UP-1254 AND LG-10/43 CABLE CLOSURES
DESCRIPTION AND INSTALLATION

CONTENTS PAGE

1. GENERAL

1.01 This section covers the description, use, and installation of the UP-1254 and LG-10/43 cable closures. These pedestal type cable closures are used with nonpressurized PIC cables in buried distribution systems.

1.02 This section is reissued to include:

- Precautions for terminating plastic-insulated conductors on 66-type connecting blocks
- Change in design of locking mechanism, ground bracket assembly, top cross-member, and base panel on UP-1254 cable closure
- Handling, cleaning, and terminating waterproof cables
- Using 710-type wire connectors for splices in LG-10/43 cable closure.

Since this is a general revision arrows ordinarily used to indicate changes have been omitted.

1.03 The cable closures are designed for use as a hard wired facility, installed between feeder and distribution cables to provide flexibility through cross-connections.

1.04 The UP-1254 cable closure and the LG-10/43 cable closure provide facilities for terminating 1200 and 400 cable pairs, respectively, of 19-, 22-, 24-, or 26-gauge plastic-insulated copper conductors as discussed in Part 2.

1.05 The cable closures should be located in accordance with the engineering plan. Acceptable locations should be unobtrusive, acceptable to the property owners, and reasonably protected from damage by motor vehicles and other machinery. They should be located at least 1 foot from metallic fences or similar lightning attractions. Also, due to the frequency of visits by the installation forces, the cable closures should be located where they are readily accessible.

1.06 Section 631-600-225 covers the description and use of the UP-1248 cable closure.

NOTICE
Not for use or disclosure outside the
Bell System except under written agreement

2. PRECAUTIONS

2.01 The 66-type connecting blocks are used for terminating 22-, 24-gauge PIC, PVC, PE-PVC and HDPE without removing the insulation; ***26-gauge conductors may be terminated on the 66M1-50 connecting block when used in conjunction with the 89B bracket to provide mechanical protection to cable conductors and the terminations are permanent. Smaller gauge wire cannot be terminated on a terminal that has been used previously to terminate a larger gauge conductor.***

2.02 ***The 66-type connecting blocks are not recommended for terminating 26-gauge waterproof cable conductors or 24-gauge waterproof cable conductors at temperatures below 30 F.*** If these condition cannot be met it is recommended that the waterproof cable be stubbed out with air core PIC utilizing the waterproof splicing system as outlined in Section 632-410-204. The 22-gauge waterproof cable conductors can be terminated on 66-type connecting blocks without any restrictions.

2.03 ***The 66-type connecting blocks are not recommended for terminating conductors in air core or waterproof aluminum conductor cables.***

2.04 Where the buried feeder or distribution cable is not waterproof, a moisture plug is recommended. (See Part 9.)

2.05 In terminating copper conductor, waterproof cable on 66-type connecting blocks, the cable conductors are widely distributed and exposed. Removal of the compound is recommended as described in Part 8.

3. DESCRIPTION

UP-1254 Cable Closure

3.01 The UP-1254 cable closure (Fig. 1 and 2) consists of a top, hinged front and back doors equipped with locks, ground bracket assembly, mounting hardware (nylon coated), base, and two anchor posts. (Iron mounting angles are available for local option where preference is to slab mount the UP-1254 cable closure. These iron mounting angles may be purchased on special order.) An F warning decal is placed on the exterior surface and an instructional decal is placed on the interior surface by the manufacturer. The exposed metal parts are galvanized and have a grey-green baked enamel finish. The internal metal parts are hot dip galvanized. Machine screws are provided for mounting the 89B brackets.

3.02 The top and ground bracket assembly are removable for easy access.

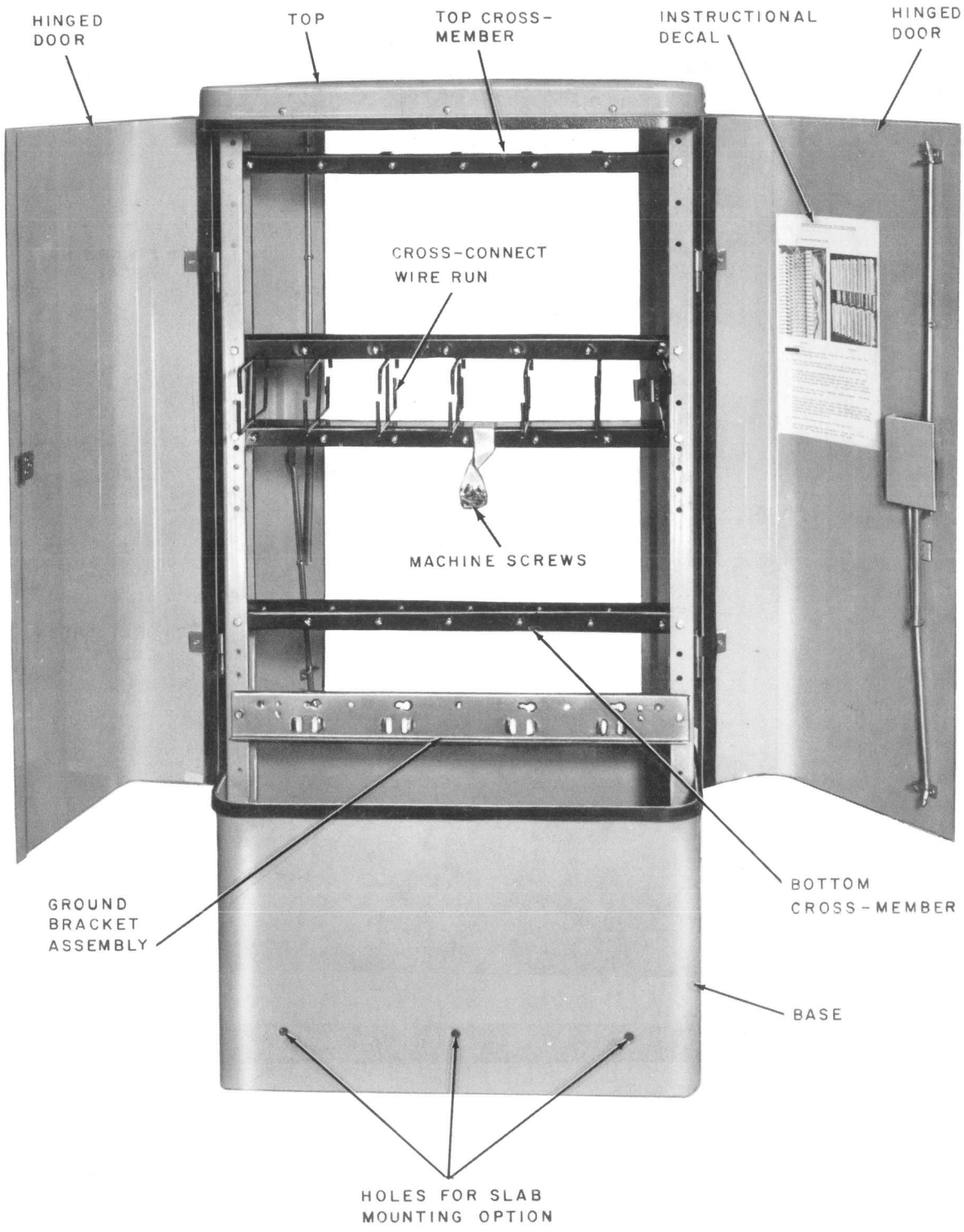

Fig. 1—UP-1254 Cable Closure

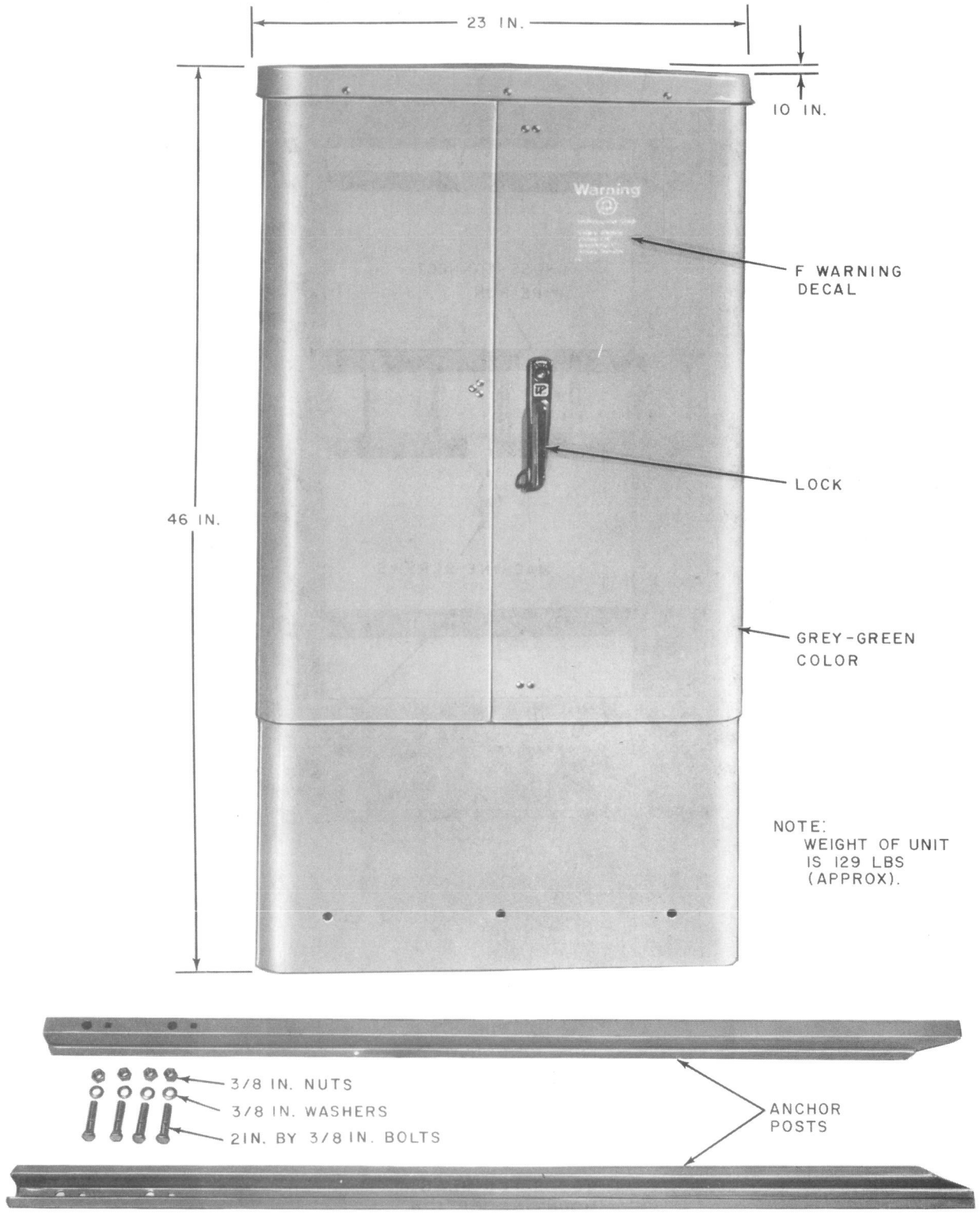

Fig. 2—Dimensions and Weight of UP-1254 Cable Closure

LG-10/43 Cable Closure

3.03 The LG-10/43 cable closure (Fig. 3) consists of a front and back cover, base, two anchor posts, backboard, and splice support bracket. The exposed metal parts are galvanized and have a grey-green baked enamel finish. The internal parts are hot dip galvanized. An F warning decal is placed on the exterior surface of the front cover by the manufacturer.

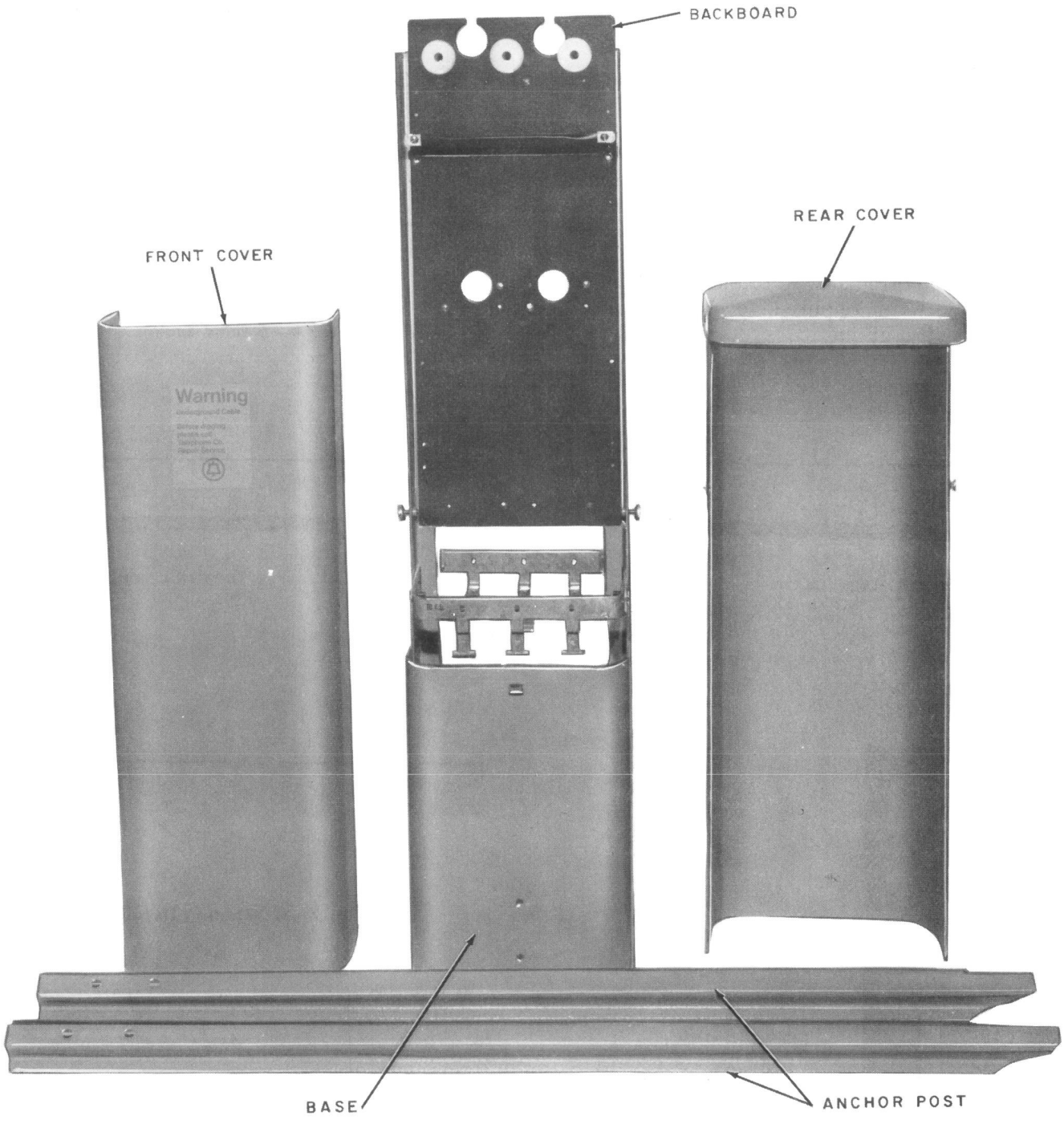

Fig. 3—LG-10/43 Cable Closure

3.04 Parts associated with the cable closures, which must be ordered separately, are as follows:

(a) ***D Bond Clamp (Fig. 4) and Bond Strap (Fig. 5):*** Used to bond the metallic shield of PIC cables to the ground bracket of the closure.

(b) ***B Measuring Tape (Fig. 6):*** Used to determine the diameter of the cable.

(c) ***G Warning Decal (Fig. 7):*** 10 inch by 1 inch strip of yellow plastic. Used in areas where a high degree of visibility is required.

(d) ***F Connector:*** Used to bond B ground wire or No. 6 ground wire to the ground bracket assembly, when required, to bond closures to power neutral ground.

(e) ***B Cable Tie (Fig. 8):*** Used to secure the cables to the ground bracket assembly.

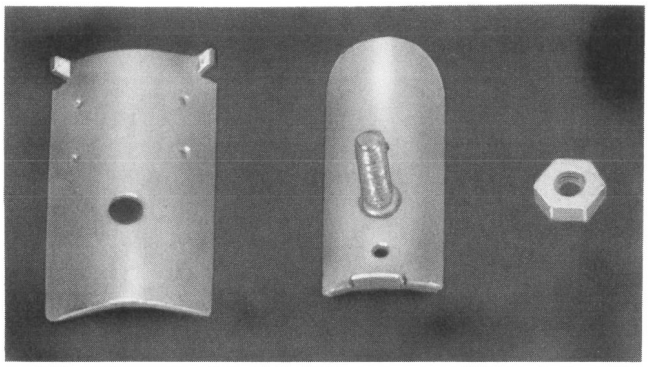

Fig. 4—D Bond Clamp

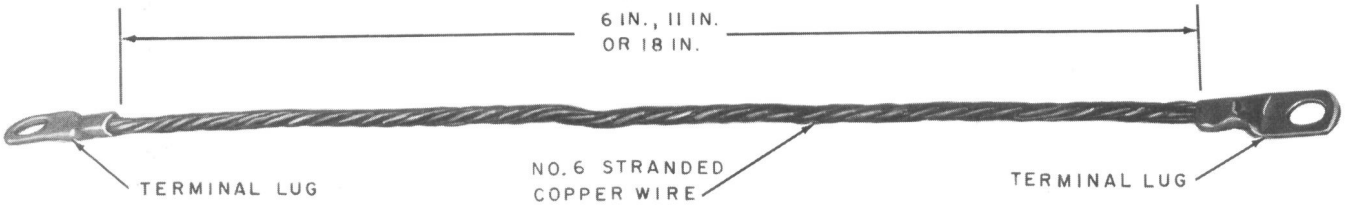

Fig. 5—Bond Strap

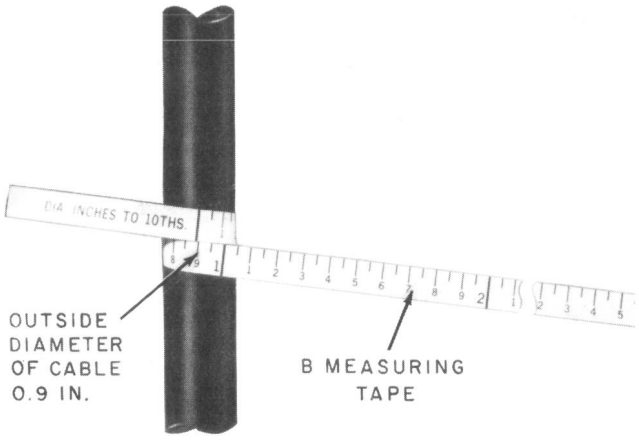

Fig. 6—B Measuring Tape

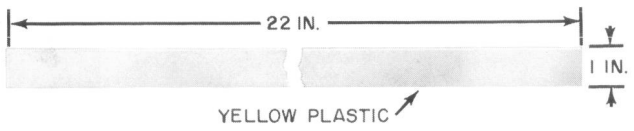

Fig. 7—G Warning Decal

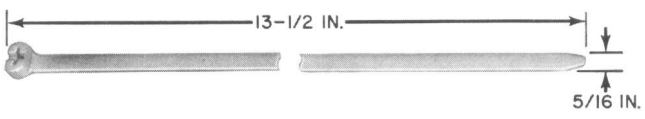

Fig. 8—B Cable Tie

4. ASSOCIATED HARDWARE

4.01 The following hardware used in conjunction with the cable closures must be ordered separately, as required:

(a) ***89B Bracket (Fig. 9):*** Used for mounting the 66M1-50 connecting blocks. (Machine screws for mounting the 89B brackets are provided with the closure.)

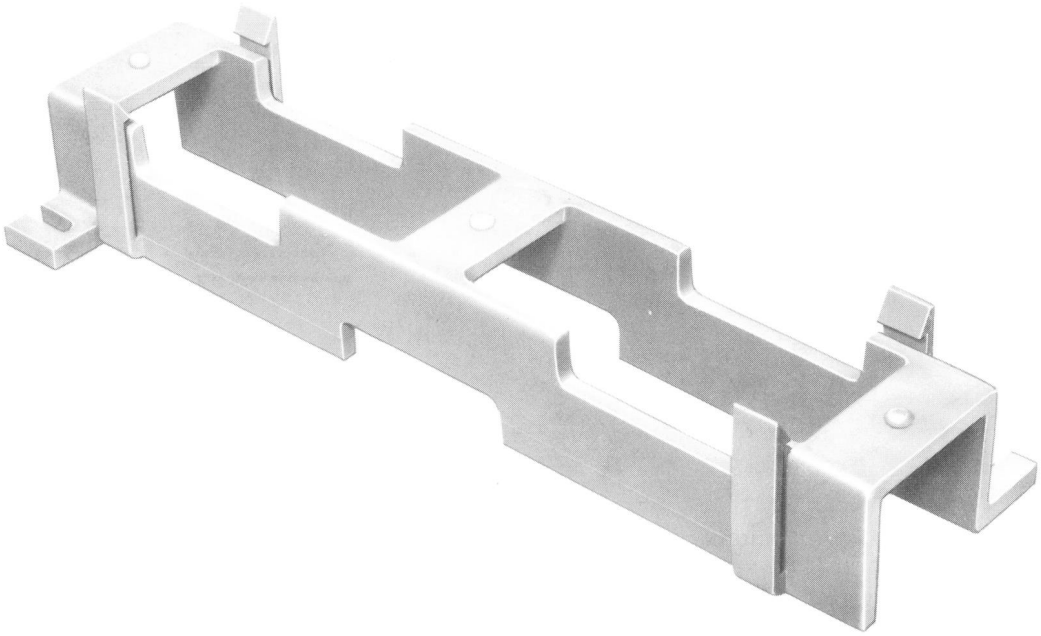

Fig. 9—89B Bracket

(b) ***66M1-50 Connecting Block (Fig. 10):*** Used to terminate cable pairs and cross-connect wires. It will accommodate 50 cable pairs and 50 pairs of cross-connect wire.

(c) ***714B Tool (Fig. 11):*** Used to terminate cable pairs or cross-connect wires on the 66M1-50 connecting block. ***The 714B tool must be used to terminate wires.***

(d) ***724A Tool (Fig. 12):*** Used to disconnect cross-connect wires or cable pairs from the connectors of the 66M1-50 connecting block.

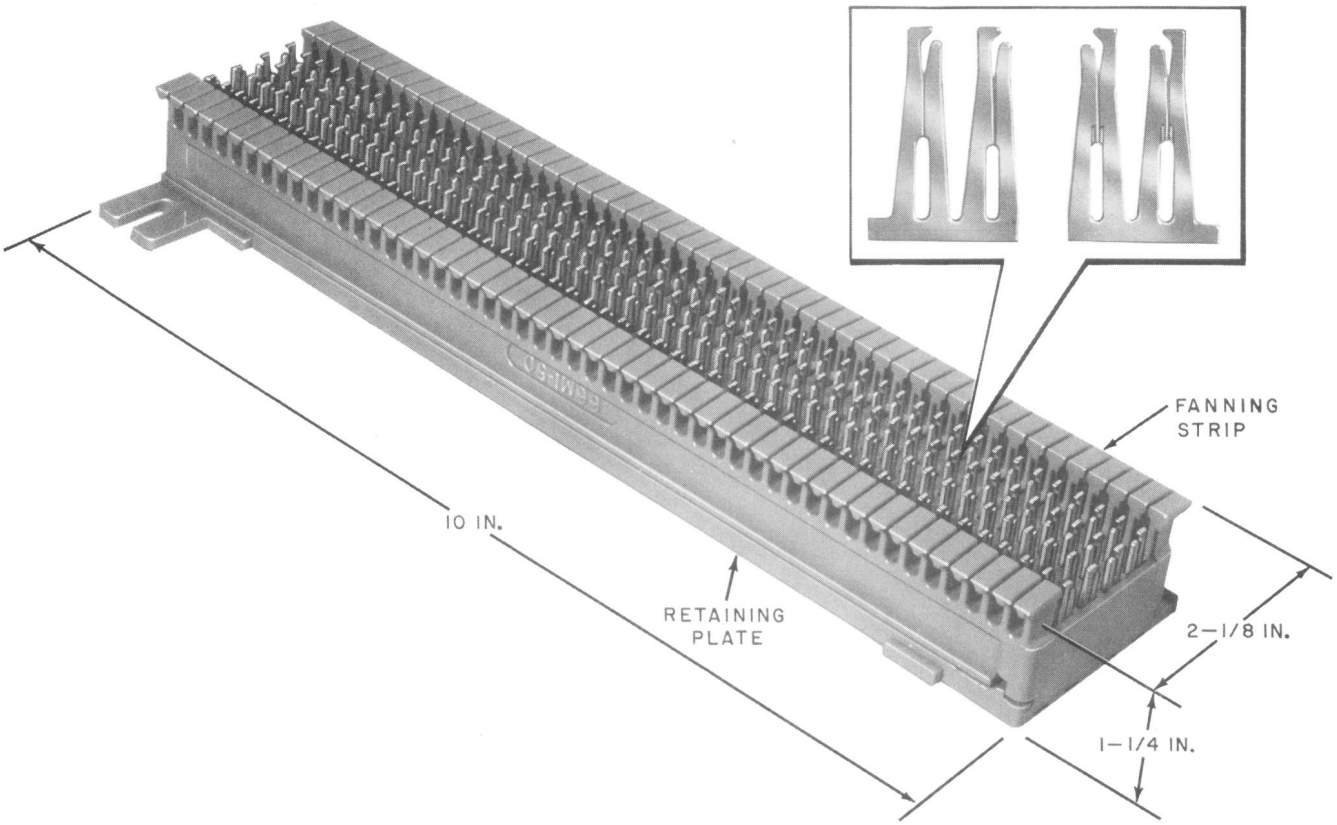

Fig. 10—66M1-50 Connecting Block

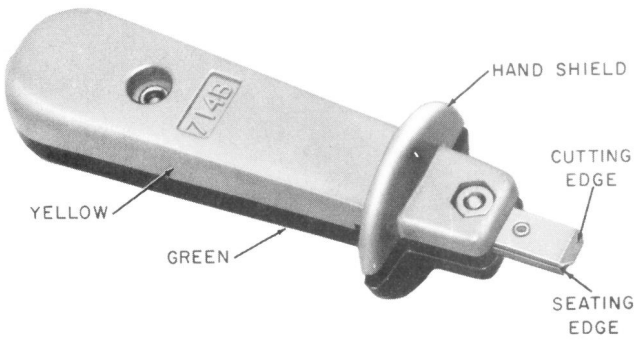

Fig. 11—714B Tool

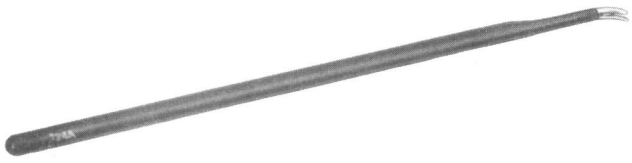

Fig. 12—724A Tool

5. USE

5.01 The cable closures are used as hard wired interface between feeder (IN) and distribution (OUT) cable pairs. A maximum of 1200 cable pairs can be terminated in the UP-1254 cable closure and 400 pairs in the LG-10/43 cable closure.

5.02 Splices shall not be made in the UP-1254 cable closure; however, a splice up to 200 pairs can be made in the back of LG-10/43 cable closure. This will reduce the terminating capacity to 200 pairs.

5.03 All cables must be cut. There are no provisions for terminating loop cables in the UP-1254 cable closure.

5.04 All cable pairs within the UP-1254 cable closure must be terminated on the 66M1-50 connecting blocks.

5.05 The ratio of cable feeder pairs to distribution cable pairs will be at the option of the engineer and pairs to be terminated will be specified on the engineering plan.

5.06 The arrangement of cable pairs for the UP-1254 cable closure is as follows:

(a) ***Feeder Pairs:*** The top 12 positions. Assign the cable pairs, starting at the top left position, progressing continuously from left to right, front to back.

(b) ***Distribution Pairs:*** The bottom 12 positions. Assign the cable pairs, starting at the bottom left position, progressing continuously from left to right, front to back.

(c) Where the number of feeder pairs exceed 600, the first 600 pairs are assigned to the top 12 positions and the remainder of the pairs are assigned to the bottom positions, starting at the bottom left and progressing continously from left to right.

(d) Figure 13 shows the feeder and distribution cable terminating positions within the closure.

5.07 The arrangement of cable pairs for the LG-10/43 cable closure is as follows.

(a) ***Feeder Pairs:*** On the side of the closure stenciled TO CO when the number of feeder pairs exceed 200, the remainder of pairs are assigned to the opposite side of the backboard starting at the top left and progressing continuously from top to bottom, left to right.

(b) ***Distribution Pairs:*** On the side of the backboard opposite the feeder pairs.

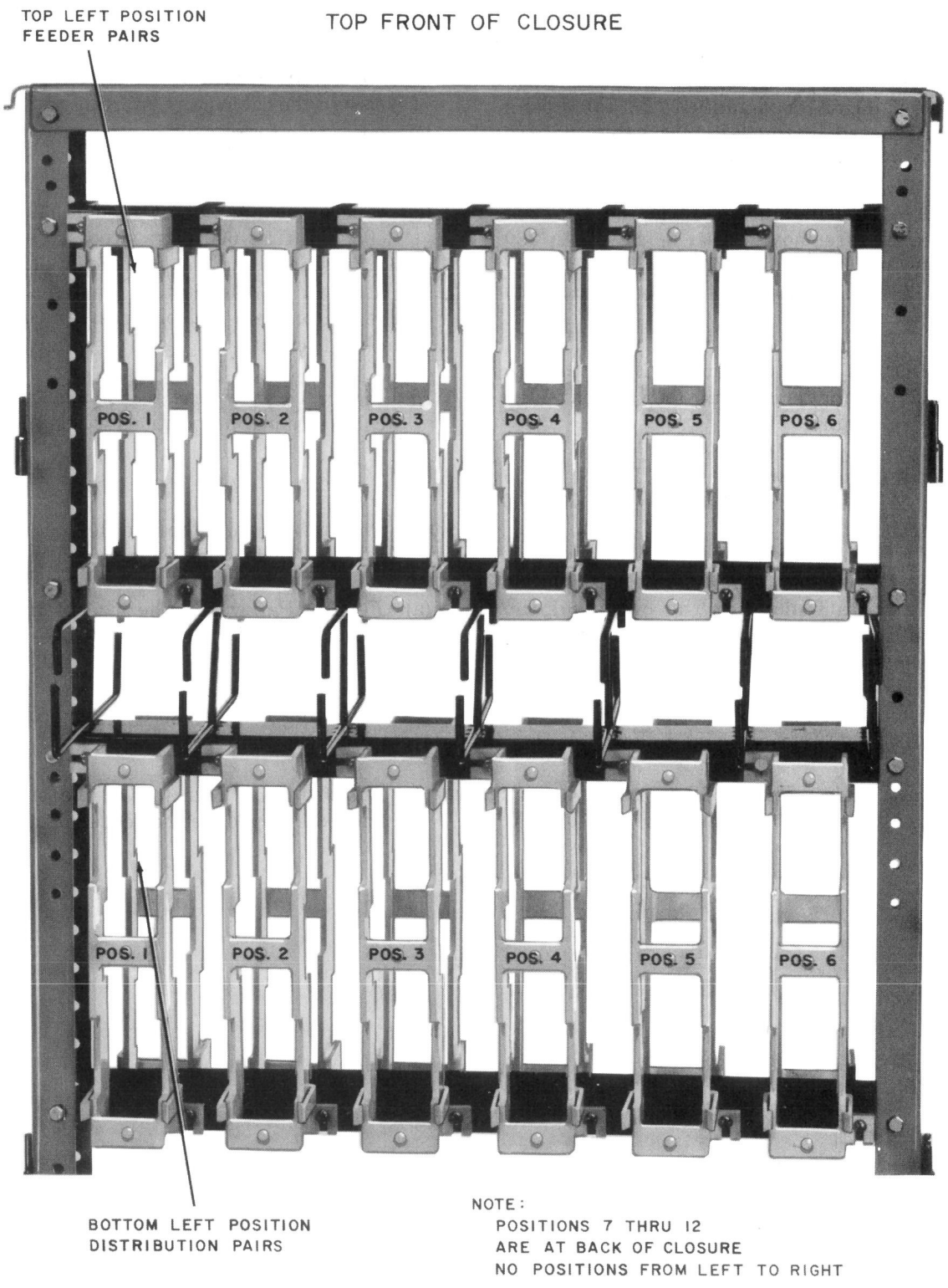

Fig. 13—Feeder and Distribution Cable Terminating Positions (UP-1254)

6. PLACING CABLE AND SHEATH OPENING

6.01 The length of cable ends required above final grade is based on 6 inches of the closure placed below groundline. If the closure is placed at any other depth, the measurements will have to be adjusted accordingly.

6.02 The cut ends placed above grade line, by the placing forces, and the sheath opening are shown in Fig. 14.

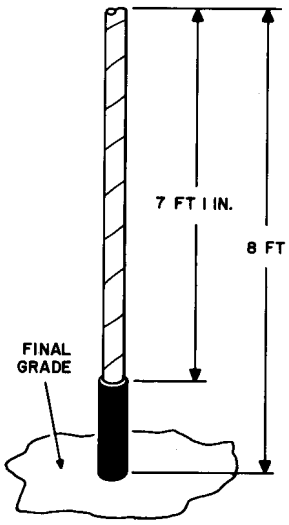

Fig. 14—Cut End Required Above Grade

7. PLACING CLOSURE

7.01 Being careful not to damage the cables, excavate a hole to the dimensions illustrated in Fig. 15 or 16.

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

7.02 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.

7.03 There are four 2-inch by 3/8-inch hex head bolts provided with each closure. These bolts are used to mount the anchor posts to 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. The top of the anchor post should be placed approximately one inch below final grade.

7.04 The closure should be placed with the base centered in the excavation and the anchor post perpendicular to the cable path. The cable enters the closure through the base. (When required, the top, hinged doors, and ground bracket assembly can be removed from the closure.) Fill the base to about one inch from the top with crushed stone, gravel, or approved equivalent (Fig. 17). This helps to eliminate rodent damage and to reduce moisture condensation inside the closures. Where cables enter closures by means of conduit (lateral), plug the conduit with a rubber conduit plug.

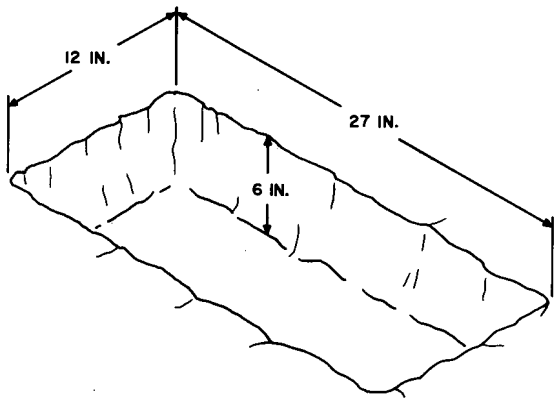

Fig. 15—Excavation Dimensions (UP-1254)

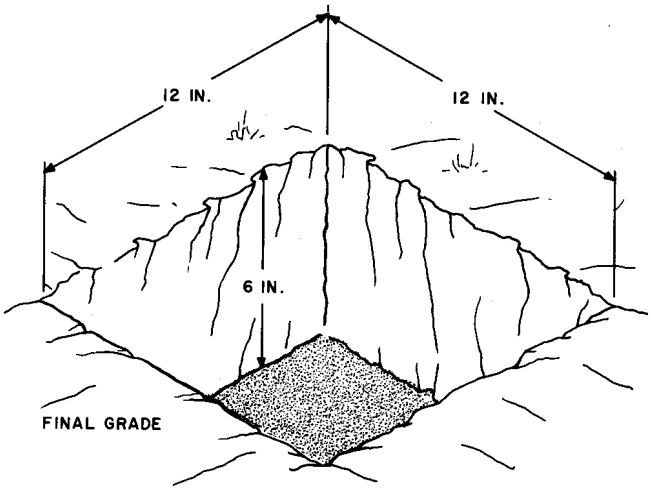

Fig. 16—Excavation Dimensions (LG-10/43)

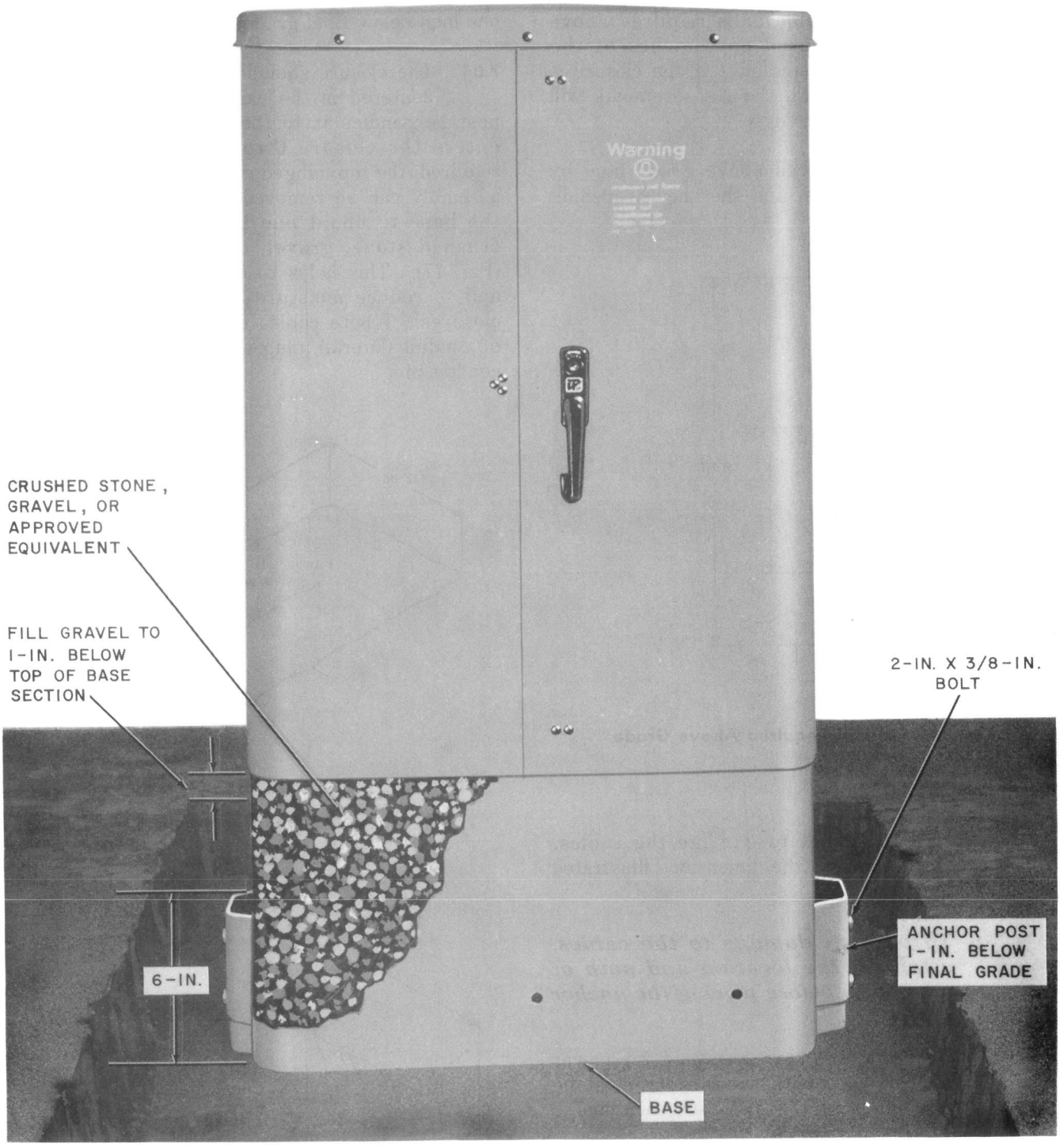

Fig. 17—Closure Placed (UP-1254)

7.05 After the closure has been placed, carefully restore the earth outside the base and tamp firmly.

The gravel, crushed stone, etc, should not be placed in the closure until after the cables have been bonded to the ground bracket assembly.

7.06 Where required, a locally fabricated reinforced concrete apron is placed at the closure location. After the apron is placed, grade the area, around the apron upward toward the apron.

8. HANDLING AND CLEANING WATERPROOF CABLE

A. Sheath Removal

8.01 The sheath is easily removed when warm. In cold weather use the precautions and procedures listed in 8.02 and 8.03 to facilitate sheath removal. (For dimensions, see Fig. 18 and Part 9.)

8.02 ***Precautions:*** Follow the standard precautions for using a propane or acetylene torch. In all cases with open flame torches a diffuser or spreader nozzle should be used to spread the flame over a large area of the cable sheath. ***Do not concentrate the flame on one spot.*** There are three stages of heating indicated by the appearance of the jacket:

(a) ***Glistening:*** The jacket is definitely black and clean looking.

(b) ***Wet Black Paint:*** The jacket looks like wet, black paint and contraction into corrugations or expansion occurs.

(c) ***Charring:*** The jacket returns to a dull black with crazing and blistering.

8.03 Before heating the sheath, wipe off all dirt and residue. Warm the sheath area that is to be removed with the torch. Move the flame over the cable until the sheath resembles [8.02(b)] wet, black paint. The sheath is easily removed when warm. No damage will occur to the insulated conductors from this heating procedure. Charring of the sheath [8.02(c)] should be avoided because of the possibility of damage to the conductor insulation.

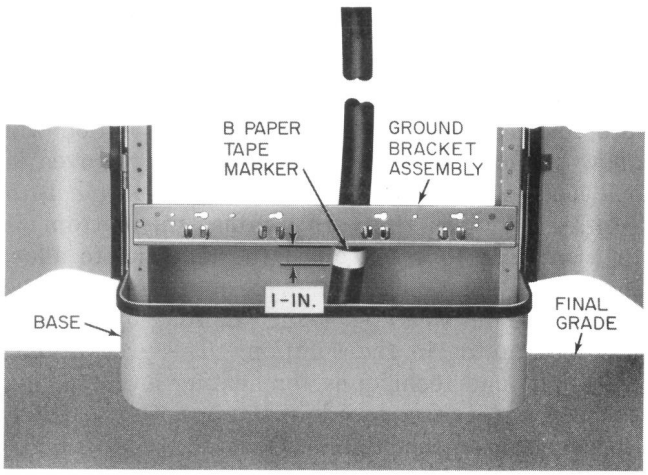

Fig. 18—Marking Cable for Sheath Opening (UP-1254)

B. Cleaning Waterproof Cable

8.04 Before terminating the cable in UP-1254 or LG-10/43 cable closure, remove the filling compound from the conductor. Use an appropriate one of the following techniques.

(a) In most cases when temperature is above 60°F simply wiping the conductors with dry rags is adequate. This method is safe, simple, and usually will remove enough of the filling compound to improve handling.

(b) Where more complete cleaning is necessary, use KS-21446 solvent as follows:

- Above 60°F, unheated solvent is effective.
- Below 60°F, solvent should be heated to be effective.

Warning: Make certain that ventilation is adequate.

8.05 ***Using KS-21446 Solvent at Temperatures Above 60°F:*** The solvent is effective unheated. The cable core can either be directly immersed and then wiped, or wiped with solvent saturated rags. ***Do not remove unit binders.*** For precautions and further details in using KS-21446 solvent, see Section 632-410-204, Splicing Waterproof Cable—General.

8.06 ***Using KS-21446 Solvent at Temperatures Below 60°F:*** Heating the solvent will make it more effective. Place the container as close as possible to the cable and immerse the cable core into the heated solution. The heated solution will allow the core wrap to be immediately removed in one piece after "dunking". ***Do not remove unit binders.*** Press the core against the bottom of the container to break apart the unit and to allow the heated solution to penetrate in and around the units. The units can be cleaned thoroughly in about 2 or 3 minutes in the solution. The precautions, materials, and techniques for heating and applying the solvent are covered in Section 632-410-204, Splicing Waterproof Cable—General.

9. INSTALLATION—SINGLE AND DUAL SHEATH CABLES

9.01 Place the cable against the ground bracket assembly, centered on the hole in the ground bracket assembly where the bond clamp will be installed. Mark the sheath one inch below the ground bracket assembly, and place a B paper tape marker on the sheath (Fig. 18).

9.02 Remove the ground bracket assembly.

9.03 Remove the outer sheath from the paper tape marker to the end of the cable. ***Do not remove the core wrapper.***

9.04 Place the D bond clamp on the cable as outlined in Section 081-852-118.

Proper installation of the bond clamp is vital. It establishes shield continuity across the opening.

9.05 Secure bond strap with the provided 1-inch bolts and nuts ground bracket assembly.

Note: If the cable is not waterproof it is recommended to place a moisture plug as outlined in Section 631-600-305.

DUAL SHEATH CABLES

9.06 The length of cut ends required above grade is outlined in 6.02 and Fig. 14.

9.07 To install dual sheath cable proceed as follows:

(a) Mark the sheath and place the B paper tape markers as outlined in 9.01.

(b) Remove the outer sheath as outlined in 9.03.

(c) Score and remove the inner sheath 3/4-inch from the outer sheath butt.

(d) Install the D bond clamp as outlined in Section 081-852-118.

(e) Install bond strap on D bond clamp and ground bar.

Note: If the cable is not waterproof it is recommended to place a moisture plug as outlined in Section 631-600-305.

10. WIRING ARRANGEMENTS

10.01 Remove the core wrapper from the cable. Do not remove the unit binders.

UP-1254 Cable Closure

10.02 ***Feeder Cable:***

(1) Using vinyl tape, tape the air core cable from the butt to the top cross-member of the closure. (See Note in Fig. 19 for securing waterproof cable.)

(2) Using the machine screws provided, place the 89B brackets in the closure.

(3) Form the cable core under the bottom cross-member and up the side of the closure. Secure the core to the bottom cross-member with C lashed cable support.

(4) Form the cable across the top cross-member. Distribute each 50 pairs in the proper 89B bracket. Secure the cable core to the top cross-member with C lashed cable support.

(5) Remove the unit binders and place binder group identification ties above each 89B bracket.

(6) Figure 19 illustrates the cable placed in the closure.

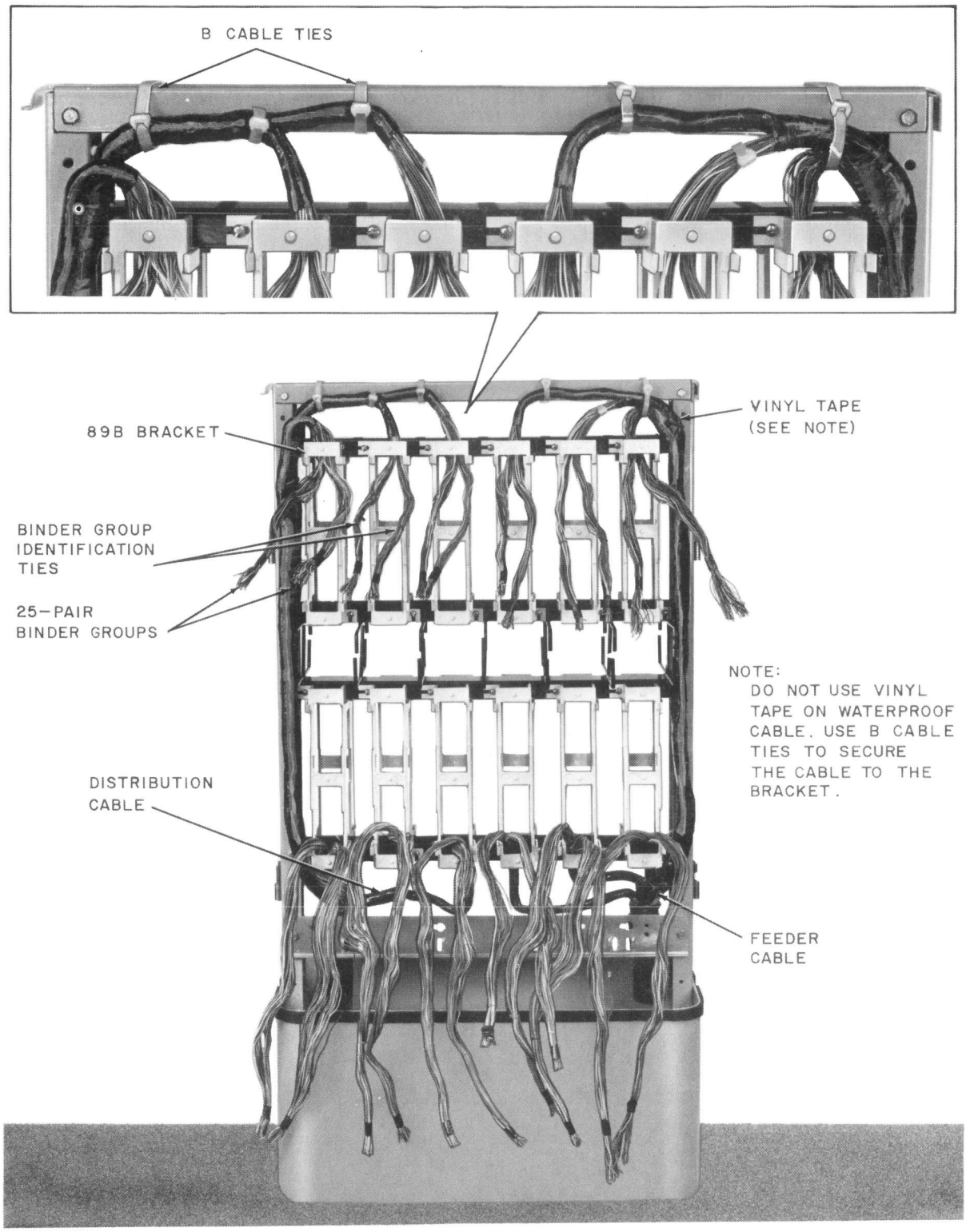

Fig. 19—Feeder Cable Placed (UP-1254)

10.03 ***Distribution Cable:***

(1) Form the cable core under the bottom cross-member.

(2) Distribute each 50 pairs in the proper 89B bracket.

(3) Remove the unit binders and place binder group identification ties below each 89B bracket.

(4) Secure the cable core to the bottom cross-member in the closure.

(5) Figure 19 illustrates the cable placed in the closure.

10.04 Place the appropriate binder groups (25 pairs) in the opening provided in the 89B brackets. ***Place the 66M1-50 connecting blocks on the 89B brackets (Fig. 20) so that vertical slot is at bottom right corner.*** This prevents back plate from releasing during punch-down operation allowing the connector body to slide down, releasing the terminal lug.

10.05 Each 66M1-50 connecting block has four vertical rows of 50 connectors. The extreme left- and right-hand rows are used to terminate

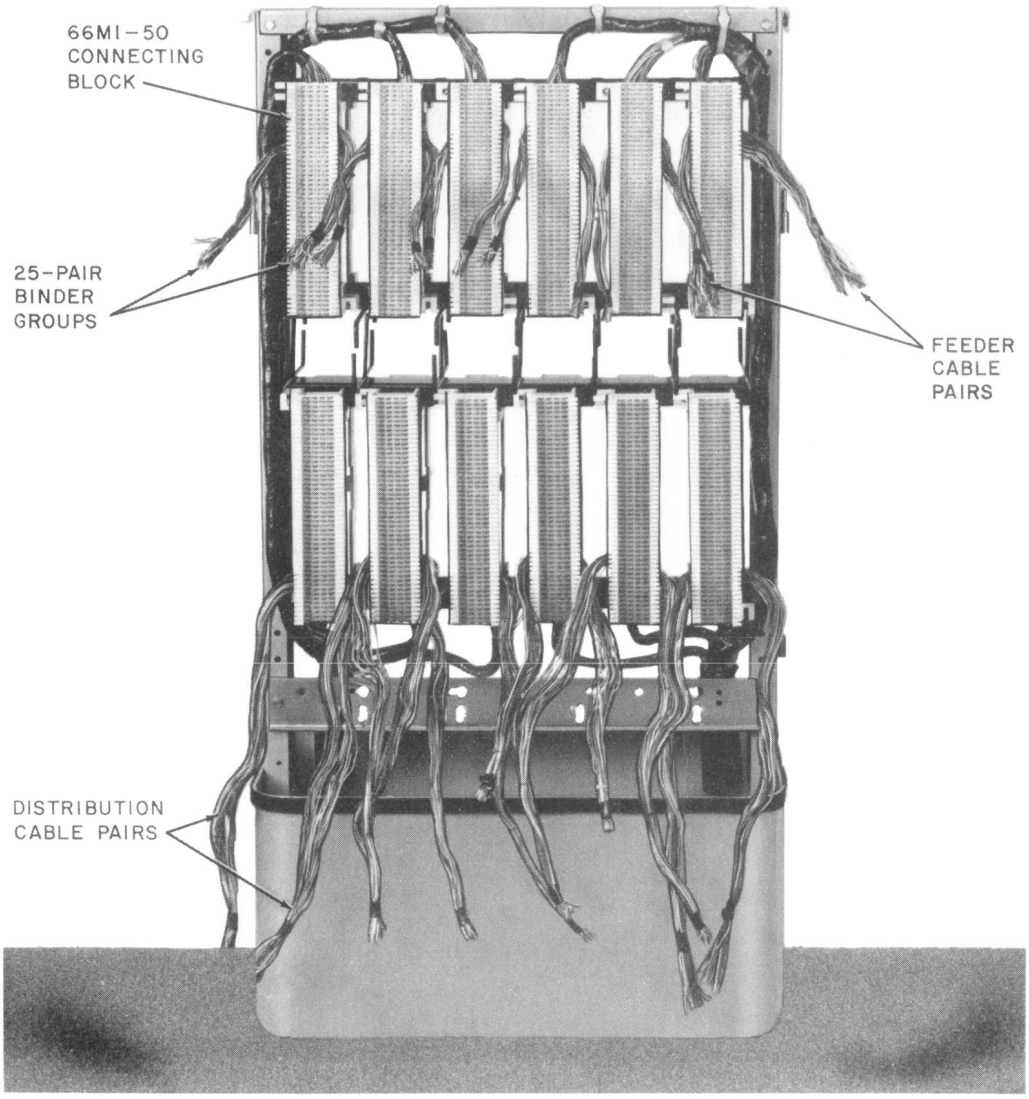

Fig. 20—66M1-50 Connecting Blocks Placed on 89B Brackets (UP-1254)

cable pairs. The two inside rows are used to terminate cross-connect wire.

10.06 Starting at the top of each row, in color code sequence (ie, white-blue, white-orange, white-green, etc) place the conductors in the slots adjacent to their connectors. Using a 714B tool terminate the conductors on the connectors. Figure 21 illustrates the cable pairs terminated on the 66M1-50 connecting blocks.

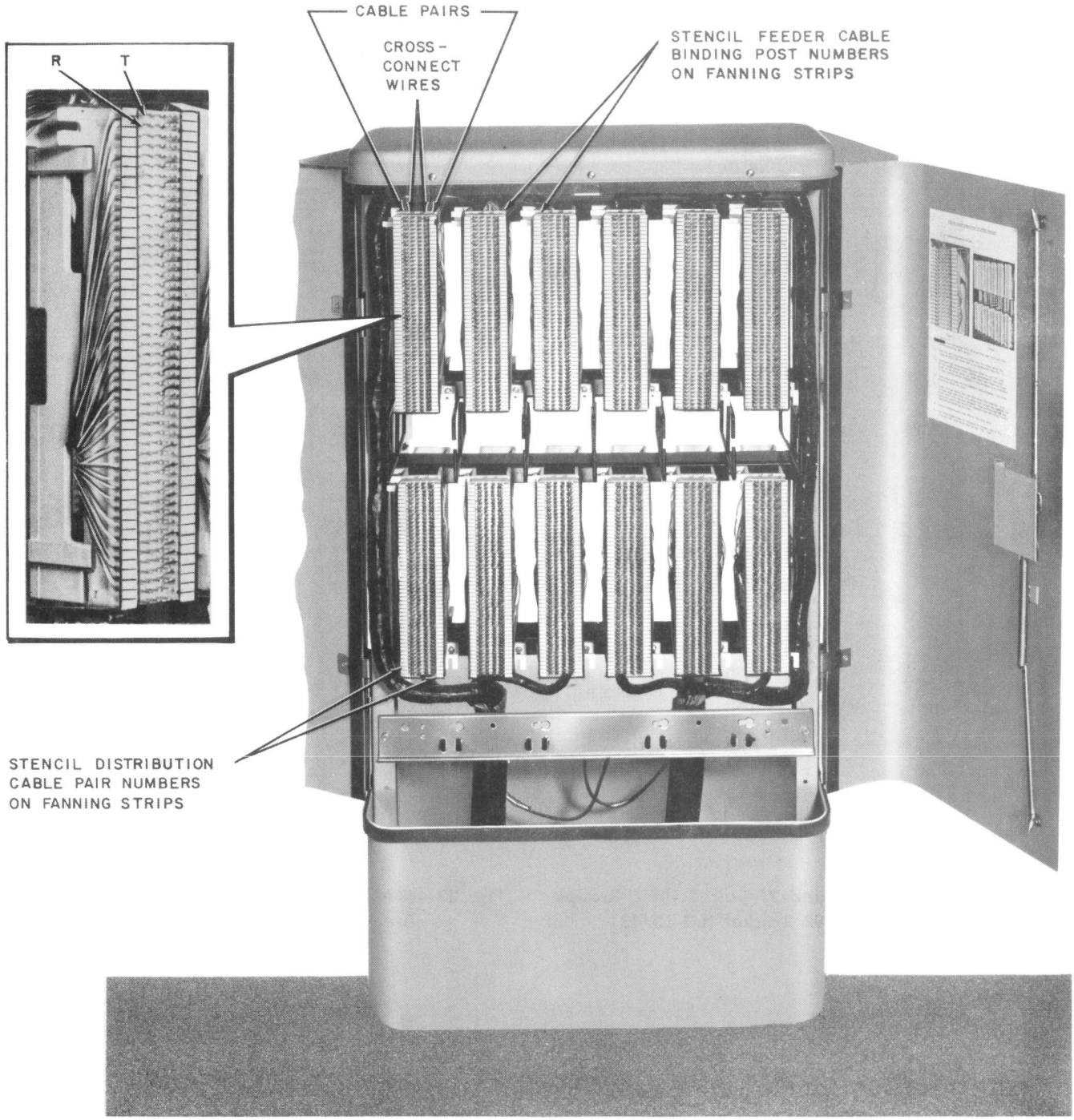

Fig. 21—Cables Terminated on 66M1-50 Connecting Blocks (UP-1254)

LG-10/43 Cable Closure

Feeder Cable

10.07 Remove the unit binders and place binder group identification ties at the butt of the cables as shown in Fig. 22.

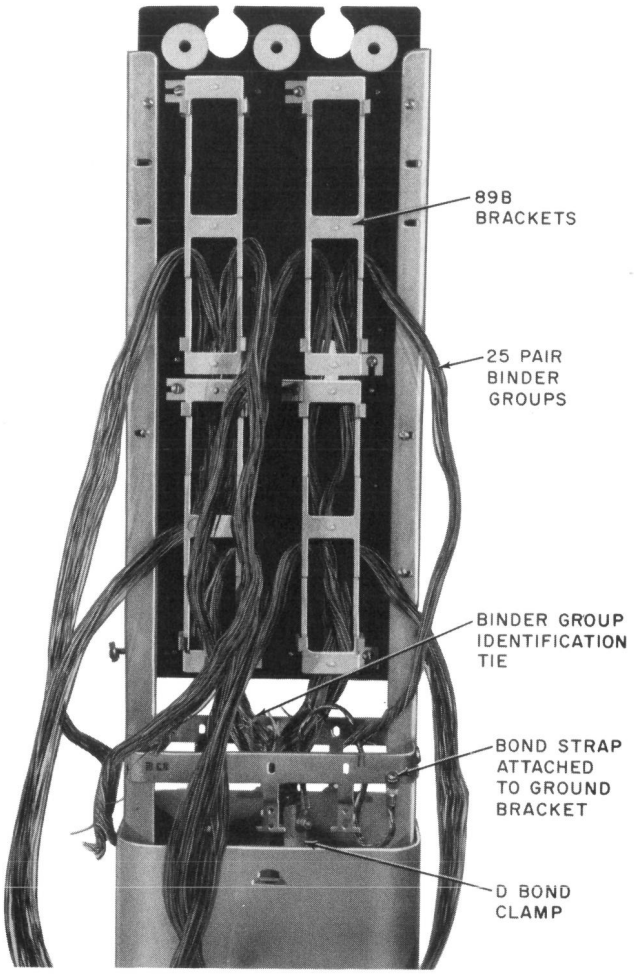

Fig. 22—Cable Prepared and 25-pair Builder Groups Placed Behind 89B Bracket (LG-10/43)

10.08 Using the machine screws provided, place the 89B brackets in the closure.

10.09 Place the 25-pair binder groups behind the 89B brackets, then install the 66M1-50 connecting blocks on the 89B brackets (Fig. 23).

10.10 Terminate the conductors on the connecting blocks as outlined in 10.06. Figure 24 illustrates the cable pairs terminated on the 66M1-50 connecting blocks.

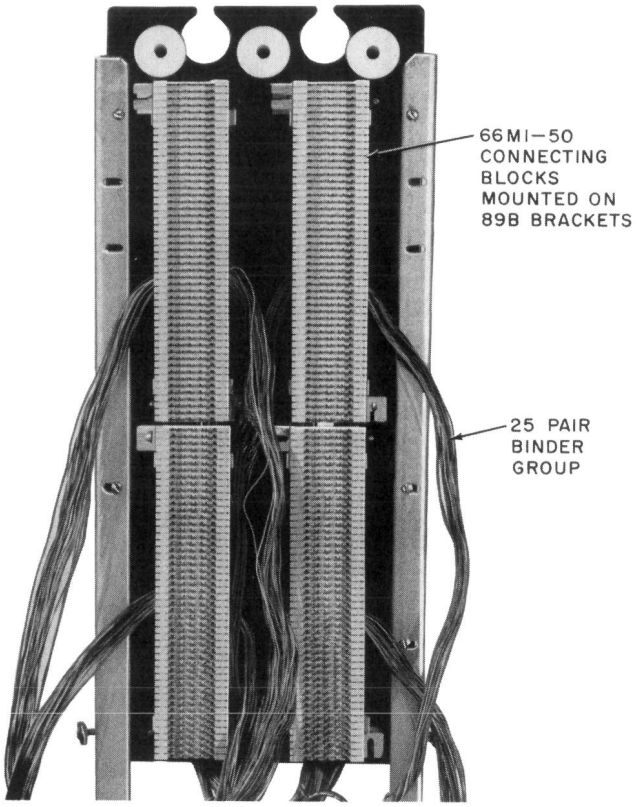

Fig. 23—66M1-50 Connecting Blocks Placed on 89B Brackets (LG-10/43)

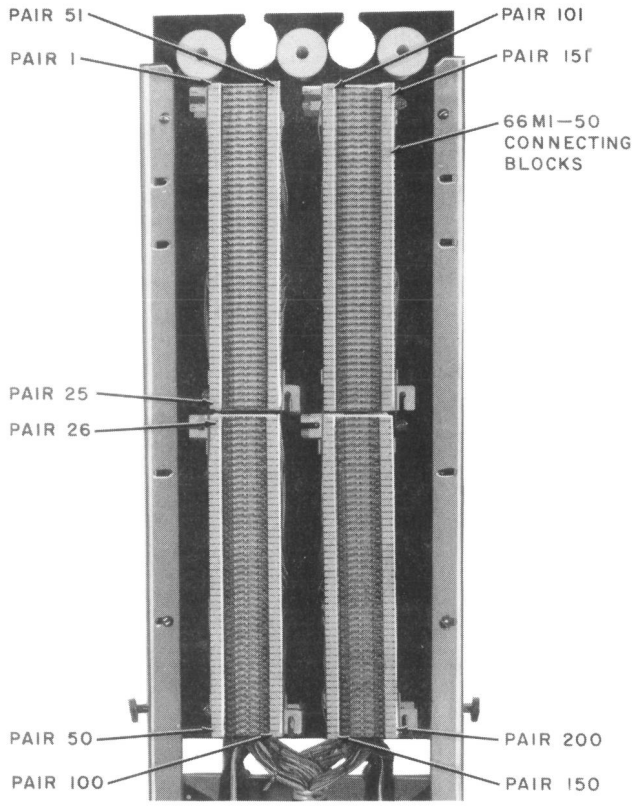

Fig. 24—Cable Terminated on 66M1-50 Connecting Blocks (LG-10//43)

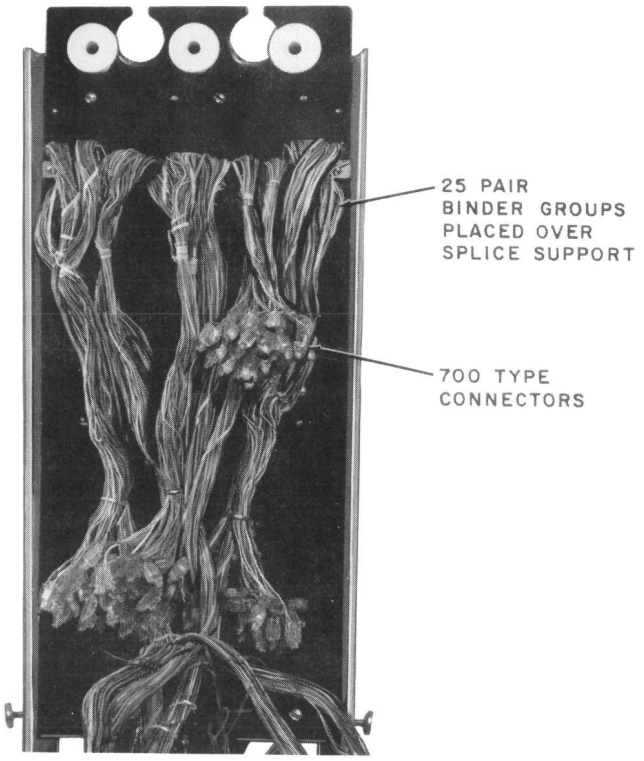

Fig. 25—Splice in Back of Closure (LG-10/43)

Distribution Cable

10.11 Figure 25 illustrates the back of the closure used for splicing.

10.12 Repeat Steps 10.07 through 10.10 for each distribution cable.

11. STENCILING

11.01 The terminated feeder cable pairs (IN pairs) are numbered as binding post. The terminated distribution cable pairs (OUT pairs) are numbered as cable pairs.

11.02 White background or white tapes with black numbers are used for numbering the feeder (IN pairs) binding posts. Yellow tapes with black numbers are used for numbering distribution cable counts. (See Note following 11.03.)

11.03 Stencil the 1st, last, and every fifth pair binding post number and distribution pair number on the fanning strip of the connecting block.

> ***Note:*** Section 631-040-200 outlines the methods of stenciling cross-connect terminals and Section 081-860-105 outlines the method of using the transfer stencil kit.

11.04 On the interior of the door, stencil:

(a) Feeder cable number and cable count.

(b) Distribution cable number and cable count.

11.05 Stencil the cable closure address on the exterior of the door.

12. CROSS-CONNECTING

12.01 All cross-connections shall be made with F cross-connecting wire. Use a 714B tool to terminate the cross-connecting wire.

12.02 All cross-connecting wires are run vertically from the fanning strip of the 66M1-50 connecting blocks containing the assigned feeder

cable pair to the distributing ring run. Horizontally, the cross-connect wires are run through the ring run to the fanning strip of the 66M1-50 connecting block containing the assigned distribution cable pair. Vertically the cross-connect wires are run to the slots in the fanning strip adjacent to the assigned connectors (Fig. 26 or 27).

12.03 The cross-connecting wires are terminated as follows:

(1) Insert the tip and ring conductors of the cross-connecting wire through the slots in the fanning strip. (The slots in the fanning strip are slightly above their associated connectors.)

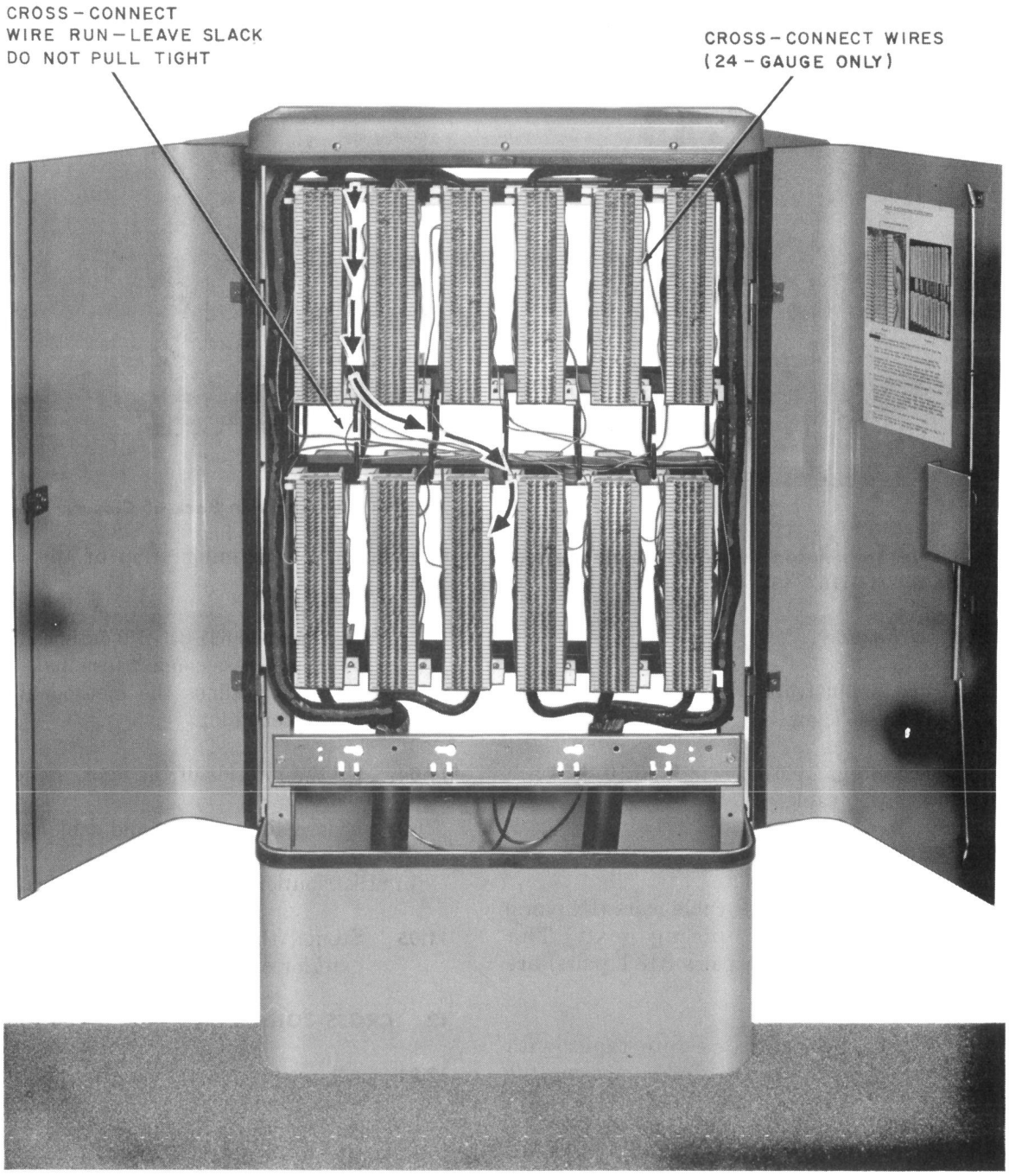

Fig. 26—Cross-Connect Wire-Run (UP-1254 Cable Closure)

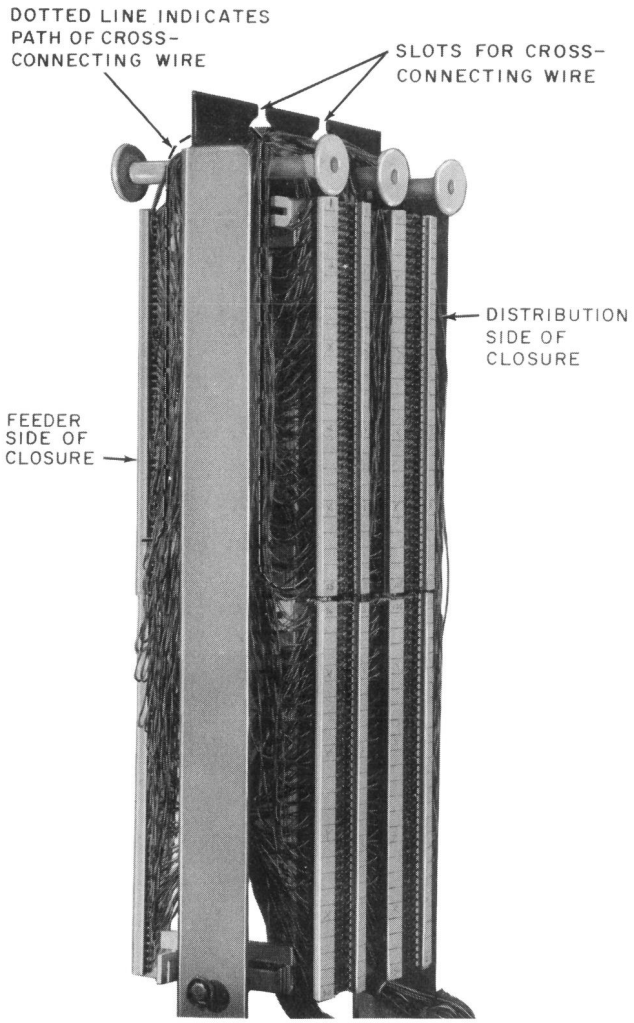

Fig. 27—Cross-Connecting Wire-Run (LG-10/43 Cable Closure)

(2) Adjacent to the slots in the fanning strip, leave approximately one inch of slack in the cross-connecting wire.

(3) Place the conductors of the cross-connecting wire in the hook of the connectors. Position the 714B tool over the connectors. Push the 714B tool toward the face of the connecting block until the conductors have been severed. ***When seating and pushing the 714B tool do not bend or twist the connectors.***

Note: The plastic handle of the 714B tool is yellow and green. The yellow identifies the cutting edge.

12.04 All special circuits in the closure must be protected by placing B clip terminal insulators (cut to proper length) over the connectors.

12.05 When cable pairs or cross-connecting wires are disconnected from the connectors, they must be disconnected with a 724A tool. Remove all disconnected or dead cross-connect wires from the closure.

Do not terminate two or more conductors on the same connector.

12.06 Where it is necessary to bridge conductors, a 183A2 adapter is available for terminating the second conductor. The 183A2 adapter is a single quick clip connector designed to stack on top of the 66M1-50 connecting block connector.

12.07 The maintenance procedures for correcting connectors that have been bent, misaligned, etc, are outlined in Section 631-050-108.

13. BONDING

13.01 When indicated on the work print, the closures are bonded to the power company ground with No. 6 ground wire. At the closure, terminate the No. 6 ground wire with an F connector. Attach the F connector to the ground bracket assembly of the closure. The ground wire is bonded to the power company ground as covered in local instructions.