

Source: www.bls.go



DRAFTING TECHNIQUES IN LANDSCAPE DESIGN



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Purpose of Drafting

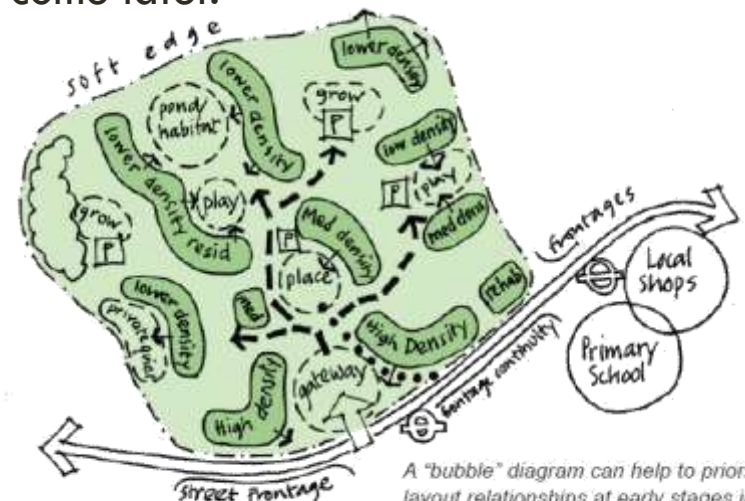
- **The purpose of drafting is to enable a designer to take an idea in their head and put it on paper.**
 - It may seem obvious, but without the ability to draft your ideas on paper (or using technology), there is no way for a designer to show their customers the ideas they intend to eventually sell to them.
 - Even for homeowners who are only creating a project for their own needs, drafting enables the designer to better plan their projects, avoid problems and pitfalls, and ensure that their design is appropriate for the space in which it will occur.
 - Without skills and abilities in regards to drafting, there is a minimal likelihood that you'll be able to effectively translate the ideas in your head into a reality.





Steps of Drafting

- Typically a designer will follow a sequence of steps similar to those below when drafting their ideas.
 - These include 1) program development, 2) inventory & analysis, 3) design development (including preliminary design and conceptual design), and 4) construction documentation.
- The first step of drafting is program development.
 - This is the phase in which the designer researches their property and its owners/users, and gathers information from owners and other people who will be affected by the project.
 - The designer is trying to ascertain the specific goals that the users of this site have in mind for the design (and eventual landscape) that is to come later.
 - The focus is on the facts, attitudes, needs, wants, opportunities, and limitations of this site and primarily consists of discussions with the people who will be most affected by the future design.
 - Drawings are seldom needed at this stage – this is really just about obtaining the needed facts in order to shape the design planning.



Source: www.hertslink.org

figure 3: bubble diagram

A "bubble" diagram can help to prioritise layout relationships at early stages in the design process, without the need to design specific building shapes.

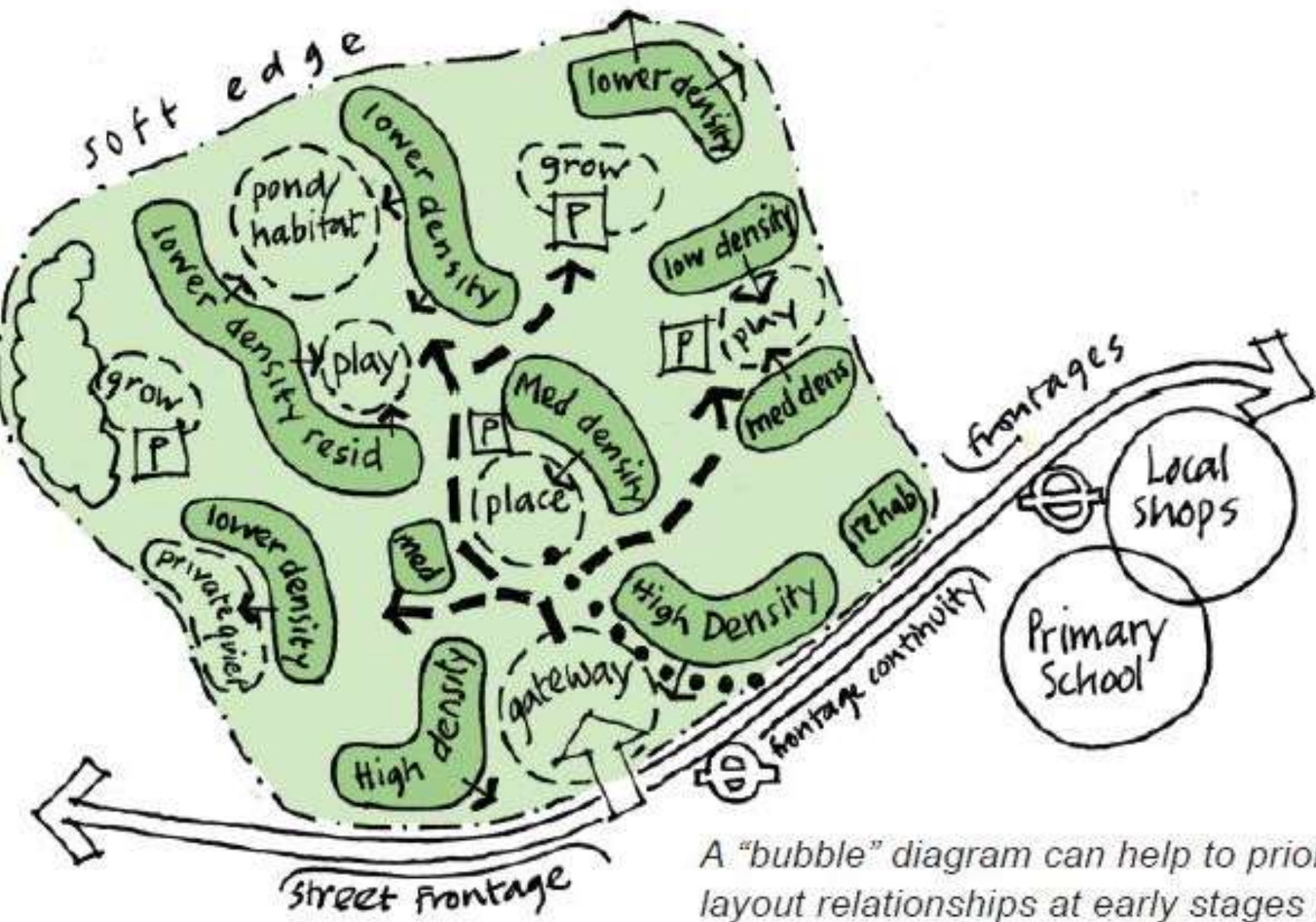


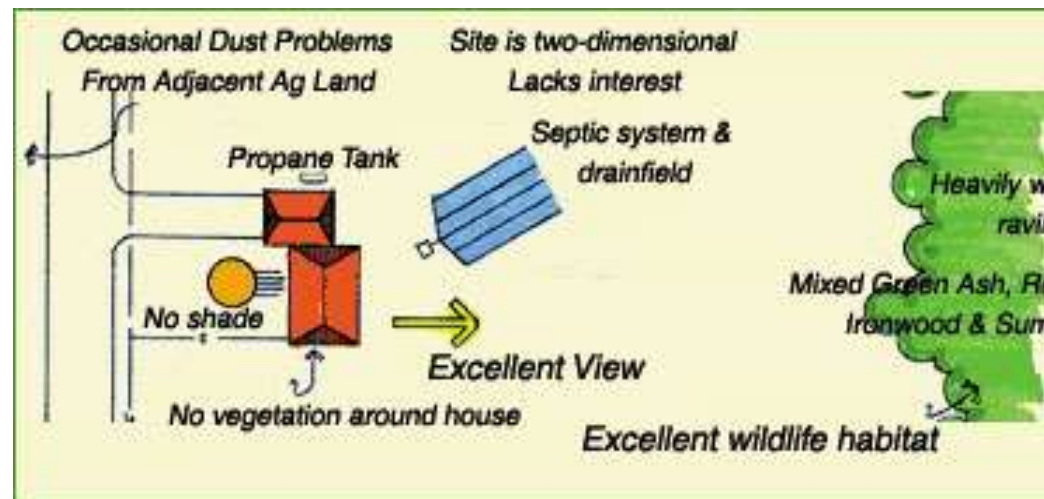
Figure 3: bubble diagram

A "bubble" diagram can help to prioritise layout relationships at early stages in the design process, without the need to design specific building shapes.



Steps of Drafting

- **The next step is inventory and analysis.**
 - In this stage, the designer gathers information about the physical characteristics of this site, including property lines, building dimensions, vegetation, topography, soils, views, and other factors.
 - Inventory involves recording the objective site data (anything involving a number, such as the length and width of the property, the USDA plant hardiness zone, slope, etc.).
 - Site analysis involves the subjective evaluation, which could include suggestions that the designer has in regards to the opportunities and limitations of that site based on the inventory.
- **It is in this stage that the designer should start to produce some plan view drawings that explain the existing conditions and provide some rough ideas of the existing conditions.**
 - This is likely a mix of rough sketches (or outlines) as well as written notes on the plan.





Steps of Drafting - Design

- **The third step is design development.**
 - Design development tends to entail the largest portion of landscape drafting and can be broken into two steps: *conceptual design* and *preliminary design*.
- **Conceptual design is where the earliest ideas begin to develop in regards to the changes that you'll be making to this landscape.**
 - These designs are usually very rough and are typically only be meant to be seen by the designer as he or she tries to organize their thoughts and stimulate creativity.
 - A conceptual design can be very loose; even bubbles with written descriptions can suffice in this stage. The key is that the designer uses the conceptual design to narrow their focus for each individual component of this landscape.





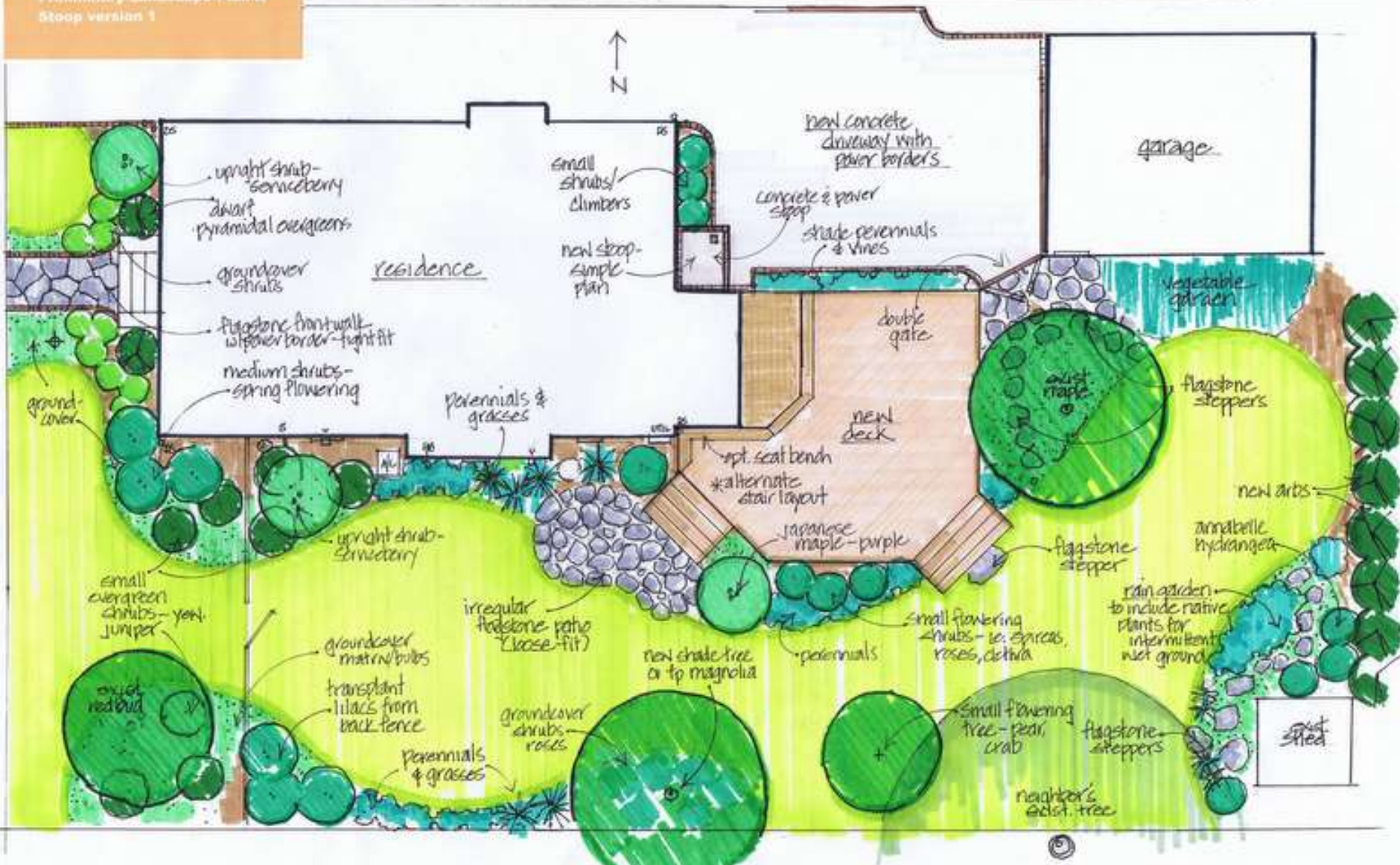
Preliminary Design

- **Preliminary design is where the ideas from the conceptual design become refined and shaped by the constraints and unifying themes of the design as they develop.**
 - It is at this stage that the designer begins to choose materials, color schemes, and potential uses and benefits of the new design.
 - It is typically at the completion of this stage that the designer makes their first presentation of their ideas to their client, if they have one.
- **The designer should present to the client knowing that they may have to start over from the beginning if their client does not like their ideas or their direction.**
 - Obtaining honest feedback from their client is vital at this stage to prevent costly setbacks should the client not like the landscape as it is being installed (or worse, after it is installed).
 - Because this is usually the first chance for client feedback, the designer should create a refined drawing for this presentation.
- **The presentation should be realistic, convincing, colorful, and should include a combination of perspectives (bird's-eye view, cross-section, etc.).**
 - The presentation should include enough detail and be made with enough effort that the need for text is minimal or nonexistent.



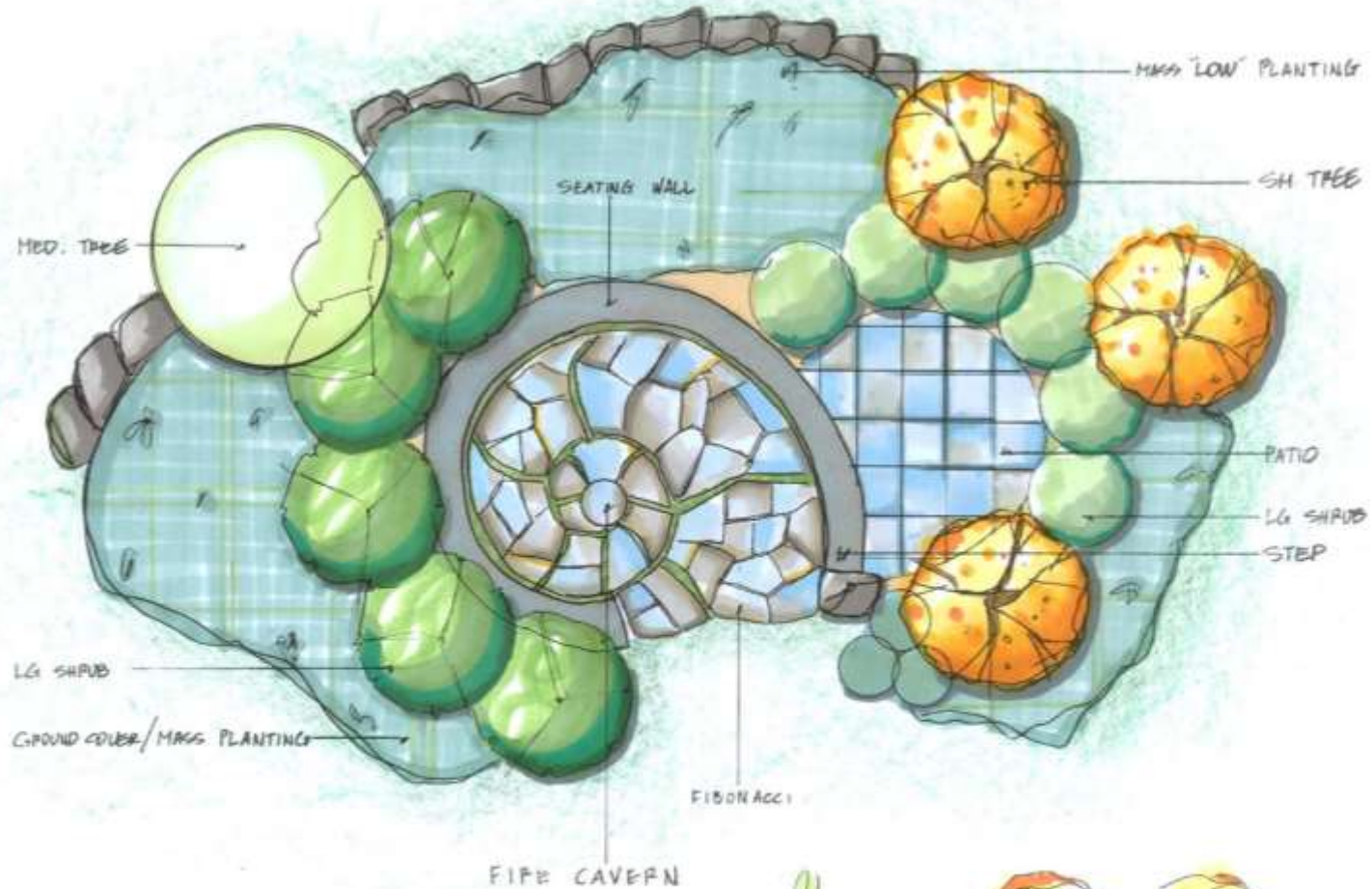
Example Preliminary Design

Preliminary Landscape Plan A
Stoop version 1





Example Preliminary Design





Steps of Drafting

- **The final step of landscape drafting is construction documentation.**
 - This is where the ideas are finalized into the documents that will provide the specifics necessary for the construction of the landscape.
 - Once this stage is reached, there should be little if any changes made to the documents; any changes should occur prior to this during the preliminary design.
 - The purpose of the documents created during the construction documentation is to provide clear, specific instructions to those who will be creating the landscape and should include exact sizes, quantities, locations, and material types.

Sample Construction Documentation



PLANT LEGEND - SHRUBS

Symbol	Quantity	Plant Name	Notes
[Symbol]	10	Red-Twig Dogwood	10x12
[Symbol]	10	Winterthur Spirea	10x12
[Symbol]	10	Winterthur Spirea	10x14
[Symbol]	10	Winterthur Spirea	10x16
[Symbol]	10	Winterthur Spirea	10x18
[Symbol]	10	Winterthur Spirea	10x20
[Symbol]	10	Winterthur Spirea	10x22
[Symbol]	10	Winterthur Spirea	10x24
[Symbol]	10	Winterthur Spirea	10x26
[Symbol]	10	Winterthur Spirea	10x28
[Symbol]	10	Winterthur Spirea	10x30
[Symbol]	10	Winterthur Spirea	10x32
[Symbol]	10	Winterthur Spirea	10x34
[Symbol]	10	Winterthur Spirea	10x36
[Symbol]	10	Winterthur Spirea	10x38
[Symbol]	10	Winterthur Spirea	10x40
[Symbol]	10	Winterthur Spirea	10x42
[Symbol]	10	Winterthur Spirea	10x44
[Symbol]	10	Winterthur Spirea	10x46
[Symbol]	10	Winterthur Spirea	10x48
[Symbol]	10	Winterthur Spirea	10x50

PLANT LEGEND - PERENNIALS

Symbol	Quantity	Plant Name	Notes
[Symbol]	10	Black-eyed Susan	10x12
[Symbol]	10	Black-eyed Susan	10x14
[Symbol]	10	Black-eyed Susan	10x16
[Symbol]	10	Black-eyed Susan	10x18
[Symbol]	10	Black-eyed Susan	10x20
[Symbol]	10	Black-eyed Susan	10x22
[Symbol]	10	Black-eyed Susan	10x24
[Symbol]	10	Black-eyed Susan	10x26
[Symbol]	10	Black-eyed Susan	10x28
[Symbol]	10	Black-eyed Susan	10x30
[Symbol]	10	Black-eyed Susan	10x32
[Symbol]	10	Black-eyed Susan	10x34
[Symbol]	10	Black-eyed Susan	10x36
[Symbol]	10	Black-eyed Susan	10x38
[Symbol]	10	Black-eyed Susan	10x40
[Symbol]	10	Black-eyed Susan	10x42
[Symbol]	10	Black-eyed Susan	10x44
[Symbol]	10	Black-eyed Susan	10x46
[Symbol]	10	Black-eyed Susan	10x48
[Symbol]	10	Black-eyed Susan	10x50

PLANT LEGEND - GRASSES

Symbol	Quantity	Plant Name	Notes
[Symbol]	10	Blue Fescue	10x12
[Symbol]	10	Blue Fescue	10x14
[Symbol]	10	Blue Fescue	10x16
[Symbol]	10	Blue Fescue	10x18
[Symbol]	10	Blue Fescue	10x20
[Symbol]	10	Blue Fescue	10x22
[Symbol]	10	Blue Fescue	10x24
[Symbol]	10	Blue Fescue	10x26
[Symbol]	10	Blue Fescue	10x28
[Symbol]	10	Blue Fescue	10x30
[Symbol]	10	Blue Fescue	10x32
[Symbol]	10	Blue Fescue	10x34
[Symbol]	10	Blue Fescue	10x36
[Symbol]	10	Blue Fescue	10x38
[Symbol]	10	Blue Fescue	10x40
[Symbol]	10	Blue Fescue	10x42
[Symbol]	10	Blue Fescue	10x44
[Symbol]	10	Blue Fescue	10x46
[Symbol]	10	Blue Fescue	10x48
[Symbol]	10	Blue Fescue	10x50

PLANT LEGEND - GROUNDCOVER

Symbol	Quantity	Plant Name	Notes
[Symbol]	10	Creeping Juniper	10x12
[Symbol]	10	Creeping Juniper	10x14
[Symbol]	10	Creeping Juniper	10x16
[Symbol]	10	Creeping Juniper	10x18
[Symbol]	10	Creeping Juniper	10x20
[Symbol]	10	Creeping Juniper	10x22
[Symbol]	10	Creeping Juniper	10x24
[Symbol]	10	Creeping Juniper	10x26
[Symbol]	10	Creeping Juniper	10x28
[Symbol]	10	Creeping Juniper	10x30
[Symbol]	10	Creeping Juniper	10x32
[Symbol]	10	Creeping Juniper	10x34
[Symbol]	10	Creeping Juniper	10x36
[Symbol]	10	Creeping Juniper	10x38
[Symbol]	10	Creeping Juniper	10x40
[Symbol]	10	Creeping Juniper	10x42
[Symbol]	10	Creeping Juniper	10x44
[Symbol]	10	Creeping Juniper	10x46
[Symbol]	10	Creeping Juniper	10x48
[Symbol]	10	Creeping Juniper	10x50

PLANT LEGEND - TREES

Symbol	Quantity	Plant Name	Notes
[Symbol]	10	Redwood	10x12
[Symbol]	10	Redwood	10x14
[Symbol]	10	Redwood	10x16
[Symbol]	10	Redwood	10x18
[Symbol]	10	Redwood	10x20
[Symbol]	10	Redwood	10x22
[Symbol]	10	Redwood	10x24
[Symbol]	10	Redwood	10x26
[Symbol]	10	Redwood	10x28
[Symbol]	10	Redwood	10x30
[Symbol]	10	Redwood	10x32
[Symbol]	10	Redwood	10x34
[Symbol]	10	Redwood	10x36
[Symbol]	10	Redwood	10x38
[Symbol]	10	Redwood	10x40
[Symbol]	10	Redwood	10x42
[Symbol]	10	Redwood	10x44
[Symbol]	10	Redwood	10x46
[Symbol]	10	Redwood	10x48
[Symbol]	10	Redwood	10x50

PLANT LEGEND - GROUNDCOVER AREAS

Symbol	Quantity	Plant Name	Notes
[Symbol]	10	Creeping Juniper	10x12
[Symbol]	10	Creeping Juniper	10x14
[Symbol]	10	Creeping Juniper	10x16
[Symbol]	10	Creeping Juniper	10x18
[Symbol]	10	Creeping Juniper	10x20
[Symbol]	10	Creeping Juniper	10x22
[Symbol]	10	Creeping Juniper	10x24
[Symbol]	10	Creeping Juniper	10x26
[Symbol]	10	Creeping Juniper	10x28
[Symbol]	10	Creeping Juniper	10x30
[Symbol]	10	Creeping Juniper	10x32
[Symbol]	10	Creeping Juniper	10x34
[Symbol]	10	Creeping Juniper	10x36
[Symbol]	10	Creeping Juniper	10x38
[Symbol]	10	Creeping Juniper	10x40
[Symbol]	10	Creeping Juniper	10x42
[Symbol]	10	Creeping Juniper	10x44
[Symbol]	10	Creeping Juniper	10x46
[Symbol]	10	Creeping Juniper	10x48
[Symbol]	10	Creeping Juniper	10x50



Project: **NORTH ACADEMY PLANTING PLAN**

Client: **WEL TENNIS ACADEMY 438 BRYANT CIRCLE OVAL, CA 95073**

Designer: **Bill Mellett Design**

Scale: **1" = 10'-0"**

Sheet: **L5.0**

Sample Construction Documentation



OUTLINE SPECIFICATION

1. Marshalls Tegula concrete setts -160 gauge - Medium 160 x 160 x 60mm depth. Harvest colour, laid in soldier course secured with concrete footing and haunching.
 2. Marshalls Saxon Paving, 600 x 600 x 50 mm depth, Buff colour, laid on a sand bed, on 150mm consolidated depth of MOT Type 1 sub base. Joints to have sand brushed in - all in accordance with Marshalls recommended laying specifications, inc. drainage falls.
 3. Steps to Performance Area - Marshalls Tegula Kerb Setts, 130 x 160 x 250mm, Harvest colour, laid on end with straight edge exposed, to a height of 150mm above ground, to create two steps up to 'performance area' (chamfered and to be buried), laid on full concrete footing and haunching. To be buff jointed, 3-4mm joints if feasible (Allow provisionally for 10mm wide mortared joints if necessary). Step treads each to be approx 490mm wide comprising 160mm wide kerb sett and two courses of 160mm wide setts per step.
 4. Marshalls Tegula concrete sett paving - 160 gauge, Harvest colour, laid in random stretcher course comprising a mix of 240 x 160mm, 160 x 160mm, and 160 x 120mm modules. Laid on sand bed, on 150mm well consolidated depth of MOT Type 1 sub-base, with sand brushed in joints. All to be carried out in accordance with Marshalls recommended specification, inc recommended drainage falls. Raised Performance Area (300mm height) to be built up in additional depth as necessary of well consolidated MOT Type 1 sub base, prior to laying Tegula.
 5. Localised retaining edge to end of steps to be agreed - eg. Tegula kerb setts on end, or 'splayed cut' Saxon flag on end - set in concrete footing and haunching.
 6. Pea gravel building trim - 50mm depth of 6-10mm buff/yellow pea gravel, on a 100mm consolidated depth MOT Type 1 sub base, with 38mm x 200mm ex jaws pressure treated softwood edging boards 200mm long, fixed at 850 centres and corners with 50 x 50 x 600mm long pressure treated softwood pegs.
 7. Pergola archways - HLD System 2 - Single Bay Single Line Kit Ref: U2SLP1, set to a width of 2750mm wide between internal side of double post supports, to a height of 2.6 metres to top of support posts, with 1 metre set below ground in concrete foundations and haunching. Allow for 2 no coats of an approved 'Valis' wood stain, colour and type to be agreed.
 8. Seating benches - 2000mm or 1800mm length - type to be agreed. To be 'fixed' with roof fixing underground in concrete /or as recommended by manufacturer.
 9. Planting Areas - to receive 400mm of approved quality topsoil in accordance with BS 3882, cultivated with 70g/m2 Enmag fertilizer granules worked in, and a 75mm depth layer of medium grade bark mulch introduced once planted.
 10. Tree pits 1000mm3 backfilled with 80% approved quality topsoil, and 20% approved peat free compost, with Enmag fertilizer worked in at a rate of 70g/m2. Trees to be staked with 2 no, 100mm dia treated softwood stakes pointed at one end. Stakes to be driven into existing ground beneath tree pit 300mm min. Top of stakes to be 750mm above ground and fixed to tree with a suitable rubber tie. Allow for watering in well to all trees and shrub beds.
 11. External tap located in position i.b.a. adjacent to existing building.
 12. Electrical Supply point and external box to be provided for potential courtyard lighting.
 13. Indicative locations for courtyard lighting bollards, or solar powered lighting bollards - type and precise locations to be agreed with advice from electrical engineer.
 14. Ramps from performance area into seating areas. To be 1:12 gradient if feasible over 1.8 metres length. Levels to small seating areas to be raised as necessary to accommodate level at base of ramp, with drainage falls into shrub beds.
 15. Urter bins - type to be agreed to tie in with choice of seating.
 16. Ramps from building floor level (+150mm) down to external paving levels. To be 'splayed' as necessary at right angles to allow access to adjacent seating areas.
- N.B. Levels provided to ramps and steps (eg. +150) are indicative, in mm.

DETAILED LANDSCAPE PROPOSALS

PHASE 4 : LARGE INTERNAL COURTYARD

St Mary's Catholic College, Wallasey

ARCHITECTS : CRUICKSHANK & SEWARD

Date : Jan 2006 Scale : 1:100 Drawn : MT Drawing No. 185.03

Margaret Twigg Dip LA MLI

Chartered Landscape Architect

18 Brayton Avenue • Didsbury • Manchester • M20 5LP

Telephone and Facsimile: 01 61 445 8369



CADD vs. Drafting by Hand

- **Most preparation of landscape design materials is now completed using modern technology, particularly computer-aided drafting and design (CADD).**
 - While manual drafting skills are now less necessary and less common in the professional landscape architectural field, there is still a need to learn these manual skills for several reasons.
 - First, most individuals develop landscapes not for professional companies but for their own personal property. While CADD would certainly be a valuable tool for these purposes, it is not necessary to invest in classes and software if you can complete small designs by hand (and it is sometimes faster).
 - Secondly, manual drafting serves as a valuable means of communicating ideas to clients and coworkers, especially in the initial stages of design.
 - Finally, manual drafting provides opportunities in regards to artistic development and expressive styles than the more rigid conventions found in CADD technology.

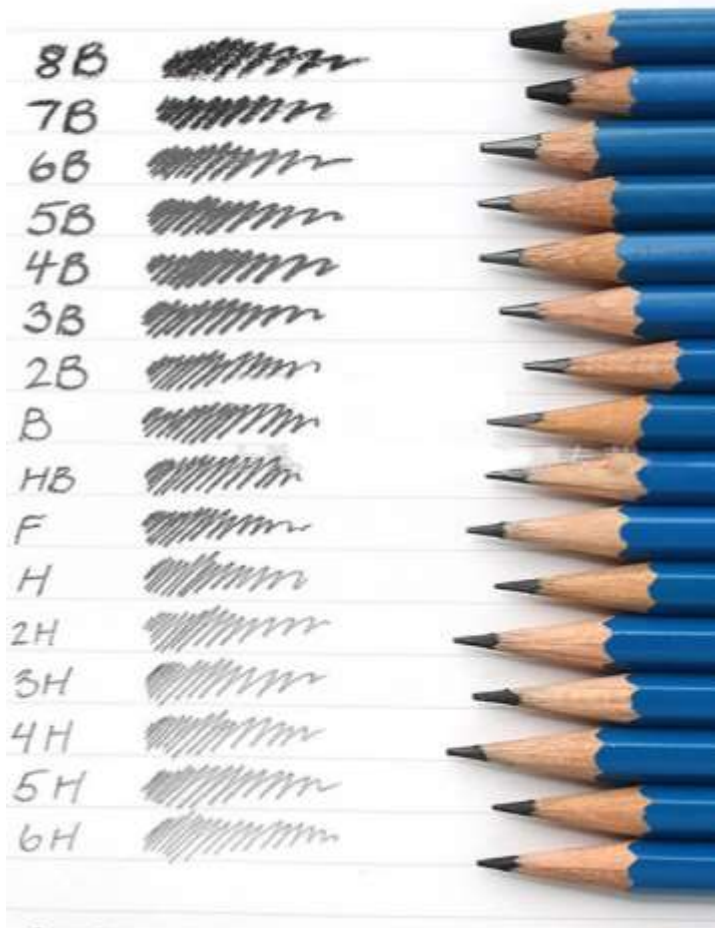




Tools of Drafting

- **Pencil and paper is still a preferred medium for many designers because it is easy to use, easy to change, and easy to manipulate on paper in order to create depth and dimension.**
 - Most designers will choose a mechanical pencil over a traditional pencil due to its uniformity.
- **Pencil lead comes in many different hardnesses, including:**
 - HB Soft – for wider, darker lines.
 - H medium – all purpose lead for a variety of purposes.
 - 2H to medium hard – designed for fine, precision work. Difficult to erase but will not smudge.
 - 4H hard – for any lines that need to be light (such as guidelines).

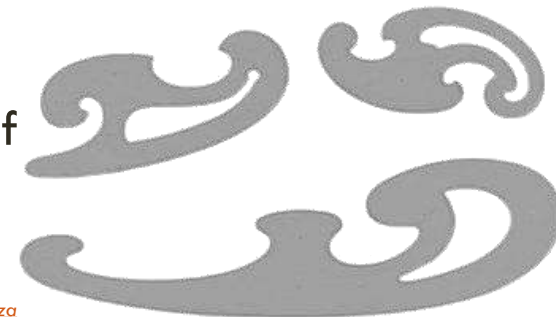
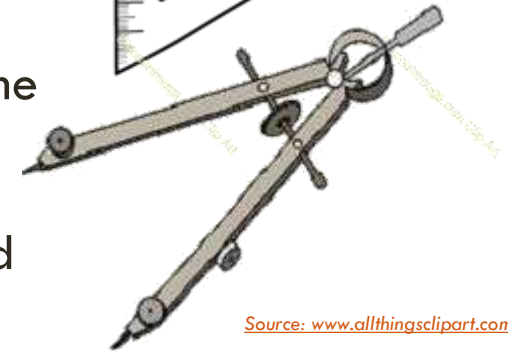
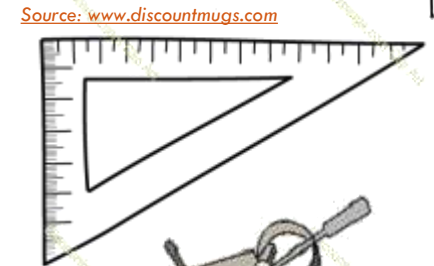
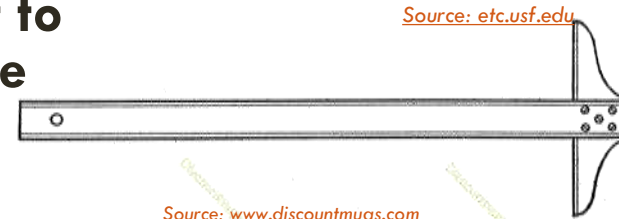
STAEDTLER MARS LUMOGRAPH
GRAPHITE WOODEN PENCILS





Tools of Drafting

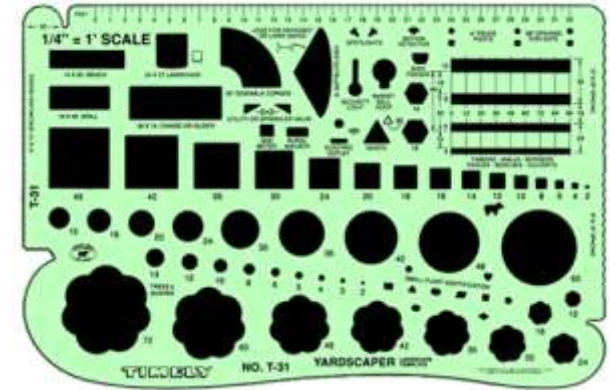
- Besides the pencil, a wide variety of tools exist to enable the designer to create their design. These tools include the following:
 - T-Square – these are long rulers with a perpendicular guide to help the designer draw perfectly parallel lines.
 - Triangle – these are used to draft straight lines in a variety of directions. Some are adjustable to enable the designer to create lines at any angle.
 - Compass – these are used to create perfect circles and arcs.
 - French curve – these are plastic or wooden templates that enable the designer to create curves of any kind of curvature as needed.





Tools of Drafting

- ❑ Template – this is a sheet or piece of flat plastic with circles, squares, ovals, and other shapes to guide the designer in drawing these shapes as needed in their design.
- ❑ Eraser – as most people know, the eraser exists to eliminate mistakes. However, most designers choose to use erasers other than the pink kind common in elementary school. The kneaded eraser is especially valuable for removing pencil marks without smudging.



Source: www.timelytemplates.com



Source: www.amazon.com



Tools of Drafting

- Erasing shield – sometimes it is necessary to erase only a small, specific portion of the design. Erasing shields enable the designer to only remove a specific area of their design in a specific shape without affecting any of the other components.



Source: davinciartistsupply.com

- Drafting brush – with erasing and pencils will come dust, debris, and loose graphite. A brush is necessary to ensure that the designer does not accidentally create stray marks on their design when clearing away debris.



Source: www.isubookstore.com



Tools of Drafting

- Scales – architects' scales are specialized rulers with multiple units of length and proportional length increments to enable the designer to draw their entire design using appropriate scale (e.g. 1 inch equals 10 feet, or 1:10). In the US, usually the first number in the units scale is inches and the second is feet.



Source: www.draphixdirect.com

- Drafting tape – this is used to secure the paper on which the design is made so that it does not shift during the creation of the design. The best kinds hold securely but peel off without ripping the paper.

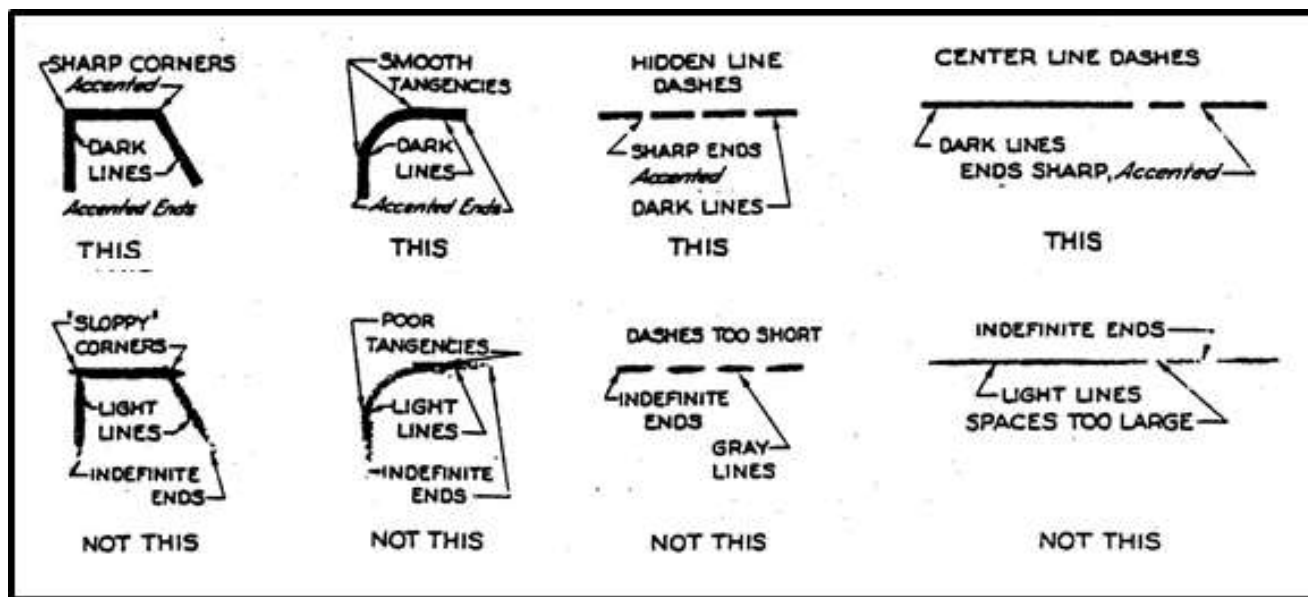


Source: www.jerrysartarama.com



Drawing Lines

- Drawing a line may sound pretty simple – you’ve probably been doing since you were age 5.
- However, there are 3 keys to creating high quality lines that are necessary for a valuable design drawing.
 - 1. Density (or value) of the line: this depends on the lead of the pencil and the paper (textured paper has more “grip” and will result in a darker line than smoother paper).
 - 2. Width of the line.
 - 3. Consistency of the line.





Drawing Lines

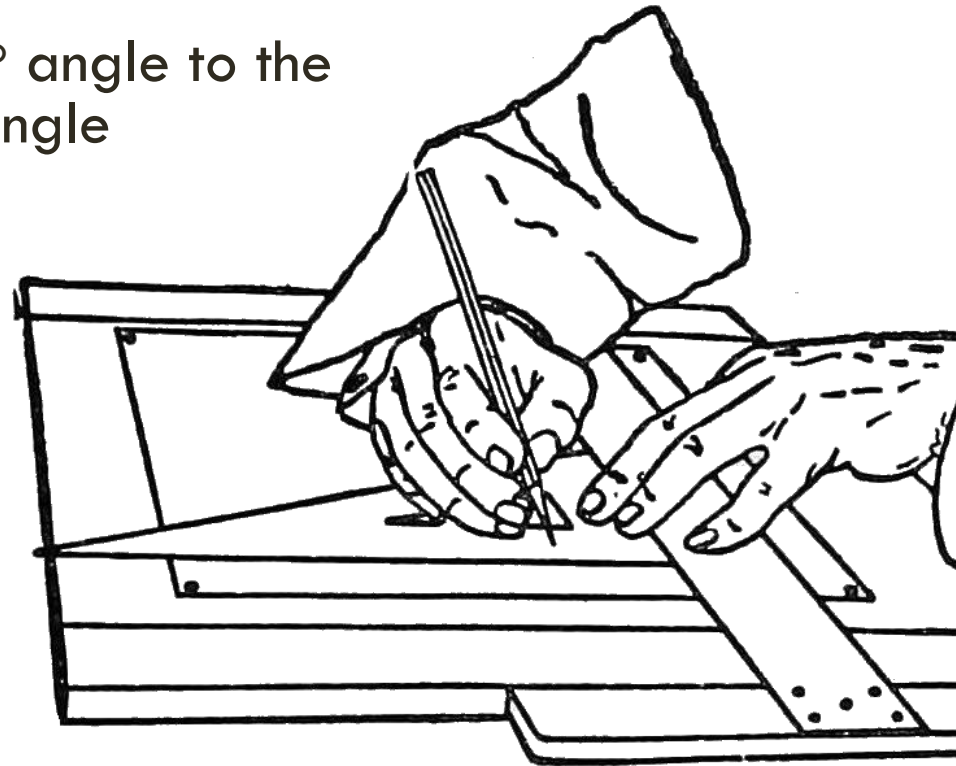
- **Drawing high quality lines in your design requires more focus and technique than most people are used to applying.**
 - ▣ Begin by tapping off the very tip of a newly sharpened pencil by tapping it gently on scratch paper. This will ensure that your lines have the appropriate width and consistency.
 - ▣ Next, round the corners by making a few marks on scratch paper while turning the pencil slightly.
 - ▣ Hold your pencil at a slight angle when using it. This will provide more area for the lead to grip the paper; be careful not to angle the pencil too much or the lead will break.





Drawing Lines

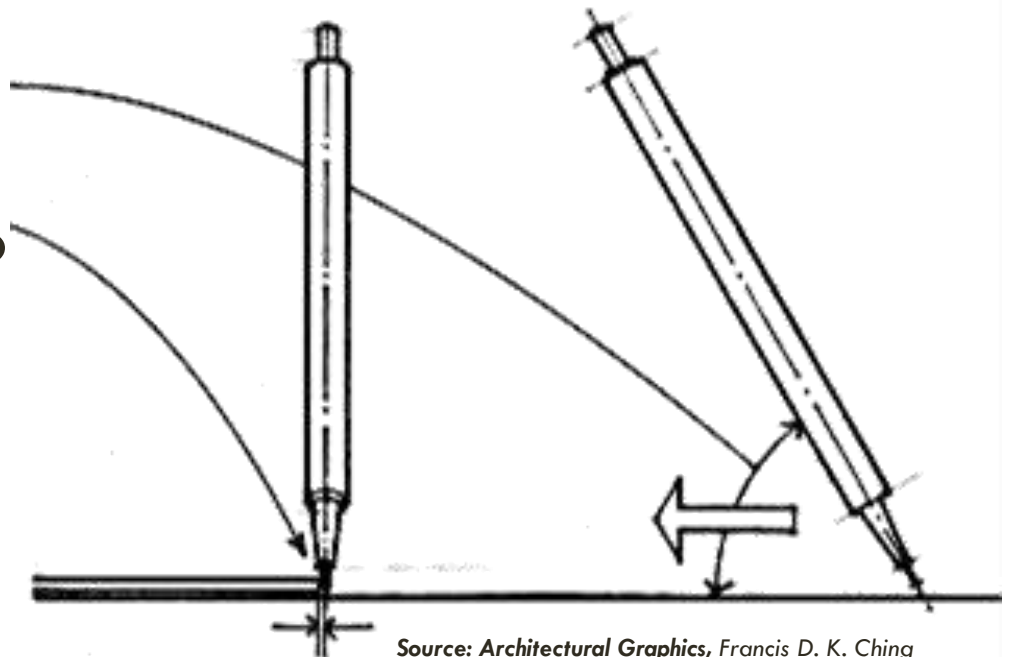
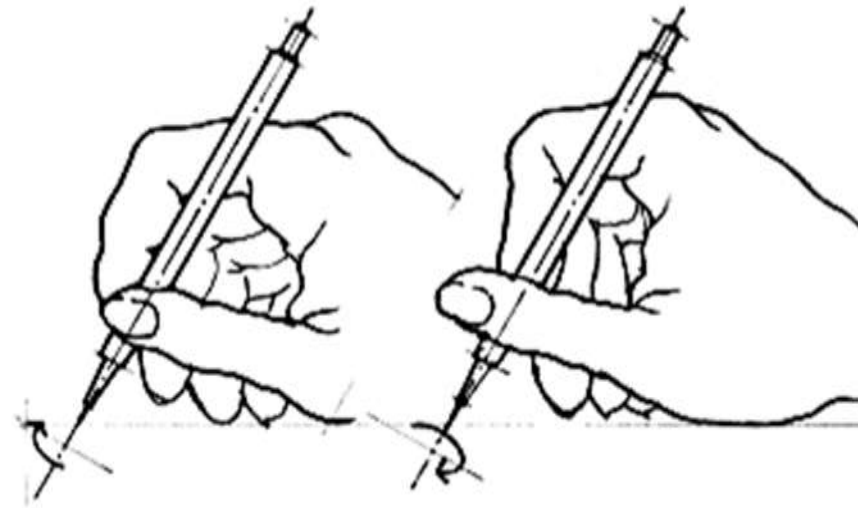
- **When drawing straight lines, be sure to always use a straight edge, particularly a T-square if possible.**
 - Use your non-dominant hand to make sure the straightedge is held firmly against the paper.
 - Always keep the lead at a 90° angle to the straight edge (but at a slight angle to the paper).
 - Roll the pencil slightly as you draw to ensure that the lead has even contact with the paper (1/2 roll max).





Drawing Lines

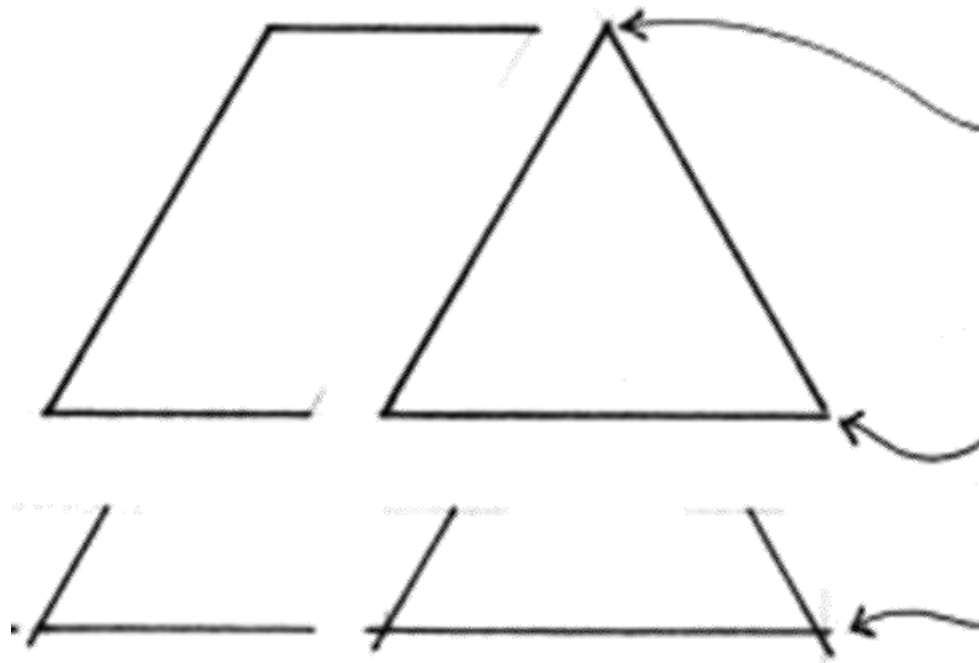
- **Steps of Drawing a Line**
 - ▣ 1. Tap the pencil on the paper.
 - ▣ 2. Round out the lead.
 - ▣ 3. Hold at an angle.
 - ▣ 4. Use a straightedge.
 - ▣ 5. Keep the pencil 90° to the straightedge.
 - ▣ 6. Roll the pencil slightly as you draw the line. ↗





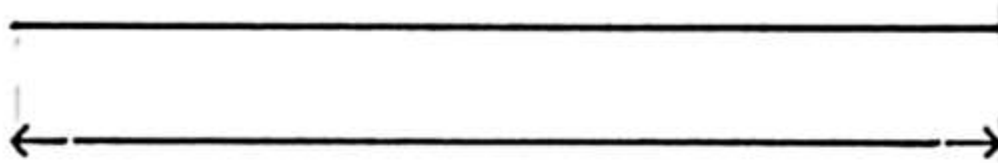
Drawing Lines

- **When connecting lines (for example, to make a 90° angle), make sure that your lines touch or have just a slight overlap.**
- ▣ Make sure you have no weak corners (where the lines do not touch) and avoid excessive overlap.





Drawing Lines



- The density and weight of a line should be as uniform as possible along its entire length.
- Drafted lines should have a taut quality, as if stretched tightly between two points.



- Avoid drawing a line as a series of short overlapping strokes.



All lines should meet crisply at corners.



When lines stop short of a corner, the resulting angle will appear to be soft or rounded.

Avoid excessive overlapping that appears out of proportion to the size of a drawing.



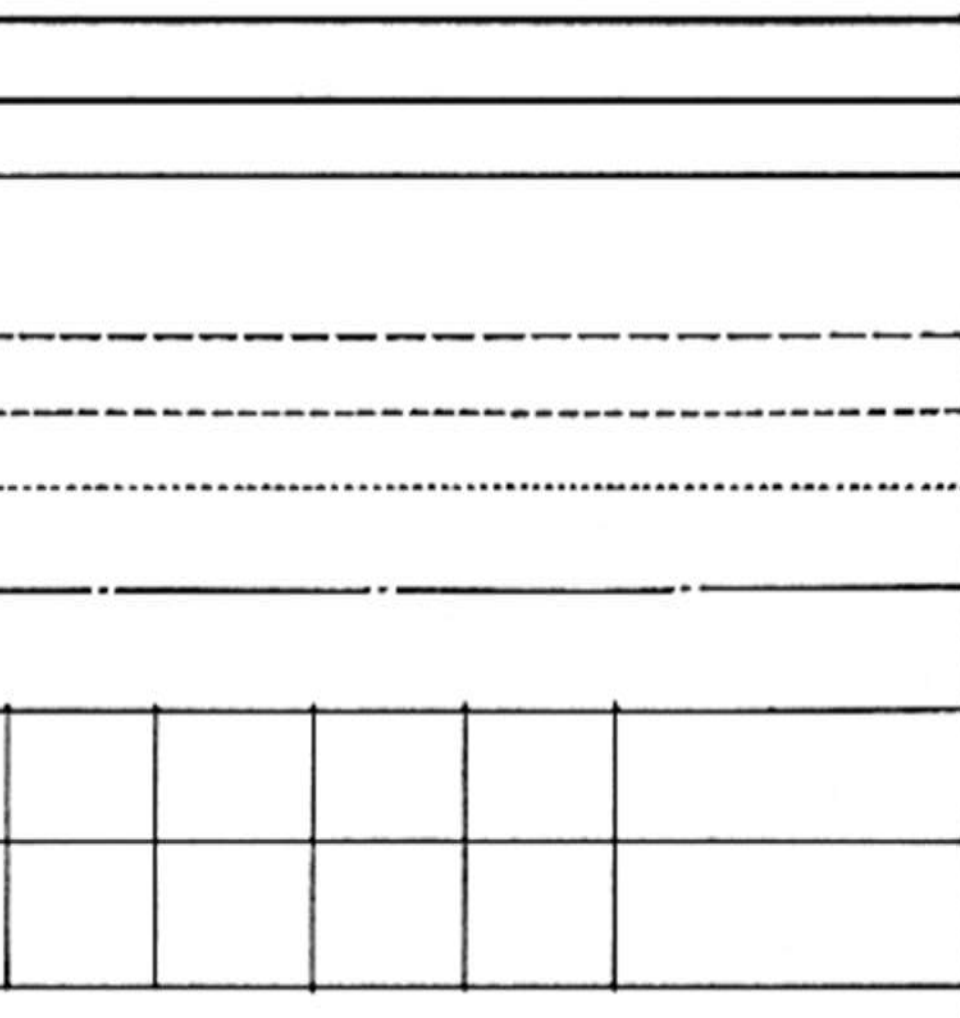
Drawing Lines

- **When starting a design, it is best to begin with your arcs and curves and then connect them with straight lines.**
 - Use harder lead (if you have multiple kinds of lead) for the arcs and softer, darker lead for straight lines.
 - This will allow you to more easily correct mistakes if your arcs are incorrect.
 - Finally darken your lines once you are sure they are correct and add shading, texture, and other necessary details.





Types of Lines



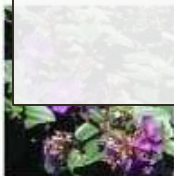
- Solid lines delineate the form of objects, such as the edge of a plane or the intersection of two planes. The relative weight of a solid line varies according to its role in conveying depth.
- Dashed lines, consisting of short, closely spaced strokes, indicate elements hidden or removed from our view.
- Centerlines, consisting of thin, relatively long segments separated by single dashes or dots, represent the axis of a symmetrical object or composition.
- Grid lines are a rectangular or radial system of light solid lines or centerlines for locating and regulating the elements of a plan.



Title Blocks

PLANT SCHEDULE	COMMON NAME	SYMBOL	PLANT NO.	QUANTITY
1
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- Landscape drawings should include title blocks if they will be used in a presentation. →
 - A title block is a section on the bottom or right edge of the presentation that includes necessary information about the presentation.
 - This information includes the project name and address, the designer and company, dates, scale, north indicator, and other pertinent information.



SYMBOL	SCEN. ITC. NAME	COMMON NAME	PLANT NO. SQFT	QUANTITY
...
...
...
...

PLANTING PLAN
SCALE: 1/8" = 1'-0"

TITLE
PP-1

DESIGNER
LEILA

NOTES
1. This is a conceptual landscape design plan and only shows the design intent. It is not a construction drawing and therefore does not show all details. All construction items, the property owner and/or contractor shall determine all final dimensions and construction on details. Contractor is responsible for all necessary building permits.
2. This is not a site plan and only shows general layout of the site. Property measurements should be used in conjunction with a final detailed survey if required.



JC Enterprise Services, Inc.

DRAWING BY
ALEFIYA M.C.

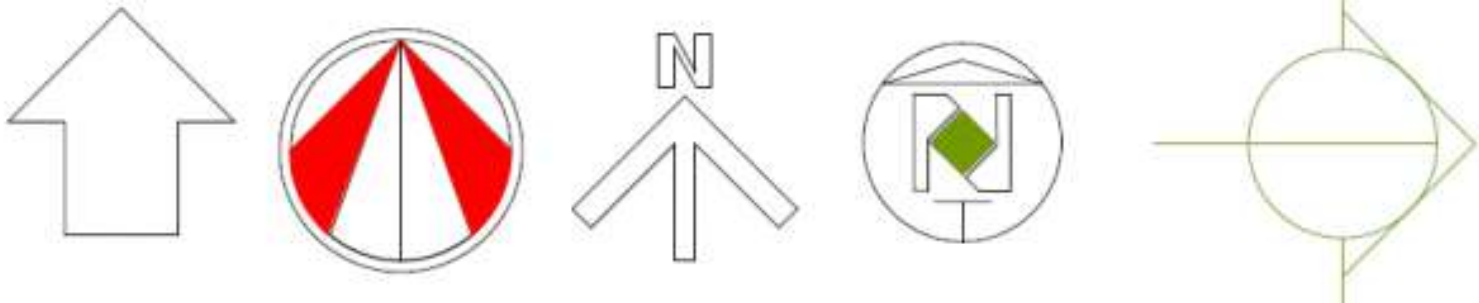
PROJECT
6146

DATE: **09-25-03** REV: **00X**



North Indicators

- **North indicators should be included in every landscape plan in order to help the designer and viewer orient their eyes.**
 - ▣ North indicators are usually just a large, unmistakable arrow.
 - ▣ While the north indicator is necessary to help the viewer make sense of the drawing, it is also necessary to understand environmental factors such as the position of the sun, wind direction, slope, and other factors.
 - ▣ The north indicator should always be near the scale.





Scale Indicators

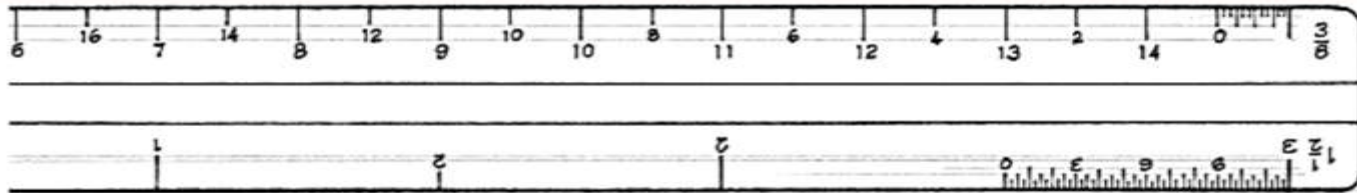
- **Every landscape drawing must include a scale indicator.**
 - This shows the difference in size between the drawing and the actual landscape.
 - The scale is expressed as either a ratio or an equation (or both).
 - There are three options for the scale: architects', engineers', and metric.





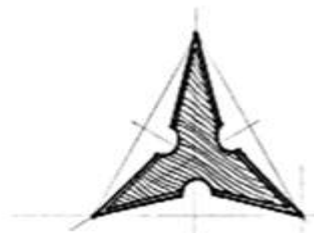
Architect's Scales

- **Architects' scales** are written as a fraction with an inch on the left and the feet on the right.
- For example, $1/4'' = 1'-0''$ would mean that $1/4$ of an inch on the drawing equals one foot in real life.
- Architects' scales are always written with a fraction of an inch on the left and a dashed-number on the right.



Architect's Scales

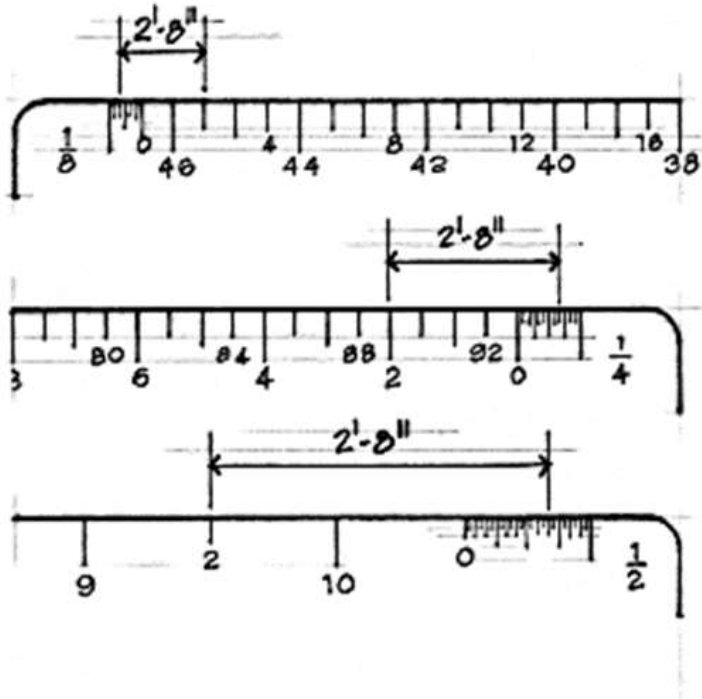
An architect's scale has graduations along its edges so that scale drawings can be measured directly in feet and inches.



- Triangular scales have 6 sides with 11 scales, a full-size scale in $1/16''$ increment, as well as the following architectural scales: $3/32''$, $3/16''$, $1/8''$, $1/4''$, $1/2''$, $3/8''$, $3/4''$, $1''$, $1\frac{1}{2}''$, and $3'' = 1'-0''$.



Architect's Scales



• $\frac{1}{8}'' = 1'-0''$

• $\frac{1}{4}'' = 1'-0''$

• $\frac{1}{2}'' = 1'-0''$

- Both 12" and 6" lengths are available.
- Scales should have precisely calibrated graduations and engraved, wear-resistant markings.
- Scales should never be used as a straightedge for drawing lines.

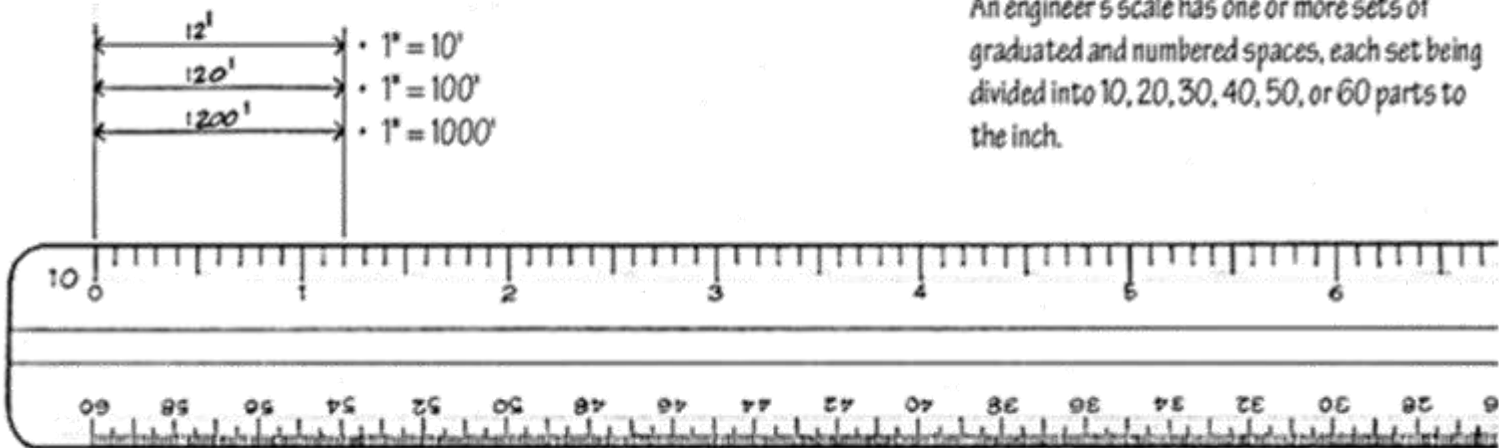
To read an architect's scale, use the part of scale graduated in whole feet and the division of a foot for increments smaller than a foot.

- The larger the scale of a drawing, the more information it can and should contain.



Engineer's Scales

- **Engineers' scales** are written with the unit of 1 inch to the left of the “=” sign and multiples of 10 feet on the right side.
 - For example, 1" = 20' would mean that 1 inch on the drawing is equivalent to 20 feet at the actual landscaping site.
 - Engineers' scales are always written in whole numbers with a multiple of ten on the right.



Engineer's Scales

An engineer's scale has one or more sets of graduated and numbered spaces, each set being divided into 10, 20, 30, 40, 50, or 60 parts to the inch.



Metric Scale

- A design can also use a metric scale, with 1 on the left of a “:” and multiples of ten on the right.
- For example, 1:50 means that one meter on the drawing is equivalent to 50 meters in the landscape.



Metric Scales

Metric scales consist of one or more sets of graduated and numbered spaces, each set establishing a proportion of one millimeter to a specified number of millimeters.

- Common metric scales include the following: 1:5, 1:50, 1:500, 1:10, 1:100, 1:1000, 1:20, and 1:200