

## ORIGINATION FORM

**THE INFORMATION BELOW IS TO BE PROVIDED BY THE ORIGINATOR**  
(The person who receives or originates the issue and needs to forward the issue for action.)



\_\_\_\_\_ 630 \_\_\_\_\_.  
Section/File number



\_\_\_\_\_  
Section number

**Subject:** Installation Requirements – Conduit For Fiber Optic Cable

**Origination date:** July 30, 2004

**Originator:** Gene Glotzbach  
**Office/Phone:** 850-410-5616  
**Email address/** gene.glotzbach@dot.state.fl.us  
**Userid:** IT951GG

**Problem statement:** The current specification does not address locate wire for ITS applications fiber optic systems.

**Information source:** PBS&J, Central Office ITS Staff

**Background data:** Currently ITS applications do not have a specification for conduit and locating of a conduit system that uses fiber optics. In order to use the existing Department specifications modification to the noted section would need to occur as the section indicates a locate wire more for shorter fiber optic runs found in signal installations rather than the longer fiber optic runs typically found in ITS application.

**Recommended usage note:** All ITS applications

**Desired implementation date:** Beginning with the July 2005 letting.



Florida Department of Transportation

JEB BUSH  
GOVERNOR

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JOSÉ ABREU  
SECRETARY

**MEMORANDUM**

**DATE:** November 9, 2004  
**TO:** Specification Review Distribution List  
**FROM:** Duane F. Brautigam, P.E., State Specifications Engineer  
**SUBJECT:** **Proposed Specifications Change: 6300003 – Installation Requirements – Conduit for Fiber Optic Cable**

In accordance with Specification Development Procedures, we are sending you a copy of a proposed specification change to Installation Requirements – Conduit for Fiber Optic Cable.

This change was proposed by Gene Glotzbach of the ITS Office to specify requirements for another size locate wire, to be installed on the outside of conduit, for ITS purposes.

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 SP965DB or duane.brautigam@dot.state.fl.us. Comments received after December 7, 2004 may not be considered. Your input is encouraged.

DFB/sh

Attachment

COMMENTS:

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Submitted by:

Phone #:

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## **INSTALLATION REQUIREMENTS – CONDUIT FOR FIBER OPTIC CABLE.**

**(REV 8-18-0410-20-04)**

SUBARTICLE 630-3.1.1 (Page 688) is deleted and the following substituted:

### **630-3.1.1 ~~Conduit For Fiber Optic Cable~~ Conduit and Locate Wire for Signal**

**Installations:** Prevent the ingress of water, dirt, sand, and other foreign materials prior to, during and after construction, into the conduit. Run an AWG #14 locate wire with the fiber optic cable in the conduit when installed underground. Do not run the locate wire into the cabinet. Terminate at the nearest pull box.

*To minimize cable tension during installation the conduit fill ration (outer cable diameter to inner conduit/duct diameter) should not exceed. 50%. The minimum inner diameter (ID) of the conduit shall be 1 ¼ inches [32 mm] and include all required fittings and incidentals necessary to construct a complete installation. The conduit system shall allow the fiber optic cable to maintain the minimum bend radius after installation.*

Exclude water and debris from the conduit and top riser assembly of above ground conduit by use of a foam-sealing material, rubber plug, or other device, designed for this type of application and approved by the Engineer. Use a flexible conduit UV rated to protect the cable from the top of the conduit riser to the span messenger where the cable is to be lashed.

**630-3.1.2 Fiber Optic Cable Conduit and Locate Wire for ITS Installations:** Prevent the ingress of water, dirt, sand, and other foreign materials prior to, during and after construction, into the conduit. Run an AWG #12 copper single conductor locate wire outside the conduit when installed underground. Insulate the wire with a .0045 mil minimum thickness polyethylene sheath that is orange in color and marked to indicate the manufacturer's identification and conductor size.

*To minimize cable tension during installation the conduit fill ration (outer cable diameter to inner conduit/duct diameter) should not exceed. 50%. The minimum inner diameter (ID) of the conduit shall be 1 ¼ inches [32 mm] and include all required fittings and incidentals necessary to construct a complete installation. The conduit system shall allow the fiber optic cable to maintain the minimum bend radius after installation.*

Exclude water and debris from the conduit and top riser assembly of above ground conduit by use of a foam-sealing material, rubber plug, or other device, designed for this type of application and approved by the Engineer. Use a flexible conduit UV rated to protect the cable from the top of the conduit riser to the span messenger where the cable is to be lashed.

**Locate Wire Splice:** Keep all locate wire splices watertight and maintain reasonable physical strength. Include a mechanical crimp connection with a butt sleeve, and oxide preventing aerosol lacquer, mastic electrical splicing tape, and standard electrical tape for underground locate wire splices.

SUBARTICLE 630-4.1 (Page 690) is expanded by the following:

*Conduit used for Fiber Optic Cable includes the cost of furnishing and installing the locate wire.*