GENERAL NOTES:

1. Poles are designed to support the following:
   a. Luminaire Effective Projected Area (EPA): 1.55 SF
   b. Weight: 55 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. Pole: Pole Connection Extrusions and Arm Extrusions: ASTM B321, Alloy 6063-T6 or Alloy 6061-T6
   b. Bars, Plates, Stiffeners and Backer Ring: ASTM B221, Alloy 6063-T6
   c. Caps and Covers: ASTM B 826, Alloy 319-F
   d. Steel Bearing Plate: ASTM A573, Grade 50 or ASTM A36
   e. Anchor Bolts: ASTM F3125, Grade A325, Type 1
   f. Nuts: ASTM A563 Grade A Heavy-Hex
   g. Nut Covers: ASTM B26 (319-F)
   h. Steel Bearing Plate Washers: ASTM A36
   i. Concrete: Class 1
   j. Stainless Steel Fasteners: ASTM F593 Alloy Group 2, Condition A, CW1 or SH1
   k. Nut Covers: ASTM B26, Alloy 319-F
   l. Reinforcing Steel: Specification 415
4. Fabrication:
   a. Weld Arm and Pole (Alloy 6063) in the 14 ton temper using 4043 filler. Age the Arm and Pole artificially to the T6 temper after welding.
   b. Transverse welds are only allowed at the base.
   c. Roadway Light Pole Taper: Taper as required to provide a round top O.D. of 6" and a base O.D. of 8' for 20' and 25' mounting heights and 10' O.D. for poles with 30' to 50' mounting heights. Portions of the pole near the base shoe and at the arm connections may be held constant to simplify fabrication.
   d. 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.
   e. Provide 2", 3", or 4", and #4, 5, or 5-6 gauges with a 7/8" gap for electrical wires.
   f. Provide a watertight cover with neoprene gasket and secure cover with galvanized screws.
   g. Perform all welding in accordance with AWS D1.2.
   h. Embedded Junction Box (EJB):
      i. Steel: ASTM A307 or ASTM A325
      j. Steel Bolts: ASTM A563 Grade A Heavy-Hex
      k. Nut Covers: ASTM B26, Alloy 319-F
      l. Reinforcing Steel: Specification 415
5. Coatings/Finish:
   a. Pole and Arm Finish: 50 grit satin rubbed.
   b. Galvanize Steel Bolts, Screws, Nuts and Washers: ASTM F2329
   c. Not Dip Galvanize EJB and other steel items including poles and plate washers: ASTM A123
6. Construction:
   a. Foundation: Specification 455, except payment for the foundation is included in the cost of the pole.
   b. Frangible Base, Base Shoe, and Clamp:
      i. Certify that the Clamp, Frangible Transformer Base, and Base Shoe Design are capable of providing the required capacity.
      j. Certify the Base conforms to the current FHWA required AASHTO Frangibility Requirements, tested under NCHRP Report 350 Guidelines (e.g. Akron Foundry TB1-17).
   c. Do not erect pole without Luminaire attached.
7. Embedded Junction Box (EJB): Install EJBs per Note 4 and in accordance with Specification 635, as shown on the following Sheets.
8. Wind Speed by County:
   a. 160 MPH
   b. 140 MPH
   c. 120 MPH
   d. 100 MPH
   e. 80 MPH
9. Foundation:
   b. Certify that the Clamp, Frangible Transformer Base, and Base Shoe Design are capable of providing the required capacity.
   c. Do not erect pole without Luminaire attached.
   d. Do not erect pole without Luminaire attached.
10. Coatings/Finish:
    a. Pole and Arm Finish: 50 grit satin rubbed.
    b. Galvanize Steel Bolts, Screws, Nuts and Washers: ASTM F2329
    c. Not Dip Galvanize EJB and other steel items including poles and plate washers: ASTM A123

INDEX

STANDARD ALUMINUM LIGHTING

715-002

INDEX

1 of 8
DANGER
HIGH VOLTAGE
DO NOT TAMPER

Revision:

Description:

11/01/19

10/14/2019

2:49:14 PM

Standard Aluminum Lighting

FY 2020-21

Standard Plans

715-002

Sheet 2 of 8
**SECTION A-A**

*Connection At Lower Arm Similar*

- **Fixture Arm Length** = 6', 10', 12' or 15'
  
  - 6' 3 x (Fixture Arm Length - 3'-0") / 4
  
  - 10' 3'-0" (8' and 10' Fixture Arm Lengths)
  
  - 12' 5'-6" (12' and 15' Fixture Arm Lengths)
  
- **3'-0" (8 and 10' Fixture Arm Lengths)** 5'-6" (12 and 15' Fixture Arm Lengths)

**ARM TUBE EXTRUSIONS NOTES:**

At the pole connections, provide arm tube extrusions with dimensions as shown. 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 1/16" nominal and within the Aluminum Association Tolerances.

The outside diameter about the minor axis should be held at 2 7/8" nominal and within the Aluminum Association Tolerances.

**ARM CONNECTION DETAIL**

- **Upper Arm Tube**
  
  - See Arm Section Above
  
  - Connection Extrusion Note
  
  - This Point - See Arm Detail
  
  - 4.625" (Arm A2)
  
  - 3.625" (Arm A1)
  
  - 3" Ø x 3" Bar Each Side of Arms, Extruded, Saddle, or Other Acceptable Connection

- **Lower Arm Tube**
  
  - See Arm Section Above
  
  - Provide 9/16" (Min.) Drain Holes in Underside of Arm Tubes 1/2" From the Base Weld
  
  - 4 1/8" Ø Stainless Steel Bolts with Hex Nuts and a Split Lockwasher Each Side of Pole Shown

**VIBRATION DAMPER ELEVATION**

- **ASTM A36 Hot Rolled Rod**
  
  - 1 1/4" x 1 1/4" long
  
  - ASTM A36 Hot Rolled Rod
  
  - Extrusion at Base of Upper Arm Only
  
  - Extrusion Note
  
  - Terminal Point - See Arm Detail
  
  - 1/8" Ø x 3" Bar Each End
  
  - 3" Ø Tapped Hole

**ARM & DAMPER DETAILS**

- **PVC Type 65500**
  
  - ASTM D2287
  
  - 1 1/4" Ø Tapped Hole
  
  - PVC Type 65500
  
  - ASTM D2287 (Typ.)

**HIGH TEMP VINYL CAP DETAIL**

- **ASTM B221**
  
  - 6063-T6 Aluminum Pipe
  
  - 2" x 12" Long Sch. 10
  
  - ASTM B221 Aluminum Pipe

**DIMPLE DETAIL**

- **ASTM D2287 PVC Type 65500**
  
  - 1 1/4" Ø Tapped Hole

**STANDARD ALUMINUM LIGHTING**

- **Fixture Arm Length = 6', 10', 12' or 15'**
  
  - 6' 3 x (Fixture Arm Length - 3'-0") / 4
  
  - 10' 3'-0" (8' and 10' Fixture Arm Lengths)
  
  - 12' 5'-6" (12' and 15' Fixture Arm Lengths)

- **2 4 1/2" O.D. Pipe Beyond This Point - See Arm Tube Extrusion Note**

- **Connection Extrusion Note**
  
  - Extrusion at Base of Upper Arm Only
  
  - Extrusion at Base of Upper Arm Only

- **Fillet Weld Arm Tube to Connection Extrusion**
  
  - 2 1/2" Ø (Arm A1)
  
  - 2 1/2" Ø (Arm A2)
ARM POLE TABLE

<table>
<thead>
<tr>
<th>Assembly Height (ft)</th>
<th>Wind Speed (mph)</th>
<th>120 mph</th>
<th>140 mph</th>
<th>160 mph</th>
</tr>
</thead>
<tbody>
<tr>
<td>8, 10, 12, 15</td>
<td>A1-P1</td>
<td>A1-P1</td>
<td>A1-P1</td>
<td>A1-P1</td>
</tr>
<tr>
<td>8, 10, 12, 15</td>
<td>A1-P3</td>
<td>A1-P3</td>
<td>A1-P3</td>
<td>A1-P3</td>
</tr>
<tr>
<td>8, 10, 12, 15</td>
<td>A1-P4</td>
<td>A1-P4</td>
<td>A1-P4</td>
<td>A1-P4</td>
</tr>
<tr>
<td>8, 10, 12, 15</td>
<td>A1-P8</td>
<td>A1-P8</td>
<td>A1-P8</td>
<td>A1-P8</td>
</tr>
</tbody>
</table>

ARM POLE NOTES:
1. See ARM SECTION detail on Sheet 3 for all A1 and A2 Values.
2. See Pole Table for all P1, P2, and P3 values.
4. For 20' and 25' assembly heights use only 8' or 10' arm A1 with P0.

POLE TABLE

<table>
<thead>
<tr>
<th>Pole</th>
<th>Pole Wall Thickness</th>
<th>Top of Base Shoe Weld</th>
<th>Inside of Base Shoe Weld</th>
</tr>
</thead>
<tbody>
<tr>
<td>P0</td>
<td>0.125</td>
<td>3/32</td>
<td>3/32</td>
</tr>
<tr>
<td>P1</td>
<td>0.156</td>
<td>5/32</td>
<td>5/32</td>
</tr>
<tr>
<td>P2</td>
<td>0.200</td>
<td>5/32</td>
<td>5/32</td>
</tr>
<tr>
<td>P3</td>
<td>0.250</td>
<td>5/32</td>
<td>5/32</td>
</tr>
</tbody>
</table>

POLE NOTES:
1. Pole wall thickness shown are nominal and must be within the Aluminum Association tolerances.
2. Thicker walls are permitted and tapered walls may be used in accordance with the minimum Aluminum Association thicknesses.

TOP MOUNT POLE TABLE

<table>
<thead>
<tr>
<th>Assembly Height (ft)</th>
<th>Wind Speed (mph)</th>
<th>120 mph</th>
<th>140 mph</th>
<th>160 mph</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>Pole P0</td>
<td>Pole P0</td>
<td>Pole P0</td>
<td>Pole P0</td>
</tr>
<tr>
<td>25</td>
<td>Pole P0</td>
<td>Pole P0</td>
<td>Pole P0</td>
<td>Pole P0</td>
</tr>
<tr>
<td>30</td>
<td>Pole P1</td>
<td>Pole P1</td>
<td>Pole P1</td>
<td>Pole P1</td>
</tr>
<tr>
<td>35</td>
<td>Pole P2</td>
<td>Pole P2</td>
<td>Pole P2</td>
<td>Pole P2</td>
</tr>
<tr>
<td>40</td>
<td>Pole P3</td>
<td>Pole P3</td>
<td>Pole P3</td>
<td>Pole P3</td>
</tr>
<tr>
<td>45</td>
<td>Pole P2</td>
<td>Pole P2</td>
<td>Pole P2</td>
<td>Pole P2</td>
</tr>
<tr>
<td>50</td>
<td>Pole P3</td>
<td>Pole P3</td>
<td>Pole P3</td>
<td>Pole P3</td>
</tr>
</tbody>
</table>

FOUNDATION TABLE

<table>
<thead>
<tr>
<th>Pole</th>
<th>Depth</th>
<th>Bolt Min Embedment</th>
</tr>
</thead>
<tbody>
<tr>
<td>P0</td>
<td>6'-0&quot;</td>
<td>2'-6&quot;</td>
</tr>
<tr>
<td>P1</td>
<td>7'-0&quot;</td>
<td>3'-6&quot;</td>
</tr>
<tr>
<td>P2</td>
<td>8'-0&quot;</td>
<td>3'-6&quot;</td>
</tr>
<tr>
<td>P3</td>
<td>9'-0&quot;</td>
<td>3'-6&quot;</td>
</tr>
</tbody>
</table>

FOUNDATION NOTES:
1. Depths shown are for slopes equal to or flatter than 1:4. For slopes steeper than 1:4 and equal to or flatter than 1:2 and 2:6 to foundation depths shown.
2. Foundation Tie Bars: #4 Tie Bars @ 12" centers (max.) or #10 (or W10) spiral @ 6" pitch, 3 flat turns top and 1 flat turn bottom.
4. See ARM SECTION detail on Sheet 3 for all A1 and A2 Values.
NOTE:
1. For locations of Bearing Plates, Base Plates and Detail "A" see Sheets 6 & 7.
2. Double Nuts: The bottom hex nut may be substituted by a half-height 'jam' nut.
3. Provide individual nut covers (not shown) for each bolt.
4. Pole wall thicknesses shown are nominal and shall be within the Aluminum Association Tolerances. Thicker walls are permitted and tapered walls may be used in accordance with the minimum Aluminum Association thicknesses.

NOTE:
1. For locations of Bearing Plates, Base Plates and Detail "A" see Sheets 6 & 7.
2. Double Nuts: The bottom hex nut may be substituted by a half-height 'jam' nut.
3. Provide individual nut covers (not shown) for each bolt.
4. Pole wall thicknesses shown are nominal and shall be within the Aluminum Association Tolerances. Thicker walls are permitted and tapered walls may be used in accordance with the minimum Aluminum Association thicknesses.
#5 Bars, 10'-6" long (Typ.)

**DESCRIPTION:**

**REVISION OF STANDARD PLANS**

**FY 2020-21 SHEET INDEX**

**STANDARD ALUMINUM LIGHTING**

---

**PLAN**

- Median Barrier (Index 521-001)
- Reinforcing steel not shown
- 2 Sp. @ 16" ±
- Symmetrical about Light Pole
- Optional Const. Jt. (See Note 2)

**ELEVATION**

- Front View
- View A-A

**END VIEW**

**SPREAD FOOTING DETAILS FOR MEDIAN BARRIER MOUNTED ALUMINUM LIGHT POLE**

1. For Bearing Plate and Base Plate details, see Sheet 5.
2. For connections to adjacent Median Barrier, use the Doweled Joint detail (per Index 521-001). Alternatively, a continuous concrete pour or a construction joint may be substituted; these alternatives require the Median Barrier's longitudinal steel to lap a minimum of 2'-0" with the longitudinal steel shown herein.

**EMBEDDED JUNCTION BOX DETAILS**

- 1" Ø Conduit
- 2" Ø Conduit
- 1" Ø Conduit for grounding

**NOTES:**

- See Roadway Plans
- See Detail 'A', Sheet 5
- Optional Construction Joint (Typ.) (See Note 2)
- Construction Joint (Typ.)
- #5 Bars, 10' 4" long (Typ.)
- Material with High Pave.Holt Only
- Base Plate
- Anchor Bolts
- 2" Ø (Typ. Barrier)

---

**INDEX SHEET**

FY 2020-21 STANDAD PLANS

LAST REVISION 01/01/17

STANDARD ALUMINUM LIGHTING

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BARRIER MOUNTED ALUMINUM LIGHT POLE

**CYLINDRICAL FOUNDATION DETAILS FOR MEDIAN BARRIER MOUNTED ALUMINUM LIGHT POLE**

**NOTES:**
1. For Bearing Plate and Base Plate Details, see Sheet S.
2. For connections to adjacent Median Barrier, use the Dowelled Joint detail per Index 521-001. Alternatively, a continuous concrete pour or a construction joint may be substituted; these alternatives require the Median Barrier's longitudinal steel to lap a minimum of 2'-0" with the alternative placement.

**FOUNDATION TABLE**

<table>
<thead>
<tr>
<th>Wind Speed (MPH)</th>
<th>Design Height (FT)</th>
<th>Foundation Depth (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>120</td>
<td>40</td>
<td>#8</td>
</tr>
<tr>
<td>140</td>
<td>40</td>
<td>9</td>
</tr>
<tr>
<td>160</td>
<td>40</td>
<td>9</td>
</tr>
</tbody>
</table>

**PLAN**

(Reinforcing steel not shown)

Provide dowel bars @ construction joint

**SECTION C-C**

**FY 2020-21 STANDARD PLANS**

**STANDARD ALUMINUM LIGHTING**

INDEX 715-002 SHEET 7 of 8
NOTES:
1. For Base Plate Details, Bearing Plate Details, and Detail 'A', see Sheet 5.
2. See Index 521-426 for details of adjacent Traffic Railing (Median 36" Single-Slope) and for angles B and C.
3. See Index 530-010 for Conduit, EJB and supplemental reinforcing details.

*At the Contractor's option, Bars SW may be fabricated as a two piece bar with a 1'-2" lap splice at the bottom legs.

** Shift horizontally to avoid Anchor Bolts