GENERAL NOTES

1. Poles are designed to support the following:
   A. Luminaire Effective Projected Area (EPA): 1.55 SF
   B. Weight: 75 lb

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

3. Materials:
   A. Poles, Pole Connection Extrusions and Arm Extrusions: ASTM B221, Alloy 6063-T6
   B. Bars, Plates, Stiffeners and Backer Ring: ASTM B212, Alloy 6063-T6
   C. Caps and Covers: ASTM B221, Alloy 319-F
   D. Steel Bearing Plate: ASTM A709 or ASTM A36 Grade 36
   E. Aluminum Weld Material: ER 4043
   G. Bolts, Nuts and Washers:
      a. Shoe Base Bolts: ASTM A325 Type 1
      b. Nut: ASTM A563 Grade Dih Heavy-Hex
      c. Washer: ASTM F364 Type 1
   H. Anchor Bolts, Nuts, and Washers:
      a. Anchor Bolts: ASTM F1554 Grade 55
      b. Nut: ASTM A563 Grade A Heavy-Hex
      c. Plate Washer: ASTM A36
   I. Stainless Steel Fasteners: ASTM 316
   J. Nut Covers: ASTM B26 (319-F)
   K. Concrete: Class 1
   L. Reinforcing Steel: Specification Section 415

4. Fabrication:
   A. Upright Splices: Not Allowed. Transverse welds are only allowed at the base.
   B. Roadway Light Pole Taper: Taper as required to provide a round top O.D. of 6" and a base O.D. of 10". Portions of the pole near the base shoe and at the arm connections may be held constant at 10" and 6" respectively to simplify fabrication.
   C. Median Barrier Mounted Light Pole Taper: Taper as required to provide a 6" O.D. round top with an 11" x 7" O.D. oblong base. Portions of the pole near the base and at the arm connections may be held constant at 11" x 7" oblong and 6" round respectively to simplify fabrication.
   D. Provide C, D, O or U hole at top of pole for electrical wires.
   E. Equip poles located on bridges, walls and concrete median barriers/Traffic Railings with a vibration damper.
   F. Provide all welding in accordance with Specification Section 460-6.4.
   G. Embedded Junction Boxes (EJB):
      a. Weld all seams continuously and grind smooth.
      b. Hot Dip Galvanize after Fabrication.
      c. Provide a watertight cover with neoprene gasket and secure cover with galvanized screws.
   H. For Median Barrier Mounted Aluminum Light Poles, the fabricator must demonstrate the ability to produce a crack free pole. The fabricator's Department-approved QC Plan must contain the following information prior to fabrication:
      a. Tests demonstrating a pole with a 1/8" wall thickness achieves and ultimate moment capacity of 36 kip-ft in the strong axis and 30 kip-ft in the weak axis.
      b. Tests demonstrating a pole with a 3/16" wall thickness achieves and ultimate moment capacity of 44 kip-ft in the strong axis and 37 kip-ft in the weak axis.
      c. Test results showing the pole does not buckle at the shape transition area under the ultimate moment capacity loads.
      d. Complete details and calculations for the reinforced 4" x 6" (Min.) handhole located 1'-6" above the base plate.
   I. Identification Tag: (Submit details for approval.)
      a. 2" x 4" (Max.) aluminum identification tag.
      b. Secured to transformer base with 5/16" stainless steel rivets or screws.
      c. Include the following information on the ID Tag:
         1. Financial Project ID
         2. Pole Height
         3. Manufacturer's Name
   J. Finish:
      A. Pole and Arm Finish: 50 grit satin rubbed.
      B. Galvanize Steel Bolts, Screws, Nuts and Washers: ASTM F2329
      C. Hot Dip Galvanize EJB and other steel items including poles: ASTM A123

5. Coatings/Finish:
   A. Pole and Arm Finish: 50 grit satin rubbed.
   B. Galvanize Steel Bolts, Screws, Nuts and Washers: ASTM F2329
   C. Hot Dip Galvanize EJB and other steel items including poles: ASTM A123

6. Construction:
   A. Foundation: Specification Section 455, except payment for the foundation is included in the cost of the pole.
   B. Frangible Base and Clamp:
      a. Certify that the Clamp and Frangible Transformer Base Design are capable of providing the required capacity.
      b. Certify the Base conforms to the current FHWA required AASHTO Frangibility Requirements, tested under NCHRP Report 350 Guidelines (e.g. Akron Foundry T91-173).
      C. Do not erect pole without Luminaire attached.

7. Payment Note: Include the cost of the EJB in the cost of the median barrier or Traffic Railing it is embedded in.
**ARM CONNECTION DETAIL**

**ARM TABLE**

<table>
<thead>
<tr>
<th>Wind Speed (MPH)</th>
<th>Arm Length (FT)</th>
<th>Upper Arm O.D. (IN)</th>
<th>Upper Arm WELD (IN)</th>
<th>Lower Arm O.D. (IN)</th>
<th>Lower Arm WELD (IN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>110</td>
<td>8</td>
<td>3.38</td>
<td>0.188</td>
<td>3.38</td>
<td>0.188</td>
</tr>
<tr>
<td>110</td>
<td>10 &amp; 12</td>
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<td>0.188</td>
<td>3.63</td>
<td>0.188</td>
</tr>
<tr>
<td>130</td>
<td>8 &amp; 10</td>
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<td>0.188</td>
<td>3.63</td>
<td>0.188</td>
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<tr>
<td>130</td>
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<td>4.63</td>
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<tr>
<td>150</td>
<td>8</td>
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<td>3.63</td>
<td>0.188</td>
</tr>
<tr>
<td>150</td>
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<td>0.188</td>
<td>3.63</td>
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<td>4.63</td>
<td>0.313</td>
<td>4.63</td>
<td>0.313</td>
</tr>
</tbody>
</table>

* Increase Member Wall Thickness as necessary to meet minimum requirements of the Welding Code for the connection weld size shown in the arm and pole tables.

**ARM SECTION** (Connection at Lower Arm Similar)

**SECTION A-A**

Connection Weld Size Shown in the Arm and Pole Tables. Minimum Requirements of the Welding Code for the Arm Connection Weld Size Shown in the Arm and Pole Tables. Increase Member Wall Thickness as Necessary to meet minimum requirements of the Welding Code for the connection weld size shown in the arm and pole tables.

**VIBRATION DAMPER ELEVATION**

**HIGH TEMP VINYL CAP DETAIL**

ARM TUBE EXTRUSIONS NOTES:

- At the pole connections, provide arm tube extrusions with dimensions as shown in the ARM SECTION and as tabulated in the ARM DATA tables. Uniformly transition elliptical section to a cylindrical section at the arm connection.
- The fabricator may substitute elliptical cross sections other than those tabulated, provided the section properties about the vertical axis and the area of the section equal or exceed that of the required section, and provide minimum wall thickness of 1/8" nominal at all pole connection extrusion.
- The outside diameter about the minor axis should be held at 2" nominal and within the Aluminum Association tolerances.

The outside diameter about the minor axis should be held at 2" nominal and within the Aluminum Association tolerances.

The outside diameter about the minor axis should be held at 2" nominal and within the Aluminum Association tolerances.
The text contains descriptions of design standards for aluminum light poles, including specifications for pole wall thicknesses, wind speeds, and various structural details. The standards are illustrated with diagrams showing components such as base plates, stiffener plates, and bearing plates, along with dimensions and notes on installation methods. The text is a part of a larger document that likely covers comprehensive design and construction guidelines for aluminum lighting poles.
Bridge Deck

Bars 5S (Typ.)

Optional Constr. Jt.

Bars 5R (Typ.)

Bars 5W (Typ.)

2" Ø Conduit

1" Ø Conduit

Min. 5' from open joint

See Detail 'A' Sheet 5

4 = 1½" Ø Anchor Bolts

END VIEW

Bridge Deck

1" Ø Conduit

Base Plate

For reinforcing steel see Index 421

Bars SW

Bearing Plate

Construction Joint

Bars 5R and 5W @ 1'-0"

Bars 5R and 5W @ 8"

Bars 5R and 5W @ 1'-0"

ELEVATION

(Longitudinal and transverse deck reinforcing steel not shown)

Bridge Deck

2' Min.

2' Min.

6" Min. Embedment

Bridge Deck

8" Min.

BAR BENDING DIAGRAMS

PLAN

(Reinforcing steel not shown)

7'-3"

2' Min.

Bars 5R and 5W @ 1'-0"

Bars 5R and 5W @ 8"

See Detail 'A' Sheet 5

4 = 1½" Ø Anchor Bolts

7' Min.

(NOTES:

1. For Base Plate Details, Bearing Plate Details and Detail 'A' see sheet 5.

2. See Index 421 for details of Traffic Railing (Median 32" F Shape) and angles EA and EB.)

DETAILS FOR TRAFFIC RAILING (MEDIAN 32" F SHAPE) MOUNTED ALUMINUM LIGHT POLE

STANDARD ALUMINUM LIGHTING

2016 DESIGN STANDARDS

INDEX NO.

17515

SHEET NO.

8 of 8

REV NO.

17515

6/18/2015

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REVISION

NO.

SHEET

INDEX

DESCRIPTION:

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LAST

REVISION

07/01/15

LONGITUDE AND TRANSVERSE DECK REINFORCING STEEL NOT SHOWN)

(Reinforcing steel not shown)