

Addendum #2



Project Information

Project Name:	Phase 3 Fiber Construction
Bid Number:	F23-08-070
Date:	October 31, 2023
Project Manager:	Dave Wells

Addendum Items

Item 1	<p>How are fiber splicing and splice closures paid for, and are there any material requirements for the splice closures?</p> <p>Fiber splicing and splice closures are paid for as part of the fiber optic cable as described on page 23 in the project special provisions. A fiber splice closure special provision is added by this addendum to provide the material requirements for the splice closure (attached Revision of Section 614 - Fiber Optic Splice Closure, pages 23A and 23B)</p>
Item 2	<p>How will the materials provided by the City of Greeley be transferred to the selected contractor?</p> <p>The bulk materials (fiber, boxes, and conduit) will be delivered to a Greeley-owned yard at 139 N 35th Ave to be picked up by the contractor, or delivered to the contractor's yard in the Greeley area, or picked up directly from the distributor by the contractor. Also, the conduit can be configured to be single reels per color or split reels with both colors on the same reel. Approach to delivery and configuration for Greeley-provided materials will be determined following contractor selection, with approximately a six-week lead time to delivery. Pull Boxes have been ordered and are estimated to ship between 11/13/2023-12/13/2023.</p>
Item 3	<p>What is the configuration of the existing conduit along US 34 between 47th and 65th, and are there any cutover requirements?</p> <p>The configuration along US 34 between 47th and 65th is generally a single conduit with the existing 24-strand cable. Based on this configuration, it is likely that the existing 24-strand cable will need to be utilized to pull the new backbone cable into the conduit. The cable replacement along this segment of US 34 will impact the lateral connections to the City Forestry Office and two traffic signals at 65th, as depicted in the splicing diagrams. The downtime for these connections will be a maximum of 5 days, but should be minimized based on a detailed method statement submitted to the City for Approval. Please note this corrects the discussion at the pre-bid meeting at which time it was incorrectly stated that a blank conduit is available.</p>

REVISION OF SECTION 614 FIBER OPTIC SPLICE CLOSURE

Section 614 of the Standard Specifications is hereby revised for this project to include the following:

DESCRIPTION

This item includes installing fiber optic splice closures and performing splicing of both fiber optic backbone and fiber optic lateral cables at locations shown on the plans.

MATERIALS

The fiber optic splice closures shall be furnished and installed by the Contractor.

The splice closures shall be dome type and shall meet the following minimum requirements:

- (1) The closures shall seal, anchor and protect fiber optic cable splices.
- (2) The closures shall have a minimum of six total cable entries.
- (3) The closures shall be suitable for underground applications and shall be corrosion resistant, watertight and airtight.
- (4) The closure splice trays shall have a hinged design with an upright locking mechanism for all splice trays.
- (5) The closures shall have a sealing design that does not require glue, sealant, or new cable seals to re-enter the closure.
- (6) The closure shall be bonded inside and outside and have an external ground lug.
- (7) The Contractor shall include all necessary accessories to complete splicing.
- (8) The Contractor shall include all mounting hardware if not provided with pull box or manhole
- (9) The splice closure shall comply with Telcordia Generic Requirement (GR) GR-771

The closures shall be sized to provide a capacity equal to the total number of strands for all cables entering the closure.

If a splice closure is installed in an existing pull box or manhole that does not have splice closure management hardware to hang the splice closure, the Contractor shall provide management hardware to support the splice closure.

CONSTRUCTION REQUIREMENTS

The Contractor shall notify the Project Engineer of proposed splicing locations a minimum of one week in advance of splicing and also the day before the proposed splicing. The Contractor shall contact the Project Engineer at least four hours prior to sealing the closure to allow inspection.

A minimum of eight digital pictures shall be taken at varying angles of the interior of the splice closure showing all completed work as stated in this specification and shown on the Project Detail Sheet. The pictures shall include exposed fiber stands (both spliced and uncut) in all splice trays, fiber tray labeling and remaining buffer tubes showing appropriate coiling. One picture shall also include the complete re-assembly of all interior parts prior to final sealing. Once the closure and fiber coils are installed in the pull box or manhole, two pictures shall be taken showing the final installation of both the closure and the coiled fiber cable attached to the fiber management hardware. All pictures shall be organized per location and shall be submitted to the Project Engineer along with all final testing result documentation.

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**REVISION OF SECTION 614
FIBER OPTIC SPLICE CLOSURE**

The Contractor's Installation technician shall have a minimum certification in International Municipal Signal Association (IMSA) Fiber Optics for ITS, Traffic, Fire Alarm, and Communications Systems or equivalent or better fiber optics certification.

All splices shall be performed using the fusion splicing method. The fusion splicer shall be calibrated and certified at least once within the previous year from this project. The Contractor shall present all certification documentation to the Project Engineer prior to start of fiber splicing.

The optical fibers shall be fusion spliced and shall meet the requirements in the Revision of Section 614 – Test Fiber Optic Cable special provision.

The Contractor shall label each individual splice and buffer tube in all splice trays per the Project Detail Sheet included on the plans.

The Contractor shall cut and splice only those fiber strands shown to be spliced on the fiber splicing plan sheets. All unused buffer tubes and fiber strands shall remain uncut. After the fiber cable and proposed buffer tube is prepped for splicing, all fiber strands in the buffer tube shall be cleaned of all homogeneous gel, unless gel-free buffer tubes are used. All uncut fiber strands shall be coiled in the tray. Remaining buffer tubes shall be neatly coiled, secured and stored in the storage area within the closure under the splice trays per the manufacturer's recommendations. Buffer tubes proposed for splicing shall be wrapped and secured to the splice tray with ties per the manufacturer's recommendations.

Bare fiber strands shall not be taped to the splice tray.

All fiber optic cables shall be secured and sealed at the closure entrances. All unused cable entries shall be plugged per manufacturer recommendations.

If the closure requires re-entry, it shall be conducted per the manufacturer's recommendation for re-entry and resealing. The Contractor shall use caution to prevent damage to the existing fiber strands, splices, and buffer tubes inside the splice closure. When sealing the closure for a second time, the Contractor shall follow all re-entry requirements of the manufacturer.

The Contractor shall ensure that the fiber optic splice closures and associated fiber cable coils fit adequately within the manhole or pull box splice locations shown on the plans.

METHOD OF MEASUREMENT

Fiber Optic Splice Closure, hardware management and all associated materials will not be measured separately but will be considered subsidiary to the Fiber Optic Cable (Single Mode) pay item.

BASIS OF PAYMENT

Fiber Optic Splice Closure and all associated materials will not be paid for separately but will be considered subsidiary to the Fiber Optic Cable (Single Mode) pay item. The item shall include all accessories necessary to complete fiber optic splicing and all mounting hardware necessary to secure the splice closure to the manhole.