

SUSPENSION STRAND STRAND CONNECTORS PLACING

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1. GENERAL

1.01 This section covers the methods and materials required for splicing suspension strand using strand connectors and pole strand connectors.

1.02 This section is reissued to add information pertaining to 6.6M suspension strand and to revise Tables A and B accordingly.

1.03 Section 627-230-208 describes the *preferred* method of joining the same size strand with B strand connectors. Strand connectors and pole strand connectors can be used as an alternate method, although they are primarily intended for joining two *different size* strands.

1.04 Strand connectors and pole strand connectors may be used to join 6M (6000 pound), ϕ 6.6M (6600 pound), ϕ 10M (10,000 pound), 16M (16,000 pound), and 25M (25,000 pound) suspension strand.

1.05 The size of strand to be joined will determine how many B guy clamps or what size B strand grip to use. The different sizes of B strand

grips with their distinguishing markers are given in Section 627-240-212.

2. STRAND CONNECTOR

2.01 Strand connectors may be used to join suspension strand between poles. They may be used in conjunction with B guy clamps or with B strand grips. Where the strand is doubled back and clamped to itself with B guy clamps, the number of clamps required on each side of the connector for different size strands is given in Table A

TABLE A
NUMBER OF CLAMPS REQUIRED

SIZE OF STRAND (POUNDS)	DIAMETER (INCHES)	NUMBER OF B GUY CLAMPS REQUIRED
6M	5/16	1
6.6M	1/4	1
10M	3/8	1
16M	7/16	2
25M	1/2	3

Note: \blacklozenge With the 6.6M suspension strand of self-supporting cable, use B strand grips or B guy clamps only. \blacklozenge

2.02 Figures 1, 2, and 3 illustrate the number and spacing of guy clamps for each strand size.

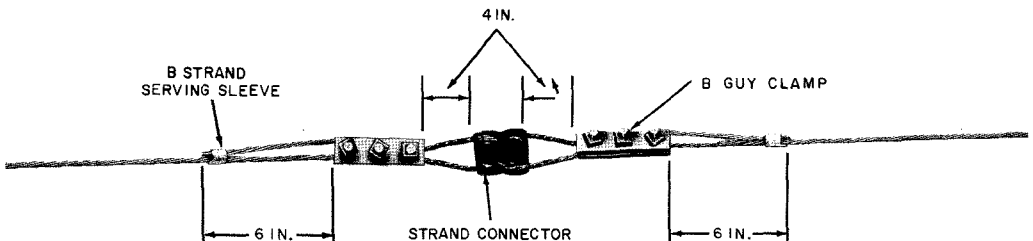


Fig. 1—6M, ϕ 6.6M, ϕ or 10M Strand Connection at Midspan

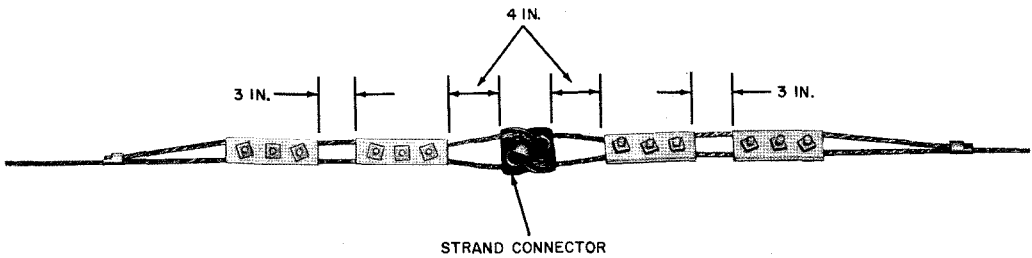


Fig. 2—16M Strand Connection at Midspan

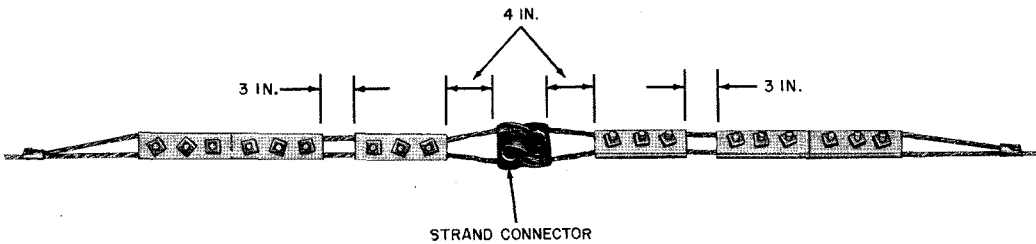


Fig. 3—25M Strand Connection at Midspan

Note: The 3-inch spaces between adjacent guy clamps in the 16M and 25M strand splices permit the placing of cable supports.

2.03 In splicing suspension strands of different sizes, the number of guy clamps required on each side of the strand connector is determined by the **smaller** size strand.

2.04 The strand may also be joined using a strand connector and two B strand grips in basically the same manner as outlined in Section 627-240-212. These may also be used where the size of strand changes. Figure 4 shows suspension strand joined in midspan with a strand connector and B strand grips.

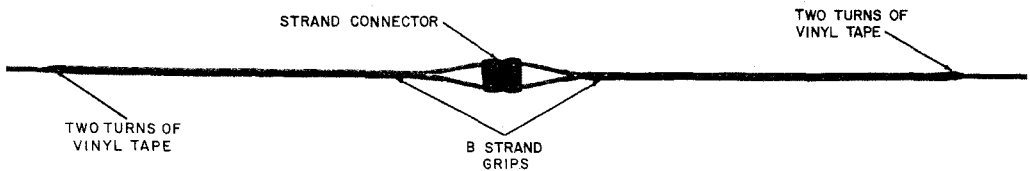


Fig. 4—Strand Connector with B Strand Grips at Midspan

2.05 Suspension strand can be joined adjacent to a pole with a strand connector and B strand grips as shown in Fig. 5. This method can be used with **only** 6M or 6.6M suspension strand. The wrapped legs of the B strand grips can be placed in the cable suspension clamp at any point beyond 1 inch from the crossover mark to within 1 inch of the end of the short leg of the B strand grip.

3. POLE STRAND CONNECTOR

3.01 The pole strand connector may be used for joining all sizes of suspension strand **except** under the following conditions:

- (a) Where the strand must be supported by cable suspension screws.
- (b) At corners where the pull is more than 5 feet.
- (c) Where there is a downward change in grade of 10 percent or more and the size of the strand is 16M or larger.
- (d) Where relocation or early replacement of the pole may be anticipated.

3.02 Where two cables are supported on opposite sides of the pole on a single suspension bolt,

the strand splices should be staggered from one pole to the other to avoid placing two pole strand connectors on the same pole.

3.03 A 5/8-inch, type A cable suspension bolt should be used for mounting the pole strand connector when splicing 6M or 10M strand. A 3/4-inch by 2-1/4 inch square washer should be placed under the nut.

3.04 A 3/4-inch, type A cable suspension bolt should be used for mounting the pole strand connector when splicing 16M or larger strand or when splicing 10M strand where there is a downward change in grade of 10 percent or more. An E curved washer should be placed under the nut of the 3/4-inch bolt. Figure 6 and the illustrations which follow show pole strand connectors with the bolt heads properly installed in the square recesses in the connectors.

3.05 The pole strand connector may be used with either the B strand grip or with an arrangement of B guy clamps. Where B guy clamps are used and the two sections of strand are the same size and dead ended at each of the distant ends, the following procedure is used:

- (1) Pull the two lengths of strand to the desired tension at the pole where the connector is

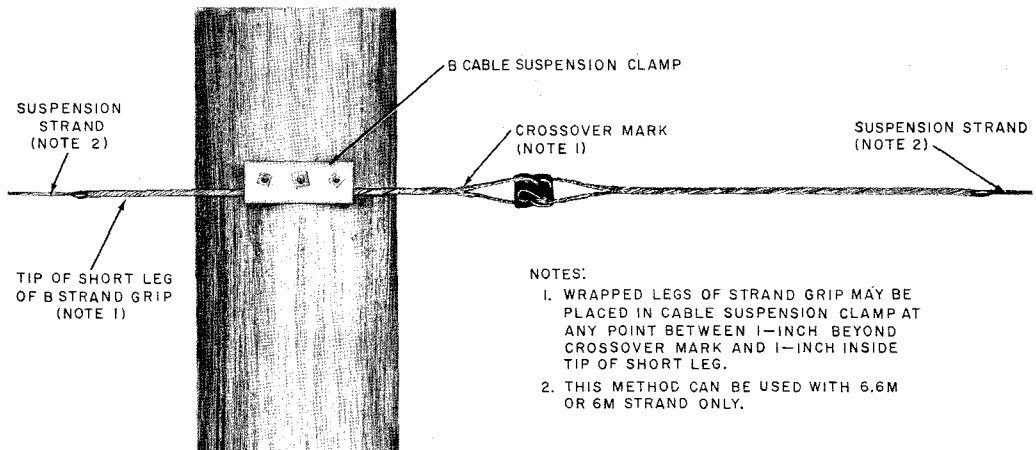


Fig. 5—Strand Connector with B Strand Grips Adjacent to Pole

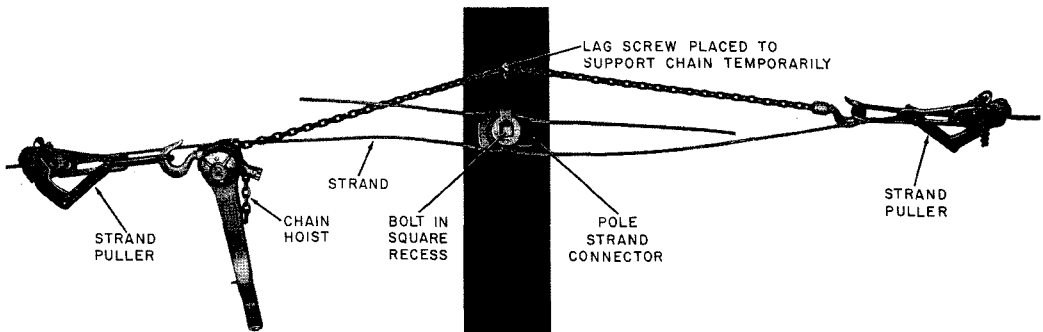


Fig. 6—Tensioning Strand for B Guy Clamps

mounted, using a chain hoist of the correct size as indicated in Section 627-240-211 (Fig. 6). The two strand ends should be pulled against each other *and not against the pole* to avoid placing unbalanced loads on the pole.

(2) Cut the two strands with an overlap of about 4 feet at the pole. Pass each end under the connector, around the strand groove, and over the top of the connector through the loop strap, keeping each strand in its proper groove.

(3) Pull up the strand tails and secure the strand with the required number of guy clamps.

(4) Release the chain hoist and recheck the strand tension, adjusting it to the proper value if necessary. The tension in the strand on each side of the splice pole should be *equal* when the job is completed.

3.06 Figure 7, 8, and 9 show the required number and spacing of guy clamps for each strand size.

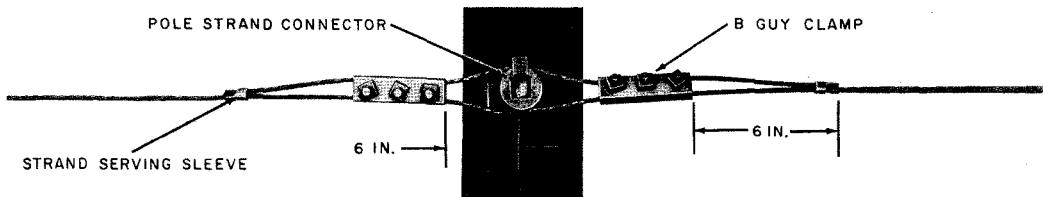


Fig. 7—6M, 6.6M, or 10M Strand Connection at Pole

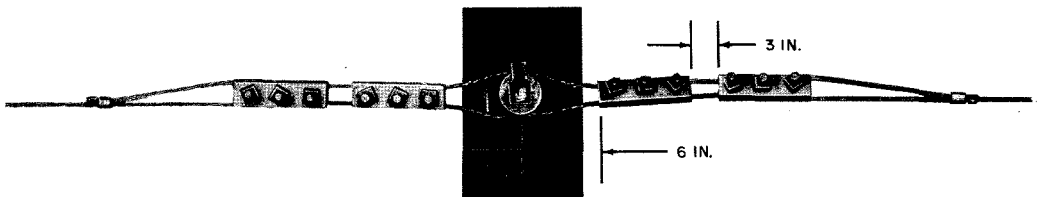


Fig. 8—16M Strand Connection at Pole

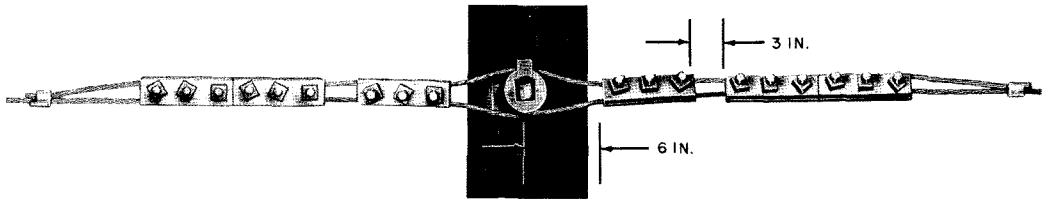


Fig. 9—25M Strand Connection at Pole

3.07 When using the B strand grip with a pole strand connector, the strand is tensioned in the same manner as when B guy clamps are used. The strand, however, is not overlapped but is cut off about 4 inches from the pole strand connector as shown in Fig. 10.

3.08 Figure 11 shows the B strand grips partially installed and Fig. 12 illustrates the completed installation.

3.09 Where two or more pole strand connectors are to be installed in a continuous strand run, the following procedure may be used:

- (1) Lay the strand out in the usual manner and determine the location of the pole strand connectors.
- (2) Make temporary splices in the strand at the poles where the pole strand connectors

are to be placed. The strand should overlap about 10 to 15 feet as shown in Fig. 13. Use the same size strand as that being spliced and the number of guy clamps indicated in Table B on each end of the splice. The specified overlap should be sufficient to ensure that the splicing point will fall at the strand connector after the strand has been pulled to the required tension. If the splice falls beyond this point, the strand should be slacked off and the temporary splice relocated. All bolts in all of the guy clamps used in the temporary splice shall be securely tightened.

- (3) After the strand has been pulled to the required tension and suitably secured at the tensioning point, the ends of the strands should be connected to the pole strand connectors as described in 3.05 or 3.07.
- (4) Remove the strand and guy clamps of the temporary splice.

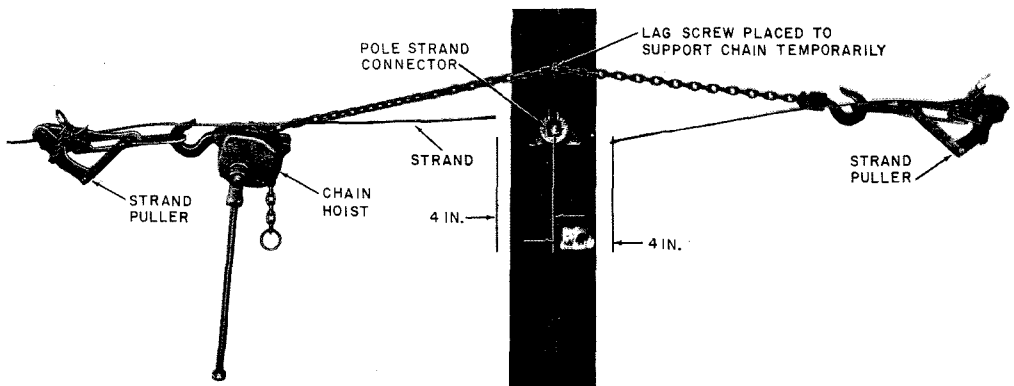


Fig. 10—Tensioning Strand for B Strand Grips

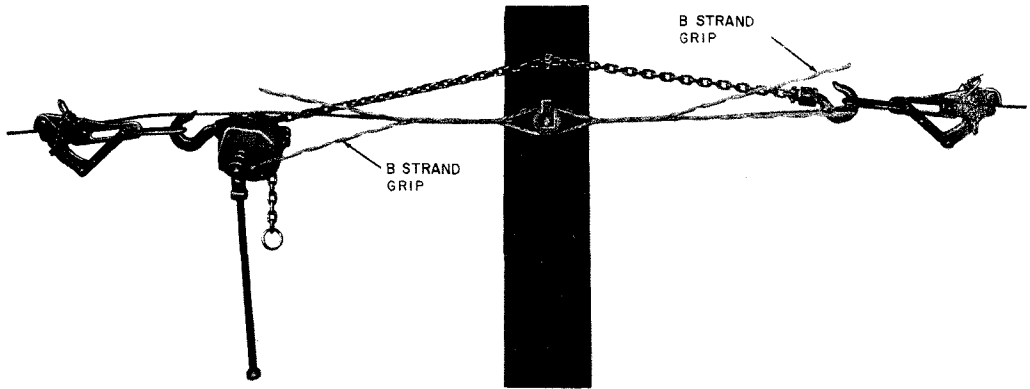


Fig. 11—B Strand Grips Partially Installed

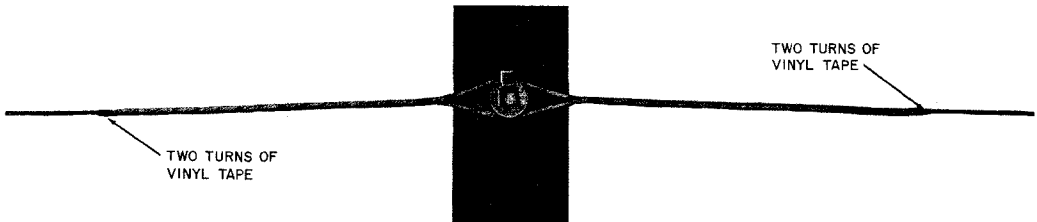


Fig. 12—Completed Installation

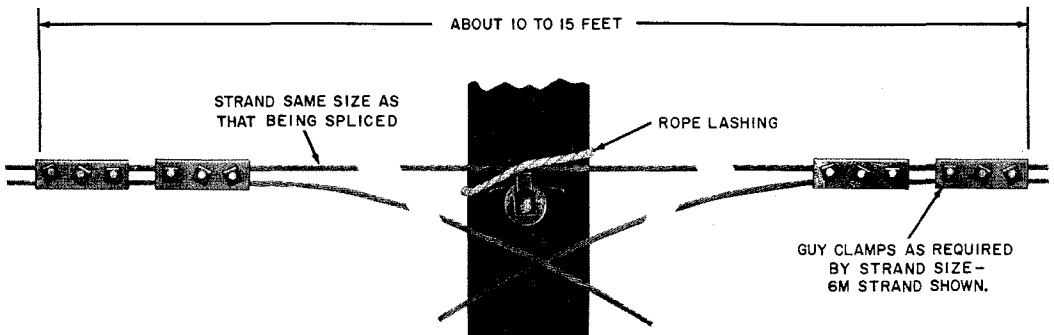


Fig. 13—Temporary Strand Splice at Pole

TABLE B
REQUIRED NUMBER OF CLAMPS FOR
TEMPORARY SPLICE

STRAND SIZE	NUMBER OF B GUY CLAMPS ON EACH SIDE OF SPLICE
6M	2
6.6M	2
10M	3
16M	4
25M	5

Note: Strand should never be terminated on only one side of a pole strand connector, as this might cause the pole to turn in the ground. If it is necessary to temporarily interrupt the strand pulling operation at a pole where a pole strand connector is to be placed, the following procedure is used:

- (a) Place a temporary head guy to support the strand termination on the pole.

(b) Pull the strand up to the desired tension and dead end it temporarily on the pole by taking two turns around the pole and clamping the end of the strand with the proper number of B guy clamps.

3.10 Where two different size strands are to be terminated on a pole strand connector, the following procedure is used:

- (1) Attach each strand to the connector with the required number of clamps (Table A) or proper size B strand grips.
- (2) In addition place a false deadend on the larger strand and head guy the pole away from the larger strand.
- (3) Pull the larger strand up to the desired tension from a convenient point along the section of larger strand.
- (4) Pull the smaller strand up to the desired tension from a convenient point along the section of smaller strand.