BURIED PLANT

BURIED WIRE TERMINATIONS AT JUNCTIONS WITH BURIED PLANT

1. GENERAL

1.01 This practice provides procedures for terminating buried service wire and underground wire at junctions with other types of buried plant and at customer locations.

2. GROUNDING AND PROTECTION

2.01 The armor of direct buried wire must *always* be grounded at the customer's protector when the protector is fed from buried plant. The grounding is needed at customer locations to protect against lightning damage and to minimize shock or fire hazards caused by sustained power contact. The armored shield of the buried service wire should always be bonded to the terminal housing at the junction with buried cable.

2.02 At the older buried wire installations where a shield wire was used, the shield wire can be terminated in the same manner as recommended for bronze tape or armor wire. See CTSP 490-800-300.

2.03 Those stations which use fuseless protectors, and which are served from buried distribution cable of 19 or 22 gauge and are exposed to possible contact with power of over 300 volts (such as in random separation construction) require a fusible link in the circuit between the exposed cable and the station. This fusible link can be provided at junctions of buried cable and buried service wire by terminating the buried service wire at the terminal block with 24 gauge leads installed in a buried cable pedestal. The 24 gauge wire leads which are connected to the cable pair provide the fusible link. The terminal blocks can be used with F-1, F-2, F-3 and F-4 cable closures.

2.04 Buried service wires can be identified at terminations by means of tabs made from B glass tape. Cut about 5 inches of glass tape and wrap it around the wire, pressing the sticky side against itself to make the tag. It can be readily marked with pencil or pen to show the customer or to identify the route of the buried wire as shown in Figure 1.

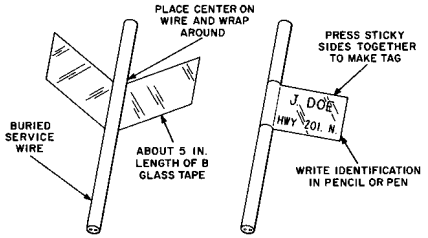


FIGURE 1. Identifying Tags

3. DISPOSITION OF UNTERMINATED PAIRS

3.01 Buried wire not in use may include new installations when some time may elapse before the buried wire is placed in service or where existing service is being disconnected. To avoid differences in potential between conductors and armor wire or bronze tape, buried wire which is not in use should be protected as follows:

a. New installations where the wire is not being terminated on a station protector at the time of placing:

(1) At the station end, twist the bare conductors and armor wires together and wrap with vinyl tape. (Make a water tight wrap if the service wire end is buried.)

(2) At the end toward the central office, bridge armor wires and connectors to a common ground post or if not available, follow the instructions in paragraph 3.01 a. (1).

b. Service disconnections where the wire has been terminated and existing service is being disconnected:

(1) At the station end, leave all terminations as they are; but where the station protector is being removed, twist the armor wires and bare conductors together and wrap with vinyl tape.

(2) At the end toward the central office when the wire terminates on a protector, leave the terminations as they are. Refer to paragraph 3.01 a. (2). (Dedicated plant only.)

4. JUNCTIONS WITH BURIED CABLE

4.01 To terminate buried service wire pull slack from the wire and mark the outer jacket about 6 inches above the ground line cover. Prepare the end as shown in Figure 2.

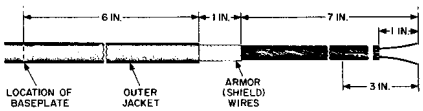


FIGURE 2. Preparation of Buried Service Wire for B Cable Closure

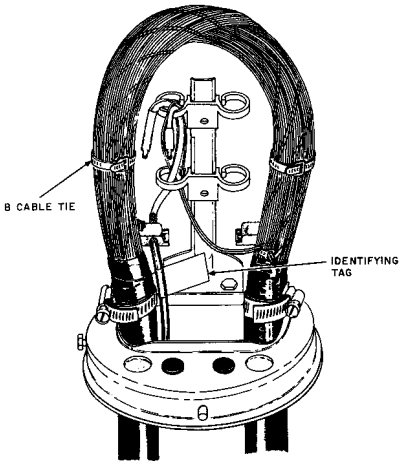
4.02 Attach the grounding harness connector and fasten securely with a compression tool.

4.03 Push any slack in the buried wire down into the terminal post. Arrange the identifying tags so that they are easily read.

4.04 Run the buried service wire through the plastic clamps (where applicable) and bend them down over the top clamps. Run the cable pair through the same route as the buried service wire. Bend the cable pair over the top plastic clamp and cut off wires about 1-1/2 inches below the bend. (See Figure 3 showing a typical installation). Connect the cable pair to the wire by using the appropriate size Scotchlok type wire connectors.

4.05 Where the binding posts on a connecting block installed for loading are not all used for loading, they should be used for any terminations required. Insert the armor wire into the grounding harness connector and terminate the conductors of the buried wire on the binding posts of the blocks in the usual manner.

4.06 To join buried wire directly to a cable conductor in a cable closure, prepare the wire as shown in Figure 4.



NOTE:
WHEN BURIED WIRE IS EXPOSED AND A FUSELESS PROTECTOR IS USED AT THE SUBSCRIBERS STATION AND IF CABLE IS 19- OR 22-GAUGE, PLACE A TERMINAL BLOCK AND TERMINATE THE BURIED SERVICE WIRE.

FIGURE 3. Buried Service Wire in B Cable Closure

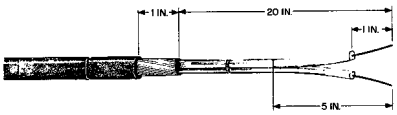


FIGURE 4. Preparation of Direct Buried Wire for Termination in a Cable Closure

4.07 Attach the armor shield of the buried wire to the grounding harness connector and fasten securely. Run the buried wire and the cable pair to be connected through the nylon cable clamp and bend down over it. Connect to the cable pair by using the appropriate size Scotchlok type connectors. See Figure 5.

4.08 The termination of buried service wire in an F-4 type pedestal mounting is illustrated in Figure 6.

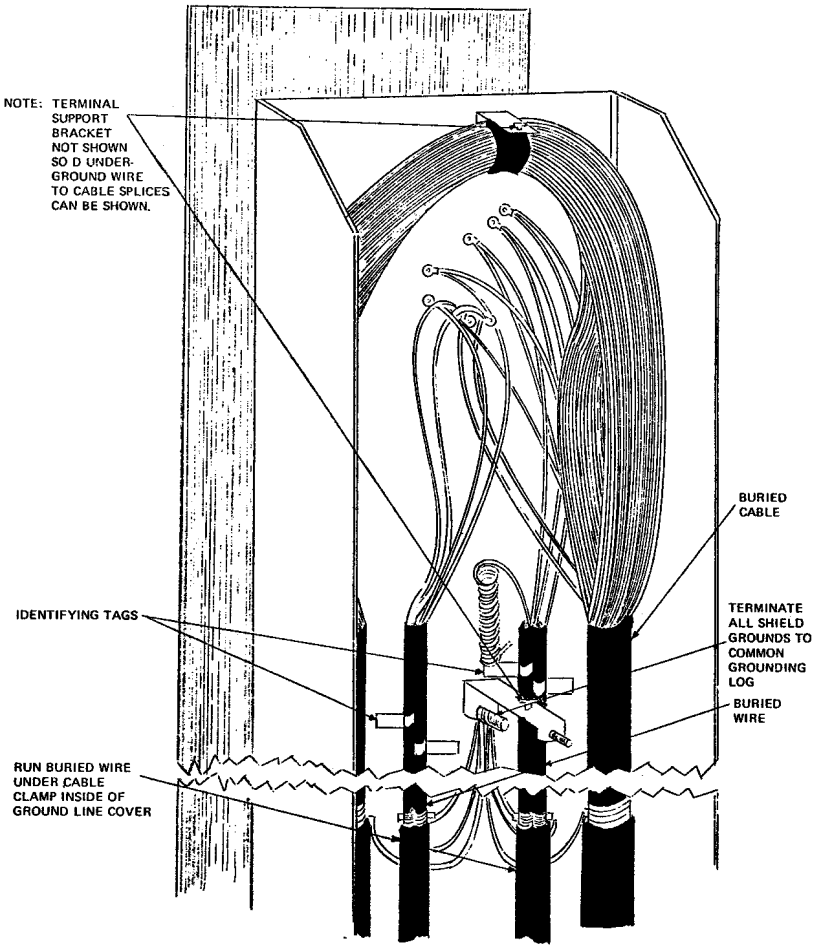


FIGURE 5. D Underground Wire in an F-3 Type Pedestal Mounting

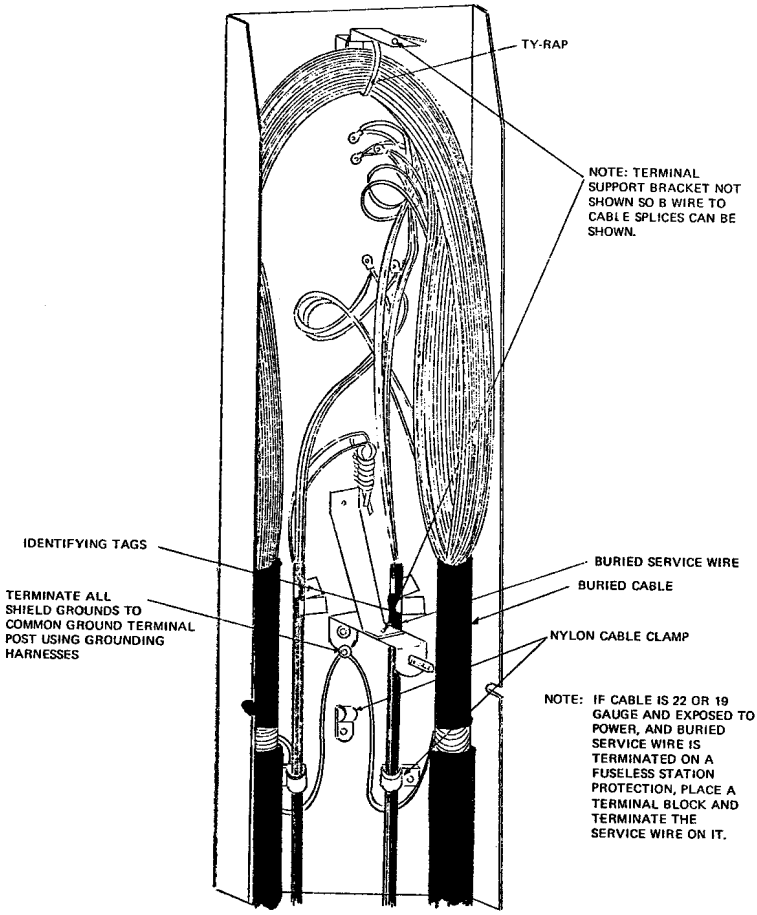


FIGURE 6. B Service Wire Terminated in an F-4 Pedestal Mounting

5. JUNCTIONS WITH BURIED WIRE

5.01 At junctions of buried wire with buried wire, place an F-3 or F-4 buried wire terminal as described in CTSP 490-500-432. Bridge the branch buried wire in the terminal as required. Each wire can be identified with a suitable designation by placing a tag made from glass tape as covered in paragraph 2.04. The armor wire or bronze tape of buried wire should always be connected to the ground post of each terminal.

6. TERMINATIONS AT CUSTOMER LOCATION

6.01 A grounding harness is used to bond the bronze tape of buried service wire to a protector ground post of the station protector. (Do not attempt to bond armor tape in any other manner.) The grounding harness has a spade clip which can be placed under the washer of the protector ground post without removing the nut. See CTSP 490-800-300.

6.02 Mount the station protector on the wall and mark the location of the grounding harness connector on the service wire. Cut off the wire about 5 inches beyond this point. Remove the outer jacket and proceed as follows:

a. Remove the bronze shield as shown in Figure 7.

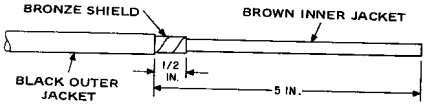


FIGURE 7. Strip Outer Jacket and Bronze Tape

b. Remove the inner jacket up to the bronze tape. Position the grounding harness on the wire as shown in Figure 8, and fasten securely with a compression tool.

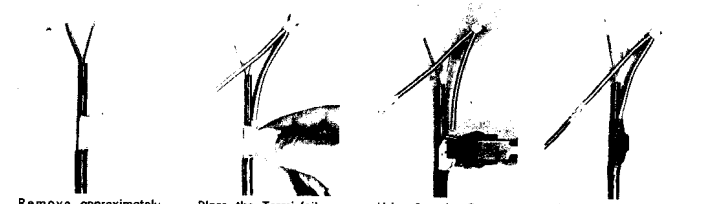


FIGURE 8.

c. Terminate buried service wire on a protector as illustrated in Figure 9. Place the spade clip of the connector under the flat washer with the clip between the flat washer and brass washer. Tighten the nut securely. Install a cover over the protector.

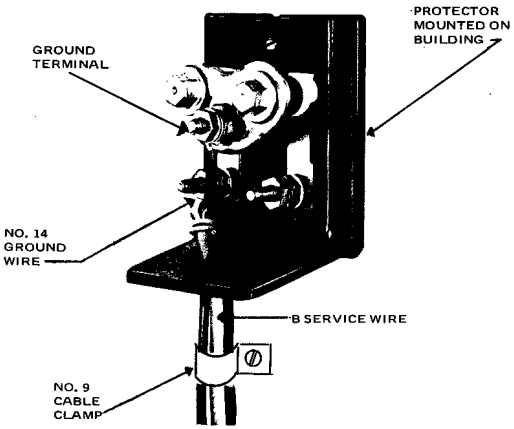


FIGURE 9. Buried Service Wire on Protector

d. Where a protector is not required, a buried service wire can be terminated on a connecting block on a backboard as shown in Figure 10.

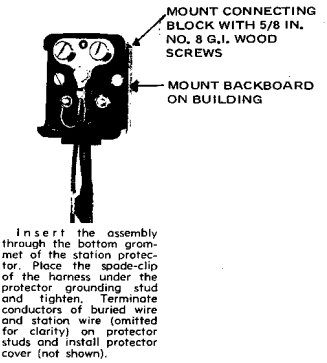


FIGURE 10. Buried Service Wire on Connecting Block

e. Buried Service wire can be terminated in a protector by preparing the end as shown in Figure 11. The spade clip connector can be placed on the ground post in a manner similar to placing the grounding harness connector (on buried service wire) on the ground post as described in paragraph 6.02 c.

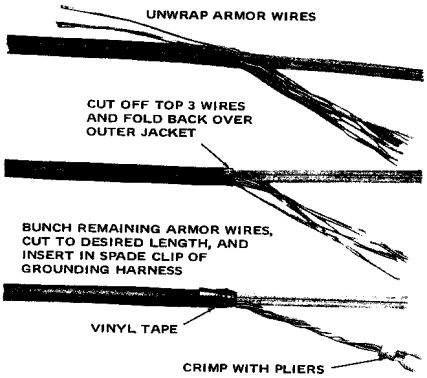


FIGURE 11. Preparation of Buried Service Wire for Termination on a Protected Terminal