

**BELL SYSTEM PRACTICES**  
**Outside Plant Construction**  
**and Maintenance**

**SECTION G51.405.1**  
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**AT&T Co Standard**

**STRAND SHIFTERS**  
**USE**

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**1. GENERAL**

1.01 This section covers the use of the Cable Shifting Tool and the B and C Strand Shifters. Section G86.535 is replaced.

1.02 These tools, in conjunction with the standard chain hoist or tackle blocks, are intended for use on corner poles where the following operations are being performed:

- (a) Raising or lowering strand.
- (b) Transferring strand in connection with pole replacement work.
- (c) Placing nuts between the cable suspension clamp and the pole.
- (d) Replacing cable suspension bolts.
- (e) Replacing cable suspension bolts with cable suspension screws.
- (f) Replacing cable suspension clamps with corner suspension clamps.

1.03 On corner guyed poles, move the guys and guy attachments to an attachment level which will not interfere with the use of the strand shifters prior to the strand shifting operations.

**2. PRECAUTIONS**

2.01 The cable shifting tool is used only where small cables and light corners are involved. Its use should be confined to 6000-pound strand or to corners of 15 feet or less in

the case of 10,000-pound strand. The B strand shifter may be used under all conditions where the pull is toward the pole and the C strand shifter may be used under all conditions where the pull is away from the pole.

2.02 When the strand pulls away from the corner pole, all work should be conducted from a safe position outside of the corner. Workmen should be cautioned about positioning themselves within the corner or reaching over the strand while the strand is detached from the pole.

2.03 In placing the rope lashing on the pole for holding the chain hoist or tackle blocks, observe the following precautions:

(a) **Keep away from overhead power supply wires and other supply attachments when placing the rope lashings and when operating the handle of the chain hoist.**

(b) Only rope in good condition should be used for the lashing.

2.04 When there is insufficient pole top to attach the chain hoist as described herein, support the suspension strand with the winch line and pole derrick as covered in the Section on pole derrick operations.

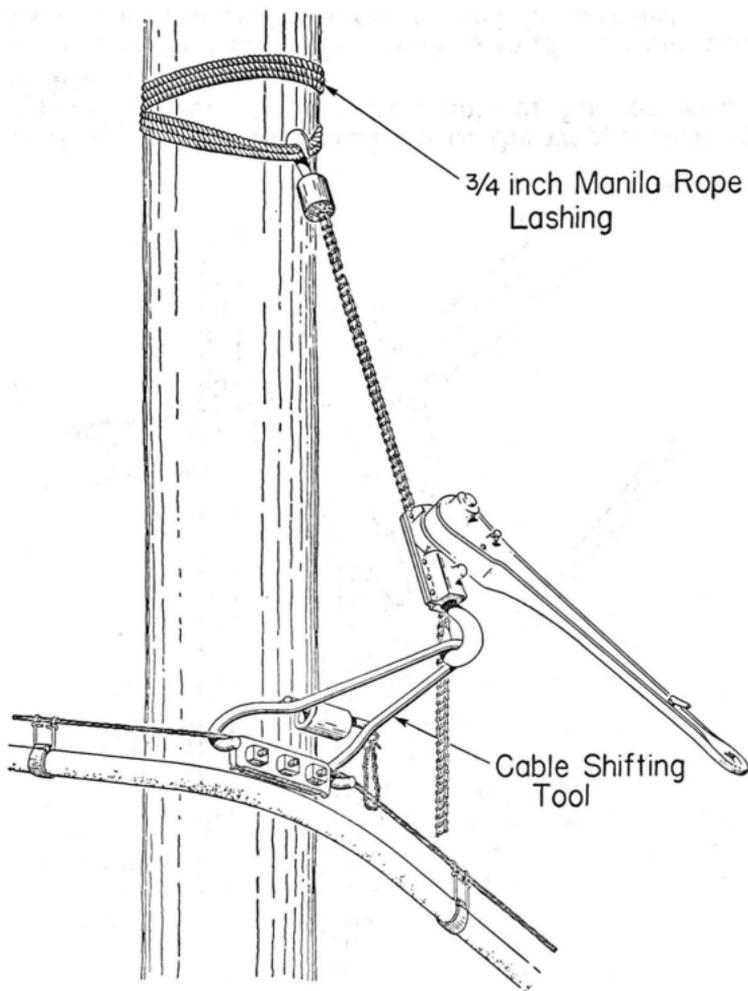
### 3. USE

#### Cable Shifting Tool

3.01 The operations required in connection with the use of this tool when the pull of the suspension strand is **toward** the pole are as follows:

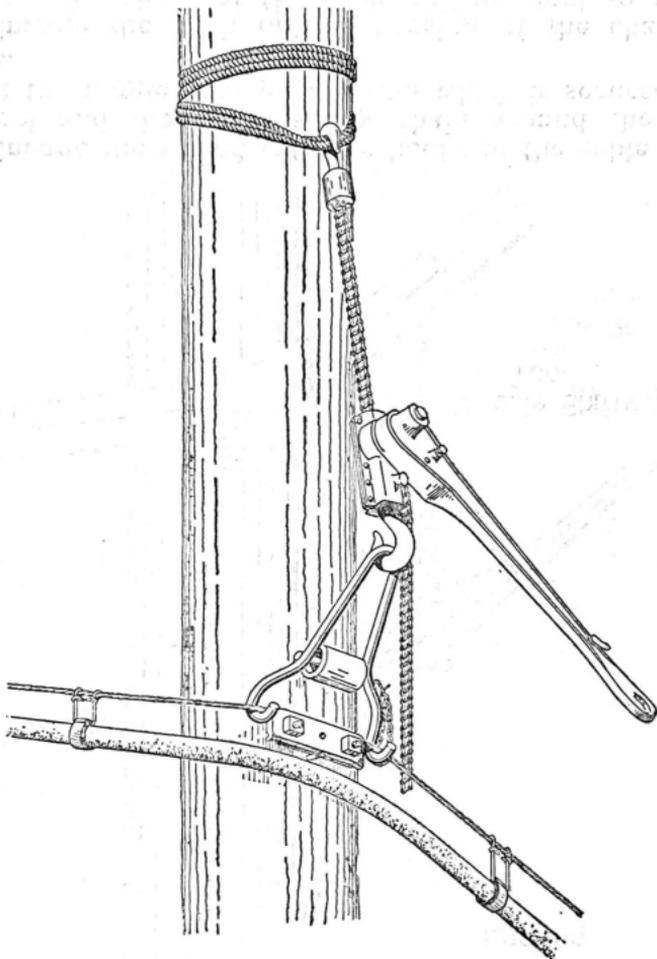
(1) Place rope lashing on pole for holding chain hoist. Locate it sufficiently high above the cable suspension bolt to permit the cable to be moved to the desired position.

(2) Secure hook on the end of the chain of the chain hoist to three turns of the rope lashing, so that the opening faces away from the pole. If a chain hoist is not available a three-inch three-sheave block and tackle arrangement may be used, securing the hook of the block with the fall line to the rope lashing.



- (3) Engage the strand with the hooks of the cable shifting tool and then pass safety chain around the strand. Insert the toggle through the ring which is secured to the frame.
- (4) Engage the hook on the housing of the chain hoist with the clevis of the cable shifting tool so that the opening faces toward the pole.
- (5) Take up on the chain hoist until the chain is sufficiently tight to hold the various items in position. If chain passes close to a guy, guard against the housing of the chain hoist catching on it.
- (6) Remove nut from the cable suspension bolt and then proceed to operate the chain hoist until the strain is removed from the bolt.

(7) If there is a nut between the pole and the suspension clamp, turn the nut back until it butts against the clamp. Drive the cable suspension bolt back against the suspension clamp and then continue to operate the chain hoist. The cross-piece of the cable shifting tool will now ride, depending on the further operation of the hoist, either up or down on the loose roller which bears against the pole.

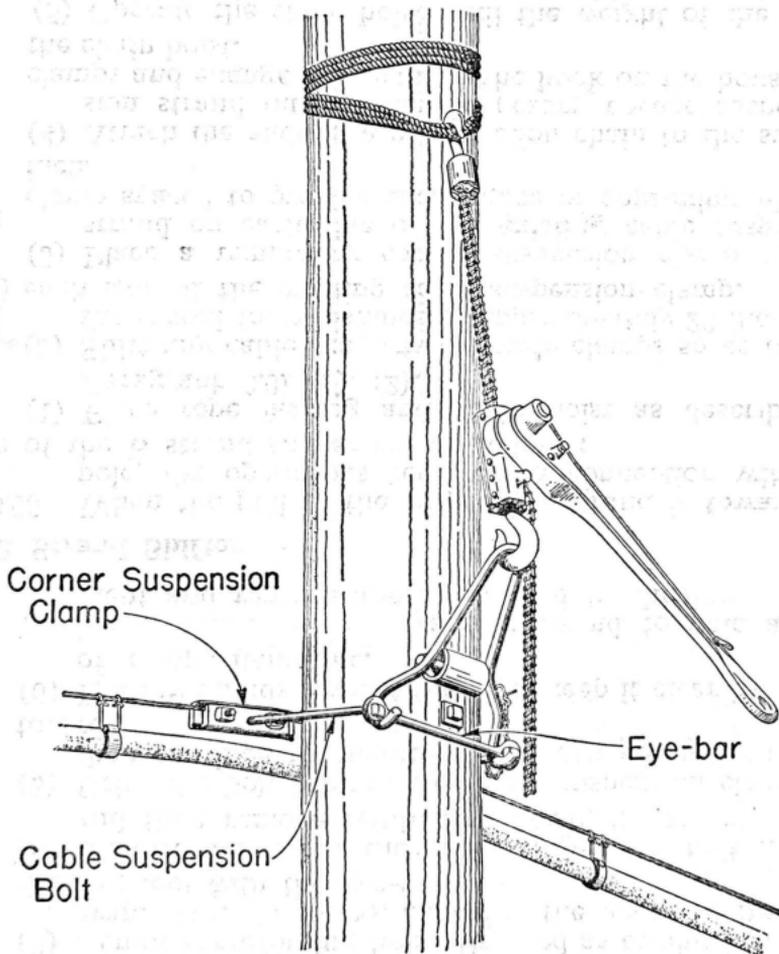


(8) With the cable and strand out of the way, a clear space is provided for boring a new hole or for replacing the strand attachment.

(9) To complete the job transfer strand to pole attachment and remove apparatus used in shifting.

3.02 The operations required in connection with the use of the cable shifting tool when the pull of the suspension strand is **away** from the corner pole are as follows:

- (1) Place two corner suspension clamps on the strand, one on each side of the existing clamp in such a position that the temporary cable suspension bolt for each clamp will clear the pole and the reinforcing links, if present. In the case of lashed cables, position the corner suspension clamps above the strand.
- (2) Place temporary cable suspension bolts through the eyes of the eye-bar and the two corner suspension clamps running the nuts down until the eye-bar is at about the same distance from the pole as the cable suspension strand.

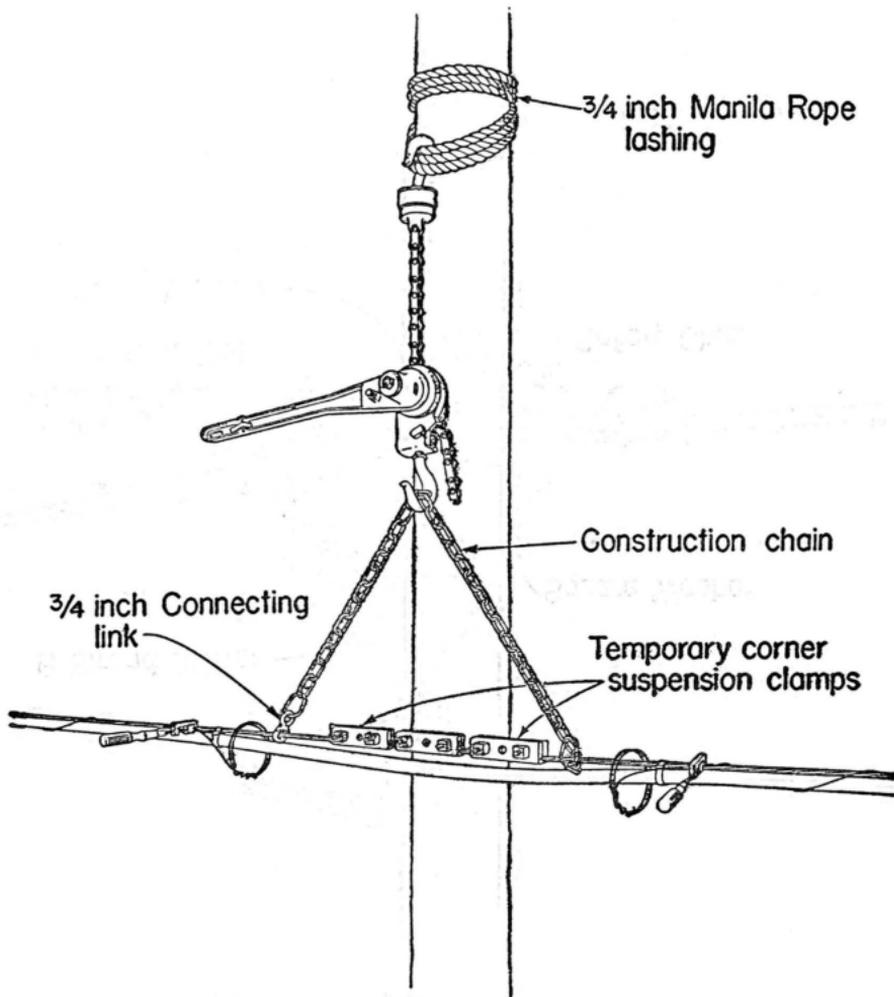


- (3) Remove reinforcing links. Proceed as outlined in Paragraph 3.01, (1) to (5), engaging the hooks of the cable shifting tool with the eye-bar.
- (4) Remove nut from the cable suspension bolt in pole and then remove reinforcing strap, if present.
- (5) Drive the bolt back to free cable suspension clamp and then continue to operate chain hoist as outlined heretofore.
- (6) If strand binds against the pole, keep it clear by means of a rope hand-line.
- (7) To complete the job transfer strand to pole attachment and remove apparatus used in shifting.

### **B Strand Shifter**

3.03 When the pull of the suspension strand is **toward** the pole, the operations required in connection with the use of the B strand shifter are as follows:

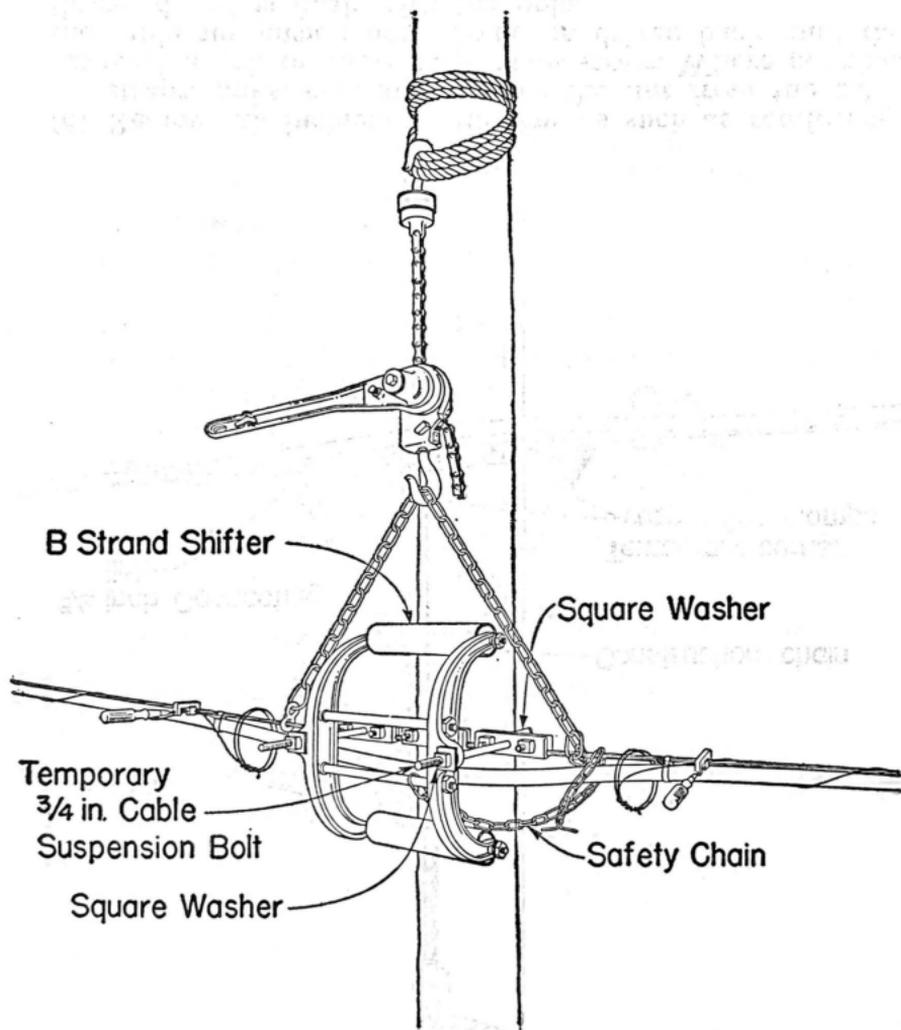
- (1) Place rope lashing and chain hoist as described in Paragraph 3.01 (1), (2).
- (2) Shift any cable supports or grade clamps so as to free the strand for a distance of approximately 20 inches on each side of the existing cable suspension clamp.
- (3) Place a temporary corner suspension clamp on the strand on each side of the existing cable suspension clamp spaced to provide a clearance of approximately one inch.
- (4) Attach the ends of a construction chain to the suspension strand outside the temporary corner suspension clamps and engage the chain to the hook on the housing of the chain hoist.
- (5) Operate the chain hoist until the weight of the strand and cable is removed from the cable suspension bolt or cable suspension screw.



(6) Remove all incidental attachments such as reinforcing straps, links, etc., and remove the nut from the cable suspension bolt or cable suspension screw. Where possible, the cable suspension bolt should be driven back until the threaded end is flush with the pole.

(7) Place a hand-line over a secure support above the cable, such as the housing hook of the chain hoist, fasten the shifter securely to the line, raise it to the desired height on the pole and support its weight while the safety chain is placed around the strand and the shifter is secured to the strand.

(8) Place a 3/4-inch cable suspension bolt of suitable length through each of the temporary corner suspension clamps and lugs on the strand shifter and run up the nuts. Washers should be used under the heads and nuts of the bolts.

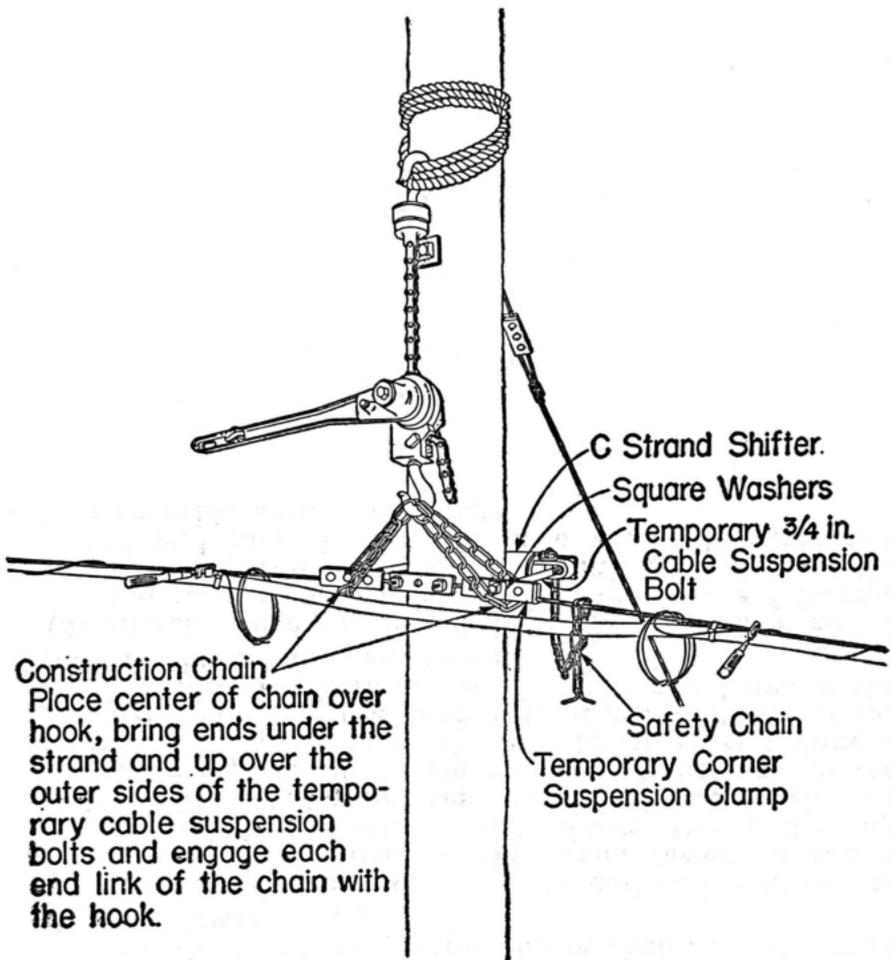


- (9) Tighten the nuts equally until the strand and cable are clear of the pole, cable suspension bolt, or cable suspension screw. Lubricate the thread of the bolt and between the nut and washer for easy operation.
- (10) Raise or lower the strand and cable to the desired location by operating the chain hoist.
- (11) To complete the job transfer strand to pole attachment and remove apparatus used in shifting.

### **C Strand Shifter**

3.04 When the pull of the suspension strand is **away** from the pole, the following operations are required in connection with the use of the C strand shifter:

- (1) Proceed as outlined in Paragraph 3.03 (1) to (3) except that the corner suspension clamps shall be placed with the nuts toward the pole.
- (2) Raise the C strand shifter to the desired height on the pole on the side opposite the strand, fasten the safety chain around the strand and secure the puller by placing 3/4-inch cable suspension bolts through the temporary corner suspension clamps and the lugs on the strand shifter and run up the nuts to moderate tightness. Washers should be used under the heads and nuts of the bolts. Lubricate the thread of the bolts and between the nut and washer for easy operation.
- (3) Attach a construction chain to the suspension strand and to the chain hoist as indicated in the following figure and operate the chain hoist until the weight of the strand and cable is removed from the cable suspension bolt or cable suspension screw.



- (4) Remove all incidental attachments such as reinforcing straps, links, etc.
- (5) Tighten the nuts on the temporary bolts and slowly loosen the nut on the cable suspension bolt or cable suspension screw until the chain hoist and the shifter are supporting the strand and cable.
- (6) Remove the nut from the cable suspension bolt or cable suspension screw and slowly back off the nuts on the temporary bolts until the strand and cable are in the clear.
- (7) Raise or lower the strand and cable to the desired location by operating the chain hoist.
- (8) To complete the job transfer strand to pole attachment and remove apparatus used in shifting.