STATEMENT OF WORK (SOW)

Fiber Installation from ITB 230 to B99

Columbus AFB, MS

Rev. 29 March 2023

Prepared By

14 CS/SCXP
495 Harpe Blvd.
Columbus AFB, MS 39710

1. SCOPE.

This SOW defines the requirement for the Contractor to engineer, furnish, install and test (EFI&T) 12-strand single mode (SM) fiber optic cable (FOC) from Information Transfer Building (ITB) 230 to Bldg. 99 at Columbus AFB, MS.

The Contractor shall provide all equipment, tools, materials, supplies, transportation, labor, supervision, management, and other incidentals necessary to meet the requirements as stated in this SOW. The Contractor shall comply with the current TIA telecommunication installation and testing commercial standard and base installation standards. All equipment, supplies, and materials provided shall be new and not refurbished.

2.0 REQUIREMENTS.

2.1 GENERAL REQUIREMENTS.

2.1.1 Safety Requirements.

The contractor shall comply with all Federal, State, county, and base security and safety laws, regulations, policies, and requirements.

2.1.2 Site Coordination.

The Contractor shall meet with the base safety officer upon arrival on site for review of the specific safety requirements prior to installation.

2.1.2.1 Confined Space.

The Contractors and Sub-contractors entering confined spaces on Columbus AFB, MS are responsible for the safety of their personnel and for their own permit space program as outlined in AFMAN 91-203. All confined space operations must be coordinated with the Base Fire Department prior to start of work. The primary Contractor is responsible for all Sub-contractor confined space operations.

2.1.2.2 Accident/Incident Reporting and Investigation.

The Contractor shall record and report all facts relating to each instance of injury to either Contractor or Government personnel. Notification shall be provided to the 14 CS/SCXP Project Manager and the Base Safety Office unless otherwise stated in the SOW. The Contractor shall secure the scene of any accident and wreckage until released by the accident investigative authority through the Base POC. If the Government elects to investigate the incident, the Contractor shall cooperate fully and assist the Government personnel until the investigation is completed.

2.1.2.3 Work Area(s).

At day's end, the Contractor shall remove all debris and surplus materials from the workplace. Safety barriers shall be in place to protect unfinished work site at the end of the day. All open holes or trenches shall be completely enclosed with flexible orange construction safety fencing, or other safety barriers, at the end of the workday. Equipment and materials required to complete the work effort may remain on site if they are organized/stored in a manner that does not cause a safety hazard. The contractor shall co-ordinate with the 14 CS/SCXP to ensure that any locking manhole covers are put back in place at the end of each workday.

2.1.2.4 Traffic Control.

In the event base vehicular traffic is disrupted by trenching, horizontal directional boring, or access to MH/HH's, the Contractor shall notify the 14 CS/SCXP PM NLT 10 calendar days in advance to inform

base Security Forces and Emergency Services personnel of the planned disruptions. NOTE: no trenching or boring required for this project.

2.1.3 Security Requirements.

The Contractor shall process and provide a Site Visit Request Letter to 14 CS/SCXP within 5 calendar days after contract award. This letter shall identify the names (as shown on the driver's license), driver's license numbers and state of issue, and birth date of the personnel who will be performing work under this SOW. This information is required to grant access to the base. If required by the base, the Contractor shall provide identification badges for their employees. All Contractor personnel shall wear these badges while on duty on the Government site. The badges shall identify the individual, company name, and be clearly and distinctly marked as Contractor and be in accordance with base regulations.

2.1.3.1 Security Clearances.

Stated work and associated products shall be performed at the UNCLASSIFIED level. However, some of this work may take place in secure areas where Contractor employees must be always escorted. The Contractor must coordinate access to secure areas at least five (5) calendar days ahead of time. It is the Government's responsibility to provide escorts.

2.1.3.2 Operational Security (OPSEC).

Network infrastructure drawings (MHDS, MH/HH locations, fiber paths, etc.) are on the 14 CS/SCXP Critical Information List and must be protected. The Contractor shall take appropriate measures to protect detailed information pertaining to the EFI&T effort, to include appropriate marking of documents as "Controlled Unclassified Information (CUI)," and ensuring limited distribution of documents and schematics/drawings to only those individuals with a valid need to know. IAW AFI 10-701, OPSEC Considerations, the contractor shall follow the OPSEC guidance/plan (AFI10-701) to ensure the protection of CUI data either furnished by the government or produced by the contractor.

2.1.4 Environmental Compliance.

The Contractor shall comply with the most stringent environmental federal, state, and local laws and regulations, and Air Force policies, instructions, and plans. The federal Government is not exempt from compliance with environmental regulations. The Contractors are responsible to know and follow all applicable Federal, State, Local and Air Force regulations for environmental protection, including waste disposal, sewer discharge, air emissions, and storm water requirements. The contractor shall maintain an awareness of changing environmental regulatory requirements to avoid environmental deficiencies for activities on Columbus AFB, MS. The Prime Contractor shall ensure that their subcontractors (if any) comply with these specifications.

2.1.5 Permits.

The Contractor shall complete, and process all permits required to complete the installation prior to any trenching, or modifications to a facility, maintenance hole or hand hole; call Mississippi 811 at least five (5) working days before excavation and request marking of all utilities in the areas where excavation will occur. All utility markings, flags, etc. shall be maintained by the contractor after the responsible work center/shop identifies/locates them. If a utility is damaged attributed to the fault of the contractor, then the contractor shall repair and return the utility back to the prior to the damage.

2.1.6 Integrated Process Team (IPT).

The Contractor shall chair a monthly/or as needed an IPT meeting that includes Contractor representatives, the Government Contracting Officer (CO), the CSI-B, the System Engineer(s), the

Government Project Manager, and other base personnel as required. The Contractor shall provide an agenda NLT 1 working day prior to the scheduled meetings. The Contractor shall provide worldwide "Meet Me" teleconference capability for the duration of the project. The Contractor shall provide worldwide "Meet Me" teleconference capability for the duration of the project. The purpose of the IPT meeting is to discuss project progress, problems being encountered, and other information necessary/beneficial to ensure success and timely completion of contract requirements. The Contractor shall record meeting minutes and distribute to the attendees NLT 1 working day after each meeting.

2.1.7 Quality Assurance.

The Contractor shall provide Quality Assurance Support for the entire duration of the project. The Contractor's quality assurance evaluator shall assist the Government representative in performing random spot checks and system acceptance tests. The Contractor shall be responsible for identifying system and outside plant deficiencies and/or discrepancies throughout the duration of the project. A weekly report (soft copy) shall be delivered/submitted to COR by COB Monday, indicating progress/status and listing any deficiencies/discrepancies found and actions to correct them.

2.1.8 Contractor Personnel.

2.1.8.1 Project Management.

The Contractor shall provide a Project Manager (PM) and alternate(s) responsible for contract performance and continuity. The Contractor shall identify the Project Manager's or alternate's range of authority to act for the Contractor relating to daily contract operation.

2.1.8.2 Site Point of Contact (POC).

The Contractor shall designate the Contractor's on-site team leader and alternate(s) as the Site POC for individual projects in their Site Visit Request Letter. The Site POC or alternate(s) shall be on site during duty hours for the duration of the project, up to and until final acceptance by the Government PM and shall oversee all facets of the installation tasks. The Site POC shall be the interface for all work site communications with the Government, including quality, safety, and discrepancy matters.

2.1.8.3 Personnel Requirements.

The Project Manager, Site POC, and respective alternate(s) shall be able to read, write, speak, and understand English and shall be on site to coordinate permits, clearances, and receive shipments/material related to the task order.

2.1.8.4 Minimum Contractor Qualifications**.**

All work shall be performed by an experienced Telecommunications Contractor. The Contractor shall have a minimum of 3 years of experience in Telecommunications Systems installations.

Ensure all technical requirements meet industry best practices as prescribed by BICSI, TIA, NFPA and IAW American National Standards Institute (ANSI), Electronic Industries Alliance (EIA), and Telecommunications Industry Association (TIA) National Electrical Code (TIA/EIA-606-A).

2.1.8.5 System for Award Management (SAM).

The contractor shall report ALL contractor labor hours (including subcontractor labor hours) required for performance of services provided under this contract for Installation via a secure data collection site. The contractor is required to completely fill in all required data fields using the following web

address https://www.sam.gov *SAM replaces the previous ECMRA application that was hosted on https://www.ecmra.mil. See https://www.dmdc.osd.mil/ecmra_splash/*

Reporting inputs will be for the labor executed during the period of performance during each Government fiscal year (FY), which runs October 1 through September 30. While inputs may be reported any time during the FY, all data shall be reported no later than October 31 of each calendar year. Contractors may direct questions to the SAM help desk.

2.1.9 Warranty.

The Contractor shall provide manufacturer's standard commercial warranty. The warranty shall be, at a minimum, IAW the NETCENTS standard or equivalent. This warranty shall include a one-year workmanship warranty. The warranty period shall start from the date of system and/or project acceptance. The Contractor shall provide written procedures and required information for warranty services at or prior to site acceptance.

2.1.10 Manuals and Practices.

The Contractor shall provide the latest version of operation, installation, and maintenance manuals and practices/users guide for each system installed as provided by the original manufacturer with all new equipment.

2.2 SPECIFIC REQUIREMENTS.

As indicated in this SOW and attached Project Drawing, the Contractor shall EFI&T 12-strand SM FOC from ITB 230 to B99 at Columbus AFB, MS. All associated fiber distribution panel (FODP), splicing and termination shall be included with the installation.

2.2.1 Outside Plant Requirements.

2.2.1.1 Existing Maintenance Holes.

The Contractor shall be responsible for pumping out maintenance holes/handholes. Water from maintenance holes/handholes shall be drain onto grass, when possible, to act as a natural filter; then it may be pumped out onto the surrounding ground, if there are no impact to roads, driveways, or vehicle traffic. Mud and debris shall be disposed of IAW base requirements. If Contractor comes across a manhole with contaminated water, the Contractor shall coordinate with the environmental office in Base CE.

2.2.1.2 Measurements.

Any distances provided in this SOW are approximations and should **NOT** be used for ordering materials or determining duct lengths.

2.2.1.3 Underground Utilities Markings. Note: No digging or boring on this project.

2.2.1.4 Splice Connectors.

All splicing shall be performed in accordance with RUS Bulletin 1735F-401, Standards for Splicing Copper and Fiber Cable.

2.2.1.5 Labeling.

The Contractor shall label all equipment and cables they install, and cables identified for re-use in accordance with TIA-606-B and as directed by the 14 CS/SCXP.

2.2.1.5.1 Cable Tags.

All tags shall be permanently labeled, easily visible and corrosion resistant. Install cable tags in all maintenance holes/hand-holes, cable vaults, pull boxes and building entrance terminal locations. When cables pass through a maintenance-hole, put a tag on the cable, approximately 2 feet from each duct entrance. Information on the cable tag shall identify cable by size, type, cable number and count. Tagging and labeling of new cables shall be IAW the following:

Example (Fiber Optic Tag): 12L8.3F

FO 230 - 99, 1-12

First line: "12" stands for Fiber Count. "L" stands for Loose Tube Buffer or ("T") for Tight Tube Buffer. "8.3" stands for Single Mode. "F" stands for Filled Core (otherwise leave blank).

Second line and following: "FO" stands for Fiber Optic cable. "230-99" stands for From Building Number 230 to 99. "1-12" stands for Cable/Strand Count.

2.2.1.5.2 Fiber Optic Distribution Panel (FODP) Marking.

Each FODP shall be stenciled/marked with black ink or paint, or adhesive backed decals in letters and numbers. The cover of all new fiber optic distributions (FODPs) shall be labeled to conform to the system used by local maintenance personnel to identify FODPs that terminate fiber. If the manufacturer has not identified the sequence in which ports on FODPs (pigtail modules) are counted, the Contractor shall provide designation labels/strips to identify the sequence in which they are counted. Each splice tray shall be marked to identify the fiber count contained in the splice tray. The marking shall identify the FODP by number (building number), cable number, and count.

Example (FODP Tag):

FODP 230 - 99, 1-12

2.2.1.6 Fiber Optic Terminations.

Fiber optic cable termination will be SC (UPC) connectors, with no splicing (home run installation), and no jumpers.

2.2.1.7 FOC Maintenance Loop.

Leave minimum of 50 feet of fiber optic cable at HH0513, HH 511, MH0514, MH0517, MH0620 and MH0619. Leave minimum of 25 feet of fiber optic cable in each COM room/cabinet. All maintenance loops installed within maintenance holes must be supported by two cable hooks. Cable hooks are to be positioned so the highest one supports the underside of the top of the coil and the bottom hook supports the underside of the bottom of the coil. The maintenance loop shall have a cable tag. The same information shall appear on the Contractor's completed as-built-drawings.

2.2.1.8 Cable Racks and Cable Rack Supports.

Cable racks shall be installed in maintenance holes and hand holes as required - this includes new and existing MHs/HHs. Splices shall not be supported by the cables that enter each end of the splice case. The splices shall be supported by cable hooks under the splice case. Telecommunications industry standard cable hooks of the appropriate length shall be provided to support cables and splice cases. The

cable hooks shall be secured using cable rack locking clips. All cables shall be supported using racking clips, cable racks, and cable hooks.

2.2.2 Requirement Installation.

This section describes the underground maintenance hole/conduit system, flexible geotextile multiple cell fabric inner-duct and fiber optic cable installation requirements. The Contractor shall design and install Customer-Owned Outside Plant Telecommunications Infrastructure in according with TIA-758-B. Each cable installation shall be coordinated with the 14 CS/SCXP so that the impact on the building users is properly coordinated. The sequence of installation is at the Contractor's discretion.

See Project Drawing below for reference and estimated distances of existing and proposed infrastructure and cables routes. This is only a proposed solution. The Contractor may make any recommendations pertaining to the accomplishment of this requirement in their proposal.

2.2.2.1 Infrastructure Installation.

The Contractor shall install the following new infrastructure. All new locations and distances are approximations.

2.2.2.1.1 New Fiber Optic Distribution Panel (FODP).

The Contractor shall install one 12-port FODP in ITB 230 existing rack space and one wall mount FODBx in B99. The location of FODP shall be provided by 14 CS/SCXP.

2.2.2.1.2 Geotextile Innerduct. Install approx. 110' of GFE Max-cell from B230 to MH0618.

Install the following GFE 2" 3-cell or 3" 3-cell Geotextile Innerduct				
From	**To**	**Quantity**	**Approx. Distance**	**NOTES**
B230	MH0619	1	45 ft.	In existing duct. (Gov't furnished)
MH0619	MH0618	1	65 ft.	In existing duct. (Gov't furnished)

2.2.2.2 Fiber Optic Cable Installation**.**

The Contractor shall install single mode (SM), loose buffer tube, water blocked, outside plant (OSP) or indoor/outdoor fiber optic cable (FOC) suitable for underground applications. The intent is to install the cable in one continuous length, to the extent that it is practical. The cable shall meet RUS 7 CFR 1755.900 criteria; shall comply with industry standards regarding manufacturers' cable marking, jacket, rip cords, water blocking, fiber color coding, jacketing materials, etc. In addition, the FOC shall comply with industry standards regarding mode field diameter, core cladding concentricity, attenuation, and dispersion characteristics at 1310 nm and 1550nm.

All fiber optic cables shall be installed in new or existing geotextile innerduct/innerduct except from PED to B99 and from B230 mech room to COM room.

2.2.2.2.1 From ITB 230 to B99.

The Contractor shall install **approximately** 4,000 feet (maintenance loop included) of 12-strand SM FOC from ITB 230 to B99. Terminate 12-strand SM FOC in the new 12-port FODP in ITB 230.

From	To	Approx. Distance (feet)	Notes
ITB 230	MH0619	150	In existing innerduct
MH0619	MH0618	75	In existing innerduct
MH0618	MH0620	300	In existing innerduct
MH0620	MH0621	140	In existing innerduct
MH0621	MH0517	150	In existing innerduct
MH0517	MH0516	250	In existing innerduct
MH0516	MH0515	500	In existing innerduct
MH0515	MH0514	500	In existing innerduct
MH0514	HH0511	450	In existing innerduct
HH0511	HH0512	200	In existing innerduct
HH0512	HH0513	250	In existing innerduct
HH0513	HH0514	100	In existing innerduct
HH0514	PEDISTAL	50	In existing innerduct
PEDISTAL	B99	400	In existing innerduct

2.2.2.2.2 Terminate new 12-strand SM FOC coming from ITB 230 to new 12 port FODP in B99. Coordinate with 14 CS/SCXP for details.

2.2.3 Project Residue.

All residue from this project shall be disposed of off base and in accordance with Federal, State, local and base environmental laws, and regulations.

2.2.4 Site Restoration.

The Contractor shall restore all disturbed grounds to the “as found” condition or better after installation. The Contractor shall comply with all base ground’s restoration requirements. Common use areas shall be restored with sod.

2.2.5 Service Outages.

The Contractor shall be responsible for preventing any unscheduled (i.e., cutting or disabling any in-service cables or equipment.), Contractor-caused, interruptions of communications capabilities that are properly identified. The Contractor shall coordinate planned outages with the site POC at least 10 calendar days in advance of the outage if the implementation necessitates disruption of service, (e.g., communications, electrical, or other utilities). NOTE: There are no planned outages.

2.2.6 Identification/Marking.

The Contractor shall clearly mark all Contractor-Furnished Property and Equipment (CFP/CFE) with their company's name. The Contractor shall place an easily read, very visible, sign (minimum 8.5" x 11") on large containers, construction equipment, or un-manned rental vehicles while on the

Government installation indicating the company name and both the Contractor and Site POC's names and local telephone numbers.

2.2.7 Installation Schedules.

The Contractor shall provide a complete milestone schedule that denotes project activities to include time-phased start and completion dates for the project and sub-projects associated with the installation of the components and system. All submissions shall be delivered electronically in MS Office-compatible format NLT 10 business days after contract award and as significant schedule changes occur to be determined by the IPT.

2.2.8 Weekly Status Reports.

The Contractor shall prepare a Weekly Status Report and distribute to the Government Contracting Officer (CO), the System Engineer(s), the Government Project Manager, and other base personnel as required. The purpose of the report is to inform IPT members of project progress, problems being encountered, and other topics necessary/beneficial to ensure success and timely completion of the contract requirements.

2.2.9 Drawings.

2.2.9.1 As-Built Drawings.

The 14 CS/SCXP shall supply existing system drawings, and the Contractor shall provide updated drawings in Visio for building and rack elevation; Visio and .pdf for OSP. These drawings shall depict the entire pathway and details of the installation, including but not limited to labeling, cables, innerducts and maintenance holes/handholes, conduits, maintenance loops, distances, bores, trenches, building entrances. Detailed butterfly drawings will also be required. If the existing cable diagram or butterfly drawings are not available; the contractor shall create the missing cable diagram/ butterfly drawings to include all the components used in this project. The Contractor shall record/deliver geospatial data of new outside plant distribution system.

2.2.9.2 Butterfly Drawings.

The Contractor shall record and submit butterfly, cable path and building penetration drawing information for all new installations including butterfly drawings for all maintenance holes and pull boxes that contain new or reused FOC. Drawings shall record the path and arrangement of new and reused fiber optic cables, splices, and the arrangement duct banks, ducts, inner-duct and shall show maintenance hole orientation with respect to geodetic north. Drawings shall be submitted in an easily read electronic format such as pdf. Scanned data sheets or legible sketches are acceptable.

2.2.10 Test and Acceptance/Installation Test Plan.

The Contractor shall provide a test plan as to how the system shall be pre-tested, in-progress-tested, and post-tested. Draft Cut-over Test Plan shall be submitted NLT 10 calendar days after contract award. Government comments will be provided after review of the draft. A final plan will be submitted 30 calendar days before the actual cut-over date. The Contractor shall test the system to demonstrate to the Government quality assurance representative that the system is fully operational and meets or exceeds the specified requirements and that the system is fully ready to be placed into service. These tests shall be accomplished prior to the system being placed into service.

2.2.10.1 Testing.

The Contractor shall conduct on-site testing IAW OEM's installation manuals, practices, and the appropriate vendor's test procedures. The Contractor shall furnish all test equipment and personnel required to conduct all required testing. During any testing phase, the Government reserves the right to perform any of the contractor performed inspections and tests to assure solutions conform to prescribed requirements. The Contractor shall provide on-site support during the acceptance testing. The Contractor shall participate with the Government in testing the complete communications system. When any system, subsystem, component, or requirement test fails to meet the requirements of the test, Government acceptance and payment will be withheld until such time as the cause of the failure is corrected to the Government's satisfaction. After appropriate corrective action has been taken, all tests including those previously completed, related to the failed test and the corrective action shall be repeated and successfully completed prior to Government acceptance.

2.2.10.1.1 Fiber Optic Tests.

All strands of all fiber optic cables shall be tested in accordance with TIA 526-7, Measurement of Optical Power Loss of Installed Single-mode Fiber Cable Plant, or equivalent. As a minimum, the following tests shall be performed. Both Optical Time Domain Reflectometer (OTDR) and Optical Power Meter tests will be used for all end-to-end circuits. Between FODPs, bi-directional testing at 1310 nm and 1550 nm is required. For incomplete circuits that end in Maintenance Holes, only one-way OTDR testing is required. **NOTE: Test result from the testing of the Fiber Optic Cables on the reel shall be provided to the 14 CS/SCXP prior to installation.**

2.2.10.1.1.1 Optical Attenuation.

End to end attenuation tests shall be conducted on all fiber optic cable strands. Tests shall be accomplished to ensure the installed cable is within the specified parameters.

2.2.10.1.1.2 Distance.

Test to determine the installed cable length between optical patch panels. All strands of all fiber optic cables shall be tested.

2.2.11 Acceptance/Installation Test Report.

The Contractor shall provide an installation test report of the results of the testing accomplished under the installation test plan NLT 10 business days after Government Witness Testing is complete.

2.2.12 Final Acceptance IAW AFTO "747 Cyberspace Infrastructure System Acceptance".

The Contractor shall schedule a final project walk-through with the Base POC, including Quality Assurance Officer and Subject Matter Expert. The walk-through should be scheduled 5 calendar days prior to acceptance. The contractor shall route the AFTO 747 after the base has signed the test report and the walk-through has been completed.

2.2.13 Deliverable Summary.

All deliverables are subject to Government acceptance and approval. They shall meet professional standards and the requirements set forth in this Task Order. All deliverables shall be produced using recommended software tools/versions as accepted by the Government.

3.0 GENERAL INFORMATION.

3.1 Period of Performance.

The period of performance for the project shall be 120 days post contract award date.

3.2 Place of Performance.

The place of performance is Columbus AFB, MS.

3.3 Hours of Operation.

The Contractor shall routinely work during normal duty hours (730-1630) of the site. However, mission requirements may necessitate work outside normal hours (nights and/or weekends), especially if existing service must be interrupted. Any site work requested by the Contractor to be performed outside of normal duty hours shall be coordinated with the 14 CS/SCXP and approved by the Contracting Officer.

3.4 Holidays/Down Days.

The Contractor shall not perform under this contract on federal holidays or site-unique down-days unless expressly authorized by the CO and coordinated with the base POC.

New Year's Day	1 January
Martin Luther King's Birthday	3rd Monday in January
President's Day	3rd Monday in February
Memorial Day	Last Monday in May
Juneteenth	19 June
Independence Day	4 July
Labor Day	1st Monday in September
Columbus Day	2nd Monday in October
Veterans Day	11 November
Thanksgiving Day	4th Thursday in November
Christmas Day	25 December

3.5 Base Support.

The Contractor shall identify any base support requirements (for example, laydown and storage areas) necessary to complete this project in their proposal. The contractor shall return all government furnished lay-down and storage areas to their original condition upon completion of the project.

4.0 APPENDICES. APPLICABLE STANDARDS.

The following list is not all-exclusive. The Contractor shall comply with applicable commercial code and standards.

AFMAN 91-203 – Air Force Consolidated Occupational Safety Instruction

OSHA CFR 29 Part 1910-268 – Telecommunications

NEMA TC 2- Electrical Polyvinyl Chloride (PVC) Tubing and Conduit

TIA-606-C Administration Standard for Telecommunications Infrastructure

TIA-568-E Commercial Building Telecommunications (568C.1, 568C.2, 568C.3) Cabling Standard

TIA-607-D Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications

TIA-526-7- Measurement of Optical Power Loss of Installed Single-mode Fiber Cable Plant

TIA-569-E - Commercial Building Standard for Telecommunications Pathways and Spaces

TIA-570-D –Residential Telecommunications Infrastructure Standard

TIA-758B Customer-owned Outside Plant Telecommunication Infrastructure Standard

BICSI TDM Manual - Building Industries Consulting Services International Telecommunications Distribution Methods (TDM) Manual

BICSI – Outside Plan Design Reference Manual

RUS Bulletin 345-65 (PE-33) – Specification for Shield Bonding Connectors

RUS Bulletin 1735F-401, Standards for Splicing Copper and Fiber Cable

RUS Bulletin 1751F-643 - Underground Plant Design

RUS Bulletin 1751F-644 - Underground Plant Construction Telecommunications Engineering Shield Continuity and Construction Manual (TE&CM) 451.2

RUS Bulletin 1751F-801 – Electrical Protection Fundamentals

RUS Bulletin 1753F-151 (515b) - Specifications and Drawings for Underground Cable Installation

RUS Bulletin 1753F-201 (PC-4) – RUS Standard for Acceptance Tests and Measurements of Telecommunications Plant

RUS Bulletin 1753F-207 (PE-87) – REA Specification for Terminating Cables

NFPA 70 - National Electric Code

Unified Facilities Criteria 3-260-01

Unified Facilities Criteria 3-580

FGDC-STD-007.3-1998 - Geospatial Positioning Accuracy Standards Part 3: National Standard for Spatial Data Accuracy

5.0 PROJECT DRAWING

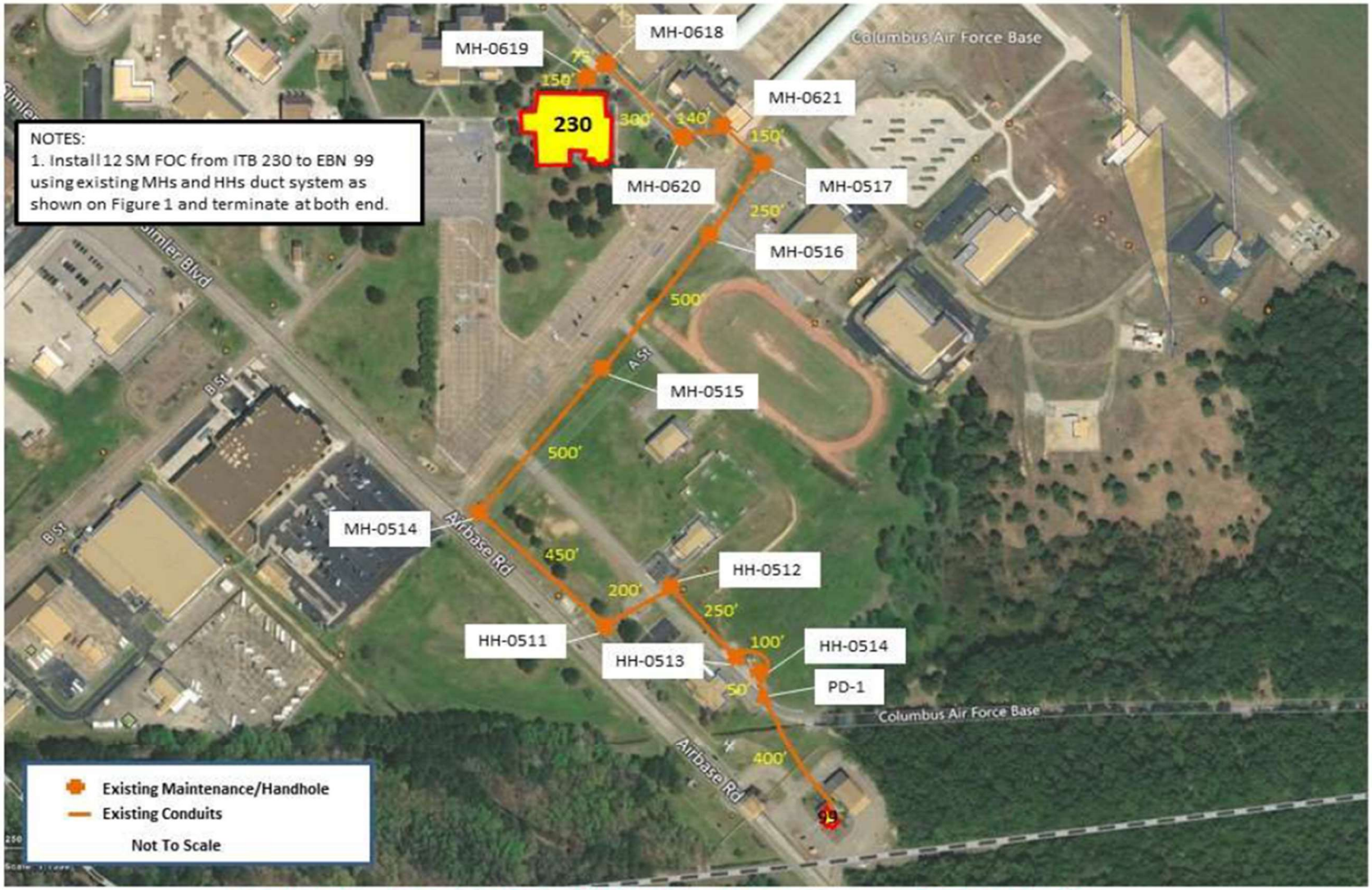

FIGURE 1 - PROPOSED 12SM FOC FROM ITB 230 TO BLDG 99