633-5 Method of Measurement.

**633-5.1 General:** The quantities to be paid will be: the length, in feet, of fiber optic cable; the number, per each, of fiber optic connections; the number, per each, of fiber optic connection hardware; and the length, per foot, of twisted pair cable, accepted by the Engineer.

**633-5.2 Furnish and Install:** The Contract unit price for communication cable, furnished and installed, will include furnishing, placement, and testing of all material, and for all tools, labor, equipment, installation hardware (such as support wire, cable ties, cable clamps, and lashing wire), supplies, support, personnel training, documentation, and incidentals necessary for a complete installation.

Payment for conductive cable terminal connectors and conductive cable grounding is considered incidental and shall be included in the price for twisted pair communication cable.

Fiber optic splices and terminations, as shown in the Plans, shall be measured per each fiber optic connection furnished and installed.

**633-5.3 Furnish:** The Contract unit price for communication cable, furnished, will include the cost of the required cable as specified in the Contract Documents, plus all shipping and handling costs involved in delivery as specified in the Contract Documents.

**633-5.4 Install:** The Contract unit price for communication cable, installed, will include all tools, labor, equipment, installation hardware (such as support wire, cable ties, cable clamps, and lashing wire), supplies, support, personnel training, documentation, and incidentals necessary for a complete, warranted, tested, and accepted installation. The Engineer will supply all cable.

633-6 Basis of Payment.

Prices and payments will be full compensation for all work specified in this Section. Payment will be made under:

- Item No. 633-1 Fiber Optic Cable - per foot.
- Item No. 633-2 Fiber Optic Connection - each.
- Item No. 633-3 Fiber Optic Connection Hardware - each.
- Item No. 633-4 Twisted Pair Cable - per foot.

Response: Change made.

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Comments: (6-25-20, Industry)
Now that 633-3.1.8 includes what fibers require testing and how, the first two sentences of sub-section 633.3.1.8.2 will also require updates to avoid conflicting (or redundant) information.

Response: This is in a sub-article that did not go out for review. We will update this sub-article for the next spec cycle.
Comments: (6-25-20, Industry)
633-5.4: Agree with removing the last sentence, "The Engineer will supply all cable" However, the remainder of this section still seems pertinent when the cable is furnished to the contractor, whether by the FDOT or a local municipality the contract work is for. The install should also include a located cable if the conduit system the fiber is being install in is lacking a locate wire and the engineer approves co-locating of the locate wire with the Fiber. 633-5.1, 633-5.2, 633-5.3: Unsure the reason for removing of the first 2 headings and complete removal of 3rd section. The third section will likely pertain mostly to maintenance contracts, however they are occasions when the Department with have the contractor install fiber that is provided for them and there are also occasions where the Department may want fiber provided as a spare quantity.

Response: 630-3.9 addresses fiber optic locate wire. It is not installed in the conduit with the fiber. This is because transients on the locate wire can potentially damage the fiber optic cable. No change in 633-5.4.

633-5.1, 633-5.2, 633-5.3: These changes were made to be consistent with other sections of the Standard Specs. If a furnish only or install only is needed, submit an MSP and it will be reviewed on a project by project basis.