NOTES:
1. Use compacted select material in accordance with Index 505.
2. Concrete shall be Class NS with a minimum strength at 28 days of f'c=2.5 ksi.
3. Outside edge of slab shall be cast against formwork.
4. The pull box shown is 13" x 24"; others approved under Section 635 of the Standard Specifications may be used.
5. Slabs to be placed around all Poles and Pull Boxes in rural locations. In urban areas or where space is limited slab dimensions may be adjusted as shown in the plans.
6. Concrete for slabs around pull boxes shall be included in the price of pull box.

SLAB DIMENSIONS

SLAB DETAILS FOR INTERMEDIATE PULLBOX LOCATIONS
NOTES:
1. Use compacted select material in accordance with Index 503.
2. Concrete shall be Class NS with a minimum strength at 28 days of f'c=2.5 ksi.
3. Outside edge of slab shall be cast against formwork.
4. The pull box shown is 13'' x 24'' others approved under Section 635 of the Standard Specifications may be used.
5. Slabs to be placed around all Poles and Pull Boxes. In urban areas or where space is limited slab dimensions may be adjusted as shown in the plans.
6. Concrete for slabs around poles and pull boxes shall be included in the price of pole or pull box.
7. The expansion joint shall consist of ½" of closed-cell polyethylene foam expansion material. The top ½" of expansion material shall be removed after pouring the slab and sealed with a QPL approved Type A sealant meeting the requirements of Section 932.

Concrete shall be Class NS with a minimum strength at 28 days of f'c=2.5 ksi.
Use compacted select material in accordance with Index 503.
Outside edge of slab shall be cast against formwork.
The pull box shown is 13'' x 24'' others approved under Section 635 of the Standard Specifications may be used.
Slabs to be placed around all Poles and Pull Boxes. In urban areas or where space is limited slab dimensions may be adjusted as shown in the plans.
Concrete for slabs around poles and pull boxes shall be included in the price of pole or pull box.
The expansion joint shall consist of ½" of closed-cell polyethylene foam expansion material. The top ½" of expansion material shall be removed after pouring the slab and sealed with a QPL approved Type A sealant meeting the requirements of Section 932.
GENERAL NOTES

1. All grounding system connections shall be electrically welded. This includes all cables, ground electrodes, and arrays. Do not electrically bond grounding electrode to grounding electrode. Method of Measurement and Basis of Payment as per Section 620 of the Standard Specifications.

2. The contractor shall be responsible for contacting all utility companies prior to any underground work. The utility company shall locate and identify their facilities.

3. Contractor shall determine the service required date for the power company transformer installation at the pre-construction conference.

4. The power company reserves the right to install the riser, switch gear and weatherhead on power company poles at the expense of the contractor. Contact the power company for cost or for authorization for an alternate procedure.

5. Any damaged portions of galvanized steel poles and bracket arms shall be painted in accordance with Section 250.5 of the Standard Specifications.

6. Before final acceptance, contractor shall provide 2 sets of full size as built plans to the maintaining agency.

7. Conduit routing shall be pole to pole, maintaining pole setback distance from edge of pavement. Any cable routing in locations where guardrail is proposed shall be 2' in front of the standard guardrail position.

8. Pole positions and conduit routing may be adjusted, as approved by the Engineer, to prevent conflicts with utility and drainage structures or indicated, and prevent guardrail post conflict with underground lighting circuits.

9. Where guardrail is constructed, the poles shall be placed a minimum of 6' behind the face of the guardrail.

10. Install pole foundations in accordance with Section 271 of the Standard Specifications.

11. All splices shall be made in pull boxes or the pole base. No splices shall be made inside the conduit. All conduit shall be provided with either expansion joints or flexible metal conduit sections adequate to take care of vibrations and thermal expansions. All metal conduit shall be hot-dipped galvanized.

12. All conduit that will remain empty as spares shall be mandrel tested, cleaned inside and both ends capped.

13. Neutral wires to have white insulation. Do not use white or green insulated wires for ungrounded conductors.

14. All exposed or surfaced mounted conduit shall be rigid or intermediate metal. These exposed runs of conduit shall be provided with either expansion joints or flexible metal conduit sections adequate to take care of vibrations and thermal expansions. All metal conduit shall be hot-dipped galvanized.

15. Pull boxes shall be located at ends of conduit crossing roadways, and as necessary for the completion of the project.

16. These plans represent minimum acceptable criteria. The inspection per these drawings represent the minimum basis of acceptance.

17. All material, unless otherwise specified, shall be Underwriters Laboratory approved.

18. A pull box shall be installed at each pole location. Pull boxes shall be located 2' max from pole unless otherwise directed by the project engineer. Metal pull box covers shall be grounded. See General Requirements Section 325.3 of the Standard Specifications for Road and Bridge Construction.

19. All pull boxes and pole bases, ends of conduit shall be sealed in accordance with Section 630 of the Standard Specifications for Road and Bridge Construction.

20. All mounting heights are ± 2'-6" unless otherwise noted in plans.

21. A handhole is required in all poles. Handhole should be located opposite approaching traffic with cover fastened with Stainless Steel Screws. The handhole opening shall be at least 20 square inches.

22. The luminaire and arm on joint use poles shall be grounded.
HIGHMAST LIGHTING NOTES:

1. High Mast materials:
   a. Pole: ASTM A1011 Grade 50, 55, 60 or 65 (less than ½”) or ASTM A572 Grade 50, 55, 60, or 65 (½” and over) or ASTM A505 Grade A (55 ksi yield) or Grade B (60 ksi yield).
   b. Steel Plates: ASTM A509 Grade 36 or ASTM A36.
   c. Weld Metal: E70XX
   d. Anchor Bolts: ASTM F1554 Grade 5 with ASTM A563, Grade A heavy hex nuts and plate washer.
   e. Handhole: ASTM A509 Grade 36 or ASTM A36 Frame with ASTM A36 cover.
   f. Caps: ASTM A1011 Grade 50, 55, 60 or 65 or ASTM B829.
   g. Nut Covers: ASTM B26 (319-F)
   h. Stainless Steel Screws: AISI Type 316

2. Reinforcing steel: ASTM A615, Grade 60.

3. Concrete: Class IV (Drilled Shaft) with a minimum 6,000 psi compressive strength at 28 days for all environmental classifications.


5. Galvanization:
   a. Nuts, Bolts, Washers and Threaded Bars/Studs: ASTM F2329
   b. Other Items (Including Pole): ASTM A123

6. Hole diameters for anchor bolts: not greater than the bolt diameter plus ½”.

7. Poles: Tapered with the diameter changing at a rate of 0.14 inch per foot with a minimum 16-sided pole shaft and maximum of two longitudinal seam welds. Circumferentially welded pole shafts are not permitted. Longitudinal seam welds within 6 inches of bolt to base must be complete penetration welds. Longitudinal seam welds or telescopic field joints must be complete penetration welds for the splice length plus 6 inches.

8. Furnish each pole with a 2” X 4” (Max) aluminum identification tag. Submit details for approval. Secure to pole with 0.124” stainless steel screws or screws with galvanized head and 0.124” stainless steel cap on the inside of pole and visible from handhole. Include the following information: Financial Project ID, Pole Mounting Height, Manufacturer’s Name, Fy of Steel, and Base Wall Thickness.

9. Verify CSL access tubes will not interfere with anchor bolt installation before excavating the shaft. When CSL access tube locations conflict with anchor bolt locations, anchor bolts shall be moved out of conflict with upper 24” of pole shaft projection on the high side.

10. This Design Standard is considered fully detailed and no shop drawings are necessary. Submit shop drawings for minor modifications not detailed in the plan.
### POLE DESIGN TABLE*

<table>
<thead>
<tr>
<th>Design Wind Speed</th>
<th>Pole Overall Height (ft)</th>
<th>SECTION 1 (TOP)</th>
<th>SECTION 2</th>
<th>SECTION 3</th>
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<td></td>
<td>Length</td>
<td>Wall Thickness (in.)</td>
<td>Minimum Splice L.</td>
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<td>2'-0&quot;</td>
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* Diameter Measured Flat to Flat

### BASE PLATE AND BOLTS DESIGN TABLE

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<th>Design Wind Speed</th>
<th>Pole Overall Height (ft)</th>
<th>Base Plate Diameter (in.)</th>
<th>Base Plate Thickness (in.)</th>
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<th>No. Bolts</th>
<th>Bolt Diameter (in.)</th>
<th>Bolt Embedment (in.)</th>
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### SHAFT DESIGN TABLE

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<td>100</td>
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<td>120</td>
<td>5'-0&quot;</td>
<td>20'-0&quot;</td>
<td>18'- #11</td>
</tr>
</tbody>
</table>

### POLE DESIGN TABLES

- **BASE PLATE AND BOLTS DESIGN TABLE**
- **SHAFT DESIGN TABLE**

* Diameter Measured Flat to Flat
For Pull Boxes between Poles refer to Index 17500.

1. Slabs to be placed around all Poles and Pull Boxes.

2. Standard Specifications For Road and Bridge Construction.

3. At all pull boxes and pole bases, ends of conduit shall be sealed in accordance with Section 630 of the Standard Specifications for Road and Bridge Construction.

NOTES:
1. For pull boxes and pole bases, ends of conduit shall be sealed in accordance with Section 630 of the Standard Specifications for Road and Bridge Construction.
2. Slabs to be placed around all Poles and Pull Boxes.
3. For Pull Boxes between Poles refer to Index 17500.
The contractor's attention is directed to those plan sheets detailing the mounting of luminaires at the pole top. Particular attention is directed to alignment of luminaire light distributions. Special attention must be exercised in the physical alignment of these luminaires to ensure that the approved photometric layout is physically produced at each lighting standard in the field. A marking shall be placed on the external face of the refractor to allow visual inspection of alignment. The marking shall correspond to the 0° axis of the refractor.

A surge protector shall be located in the pole with the circuit breaker. The surge protector shall be mounted at the front near hand hole for easy access.

600 Volt rated Circuit Breaker Cable. Size of conductors to be determined by luminaire load.

600 Volt rated Pole Cable. Size of conductors to be determined by luminaire load.

Winch cable

A Positive drive reversible winch with Male Inlet.

Winch

Lock nuts

Hand hole

Circuit Breaker Cable with Female Plug

2" slip fitter Assembly (equally spaced around ring)

2" Slip-fitter Assembly

Luminaire support ring

Power Cable Terminator

Luminaire support ring

Covered receptacle to power luminaires when in the lowered position with Male Inlet.

Cover

Lift cables & sheaves

Pole cable & sheaves

Lift cable sheaves

See legend for number of luminaires, lamp wattage and light distribution.

High mast pole

600 Volt rated Circuit Breaker Cable. Size of conductors to be determined by luminaire load.

Remote control switch

Supply cable receptacle

Remote control switch

25' minimum remote control cable (see schematic)

Step down transformer provided with 120V, grounded receptacle for electric drill & receptacle for supply cable. (see schematic)

25' heavy duty reversible or 1 HP Portable Motor(s) per project.

All hardware for mounting heavy duty drill to pole shall be Stainless Steel.

120V. grounded receptacle for electric drill & receptacle for supply cable. (see schematic)

Step down transformer provided with 120V, grounded receptacle for electric drill & receptacle for supply cable. (see schematic)

25' minimum remote control cable (see schematic)

Step down transformer provided with 120V, grounded receptacle for electric drill & receptacle for supply cable. (see schematic)

25' minimum remote control cable (see schematic)

A surge protector shall be located in the pole with the circuit breaker. The surge protector shall be mounted at the front near hand hole for easy access.

600 Volt rated Circuit Breaker Cable. Size of conductors to be determined by luminaire load.

Winch

600 Volt rated Pole Cable. Size of conductors to be determined by luminaire load.

Winch cable

Positive drive reversible winch

A Positive drive reversible winch with Male Inlet.

Winch

Lock nuts

Hand hole

Circuit Breaker Cable with Female Plug

2" slip fitter Assembly (equally spaced around ring)

2" Slip-fitter Assembly

Luminaire support ring

Power Cable Terminator

Luminaire support ring

Covered receptacle to power luminaires when in the lowered position with Male Inlet.

Cover

Lift cables & sheaves

Pole cable & sheaves

Lift cable sheaves

See legend for number of luminaires, lamp wattage and light distribution.

High mast pole

600 Volt rated Circuit Breaker Cable. Size of conductors to be determined by luminaire load.

Remote control switch

Supply cable receptacle

Remote control switch

25' minimum remote control cable (see schematic)

Step down transformer provided with 120V, grounded receptacle for electric drill & receptacle for supply cable. (see schematic)

25' heavy duty reversible or 1 HP Portable Motor(s) per project.

All hardware for mounting heavy duty drill to pole shall be Stainless Steel.

120V. grounded receptacle for electric drill & receptacle for supply cable. (see schematic)

Step down transformer provided with 120V, grounded receptacle for electric drill & receptacle for supply cable. (see schematic)

25' minimum remote control cable (see schematic)

Step down transformer provided with 120V, grounded receptacle for electric drill & receptacle for supply cable. (see schematic)
NOTES:

1. Use compacted select material in accordance with Index 505.
2. Concrete shall be Class 65 with a minimum strength at 28 days of f'c=2.5 ksi.
3. Outside edge of slab shall be cast against formwork.
4. The pull box shown is 13" x 24"; others approved under Section 833 of the Standard Specifications may be used.
5. Slabs to be placed around all Poles and Pull Boxes. In urban areas or where space is limited slab dimensions may be adjusted as shown in the plans.
6. Concrete for slabs around poles and pull boxes shall be included in the price of pole or pull box.
7. The expansion joint shall consist of 1/2" of closed-cell polyethylene foam expansion material. The top 1/2" of expansion material shall be removed after pouring the slab and sealed with a QPL approved Type A sealant meeting the requirements of Section 831.

DESCRIPTION:

- Pull Box
- Slab Dimensions
- Shaft Location
- Pull Box Location

SLAB DETAILS
GENERAL NOTES:

1. It shall be the contractor's responsibility to provide a complete service assembly as per the plans and service specifications.
2. The service installation shall meet the requirements of the national electric code and applicable local codes.
3. Shop drawings are not required for service equipment, unless noted in the plans.
4. A Pull Box is required at each service point.

Aerial Feed:
- Concrete Pole Prestressed Type P-II, 36'L
- Conductor Weatherhead Height
- Cleat With Insulators
- Service Conductors Shall Be Stranded Copper Single Conductor Cable Type RHW
- A Minimum Length Of 10' Shall Be Provided From The Weatherhead For Each Conductor
- #8 AWG Insulated Grounding Electrode Conductor In 3/4" Rigid Galvanized Steel Conduit
- U.L. Approved Ground Rod, 1/2" Dia, 40'L Long Copper Clad (All Service Points)
- Crushed Stone For Drainage
- 12" Bed Of Pearock Or Crushed Stone For Drainage
- Conductor Weatherhead Height As Required By Power Company
- Pull Box
- City Of Miami
- Galvanized Steel Conduit
- #12 Conductor In #6 AWG Insulated Grounding Electrode Conductor
- Service Main
- Service Main
- Service Main
- Connection For Pole Ground, Bond Wire, And Ground Rod
- Conduit #8 Conductor Weatherhead Height As Required Height Specified By Power Company
- Concrete Pole, Prestressed Type P-II, 12'L

 Underground Feed:
- Concrete Pole, Prestressed Type P-II, 36'L
- Conductor Weatherhead Height
- Meter As Required Height Specified By Power Company
- #8 AWG Insulated Grounding Electrode Conductor In 3/4" Rigid Galvanized Steel Conduit
- U.L. Approved Ground Rod, 1/2" Dia, 40'L Long Copper Clad (All Service Points)
- Crushed Stone For Drainage
- 12" Bed Of Pearock Or Crushed Stone For Drainage
- Conductor Weatherhead Height As Required By Power Company
- Pull Box
- City Of Miami
- Galvanized Steel Conduit
- #12 Conductor In #6 AWG Insulated Grounding Electrode Conductor
- Service Main
- Service Main
- Service Main
- Connection For Pole Ground, Bond Wire, And Ground Rod
- Conduit #8 Conductor Weatherhead Height As Required Height Specified By Power Company
- Concrete Pole, Prestressed Type P-II, 12'L

REV 07/01/13
Keyed Notes:
2. Service Feeder in Rigid Galvanized Steel Conduit.
3. Meter Socket by Contractor
4. Service Main Disconnect.
6. Concrete Riser Pole.
7. Weatherhead.
8. Electrical Panel. Number and Rating of Branch Circuit Breakers shall be as Indicated on Distribution Point Description on Lighting Plan Sheets.
9. Branch Circuit to roadway luminaries.
10. 1/0 Copper Clad Ground Rod, 40’ long.
11. #6 Insulated Copper Ground Wire. Bond the Service Neutral to Ground.
12. Concrete Riser Pole.
13. Ground BUS.
15. UnderGround Feeder Conduit.
16. Concrete Pad.
17. Branch Circuit to roadway luminaires.
18. Photo Electric Switch-120V Rated.
19. Fused Control Power Transformer 0.5 KVA, Single Phase, 480V Primary, 120V Secondary (Part of Lighting Contractor, Shown Outside for Clarity).
20. Hand-off Automatic Selector Switch (Part of Lighting Contractor, Shown Outside for Clarity).
21. Lightning Arrester Mounted on Outside of Enclosure.
22. Photo Electric Switch-120V Rated.

CUT A 2" HOLE IN THE SIDE OF THE LIGHTING CONTROL PANEL ENCLOSED FOR THE OPERATION AND MOUNTING OF THE P.E. CONTROLLER. USE PLEXIGLASS AND A CLEAR SILICONE SEALANT TO COVER HOLE. INSTALL P.E. CONTROLLER.

PHOTO ELECTRIC CONTROLLER DETAIL

ONE LINE DIAGRAM DISTRIBUTION POINT

RISER DIAGRAM - TYPICAL DISTRIBUTION POINT

TYPICAL DISTRIBUTION POINT SCHEMATIC DETAIL

Side or Back of Enclosure
SIGN LIGHTING INSTALLATION

Roadway Lighting included in contract:
The power for the sign lighting shall be provided from the roadway lighting circuit. The lighting plans shall indicate the sign location and a pull box location for connection to the sign lights. The lighting contractor shall install pull box and loop of lighting circuit conductors in the pull box for connection by the signing contractor.

The signing contractor shall furnish and install luminaires, Nema 3R enclosure, 30 amp breaker, conduit, conductors, ground rods, pull boxes and service point equipment. The signing plans shall indicate the location of the service point equipment and circuit runs. The signing contractor shall provide all electrical equipment necessary for connection to the lighting circuits.

Roadway Lighting not included in contract:
The signing plans shall indicate sign locations and a pull box location for connection to the lighting circuits. The signing contractor shall furnish and install luminaires, Nema 3R enclosure, 30 amp breaker, conduit, conductors, ground rods, pull boxes and service point equipment. The signing contractor shall provide all electrical equipment necessary for connection to the lighting circuits.

PLACE OF SIGN LIGHTS

1. Luminaires that recommend their fixture be tilted shall be mounted on a bracket which provides the recommended tilt.
2. Luminaires spacing and arm length is shown on guide sign worksheet.
3. Guide sign worksheet indicates sign luminaire used for basis of design. The contractor may propose a different luminaire by submitting photometric calculations for each luminaire for review.

PLACEMENT OF SIGN LIGHTS

1. Luminaires that require fixture be tilted shall be mounted on a bracket which provides the recommended tilt.
2. Luminaires spacing and arm length is shown on guide sign worksheet.
3. Guide sign worksheet indicates sign luminaire used for basis of design. The contractor may propose a different luminaire by submitting photometric calculations for each luminaire for review.
NOTES
1. Dimension to be established by type and make of luminaire to be purchased and used on the project.
2. The center lines of both flange plates and the luminaire support arm shall be parallel to the roadway before the set screw is seated.
3. All steel pipe shall meet the strength requirements of ASTM Specification A53 Grade "A" or Grade "B". Steel plates shall meet the requirements of ASTM A572.
4. All items shall be hot-dip galvanized after fabrication in accordance with the requirements of Specification Section 962.
5. Luminaire support arm shall be free to rotate in a clockwise or counter clockwise direction. When service or maintenance is required for sign face or vertical face of truss.
6. All pipe dimensions are NPS.
7. The SK3264A01 zee vertical hanger option cannot be used when installing sign lighting.

DESCRIPTION:
The 5X3.25X4.01 Zee vertical hanger option cannot be used when installing sign lighting. All items shall be hot dip galvanized after fabrication in accordance with the requirements of ASTM A307. All steel pipe shall meet the strength requirements of ASTM A53 Grade "A" or Grade "B".

PLATE A

SECTION AA

SECTION BB

DETAIL "A"
ALUMINUM LIGHT POLE GENERAL NOTES

1. Designed in accordance with FDOT Structures Manual.
2. All tables were developed assuming the following Luminaire properties: Effective Projected Area of 1.55 sq. ft. (includes wind drag coefficients and 75 percent max.)

4. See Standard Index No. 17500 for grounding and wiring details.

5. Pole Specifications:
   c. Finish: For poles and arms, 50 grit satin rubber finish.
   e. Aluminum Caps and Covers: ASTM B-263(T4-1).
   f. Washer Metal: EN40D.
   g. Stainless Steel Fasteners and hardware: AISI Grade 304.
   h. Concrete: Class I.
   i. Anchor Bolts: ASTM F1554 Grade 55 with ASTM A563 Grade DH nuts and ASTM A36 Plate Washer or ASTM F436 Type 1 washers (all galvanized in accordance with ASTM F2391). Coupler shall be in accordance with AASHTO 5.11.2.2.

6. Provide “J”, “S”, or “C” hook at top of pole for electrical cable.
7. Furnish each pole with a 2”x4” (max) aluminum identification tag. Submit details for approval. Separate the Transformer Base with 0.125” stainless steel nuts or screws. Locate Identification Tag on the inside of base and visible from the door opening. Include the following information: Financial Project ID, Pole Height and Manufacturer’s Name.

8. For Clamp and Frangible Transformer Base Design, certify that the components are capable of providing the required capacity. Verify that the Frangible Transformer Base conforms to the current FDOT required AASHTO Frangibility Requirements, tested under NCHRP Report 350 Guidelines (eg. Akron Foundry T81-T17).

9. For Median Barrier Mounted Aluminum Light Pole design, submit test results showing that pole will not buckle at pole shape transition area. Demonstrate in the tests that the poles will achieve full ultimate moment capacity of 36 k-ft in the string and 30 k-ft in the plug area respectively for the 0.25” thick poles, and 44 k-ft in the string area and 33 k-ft in the plug area respectively for the 0.375” thick poles. Submit complete details and calculations for the reinforced 4”x6” (min) foundation located 1’-6” above the base plate.

10. The Design Standard is considered fully detailed and no shop drawings are necessary. Submit shop drawings for minor modifications not detailed in the plans.

ROADWAY ALUMINUM LIGHTING POLE NOTES

1. Foundation Materials:
   a. Reinforcing Steel: ASTM A615 Grade 60.
   b. Concrete: Class I.
   c. Anchor Bolts: ASTM F1554 Grade 55 with ASTM A603 Grade DH nuts and ASTM A36 Plate Washer or ASTM F436 Type 1 washers (all galvanized in accordance with ASTM F2391). Coupler shall be in accordance with AASHTO 5.11.2.2.

2. Base Connection Materials:
   c. Bearing Plate for Anchor Bolts: ASTM F709 Grade 36 or ASTM A36.

3. Pole Notes:
   a. Tapered as required to provide a 0” (O.D.) round top with a 11”x7” (O.D.) oblong base. Portions of the shaft near the base and at the arm connections may be held constant at 11”x7” oblong and 6” round respectively to simplify fabrication.
   b. Transverse welds are allowed only at the base.
   c. Poles constructed out of two or more sections with overlapping splices are not permitted.
   d. Equi poles with a vibration damper at locations per Specification Section F15.

MEDIAN 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 A603 Grade DH nuts and ASTM A36 Plate Washer or ASTM F436 Type 1 washers (all galvanized in accordance with ASTM F2391). Coupler shall be in accordance with AASHTO 5.11.2.2.

2. Base Connection Materials:
   b. Bearing Plate for Anchor Bolts: ASTM F709 Grade 36 or ASTM A36.

3. Pole Notes:
   a. Tapered as required to provide a 0” (O.D.) round top with a 11”x7” (O.D.) oblong base. Portions of the shaft near the base and at the arm connections may be held constant at 11”x7” oblong and 6” round respectively to simplify fabrication.
   b. Transverse welds are allowed only at the base.
   c. Poles constructed out of two or more sections with overlapping splices are not permitted.
   d. Equi poles with a damping device.

EMBEDDED JUNCTION BOX NOTES

1. Fabricate embedded junction boxes from ASTM A36 steel and hot-dip galvanized in accordance with FDOT A 123 after fabrication. All seams shall be continuously welded and ground smooth. Provide watertight cover with neoprene gasket and secure cover with galvanized screws.
2. Completed embedded junction box and conduit risers are incidental to the cost of concrete barrier wall.
** Depths shown in table are for grades flat than 1:4, for grades

<table>
<thead>
<tr>
<th>SPEED (MPH)</th>
<th>WIND (FT)</th>
<th>HEIGHT (FT)</th>
<th>MOUNTING DESIGN</th>
</tr>
</thead>
<tbody>
<tr>
<td>110</td>
<td>110</td>
<td>110</td>
<td>110</td>
</tr>
<tr>
<td>120</td>
<td>120</td>
<td>120</td>
<td>120</td>
</tr>
<tr>
<td>130</td>
<td>130</td>
<td>130</td>
<td>130</td>
</tr>
</tbody>
</table>

NOTE: Pole wall thickness shown in the POLE TABLE are nominals and shall be within the Aluminum Association Tolerances. Thicker walls are permitted and tapered walls may be used provided the minimum Aluminum Association thicknesses are not violated.

1/2 DD Shaft

CAST ALUMINUM BASE SHOE

CAST IN PLACE OR PRECAST CLASS I CONCRETE MAY BE CAST IN PLACE OR IN PRECAST PATTERNS AND MAY BECast Aluminum

Transformer Base

Manufacture (Typ.)

See Notes on Sheet No. 2.

Frangible/Breakaway

Cast Aluminum

By Approved Breakaway Lockwasher as Required

Nut, Bolt, Washer and Split Anchor Bolt, Connection

Anchor Bolt, Connection Bolt, Washer and Split Lockwasher as Required by Approved Breakaway Transformer Base Manufacture (Typ.)

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Sheet No. 2

Foundation Tables for Roadway Aluminum Light Pole

<table>
<thead>
<tr>
<th>WIND SPEED (MPH)</th>
<th>DESIGN MOUNTING HEIGHT (FT)</th>
<th>TOTAL DEPTH (FT)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>110</td>
<td>40</td>
<td>8</td>
</tr>
<tr>
<td>110</td>
<td>45 &amp; 50</td>
<td>8</td>
</tr>
<tr>
<td>120</td>
<td>40</td>
<td>8</td>
</tr>
<tr>
<td>120</td>
<td>45 &amp; 50</td>
<td>9</td>
</tr>
<tr>
<td>150</td>
<td>40</td>
<td>9</td>
</tr>
<tr>
<td>150</td>
<td>45 &amp; 50</td>
<td>9</td>
</tr>
</tbody>
</table>

** Depths shown in table are for grades shall be within the Aluminum Association Tolerances. Thicker walls are permitted and tapered walls may be used provided the minimum Aluminum Association thicknesses are not violated.

POLE TABLE

<table>
<thead>
<tr>
<th>WIND SPEED (MPH)</th>
<th>ARM LENGTH (FT)</th>
<th>DESIGN MOUNTING HEIGHT (FT)</th>
<th>POLE WALL (IN)</th>
<th>UPPER WELD (IN)</th>
<th>LOWER WELD (IN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>110</td>
<td>6, 10, 12 &amp; 15</td>
<td>40 &amp; 45</td>
<td>0.156</td>
<td>0.156</td>
<td>0.156</td>
</tr>
<tr>
<td>110</td>
<td>6, 10, 12 &amp; 15</td>
<td>40</td>
<td>0.156</td>
<td>0.156</td>
<td>0.156</td>
</tr>
<tr>
<td>120</td>
<td>6, 10, 12 &amp; 15</td>
<td>40</td>
<td>0.188</td>
<td>0.188</td>
<td>0.188</td>
</tr>
<tr>
<td>120</td>
<td>6, 10, 12 &amp; 15</td>
<td>45</td>
<td>0.188</td>
<td>0.188</td>
<td>0.188</td>
</tr>
<tr>
<td>130</td>
<td>6, 10, 12 &amp; 15</td>
<td>45</td>
<td>0.188</td>
<td>0.188</td>
<td>0.188</td>
</tr>
<tr>
<td>130</td>
<td>6, 10, 12 &amp; 15</td>
<td>50</td>
<td>0.250</td>
<td>0.250</td>
<td>0.250</td>
</tr>
<tr>
<td>150</td>
<td>6, 10, 12 &amp; 15</td>
<td>40</td>
<td>0.250</td>
<td>0.250</td>
<td>0.250</td>
</tr>
<tr>
<td>150</td>
<td>6, 10, 12 &amp; 15</td>
<td>45</td>
<td>0.250</td>
<td>0.250</td>
<td>0.250</td>
</tr>
<tr>
<td>150</td>
<td>6, 10, 12 &amp; 15</td>
<td>50</td>
<td>0.313</td>
<td>0.313</td>
<td>0.313</td>
</tr>
</tbody>
</table>

NOTE:

Pole wall thickness shown in the POLE TABLE are nominals and shall be within the Aluminum Association Tolerances. Thicker walls are permitted and tapered walls may be used provided the minimum Aluminum Association thicknesses are not violated.

FLEXIBILITY

1. Shop-weld assemblies of foundation stirrup reinforcing bars are permitted in reinforced concrete foundation provided that:

   a. The reinforcing bars conform to ASTM Specification A706/A706M.

   b. The shop welds are made by machine under a continuous, controlled process, approved by the Engineer.

   c. Quality control yield strength and tensile strength tests are performed on shop-welded specimens and the test results are available, upon request, to the Engineer.

   d. The shop welds are made by machine under a continuous, controlled process, approved by the Engineer.

   e. The shop welds are made by machine under a continuous, controlled process, approved by the Engineer.

   f. The shop welds are made by machine under a continuous, controlled process, approved by the Engineer.

   g. The shop welds are made by machine under a continuous, controlled process, approved by the Engineer.

   h. The shop welds are made by machine under a continuous, controlled process, approved by the Engineer.

   i. The shop welds are made by machine under a continuous, controlled process, approved by the Engineer.

   j. The shop welds are made by machine under a continuous, controlled process, approved by the Engineer.

   k. The shop welds are made by machine under a continuous, controlled process, approved by the Engineer.

   l. The shop welds are made by machine under a continuous, controlled process, approved by the Engineer.

   m. The shop welds are made by machine under a continuous, controlled process, approved by the Engineer.

   n. The shop welds are made by machine under a continuous, controlled process, approved by the Engineer.

   o. The shop welds are made by machine under a continuous, controlled process, approved by the Engineer.

   p. The shop welds are made by machine under a continuous, controlled process, approved by the Engineer.

   q. The shop welds are made by machine under a continuous, controlled process, approved by the Engineer.

   r. The shop welds are made by machine under a continuous, controlled process, approved by the Engineer.

   s. The shop welds are made by machine under a continuous, controlled process, approved by the Engineer.

   t. The shop welds are made by machine under a continuous, controlled process, approved by the Engineer.

   u. The shop welds are made by machine under a continuous, controlled process, approved by the Engineer.

   v. The shop welds are made by machine under a continuous, controlled process, approved by the Engineer.

   w. The shop welds are made by machine under a continuous, controlled process, approved by the Engineer.

   x. The shop welds are made by machine under a continuous, controlled process, approved by the Engineer.

   y. The shop welds are made by machine under a continuous, controlled process, approved by the Engineer.

   z. The shop welds are made by machine under a continuous, controlled process, approved by the Engineer.

2. #4 Tie Bars @ 12" centers (max.) or #10 (or #12) spiral @ 6" pitch, 3 flat turns top and 1 flat turn bottom.
NOTE:

Pole wall thicknesses shown in the POLE TABLE are nominals and shall be within the Aluminum Association Tolerances. Thicker walls are permitted and tapered walls may be used provided the minimum Aluminum Association thicknesses are not violated.

<table>
<thead>
<tr>
<th>SPEED (MPH)</th>
<th>ARM LENGTH (FT)</th>
<th>DESIGN MOUNTING HEIGHT (FT)</th>
<th>POLE WALL (IN)</th>
<th>FULL HEIGHT (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>110</td>
<td>8, 10, 12</td>
<td>40</td>
<td>0.25</td>
<td>Up to 70</td>
</tr>
<tr>
<td>130</td>
<td>8, 10, 12</td>
<td>40</td>
<td>0.25</td>
<td>Up to 70</td>
</tr>
<tr>
<td>150</td>
<td>8, 10, 12</td>
<td>40</td>
<td>0.313</td>
<td>&gt;20' to 70</td>
</tr>
</tbody>
</table>

NOTE:

For locations of Bearing Plates, Base Plates and Detail 'A' see Sheets 6 & 7.

*Top nut may be @ height Jam Nut. Provide individual nut cover (not shown) for each bolt.

Bolt Dia. (Max.)

Plates and Detail 'A' see Sheets 6 & 7.
**Foundation Details for Median Barrier Mounted Aluminum Light Pole**

**Foundation Table**

<table>
<thead>
<tr>
<th>Wind Speed (MPH)</th>
<th>Design Wounding Height (FT)</th>
<th>Foundation Depth (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>110</td>
<td>40</td>
<td>8</td>
</tr>
<tr>
<td>130</td>
<td>40</td>
<td>9</td>
</tr>
<tr>
<td>150</td>
<td>40</td>
<td>9</td>
</tr>
</tbody>
</table>

**Plan**

- **For Roadway Concrete Barrier Wall** see Design Std Index No. 410

**Elevation**

- **For Roadway Concrete Barrier Wall reinforcing steel see Design Std Index No. 410**

**Cylindrical Foundation Details for Median Barrier Mounted Aluminum Light Pole**

- **NOTE:** For Base Plate Details, Bearing Plate Detail and Detail 'A' see Sheet 5

**Foundation Details**

- #5 Bars, 4' long (Typ.)

**Construction Joint**

- Min. 10' from free end and approach wall transition, approach ends and structural joints.

**See Detail 'A' Sheet 5**

**See Roadway Plans**

**Bearing Plate**

- #1 Bar

**Tie Bars**

- #4 Bars @ 12" centers (max.) or D10 (or W10) spiral @ 6" pitch, 2.

**Grounding Rod**

- 1" Ø Conduit

**NOTE:**

- Deviate 2" Ø Conduit to avoid cylindrical foundation.

**END VIEW**

**VIEW B-B**

**SECTION C-C**

**Double Nuts (Typ.)**

**Variables**

- #7 Bars

**Note:**

- Cylindrical foundation details for median barrier mounted aluminum light pole.

**For reinforces steel above foundation see Design Std Index No. 410**

- For reinforcing steel above foundation see Design Std Index No. 421

**NOTE:**

- #4 Tie Bars @ 12" centers (max.) or D10 (or W10) spiral @ 6" pitch, 3 flat turns top and 1 flat turn bottom.

**For Roadway Concrete Barrier Wall reinforcing steel see Design Std Index No. 410**

**Provide dowel bars @ construction joint.**
DETAILS FOR TRAFFIC RAILING (MEDIAN 32" F SHAPE) MOUNTED ALUMINUM LIGHT POLE

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, isolate light poles near substructure supports.

BAR BENDING DIAGRAMS

END VIEW
(Longitudinal and transverse deck reinforcing steel not shown)

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 EA and EB.