

EXPECTED IMPLEMENTATION JULY 2021

646 ALUMINUM POLES, PEDESTALS, AND POSTS (REV 12-10-20) (FA 1-29-21) (7-21)

ARTICLE 646-1 is deleted and the following substituted:

646-1 Description.

The work in this Section consists of furnishing and installing aluminum poles, pedestals, and posts at the locations shown in the Plans and in accordance with the details shown in the Plans and Standard Plans, subject to a five-year warranty period as defined herein. The warranty period will apply only when aluminum poles, pedestals, and posts are painted as called for in the Contract Documents. An aluminum pedestal consists of a pole and a transformer base.

ARTICLE 646-2 is expanded by the following new Subarticle:

646-2 Materials.

646-2.1 Poles and Posts: Use nominal 4 inch diameter Schedule 40 aluminum poles and posts meeting the requirements of The Aluminum Association Alloy 6061-T6 and ASTM B429. Poles used with transformer bases must be threaded with No. 8 NPT threads. Sufficient threads are required to fully seat the pole into the hub of the pedestal base.

646-2.2 Transformer Base: Use transformer bases listed on the Department's Approved Product List (APL).

Manufacturers seeking APL approval of proprietary transformer bases must submit an application in accordance with Section 6, independent laboratory test report, and calculations and drawings showing details, notes, materials, dimensions, and sizes that the transformer base meets the following requirements:

1. **Materials:** Meets the material requirements of Aluminum Association Alloy 319 or 356-T6 and ASTM B26 or ASTM B108.
2. **Height:** Base is 12 to 18 inches in height with a threaded hub at the top for mounting a nominal 4 inch Schedule 40 aluminum pole. The threaded hub must be tapped to allow full pole engagement.
3. **Fastening:** Provides for fastening to a foundation with four 3/4 inch anchor bolts located 90 degrees apart. The bolt circle diameter must be in accordance with the base manufacturer recommendations. The base design must allow for bolts that are placed off-center.
4. **Door:** Provides a door opening of not less than 8 inches by 8 inches. The door must be constructed of fiberglass or other non-combustible, non-aluminum material. 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.
5. **Moment Capacity:** Supports an ultimate moment capacity of 10,000 foot-pounds. Submit certified test reports from the manufacturer verifying that each base model meets the moment capacity without breaking, cracking or rupturing in any manner.

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6. Breakaway: Meets the requirements in the AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals. Submit the FHWA certification for product approval.

7. Identification: Is legibly and visibly marked with the manufacturer's name or logo and the model number.

646-2.3 Anchor Bolts: Provide ASTM F1554 Grade 55 anchor bolts, 3/4 inch diameter, 18 inches long, with double nuts per ASTM F1554 Grade 55. For each bolt, provide two 3/4 inch ASTM A563 Grade A or higher heavy hex nuts and one 3/16 inch thick by 3 inch round ASTM A36 plate washer or one ASTM F436 Type 1 washer. Anchor bolts, washers and hex nuts must be galvanized in accordance with ASTM F2329.

646-2.4 End Caps: Provide end caps sized for nominal 4 inch diameter Schedule 40 aluminum poles. The cap must be a minimum of 1/4 inch thick and tapped for at least two set screws. Set screws will be provided with the end cap.

646-2.5 Shims: Provide U-shaped galvanized steel shims 2 inches wide by 2-1/2 inches long, shaped to fit around a 3/4 inch anchor bolt.

646-2.6 Concrete: Use Class 1 concrete meeting the requirements of Section 346.

646-2.7 Painting:

646-2.7.1 General: When required by the Contract Documents, provide painted aluminum poles, pedestals, and posts. Provide products that will meet specification requirements throughout the warranty period. Meet the color requirement as specified in the Contract Documents. Provide the Engineer with two metal sample coupons, a minimum of 2 inches by 4 inches, painted concurrently and with the same paint as was used on the first lot of any aluminum poles, pedestals, and posts delivered to the jobsite. Submit sample coupons and manufacturer product data sheets to the Engineer along with the delivery of the first shipment of any painted aluminum poles, pedestals, and posts delivered to the jobsite. At the time of their delivery, the sample coupons described in this paragraph must match the color of the aluminum poles, pedestals, and posts to within 1ΔE measured as specified in 975-4. If the delivered sample coupons exhibit a difference in color from the poles, pedestals, and posts greater than 1ΔE then the sample coupons will be considered unacceptable and no payment shall be made for the materials which the sample coupons represent. Those materials shall not be accepted by the Department until acceptable representative sample coupons in accordance with the requirements of this Section have been submitted to the Engineer.

646-2.7.2 Responsible Party Warranty: When the Contract Documents call for painted aluminum poles, pedestals, and posts, the Contractor shall designate a responsible party to accept responsibility. The responsible party designated by the Contractor must execute and submit to the Department a form, provided by the Department, prior to the first delivery to the jobsite of any painted aluminum poles, pedestals, and posts, stipulating that the responsible party accepts responsibility for ensuring the coating system adhesion and color retention requirements as specified in 975-4 are met for a period of five years after final acceptance in accordance with 5-11. The responsible party shall also bear the continued responsibility for performing all remedial work associated with repairs of any adhesion or color retention failure as defined in Section 975, as to which notice was provided to the responsible party within the five year warranty period. Failure to timely designate the responsible party will result

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in the Contractor being the responsible party unless otherwise agreed to in writing by the Department. The responsible party shall be either the Contractor or the supplier of the painted aluminum poles, pedestals, and posts. When the responsible party is the fabricator, the responsible party shall be one of the fabricators listed on the Prequalified Painted Galvanized Steel and Aluminum Products Fabricators List. This list may be viewed on the Department's website at the following URL:

<https://www.fdot.gov/construction/Engineers/PaintedPoleSuppliers.shtm>

Upon final acceptance of the Contract in accordance with 5-11, the Contractor's responsibility to ensure that the coating system adhesion and color retention requirements specified in 975-4 will terminate. The obligations of the responsible party set forth in this Section shall start at final acceptance of the Contract in accordance with 5-11 and continue thereafter until expiration of the five-year warranty period.

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