



TEXAS TECH UNIVERSITY™

Operating Policy and Procedure

OP 61.12: Installation of Cabling in Buildings, Tunnels, and Other TTU Locations

DATE: November 9, 2021

PURPOSE: The purpose of this Operating Policy/Procedure (OP) is to establish a standard procedure for the approval of cable installation in Texas Tech buildings, tunnels, and other TTU locations, and quality control procedures for such work. Under the provisions of this OP, property drawings will be upgraded to reflect the location of all cables installed at TTU locations.

REVIEW: This OP will be reviewed in February of even-numbered years by the Associate Vice President for Operations in coordination with the Senior Director of Telecommunications and the Director of Communication Services with substantive revisions consolidated by the Associate Vice President for Operations and forwarded to the Senior Vice President for Administration & Finance and Chief Financial Officer.

POLICY/PROCEDURE

For the purpose of this OP, cabling is defined as any communication, telephone, fiber optic, security alarm, fire alarm, energy monitoring system, data acquisition, video, audio, two-way radio, or department or school network cables.

1. Responsibilities

- a. The Senior Managing Director of Building Maintenance & Construction is responsible for the control of, access to, and use of the utility corridors in TTU buildings and tunnels, and utility rights of way at TTU locations (surface, underground, or overhead). This responsibility includes installation of appliances and cable systems at TTU locations. Therefore, the installation of any wiring or cables at TTU locations must receive approval from the Senior Managing Director of Building Maintenance & Construction.
- b. The Information Technology Division is responsible for the installation of all digital, audio, video, or network communications. The installation of any network communications cabling must be initiated in accordance with [OP 52.03, Telecommunications Services](#). Communications cabling will be coordinated in accordance with the procedures prescribed in section 2.b of this OP.
- c. Agencies, organizations, and individuals that do not install cables as part of their primary mission will submit a self-help *Customer Project Request* (CR) to the Senior Managing Director of Building Maintenance & Construction in accordance with [OP 61.35, Requesting Approval for Building Self-help Projects](#). Approval for these organizations will be granted only after the following criteria have been met:

- (1) Certification by a department director, chairperson, or individual of equivalent responsibility level that the installation is necessary to meet a university requirement;
 - (2) Installing department will provide the funding necessary for installation of the cables;
 - (3) Installation will be completed in accordance with the standards stipulated by this OP; and
 - (4) Review and approval by the Senior Managing Director of Telecommunications of any audio, video, or digital network communications involved in the project.
- d. The mechanical, heating and air conditioning, and structural superintendent is responsible to the Senior Managing Director of Building Maintenance & Construction for the maintenance and cleanliness of chases and ceiling spaces in which utilities are piped.
- e. The Managing Director of Engineering Services is responsible for notifying the Senior Managing Director of Building Maintenance & Construction and the affected superintendent(s) of any plans or projects that will involve additional cables at TTU locations. Additionally, the Managing Director of Engineering Services is responsible for ensuring that material containing asbestos is appropriately identified and handled.
- f. The University Fire Marshal and Assistant Vice President for Environmental Health & Safety are responsible for the health and safety of building occupants. This responsibility includes ensuring that the structural safety of facilities is not compromised and all firewalls are maintained. Therefore, the Senior Managing Director of Building Maintenance & Construction will forward any submitted designs or requests for the installation of cables to the University Fire Marshal and the Assistant Vice President for Environmental Health & Safety for review prior to granting approval for installation.
- g. The chairperson, director, or department head of any agency or organization installing cables is responsible for ensuring that personnel involved in installation have received asbestos awareness training.
- h. TTU Telecommunications (“Telecom”) is responsible for data communication rooms (“Comm Rooms”). To maximize the university’s compliance with IT security best practices and minimize its exposure to security vulnerabilities, the data communications cable plant must connect to the university’s network infrastructure within Comm Rooms. Comm Rooms may only contain Telecom-managed network equipment. Access into Comm Rooms is restricted to Telecom staff. Exceptions for equipment or access must be reviewed and approved by the Senior Director of Telecommunications Enterprise Network Services.

2. Procedures

- a. Departments that do not routinely install cables as part of their normal operation and do not feel comfortable performing cable installation may request the Operations Division to do the installation by completing and submitting a CR as outlined in [OP 61.35, Requesting Approval for Building Self-help Projects](#).
- b. The Information Technology Division will coordinate with Operations Division regarding the location of communication cables in the following ways:

- (1) A record of installed cables will be maintained and information provided, upon request by the Senior Managing Director of Building Maintenance & Construction, sufficient to coordinate work in any building or tunnel.
 - (2) Site demolition and disposition of communications cables will be coordinated with Operations Division upon request by the Senior Managing Director of Building Maintenance & Construction.
- c. To obtain approval for cable installation, all other agencies not cited above must submit a self-help CR to the Senior Managing Director of Building Maintenance & Construction in accordance with [OP 61.35, Requesting Approval for Building Self-help Projects](#).
- (1) The CR must include the following information:
 - (a) Building or property plan indicating the proposed route of the cables with all firewall, floor, and other structural penetrations clearly identified;
 - (b) Type of system (data, video, audio, etc.) being served;
 - (c) Number and type of cables being installed;
 - (d) Termination locations;
 - (e) Identification system to be used on the cable;
 - (f) Installation technique/method to be used, including a clear description of the method used in sealing firewall and/or floor penetrations;
 - (g) Proposed installation schedule;
 - (h) Name and telephone number of individual(s) responsible for the installation; and
 - (i) Certified approval by the department director, chairperson, or individual of equivalent responsibility level.
 - (2) The Senior Managing Director of Building Maintenance & Construction will process the CR in the same manner as a self-help project (see [OP 61.35, Requesting Approval for Building Self-help Projects](#)).
 - (3) The Senior Managing Director of Building Maintenance & Construction and the Building Maintenance & Construction Work Control Center personnel will review the CR to verify that it does not interfere with any known projects or utilities. If it does not, the Senior Managing Director of Building Maintenance & Construction will forward it to the affected superintendent(s) for technical review.
 - (4) The affected superintendent(s) will review the CR to verify that the route indicated is appropriate and does not create interference of any kind for existing cables or utility systems. Finally, an inspection of the area proposed for penetration of the floors, walls, and ceilings will be conducted to verify that such penetration will not endanger existing systems. After this review, the affected superintendent(s) will return the CR with comments to the Senior Managing Director of Building Maintenance & Construction.

- (5) The Senior Managing Director of Building Maintenance & Construction will consider the comments received from the affected superintendent(s) and approve the installation, or prepare comments to the requesting department indicating disapproval and the reasons for disapproval. For projects that are approved, written authorization to proceed will be forwarded to the requester, along with any special instructions and appropriate guidance on standards of installation as prescribed in this OP.
 - (6) The installing department will notify the Senior Managing Director of Building Maintenance & Construction of the estimated start date and the estimated completion date of the installation.
 - (7) The affected superintendent(s) may make periodic inspections while the cables are being installed, and will inspect the installation after it has been completed. Any deficiencies or improper installation will be reported to the Senior Managing Director of Building Maintenance & Construction and to the installing department for correction.
 - (8) After all deficiencies have been corrected, the affected superintendent(s) will make a final inspection of the installation and recommend approval to the Senior Managing Director of Building Maintenance & Construction, as appropriate.
 - (9) The Senior Managing Director of Building Maintenance & Construction will notify the installing department of the approval and request a final drawing of the installation be submitted to the Senior Managing Director of Building Maintenance & Construction for inclusion in campus building plans. This drawing must include:
 - (a) Final location of cables and all firewall penetrations;
 - (b) Location of junction boxes;
 - (c) Location of termination points;
 - (d) Size of conduit used;
 - (e) Number of cables installed;
 - (f) Type of cables installed, and
 - (g) Any and all transceivers, multiplexers, network repeaters, or other equipment associated with the cables.
 - (10) Upon receipt of the final installation drawings, the Senior Managing Director of Building Maintenance & Construction will review them with the affected superintendent(s) for accuracy and, subsequently, submit them to the Managing Director of Engineering Services for inclusion in campus building or tunnel plans.
- d. In the normal pursuance of their duties, Building Maintenance & Construction technicians and craftspeople will identify and report any improperly installed cables that they encounter, including any non-elevator-related cables in any part of an elevator shaft or elevator equipment room. The superintendent will attempt to identify the agency responsible for the installation of this cable by inquiry of the agencies cited in sections 2.a and 2.b. The

- responsible agency will be expected to correct the deficiencies discovered. In the event that the responsible agency cannot be identified, such cables will be reported to the Senior Managing Director of Building Maintenance & Construction.
- e. The Senior Managing Director of Building Maintenance & Construction will consult with Engineering Services and all agencies cited in section 2.a in a final attempt to identify the cable. If it cannot be identified, a decision will be made regarding the arbitrary removal of the cable. No cable will be cut or removed unless it presents an obstacle to maintenance operation, a hazard to safety in the building or tunnel, a hazard to the structural integrity of the building or tunnel, or a significant violation of applicable structural codes.
 - f. To coordinate replacement of any existing cable, an installing agency will be required to notify the Senior Managing Director of Building Maintenance & Construction in writing. This notification will include the following information:
 - (1) Type of cable (data, video, audio, etc.) being replaced;
 - (2) Location of cable being replaced; and
 - (3) Identification system used on replacement cables.

3. Standards of Installation

All cable installations on the Texas Tech campus will meet the specifications and requirements established by Uniform Building Code (UBC), National Safety Code (NSC), National Electric Codes (NEC), The Institute of Electrical and Electronic Engineers (IEEE), Electronic Industries Association (EIA), and American National Standards Institute (ANSI). In addition, all installations will comply with established federal and state regulations concerning the disturbance of asbestos-containing materials. Specific standards established for the installation of cables at TTU are as follows:

- a. All wall, ceiling, and floor penetrations will be made in accordance with applicable codes and standards noted in Section 3.
- b. All cables in plenums shall be in conduit or have an outer jacket approved for use in air plenums (e.g., “plenum-rated”).
- c. Cables will be laid in existing cable trays and bundled with wire ties every 20 feet. In areas that do not have a cable tray, alternate means of support may be acceptable and, generally, consist of wall locks, clamps, or messenger cable systems. Distance between support points will not exceed eight feet. Cables will not be laid on the ceiling tile or grids.
- d. Cables will not be secured to existing electrical power cables by wire ties or any other method.
- e. Cables will be neatly bundled and installed and well secured with installation as close to the structural ceiling as possible.
- f. Cables will not be installed in or through any elevator shaft or elevator equipment room unless the cables are specifically part of the elevator system.

- g. Cables will not be installed or passed through any fire dampers.
- h. Cables will not be secured to pipes (water, chilled water, or steam) or valves, and will not be wrapped or entwined around pipes. Cables will not be wrapped or entwined around any structural feature or routed through any ladders or catwalk equipment. Cables may be secured to existing anchors, supports, or brackets.
- i. Cables will not be installed with excessive slack producing a tripping, snagging, or entrapment hazard.
- j. All installed cables will be marked and identified. Adhesive or snap on jacket markers will be affixed to the cables on each side of any firewall, floor penetration, tunnel entrance point, and junction box connection. These identification tags will be attached securely and permanently to every cable or cable bundle and include the following information:
 - (1) Installing agency or department
 - (2) Termination points
- k. All personnel installing cables at TTU shall have completed a minimum of two hours of asbestos awareness training.
- l. Suspected asbestos-containing materials will be tested and verified as non-asbestos prior to disturbance.
- m. Only properly trained and licensed personnel will be allowed to disturb materials containing asbestos.
- n. All suspected asbestos-containing materials found to be damaged by personnel installing cables will be reported immediately to the Senior Managing Director of Building Maintenance & Construction and to the Assistant Vice President for Environmental Health & Safety.