AUXILIARY SLEEVES

PLASTIC- OR LEAD-JACKETED CABLES

CONTENTS PAGE

1. GENERAL

1.01 This section describes the method of making a wrapped gastight or nongastight joint on plastic- or lead-jacketed cables using auxiliary sleeves.

1.02 The reasons for reissuing this section are listed below:

(a) To change title of section

(b) To include the new bonded sheath cable

(c) To include information formerly contained in Sections 633-300-203, 633-300-204, 633-300-206, and 633-300-210.

In addition to the above specific changes, this section has been completely reorganized and is considered a general revision. As a result, no revision arrows have been used.

1.03 The auxiliary sleeve can be used for all aerial, underground, and buried closures.

2. PRECAUTIONS

2.01 Dry scraping, sanding, or otherwise abrading the surface of lead sheathing can generate airborne lead dust particles. The following procedures are to be followed when cleaning all lead surfaces.

(1) Use a clean, dry rag to apply a generous amount of lead particle entrapment compound (LEPEC) to the lead surface to be cleaned and at least 2 inches beyond the area to be cleaned. ***Do not use the carding brush on any lead surface that has not been coated with LEPEC.***

(2) Apply a 1/2-inch wide strip of LEPEC over the length of the bristles of the carding brush and brush the surface to be cleaned.

(3) As the LEPEC begins to dry, apply additonal compound to the carding brush and continue brushing. Remove lead particulate from the carding brush by striking the brush against a solid object. The LEPEC should be caught in a container and disposed of in accordance with local practices.

(4) When the lead surface has been thoroughly cleaned, remove excess LEPEC with a clean, dry rag. Since stearine is a component of the LEPEC, it is not necessary to apply additional stearine to the cleaned area to protect against oxidation. Dispose of rags in accordance with local practices.

2.02 Set up and secure the cable ends firmly in position before opening the sheath. This will prevent movement of the cable and sheath while splicing the conductors. Remove or turn back all sheath coverings (tape, jute, armor wires, etc) from the opening location.

2.03 Take protective measures to keep moisture away from the exposed conductors when opening a cable in a damp area. Place drip collars on the cables beyond the sheath opening to prevent water from running along the cable and into the splice.

2.04 When removing sheath from the end of a cable containing defective pair markers, exercise care so that the markers are not detached (Sections 632-020-105 and 632-020-200).

2.05 Remove sheath from cables containing disc-insulated spiral-four quads or coaxial by slitting the sheath with the chipping knife. ***Do not pull the sheath off the ends of such cables,*** because the quads or coaxials may be damaged.

2.06 Do not allow the chipping knife to cut the paper wrapping on the core or damage the conductors.

2.07 Since the protection of the lead sheath against corrosion depends on having a complete covering, it is essential to avoid damaging the polyethylene in setting up the cable.

2.08 Gloves must be worn when working on cable.

3. AUXILIARY SLEEVES

3.01 An auxiliary sleeve is required when a lead sleeve will be used to close the opening in plastic sheath cables. The auxiliary and all tape wrappings, except the final wrapping on the outer joint, should be placed before conductors are spliced.

3.02 Where lead discs are used, the disc should be placed on the auxiliary lead sleeve before the inner wrapped joint is started. It may also be desirable to solder the disc to the auxiliary lead sleeve before placing the auxiliary on the cable.

3.03 The auxiliary lead sleeve should be a minimum of 10 inches long and 1/4 inch larger than the diameter of the cable. Where a wiped lead sleeve is to be placed (without disc), a longer auxiliary is more desirable.

3.04 Clean 3 inches of one end of the auxiliary sleeve with a carding brush or file. ***Carefully remove the identification ridges in this area to avoid the possibility of leaks in the wrappings.*** Place an auxiliary sleeve over each cable and slide away from the working area.

3.05 If a split auxiliary sleeve is used, refer to Section 633-200-201 for the preparation and running of the seam. Wrap the cable sheath with muslin under the sleeve to prevent damaging the polyethylene during the soldering operation.

4. CABLE SHEATH PREPARATION

A. Bonded Sheath Cable

4.01 Refer to practices covering wire joining (sections in the 632 Division) and lead sleeve (Sec-

tion 633-200-201) to determine the amount of cable ends required to make the splice and the length of the sheath opening.

4.02 Mark the sheath opening with B paper tape as shown in Fig. 1.

4.03 The bonded versions of plastic sheath differ from regular sheath in that they have a thin polyethylene jacket on the steel. The steel is bonded to the polyethylene jacket during manufacture.

4.04 ***Caution: The steel template is sharp and care should be exercised when handling.*** When removing the sheath on bonded plastic, the jacket of polyethylene and steel must be removed as a unit. After ringing the sheath, make a longitudinal cut by heavily scoring the sheath and split using a hammer and chipping knife (Fig. 2). The sheath can now be peeled open as shown in Fig. 3. Removing bonded sheath has similar characteristics as removing regular stalpeth sheath in cold weather.

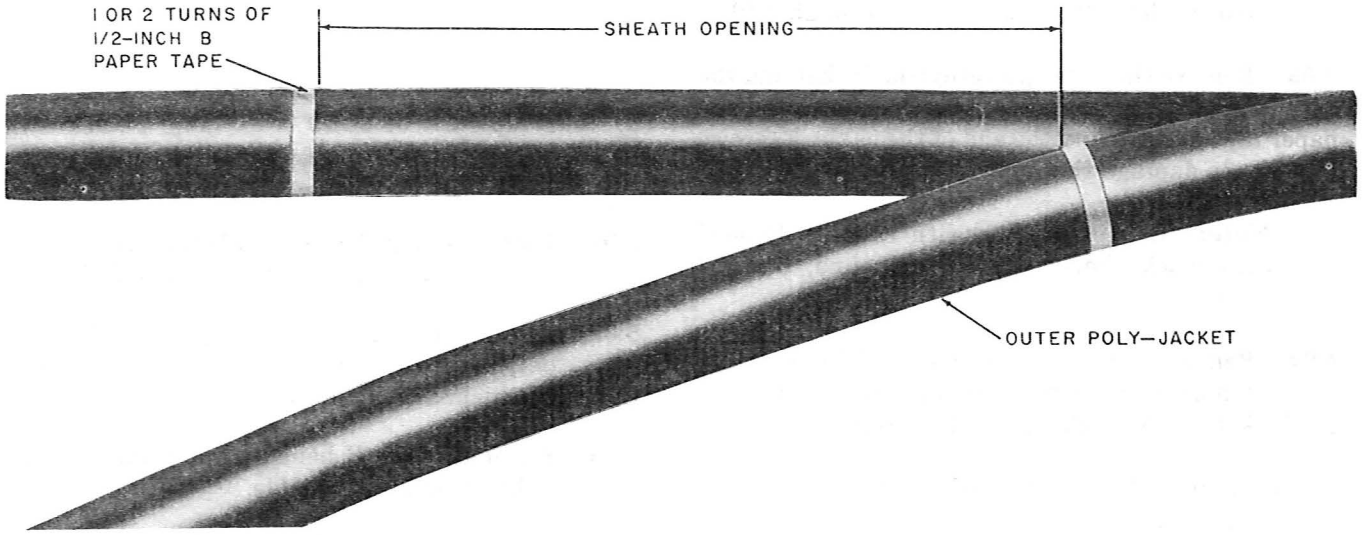

Fig. 1—Cables Marked for Sheath Opening

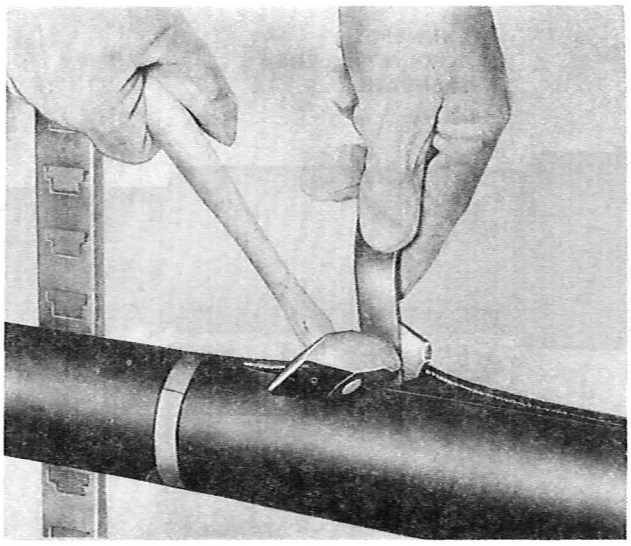

Fig. 2—Splitting Bonded Sheath

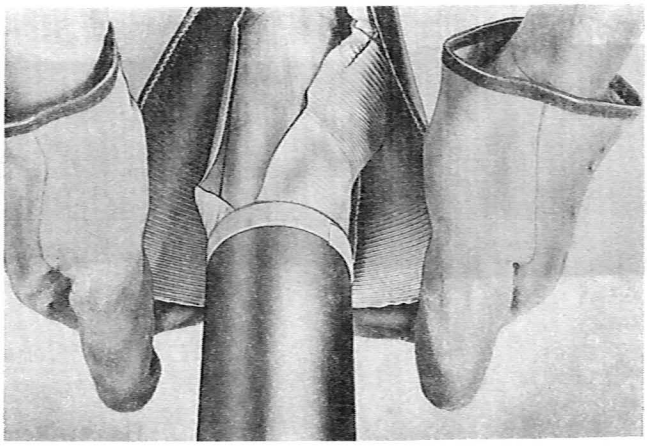

Fig. 3—Opening Bonded Sheath

B. Alpeth and Stalpeth

4.05 The cable sheath is prepared as outlined in paragraphs 4.01 and 4.02.

4.06 Remove the cable sheath from the B paper tape marker to the end of the cable. Do not remove the core wrap. Remove the B paper tape marker.

C. PAP, PASP, ARPAP, and ARPASP Sheath

4.07 The cable sheath is prepared as outlined in pararaphs 4.01, 4.02, and 4.08 through 4.10.

4.08 Remove the outer polyethylene jacket and the underlying metallic sheaths between the paper tape marker and the end of the cable. Exercise care not to damage the inner polyethylene jacket.

> ***Note:*** If the PASP sheath cable is flooded with black thermoplastic compound, ***do not*** clean.

4.09 Remove the clear petroleum jelly flooding compound from the inner and outer polyethylene jacket of PASP sheath cable as follows.

(a) Obtain a 3-foot length of 1/4-inch wide B cotton tape, then wrap this around the inner sheath. Using a sawing action, work it down the sheath to remove the mass of the flooding compound.

(b) Using a KS-14666 cloth soaked with KS-21446 solvent, wipe down the inner and outer sheath for a distance of approximately 3 inches on either side of the inner/outer sheath interface to remove the flooding compound.

(c) Using a small amount of B cleaning fluid, remove the KS-21446 solvent. Both inner and outer polyethylene jackets should be completely clean of flooding compound and solvent.

4.10 Cut and remove the inner polyethylene jacket as shown in Fig. 4.

5. PREPARATION OF BOND

A. Bonded Sheath Cable

5.01 Using tabbing shears cut a 1-1/2 inch long slit in the sheath and the metallic shield (Fig. 5).

5.02 Apply two turns of vinyl tape, adhesive side out, around the cable core and slide between the cable shield and cable core (Fig. 6).

5.03 Select the size B bond clamp required from Table A and disassemble.

5.04 Place the inner half of B bond clamp between the vinyl tape collar and metallic shield.

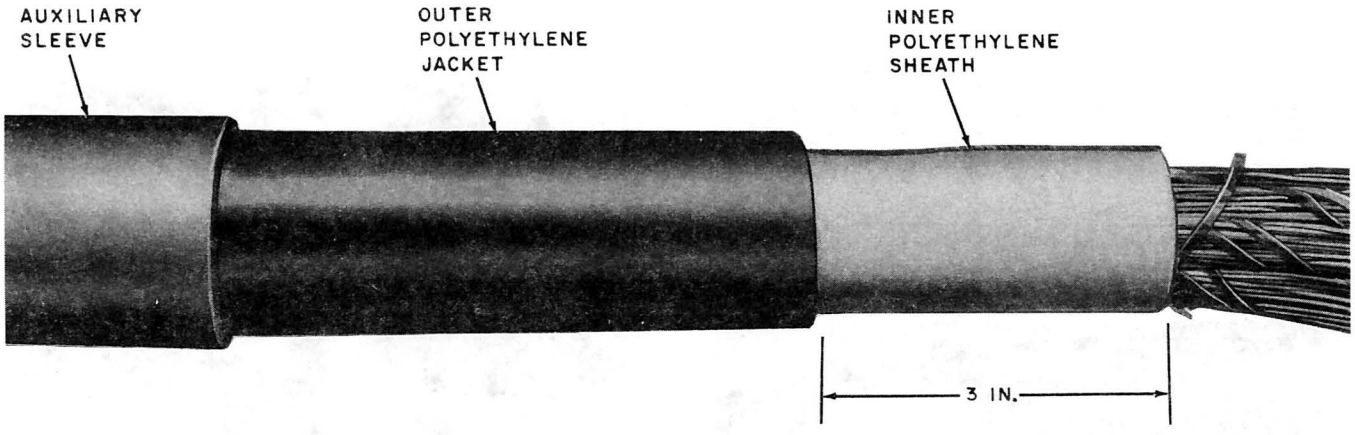

Fig. 4—Removed Cable Sheat

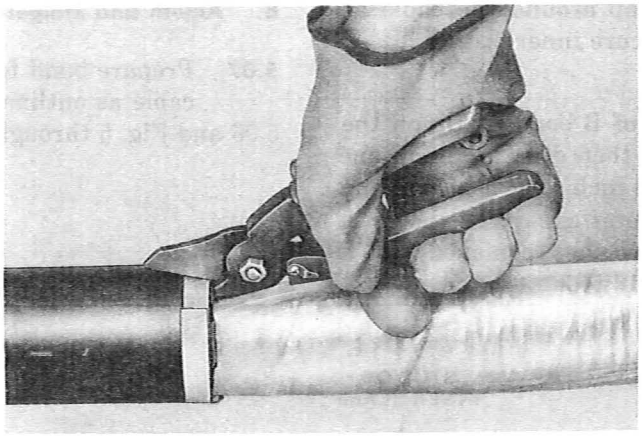

Fig. 5—Cutting Slit in Bonded Sheath

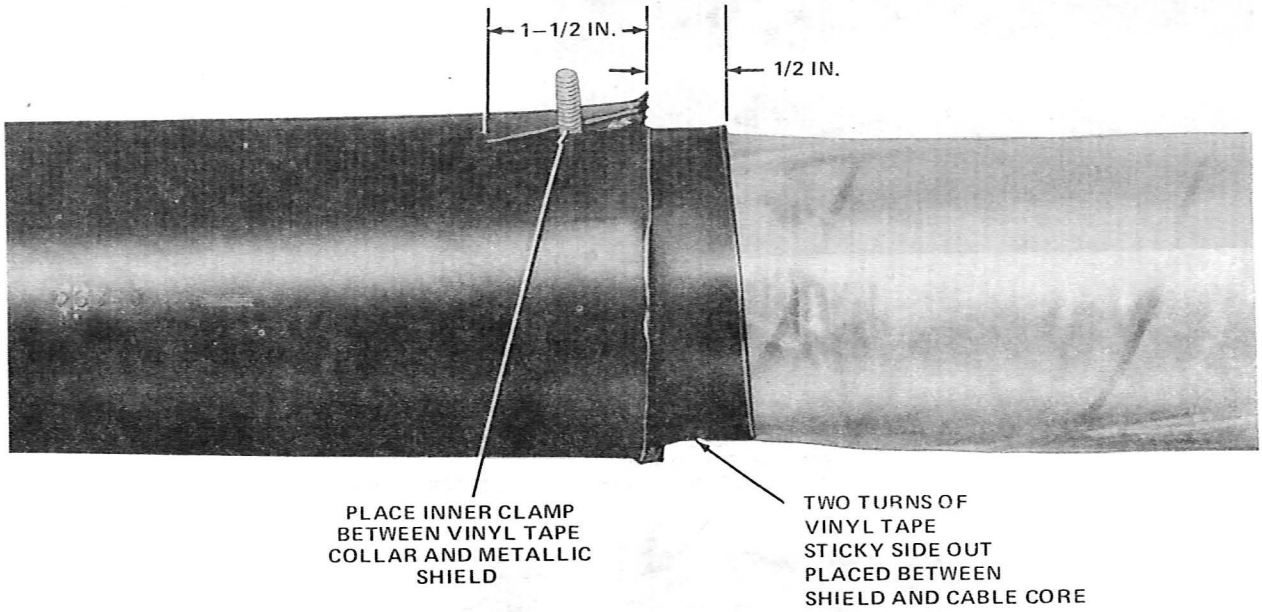

Fig. 6—Bonding Clamp Installed

TABLE A

B BOND CLAMP

SIZE	FOR CABLE SIZES
No. 1	0 to 0.8-inch diameter
No. 2	0.9- to 1.6-inch diameter
No. 3	1.7-inch diameter and larger

5.05 Apply vinyl tape wrap around the cable as shown in Fig. 7 to secure inner clamp.

5.06 Place the outer half of B bond clamp on the stud of inner clamp, then drill a hole in one end of an approximately 18-inch length of bonding ribbon and place over the outer clamps as shown in Fig. 8. Secure with nut and washer furnished with B bond clamp. Tighten with 216 tool.

B. Alpeth and Stalpeth

5.07 Prepare bond for alpeth and stalpeth sheath cable as outlined in paragraphs 5.01 through 5.06 and Fig. 5 through 8.

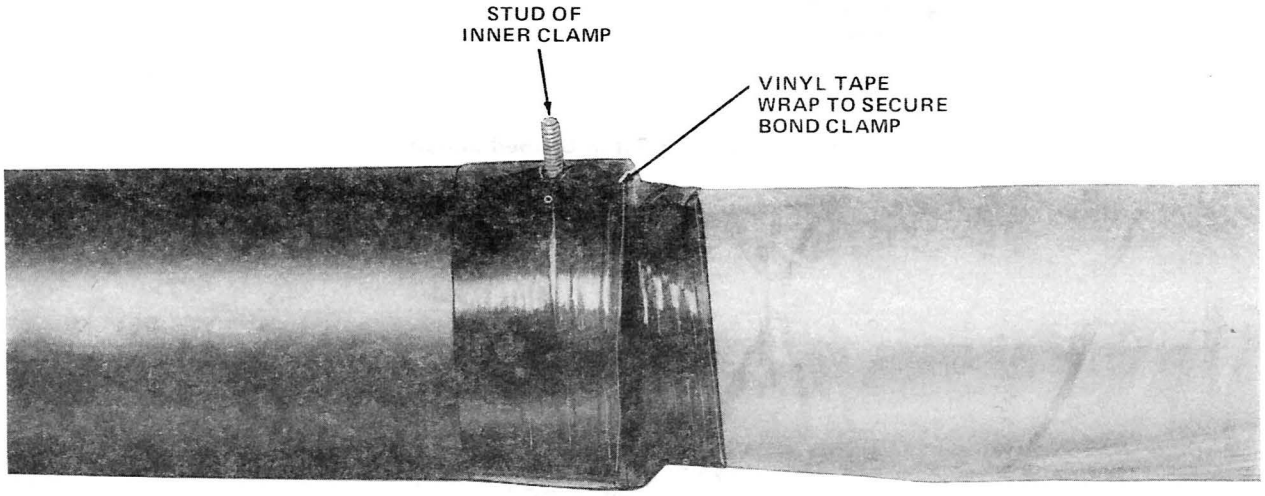

Fig. 7—Tape Applied Around Cable

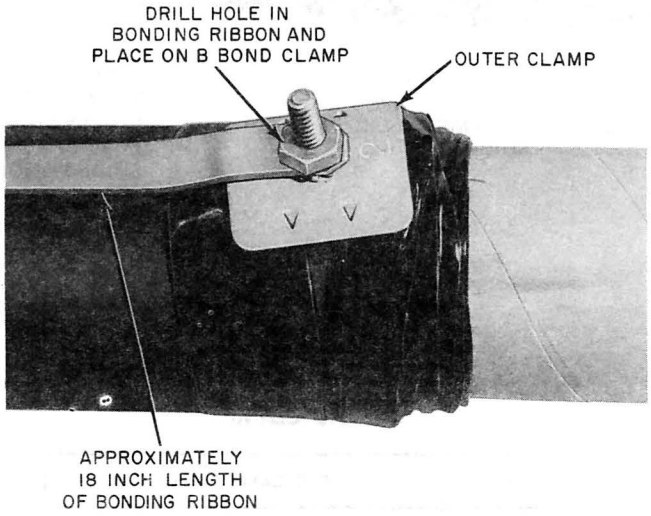

Fig. 8—Installed B Bond Clamp and Bonding Ribbon

C. PAP, PASP, ARPAP, and ARPASP

5.08 Using a carding brush, scuff the outer polyethylene jacket and the inner polyethylene jacket as shown in Fig. 9. With B cleaning fluid, clean the area that was scuffed. This removes any oily residue from the cable sheath.

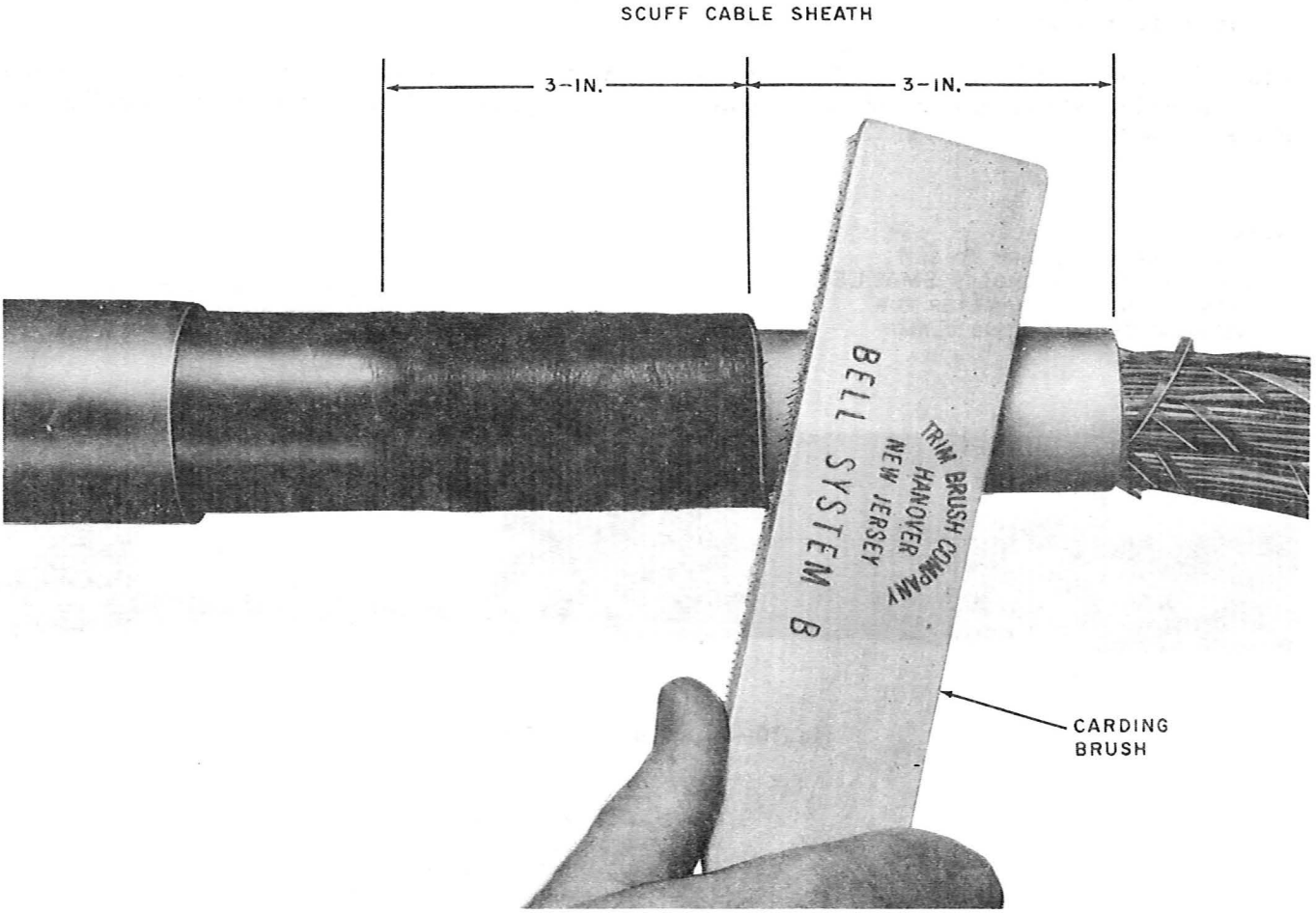

Fig. 9—Scuffing Sheath

5.09 Install a D bond clamp between the metallic shield and inner polyethylene sheath as outlined in Section 081-852-118 and as shown in Fig. 10.

Note: On cables less than 0.9 inch in diameter, it will be necessary to slit cable sheath for installation of D bond clamp.

5.10 Place a wrap of 1-1/2 inch wide B sealing tape around sheath at each end of bond clamp as shown in Fig. 11.

5.11 Prepare a 6-foot length of B bonding ribbon with a 7/32-inch hole 18 inches from each end. Remove nut from stud of bond clamp, place ribbon on stud, then replace nut and tighten with 216-type tool. Cut off excess stud lengths with side cutting pliers (Fig. 12).

5.12 Fill voids between tape wraps with small pieces of B sealing tape as shown in Fig. 13.

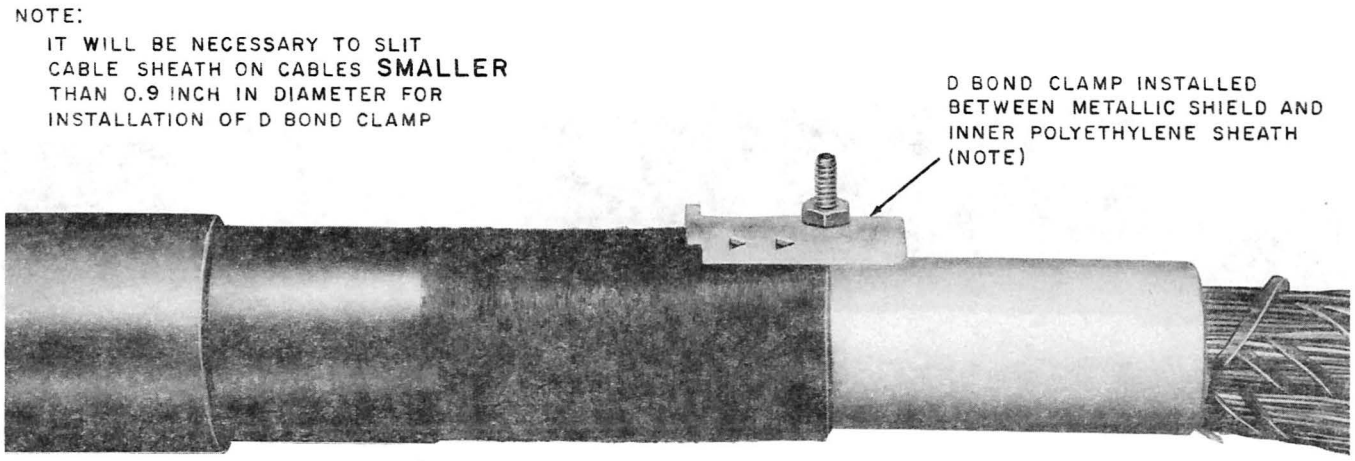

Fig. 10—Installed D Bond Clamp

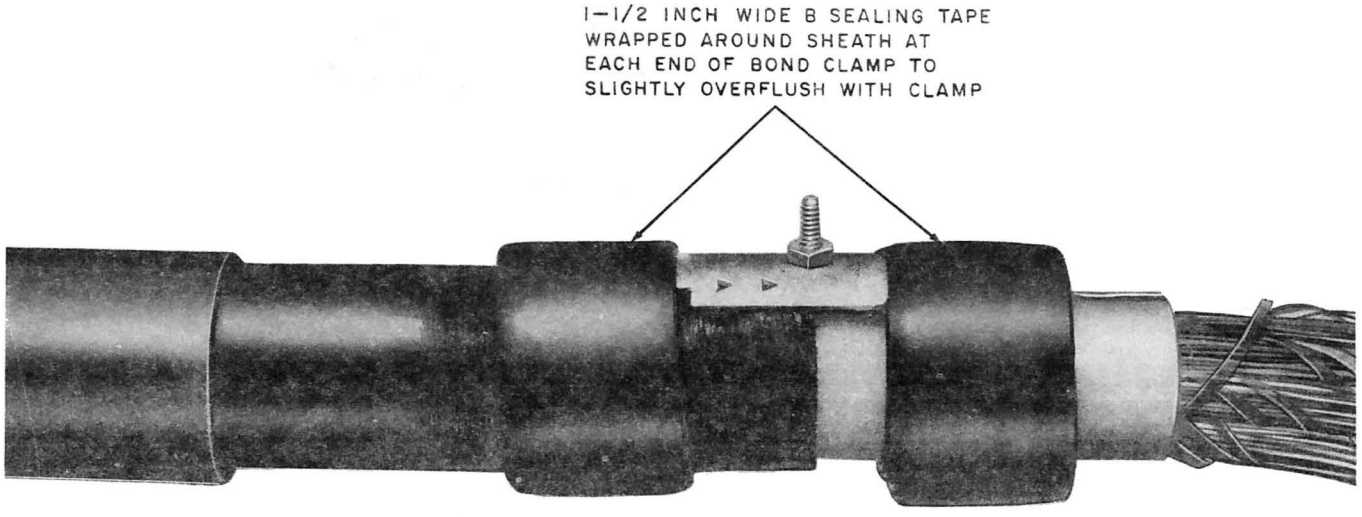

Fig. 11—Installed B Sealing Collar

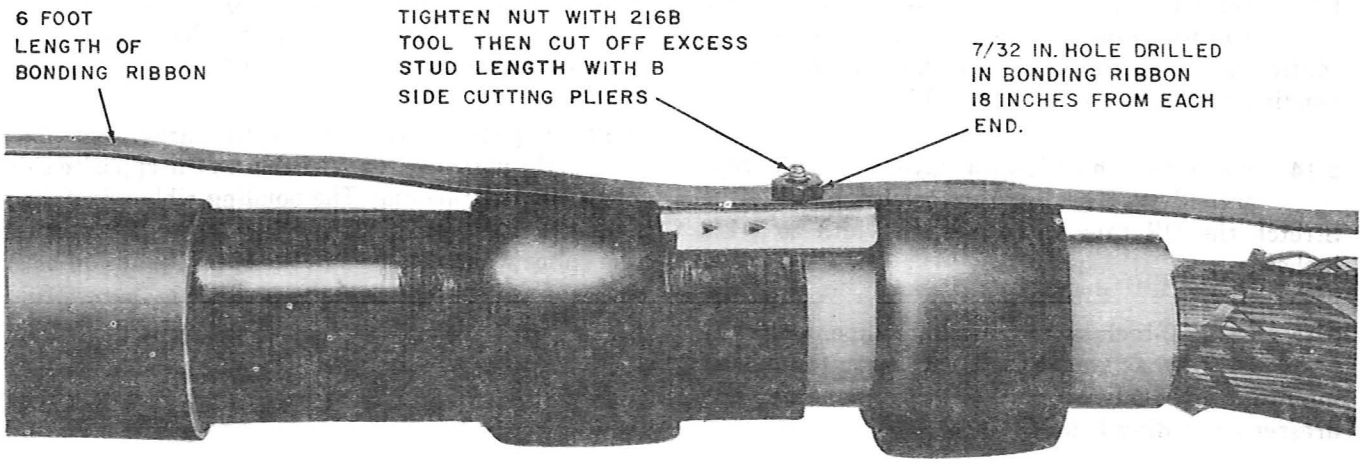

Fig. 12—Installed Bonding Ribbon

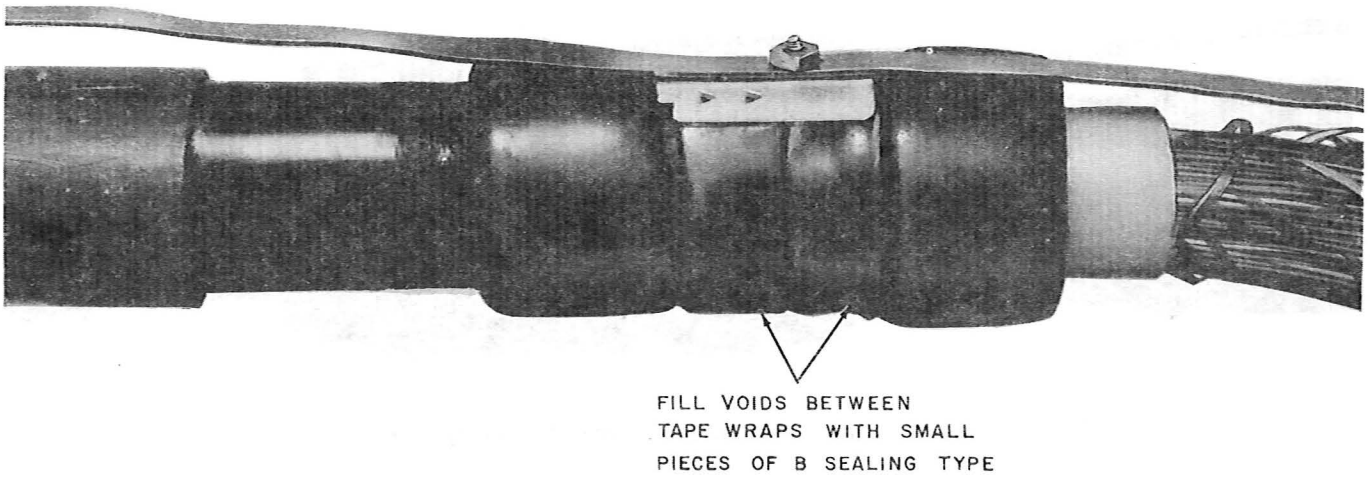

Fig. 13—Filling Voids With B Sealing Tape

5.13 Place a half-lapped layer of B sealing tape over previous wraps and bond clamp, forming continuous, gastight cover, sealing around the B bonding ribbon as shown in Fig. 14.

5.14 Wrap two half-lapped layers of DR tape around the B sealing tape as shown in Fig. 15. Stretch the DR tape to reduce its width to 1-1/2 inches.

5.15 Using 2-inch wide aluminum tape, wrap the DR tape as shown in Fig. 16. Iron the aluminum tape smoothly in place with the handle of the dresser or carding brush.

5.16 Apply two half-lapped layers of vinyl tape over the aluminum tape as shown in Fig. 17. This completes the inner wrapped joint.

5.17 Repeat steps outlined in paragraphs 5.08 through 5.16 for the cable on the opposite side of the sheath opening. The bonding ribbon installed in paragraph 5.04 provides a permanent bond across the splice when attached to the bond clamps on both sides of the sheath opening.

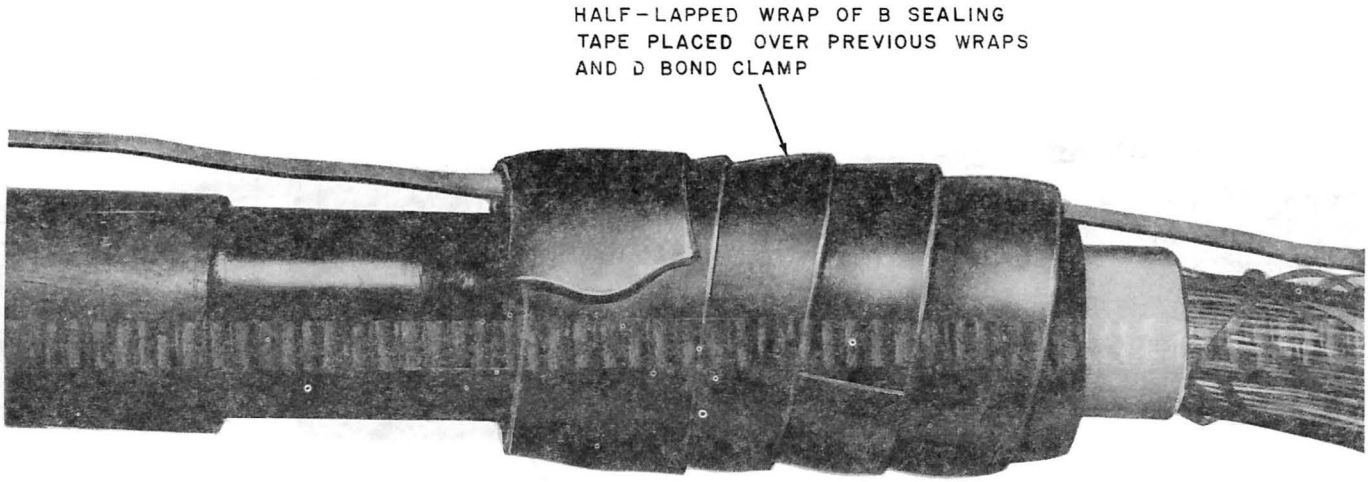

Fig. 14—Inner Joint Wrapped With B Sealing Tape

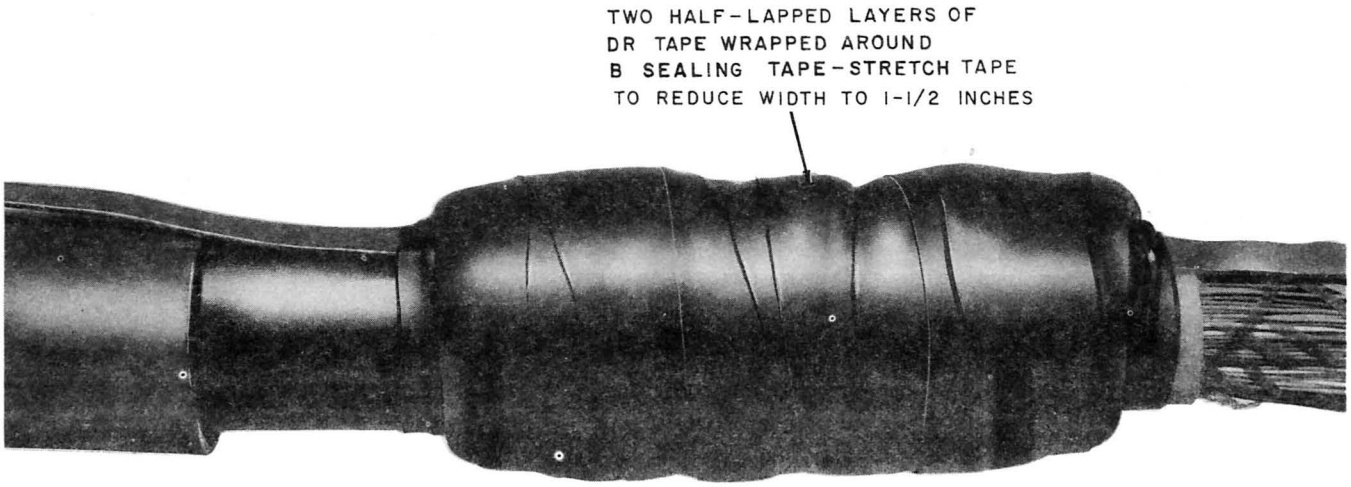

Fig. 15—DR Tape Wrapped Around B Sealing Tape

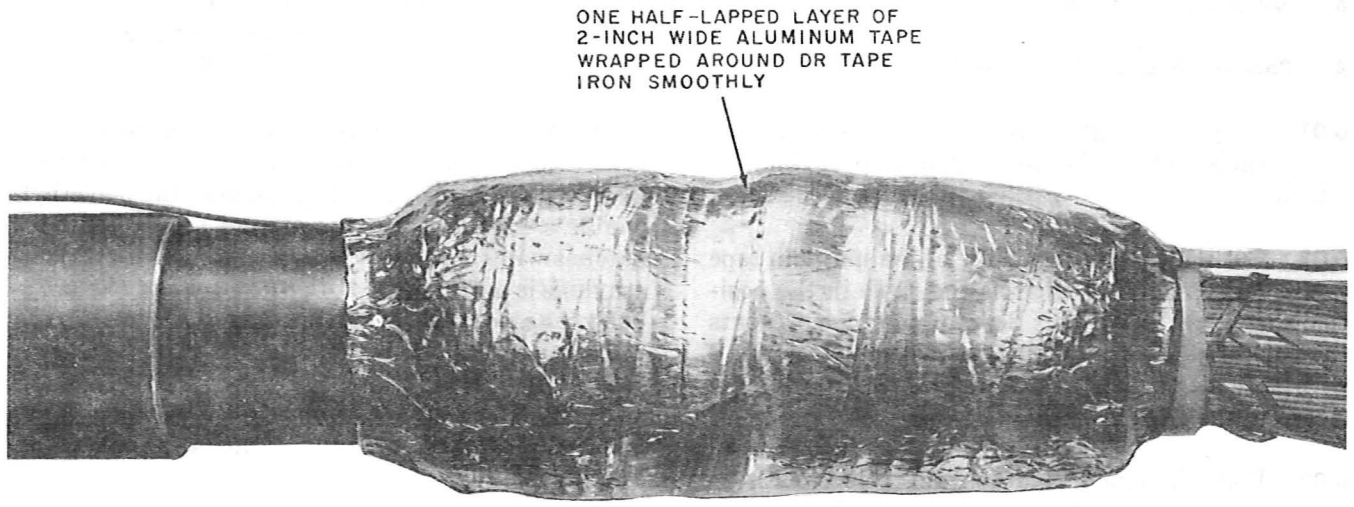

Fig. 16—Applied Aluminum Tape Wrap

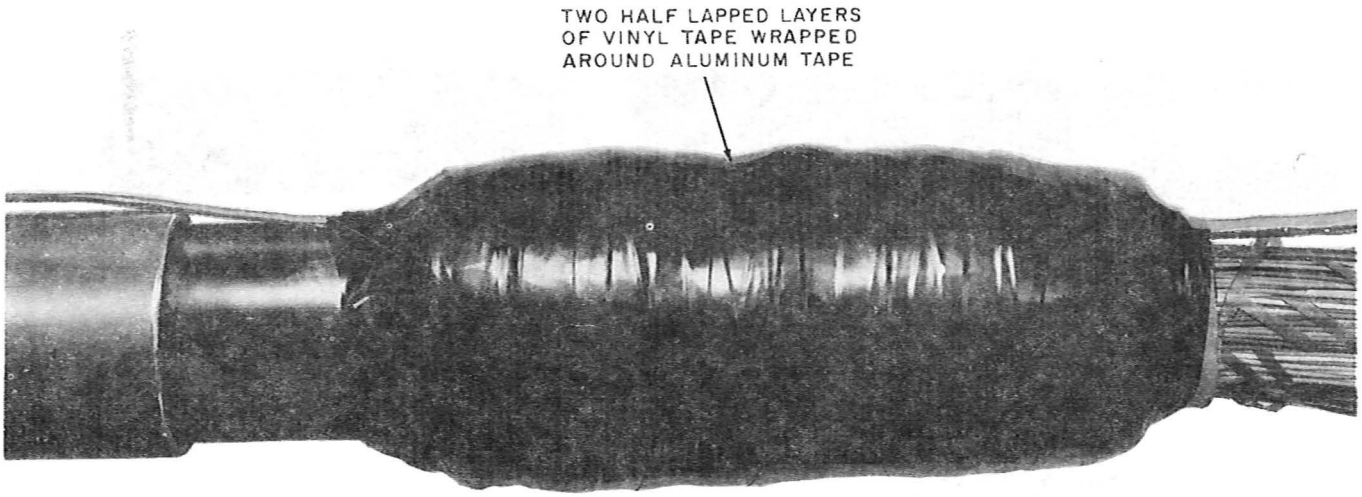

Fig. 17—Completed Inner Joint Wrap

6. WRAPPING AUXILIARY SLEEVE

A. Bonded Sheath, Alpeth and Stalpeth

6.01 Prepare a length of B wire cloth to encircle the cable and provide an overlap of approximately 1 inch.

6.02 Cut a 1/2-inch wide piece of B aluminum tape long enough to encircle the cable in the position shown in Fig. 18. This B aluminum tape prevents the polyethylene from melting and oozing into the B wire cloth mesh when heat is applied in soldering the sleeve to the B wire cloth.

6.03 Place B paper tape on the cable sheath as shown in Fig. 19 to prevent the leading edge of the B wire cloth from piercing the polyethylene, then wrap the B wire cloth tightly around the cable with the leading edge as shown in Fig. 19.

6.04 Secure the B wire cloth with B paper tape; then with a hot soldering iron held against the B wire cloth as shown in Fig. 20, heat the polyethylene at a number of points around the cable. Black patches will show in the B wire cloth when the polyethylene is soft enough. ***Do not overheat the polyethylene nor use point or edge of the soldering iron.***

6.05 Wrap the B wire cloth tightly with one half-lapped layer of 3/4-inch DR tape as shown in Fig. 21.

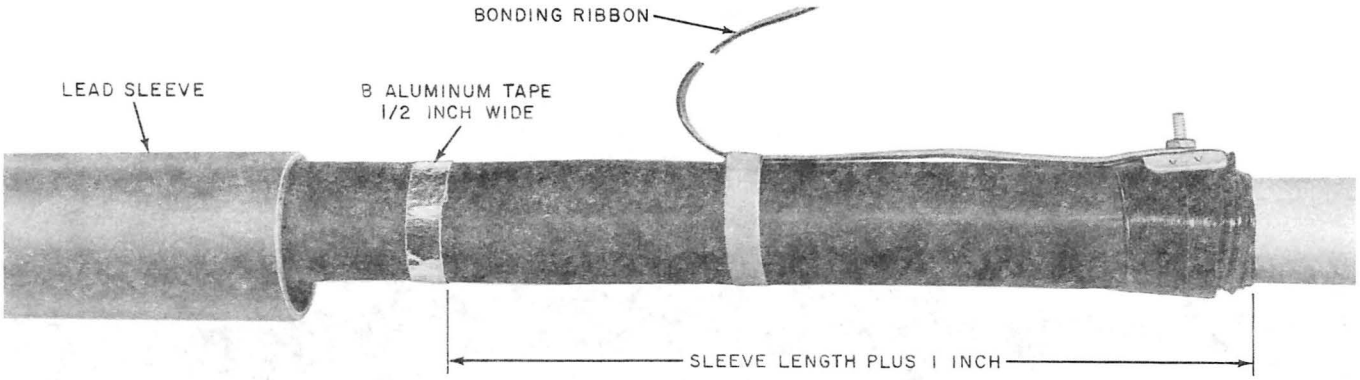

Fig. 18—B Aluminum Tape Placed on Cable

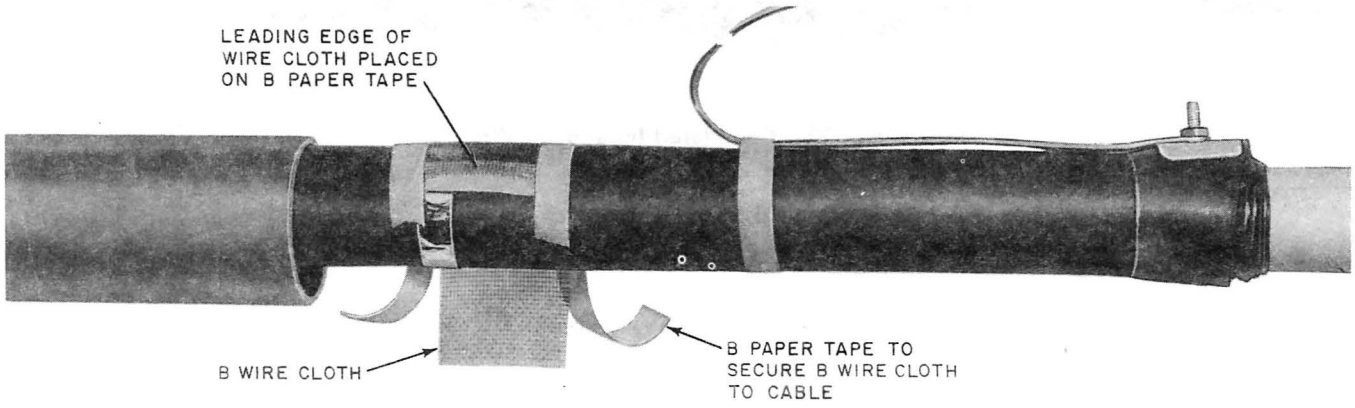

Fig. 19—Wrapping Wire Cloth Around Cable

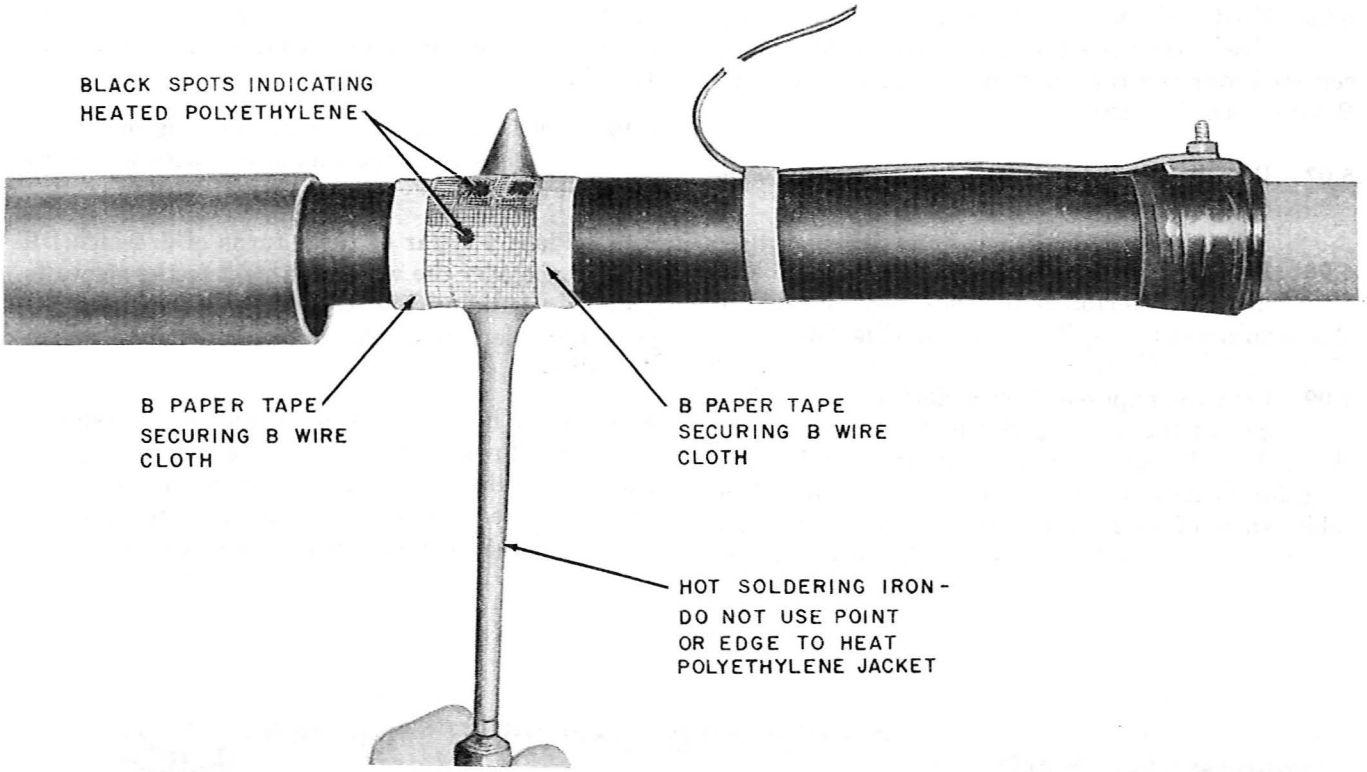

Fig. 20—Heating Polyethylene Alpeth Sheath

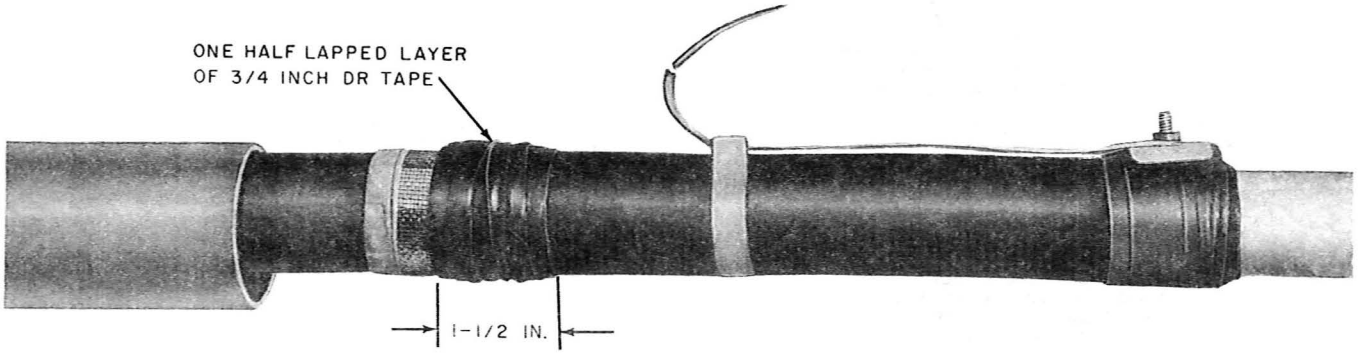

Fig. 21—Wire Cloth Wrapped With DR Tape—Alpeth Sheath

6.06 Feed the bonding ribbon through the auxiliary sleeve, then position the sleeve so the edge is centered over the B aluminum tape underneath the B wire cloth (Fig. 22).

6.07 Remove the B paper tape from the outer edge of the B wire cloth (Fig. 22).

6.08 Beat the sleeve in tightly over the B wire cloth and bonding ribbon, then beat in the end of the sleeve adjacent to the B bond clamp (Fig. 23).

6.09 Coat the exposed B wire cloth with stearine, cut off the bonding ribbon 1/4 inch from the sleeve, bend it back over the lead sleeve and solder (Fig. 23), then solder the sleeve to the wire cloth. The solder should flow into the wire cloth mesh in order to develop good mechanical strength. This arrangement keeps the cable from pulling out of the splice due to lateral expansion and contraction of the cable sheath.

6.10 Scuff the cable sheath for approximately 3 inches from the lead sleeve with a carding brush (Fig. 24).

6.11 Place a collar of three turns of 3/4-inch DR tape over the wire cloth next to the sleeve to provide a buildup (Fig. 25). The collar may extend over the solder but should not be carried up the auxiliary sleeve.

6.12 Place B paper tape collars on the cable sheath as shown in Fig. 26. Then coat the area between the collars with C cement. Remove the collars and allow the cement to dry 3 to 5 minutes in warm weather and 5 to 10 minutes in cold weather.

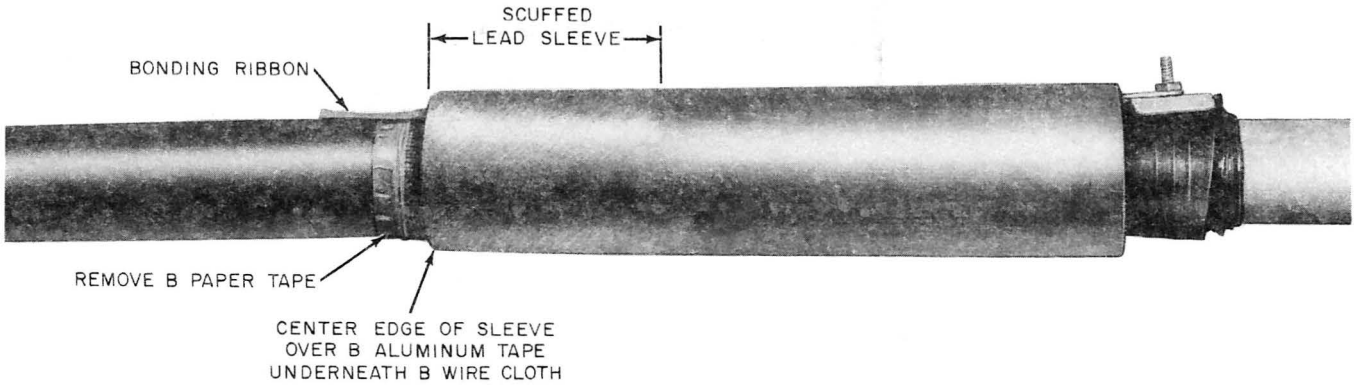

Fig. 22—Positioned Auxiliary Sleeve

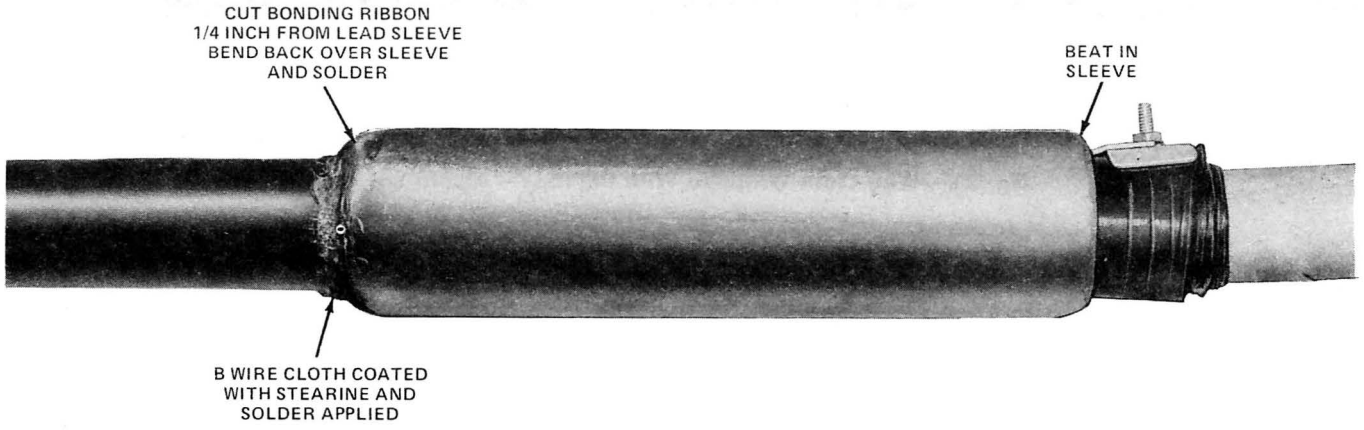

Fig. 23—Auxiliary Sleeve Beat-In and Solder Applied

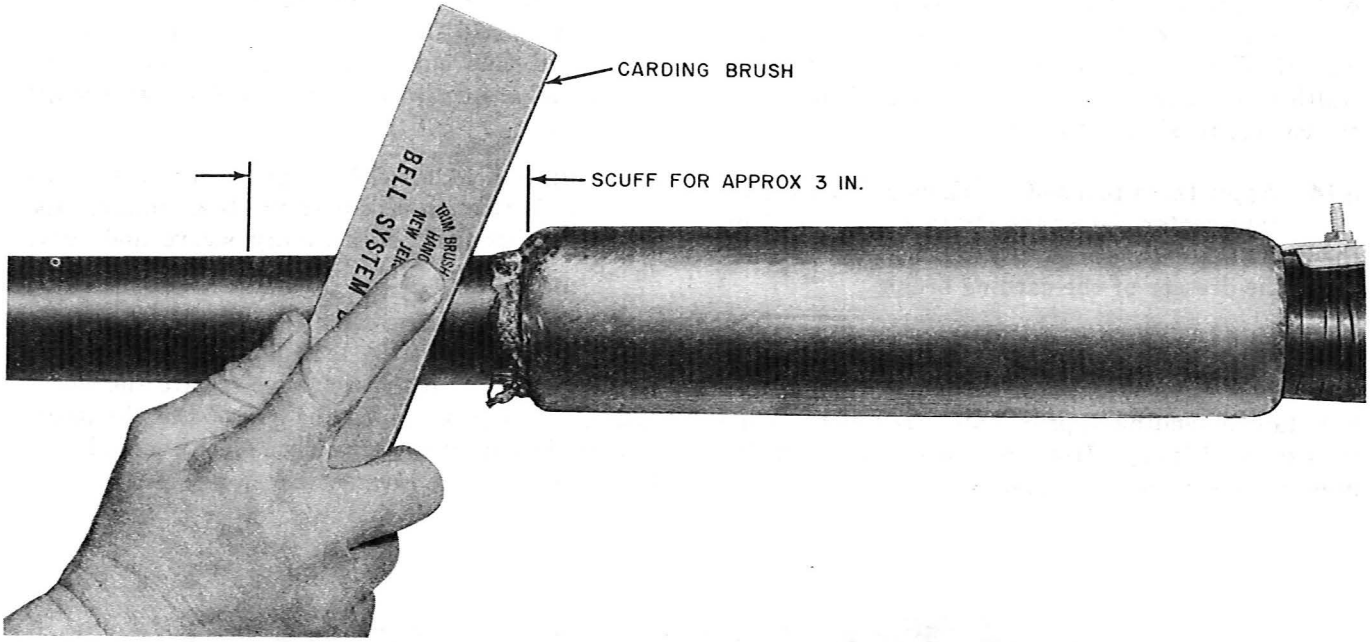

Fig. 24—Scuffing Polyethylene Sheath With Carding Brush

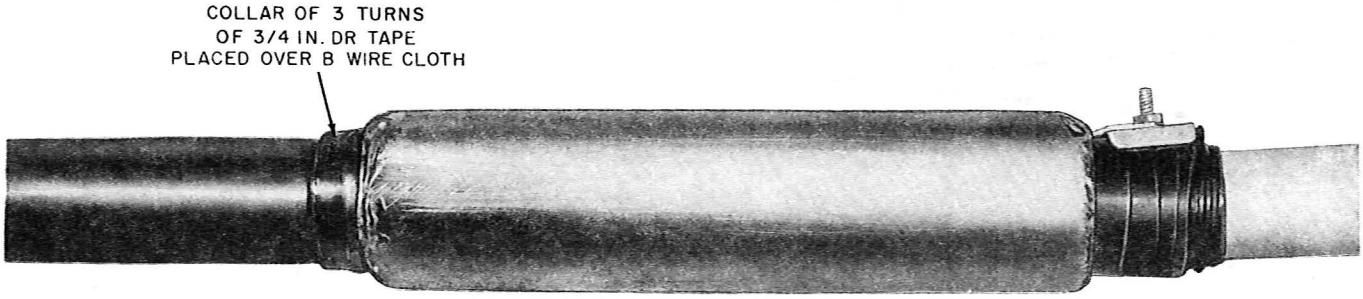

Fig. 25—Collar Placed Over B Wire Cloth

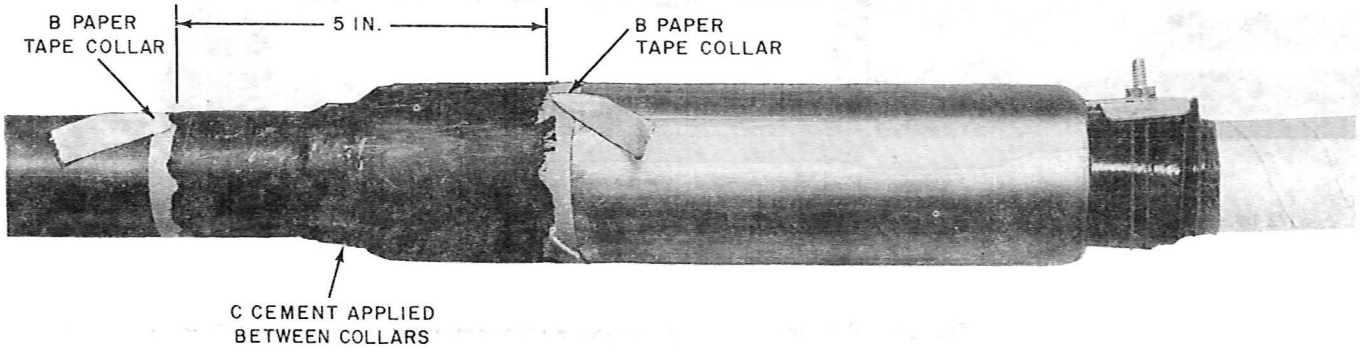

Fig. 26—C Cement Applied

6.13 Apply 2-1/2 half-lapped layers of 2-inch DR tape over the cemented area as shown in Fig. 27. The tape should be stretched to reduce its width to 1-1/2 inches. This is a means of specifying the correct tension in the DR tape.

6.14 Apply three turns of 4-inch wide B aluminum tape centered over the DR tape (Fig. 28). Iron the B aluminum tape smoothly in place with the handle of the dresser or the carding brush.

6.15 Apply a wrapping of 2-inch wide B aluminum tape at each end of the 4-inch wide B aluminum tape extending approximately 1/2 inch beyond the exposed DR tape. Iron the 2-inch width of B aluminum tape smoothly in place (Fig. 29).

Note: The outer wrappings outlined in paragraphs 6.16 through 6.18 are for use on aerial cable. The outer wrappings for underground plant are outlined in paragraphs 6.40 through 6.44.

6.16 Place a collar of five tight turns of 3/4-inch wide friction tape over the B aluminum tape at the junction of the auxiliary sleeve and cable sheath as shown in Fig. 30.

6.17 Starting on the cable sheath just beyond the outer edge of the B aluminum tape, apply a half-lapped layer of friction tape toward the sleeve and continue just beyond the end of the aluminum tape on the auxiliary sleeve. Then place a second half-lapped layer in the reverse direction (Fig. 31).

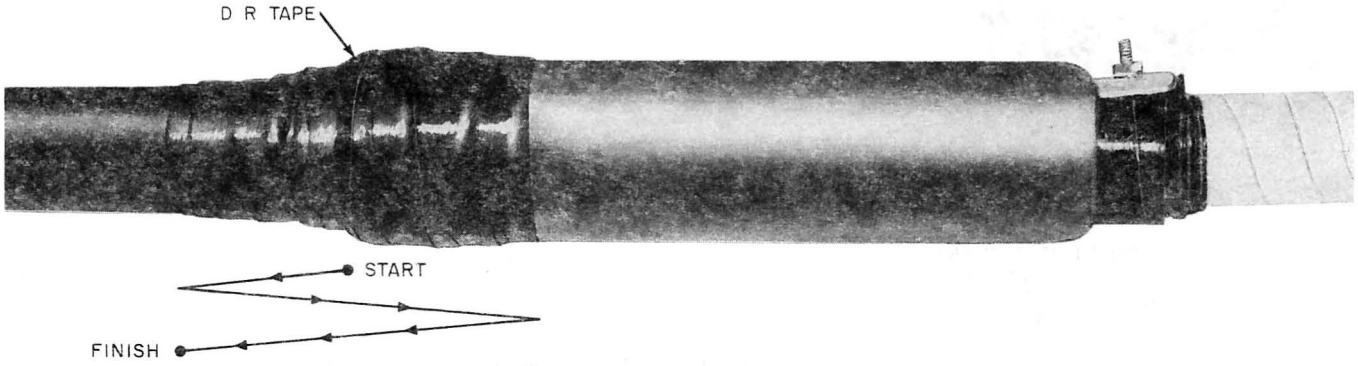

Fig. 27—DR Tape Applied Over Cemented Area

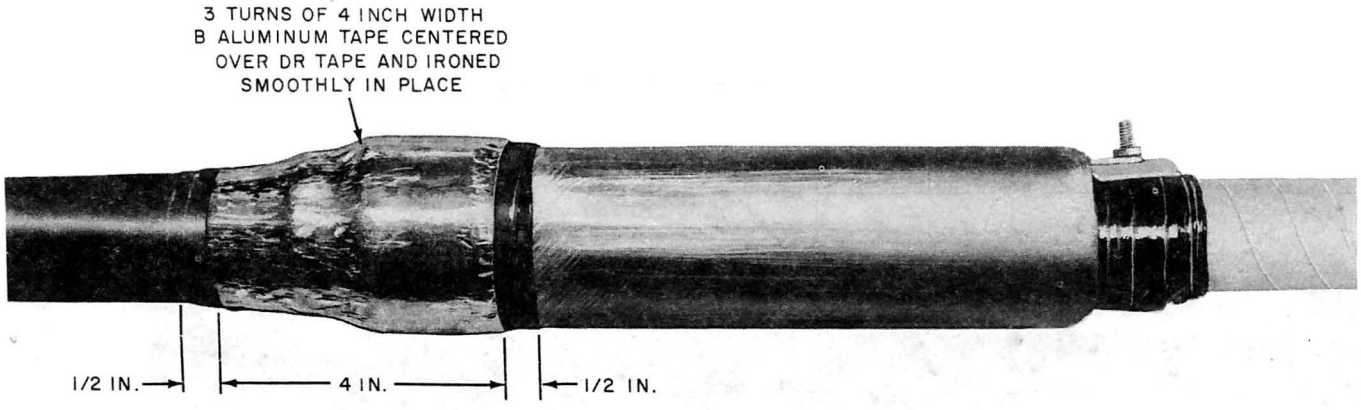

Fig. 28—B Aluminum Tape Applied Over DR Tape

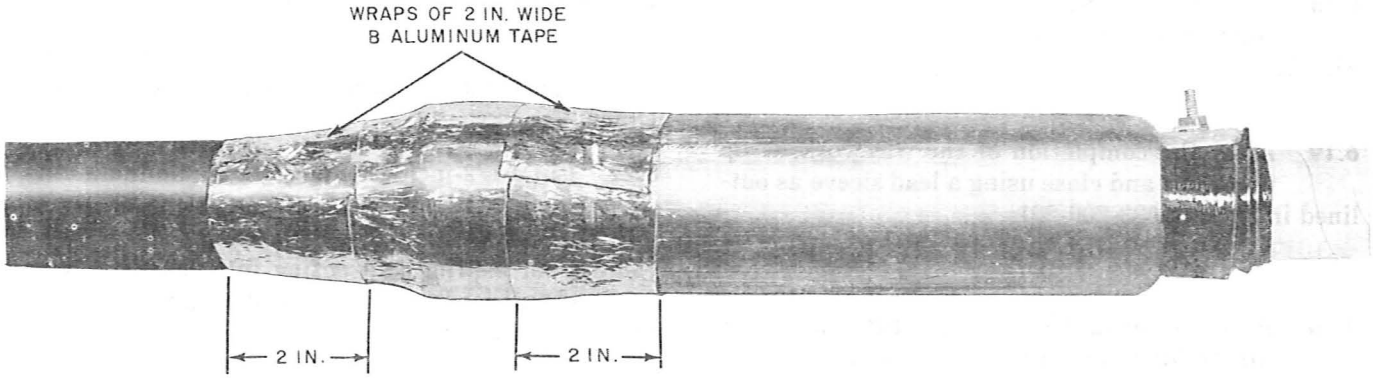

Fig. 29—A 2-Inch Width of B Aluminum Tape Placed Over Each End of 4-Inch Wide B Aluminum Tape

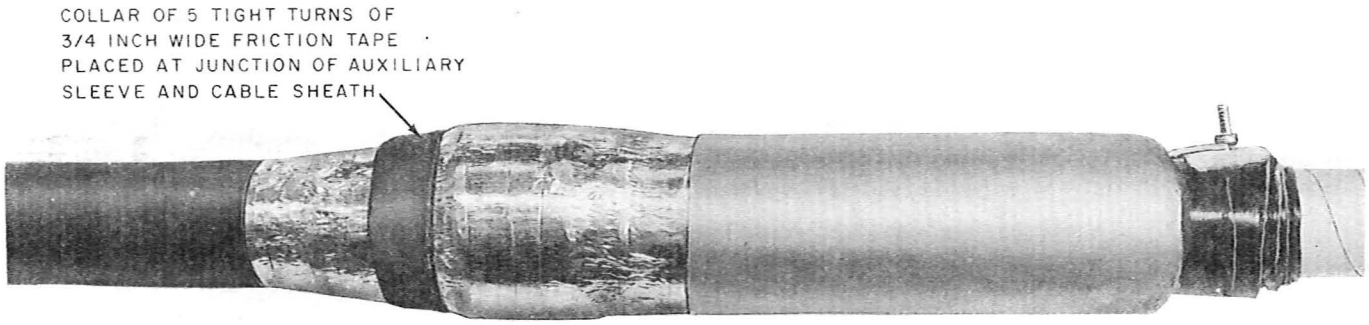

Fig. 30—Friction Tape Collar Placed Over B Aluminum Tape

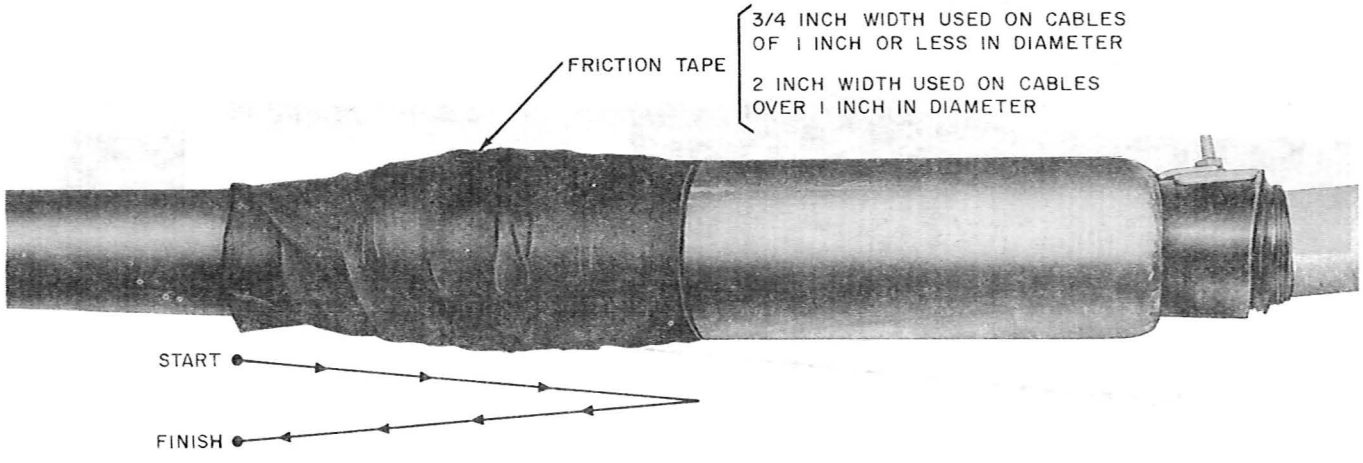

Fig. 31—Friction Tape Wrappings Applied

6.18 Prior to splicing operation place a splicing bond across the sheath opening as shown in Fig. 32.

6.19 After the completion of the wirework, wrap the splice and close using a lead sleeve as outlined in Section 633-200-201.

6.20 ***After wiping the joints and when the joints have cooled to atmospheric temperature*** finish the wrapping with half-lapped layers of vinyl tape applied over the friction tape as shown in Fig. 33. ***The last wrap of vinyl tape should be free of tension so the end of tape will not curl back.***

B. PAP, PASP, ARPAP, and ARPASP

6.21 Prepare a length of B wire cloth to encircle the cable and provide an overlap of approximately 1 inch.

6.22 Cut a 1/2-inch wide piece of B aluminum tape long enough to encircle the cable as shown in Fig. 34. This B aluminum tape prevents the polyethylene from melting and oozing into the wire cloth mesh when heat is applied in soldering the sleeve to the wire cloth.

6.23 Place B paper tape on the cable sheath to prevent the leading edge of the wire cloth from piercing the polyethylene, then wrap the wire cloth tightly around the cable with the leading edge as shown in Fig. 35.

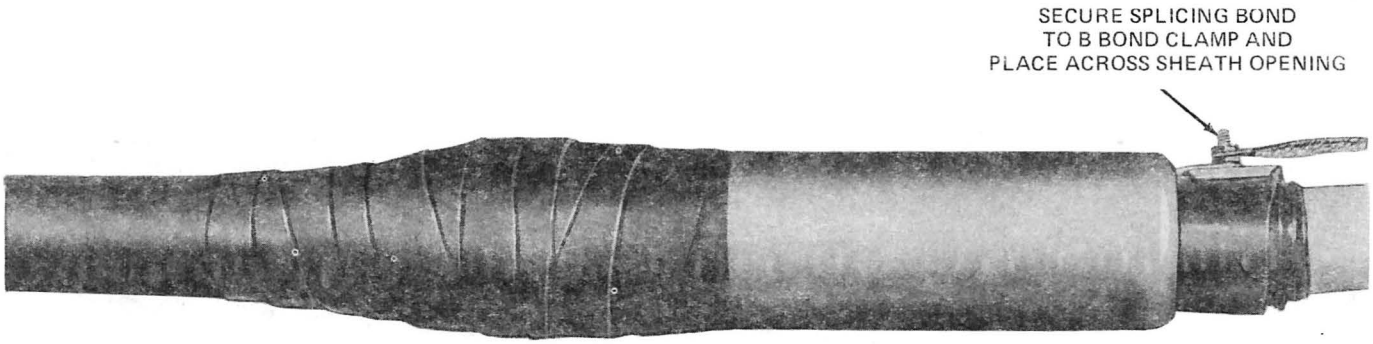

Fig. 32—Copper Braid Placed Across Sheath Opening

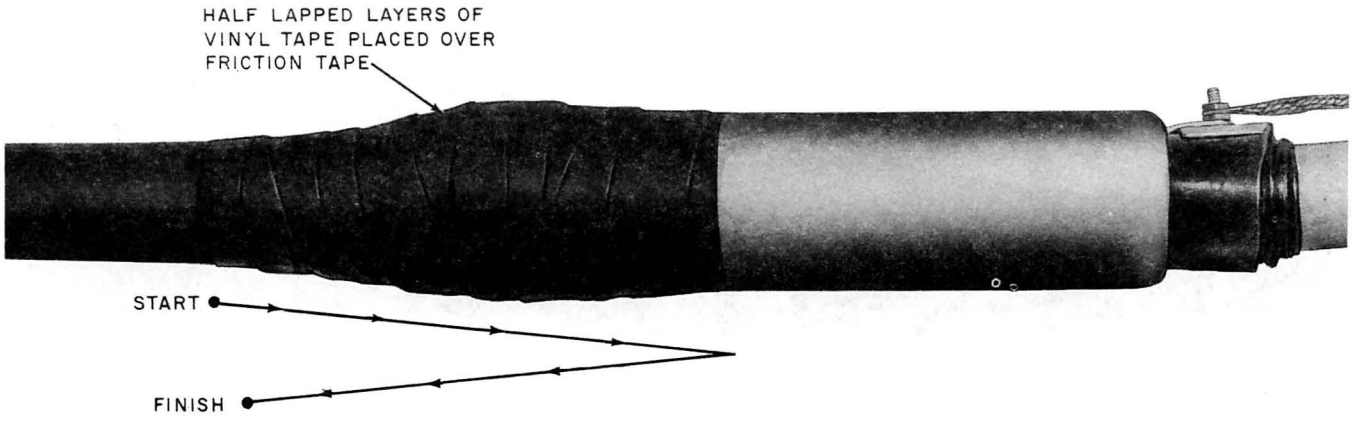

Fig. 33—Vinyl Tape Applied Over Friction Tape

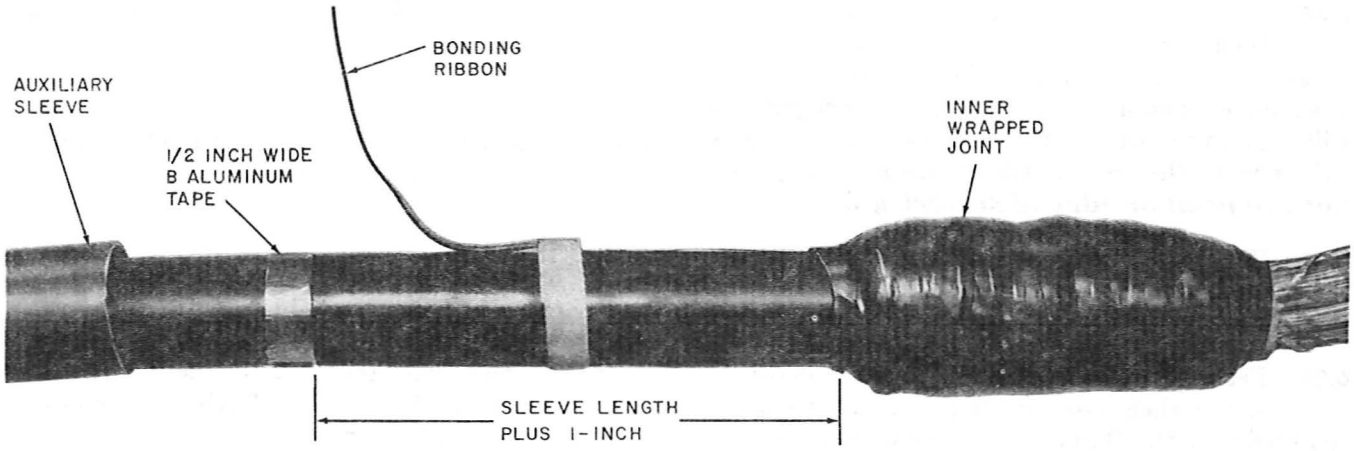

Fig. 34—B Aluminum Tape Placed on Cable

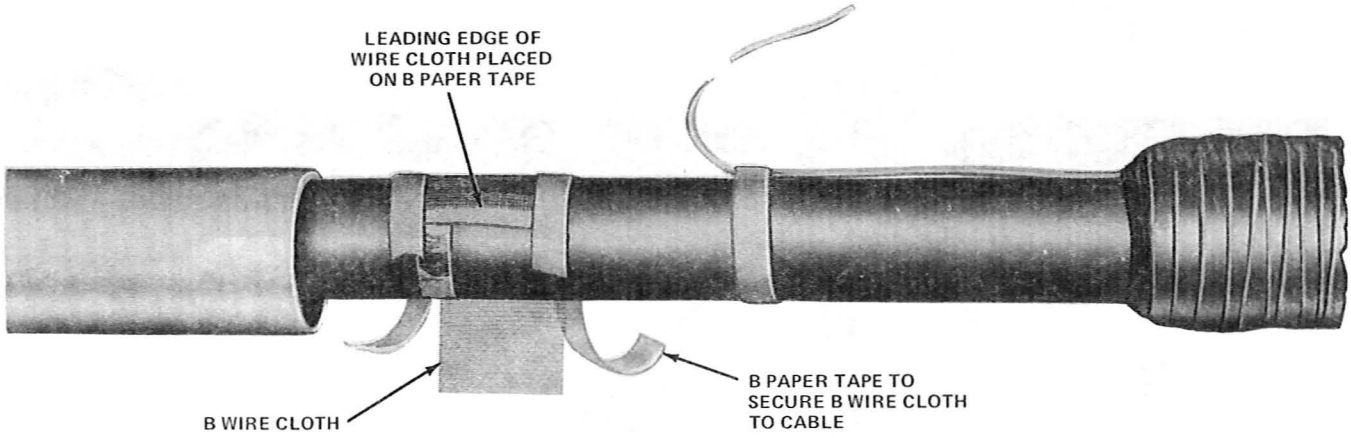

Fig. 35—Wrapping Wire Cloth Around Cable

6.24 Secure the B wire cloth with B paper tape, then with a hot soldering iron held against the wire cloth as shown in Fig. 36, heat the polyethylene at a number of points around the cable. Black patches will show in the wire cloth when the polyethylene is soft enough. ***Do not overheat the polyethylene nor use point or edge of soldering iron.***

6.25 Wrap the B wire cloth tightly with one half-lapped layer of 3/4-inch DR tape as shown in Fig. 37.

6.26 Feed the bonding ribbon through the auxiliary sleeve, then position the sleeve so the edge is centered over the B aluminum tape underneath the B wire cloth (Fig. 38).

6.27 Remove the B paper tape from the outer edge of the B wire cloth (Fig. 38).

6.28 Beat the sleeve in tightly over the B wire cloth and bonding ribbon (Fig. 39).

6.29 Coat the exposed B wire cloth with stearine, cut off the bonding ribbon 1/4 inch from the sleeve, bend it back over the lead sleeve and solder (Fig. 39), then solder the sleeve to the B wire cloth. The solder should flow into the B wire cloth mesh to develop good mechanical strength.

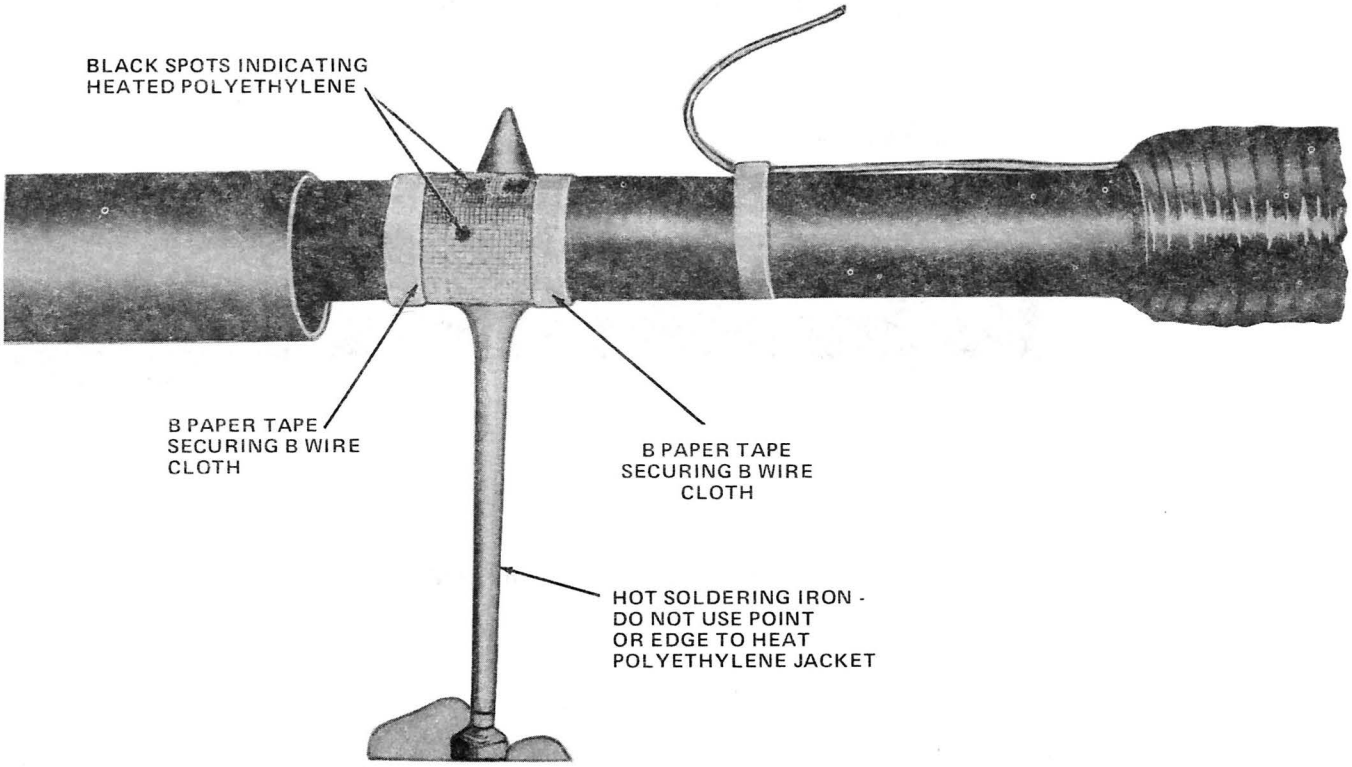

Fig. 36—Heating Polyethylene

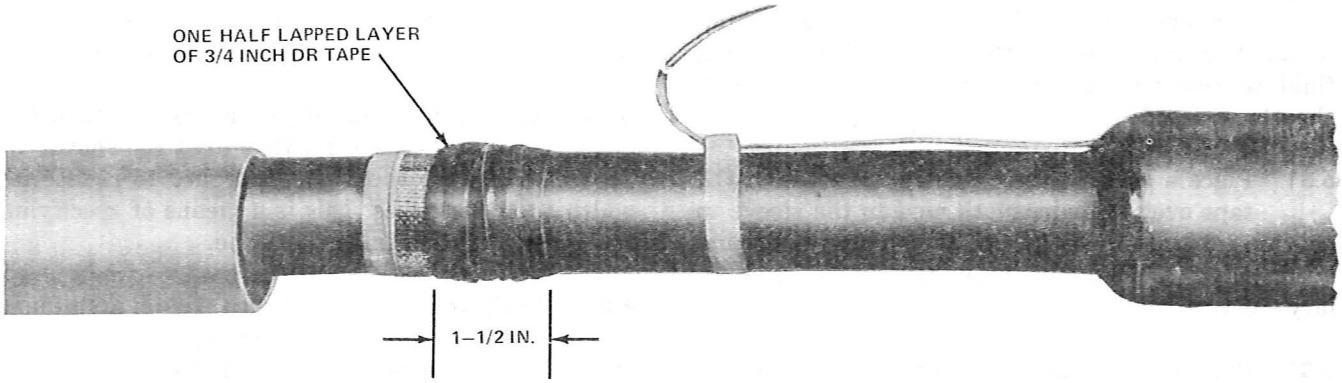

Fig. 37—Wire Cloth Wrapped With DR Tape

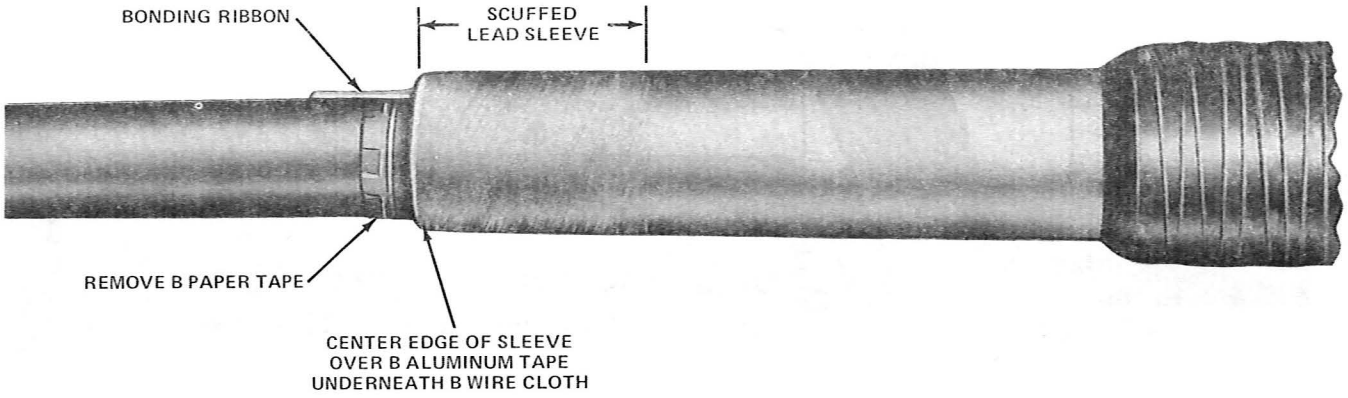

Fig. 38—Positioned Auxiliary Sleeve

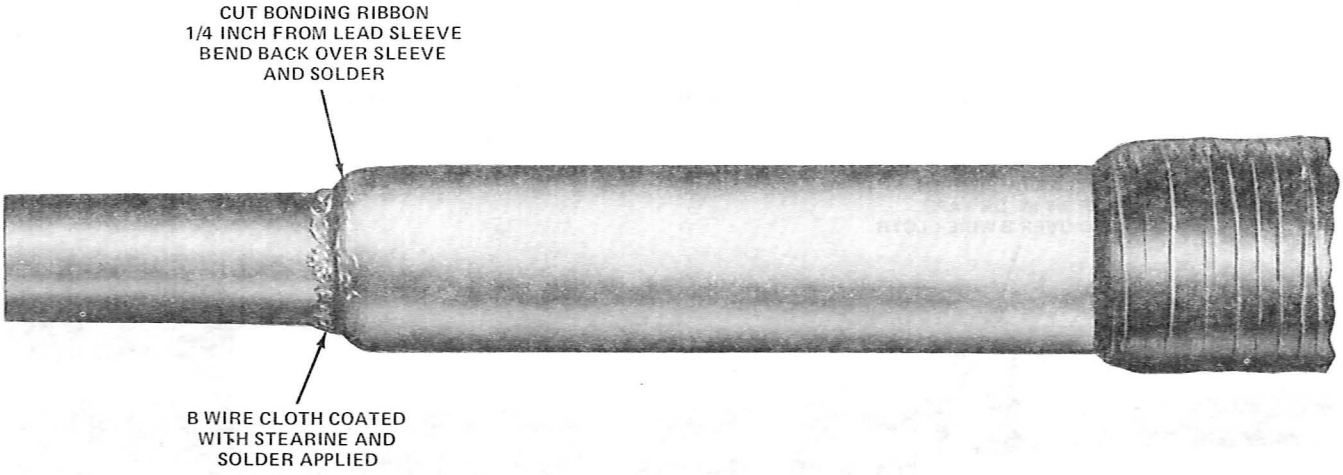

Fig. 39—Auxiliary Sleeve Beat-In and Solder Applied

6.30 Scuff the cable sheath for approximately 3 inches from the lead sleeve with a carding brush (Fig. 40). Clean scuffed area with B cleaning fluid to remove any oily residue from the cable sheath.

6.31 Place a collar of three turns of 3/4-inch DR tape over the wire cloth next to the sleeve to provide a buildup (Fig. 41). The collar may extend over the solder but should not be carried up the auxiliary sleeve.

6.32 Place B paper tape collars on the cable sheath as shown in Fig. 42. then coat the area between the collars with C cement. Remove the collars and allow the cement to dry 3 to 5 minutes in warm weather and 5 to 10 minutes in cold weather.

6.33 Apply 2-1/2 half-lapped layers of 2-inch DR tape over the cemented area as shown in Fig. 43. The tape should be stretched to reduce its width to 1-1/2 inches. This is a means of specifying the correct tension in the DR tape.

6.34 Apply three turns of 4-inch wide B aluminum tape centered over the DR tape (Fig. 44). Iron the B aluminum tape smoothly in place with the handle of the dresser or the carding brush.

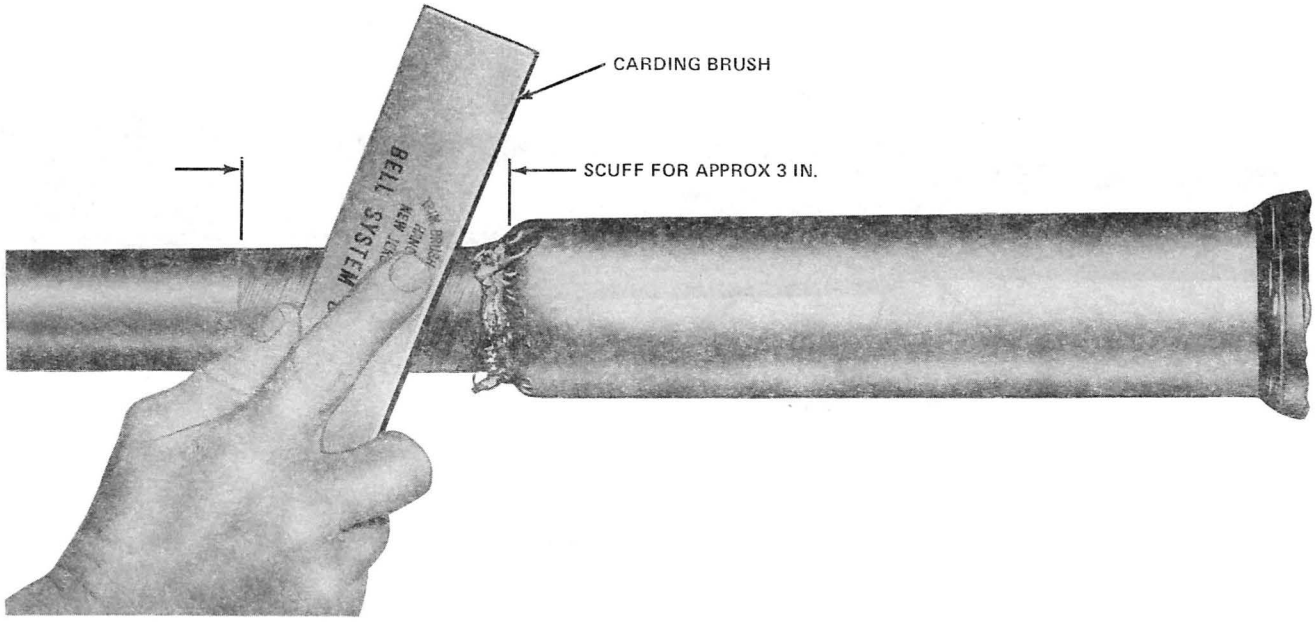

Fig. 40—Scuffing Polyethylene Sheath With Carding Brush

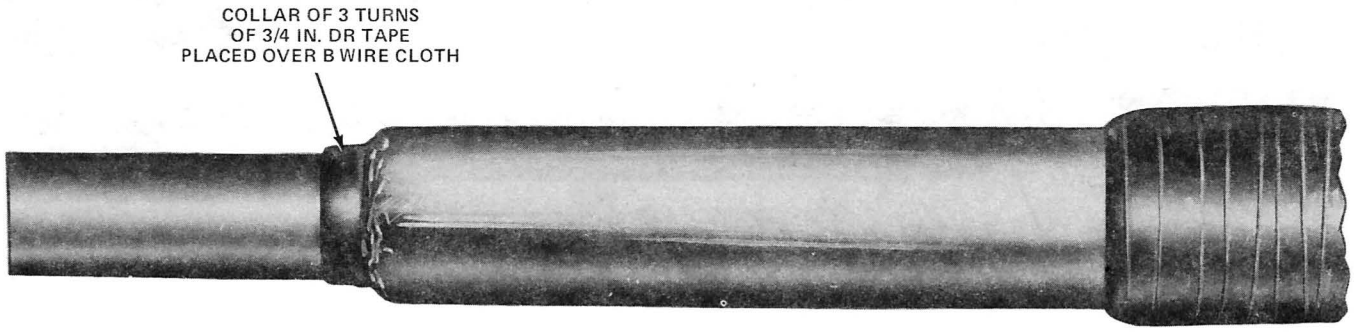

Fig. 41—Collar Placed Over B Wire Cloth

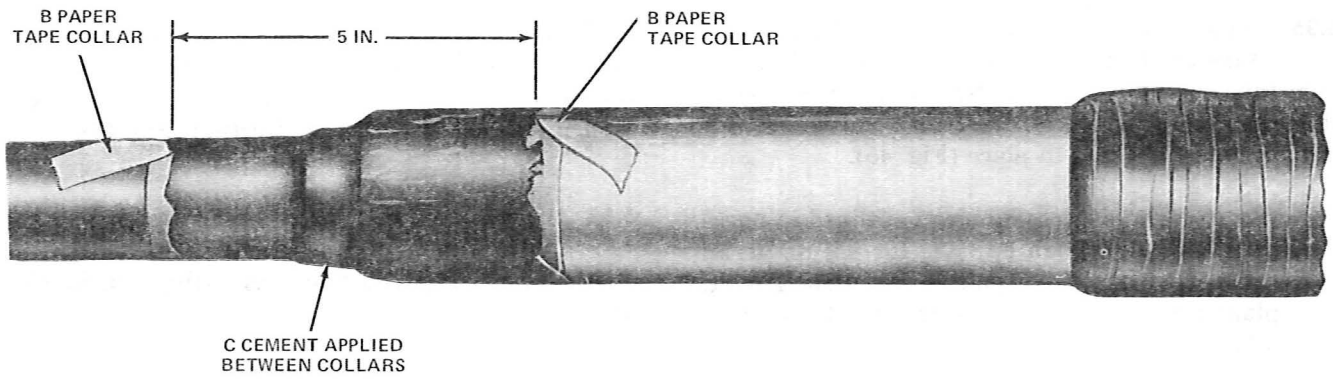

Fig. 42—Applied C Cement

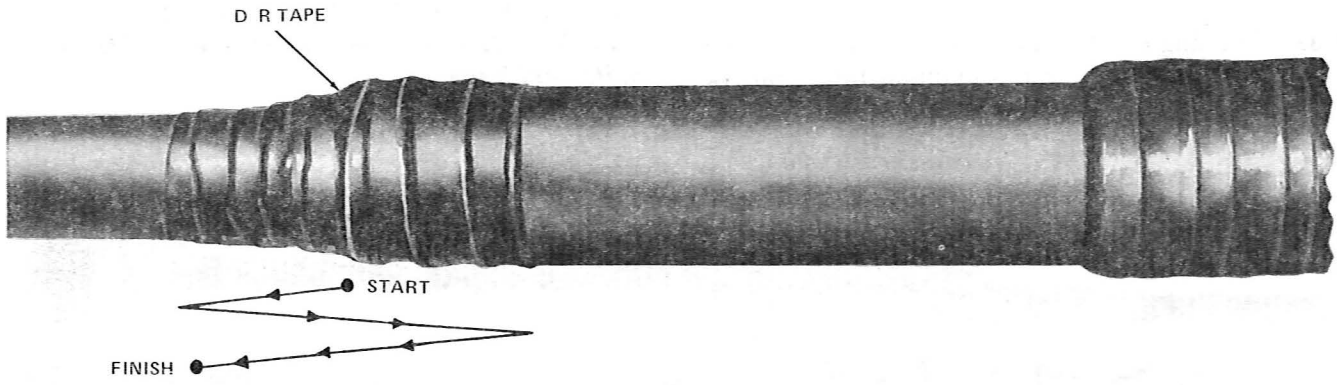

Fig. 43—DR Tape Applied Over Cemented Area

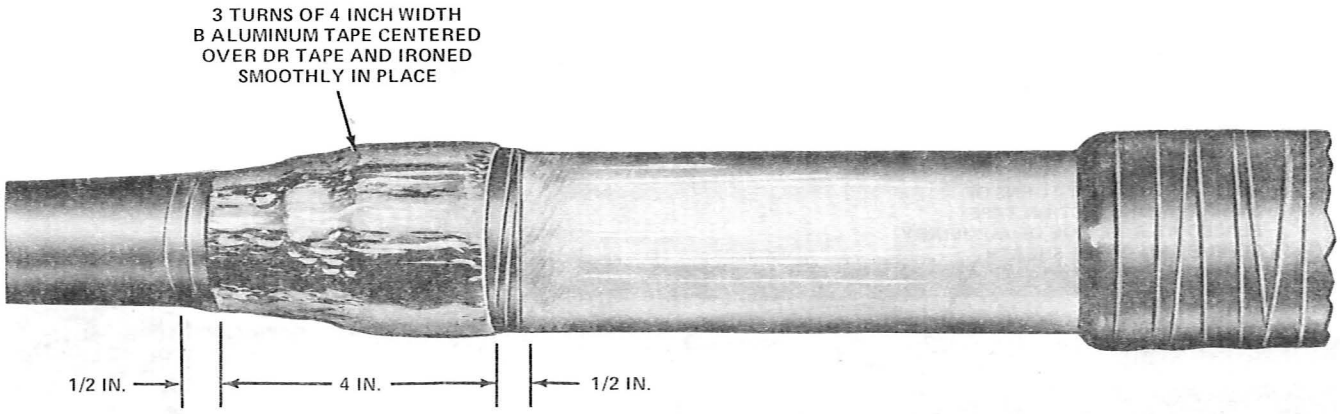

Fig. 44—B Aluminum Tape Applied Over DR Tape

6.35 Apply a wrapping of 2-inch wide B aluminum tape at each end of the 4-inch wide B aluminum tape extending approximately 1/2 inch beyond the exposed DR tape. Iron the 2-inch width of B aluminum tape smoothly in place (Fig. 45).

Note: The outer wrappings outlined in paragraphs 6.16 through 6.18 are for use on aerial cable. The outer wrappings for underground plant are covered in paragraphs 6.40 through 6.44.

6.36 Place a collar of five tight turns of 3/4-inch wide friction tape over the B aluminum tape at the junction of the auxiliary sleeve and cable sheath as shown in Fig. 46.

6.37 Starting on the cable sheath just beyond the outer edge of the B aluminum tape, apply a half-lapped layer of friction tape toward the sleeve and continue just beyond the end of the aluminum tape on the auxiliary sleeve, then place a second half-lapped layer in the reverse direction (Fig. 47).

6.38 On completion of the splicing operation wrap the splice as outlined in Section 632-490-200, and enclose using lead sleeve as outlined in Section 633-200-201.

6.39 ***After wiping the joints and when the joints have cooled to atmospheric temperature,*** finish the wrapping with half-lapped layers of vinyl tape applied over the friction tape as shown in Fig. 48. ***The last wrap of vinyl tape should be free of tension so the end of the tape will curl back.***

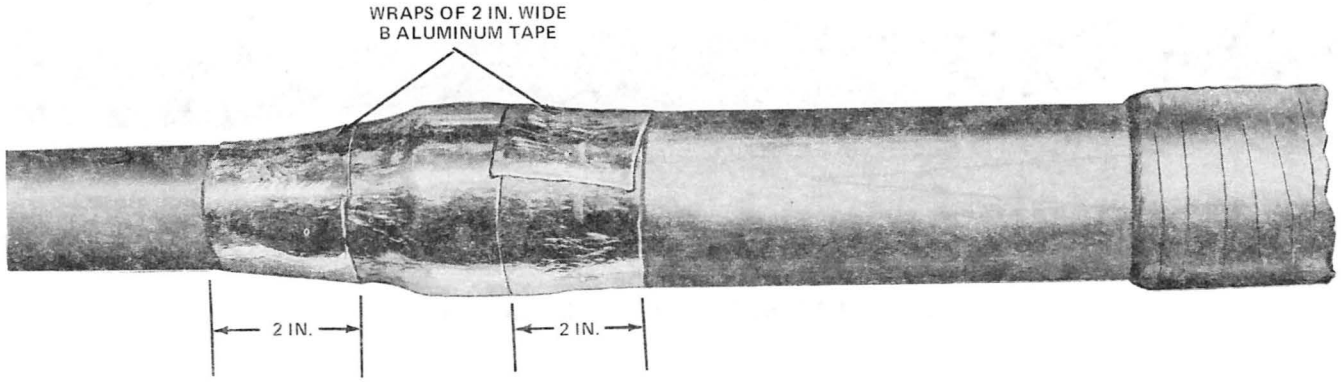

Fig. 45—A 2-Inch Width of B Aluminum Tape Placed Over End of 4-Inch Wide B Aluminum Tape

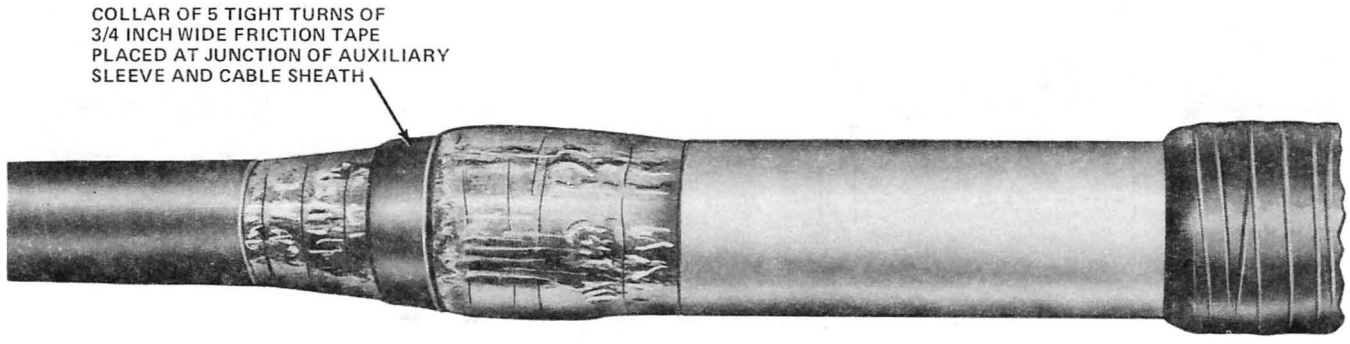

Fig. 46—Friction Tape Collar Placed Over B Aluminum Tape

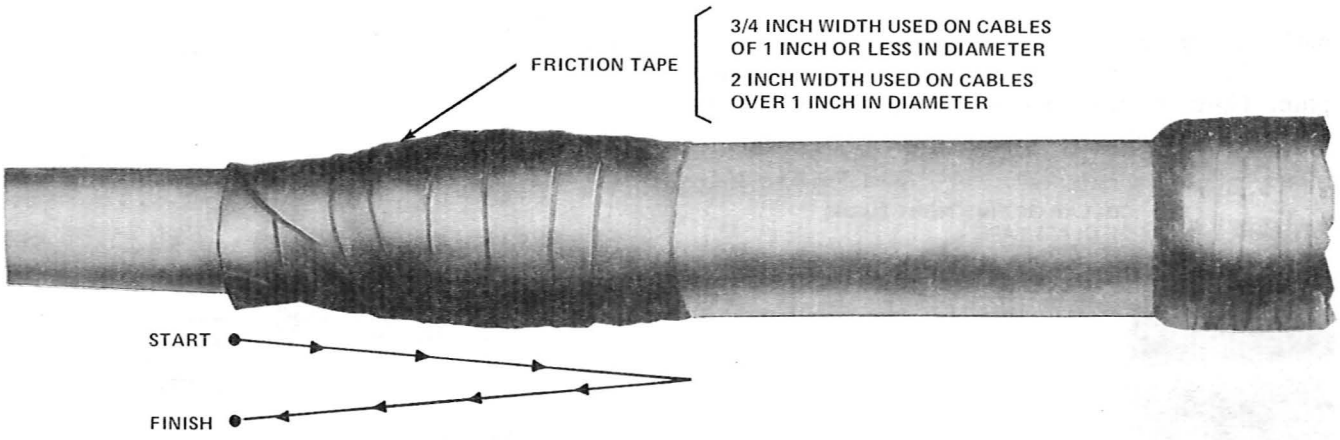

Fig. 47—Friction Tape Wrapping Applied

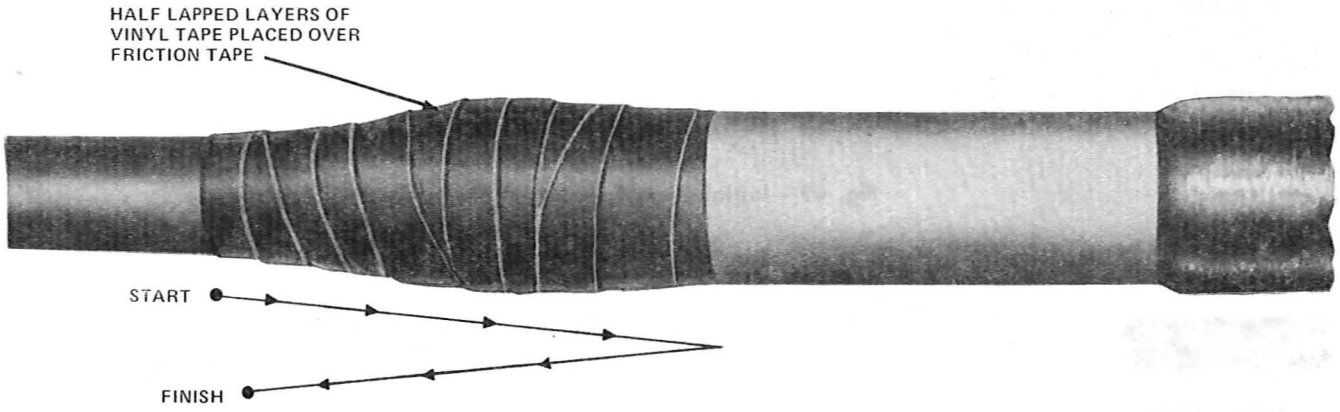

Fig. 48—Vinyl Tape Applied Over Friction Tape

C. Underground Protection for Wrapped Joints

6.40 Use glass tape as added protection on auxiliary or main sleeve joints in underground plant. The glass fibers are chemically inert and maintain their strength.

6.41 Apply the glass tape on auxiliary sleeves as shown in Fig. 49, 50, and 51. Apply the glass tape on main sleeves as shown in Fig. 52, 53, and 54.

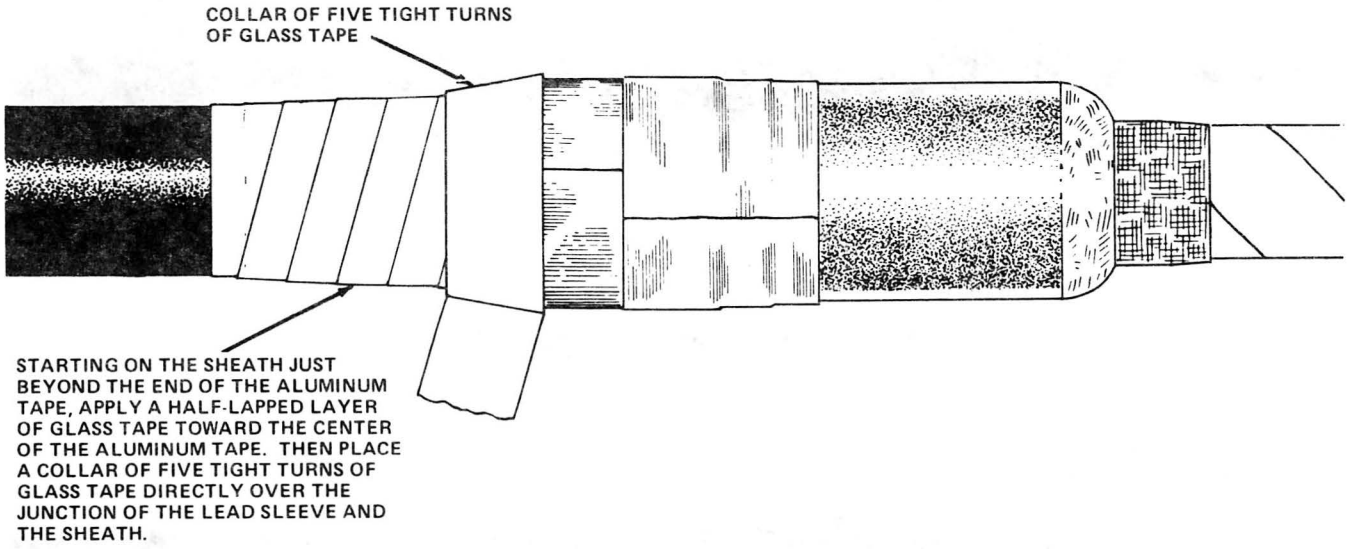

Fig. 49—Initial Glass Tape Wrapping

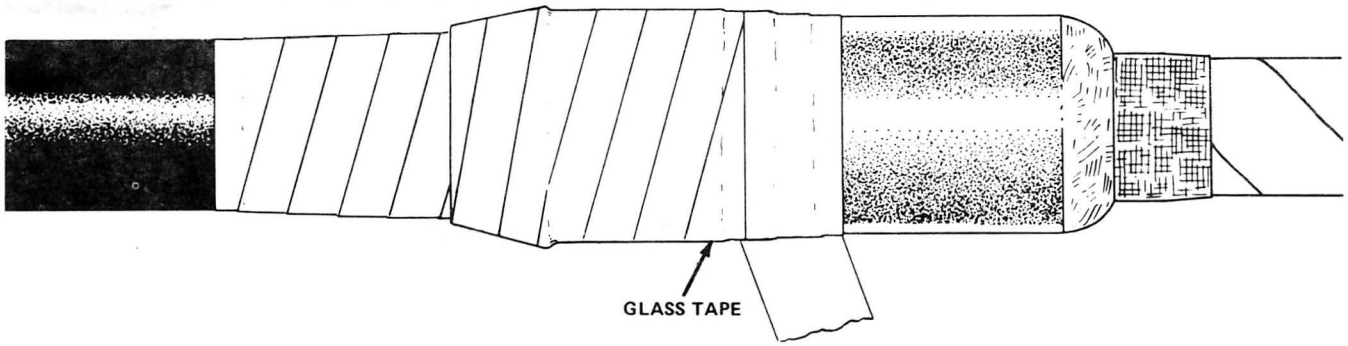

Fig. 50—Glass Tape Wrapped to the End of Aluminum Tape

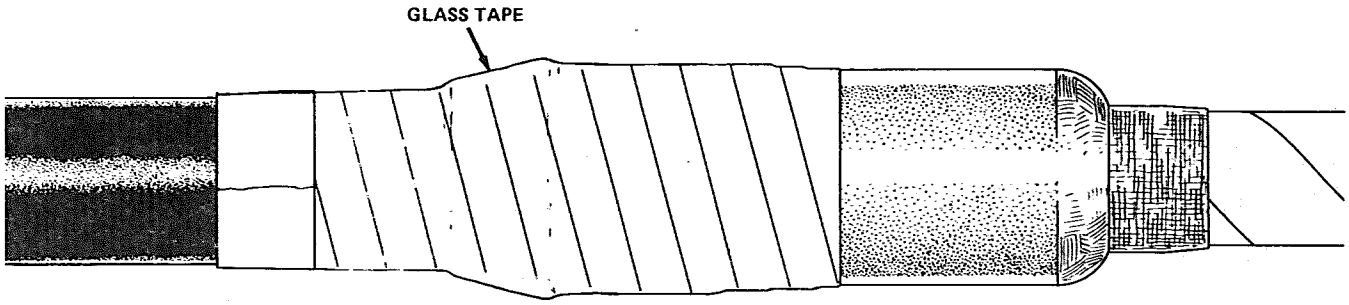

Fig. 51—Second Layer of Glass Tape Applied

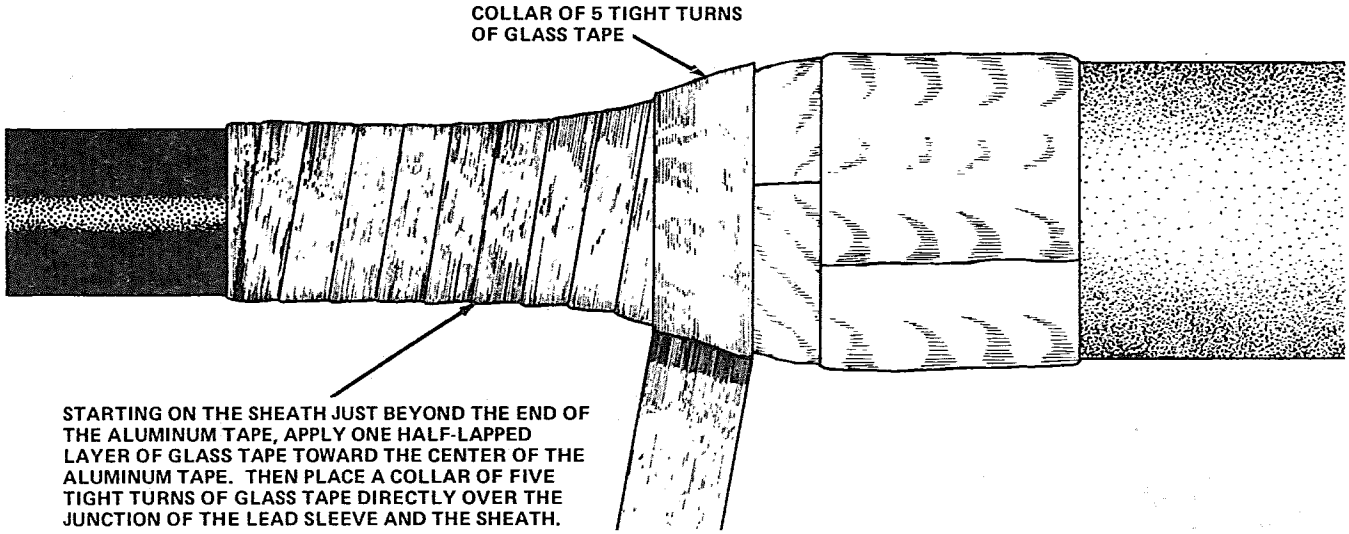

Fig. 52—Applying Glass Tape to Main Sleeve

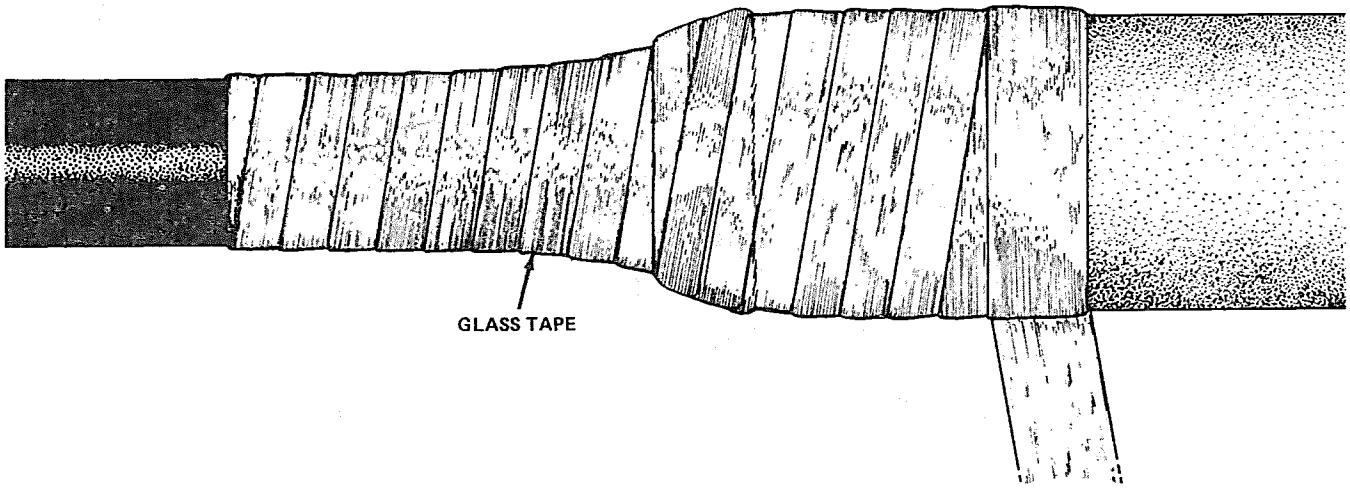

Fig. 53—Tape Wrapped to the End of Aluminum Tape on Main Sleeve

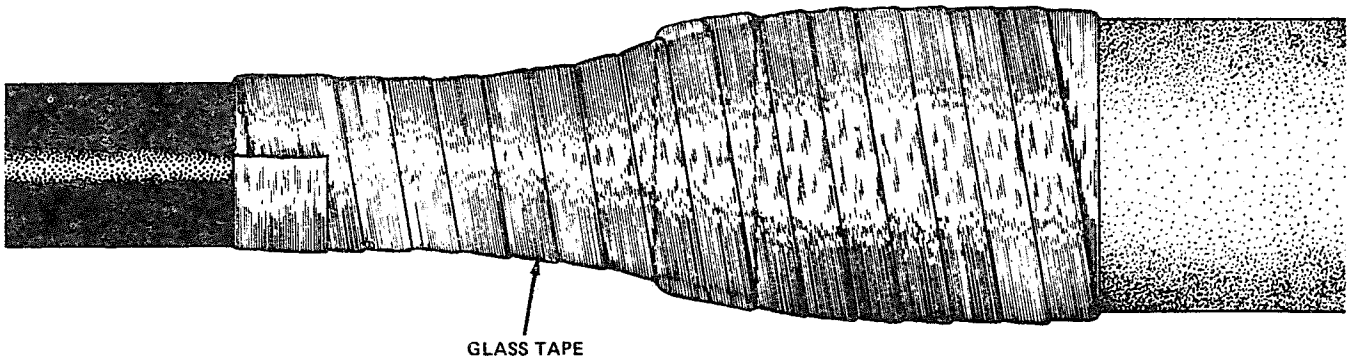

Fig. 54—Second Layer of Glass Tape Applied to Main Sleeve

D. Reinforcing Aerial and Underground Wrapped Joints

6.42 Use sealing clamps to reinforce aerial and underground wrapped joints. The sealing clamps are placed over the vinyl tape as shown in Fig. 55 through 58.

6.43 If the main sleeve joint has been completed for some time and will now be pressurized, remove the old vinyl tape and place the sealing clamps as shown in Fig. 57. The main sleeve should then be rewrapped with vinyl tape.

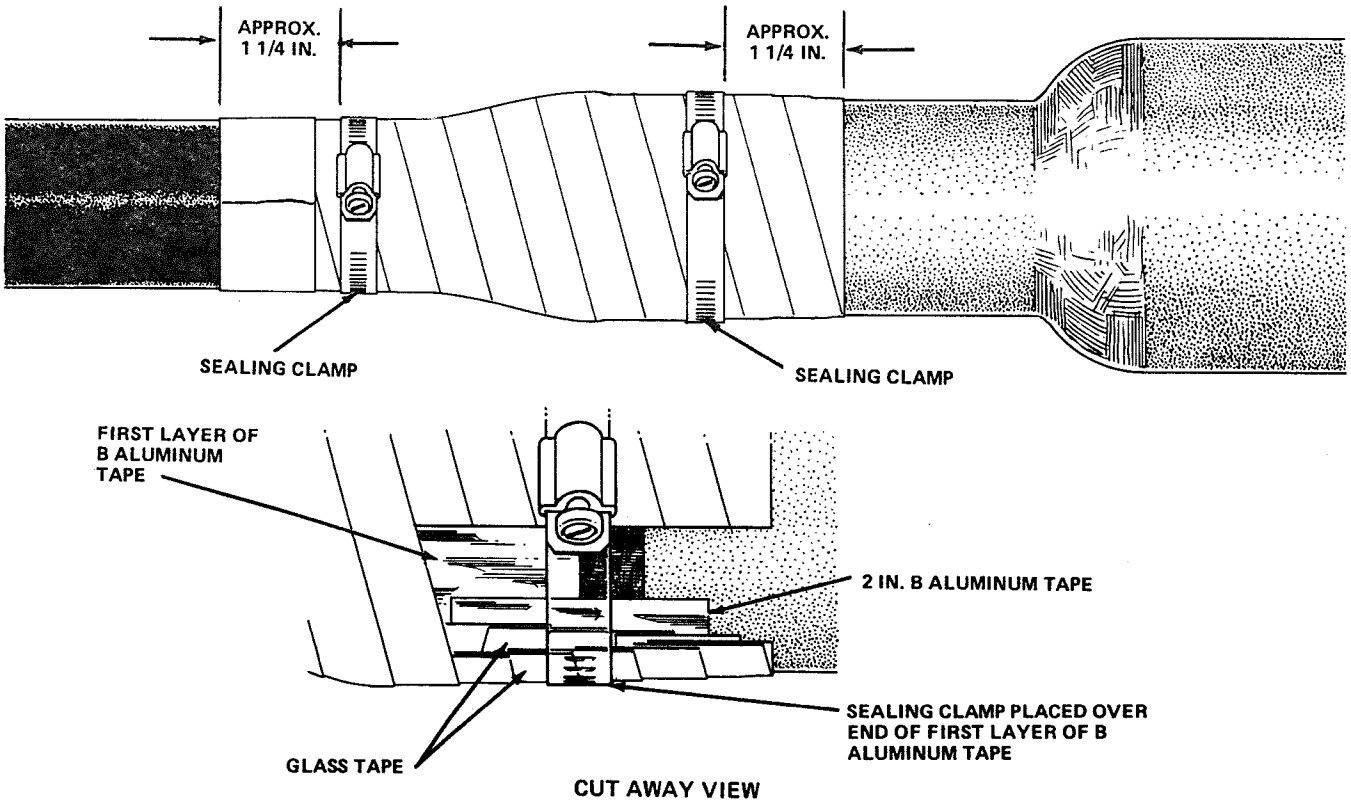

Fig. 55—Clamps Placed on Auxiliary Sleeve

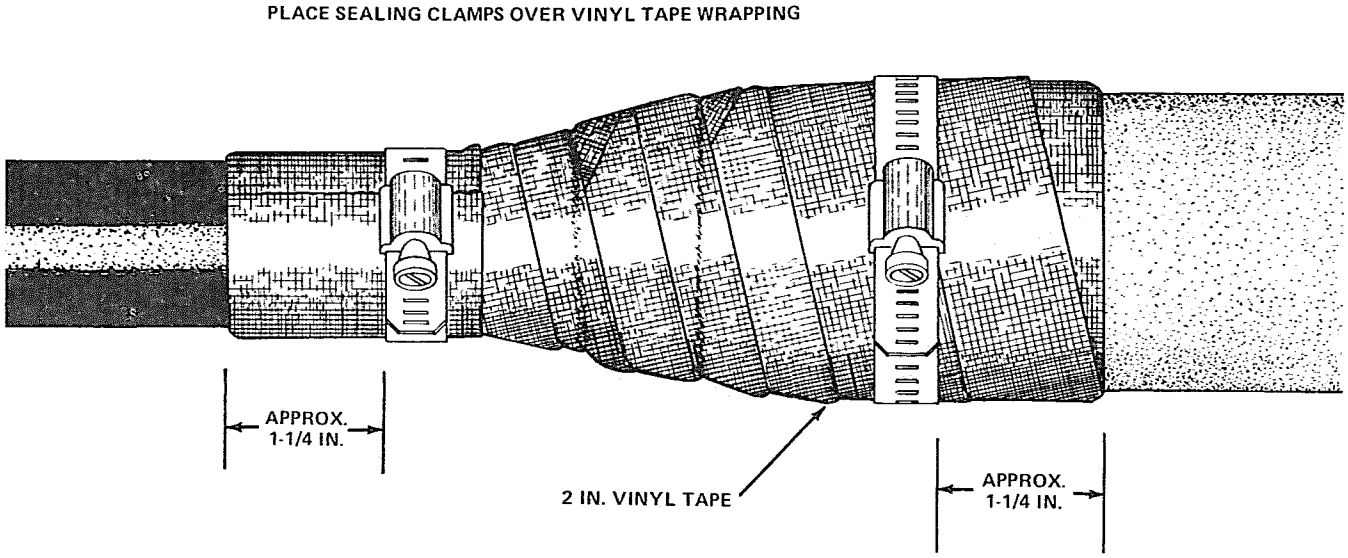

Fig. 56—Clamps Placed on Main Sleeve

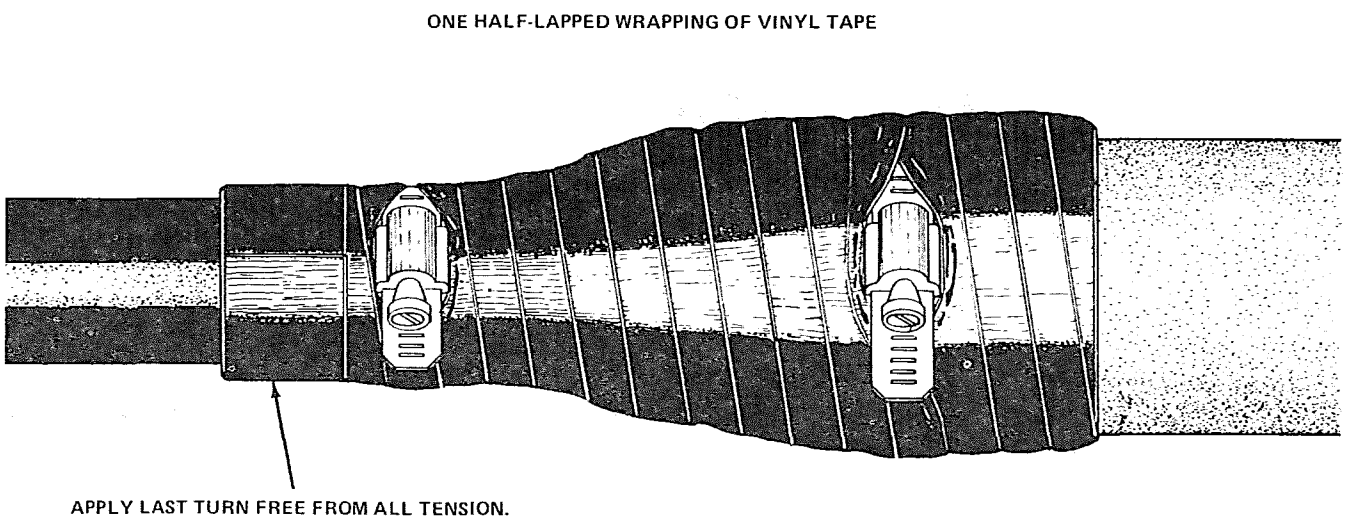

Fig. 57—Clamps Placed on Rewrapped Joint

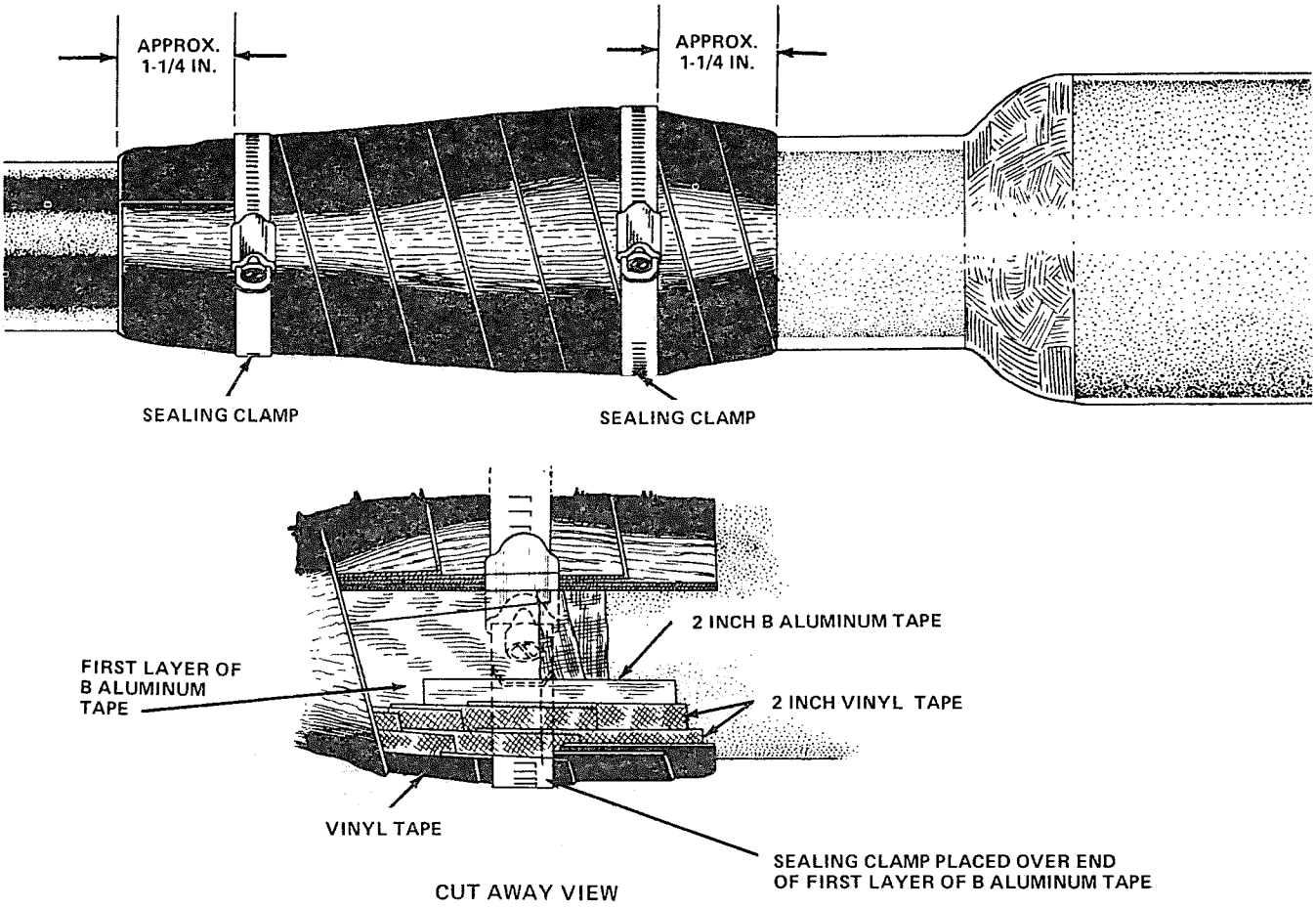

Fig. 58—Clamps Placed on Underground Installation

6.44 To reinforce underground wrapped joints for operation under continuous pressure, place sealing clamps over the wrapping as shown in Fig. 58. ***These sealing clamps should be placed after the joints have cooled to atmospheric temperature.***

7. REENTRY AND REPAIR METHOD

7.01 If it becomes necessary to reenter the splice, remove the lead sleeve as outlined in Section 633-200-201.

7.02 If upon reentry it is found that the cable shield is bonded by means other than use of B bond clamp (Part 5) then it will be necessary to repair bonding method to agree with method outlined in paragraphs 7.03 through 7.09 for alpeth sheath cable, paragraphs 7.10 through 7.13 for stalpeth sheath cable, and paragraphs 7.15 through 7.19 for wrapped joints, main sleeve.

A. Alpeth Sheath

7.03 Figure 59 illustrates an auxiliary sleeve after the main lead sleeve has been removed from the splice.

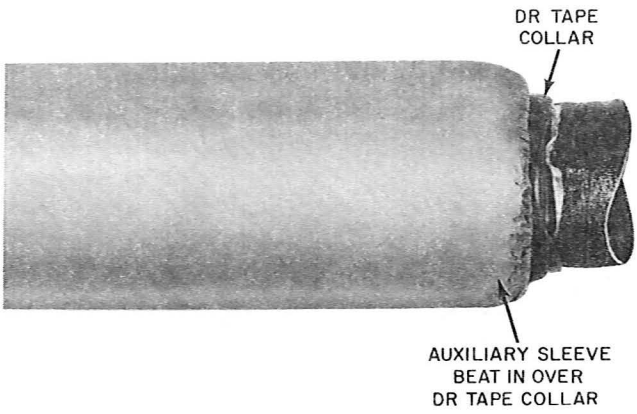

Fig. 59—Lead Sleeves Removed From Auxiliary Sleeve

7.04 Cut the auxiliary sleeve 2 inches back from the DR tape collar as shown in Fig. 60.

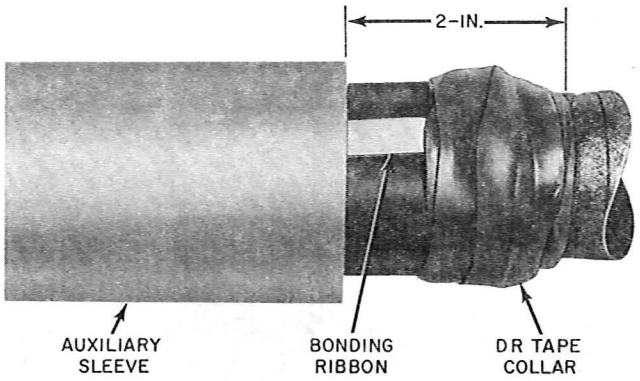

Fig. 60—Auxiliary Sleeve Cut Back 2 Inches

7.05 Remove the DR tape collar to expose the bonding ribbon, copper lashing wire, and metallic cable shield (Fig. 61).

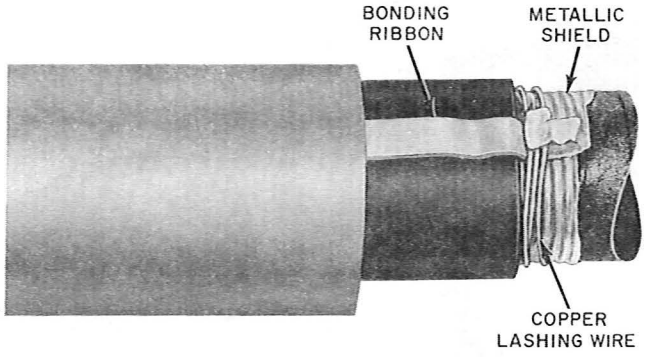

Fig. 61—Removed DR Tape Collar

7.06 Unsolder the bonding ribbon and bend back over the auxiliary sleeve, then remove the copper lashing wire and exposed metallic shield (Fig. 62).

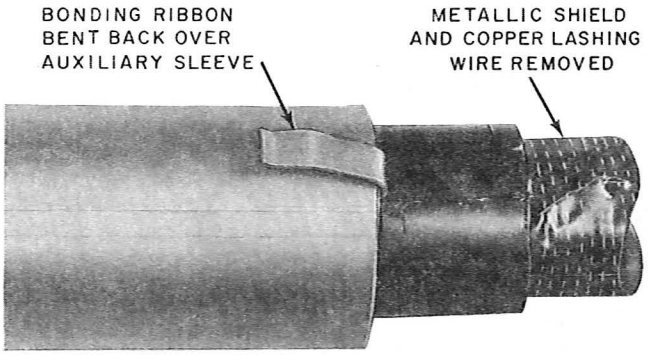

Fig. 62—Bonding Ribbon Disconnected, Metallic Shield and Lashing Wire Removed

7.07 Prepare cable sheath and install B bond clamp as outlined in Part 5.

7.08 Drill a hole in bonding ribbon as shown in Fig. 63.

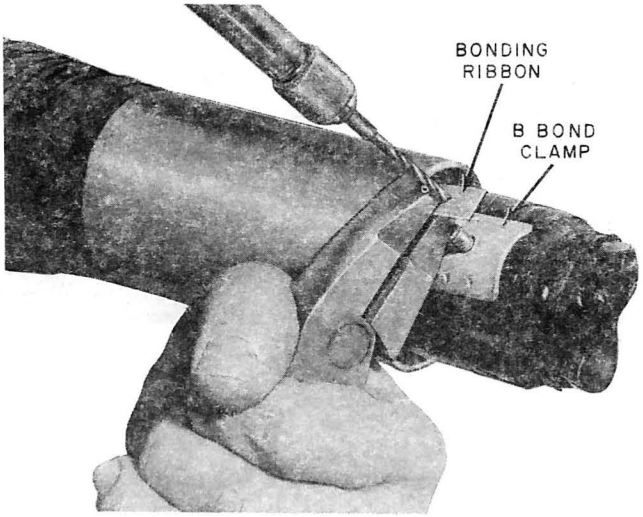

Fig. 63—Drilling Hole In Bonding Ribbon

7.09 Position bonding ribbon and splicing bond on stud of B bond clamp and secure with nuts and washers furnished with clamp. Tighten with 216B tool (Fig. 64), then beat in edge of auxiliary sleeve.

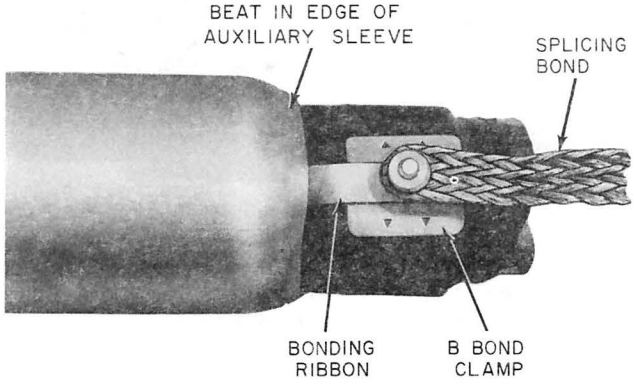

Fig. 64—Bonding Ribbon and Splicing Bond Secured to B Bond Clamp

B. Stalpeth Sheath

7.10 Figure 65 illustrates an auxiliary sleeve after the lead sleeve has been removed from the splice.

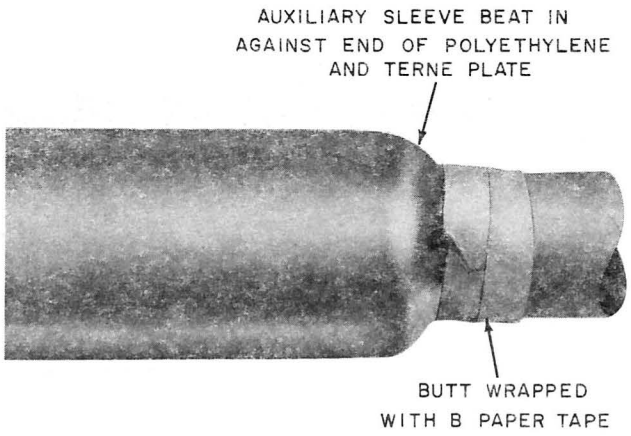

Fig. 65—Auxiliary Sleeve After Lead Sleeve Has Been Removed

7.11 Cut the auxiliary sleeve back 2 inches from the edge of the B paper tape as shown in Fig. 66. Remove the B paper tape, copper lashing wire, and expose the metallic shield.

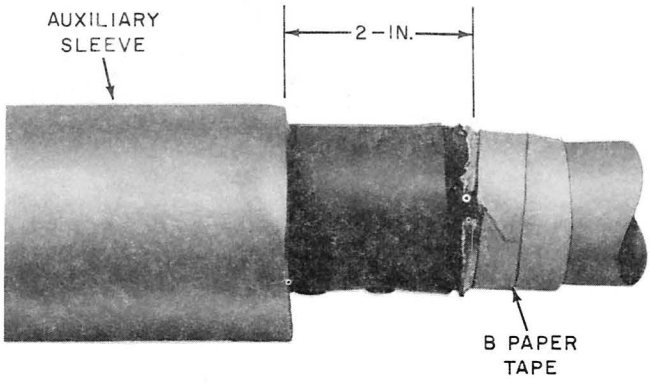

Fig. 66—Auxiliary Sleeve Cut Back 2 Inches

7.12 Prepare cable sheath and install B bond clamp as outlined in Part 5. Install bonding ribbon and shield continuity bond on the stub of the B bond clamp and secure with nut and washer (Fig. 67). Tighten with 216B tool.

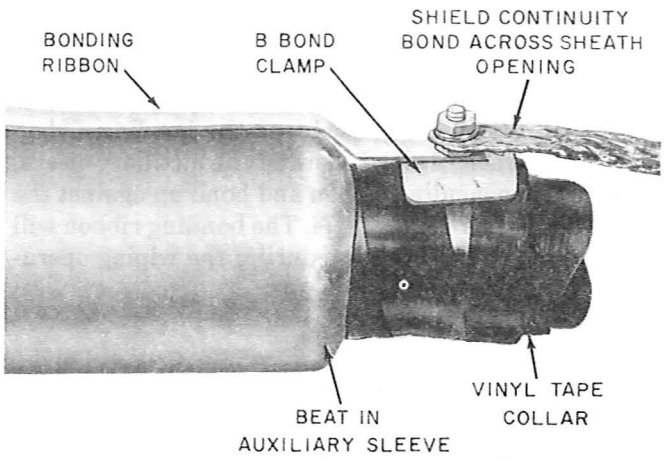

Fig. 67—Prepared Cable Sheath

7.13 After all repairs have been made and lead sleeve is in position over the splice, check to assure that bonding ribbon extends beyond the main sleeve as shown in Fig. 68, then beat in edge of sleeve. If lead discs are used, the bonding ribbon will have to be sandwiched between the lead disc and the auxiliary sleeve.

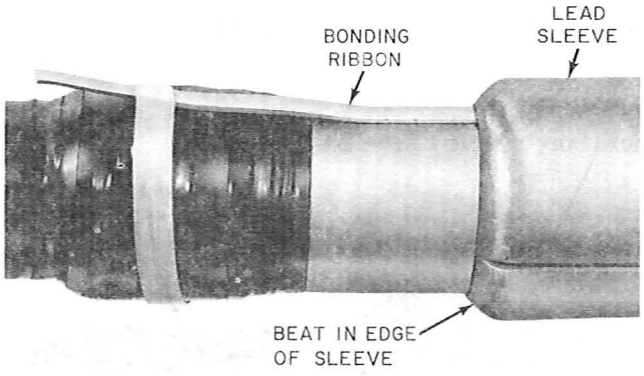

Fig. 68—Lead Sleeve in Position With Extended Bonding Ribbon

7.14 Cut the bonding ribbon and fold back over the lead sleeve or lead disc as shown in Fig. 69. The bonding ribbon will be secured when the joint is wiped, thus establishing the bond.

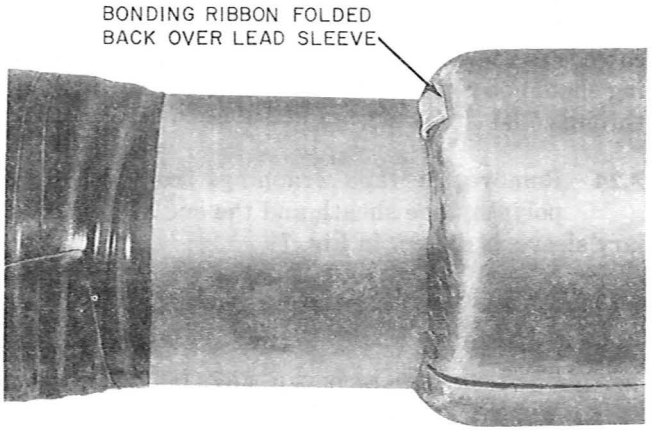

Fig. 69—Bonding Ribbon Folded Back Over Lead Sleeve

7.15 Wipe the sleeve as outlined in Section 633-200-201.

C. Wrapped Joint—Main Sleeve

7.16 Remove all tape wrappings from each end of main sleeve.

7.17 Remove the lead sleeve as outlined in Section 633-200-201.

7.18 Remove the copper lashing wire, bonding ribbon, and exposed metallic shield from each end of sheath opening.

7.19 Install a split auxiliary sleeve on each side of the sheath opening, and run the seam as outlined in Section 633-200-201.

7.20 Push the sleeve back away from the working area, then prepare the wrapped joint as outlined in Parts 3, 4, 5, and 6.

7.21 Place a sleeve over the splice and wipe as outlined in Section 633-200-201.

D. PAP, PASP, ARPAP, and ARPASP

7.22 If it becomes necessary to reenter the splice, remove the lead sleeve as outlined in Section 633-200-201.

7.23 If it is found upon reentry that the method of bonding auxiliary sleeve to metallic shield of cable is as shown in Fig. 70, then the method of bonding should be repaired as outlined in paragraphs 7.24 through 7.30.

7.24 Remove the tape wrappings from the inner polyethylene sheath and the end of the auxiliary sleeve as shown in Fig. 71.

7.25 Cut the auxiliary sleeve back 2 inches from beat-in as shown in Fig. 72.

7.26 Remove the exposed metallic shield and copper lashing wire as shown in Fig. 73.

7.27 Using a carding brush, scuff the inner and outer polyethylene jackets as shown in Fig. 9.

7.28 Install B bond clamp and bonding ribbon and prepare inner wrapped joint as outlined in paragraphs 5.08 through 5.16.

7.29 If a lead disc is used feed the bonding ribbon between the lead disc and the auxiliary sleeve, then cut the bonding ribbon and bond up against the lead disc as shown in Fig. 74. The bonding ribbon will be secured to the lead disc during the wiping operation.

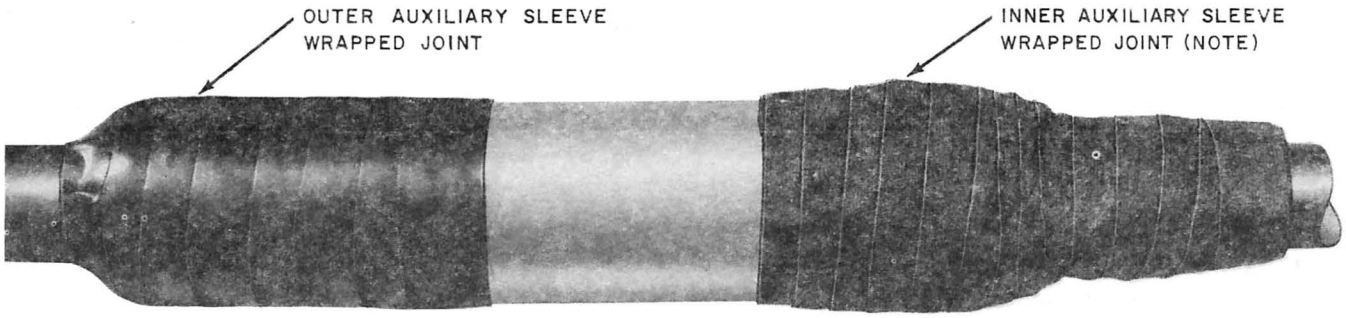

Fig. 70—Superseded Method of Bonding Auxiliary Sleeve to Metallic Shield of Cable

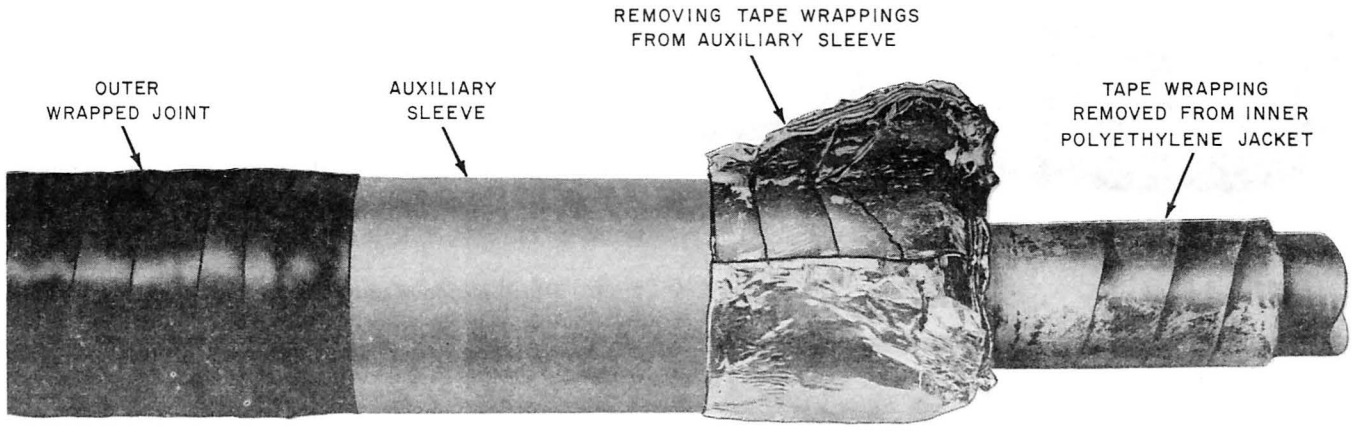

Fig. 71—Removing Tape Wrapping

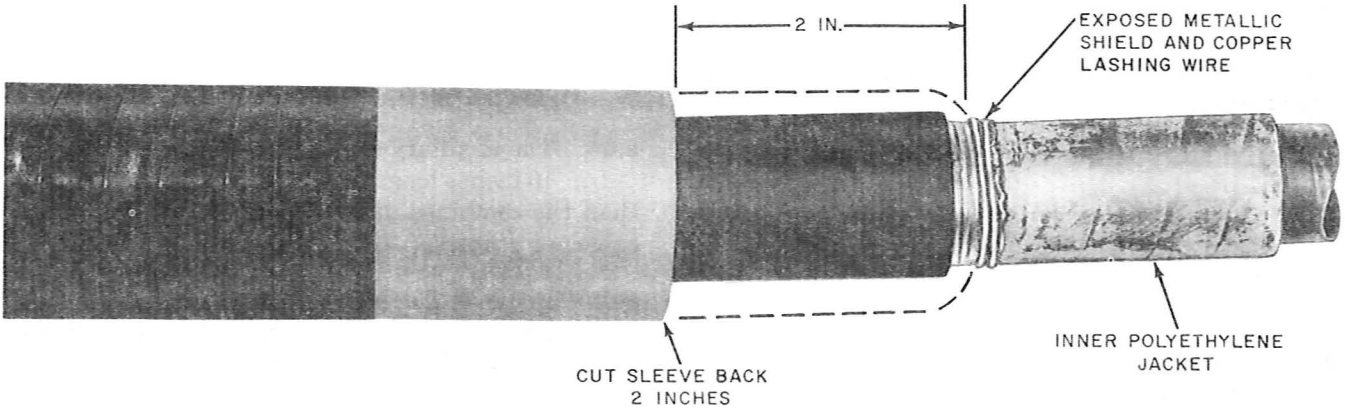

Fig. 72—Auxiliary Sleeve Cut Back 2 Inches

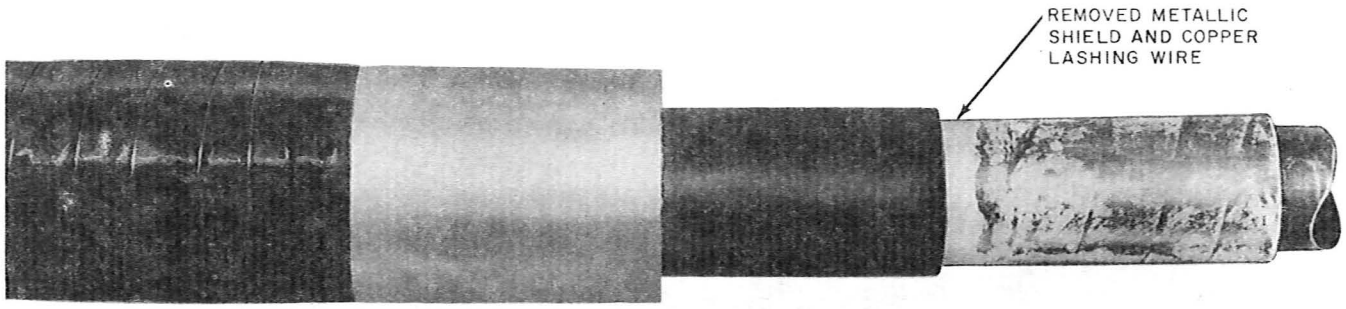

Fig. 73—Auxiliary Sleeve Beat-In

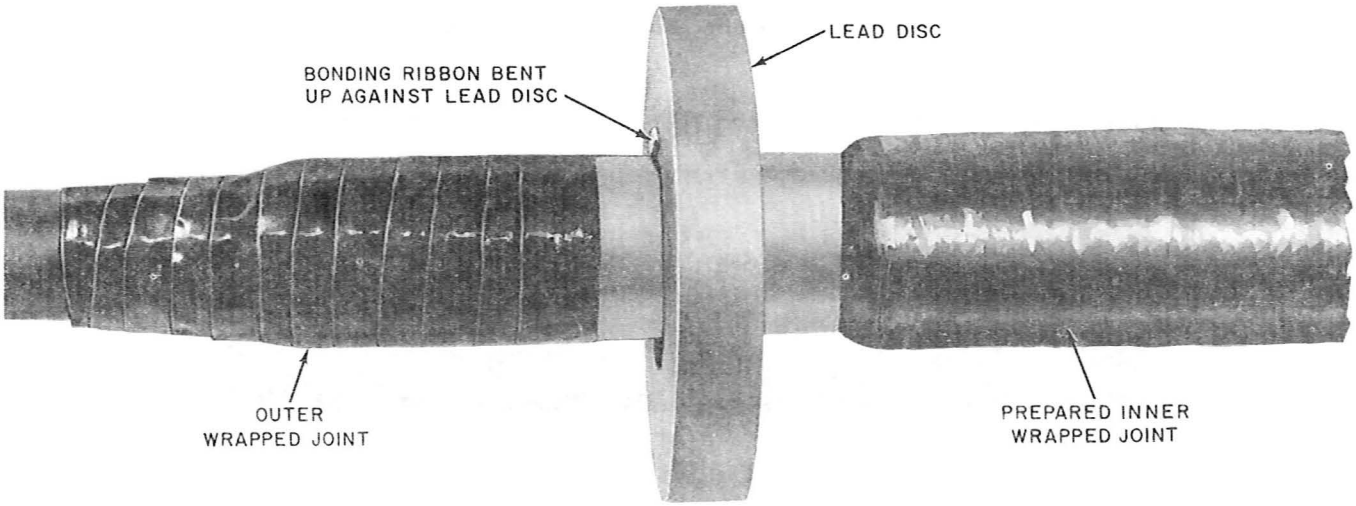

Fig. 74—Method of Securing Bonding Ribbon When Lead Disc Is Used

7.30 If a lead disc is not used, then the bonding ribbon must be bent back over the main lead sleeve as shown in Fig. 75 and secured during the wiping operation.

8. AUXILILARY SLEEVES FOR SPLICE CASES

8.01 Auxiliary sleeves for splice cases permit two lead sheath cables or stubs up to 1.2 inches in diameter to enter a single opening of a splice case.

8.02 Using the auxiliary sleeve eliminates the need for a large lead sleeve and a disc joint; however, the introduction of this method of installation does not preclude the use of lead sleeves for 3-way joints. Either method may be used to cover the splice.

8.03 The lead sheath cables are prepared for splicing as outlined in Section 632-315-200.

A. Preparing Auxiliary Sleeve

8.04 The auxiliary sleeve should be a minimum of 10 inches long and 1/4 inch larger in diameter than the combined diameter of the two lead sheath cables or stubs.

8.05 Remove the identification ridges from the auxiliary sleeves to avoid the possibility of leaks between the sleeve and the splice case.

8.06 Clean one end of the sleeve with a carding brush and apply a coat of stearine as outlined in Section 633-200-201 (Fig. 76).

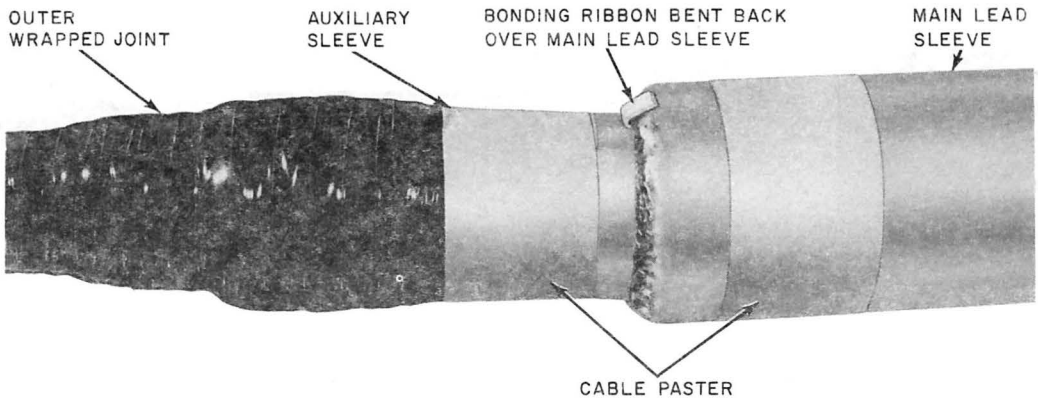

Fig. 75—Method of Securing Bonding Ribbon to Lead Sleeve

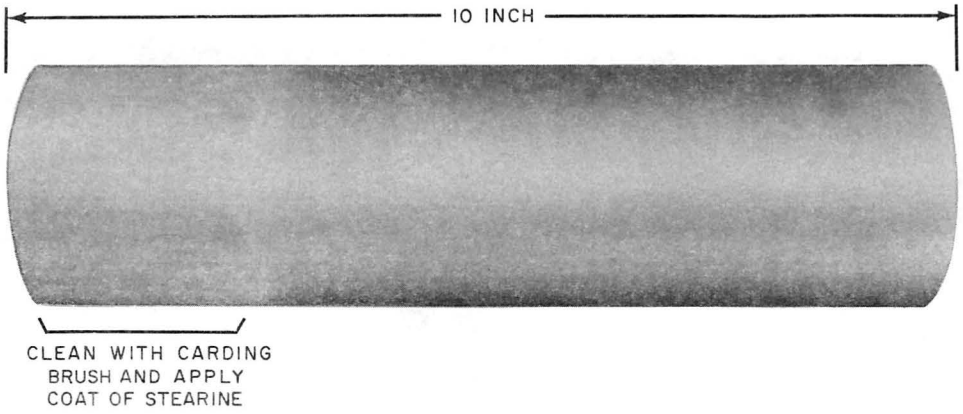

Fig. 76—Auxiliary Sleeve

B. Installation of Auxiliary Sleeve

8.07 Slide the auxiliary sleeve with the stearline-coated end away from the splice over the cables and place a lead wedge between the stub cables as shown in Fig. 77.

8.08 Beat in sleeves to form a tight fit between the cables, lead wedge, and auxiliary sleeve (Fig. 77).

8.09 Place cable pasters on the lead sheath cables and prepare for wiping as outlined in Section 633-200-201.

8.10 Wipe the sleeve as outlined in Section 633-300-201 using a minimum amount of heat to avoid damaging the conductor insulation (Fig. 78).

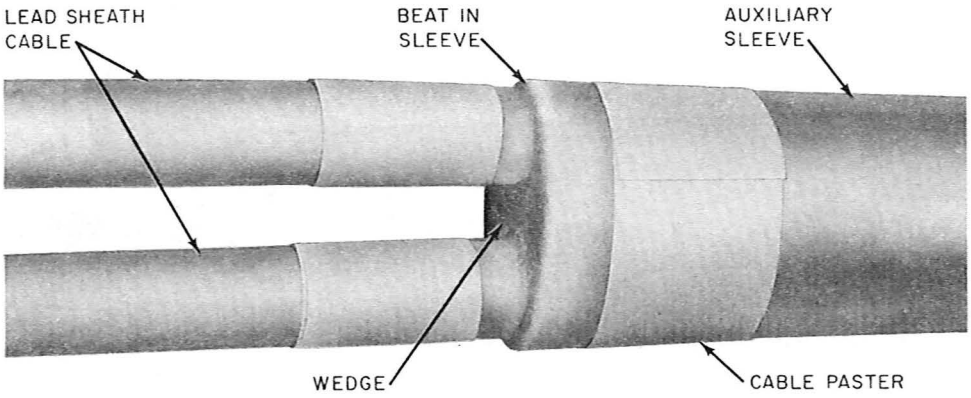

Fig. 77—Joint Prepared for Wiping

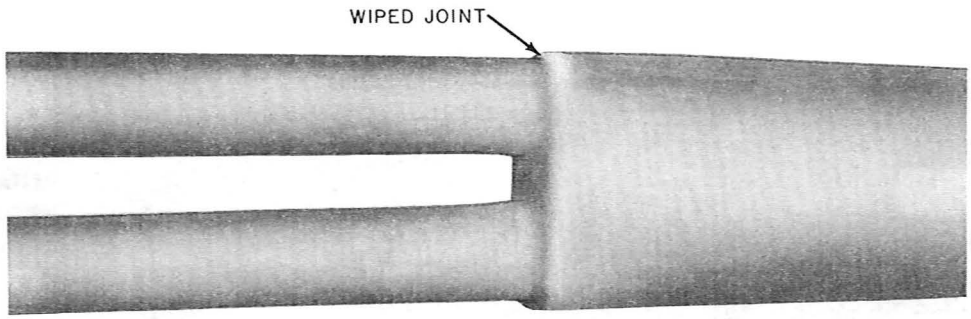

Fig. 78—Wiped Joint

8.11 Cut eight tabs 2-1/2 inches long in the sleeve as would be done in a cable sheath for placement of the inner sheath clamp (Fig. 79).

8.12 Place a large size inner sheath clamp underneath the tabs as shown in Fig. 80 and beat in the sleeve to hold the inner sheath clamp in place.

C. Installation of Splice Case or Closure

8.13 After completion of the wire joining, wrap the completed splice.

8.14 Using sealing washers and B sealing tape, form a collar on the auxiliary sleeve as shown in Fig. 81 and as outlined in Section 633-400-200.

8.15 Place a splice case over the splice as outlined in Section 633-400-200, and Fig. 82 and 83.

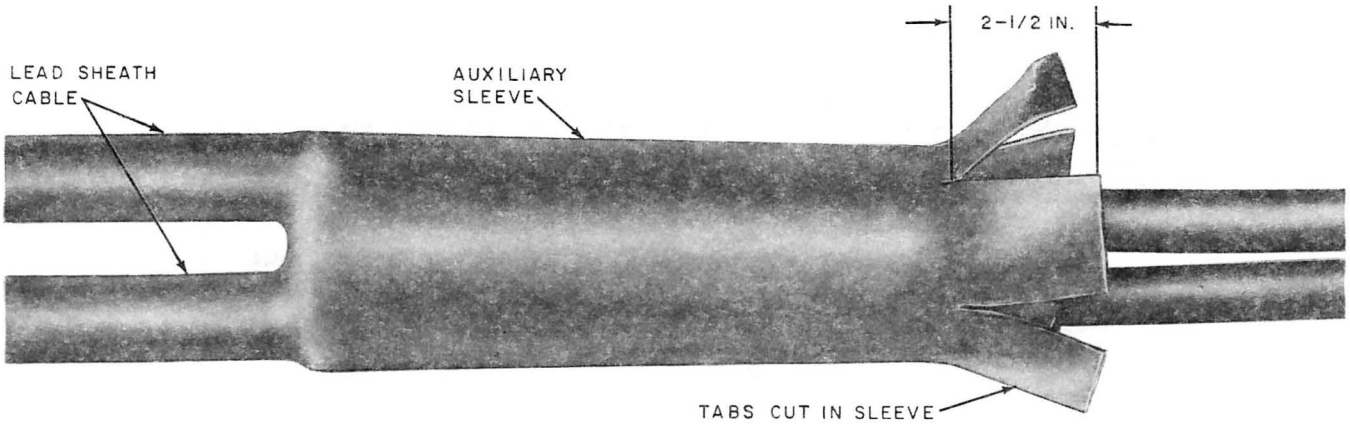

Fig. 79—Tabs Cut in Sleeve

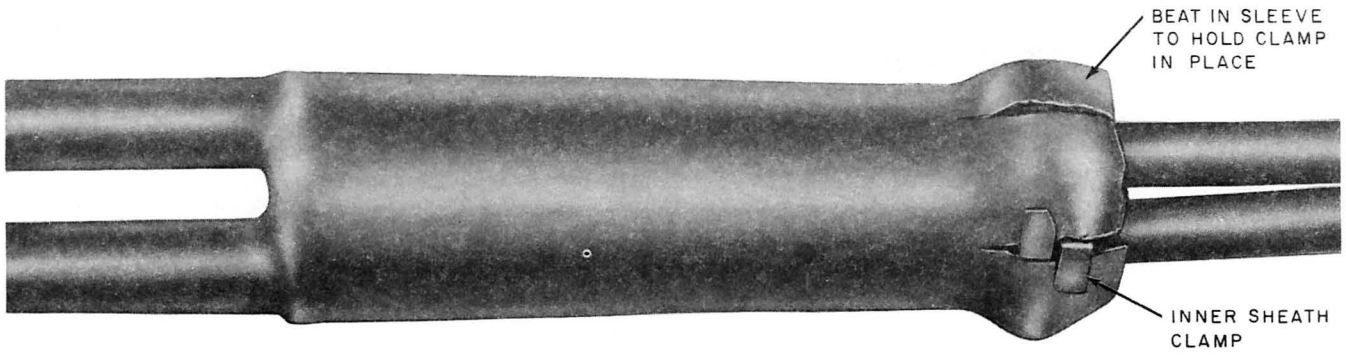

Fig. 80—Installed Inner Sheath Clamp

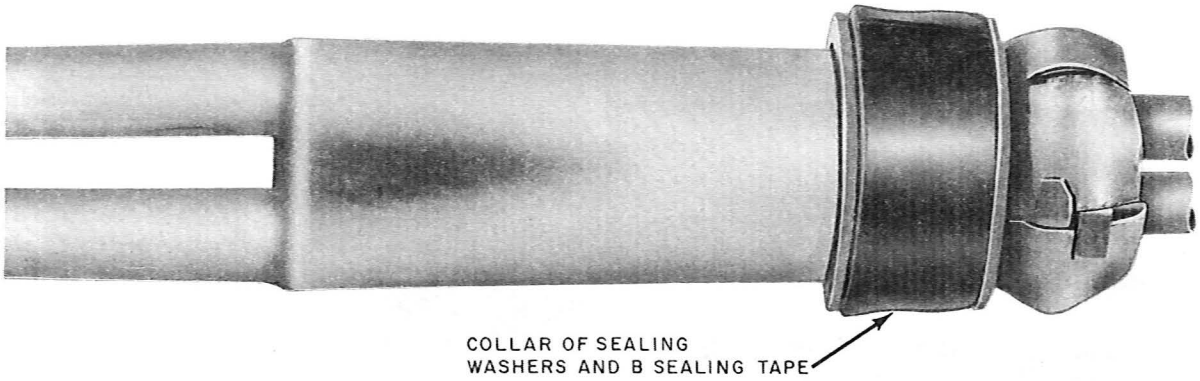

Fig. 81—Sealing Tape Collar Installed

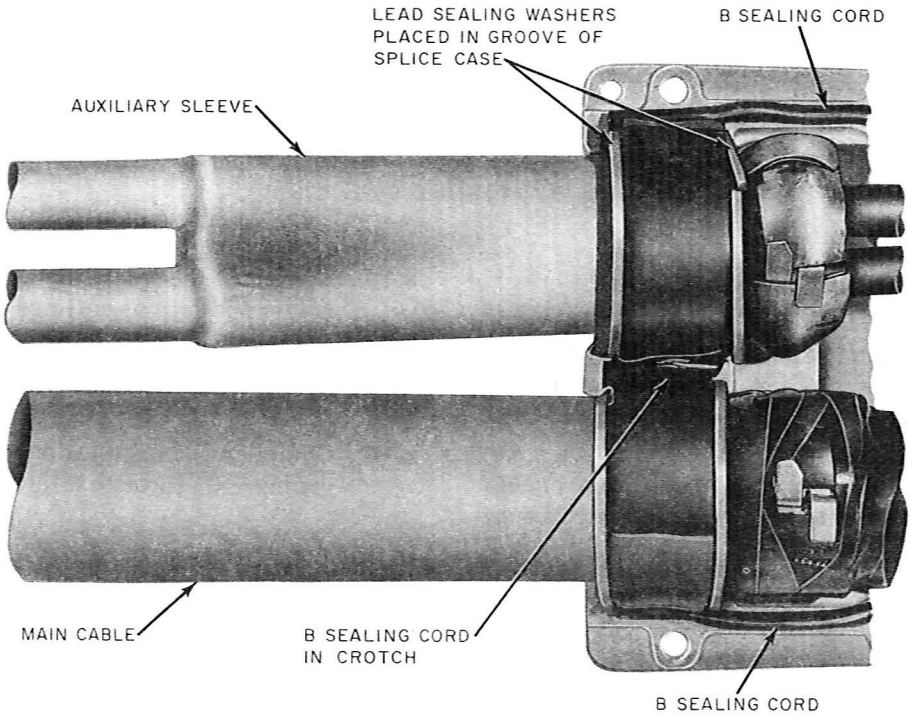

Fig. 82—Back Half of Splice Case Placed Over Splice

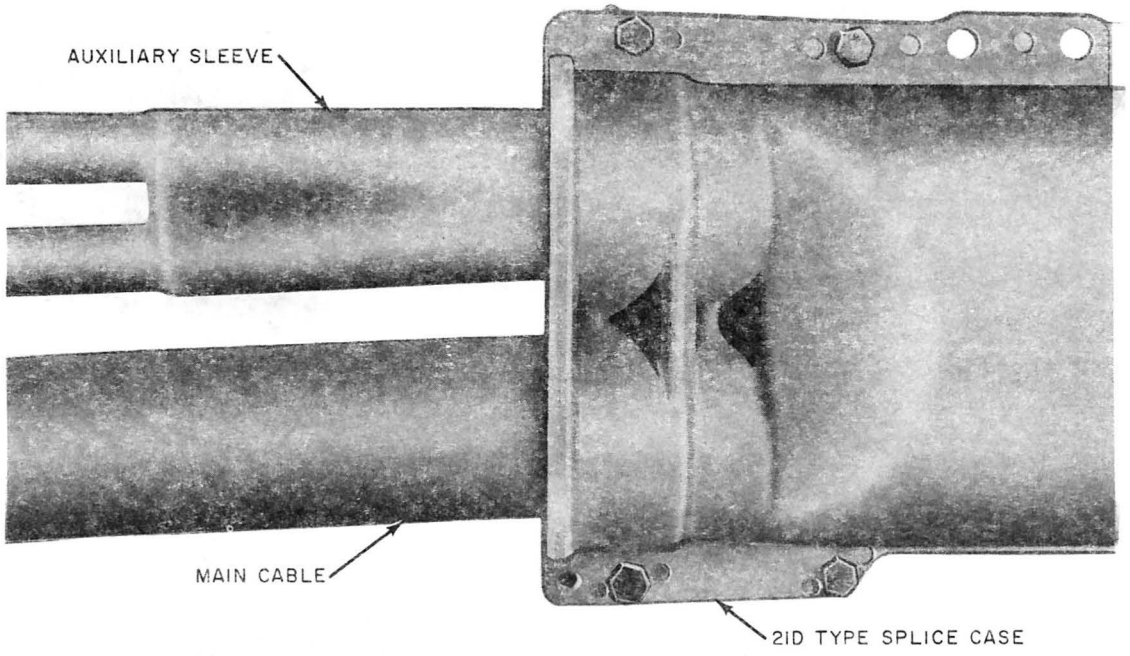

Fig. 83—Installed Splice Case

D. Split Auxiliary Sleeve

8.16 When adding a second lead sheath cable to an existing splice it will be necessary to split the auxiliary sleeve as outlined in Section 633-200-201.

8.17 After splitting the sleeve, open it wide enough to allow the sleeve to be slipped onto the cables.

8.18 Clean the sleeve, slip it over the cable, then solder the split as outlined in Section 633-200-201.

8.19 Complete the installation as outlined in paragraphs 8.07 through 8.15.