

GRAPH SHEETS

*cross section and
profile papers, cloths
and films • guide
to selection and use.*

KEUFFEL & ESSER CO.

20

1960



GRAPH SHEETS

CROSS SECTION & PROFILE

papers, cloths and films

This book comprises pages selected from the complete Catalog (42nd Edition), with an introductory guide to the selection of grid patterns best suited to individual requirements.

KEUFFEL & ESSER CO.

ESTABLISHED 1867

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Slide Rules

Measuring Tapes

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SELECTION GUIDE

For Plotting Business Statistics

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HOW GRAPHS SAVE TIME AND MONEY

Executives of the largest corporations often keep on their desks loose-leaf books containing graphs and charts. These graphs show up-to-the-minute trends in their company's sales, costs, production, profits and other elements of the business, each element broken down pictorially into its component parts.

Often these firms employ specialists who come in once a week or once a month to bring the charts up to date.

Why do these high-paid executives consider graphs so important?

Because they have found that a graph gives them at a glance information it would take hours to dig out of statistical tables.

Sound business decisions can be made only by weighing the interaction of many trends, which usually are moving in different directions or at different rates. A graph is a quickly grasped "moving picture" of these trends.

In hundreds of different ways, properly prepared graphs serve as incisive tools of analysis, computation and illustration.

Engineers, mathematicians and scientists use graphs to simplify the complicated problems with which they deal. In addition to the familiar square-ruled sheets, they use logarithmic and polar co-ordinate sheets, plus highly specialized graph papers for plotting probabilities, hyperbolic relationships, electronic phenomena, and other mathematical ratios.

Architects, draftsmen, surveyors and construction engineers have their own specialized graph forms—isometric and perspective sheets, profile plan charts, stadia sheets, and others.

But the greatest opportunities for using graphs to save time and money lie in the field of everyday business activities. This applies not only to heads of large corporations, but also to small businessmen, retailers, professional men, and salesmen.

Graphs serve businessmen in two ways: as a means of analysis, and as a method of illustration.

For analyzing the operation of a company, graphs can show each major element of a business broken down into segments—manufacturing costs broken down into labor, materials, machinery; sales volume broken down by product, by territory, or by salesman, and so on.

Graphs also spotlight important relationships between various factors—advertising and sales volume, production rate and unit costs, this year's figures compared with last year's.

Used as illustrations, graphs put over your message quickly and dramatically. They highlight the important information in annual reports, sales presentations and bulletins, magazine articles, or research findings. Blown up into large charts or slides, graphs add impact to speeches.

Suppose you are a sales manager and want to convince your Southeastern District Manager that his sales volume is slipping. You could send him a table of statistics like this:

DISTRICT	MONTHLY SALES VOLUME (in 1,000s of dollars)							
	Jan	Feb	Mar	Apr	May	June	July	Aug
Northeastern	81	83	92	99	98	102	101	109
North Central	56	54	59	66	67	74	80	86
Southeastern	37	43	48	53	57	61	46	29
Southwestern	32	34	40	51	52	60	71	74
Northwestern	19	21	26	33	48	55	60	63

Or you could put the same information into graph form, like this:

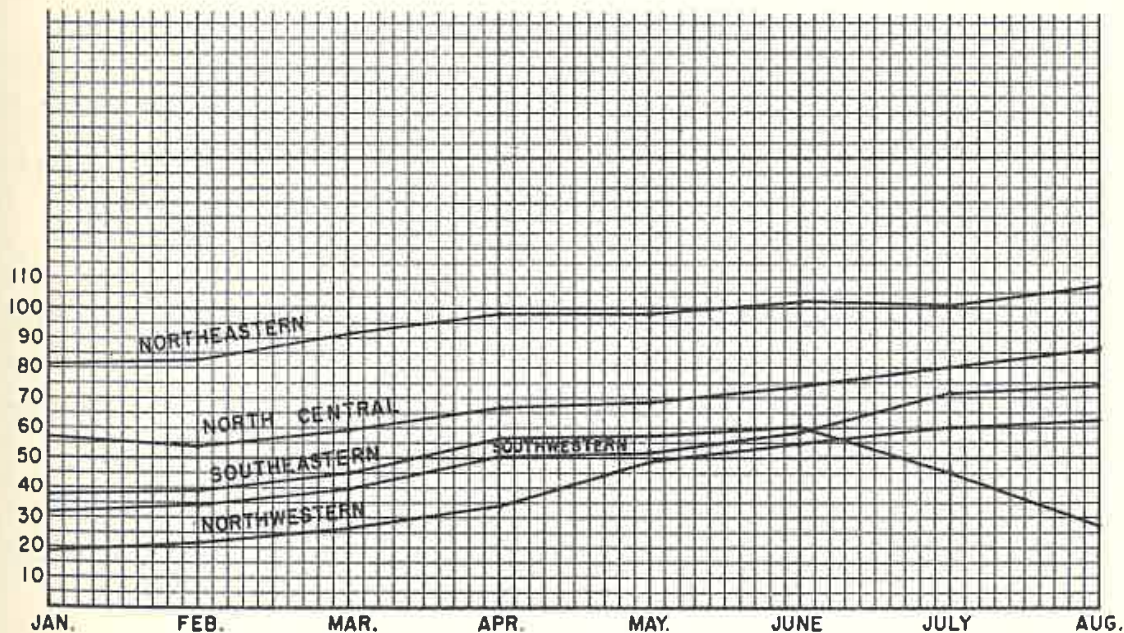


Figure 1. Graph of Sales Trends

Which method of presentation puts over your point most quickly and powerfully?

Once you have discovered how useful graphs can be, you will find more and more ways of using them profitably.

You will also discover it is important to select the type of graph paper best suited to your purpose.

Many persons use ordinary square-ruled sheets as a matter of habit, when they could save time and effort, and get better results, by using a paper designed for a more specific purpose.

The chart on page iii lists the major functions served by various types of graph papers. The following pages contain brief hints on selecting the graph paper best suited to your needs.

SELECTING THE BEST GRAPH SHEET FOR YOUR NEEDS

1. FOR BUSINESS STATISTICS, ORGANIZATION AND FLOW CHARTS

Suppose you decide to keep running charts of sales, costs, commodity or stock market prices, or other business factors.

First decision: Should you use ordinary square-ruled paper, or semi-logarithmic paper?

On the familiar square-ruled, or *cross section* paper, all vertical and horizontal divisions are the same size. On semi-logarithmic paper, the horizontal divisions are all the same width, but the vertical divisions are laid out in a logarithmic ratio. For this reason these papers are called *semi-logarithmic* or *ratio* papers.

The important difference is that a graph drawn on square-ruled paper shows changes in *quantities* or amounts, whereas a chart on semi-logarithmic paper shows *rate of change* and changes in *ratios* or *percentages*.

Suppose, for example, that your company's sales volume for the last few years has been this:

YEAR	SALES	INCREASE OVER PREVIOUS YEAR
6 years ago	500,000
5 years ago	560,000	60,000
4 years ago	630,000	70,000
3 years ago	710,000	80,000
2 years ago	800,000	90,000
Last year	900,000	100,000

If you plot those figures on square-section paper, your business seems to be gaining momentum. Your graph looks like this:

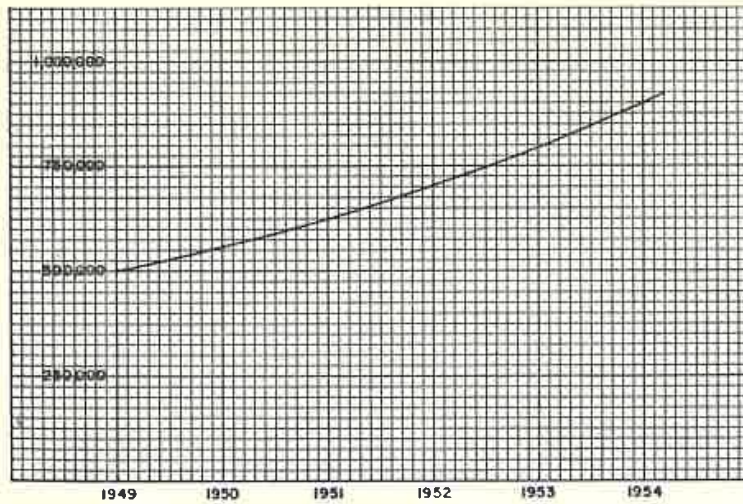


Figure 2. Growth Curve on Cross-Section Paper

This chart makes it appear that your volume is increasing at an accelerating rate. Now plot those same figures on semi-logarithmic paper, and your graph looks like this:

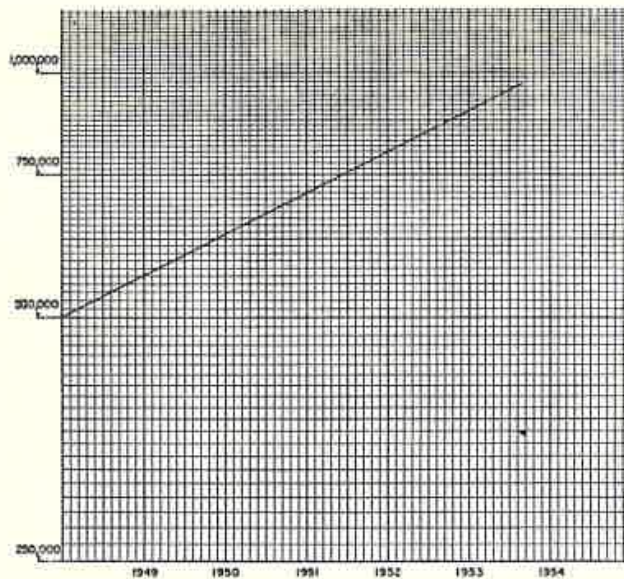


Figure 3. The Same Curve on Semi-Logarithmic Paper

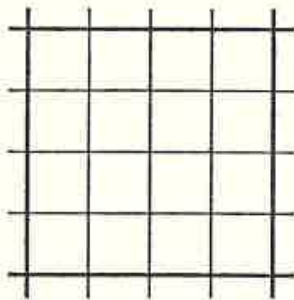
The semi-logarithmic graph reveals that your *rate of growth* is constant.

Often you are more interested in your rate of change than you are in the quantity of change. In that case, graphs plotted on semi-logarithmic paper will be much more important to you. When two curves representing, for instance, your district sales and total sales, plotted on semi-logarithmic paper, move parallel to each other, this indicates that they are increasing or decreasing at a constant ratio.

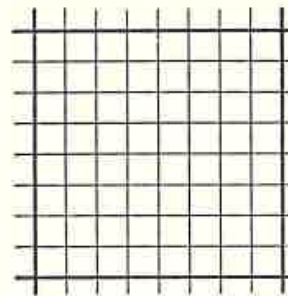
Second decision: What type of grid will best serve your purpose?

If you have decided to use square section paper, what grid should you use? Square section papers are designated by the number of lines per inch—a 4 x 4 paper, for example, has four lines per inch in both directions, with every fourth line heavier. You have your choice of 4 x 4, 5 x 5, 6 x 6, 8 x 8, 10 x 10, 12 x 12, 16 x 16, and 20 x 20 grids.

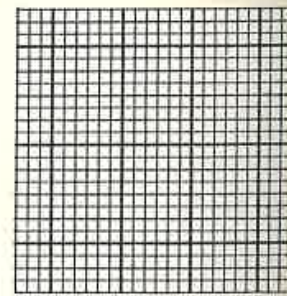
Your choice will depend partly upon the type of units you are charting. 10 x 10 is convenient for percentages, dollars, or other units divisible by 10; 4 x 4 would be useful for quarts and gallons, 12 x 12 for feet and inches, and so on.



Square section, 4 x 4



Square section, 10 x 10



Rectangular section, 6 x 8

Figure 4. Typical Grids

Rectangular section papers have finer divisions in one direction than the other. A 5 x 10 paper, for example, is used in plotting commodity prices, with the 5-line side representing the days of the week and the 10-line side representing prices. For plotting stock market quotations, given in eighths of a dollar, 5 x 8 paper is used.

You may prefer to use a *time series* sheet, on which the horizontal scale represents divisions of some time period—a year divided into days, weeks, or months; a month divided into days, and so on. The vertical scale may be either equal divisions, or a logarithmic ratio.

Third decision: How fine a grid do you need?

Select the grid which has the fewest lines that will serve your purpose. If you are entering monthly totals, you do not need a sheet on which the months are divided into weeks. The extra lines would needlessly clutter up your chart.

The selection of the grid is determined by the range of figures you are plotting and the degree of accuracy required. Suppose you are charting monthly sales that will probably range from \$50,000 to \$150,000 over a one-year period. Looking at the “one year by months” sheets listed on page 84, you find that No. 358-170 has 150 vertical divisions, while No. 358-171 has 100 divisions. Using the latter, you can let the bottom line represent \$50,000 and the top line \$150,000, and each intermediate line will represent \$1,000. This is the one you would select.

A special note on ratio papers: the vertical divisions are numbered from 1 to 10. Graph papers are available with this 1-to-10 cycle appearing only once, or repeated two or more times. Which paper do you need?

On a one-cycle ratio paper, you can plot any set of figures in which the largest one is not more than 10 times as big as the smallest one. On a two-cycle paper you can plot figures with a 100-to-1 ratio, a three-cycle paper gives you a 1000-to-1 range, and so on.

For example, you want a ratio chart which will show the percentage growth in sales of a new product. It is now selling at the rate of 15,000 cases a month, and will eventually—you hope—reach a volume of 100,000. Since the largest figure here is less than 10 times the smaller one, a one-cycle paper will serve your purposes. Your graph might look like this:

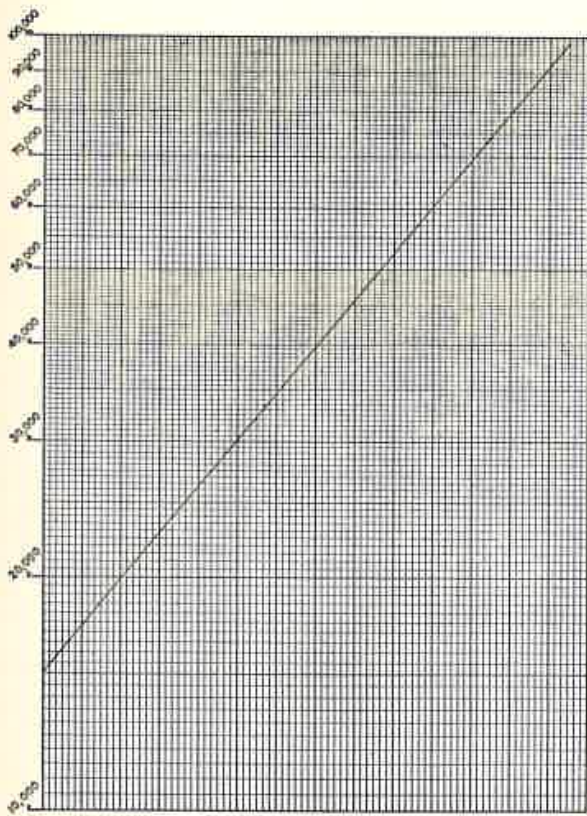


Figure 5.
One-Cycle
Semi-Logarithmic Paper

If your figures had started at 3,000 and might reach 150,000 the span is a ratio of 50-to-1, so you need a two-cycle paper, as shown on the next page.

In using a ratio paper, you will find that there is no “zero” line—the bottom line is “1”. You assign a convenient value to this line, then multiply that value by 2, 3, 4, and so on for the rest of your vertical divisions.

It is not as complicated as it sounds. Take that product that might range from 15,000 to 100,000 cases a month. You let the “1” line represent 10,000 cases. Then the “2” line is 20,000, the “3” line is 30,000 and so on up to “10” for 100,000. Whatever value you assign to the “1” line, the 10 line becomes 10 times that, the second 10 on a two-cycle paper is 100 times that, and so on.

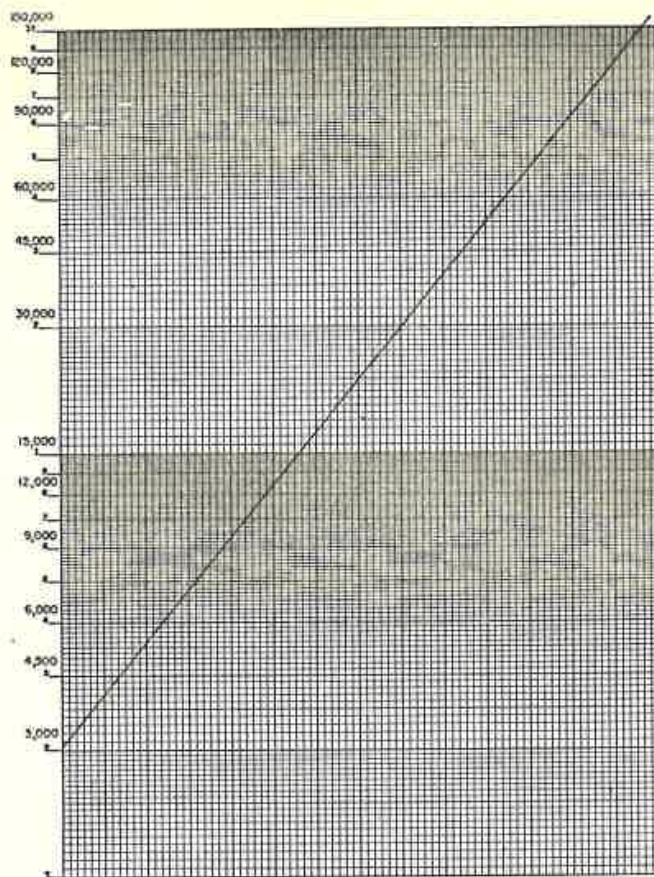


Figure 6. Two-Cycle Semi-Logarithmic Paper

Take the 3,000 to 150,000 range you were going to plot on two-cycle paper. You could let the lines represent 3,000, 6,000, 9,000, etc. The top line would be 300,000, so at a volume of 150,000, you would be using only half the area of your graph paper. So you decide to let the lines represent 1,500, 3,000, 4,500, etc., up to 150,000.

Fourth decision: What size and type paper do you need?

If you plan to keep your graphs in a loose-leaf book, you will probably want punched sheets of $8\frac{1}{2} \times 11$ inches or, for longer charts, an $11 \times 16\frac{1}{2}$ inch sheet which can be folded into your book, leaving a half-inch for the rings. Some papers are available in $7 \times 8\frac{1}{2}$ inch size.

Many papers come in larger sheets, such as 17×22 or 18×23 inches, and in continuous rolls of various widths and lengths.

Fifth decision: What about reproduction considerations?

If your graph is to be used as a printed illustration, allow for the necessary reduction. Do not use a grid or plotted lines so close that they will blur or lose detail when reduced.

When a chart is to be drawn for reproduction, whether as a printed illustration or as individual copies for distribution, the paper and color of the grid should be considered. For photographic prints use drawing paper. For contact reproductions use tracing paper. Orange lines reproduce best, though green lines are satisfactory. A black grid is needed only if it is to appear extra heavy in the reproduction. If the grid is not to show in the reproduction, papers with non-reproducible guide lines should be used.

OTHER TYPES OF BUSINESS CHARTS

The familiar "moving line" chart we have been discussing is usually used to show how some quantity changes over a period of time.

If you wish to compare various quantities at some fixed time, you may prefer a bar chart like this:

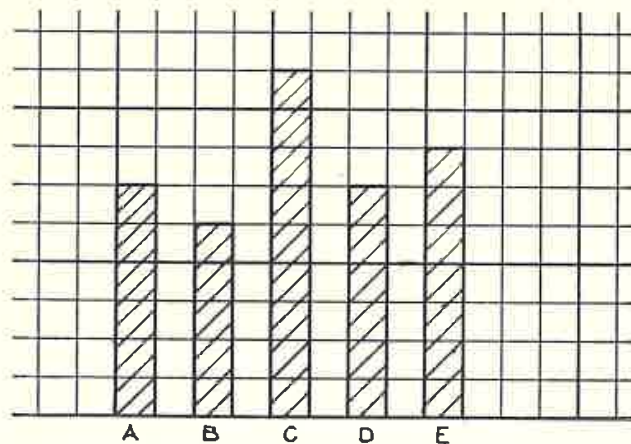


Figure 7. A Bar Chart

A square-section paper should be selected with a pattern divided closely enough to cover the range of values to be plotted.

Another familiar type of chart is the *circular percentage* chart, or "pie chart." It shows how a unit is divided, percentage-wise, among various elements—like this chart on advertising appropriations, for example:

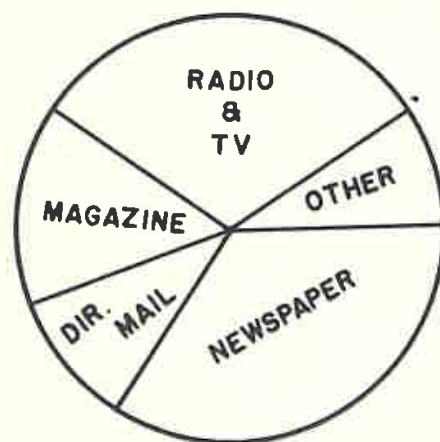


Figure 8. A Circular Percentage or "Pie" Chart

To simplify your pie chart drawing, you can get graph sheets (see No. 359-35 on page 70) with one large circle and two smaller ones, divided into 100 parts for your percentages.

2. FOR SKETCHING AND DRAWING

Since the squares on square-ruled or cross-section sheets can represent any assigned number of inches or feet, this type of paper is handy in making engineering sketches, plant layouts, etc. Grids with 4 x 4, 8 x 8, or 16 x 16 divisions to the inch are convenient for this purpose. The lines are $\frac{1}{4}$ " , $\frac{1}{8}$ " , or $\frac{1}{16}$ " apart, and can stand for any desired dimension. 12 x 12 paper is sometimes preferred for drawing objects with dimensions of several feet. Each line can represent one inch and the heavier lines thus represent one foot. The accompanying table will be useful in selecting a grid size which will fit well with the ratio of your drawing. It shows the dimension represented by a single division on various square section graph forms, as determined by the scale of the drawing.

Cross section grids are also available with the lines printed in non-reproducible ink. These guide lines do not appear on reproductions.

GRAD. PER INCH.	4 x 4	6 x 6	8 x 8	12 x 12	16 x 16
<i>Scale of Drawing</i>	<i>Value of Single Division</i>				
Full Size	$\frac{1}{4}$ "	—	$\frac{1}{8}$ "	—	$\frac{1}{16}$ "
Half Size	$\frac{1}{2}$ "	—	$\frac{1}{4}$ "	—	$\frac{1}{8}$ "
Quarter Size	1"	—	$\frac{1}{2}$ "	—	$\frac{1}{4}$ "
3" = 1'	1"	—	$\frac{1}{2}$ "	—	$\frac{1}{4}$ "
2" = 1'	—	1"	—	$\frac{1}{2}$ "	—
1 $\frac{1}{2}$ " = 1'	—	—	1"	—	$\frac{1}{2}$ "
1" = 1'	—	2"	—	1"	—
$\frac{3}{4}$ " = 1'	—	—	2"	—	1"
$\frac{1}{2}$ " = 1'	6"	4"	3"	2"	—
$\frac{3}{8}$ " = 1'	—	—	4"	—	2"
$\frac{1}{4}$ " = 1'	1'	—	6"	—	3"
$\frac{1}{8}$ " = 1'	2'	—	1'	—	6"

With the aid of an *isometric* paper, you can convert an orthographic "blueprint-type" drawing into an isometric drawing almost automatically. The paper has vertical and 30° lines marked off into equal segments. Isometric paper is also available with a square-ruled grid superimposed on the isometric grid, so that an orthographic drawing can be shown on one part of a sheet, with an isometric presentation on another part.

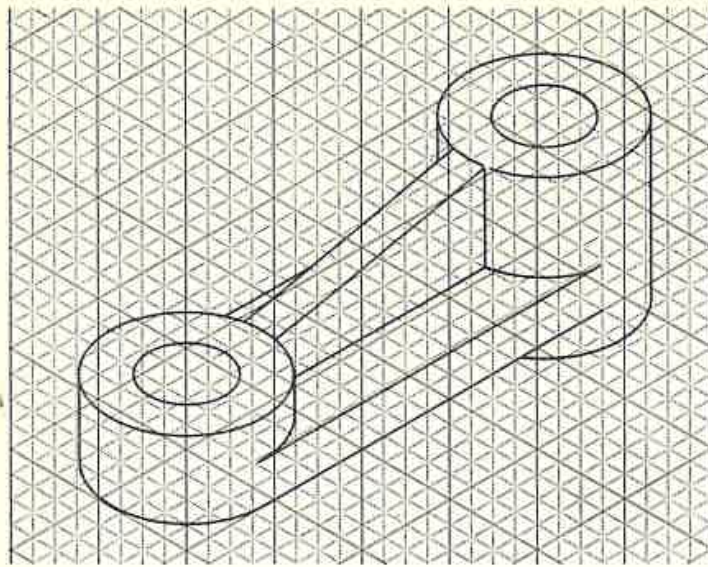


Figure 9. Isometric Paper

Another handy paper for sketching is *perspective* paper (Figure 10). Here again are lines representing the vertical dimensions and the two “sides,” but they converge toward a perspective “vanishing point” instead of maintaining a constant angularity as the isometric lines do. All lines on the perspective sheet are marked off into segments which *represent* equal distance, although the perspective causes the more distant segments to be shorter than those in the foreground.

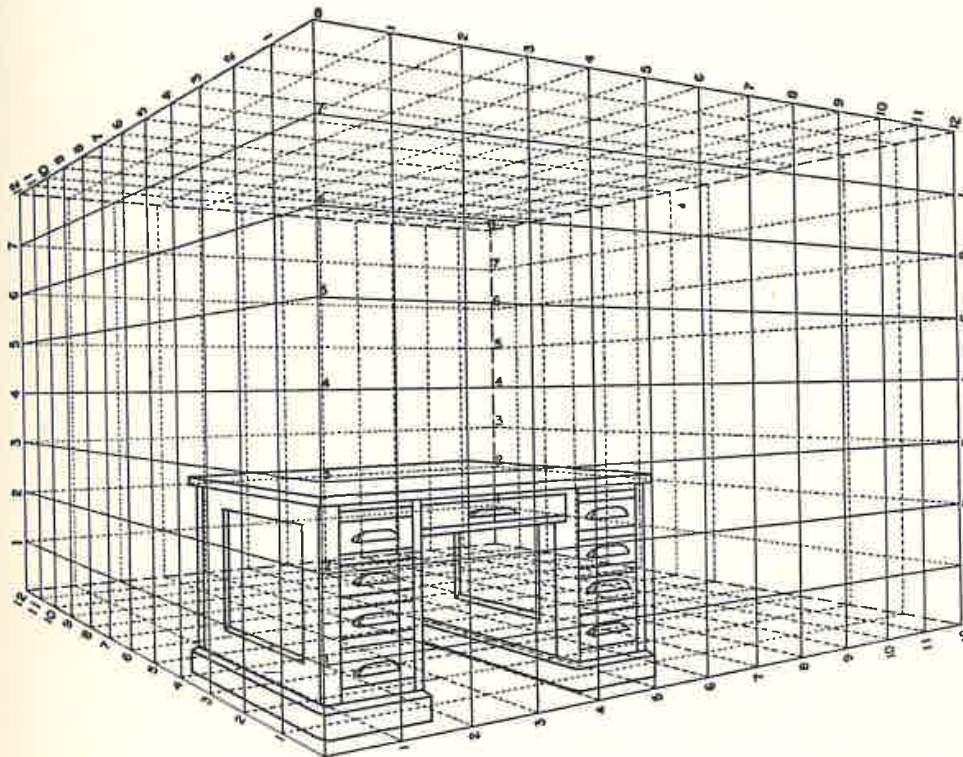


Figure 10. Perspective Paper

3. FOR SURVEYING AND MAPPING

Square-section graph sheets are frequently used for surveying and mapping. The accompanying table shows, for various grids and map scales, the distance represented by each division on the graph form.

DIVISIONS PER INCH.	6 x 6	8 x 8	10 x 10	12 x 12	16 x 16	20 x 20
Scale of Map	Value of Single Division					
10' = 1"	—	—	1'	—	—	0.5'
20' = 1"	—	—	2'	—	—	1'
30' = 1"	5'	—	—	2.5'	—	—
40' = 1"	—	5'	4'	—	2.5'	2'
50' = 1"	—	—	5'	—	—	2.5'
60' = 1"	10'	—	—	5'	—	—
80' = 1"	—	10'	—	—	5'	4'
100' = 1"	—	—	10'	—	—	5'
120' = 1"	20'	—	—	10'	—	—
160' = 1"	—	20'	—	—	10'	—
200' = 1"	—	—	20'	—	—	10'

Polar co-ordinate (Figure 11) is ideal for plotting stadia survey notes. The center of ordinates represents the station from which the observations were taken. Horizontal angles, distances, and elevations are plotted in, and the appropriate points connected by contour lines.

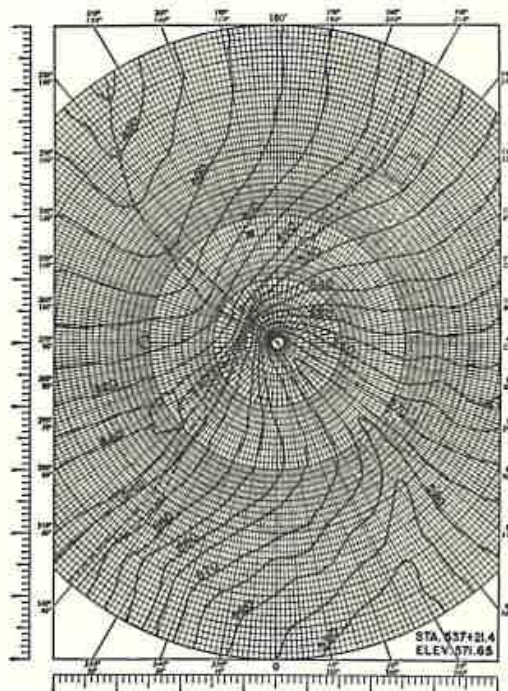


Figure 11. Polar Co-ordinate Paper

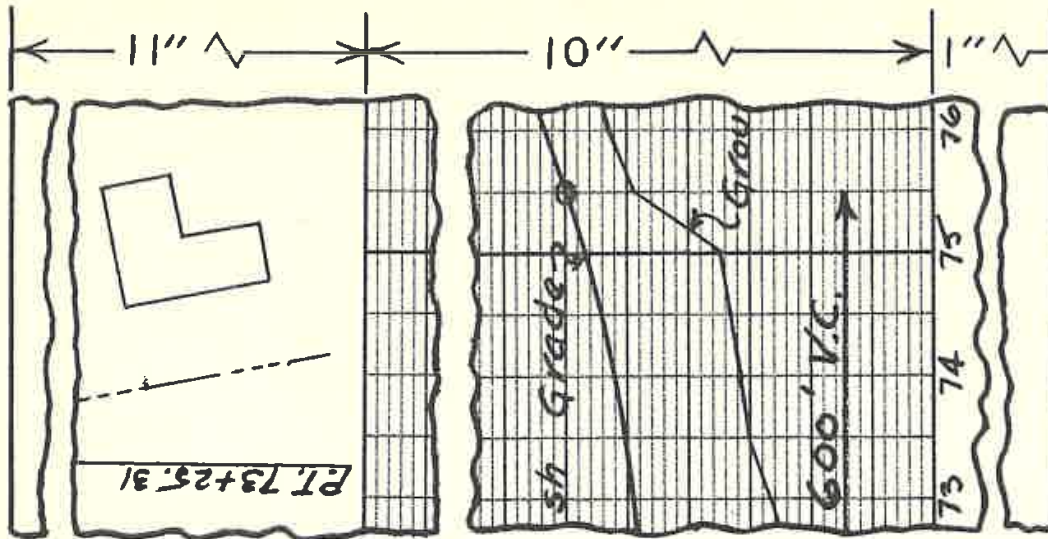


Figure 12. A Profile-Plan Chart

Profile papers, used in sketching profiles of railroads, roads, embankments, sub-surface formations, have vertical divisions smaller than horizontal divisions. A profile-plan sheet (Figure 12) is similar, except that in addition to the profile grid there is space for sketching special cuts, fills, etc.

Township paper shows a complete township, at a scale of 1 inch = 1 mile, with sections properly numbered and quarter sections shown.

Traverse sheets (Figure 13) are designed for recording the data of a course—bearings, distances, latitudes, course, etc.

Computer by _____ Checked by _____

Sta- tions	Course		Latitude		Departure		Balance		Double Meridian Distance		Double Area			
	Bearing	Distance	N+	S-	E+	W-	Lat.	Dep.	+	-	+	-		
A					Assumed (See 1000000000)									
B	S39°25'E	780.1	602.7	-495.5	-0.1	+0.2	-602.6	+495.3	495.5			230300		
C	N73°05'E	1196.8	307.0	1156.4			+307.2	+1156.7	1156.7	639773				
D	N43°51'W	917.8	660.1				502.5	-660.2	-394.2	2970	230600			
E	N06°02'N	910.2	630				900.0	631	-901.1	1600.3	107162			
F	S20°17'W	743.8	636.0				330.5	-633.9	-350.3	350.3		220762		
A					Check 1000000000									
48023/1280.1/1250.1/1681.7/1635.0 -1250.1 1651.7											0	0	3346097	520350
Total Error 1.43 Accuracy 1/3218													2817147	1400074
											-2	143360	32343	
													32.34	Acres

Traverse Computations and Areas for 200 ft. Scale

Figure 13. A Traverse Sheet

4. FOR PLOTTING SCIENTIFIC DATA

Many mathematical and scientific graphs are plotted on the square-ruled, rectangular, or ratio papers described on pages vi through x.

Among the more specialized papers are these:

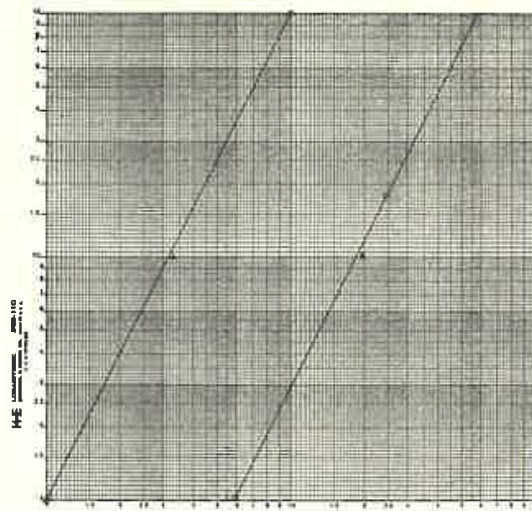


Figure 14. Full Logarithmic Paper

Full logarithmic paper (Figure 14) has the horizontal as well as the vertical divisions in logarithmic proportions. Basically all relationships which involve multiplication, division, raising to powers or extracting roots are represented by straight lines on logarithmic paper. Thus functions can be plotted more easily and investigated more thoroughly. A wider plotting range is also afforded.

In business full logarithmic paper is useful for rapid and accurate estimating. In science and engineering a few applications are in such fields as thermodynamics, electronic and electrical engineering, structural design, statics, dynamics and naval architecture.

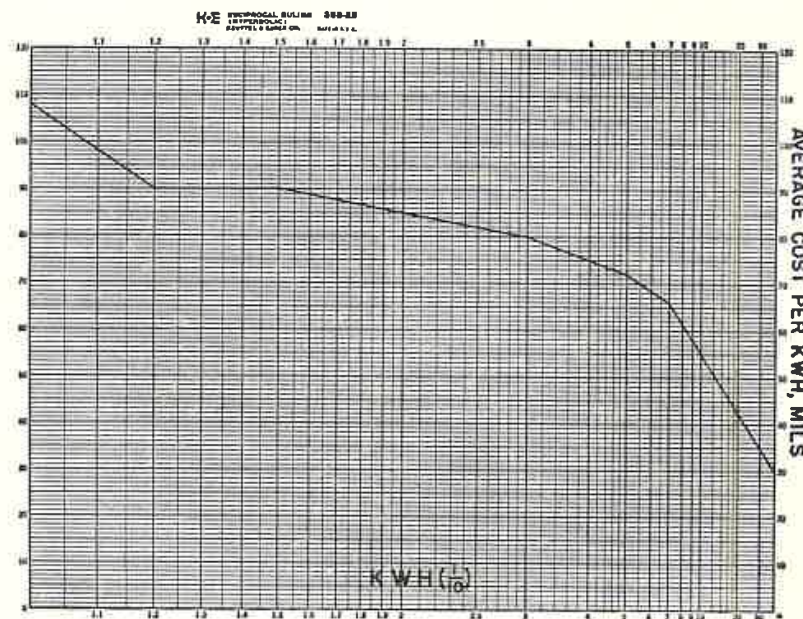


Figure 15. Hyperbolic Paper

Hyperbolic or *reciprocal* sheets (Figure 15) are used primarily for computing public utility bills. This paper has evenly spaced vertical divisions, with the horizontal lines divided reciprocally. Suppose an electric company, for instance, charges:

- 9 cents per KWH..... for the first 15 KWH
 - 7 cents per KWH..... for the second 15 KWH
 - 6 cents per KWH..... for the next 20 KWH
 - 5 cents per KWH..... for the next 20 KWH
 - 3 cents per KWH..... for all over 70 KWH
- Minimum charge \$1.08 per month

From these figures the chart in Figure 15 is made up on hyperbolic paper. If the amount of electricity used by a consumer is located on the bottom scale, the corresponding point on the charted line is the *average* cost per KWH he should pay.

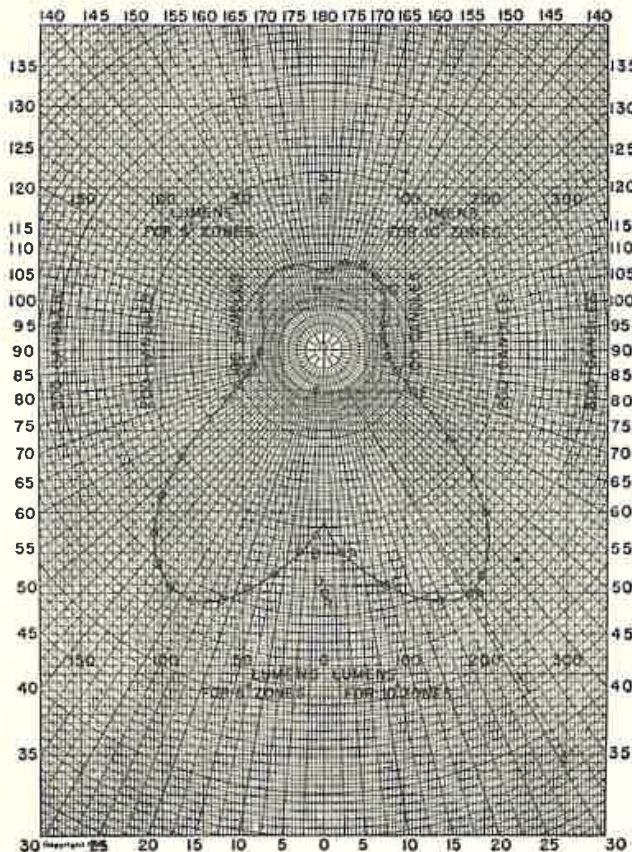


Figure 16. Fluxolite Paper

Polar co-ordinate papers are used for plotting any data given in polar co-ordinates—that is, situations in which a point is defined by its angle above a base line and its distance from the center. A special type of polar co-ordinate paper, called *fluxolite* paper (Figure 16), is used in lighting studies.

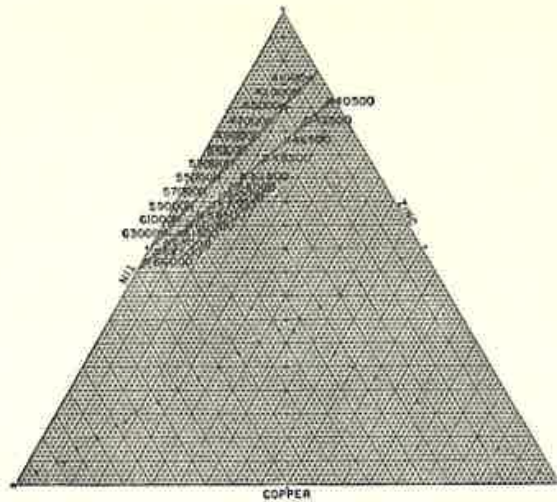


Figure 17.
Triangular
Co-ordinate Paper

Triangular co-ordinate paper is used in studying any substance or problem consisting of three elements which can be present in varying percentages. In Figure 17, each point represents a bronze alloy made with varying percentages of tin, copper and zinc. The uppermost point, for example, represents a bronze consisting of 2% zinc (measuring outward from the zinc side of the triangle), about 86% copper (measuring up from the bottom), and 12% tin. The numerals indicate the anticipated tensile strength of each mixture.

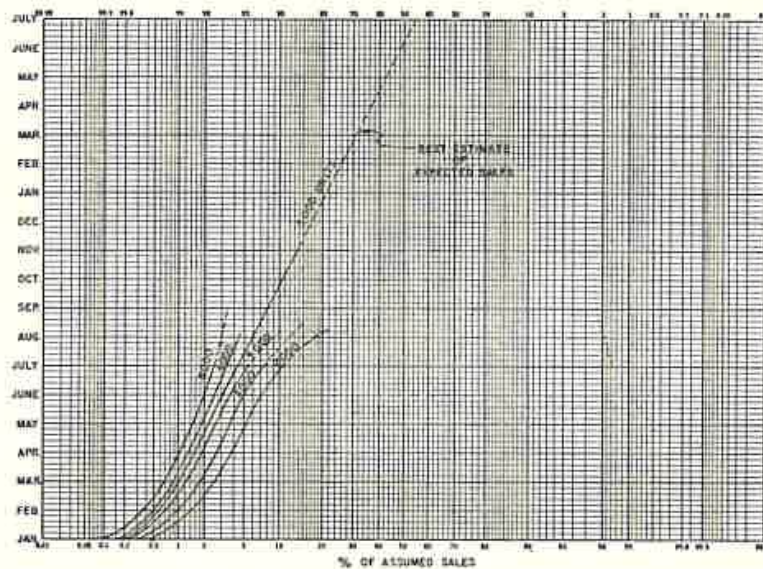


Figure 18.
Probability Paper

Probability paper is used when dealing with statistics or events which fall into the bell-shaped "probability curve." Quality control matters can be readily evaluated with it. This type of paper "straightens out" the probability curve. If a series of experiments or statistics is plotted on this paper and the result is a straight line, you know that the distribution of your experiments followed a random probability. If you, as a manufacturer, find that the volume of reorders on a new item follows a probability curve, you can use this type of graph paper to predict, after a few weeks, what the total volume will probably be.

Other specialized papers, such as Audio Frequency, Reactance Frequency, Power Emission and Radio Receiver Performance, are widely used in the field of electronics.

PROFILE AND CROSS SECTION PAPERS, CLOTHS AND FILMS

Special attention is called to the high quality of the materials that are used for the Profile and Cross Section Papers, Cloths and Films in sheets and in continuous rolls described in the following pages. These are as follows:

DRAWING PAPER: Very high quality. 100% rag stock, great strength; hard sized; very good erasing quality. Thickness: Heavy, approx. .0055 in., Weight Sub. 36; Medium, approx. .0036 in., Weight Sub. 24.

TRACING PAPER: In the following pages the term "Tracing Paper" indicates a natural high grade tracing paper, 100% high grade rag, very strong. Tracing and reproduction transparency: good. Thickness approx. .0022 in., Weight Sub. 12.

Wherever ALBANENE is indicated, No. 195L base paper is used. This finest quality paper is made from 100% long fiber highest grade new rags. It has extraordinary tearing strength. Tracing and reproduction transparency: very good. Thickness approx. .0025 in. Base Weight Sub. 14, Finished Weight Sub. 17.

TRACING CLOTH: All STANDARD Profile and Cross Section Cloths, except as noted, are printed on Imperial Tracing Cloth. All STANDARD Tracing Cloths are printed on the glazed side of the cloth with a special erasable ink, so that an area of the section lining may be removed if desired with alcohol. Benzine or carbon tetrachloride can be used to clean the drawing surface.

FILMS: HERCULENE No. 163 (base thickness .003 in.) and STABILENE No. 130 (base thickness .005 in.) have a high degree of transparency and stability. The "Mylar" base gives them toughness and durability to withstand rough handling.

STABILENE is guaranteed stable, thermally and hygroscopically, in both directions.

GRAPH SHEETS

For specifications of papers used in Graph Sheets see page 59.

NON-REPRODUCIBLE GUIDE LINES

For cross section patterns printed in non-reproducible ink, which do not appear in reproductions, see pages 48, 57 and 87A.

PROFILE PAPERS AND CLOTHS

IN CONTINUOUS ROLLS

STANDARD®

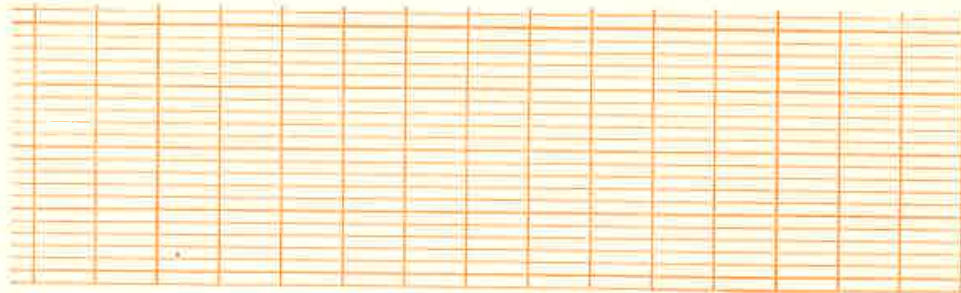


Plate A—4 x 20 to the inch

Profile lines, 20 to the inch, 5th lines accented, 50th lines heavy.
Vertical lines, 4 to the inch, 10th lines heavy.

		Width of Roll	Width of Engraving	Color of Lines	Length of Roll
253G	DRAWING PAPER, heavy	22"	20"	green	50 yds.
253R	DRAWING PAPER, heavy	22"	20"	orange	50 yds.
254G	DRAWING PAPER, heavy	12"	10"	green	50 yds.
257R	TRACING PAPER	22"	20"	orange	50 yds.
A257R	ALBANENE TRACING PAPER	22"	20"	orange	50 yds.
257½R	TRACING PAPER	12"	10"	orange	50 yds.
258R	IMPERIAL TRACING CLOTH	24"	20"	orange	20 yds.
258½R	IMPERIAL TRACING CLOTH	12½"	10"	orange	20 yds.

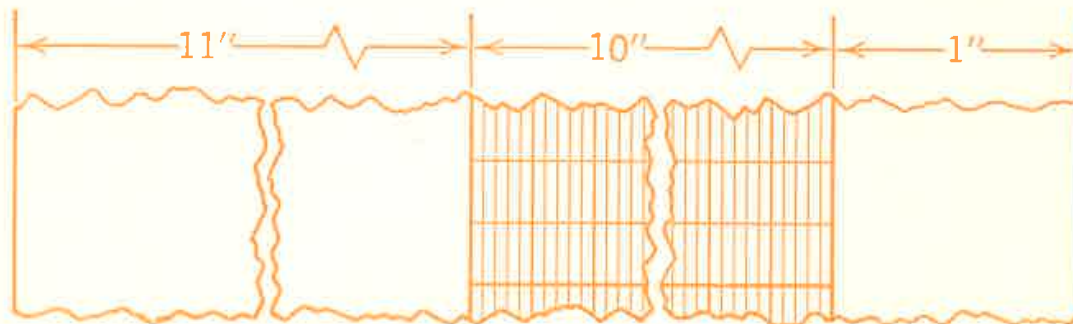


Plate A—Profile-Plan

Profile-Plan papers and cloths have approximately half the width of the roll left blank for explanatory maps, sketches, memoranda, etc.

		Width of Roll	Width of Engraving	Color of Lines	Length of Roll
257HR	TRACING PAPER	22"	10"	orange	50 yds.
A257HR	ALBANENE TRACING PAPER	22"	10"	orange	20 yds.
257½HR	TRACING PAPER	12"	5"	orange	20 yds.
258HR	IMPERIAL TRACING CLOTH	24"	10"	orange	20 yds.
258½HR	IMPERIAL TRACING CLOTH	12½"	5"	orange	20 yds.

PROFILE-PLAN PAPERS AND CLOTHS

IN CONTINUOUS ROLLS

STANDARD®

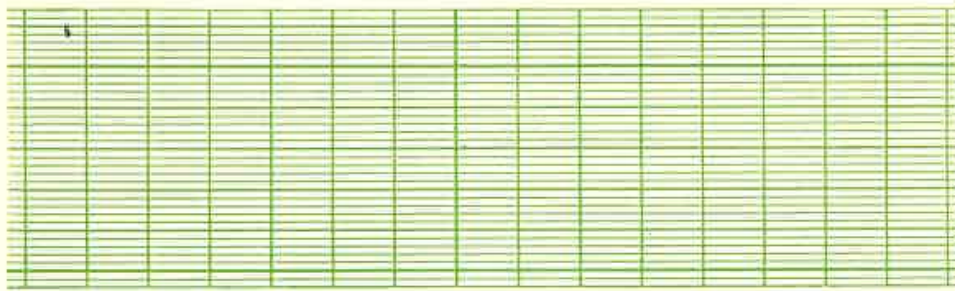


Plate B—4 x 30 to the inch

Profile lines, 30 to the inch, 5th lines accented, 25th lines heavy.
Vertical lines, 4 to the inch, 10th lines heavy.

		Width of Roll	Width of Engraving	Color of Lines	Length of Roll
263G	DRAWING PAPER, heavy	22"	20"	green	50 yds
267R	TRACING PAPER	22"	20"	orange	50 yds.
267½R	TRACING PAPER	12"	9"	orange	50 yds.
268R	IMPERIAL TRACING CLOTH	24"	20"	orange	20 yds.

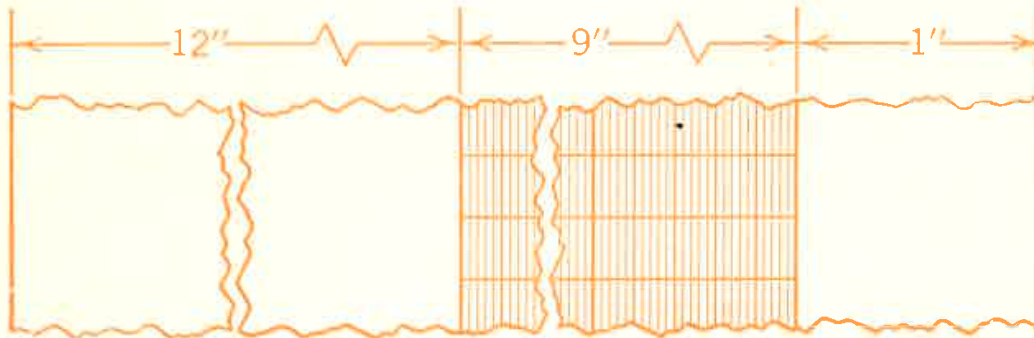
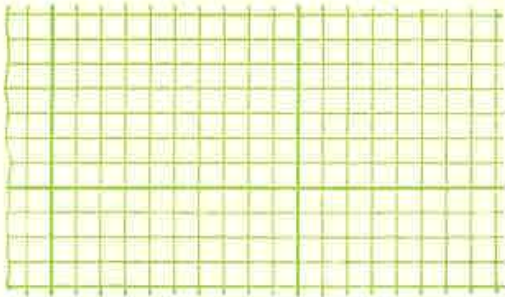


Plate B—Profile Plan

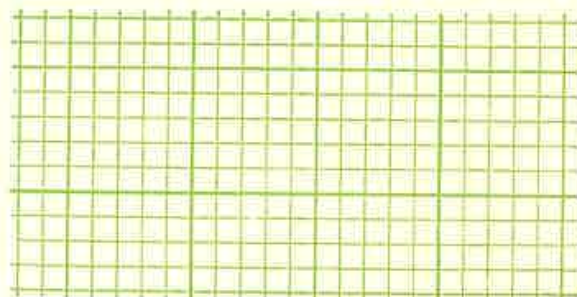
Profile-Plan papers and cloths have approximately half the width of the roll left blank for explanatory maps, sketches, memoranda, etc.

		Width of Roll	Width of Engraving	Color of Lines	Length of Roll
267HR	TRACING PAPER	22"	9"	orange	50 yds.
268HR	IMPERIAL TRACING CLOTH	24"	9"	orange	20 yds.

CROSS SECTION PAPERS AND CLOTHS STANDARD®

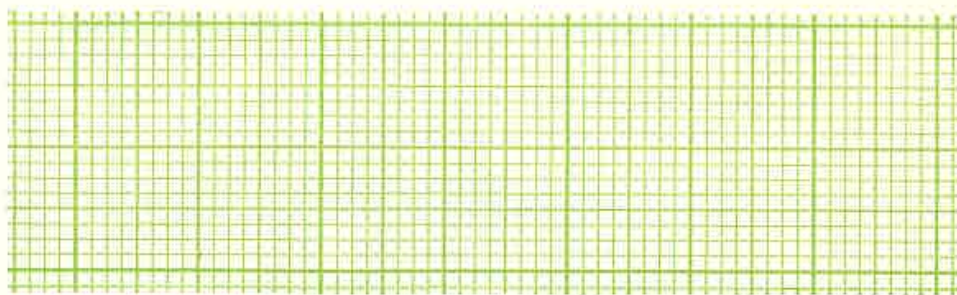


**10 x 10 to the inch,
Nos. 280 and 283 to 288, incl.**



**10 x 10 to the inch, 5th lines accented
Nos. 282G and 282½G**

		Size of Sheet	Size of Engraving	Color of Lines	
280G	DRAWING PAPER, heavy	18 x 23"	16 x 20"	green	
280TR	TRACING PAPER	18 x 23"	16 x 20"	orange	
		Width of Roll	Width of Engraving	Color of Lines	Length of Roll
282G	DRAWING PAPER, heavy	26"	24"	green	50 yds.
282½G	TRACING PAPER	26"	24"	green	50 yds.
A282½G	ALBANENE TRACING PAPER	26"	24"	green	20 yds.
283G	DRAWING PAPER, heavy	22"	20"	green	50 yds.
283R	DRAWING PAPER, heavy	22"	20"	orange	50 yds.
284G	DRAWING PAPER, heavy	12"	10"	green	50 yds.
286½G	TRACING PAPER	36"	35"	green	50 yds.
287G	TRACING PAPER	22"	20"	green	50 yds.
287R	TRACING PAPER	22"	20"	orange	50 yds.
287B	TRACING PAPER	22"	20"	blue	50 yds.
287HR	TRACING PAPER	22"	10"	orange	50 yds.
A287G	ALBANENE TRACING PAPER	22"	20"	green	20 yds.
A287R	ALBANENE TRACING PAPER	22"	20"	orange	20 yds.
288G	IMPERIAL TRACING CLOTH	24"	20"	green	20 yds.
288R	IMPERIAL TRACING CLOTH	24"	20"	orange	20 yds.
288PR	PHOENIX TRACING CLOTH	24"	20"	orange	20 yds.
288½R	IMPERIAL TRACING CLOTH	36"	35"	orange	20 yds.



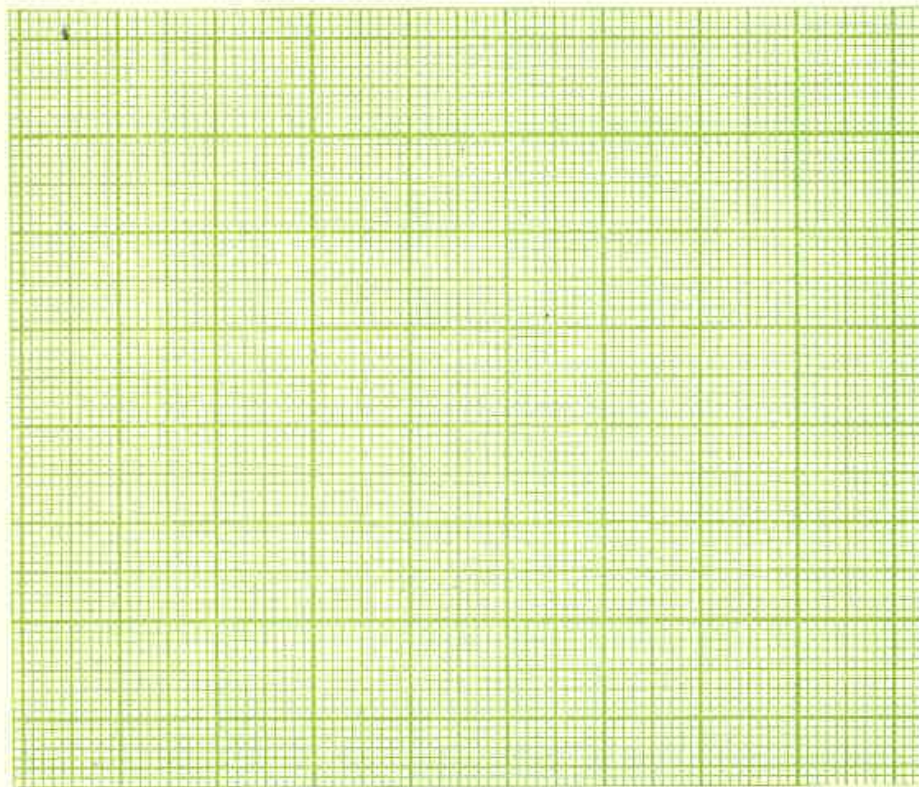
16 x 16 to the inch, 4th, 8th and 16th lines progressively accented

		Size of Sheet	Size of Engraving	Color of Lines	
290G	DRAWING PAPER, heavy	18 x 23"	16 x 20"	green	
290TR	TRACING PAPER	18 x 23"	16 x 20"	orange	
		Width of Roll	Width of Engraving	Color of Lines	Length of Roll
293G	DRAWING PAPER, heavy	22"	20"	green	50 yds.

CROSS SECTION PAPERS AND CLOTHS

IN SHEETS AND IN CONTINUOUS ROLLS

STANDARD®

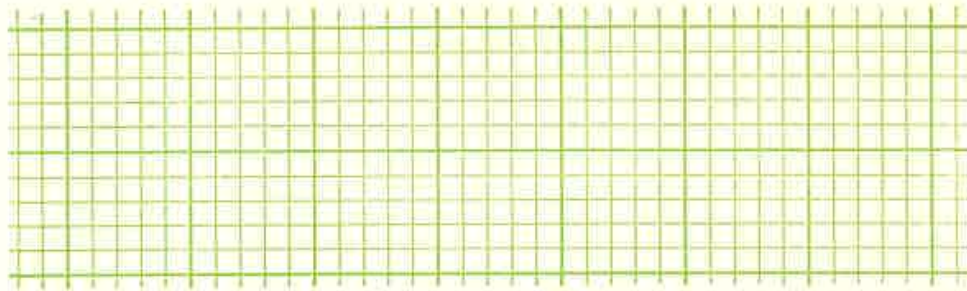


Millimeters, 5, 10 and 50 mm. lines progressively accented

		Size of Sheet	Size of Engraving	Color of Lines	
300G	DRAWING PAPER, heavy	18 x 23"	40 x 50 cm.	green	
300TR	TRACING PAPER	18 x 23"	40 x 50 cm.	orange	
		Width of Roll	Width of Engraving	Color of Lines	Length of Roll
303G	DRAWING PAPER, heavy	22"	50 cm.	green	50 yds.
303R	DRAWING PAPER, heavy	22"	50 cm.	orange	50 yds.
306G	DRAWING PAPER, heavy	32"	75 cm.	green	50 yds.
306R	DRAWING PAPER, heavy	32"	75 cm.	orange	50 yds.
307R	TRACING PAPER	22"	50 cm.	orange	50 yds.
307½R	TRACING PAPER	32"	75 cm.	orange	50 yds.
A307½R	ALBANENE TRACING PAPER	32"	75 cm.	orange	20 yds.
308½R	IMPERIAL TRACING CLOTH	24"	50 cm.	orange	20 yds.
309R	IMPERIAL TRACING CLOTH	33½"	75 cm.	orange	20 yds.
310G	DRAWING PAPER, heavy	42"	100 cm.	green	50 yds.
310TR	TRACING PAPER	42"	100 cm.	orange	50 yds.
A310TR	ALBANENE TRACING PAPER	42"	100 cm.	orange	20 yds.

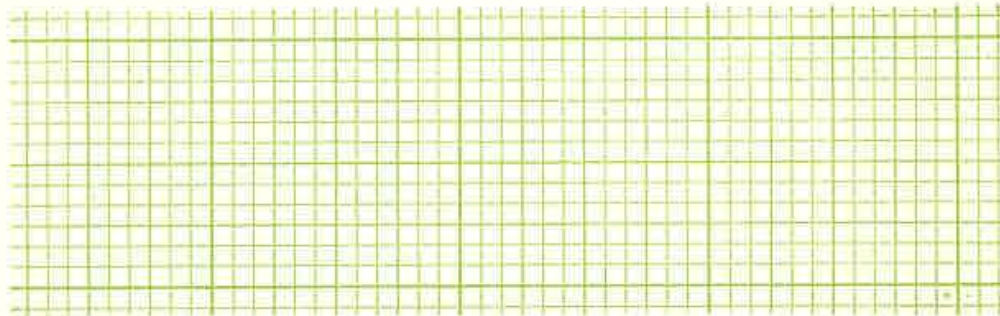
See also Graph Sheets 10 x 10 and 5 x 5 to 1 cm., page 65.

CROSS SECTION PAPERS
 IN SHEETS
STANDARD®



5 x 5 to the half-inch

		Size of Sheet	Size of Engraving	Color of Lines
320G	DRAWING PAPER, heavy	18 x 23"	16 x 20"	green
320TR	TRACING PAPER	18 x 23"	16 x 20"	orange

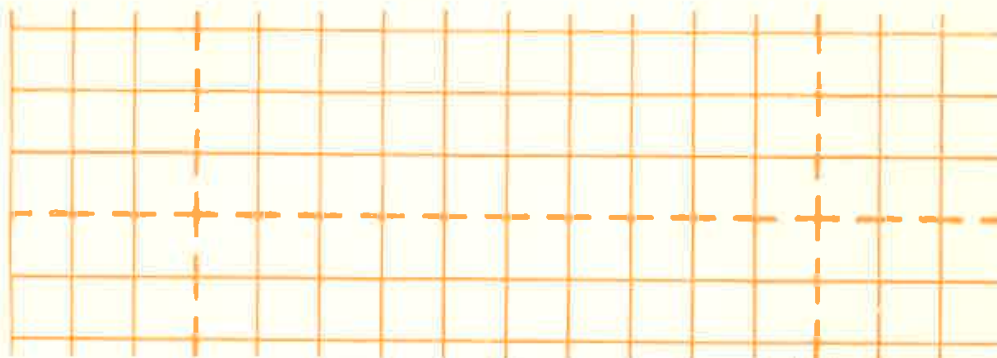


12 x 12 to the inch, 3rd, 6th, and 12th lines progressively accented

		Size of Sheet	Size of Engraving	Color of Lines
322G	DRAWING PAPER, heavy	18 x 23"	16 x 20"	green

PLANT LAYOUT
 IN CONTINUOUS ROLLS

For Plant Layout work, to scale of 1/4 inch to the foot



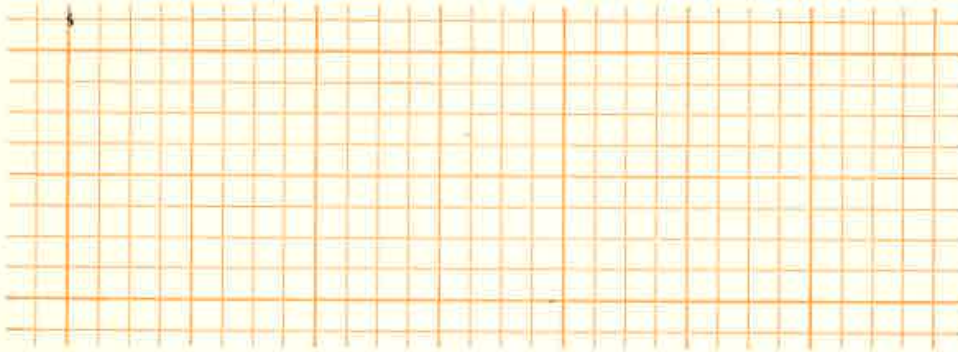
10 x 10 to 2 1/2 inches, 10th lines heavy and dashed

		Width of Roll	Width of Engraving	Color of Lines	Length of Roll
A324R	ALBANENE TRACING PAPER	36"	35"	orange	20 yds.
MF324	ACETATE SAFETY FILM, matte surface, .0075 in. thick	36"	35"	orange	10 yds.
325R	STABILENE FILM .005 in. thick	36"	35"	orange	10 yds.
325G	STABILENE FILM .005 in. thick	36"	35"	non-repro	10 yds.

CROSS SECTION PAPER

30 INCH ENGRAVING—IN CONTINUOUS ROLLS

These Cross Section Papers are intended for architectural and mechanical full-size detail sketches. No. 326D is a white drawing paper, 50% rag content. Weight Sub. 30.

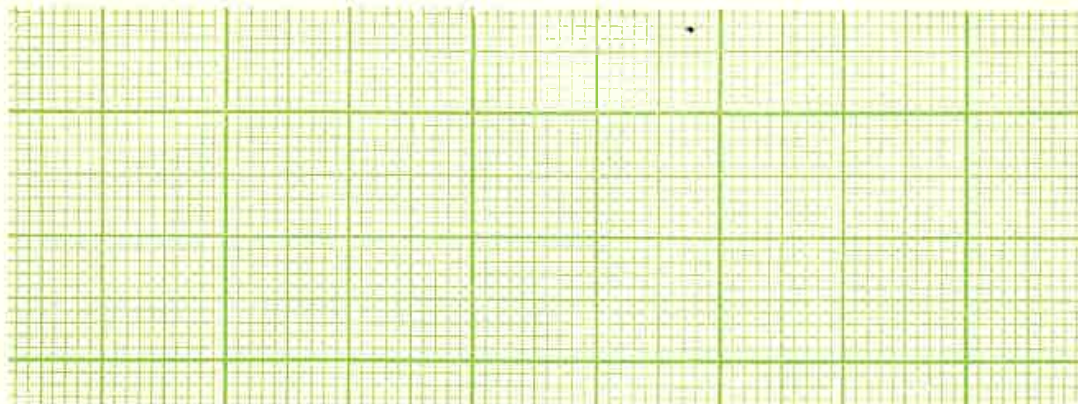


8 x 8 to the inch, 4th lines accented, 8th lines heavy

		Width of Roll	Width of Engraving	Color of Lines	Length of Roll
326D	WHITE DETAIL PAPER	32"	30"	orange	50 yds.
327TR	TRACING PAPER	32"	30"	orange	50 yds.
A327TR	ALBANENE TRACING PAPER	32"	30"	orange	20 yds.

CROSS SECTION PAPER

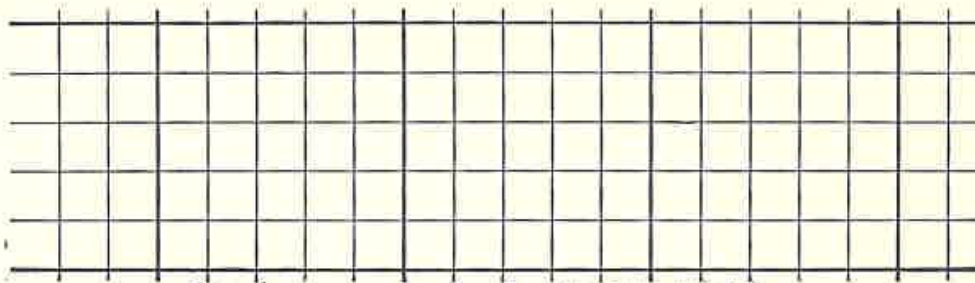
PRINTED FROM ENGRAVED PLATE—IN SHEETS



20 x 20 to the inch, 5th, 10th and 20th lines progressively accented

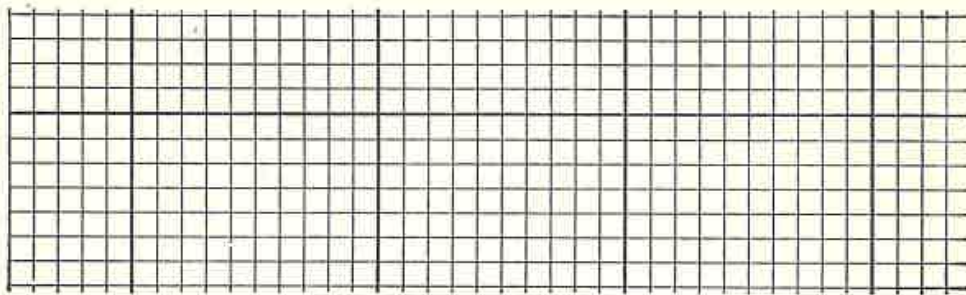
		Size of Sheet	Size of Engraving	Color of Lines
329	DRAWING PAPER, medium	17 x 22"	15 x 20"	green

RULED CROSS SECTION PAPERS



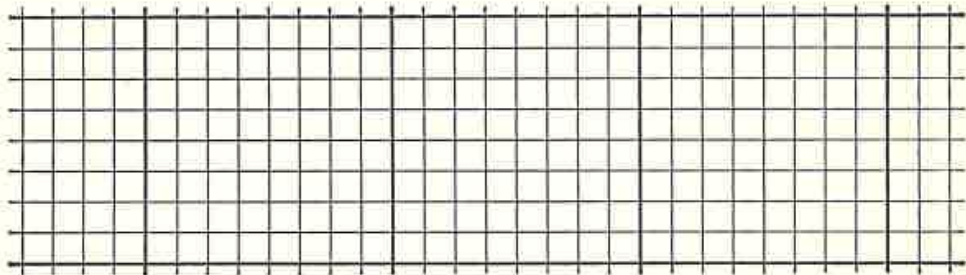
Sheets, 17 x 22 in., 5 x 5 to the inch, ruled blue

- N330** DRAWING PAPER, heavy weight.
- N330L** DRAWING PAPER, medium weight.



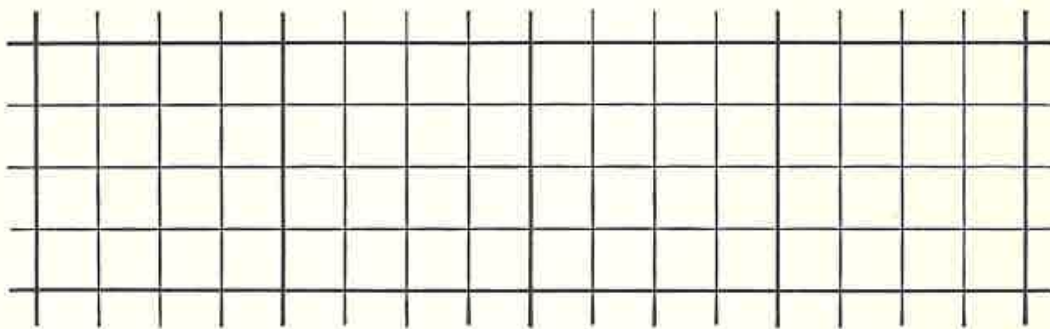
Sheets, 17 x 22 in., 10 x 10 to the inch, ruled blue

- N331** DRAWING PAPER, heavy weight.
- N331L** DRAWING PAPER, medium weight.



Sheets, 17 x 22 in., 8 x 8 to the inch, ruled blue

- N332** DRAWING PAPER, heavy weight.
- N332L** DRAWING PAPER, medium weight.

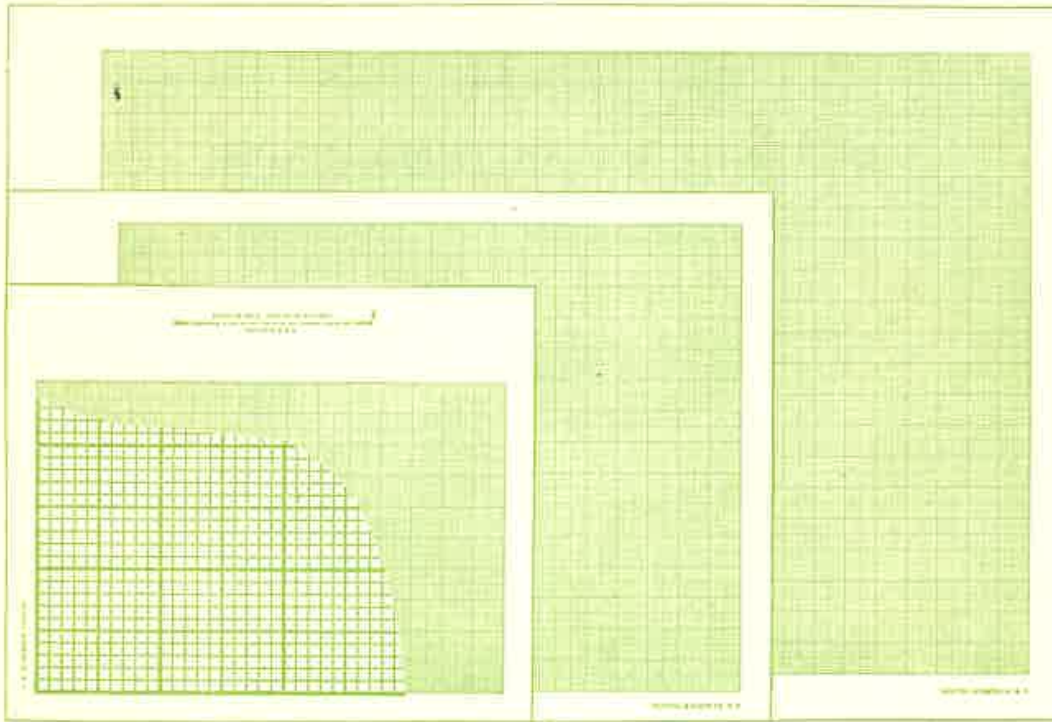


- Topographical Paper, Sheets, 17 x 22 in., 400 feet to the inch, ruled red and blue**
- N333** DRAWING PAPER, heavy weight.

See also other papers 5 x 5, 8 x 8 and 10 x 10 to 1 inch, pages 60-62.

CONSTRUCTOR'S CROSS SECTION PAPERS AND CLOTHS

IN SHEETS AND CONTINUOUS ROLLS



334-1G
334-1TG

334-2G
334-2TG

334-3G
334-3TG

10 x 10 to the half inch, 5th lines accented

This popular decimally ruled cross-section is available in three sheet sizes and also in continuous rolls, printed on drawing paper, tracing paper and tracing cloth, in blue, green, orange and black ink. Blue ink reproduces very faintly or not at all, green and orange fairly strong and black very strong.

SHEETS		Size of Sheet*	Size of Engraving	Color of Lines
334-1G	DRAWING PAPER, medium	7 x 8½"	5 x 7½"	green
334-1TG	TRACING PAPER	7 x 8½"	5 x 7½"	green
334-2G	DRAWING PAPER, medium	8½ x 12¼"	7½ x 10"	green
334-2B	DRAWING PAPER, medium	8½ x 12¼"	7½ x 10"	blue
334-2K	DRAWING PAPER, medium	8½ x 12¼"	7½ x 10"	black
334-2TG	TRACING PAPER	8½ x 12¼"	7½ x 10"	green
334-2TB	TRACING PAPER	8½ x 12¼"	7½ x 10"	blue
334-2TR	TRACING PAPER	8½ x 12¼"	7½ x 10"	orange
334-2CR	IMPERIAL TRACING CLOTH	8½ x 12¼"	7½ x 10"	orange
334-3G	DRAWING PAPER, medium	11½ x 17"	10 x 15"	green
334-3TG	TRACING PAPER	11½ x 17"	10 x 15"	green
334-3TR	TRACING PAPER	11½ x 17"	10 x 15"	orange
334-3CR	IMPERIAL TRACING CLOTH	11½ x 17"	10 x 15"	orange

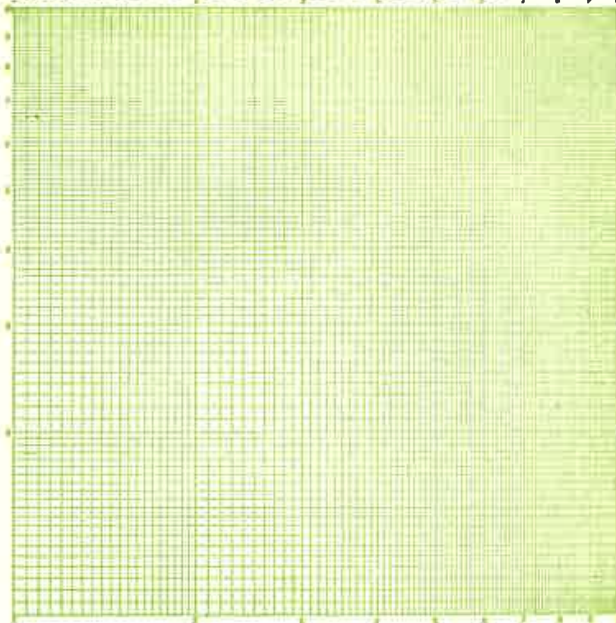
ROLLS		Width of Roll	Width of Engraving	Color of Lines	Length of Roll
334½G	DRAWING PAPER, heavy	22"	20"	green	50 yds.
334½TG	TRACING PAPER	22"	20"	green	50 yds.
A334½TG	ALBANENE TRACING PAPER	22"	20"	green	20 yds.

See also other sheets 10 x 10 to the half inch, page 63, 64.

LOGARITHMIC PAPERS

Among the various relationships which may be represented by means of these papers, are: Circumferences and areas of circles in terms of their radii or diameters, or the inverse; moments of inertia and radii of gyration in terms of a linear dimension, or the inverse; length of pendulum and time of oscillation; powers and roots of any and all indices; weights of a series of bodies of the same substance and form but of varying size, or the inverse, in terms of a linear dimension; sizes of shafts, struts, tie bars, etc., in terms of varying load, or the inverse; shearing stress, bending moment or deflection of beams, or the inverse in terms of load, etc., etc.

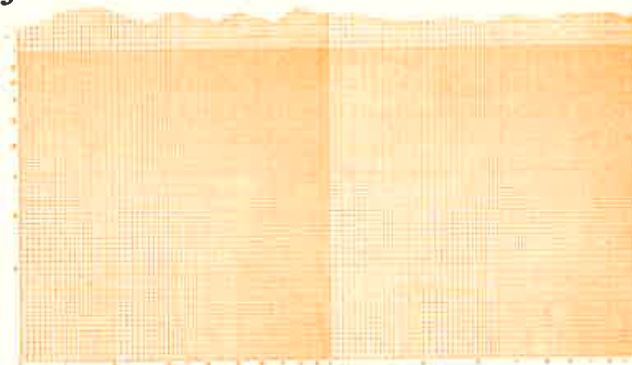
DURAND'S LOGARITHMIC PAPER



N336* DRAWING PAPER, medium	Size of Sheet	Size of Engraving	Color of Lines green
	$11\frac{1}{2} \times 11\frac{1}{2}''$	25×25 cm. ($9\frac{13}{16} \times 9\frac{13}{16}''$)	

This paper has a single 25 cm. logarithmic scale in each direction.

JENSEN'S LOGARITHMIC PAPER

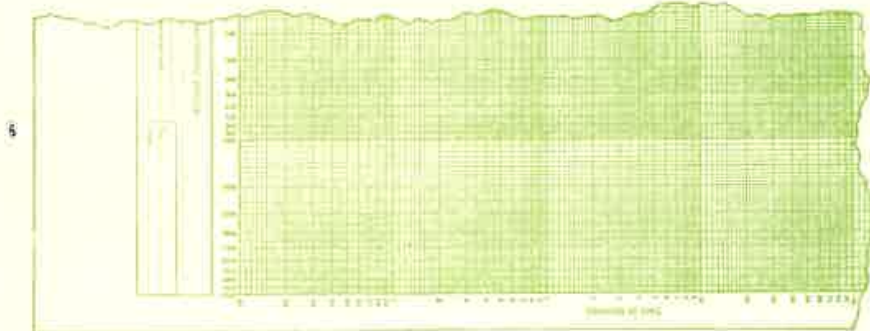


336J* TRACING PAPER	Size of Sheet	Size of Engraving	Color of Lines orange
	$11\frac{1}{2} \times 17''$	$10 \times 10''$	

Jensen's Logarithmic Paper is similar to Durand's, but has two 5 in. logarithmic scales in each direction, instead of one.

* See also Graph Sheets 1 x 1 and 2 x 2 cycles, page 79.

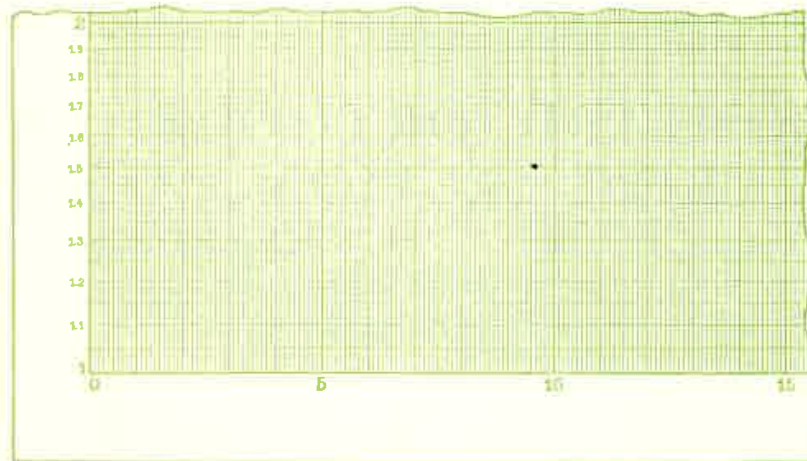
LOGARITHMIC PAPERS TIME-CURRENT CHARACTERISTIC



This paper admits of a clear presentation of the data on established current ratings of fuse links within the time and current scales that are required in the application of these links. A box of printed matter below the engraving was standardized to establish a uniform method of briefly presenting the pertinent information on which the data shown by the graph is based. The sheet has $4\frac{1}{2}$ logarithmic cycles, numbered from 0.5 to 10,000, in one direction, and 5 logarithmic cycles, numbered from 0.01 to 1000, in the other direction. While this paper is the standard established by the Joint Committee on Distribution Cut-out Standards of the National Electric Manufacturers Association and the Edison Electric Institute, it can likewise be employed for plotting time-current characteristics of any other apparatus to which the time and current scales used in the graph sheet can be applied.

336E*	TRACING PAPER	Size of	Size of	Color o.
		Sheet	Engraving	Lines
		10½ x 15"	9½ x 11¼"	green

SEMI-LOGARITHMIC PAPER



336P†	DRAWING PAPER, heavy	Size of	Size of	Color of
		Sheet	Engraving	Lines
		16 x 21"	25 x 50 cm.	green

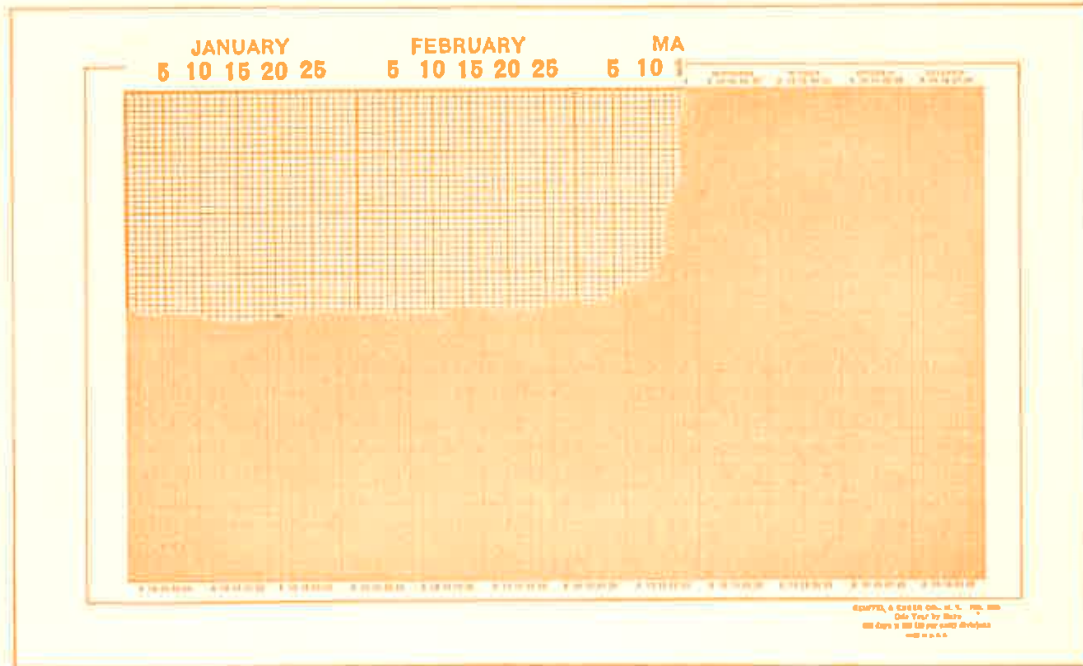
The ordinate measures 25 cm. and has a single logarithmic scale; the space from 1 to 2, having twenty sub-divisions and from 2 to 3, 3 to 4 etc., up to 10, having ten divisions. The abscissa is divided into equal parts of one millimeter.

* See also Graph Sheets, 3 x 5 cycles, page 80.

† See also Semi-Logarithmic Graph Sheets No. 358-52, page 75.

CROSS SECTION PAPER PROGRESS

TRADE MARK



338* TRACING PAPER

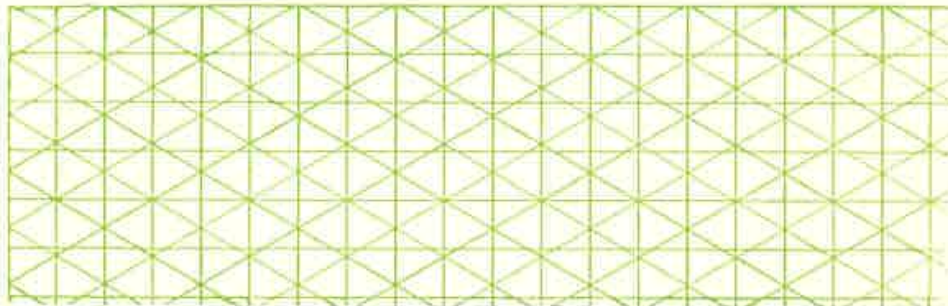
Size of Sheet
8½ x 14"

Size of Engraving
7 x 12"

Color of Lines
orange

The base line is divided into 366 equal parts, corresponding to the number of days per year (365 or 366). Heavy lines separate the twelve months, the names being printed at the head of each column, and every fifth day numbered. Of the 260 horizontal lines, every tenth line is heavy to facilitate reading.

ISOMETRIC-ORTHOGRAPHIC CROSS SECTION PAPER



342B† TRACING PAPER
342C† DRAWING PAPER, medium

Size of Sheet
10¾ x 13¾"
13 x 19"

Size of Engraving
9 x 12"
12 x 18"

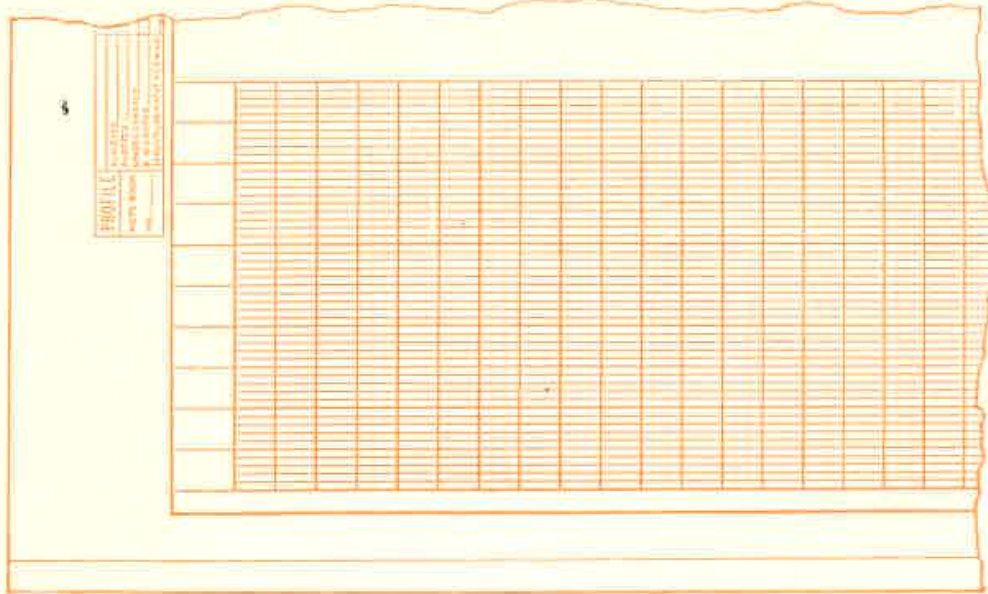
Color of Lines
green
green

* See also Graph Sheets on page 83.

† See also Isometric Graph Sheets, page 69.

FEDERAL AID SHEETS

as recommended by the
U. S. DEPARTMENT OF AGRICULTURE,
OFFICE OF PUBLIC ROADS AND RURAL ENGINEERING



345-2

PLATE 1—FOR PROFILES AND PLANS

Sheet Size	—23 x 36 in.
Profile Size	—10 x 33½ in.
Divisions	— 2 x 10 to the inch.
Plan Space	—10¾ x 33½ in. left blank above profile.
Title Blocks	—two.

PLATE 2—FOR FLAT PROFILES AND PLANS

Sheet Size	—23 x 36 in.
Two Profiles, each	— 5 x 33½ in.
Divisions	— 2 x 10 to the inch.
Two Plan Spaces	—each 5¼ x 33½ in. above profiles.
Title Blocks	—two.

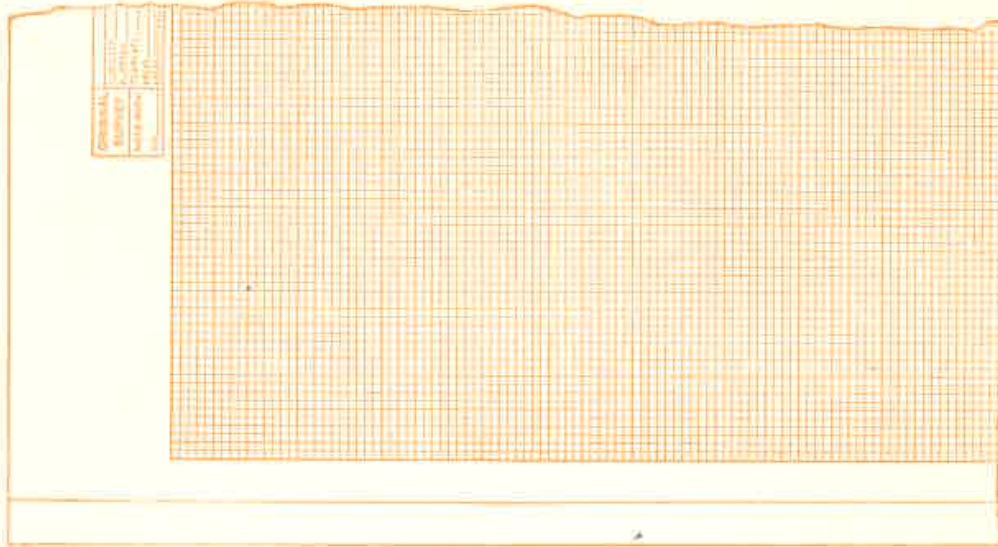
- 345-1 PLATE 1, printed in orange on Tracing Paper.
 345-2 PLATE 2, printed in orange on Tracing Paper.
 Tracing paper is 100% clean white rag natural tracing paper of great strength and permanence. Thickness .0022 in. approx.
 346-1C PLATE 1, printed in orange on Imperial Tracing Cloth in reverse type on glazed side.
 346-2C PLATE 2, printed in orange on Imperial Tracing Cloth in reverse type on glazed side.
 346-1FG PLATE 1, reverse printed in green on No. 163 Herculene Drafting Film.
 346-2FG PLATE 2, reverse printed in green on No. 163 Herculene Drafting Film.
 347-1R PLATE 1, reverse printed in orange on No. 195L Albanene Tracing Paper.
 347-2R* PLATE 2, reverse printed in orange on No. 195L Albanene Tracing Paper.

* To order only in lots of 500 sheets and over.

NOTE:—Plate 1 or 2 printed on Nos. 165 and N166 Phoenix Tracing Cloth or on No. 158 Arkwright Tracing Cloth to special order in quantity.

FEDERAL AID SHEETS

as recommended by the
**U. S. DEPARTMENT OF AGRICULTURE,
 OFFICE OF PUBLIC ROADS AND RURAL ENGINEERING**



345-3

PLATE 3—CROSS SECTION

- Sheet Size —23 x 36 in.
- Cross-section Size —21 x 33½ in.
- Divisions —10 x 10 to the inch, tenth lines heavy; 2nd, 4th, 6th and 8th lines accented.
- Title Blocks —two, one each for original and final surveys.

PLATE 4—CROSS SECTION AND PLAN

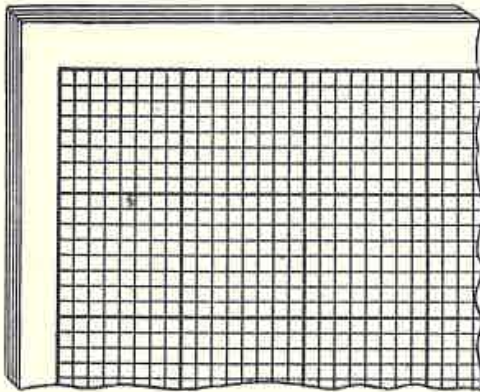
- Sheet Size —23 x 36 in.
- Cross-section Size —10 x 33½ in.
- Divisions —10 x 10 to the inch, tenth lines heavy; 2nd, 4th, 6th and 8th lines accented.
- Plan Space —11 x 33½ in. left blank above cross sections.
- Title Blocks —two, one each for original and final surveys.

- 345-3 PLATE 3, printed in orange on Tracing Paper.
- 345-4 PLATE 4, printed in orange on Tracing Paper.
 Tracing paper is 100% clean white rag natural tracing paper of great strength and permanence. Thickness .0022 in. approx.
- 346-3C PLATE 3, printed in orange on Imperial Tracing Cloth, in reverse type on glazed side.
- 346-4C PLATE 4, printed in orange on Imperial Tracing Cloth, in reverse type on glazed side.
- 346-3FG PLATE 3, reverse printed in green on No. 163 Herculene Drafting Film.
- 346-4FG* PLATE 4, reverse printed in green on No. 163 Herculene Drafting Film.
- 347-3R PLATE 3, reverse printed in orange on No. 195L Albanene Tracing Paper.
- 347-4R* PLATE 4, reverse printed in orange on No. 195L Albanene Tracing Paper.

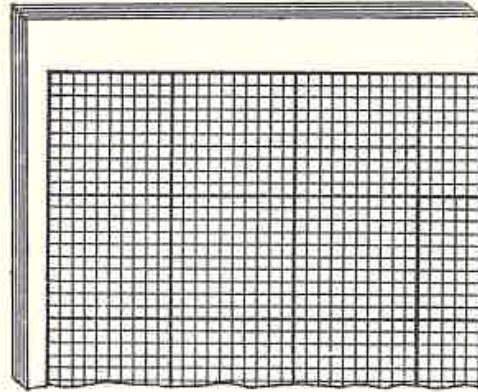
* To order only in lots of 500 sheets and over.

NOTE:—Plate 3 or 4 printed on Nos. 165 and N166 Phoenix Tracing Cloth or on No. 158 Arkwright Tracing Cloth to special order in quantity.

CROSS SECTION PADS, DRAWING PAPER



353-8-01



353-10-01

All pads 8½ x 11 in., printed in blue on Drawing paper, medium weight.

Pad of 25 Sheets	Pad of 50 Sheets	Section Lining
353-4-01	353-4-11	4 x 4 to 1 in.
353-5-01	353-5-11	5 x 5 to 1 in.
353-8-01	353-8-11	8 x 8 to 1 in.
353-10-01	353-10-11	10 x 10 to 1 in.
353-14-01	353-14-11	Millimeters

CROSS SECTION PADS, PREPARED TRACING PAPER

WITH NON-REPRODUCIBLE LINES

For freehand drawing, field sketches, plot plans, rough layouts before final drawings are made, charts, graphs, diagrams of statistics when reproductions of the drawings are required, in which the grid lines are not wanted.

All pads 8½ x 11 in., printed in non-reproducible ink on prepared Tracing Paper.

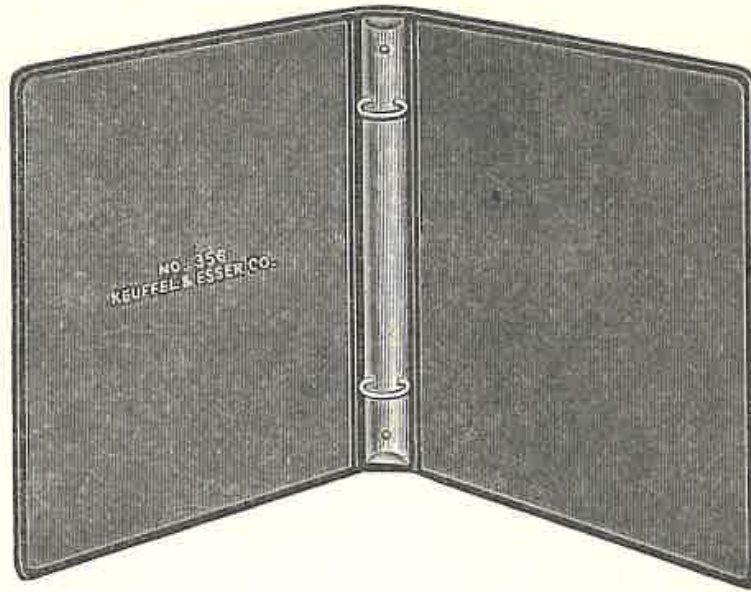
Pad of 50 Sheets	Section Lining
354-4-11	4 x 4 to 1 in.
354-5-11	5 x 5 to 1 in.
354-8-11	8 x 8 to 1 in.
354-10-11	10 x 10 to 1 in.
354-14-11	Millimeters

See also ALBANENE and SWALLOW Guide Line Pads, with non-reproducible lines, page 87a.

TRANSPARENT SKETCHING PADS

355-11 K & E TRANSPARENT SKETCHING PAD, 50 sheets, 8½ x 11 in., tracing paper. Heavy, rigid board backs. Bristol Board insert, printed with 8 x 8 and 10 x 10 grids. Similar Sketch pads are available under the following catalog numbers: ALBANENE 195L-11 and SWALLOW N179-11.

LOOSE LEAF BINDERS



LOOSE LEAF BINDERS Nos. 356 and 356L are strongly made and durable. The heavy stiff covers are finished on the outside with a durable black leather substitute having a levant grain, and on the inside with a strong black moire paper. The two snap rings are firmly secured to a nickelplated steel base, which in turn is bound into the back.

The capacity of these binders, in terms of K & E Graph Sheets, is as follows—about 200 sheets of No. 358 Drawing Paper; 375 sheets of No. 359H Heavy Tracing Paper; and 450 sheets of No. 359 Thin Tracing Paper.

- 356 LOOSE LEAF BINDER, $9\frac{1}{4}$ x $11\frac{3}{8}$ in., for sheets $8\frac{1}{2}$ x 11 in., punched on the long edge.
- 356L LOOSE LEAF BINDER, $11\frac{3}{8}$ x $17\frac{3}{4}$ in., for sheets 11 x $16\frac{1}{2}$ in., punched on the short edge.

GRAPH SHEETS

The Graph Sheets listed in the following pages offer a wide variety of forms for graphical representation.

SIZES. Sheets are either 8½ x 11 in. or 11 x 16½ in. They are punched with five holes on the 11 inch edge, to fit 2-ring binders Nos. 356 and 356L and standard 3-ring binders as well. Plate sizes are usually 7 x 10 in. and 10 x 15 in. Thus ample margins are provided for numerical scales and notations.

PAPER. The drawing paper (No. 358 line) is a strong white paper with high rag content and good erasing qualities. Thickness approx. .004 in. Weight Sub. 24.

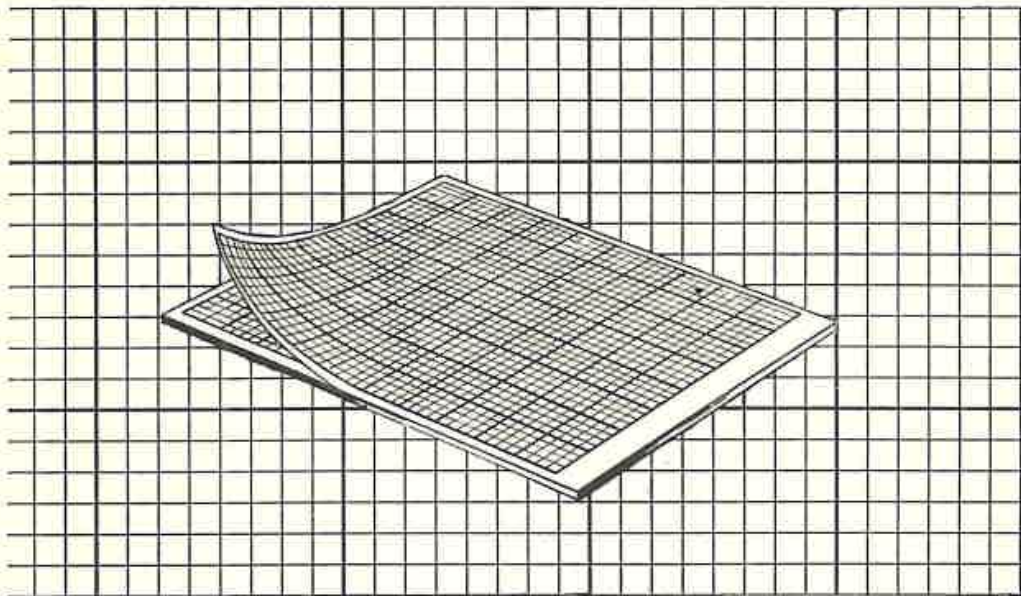
The tracing paper (No. 359 line) is a strong, high rag content, natural tracing paper. Thickness approx. .002 in. Weight Sub. 12.

The heavy tracing paper (No. 359H line) is a 100% rag, high grade, natural tracing paper. Thickness approx. .0025 in. Weight Sub. 16.

ALBANENE Tracing Paper (No. 359T line) is No. 195L. See page 43.

INKS. On drawing paper green ink is standard. On tracing paper orange ink is used, with green ink also available for many plates. Some plates are printed in pale blue ink and some in black. Other colors are available on special order.

All K & E Graph Sheets printed in green or black ink will reproduce in THERMO-FAX office copying machines.

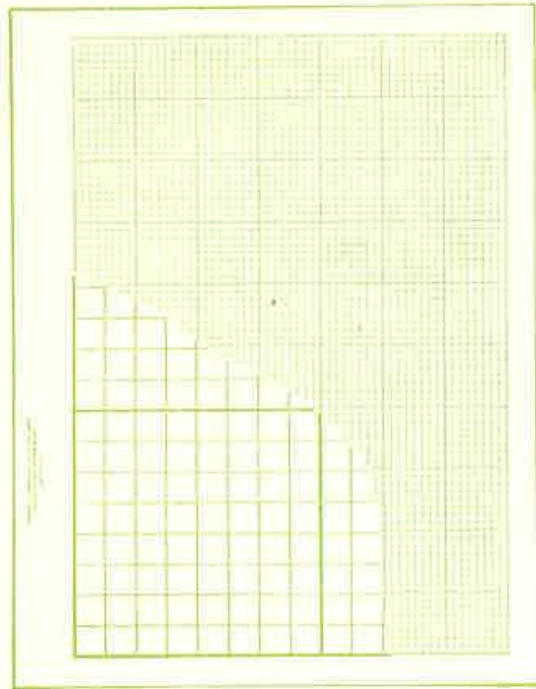


358-3P

GRAPH SHEETS IN PADS

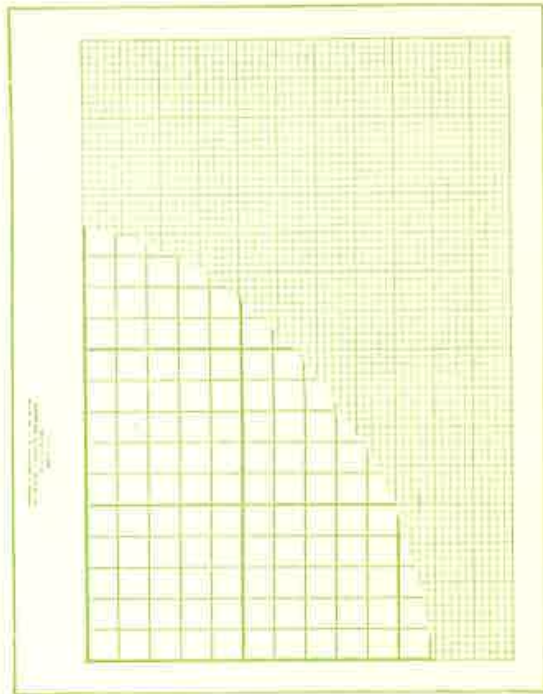
Pad of 25 Sheets		Section Lining	Size of Sheet	Size of Plate	Color of Lines
358-3P	DRAWING PAPER	8 x 8 to 1 in.	8½ x 11 in.	8 x 10 in.	blue
358-5P	DRAWING PAPER	10 x 10 to 1 in.	8½ x 11 in.	8 x 10 in.	blue

GRAPH SHEETS SQUARE SECTIONS



358-3

359-3



358-3D

359-3DG

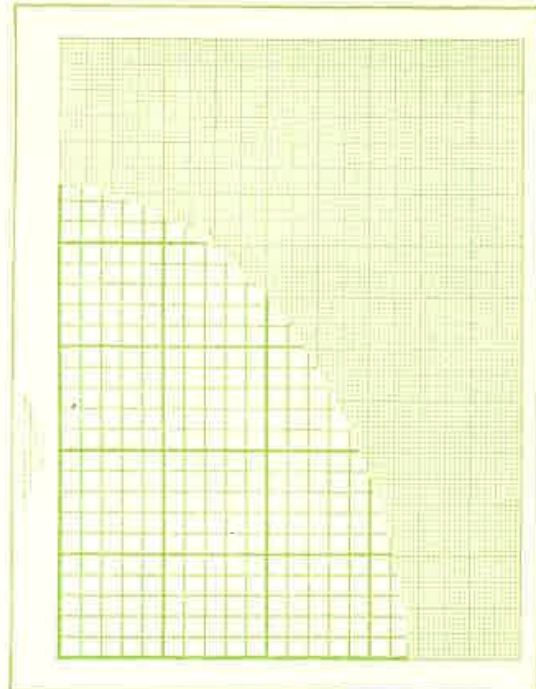
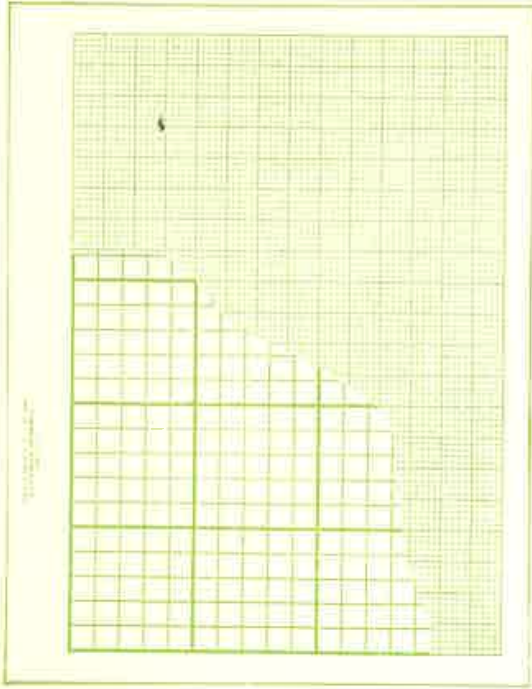
Divisions Per Unit		Paper	Color of Line	Sheet Size	Plate Size
4 x 4 to 1"*—4th lines heavy	358-1	Drawing	green	8½ x 11"	7 x 10"
	359-1	Tracing	orange		
5 x 5 to 1"†—5th lines heavy	358-2	Drawing	green	8½ x 11"	7 x 10"
	359-2	Tracing	orange		
	359-2G	Tracing	green		
	358-221	Drawing	blue		
6 x 6 to 1"—6th lines heavy	358-2½	Drawing	green	8½ x 11"	7 x 10"
	359-2½	Tracing	orange		
6 x 6 to 1"—6th lines heavy	358-2½L	Drawing	green	11 x 16½"	10 x 15"
	359-2½L	Tracing	orange		
8 x 8 to 1"†—8th lines heavy	358-3	Drawing	green	8½ x 11"	7 x 10"
	358-3P	Drawing, Pads— see page 59	blue		
	359-3	Tracing	orange	7 x 10"	
	359-3G	Tracing	green		
	358-3L	Drawing	green	11 x 16½"	10 x 15"
	359-3L	Tracing	orange		

* For Topographical Paper 4 x 4 to 1 inch see page 50.

† For other sheets 5 x 5 and 8 x 8 to 1 inch see pages 50 and 59.

GRAPH SHEETS

SQUARE SECTIONS



358-6 359-6G 359T-6G

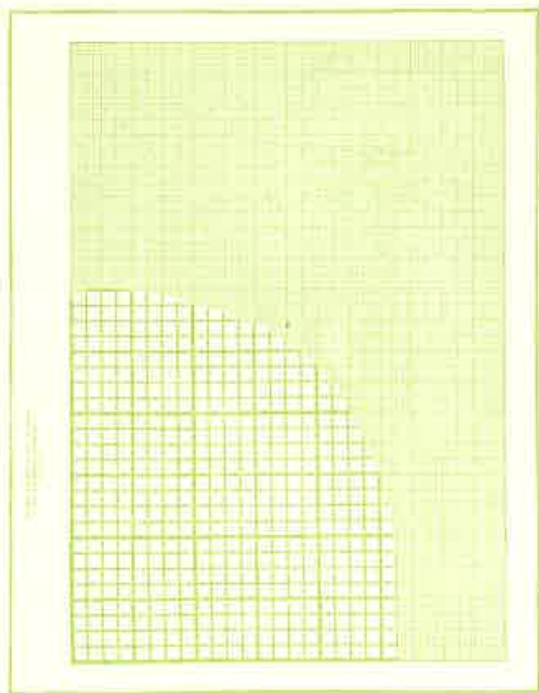
358-8D 359-8DG

Divisions per Unit	Paper	Color of Line	Sheet Size	Plate Size
10 x 10 to 1 1/4" (8 x 8 to 1")	—5th lines accented, 10th lines heavy			
	358-3D Drawing 359-3DG Tracing	green green	8 1/2 x 11"	7 x 10"
10 x 10 to 1"*	—All lines equal weight			
	358-4 Drawing 359-4 Tracing	green orange	8 1/2 x 11"	7 x 10"
10 x 10 to 1"*	—10th lines heavy			
	358-5 Drawing	green	8 1/2 x 11"	7 x 10"
	358-5P Drawing, Pads— see page 59	blue		8 x 10"
	359-5 Tracing	orange		7 x 10"
	359-5G Tracing	green		
	359H-5 Heavy Tracing	orange		
	359T-5 Albanene	orange		
	359T-5G Albanene	green		
358-5L Drawing	green	11 x 16 1/2"	10 x 15"	
359-5L Tracing	orange			
359-5LG Tracing	green			
359T-5L Albanene	orange			
359T-5LG Albanene	green			

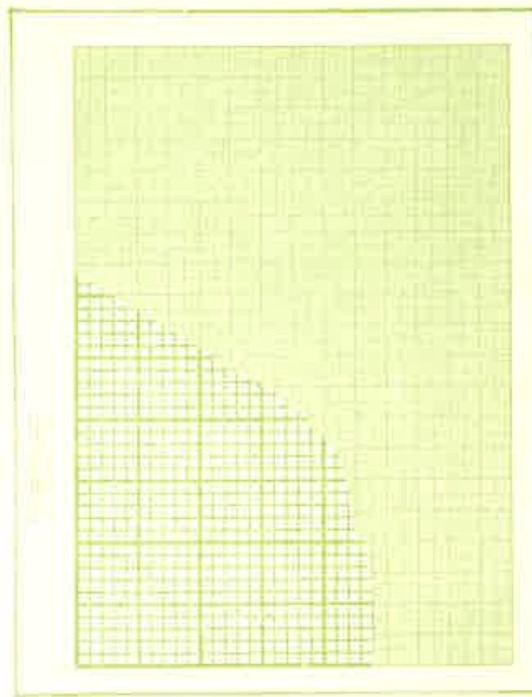
* For other sheets and rolls 10 x 10 to 1 inch see pages 46, 50 and 59.



GRAPH SHEETS SQUARE SECTIONS



358-9½



358-11 359-11G 359T-11G

Divisions per Unit	Paper	Color of Line	Sheet Size	Plate Size
10 x 10 to 1"*	—5th lines accented, 10th lines heavy			
	358-5D	Drawing	green	8½ x 11"
	359-5DG	Tracing	green	7 x 10"
	358-5DL	Drawing	green	11 x 16½"
	359-5DLG	Tracing	green	10 x 15"
	359T-5DLG	Albanene	green	
5 x 5 to ½"†	—5th lines heavy			
	358-6	Drawing	green	8½ x 11"
	359-6	Tracing	orange	7 x 10"
	359-6G	Tracing	green	
	359H-6	Heavy Tracing	orange	
	359T-6	Albanene	orange	
	359T-6G	Albanene	green	
358-6L	Drawing	green	11 x 16½"	10 x 15"
	359-6LG	Tracing	green	
12 x 12 to 1"†	—3rd, 6th and 12th lines progressively accented			
	358-8	Drawing	green	8½ x 11"
	359-8	Tracing	orange	7 x 10"
	358-8L	Drawing	green	11 x 16½"
359-8LG	Tracing	green		

* For other sheets and rolls 10 x 10 to 1 inch see pages 46, 50 and 59.

† For other sheets 5 x 5 to the ½ inch and 12 x 12 to the inch see page 48.

GRAPH SHEETS SQUARE SECTIONS

Divisions per Unit	Paper	Color of Line	Sheet Size	Plate Size
10 x 10 to 5/6" —5th lines accented, 10th lines heavy (12 x 12 to 1") ₅	358-8D Drawing	green	8½ x 11"	7½ x 10"
	359-8DG Tracing	green		
	358-8DL Drawing	green	11 x 16½"	10 x 15"
	359-8DLG Tracing	green		
16 x 16 to 1" *—16th lines heavy	358-9 Drawing	green	8½ x 11"	7 x 10"
	359-9 Tracing	orange		
8 x 8 to ½" —4th lines accented, 8th lines heavy	358-9½ Drawing	green	8½ x 11"	7 x 10"
	359-9½ Tracing	orange		
	358-9½L Drawing	green	11 x 16½"	10 x 15"
	359-9½L Tracing	orange		
20 x 20 to 1"† —All lines equal weight	358-10 Drawing	green	8½ x 11"	7 x 10"
	359-10 Tracing	orange		
20 x 20 to 1"† —5th, 10th and 20th lines progressively accented	358-10½ Drawing	green	8½ x 11"	7 x 10"
	359-10½G Tracing	green		
	358-10½L Drawing	green	11 x 16½"	10 x 15"
	359-10½LG Tracing	green		
10 x 10 to ½"‡ —5th lines accented, 10th lines heavy	358-11 Drawing	green	8½ x 11"	7 x 10"
	358-11B Drawing	blue		
	359-11 Tracing	orange		
	359-11B Tracing	blue		
	359-11G Tracing	green		
	359-11K Tracing	black		
	359H-11 Heavy Tracing	orange		
	359T-11 Albanene	orange		
	359T-11G Albanene	green		
	358-11L Drawing	green	11 x 16½"	10 x 15"
	359-11L Tracing	orange		
	359-11LG Tracing	green		
	359T-11L Albanene	orange		
	359T-11LG Albanene	green		

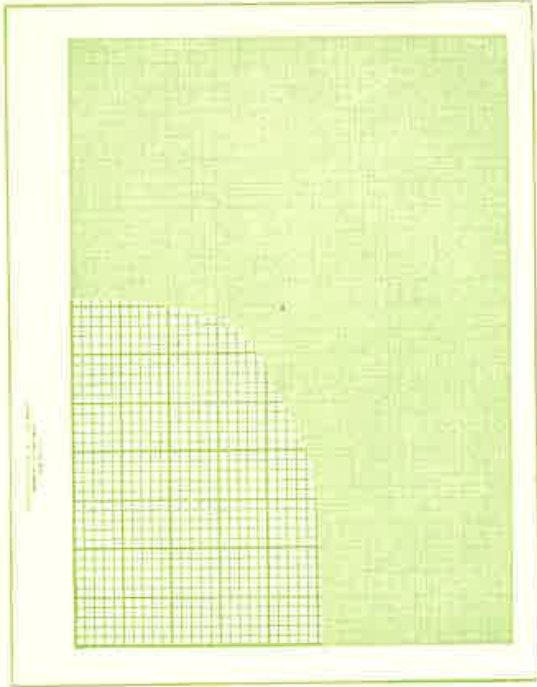
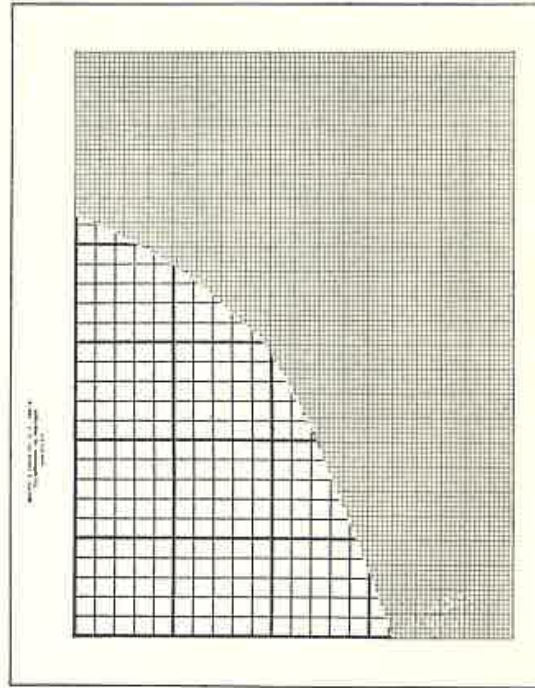
* For other sheets and rolls 16 x 16 to 1 inch see page 46.

† For another sheet 20 x 20 to 1 inch see page 49.

‡ For other sheets and rolls 10 x 10 to the ½ inch see page 51.

GRAPH SHEETS

SQUARE SECTIONS


358-14
359-14G

358-15K

Divisions per Unit	Paper	Color of Line	Sheet Size	Plate Size
10 x 10 to 1/2" — 5th lines accented, 10th lines heavy	358-11 1/2 Drawing	green	8 1/2 x 11"	6 x 9"
	359-11 1/2 G Tracing	green		
10 x 10 to 1/2" — 5th lines accented, 10th lines heavy	358-12 Drawing	green	8 1/2 x 11"	7 1/2 x 10"
	359-12 Tracing	orange		
	359-12G Tracing	green		
	359H-12 Heavy Tracing	orange		
	359T-12 Albanene	orange		
359T-12G Albanene	green	green		

* See also 10 x 10 to the 1/2 inch sheets and rolls on page 51.

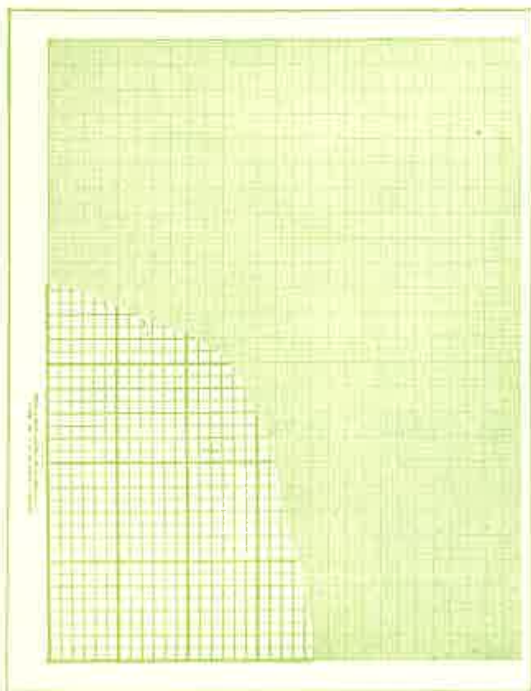
GRAPH SHEETS

SQUARE SECTIONS

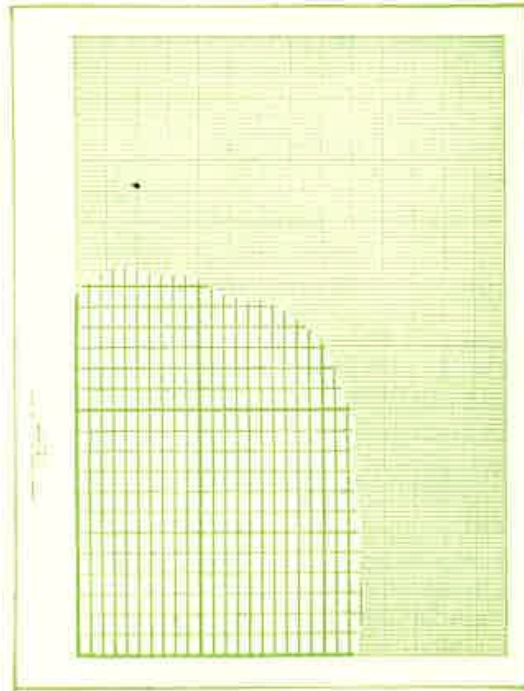
Divisions per Unit	Paper	Color of Line	Sheet Size	Plate Size
10 x 10 to 1 cm.*—5th lines accented, 10th lines heavy	358-14	Drawing	green	8½ x 11" 18 x 25 cm.
	358-14B	Drawing	blue	
	359-14	Tracing	orange	
	359-14B	Tracing	blue	
	359-14G	Tracing	green	
	359H-14	Heavy Tracing	orange	
	359T-14	Albanene	orange	
	359T-14G	Albanene	green	11 x 16½" 25 x 38 cm.
	358-14L	Drawing	green	
	359-14L	Tracing	orange	
	359-14LG	Tracing	green	
	359T-14L	Albanene	orange	
	359T-14LG	Albanene	green	
	5 x 5 to 1 cm.*—5th lines heavy	358-15	Drawing	
358-15K		Drawing	black	
359-15G		Tracing	green	

* See also Millimeter Cross Section Papers and Cloths in sheets and rolls, page 47.

SPECIAL PURPOSES



358-17



358-21

GRAPH SHEETS

SPECIAL PURPOSES

Security Prices
27 Weeks of 5 Days x 8 Divisions per Unit

135 divisions short side (5th lines heavy). 200 divisions long side (2nd lines accented, 8th lines heavy).

	Paper	Color of Line	Sheet Size	Plate Size
358-16	Drawing	green	8½ x 11"	7⅝ x 10"
359-16	Tracing	orange		
359T-16	Albanene	orange		

Security Prices
53 Weeks of 5 Days x 8 Divisions per Unit

265 divisions long side (5th lines heavy). 200 divisions short side (2nd lines accented, 8th lines heavy).

358-16L	Drawing	green	11 x 16½"	10 x 15"
359-16L	Tracing	orange		
359T-16L	Albanene	orange		

Security Prices, Semi-Log
53 Weeks of 5 Days x Logarithmic Scale

265 divisions long side (5th lines heavy). Logarithmic scale on short side especially designed for charting movements of stock prices on a percentage basis.

358-280L	Drawing	green	11 x 16½"	10 x 15"
359-280LG	Tracing	green		

Security Prices
27 Weeks of 6 Days x 8 Divisions per Unit

162 divisions short side (6th lines heavy). 200 divisions long side (2nd lines accented, 8th lines heavy).

358-17	Drawing	green	8½ x 11"	7⅝ x 10"
359-17	Tracing	orange		

Security Prices
53 Weeks of 6 Days x 8 Divisions per Unit

318 divisions long side (6th lines heavy). 200 divisions short side (2nd lines accented, 8th lines heavy).

358-17L	Drawing	green	11 x 16½"	10 x 15"
359-17L	Tracing	orange		

Commodity Prices
53 Weeks of 6 Days x 10 Divisions per Unit

318 divisions long side (6th lines heavy). 200 divisions short side (10th lines heavy).

358-18L	Drawing	green	11 x 16½"	10 x 15"
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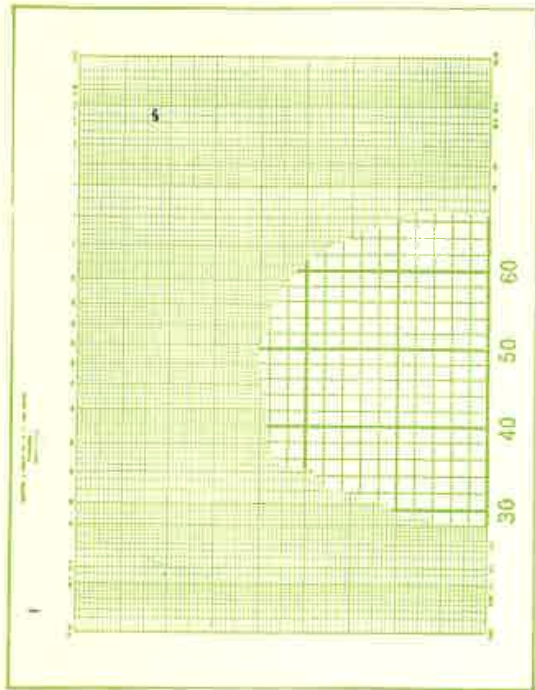
Commodity Prices
53 Weeks of 5 Days x 10 Divisions per Unit

265 divisions long side (5th lines heavy). 200 divisions short side (5th lines accented, 10th lines heavy).

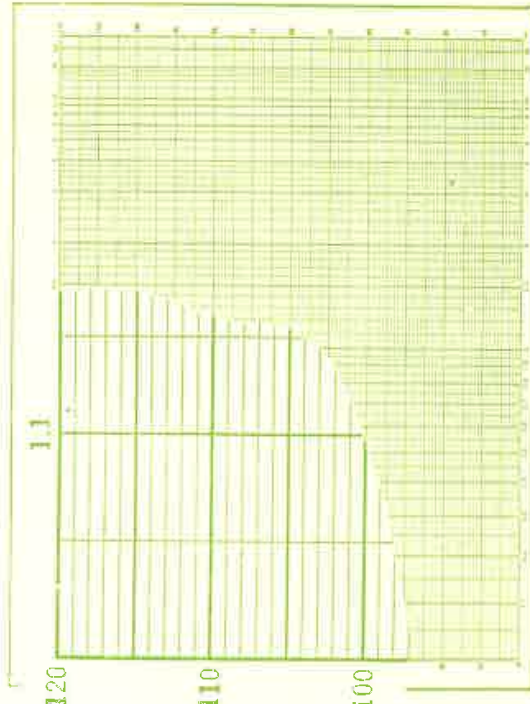
358-19L	Drawing	green	11 x 16½"	10 x 15"
359T-19L	Albanene	orange		

GRAPH SHEETS

SPECIAL PURPOSES



358-23



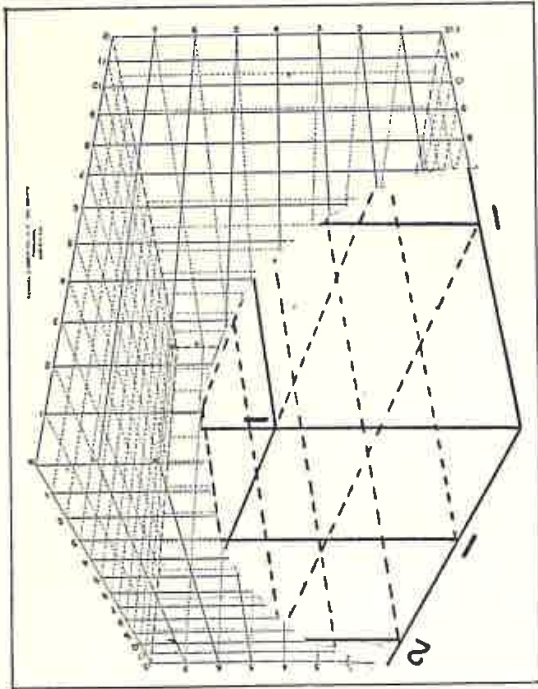
358-25

		Paper	Color of Line	Sheet Size	Plate Size
10 x 12 to 1 Inch 10 divisions per inch short side (5th lines heavy). 12 per inch long side (6th lines heavy).	358-20	Drawing	green	8½ x 11"	7 x 10"
	359-20	Tracing	orange		
12 x 20 to 1 Inch 12 divisions per inch long side (6th lines accented, 12th lines heavy). 20 per inch short side (10th lines accented, 20th lines heavy).	358-21	Drawing	green	8½ x 11"	7 x 10"
	359-21	Tracing	orange		
	358-21L	Drawing	green	11 x 16½"	10 x 15"
	359-21L	Tracing	orange		
Probability* x Logarithmic 3 cycles, with Probit Scale.	358-22	Drawing	green	8½ x 11"	6½ x 9"
	359-22G	Tracing	green		
Probability* x 90 Divisions 5th lines accented, 10th lines heavy.	358-23	Drawing	green	8½ x 11"	6⅝ x 9¼"
	359-23	Tracing	orange		
Probability* x Logarithmic 2 cycles (short side).	358-24	Drawing	green	8½ x 11"	7½ x 9¼"
	359-24	Tracing	orange		
Reciprocal Absolute Temperature x 4 Cycles	358-26	Drawing	green	8½ x 11"	7 x 8"
	359-26	Tracing	orange		
Reciprocal Absolute Temperature x 4 Log Cycles 100° to 300° C	359-270G	Tracing	green	8½ x 11"	6¼ x 8"
	359-271G	Tracing	green	8½ x 11"	6¼ x 8"

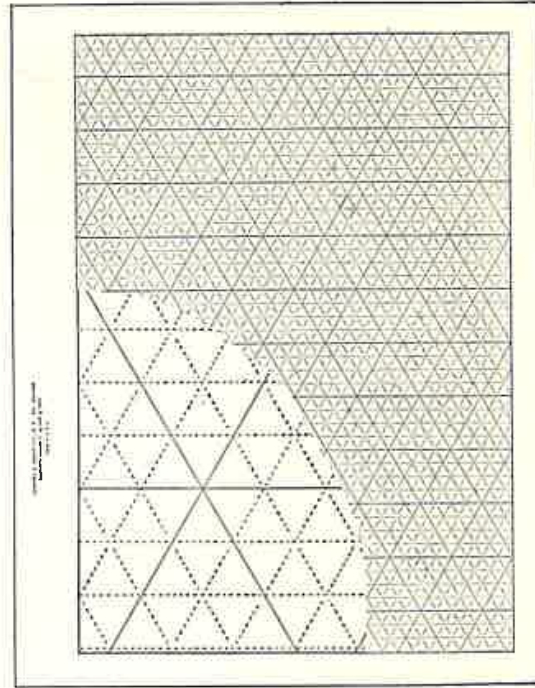
* The Probability Scale is based on the normal law of error.

GRAPH SHEETS

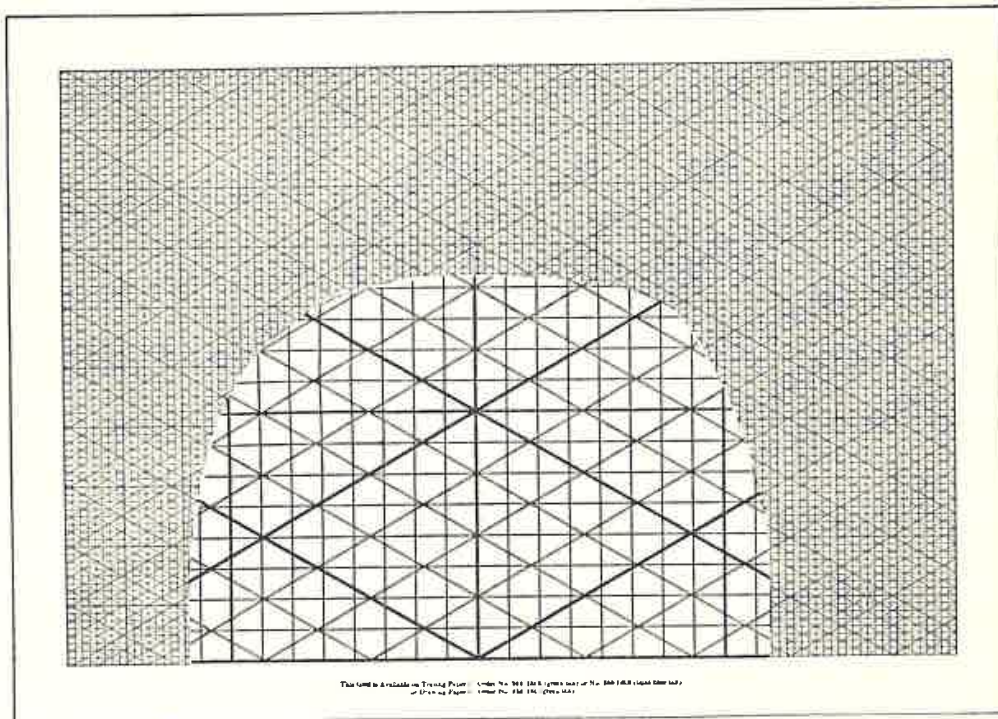
SPECIAL PURPOSES



358-27B



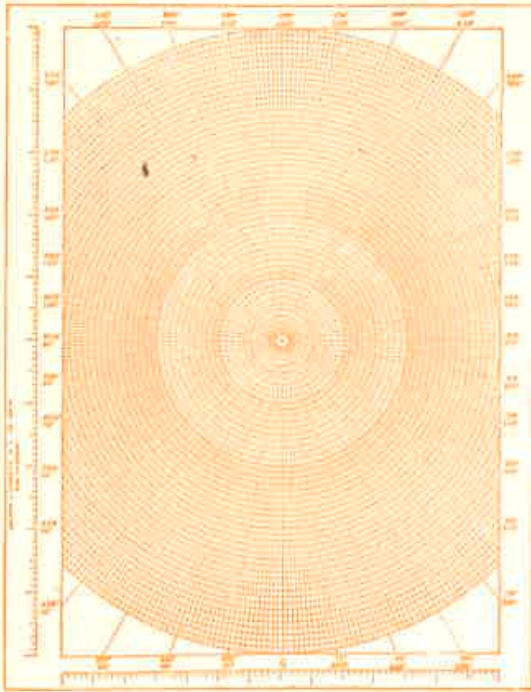
358-29B



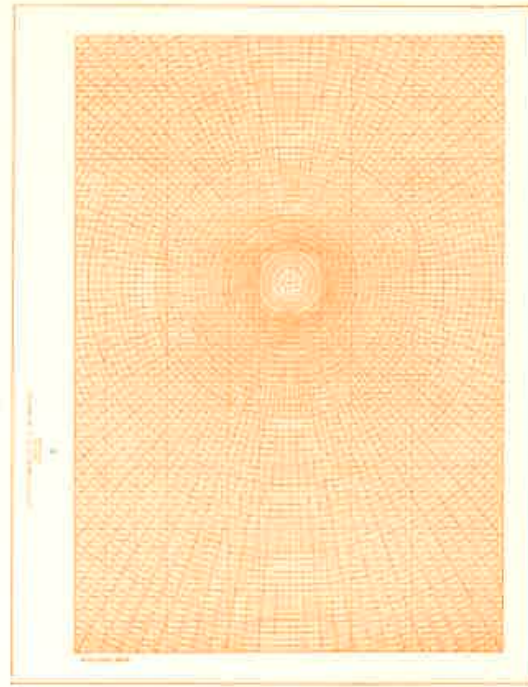
This grid is available on tracing paper under No. 345 and on glass under No. 346. Also available on paper under No. 344 and 343.

359-28LB

GRAPH SHEETS SPECIAL PURPOSES



359-31



359-31 1/2

Reciprocal Ruling or Hyperbolic

Reciprocal ruling long side, 120 equal divisions short side, 5th lines accented, 10th lines heavy. For plotting gas and electric rates, etc.

Same. 130 equal divisions short side.

Perspective

Isometric-Orthographic†*

For drawing both isometric and orthographic views. 60 degree isometric, 4 x 4 to 1 inch. Inch lines heavy. Orthographic 8 x 8 to 1 inch. Inch lines heavy.

Isometric*

60 degree isometric, 4 x 4 to 1 inch. Inch lines heavy.

Isometric-Orthographic*

For drawing both isometric and orthographic views. 60 degree isometric. Orthographic 2 x 2 to 1 cm.

* See also Isometric Cross Section Paper, page 54.

† © 1943.

358-25
359-25

Paper
Drawing
Tracing

Color of Line
green
orange

Sheet Size
8 1/2 x 11"

Plate Size
7 x 10"

358-25L
359-25L

Drawing
Tracing

green
orange

11 x 16 1/2"

10 x 15"

358-27B
359-27B

Drawing
Tracing

blue
blue

8 1/2 x 11"

8 x 10"

358-28L
359-28LB
359-28LG

Drawing
Tracing
Tracing

green
blue
green

11 x 16 1/2"

10 x 15"

358-29B
359-29B

Drawing
Tracing

blue
blue

8 1/2 x 11"

7 x 10"

358-30
359-30

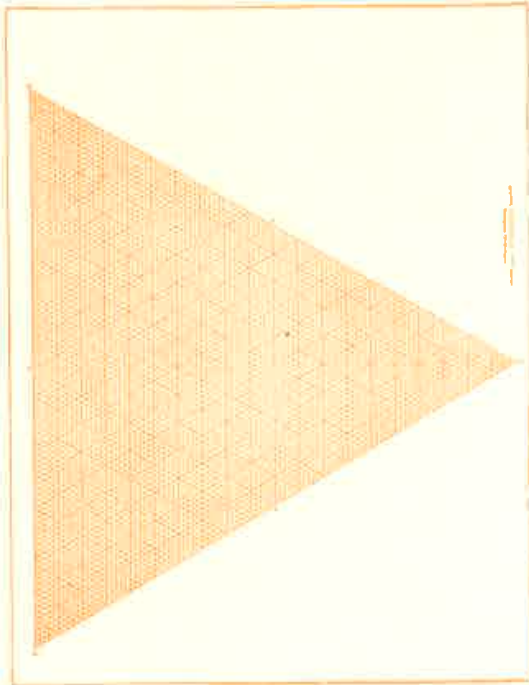
Drawing
Tracing

green
orange

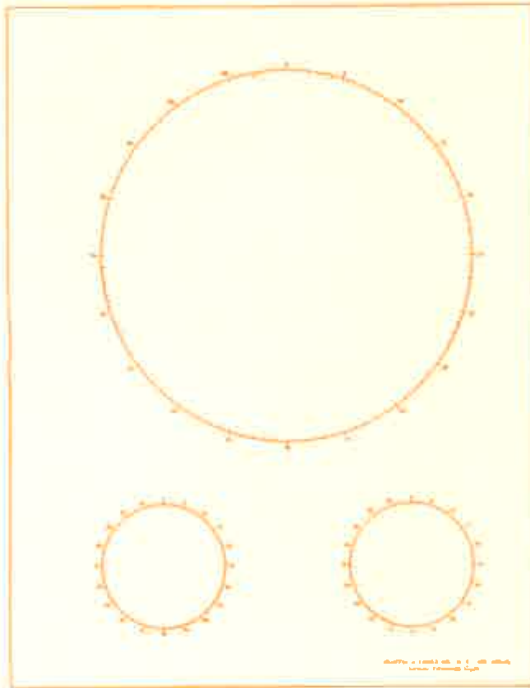
8 1/2 x 11"

7 x 10"

GRAPH SHEETS SPECIAL PURPOSES



359-32



359-35

Polar Co-Ordinate

Divided to single degrees, numbered every 10 degrees in both directions. Ordinates divided to 10 parts to the inch. Outside of main engraving are 2 scales divided 10 parts to the inch, one on long dimension and one on short dimension.

358-31	Drawing
359-31	Tracing
359-31G	Tracing
359T-31	Albanene
359T-31G	Albanene

Color of Line
green
orange
green
orange
green

Sheet Size
8½ x 11"

Plate Size
7 x 10"

Fluxolite Paper

For rapidly determining results in lighting problems, as flux determinations, flux in light beams, etc.: for mapping space relations between light source and points of illumination; and for point by point method of illumination calculation.

359-31½	Tracing	orange	8½ x 11"	7 x 10"
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Triangular Co-Ordinate

All 3 dimensions divided into 100 parts, each properly numbered at every 5th division. For plotting a curve composed of 3 variables whose sum is always constant.

358-32	Drawing	green
359-32	Tracing	orange
359-32G	Tracing	green

8½ x 11"

Each side 23 cm.

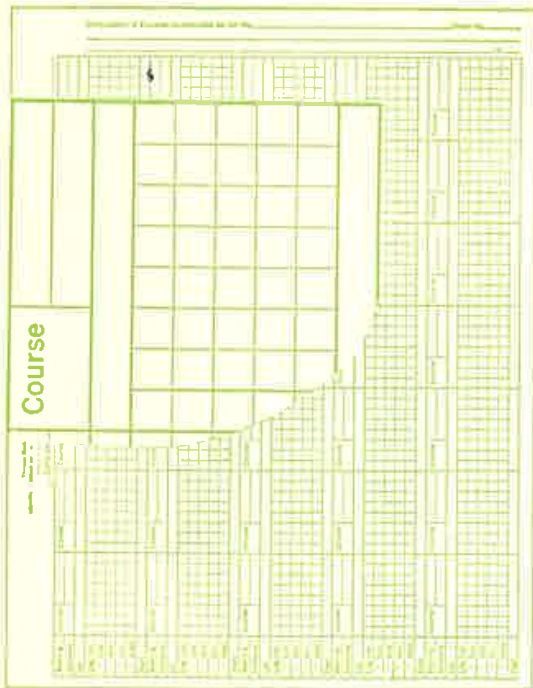
Circular Percentage

3 Circles—one 6 in. dia., circumference divided into 100 divisions, with 2 parts to each division, numbered from 0 to 100; two 2 in. dia. with circumference divided into 100 parts, numbered 0 to 100. For "pie" charts, showing percentages by sectors.

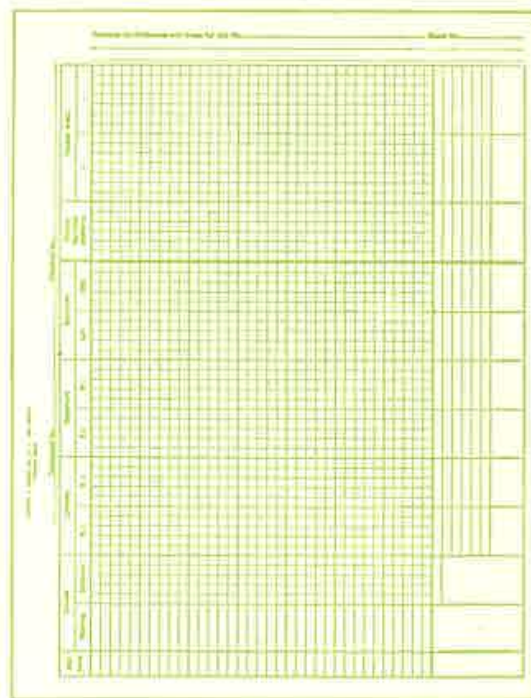
358-35	Drawing	green	8½ x 11"
359-35	Tracing	orange	

GRAPH SHEETS

SPECIAL PURPOSES



358-40



358-41

Traverse Sheets

For recording the computations involving the latitudes and departures of the course.

358-40
359-40

Paper
Drawing
Tracing

Color of Line
green
orange

Sheet Size
8½ x 11"

Plate Size
7½ x 10"

Traverse Sheets

For recording the co-ordinates of the Traverse: Angle, Bearing, Distance, Northings, Southings, Double Areas, etc.

358-41
359-41

Drawing
Tracing

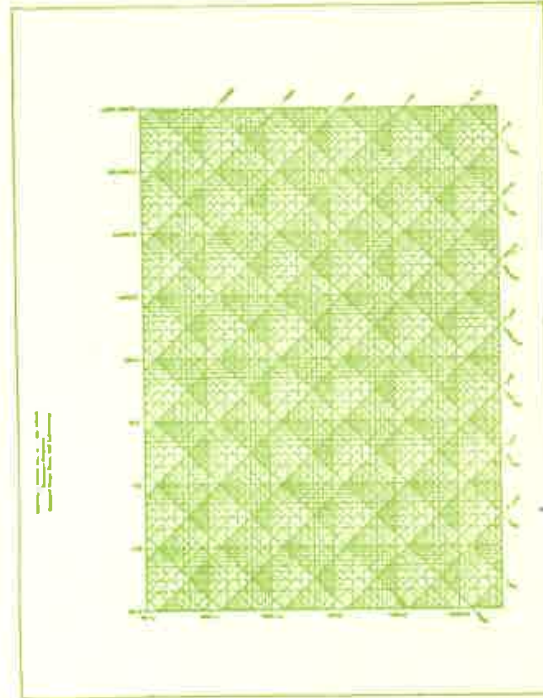
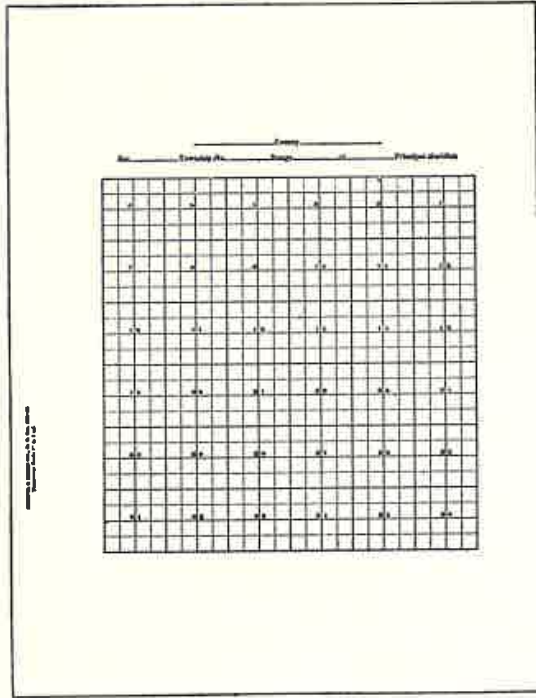
green
orange

8½ x 11"

7¾ x 9¾"

GRAPH SHEETS

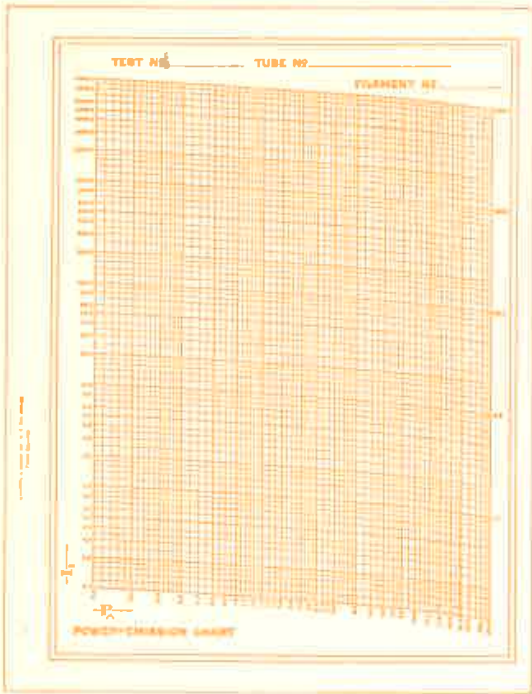
SPECIAL PURPOSES



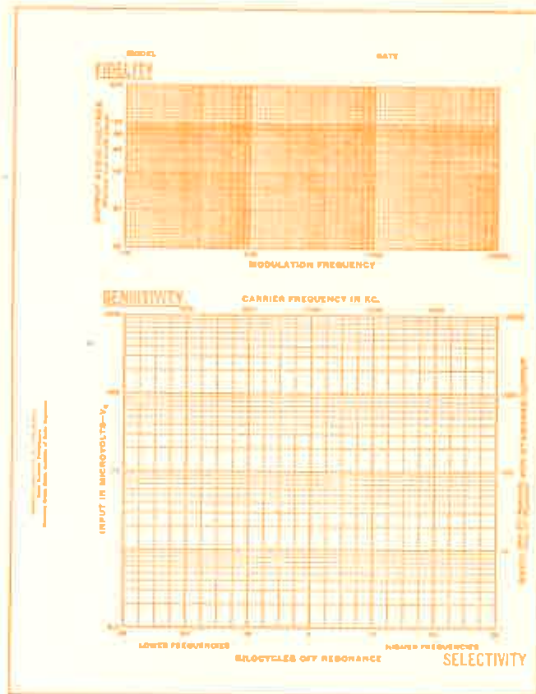
		Paper	Color of Line	Sheet Size	Plate Size
Township Paper Showing complete township, with sections properly numbered, quarter sections, etc., scale 1 in. = 1 mi.	358-44	Drawing	black	8½ x 11"	6 x 6"
	359-44	Tracing	black		
Audio Frequency Semi-Logarithmic; 20 to 20,000 cycles per second on long side x 10 to the ½ inch. 5th lines accented, 10th lines heavy.	359-46G	Tracing	green	8½ x 11"	6 x 9"
Reactance-Frequency A logarithmic paper especially designed to solve quickly the relationships between reactance, capacitance, inductance and frequency.	358-47	Drawing	green	8½ x 11"	5¾ x 8"
	359-47	Tracing	orange		
Two-Thirds Power 2/3 power x 20 to the inch, ¼, ½ and inch lines progressively accented.	359-48G	Tracing	green	8½ x 11"	7 x 10"

GRAPH SHEETS

SPECIAL PURPOSES



359-98



359-99

Power-Emission

Institute of Radio Engineers standard for plotting the relation between emission current and filament power of vacuum tubes by extrapolation.

358-98
359-98

Paper
Drawing
Tracing

Color of Line
green
orange

Sheet Size
8½ x 11"

Plate Size
6¾ x 8¾"

Radio Receiver Performance

Institute of Radio Engineers standard for graphically indicating the fidelity, sensitivity and selectivity of radio receivers.

358-99
359-99

Drawing
Tracing

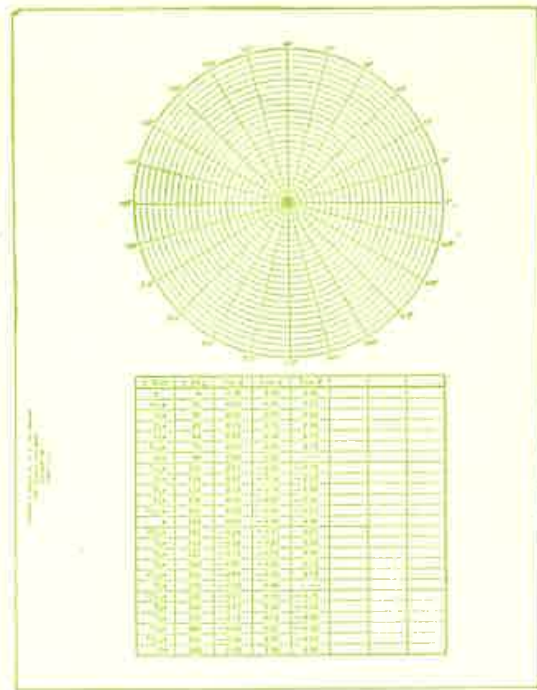
green
orange

8½ x 11"

6 x 8¾"

GRAPH SHEETS

SPECIAL PURPOSES



358-260

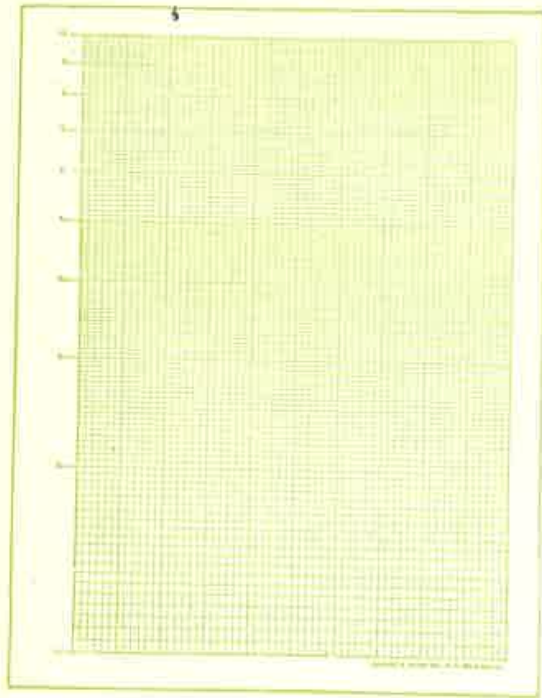
		Paper	Color of Line	Sheet Size	Plate Size
Ruled Paper	358-220	Drawing	blue	8½ x 11"	Lines only
Plain Paper	358-226	Drawing	blank	8½ x 11"	
	359-226	Tracing	blank	8½ x 11"	
Trig Function Data Sheet† For trigonometry, analytic geometry (polar co-ordinate) and calculus. Tables give values of principal trigonometric functions and of radians for intervals of 15° around the entire circle. Blank spaces for additional data.	358-260	Drawing	green	8½ x 11"	

† © 1944.

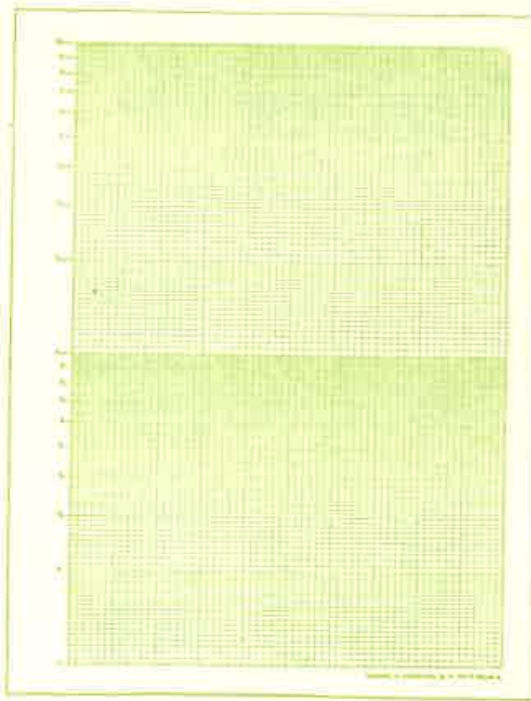
GRAPH SHEETS

SEMI-LOGARITHMIC

Logarithmic Scale one way—Uniform Scale other way



358-50



358-60

No. of Log Cycles (Units)	Length of Each Cycle	Uniform Scale Divisions	Paper	Color of Line	Sheet Size	PLATE SIZE	
						Log Side	Uniform Side
1	10"	60	6th lines heavy		8½ x 11"	10"	7"
			358-50	Drawing			
1	10"	70	5th lines accented, 10th lines heavy		8½ x 11"	10"	7"
			359-50	Tracing			
1	10"	70	5th lines accented, 10th lines heavy		8½ x 11"	10"	7"
			358-51	Drawing			
1	10"	70	5th lines accented, 10th lines heavy		8½ x 11"	10"	7"
			359-51	Tracing			
1	10"	70	5th lines accented, 10th lines heavy		8½ x 11"	10"	7"
			359-51G	Tracing			
1	10"	70	5th lines accented, 10th lines heavy		8½ x 11"	10"	7"
			359T-51	Albanene			
1	10"	70	5th lines accented, 10th lines heavy		8½ x 11"	10"	7"
			359T-51G	Albanene			
1	10"	84	6th lines heavy		8½ x 11"	10"	7"
			358-52*	Drawing			
1	10"	84	6th lines heavy		8½ x 11"	10"	7"
			359-52	Tracing			
1	10"	180	6th lines heavy		11 x 16½"	10"	15"
			358-52L*	Drawing			
1	10"	180	6th lines heavy		11 x 16½"	10"	15"
			359-52L	Tracing			
2	5"	60	6th lines heavy		8½ x 11"	10"	7"
			358-60	Drawing			
2	5"	60	6th lines heavy		8½ x 11"	10"	7"
			359-60	Tracing			

* See also No. 336P Semi-Logarithmic Paper, page 53.

GRAPH SHEETS

SEMI-LOGARITHMIC

(Continued)

Logarithmic Scale one way—Uniform Scale other way

No. of Log Cycles (Units)	Length of Each Cycle	Uniform Scale Divisions	Paper	Color of Line	Sheet Size	PLATE SIZE		
						Log Side	Uniform Side	
2	5"	70	5th lines accented, 10th lines heavy		8½ x 11"	10"	7"	
			358-61	Drawing				green
			359-61	Tracing				orange
			359-61 G	Tracing				green
			359T-61	Albanene				orange
359T-61 G	Albanene	green						
2	5"	150	358-61L	Drawing	green	11 x 16½"	10"	15"
			359-61LG	Tracing	green			
2	5"	84	6th lines heavy		8½ x 11"	10"	7"	
			358-62	Drawing				green
2	5"	180	359-62	Tracing	orange	11 x 16½"	10"	15"
			358-62L	Drawing	green			
2	5"	180	359-62L	Tracing	orange	11 x 16½"	10"	15"
			358-62L	Drawing	green			
2	5"	140	5th lines accented, 10th lines heavy		8½ x 11"	10"	7"	
			358-63	Drawing				green
			359-63	Tracing				orange
2	3¾"	200	359-63G	Tracing	green	8½ x 11"	7½"	10"
			358-64	Drawing	green			
2	3¾"	200	359-64	Tracing	orange	8½ x 11"	7½"	10"
			358-64	Drawing	green			
3	3⅓"	60	6th lines heavy		8½ x 11"	10"	7"	
			358-70	Drawing				green
3	3⅓"	60	359-70	Tracing	orange	8½ x 11"	10"	7"
			358-70	Drawing	green			
3	3⅓"	70	5th lines accented, 10th lines heavy		8½ x 11"	10"	7"	
			358-71	Drawing				green
			359-71	Tracing				orange
			359-71 G	Tracing				green
			358-71 B	Drawing				blue
			359H-71	Heavy Tcg.				orange
			359T-71	Albanene				orange
359T-71 G	Albanene	green						
3	3⅓"	150	358-71L	Drawing	green	11 x 16½"	10"	15"
			359-71LG	Tracing	green			

GRAPH SHEETS

SEMI-LOGARITHMIC

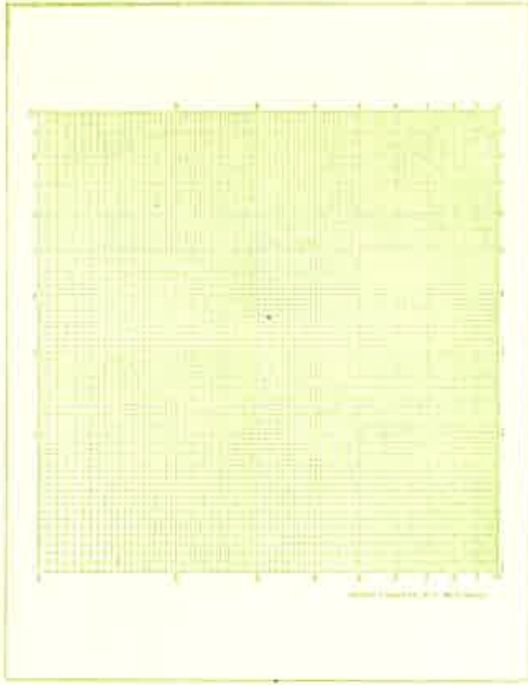
(Continued)

Logarithmic Scale one way—Uniform Scale other way

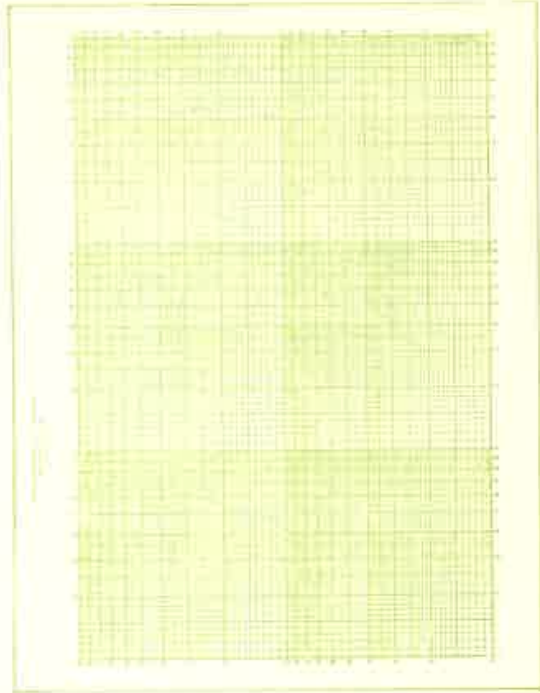
No. of Log Cycles (Units)	Length of Each Cycle	Uniform Scale Divisions	Paper	Color of Line	Sheet Size	PLATE SIZE		
						Log Side	Uniform Side	
3	3 1/3"	84	6th lines heavy		8 1/2 x 11"	10"	7"	
			358-72	Drawing				green
			359-72	Tracing	orange			
3	3 1/3"	180	6th lines heavy		11 x 16 1/2"	10"	15"	
			358-72L	Drawing				green
			359-72L	Tracing				orange
			359-72LG	Tracing	green			
3	3 1/3"	140	5th lines accented, 10th lines heavy		8 1/2 x 11"	10"	7"	
			358-73	Drawing				green
			359-73	Tracing	orange			
3	3 1/3"	300	5th lines accented, 10th lines heavy		11 x 16 1/2"	10"	15"	
			358-73L	Drawing				green
			359-73L	Tracing				orange
			359-73LG	Tracing	green			
4	2 1/2"	60	6th lines heavy		8 1/2 x 11"	10"	7"	
			358-80	Drawing				green
			359-80	Tracing	orange			
4	2 1/2"	70	5th lines accented, 10th lines heavy		8 1/2 x 11"	10"	7"	
			358-81	Drawing				green
			359-81	Tracing				orange
			359-81G	Tracing	green			
4	2 1/2"	150	5th lines accented, 10th lines heavy		11 x 16 1/2"	10"	15"	
			358-81L	Drawing				green
			359-81LG	Tracing	green			
4	2 1/4"	84	6th lines heavy		8 1/2 x 11"	9"	7"	
			358-82	Drawing				green
			359-82	Tracing	orange			
5	2"	70	5th lines accented, 10th lines heavy		8 1/2 x 11"	10"	7"	
			358-91	Drawing				green
			359-91	Tracing				orange
			359-91G	Tracing	green			
5	2"	150	5th lines accented, 10th lines heavy		11 x 16 1/2"	10"	15"	
			358-91L	Drawing				green
			359-91LG	Tracing	green			
5	1.8"	72	6th lines heavy		8 1/2 x 11"	9"	6"	
			358-92	Drawing				green
			359-92	Tracing	orange			
5	3"	60	6th lines heavy		11 x 16 1/2"	15"	10"	
			358-94L	Drawing				green
			359-94L	Tracing	orange			
7	1 1/4"	60	5th lines heavy		8 1/2 x 11"	8 3/4"	6"	
			358-96	Drawing				green
			359-96	Tracing	orange			

GRAPH SHEETS

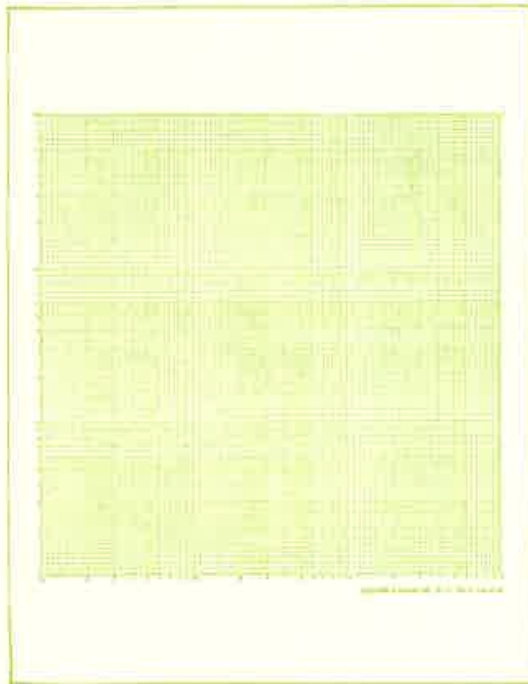
FULL LOGARITHMIC



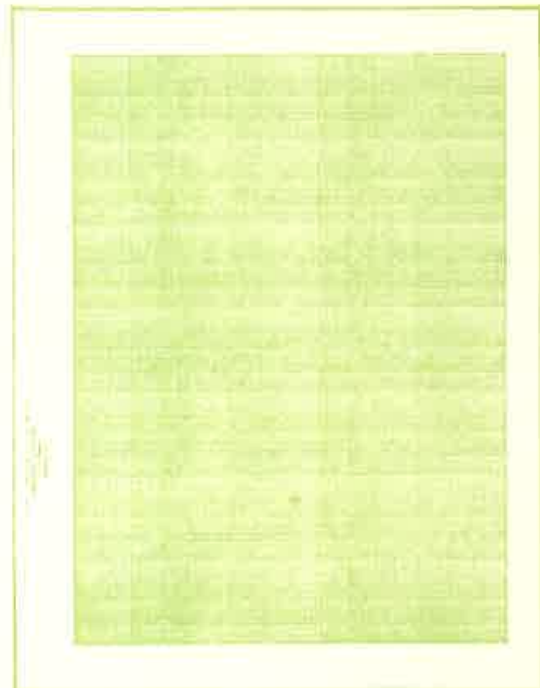
358-100
359-100G



358-112



358-120
359-120G

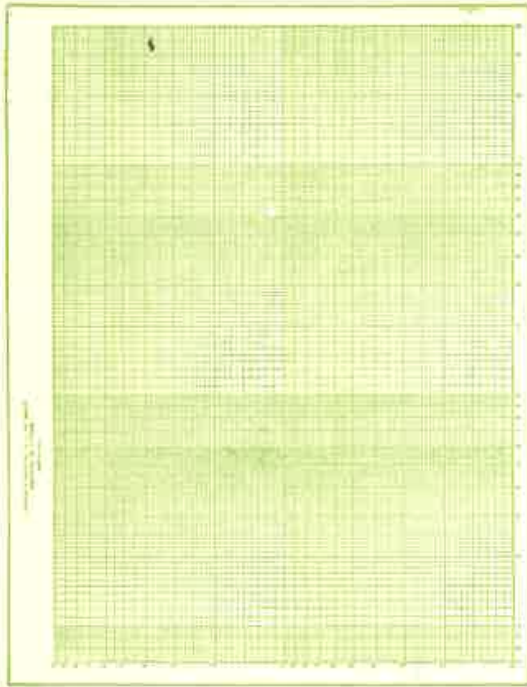


358-127
359-127G

GRAPH SHEETS

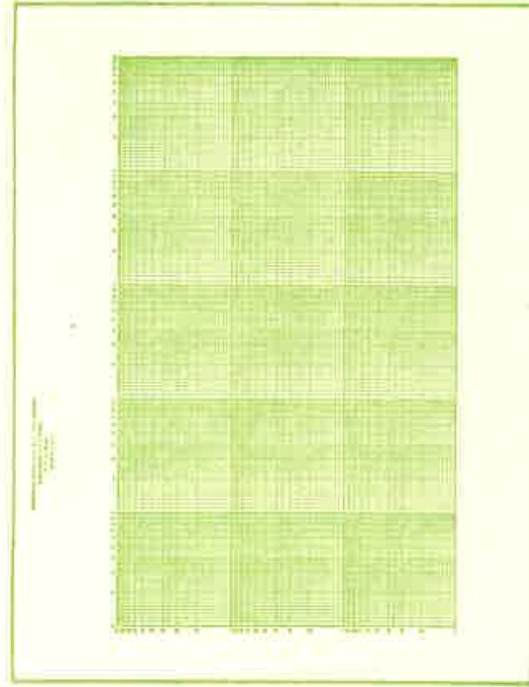
FULL LOGARITHMIC

Log Scales both directions



358-111

359-111G



358-125

359-125G

No. of Log Cycles (Units)*	Length of Each Cycle (In.)		Paper	Color of Line	Sheet Size	Plate Size
1 x 1	7½ x 7½	358-100	Drawing	green	8½ x 11"	7½ x 7½"
		359-100	Tracing	orange		
		359-100G	Tracing	green	11 x 16½"	9.85 x 9.85"
		358-100L	Drawing	green		
		359-100L	Tracing	orange		
2 x 1	5 x 5	358-103	Drawing	green	8½ x 11"	5 x 10"
		359-103	Tracing	orange		
2 x 2	3¾ x 3¾	358-110	Drawing	green	8½ x 11"	7½ x 7½"
		359-110	Tracing	orange		
		359-110G	Tracing	green	11 x 16½"	10 x 10"
		359T-110	Albanene	orange		
		359T-110G	Albanene	green		
2 x 2	5 x 5	358-110L	Drawing	green	11 x 16½"	10 x 10"
		359-110L	Tracing	orange		
2 x 2.7	3¾ x 3¾	358-111	Drawing	green	8½ x 11"	7½ x 10¾"
		359-111	Tracing	orange		
		359-111G	Tracing	green		

* First number is cycles on ordinate; second number cycles on abscissa.

GRAPH SHEETS

FULL LOGARITHMIC

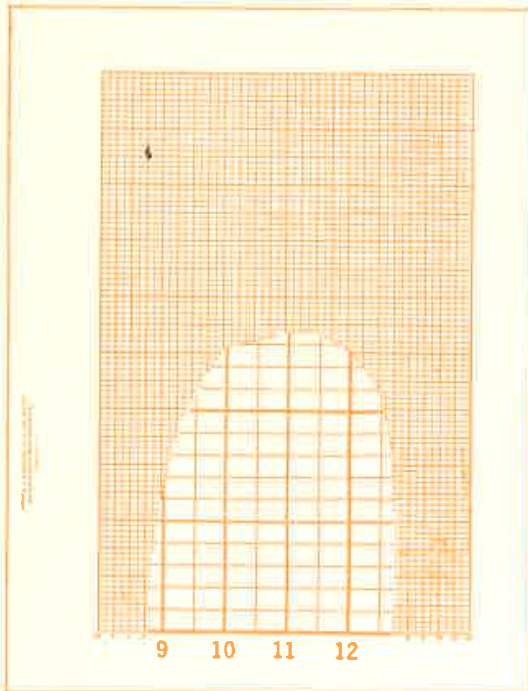
Log Scales both directions

No. of Log Cycles (Units)*	Length of Each Cycle (In.)		Paper	Color of Line	Sheet Size	Plate Size
2 x 3	3 1/3 x 3 1/3	358-112	Drawing	green	8 1/2 x 11"	6 2/8 x 10"
		359-112	Tracing	orange		
2 x 3	5 x 5	358-112L	Drawing	green	11 x 16 1/2"	10 x 15"
		359-112L	Tracing	orange		
		359-112LG	Tracing	green		
3 x 3	2 1/2 x 2 1/2	358-120	Drawing	green	8 1/2 x 11"	7 1/2 x 7 1/2"
		358-120B	Drawing	blue		
		359-120	Tracing	orange		
		359-120G	Tracing	green		
3 x 5	1.85 x 1.85	358-125	Drawing	green	8 1/2 x 11"	5 9/16 x 9 1/4"
		359-125G	Tracing	green		
3 x 5	3 x 3	358-125L	Drawing	green	11 x 16 1/2"	9 x 15"
		359-125L	Tracing	orange		
		359-125LG	Tracing	green		
7 x 2.2	1.36 x 3.18	358-127	Drawing	green	8 1/2 x 11"	7 x 9 1/2"
		359-127G	Tracing	green		
7 x 4	1.36 x 3	358-128L	Drawing	green	11 x 16 1/2"	9 1/2 x 12"
		359-128LG	Tracing	green		

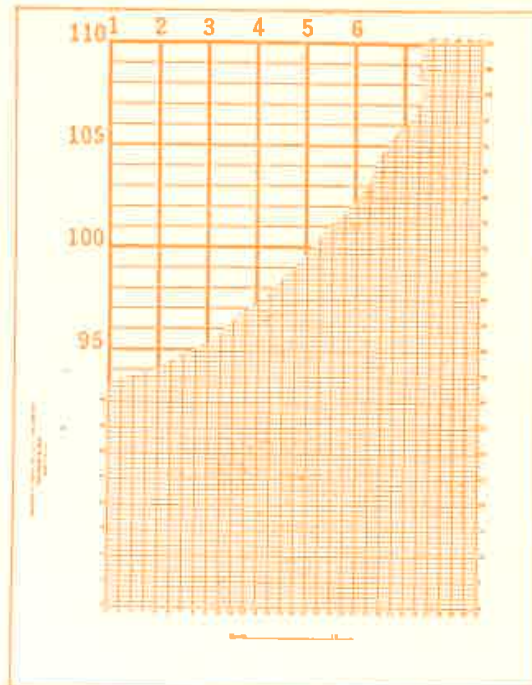
* First number is cycles on ordinate; second number cycles on abscissa.
For other Logarithmic sheets for special applications see pages 52 and 53.

GRAPH SHEETS

BUSINESS STATISTICAL



359-130



359-134

One Day by Hours

24 hours by half hours long side, hours numbered; 100 divisions short, with 5th lines accented, 10th lines heavy.

358-129
359-129

Paper
Drawing
Tracing

Color of Line
green
orange

Sheet Size
8½ x 11"

Plate Size
7 x 9⅝"

One Day by Hours

24 hours by half hours short side, hours numbered; 100 divisions long side, with 5th lines accented, 10th lines heavy.

358-130
359-130
359-130G

Drawing
Tracing
Tracing

green
orange
green

8½ x 11"

6 x 9"

One Week by Hours

168 divisions short side, 6th, 12th and 24th line progressively accented. 200 divisions long side, with 5th lines accented, 10th lines heavy.

358-132L
359-132L

Drawing
Tracing

green
orange

11 x 16½"

10 x 14½"

One Month by Days

31 divisions short side, numbered; 110 divisions long side, numbered at every 5th division, with 5th lines accented, 10th lines heavy.

358-134
359-134
359-134G

Drawing
Tracing
Tracing

green
orange
green

8½ x 11"

6 x 9⅞"

Weekly-Monthly

2 Plates, each 5 x 7½ in., divided on short side into 60 parts with 5th lines heavy. One chart divided on long side into 96 parts, with 4th lines heavy; the other into 132 parts with 12th lines heavy.

358-136
359-136

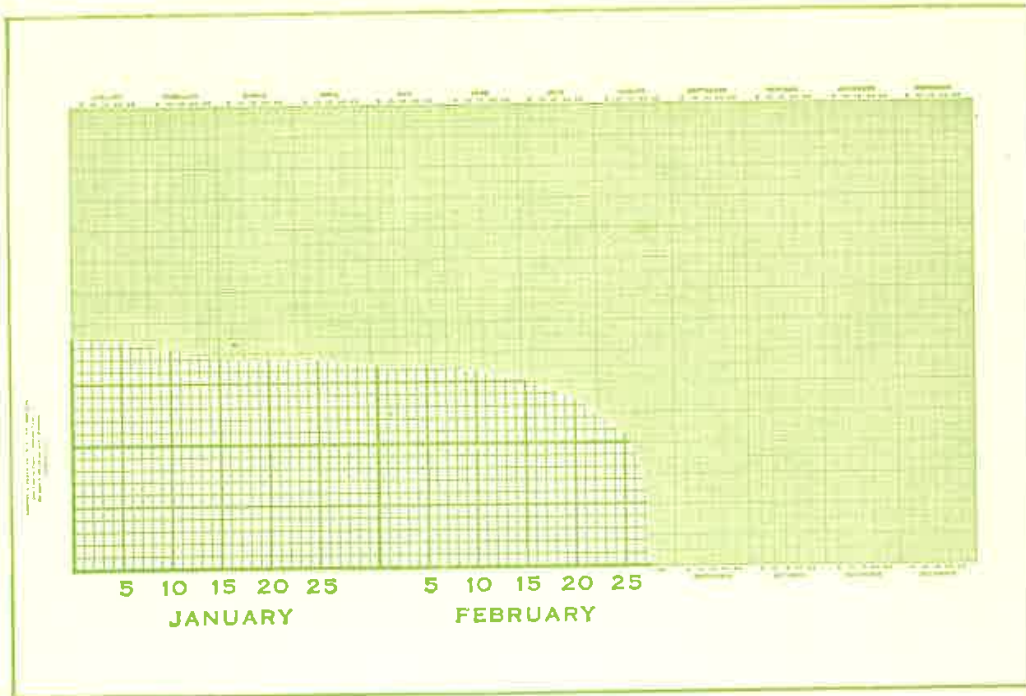
Drawing
Tracing

green
orange

8½ x 11" 2 of 5 x 7½"

GRAPH SHEETS

BUSINESS STATISTICAL


358-141L
359-141LG
Six Months by Days

Six calendar months, Jan. to June. Every 5th day numbered and accented; months printed. Divided on short side into 90 parts, with 5th lines accented, 10th lines heavy.

358-137L
359-137L

Paper
Drawing
Tracing

Color of Line
green
orange

Sheet Size
11 x 16½"

Plate Size
9 x 13⅝"

Six Months by Days

Six calendar months, July to Dec. Otherwise divided and arranged like No. 137L.

358-138L
359-138L

Drawing
Tracing

green
orange

11 x 16½"

9 x 13¾"

Six Months by Days

Divided on long side, into 6 months of 31 days, with every 5th day numbered. Divided on short side into 120 parts, with 10th lines heavy. Boxes in which names of months can be written.

358-139
359-139

Drawing
Tracing

green
orange

8½ x 11"

7 x 10"

One Year by Days

Any fiscal year. Divided on long side into 372 days; heavy lines between months; every 5th day numbered. Divided on short side into 180 parts with 5th lines accented, 10th lines heavy.

358-140L
359-140L

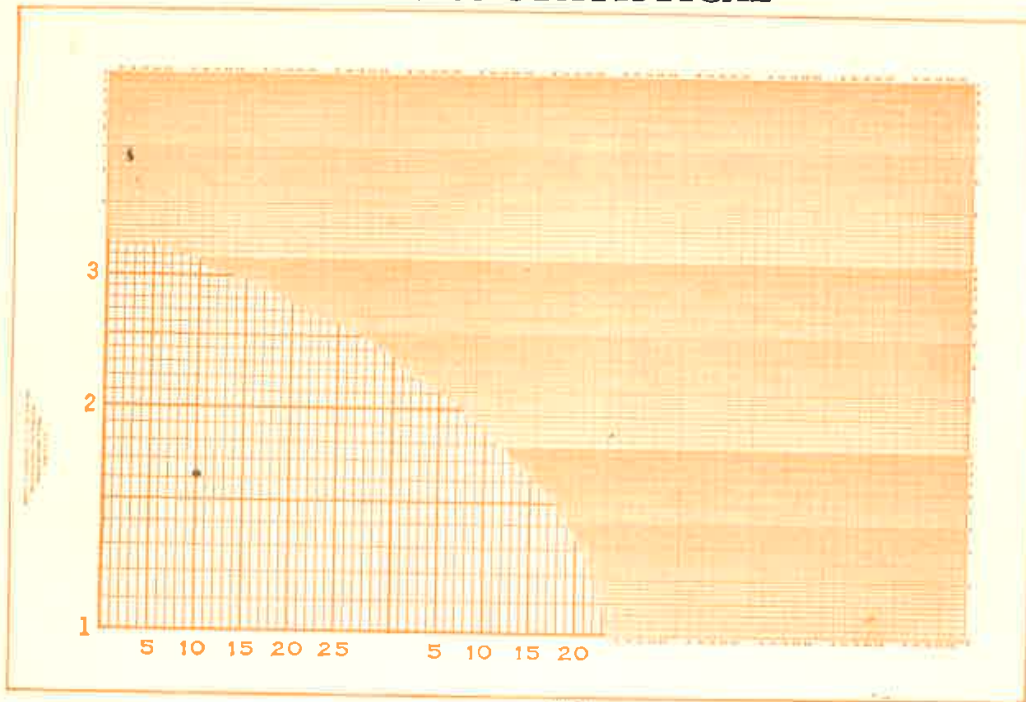
Drawing
Tracing

green
orange

11 x 16½"

9 x 14"

GRAPH SHEETS BUSINESS STATISTICAL



359-150L

One Year by Days*

Calendar Year. Divided on long side into 366 days, with 5th days numbered and months printed. Divided on short side into 150 parts, with 5th lines accented, 10th lines heavy.

358-141L
359-141L
359-141LG

Paper
Drawing
Tracing
Tracing

Color of
Line
green
orange
green

Sheet
Size
11 x 16½" 7½ x 14⅝"

Plate
Size

One Year by Days*

Similar to No. 141L, but divided on short side into 250 parts.

358-142
359-142
358-142L
359-142L

Drawing
Tracing
Drawing
Tracing

green
orange
green
orange

8½ x 11" 6¼ x 9"
11 x 16½" 9¾ x 14⅝"

6¼ x 9"

One Year by Days

Similar to No. 141L, but divided on short side into 200 parts with 4th lines accented, 8th lines heavy.

358-143L
359-143L

Drawing
Tracing

green
orange

11 x 16½" 9 x 14"

9 x 14"

One Year by Days

Divided and marked on long side like No. 140L. Three 3 in. Log Scales short side.

358-150L
359-150L

Drawing
Tracing

green
orange

11 x 16½" 9 x 14"

9 x 14"

One Year by Days

Divided and marked on long side like No. 141L. Three 3 in. Log Scales short side.

358-151L
359-151L

Drawing
Tracing

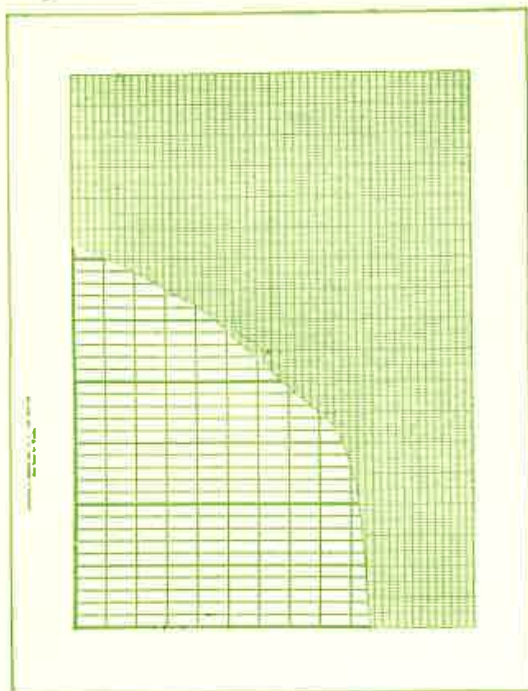
green
orange

11 x 16½" 9 x 14"

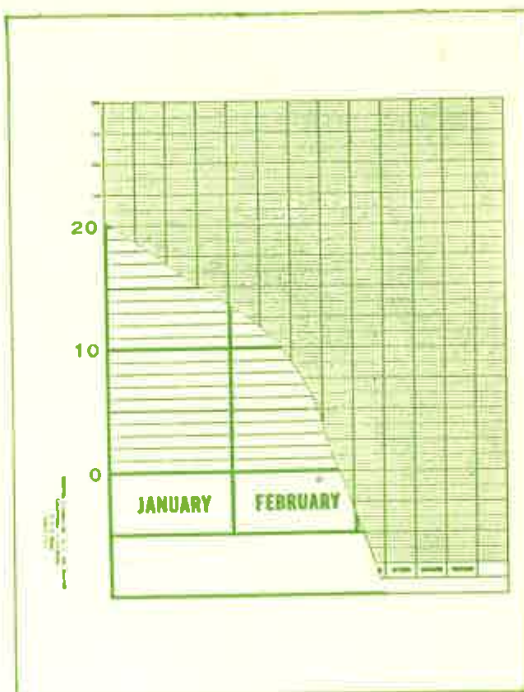
9 x 14"

* See also No. 338, page 54.

GRAPH SHEETS BUSINESS STATISTICAL



358-160



358-170

One Year by Weeks

Divided on short side into 52 parts with 13th lines ($\frac{1}{4}$ year) heavy, and on long side into 180 parts, 5th lines accented, 10th lines heavy.

358-160
359-160

Paper
Drawing
Tracing

Color of Line
green
orange

Sheet Size
 $8\frac{1}{2} \times 11''$

Plate Size
 $6\frac{1}{2} \times 9''$

One Year by Months

Divided on short side into 13 parts, with names of months in 12 parts; divided on long side into 150 parts with 5th lines accented, 10th lines heavy and numbered.

358-170
359-170

Drawing
Tracing

green
orange

$8\frac{1}{2} \times 11''$

$6\frac{1}{2} \times 8''$

One Year by Months

Similar to No. 170 but months running the long side of the paper. Divided on short side into 100 parts, with 5th lines accented, 10th lines heavy and numbered.

358-171
359-171

Drawing
Tracing

green
orange

$8\frac{1}{2} \times 11''$

$6\frac{1}{2} \times 9\frac{1}{2}''$

One Year by Months

Similar to No. 170, but has three 3 in. Log scales long side.

358-175
359-175

Drawing
Tracing

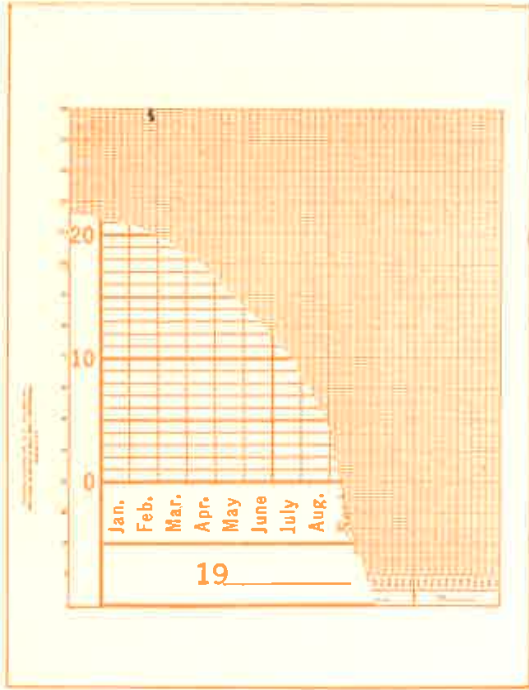
green
orange

$8\frac{1}{2} \times 11''$

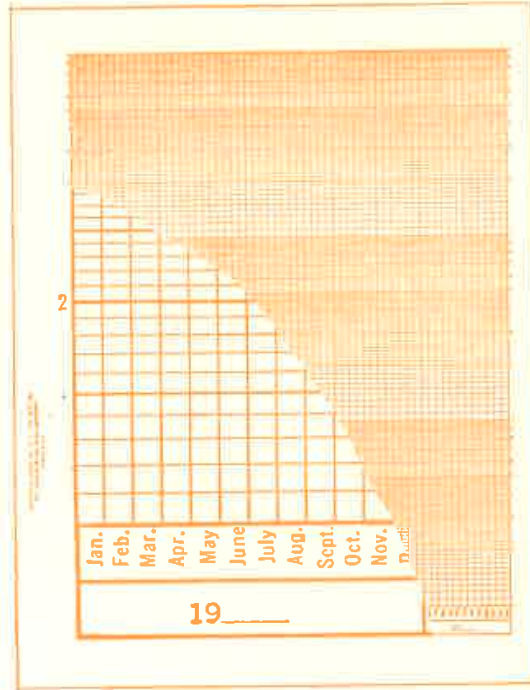
$6\frac{1}{2} \times 9\frac{1}{2}''$

GRAPH SHEETS

BUSINESS STATISTICAL



359-190



359-195

Three Years by Months

Divided on long side into 100 parts with 5th lines heavy and 10th lines numbered. Months printed. Spaces for years.

358-180
359-180

Paper
Drawing
Tracing

Color of
Line
green
orange

Sheet
Size
8½ x 11"

Plate
Size
6 x 9"

Five Years by Months

Divided on long side into 150 parts with 5th lines accented, 10th lines heavy and numbered. Months printed. Spaces for years.

358-190
359-190

Drawing
Tracing

green
orange

8½ x 11"

7 x 8"

Five Years by Months

Similar to No. 190, but months running long way of paper. Divided on short side into 100 parts with 5th lines accented, 10th lines heavy and numbered.

358-192
359-192
358-192L
359-192L

Drawing
Tracing
Drawing
Tracing

green
orange
green
orange

8½ x 11"

11 x 16½"

6½ x 10"

9½ x 14"

Five Years by Months

Similar to No. 190, but three 3 in. Log scales long side.

358-195
359-195

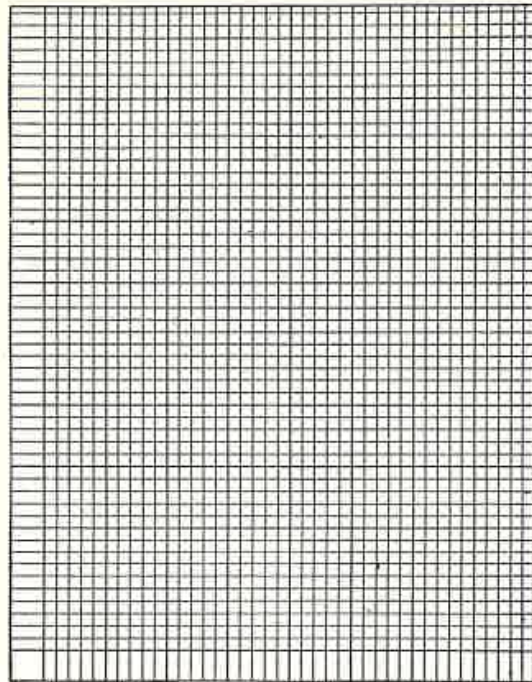
Drawing
Tracing

green
orange

8½ x 11"

18 x 24 cm.

**GRAPH SHEETS
BUSINESS STATISTICAL**

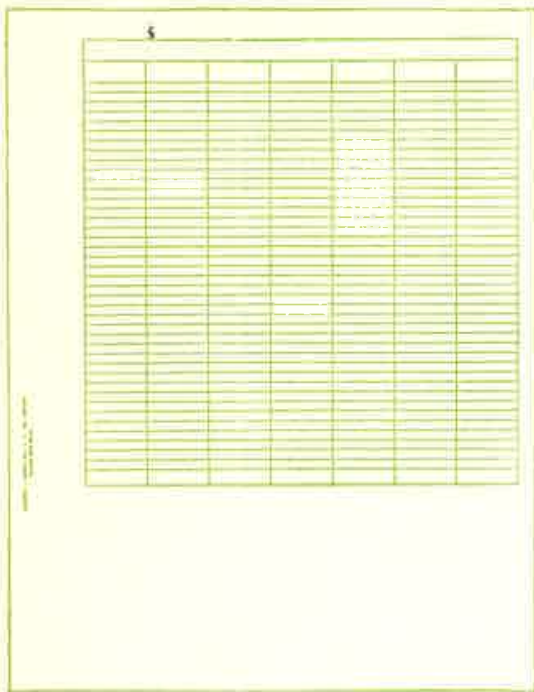


358-221

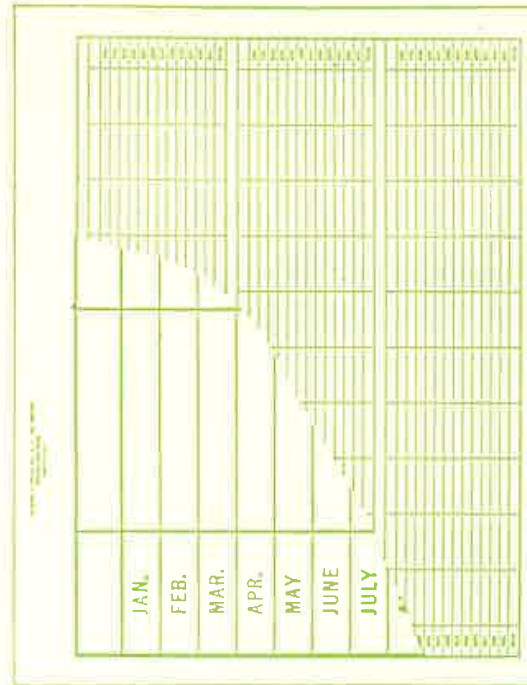
		Paper	Color of Line	Sheet Size	Plate Size
Ten Years by Months Divided on short side into 110 parts with 5th lines accented, 10th lines heavy and numbered. Months printed. Spaces for years.	358-200L	Drawing	green	11 x 16½"	9¾ x 14"
	359-200L	Tracing	orange		
	359-200LG	Tracing	green		
Ten Years by Months Similar to No. 200L, but three 3 in. Log scales on short side.	358-205L	Drawing	green	11 x 16½"	9¾ x 14"
	359-205L	Tracing	orange		
Twenty Years by Months Months Mar., June, Sept., and Dec. printed. Divided on short side into 110 parts with 5th lines accented, 10th lines heavy and numbered.	358-210L	Drawing	green	11 x 16½"	9¾ x 14"
	359-210L	Tracing	orange		
Twenty Years by Months Divided and printed on long side like No. 210L. Two 4⅝ in. Log scales on short side.	358-214L	Drawing	green	11 x 16½"	9¾ x 14"
	359-214L	Tracing	orange		
Twenty Years by Months Divided and printed on long side like No. 210L. Three 3¼ in. Log scales on short side.	358-215L	Drawing	green	11 x 16½"	9¾ x 14"
	359-215L	Tracing	orange		

GRAPH SHEETS

BUSINESS STATISTICAL



358-230



358-240

358-220 See page 74.
358-221 See page 60.

358-226 See page 74.
359-226 See page 74.

General Data Sheet		Paper	Color of Line	Sheet Size	Plate Size
Divided into 7 columns on the short side and into 43 spaces for headings, figures and totals on the long side, with a clear space of $3\frac{3}{8}$ in. below the engraving for notes.	358-230	Drawing	green	$8\frac{1}{2} \times 11"$	$7 \times 7\frac{3}{16}"$

Monthly Data Sheet Printed on both sides

Divided into 10 columns on the long side, with the names of the months in separate columns at the right and left. Three separate sections of 12 months, each with extra space for headings and totals on the short dimensions. Each face of the sheet has the complete engraving as above described.	358-240	Drawing	green	$8\frac{1}{2} \times 11"$	$7\frac{1}{4} \times 10"$
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359-270G See page 67.
359-271G See page 67.

358-280L See page 66.
359-280LG See page 66.

K+Σ GUIDE LINE
TRADE MARK

NON-REPRODUCIBLE CROSS SECTION LINES

These guide lines are a great help and convenience for speeding up drawing work. They are in regular cross section patterns and therefore make much work with scales and triangles unnecessary. Since they are printed in non-reproducible ink, the guide lines do not appear in reproductions of drawings made on this material.

Sheets of this non-reproducible guide line material can be printed in black with borders and title blocks exactly as ordinary sheets.

ALBANENE® GUIDE LINE

ROLLS 20 yards and 50 yards long in the following widths: 30", 36", 42".

195GL-4	20 yds.	4 x 4 to 1 inch	195GL-8	20 yds.	8 x 8 to 1 inch
195GLX-4	50 yds.	4 x 4 to 1 inch	195GLX-8	50 yds.	8 x 8 to 1 inch
195GL-5	20 yds.	5 x 5 to 1 inch	195GL-10	20 yds.	10 x 10 to 1 inch
195GLX-5	50 yds.	5 x 5 to 1 inch	195GLX-10	50 yds.	10 x 10 to 1 inch

On rolls the grid extends to the edge of the sheet.

SHEETS: Sizes as ordered; plain or imprinted.

PADS: 50 sheets, Heavy rigid board backs.

8½ x 11 in.	11 x 17 in.	
195GL-4-11	195GL-4-13	4 x 4 to 1 inch
195GL-5-11	195GL-5-13	5 x 5 to 1 inch
195GL-8-11	195GL-8-13	8 x 8 to 1 inch
195GL-10-11	195GL-10-13	10 x 10 to 1 inch
195GL-11-11	195GL-11-13	10 x 10 to ½ inch
195GL-14-11	195GL-14-13	Millimeters

NOTE: The same cross section patterns are also available on SWALLOW Natural Tracing Paper, No. 179GL; and, on CRYSTALENE Prepared Tracing Paper, No. 198GL.

HERCULENE® GUIDE LINE

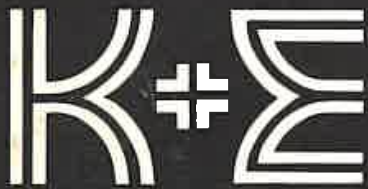
ROLLS 20 yards long in the following widths: 36", 42".

163G-8 (.003 in.)	8 x 8 to 1 inch
163G-10 (.003 in.)	10 x 10 to 1 inch

STABILENE® GUIDE LINE

ROLLS 20 yards long in the following widths: 36", 42".

130G-8 (.005 in.)	8 x 8 to 1 inch
130G-10 (.005 in.)	10 x 10 to 1 inch



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