

SECTION BILL OF MATERIAL w/ACCS.

| ITEM # | QTY. | PART No. | DESCRIPTION | MATERIAL | Wt./Lb. | TOTAL Wt./Lb. |
|--------|------|------------|--|-----------------|------------------|---------------|
| 12 | 1 | 17566-1-12 | TOP SECTION: PL. 3/16" x 6.00" F.F. x 12.14" F.F. x 49'-0" LG. | ASTM A572 GR 65 | 958.13 | 958.13 |
| 22 | 1 | 17566-1-22 | BOT. SECTION: PL. 3/16" x 11.43" F.F. x 13.00" F.F. x 12'-6" LG. | ASTM A572 GR 65 | 375.97 | 375.97 |
| | | | | | BLACK WT. | 1334.1 |
| | | | | | GALV. WT. | 1414.15 |

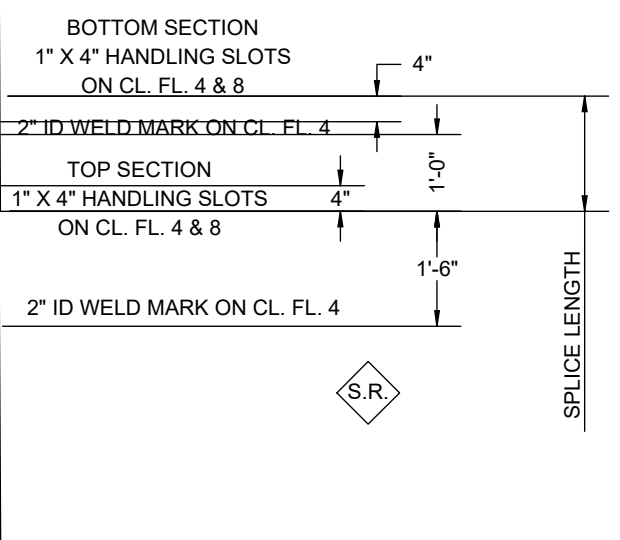
LOOSE COMPONENTS BILL OF MATERIAL

| ITEM # | QTY. | PART No. | DESCRIPTION | MATERIAL | Wt./Lb. | TOTAL Wt./Lb. |
|--------|------|-------------|-------------------------------------|----------|-----------------------------------|---------------|
| HHC | 2 | 17566-1-HHC | HAND HOLE COVER: 1/4" x 4" x 6 1/2" | ASTM A36 | 1.6 | 3.2 |
| | | | | | LOOSE COMPONENTS BLACK WT. | 3.2 |
| | | | | | LOOSE COMPONENTS GALV. WT. | 3.39 |

HADWARE BILL OF MATERIAL

| ITEM # | QTY. | PART No. | DESCRIPTION | MATERIAL | Wt./Lb. | TOTAL Wt./Lb. |
|---|------|----------|---|-------------------------|---------------------|---------------|
| HB | 4 | 00-HB | Ø1/2"-13UNC x 2" LG. HEX BOLT FULL THREAD (HDG) | ASTM F3125 GR A325 TP 1 | 0.17 | 0.68 |
| SLW | 4 | 00-SLW | Ø1/2" SPRING LOCK WASHER | ASME B18.21.1 - S.S. | 0.010 | 0.04 |
| | | | | | HARDWARE WT. | 0.72 |
| TOTAL. WT. (GALV. WT. + LOOSE COMPONENTS GALV. WT. + HARDWARE WT.) | | | | | | 1418.26 |

All POLES POWDER COATED



- GENERAL NOTES:**
- WORKMANSHIP IN ACCORDANCE WITH AISC 207 LATEST EDITION.
 - STRUCTURAL STEEL IN ACCORDANCE TO ASTM A572, GRADE IN ACCORDANCE TO THICKNESS.
 - NONSTRUCTURAL ELEMENTS IN ACCORDANCE TO ASTM A36.
 - ALL STEEL USED WILL BE IN ACCORDANCE WITH THE BOM.
 - STAINLESS STEEL IN ACCORDANCE WITH ASTM A167 OR A240.
 - STRUCTURAL BOLTS IN ACCORDANCE WITH ASTM F3125 A325, A490 & A449. NONSTRUCTURAL BOLTS ACCORDING TO ASTM A307, NUTS ACCORDING TO ASTM A563 AND A194 & WASHERS IN ACCORDANCE WITH F436. ALL TYPE 1 OR GRADE DH.
 - HOT-DIP GALVANIZED IN ACCORDANCE WITH REQUIREMENTS OF ASTM A123, A143, A153, A384, A385, A386.
 - SPECIAL REQUIREMENTS SHALL BE SHOWN IN DRAWINGS (S.R.).
 - ARC WELDING PERFORMED IN ACCORDANCE WITH AWS D1.1 LATEST EDITION. WELDING ELECTRODES FOR MORE THAN 1 1/2" THICKNESS SHALL BE E71-T1 OR EQUIVALENT & FOR 1 1/2" THICKNESS OR LESS SHALL BE E81-T1 OR EQUIVALENT. WELDING OF ANY S.S. TO CARBON STEEL SHALL BE PERFORMED WITH E308 OR E309 WELDING ELECTRODE.
 - LONGITUDINAL WELDS SHALL BE SUBMERGED ARC WELD (SAW) WITH MINIMUM PENETRATION OF 60% OF THE PLATE THICKNESS.
 - CJP WELDS SHALL BE REQUIRED IN, BUT NOT LIMITED TO, THE FOLLOWING AREAS:
 - CIRCUMFERENTIAL WELDS JOINING STRUCTURAL MEMBERS.
 - LONGITUDINAL WELDS IN THE FEMALE PORTION OF THE JOINT WITHIN THE MAX SLIP JOINT AREA PLUS SIX INCHES.
 - WELDS AT THE BUTT JOINTS OF BACKUP STRIPS 6 INCHES UPSIDE AND 6 INCHES DOWNSIDE.
 - BASE PLATE & FLANGE TO SHAFT WELD.
 - LONGITUDINAL WELDS IN THE MALE PORTION OF THE JOINT ONE FOOT WITHIN THE SLIP.
 - PJP WELDS SHALL HAVE 60 PERCENT MINIMUM PENETRATION.
 - IF ARMS ARE REQUIRED, A MINIMUM OF 90 PERCENT PJP WITH FILLET OVERLAY SHALL BE USED FOR ARM-TO-ARM BASE.
 - TEST IN ACCORDANCE WITH ASTM A370 & ASTM A673.
 - ANCHOR BOLT, STRUCTURAL PLATE AND WELD MATERIAL SHALL MEET ASCE/SEI 48 & ASTM REQUIREMENTS FOR CHARPY TESTS.
 - ALL PLATES OVER 1 1/2 INCHES THICK SHALL BE ULTRASONICALLY TESTED TO ASSURE AGAINST DEFECTS.

FABRICATION NOTES:

1. COATING INSTRUCTIONS: (CHEMTHANE 2260 PRODUCT).
CT: 0'-0"-9'-0" BR: Y@20MIL/IN: 0'-0"/UV GRAY: 0'-0" TO 0'-0"

2. DO NOT APPLY CHEMTHANE ON GROUNDING PAD

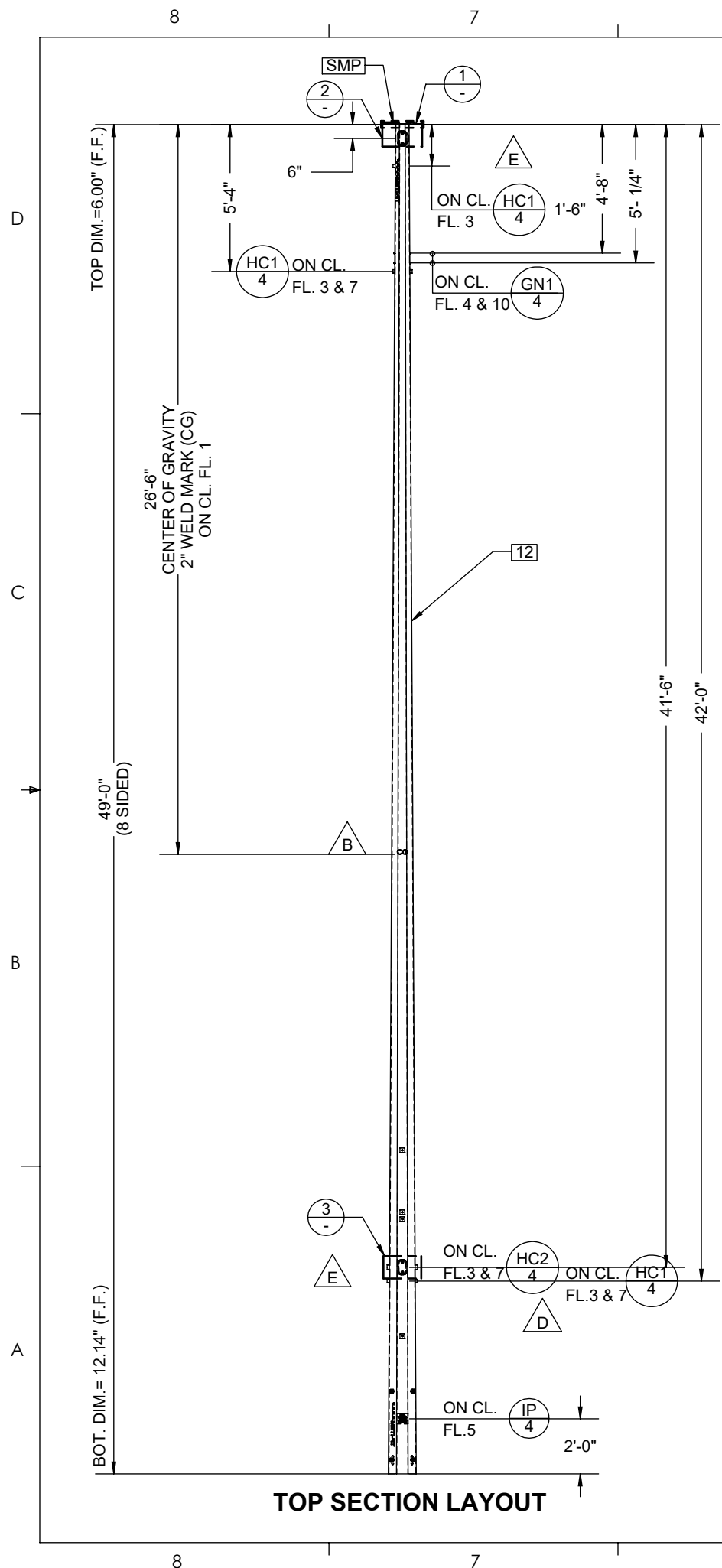
| REV. | DATE | REV. BY | CHK. BY | DESCRIPTION |
|------|----------|---------|---------|--|
| 0 | 06/24/19 | JMVM | JLME | ISSUED FOR FABRICATION |
| E | 06/17/19 | JMVM | JLME | UPDATED GENERAL ERECTION & TOTAL WEIGHT |
| D | 06/06/19 | JMPM | JLME | UPDATED GENERAL ERECTION, TOTAL WEIGHT & TITLE BLOCK |
| C | 05/13/19 | JMVM | JLME | UPDATED GENERAL ERECTION |
| B | 05/07/19 | JMPM | JLME | UPDATED GENERAL ERECTION & BOM |
| A | 04/26/19 | - | JLME | ISSUED FOR APPROVAL |

ANS SERVICES

POLES-WPE 1-60

ASSEMBLY AND GENERAL DETAILS

| DWN | DATE | CUST. P.O. NUMBER | TAPP ORDER No. | DRAWING No. | SH/OF | SCALE | REV. |
|------|----------|-------------------|----------------|-------------|-------|-------|------|
| JMPM | 04/26/19 | 2526 | TP-17566 | 17566-1-PA | 1/7 | NTS | 0 |



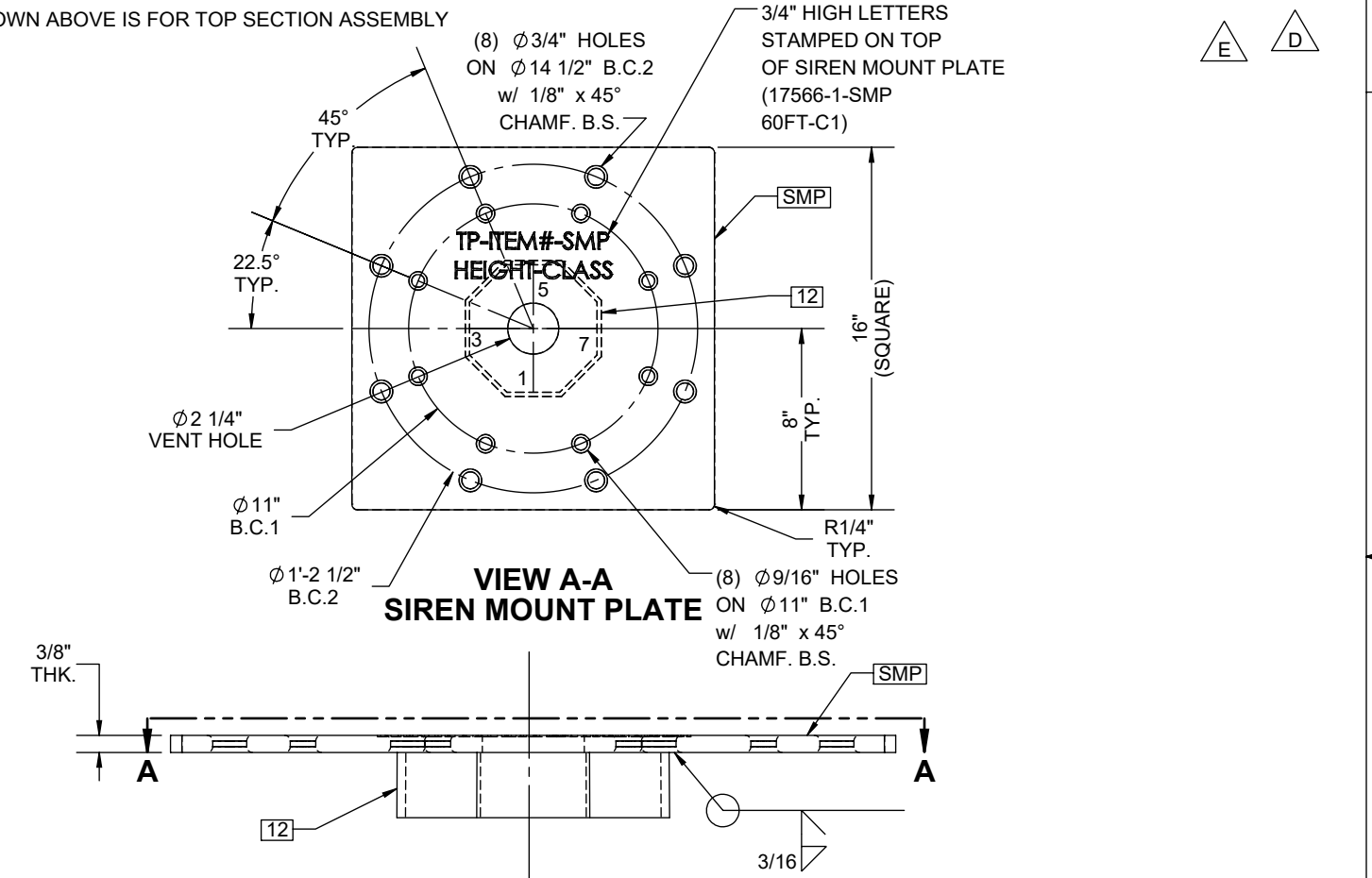
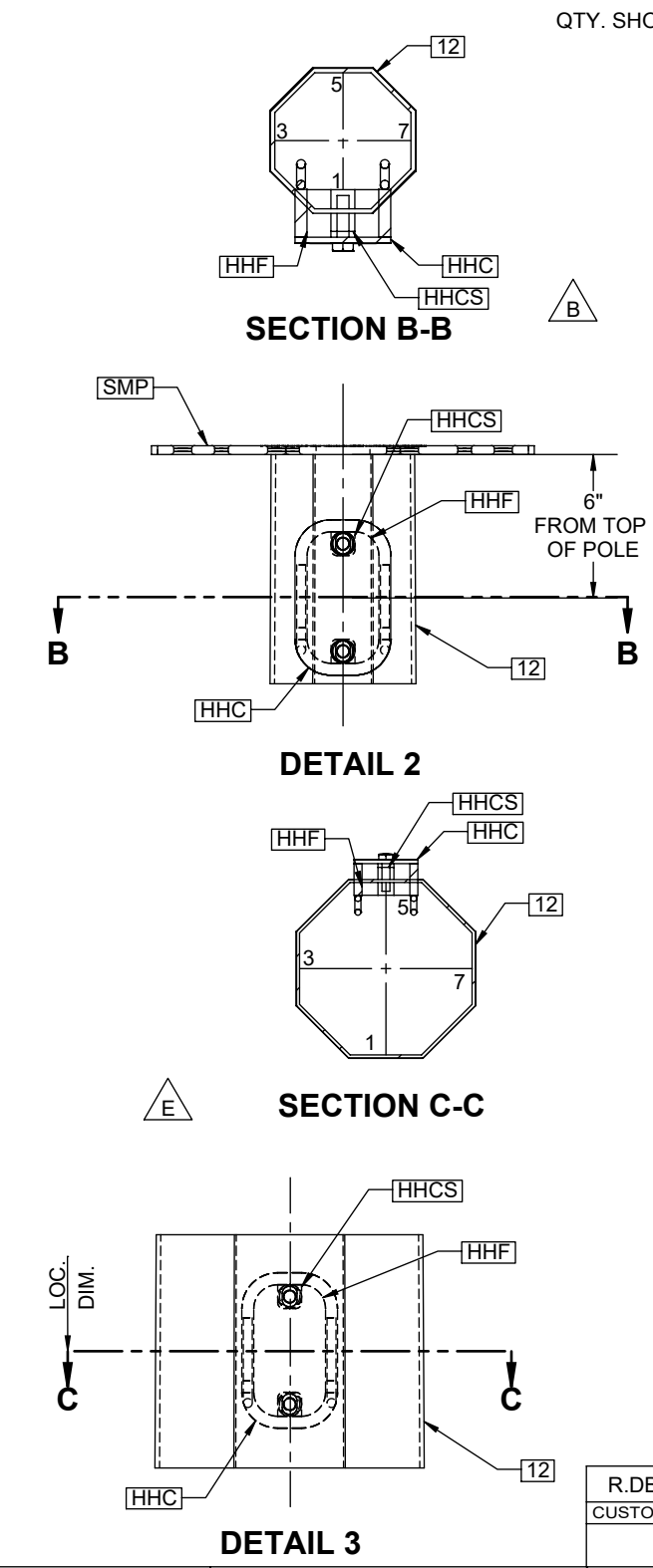
ATTACHMENT PLATE LAYOUT

| ORIENTATION ON CL. FL. | DISTANCE FROM TOP OF SECTION |
|------------------------|------------------------------|
| 1 | 37'-3" |
| 1 | 39'-6" |
| 1 | 39'-9" |
| 1 | 44'-0" |

SEE AP DETAIL ON SHEET 4

TOP SECTION BILL OF MATERIAL

| ITEM # | QTY. | PartNo. | DESCRIPTION | MATERIAL | Wt./Lb. | TOTAL Wt./Lb. |
|--------|------|--------------|--|------------------|------------------|----------------|
| 12 | 1 | 17566-1-12 | TOP SECTION: PL. 3/16" x 6.00" F.F. x 12.14" F.F. x 49'-0" LG. | ASTM A572 GR 65 | 913.09 | 913.09 |
| SMP | 1 | 17566-1-SMP | SIREN MOUNT PLATE PL. 3/8" x 1'-4" (SQUARE) | ASTM A572 GR 65 | 25.95 | 25.95 |
| HHF | 2 | 17566-1-HHF | HAND HOLE FRAME: PL. 1/2" x 3" x 5 1/2" I.D. | ASTM A572 GR 65 | 4.7 | 9.40 |
| HHCS | 4 | 17566-1-HHCS | HAND HOLE COVER SUPPORT: PL. 1/4" x 1" x 1" | ASTM A36 | 0.06 | 0.24 |
| JH | 4 | 00-JH | J-HOOK: 3/8" x 3 3/4" LG. | ASTM A36 | 0.157 | 0.63 |
| JN | 4 | 00-JN | JACKING NUT: Ø1"-8UNC HVY. HEX NUT | ASTM A563 GR DH | 0.4302 | 1.72 |
| HC1 | 5 | 00-HC1 | STANDARD 150 LBS. NPT THREAD HALF COUPLING 1: Ø1 x 1" | ASTM A105 GR 1 | 0.2 | 1.00 |
| HC2 | 2 | 00-HC2 | STANDARD 150 LBS. NPT THREAD HALF COUPLING 2: Ø1 1/2" x 1" | ASTM A105 GR 1 | 0.3 | 0.60 |
| GN1 | 4 | 00-GN1 | GROUNDING NUT 1: Ø5/16"-18UNC HEX. NUT | ASTM A563 GR DH | 0.01 | 0.04 |
| AP | 4 | 00-AP | ATTACHMENT PLATE: PL. 1" x 2" x 2" | ASTM A240 TP 304 | 1.07 | 4.28 |
| IP | 1 | 00-IP | ID PLATE: PL. 3/16" x 4 1/2" x 5" | ASTM A36 | 1.18 | 1.18 |
| | | | | | BLACK WT. | 958.13 |
| | | | | | GALV. WT. | 1015.62 |



DETAIL 1

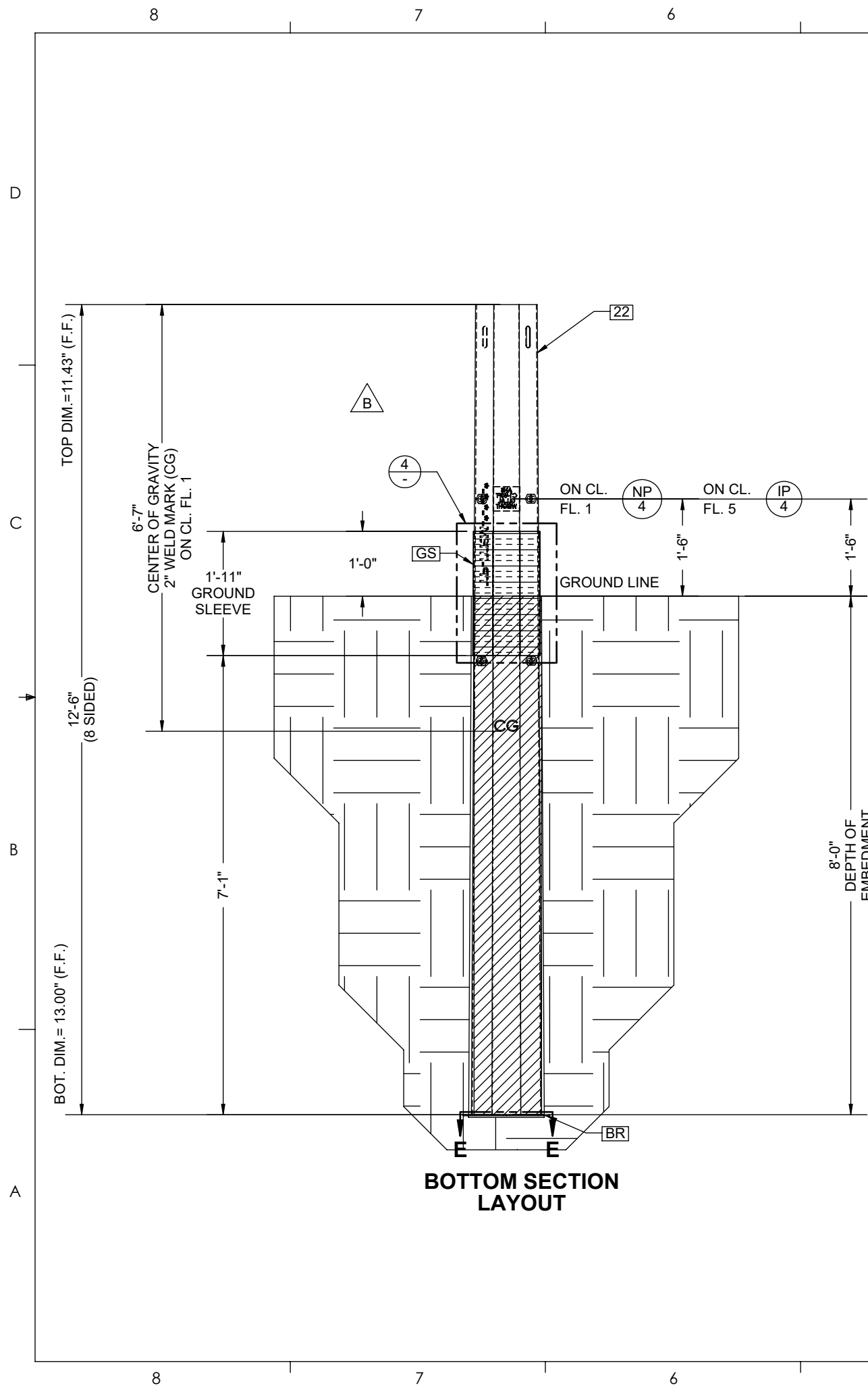
| REV. | DATE | REV. BY | CHK. BY | DESCRIPTION |
|------|----------|---------|---------|--|
| 0 | 06/24/19 | JMVM | JLME | ISSUED FOR FABRICATION |
| E | 06/17/19 | JMVM | JLME | UPDATED ASSEMBLY, BOM, ADDED HAND HOLE & HALF COUPLING |
| D | 06/06/19 | JMPM | JLME | UPDATED ASSEMBLY, BOM, ADDED HALF COUPLING & TITLE BLOCK |
| C | 05/13/19 | JMVM | JLME | NO CHANGES ON THIS SHEET |
| B | 05/07/19 | JMPM | JLME | UPDATED ASSEMBLY, BOM & ADDED HAND HOLE DETAIL |
| A | 04/26/19 | - | JLME | ISSUED FOR APPROVAL |

**FINISH:
HOT DIP. GALV. AS
PER ASTM A123**

FOR FABRICATION

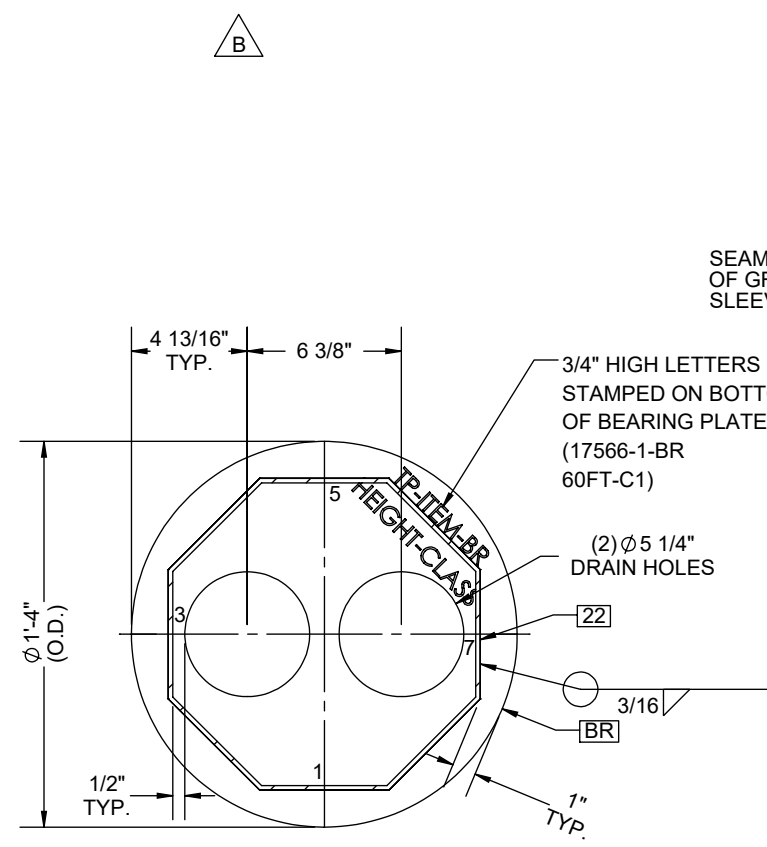
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| DWN | DATE | ANS SERVICES | | | | | |
|----------------------------|----------|--------------------|----------------|-------------|-------|-------|------|
| JMPM | 04/26/19 | POLES-WPE 1-60 | | | | | |
| CHK. TAPP | DATE | TOP SECTION LAYOUT | | | | | |
| L.L. | 06/24/19 | | | | | | |
| APP | DATE | | | | | | |
| M.D. | 06/24/19 | | | | | | |
| R.DB.10-3 | | CUST. P.O. NUMBER | TAPP ORDER No. | DRAWING No. | SH/OF | SCALE | REV. |
| CUSTOMER DRAWING REFERENCE | | 2526 | TP-17566 | 17566-1-PA | 2/7 | NTS | 0 |

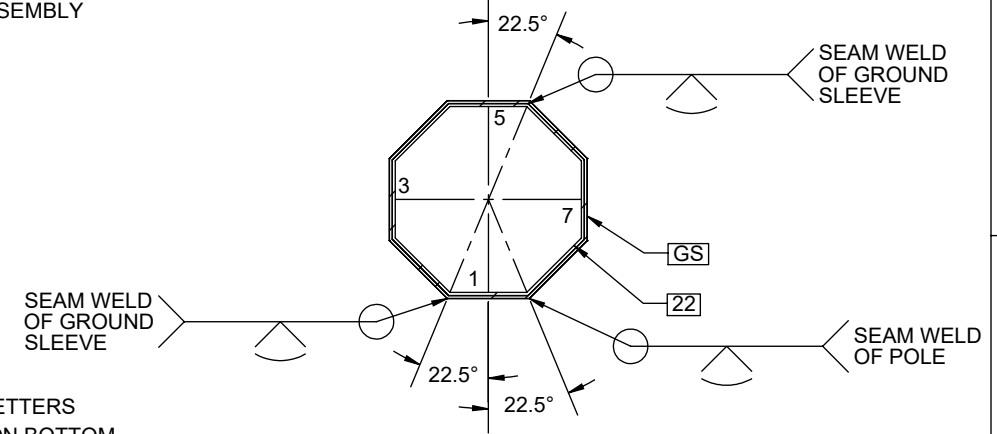


| BOTTOM SECTION BILL OF MATERIAL | | | | | | |
|---------------------------------|------|------------|---|------------------|------------------|---------------|
| ITEM # | QTY. | PartNo. | DESCRIPTION | MATERIAL | Wt./Lb. | TOTAL Wt./Lb. |
| 22 | 1 | 17566-1-22 | BOT. SECTION: PL. 3/16" x 11.43" F.F. x 13.00" F.F. x 12'-6" LG. | ASTM A572 GR 65 | 314.99 | 314.99 |
| IP | 1 | 00-IP | ID PLATE: PL. 3/16" x 4 1/2" x 5" | ASTM A36 | 1.18 | 1.18 |
| JN | 4 | 00-JN | JACKING NUT: Ø1"-8UNC HVY. HEX NUT | ASTM A563 GR DH | 0.4302 | 1.72 |
| BR | 1 | 17566-1-BR | BEARING PLATE: PL. 3/16" x 1'-4" (O.D.) | ASTM A572 GR 65 | 8.49 | 8.49 |
| NP | 1 | 00-NP | NEMA PAD: PL. 1/2" x 1 1/2" x 3" | ASTM A240 TP 304 | 0.59 | 0.59 |
| GS | 1 | 17566-1-GS | GROUND SLEEVE: PL. 3/16" x 12.245" F.F. x 12.485" F.F. x 1'-11" LG. | ASTM A572 GR 65 | 49 | 49.00 |
| | | | | | BLACK WT. | 375.97 |
| | | | | | GALV. WT. | 398.53 |

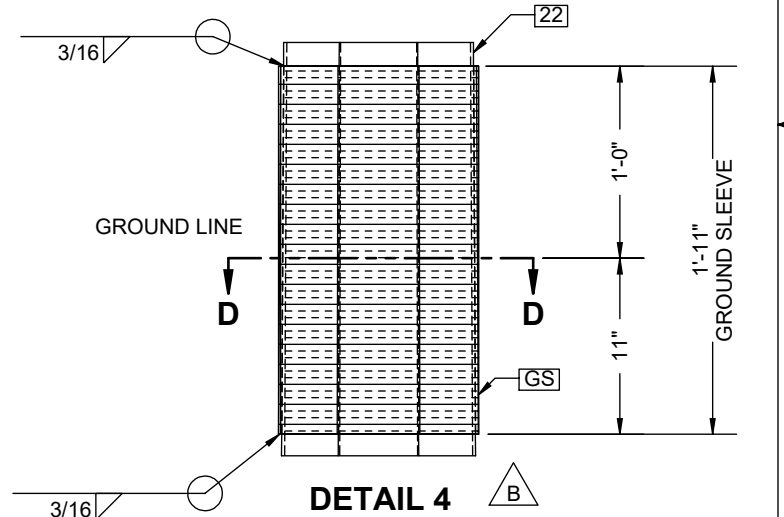
QTY. SHOWN ABOVE IS FOR BOTTOM SECTION ASSEMBLY



**SECTION E-E
BEARING PLATE**



SECTION D-D



DETAIL 4

**FINISH:
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PER ASTM A123**

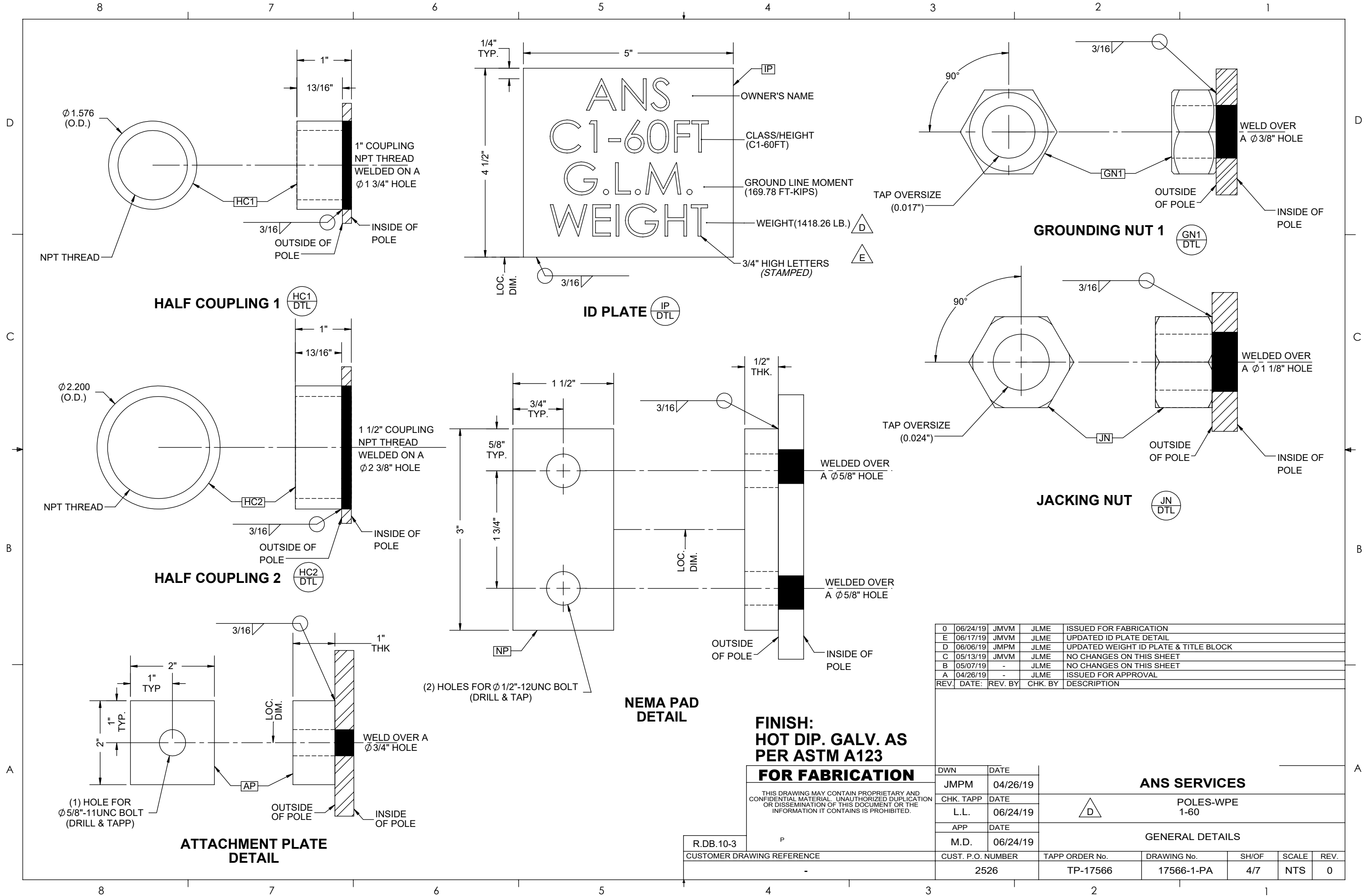
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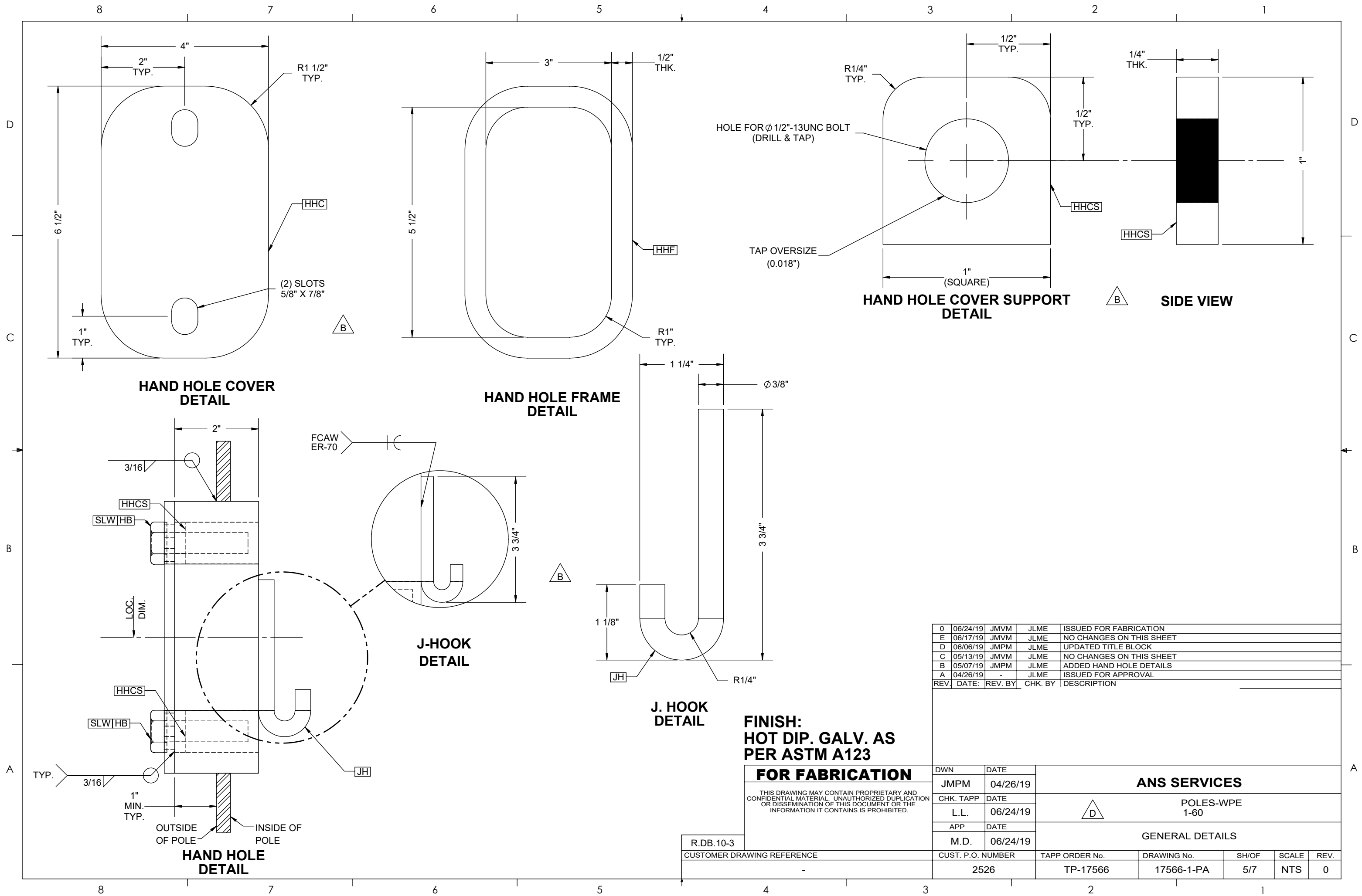
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| E | 06/17/19 | JMVM | JLME | NO CHANGES ON THIS SHEET |
| D | 06/06/19 | JMPM | JLME | UPDATED TITLE BLOCK |
| C | 05/13/19 | JMVM | JLME | NO CHANGES ON THIS SHEET |
| B | 05/07/19 | JMPM | JLME | UPDATED BOT. SECTION & GALV. WT. |
| A | 04/26/19 | - | JLME | ISSUED FOR APPROVAL |

| | | | | | |
|-----------|----------|---|--|--|--|
| DWN | DATE | ANS SERVICES POLES-WPE 1-60 BOT. SECTION LAYOUT | | | |
| JMPM | 04/26/19 | | | | |
| CHK. TAPP | DATE | | | | |
| L.L. | 06/24/19 | | | | |
| APP | DATE | | | | |
| M.D. | 06/24/19 | | | | |

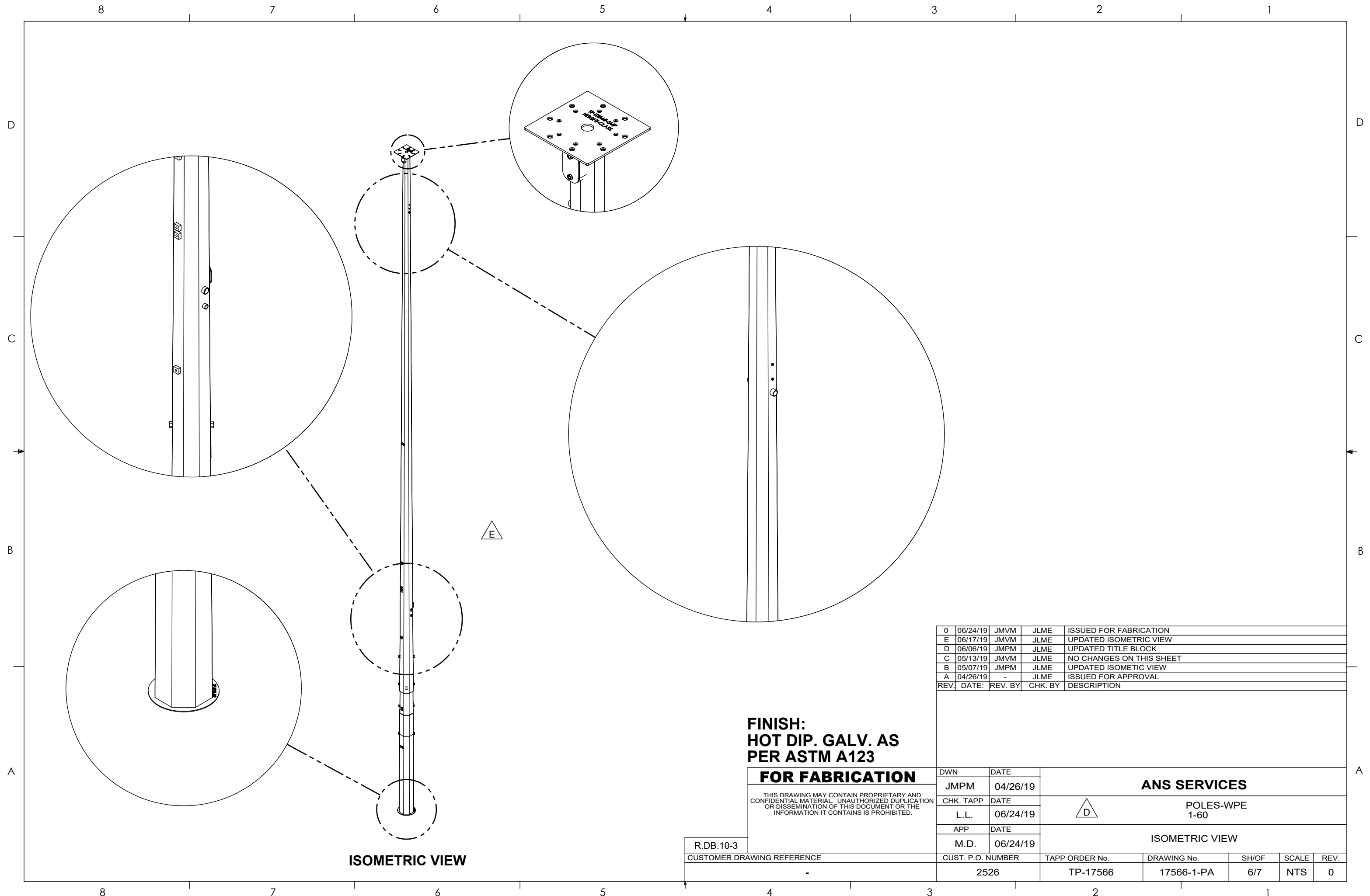
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|-----------|----------------------------|-------------------|----------------|-------------|-------|-------|------|
| R.DB.10-3 | CUSTOMER DRAWING REFERENCE | CUST. P.O. NUMBER | TAPP ORDER No. | DRAWING No. | SH/OF | SCALE | REV. |
| | | 2526 | TP-17566 | 17566-1-PA | 3/7 | NTS | 0 |





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| E | 06/17/19 | JMVM | JLME | NO CHANGES ON THIS SHEET |
| D | 06/06/19 | JMPM | JLME | UPDATED TITLE BLOCK |
| C | 05/13/19 | JMVM | JLME | NO CHANGES ON THIS SHEET |
| B | 05/07/19 | JMPM | JLME | ADDED HAND HOLE DETAILS |
| A | 04/26/19 | - | JLME | ISSUED FOR APPROVAL |

| DWN | DATE | ANS SERVICES | | | |
|-----------|----------|---|--|--|--|
| JMPM | 04/26/19 | POLES-WPE 1-60 | | | |
| CHK. TAPP | DATE | GENERAL DETAILS CUSTOMER DRAWING REFERENCE: R.DB.10-3 CUST. P.O. NUMBER: 2526 TAPP ORDER No.: TP-17566 DRAWING No.: 17566-1-PA SH/OF: 5/7 SCALE: NTS REV.: 0 | | | |
| L.L. | 06/24/19 | | | | |
| APP | DATE | | | | |
| M.D. | 06/24/19 | | | | |




ISOMETRIC VIEW

**FINISH:
HOT DIP. GALV. AS
PER ASTM A123**

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| 0 | 06/24/19 | JMVM | JLME | ISSUED FOR FABRICATION |
| E | 06/17/19 | JMVM | JLME | UPDATED ISOMETRIC VIEW |
| D | 06/06/19 | JMPM | JLME | UPDATED TITLE BLOCK |
| C | 05/13/19 | JMVM | JLME | NO CHANGES ON THIS SHEET |
| B | 05/07/19 | JMPM | JLME | UPDATED ISOMETRIC VIEW |
| A | 04/26/19 | - | JLME | ISSUED FOR APPROVAL |

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|----------------------------|----------|---|----------------|-------------|-------|-------|------|
| JMPM | 04/26/19 | ANS SERVICES | | | | | |
| CHK. TAPP | DATE | | | | | | |
| L.L. | 06/24/19 |  POLES-WPE 1-60 | | | | | |
| APP | DATE | ISOMETRIC VIEW | | | | | |
| M.D. | 06/24/19 | | | | | | |
| CUSTOMER DRAWING REFERENCE | | CUST. P.O. NUMBER | TAPP ORDER No. | DRAWING No. | SH/OF | SCALE | REV. |
| R.DB.10-3 | | 2526 | TP-17566 | 17566-1-PA | 6/7 | NTS | 0 |

SLIP JOINT ASSEMBLY

THIS STANDARD DEFINES THE STANDARD PROCEDURE FOR JACKING SLIP-FIT POLES TOGETHER.

1. POLE ASSEMBLY SHOULD BE DONE ON THE GROUND AS PER TAPP'S RECOMMENDATION AND STANDARD. HOWEVER, THIS CAN BE OPTED OUT BY THE CONTRACTOR IF OTHER CONDITIONS APPLY.

2. ALIGN THE SECTION PROPERLY, THERE IS A 2" LONG WELD ON THE MATCHING CORNERS OF EACH SECTION. LINE THEM UP FOR PROPER SECTION ALIGNMENT.

3. THERE ARE SEVERAL ACCEPTABLE TYPES OF EQUIPMENT FOR PULLING THE SECTION TOGETHER: HYDRAULIC JACKS, ARE USED IN COMMON PRACTICE.

4. IF ASSEMBLED ON THE GROUND, THE SECTIONS SHALL BE BLOCKED. LUBRICATION MAY BE APPLIED TO THE MALE SECTION TO AID IN SLIPPING PROCESS. LIQUID DISH WASHING DETERGENT IS PREFERRED. DO NOT USE OIL BASED LUBRICANTS. THEY WILL BE DIFFICULT, IF NOT IMPOSSIBLE TO REMOVE.

5. IF THE MINIMUM SPLICE LENGTH CANNOT BE ACHIEVED, OR IF THERE ARE VISIBLE GAPS (IN EXCESS OF 3/16" ON OPPOSITE FLATS) AFTER THE SECTIONS TRESPASS MAXIMUM SLIP - TRANSAMERICAN POWER SHOULD BE CONTACTED BEFORE PROCEEDING WITH THE ERECTION. UNDER NO CIRCUMSTANCE SHOULD THE STRUCTURE BE ERECTED OR LOADED IF EITHER OF THESE CONDITIONS EXIST.

6. RECOMMENDED JACKING FORCES


| MINIMUM PLATE THICKNESS (INCHES) | MINIMUM JACKING FORCE PER SIDE (POUNDS) | MAXIMUM JACKING FORCE PER SIDE (POUNDS) |
|---|---|---|
| 3/16 | 19,000 | 25,800 |
| 7/32 | 22,800 | 29,400 |
| 1/4 | 26,800 | 32,700 |
| 5/16 | 34,700 | 42,000 |
| 3/8 | 42,500 | 47,500 |
| 7/16 and Above | 48,000 | 52,000 |

**FINISH:
HOT DIP. GALV. AS
PER ASTM A123**

FOR FABRICATION

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| | | | | | | |
|----------------------------|-------------------|---|-------------|-------|-------|------|
| DWN | DATE | ANS SERVICES OLES-WPE 1-60 SLIP JOINT PROCEDURE | | | | |
| JMPM | 04/26/19 | | | | | |
| CHK. TAPP | DATE | | | | | |
| L.L. | 06/24/19 | | | | | |
| APP | DATE |  | | | | |
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