

BELL SYSTEM PRACTICES
Outside Plant Construction
and Maintenance

SECTION G51.121.1
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AT&T Co Standard

SUSPENSION STRAND
STRAND CONNECTORS

Contents	Page
1. General	1
2. Strand Connector	2
3. Pole Strand Connector	3

1. GENERAL

1.01 This section covers the methods and materials required for splicing suspension strand using the strand connector or the pole strand connector. The use of strand links is covered in another section. Section G51.121, Issue 1, is replaced.

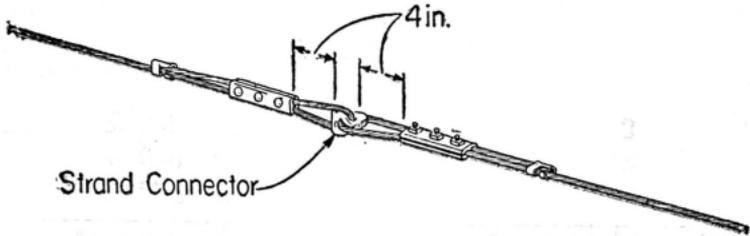
1.02 In terminating strand on strand connectors or pole strand connectors, or under other conditions where the strand is doubled back and clamped to itself with 3-bolt guy clamps, the number of clamps to be placed on each section of strand is as follows:

<u>Size of Strand (Pounds)</u>	<u>Number of Guy Clamps Required</u>
6,000 or 10,000	1
16,000	2
25,000	3

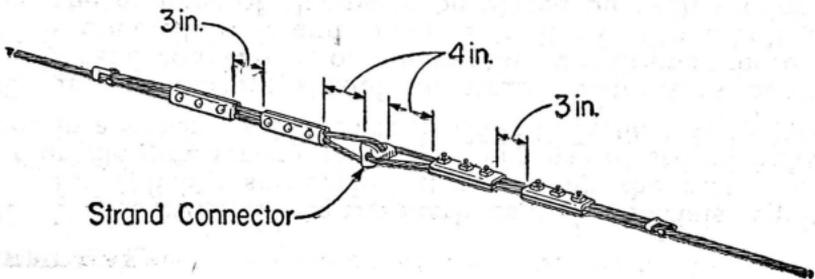
2. STRAND CONNECTOR

2.01 A splice in suspension strand using a strand connector should be made as follows:

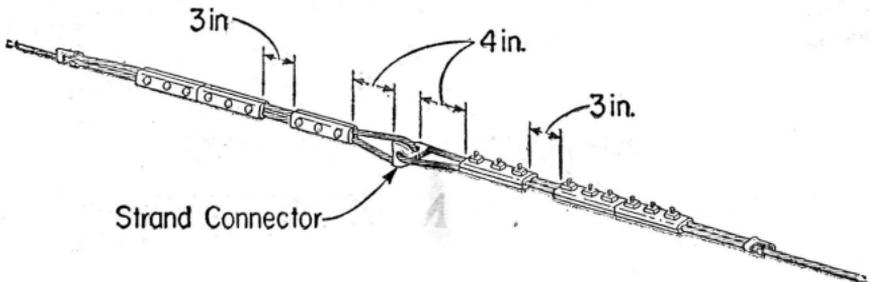
SPLICE FOR 6,000 POUND AND 10,000 POUND SUSPENSION STRAND



SPLICE FOR 16,000 POUND SUSPENSION STRAND



SPLICE FOR 25,000 POUND SUSPENSION STRAND



Note: The 3-inch spaces between adjacent guy clamps in the 16,000 and 25,000 pound strand splices permit the placing of cable supports.

2.02 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, as shown in the following table.

<u>Sizes of Strand to be Spliced</u>	<u>Number of Guy Clamps Required</u>
6,000 and 10,000	1
6,000 and 16,000	1
10,000 and 16,000	1
16,000 and 25,000	2

3. POLE STRAND CONNECTOR

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

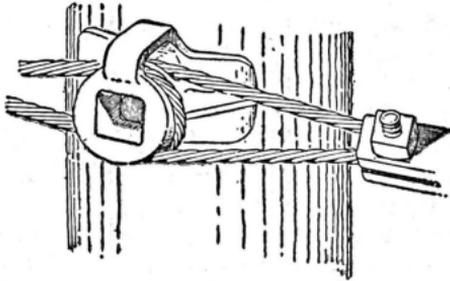
- (a) Where the strand must be supported by cable suspension screws.
- (b) At corners where the pull is more than 5 feet.
- (c) Where there is a downward change in grade of more than 1/10 and the size of the strand is 16,000 pound or larger.
- (d) Where relocation or early replacement of the pole may be anticipated.

3.02 Where two cables are supported on opposite sides of the pole on one suspension bolt, the strand splices should be staggered to avoid placing two pole strand connectors on the same pole.

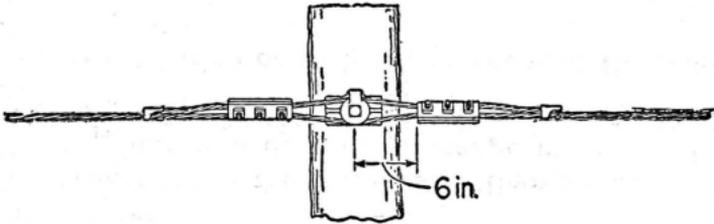
3.03 A crossarm bolt or a 5/8 inch type A cable suspension bolt should be used for mounting the connector on the pole when splicing 6,000 or 10,000 pound strand, except as noted in Paragraph 3.04. A 3/4 inch x 2-1/4 inch square washer should be placed under the nut.

3.04 A 3/4 inch type A cable suspension bolt should be used for mounting the connector on the pole when splicing 16,000 pound or larger strand, or when splicing 10,000 pound strand where there is a downward change in grade of more than 1/10. An E curved washer should be placed under the nut of a 3/4 inch bolt.

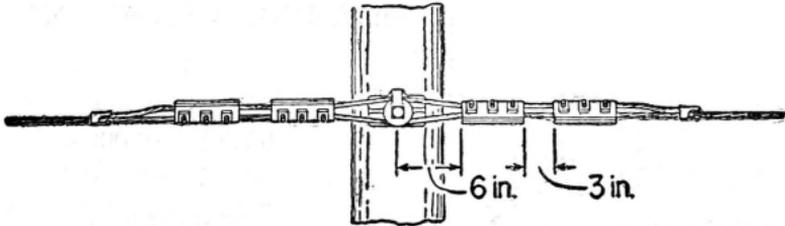
3.05 The pole strand connector should be installed as shown in the following illustrations. The bolt should be installed with the head in the square recess in the connector.



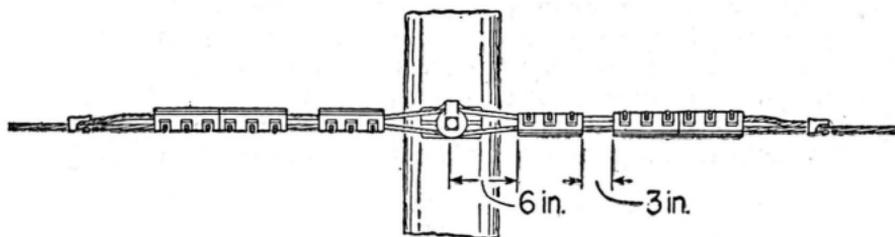
6,000 POUND AND 10,000 POUND SUSPENSION STRAND



16,000 POUND SUSPENSION STRAND

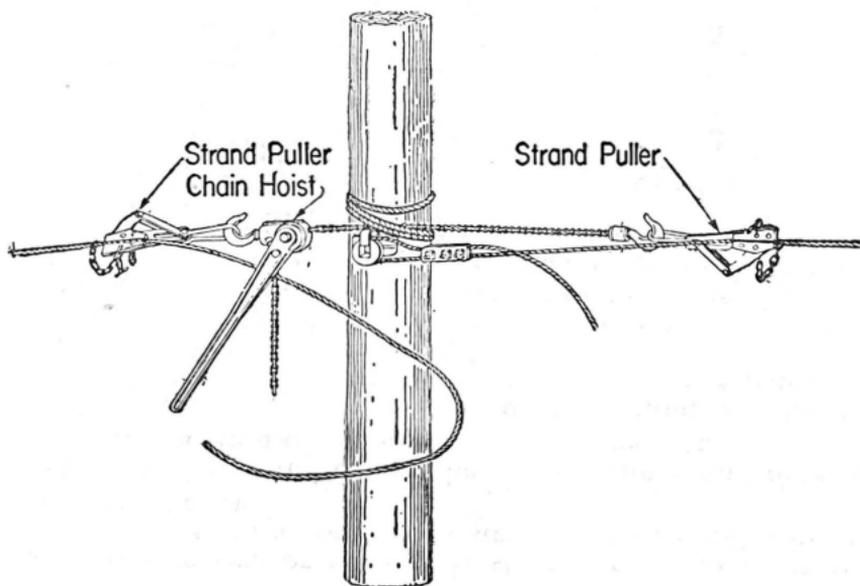


25,000 POUND SUSPENSION STRAND



3.06 Where a pole strand connector is to be placed between two sections of strand that have been dead-ended at the far ends, and the strand sizes are the same, the following procedure may be used:

- (1) Pull the two lengths of strand to the desired tension at the pole where the connector is mounted, using a chain hoist or rope tackle. The two strand ends should be pulled against each other, and not against the pole, to avoid placing unbalanced loads on the pole.



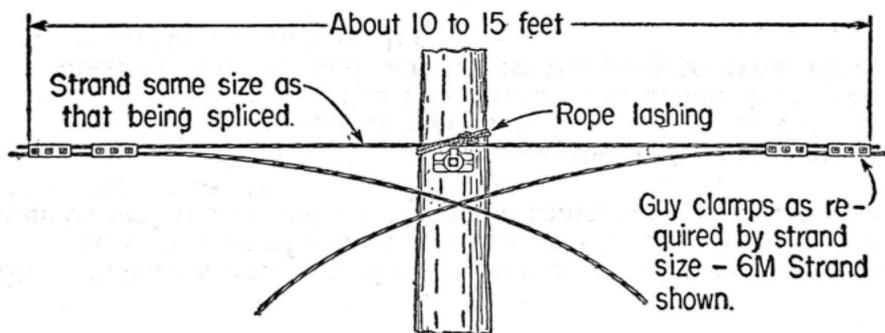
- (2) Cut the two strands with an overlap of about 4 feet at the pole. Pass each end under the connector, around the strand groove and over the top of the connector through the loop strap, keeping each strand in its proper groove.

- (3) Pull up the strand tails and secure the strand with the required number of guy clamps.
- (4) Release the tackle and recheck the strand tension, adjusting it to the proper value if necessary. The tensions in the strands on each side of the splice pole should be equal when the job is completed.

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

- (1) Pay 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 or 15 feet at the temporary splice. This splice should be made approximately at the center of the overlap, using strand of the same size as that being spliced and the following number of guy clamps.

<u>Strand Size (Pounds)</u>	<u>No. of Guy Clamps</u>
6,000	2
10,000	3
16,000	4
25,000	5



The specified overlap should be sufficient to insure 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 at the temporary splice shall be connected to the pole strand connector. Make up the strand on the connectors as described in Paragraph 3.06 (2) and (3).
- (4) Remove the strand and guy clamps of the temporary splice.
- (5) 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 interrupt temporarily the strand pulling operation at a pole where a pole strand connector is to be placed, the following procedure may be 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 three-bolt guy clamps as indicated in Paragraph 1.02.

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

- (1) Attach each strand to the connector with the required number of clamps.
- (2) Place a false dead end 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.