



**Angelo State University**  
**Operating Policy and Procedure**

**OP 40.10: Existing Utility Connections and Underground Trenching of Utilities**

**DATE:** June 4, 2019

**PURPOSE:** The purpose of this Operating Policy/Procedure (OP) is to establish a communication process for connecting to existing utilities, to establish the depth of installation of all types of utilities by trenching, ditching, or boring to maximize the protection of existing utilities, and to establish a protocol to protect new installations from being disturbed or causing disruption of service of that utility because of improper installation.

**REVIEW:** This OP will be reviewed in April every five years, or as needed, by the director of facilities planning and construction (DFPC) with recommended revisions forwarded through the vice president for finance and administration to the president by May 15 of the same year.

**POLICY/PROCEDURE**

**1. Existing Utility Connection Notifications and Guidelines**

- a. A contractor shall contact the following offices at least 48 hours prior to the connection into existing Angelo State University-owned utilities (water, gas, sewer, electric, irrigation):

**Facilities Management (FM) office (325) 942-2355**

**Facilities Planning and Construction (FPC) office (325) 942-2380**

- b. Any connection into an existing Angelo State University-owned utility must be performed by a licensed individual or licensed entity for the specific trade that is required for the connection. The connection assembly and all appurtenances shall be installed in strict accordance to the pertinent state adopted code. FM or FPC may require the connection to be designed by a design professional; if so, the connection will be made in accordance with that design.
- c. FM or FPC may require utilities to individual buildings or facilities to be metered, even when the utility source is an Angelo State University-owned utility.
- d. Connections to water utilities:
- (1) Any new connection into a **Domestic (Potable) Water** source, owned by Angelo State University, must include a code compliant backflow prevention assembly in the following circumstances:
- when required by state adopted code
  - to a new **Non-Domestic Water** supply (e.g., irrigation, fire suppression, heating and cooling systems, etc.)

- to a new **Domestic (Potable) Water** supply to a new stand-alone facility
  - to appliances, such as ice machines and beverage dispensers
- (2) Any new connection into a **Domestic (Potable) Water** source, not owned by Angelo State University, being used for a **Domestic (Potable) Water** supply to Angelo State University facilities must include a backflow prevention device or check valve assembly prior to further distribution and be metered at the connection point.
- (3) Any new connection into a **Fire Suppression Water** source, owned by Angelo State University, being used for any purpose other than Fire Suppression is strictly prohibited.
- e. A contractor shall request permission from the pertinent utility owner (e.g., AEP, the City of San Angelo Utilities Department, Atmos Energy, Suddenlink, Frontier Communications, AT&T, Verizon, etc.) at least 14 days prior to the connection into Non-Angelo State University-owned utilities (commercial, franchise or city-owned utilities such as water, gas, sewer, telephone, TV, cable, and electric).

## 2. Trenching and/or Excavating Notifications and Guidelines

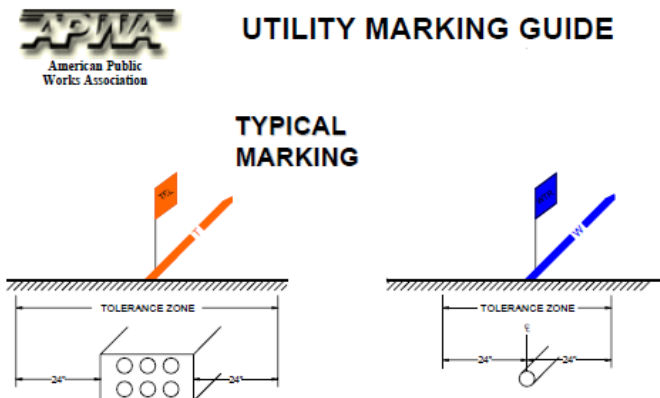
- a. A contractor shall call the following offices at least 48 hours prior to start of any trenching or excavation work:

**Texas Excavation Safety System (Dig TESS) 1-800-344-8377**

**FM office (325) 942-2355**

**FPC office (325) 942-2380**

- b. The excavator shall observe a tolerance zone of 24 inches. Tolerances shall be measured horizontally from the temporary surface marking.



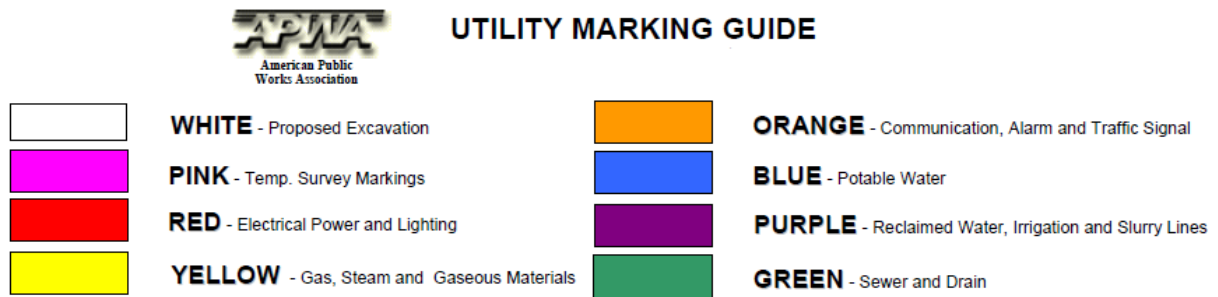
- c. Any excavation within the tolerance zone shall be performed with non-powered hand tools and/or non-invasive method(s) until the utility is exposed.
- d. All excavation and trenching operations shall be in accordance with OSHA requirements.

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- e. Excavations deeper than 24 inches must utilize a “spotter”. Qualifications and competency of a “spotter” shall be as defined by OSHA 1926.1428.

### 3. Locating and Identification Guidelines for Utilities

- a. Temporary color-coded surface markings (e.g., chalk, water-based paint, flags) shall be used to indicate the location or route of active and out-of-service buried lines. To increase visibility, color-coded markers indicate the name, initials, or logo of the company or organization that owns or operates the line. Marks placed by anyone other than line owner/operator or its agent indicate the identity of the designating firm. Multiple lines in a joint trench are marked in tandem. **If the surface over the buried line is to be removed, supplementary offset markings shall be used.** Offset markings are on a uniform alignment and clearly indicate that the actual facility is a specific distance away.
- b. The Uniform Color Code of the American Public Works Association, using the ANSI Z535.1 “Safety Colors for Temporary Marking and Facility Identification” standard, shall be the official color scheme of Angelo State University. It designates the colors as follows:



- c. Proposed excavation shall be marked using white marks to clearly indicate the location, route or boundary. Surface marks on roadways should not exceed 1.5 inches by 18 inches (40 mm by 450 mm).

### 4. Utility Installation and Backfill Requirements

- a. Minimum cover requirements to top of pipe or insulation for ASU utilities:
  - Low pressure gas (ounces) ..... 36 inches
  - High pressure gas (pounds) ..... 46 inches
  - Domestic water ..... 36 inches
  - Fire Protection water ..... 36 inches
  - Irrigation mains ..... 24 inches
  - Irrigation laterals ..... 18 inches
  - Direct-buried steam/condensate return ..... 36 inches
  - Direct-buried Air ..... 36 inches
  - Direct-buried Chilled water ..... 36 inches
  - Direct-buried Reverse osmosis (R-O) water ..... 36 inches
  - Electrical primary voltage (including 6” concrete cap) ..... 42 inches
  - Electrical secondary voltage (less than 600 volts) ..... 36 inches
  - Direct-buried Communication, Alarm/Security Cabling ..... 42 inches
  - Communication, Alarm/Security Cabling in Conduit ..... 42 inches

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- b. All ASU utilities must be tested, inspected and approved by ASU prior to backfill commencement.
  - c. Minimum cover requirements to top of pipe or insulation for municipal or franchise utilities shall be in accordance with their standards if greater than ASU's minimum above.
  - d. Warning tape for the following utilities should be 12 to 16 inches below grade in ditch lines: gas, alarm systems, security systems, communication, and all electric. This shall also apply to all direct-buried utilities such as fire-protection water, steam, air, chilled water, and reverse osmosis water.
  - e. Piping that is non-metallic must have a continuous, coated (protected from ground) wire (i.e. AWG 12) installed for locating purposes (e.g., natural gas, R-O water, domestic water, communications). Metallic warning tape shall not be considered equivalent.
  - f. Modifications or changes of utility installation depths from the indicated depths of installation, due to other utilities and/or underground obstacles, should be approved through FM and FPC.
  - g. Utility trench backfill can be accomplished utilizing the following methods:
    - (1) As required by the Civil/Structural Engineer of record, if applicable
    - (2) By filling the trench with 8" maximum loose lifts of excavated material or imported "clayey sand" material approved by ASU compacted between 93% and 97% of Standard Proctor Density.
    - (3) By filling the trench with 200 PSI (minimum), 800 PSI (maximum) ASTM C150 Portland Cement Flowable fill
  - h. If pavement or concrete is to be removed for utility trenching and/or excavation, a 5,000 PSI reinforced concrete "t-cap", of no less than 12 inches either side of a trench and no less than 8 inches thick, shall be installed where pavement is disturbed.
5. A copy of this OP shall be placed into all ASU bid documents where trenching, excavation and/or utility work is necessary. A copy of this OP shall be provided to all contractors doing excavation work on the campus of Angelo State University. Facilities Planning and Construction will be responsible for this distribution.