

The image shows a set of architectural working drawings for a house. It includes a 'PILE LOCATION PLAN' at the top left, a 'SECOND FLOOR PLAN' at the top right, a 'GARMENT FLOOR PLAN' at the bottom left, and a 'FIRST FLOOR PLAN' at the bottom right. There are also several cross-sections labeled 'SECTION 1' through 'SECTION 5' along the bottom. The drawings are detailed with lines, dimensions, and annotations. A title block in the bottom right corner identifies the project as 'MARGARET ESCHRICK HOUSE' and lists the architect as 'LOUIS I. KAHN ARCHITECT'.

Working Drawings: Floor Plans

CMCE 1110 Construction Drawings
Professor Anderson

Working Drawings

Technical drawings describing the project in pictorial form for the builder to execute, fully explaining what has to be done.

How a building gets built:

- 3 main parties involved:
 1. Owner
 2. Design Professional
 3. Builder
- Typical Contractual Agreements:
 - Owner hires architect to develop a design
 - General Contractor is selected to build the project, usually via competitive bidding
- Key Roles:
 - Architect / Engineer: codes, MEP, structural
 - General Contractor: responsibility for constructing the project
 - Sub-Contractors: independent construction firms that specialize in a specific trade (carpenter, electrician, concrete, etc)

5 Project Phases:

1. Preliminary / Schematic Design: explore ideas for the building, code research
2. Design Development: develop one design exclusively
3. Contract Documents: develop to fully describe the project
 - working drawings
 - Specifications
4. Bid Documents: bidding and negotiation
5. Construction Administration: administer the contract documents, shop drawings and construction sketches. Architect continues to coordinate with the GC to make sure the project is built to the standards defined in the CD's

Building Codes:

*Working Architectural Drawings must conform with the applicable building codes.

Building Code: laws that provide for the health, safety, and general welfare of the public.

Building Permits:

Plans and specs are submitted and reviewed by building department officials to determine whether the project meets local building codes. A GC must have a building permit to begin construction on the project. Work is inspected by building officials and construction progresses.

Plans

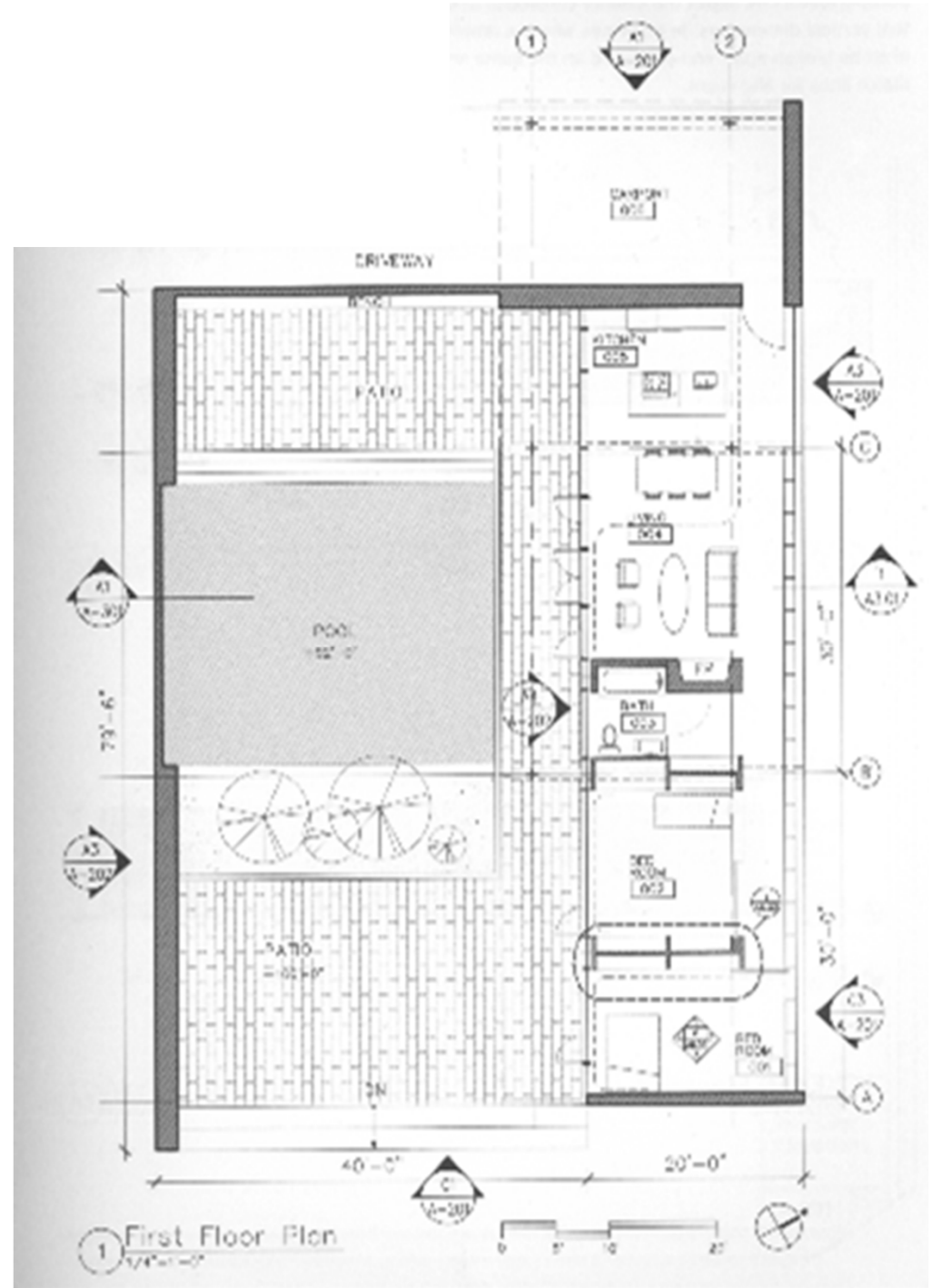
Horizontal section at around 4' AFF (above finish floor) drawn at a scale that enables one to see the whole plan.

The most important drawing.

- Typically at the beginning of the drawing set
- Refers you to other drawings in the set- Symbols
- Dimensions and Notes to indicate quantity and location of an item or feature

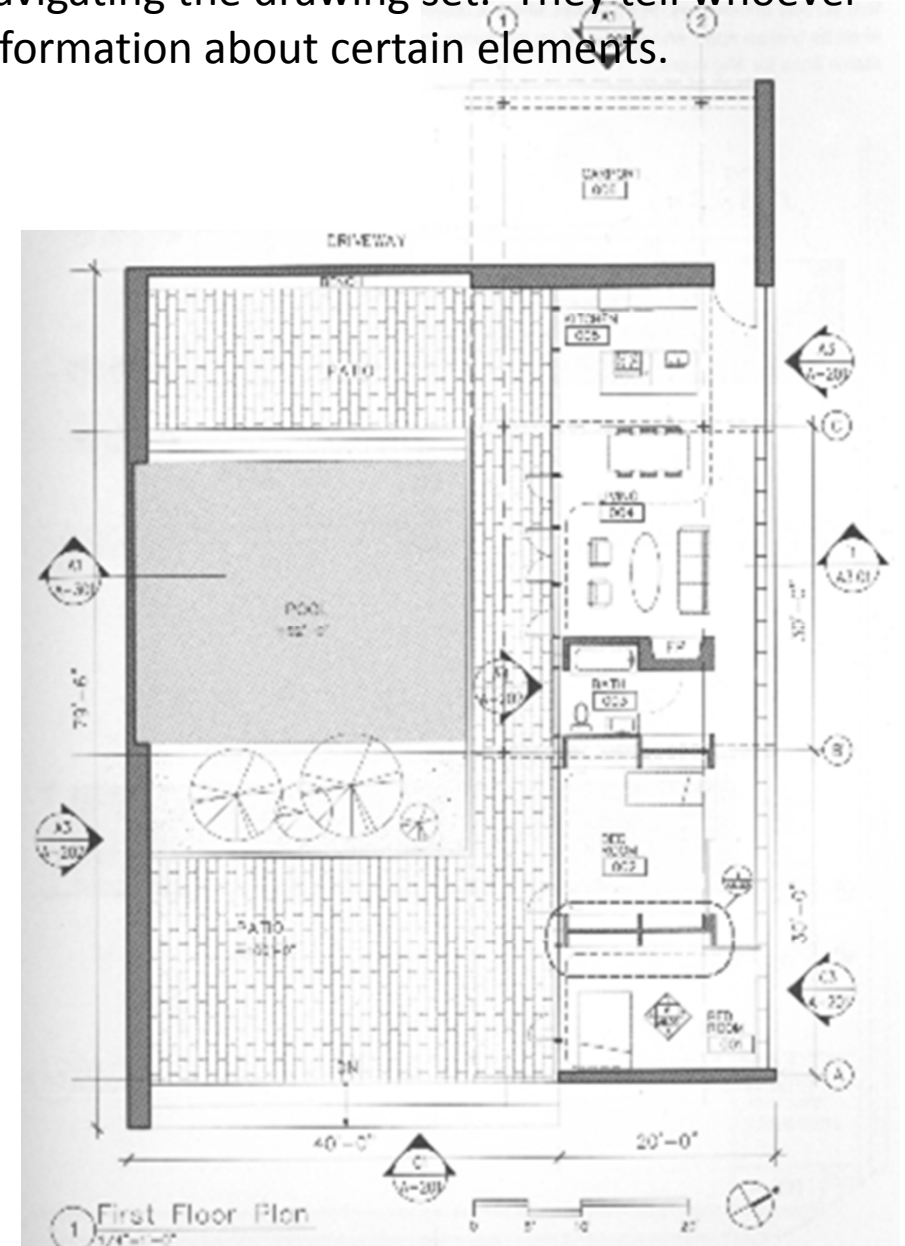
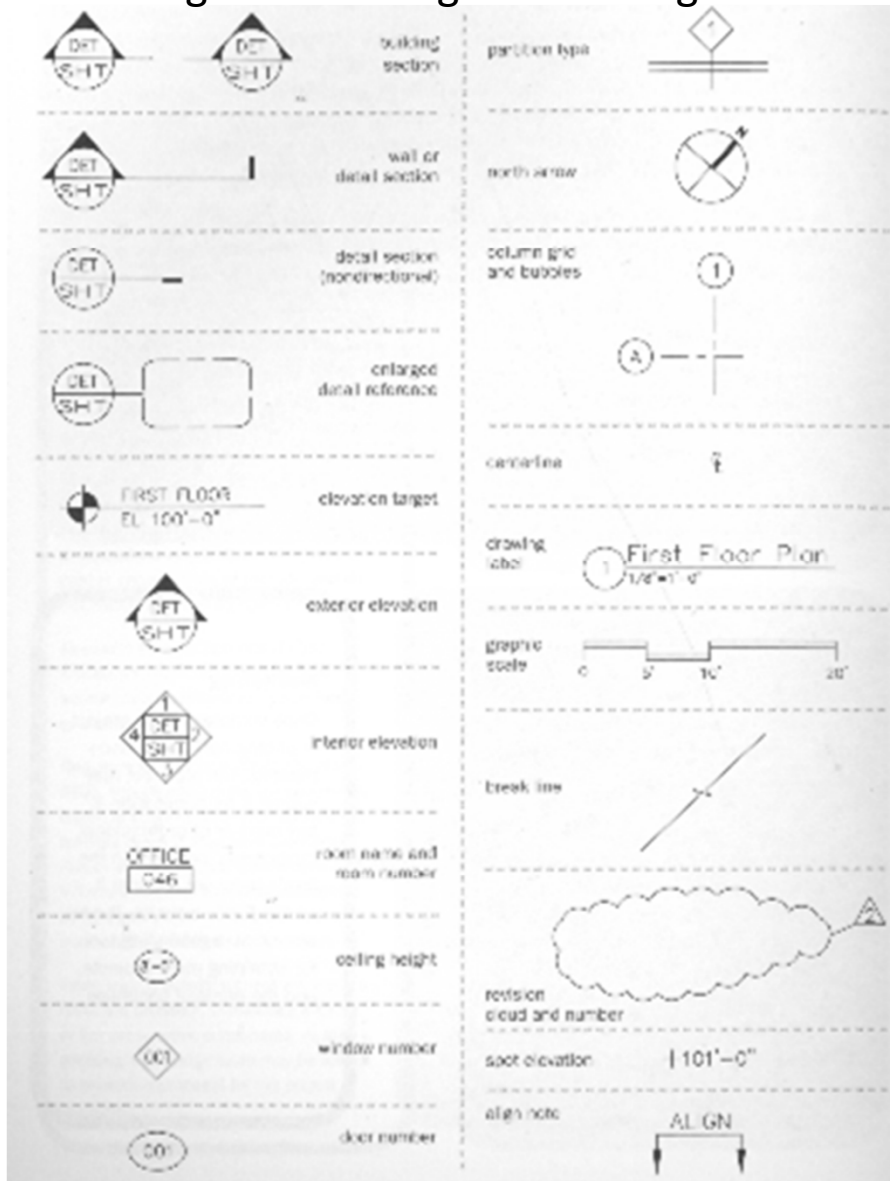
Types of Plans (all drawn at same scale):

- Floor/Roof Plans
- Structural
- MEP
- Code Analysis



Symbols

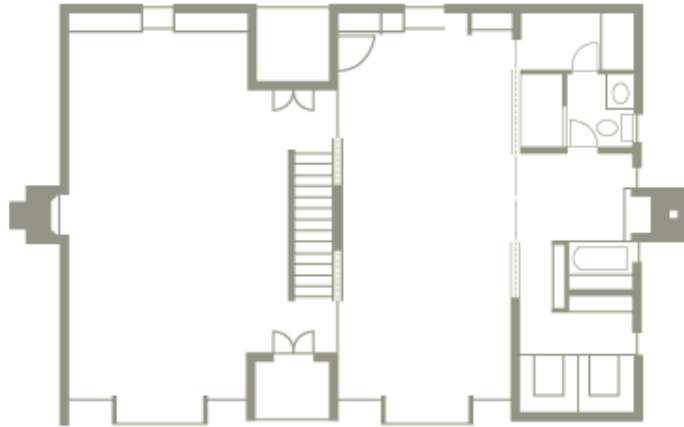
Symbols and reference markers are necessary for navigating the drawing set. They tell whoever is looking at a drawings where to go to find more information about certain elements.



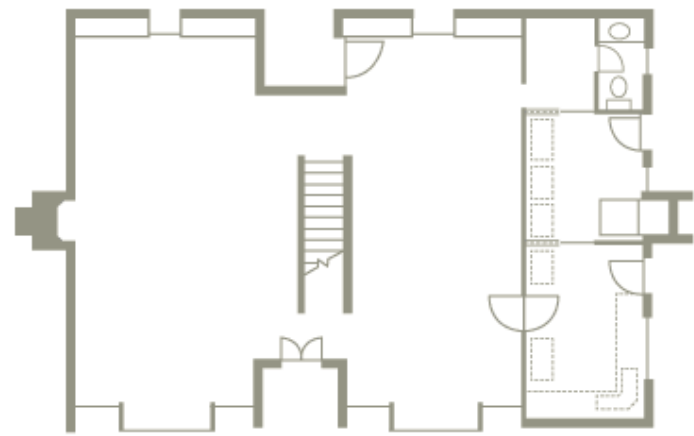
Escherick House

Louis Kahn, 1959-1961

204 Sunrise Lane, Philadelphia, PA

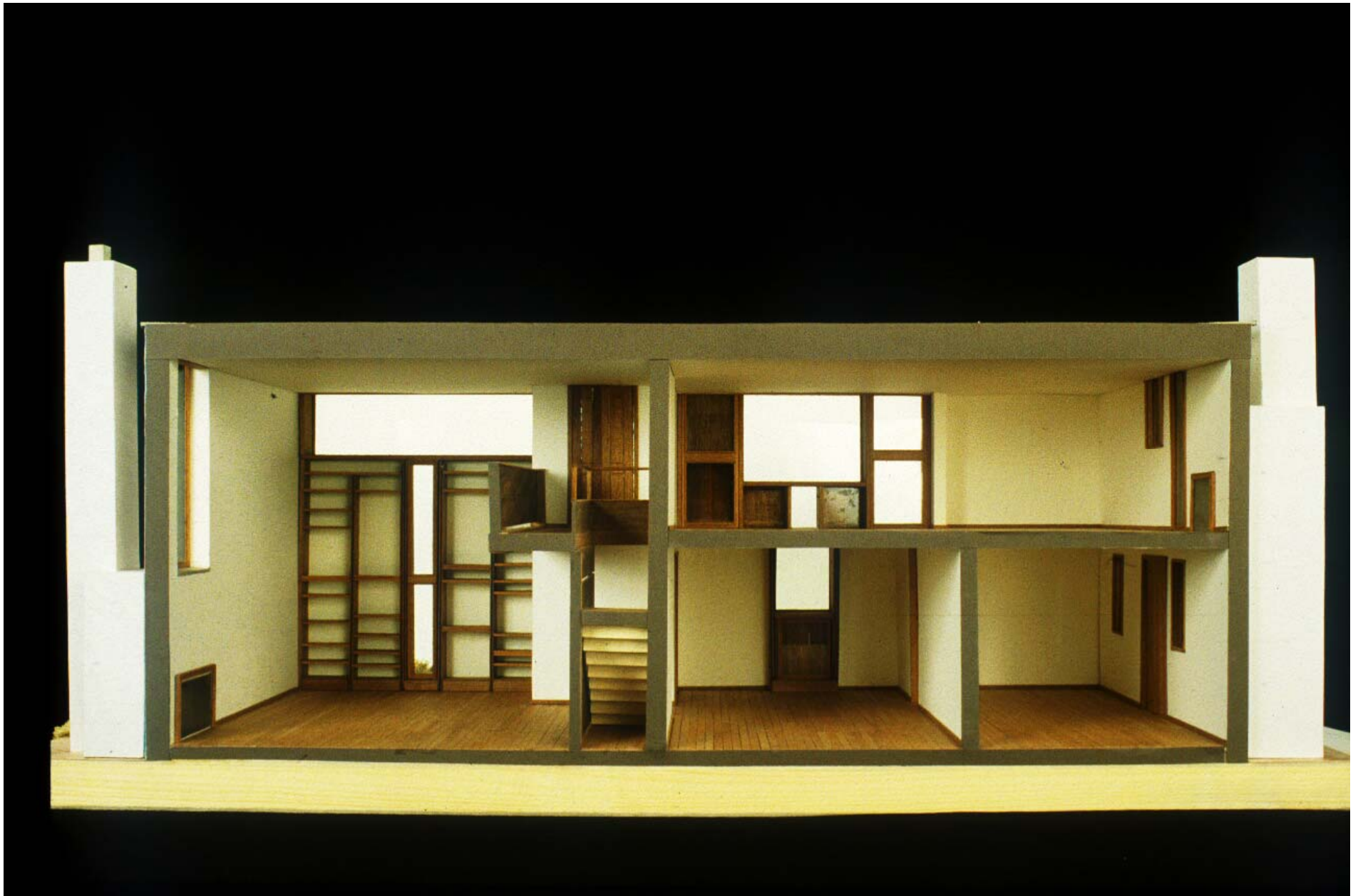


SECOND FLOOR PLAN



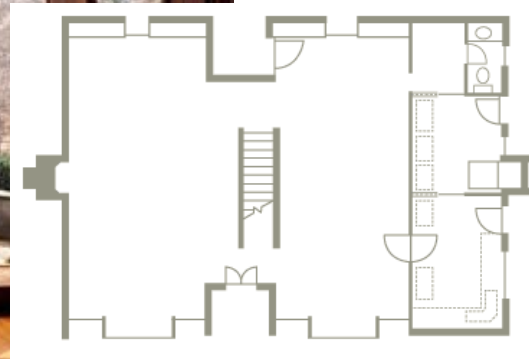
FIRST FLOOR PLAN







SECOND FLOOR PLAN



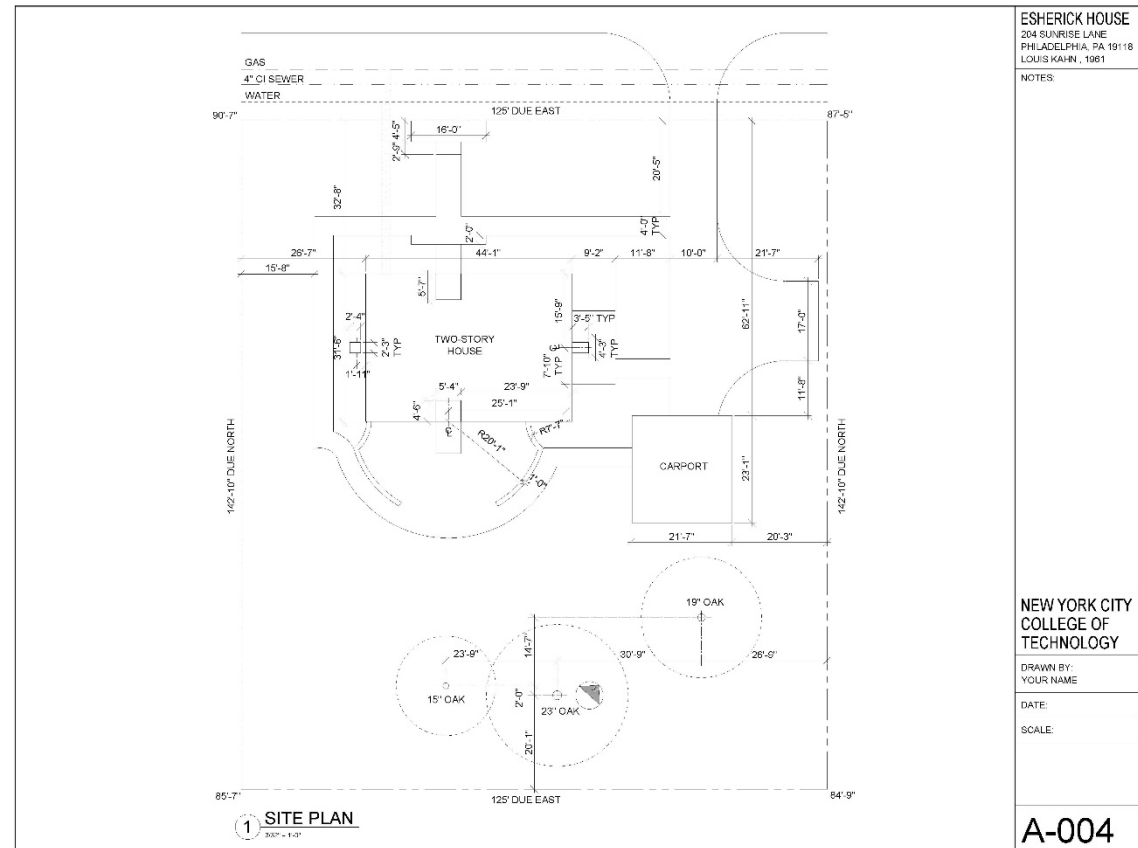
FIRST FLOOR PLAN





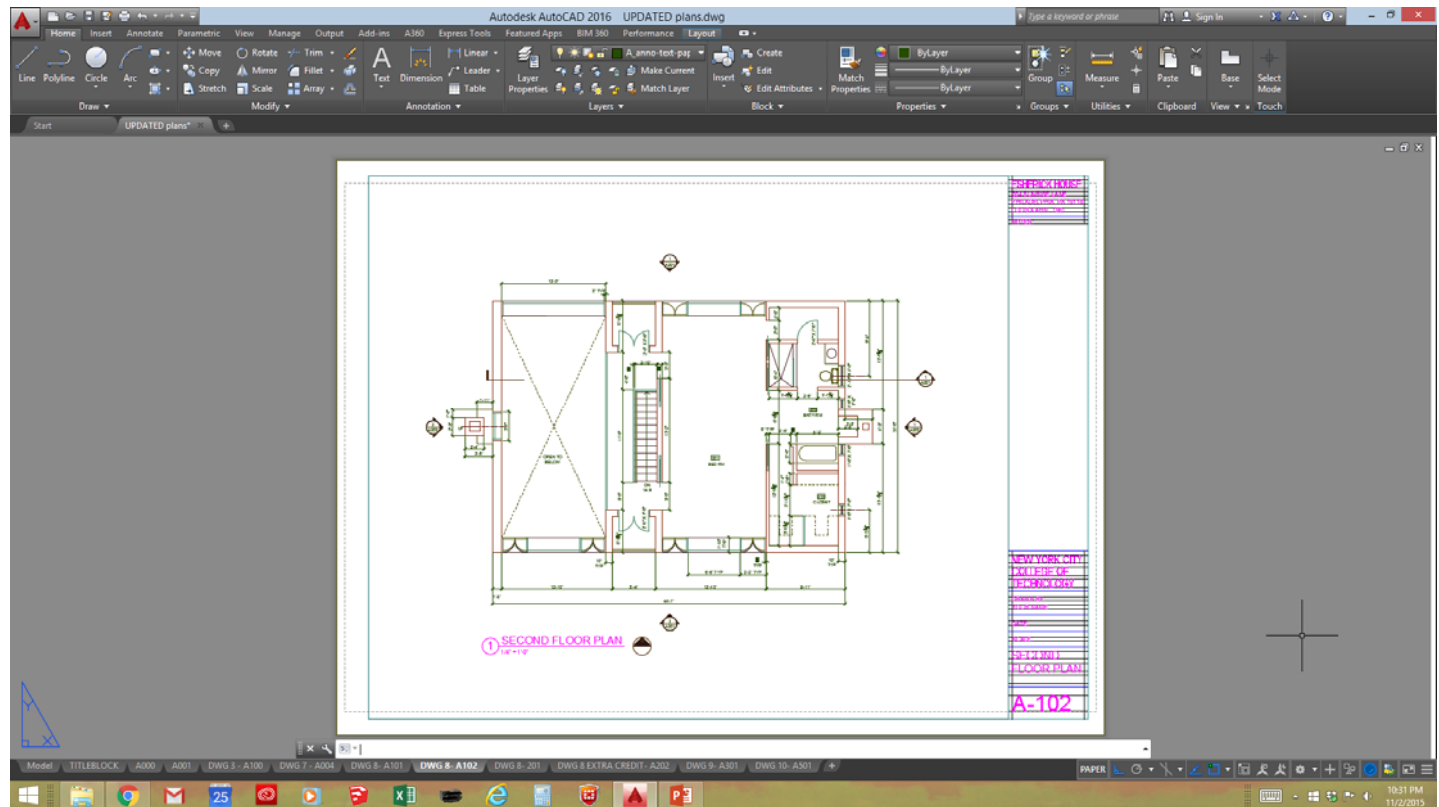
Procedure

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

- Circle
- Arc
- Ellipse
- Blocks



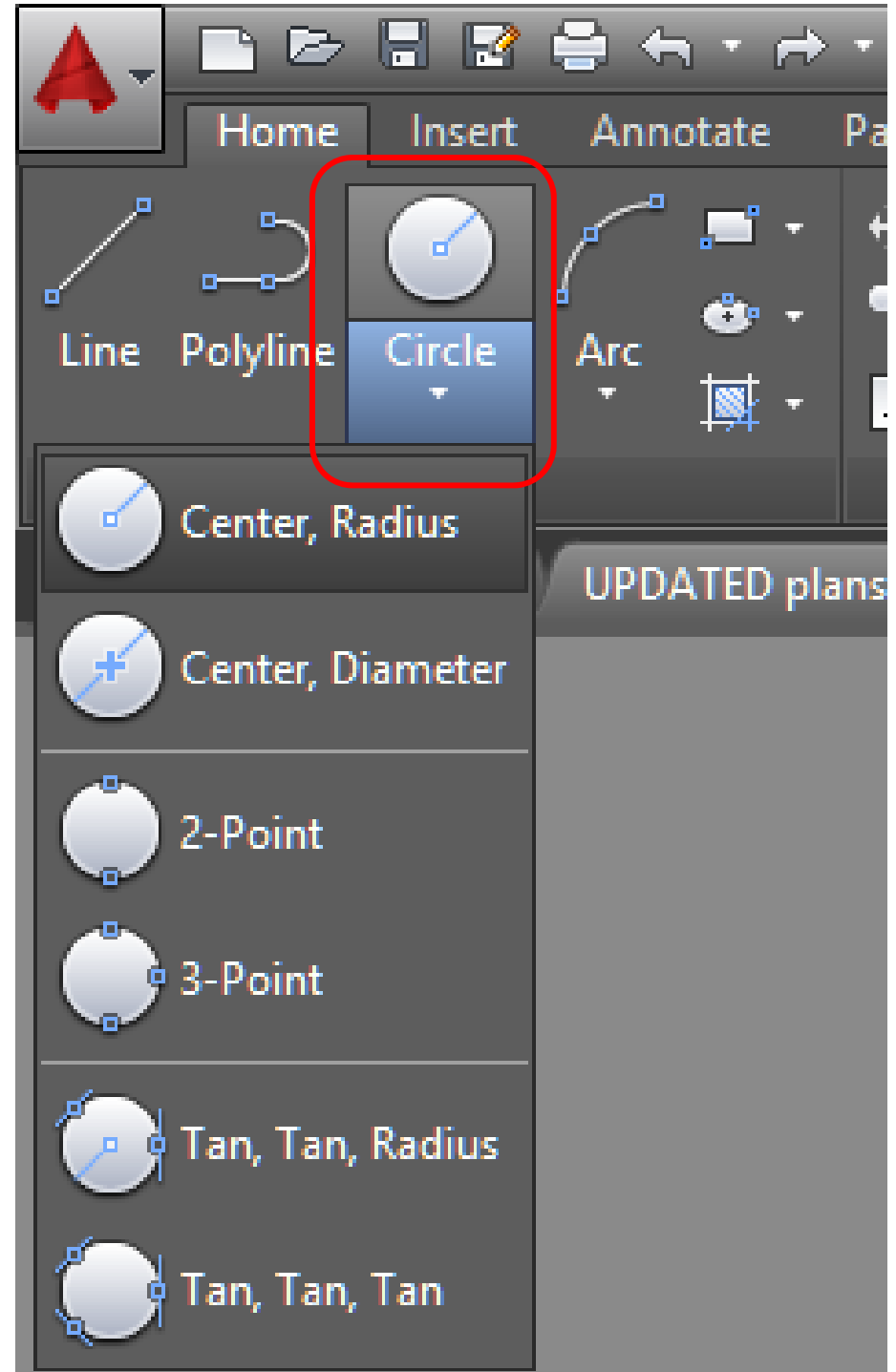
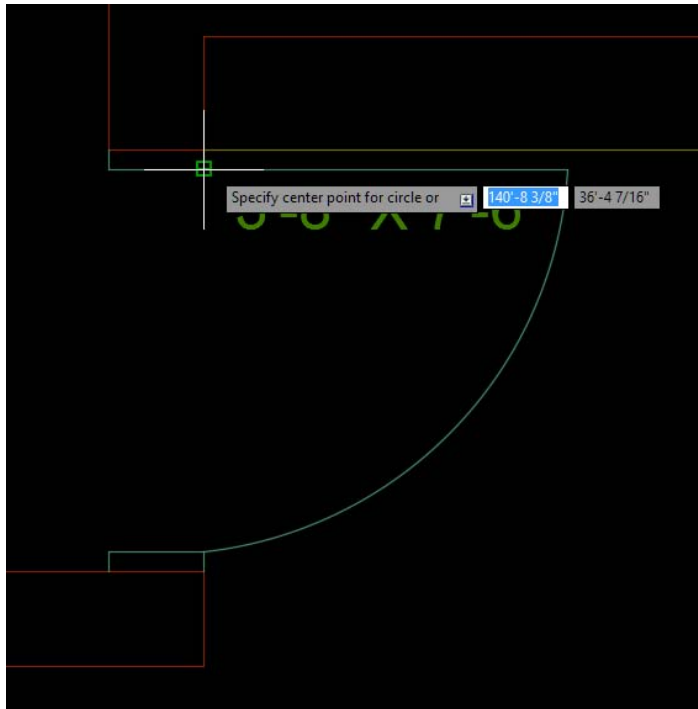
Tools we have learned:

- Line and X-Lines
- Offset
- Extend/Trim
- Fillet
- Copy/Paste
- Ortho Mode and Polar Tracking
- Object Snap
- Layers and Color Styles
- Line-types
- Dimensioning
- Paper Space vs Model Space
- Viewports

Circle

Access: Click circle button in Home tab or type “C”. Use ↓ to cycle through construction options.

Resources: [Autodesk Support: Circle Command](#)

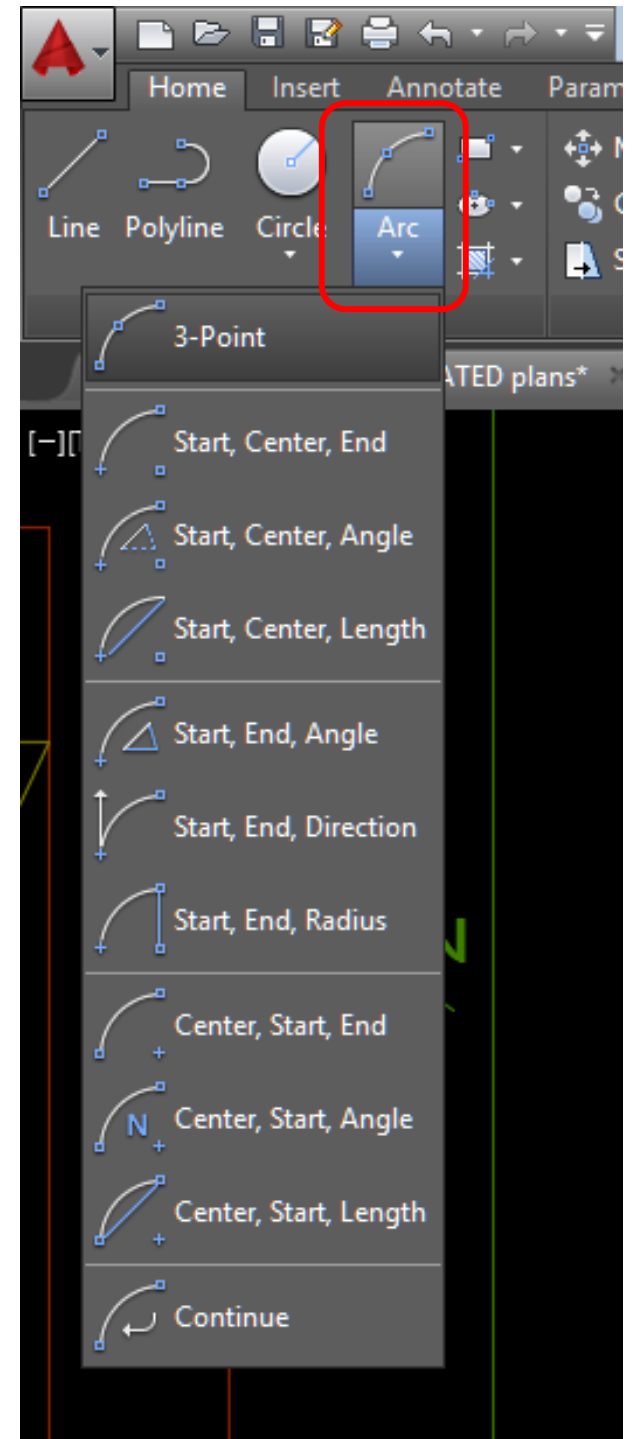


Arc

To create an arc, you can specify combinations of center, endpoint, start point, radius, angle, chord length, and directional values. Arcs are drawn in counterclockwise direction by default.

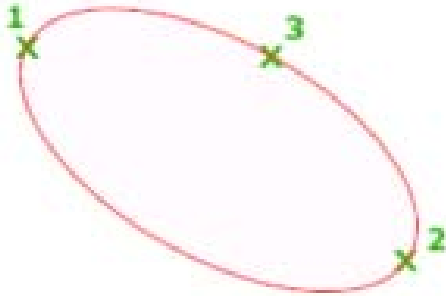
Access: Home tab or type “arc”

Resources: [Autodesk Support: Arc Command](#)



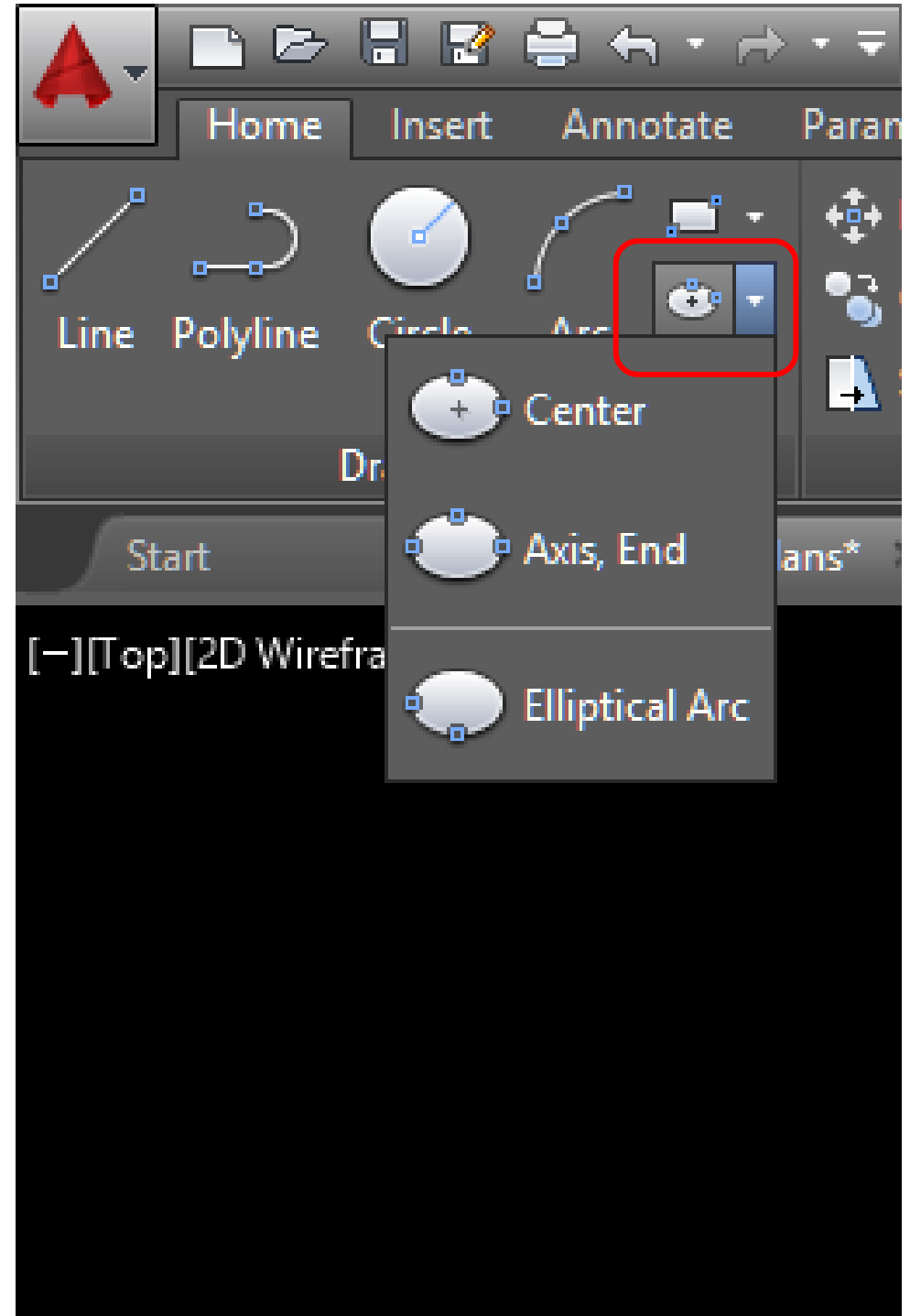
Ellipse

For “axis, end” option, the first 2 points determine the location and length of the first axis. The 3rd point determines the distance between the center of the ellipse and the end point of the second axis.



Access: Home tab or type “el”

Resources: [Autodesk Support: Ellipse Command](#)



Blocks

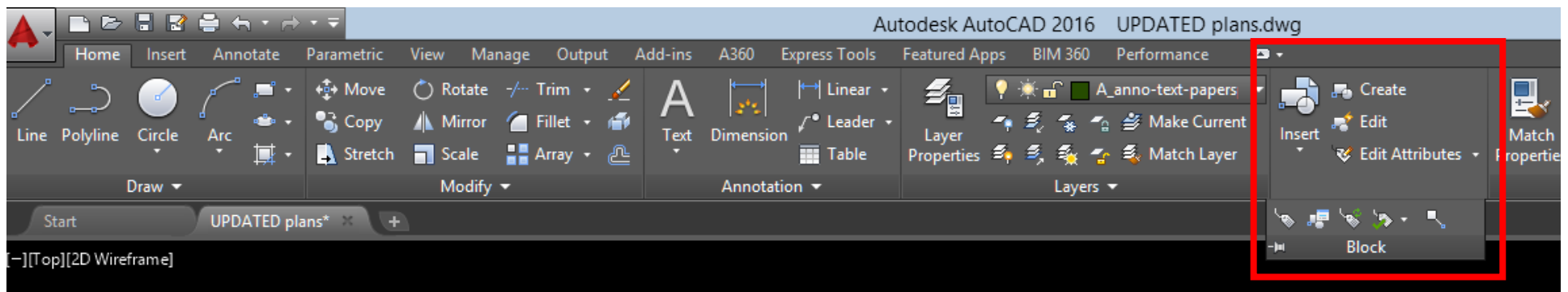
A **block** is a named group of objects that act as a single 2D or 3D object. Use them to create repeated content (symbols, components) such as doors, windows, appliances, fixtures.

Access: Home tab or “b” to define a block and “i” to insert a block

Resources:

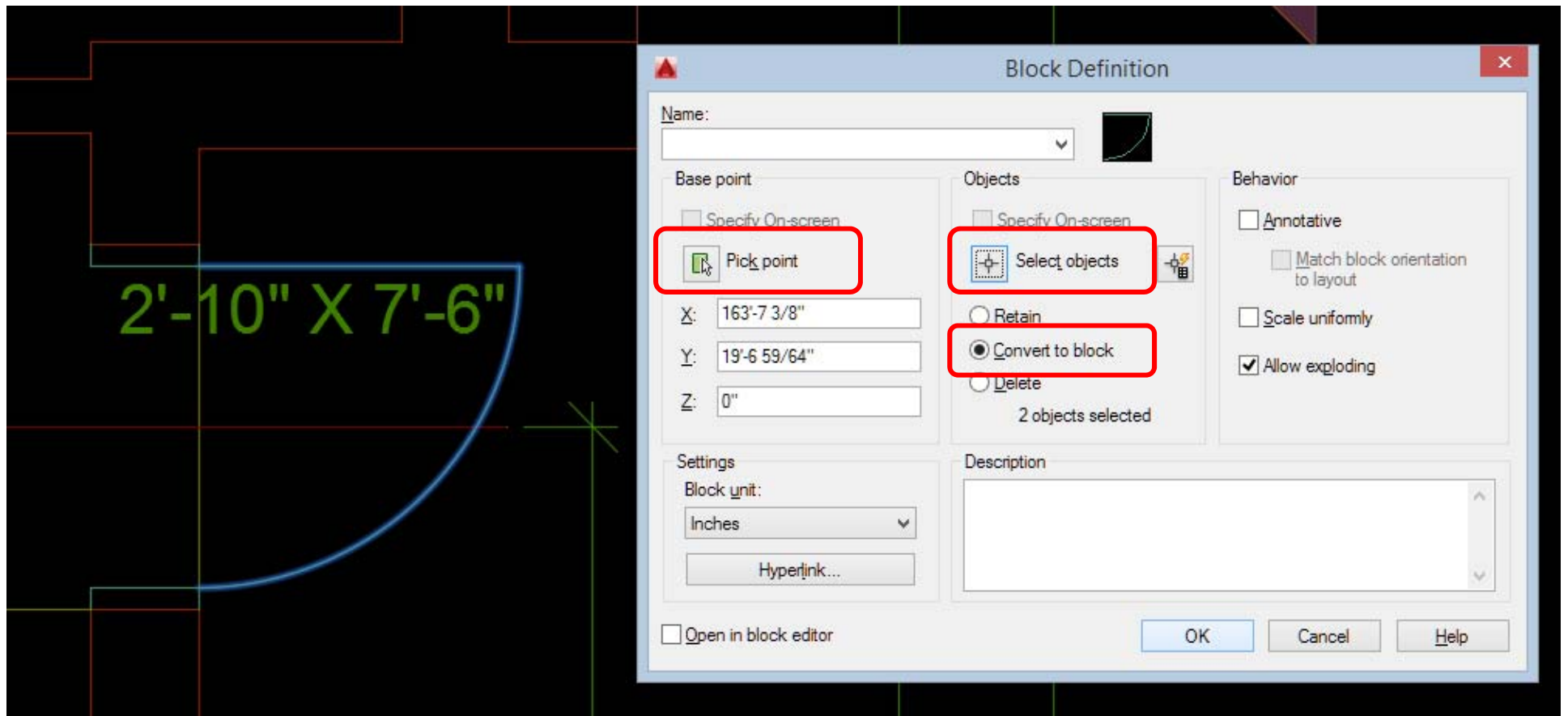
[Autodesk Support: Block Command](#)

[Autodesk: What is a Block?](#)



Blocks

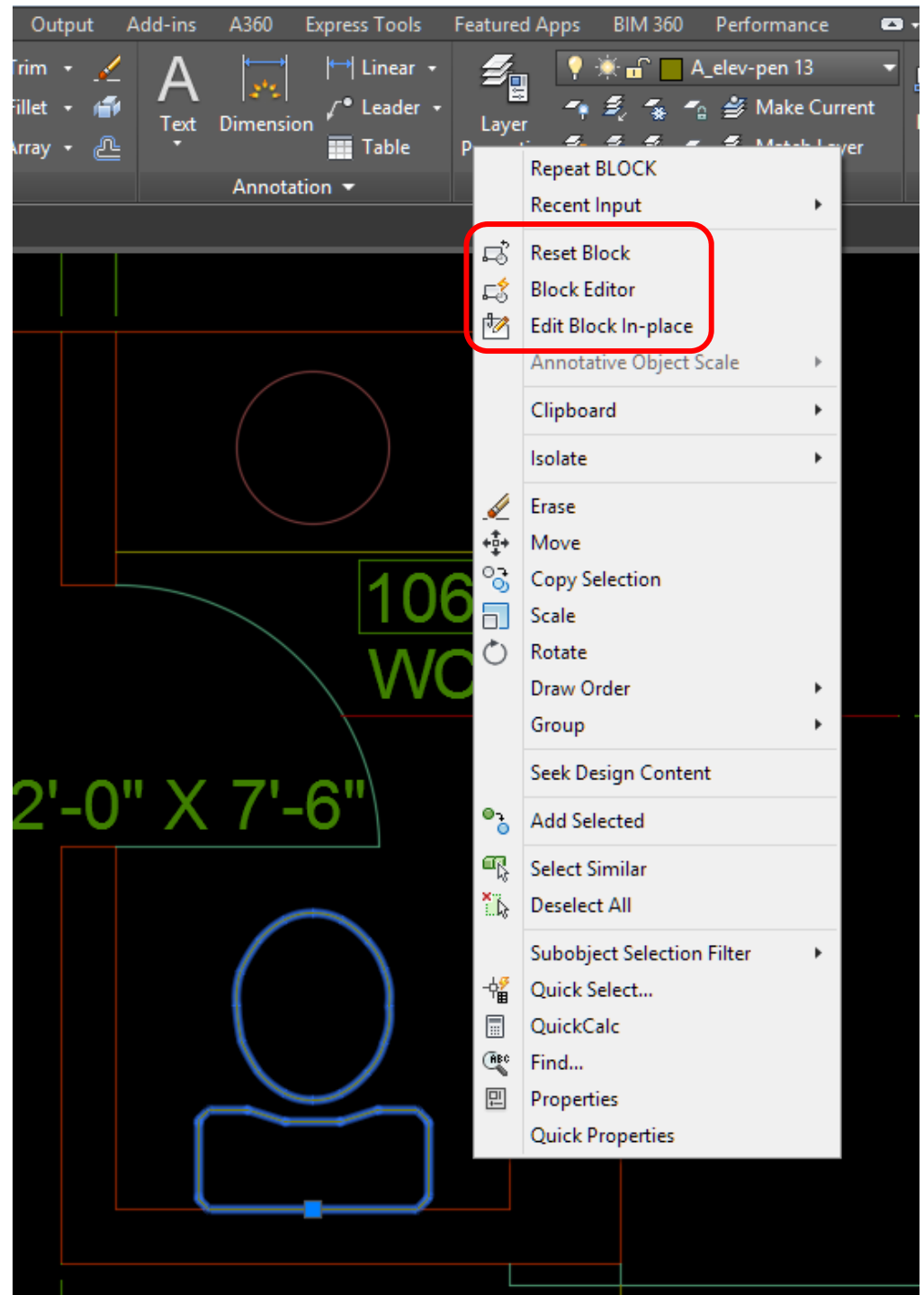
To define a block, type “b”. Name the block (ex: “door”). Select base point (this is the insertion point for the block) and the objects you want to use to create a block. Check your setting units are inches.



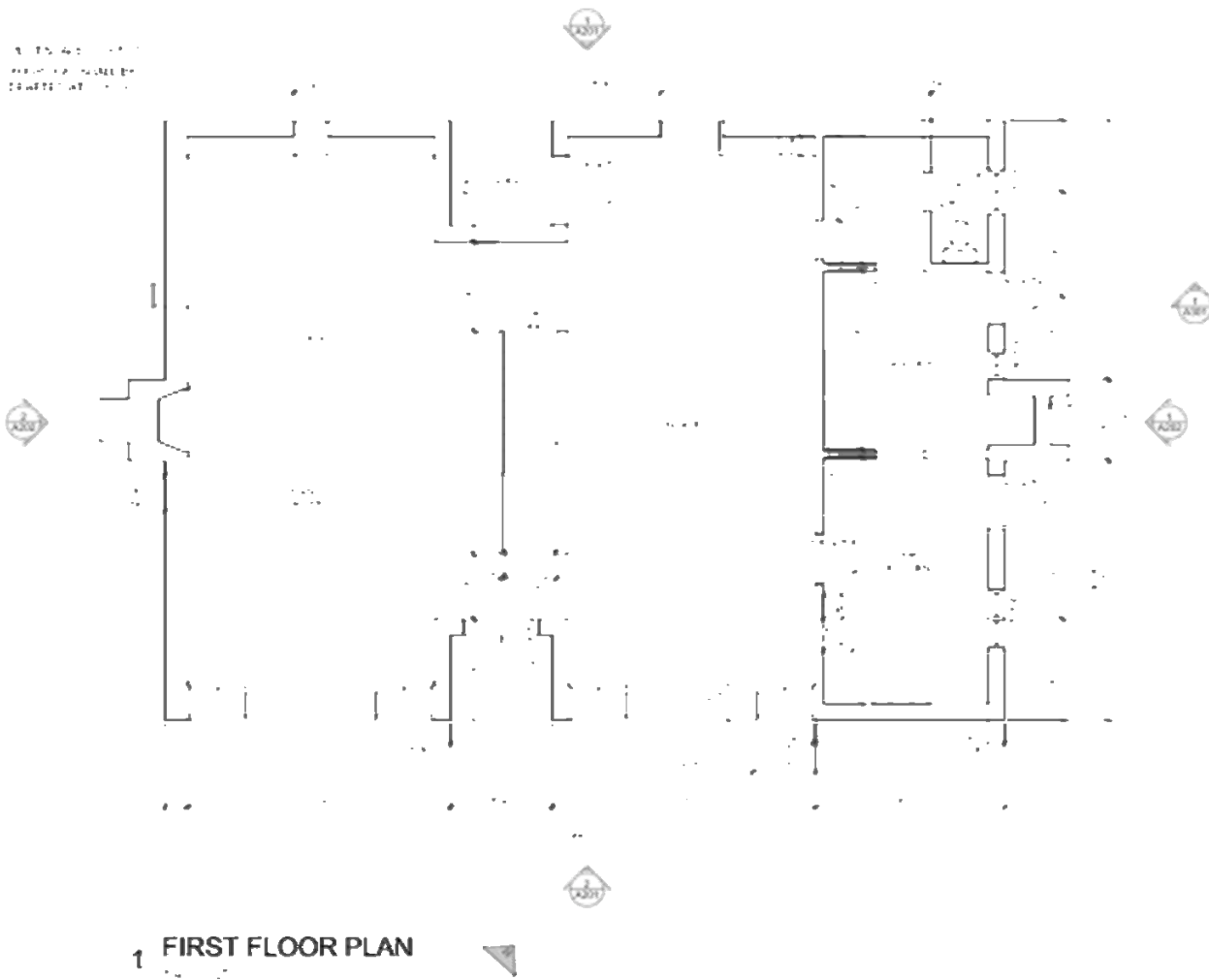
Edit Blocks

By redefining a block, you automatically update all references to that block.

Tip: If the actual linework within your block is on the “0” layer, the linework will display as whichever layer you place the block. This allows for the same block to appear as different line weights.



1. TITLE BLOCK
2. DIMENSIONS
3. WALLS
4. DOORS
5. WINDOWS
6. FIXTURES
7. SYMBOLS
8. DIMENSIONS
9. NOTES



Process:

1. Regulating Lines

- a) Building Control Lines
- b) Overall Dimensions
- c) Structural Lines

2. Walls

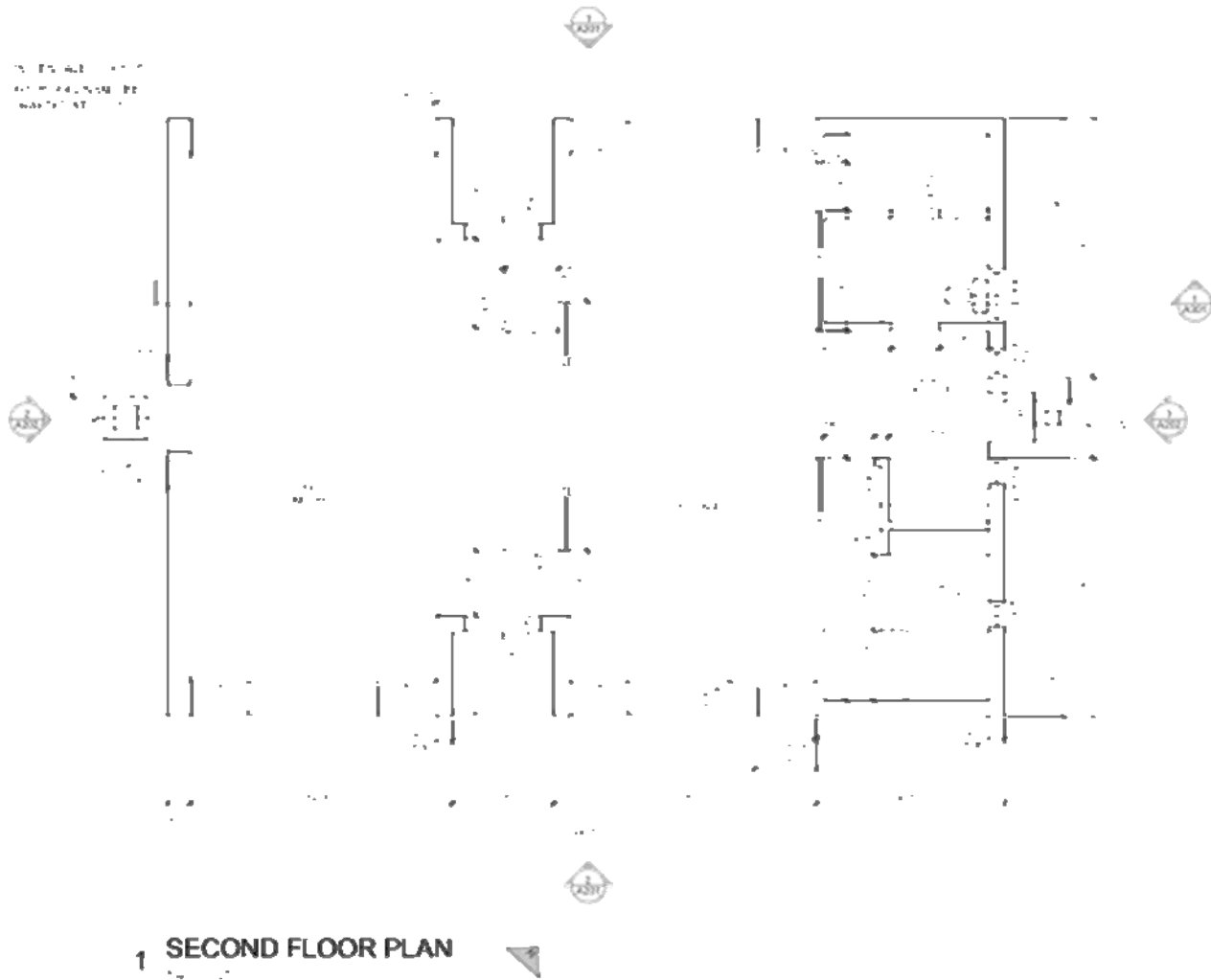
- a) Walls
- b) Doors
- c) Windows
- d) Fixtures

3. Annotation

- a) Symbols
- b) Dimensions
- c) Notes

4. Sheet

- a) Titles
- b) Titleblock



Process:

1. Regulating Lines

- a) Building Control Lines
- b) Overall Dimensions
- c) Structural Lines

2. Walls

- a) Walls
- b) Doors
- c) Windows
- d) Fixtures

3. Annotation

- a) Symbols
- b) Dimensions
- c) Notes

4. Sheet

- a) Titles
- b) Titleblock

Assignment Specifications:

- Email your progress drawing at the end of this class. *You must use your City Tech email address and email to the gmail submission email address. Include the assignment title in the email subject line.
- Name files: Last Name First Name – Assignment # Assignment Title.
- Example: Anderson Nicole – Assignment 8 First and Second Floor Plans
- Email final submission *BEFORE THE START OF THE NEXT CLASS*
- Submit 8.5"x11" plot of each drawing *AT THE START OF THE NEXT CLASS* - bind/staple as required