Drawing - The art of representation of an object by the systematic lines on the paper.

Classification of drawing →

1. Artistic or free hand drawing -
2. Engg. drawing - The art of representation of engineering objects such as buildings, roads, machines on the paper.

⇒ Drawing instruments & other drawing materials :-

a) Drawing board
b) Drawing sheet
c) Pencils.

a) Drawing board -

Standard size of drawing board

S. No	Designation	Size ($l \times b \times t$) (mm^3)
1	D_0	$1500 \times 1000 \times 25$
2	D_1	$1000 \times 700 \times 25$
3	D_2	$700 \times 500 \times 15$
4	D_3	$500 \times 350 \times 15$

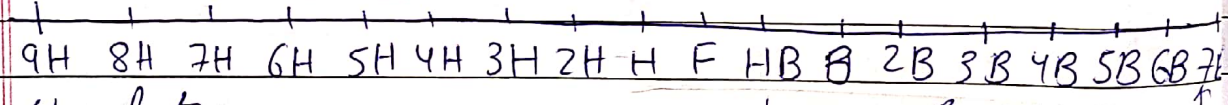
b) Drawing sheet -

Sheet

S.No.	Designation in mm (width x length) (mm^2)	Untrimmed length (mm)
Half Imperial Sheet →	A_0 841 x 1189	880 x 1230
	A_1 594 x 841	625 x 880
	A_2 420 x 594	450 x 625
	A_3 297 x 420	330 x 450
	A_4 210 x 297	240 x 330
	A_5 148 x 210	165 x 240

c) Drawing pencils:-

Pencils are used for preparing the sheets drawing on the sheets. The accuracy of drawing depends upon the quality of the pencil used.



H, 2H pencils are used for engg. drawing

d) Eraser-

e) Sharpner-

f) Protractor- It is used for measuring the angles

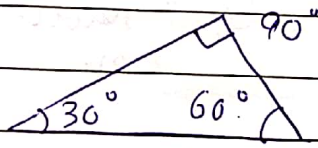
g) Compass -

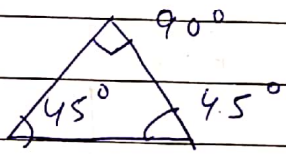
h) Cellotape or clip -

i) Scale -

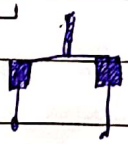
j) Mini drafter -

k) Set square -





l) Dividers -



It is used to divide the straight line into desired no. of equal parts

m) Sheet container -

☆ - Types of lines :-

1. Continuous thick (HB) ——— Application visible outlines

2. Continuous thin (1H, 2H) ——— Dimension lines, leader lines, extension lines, construction lines projection line

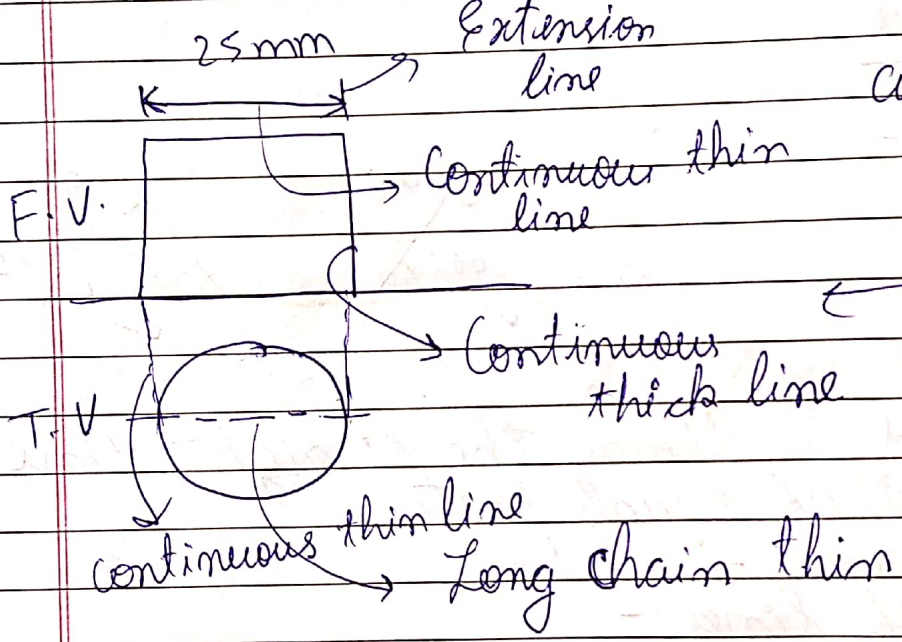
3. Continuous thin wavy ~~~~ Irregular boundary lines, short break lines

4. Short dashes medium — — — — 2 to 3 mm approx, 1mm approx — Hidden outlines & edges.

5. Long chain thin line — 15 to 30 mm, 2 to 3 mm, 1mm — Center lines, locus lines.

6. Long chain thick at ends & thin elsewhere — 1mm, 2 to 3mm, 15 to 30 — Cutting plane lines

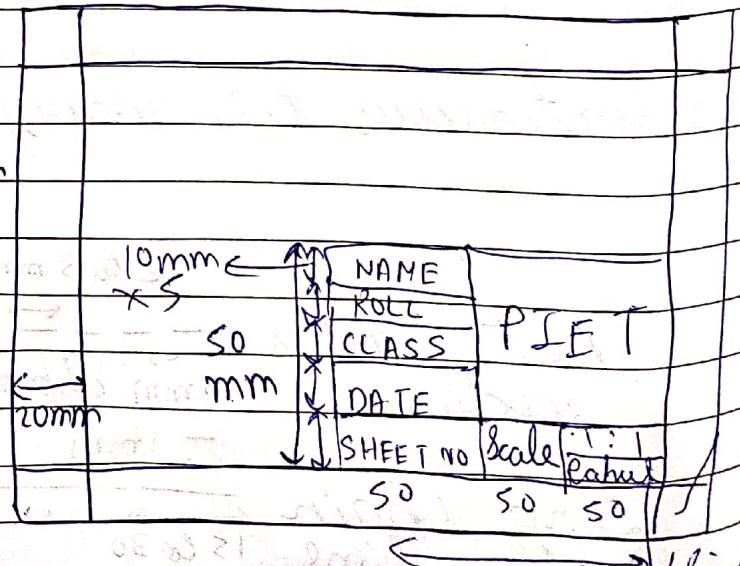
7. Long chain thick — To indicate surfaces which are to be received additional treatment



☆ :- Title block :-

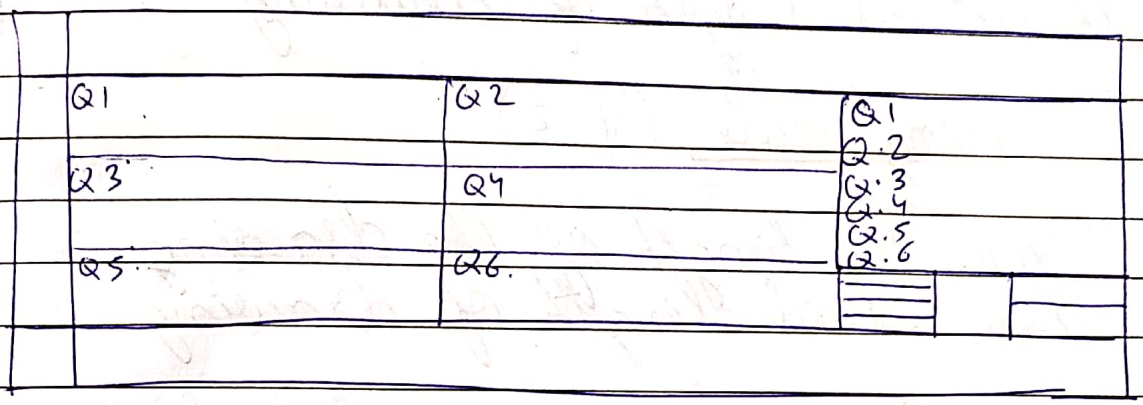
Title block contains following info:-

i) Name of title of drawing
ii) Drawing no.
iii) Scale (1:1)
iv) Symbols denoting the method of projection
v) Name of firm



Draw tool bar:- It contains line, polyline, circle, arc, rectangle, ellipse, hatch.

Title Block is an imp feature in drawing because it gives all the information of the prepared drawing:- ↵



Scales:-

If the linear dimension of an object have to be enlarged or reduced for drawing purpose, we use the concept of scales which enables us to enlarge or reduce linear dimensions with uniformity

Representative fraction (RF):-

We have to draw 50 feet drawing on paper

$50 \text{ feet} \times \left(\frac{1}{25}\right) = 2 \text{ feet}$

Actual length of drawing $\times$ RF = Length of drawing

$$RF = \frac{\text{Length of drawing}}{\text{Actual length of drawing}} = \frac{1}{25}$$

Sheet No - 5

Length of scale (LOS):-

LOS = R.F x Max. length measured

Full size scale:-(1:1)

When the length of the drawing is equal to actual length of drawing. (1:1)

Reducing scale (1:2)

When the length of the drawing is less than actual length of drawing

Length of drawing < Actual length of drawing.

Enlarging scale (2:1):-

Length of drawing > Actual length of the drawing.

Types of scale:-

1. Plain scale
2. Diagonal scale
3. Vernier scale
4. Scale of chords
5. Isometric scale.

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