



Florida Department of Transportation

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ANANTH PRASAD, P.E.
SECRETARY

MEMORANDUM

DATE: July 13, 2011

TO: Gene Glotzbach, Traffic Engineering and Operations, ITS

FROM: Frances Thomas, Specifications Development Specialist

SUBJECT: Proposed Specification: **7830302 ITS – Fiber Optic Cable and Interconnect**

Comments received, regarding the subject modification to the Standard Specifications, are attached. Please review these comments and advise of any further modifications by **July 27, 2011**. You may respond to the comments within the document below. The comments and responses will be posted on the State Specifications Office Web Page and included in the Specifications folder for future reference, should someone question your response. Your assistance will be appreciated.

Please email submittals to frances.thomas@dot.state.fl.us .

Attachment

INTELLIGENT TRANSPORTATION SYSTEMS - FIBER OPTIC CABLE AND INTERCONNECT.

(REV ~~12-7-105-31-11~~) (~~FA-1-24-11~~) (~~7-11~~)

SUBARTICLE 783-3.2.2 9 (of the Supplemental Specifications) is deleted and the following substituted:

783-3.2.2 Pull Box: Ensure that all pull boxes have an open bottom. Ensure that the pull box is equipped with a nonskid cover secured by ~~hex head~~ bolts and any other miscellaneous hardware required for installation or as shown in the in the plans.

Ensure that the minimum pull box size is approximately 2 feet wide by 3 feet long by 3 feet deep, or as required in the plans. Ensure that the pull box is large enough to house fiber optic cable without subjecting the cable to a bend radius less than 14 times the diameter of the cable.

SUBARTICLE 784-3.3 (of the Supplemental Specifications) is deleted and the following substituted:

783-3.3 Installation Requirements. Install all pull boxes and splice boxes according to the manufacturer's recommendations; as shown in the plans; and in compliance with Section 635 and Design Standards Index No. ~~17700~~¹⁸²⁰⁴. Complete the installation of pull boxes, splice boxes, and conduit prior to cable installation. Provide all pull boxes and splice boxes a final finish grade elevation as shown in the plans. Excavate pull box and splice box installation sites to a depth of 1 foot below the bottom of the box, and replace with a 1 foot bed of pearock or crushed stone at the excavation base prior to installing the box.

Ensure that the box cover is flush with the existing finish grade after installation. Taper the finish grade contour to provide drainage from the splice box.

783-3.3.1 General Placement and Spacing: Place pull boxes and splice boxes as detailed in the plans, and at the following locations, unless directed otherwise by the Engineer:

1. At all major fiber optic cable and conduit junctions.
2. Approximately every 2,500 feet in rural areas with any continuous section of straight conduit if no fiber optic cable splice is required.
3. At a maximum of 1,760 feet in metropolitan areas.
4. At each end of a tunnel, and on each side of a river or lake crossing.
5. On each side of an aboveground conduit installation, such as an attachment to a bridge or wall.
6. At all 90 degree turns in the conduit system.

Ensure that all pull boxes and splice boxes are flush mounted at grade level, and are located near the base of a service pole or near the communication equipment cabinet serving the ITS field device to provide:

1. A transition point between the fiber optic conduits extending from the fiber backbone and the conduit feeding the communication cabinet.
2. An assist point for the installation of fiber optic drop cable.
3. Storage of slack fiber optic drop cable.

Do not place the pull boxes in roadways, driveways, parking areas, ditches, or public sidewalk curb ramps. Avoid placing pull boxes and splice boxes on steep slopes where the cover cannot be leveled within a tolerance of 1 inch of drop to 1 foot of grade or in low-lying locations with poor drainage.

783-3.3.2 Bonding and Grounding: Ensure that pull box and splice box installation includes a bonding and grounding system including a driven rod that is a minimum of 10 feet in length and 5/8" in diameter. Ensure that grounding rod is constructed of copper clad steel and complies with the UL 467 standard. Ensure that bonding conductors are bare solid AWG #6 copper wire as required in the ASTM B1 standard. Ensure that splice and termination components meet or exceed the UL 467 requirements, and are clearly marked with the manufacturer, catalog number, and conductor size. Ensure that grounding system complies with the NEC.

783-3.3.3 Material Removal and Restoration Specifications: Provide all material, equipment and labor for the removal of turf, earth, concrete/asphalt pavement or other site specific material to be removed for box installation. Ensure that original turf, earth, concrete/asphalt pavement or other site specific material is restored to its original condition once box installation is complete.

7830302 ITS – Fiber Optic Cable and Interconnect
COMMENTS FROM INTERNAL/INDUSTRY REVIEW

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Comments: (7-11-11)

District 4 Construction has the following comments: 783-3.3 makes reference to the new Index no. 17700 but also refers to 635 of the spec.'s which still has the index no, for the standard pull box installation. If you are going to continue to refer to 635 then 635 should be revised to instruct the contractor follow either standard as appropriate. In lieu of this spec. why don't you include the fiber optic pull boxes in with Section 635 since they are not just for ITS projects?

Response:

The Index reference in 635 was changed in the January 2011 Workbook. The consolidation of 783 pullbox specifications with those found in Section 635 is a work in progress, but part of a larger project that will impact numerous sections with the end goal of consolidating ITS and Signalization material that is similar or identical in function, etc.
