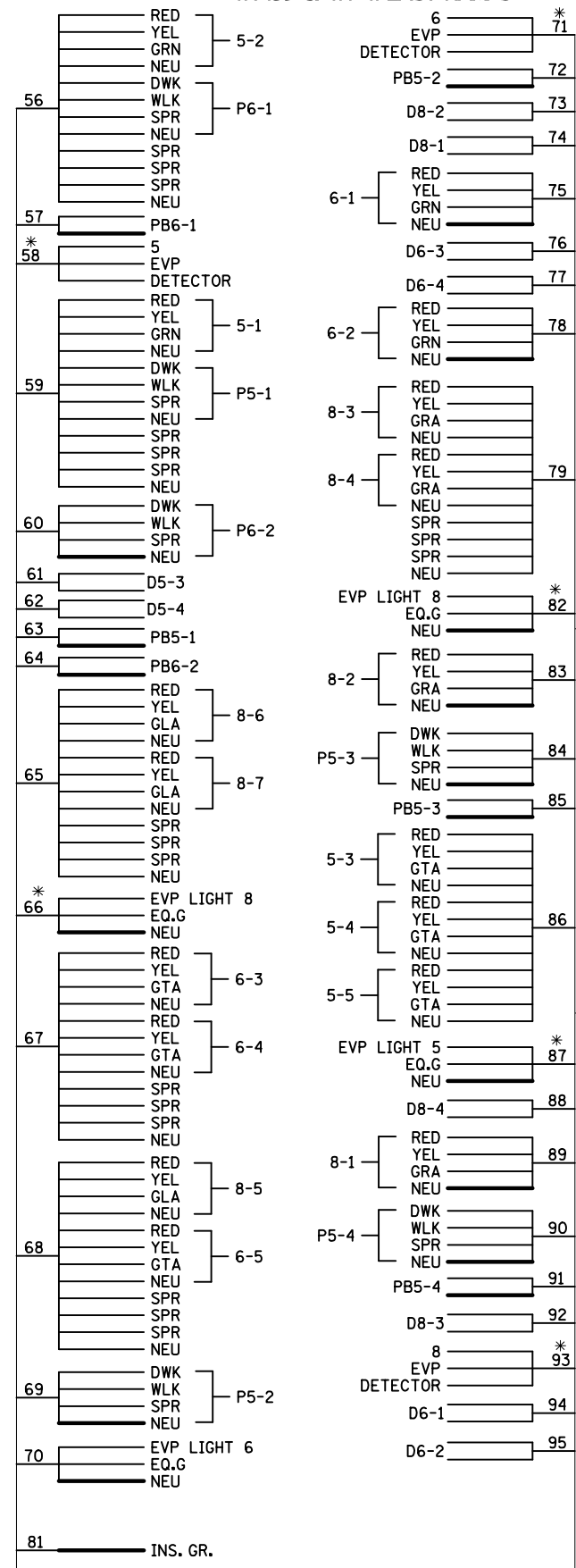
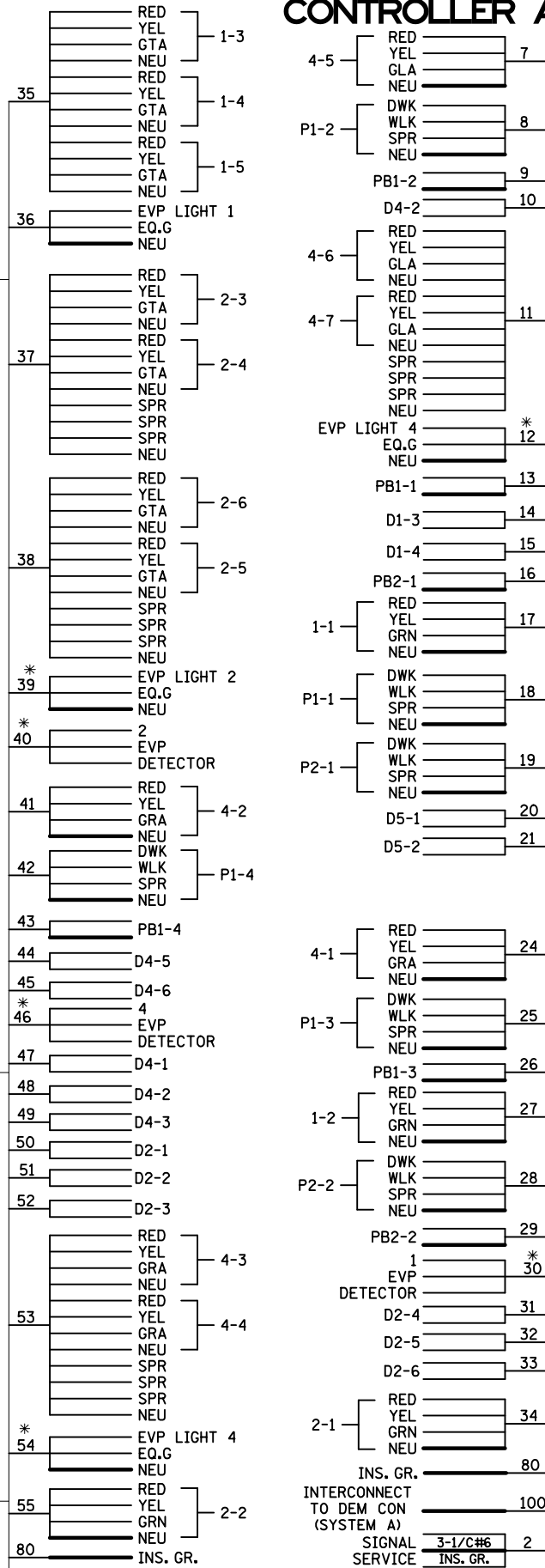
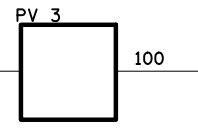
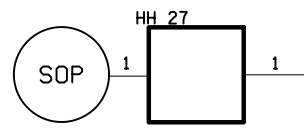
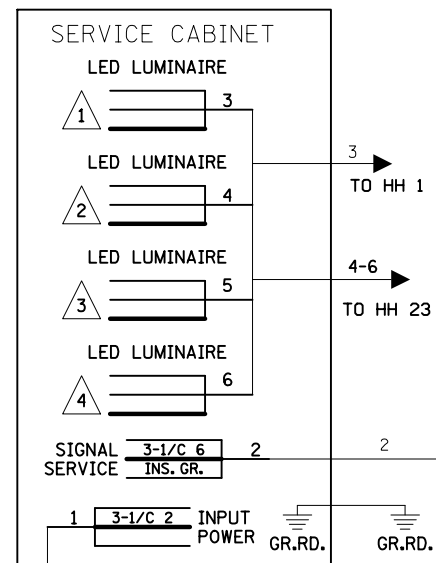
TH 169/TH 41/CSAH 78 DDI
 147th St. Overpass
 Scott County, Minnesota

POLE NOTES-TH 41 & TH 169 W RAMPS - "SYSTEM B"
 TRAFFIC CONTROL SIGNAL SYSTEM
 S.P.7005-121 (TH 169), S.P.070-596-013, ET AL

SHEET
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 OF
 \$TOT11
 SHEETS

CONTROLLER AND CABINET

(SYSTEM "C")
TH 169 & TH 41 EAST RAMPS



NOTES:
 1. LUMINAIRES ARE METERED.
 2. SIGNAL SYSTEM INCLUDES BATTERY- BACKUP SERVICE CABINET WITH DUAL METERS (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. ITEMS DENOTED WITH AN (**) ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

AS-BUILT PLAN
SP 7005-21

SYSTEM ID: 2079511
TE NO: 3965
ADDRESS: HWY 41/169 SIGNAL

DATE: \$DATE\$ \$TIME\$
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Design By: MS
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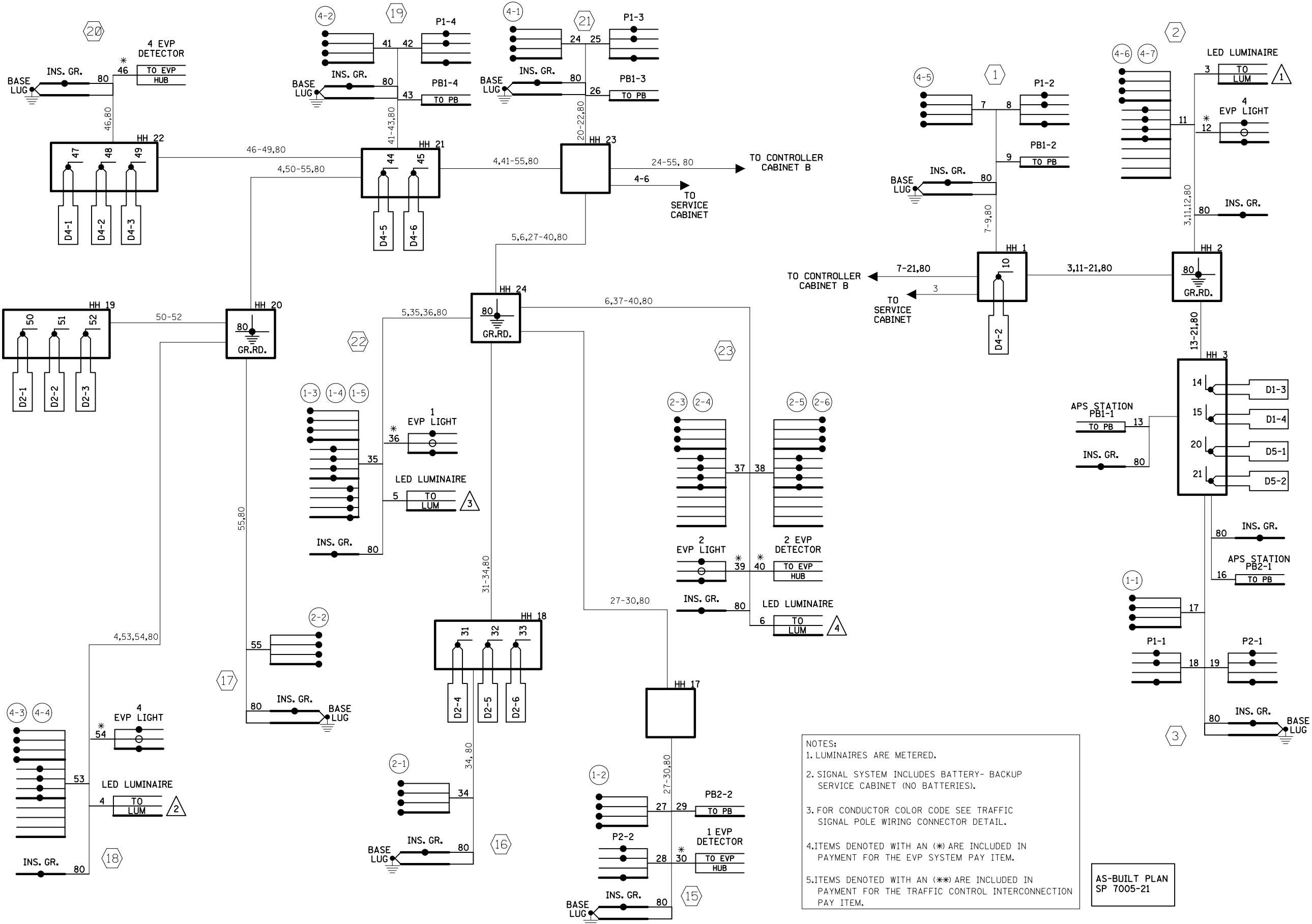
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 LICENSED PROFESSIONAL ENGINEER - SEAN DELMORE, PE
 DATE: 03/23/2018 40945



TH 169/TH 41/CSAH 78 DDI
147th St. Overpass
Scott County, Minnesota

WIRING DIAGRAM-TH 41 & TH 169 W RAMPS - "SYSTEM B"
TRAFFIC CONTROL SIGNAL SYSTEM
S.P.7005-121 (TH 169), S.P.070-596-013, ET AL

SHEET
\$SL20
OF
\$TOT11
SHEETS



NOTES:
 1. LUMINAIRES ARE METERED.
 2. SIGNAL SYSTEM INCLUDES BATTERY- BACKUP SERVICE CABINET (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 EVF SYSTEM PAY ITEM.
 5. ITEMS DENOTED WITH AN (***) ARE INCLUDED IN PAYMENT FOR THE TRAFFIC CONTROL INTERCONNECTION PAY ITEM.

AS-BUILT PLAN
 SP 7005-21

SYSTEM ID: 2079511
 TE NO: 3965
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TH 169/TH 41/CSAH 78 DDI
 147th St. Overpass
 Scott County, Minnesota

WIRING DIAGRAM-TH 41 & TH 169 W RAMPS - "SYSTEM B"
 TRAFFIC CONTROL SIGNAL SYSTEM
 S.P.7005-121 (TH 169), S.P.070-596-013, ET AL

SHEET
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