Creating Roof Trusses

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The information in this article applies to:

PREMIER | PRO

QUESTION

How do I create roof trusses?

ANSWER

In Chief Architect X15 and newer versions, roof trusses can be created automatically using the Build Framing dialog and/or manually using the dedicated Roof Truss tool. However, in X14 and prior versions, trusses can only be built using the Roof Truss tool. We will discuss both methods of creating trusses in this article.

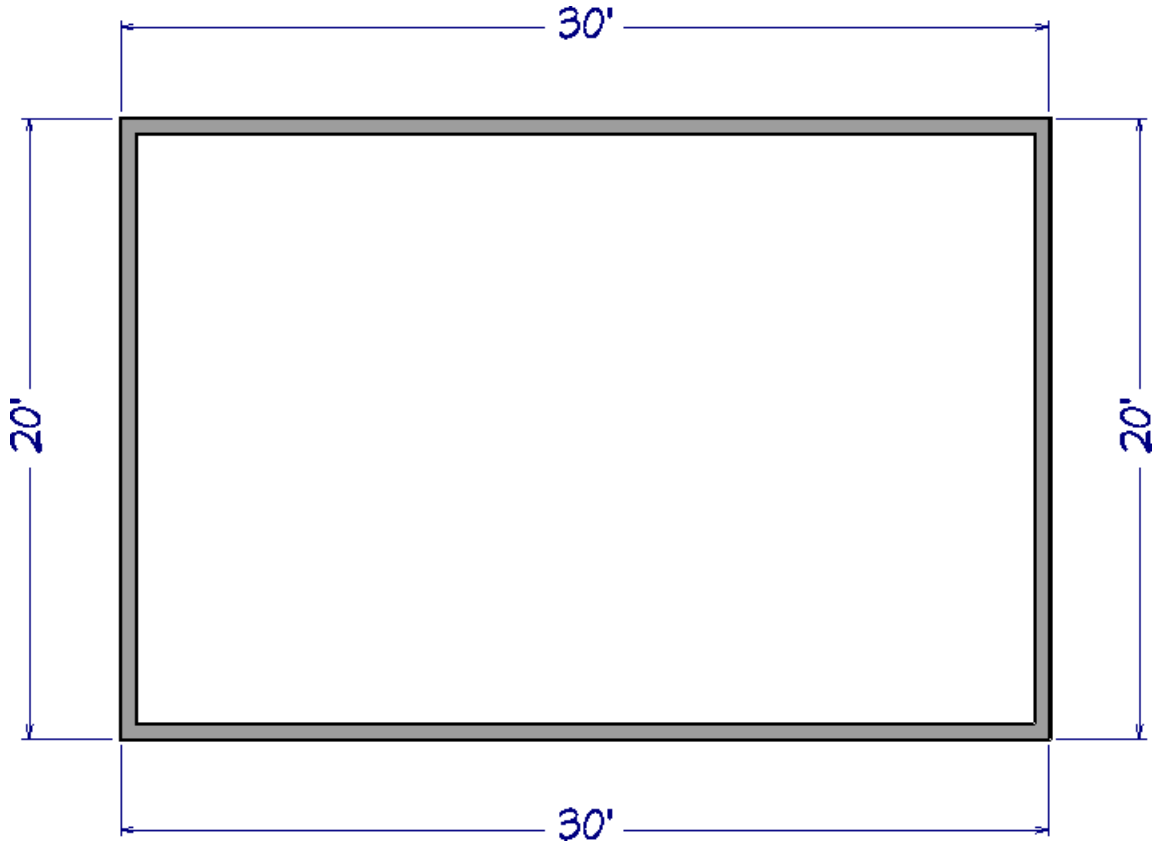
Before continuing, it's important to know that roof trusses in Chief Architect are defined by the position of one or more roof planes above and one or more ceilings below, so both must be in place before a truss is drawn.

- The roof and ceiling planes can be automatically generated or manually drawn.
- The ceiling can be composed of the default flat ceiling generated in each room by default, of manually-drawn planes created using the Ceiling Plane tool, or of a combination of the two.
- There must be space between the roof and ceiling in which a truss can generate. Trusses cannot be generated along the line where the roof and ceiling come together, usually on a bearing wall.

To build the structure and roof

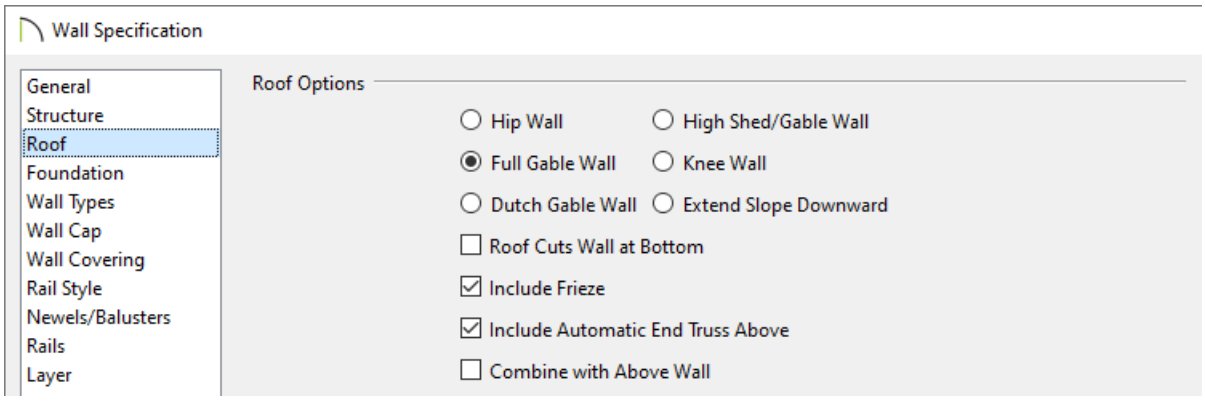
1. **Open** the plan in which you would like to create roof trusses, or select **File> New Plan**.

   In this example, a simple 20' x 30' structure is used.



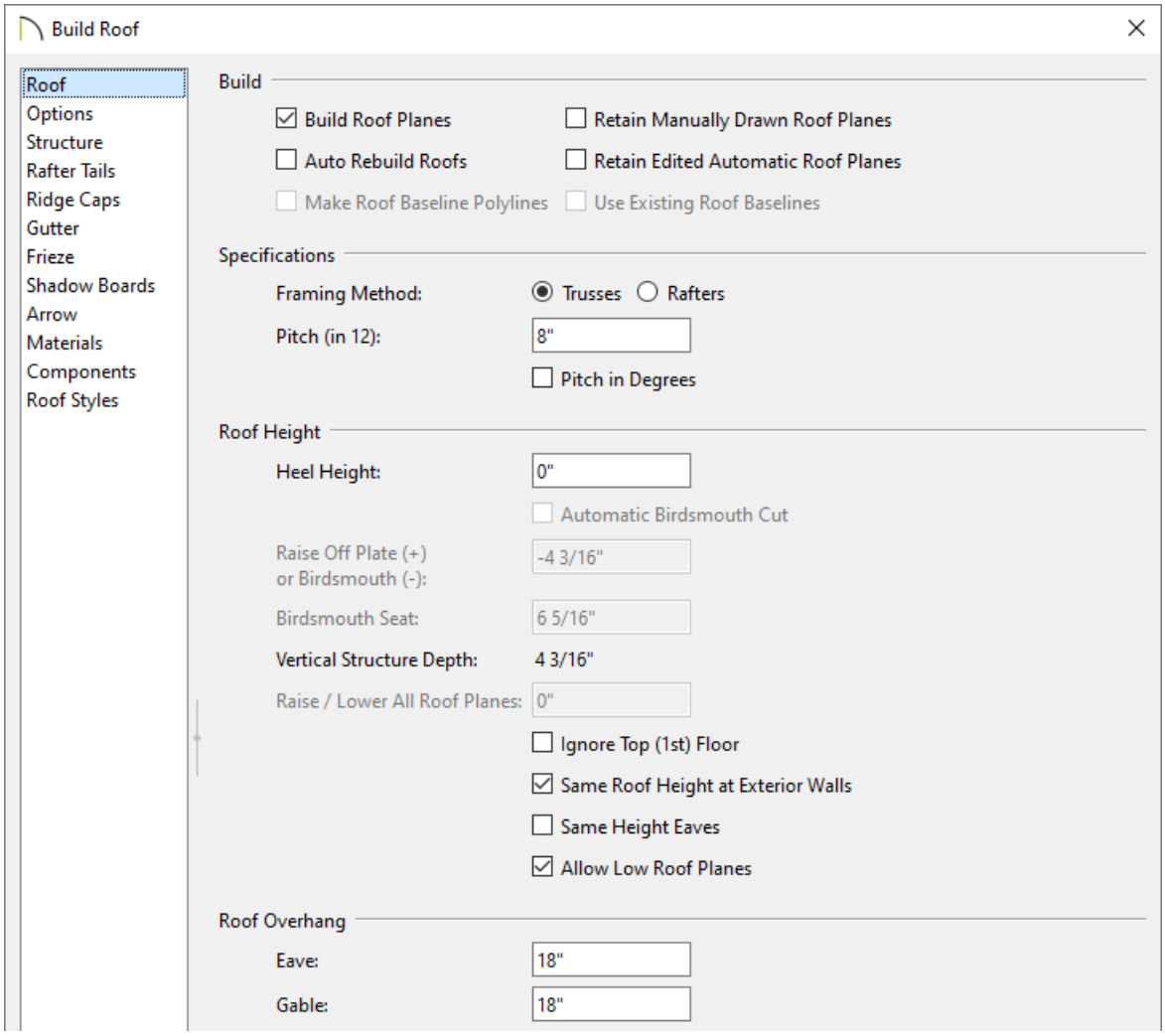
2. With the **Select Objects** tool, select the left and right walls, then click the **Open Object** edit button.

3. On the Roof panel of the **Wall Specification** dialog that opens, choose the **Full Gable Wall** option, then click **OK**.



> For additional information on building an automatic gable roof, visit the "Generating Automatic Hip and Gable Roofs" article linked in the Related Articles section below.

4. Select **Build> Roof> Build Roof** from the menu, and on the Roof panel of the **Build Roof** dialog that appears:



- Check the **Build Roof Planes** box.
- Select the **Trusses** Framing Method.

  In X14, Home Designer Pro 2023, and prior versions, check the **Trusses (no Birdsmouth)** box instead.

This setting tells the program to build the the roof so that the bottom edge of the truss top chord is flush with the top of the wall. The roof plane thickness is based on the default Top Chord Member Depth set within the Framing Defaults. If this setting is set to Rafters or the box is unchecked, the roof plane thickness is determined by the rafter Depth setting in the Framing Defaults.

- Specify your desired **Pitch (in 12)** and **Roof Overhang** values.

  In this example, the default 8" in 12" pitch is specified with the default 18" overhangs.

- Set the **Heel Height** to your liking.

  In X14, Home Designer Pro 2023, and prior versions, you must uncheck Automatic Birdsmouth Cut to define a raised heel.

  Please see the "Creating an Energy Heel Truss" resource in the Related Articles section to learn more.

  In this example, the value of 0" is used.

- Once all desired changes have been made, click **OK** to build the roof.

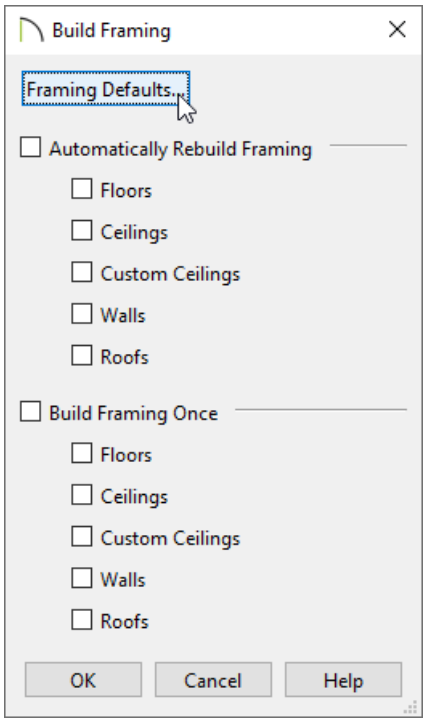
To create roof trusses automatically

**Applies to Chief Architect Premier X15, Home Designer Pro 2024, and newer versions.*

1. Select **Build> Framing> Build Framing** from the menu.

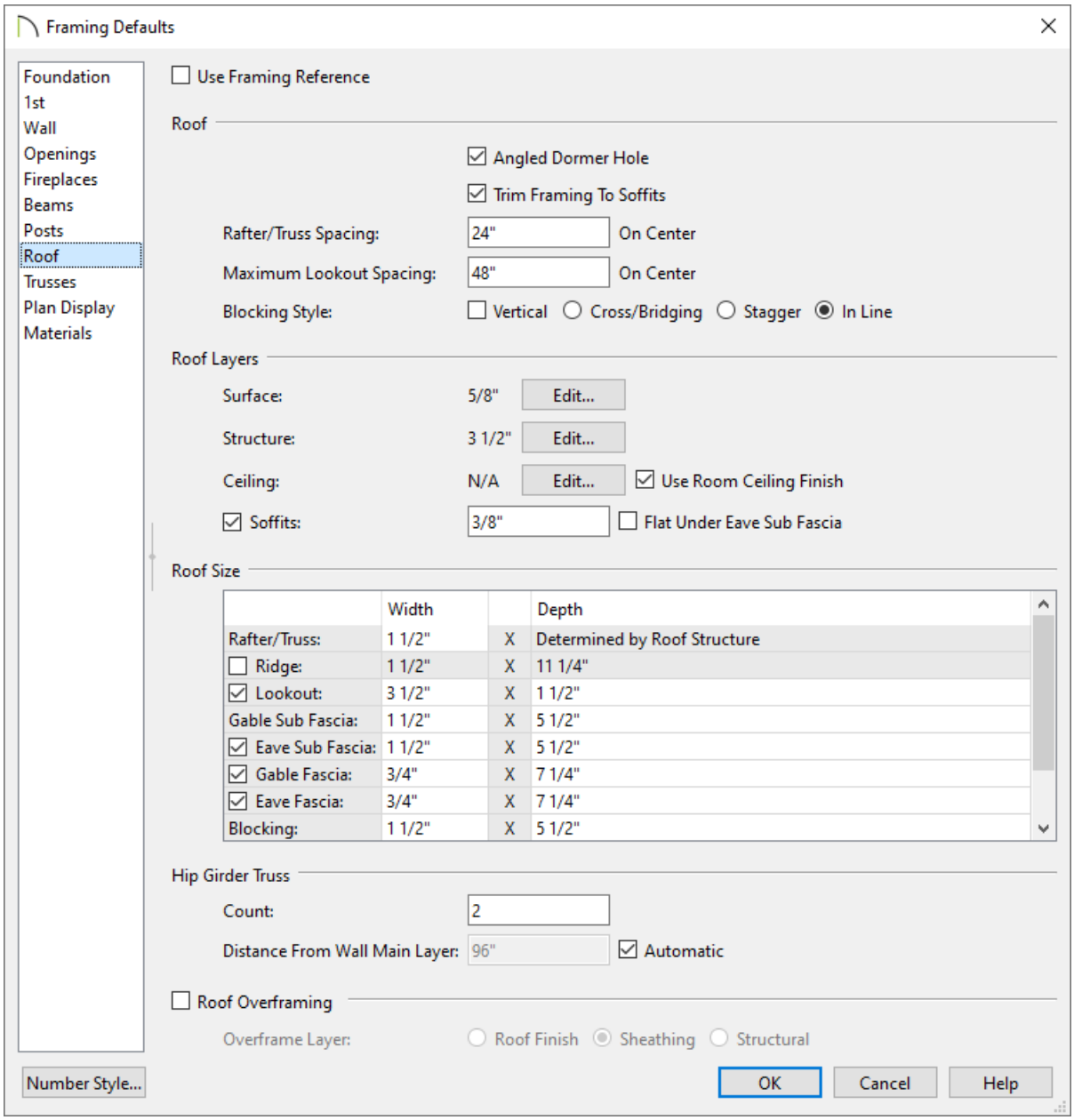
2. In the **Build Framing** dialog that appears, click on the **Framing Defaults** button.

   In X15 and Home Designer Pro 2024, skip this step and proceed to Step 3.

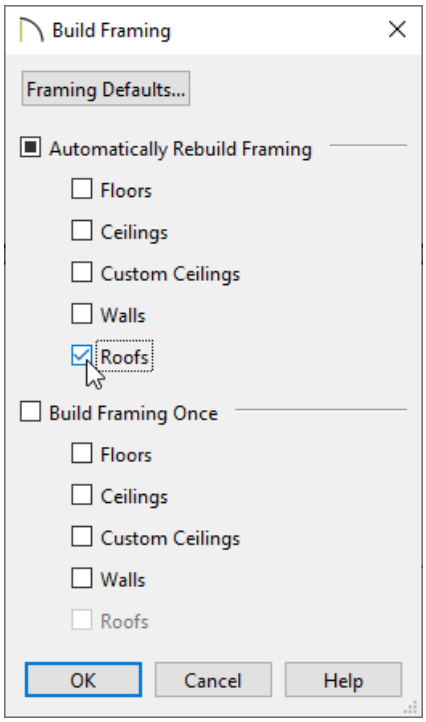


3. Access both the ROOF and TRUSSES panels in the dialog that appears, and verify that the settings are set to your liking.

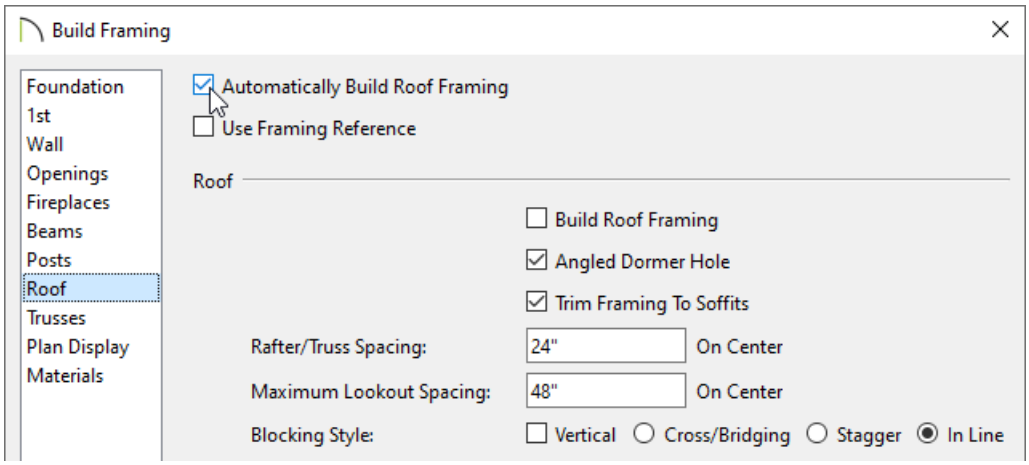
   In this example, the default Rafter/Truss Spacing value of 24" is used and the Ridge box is unchecked so that a ridge board/beam is not generated.



4. Once your roof framing settings are setup to your liking, click **OK**, check the appropriate **Roofs** box in the **Build Framing** dialog, then click **OK**.



In X15 and Home Designer Pro 2024, check the **Build Roof Framing** or **Automatically Build Roof Framing** box located on the Roof panel of the **Build Framing** dialog instead, then click **OK**.

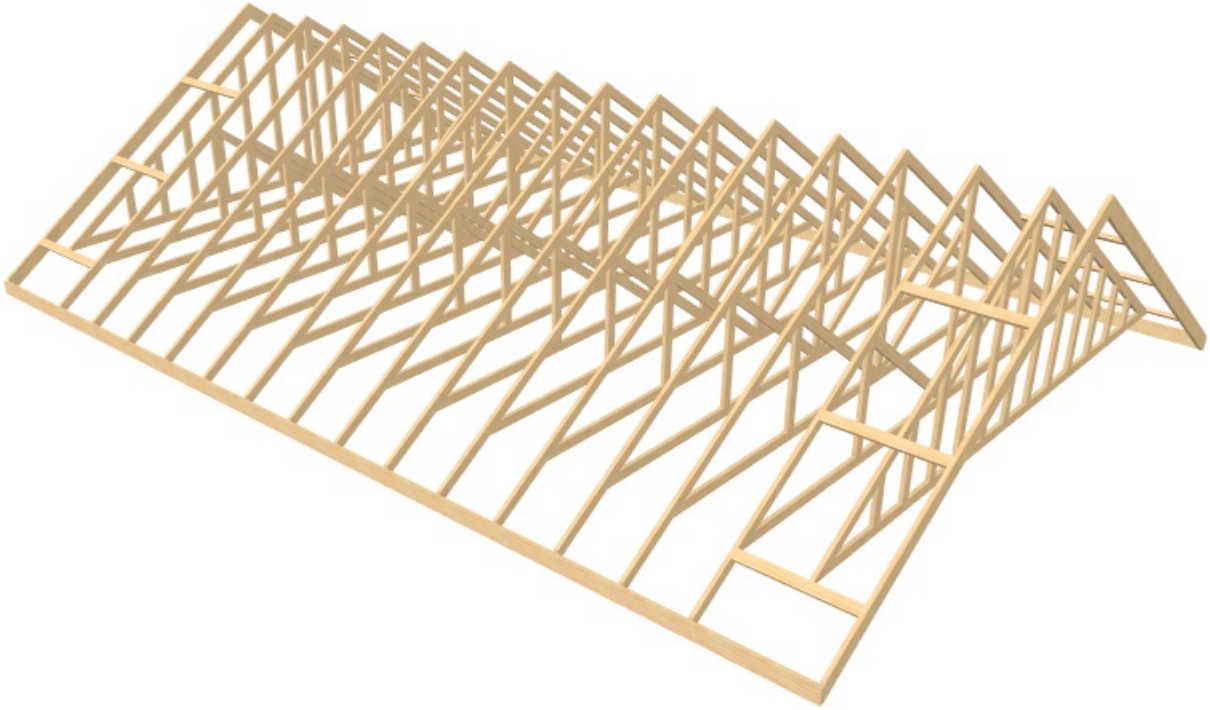


Automatic trusses, along with any other automatic framing components, such as blocking and fascia boards, will be generated.

You may be prompted to choose whether or not to display roof framing layers in the active view. Whichever choice you choose will not affect the generation of the framing components.

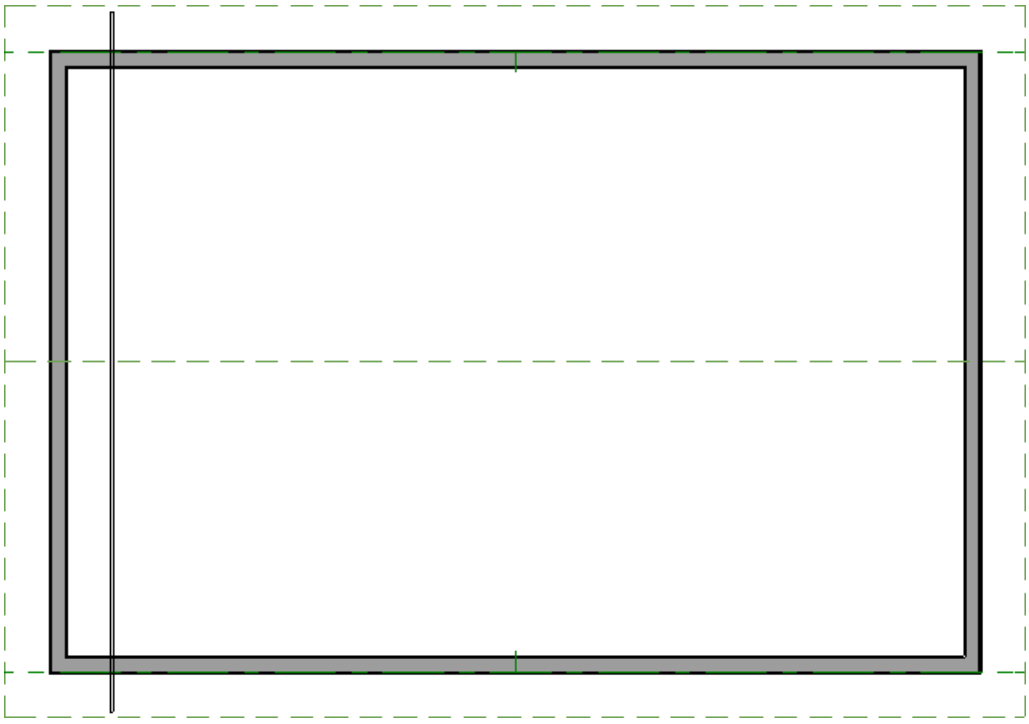
> The trusses located on each end of the structure will be reduced gable end trusses. If you don't want these types of trusses to be built automatically, open the two gable walls up to specification, select the Roof panel, and uncheck the "Include Automatic End Truss Above" box. Once you regenerate the roof framing, end trusses will no longer be built.

5. Create a **Perspective Framing Overview** to see the results.



To create roof trusses manually

1. Select **Build> Framing> Roof Truss** from the menu, then click and drag a line at a location where you would like a roof truss.

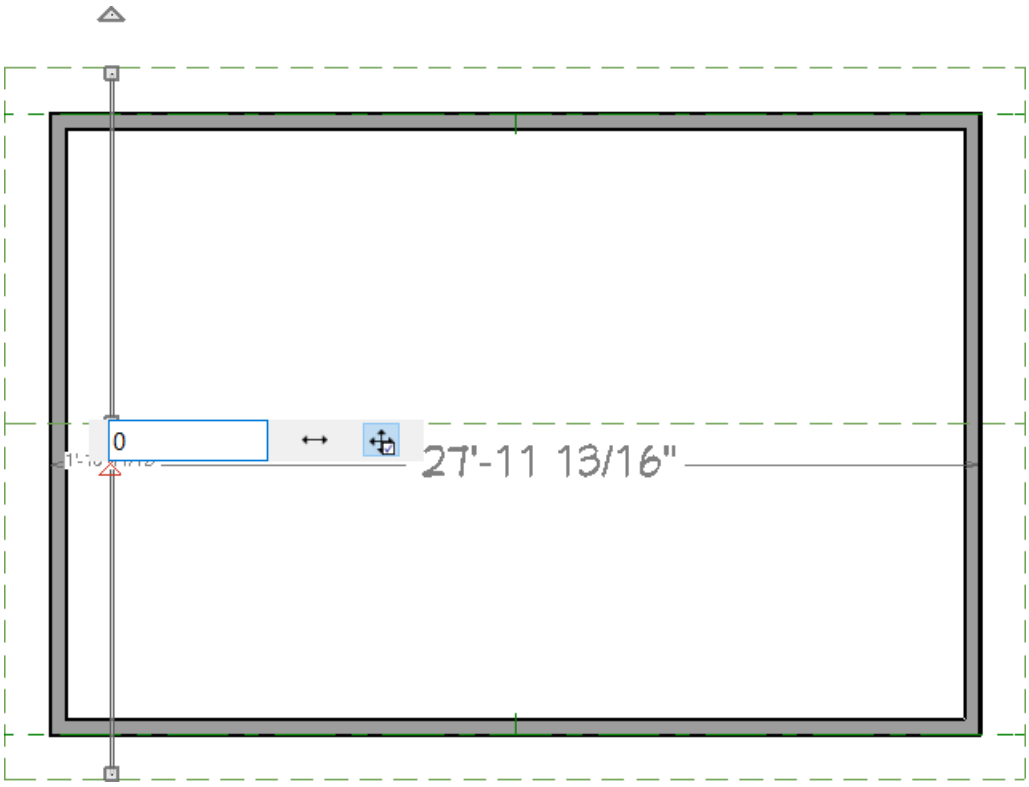


Note: A Message may appear asking "The layer 'Framing, Roof Trusses' is not displayed. Do you want to turn on the display of this layer in the current view?" Click Yes to display the Roof Trusses layer in this view.

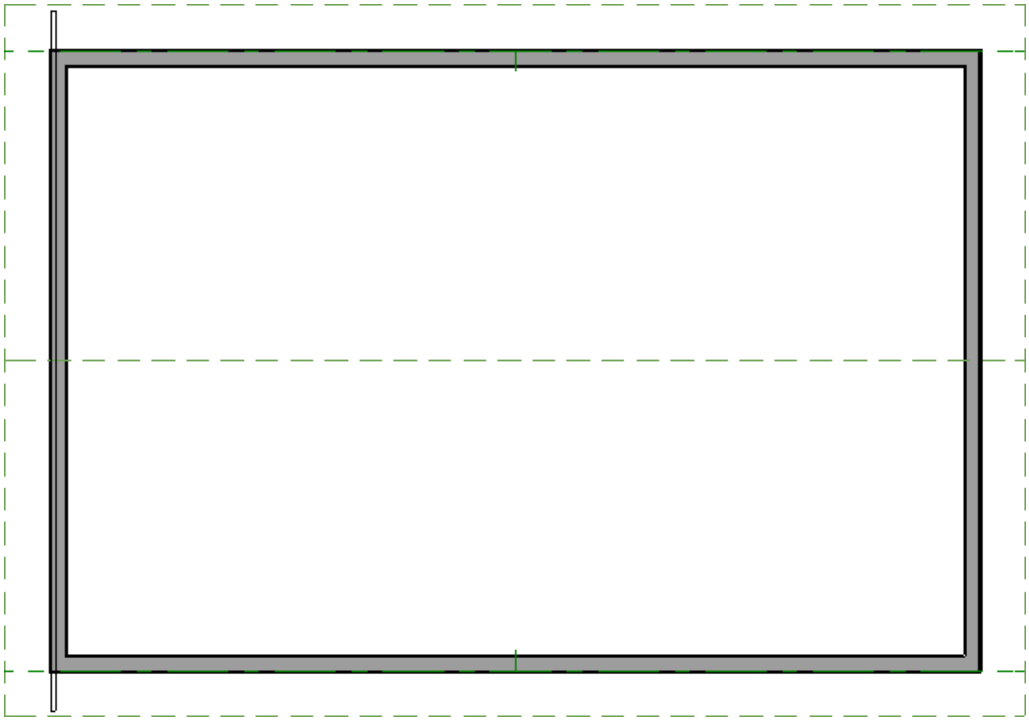
2. Make sure **Temporary Dimensions** are toggled on, enable the **Select Objects** tool, then click on the truss to select it.

3. When the truss is selected, a dimension will depict how far it is from a perpendicular wall. Click on the dimension, type your desired value in the text field, then press **Enter** on the keyboard.

   In this example, 0" is specified.



The truss will move so that its outer edge is aligned with the outer edge of the framing layer of the wall.

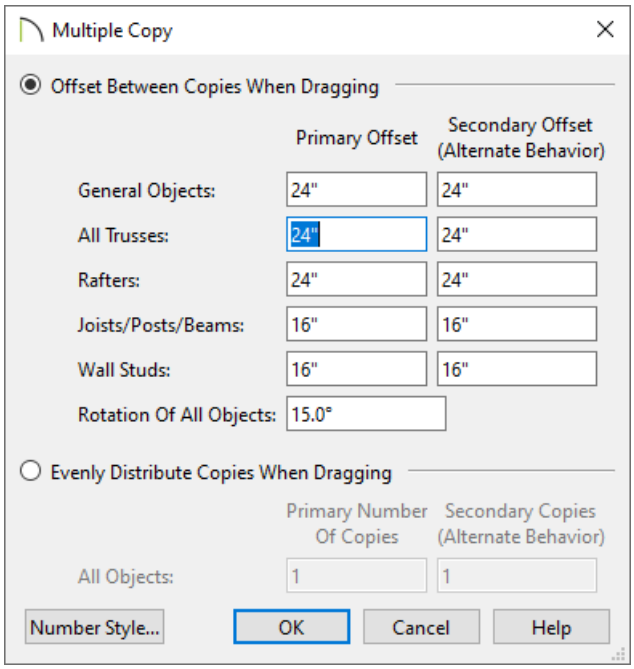


4. Using the **Select Objects** tool, click on the single roof truss to select it, then click on the **Multiple Copy** edit button.

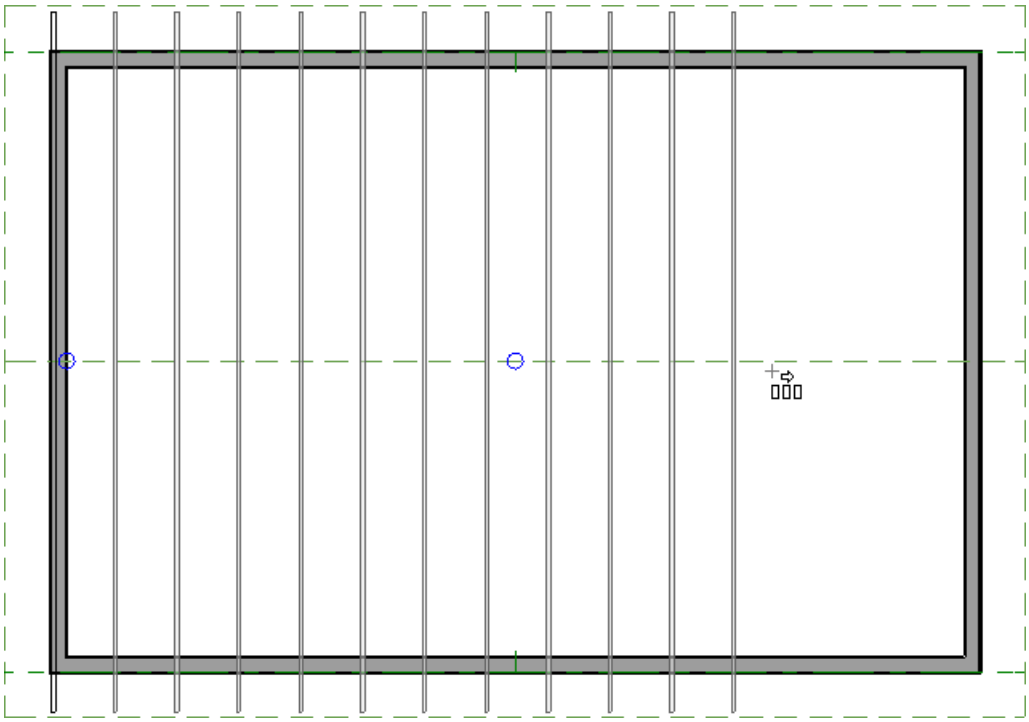
5. By default, the Multiple Copy interval for trusses is 24" (600 mm). To change this interval, click the **Multiple Copy Interval** secondary edit button, specify the desired **Primary Offset** value for **All Trusses**, then click **OK**.

   In this example, the default Primary Offset value of 24" is used.

   > **Note:** Multiple Copy is not available in Home Designer Pro. Instead, use the Transform/Replicate edit tool. As an example, if you wanted to create 6 copies all separated a certain distance from each other, you would check the Copy box, set the Number of Copies to 6, then check the option for Move and set the X Delta to be 24". Negative values can also be set for each of the deltas if needed.



6. Hover over the main Move edit handle on the truss until you see the **Multiple Copy** cursor display, then click and drag across the structure. As you drag, new trusses will be created at regular intervals. Release the mouse button to complete the command.



7. Next, with the **Select Objects** tool, select the trusses on either end of the structure and click the **Open Object** edit button.

> Holding the Shift key while selecting object allows you to group select multiple trusses. For more information on group selecting objects, please see the Related Articles section below.

8. On the GENERAL panel of the **Roof Truss Specification** dialog that opens, check the **End Truss** and **Force Truss Rebuild** boxes.
   - Check the **Reduced Gable** box in this dialog as well to lower the top chord of an End Truss so that lookouts can pass over the truss.
   - Click **OK** to rebuild the truss based upon the settings just specified.

9. Create a **Perspective Framing Overview** to see the results.

Now, additional framing components, such as lookouts and fascia boards, can be generated automatically using the Build Framing dialog.

Related Articles

- Creating a Log Truss (https://www.chiefarchitect.com/support/article/KB-02781/creating-a-log-truss.html)
- Creating a Vaulted Ceiling and Scissor Trusses (/support/article/KB-00068/creating-a-vaulted-ceiling-and-scissor-trusses.html)
- Creating an Attic Truss (/support/article/KB-00933/creating-an-attic-truss.html)

- Creating an Energy Heel Truss (/support/article/KB-00032/creating-an-energy-heel-truss.html)
- General Framing Guidelines (https://www.chiefarchitect.com/support/article/KB-00465/general-framing-guidelines.html)
- Generating Automatic Hip and Gable Roofs (https://www.chiefarchitect.com/support/article/KB-00758/generating-automatic-hip-and-gable-roofs.html)
- Group Selecting Objects (https://www.chiefarchitect.com/support/article/KB-00623/group-selecting-objects.html)

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