

ORIGINATION FORM

Date: June 27, 2013

Originator: Chester Henson

Contact Information: chester.henson@dot.state.fl.us

Specification Title: Highway Lighting Materials

Specification Section, Article, or Subarticle Number: Revision to 992-1.9.3, 992-1.9.4, 992-1.9.6 and new section 992-1.9.7.

Why does the existing language need to be changed? Revised specifications to reflect new service point detail index in Design Standards.

Summary of the changes: Revised specifications for Main Disconnect, Lighting Contactor and Surge Protection Device.

Are these changes applicable to all Department jobs? Yes
If not, what are the restrictions?

Will these changes result in an increase or decrease in project costs? No
If yes, what is the estimated change in costs?

With who have you discussed these changes? Specifications and Industry

What other offices will be impacted by these changes? None

Are changes needed to the PPM, Design Standards, SDG, CPAM or other manual? Yes,
Design Standard 17504, Sheet 2.

Is a Design Bulletin, Construction Memo, or Estimates Bulletin needed? No

Contact the State Specifications Office for assistance in completing this form.

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ANANTH PRASAD, P.E.
SECRETARY

MEMORANDUM

DATE: July 2, 2013

TO: Specification Review Distribution List

FROM: Daniel Scheer, P.E., State Specifications Engineer

SUBJECT: Proposed Specification: **9920109 Highway Lighting Materials.**

In accordance with Specification Development Procedures, we are sending you a copy of a proposed specification change.

This change was proposed by Chester Henson of the Roadway Design Office to revise specifications to reflect new service point detail index in Design Standards.

Please share this proposal with others within your responsibility. Review comments are due within four weeks and should be sent to Mail Station 75 or to my attention via e-mail at SP965DS, or daniel.scheer@dot.state.fl.us. Comments received after **July 30, 2013**, may not be considered. Your input is encouraged.

DS/cah
Attachment

HIGHWAY LIGHTING MATERIALS.
(REV 6-27-13)

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, 25,000 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, ~~25,000 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~~ electrical contactor in NEMA 1 enclosure *w/HOA on cover, 120V coil and fused control power transformer*.

992-1.9.5 Electrical Panel: 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 C62.41.

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.