

SUSPENSION STRAND

PLACING — GENERAL

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1. GENERAL

- 1.01 This section covers the methods of running out suspension strand. Section G51.115, Issue 1 is replaced.
- 1.02 Exercise caution when handling and stringing strand to protect both the public and workmen from mechanical or electrical hazards involved in the work operations.
- 1.03 When placing suspension strand on jointly used pole lines and at power and road crossings observe the precautions outlined in Section G51.113.1.

2. RUNNING OUT SUSPENSION STRAND

- 2.01 In order to reduce the number of strand splices and the number of pulls, place the maximum practicable continuous lengths of strand.
- 2.02 The factors governing the desirable length of strand to pull are:
- (a) The number of corners and the amount of "pull" at each.
 - (b) Changes in grade.
 - (c) Interference with trees.
 - (d) Interference with wires or cables.

2.03 Do not ride suspension strand unless it is either dead ended or safely clamped in suspension clamps at both ends of the span. Run out the suspension strand in one of the following ways:

- (a) In the strand groove of the suspension clamp.

When running strand through the suspension clamp, after the strand has been placed in the clamp and before it is pulled up, tighten the nuts of the clamp sufficiently to prevent the strand from falling out of the clamp groove but not so tight as to cause binding of the strand when it is being pulled up.

- (b) Over the nut that is placed on the suspension bolt between the pole and the suspension clamp.

Where this method is used, the strand should be placed in the strand groove of the suspension clamp at every sixth pole in straight sections, at all corners where there is a pull away from the pole, and at those poles where there is a dip or high point. At all other poles, secure the clamp in a vertical position to help keep the strand in place. At those poles where the strand is placed in the groove of the suspension clamp, tighten the clamp as described in Paragraph 2.03(a).

- (c) Along the ground.

Run the strand out along the ground only under the following conditions:

- (1) Where the ground along which the strand is to be dragged is such that the galvanizing will not be injured.
 - (2) Where there are no obstructions such as trees, wires, guys, or cables which would interfere with raising the strand from the ground to the suspension clamps.
 - (3) Where there will be no interference with traffic.
- (d) Over drive hooks driven into the pole at approximately the proposed height of the cable.

This method is not recommended for general use and should only be used in those cases where it is not practicable to determine the exact level of the strand attachment on the pole by means of sighting or measurement of the clearance above ground. Nails or spikes should not be used for temporarily supporting strand. Where it is necessary to use drive hooks they should be driven well into the pole, leaving only sufficient space between the pole surface and the hook to permit laying the strand in the hook. When running suspension strand over drive hooks, place cable suspension clamps on every sixth pole

in straight sections, at all corners where there is a pull away from the pole and at those poles where there is a dip or high point. After the strand has been pulled up to stringing tension place it in suspension clamps at the proper location on the poles on which the drive hooks were used. Remove the drive hooks.

2.04 Where trees interfere with placing the suspension strand, place a rope or other line through the trees at the proper location for the strand and use it to pull the strand through the trees.

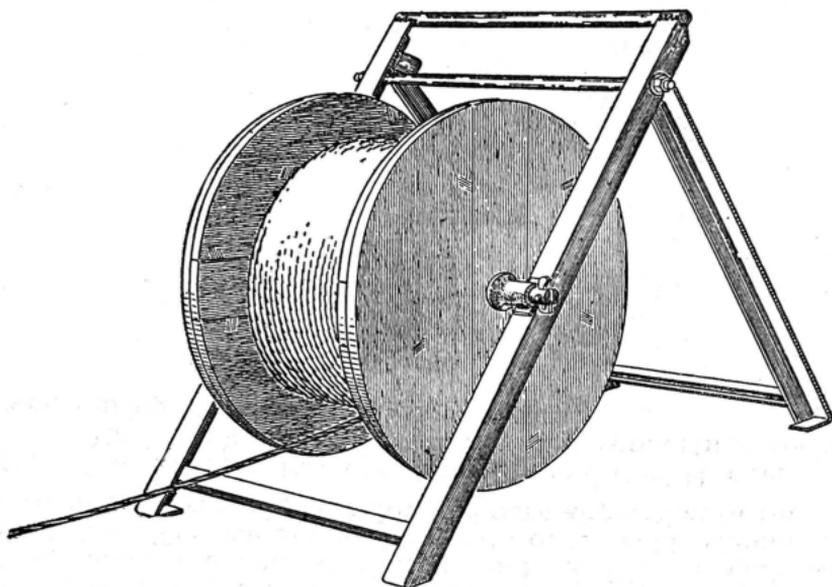
2.05 If it is impracticable to throw a hand line over interfering tree limbs, use a wire raising tool for passing the rope through the trees.

2.06 If tree limbs interfere with pulling up the line to the desired position, reroute the line by cutting and splicing it so as to obtain the clearest possible route between poles. In this connection, consideration should be given to the use of pull-offs as a means of avoiding excessive tree interference.

2.07 Where tree limbs are encountered which are near the level of the cable and which are not to be removed, place the suspension strand so that when the cable is placed, the suspension strand and cable will be under the limb rather than lying on it. This can be accomplished by running the suspension strand under the limb so that it tends to lift the limb when pulled tight. The sag due to the weight of the cable should bring the suspension strand just below the normal position of the limb.

2.08 Use a Strand Pay-out Frame, Strand Reel Hanger, Cable Reel Jack or similar device for supporting reels of strand during the paying out operation.

STRAND PAY - OUT FRAME



2.09 Running out suspension strand from a moving reel is covered in another section of the Practices.

3. BENDING AND CUTTING STRAND

3.01 Factory splices in individual wires of the strand are marked by a band of paint. At such points do not bend the strand around strand connectors or guy bolts or make other similar small radius bends.

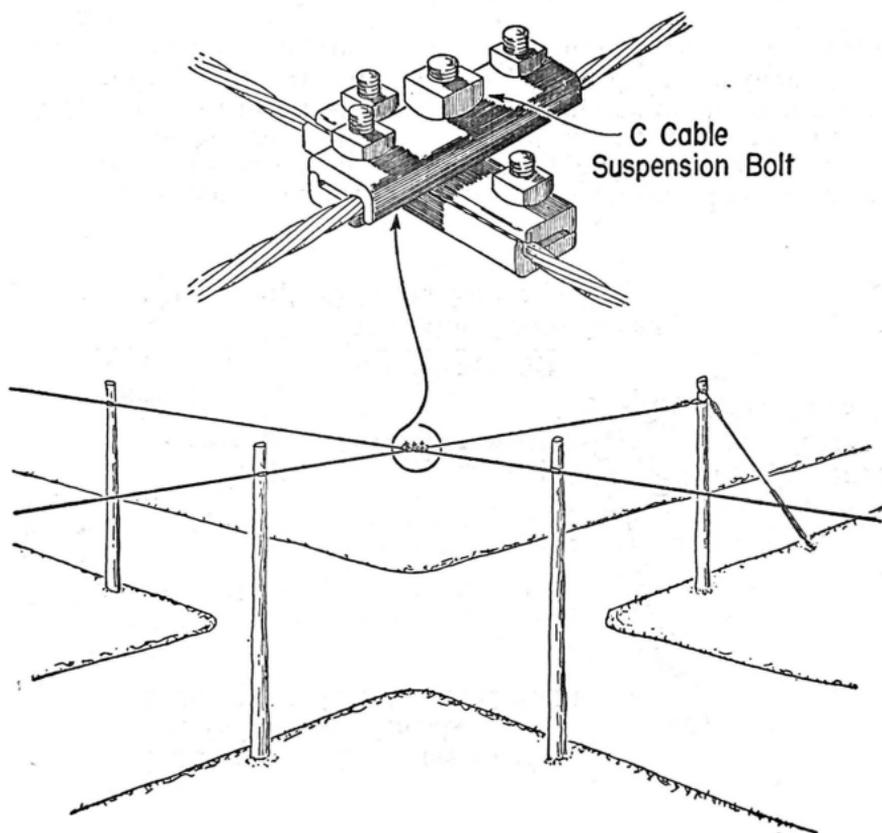
3.02 Bind 10,000, 16,000 and 25,000 pound strand with a double layer of friction tape or a wire serving on both sides of the point to be cut to prevent the strand wires from spreading.

3.03 Secure the strand before cutting to prevent the loose ends from flipping. The strand may be cut with strand cutters, a hack saw or a 3-cornered file.

3.04 When strand to be cut is in place on the pole line, make the cut as far away as practicable from the strand puller or other temporary attachment holding the strand. Make a straight cut with no rocking motion of the strand cutter while the cut is being made.

4. CROSSOVERS OR TURNS

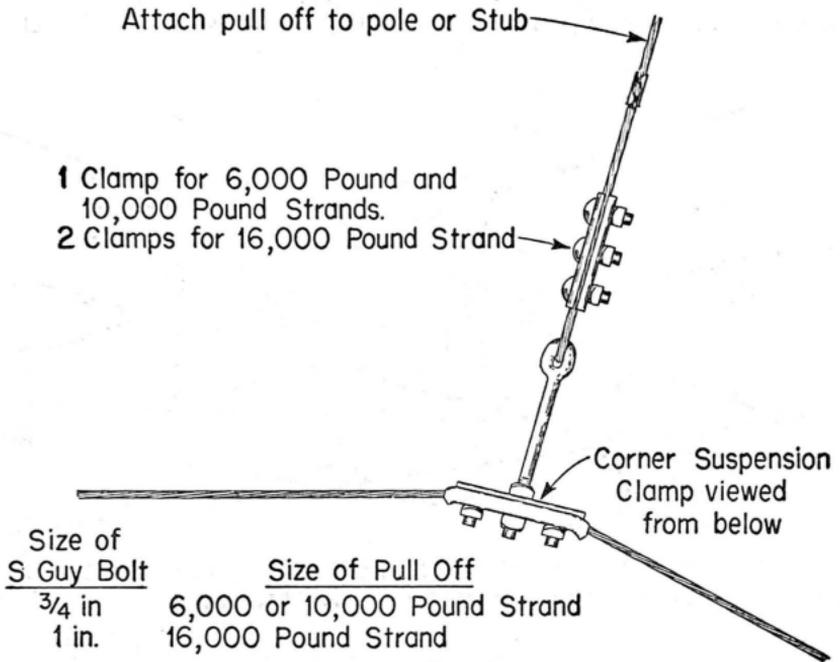
4.01 Where one suspension strand is to cross over another, use two cable suspension clamps at the point of crossing as shown in the following illustration. Place the strand for the branch (or smaller) cable above the strand which will support the main (or larger) cable.



4.02 Do not introduce corners at strand crossovers unless specified on the detail plans.

4.03 Avoid making turns in the span wherever practicable. Where a turn in the span is necessary, construct a pull-off as shown in the following illustration. Do not use this type of construction where the corner pull is more than 50 feet. To determine the size of strand to be used for the pull-off, follow

the procedure outlined in the guying sections for determining the size of strand for a guy to a stub. In no case shall this be less than 6,000 pound strand. The pull-off strand should be attached to the pole or stub at such a height that the completed installation will meet all clearance requirements.



- (a) In order to keep the pull-off in position while the strand is being pulled up, a temporary 5/8 in. rope guy should be strung between the guy bolt of the pull-off and the pole adjacent to the pull-off on the side opposite the direction of pulling up the strand. The rope should be attached at a height on the pole above the attachment level of the suspension strand.
- (b) After placing the strand in the groove of the corner suspension clamp, tighten the clamp to the point where the strand cannot jump out of the clamp but will slide through the clamp as the strand is being tensioned.
- (c) Tighten the suspension clamp at the pull-off securely after the strand has been pulled up to the required tension.

5. REDUCING SUSPENSION STRAND SIZE OR TENSION

5.01 Where a cable diminishes in size and a smaller size suspension strand would be satisfactory beyond the diminishing point, splice in the smaller size strand at this point if the length of the smaller cable is at least 1,000 feet. In some cases it may be necessary to continue the larger strand one or more spans beyond the cable diminishing point in order to secure right-of-way for the anchor and guy.

5.02 If the length of the smaller strand will be less than 1,000 feet, it will generally prove economical to continue the larger size of strand, without reducing the stringing tension, for the entire distance.

5.03 Place a false dead end on the larger or the more highly tensioned strand and head guy the pole away from the false dead end at strand diminishing points and at locations where the strand is continuous but where there is a large difference in strand tension, such as,

- (a) at a junction between cables of different weights, or
- (b) where a line changes from short span to long span construction.