JOINT USE OF POLES

Purpose: The purpose of this addendum is to supplement REA TE & CM-690, "Joint Use of Poles" and Addendum 1 thereto with information required in the design of aerial cable plant in joint use construction.

Additions:

1. SCOPE

1.1 This addendum discusses joint use of poles for power circuits and aerial cable in rural areas. It is intended to be used in conjunction with the REA TE & CM-690 to which it is directly related.

2. GENERAL

2.4 In addition to construction economies the long spans commonly used for rural power circuits reduce cable maintenance costs because less bowing occurs than in short spans and less sheath trouble results as most of this trouble occurs near poles.

2.5 REA has established a maximum of 60 percent of the rated breaking strength of suspension strand as the limit to which the strand shall be stressed when the strand and cable it supports are loaded with ice and wind in accordance with the National Electrical Safety Code (NESC) storm loading assumptions. These loadings are stated in REA TE & CM-611, "Design of Pole Lines."

Table 1 gives the maximum allowable average spans for plastic sheath, plastic insulated cables of various weights per foot lashed to strand, in the NESC loading areas based on the 60 percent of rated breaking strength of the strand.

TABLE 1

APPROXIMATE MAXIMUM AVERAGE SPANS FOR AERIAL CABLE AND RELATED LOADED STRAND TENSION

Utility Grade Steel Strand Size	Cable Weight Lbs/Ft.	Heavy Loading Max. Spans Feet	Heavy Loading Loaded Tension Lbs.	Medium Loading Max. Spans Feet.	Medium Loading Loaded Tension Lbs.	Light Loading Max. Spans Feet	Light Loading Loaded Tension Lbs.
6M	.25	325	33[illegible]	400	2945	400	2[illegible]
6M	.5	300	3[illegible]	400	3301	400	2854
6M	.75	250	3[illegible]	350	3365	400	3148
6M	1.0	250	3[illegible]	300	3386	400	3421
10M	.25	700	5[illegible]	900	5370	900	4[illegible]29
10M	.5	600	6[illegible]	700	5427	700	4715
10M	.75	600	6[illegible]	700	5876	---	---
10M	1.0	600	6[illegible]	700	6306	700	5[illegible]

The use of 6M strand is not recommended for joint use in the light loading area where spans are in the order of 450 to 700 feet. This is because the effect of concentrated load at mid-span (splicer and tools), the relatively low strength of this size strand and the large sags required.

2.6 The final sag of cable will be greater than its initial stringing sag due to stretching of the strand due to wind and ice. The differences are ignored in urban or other short span construction but cannot be ignored in long spans because sags may vary as much as two or more feet between initial and final conditions even with cable weighing less than 1 lb. per foot. It is not practicable to restore cable to its original sag by pulling slack after an ice storm as is done with open wire. Consequently, it is necessary to allow initially for sag increase due to storms when determining the ground clearance and when making joint pole strand attachment points so the initial sag will give the NESC required separations from the power wires in the spans and at the poles.

2.7 The weights of plastic cable used by REA borrowers in aerial plant along rural roads where power line spans are relatively long will seldom exceed 1.0 lb. per foot. The data herein are limited to that required for cables not much in excess of 1.0 lb. per foot. There are many more different cable diameters and weights per foot than there are of commonly used telephone line wires. This makes it impracticable to furnish exact data for all of the cable sizes commonly used in long span construction. It is practicable to group cable sizes of approximately the same weight per foot for the purposes of this addendum, and thereby limit the number of data sheets and curves required. The data in this addendum are limited to copper conductor cables lashed to either 6M or 10M utility grade galvanized steel strand.

2.8 REA power line construction in rural areas uses sags and tensions based on "ruling spans." Expressed as a formula it is: Ruling Span = Average Span + 2/3 (Max. Span - Average Span). As a general rule, REA borrowers' rural power lines make use of one of four different power conductors. Final unloaded sag curves of these four kinds of conductors are given in Figures 8 to 16 inclusive. Final unloaded sag means the sag after the conductors have been loaded with wind and ice to the amounts specified by the NESC and the load is removed. It is necessary that the kind of power conductors and the ruling span used in the joint line be known in designing joint use for telephone cable and that the theoretical final unloaded sag of the power conductors be used when determining clearances between power and communication conductors. In aerial telephone cable construction the sag and tension data are not furnished on the basis of ruling spans but on actual span lengths on the assumption that the cable is deadended at both ends of the span; in other words it is assumed that the poles do not lean due to the loading.

2.9 Cable suspension strand is placed to definite tensions depending on strand size and temperature. The tension is practically uniform from deadend to deadend in the strand when placed, regardless of span length variations. After a cable has been placed and supported by a strand, the sags will vary in spans of different lengths.

2.10 In checking the sag that results in a cable span after a job is finished, some variation for each different span length from the sag curve amount can be expected. The amount of the variation cannot be exactly forecast. The sag in a short span probably will be less than shown on the sag curve for a certain average span and greater for a span longer than the average. The sag would agree with the sag curve calculated value only in the case of a level section of line having exactly equal span lengths throughout.

2.11 Cable dancing, also called galloping, may occur where high winds prevail. Where there is the possibility of this phenomenon occurring, the cables should be spiraled around the strand immediately after placing, in accordance with instructions provided in REA TE & CM-635, "Construction of Aerial Cable Plant." If this is not done there is the possibility of the cable dancing sufficiently to cause contact between it and the power conductor above it.

2.12 REA TE & CM-635 should be consulted for construction practices.

2.13 All applicable requirements of the NESC should be complied with.

3. STRENGTH REQUIREMENTS

3.4 Longer spans could be provided by using 16M strand than with 6M or 10M but this large strand is out of proportion in size to small

cables and costs considerably more than 10M strand (about 30-35%). It is necessary to use 10M strand for small cables in extra long span construction where 6M strand would be adequate for short spans. This is because of the considerable sag that results in very long spans even with small cables if supported by small size strand.

3.5 Strand and the cable it supports can be equated in terms of bare wire for pole strength determination when using Figures RD-1 to 15 of Issue 1, REA TE & CM-690, "Joint Use of Poles." The transverse load that will be added on power poles by cable lashed to strand is given in the following table of equivalents to .109 inch diameter wire.

Table 2

APPROXIMATE EQUIVALENT IN NUMBERS OF 0.109 INCH DIAMETER BARE WIRES FOR CABLE LASHED TO 6M OR 10M STRAND FOR USE IN COMPUTING TRANSVERSE LOADS ON POLES

	Numbers of Wires		
	Storm Loading District		
Diameter, Cable Only	Heavy	Medium	Light
0.5 inch	2	2	8
0.75	2	4	12
1.0	2	4	14
1.25	4	4	16
1.5	4	4	18
1.75	4	6	20
2.0	4	6	22
2.25	4	6	24
2.5	4	6	28

Note: Diameters stated are for cable only; that is, strand diameter is not included. However, the data given in numbers of bare wires is based on the cable diameter plus the strand diameter. For example, a cable 0.5 inch in diameter lashed to a 6M or 10M strand when storm loaded equates approximately to 2 bare 0.109 inch diameter wires when these are storm loaded, in the heavy storm loading district.

4. CLEARANCE AND SEPARATION REQUIREMENTS

4.4 Where cable is attached to power poles that also support open wire telephone crossarms, the cable should be attached to the poles under the lowest crossarm to minimize the possibility of open wires swinging against the cable strand which is grounded. The final unloaded sag of cable and strand, especially in long span construction, generally is greater than the maintenance sag for open wires in the same spans.

This page was reissued to incorporate revised Table 2, formerly Addendum No. 4 to the Telephone Engineering and Construction Manual, Section 690.

4.5 Among the NESC requirements which should be observed are those relating to the location of vertical cable runs on poles, such as for underground feeds, dips and pole mounted cable terminals and loading coils.

4.6 Secondaries on power poles usually are below the neutral wire and generally are of such size that they are installed with the same sag as the neutral wire. The lowest secondary is assumed to be attached to poles 3 feet below the neutral wire. The data sheets provided herein are based on these assumptions.

4.7 REA TE & CM-690 in paragraphs 4.31 to 4.37 states in detail the requirements for vertical separations of circuits at the supports and in spans. Briefly stated these requirements are:

4.71 Minimum vertical separation at the supports between telephone

circuits and power conductors of less than 8700 volts between conductors is 40 inches. This includes separation from power transformers.

4.72 Minimum vertical separation at the supports between telephone circuits and power conductors of more than 8700 volts between conductors is 60 inches.

4.73 Minimum vertical separation in spans between telephone circuits and power conductors of less than 8700 volts between conductors is 30 inches.

4.74 Minimum vertical separation in spans between telephone circuits and power conductors of more than 8700 volts between conductors is 40 inches.

4.75 Other requirements are that (1) telephone circuit attachments on poles shall be adjusted so that at 60°F and no wind, no secondary (0-750 volts) shall hang below a straight line of sight between telephone circuit attachments on adjacent poles, and (2) no power conductor of more than 750 volts shall be lower than 30 inches above this line of sight. This applies even though a neutral is below the power conductors. The neutral in this case is covered by paragraphs 4.71 and 4.73 above.

4.8 The minimum permissible ground clearance for power wires along roads in rural areas under NESC rules usually is 18 feet basic, but this may be reduced to 15 feet basic where the ground under the line never will be traveled except by pedestrians.

Communication conductors (including cables) require 14 foot basic ground clearance in the same rural areas but may be 13 feet basic if not overhanging traveled portions of the road or 8 feet basic where the ground under the line will never be traveled except by pedestrians. Data herein covers basic ground clearances of 8, 10, 12 and 14 feet for telephone cable and assumes 15 foot minimum power wire ground clearance.

4.9 REA TE & CM-635 includes strand stringing tension and sag data at 20°, 60° and 100°F for 6M, 10M and 16M strands. Figure 1 herewith gives strand stringing sags at 60° for 6M and 10M strand.

4.10 Initial sag curves at 60°F and final sag curves at 120°F for cables weighing .25 to 1.0 pounds per foot with 6M and 10M strands are given in Figures 2 to 7, inclusive, for the heavy, medium and light loading areas. The 120°F sag curves are given because this gives the greatest sags that are likely to occur in hot weather.

5. CLIMBING SPACE REQUIREMENTS

5.3 Where two or more cables are attached to a power pole they shall be on the same side of the pole to comply with NESC climbing space requirements.

5.4 Cables preferably shall be attached to the same side of the pole as the power neutral wire.

6. ELECTRICAL PROTECTION REQUIREMENTS

6.3 The requirements of REA TE & CM-810, "Cable Circuit Protection" should be complied with. In brief, these requirements are that cable sheaths or shields be bonded to the MEN of the power system via the support strand and a vertical pole ground wire (1) at the beginning and end of the joint use section; (2) at one mile intervals (if the section is more than 1.5 miles in length); and (3) on every electric supply pole that carries a vertical pole ground wire to which is connected transformers, capacitors, or other types of power equipment that drew load current under normal conditions. In addition to the above grounding bonds the cable sheath or shield should be electrically connected to the central office ground.

7. INDUCTIVE COORDINATION

7.4 REA TE & CM-450, "Inductive Coordination - Telephone Circuit Noise Due to Induction from Electric Power Lines," should be consulted particularly as to the relative merits of cable on joint poles with power circuits versus cable on a pole line at highway separation from the power line.

8. ECONOMIC CONSIDERATIONS

8.5 Where more than two poles per mile require replacement or pole inserts to permit joint use for cable, the project is doubtful economically. Cost studies should be made in any event as outlined in REA TE & CM-205, "Preparation of an Area Coverage Design," and REA TE & CM-218, "Plant Annual Cost Data for System Design."

9. SAFETY CONSIDERATIONS

9.6 Telephone linemen should not work in power space above communication space on joint use poles. Vertical pole ground wires on electric supply poles that are interconnected to transformers or capacitor banks should be connected directly to the power system neutral. The transformer or capacitor banks should also have direct connections to the power system neutral. At such locations visual inspection from the ground should be made before climbing, to ascertain that the vertical pole ground wire is <u>actually</u> connected to the neutral. If it is not connected, this fact should be reported to

the power company and the wire should be regarded as energized. The pole should not be touched or climbed by telephone linemen until the condition has been corrected by the power company.

9.7 When suspension strand is installed it has much less sag than after cable is placed on it. Power wires have considerable sag in long span rural construction. Consequently, it may be necessary to attach the suspension strand temporarily at a point below its final attachment point to prevent contact with power wires above it on the same poles until cable is placed on the strand. The temporary location should keep the strand at mid-span below the lowest power wire attached to the poles above the strand. The temporary means of attachment can be by driving lag bolts into the poles or by placing other suitable support hardware at proper height to give the temporary clearance. Washers can be placed on the bolts and the strand can be placed on the bolts between the washers and poles. The strand then can be secured to the poles with .109 inch steel line wire to hold it temporarily until after the cable is supported by the strand. The strand and cable then can be raised to the throughbolts and the strand attached by three bolt cable clamps in the standard manner.

9.8 The curves of sags for strand only and for strand with cable in place can be used to determine the temporary location of the strand on the poles. For example, a 6M strand when installed will have about 2.5 feet of sag in a 300 foot span at 60°F. A cable weighing .5 pounds per foot on this strand will increase the sag to nearly 5 feet. Therefore in this case the strand should be placed 2.5 feet below its final location, assuming that this point is to bring the cable at mid-span to a point 30 inches below the lowest pole attached power wire.

9.9 Safety considerations dictate that cables be lashed in joint use construction from the ground rather than by a man riding the strand to handle the lashing machine.

9.10 Strand should be grounded at all times during installation and permanently bonded to the neutral power wire immediately after stringing.

9.11 In long spans intermediate poles between power poles to support the cable but not the power wires create an electrical hazard and should be avoided.

9.12 Telephone linemen may make bonding connections to vertical pole ground wires in communication space on joint use poles. If no vertical pole ground wire exists on a pole on which a grounding bond is required, sufficient bonding wire to reach and connect the MGN shall be left coiled and taped two feet above the cable. Attachment of this wire in electric supply space on the pole and

and connection to the [illegible] must be done by power company linemen.

10. DETERMINATION OF POLE REPLACEMENTS REQUIRED IN EXISTING POWER POLE LINES

10.52 Reference should be made to the REA TE & CS-690 paragraphs under this heading. In this addendum the vertical separation data are given in RD Figures 64 to 98 inclusive for cable placing.

10.53 The following examples are provided for use in determining the practicability of joint use for cable:

Example No. 4:

Conditions:

Cable Size	25 pr., 22 ga. plastic sheath and insulation.
Loading District	Heavy
Cable Ground Clearance	8 feet
Average Span Length	300 feet
Ground	Level
Power Pole Height	30 feet
Pole Class	Class 6
Secondaries	None
Power Wires	4-7/1 ACSR
Power Wire Configuration	Single Phase, 2 Wire
Voltage	7200 volts
Proposed Suspension Strand	6M
Ruling Span Length	326 feet

Solution:

Step 1. Cable Weight = .209 lb. per foot. Consider it to be .25 lb. per foot.

Step 2. Table 1 shows that this 25 pr. 22 ga. cable can be used on 6M strand for average spans up to 325 feet in heavy loading.

Step 3. Power neutral wire point of attachment above ground on 30 ft. pole is 21 feet.

Step 4. Power wire final sag in a 300 ft. span where ruling span is 326 feet is 3.5 feet (Figure 8).

Step 5. Initial sag of .25 lb. per foot cable on 6M strand, 300 ft. span, heavy loading, is 3.5 feet (Figure 2).

Step 6. Final sag of .25 lb. per foot cable on 6M strand, 300 ft. span, heavy loading is 6.0 feet (Figure 2).

Step 7. Because the initial sag of the cable will be equal to the final sag of the power wire (3.5 ft.) the cable can be attached 3.5 feet below the power wire point of attachment. This point is 21 minus 3.5 which is 17.5 feet above ground.

Step 8. With the cable attached 17.5 ft. above ground and final cable sag of 6.0 ft., the ground clearance at mid-span on level ground would be 11.5 feet.

Step 9. The attachment of the cable can be 3.5 feet below the point of power neutral attachment per Step 6 above. The cable equates to approximately 4 open wires per paragraph 3.5. The 4-7/1 ACSR power wire diameter is .257 inches (approximately .250 in.). Reference to REA TE & CM-690, RD Figure No. 2 for "2 power conductors" and "4 communication conductors" can be carried safely in 300 ft. spans by a Class 6 pole in heavy loading.

Example No. 5:

Conditions:

Cable Size	75 pr., 22 ga. plastic sheath and plastic insulation.
Loading Area	Medium
Cable Ground Clearance	8 feet
Average Span Length	350 feet
Ground	Level
Power Pole Height	35 foot
Pole Class	Class 7

Secondaries	None
Power Conductors	4-7/1 ACSR
Power Configuration	Single Phase, 2-wire
Voltage	7200 volts
Proposed Strand	6M
Ruling Span Length	425 feet

Solution

Step 1. Cable Weight = .504 lb. per foot. Consider it to be .5 lb. per foot.

Step 2. Table 1 shows that 75 pr., 22 gauge (.5 lb) cable on 6M strand can be used for average spans up to 400 feet in medium loading.

Step 3. Power neutral wire point of attachment above ground on 35 ft. pole is 25.5 feet.

Step 4. Power wire final sag at 350 feet where ruling span is 425 feet is 3.0 feet (Figure 12).

Step 5. Initial sag of .5 lb. per ft. cable on 6M strand, 350 ft. span, medium loading is 6.0 feet (Figure 3).

Step 6. Final sag of .5 lb. per ft. cable on 6M strand, 350 ft. span, medium loading is 7.75 feet (Figure 3).

Step 7. The cable must be attached to the pole at least 3.5 feet below the neutral wire. Because the initial cable sag (6 feet) is greater than the final sag of the neutral wire (3 feet) the cable will not violate the 2.5 foot required separation at mid-span. The cable attachment point will be 25.5 less 3.5 which is 22 feet above ground.

Step 8. The cable final sag of 7.75 feet means its final ground clearance will be 22 minus 7.75 which is 14.25 feet at mid-span. This fulfills the 8 ft. desired ground clearance requirement.

Step 9. The point of attachment of the cable will be at 22 ft. above ground which is 3.5 feet below the neutral wire attachment point (call it 4 feet). The cable equates to 6 open wires

per paragraph 3.5 in the medium loading area. The 4-7/1 ACSR power wire diameter is .257 in. (approximately .250 in.). Reference to Section 690, RD Figure No. 7 for "2 power conductors" and "6 telephone conductors" shows that a class 7 pole will safely carry the combined load in 350 ft. spans in the medium loading area.

11. STAKING OF JOINT USE LINE

11.6 Reference should be made to the REA TE & CM-690 paragraphs under this heading. In this addendum the staking tables are given in RD Figures 99 to 118 inclusive.

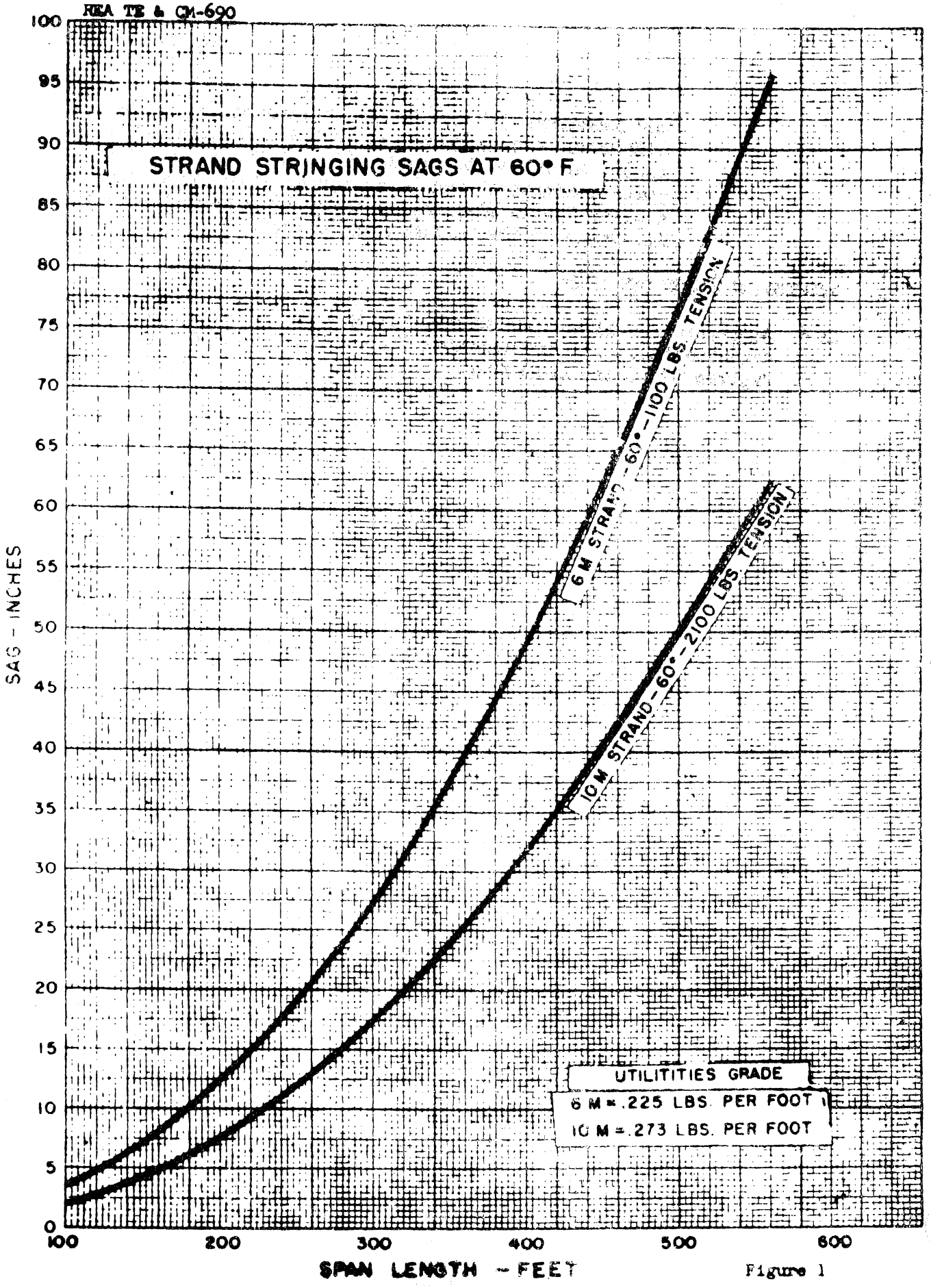

STRAND STRINGING SAGS AT 60° F.
6 M STRAND - 60° - 1100 LBS TENSION
10 M STRAND - 60° - 2100 LBS TENSION
UTILITITIES GRADE
6 M = .225 LBS. PER FOOT
10 M = .273 LBS. PER FOOT
SAG - INCHES
SPAN LENGTH - FEET
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
95
100
100
200
300
400
500
600

Figure 1

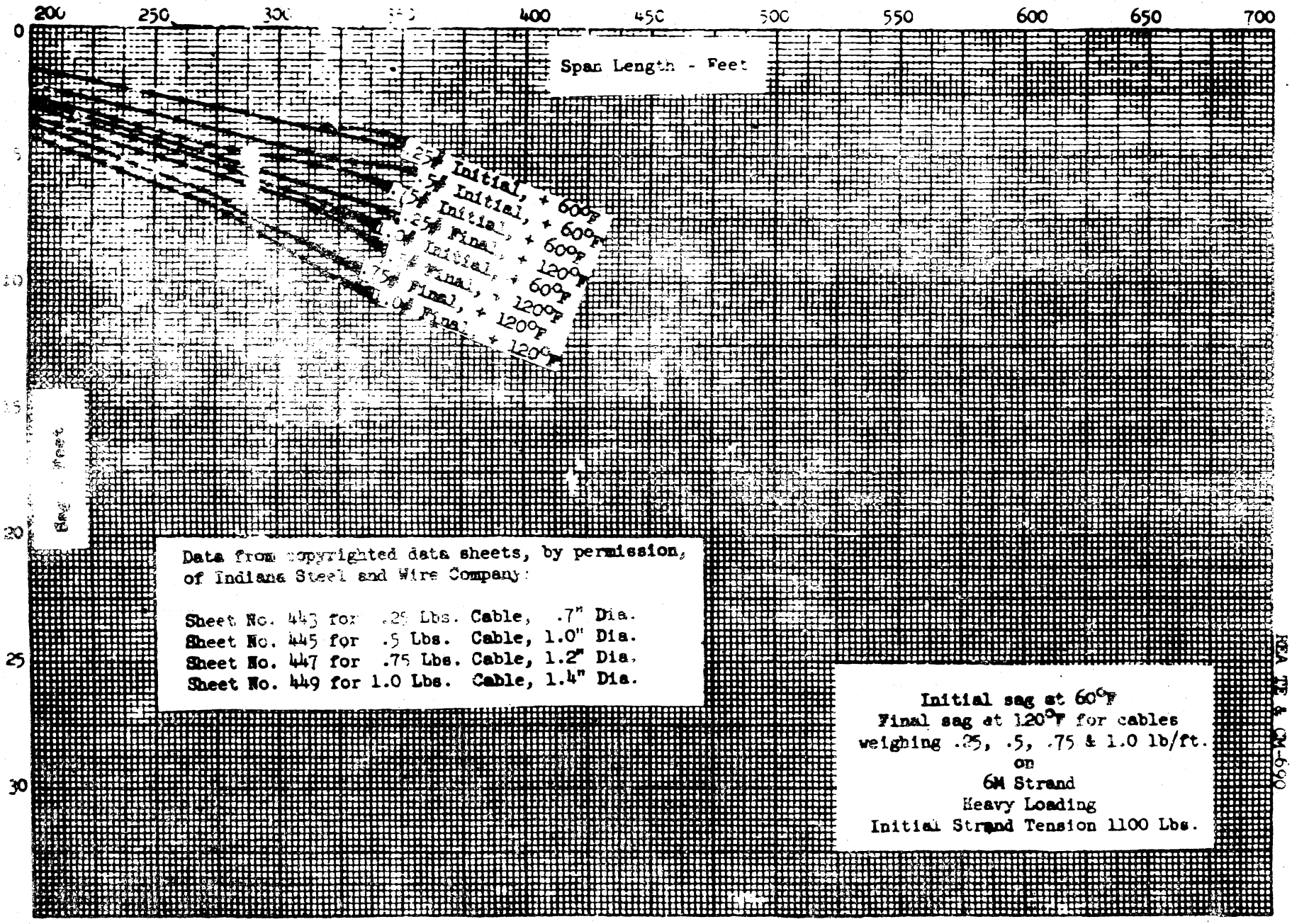

200
250
300
400
450
500
550
600
650
700
0
10
15
20
25
30
Span Length - Feet
Initial, + 60°F
Initial, + 60°F
Initial, + 60°F
Final, + 120°F
Initial, + 60°F
Final, + 120°F
Final, + 120°F
Data from copyrighted data sheets, by permission, of Indiana Steel and Wire Company:
Sheet No. 443 for .25 Lbs. Cable, .7" Dia.
Sheet No. 445 for .5 Lbs. Cable, 1.0" Dia.
Sheet No. 447 for .75 Lbs. Cable, 1.2" Dia.
Sheet No. 449 for 1.0 Lbs. Cable, 1.4" Dia.
Initial sag at 60°F
Final sag at 120°F for cables weighing .25, .5, .75 & 1.0 lb/ft.
on
6M Strand
Heavy Loading
Initial Strand Tension 1100 Lbs.

Figure 2

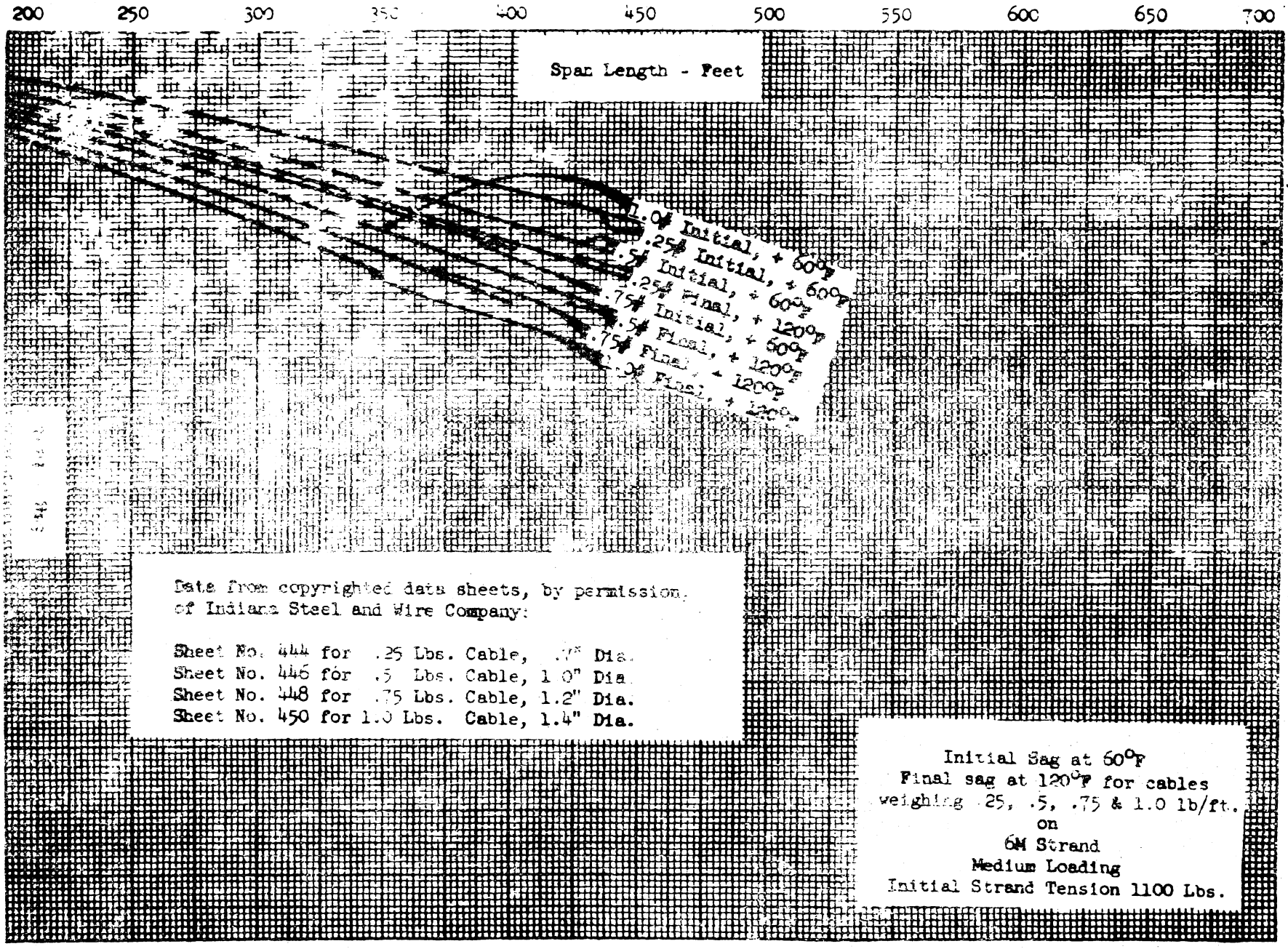

200
250
300
350
400
450
500
550
600
650
700
Span Length - Feet
1.0# Initial, + 60°F
.25# Initial, + 60°F
.5# Initial, + 60°F
1.25# Final, + 120°F
.75# Initial, + 60°F
.5# Final, + 120°F
.75# Final, + 120°F
1.0# Final, + 120°F
Data from copyrighted data sheets, by permission of Indiana Steel and Wire Company:
Sheet No. 444 for .25 Lbs. Cable, .7" Dia.
Sheet No. 446 for .5 Lbs. Cable, 1.0" Dia.
Sheet No. 448 for .75 Lbs. Cable, 1.2" Dia.
Sheet No. 450 for 1.0 Lbs. Cable, 1.4" Dia.
Initial Sag at 60°F
Final sag at 120°F for cables
weighing .25, .5, .75 & 1.0 lb/ft.
on
6M Strand
Medium Loading
Initial Strand Tension 1100 Lbs.

Figure 3

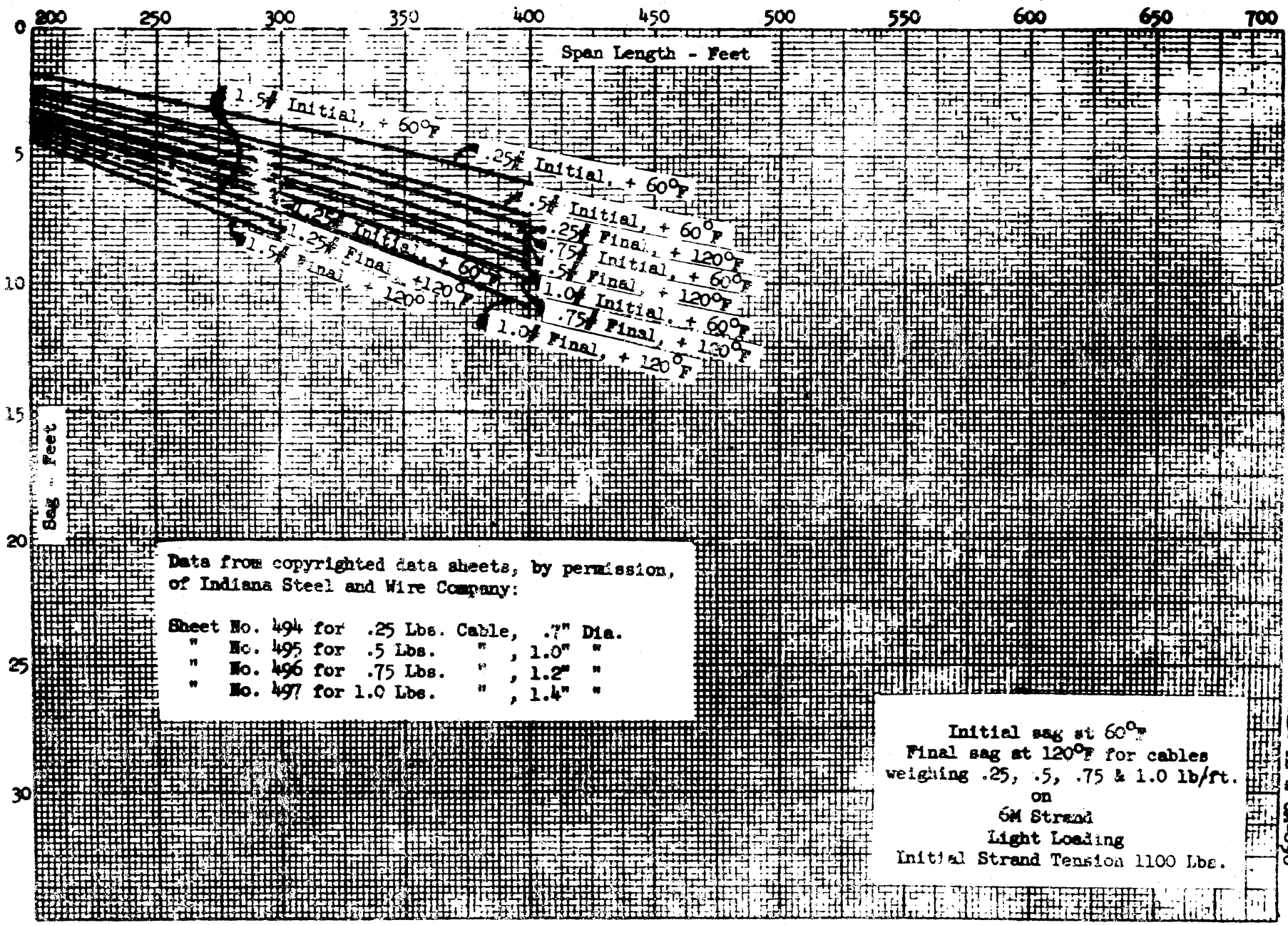

200
250
300
350
400
450
500
550
600
650
700
0
5
10
15
20
25
30
Span Length - Feet
Sag - Feet
1.5# Initial, + 60°F
1.5# Final, + 120°F
1.25# Initial, + 60°F
1.25# Final, + 120°F
1.0# Initial, + 60°F
1.0# Final, + 120°F
.75# Initial, + 60°F
.75# Final, + 120°F
.5# Initial, + 60°F
.5# Final, + 120°F
.25# Initial, + 60°F
.25# Final, + 120°F
Data from copyrighted data sheets, by permission, of Indiana Steel and Wire Company:
Sheet No. 494 for .25 Lbs. Cable, .7" Dia.
" No. 495 for .5 Lbs. " , 1.0" "
" No. 496 for .75 Lbs. " , 1.2" "
" No. 497 for 1.0 Lbs. " , 1.4" "
Initial sag at 60°F
Final sag at 120°F for cables
weighing .25, .5, .75 & 1.0 lb/ft.
on
6M Strand
Light Loading
Initial Strand Tension 1100 Lbs.
REA TE & CM-690

Figure 4

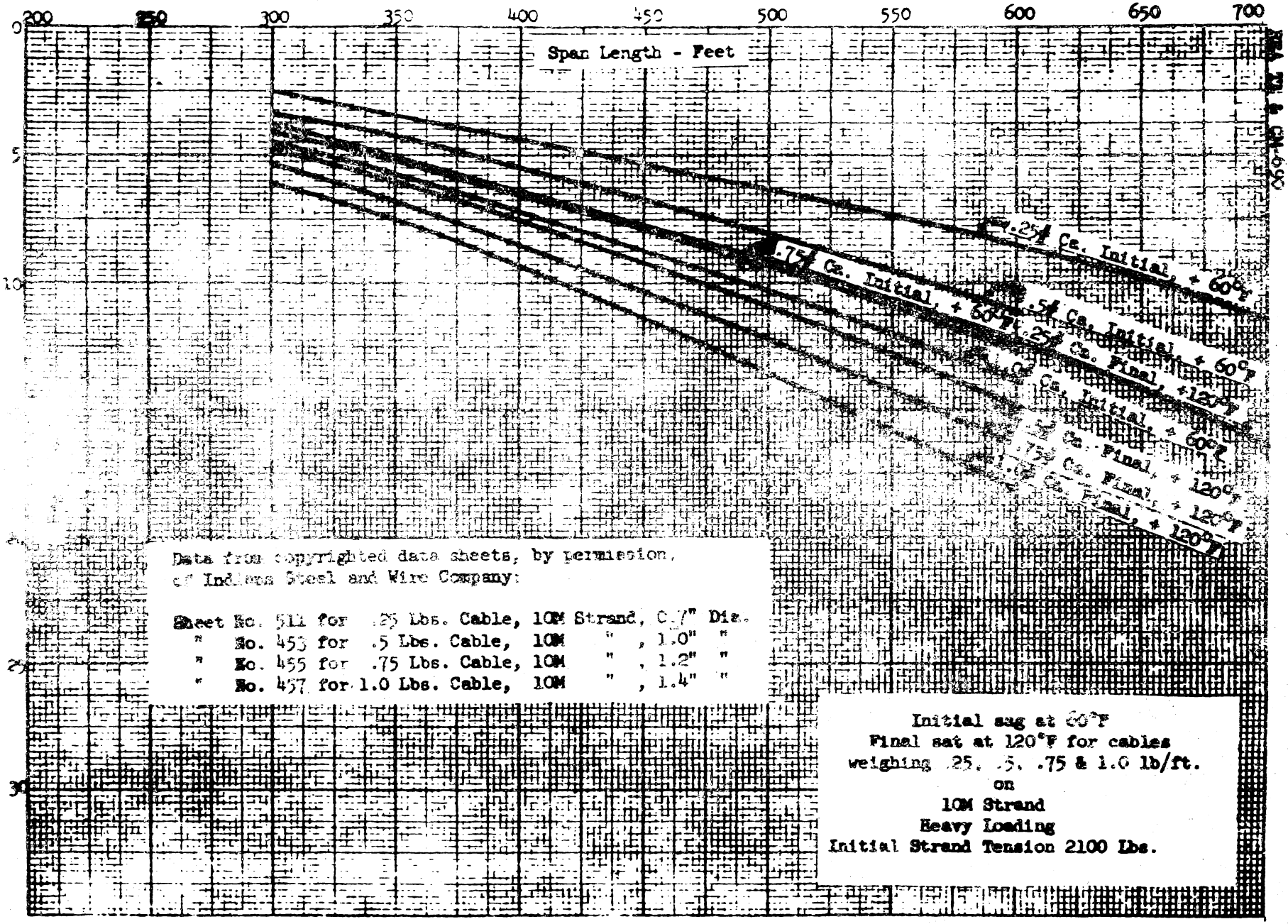
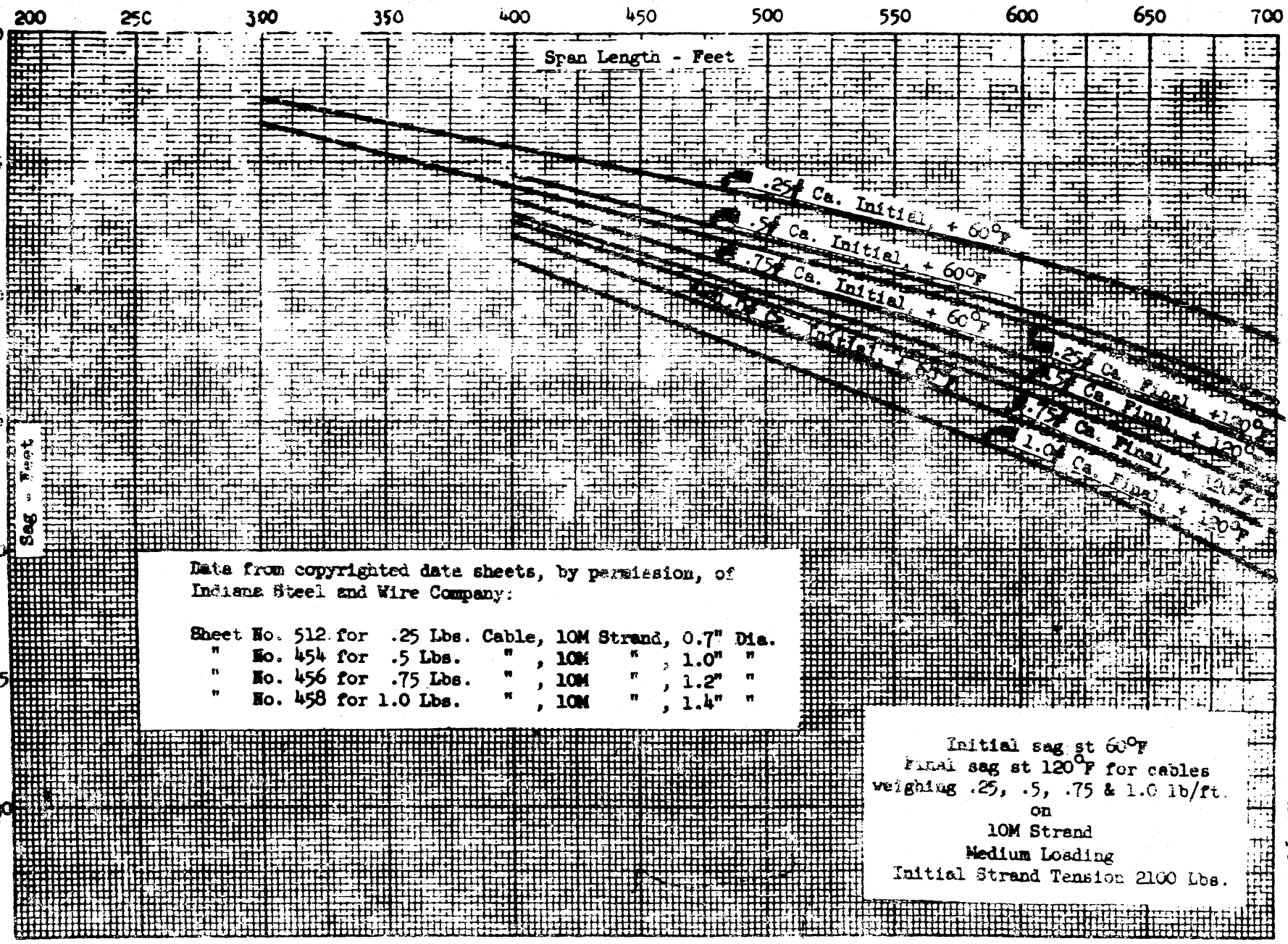

Span Length - Feet
200
250
300
350
400
450
500
550
600
650
700
0
5
10
25
30
.25# Ca. Initial, + 60°F
.5# Ca. Initial, + 60°F
.75# Ca. Initial, + 60°F
1.0# Ca. Initial, + 60°F
.25# Ca. Final, +120°F
.5# Ca. Final, + 120°F
.75# Ca. Final, + 120°F
1.0# Ca. Final, + 120°F
Data from copyrighted data sheets, by permission, of Indiana Steel and Wire Company:
Sheet No. 511 for .25 Lbs. Cable, 10M Strand, 0.7" Dia.
" No. 453 for .5 Lbs. Cable, 10M " , 1.0" "
" No. 455 for .75 Lbs. Cable, 10M " , 1.2" "
" No. 457 for 1.0 Lbs. Cable, 10M " , 1.4" "
Initial sag at 60°F
Final sat at 120°F for cables
weighing .25, .5, .75 & 1.0 lb/ft.
on
10M Strand
Heavy Loading
Initial Strand Tension 2100 Lbs.

Figure 5



REA TE & CM-6(M)

Figure 6

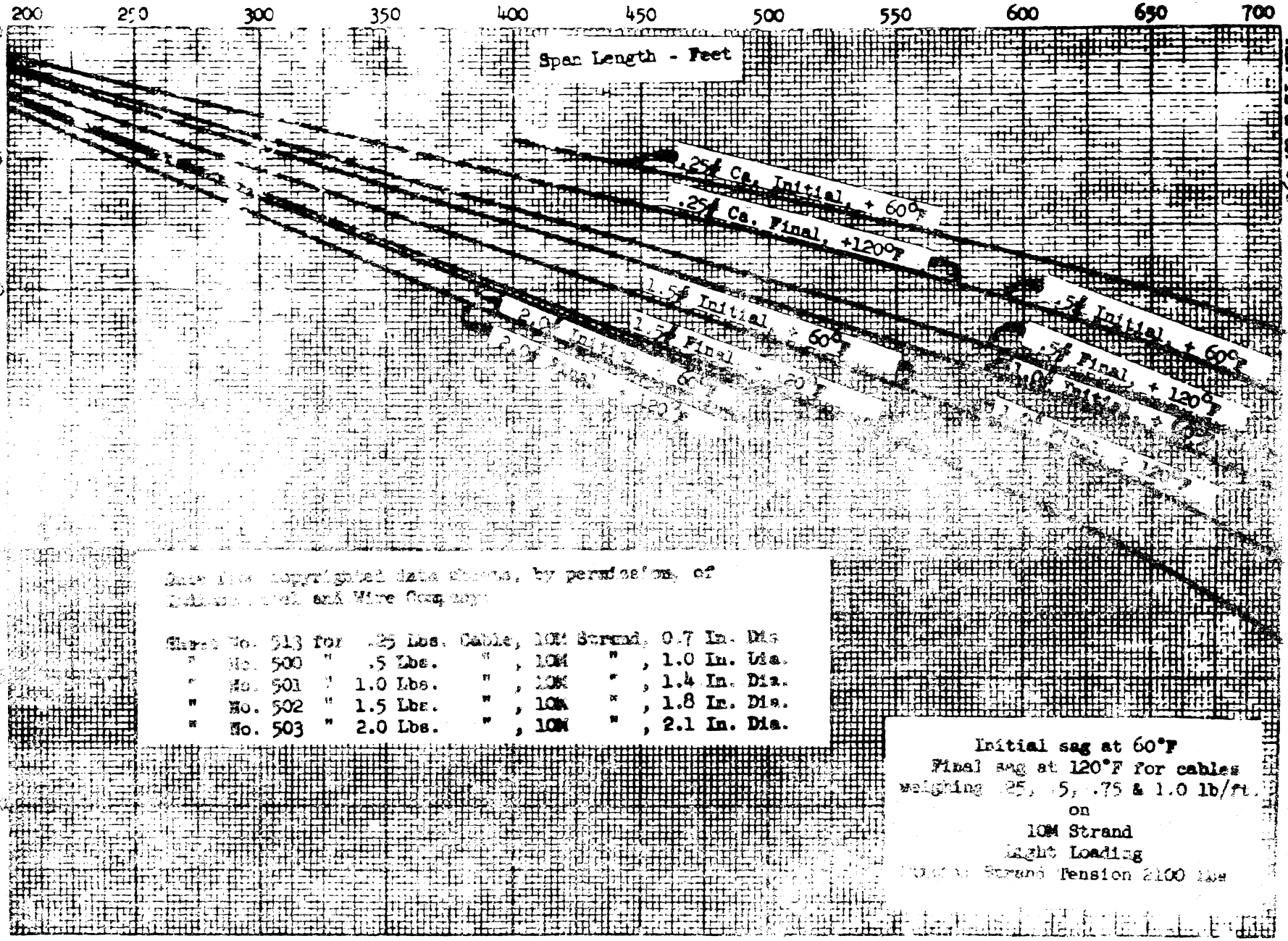

200
250
300
350
400
450
500
550
600
650
700
0
5
10
Span Length - Feet
REA TE & CM-690
.25# Ca. Initial, + 60°F
.25# Ca. Final, +120°F
.5# Initial, + 60°F
.5# Final, + 120°F
1.5# Initial, + 60°F
1.5# Final
2.0# Initial, + 60°F
Initial sag at 60°F
Final sag at 120°F for cables
weighing .25, .5, .75 & 1.0 lb/ft.
on
10M Strand
Light Loading
Strand Tension 2100 lbs
Sheet No. 513 for .25 Lbs. Cable, 10M Strand, 0.7 In. Dia
" No. 500 " .5 Lbs. " , 10M " , 1.0 In. Dia.
" No. 501 " 1.0 Lbs. " , 10M " , 1.4 In. Dia.
" No. 502 " 1.5 Lbs. " , 10M " , 1.8 In. Dia.
" No. 503 " 2.0 Lbs. " , 10M " , 2.1 In. Dia.

Figure 7

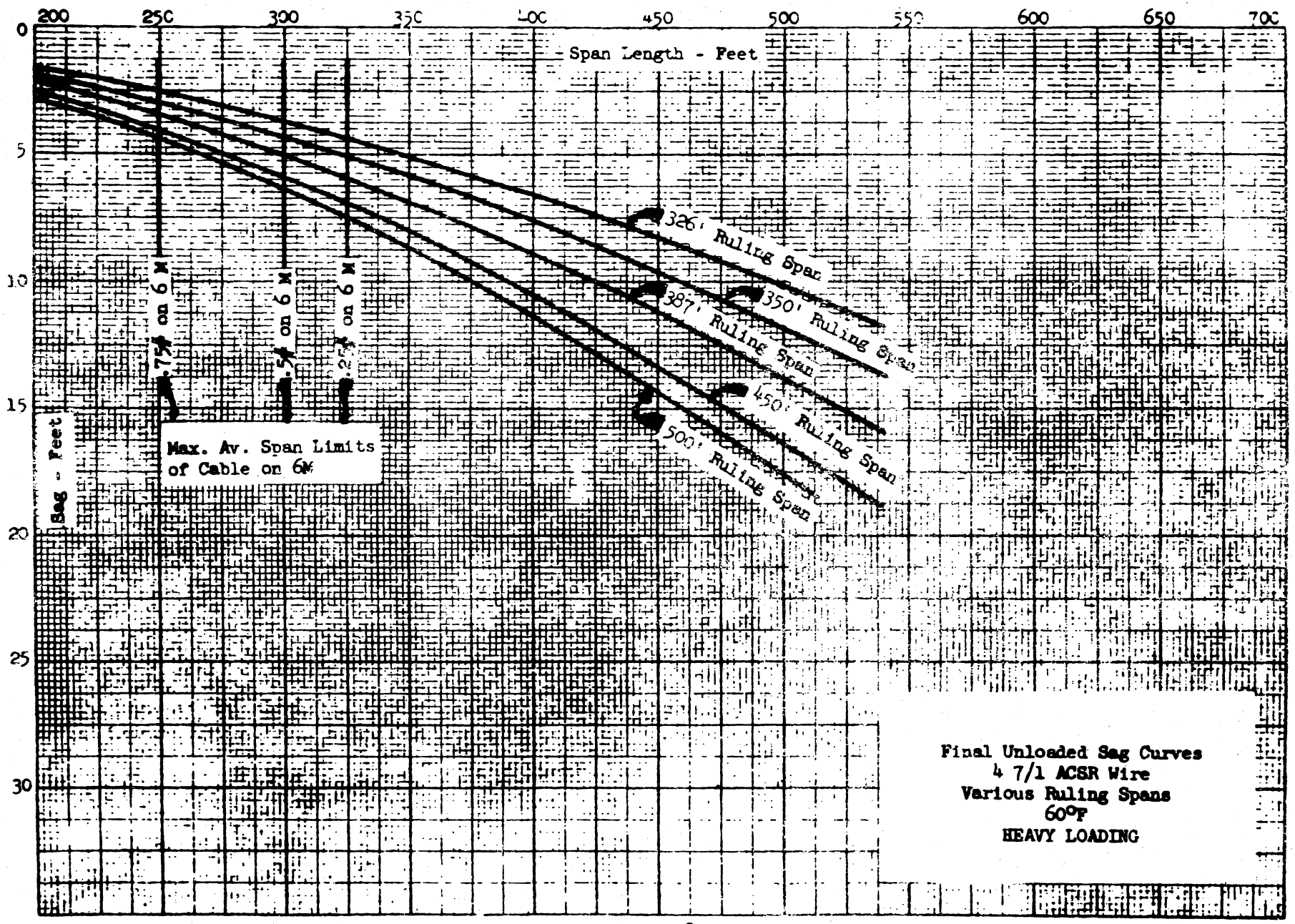

200
250
300
350
400
450
500
550
600
650
700
0
5
10
15
20
25
30
Span Length - Feet
Sag - Feet
326' Ruling Span
350' Ruling Span
387' Ruling Span
450' Ruling Span
500' Ruling Span
Max. Av. Span Limits of Cable on 6
Final Unloaded Sag Curves
4 7/1 ACSR Wire
Various Ruling Spans
60°F
HEAVY LOADING
REA TE & CM-690

Figure 8

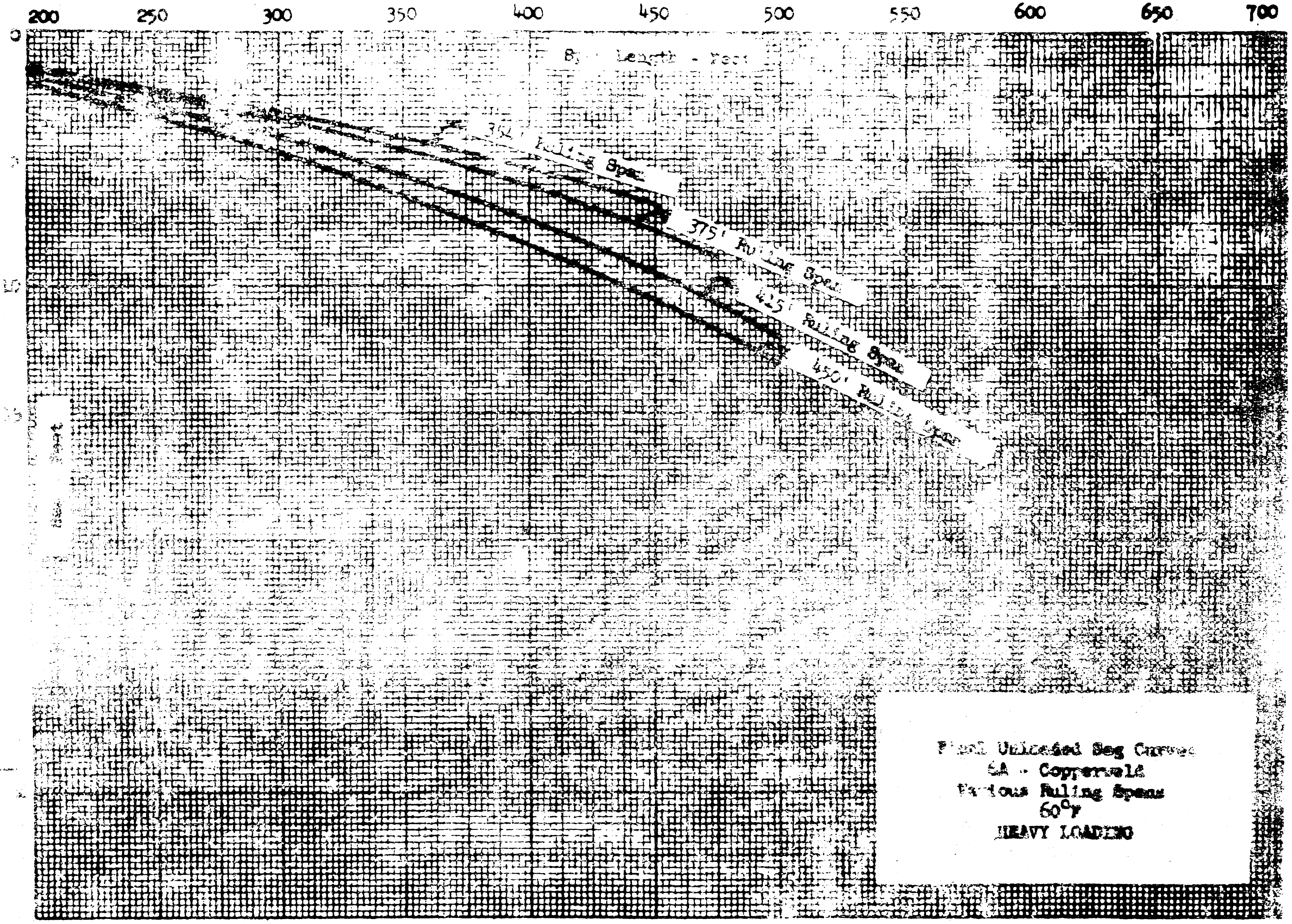

200
250
300
350
400
450
500
550
600
650
700
0
10
375' Ruling Span
425' Ruling Span
Unloaded Sag Curves
6A - Copperweld
Ruling Spans
60°F
HEAVY LOADING

Figure 9

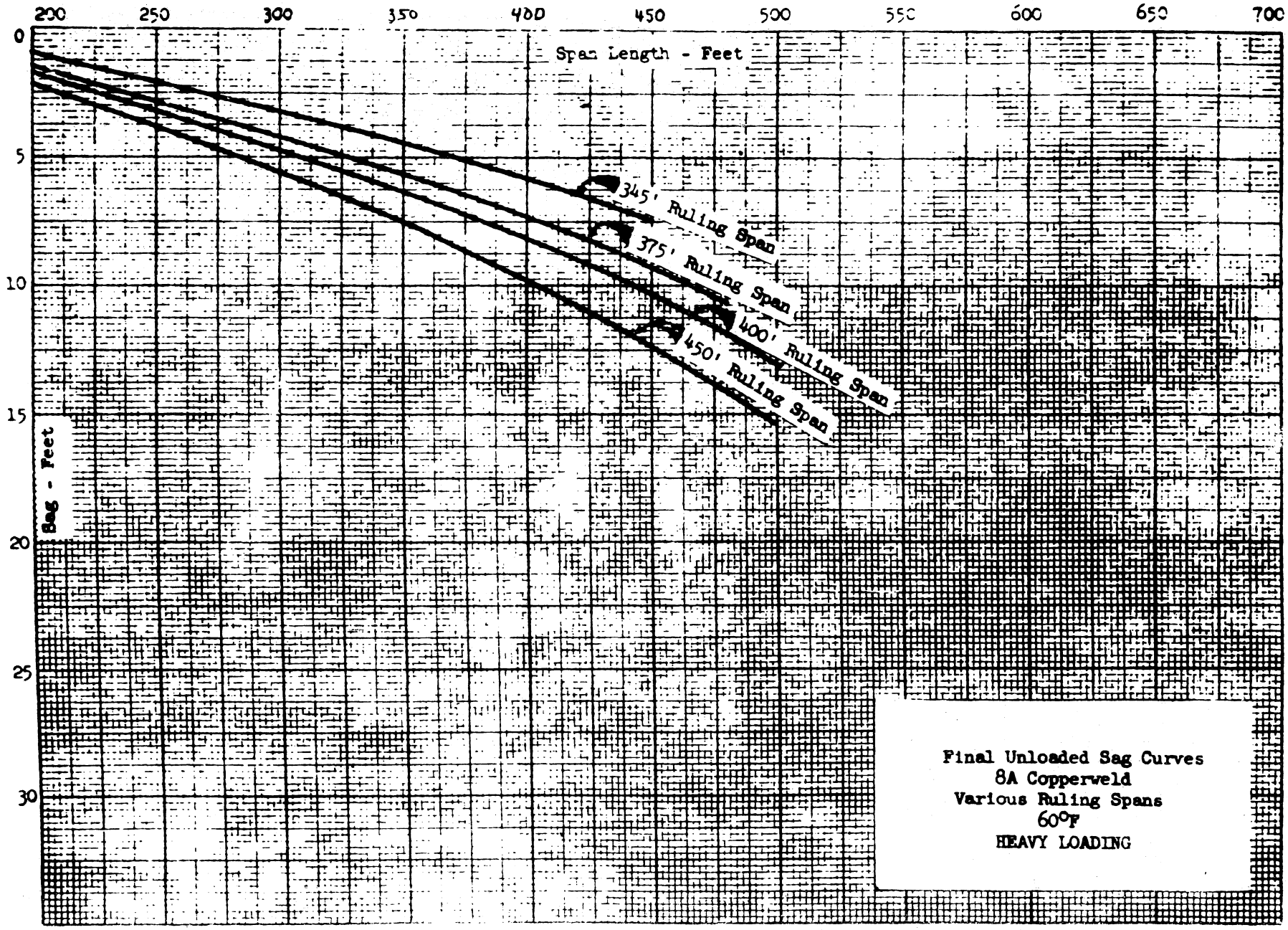

200
250
300
350
400
450
500
550
600
650
700
0
5
10
15
20
25
30
Span Length - Feet
Sag - Feet
345' Ruling Span
375' Ruling Span
400' Ruling Span
450' Ruling Span
Final Unloaded Sag Curves
8A Copperweld
Various Ruling Spans
60°F
HEAVY LOADING
REA TE & CM-690

Figure 10

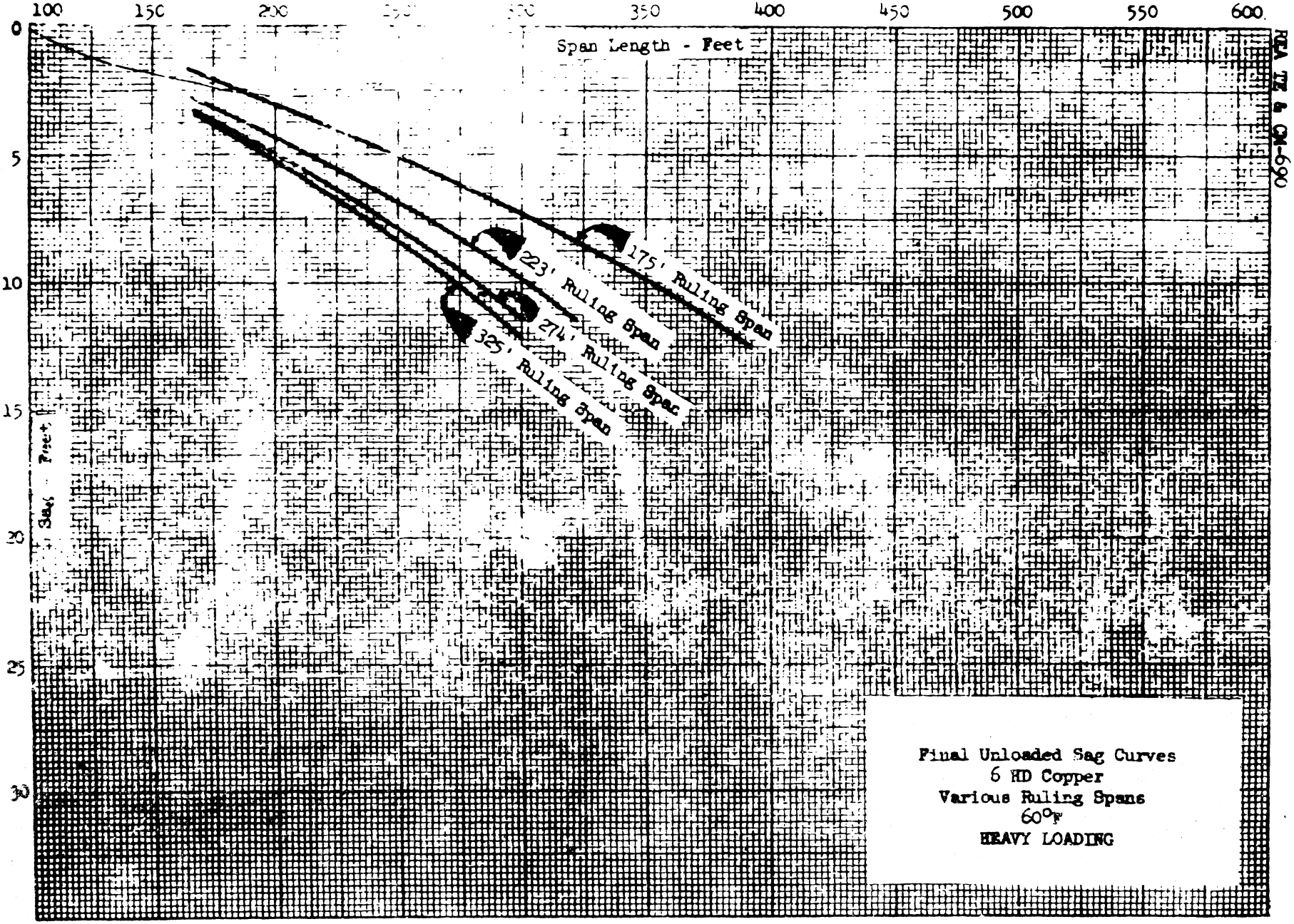

100
150
200
350
400
450
500
550
600
0
5
10
15
20
25
30
Span Length - Feet
175' Ruling Span
223' Ruling Span
274' Ruling Span
325' Ruling Span
REA TE & CM-600
Final Unloaded Sag Curves
6 HD Copper
Various Ruling Spans
60°F
HEAVY LOADING

Figure 11

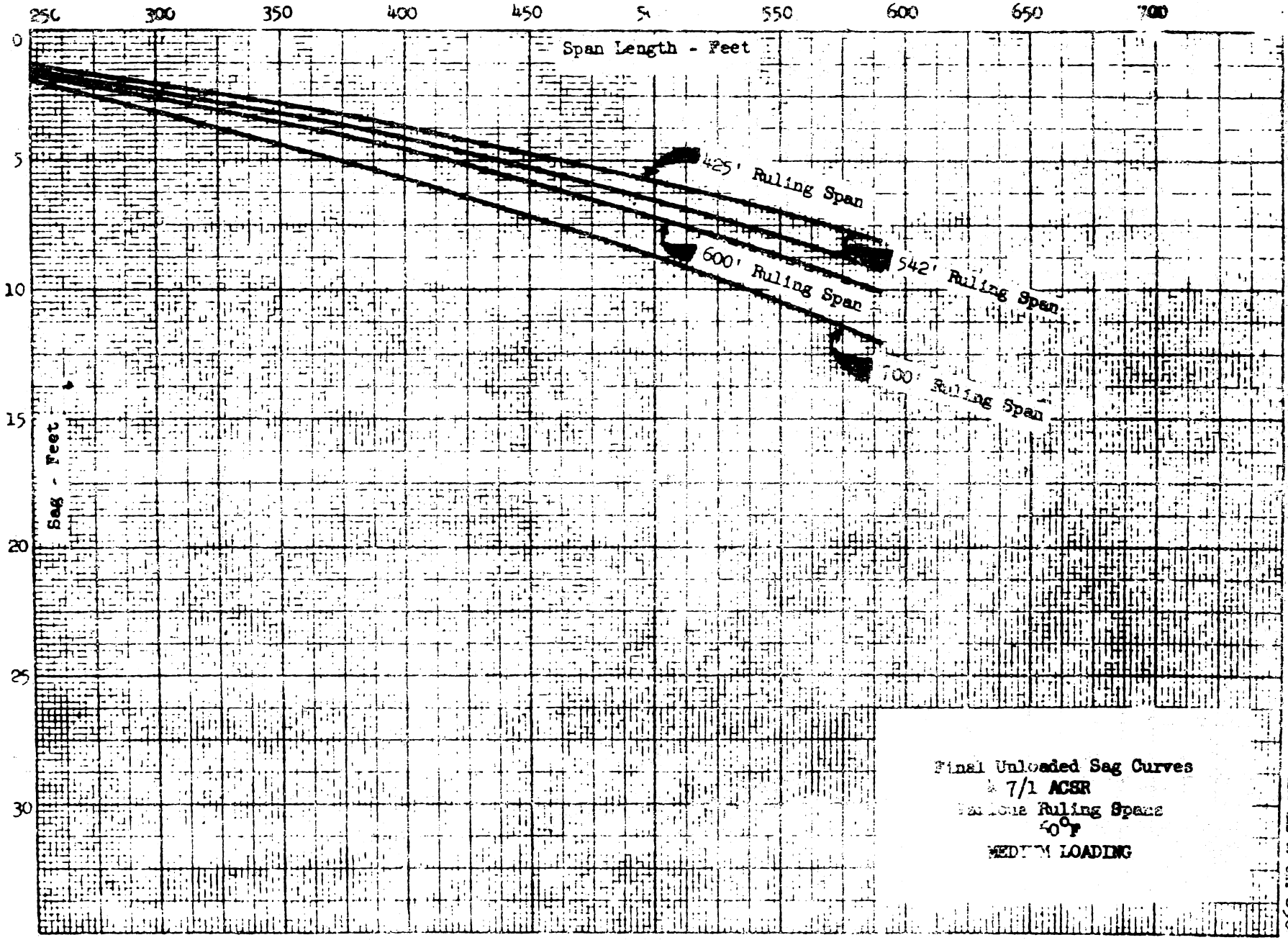

250
300
350
400
450
550
600
650
Span Length - Feet
0
5
10
15
20
25
30
Sag - Feet
425' Ruling Span
542' Ruling Span
600' Ruling Span
700' Ruling Span
Final Unloaded Sag Curves
7/1 ACSR
Various Ruling Spans
60°F
MEDIUM LOADING
REA BE & CM-690

Figure 12

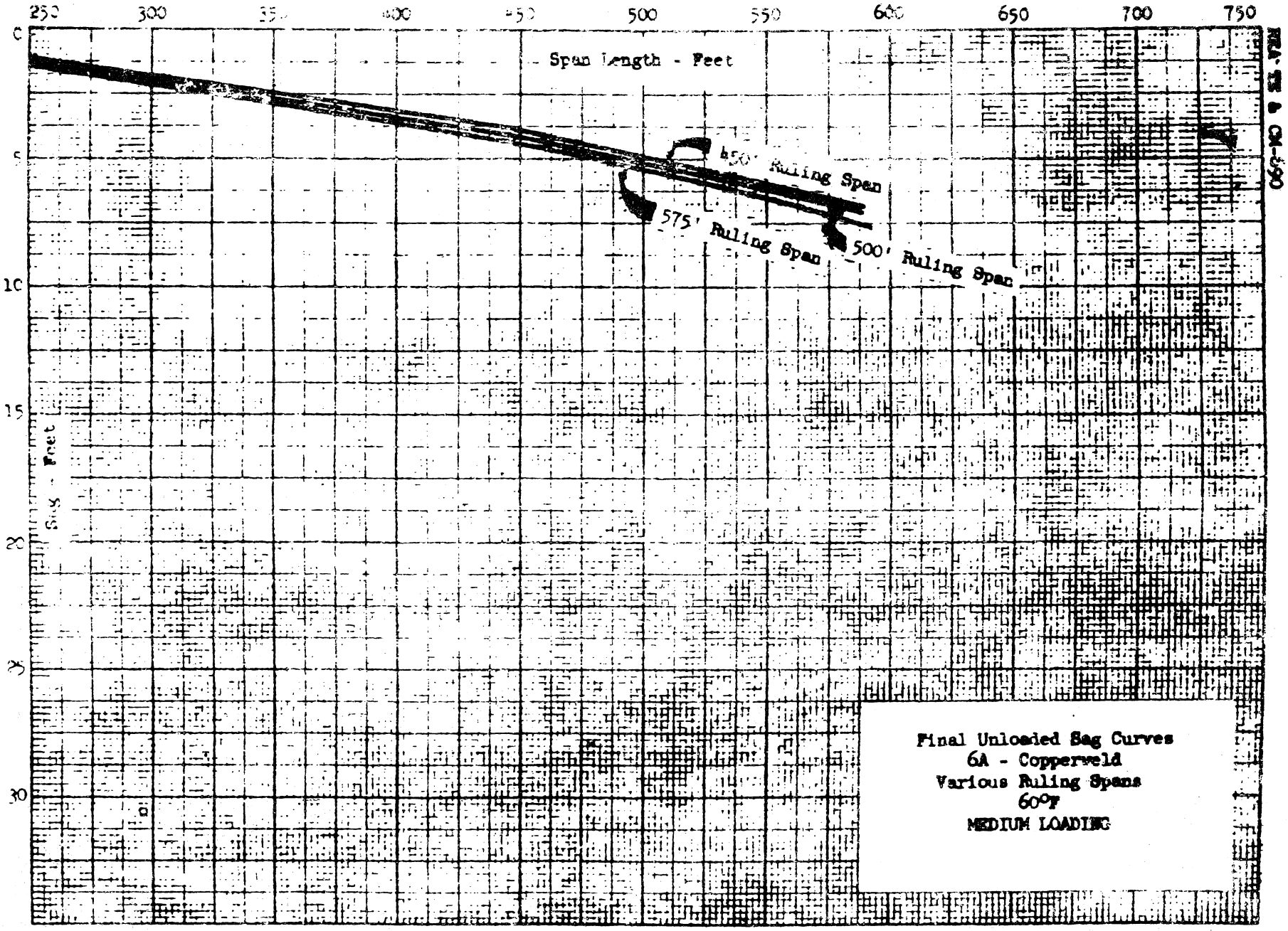

250
300
500
550
650
700
750
Span Length - Feet
650' Ruling Span
575' Ruling Span
500' Ruling Span
Sag - Feet
0
5
10
15
20
25
30
Final Unloaded Sag Curves
6A - Copperweld
Various Ruling Spans
60°F
MEDIUM LOADING

Figure 13

REA TE & CM-690

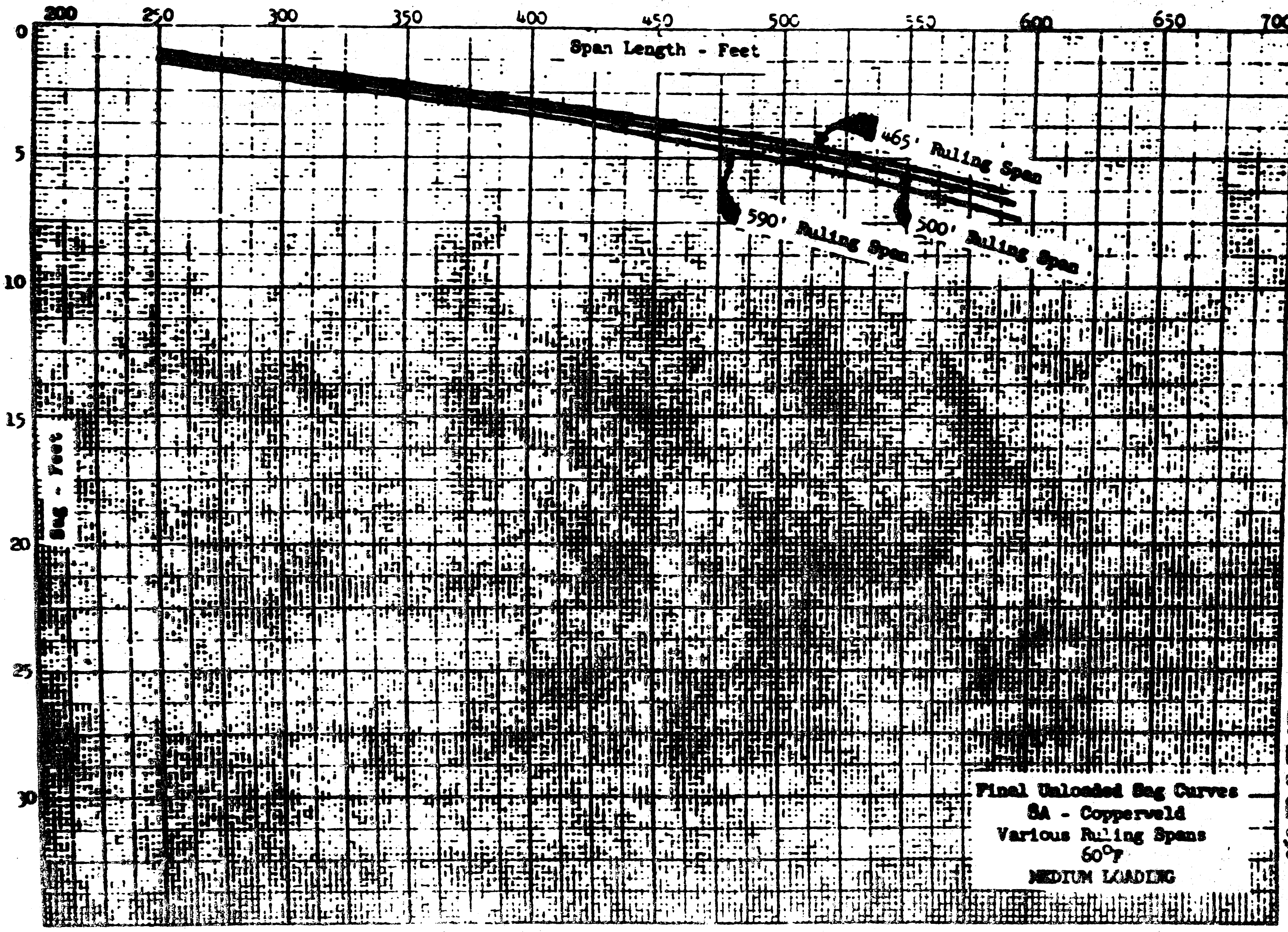


Figure 14

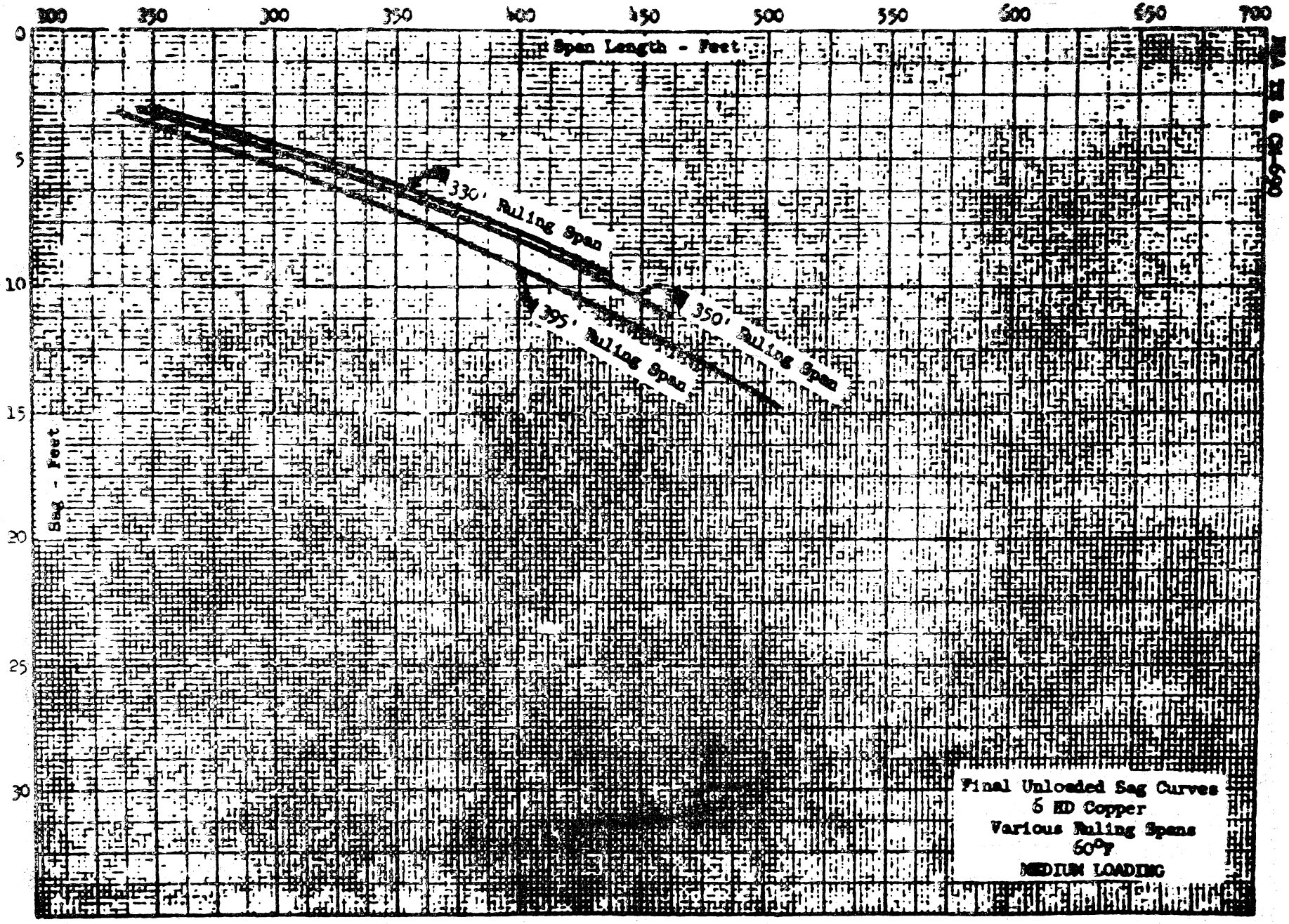

Span Length - Feet
Sag - Feet
330' Ruling Span
350' Ruling Span
395' Ruling Span
Final Unloaded Sag Curves
6 HD Copper
Various Ruling Spans
60°F
MEDIUM LOADING

Figure 15

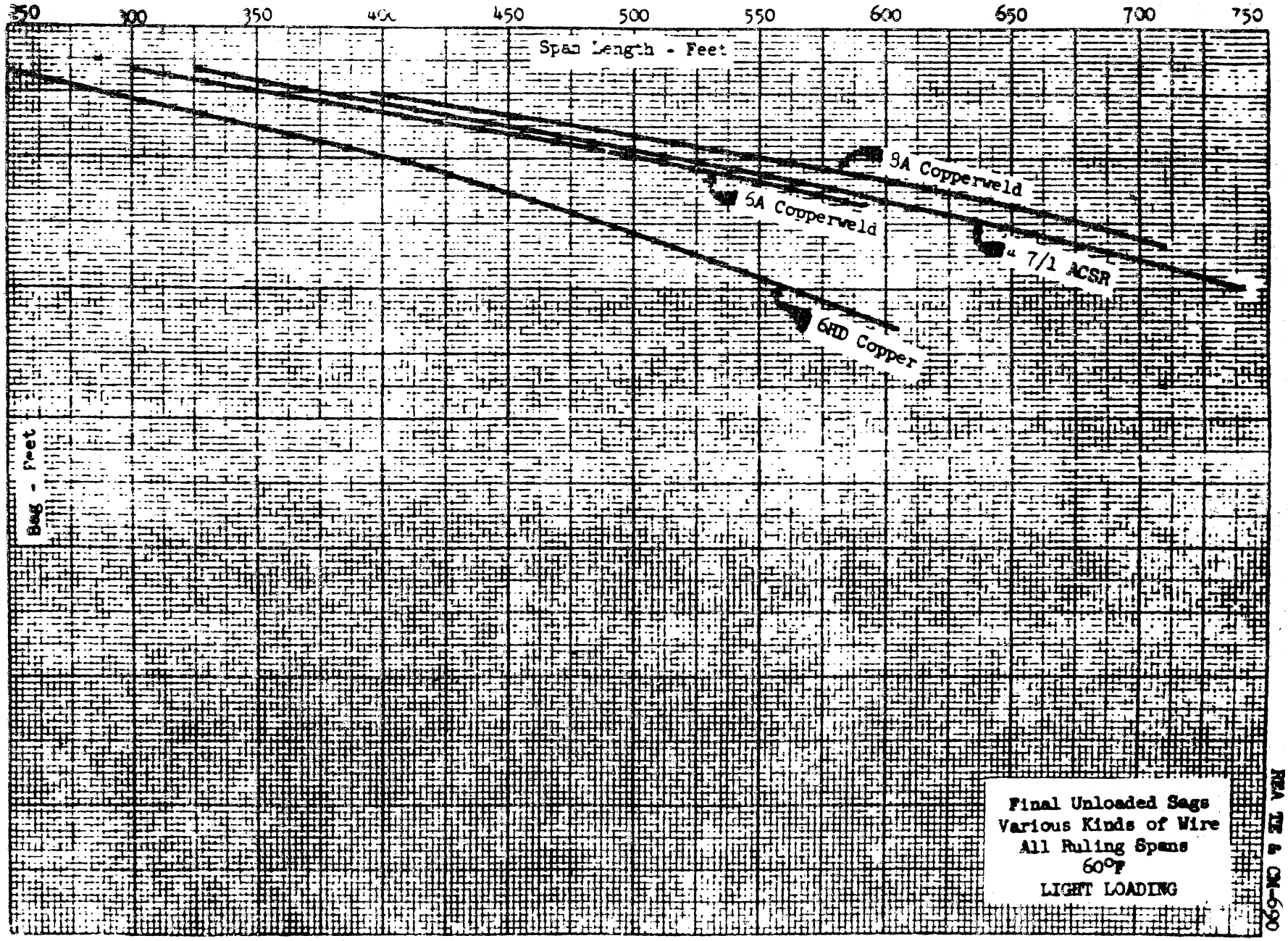

250
300
350
400
450
500
550
600
650
700
750
Span Length - Feet
0
5
10
15
20
25
30
Sag - Feet
9A Copperweld
6A Copperweld
4 7/1 ACSR
6HD Copper
Final Unloaded Sags
Various Kinds of Wire
All Ruling Spans
60°F
LIGHT LOADING
REA TE & CM-600

Figure 16

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES - Feet

When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT: Heavy

POWER CONDUCTORS: 4-7/1 ACSR

TELEPHONE CONDUCTORS: All Cables Weighing .5# or less per ft

MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS

SPAN LENGTH FT	326' RULING SPAN		350' RULING SPAN		RULING SPAN		RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200	3.5	6.5	3.5	6.5						
210	"	"	"	"						
220	"	"	"	"						
230	"	"	"	"						
240	"	"	"	"						
250	"	"	"	"						
260										
270		"	"	"						
280	"	"	"	7.0						
290	"	"	"	"						
300	"	7.0	"	7.5						
310	"	"	"	8.0						
320	"	7.5	"	"						
330	"	"	4.0	8.5						
340										
350										
360										
370										
380										
390										
400										
410										
420										
430										
440										
450										
460										
470										
480										
490										
500										
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40-inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30-inch minimum midspan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

RD-Figure No. 64

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES - Feet

When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT

POWER CONDUCTOR: 6 A CW

TELEPHONE CONDUCTOR: .25# Cu. on 6M Strand

MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS

SPAN LENGTH FT.	35½ RULING SPAN		RULING SPAN		RULING SPAN		RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200	3.5	6.5								
210	"	"								
220	"	"								
230	"	"								
240	"	"								
250	"	"								
260	"	"								
270	"	"								
280	"	"								
290	"	"								
300	"	"								
310	"	"								
320	"	"								
330	"	7.0								
340										
350										
360										
370										
380										
390										
400										
410										
420										
430										
440										
450										
460										
470										
480										
490										
500										
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40-inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30-inch minimum midspan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

R)-Figure No. 65

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES - Feet

LOADING DISTRICT: Heavy

POWER CONDUCTOR: 8A CW

TELEPHONE CONDUCTOR: .25# Cu. on 6M Strand

When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS

SPAN LENGTH FT	345 RULING SPAN		RULING SPAN		RULING SPAN		RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200	35	65								
210	"	"								
220	"	"								
230	"	"								
240	"	"								
250	"	"								
260	"	"								
270	"	"								
280	"	"								
290	"	"								
300	"	"								
310	"	"								
320	"	70								
330	"	"								
340										
350										
360										
370										
380										
390										
400										
410										
420										
430										
440										
450										
460										
470										
480										
490										
500										
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40-inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30-inch minimum sidespan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

RD-Figure No. 66

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES - Feet

When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT: Heavy

POWER CONDUCTOR: 6 HD Copper

TELEPHONE CONDUCTOR: .25# Ca. on 6M Strand

SPAN LENGTH FT	MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS									
	175 RULING SPAN		223 RULING SPAN		274 RULING SPAN		325 RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200	4.5	7.5	5.5	8.5	6.0	9.0	6.5	9.5		
210	"	"	"	"	6.5	9.5	7.0	10.0		
220	"	"	6.0	9.0	7.0	10.0	"	"		
230	5.0	8.0	"	"	"	"	7.5	10.5		
240	"	"	6.5	9.5	7.5	10.5	8.0	11.0		
250	"	8.5	7.0	10.0	8.0	11.0	8.5	11.5		
260	5.5	"	"	"	8.5	11.5	9.0	12.5		
270	"	9.0	7.5	11.0	"	12.5	9.5	13.5		
280	6.0	9.5	8.0	11.5	9.0	13.0	10.0	"		
290	"	10.0	8.5	12.5	9.5	13.5	10.5	14.5		
300	6.5	10.5	9.0	13.0	10.0	14.5	11.0	15.5		
310	"	11.0	9.5	13.5	11.0	15.5				
320	7.0	11.5	10.0	14.5						
330	7.5	12.0								
340										
350										
360										
370										
380										
390										
400										
410										
420										
430										
440										
450										
460										
470										
480										
490										
500										
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements

1. 40-inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30-inch minimum midspan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES - Feet

When communications are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT: Heavy

POWER CONDUCTOR: 6 HD Copper

TELEPHONE CONDUCTOR: .5# Ca. on 6M Strand

SPAN LENGTH FT	MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS									
	175 RULING SPAN		223 RULING SPAN		274 RULING SPAN		325 RULING SPAN		RULING SPAN	
	LOWER POWER COND		LOWER POWER COND		LOWER POWER COND		LOWER POWER COND		LOWER POWER COND	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200	3.5	6.5	4.5	7.5	5.5	8.5	5.5	8.5		
210	4.0	"	5.0	8.0	"	"	6.0	9.0		
220	"	7.0	5.5	8.5	6.0	9.0	6.5	9.5		
230	"	7.5	"	9.0	"	9.5	"	10.0		
240	"	8.0	6.0	9.5	6.5	10.5	7.0	11.0		
250	4.5	8.0	6.0	10.0	7.0	11.0	7.5	11.5		
260	"	8.5	6.5	10.5	7.5	11.5	8.0	12.5		
270	"	9.0	7.0	11.0	8.0	12.5	8.0	13.0		
280	5.0	9.5	7.5	12.0	8.5	13.0	9.5	13.5		
290	5.5	10.0	8.0	12.5	9.5	14.0	10.0	14.5		
300	6.0	10.5	8.5	13.0	10.0	14.5	11.0	15.5		
310										
320										
330										
340										
350										
360										
370										
380										
390										
400										
410										
420										
430										
440										
450										
460										
470										
480										
490										
500										
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements

1. 40-inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral)
2. 30-inch minimum midspan separation between highest telephone conductor and neutral or secondaries
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral

RD-Figure No. 68

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES - Feet

When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT: Heavy

POWER CONDUCTOR: 6 ND Copper

TELEPHONE CONDUCTOR: .75# Cu. on 6M Strand

SPAN LENGTH FT.	MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS									
	175 RULING SPAN		223 RULING SPAN		274 RULING SPAN		RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200	3.5	6.5	4.0	7.5	5.0	9.0				
210	"	7.0	4.5	8.0	"	8.5				
220	"	"	5.0	8.5	5.5	9.0				
230	"	7.5	"	9.0	6.0	9.5				
240	"	8.0	"	9.5	"	10.5				
250	4.0	"	5.5	10.0	6.5	11.0				
260	"	8.5	6.0	10.5	7.0	11.5				
270	4.5	9.0	7.0	11.0	7.5	12.5				
280										
290										
300										
310										
320										
330										
340										
350										
360										
370										
380										
390										
400										
410										
420										
430										
440										
450										
460										
470										
480										
490										
500										
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40-inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30-inch minimum sidespan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

RD-Figure No. 69

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES -- Feet

LOADING DISTRICT: Heavy

POWER CONDUCTOR: 4 ND Copper

TELEPHONE CONDUCTOR: 1 [illegible] on 6M Strand

Where secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

SPAN LENGTH FT.	MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS									
	175 RULING SPAN		223 RULING SPAN		274 RULING SPAN		RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200	3.5	6.5	4.0	7.5	4.5	8.0				
210	"	7.0	"	8.0	"	8.5				
220	"	"	4.5	8.5	5.0	9.0				
230	"	7.5	"	9.0	5.5	10.0				
240	"	8.0	5.0	9.5	"	10.5				
250	4.0	"	5.5	10.0	6.0	11.0				
260										
270										
280										
290										
300										
310										
320										
330										
340										
350										
360										
370										
380										
390										
400										
410										
420										
430										
440										
450										
460										
470										
480										
490										
500										
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in the tables reflect the following basic minimum requirements:

1. 40-inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30-inch minimum midspan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

ND Figure No. 10

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES - Feet

LOADING DISTRICT: Heavy

POWER CONDUCTOR: 6 HD Copper

TELEPHONE CONDUCTOR: .75# Cu. on 6M Strand

When secondaries are present or planned, use colum "Secondary". All separations shown are between neutral and telephone conductors.

SPAN LENGTH FT.	MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS									
	175 RULING SPAN		223 RULING SPAN		274 RULING SPAN		RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200	3.5	6.5	4.0	7.5	[illegible]	8.0				
210	"	7.0	4.5	8.0	"	8.5				
220	"	"	5.0	8.5	5.5	9.0				
230	"	7.5	"	9.0	6.0	9.5				
240	"	8.0	"	9.5	"	10.5				
250	4.0	"	5.5	10.0	6.5	11.0				
260	"	8.5	6.0	10.5	7.0	11.5				
270	4.5	9.0	7.0	11.0	7.5	12.5				
280										
290										
300										
310										
320										
330										
340										
350										
360										
370										
380										
390										
400										
410										
420										
430										
440										
450										
460										
470										
480										
490										
500										
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40-inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30-inch minimum midspan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

HD-Figure No. 69

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD
ON REA ELECTRIC POLE LINES - Feet

When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT: Heavy

POWER CONDUCTOR: 4 7/1 ACSR

TELEPHONE CONDUCTOR: .5# Cu. on 10M Strand

MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS

SPAN LENGTH FT	350 RULING SPAN		390 RULING SPAN		387 RULING SPAN		450 RULING SPAN		500 RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200										
210										
220										
230										
240										
250										
260										
270										
280										
290										
300	3.5	7.0	3.5	7.5	4.0	8.0	4.5	9.0	5.5	9.5
310	"	7.5	"	"	"	8.5	5.0	9.5	6.0	10.0
320	"	"	4.0	"	4.5	"	5.5	10.0	"	10.5
330	"	8.0	"	8.0	"	9.0	6.0	"	6.5	11.0
340	"	"	4.5	8.5	5.0	9.5	6.5	10.5	7.0	11.5
350	4.0	8.5	"	9.0	5.5	10.0	7.0	11.0	7.5	12.0
360	"	9.0	5.0	"	6.0	10.5	7.5	11.5	8.0	12.5
370	4.0		"	9.5	6.5	11.0	8.0	12.0	8.5	13.0
380	5.0	9.5	5.5	10.0	7.0	"	8.5	12.5	9.0	13.5
390	"	"	6.0	10.5	"	11.5	9.0	13.0	9.5	14.0
400	5.5	10.0	6.5	"	7.5	12.0	9.5	13.5	10.0	14.5
410	6.0	10.5	7.0	11.0	8.0	12.5	10.0	14.0	10.5	15.0
420	"	11.0	"	11.5	8.5	13.0	10.5	15.0	11.0	15.5
430	6.5	"	7.5	12.0	9.0	13.5	11.0	"	12.0	16.5
440	7.0	11.5	8.0	12.5	9.5	14.0	11.5	16.0	12.5	17.0
450	"	12.0	8.5	13.0	10.0	14.5	12.0	16.5	13.0	17.5
460			9.0	13.0	10.5	15.0	12.5	17.0		
470			"	13.5	11.0	15.5	13.0	17.5		
480					11.5	16.0				
490					12.0	16.5				
500										
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements

1. 40-inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30-inch minimum midspan separation between highest telephone conductor and neutral or secondaries
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

RD-Figure No. 75

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES - Feet

When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT: Heavy

POWER CONDUCTOR: 6 HD Copper

TELEPHONE CONDUCTOR: .75# Cu. on 6M Strand

SPAN LENGTH FT.	MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS									
	175 RULING SPAN		223 RULING SPAN		274 RULING SPAN		RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200	3.5	6.5	4.0	7.5	5.0	10.0				
210	"	7.0	4.5	8.0	"	8.5				
220	"	"	5.0	8.5	5.5	9.0				
230	"	7.5	"	9.0	6.0	9.5				
240	"	8.0	"	9.5	"	10.5				
250	4.0	"	5.5	10.0	6.5	11.0				
260	"	8.5	6.0	10.5	7.0	11.5				
270	4.5	9.0	7.0	11.0	7.5	12.5				
280										
290										
300										
310										
320										
330										
340										
350										
360										
370										
380										
390										
400										
410										
420										
430										
440										
450										
460										
470										
480										
490										
500										
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40-inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30-inch minimum sidespan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

RD-Figure No. 69

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES - Feet

When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT: Heavy

POWER CONDUCTOR: 4-7/1 ACSR

TELEPHONE CONDUCTOR: 14 Cu. on 10M Strand

MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS

SPAN LENGTH FT.	325 RULING SPAN		350 RULING SPAN		387 RULING SPAN		450 RULING SPAN		500 RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200										
210										
220										
230										
240										
250	3.5	6.5	3.5	6.5	3.5	6.5	3.5	7.5	3.5	7.5
260	"	"	"	6.5	"	"	"	"	4.0	8.0
270	"	"	"	"	"	"	"	8.0	"	8.5
280	"	6.5	"	7.0	"	7.0	4.0	8.5	4.5	"
290	"	"	"	"	"	8.0	4.5	"	"	9.0
300	"	7.0	"	7.5	4.0	"	"	9.0	5.0	9.5
310	"	"	"	"	"	8.5	5.0	9.5	5.5	10.0
320	"	7.5	"	8.0	4.5	9.0	5.5	10.0	6.0	10.5
330	"	"	4.0	"	5.0	"	6.0	10.5	6.5	11.0
340	"	8.0	4.5	8.5	"	9.5	6.5	"	7.0	11.5
350	4.0	"	"	9.0	5.5	10.0	7.0	11.0	7.5	12.0
360	"	8.5	5.0	9.5	6.0	10.5	7.5	11.5	8.0	12.5
370	4.5	9.0	"	"	6.5	11.0	8.0	12.0	8.5	13.0
380	5.0	"	5.5	10.0	7.0	"	8.5	12.5	9.0	13.5
390	"	9.5	6.0	10.5	7.5	11.5	"	13.0	9.5	14.0
400	5.5	10.0	6.5	11.0	"	12.0	9.5	13.5	10.0	14.5
410	6.0	"	7.0	"	8.0	12.5	10.0	14.0	10.5	15.0
420	"	10.5	"	11.5	8.5	13.0	10.5	15.0	11.0	15.5
430	6.5	11.0	7.5	12.0	9.0	13.5	11.0	15.5	12.0	16.0
440	7.0	"	8.0	12.5	9.5	14.0	11.5	16.0	12.5	17.0
450	"	11.5	8.5	13.0	10.0	14.5	12.0	16.5	13.0	17.5
460							12.5	17.0		
470							13.5	17.5		
480										
490										
500										
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40 inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30-inch minimum midspan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

RD-Figure No. 7A

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES – Feet

When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT: Heavy

POWER CONDUCTOR: 4 7/1 ACSR

TELEPHONE CONDUCTOR: .25# Cu. on 10M Strand

MAXIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTOR

SPAN LENGTH FT.	325 RULING SPAN		350 RULING SPAN		387 RULING SPAN		450 RULING SPAN		500 RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200										
210										
220										
230										
240										
250										
260										
270										
280										
290										
300	4.0	7.0	4.5	7.5	5.0	8.0	6.0	9.0	6.5	9.5
310	"	"	"	8.0	5.5	8.5	"	9.5	"	10.0
320	"	7.5	"	"	"	9.0	6.5	10.0	7.0	10.5
330	"	"	"	8.5	"	"	"	10.5	7.5	11.0
340	"	8.0	5.0	"	6.0	9.5	7.0	11.0	"	11.5
350	4.5	8.5	"	9.0	"	10.0	"	"	8.0	12.0
360	"	"	"	9.5	"	10.5	7.5	11.5	"	12.5
370	"	9.0	5.5	"	6.5	11.0	8.0	12.0	8.5	13.0
380	"	"	"	10.0	"	"	"	12.5	9.0	13.5
390	5.0	9.5	6.0	10.5	7.0	11.5	8.5	13.0	9.5	14.0
400	5.5	10.0	6.5	11.0	7.5	12.0	9.0	13.5	10.0	14.5
410	"	"	"	"	8.0	12.5	9.5	14.0	10.5	15.0
420	6.0	10.5	7.0	11.5	8.5	13.0	10.5	15.0	11.5	15.5
430	6.5	11.0	7.5	12.0	9.0	13.5	11.0	15.5	12.0	16.5
440	7.0	11.5	8.0	12.5	9.5	14.0	11.5	16.0	12.5	17.0
450			8.5	13.0	10.0	14.5	12.0	16.5	13.0	17.5
460			"	"	10.5	15.0	12.5	17.0		
470			9.0	13.5	11.0	15.5	13.0	17.5		
480					11.5	16.0				
490					12.0	16.5				
500										
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements

1. 40-inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30-inch minimum midspan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

RD-Plants No. 71

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES - Feet

When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT	POWER CONDUCTOR	TELEPHONE CONDUCTOR
Heavy	6A CW	.5# Ca. on 10M Strand

MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS

SPAN LENGTH FT.	354 RULING SPAN		375 RULING SPAN		416 RULING SPAN		450 RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200										
210										
220										
230										
240										
250	3.5	6.5	3.5	6.5	3.5	6.5	3.5	6.5		
260	"	"	"	"	"	"	"	"		
270	"	"	"	6.5	"	"	"	7.0		
280	"	6.5	"	"	"	7.0	"	"		
290	"	"	"	6.5	"	"	4.0	7.5		
300	"	"	"	"	"	7.5	"	8.0		
310	"	6.5	"	"	"	"	4.5	"		
320	"	"	"	7.0	"	8.0	"	8.5		
330	"	7.0	"	7.5	4.0	8.5	"	9.0		
340	"	"	"	"	"	"	5.0	"		
350	"	7.5	"	8.0	4.5	9.0	"	9.5		
360	"	"	"	"	5.0	"	5.5	10.0		
370	"	"	4.0	8.5	"	9.5	6.0	10.5		
380	"	8.0	"	"	5.5	10.0	6.5	"		
390	4.0	8.5	4.5	9.0	6.0	10.5	"	11.0		
400	"	"	5.0	9.5	6.5	"	7.0	11.5		
410	4.5	9.0	"	"	6.5	11.0	7.5	12.0		
420	"	"	5.5	10.0	7.0	11.5	8.0	12.5		
430	5.0	9.5	6.0	"	7.5	12.0	8.5	13.0		
440	5.5	"	"	10.5	8.0	12.5	9.0	13.5		
450	"	10.0	6.5	11.0	8.5	"	9.5	"		
460			7.0	11.5	"	13.0	10.0	14.0		
470			"	"	9.0	13.5	"	14.5		
480			7.5	12.0	9.5	14.0	11.0	15.0		
490					10.0	14.5	11.5	15.5		
500					10.5	15.0	12.0	16.0		
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40-inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30-inch minimum midspan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 8½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 2 feet below neutral.

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES - Feet

When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT: Heavy

POWER CONDUCTOR: 4 7/1 ACSR

TELEPHONE CONDUCTOR: .75 # Cu. on 10M Strand

MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS

SPAN LENGTH FT.	325 RULING SPAN		350 RULING SPAN		387 RULING SPAN		450 RULING SPAN		500 RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200										
210										
220										
230										
240										
250	3.5	6.5	3.5	6.5	3.5	6.5	3.5	7.0	4.0	7.5
260	"	6.5	"	6.5	"	7.0	4.0	7.5	"	8.0
270	"	"	"	"	"	7.5	"	8.0	"	8.5
280	"	6.5	"	7.0	"	"	"	8.5	4.5	"
290	"	"	"	"	"	8.0	4.5	"	"	9.0
300	"	7.0	"	7.5	4.0	"	5.0	9.0	5.0	9.5
310	"	"	"	"	"	8.5	"	9.5	5.5	10.0
320	"	7.5	"	8.0	4.5	9.0	5.5	10.0	6.0	10.5
330	"	"	4.0	8.5	5.0	"	6.0	10.5	6.5	11.0
340	"	8.0	4.5	"	"	9.5	6.5	"	7.0	11.5
350	4.0	"	"	9.0	5.5	10.0	7.0	11.0	7.5	12.0
360	4.5	8.5	5.0	9.5	6.0	10.5	7.5	11.5	8.0	12.5
370	"	9.0	5.5	"	6.5	11.0	8.0	12.0	8.5	13.0
380	5.0	"	"	10.0	7.0	"	8.5	12.5	9.0	13.5
390	"	9.5	6.0	10.5	7.0	11.5	9.0	13.0	9.5	14.0
400	5.5	10.0	6.5	11.0	7.5	12.0	9.5	13.5	10.5	14.5
410	6.0	"	7.0	"	8.0	12.5	10.0	14.0	11.0	15.0
420	"	10.5	"	11.5	8.5	13.0	10.5	15.0	11.5	15.5
430	6.5	11.0	7.5	12.0	9.0	13.5	11.0	15.5	12.0	16.0
440	7.0	"	8.0	12.5	9.5	14.0	11.5	16.0	12.5	17.0
450	"	11.5	8.5	13.0	10.0	14.5	12.0	16.5	13.0	17.5
460										
470										
480										
490										
500										
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40-inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements if a power equipment is mounted on pole below the neutral).
2. 30-inch min. midspan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

RD-Figure No. 73

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES - Feet

LOADING DISTRICT: Heavy

POWER CONDUCTOR: 6A CW

TELEPHONE CONDUCTOR: 1, # Cu. on 10M Strand

When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS

SPAN LENGTH FT.	354 RULING SPAN		375 RULING SPAN		416 RULING SPAN		450 RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200										
210										
220										
230										
240										
250	3.5	6.5	3.5	6.5	3.5	6.5	3.5	6.5		
260	"	"	"	"	"	"	"	7.0		
270	"	"	"	"	"	"	"	"		
280	"	"	"	"	"	7.0	"	7.5		
290	"	"	"	"	"	"	"	"		
300	"	"	"	"	"	7.5	"	8.0		
310	"	"	"	7.0	"	"	4.0	8.5		
320	"	"	"	"	"	8.0	"	"		
330	"	7.0	"	7.5	4.0	"	4.5	9.0		
340	"	"	"	"	"	8.5	5.0	"		
350	"	7.5	"	8.0	4.5	9.0	"	9.5		
360	"	"	"	"	5.0	"	5.5	10.0		
370	"	8.0	4.0	8.5	"	9.5	6.0	10.5		
380	"	"	"	"	5.5	10.0	6.5	11.0		
390	4.0	8.5	4.5	9.0	6.0	10.5	"	"		
400	"	8.5	5.0	9.5	6.5	"	7.0	11.5		
410	4.5	9.0	"	"	"	11.0	7.5	12.0		
420	"	"	5.5	10.0	7.0	11.5	8.0	12.5		
430	5.0	9.5	6.0	"	7.5	12.0	8.5	13.0		
440	5.5	"	"	10.5	8.0	12.5	9.0	13.5		
450	"	10.0	6.5	11.0	8.5	"	9.5	14.0		
460			7.0	11.5	"	13.0	10.0	14.5		
470			"	"	9.0	13.5	"	"		
480			7.5	12.0	9.5	14.0	11.0	15.0		
490					10.0	14.5	11.5	15.5		
500					10.5	15.0	12.0	16.5		
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40 inch minimum separation at pole between neutral or secondary and highest telephone conductor (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30 inch minimum midspan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

RD-Figure No. 78

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES – Feet

When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT: Heavy

POWER CONDUCTOR: 6A CW

TELEPHONE CONDUCTOR: .25" Cu. on 10M Strand

SPAN LENGTH FT.	MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS									
	350 RULING SPAN		375 RULING SPAN		410 RULING SPAN		450 RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200										
210										
220										
230										
240										
250										
260										
270										
280										
290										
300	3.5	6.5	3.5	6.5	4.5	7.5	5.0	8.0		
310	"	"	"	7.0	"	"	"	8.5		
320	"	"	"	"	"	8.0	"	"		
330	"	7.0	"	7.5	"	8.5	5.5	9.0		
340	"	"	4.0	"	5.0	"	"	"		
350	"	7.5	"	8.0	"	9.0	"	8.5		
360	"	"	"	"	"	"	"	10.0		
370	"	8.0	"	8.5	"	9.5	6.0	10.5		
380	"	"	"	"	5.5	10.0	"	11.0		
390	4.0	8.5	4.5	9.0	6.0	10.5	6.5	"		
400	"	"	5.0	9.5	6.5	11.0	7.0	11.5		
410	4.5	9.0	"	"	"	"	7.5	12.0		
420	"	"	5.5	10.0	7.0	11.5	8.0	12.5		
430	5.0	9.5	6.0	"	7.5	12.0	8.5	13.0		
440	5.5	10.0	"	10.5	8.0	12.5	9.0	13.5		
450	"	"	6.5	11.0	8.5	13.0	9.5	"		
460			7.0	11.5	"	"	10.0	14.0		
470			"	"	9.0	13.5	10.5	14.5		
480			7.5	12.0	9.5	14.0	11.0	15.0		
490					10.0	14.5	11.5	15.5		
500					10.5	15.0	12.0	16.0		
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40-inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30-inch minimum midspan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

RD-Figure No. 75

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES - Feet

LOADING DISTRICT: Heavy

POWER CONDUCTOR: 8A CW

TELEPHONE CONDUCTOR: .5# Cu. on 10M Strand

When secondaries are present or planned, use column "Secondary". All clearances shown are between neutral and telephone conductors.

SPAN LENGTH FT.	MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS									
	325 RULING SPAN		375 RULING SPAN		400 RULING SPAN		450 RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200										
210										
220										
230										
240										
250	3.5	6.5	3.5	6.5	3.5	6.5	4.0	7.0		
260	"	"	"	"	"	"	"	7.5		
270	"	"	"	"	"	7.0	4.5	"		
280	"	"	"	"	"	"	"	8.0		
290	"	"	"	7.0	4.0	7.5	"	"		
300	"	"	"	"	"	8.0	"	8.5		
310	"	"	"	7.5	"	"	5.0	9.0		
320	"	7.0	"	8.0	"	8.5	"	9.5		
330	"	"	"	"	4.5	"	5.5	"		
340	"	7.5	4.0	8.5	"	9.0	"	10.0		
350	"	"	"	"	5.0	9.5	6.0	10.5		
360	"	8.0	4.5	9.0	5.5	10.0	6.5	11.0		
370	"	"	5.0	9.5	6.0	"	7.0	11.5		
380	4.0	8.5	5.5	"	"	10.5	7.5	12.0		
390	4.5	"	"	10.0	6.5	11.0	8.0	12.5		
400	"	9.0	6.0	10.5	7.0	11.5	8.5	13.0		
410	5.0	9.5	6.5	11.0	7.5	12.0	9.0	13.5		
420	"	"	"	"	8.0	"	9.5	"		
430	5.5	10.0	7.0	11.5	"	12.5	10.0	14.0		
440	6.0	10.5	7.5	12.0	8.5	13.0	10.5	14.5		
450	"	"	8.0	12.5	9.0	13.5	11.0	15.0		
460	6.5	11.0	8.5	13.0	9.5	14.0	11.5	15.5		
470	"	"	9.0	"	10.0	14.5	12.0	16.0		
480	7.0	11.5	9.5	13.5	10.5	15.0	12.5	16.5		
490	7.5	12.0	"	14.0	11.0	15.5	13.5	17.0		
500	8.0	"	10.0	14.5	11.5	16.0	14.0	18.0		
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40-inch minimum separation at pole between neutral or secondary and highest telephone conductor (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30-inch minimum sidepoe separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule does not apply as 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 8½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

RD-Figure No. 80

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES – Feet

When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT: Heavy

POWER CONDUCTOR: 6A CW

TELEPHONE CONDUCTOR: .75# Cu. or [illegible]

MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTOR

SPAN LENGTH FT	354 RULING SPAN		375 RULING SPAN		416 RULING SPAN		450 RULING SPAN		[illegible] SPAN
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL / SECONDARY
200									
210									
220									
230									
240									
250	3.5	6.5	3.5	6.5	3.5	6.5	3.5	6.5	
260	"	"	"	"	"	"	"	"	
270	"	"	"	"	"	"	"	7.0	
280	"	"	"	"	"	7.0	"	"	
290	"	"	"	"	"	"	"	7.5	
300	"	"	"	"	"	7.5	"	8.0	
310	"	"	"	7.0	"	"	4.0	"	
320	"	"	"	"	"	8.0	"	8.5	
330	"	7.0	"	7.5	4.0	8.5	4.5	9.0	
340	"	"	"	"	"	"	5.0	"	
350	"	7.5	"	8.0	4.5	9.0	"	9.5	
360	"	"	"	"	5.0	"	5.5	10.0	
370	"	"	4.0	8.5	"	9.5	6.0	10.5	
380	"	8.0	"	"	5.5	10.0	6.5	"	
390	4.0	8.5	4.5	9.0	6.0	10.5	"	11.0	
400	"	"	5.0	9.5	6.5	"	7.0	11.5	
410	4.5	9.0	"	"	"	11.0	7.5	12.0	
420	"	"	5.5	10.0	7.0	11.5	8.0	12.5	
430	5.0	9.5	6.0	"	7.5	12.0	8.5	13.0	
440	5.5	"	"	10.5	8.0	12.5	9.0	13.5	
450	"	10.0	6.5	11.0	8.5	"	9.5	"	
460			7.0	11.5	"	13.0	10.0	14.0	
470			"	"	9.0	13.5	"	14.5	
480			7.5	12.0	9.5	14.0	11.0	15.0	
490					10.0	14.5	11.5	15.5	
500					10.5	15.0	12.0	16.0	
510									
520									
530									
540									
550									
560									
570									
580									
590									
600									

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 30-inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30-inch minimum midspan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

RD-Figure No. 17

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES – Feet

Where secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT: Heavy

POWER CONDUCTOR: 8A CW

TELEPHONE CONDUCTOR: 1.# Cu. on 10M Strand

MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS

SPAN LENGTH FT	345 RULING SPAN		375 RULING SPAN		400 RULING SPAN		450 RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200										
210										
220										
230										
240										
250	3.5	6.5	3.5	6.5	3.5	6.5	3.5	7.0		
260	"	"	"	"	"	"	"	"		
270	"	"	"	"	"	7.0	"	7.5		
280	"	"	"	"	"	"	"	8.0		
290	"	"	"	7.0	"	7.5	4.0	"		
300	"	"	"	"	"	8.0	"	8.5		
310	"	"	"	7.5	"	"	4.5	9.0		
320	"	7.0	"	"	4.0	8.5	5.0	9.5		
330	"	"	"	8.0	4.5	"	5.5	"		
340	"	7.5	4.0	8.5	"	9.0	6.0	10.0		
350	"	"	4.5	"	5.0	9.5	"	10.5		
360	"	8.0	"	9.0	5.5	"	6.5	11.0		
370	"	"	5.0	9.5	6.0	10.0	7.5	11.5		
380	4.0	8.5	5.5	"	"	10.5	"	12.0		
390	4.5	"	"	10.0	6.5	11.0	8.0	12.5		
400	"	9.0	6.0	10.5	7.0	11.5	8.5	13.0		
410	5.0	"	6.5	11.0	7.5	12.0	9.0	13.5		
420	"	9.5	7.0	"	8.0	"	9.5	"		
430	5.5	10.0	"	11.5	8.5	12.5	10.0	14.0		
440	6.0	"	7.5	12.0	"	13.0	10.5	14.5		
450	"	10.5	8.0	12.5	9.0	13.5	11.0	15.0		
460	6.5	11.0	8.5	13.0	9.5	14.0	11.5	16.0		
470	"	"	9.0	"	10.0	14.5	12.0	16.5		
480	7.0	11.5	9.5	13.5	10.5	15.0	12.5	17.0		
490	7.5	12.0	"	14.0	11.0	15.5	13.5	17.5		
500	8.0	"	10.0	14.5	11.5	16.0	14.0	18.5		
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40-inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30-inch minimum midspan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

RD-Figure No. 82

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES Fact

When secondaries are present or planned use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT: Heavy

POWER CONDUCTOR: 8A CW

TELEPHONE CONDUCTOR: .25 # Cu. on 10M Strand

MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS

SPAN LENGTH FT.	345 RULING SPAN		375 RULING SPAN		400 RULING SPAN		450 RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200										
210										
220										
230										
240										
250										
260										
270										
280										
290										
300	3.5	6.5	4.0	7.0	4.5	8.0	5.5	8.5		
310	"	"	4.5	7.5	5.0	"	6.0	9.0		
320	"	7.0	"	8.0	"	8.5	"	9.5		
330	"	"	"	"	"	9.0	"	10.0		
340	"	7.5	"	8.5	5.5	"	6.5	"		
350	"	"	"	"	"	9.5	"	10.5		
360	"	8.0	5.0	9.0	"	10.0	"	11.0		
370	4.0	"	"	9.5	6.0	"	7.5	11.5		
380	"	8.5	"	"	"	10.5	"	12.0		
390	"	"	5.5	10.0	6.5	11.0	8.0	12.5		
400	4.5	9.0	6.0	10.5	7.0	11.5	8.5	13.0		
410	5.0	9.5	6.5	11.0	7.5	12.0	9.0	13.5		
420	"	"	"	"	8.0	"	9.5	"		
430	5.5	10.0	7.0	11.5	8.5	12.5	10.0	14.0		
440	6.0	10.5	7.5	12.0	"	13.0	10.5	14.5		
450	"	"	8.0	12.5	9.0	13.5	11.0	15.5		
460	6.5	11.0	8.5	13.0	"	14.0	11.5	16.0		
470	7.0	11.5	9.0	"	10.0	14.5	12.0	16.5		
480	"	"	9.5	13.5	10.5	15.0	12.5	17.0		
490	7.5	12.0	"	14.0	11.0	15.5	13.5	17.5		
500	8.0	12.5	10.0	14.5	11.5	16.0	14.0	18.5		
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40-inch minimum separation at pole between neutral or secondary and highest telephone conductor (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30 inch minimum midspan separation between highest telephone conductor and neutral or secondaries
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

RD-Figure No. 79

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES - Feet

When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT: Medium

POWER CONDUCTOR: 6A CW

TELEPHONE CONDUCTOR: All cables weighing 1# or less on 6M messenger

MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS

SPAN LENGTH FT	450 RULING SPAN		500 RULING SPAN		575 RULING SPAN		RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200										
210										
220										
230										
240										
250	3.5	6.5	3.5	6.5	3.5	6.5				
260	"	"	"	"	"	"				
270	"	"	"	"	"	"				
280	"	"	"	"	"	"				
290	"	"	"	"	"	"				
300	"	"	"	"	"	"				
310	"	"	"	"	"	"				
320	"	"	"	"	"	"				
330	"	"	"	"	"	"				
340	"	"	"	"	"	"				
350	"	"	"	"	"	"				
360	"	"	"	"	"	"				
370	"	"	"	"	"	"				
380	"	"	"	"	"	"				
390	"	"	"	"	"	"				
400	"	"	"	"	"	"				
410	"	"	"	"	"	7.0				
420	"	7.0	"	7.0	"	"				
430	"	"	"	"	"	"				
440	"	"	"	"	"	7.5				
450	"	"	"	7.5	"	"				
460										
470										
480										
490										
500										
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40 inch minimum separation at pole between neutral or secondary and highest telephone conductor (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30 inch minimum midspan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral

ED-Figure No. 84

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES - Feet

When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT: Heavy

POWER CONDUCTOR: 8A CW

TELEPHONE CONDUCTOR: 7S# Cu. on 10M Strand

MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS

SPAN LENGTH FT.	345 RULING SPAN		375 RULING SPAN		400 RULING SPAN		450 RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200										
210										
220										
230										
240										
250	3.5	6.5	3.5	6.5	3.5	6.5	3.5	7.0		
260	"	"	"	"	"	"	"	"		
270	"	"	"	"	"	7.0	"	7.5		
280	"	"	"	"	"	"	"	8.0		
290	"	"	"	7.0	"	7.5	4.0	"		
300	"	"	"	"	"	8.0	"	8.5		
310	"	"	"	7.5	"	"	4.5	9.0		
320	"	7.0	"	8.0	4.0	8.5	5.0	9.5		
330	"	"	"	"	4.5	"	5.5	"		
340	"	7.5	4.0	8.5	"	9.0	"	10.0		
350	"	"	4.5	"	5.0	9.5	6.0	10.5		
360	"	8.0	"	9.0	5.5	10.0	6.5	11.0		
370	"	"	5.0	9.5	6.0	"	7.0	11.5		
380	4.0	8.5	5.5	"	"	10.5	7.5	12.0		
390	4.5	"	"	10.0	6.5	11.0	8.0	12.5		
400	"	9.0	6.0	10.5	7.0	11.5	8.5	13.0		
410	5.0	9.5	6.5	11.0	7.5	12.0	9.0	13.5		
420	"	"	"	"	8.0	"	9.5	"		
430	5.5	10.0	7.0	11.5	8.5	12.5	10.0	14.0		
440	6.0	"	7.5	12.0	"	13.0	10.5	14.5		
450	"	10.5	8.0	12.5	9.0	13.5	11.0	15.5		
460	6.5	11.0	8.5	13.0	9.5	14.0	11.5	16.0		
470	"	"	9.0	"	10.0	14.5	12.0	16.5		
480	7.0	11.5	9.5	13.5	10.5	15.0	12.5	17.0		
490	7.5	12.0	"	14.0	11.0	15.5	13.5	17.5		
500	8.0	"	10.0	14.5	11.5	16.0	14.0	18.0		
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40-inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30-inch minimum midspan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

RE-Figure No. 81

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES --- Feet

When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT: Medium

POWER CONDUCTOR: 6 HD Copper

TELEPHONE CONDUCTOR: All cables weighing 1.# or less on 6M strand

SPAN LENGTH FT.	MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS									
	330 RULING SPAN		350 RULING SPAN		395 RULING SPAN		RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200										
210										
220										
230										
240										
250	3.5	6.5	3.5	6.5	3.5	6.5				
260	"	"	"	"	"	7.0				
270	"	"	"	7.0	"	7.5				
280	"	7.0	"	"	4.0	"				
290	"	"	"	7.5	"	8.0				
300	"	7.5	"	8.0	"	8.5				
310	"	"	"	"	"	"				
320	"	8.0	4.0	8.5	4.5	9.0				
330	4.0	8.5	4.5	"	5.0	9.5				
340	4.5	"	"	9.0	5.5	10.0				
350	"	9.0	5.0	9.5	6.0	"				
360	5.0	9.5	5.5	10.0	"	10.5				
370	5.5	"	6.0	"	6.5	11.0				
380	"	10.0	"	10.5	7.0	11.5				
390	6.0	10.5	6.5	11.0	7.5	12.0				
400	6.5	11.0	7.0	11.5	8.0	12.5				
410	7.0	"	7.5	12.0	8.5	13.0				
420	7.5	11.5	8.0	"	9.0	13.5				
430	"	12.0	8.5	12.5	9.5	14.0				
440	8.0	12.5	"	13.0	"	14.5				
450	8.5	13.0	9.0	13.5	10.0	15.0				
460										
470										
480										
490										
500										
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40-inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30-inch minimum sidespan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

RD-Figure No. 86

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES – Feet

LOADING DISTRICT: Medium

POWER CONDUCTOR: 4-7/1 ACSR

TELEPHONE CONDUCTOR: All cables weighing 1.# or less on 6M strand.

When secondaries are present or planned, use columns "Secondary". All comparisons shown are between neutral and telephone conductors.

SPAN LENGTH FT.	MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS.									
	405 RULING SPAN		540 RULING SPAN		RULING SPAN		RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200										
210										
220										
230										
240										
250	3.5	6.5	3.5	6.5						
260	"	"	"	"						
270	"	"	"	"						
280	"	"	"	"						
290	"	"	"	"						
300	"	"	"	"						
310	"	"	"	"						
320	"	"	"	"						
330	"	"	"	"						
340	"	"	"	"						
350	"	"	"	"						
360	"	"	"	"						
370	"	"	"	"						
380	"	"	"	"						
390	"	"	"	7.0						
400	"	7.0	"	"						
410	"	"	"	7.5						
420	"	"	"	"						
430	"	7.5	"	8.0						
440	"	"	"	"						
450	"	8.0	4.0	8.5						
460										
470										
480										
490										
500										
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: 1. The data shown in this table reflect the following basic minimum requirements:

a. 40 inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).

b. 30 inch minimum midspan separation between highest telephone conductor and neutral or secondaries.

2. Line of sight rule when secondaries up to 750 volts are involved.

3. All comparisons are based on REA pole head configurations with neutral 3½ feet below power wire and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral

RD-Figure No. 83

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES - Feet	LOADING DISTRICT	POWER CONDUCTOR
When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.	Medium	6A CW TELEPHONE CONDUCTOR: All cables weighing 1# or less on 10M strand.

MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS

SPAN LENGTH FT	450 RULING SPAN		500 RULING SPAN		575 RULING SPAN		RULING SPAN		RULING SPAN	
	LOWER POWER COND		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200										
210										
220										
230										
240										
250										
260										
270										
280										
290										
300										
310										
320										
330										
340										
350	3.5	6.5	3.5	6.5	3.5	6.5				
360	"	"	"	"	"	"				
370	"	"	"	"	"	"				
380	"	"	"	"	"	"				
390	"	"	"	"	"	"				
400	"	"	"	"	"	"				
410	"	"	"	"	"	7.0				
420	"	"	"	7.0	"	"				
430	"	7.0	"	"	"	"				
440	"	"	"	"	"	7.5				
450	"	"	"	7.5	"	"				
460	"	7.5	"	"	"	8.0				
470	"	"	"	"	"	"				
480	"	8.0	"	8.0	"	"				
490	"	"	"	"	4.0	8.5				
500	"	"	4.0	8.5	"	"				
510	4.0	8.5	"	"	4.5	9.0				
520	"	"	4.5	9.0	"	"				
530	4.5	9.0	"	"	5.0	9.5				
540	"	"	5.0	"	"	"				
550	5.0	"	"	9.5	5.5	10.0				
560	"	9.5	"	"	"	"				
570	5.5	"	5.5	10.0	6.0	"				
580	"	10.0	"	"	"	10.5				
590	6.0	"	6.0	10.5	6.5	11.0				
600										

NOTES. The data shown in this table reflect the following basic minimum requirements:

1. 40 inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral.)
2. 30 inch minimum midspan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral [illegible] below pole top and phase wires occupying a position at top of pole and lower secondary 3 feet below neutral.

ED-Figure No. 68

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES - Feet

When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT: Medium

POWER CONDUCTOR: 8A CW

TELEPHONE CONDUCTOR: All cables weighing 1.# or less per 6M strand

SPAN LENGTH FT	MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS									
	465 RULING SPAN		500 RULING SPAN		590 RULING SPAN		RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200										
210										
220										
230										
240										
250	3.5	6.5	3.5	6.5	3.5	6.5				
260	"	"	"	"	"	"				
270	"	"	"	"	"	"				
280	"	"	"	"	"	"				
290	"	"	"	"	"	"				
300	"	"	"	"	"	"				
310	"	"	"	"	"	"				
320	"	"	"	"	"	"				
330	"	"	"	"	"	"				
340	"	"	"	"	"	"				
350	"	"	"	"	"	"				
360	"	"	"	"	"	"				
370	"	"	"	"	"	"				
380	"	"	"	"	"	"				
390	"	"	"	"	"	"				
400	"	"	"	"	"	"				
410	"	"	"	"	"	"				
420	"	"	"	"	"	7.0				
430	"	"	"	"	"	"				
440	"	"	"	7.0	"	"				
450	"	"	"	"	"	7.5				
460										
470										
480										
490										
500										
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40-inch minimum separation at pole between neutral or secondary and highest telephone conductor (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30-inch minimum midspan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

RD-Figure No. 85

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES – Feet

When communications are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT: Medium

POWER CONDUCTOR: 6 H) Copper

TELEPHONE CONDUCTOR: All cables weighing 1# or less on 10M strand.

SPAN LENGTH FT	MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS									
	330 RULING SPAN		350 RULING SPAN		395 RULING SPAN		RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200										
210										
220										
230										
240										
250										
260										
270										
280										
290										
300										
310										
320										
330										
340										
350	4.5	9.0	5.0	9.5	6.0	10.0				
360	5.0	9.5	5.5	10.0	"	10.5				
370	5.5	"	6.0	"	6.5	11.0				
380	"	10.0	"	10.5	7.0	11.5				
390	6.0	10.5	6.5	11.0	7.5	12.0				
400	6.5	11.0	7.0	11.5	8.0	12.5				
410	7.0	"	7.5	12.0	8.5	13.0				
420	"	11.5	8.0	"	9.0	13.5				
430	7.5	12.0	"	12.5	9.5	14.0				
440	8.0	12.5	8.5	13.0	10.0	14.5				
450	8.5	13.0	9.0	13.5	10.5	15.0				
460	"	13.5	9.5	14.0	11.0	15.5				
470	9.0	"	10.0	14.5	11.5	16.0				
480	9.5	14.0	10.5	15.0						
490	10.0	14.5	11.0	15.5						
500	10.5	15.0	11.5	16.0						
510	11.0	15.5	12.0	16.5						
520	11.5	16.0								
530	12.0	16.5								
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40 inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral)
2. 30 inch minimum sidespan separation between highest telephone conductor and neutral or secondaries
3. Line of sight rule when secondaries up to 750 volts are involved
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral

RD-Figure No. 90

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES - Feet

When secondaries are present or planned, use values "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT: Medium

POWER CONDUCTOR: 4 7/1 ACSR

TELEPHONE CONDUCTOR: All cables weighing 1.# or less on 10M strand.

MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS

SPAN LENGTH FT	425 RULING SPAN		540 RULING SPAN		RULING SPAN		RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200										
210										
220										
230										
240										
250										
260										
270										
280										
290										
300										
310										
320										
330										
340										
350	3.5	6.5	3.5	6.5						
360	"	"	"	"						
370	"	"	"	"						
380	"	"	"	7.0						
390	"	"	"	"						
400	"	7.0	"	"						
410	"	"	"	7.5						
420	"	"	"	"						
430	"	7.5	"	8.0						
440	"	"	"	"						
450	"	8.0	4.0	8.5						
460	"	"	"	"						
470	4.0	"	4.5	9.0						
480	"	8.5	"	"						
490	4.5	"	5.0	9.5						
500	"	9.0	"	"						
510	5.0	"	5.5	10.0						
520	"	9.5	"	"						
530	5.5	"	6.0	10.5						
540	"	10.0	"	"						
550	6.0	"	6.5	11.0						
560	"	10.5	"	"						
570	6.5	"	7.0	11.5						
580	"	11.0	7.5	12.0						
590	7.0	11.5	"	"						
600	"	11.5	8.0	12.5						

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40-inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30 inch minimum sidespan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

EC-Figure No. 87

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES - Feet

LOADING DISTRICT: Light

POWER CONDUCTOR: 6A CW

TELEPHONE CONDUCTOR: All cables weighing 1# or less on 6M strand.

When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS

SPAN LENGTH FT	All RULING SPANS		RULING SPAN		RULING SPAN		RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	Neutral	Secondary	Neutral	Secondary	Neutral	Secondary	Neutral	Secondary	Neutral	Secondary
200										
210										
220										
230										
240										
250										
260										
270										
280										
290										
300	3.5	5.0								
310	"	"								
320	"	"								
330	"	5.5								
340	"	"								
350	"	"								
360	"	"								
370	"	6.0								
380	"	"								
390	"	"								
400	"	6.5								
410										
420										
430										
440										
450										
460										
470										
480										
490										
500										
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40-inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30-inch minimum sidespan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

RD-Figure No. 92

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES - Feet

When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT: Medium

POWER CONDUCTOR: 8A CW

TELEPHONE CONDUCTOR: All cables weighing 1# or less on 10M strand.

SPAN LENGTH FT	MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS									
	465 RULING SPAN		500 RULING SPAN		590 RULING SPAN		RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200										
210										
220										
230										
240										
250										
260										
270										
280										
290										
300										
310										
320										
330										
340										
350	3.5	6.5	3.5	6.5	3.5	6.5				
360	"	"	"	"	"	"				
370	"	"	"	"	"	"				
380	"	"	"	"	"	"				
390	"	"	"	"	"	"				
400	"	"	"	"	"	"				
410	"	"	"	"	"	"				
420	"	"	"	"	"	7.0				
430	"	"	"	"	"	"				
440	"	"	"	7.0	"	"				
450	"	"	"	"	"	7.5				
460	"	7.0	"	"	"	"				
470	"	"	"	7.5	"	"				
480	"	"	"	"	"	8.0				
490	"	7.5	"	"	"	"				
500	"	"	"	8.0	4.0	8.5				
510	"	"	"	"	"	"				
520	"	8.0	4.0	"	4.5	9.0				
530	"	"	"	8.5	"	"				
540	4.0	"	"	"	5.0	"				
550	"	11.5	4.5	"	"	9.5				
560	4.2	"	"	9.0	5.5	"				
570	"	12.0	5.0	"	"	10.0				
580	"	"	"	9.5	"	"				
590	5.0	12.5	5.5	"	6.0	10.5				
600	"	"	"	10.0	"	"				

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40 inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30 inch minimum sidepan separation between highest telephone conductor and neutral or secondaries.
3. Use of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

RD-Figure No. 89

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES – Feet

When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT: Light

POWER CONDUCTOR: 6 HD Copper

TELEPHONE CONDUCTOR: All cables weighing 1# or less on 6M strand.

MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS

SPAN (Feet)	All RULING SPANS — Lower Power Cond.		RULING SPAN — Lower Power Cond.		RULING SPAN — Lower Power Cond.		RULING SPAN — Lower Power Cond.		RULING SPAN — Lower Power Cond.	
	Neutral	Secondary	Neutral	Secondary	Neutral	Secondary	Neutral	Secondary	Neutral	Secondary
200										
210										
220										
230										
240										
250										
260										
270										
280										
290										
300	3.5	6.0								
310	"	"								
320	"	6.5								
330	"	"								
340	"	"								
350	"	7.0								
360	"	"								
370	"	7.5								
380	"	"								
390	"	8.0								
400	"	"								
410										
420										
430										
440										
450										
460										
470										
480										
490										
500										
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40-inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30-inch minimum midspan separation between highest telephone conductor and neutral or secondaries.
3. Use of slight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

HD-Figure No. 9b

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES - Feet

When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT: Light

POWER CONDUCTOR: 4-7/1 ACSR

TELEPHONE CONDUCTOR: All cables weighing 1# or less on 6M strand.

SPAN LENGTH FT	MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS									
	495 RULING SPAN		650 RULING SPAN		RULING SPAN		RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200										
210										
220										
230										
240										
250										
260										
270										
280										
290										
300	3.5	5.0	3.5	4.5						
310	"	"	"	5.0						
320	"	"	"	"						
330	"	"	"	"						
340	"	"	"	"						
350	"	5.5	"	5.5						
360	"	"	"	"						
370	"	"	"	"						
380	"	6.0	"	"						
390	"	"	"	6.0						
400	"	"	"	"						
410										
420										
430										
440										
450										
460										
470										
480										
490										
500										
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40 inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30 inch minimum midspan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

RD-Figure No. 91

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES - Feet

When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT: Light

POWER CONDUCTOR: 6A CW

TELEPHONE CONDUCTOR: All cables weighing 1# or less on 10M strand.

SPAN LENGTH FT	MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS									
	All RULING SPAN		RULING SPAN		RULING SPAN		RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200										
210										
220										
230										
240										
250										
260										
270										
280										
290										
300	3.5	5.0								
310	"	"								
320	"	"								
330	"	5.5								
340	"	"								
350	"	"								
360	"	"								
370	"	6.0								
380	"	"								
390	"	"								
400	"	6.5								
410	"	"								
420	"	"								
430	"	7.0								
440	"	"								
450	"	"								
460	"	7.5								
470	"	"								
480	"	"								
490	"	8.0								
500	"	"								
510	4.0	8.5								
520	"	"								
530	4.5									
540	"	9.0								
550	"	"								
560	5.0	9.5								
570	"	"								
580	5.5	10.0								
590	"	"								
600										

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40-inch minimum separation at pole between neutral or secondary and highest telephone conductor (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30-inch minimum midspan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

RD-Figure No. 96

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES - Feet

When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT: Light

POWER CONDUCTOR: 8A CW

TELEPHONE CONDUCTOR: All cables weighing 1# or less on 6M Strand.

SPAN LENGTH FT	MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS									
	All RULING SPAN		RULING SPAN		RULING SPAN		RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200										
210										
220										
230										
240										
250										
260										
270										
280										
290										
300	3.5	4.5								
310	"	"								
320	"	5.0								
330	"	"								
340	"	"								
350	"	"								
360	"	5.5								
370	"	"								
380	"	"								
390	"	"								
400	"	6.0								
410										
420										
430										
440										
450										
460										
470										
480										
490										
500										
510										
520										
530										
540										
550										
560										
570										
580										
590										
600										

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40 inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30 inch minimum midspan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

RD-Figure No. 93

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILDS ON REA ELECTRIC POLE LINES

When secondaries are present or planned, use column "Secondary". Separations shown are between neutral and telephone conductors. All

LOADING DISTRICT: Light

POWER CONDUCTOR: [illegible] Copper

TELEPHONE CONDUCTOR: All cables weighing 1# or less on 10M strand.

MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS

SPAN LENGTH FT	All RULING SPAN — LOWER POWER COND		RULING SPAN — LOWER POWER COND		RULING SPAN — LOWER POWER COND		RULING SPAN — LOWER POWER COND		RULING SPAN — LOWER POWER COND	
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
200										
210										
220										
230										
240										
250										
260										
[illegible]										
[illegible]										
[illegible]										
300	5.5	6.5								
[illegible]	"	"								
320	"	"								
330	"	"								
[illegible]	"	"								
[illegible]	"	7.0								
[illegible]	"	"								
370	"	7.5								
[illegible]	"	"								
[illegible]	"	8.0								
[illegible]	"	"								
[illegible]	4.0	8.5								
420	"	"								
430	4.5	9.0								
[illegible]	"	"								
[illegible]	5.0	9.5								
[illegible]	"	"								
470	5.5	10.0								
[illegible]	6.0	10.5								
[illegible]	"	"								
[illegible]	6.5	11.0								
[illegible]	7.0	"								
[illegible]	"	11.5								
[illegible]	7.5	12.0								
[illegible]	8.0	"								
[illegible]	"	12.5								
[illegible]	8.5	13.0								
[illegible]	9.0	13.5								
[illegible]										
[illegible]										

Notes: The data shown in this table reflect the following basic minimum requirements:

[illegible] inch minimum separation at pole between neutral or secondary and highest telephone conductor (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).

* 30-inch minimum midspan separation between highest telephone conductor and neutral or secondaries

[illegible] of eight rule when secondaries up to 750 volts are involved.

[illegible] separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

ED-Figure No. 98

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES - Feet

When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT: Light

POWER CONDUCTOR: 4-7/1 ACSR

TELEPHONE CONDUCTOR: All cables weighing 1# or less on 1CM messenger.

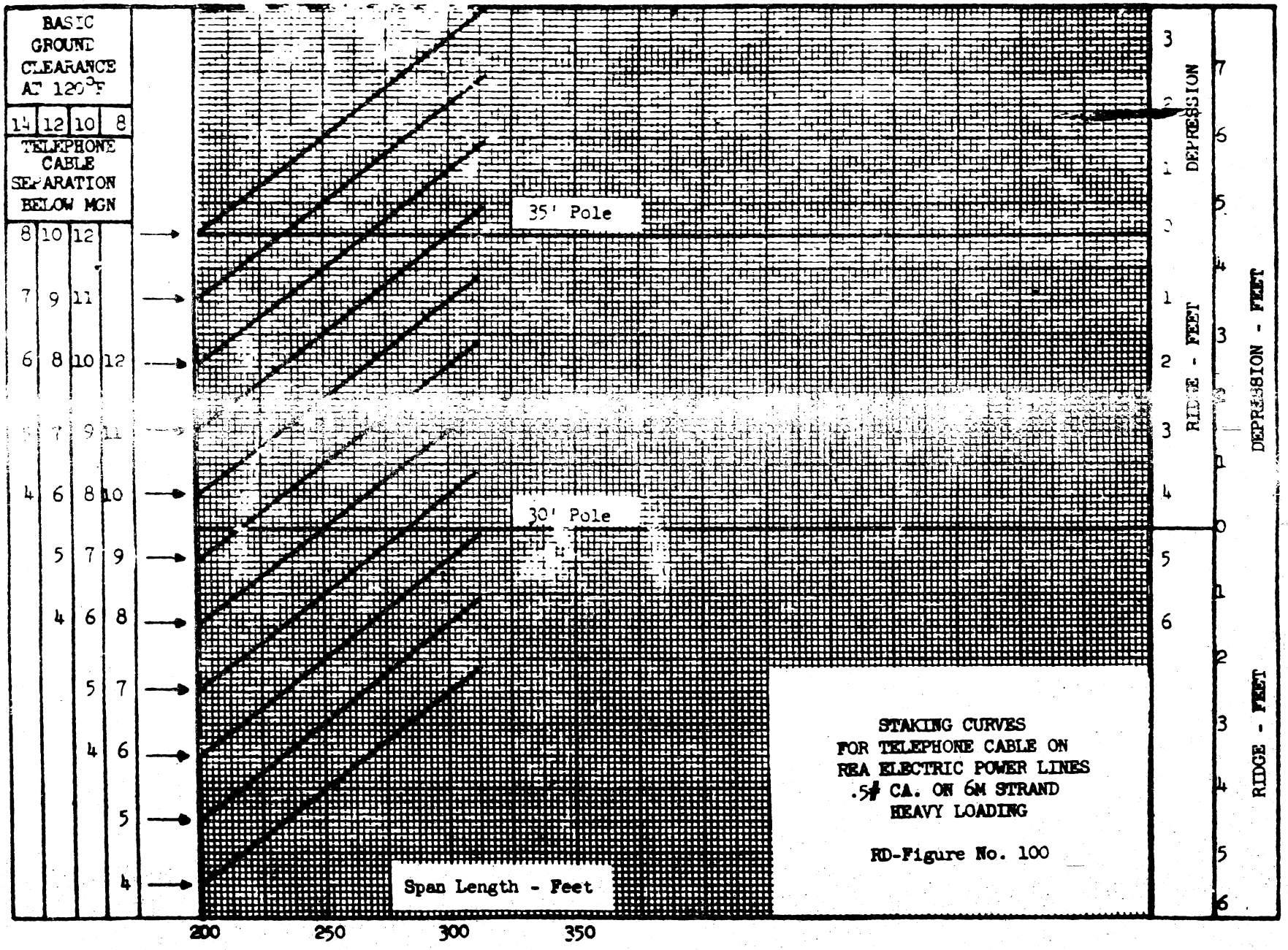
MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS

SPAN LENGTH	495 RULING SPAN		650 RULING SPAN		RULING SPAN		RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	Neutral	Secondary	Neutral	Secondary	Neutral	Secondary	Neutral	Secondary	Neutral	Secondary
200										
210										
220										
230										
240										
250										
260										
270										
280										
290										
300	3.5	6.5	3.5	6.5						
310	"	"	"	"						
320	"	"	"	"						
330	"	"	"	"						
340	"	"	"	"						
350	"	"	"	"						
360	"	"	"	"						
370	"	"	"	"						
380	"	"	"	"						
390	"	"	"	"						
400	"	"	"	"						
410	"	"	"	"						
420	"	"	"	"						
430	"	"	"	"						
440	"	"	"	"						
450	"	7.0	"	7.0						
460	"	"	"	"						
470	"	"	"	"						
480	"	7.5	"	"						
490	"	"	"	7.5						
500	"	"	"	"						
510	"	8.0	"	8.0						
520	"	"	"	"						
530	4.0	8.5	"	"						
540	"	"	4.0	8.5						
550	"	"	"	"						
560	4.5	9.0	4.5	"						
570	"	"	"	9.0						
580	5.0	9.5	"	"						
590	"	"	5.0	"						
600										

NOTES: The data shown in this table reflect the following basic minimum requirements:

1. 40-inch minimum separation at pole between neutral or secondary and highest telephone conductor. (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral).
2. 30-inch minimum midspan separation between highest telephone conductor and neutral or secondaries.
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral.

RD-Figure No. 95



STAKING CURVES
FOR TELEPHONE CABLE ON
REA ELECTRIC POWER LINES
.5# CA. ON 6M STRAND
HEAVY LOADING

RD-Figure No. 100

VERTICAL SEPARATION TABLES FOR TELEPHONE UNDERBUILD ON REA ELECTRIC POLE LINES – Feet

When secondaries are present or planned, use column "Secondary". All separations shown are between neutral and telephone conductors.

LOADING DISTRICT: Light

POWER CONDUCTOR: 8A Cd

TELEPHONE CONDUCTOR: All cables weighing 1# or less on 10M strand.

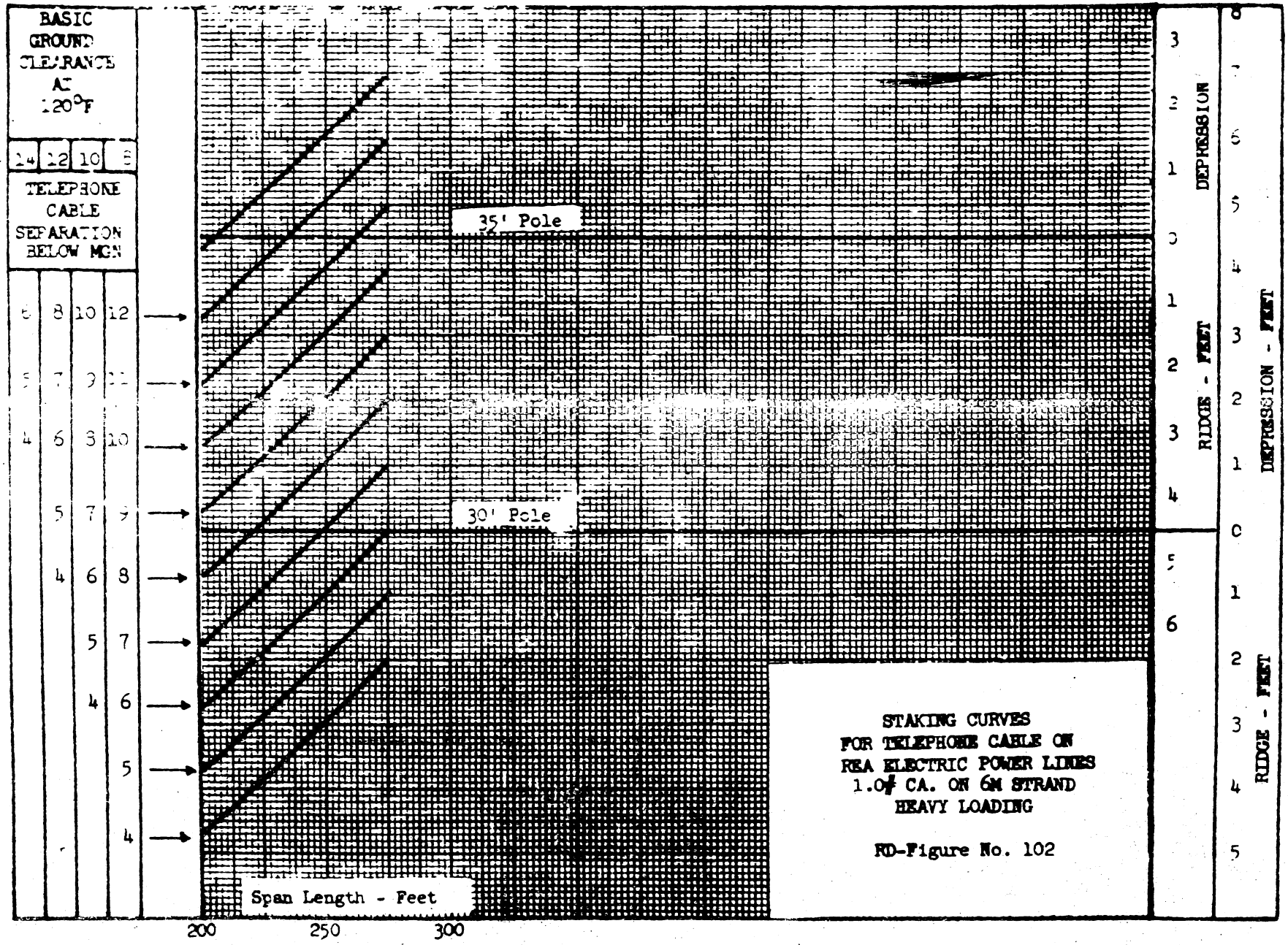
MINIMUM SEPARATION AT POLE BETWEEN POWER NEUTRAL AND TELEPHONE CONDUCTORS

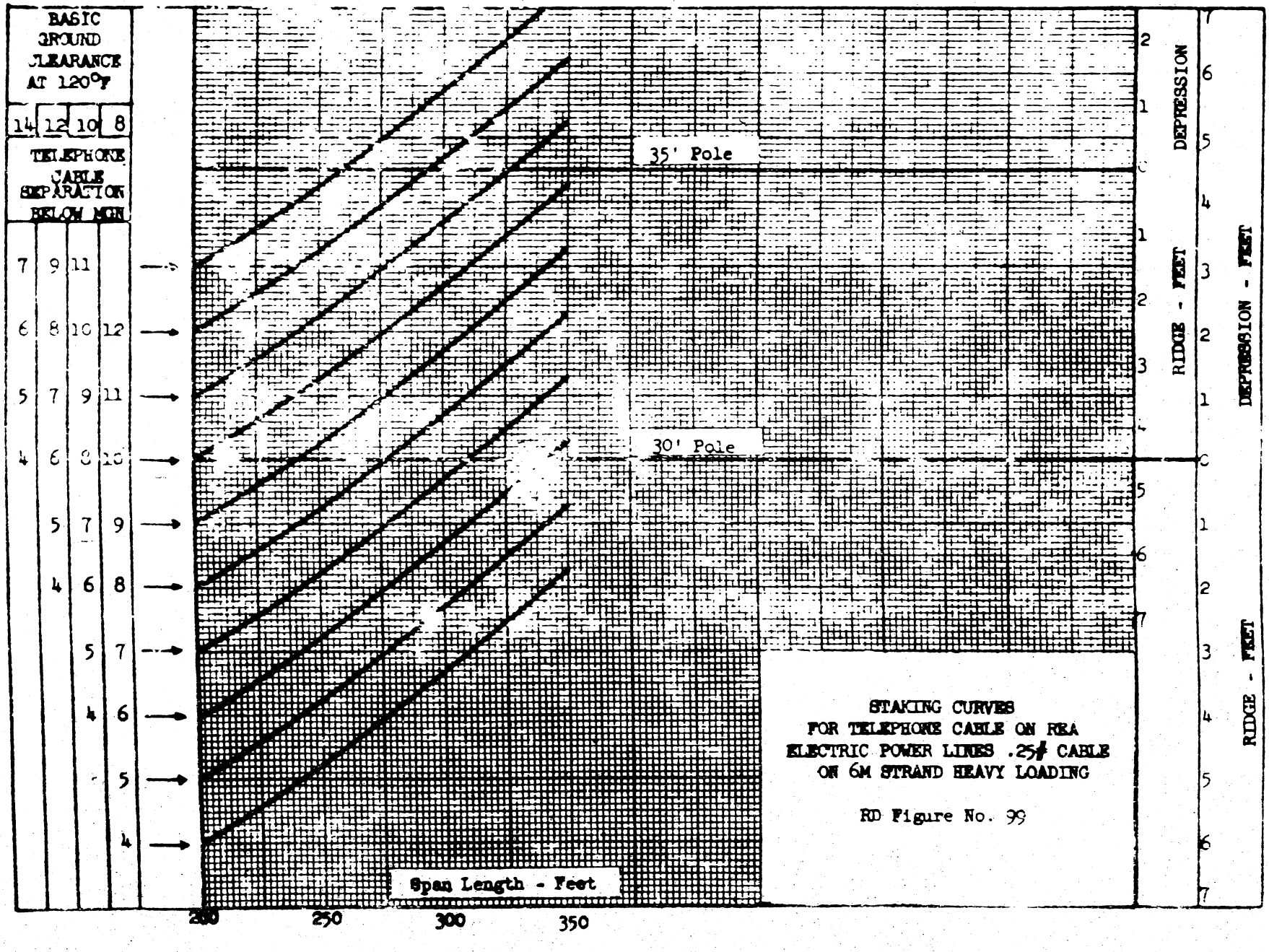
SPAN LENGTH FT.	All RULING SPAN		RULING SPAN		RULING SPAN		RULING SPAN		RULING SPAN	
	LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.		LOWER POWER COND.	
	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY	NEUTRAL	SECONDARY
200										
210										
220										
230										
240										
250										
260										
270										
280										
290										
300	3.5	6.5								
310	"	"								
320	"	"								
330	"	"								
340	"	"								
350	"	"								
360	"	"								
370	"	"								
380	"	"								
390	"	"								
400	"	"								
410	"	"								
420	"	"								
430	"	"								
440	"	"								
450	"	"								
460	"	"								
470	"	7.0								
480	"	"								
490	"	"								
500	"	7.5								
510	"	"								
520	"	"								
530	"	8.0								
540	"	"								
550	"	"								
560	4.0	8.5								
570										
580	4.5	"								
590	"	9.0								
600										

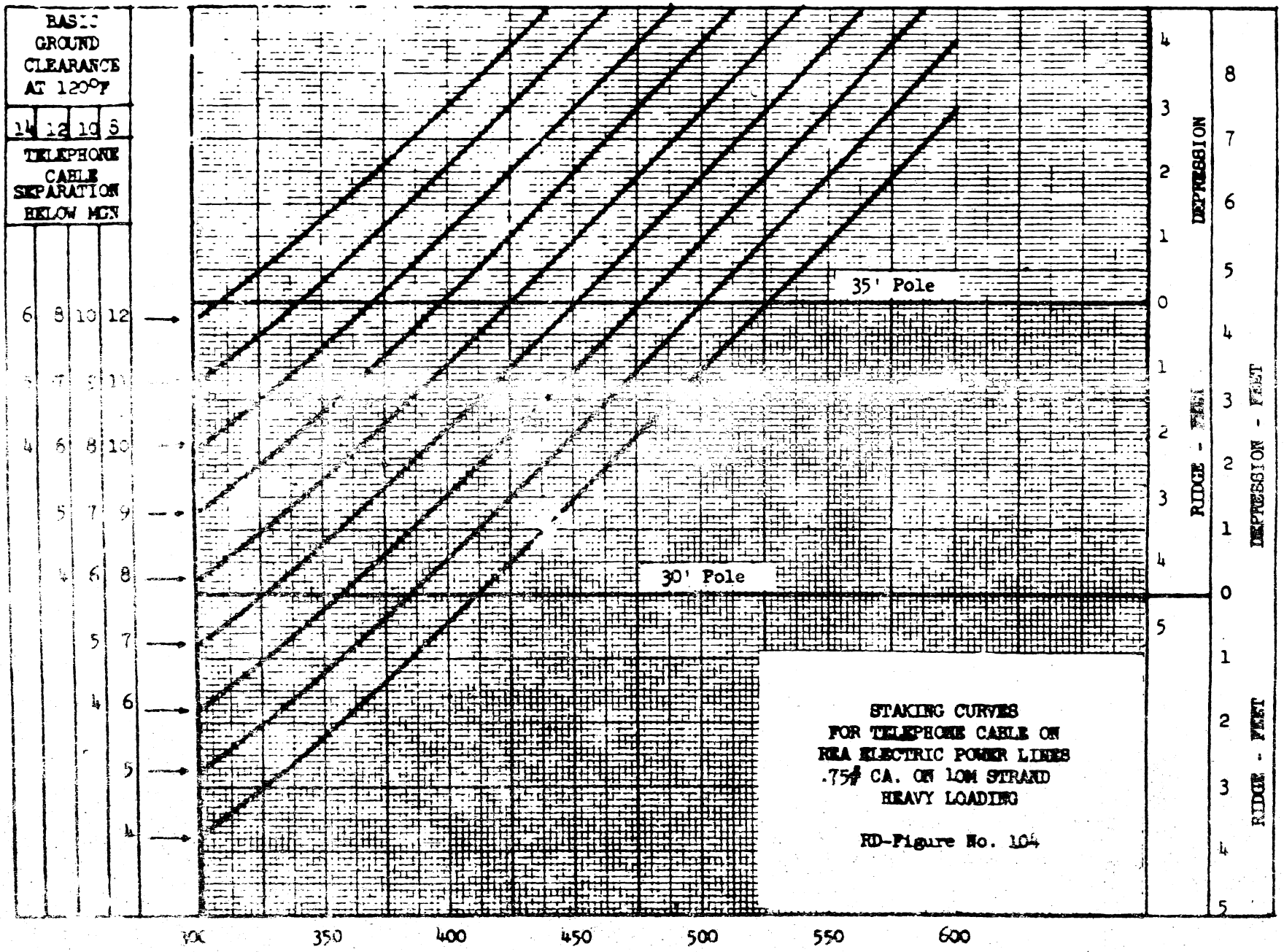
NOTES: The data shown in this table reflect the following basic minimum requirements

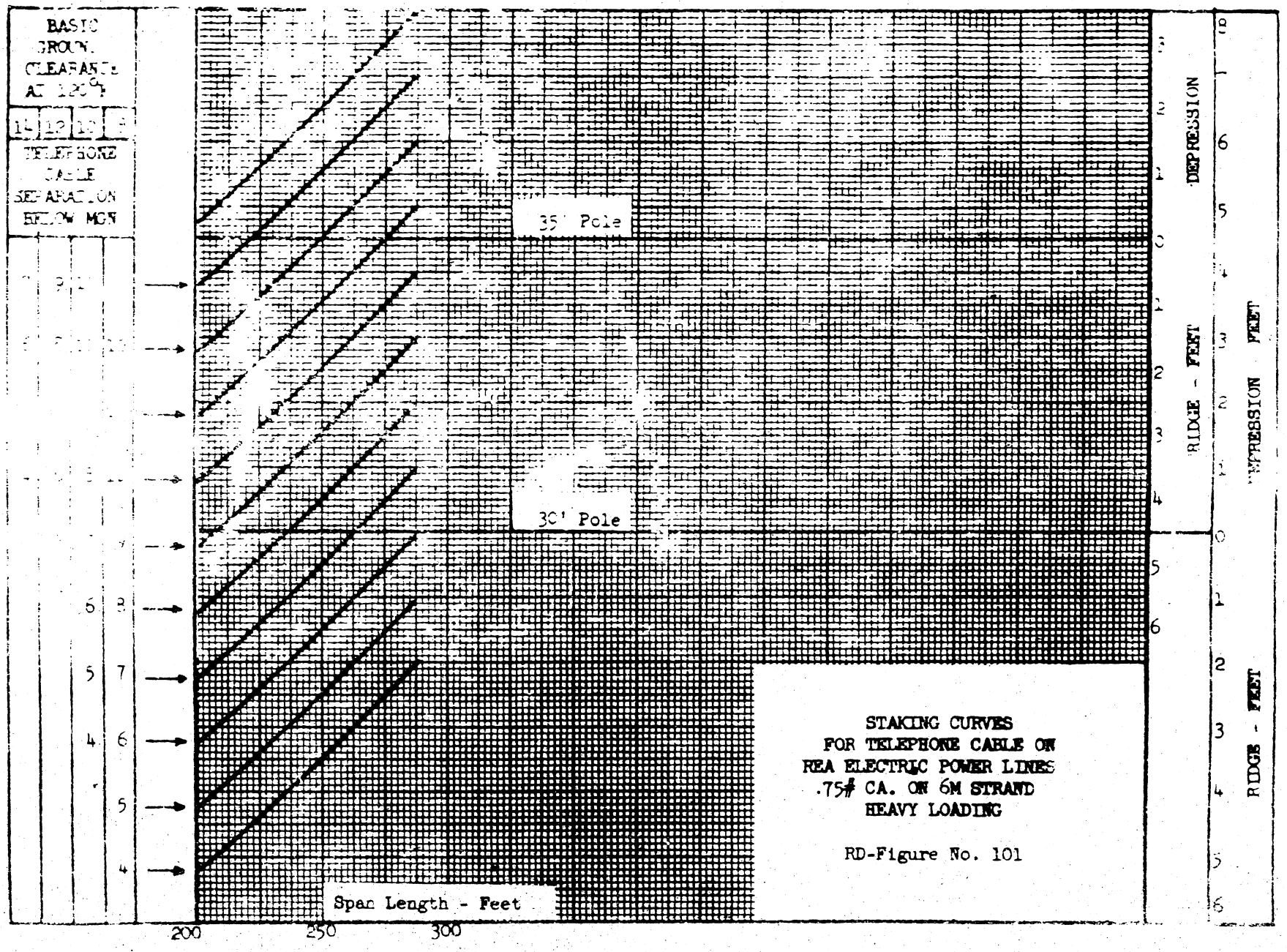
1. 40-inch minimum separation at pole between neutral or secondary and highest telephone conductor (These tables do not include any consideration of minimum separation requirements when power equipment is mounted on pole below the neutral)
2. 30 inch minimum midspan separation between highest telephone conductor and neutral or secondaries
3. Line of sight rule when secondaries up to 750 volts are involved.
4. All separations are based on REA pole head configurations with neutral 3½ feet below pole top and phase wires occupying a position at top of pole and lowest secondary 3 feet below neutral

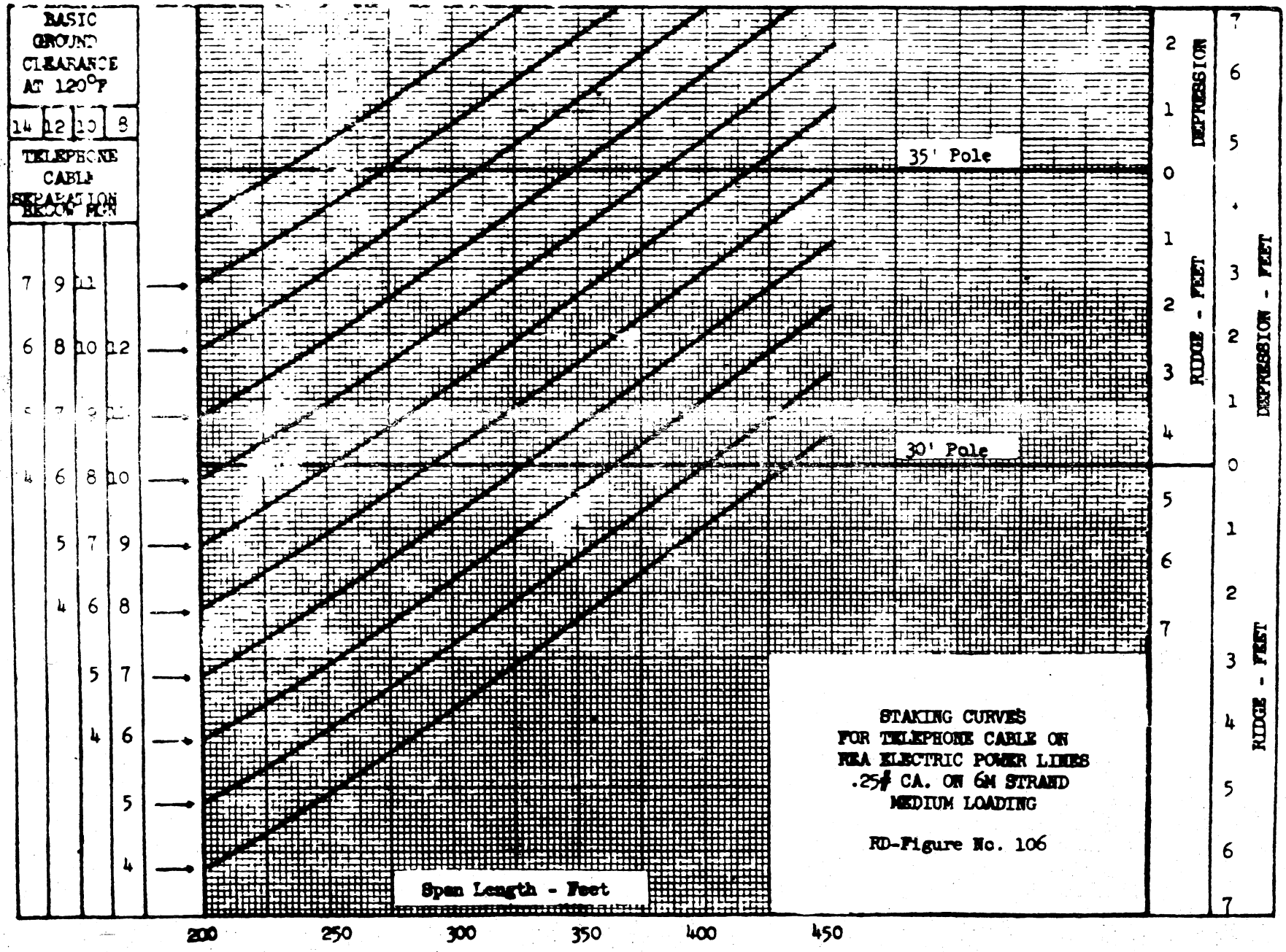
RD-Figure No. 11

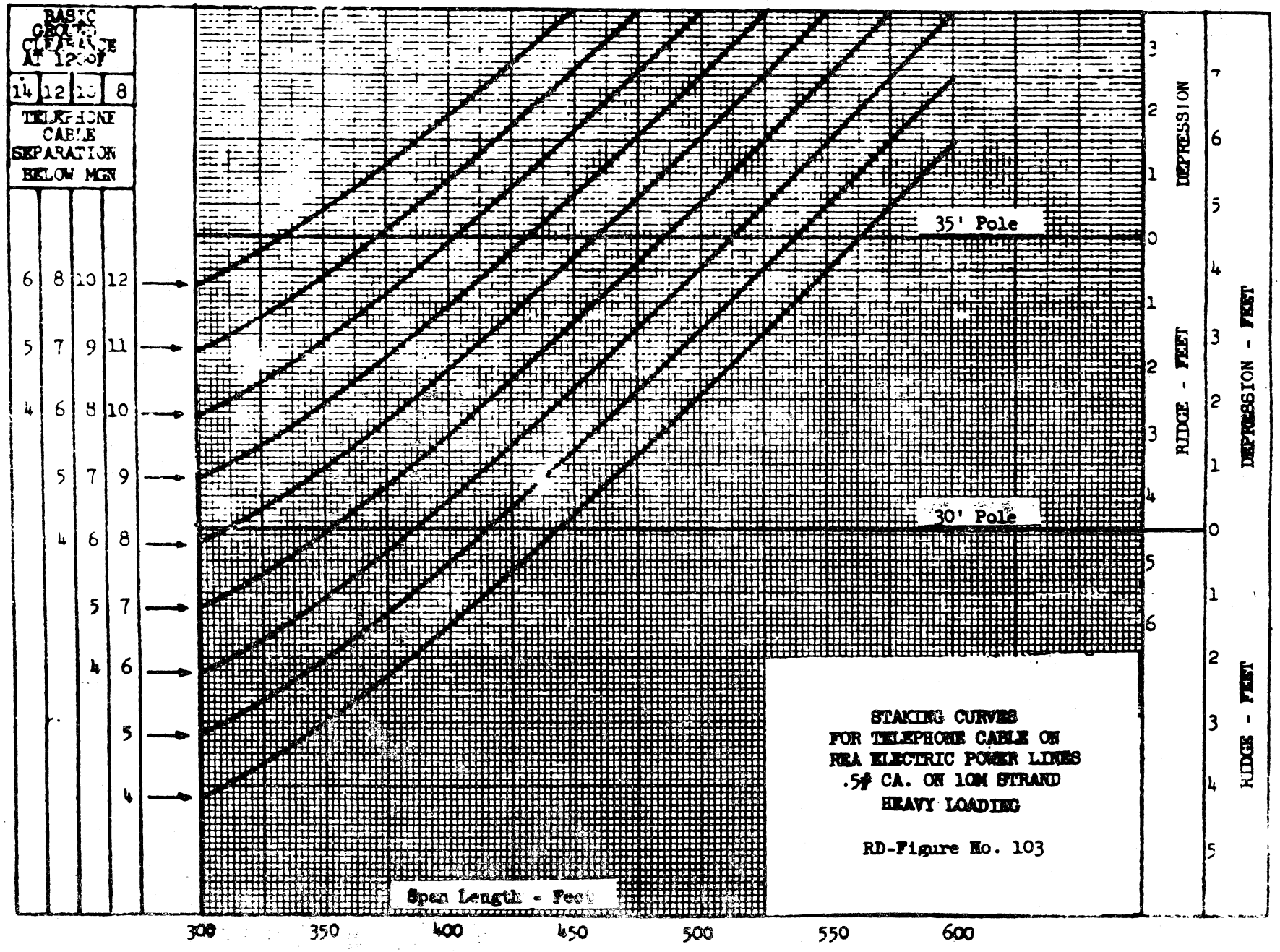

BASIC GROUND CLEARANCE AT 120°F
14 12 10 8
TELEPHONE CABLE SEPARATION BELOW MGN
6 8 10 12
5 7 9 11
4 6 8 10
5 7 9
4 6 8
5 7
4 6
5
4
35' Pole
30' Pole
Span Length - Feet
200
250
300
3 2 1 0 1 2 3 4
RIDGE - FEET DEPRESSION
5 6
0 1 2 3 4 5 6
DEPRESSION - FEET RIDGE - FEET
STAKING CURVES
FOR TELEPHONE CABLE ON
REA ELECTRIC POWER LINES
1.0# CA. ON 6M STRAND
HEAVY LOADING
RD-Figure No. 102

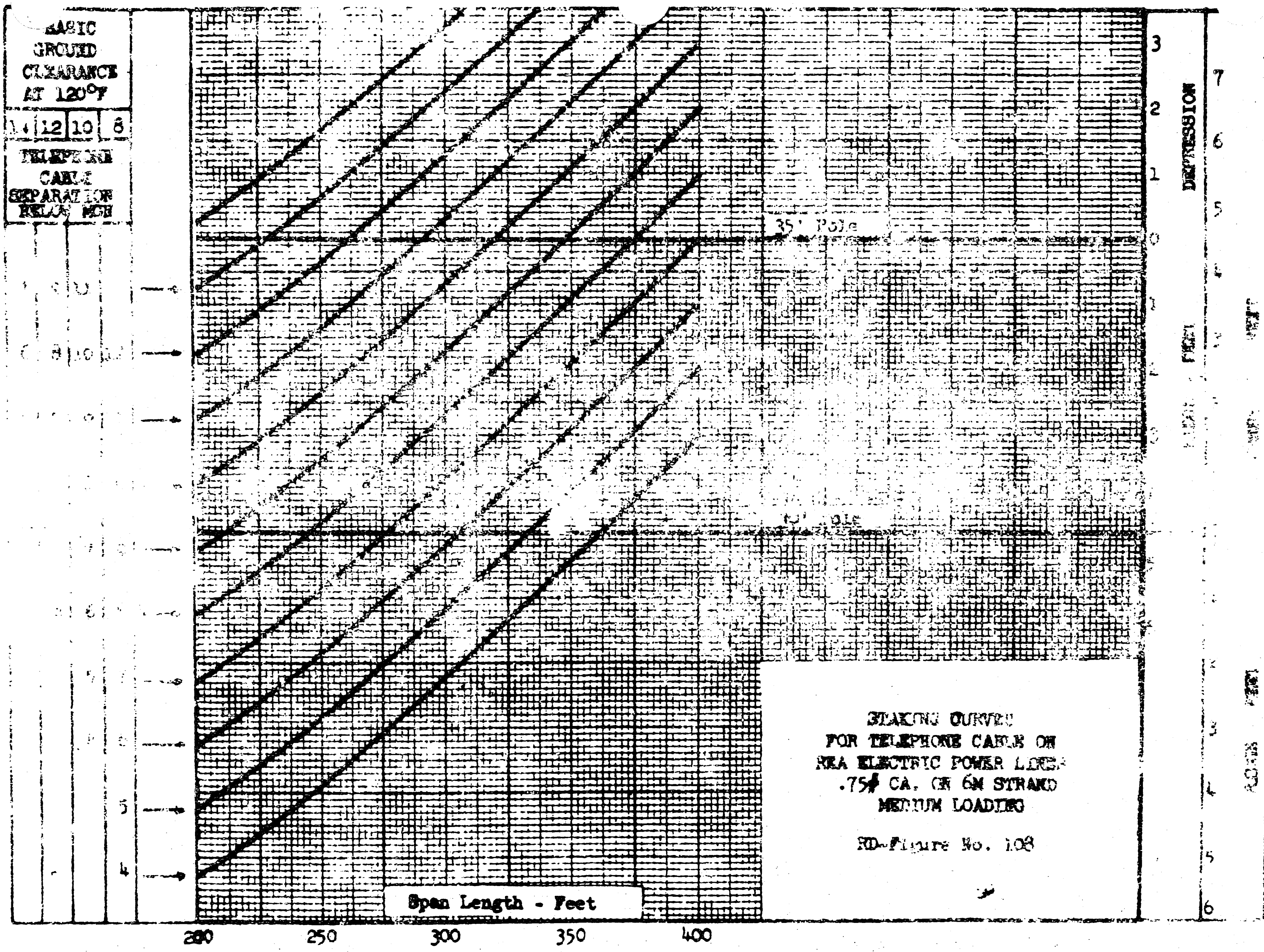

BASIC GROUND CLEARANCE AT 120°F
14 12 10 8
TELEPHONE CABLE SEPARATION BELOW MGN
7 9 11
6 8 10 12
5 7 9 11
4 6 8 10
5 7 9
4 6 8
5 7
4 6
5
4
35' Pole
30' Pole
RIDGE - FEET DEPRESSION
DEPRESSION - FEET RIDGE
Span Length - Feet
200 250 300 350
STAKING CURVES
FOR TELEPHONE CABLE ON REA
ELECTRIC POWER LINES .25# CABLE
ON 6M STRAND HEAVY LOADING
RD Figure No. 99


BASIC GROUND CLEARANCE AT 120°F
14 12 10 8
TELEPHONE CABLE SEPARATION BELOW MCN
6 8 10 12
4 6 8 10
5 7 9
4 6 8
5 7
4 6
5
4
35' Pole
30' Pole
DEPRESSION
RIDGE - FEET
DEPRESSION - FEET
RIDGE - FEET
4 3 2 1 0 1 2 3 4
8 7 6 5 4 3 2 1 0 1 2 3 4 5
300 350 400 450 500 550 600
STAKING CURVES
FOR TELEPHONE CABLE ON
REA ELECTRIC POWER LINES
.75# CA. ON 10M STRAND
HEAVY LOADING
RD-Figure No. 104


BASIC GROUND CLEARANCE AT 120°F
TELEPHONE CABLE SEPARATION BELOW MGN
35' Pole
30' Pole
Span Length - Feet
200
250
300
DEPRESSION
RIDGE - FEET
RIDGE - FEET
DEPRESSION FEET
STAKING CURVES
FOR TELEPHONE CABLE ON
REA ELECTRIC POWER LINES
.75# CA. ON 6M STRAND
HEAVY LOADING
RD-Figure No. 101

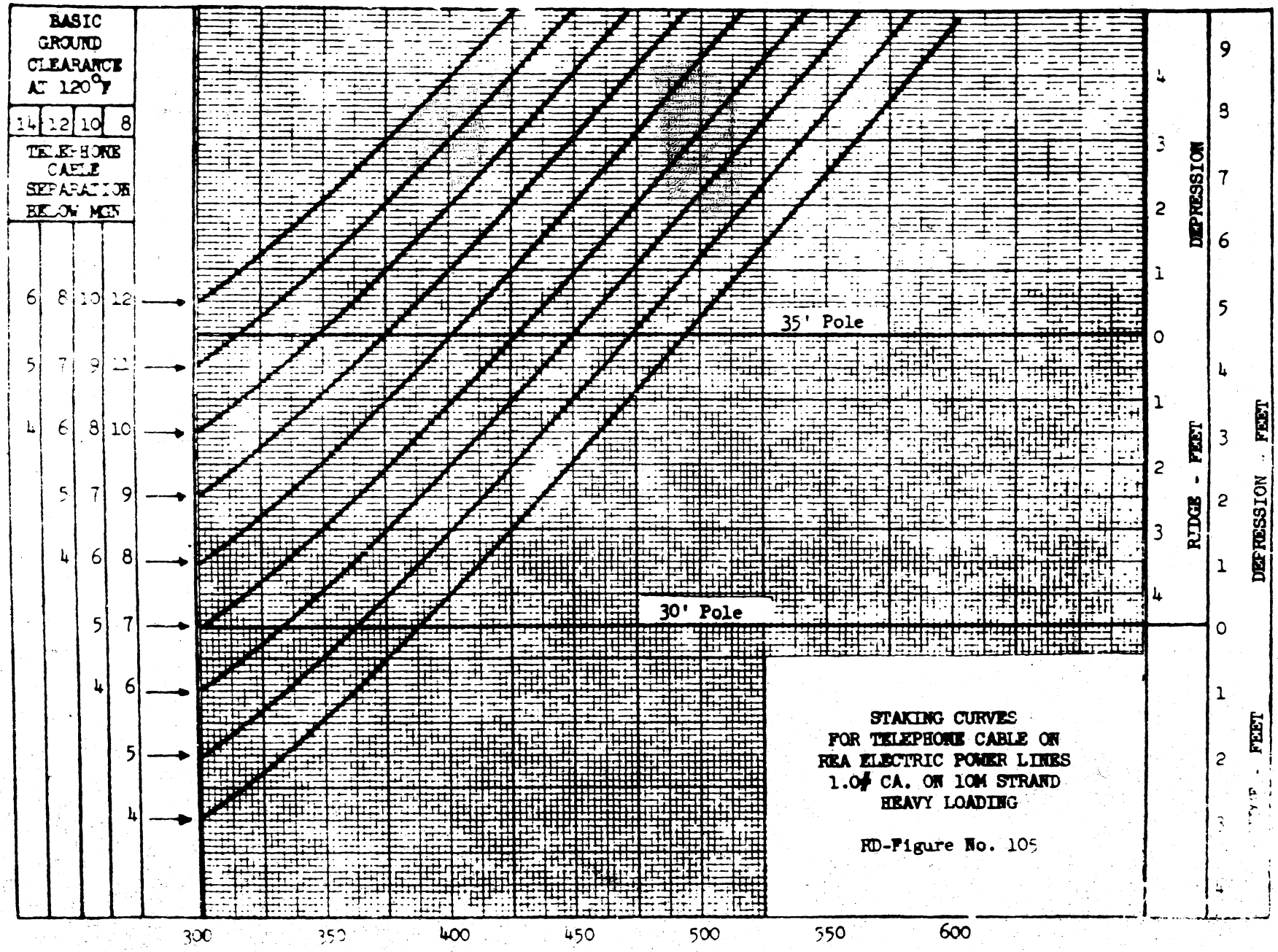

BASIC GROUND CLEARANCE AT 120°F
14 12 10 8
TELEPHONE CABLE SEPARATION ABOVE POLE
7 9 11
6 8 10 12
4 6 8 10
5 7 9
4 6 8
5 7
4 6
5
4
35' Pole
30' Pole
Span Length - Feet
200 250 300 350 400 450
RIDGE - FEET
2 1 0 1 2 3 4
5 6 7
DEPRESSION - FEET
7 6 5 4 3 2 1 0
1 2 3 4 5 6 7
STAKING CURVES
FOR TELEPHONE CABLE ON
REA ELECTRIC POWER LINES
.25# CA. ON 6M STRAND
MEDIUM LOADING
RD-Figure No. 106

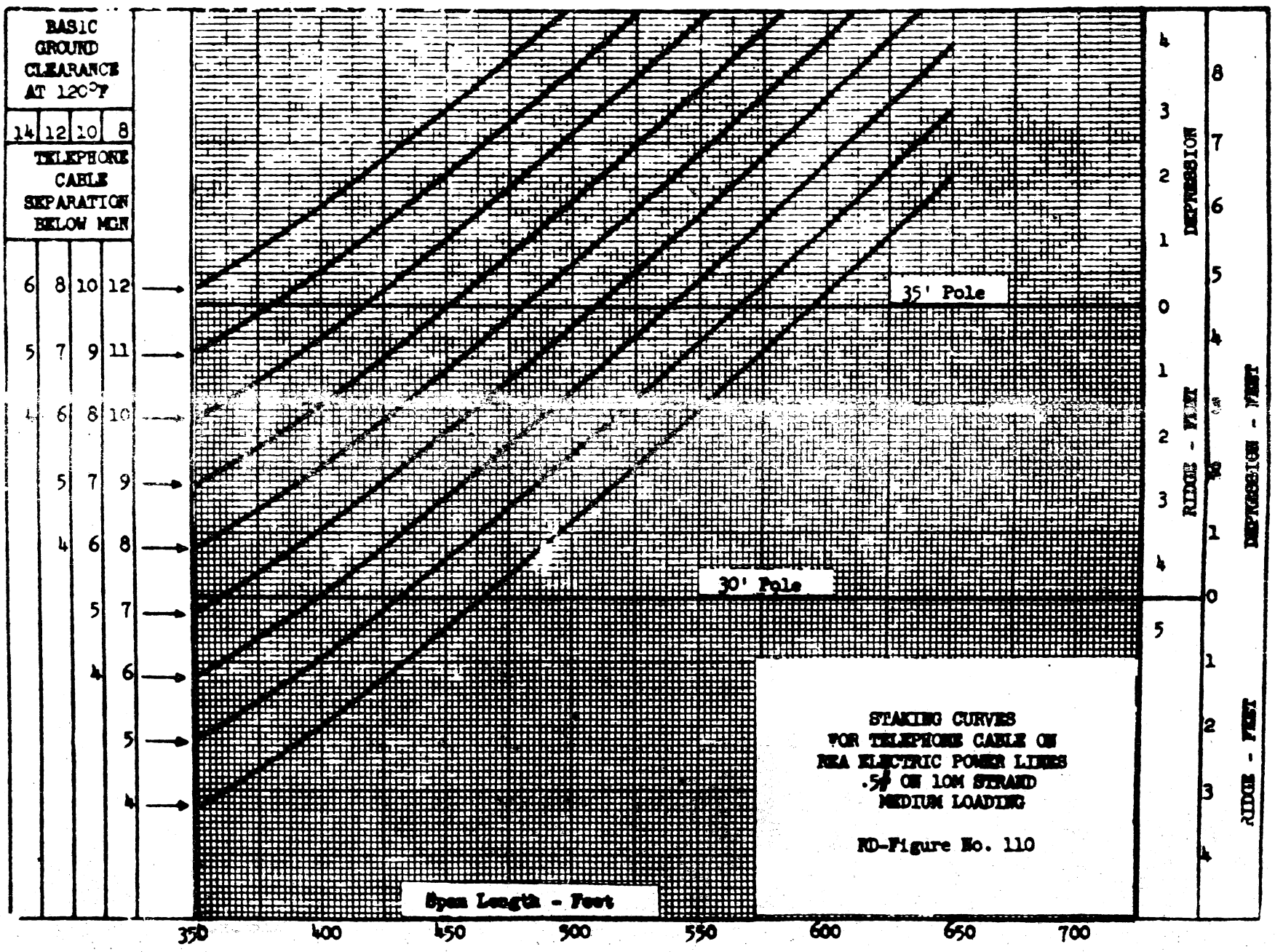

BASIC GROUND CLEARANCE AT 120°F
14
12
10
8
TELEPHONE CABLE SEPARATION BELOW MGN
6 8 10 12
5 7 9 11
4 6 8 10
5 7 9
4 6 8
5 7
4 6
5
4
35' Pole
30' Pole
RIDGE - FEET
DEPRESSION
DEPRESSION - FEET
RIDGE - FEET
Span Length - Feet
300
350
400
450
500
550
600
STACKING CURVES
FOR TELEPHONE CABLE ON
REA ELECTRIC POWER LINES
.5# CA. ON 10M STRAND
HEAVY LOADING
RD-Figure No. 103

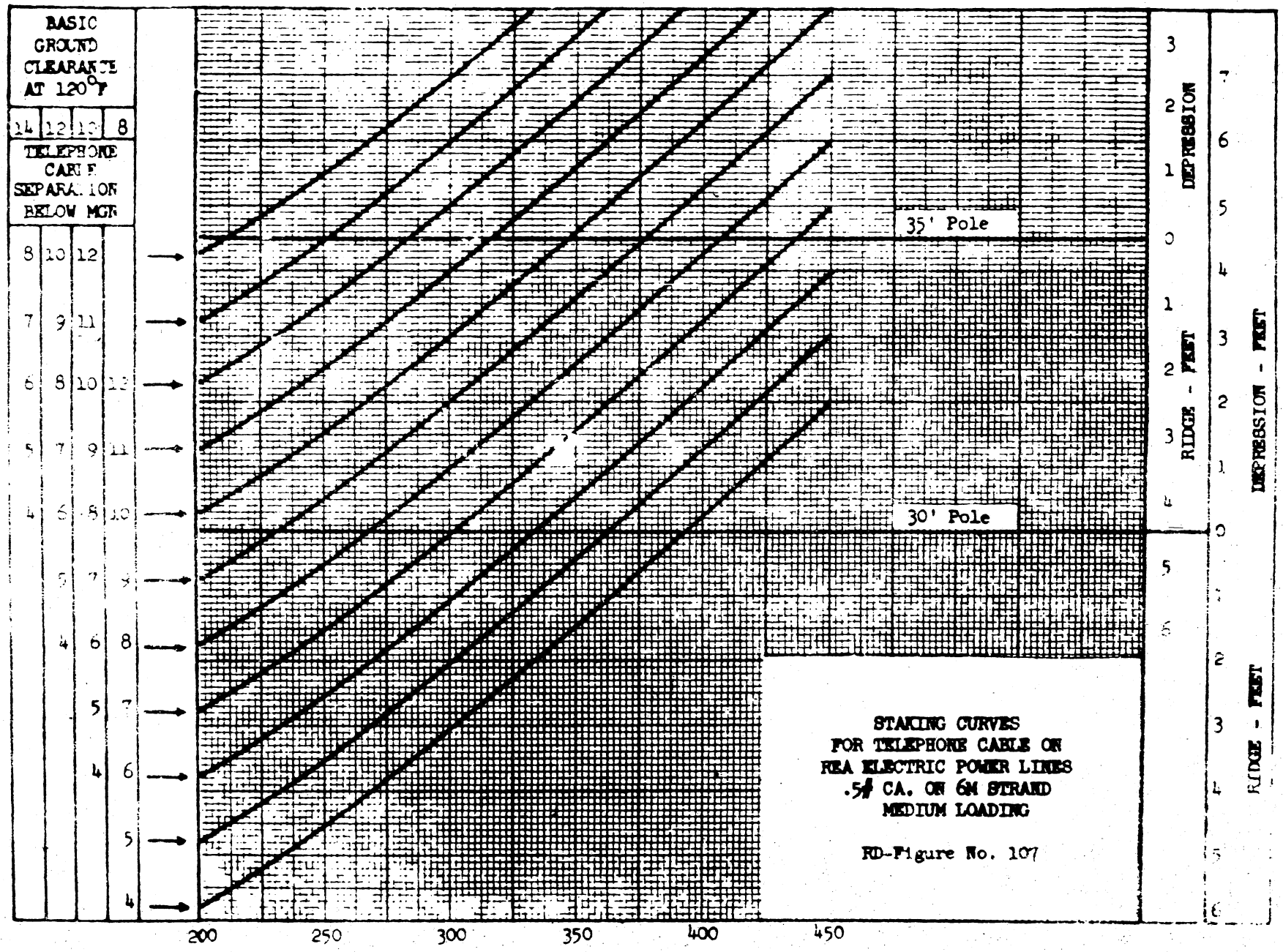


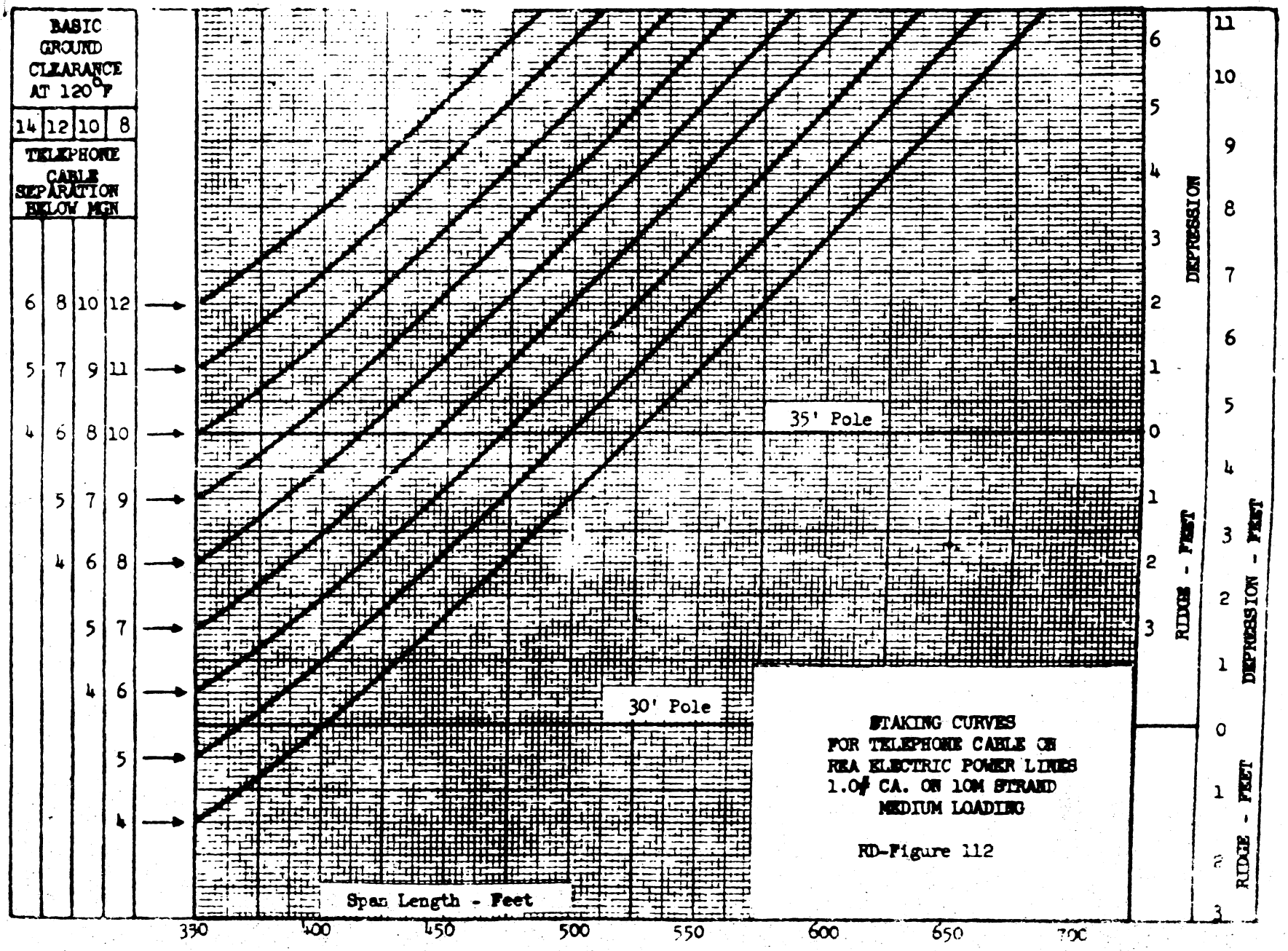
STAKING CURVES
FOR TELEPHONE CABLE ON
REA ELECTRIC POWER LINES
.75# CA. ON 6M STRAND
MEDIUM LOADING

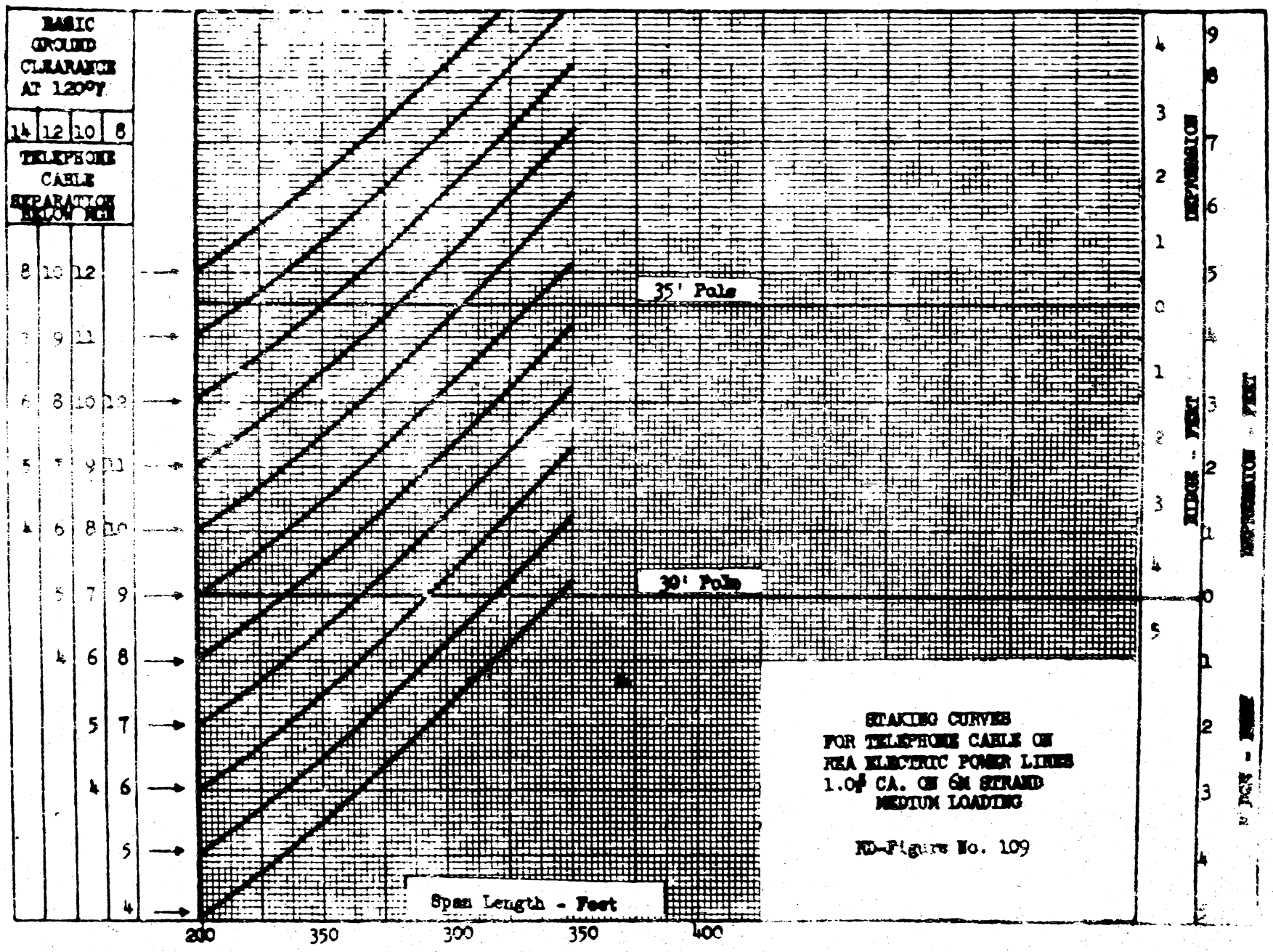
RD-Figure No. 108

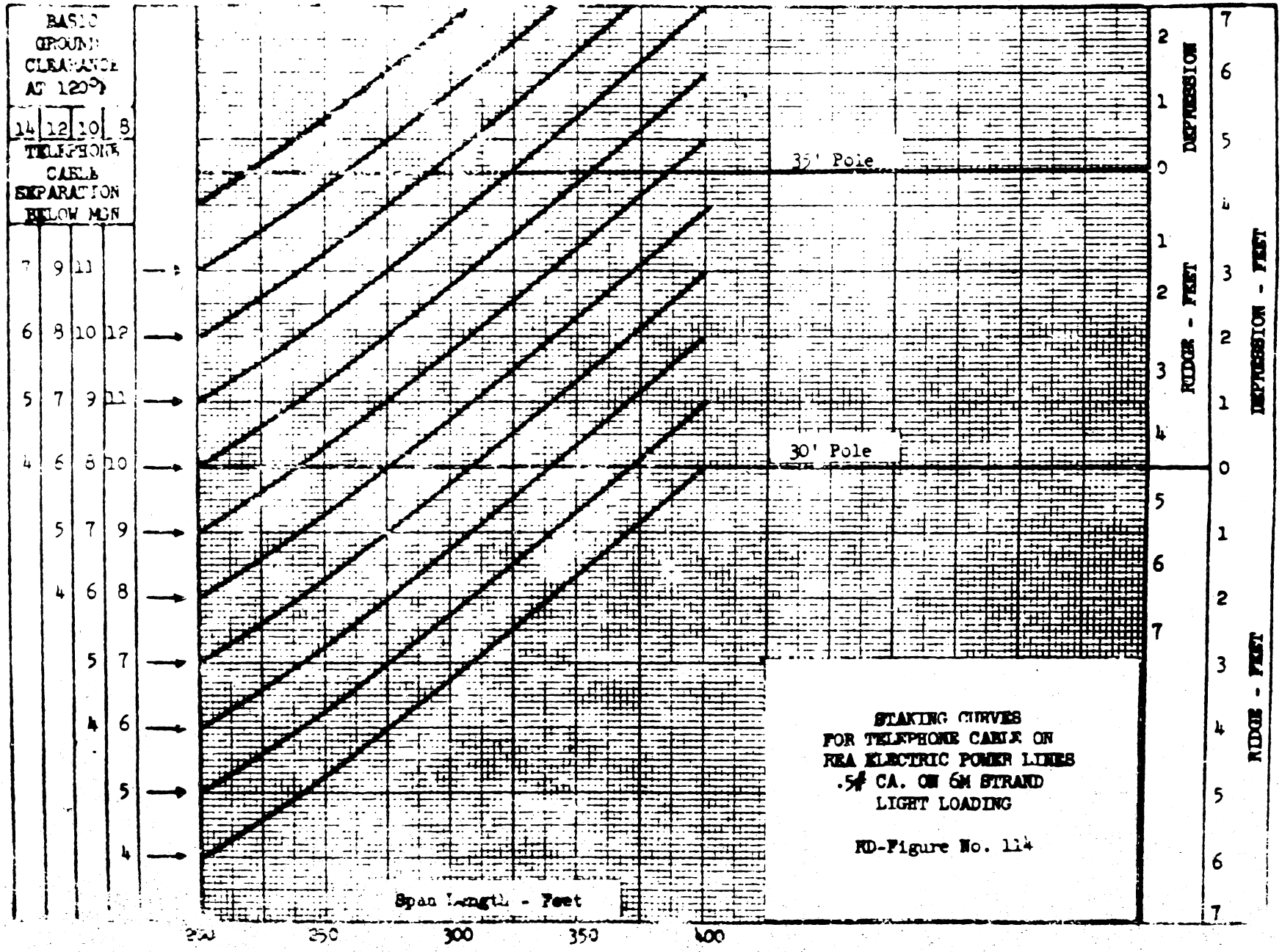

BASIC GROUND CLEARANCE AT 120°F
14 12 10 8
TELEPHONE CABLE SEPARATION BELOW MGN
6 8 10 12
5 7 9 11
4 6 8 10
5 7 9
4 6 8
5 7
4 6
5
4
35' Pole
30' Pole
RIDGE - FEET DEPRESSION
DEPRESSION - FEET
300 350 400 450 500 550 600
STAKING CURVES
FOR TELEPHONE CABLE ON
REA ELECTRIC POWER LINES
1.0# CA. ON 10M STRAND
HEAVY LOADING
RD-Figure No. 105

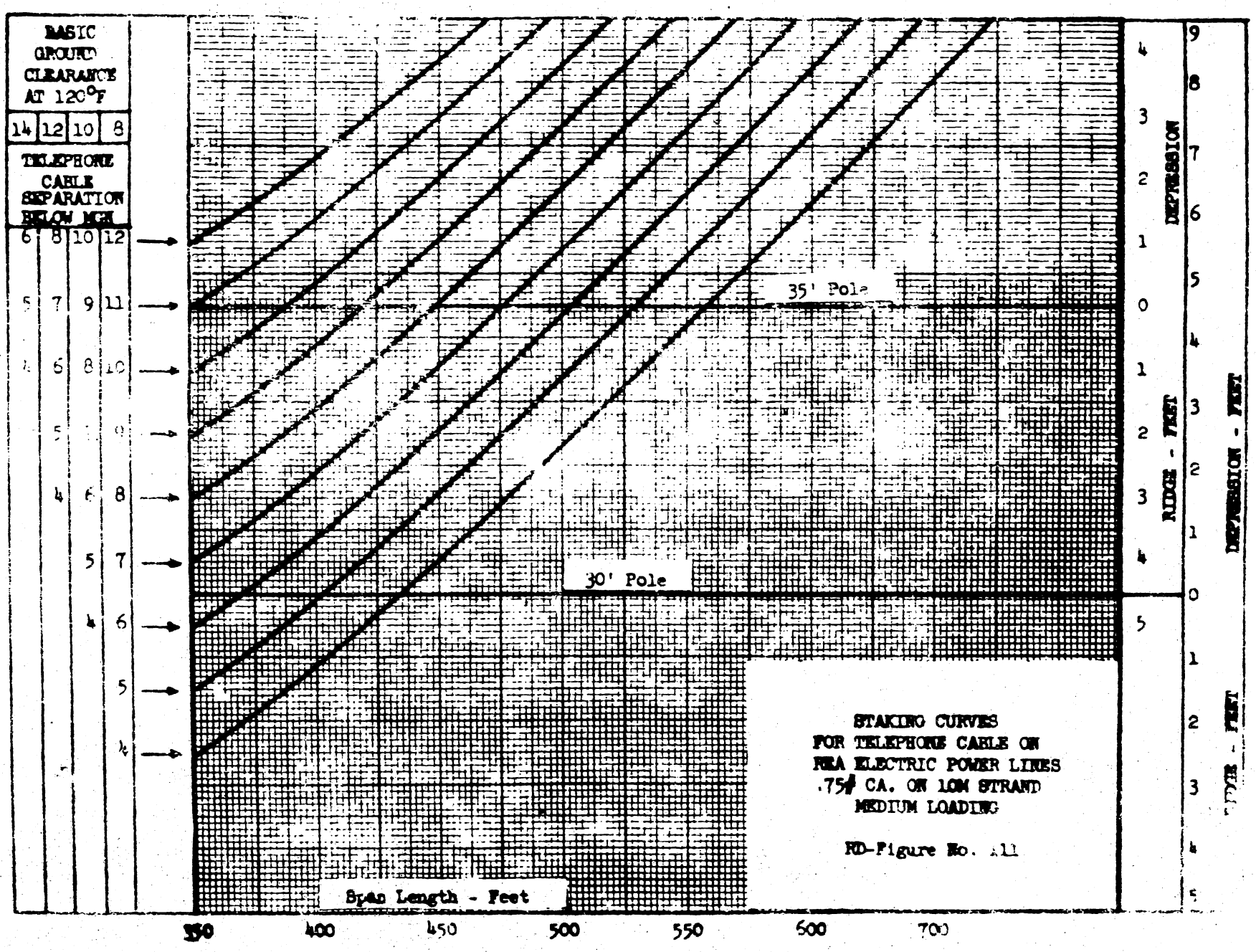

BASIC GROUND CLEARANCE AT 120°F
14 12 10 8
TELEPHONE CABLE SEPARATION BELOW MEN
6 8 10 12
5 7 9 11
4 6 8 10
5 7 9
4 6 8
5 7
4 6
5
4
35' Pole
30' Pole
Span Length - Feet
350 400 450 500 550 600 650 700
DEPRESSION
RIDGE - FEET
DEPRESSION - FEET
RIDGE - FEET
4 3 2 1 0 1 2 3 4
8 7 6 5 4 3 2 1 0 1 2 3 4
5
STAKING CURVES
FOR TELEPHONE CABLE ON
REA ELECTRIC POWER LINES
.5" OR 1OM STRAND
MEDIUM LOADING
RD-Figure No. 110

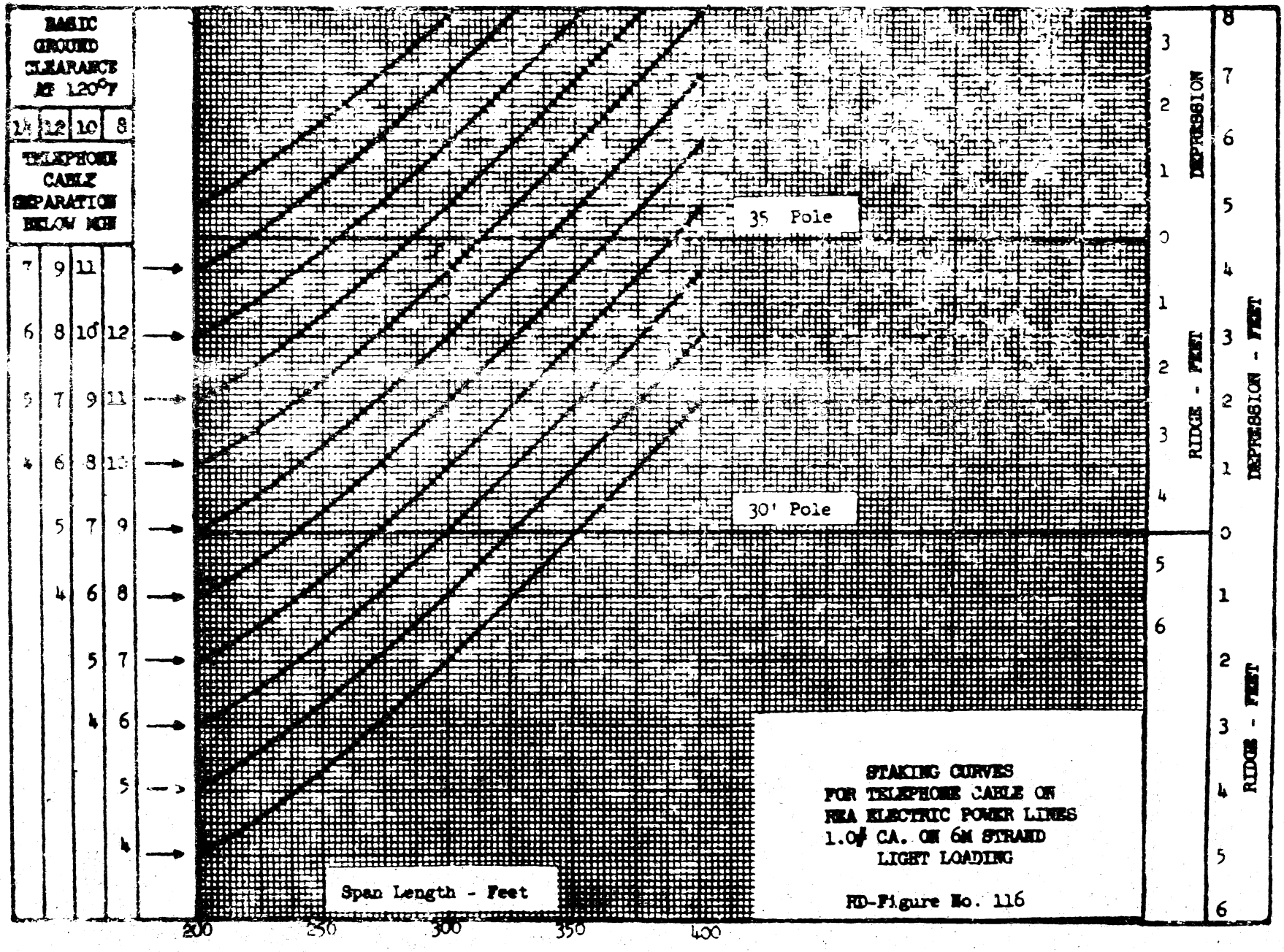

BASIC GROUND CLEARANCE AT 120°F
14 12 10 8
TELEPHONE CABLE SEPARATION BELOW MGR
8 10 12
7 9 11
6 8 10 12
5 7 9 11
4 6 8 10
5 7 9
4 6 8
5 7
4 6
5
4
35' Pole
30' Pole
3 2 1 0 1 2 3 4
RIDGE - FEET
7 6 5 4 3 2 1 0 1 2 3 4 5 6
DEPRESSION - FEET
200 250 300 350 400 450
STAKING CURVES
FOR TELEPHONE CABLE ON
REA ELECTRIC POWER LINES
.5# CA. ON 6M STRAND
MEDIUM LOADING
RD-Figure No. 107

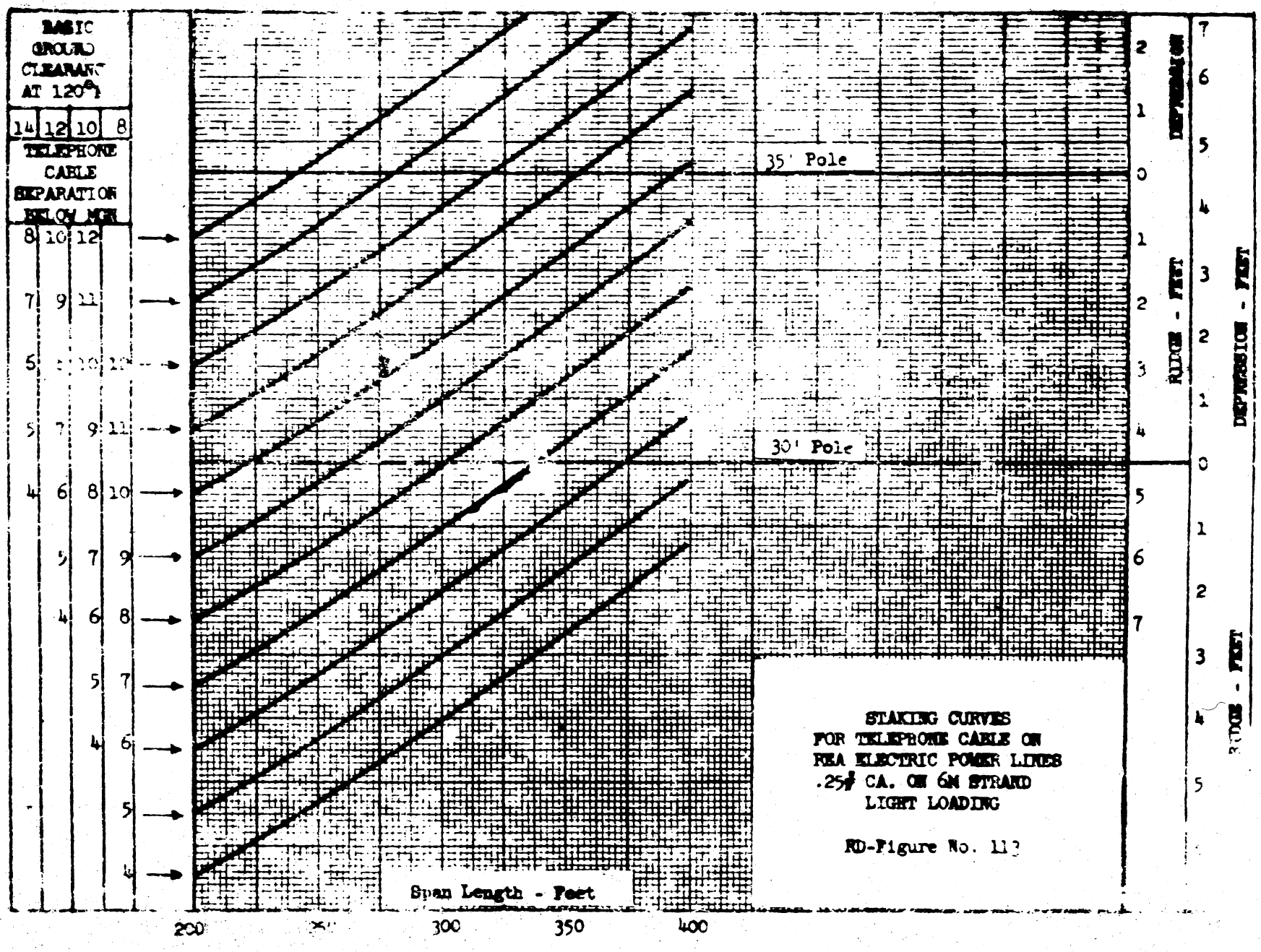

BASIC GROUND CLEARANCE AT 120°F
14 12 10 8
TELEPHONE CABLE SEPARATION BELOW MGN
6 8 10 12
5 7 9 11
4 6 8 10
5 7 9
4 6 8
5 7
4 6
5
4
35' Pole
30' Pole
Span Length - Feet
330 400 450 500 550 600 650 700
6 5 4 3 2 1 0 1 2 3
RIDGE - FEET DEPRESSION
11 10 9 8 7 6 5 4 3 2 1 0 1 2 3
RIDGE - FEET DEPRESSION - FEET
STAKING CURVES
FOR TELEPHONE CABLE ON
REA ELECTRIC POWER LINES
1.0# CA. ON 10M STRAND
MEDIUM LOADING
RD-Figure 112

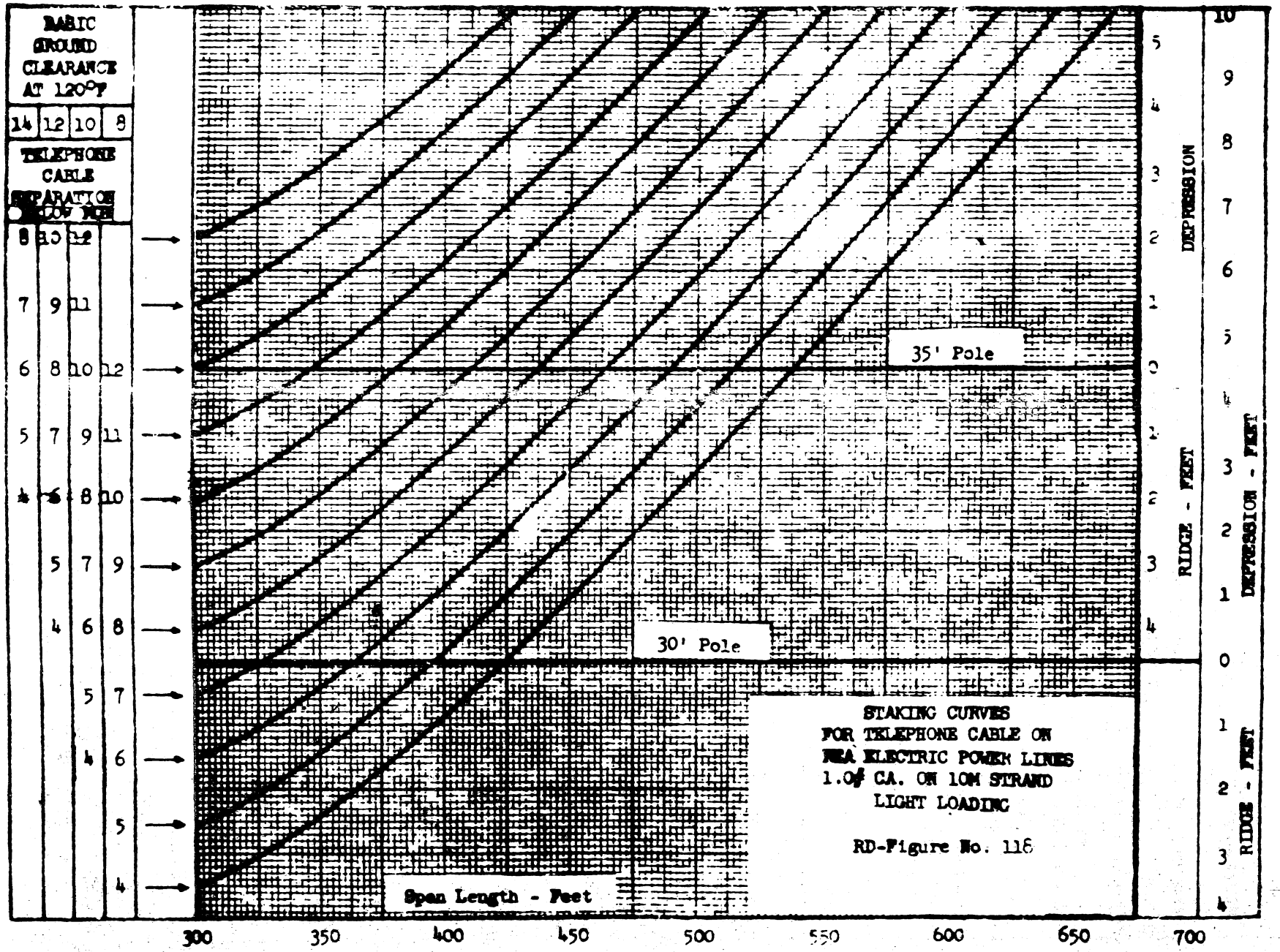

BASIC GROUND CLEARANCE AT 120°F
14 12 10 8
TELEPHONE CABLE SEPARATION BELOW NEA
8 10 12
9 11
8 10 12
9 11
6 8 10
5 7 9
4 6 8
5 7
4 6
5
4
35' Pole
30' Pole
Span Length - Feet
200 250 300 350 400
INCREMENT
RISE - FEET
INCREMENT - FEET
STAKING CURVES
FOR TELEPHONE CABLE ON
REA ELECTRIC POWER LINES
1.0# CA. ON 6M STRAND
MEDIUM LOADING
RD-Figure No. 109

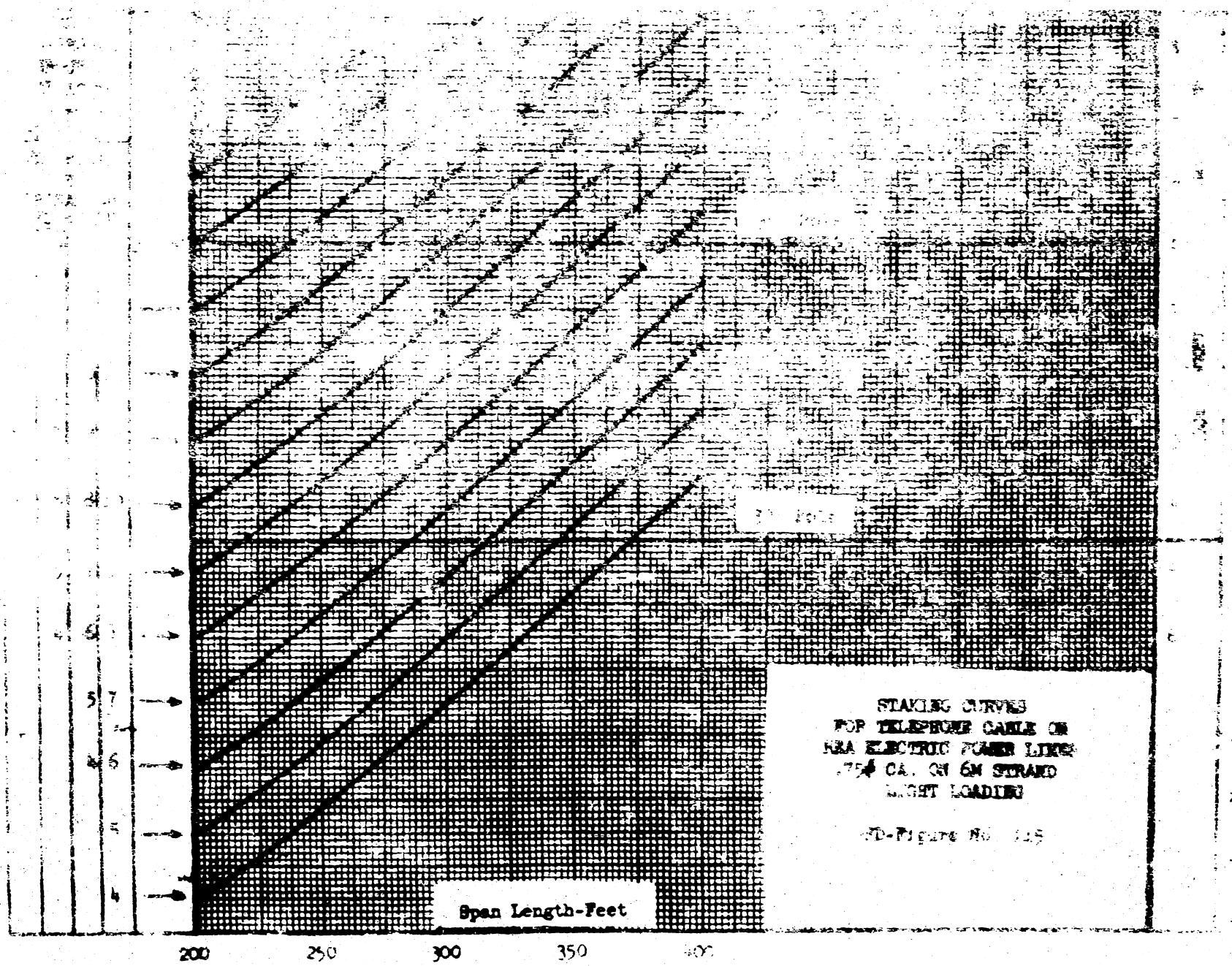

BASIC GROUND CLEARANCE AT 120°
14 12 10 8
TELEPHONE CABLE SEPARATION BELOW MGN
7 9 11
6 8 10 12
5 7 9 11
4 6 8 10
5 7 9
4 6 8
5 7
4 6
5
4
35' Pole
30' Pole
RIDGE - FEET
DEPRESSION
RIDGE - FEET
DEPRESSION - FEET
Span Length - Feet
250
300
350
400
STAKING CURVES
FOR TELEPHONE CABLE ON
REA ELECTRIC POWER LINES
.5# CA. ON 6M STRAND
LIGHT LOADING
RD-Figure No. 114

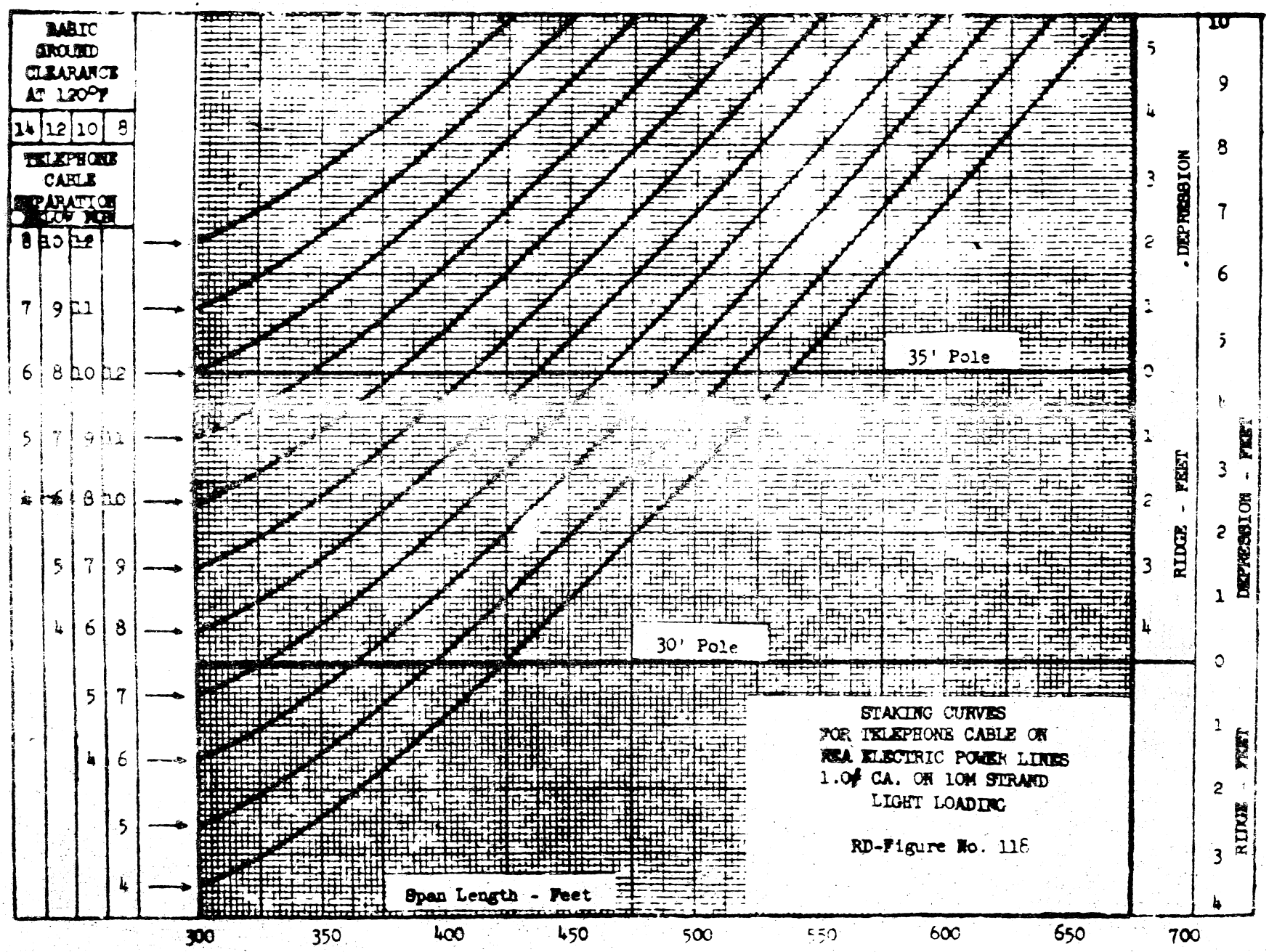

BASIC GROUND CLEARANCE AT 120°F
14 12 10 8
TELEPHONE CABLE SEPARATION BELOW MGN
6 8 10 12
5 7 9 11
4 6 8 10
5
4 6 8
5 7
4 6
5
4
35' Pole
30' Pole
Span Length - Feet
350 400 450 500 550 600 700
RIDER - FEET DEPRESSION
4 3 2 1 0 1 2 3 4
DEPRESSION - FEET
9 8 7 6 5 4 3 2 1 0 1 2 3 4 5
STAKING CURVES
FOR TELEPHONE CABLE ON
REA ELECTRIC POWER LINES
.75# CA. ON 10M STRAND
MEDIUM LOADING
RD-Figure No. 11


BASIC GROUND CLEARANCE AT 120°F
14 12 10 8
TELEPHONE CABLE SEPARATION BELOW MCH
7 9 11
6 8 10 12
5 7 9 11
4 6 8 10
5 7 9
4 6 8
5 7
4 6
5
4
35' Pole
30' Pole
Span Length - Feet
200 250 300 350 400
3 2 1 0 1 2 3 4
RIDGE - FEET DEPRESSION
5 6
RIDGE - FEET
0 1 2 3 4 5 6 7 8
DEPRESSION - FEET
STAKING CURVES
FOR TELEPHONE CABLE ON
REA ELECTRIC POWER LINES
1.0# CA. ON 6M STRAND
LIGHT LOADING
RD-Figure No. 116


BASIC GROUND CLEARANCE AT 120°
14 12 10 8
TELEPHONE CABLE SEPARATION BELOW MGN
8 10 12
7 9 11
5 10
5 7 9 11
4 6 8 10
5 7 9
4 6 8
5 7
4 6
5
4
35' Pole
30' Pole
RIDGE - FEET
DEPRESSION - FEET
2 1 0 1 2 3 4
7 6 5 4 3 2 1 0 1 2 3 4 5 6 7
Span Length - Feet
200
300
350
400
STAKING CURVES
FOR TELEPHONE CABLE ON
REA ELECTRIC POWER LINES
.25# CA. ON 6M STRAND
LIGHT LOADING
RD-Figure No. 11


BASIC GROUND CLEARANCE AT 120°F
14 12 10 8
TELEPHONE CABLE SEPARATION BELOW POWER
8 10 12
7 9 11
6 8 10 12
5 7 9 11
4 6 8 10
5 7 9
4 6 8
5 7
4 6
5
4
35' Pole
30' Pole
Span Length - Feet
300 350 400 450 500 550 600 650 700
DEPRESSION
RIDGE - FEET
5 4 3 2 1 0 1 2 3 4
10 9 8 7 6 5 4 3 2 1 0 1 2 3 4
RIDGE - FEET
DEPRESSION - FEET
STAKING CURVES
FOR TELEPHONE CABLE ON
REA ELECTRIC POWER LINES
1.0# CA. ON 10M STRAND
LIGHT LOADING
RD-Figure No. 118


Span Length-Feet
200
250
300
350
STAKING CURVES
FOR TELEPHONE CABLE ON
REA ELECTRIC POWER LINES
CA. ON 6M STRAND
LIGHT LOADING


BASIC GROUND CLEARANCE AT 120°F
14 12 10 8
TELEPHONE CABLE SEPARATION BELOW PCH
8 10 12
7 9 11
6 8 10 12
5 7 9 11
4 6 8 10
5 7 9
4 6 8
5 7
4 6
5
4
35' Pole
30' Pole
Span Length - Feet
300 350 400 450 500 550 600 650 700
RIDGE - FEET
DEPRESSION
5 4 3 2 1 0 1 2 3 4
10 9 8 7 6 5 4 3 2 1 0 1 2 3 4
STAKING CURVES
FOR TELEPHONE CABLE ON
REA ELECTRIC POWER LINES
1.0# CA. ON 10M STRAND
LIGHT LOADING
RD-Figure No. 118