

TERMINATIONS OF BURIED WIRE
AT JUNCTIONS WITH BURIED PLANT

1. GENERAL

1.03 The armor wire of underground wire and the aluminum tape of service wire should *always* be grounded at the cable or wire terminal, and at all subscriber locations where protectors are used. In connection with rearrangements of the older buried wire installations in which a shield wire was used, the shield wire can be terminated in the same manner as recommended for the armor and aluminum tape.

1.04 Grounding the armor wire of underground wire and the aluminum tape of service wire will keep the difference in potential between the conductors and the armor wire or aluminum tape relatively low in the event of lightning stroke to the telephone plant or to the immediate surroundings. This tends to limit the extent of any damage to the insulation to a few points rather than scattered pinholes. Repair of the damaged wire is generally practical in this case. A separate shield wire should only be placed when authorized on the detailed construction plans.

1.05 Buried wires can be identified at terminations by means of tags made from B Glass Tape. Cut about 5 inches of glass tape and wrap it about the wire, pressing the sticky side against itself to make the tag. It can be readily marked with pencil or pen to show the subscriber or to identify the route of the buried wire. This is shown in Fig. 1.

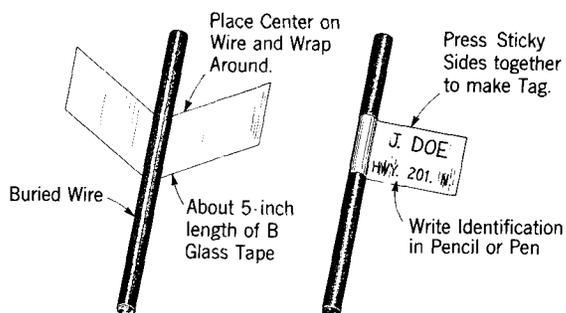


Fig. 1 — Identifying Tags

1.06 The 052 B Wire Connector should be used to join service wire with PIC cable conductors as indicated in Tables A and B.

TABLE A — TWO WIRE JUNCTIONS

Conductor Insulation	
Polyethylene (Cable Conductor)	Polyethylene (Service Wire)
*19	*20
22	*20
24	*20
26	*20

* Remove insulation before joining.

TABLE B — THREE WIRE JUNCTIONS

Conductor Insulation		
Polyethylene (Cable Conductor)	Polyethylene (Cable Conductor)	Polyethylene (Service Wire)
*19	*19	*20
*22	*22	*20
24	24	*20
26	26	*20

* Remove insulation before joining.

1.07 The 19 gauge conductors of underground wire can be substituted for the 20 gauge conductors of service wire in Tables A and B, provided the conductors are split apart and the insulation removed for about 1-inch.

1.08 The B Wire Connector should be pressed with the B Connector Presser. If it is not available, the connector can be pressed with long nose pliers as shown in Section 632-205-204.

Disposition of Unterminated Pairs

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

(a) **New Installations** where the wire is not being terminated at time of placing:

- (1) At station end — twist the bare conductors and armor wires together and wrap with vinyl tape.
- (2) At end toward central office — bridge armor wires and conductors to a common ground post, or if not available, follow part (1).

(b) **Service Disconnections** where the wire has been terminated and existing service is being discontinued:

- (1) At station end — leave all terminations as they are, except where the station protector is being removed twist the armor wires and bare conductors together and wrap with vinyl tape.
- (2) At end toward central office — when the wire terminates in a protector or protected terminal, leave the terminations as they are. Under "Dedicated Plant" conditions, leave the terminations as they are. Under all other conditions, disconnect the wire and bridge the conductors and the armor wire to a common ground post. If a common ground is not available, twist armor wires and conductors together and wrap with vinyl tape.

2. JUNCTIONS WITH BURIED CABLE

2.01 The armor wire of underground wire, the aluminum tape of service wire, or the separate shield wire occasionally used with buried wire should be terminated on a common ground as outlined in the following paragraphs.

B Cable Closure

2.02 The termination of B Service Wire in a B Cable Closure is described in Parts 5 and 6 of Section 631-600-201 (See Figs. 24, 25, and 30 of 631-600-201).

2.03 To terminate D Underground Wire, pull slack from the wire and mark the outer jacket about 6-inches above the base plate. Prepare the end as shown in Fig. 2.

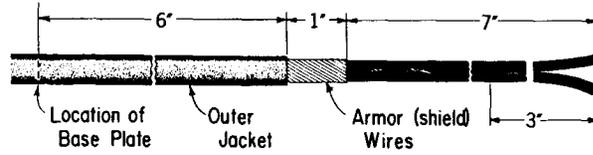


Fig. 2 — Preparation of D Underground Wire for B Cable Closure

2.04 Insert the armor wire in the ground connector of the closure and tighten securely. Do not crush the conductor insulation by too great a pressure.

2.05 Push any slack in the underground wire down into the terminal post. Arrange the identifying tags so they are most easily read.

2.06 Run the underground wire through the plastic clamps and bend down over the top clamps. Run the cable pair through the same route as the underground wire. Bend the cable pair over the top plastic clamp and cut off wires about 1-1/2 inches below the bend.

2.07 Skin the insulation from the underground wire for about 1-inch and connect cable pair to underground wire using B Wire Connectors. After the splice is made, the end of the connector and the wire should be wrapped with a short piece of vinyl tape to insulate the bare conductor. A completed installation is shown in Fig. 3.

2.08 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 ground connector and terminate the conductors of the underground wire on the binding posts of the blocks in the usual manner. The installation would be similar to that shown in Fig. 30 of Section 631-600-201.

38-Y-D and 38-Y-DB Cable Closures

2.09 The termination of B Service Wire in 38-Y-D and 38-Y-DB Cable Closures is described in Part 5 of Section 631-600-210 (See Figs. 11 and 12).

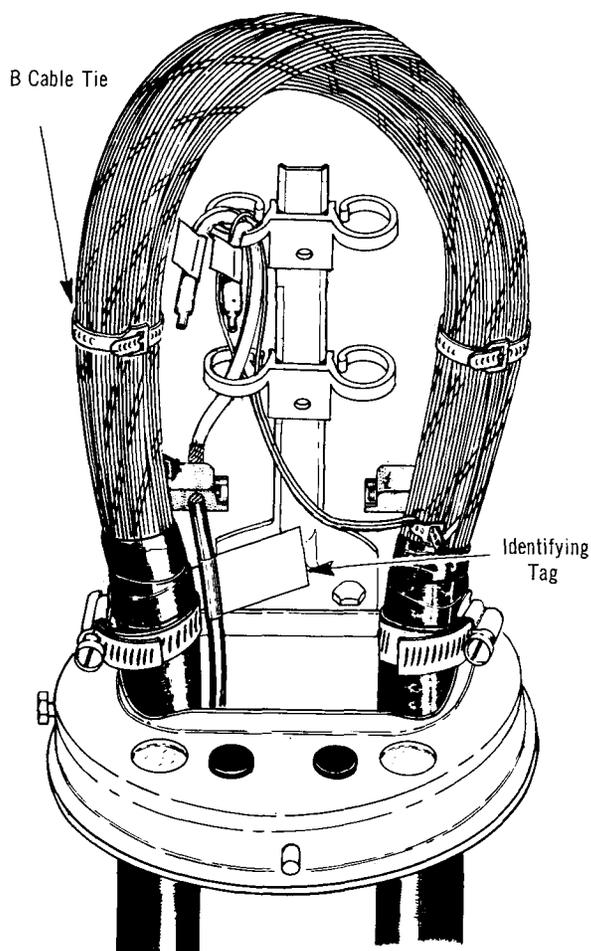


Fig. 3 — Underground Wire in B Cable Closure

2.10 To join D Underground Wire directly to the cable conductors in a 38-Y-D and 38-Y-DB Cable Closure, prepare the wire as shown in Fig. 4.

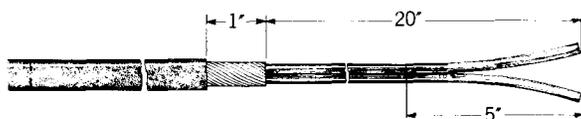


Fig. 4 — Preparation of D Underground Wire for 38-Y-D and 38-Y-DB Cable Closure

2.11 Place Fargo Connectors in either opening adjacent to the U-bolt. Insert the armor wire in the connector and tighten securely. Run the cable pair along with the D Underground Wire up through two plastic clamps on the bracket assembly and bend down over the top clamp.

2.12 Skin the insulators from the underground wire for about 1-inch and connect cable pair to wire using B Wire Connectors. After the splice is made, the end of the connector and the wire should be wrapped with a short piece of vinyl tape to insulate the bare conductor. A completed installation is shown in Fig. 5.

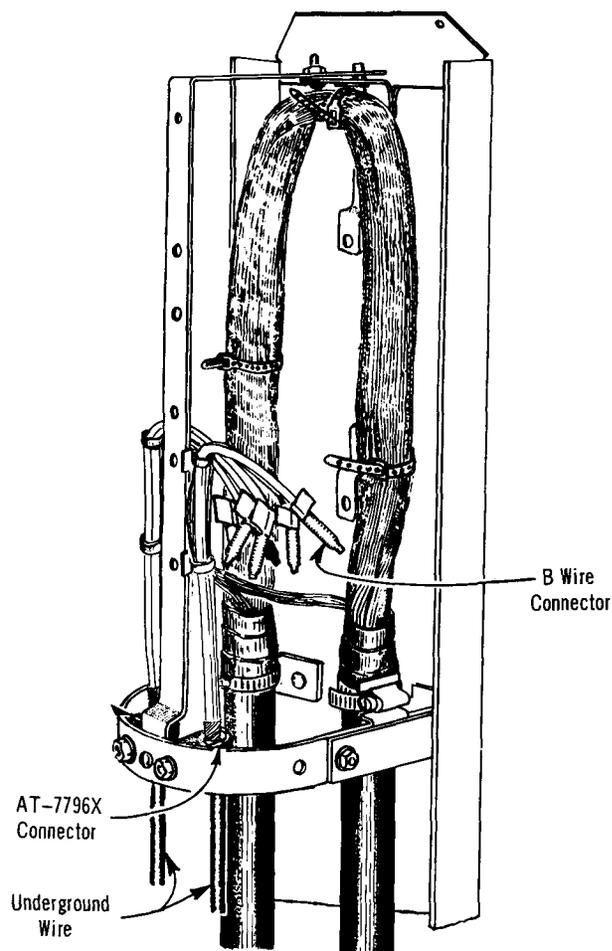


Fig. 5 — D Underground Wire in 38-Y-D and 38-Y-DB Cable Closure

D Cable Closure

2.13 The termination of B Service Wire in a D Cable Closure is described in Part 5 of Section 631-600-203 (See Figs. 9, 10, and 11).

2.14 To join D Underground Wire directly to a cable conductor in a D Cable Closure, prepare the wire as shown in Fig. 6.

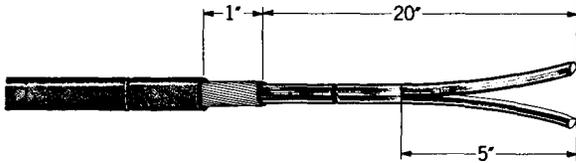


Fig. 6 – Preparation of D Underground Wire for D Cable Closure

4.02 Place the 123A1A or 128A1A Protector on the wall and mark the location of the “Lug-It” on the service wire. Cut off the wire about 5-inches beyond this point. Remove the outer jacket and untwist the aluminum tape as shown in Fig. 8.

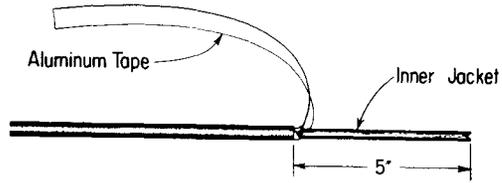


Fig. 8 – Strip Outer Jacket and Aluminum Tape

4.03 Wrap the aluminum tape tightly on itself at end of outer jacket about two turns and cut off remainder, as shown in Fig. 9.

2.15 Insert the armor wire of the underground wire in the ground connector and tighten securely. Run the underground wire and the cable pair to be connected through the plastic eyebolt and bend down over it.

2.16 Skin the insulation from the underground wire for about 1-inch and connect to the cable pair using B Wire Connectors. After the splice is made, the end of the connector and the wire should be wrapped with a short piece of vinyl tape to insulate the bare conductor. A completed installation is shown in Fig. 7.

3. JUNCTIONS WITH BURIED WIRE

3.01 At junctions of buried wire with buried wire, place a D or E Buried Wire Terminal as described in Section 629-720-215. Bridge the branch buried wires 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 Par. 1.04. The armor wire or aluminum tape of buried wire should be connected to the ground post of each terminal.

4. TERMINATIONS AT SUBSCRIBER LOCATIONS

4.01 A No. 35301 Thomas and Betts “Lug-It” can be used to bond the aluminum tape of service wire to a 123A1A or 128A1A Protector.

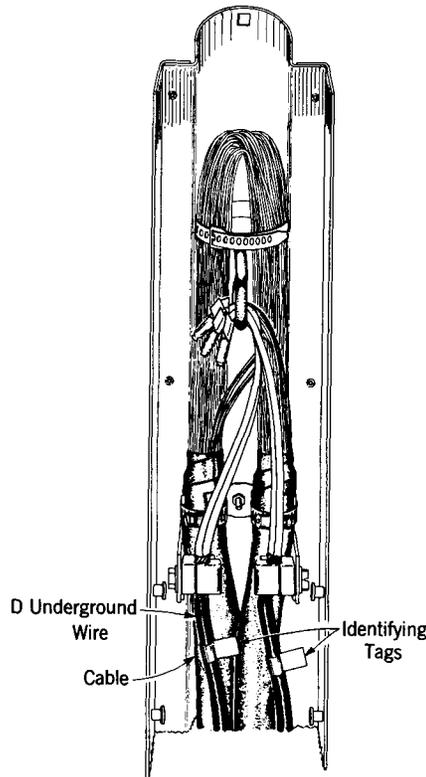


Fig. 7 – D Underground Wire in D Cable Closure

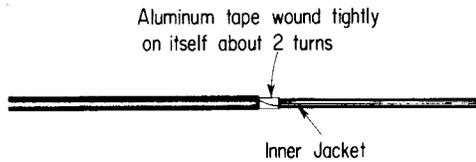


Fig. 9 – Wrap Aluminum Tape on Itself

4.04 Remove the inner jacket from about 1/4 inch beyond the aluminum tape to end wire. Position the “Lug-It” on the wire as shown in Fig. 10, and tighten firmly with a small screwdriver.

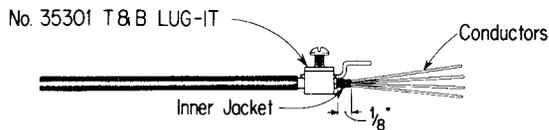
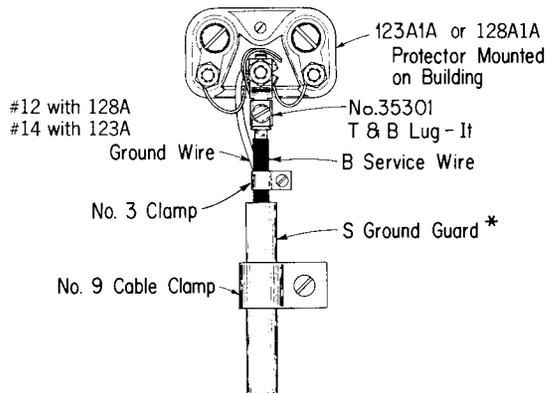


Fig. 10 – “Lug-It” on Service Wire

4.05 Terminate service wire on a 123A1A or 128A1A Protector as illustrated in Fig. 11. Place the pronged washer on the stud between the ground wire and the “Lug-It.” Place the brass washers and nut on top of the “Lug-It.”



* If more protection is required, use No. OU Cable Guard.

Fig. 11 – Service Wire on Protector

4.06 Cover the 123A1A or 128A1A Protector with a 150A Cover as illustrated in Fig. 12.

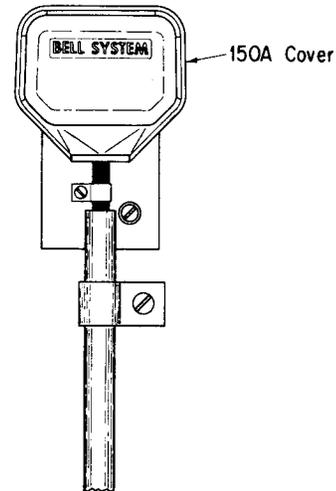
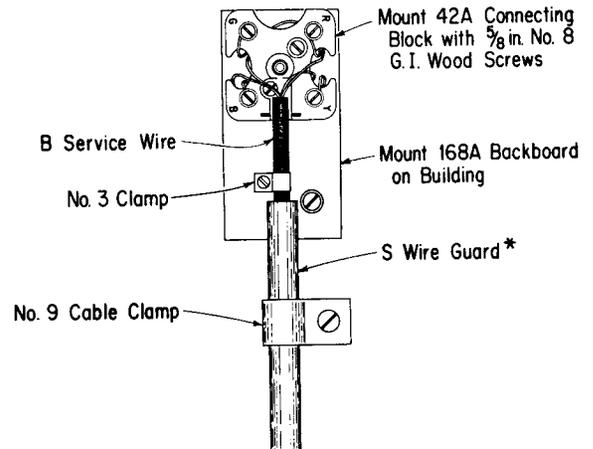


Fig. 12 – Protector With Cover in Place

4.07 Where a protector is not required, a service wire can be terminated on a 42A Connecting Block on a 168A Backboard as shown in Fig. 13.



* If more protection is required, use a No. OU Cable Guard

Fig. 13 – Service Wire on 42A Connecting Block

4.08 Underground wire can be terminated in a protector by preparing the end as shown in Fig. 14. The solderless connector can be placed on the ground post in a manner similar to the “Lug-It” on service wire.

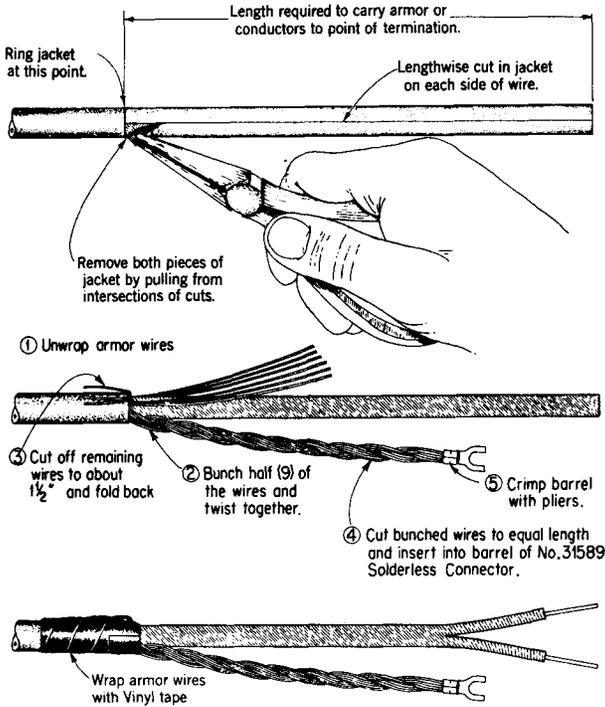


Fig. 14 — Preparation of Underground Wire for Protector Termination

3A1 Closure

4.09 The 3A1 Closure as described in Section 631-600-204 can also be used for buried wire terminations at subscriber locations.

4.10 The service wire should be prepared as described in Pars. 4.02 to 4.04. The protector or connecting block should be placed with the ground binding post toward the U-guard. Place the pronged washer on the ground binding post between the ground wire and the "Lug-It." Place the brass washers and nut on top of the "Lug-It." A typical installation with a 3A1 Closure is shown in Fig. 15.

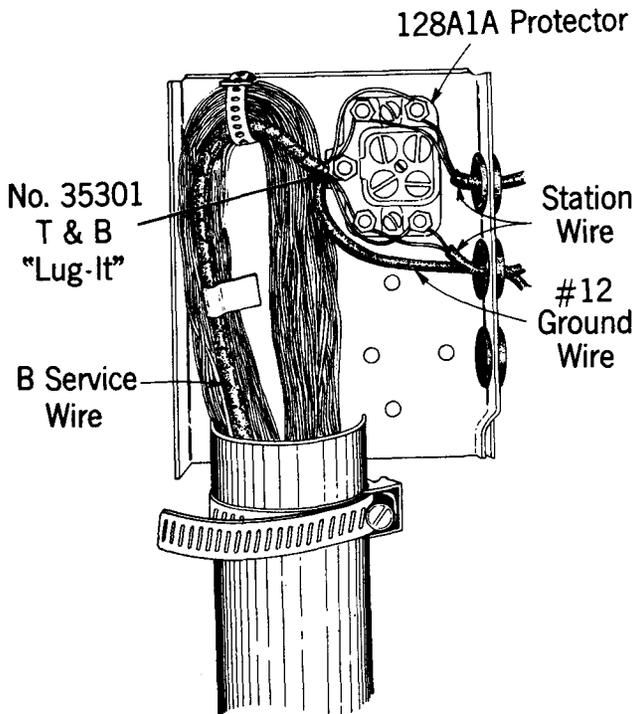


Fig. 15 — 3A1 Closure at Subscriber Location