## 4.2 PLOTTING AND DIMENSIONING IN AUTOCAD

1. Plotting in AutoCAD

Plotting in AutoCAD refers to printing or exporting a drawing from the AutoCAD environment onto paper, PDF, or other media. It is the process of converting the digital design into a hard copy or shareable format.

1.1 Purpose of Plotting

Produce physical copies for construction, manufacturing, or review.

Share drawings in standardized formats.

Ensure accurate scaling and representation of objects.

1.2 Key Components

Printer/Plotter Selection

Choose the correct device (e.g., laser printer, large-format plotter).

Paper Size

Standard sizes: A0, A1, A2, A3, A4.

Ensure the drawing fits appropriately on the chosen sheet.

Plot Area

Display: Plots exactly what is shown on the screen.

Extents: Plots all objects in the drawing.

Window: Select a specific rectangular area to plot.

Plot Scale

Defines the ratio of drawing units to paper units.

Example: 1:100 means 1 unit in the drawing = 100 units on paper.

Ensures measurements remain proportional.

Plot Style Table (CTB/STB)

Assigns line weights, colors, and styles for plotting.

Example: Thicker lines for walls, dashed lines for hidden elements.

Orientation

Portrait or Landscape depending on layout.

1.3 Steps to Plot

Type PLOT or CTRL+P.

Select printer/plotter and paper size.

Choose plot area (Display, Extents, Window).

Set plot scale.

Select plot style table for line weights/colors.

Preview the plot to check accuracy.

Click OK/Plot to print or save as PDF.

## 2. Dimensioning in AutoCAD

Dimensioning refers to annotating drawings with measurements to specify distances, angles, radii, diameters, or coordinates. Accurate dimensioning is essential for construction, manufacturing, and engineering purposes.

2.1 Types of Dimensions

Linear Dimension – Measures horizontal or vertical distance between points.

Aligned Dimension – Measures distance along a line (not restricted to horizontal/vertical).

Angular Dimension – Measures angles between two lines.

Radius/Diameter Dimension – Measures circles and arcs.

Arc Length Dimension – Measures the length of an arc.

Ordinate Dimension – Measures X and Y coordinates relative to an origin.

2.2 Dimensioning Tools in AutoCAD

DIMLINEAR – Creates linear dimensions.

DIMALIGNED – Creates aligned dimensions.

DIMANGULAR – Measures angles.

DIMRADIUS / DIMDIAMETER – For circles and arcs.

DIMORDINATE – For coordinate-based measurements.

DIMSTYLE – Customize dimension appearance (text height, arrow style, units).

2.3 Best Practices in Dimensioning

Keep dimension lines outside objects to avoid clutter.

Use consistent text height and arrow style throughout the drawing.

Avoid over-dimensioning; only include necessary measurements.

Use layers for dimensions (e.g., a separate layer named Dimensions) for easy editing and plotting.

Maintain proper units (mm, cm, m, inches) based on project standards.