TRENCHING UNDERGROUND DISTRIBUTION

ALL UNDERGROUND DISTRIBUTION DESIGNS ARE TO BE A CUSTOMER PROVIDED TOTAL CONDUIT SYSTEM INSTALLATION.

Clear & Drivable Area

Compacted Backfill

TEP Primary & Secondary Conduit

TEP Only

Note 2

SPOIL PILE

Note 2

12" Min.

18" Min.

Clear & Drivable Area

Compacted Backfill

Other Utilities

TEP Primary & Secondary Conduit

TEP with Other Utilities

12" Min.

42" Min.

Clear & Drivable Area

Compacted Backfill

12" Min.

36" Min. from Final Grade

36" Min. from Final Grade

NOTE:

TEP designs exclusively with a customer provided and installed total conduit system.

NOTES:

1. See SR-207 for bedding and backfill requirements.
2. Where possible, the trench spoil shall be placed to the opposite side of the access to the trench. Adequate protection shall be provided to protect employees from loose rock or soil that could pose a hazard by falling or rolling into the excavation. Protection can be provided by placing and keeping such materials at least 2 feet from the edge of the excavation, or by other means that provide equivalent protection. This 2 ft. area shall be level and free of debris to permit safe footing during inspection.
3. On-site inspections by TEP are required for open trench, bedding, and shading. Call 918-8300 to schedule inspections.
4. A 2 ft. x 5 ft. bell hole must be provided when modifying an existing CIC installation. Bell holes for service trenches must comply with the requirements of SR-312 and SR-210 where applicable.
5. The minimum horizontal radius in a trench prepared for installation of wave rib conduit system shall be 4 ft., and 12’6” on a schedule 40 PVC continuous conduit system.
6. Service trenches for the continuous conduit system must be 36 inches in depth.
7. Under no circumstances is a trench to be dug closer than 3 ft. to a down guy anchor rod.
8. See SR-210 for sleeve installation where a trench can not remain open.
9. The service conduit shall be installed into the equipment sites at the same time when the primary and/or secondary conduits are installed. All conduits are to be tied up per the equipment detail, and prior to calling for the trench and conduit inspection.
10. Do Not trench under TEP/UES underground equipment without the presence of an Access Crew. For conduit installation into existing underground equipment, contact Access at 918-8300 (761-7952 UES) to assist with the conduit placement.
TRENCHING, URD
EQUIPMENT PLACEMENT

OFFSET EASEMENT - TRANSFORMER PAD

With 6'-0" strip easement, 4'-0" x 10'-0" additional easement required

STRIP EASEMENT - TRANSFORMER PAD
*For 6'-0" strip easement only
TRENCHING, URD
EQUIPMENT PLACEMENT

OFFSET EASEMENT
OPTIONAL SECONDARY JUNCTION BOX

With 6'-0" strip easement, 4'-0" x 10'-0" additional easement required

STRIP EASEMENT
OPTIONAL SECONDARY JUNCTION BOX
* For 6'-0" strip easement only
TRENCHING, URD
EQUIPMENT PLACEMENT

OFFSET EASEMENT
J - 1 CABINET

J - 1 Cabinet (24"x15")
CATV Pedestal placement

36" Min. (Typ)
18" Easement Line (10'-0" x 10'-0")

TELCO Pedestal placement
Center Of Cable Tie Up

With 6'-0" strip easement, 4'-0" x 10'-0" additional easement required

STRIP EASEMENT
J - 1 CABINET
* For 6'-0" strip easement only
CONDUIT PLACEMENT
EXISTING SINGLE PHASE
STEEL PEDESTAL

Profile View

Duct Plug

2 1/2" x 36" x 90°
Schedule 40
Electrical PVC sweep

Final Grade

Install the pull rope for
the entire service run

Refer to SR-218 for all service stubs

Secondary Connectors

Pedestal Stake

Pedestal

Top View

Secondary Connectors

Pedestal Stake

Front View

Conduit
Schedule 40 Electric PVC
2 1/2" x 36" x 90° and 5'-0" stub

Pedestal Stake

Pedestal

Final Grade

2 1/2" x 5'-0" Schedule 40
Electrical PVC stub

Duct Plug

6"

6"
Service Conduits 2 1/2" / 4" for 1 to 2 lot applications.

4" conduit systems require the installation of Smooth - Cor conduit system.

The customer to provide the tie-up support & ground wire for total conduit installation.

**Pad Mounted Transformer**

**Plan View**

Schedule 40 PVC 3'-0" x 90° & a 5'-0" straight stick is preferred for the service stub out. The stub out is to be in place for the primary trench conduit inspection.

If using Wave-Rib conduit, leave 4 to 5 extra feet to assist with shaping and holding the conduit in place. Trim the conduit after the transformer backfill inspection has passed.

If installing conduit into an existing transformer, a schedule 40 2 1/2" x 36" x 90° will be required. Call for an access appointment at 918-8300.

**Note:**

Ground Rods are Not Permitted to be cut under any circumstance. If soil conditions prohibit driving the ground rod per the SR, contact TEP's design department.
NOTES:

1. EASEMENT / EQUIPMENT IDENTIFICATION
   Customer is to provide property pins and / or swing ties (stakes) to the center of equipment at the UG equipment
   (Transformer, Pedestal, J-10, J-1, J-2, etc.) location. These pins / stakes will be in place for the trench / conduit
   inspection and backfill / mandrel inspection.

2. CONDUIT PLACEMENT / TRANSFORMER PAD SITE PREPARATION
   A) Pad and trench sites shall be level and at final grade before calling TEP for a trench / duct inspection. Driven
   ground rod to be 6 inches above final grade.
   B) Customer to utilize the approved TEP conduit template (purchased through TEP) during the backfill process to
   ensure proper conduit and ground rod placement final grade. Duct plugs are required for all conduits (no duct
   tape).
   C) After the conduits (SR-205) and ground rods are in place, the customer is to install a #6 solid soft drawn copper
   conductor for Telco bonding from the ground rod 2 ft. above the pad (at the ground rod), 12 inches away from the
   front of the pad and 36 inches to the right of the pad site. Bury the conductor 12 inches below final grade and coil
   up approximately 2 ft. of conductor. With the template in place, pour concrete on the conduit (see SR-205 & 215,
   Pg. 1 of 2) if using PVC and call for an inspection. After passing the inspection, backfill and compact (95%), level
   the equipment site and install the transformer pad. The conduit shall be cut 1 inch above the top of the pad and
   covered with the appropriate duct plug. See SR-208 for equipment site preparations, including sites with slopes.
   D) The customer to call for a transformer pad site, pedestal site, and mandrel inspection, upon approval the
   customer will pour a slurry of concrete (1/2 inch thick) inside the entire opening for rodent protection.

3. PEDESTAL SITES
   TEP to provide the pedestal. The customer is to excavate and install per SR-209 page 9. After the conduits (SR-205)
   are in place, the customer is to install a #6 solid soft drawn copper conductor for Telco bonding from 2 ft. above the
   sub grade (next to the right side of the conduits), 12 inches away from the front of the pedestal and 24 inches to the
   right of the equipment site. Bury the conductor 12 inches below final grade and coil up approximately 2 ft. of
   conductor.

4. J-1 CABINET SITES
   TEP to provide the subsurface base. The customer is to excavate and install per SR-235. Install ground wire per note
   3 on this page.

5. J-2 CABINET SITES
   TEP to provide the subsurface base. The customer is to excavate and install per SR-234.

6. SECONDARY JUNCTION BOX SITES (J-10) - CUSTOMER OPTION (in place of pedestals)
   The customer to provide and install the 20K rated J-10 box per SR-209 page 9. Install ground wire per note 3 on this
   page.
   A) After the conduit (SR-205) is installed, the customer to provide, install and level an approved TEP secondary
   junction box (see below) so the top of the box is 1 inch above final grade. Place the lid on the box.
   B) Approved secondary junction box (17"x30"):
      Armorcast Products Co. - Cat. No. 6001640-AS
      CDR Systems - Cat. No. PA30-1730-18S
      Christy Concrete Products - Cat. No. FL36BOX18
      Electrimold Inc. - Cat. No. ECAA-173018-100
      New Basis - Cat. No. FMA173018TN20001P212N00000
      Quazite - PT1730BA (Box), PT1730CA00 (Cover)
   TEP will furnish the transformer pads, pedestals, and ground rods to the job site at the customers' request. Please give
   TEP a 2 week notice and specify a contact name, phone number and the material staging area. It's the customers'
   responsibility for the care of this material. The customer must sign for the delivered material. Any lost, or damaged
   material will be the responsibility of the customer to replace with approved TEP material.

Note: Ground Rods are Not Permitted to be cut under any circumstance. If soil conditions prohibit driving the ground
rod per the SR, contact TEP's design department.
CONDUIT PLACEMENT PRIMARY, SECONDARY, & SERVICE

Secondary Conduits - 2.5"
Ground Rod
Pad Mounted Transformer
Plan View - Strip Easement

Service Conduits - 2.5"
(3'-0" X 90° & a 5'-0" straight stick is to be used for all stub outs, refer to SR-218)
Center of Equipment
Secondary Conduits - 2.5"
Ground Wire
Pad Mounted Transformer
Plan View Strip Easement

30" Min. Primary Conduits - 2.5"

Ground Wire - 36" x 90° PVC Ell or HDPE
Secondary Pedestal
Front View Strip Easement

Secondary Pedestal
Ground Wire

36” Min
60” Max
36” x 90° PVC
Ell or HDPE

Ground Wire

30”

* Service Conduits - 2.5"
Center of Equipment
Secondary Conduits - 2.5"

Secondary Junction Box (Customers Option)
Plan View & Front View

Transformer Template

Note:
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