

ORIGINATION FORM

Date: 5-2-2014

Originator: Jeff Morgan

Contact Information: Traffic Engineering and Operations Office, 850-921-7354

Specification Title: **TRAFFIC CONTROLLER ACCESSORIES**

Specification Section, Article, or Subarticle Number: 678

Why does the existing language need to be changed? Changes made to reference national standards (NEMA and CALTRANS TEES) where applicable. This specification is also being moved from the Department's Minimum Specifications for Traffic Control Signals and Devices (MSTCSD) to the Section 678 of the Department's Standard Specifications for Road and Bridge Construction (SSRBC) as part of the Consolidation of Products and Specifications (COPS) effort being undertaken within FDOT central office.

Summary of the changes: See above.

Are these changes applicable to all Department jobs? If not, what are the restrictions? This requirement is applicable to projects that include Traffic Controller Accessories used within a traffic controller cabinet used at a signalized intersection.

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

With who have you discussed these changes? Staff involved in the discussion and decision to make noted changes and move to the SSRBC include COPS committee members from the Construction, Specifications and Estimates, Roadway Design and Traffic Engineering and Operations Office.

What other offices will be impacted by these changes? District counterparts of offices mentioned above.

Are changes needed to the PPM, Design Standards, SDG, CPAM or other manual? No. 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: June 2, 2014
TO: Specification Review Distribution List
FROM: Daniel Scheer, P.E., State Specifications Engineer
SUBJECT: Proposed Specification: **6780000 Traffic Controller Accessories.**

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

This change was proposed by Jeff Morgan of the State Traffic Engineering and Operations Office to consolidate material requirements from the Minimum Specifications for Traffic Control Signals and Devices (MSTCSD) and the Standard Specifications for Road and Bridge Construction (SSRBC). This activity is a planned part of an ongoing specification consolidation effort.

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 **June 30, 2014**, may not be considered. Your input is encouraged.

DS/dt
Attachment

CONTROLLER ACCESSORIES.
(REV 5-630-14)

SECTION 678 is deleted and the following substituted:

SECTION 678
***TRAFFIC* CONTROLLER ACCESSORIES**

678-1 Description.

Furnish and install traffic controller accessories as shown in the Plans. Meet the requirements of Section 603.

678-2 Materials.

Use traffic controller accessories listed on the Department's Approved Product List (APL). Ensure that all traffic controller accessories are *permanently* marked ~~in accordance with Section 603 and the markings are visible after installation~~ *with the manufacturer's name or trademark, model or part number, and serial number.*

Traffic controllers must meet the following applicable industry standards:

<i>NEMA TS1 Conflict Voltage Monitor.....</i>	<i>..... NEMA TS-1-1989, Section 6</i>
<i>NEMA TS2 Malfunction Management Unit.....</i>	<i>..... NEMA TS-2-2003, Section 4</i>
<i>Load Switch</i>	<i>NEMA TS 2 2003, Section 6.2</i>
<i>Flasher.....</i>	<i>NEMA TS 2 2003, Section 6.3</i>
<i>Flash Transfer Relay</i>	<i>NEMA TS 2 2003, Section 6.4</i>
<i>210 Conflict Monitor (Model 210)</i>	<i>..... CALTRANS TEES, 2009</i>
<i>Power Supply Module (Model 206).....</i>	<i>..... CALTRANS TEES, 2009</i>
<i>Power Distribution Assembly</i>	<i>..... CALTRANS TEES, 2009 6.4.3</i>
<i>Flash Transfer Relay (Model 430)</i>	<i>..... CALTRANS TEES, 2009 6.4.5.1.5</i>
<i>Input File</i>	<i>CALTRANS TEES, 2009 6.4.4</i>
<i>Current Monitor (Model 208).....</i>	<i>..... CALTRANS TEES, 2009 3.7.2</i>

Ensure all traffic controllers perform all specified functions during and after being subjected to the environmental testing procedures described in NEMA TS-2, Sections 2.2.7, 2.2.8, and 2.2.9.

678-2.1 Time Switch: *Ensure the A-time switch is a 24-hour timer which controls the daily switching operation of circuit contacts at preselected times.*

A-Type 1 time switches must contains a single circuit contact and a solid state timer with at least 48 programmable on and off times.

A-Type 2 time switches must contains two circuit contacts and a solid state timer with at least three independently programmable on and off times per circuit.

A Type 3 time switches must contain three circuit contacts and a solid state timer with at least three independently programmable on and off times per circuit.

***678-2.1.1 Timing:** Solid state timing must ~~shall~~ be accomplished by digital circuits utilizing the power line 60 Hz frequency as the normal timing reference. Time-of-day must ~~shall~~ be settable and displayed in maximum increments of one minute.*

***678-2.1.2 Programming:** Programming for selection of contact openings or closures must ~~shall~~ be provided in maximum increments of one minute for Types 1 through 3 time switches.*

A day omit device or circuit must ~~shall~~ be provided with Types 1 through 3 time switches to omit the programmed switching operation for any combination of up to three days of the week. A positive means of indicating the day of the week must ~~shall~~ be provided with Types 1 through 3 time switches.

***678-2.1.3 Reserve Power:** Type 1, Type 2, and Type 3 solid state time switches must ~~shall~~ be provided with a battery ~~etter~~ backup circuit which maintains time during a power failure of up to 10 hours. The timing accuracy of battery backup circuits during a power failure must ~~shall~~ be plus or minus 0.5 seconds.*

***678-2.1.4 Output Circuit Contacts:** Each output circuit contact must ~~shall~~ be rated for a 3A, 115 V_{AC} load. The output circuit contact must ~~shall~~ have 115 V_{AC} present when the timer turns the circuit on.*

***678-2.1.5 Construction Requirements:** ~~The~~ time switches must ~~shall~~ be enclosed in durable sheet aluminum or approved alternate housing. A terminal strip or screws must ~~shall~~ be provided with the time switch for AC power and all output circuit contacts.*

678-3 Time Switch Installation.

***678.3.1 General:** Install all system control equipment in accordance with the manufacturer's recommendations. Terminate wires on the appropriate terminal strips in the controller cabinet with insulated terminal lugs. Neatly bundle, secure, and identify all wiring and cables.*

***678-3.2 Time Switch:** Mount time switches on the inside wall of the controller cabinet in such a manner as to allow easy access for programming the switch. Ensure that the load current on the output circuits of the time switch does not exceed 3 A at 115 V_{AC}. Whenever time switches are used for transferring a controller assembly to and from flashing operation, wire the controller cabinet for uniform code flashing ~~as specified in the Contract Documents.~~*

678-4 Method of Measurement.

~~—— **678-4.1 General:** Measurement for payment will be in accordance with the following work tasks.~~

~~—— **678-4.2 Furnish and Install:** The Contract unit price each for controller accessory, furnished and installed, will include furnishing all materials, equipment, and hardware specified in the Contract Documents, and all labor and miscellaneous materials necessary for a complete and acceptable installation.~~

~~—— **678-4.3 Furnish:** The Contract unit price each for controller accessory, furnished, will include the cost of the equipment and materials and all shipping and handling costs involved in delivery as specified in the Contract Documents.~~

~~—— **678-4.4 Install:** The Contract unit price each for controller accessory, installed, will include all labor, equipment, and miscellaneous materials necessary for a complete and acceptable installation. The Engineer will supply all materials as specified in the Contract~~

~~Documents. No separate payment will be made for traffic controller accessories; payment is included with the Traffic Controller Assembly.~~

~~678-5~~ Basis of Payment.

~~Price and payment will be full compensation for all work specified in this Section.~~

~~Payment will be made under:~~

~~Item No. 678-1 Controller Accessories each.~~ *No separate payment will be made for traffic controller accessories. Include the cost in the Contract unit price for the traffic controller assembly.*