

BELL SYSTEM PRACTICES
Outside Plant Construction
and Maintenance

SECTION G32.143.1
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AT&T Co Standard

DROP AND BLOCK WIRING
STRINGING SAGS FOR DROP WIRE

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1. GENERAL

1.01 This section replaces Issue 1 and Section G32.143.2, Issue 1. It has been rewritten to cover stringing sags in the Heavy, Medium and Light Loading Areas for **C Drop Wire** which supersedes NP Drop Wire.

1.02 String **NP Wire** (new or recovered) with the same stringing sags as C Wire except that in heavy loading areas the maximum span should not exceed 150 feet in length.

1.03 Where **HD Wire** is used as drop wire, string to the **Normal Stringing Sags** covered herein for span lengths not exceeding 150 feet.

1.04 Table 1 of Paragraph 2.01 gives **Normal Stringing Sags** to which C Drop Wire should be strung. These sags can be obtained by workmen on poles with hand pulls of practicable amounts. However, if normal stringing sags will not provide adequate ground clearances use minimum stringing sags.

1.05 Table 2 of Paragraph 4.01 indicates the **Minimum Stringing Sag** to which C Drop Wire can be strung where ground clearances under the spans are controlling. These smaller sags result in higher stringing tensions in the wire and hence pulling tools are required to enable workmen to pull the wire up to tension.

1.06 In both Table 1 and Table 2 there are indicated the approximate final unloaded sags which C Drop Wire will develop after being subjected to wind and ice storms. To

avoid the necessity of resagging drop wire after storms to comply with ground clearance requirements, allowance shall be made in selecting heights of attachments on poles and houses to care for sag increases from stringing to final conditions. Such sag increases between stringing sags and final sags are shown in Tables 1 and 2.

1.07 Sag increases shown in Tables 1 and 2 are the maximum amounts which develop at mid span only. These amounts decrease as you approach the supporting attachments of the drop wire span. However for practical purposes it should be satisfactory to allow for sag increases at different points in the span on the following basis:

(a) Up to 1/5 of the span measured from the pole or house attachment, take **half** the sag increases shown in Tables 1 and 2.

(b) Over 1/5 of the span, take **all** the sag increases indicated in Tables 1 and 2.

1.08 **In span-clamp-to-house spans, string drop wire with a tension which will not pull the aerial cable out of line.** If this is not practicable then distribute the drop from a pole.

2. NORMAL STRINGING SAGS FOR C DROP WIRE

2.01 String C Drop Wire to the sags indicated in Table 1 in all pole-to-pole and pole-to-house spans except in those cases where adequate ground clearances can only be provided with the use of the minimum stringing sags shown in Table 2 of Paragraph 4.01. **Your supervisor will advise the storm loading to be assumed for the area concerned.**

TABLE NO. 1

Normal Stringing Sags for C Drop Wire in Pole-to-Pole and Pole-to-House Spans

Span Length	Stringing		Approx. Final Unloaded Sag Following Storm Loading	Sag Increase from Stringing to Final Condition
	Sag	Approx. Tension		
Heavy Loading Area				
50 ft. (or less)	0' 6"	30 lbs.	0' 6"	—
75	1' 0"	" "	1' 0"	—
100	1' 9"	" "	2' 0"	0' 3"
125	2' 10"	" "	3' 4"	0' 6"
150	4' 0"	" "	4' 10"	0' 10"
175	5' 6"	" "	6' 7"	1' 1"
200	7' 0"	" "	8' 6"	1' 6"
225	9' 0"	" "	10' 10"	1' 10"
250	11' 2"	" "	13' 4"	2' 2"

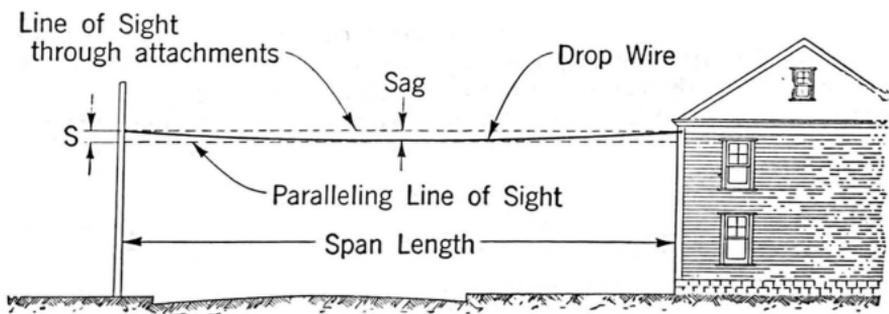
Span Length	Stringing		Approx. Final Unloaded Sag Following Storm Loading	Sag Increase from Stringing to Final Condition
	Sag	Approx. Tension		
Medium and Light Loading Areas				
50 ft. (or less)	0' 6"	30 lbs.		
75	1' 0"	" "		
100	1' 9"	" "	Same as Stringing Sags	No Increases
125	2' 10"	" "		
150	4' 0"	" "		
175	5' 6"	" "		
200	7' 0"	" "		
225	9' 0"	" "		
250	11' 2"	" "		

Over 250 ft.—Use Minimum Stringing Sags shown in Table 2.

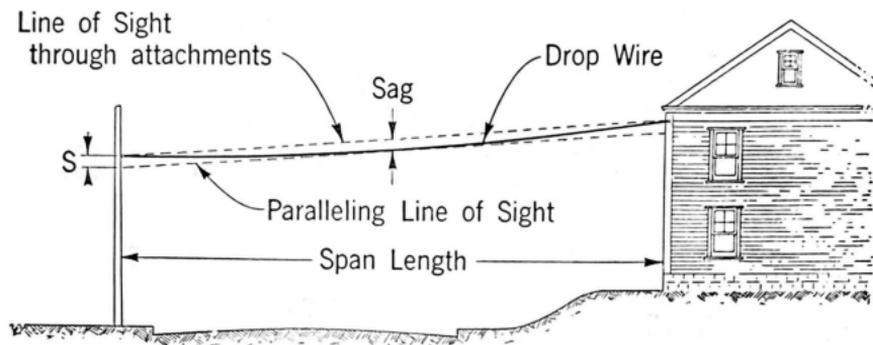
3. SAGGING DROP WIRE TO NORMAL STRINGING SAGS

3.01 The sag of drop wire in pole-to-house or pole-to-pole span is indicated in the following illustrations.

DROP WIRE ATTACHMENTS ON SAME LEVEL



DROP WIRE ATTACHMENTS ON DIFFERENT LEVELS



3.02 Since the normal stringing sags given in Paragraph 2.01 are used only in locations where ground clearance is no consideration it is satisfactory to estimate by sight the amount of sag given to drop wire.

4. MINIMUM STRINGING SAGS FOR C DROP WIRE

4.01 The minimum stringing sags to which C Drop Wire can be strung are indicated in Table 2 below. **These sags should be used where they provide the only means of obtaining required ground clearances under drop wire in spans.**

TABLE NO. 2

Minimum Stringing Sags for C Drop Wire in Pole-to-Pole and Pole-to-House Spans

Span Length	Stringing		Approx. Final Unloaded Sag Following Storm Loading	Sag Increase from Stringing to Final Condition
	Sag	Approx. Tension		
Heavy Loading Area				
50 ft. (or less)	0' 3"	50 lbs.	0' 5"	0' 2"
75	0' 7"	" "	0' 10"	0' 3"
100	1' 0"	" "	1' 5"	0' 5"
125	1' 7"	" "	2' 3"	0' 8"
150	2' 3"	" "	3' 7"	1' 4"
175	3' 0"	" "	5' 0"	2' 0"
200	4' 0"	" "	7' 0"	3' 0"

Over 200 ft.—Same as in Table 1.

Span Length	Stringing		Approx. Final Unloaded Sag Following Storm Loading	Sag Increase from Stringing to Final Condition
	Sag	Approx. Tension		
Medium Loading Area				
50 ft. (or less)	0' 3"	50 lbs.	0' 3"	—
75	0' 7"	" "	0' 7"	—
100	1' 0"	" "	1' 0"	—
125	1' 7"	" "	1' 7"	—
150	2' 3"	" "	2' 4"	0' 1"
175	3' 0"	" "	3' 2"	0' 2"
200	4' 0"	" "	4' 4"	0' 4"
225	5' 0"	" "	5' 5"	0' 5"
250	6' 0"	" "	6' 5"	0' 5"
275	7' 6"	" "	8' 0"	0' 6"
300	9' 0"	" "	9' 6"	0' 6"
Light Loading Area				
50 ft. (or less)	0' 3"	50 lbs.		
75	0' 7"	" "		
100	1' 0"	" "		
125	1' 7"	" "		
150	2' 3"	" "	Same as Stringing Sags	No Increases
175	3' 0"	" "		
200	4' 0"	" "		
225	5' 0"	" "		
250	6' 0"	" "		
275	7' 6"	" "		
300	9' 0"	" "		

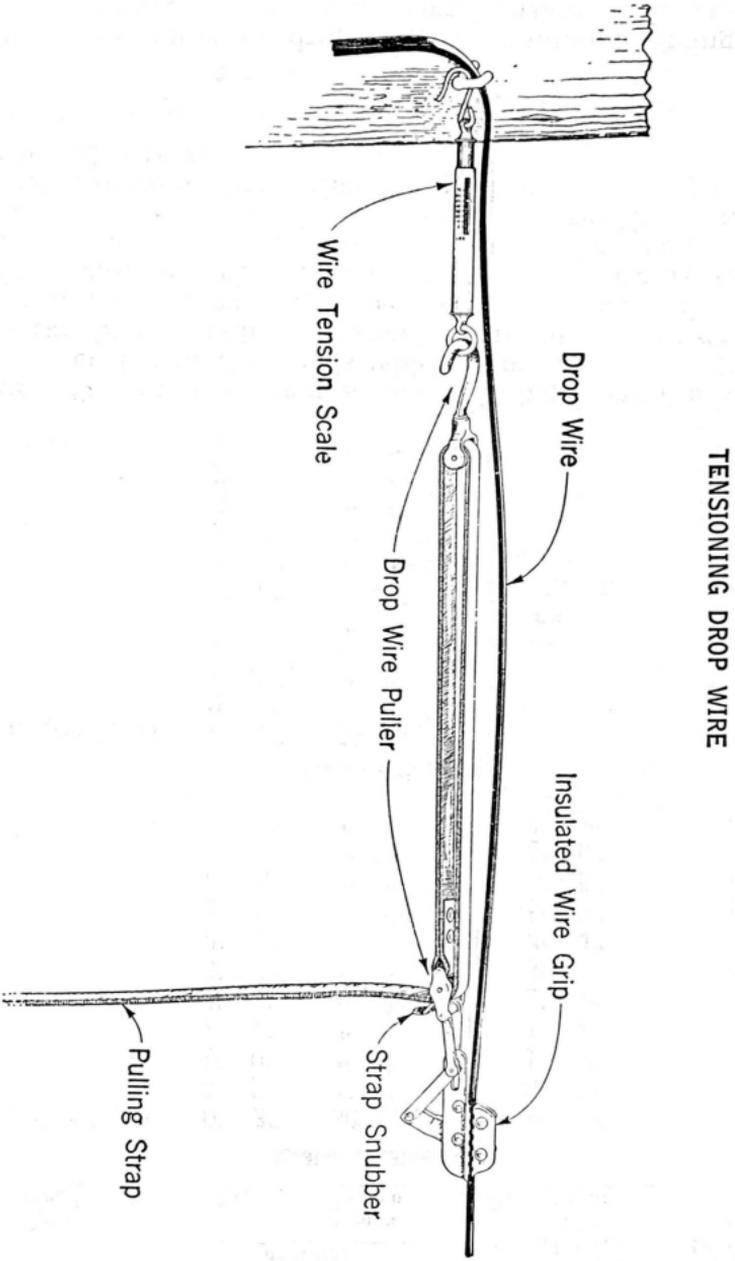
4.02 The minimum sags shown in Table 2 entail a stringing tension of 50 pounds which is more than workmen on poles can handle with the normal means of placing drop wire. Therefore, where wire is to be strung at these reduced sags, it will facilitate stringing operation if the wire is tensioned with the aid of a Drop Wire Puller and Wire Tension Scale. Tensioning the drop wire will give the required sag automatically, thereby eliminating the need of measuring both span length and wire sag.

5. TENSIONING DROP WIRE TO MINIMUM STRINGING SAGS

5.01 Tensioning of drop wire to minimum stringing sags requires the use of a Wire Tension Scale and a Drop Wire Puller. Proceed as follows:

- (1) Suspend the Wire Tension Scale on the drive hook by means of its hook. Pull up on the drop wire hand-tight and hold it over the drive hook with one hand. With

the free hand, insert the hook of the Drop Wire Puller into the ring of the Wire Tension Scale, then reach out and place the wire grip on the drop wire at arm's length. The setup for tensioning drop wire is shown below.



- (2) Pull on the drop wire with the Drop Wire Puller until the scale registers a reading of about 35 pounds then snub the pulling strap with the strap snubber. Release the pull on the strap and note the rise of the scale reading up to about 50 pounds. If the desired 50 pound reading is not indicated make adjustments by means of the Drop Wire Puller.
- (3) Place the drop wire clamp loosely on the slack drop wire section between the grip and the pole. Take up the slack in the wire and hold while tightening the drop wire clamp on the drop wire with the tail wire locating about 1/2 inch short of the drive hook.
- (4) Pull on the drop wire and attach the drop wire clamp to the drive hook.
- (5) Remove wire puller and scale.