

SIGNAL FACE CHART			
FACE	R	Y	G
5-1, 5-2	●	●	●
5-3, 5-4, 5-5	●	●	▲
6-1, 6-2	●	●	●
6-3, 6-4, 6-5	●	●	▲
8-1, 8-2, 8-3, 8-4	●	●	▶
8-5, 8-6, 8-7	●	●	◀

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

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

- 3" CONDUIT
2-12/C 14
1-4/C 14
1-3/C 14 (LUM)
6-2/C 14
* 1-3/C 14
1-1/2 6 INS. GR.
- APS PEDESTRIAN PUSH BUTTON STATION (PB6-1) (SEE DETAILS)
1-APS PUSH BUTTON & SIGN (LT ARROW)
EXTEND INTO HH 7:
1" CONDUIT
1-2/C 14
1-1/2 6 INS. GR.

- APS PEDESTRIAN PUSH BUTTON STATION (PB6-2) (SEE DETAILS)
1-APS PUSH BUTTON & SIGN (RT ARROW)
EXTEND INTO HH 5:
1" CONDUIT
1-2/C 14
1-1/2 6 INS. GR.

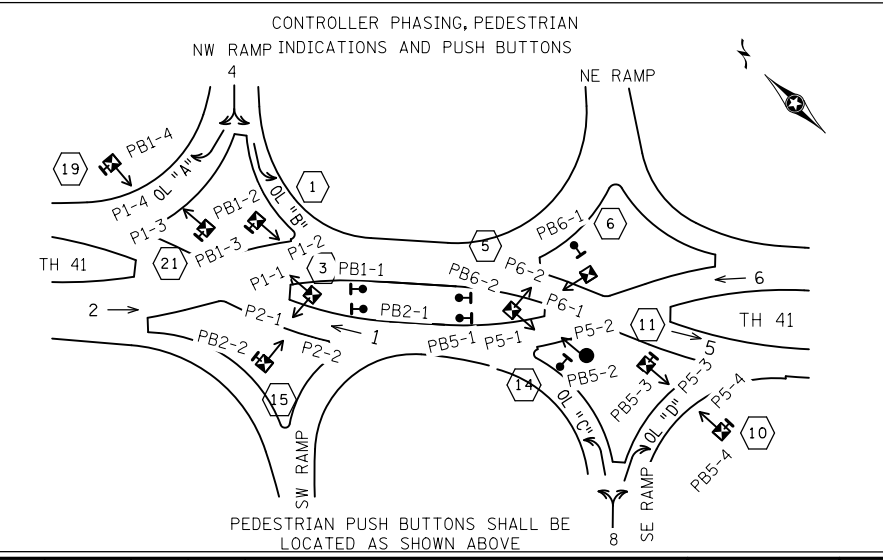
- APS PEDESTRIAN PUSH BUTTON STATION (PB5-1) (SEE DETAILS)
1-APS PUSH BUTTON & SIGN (LT ARROW)
EXTEND INTO HH 5:
1" CONDUIT
1-2/C 14
1-1/2 6 INS. GR.

- 3" CONDUIT
1-12/C 14
1-4/C 14
1-3/C 14 (LUM)
4-2/C 14
* 1-3/C 14
1-1/2 6 INS. GR.
- 3" CONDUIT:
1-12/C 14
4-4/C 14
1-3/C 14 (LUM)
4-2/C 14
* 1-3/C 14
* 1-3/C 20
1-1/2 6 INS. GR.

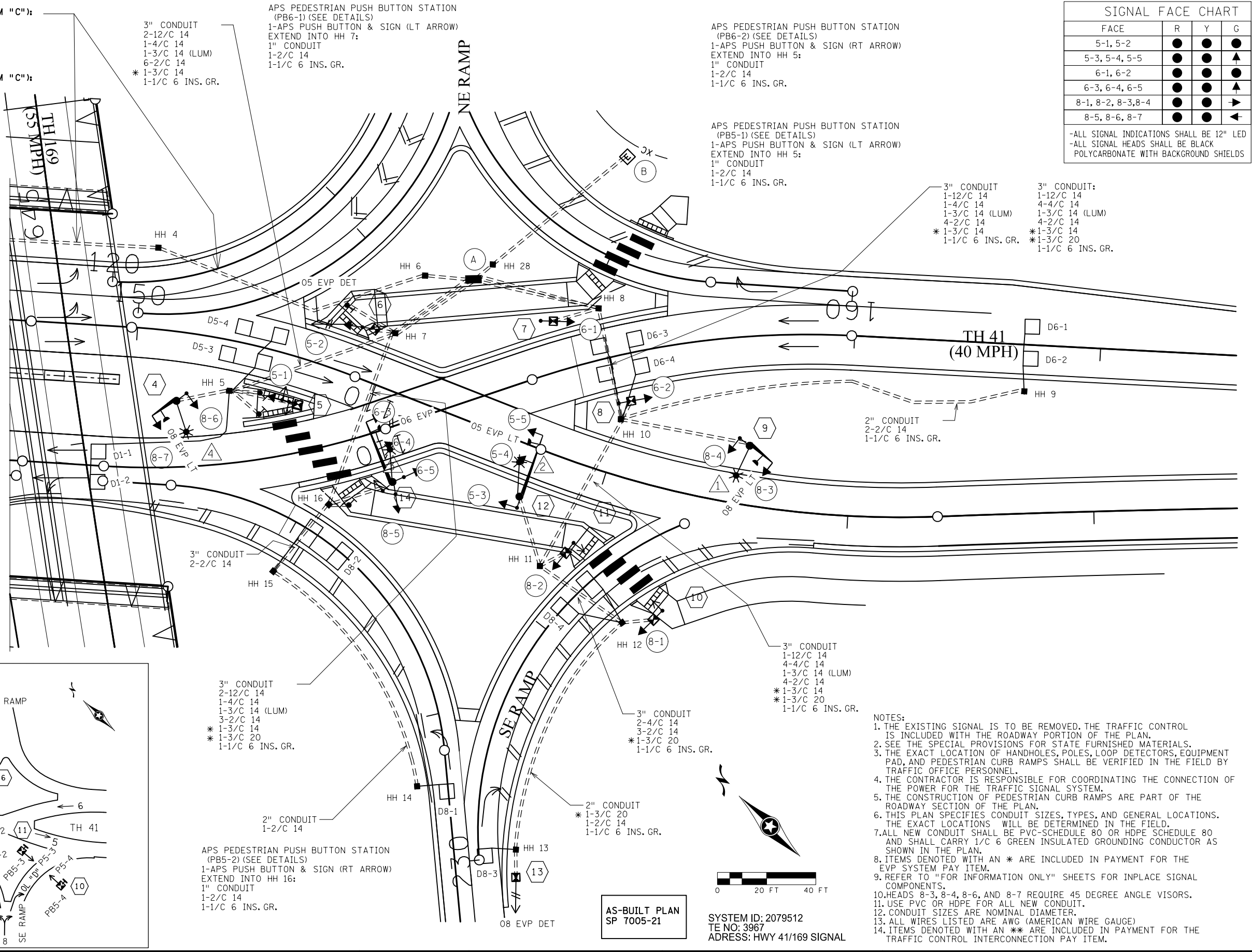
NUMBER	SIZE (FT)	LOCATION
D1-1, D1-2	6x6	120
D5-3, D5-4	2-6x6	5 & 20
D6-1, D6-2	6x6	180
D6-3, D6-4	2-6x6	5 & 20
D8-1, D8-3	6x6	120
D8-2, D8-4	2-6x10	5 & 20

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

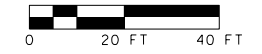
- SIGNAL SYSTEM OPERATIONS
- THE SIGNAL SYSTEM FLASH MODE IS ALL RED.
 - NORMAL OPERATION IS 8 PHASE.
 - ANY PHASE ON RING 1 MAY RUN CONCURRENTLY WITH ANY PHASE ON RING 2.
 - PHASES 1 AND 2 MAY BE REVERSED.
 - PHASES 5 AND 6 MAY BE REVERSED.
 - PHASES 4 OR 8 (OR BOTH) MAY BE OMITTED.
 - OVERLAP "A" =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



MATCHLINE "A"



- 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 1/2 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 8-3, 8-4, 8-6, AND 8-7 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.



SYSTEM ID: 2079512
TE NO: 3967
ADDRESS: HWY 41/169 SIGNAL

DATE: \$DATE\$ TIME: \$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 E RAMPS - "SYSTEM C"
TRAFFIC CONTROL SIGNAL SYSTEM
S.P.7005-121 (TH 169), S.P.070-596-013, ET AL

SHEET
\$SL22
OF
\$TOT11
SHEETS

INTERSECTION NOTES

④ X: 432046.8516, Y: 207144.8873
 PA85 POLE FOUNDATION
 TYPE PA85-A-10-D40-9 (DAVIT AT 270 DEG)
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
 1-ANGLE MOUNT SIGNAL-POLE MOUNTED 180 DEG
 * 1-ONE WAY LED CONFIRMATORY LIGHT (PHASE 8)
 LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
 1-SIGN R3-5L (48 X 60)
 EXTEND INTO HH 5:
 3" CONDUIT
 1-12/C 14
 1-3/C 14 (LUM)
 * 1-3/C 14
 1-1/C 6 INS. GR.

⑤ X: 432080.7316, Y: 207108.9228
 PEDESTAL FOUNDATION
 14' PEDESTAL POLE (INCLUDES BASE)
 1-STRAIGHT MOUNT SIGNAL-POLE MOUNTED
 (FACING EASTBOUND TRAFFIC)
 2- C.D. PED INDICATION-POLE MOUNTED
 EXTEND INTO HH 5:
 3" CONDUIT
 1-12/C 14
 1-4/C 14
 1-1/C 6 INS. GR.

⑥ X: 432124.3617, Y: 207108.3506
 PEDESTAL FOUNDATION
 14' PEDESTAL POLE (INCLUDES BASE)
 1-STRAIGHT MOUNT SIGNAL-POLE MOUNTED
 (FACING EASTBOUND TRAFFIC)
 1-C.D. PED INDICATION-POLE MOUNTED
 * ONE WAY EVP DETECTOR-MOUNT ON TOP OF
 PEDESTAL POLE (PHASE 5)
 EXTEND INTO HH 7:
 3" CONDUIT
 1-12/C 14
 * 1-3/C 20
 1-1/C 6 INS. GR.

⑦ X: 432177.9754, Y: 207059.5053
 PEDESTAL FOUNDATION
 14' PEDESTAL POLE (INCLUDES BASE)
 1-STRAIGHT MOUNT SIGNAL-POLE MOUNTED
 (FACING EASTBOUND TRAFFIC)
 EXTEND INTO HH 8:
 3" CONDUIT
 1-4/C 14
 1-1/C 6 INS. GR.

⑧ X: 432177.4247, Y: 207014.1997
 PEDESTAL FOUNDATION
 14' PEDESTAL POLE (INCLUDES BASE)
 1-STRAIGHT MOUNT SIGNAL-POLE MOUNTED
 (FACING EASTBOUND TRAFFIC)
 EXTEND INTO HH 10:
 3" CONDUIT
 1-4/C 14
 1-1/C 6 INS. GR.

⑨ X: 432201.0670, Y: 206967.6466
 PA85 POLE FOUNDATION
 TYPE PA85-A-10-D40-9 (DAVIT AT 270 DEG)
 1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
 1-ANGLE MOUNT SIGNAL-POLE MOUNTED 180 DEG
 * 1-ONE WAY LED CONFIRMATORY LIGHT (PHASE 8)
 LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
 1-SIGN R3-5R (48 X 60)
 EXTEND INTO HH 10:
 3" CONDUIT
 1-12/C 14
 1-3/C 14 (LUM)
 * 1-3/C 14
 1-1/C 6 INS. GR.

⑩ X: 432120.9580, Y: 206946.7494
 PEDESTAL FOUNDATION
 14' PEDESTAL POLE (INCLUDES BASE)
 1-STRAIGHT MOUNT SIGNAL-POLE MOUNTED
 (FACING NORTHBOUND TRAFFIC)
 1-C.D. PED INDICATION-POLE MOUNTED
 1-APS PB AND SIGN (RT ARROW),
 AND PEDESTAL POLE ADAPTOR (PB5-4)
 EXTEND INTO HH 12:
 2-4/C 14
 1-2/C 14
 1-1/C 6 INS. GR.

⑪ X: 432114.9589, Y: 206989.3898
 PEDESTAL FOUNDATION
 1-14' PEDESTAL POLE (INCLUDES BASE)
 1-STRAIGHT MOUNT SIGNAL-POLE MOUNTED
 (FACING NORTHBOUND TRAFFIC)
 1-C.D. PED INDICATION-POLE MOUNTED
 1-APS PB AND SIGN (LT ARROW),
 AND PEDESTAL POLE ADAPTOR (PB5-3)
 EXTEND INTO HH 11:
 2-4/C 14
 1-2/C 14
 1-1/C 6 INS. GR.

⑫ X: 432117.8366, Y: 207018.8725
 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 5)
 LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
 2-SIGN R3-5a (48 X 60)
 EXTEND INTO HH 11:
 3" CONDUIT
 1-12/C 14
 1-3/C 14 (LUM)
 * 1-3/C 14
 1-1/C 6 INS. GR.

⑬ X: 432007.4121, Y: 206910.4670
 PEDESTAL FOUNDATION
 10' PEDESTAL POLE (INCLUDES BASE)
 * ONE WAY EVP DETECTOR-MOUNT ON TOP OF
 PEDESTAL POLE (PHASE 8)
 EXTEND INTO HH 13:
 3" CONDUIT
 * 1-3/C 20
 1-1/C 6 INS. GR.

⑭ X: 432081.4009, Y: 207060.7882
 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'
 2-ANGLE MOUNT SIGNALS-POLE MOUNTED 180
 AND 270 DEG
 * 1-ONE WAY LED CONFIRMATORY LIGHT AND
 EVP DETECTOR (PHASE 6)
 LUMINAIRE-LED (FOR 40' MOUNTING HEIGHT)
 2-SIGNS R3-5a (48 X 60)
 EXTEND INTO HH 16:
 3" CONDUIT
 2-12/C 14
 1-4/C 14
 1-3/C 14 (LUM)
 * 1-3/C 14
 * 1-3/C 20
 1-1/C 6 INS. GR.

Ⓐ CONTROLLER CABINET (NO CONTROLLER)
 (STATE FURNISHED)
 (NO BBU, NO BATTERIES)
 3" CONDUIT TO HH 7: 3" CONDUIT TO HH 8:
 2-12/C 14 1-12/C 14
 1-4/C 14 2-4/C 14
 3-2/C 14 4-2/C 14
 * 1-3/C 14 * 1-3/C 14
 * 1-3/C 20 * 1-3/C 20
 1-1/C 6 INS. GR. 1-1/C 6 INS. GR.

3" CONDUIT TO HH 7: 3" CONDUIT TO HH 8:
 3-12/C 14 1-12/C 14
 1-4/C 14 4-4/C 14
 5-2/C 14 4-2/C 14
 * 1-3/C 14 * 1-3/C 14
 * 1-3/C 20 * 1-3/C 20
 1-1/C 6 INS. GR. 1-1/C 6 INS. GR.

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 7:
 2" CONDUIT
 2-3/C 14 (LUM)
 SERVICE CABINET TO HH 8:
 2" CONDUIT
 2-3/C 14 (LUM)
 SERVICE CABINET TO EXTERNAL GR. RD.:
 1" CONDUIT
 1-1/C 6 INS. GR.
 (SEE EQUIPMENT PAD LAYOUT)

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

3" CONDUIT: 3" CONDUIT:
 3-12/C 14 1-12/C 14
 1-4/C 14 4-4/C 14
 5-2/C 14 4-2/C 14
 * 1-3/C 14 * 1-3/C 14
 * 1-3/C 20 * 1-3/C 20
 1-1/C 6 INS. GR. 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: 2079512
 TE NO: 3967
 ADDRESS: HWY 41/169 SIGNAL

DATE: \$DATE\$ \$TIME\$
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NO.	DATE	BY	CHK	REVISIONS

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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

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

SHEET
 \$SL23
 OF
 \$TOT11
 SHEETS

