

992 HIGHWAY LIGHTING MATERIALS.

(REV 8-13-08) (FA 8-18-08) (1-09)

ARTICLES 992-1 thru 992-4 (Pages 902-904) is deleted and the following substituted:

992-1 Design Criteria.

992-1.1 General: The light poles and bracket arms shall be in accordance with the requirements of the AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, the FDOT Structures Manual and with the specific requirements contained in this Section.

992-1.2 Wall Thickness of Steel High Mast Poles: The minimum wall thickness for galvanized steel poles shall be 0.1793 inch (7 gauge).

992-1.3 Light Pole Assembly: The light pole assembly shall conform to the applicable requirements of IES, EEI, and NEMA (Illuminating Engineering Society, Edison Electric Institute, and National Electrical Manufacturers Association).

992-2 Light Poles.

992-2.1 Galvanized Steel: Galvanized steel high mast poles shall be continuous-tapered, round or minimum of 12 sided poles. Each section shall be manufactured from one length of steel sheet, formed in continuous tapered tube, with one continuous arc-welded vertical seam. They shall be galvanized in accordance with ASTM A 123.

992-2.2 Aluminum: Aluminum light poles shall be round, one piece, continuous-tapered, high-strength aluminum, and of an approved alloy meeting the requirements of the Design Standards.

992-2.3 Length: The poles shall be of such length as to provide the approximate luminaire mounting height shown in the plans or directed by the Engineer.

992-2.4 Bases: Transformer base poles shall have a grounding lug in the transformer base. A heavy cast base shall be attached to the lower end of each shaft by a continuous arc weld, inside and outside of the shaft, or by a combination of arc welding and a press fit, subject to the approval of the Engineer. The base shall be arranged for anchoring to a transformer base or a concrete foundation with four anchor bolts 1 inch (minimum size), unless otherwise shown in the plans.

992-2.5 General: The lighting pole assembly shall conform to the applicable requirements of IES, EEI and NEMA. The base shall be provided with the necessary anchorage, hardware, and bolt covers. An ornamental cap shall be provided to fit over the top of the pole to exclude moisture. All poles not located behind guardrail or bridge rail, or that are not wall mounted, shall be frangible, except as shown in the plans.

992-3 Bracket Arms.

Bracket arms shall be aluminum, truss-type construction, consisting of upper and lower members with vertical struts, and shall have the luminaire end formed to accommodate a 2 inch pipe slipfitter. The bracket arms shall meet the design requirements of 992-1.1 and 992-1.3.

Bracket arms shall be attached to aluminum poles, with machine bolts and pole adapters, unless approved otherwise.

992-4 Luminaires, Ballasts, etc.

Luminaires shall consist of a precision-cast aluminum housing and reflector holder, a refractor-holder latch on the street side, and a hinge with a safety catch on the house side of the luminaire; also a slipfitter suitable for attaching to a 2 inch mounting bracket, gasketing between the reflector and the refractor and the socket entry, an adjustable bracket capable of producing the specified IES type light distributions, and a heat-resistant, high-transmission glass prismatic refractor. Luminaires may be induction, metal halide, or high pressure sodium vapor, as indicated in the plans.

Unless otherwise indicated in the plans, the luminaires shall have internal ballasts of the regulated output (constant wattage) type, suitable for operating on the circuits shown in the plans. The ballasts shall be pre-wired to the lamp socket and terminal board, requiring only connection of the power-supply leads to the ballast primary terminals. The ballast shall have a power factor of at least 90%. The ballast shall provide for regulation within $\pm 6\%$ variation in lamp watts at a primary voltage variation of $\pm 10\%$ for lamps of 400w or less and provide for regulation within $\pm 13\%$ variation in lamp watts at a primary voltage variation of $\pm 10\%$ for lamps of 750w or greater.

The luminaires shall meet the requirements shown in the plans.

992-4.1 Induction Sign Fixtures: The fixture shall be rated for 100,000 hours with a minimum lamp efficiency of 70% of lumen output at 60,000 hours. The housing shall be precision cast aluminum with a corrosive resistant polyester powder coat finish. The standard color shall be gray. The cover shall be attached to the housing utilizing stainless steel bolts, and the housing shall be sealed to provide an IP 55 rating or greater. The mounting assembly for a sign light shall be a slipfitter type to accommodate a 1 1/2 inches schedule 40 steel pipe connection. The luminaire manufacturer shall place a permanent tag on the luminaire housing on which the following is imprinted: the luminaire voltage, lamp wattage and a blank area for the Contractor to inscribe the installation date. The refractor shall be tempered clear or microprismatic glass. The generator/ballast may be internal or external to the fixture. If the generator is internal to the fixture, the maximum operating temperature shall not exceed 130°F when measured at the base point. If the fixture is not compatible with the circuit voltage, step-down transformers or other equivalent circuitry shall be provided by the fixture manufacturer to provide for a complete installation. The manufacturer shall provide a five year non-prorated warranty to the Department. The warranty shall begin on the installation date.

992-4.2 Certification: The Contractor shall provide the Engineer a certification conforming to the requirements of Section 6 from the manufacturer of the luminaries and electrical ballasts confirming that the requirements of this Section are met. Each certification shall cover only one LOT for luminaries and/or electrical ballasts.