



Florida Department of Transportation

RICK SCOTT
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

ANANTH PRASAD, P.E.
SECRETARY

August 8, 2013

Monica Gourdine
Program Operations Engineer
Federal Highway Administration
545 John Knox Road, Suite 200
Tallahassee, Florida 32303

Re: State Specifications and Estimates Office
Section **992**
Proposed Specification: **9920109 Highway Lighting Materials.**

Dear Ms. Gourdine:

We are submitting, for your approval, two copies of the above referenced Supplemental Specification.

These changes were proposed by Chester Henson of the Roadway Design Office to revise specifications to reflect new service point detail index in Design Standards.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via email to SP965DS or daniel.scheer@dot.state.fl.us.

If you have any questions relating to this specification change, please call me at 414-4130.

Sincerely,

Signature on file

Daniel Scheer, P.E.
State Specifications Engineer

DS/cah

Attachment

cc: Florida Transportation Builders' Assoc.
State Construction Engineer

HIGHWAY LIGHTING MATERIALS.(REV ~~86-827-13~~)

SUBARTICLE 992-1.9 (Page 1134) is deleted and the following substituted:

992-1.9 Distribution Service Point Equipment: All electrical equipment shall be provided with 75°C terminal lug connectors.

992-1.9.1 Service Main: Two pole 480 V, ~~235,000~~ **min.** AIC, solid neutral, NEMA 4X stainless steel, enclosed circuit breaker rated for service entrance.

992-1.9.2 Control Panel Enclosure: NEMA 4X stainless steel enclosure ground mounted per Design Standards, Index No. 17736. Dimensions shall be as necessary for equipment inside.

992-1.9.3 Control Panel Main Disconnect: ~~Two Pole~~**Single phase**, 480V, ~~235,000 AIC 2-wire~~ with ~~solid neutral~~**ground bus** in NEMA 1 enclosure, ~~with two pole, 18,000 AIC branch circuit breakers.~~ Number and rating of branch circuit breakers shall be as indicated in Plans.

992-1.9.4 Lighting Contactor: Two pole, ~~120V~~ **480V** electrical contactor in NEMA 1 enclosure **w/HOA on cover, 120V coil and fused control power transformer.**

992-1.9.5 Electrical Panel: **Single Phase** (Two pole), 480V, ~~25,000 AIC~~ with solid neutral in NEMA 1 enclosure.

992-1.9.6 Surge Protection Device: Surge protective device shall be Type 1, UL or NRTL listed to 1449, Third Edition. Surge current rating on per phase basis shall equal or exceed 50KA. I-nominal rating shall be 10KA or 20KA. **480V true single phase system** ~~M~~ modes of protection shall include L-G and N-G having UL 1449-3 Voltage Protection Ratings of 2000V or lower. **240/480V split phase systems deriving 480V across two energized conductor's modes of protection shall include L-G and N-G having UL 1449-3 Voltage Protection Ratings of 1200V or lower.**

ARTICLE 992-4 (Page 1140) is deleted and the following substituted:

992-4 Sign Lighting.

992-4.1 Luminaires and Ballasts: The luminaire shall consist of a precision cast aluminum housing 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 hardware, 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 inch, 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.

Induction or LED fixtures shall meet the following requirements: Correlated Color Temperature of CCT 4500 K (plus or minus 500K), maintain 94.1% intensity at 6,000 hours (IES LM-80) and have IESNA light distribution curves (IES LM-79) by an EPA recognized laboratory. The driver/ballast may be internal or external to the fixture. The driver/ballast shall have a power factor greater than or equal to 90% at

full load and a total harmonic distortion less than or equal to 20% at full load. The fixture shall accommodate a circuit voltage of 480 volts. 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 fixture shall have an internal surge protective device. The surge protection must meet 10kV/5kA meeting ANSI/IEEE 62.41.

The fixture shall be rated for a minimum lamp efficiency of 60% lumen output at 75,000 hours at 25°C. The manufacturer shall provide a five year non-prorated warranty to the Department. The warranty shall begin on the installation date.

HIGHWAY LIGHTING MATERIALS.**(REV 8-8-13)**

SUBARTICLE 992-1.9 (Page 1134) is deleted and the following substituted:

992-1.9 Distribution Service Point Equipment: All electrical equipment shall be provided with 75°C terminal lug connectors.

992-1.9.1 Service Main: Two pole 480 V, 35,000 min. AIC, solid neutral, NEMA 4X stainless steel, enclosed circuit breaker rated for service entrance.

992-1.9.2 Control Panel Enclosure: NEMA 4X stainless steel enclosure ground mounted per Design Standards, Index No. 17736. Dimensions shall be as necessary for equipment inside.

992-1.9.3 Control Panel Main Disconnect: Two Pole, 480V, 35,000 AIC with solid neutral in NEMA 1 enclosure. Number and rating of branch circuit breakers shall be as indicated in Plans.

992-1.9.4 Lighting Contactor: Two pole, 480V electrical contactor in NEMA 1 enclosure w/HOA on cover, 120V coil and fused control power transformer.

992-1.9.5 Electrical Panel: Single Phase (Two pole), 480V, with solid neutral in NEMA 1 enclosure.

992-1.9.6 Surge Protection Device: Surge protective device shall be Type 1, UL or NRTL listed to 1449, Third Edition. Surge current rating on per phase basis shall equal or exceed 50KA. I-nominal rating shall be 10KA or 20KA. 480V true single phase system modes of protection shall include L-G and N-G having UL 1449-3 Voltage Protection Ratings of 2000V or lower. 240/480V split phase systems deriving 480V across two energized conductor's modes of protection shall include L-G and N-G having UL 1449-3 Voltage Protection Ratings of 1200V or lower.

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