

SHEET NUM.

PART.

ITEM

ITEM EXT

GRAND TOTAL

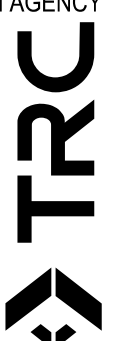
UNIT

DESCRIPTION

SEE SHEET NO.

| P.5 | P.6 | P.11 | P.12 | P.13 | P.14 | P.15 | P.28 | P.30 | P.31 | P.32 | P.33 | P.34 | 01/SAF/OT | ITEM | ITEM EXT | GRAND TOTAL | UNIT | DESCRIPTION | SEE SHEET NO. |
|------|-----|------|------|------|------|------|------|------|------|------|------|------|-----------|------|----------|-------------|--------|--|---------------|
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | 2 | 1 | 2 | 3 | 2 | 10 | 625 | 00450 | 10 | EACH | TRAFFIC SIGNALS | |
| | | | | | | | | | | 1 | 1 | 1 | 2 | 625 | 14000 | 2 | EACH | CONNECTION, FUSED PULL APART | |
| | | | | | | | | | | | | | | 625 | 17961 | 2 | EACH | LIGHT POLE FOUNDATION, 24" X 6' DEEP | |
| | | | | | | | | 1 | | | | 1 | 2 | 625 | 18001 | 1 | EACH | BRACKET ARM, 8', AS PER PLAN | P.28 |
| | | | | | | | | 1 | 1 | | 1 | 1 | 3 | 625 | 18201 | 3 | EACH | BRACKET ARM, 10', AS PER PLAN | P.28 |
| | | | | | | | | 1 | | | | | 2 | 625 | 18401 | 2 | EACH | BRACKET ARM, 15', AS PER PLAN | P.28 |
| | | | | | | | | 400 | 200 | 200 | 505 | 400 | 1705 | 625 | 23000 | 1705 | FT | BRACKET ARM, 20', AS PER PLAN | P.28 |
| | | | | | | | | 160 | 80 | 80 | 160 | 160 | 640 | 625 | 23400 | 640 | FT | NO. 4 AWG 600 VOLT DISTRIBUTION CABLE | |
| | | | | | | | | 115 | 128 | 135 | 109 | 42 | 529 | 625 | 25408 | 529 | FT | NO. 10 AWG POLE AND BRACKET CABLE | |
| | | | | | | | | 45 | 6 | 197 | 80 | 74 | 402 | 625 | 25604 | 402 | FT | CONDUIT, 2", 725.051 | |
| | | | | | | | | 234 | 704 | | 263 | 163 | 1364 | 625 | 25906 | 1364 | FT | CONDUIT, 4", 725.051 | |
| | | | | | | | | 2 | 1 | 1 | 2 | 2 | 8 | 625 | 27551 | 8 | EACH | CONDUIT, JACKED OR DRILLED, 725.051, 4" | |
| | | | | | | | | 123 | 126 | 207 | 160 | 84 | 700 | 625 | 29000 | 700 | FT | LUMINAIRE, DECORATIVE, AS PER PLAN (AS PER THE PLAN NOTE) | P.28 |
| | | | | | | | | | 1 | | | | 1 | 625 | 30700 | 1 | EACH | TRENCH | |
| | | | | | | | | 6 | 9 | 2 | 6 | 6 | 29 | 625 | 30706 | 29 | EACH | PULL BOX, 725.08, 18" | |
| | | | | | | | | 9 | 6 | 3 | 10 | 7 | 35 | 625 | 32000 | 35 | EACH | PULL BOX, 725.08, 24" | |
| | | | | | | | | | | | 1 | | 2 | 625 | 35010 | 2 | EACH | GROUND ROD | |
| | | | | | | | | 123 | 109 | 207 | 150 | 76 | 665 | 625 | 36010 | 665 | FT | REMOVE AND REERECT EXISTING LIGHT POLE | |
| | | | | | | | | | | | 1 | | 1 | 625 | 75402 | 1 | EACH | UNDERGROUND WARNING/MARKING TAPE | |
| | | | | | | | | | | | 1 | 2 | 3 | 625 | 75500 | 3 | EACH | LIGHT POLE REMOVED FOR STORAGE | |
| | | | | | | | | 1 | | | 1 | 1 | 4 | 625 | 76000 | 4 | EACH | LIGHT POLE FOUNDATION REMOVED | |
| | | | | | | | | | | | | | | | | | | ARC FLASH CALCULATIONS AND LABEL - SIGNAL CONTROLLER | |
| | | | | | | | | 8 | 4 | 4 | 8 | 8 | 32 | 632 | 05007 | 32 | EACH | VEHICULAR SIGNAL HEAD, (LED), 3-SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN | P.27 |
| | | | | | | | | 8 | 6 | 2 | 8 | 8 | 32 | 632 | 20731 | 32 | EACH | PEDESTRIAN SIGNAL HEAD (LED), TYPE D2, COUNTDOWN, AS PER PLAN | P.28 |
| | | | | | | | | 8 | 4 | 4 | 8 | 8 | 32 | 632 | 25000 | 32 | EACH | COVERING OF VEHICULAR SIGNAL HEAD | |
| | | | | | | | | 8 | 6 | 2 | 8 | 8 | 32 | 632 | 25010 | 32 | EACH | COVERING OF PEDESTRIAN SIGNAL HEAD | |
| | | | | | | | | 2 | | 2 | 2 | 2 | 10 | 632 | 26500 | 8 | EACH | DETECTOR LOOP | |
| | | | | | | | | 8 | 6 | 2 | 8 | 8 | 32 | 632 | 26000 | 32 | EACH | PEDESTRIAN PUSHBUTTON | |
| | | | | | | | | 2 | | 2 | 2 | 2 | 10 | 632 | 27104 | 8 | EACH | LOOP DETECTOR UNIT, 2 CHANNEL, DELAY AND EXTENSION TYPE | P.27 |
| | | | | | | | | 1866 | 1748 | 1016 | 1722 | 1718 | 8070 | 632 | 40500 | 8070 | FT | SIGNAL CABLE, 5 CONDUCTOR, NO. 14 AWG | |
| | | | | | | | | 983 | 519 | 432 | 681 | 737 | 3352 | 632 | 40700 | 3352 | FT | SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG | |
| | | | | | | | | 3 | 1 | 1 | 2 | 3 | 10 | 632 | 64010 | 10 | EACH | SIGNAL SUPPORT FOUNDATION | |
| | | | | | | | | 5 | 5 | 1 | 6 | 3 | 20 | 632 | 64020 | 20 | EACH | PEDESTAL FOUNDATION | |
| | | | | | | | 4 | | | | | | 4 | 632 | 64950 | 4 | EACH | TEST HOLE PERFORMED | |
| | | | | | | | | 307 | 533 | 333 | 218 | 215 | 1606 | 632 | 65300 | 1606 | FT | LOOP DETECTOR LEAD-IN CABLE, 2 CONDUCTOR, NO. 14 AWG | |
| | | | | | | | | 113 | | 57 | 161 | 38 | 369 | 632 | 69200 | 369 | FT | POWER CABLE, 2 CONDUCTOR, NO. 4 AWG | |
| | | | | | | | | 139 | 126 | 439 | 83 | 184 | 971 | 632 | 69900 | 971 | FT | SERVICE CABLE, 3 CONDUCTOR, NO. 4 AWG | |
| | | | | | | | | 1 | | 1 | 1 | 1 | 4 | 632 | 70000 | 4 | EACH | POWER SERVICE | |
| | | | | | | | | | | 2 | | | 2 | 632 | 70400 | 2 | EACH | CONDUIT RISER, 2" DIAMETER | |
| | | | | | | | | 1 | | | | 1 | 2 | 632 | 72101 | 2 | EACH | SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 2, AS PER PLAN | P.28 |
| | | | | | | | | | | | 2 | 1 | 3 | 632 | 78245 | 3 | EACH | COMBINATION SIGNAL SUPPORT, TYPE TC-12.31 DESIGN 6 POLE, WITH MAST ARMS TC-81.22 DESIGN 12 AND DESIGN 4, AS PER PLAN | P.27 |
| | | | | | | | | | 1 | 1 | | | 2 | 632 | 78369 | 2 | EACH | COMBINATION SIGNAL SUPPORT, TYPE TC-12.31 DESIGN 10 POLE, WITH MAST ARMS TC-81.22 DESIGN 13 AND DESIGN 12, AS PER PLAN | P.27 |
| | | | | | | | | 1 | | | | 1 | 2 | 632 | 79101 | 2 | EACH | COMBINATION SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 2, AS PER PLAN | P.27 |
| | | | | | | | | 1 | | | | | 1 | 632 | 79421 | 1 | EACH | COMBINATION SIGNAL SUPPORT, TYPE TC-81.22 DESIGN 12 POLE, WITH MAST ARMS TC-81.22 DESIGN 4 AND DESIGN 2, AS PER PLAN | P.27 |
| | | | | | | | | 5 | 5 | 1 | 6 | 3 | 20 | 632 | 89905 | 20 | EACH | PEDESTAL, 10', TRANSFORMER BASE, AS PER PLAN | P.28 |
| | | | | | | | | 1 | 1 | | 1 | 1 | 4 | 632 | 90100 | 4 | EACH | REMOVAL OF TRAFFIC SIGNAL INSTALLATION | |
| | | | | | | | | 1 | | 1 | 1 | | 3 | 633 | 45000 | 3 | EACH | GPS (GLOBAL POSITIONING SYSTEM) CLOCK ASSEMBLY | |
| | | | | | | | | 1 | | 1 | 1 | 1 | 4 | 633 | 65523 | 4 | EACH | CABINET, TYPE 332L, AS PER PLAN | P.27 |
| | | | | | | | | 1 | | 1 | 1 | 1 | 4 | 633 | 67101 | 4 | EACH | CABINET FOUNDATION, AS PER PLAN | P.29 |
| | | | | | | | | 1 | | 1 | 1 | 1 | 4 | 633 | 67201 | 4 | EACH | CONTROLLER WORK PAD, AS PER PLAN | P.29 |
| | | | | | | | | 1 | | 1 | 1 | 1 | 4 | 809 | 69123 | 4 | EACH | ATC CONTROLLER, AS PER PLAN | P.27 |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | MAINTENANCE OF TRAFFIC | |
| 40 | | | | | | | | | | | | | 40 | 614 | 11110 | 40 | HOURLY | LAW ENFORCEMENT OFFICER WITH PATROL CAR FOR ASSISTANCE | |
| 0.08 | | | | | | | | | | | | | 0.08 | 614 | 21000 | 0.08 | MILE | WORK ZONE CENTER LINE, CLASS I | |
| 0.24 | | | | | | | | | | | | | 0.24 | 614 | 21100 | 0.24 | MILE | WORK ZONE EDGE LINE, CLASS I, 4" | |
| 102 | | | | | | | | | | | | | 102 | 614 | 26000 | 102 | FT | WORK ZONE STOP LINE, CLASS I | |
| | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | INCIDENTALS | |
| | | | | | | | | | | | | | LS | 614 | 11000 | LS | | MAINTAINING TRAFFIC | |
| | | | | | | | | | | | | | LS | 623 | 10000 | LS | | CONSTRUCTION LAYOUT STAKES AND SURVEYING | |
| | | | | | | | | | | | | | LS | 624 | 10000 | LS | | MOBILIZATION | |

GENERAL SUMMARY

DESIGN AGENCY

 DESIGNER: JGB
 REVIEWER: WAA 09/29/21
 PROJECT ID: 110443
 SHEET: P.10A TOTAL: 51

GROUNDING AND BONDING

THE REQUIREMENTS OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS (C&MS) AND THE TC SERIES OF STANDARD CONSTRUCTION DRAWINGS ARE MODIFIED AS FOLLOWS:

1. ALL METALLIC PARTS CONTAINING ELECTRICAL CONDUCTORS SHALL BE PERMANENTLY JOINED TO FORM AN EFFECTIVE GROUND FAULT CURRENT PATH BACK TO THE GROUNDED CONDUCTOR IN THE POWER SERVICE DISCONNECT SWITCH.

A. PROVIDE AN EQUIPMENT GROUNDING CONDUCTOR IN METALLIC CONDUITS (725.04) IN ADDITION TO THE CONDUCTORS SPECIFIED AND BOND THE CONDUIT TO THIS GROUNDING CONDUCTOR.

B. WHEN AN EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED IN PLASTIC CONDUIT (725.05), THE INSTALLATION SHALL INCLUDE A SEPARATE EQUIPMENT GROUNDING CONDUCTOR IN ADDITION TO THE CONDUCTORS SPECIFIED.

C. IF MULTIPLE CONDUIT RUNS BEGIN AND END AT THE SAME POINTS, ONLY ONE EQUIPMENT GROUNDING CONDUCTOR IS REQUIRED.

D. WHEN CONDUIT CONNECTS THE CORNERS OF AN INTERSECTION, AN EQUIPMENT GROUNDING CONDUCTOR SHALL BE USED IN THE CONDUIT.

2. CONDUITS.

A. THE 725.05 CONDUIT SHALL HAVE THE INSIDE AND OUTSIDE DIAMETERS OF THE CONDUIT DEBURRED AT ALL TERMINATION POINTS.

3. WIRE FOR GROUNDING AND BONDING.

A. USE INSULATED, COPPER WIRE FOR THE EQUIPMENT GROUNDING CONDUCTOR. BONDING JUMPERS IN BOXES AND ENCLOSURES MAY BE BARE OR INSULATED COPPER WIRE. WIRE SIZE SHALL BE AS FOLLOWS:

I. USE 4 AWG BETWEEN THE POWER SERVICE AND SUPPORTS, POLES, PEDESTALS, CONTROLLER OR FLASHER CABINETS.

II. USE A MINIMUM 8 AWG BETWEEN LOOP DETECTOR PULL BOXES AND THE FIRST CONDUIT THAT REQUIRES A LARGER SIZE AS SPECIFIED IN 3.A.I ABOVE.

III. THE INSULATION SHALL BE GREEN OR GREEN WITH YELLOW STRIPE(S). FOR 4 AWG OR LARGER, INSULATION MAY ALSO BE BLACK WITH GREEN TAPE/LABELS INSTALLED AT ALL ACCESS POINTS.

4. GROUND ROD.

A. A 3/4 INCH SCHEDULE 40 PVC CONDUIT WILL BE USED IN FOUNDATIONS AND CONCRETE WALLS FOR THE GROUNDING CONDUCTOR (GROUND WIRE) RACEWAY TO THE GROUND ROD. SHOULD METALLIC CONDUIT BE USED, BOTH ENDS OF THE CONDUIT SHALL BE BONDED TO THE GROUNDING CONDUCTOR.

B. THE TYPICAL GROUNDING CONDUCTOR (GROUND WIRE) SHALL BE 4 AWG INSULATED, COPPER.

GROUNDING AND BONDING, CONTINUED

5. THE GREEN CONDUCTOR IN SIGNAL CABLES (CONDUCTOR #4) SHALL NOT BE USED TO SUPPLY POWER TO A SIGNAL INDICATION. IT WILL BE CONNECTED TO THE SIGNAL BODY AS AN EQUIPMENT GROUND IN ALUMINUM HEADS AND IT WILL BE UNUSED IN PLASTIC HEADS. UNUSED CONDUCTORS SHALL BE GROUNDED IN THE CABINET. TYPICAL USE OF CONDUCTORS IS AS FOLLOWS:

| COND. NO. | COLOR | VEHICLE SIGNAL | PEDESTRIAN SIGNAL |
|-----------|--------------------|------------------|-------------------|
| 1 | BLACK | GREEN BALL | #1 WALK |
| 2 | WHITE | AC NEUTRAL | AC NEUTRAL |
| 3 | RED | RED BALL | #1 DW/FDW |
| 4 | GREEN | EQUIPMENT GROUND | EQUIPMENT GROUND |
| 5 | ORANGE | YELLOW BALL | #2 DW/FDW |
| 6 | BLUE | GREEN ARROW | #2 WALK |
| 7 | WHITE/BLACK STRIPE | YELLOW ARROW | NOT USED |

6. POWER SERVICE AND DISCONNECT SWITCH.

A. AT THE POWER SERVICE LOCATION, THE GROUNDING CONDUCTOR (GROUND WIRE) FROM THE DISCONNECT SWITCH NEUTRAL (AC-) BAR TO THE GROUND ROD SHALL BE A CONTINUOUS, UNSPLICED CONDUCTOR. IF SPLICED, IT SHALL BE AN EXOTHERMIC WELD BUTT SPLICE.

B. THE SERVICE NEUTRAL (AC-) SHALL ONLY BE CONNECTED TO GROUND AT THE PRIMARY POWER SERVICE DISCONNECT SWITCH.

I. NEMA CONTROLLER CABINETS: IF A POWER SERVICE DISCONNECT SWITCH IS LOCATED BEFORE THE CONTROLLER CABINET, THE NEUTRAL (AC-) AND THE GROUNDING BARS IN THE CONTROLLER CABINET SHALL NOT BE CONNECTED TOGETHER AS SHOWN IN NEMA TS-2, FIGURE 5-4.

II. IF SECONDARY DISCONNECT SWITCHES ARE CONNECTED AFTER THE PRIMARY DISCONNECT SWITCH, THE NEUTRAL (AC-) SHALL ONLY BE GROUNDED AT THE PRIMARY SWITCH. EQUIPMENT GROUNDING CONDUCTORS SHALL BE BROUGHT TO THE PRIMARY SWITCH, BUT SHALL BE GROUNDED AT BOTH SECONDARY AND PRIMARY SWITCHES.

7. PAYMENT - ALL MATERIALS AND WORK REQUIRED TO COMPLETE THE EFFECTIVE GROUND FAULT CURRENT PATH SYSTEM ARE INCIDENTAL TO THE CONDUCTORS INSTALLED BY CONTRACT.

ITEM 625 ARC FLASH CALCULATIONS AND LABEL SIGNAL CONTROLLER

FOR THE FOLLOWING LOCATION(S), PERFORM AND SUBMIT ARC FLASH HAZARD CALCULATIONS, PREPARE THE NECESSARY LABEL, AND AFFIX THE LABEL TO THE ELECTRICAL DEVICE PER SS 825.

LOCATIONS:
- SIGNAL CONTROLLER

632 PEDESTRIAN SIGNAL HEAD (LED), (COUNTDOWN), TYPE D2, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF C&MS 632 AND 732 THE FOLLOWING SHALL APPLY:

1. SIGNAL HEADS AND VISORS SHALL BE CONSTRUCTED OF BLACK POLYCARBONATE PLASTIC AND MEET ITE SPECIFICATIONS. THE BLACK COLOR SHALL BE FEDERAL COLOR NO. 17038.

2. PROPER EXTERIOR COLORS SHALL BE OBTAINED BY USE OF COLORED PLASTIC MATERIAL RATHER THAN PAINTING.

3. PIPE, SPACERS AND FITTINGS CONSTRUCTED OF POLYCARBONATE PLASTIC MAY BE USED IN LIEU OF GALVANIZED STEEL OR ALUMINUM.

4. THE PEDESTRIAN SIGNAL HEAD SHALL BE OF THE LED COUNTDOWN TYPE.

5. NEW ATTACHMENT HARDWARE AND FITTINGS SHALL BE USED.

6. THE LIGHT EMITTING DIODE (LED) MODULES SHALL MEET THE REQUIREMENTS OF C&MS 732.04-C. THE CONTRACTOR SHALL PROVIDE ODOT, IN WRITING, WITH THE LED MANUFACTURER NAME, SERIAL NUMBER, PART NUMBER, DESCRIPTION OF LAMP, AND DATE OF MANUFACTURE FOR ALL LED UNITS THAT ARE TO BE USED IN THE SIGNAL HEAD PRIOR TO INSTALLATION, FOR ACCEPTANCE AND WARRANTY PURPOSES.

PAYMENT FOR ITEM 632 PEDESTRIAN SIGNAL HEAD (LED), (COUNTDOWN), TYPE D2, AS PER PLAN SHALL BE MADE FOR THE NUMBER OF COMPLETE SIGNAL HEAD FURNISHED AND INSTALLED, INCLUDING ALL LABOR, EQUIPMENT, MATERIALS AND NEW ATTACHMENT HARDWARE.

632 TEST HOLE PERFORMED

IT IS ANTICIPATED THAT THE CONTRACTOR WILL ENCOUNTER UNDERGROUND UTILITIES WHILE EXCAVATING FOR SIGNAL SUPPORT FOUNDATIONS OR SIMILAR FOUNDATIONS. AFTER ACCURATELY IDENTIFYING THE PROPOSED LOCATION OF THE FOUNDATION, AS SHOWN IN THE PLANS AND AFTER MODIFYING THAT LOCATION, IF NECESSARY, BASED ON THE FIELD MARKING OF UNDERGROUND UTILITY LOCATION, THE CONTRACTOR DISCOVERS A UTILITY CONFLICT DURING THE EXCAVATION OPERATION, THE CONTRACTOR WILL BE COMPENSATED FOR EACH PARTIAL FOUNDATION EXCAVATION ACCORDING TO THE BID PRICE.

BEFORE THE CONTRACTOR BEGINS THE EXCAVATION AT THE MODIFIED LOCATION, THE CONTRACTOR SHALL VERIFY THAT THERE WILL BE NO OVERHEAD UTILITY CONFLICTS RESULTING FROM THE NEW SIGNAL SUPPORT LOCATION. NEW SUPPORT LOCATIONS ARE TO BE APPROVED BY THE ENGINEER.

THE WORK WILL INCLUDE BACKFILLING, COMPACTING, AND RESTORATION OF THE EXCAVATION TO THE SITE'S ORIGINAL CONDITION. EXCAVATIONS SHALL NOT BE LEFT OPEN OVERNIGHT. PAYMENT FOR THIS ITEM SHALL BE AT THE UNIT PRICE BID PER EACH ITEM 632 TEST HOLE PERFORMED TO BE USED AT THE DIRECTION OF THE ENGINEER.

632, TEST HOLE PERFORMED: 4 EACH

632 SIGNAL SUPPORT, TYPE TC-81.22, DESIGN 2, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF C&MS 632, A BLACK COATING SHALL BE APPLIED AS PER SUPPLEMENTAL SPECIFICATION 916. THE BLACK COLOR SHALL BE FEDERAL COLOR NO. 17038.

632 PEDESTAL 10' TRANSFORMER BASE, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF C&MS 632, A BLACK COATING SHALL BE APPLIED AS PER SUPPLEMENTAL SPECIFICATION 916. THE BLACK COLOR SHALL BE FEDERAL COLOR NO. 17038.

625 BRACKET ARM, 8', AS PER PLAN
625 BRACKET ARM, 10', AS PER PLAN
625 BRACKET ARM, 15', AS PER PLAN
625 BRACKET ARM, 20', AS PER PLAN

IN ADDITION TO THE REQUIREMENTS OF C&MS 625, A BLACK COATING SHALL BE APPLIED AS PER SUPPLEMENTAL SPECIFICATION 916. THE BLACK COLOR SHALL BE FEDERAL COLOR NO. 17038.

625, LUMINAIRE, DECORATIVE, AS PER PLAN

THIS ITEM CONSISTS OF SUPPLYING AND INSTALLING A DECORATIVE ACORN-STYLE LED LUMINAIRE FOR ROADWAY ILLUMINATION. THIS ITEM CONSISTS OF A BASE FITTER, GLOBE AND A BASIC HOUSING. NO FEATURES SUCH AS FINIAL, CROWN, BAND OR RIBS ARE REQUIRED, BUT CAN BE INCLUDED IF PART OF THE BASE MODEL. PROVIDE A LUMINAIRE COMPATIBLE WITH THE LIGHTING BRANCH CIRCUIT SHOWN IN THE PLANS. ASSURE THE LUMINAIRE CAN MOUNT A PHOTOCELL OR WIRELESS CONTROL THAT USES A NEMA STANDARD PHOTOCELL RECEPTACLE. PROVIDE A LUMINAIRE WITH 3G VIBRATION RATING.

PROTECT EACH LUMINAIRE USING A SURGE PROTECTIVE DEVICE (SPD) CONFORMING TO ODOT SUPPLEMENTAL SPEC 913.

ASSURE THE LUMINAIRE HAS A NOMINAL COLOR TEMPERATURE (CCT) OF 3000K, NOMINAL 19000 LUMENS AND TYPE 3 DISTRIBUTION.

PROVIDE A LUMINAIRE WITH FACTORY-APPLIED BLACK FINISH MEETING SUPPLEMENTAL SPECIFICATION 916.

THE LUMINAIRE SHALL BE ONE OF THE FOLLOWING, OR AN APPROVED EQUAL:

STERNBERG LIBERTYVILLE
1A-1914LED-3L-30-T3-MDL09-A-HSHN-BKT

KING CORONET SR
K804-P4SH-111-200-(SSL)-8084-120V-KPL21-3K-BK

HOLOPHANE ESPLANADE
ESL2-P505-30K-MVOLT-BK-TG3-NPT



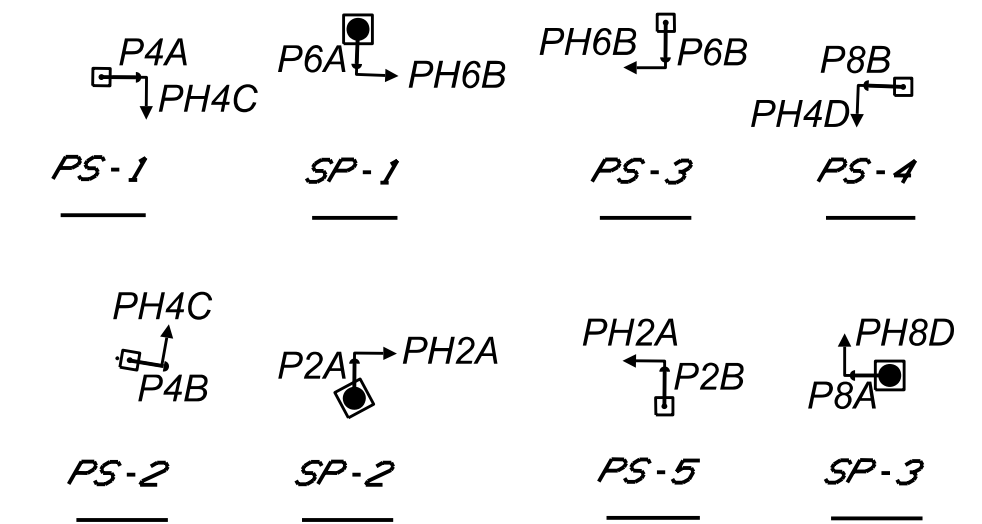
| | |
|---------------|----------------|
| DESIGN AGENCY | Mead & Hunt |
| CLIENT | |
| DESIGNER | DAD |
| REVIEWER | DLW 06-30-2020 |
| PROJECT ID | 110443 |
| SHEET | TOTAL |
| P.28 | 51 |

PULL BOX TABLE

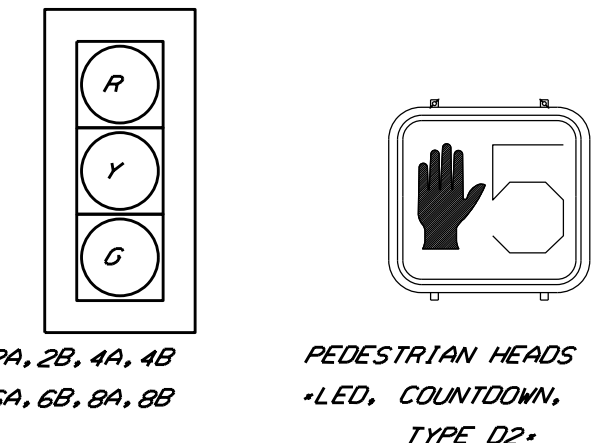
| PULL BOX # | STATION | SIDE | OFFSET | SIZE (IN.) |
|------------|----------|-------|--------|------------|
| PB-1 | 2+00 | LEFT | 64' | 24 |
| PB-2 | 1+86 | LEFT | 37' | 24 |
| PB-3 | NOT USED | | | |
| PB-4 | 1+89 | RIGHT | 20' | 24 |
| PB-5 | 2+43 | LEFT | 36' | 24 |
| PB-6 | 2+42 | RIGHT | 24' | 24 |
| PB-7 | 2+31 | RIGHT | 56' | 24 |
| - | - | - | - | - |

NOTES: FOR PAVEMENT MARKING AND SIGNING SEE SHEETS 26 & 27.
FOR SIGNAL QUANTITIES SEE SUB SUMMARY SHEET 30.

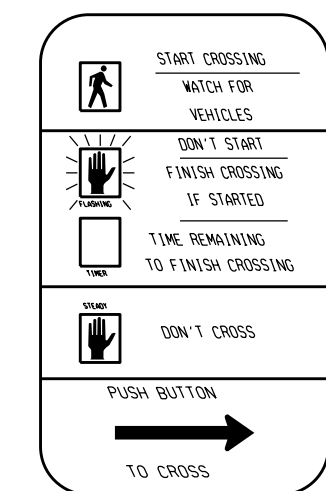
SIGNAL POLE & PEDESTRIAN POLE DETAILS



SIGNAL HEADS



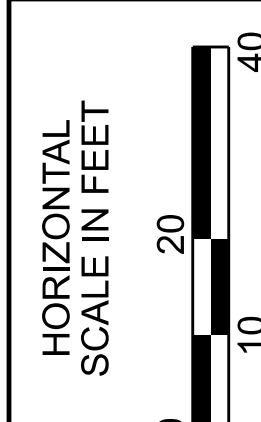
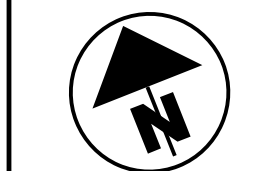
PEDESTRIAN SIGNS



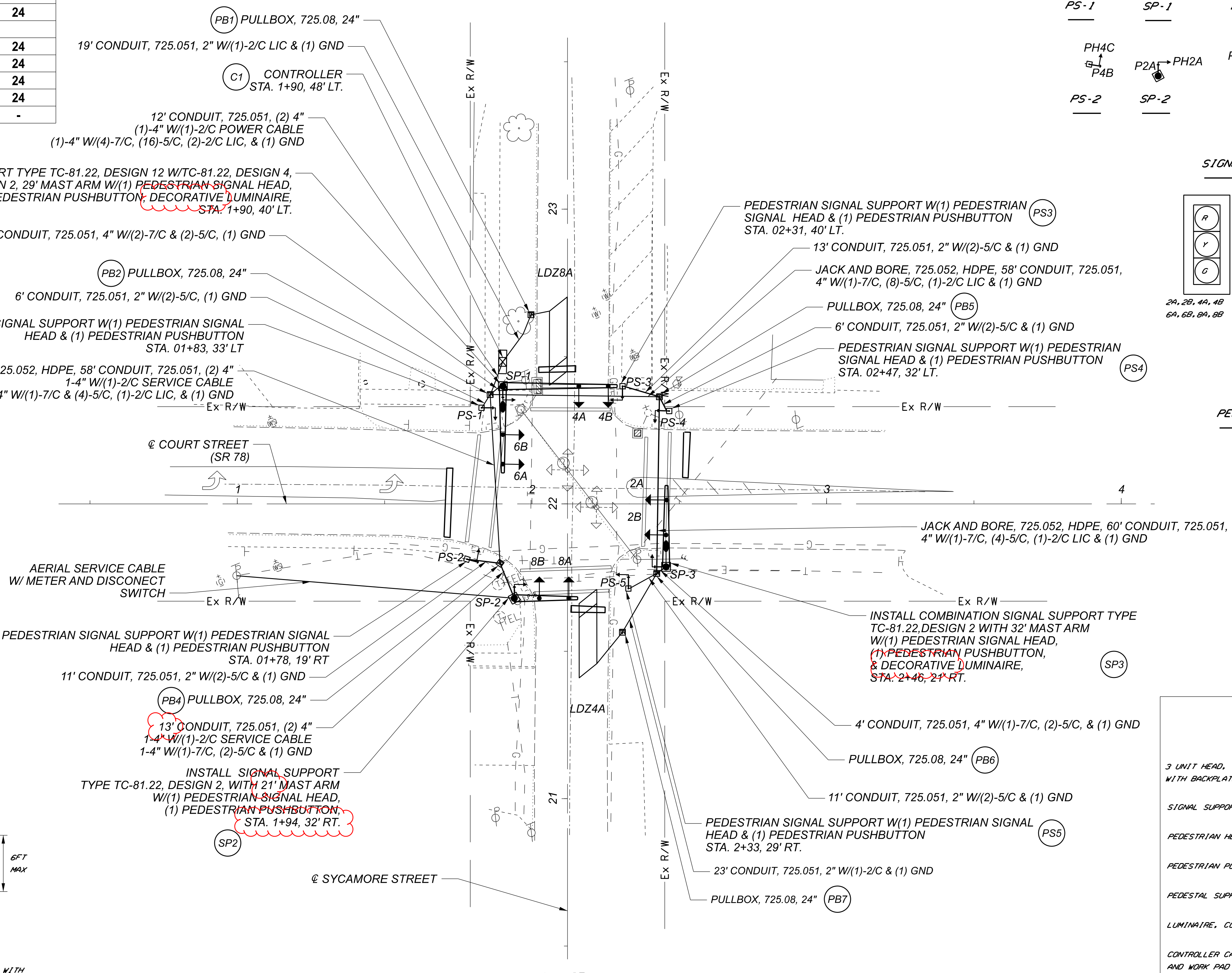
R18-3E-9
4 - LEFT ARROWS
4 - RIGHT ARROWS

LEGEND

| | PROP | EXIST |
|---------------------------------------|------|-------|
| 3 UNIT HEAD, 12" LED WITH BACKPLATE | | |
| SIGNAL SUPPORT POLE | | |
| PEDESTRIAN HEAD | | |
| PEDESTRIAN PUSH BUTTON | | |
| PEDESTAL SUPPORT | | |
| LUMINAIRE, CONVENTIONAL | | |
| CONTROLLER CABINET AND WORK PAD -332- | | |
| TRAFFIC PULL BOX | | |
| DETECTOR LOOP | | |
| SINGLE POST SIGN, POLE MOUNTED | | |



TRAFFIC SIGNAL PLAN
SR 78 & SYCAMORE ST



INSTALL COMBINATION SIGNAL SUPPORT TYPE TC-81.22, DESIGN 12 W/TC-81.22, DESIGN 4, 38' MAST ARM & TC-81.22, DESIGN 2, 29' MAST ARM W/(1) PEDESTRIAN SIGNAL HEAD, (1) PEDESTRIAN PUSHBUTTON, DECORATIVE LUMINAIRE, STA. 1+90, 40' LT.

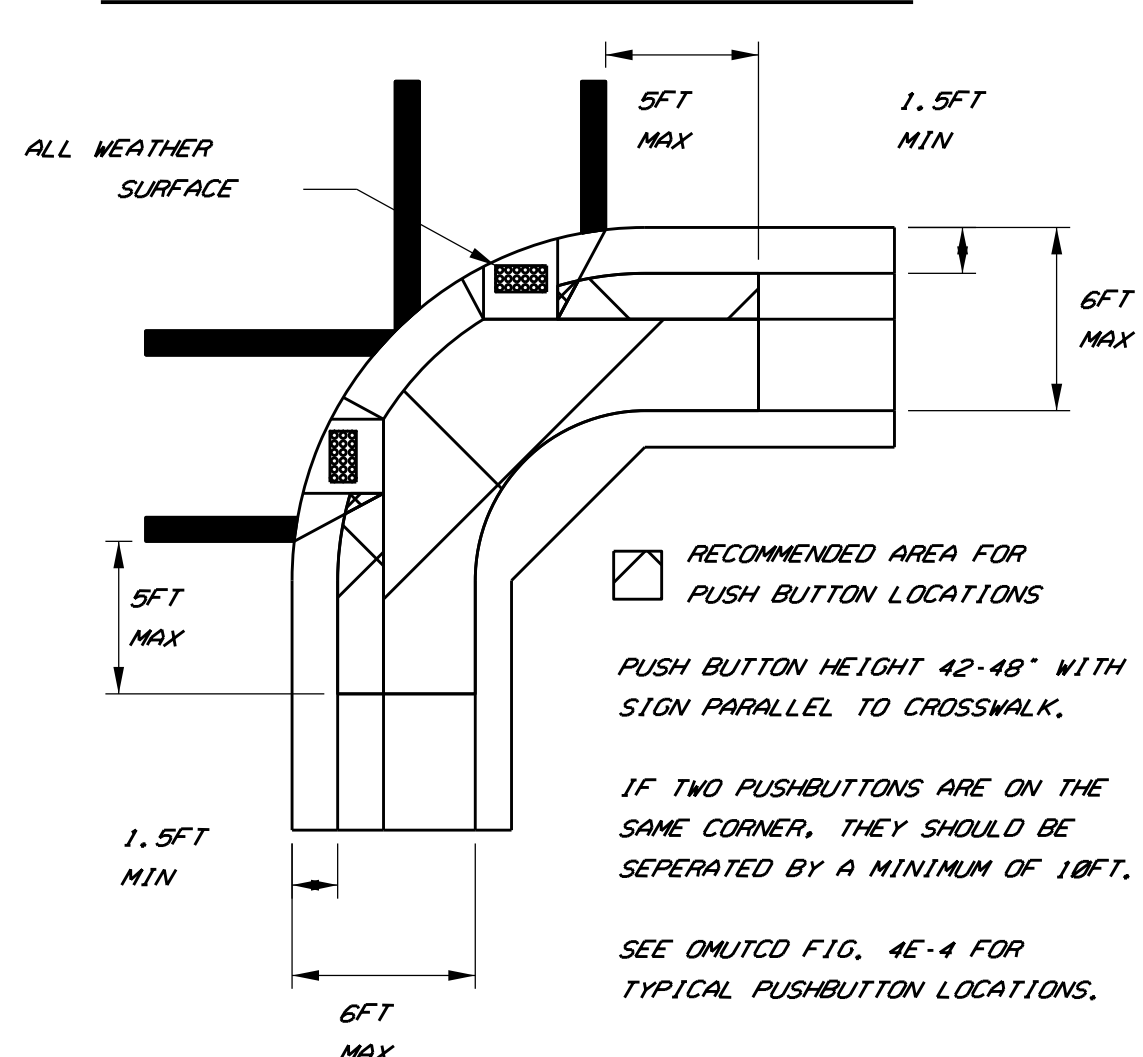
PEDESTRIAN SIGNAL SUPPORT W(1) PEDESTRIAN SIGNAL HEAD & (1) PEDESTRIAN PUSHBUTTON STA. 02+31, 40' LT.

PULLBOX, 725.08, 24"

PEDESTRIAN SIGNAL SUPPORT W(1) PEDESTRIAN SIGNAL HEAD & (1) PEDESTRIAN PUSHBUTTON STA. 02+47, 32' LT.

INSTALL COMBINATION SIGNAL SUPPORT TYPE TC-81.22, DESIGN 2 WITH 32' MAST ARM W/(1) PEDESTRIAN SIGNAL HEAD, (1) PEDESTRIAN PUSHBUTTON, & DECORATIVE LUMINAIRE, STA. 2+46, 21' RT.

ADA PUSHBUTTON & STRUCTURE DIAGRAM



RECOMMENDED AREA FOR PUSH BUTTON LOCATIONS
PUSH BUTTON HEIGHT 42-48" WITH SIGN PARALLEL TO CROSSWALK.
IF TWO PUSHBUTTONS ARE ON THE SAME CORNER, THEY SHOULD BE SEPERATED BY A MINIMUM OF 10FT.
SEE OMITED FIG. 4E-4 FOR TYPICAL PUSHBUTTON LOCATIONS.

PLAN VIEW

MOE-26-1685

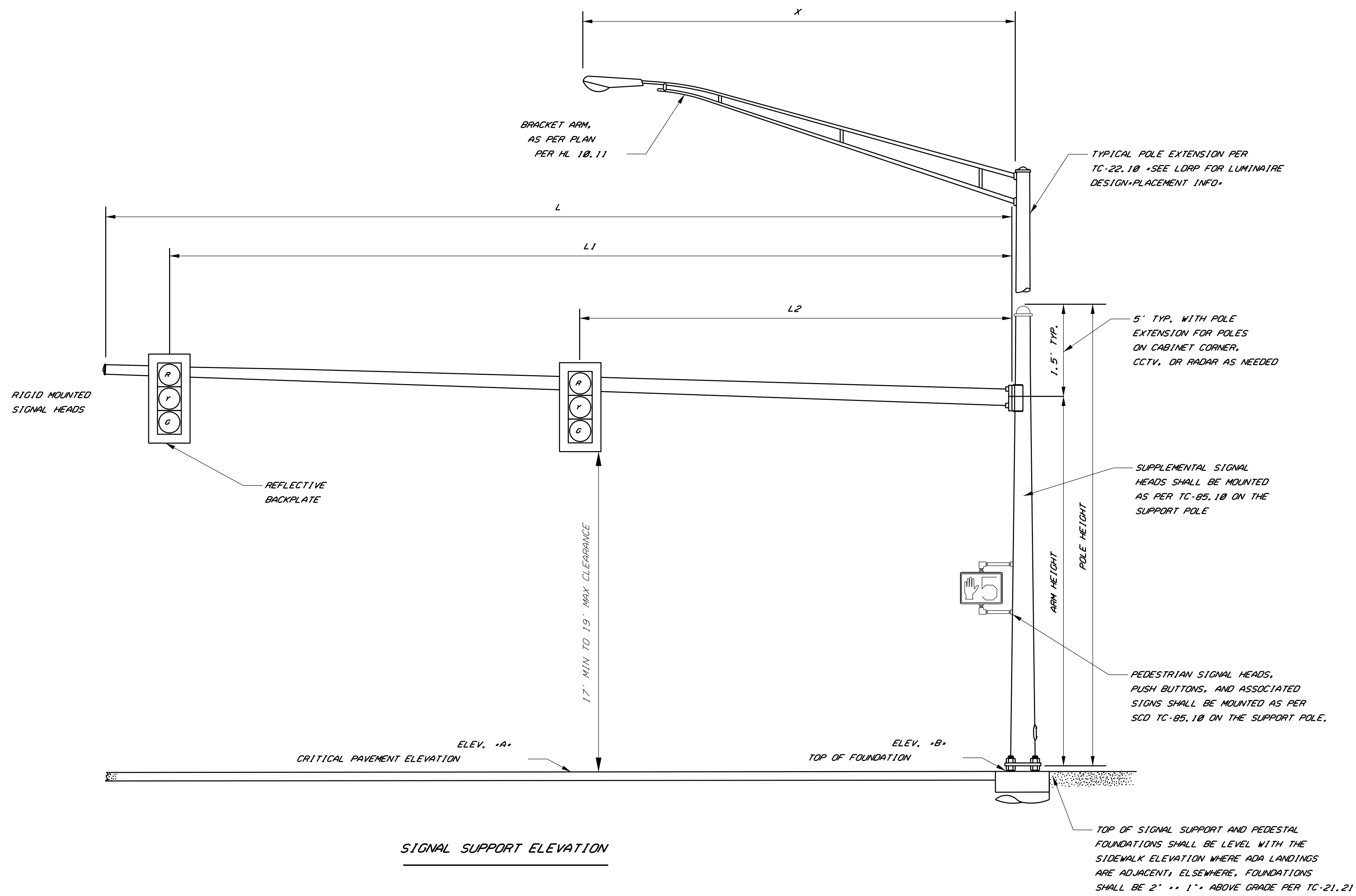
DESIGN AGENCY
Mead & Hunt
CLIENT

DESIGNER
DAD

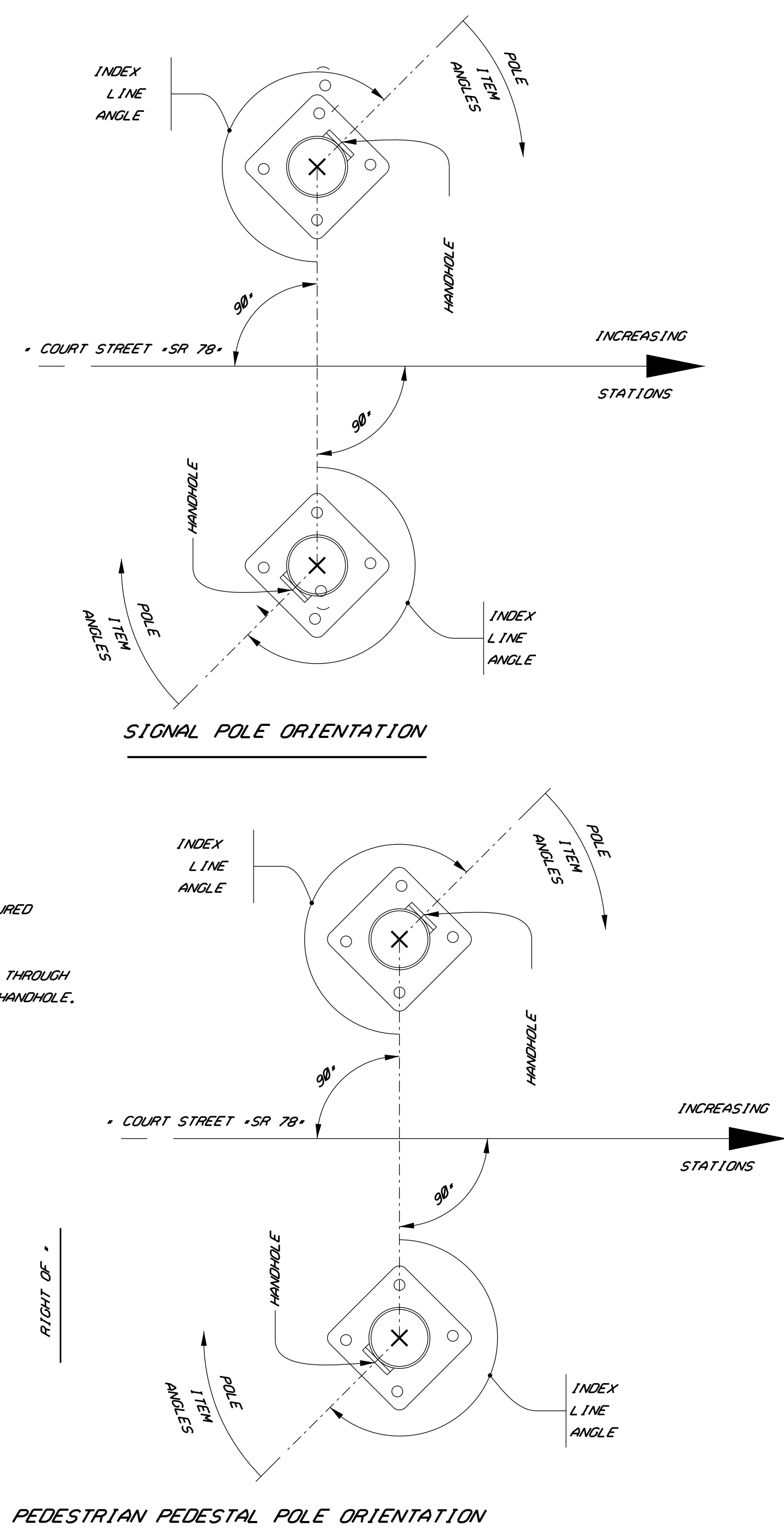
REVIEWER
DLW 06-12-2020

PROJECT ID
110443

SHEET TOTAL
P.35 51



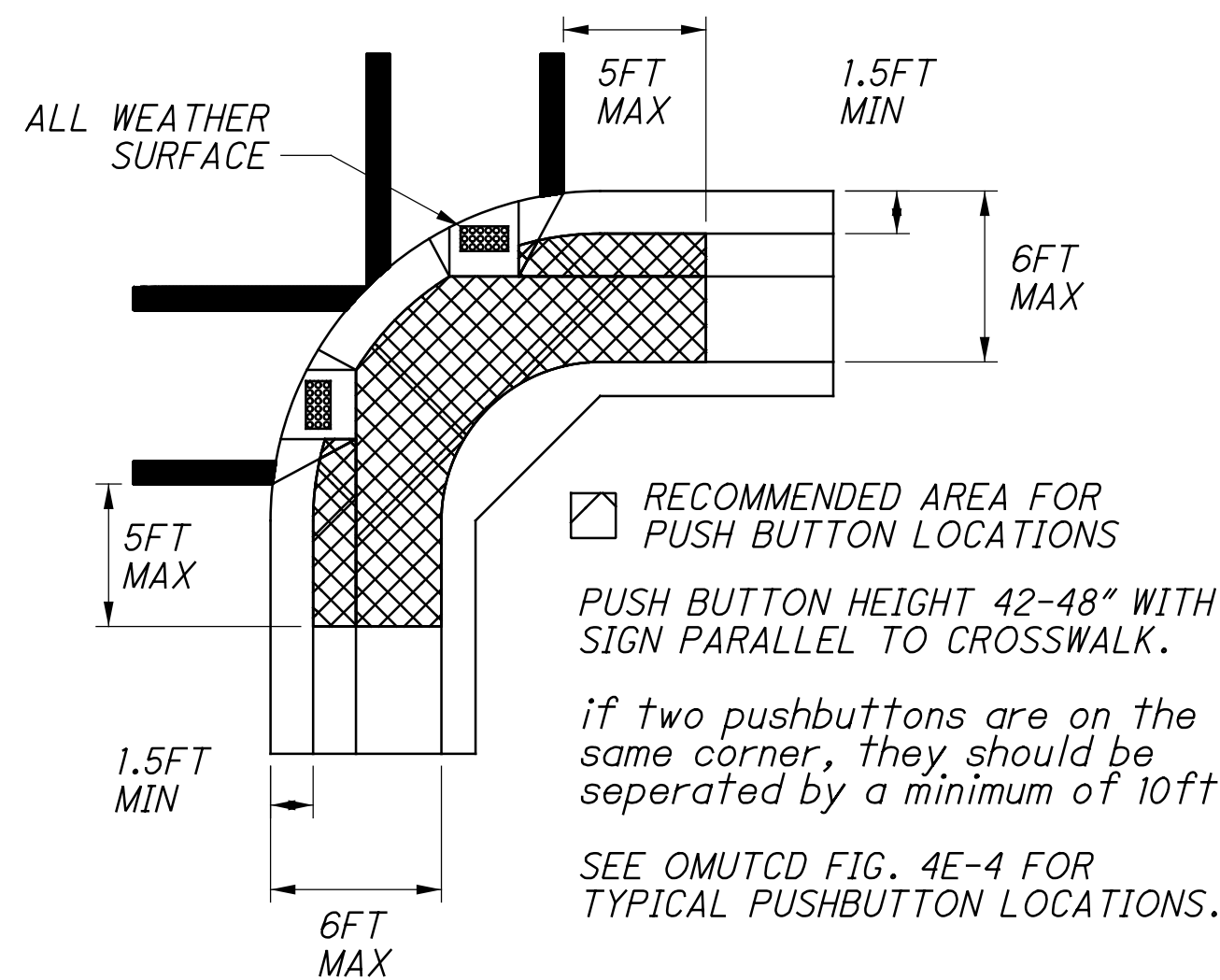
- NOTES:
- ALL ANGLES ARE MEASURED CLOCKWISE.
 - THE INDEX LINE GOES THROUGH THE CENTER OF THE HANDHOLE.



MAST ARM TABLE

| SUPPORT NO. | STATION | OFFSET | ELEVATION | | SIGNAL SUPPORT DETAILS | | | | | | | | ORIENTATION ANGLES FROM MAST ARM | | | | | | | |
|-------------|---------|--------|-----------------|-------------------|------------------------|------------|-------------|------------|----|----|----|---|----------------------------------|------------------|-------------------|-----------------------|---------------|-------------|----------|-----------------------------|
| | | | A (Pavt. Elev.) | B (Top of Found.) | DESIGN TYPE | DESIGN NO. | POLE HEIGHT | ARM HEIGHT | L | L1 | L2 | X | MAST ARM A ANGLE | MAST ARM B ANGLE | PEDESTRIAN SIGNAL | PEDESTRIAN PUSHBUTTON | POWER SERVICE | BRACKET ARM | HANDHOLE | CABLE ENTRANCE 12" FROM TOP |
| | | | | | | | | | | | | | | | | | | | | |
| SP-1 | 1+90 | 40' LT | - | 1200.87 | TC-81.22 | 12 | 36 | - | - | - | - | - | - | 90 | 90 | - | 90 | 180 | - | |
| ARM A | - | - | 1201.05 | - | TC-81.22 | 4 | - | 21 | 38 | 35 | 25 | - | 270 | - | - | - | - | - | - | |
| ARM B | - | - | 1200.01 | - | TC-81.22 | 2 | - | 20 | 29 | 26 | 16 | - | 0 | - | - | - | - | - | - | |
| SP-2 | 1+94 | 32' RT | 1198.69 | 1198.99 | TC-81.22 | 2 | 23 | 21 | 21 | 18 | 8 | - | 90 | - | 270 | 270 | 176 | 61 | 176 | |
| SP-3 | 2+46 | 21' RT | 1200.76 | 1199.97 | TC-81.22 | 2 | 37 | 22 | 32 | 29 | 17 | - | 0 | - | 270 | 270 | - | 0 | 180 | |
| PS-1 | 1+83 | 33' LT | - | 1200.55 | - | - | 10 | - | - | - | - | - | - | - | 90 | 90 | - | - | 180 | |
| PS-2 | 1+78 | 19' RT | - | 1199.42 | - | - | 10 | - | - | - | - | - | - | - | 172 | 180 | - | - | 288 | |
| PS-3 | 2+31 | 40' LT | - | 1201.17 | - | - | 10 | - | - | - | - | - | - | - | 90 | 90 | - | - | 270 | |
| PS-4 | 2+47 | 32' LT | - | 1201.26 | - | - | 10 | - | - | - | - | - | - | - | 270 | 270 | - | - | 180 | |
| PS-5 | 2+33 | 29' RT | - | 1199.26 | - | - | 10 | - | - | - | - | - | - | - | 270 | 270 | - | - | 90 | |

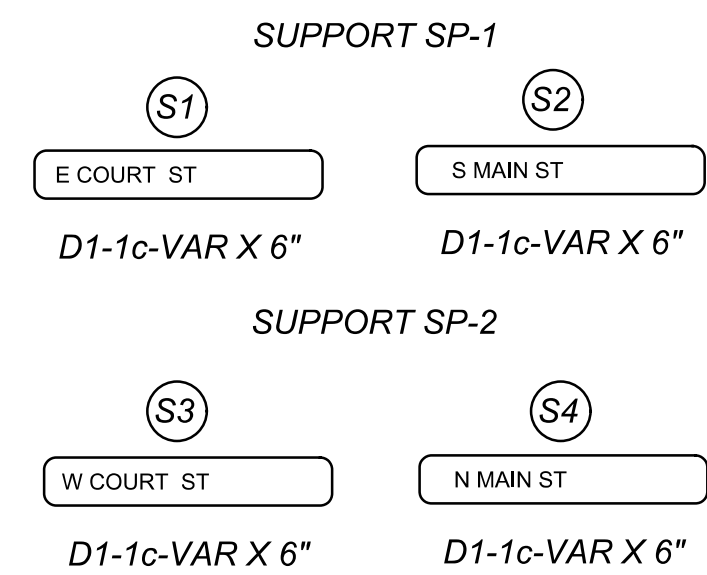
ADA PUSHBUTTON & STRUCTURE DIAGRAM



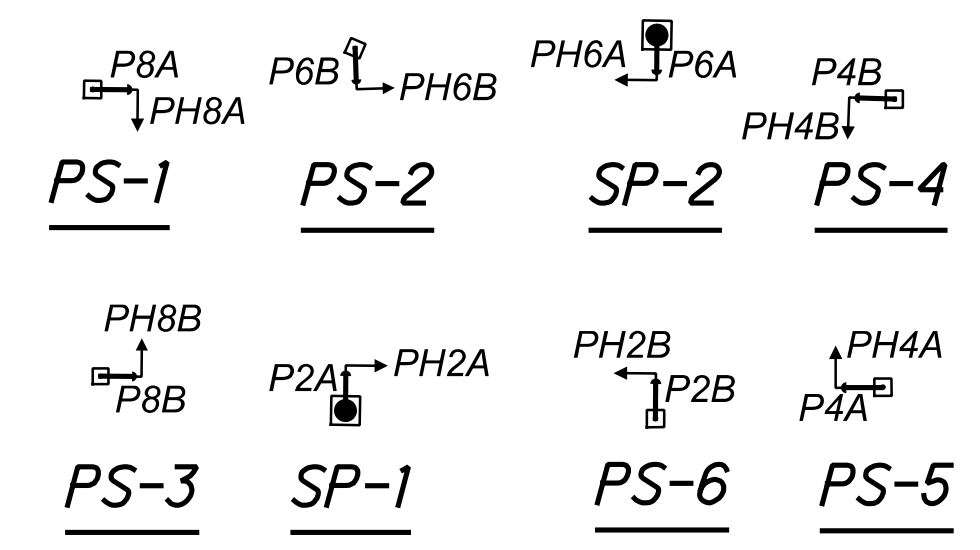
PULL BOX TABLE

| PULL BOX # | STATION | SIDE | OFFSET | SIZE (IN.) |
|------------|---------|-------|--------|------------|
| PB-1 | 5+14 | LEFT | 40' | 24 |
| PB-2 | 6+21 | LEFT | 27' | 24 |
| PB-3 | 6+31 | RIGHT | 23' | 18 |
| PB-4 | 6+11 | RIGHT | 37' | 24 |
| PB-5 | 4+91 | LEFT | 14' | 24 |
| PB-6 | 5+15 | RIGHT | 36' | 24 |
| PB-7 | 109+51 | LEFT | 48' | 24 |
| PB-8 | 109+52 | RIGHT | 0.3' | 24 |
| PB-9 | 108+20 | LEFT | 1' | 24 |
| PB-10 | 108+10 | RIGHT | 55' | 24 |

SIGNAL SUPPORT MOUNTED SIGNS

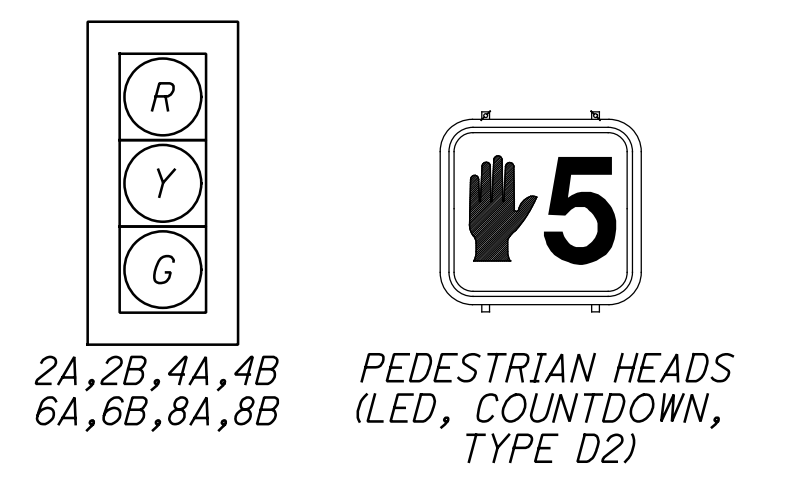


SIGNAL POLE & PEDESTRIAN POLE DETAILS

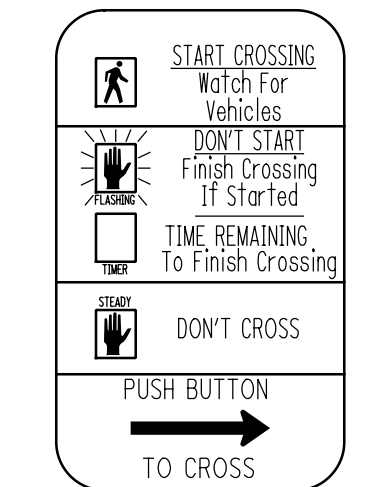


NOTES: FOR PAVEMENT MARKING AND SIGNING SEE SHEETS 26 & 27.
FOR SIGNAL QUANTITIES SEE SUB SUMMARY SHEET 31 & 32.
CONDUIT FOR PARKING PAY STATIONS ARE INCLUDED IN PAYMENT UNDER THE SIGNAL ITEMS.

SIGNAL HEADS



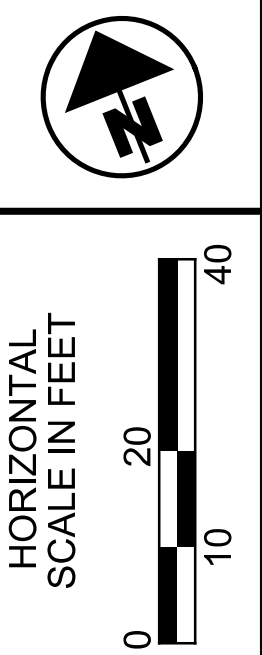
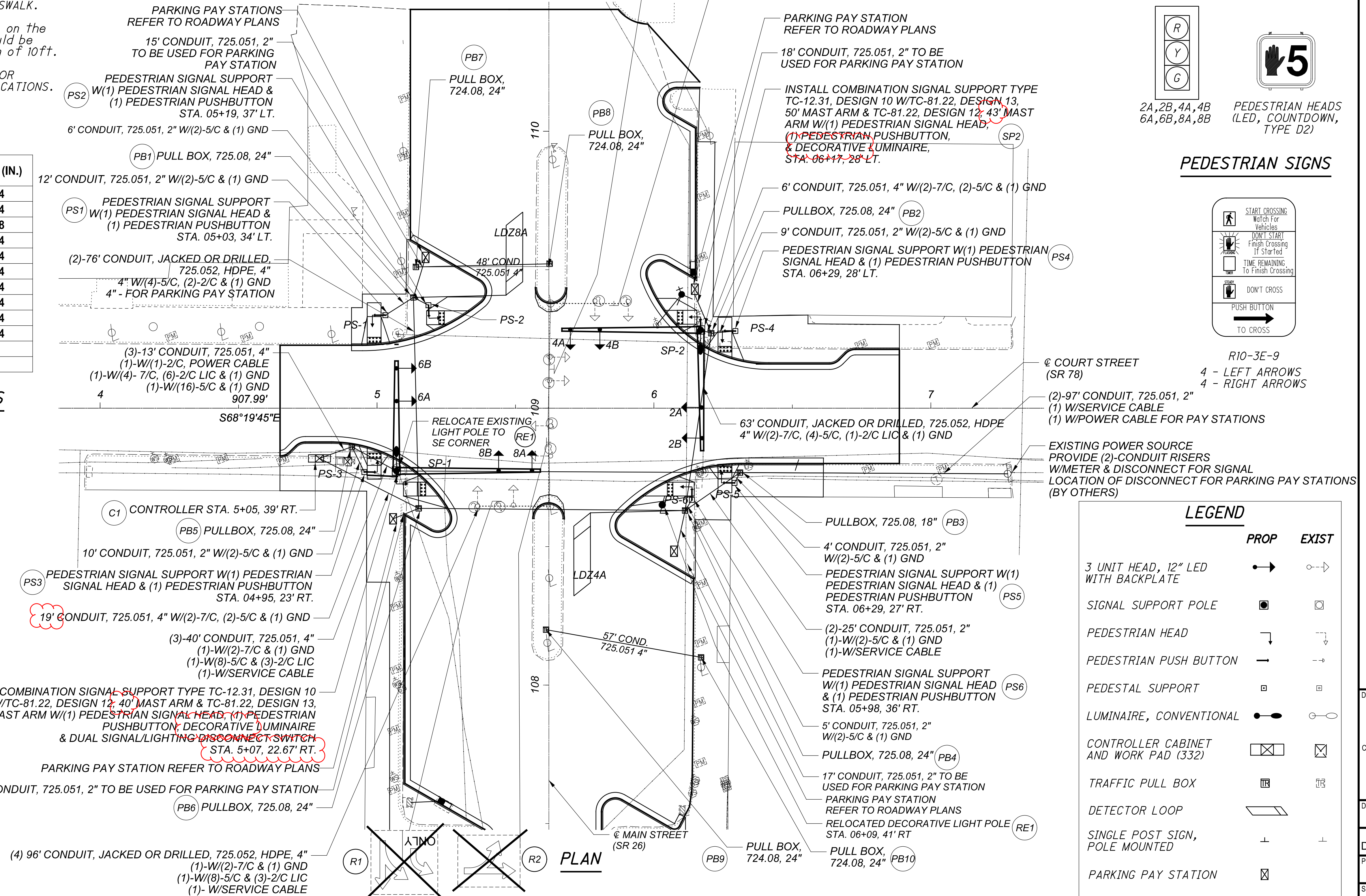
PEDESTRIAN SIGNS



R10-3E-9
4 - LEFT ARROWS
4 - RIGHT ARROWS

LEGEND

| | PROP | EXIST |
|---------------------------------------|------|-------|
| 3 UNIT HEAD, 12" LED WITH BACKPLATE | → | → |
| SIGNAL SUPPORT POLE | ■ | ■ |
| PEDESTRIAN HEAD | ⌋ | ⌋ |
| PEDESTRIAN PUSH BUTTON | — | — |
| PEDESTAL SUPPORT | □ | □ |
| LUMINAIRE, CONVENTIONAL | ● | ● |
| CONTROLLER CABINET AND WORK PAD (332) | ⊠ | ⊠ |
| TRAFFIC PULL BOX | ⊞ | ⊞ |
| DETECTOR LOOP | ▭ | ▭ |
| SINGLE POST SIGN, POLE MOUNTED | ⊥ | ⊥ |
| PARKING PAY STATION | ⊠ | ⊠ |



TRAFFIC SIGNA PLAN
SR 78 & SR 26

MOE-26-1685

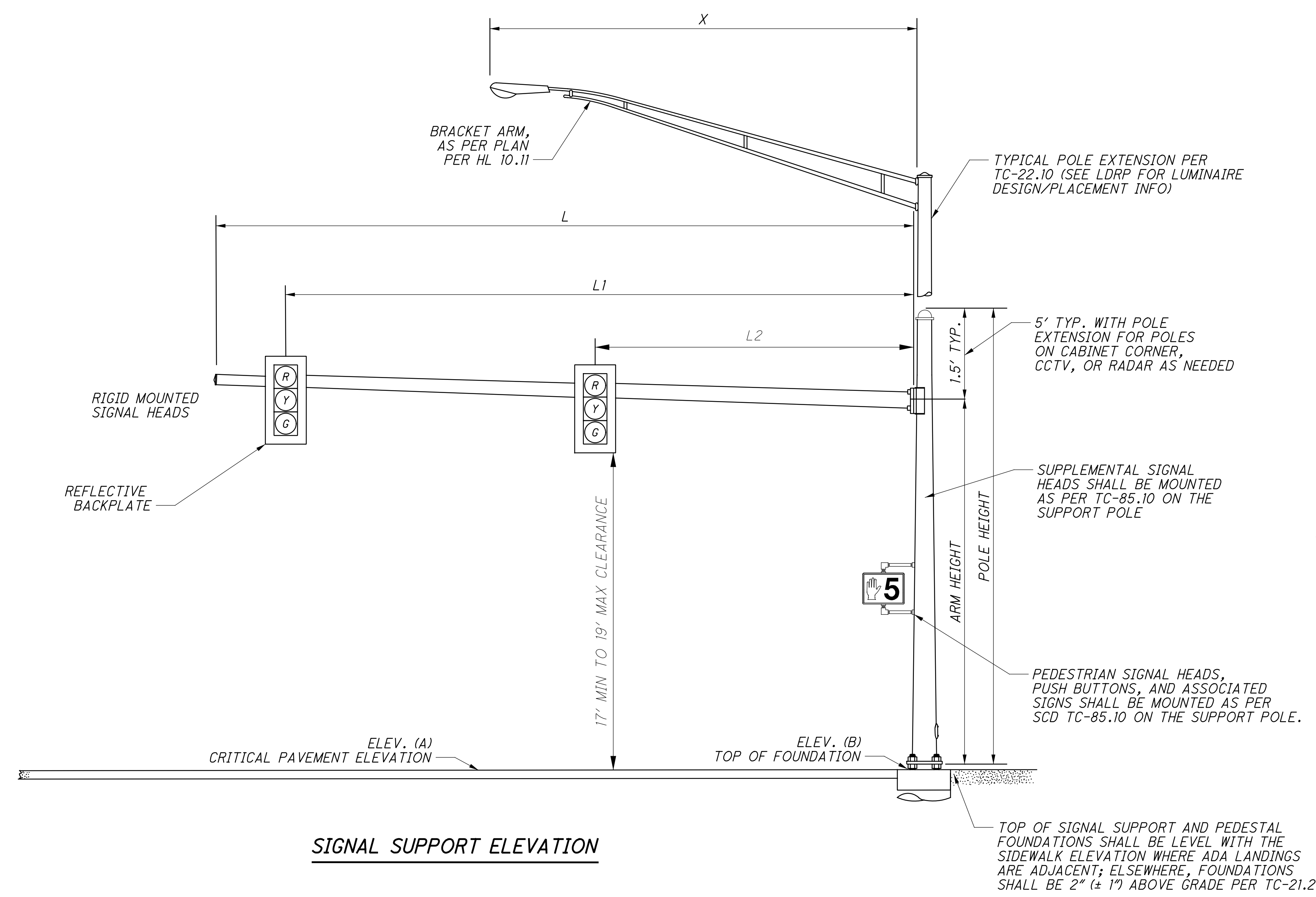
DESIGN AGENCY
Mead & Hunt
CLIENT

DESIGNER
DAD

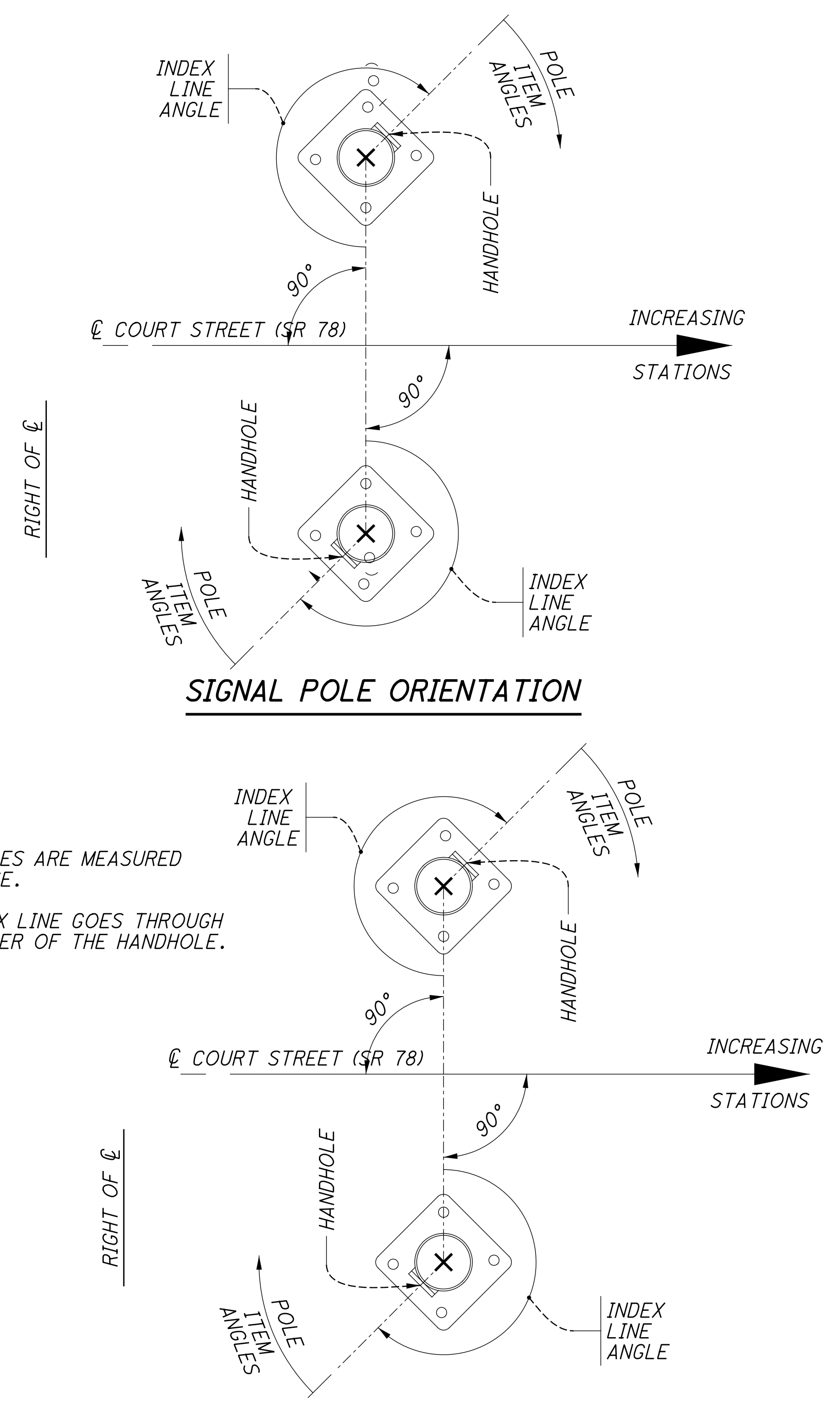
REVIEWER
DLW 06-30-20

PROJECT ID
110443

SHEET TOTAL
P.39 51



SIGNAL SUPPORT ELEVATION



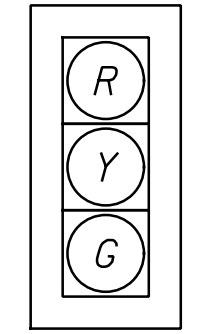
- NOTES:**
- ALL ANGLES ARE MEASURED CLOCKWISE.
 - THE INDEX LINE GOES THROUGH THE CENTER OF THE HANDHOLE.

PEDESTRIAN PEDESTAL POLE ORIENTATION

MAST ARM TABLE

| SUPPORT NO. | STATION | OFFSET | ELEVATION | | SIGNAL SUPPORT DETAILS | | | | | | | | | ORIENTATION ANGLES FROM MAST ARM | | | | | | | | |
|-------------|---------|-----------|-----------------|-------------------|------------------------|------------|-------------|------------|----|----|----|----|----|----------------------------------|------------------|------------------|-------------------|-----------------------|---------------|-------------|----------|-----------------------------|
| | | | A (Pavt. Elev.) | B (Top of Found.) | DESIGN TYPE | DESIGN NO. | POLE HEIGHT | ARM HEIGHT | L | L1 | L2 | S1 | S2 | X | MAST ARM A ANGLE | MAST ARM B ANGLE | PEDESTRIAN SIGNAL | PEDESTRIAN PUSHBUTTON | POWER SERVICE | BRACKET ARM | HANDHOLE | CABLE ENTRANCE 12" FROM TOP |
| | | | FT | FT | FT | FT | FT | FT | FT | FT | FT | FT | FT | FT | DEG | DEG | DEG | DEG | DEG | DEG | DEG | DEG |
| SP-1 | 5+07 | 22.67' RT | - | 1206.80 | TC-12.31 | 10 | 37 | - | 40 | 37 | 25 | - | - | 20 | 90 | - | - | - | - | - | - | - |
| ARM A | - | - | 1207.32 | - | TC-81.22 | 12 | - | 22 | 52 | 49 | 37 | - | - | - | - | 0 | - | - | - | - | - | - |
| ARM B | - | - | 1207.44 | - | TC-81.22 | 13 | - | 21 | 43 | 40 | 28 | - | - | 15 | 90 | - | - | - | - | - | - | - |
| SP-2 | 6+17 | 28' LT | - | 1207.46 | TC-12.31 | 10 | 36 | - | 50 | 47 | 36 | - | - | - | - | - | 270 | 270 | - | 270 | 180 | - |
| ARM A | - | - | 1208.33 | - | TC-81.22 | 12 | - | 21 | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| ARM B | - | - | 1207.11 | - | TC-81.22 | 13 | - | 20 | - | - | - | - | - | - | 0 | - | - | - | - | - | - | - |
| PS-1 | 5+03 | 34' LT | - | 1207.38 | - | - | 10 | - | - | - | - | - | - | - | - | - | 180 | 180 | - | - | 90 | - |
| PS-2 | 5+19 | 37' LT | - | 1207.52 | - | - | 10 | - | - | - | - | - | - | - | - | - | 245 | 245 | - | - | 113 | - |
| PS-3 | 4+95 | 23' RT | - | 1206.68 | - | - | 10 | - | - | - | - | - | - | - | - | - | 270 | 270 | - | - | 180 | - |
| PS-4 | 6+29 | 28' LT | - | 1207.06 | - | - | 10 | - | - | - | - | - | - | - | - | - | 180 | 180 | - | - | 270 | - |
| PS-5 | 6+29 | 27' RT | - | 1206.28 | - | - | 10 | - | - | - | - | - | - | - | - | - | 180 | 180 | - | - | 90 | - |
| PS-6 | 5+98 | 36' RT | - | 1206.52 | - | - | 10 | - | - | - | - | - | - | - | - | - | 180 | 180 | - | - | 180 | - |

SIGNAL HEADS

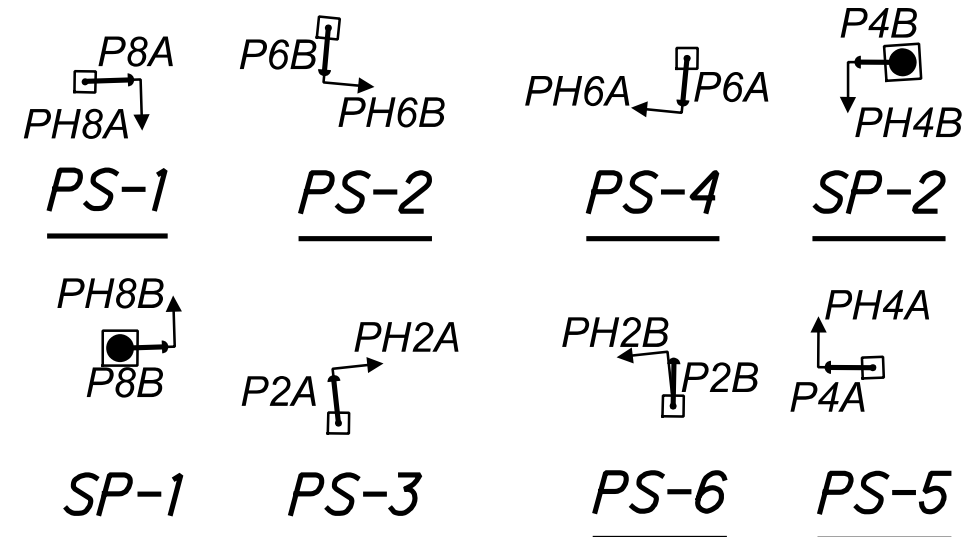


2A, 2B, 4A, 4B
6A, 6B, 8A, 8B



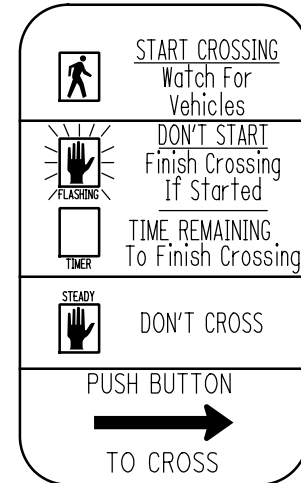
PEDESTRIAN HEADS
(LED, COUNTDOWN,
TYPE D2)

SIGNAL POLE & PEDESTRIAN POLE DETAILS



NOTES: FOR PAVEMENT MARKING AND SIGNING SEE SHEETS 26 & 27.
FOR SIGNAL QUANTITIES SEE SUB SUMMARY SHEET 34.

PEDESTRIAN SIGNS

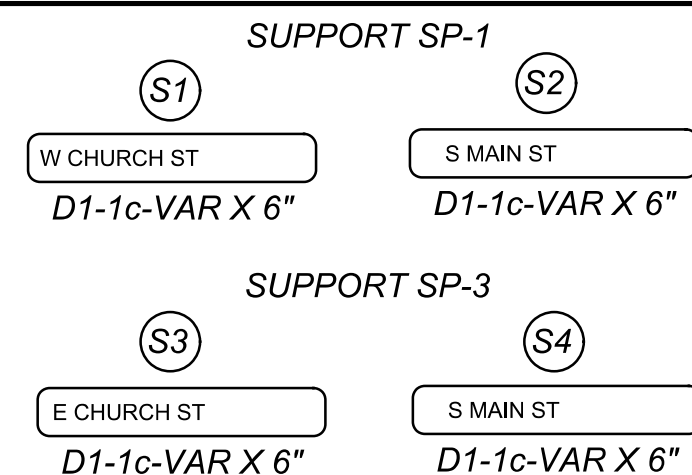


R10-3E-9
4 - LEFT ARROWS
4 - RIGHT ARROWS

PULL BOX TABLE

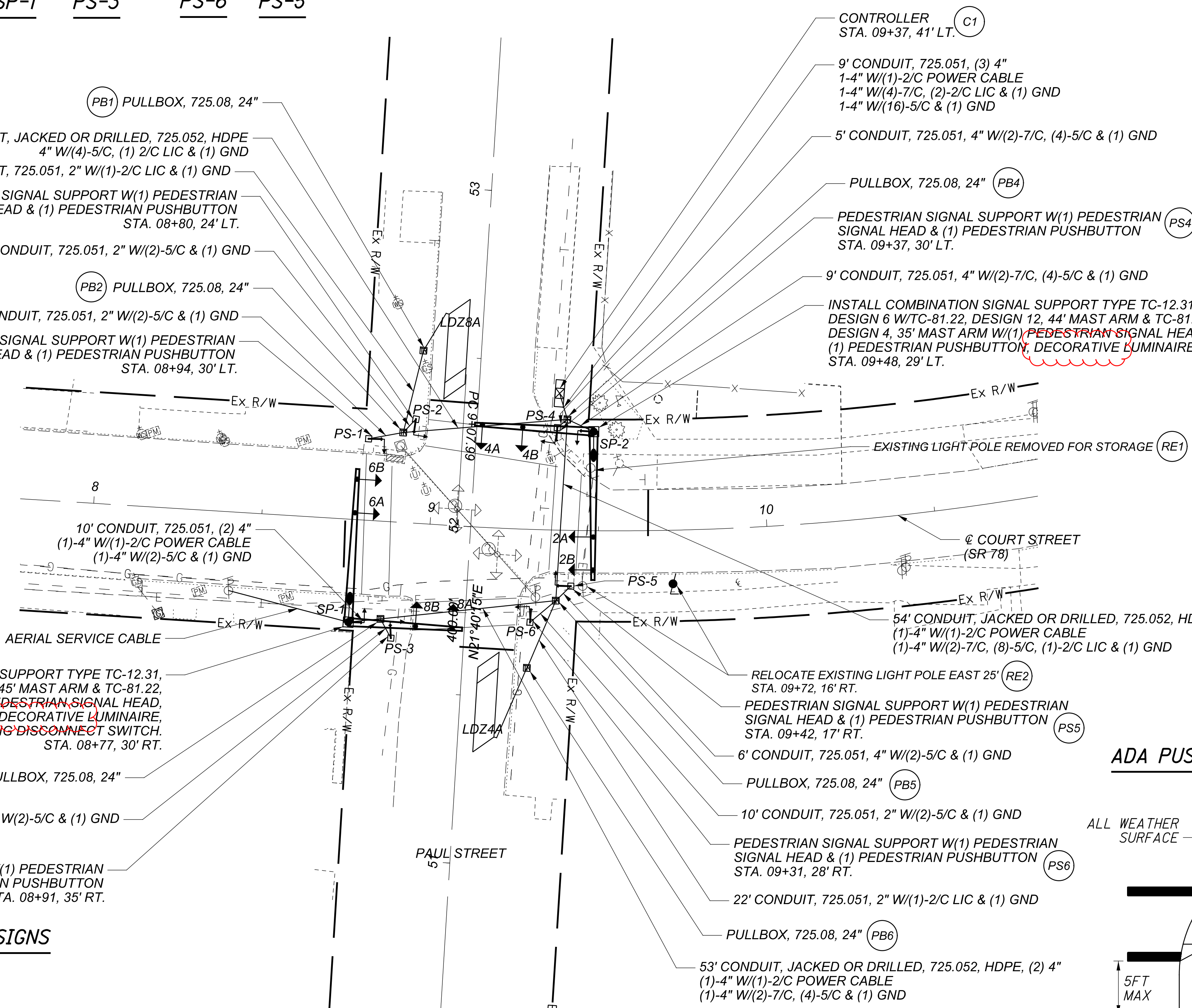
| PULL BOX # | STATION | SIDE | OFFSET | SIZE (IN.) |
|------------|---------|-------|--------|------------|
| PB-1 | 8+95 | LEFT | 51' | 24 |
| PB-2 | 8+90 | LEFT | 27' | 24 |
| PB-3 | 8+87 | RIGHT | 29' | 24 |
| PB-4 | 9+40 | LEFT | 33' | 24 |
| PB-5 | 9+38 | RIGHT | 21' | 24 |
| PB-6 | 9+30 | RIGHT | 41' | 24 |

SIGNAL SUPPORT MOUNTED SIGNS

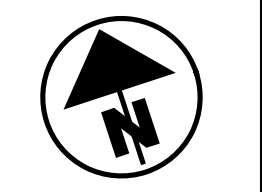
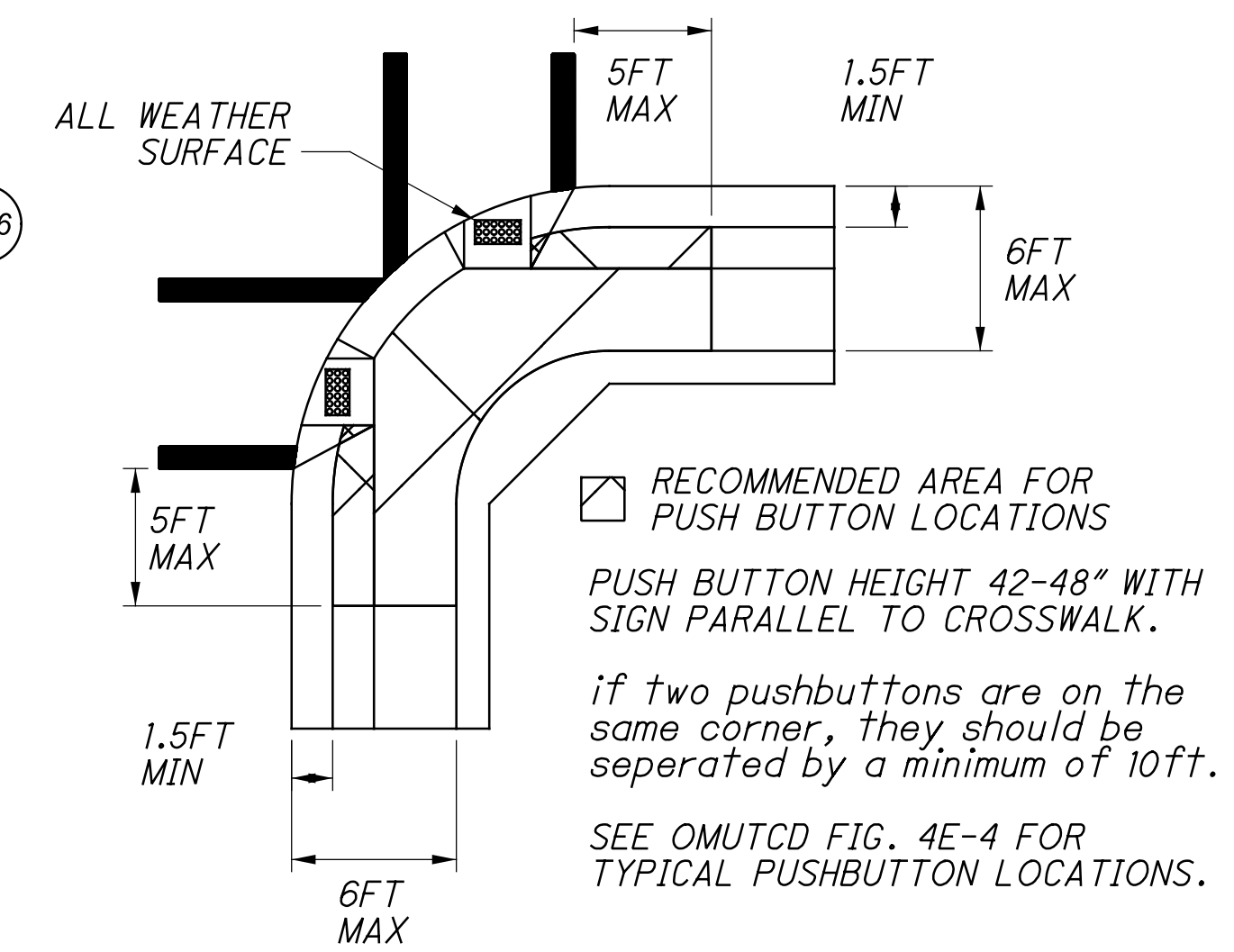


LEGEND

| | PROP | EXIST |
|---------------------------------------|------|-------|
| 3 UNIT HEAD, 12" LED WITH BACKPLATE | | |
| SIGNAL SUPPORT POLE | | |
| PEDESTRIAN HEAD | | |
| PEDESTRIAN PUSH BUTTON | | |
| PEDESTAL SUPPORT | | |
| LUMINAIRE, CONVENTIONAL | | |
| CONTROLLER CABINET AND WORK PAD (332) | | |
| TRAFFIC PULL BOX | | |
| DETECTOR LOOP | | |
| SINGLE POST SIGN, POLE MOUNTED | | |



ADA PUSHBUTTON & STRUCTURE DIAGRAM



TRAFFIC SIGNAL PLAN
SR 78 & PAUL STREET

MOE-26-1685

DESIGN AGENCY
Mead & Hunt
CLIENT

DESIGNER
DAD

REVIEWER
DLW 06-29-20

PROJECT ID
110443

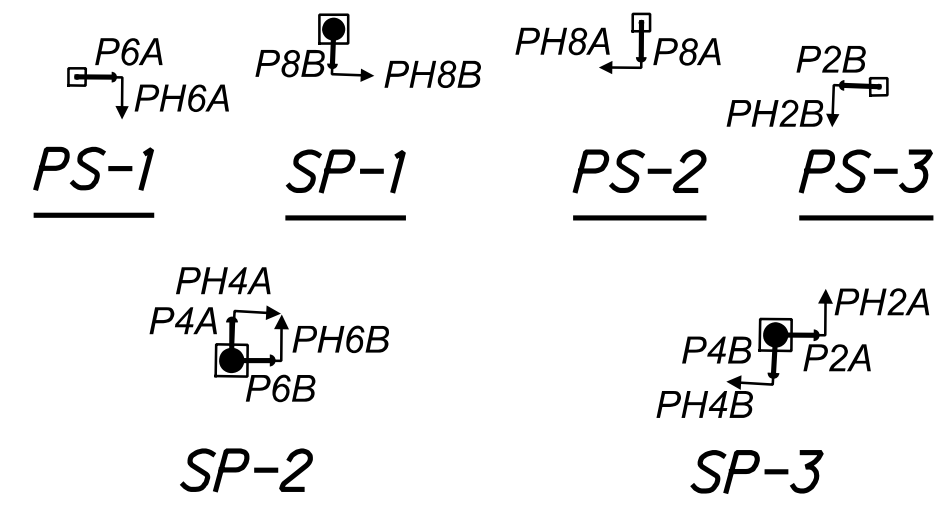
SHEET TOTAL
P.43 51

PULL BOX TABLE

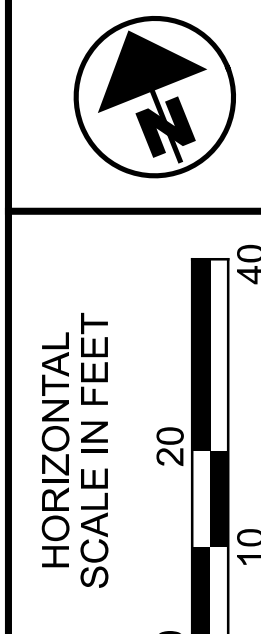
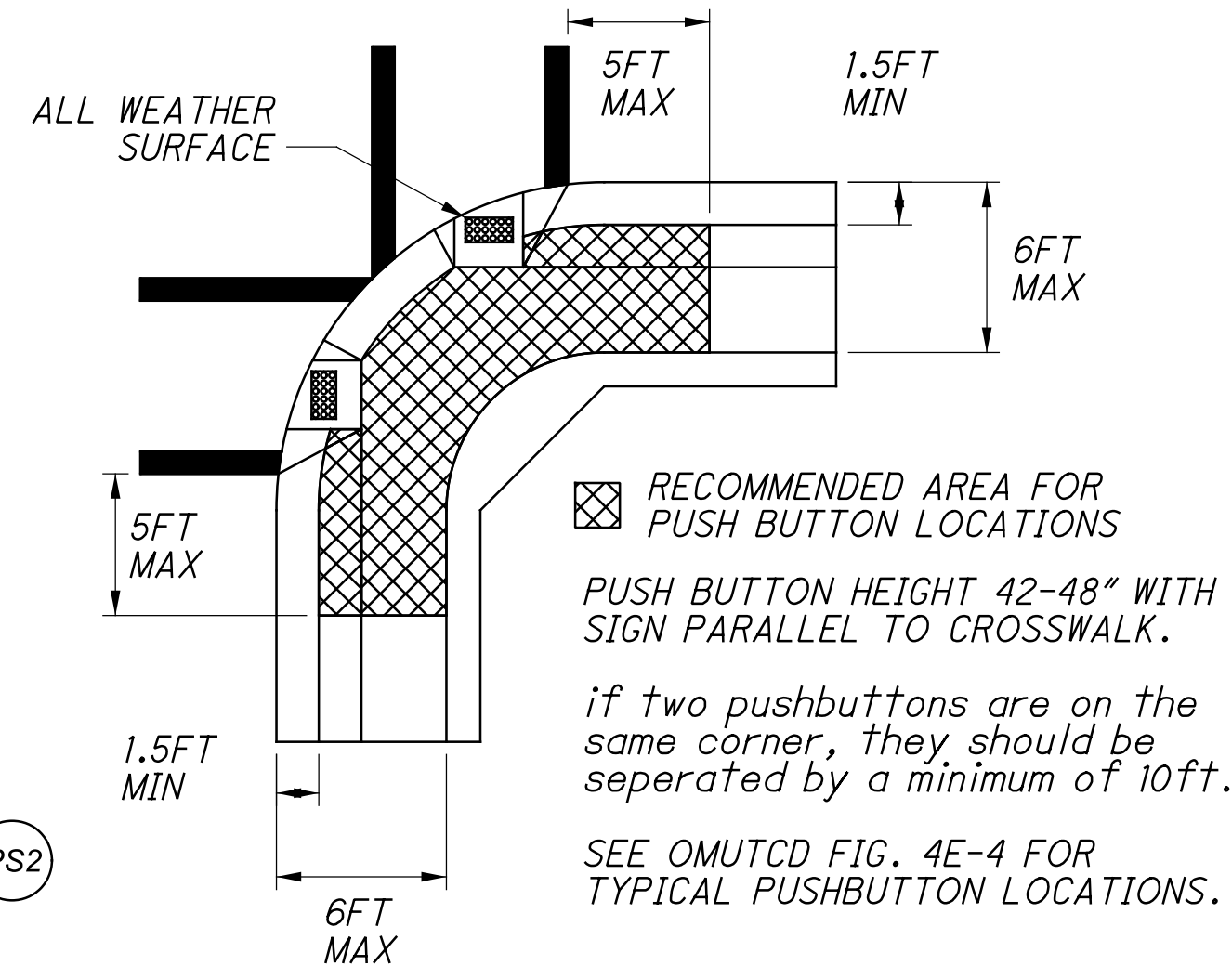
| PULL BOX # | STATION | SIDE | OFFSET | SIZE (IN.) |
|------------|---------|-------|--------|------------|
| PB-1 | 103+09 | LEFT | 31' | 24 |
| PB-2 | 102+71 | LEFT | 63' | 24 |
| PB-3 | 102+63 | LEFT | 35' | 24 |
| PB-4 | 103+09 | RIGHT | 24' | 24 |
| PB-5 | 103+01 | RIGHT | 55' | 24 |
| PB-6 | 102+61 | RIGHT | 24' | 24 |
| - | - | - | - | - |

NOTES: FOR PAVEMENT MARKING AND SIGNING SEE SHEETS 26 & 27.
FOR SIGNAL QUANTITIES SEE SUB SUMMARY SHEET 35.

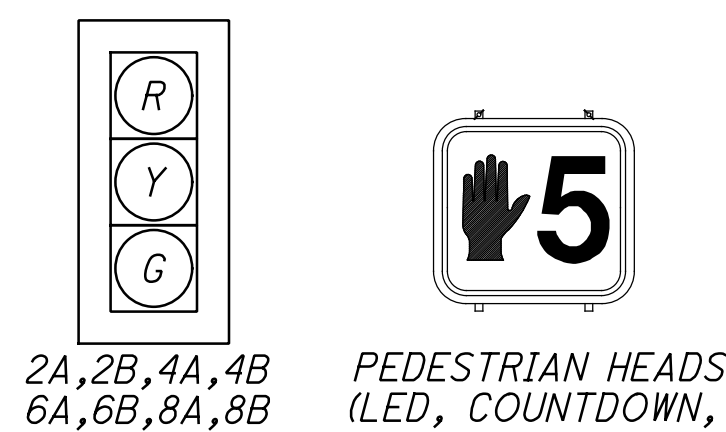
SIGNAL POLE & PEDESTRIAN POLE DETAILS



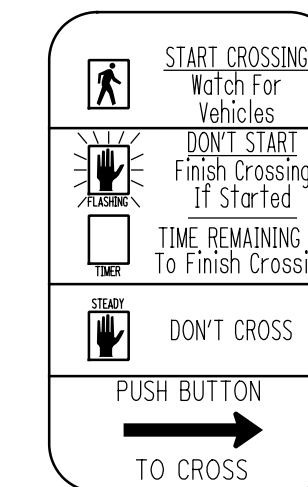
ADA PUSHBUTTON & STRUCTURE DIAGRAM



SIGNAL HEADS



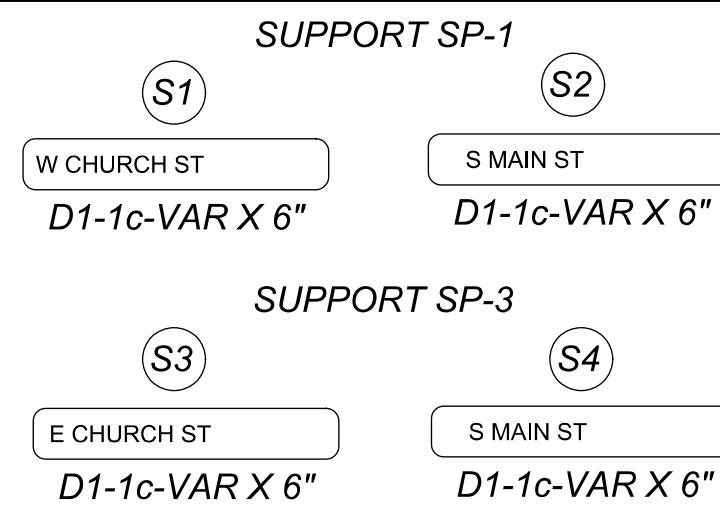
PEDESTRIAN SIGNS



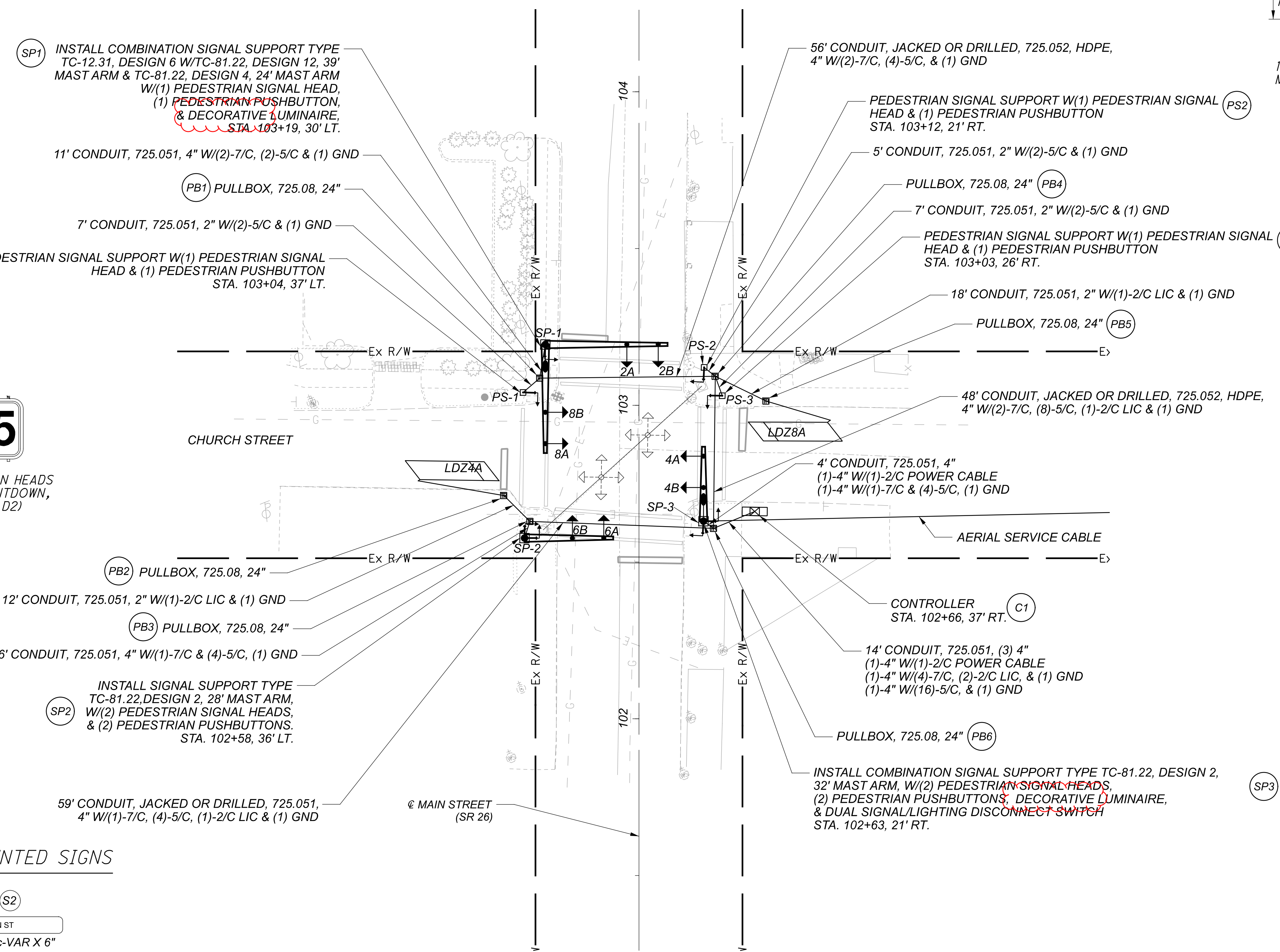
LEGEND

| | PROP | EXIST |
|---------------------------------------|------|-------|
| 3 UNIT HEAD, 12" LED WITH BACKPLATE | | |
| SIGNAL SUPPORT POLE | | |
| PEDESTRIAN HEAD | | |
| PEDESTRIAN PUSH BUTTON | | |
| PEDESTAL SUPPORT | | |
| LUMINAIRE, CONVENTIONAL | | |
| CONTROLLER CABINET AND WORK PAD (332) | | |
| TRAFFIC PULL BOX | | |
| DETECTOR LOOP | | |
| SINGLE POST SIGN, POLE MOUNTED | | |

SIGNAL SUPPORT MOUNTED SIGNS



PLAN



MOE-26-1685

MODEL: Plan 4 [Sheet] PAPER SIZE: 34x22 (in.) DATE: 11/4/2021 TIME: 8:53:27 AM USER: AMcHan
pw:\trc-pw\bentley.com\trc-pw-0\Documents\5 - Projects\Ohio Department of Transportation (0001)\345242 - MOE-26-16.85.4 - CAD_Design\10443\400-Engineering\Signals\Sheet\10443_CFD004.dgn

TRAFFIC SIGNAL PLAN
SR 26 & CHURCH STREET

DESIGN AGENCY
Mead & Hunt
CLIENT

DESIGNER
DAD

REVIEWER
DLW 06-12-2020

PROJECT ID
110443

SHEET TOTAL
P.47 | 51