

presents

REVIT® Structure

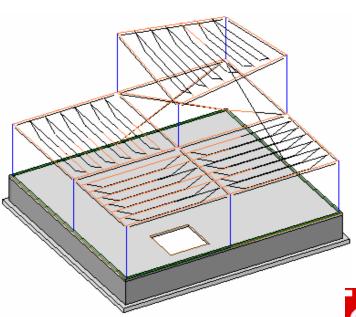
A to Z

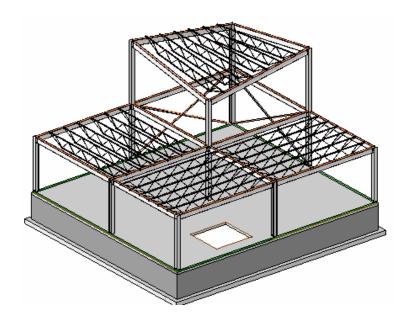
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REVIT is awesome and it is also an autodesk registered trademark

REVIT_® Structure 4

Welcome!

These **CADclips** are designed for the new REVIT user who has not used REVIT before in any capacity.

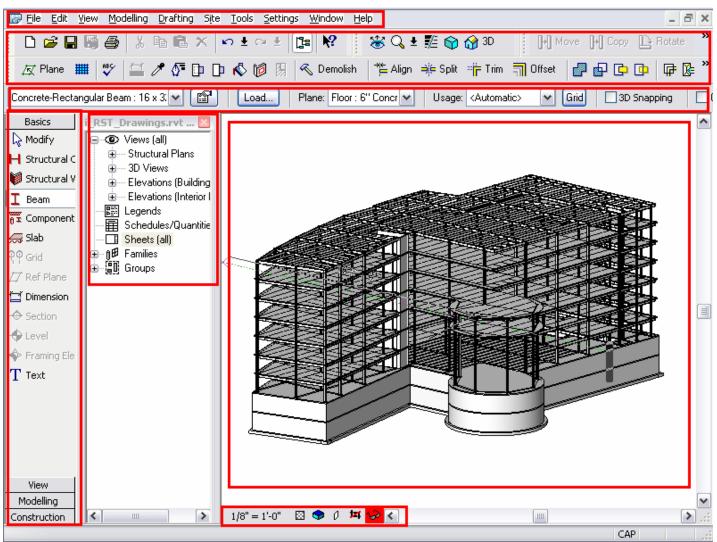




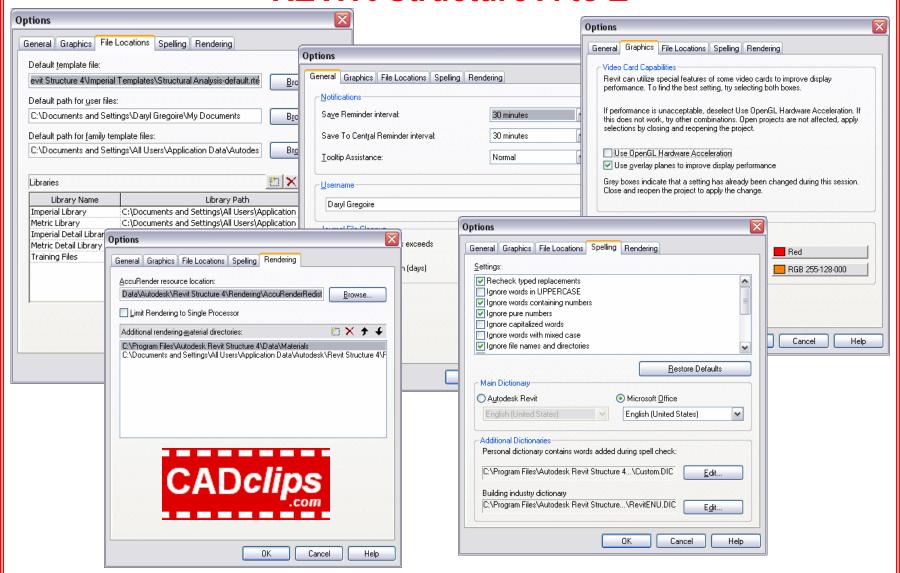
CAD*clips*

Training Overview



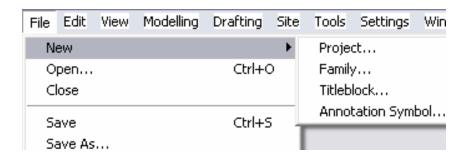


Interface



Options Settings



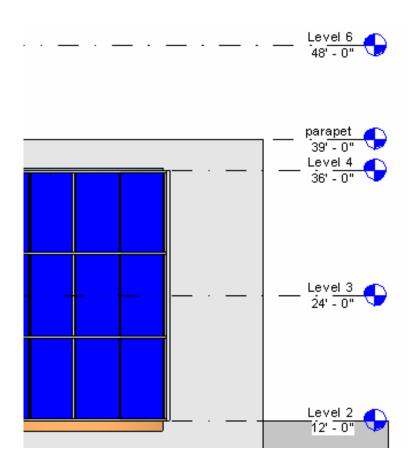


REVIT File Extensions

- * . RVT > revit 'Project' file
- * . RTE > revit 'Project Template' file
- * . RFA > revit 'Family' file
- * . RFT > revit 'Family Template' file

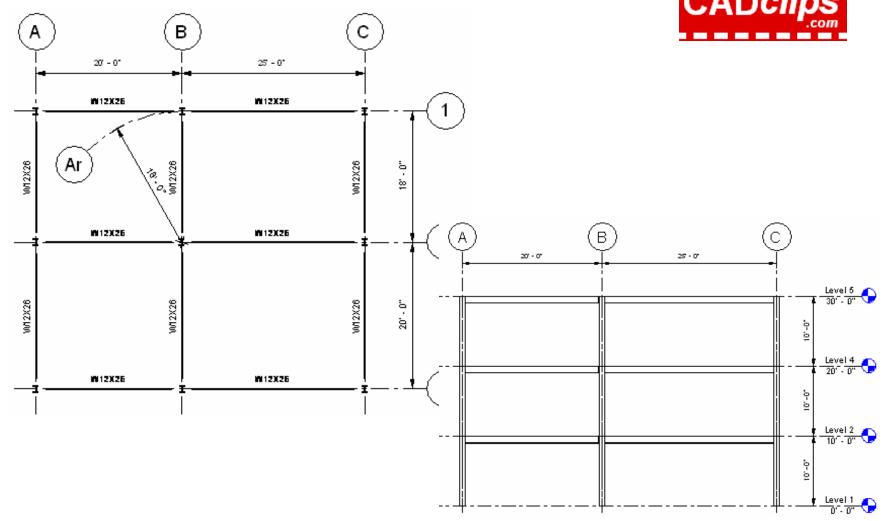
Files Extensions





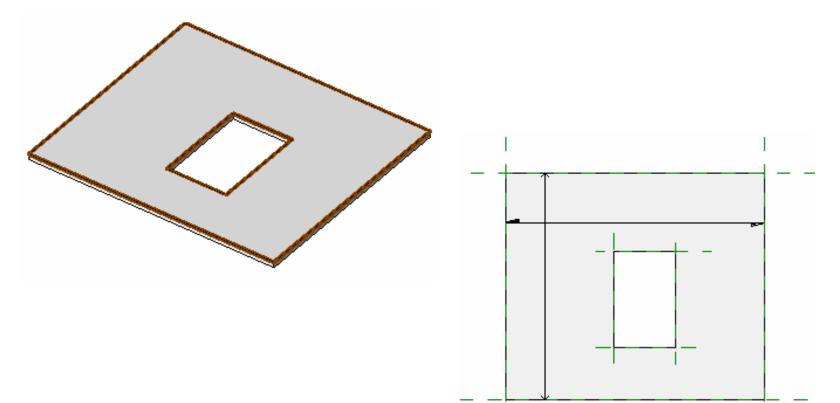
Levels





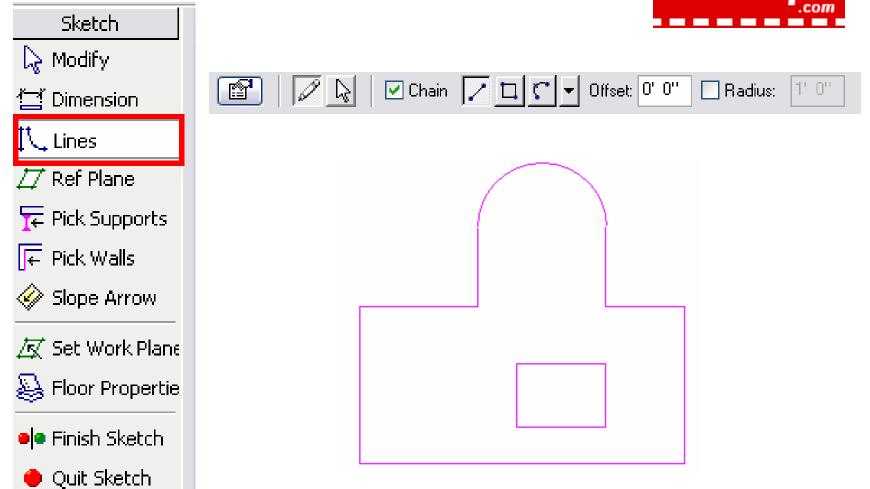
Grids





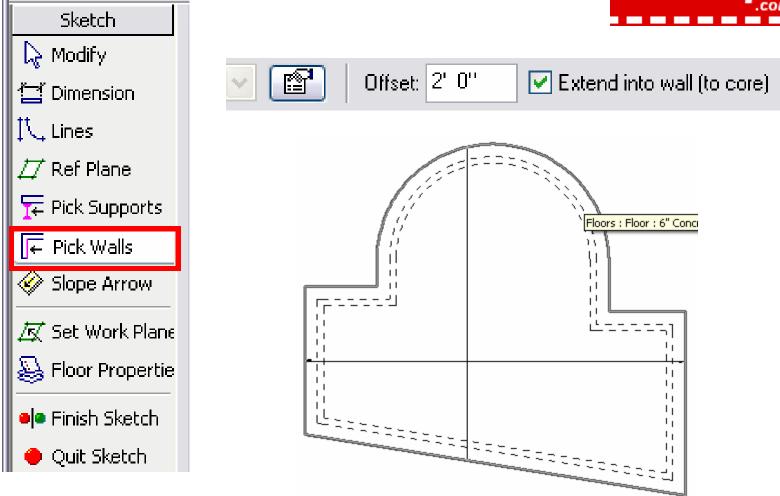
Reference Planes



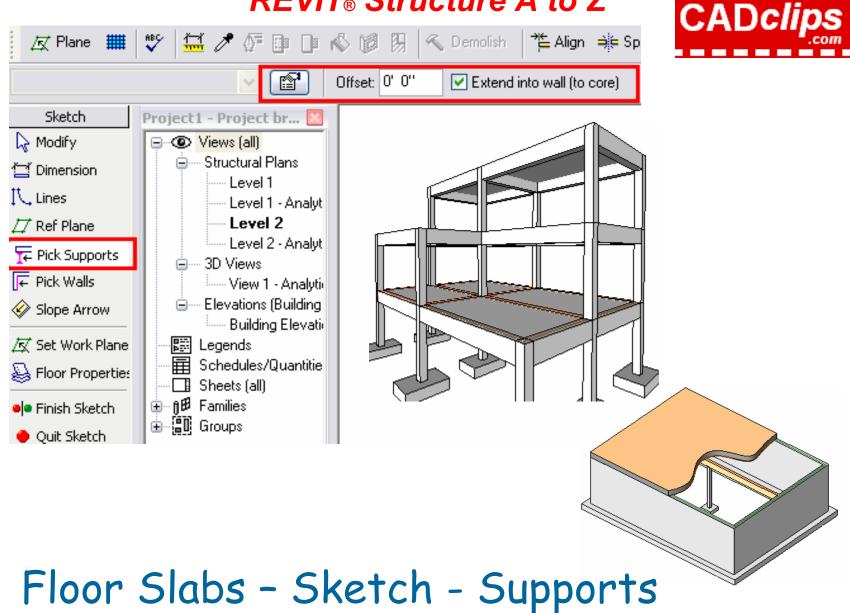


Floor Slabs - Sketch by Lines



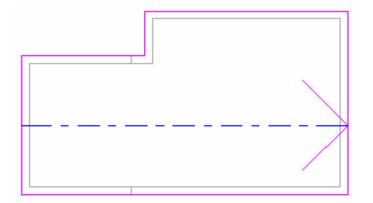


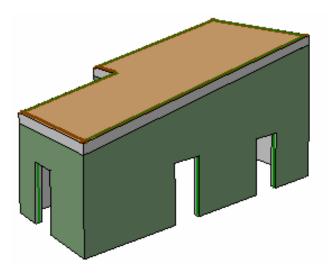
Floor Slabs - Sketch - Pick Walls





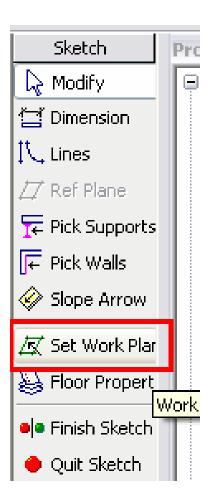


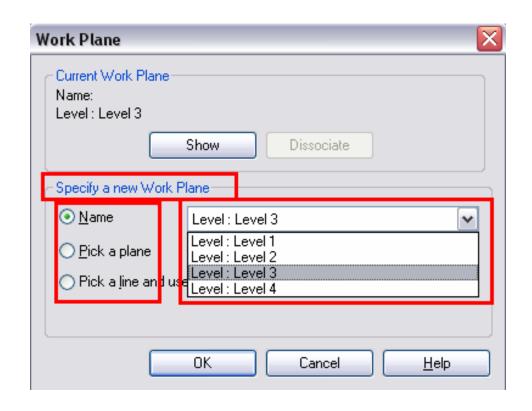




Floor Slabs - Sketch - Slope Arrow



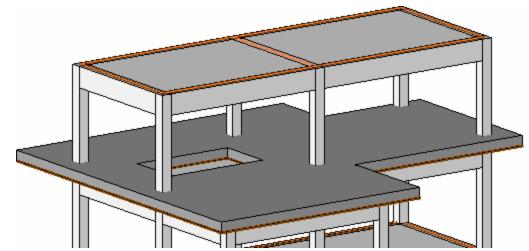


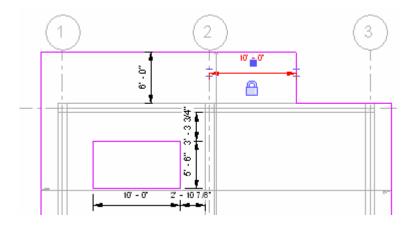


Floor Slabs - Sketch - Work Plane

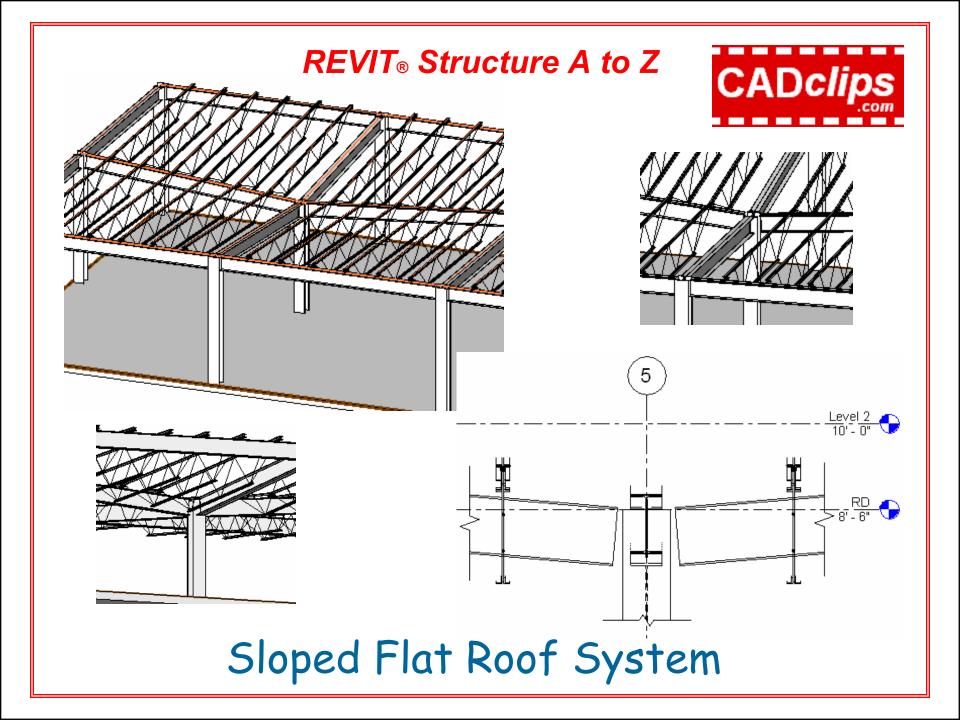






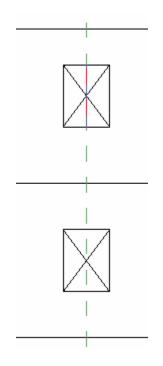


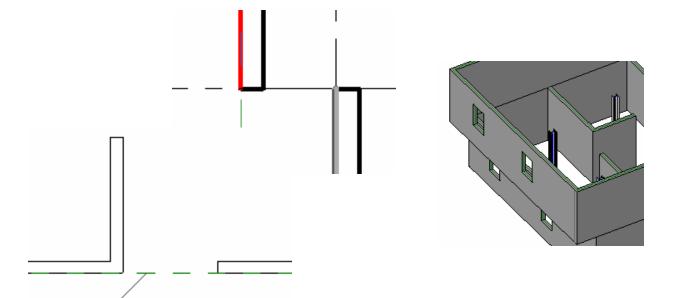
Floor Slabs - Sketch - Dimensions





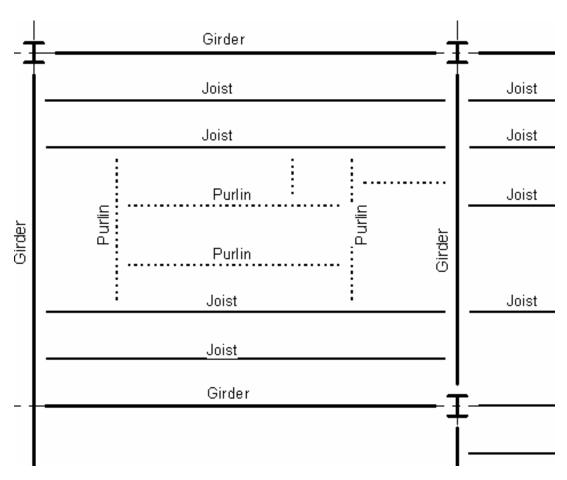






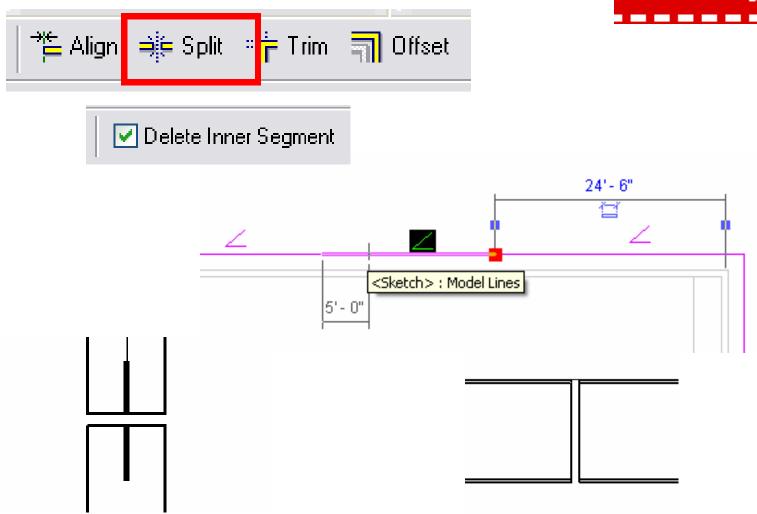
ALIGN - My favorite tool!





Beam Usage Assignments

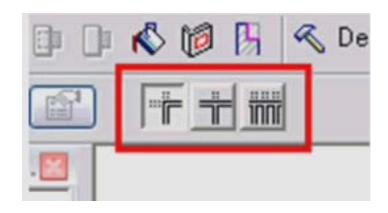




Split Tool







Trim / Extend Tool

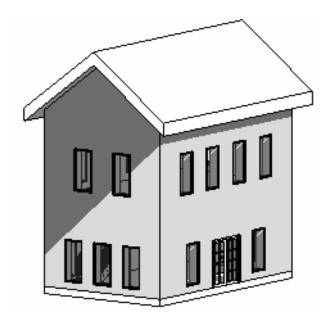


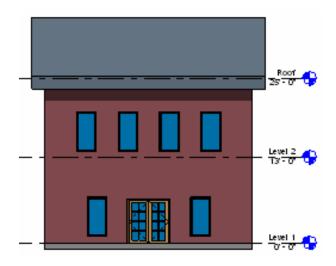




Offset Tool

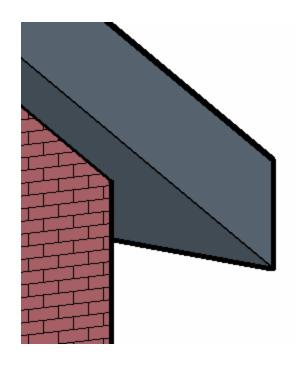


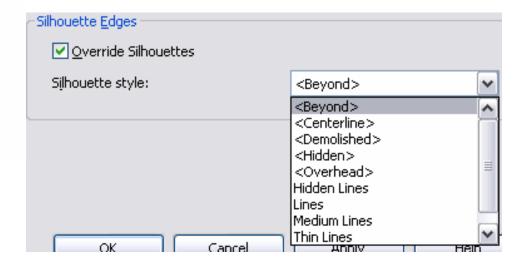




View Control Bar

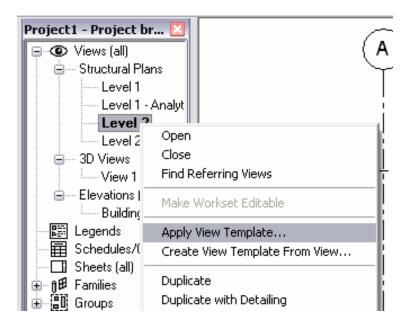


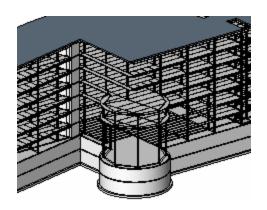


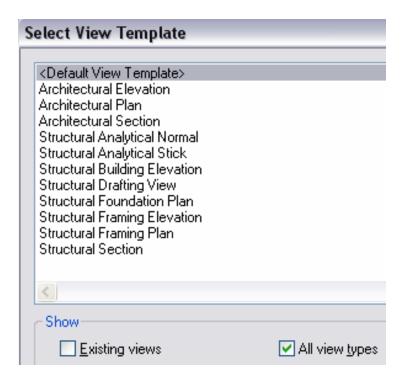


Silhouette Edges







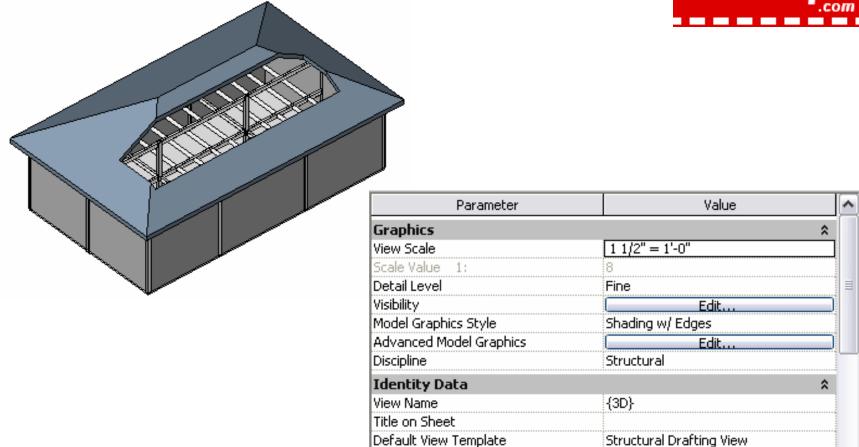


View Templates



Construction Documentation

۶



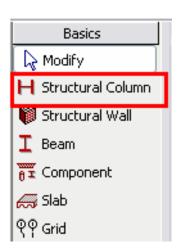
View Properties

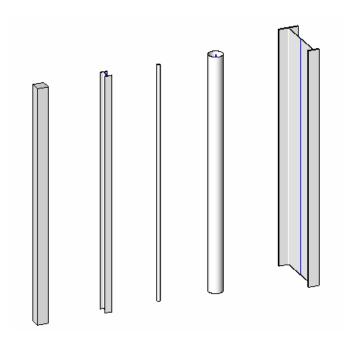
Documentation Category

Extents

Crop Region





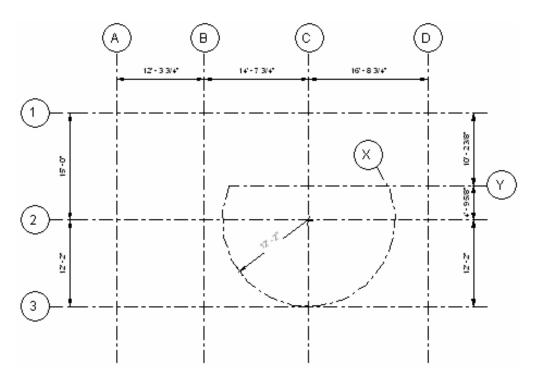


Columns - Load Family



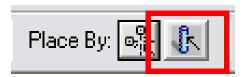




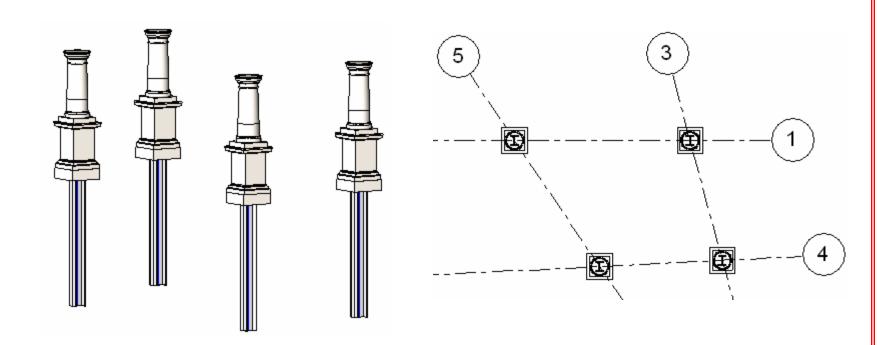


Structural Columns - By Grid Intersects

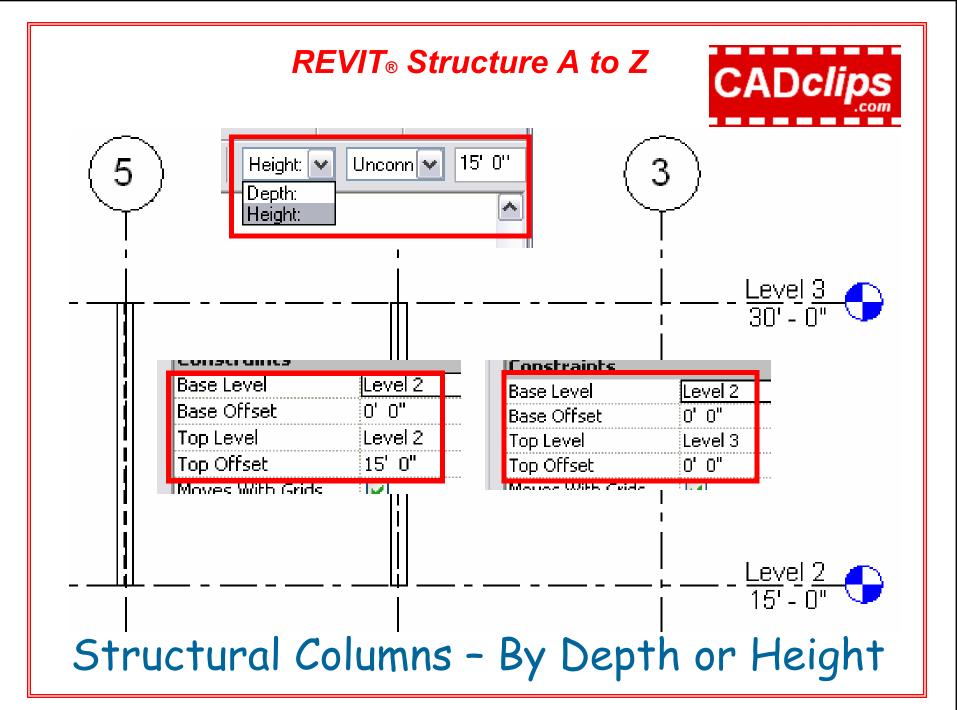




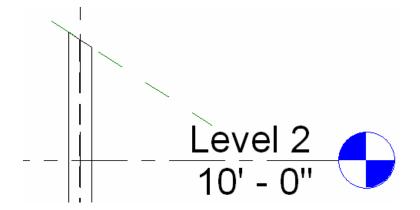


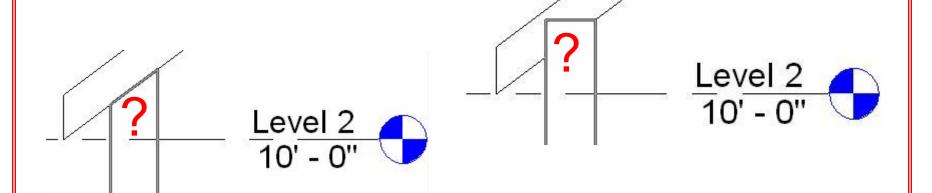


Structural Columns - By Architectural



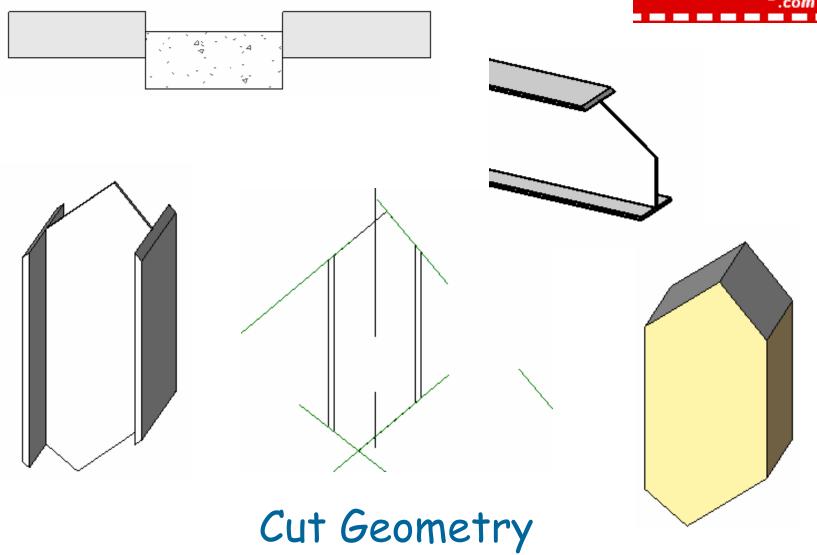






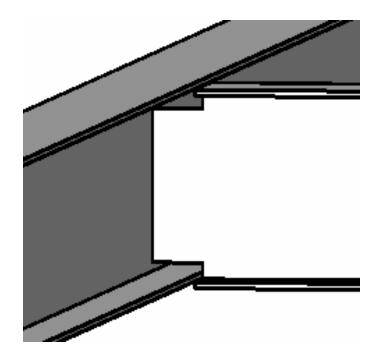
Structural Columns - Attach / Detach

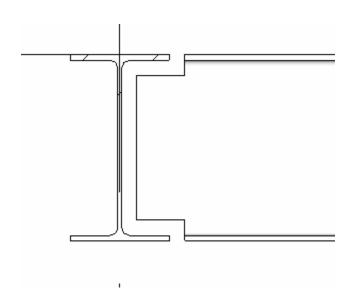




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Coping

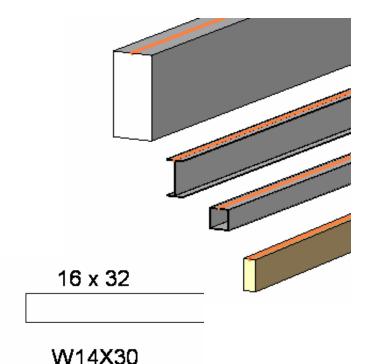
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REVIT® Structure A to Z Top Clip Plane Pri mary Range Boundaries Cut plane Bottom Clip Plane i plane

View Range

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W-Wide Flange: W14X30

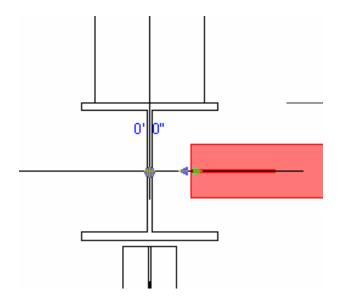
Concrete-Rectangular Beam: 12 x 24
Concrete-Rectangular Beam: 16 x 32
Glulam-Western Species: 5.125x12
HSS-Hollow Structural Section: HSS6X6X.500
HSS-Hollow Structural Section: HSS8X8X.375
W-Wide Flange: W8X10
W-Wide Flange: W12X26
W-Wide Flange: W14X30
W-Wide Flange: W16X26

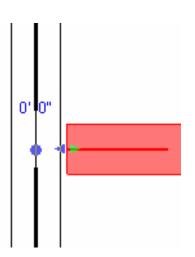
HSS8X8X.375

5.125x12

Beam Families







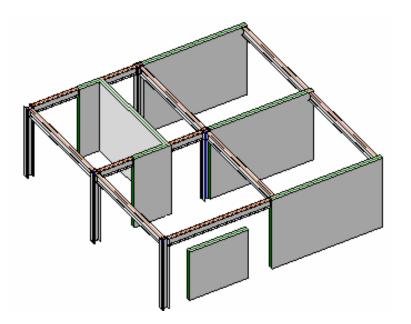
Construction		
Start Extension	-0' 0 1,	/2"
End Extension	-0' 0 1,	/2"

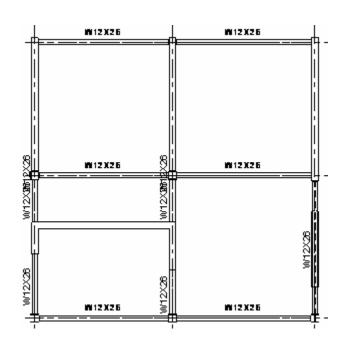
Beam Placement Horizontal





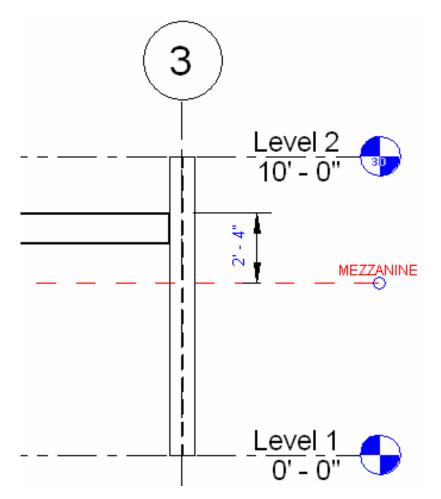






Beam Placement By Grid

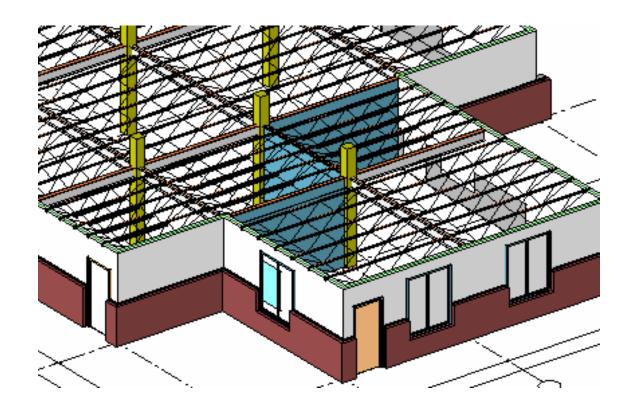




Parameter	
Constraints	
Geometry Offset	0' 0"
Reference Level	Level 2
Start Level Offset	-2' 0"
End Level Offset	-2' 0"

Beam Placement Vertical

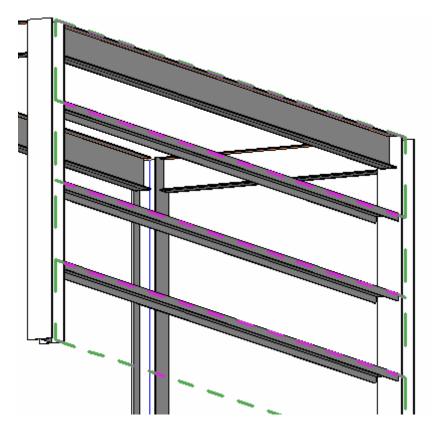




Trace an Imported DWG

REVIT_® Structure A to Z **CAD**clips Beam System Basics

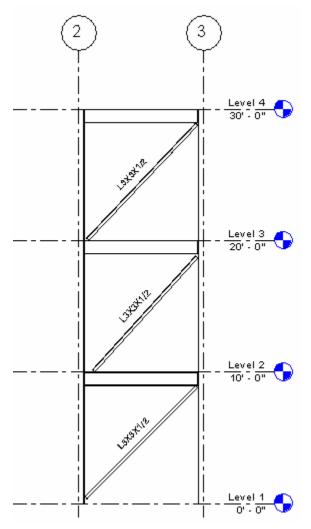


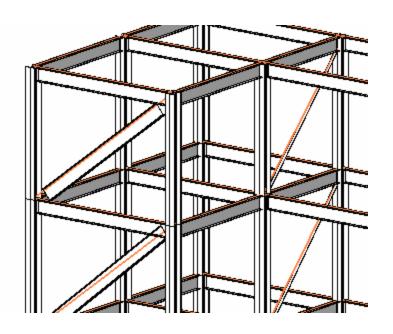


Wall Girt System

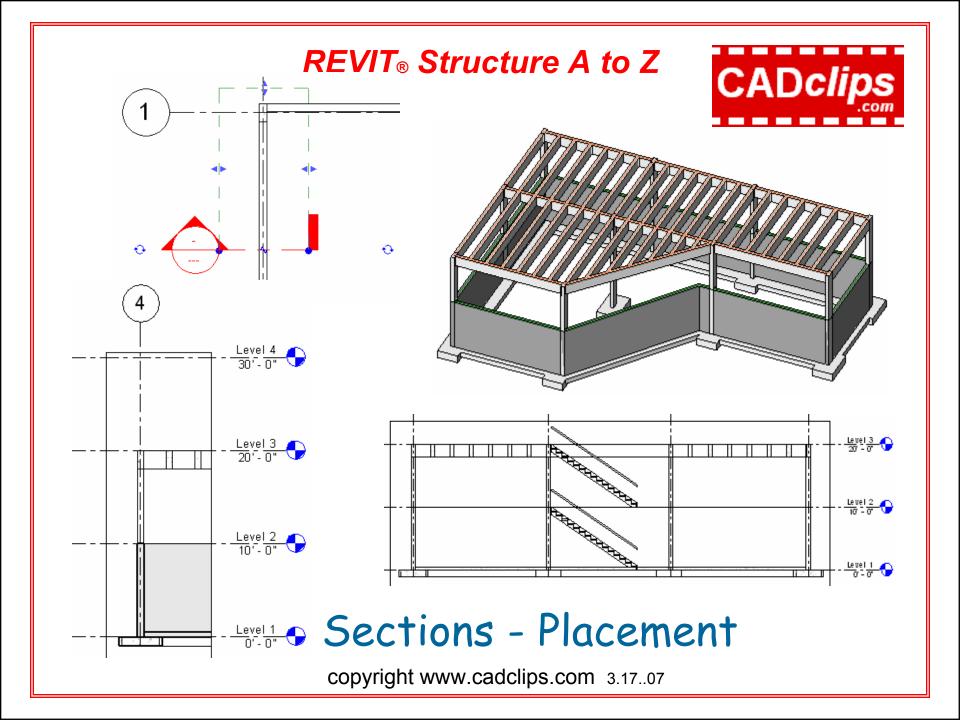
REVIT_® Structure A to Z **CAD**clips Elevation 3 W12X26 W12X26 W12X26 W12X26 Elevation 3 - a-W12X26 W12X26 **Elevation Basics**

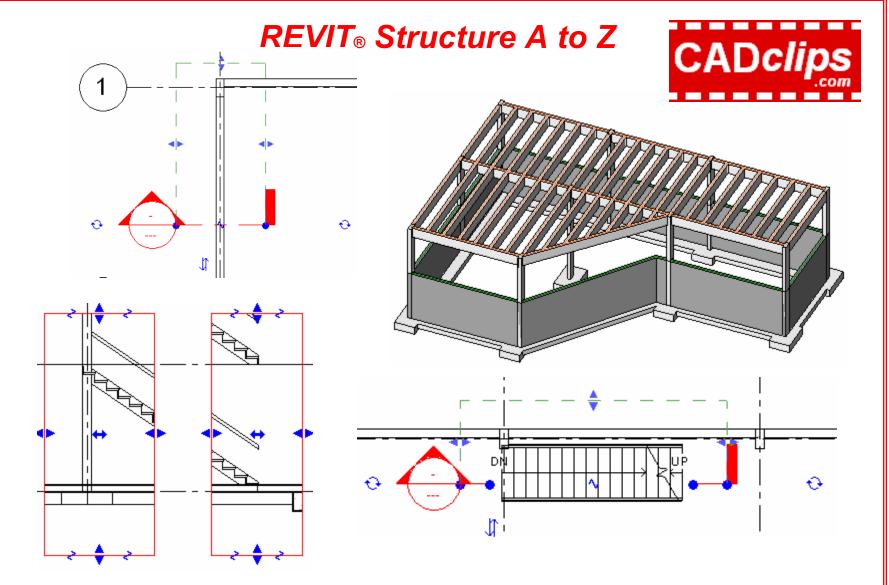




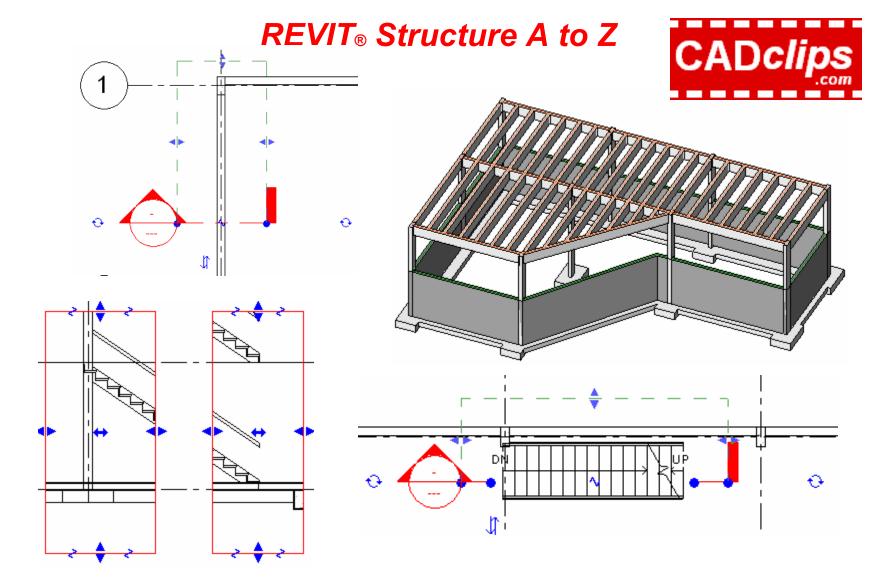


Framing Elevations





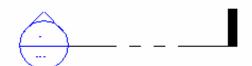
Sections - Grips / Handles

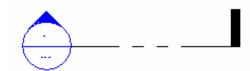


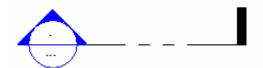
Sections - View Limits

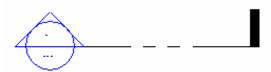
REVIT® Structure A to Z



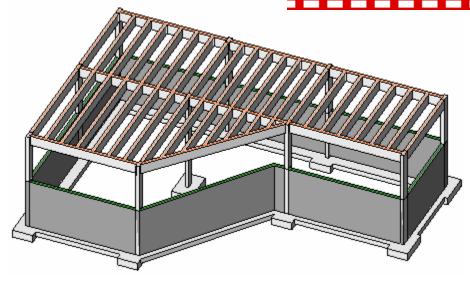








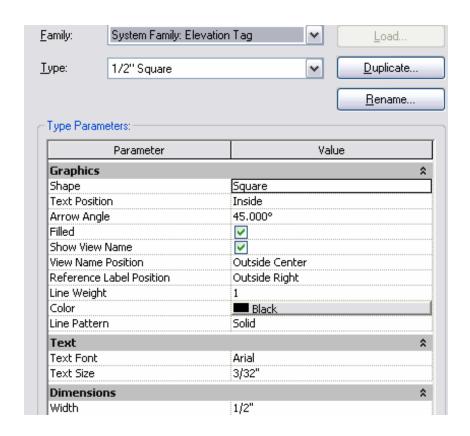


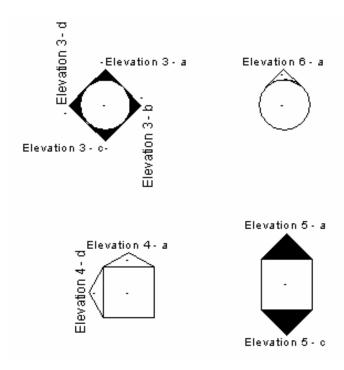




Sections - Display, Visibility, View Tags







Elevation View Tags

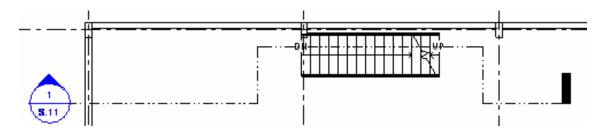


USE SECTIONS FOR PERMANENT DOCUMENTATION WITH ANNOTATIONS, DIMENSIONS, CALLOUTS AND DETAILING.

YOU SHOULD ALSO USE SECTIONS JUST TO VIEW AND GATHER INFORMATION. THEN DELETE THE SECTION. MOVE SECTIONS AROUND TO GATHER / CHECK MODEL INFORMATION

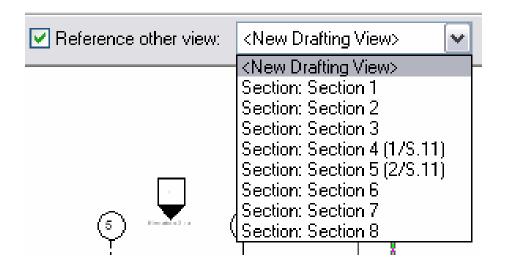
SECTION BUBBLES ARE FILLED IN / CROSS REFERENCED
AFTER THEY HAVE BEEN PLACED ON A SHEET

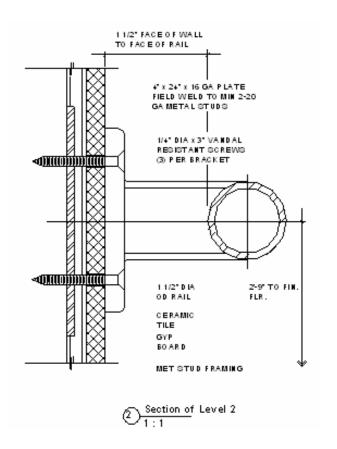
USE SPLIT SEGMENT TOOL



Sections - Miscellaneous

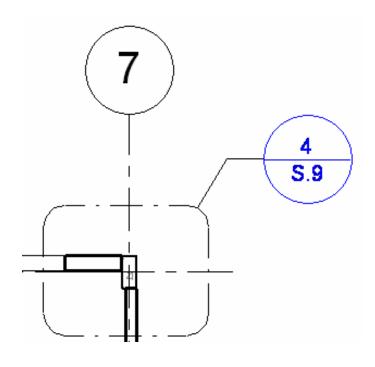


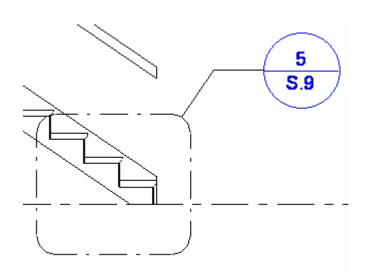




Sections - Reference Other View







Callout Basics



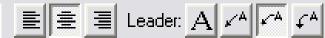




Text: 3/32" Arial 5

















1HS IS 1EXT

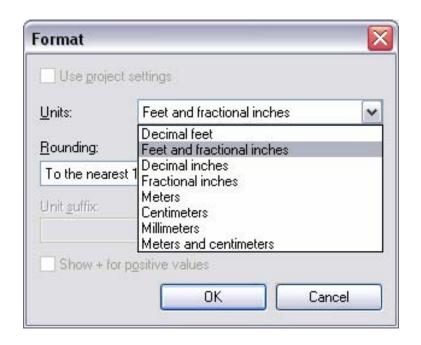
TEXT CAN BE TRANSPARENT OR OPAQUE



Text



Project Units			X
<u>D</u> iscipline:	Common		~
Units		Format	^
Length Area Volume		1' - 5 3/8" 1235 SF 1234,57 CF	
Angle		12.35°	
Options			
Slope: Slope Angle	~	<u>D</u> ecimal symbol: . (point)	~
	OK	Cancel	<u>H</u> elp



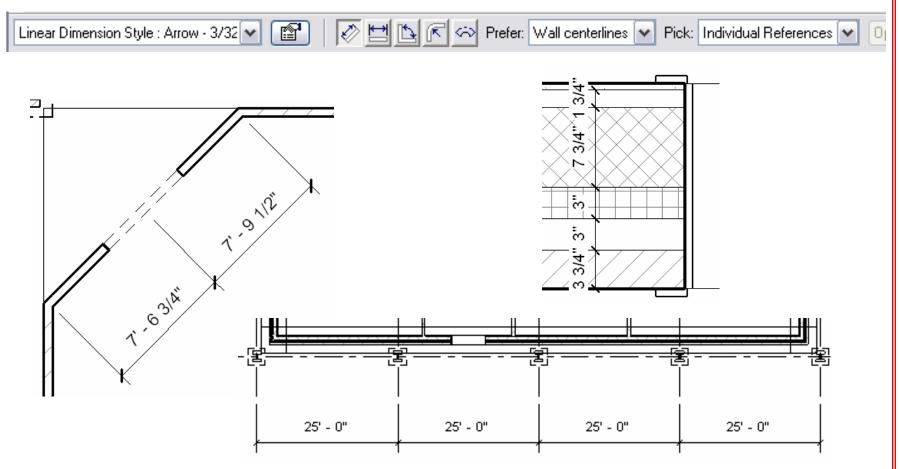
Project Units



	System Family: Arrowhead
	Arrow 30 Degree
	Arrow 30 Degree
	Arrow 30 Degree - Large
	Arrow Filled 15 Degree
	Arrow Filled 20 Degree
	Arrow Filled 30 Degree
	Arrow Filled 30 Degree - Large
	Diagonal 1/8"
_	Diagonal 3/32"
	Filled Box 3/32"
	Filled Dot 3/32"
1	Filled Dot 3/32" Filled Dot - Small
	Filled Elevation Target 3/16"
	Filled Triangle 3/32''
	Heavy End 1/8"
	Open Dot 1/16"

Arrowheads





Dimensions - Aligned

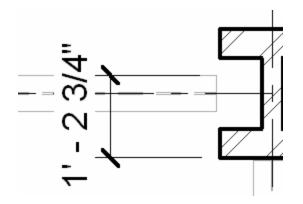


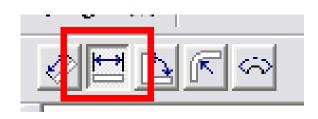
Draw the objects in anywhere and let the dimensions do the work!

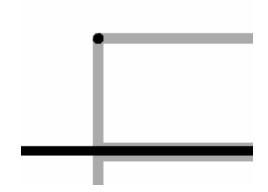
Dimensions - Do the work

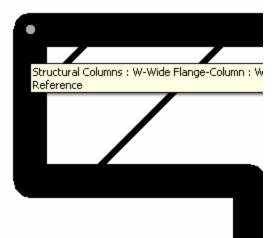
REVIT® Structure A to Z







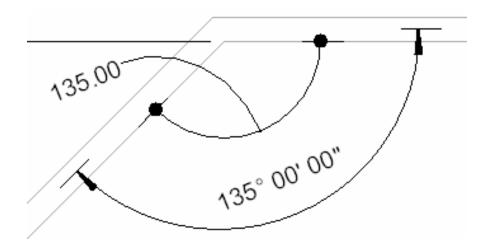




Dimensions - Linear





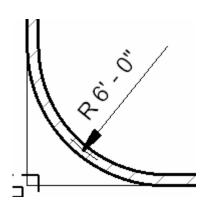


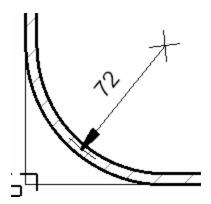
Dimensions - Angular

REVIT® Structure A to Z





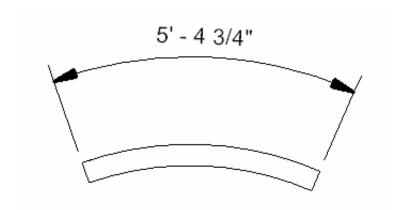




Dimensions - Radial

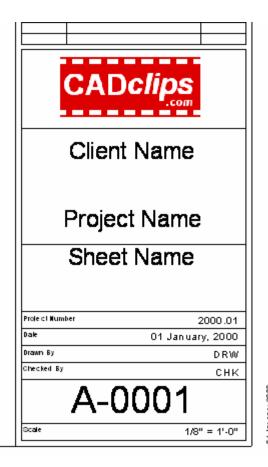


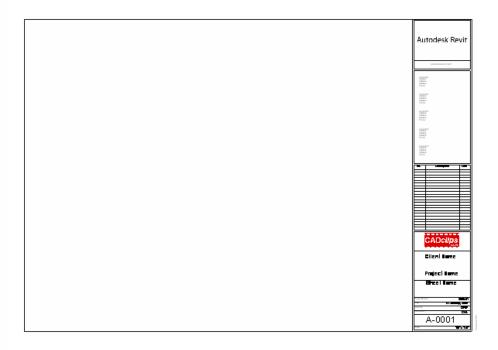




Dimensions - Arc Length

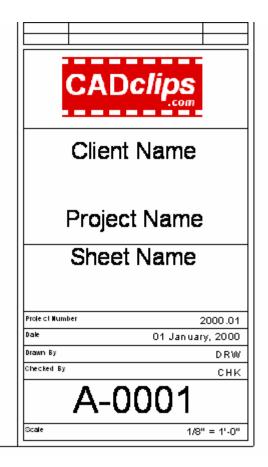


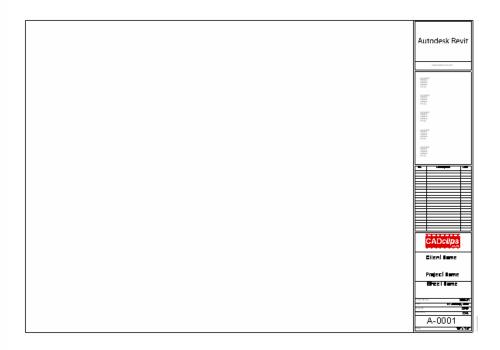




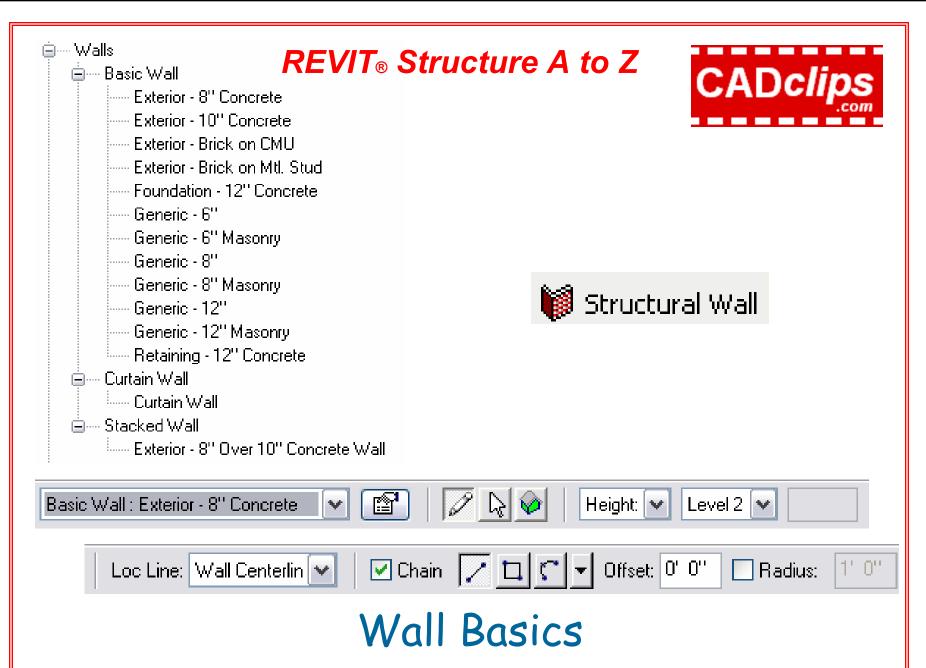
Custom Title Blocks



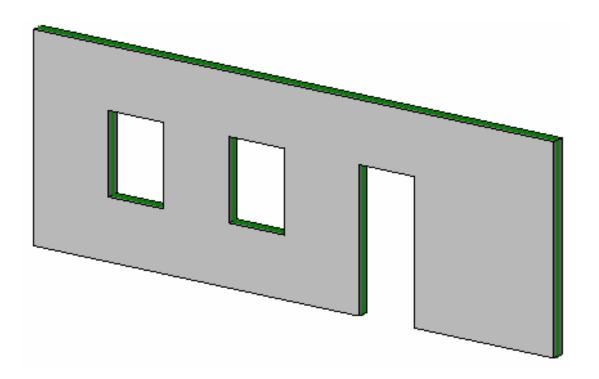




Custom Title Blocks P2

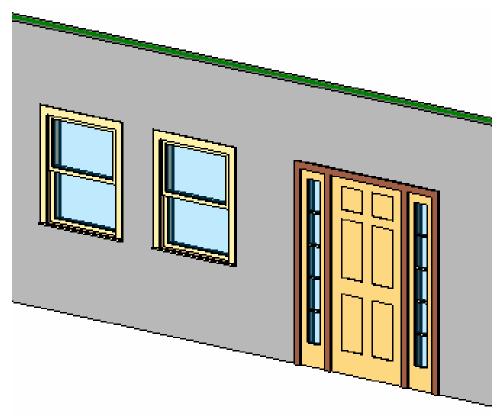






Structural Window and Door Openings





Architectural Windows and Doors



Wall Structural Property

i

View Discipline Property

Architectural
Structural
Mechanical
Electrical
Coordination

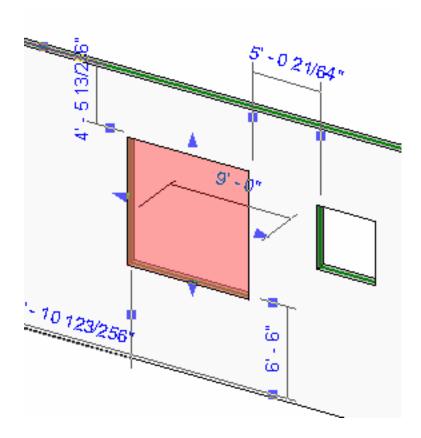
View Discipline: Options are Architectural, Structural, or Coordination.

Coordination combines both Architectural and Structural.

Select Structural to hide (non-load-bearing) walls from the view.

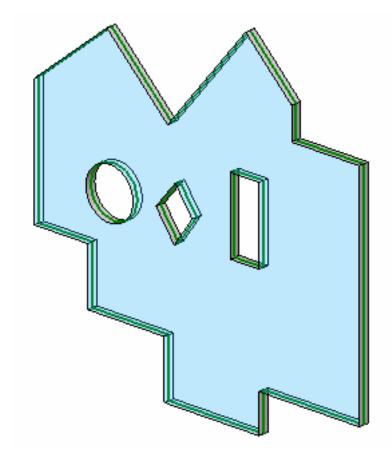
View Discipline and Wall Structural Usage





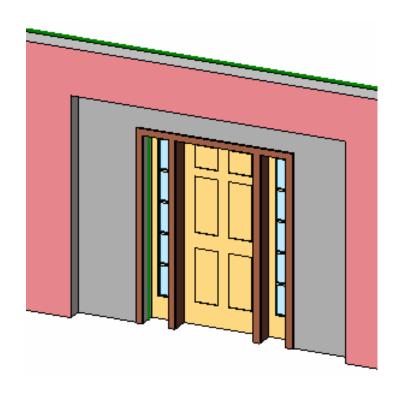
Model Openings

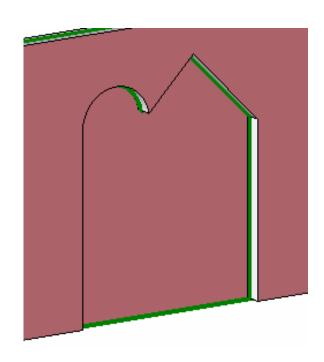




Edit Wall Profile

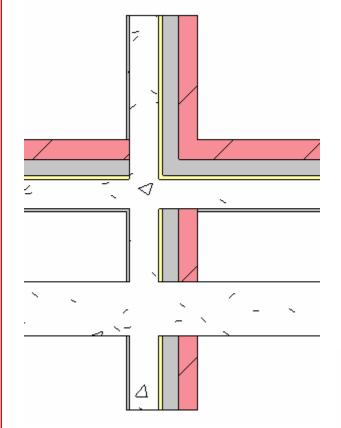






Wall Cut Geometry





use 'Join	Geometry
Use 'Join	Geom

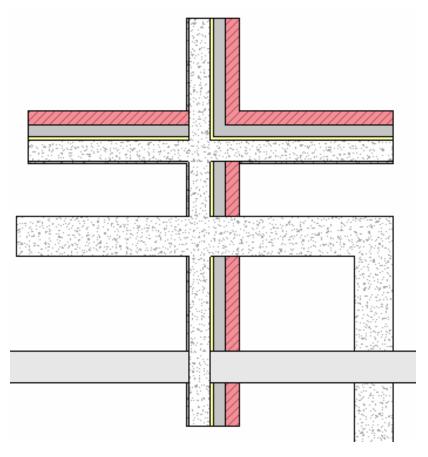
Function Material Thickness			Wra 🔨	
1	Finish 1 [4]	Masonry - Brick	0' 35/8"	✓
2	Thermal/Air Layer [3	Misc. Air Layers -	0' 3"	V
3	Membrane Layer	Air Barrier - Air In	0' 0"	~
4	Substrate [2]	Wood - Sheathing	0' 0 3/4"	V
5	Core Boundary	Layers Above Wr	0' 0"	
6	Structure [1]	Concrete - Cast-i	0' 5 1/2"	
7	Core Boundary	Layers Below Wra	a O' O"	
8	Membrane Layer	Vapor / Moisture	0' 0"	✓
9	Finish 2 [5]	Finishes - Interior	0' 0 1/2"	V

Wall Cleanup Penetration Process

- Compares all intersecting Layers inside 'Core'.
 - a) Compares the 'Function' priorities.
- 2. Compares all intersecting NON 'Core' Layers.
 - b) Compares 'function' priorities.
- * Function [1] is Top and [5] is lowest
- 3. Cleans up intersecting 'seem lines' of similar material.

Wall Cleanup Theory

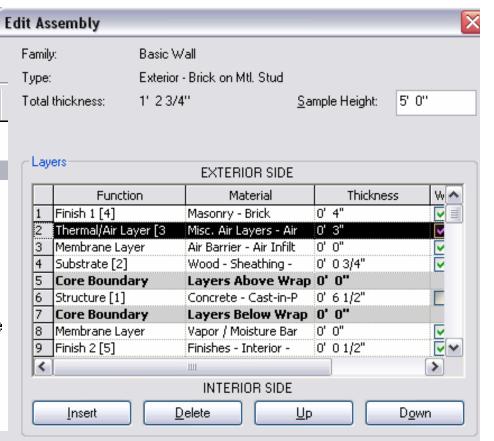




Wall Cleanup Demo copyright www.cadclips.com 4.15..07



Interior	
Exterior	
Foundation	
Retaining	
Soffit -	



Basic Wall: Exterior - Brick on Mtl. St

Basic Wall: Exterior - 10" Concrete Basic Wall: Exterior - Brick on CMU

Basic Wall: Exterior - Brick on Mtl. Stud Basic Wall: Foundation - 12" Concrete

Basic Wall: Generic - 6"

Basic Wall: Generic - 6" Masonry

Basic Wall: Generic - 8"

Basic Wall: Generic - 8" Masonry

Basic Wall: Generic - 8" Masonry + Furring in Core Basic Wall: Generic - 8" Masonry + Furring out Core

Basic Wall: Generic - 12"

Basic Wall: Generic - 12" Masonry Basic Wall: Retaining - 12" Concrete

Curtain Wall

Stacked Wall: Exterior - 8" Over 10" Concrete Wall

Wall Type Structure



Export Layers: C:\Program Files\Autodesk Revit Structure 4\Data\exportla

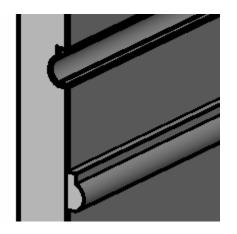
Catagory	Projection		Cut	
Category	Layer name	Color ID	Layer name	
View Titles	G-ANNO-TTLB	6		
Viewports	A-ANNO-NPLT	5		
Wall Tags	A-WALL-IDEN	4		
Walls	A-WALL	2	A-WALL	2
Analytical Model	{ A-WALL }	2	{ A-WALL }	2
Common Edges	{ A-WALL }	2	{ A-WALL }	2
Curtain Wall Grids	A-GLAZ-GRID	2	A-GLAZ-GRID	2
Cut Pattern	A-WALL-PATT	2	A-WALL-PATT	2
Finish 1 [4]	{A-WALL}	2	{ A-WALL }	2
Finish 2 [5]	{A-WALL}	2	{ A-WALL }	2
Hidden Lines	A-WALL-HIDN	2	A-WALL-HIDN	2
Membrane Layer	{A-WALL}	2	{ A-WALL }	2
Structure [1]	{A-WALL}	2	{ A-WALL }	2
Substrate [2]	{A-WALL}	2	{ A-WALL }	2
Surface Pattern	A-WALL-PATT	2	A-WALL-PATT	2
Thermal/Air Layer [{A-WALL}	2	{ A-WALL }	2
Wall Sweep - Trim	{A-WALL}	2	{ A-WALL }	2
Walls/Interior	I-WALL	2	I-WALL	2
Walls/Exterior	A-WALL	2	A-WALL	2
Walls/Foundation	S-FNDN	2	S-FNDN	2
Walls/Retaining	SITE-WALL	2	SITE-WALL	2

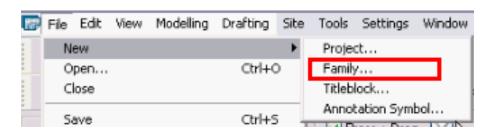
Interior
Exterior
Foundation
Retaining
Soffit -

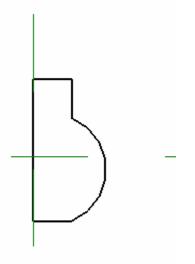
Thanks Wes!

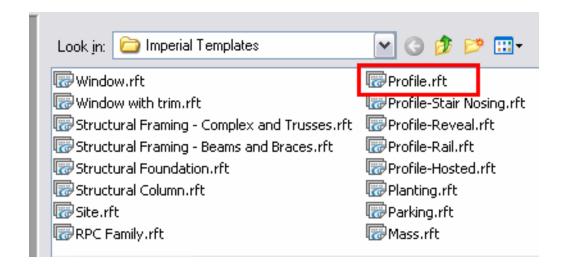
Wall Function





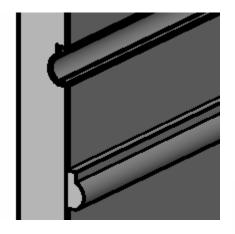




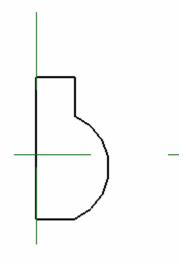


Profile Family



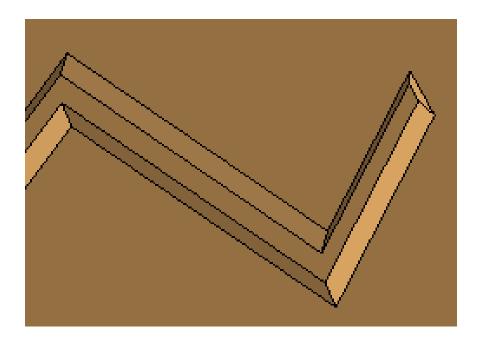






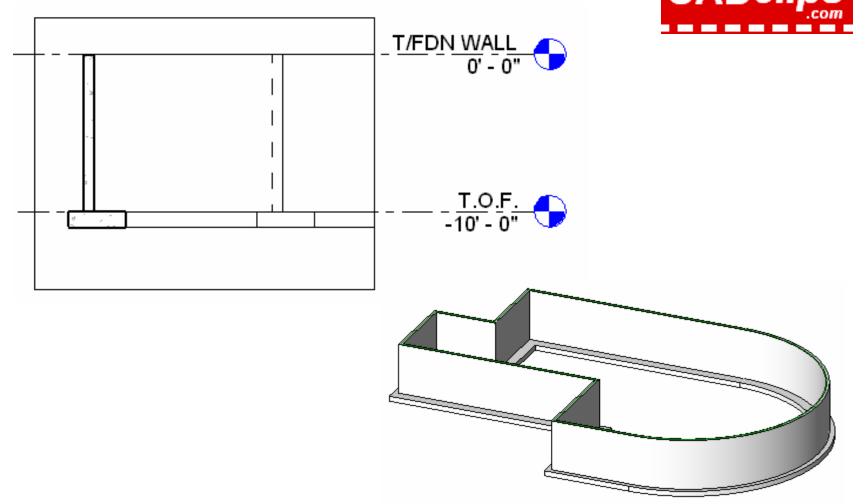
Wall Sweep and Reveal





Diagonal Wall Reveals

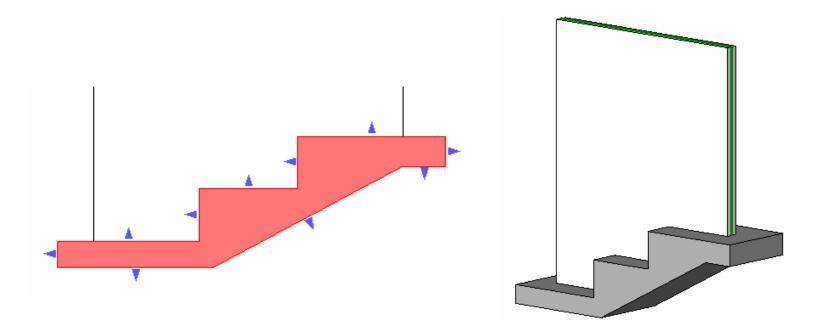




Basic Wall Footings

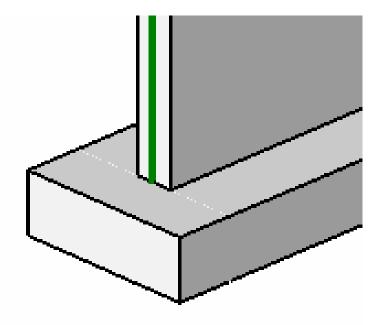
REVIT® Structure A to Z





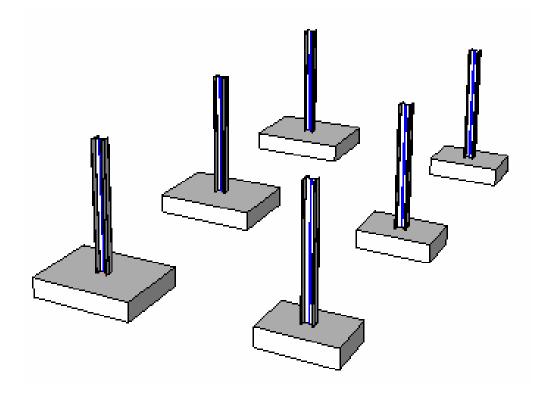
Stepped Footing





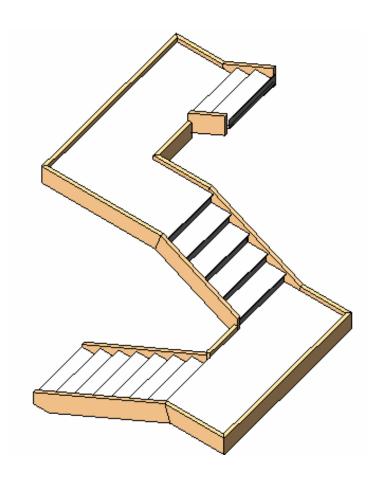
Footing Return





Footing Pad





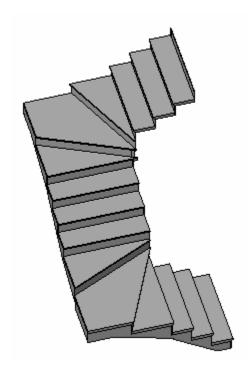
Parameter	Value
Materials and Finishes	
Tread Material	Metal - Paint Finish - Ivory,Matte
Riser Material	<by category=""></by>
Stringer Material	Wood - Birch
Monolithic Material	<by category=""></by>
Treads	
Minimum Tread Depth	0' 11"
Tread Thickness	0' 2"
Nosing Length	0' 1"
Nosing Profile	Stair Nosing - Pan : Stair Nosing
Apply Nosing Profile	Front Only
Risers	
Maximum Riser Height	0' 7"
Begin with Riser	✓
End with Riser	✓
Riser Type	Straight
Riser Thickness	0' 0 1/4"
Riser to Tread Connection	Extend Riser Behind Tread
Stringers	
Trim Stringers at Top	Do not trim
Right Stringer	Closed
Left Stringer	Closed
Middle Stringers	Π

Stair Basics

REVIT® Structure A to Z **CAD**clips

Stair - Edit Run

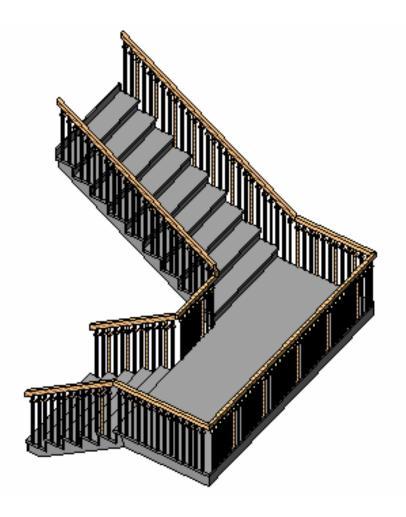




Stair - Boundaries and Risers

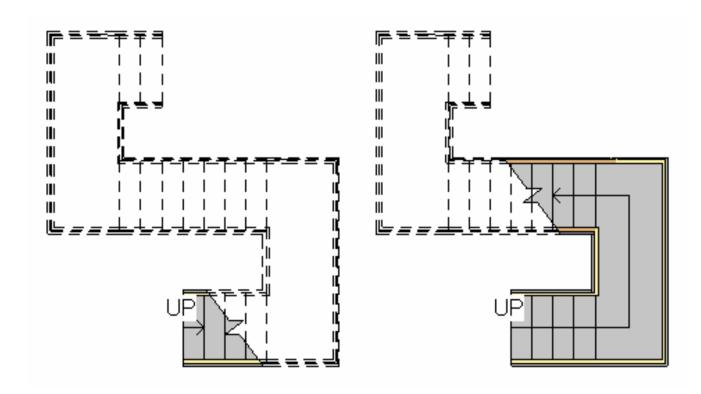
REVIT® Structure A to Z



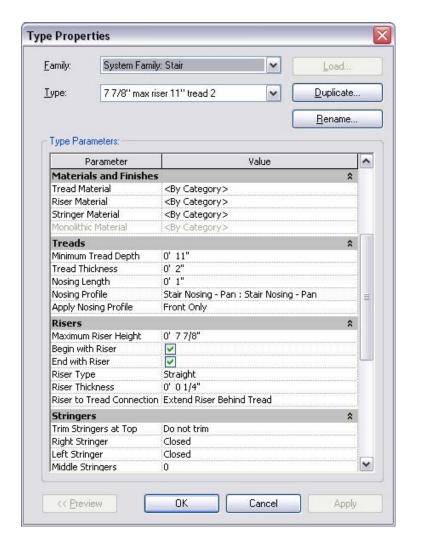


Stair - Railings





Stair - Cut Plane

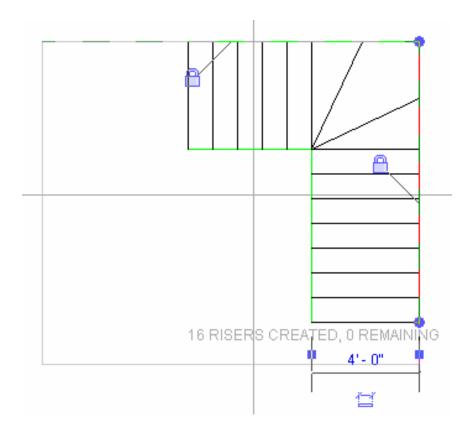






Stair - Properties

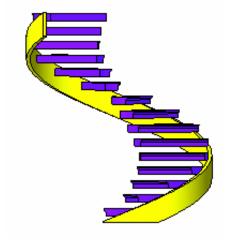


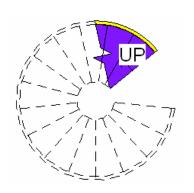


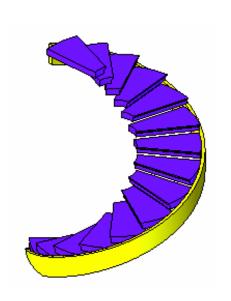
Stair - Lock to Opening

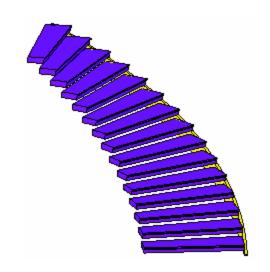
REVIT® Structure A to Z





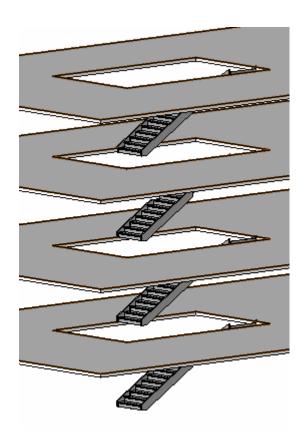






Stair - Spiral or Arc



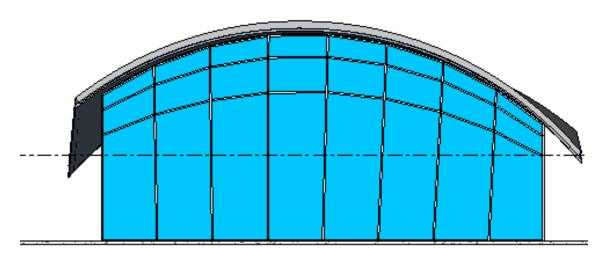


Stair - Multi Storey



A few notes before we get started with Roofs.

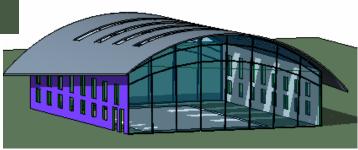
- We are using revit structure 2008.
- Set the slope type in project units to 'slope angle' or 'rise /12'
- Check visibility graphics (v v) to turn on and off model. catagories. Browse thru the catgories and have a look.
- check the 'show catagories from all disciplines', toggle.
- Walls have an additional visibility setting pertaining to it's 'structural usage' property and whether or not it is 'load bearing'.
 This is set in each view or saved to a view template.

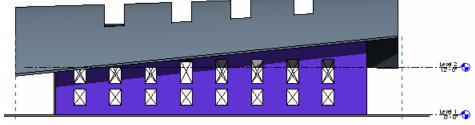


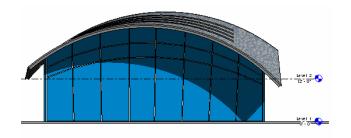
Roofs - Introduction





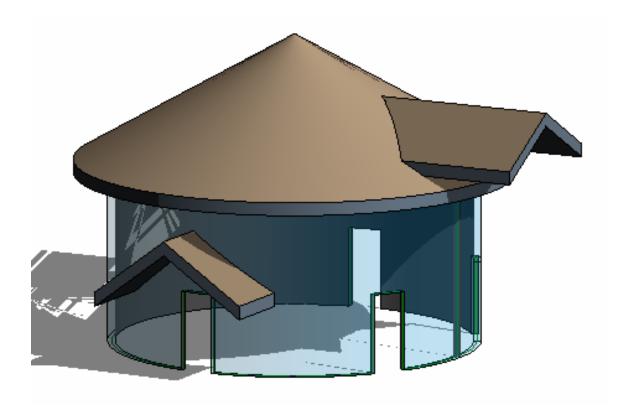






Roofs - By Face copyright www.cadclips.com 5.13..07

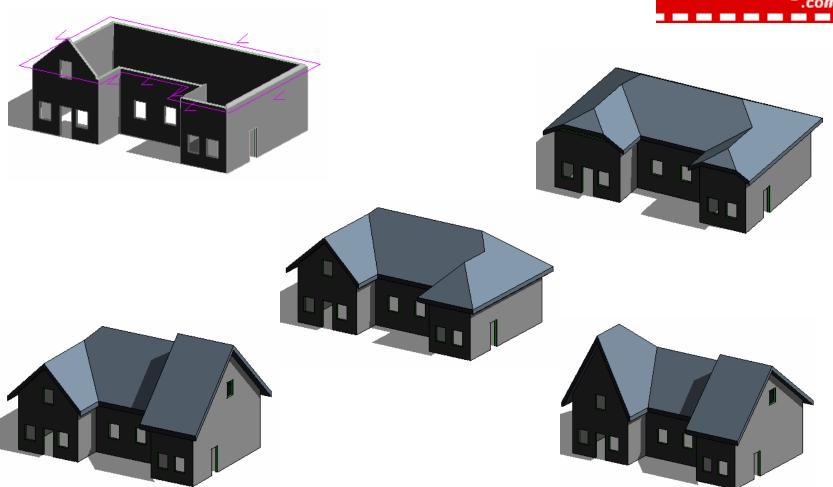




Roofs - By Extrusion

REVIT® Structure A to Z





Roofs - By Footprint

Edit Assembly

Family:



Down.

	Function	Material	Г	Thickness	Wraps	Variable	_
1	Finish 1 [4]	Roofing - EPDM	0'	0 1/2"			≣
2	Thermal/Air Lay	Insulation / Ther	0'	6"		<u>~</u>	
3	Core Boundary	Layers Above W	0'	0"			
4	Structure [1]	Metal - Deck	0'	2"			
5	Core Boundary	Layers Below Wr	0'	0"			

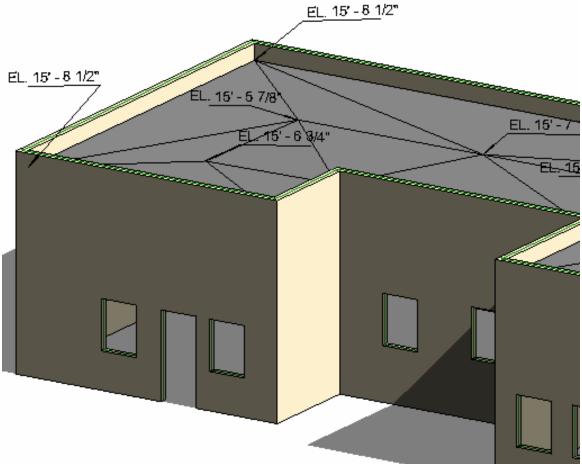
Delete

Basic Roof

Roofs - Assembly

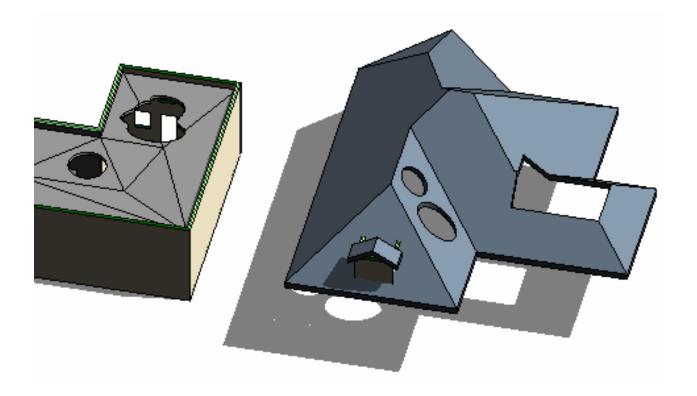
Insert





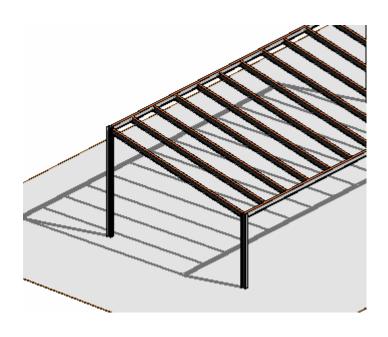
Roofs - Sloped / Flat

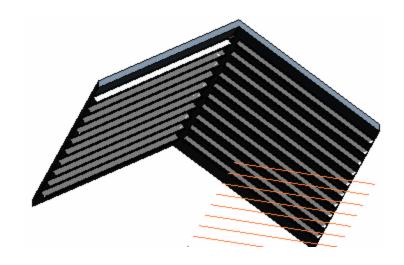




Roofs - Openings





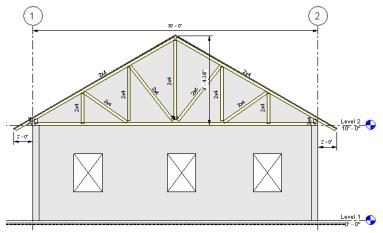


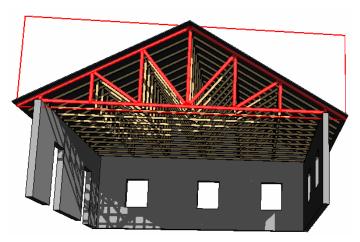
Roofs - Sloped Framing





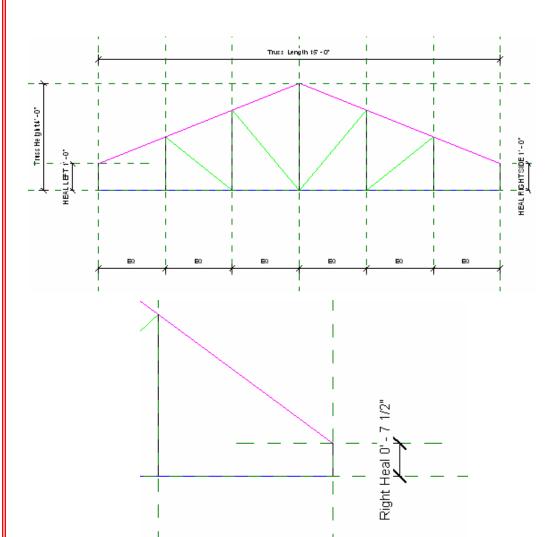






Roofs - Intro to Trusses





Parameter	Value	:	
Structural Framing	Set Framing	Ту	=
Start Release	Pinned		=
End Release	Pinned		=
Angle	0.000°		=
Construction			
Webs have symbol			=
Web Orientation	Vertical		=
Dimensions			
Right Heal (default	0' 7 1/2"		=
Left Heal (default)	0' 7 1/2"		=
Truss Length	20' 0"		=
Truss Height (defa	8' 0"		=
Identity Data			
Assembly Code			=

Roofs - Custom Truss Family





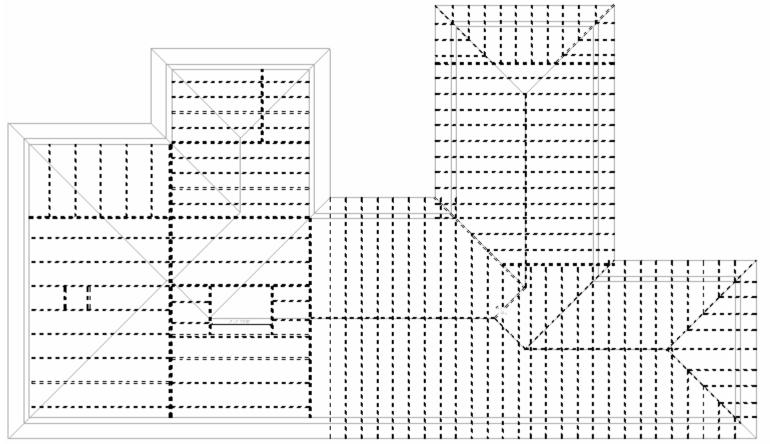
Roofs - By with a Kicker





Roofs - Country Porch

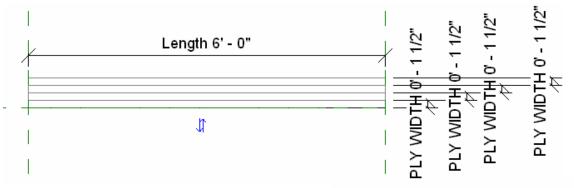




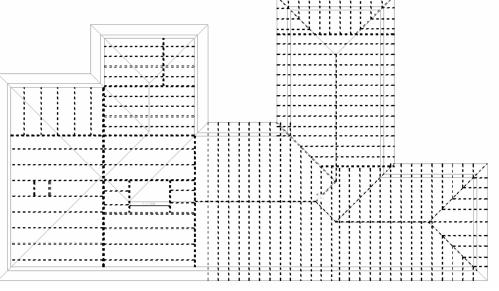
Roofs - 2D Framing Plan

REVIT® Structure A to Z









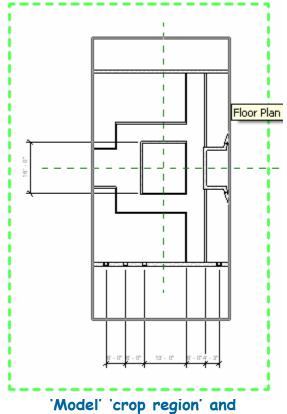
2D Framing Family





Daryl, Erin and baby Ivy Jasper, Alberta, 05/07





'Annotation' (green) 'crop region'

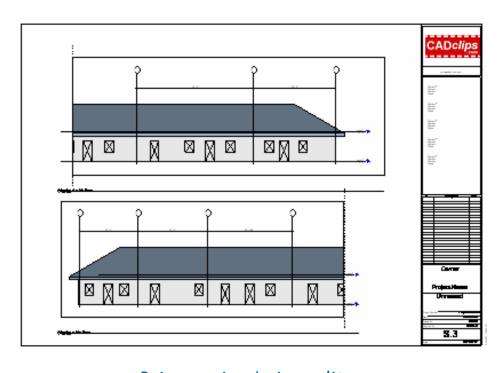
Annotation Crop Region





Erin, Baby Ivy and Mr. French Jasper, Alberta, 05/07





Primary view being split up into 2 dependent views, that are placed on a sheet.

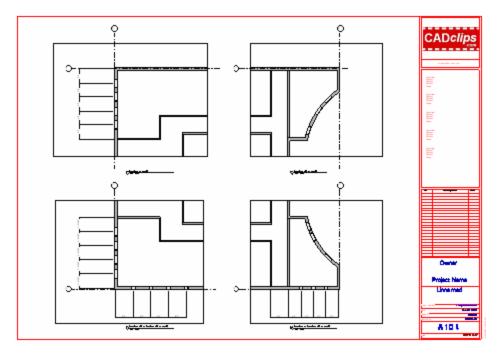
Dependent Views - Elevation





The new wagon. Jasper, Alberta, 05/07





Primary Plan view being split up into 4 dependent views, that are placed on a sheet.

Dependent Views - Plan