

**Appalachian Electric Cooperative**  
**Underground Electric Specifications for Commercial and Industrial Developments**  
**Ditching and Conduit Installations**  
**Policy 1460 – Attachments A and B**  
**January 2009 Edition**

**1.00 Customer's Responsibilities**

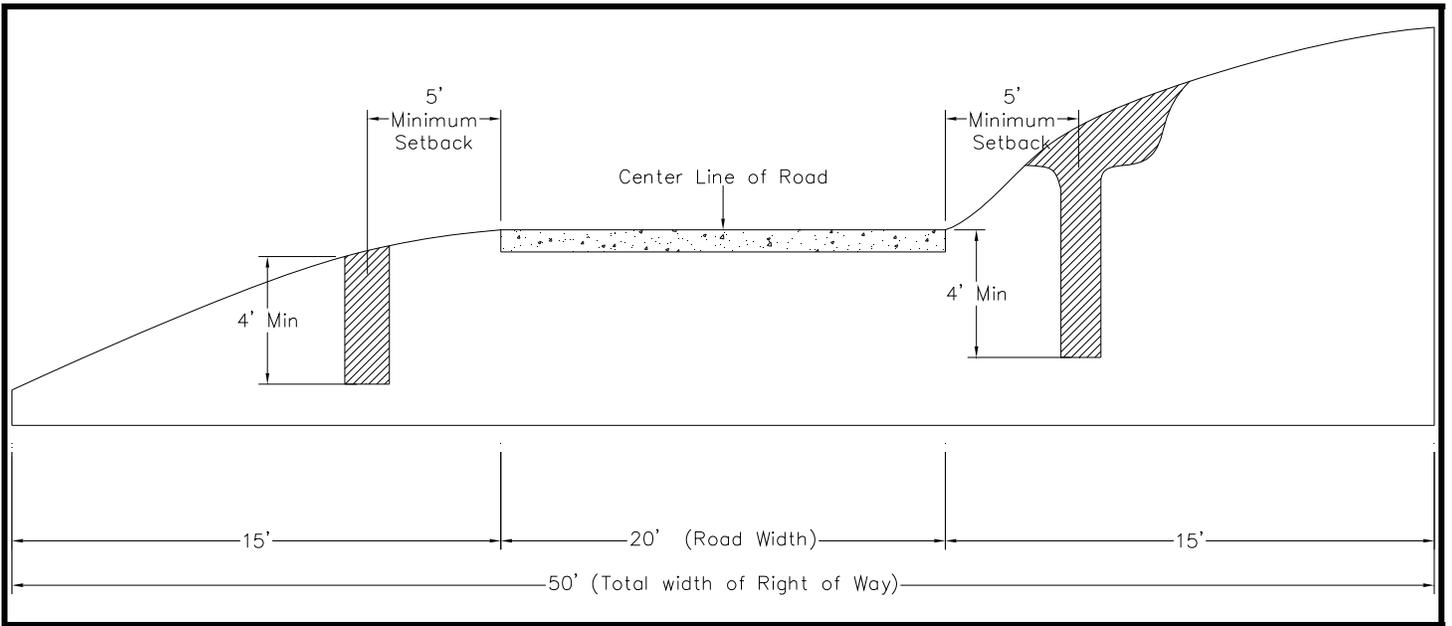
- 1.10 The **customer** shall be responsible for paying all Aid-to-Construction charges and miscellaneous fees before AEC will provide ditch inspection or provide electric service.
- 1.20 The **customer** shall be responsible for obtaining, granting and the initial clearing of right-of-way easement as per AEC's specifications before the installation of the electric facilities begins. Typical right-of-way easement widths are twenty feet (20') for distribution and seventy-five feet (75') for transmission. However, custom installations might require additional easement.
- 1.30 The **customer** shall be responsible for the opening and closing of all ditches. The **customer** shall also provide a backhoe to assist AEC in the installation of equipment wells and conduit exits.
- 1.40 The **customer** shall be responsible for locating all existing underground facilities prior to any excavation by contacting Tennessee One Call (811).
- 1.50 The **customer** shall be responsible for coordinating with AEC's Operating Supervisor for the inspection of ditches before closing any primary ditches, installing caution tape and pouring concrete padmounted equipment foundations.
- 1.60 The **customer** shall provide and install all primary conduits and any associated hardware for all primary underground installations for commercial developments. For backup purposes, the **customer** shall also provide and install a *second* raceway of continuous conduit. The conduit shall be Schedule 40 unless the installation is under a paved surface, in which case the conduit shall be Schedule 80. All elbows shall be 90° three foot (3') radius elbows.
- 1.70 The **customer** shall be responsible for the construction and installation of any concrete foundations that are required for the project per AEC specifications. The **customer** shall be responsible for providing crushed stone (#57) for the base of all wells for elbow cabinets, vaults or any other non-foundational type equipment.
  - 1.71 Concrete Foundations (requires custom built foundation for each)
    - 1.711 3Ø padmounted transformers
    - 1.712 3Ø padmounted switchgear (special order equipment)
  - 1.72 Prefabricated Foundation or Well
    - 1.721 1Ø padmounted transformers
    - 1.722 Manual switching (or elbow) cabinets (1Ø and 3Ø)
    - 1.723 Vaults (special order equipment)

## 2.00 Appalachian Electric Cooperative's Responsibilities

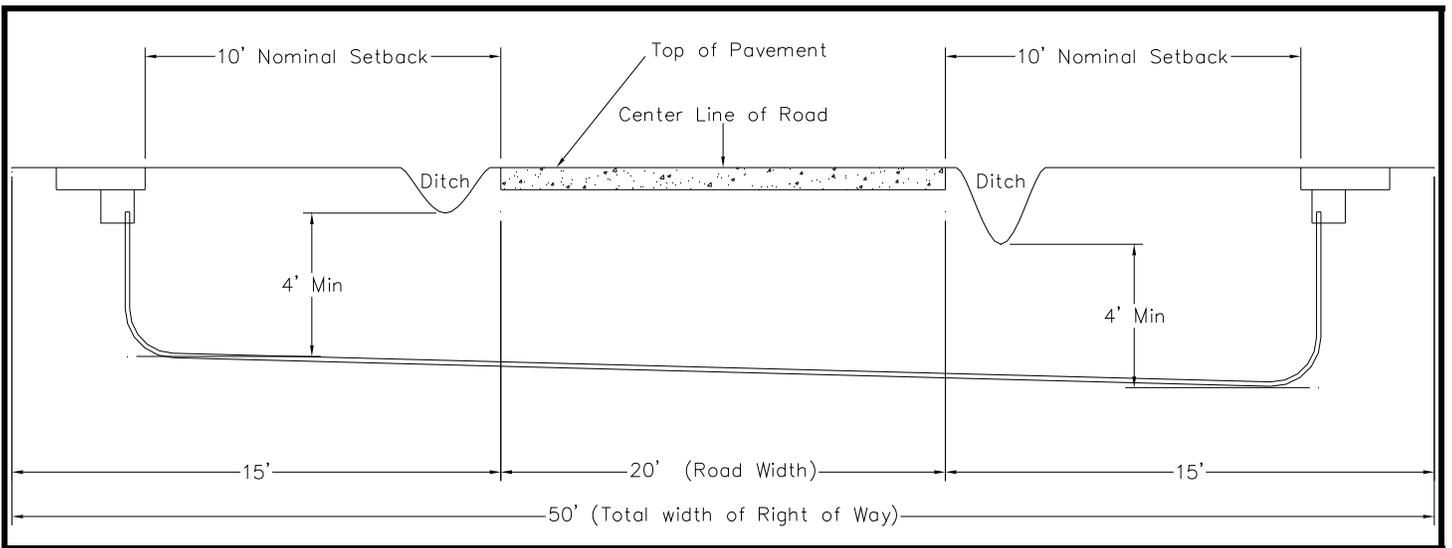
- 2.10 An **AEC staking technician** will provide the developer with a copy of the underground layout and will provide stakes at all padmounted equipment locations. At locations deemed appropriate, an **AEC staking technician** will stake the approximate location of the ditch line to avoid confusion. On developments where no or minimal landmarks are visible to properly ascertain the location of facilities, the **AEC staking technician** may require assistance from the developer or developer's representative for staking. Once the project is staked, it is beneficial for the developer to inspect the staked locations to determine the proximity of any underground facilities that could cause a problem with the installation of electric power.
- 2.20 A foundation drawing for any equipment requiring a custom built concrete foundation must be prepared by an **AEC staking technician** for each installation.
- 2.30 An **AEC ROW supervisor** is responsible for ditch inspection and will supply caution tape to the developer once the ditch has been approved.

## 3.00 Construction Specification

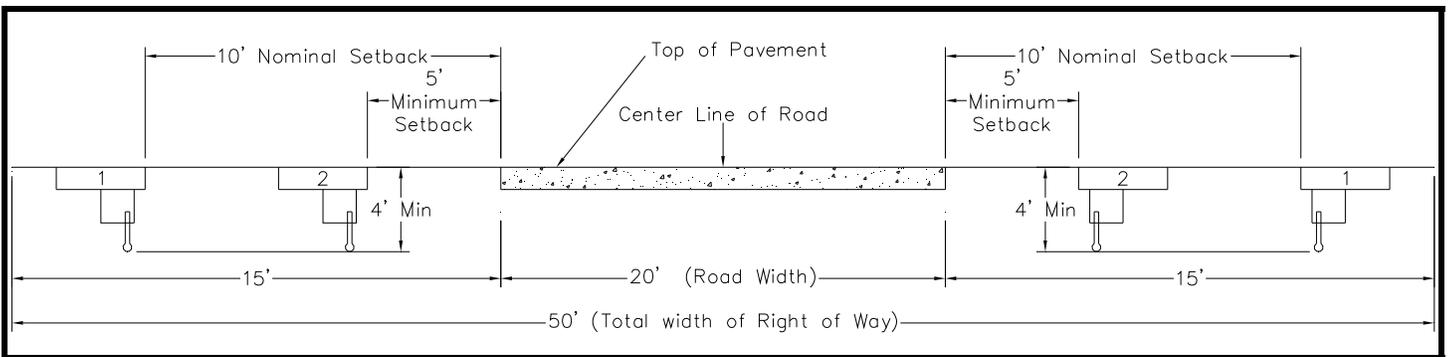
- 3.10 The ditch for primary underground lines shall not be less than four feet (4') deep. The distance shall be measured from the bottom of the open ditch to the top of finished grade (see Figure 1). If rock is encountered that prohibits the excavation of a four foot (4') ditch and **on pre-approval from AEC**, a two foot (2') ditch with one foot (1') of concrete covering the installed power conduits may be installed.
- 3.20 If the path of the primary underground line passes under any depressions (i.e. drainage ditch), the primary underground ditch shall be four feet (4') below the depression (see Figure 2).
- 3.30 When ditching is parallel to a road, the ditch line shall be far enough away from the edge of the road to yield a 5' minimum setback from the edge of the road to the front of the padmounted equipment. A nominal distance of 10' from the edge of the road to the front of the padmounted equipment would provide a preferred installation and allow the equipment to be located on road right-of-way (see Figure 3).
- 3.40 The ditch must be **pre-approved** by AEC for **joint-use applications**. All other utility conduits that are to be installed parallel to the power conduits must be separated from the power conduits by a 12" horizontal separation. Conduits crossing the power conduits must be perpendicular to the power conduits and separated by a distance of 12" vertically (see Figure 5)
- 3.50 In the event any padmounted equipment is located on a grade, the area must be excavated or filled to provide a level area for the installation of the foundations (see Figure 4).
- 3.60 Clean backfill is required for all installations. Crushed rock (#57 stone) backfill shall cover all power conduits for a minimum depth of 6" (see Figure 5).
- 3.70 CAUTION tape shall be installed on top of the crushed rock backfill (see Figure 5).



**Figure 1**



**Figure 2**



**Figure 3**

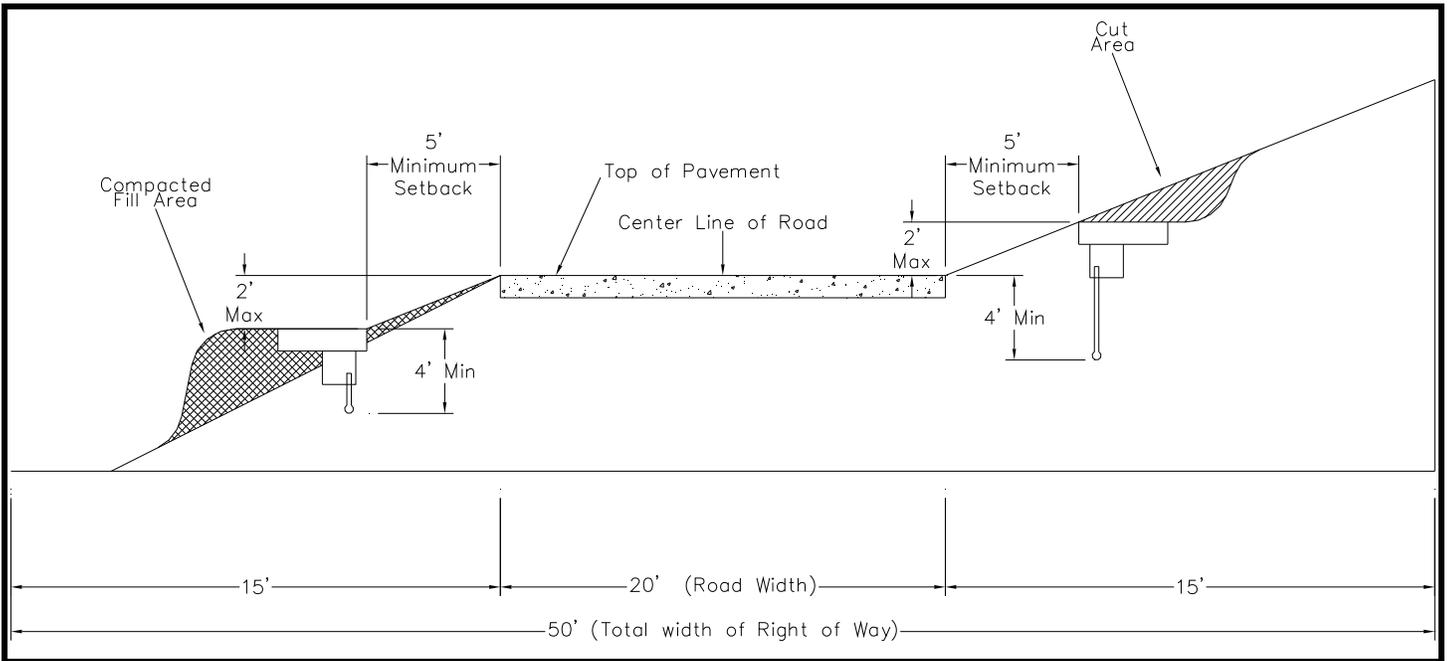


Figure 4

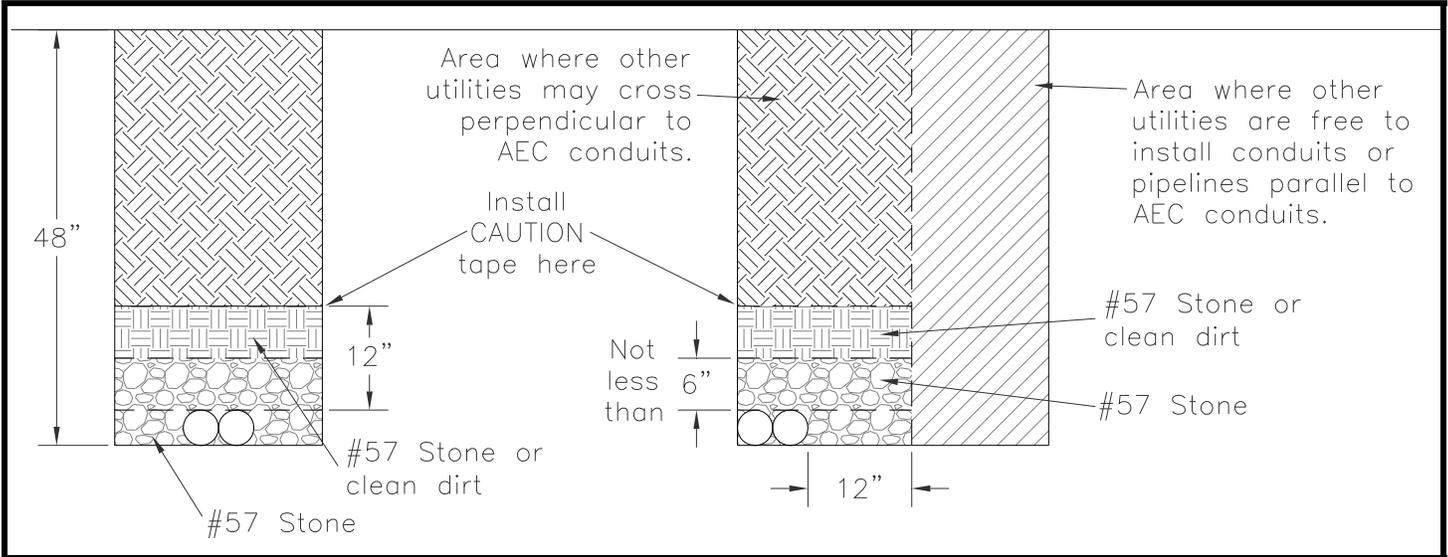


Figure 5