

STATEMENT OF WORK
AFLCMC Building 1614
Fiber to Desk (F2D)
Date: 23 January 2024

1. Purpose: The intent of this contract is to install Fiber-to-Desk (F2D) within the limits of work of the building 1614, Phase 2 renovation project (Attachment #1), located at 11 Barksdale Street, Hanscom Air Force Base (HAFB), Massachusetts, 01731.

2. Scope/Objectives: The contractor shall provide all labor, materials, and equipment necessary to install fiber optic cabling as shown on the attached. The F2D requirements include:

- a. Installation of multi-mode and single mode fiber optic cable from the main building communications room (MDF-2) to Central IT Room.
- b. Installation of multimode cable from the Central IT room to each of the 13 server rooms within the project area.
- c. Installation of fiber optic cable from each of the 13 area server rooms to individual offices, rooms, conference rooms, or systems furniture workstations.

3. Attachments:

Attachment #1: Communications / Data Plans

Attachment #2: Related Construction Drawings (Reference Only)

4. Administration:

The following individuals are the points of contact (POCs) for this delivery order:

- a. Project Manager (PM): Peter Crory, peter.crory@us.af.mil
- b. Alternate Project Manager: Christopher Gray, christopher.gray.33.ctr@us.af.mil
- c. Contracting Officer: Marcus R. Green, marcus.green.7@us.af.mil

5. Product Deliverables:

Products delivered under this contract shall be new-in-box, NOT refurbished or recertified.

6. Project Submittals:

The following submittals shall be required under this contract. Unless otherwise specified below, the Government requires 21 calendar days for the review and approval of each submittal. Pre-installation submittals shall be submitted and approved prior to furniture installation. Closeout submittals will be required prior to the Pre-Final Inspection.

a. Pre-Installation Submittal: Material Cut Sheets

Provide manufacturer standard product information for all products provided under this contract. For products in which options exist, highlight in yellow, the options that are included in this project.

Submittal	Format	When
Material Cut Sheets	Adobe PDF	30 Calendar Days from Contract Award

b. Pre-Installation Submittal: Personnel Qualifications

Provide qualifications for the Communications Installers. Submit documentation demonstrating that the proposed communications cabling installers meets the requirements stated in Section 8 of this SOW.

Submittal	Format	When
Communications Installers	Adobe PDF	30 Calendar Days from Contract Award

c. Pre-Installation Submittal: Telecommunications Drawings

Provide telecommunications drawings as stated in Section 8.

Submittal	Format	When
Telecommunications Drawings	Adobe PDF	30 Calendar Days from Contract Award

d. Submittal: Factory Reel Tests

Provide factory reel test data for all fiber optic cabling provided.

Submittal	Format	When
Factory Reel Test	Adobe PDF	10 work days prior to installation

e. Submittal: Performance Testing

Provide the results of performance testing completed on the installed cabling.

Submittal	Format	When
Performance Testing	Adobe PDF	Prior to Pre-Final Inspection

f. Closeout Submittal: Operations & Maintenance Documentation

Provide operations and maintenance documentation for all equipment provided under this contract.

Submittal	Format	When
O&M Documentation	Adobe PDF	Prior to Pre-Final Inspection

g. Closeout Submittal: Warranty Information

Provide installer and manufacturer warranty for all equipment provided under this contract. Provide a summary of all manufacturer warranties that includes an item description, expiration date of warranty, and contact information to request warranty service. Please register and email any warranties to Peter Crory, peter.crory@us.af.mil.

Submittal	Format	When
Warranty Information	Adobe PDF	Prior to Pre-Final Inspection

h. Asbuilt Drawings

Provide asbuilt drawings that details the configuration of F2D installed.

Submittal	Format	When
Asbuilts	Adobe PDF, AutoCAD (Max Sheet Size ANSI D)	Prior to Pre-Final Inspection

7. Project Management:

The Government requires that the Contractor perform all management functions required to meet the requirements of this SOW. Specifically, the contractor shall:

- a. Participate in a virtual kickoff meeting within five (5) working days of contract award.

- b. Participate in virtual bi-weekly progress meetings between contract award and the start of fiber optic cable installation.
- c. Participate in virtual weekly progress meetings upon commencement of fiber optic cable installation.
- d. Participate in an on-site pre-final inspection.
- e. Participate in an on-site final inspection.

8. Period of Performance:

The Period of Performance (POP) for this contract shall be 240 calendar days after award of the contract. The POP shall include:

- a. Pre-Installation Submittals
- b. Government Reviews
- c. Material Lead Time
- d. Pre-Final & Final Inspections
- e. Project Closeout activities

The contractor shall assume the Government will provide a notice to proceed for fiber optic cable installation will commence between 1 Sep 2024 and 31 Oct 2024, The contractor shall begin installation within 30 calendar days of the NTP from the Government. The Contractor shall coordinate with the Government, building 1614 Renovation Prime Contractor, Intrusion Detection System Installer, Access Control Equipment Installer, and the Furniture Installation Contractor to coordinate schedules and deconflict work.

9. Fiber Optic Cable Specifications / Requirements

a. Common Requirements:

- (1) All installers shall be BICSI Installer 2, Optical Fiber® (INSTF®) certified.
- (2) Install all cabling through a metal conduit (installed by others) where the wires penetrate secure walls.
- (3) Optical fiber cables shall be non-conductive optical fiber plenum (OFNP).
- (4) All optical fiber cable shall be yellow.

- (5) Terminate optical fiber cables using unkeyed duplex LC connectors and adaptors by fusion splicing at both ends.
- (6) Provide telecommunication drawings prepared by a registered communications distribution designer (RCDD) in accordance with TIA-606 for Government approval prior to starting installation. The identifier for each termination and cable shall appear on the drawings. Drawings shall depict final telecommunications installed wiring system infrastructure in accordance with TIA-606. The drawings should provide details required to prove that the distribution system shall properly support connectivity from the MDF-2 to the Central IT room, to the designated server room, and finally to the data port location. Provide a plastic laminated schematic of the as-installed telecommunications cable system showing in each of the Server rooms.
- (7) Cabling, equipment, and hardware manufacturers shall have a minimum of 3 years' experience in the manufacturing, assembly, and factory testing of components which comply with TIA-568.1, TIA-568.2 and TIA-568.3.
- (8) Provide a complete and detailed test plan for the telecommunications cabling system including a complete list of test equipment for the components and accessories for each cable type specified, 60 days prior to the proposed test date. Include procedures for certification, validation, and testing.
- (9) In accordance with ICEA S-83-596, TIA-568.3, UL 1666 and NFPA 70. Cable shall be imprinted with fiber count, fiber type and aggregate length at regular intervals not to exceed 40 inches.
- (10) Provide labeling in accordance with TIA-606. Handwritten labeling is unacceptable.

b. Server Rack Enclosure Cabinets

- (1) Provide the number of Server Rack Enclosure Cabinets listed in Table 1 below meeting the following requirements:
 - Enclosed Cabinet with lockable doors and sides
 - All cabinets in each server shall be keyed the same
 - Size: 24" (max) x 48" (max)
 - Height: 42U
 - Casters with Leveling Legs
 - Plug Type: L5-30P Twist Lock (see UPS)
 - Internal Power Strip with a minimum of twenty (20), 120 volt, 20 amp outlets
 - 2 each 2U Cantilever Mount Fixed Shelf
 - 1 each Vertical Cable Manager
 - 2 each 1U Horizontal Cable Manager

- Top Cabinet Fan
- Top Wire Access
- 1 each 2U Rackmount UPS, 3kVA Line Interactive Unit to support 2,500-watt maximum load

Table 1	
Server Rack Enclosure Cabinets	
Server Room	# of Server Rack Enclosure Cabinets
01-02-05	2
01-03-02	3
01-04-03	3
01-04-15	1
01-05-57	6
01-06-06	2
01-07-06	2
01-08-04	2
01-14-05	6
02-01-46	4
02-02-03	2
02-03-04	2
02-04-04	2
Total	37

(2) Ground Server Rack Enclosure Cabinets

c. MDF-2 to Central IT Cable Run Requirements

- (1) Install one 96 strand 50/125 μ m OM3 multi-mode cable from MDF-2 (Room MDF-2, Sheet A-801C) to the Central IT Room (Room 01-14-05, Sheet A-801C).
- (2) Install one 48 strand 9/125 μ m OS2 duplex single mode cable from MDF-2 (Room MDF-2, Sheet A-801C) to the Central IT Room (Room 01-14-05, Sheet A-801C). This cable shall follow the same path as the 96 strand multi-mode cable.
- (3) Terminate both ends of each cable with LC Connectors.

d. Central IT to Server Room Cable Requirements

- (1) Install one 48 strand 50/125 μ m OM3 multi-mode cable from the Central IT Room (Room 01-14-05, Sheet A-801C) to each of the server rooms shown.
- (2) Terminate both ends of each cable with LC Connectors.
- (3) Server rooms are identified on the attached plans.

e. Central IT to existing Server Room 02-00-09 Cable Requirements

- (1) Install one 48 strand 50/125 μ m OM3 multi-mode cable from the Central IT Room (Room 01-14-05, Sheet A-801C) to the existing Server Room 02-00-09 (Sheet A-802B).
- (2) Terminate both ends of each cable with LC Connectors.
- (3) Server rooms are identified on the attached plans.

f. Private Offices

- (1) Install one 12-strand 50/125 μ m OM2 multi-mode plenum rated fiber optic fiber cable between the associated server room and the data drop locations shown on the attached plans.
- (2) Terminate each strand in the associated server room using LC connectors.
- (3) Terminate each strand at the office data drop locations shown on the attached plans in the provided single gang, 6 port, surface mounted boxes using LC connectors. The surface mounted data drop boxes will be provided and installed by others.
- (4) The server room associated with each room is shown on the attached plans.

g. Conference Rooms

- (1) Install one 12-strand 50/125 μ m OM2 multi-mode plenum rated fiber optic fiber cable between the associated server room and the data drop locations shown on the attached plans.
- (2) Terminate each strand in the associated server room using LC connectors.
- (3) Terminate each strand at the conference room data drop locations shown on the attached plans in the provided single gang, 6 port, surface mounted boxes using LC connectors. The surface mounted data drop boxes will be provided and installed by others.
- (4) The server room associated with each conference room is shown on the attached plans.

h. Systems Furniture Locations

- (1) Install one 12-strand 50/125 μm OM2 multi-mode plenum rated fiber optic fiber cable between the associated server room and each workstation shown on the attached plans.
- (2) Terminate each strand in the associated server room using LC connectors.
- (3) Coordinate with the Furniture Contractor to terminate each strand within the internal systems furniture raceways using LC Connectors.
- (4) Only the cable trays shown on the attached drawings will be provided by others. The Contractor shall extend cable trays as required.
- (5) For workstations along walls, the contractor shall install surface mounted conduit for each workstation served. For interior workstations that contractor shall install telecom / power poles as required. Contractor shall minimize the use of telecom / power poles.
- (8) The server room associated with each conference room is shown on the attached plans.

i. Multi-Function Printer Locations

- (1) Install one 12-strand 50/125 μm OM2 multi-mode plenum rated fiber optic fiber cable between the associated server room and the data drop locations shown on the attached plans.
- (2) Terminate each strand in the associated server room using LC connectors.
- (3) The server room associated with each multi-function printer is based on the room number the printer is located in. The attached plans indicate what rooms are associate with each server room.

j. Wall Penetrations

- (1) Contractor to use existing wall penetrations to the greatest extent possible.
- (2) New wall penetrations require Contracting Officer approval.
- (3) Construct new wall penetrations using details shown on sheets ET-600 & ET601 included in Attachment #2.
- (4) After all communications wires have been pulled, seal each penetration using firestopping system that complies with ASTM E814 or UL 1479.

j. Testing requirements

- (1) Provide documentation of the testing and verification (Factory Reel Tests) actions taken by manufacturer to confirm compliance with TIA-568.1, TIA-568.2, TIA-568.3, TIA-526-7 for single mode optical fiber, and TIA-526-14 for multimode optical fiber cables.
- (2) Perform telecommunications cabling inspection, verification, and performance tests in accordance with TIA-568.1, [TIA-568.2], [TIA-568.3]. Test equipment shall conform to TIA-1152. Perform optical fiber field inspection tests via attenuation measurements on factory reels and provide results along with manufacturer certification for factory reel tests. Remove failed cable reels from project site upon attenuation test failure.
- (3) For multimode optical fiber, perform optical fiber end-to-end attenuation tests in accordance with TIA-568.3 and TIA-526-14 using Method B, OTDR for multimode optical fiber. For single-mode optical fiber, perform optical fiber end-to-end attenuation tests in accordance with TIA-568.3 and TIA-526-7 using Method B, OTDR for single-mode optical fiber.
- (4) For each outlet, perform optical fiber end-to-end link tests in accordance with TIA-568.3.

END OF DOCUMENT