ORIGINATION FORM
Proposed Revisions to the Specifications
(Please provide all information - incomplete forms will be returned)

Date: 7/11/22

Originator: Matt DeWitt

Telephone: 850-921-7353

email: matthew.dewitt@dot.state.fl.us

Office: Traffic Engineering and Operations

Specification Section: 678

Article/Subarticle: 678-2, 678-3

Associated Section(s) Revisions: 995

Will the proposed revision require changes to:

Publication	Yes	No	Office Staff Contacted
Standard Plans Index	○	◉	Rick Jenkins/Joshua Turley 6/28/
Traffic Engineering Manual	○	◉	Dana Knox 6/28/
FDOT Design Manual	○	◉	Gevin McDaniel 6/28/
Construction Project Administration Manual	○	◉	Scott Arnold 6/28/
Basis of Estimate/Pay Items	○	◉	Ryan Gray 6/28/
Structures Design Guidelines	○	◉	Ben Goldsberry 6/28/
Approved Product List	○	◉	Karen Byram 6/28/
Materials Manual	○	◉	Tim Counts 6/28/
Maintenance Specs	○	◉	(Select)

Will this revision necessitate any of the following:

Design Bulletin ☐ **Construction Bulletin** ☐ **Estimates Bulletin** ☐ **Materials Bulletin** ☐

Have all references to internal and external publications in this Section been verified for accuracy? YES

Synopsis: Summarize the changes.

Deleted material requirements in article 678-2 that have been moved from Division II (678) to Division III (995-12). Edited text in 678-3.

Justification: Why does the existing language need to be changed?

Content must be moved as part of ongoing Department efforts to move all material requirements from Division II to Division III. Corrected terminology in 678-3.1 and edited 678-3.2 for plain language.

Do the changes affect either of the following types of specifications (Hover over type to go to site.):

Special Provisions ☐ **Developmental Specifications** ☐

List Specifications Affected: (ex. SP3270301, Dev330TL, Dev334TL etc.)

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

Daniel Strickland 850-414-4130 Daniel.Strickland@dot.state.fl.us Rebecca Arcia 850-414-4155 Rebecca.Arcia@dot.state.fl.us
Darla Hunsicker 850-414-4114 Darla.Hunsicker@dot.state.fl.us Valencia Cunningham 850-414-4101 Valencia.Cunningham@dot.state.fl.us

TRAFFIC CONTROLLER ACCESSORIES
(REV 7-20-22)

SECTION 678 is deleted and the following substituted:

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 with the manufacturer's name or trademark, model or part number, and serial~~

~~Traffic controllers must meet the following applicable industry standards~~Meet the following requirements:

Conflict Monitor*	Section 995
Malfunction Management Unit*	Section 995
Power Supply*	Section 995
Load Switch*	Section 995
Flasher*	Section 995
Flash Transfer Relay	NEMA TS2-2021, Section 6.4
Model 206L Power Supply Unit*	Section 995
Model 208 Monitor Unit*	Section 995
Model 210 Monitor Unit*	Section 995
Power Distribution Assembly*	Section 995
Input File*	Section 995
Model 430 Flash Transfer Relay	CALTRANS TEES 2020, 6.4.5.1.5
Time Switch*	Section 995

*Use products listed on the Department's APL.

NEMA TS1 Conflict Voltage Monitor ..... NEMA TS-1-1989, Section 6
NEMA TS2 Malfunction Management Unit ..... NEMA TS-2-2016, Section 4
Power Switch ..... NEMA TS-2-2016, Section 5.3.5
Load Switch ..... NEMA TS-2-2016, Section 6.2
Flasher ..... NEMA TS-2-2016, Section 6.3
Flash Transfer Relay ..... NEMA TS-2-2016, Section 6.4
210 Conflict Monitor (Model 210) ..... CALTRANS TEES, 2009
Power Supply Module (Model 206) ..... CALTRANS TEES, 2009
Power Distribution Assembly ..... CALTRANS TEES, 2009 6.4.3
Flash Transfer Relay (Model 430) ..... CALTRANS TEES, 2009 6.4.5.1.5
Input File ..... CALTRANS TEES, 2009 6.4.4
Current Monitor (Model 208) ..... CALTRANS TEES, 2009 3.7.2

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 time switch is a 24-hour timer which controls the daily switching operation of circuit contacts at preselected times.

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

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

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 be accomplished by digital circuits utilizing the power line 60 Hz frequency as the normal timing reference or GPS Time Sync. Time-of-day must be settable and displayed in maximum increments of one minute.

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

A day omit device or circuit must 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 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 be provided with a battery 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 be plus or minus 0.5 seconds.

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

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

678-3 Installation.

678.3.1 General: Install all ~~system control equipment~~traffic controller accessories 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 Section 676.

678-4 Basis of Payment.

No separate payment will be made for traffic controller accessories. Include the cost in the Contract unit price for the traffic controller assembly.