

## GUYS AND ANCHORS ON WIRE AND CABLE LINES

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#### 1. GENERAL

- 1.01 This section is intended to provide REA borrowers, consulting engineers, contractors and other interested parties with technical information for use in the design and construction of REA borrowers' telephone systems. It discusses in particular the guying and anchoring of pole lines supporting open wire, aerial distribution wire, cable, or both wire and cable.

2. REASONS FOR REISSUE

2.01 This revision is issued to further simplify guy and anchor selection and to provide for guying aerial distribution wire and also for wire and cable on the same line. This is accomplished by provision of: (1) guy selection charts giving the maximum spans permissible for wire, cable or both, for various corner angles and two commonly used ratios of lead over height; (2) a table giving the anchor assembly units listed in REA Form 511, "Telephone System Construction Contract," required for the different guy strand sizes in various types of soil; and (3) wire equivalents for aerial distribution wire for use in selecting guys.

3. DESIGN CONSIDERATIONS

3.01 The guy sizes recommended herein for poles carrying open wires are based on average values of corner pulls. These pulls approximate the values given by the wire manufacturers but are the same for a given corner angle, average span length and storm loading district for all of the types of single open wire permissible for the given span length.

3.02 The guy sizes recommended for cable are based on the tension in the suspension strand when the cable and strand are loaded to 60 percent of the rated breaking strength of the strand. Guys for cable have the same strength requirements for the three storm loading districts. Span length is not involved in the requirements.

3.03 The measurements to be made for determining the "lead" and "height" are shown in Figure 1.

3.04 The stranded wires for guys provided for in the "List of Materials Acceptable for Use on Telephone Systems of REA Borrowers," are given below.

UTILITIES GRADE, 7 STRANDS, GALVANIZED STEEL

<u>Strand Designation</u>	<u>Diameter Inches</u>
2.2 M	3/16
6 M	5/16
10 M	3/8
16 M	7/16

COPPER-COVERED STEEL GUY STRAND, 7 WIRE

<u>Strand Designation</u>	<u>Diameter Inches</u>
6 M	.237
10 M	.303
16 M	.386

- 3.05 Grade N construction applies to most of the telephone outside plant. The National Electrical Safety Code (NESC) does not specify any limitation as to the maximum percent of the rated breaking strength that may be developed by a guy when employed for Grade N construction. The calculations herein use the nominal guy strand strengths which are 2,200, 6,000, 10,000 and 16,000 pounds.
- 3.06 REA TE & CM-617, "Railroad Crossing Specifications," gives the requirements for guys and anchors at crossings of open wire and cable over railroad tracks.
- 3.07 The "Lead over Height" ratios used herein are satisfactory for most purposes. Anchors so close to the pole that the ratio is less than 1/2 and those so far away from the pole that the ratio is greater than 1 are not recommended.
- 3.08 Where "span length" is mentioned in guy selection, the average of the three adjacent spans in each direction from the corner pole shall be used as the span length. At deadend poles the average of the last three spans ending at the deadend pole shall be used as the span length.

4. GUYS FOR OPEN WIRE

- 4.01 Guys for lines carrying open wire only (bare or insulated) shall be selected from Charts 1, 2 or 3. The three charts give the maximum average span lengths permissible for the various guy strand strengths, for selected numbers of wires and corner angles and for deadends, separately for the three storm loading districts. The guy selection shall be on the basis of the maximum number of wires that the line is expected to support during the 10-year period. For example, guying four open wire circuits (8 wires) on a crossarm line that is expected to increase to 10 circuits (20 wires) should be selected to hold the 10-circuit load if sufficient guying may be obtained through the use of a single guy. If two guys eventually would be required for the 10 circuits, only one guy should be installed at the time of initial construction (4 circuits), and its strength shall be sufficient for the full capacity of the first crossarm which supports the four circuits.

- 4.02 No wind "shielding" of wires was considered in determining the guy strengths required.
- 4.03 These data provided herein are based on corner angles in degrees. Figure 2 is included to permit converting "pull" in feet to corner angle in degrees. It indicates how "pull" is measured; also what is meant by "corner angle."
- 4.04 The guying provided takes care of the corner pulls and deadends for a maximum of 20 telephone wires of any kind now approved for REA borrowers' construction. The wires on a pole need not be all of one kind and gauge. Where extra high strength wire is on the same line with a lower strength wire, it is required to be strung with the same sag as the lower strength wire. Consequently its tension normally, as well as when storm loaded, will not vary greatly from that of the lower strength wire. This permits all of the kinds of wires on a line to be treated alike in guying.
- 4.05 Deadend wire loads approximate the wire loads at 55 degree corners. For deadends of open wires the guy selection Charts 1, 2 or 3 shall be used, making the guy selection on the basis of a 55 degree corner.
- 4.06 Where one circuit of a line is deadended on a pole and four or more circuits continue through, a guy is not required for the deadended circuit.
- 4.07 Guys at corners of 60 degrees or less shall be placed so that they bisect the corner angle.
- 4.08 For corners greater than 60 degrees but less than 90 degrees, two head guys shall be used and the open wires shall be dead-ended in both directions. The anchor for each of the two guys shall be placed approximately two feet away from the "in-line" position toward the bisector of the corner angle.
- 4.09 At right angle corners two head guys shall be used and the open wires deadended in both directions. The anchor for each of the two guys should be placed in line with the wires they hold.

## 5. OMISSION OF GUYS FOR OPEN WIRE

5.01 As a general rule, a guy is required at all corners in a line regardless of the size of the corner angle. Exceptions are as follows:

5.011 A pole key may be used at a small corner where a guy cannot be placed.

5.012 No head guy is required to hold the pull of one crossarm of wires at a junction of open wires and cable in tangent construction if the cable suspension strand is not more than two feet below the crossarm.

## 6. GUYS FOR AERIAL DISTRIBUTION WIRE

6.01 Guys for lines supporting only aerial distribution wire shall be selected from Chart 4. This chart gives the maximum average span lengths permissible for various guys for various corner angles and deadends with one part for the heavy storm loading district and the other part for the medium and light storm loading district. Guying requirements are the same for this wire in both medium and light loading districts.

## 7. GUYS FOR AERIAL CABLE

7.01 Guys for poles supporting only aerial cable on suspension strand shall be selected from Chart 5. The chart gives guy sizes required for various corner angles and deadends, for the three commonly used suspension strand sizes employed singly and for combinations of two strands on a pole. These data are the same for the three storm loading districts.

7.02 Guys placed at corners 60 degrees or less shall be placed so that they bisect the corner angle.

7.03 For corners greater than 60 degrees but less than 90 degrees, two head guys shall be used. The anchors for each of the two guys shall be placed approximately two feet away from the "in-line" position toward the bisector of the corner angle.

7.04 At right angle corners two head guys shall be used. The anchors shall be placed in line with the cable strands they hold, and a thimble-eye bolt through the pole used for each strand and its guy.

8. GUYS FOR POLES SUPPORTING OPEN WIRE AND AERIAL DISTRIBUTION WIRE

8.01 Aerial distribution wire as equated in paragraph 9.03 to number of open wires permits adding the "equivalent" number to the number of actual open wires for selection of guy size from Charts 1, 2 or 3, where necessary. For example, where an aerial distribution wire is added to a line carrying a two pin crossarm circuit in the heavy and medium storm loading districts, the guy would be for four wires. In the light storm loading district, the guy would be for eight wires. One guy ordinarily will be sufficient to hold the load of open wires and aerial distribution wires. The number of wires used in the guy selection shall be on the basis of the ten-year requirement.

9. GUYS FOR WIRE AND AERIAL CABLE

9.01 Guys for lines carrying open wire and aerial cable or aerial distribution wire and aerial cable shall be selected from Charts 6 to 14, inclusive. These charts provide data for the three storm loading districts and for cable on 6 M, 10 M and 16 M suspension strand, in combination with various numbers of wires from 2 to 20 at various corner angles.

9.02 In the case where the cable is on a line with open wires, the actual number of wires shall be used; that is, no shielding is considered. The number of wires shall be on the basis of the ten-year period.

9.03 In the case where the cable is on a line with aerial distribution wire, the distribution wire shall be the "equivalent" number as given below.

<u>Kind of Wire</u>	<u>Number of "Equivalent" Wires</u>		
	<u>Storm Loading District</u>		
	<u>Heavy</u>	<u>Medium</u>	<u>Light</u>
All sizes of aerial distribution wire	2	2	6

- 9.04 Charts 6 to 14 give values showing the maximum spans permissible for the combined loads of wires and cable for various corner angles and for deadends in the three storm loading districts.
- 9.05 Where open wire and aerial distribution wire or open wire and aerial cable are placed on the same pole line, one guy of sufficient size may be used at corners.
- 9.06 For open wire and aerial cable the separation between the top crossarm throughbolt and the cable throughbolt shall be not more than 30 inches where a single guy is used. Such a situation is illustrated on Guide Drawing 809, in REA Form 511. For this arrangement of 1 or 2 crossarms and cable, the guy shall be attached by a thimble-eye bolt supporting the cable.

10. SELECTION OF ANCHORS

- 10.01 Anchors shall be selected from Table 1. The selection for specific applications must be determined on the basis of the soil at the location involved and the guy size required by the guy selection charts.
- 10.02 The various soils that may be encountered are classed as follows:
  - Class 1. Hard Rock (solid).
  - Class 2. All soil except hard rock, sand and swamp.
  - Class 3. Sand
  - Class 4. Swamp
- 10.03 After the guy size has been selected from Charts 1 to 14, the anchor assembly unit is selected for that guy size from Table 1 based on the type of soil where the anchor is to be placed. Where more than one anchor assembly unit is shown in the table a choice may be made. In certain cases two anchors and guys are required. These anchor assembly units are defined in REA Form 511. It should be noted that Rock Anchor Assemblies PF5-3 and PF5-4 are not interchangeable. They should be applied in accordance with the drawing of them in Form 511.
- 10.04 Swamp anchors are screw type. The "rods" for these anchors are galvanized steel pipe, which permits the length to be as great as necessary by coupling pipe lengths together to reach firm soil under swamps, with a penetration of at least 5 feet into firm soil.

11. GUYS REQUIRING ELECTRICAL PROTECTION

- 11.01 Guys that are classified as exposed guys constitute an electrical hazard to workmen and the public and must therefore be electrically protected.
- 11.02 A guy is considered to be exposed where:
  - 11.021 It passes over, under, or between supply conductors whose voltage exceeds 300 volts to ground, or where it is attached to a pole carrying such conductor, or
  - 11.022 It is so situated that the minimum horizontal distance between it and the nearest supply conductor whose voltage exceeds 300 volts is less than ten feet, or
  - 11.023 It is connected to a continuous cable strand which is not systematically and effectively grounded.<sup>1</sup>
- 11.03 The electrical protection of an exposed guy is accomplished by grounding the guy, or by the insertion of strain insulators in the guy in order to isolate the electrical hazard. REA Form 511 contains construction drawings showing guy assemblies using these methods of electrical protection. Grounded guy assembly units are suffixed by the letter "G", and assembly units employing insulators are suffixed by the letter "S." Grounded guys are less expensive than insulated guys and are preferred in all instances where grounded guys are used by the power system involved. If insulated guys are used to guy the power conductor load on a pole, insulated guys should also be used to guy the telephone load to prevent the possibility of the telephone guy shorting out the insulator in the power guy.

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<sup>1</sup>The term effectively grounded means permanently connected to earth through a ground connection of sufficiently low impedance and having sufficient current carrying capacity to prevent the building up of voltages which may result in undue hazard to connected equipment or to persons.

- 11.04 Where guys are to be grounded, grounding should be accomplished by (1) bonding the guy to a vertical pole ground wire which is connected to a Multigrounded Neutral (MGN) or (2) bonding the guy to an effectively grounded cable strand. Guys on the same throughbolt with an effectively grounded cable strand are considered to be electrically bonded to the strand and no separate bonding conductor is needed.
- 11.05 Where guys are to be insulated, one or more insulators shall be placed in each exposed guy and so located that where practicable voltages which may be accidentally impressed between guy insulators will not energize any part thereof within 8 feet of ground, or within 6 feet of any pole carrying communication or supply cables or conductors to which it is attached. See Figure 3.
- 11.06 Strain insulators shall have a mechanical strength at least equal to that required of the guy strand in which they are installed. The strain insulators listed in the "List of Materials Acceptable for Use on Telephone Systems of REA Borrowers" are such that they will meet this requirement for the size of guy strand indicated.
- 11.07 The electrical strength of the insulators shall be such that they shall have a wet flashover at least equal to, and a dry flashover at least double, the voltage between conductors of the highest voltage supply circuit to which the guy is exposed. The listings of the strain insulators in the "List of Materials Acceptable for Use on Telephone Systems of REA Borrowers" indicate their minimum wet and dry flashover values.
- 11.08 In those cases where exposure occurs to voltages in excess of those indicated for the strain insulators in an assembly, the engineer shall select strain insulators on the basis of this electrical requirement and so indicate in the detailed plans and specifications. Two or more insulators may be used in series where necessary to meet this insulation requirement.

12. UNUSUAL CASES REQUIRING GUYS

12.01 Guying may be required in certain unusual cases not covered herein. In such cases it is the responsibility of the engineer to make a thorough study of the situation and to provide adequate guying in accordance with the NES Code or other local code, whichever is the more stringent.

13. GUY ATTACHMENT AT POLES

13.01 Guys preferably shall be attached to poles by means of thimbleye angle bolts as shown in REA Form 511.

14. PRECAUTIONS IN ANCHOR INSTALLATION

14.01 Holes dug to place anchors shall be made no larger than necessary to permit entry of the anchor into the hole.

14.02 Care shall be exercised in placing expanding anchors of certain types to prevent earth or sand falling into the hole and lodging between the plates which will prevent full expansion of the plates and reduce the holding power.

14.03 Anchor holes shall be dug to such depth that no more than about six inches of rod will be above ground after the strain is applied by the guy. The rod thimbleye should never be covered with earth. The anchor hole shall be dug so that the anchor rod will be in line with the guy. No bending of an anchor rod is permissible.

15. PUSH BRACES INSTEAD OF GUYS

15.01 The use of a push brace is the least favorable method of supporting the horizontal load on a pole. It should be used only when it is impracticable to place a down guy or overhead guy to a stub pole. Where it is necessary to use a push brace, it shall be the same class pole as the pole it braces. A push brace installation calls for a pole key at the pole butt to prevent lifting of the pole under storm load and a plank footing at the butt of the brace, as shown in a drawing in REA Form 511.

16. POLE-TO-POLE GUYS

16.01 Anchor guys are preferable to pole-to-pole guys wherever practicable.

17. POLE-TO-STUB GUYS

17.01 The size of a down guy at a stub pole in a pole-to-stub situation shall be selected as though it were to be attached to the line corner pole instead of the stub. The overhead guy size shall be the same size guy strand as is selected for the stub down guy.

18. STORM GUYS

18.01 Tangent multi-circuit open wire lines in stretches of 15 to 20 spans between corners, if exposed to normal wind direction at right angles to the line in the windy area, may be expected to have the poles gradually lean away from the direction of the wind. Storm side guys may be justified to stiffen the line. If used, side guys should be placed at the mid-point of the tangent section, or in long tangent sections at about every tenth pole or every half mile, whichever is the shorter.

18.02 Such side guys for open wire lines preferably should be placed with a lead over height ratio of 1, for which 2.2M guys are sufficient. If the lead over height is 1/2, the guys should be 6M.

19. ADDING A GUY TO AN EXISTING ANCHOR

19.01 Auxiliary eye bolts are available for attaching a second guy to an anchor rod having an eye for but one guy strand. When the attachment of a guy to an existing anchor of a foreign company is contemplated, that company shall be notified. The attachment should not be made until permission to do so is obtained from the foreign company. In any event the attachment of a guy to an existing anchor is permissible only if it is known that the anchor has sufficient holding power for the load of the two guys.

20. EXAMPLES ILLUSTRATING USE OF GUY SELECTION CHARTS

20.01 For a Pole Carrying Open Wire Only

Assume a pole that is to carry 10 wires during the 10-year period; that the average of the three adjacent spans in each direction from the corner pole is 300 feet; that the corner angle is 30 degrees; it is in the heavy storm loading district; and a lead over height ratio of 1 is possible.

Solution: The data requires the use of Guy Selection Chart 1. This chart shows that for 30 degree angles for 10 wires at L/H=1 a 10M (PE1-3) guy is required.

20.02 For a Pole Carrying Aerial Distribution Wire Only

Assume a pole that is to carry one 6-pair, 19-gauge aerial distribution wire for the 10-year period; that the average of the three adjacent spans in each direction from the corner pole is 325 feet; that the corner angle is 45 degrees; that it is in the heavy loading district; and that the lead over height ratio must be restricted to 1/2.

Solution: The data requires the use of Guy Selection Chart 4. This chart shows that for 45 degree angles for this wire at L/H=1/2 a 6M (PE1-2) guy is required.

20.03 For a Pole Carrying Both Open Wire and Aerial Distribution Wire

Assume a pole that carries 2 open wires is to have a 6-pair, 19-gauge aerial distribution wire added; that the corner is 15 degrees; that the average of the three adjacent spans in each direction from the corner pole is 325 feet; that it is in the heavy loading district; and that a lead over height ratio of 1 is permissible at the location.

Solution: For combinations of open wire and aerial distribution wire it is necessary to use an equated value for the distribution wire and add this equated number to the actual number of open wires. In the heavy storm loading district the aerial distribution wire equates to 2 open wires. This value, added to the 2 open wires, calls for the use of Guy Selection Chart 1 for the 4 wires in heavy loading. This chart shows that for a 15 degree angle for 4 wires at L/H=1 a 2.2M (PE1-1) guy is required.

20.04 For a Pole Carrying Cable Only

Assume a pole that is to carry a cable on a 6M suspension strand; that the corner angle is 40 degrees; and that a lead over height of 1/2 is necessary.

Solution: The data requires the use of Guy Selection Chart 5 in the three storm loading districts. This chart shows that for  $L/H=1/2$  at a 40 degree corner a 6M (PEL-2) guy is required.

20.05 For a Pole Carrying Cable and Aerial Distribution Wire

Assume a cable on 6M strand is to have a 6-pair, 19-gauge aerial distribution wire added; that the corner is 25 degrees; that the average of the three adjacent spans in each direction from the corner pole is 275 feet; that it is in the heavy storm loading district; and the guy lead over height ratio is 1/2.

Solution: The data requires the use of Guy Selection Chart 6. In the heavy loading district the aerial distribution wire equates to 2 open wires. This chart shows that for 2 open wires and 6M strand at a 25 degree corner for  $L/H=1/2$  a 6M (PEL-2) guy is required.

20.06 For a Pole Carrying Cable and Open Wire

Assume a cable on 6M suspension strand is to be added to a pole line carrying a 6 pin crossarm for open wires with only 4 wires in place; that the corner pole to be guyed is at a 20 degree corner; that the average of the three adjacent spans in each direction from the corner pole is 300 feet; that it is in the heavy storm loading district; and that the lead over height ratio can be 1.

Solution: The data requires the use of Chart 6. The number of open wires to be guyed for is 6, this being the ultimate capacity of the cross-arm. This chart shows that for a 20 degree corner, 6 wires and a cable on 6M strand, a 10M (PEL-3) guy is required, for  $L/H=1$ .

Anchor Selection Table for Various Guy Sizes

Guy Size	Guy Assembly Units	Anchor Assembly Units for Guy Assembly Units			
		Class of Soil			
		Class 1 Hard Rock (Solid)	Class 2 All Soil	Class 3 Sand	Class 4 Swamp
2.2M	PE1 - 1 PE1 - 1S PE1 - 1G	PF5 - 3 or PF5 - 4 (See Note 1)	PF1 - 2	PF4 - 1	PF6 - 3
6M	PE1 - 2 PE1 - 2S PE1 - 2G	PF5 - 3 or PF5 - 4 (See Note 1)	PF1 - 3	PF1 - 5 or PF2 - 5	PF6 - 3
10M	PE1 - 3 PE1 - 3S PE1 - 3G	PF5 - 3 or PF5 - 4 (See Note 1)	PF1 - 5 or PF2 - 5	PF1 - 5 or PF2 - 5	PF6 - 4
16M	PE1 - 4 PE1 - 4S PE1 - 4G	PF5 - 3 or PF5 - 4 (See Note 1)	PF1 - 7 or PF2 - 7	PF1 - 7 or PF2 - 7	PF6 - 5

Note 1: The PF5-3 and PF5-4 are not interchangeable and should be applied in accordance with the drawing of these Anchor Assembly Units in REA Form 511.

Note 2: For 20M Guy Size, use 2-10M Guys and 2 Anchors.  
 For 26M Guy Size, use 1-10M Guy and 1-16M Guy and 2 Anchors.  
 For 32M Guy Size, use 2-16M Guys and 2 Anchors.

TABLE 1

**HEAVY LOADING DISTRICT  
GUY STRAND SELECTION CHART  
FOR OPEN WIRE CORNERS AND DEADENDS  
(MAXIMUM SPANS IN FEET-AVERAGE OF SPANS ADJACENT TO POLE)**

REA TIE & GW-650

NUMBER OF WIRES	STRENGTH REQ'D IN 1000 LBS. (M)	REA GUY ASSEMBLY UNITS *	LEAD/HEIGHT RATIO	CORNER ANGLES											DEADEND AND OR ANGLE 55°	60°
				5°	10°	15°	20°	25°	30°	35°	40°	45°	50°			
2	2.2 M	PEI-1	1/2			450	360	290	240	200	170	140	120	100		
								520	440	380	330	280	250	220	190	
	6 M	PEI-2	1/2										570	510	470	420
4	2.2 M	PEI-1	1/2	395	280	180	135									
					465	330	260	200	165	130	110					
	6 M	PEI-2	1/2				520	430	365	310	265	230	200	175	150	
											515	480	420	380	340	310
	10 M	PEI-3	1/2								580	515	455	410	365	330
6	2.2 M	PEI-1	1/2	230	140											
				440	290	200	150	110								
	6 M	PEI-2	1/2		560	410	320	250	210	175	140	120	100			
							560	450	380	325	280	240	220	200	190	
	10 M	PEI-3	1/2				590	490	410	360	310	270	240	210	180	
												540	480	430	390	350
	16 M	PEI-4	1/2									560	490	440	400	360
8	2.2 M	PEI-1	1/2	150												
				285	185	120										
	6 M	PEI-2	1/2	570	395	280	215	165	135	105						
						495	390	315	265	215	190	155	135	115		
	10 M	PEI-3	1/2				530	420	340	290	240	200	180	150	130	100
										500	440	380	330	300	270	230
	16 M	PEI-4	1/2							520	450	390	340	310	270	240
10	2.2 M	PEI-1	1/2	110												
				210	130											
	6 M	PEI-2	1/2	440	300	200	150	110								
					520	380	300	230	190	160	130	100				
	10 M	PEI-3	1/2				560	450	380	330	280	240	220	200	190	
								560	570	390	340	290	250	220	190	170
	16 M	PEI-4	1/2								590	520	460	410	370	330
	20 M	2-PEI-3	1/2							520	450	390	340	310	270	240

CHART 1  
-16-

NUMBER OF WIRES	STRENGTH REQ'D IN 1000 LBS. (M)	REA GUY ASSEMBLY UNITS *	LEAD/HEIGHT RATIO	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	DEADEND AND OR ANGLE 55°	60°		
12	6 M	PEI-2	1/2	350	225	150	110	Under 100									
			1	420	300	230	180									140	110
	10 M	PEI-3	1/2		450	330	250	200	160	130	100	Under 100					
			1		560	450	360	300	250	220	180						160
	16 M	PEI-4	1/2			570	450	370	320	270	230	190	170	150	120		
1							550	470	410	360	320	290	260				
20 M	2- PEI-3	1/2				590	490	410	360	310	270	240	210	180			
26 M	1- PEI-3 1- PEI-4	1/2							570	490	430	380	340	300	270		
		1											540	480	430	390	350
16	6 M	PEI-2	1/2	230	140	Under 100											
			1	440	290											200	150
	10 M	PEI-3	1/2	460	310	220	160	120	100	Under 100							
			1		540	390	310	250	200								
	16 M	PEI-4	1/2		560	410	320	250	210	175	140	120	100	Under 100			
			1			560	450	380	325	280	240	220	200				
20 M	2- PEI-3	1/2			530	420	340	290	240	200	180	150	130	100			
26 M	1- PEI-3 1- PEI-4	1/2				570	480	400	350	300	260	230	200	170			
		1								500	440	380	330	300	270	230	
32 M	2- PEI-4	1/2							520	450	390	340	310	270	240		
20	6 M	PEI-2	1/2	170	100	Under 100											
			1	320	210											140	100
	10 M	PEI-3	1/2	350	225	150	110	Under 100									
			1		420	300	230										180
	16 M	PEI-4	1/2		430	310	240	180	150	120	Under 100						
			1			530	420	340	290	240							200
	20 M	2- PEI-3	1/2		560	410	320	250	210	175	140	120	100	Under 100			
1				560	450	380	325	280	240	220	200	190					
26 M	1- PEI-3 1- PEI-4	1/2			560	440	360	300	250	220	190	160	140	110			
		1							530	460	400	350	310	230	250		
32 M	2- PEI-4	1/2				560	470	390	340	290	250	220	190	170			
		1							590	520	460	410	370	330			

\* WHERE STRAIN INSULATORS ARE REQUIRED ADD SUFFIX S.  
\* WHERE GROUND CONNECTION ARE REQUIRED ADD SUFFIX G.

**MEDIUM LOADING DISTRICT  
GUY STRAND SELECTION CHART  
FOR OPEN WIRE CORNERS AND DEADENDS  
(MAXIMUM SPANS IN FEET-AVERAGE OF SPANS ADJACENT TO POLE)**

**CORNER ANGLES**

NUMBER OF WIRES	STRENGTH REQ'D IN 1000 LBS. (M)	REA GUY ASSEMBLY UNITS*	LEAD/HEIGHT RATIO	CORNER ANGLES											DEADEND AND OR ANGLE 55°	60°	
				5°	10°	15°	20°	25°	30°	35°	40°	45°	50°				
2	2.2 M	PEI-1	1/2						550	460	400	350	320	290	260	240	
			1											580	520	480	430
2	6 M	PEI-2	1/2														
			1														
4	2.2 M	PEI-1	1/2		510	380	300	230	200	175	150	135	120	110			
			1				500	420	350	305	270	240	215	195	180		
	6 M	PEI-2	1/2								565	500	450	405	370	340	
			1														560
4	10 M	PEI-3	1/2														
			1														
6	2.2 M	PEI-1	1/2	460	300	220	170	140	120	100						Under 100	
			1	600	550	390	310	260	220	190	170	150	130	120	110		
	6 M	PEI-2	1/2					590	490	420	360	320	290	260	230	210	
			1								590	530	470	430	390	360	
	6 M	PEI-3	1/2										560	510	460	420	390
			1														
	6 M	PEI-4	1/2														
			1														
8	2.2 M	PEI-1	1/2	290	180	135	110									Under 100	
			1	570	370	260	210	170	145	125	110						
	6 M	PEI-2	1/2				540	425	355	300	260	225	200	180	165	150	
			1							590	500	435	385	345	310	285	260
	6 M	PEI-3	1/2								530	460	410	370	330	300	280
			1												550	500	460
	6 M	PEI-4	1/2												560	510	470
			1														
10	2.2 M	PEI-1	1/2	200	120											Under 100	
			1	410	260	190	160	130	110								
	6 M	PEI-2	1/2	600	570	410	330	270	230	200	170	150	130	120	110		
			1				560	460	390	340	300	270	240	220	200		
	6 M	PEI-3	1/2					590	490	420	360	320	290	260	230	210	
			1								590	530	470	430	390	360	
	6 M	PEI-4	1/2										540	480	440	400	370
			1														
	6 M	2-PEI-3	1/2												560	510	470
			1														

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CHART 2

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CHART 2 (CONTINUED)

NUMBER OF WIRES	STRENGTH REQ'D IN 1000 LBS. (M)	REA GUY ASSEMBLY UNITS *	LEAD/HEIGHT RATIO	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	DEADEND AND OR ANGLE 55°	60°	
12	6 M	PEI-2	1/2		450	330	260	210	180	160	140	120	110	Under 100	100	
					570	450	370	320	270	240	210	190	170	160		
	10 M	PEI-3	1/2				480	400	340	290	260	230	210	190	170	
								560	490	430	390	350	320	290		
	16 M	PEI-4	1/2							570	500	440	390	360	330	300
												590	540	490		
20 M	2- PEI-3	1/2									560	510	460	420	390	
26 M	1- PEI-3 1- PEI-4	1/2												560	520	
16	6 M	PEI-2	1/2	460	300	220	170	140	120	100				Under 100		
				600	550	390	310	260	220	190	170	150	130	120	110	
	10 M	PEI-3	1/2			430	340	280	240	210	180	160	140	130	120	
							580	480	410	350	310	280	250	230	210	
	16 M	PEI-4	1/2					590	490	420	360	320	290	260	230	210
											590	530	470	430	390	360
20 M	2- PEI-3	1/2							530	460	410	370	330	300	280	
													550	500	460	
26 M	1- PEI-3 1- PEI-4	1/2												550	490	440
														550	490	440
32 M	2- PEI-4	1/2											560	510	470	
20	6 M	PEI-2	1/2	340	210	160	130	100							Under 100	
					420	300	240	200	170	140	120	110				
	10 M	PEI-3	1/2		450	330	260	210	180	160	140	120	110		170	160
						570	450	370	320	270	240	210	190		170	160
	16 M	PEI-4	1/2			580	460	380	320	280	240	220	200	180	160	
									540	480	410	370	330	300	280	
	20 M	2- PEI-3	1/2				590	490	420	360	320	290	260	230	210	
									590	530	470	430	390	360		
26 M	1- PEI-3 1- PEI-4	1/2							560	480	430	380	350	320	290	
													570	520	480	
32 M	2- PEI-4	1/2									540	480	440	400	370	

\* WHERE STRAIN INSULATORS ARE REQUIRED ADD SUFFIX S.  
 \* WHERE GROUND CONNECTION ARE REQUIRED ADD SUFFIX G.

**LIGHT LOADING DISTRICT  
GUY STRAND SELECTION CHART  
FOR OPEN WIRE GORNERS AND DEADENDS  
(MAXIMUM SPANS IN FEET-AVERAGE SPANS ADJACENT TO POLE.)**

NUMBER OF WIRES	STRENGTH REQ'D IN 1000 LBS. (M)	REA GUY ASSEMBLY UNITS*	LEAD / HEIGHT RATIO	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	DEADEND AND OR ANGLE 55°	60°	
				2	2.2 M	PEI-1	1/2									
4	2.2 M	PEI-1	1/2					550	465	405	360	315	285	260	240	
	6 M	PEI-2	1/2								590	535	480	435	400	
6	2.2 M	PEI-1	1/2			540	420	350	290	250	220	200	180	160	150	
	6 M	PEI-2	1/2					580	490	430	380	340	310	280	250	
8	2.2 M	PEI-1	1/2		505	375	290	240	205	170	150	130	120	110		
	6 M	PEI-2	1/2				500	415	350	305	265	240	215	195	175	
10	2.2 M	PEI-1	1/2	590	380	280	220	180	150	130	110			Under 100		
	6 M	PEI-2	1/2			500	390	320	270	230	200	180	160	150	140	
	10 M	PEI-3	1/2						510	450	400	350	320	290	270	
12	2.2 M	PEI-1	1/2	460	300	220	170	140	120				Under 100			
	6 M	PEI-2	1/2		600	490	400	310	260	220	190	160	140	130	120	110
	10 M	PEI-3	1/2				590	490	420	360	320	290	260	230	210	
16	2.2 M	PEI-1	1/2	290	200	140	110							Under 100		
	6 M	PEI-2	1/2			540	420	350	290	250	220	200	180	160	150	
	10 M	PEI-3	1/2					580	490	430	380	340	310	280	250	
	16 M	PEI-4	1/2						540	470	420	370	330	300	280	
20	2.2 M	PEI-1	1/2	190	130									Under 100		
	6 M	PEI-2	1/2		600	560	420	320	270	230	200	170	150	130	120	110
	10 M	PEI-3	1/2				550	460	390	340	300	270	240	220	200	
	16 M	PEI-4	1/2					590	490	420	360	320	290	260	230	210
	20 M	2-PEI-3	1/2								550	480	440	400	370	

\* WHERE STRAIN INSULATORS ARE REQUIRED ADD SUFFIX S.  
\* WHERE GROUND CONNECTIONS ARE REQUIRED ADD SUFFIX G.

REA TEE & CM-650

CHART 3

GUY STRAND SELECTION CHART																
FOR MULTIPAIR DISTRIBUTION WIRE CORNERS AND DEADENDS																
MAXIMUM SPANS IN FEET																
CORNER ANGLES																
HEAVY LOADING DISTRICT																
CONDUCTOR SIZE & GAUGE	SUPPORT WIRE	REA GUY ASSEMBLY UNITS *	LEAD/HEIGHT RATIO	CORNER ANGLES												
				5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	
2-19	109-190	PEI-1	1/2								375	320	275	235	200	175
			1													375
		PEI-2	1/2													
4-19	109-190	PEI-1	1/2									285	245	210	180	160
			1													325
6-19	109-190	PEI-2	1/2													325
			1													250
12-22	109-190	PEI-1	1/2										230	200	170	150
			1													250
		PEI-2	1/2													
12-19	134-190	PEI-1	1/2					340	275	235	190	160	130	110	90	
			1									330	290	260	230	
		PEI-2	1/2													
18-22	134-190	PEI-2	1													350
			1													

LIGHT AND MEDIUM LOADING DISTRICT																
CONDUCTOR SIZE & GAUGE	SUPPORT WIRE	REA GUY ASSEMBLY UNITS *	LEAD/HEIGHT RATIO	CORNER ANGLES												
				5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	55°	60°	
2-19	109-190	PEI-1	1/2								590	510	440	390	340	300
			1													600
		PEI-2	1/2													
4-19	109-190	PEI-1	1/2									460	400	350	300	270
			1													500
6-19	109-190	PEI-2	1/2													500
			1													425
12-22	109-190	PEI-1	1/2									410	350	300	270	240
			1													425
		PEI-2	1/2													
12-19	134-190	PEI-1	1/2						425	350	300	250	210	180	150	
			1										450	400	360	
		PEI-2	1/2													500
18-22	134-190	PEI-2	1												500	
			1													500

\* WHERE STRAIN INSULATORS ARE REQUIRED ADD SUFFIX S  
 \* WHERE GROUND CONNECTIONS ARE REQUIRED ADD SUFFIX G

CHART 4



**HEAVY LOADING DISTRICT**  
**GUY STRAND SELECTION CHART**  
**FOR CORNERS AND DEADENDS CARRYING OPEN WIRES AND**  
**CABLE ON 6 M SUSPENSION STRAND**  
**(MAXIMUM SPANS IN FEET - AVERAGE SPANS ADJACENT TO POLE)**

NUMBER OF WIRES	STRENGTH REQ'D IN 1000 LBS. (M)	REA GUY ASSEMBLY UNITS *	LEAD / HEIGHT RATIO	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	DEADEND AND OR ANGLE 55°	60°	
				2	2.2 M	PEI-1	1/2	600	160							
1		600	240													
6 M	PEI-2	1/2					600	350	275						Under 100	
2	10 M	PEI-3	1/2								525	375	250	150		
			1								600	445	350	230	130	
															570	
4	2.2 M	PEI-1	1/2	215												
			1	500	225											
	6 M	PEI-2	1/2			400	220	100								Under 100
			1				600	425	300	200	100					
	10 M	PEI-3	1/2					485	350	240	150					
1											535	430	345	275	220	
16 M	PEI-4	1/2									575	465	380	305	250	
20 M	2-PEI-3	1/2										585	495	420		
6	2.2 M	PEI-1	1/2													
			1	110												
	6 M	PEI-2	1/2	290	200	130										Under 100
			1	535	420	325	245	185	135							
	10 M	PEI-3	1/2	585	465	355	275	215	160	115						
1						565	475	400	335	285	235	195	150	110		
16 M	PEI-4	1/2				585	495	420	355	300	250	205	160	120		
20 M	2-PEI-3	1/2							590	510	445	385	335	285	240	
8	2.2 M	PEI-1	1/2													
			1	200												
	6 M	PEI-2	1/2	480	365	135										Under 100
			1		540	350	235	150								
	10 M	PEI-3	1/2		590	390	270	175	110							
			1				570	435	335	260	205	150	115			
	16 M	PEI-4	1/2				585	450	350	270	215	160	120			
1									585	495	415	355	305	265		
20 M	2-PEI-3	1/2						505	410	335	275	225	185	150		
26 M	1-PEI-3 1-PEI-4	1/2									520	440	375	325	285	

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CHART 6

CHAPTER 6 (CONTINUED)

NUMBER OF WIRES	STRENGTH REQ'D IN 1000 LBS. (M)	REA GUY ASSEMBLY UNITS *	LEAD/HEIGHT RATIO	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	DEADEND AND OR ANGLE 55°	60°	
10	2.2 M	PEI-1	1/2	125										Under 100		
	6 M	PEI-2	1/2	370	160											
	10 M	PEI-3	1/2		425	265	165	100								
	16 M	PEI-4	1/2		455	295	185	115								
	20 M	2-PEI-3	1/2			600	450	335	250	180	130					
	26 M	1-PEI-3 1-PEI-4	1/2						570	470	380	320	265		225	185
	32 M	2-PEI-4	1/2						505	400	310	245	190		150	120
12	6 M	PEI-2	1/2	385	135									Under 100		
	10 M	PEI-3	1/2	550	330	205	125									
	16 M	PEI-4	1/2		490	355	265	195	145	105						
	20 M	2-PEI-3	1/2				510	395	310	245	195	150	115			
	26 M	1-PEI-3 1-PEI-4	1/2					580	465	385	330	260	220		180	150
	32 M	2-PEI-4	1/2							525	440	375	320		275	240
	16 M	PEI-4	1/2									570	470		375	320
16	6 M	PEI-2	1/2	200										Under 100		
	10 M	PEI-3	1/2	385	220	125										
	16 M	PEI-4	1/2		475	330	230	155	105							
	20 M	2-PEI-3	1/2		485	340	240	160	110							
	26 M	1-PEI-3 1-PEI-4	1/2				470	350	260	195	145	105				
	32 M	2-PEI-4	1/2					525	425	350	290	245	205		170	140
	16 M	PEI-4	1/2							510	400	320	255		205	165
20	6 M	PEI-2	1/2	110										Under 100		
	10 M	PEI-3	1/2	270	145											
	16 M	PEI-4	1/2		300	160										
	20 M	2-PEI-3	1/2		555	350	225	160	110							
	26 M	1-PEI-3 1-PEI-4	1/2		575	365	245	170	115							
	32 M	2-PEI-4	1/2							480	365	280	220		175	135
	16 M	PEI-4	1/2							495	350	255	185		140	100
20	6 M	PEI-2	1/2	110										Under 100		
	10 M	PEI-3	1/2	270	145											
	16 M	PEI-4	1/2		300	160										
	20 M	2-PEI-3	1/2		555	350	225	160	110							
	26 M	1-PEI-3 1-PEI-4	1/2		575	365	245	170	115							
	32 M	2-PEI-4	1/2							500	395	320	260		215	175
	16 M	PEI-4	1/2							495	350	255	185		140	100
20	6 M	PEI-2	1/2	110										Under 100		
	10 M	PEI-3	1/2	270	145											
	16 M	PEI-4	1/2		300	160										
	20 M	2-PEI-3	1/2		555	350	225	160	110							
	26 M	1-PEI-3 1-PEI-4	1/2		575	365	245	170	115							
	32 M	2-PEI-4	1/2							500	395	320	260		215	175
	16 M	PEI-4	1/2							495	350	255	185		140	100
20	6 M	PEI-2	1/2	110										Under 100		
	10 M	PEI-3	1/2	270	145											
	16 M	PEI-4	1/2		300	160										
	20 M	2-PEI-3	1/2		555	350	225	160	110							
	26 M	1-PEI-3 1-PEI-4	1/2		575	365	245	170	115							
	32 M	2-PEI-4	1/2							515	410	330	270		225	180
	16 M	PEI-4	1/2							525	455	395	340		300	260

\* WHERE STRAIN INSULATORS ARE REQUIRED ADD SUFFIX S.  
 \* WHERE GROUND CONNECTORS ARE REQUIRED ADD SUFFIX G

**HEAVY LOADING DISTRICT**  
**GUY STRAND SELECTION CHART**  
**FOR CORNERS AND DEADENDS CARRYING OPEN WIRES AND**  
**CABLE ON 10M SUSPENSION STRAND**  
**(MAXIMUM SPANS IN FEET - AVERAGE SPANS ADJACENT TO POLE)**

NUMBER OF WIRES	STRENGTH REQ'D IN 1000 LBS. (M)	REA GUY ASSEMBLY UNITS *	LEAD/HEIGHT RATIO	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	DEADEND AND OR ANGLE 55°	60°
2	2.2 M	PEI-1	1/2	280											
	6 M	PEI-2	1/2		165	425									
	10 M	PEI-3	1/2					410	135						
	16 M	PEI-4	1/2					520	230			570	350	170	
4	2.2 M	PEI-1	1/2												
	6 M	PEI-2	1/2		445	150									
	10 M	PEI-3	1/2			600	325	135							
	16 M	PEI-4	1/2				385	210							
	20 M	2-PEI-3	1/2						500	350	225	125			
	26 M	1-PEI-3 1-PEI-4	1/2						515	365	240	140	520	410	315
6	2.2 M	PEI-1	1/2												
	6 M	PEI-2	1/2		585	265									
	10 M	PEI-3	1/2			365	185								
	16 M	PEI-4	1/2			410	225	100							
	20 M	2-PEI-3	1/2					450	310	200	105				
	26 M	1-PEI-3 1-PEI-4	1/2					465	325	215	120				
	32 M	2-PEI-4	1/2								510	400	310	230	170
														530	440
8	2.2 M	PEI-1	1/2												
	6 M	PEI-2	1/2		420	170									
	10 M	PEI-3	1/2			435	245	115							
	16 M	PEI-4	1/2			490	285	145							
	20 M	2-PEI-3	1/2				445	300	200	120					
	26 M	1-PEI-3 1-PEI-4	1/2				460	320	210	130					
	32 M	2-PEI-4	1/2					565	445	350	270	200	145	100	
									500	370	270	190	125		

REA TIE & CM-650

CHART 7

CHAPTER 7 (CONTINUED)

NUMBER OF WIRES	STRENGTH REQ'D IN 1000 LBS. (M)	REA GUY ASSEMBLY UNITS *	LEAD / HEIGHT RATIO	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	DEAD END AND OR ANGLE 55°	60°	
10	6 M	PEI-2	1/2	300	100											
			I	500	325	165										
	10 M	PEI-3	1/2		355	190										
			I			480	320	210	125							
	16 M	PEI-4	1/2			500	330	220	135							
			I				550	420	325	240	175	125				
20 M	2-PEI-3	1/2				505	365	260	185	115						
		I						490	400	320	255	210	165			
26 M	1-PEI-3 1-PEI-4	1/2						575	445	345	265	200	145	105		
		I									510	455	390	335		
32 M	2-PEI-4	1/2									515	420	335	270	220	
		I										560	490		490	
12	6 M	PEI-2	1/2	245												
			I	490	265	125										
	10 M	PEI-3	1/2	535	300	130										
			I			410	245	170	105							
	16 M	PEI-4	1/2			415	280	180	115							
			I				600	485	375	285	220	160	115			
20 M	2-PEI-3	1/2			600	425	300	215	145							
		I					515	410	330	265	210	160	115			
26 M	1-PEI-3 1-PEI-4	1/2						485	375	285	220	160	115			
		I								525	445	375	315	260		
32 M	2-PEI-4	1/2							530	425	345	275	220	175	125	
		I									525	455	390			
16	6 M	PEI-2	1/2	165												
			I	350	170											
	10 M	PEI-3	1/2	185	200											
			I		425	270	165									
	16 M	PEI-4	1/2		430	275	170	100								
			I		570	420	310	225	160	110						
20 M	2-PEI-3	1/2		595	405	275	190	120								
		I			570	495	345	270	205	155	115					
26 M	1-PEI-3 1-PEI-4	1/2			595	435	325	240	180	125						
		I					540	440	360	295	240	200	165			
32 M	2-PEI-4	1/2				595	460	360	285	220	170	125				
		I						590	495	420	355	305	265			
20	6 M	PEI-2	1/2	110												
			I	255	105											
	10 M	PEI-3	1/2	280	130											
			I	530	315	190	110									
	16 M	PEI-4	1/2	545	325	200	120									
			I			440	315	220	150	105						
20 M	2-PEI-3	1/2		465	305	205	125									
		I			600	450	340	255	195	145	100					
26 M	1-PEI-3 1-PEI-4	1/2			460	330	235	165	115							
		I				515	410	330	265	210	165	130	105			
32 M	2-PEI-4	1/2				460	345	265	205	150	105					
		I					555	455	380	315	260	220	185			

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\* WHERE STRAIN INSULATORS ARE REQUIRED ADD SUFFIX S.  
 \* WHERE GROUND CONNECTIONS ARE REQUIRED ADD SUFFIX G.

**HEAVY LOADING DISTRICT  
GUY STRAND SELECTION CHART  
FOR CORNERS AND DEADENDS CARRYING OPEN WIRES AND  
CABLE ON 16 M SUSPENSION STRAND  
(MAXIMUM SPANS IN FEET-AVERAGE SPANS ADJACENT TO POLE)**

NUMBER OF WIRES	STRENGTH REQ'D IN 1000 LBS. (M)	REA GUY ASSEMBLY UNITS *	LEAD / HEIGHT RATIO	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	DEADEND AND OR ANGLE 55°	60°			
				2	2.2 M	PEI-1	1/2	500										
6 M	PEI-2	1/2			495													
10 M	PEI-3	1/2					165											
16 M	PEI-4	1/2							490	145								
20 M	2-PEI-3	1/2										410	130	440	210			
26 M	1-PEI-3 1-PEI-4	1/2												535	290			
32 M	2-PEI-4	1/2													595			
4	2.2 M	PEI-1	1/2	275														
	6 M	PEI-2	1/2		255													
	10 M	PEI-3	1/2			350												
	16 M	PEI-4	1/2			415	130		400	195								
	20 M	2-PEI-3	1/2						425	220								
	26 M	1-PEI-3 1-PEI-4	1/2								455	295	140					
	32 M	2-PEI-4	1/2						505	310	155			465	330	205		
6	2.2 M	PEI-1	1/2	110														
	6 M	PEI-2	1/2	475	100													
	10 M	PEI-3	1/2		480	170												
	16 M	PEI-4	1/2			550	220											
	20 M	2-PEI-3	1/2				435	230		455	245							
	26 M	1-PEI-3 1-PEI-4	1/2						500	310	155			530	395	285	190	115
	32 M	2-PEI-4	1/2									450	300	185		490	390	
8	6 M	PEI-2	1/2	325														
	10 M	PEI-3	1/2		335													
	16 M	PEI-4	1/2			385	125											
	20 M	2-PEI-3	1/2			525	300	135										
	26 M	1-PEI-3 1-PEI-4	1/2			540	315	145										
	32 M	2-PEI-4	1/2						500	415	275	175						
	32 M	2-PEI-4	1/2						540	345	200			505	375	270	195	120

REA TEE & CM-650

CHART 8

CHART 8 (CONTINUED)

NUMBER OF WIRES	STRENGTH REQ'D IN 1000 LBS. (M)	REA GUY ASSEMBLY UNITS*	LEAD/HEIGHT RATIO	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	DEAD END AND OR ANGLE 55°	60°
				10	6 M	PEI-2	1/2	230	550	245					
10 M	PEI-3	1/2	600		280	100									
16 M	PEI-4	1/2				405	220	100							
20 M	2-PEI-3	1/2					405	235	150						
26 M	1-PEI-3	1/2						475	310	205	125				
	1-PEI-4														
32 M	2-PEI-4	1/2							530	400	300	220	145		
12	6 M	PEI-2	1/2	175	430	180									
	10 M	PEI-3	1/2	470	210	150									
	16 M	PEI-4	1/2		525	295	160								
	20 M	2-PEI-3	1/2		540	305	160								
26 M	1-PEI-3	1/2			490	310	180								
	1-PEI-4														
32 M	2-PEI-4	1/2					525	385	275	190	120				
16	6 M	PEI-2	1/2	120	305	115									
	10 M	PEI-3	1/2	330	135	100									
	16 M	PEI-4	1/2		365	190	100								
	20 M	PEI-3	1/2		375	205	105								
26 M	1-PEI-3	1/2		540	335	220	135								
	1-PEI-4														
32 M	2-PEI-4	1/2			505	365	260	180	110						
20	6 M	PEI-2	1/2	230	550	245									
	10 M	PEI-3	1/2	250	100	155									
	16 M	PEI-4	1/2	495	280	165									
	20 M	2-PEI-3	1/2	510	290	165									
26 M	1-PEI-3	1/2		565	380	265	185	120							
	1-PEI-4														
32 M	2-PEI-4	1/2		410	260	165	100								

\* WHERE STRAIN INSULATORS ARE REQUIRED ADD SUFFIX S.  
 \* WHERE GROUND CONNECTIONS ARE REQUIRED ADD SUFFIX G.

**MEDIUM LOADING DISTRICT**  
**GUY STRAND SELECTION CHART**  
**FOR CORNERS AND DEADENDS CARRYING OPEN WIRES AND**  
**CABLE ON 6 M SUSPENSION STRAND**  
**(MAXIMUM SPANS IN FEET--AVERAGE SPANS ADJACENT TO POLE)**

NUMBER OF WIRES	STRENGTH REQ'D IN 1000 LBS. (M)	REA GUY ASSEMBLY UNITS*	LEAD/HEIGHT RATIO	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	DEADEND AND OR ANGLE 55°	60°		
2	2.2 M	PEI-1	1/2		315									Under 100			
						490	180										
	6 M	PEI-2	1/2						400	215							
	10 M	PEI-3	1/2									495	355	235	130		
												585	440	315	210		
4	2.2 M	PEI-1	1/2	440										Under 100			
					450	185											
	6 M	PEI-2	1/2				450	270	145								
	10 M	PEI-3	1/2						570	425	310	220	145				
										490	370	275	195	130			
														555	470		
6	2.2 M	PEI-1	1/2	240										Under 100			
				450	155												
	6 M	PEI-2	1/2			465	285	170									
							490	365	270	200	140						
	10 M	PEI-3	1/2					545	415	310	235	170	125				
	16 M	PEI-4	1/2							590	490	415	350	285			
											510	430	365	300			
	20 M	2-PEI-3	1/2											545	470		
8	2.2 M	PEI-1	1/2	120										Under 100			
				400	155												
	6 M	PEI-2	1/2			525	315	195	115								
							480	350	265	195	140	100					
	10 M	PEI-3	1/2					530	395	300	225	165	120				
										525	435	365	305		250	205	
	16 M	PEI-4	1/2							540	450	375	315	260	215		
														580	500		
	20 M	2-PEI-3	1/2									545	470	400	340		
	26 M	1-PEI-3 1-PEI-4	1/2												530		
10	2.2 M	PEI-1	1/2	290	100									Under 100			
					400	230	140										
	6 M	PEI-2	1/2			530	365	265	190	135							
							530	365	265	190	135						
	10 M	PEI-3	1/2					580	405	295	220	160	115				
										495	405	330	275		225	185	155
	16 M	PEI-4	1/2							505	415	340	285		235	195	140
											585	505	440		390		
	20 M	2-PEI-3	1/2								585	490	420	355	305	265	
															555		
	26 M	1-PEI-3 1-PEI-4	1/2										535	470	420		
	32 M	2-PEI-4	1/2												475		

REA 11E & CM-650

CHART 9

CHART 9 CONTINUED

NUMBER OF WIRES	STRENGTH REQ'D IN 1000 LBS. (M)	REA GUY ASSEMBLY UNITS*	LEAD/HEIGHT RATIO	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	DEADEND AND OR ANGLE 55°	60°	
12	2.2 M	PEI-1	1/2											Under 100		
				200												
	6 M	PEI-2	1/2	590	310	190	105									
						425	300	215	155	115						
	10 M	PEI-3	1/2			465	330	240	175	130						
							505	405	330		265	220	185		150	125
	16 M	PEI-4	1/2					520	415	340	275	230	190		160	130
										575	500	435	380	340		
	20 M	2-PEI-3	1/2							575	475					
	26 M	1-PEI-3 1-PEI-4	1/2									575	500	435	380	340
	32 M	2-PEI-4	1/2											585	525	470
16	2.2 M	PEI-1	1/2											Under 100		
				110												
	6 M	PEI-2	1/2	390	195	100										
					440	280	190	130								
	10 M	PEI-3	1/2		485	310	215	150	110							
							455	350	275	220	180	145	120		105	
	16 M	PEI-4	1/2				475	365	290	230	190	155	130		110	
										560	470	400	345	300	265	230
	20 M	2-PEI-3	1/2					505	405	335	280	235	205	175	150	
	26 M	1-PEI-3 1-PEI-4	1/2							585	490	420	360	315	275	245
														585	525	480
	32 M	2-PEI-4	1/2									560	490	430	380	340
20	6 M	PEI-2	1/2											Under 100		
				285	230											
				590	330	215	150	100								
	10 M	PEI-3	1/2		355	240	165	110								
						485	360	270	215	165	130	105				
	16 M	PEI-4	1/2			500	365	280	220	170	140	110				
									535	440	365	310	265		230	200
	20 M	2-PEI-3	1/2				500	395	320	260	215	180	150	130	115	
										595	505	435	375	325	290	260
	26 M	1-PEI-3 1-PEI-4	1/2						565	460	385	325	280	240	215	190
										595	500	430	370	325	290	260
	32 M	2-PEI-4	1/2								515	440	385	335	300	265
													600	545	490	

REA 11E & CH-650

\* WHERE STRAIN INSULATORS ARE REQUIRED ADD SUFFIX S.  
 \* WHERE GROUND CONNECTION ARE REQUIRED ADD SUFFIX G.

**MEDIUM LOADING DISTRICT**  
**GUY STRAND SELECTION CHART**  
**FOR CORNERS AND DEADENDS CARRYING OPEN WIRES AND**  
**CABLE ON 10M SUSPENSION STRAND**  
**(MAXIMUM SPANS IN FEET-AVERAGE SPANS ADJACENT TO POLE)**

NUMBER OF WIRES	STRENGTH REQ'D IN 1000 LBS. (M)	REA GUY ASSEMBLY UNITS *X	LEAD / HEIGHT RATIO	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	DEADEND AND OR ANGLE 55°	60°		
				2	2.2 M	PEI-1	1/2	575									
					350												
6 M	PEI-2	1/2					200										
									350								
10 M	PEI-3	1/2							490	140							
4	16 M	PEI-1	1/2										385	175			
													445	225			
	20 M	2-PEI-3	1/2												560		
	2.2 M	PEI-1	1/2	200													
6					120												
	6 M	PEI-2	1/2			350											
							590	320	135								
	10 M	PEI-3	1/2					430	225								
										445	305	190					
	16 M	PEI-4	1/2							470	330	210	100				
8	20 M	2-PEI-3	1/2										490	365	250		
	2.2 M	PEI-1	1/2	400													
					485	190											
	6 M	PEI-2	1/2				400	215									
							465	265	125								
	10 M	PEI-3	1/2						595	430	300	200	115				
									445	315	210	130					
16 M	PEI-4	1/2											565	455	355		
20 M	2-PEI-3	1/2								560	430	325	230	150			
26 M	1-PEI-3	1/2												575	410		
2.2 M	PEI-1	1/2	270														
10					360	105											
	6 M	PEI-2	1/2				250	100									
							555	320	155								
	10 M	PEI-3	1/2						585	410	280	185	105				
										430	300	200	120				
	16 M	PEI-4	1/2											525	420	335	265
20 M	2-PEI-3	1/2								525	400	300	215	150	105		
26 M	1-PEI-3	1/2											515	460	360	295	
32 M	2-PEI-4	1/2												585	490		

CHART 10

REA TIE & CM-650

CHART 10 (CONTINUED)

NUMBER OF WIRES	STRENGTH REQ'D IN 1000 LBS. (M)	REA GUY ASSEMBLY UNITS *	LEAD/HEIGHT RATIO	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	DEADEND AND OR ANGLE 55°	60°				
10	2.2 M	PEI-1	1/2	185										Under 100					
	6 M	PEI-2	1/2		250														
	10 M	PEI-3	1/2			360	195												
	16 M	PEI-4	1/2				440	310	215	145									
	20 M	2-PEI-3	1/2					460	325	225	155								
	26 M	1-PEI-3 1-PEI-4	1/2						520	400	305	225	165		115				
	32 M	2-PEI-4	1/2									490	385		320	255	210		
12	6 M	PEI-2	1/2	490	195									Under 100					
	10 M	PEI-3	1/2		525	295	155												
	16 M	PEI-4	1/2			575	335	190	100										
	20 M	2-PEI-3	1/2					510	365	255	180	120							
	26 M	1-PEI-3 1-PEI-4	1/2						525	375	265	190	130						
	32 M	2-PEI-4	1/2							495	405	330	265		215	165			
16	6 M	PEI-2	1/2	315	100									Under 100					
	10 M	PEI-3	1/2		350	175													
	16 M	PEI-4	1/2			395	210	105											
	20 M	2-PEI-3	1/2					530	355	245	170	100							
	26 M	1-PEI-3 1-PEI-4	1/2						550	375	260	180	110						
	32 M	2-PEI-4	1/2							600	470	365	285		220	175	135	100	
20	6 M	PEI-2	1/2	200										Under 100					
	10 M	PEI-3	1/2		525	265	145												
	16 M	PEI-4	1/2			590	300	165											
	20 M	2-PEI-3	1/2					410	280	205	145	105							
	26 M	1-PEI-3 1-PEI-4	1/2						425	290	210	150	110						
	32 M	2-PEI-4	1/2							590	455	365	290		240	200	165	140	115
	32 M	2-PEI-4	1/2								500	350	260		195	145	115		

\* WHERE STRAIN INSULATORS ARE REQUIRED ADD SUFFIX S  
 \* WHERE GROUND CONNECTION ARE REQUIRED ADD SUFFIX G.

**MEDIUM LOADING DISTRICT  
GUY STRAND SELECTION CHART  
FOR CORNERS AND DEADENDS CARRYING OPEN WIRES AND  
CABLE ON 16M SUSPENSION STRAND  
(MAXIMUM SPANS IN FEET-AVERAGE SPANS ADJACENT TO POLE)**

NUMBER OF WIRES	STRENGTH REQ'D IN 1000 LBS. (M)	REA GUY ASSEMBLY UNITS *	LEAD / HEIGHT RATIO	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	DEADEND AND OR ANGLE 55°	60°					
				2	2.2 M	PEI-1	1/2													
6 M	PEI-2	1/2																		
10 M	PEI-3	1/2					325			260										
16 M	PEI-4	1/2					525			330										
20 M	2-PEI-3	1/2					Over 600					265		350						
26 M	1-PEI-3 1-PEI-4	1/2													195					
4	2.2 M	PEI-1	1/2	380																
	6 M	PEI-2	1/2		415															
	10 M	PEI-3	1/2			600	160													
	16 M	PEI-4	1/2				250			380	130									
	20 M	2-PEI-3	1/2				Over 600			415	170									
	26 M	1-PEI-3 1-PEI-4	1/2									520	330	160						
32 M	2-PEI-4	1/2											590	420						
													410	235						
															465					
6	2.2 M	PEI-1	1/2	210																
	6 M	PEI-2	1/2		205															
	10 M	PEI-3	1/2			350														
	16 M	PEI-4	1/2			430	110			435	210									
	20 M	2-PEI-3	1/2							475	235									
	26 M	1-PEI-3 1-PEI-4	1/2									505	345	215	110					
32 M	2-PEI-2	1/2											570	355	185					
														530	390	270				
														555	395	255	145			
														565	425	295				
8	2.2 M	PEI-1	1/2	100																
	6 M	PEI-2	1/2		115															
	10 M	PEI-3	1/2			235														
	16 M	PEI-4	1/2			305														
	20 M	2-PEI-3	1/2					555	315	145										
	26 M	1-PEI-3 1-PEI-4	1/2					590	335	160										
32 M	2-PEI-4	1/2								525	365	240	140							
														415	250	120				
															575	410	380	175		
																510	385	280	190	
																	540	415	300	210
																			495	

REA 712 & CM-650

CHART 11

CHART II (CONTINUED)

NUMBER OF WIRES	STRENGTH REQ'D IN 1000 LBS. (M)	REA GUY ASSEMBLY UNITS *	LEAD/HEIGHT RATIO	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	DEADEND AND OR ANGLE 55°	60°		
10	6 M	PEI-2	1/2	505													
					480	160											
	10 M	PEI-3	1/2		545	210								Under 100			
							425	230									
	16 M	PEI-4	1/2				450	250	105								
									560	395	265	165	100				
	20 M	2-PEI-3	1/2					485	300	170							
											505	385	290	210	140		
	26 M	1-PEI-3 1-PEI-4	1/2 						600	430	295	195	125				
													580	480	380		
	32 M	2-PEI-4	1/2								535	410	310	230	155		
12	6 M	PEI-2	1/2	350													
					355	100											
	10 M	PEI-3	1/2			430	135							Under 100			
						575	320	165									
	16 M	PEI-4	1/2					335	175								
								600	440	310	200	115					
	20 M	2-PEI-3	1/2				570	375	230	120							
											535	410	300	225	155	115	
	26 M	1-PEI-3 1-PEI-4	1/2 						475	335	230	140					
													575	470	380	315	
	32 M	2-PEI-4	1/2							555	430	320	240	175	125		
														600	515		
16	6 M	PEI-2	1/2	230													
					600	240											
	10 M	PEI-3	1/2		270	100								Under 100			
						405	225	120									
	16 M	PEI-4	1/2				425	240	130								
								450	325	225	155	100					
	20 M	2-PEI-3	1/2				415	275	170								
										515	390	300	225	165	120		
	26 M	1-PEI-3 1-PEI-4	1/2 						485	355	250	175	120				
													525	425	345	285	225
	32 M	2-PEI-4	1/2							535	410	315	240	180	130		
														525	445	375	
20	6 M	PEI-2	1/2	130													
					455	175											
	10 M	PEI-3	1/2	510	210									Under 100			
						530	310	180									
	16 M	PEI-4	1/2			550	320	185									
								500	355	250	175	115					
	20 M	2-PEI-3	1/2				495	325	210	125							
									530	400	305	230	180	120			
	26 M	1-PEI-3 1-PEI-4	1/2 					530	380	270	195	130					
											505	410	330	265	215	170	
	32 M	2-PEI-4	1/2						550	415	320	245	180	135			
													585	490	410	345	290

\* WHERE STRAIN INSULATORS ARE REQUIRED ADD SUFFIX S.  
 \* WHERE GROUND CONNECTIONS ARE REQUIRED ADD S

LIGHT LOADING DISTRICT  
 GUY STRAND SELECTION CHART  
 FOR CORNERS AND DEADENDS CARRYING OPEN WIRES AND  
 CABLE ON 6 M SUSPENSION STRAND  
 (MAXIMUM SPANS IN FEET-AVERAGE SPANS ADJACENT TO POLE)

NUMBER OF WIRES	STRENGTH REQ'D IN 1000 LBS. (M)	REA GUY ASSEMBLY UNITS *	LEAD/HEIGHT RATIO	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	DEADEND AND OR ANGLE 55°	60°		
				[Grid area with values and annotations]													
2	2.2 M	PEI-1	1/2				425							Under 100			
	6 M	PEI-2	1/2					520	200					465	255		
	10 M	PEI-3	1/2												460		
4	2.2 M	PEI-1	1/2		365										Under 100		
	6 M	PEI-2	1/2			525	235			425	260	130		515	380	275	165
	10 M	PEI-3	1/2										600	460	345	235	
6	2.2 M	PEI-1	1/2		170										Under 100		
	6 M	PEI-2	1/2			295			430	260	135						
	10 M	PEI-3	1/2								600	450	330	230	150		
8	2.2 M	PEI-1	1/2	490	100										Under 100		
	6 M	PEI-2	1/2			200											
	10 M	PEI-3	1/2				475	290	160								
	16 M	PEI-4	1/2							590	430	320	225	145			
10	2.2 M	PEI-1	1/2	335											Under 100		
	6 M	PEI-2	1/2		350	140											
	10 M	PEI-3	1/2			540	360	225	130								
	16 M	PEI-4	1/2					600	450	340	250	180	120				
	20 M	2-PEI-3	1/2							505	390	295	220	160	105		
12	2.2 M	PEI-1	1/2	250											Under 100		
	6 M	PEI-2	1/2		255	450	275	170									
	10 M	PEI-3	1/2					480	355	265	200	140					
	16 M	PEI-4	1/2								575	485	405	340	285		
	20 M	2-PEI-3	1/2									595	500	425	355	300	

REA TEE & CM-650

CHART 12

CHART 12 (CONTINUED)

NUMBER OF WIRES	STRENGTH REQ'D IN 1000 LBS. (M)	REA GUY ASSEMBLY UNITS *	LEAD/HEIGHT RATIO	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	DEADEND AND OR ANGLE 55°	60°	
16	2.2 M	PEI-1	1/2	130										Under 100		
				410	160											
	6 M	PEI-2	1/2		540	320	185	100								
							485	350	255	175	120					
	10 M	PEI-3	1/2				535	390	290	210	145	100				
										530	430	355	295		245	205
	16 M	PEI-4	1/2							545	445	370	305	250	215	
														580	505	
	20M	2-PEI-3	1/2									545	465	395	345	
	26 M	1-PEI-3 PEI-4	1/2												530	
20	2.2 M	PEI-1	1/2	280	100									Under 100		
	6 M	PEI-2	1/2		395	235	145									
						515	370	265	200	150	105					
	10 M	PEI-3	1/2			570	410	300	225	175	130					
									495	405	335	280	235		195	155
		16 M	PEI-4	1/2						505	415	345	290		240	200
											580	510	450	395		
	20 M	2-PEI-3	1/2							580	490	420	360	310	265	
															555	
	26 M	1-PEI-3 1-PEI-4	1/2									535		475	420	
	32 M	2-PEI-4	1/2												570	

\* WHERE STRAIN INSULATORS ARE REQUIRED ADD SUFFIX S.

\* WHERE GROUND CONNECTION ARE REQUIRED ADD SUFFIX G.

LIGHT LOADING DISTRICT  
 GUY STRAND SELECTION CHART  
 FOR CORNERS AND DEADENDS CARRYING OPEN WIRES AND  
 CABLE ON 10M SUSPENSION STRAND  
 (MAXIMUM SPANS IN FEET-AVERAGE SPANS ADJACENT TO POLE)

NUMBER OF WIRES	STRENGTH REQ'D IN 1000 LBS. (M)	REA GUY ASSEMBLY UNITS *	LEAD/HEIGHT RATIO	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	DEADEND AND OR ANGLE 55°	60°
2	2.2 M	PEI-1	1/2												
	6 M	PEI-2	1/2				480								
	10 M	PEI-3	1/2								165				
	16 M	PEI-4	1/2								400				
4	2.2 M	PEI-1	1/2	575											
	6 M	PEI-2	1/2		345										
	10 M	PEI-3	1/2				200				325				
	16 M	PEI-4	1/2								475	140			
	20 M	2-PEI-3	1/2										385	170	
6	2.2 M	PEI-1	1/2	330											
	6 M	PEI-2	1/2		200										
	10 M	PEI-3	1/2			495	100								
	16 M	PEI-4	1/2					470	195						
	20 M	2-PEI-3	1/2					590	295						
8	2.2 M	PEI-1	1/2	190											
	6 M	PEI-2	1/2		100										
	10 M	PEI-3	1/2			320									
	16 M	PEI-4	1/2					325	100						
	20 M	2-PEI-3	1/2					415	180						
10	2.2 M	PEI-1	1/2	100											
	6 M	PEI-2	1/2			240									
	10 M	PEI-3	1/2				480	245							
	16 M	PEI-4	1/2				570	310	125						
	20 M	2-PEI-3	1/2							505	345	210	105		
	26 M	1-PEI-3 1-PEI-4	1/2 1								530	370	230	125	

REA TIE & GM-650

CHART 13

CHART 13 (CONTINUED)

NUMBER OF WIRES	STRENGTH REQ'D IN 1000 LBS. (M)	REA GUY ASSEMBLY UNITS *	LEAD/HEIGHT RATIO	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	DEADEND AND OR ANGLE 55°	60°	
				12	2.2 M	PEI-1	1/2	410								
	6 M	PEI-2	1/2		520	200								Under 100		
	10 M	PEI-3	1/2				390	210								
	16 M	PEI-4	1/2				460	260	115							
	20 M	2-PEI-3	1/2						560	400	280	185	105			
	26 M	1-PEI-3 1-PEI-4	1/2						585	420	295	200	120	560	460	370
	2.2 M	PEI-1	1/2	250												
16	6 M	PEI-2	1/2		350	115								Under 100		
	10 M	PEI-3	1/2			485	270	130								
	16 M	PEI-4	1/2			550	325	175								
	20 M	2-PEI-3	1/2					575	415	290	200	120				
	26 M	1-PEI-3 1-PEI-4	1/2					600	430	310	215	135				
	32 M	2-PEI-4	1/2							520	400	305	230	340	270	
	2.2 M	PEI-1	1/2	175												
20	6 M	PEI-2	1/2		260									Under 100		
	10 M	PEI-3	1/2			375	210	100								
	16 M	PEI-4	1/2			425	245	135								
	20 M	2-PEI-3	1/2					450	325	230	155					
	26 M	1-PEI-3 1-PEI-4	1/2					465	340	245	165	105				
	32 M	2-PEI-4	1/2						530	410	315	235	180	265	205	
	2.2 M	PEI-1	1/2													
	6 M	PEI-2	1/2													
	10 M	PEI-3	1/2													
	16 M	PEI-4	1/2													
	20 M	2-PEI-3	1/2													
	26 M	1-PEI-3 1-PEI-4	1/2													
	32 M	2-PEI-4	1/2													

\* WHERE STRAIN INSULATORS ARE REQUIRED ADD SUFFIX S.  
 \* WHERE GROUND CONNECTIONS ARE REQUIRED ADD SUFFIX G.

C. 1. 1. 4. 5. 6. 7. 11.

**LIGHT LOADING DISTRICT**  
**GUY STRAND SELECTION CHART**  
**FOR CORNERS AND DEADENDS CARRYING OPEN WIRES AND**  
**CABLE ON 16 M SUSPENSION STRAND**  
**(MAXIMUM SPANS IN FEET-AVERAGE SPANS ADJACENT TO POLE)**

NUMBER OF WIRES	STRENGTH REQ'D IN 1000 LBS. (M)	REA GUY ASSEMBLY UNITS*	LEAD / HEIGHT RATIO	ANGLE												DEADEND AND OR ANGLE 55°	60°						
				5°	10°	15°	20°	25°	30°	35°	40°	45°	50°										
2	2.2 M	PEI-1	1/2																				
	6 M	PEI-2	1/2																				
	10 M	PEI-3	1/2																				
	16 M	PEI-4	1/2																525				
	20 M	2-PEI-3	1/2																560	215			
	26 M	1-PEI-3 1-PEI-4	1/2																430				
4	2.2 M	PEI-1	1/2																				
	6 M	PEI-2	1/2																				
	10 M	PEI-3	1/2																285	550			
	16 M	PEI-4	1/2																230	300			
	20 M	2-PEI-3	1/2																245	365	100		
	26 M	1-PEI-3 1-PEI-4	1/2																500	205			
6	2.2 M	PEI-1	1/2	600																			
	6 M	PEI-2	1/2	600																			
	10 M	PEI-3	1/2	235																355	520	205	
	16 M	PEI-4	1/2	560																250	470	255	
	20 M	2-PEI-3	1/2	440																200	575		
	26 M	1-PEI-3 1-PEI-4	1/2	550																320	130		
8	2.2 M	PEI-1	1/2	350																			
	6 M	PEI-2	1/2	395																600	150		
	10 M	PEI-3	1/2	210																370	120		
	16 M	PEI-4	1/2	410																155	525	330	170
	20 M	2-PEI-3	1/2	570																315	120	585	420
	26 M	1-PEI-3 1-PEI-4	1/2	600																390	225		
	32 M	2-PEI-4	1/2	465																			

CHART 14

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CHART 14 (CONTINUED)

NUMBER OF WIRES	STRENGTH REQ'D IN 1000 LBS. (M)	REA GUY ASSEMBLY UNITS*	LEAD / HEIGHT RATIO	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°	DEADEND AND OR ANGLE 55°	60°	
10	2.2 M	PEI-1	1/2	265										Under 100		
	6 M	PEI-2	1/2		285											
	10 M	PEI-3	1/2			445	100									
	16 M	PEI-4	1/2				530	165								
	20 M	2-PEI-3	1/2					545	280							
	26 M	1-PEI-3 1-PEI-4	1/2						575	310	110					
	32 M	PEI-1	1/2								430	240	600		410	265
12	2.2 M	PEI-1	1/2	185										Under 100		
	6 M	PEI-2	1/2		215											
	10 M	PEI-3	1/2			365										
	16 M	PEI-4	1/2			445	115									
	20 M	2-PEI-3	1/2					450	220							
	26 M	1-PEI-3 1-PEI-4	1/2						480	245						
	32 M	2-PEI-4	1/2								570	350	180		500	335
16	6 M	PEI-2	1/2			275								Under 100		
	10 M	PEI-3	1/2			350										
	16 M	PEI-4	1/2					345	145							
	20 M	2-PEI-3	1/2						370	165						
	26 M	1-PEI-3 1-PEI-4	1/2								565	380	245		140	
	32 M	2-PEI-4	1/2								450	235	120		525	390
20	6 M	PEI-2	1/2	500	100									Under 100		
	10 M	PEI-3	1/2		475	195										
	16 M	PEI-4	1/2			550	245									
	20 M	2-PEI-3	1/2					440	245	115						
	26 M	1-PEI-3 1-PEI-4	1/2						460	265	130					
	32 M	2-PEI-4	1/2								565	410	285		185	105
	32 M	2-PEI-4	1/2						490	320	195	100	520		395	295

REA TIE & CM-650

\* WHERE STRAIN INSULATORS ARE REQUIRED ADD SUFFIX S.  
 \* WHERE GROUND CONNECTIONS ARE REQUIRED ADD SUFFIX G.

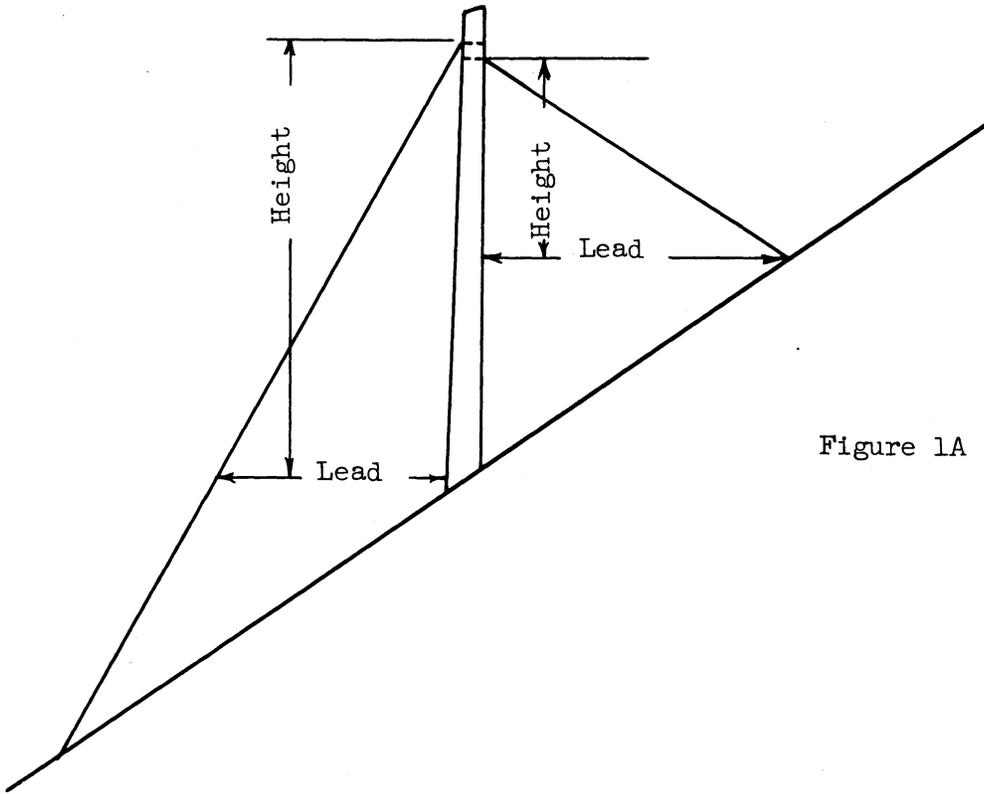


Figure 1A - Hillside

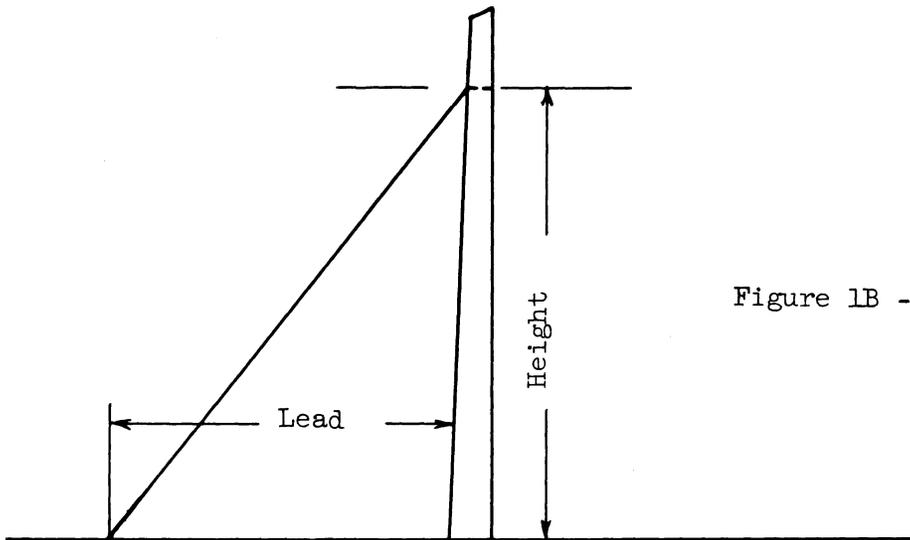
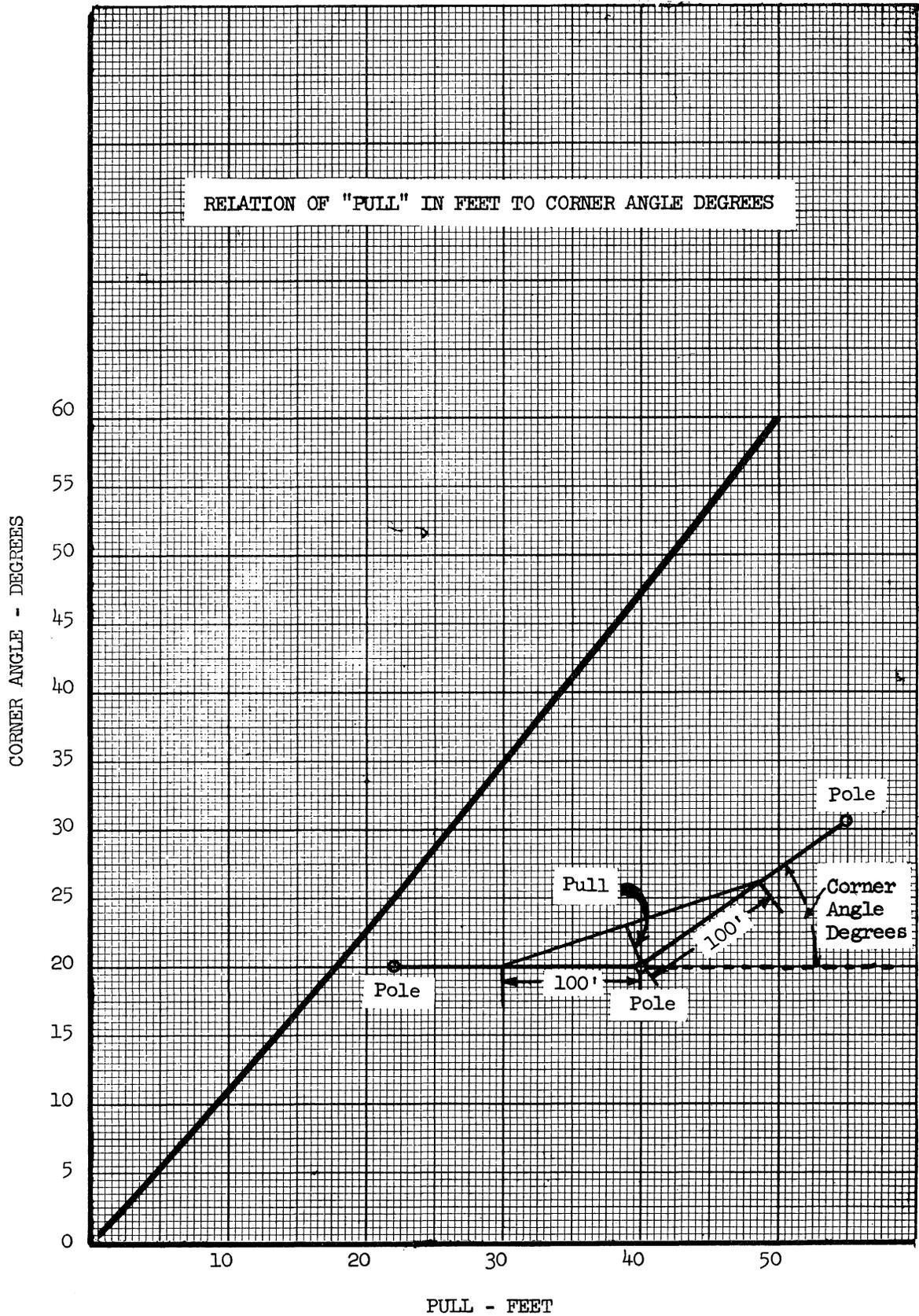


Figure 1B - Level ground

GUY LEAD AND HEIGHT MEASUREMENTS

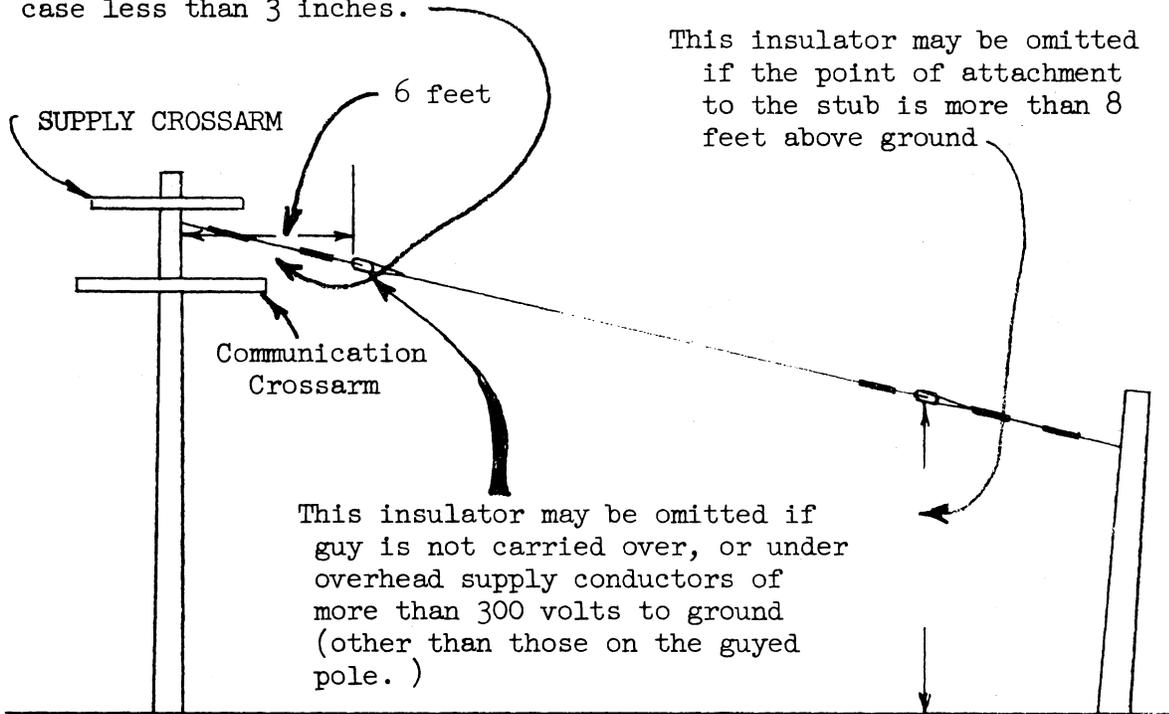
Figure 1



PULL - FEET

FIGURE 2

Guy wires shall clear communication cables or line conductors by at least 6 inches where practicable and in no case less than 3 inches.



USE OF STRAIN INSULATORS IN UNGROUNDED GUYS

FIGURE 3