

The following is a list of common Austin Energy electrical distribution design minimum requirements that are taken out of the Austin Energy Design Criteria Manual (AEDCM). *This document does not supersede the Austin Energy Design Criteria Manual or Austin Energy Construction Standards. All designs must follow the latest Austin Energy Design Criteria Manual and Construction Standards. This document does not apply to downtown Network designs.*

I. Clearance Requirements

A. Underground Conduit, Pull Boxes, and Manholes

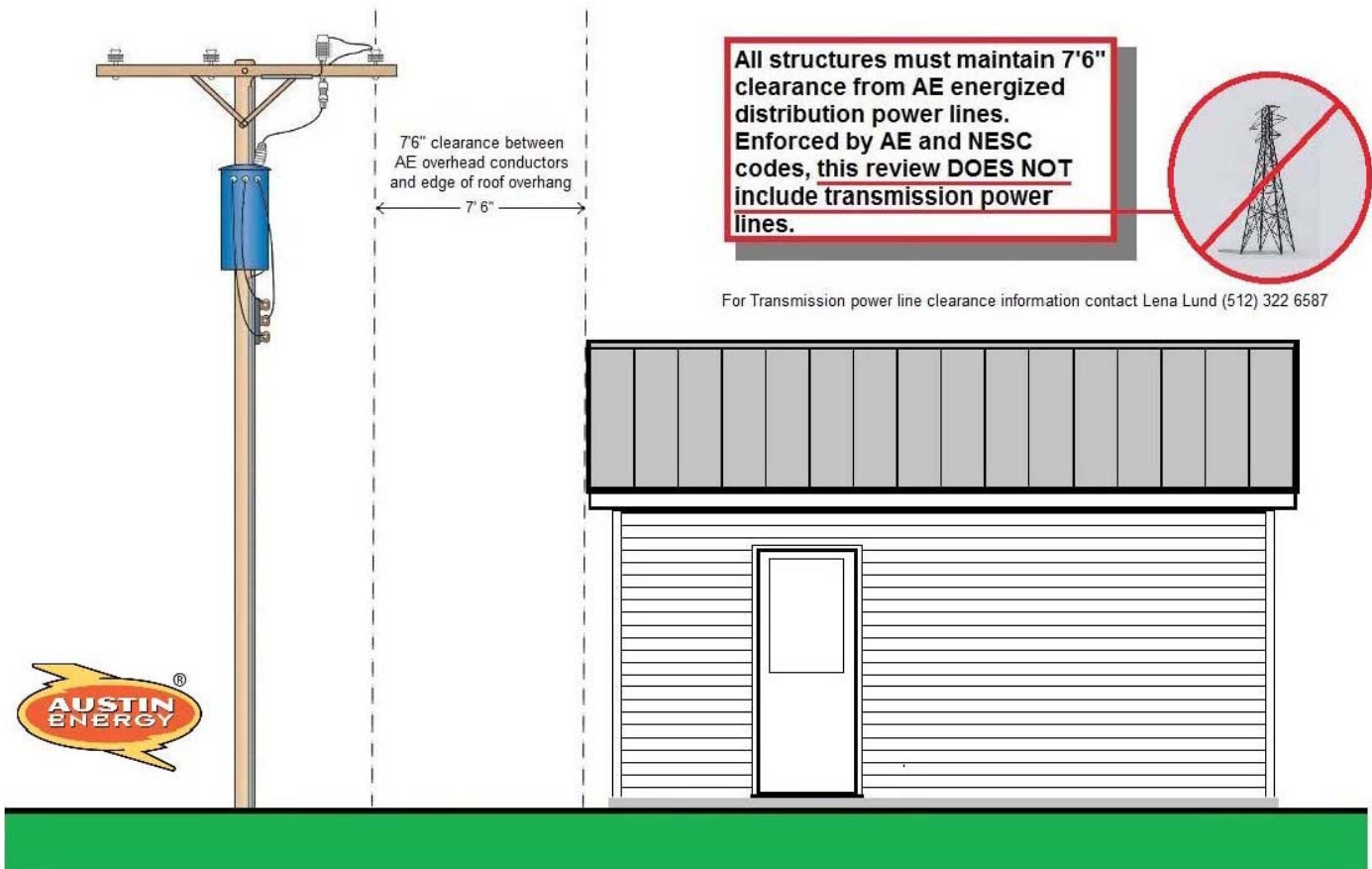
- i. Maintain 12" horizontal (and 12 inches vertical if crossing) from other public utilities. The site's utility coordination is the responsibility of the customer. No private utilities shall be within 5' horizontal and 12 inches vertical if crossing. (Other utilities may have different clearance requirements).
- ii. Avoid gas and steam lines. Note: Gas typically requires 3 feet separation from other utilities.
- iii. Maintain 5 feet horizontally (and vertically if crossing) from septic and drain systems.
- iv. Maintain 5 feet horizontal from permanent structures (buildings, foundations, stairs, steps, walls, etc.). Conduit may be installed under sidewalks, parking lots, and road crossings.
- v. Trees should be planted (a minimum of ten feet) far enough away from any easements (such as overhead lines, underground facilities, or pad-mounted facilities) so that when the trees reach maturity, overhanging branches will not obstruct access to AE facilities for maintenance or replacement of AE facilities. (See www.austinenergy.com/go/trees)
- vi. Maintain 5 feet horizontal clearance from the edge of swimming pools or manmade retention ponds.
- vii. All equipment and facilities must be accessible by a minimum 20 feet wide all weather access road that can support a minimum of 40 tons. Access to the project site must maintain a minimum overhead clearance of 35 feet.

B. Underground Pad-mounted Equipment (transformer pads, switchgear pads, etc.).

- i. No covering, canopy, building, or structure of any kind is allowed directly above pad-mounted equipment.
- ii. Maintain 10 feet of level clearance in front of pads to any structure (trees, plants, fence, buildings, foundations, walls, etc. The front of equipment can be faced toward streets or 40 ton drivable surface to obtain this clearance.
- iii. Maintain 5 feet horizontal clearance from sides and back of pads to any structure (trees, plants, fence, buildings, foundations, walls, etc.).
- iv. Maintain 12 feet horizontal clearance from sides and back of pads to any non-brick or non-masonry structures.
- v. Maintain 5 feet lateral clearance from edge of pads to edge of windows, doors, and ventilating ducts.
- vi. Maintain 12 feet vertical clearance from edge of pad to edge of windows, doors, and ventilating ducts.
- vii. Maintain 20 feet lateral clearance from edge of pad to fire escapes.
- viii. Maintain 10 feet horizontal clearance from pad to the edge of swimming pools.
- ix. Maintain 5 feet horizontal clearance from retention ponds and/or surface or sub-surface rain-garden(s).
- x. Maintain 5 feet horizontally from septic and drain systems.
- xi. Transformers must be located on private property and within 5 feet from back of curb or 2 feet from back of sidewalk. If transformer is located within 4 feet of vehicular access barrier posts must be installed to protect transformer.
- xii. Underground equipment must not be placed in right-of-ways and must be placed within customer's property lines unless otherwise specified by Austin Energy.
- xiii. Underground equipment is not allowed within the 100yr flood plain.

C. Overhead Poles & Conductors:

- i. Poles must be placed adjacent to a minimum 20 foot wide paved access that can support a minimum of 40 tons. Access to the project site must maintain a minimum overhead clearance of 35 feet.
- ii. For any structure (including balconies) maintain a horizontal clearance of 7ft-6in between the nearest conductor and the structure (see diagram below).
- iii. **OSHA requirements prohibits any unqualified persons or operation of equipment within 10 feet of live overhead lines. Note: AE may not be able to de-energize power lines for construction or maintenance. Customer must plan for adequate room for vertical construction and future maintenance of building (including scaffolding).**



II. Easements

A. A blanket easement is the most efficient way to obtain easements for new planned electrical facilities. Upon completion of installation the blanket easement is replaced with a specific easement where the lines and equipment are installed.

B. Typical Easements:

All Proposed Easements shall be 10'- 15' parallel to streets and within private property.	
Electric Equipment	Extending 5 feet from parameter
Single-Phase Overhead Primary Lines	10 Feet centered on pole
Three-Phase Overhead Primary Lines	15 Feet centered on pole
Underground Primary Lines	10 Feet centered on conduit

III. Typical Equipment and Installation Dimensions

A. Underground transformer pad sizes:

<u>Transformer</u>	<u>Pad Size</u>
Single-Phase 25-167 kVA	5ft x 5ft
Three-Phase 75-2500 kVA	10ft x 10ft

B. Available Voltage and Transformer Sizes:

<u>Transformer Scdy Voltage</u>	<u>Sizes Available</u>
Single-Phase 120/240 V	25, 50, 75, 100 & 167
Three-Phase 120/208 V	75, 150, 300, 500, & 750
Three-Phase 277/480 V	75, 150, 300, 500, 750, 1000, 1500, 2000, & 2500

C. Required Secondary Conduit Stubs Out of Transformers:

<u>Transformer</u>	<u>Number of Scdy Conduits Required</u>
Single-Phase	Four x 3" Conduits
Three-Phase	Ten x 4" Conduits

IV. Typical Customer Responsibilities and the Line Extension Policy

- A. To request electrical service the customer must submit an Electric Service Planning Application (ESPA), PDF and Auto-CAD files of the development plan showing building footprint, existing and proposed utilities, and proposed AE facility locations (see Section V below) and submit it to the appropriate AE Distribution Design department (see link to contact map below).
- B. Customer is responsible for the material and installation of all civil work, including conduit, equipment pads, and pull boxes. Austin Energy will install all primary cable and electrical equipment.
- C. **Austin Energy Line Extension Policy** - City ordinance requires Austin Energy to collect 100% of the costs for line extensions and new infrastructure associated with requests for new electric service. A Customer applying for new service will be charged all estimated costs for labor and material required to modify existing infrastructure and to extend service from Austin Energy's existing infrastructure to the Customer's point of service to serve the requested load. This includes the service drop and meter.

V. General Guidelines for Design of Various Job Types

**The intent of this guide is to provide preliminary general guidance to customers in planning for electrical facilities and is subject to change with the actual design that is developed by Austin Energy. This document does not supersede the Austin Energy Design Criteria Manual or Austin Energy Construction Standards. All designs must follow the latest Austin Energy Design Criteria Manual and Construction Standards. This document does not apply to downtown Network designs.*

A. Subdivisions Served by Underground Single-Phase Power

- i. 15ft x 15ft area (one 1-phase transformer pad/pull box) per every other lot, located at the front property corners intersecting 2 lots.
- ii. 10ft easement from the subdivision entrance to along all property lines (for line route).

B. Apartments Served by Underground Single-Phase Power

- i. 15ft x 15ft area (one 1-phase transformer/pull box) per every building. If the building has an NEC-calculated load of more than 1600 amps, a 25ft x 15ft area (two transformers) is needed. Area should be located within 150ft and in line of sight of meters/disconnects.
- ii. A 36” diameter pull box shall be installed near and adjacent to every meter bank, which will be the service point.
- iii. 10ft easement from the apartment complex entrance to along the route connecting transformers.

C. Commercial/Residential Served by Underground Three-Phase Power

- i. 20ft x 20ft area (one 3-phase transformer pad) per every building consisting of an NEC-calculated load of 1500kVA or less (for 208V) or 5000kVA or less (for 480V). Larger loads may require two transformer pads (35ft x 20ft). Area should be located within 150ft and in line of sight of meters/disconnects. Systems of different voltages should be separated by a fire wall.
- ii. 10ft easement from the development entrance to along the route connecting transformers.

The Design Lead will review your preliminary design for any adjustments needed. For any other types of developments, please contact a Design Lead for guidance.

Design sections are divided by North-East, North-West, South-East, South-West. Contact the downtown Network Lead for all designs in the Network area. The contacts for these sections are according the map at the following link: <https://austinenergy.com/wcm/connect/efa843a2-4ffe-4459-9700-2d955637bf99/Electric+Distribution+Design+Contacts.pdf?MOD=AJPERES&CVID=mfMMb9F>

Note that whereas the preliminary design by the customer may improve coordination, Austin Energy will be responsible for creating the official design and procuring AE electrical equipment and materials for the project. The project will go into the design queue once everything is received to start the design.

General Design Process

