ORIGINATION FORM

Proposed Revisions to a Standard Plans Index (Please provide all information – Incomplete forms will be returned)

Contact Information:

Standard Plans:

Date: January 10, 2019 Originator: **Cheryl Hudson** Phone: 414-5332 Email: cheryl.hudson@dot.state.fl.us Index Number: **715-002** Sheet Number (s): 1, 2, & 4 Index Title: Standard Aluminum Lighting

Summary of the changes:

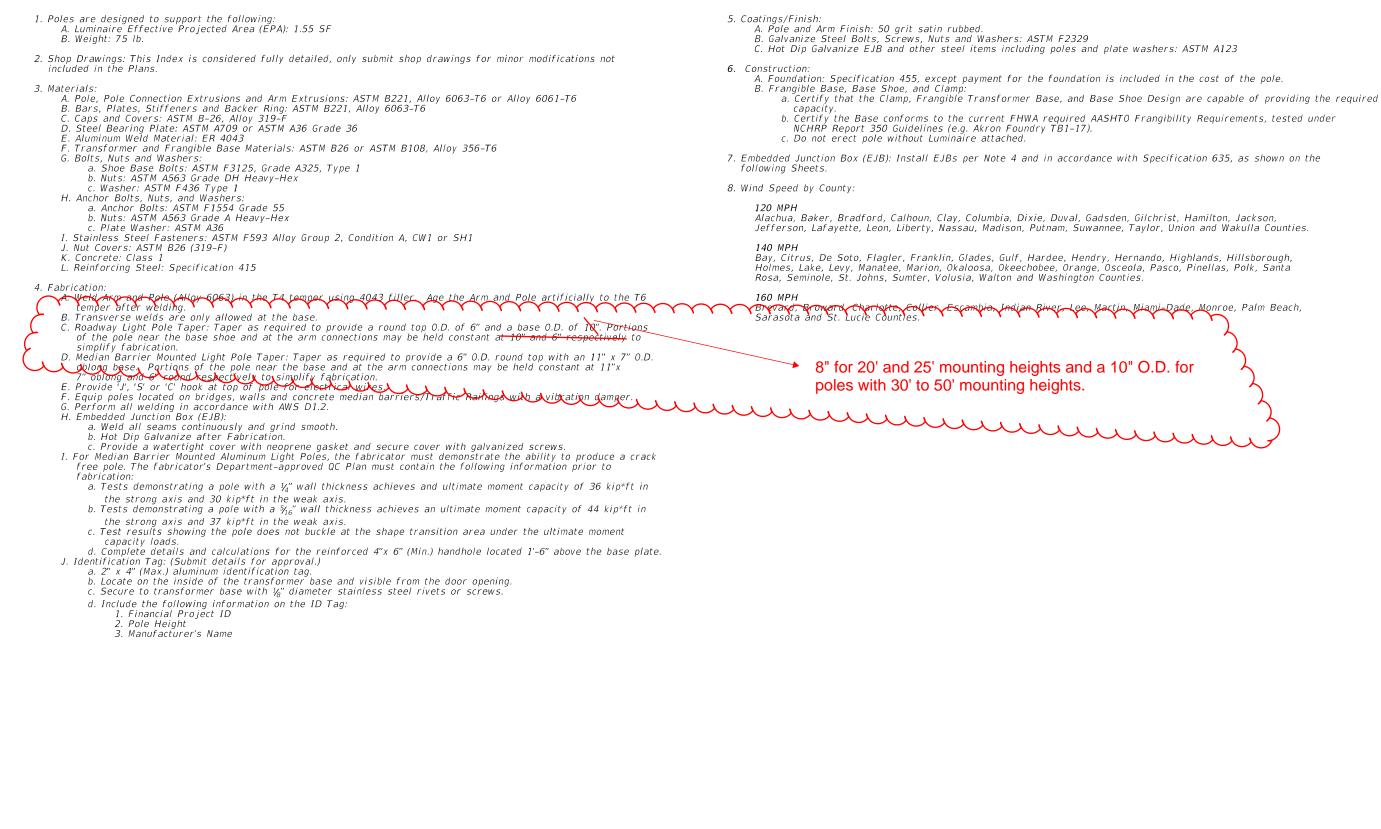
Sheet 1: Changed Note 4C Sheet 2: Added 20' & 25' mounting height Sheet 3:Change Strut weld dimension in ARM ELEVATION Detail Sheet 4: Added Pole P0 information.

Commentary / Background:

Wildlife-Friendly lighting. Add 20 & 25' standard light poles for use where deemed necessary by EMO.

Yes	No	Other Affected Offices / Documents: (Provide name of responsible personnel)
		Other Standard Plans –
	\checkmark	FDOT Design Manual –
	\checkmark	Basis of Estimates Manual –
		Standard Specifications –
		Approved Product List –
		Construction –
		Maintenance –
		Origination Package Includes: (Email or hand deliver package to Derwood Sheppard)
Yes	N/A	
\checkmark		Redline Mark-ups
	\checkmark	Proposed Standard Plan Instructions (SPI)
\checkmark		Revised SPI
		Other Support Documents
		ntation: Bulletin (Interim) DCE Memo Program Mgmt. Bulletin 🗹 FY-Standard Plans (Next Release)
		Contact the Roadway Design Office for assistance in completing this form

GENERAL NOTES:



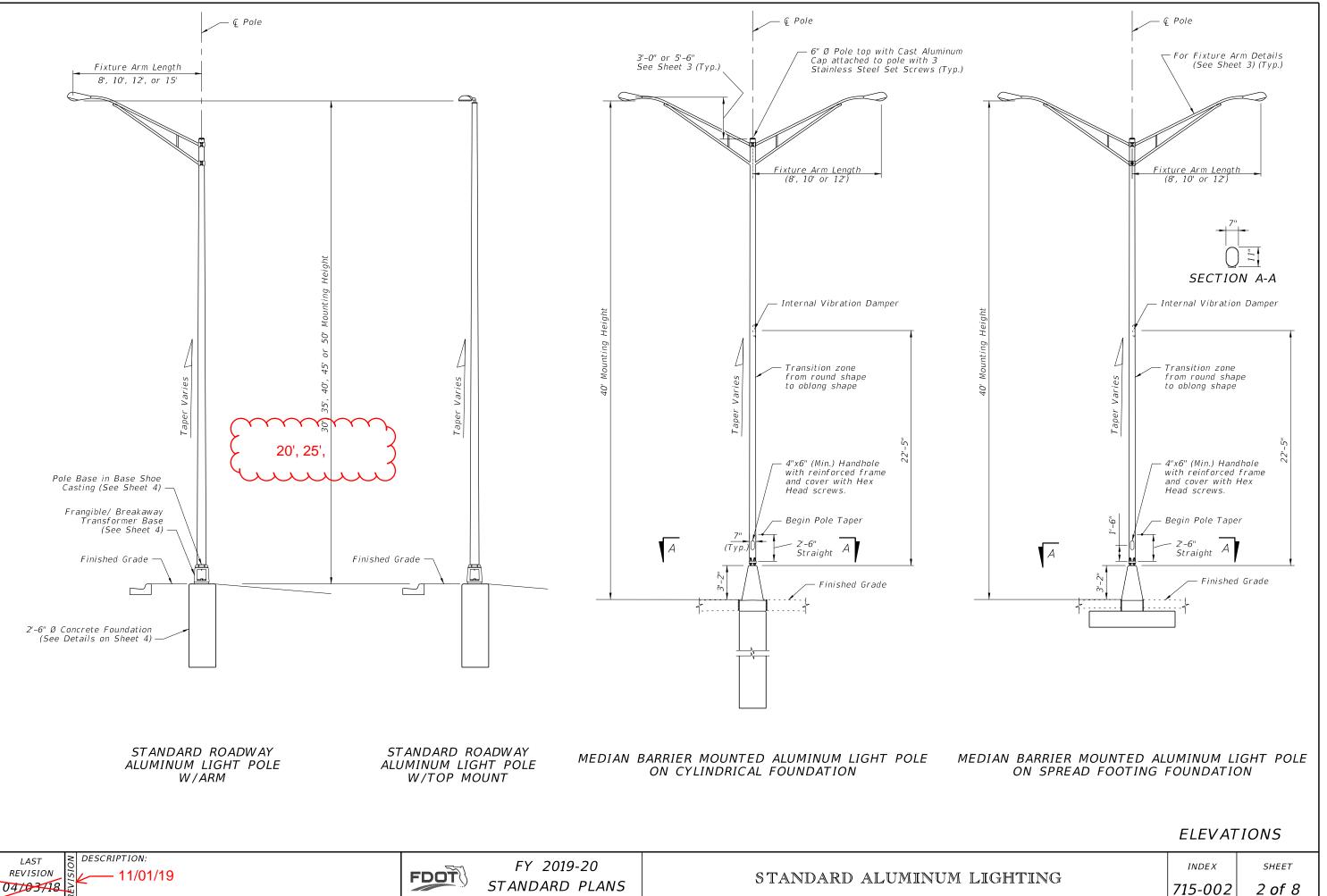
LAST

REVISION

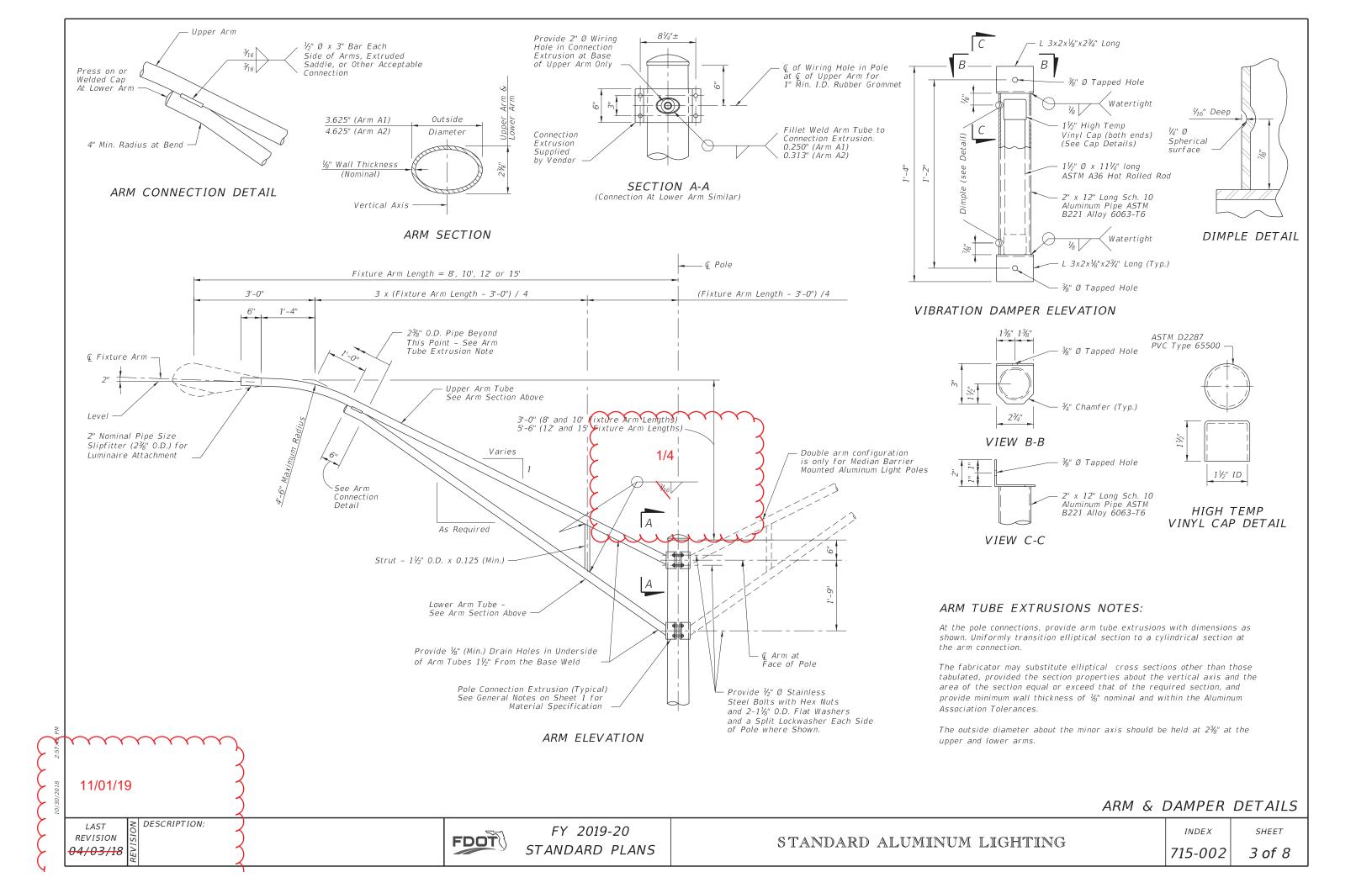


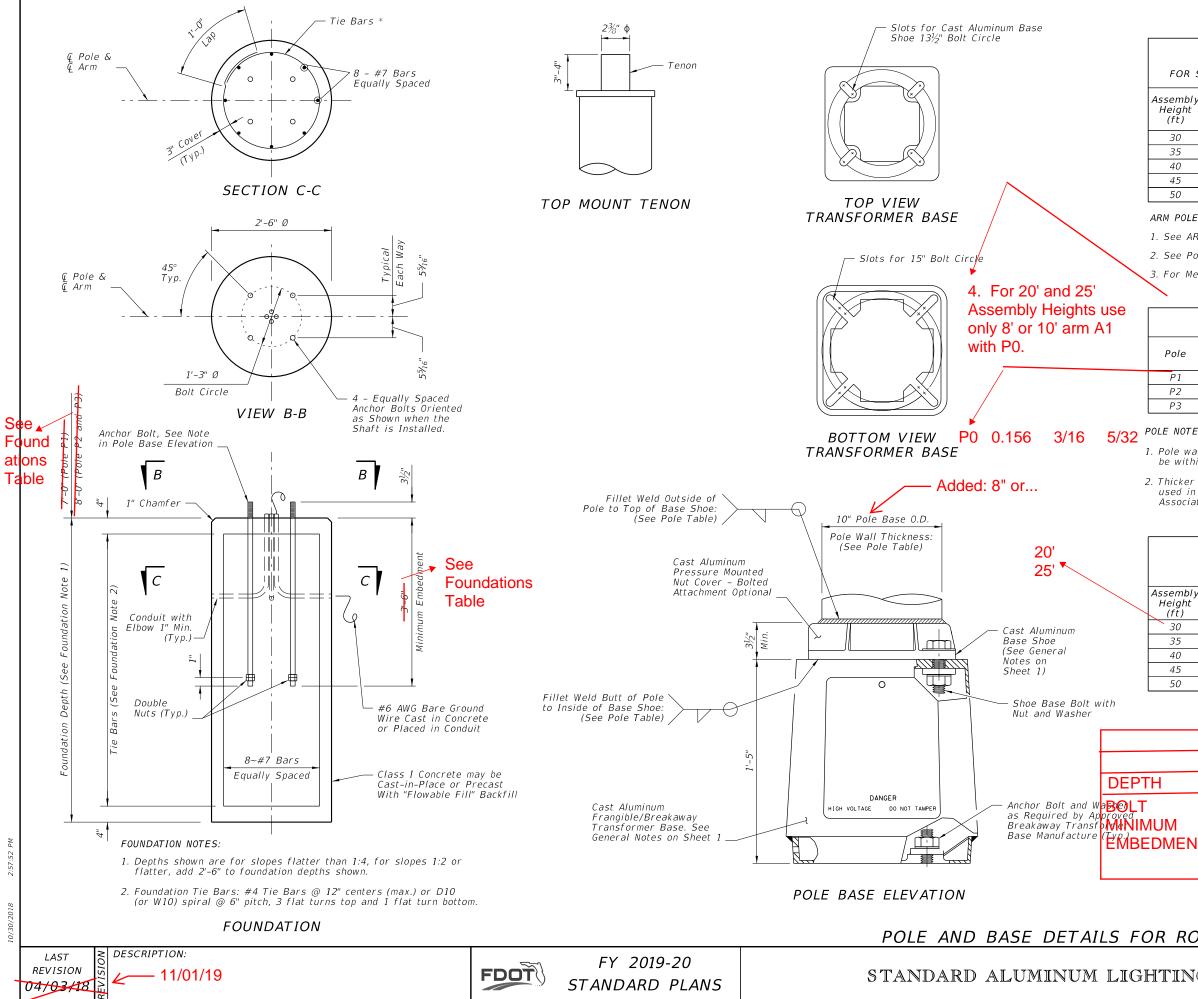
STANDARD ALUMINUM LIGH'

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ARM-POLE TABLE

FOR STANDARD ALUMINUM LIGHT POLES WITH ARM

sembly	Wind Speed and Arm Lengths (ft)						
leight	120 mph	140	mph	160 mph			
(ft)	8, 10, 12, 15	8, 10, 12	15	8,10	12, 15		
30				A1-P1	A2-P1		
35	A1-P1	A1-P1	A2-P1	A1-P1	AZ-FI		
40	AI-PI			A1-P2	A2-P2		
45	A1-P2	A1-P2	A2-P2	AI-PZ	AZ-PZ		
50	AI-PZ	AI-PZ	AZ-PZ	A1-P3	A2-P3		

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

3. For Median Barrier Mounted Pole, Use Arm A1

POLE TABLE						
Pole	Pole Wall Thickness	Top of Base Shoe Weld	Inside of Base Shoe Weld			
P1	0.156	³⁄16″	⁵ / ₃₂ "			
Ρ2	0.250	1/4"	1/4"			
Ρ3	0.313	5⁄16″	5⁄16″			

POLE NOTES:

1. Pole wall thicknesses 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 FOR STANDARD ALUMINUM LIGHT POLES WITH TOP MOUNT Wind Speed and Arm Lengths (ft) 120 m/ph 140 mph 160 mph

Pole P0

30			Pole P1
35	Pole P1	Pole P1	FOIE FI
40			
45	Pole P2	Pole P2	Pole P2
50	Pole P2	POIE PZ	

	FOUNDATIONS					
	P0	P1	P2	P3		
	6' -0"	7' -0"	8' -0"	8' -0"		
M MENT	2'-6"	3'-6"	3'-6"	3'-6"		

ROADWAY ALUM	YAY ALUMINUM LIGHT POL					
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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. Pole, Pole Connection Extrusions and Arm Extrusions: ASTM B221, 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-26, Alloy 319-F

- D. Steel Bearing Plate: ASTM A709 or ASTM A36 Grade 36 E. Aluminum Weld Material: ER 4043
- Transformer and Frangible Base Materials: ASTM B26 or ASTM B108, Alloy 356-T6
- G. Bolts, Nuts and Washers: a. Shoe Base Bolts: ASTM F3125, Grade A325, Type 1
- b. Nuts: ASTM A563 Grade DH Heavy-Hex
- c. Washer: ASTM F436 Type 1
- H. Anchor Bolts, Nuts, and Washers:
- a. Anchor Bolts: ASTM F1554 Grade 55
- b. Nuts: ASTM A563 Grade A Heavy-Hex
- c. Plate Washer: ASTM A36
- I. Stainless Steel Fasteners: ASTM F593 Alloy Group 2, Condition A, CW1 or SH1
- Nut Covers: ASTM B26 (319-F)
- K. Concrete: Class 1
- L. Reinforcing Steel: Specification 415
- 4. Fabrication:
- A. Weld Arm and Pole (Alloy 6063) in the T4 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 0.D. of 6" and a base 0.D. of 8" for 20' and 25' mounting heights and 10" 0.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 J', S' or C' hook at top of pole for electrical wires.
- Equip poles located on bridges, walls and concrete median barriers/Traffic Railings with a vibration damper.
- G. Perform all welding in accordance with AWS D1.2.
- H. Embedded Junction Box (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.
 I. 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 $\frac{1}{4}$ " 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 5#16" wall thickness achieves an 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 J. Identification Tag: (Submit details for approval.)
- a. 2" x 4" (Max.) aluminum identification tag.
- b. Locate on the inside of the transformer base and visible from the door opening.
- c. Secure to transformer base with $\frac{1}{16}$ diameter stainless steel rivets or screws.
- d. Include the following information on the ID Tag:
- 1. Financial Project ID
- 2 Pole Height
- 3. Manufacturer's Name

- 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 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:
- 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:

120 MPH

Alachua, Baker, Bradford, Calhoun, Clav, Columbia, Dixie, Duval, Gadsden, Gilchrist, Hamilton, Jackson, Jefferson, Lafayette, Leon, Liberty, Nassau, Madison, Putnam, Suwannee, Taylor, Union and Wakulla Counties.

140 MPH

Bay, Citrus, De Soto, Flagler, Franklin, Glades, Gulf, Hardee, Hendry, Hernando, Highlands, Hillsborough, Holmes, Lake, Levy, Manatee, Marion, Ökaloosa, Ökeechobee, Orange, Ösceola, Pasco, Pinellas, Polk, Santa Rosa, Seminole, St. Johns, Sumter, Volusia, Walton and Washington Counties.

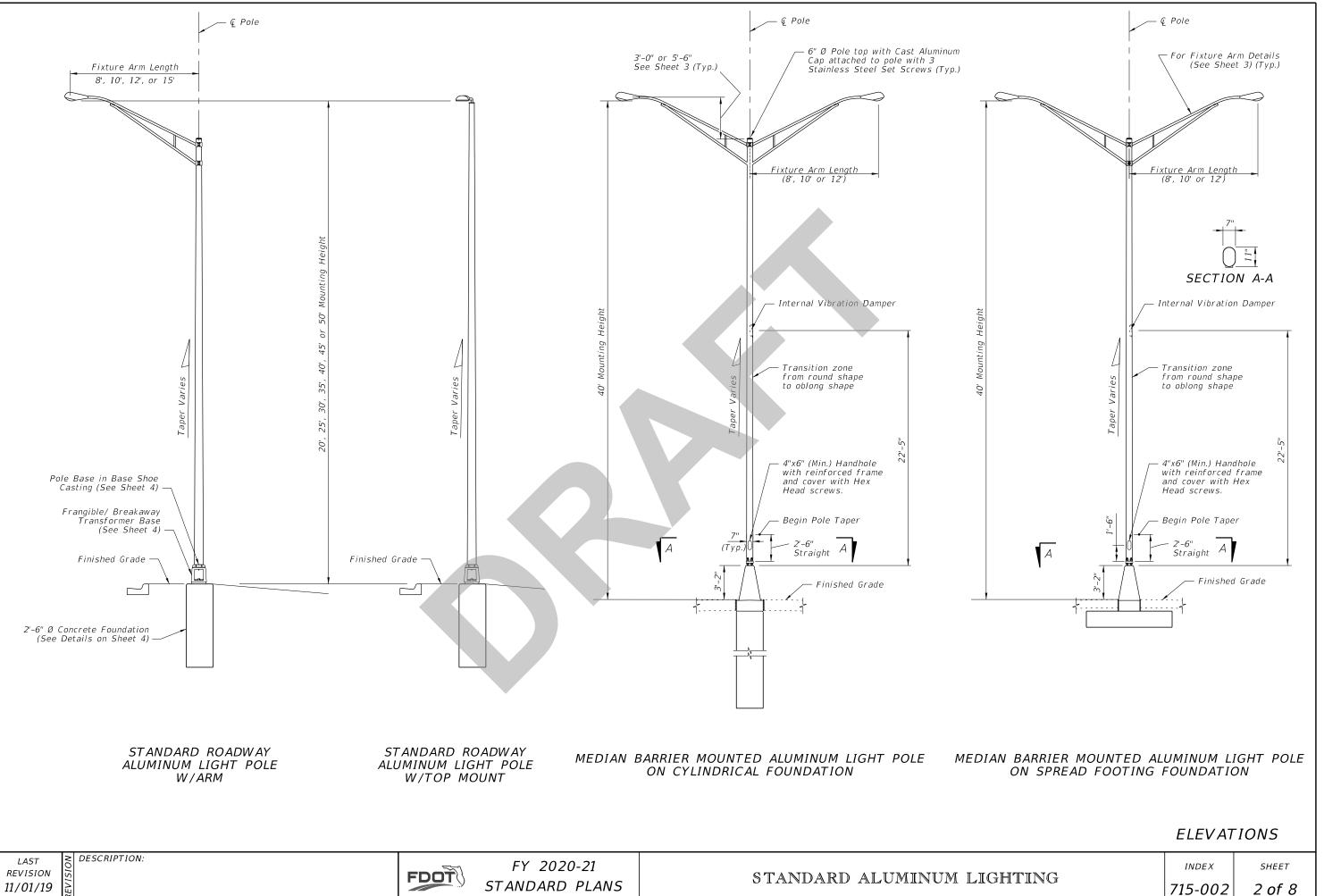
160 MPH.

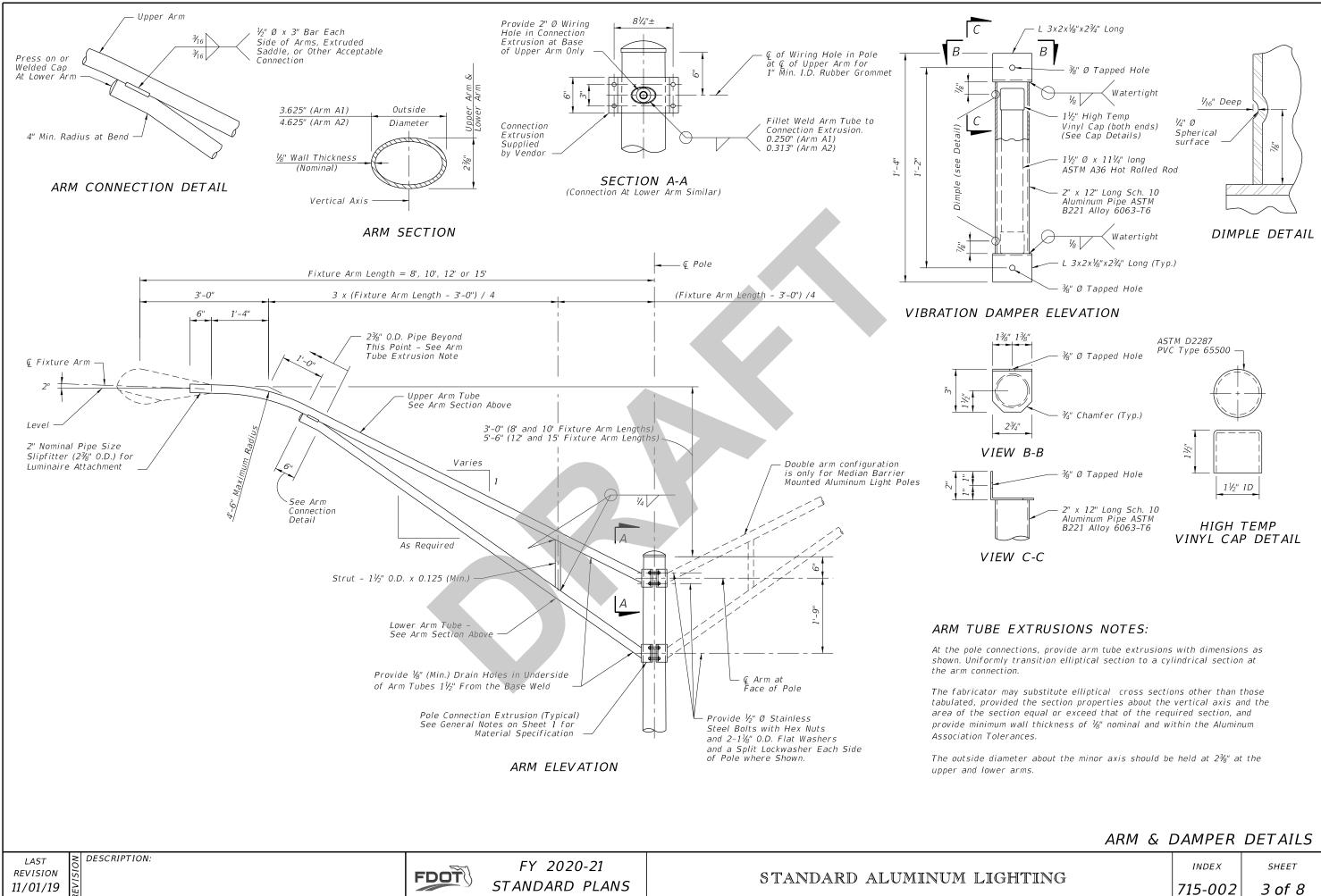
Brevard, Broward, Charlotte, Collier, Escambia, Indian River, Lee, Martin, Miami-Dade, Monroe, Palm Beach, Sarasota and St. Lucie Counties



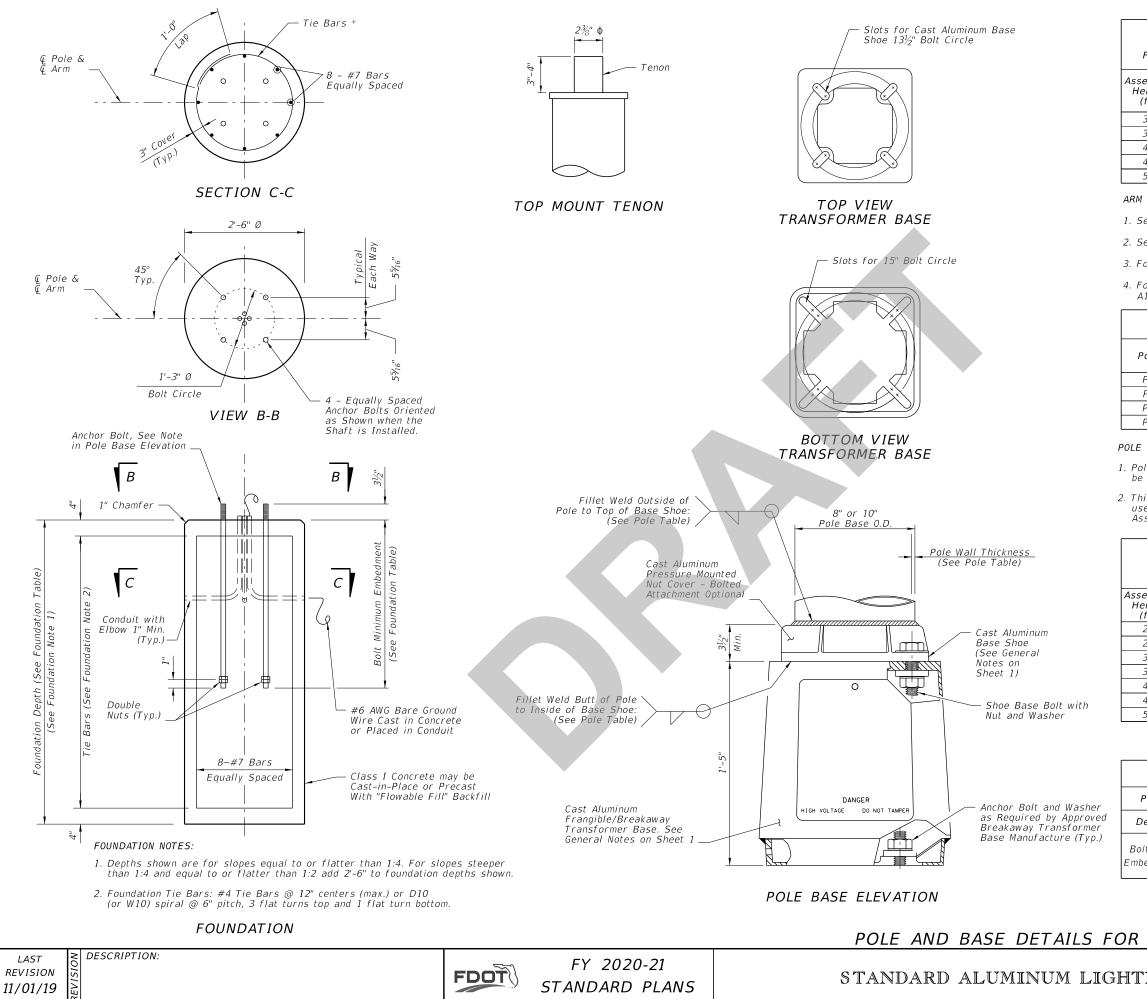
a. Certify that the Clamp, Frangible Transformer Base, and Base Shoe Design are capable of providing the required capacity. b. Certify the Base conforms to the current FHWA required AASHTO Frangibility Requirements, tested under

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35	A1-P1	A1-P1	A2-P1	AI-FI	AZ-FI		
40	AI-PI			A1-P2	A2-P2		
45	A1-P2	A1-P2	42.02	AI-PZ	AZ-PZ		
50	AI-PZ	AI-PZ	A2-P2	A1-P3	A2-P3		

ARM POLE NOTES:

See ARM SECTION detail on Sheet 3 for all A1 and A2 Values.
 See Pole Table for all P1, P2, and P3 values.

3. For Median Barrier Mounted Pole, Use Arm A1.

4. For 20' and 25' assembly heights use only 8' or 10' arm A1 with PO.

POLE TABLE					
Pole	Pole Wall Thickness	Top of Base Shoe Weld	Inside of Base Shoe Weld		
P0	0.156	³⁄16″	⁵ / ₃₂ "		
P1	0.156	3/16"	<i>⁵</i> / ₃₂ ″		
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POLE NOTES:

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TOP MOUNT POLE TABLE FOR STANDARD ALUMINUM LIGHT POLES WITH TOP MOUNT

sembly leight	Wind Speed and Arm Lengths (ft)				
(ft)	120 mph	140 mph	160 mph		
20	Pole PO	Pole PO	Pole PO		
25	FULL FU				
30		Pole P1	Pole P1		
35	Pole P1				
40					
45	Pole P2	Pole P2	Pole P2		
50	FOIE FZ	FOIE FZ			

FOUNDATION TABLE					
Pole	Р0	P1	P2	Р3	
Depth	6'-0"	7'-0"	8'-0"	8'-0"	
olt Min. ibedment	2'-6"	3'-6"	3'-6"	3'-6"	

ROADWAY ALUM	INUM LIC	GHT POLE
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