ALUMINUM LIGHT POLE GENERAL NOTES

2) All fabrics were developed assuming the following Luminaires properties: Effective Projected Area of 1.55 ft². (Includes wind drag coefficient and 75% percent max.)
4) See Standard Index No.17500 for grounding and wiring details.
5) Light Pole Specifications:
   c. Finish: For poles and arms: 50 grit satin rubber finish.
   f. Weld Antenna: 0.044.
   g. Stainless Steel Fasteners and Hardware: AISI Grade 304.
   h. Aluminum alloy 6063-T4 condition and heat treated in accordance with ASTM B859-T6.
6) Provide “J”, “S” or “C” hook at top of pole for electrical cable.
7) Furnish each pole with a 2” x 4” (Max) aluminum identification tag. Submit details for approval. Secure to Transformer Base with 0.125 stainless steel rivets or screws. Locate Identification Tag on the inside of the base and visible from the door opening. Include the following information: [Project Name], Pole Height, Manufacturer’s Name, Certification number and QPL Number.
8) Manufacturers seeking approval of a Standard Roadway Lighting Pole assembly for inclusion on the Qualified Products List must submit a QPL Product Evaluation Application along with design documents and drawings showing the product meets all specified requirements of this index.
   a. For Clamp and Frangible Transformer Base Design, provide design calculations and/or test results indicating that the components are capable of providing the required capacity. Verify that the frangible Transformer Base conforms to the current FHA-1040 Frangibility Requirements, tested under NCHRP Report 350 Guidelines.
   b. For Median Barrier Mounted Aluminum Light Pole design, provide test results showing that pole will not buckle at pole shape transition area. Demonstrate in the tests that the poles will achieve full ultimate maximum moment capacity at 16 k-in in the strong axis and 30 k-in in the weak axis respectively for the 0.25” thick pole, and 44 k-in in the strong axis and 37 k-in in the weak axis respectively for the 0.375” thick pole. Submit complete details and calculations for the reinforced 4” x 6” (Max) handhole located 16” above the base plate.
   c. For Alternate Foundations: Include design calculations and drawings showing that the product meets the requirements of this index, FDOT Structures Manual Specification 76.

ROADWAY ALUMINUM LIGHTING POLES NOTES

1) Foundation Materials:
   a. Reinforcing Steel: ASTM A615 Grade 60.
   b. Concrete: Class I.
   c. Anchor Bolts: ASTM F1554 Grade 55 with ASTM A453 Grade DW nuts and ASTM F436 Type 1 washers (galvanized in accordance with ASTM F2129).
2) Shoe Base and Frangible/Breakaway Transformer Base Casting Specifications:
   c. Shoe Base Connection Bolts: ASTM A453 Grade DW nuts and ASTM F436 Type 1 washers (galvanized in accordance with ASTM F2129).
3) Pole Notes:
   a. Tapered as required to provide a top outside diameter (O.D.) of 6” with a base 0.0” of 10” Portions of the shaft near the base shoe and at the arm connections may be held constant at 10” and 6” respectively to simplify fabrication.
   b. Transverse webs are allowed only at the base.
   c. Poles constructed out of two or more sections with overlapping splices are not permitted.
   d. Equip poles with a damping device if the pole location is within 5 miles of the coastline.

MIDIAN BARRIER MOUNTED ALUMINUM LIGHT POLE

1) Foundation Materials:
   a. Reinforcing Steel: ASTM A615 Grade 60.
   b. Concrete: Class I.
   c. Anchor Bolts: ASTM F1554 Grade 55 with ASTM A453 Grade DW nuts and ASTM A456 Plate Washer or ASTM F436 Type 1 washers (galvanized in accordance with ASTM F2129).
2) Base Connection Materials:
   a. Aluminum: Base Plate and SHH Hanger Alloy 6063-T6.
   c. Bearing Plate for Anchor Bolts: ASTM A459 Grade 36 or ASTM A456.
3) Pole Notes:
   a. Tapered as required to provide a 6” (O.D.) round top with a 11” x 7” (O.D.) oblong base. Portions of the shaft near the base and at the arm connections may be held constant at 11” x 7” oblong and 6” round respectively to simplify fabrication.
   b. Transverse webs are allowed only at the base.
   c. Poles constructed out of two or more sections with overlapping splices are not permitted.
   d. Equip poles with a damping device.

FOUNDATION NOTES

The foundations for Roadway Aluminum Light Poles are pre-designed and are based upon the following conservative criteria which cover the majority of soil types found in Florida:

Foundation Notes:
- Classification = Cohesiveless (Fine Sand)
- Friction Angle = 30 Degrees (20°)
- Unit Weight = 50 lbs./cu. ft. (Assumed saturated)

Only in cases where the designer considers the soil type at the specific site location to be of lesser strength properties should an analysis be required. Auger borings, SPT borings or CPT soundings may be utilized as a need to verify the assumed soil properties, and at relatively uniform site. A single boring or sounding may cover several foundations. Borings in the area that were performed for other purposes may be used to confirm the assumed soil properties.

PULL BOX NOTES

1. Fabricated pullboxes from ASTM A453 steel and hot-dip galvanized in accordance with ASTM A123 after fabrication. Alumina shall be continuously welded and ground smooth. Provide watertight cover with neoprene gasket and secure cover with galvanized screws.

2. Completed pullbox and conduit risers are incidental to the cost of concrete barrier wall.
ARM CONNECTION DETAIL

SECTION A-A
(Connection At Lower Arm Similar)

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 1/4" nominal and within the Aluminum Association Tolerances.

The outside diameter about the minor axis should be held at 2 3/8" at the upper and lower arms.

DOUBLE ARM CONFIGURATION IS ONLY FOR MEDIAN BARRIER MOUNTED ALUMINUM LIGHT POLES

ARM TABLE

<table>
<thead>
<tr>
<th>WIND SPEED (MPH)</th>
<th>ARM LENGTH (FT)</th>
<th>0.0 &quot;</th>
<th>0.0 &quot;</th>
<th>0.0 &quot;</th>
<th>0.0 &quot;</th>
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<tr>
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<td>4.35</td>
<td>0.313</td>
<td>4.35</td>
<td>0.313</td>
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</table>

* Increase member wall thickness as necessary to meet minimum requirements of the Welding Code for the connection weld sizes shown in the Arm and Pole Tables.
Cylindrical Foundation Details for Median Barrier Mounted Aluminum Light Pole

1. Shop-weld assemblies of foundation strip, reinforcing bars are permitted in reinforced concrete foundation provided that:
   a. The reinforcing bars conform to ASTM Specification A706/706M.
   b. The holding wires conform to ASTM Specification 482 or 4496.
   c. The Shop welding is performed by machines under a continuous, controlled process, approved by the Engineer.

2. Tie Bars @ 12" centers (max.) or 1/2" (or W2D) spiral @ 6" pitch, 3 flat turn top and 1 flat turn bottom.

NOTE:
For Base Plate Details, Bearing Plate Detail and Detail 4' see Sheet 5

Foundation Table

<table>
<thead>
<tr>
<th>Wind Speed</th>
<th>Mounting Height (ft)</th>
<th>Foundation Depth (ft)</th>
</tr>
</thead>
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<tr>
<td>100</td>
<td>40</td>
<td>5</td>
</tr>
<tr>
<td>120</td>
<td>40</td>
<td>6</td>
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</tbody>
</table>

2010 FDOT Design Standards

STANDARD ALUMINUM LIGHTING
PLAN
(Reinforcing steel not shown)

ELEVATION
(Longitudinal and transverse deck reinforcing steel not shown)

INSTRUCTIONS TO DESIGNER:
In order to minimize vibration of light poles due to traffic, locate light poles near substructure supports.

BAR BENDING DIAGRAMS

NOTES:
1. For Base Plate Details, Bearing Plate Details and Detail 'A' see sheet 5.
2. See Design Standard Index No. 421 for details of Traffic Railing (Median 32" F Shape) and angles 04 and 06.