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# **TRENCHING & CONDUIT**

## **FORMS**

**Last Update: 02/03/15**



ELECTRICAL DISTRICT NO. 3
TRENCHING AND CONDUIT AGREEMENT

REVISION NO: 8

EFFECTIVE: 02/03/2015

WORK REQUEST# \_\_\_\_\_ JOB# \_\_\_\_\_
Internal Use Only Internal Use Only

Date: \_\_\_\_\_

CUSTOMER NAME: \_\_\_\_\_

PROPERTY OWNER (LEGAL NAME): \_\_\_\_\_

CUSTOMERS AGENT (IF APPLICABLE): \_\_\_\_\_

REQUIREMENTS:

The parties to this Agreement are Electrical District No. 3 of Pinal County, a political subdivision of the State of Arizona, hereinafter called "ED3" and \_\_\_\_\_, hereinafter called "Customer". In consideration of the services to be performed by ED3 and Customer for construction of underground distribution facilities at: \_\_\_\_\_

\_\_\_\_\_, it is agreed as follows:

- 1. Customer shall provide trench, conduit, backfill and 3-phase transformer pads. Customer shall install conduit, backfill, 3-phase transformer pads and ED3 provided equipment pads/box pads, pull boxes, j-boxes and vaults. These items shall be provided and installed according to this agreement, the Installation requirements, and the attached construction design drawings.
2. ED3 shall be responsible for inspecting all trench, conduit and equipment installations outlined in item 1 above. Customer shall provide easements for trench routes, equipment locations, and secure all necessary permits required by local municipalities and/or governing agencies.
3. Customer shall have property corners and other control points as requested, installed and flagged before ED3 will inspect the job. In addition, easements, alleys, streets and water retention areas adjacent to proposed trench route must be graded to within 6" of finished grade and grade stakes set before ED3 approves trench and begins construction. Customer agrees to reimburse ED3 for any costs incurred in adjusting facilities due to changes in finished grade.
4. Customer shall be responsible for having all existing underground facilities located and identified in the field before excavation begins.
5. ED3 approved and customer provided concrete caps shall be installed over conduit in trenches which cross or are located in drainage areas, washes, and other areas subject to erosion as shown on the attached drawings and as required by the ED3 inspector.
6. ED3 will not energize underground cables until the trench depth is verified, and backfill is compacted with a minimum of 36" cover for secondary / service and 60" cover for primary, unless otherwise shown on the attached drawings.

Customer Initials: \_\_\_\_\_

7. Customer shall restore, at Customer's expense, any damaged landscaping or property to its original condition, due to Customer provided trenching, backfilling or equipment installations.
8. ED3 reserves the right to inspect all and every part of Customer's work during or after completion of trenching, conduit installation, shading, backfilling, or compaction. If all of any part of the work has not been done according to ED3 specifications, Customer shall take corrective action at Customer's expense. ED3, at Customer's request, may perform the corrective action at the Customer's expense. **Neither inspection of the work by ED3, nor lack of same, shall relieve Customer of the responsibility to provide and perform the work according to ED3 requirements. In all cases, the Customer is responsible for conduit system location, integrity and usefulness until ED3 conductors are energized.**
9. Where Customer provides the trenching and backfilling, Customer shall indemnify and save harmless ED3 and any other utility who is a joint trench occupant with ED3, from any and all claims, losses, costs, and damages incurred by the utilities, on account of injuries or damages to persons or property received or sustained by any persons, firms, or corporations by reason of any acts or omissions of Customer, its agents or employees, or of any defects in the methods, materials, equipment, or tools used in the trenching or backfilling or any contingencies arising therefrom.
10. Customer shall use a properly licensed contractor when excavating in the public right-of-way or utility easement. Licensing information is available through the State Registrar of Contractors.
11. **The following documents are attached to and made a part of this Agreement.**
  - Construction Drawings
  - Customer Trenching Diagram
  - Construction Design Drawings
  - Other: \_\_\_\_\_
  - Three Phase Transformer Pad and Conduit Requirements
  - ED3's Electric Service Requirements
  - Equipment Box Pad Details
12. **Customer shall review this document and the Installation drawings with their trenching contractor before work begins. The trenching contractor shall maintain a copy of these documents at the job site for review.**
13. **To schedule the Inspection, call the Customer Service Office at (520) 424-9021 two (2) business days PRIOR to start of work.**
14. **Contact the Design Department at (520) 424-0411 for project scheduling and coordination.**
15. **[Please see separate Trenching and Conduit Installation Specifications document.](#)**

**Customer Initials:** \_\_\_\_\_

**THIS AGREEMENT HAS BEEN EXECUTED BY THE DULY AUTHORIZED REPRESENTATIVES OF THE PARTIES:**

		<b>ELECTRICAL DISTRICT NO. 3 OF PINAL COUNTY ARIZONA</b>	
<i>Customer / Customers Agent / Company Name (Print Above)</i>		<i>Name (Print Above)</i>	
Signature:		Signature:	
Signed By: <i>Please Print:</i>		Signed By: <i>Please Print:</i>	<b>Larry Yates</b>
Title: <i>Please Print:</i>		Title: <i>Please Print:</i>	<b>Director of Engineering &amp; Operations</b>
Mailing Address:		Mailing Address	41630 W. Louis Johnson Drive Maricopa, AZ 85138-5402
Phone:		Phone:	(520) 424-9021
Property Owner (Legal Name):			
Property Owner Mailing Address:			
Property Owner Telephone:			
Date:		Date:	



**ELECTRICAL DISTRICT NO. 3**  
**TRENCHING AND CONDUIT INSTALLATION SPECIFICATIONS**  
*RETAINED BY CUSTOMER*

**REVISION NO: 1**

**EFFECTIVE: 02/03/2015**

**INSTALLATION SPECIFICATIONS:**

1. All primary, secondary, and service conductors shall be installed in SCH 40 PVC conduit.
2. Rigid conduit is defined as PVC. Sweeps shall have one belled end and one plain end. Both ends shall be internally chamfered.
3. Customer will provide conduit which meets the following specifications:

<b>APPLICATION</b>	<b>ACCEPTABLE PRODUCT MATERIAL</b>	<b>CONDUIT MARKING REQUIREMENTS</b>
Straight Conduit (See Notes 1 & 2)	PVC SCH 40	Mfg. Name, nom. size, PVC SCH 40 , 90° C UL Type
Bends, Sweeps and Elbows (See Note 3)	PVC SCH 40 (See Note 4)	Mfg. Name, nom. size, PVC SCH 40 , 90° C UL Type
Fittings	PVC SCH 40	Mfg. Name, nom. size, PVC SCH 40 , 90° C UL Type (marking may be on packing material)

**NOTES:**

1. 4" diameter & under-SCH 40 NEMA TC-2; 5" diameter & larger-SCH 80 NEMA TC-2, 50" radius.
2. Sweeps at meter socket panel end shall be 2.5" SCH 80.
3. All PVC shall be gray.

4. When installing PVC conduit apply purple primer/cleaner ASTM F656 to all PVC joints prior to applying a coating of gray PVC to PVC cement ASTM D2564.
5. Unless otherwise specified, sweeps/bends shall be 36" minimum radius for secondary/service and 36" minimum radius for primary Three inch. Five inch conduit requires a 60" minimum radius sweep.
6. The conduit sweeps at device locations shall extend a minimum of 1-1/2" and a maximum of 2" above the top of the pad. Trench depth shall be adjusted to obtain the correct extension (conduit sweeps shall not be cut). Service conduit stub out locations shall be identified by lot number using a permanent black ink marker.
7. Customer shall provide and install 3 phase transformer pads, as well as install ED3 provided equipment pads/box pads, pull boxes, j-boxes and manholes per the attached Work Order drawings at CUSTOMER cost. Conduit stubs shall be positioned in equipment as specified on the attached drawings or details. ED3 will provide ground rods or ground wire. The customer shall install the ground rod to within 6" of finished grade at time of conduit installation at each equipment location. Alternate 46 copper ground wire (where specified on the Work Order drawings) shall be buried a minimum of 18" deep. Working clearance shall be provided for all equipment per ED3 requirements.
8. Minimum 95 percent soil compaction is required at all equipment locations (compacted area to extend 1' out from equipment). All equipment locations shall be backfilled with select (1-1/2" maximum diameter rock) material compacted with mechanical tamping machine and leveled to finished grade. The use of a mechanical tamping machine is not required where 1/2-sack slurry (1/2 sack of cement per cubic yard of sand or ABC) is utilized for backfill. Equipment locations shall maintain the minimum clear working areas specified by ED3.
9. Concrete caps shall consist of 3000 psi concrete at 28 days, 4 inches thick and 2 inches minimum on all sides.

10. Shading over all ED3 conduits shall be a minimum of 12" regardless of soil conditions. The 6" immediately above the conduit shall contain no rocks larger than 1-1/2" in diameter. The next 6" lift shall contain no rocks larger than 3" in diameter. The remaining backfill may be trench spoils. Shading is not required when 1-sack slurry backfill (1-sack of cement per cubic yard of sand or ABC) is utilized.
11. ED3 will not energize underground cables until the trench depth is verified, and backfill is compacted with a minimum of 36" cover for secondary / service and 60" cover for primary, unless otherwise shown on the attached drawings.
12. The ED3 inspector shall approve trench depth changes due to obstructions encountered while digging.
13. See ED3 construction design cover sheet and trench details on the construction sketch, for minimum separations to other utilities.
14. Crossings require a minimum of 12" vertical separation between ED3 facilities and other utilities, including water and sewer taps. Exceptions: a) If crossing is with a gas service line, this separation may be reduced to 6" if the gas service line is sleeved in a rigid pipe. The sleeve shall extend 12" beyond ED3 conduits, measured perpendicular from the sidewall of the nearest electric conduit/cable. b) A 2" vertical crossing separation (above or below) is allowed between ED3 communications at equipment locations.
15. If ED3 facilities are joint trench with natural gas facilities, natural gas lines shall be installed with a minimum of 12" vertical separation, outside wall to outside wall, above all ED3 conduits. In addition, natural gas lines shall maintain a minimum 12" horizontal separation from the outside edge of all ED3 equipment pads to the outside wall of the gas lines.
16. The conduit system shall be proven after backfill is completed. An ED3 provided pull line shall be installed by the customer (except in service stubs). All empty conduit ends shall be plugged at equipment locations. ED3 shall provide and the customer shall install expandable plugs in switching cabinets, in other equipment use universal plugs. Future conduit stub outs shall be capped and a locate marker installed. Tape is not an acceptable substitute for caps or plugs.
17. Customer shall excavate by hand within two (2) feet of existing energized ED3 equipment. Contact the ED3 Inspector prior to digging within ten (10) feet of a pole or five (5) feet of a down guy rod unless the excavation is two (2) feet or less in depth or specified on the Work Order drawings. All trench spoils shall be placed a minimum of two (2) feet from the trench wall.
18. **Refer all questions to the ED3 Inspector.**