Designing a Structure Using Post-Frame Construction

Reference Number: **KB-03137** Last Modified: **June 20, 2024**

The information in this article applies to:



QUESTION

I would like to create a structurally detailed pole building, or pole barn, using postframe construction. How can I accomplish this?



ANSWER

A pole building, or pole barn, can easily be created in Chief Architect X13 and newer versions by using properly setup wall types, framing, and roof components.

If you're using a legacy version (X12 and prior), please refer to <u>KB-01069: Creating a</u> <u>Pole Barn Structure in Legacy Versions</u>

(https://www.chiefarchitect.com/support/article/KB-01069/designing-a-traditional-polebarn-structure.html).

In addition to this article, you can find a <u>Post Frame Design sample plan</u> (<u>https://www.chiefarchitect.com/products/samples.html#projects-post-frame-design</u>) and other related resources on our <u>Samples Gallery</u> (<u>https://www.chiefarchitect.com/products/samples.html</u>) page. Please be aware that due to varying post-frame construction design methods, you may notice differences between the sample plan, related resources, and the content located within this article.

Note: This article assumes that the reader is familiar with and comfortable modifying the default settings, creating custom wall types, using the automatic framing functionality and manual framing tools, working with layers, layer sets, and plan views, and using various edit tools.

There are a number of tasks involved in creating a structure using post-frame construction, including:

- <u>Setting up defaults</u>
- Creating the initial structure and placing openings
- <u>Building the roof</u>
- Framing walls
- <u>Creating roof trusses automatically</u> (Applies to X15 and newer versions)
- Creating roof trusses manually
- Generating roof purlins
- <u>Making manual framing adjustments</u>
- <u>Generating piers</u>

Before starting work on any drawing, it is important to set up the correct default settings, particularly for the structural aspects of the plan.

As you set up your defaults, you can also set up defaults for door styles and materials for roofing, casing, doors, and other items.

Setting up defaults

Before setting up the **Default Settings** ^[1], we will create a wall type that will be specific to post-frame construction. To begin, select **Build> Wall> Define Wall**
 Types ^[1] from the menu, then click the **New** button to create a new wall type.

To learn more about wall types, please see the "Defining a New Wall Type" resource in the <u>Related Articles</u> section below.

∖ Wall Type Definitions									
Post Framed Wall	~	New Cop	y Re	ename	Delete	Delete All U	nused		
Vall Layers									
Layer # Line Color Line Style	Weight	Material	Pattern	Texture	Fill	Thickness	Extension	Display Layer	Insert Above
Exterior Layers									Insert Below
1	35	Blue Corrugate				1/2"	0"	Default	Move Up
2	35	Fir Framing 1				1 1/2"	0"	Default	Move Down
Main Layers						1			Delata
3	35	CA-B Pressure		1.8213.08		5 1/2"		Default	Total Thickness
Interior Layers									7 1/2"
✓ Framing Use Default Framing □ Place Framing On Diagonal	Material splay Lay	er							
Туре:		Lumber	∨ On Ce	nter [Horizonta	l Framing			
Stud Spacing:		96"	ሮ		Botton	n Run Elevati	on: 0"		
Stud Width:		5 1/2"	也		Ma	x Girt Length	: 144"	뱐	
Top Plate Count:		0	ሮ						
Top Plate Width:		1 1/2"	2						
Bottom Plate Count:		0	ሮ						
Bottom Plate Width:		1 1/2"	2						
Max Plate Length:		144"	Ŷ						
Auto Detail as Insulation									

• Give the wall type a **Name** using the field in the top left corner.

In this example, the name of Post Framed Wall is specified.

• Use **Insert Above** or **Insert Below** to add the different wall layers - an exterior finish layer, an exterior framing layer for girts, and a main layer consisting of pressure treated framing for the posts.

In this example, the exterior finish layer is set to a corrugated metal material.

• For each layer of the wall type, set the **Thickness**.

In this example, the Thickness values are set to 1/2" for the exterior finish layer, 1 1/2" for the layer that will become our girts, and 5 1/2" for the posts layer.

 For the layer that will be used as girts, check the box for Framing, set the Stud Spacing and Stud Width, check the box for Horizontal Framing, and specify the Bottom Run Elevation to your liking. In this example, the Stud Spacing is set to 24", the Stud Width is set to 5 1/2", and the Bottom Run Elevation is set to 0".

 For the layer that will be used for posts, check the box for Framing, set the Stud Spacing and Stud Width, Plate Counts, and make any other desired adjustments.

In this example, the Stud Spacing is set to 96", the Stud Width is set to 5 1/2", and the Top and Bottom Plate Counts are set to 0.

- Make any other adjustments to the wall type, as desired.
- 2. Next, select **Edit> Default Settings** ^[1]/_[2] from the menu to open the **Default Settings** dialog.
 - To expand a category in the tree list and view its subcategories, click the arrow to the left of its name.
 - To open the defaults dialog for a line item, click on its name and then click the **Edit** button, or simply double-click on its name.

3. In the **Exterior Door Defaults** dialog:

• On the GENERAL panel, specify the **Door Style** of the exterior man door that you would like, as well as the **Width** and **Height**.

In this example, the Door P09 from the library is used, and the default values are used for the Width and Height.

- On the CASING panel, specify whether or not to use casing, and if so, adjust the properties accordingly.
- On the **S**ILL/**T**HRESHOLD panel, specify whether or not to use a threshold.

In X15 and prior, sill/threshold settings for doors are located on the CASING panel.

• On the JAMB panel, set the jamb properties to your liking.

If wall girts will be covering the door jamb, consider unchecking the Fit Jamb to Wall box and changing the Depth and/or Inset values.

• On the **Rough Opening** panel, set the rough opening properties to your liking.

In X13, the Rough Opening information is located on the FRAMING panel.

In this example, we will account for the 3/4" default JAMB value located around the door, so we will specify the Additional Width to be 1 1/2" (3/4" x 2) and the Additional Height to be 3/4". In X14 and prior, specify 3/4" for Each Side, 3/4" for the Top, and 0" for the Bottom instead.

 On the Framing panel, specify the desired header information, such as Thickness, Count, and Framing Method*, as well as the Trimmer and King Stud Count**.

In this example, we have specified a Flat Header* with a Count of 1, a Trimmer Count of 1, and a King Stud Count of 1. Manual modification of these framing members may be required after framing has been generated. This is discussed more in the <u>Making manual framing adjustments</u> section.

*The Framing Method drop-down menu allows you to choose between Standard, Boxed, and Flat headers, and is only available in X16 and newer versions. In X15 and prior, specify a Standard header with a Count of 1, then swap the Thickness and Depth values to simulate a flat header, if desired. Calculate from Width must be unchecked to change the Depth.

**Available in X14 and newer versions. In X13, king studs were generated automatically. Set the Trimmer Count to 1 to generate the same number of studs for the doors.

- Access any other panels that you would like to make changes to before closing out of the dialog.
- 4. In the Garage Door Defaults dialog:

Note: If your building will contain barn doors instead of garage doors, access

the Barn Door Defaults instead.

• On the GENERAL panel, specify the **Door Style** of the garage door that you would like, as well as the **Width** and **Height**.

In this example, the Garage Door P02 from the library is used, and a value of 120" (10') is specified for both the Width and Height.

Additional garage door options are available in the <u>Amarr®</u> (<u>https://www.chiefarchitect.com/3d-library/index.php?</u> <u>r=site/detail/691</u>) and <u>Clopay® (https://www.chiefarchitect.com/3d-library/index.php?r=site/detail/692</u>) manufacturer catalogs. Please see the "Obtaining and Updating Library Content" resource in the <u>Related Articles</u> section below to learn more.

- On the CASING panel, specify whether or not to use casing, and if so, adjust the properties accordingly.
- On the **S**ILL**/T**HRESHOLD panel, specify whether or not to use a threshold.

In X15 and prior, sill/threshold settings for doors are located on the CASING panel.

• On the JAMB panel, set the jamb properties to your liking.

If wall girts will be covering the door jambs, consider unchecking the Fit Jamb to Wall box and changing the Depth and/or Inset values.

• On the **Rough Opening** panel, set the rough opening properties to your liking.

In X13, the Rough Opening information is located on the FRAMING panel.

In this example, we will account for the 3/4" default JAMB value located around the door, so we will specify the Additional Width to be 1 1/2" (3/4" x 2), and the Additional Height to be 3/4". In X14 and prior, specify 3/4" for Each Side and 3/4"

for the Top, and 0" for the Bottom instead.

 On the Framing panel, specify the desired header information, such as Thickness, Count, and Framing Method*, as well as the Trimmer and King Stud Count**.

In this example, we have specified a Standard Header with a Count of 2, a Trimmer Count of 1, and a King Stud Count of 1. Manual modification of these framing members may be required after framing has been generated. This is discussed more in the <u>Making manual framing adjustments</u> section.

*The Framing Method drop-down menu allows you to choose between Standard, Boxed, and Flat headers, and is only available in X16 and newer versions.

**Available in X14 and newer versions. In X13, king studs were generated automatically. Set the Trimmer Count to 1 to generate the same number of studs for the doors.

- Access any other panels that you would like to make changes to before closing out of the dialog.
- 5. In the **Floor/Ceiling Platform Defaults**, which is located under the Floors and Rooms category, modify or delete layers from the Ceiling Structure, Ceiling Finish, Floor Finish, and Floor Structure.

In this example, all layers from the Ceiling Structure and Ceiling Finish sections have been deleted, resulting in a 0" Thickness. The Floor Finish and Floor Structure are unchanged, as we will cover this topic within the <u>Creating the initial structure and</u> <u>placing openings</u> section below.

∩ Fl	Floor/Ceiling Platform Defaults				
Ceilin	g				
	Ceiling Structure:	0"	Edit		
	Ceiling Finish:	0"	Edit		
Floor					
	Floor Finish:	7/8"	Edit		
	Floor Structure:	12 5/8"	Edit		
Num	ber Style (OK	Cancel	Help	

- 6. In the **Framing Defaults** dialog:
 - On the WALL panel, set the **Plate Counts** if this was not changed, or available, when defining the wall type.

In this example, the Top and Bottom Plate Count are both set to 0.

- On the **O**PENINGS panel, ensure the Header Sizes for the different spans are set properly.
- On the TRUSSES panel, under the Roof Trusses section, set the correct Member Depth for the **Top Chord**, **Bottom Chord**, and **Webbing**, the Maximum Horizontal Span for the **Top** and **Bottom Chord**, and whether or not the **Require Kingpost** and **Energy Heel*** boxes are checked.

In this example, the Top and Bottom Chords are set to 5 1/2" and the Energy Heel box is checked. All other settings are unchanged.

*Available in Chief Architect X14 and newer versions. In X13 and prior versions, trusses can only be marked as such within the Truss Specification dialog. Please see the <u>Related Articles</u> section for more information on creating energy heel trusses.

- Edit any other settings that you desire, apart from those located on the ROOF panel. We will discuss roof defaults, including roof framing, in the next step.
- 7. In the **Roof Defaults** dialog:

• On the **ROOF** panel, set the Framing Method to **Trusses**.

In X14 and prior, check the **Trusses (no Birdsmouth)** box instead.

• Specify the desired roof **Pitch (in 12)**.

In this example, a Pitch of 4 in 12 is specified.

• Set the Roof Height properties, such as the **Heel Height**.

In this example, the Heel Height is set to 6 1/4". This value will vary depending on the pitch that you specify.

In X14 and prior, a Heel Height option is not available. Instead, uncheck the Automatic Birdsmouth Cut box, then specify a Raise Off Plate (+) or Birdsmouth (-) value to create an energy heel. Specify a value of 7/16" to produce a 6 1/4" Heel Height.

• Set the Roof Overhang on the **Eave** and **Gable** to the values you desire.

In this example, a value of 12" is specified for each.

• On the **O**PTIONS panel, specify your desired Eave settings.

In this example, the default Plumb option is selected.

• On the STRUCTURE panel, check the **Use Framing Reference** box and change the **Rafter/Truss Spacing** to your preference.

In this example, a value of 48" is specified.

• Under the Roof Layers section, **Edit** the Roof Surface and define a roof purlins framing layer along with a roof exterior surface layer, then click **OK**.

In this example, a purlins layer with a Thickness of 1 1/2", a Width of 3 1/2", and a Spacing value of 24" is specified. Another layer consisting of corrugated metal with a Thickness of 1/2" is defined for the exterior roofing material.

trusses/rafters instead of on top, click the Edit button next to Roof Structure and define a structural purlins framing layer instead.

Roof	Surface Definition							×
Material l	Layers						- €	3 🔒 🖪
Layer #	Material	Pattern	Texture	Fill	Thickness	Insert Above		
1	Black Corrugat				1/2"	Insert Below		
2	Fir Framing 1				1 1/2"	Move Up		
						Move Down		
						Delete		
						Total Thickness:		
						2"		
Structure								
	Purlins						• 177	
	Type:		Lumber	~				
	Spacir	ng:	24"		On Center			
	Width	:	3 1/2"					
	🗌 Ma	ax Length:	144"					
	Bottor	m Run Offset:	0"					
	Top Ru	un Offset:	0"					
	Us	e Equal Spacin	g					
	Auto Detail as In	sulation						
	Air Gap							
Number	r Style					ОК	Cancel	Help

• To create exposed trusses on the exterior of the structure, uncheck the **Soffits** box.

In this example, the Soffits box is checked.

• Under the Roof Size section, adjust the properties of other elements of the roof, as desired.

In this example, we have unchecked the Lookout box and adjusted the Ridge board to have a Depth of 5 1/2" to match our trusses. This will create blocking between our trusses at the ridge.

• Make any other desired changes, such as to the RIDGE CAPS, GUTTERS,

MATERIALS, etc.

- 8. On the WALL TYPES panel of the **Exterior Wall Defaults** dialog, use the **Wall Type** drop-down to select the "Post Framed Wall" wall type created earlier.
- 9. Windows are not used in this example, but if you will be adding windows to your design, access the **Windows Defaults** dialog:
 - On the GENERAL panel, specify the **Window Type**, as well as the **Width**, **Height**, and **Floor to Top/Bottom** values.
 - Access the CASING, SILL/THRESHOLD, SASH, and FRAME panels to adjust these window settings, as necessary.

In X15 and prior, access the SILL panel to adjust sill settings for windows.

• Set the rough opening and frame properties by accessing the ROUGH OPENING and FRAME panels.

In X13, the Rough Opening information is located on the FRAMING panel.

 Access the Framing panel, specify the desired header information, such as Thickness, Count, and Framing Method*, as well as the Trimmer and King Stud Count**.

As with doors, manual modification of these framing members may be required after framing has been generated. This is discussed more in the <u>Making manual</u> <u>framing adjustments</u> section.

*The Framing Method drop-down menu allows you to choose between Standard, Boxed, and Flat headers, and is only available in X16 and newer versions.

**Available in X14 and newer versions. In X13, king studs were generated automatically.

• Access any other panels that you would like to make changes to before closing out of the dialog.

If you plan to design these types of structures in the future, now is a great time to save your default settings for use as a template plan. To create a template plan, select **File> Templates> Save As Template** A. Give the file a short, descriptive name, and save it in the Chief Architect Templates directory, or the location of your choice.

The program may ask if you want to make your new template your default template for new plans. Unless you expect that most of your new projects will use post-frame construction, click **No**. Once the defaults are set up, the structure can be drawn.

Creating the initial structure and placing openings

1. With the **Build> Walls> Straight Exterior Wall** tool, draw the perimeter walls for your pole building.

In this example, we drew a 32' x 40' rectangular structure.



- 2. Using the **Select Objects** tool, click inside of the newly created room, then click the **Open Object** edit tool.
- 3. In the **Room Specification** dialog that displays:

Room Specification							
General	Absolute Elevations						
Structure Deck	Floor Above:						
Deck Support	Ceiling:	144" (신)					
Moldings Wall Covering	Floor:	0"]				
Fill Style	Floor Below:						
Components	Relative Heights						
Object Information	Rough Ceiling:	144" 🖞]				
Schedule	Finished Ceiling:	144" (신)]				
	SWT To Ceiling:	144" 🖞					
	Ceiling Below:						
	Stem Wall:	37 1/2"					
	SWT = Stem Wall	Тор					
	Ceiling						
			🗹 Roof Over This Room				
			✓ Flat Ceiling Over This Room				
			Shelf Ceiling				
			Use Soffit Surface for Ceiling				
	Ceiling Structure:		0" Edit 🗹 Default				
	Ceiling Finish:		0" Edit 🗹 Default				
	Floor						
			Floor Under This Room				
			Floor Supplied by the Foundation Room Below				
			Monolithic Slab Foundation				
			Build Foundation Below				
			Raised Floor For Bump Out				
			Retain Floor/Ceiling Framing				
	Slab Pour Numbe	er / Framing Group:					
	Floor Finish:		0" Edit 🗹 Default				
	On Structure Resi	ze:	Lock Floor Top O Lock Floor Bottom				
	Floor Structure:		4" Edit 🗹 Default				

On the GENERAL panel, specify the Room Type to be a Slab if you would like a 4" concrete slab as your floor platform, then specify an appropriate Room Name such as "Pole Building".

Note: Further modifications can be made to the Floor Platform by accessing the Structure panel and clicking the Edit button next to Floor Structure and/or Floor Finish.

If dirt, gravel, or stone will be used for the structure's flooring instead, you can delete the Floor Structure and Floor Finish entirely, create a Terrain Perimeter, then add a Terrain Feature consisting of one of these materials.

• On the **S**TRUCTURE panel, specify the desired **Ceiling** height, which determines the top of the wall, as well as the elevation at which the roof trusses' bottom chords will start.

In this example, 144" (12') is used.

- Also on the **S**TRUCTURE panel, ensure that the Ceiling and Floor sections are following what was set within the Floor/Ceiling Platform Defaults, or are set to your liking.
- Make any other desired changes, then click **OK**.
- 4. Using the different **Door** and **Window** tools, add any openings that are needed for the structure.

In this example, we have added a standard man door measuring 36" (3') wide and 80" high, and two garage doors that measure 120" (10') wide and 120" (10') high.



Building the roof

Using the Select Objects tool, click on one of the end walls, click on the Open Object edit tool, and on the ROOF panel of the Wall Specification dialog that displays:

Wall Specification			
General	Roof Options		
Structure		O Hip Wall	○ High Shed/Gable Wall
Roof		Full Gable Wall	O Knee Wall
Foundation			
Wall Types		O Dutch Gable Wall	O Extend Slope Downward
Wall Cap		Roof Cute Wall at I	Pottom
Wall Covering			bottom
Rail Style		🗹 Include Frieze	
Newels/Balusters		🔽 Include Automatic	End Truce Above
Rails			. End Iruss Above
Layer			

• Select the Full Gable Wall option.

• In X15 and newer, check the **Include Automatic End Truss Above** if you would like a reduced gable end truss to be generated above this wall when trusses are automatically generated.

In X14 and prior, trusses will need to be created manually, which is discussed in the <u>Creating roof trusses manually</u> section below.

Note: If the "Include Automatic End Truss Above" setting is disabled, and automatic wall and roof (truss) framing is generated, posts located within full gable walls will extend to the roof.

Full gable walls with attic walls above them can also be combined, resulting in full height posts that extend to the roof, even when the "Include Automatic End Truss Above" setting is enabled. This setting is called "Combine with Above Wall" and will appear directly under the "Include Automatic End Truss Above" setting after the program has detected an attic wall above a full gable wall.

- Click **OK** to confirm the changes and close the dialog.
- 2. Repeat the above process on the opposite end wall.
- 3. If Auto Rebuild Roofs is not currently enabled, navigate to **Build> Roof> Build Roof** , check the **Auto Rebuild Roofs** box located on the ROOF panel, then click **OK** to generate the roof.



Framing walls

1. Navigate to **Build> Framing> Framing Reference Marker** 4 and place a framing reference marker at the corner where two walls meet, making sure it's placed along the main layer that contains the posts. This will dictate where the wall framing starts at.



- 2. Next, navigate to Build> Framing> Build Framing .
- 3. In the **Build Framing** dialog, check the **Walls** box under either the **Automatically Rebuild Framing** or **Build Framing Once** section.

→ Build Framing ×
Framing Defaults
Automatically Rebuild Framing
Floors
Ceilings
Custom Ceilings
Walls
Roofs
Build Framing Once
Floors
Ceilings
Custom Ceilings
Walls
Roofs
OK Cancel Help

In X15 and prior, check the **Automatically Build Wall Framing** or **Build Wall Framing** box located on the WALL panel.

Build Framin	ng		×
Foundation 1st Wall Openings Fireplaces Beams Posts Roof Trusses Plan Display Materials	Wall Wall Stud Thickness: Stud Spacing: Stud Depth: Allow Automatic B	Framing 1 1/2" 16" On Center Determined By Wall Layer Balloon Framing	

4. Click **OK** to close the dialog and generate wall framing, which will include headers, posts, and girts.

Note: When generating framing, you may be presented with one or more messages stating: "Do you want to turn on the display of this layer in the current view?" Click Yes to display these layers in the current view or No to

hide their display. Wall framing components will still be generated if you choose not to display them in the current view.



Creating roof trusses automatically*

*Applies to Chief Architect Premier X15 and newer versions.

- 1. Select **Build> Framing> Build Framing** from the menu.
- 2. In the **Build Framing** dialog that appears, check the **Roofs** box under either the **Automatically Rebuild Framing** or **Build Framing Once** section.

→ Build Framing ×
Framing Defaults
Automatically Rebuild Framing
Floors
Ceilings
Custom Ceilings
☑ Walls
Roofs
Build Framing Once
Floors
Ceilings
Custom Ceilings
Walls
Roofs
OK Cancel Help

In X15, check the **Automatically Build Roof Framing** or **Build Roof Framing** box located on the ROOF panel.

Build Framin	ng	×
Foundation 1st Wall Openings	Automatically Build Roof Framing Use Framing Reference Roof	
Fireplaces Beams	Build Roof Framing	
Posts	Angled Dormer Hole	
Trusses	Trim Framing To Soffits	
Plan Display	Rafter/Truss Spacing: 48" On Center	
Materials	Maximum Lookout Spacing: 48" On Center	

- 3. Click **OK** to generate automatic trusses, purlins, as well as additional roof framing components.
- 4. To adjust the properties of an individual roof truss further, click on it to select it, then click the **Open Object** click tool to access the **Roof Truss Specification**

dialog.

Note: If you make changes to an automatic truss, you may be prompted with a message stating: "The current operation modifies a roof framing member... Would you like to turn off Automatic Roof Framing and continue with this operation?" Click Yes to proceed or No to cancel the operation.

Creating roof trusses manually

If you're using X14 or a prior version, trusses will need to be created manually. Please follow the instructions below to learn how to place and replicate roof trusses.

- 1. Select **Build> Framing> Roof Truss** (from the menu, then click and drag to draw a roof truss near one of the main posts towards the outside of the structure.
- 2. Click on the newly placed roof truss to select it, then use a Temporary Dimension or the **Move** \Leftrightarrow edit handle to position it precisely.
- Keep placing roof trusses until you reach the other side of the pole building. You can also use the Transform/Replicate Object → or Multiple Copy → edit tools to quickly replicate trusses across a plan.
- 4. Select the outermost truss on the left-hand side of the building and click the **Open Object** edit tool.
- 5. On the **General** panel of the **Roof Truss Specification** dialog, check the **End Truss** and **Reduced Gable** boxes if they aren't already checked, then click**OK**. Repeat this process for the truss on the opposite end of the building.

Generating roof purlins

If you generated automatic trusses in X15 or a newer version, it's likely that purlins have already been generated. You can skip to the next section if purlins have already been built.

- 1. Navigate to **Build> Framing> Build Framing** from the menu.
- 2. In the **Build Framing** dialog that appears, check the **Roofs** box under either the **Automatically Rebuild Framing** or **Build Framing Once** section.

In X15 and prior, check the **Automatically Build Roof Framing** or **Build Roof Framing** box located on the ROOF panel.

3. Click **OK** to generate automatic purlins, as well as additional roof framing components.

Note: If you recall, we setup a purlins framing layer in the first section of this article. If this was not setup correctly, or you'd like to make adjustments, you can click the Framing Defaults button, access the Roof panel, then click Edit next to the Surface option.

In X15 and prior versions, a Framing Defaults button is not available in the mentioned dialog; instead, simply access the Roof panel, then click Edit.

Making manual framing adjustments

If additional framing needs to be added (e.g. wind bracing), adjusted, or removed, manual modifications may be in order.

> It's important to be aware that making manual framing adjustments may require you to disable automatic rebuild functionality for one or more framing categories. With this in mind, it's recommended to only make manual adjustments after you are finished using the automatic framing

capabilities.

If framing needs to be rebuilt, manual adjustments will be overridden unless the Retain Framing setting is specified for the object. This setting prevents new framing from generating, and can be found on the Structure panel of Wall, Ceiling, Room, and Roof Plane Specification dialogs.

You can rebuild framing on a per object basis using the Build Framing for Selected Object edit tool while a valid object (e.g. wall, roof, etc.) is selected. This edit tool; however, will not appear for objects that have Retain Framing selected.

In our current design, a few manual adjustments that we still need to make include adding truss carriers for the roof trusses, modifying the bottom skirt (girt) boards to be treated and flush with the concrete piers, adjusting the trimmers, headers, king studs, and girts around the doors, and extending/shortening posts. **Cross Section/Elevation** and/or **Backclipped Cross Section** views are recommended for making these type of framing adjustments. To make it easy to see our framing in these views, we will use the 3D Framing Layer Set.

Start by deleting any framing objects that are not needed.

For the truss carriers, we will copy an existing girt, place it into position, then adjust them to be 2x10s. Repeat for the opposite side of the structure.



For the skirt boards, we will select and lower their position, adjust them to be 2x8s, then apply a pressure treated framing material. Perform this procedure for each of the skirt boards around the structure.



For the man door, we will adjust the flat header to extend to meet the corner post, adjust the trimmers to be 2x4's, and move the door and trimmers up against the post. Finally, we will adjust and place additional boards around the door.



For the garage doors, we will modify the trimmers to be 2x4s, then move the trimmers and king studs up against the door jambs. We will raise the standard headers up 1 1/2", adjust them accordingly, then place a general framing member to act as a flat header. Next, we will move the existing girts at the top of the garage doors down to accommodate additional girts. Finally, we will adjust and place additional boards around the doors.



FOR DEMONSTRATION PURPOSES

With all of the framing now positioned, we can extend/shorten the posts using edit handles in a section view or by accessing the Specification dialog. For our design, we will extend our posts down 46" to increase their total width to 190", as they will be contained within piers (discussed in the next section).



You can learn more about making manual framing adjustments in the following resources:

- <u>Manually Drawing Framing Members</u> (<u>https://www.chiefarchitect.com/support/article/KB-00727/manually-drawing-framing-members.html</u>)
- <u>Manually Editing Wall Framing (https://www.chiefarchitect.com/support/article/KB-00571/manually-editing-wall-framing.html)</u>
- <u>General Framing Guidelines (https://www.chiefarchitect.com/support/article/KB-00465/general-framing-guidelines.html)</u>
- <u>Framing (https://www.chiefarchitect.com/videos/playlists/93/framing.html)</u> video playlist

Generating piers

1. In a floor plan view, navigate to **Build> Slab> Round Pier** And place a pier directly below one of your posts, preferably *not* a corner post.



- 2. Using the **Select Objects** \searrow tool, click on the pier to select it, and **Open** \prod it specification.
- 3. In the Pier/Pad Specification dialog that opens, specify your desired properties of

the pier, then click **OK**.

In this example, a Top Height of -4", a Bottom Height of -52", and a Width of 24" are specified.

Pier/Pad Specificati	on	×
General Layer Fill Style Materials Label Components Object Information Schedule	Type Round Pier Square Pad Size and Position Top Height: -4" Bottom Height: -52" Width: 24"	

4. With the pier still selected, click on the Copy/Paste → edit tool, click on the Sticky
 Mode ↓ secondary edit tool, then go around the structure clicking at the Center
 O snap point of each post until all of the piers are placed.

You can also use a variety of other edit tools to easily copy/paste piers precisely beneath your posts, such as Multiple Copy, Transform/Replicate Object, and Point to Point Move.



5. Create a **Camera** io view, such as a **Perspective Framing Overview** is view to see the results. Switch to your desired Layer Set or toggle the display of layers using the **Display Options** or **Active Layer Display Options** is side window.



MORE INFORMATION

- 3D views of the structure can be produced using any of the 3D Camera tools. However, by default, most of the framing layers are turned off aside from Framing Overviews. If you would like posts, girts, purlins, and other items to display in a particular type of 3D view, create the view, then either switch the Layer Set being used or toggle the display of layers, as desired. Please refer to the <u>Understanding Layers (https://www.chiefarchitect.com/support/article/KB-03183/understandinglayers.html), Understanding Layer Sets (https://www.chiefarchitect.com/support/article/KB-00765/understanding-layersets.html), and <u>Understanding Saved Plan Views</u> (https://www.chiefarchitect.com/support/article/KB-03185/understanding-savedplan-views.html) resources to learn more. You can find additional information in the Cameras & Lighting (https://www.chiefarchitect.com/videos/playlists/102/renderingcameras-lighting.html) and <u>Saved Plan Views</u>, Layers, & Annotations (https://www.chiefarchitect.com/videos/playlists/100/saved-plan-views-layersannotations.html) video playlists.
 </u>
- Consider using the Object Eyedropper stool to quickly, and easily, apply properties from one object to another. Please refer to the Using the Object
 Eyedropper and Painter (https://www.chiefarchitect.com/videos/watch/5307/using-

the-object-eyedropper-and-painter.html) video to learn more.

- You can add finishing touches, such as truss connectors, fasteners, straps, and ties using the objects located in the <u>Simpson Strong Tie®</u> (<u>https://www.chiefarchitect.com/3d-library/index.php?r=site/detail/796</u>) manufacturer catalog.
- Corner boards can be added to the structure by navigating to Build> Trim> Corner
 Boards

 or Auto Place Corner Boards
 A. Defaults for corner boards can also be specified before they are created.

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Related Articles

Automatically Building the Basic Roof Styles

(https://www.homedesignersoftware.com/support/article/KB-00359/automaticallybuilding-the-basic-roof-styles.html)

- Creating a Pole Barn Structure in Legacy Versions (/support/article/KB-01069/creating-a-pole-barn-structure-in-legacy-versions.html)
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- Creating an Energy Heel Truss (/support/article/KB-00032/creating-an-energy-heeltruss.html)
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