

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

**SECTION G52.141.5**  
**Issue 1, November, 1953**  
**AT&T Co Standard**

# CABLE DANCING

## SINGLE CABLE LINES

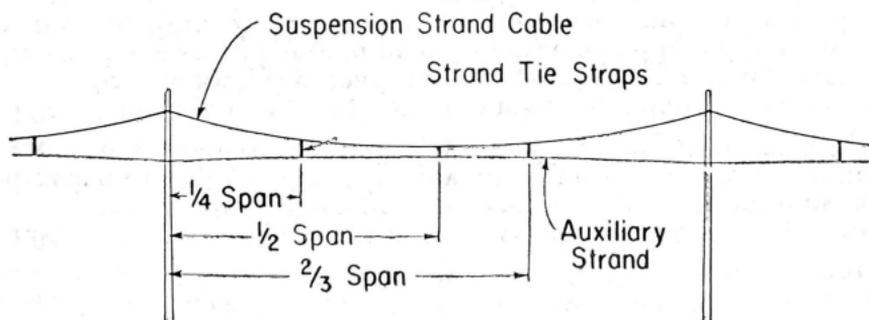
### INVERTED AUXILIARY STRAND METHOD

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#### 1. GENERAL

1.01 This section covers a method of reducing or preventing dancing on single aerial cable lines by means of an auxiliary 2200-pound strand placed below and tied to the cable suspension strand.

1.02 The inverted auxiliary strand is attached to the cable suspension strand at the  $1/4$ ,  $1/2$  and  $2/3$  span points to form a semirigid structure which offers resistance to vertical motion of the cable and its strand.



1.03 When it is necessary to ride the strand, avoid interference with the cable by temporarily detaching the tie straps from the cable supporting strand before riding. Allow the auxiliary strand to hang free. Do not ride the auxiliary strand.

1.04 Where dancing has been observed or where inspections reveal that dancing has occurred and conditions are indicative of plant damage if preventive measures are not taken, an inverted auxiliary strand may be placed as authorized.

1.05 Check existing guying and make any additions necessary to support the load imposed by the auxiliary strand. The auxiliary strand should be considered as adding 2,000 pounds to the loading. At auxiliary strand dead ends where it is necessary to head guy for the auxiliary strand only, use 2200-pound strand for the guy.

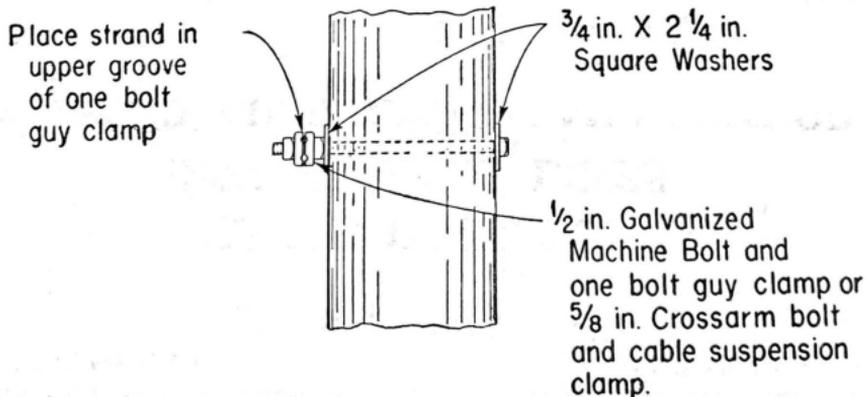
## 2. LOCATION, ATTACHMENTS AND STRINGING TENSION OF AUXILIARY STRAND

2.01 The auxiliary strand should be attached to the same side of the pole as the cable suspension strand.

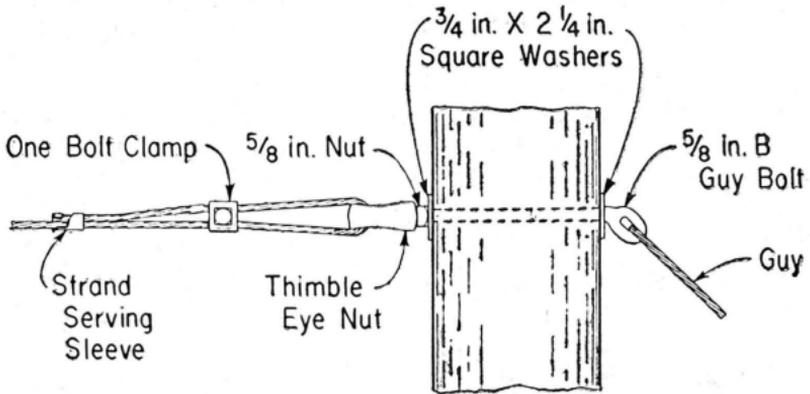
2.02 Locate the strand attachments on the poles not less than 12 inches below the maximum 60° F. sag of the cable suspension strand with cable in place. In no case shall the ground clearance be less than specified in the Clearance Practices.

2.03 Attach the auxiliary strand as shown in the following illustrations:

(a) For in-line poles



(b) At dead ends



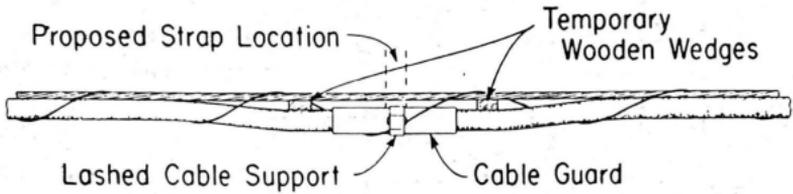
2.04 Place the 2200-pound auxiliary strand at the tension or sag shown in the following table:

Average Span Length (Feet)	Temperature (Degrees Fahr.)								
	-20	0	20	40	60	80	100	120	
			Stringing Tension (Pounds)						
All	1000	950	900	850	800	750	700	650	
			Approximate Sag (Inches)						
150	2.5	2.5	3.0	3.0	3.5	3.5	3.5	4.0	
200	4.5	5.0	5.0	5.5	6.0	6.0	6.5	7.0	
250	7.0	7.5	8.0	8.5	9.0	9.5	10.5	11.0	
300	10.5	11.0	11.5	12.0	13.0	14.0	15.0	16.0	
350	14.0	15.0	15.5	16.5	17.5	19.0	20.0	21.5	
400	18.5	19.5	20.5	21.5	23.0	24.5	26.5	28.5	
450	23.5	24.5	26.0	27.5	29.5	31.0	33.5	36.0	
500	29.0	30.5	32.0	34.0	36.0	38.5	41.5	44.5	
550	35.0	36.5	39.0	41.0	43.5	46.5	50.5	54.0	
600	41.5	44.0	46.0	49.0	52.0	55.5	59.5	64.0	

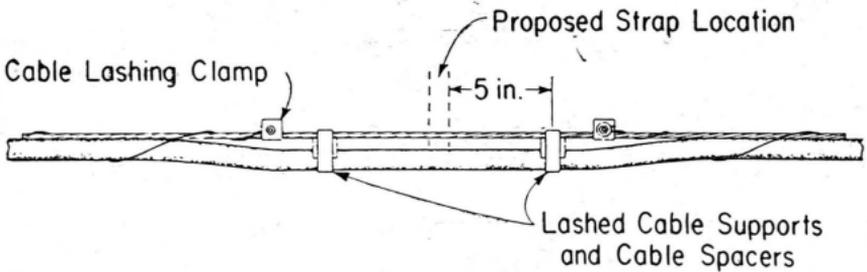
### 3. SELECTION AND INSTALLATION OF STRAND TIE STRAPS

3.01 For lashed cable, it is necessary to protect the sheath from abrasion by the guy clamps or straps as follows:

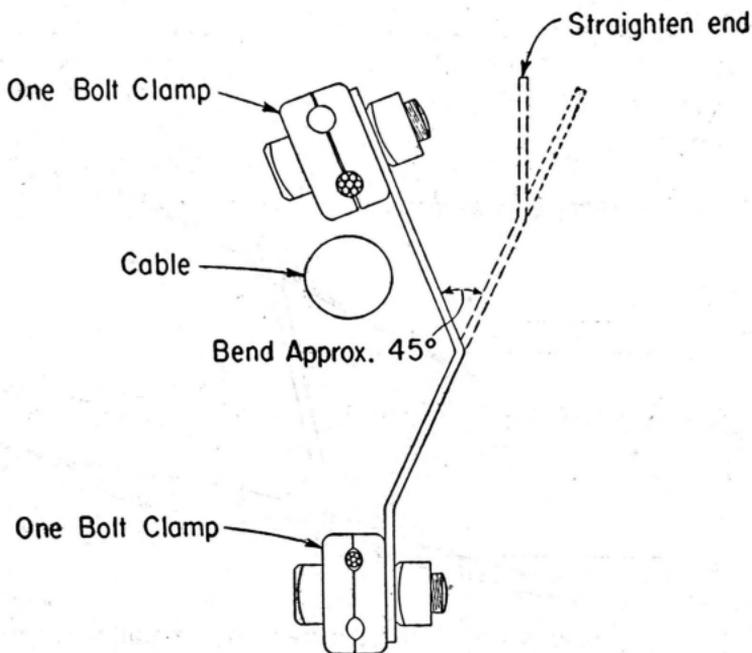
(a) Separate the strand and cable at the attachment point with wooden wedges and install a cable guard under the lashing wire. Place a lashed cable support around the guard at the attachment location. Make one wrap of the support around the guard under the lashing wire and two wraps including the wire. Remove the wedges after the attachment is completed.



(b) If necessary, the lashing wire may be cut and terminated on cable lashing clamps and spacers and lashed cable supports used as shown in the following illustration.



3.02 At the  $\frac{1}{2}$  span point form and place an S reinforcing strap as shown in the following illustration.



3.03 At the  $\frac{1}{4}$  and  $\frac{2}{3}$  span points install strand tie straps. The length of strap depends on the  $60^\circ$  F. sag of the cable suspension strand with the cable in place as follows:

#### $\frac{1}{4}$ Span Point

<u>Length of Strand Tie Strap</u> (Inches)	<u>Mid-Span Sag with Cable in Place at <math>60^\circ</math> F.</u> (Inches)
14	32 or less
20	33 to 56
26	over 56

#### $\frac{1}{3}$ Span Point

14	72 or less
20	73 to 128
26	over 128

3.04 Install the strand tie strap as follows :

- (1) Remove nut, lock washer and carriage bolt.
- (2) Place clamping detail under the suspension strand and position strand in the groove.
- (3) Place the strap. The tongue on the clamping detail should be inserted in the second hole from the end of the strap.
- (4) Place carriage bolt, lock washer and nut. The head of the bolt should be on the underside of the strap. Turn nut down finger tight.
- (5) Wrap three layers of lead serving tape around the 2200-pound auxiliary strand at the attachment point.
- (6) Attach clamping detail and strap.
- (7) Position the strap properly and tighten both nuts securely.

3.05 Where 20 and 26-inch tie straps are used the bent end of the strap should be attached to the cable suspension strand. Where the 14-inch tie strap is used, a bend of approximately 45 degrees should be made about 4 inches from one end and this end attached to the cable suspension strand.

