Florida Department of Transportation

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GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

ANANTH PRASAD, P.E.
SECRETARY

August 5, 2014

Khoa Nguyen
Director, Office of Technical Services
Federal Highway Administration
545 John Knox Road, Suite 200
Tallahassee, Florida 32303

Re: State Specifications and Estimates Office
Section **611**
Proposed Specification: **6110203 Acceptance Procedures for Traffic Control Signals and Devices.**

Dear Mr. Nguyen:

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

This change is proposed by Alan El-Urfali of the State Traffic Engineering and Operations Office to update specification to reflect the need for submittal information to include DGPS position information and clarify other submittal data requirements.

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/dt
Attachment
cc: Florida Transportation Builders' Assoc.
State Construction Engineer

ACCEPTANCE PROCEDURES FOR TRAFFIC CONTROL SIGNALS AND DEVICES. (REV ~~4-1-14~~*~~4-17~~8-5-14*)

SUBARTICLE 611-2.3 is deleted and the following substituted:

611-2.3 As-Built Drawings: As a condition precedent to acceptance under 611-2.1 or 611-2.2, furnish *signed and sealed* as-built drawings of all installations ~~in accordance with the following requirements~~:

611-2.3.1 Submittal Requirements: Submit three sets of as-built plans for review by the Engineer on reproductions of the original 11 inch by 17 inch sheets. ~~*As-built information may be provided*~~ *Submittal of electronic~~ally~~ plans is preferred,* ~~*in lieu of hard copy reproductions,*~~ *such as PDF files or as a separate level/layer within project design files, and may be provided electronically in lieu of hard copy reproductions. Coordinate the format of electronic as-built files with the Engineer.* Record all as-built information using block lettering or typed text to ensure legibility. Signing and pavement marking plan sheets may be used instead of signalization plan sheets, if a substantial number of changes from the original plans must be recorded. *If, in the opinion of the Engineer, the changes cannot be clearly delineated on the existing drawings, clearly delineate all changes on 11 inch by 17 inch detail sheets, enlarged 200% from the reproductions.*

Submit fiber optic splicing diagrams detailing all cable splices, terminations, equipment port assignments, and optical circuits within the communication network.

As-built submittals must include an electronic file with an inventory of all traffic control signals and devices, ~~*including intelligent transportation system (ITS) features*~~ *and support structures. The inventory must include horizontal position geographic coordinate data collected using Differential Global Positioning System (DGPS) equipment. The inventory must include the manufacturer, model, and serial number*~~*, date of purchase, and date of installation of*~~ *for each device or completed assembly. Provide coordinate data for pull boxes as well as conduit and cable at 100 foot intervals including changes in direction.*

~~Intelligent transportation system (ITS) as-built plans must include an accurate table (spreadsheet) that provides the true final location of devices by mile post to three decimal places, plus an offset dimension given for each above-ground structure. Global positioning system (GPS) coordinates can be utilized as supplemental information in the table.~~ Aerial photographs may be furnished with *as-built submittals*~~the table~~ to provide supplementary information. The aerials should not include ~~the~~ extra features *such as*~~of~~ the right of way, baseline, or roadway edges ~~being drawn in~~. The aerials may be used as a base for the as-built plans with mile post and offset dimensions. ~~If, in the opinion of the Engineer, the changes can not be clearly delineated on reproductions of the original 11 inch by 17 inch sheets, clearly delineate all changes on 11 inch by 17 inch detail sheets, enlarged 200% from the reproductions.~~ Make any corrections resulting from the Engineer's review, and resubmit three sets of the completed as-built plans as a condition precedent to acceptance of the installation.

611-2.3.2 Components: ~~Include as-built information for all components of the installation.~~ As a minimum, ~~*locate*~~*identify all traffic control devices, poles, support structures, cabinets, pull and splice boxes, hubs, access points, and power services*~~identify the following components in the format indicated below~~.

611-2.3.2.1 Conduit and Cable: Identify all conduit and cable ~~*at 100 foot intervals and changes in direction*~~ with unique ~~linestyles~~*line styles* for routing (overhead, conduit, saw cut, etc.) that are clearly identified in a legend on each sheet. Identify the type of cable (example - 7 conductor signal cable) and label the number of conductors, fiber strands or other identifying features of the cable. For conduit, clearly note conduit size and number of runs. ~~*Locate fiber optic cable routes at 100 foot intervals and changes in direction.*~~

611-2.3.2.2 Loops and Detection Zones: Identify the location of all installed loops (including the distance from the stop bar for the advance loops), the path of each loop to the pull box, the loop window and the path of the loop lead-in to the controller cabinet. Identify the device location and the approximate detection area for detection systems that are not embedded in or under pavement.

611-2.3.2.3 Pull Boxes: Label unused and out of service pull boxes clearly. Show distances to each pull box from the nearest edgeline, stop bar, or other permanent feature. If an edgeline is not near a pull box or would not clearly identify its location; a fixed monument may be used (example - FDOT pole or structure).

611-2.3.2.4 Poles: ~~Locate~~ *Identify* ~~P~~*p*oles from the nearest edgeline of both approaches. If an edgeline is not near a pole or would not clearly identify its location, a fixed monument may be used.

611-2.3.2.5 Signal Heads: ~~Locate *Identify*~~*As-built plans must show the final location of* ~~all~~ signal heads ~~with respect to the pavement markings *on the as-built plans*~~. Each signal head shall be identified by its corresponding movement number.

611-2.3.2.6 Cabinet: ~~Clearly locate all cabinets.~~ The type of cabinet~~s~~ and inventory of internal components must be documented.~~-~~ Controller manufacturer along with the controller model number shall be provided for all traffic signal cabinets. A cabinet corner "blow up" shall be provided detailing pull box locations with all conduit and cable ~~per 611-2.3.2.1 and 611-2.3.2.3~~.

~~**611-2.3.2.7 Preemption:** Clearly locate all preemption equipment. The type of preemption equipment and the manufacturer along with the model number shall be provided. Additionally, the type of communication medium (example - closed loop) shall be identified. Any underground conduit and cable as well as pull boxes shall be per 611-2.3.2.1 and 611-2.3.2.3.~~

611-2.3.3 Compensation: All costs *incurred in*~~involved with~~ providing as-built drawings are incidental to the other items of work associated with traffic control signals and devices.

ACCEPTANCE PROCEDURES FOR TRAFFIC CONTROL SIGNALS AND DEVICES. (REV 8-5-14)

SUBARTICLE 611-2.3 is deleted and the following substituted:

611-2.3 As-Built Drawings: As a condition precedent to acceptance under 611-2.1 or 611-2.2, furnish signed and sealed as-built drawings of all installations:

611-2.3.1 Submittal Requirements: Submit three sets of as-built plans for review by the Engineer on reproductions of the original 11 inch by 17 inch sheets. Submittal of electronic plans is preferred, such as PDF files or as a separate level/layer within project design files, and may be provided electronically in lieu of hard copy reproductions. Coordinate the format of electronic as-built files with the Engineer. Record all as-built information using block lettering or typed text to ensure legibility. Signing and pavement marking plan sheets may be used instead of signalization plan sheets, if a substantial number of changes from the original plans must be recorded. If, in the opinion of the Engineer, the changes cannot be clearly delineated on the existing drawings, clearly delineate all changes on 11 inch by 17 inch detail sheets, enlarged 200% from the reproductions.

Submit fiber optic splicing diagrams detailing all cable splices, terminations, equipment port assignments, and optical circuits within the communication network.

As-built submittals must include an electronic file with an inventory of all traffic control signals and devices, and support structures. The inventory must include horizontal position geographic coordinate data collected using Differential Global Positioning System (DGPS) equipment. The inventory must include the manufacturer, model, and serial number for each device or completed assembly. Provide coordinate data for pull boxes as well as conduit and cable at 100 foot intervals including changes in direction.

Aerial photographs may be furnished with as-built submittals to provide supplementary information. The aerials should not include extra features such as the right of way, baseline, or roadway edges. The aerials may be used as a base for the as-built plans with mile post and offset dimensions. Make any corrections resulting from the Engineer's review, and resubmit three sets of the completed as-built plans as a condition precedent to acceptance of the installation.

611-2.3.2 Components: As a minimum, identify all traffic control devices, poles, support structures, cabinets, pull and splice boxes, hubs, access points, and power services.

611-2.3.2.1 Conduit and Cable: Identify all conduit and cable with unique line styles for routing (overhead, conduit, saw cut, etc.) that are clearly identified in a legend on each sheet. Identify the type of cable (example - 7 conductor signal cable) and label the number of conductors, fiber strands or other identifying features of the cable. For conduit, clearly note conduit size and number of runs.

611-2.3.2.2 Loops and Detection Zones: Identify the location of all installed loops (including the distance from the stop bar for the advance loops), the path of each loop to the pull box, the loop window and the path of the loop lead-in to the controller cabinet. Identify the device location and the approximate detection area for detection systems that are not embedded in or under pavement.

611-2.3.2.3 Pull Boxes: Label unused and out of service pull boxes clearly. Show distances to each pull box from the nearest edgeline, stop bar, or other permanent

feature. If an edgeline is not near a pull box or would not clearly identify its location; a fixed monument may be used (example - FDOT pole or structure).

611-2.3.2.4 Poles: Identify poles from the nearest edgeline of both approaches. If an edgeline is not near a pole or would not clearly identify its location, a fixed monument may be used.

611-2.3.2.5 Signal Heads: As-built plans must show the final location of signal heads. Each signal head shall be identified by its corresponding movement number.

611-2.3.2.6 Cabinet: The type of cabinet and inventory of internal components must be documented. Controller manufacturer along with the controller model number shall be provided for all traffic signal cabinets. A cabinet corner “blow up” shall be provided detailing pull box locations with all conduit and cable.

611-2.3.3 Compensation: All costs incurred in providing as-built drawings are incidental to the other items of work associated with traffic control signals and devices.