

# CLEARANCES FOR DROP WIRE IN THE HEAVY LOADING AREA

## 1. GENERAL

**1.02** Drop wire placed in the heavy loading area will generally experience some permanent stretch as a result of ice loading. "Construction" values of clearances therefore generally contain an allowance for extra sag which will be introduced by this permanent stretch. "Maintenance" values of clearances should exist after the wire has been through one or more cycles of storm loading and the temperature returns to 60°F.

**1.03** Drop wire tends to elongate as the temperature rises and contracts as the temperature falls. Wire placed during cold weather will, therefore, always have a greater sag in warm weather even if no permanent stretch is involved. In order to avoid having inadequate ground clearances at 60°F, it is necessary to provide extra clearance when wire is placed during cold weather (freezing or below). The amount of extra clearance required is the difference between the 60°F stringing sag and the cold weather stringing sag. No increase in clearance is required when placing drop wire if the temperature is above 32°F, however. Drop wire sags are shown in Section 462-400-200.

POLE 50 FEET FROM FAR EDGE		POLE 75 FEET FROM FAR EDGE	
SPAN LENGTH (FEET)	PER CENT OF MIDSPAN SAG	SPAN LENGTH (FEET)	PER CENT OF MIDSPAN SAG
130-145	95	195-220	95
146-160	90	221-245	90
161-180	85	246-270	85
181-200	80	271-300	80
201-225	75		
226-250	70		
251-275	65		
276-300	60		

**Note:** Table may be used with normal or minimum sags.

**1.07** Clearances shown in this section should be used unless the work order or local requirements calls for other values. This may occur when engineering forces recognize factors not allowed for in this section or because of local ordinances, etc. Clearances for span lengths, voltages and other conditions not covered in this section are an engineering responsibility and will be shown on the work order or detail plans.

## 2. CLEARANCES ABOVE GROUND OR RAILS

**2.01** The designation "No Overhang — Back of Obst." in the tables that follow means that the pole line is located back of a fence, ditch, embankment, etc., so that the ground beneath the line can ordinarily be travelled by pedestrians only. The designation "No Overhang — Not Back of Obst." means that the line is not back of such obstruction and does not overhang the normally travelled part of the road. This category is also meant to include ground not ordinarily travelled but which can be reached by vehicles. If farm machinery is likely to pass under the line, provide sufficient clearance so that the wire will be 2 feet above the highest part of such machinery or the load it will carry. Initial clearance at 60°F should be *increased* by the *difference* between construction and maintenance clearance shown in the table for road crossings of the same length.

**CLEARANCES ABOVE GROUND OR RAILS (at 60°F)****A. USING NORMAL SAGS****Span Lengths of 175 Feet and Less**

SITUATION	REF.	CONSTRUCTION					MAINTENANCE		
		75-LESS ft. in.	76-100 ft. in.	101-125 ft. in.	126-150 ft. in.	151-175 ft. in.	125-LESS ft. in.	126-150 ft. in.	151-175 ft. in.
<b>Crossing Above:</b>									
Railroad Tracks									
Generally	—	27-0	27-3	25-0†	25-0†	25-0†	(27-0)†	25-0†	25-0†
Special Case	Fig. 2	25-0	25-3	25-0†	25-0†	25-0†	(25-0)†	25-0†	25-0†
Public Roads									
Generally#	—	18-0	18-3	18-6	19-3	20-2	(18-0)	(18-5)	(19-0)
Pole not over 50 ft from far edge#	Fig. 1	18-0	18-3	18-6	18-11	19-3	(18-0)	(18-1)	(18-3)
Public Alleys									
Generally	—	15-0	15-3	15-6	16-3	17-2	(15-0)	(15-5)	(16-0)
Pole not over 50 ft. from far edge	Fig. 1	15-0	15-3	15-6	15-11	16-3	(15-0)	(15-1)	(15-3)
Resid. Driveways									
Generally	—	10-0	10-3	10-6	11-3	12-2	(10-0)	(10-5)	(11-0)
Pole not over 50 ft. from far edge	Fig. 1	10-0	10-3	10-6	10-11	11-3	(10-0)	(10-1)	(10-3)
Flat Roof Bldgs.	—	8-0	8-3	8-6	8-10	9-2	(8-0)	(8-0)	(8-0)
Peak Roof Bldgs., Billboards	—	2-0	2-2	2-3	2-5	2-7	(2-0)	(2-0)	(2-0)
Neon Signs	—	4-0	4-3	4-6	4-10	4-10	(4-0)	(4-0)	(4-0)
Waterways	—	Must be shown on detail plans.							
<b>Running Along:</b>									
Public Roads									
Major Overhang	Fig. 3	18-0	18-3	18-6	19-3	20-2	(18-0)	(18-5)	(19-0)
Minor Overhang	Fig. 3								
Urban	—	18-0	18-3	18-6	18-10	19-2	(18-0)	(18-0)	(18-0)
Rural (Lt. Traffic)	—	14-0	14-3	14-6	14-10	15-2	(14-0)	(14-0)	(14-0)
No Overhang									
Back of Obst.	Fig. 5	8-0	8-3	8-6	8-10	9-2	(8-0)	(8-0)	(8-0)
Not back of Obst.	Fig. 6	13-0	13-3	13-6	13-10	14-2	(13-0)	(13-0)	(13-0)
Public Alleys	—	15-0	15-3	15-6	15-10	16-2	(15-0)	(15-0)	(15-0)

# For Service drops, over residential streets, these clearances may be reduced 2 feet at the edge of the road if required clearance is obtained at the center of the road. See Fig. 4.

† Must be supported on 6M strand for spans over 100 feet; clearance of 25 feet permitted when supported on strand.

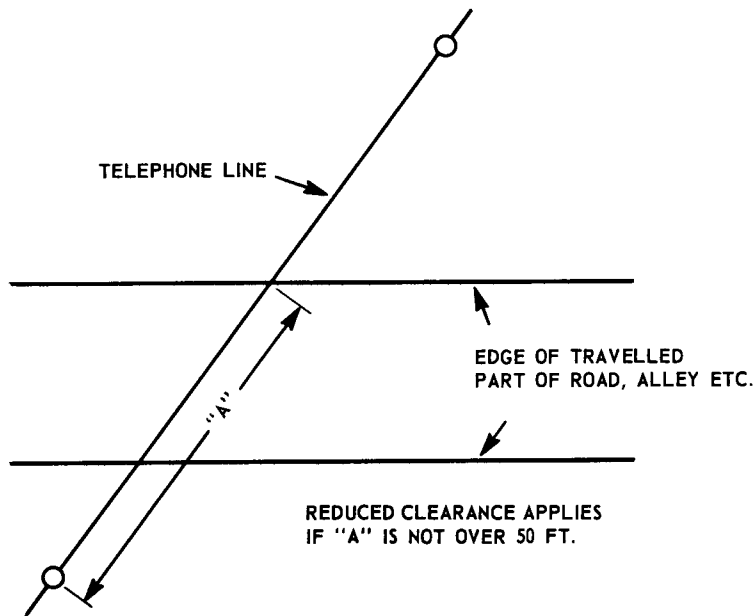


Fig. 1

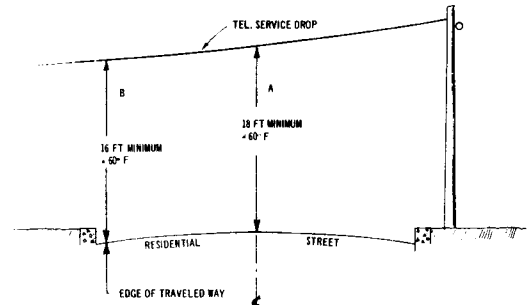


Fig. 4

RUNNING ALONG PUBLIC ROADS - BACK OF DITCHES ETC.

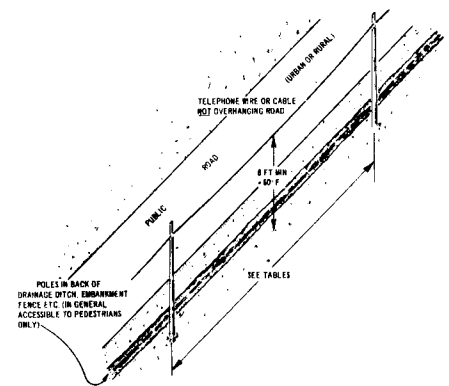


Fig. 5

WIRE CROSSING RAILROAD TRACKS - SPECIAL CASE

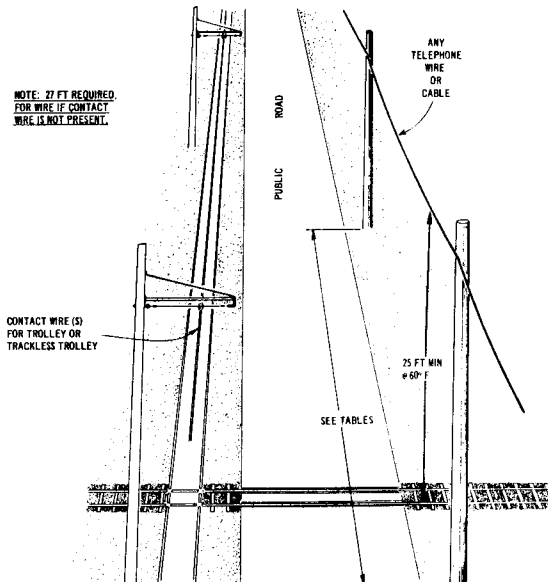


Fig. 2

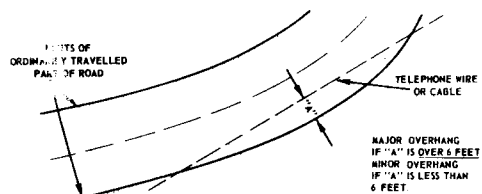


Fig. 3

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

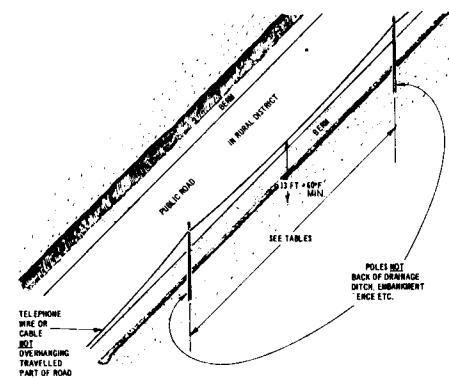


Fig. 6

## 2. CLEARANCES ABOVE GROUND OR RAILS (at 60°F)

## B. USING MINIMUM SAGS

## Span Lengths of 150 Feet and Less

SITUATION	REF.	CONSTRUCTION				MAINTENANCE		
		75-LESS ft. in.	76-100 ft. in.	101-125 ft. in.	126-150 ft. in.	100-LESS ft. in.	101-125 ft. in.	126-150 ft. in.
<b>Crossing Above:</b>								
Railroad Tracks								
Generally	—	27-3	27-6	25-0†	25-0†	(27-0)	25-0†	25-0†
Special Case	Fig. 2	25-3	25-6	25-0†	25-0†	(25-0)	25-0†	25-0†
Public Roads								
Generally#	—	18-3	18-6	19-5	20-8	(18-0)	(18-7)	(19-4)
Pole not over 50 feet from far edge#	Fig. 1	18-3	18-6	19-3	20-1	(18-0)	(18-5)	(18-10)
Public Alleys								
Generally	—	15-3	15-6	16-5	17-8	(15-0)	(15-7)	(16-4)
Pole not over 50 feet from far edge	Fig. 1	15-3	15-6	16-3	17-1	(15-0)	(15-5)	(15-10)
Resid. Driveways								
Generally	—	10-3	10-6	11-5	12-8	(10-0)	(10-7)	(11-4)
Pole not over 50 feet from far edge	Fig. 1	10-3	10-6	11-3	12-1	(10-0)	(10-5)	(10-10)
Flat Roof Bldgs.	—	8-3	8-6	8-10	9-4	(8-0)	(8-0)	(8-0)
Peak Roof Bldgs.,								
Billboards	—	2-2	2-3	2-5	2-8	(2-0)	(2-0)	(2-0)
Neon Signs	—	4-3	4-6	4-6	4-8	(4-0)	(4-0)	(4-0)
Waterways	—	Must be shown on detail plans.						
<b>Running Along:</b>								
Public Roads								
Major Overhang	Fig. 3	18-3	18-6	19-5	20-8	(18-0)	(18-7)	(19-4)
Minor Overhang	Fig. 3							
Urban	—	18-3	18-6	18-10	19-4	(18-0)	(18-0)	(18-0)
Rural (Lt. Traffic)	—	14-3	14-6	14-10	15-4	(14-0)	(14-0)	(14-0)
No Overhang								
Back of Obst.	Fig. 5	8-3	8-6	8-10	9-4	(8-0)	(8-0)	(8-0)
Not Back of Obst.	Fig. 6	13-3	13-6	13-10	14-4	(13-0)	(13-0)	(13-0)
Public Alleys	—	15-3	15-6	15-10	16-4	(15-0)	(15-0)	(15-0)

† Must be supported on 6M strand for spans over 100 ft.

# For Service drops, over residential streets, these clearances may be reduced 2 feet at the edge of the road if required clearance is obtained at the center of the road. See Fig. 4.

**3. CLEARANCES CROSSING BELOW POWER WIRES AND CABLES****Drop Wire Strung to Normal or Minimum Sags****CONSTRUCTION<sup>1</sup> CLEARANCES  
FOR POWER SPAN LENGTHS OF:**

KIND OF POWER FACILITY	100-LESS ft. in.	101-150 ft. in.	151-175 ft. in.
300 Volts <sup>2</sup> or less			
Service Wires or Cables	2-0	2-6	2-9
Line Wires — Generally	2-0	2-6	2-9
If within 6 feet of telephone pole <sup>3</sup> (See Section 620-210-012)	4-0	4-6	4-9
301-750 Volts <sup>2</sup> — Phase Wires	4-0	4-6	4-9
751-8700 Volts <sup>2</sup> — Phase Wires — Generally	4-0	4-6	4-9
If within 6 feet of telephone pole <sup>3</sup>	6-0	6-6	6-9
8701-50,000 Volts <sup>2</sup> — Phase Wires — Generally	6-0	6-6	6-9
If near telephone pole see Section 620-210-012			
Grounded Neutrals — Systems of:			
Up to 22,000 Volts to ground	2-0	2-6	2-9
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>4</sup>			
300 Volts <sup>2</sup> or Less — Generally	2-0	2-0	2-0
If within 6 feet of telephone pole <sup>3</sup>	4-0	4-0	4-0
301-750 Volts <sup>2</sup>	4-0	4-0	4-0
751-8700 Volts <sup>2</sup> — Generally	4-0	4-0	4-0
If within 6 feet of telephone pole <sup>3</sup>	6-0	6-0	6-0
8701-50,000 Volts <sup>2</sup>	6-0	6-0	6-0
If near telephone pole see Section 620-210-012			

1. Maintenance clearances for span lengths of 101 to 175 feet are the same as construction clearances for span lengths of 100 feet and less.
2. Voltage to ground if power circuit is effectively grounded; voltage between wires if not.
3. ***Every effort should be made to avoid these situations and establish a common pole crossing instead.***
4. Illustrated in Section 620-216-013.

**4. MISCELLANEOUS CLEARANCES**

<b>Drop Wire Above:</b> Power service drops or power line wires of 300 volts or less, foreign guys, foreign communications facilities, trolley span wires.				
Span Length of Drop Wire (Ft.)	CLEARANCES IN FEET, INCHES			
	NORMAL SAGS		MINIMUM SAGS	
	CONST.	MTCE.	CONST.	MTCE.
75-less	2-0	(2-0)	2-3	(2-0)
76-100	2-3	(2-0)	2-6	(2-0)
101-125	2-6	(2-0)	2-10	(2-0)
126-150	2-10	(2-0)	3-4	(2-0)
151-175	3-2	(2-0)	4-0	(2-0)
<b>Trolley Contact Wires 750 Volts — Less</b>				
75-less*	4-0	(4-0)	4-3	(4-0)
76-100*	4-3	(4-0)	4-6	(4-0)
101-125*	4-6	(4-0)	4-10	(4-0)
126-150*	4-10	(4-0)	5-4	(4-0)
151-175*	5-2	(4-0)	6-0	(4-0)
<b>Drop Wire Below:</b>				
Foreign Guys, Communications Cables† Any span length	2-0	(2-0)	2-0	(2-0)
Neon Signs Any span length	4-0	(4-0)	4-0	(4-0)
<b>Drop Wire Alongside:</b>				
Neon Signs Any span length	2-0	(2-0)	2-0	(2-0)

\* Place wire guard at point of crossing.

† Span length of foreign cable not over 175 feet.