



New York City College of Technology Division of Continuing Education

Building Information Modeling with Revit 2014 Module 03 *The Warm-up Project*



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<http://professorpaulking.wordpress.com/>
<http://openlab.citytech.cuny.edu/bim101-sp14/>

<http://students.autodesk.com/>

New Project

- Grids 1 2
- Slab 1 2

▪ Levels

▪ Walls

- Roof
- Cut Plane
- Attach Top

Door Openings 1 2 3

Windows 1 2 3 4

Columns 1 2

Structural Plan

- View Template
- Propagate Extents

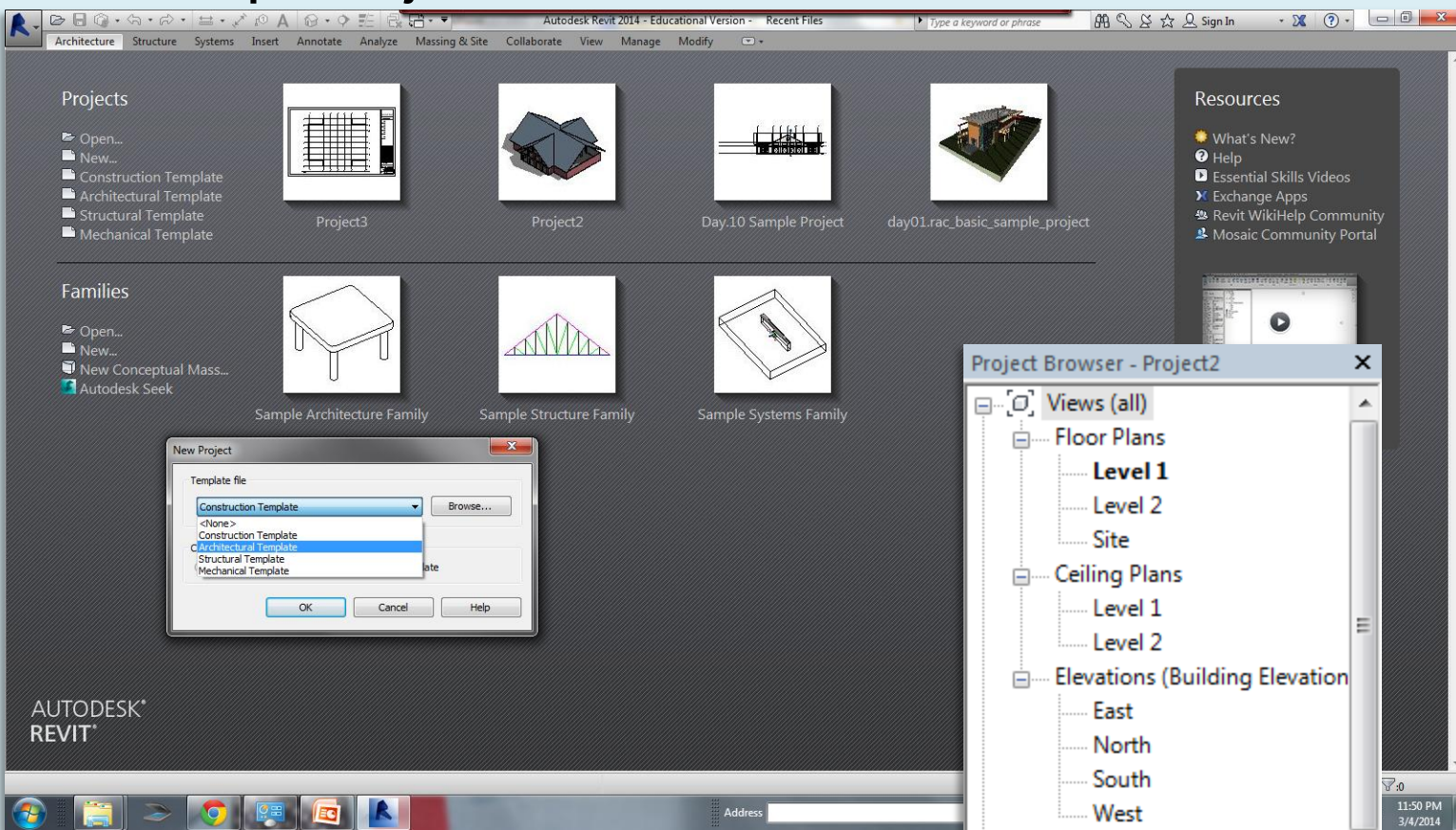
New Sheets

- Layout
- Plot to PDF
-

Wrap Up

Revit Introduction
Division of Continuing Education

Warm Up Project

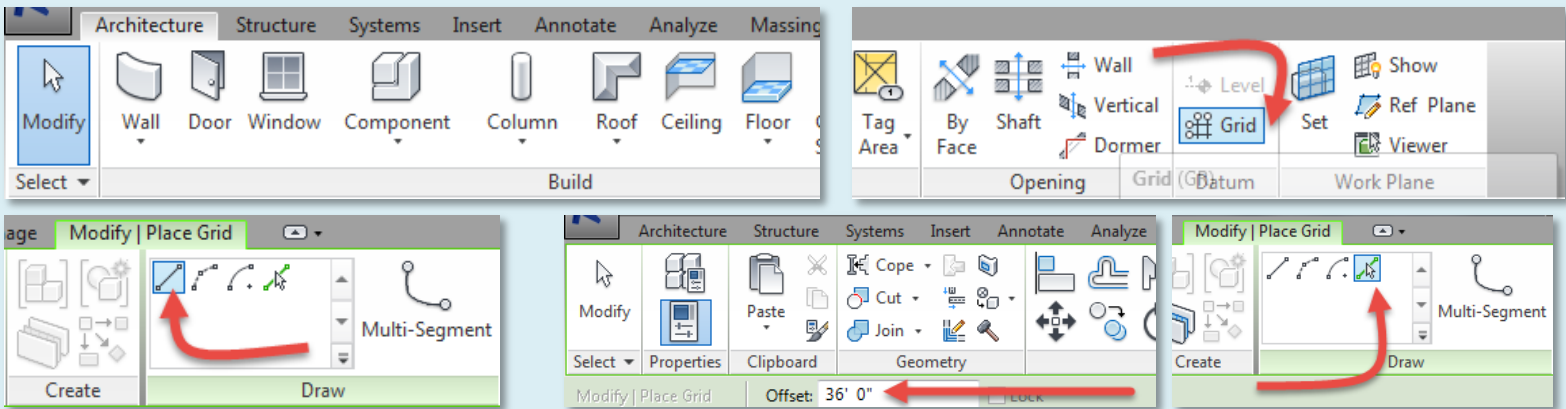


New Project

- Architecture Template

- New Project
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- Division of Continuing Education

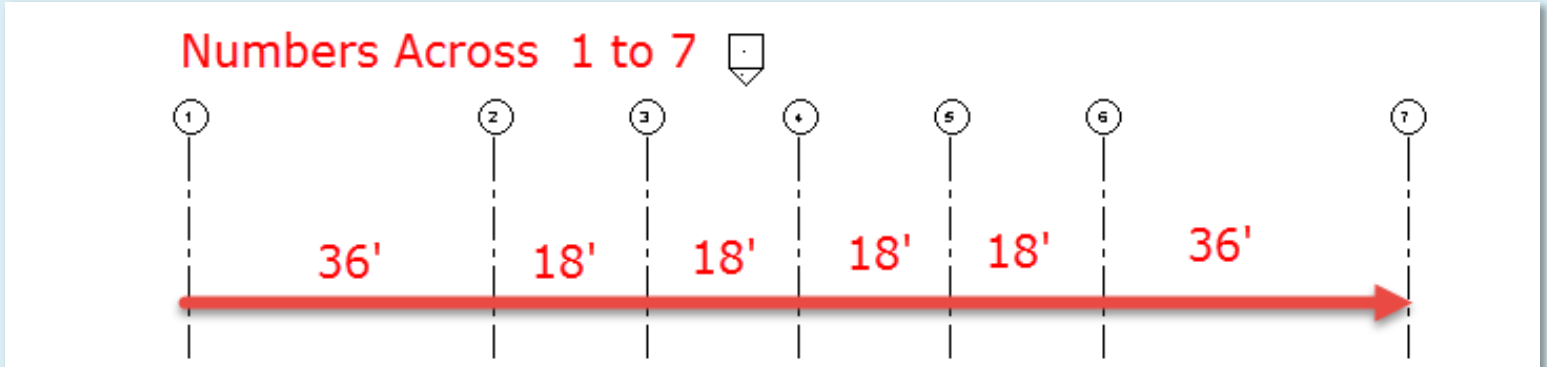
Warm Up Project : Grid



Grid

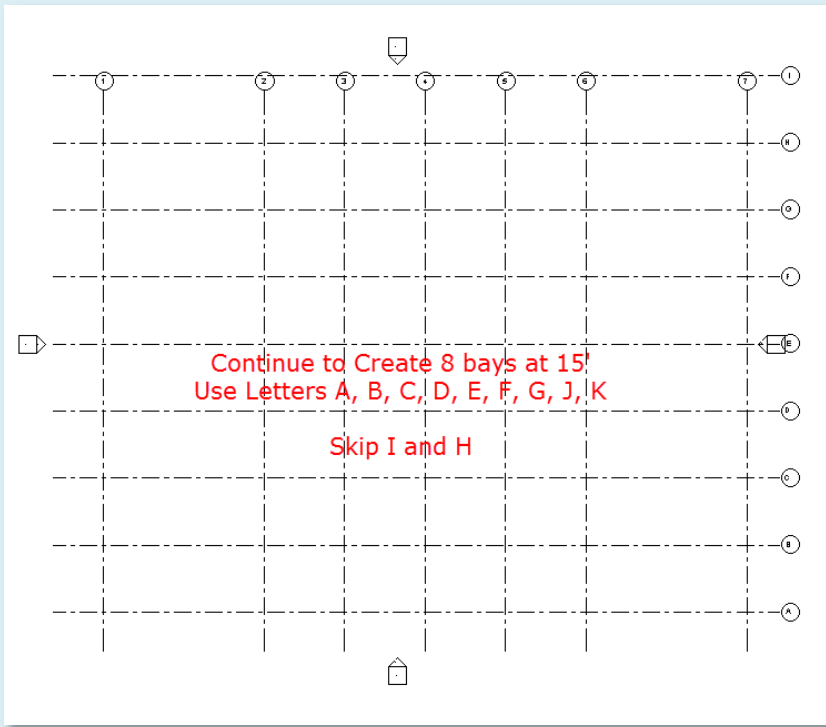
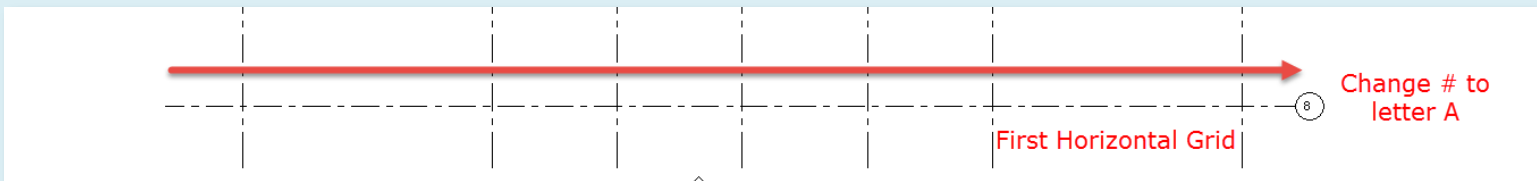
Place Grid Line #1

Then "Pick Lines" offset to create the rest



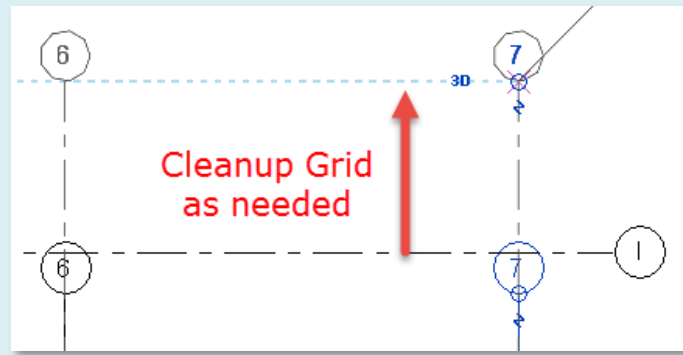
- New Project
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Warm Up Project : Grid



Grid

- Place first Vertical Grid Line
- Change # to letter "A"
- Create 15 bays @ 15'
- Use letters A, B, C, D, F, G, J, K – skip I and H



New Project

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Levels

Walls

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Columns 1 2

Structural Plan

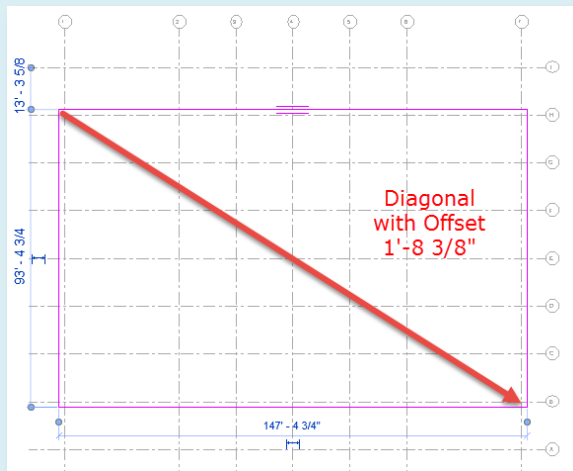
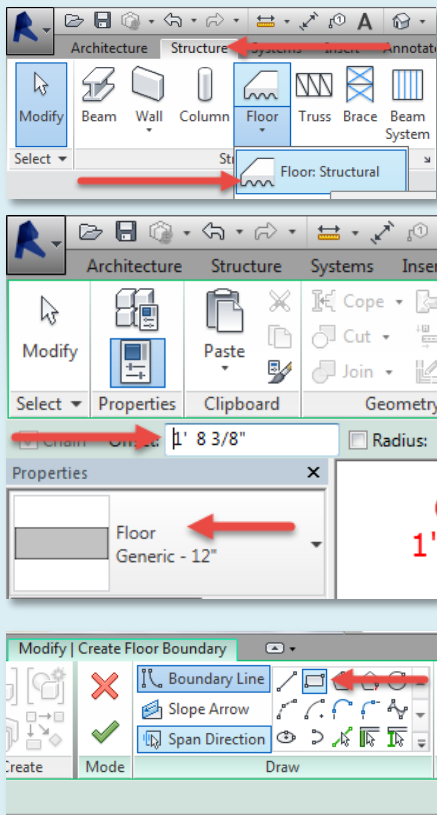
- View Template
- Propagate Extents

New Sheets

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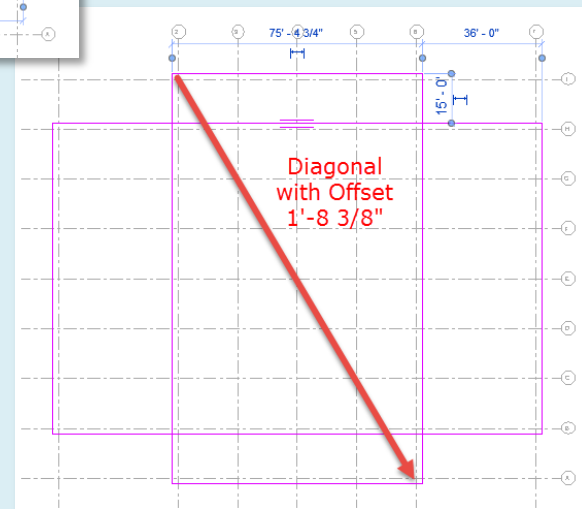
Wrap Up

Warm Up Project : Structural Slab



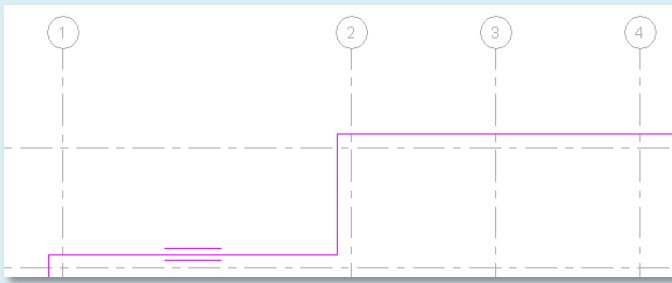
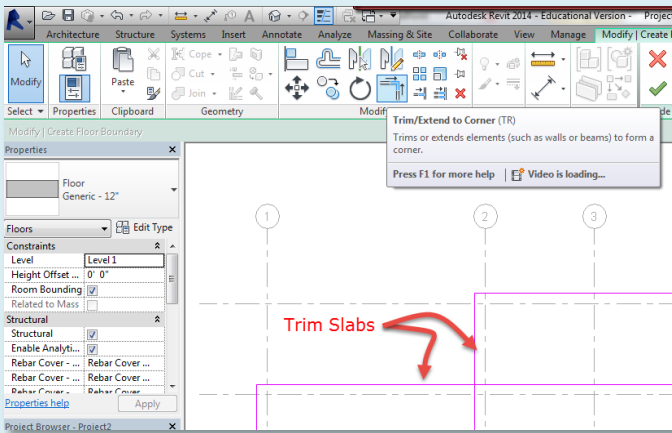
Structure

- Floor : Structural
- Offset 1' 8 3/8"
- Grid 1-J to 7-B
- Grid 2-K to 6-A

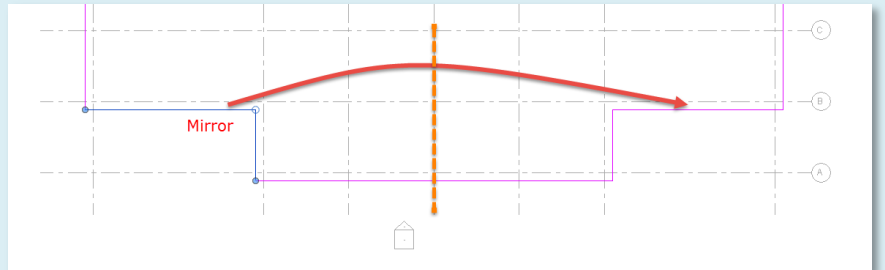
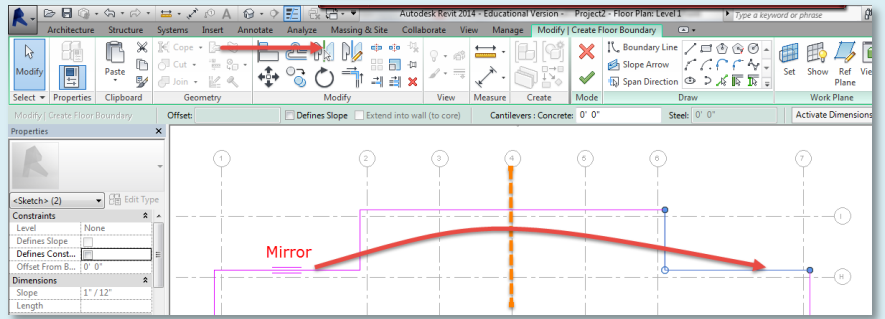
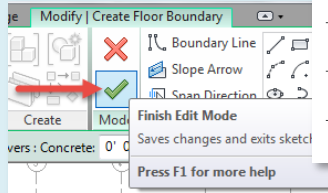
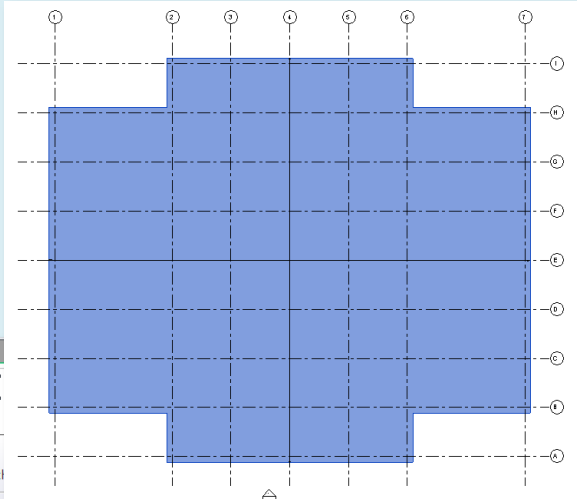


- New Project
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Warm Up Project : Slab Cleanup

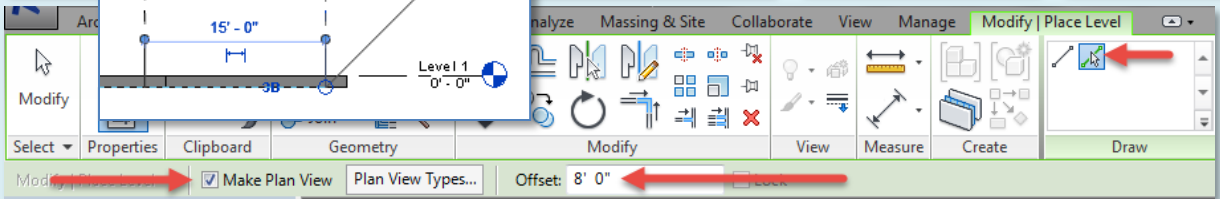
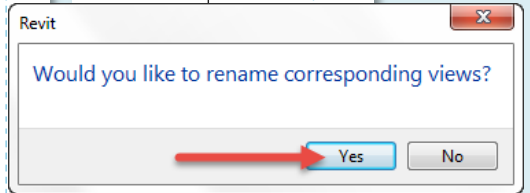
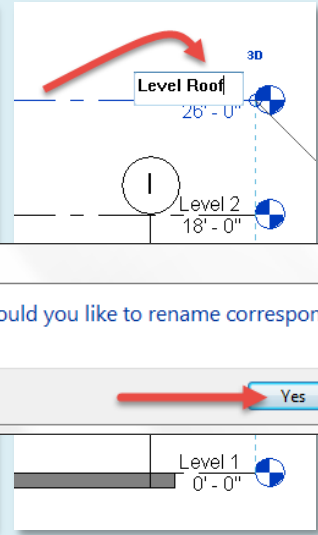
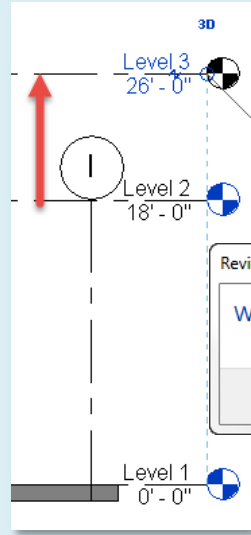
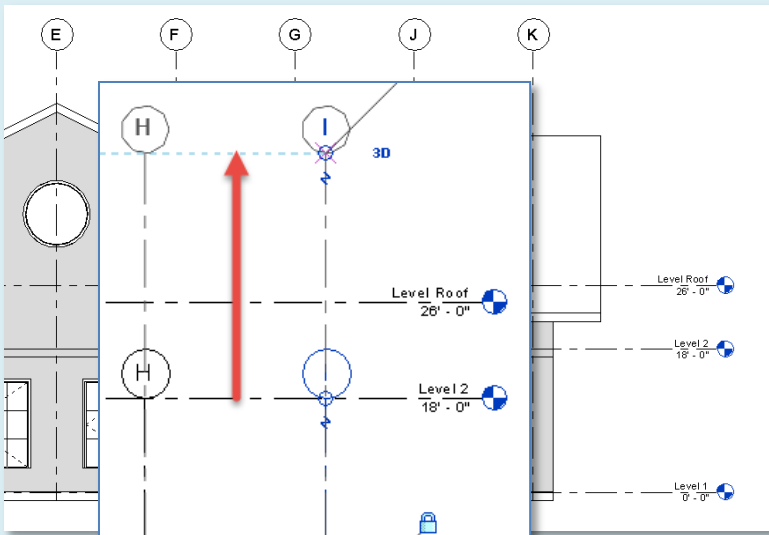
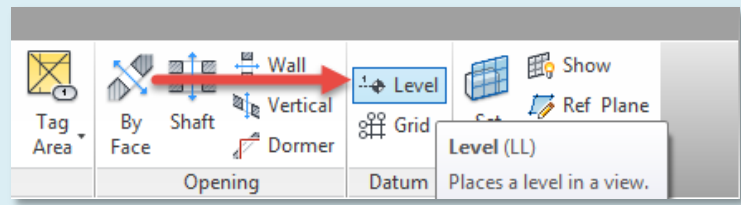
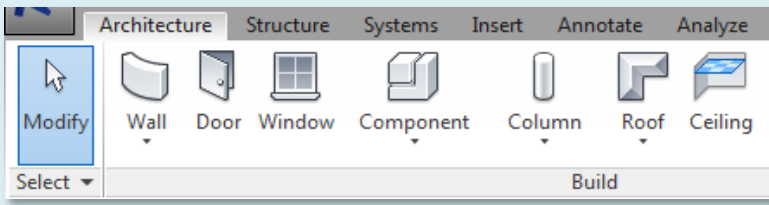


Trim/Extend Slab at corners
Then Mirror Slab Edges
Finish the sketch



- New Project
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- Wrap Up

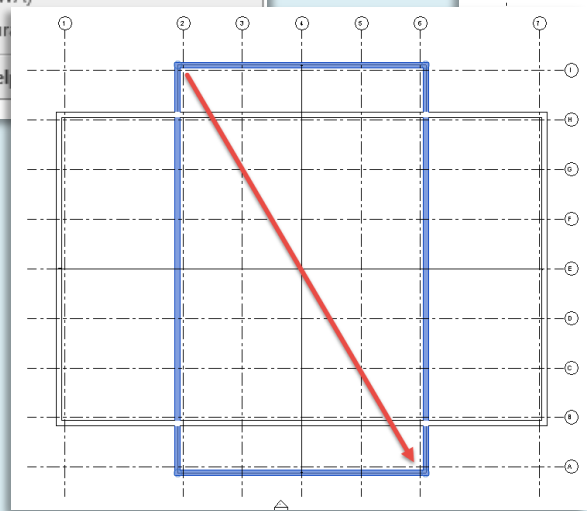
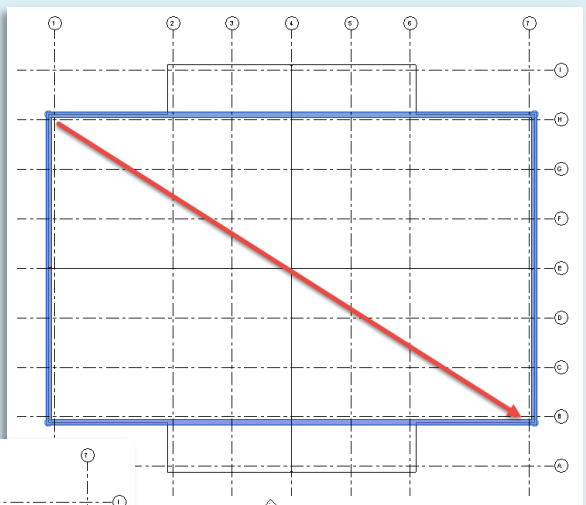
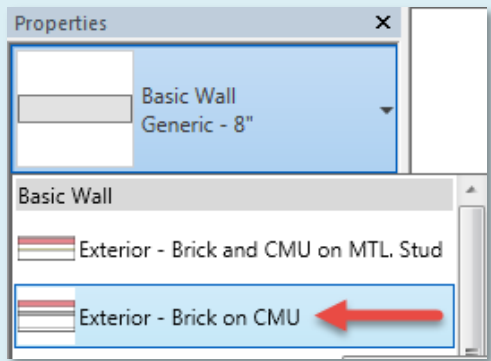
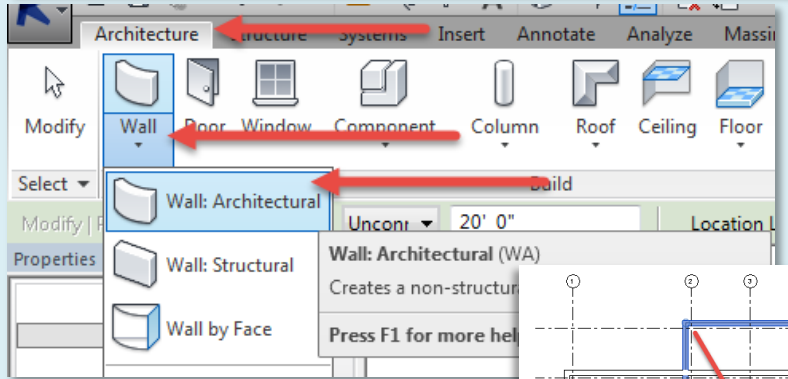
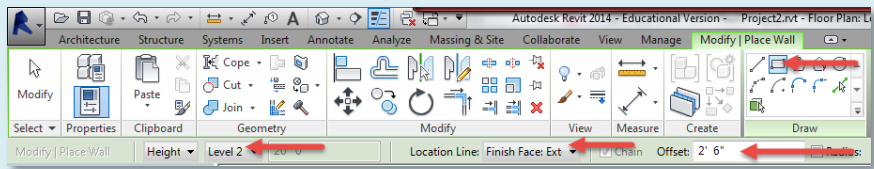
Warm Up Project : Levels



- Roof @ 26'
- Level 2 @ 18'
- Level 1 @ 0'

- New Project
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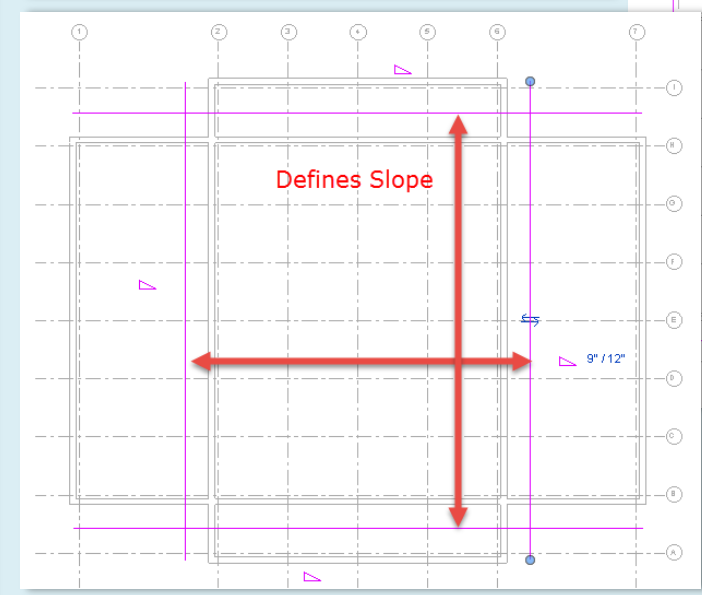
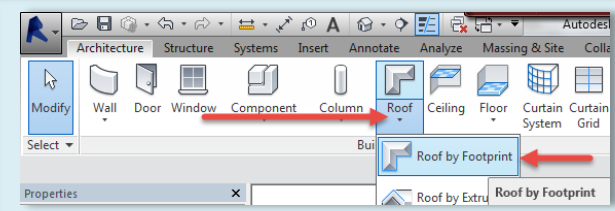
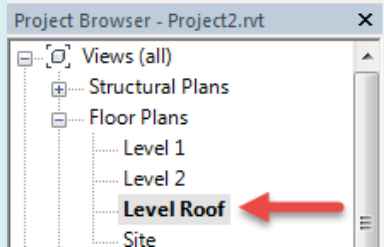
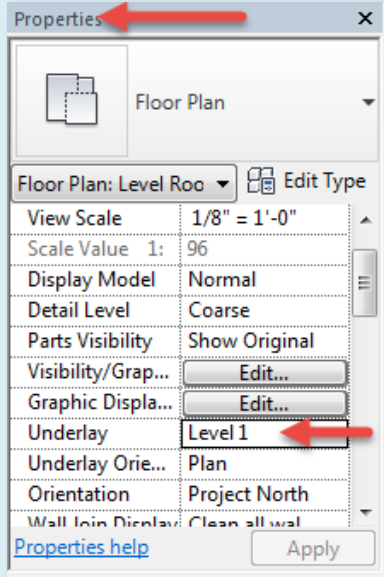
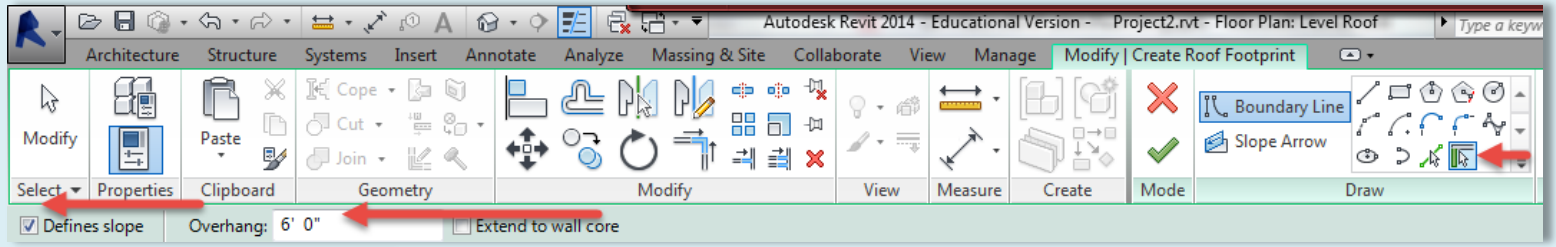
Warm Up Project : Walls



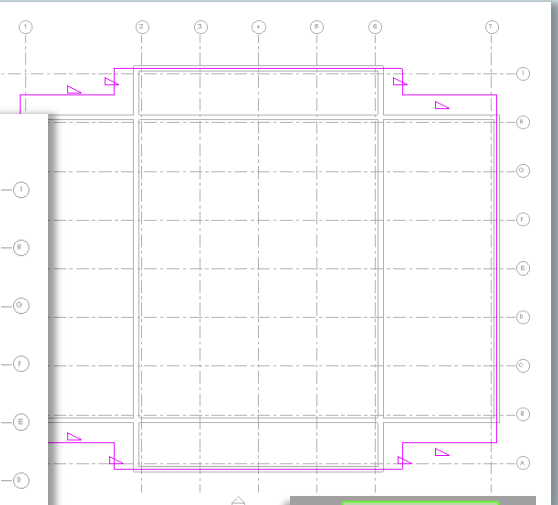
- Wall Masonry
- Offset 2'6" from Grids

- New Project
 - Grids 1 2
 - Slab 1 2
- Levels
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 - Cut Plane
 - Attach Top
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- Structural Plan
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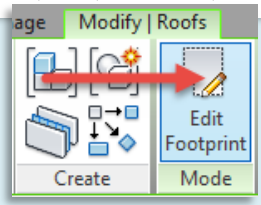
Warm Up Project : Roof



- Defines Slope (y/n)
- Overhang 6'-0"

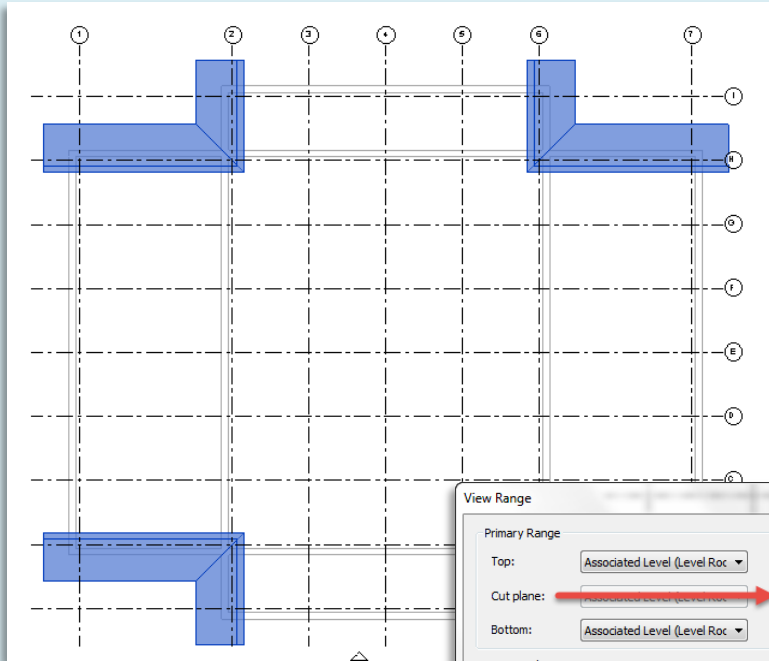
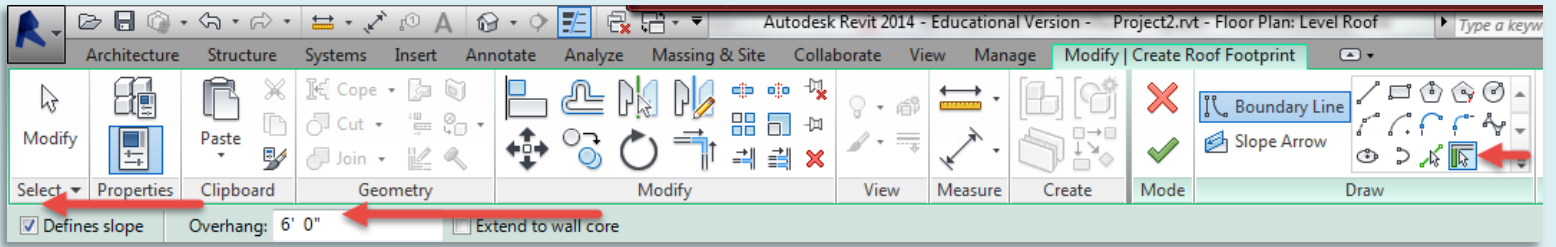


Edit Footprint

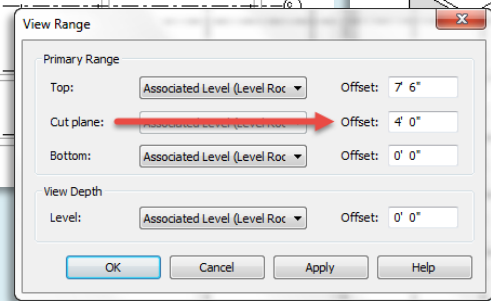
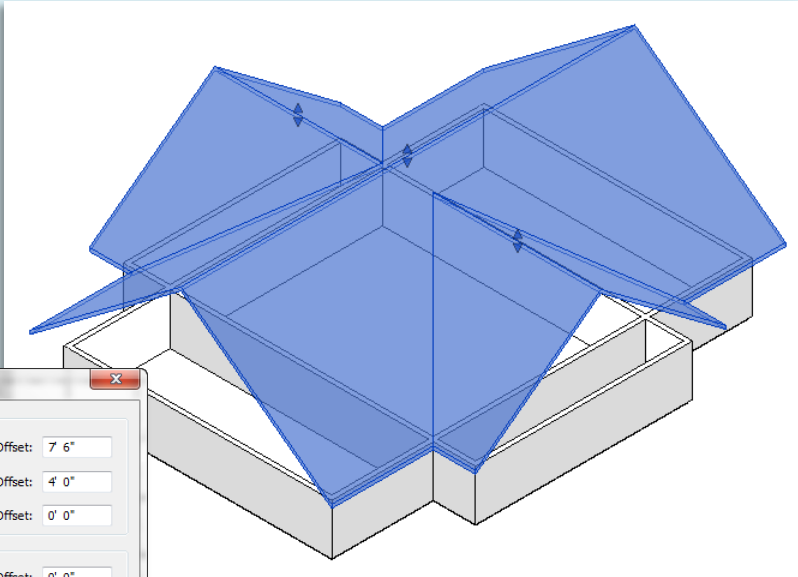


- New Project
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Warm Up Project : Roof



- Wall Masonry
- Offset 2'6" from Grids



- Roof Display has a cut plane @ 4'-0"

New Project

- Grids 1 2
- Slab 1 2

▪ Levels

▪ Walls

- Roof
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- Attach Top

Door Openings 1 2 3

Windows 1 2 3 4

Columns 1 2

Structural Plan

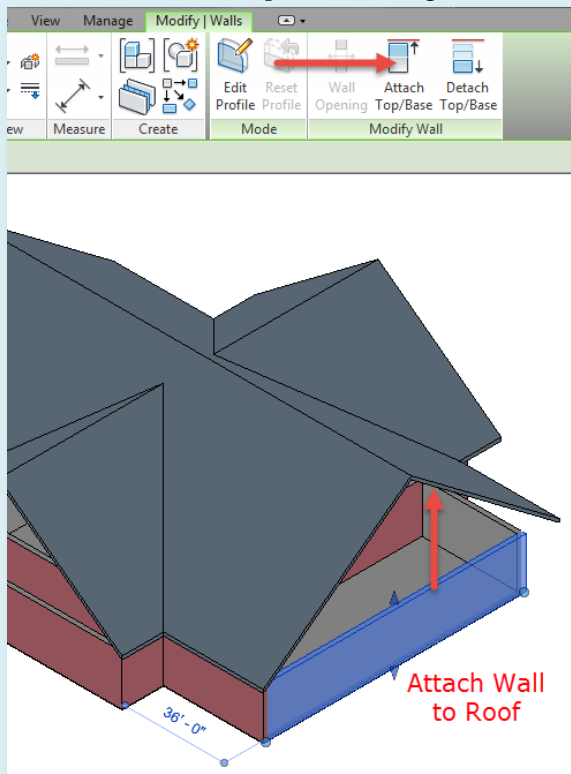
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New Sheets

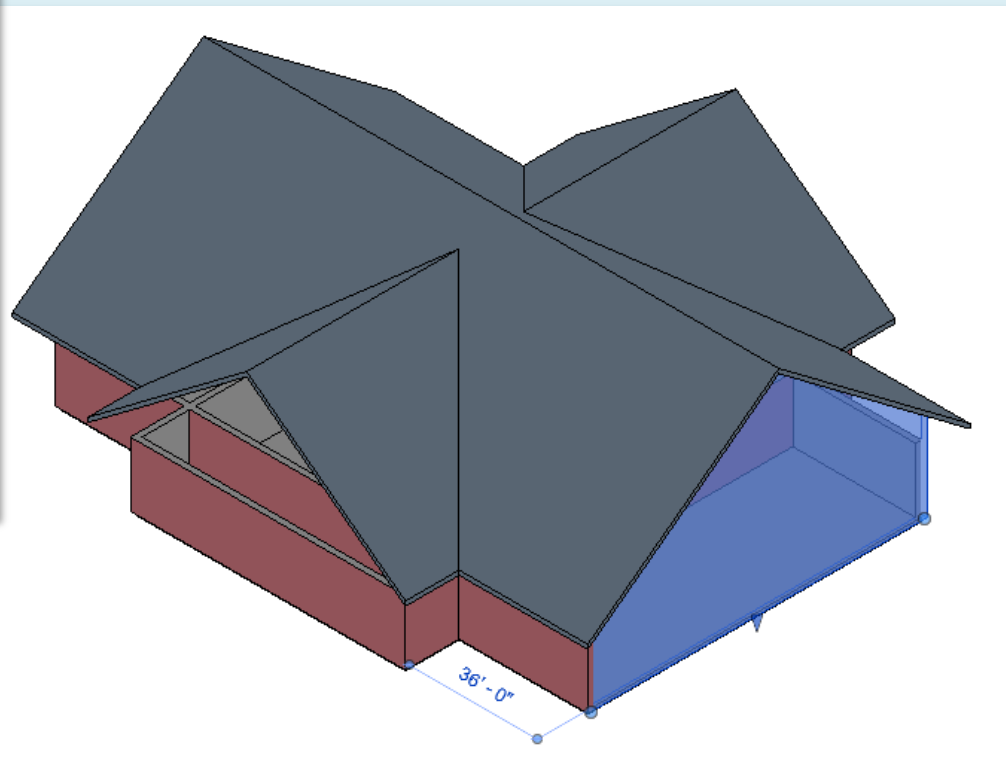
- Layout
- Plot to PDF
-

Wrap Up

Warm Up Project : Roof : Attach Top/Base



- **Select Wall**
- **Then Select Attach Top/Base**



- **Attach all of the walls to the roof**

- New Project
 - Grids 1 2
 - Slab 1 2
- Levels
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Door Openings 1 2 3

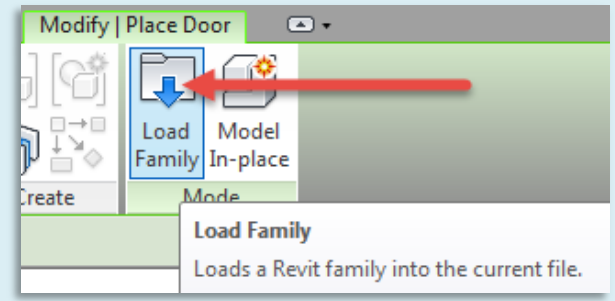
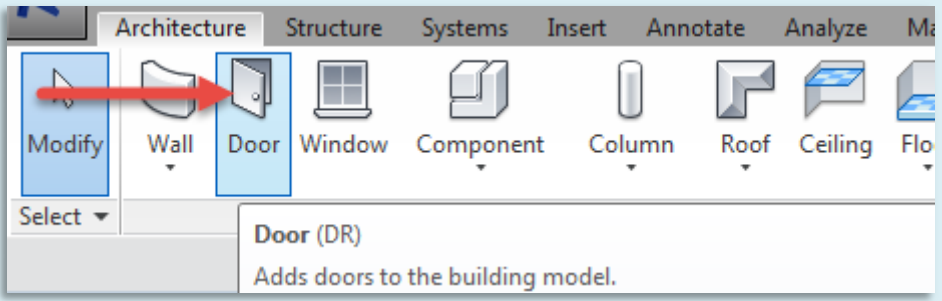
Windows 1 2 3 4

Columns 1 2

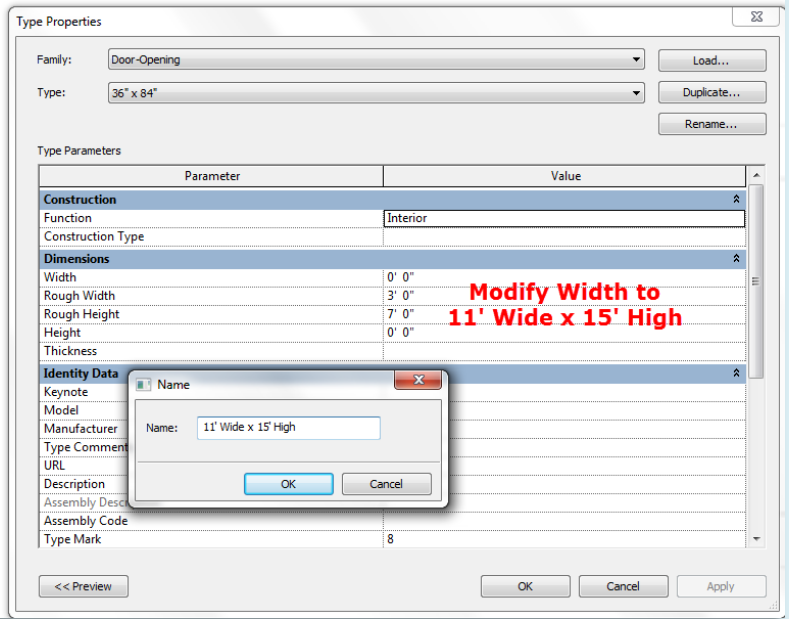
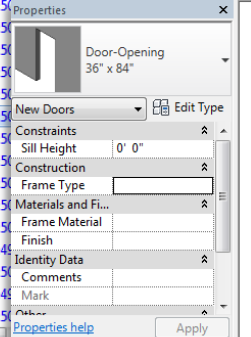
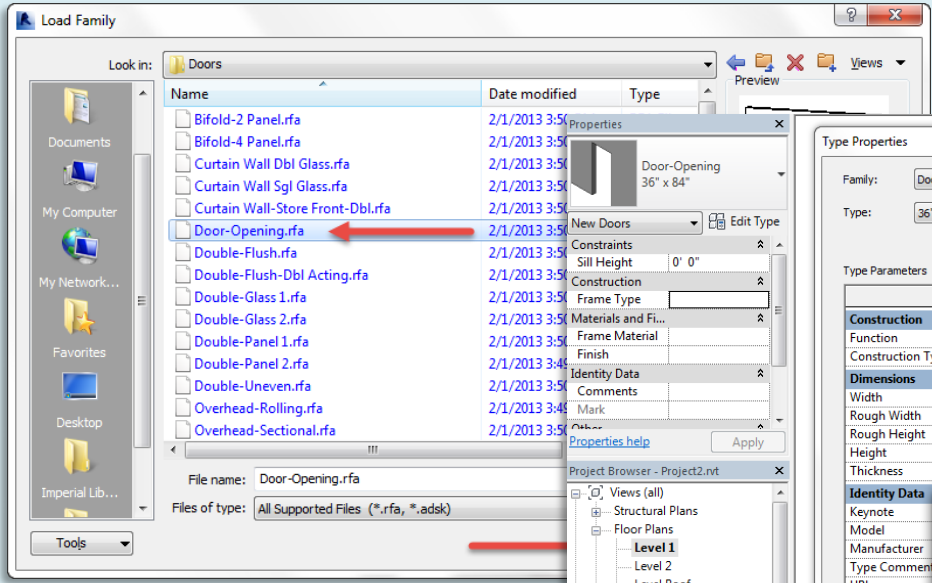
- Structural Plan
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Warm Up Project : Add Door Openings



- Door
- Load Family > Door Opening



- Duplicate
- 11' Wide x 15' High

New Project

- Grids 1 2
- Slab 1 2

▪ Levels

▪ Walls

- Roof
- Cut Plane
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Door Openings 1 2 3

Windows 1 2 3 4

Columns 1 2

Structural Plan

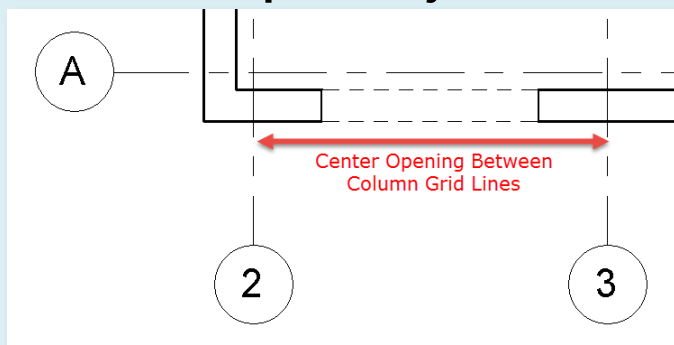
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New Sheets

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Wrap Up

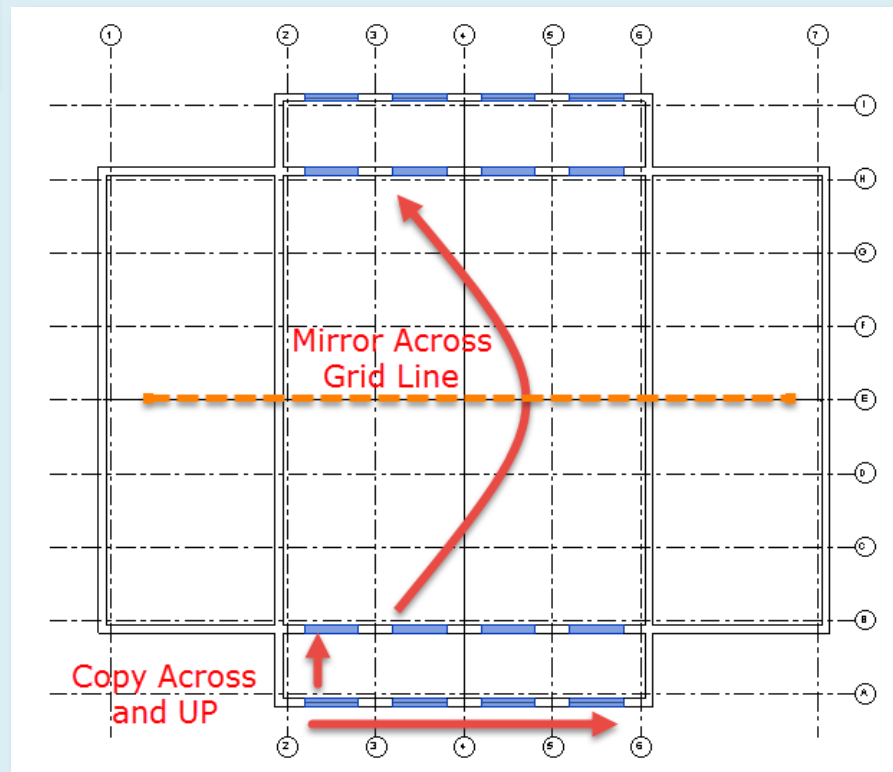
Warm Up Project : Add Door Openings



- **Center Opening Between Grids 2 & 3**

- **Copy Opening Across then Up**

- **Mirror group across grid line**



New Project

- Grids 1 2
- Slab 1 2

▪ Levels

▪ Walls

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Door Openings 1 2 3

Windows 1 2 3 4

Columns 1 2

Structural Plan

- View Template
- Propagate Extents

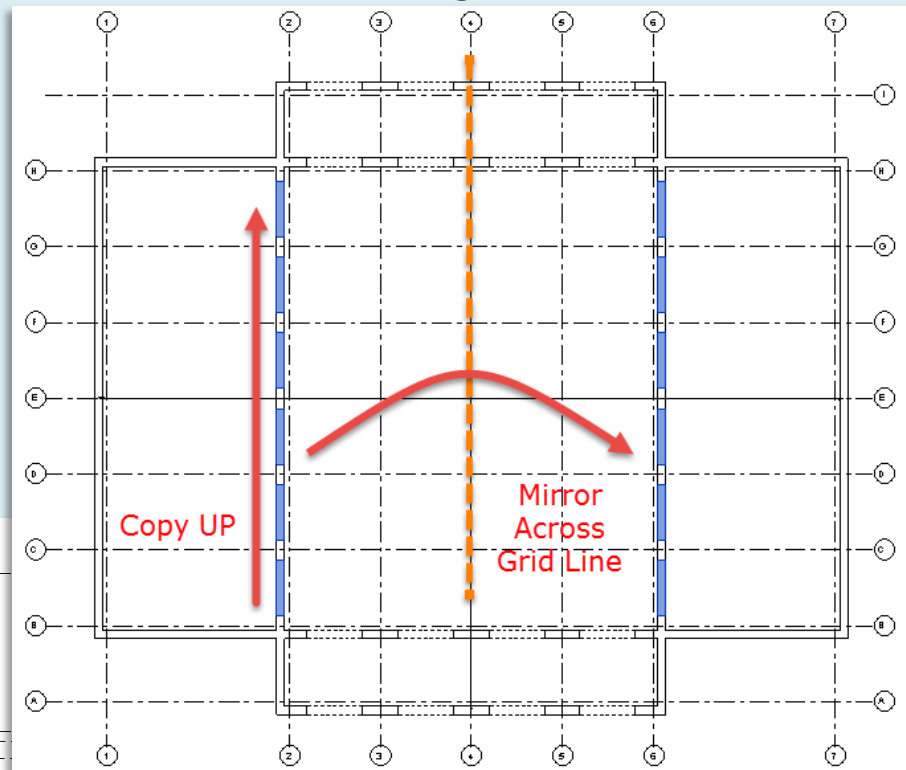
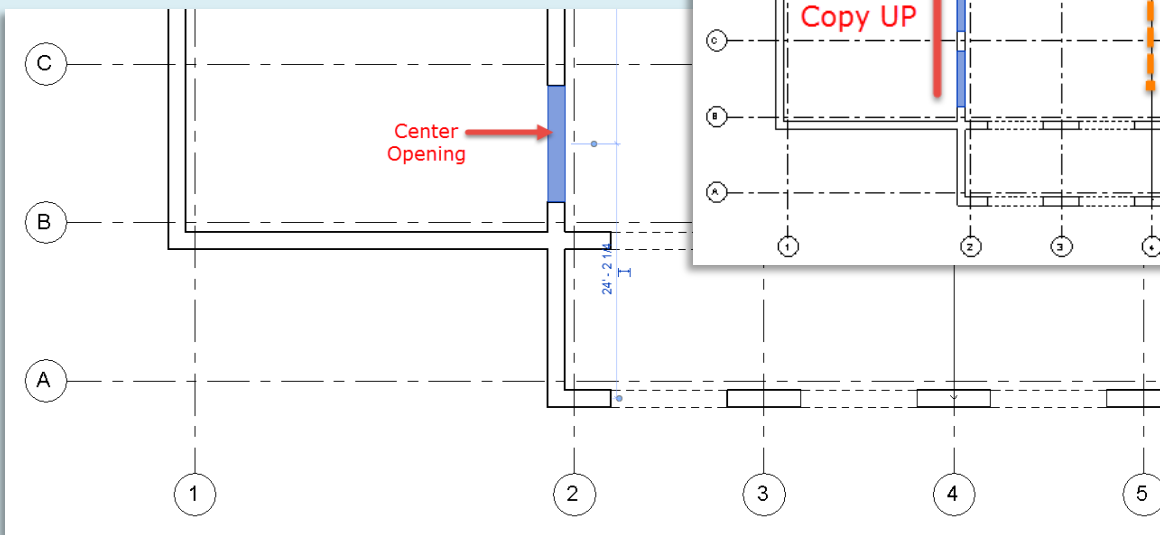
New Sheets

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-

Wrap Up

Warm Up Project : Add Door Openings

- Center Opening Between Grids B & C
- Copy Up
- Mirror group across grid line



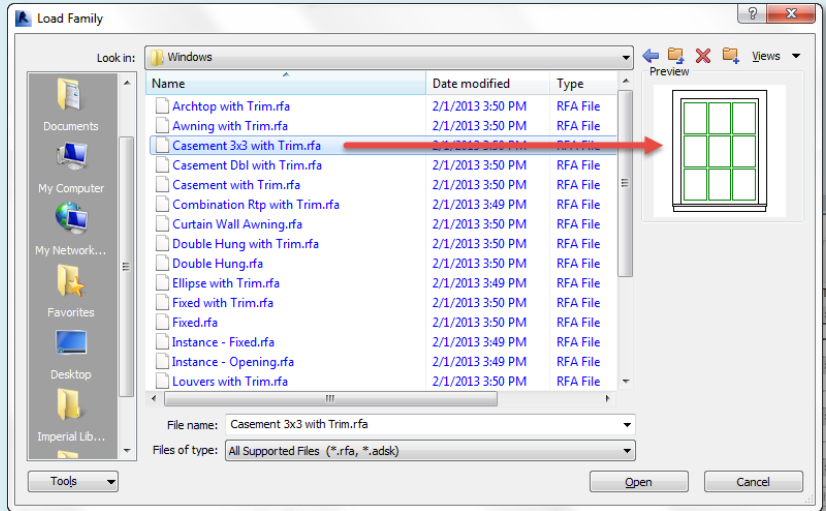
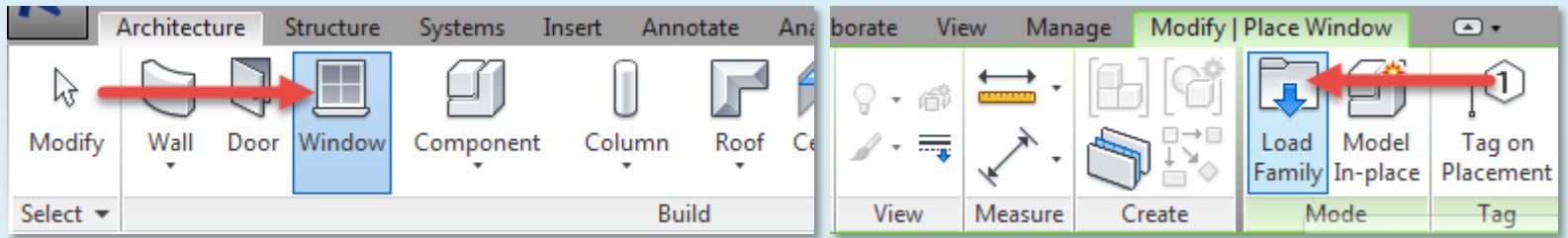
- New Project
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Windows 1 2 3 4

- Columns 1 2
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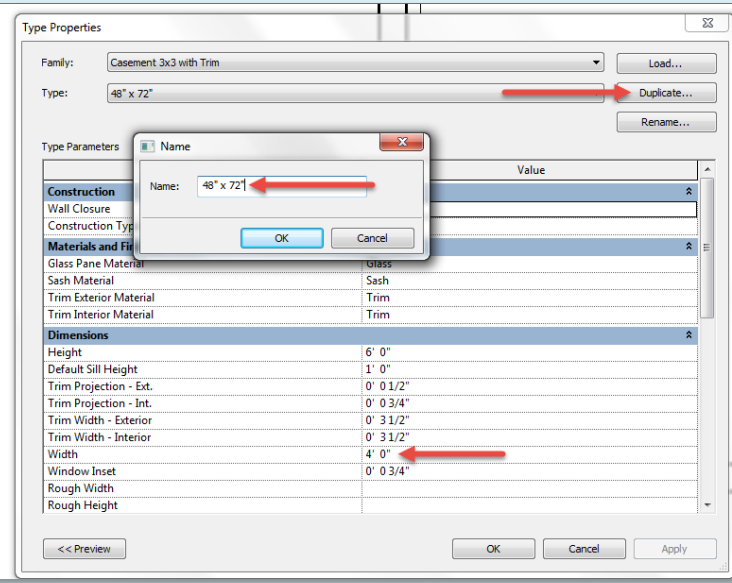
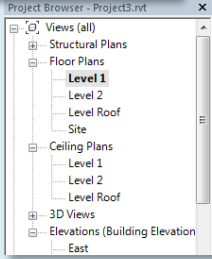
- New Sheets
 - Layout
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Warm Up Project : Add Windows



- Duplicate
- 48" x 72"

- Window
- Load Family > Casement 3 x 3



New Project

- Grids 1 2
- Slab 1 2

▪ Levels

▪ Walls

- Roof
- Cut Plane
- Attach Top

Door Openings 1 2 3

Windows 1 2 3 4

Columns 1 2

Structural Plan

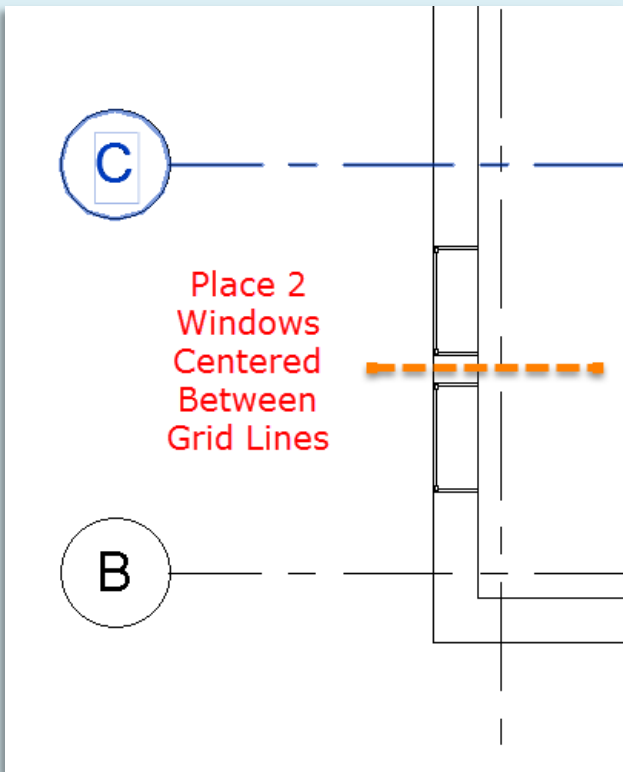
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New Sheets

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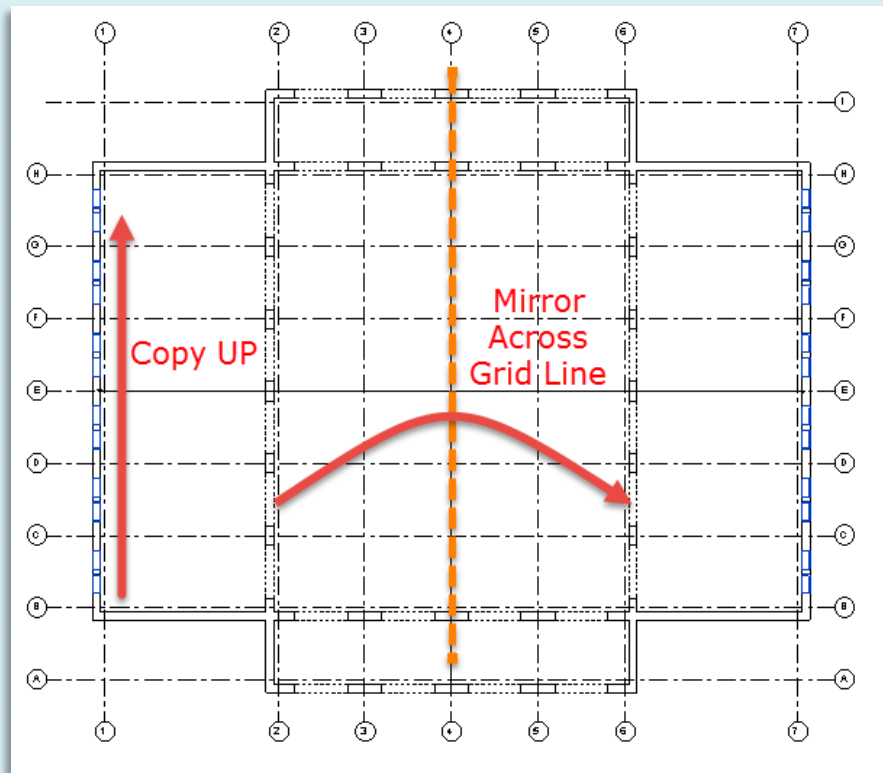
Wrap Up

Warm Up Project : Add Windows



- Place 2 Windows
- Centered Between Grid Lines

- Copy Windows UP
- Mirror Across Grid Line



New Project

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- Slab 1 2

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Windows 1 2 3 4

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Warm Up Project : Add Windows

- Copy Windows UP
- Mirror Across Grid Line

The screenshot illustrates the workflow for copying windows from one level to another in Autodesk Revit. The main window shows a structural plan view with grid lines and levels. The Properties palette on the left shows the 'Casement 3x3 with Trim 48" x 72"' window type. The Project Browser on the bottom left shows the hierarchy of levels: Level 1, Level 2, and Level Roof. Three dialog boxes are overlaid on the screen:

- Copy to Clipboard:** A dialog box with the text "Copy to Clipboard" and "Copies selected elements to the clipboard." A red arrow points from the ribbon's Copy button to this dialog.
- Select Levels:** A dialog box with a list of levels: Level 1, Level 2, and Level Roof. Level 2 is selected, and a red arrow points from this dialog to the 'Aligned to Selected Levels' option in the ribbon's Paste dropdown.
- Aligned to Selected Levels:** A dialog box with the text "Aligned to Selected Levels" and "Pastes multiple elements from one level to specified levels." A red arrow points from this dialog to the 'Aligned to Selected Levels' option in the ribbon's Paste dropdown.

A red arrow at the bottom of the screenshot points to a set of windows on Level 1, with the text "Select Windows" next to it.

- New Project
 - Grids 1 2
 - Slab 1 2
 - Levels
 - Walls
 - Roof
 - Cut Plane
 - Attach Top
- Door Openings 1 2 3

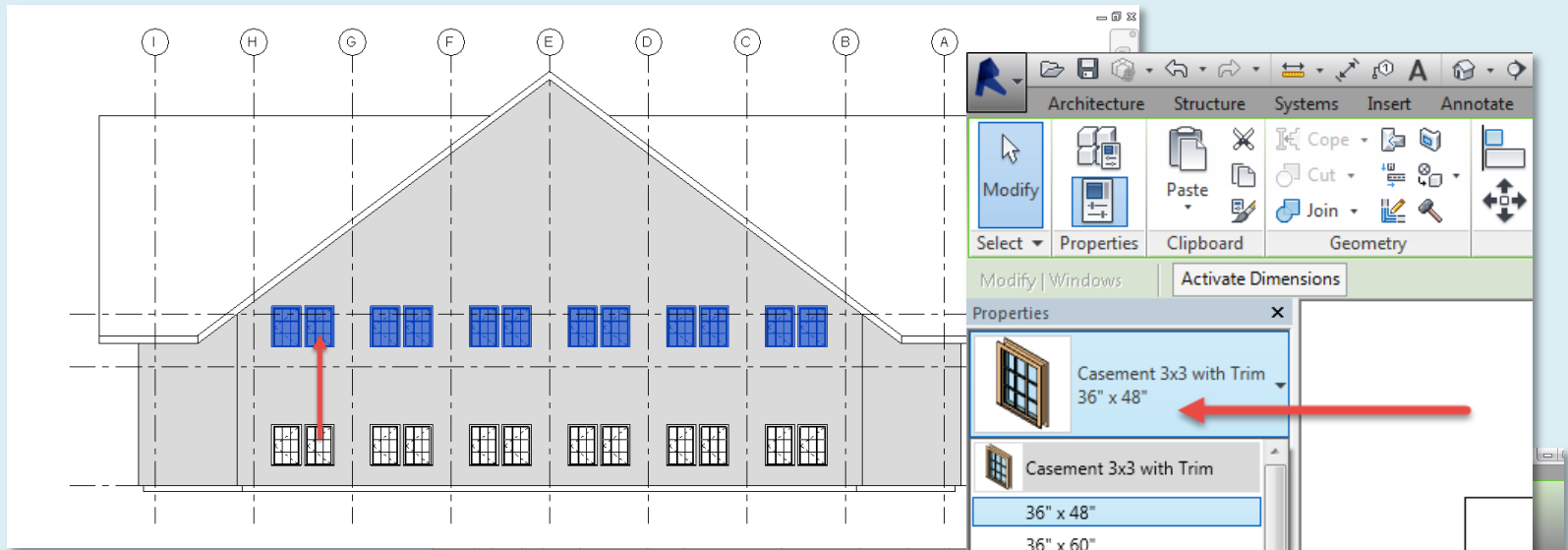
Windows 1 2 3 4

Columns 1 2

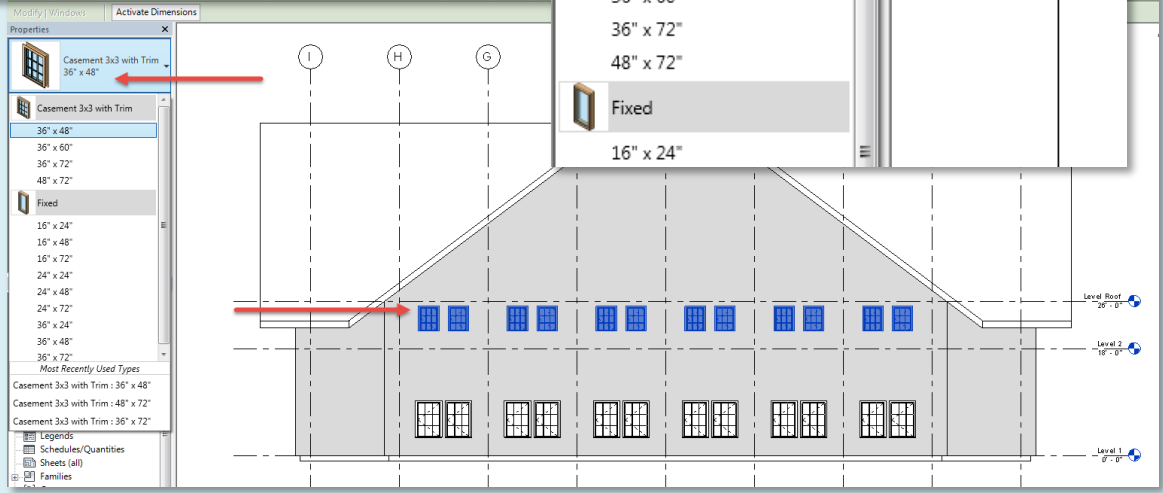
- Structural Plan
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Warm Up Project : Add Windows



- Copy Windows UP
- Change Windows to 36" x 48"

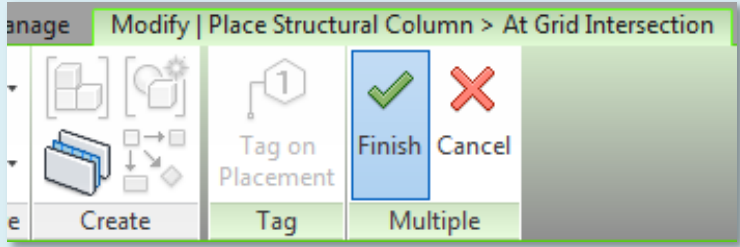
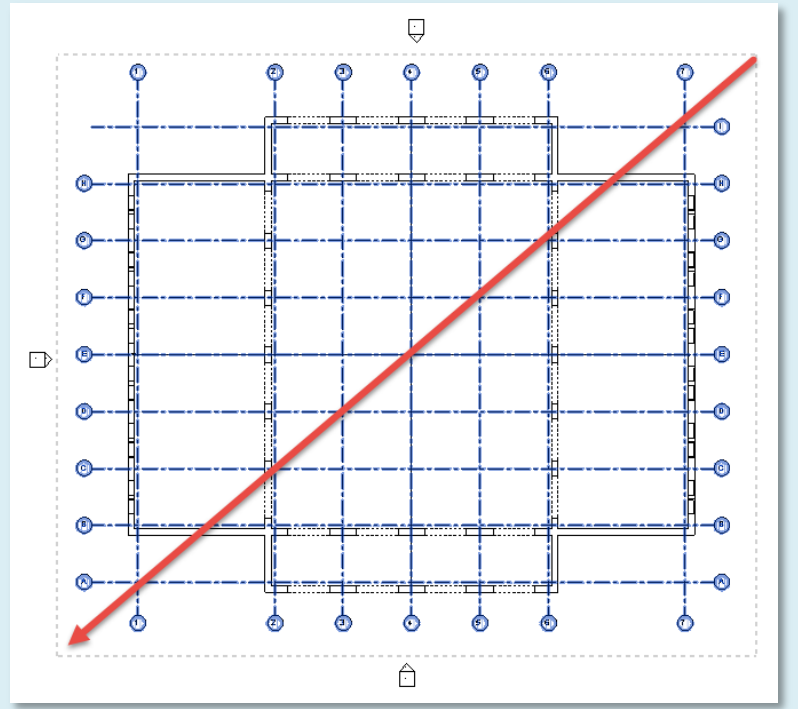
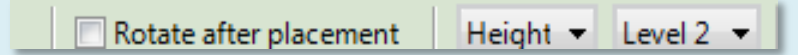
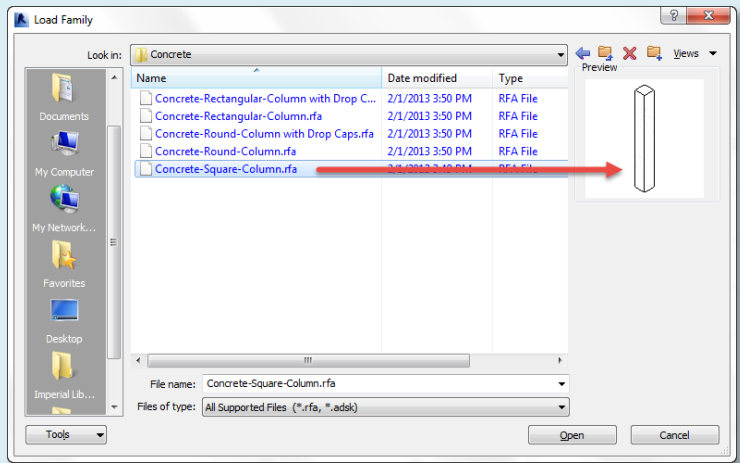
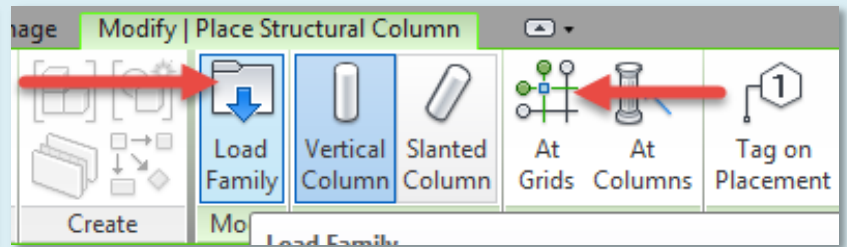
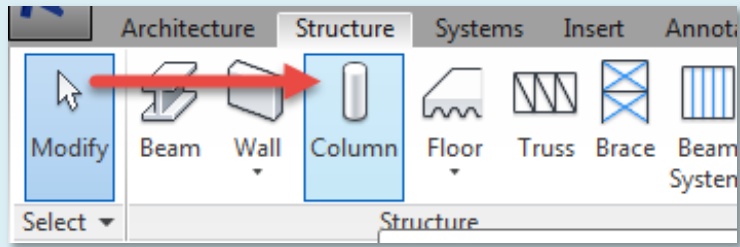


- New Project
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 - Layout
 - Plot to PDF

Warm Up Project : Add Columns



Day 03

New Project

- Grids 1 2
- Slab 1 2

▪ Levels

▪ Walls

- Roof
- Cut Plane
- Attach Top

Door Openings 1 2 3

Windows 1 2 3 4

Columns 1 2

Structural Plan

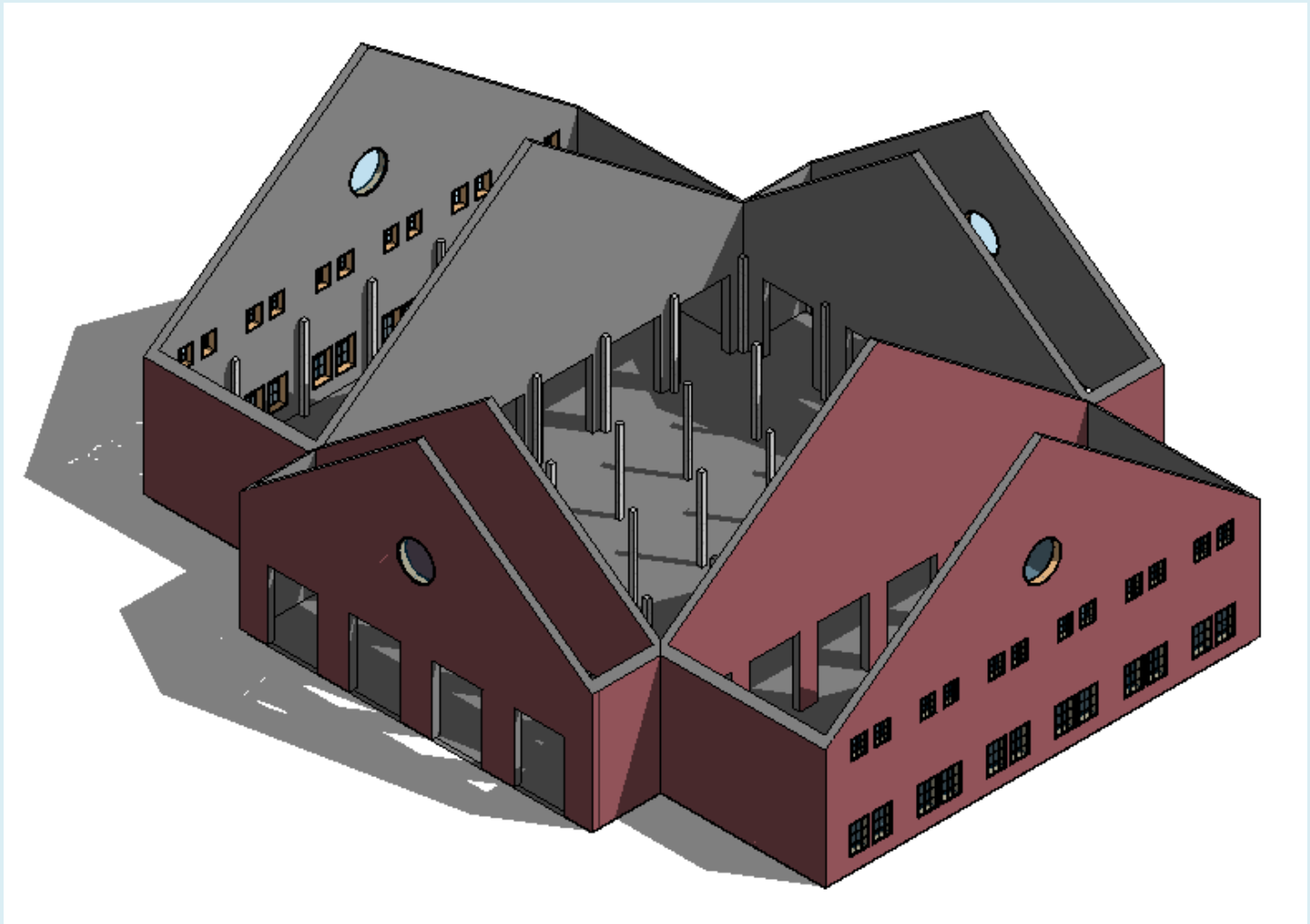
- View Template
- Propagate Extents

New Sheets

- Layout
- Plot to PDF
-

Wrap Up

Warm Up Project : Add Columns



New Project

- Grids 1 2
- Slab 1 2

▪ Levels

▪ Walls

- Roof
- Cut Plane
- Attach Top

Door Openings 1 2 3

Windows 1 2 3 4

Columns 1 2

Structural Plan

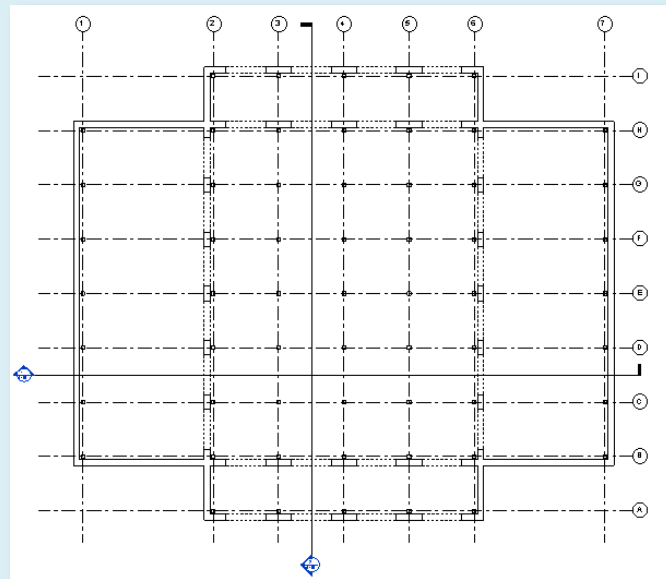
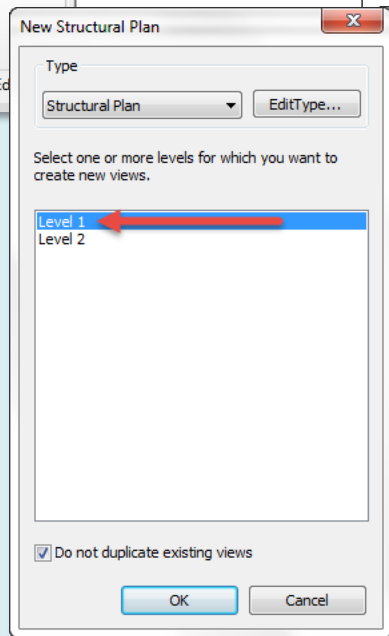
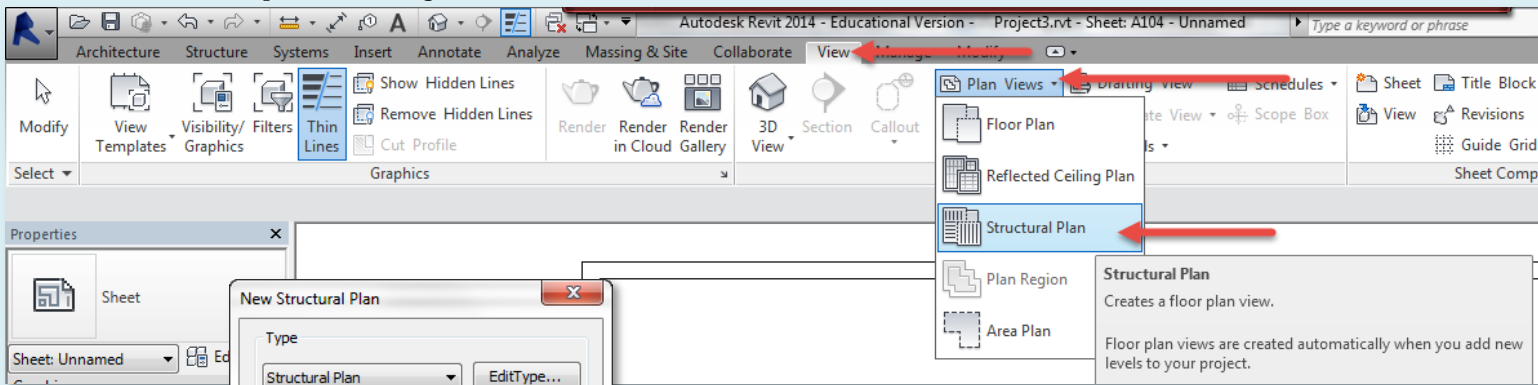
- View Template
- Propagate Extents

New Sheets

- Layout
- Plot to PDF
-

Wrap Up

Warm Up Project : View > Plan View > Structural



- New Project
 - Grids 1 2
 - Slab 1 2
- Levels
- Walls
- Roof
- Cut Plane
- Attach Top
- Door Openings 1 2 3

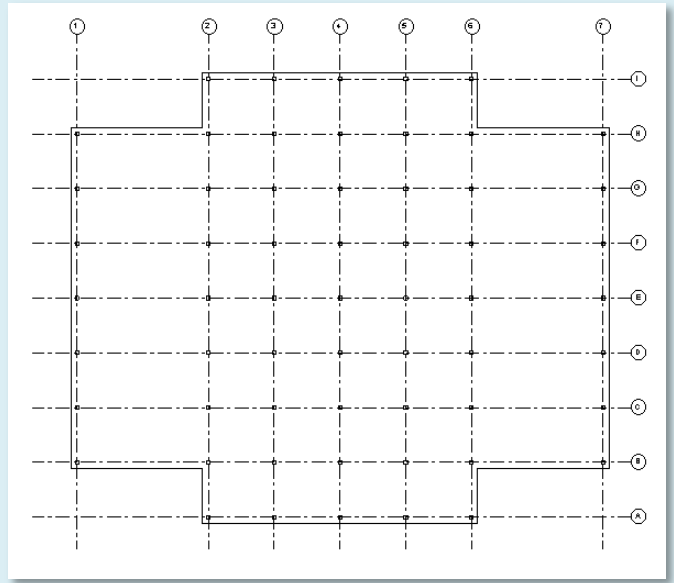
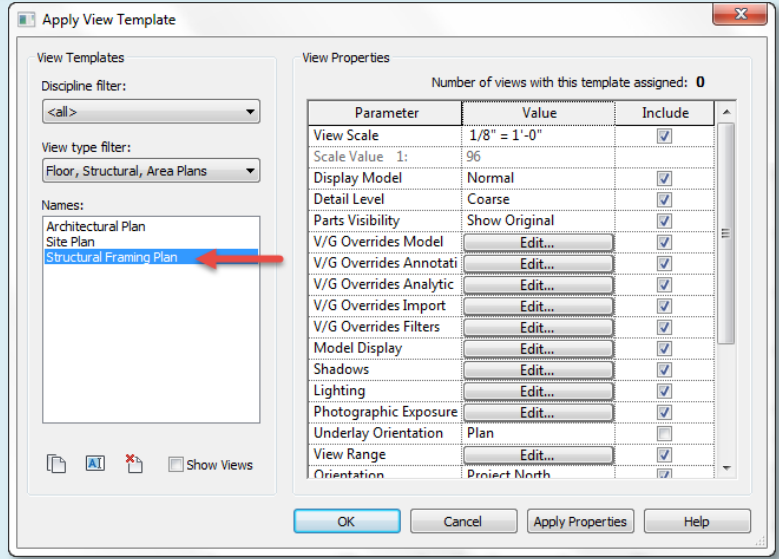
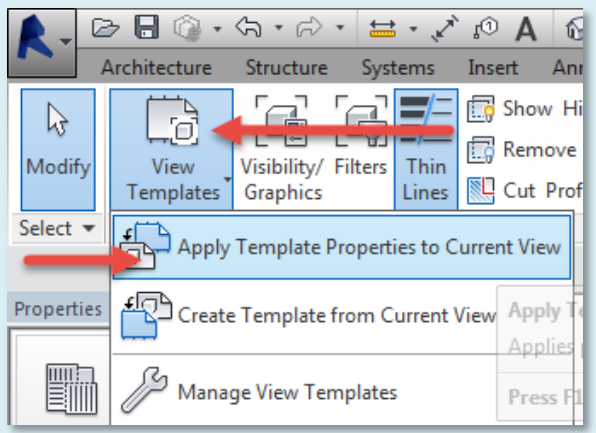
- Windows 1 2 3 4

- Columns 1 2

- Structural Plan
 - View Template
 - Propagate Extents

- New Sheets
 - Layout
 - Plot to PDF

Warm Up Project : View > View Templates



- New Project
 - Grids 1 2
 - Slab 1 2
- Levels
- Walls
- Roof
 - Cut Plane
 - Attach Top

Door Openings 1 2 3

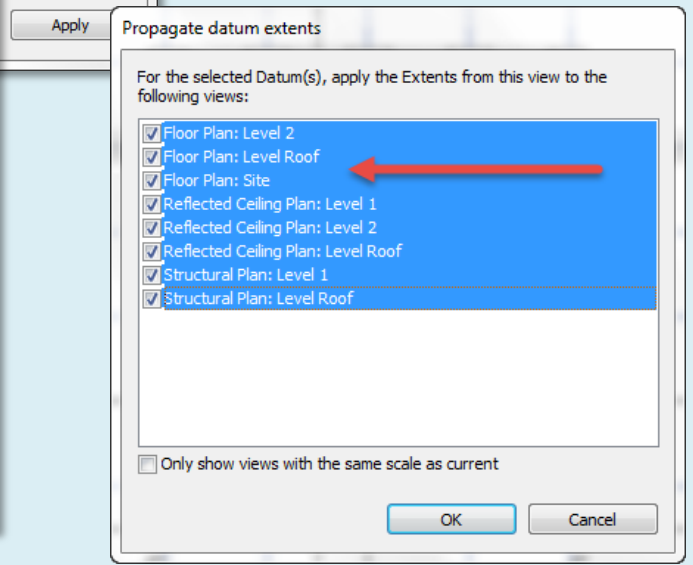
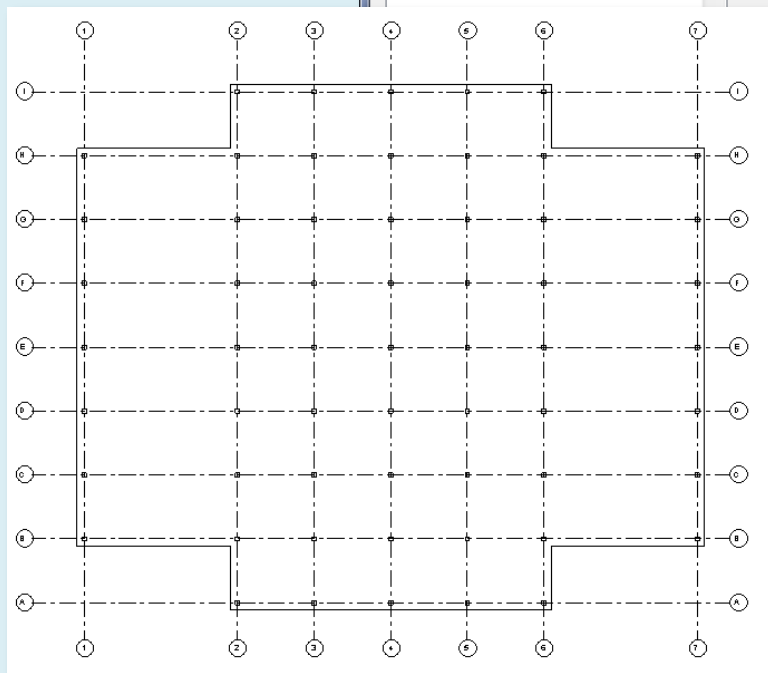
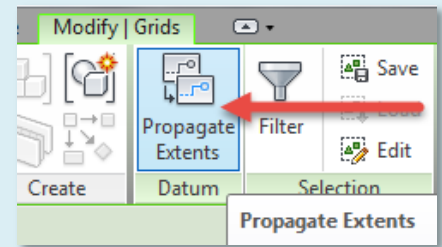
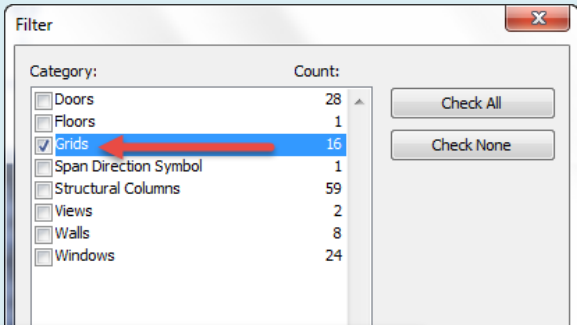
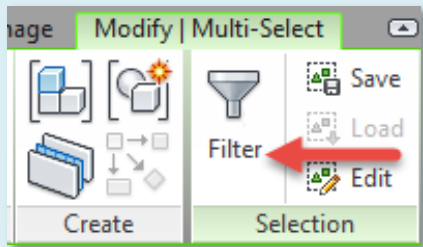
Windows 1 2 3 4

Columns 1 2

- Structural Plan
 - View Template
 - Propagate Extents

- New Sheets
 - Layout
 - Plot to PDF

Warm Up Project : Propagate Extents



- New Project
 - Grids 1 2
 - Slab 1 2
 - Levels
 - Walls
 - Roof
 - Cut Plane
 - Attach Top
- Door Openings 1 2 3
- Windows 1 2 3 4
- Columns 1 2
- Structural Plan
 - View Template
 - Propagate Extents
- New Sheets
 - Layout
 - Plot to PDF
- Wrap Up
- Revit Introduction
- Division of Continuing Education

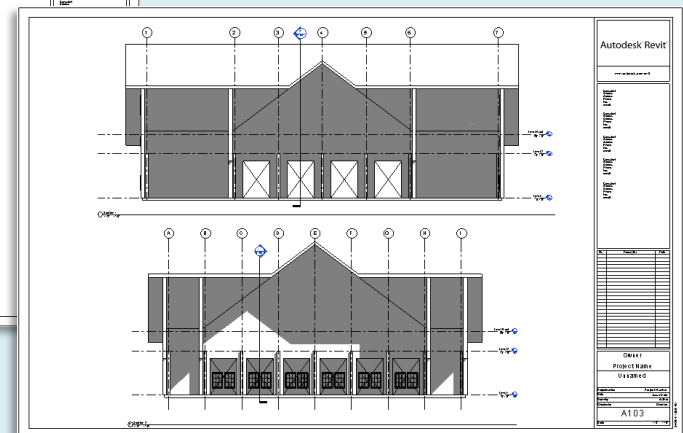
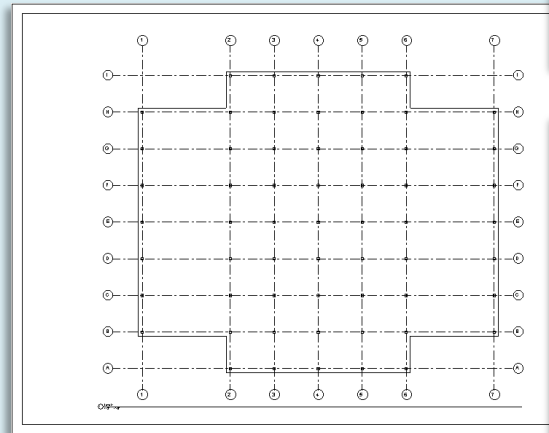
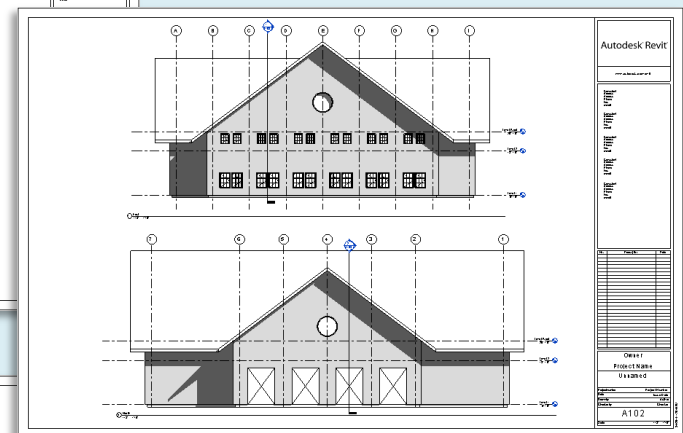
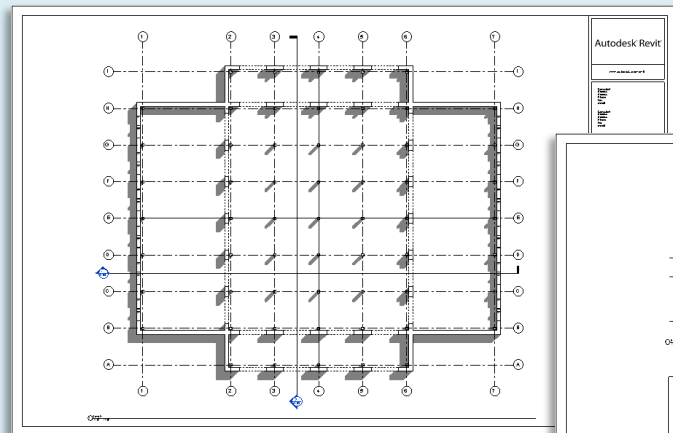
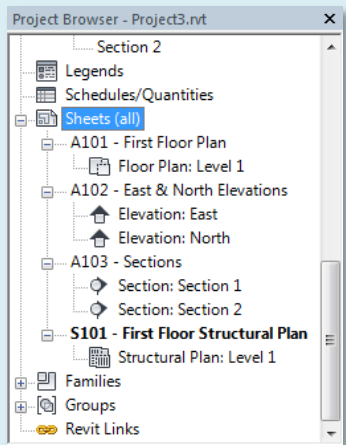
Sheet Layout (create new sheet)

The process is shown in four main steps:

- Step 1:** In the project browser, the 'Sheets' folder is right-clicked and 'New Sheet...' is selected.
- Step 2:** The 'Load Family' dialog is open, showing a list of titleblock files. 'D 22 x 34 Horizontal.rfa' is selected. A preview shows a 22 x 34 sheet.
- Step 3:** The 'New Sheet' dialog is open. The 'Load...' button is clicked, and the selected titleblock is loaded into the 'Select titleblocks:' list.
- Step 4:** The 'New Sheet' dialog is open. The 'Load...' button is clicked, and 'New' is selected in the 'Select placeholder sheets:' list.

Warm Up Project : Layout Sheets

- New Project
 - Grids 1 2
 - Slab 1 2
- Levels
- Walls
- Roof
 - Cut Plane
 - Attach Top
- Door Openings 1 2 3
- Windows 1 2 3 4
- Columns 1 2
- Structural Plan
 - View Template
 - Propagate Extents
- New Sheets
 - Layout
 - Plot to PDF
- Wrap Up
 - Revit Introduction
 - Division of Continuing Education



New Project

- Grids 1 2
- Slab 1 2

Levels

Walls

- Roof
- Cut Plane
- Attach Top

Door Openings 1 2 3

Windows 1 2 3 4

Columns 1 2

Structural Plan

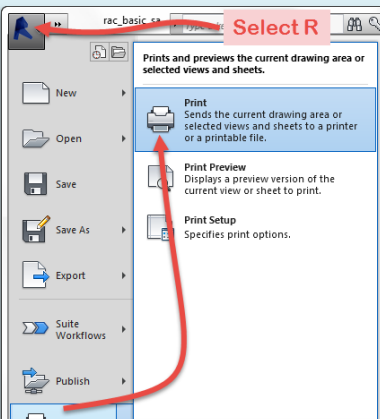
- View Template
- Propagate Extents

New Sheets

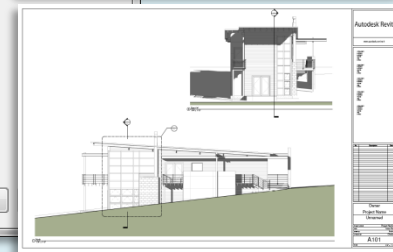
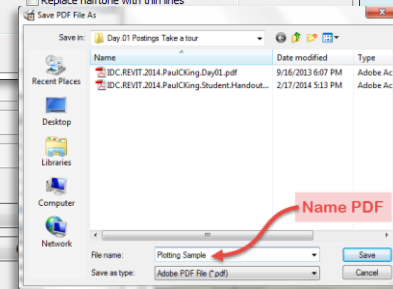
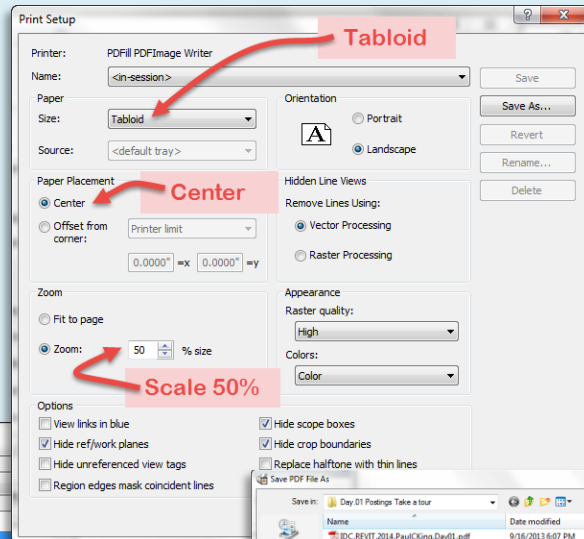
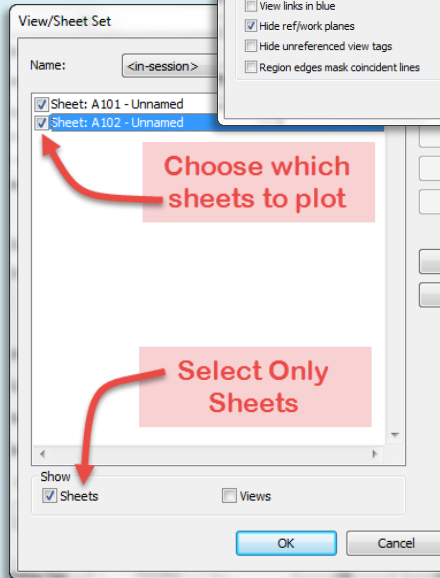
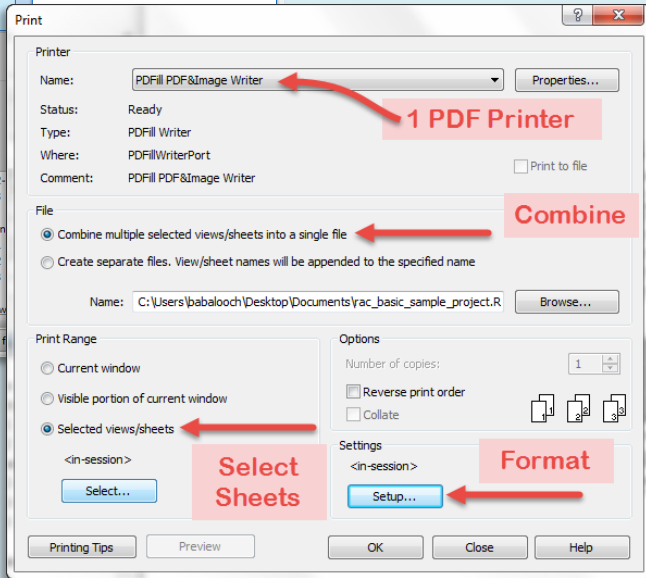
- Layout
- Plot to PDF

Wrap Up

Plot to PDF



- Print
- Select a PDF Printer
- Select Multiple Sheets
- Combine into single PDF
- 22 x 34 to Tabloid
- Center and Scale to 50%



Day 03

New Project

- Grids 1 2
- Slab 1 2

▪ Levels

▪ Walls

- Roof
- Cut Plane
- Attach Top

Door Openings 1 2 3

Windows 1 2 3 4

Columns 1 2

Structural Plan

- View Template
- Propagate Extents

New Sheets

- Layout
- Plot to PDF
-

Wrap Up

Day 03 - Wrap Up

- **Warm Up Project**
- **New Project**
 - Grids 1 2
 - Slab 1 2
 - Levels
 - Walls
 - Roof
 - Cut Plane
 - Attach Top
- **Door Openings 1 2 3**
- **Windows 1 2 3 4**
- **Columns 1 2**
- **Structural Plan**
 - View Template
 - Propagate Extents
- **New Sheets**
 - Layout
 - Plot to PDF
 -
- **Wrap Up**