

ORIGINATION FORM
Proposed Revisions to the Specifications
(Please provide all information - incomplete forms will be returned)

Date: _____ **Office:** _____
Originator: _____ **Specification Section:** _____
Telephone: _____ **Article/Subarticle:** _____
Email: _____ **Associated Section(s) Revisions:** _____

Will the proposed revision require changes to the following Publications:

Publication	Yes	No	Office Staff Contacted	Date
Standard Plans Index				
Traffic Engineering Manual				
FDOT Design Manual				
Construction Project Administration Manual				
Basis of Estimate/Pay Items				
Structures Design Guidelines				
Approved Product List				
Materials Manual				
Maintenance Specs				

Will this revision necessitate any of the following:

Design Bulletin Construction (DCE Memo) Estimates Bulletin Materials Bulletin

Have all references to internal and external publications in this Section been verified for accuracy?

Synopsis: Summarize the changes:

Justification: Why does the existing language need to be changed?

Do the changes affect either of the following types of specifications (Hover over type to go to site.):

Special Provisions Developmental Specifications

List Specifications Affected: (ex. SP3270301, Dev330TL, Dev334TL etc.)

Contact the State Specifications Office for assistance completing this form.

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- 1. Are changes in line with promoting and making meaningful progress on improving safety, enhancing mobility, inspiring innovation, and fostering talent; explain how?**

- 2. What financial impact does the change have; project cost, pay item structure, or consultant fees?**

- 3. What impacts does the change have on production or construction schedules?**

- 4. How does this change improve efficiency or quality?**

- 5. Which FDOT offices does the change impact?**

- 6. What is the impact to districts with this change?**

- 7. Does the change shift risk and to who?**

- 8. Provide summary and resolution of any outstanding comments from the districts or industry.**

- 9. What is the communication plan?**

- 10. What is the schedule for implementation?**

GENERAL PROVISIONS FOR ALUMINUM ITEMS (INCLUDING WELDING)
(REV 4-28-23)

SECTION 965 is deleted and the following substituted:

965-1 General.

This Section covers the material and fabrication requirements for aluminum components. ~~All~~ Provide aluminum light poles ~~and Gantry J-arms , and railings~~ from ~~p~~Producers who are approved in one of the following fabrication categories:

1. American Institute of Steel Construction, Highway Component Manufacturer
2. American Welding Society, Certified Welding Fabricator
3. Canadian Welding Bureau, Fusion Welding of Aluminum (W47.2) ~~currently on the Department's Production Facility Listing. Producers seeking inclusion on the Department's Production Facility Listing must meet the requirements of Section 105.~~

965-2 Fabrication.

Provide fabricated components in accordance with AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, the Design Plans, and this section. Verify the strength of each Lot by tensile test. Alternate testing will not be accepted. Protect against damage and marring during transit and delivery. Provide an anodic coating (minimum 0.0002 inch) and chromate seal all hardware.

~~All welds must be visually inspected for final approval by an actively certified welding inspector, qualified through the~~ An American Welding Society certified welding inspector must visually inspect all welds for final approval. A certifying statement from the welding inspector must be provided with the railing. The document must identify the project information, date of inspection, welding inspector name, and inspector certification number.

Product	Test Method	Alloy/Temper	Reported Properties
Pole, Arm, Extrusions	ASTM B221	6061-T6	Alloy, Temper, Thickness, Tensile Strength
		6063-T6	
Pedestal, Posts	ASTM B429	6061-T6	
Bars, Plates, Stiffeners, Backing Ring, Shims, Shapes	ASTM B221	6063-T6	
		6061-T6	
		ASTM B209	
Railing	ASTM B308	6061-T6	
		ASTM B221	
		6351-T5	
		ASTM B241	
		6061-T6	
J-Arm Tube	ASTM B210	ASTM B429	
		ASTM B221	
		6061-T6	
		ASTM B429	

Table 965-1 Material Requirements for Aluminum Components			
Product	Test Method	Alloy/Temper	Reported Properties
J-Arm Connection Plate	ASTM B209	6061-T6	
Sheet	ASTM B209	6061-T6 5154-H38 5052-H38	
Structural Shapes	ASTM B308	6061-T6	
	ASTM B221		
Single Column Ground Sign Sand Castings	ASTM B26	A356-T6	
	ASTM B108	A356-T61	
Washers	ASTM B221	7075-T6 2024-T4	
Button Head or Flat Head Bolts	ASTM F468	2024-T4 6061-T6	S2 Lot Testing, Alloy, Temper
Hex Nuts	ASTM F467	6061-T6 6262-T9 2024-T4	S2 Lot Testing, Alloy, Temper

965-2.1 Light Poles: Provide aluminum lighting poles in accordance with this section and Table 965-1. Weld arms and poles in the T4 condition, using the filler metal ER4043, ER4047, ER5183, ER5356, or ER5556 in accordance with AWS D1.2 Aluminum Structural welding Code. Weld to castings in accordance with 965-2.3. Heat treat the arm and pole, until aged to the T6 condition. Transverse welds are only allowed at the base. Equip poles with a vibration damper, when specified in the contract documents.

Provide exterior surface with a clean, uniform silvery appearance, free of dark streaks and discoloration. Finish the pole and arm with a satin rubbed finish.

965-2.2 Overhead Sign Components: Provide aluminum toll gantry J-arms in accordance with this section and Table 965-1. Weld tube to plate connections in the T4 or T6 condition, using the filler metal ER4043, ER4047, ER5183, ER5356, or ER5556 in accordance with AWS D1.2 Aluminum Structural welding Code. Heat treat tube and plate in the T4 condition until aged to the T6 condition.

Provide exterior surface with a clean, uniform silvery appearance, free of dark streaks and discoloration.

965-2.3 Castings: Provide aluminum castings in accordance with this section and Table 965-1. Weld aluminum castings to itself or aluminum tube to castings using the filler metal ER4043, in accordance with AWS D1.2 Aluminum Structural welding Code. Heat treat the castings, until aged to the T6 condition.

965-2.4 Railing: Provide aluminum railing in accordance with this section and Table 965-1. Weld aluminum railing using the filler metal ER4043, ER4047, ER5183, ER5356, or ER5556 in accordance with AWS D1.2 Aluminum Structural welding Code.

965-2.5 Static Sign Assemblies: Provide aluminum sheet, plate, and structural shapes in accordance with this section and Table 965-1. Weld structural profiles to itself or aluminum components using ER4043, ER4047, ER5183, ER5356 or ER5556 in accordance with

AWS D1.2 Aluminum Structural Welding Code. Heat treat the structural profiles, until aged to the T6 condition.

965-2.6 Transformer Bases (Excluding Lighting):

965-2.6.1 Product Acceptance: Manufacturers seeking evaluation of products for inclusion on the APL shall submit an application in accordance with Section 6 and include the following documentation, showing that the product meets the applicable requirements.

Table 965-2 Submittal Compliance Requirements	
Documentation	Requirements
Certified Test Report	Shows that product meets Moment Capacity
Installation Instructions	Include installation instructions
Product Identification Photo	Display's the manufacturer's name or logo and the model number.
Product Photo	Displays the significant features of the product as required in this section.
Technical Data Sheet or Product Drawing	Uniquely identifies the product and includes product details, notes, material specifications, dimensions, and sizes meeting the specification

965-2.6.2 Physical Requirements: Meet the requirements of Table 965-3.

Table 965-3 Physical Requirements for Transformer Base		
Feature	Requirement	Documentation
Height	Base is 12 to 18 inches in height	Technical Data Sheet or Product Drawing
Base Material	ASTM B26, 356 T6 or 319	Technical Data Sheet or Product Drawing
Threaded Hub	Hub located at the top for mounting a nominal 4-inch Schedule 40 (4-1/2-inch outside diameter) aluminum pole. The threaded hub must be tapped to allow full pole engagement.	Technical Data Sheet or Product Drawing
Fastening	Provides for fastening to a foundation with four 3/4-inch anchor bolts located 90 degrees apart. The base design must allow for bolts that are placed off-center.	Technical Data Sheet or Product Drawing
Door Size	Provides a door opening of not less than 8 inches by 8 inches.	Technical Data Sheet or Product Drawing
Door Material	The door must be constructed of fiberglass or other non-combustible, non-aluminum material.	Technical Data Sheet or Product Drawing

Table 965-3 Physical Requirements for Transformer Base		
Door Attachment	Attach the door to the base with cleats and one stainless steel socket button head screw or by other means suitable for NEMA 3 electrical enclosures.	Technical Data Sheet or Product Drawing
Moment Capacity	Supports an ultimate moment capacity of 10,000 foot-pounds, without breaking, cracking or rupturing in any manner.	Certified Test Report
Breakaway	Meets the requirements in the AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.	FHWA Eligibility Letter.

965-3 Paint for Poles, Pedestals, and Posts.

Paint systems used on aluminum poles, pedestals, and posts shall meet the color requirements as specified in the Contract Documents. All paint systems shall possess physical properties and handling characteristics that are compatible with the application requirements of Section 646. Materials shall be specifically intended for use over aluminum. Paint systems shall exhibit no loss of adhesion or total color difference (ΔE^*_{ab}) greater than 8.0 units for five years after final acceptance as specified in 5-11. An aluminum pole, pedestal, post, or sign panel that exhibits a cumulative surface area of delamination in excess of 50 square inches will constitute an adhesion failure. Delamination shall be defined as any area of exposed metal surface subsequent to hand tool cleaning. A ΔE^*_{ab} value exceeding 8.0 units per the International Commission on Illumination $L^*a^*b^*$ 1976 (CIELAB) space and color difference formula, measured in accordance with ASTM D2244, will constitute a color retention failure.

The Department will measure and enter in the Department's database the CIELAB color chromaticity coordinates for the color of the top coat of sample coupons provided as required by 646-2.7 using a BYK-Gardner Handicolor colorimeter using D65 illuminant and 2-degree geometry settings. The Department-measured CIELAB chromaticity coordinates shall define the initial color and will be used for resolution of color retention failures and the resolution of color retention disputes.

965-4 Certification.

Produce a certificate of compliance for non-APL products, upon request of the Engineer. Certificates of compliance shall identify the reportable properties of Table 965-1.