

ME 101

**ENGINEERING
GRAPHICS**

CHAPTER 2

LETTERING

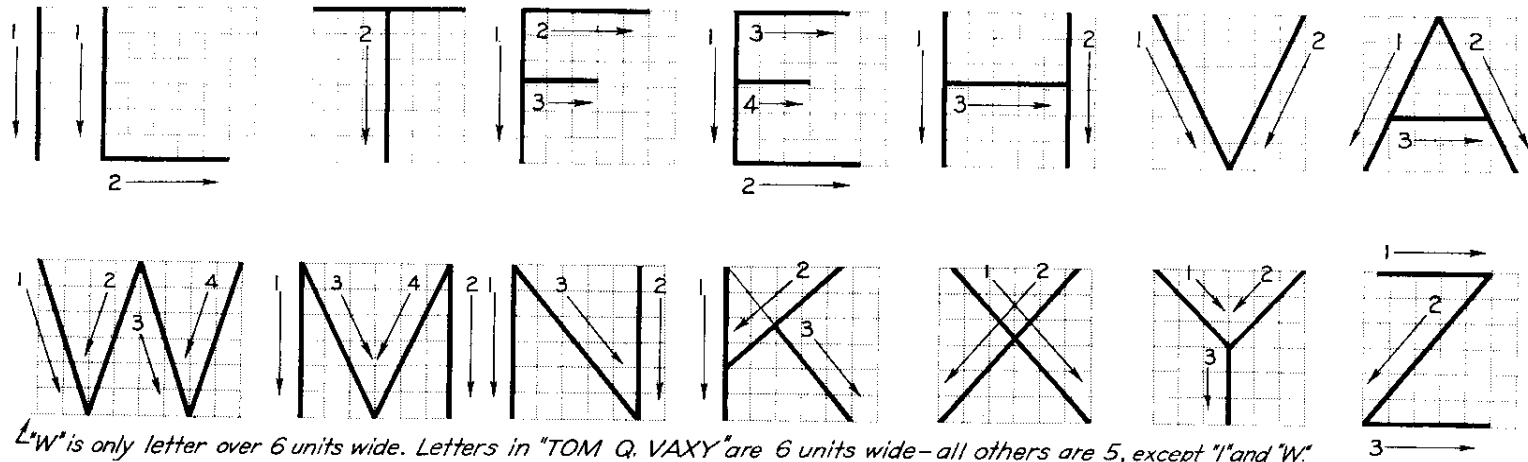
2.1. INTRODUCTION

Graphic representation of the shape of a part, a machine or a structure, gives one aspect of the information needed for its construction. To this must be added, to complete the description, figured dimensions, notes on material and finish, and descriptive title all lettered, free-hand, in a style that is perfectly legible, uniform, and capable of rapid execution.

As far as the appearance of a drawing is concerned, the lettering is the most important part.

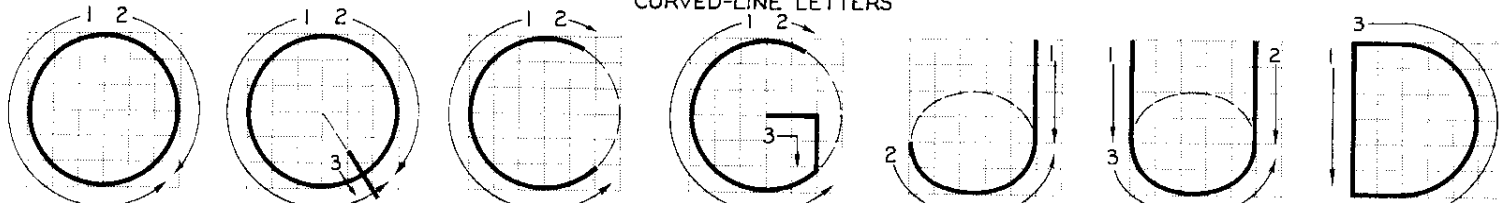
In a broad sense, lettering is a branch of design.

STRAIGHT-LINE LETTERS



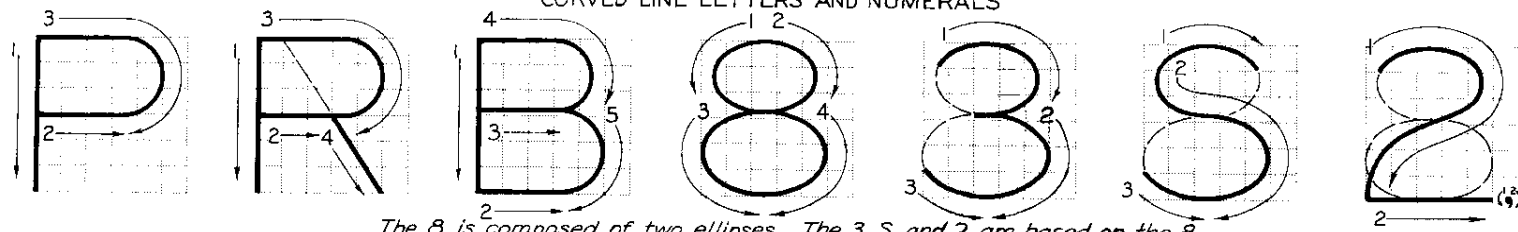
*L*W* is only letter over 6 units wide. Letters in "TOM Q. VAXY" are 6 units wide—all others are 5, except "I" and "W."*

CURVED-LINE LETTERS

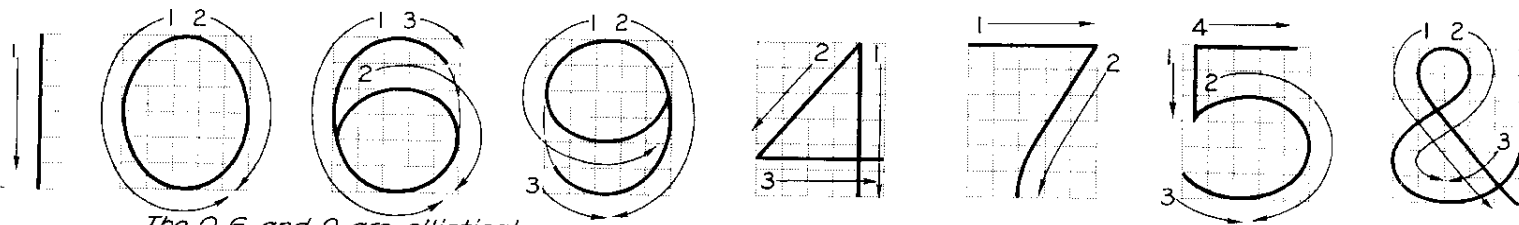


The letters O, Q, C, G, and D are based on a true circle. The lower portion of the J and U is elliptical.

CURVED-LINE LETTERS AND NUMERALS

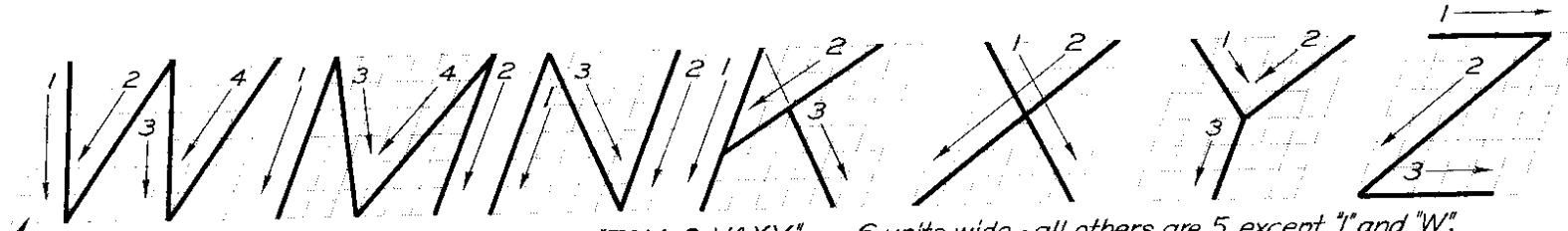
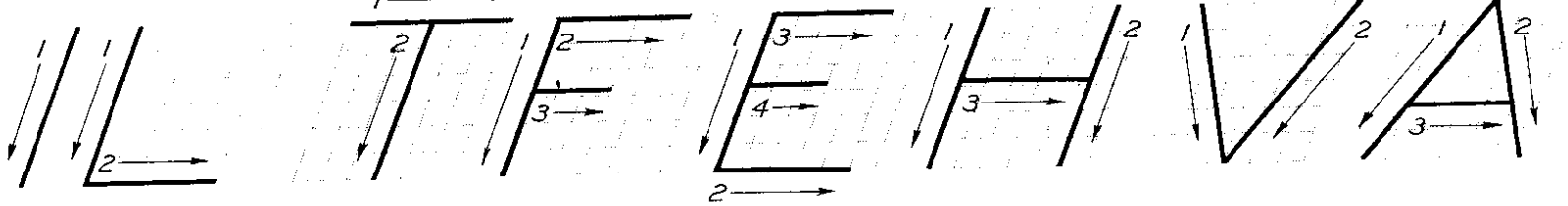


The 8 is composed of two ellipses. The 3, S, and 2 are based on the 8.



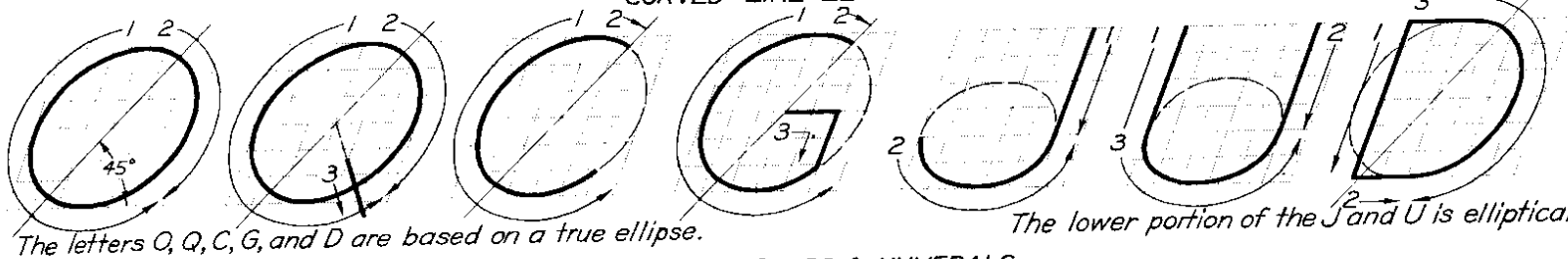
The O, 6, and 9 are elliptical.

Fig 2.1 Vertical Capital Letters and Numerals.



*W is only letter over 6 units wide. Letters in "TOM Q. VAXY" are 6 units wide - all others are 5, except "I" and "W".

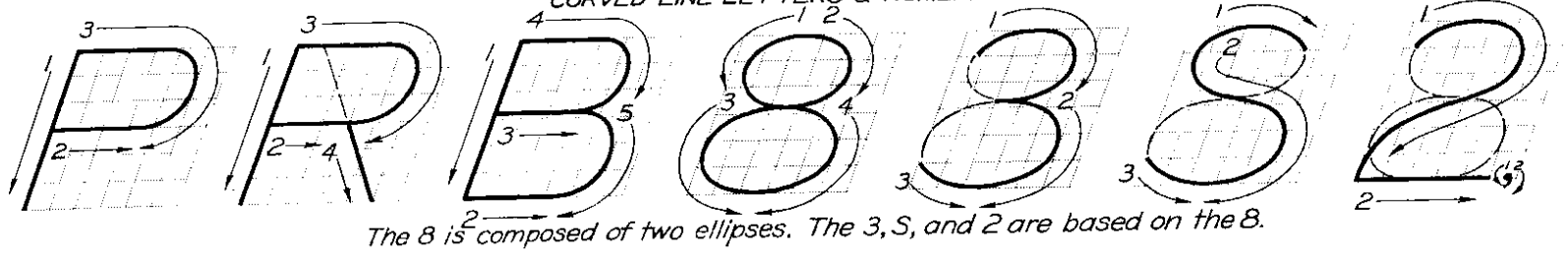
CURVED-LINE LETTERS



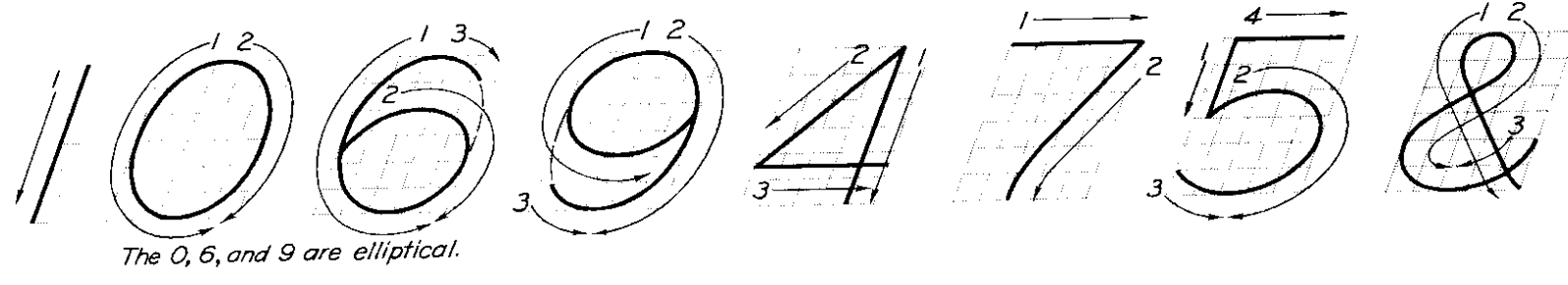
The letters O, Q, C, G, and D are based on a true ellipse.

The lower portion of the J and U is elliptical.

CURVED-LINE LETTERS & NUMERALS



The 8 is composed of two ellipses. The 3, S, and 2 are based on the 8.



The O, 6, and 9 are elliptical.

Fig.2.2 Inclined capital letters and numerals.



Fig.2.3. Single-stroke vertical capitals and lower case. Note the alternate strokes for small size capitals and the alternate shapes for lower case a, g, and y.



Fig.2.4 Basic forms for lower case letters. For standard letters, the waist-line height; capital line and drop line are therefore one-third above and one-third below the body of the letter.

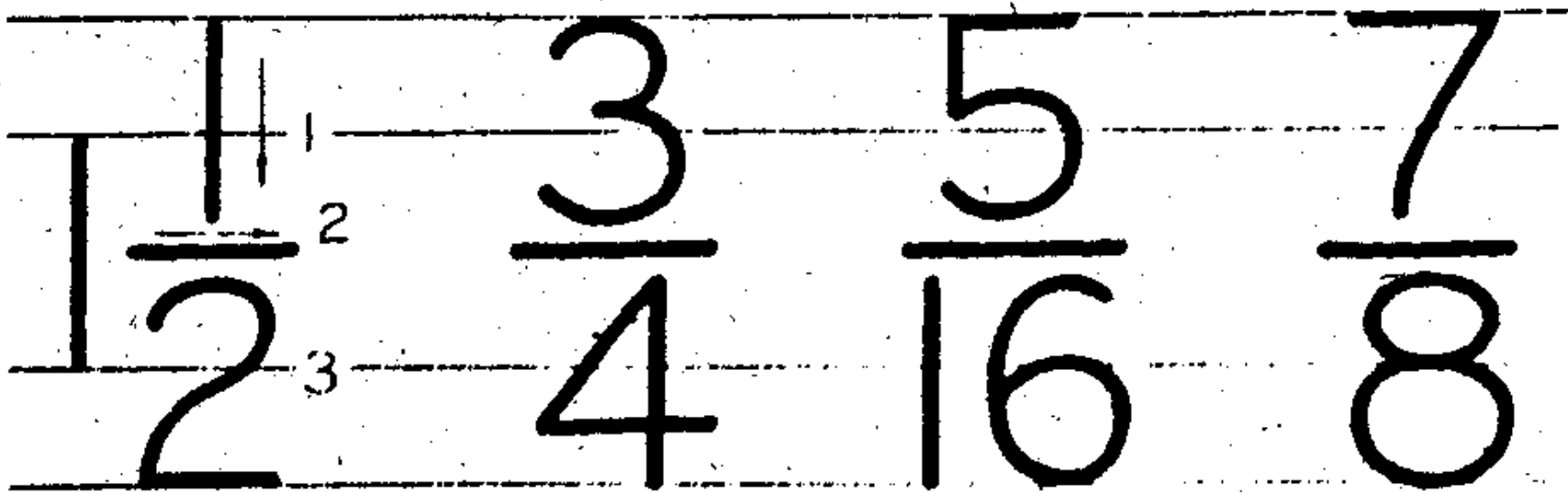


Fig.2.5 Fractions. The total height of a fraction is twice that of the integer.

A B B C C D E F G H I

J J K L M N O P P Q R

S S S T U U V W X Y Z

1 2 3 4 5 6 7 8 9 0

a¹ or a b c d e f g¹ or g² h i j k l m

n o p q r s t u v w x y¹ or y² z

Fig.2.6 Single-stroke inclined capitals and lower case. Note the alternate strokes for small size capitals and the alternate shapes for lower case a, g, and, y

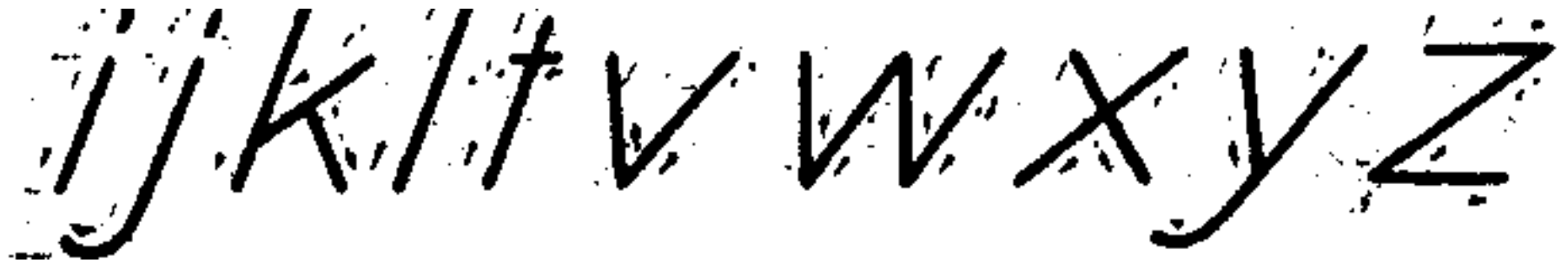


Fig.2.7 the straight line inclined lower case letters. Note that the centre lines of the letters follow the slope angle.



Fig.2.8 The loop letters. Note the graceful combination of elliptical body, ascenders, and descenders.



Fig.2.9 The ellipse letters. Their formation is basically elliptical.

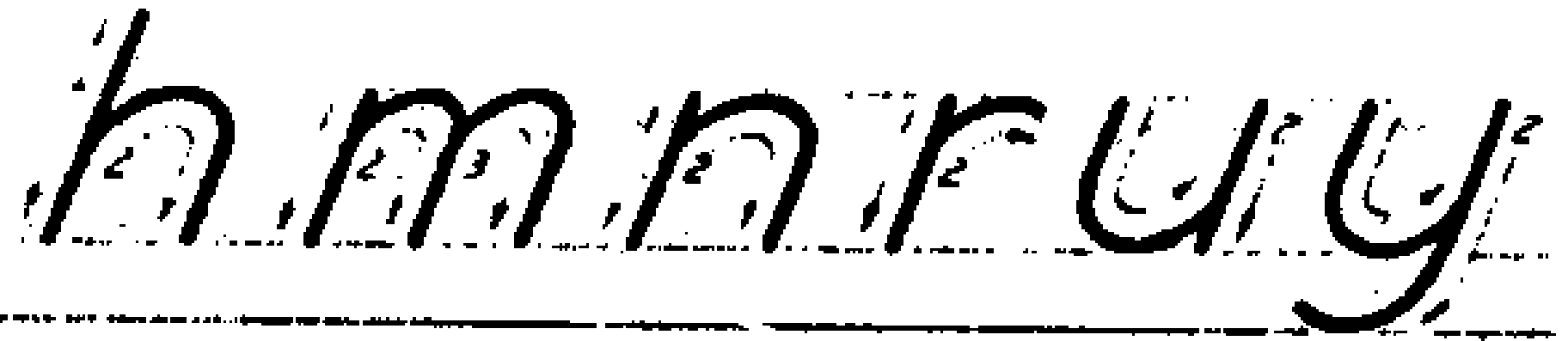


Fig.2.10 The hook letters. They are combinations of ellipses and straight lines.

A A B C C D E E F F G G H H
I J J K L L M N O O P Q Q R S
T T U U V W X Y Z Z

1 2 3 4 5 6 7 8 9 0

a b c c d e f f g h i j k l m
n o o p q r s t t u v w x y z

Fig. 2.11 Strokes for left-handers. Several alternate strokes are given. Choose the one that is most effective for you

Generally, lettering on drawings is done in a rapid single stroke letter, either vertical or inclined, and every engineer must have absolute command of these styles.

Always draw very light guide lines for both tops and bottoms of letters, using a sharp hard pencil.

In spacing words, a good principle is to leave a space that should be taken by an assumed letter (I) connecting the two words into one as in Fig.2.12.

COMPOSITION IN LETTERING REQUIRES CAREFUL SPACING NOT ONLY OF LETTER BUT OF WORDS AND LINES

Fig.2.12. a) Word composition. Careful spacing of letters and words and the proper emphasis of size and weight are important.

WORDSPACEDIBYISKETCHINGIANIIBETWEEN
WORDS SPACED BY SKETCHING AN I BETWEEN

Fig.2.12 b) Word spacing. Space words so that they read naturally and do not run together (too close) or appear as separate units (too far apart).

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Fig.2.12 b) Word spacing. Space words so that they read naturally and do not run together (too close) or appear as separate units (too far apart).

2.0.0 ENGINEERING LETTERING

A drawing; in addition to shape description, should have supplementary data in the form of dimensional sizes, explanatory notes, listing of specifications and titles. The presentation of these supplementary data is known as lettering.

Lettering must be legible , neat pleasing in appearance and easy to execute.

Lettering on a technical drawing (also called printing) should be considered as drawing lines, not handwriting.

Letter line thickness for classroom purposes do not change. It is the thickness the lettering pencil produce. However it must be uniform, sharp and dense enough to assure good reproduction. For large displays and panels line thickness change between $1/10$ 'th to $1/7$ 'th of the letter height.

2.0.0 STYLES LETTERING

There are several different styles of letters. However, in machine drawings only vertical and inclined gothic letters are used. In TURKIYE inclined letters are drawn at an angle of 75° from the horizontal. Whichever style is preferred, all lettering on a drawing should be done in one style only. It is recommended that only upper-case (capital), rather than lowercase letters should be used on machine drawings because of their greater readability.



Fig 2.13 Vertical Capital Letters and Numerals.



Fig 2.14 Inclined Capital Letters and Numerals.

THE END