

ARAB ELECTRIC COOPERATIVE, INC.
P.O. BOX 770
ARAB, ALABAMA 35016
TELEPHONE (256) 586-3196

NOTES & SPECIFICATIONS FOR UNDERGROUND SERVICES SINGLE PHASE

IMPORTANT – AEC WILL NOT BEGIN WORK ON SERVICE UNTIL ALL CONDUIT IS IN THE APPROPRIATE PLACE.

All underground service maintained by AEC must be installed in conduit from AEC's pole to the residence or business. **ALL CONDUIT MUST BE FURNISHED AND INSTALLED BY CUSTOMER.** All 90 degree elbows are to be GALVANIZED CONDUIT.

The depth of this conduit shall be as follows:

- PRIMARY** = 3 feet minimum on schedule 40 grey PVC conduit.
- = 2 feet minimum on rigid galvanized conduit.

ALL ABOVE GROUND CONDUIT INSTALLED ON CUSTOMERS' PREMISES FOR PRIMARY INSTALLATION MUST BE GALVANIZED CONDUIT OF THE APPROPRIATE SIZE. ALL UNDERGROUND CONDUIT INSTALLED ON CUSTOMERS' PREMISES CAN BE SCHEDULE 40 GREY PVC CONDUIT IF DITCH IS 3 FEET DEEP.

It shall be of appropriate size as to accommodate the requirements for the **single phase primary line**. Sizes are as follows:

Up to 300 ft will be a minimum of 2 inch conduit

300 – 500 ft will be a minimum of 3 inch conduit

Over 500 ft will require a primary feed through cabinet (Contact AEC Engineering Dept)

SECONDARY = 24 inch minimum on schedule 40 grey PVC conduit.

= 18 inch minimum on rigid galvanized conduit.

= 3 feet if cable or telephone line to be in same ditch.

FIRST JOINT OF CONDUIT MUST BE GALVANIZED OF THE APPROPRIATE SIZE AND AT METERBASE. ALL OTHER CONDUIT SHOULD BE GREY SCHEDULED 40 PVC OF THE APPROPRIATE SIZE. AMOUNT AND SIZE IS TO BE DETERMINED BY AEC. ALL SECONDARY INSTALLATIONS MUST HAVE A WEATHERHEAD.

It shall be of appropriate size as to accommodate the requirements for the **single phase service entrance**. Sizes are as follows:

100 amp – 2 inch conduit with #4 bare copper ground wire.

200 amp – 2 inch conduit with #4 bare copper ground wire.

400 amp – 3 inch conduit with #2 bare copper ground wire.

It shall be of appropriate size as to accommodate the requirements for the **three phase service entrance**. Sizes are as follows:

200 amp – 3 inch conduit with #4 bare copper ground wire.

400 amp – 4 inch conduit with #2 bare copper ground wire.

600 amp – 5 inch conduit with 1/0 stranded copper ground wire.

The above requirements also apply to CT metering installations.

When conduit is installed, it must contain a pull string to facilitate installation of wire. AEC can furnish to the member or his designated contractor such string. The string can be picked up any time between 7:30 a.m. and 3:30 p.m. at the AEC Warehouse.

Customer or his contractor is responsible for furnishing an approved type underground service meter base. The meter base location **MUST** be determined by the AEC Engineer. Customer should not install any service entrance equipment without **PRIOR APPROVAL** by AEC engineering office; this could lead to possible relocation of entrance at the **CUSTOMER'S** expense.

Customer or his contractor is responsible for furnishing an approved type underground service meter base. The meter base location **MUST** be determined by the AEC Engineer. Customer should not install any service entrance equipment without **PRIOR APPROVAL** by AEC engineering office; this could lead to possible relocation of entrance at the **CUSTOMER'S** expense.

Customer or his contractor is responsible for opening and closing ditch or trench from AEC's pole to house or building. This must be coordinated thru AEC operations superintendent's office so as to avoid any problems or added expense. When conduit has been installed, this installation **MUST BE INSPECTED** by AEC superintendent or engineer. At the time of inspection, AEC will furnish to the customer or contractor underground marking tape to be installed in the ditch or trench before it is covered. In no instance shall water, gas or sewer lines to be contained in this trench of ditch however these utilities can cross-over electrical trench or ditch.

All three phase underground services **MUST BE APPROVED BY AEC MANAGEMENT**. Any customer desiring this service should make application and obtain prior approval before proceeding in this area. Additional information and specifications on three phase underground service may be obtained from the AEC Engineering Office.

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SPECIFICATIONS FOR UNDERGROUND SERVICES
MINIMUM DEPTH OF DITCH FOR SERVICE WIRE
0-600 VOLTS

RIGID NONMETALLIC CONDUIT APPROVED FOR DIRECT BURIAL	RIGID METAL CONDUIT
24"	12"
IF ENCASED IN 12" CONCRETE	
12" TO 18"	

SPECIFICATION FOR UNDERGROUND SERVICES
PRIMARY LINE
MINIMUM DEPTH OF DITCH FOR VOLTAGES
OVER 600 TO 22KV

RIGID NONMETALLIC CONDUIT APPROVED FOR DIRECT BURIAL	RIGID METAL CONDUIT
36"	24"
IF ENCASED IN 12" CONCRETE	
30"	

**AEC SPECIFICATIONS FOR INSTALLATION OF AN
UNDERGROUND SERVICE FROM A CO-OP POLE
TO A RESIDENCE OR A BUSINESS**

1. Customer/Contractor should **NOT** proceed with initial installation of service entrance without first checking with AEC Engineering Department, as to the location point of said entrance. Failure to do so may result in additional expense and labor on the Customer/Contractor, furthermore no digging or trenching around or near a pad mounted transformer should be attempted without first contacting AEC Engineering Department, and allowing AEC to locate and mark any and all underground lines. Failure to do so can or may result in injury or death. Customer will be responsible for all expenses due to damaged lines if not located by AEC before digging.
2. Customer/Contractor shall be responsible for all necessary and required trenching of appropriate depth along with all back filling.
3. If trench is to be single purpose and contain only the electric service conduit, the minimum depth shall be 24” inches. If trench is to be single purpose and contain only the primary electric service conduit, the minimum depth shall be 36” inches. The electrical conduit has to be a minimum of 12 inches under all other utilities.
4. If trench is to be joint use whereas to contain electric, phone and cable services, minimum depth shall be 36” inches, in the case of joint use trenches, electrical conduit shall in all cases be placed in the bottom of the trench, there shall be a minimum of 12” inches vertical separation between electrical conduit and other utilities in the trench. In **NO** instance shall water, sewer or gas lines be contained in this trench however these utilities can cross electrical ditch. For information on clearances from other underground utilities Customer/Contractor should contact the Engineering Department at AEC.
5. Customer/Contractor shall be responsible for furnishing and installing any and all conduit of appropriate size and type as specified by AEC. This covers conduit from the meter base all the way up AEC riser pole. All conduit shall be installed with a pull string without exception. AEC may furnish said string and can be picked-up at AEC between 7:30 a.m. and 3:30 p.m. Monday-Friday. Conduit from meter base to bottom of the trench including 90 degree elbow, shall be rigid galvanized of appropriate size. Conduit installed in the bottom of the trench between the service entrance and AEC riser pole may be scheduled 40 grey electrical PVC. Regarding a secondary riser pole once PVC conduit reaches riser pole it shall at this point transition back to rigid galvanized, beginning with 90’ degree sweeping elbow along with the first 10’ foot joint up said riser pole. At this point conduit may again transition back to scheduled 40 grey electrical PVC. However, the Co-op will install all conduit above the first joint of rigid galvanized on the Co-op pole. Customer/Contractor is responsible for furnishing a minimum of 3 ten foot joints of scheduled 40 grey PVC conduit of appropriate size along with a minimum of 6 conduit straps of appropriate size and a weather head of appropriate size. Customer/Contractor should lay off conduit, straps and weather head at the foot of the Co-op riser pole. AEC personnel will install at time of installation of permanent service. The above applies for secondary voltage installations. The same applies for primary voltage installations except all above ground conduit shall be rigid galvanized conduit of appropriate size.
6. Once trench has been cut, conduit installed and service entrance built. Customer/Contractor must in all cases call for an inspection and approval by AEC Engineering Department before any back filling is done.
7. Once service has been inspected and approved, then conduit should be back filled 12” inches, at this point, “**RED WARNING TAPE**” furnished by AEC should be installed. Following this, the trench maybe back filled to finished grade line.

**AEC SPECIFICATIONS FOR INSTALLATION OF AN
UNDERGROUND SERVICE FROM A CO-OP PAD
MOUNTED TRANSFORMER TO A RESIDENCE OR A BUSINESS**

1. Customer/Contractor should not proceed with initial installation of service entrance without first checking with AEC Engineering Department, as to the location point of said entrance. Failure to do so may result in additional expense and labor on the Customer/Contractor, furthermore no digging or trenching around or near a pad mounted transformer should be attempted without first contacting AEC Engineering Department, and allowing AEC to locate and mark any and all underground lines. Failure to do so can or may result in injury or death. Customer will be responsible for all expenses due to damaged lines if not located by AEC before digging.
2. Customer/Contractor shall be responsible for all necessary and required trenching of appropriate depth along with all back filling.
3. If trench is to be single purpose and contain only the electric service conduit, the minimum depth shall be 24" inches. If trench is to be single purpose and contain only the primary electric service conduit, the minimum depth shall be 36" inches. The electrical conduit has to be a minimum of 12 inches under all other utilities.
4. If trench is to be joint use whereas to contain electric, phone and cable services, minimum depth shall be 36" inches, in the case of joint use trenches, electrical conduit shall in all cases be placed in the bottom of the trench, there shall be a minimum of 12" inches vertical separation between electrical conduit and other utilities in the trench. In **NO** instance shall water, sewer or gas lines be contained in this trench however these utilities can cross over electrical ditch of trench. For information on clearances from other underground utilities Customer/Contractor should contact the Engineering Department at AEC.
5. Customer/Contractor shall be responsible for furnishing and installing any and all conduit of appropriate size and type as specified by AEC. This covers conduit from the meter base all the way up AEC pad mounted transformer. All conduit shall be installed with a pull string WITHOUT EXCEPTION. AEC may furnish said string and can be picked-up at AEC between 7:30 a.m. and 3:30 p.m. Monday-Friday. Conduit from meter base to bottom of the trench including 90 degree elbow, shall be rigid galvanized of appropriate size. Conduit installed in the bottom of the trench between the service entrance and AEC pad mounted transformer may be schedule 40 grey electrical PVC. Once PVC conduit reaches pad mounted transformer it shall at this point transition back to a rigid galvanized 90 degree sweeping elbow, conduit above this elbow and into the pad mounted transformer compartment may be schedule 40 grey PVC.
6. In such cases that Customer/Contractor may require access into the pad mounted transformer for the installation of service conduit, they should contact AEC and request this access. AEC will be happy to comply by scheduling authorized personnel to open said transformer and stand-by at job site until such time as conduit is installed and transformer can be re-secured.
7. Once trench has been cut, conduit installed and service entrance built. Customer/Contractor must in all cases call for an inspection and approval by AEC Engineering Department before any back filling is done.
8. Once service has been inspected and approved, then conduit should be back filled 12" inches, at this point, "RED WARNING TAPE" furnished by AEC should be installed. Following this, the trench may be back filled to finished grade line.