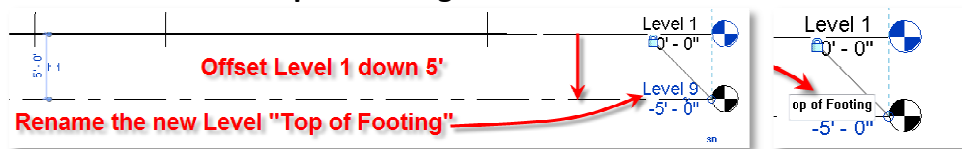


Fall 2011

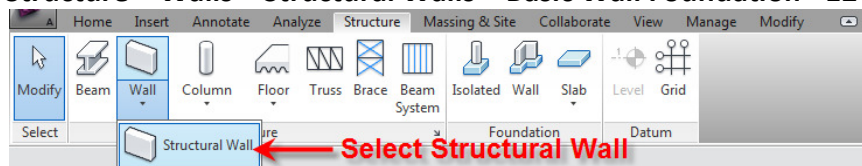
Bldg.Foundation.1 DEVELOPMENT OF FOUNDATIONS AND FOOTINGS FOR GYM / AUDITORIUM

Overview: We will begin to create the foundation walls and footings beginning with the Gym/ Auditorium building. Before we begin we will want to create 1 additional level to for the Top of Footing. Start with the **North Elevation**.

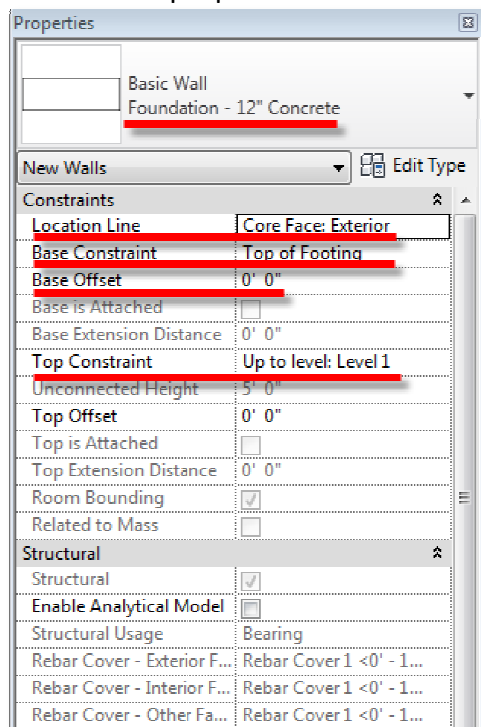
Add Level: Make the North Elevation the Current Elevation.
Select **Home > Levels > Pick Lines > Uncheck "Make Plan View"** and set the offset value to **5'-0"**. Offset Level 1 down 5' to create a new level.
Rename this level **"Top of Footing"**.



Level 1 Current: Make "Level 1" the current view and then select:
Setup Wall: **Structure > Walls > Structural Walls > Basic Wall Foundation -12" Concrete**



Wall Properties: Set the wall properties



Match the following Settings:

Location Line = Core Face Exterior

We will locate the wall by specifying the outside face.

Top Constraint = Up to level: Level 1

Base Constraint = Top of Footing

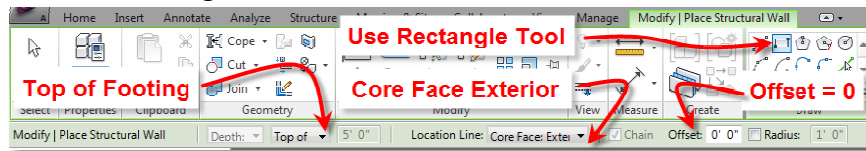
The bottom of the wall sits at the Top of the Footing and extends up to Level 1.

Base Offset = 0

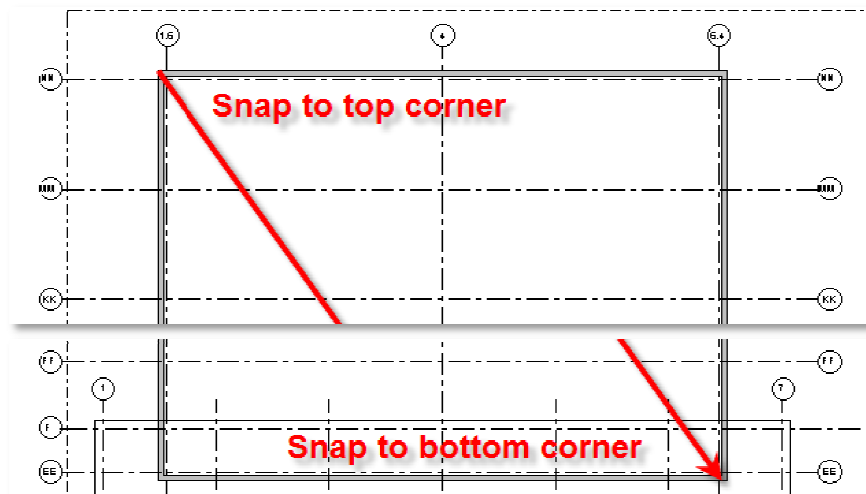
There will be no offset from the base - that is the bottom of the wall starts at the Top of Footing

Fall 2011

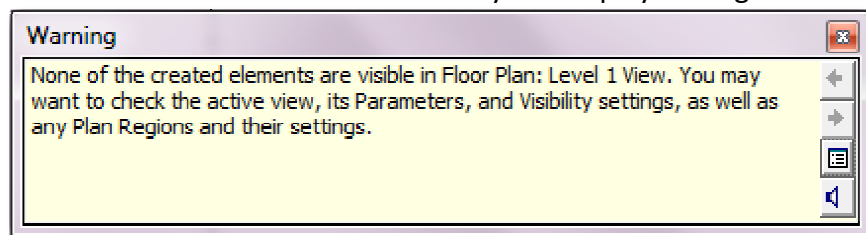
Draw Foundation: Use the rectangle tool and set the **offset to 0, Core Face Exterior, Top of Footing**



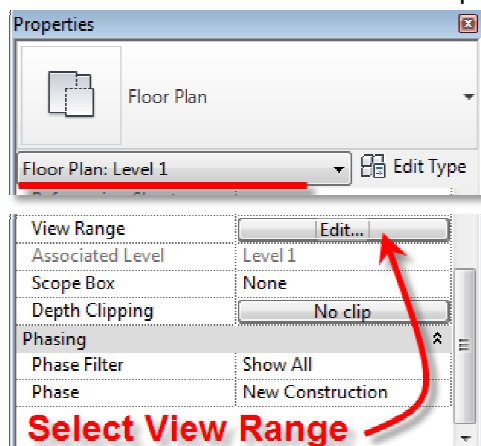
Snap to the opposite corners of the Gym/Auditorium building outline.



Ignore Warning: Read the warning. It tells you the wall you just created will not be visible in Floor Plan : Level 1. We will need to modify the display settings of the view to see it.

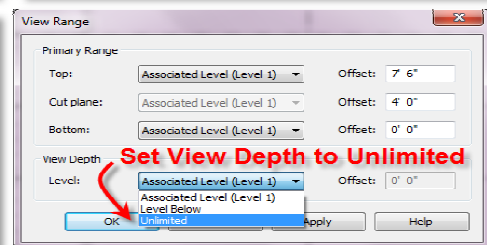


View Properties: **Make Level 1 current** and make certain no objects are selected. You should be able to see the "Properties" of the view.



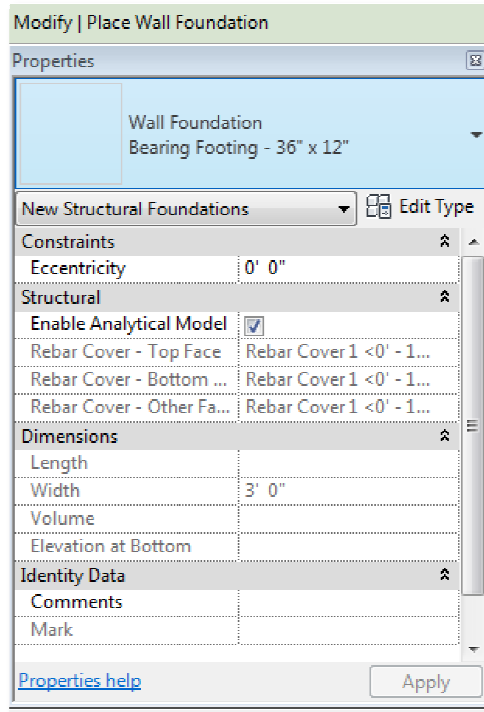
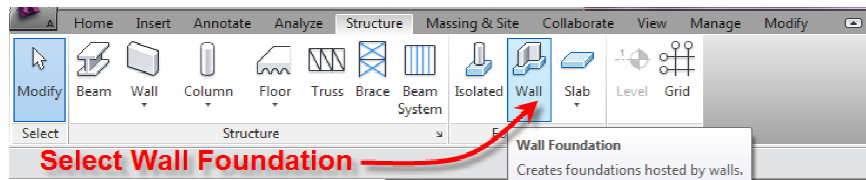
Select View Range > Edit...

At the bottom select
View Depth : Level (Set it to Unlimited)



Fall 2011

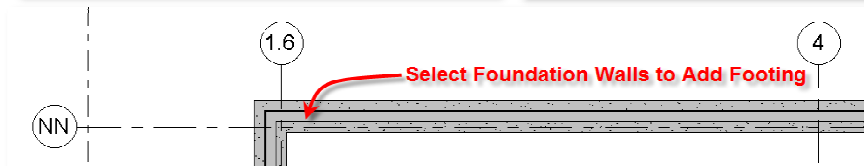
Add Wall Footing: Select **Structure > Wall Foundation**



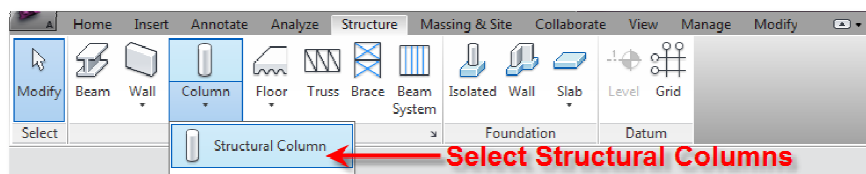
Select:
Wall Foundation Bearing Footing - 36" x 12"

36" is the width
12" is the depth

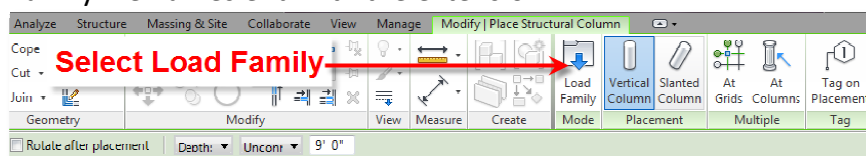
The length of the footings will be set to match the wall selected



Add Columns: Select **Structure > Column > Structural Column**

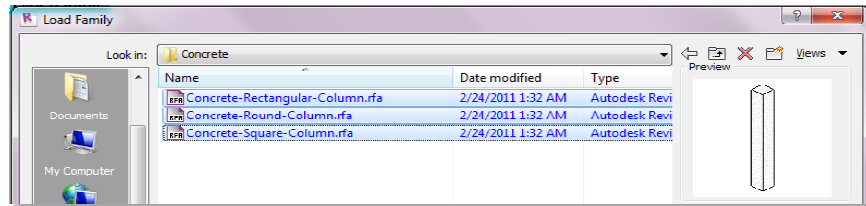


Load Family: You may need to load the family to access concrete columns
Family file names end with the extension **.RFA**

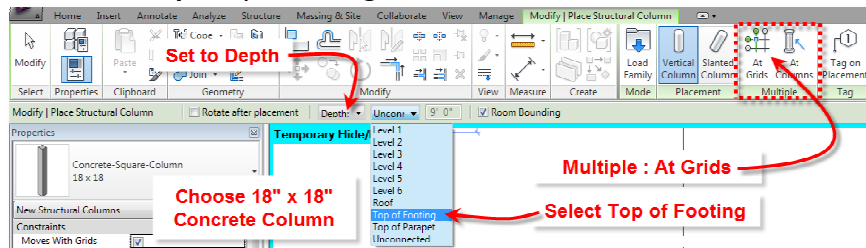


Fall 2011

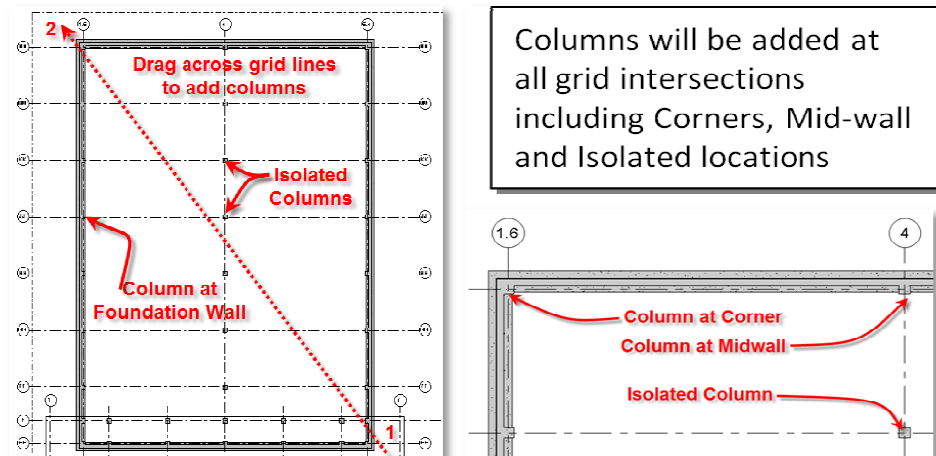
Load Concrete: US Imperial > Structural > Columns > Concrete (Select all and then Open)



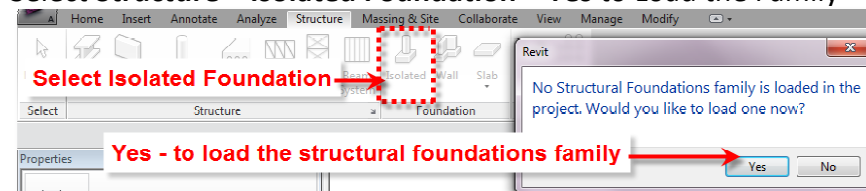
Setup Column: Choose **Concrete Square Column 18 x 18**
Set Direction to "Depth" and base level to "Top of Footing"
Locate **Multiple** by selecting "At Grids"



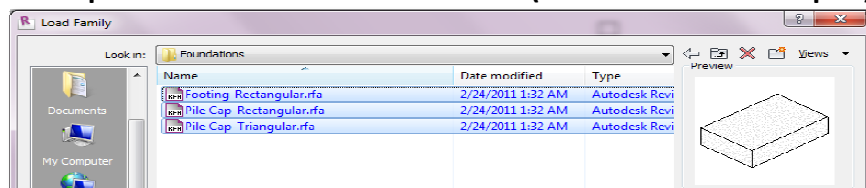
Select Grids: Working from bottom right to top left select all the column grids



Isolated Foundation: Select **Structure > Isolated Foundation > Yes** to Load the Family

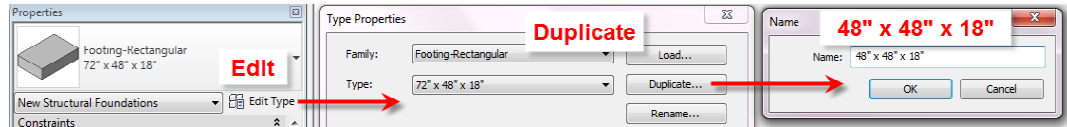


Load Foundations: US Imperial > Structural > Foundations (Select all and then Open)

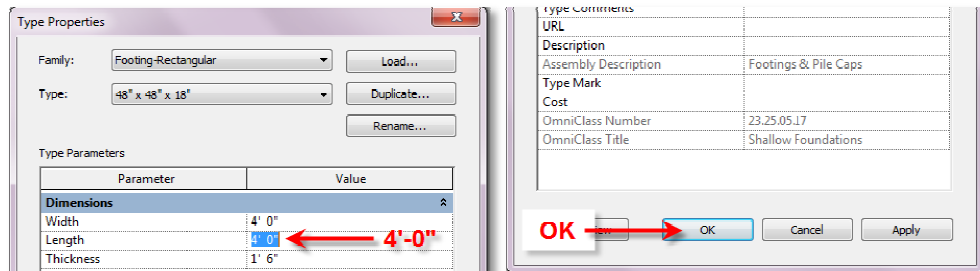


Fall 2011

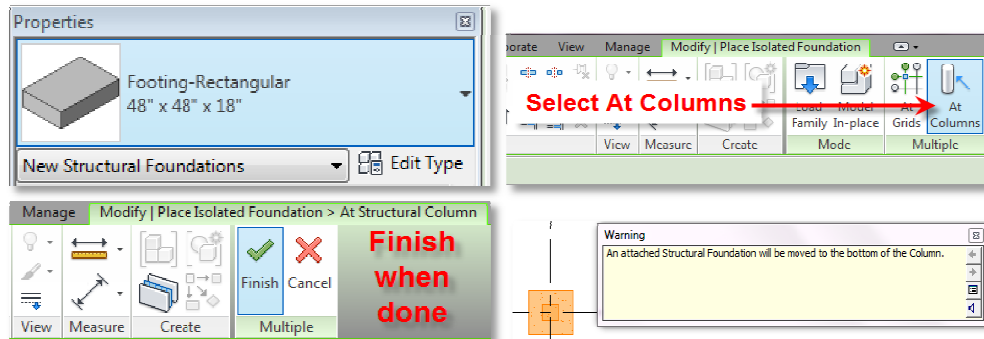
Create 48 x 48 x 18: Select and **Duplicate** the 72" x 48" x 18" rectangular footing.
Rename it 48" x 48" x 18" (this alone does not change the actual dimensions)



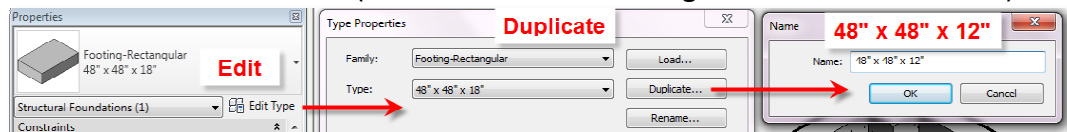
Type Parameters: Under Type Parameters, change the **Length** to 4'-0".
(Width = 4'-0" & Thickness = 1'6")



Place Footings: Use the new 48" x 48" x 18" Footing and locate these "At Columns"

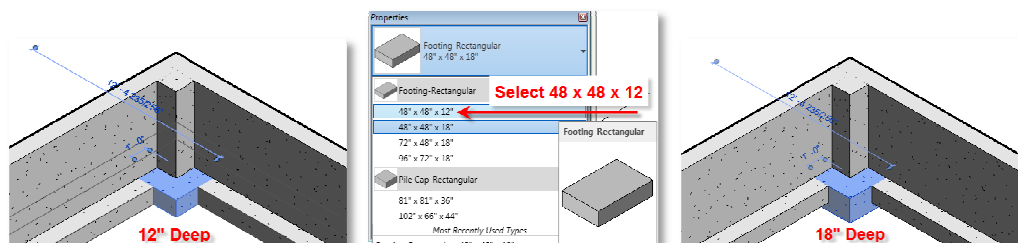


Create 48 x 48 x 12: Select and **Duplicate** the 48" x 48" x 18" rectangular footing.
Rename it 48" x 48" x 12" (this alone does not change the actual dimensions)



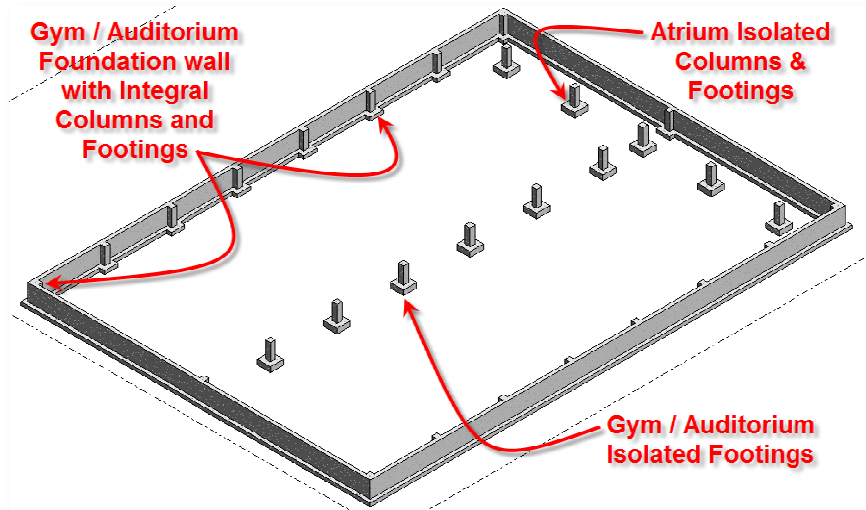
Type Parameters: Change the **Thickness** to 1'-0". (Width = 4'-0" & Length = 4'-0")

Corners & Mid-span: Since the columns embedded in the foundation wall are integral, the footing pad does not need to be as deep. Update all of the corner and mid-span footings.

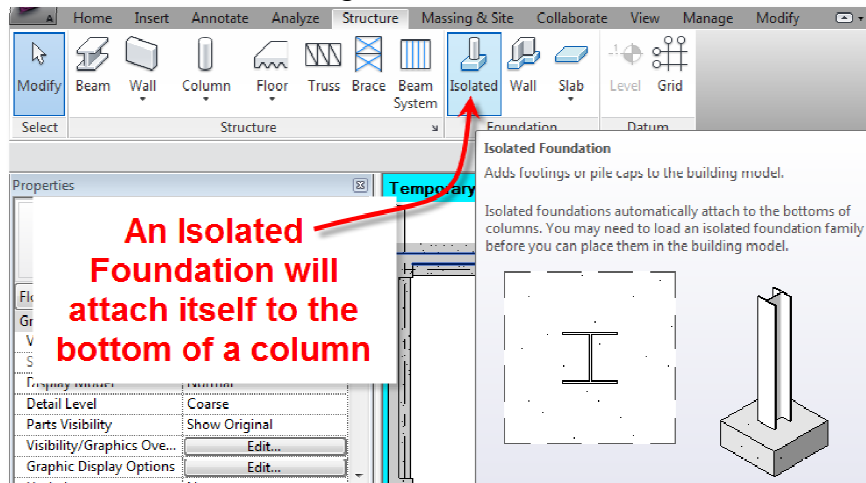


Fall 2011

Foundation The completed foundation will include columns and footings integral to the foundation wall, isolated columns with footings for the Gym and isolated columns with footings for the Atrium



Isolated Footings: Isolated Structural Footings will attach itself to the bottom of a column



Atrium and Lab: Design and Finish the Foundations for the Atrium and Lab Buildings

