Site Plan:

Illustrates the existing natural and built features of a site and describes proposed construction in relation to the existing features. The site plan is essential for studying the influence of the environmental and regulatory factors on the planning, siting, and massing of a building.
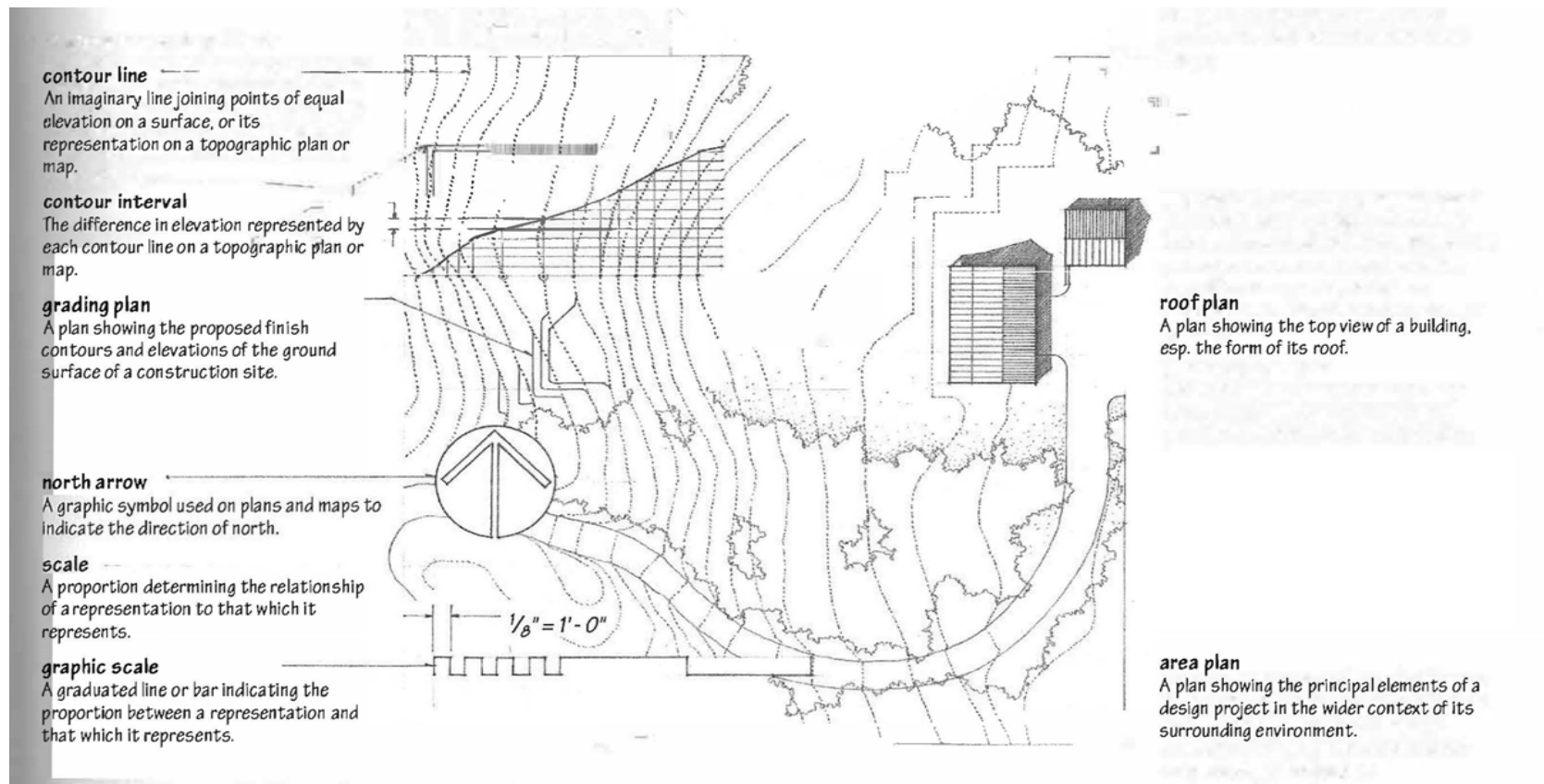
What is a *Site Plan*?

A plan showing the form, location, and orientation of a building or group of buildings on a site; usually including the dimensions, contours, landscaping, and other significant features of the plot. Also call a *plot plan*.

Ching, Francis. *A Visual Dictionary of Architecture*. Van Nostrand Reinhold, 1995.


contour line
An imaginary line joining points of equal elevation on a surface, or its representation on a topographic plan or map.

contour interval
The difference in elevation represented by each contour line on a topographic plan or map.

grading plan
A plan showing the proposed finish contours and elevations of the ground surface of a construction site.

north arrow
A graphic symbol used on plans and maps to indicate the direction of north.

scale
A proportion determining the relationship of a representation to that which it represents.

graphic scale
A graduated line or bar indicating the proportion between a representation and that which it represents.

roof plan
A plan showing the top view of a building, esp. the form of its roof.

area plan
A plan showing the principal elements of a design project in the wider context of its surrounding environment.

$1/8" = 1'-0"$

The site plan is usually based on an professional land survey.

What is a *Survey*?

A *land survey* locates, describes, and maps the boundaries and corners of a parcel of land including:

- Topography
- Location of building and features
- Course and location of each boundary line (metes and bounds)

Zoning Ordinance

A site plan is used to demonstrate compliance with applicable codes and zoning ordinances.
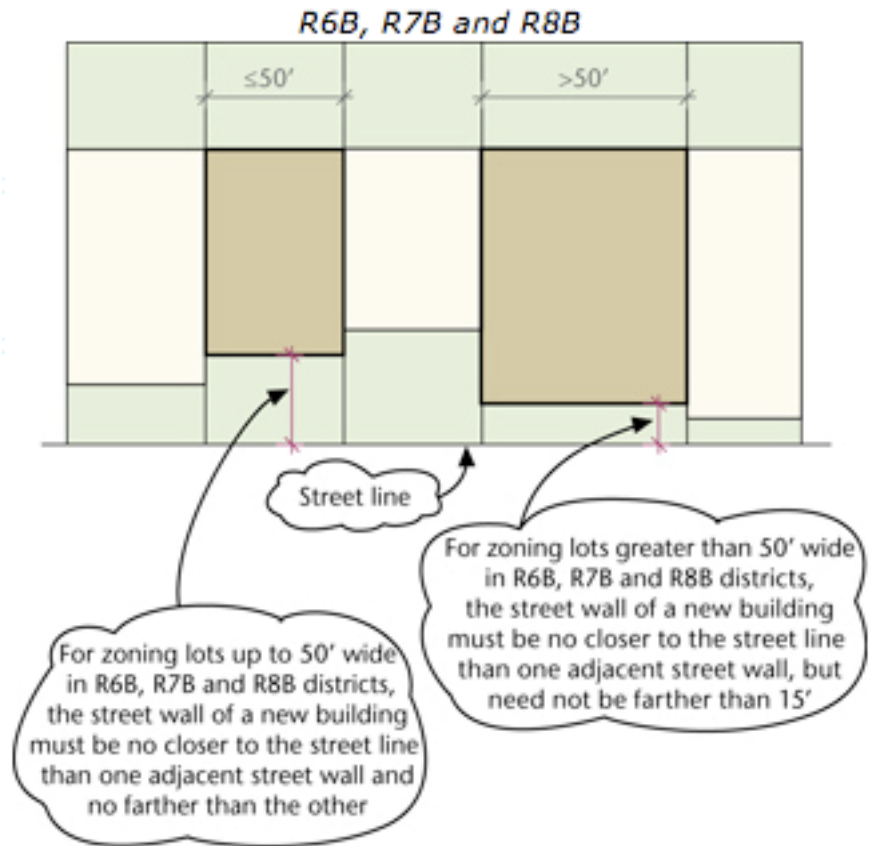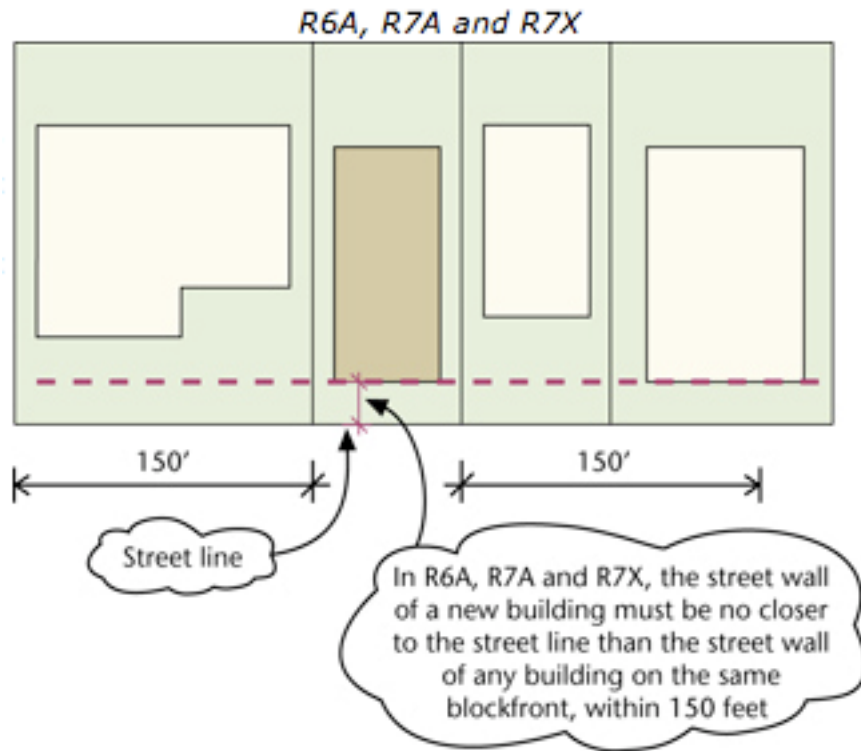
Components

- Outline of **structures and features**
- **Dimensions** include:
  - overall size of buildings and features
  - distance from the outside wall of each building or feature to at least 2 property lines
  - Dimension and compass azimuth of each property line
- **Building Code and Zoning Analysis**
  - Property lines
  - Setbacks
  - Easements
- Contour lines and **grade elevation** of surfaces
- Architectural **surface materials** are labeled or shown with material symbols
- **Streets** adjacent to the property are labeled
- Compass **orientation** of the lot is identified by North arrow
- **Utility lines** are labeled by function

1   SITE PLAN
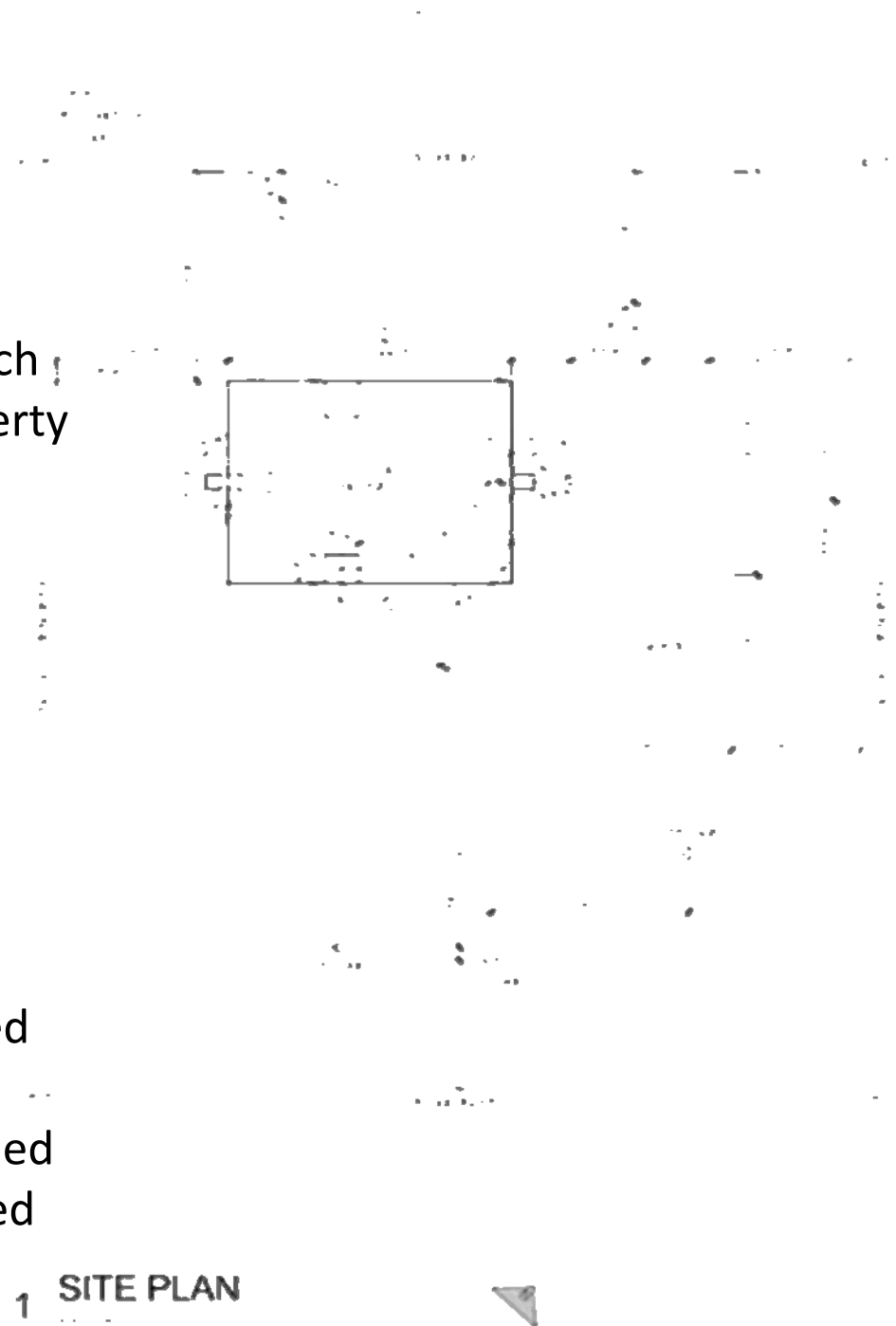
Margaret Esherick House, Louis Kahn, 1961.

Procedure

1. **Guidelines**- layout page
2. **Draft the objects**
   - Start with guidelines
   - Complete with proper linewieghts and linetypes
3. **Annotation:** Label and dimension the objects
4. **Drawing Title** and scale
5. **Titleblock** and darken border
6. **Review**
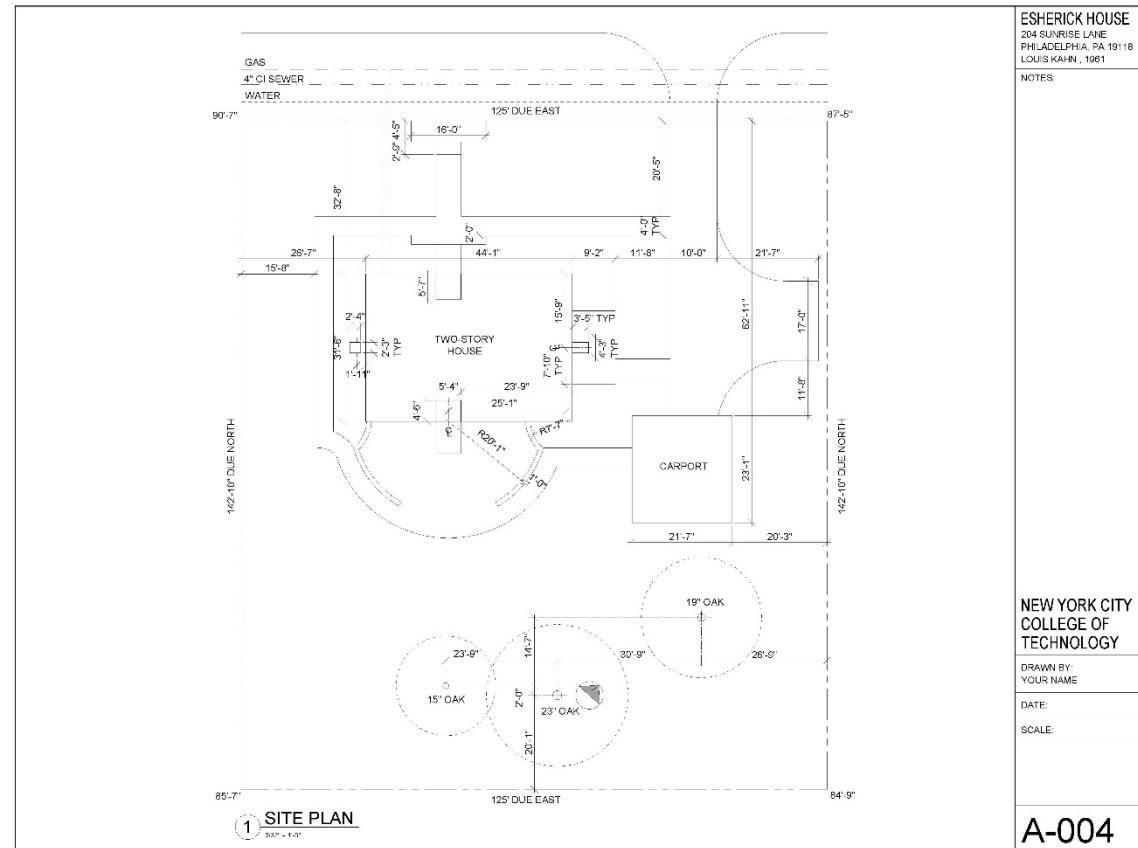
Autocad Techniques

- Layers and Color Styles
- Line-types
- Dimensioning

- Paper Space vs Model Space
- Viewports

Tools we have learned:
- Line and X-Lines
- Offset
- Extend/Trim
- Fillet
- Copy/Paste
- Ortho Mode and Polar Tracking
- Object Snap
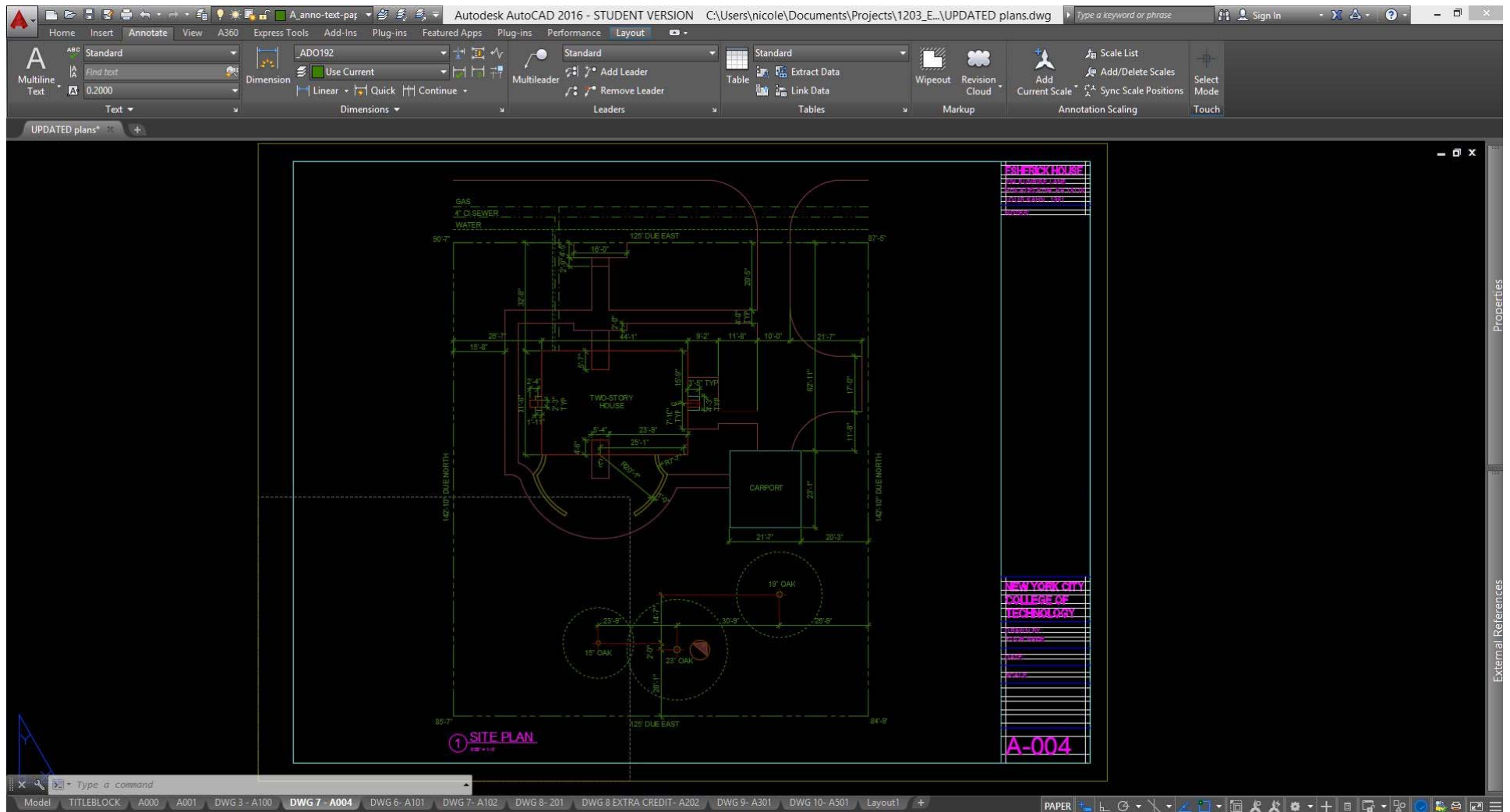
Getting Started

- Open a new drawing, save it!
- Check your *units*: Architectural, Inches
- You can customize your workspace with *options*
- Draft your linework in *model space*
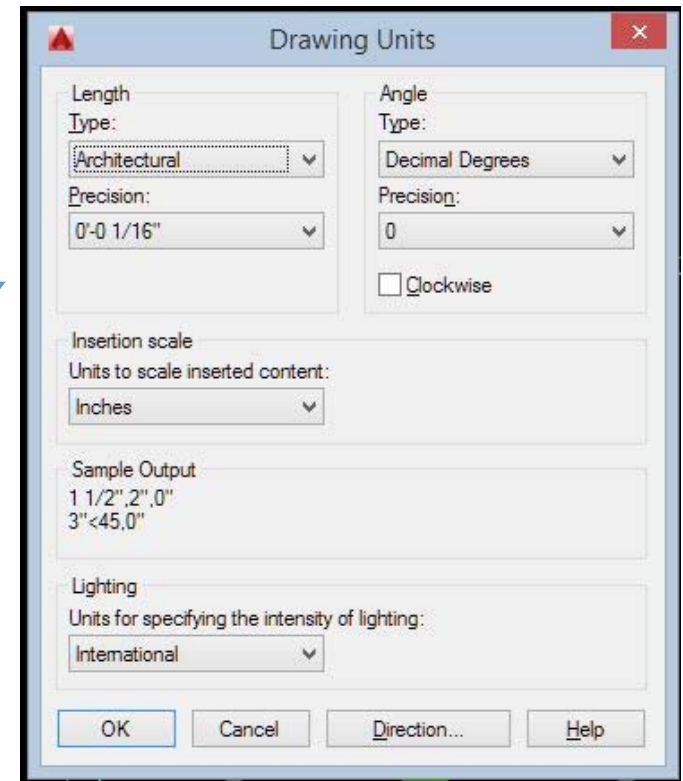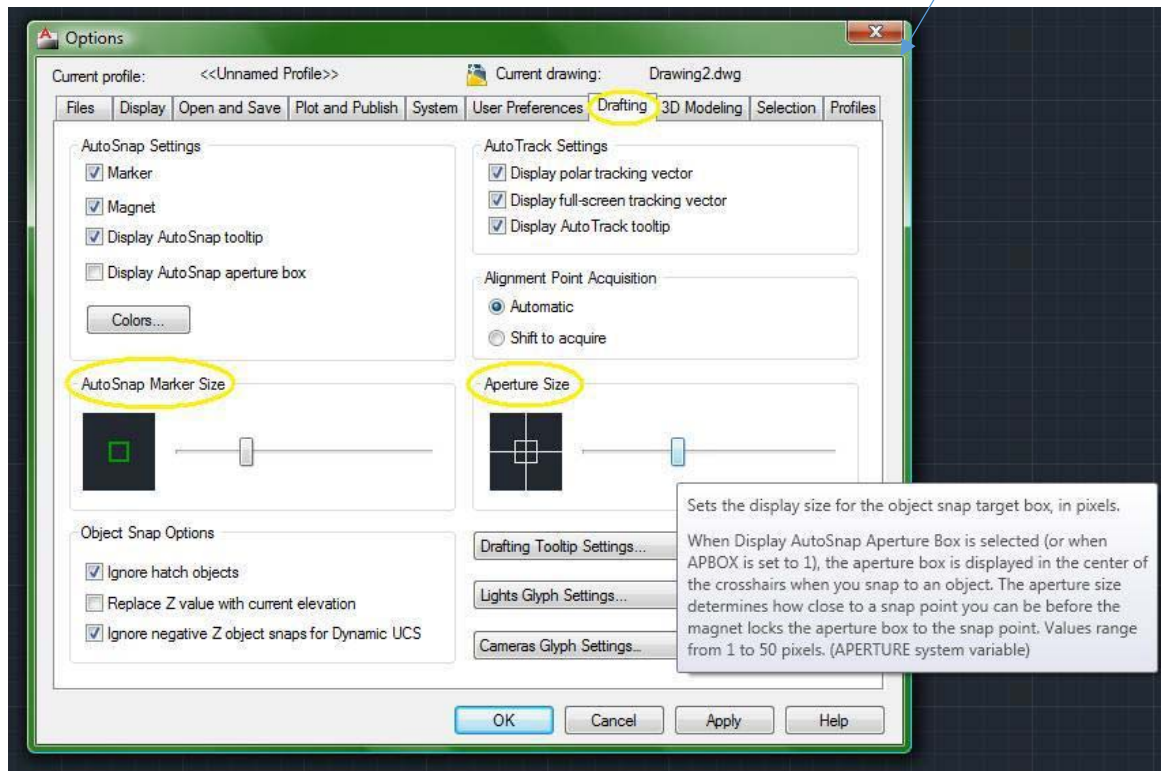
Layers

A *layer* is a virtual piece of paper on which objects/linework is placed. All layers are visible on top of each other… think of it as layers of vellum overlays. This helps in organizing your drawing and keep various elements separate from one another.

- Layers are given a standard name and color
- Layers can be turned on/off, freeze/thaw (visible/not visible), locked, re-ordered (above/behind other layers), matched…
- The *defpoints* layer does not print and is useful as guidelines

Resources: Autodesk Layer Guide
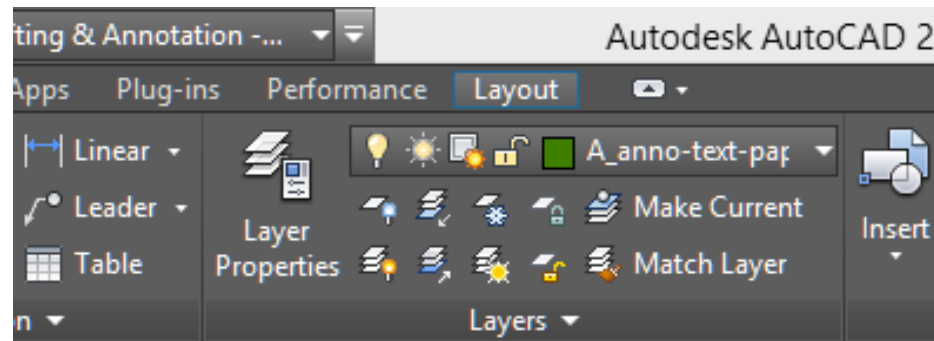
Layer Names

Follow standard *layer name* formatting.

Layer Name Formatting									
# 1	A-WALL	=	Discipline Code	+	Major Group				
# 2	A-WALL-FULL	=	Discipline Code	+	Major Group	+	Minor Group		
# 3	A-WALL-DEMO	=	Discipline Code	+	Major Group	+	Status Code		
# 4	A-WALL-FULL-E	=	Discipline Code	+	Major Group	+	Minor Group	+	Status Code

Discipline Designator				
A	Architectural	O	Operations
B	Geotechnical	P	Plumbing
C	Civil	Q	Equipment
D	Process	R	Resource
E	Electrical	S	Structural
F	Fire Protection	T	Telecommunications
G	General	U	University (HU defined)
H	Hazardous Materials	V	Survey/Mapping
I	Interiors	X	Other Disciplines
L	Landscape	Z	Contractor / Shop Drawings
M	Mechanical		

Layer Colors

Layers are assigned colors allowing for clear distinction between various elements.

Color can also be used to determine the plotted properties of lines. Colors can be assigned lineweights. *See plot styles.*

GROUND LEVEL PLAN
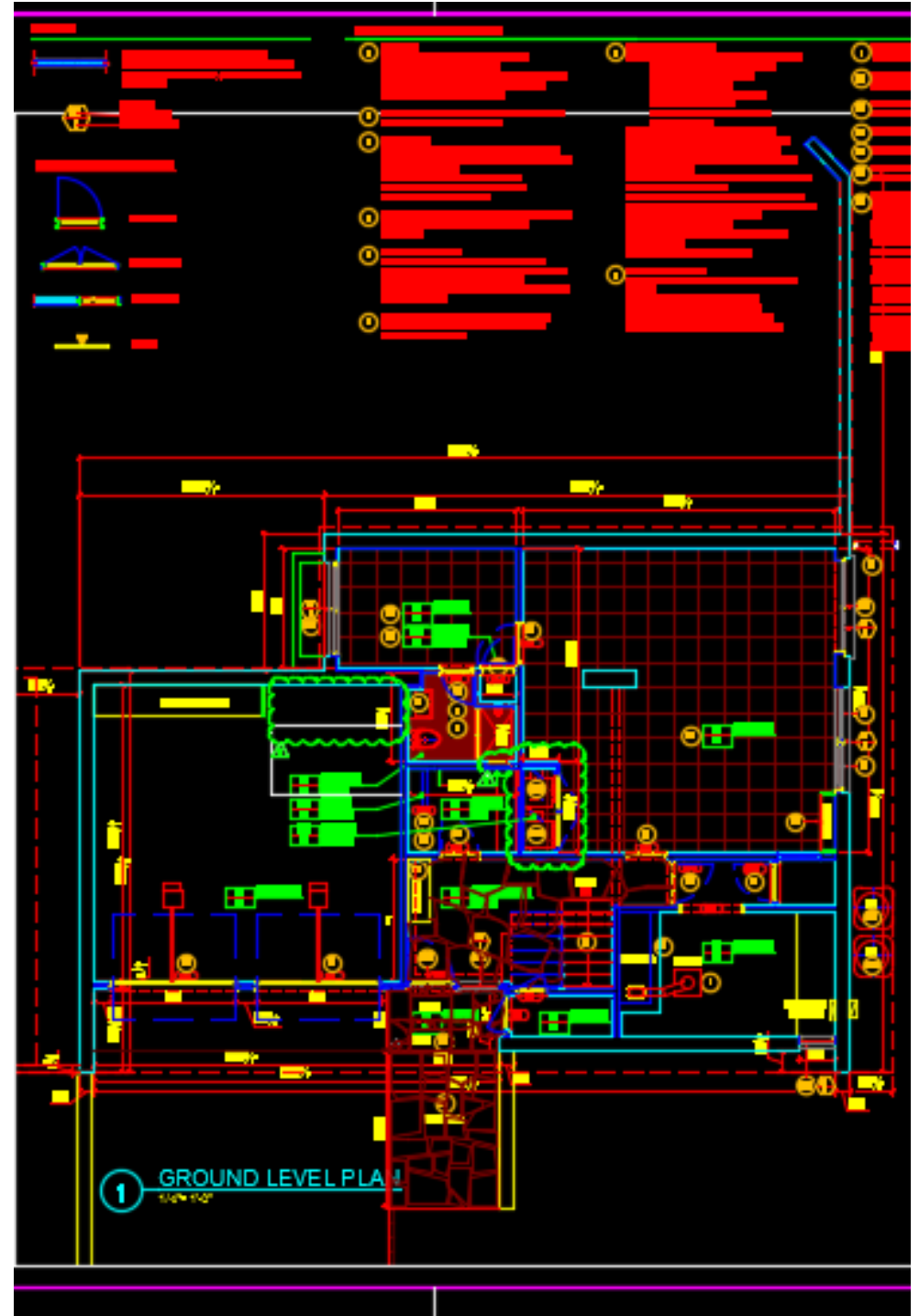
Line-types

Layers are assigned *line-types,* which function the same as with analog drafting techniques.
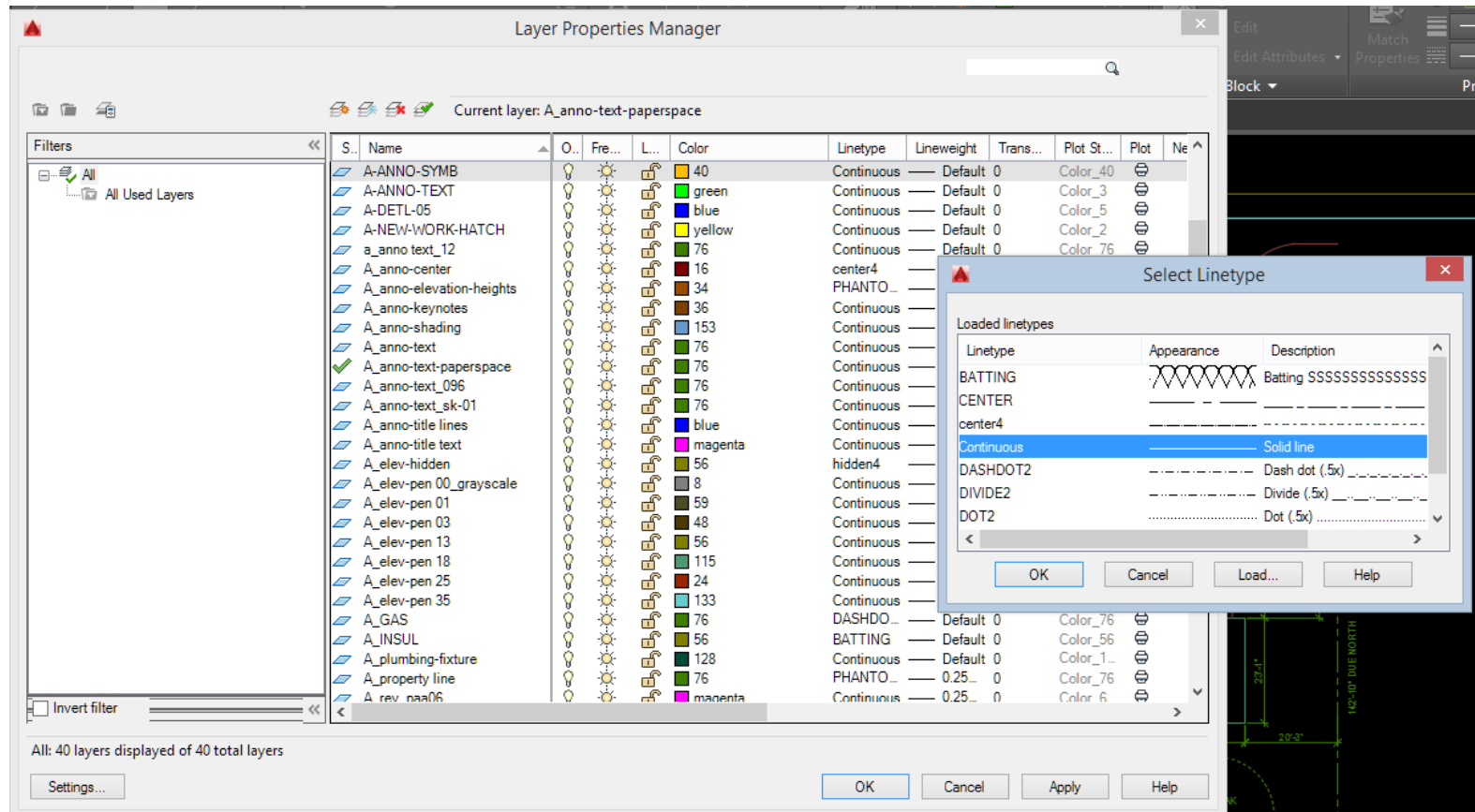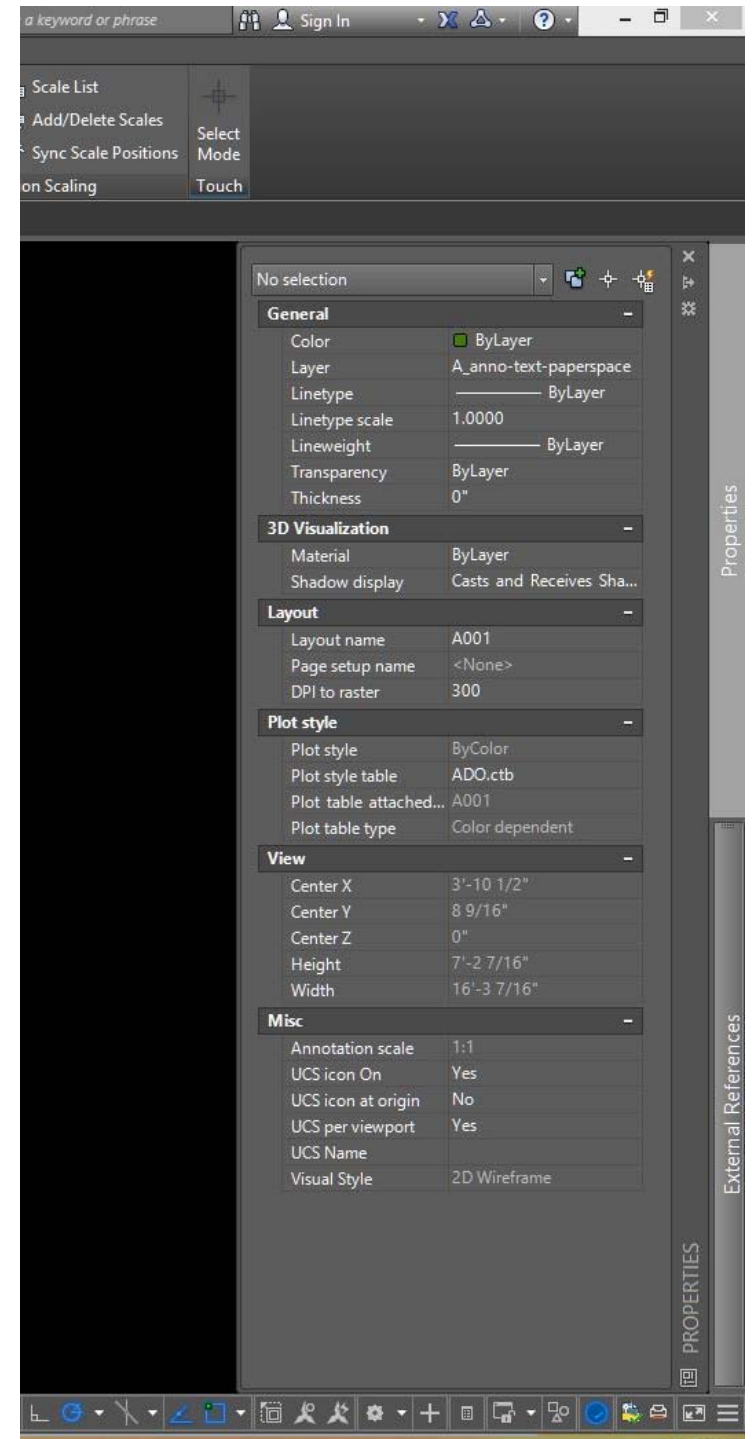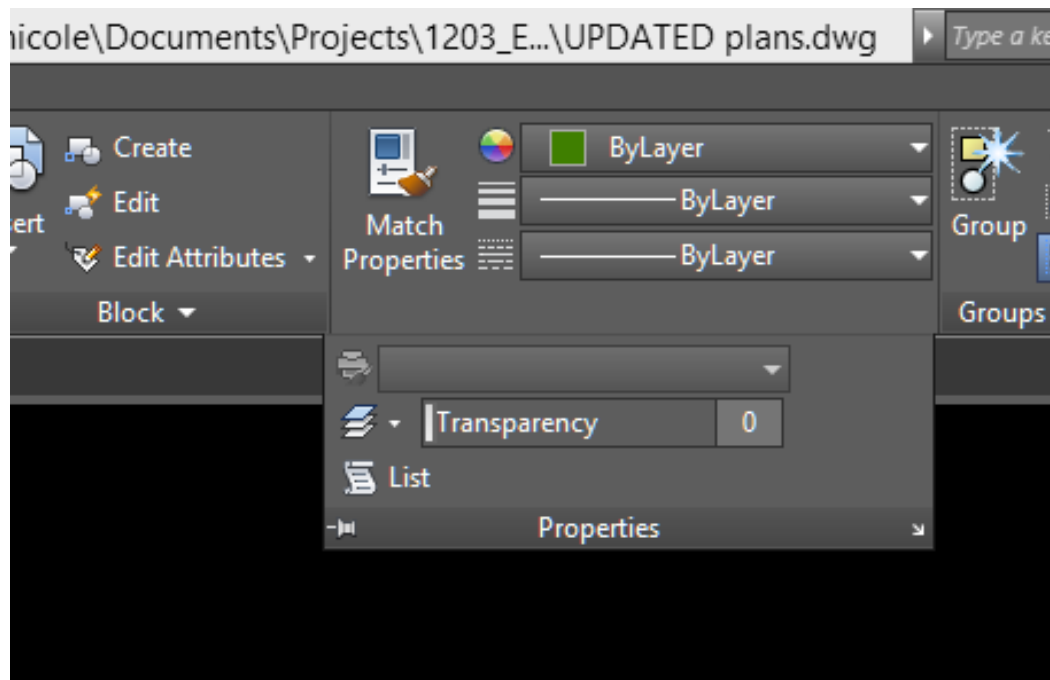
Layer Properties Manager

A ***layer*** is a virtual piece of paper on which objects/linework is placed. All layers are visible on top of each other... think of it as layers of vellum overlays.

- Layers are given a standard name and color
- Layers can be turned on/off
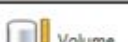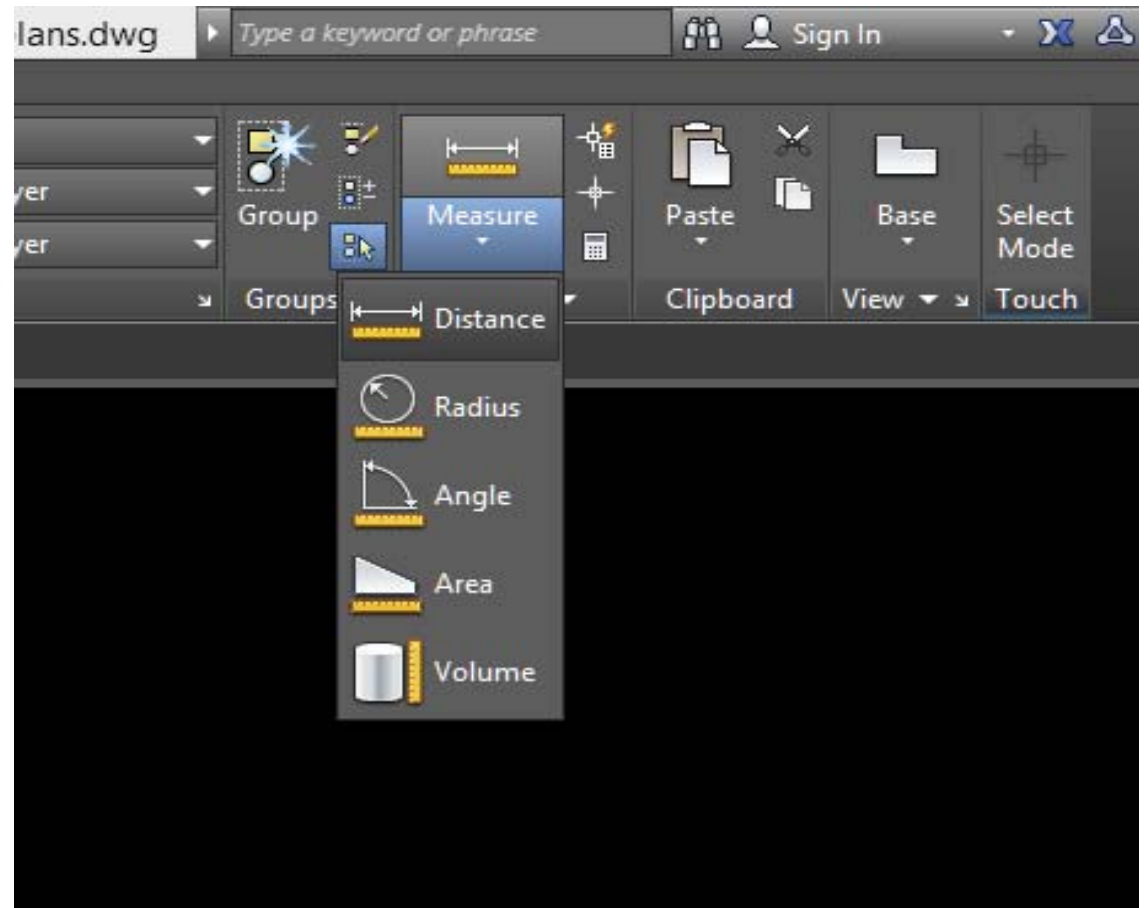- The ***defpoints*** layer does not print and is useful as guidelines
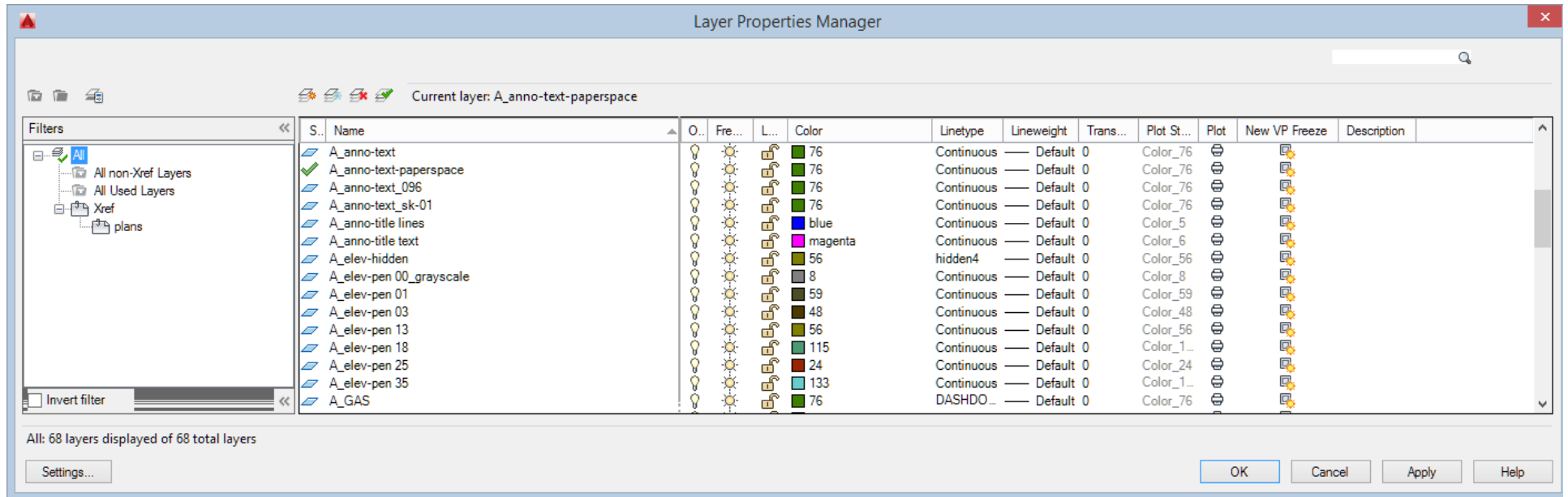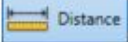
Modifying Properties

Use the ***Properties Palette*** (to open: select an object then right click)

Dimensions

Use standard dimension techniques as discussed in regards to analog drafting. Autocad will help with the formatting.
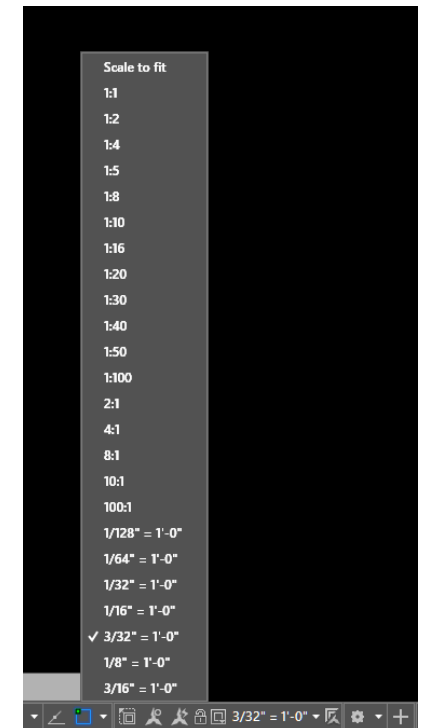
Check your drafting!

Pulling information directly from your drawing
using *measure* utilities such as *distance*:

Sheet Setup & Viewports

- Use the Titleblock constructed in *paper space* for the previous assignment.
- Use *Page Setup Manager* by right-clicking paper space layout tab
- *Viewports* create a view into model space at a specific scale.
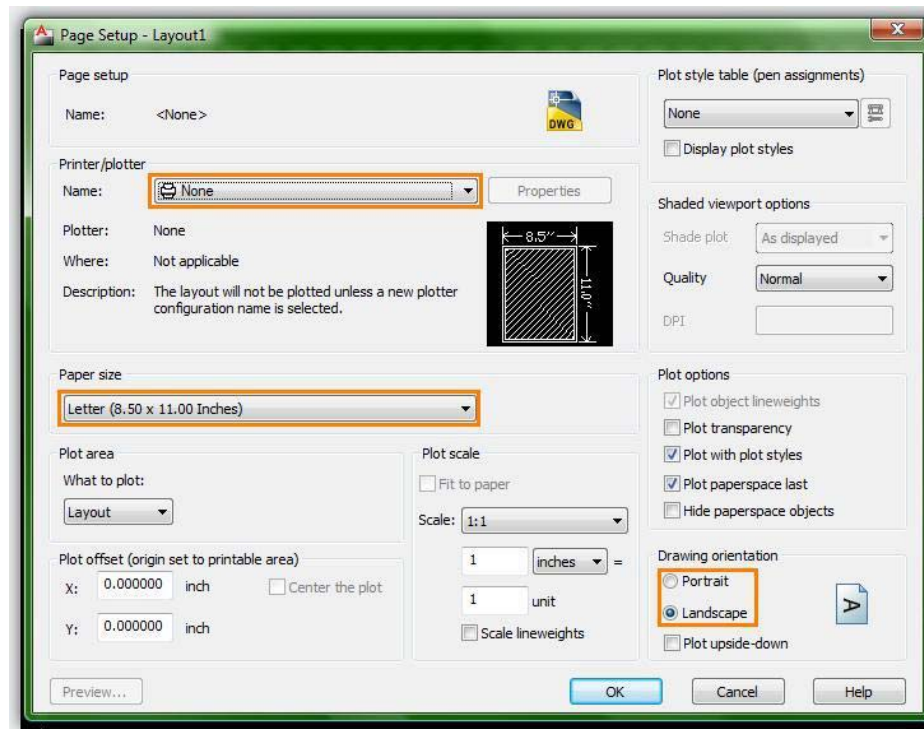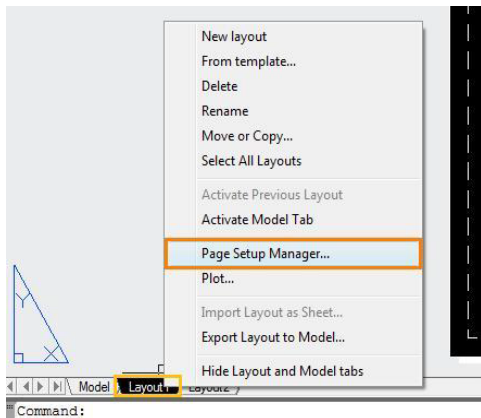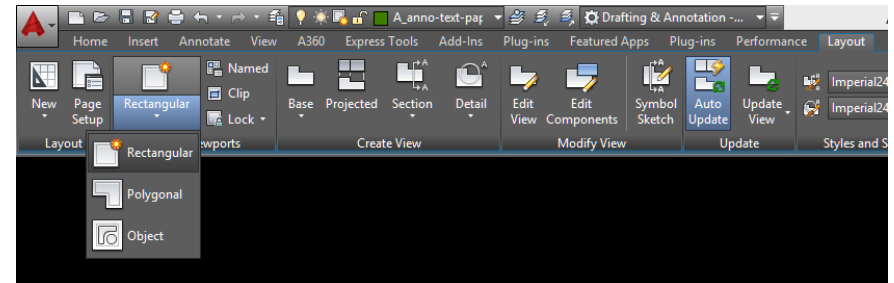
Scale Factors

We draft at 1:1 in model space, full scale. We use drawing scales so that we can view an entire building or city block on a manageable sheet of paper.

Scale factors are the reciprocal of the drawing scale. We can use them for objects in model space that should appear the same size regardless of the scale of the drawing… text, dimensions, symbols.

Calculating Scale Factor

To convert an architectural drawing scale to a scale factor:

1. Select the desired scale. 1/8" = 1'-0"
2. Invert the fraction and multiply by 12. 8/1 x 12 = Scale Factor 96

Architectural Scales

DRAWING SCALE	SCALE FACTOR	VIEWPORT SCALE	DECIMAL SCALE
1/16" = 1'-0"	192	1/192xp	.0625" = 1'-0"
3/32" = 1'-0"	128	1/128xp	.09375" = 1'-0"
1/8" = 1'-0"	96	1/96xp	.125" = 1'-0"
3/16" = 1'-0"	64	1/64xp	.1875" = 1'-0"
1/4" = 1'-0"	48	1/48xp	.25" = 1'-0"
3/8" = 1'-0"	32	1/32xp	.375" = 1'-0"
1/2" = 1'-0"	24	1/24xp	.50" = 1'-0"
3/4" = 1'-0"	16	1/16xp	.75" = 1'-0"
1" = 1'-0"	12	1/12xp	1" = 1'-0"
1 1/2" = 1'-0"	8	1/8xp	1.5" = 1'-0"
3" = 1'-0"	4	1/4xp	3" = 1'-0"

Plot Styles

When *plotting* (*ctrl+p)* a drawing, a *plot style* must be chosen.
Standard styles should be used (office standards). A *plot style*
controls and object's plotted properties.
- CTB: color dependent
- STB: named