

A top-down view of a wooden desk with various graphic design and drafting tools. In the top left, there are three white paper tubes. A pair of black-handled scissors lies on the left. A yellow level is in the bottom left corner. A large white sheet of paper with the text 'GRAPHIC DESIGN TOOLS' is centered. Below it, a smaller sheet of paper shows technical drawings of a bearing and a compass. A silver caliper is at the top, and an orange pencil is on the right. The background features a technical drawing of a circular component with concentric circles and dimension lines.

GRAPHIC DESIGN TOOLS

Objectives

- To identify graphic design tools.
- To recognize a variety of materials and supplies.
- To select the correct equipment for conveying information.

Graphic Design Tools

- Designers use a variety of tools and materials to convey information and concepts
- Accurate drawings communicate design ideas and provide technical details



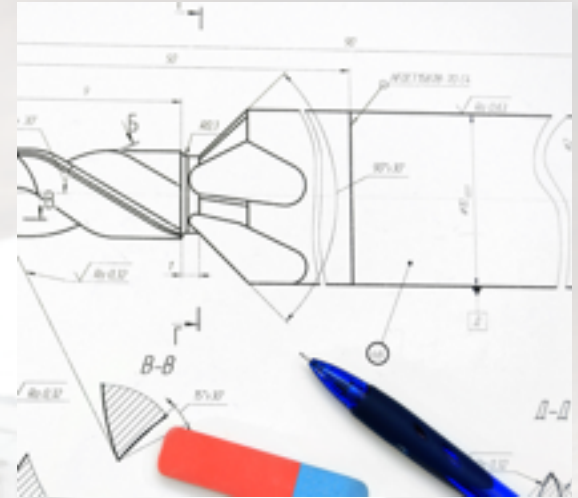
Types of Pencils

- Wooden pencils
 - advantages
 - least expensive
 - wide variety of lead types (graphite, charcoal, etc.)
 - disadvantages
 - must be sharpened
 - become dull quickly



Types of Pencils

- Mechanical pencils
 - advantages
 - replaceable leads
 - different sizes available
 - 0.3mm to 0.9mm
 - disadvantages
 - each pencil uses only one size of lead
 - must use a different pencil for each line thickness



Types of Pencils

- Lead holders
 - advantages
 - plastic or metal casing which holds interchangeable leads
 - flexibility of using specialty leads or different hardness
 - easy to attain various line thickness
 - great detail capability



Types of Pencils

- Lead holders
 - disadvantages
 - must be sharpened
 - can be expensive

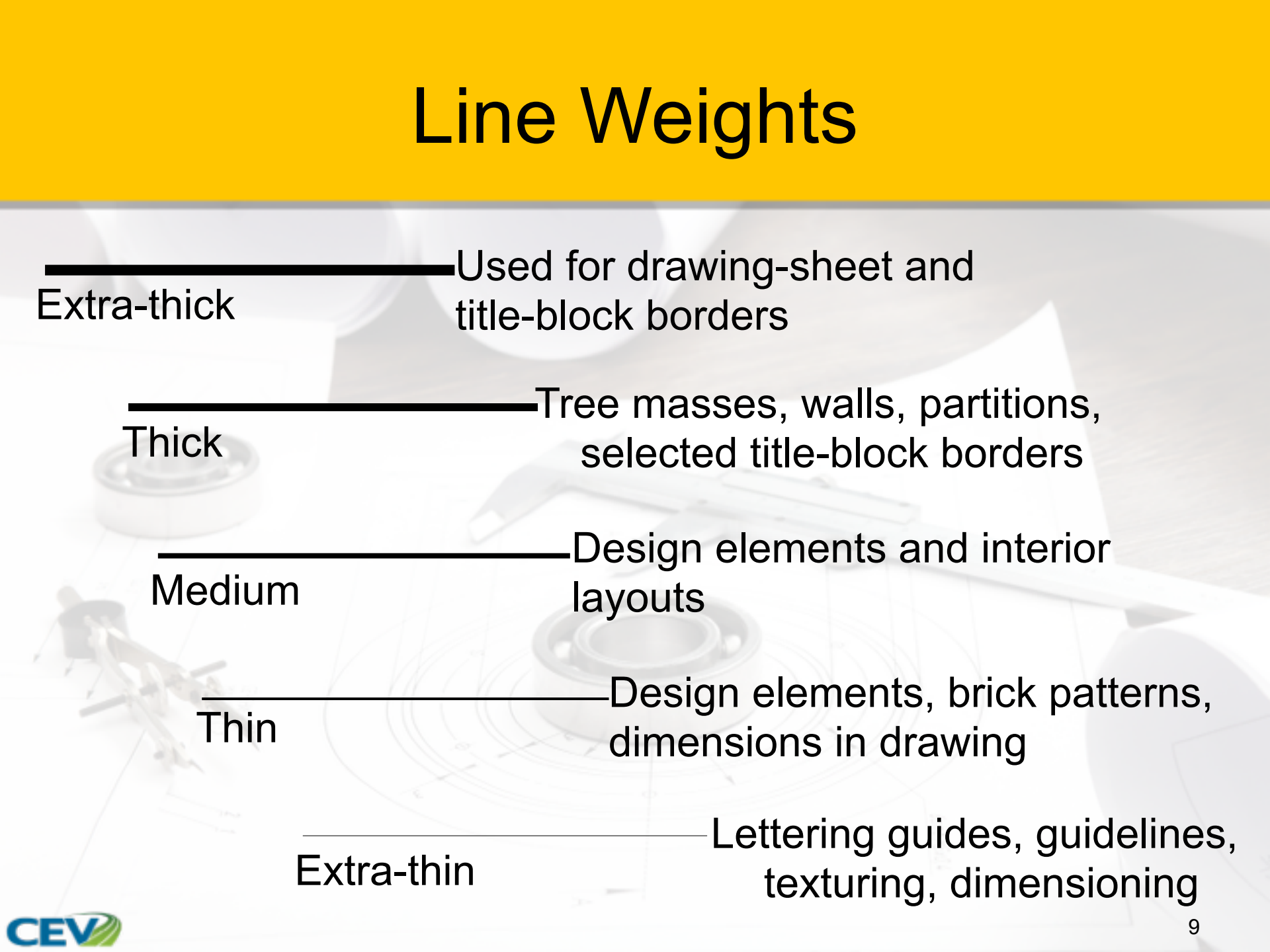


Hardness of Leads

- Lead's hardness determines type and thickness of line the pencil makes
 - use harder leads for thin, precise lines
 - use softer leads for sketching and bold lines



Line Weights

- 
- Extra-thick — Used for drawing-sheet and title-block borders
 - Thick — Tree masses, walls, partitions, selected title-block borders
 - Medium — Design elements and interior layouts
 - Thin — Design elements, brick patterns, dimensions in drawing
 - Extra-thin — Lettering guides, guidelines, texturing, dimensioning

Sharpeners

- Traditional pencil sharpener
 - used for wooden pencils
- Lead pointer
 - used for lead holders
- Sand paper
 - used for wooden pencils, can create a chisel point



Specialty Pencils

- Colored pencils
 - used to render drawings
- Non-reproductive pencils
 - used to draw guidelines which do not show up when duplicated
- Non-photo pencils
 - used to draw guidelines not visible in photo duplication



Erasers

- Ease of erasure depends on lead hardness and pressure
- Many types of erasers are available
 - including electric, for precision erasure
- Eraser shield aids in precision erasure



Pens

- Pens
 - advantages
 - various size nibs available
 - used for finished drawings
 - make drawings permanent
 - disadvantages
 - extra caution must be taken, mistakes are permanent
 - if not allowed to dry properly, can smear and smudge



T-Square

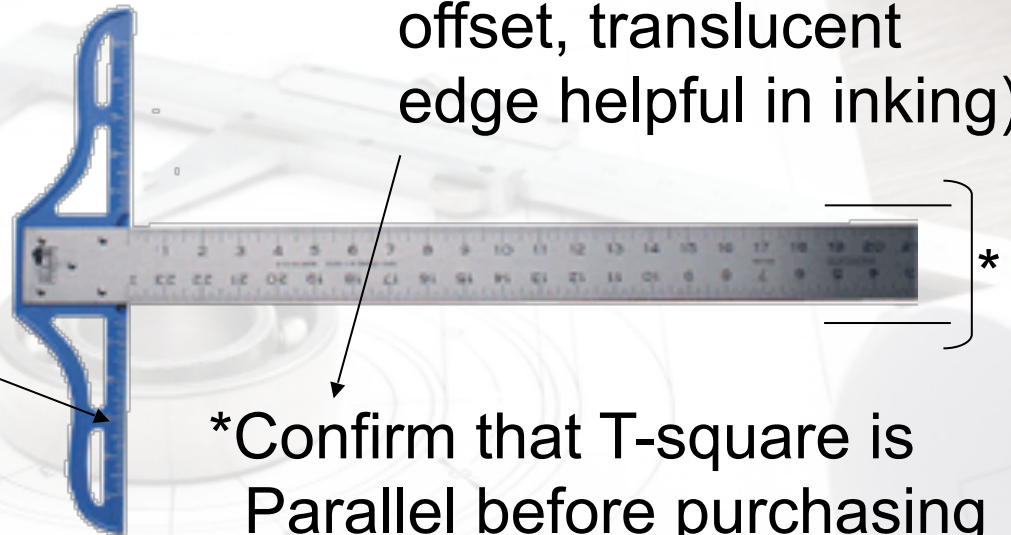
- Used to draw horizontal lines
- Aids in drawing angled lines with appropriate triangle
- Provides perpendicular guide for paper alignment
- Left-handed T-squares are available



T-Square

This edge aligns with the left side of a drafting table or table with parallel sides

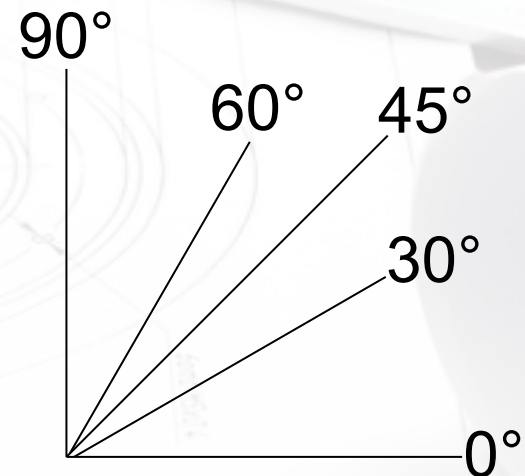
Edge used to create horizontal lines (often offset, translucent edge helpful in inking)



*Confirm that T-square is Parallel before purchasing

Triangles

- Most common triangles are 30° - 60° - 90°
 45° - 90°
- Line one edge of the triangle with the T-square to draw angles or vertical lines
- Adjustable triangles are available



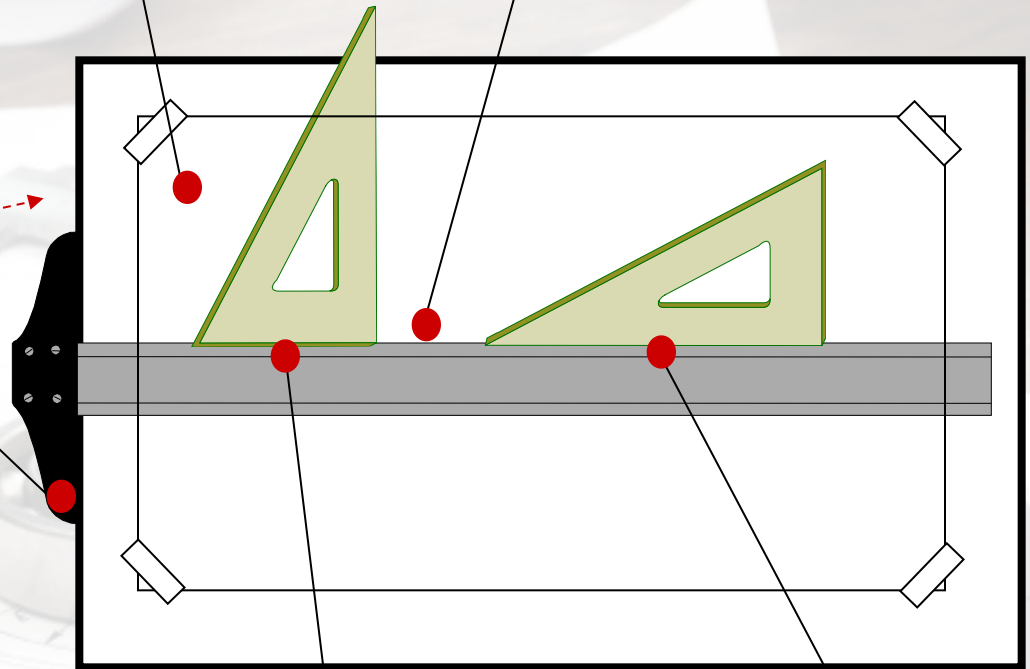
Drafting

Secure corners with tape

Triangle lined up on T-square

T-square flush against edge of drafting table

Table-top tilts for easier viewing



To make a 60° or 90° line

To make 30° or 90° line

Scales

- Measuring device used to accurately draw distance ratios
- Triangular in shape
 - each side has four conversion ratios
- Choice of scale used depends on size of drawing
- All measurements in a drawing must use the same scale

Scale: proportion used in determining dimensional relationships

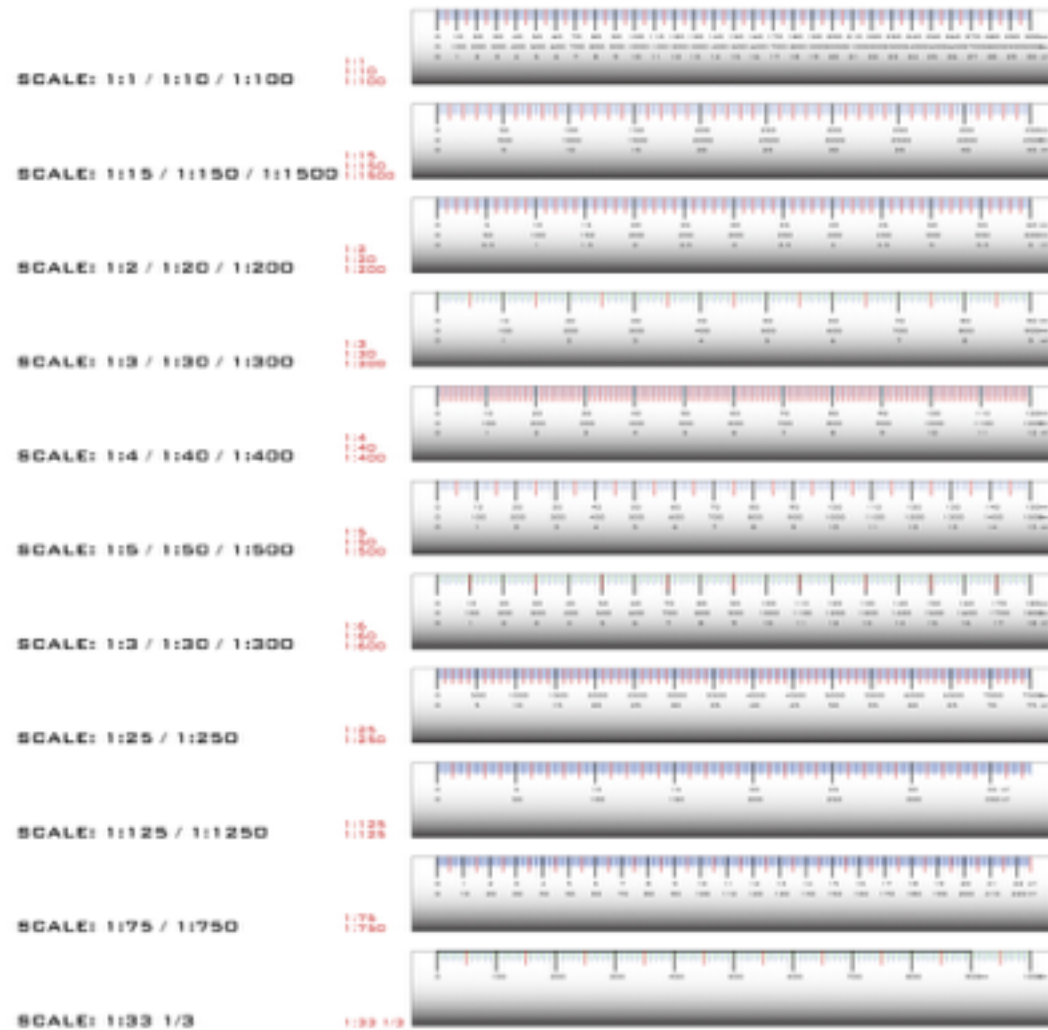
Scales

- Common scales include
 - architect's
 - divides inches into units which are multiples of four
 - engineer's
 - divides inches into units which are multiples
 - meter
 - relates to meter, multiples of ten



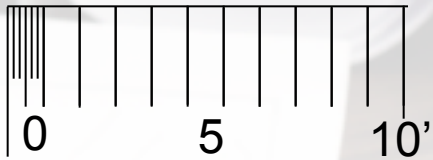
Scales

- Various scales will show the same distance (i.e., 10 feet*) differently

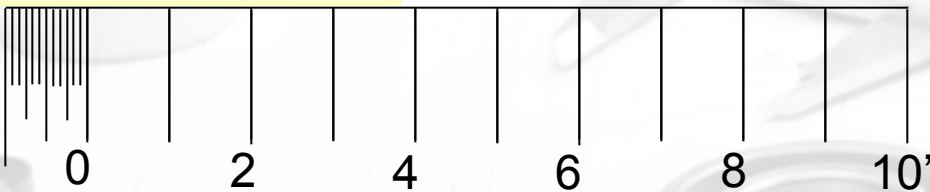


Scales

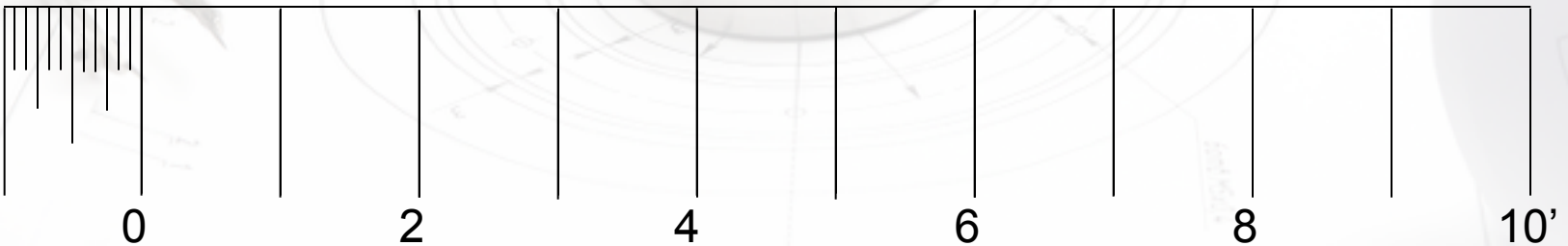
SCALE: $\frac{1}{8}"=1'$



SCALE: $\frac{3}{16}"=1'$



SCALE: $\frac{1}{4}"=1'$



*Drawing not to scale

Templates

- Flat plastic pieces with patterned cutouts, used to symbolize objects on a plan
 - usually scaled to $1/4" = 1'$



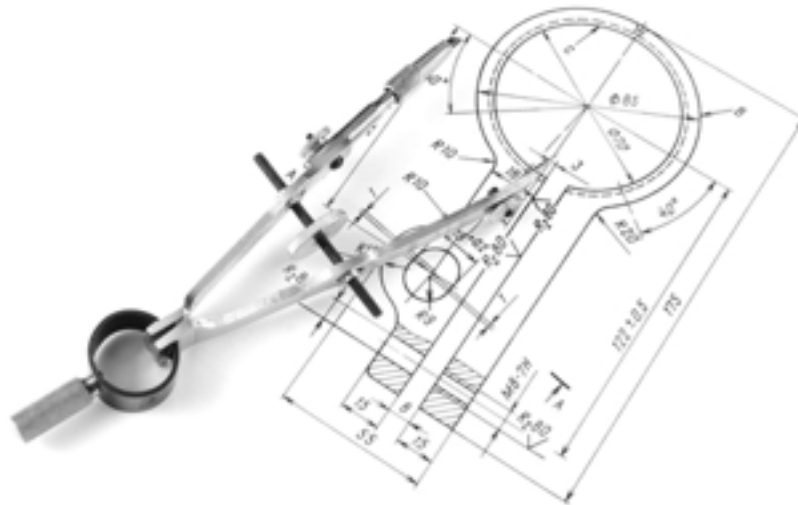
Templates

- Circles are often used to indicate spread of trees
- Shapes can indicate anything from furniture and fixtures to walkways and buildings



Compass

- Used to draw circles and arcs in multiple sizes
- Adjustable
- Can be used if template is not available, or if template does not fit scale



Types of Paper

- Sketch paper
 - comes in many grades and sizes
 - used for preliminary drawings and rough drafts
 - tracing paper used for preliminary drafts



Types of Paper

- Vellum
 - high quality paper
 - whiteness and transparency vary
 - used for drafts and final drawings
 - can come in sheets or a roll



Drafting Tape

- Has a weakened adhesive designed to protect the drawing
- Should not tear or damage paper when adhered to drafting surface
- No other tape should be used, unless specifically designed for drafting
- Use caution when removing tape after drawing is finished



Basic Drafting

- Always dust your drawing area prior to taping down paper
 - debris underneath paper can affect drawing
- Use drafting tape to secure paper to drawing surface
- Pay careful attention to line up drawing exactly parallel to your T-square

Sometimes T-squares are not perpendicularly constructed, so lining the paper up with your T-square instead of the table insures straight lines every time

Basic Drafting

- Hold the pencil at a 45 degree to 60 degree angle
- Do not push the pencil to draw the line, pull it
- Rotate pencil in hand while drawing
 - helps maintain the point of the lead and decreases amount of sharpening needed



Basic Drafting

- When inking drawings using a T-square, triangles or templates, wipe edges to remove excess ink to prevent smearing
- Take care to lift template straight up after drawing to prevent smearing



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