

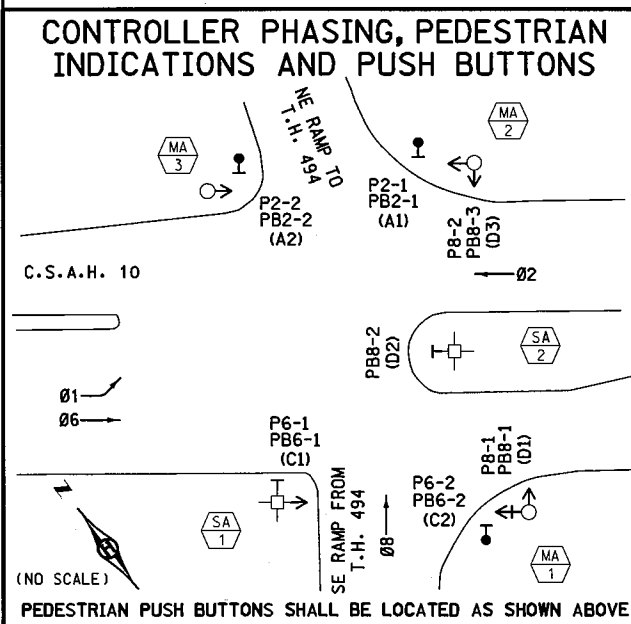
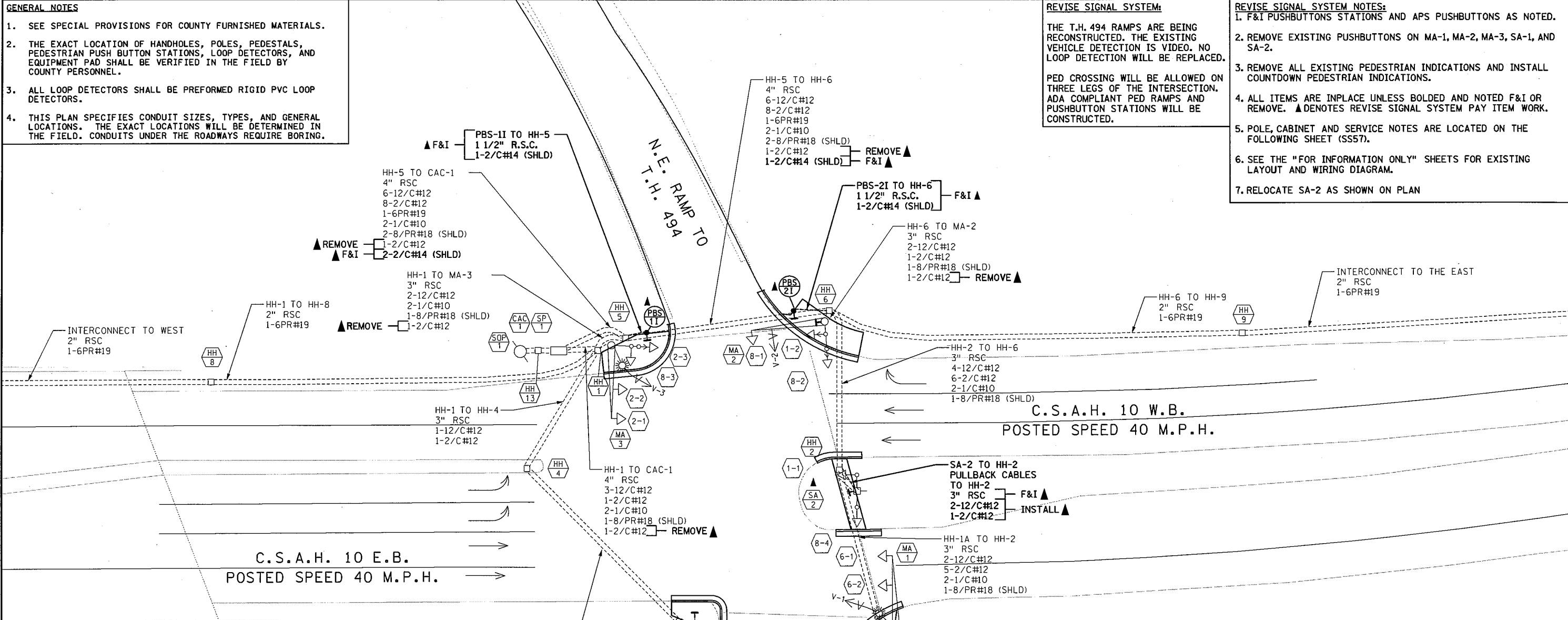
- GENERAL NOTES**
1. SEE SPECIAL PROVISIONS FOR COUNTY FURNISHED MATERIALS.
 2. THE EXACT LOCATION OF HANDHOLES, POLES, PEDESTALS, PEDESTRIAN PUSH BUTTON STATIONS, LOOP DETECTORS, AND EQUIPMENT PAD SHALL BE VERIFIED IN THE FIELD BY COUNTY PERSONNEL.
 3. ALL LOOP DETECTORS SHALL BE PREFORMED RIGID PVC LOOP DETECTORS.
 4. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER THE ROADWAYS REQUIRE BORING.

REVISE SIGNAL SYSTEM:

THE T.H. 494 RAMPS ARE BEING RECONSTRUCTED. THE EXISTING VEHICLE DETECTION IS VIDEO. NO LOOP DETECTION WILL BE REPLACED.

PED CROSSING WILL BE ALLOWED ON THREE LEGS OF THE INTERSECTION. ADA COMPLIANT PED RAMPS AND PUSHBUTTON STATIONS WILL BE CONSTRUCTED.

- REVISE SIGNAL SYSTEM NOTES:**
1. F&I PUSHBUTTONS STATIONS AND APS PUSHBUTTONS AS NOTED.
 2. REMOVE EXISTING PUSHBUTTONS ON MA-1, MA-2, MA-3, SA-1, AND SA-2.
 3. REMOVE ALL EXISTING PEDESTRIAN INDICATIONS AND INSTALL COUNTDOWN PEDESTRIAN INDICATIONS.
 4. ALL ITEMS ARE INPLACE UNLESS BOLDED AND NOTED F&I OR REMOVE. ▲ DENOTES REVISE SIGNAL SYSTEM PAY ITEM WORK.
 5. POLE, CABINET AND SERVICE NOTES ARE LOCATED ON THE FOLLOWING SHEET (SS57).
 6. SEE THE "FOR INFORMATION ONLY" SHEETS FOR EXISTING LAYOUT AND WIRING DIAGRAM.
 7. RELOCATE SA-2 AS SHOWN ON PLAN



SIGNAL SYSTEM OPERATION

- SIGNAL SYSTEM FLASH MODE IS ALL RED.
- PHASES 2 AND 6 ARE ON RECALL.

SCALE IN FEET

I hereby certify that this plan, specification, or report 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: **KATIE SCHMIDT**

Katie Schmidt

Date: **12/16/14** License #: **47147**

STATE AID PROJECT NO. **027-030-039**

STATE PROJECT NO. **2785-330**

COUNTY PROJECT NO.

CITY PROJECT NO.

DRAWN BY

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ALLIANT ENGINEERING

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 Minneapolis, MN 55415
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SP 2785-330 (TH 494)

REVISE SIGNAL SYSTEM "I"

INTERSECTION LAYOUT

C.S.A.H. 10 AT T.H. 494 EAST RAMPS

SHEET **SS56** OF **SS61**

ID 1735847

METER ADDRESS:
 C.S.A.H 10 AT T.H. 494 E. RAMPS
 SYSTEM ID: 9020300

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| INPLACE SIGNAL STRUCTURES | | | |
|---------------------------|---|-----|---------|
| NO. | REMARKS | NO. | REMARKS |
| ▲ MA-1 | REMOVE 2 PED PUSHBUTTONS F&I 1-APS PB (PB8-1) REMOVE 2 PED INDICATIONS F&I 2 C.D. PED INDICATIONS | | |
| ▲ MA-2 | REMOVE 2 PED PUSHBUTTONS F&I 1-APS PB (PB8-3) REMOVE 2 PED INDICATIONS F&I 2 C.D. PED INDICATIONS | | |
| ▲ MA-3 | REMOVE 1 PED PUSHBUTTON REMOVE 1 PED INDICATION F&I 1 C.D. PED INDICATION | | |
| ▲ SA-1 | REMOVE 1 PED PUSHBUTTON F&I 1-APS PB (PB6-1) REMOVE 1 PED INDICATION F&I 1 C.D. PED INDICATION | | |
| ▲ SA-2 | SALVAGE SIGNAL ASSEMBLY AND INSTALL ON NEW FOUNDATION AS SHOWN ON PLAN REMOVE FOUNDATION REMOVE PED PUSHBUTTON F&I 1-APS PB (Ø 8) | | |
| ▲ HH-11 | ADJUST HANDHOLE TO BE FLUSH WITH NEW WALK | | |

* ONLY INPLACE STRUCTURES TO BE MODIFIED ARE DETAILED.

| SIGNAL STRUCTURE LOCATIONS | | | |
|----------------------------|--------------|-----|--------------|
| NO. | LOCATION (1) | NO. | LOCATION (1) |
| ▲ PBS 1I | (2) | | |
| ▲ PBS 2I | (2) | | |
| ▲ PBS 3I | (2) | | |
| | | | |
| ▲ SA-2 | (2) | | |

(1) TO THE CENTER OF THE HANDHOLE OR CONCRETE FOUNDATION.
(2) SEE CONSTRUCTION INTERSECTION DETAIL FOR EXACT LOCATION.

| VIDEO DETECTION CHART | | | |
|-----------------------|--------|-------|-----------|
| DESIGNATION | CAMERA | MOUNT | LOCATION |
| D1-1 | V-1 | POLE | 20' & 50' |
| D1-2 | V-2 | POLE | 5' & 35' |
| D2-1, D2-2 | V-3 | POLE | 250' |
| D6-1, D6-2 | V-1 | POLE | 250' |
| D8-1 | V-2 | POLE | 120' |
| D8-2, D8-3 | V-2 | POLE | 5 & 20 |

| SIGNAL INDICATIONS AND BRACKETING | | | | | | | | | |
|-----------------------------------|----------|-------------------|--------|-----------------|---------|------|---------|----------|--|
| SIG. POLE NO. | FACE NO. | SIGNAL FACE MOUNT | SIG. Ø | LED INDICATIONS | | | | PED SYM. | BRACKET MOUNTING ANGLE, TYPE, AND STANDARD PLATE NO. |
| | | | | RED | YEL | FYEL | GRN | | |
| MA-1 | 6-1 | MAST ARM (END) | 6 | 12" | 12" | | 12" | | ONE-WAY MNT./PLT. 8124D |
| MA-1 | 6-2 | MAST ARM (INSIDE) | 6 | 12" | 12" | | 12" | | ONE-WAY MNT./PLT. 8124D |
| MA-1 | 6-3 | POLE MOUNT | 6 | 12" | 12" | | 12" | | |
| MA-1 | PED | POLE MOUNT | 8 | | | | | C.D. | 270° TYPE 10C PLT. 8110C |
| MA-1 | PED | POLE MOUNT | 8 | | | | | C.D. | |
| MA-2 | 8-1 | MAST ARM (END) | 8 | 12" | 12" | | 12" | | ONE-WAY MNT./PLT. 8124D |
| MA-2 | 8-2 | POLE MOUNT | 8 | 12" | 12" | | 12" | | |
| MA-2 | PED | POLE MOUNT | 8 | | | | | C.D. | 270° TYPE 20C PLT. 8110C |
| MA-2 | 1-2 | POLE MOUNT | 1 | 12" LTA | 12" LTA | | 12" LTA | | |
| MA-2 | PED | POLE MOUNT | 2 | | | | | C.D. | 90° TYPE 30 PLT. 8110C |
| MA-3 | 2-1 | MAST ARM (END) | 2 | 12" | 12" | | 12" | | ONE-WAY MNT./PLT. 8124D |
| MA-3 | 2-2 | MAST ARM (INSIDE) | 2 | 12" | 12" | | 12" | | ONE-WAY MNT./PLT. 8124D |
| MA-3 | 2-3 | POLE MOUNT | 2 | 12" | 12" | | 12" | | |
| MA-3 | PED | POLE MOUNT | 2 | | | | | C.D. | 270° TYPE 20B PLT. 8110C |
| MA-3 | 8-3 | POLE MOUNT | 8 | 12" | 12" | | 12" | | |
| SA-1 | PED | PEDESTAL MOUNT | 8 | | | | | C.D. | PLT. 8111B TYPE 4A |
| SA-2 | 1-1 | PEDESTAL MOUNT | 1 | 12" LTA | 12" LTA | | 12" LTA | | PLT. 8111B TYPE 2A |
| SA-2 | 8-4 | PEDESTAL MOUNT | 8 | 12" | 12" | | 12" | | |

* PEDESTRIAN INDICATIONS SHALL BE INTERNATIONAL SYMBOLS.

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| NO | DATE | BY | CHKD | APPR | REVISION |
|----|----------|-----|------|------|----------------------|
| 0 | 12/16/14 | KAS | RJG | RJG | FINAL PLAN SUBMITTAL |

I hereby certify that this plan, specification, or report 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: **KATIE SCHMIDT**
Katie Schmidt
Date: **12/16/14** License # **47147**

STATE AID PROJECT NO.
027-030-039
STATE PROJECT NO.
2785-330
COUNTY PROJECT NO.
CITY PROJECT NO.

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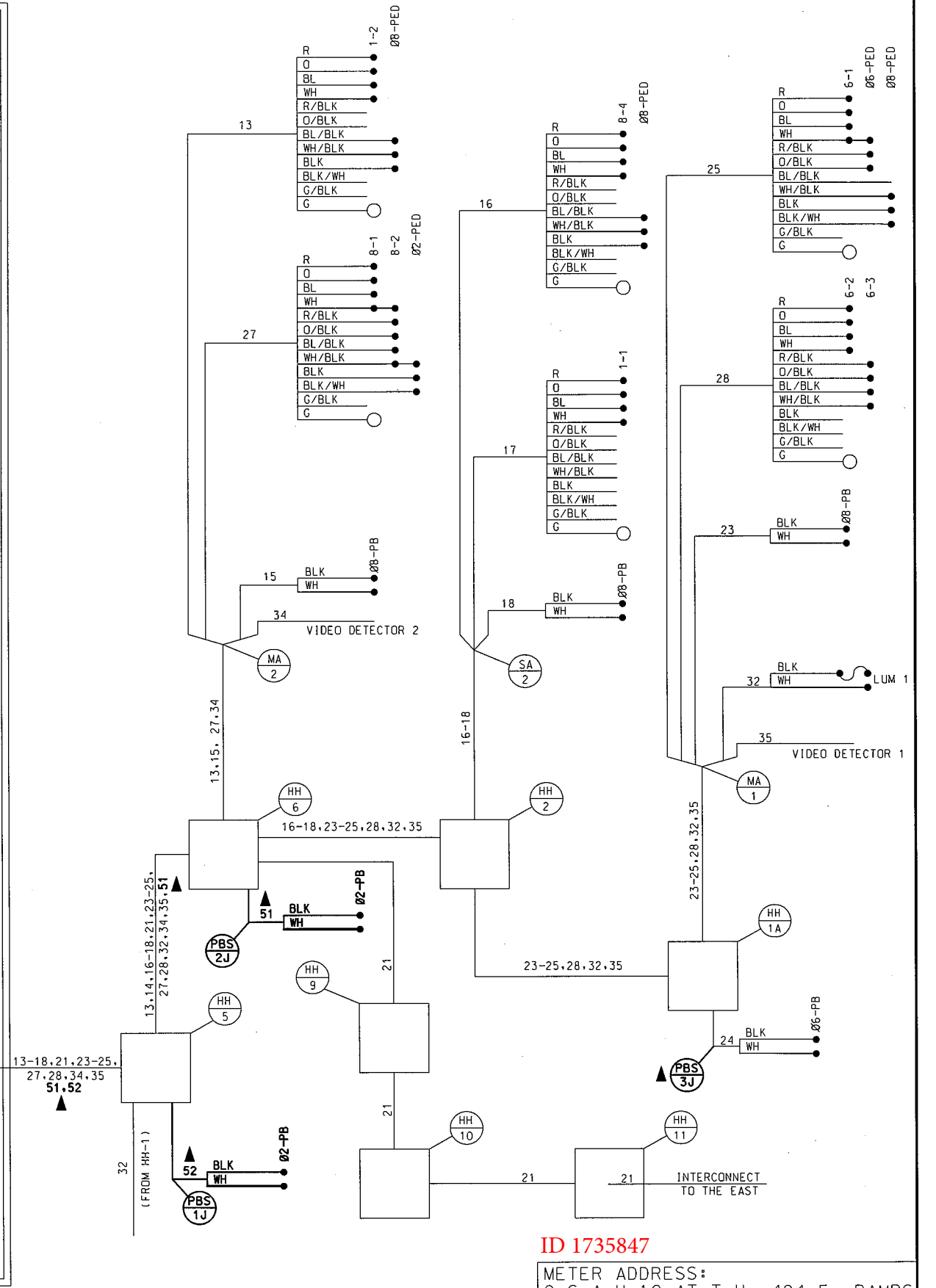
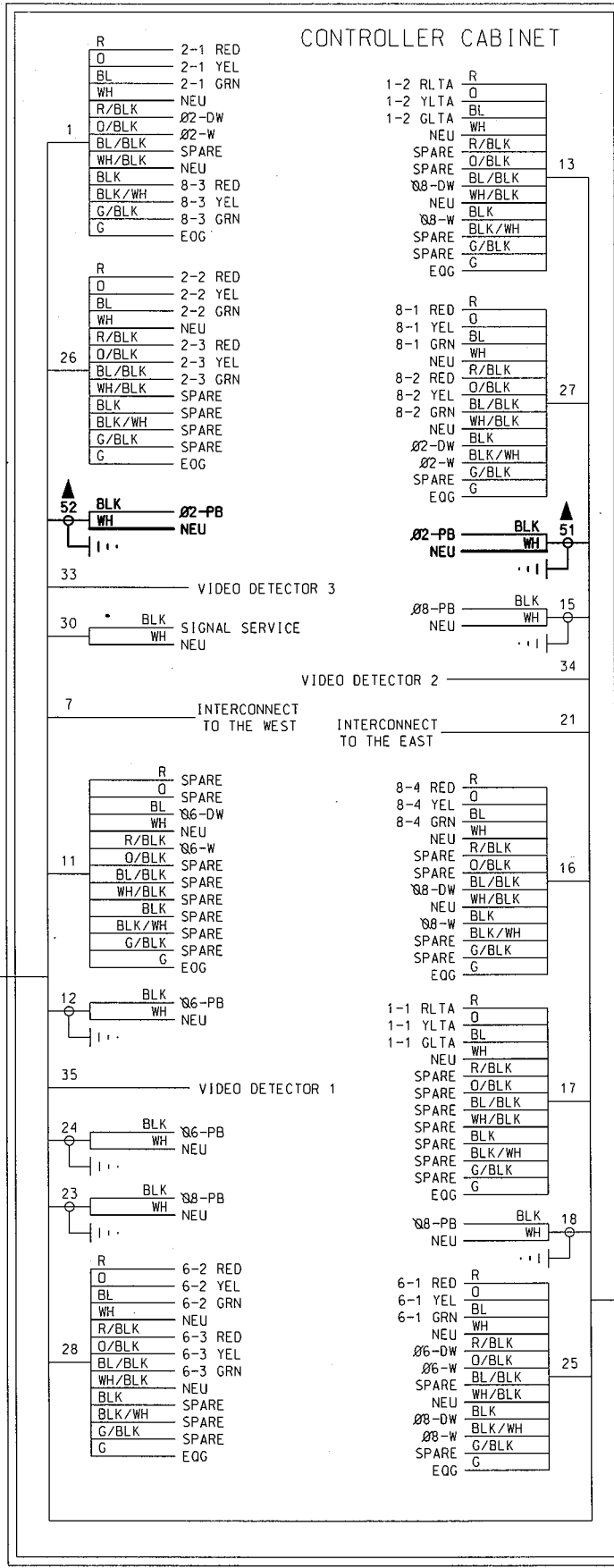
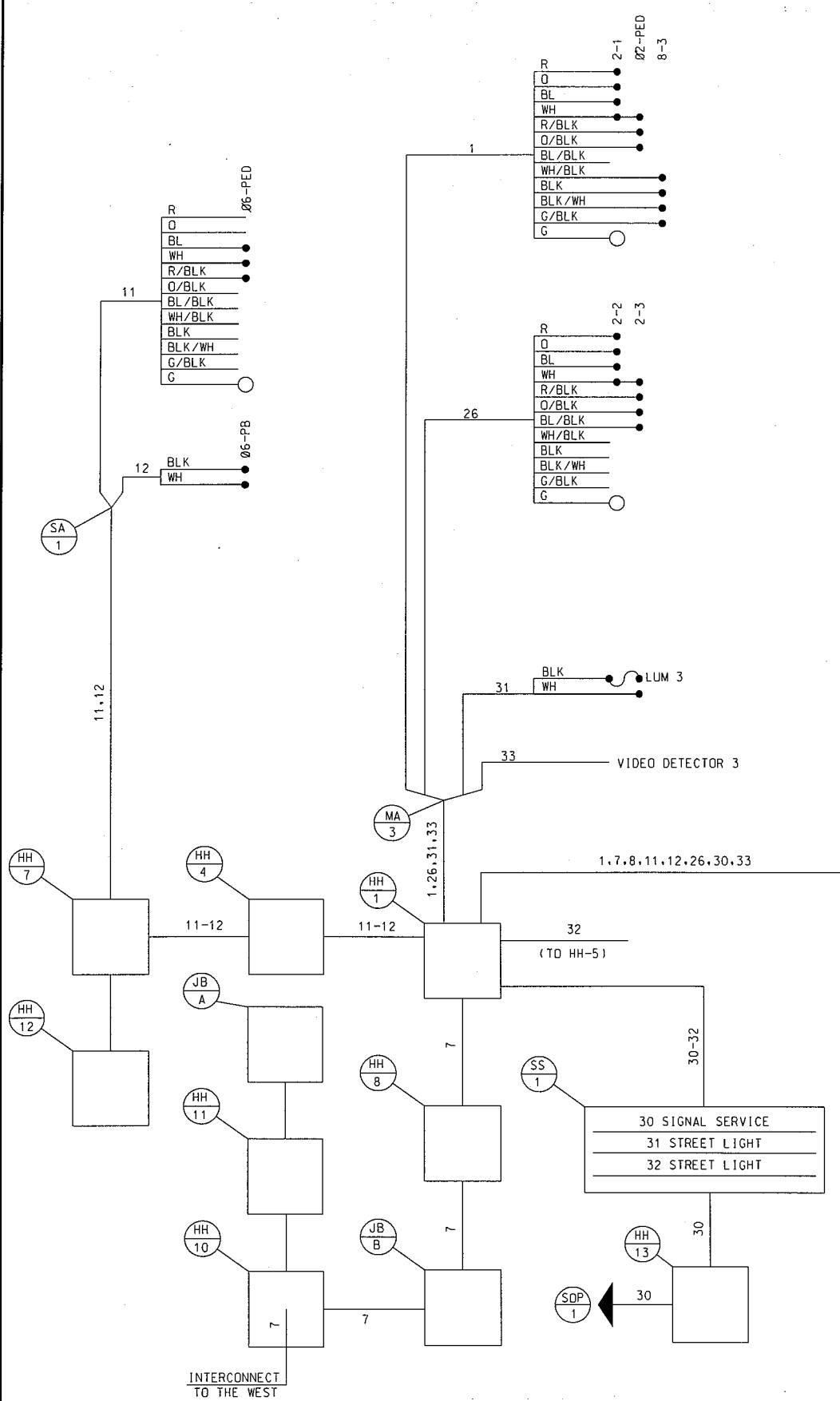
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SP 2785-330 (TH 494)
REVISE SIGNAL SYSTEM "I"
TABULATIONS
C.S.A.H. 10 AT T.H. 494 EAST RAMPS

SHEET
SS57
OF
SS61

ID 1735847
METER ADDRESS:
C.S.A.H 10 AT T.H. 494 E. RAMPS
SYSTEM ID: 9020300

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ID 1735847

METER ADDRESS:
C.S.A.H 10 AT T.H. 494 E. RAMPS
SYSTEM ID: 9020300

| NO | DATE | BY | CHKD | APPR | REVISION |
|----|----------|-----|------|------|----------------------|
| 0 | 12/16/14 | KAS | RJG | RJG | FINAL PLAN SUBMITTAL |

I hereby certify that this plan, specification, or report 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: **KATIE SCHMIDT**
Katie Schmidt
Date: **12/16/14** License #: **47147**

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027-030-039

STATE PROJECT NO.
2785-330

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SP 2785-330 (TH 494)

REVISE SIGNAL SYSTEM "I"
FIELD WIRING DIAGRAM
C.S.A.H. 10 AT T.H. 494 EAST RAMPS

SHEET
SS58
OF
SS61

REVISED 2010

ALL LOOP DETECTORS HAVE BEEN REMOVED BY MILLING OPERATIONS OR ABANDONED INPLACE AND ALL LOOP LEAD-IN CABLES HAVE BEEN REMOVED FOR CONDUIT CAPACITY OR ABANDONED INPLACE.

INSTALL ONE VIDEO DETECTION CAMERA WITH 1 - 8/PR #18 CABLE ON THE INPLACE LUMINAIRE DAVIT ARM OF MA-1 AND MA-3.

INSTALL ONE VIDEO DETECTION CAMERA WITH 1 - 8/PR #18 CABLE ON THE INPLACE MAST ARM OF MA-2.

** NUMBER OF TURNS IN THE LOOP UNLESS OTHERWISE SPECIFIED BY THE MANUFACTURER.

FUNCTION AND EXTEND:

- (1) CALL AND EXTEND
- (2) EXTEND ONLY
- (3) CALL AFTER DELAY, EXTEND IMMEDIATELY

SS 1 PAD MOUNTED SERVICE EQUIPMENT
2" RSC WITH RISER FROM NSP POLE
TO SS-1 VIA HH-13 WITH:
3-1/C #4

KEY:

- * DESIGNATES ITEMS TO BE FURNISHED AND INSTALLED AS PART OF INTERCONNECT SYSTEM PAY ITEM.
- ** DESIGNATES ITEMS TO BE FURNISHED AND INSTALLED AS PART OF RAMP METER SIGNAL SYSTEM "88"

* SEE SHEETS LI - L5 FOR LOCATION AND WIRING

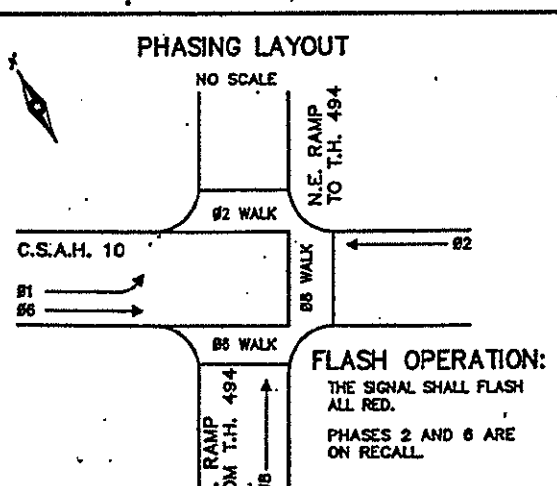
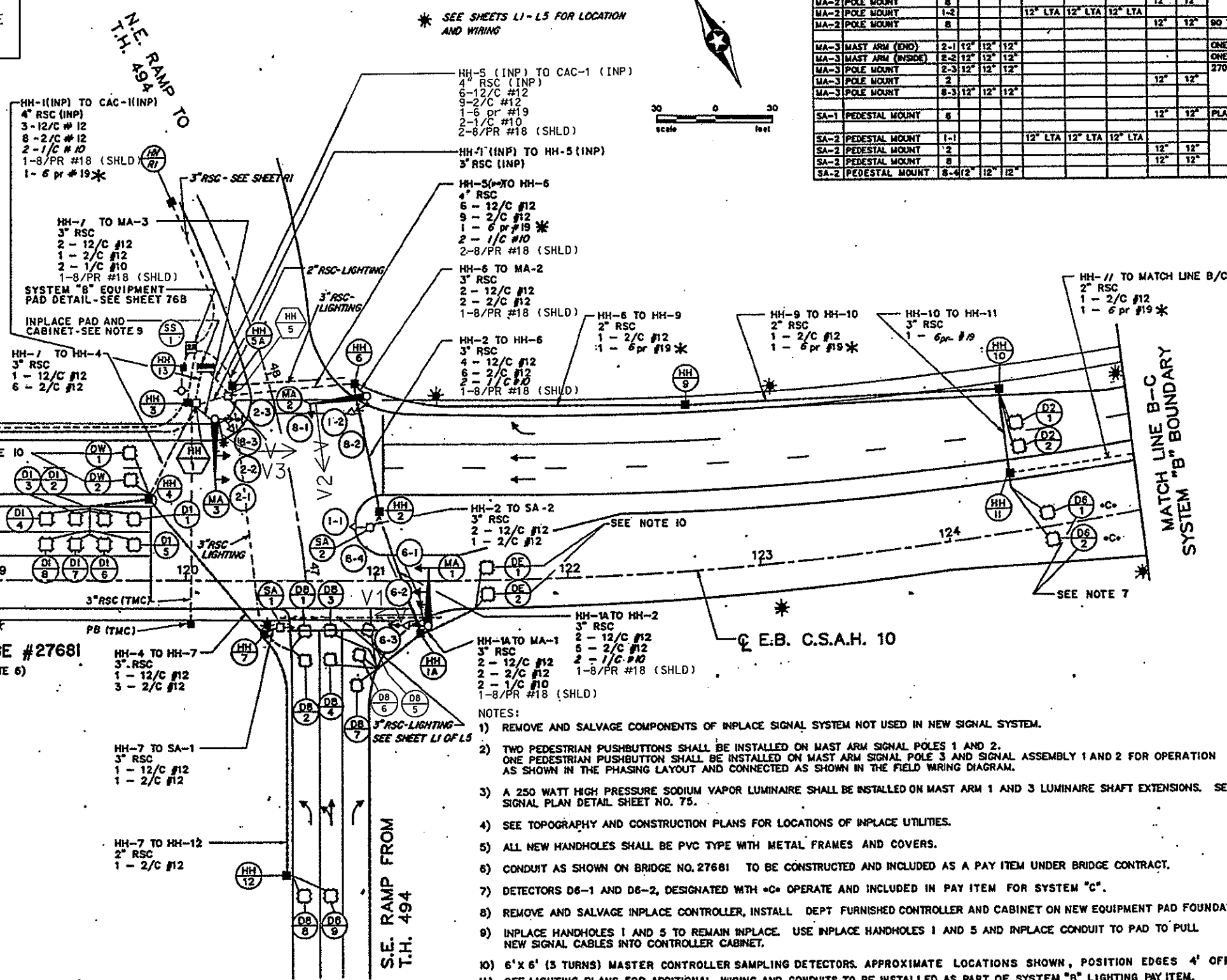
| SIG. POLE NO. | SIGNAL FACE MOUNT | SIG. # | VEHICULAR INDICATION SIZE AND TYPE | | | | PEDESTRIAN | | BRACKET MOUNTING ANGLE, TYPE AND STANDARD PLATE NO. |
|---------------|-------------------|--------|------------------------------------|-------------------------|-----------|---------|------------|-------------------------|---|
| | | | CIRCULAR | TURN ARROWS | DONT WALK | WALK | | | |
| MA-1 | MAST ARM (END) | 6-1 | 12" 12" | 12" 12" | | | | ONE-WAY MNT./PLT. 81240 | |
| MA-1 | MAST ARM (INSIDE) | 6-2 | 12" 12" | 12" 12" | | | | ONE-WAY MNT./PLT. 81240 | |
| MA-1 | POLE MOUNT | 6-3 | 12" 12" | 12" 12" | | | | 270 PLATE 8110C | |
| MA-1 | POLE MOUNT | 6 | | | | 12" 12" | | TYPE 10C | |
| MA-1 | POLE MOUNT | 6 | | | | 12" 12" | | TYPE 10C | |
| MA-2 | MAST ARM (END) | 8-1 | 12" 12" | 12" 12" | | | | ONE-WAY MNT./PLT. 81240 | |
| MA-2 | MAST ARM (INSIDE) | 8-2 | 12" 12" | 12" 12" | | | | ONE-WAY MNT./PLT. 81240 | |
| MA-2 | POLE MOUNT | 8 | | | | 12" 12" | | TYPE 20C | |
| MA-2 | POLE MOUNT | 8 | | | | 12" 12" | | TYPE 20C | |
| MA-2 | POLE MOUNT | 1-2 | | 12" LTA 12" LTA 12" LTA | | 12" 12" | | 80 TYPE 30 PLT. 8110C | |
| MA-2 | POLE MOUNT | 8 | | | | 12" 12" | | 80 TYPE 30 PLT. 8110C | |
| MA-3 | MAST ARM (END) | 2-1 | 12" 12" | 12" 12" | | | | ONE-WAY MNT./PLT. 81240 | |
| MA-3 | MAST ARM (INSIDE) | 2-2 | 12" 12" | 12" 12" | | | | ONE-WAY MNT./PLT. 81240 | |
| MA-3 | POLE MOUNT | 2-3 | 12" 12" | 12" 12" | | | | 270 PLATE 8110C | |
| MA-3 | POLE MOUNT | 2 | | | | 12" 12" | | TYPE 20B | |
| MA-3 | POLE MOUNT | 2 | | | | 12" 12" | | TYPE 20B | |
| MA-3 | POLE MOUNT | 8-3 | 12" 12" | 12" 12" | | | | 270 PLATE 8110C | |
| SA-1 | PEDESTAL MOUNT | 8 | | | | 12" 12" | | PLATE 8111B TYPE 4A | |
| SA-2 | PEDESTAL MOUNT | 1-1 | | 12" LTA 12" LTA 12" LTA | | | | PLATE 8111B | |
| SA-2 | PEDESTAL MOUNT | 2 | | | | 12" 12" | | TYPE 2A + | |
| SA-2 | PEDESTAL MOUNT | 8 | | | | 12" 12" | | 2 TYPE 4A | |
| SA-2 | PEDESTAL MOUNT | 8-4 | 12" 12" | 12" 12" | | | | 2 TYPE 4A | |

| NO. | LOCATION | LOOP SIZE | NO. OF TURNS | LOOP FUNCTION |
|--------|--|-----------|--------------|---------------|
| D1-1,2 | EAST EDGE AT 118+75, +60 SOUTH EDGE 27' LT | 6X8 | 3 | (1) |
| D1-3,4 | EAST EDGE AT 118+45, +30 SOUTH EDGE 27' LT | 6X8 | 3 | (1) |
| D1-5,6 | EAST EDGE AT 118+75, +60 SOUTH EDGE 15' LT | 6X8 | 3 | (1) |
| D1-7,8 | EAST EDGE AT 118+45, +30 SOUTH EDGE 15' LT | 6X8 | 3 | (1) |
| D2-1 | WEST EDGE AT 124+40 SOUTH EDGE 39' LT | 6X8 | 3 | (1) |
| D2-2 | WEST EDGE AT 124+40 SOUTH EDGE 51' LT | 6X8 | 3 | (1) |
| D8-1 | WEST EDGE AT 120+59 NORTH EDGE 22' RT | 6X8 | 3 | (1) |
| D8-2 | WEST EDGE AT 120+59 SOUTH EDGE 37' RT | 6X8 | 3 | (1) |
| D8-3 | WEST EDGE AT 120+71 NORTH EDGE 22' RT | 6X8 | 3 | (1) |
| D8-4 | WEST EDGE AT 120+71 NORTH EDGE 37' RT | 6X8 | 3 | (1) |
| D8-5 | WEST EDGE AT 120+90 NORTH EDGE 23' RT | 6X8 | 3 | (3) |
| D8-6 | WEST EDGE AT 120+85 NORTH EDGE 38' RT | 6X8 | 3 | (3) |
| D8-7 | WEST EDGE AT 120+85 NORTH EDGE 53' RT | 6X8 | 3 | (3) |
| D8-8 | WEST EDGE AT 120+59 NORTH EDGE 156' RT | 6X8 | 3 | (2) |
| D8-9 | WEST EDGE AT 120+71 NORTH EDGE 156' RT | 6X8 | 3 | (2) |
| D8-10 | WEST EDGE AT 124+48 SOUTH EDGE 4' LT | 6X8 | 3 | (1) |
| D8-20 | WEST EDGE AT 124+48 NORTH EDGE 4' RT | 6X8 | 3 | (1) |

HH-1 INP TO BRIDGE
2" RSC (MATCH TO BRIDGE CONDUIT)
1 - 2/C #12
1 - 6 pr #19*

HH-3 TO HH-8
3" RSC**
1 - 6 pr #19**

HH-8 TO MATCH LINE A-B
3" RSC**
1 - 6 pr #19**



- NOTES:
- 1) REMOVE AND SALVAGE COMPONENTS OF INPLACE SIGNAL SYSTEM NOT USED IN NEW SIGNAL SYSTEM.
 - 2) TWO PEDESTRIAN PUSHBUTTONS SHALL BE INSTALLED ON MAST ARM SIGNAL POLES 1 AND 2. ONE PEDESTRIAN PUSHBUTTON SHALL BE INSTALLED ON MAST ARM SIGNAL POLE 3 AND SIGNAL ASSEMBLY 1 AND 2 FOR OPERATION AS SHOWN IN THE PHASING LAYOUT AND CONNECTED AS SHOWN IN THE FIELD WIRING DIAGRAM.
 - 3) A 250 WATT HIGH PRESSURE SODIUM VAPOR LUMINAIRE SHALL BE INSTALLED ON MAST ARM 1 AND 3 LUMINAIRE SHAFT EXTENSIONS. SEE SIGNAL PLAN DETAIL SHEET NO. 75.
 - 4) SEE TOPOGRAPHY AND CONSTRUCTION PLANS FOR LOCATIONS OF INPLACE UTILITIES.
 - 5) ALL NEW HANDHOLES SHALL BE PVC TYPE WITH METAL FRAMES AND COVERS.
 - 6) CONDUIT AS SHOWN ON BRIDGE NO. 27681 TO BE CONSTRUCTED AND INCLUDED AS A PAY ITEM UNDER BRIDGE CONTRACT.
 - 7) DETECTORS D8-1 AND D8-2, DESIGNATED WITH "C" OPERATE AND INCLUDED IN PAY ITEM FOR SYSTEM "C".
 - 8) REMOVE AND SALVAGE INPLACE CONTROLLER, INSTALL DEPT FURNISHED CONTROLLER AND CABINET ON NEW EQUIPMENT PAD FOUNDATION (SEE SHEET 768).
 - 9) INPLACE HANDHOLES 1 AND 5 TO REMAIN INPLACE. USE INPLACE HANDHOLES 1 AND 5 AND INPLACE CONDUIT TO PAD TO PULL NEW SIGNAL CABLES INTO CONTROLLER CABINET.
 - 10) 6' X 6' (3 TURNS) MASTER CONTROLLER SAMPLING DETECTORS. APPROXIMATE LOCATIONS SHOWN, POSITION EDGES 4' OFF CENTERLINE.
 - 11) SEE LIGHTING PLANS FOR ADDITIONAL WIRING AND CONDUITS TO BE INSTALLED AS PART OF SYSTEM "B" LIGHTING PAY ITEM.

MN/DOT System ID 21713

| | | | | | | | |
|--|---|---|----------------------|----------------|--|--|------------------------|
| | 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. | Dharam C. Bobra DHARAM C. BOBRA, PROFESSIONAL ENGINEER | 12616 LICENSE NO. | 1/9/12 DATE | REVISED BY: J. WING LAST REVISION: 2011 | SIGNAL PLAN C.S.A.H. NO. 10 AT I-494 EAST RAMPS I.D. NO. 9020300 | SHEET NO. 1 OF 3 |
| | 183PLAN pg6449 25-OCT-2011 08:43 E:\signals\bul\v\VIDEO UP-GRADE\2010\WIRE2010 20.dgn | | | | | | |

FOR INFORMATION ONLY