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Original Version

Table 2

Basic Minimum Allowable Clearance of Wires from Other Wires at Crossings and at Supports
(Letter references Denote Modifications of Minimum Clearances Referred to in Notes Following this Table)
All Clearances Are in Inches

Case No.	Nature of Clearance and Class of Voltage of wire, cable or conductor concerned	Other Wire, cable or conductor concerned										
					Supply conductor (including supply cables)							
		A Span wires, guys and messengers	B Trolley contact conductors 0-750 volts	C Communication conductors (including open wire, cables and service drops)	D 0-750 volts (including service drops and trolley feeders (a))	E 750-7,500 Volts	F 7,500-20,000 volts	G 20,000-35,000 volts	H 35,000-75,000 volts	I 75,000-150,000 volts	J 150,000 - 300,000 volts	K 300,000 - 550,000 volts
	Clearance between wires, cables, and conductors not supported on the same poles, vertically at crossings in spans, and radially where collinear or approaching crossing											
1	Span wires, guys and messengers (b)	18 (c)	48 (d, e)	24 (e)	24 (e)	36 (f)	36	72	72	78	78(gg)	138(hh)
2	Trolley contact conductors 0-750 volts	48 (d, e)	----------	48 (d)	48 (d, h)	48	72	96	96	96	96 (gg)	156(hh)
3	Communication conductors	24 (e)	48 (d)	24	48 (i)	48 (dd)	72	96	96	96	96 (gg)	156(hh)
4	Supply conductors, service drops and trolley feeders 0-750 volts	24 (e)	48 (d, h)	48 (i)	24	48	48	96	96	96	96 (gg)	156(hh)
5	Supply conductors, 750-7500 volts	36 (f)	48	48 (dd)	48	48 (h)	72	96	96	96	96 (gg)	156(hh)
6	Supply conductors 7500-20,000 volts	36	72	72	48	72	72	96	96	96	96 (gg)	156(hh)
7	Supply conductors, more than 20,000 volts	72	96	96	96	96	96	96	96	96	96 (gg)	156(hh)
	Vertical separation between conductors and / or cables on separate crossarms or other											

	supports at different levels (excepting on related line and buck arms on the same pole)											
8	Communication conductors and service drops	---------- ---	---------- -	12 (j)	48 (k, l, m, n)	48 (k)	72 (m, n)	72(m)	72	78	87 (gg)	147(hh)
9	Supply Conductors, service drops and trolley feeders 0-750 volts	---------- ---	---------- -	48 (k, l, m, n)	24 (h, k, m, o)	48 (k, m, p)	48 (k, m, q)	72(m)	72	78	87 (gg)	147(hh)
10	Supply conductors, 750-7500 volts	---------- ---	---------- -	48 (k)	48 (k, m, p)	48 (m, o, r, ee)	48 (m, q)	48(q)	48(q)	60(ff)	90 (gg)	150(hh)
11	Supply conductors 7500-20,000 volts	---------- ---	---------- -	72 (m, n)	48 (k, m, q)	48 (m, q)	48 (m, o, q, r, ee)	48(q)	48(q)	60(ff)	90 (gg)	150(hh)
12	Supply conductors 20,000-68,000 volts	---------- ---	---------- -	72 (m)	72 (m)	48 (m, q)	48 (m, q)	48(o, q)	48(o, q)	60(ff)	90 (gg)	150(hh)
13	Supply conductors, more than 68,000 volts	---------- ---	---------- -	72	72	60 (q)	60 (q)	60(q)	60(q)	60(ff)	90 (gg)	150(hh)
	Vertical arms above or below conductors on related line arms and buck arms.											
14	Line arms above or below related buck arms (s, t)	---------- ---	---------- -	6	12 (u)	18 (u)	18 (u)	24	48	60(ff)	90 (gg)	150(hh)
	Horizontal separation of conductors on same crossarm											
15	Pin spacings of longitudinal conductors, vertical conductors and service drops (v, w)	---------- ---	---------- -	3(x)	11 ½ (h, x)	11 ½ (x)	17 ½ (x)	24 (x)	48	60(ff)	90 (gg)	150(hh)
	Radial separation of conductors on same crossarm, pole or structure											
	Incidental pole wiring											
16	Conductors, tap or lead wires of different circuits (v, y, z)	---------- ---	---------- -	3 (x)	11 ½ (h, x)	11 ½ (x)	17 ½ (x)	24 (x)	48	60(ff)	90 (gg)	150(hh)
17	Conductors, tap or lead wires of same circuits (v, z, aa)	---------- ---	---------- -	3	3	6	6	12	24	60(ff)	90 (gg)	150(hh)
	Radial separation between guys and conductors		---------- -									
18	Guys passing conductors supported on other poles (excluding poles of same circuit), and guys	---------- ---	---------- -	3 (bb)	12	18	18	30	36	36 (ff)	78 (gg)	138(hh)

	approximately parallel to conductors supported on the same poles											
19	Guys and spans wires passing conductors supported on the same poles	(ee)		3	3	6	9	12	18	24	48 (ll)	86 (jj)
20	Vertical Clearance between conductors of the same circuit on Horizontal post insulators	-	-	-	-	24	24	30	36 or 48 (ii) (mm)	48 (mm)	48(mm)	48(mm)

(a)	The clearances in Column D are also applicable to supply cables of any voltage under certain conditions	57.4
(b)	Clearances for guys and span wires apply vertically at crossings; see Case 18 for radial clearances from conductors. 1. Supply guys and span wires from conductors 2. Supply guys and span wires from guys and span wires 3. Communication guys and span wires from conductors 4. Communication guys and span wires from guys and span wires	56.4-C 56.4-D1 86.4-C 86.4-D1
(c)	Not applicable between messengers or span wires of the same system. 1. Supply messengers 2. Trolley span wires 3. Communication messengers	57.4-E 77.4-D 87.4-G
(d)	Protection required on guys, span wires, messengers, and cables where within trolley throw 1. Supply Guys and Span wires 2. Supply Messengers and Cables 3. Communication guys and span wires 4. Communication messengers	56.4-B2 57.4-B2 86.4-B2 87.4-B2
(e)	Not applicable to certain conductors supported on trolley span wires. 1. Trolley contact and feeder conductors 2. Trolley feeder conductors 3. Trolley system communication conductors 4. Foreign conductors	74.4-G 78.1 78.2 78.3
(f)	Increased clearance required over trolley contact conductors of 750-7500 volts	74.4-G2
(g)	Shall be increased for conductors of more than 75,000 volts. As required by Table 2 Columns I, J, and K	
(h)	May be reduced for certain conductors of Class T circuits of the same system	74.4-C

(i)	May be reduced for service drops under special conditions. 1. Supply service drops and communication line conductors 2. Supply service drops and communication service drops 3. Communication service drops and supply line conductors 4. Communication service drops and supply service drops	54.8-C1a 54.8-C4 84.8-D1a 84.8-D4
(j)	May be reduced or shall be increased for certain communication conductors or cables. 1. Open wire conductors, attached to poles, within 3 feet of topmost conductor 2. Line conductors of police or fire-alarm circuits and service drops from other communication circuits. 3. Cables and messengers attached to poles	84.4-C1a 84.8-D1b 87.4-C3
(k)	Special clearances for 0-750 volt conductors in rack configuration and messengers and cables attached to poles. 1. Supply conductors of 0-750 volts in rack configuration 2. Supply cables and messengers attached to poles 3. Communication cables and messengers attached to poles 4. On Jointly used poles	54.9 57.4-F 87.4-C3 92.1
(l)	May be reduced for service drops, and police or fire-alarm conductors, under special conditions. 1. Supply service drops and communication line conductors 2. Supply service drops on clearance arms 3. Supply service drops on pole-top extensions 4. Supply service drops and communication service drops 5. Communication service drops and police, fire-alarm or supply line conductors 6. Communication service drops on clearance arms 7. Communication service drops on pole-top extensions 8. Communication service drops and supply service drops 9. Police or fire-alarm conductors	54.8-C1b 54.8-C2 54.8-C3 54.8-C4 84.8-D1b 84.8-D2 84.8-D3 84.8-D4 92.2

(m)	May be reduced for lead wires 1. Supply lead wires above supply conductors 2. Supply drip loops above communication conductors	 54.4-C6 92.1-F3
(n)	May be reduced for supply conductors and private communication conductors of the same ownership	89.2-B
(o)	May be reduced or increased for triangular or vertical configuration or for pole-top construction. 1. Triangular or vertical configuration on crossarms 2. Dead-ended on pole in vertical configuration 3. Conductors of 0-7500 volts in triangular configuration at top of pole 4. Conductors of more than 7500 volts at top of pole	 54.4-C1c 54.4-C4 54.4-D8a 54.4-D8b
(p)	May be reduced for supply service drops of 0-750 volts	54.8-C6
(q)	Shall be increased between circuits where conductors of more than 7500 volts are at pole top.	54.4-D8b
(r)	May be reduced under special conditions 1. Supply conductors of 750-7500 volts 2. Supply conductors of 7500-20,000 volts	 54.4-C1a 54.4-C1b
(s)	Does not apply where conductors do not cross. 1. Supply conductors of different phase polarity 2. Communication conductors	 54.4-C2a 84.4-C1a
(t)	Shall not be applied consecutively both above and below the same supply conductors	54.4-2a
(u)	Shall be increased where conductors of different classifications are supported on the same crossarms. 1. Supply conductors of 0-750 volts and conductors of 7500-20,000 volts 2. Supply conductors of 0-750 volts and conductors of 750-7500 volts	 32.4-A2 32.4-A3
(v)	Not applicable to certain kinds of conductors. 1. Supply conductors of same phase or polarity 2. Insulated supply conductors in multiple-conductor cables 3. Communication insulated conductors or multiple-conductor cables	 54.4-C3c 57.4-C 87.4-C1

(w)	Shall apply radially to conductors on brackets attached to crossarms. 1. Supply conductors 2. Communication conductors	54.4-C3b 84.8-C1b
(x)	Shall be increased between conductors of different classifications supported on the same crossarm. 1. Supply conductors of different voltage classification 2. Supply circuits of 0-750 volts and communication circuits 3. Supply circuits and private communication circuits.	32.4-A 32.4-B 89.2-A
(y)	Special clearances for unprotected supply conductors from one level to another level	54.6-A 58.2-B3 92.1-F5
(z)	Not applicable to the following: 1. Clearances between conductors at different levels specified in Cases 8 to 13 inclusive. 2. Supply lateral conductors, suitably protected 3. Supply vertical runs, suitably protected 4. Supply risers, suitably protected 5. Communication Conductors	54.6-C 54.6-D 54.6-E 87.4-C1
(aa)	Not applicable between cables and their supporting messengers. 1. Supply 2. Communication	57.4-D 87.4-F
(bb)	May be reduced for communication guys and communication conductors supported on the same poles 1. Supply 2. Communication	56.4-C 86.4-C
(cc)	Clearance required between guys. 1. Supply guys, crossing 2. Supply guys, approximately parallel 3. Communication guys, crossing 4. Communication guys, approximately parallel	56.4-D2 56.4-D3 86.4-D2 86.4-D3
(dd)	Shall be increased where within 6 feet of a pole	103.5
(ee)	May be decreased in partial underground distribution	54.4-C4c
(ff)	shall be increased by 0.40 inches per kV in excess of 75 kV	
(gg)	shall be increased by 0.40 inches per kV in excess of 150 kV	
(hh)	shall be increased by 0.40 inches per kV in excess of 300 kV	
(ii)	shall be increased by 0.25 inches per kV in excess of 150 kV	

(jj)	shall be increased by 0.25 inches per kV in excess of 300 kV	
(kk)	proposed clearances to submitted to the CPUC prior to construction for circuits in excess of 550 kV	
(ll)	36-inch clearance applies 35 kV to 68kV 48-inch clearance applies over 68 kV	
(mm)	vertical clearance shall be increased by ½ inch for each kilovolt over 68 kV	

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Table 2

Basic Minimum Allowable Clearance of Wires from Other Wires at Crossings and at Supports

(Letter references Denote Modifications of Minimum Clearances Referred to in Notes Following this Table)

All Clearances Are in Inches

Case No.	Nature of Clearance and Class of Voltage of wire, cable or conductor concerned	Other Wire, cable or conductor concerned										
					Supply conductor (including supply cables)							
		A Span wires, guys and messengers	B Trolley contact conductors 0-750 volts	C Communication conductors (including open wire, cables and service drops)	D 0-750 volts (including service drops and trolley feeders (a))	E 750-7,500 Volts	F 7,500-20,000 volts	G 20,000-35,000 volts	H 35,000-75,000 volts	I 75,000-150,000 volts	J 150,000 - 300,000 volts	K 300,000 - 550,000 volts
	Clearance between wires, cables, and conductors not supported on the same poles, vertically at crossings in spans, and radially where collinear or approaching crossing											
1	Span wires, guys and messengers (b)	18 (c)	48 (d, e)	24 (e)	24 (e)	36 (f)	36	72	72	78	78(gg)	138(hh)
2	Trolley contact conductors 0-750 volts	48 (d, e)	----------	48 (d)	48 (d, h)	48	72	96	96	96	96 (gg)	156(hh)
3	Communication conductors	24 (e)	48 (d)	24	48 (i)	48 (dd)	72	96	96	96	96 (gg)	156(hh)
4	Supply conductors, service drops and trolley feeders 0-750 volts	24 (e)	48 (d, h)	48 (i)	24	48	48	96	96	96	96 (gg)	156(hh)
5	Supply conductors, 750-7500 volts	36 (f)	48	48 (dd)	48	48 (h)	72	96	96	96	96 (gg)	156(hh)
6	Supply conductors 7500-20,000 volts	36	72	72	48	72	72	96	96	96	96 (gg)	156(hh)
7	Supply conductors, more than 20,000 volts	72(g)	96(g)	96(g)	96(g)	96(g)	96(g)	96(g)	96 (g)	96	96 (gg)	156(hh)
	Vertical separation between conductors and / or cables on separate crossarms or other supports at different levels (excepting on related line and buck arms on the											

	same pole)											
8	Communication conductors and service drops	---------- ---	---------- -	12 (j)	48 (k, l, m, n)	48 (k)	72 (m, n)	72(m)	72	78	87 (gg)	147(hh)
9	Supply Conductors, service drops and trolley feeders 0-750 volts	---------- ---	---------- -	48 (k, l, m, n)	24 (h, k, m, o)	48 (k, m, p)	48 (k, m, q)	72(m)	72	78	87 (gg)	147(hh)
10	Supply conductors, 750-7500 volts	---------- ---	---------- -	48 (k)	48 (k, m, p)	48 (m, o, r, ee)	48 (m, q)	48(q)	48(q)	60(ff)	90 (gg)	150(hh)
11	Supply conductors 7500-20,000 volts	---------- ---	---------- -	72 (m, n)	48 (k, m, q)	48 (m, q)	48 (m, o, q, r, ee)	48(q)	48(q)	60(ff)	90 (gg)	150(hh)
12	Supply conductors 20,000-~~68,000~~ 75,000 volts	---------- ---	---------- -	72 (m)	72 (m)	48 (m, q)	48 (m, q)	48(o, q)	48(o, q)	60(ff)	90 (gg)	150(hh)
13	Supply conductors, more than ~~68,000~~ 75,000 volts	---------- ---	---------- -	72	72	60 (q)	60 (q)	60(q)	60(q)	60(ff)	90 (gg)	150(hh)
	Vertical arms above or below conductors on related line arms and buck arms.											
14	Line arms above or below related buck arms (s, t)	---------- ---	---------- -	6	12 (u)	18 (u)	18 (u)	24	48	60(ff)	90 (gg)	150(hh)
	Horizontal separation of conductors on same crossarm											
15	Pin spacings of longitudinal conductors, vertical conductors and service drops (v, w)	---------- ---	---------- -	3(x)	11 ½ (h, x)	11 ½ (x)	17 ½ (x)	24 (x)	48	60(ff)	90 (gg)	150(hh)
	Radial separation of conductors on same crossarm, pole or structure											
	Incidental pole wiring											
16	Conductors, tap or lead wires of different circuits (v, y, z)	---------- ---	---------- -	3 (x)	11 ½ (h, x)	11 ½ (x)	17 ½ (x)	24 (x)	48	60(ff)	90 (gg)	150(hh)
17	Conductors, tap or lead wires of same circuits (v, z, aa)	---------- ---	---------- -	3	3	6	6	12	24	60(ff)	90 (gg)	150(hh)
	Radial separation between guys and conductors		---------- -									
18	Guys passing conductors supported on other poles (excluding poles of same circuit), and guys approximately parallel to conductors supported on the same poles	---------- ---	---------- -	3 (bb)	12	18	18	30	36	36 (ff)	78 (gg)	138(hh)

19	Guys and spans wires passing conductors supported on the same poles	(ee)		3	3	6	9	12	18	24	48 (ll)	86 (jj)
20	Vertical Clearance between conductors of the same circuit on Horizontal post insulators	-	-	-	-	24	24	30	36 or 48 (ii) (mm)	48 (mm)	48(mm)	48(mm)

(a)	The clearances in Column D are also applicable to supply cables of any voltage under certain conditions	57.4
(b)	Clearances for guys and span wires apply vertically at crossings; see Case 18 for radial clearances from conductors. 1. Supply guys and span wires from conductors 2. Supply guys and span wires from guys and span wires 3. Communication guys and span wires from conductors 4. Communication guys and span wires from guys and span wires	56.4-C 56.4-D1 86.4-C 86.4-D1
(c)	Not applicable between messengers or span wires of the same system. 1. Supply messengers 2. Trolley span wires 3. Communication messengers	57.4-E 77.4-D 87.4-G
(d)	Protection required on guys, span wires, messengers, and cables where within trolley throw 1. Supply Guys and Span wires 2. Supply Messengers and Cables 3. Communication guys and span wires 4. Communication messengers	56.4-B2 57.4-B2 86.4-B2 87.4-B2
(e)	Not applicable to certain conductors supported on trolley span wires. 1. Trolley contact and feeder conductors 2. Trolley feeder conductors 3. Trolley system communication conductors 4. Foreign conductors	74.4-G 78.1 78.2 78.3
(f)	Increased clearance required over trolley contact conductors of 750-7500 volts	74.4-G2
(g)	Shall be increased for conductors of more than 75,000 volts. As required by Table 2 Columns I, J, and K	
(h)	May be reduced for certain conductors of Class T circuits of the same system	74.4-C

(i)	May be reduced for service drops under special conditions. 1. Supply service drops and communication line conductors 2. Supply service drops and communication service drops 3. Communication service drops and supply line conductors 4. Communication service drops and supply service drops	54.8-C1a 54.8-C4 84.8-D1a 84.8-D4
(j)	May be reduced or shall be increased for certain communication conductors or cables. 1. Open wire conductors, attached to poles, within 3 feet of topmost conductor 2. Line conductors of police or fire-alarm circuits and service drops from other communication circuits. 3. Cables and messengers attached to poles	84.4-C1a 84.8-D1b 87.4-C3
(k)	Special clearances for 0-750 volt conductors in rack configuration and messengers and cables attached to poles. 1. Supply conductors of 0-750 volts in rack configuration 2. Supply cables and messengers attached to poles 3. Communication cables and messengers attached to poles 4. On Jointly used poles	54.9 57.4-F 87.4-C3 92.1
(l)	May be reduced for service drops, and police or fire-alarm conductors, under special conditions. 1. Supply service drops and communication line conductors 2. Supply service drops on clearance arms 3. Supply service drops on pole-top extensions 4. Supply service drops and communication service drops 5. Communication service drops and police, fire-alarm or supply line conductors 6. Communication service drops on clearance arms 7. Communication service drops on pole-top extensions 8. Communication service drops and supply service drops 9. Police or fire-alarm conductors	54.8-C1b 54.8-C2 54.8-C3 54.8-C4 84.8-D1b 84.8-D2 84.8-D3 84.8-D4 92.2

(m)	May be reduced for lead wires 1. Supply lead wires above supply conductors 2. Supply drip loops above communication conductors	 54.4-C6 92.1-F3
(n)	May be reduced for supply conductors and private communication conductors of the same ownership	89.2-B
(o)	May be reduced or increased for triangular or vertical configuration or for pole-top construction. 1. Triangular or vertical configuration on crossarms 2. Dead-ended on pole in vertical configuration 3. Conductors of 0-7500 volts in triangular configuration at top of pole 4. Conductors of more than 7500 volts at top of pole	 54.4-C1c 54.4-C4 54.4-D8a 54.4-D8b
(p)	May be reduced for supply service drops of 0-750 volts	54.8-C6
(q)	Shall be increased between circuits where conductors of more than 7500 volts are at pole top.	54.4-D8b
(r)	May be reduced under special conditions 1. Supply conductors of 750-7500 volts 2. Supply conductors of 7500-20,000 volts	 54.4-C1a 54.4-C1b
(s)	Does not apply where conductors do not cross. 1. Supply conductors of different phase polarity 2. Communication conductors	 54.4-C2a 84.4-C1a
(t)	Shall not be applied consecutively both above and below the same supply conductors	54.4-2a
(u)	Shall be increased where conductors of different classifications are supported on the same crossarms. 1. Supply conductors of 0-750 volts and conductors of 7500-20,000 volts 2. Supply conductors of 0-750 volts and conductors of 750-7500 volts	 32.4-A2 32.4-A3
(v)	Not applicable to certain kinds of conductors. 1. Supply conductors of same phase or polarity 2. Insulated supply conductors in multiple-conductor cables 3. Communication insulated conductors or multiple-conductor cables	 54.4-C3c 57.4-C 87.4-C1

(w)	Shall apply radially to conductors on brackets attached to crossarms. 1. Supply conductors 2. Communication conductors	54.4-C3b 84.8-C1b
(x)	Shall be increased between conductors of different classifications supported on the same crossarm. 1. Supply conductors of different voltage classification 2. Supply circuits of 0-750 volts and communication circuits 3. Supply circuits and private communication circuits.	32.4-A 32.4-B 89.2-A
(y)	Special clearances for unprotected supply conductors from one level to another level	54.6-A 58.2-B3 92.1-F5
(z)	Not applicable to the following: 1. Clearances between conductors at different levels specified in Cases 8 to 13 inclusive. 2. Supply lateral conductors, suitably protected 3. Supply vertical runs, suitably protected 4. Supply risers, suitably protected 5. Communication Conductors	54.6-C 54.6-D 54.6-E 87.4-C1
(aa)	Not applicable between cables and their supporting messengers. 1. Supply 2. Communication	57.4-D 87.4-F
(bb)	May be reduced for communication guys and communication conductors supported on the same poles 1. Supply 2. Communication	56.4-C 86.4-C
(cc)	Clearance required between guys. 1. Supply guys, crossing 2. Supply guys, approximately parallel 3. Communication guys, crossing 4. Communication guys, approximately parallel	56.4-D2 56.4-D3 86.4-D2 86.4-D3
(dd)	Shall be increased where within 6 feet of a pole	103.5
(ee)	May be decreased in partial underground distribution	54.4-C4c
(ff)	shall be increased by 0.40 inches per kV in excess of 75 kV	
(gg)	shall be increased by 0.40 inches per kV in excess of 150 kV	
(hh)	shall be increased by 0.40 inches per kV in excess of 300 kV	
(ii)	shall be increased by 0.25 inches per kV in excess of 150 kV	

(jj)	shall be increased by 0.25 inches per kV in excess of 300 kV	
(kk)	proposed clearances to submitted to the CPUC prior to construction for circuits in excess of 550 kV	
(ll)	36-inch clearance applies 35 kV to 68kV 48-inch clearance applies over 68 kV	
(mm)	vertical clearance shall be increased by ½ inch for each kilovolt over 68 kV	

Final Version

Table 2

Basic Minimum Allowable Clearance of Wires from Other Wires at Crossings and at Supports

(Letter references Denote Modifications of Minimum Clearances Referred to in Notes Following this Table)

All Clearances Are in Inches

Case No.	Nature of Clearance and Class of Voltage of wire, cable or conductor concerned	Other Wire, cable or conductor concerned										
					Supply conductor (including supply cables)							
		A Span wires, guys and messengers	B Trolley contact conductors 0-750 volts	C Communication conductors (including open wire, cables and service drops)	D 0-750 volts (including service drops and trolley feeders (a))	E 750-7,500 Volts	F 7,500-20,000 volts	G 20,000-35,000 volts	H 35,000-75,000 volts	I 75,000-150,000 volts	J 150,000 - 300,000 volts	K 300,000 - 550,000 volts
	Clearance between wires, cables, and conductors not supported on the same poles, vertically at crossings in spans, and radially where collinear or approaching crossing											
1	Span wires, guys and messengers (b)	18 (c)	48 (d, e)	24 (e)	24 (e)	36 (f)	36	72	72	78	78(gg)	138(hh)
2	Trolley contact conductors 0-750 volts	48 (d, e)	----------	48 (d)	48 (d, h)	48	72	96	96	96	96 (gg)	156(hh)
3	Communication conductors	24 (e)	48 (d)	24	48 (i)	48 (dd)	72	96	96	96	96 (gg)	156(hh)

4	Supply conductors, service drops and trolley feeders 0-750 volts	24 (e)	48 (d, h)	48 (i)	24	48	48	96	96	96	96 (gg)	156(hh)
5	Supply conductors, 750-7500 volts	36 (f)	48	48 (dd)	48	48 (h)	72	96	96	96	96 (gg)	156(hh)
6	Supply conductors 7500-20,000 volts	36	72	72	48	72	72	96	96	96	96 (gg)	156(hh)
7	Supply conductors, more than 20,000 volts	72(g)	96(g)	96(g)	96(g)	96(g)	96(g)	96(g)	96 (g)	96	96 (gg)	156(hh)
	Vertical separation between conductors and / or cables on separate crossarms or other supports at different levels (excepting on related line and buck arms on the same pole)											
8	Communication conductors and service drops	----------	----------	12 (j)	48 (k, l, m, n)	48 (k)	72 (m, n)	72(m)	72	78	87 (gg)	147(hh)
9	Supply Conductors, service drops and trolley feeders 0-750 volts	----------	----------	48 (k, l, m, n)	24 (h, k, m, o)	48 (k, m, p)	48 (k, m, q)	72(m)	72	78	87 (gg)	147(hh)
10	Supply conductors, 750-7500 volts	----------	----------	48 (k)	48 (k, m, p)	48 (m, o, r, ee)	48 (m, q)	48(q)	48(q)	60(ff)	90 (gg)	150(hh)
11	Supply conductors 7500-20,000 volts	----------	----------	72 (m, n)	48 (k, m, q)	48 (m, q)	48 (m, o, q, r, ee)	48(q)	48(q)	60(ff)	90 (gg)	150(hh)
12	Supply conductors 20,000-~~68,000~~ 75,000 volts	----------	----------	72 (m)	72 (m)	48 (m, q)	48 (m, q)	48(o, q)	48(o, q)	60(ff)	90 (gg)	150(hh)
13	Supply conductors, more than ~~68,000~~ 75,000 volts	----------	----------	72	72	60 (q)	60 (q)	60(q)	60(q)	60(ff)	90 (gg)	150(hh)
	Vertical arms above or below conductors on related line arms and buck arms.											
14	Line arms above or below related buck arms (s, t)	----------	----------	6	12 (u)	18 (u)	18 (u)	24	48	60(ff)	90 (gg)	150(hh)
	Horizontal separation of conductors on same crossarm											
15	Pin spacings of longitudinal conductors, vertical conductors and service drops (v, w)	----------	----------	3(x)	11 ½ (h, x)	11 ½ (x)	17 ½ (x)	24 (x)	48	60(ff)	90 (gg)	150(hh)
	Radial separation of											

	conductors on same crossarm, pole or structure Incidental pole wiring											
16	Conductors, tap or lead wires of different circuits (v, y, z)	---------- ---	---------- -	3 (x)	11 ½ (h, x)	11 ½ (x)	17 ½ (x)	24 (x)	48	60(ff)	90 (gg)	150(hh)
17	Conductors, tap or lead wires of same circuits (v, z, aa)	---------- ---	---------- -	3	3	6	6	12	24	60(ff)	90 (gg)	150(hh)
	Radial separation between guys and conductors		---------- -									
18	Guys passing conductors supported on other poles (excluding poles of same circuit), and guys approximately parallel to conductors supported on the same poles	---------- ---	---------- -	3 (bb)	12	18	18	30	36	36 (ff)	78 (gg)	138(hh)
19	Guys and spans wires passing conductors supported on the same poles	(ee)		3	3	6	9	12	18	24	48 (ll)	86 (jj)
20	Vertical Clearance between conductors of the same circuit on Horizontal post insulators	-	-	-	-	24	24	30	36 or 48 (ii) (mm)	48 (mm)	48(mm)	48(mm)

(a)	The clearances in Column D are also applicable to supply cables of any voltage under certain conditions	57.4
(b)	Clearances for guys and span wires apply vertically at crossings; see Case 18 for radial clearances from conductors. 1. Supply guys and span wires from conductors 2. Supply guys and span wires from guys and span wires 3. Communication guys and span wires from conductors 4. Communication guys and span wires from guys and span wires	56.4-C 56.4-D1 86.4-C 86.4-D1
(c)	Not applicable between messengers or span wires of the same system. 1. Supply messengers 2. Trolley span wires 3. Communication messengers	57.4-E 77.4-D 87.4-G
(d)	Protection required on guys, span wires, messengers, and cables where within trolley throw 1. Supply Guys and Span wires 2. Supply Messengers and Cables 3. Communication guys and span wires 4. Communication messengers	56.4-B2 57.4-B2 86.4-B2 87.4-B2
(e)	Not applicable to certain conductors supported on trolley span wires. 1. Trolley contact and feeder conductors 2. Trolley feeder conductors 3. Trolley system communication conductors 4. Foreign conductors	74.4-G 78.1 78.2 78.3
(f)	Increased clearance required over trolley contact conductors of 750-7500 volts	74.4-G2
(g)	Shall be increased for conductors of more than 75,000 volts. As required by Table 2 Columns I, J, and K	
(h)	May be reduced for certain conductors of Class T circuits of the same system	74.4-C

(i)	May be reduced for service drops under special conditions. 1. Supply service drops and communication line conductors 2. Supply service drops and communication service drops 3. Communication service drops and supply line conductors 4. Communication service drops and supply service drops	54.8-C1a 54.8-C4 84.8-D1a 84.8-D4
(j)	May be reduced or shall be increased for certain communication conductors or cables. 1. Open wire conductors, attached to poles, within 3 feet of topmost conductor 2. Line conductors of police or fire-alarm circuits and service drops from other communication circuits. 3. Cables and messengers attached to poles	84.4-C1a 84.8-D1b 87.4-C3
(k)	Special clearances for 0-750 volt conductors in rack configuration and messengers and cables attached to poles. 1. Supply conductors of 0-750 volts in rack configuration 2. Supply cables and messengers attached to poles 3. Communication cables and messengers attached to poles 4. On Jointly used poles	54.9 57.4-F 87.4-C3 92.1
(l)	May be reduced for service drops, and police or fire-alarm conductors, under special conditions. 1. Supply service drops and communication line conductors 2. Supply service drops on clearance arms 3. Supply service drops on pole-top extensions 4. Supply service drops and communication service drops 5. Communication service drops and police, fire-alarm or supply line conductors 6. Communication service drops on clearance arms 7. Communication service drops on pole-top extensions 8. Communication service drops and supply service drops 9. Police or fire-alarm conductors	54.8-C1b 54.8-C2 54.8-C3 54.8-C4 84.8-D1b 84.8-D2 84.8-D3 84.8-D4 92.2

(m)	May be reduced for lead wires 1. Supply lead wires above supply conductors 2. Supply drip loops above communication conductors	 54.4-C6 92.1-F3
(n)	May be reduced for supply conductors and private communication conductors of the same ownership	89.2-B
(o)	May be reduced or increased for triangular or vertical configuration or for pole-top construction. 1. Triangular or vertical configuration on crossarms 2. Dead-ended on pole in vertical configuration 3. Conductors of 0-7500 volts in triangular configuration at top of pole 4. Conductors of more than 7500 volts at top of pole	 54.4-C1c 54.4-C4 54.4-D8a 54.4-D8b
(p)	May be reduced for supply service drops of 0-750 volts	54.8-C6
(q)	Shall be increased between circuits where conductors of more than 7500 volts are at pole top.	54.4-D8b
(r)	May be reduced under special conditions 1. Supply conductors of 750-7500 volts 2. Supply conductors of 7500-20,000 volts	 54.4-C1a 54.4-C1b
(s)	Does not apply where conductors do not cross. 1. Supply conductors of different phase polarity 2. Communication conductors	 54.4-C2a 84.4-C1a
(t)	Shall not be applied consecutively both above and below the same supply conductors	54.4-2a
(u)	Shall be increased where conductors of different classifications are supported on the same crossarms. 1. Supply conductors of 0-750 volts and conductors of 7500-20,000 volts 2. Supply conductors of 0-750 volts and conductors of 750-7500 volts	 32.4-A2 32.4-A3
(v)	Not applicable to certain kinds of conductors. 1. Supply conductors of same phase or polarity 2. Insulated supply conductors in multiple-conductor cables 3. Communication insulated conductors or multiple-conductor cables	 54.4-C3c 57.4-C 87.4-C1

(w)	Shall apply radially to conductors on brackets attached to crossarms. 1. Supply conductors 2. Communication conductors	54.4-C3b 84.8-C1b
(x)	Shall be increased between conductors of different classifications supported on the same crossarm. 1. Supply conductors of different voltage classification 2. Supply circuits of 0-750 volts and communication circuits 3. Supply circuits and private communication circuits.	32.4-A 32.4-B 89.2-A
(y)	Special clearances for unprotected supply conductors from one level to another level	54.6-A 58.2-B3 92.1-F5
(z)	Not applicable to the following: 1. Clearances between conductors at different levels specified in Cases 8 to 13 inclusive. 2. Supply lateral conductors, suitably protected 3. Supply vertical runs, suitably protected 4. Supply risers, suitably protected 5. Communication Conductors	54.6-C 54.6-D 54.6-E 87.4-C1
(aa)	Not applicable between cables and their supporting messengers. 1. Supply 2. Communication	57.4-D 87.4-F
(bb)	May be reduced for communication guys and communication conductors supported on the same poles 1. Supply 2. Communication	56.4-C 86.4-C
(cc)	Clearance required between guys. 1. Supply guys, crossing 2. Supply guys, approximately parallel 3. Communication guys, crossing 4. Communication guys, approximately parallel	56.4-D2 56.4-D3 86.4-D2 86.4-D3
(dd)	Shall be increased where within 6 feet of a pole	103.5
(ee)	May be decreased in partial underground distribution	54.4-C4c
(ff)	shall be increased by 0.40 inches per kV in excess of 75 kV	
(gg)	shall be increased by 0.40 inches per kV in excess of 150 kV	
(hh)	shall be increased by 0.40 inches per kV in excess of 300 kV	
(ii)	shall be increased by 0.25 inches per kV in excess of 150 kV	

(jj)	shall be increased by 0.25 inches per kV in excess of 300 kV	
(kk)	proposed clearances to submitted to the CPUC prior to construction for circuits in excess of 550 kV	
(ll)	36-inch clearance applies 35 kV to 68kV 48-inch clearance applies over 68 kV	
(mm)	vertical clearance shall be increased by ½ inch for each kilovolt over 68 kV	

Original Version
Rule 49.3-B

49.3-B Size

1 Wood Pins: The minimum diameter of the shank shall not be less than 1 ¼ inches.

2 Metal Pins: The minimum diameter of the shank shall not be less than ½ inches.

3 Fastenings and Tie Wires: Fastenings and tie wires shall have no sharp edges at points of contact with conductors, and shall be applied in such a manner as not to damage the conductor. The materials and minimum sizes of tie wires for the various sizes and types of conductors shall be as shown in Table 7. Flat tie wire having a cross-sectional area not less than that of round wire of the gage specified for tie wires may be used.

Table 7
Size and Material of Tie Wires

Line conductor		Tie Wire	
Material	Size	Size	Material
Copper, bronze, copper-covered steel, or composition of any of them	6 AWG and smaller	Same as line conductor	Soft copper or annealed copper-covered steel
	4 AWG	6 AWG	
	2 AWG and larger	4 AWG	
Galvanized iron or galvanized steel	10 BWG and smaller	Same as line conductor	Soft or galvanized iron or galvanized steel
	9 BWG	10 BWG	
	8 BWG	9 BWG	
	4 and 6 BWG	8 BWG	
Aluminum or ACSR	4 AWG and smaller	Same as line conductor	Soft aluminum
	2 AWG and larger	4 AWG	

Strikeout and Underline Version
Rule 49.3-B

49.3-B Size

1 Wood Pins: The minimum diameter of the shank shall not be less than 1 ¼ inches.

2 Metal Pins: The minimum diameter of the shank shall not be less than ½ inches.

3 Fastenings and Tie Wires: Fastenings and tie wires shall have no sharp edges at points of contact with conductors, and shall be applied in such a manner as not to damage the conductor. The materials and minimum sizes of tie wires for the various sizes and types of conductors shall be as shown in Table 7. Flat tie wire having a cross-sectional area not less than that of round wire of the gage specified for tie wires may be used.

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Copper, bronze, copper-covered steel, or composition of any of them	6 AWG and smaller	Same as line conductor	Soft copper or annealed copper-covered steel
	4 AWG	6 AWG	
	2 AWG and larger	4 AWG	
Galvanized iron or galvanized steel	10 BWG and smaller	Same as line conductor	Soft or galvanized iron or galvanized steel
	9 BWG	10 BWG	
	8 BWG	9 BWG	
	4 and 6 BWG	8 BWG	
Aluminum or ACSR	4 AWG and smaller	Same as line conductor	Soft aluminum or aluminum alloy
		Or 6 AWG	Strong aluminum alloy*
	2 AWG and larger	4 AWG	Soft aluminum or aluminum alloy
		Or 6 AWG	Strong aluminum alloy*

*Minimum tensile strength of 350 pounds.

FinalVersion
Rule 49.3-B

49.3-B Size

1 Wood Pins: The minimum diameter of the shank shall not be less than 1 ¼ inches.

2 Metal Pins: The minimum diameter of the shank shall not be less than ½ inches.

3 Fastenings and Tie Wires: Fastenings and tie wires shall have no sharp edges at points of contact with conductors, and shall be applied in such a manner as not to damage the conductor. The materials and minimum sizes of tie wires for the various sizes and types of conductors shall be as shown in Table 7. Flat tie wire having a cross-sectional area not less than that of round wire of the gage specified for tie wires may be used.

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	4 AWG	6 AWG	
	2 AWG and larger	4 AWG	
Galvanized iron or galvanized steel	10 BWG and smaller	Same as line conductor	Soft or galvanized iron or galvanized steel
	9 BWG	10 BWG	
	8 BWG	9 BWG	
	4 and 6 BWG	8 BWG	
Aluminum or ACSR	4 AWG and smaller	Same as line conductor	Soft aluminum or aluminum alloy
		Or 6 AWG	Strong aluminum alloy*
	2 AWG and larger	4 AWG	Soft aluminum or aluminum alloy
		Or 6 AWG	Strong aluminum alloy*

*Minimum tensile strength of 350 pounds.

Original Version
Rule 54.4-D6b

Rule 54.4-D6 Dead Ended on Poles

b) More Than 750 Volts supported on climbable poles:

Where conductors are supported on a climbable pole in vertical configuration, the energized portions of such conductors shall have clearances of not less than 15 inches from the surface of pole for voltages between 750 and 7500 volts and 18 inches from the surface of pole for voltages in excess of 7500 volts.

Not more than two conductors of a circuit of 750-5000 volts shall be attached directly to a pole in vertical configuration without the use of crossarms. The number of conductors of a circuit of more than 5000 volts so supported on a pole is not limited. Branch circuits may be taken from such construction without the use of crossarms provided a climbing and working space as specified in Rules 54.7 and 54.11 is maintained.

Strikeout and Underline Version
Rule 54.4-D6b

Rule 54.4-D6 Dead Ended on Poles

b) More Than 750 Volts supported on climbable poles:

Where conductors are supported on a climbable pole in vertical configuration, the energized portions of such conductors shall have clearances of not less than 15 inches from the surface of pole for voltages between 750 and 7500 volts and 18 inches from the surface of pole for voltages in excess of 7500 volts.

Not more than two conductors of a circuit of 750-5000 volts shall be attached directly to a pole in vertical configuration without the use of crossarms. The number of conductors of a circuit of more than 5000 volts so supported on a pole shall ~~is not~~ be limited to four. Branch circuits may be taken from such construction without the use of crossarms provided a climbing and working space as specified in Rules 54.7 and 54.11 is maintained.

Final Version
Rule 54.4-D6b

Rule 54.4-D6 Dead Ended on Poles

b) More Than 750 Volts supported on climbable poles:

Where conductors are supported on a climbable pole in vertical configuration, the energized portions of such conductors shall have clearances of not less than 15 inches from the surface of pole for voltages between 750 and 7500 volts and 18 inches from the surface of pole for voltages in excess of 7500 volts.

Not more than two conductors of a circuit of 750-5000 volts shall be attached directly to a pole in vertical configuration without the use of crossarms. The number of conductors of a circuit of more than 5000 volts so supported on a pole shall be limited to four. Branch circuits may be taken from such construction without the use of crossarms provided a climbing and working space as specified in Rules 54.7 and 54.11 is maintained.

Original Version
Rule 54.6-D

54.6 Vertical and Lateral Conductors

D Vertical Runs

(1) VERTICAL RUNS: Vertical conductors installed as specified in this Rule 54.6-D are known as Vertical Runs.

(2) RUNS LESS THAN 18 INCHES FROM POLE CENTERLINE: Vertical conductors may be installed with less than the radial clearances between conductors, specified in Table, Cases 16 and 17, and on the surface of poles or less than 18 inches from center line of pole provided such conductors are suitably insulated and covered throughout by a suitable protective covering. (See Rule 22.2 for the definition of suitable protective covering.) the plastic pipe or U-shaped moulding specified in Rule 22.2 shall have a minimum wall thickness of 0.15 inches. This protective covering is not required over suitably insulated vertical conductors in metal conduit attached to metal poles, towers, or other structures provided conduit and structures are metallically connected and effectively grounded.

(3) RUNS 18 INCHES FROM POLE CENTERLINE: Vertical conductors may be installed with less than the radial clearances between conductors, specified in Table 2, Cases 16 and 17, and at a distance of more than 18 inches from the center line of any pole provided that such conductors are suitably insulated and covered by suitable protective covering or by securely supported impregnated fiber conduit without metal conduit. Such conductors shall be located outside of the climbing and working spaces and shall not pass between conductors of different ownership except between the pole pair and at a clearance therefrom of no less than 6 inches.

(4) OPTION: In lieu of the foregoing vertical conductors may be installed as unprotected conductors, as specified in Rules 54.6-A and 54.4-D9.

(5) RUNS WITHIN 8 FEET OF GROUND: Vertical conductors installed as specified in Rule 54.6-D(1) and 54.6-D(2) and which extend within 8 feet of the ground shall be treated as risers. Runs which terminate in the top of the runs may extend within 8 feet of the ground but not less than 6 feet of the ground without being treated as risers.

(6) RUNS ENCASED IN GROUNDED METAL COVERING: Vertical conductors where encased shall be treated as risers.

Strikeout and Underline Version
Rule 54.6-D

54.6 Vertical and Lateral Conductors

D Vertical Runs

(1) VERTICAL RUNS: Vertical conductors installed as specified in this Rule 54.6-D are known as Vertical Runs.

(2) RUNS LESS THAN 18 INCHES FROM POLE CENTERLINE: Vertical conductors may be installed with less than the radial clearances between conductors, specified in Table, Cases 16 and 17, and on the surface of poles or less than 18 inches from center line of pole provided such conductors are suitably insulated and covered throughout by a suitable protective covering. (See Rule 22.2 for the definition of suitable protective covering.) the plastic pipe or U-shaped moulding specified in Rule 22.2 shall have a minimum wall thickness of 0.15 inches. This protective covering is not required over suitably insulated vertical conductors in metal conduit attached to metal poles, towers, or other structures provided conduit and structures are metallically connected and effectively grounded.

(3) RUNS 18 INCHES FROM POLE CENTERLINE: Vertical conductors may be installed with less than the radial clearances between conductors, specified in Table 2, Cases 16 and 17, and at a distance of more than 18 inches from the center line of any pole provided that such conductors are suitably insulated and covered by suitable protective covering or by securely supported impregnated fiber conduit without metal conduit. Such conductors shall be located outside of the climbing and working spaces and shall not pass between conductors of different ownership except between the pole pair and at a clearance therefrom of no less than 6 inches.

(4) OPTION: In lieu of the foregoing vertical conductors may be installed as unprotected conductors, as specified in Rules 54.6-A and 54.4-D9.

(5) RUNS WITHIN 8 FEET OF GROUND: Vertical conductors installed as specified in Rule 54.6-D(~~1~~2) and 54.6-D(~~2~~3) and which extend within 8 feet of the ground shall be treated as risers. Runs which terminate in the top of the runs may extend within 8 feet of the ground but not less than 6 feet of the ground without being treated as risers.

(6) RUNS ENCASED IN GROUNDED METAL COVERING: Vertical conductors where encased in grounded metal conduit, sheath, or shield, shall be treated as risers.

Final Version
Rule 54.6-D

54.6 Vertical and Lateral Conductors

D Vertical Runs

(1) VERTICAL RUNS: Vertical conductors installed as specified in this Rule 54.6-D are known as Vertical Runs.

(2) RUNS LESS THAN 18 INCHES FROM POLE CENTERLINE: Vertical conductors may be installed with less than the radial clearances between conductors, specified in Table, Cases 16 and 17, and on the surface of poles or less than 18 inches from center line of pole provided such conductors are suitably insulated and covered throughout by a suitable protective covering. (See Rule 22.2 for the definition of suitable protective covering.) the plastic pipe or U-shaped moulding specified in Rule 22.2 shall have a minimum wall thickness of 0.15 inches. This protective covering is not required over suitably insulated vertical conductors in metal conduit attached to metal poles, towers, or other structures provided conduit and structures are metallically connected and effectively grounded.

(3) RUNS 18 INCHES FROM POLE CENTERLINE: Vertical conductors may be installed with less than the radial clearances between conductors, specified in Table 2, Cases 16 and 17, and at a distance of more than 18 inches from the center line of any pole provided that such conductors are suitably insulated and covered by suitable protective covering or by securely supported impregnated fiber conduit without metal conduit. Such conductors shall be located outside of the climbing and working spaces and shall not pass between conductors of different ownership except between the pole pair and at a clearance therefrom of no less than 6 inches.

(4) OPTION: In lieu of the foregoing vertical conductors may be installed as unprotected conductors, as specified in Rules 54.6-A and 54.4-D9.

(5) RUNS WITHIN 8 FEET OF GROUND: Vertical conductors installed as specified in Rule 54.6-D(2) and 54.6-D(3) and which extend within 8 feet of the ground shall be treated as risers. Runs which terminate in the top of the runs may extend within 8 feet of the ground but not less than 6 feet of the ground without being treated as risers.

(6) RUNS ENCASED IN GROUNDED METAL COVERING: Vertical conductors where encased in grounded metal conduit, sheath, or shield, shall be treated as risers.

Original Version
Rule 54.8-B4b

54.8-B4b) Residential Premises: On premises used for residential purpose only, service drops of 300-750 volts shall be maintained at a vertical clearance of not less than 8 feet over all buildings and structures.

The clearance above buildings of service drops of 0-300 volts shall be not less than the distance specified in Table 10.

Table 10
Minimum Allowable Clearances of Service Drops of 0-300 Volts Above Buildings.

Type of Roof	Minimum clearance above		
	Building Served	Other Buildings on Premises served	Buildings on other premises
Metal roof 3/8 pitch or less (a)	8 ft.(c)	8 ft.	8 ft.
Metal roof, more than 3/8 pitch	2 ft.(c)	2 ft.	8 ft.
Nonmetallic roof, 3/8 pitch or less	(b)	2 ft.	8 ft.
Nonmetallic roof, more than 3/8 pitch	(b)	2 ft.	2 ft.

a. 3/8 pitch is a approximately 37 degrees from the horizontal.
b. No limit specified but the greatest clearance should be obtained.
c. Where insulated abrasion-resistant conductors are may be reduced to 12 inches.

On premises used for residential purposes only the clearance above building of service drops of 0-300 volts may be less than the distance specified in Table 10 but not less than 12 inches over the building served nor less than 24 inches above other buildings on the premises served, provided:

The current-carrying conductors consist of abrasion-resistant cable having a grounded metallic voltage being supplied and the roof is metallic or nonmetallic, nonwalkable over hang or patio cover.

Service Drops are not required to clear buildings on residential premises any specified horizontal distance, but shall be so installed

that they clear fire escapes, exits, windows, doors, and other points at which human contact might be expected, a horizontal distance of not less than 3 feet. Service drops above a horizontal plane through the top extremity of an opening should maintain the maximum practical radial clearance, which in no event shall be less than 1 foot.

Strike out and Underline Version
Rule 54.8-B4b

54.8-B4b) Residential Premises: On premises used for residential purpose only, service drops of 300-750 volts shall be maintained at a vertical clearance of not less than 8 feet over all buildings and structures.

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Nonmetallic roof, 3/8 pitch or less	(b)	2 ft.	8 ft.
Nonmetallic roof, more than 3/8 pitch	(b)	2 ft.	2 ft.

a. 3/8 pitch is a approximately 37 degrees from the horizontal.
b. No limit specified but the greatest clearance should be obtained.
c. Where insulated abrasion-resistant conductors are may be reduced to 12 inches.

On premises used for residential purposes only the clearance above building of service drops of 0-300 volts may be less than the distance specified in Table 10 but not less than 12 inches over the building served nor less than 24 inches above other buildings on the premises served, provided:

The current-carrying conductors consist of abrasion-resistant cable having a grounded metallic <u>sheath or neutral supported service drop cable manufactured in accordance with Standard No. WC-%-1961 or Standard No. WC-3-1959 of the National Electric Manufactures Association and are insulated for the</u> voltage being

supplied and the roof is metallic or nonmetallic, nonwalkable over hang or patio cover.

Service Drops are not required to clear buildings on residential premises any specified horizontal distance, but shall be so installed that they clear fire escapes, exits, windows, doors, and other points at which human contact might be expected, a horizontal distance of not less than 3 feet. Service drops above a horizontal plane through the top extremity of an opening should maintain the maximum practical radial clearance, which in no event shall be less than 1 foot.

Final Version
Rule 54.8-B4b

54.8-B4b) Residential Premises: On premises used for residential purpose only, service drops of 300-750 volts shall be maintained at a vertical clearance of not less than 8 feet over all buildings and structures.

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Nonmetallic roof, 3/8 pitch or less	(b)	2 ft.	8 ft.
Nonmetallic roof, more than 3/8 pitch	(b)	2 ft.	2 ft.

a. 3/8 pitch is a approximately 37 degrees from the horizontal.
b. No limit specified but the greatest clearance should be obtained.
c. Where insulated abrasion-resistant conductors are may be reduced to 12 inches.

On premises used for residential purposes only the clearance above building of service drops of 0-300 volts may be less than the distance specified in Table 10 but not less than 12 inches over the building served nor less than 24 inches above other buildings on the premises served, provided:

The current-carrying conductors consist of abrasion-resistant cable having a grounded metallic sheath or neutral supported service drop cable manufactured in accordance with Standard No. WC-%-1961 or Standard No. WC-3-1959 of the National Electric Manufactures Association and are insulated for the voltage being

supplied and the roof is metallic or nonmetallic, nonwalkable over hang or patio cover.

Service Drops are not required to clear buildings on residential premises any specified horizontal distance, but shall be so installed that they clear fire escapes, exits, windows, doors, and other points at which human contact might be expected, a horizontal distance of not less than 3 feet. Service drops above a horizontal plane through the top extremity of an opening should maintain the maximum practical radial clearance, which in no event shall be less than 1 foot.

Original Version
Rule 54.11-G

54.11-G ALLOWABLE CLIMBING SPACE OBSTRUCTIONS

Post-type insulators and their attaching brackets which support line conductors of over 750 volts may extend not more than one-half of their dimension D into the climbing space.

Suitable protected vertical conductors attached to the surface of poles and guys (except those guys contacting metal pins or dead-end hardware (as specified in Rule 52.7D)) are allowed in the climbing spaces provided that not more than one guy and one vertical riser, run, or ground wire are installed in any 4-foot vertical section of climbing space. The terminals or terminal fittings of risers or runs shall not be installed within climbing spaces.

Strikeout and underline Version
Rule 54.11-G

54.11-G ALLOWABLE CLIMBING SPACE OBSTRUCTIONS

Post-type insulators and their attaching brackets which support line conductors of over 750 volts may extend not more than one-half of their dimension ~~D~~ into the climbing space.

Suitable protected vertical conductors attached to the surface of poles and guys (except those guys contacting metal pins or dead-end hardware (as specified in Rule 52.7D)) are allowed in the climbing spaces provided that not more than one guy and one vertical riser, run, or ground wire are installed in any 4-foot vertical section of climbing space. The terminals or terminal fittings of risers or runs shall not be installed within climbing spaces.

Final Version
Rule 54.11-G

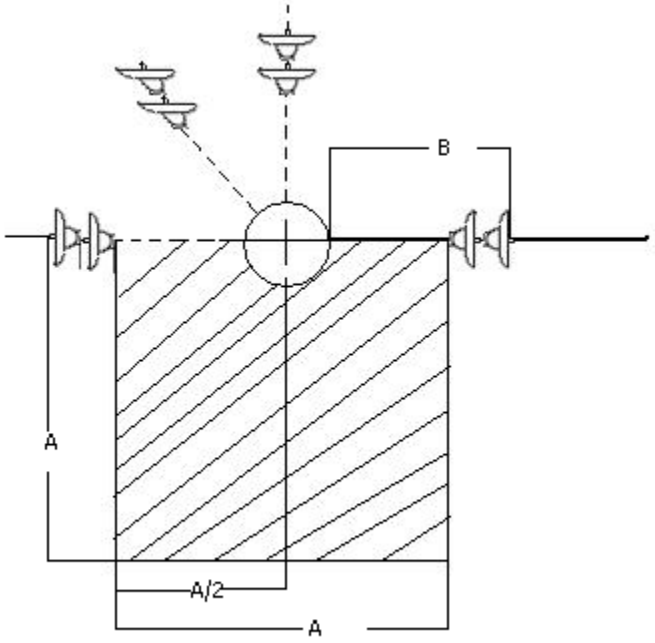
54.11-G ALLOWABLE CLIMBING SPACE OBSTRUCTIONS

Post-type insulators and their attaching brackets which support line conductors of over 750 volts may extend not more than one-half of their dimension into the climbing space.

Suitable protected vertical conductors attached to the surface of poles and guys (except those guys contacting metal pins or dead-end hardware (as specified in Rule 52.7D)) are allowed in the climbing spaces provided that not more than one guy and one vertical riser, run, or ground wire are installed in any 4-foot vertical section of climbing space. The terminals or terminal fittings of risers or runs shall not be installed within climbing spaces.

Original Version
Figure 15

Climbing Space for
Dead Ending in Vertical Configuration
Rule 54.7-A1



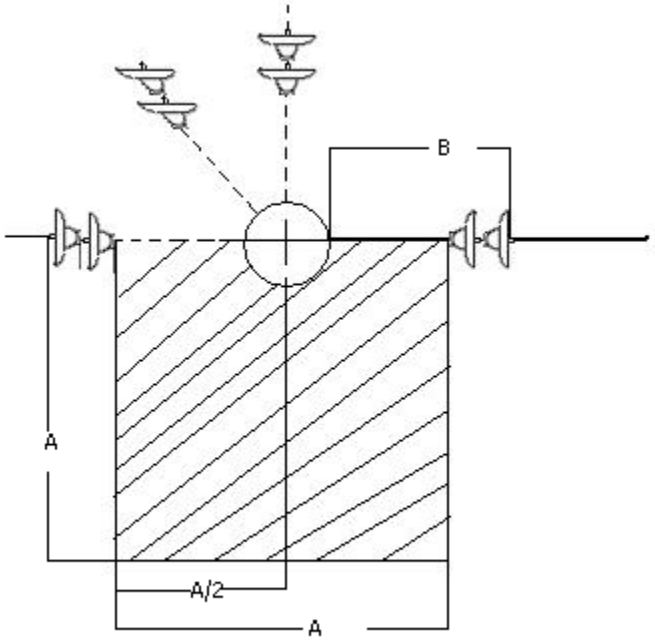
		B** (Min)	
Voltage of Circuit	A (min)	Top Circuit	Below Top Circuit
750-7500 Volts	30″*	18″	36″
7500-46000 Volts	36″*	18″	36″
More Than 46000 Volts	36″ plus ½ per KV over 46 KV*	18″	36″

* Unobstructed by deadend insulators Etc. (Rule 54.7-A4)
** See Rule 54.4-D6b

Strikeout and Underline Version

Figure 15

Climbing Space for
Dead Ending in Vertical Configuration
Rule 54.7-A1



		B** (Min)	
Voltage of Circuit	A (min)	~~Top Circuit~~	~~Below Top Circuit~~
750-7500 Volts	30″*	15″	~~24″~~
7500-46000 Volts	36″*	18″	~~36″~~
More Than 46000 Volts	36″ plus ½ per KV over 46 KV*	18″	~~36″~~

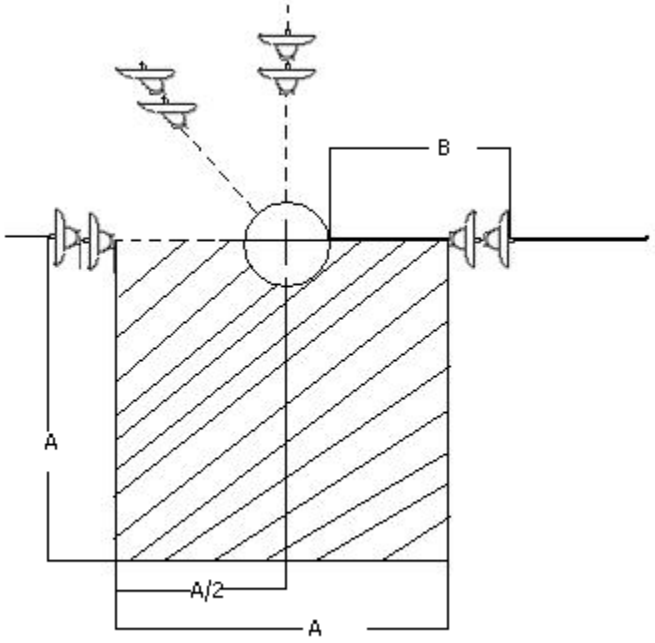
* Unobstructed by deadend insulators Etc. (Rule 54.7-A4)

** See Rule 54.4-D6b

Final Version

Figure 15

Climbing Space for
Dead Ending in Vertical Configuration
Rule 54.7-A1



Voltage of Circuit	A (min)	B** (Min)
750-7500 Volts	30″*	15″
7500-46000 Volts	36″*	18″
More Than 46000 Volts	36″ plus ½ per KV over 46 KV*	18″

* Unobstructed by deadend insulators Etc. (Rule 54.7-A4)

** See Rule 54.4-D6b