

SPECIFICATION STANDARD

Communications Fiber Optic Backbone Cabling

27 13 23

PART 1: GENERAL

1.01 SCOPE OF WORK

- A. Work covered by this Section shall consist of furnishing labor, equipment, supplies, materials, and testing unless otherwise specified, and in performing the following operations recognized as necessary for the installation, termination, and labeling of fiber optic backbone infrastructure as described on the drawings and/or required by these specifications.

1.02 RELATED SECTIONS

- A. Division 26 Electrical
- B. Division 27 Communications Systems
- C. Division 28 Electronic Safety and Security

1.03 COORDINATION

- A. The contractor shall coordinate the work specified in this Section with the work in other parts of the Contract document.
- B. Plans in general are diagrammatic. It is the full responsibility of the Contractor to be familiar with the location of equipment involved under the work of other trades to eliminate conflicts between the fiber optic cable installation and the work of other trades.
- C. All questions and issues concerning coordination shall be directed to UNM IT.

1.04 SUBSTITUTIONS

- A. The intent of the specifications are:
 - 1. Where specified only by reference standards, select any approved product meeting the standards of any manufacturer.
 - 2. Where specified by naming several products or manufacturers, select any approved product and manufacturer named that meets the specified requirements. Other products and manufacturers will not be considered.
 - 3. Where specified by naming one or more products or manufacturers, but indicating "or equivalent" after the specified listing, the specified product is the preferred quality standard. The Contractor may submit a request for another product for acceptance.
 - 4. Where specified by naming only one product and manufacturer: There is no option and no substitution will be allowed.

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- B. Submit requests for substitutions within 10 days of contract award, or sooner if required to maintain the construction schedule.
- C. The Contractor must submit sufficient information to show that a proposed substitute is equivalent to the item specified. Acceptance of substitutions is at UNM IT's discretion: UNM IT reserves the right to determine the suitability of the substitute product and reject any materials submitted for substitution. All substitute products and materials must be approved for substitution by UNM IT in writing before installation.

Products rejected or otherwise judged unsatisfactory by UNM IT will not be authorized for use in completing the Work. Any unapproved products discovered as part of the installation will be removed and replaced with UNM IT-specified and approved products at the Contractor's expense.

- D. Project Drawings may be based on the equipment configuration of a particular manufacturer. If a substitution is approved, the Contractor shall make changes needed to accommodate the substitution at no expense to UNM IT University, including work under other divisions.

1.06 QUALITY ASSURANCE

- A. Verification: UNM IT will maintain inspection personnel on the job site. It is incumbent upon the Contractor to verify that the installation and materials used have been inspected by UNM IT before it is enclosed within building features or otherwise hidden from view. The Contractor shall bear costs associated with uncovering or exposing installations or features that have not been inspected by UNM IT.
- B. Equipment Qualifications: The Contractor shall use equipment and rigs designed for pulling, placement, and termination of backbone cable; including reel trucks, mechanical mules, sheaves, shoes, anchors, etc., and equipment for drilling masonry, installing anchors, etc., to install support and cable management hardware.

PART 2: PRODUCTS

2.01 SINGLE-MODE FIBER CABLE

- A. Furnish all required single-mode fiber (SMF) OS1, steel armored, OSP-rated cable per UNM IT request.

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- B. Furnish all required single-mode fiber (SMF) OS1, blown fiber (ABF), and properly rated cable per UNM IT request.

2.02 MANUFACTURER

Approved Manufacturers:

1. OSP -Ortronics/Superior Essex, Bertek, when specified
2. ABF -AFL / Dura-Line ABF
3. Sumitomo when specified

PART 3: EXECUTION

3.01 FIBER OPTIC INSTALLATION

- A. This Section describes the installation locations for the products and materials, as well as methods and UNM IT Standards associated with the Telecommunications Installation portions of the Project. These Specifications, along with the drawings and other UNM IT-supplied specifications shall be followed during the installation.
- B. All products shall be installed following the manufacturer's requirements.
- C. The Contractor is instructed to coordinate his efforts with the other tradesmen who may be working within the same vicinity to avoid conflict and lost time.
- D. The Contractor is required to supply all necessary tools, equipment, accessories, safety equipment, protective clothing, etc., as customary for the craft and necessary for the installation.
- E. The Contractor shall verify space requirements and locations with UNM IT before starting cable installations and terminations.
- F. The Contractor shall verify the cable type and jacket rating required with UNM IT before starting fiber installation.
- G. The Contractor shall verify existing cable fill in conduit, raceway, or cable tray system before installation of additional cables so as not to exceed 40% cable fill. The contractor will be responsible for the installation of additional conduit, raceway, and cable tray where additional cables to be added will exceed the 40% cable fill. See cable fill attachment, 3.1 Attachment #1.
- H. Verify that field measurements and cable routing and termination conditions are as shown on construction drawings conjoined with this specification. Provide notification, in writing, of conditions deviating from drawings.

3.02 FIBER AND TERMINATION PANEL LABELING

- A. Label the installed cables following UNM IT Division 27,

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3.03 CABLE SUPPORT

- A. Provide cable supports in UNM Tunnel System with a steel messenger cable to support the new cable. (Submittal approval is required from UNM IT)
- B. Stainless Steel strapping is required for cable banding applications that require various bundle sizes. (Submittal approval is required from UNM IT)
- C. Provide cable supports and clamps to attach cables to backboards and walls.
- D. Attach horizontal and vertical backbone cables at a maximum of three feet intervals using UNM IT-approved supports to avoid cable sagging.
- E. All entrance cables shall have a minimum of a six feet slack loop up to the protector block.
- F. Attach cables to manhole racks using UNM IT-approved methods.

END OF SECTION