INSTRUCTIONS FOR THE PREPARATION OF
MANUSCRIPTS AND DRAWINGS FOR ENGINEERING
EXPERIMENT STATION PUBLICATIONS

The following specifications are prepared to facilitate the preparation of manuscripts and illustrations for publications of the Engineering Experiment Station of the University of Illinois.

A manuscript for a bulletin is a record of investigation pertaining to the manufacturing, railway, mining, constructional or industrial interests of the State. A manuscript for a circular is a compilation giving the results of the experiments of engineers, industrial works, technical institutions or governmental testing departments. Any manuscript should be prepared with a view of giving the reader a comprehensive view of the subject, a means of applying the methods described, and the conclusions reached. With the goal of brevity in mind a manuscript for publication will be an abstract of a complete report. It will include only such detailed data as would be required by the reader to secure the facts regarding the development of the subject or to make use of the data in the field of engineering to which the publication serves as a contribution.

The writer should aim to present his facts in the simplest and most direct manner possible. Sentences should be comparatively short and free from complicated phraseology. One sentence should follow another in the order of logical sequence of thought. Each paragraph should develop an individual idea, and should be arranged in the order of progress in the development of the subject. Dis-

tinct branches or integral parts of the publication should be separated into sections.

The organization of the subject matter of a manuscript requires careful consideration. There is danger that the writer will not distinguish between the point of view of the investigator and that of the practical reader. As the investigator he is inclined to write what he did rather than what he did that can be used by others. The reader will make use of only those details which he can apply in further experimentation or in engineering practice; otherwise the investigator's actual performance is of interest chiefly, if not only, as a historical sketch. The reader does, however, desire conclusions and summaries, and where these are not conclusive he wants an expression of the best judgment of the one who carried on the research. This opinion he will regard most favorably when it is substantiated by fact or when supported by convincing logic.

A clear, concise and well organized description presents a subject satisfactory to one whose mind is trained to interpret information recorded by this means. It should be recognized, however, that no small proportion of the individuals to whom the publications of the Station are mailed are men who are dealing with concrete rather than with abstract data. They prefer to get facts from figures rather than from words or, they appreciate having a description supplemented by means of numerical and graphical data. The table, the graph and the photograph then should be used to supplement the text of a publication and in many instances these should be the chief means of conveying information. When an illustration takes the form of a drawing or a photograph, the instructions for its preparation given hereinafter should be carefully followed.

PREPARATION OF MANUSCRIPTS

A manuscript should be in final form when submitted to the Director of the Station. The care with which it is prepared may seriously affect the time required in editing and the expense involved in printing. Hastily prepared manuscripts frequently must be fully revised and rewritten in whole or in part by the author or the Station office. To avoid this time-consuming process the following instructions for preparing a manuscript are given.

The manuscript furnished by the author shall consist of three typewritten copies, one original and two carbons, double spaced, on 8½ in. by 11 in. sheets with liberal margins and spaces at top and bottom. Equations shall be double spaced at top and bottom.

The pages shall be numbered consecutively.

If one line or less is to be added, write the addition between the lines, using the caret to show the place of insertion. If a paragraph or more is to be added, the place for the insertion should be clearly marked with "InsertA", "Insert B", etc., and the insert typed on a separate page of the same size. This new page should be marked "Insert A", "Insert B", etc., and the folio number should be the same as the original page with an addition of the letter a,b,c, etc. Suppose,for example, that two new pages are inserted between pages 22 and 23 of the copy. In the lower right-hand corner of page 22, within parentheses, should appear (22a follows). The next page should be the first of the two-page insert and numbered 22a; in its lower right-hand corner should appear (22b follows).

If a line or less is to be omitted,a horizontal line should be drawn, through the part to be omitted. If, however, a paragraph is to be omitted, an oblique line drawn across the rejected part will suffice. If a page or more is to be omitted, it is discarded and the folios of the page or pages omitted are indicated after the folio of the page that precedes the omitted part. Suppose, for example, it is decided at the last minute to omit pages 24 and 25 of a manuscript, the folio of page 23 should appear as 23-25. It is thus, not necessary to renumber the entire copy, but if these pages contain numbered sections the Contents and subsequent sections should be changed accordingly.

The manuscript shall contain a table of contents, a list of figures, a list of tables, and the body of the text with footnotes. It shall be accompanied by an appendix and a bibliography when these are desirable.

Contents

The table of contents shall contain the exact titles for the sections or chapters and their divisions.

The chapter divisions shall be numbered consecutively as they will appear numbered in the publication. The page numbers shall be omitted.

CONTENTS

Lists of Figures and Tables

A list of figures and a list of tables shall be a part of the copy, each list appearing in the order named on a separate sheet immediately following the "Contents". Each figure and each table shall be listed by title as it will appear in the text. All page numbers shall be omitted. An example of the list of figures and the list of tables follows.

List of Figures (Continued)

LIST OF TABLES

The Text

Examine and use a printed bulletin as an example until you understand the style of the publications

Do not crowd anything to save paper. It is impossible to make the copy too plain and room must be left for marks indicating style of type.

Do not write one figure over another so as to cover it and to produce an undertain result.

Do not copy clippings of any length. Paste, do not pin, them on the page in their proper place.

Write, do not type, lower case l if it appears in connection with 1 (one). Both look the same to the compositor.

Write all Greek symbols, accents and umlauts.

It shall be regarded as permissible to abbreviate any or all commonly abbreviated words and terms, but, in general, abbreviations shall be avoided for all terms not usually abbreviated in the best engineering literature, or occuring frequently in the text unless by their use the subject matter will be more easily understood or parts of it will more readily catch the eye. The term figure in the singular form shall be written Fig. and in the plural form Figs.

It shall be regarded as permissible to express numerical values in figures irrespective of any rule, provided an author feels that by such means the desired results will be best accomplished. In general, however, all numerical values shall be expressed in figures except those requiring only one or two words, or except when less than three numerical values are given in a paragraph.

All numerical values forming a series shall be expressed in figures.

All numerical adjectives shall be expressed in figures.

All percentages shall be expressed in figures.

In beginning a sentence all values otherwise expressed in figures shall be written out.

Letters used as symbols for quantities in equations or in the text shall be expressed by italics.

All first paragraphs in sections or divisions of a manuscript, as indicated in the table of contents, shall be numbered in series without regard to chapters or other physical grouping.

All fundamental or concluding equations shall be numbered with an arabic figure in parentheses, placed to the right of the equation in the right-hand type page line without the use of leaders

A series of similar important statements (as in a summary) within a numbered section shall ordinarily be numbered each with an arabic figure in parentheses in an indented paragraph.

Indices in tables shall be signs ordinarily used for footnotes rather than the superior type when superior type and exponent may be confused. Use superior type for reference placed in rear of publication as a bibliography.

All decimal numbers having no units shall have a cipher placed before the decimal point.

Values expressed in more than four digits shall be set off by spaces rather than by commas.

In a table which extends beyond the limits of one page all column headings shall be repeated on each new page.

All side cuts and tables shall read from the bottom to the top of the page and cuts shall have captions appear on the right hand side of the page.

In equation (1) the explanation should precede the equation as follows:

In the following equation $\underline{S}_1$ and S_2, ~~and~~ are two stresses at right angles to each other and λ is Poisson's ratio:

$$\underline{E}_e = \underline{S}_1 - \underline{S}_2$$

$$\text{Tonnage} = \frac{62.5 \quad VS}{1.80}$$

in which $\underline{V}$ equals the volume in cubic feet and $\underline{S}$ equals the specific gravity. Here the explanation follows the equation and the equation need not necessarily be numbered. Do not use more than one form of equation in the same publication.

Footnotes.

Write each footnote in the line immediately following the line of text which contains the reference mark with a line two-thirds the width of the page above and below the footnote, but do not break the text at the reference mark if it comes in the middle of a line.

Use the following reference marks for footnotes on each page in the order they are given:

(1) (2) (3) (4) (5)	(1) *	(6) **
	(2) +	(7) ++
	(3) ‡	(8) ‡‡
	(4) ¶	(9) ¶¶
	(5) §	(10) §§

Only the first mark (*) appears on the keyboard. The others will have to be made by hand. If only two footnotes appear on the first page of the copy, use * and † and begin again with * on the next page containing footnotes.

In writing footnotes, use the following forms:

Books

*P.Paglianti, "Metallurgie", Vol. 9, p. 217, 1912.

Journals

*Journal Iron and Steel Instit., Vol. 36, II, p. 222, 1889.

Bulletins

* "Magnetic and Other Properties of Electrolytic Iron Melted in Vacuo." Univ. of Ill. Eng. Exp. Sta.,Bul. 72, pp. 32-42, 1915.

Reports

*Rpt. British Assoc. for Advancement of Science, Vol. 2, p. 792, London 1896-97.

Appendix

The appendix shall contain material not necessarily essential to the text but valuable as an accompanying supplement. Such general material as explanatory notes and a historical or mathematical treatment shall be put into an appendix which shall occupy a position in the copy immediately following the text.

The appendix may or may not be divided into sections. If sections are desirable, the appendix shall be divided into divisions which shall be numbered in sequence with those of the text, the first division of the appendix being given the next consecutive number to that used for the last numbered division in the text. If more than one appendix is printed, each shall be numbered with a roman numeral beginning with No. I. The arrangement is shown in the following example, which is the printed list of appendices and their divisions appearing in the front of the publication as a "Contents (Continued)".

CONTENTS (Continued)

Bibliography

If a bibliography is to appear in the publication, it shall be placed in the copy immediately following the appendix.

The following form in writing a bibliography shall be observed.

Basquin, O. H. "The Circular Diagram of Stress and Its Application to the Theory of Internal Friction." Proc. Western Society of Engineers, November, 1912, p. 815.

Watson, F. R. "Acoustics of Auditoriums." The Brickbuilder, Vol. 24, p.257, October 1915.

Gillott, Thomas "Subsidence Due to Coal Workings." Inst. Civ. Engrs., Vol. 135, p. 152, 1898.

White, E. J. "Law of Mines and Mining Injuries." Secs. 212, 215, and 490, St. Louis, 1903.

Jones, Edward "The Control of Creeps." Mines and Minerals, Vol. 18, p. 111, 1897-98.

Tables

Tables numbered in sequence and with titles shall be on separate sheets placed in the manuscript approximately where they are to appear in the publication. They must not appear on a page containing text.

Titles for tables shall be short and specific, placed at the top of the table with the table number on a separate line centered above the title, as:

Table 4
List of Orifices Used

Table title shall not have end punctuation.

In tables in which the unit of measure is constant this fact may be indicated in a line immediately following the title, as:

Table 10
Stresses in Steel Girders
(pounds per square inch)

In tables in which the unit of measure is not constant the different units of measure shall be referred to in the table by placing the proper unit at the top of each column.

Illustrations.

All drawings, photographs, prints, etc., for publication shall accompany the copy. Any specifications as to figure number, title, reduction factor, reference to publication, etc., shall be in pencil on the back of the sheet and in the case of tracings in the back of the margin space of the plate. Of these markings only the reduction factor, figure number, and the author's name or some reference to the publication, are necessary. The reduction is to be such that cuts will be full type page in width or length including all captions and running heads. Type page size is 4 1/3 inches by 7 inches. Side cuts shall be 7 inches long including captions and running head and shall be 4 1/3 inches high including captions. Cuts 4 1/3 inches type page in width, shall have a height giving a good proportion and yet securing an

effective presentation of the data. Photographs should be marked lightly in pencil on the back to indicate possible trimming to obtain conditions just given. (Photographs may be attached to a sheet of paper and any markings may be made on the paper.) No running head shall be used on half tone reproductions.

Drawings and all other forms of illustrations for the final printed form shall be made in or by the Station office or under the direct supervision of the Assistant to the Director.

The completed drawings for the illustrations of a bulletin or circular will be submitted to the author for approval or correction. He should indicate his approval by signature and date. If corrections are necessary, he should indicate them clearly on the drawing or on a memorandum attached to it. After the author has thus approved or corrected the drawings he can make no further alterations in them except by authority of the Director.

In case finished drawings are furnished with copy by the author they shall conform to the following prescribed standards which govern in the preparation of drawings made in the Station office.

All drawings shall be black on white and preferably on tracing cloth except when otherwise specified. Water proof India ink shall be used both with ruling and writing pen.

Drawings shall be made to reduce two, two and one-half or three times. An example giving the essential elements of a drawing or chart for each of the reductions named is held by the Station office to serve as an exact copy in making all drawings. Copies can be furnished to be used in securing standards in work done outside the Station office The reduction should be determined on the basis of the importance, the detail and the expanse of the subject to be illustrated. Herewith find cuts made from these drawings.

Drawings of apparatus or equipment shall be made without border lines. The drawing itself shall be made with lines of two widths only. The outline, or principal line, shall be drawn full to reduce to 0.01 inch. All other lines, or secondary lines, shall be drawn full, except when necessary to break them for dimension figures or some other obstruction, with lines which when reduced will be as fine as possible without breaking down in printing. Samples of all lines for different reductions are held in the Station office and may be secured for use in Station drafting done outside the office.

In charted data drawings, a scale for coordinate lines should be selected to make these lines in the cut appear as nearly as possible to be separated by one-fourth inch spaces or some equal division or multiple thereof. Therefore, when the coordinate lines form squares these should be one-fourth inch in size, some equal division or multiple thereof, or as close an approximation to this standard as possible. When the coordinate lines form rectangles the width and length of the rectangle should be determined as stated. This standard does not apply when using the logarithmic scale.

Lines on charted curve drawings shall be in conformity with the following specifications:

Curved lines, that is, the graphs representing the data, are to be full lines of such weight as to reduce to 0.015 inch.

Border lines are to be one-half the width of the curve line, or 0.0075 inch.

Ordinary coordinate lines are to be of the same weight as the secondary lines specified in rule (3), i.e., 0.005 inch.

The emphasized coordinate line shall be just enough heavier than the ordinary coordinate line to make it out-standing in the cut, 0.0075 inch.

The area within the border lines of a charted curve drawing shall be used exclusively for charting data.

As far as possible notes on drawings shall be minimized. These shall be placed near the cut in tabulated form or be used in the running text.

Curves representing charted data shall be located by open circles or, when necessary, by solid circles, the diameter of which shall be approximately twice the width of the curve line.

All charted curves shall be named in full except where abbreviations are necessary or as specified herein for the running text under "Copy" of "Rules". Ordinarily the name shall be arrowed out from the curve and appear in a horizontal line well placed to give balance.

Chart captions and figures used to designate coordinate lines shall be placed outside the border area as in Fig. 10, p. 17, Bulletin No. 105.

All letters and figures on drawings shall be made Reinhardt style. The general appearance, size and weight, of letters and figures shall be the same as in Fig. 10, p. 17, Bulletin 105. Lower case letters shall be 1/16 inch high and initial caps shall be 3/32 inch high after reduction. Figures used in whole numbers shall be 5/64 inch high after reduction.

Arrow heads ahall be open, narrow and of a size to reduce to 5/64 inch in length, the sides of the arrow being the same in length and making equal angles with the dimension line.

All drawings, shall be made in third angle projection and shall not be line nor surface shaded.

Note: The Station office will furnish prints of plates prepared to give standards for all details in drafting work for Station publication drawings. Prints will be herewith.

PROOF-READING

All publications shall be read from copy in the Station office. When galley and page proofs have been read, they shall be submitted to the author. The author shall not make changes from the printer's copy,

except when such changes are absolutely necessary and then they shall be made on the galley proof. Therefore, the work on galley and page proofs shall be in the nature of supplementing proof reading corrections made by the Station office. For this purpose the following rules and marks are given:

In reading proof, mark corrections on the margin opposite the indicated errors. Do not attempt to make a correction by writing over the print or between the lines, and do not, when possible to avoid it, draw a line from the point at which error occurs to the correction on margin.

In correcting proof use the following marks:

⊙ Period.

, Comma.

= Hyphen

: Colon.

; Semicolon.

Apostrophe

Quotations.

Em quad.

1/m One -em dash.

2/m Two-em dash.

Push down.

Less space.

Close up.

^ Insert.

Turn over or to proper position.

Insert space

[or] Move to left or to right

⊓ or ⊔ Move up or move down

tr transpose

----- or stet Let it stand. Return words crossed out

Delete --take out.

x Broken or imperfect letter.

¶ Paragraph.

No ¶ No paragraph.

w.f. Wrong font

Eq # Equalize spacing

≡ or Caps. Capitals.

= or s.c. Small capitals.

l.c. Lower case.

a/ or /, \ Superior or inferior.

_____ or ital. Italic.

rom. Roman.

[/] Brackets.

(/) Parentheses.

≡≡≡ Straighten line

/// Straighten margin or column.

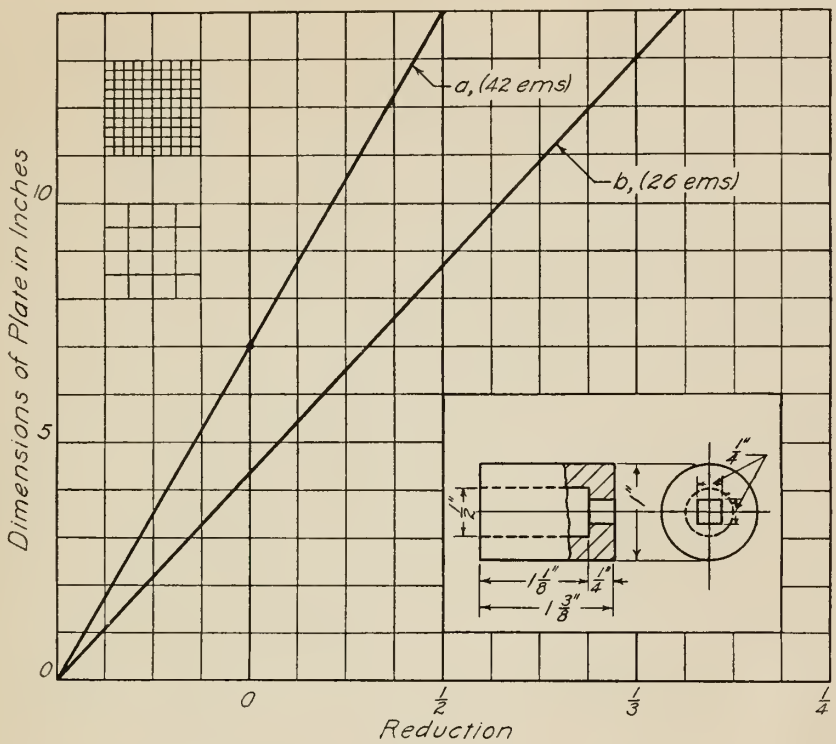
~~~ or bf. Bold-face.
~~~

TYPOGRAPHICAL ERRORS] 6-pt. ital. caps.

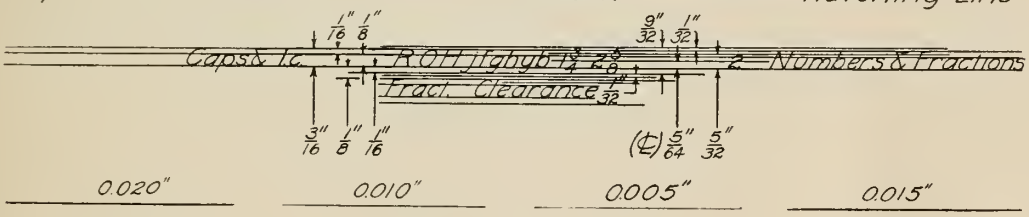
It does not appear that the earliest printers had any method of correcting errors before the form was on the press. The learned ~~The learned~~ correctors of the first two centuries of printing were not proof-readers in our sense, they were rather what we should term office editors. Their labors were chiefly to see that the proof corresponded to the copy, but that the printed page was correct in its latinity ~~that the words were there~~, and that the sense was right. They cared ~~but~~ little about orthography, bad letters or purely printers' errors, and when the text seemed to them wrong they consulted fresh authorities or altered it on their own responsibility. Good proofs in the modern sense, were ~~impossible~~ until professional readers were employed men who had first a printer's education, and then spent many years in the correction of proof. The orthography of English, which for the past century has undergone little change, was very fluctuating until after the publication of Johnson's Dictionary, and capitals, which have been used with considerable regularity for the past 80 years, were previously used on the miss or hit plan. The approach to regularity, so far as we have, may be attributed to the growth of a class of professional proof readers, and it is to them that we owe the correctness of modern printing. More errors have been found in the Bible than in any other one work. For many generations it was frequently the case that Bibles were brought out stealthily, from fear of governmental interference. They were frequently printed from imperfect texts, and were often modified to meet the views of those who published them. The story is related that a certain woman in Germany, ~~who was~~ the wife of a printer, ~~and~~ had become disgusted with the continual assertions of the superiority of man over woman which she had heard, hurried into the composing room while her husband was at supper and altered a sentence in the Bible, which he was printing, so that it read Narr instead of Herr, thus making the verse read "And he shall be thy fool." instead of "And he shall be thy Lord." The word not was omitted by Barker, the King's printer in England in 1632, in printing the seventh commandment. He was fined £3,000 on this account.

4 (?)

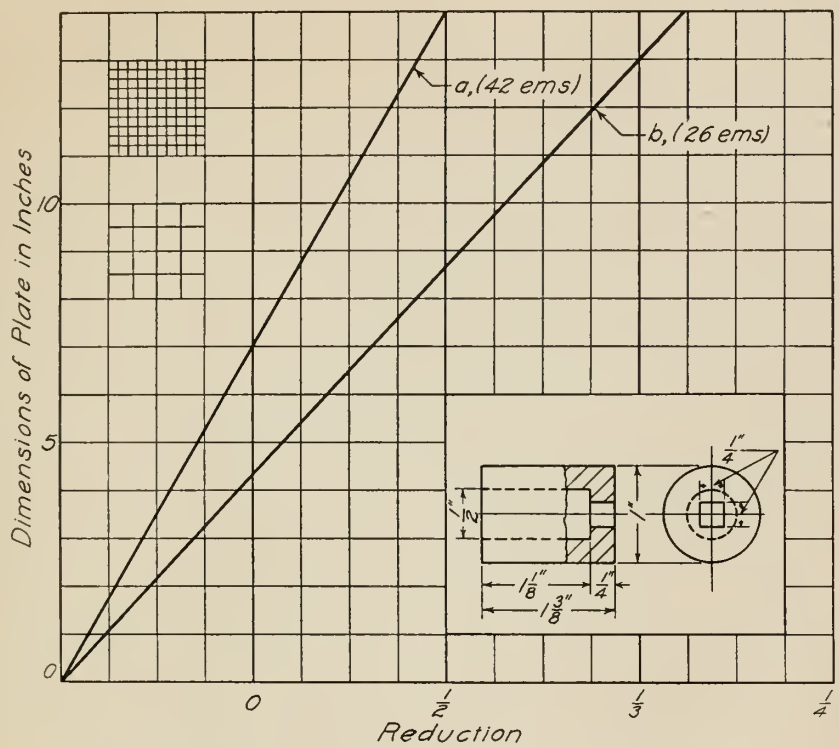
Specimens for $\frac{1}{2}$ Reduction



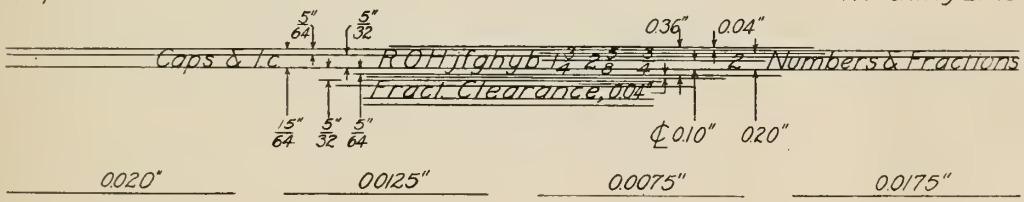
Curve Diagrams		Mechanical Drawings	
Curve Line	0.030" 0.020"		Outline
Border Line	0.020" 0.010"		Dimension Line
Ordinary Coordinate Line	0.010" 0.010"		Extension Line
Emphasized Coordinate Line	0.020" 0.010"		Hatching Line



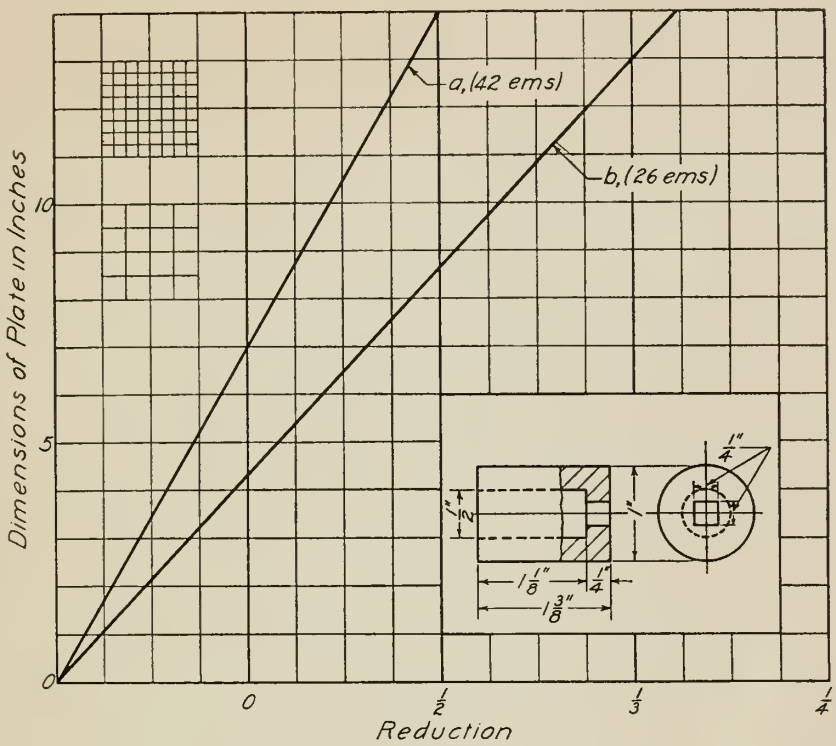
Specimens for $\frac{2}{3}$ Reduction



Curve Diagrams		Mechanical Drawings	
Curve Line	0.0375" 0.0250"		Outline
Border Line	0.0250" 0.0125"		Dimension Line
Ordinary Coordinate Line	0.0125" 0.0125"		Extension Line
Emphasized Coordinate Line	0.0250" 0.0125"		Hatching Line



Specimens for $\frac{1}{3}$ Reduction



Curve Diagrams			Mechanical Drawings
Curve Line	0.045"	0.030"	Outline
Border Line	0.030"	0.015"	Dimension Line
Ordinary Coordinate Line	0.015"	0.015"	Extension Line
Emphasized Coordinate Line	0.030"	0.015"	Hatching Line