

## CLEARANCES FOR MULTIPLE DROP WIRE IN THE MEDIUM LOADING AREA

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above the traveled part of roads, alleys, and driveways. This will often be the case at crossings when the far edge of the road, alley, etc, is 50 feet or less from the pole (measured along the wire route). Where this condition exists, it will generally be possible to base the height of pole attachment on something less than 100 per cent of the midspan sag. The following table shows the percentage of midspan sag to be used in determining the height of pole attachment when the 50-foot criterion applies. This procedure should be ignored for spans less than 145 feet.

SPAN LENGTH (Feet)	PER CENT OF MIDSPAN SAG
145-160	90
161-180	85
181-200	80
201-225	75
226-250	70
251-275	65
276-300	60

### 1. GENERAL

**1.01** This section covers the recommended clearances for multiple drop wire in the medium loading area. The values specified meet the requirements of the National Electrical Safety Code (Sixth Edition). They apply under conditions of 60°F with no wind or ice.

**1.02** "Construction" clearances generally contain some allowance for extra sag which will be introduced as a result of permanent stretching caused by storm loading. It will not be necessary to resag multiple drop wire unless the storm loading experienced is quite severe.

**1.03** "Maintenance" clearances should exist after the wire has been through storm loading and the temperature returns to 60°F. Wire should be resagged, however, if clearances at 60°F fall below maintenance values.

**1.04** Multiple drop wire must be installed with relatively large sags. Hence it will generally be advantageous to locate poles and wire runs so that the middle of the span will *not* be

Example: A 275 foot span crosses a road; the midspan sag is 10 feet. The pole nearest the road is within 50 feet of the far edge and is on ground which is 2 feet higher than the road. The sag at 50 feet will be 65 per cent of midspan or 6-1/2 feet. The required clearance is 18 feet 4 inches. Minimum height of pole attachment is 18 feet 4 inches minus 2 feet, plus 6 feet 6 inches or 22 feet 10 inches.

**1.05** Clearances shown in this section should be used unless the detail plans show other values. Clearances shown on the detail plans may call for different values where engineering forces have recognized factors not allowed for in this section. Clearances for span lengths, voltages and conditions not shown in this section are an engineering responsibility and will be shown on the detail plans.

## 2. CLEARANCES ABOVE GROUND OR RAILS

## (a) Using Normal Sags

SPAN LENGTHS IN FEET

SITUATION	REF.	100-LESS		101-150		151-200		201-250	
		CONST Ft. In.	(MTCE) Ft. In.	CONST Ft. In.	(MTCE) Ft. In.	CONST Ft. In.	(MTCE) Ft. In.	CONST Ft. In.	(MTCE) Ft. In.
<b>Crossing Above:</b>									
Railroad Tracks						Must be supported on 6M strand for spans 126-150 feet; 10M required for spans over 150 ft.			
Generally	—	27-0	(27-0)	27-2	(27-0)				
Special Case	Fig. 1	25-0	(25-0)	25-2	(25-2)				
Public Roads ∅	—	18-0	(18-0)	18-2	(18-0)	18-3	(18-0)	18-4	(18-0)
Public Alleys ∅	—	15-0	(15-0)	15-2	(15-0)	15-3	(15-0)	15-0	(15-0)
Resid. Driveways ∅	—	10-0	(10-0)	10-2	(10-0)	10-3	(10-0)	10-4	(10-0)
Flat Roof Buildings	—	8-0	(8-0)	8-2	(8-0)	8-3	(8-0)	8-4	(8-0)
Peak Roof Buildings, Billboards	—	2-0	(2-0)	2-2	(2-0)	2-3	(2-0)	2-4	(2-0)
Neon Signs	—	4-0	(4-0)	4-2	(4-0)	4-3	(4-0)	4-4	(4-0)
Waterways	—	Must be shown on detail plans.							
<b>Running Along:</b>									
Public Roads									
Major Overhang	Fig. 2	18-0	(18-0)	18-2	(18-0)	18-3	(18-0)	18-4	(18-0)
Minor Overhang	Fig. 2								
Urban	—	18-0	(18-0)	18-2	(18-0)	18-3	(18-0)	18-4	(18-0)
Rural (Lt. Traffic)	—	14-0	(14-0)	14-2	(14-0)	14-3	(14-0)	14-4	(14-0)
No Overhang									
Back of Obst.	Fig. 3	8-0	(8-0)	8-2	(8-0)	8-3	(8-0)	8-4	(8-0)
Not Back of Obst.	Fig. 4	13-0	(13-0)	13-2	(13-0)	13-3	(13-0)	13-4	(13-0)
Public Alleys	—	15-0	(15-0)	15-2	(15-0)	15-3	(15-0)	15-4	(15-0)

∅ For these span lengths, clearances are not significantly affected by locating poles within 50 feet of the far edge of the road, alley or driveway. Some saving in pole height may be obtained however. See par 1.04.

## 2. CLEARANCES ABOVE GROUND OR RAILS

### (b) Using Minimum Sags

SPAN LENGTHS IN FEET

SITUATION	REF.	75-LESS		76-150		151-250		251-275		276-300	
		CONST	(MTCE)	CONST	(MTCE)	CONST	(MTCE)	CONST	(MTCE)	CONST	(MTCE)
		Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.
<b>Crossing Above:</b> Railroad Tracks Generally Special Case	— Fig. 1	27-2 25-2	(27-0) (25-0)	27-4 25-4	(27-0) (25-0)	Span lengths over 125 feet require 6M supporting strand; 10M required for span lengths over 150 feet.					
Public Roads Generally	—	18-2	(18-0)	18-4	(18-0)	18-6	(18-0)	18-9	(18-3)	19-0	(18-6)
Pole not over 50 ft. from far edge	—	18-2	(18-0)	18-4	(18-0)	18-4	(18-0)	18-4	(18-0)	18-4	(18-0)
Public Alleys Generally	—	15-2	(15-0)	15-4	(15-0)	15-6	(15-0)	15-9	(15-3)	16-0	(15-6)
Pole not over 50 ft. from far edge	—	15-2	(15-0)	15-4	(15-0)	15-4	(15-0)	15-4	(15-0)	15-4	(15-0)
Resid. Driveways Generally	—	10-2	(10-0)	10-4	(10-0)	10-6	(10-0)	10-9	(10-3)	11-0	(10-6)
Pole not over 50 ft. from far edge	—	10-2	(10-0)	10-4	(10-0)	10-4	(10-0)	10-4	(10-0)	10-4	(10-0)
Flat Roof Buildings	—	8-2	(8-0)	8-4	(8-0)	8-6	(8-0)	8-6	(8-0)	8-6	(8-0)
Peak Roof Buildings, Billboards	—	2-2	(2-0)	2-4	(2-0)	2-6	(2-0)	2-6	(2-0)	2-6	(2-0)
Neon Signs	—	4-2	(4-0)	4-4	(4-0)	4-6	(4-0)	4-6	(4-0)	4-6	(4-0)
Waterways		Must be shown on detail plans.									
<b>Running Along:</b> Public Roads Major Overhang	Fig. 2	18-2	(18-0)	18-4	(18-0)	18-6	(18-0)	18-9	(18-3)	19-0	(18-6)
Minor Overhang	Fig. 2										
Urban	—	18-2	(18-0)	18-4	(18-0)	18-6	(18-0)	18-9	(18-3)	18-6	(18-6)
Rural (Lt. Traffic)	—	14-2	(14-0)	14-4	(14-0)	14-6	(14-0)	14-9	(14-3)	15-0	(14-6)
No Overhang Back of Obst.	Fig. 3	8-2	(8-0)	8-4	(8-0)	8-6	(8-0)	8-6	(8-0)	8-6	(8-0)
Not Back of Obst.	Fig. 4	13-2	(13-0)	13-4	(13-0)	13-6	(13-0)	13-6	(13-0)	13-6	(13-0)
Public Alleys	—	15-2	(15-0)	15-4	(15-0)	15-6	(15-0)	15-9	(15-3)	16-0	(15-6)

WIRE CROSSING RAILROAD TRACKS - SPECIAL CASE

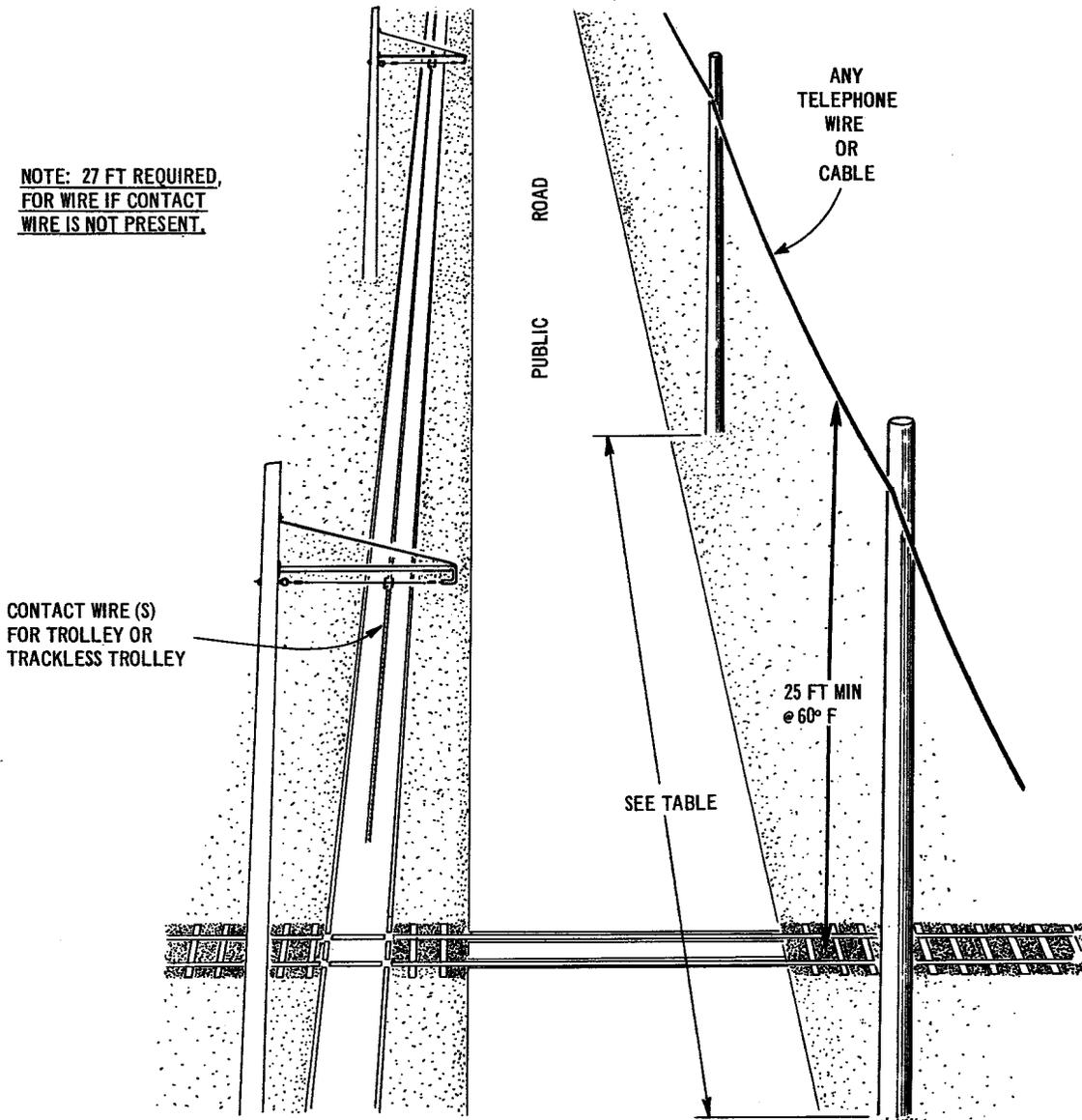


FIG. 1

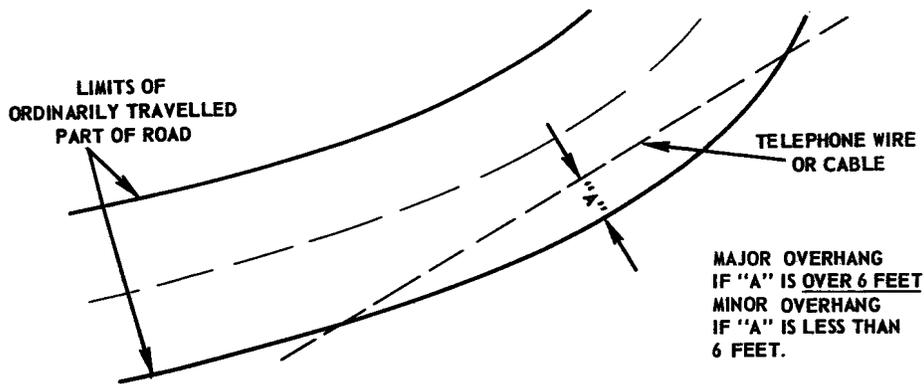


FIG. 2

RUNNING ALONG PUBLIC ROADS - BACK OF DITCHES ETC.  
(NO OVERHANG)

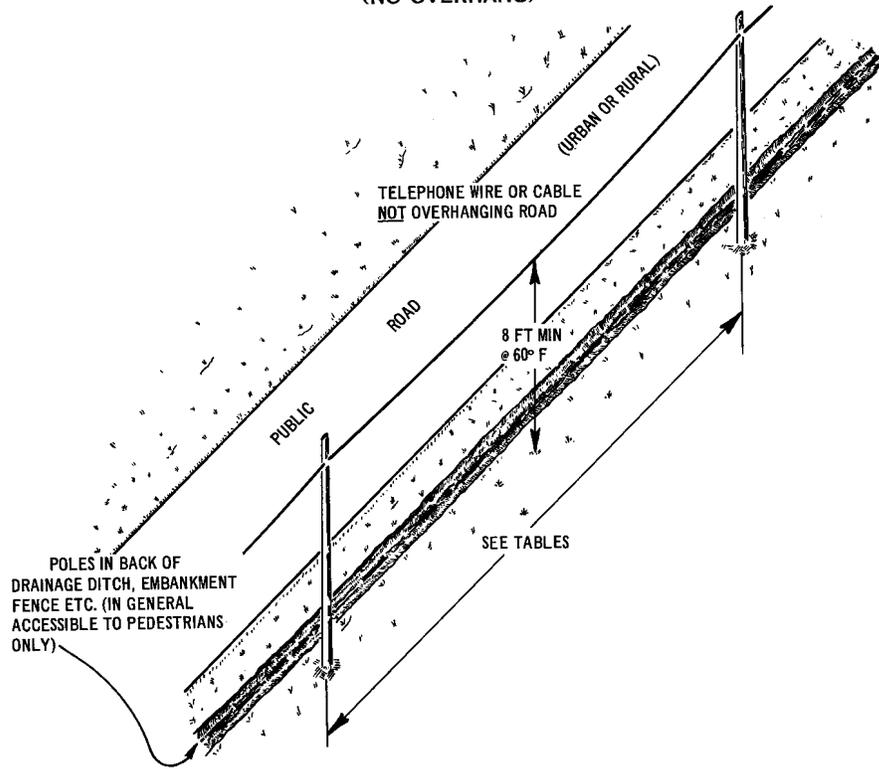


FIG. 3

RUNNING ALONG, BUT NOT OVERHANGING PUBLIC ROADS  
(NOT BACK OF OBSTRUCTION)

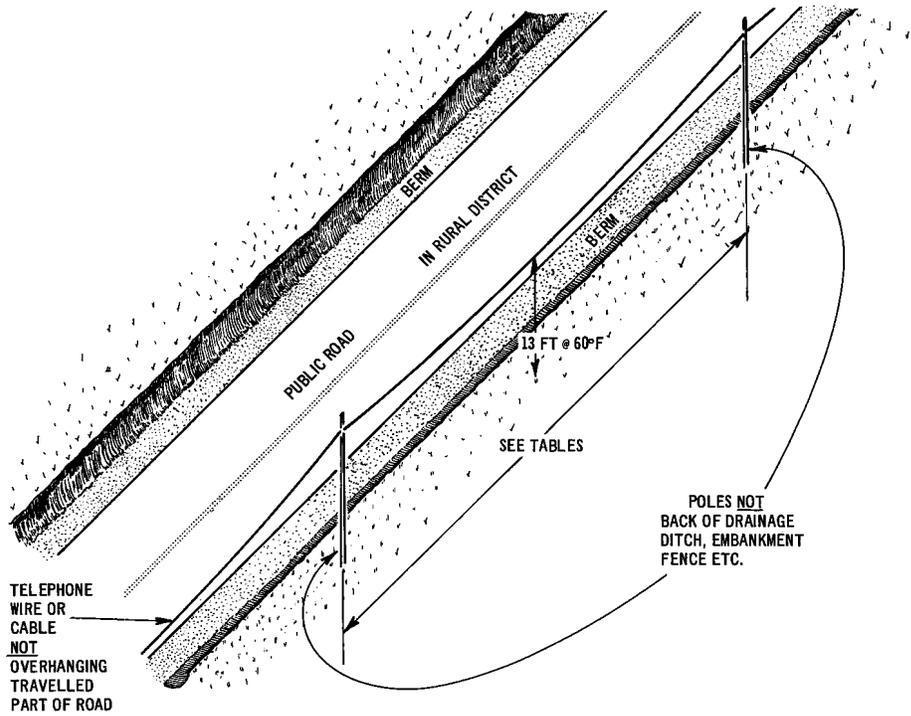


FIG. 4

## 3. CLEARANCES CROSSING BELOW POWER WIRES AND CABLES

CONSTRUCTION<sup>3</sup> CLEARANCES  
FOR POWER SPAN LENGTHS OF

KIND OF POWER FACILITY	150-LESS ft in.	151-200 ft in.	201-250 ft in.
300 volts <sup>1</sup> or less			
Service wires or cables	2-0	2-6	3-0
Line wires — generally	2-0	2-6	3-0
If within 6 feet of telephone pole <sup>4</sup> (See Section 620-210-012)	4-0	4-6	5-0
301-750 volts <sup>1</sup> — phase wires	4-0	4-6	5-0
751-8700 volts <sup>1</sup> — phase wires	4-0	4-6	5-0
If within 6 feet of telephone pole <sup>4</sup> (See Section 620-210-012)	6-0	6-6	7-0
8701-50,000 volts <sup>1</sup> — phase wires	6-0	6-6	7-0
If near telephone pole, see Section 620-210-012			
Grounded neutrals — systems of:			
Up to 22,000 volts to ground	2-0	2-6	3-0
Over 22,000 volts to ground	Same as associated phase wires.		
Other neutrals	Same as associated phase wires.		
Grounded metal sheath cables or any cable lashed to grounded strand, any voltage	2-0	2-0	2-0
Spacer cables <sup>2</sup>			
300 volts <sup>1</sup> or less	2-0	2-0	2-0
If within 6 feet of telephone pole <sup>4</sup>	4-0	4-0	4-0
301-750 volts <sup>1</sup>	4-0	4-0	4-0
751-8700 volts <sup>1</sup> — generally	4-0	4-0	4-0
If within 6 feet of telephone pole <sup>4</sup>	6-0	6-0	6-0
8701-50,000 volts <sup>1</sup>	6-0	6-0	6-0

1. Voltage to ground if power circuit is grounded; voltage between wires if not.
2. Illustrated in Section 620-216-013.
3. Maintenance clearances for span lengths up to 250 feet are the same as construction clearances for span lengths of 150 feet or less.
4. Every effort should be made to avoid these situations and establish a common pole crossing instead.

**4. MISCELLANEOUS CLEARANCES**

<b>Multiple Drop Wire Above:</b>		<b>CLEARANCE IN FEET, INCHES</b>	
<b>SPAN LENGTH OF MULTIPLE DROP WIRE (Feet)</b>		<b>CONSTRUCTION</b>	<b>MAINTENANCE</b>
100-less		2-0	2-0
101-150		2-2	2-0
151-200		2-3	2-0
201-250		2-4	2-0
<b>USING MINIMUM SAGS</b>			
75-less		2-2	2-0
76-150		2-4	2-0
151-225		2-5	2-0
226-250		2-6	2-0
Trolley contact wires 750 volts — less (Normal or Minimum Sags)			
250-less*		4-6	4-0
<b>Multiple Drop Wire Below:</b>			
Foreign guys or communication cables ∅			
Any span length		2-0	2-0
Neon Signs			
Any span length		4-0	4-0
<b>Multiple Drop Wire Alongside:</b>			
Neon Signs			
Any span length		2-0	2-0

\* Place wire guard at point of crossing.

∅ Span length of foreign cable not over 250 feet.

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