GENERAL NOTES

1. Shop Drawings. This Index is considered fully detailed, only submit shop drawings for minor modifications not detailed in the Plans.

2. Prior to Fabrication: Verify the installed foundation elevation will result in the required signal elevation and adjust the Pole height as needed.

3. Details for Signal and Sign locations, Signal Head attachment, Sign attachment, Pedestrian Head attachment, and Foundation Construction are not shown for simplicity.

4. Materials:
   A. Poles, Mast Arms and Backing Rings
      - less than ½\": ASTM A1011 Grade 50, 55, 60 or 65
      - Greater than or equal to ½\": ASTM A572 Grade 50, 55, 60 or 65
   B. ASTM A586 Grade A (53 ksi yield) or Grade B (60 ksi yield)
   C. Steel Plates: ASTM A36
   D. Bolts, Nuts and Washers:
      - Hot Dip Galvanize after fabrication.
   E. Wire Access holes are 1\(\frac{1}{2}\)" or less in diameter.

5. Fabrication:
   A. Pole and Mast Arm Taper: Change diameter at a rate of 0.14 inches per foot.
   B. Upright splices are not allowed. Transverse welds are only permitted at the base.
   C. First and Second arm camber angle = 2°
   D. Provide bolt hole diameters as follows:
      - Anchor Bolts: Bolt diameter plus ¾\" (Max.)
      - Anchor Bolts: Bolt diameter plus ½\" (Max.)
      - Face handhole perpendicular from arm on single arm poles, perpendicular from first arm of double arm poles facing away from traffic or see special instructions on the Mast Arm Tabulation Sheet.
      - Steel Plates: ASTM A36
      - Plate Washers: ASTM A563 (2 per bolt)
      - Threaded Bars/Study: ASTM A36 or ASTM A307
   E. Pedestrian Head attachment, and Foundation Conduit are not shown for simplicity.

6. Coatings:
   A. Fill-Top washers and self-locking nuts are not permitted
   B. Hot Dip Galvanize after fabrication.
   C. Provide a ‘J’ or ‘C’ hook at the top of the pole for signal wiring support

7. Construction:
   A. Foundation: Specification Section 455 Drilled Shaft, except that payment is included in the cost of the Mast Arm.
   B. Install Pole vertically.
   C. Place Structural grout pad with drain between top of foundation and bottom of baseplate in accordance with Specification Section 649-7.
   D. Attach Sign Panels and Signals centered on the elevation of the Mast Arm.

TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>SHEET NO.</th>
<th>SUBJECT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Foundation and Notes</td>
</tr>
<tr>
<td>2</td>
<td>Foundation and Base Plate Details</td>
</tr>
<tr>
<td>3</td>
<td>Single Arm Connection and Splice Details</td>
</tr>
<tr>
<td>4</td>
<td>Double Arm Connection and Splice Details</td>
</tr>
<tr>
<td>5</td>
<td>Luminaire Arm and Connection Details</td>
</tr>
<tr>
<td>6</td>
<td>Handhole and Pole Top Details</td>
</tr>
</tbody>
</table>

EBLATION AND NOTES

FY 2017-18
DESIGN STANDARDS

MAST ARM ASSEMBLIES

INDEX NO. 17745
SHEET NO. 1 of 6

REVISION
01/01/16

LAST
DESIGN
NOTES:

1. The Structural Grout Pad diameter may be reduced where the footprint of the Grout Pad does not provide adequate clearance for the sidewalk and/or accessibility considerations.

2. See Index No. 17743 and the plans for actual quantity of bolts in the Base Plate Connection.

3. The bottom hex nut of the double nuts shown in Section A-A may be substituted by a half-height jam nut. Provide individual nut covers (not shown) for each bolt.
MAST ARM ASSEMBLY

ARM SPLICE

SINGLE ARM CONNECTION

NOTE:
1. Install the 'Slip Joint' splice with a tight fit and no change in the Mast Arm taper due to the splice.
2. Details shown on this sheet are for 12 sided pole sections. However, sections with more than 12 sides and round sections are permitted provided outside diameter and wall thickness are not reduced.
3. Match mark the Arm and Connection Plates to ensure proper assembly and the seam weld is in the proper location (seam located at the bottom side of the Arm).
DOUBLE ARM CONNECTIONS & SPLICE DETAILS

SECTION F-F
- Provide Ultrasonic Testing for Lamellar Tearing in Connection Plate when using 'SP' Ø Connection Bolt.
- Center of Pole
- 'SF' Ø Wiring Hole
- 'SP' Ø Connection Bolt
- See DETAIL 'F'
- 'SD' Plates (Typ.)
- Connection Plates (Typ.) Offset to Avoid Side Connection Plates (Typ.)
- 'SF' Plates (Typ.)
- 'SF' Plates (Typ.)
- 'SF' Plates (Typ.)
- Minimum Internal Bend Radius = 5x Wall Thickness (1" Min.)
- Seam Weld (Typ. = 5x Wall Thickness (1" Min.)
- Inside Radius Measured Center To Flat
- Wall Thickness 'SD', 'SH'
- Min. 'SD', 'SN'
- (May Vary For Special Design)

NOTE:
1. Install the 'Slip Joint' splice with a tight fit and no change in the Mast Arm taper due to the splice.
2. Details shown on this sheet are for 12 sided pole sections. However, sections with more than 12 sides and round sections are permitted provided outside diameter and wall thickness are not reduced.
3. Match mark the Arm and Connection Plates to ensure proper assembly and the seam weld is in the proper location (seam located at the bottom side of the Arm).
4. 'UF' measured counter clockwise from 'SF' First Mast Arm Extension.
5. Adjust width of top and bottom Connection Plates to maintain minimum clearance shown.

MAST ARM ASSEMBLIES
**NOTES:**
1. Luminaire type and luminaire length may be found in the Lighting Plans.
2. Align Luminaire Arm with Single Mast Arm or First Arm of Double Mast Arm unless indicated otherwise in the plans.
3. The fabricator may substitute a 1/2" thick bent plate with the same flange width, height, and length as the MC 10x33.6 Channel section.
4. 'LL' measure counter clockwise from First Mast Arm.
**Mast Arm Assembly**

1. Handhole covers may be omitted when Terminal Compartment is provided.
2. Terminal Compartment is optional. See Mast Arm Tabulation to see if required and for locations.
3. Terminal Compartment Frame Height 2'-0" minimum to 2'-6" maximum. Align bottom of Terminal Compartment a minimum of 1" below the bottom of the Handhole Frame.
4. Any combination of Options 'a' or 'b' may be used, provided both lifting and wiring is accommodated.

**Cover**

- 4" OD x 1/2" Wall
- Thru Arm Mast Arm Handhole Frame
- Threaded Hole For 1/2" Hex Head Screw (Typ.)

**Frame**

- Tack Welded Cover Clip (Typ.)
- Mast Arm Handhole Frame
- 11 Gage Handhole Cover
- 5/16" Hole (Typ.)

** SECTION J-J**

- 4" OD x 1/2" Wall
- Thru Arm Mast Arm Handhole Frame
- Threaded Hole For 1/2" Hex Head Screw (Typ.)
- Tack Welded Cover Clip (Typ.)
- Full Penetration Weld
- Partial Penetration Weld

**SECTION K-K (Thru Handhole)**

- 4" OD x 1/2" Wall
- Thru Arm Mast Arm Handhole Frame
- Threaded Hole For 1/2" Hex Head Screw (Typ.)
- Tack Welded Cover Clip (Typ.)
- Handhole Frame
- 5/16" Hole (Typ.)
- Full Penetration Weld
- Partial Penetration Weld

**SECTION K-K (Terminal Compartment)**

- 4" OD x 1/2" Wall
- Thru Arm Mast Arm Handhole Frame
- Threaded Hole For 1/2" Hex Head Screw (Typ.)
- Tack Welded Cover Clip (Typ.)
- Handhole Frame
- 5/16" Hole (Typ.)
- Full Penetration Weld
- Partial Penetration Weld

**Handhole and Pole Top Details**

- Flat Washer
- Pole Cap Plate
- Pole
- Center Of Pole, Pole Cap And Lifting Bar
- 1/2" x 2" Lifting Bar With (Bolt Size + 5/8") Hole And Matching Nut Tack Weld To underside of Bar
- 1/4 Overhang (Min.)
- Lifting Bar
- Nut
- 1" Min.
- Pole Cap Plate
- Pole
- Center Of Pole, Pole Cap And Lifting Bar
- 1/2" Min. Thick.
- Cast Aluminum Pole Cap Plate
- 1/4 Min. Thick.
- C Hook For Wiring And Lifting, 1/2" Commercial Grade Hot Rolled Bar Welded To Inside Of Pole

**MAST ARM ASSEMBLY INDEX NO. 17745 SHEET NO. 6 of 6**

**DESIGN STANDARDS FY 2017-18**

**REV ISIO N NO. 01/01/16 LAST REVIS ION 01/01/16 DESCRIPTION:**