

# EXPECTED IMPLEMENTATION JULY 2011

## 783 INTELLIGENT TRANSPORTATION SYSTEMS - FIBER OPTIC CABLE AND INTERCONNECT.

(REV 11-23-10) (FA 1-5-11) (7-11)

SUBARTICLE 783-1.2.1.4 (of the Supplemental Specifications) is deleted and the following substituted:

**783-1.2.1.4 Strength Member:** Ensure that the fiber optic cable contains a dielectric central strength member and dielectric outside strength member to prevent buckling of the cable and provide tensile strength. Ensure that the fiber optic cable can withstand a pulling tension of 600 lbs. without damage to any components of the fiber optic cable.

SUBARTICLE 783-1.2.4 (of the Supplemental Specifications) is deleted and the following substituted:

**783-1.2.4 Patch Panels:** Ensure that the patch panel is compatible with the fiber optic cable being terminated and color-coded to match the optical fiber color scheme. Ensure that the patch panel has a minimum of 12 ST-type panel connectors. Ensure that the patch panel dimensions do not exceed 14 x 6 x 4 inches for fiber counts of twelve or less.. Ensure the patch panel is suitable for mounting within an approved cabinet at the field device location. Ensure patch panels are sized to accommodate specified coupler housings and maintain sufficient bend radius for cables to maintain their specified optical performance. Ensure the patch panel is sized to occupy the minimum space required to adequately accommodate fiber capacity.

**783-1.2.4.1 Pre-terminated Patch Panels:** Ensure that the pre-terminated patch panel is a termination panel that includes a factory installed all-dielectric SMF cable stub. Ensure that the panel includes factory-installed and terminated ST-type panel connectors. Ensure that the cable stub is of adequate length to splice the stub and provide a fiber connection between the panel and the backbone fiber cable or as directed by the Engineer.

**783-1.2.4.2 Field Assembled and Terminated Patch Panels:** Ensure that the field-assembled patch panel is a termination panel that includes a connector panel and the hardware required to mount the patch panel within an approved cabinet at the field device location and connect the panel to the backbone fiber cable.

**783-1.2.4.2.1 Connector Panel:** Ensure that the connector panel provides 12 ST-type, bulkhead-mount coupling connectors. Ensure that each coupling connector allows connection of a cable terminated on one side of the panel to a cable on the opposite side.

Ensure that each bulkhead-mount coupling connector includes a locknut for mounting the connector in predrilled or punched holes in the connector panel.

SUBARTICLE 783-2.2.2 (of the Supplemental Specifications) is deleted and the following substituted:

**783-2.2.2 Warning Tape:** Ensure that the buried cable warning tape is flexible, elastic material 3 inches wide, 6 mil thick, intended for burial and use as an underground utility

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warning notice. Ensure that the surface of the warning tape is coated and sealed to prevent deterioration caused by harsh soil elements. Ensure that the tape material and ink colors do not change when exposed to acids, alkalis, and other destructive chemical variances commonly found in Florida soils. Ensure that the warning tape color is orange as required by the American Public Works Association (APWA) Uniform Color Code, and has "CAUTION: FDOT FIBER OPTIC CABLE BURIED BELOW," or other wording approved by the Engineer, permanently printed on its surface.

Include buried cable warning tape with all conduit.

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SUBARTICLE 783-3.1 (of the Supplemental Specifications) is deleted and the following substituted:

**783-3.1 Description:** Furnish and install pull boxes and splice boxes of the type, size, and quantity as shown in the plans. Ensure that pull boxes and splice boxes meet the requirements of Section 635. Use only equipment and components that are listed on the Department's Approved Product List (APL).

Use pull boxes and splice boxes that provide:

1. At-grade access to fiber optic cables housed within conduit systems used for Department ITS communications.
2. At-grade access to aid in the installation of fiber optic cable.
3. Protection for installed fiber optic cable.
4. Adequate space for cable storage and splice enclosures.

Ensure that pull boxes and splice boxes containing fiber optic cable do not contain power cables for ITS devices or other equipment.

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SUBARTICLE 783-3.2 (of the Supplemental Specifications) is deleted and the following substituted:

## **783-3.2 Materials:**

**783-3.2.1 General Requirements:** Ensure that all pull boxes and splice boxes are compatible with the fiber optic cable and are approved by the Engineer.

**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.

**783-3.2.3 Splice Box:** Use splice boxes at all fiber optic splice locations, as shown in the plans, and at other locations as approved by the Engineer. Ensure that all splice boxes have an open bottom. Ensure that the splice box is equipped with a nonskid cover secured by hex head bolts; cable racks and hooks; pulling eyes; and any other miscellaneous hardware required for installation or as shown in the in the plans.

Ensure that the splice box size is approximately 2.5 feet wide by 5 feet long by 4 feet deep or as shown in the plans. Ensure that the splice box is large enough to house

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fiber optic cable without subjecting the cable to a bend radius less than 14 times the diameter of the cable.

**783-3.2.4 Marking:** Ensure that all pull box and splice box covers include the words “FDOT FIBER OPTIC CABLE” or text shown in plans permanently cast into their top surface. Ensure that markings are permanently affixed and clearly visible after installation.

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