

LD- AND LE-TYPE CABLE CLOSURES

DESCRIPTION AND INSTALLATION

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Note: The LD- and LE-type closures employ the new coding method as described in Section 631-604-203.

1.04 The LE-type cable closures are used to house access and control points in dedicated buried plant and CCTV equipment as outlined in Sections 642-235-202 and 641-270-201, respectively.

1.05 The LD6/42 and LE6/42 Cable Closures will accept six cables up to 1.6 inches outside diameter or four cables up to 2.2 inches outside diameter on each ground bracket. However, the splice pair capacity cannot exceed that shown in Table A. The LD10/42 and LE10/42 Cable Closures will accept six cables up to 3 inches outside diameter on each ground bracket. The maximum pair capacities of these closures are listed in Table A.

TABLE A

L-TYPE CLOSURE CAPACITY			
CLOSURE	SLICE CAPACITY	IN PAIR CAPACITY CONTROL OR ACCESS POINT	OUT PAIR CAPACITY CONTROL OR ACCESS POINT
LD6/42	400	—	—
LE6/42	—	400	300
LD10/42	900	—	—
LE10/42	—	900	600

1. GENERAL

1.01 This section covers the description and installation of the LD6/42, LE6/42, LD10/42, and LE10/42 Cable Closures.

1.02 The LD6/42 and LE6/42 Cable Closures replaces the H Cable Closure and the LD10/42 and LE10/42 Cable Closures replaces the G Cable Closure. These new closures have been designed to facilitate establishing shield continuity by employing the B or C Bond Clamps.

1.03 The LD-type closures are used with PIC cables in buried distribution systems. They are a nongas-type closure installed above groundline. They provide facilities for housing straight splices, bridge splices, and for loading cable pairs. Buried service wires can also be terminated in these closures.

1.06 At dedicated buried plant control or access points service wires shall not be terminated. At other splice points, service wires up to the capacity of one bracket assembly (6 service wires) may be terminated.

1.07 The L-type cable closures shall be located where they are reasonably protected from damage by motor vehicles and other machinery. They should be located so they are at least one foot from metallic fences.

2. DESCRIPTION

2.01 The L-type cable closures are galvanized steel and have the new baked grey-green enamel finish. The internal metal parts are hot dip galvanized. The nuts, bolts, and washers are

made of stainless steel. An F Warning Decal is placed on the exterior surface and an instructional decal is placed on the interior surface of each closure by the manufacturer. Fig. 1, 2, 3, and 4 illustrate the LD6/42, LE6/42, LD10/42, and LE10/42 Cable Closures, respectively.

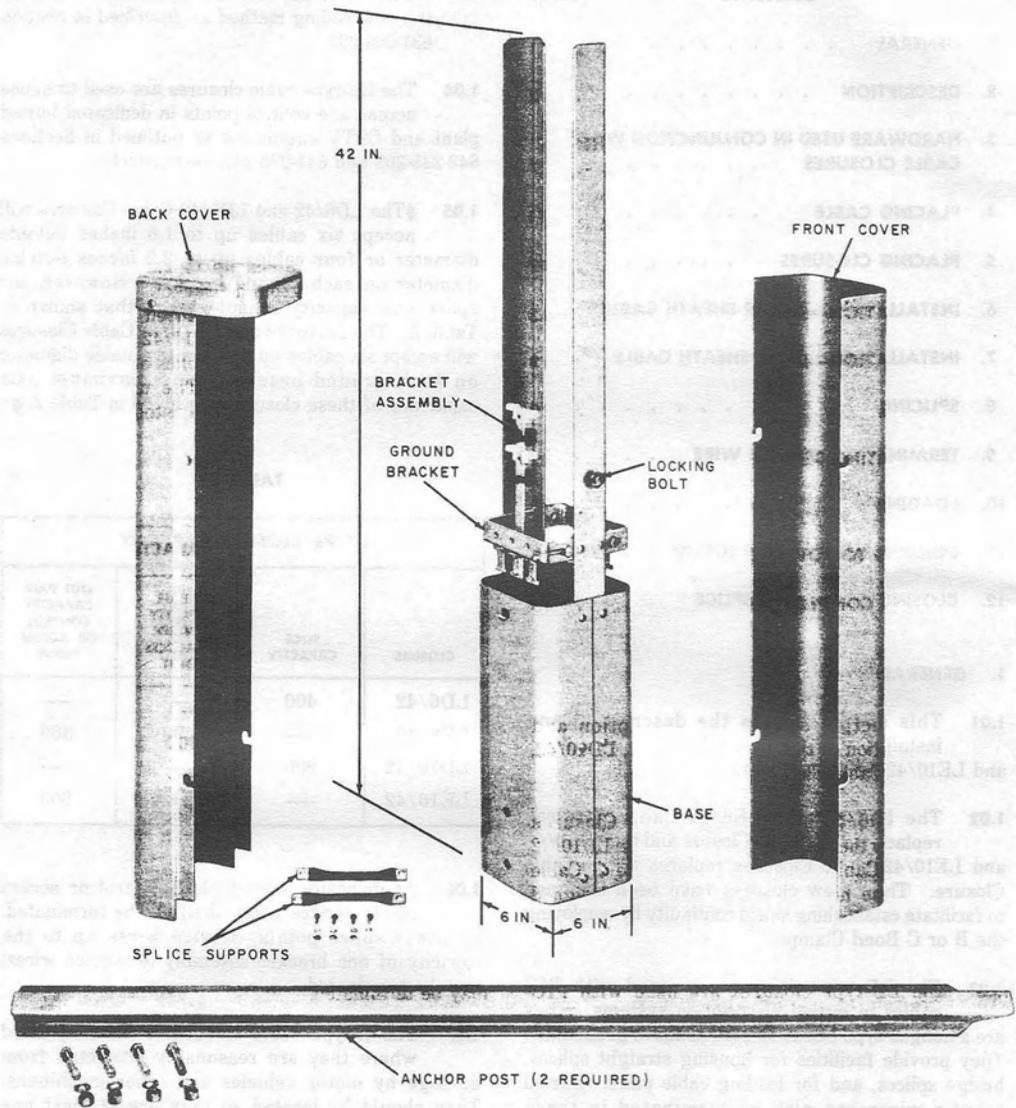


Fig. 1—LD6/42 Cable Closure

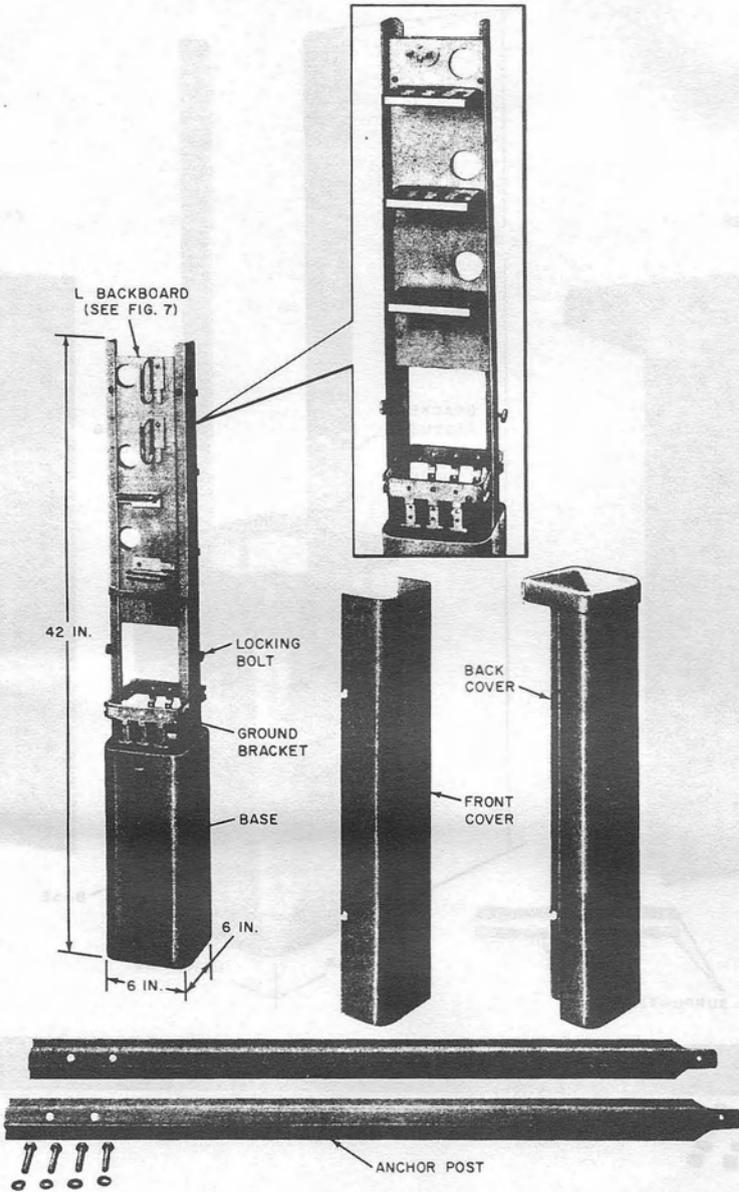


Fig. 2—LE6/42 Cable Closure

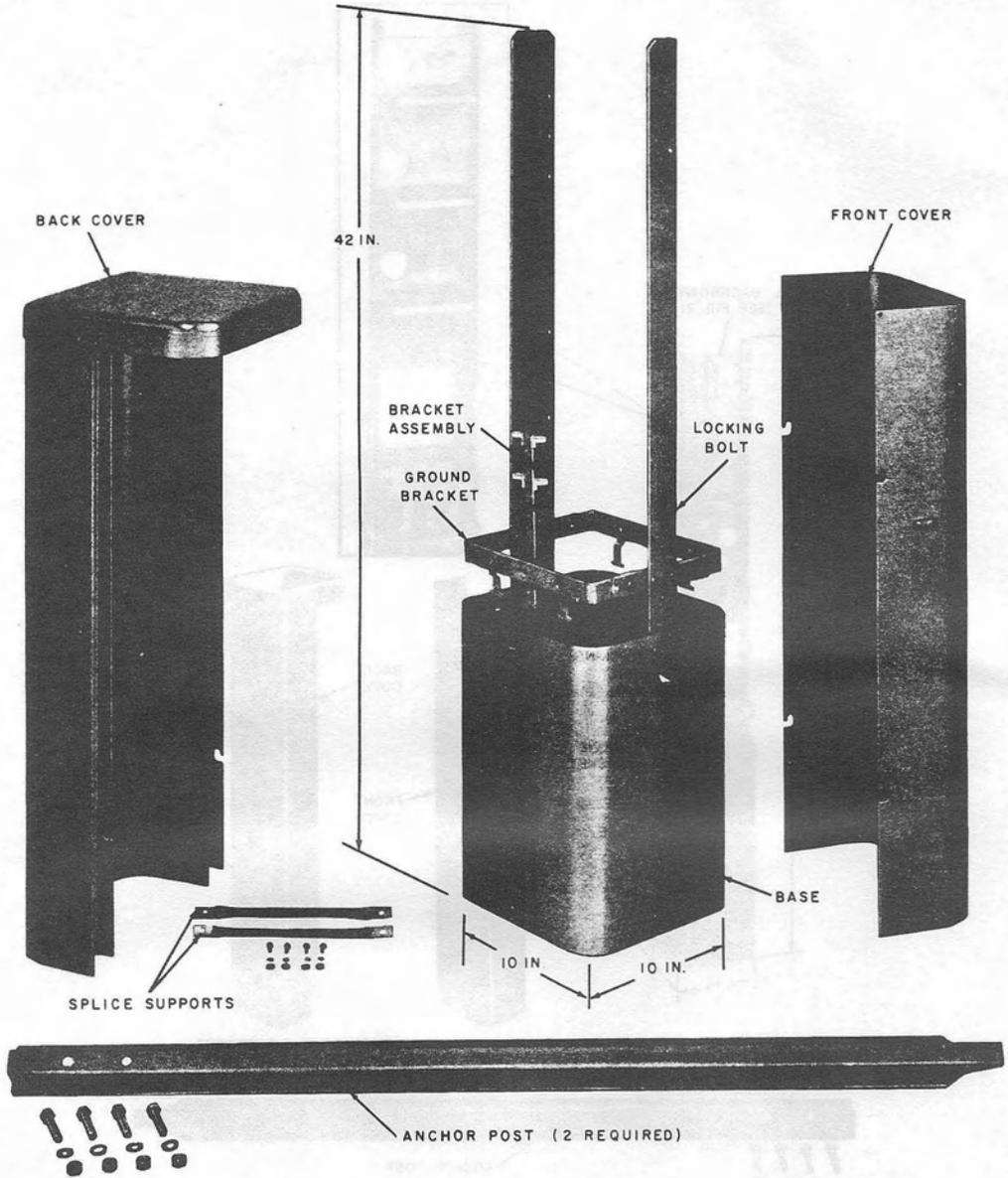


Fig. 3—LD10/42 Cable Closure

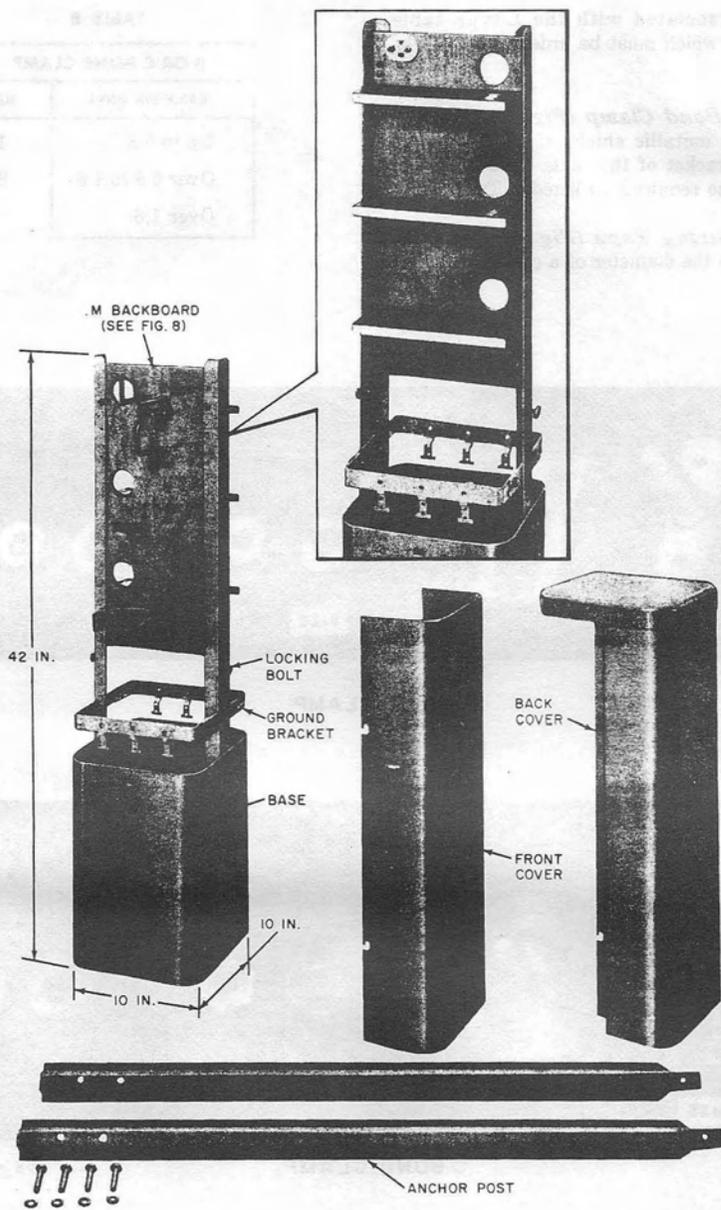


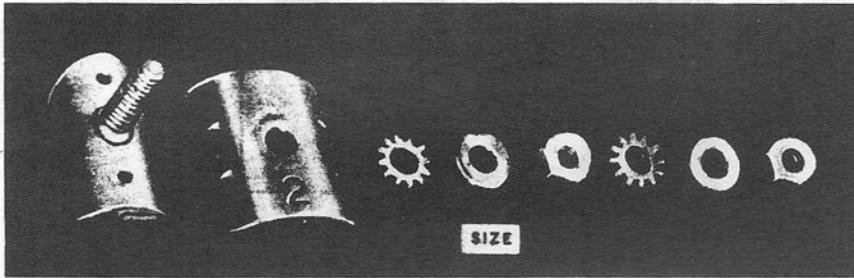
Fig. 4—LE10/42 Cable Closure

2.02 Parts associated with the L-type cable closures, which must be ordered separately, are as follows:

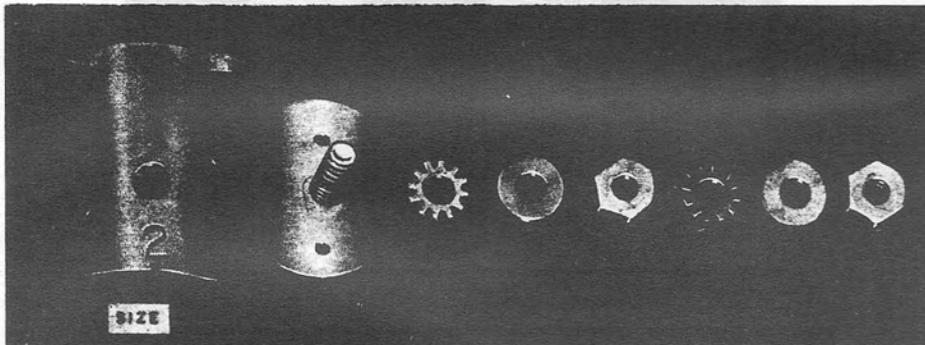
- (a) **B or C Bond Clamp (Fig. 5):** Used to bond the metallic shield of PIC cables to the ground bracket of the cable closure. Select the correct size required, as listed in Table B.
- (b) **B Measuring Tape (Fig. 6):** Used to determine the diameter of a cable.

TABLE B

B OR C BOND CLAMP	
CABLE DIA (INS.)	SIZE
Up to 0.8	1
Over 0.8 to 1.6	2
Over 1.6	3



B BOND CLAMP



C BOND CLAMP

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Fig. 5—B and C Bond Clamp

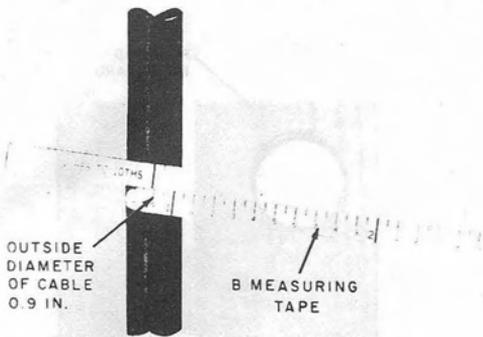


Fig. 6—B Measuring Tape

- (c) **G Warning Decal:** 10 inch by 1 inch strip of yellow plastic tape. Used in areas where a high degree of visibility is required.

3. HARDWARE USED IN CONJUNCTION WITH CABLE CLOSURES

- 3.01 L Backboards (Fig. 7) and M backboard (Fig. 8) are furnished with LE6/42 and LE10/42 Cable Closures, respectively. These backboards are used to construct control and access points in dedicated plant. The backboards are plywood boards, consisting of B Cable Ties, distributing rings, wiring brackets, and a terminal block for terminating a talk pair. These components are factory assembled. Each backboard has the letters **TO C.O.** stenciled on the **IN** cable side. ♦

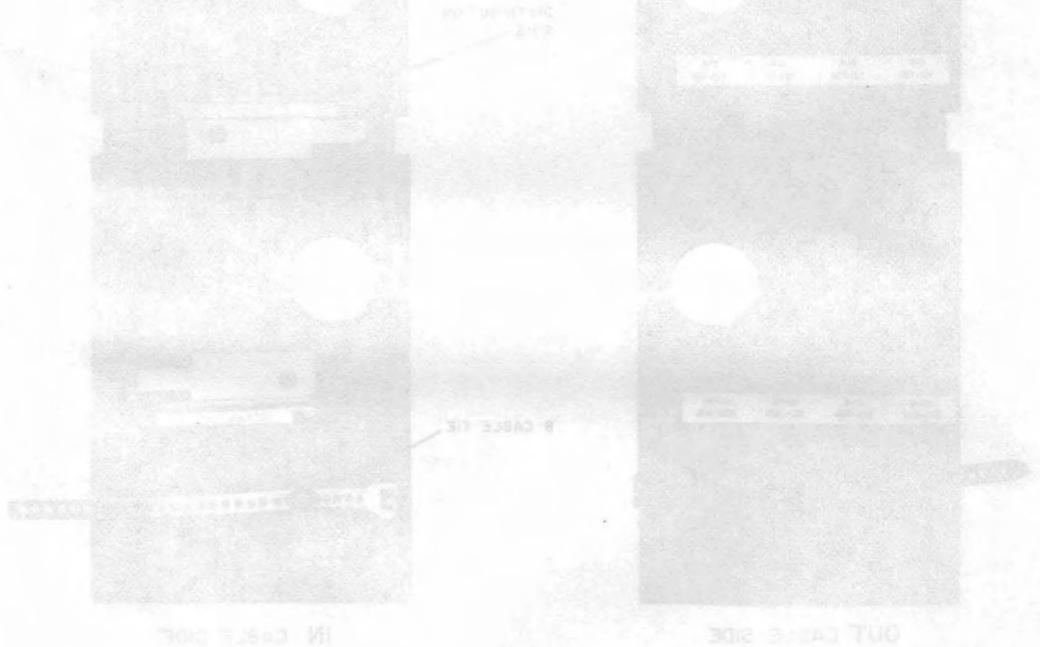


Fig. 7—L Backboard (for LE6/42 Cable Closures)

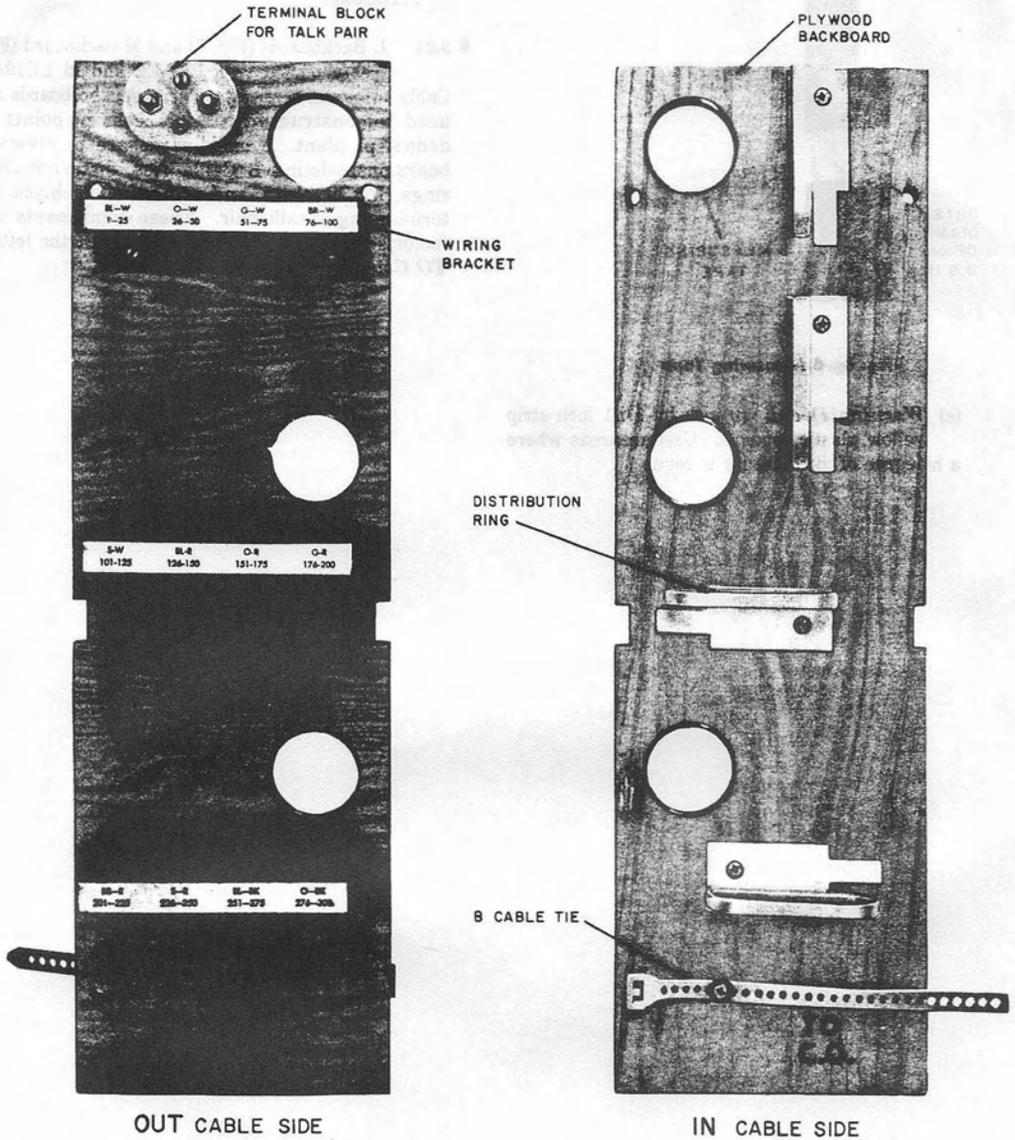


Fig. 7—L Backboard (for LE6/42 Cable Closure)

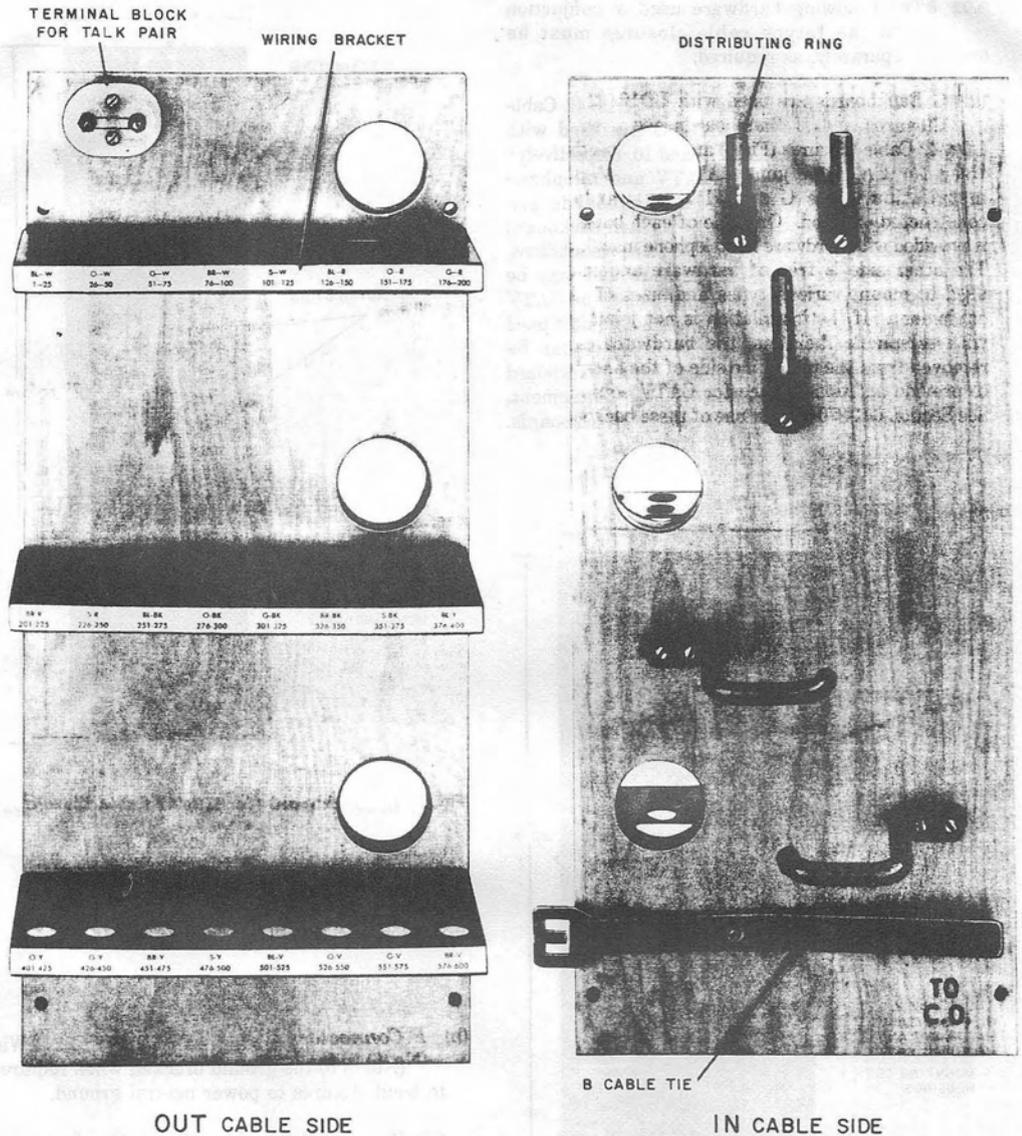


Fig. 8—M Backboard (for LE10/42 Cable Closure)

3.02 ♦ The following hardware used in conjunction with the L-type cable closures must be ordered separately, as required:

- (a) G Backboards are used with LD10/42 Cable Closures and H Backboards are used with LD6/42 Cable Closures (Fig. 9 and 10, respectively): Used for CATV or joint CATV and telephone installation. ♦ The G and H Backboards are constructed of wood. One side of each backboard is provided with hardware for telephone installations. The other side is free of hardware and may be used to mount various types and sizes of CATV equipment. If the installation is not jointly used with telephone facilities, the hardware can be removed from the telephone side of the backboard to provide additional space for CATV equipment. See Section 641-270-201 for use of these backboards.

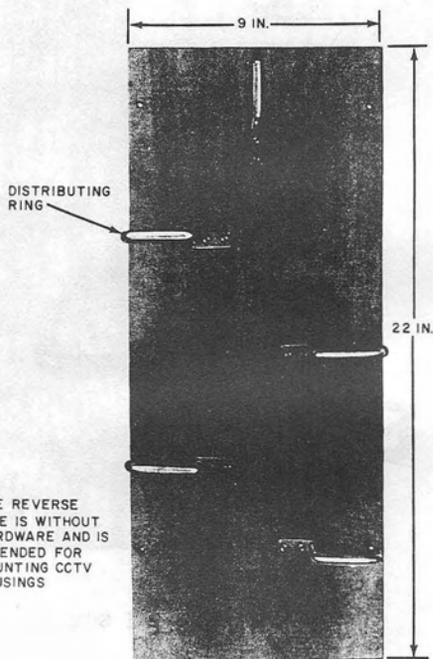


Fig. 9—G Backboard (for LD10/42 Cable Closure)

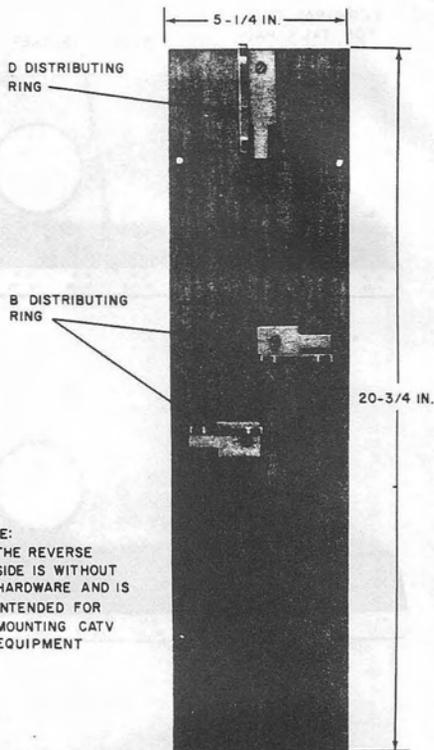


Fig. 10—H Backboard (for LD6/42 Cable Closure)

- (b) **F Connector:** Used to bond B Ground Wire (No. 6) to the ground bracket, when required, to bond closures to power neutral ground.
- (c) **Bracket Assembly (Fig. 11):** Used for terminating buried service wires at locations where protection is not required. It is equipped with two AT-7796X Connectors and two plastic clips.

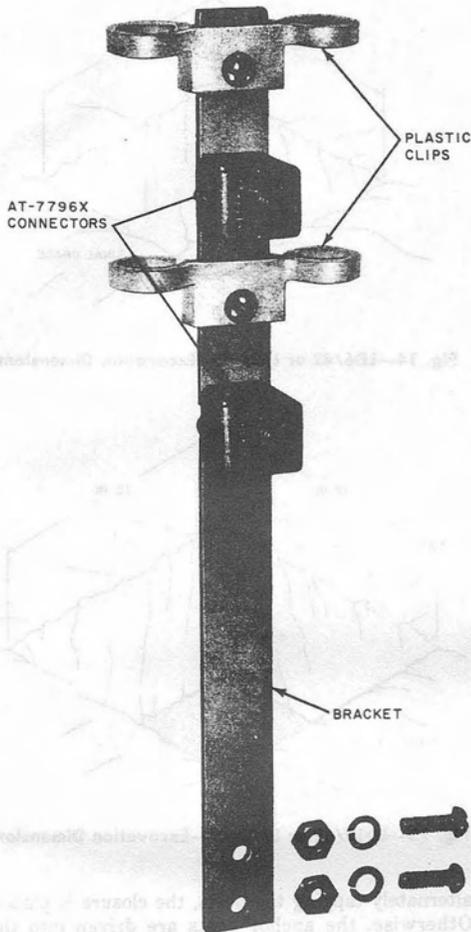


Fig. 11—Bracket Assembly

4. PLACING CABLE

4.01 The cut end or loop of cable placed above grade line, by the placing forces, is shown in Fig. 12 and 13, respectively.

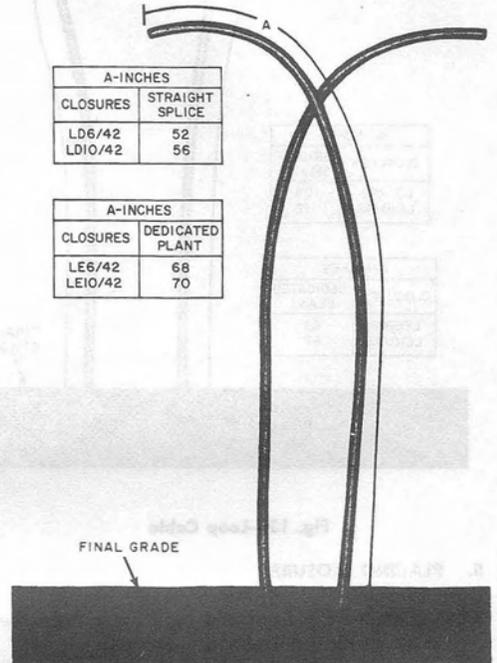
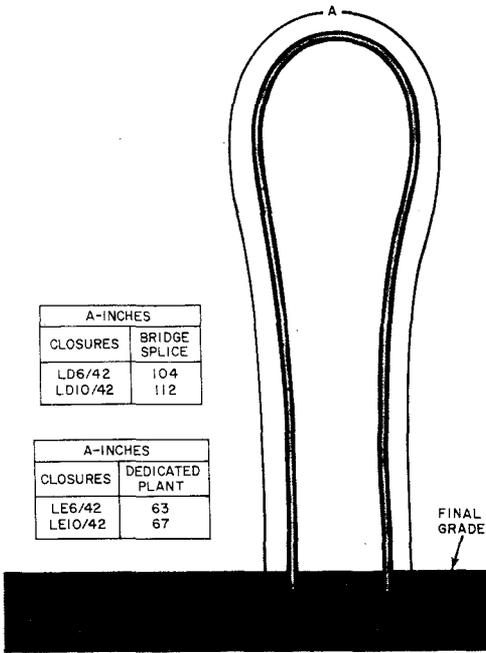


Fig. 12—Cut Cable Ends



A-INCHES	
CLOSURES	BRIDGE SPLICE
LD6/42	104
LD10/42	112

A-INCHES	
CLOSURES	DEDICATED PLANT
LE6/42	63
LE10/42	67

Fig. 13—Loop Cable

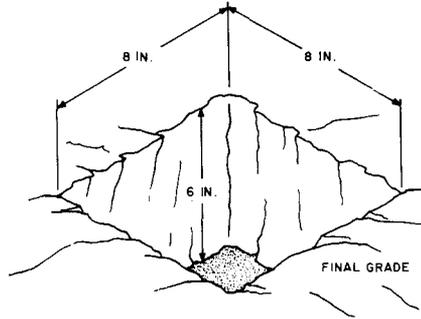


Fig. 14—LD6/42 or LE6/42—Excavation Dimensions

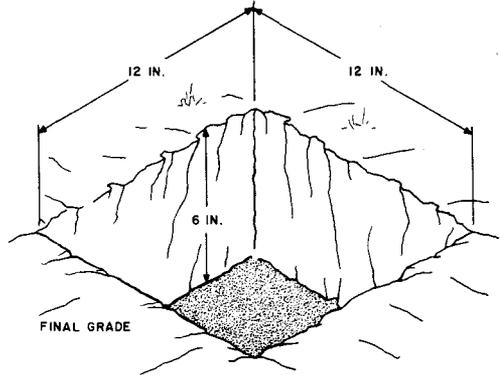


Fig. 15—LD10/42 or LE10/42—Excavation Dimensions

5. PLACING CLOSURES

- 5.01 Remove the front and back cover from the L-type closure that is to be installed.
- 5.02 Being careful not to damage the cable, excavate a hole to the dimensions illustrated in Fig. 14 and 15.



To prevent damage to the cable establish the location and path of the cable before placing the anchor posts.

Note: When a joint trench is provided for power and telephone cables, the closure must be placed a minimum of 6 inches off the trench line.

- 5.03 There are 4 2-inch by 3/8-inch hex head bolts provided with each closure. These bolts are used to mount the anchor posts to the base of the closure. In soft soil, the anchor posts can be bolted to the base of the closure and by

alternately tapping the posts, the closure is placed. Otherwise, the anchor posts are driven into the ground separately and the closure mounted on the posts. When the anchor posts are placed separately, the inside dimensions between posts is 6 inches for the LD6/42 or LE6/42 Closure and 10 inches for the LD10/42 or LE10/42 Closure. The top of the anchor posts should be placed approximately one inch below final grade.

- 5.04 The closure should be placed with the base centered in the excavation and the anchor posts perpendicular to the cable path. The cable enters the closure through the base. Fig. 16 illustrates a closure in place. Fill the base to about one inch from the top with crushed stone, gravel, or approved equivalent (Fig. 16). This helps to

eliminate rodent damage and to reduce moisture condensation inside the closure. Where cable enters closures by means of conduit (lateral), plug the conduit with a rubber conduit plug.

6. INSTALLATION—SINGLE SHEATH CABLE

- 6.01 Hold each cable in place against the ground bracket. Approximately 1/4-inch above the ground bracket mark the cable sheath and place

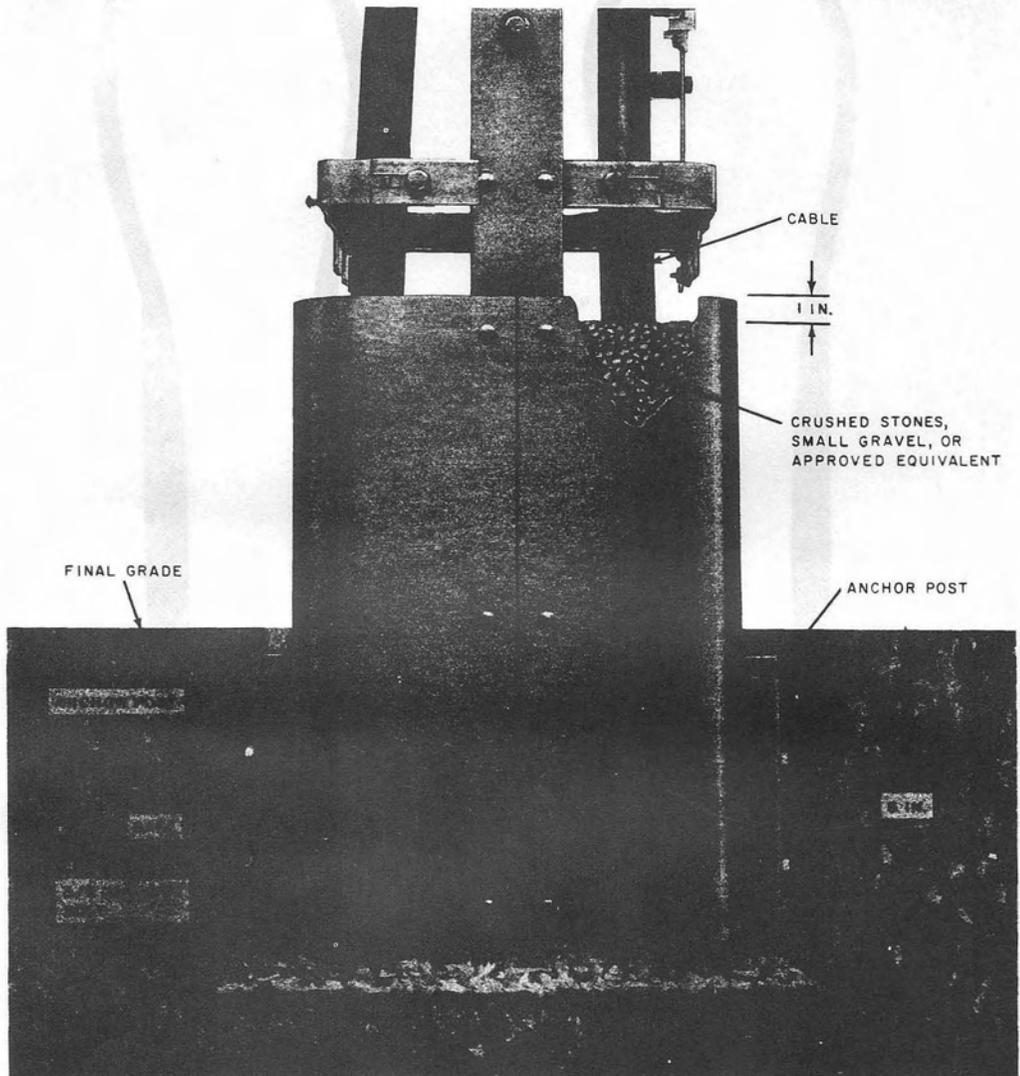


Fig. 16—LD- or LE-Type Closure Placed

paper tape markers on the cable (Fig. 17). Remove the ground bracket. Place paper tape markers on

the cables 1-1/2 inch below the 1/4-inch marks (Fig. 17).

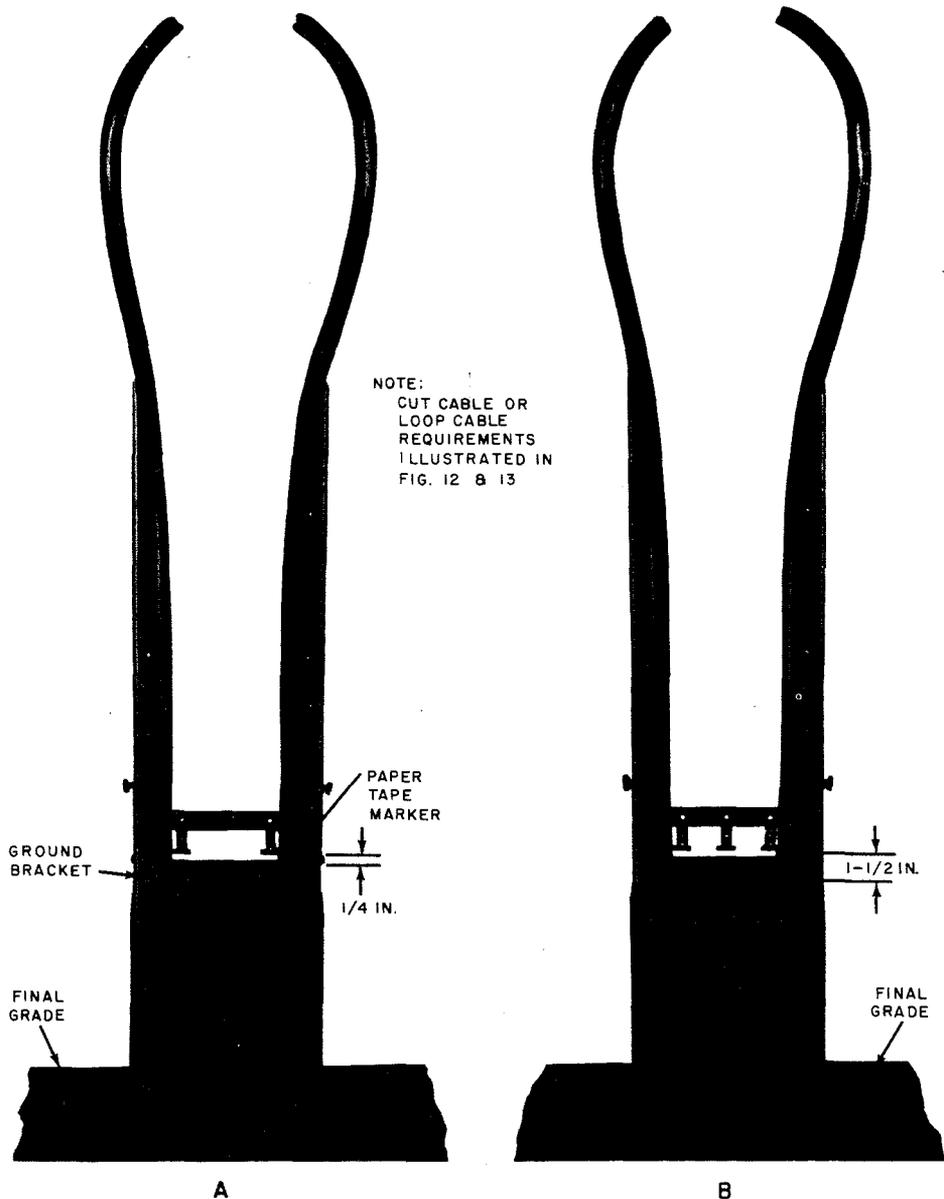


Fig. 17—Marking Cable

Note: The 1/4-inch dimension is necessary to properly align the bond clamp for attachment to the ground bracket.

6.02 At cable loop through locations, check the cable loop measurements. These measurements must be measured accurately; a good housekeeping job cannot be done if the sheath opening is too long or too short.



The cable loop requirements for bridge splicing or dedicated plant installation is illustrated in Fig. 13.

6.03 Score the circumference of the cable at the 1/4-inch marker. Remove the sheath and shield from the cable (Fig. 18). At loop through locations, remove the sheath and shield from between the 1/4-inch paper tape markers. **DO NOT REMOVE THE CORE WRAPPER.**

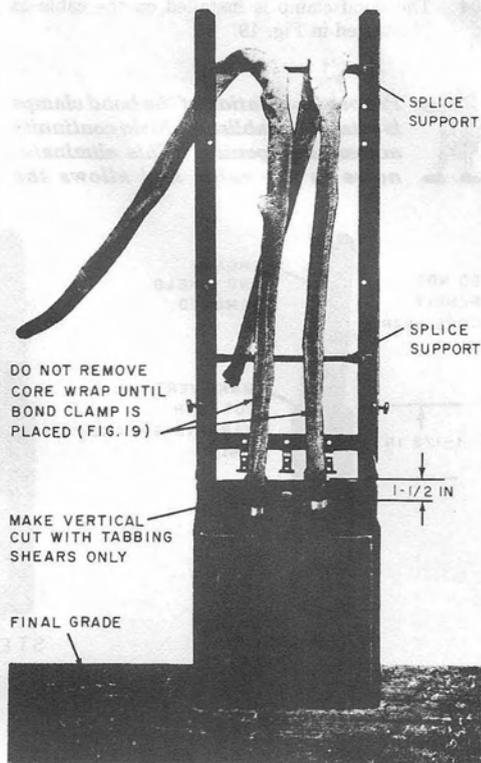


Fig. 18—Sheath Removed—Cut Ends

6.04 The bond clamp is installed on the cable as illustrated in Fig. 19.

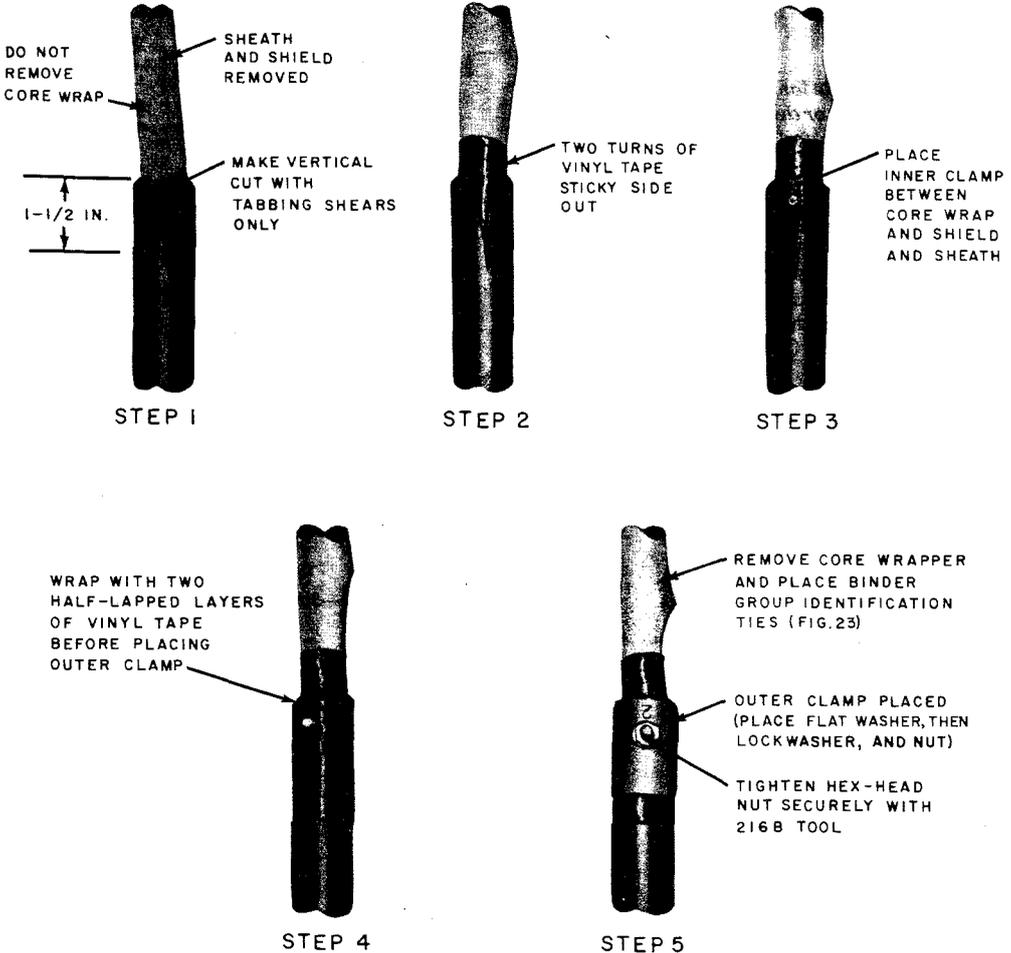


Proper installation of the bond clamps is vital. It establishes shield continuity across the opening. This eliminates noise in the cable and allows the

installation to meet transmission objectives.

6.05 In corrosive areas the bond clamp is installed as illustrated in Fig. 20.

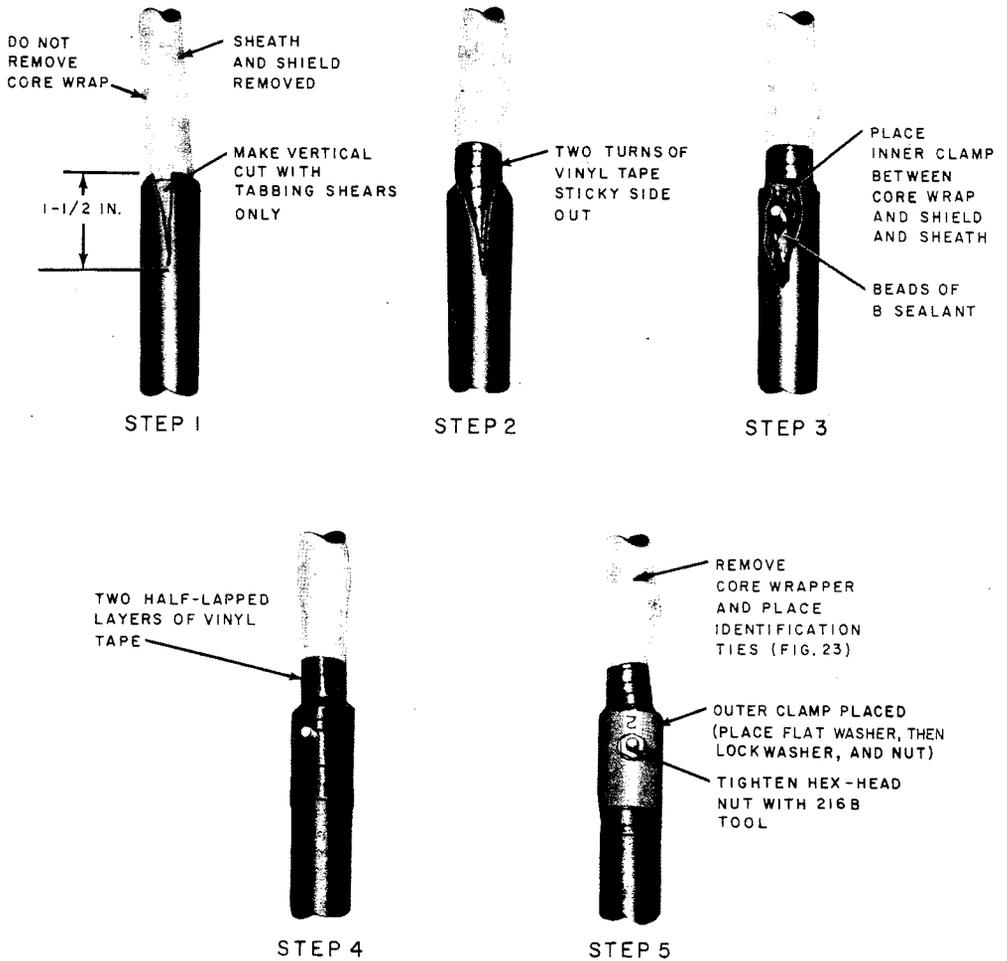
6.06 Place the inner plate stud through the proper hole in the ground bracket. Place the flat



NOTE:
SEE FIG.20-CORROSIVE AREA
FIG. 21 ILLUSTRATES CABLES PLACED IN CLOSURES

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Fig. 19—Installing Bond Clamp



NOTE:
 FIG. 21 ILLUSTRATES THE CABLES PLACED IN THE CLOSURE

TPA 553059

Fig. 20—Installing Bond Clamp—Corrosive Area

washer, lock washer, and nuts on the stud and tighten securely. Secure the cable to the ground bracket with a WE-1 Cable Tie. Fig. 21 illustrates the cable installed in the LD-type closure.

Note: The cables are installed in the LE-type closures as outlined in 6.01 through 6.06. The wiring arrangements of the backboards are outlined in Sections 641-270-201 and 642-235-202.

6.07 The pairs are spliced with B Wire Connectors as outlined in Section 632-205-201.

7. INSTALLATION—DUAL SHEATH CABLE

7.01 The amount of cut ends or cable loop required above grade is illustrated in Fig. 12 and 13, respectively.

7.02 To install dual sheath cable in the closure, proceed as follows:

- (1) Mark the outer sheath approximately 1/4-inch above the ground bracket and place paper tape markers as outlined in 6.01 and shown in Fig. 17.
- (2) Score the circumference of the outer sheath at the 1/4-inch paper tape marker. Remove the outer sheath and shield.

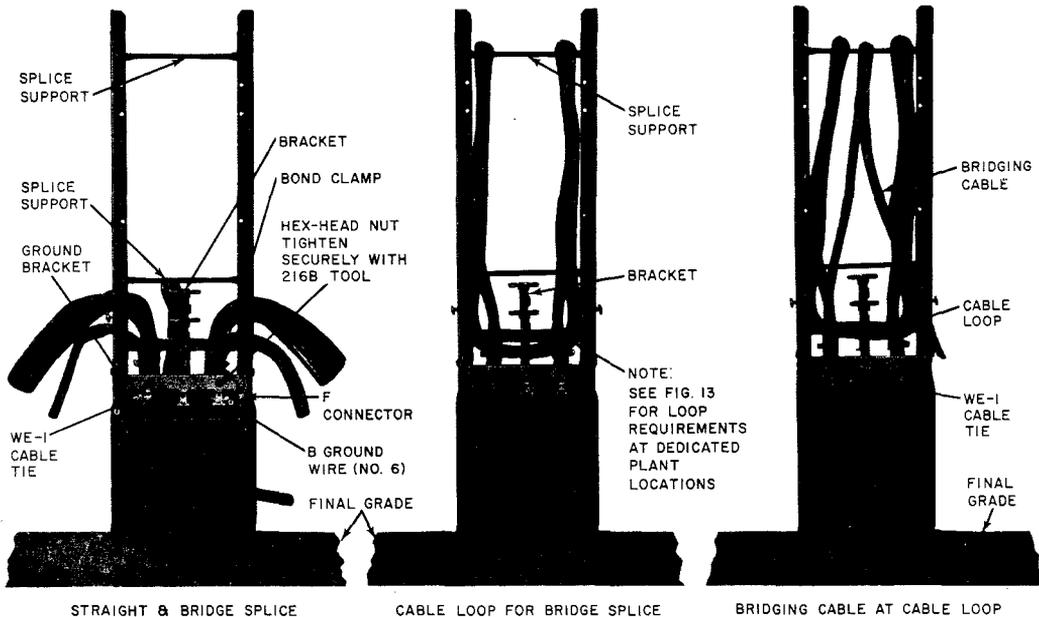


Fig. 21—Cable Installed in Closure

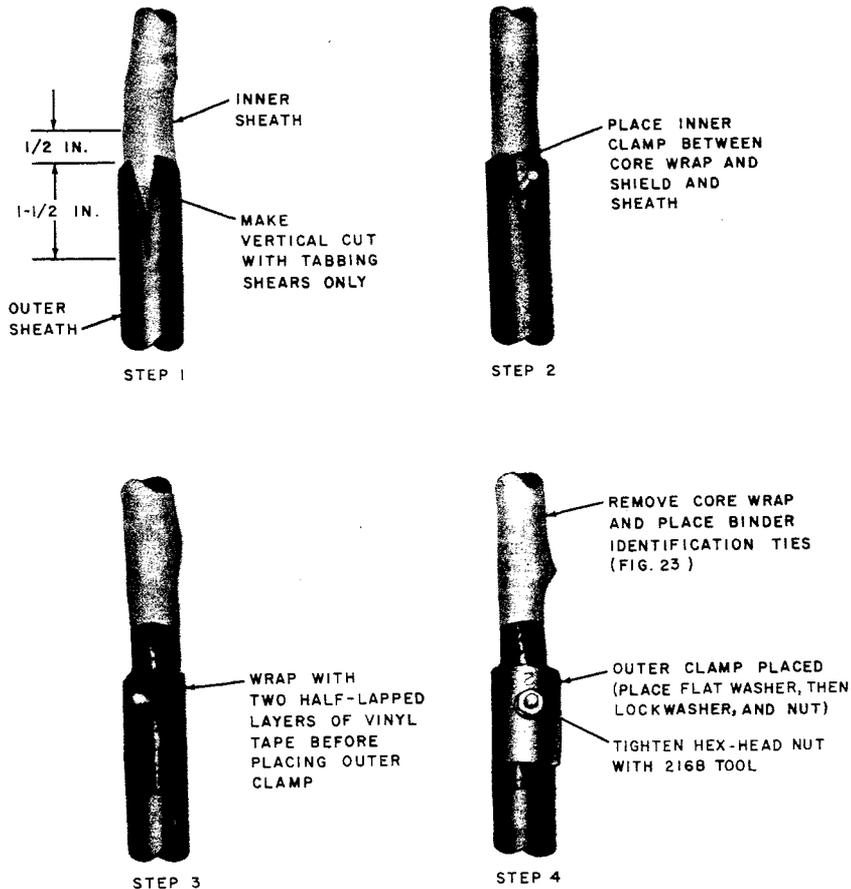
- (3) Score the circumference of the inner sheath 1/2-inch from the butt of the outer sheath. Remove the inner sheath (Fig. 22). Install the bond clamp as illustrated in Fig. 22.

Note: In corrosive areas install the bond clamp as illustrated in Fig. 20.

- 7.03** The cable is installed in the closure as outlined in 6.06 and Fig. 21.

8. SPLICING

- 8.01** After the core wrapper has been removed from the cable, before splicing the binder groups, approximately 4 inches above the ground bracket place binder group identification ties around each binder group. (The binder group identification tie is a pair of PIC conductors of the same colors as the binders). Select from each cable the first binder group (25 pairs) to be spliced. Secure the



NOTES:

1. IN CORROSION AREAS INSTALL CLAMP AS ILLUSTRATED IN FIG. 20.
2. FIG. 21 ILLUSTRATES THE CABLE INSTALLED IN CLOSURE.

TPA 553060

Fig. 22—Installing Bond Clamp—PAP or PASP Sheath Cable

cut ends of each group to prevent splitting of the pairs. Place the group over the top splice support and tie in place. The pairs are cut 2 inches above the ground bracket and spliced with B Wire

Connectors as outlined in Section 632-205-201. Fig. 23 illustrates the first binder group spliced.

Note: At control or access points the binder group identification ties are placed as specified on the detail plan.

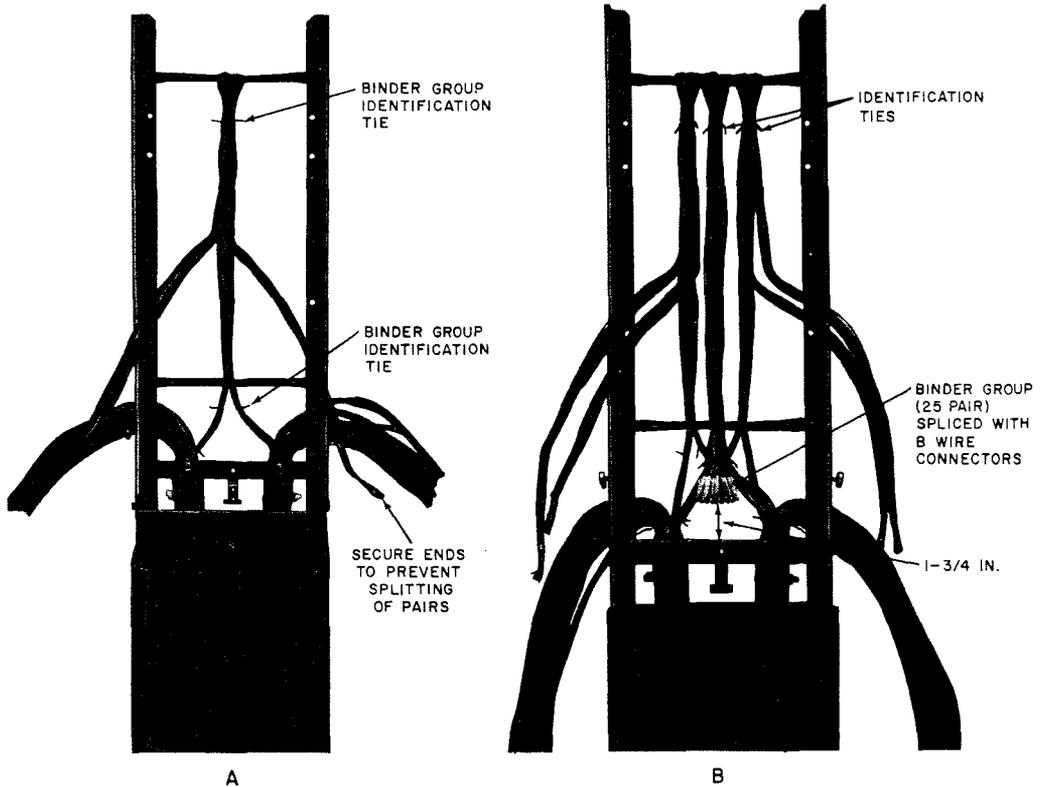


Fig. 23—Completed Binder Group (25 Pairs)

8.03 The first row of B Wire Connectors should be 1-3/4 inches above the ground bracket.

Each succeeding row should be separated by 1/2 inch. Fig. 24 illustrates a completed splice.

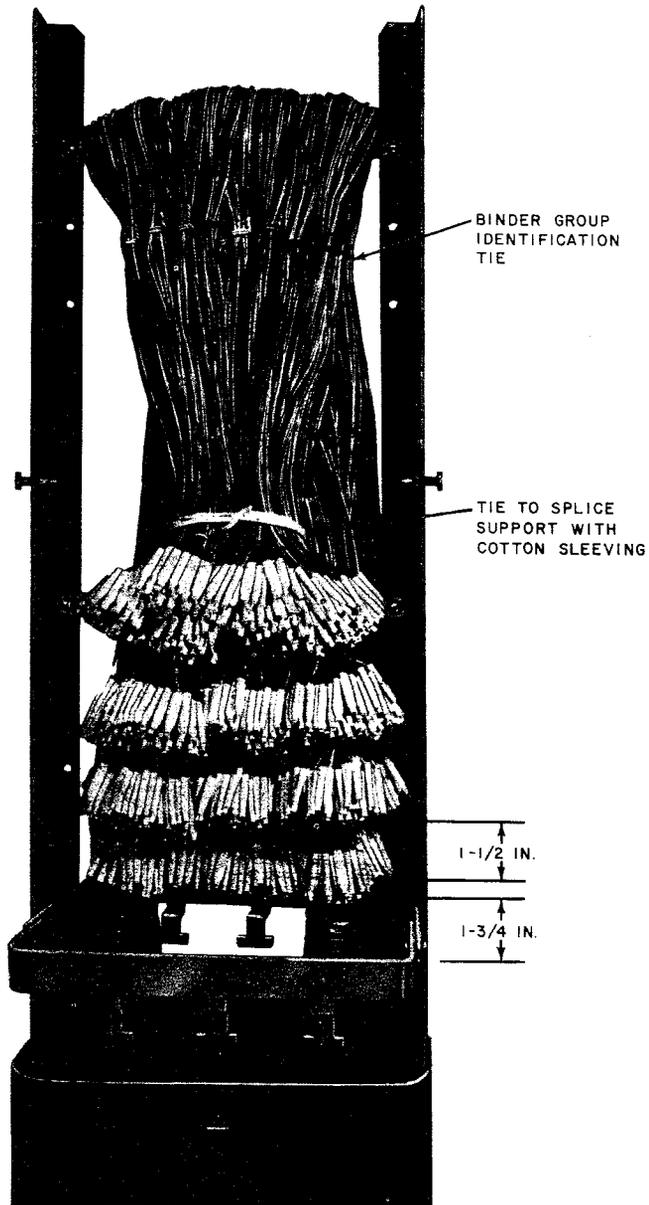


Fig. 24—Completed Splice

9. TERMINATING SERVICE WIRE

9.01 Service wires can be terminated in LD-type closures at splice points only (1.06).

9.02 The bracket assembly is installed on the ground bracket with the nuts and bolts provided. The plastic clips and AT-7796X Connector are faced to the inside of the closure (Fig. 25).

9.03 Remove all unnecessary slack from the service wire. Mark the sheath of the service wire 1/4 inch below the AT-7796X Connector. Prepare the B Service Wire as illustrated in Fig. 26.

9.04 To bond the shield of the service wire to the closure it is not necessary to remove the screw from the AT-7796X Connector. Place the metallic shield of the service wire in the connector as illustrated in Fig. 27.

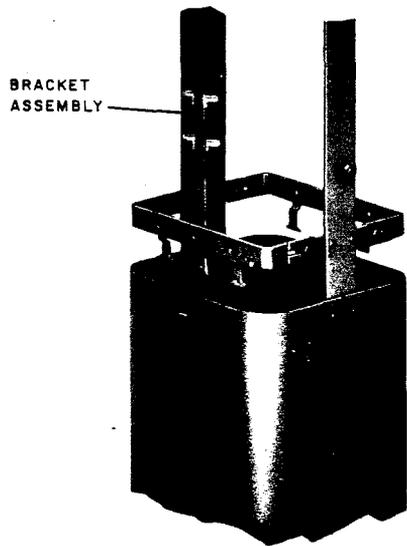


Fig. 25—Bracket Assembly Installed

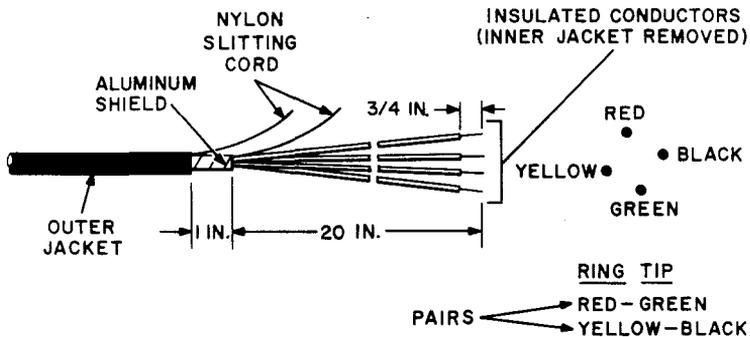


Fig. 26—Preparation of B Service Wire

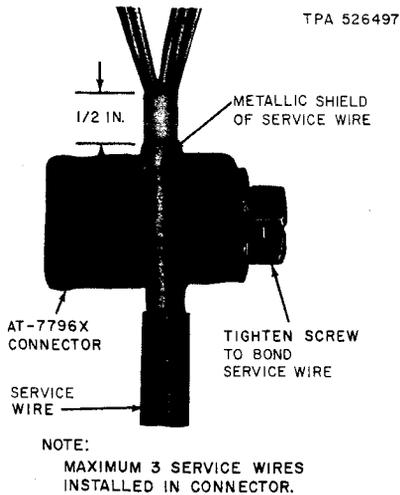


Fig. 27—Installing Service Wire in AT-7796X Connector

9.05 Place the screw of the AT-7796X Connector in the proper slot of the bracket assembly and tighten securely. Run the pair of wires from the service wire up and then down through the plastic clips. Run the cable pair through the same plastic clips. Cut the cable pair and service wire pair even. Connect the cable pair and service wire pair with B Wire Connectors (Fig. 28).

Note: At multiple plant locations, bridge the service wire to the cable pair at the center of the loop to obtain maximum length of both cable pair ends. At dedicated plant locations, cut the cable pair away from the

central office. Twist the ends of the cut-off pair together to prevent loss of identification of the pair.

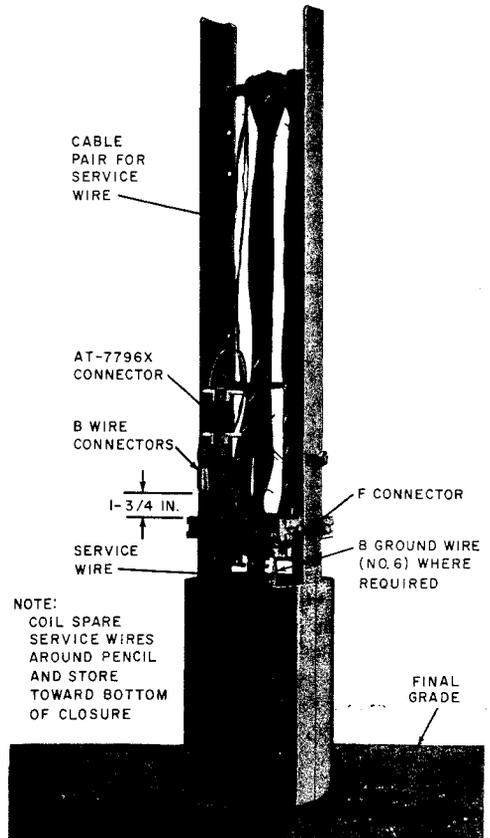


Fig. 28—Service Wire Installed

10. LOADING

10.01 Figure 29 illustrates a 701-type load coil case placed in an LD-type cable closure. A maximum of two 701-type load coil cases can be placed in the LD6/42 Cable Closure and a maximum of four 701-type load coil cases can be placed in the LD10/42 Cable Closure.

Note: Do not fill the interior of the closure with crushed stone, gravel, or locally approved equivalent until the load coil cases have been placed.

10.02 When required, 702- or 703-type load coil cases can be used for loading. (Section 643-200-201 describes these load coil cases.) These cases are buried in the trench with the cable. The stub from the load coil case is extended into the closure and installed in the same manner as dual sheath cables (Part 7).



When 702- or 703-type load coil cases are used to load cable pairs, do not exceed the maximum size cable diameters (1.05) or maximum number of pairs (Table A) that can be installed and spliced in each type of LD closure.

10.03 Section 643-700-201 describes the method of identifying and splicing the *IN* and *OUT* pairs in the stub of the load coil cases. The pairs are connected with B Wire Connectors. Place binder group identification ties on the *IN* and *OUT* binder groups for easy identification of the loaded pairs.

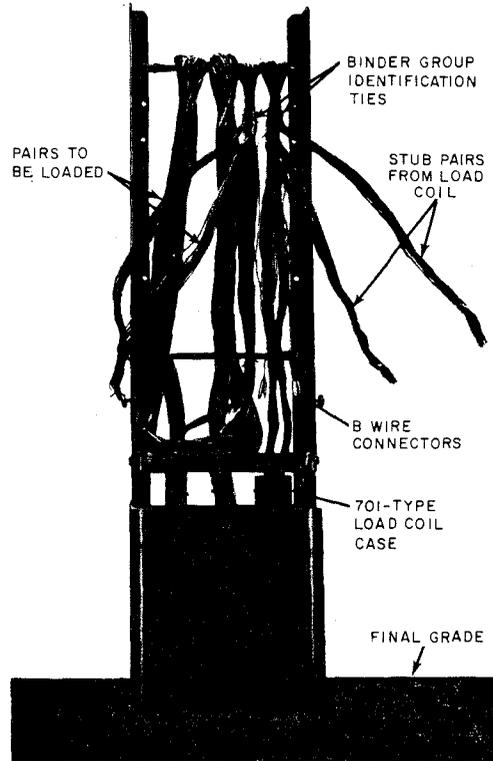


Fig. 29—Load Coil Case Placed

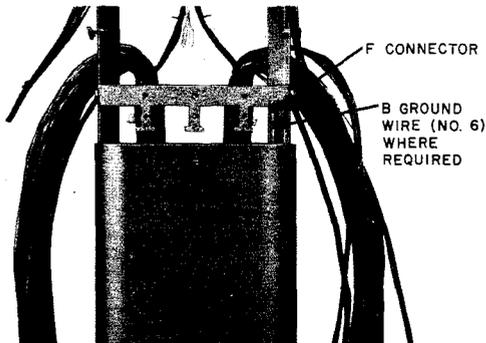
11. BONDING TO POWER GROUND

11.01 When indicated on the detail plan, the ground bracket of the closure is bonded to the power company ground by means of a continuous B Ground Wire (No. 6). Terminate the B Ground Wire in an F Connector installed on the ground bracket (Fig. 30). The B Ground Wire is bonded to the power company ground as covered in local instructions.

12. CLOSING COMPLETED SPLICE

12.01 Install the back and front cover on the base. Tighten the locking bolts with a 216B Tool. Fig. 31 illustrates a completed installation.

12.02 The F Warning Decal is installed at the factory. When a higher degree of visibility is desired, G Warning Decals are placed on the top and sides of the closure.



NOTE:
TERMINATE GROUND WIRE
TO POWER COMPANY GROUND
AS PER LOCAL INSTRUCTIONS.

Fig. 30—B Ground Wire Bonded to Closure

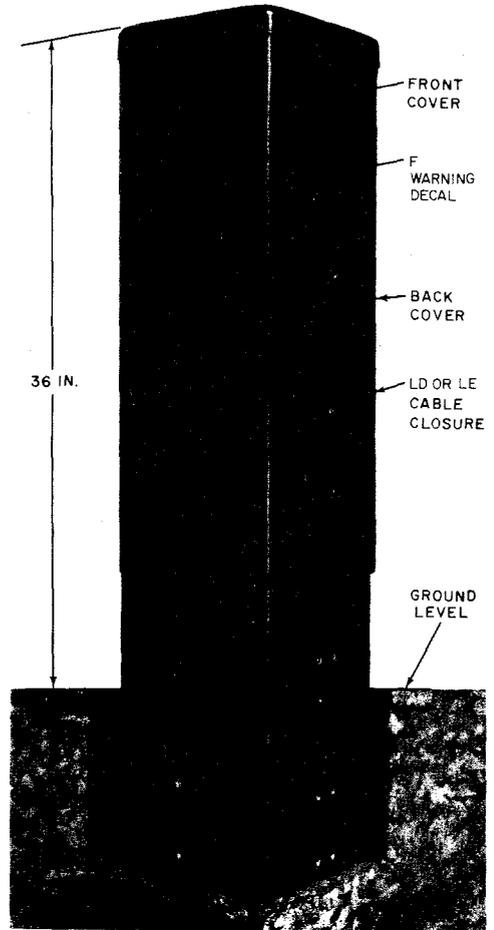


Fig. 31—Completed Installation