NOT TO SCALE

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS DELIVERY STANDARD PLAN FOR
TRAFFIC SIGNAL MAST ARM POLE AND
MAST ARM DETAILS - CATEGORY I

SIG-030-B SHEET 1 of 6

FILE: RefDoc/TR/Signarts/Web/Sp Det/FIn/SIG030B.dgn Rev. 11/05/18
## NOTES:

1. THE DESIGN OF THIS STRUCTURE IS BASED ON THE 2001 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS FOR 90 MPH WIND LOAD AND CATEGORY I WITH GALLOPING, NATURAL WIND GUSTS, AND TRUCK INDUCED FATIGUE LOADING.

2. WELD THE LONGITUDINAL ARM SEAM ON THE INBOARD AND OUTBOARD SECTIONS OF THE TELESCOPIC FIELD SPLICE WITH A COMPLETE JOINT PENETRATION (CJP) WELD FOR A MINIMUM OF 6 INCHES LONG. IN ADDITION, LONGITUDINAL ARM SEAMS MUST BE WELDED FOR A MINIMUM OF 6 INCHES FROM TUBE TO PLATE CJP WELDS.

3. WELD SEAM MUST BE 90° FROM THE HANDHOLE AT THE BASE.

4. LUMINAIRE ARM IS 11 GAUGE ROUND STEEL WITH 0.140 INCH PER FOOT TAPER.

5. BACKING BAR FOR PIPE TO BASE PLATE AND MAST ARM TO MAST ARM PLATE MUST BE MINIMUM 5/16 INCH X 2 INCH PLATE.

6. 1/2 INCH DIAMETER (4) ROUND STOCK C-HOOK ATTACHED TO ALL POLE SIZES. 3/4 INCH SCHEDULE (SCH.) 40 PIPE ATTACHED TO ALL POLE SIZES AND INBOARD AND OUTBOARD ARM.

7. S.S. DENOTES STAINLESS STEEL, GA. DENOTES GAUGE, O.D. DENOTES OUTSIDE DIAMETER, I.D. DENOTES INSIDE DIAMETER, H.S. DENOTES HIGH STRENGTH.

---

### MAST ARM TUBE TAPER IS 0.140 IN/FT

* DIAMETERS GIVEN ARE O.D.

** DIAMETERS GIVEN ARE O.D.

---

### ARM/POLE S.S. ID TAG DETAIL

TO BE ATTACHED TO POLE OR MAST ARM AT LOCATIONS SHOWN 4" FROM BASE OF TUBE BELOW HANDHOLE WITH (4) #8 X 3/8" S.S. TYPE U DRIVE SCREWS.

LETTERS STAMPED IN 3/8" CHARACTERS

---

### BASE S.S. ID TAG DETAIL

WELD TAG TO EDGE OF BASE PLATE WITH (4) #8 X 3/8" S.S. TYPE U DRIVE SCREWS.

LETTERS STAMPED IN 3/8" CHARACTERS

---

### TABLE: ROUND TAPERED STEEL MAST ARM

<table>
<thead>
<tr>
<th>MAST ARM LENGTH</th>
<th>* MAST ARM DIMENSIONS</th>
<th>MTG HT SINGLE</th>
<th>** MAST ARM DIMENSIONS</th>
<th>MTG HT TWIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>20'-0&quot;</td>
<td>0.1793&quot;-16.50&quot; x 13.70&quot; x 20'-0&quot;</td>
<td>18'-6&quot;</td>
<td>18'-6&quot; &amp; 21'-0&quot;</td>
<td></td>
</tr>
<tr>
<td>25'-0&quot;</td>
<td>0.1793&quot;-16.50&quot; x 13.00&quot; x 25'-0&quot;</td>
<td>13.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30'-0&quot;</td>
<td>0.1793&quot;-16.50&quot; x 12.30&quot; x 30'-0&quot;</td>
<td>12.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35'-0&quot;</td>
<td>0.4290&quot;-16.50&quot; x 13.70&quot; x 20'-0&quot;</td>
<td>13.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40'-0&quot;</td>
<td>0.4290&quot;-16.50&quot; x 13.70&quot; x 20'-0&quot;</td>
<td>13.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45'-0&quot;</td>
<td>0.4290&quot;-16.50&quot; x 13.70&quot; x 20'-0&quot;</td>
<td>13.70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50'-0&quot;</td>
<td>0.4290&quot;-16.50&quot; x 13.70&quot; x 20'-0&quot;</td>
<td>13.70</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### TABLE: ROUND TAPERED STEEL MAST ARM POLE

<table>
<thead>
<tr>
<th>POLE LENGTH</th>
<th>* POLE DIMENSIONS</th>
<th>LUMINAIRE ARM</th>
</tr>
</thead>
<tbody>
<tr>
<td>20'-0&quot;</td>
<td>0.1793&quot;-16.50&quot; x 13.70&quot; x 20'-0&quot;</td>
<td>NO</td>
</tr>
<tr>
<td>25'-0&quot;</td>
<td>0.1793&quot;-16.50&quot; x 13.00&quot; x 25'-0&quot;</td>
<td>YES</td>
</tr>
<tr>
<td>30'-0&quot;</td>
<td>0.1793&quot;-16.50&quot; x 12.30&quot; x 30'-0&quot;</td>
<td>NO</td>
</tr>
<tr>
<td>35'-0&quot;</td>
<td>0.4290&quot;-16.50&quot; x 13.70&quot; x 20'-0&quot;</td>
<td>NO</td>
</tr>
<tr>
<td>40'-0&quot;</td>
<td>0.4290&quot;-16.50&quot; x 13.70&quot; x 20'-0&quot;</td>
<td>NO</td>
</tr>
<tr>
<td>45'-0&quot;</td>
<td>0.4290&quot;-16.50&quot; x 13.70&quot; x 20'-0&quot;</td>
<td>NO</td>
</tr>
<tr>
<td>50'-0&quot;</td>
<td>0.4290&quot;-16.50&quot; x 13.70&quot; x 20'-0&quot;</td>
<td>NO</td>
</tr>
</tbody>
</table>

POLE TUBE TAPER IS 0.140 IN/FT

* DIAMETERS GIVEN ARE O.D.
**DETAIL A**

Orientation of SCH. 40 pipe 180° from hand. Hole at base & C-hook 180° from SCH. 40 pipe.

**DETAIL B**

(35'-0" arms and greater)

5/8" Ø bolt with "ANCO" lock nuts. 3/4" Ø hole factory drilled in outboard tube. Field drill inboard tube. (Orientation must be horizontal)

**SECTION A-A**

INBOARD/OUTBOARD ARM LIFTING DEVICE
**Mast Arm Clamp Washer Placement**

1. **Grounding Provision**
   - 3/8" Ø S.S. Hex bolt to mount mechanical lug to accommodate min. 1 #4 wire.

2. **1/4" X 1" S.S. Back Up Bar to Secure Hand Hole Cover**
   - (Horizontal Orientation)

3. **1" X 1" X 1/2" Square Stock (Drill & Tap)**

4. **6" X 10" Bar Bottom Hand Hole**

5. **Orientation of Hand Hole**

6. **4" X 6½" Bar Top Hand Hole**
   - Design with 29'-0" Pole Only

---

Michigan Department of Transportation
Bureau of Highways Delivery Standard Plan

RefDoc/TR/Signals/WEB/Sp Def/Fin/SIG-030-B.dgn
Rev. 11/05/18
**SECTION D-D**

(6) 2\(\frac{7}{16}\)" Ø HOLES FOR 
(6) 1\(\frac{3}{16}\)" ANCHOR BOLTS 
EQUALLY SPACED AT 60° 
ON A 24" Ø BOLT CIRCLE

**DETAIL D**

(VIEW ROTATED 90 DEGREES)

* SEAL JOINT WITH CAULK AFTER GALVANIZING

**SECTION E-E**

9/16" Ø HOLE FOR 
1/2" Ø H.S. BOLT. 
TACK WELD 1/2" HEX 
NUT OR TAP HOLE IN 
3/4" SQUARE STOCK

**POLE AND MAST ARM CAP DETAIL**