

Creating an Attic Truss

Reference Number: **KB-00933**

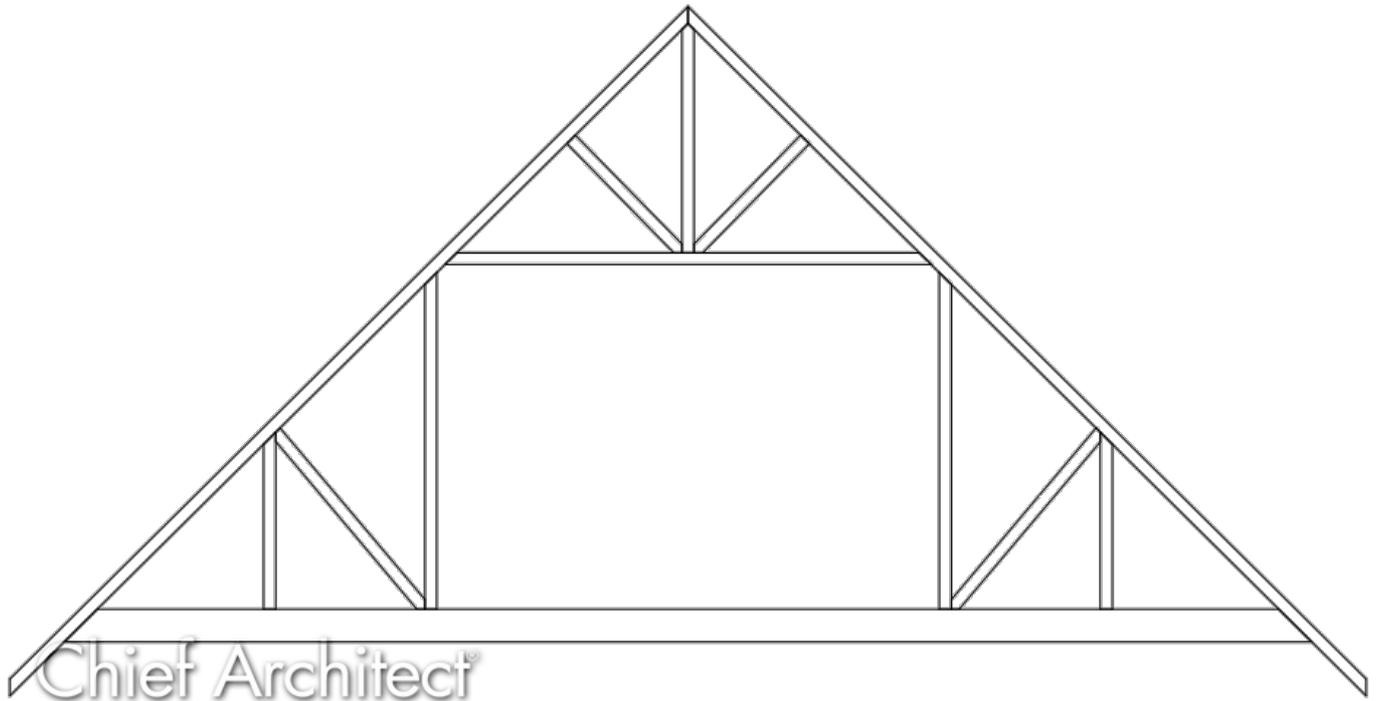
Last Modified: **March 14, 2024**

The information in this article applies to:



QUESTION

How do I create an attic truss?



ANSWER

An attic truss is a type of roof truss with an open space at its bottom center to accommodate a living space, with webbing above and on either side of this living space.

In order to create an attic truss, certain conditions must be met in the plan:

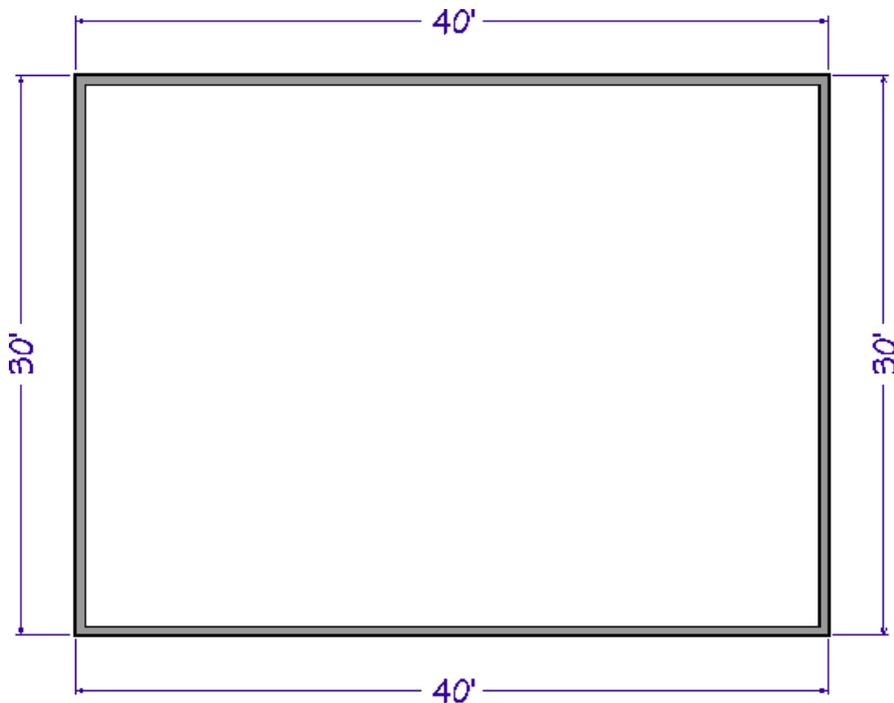
- The structure must be wide enough and the roof steep enough to allow space for a loft area with attic rooms on either side of it. The loft area must have Attic rooms on both sides and must be separated from these Attic rooms by Knee Walls.
- The loft area cannot be on Floor 0 or Floor 1 - it must have a living space below it that has a flat ceiling.
- The roof must bear on the walls defining the floor below the loft area. It cannot bear on knee walls.
- Each side of the roof must be composed of a single roof plane forming a continuous slope with a single pitch from baseline to ridge.
- The loft area must have a flat ceiling.

To create the structure and build the roof

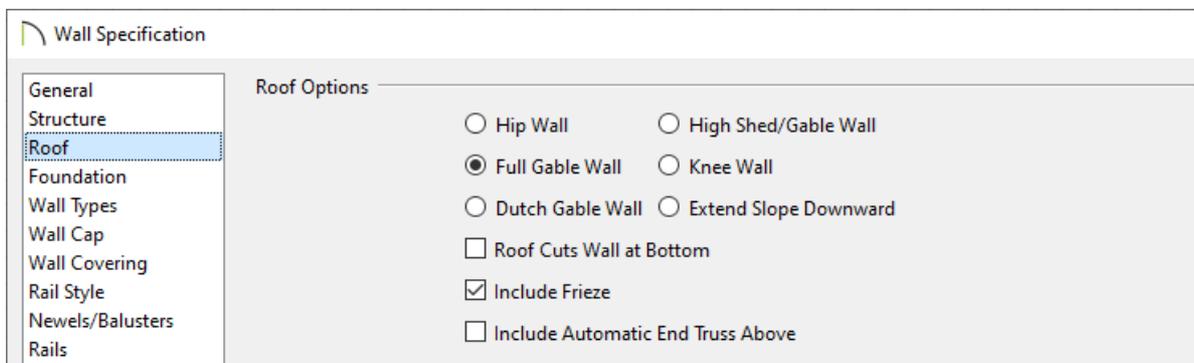
Because attic trusses require specific conditions to be met before they can be created, we'll begin by drawing a simple structure in a new file that meets those requirements.

1. Select **Build> Wall> Straight Exterior Wall**  from the menu, then click and drag to draw a rectangular structure.

In this example, a structure measuring 30' x 40' is used.



2. Using the **Select Objects**  tool, click on the vertical wall on the left to select it, then click the **Open Object**  edit button to open the **Wall Specification** dialog.



- On the **ROOF** panel, select **Full Gable Wall**, then click **OK**.
- Repeat this process with the vertical wall on the right, as well.

Note: You can also use the Change to Gable Wall(s) edit tool to convert hip walls to gable walls without having to open the Wall Specification dialog.

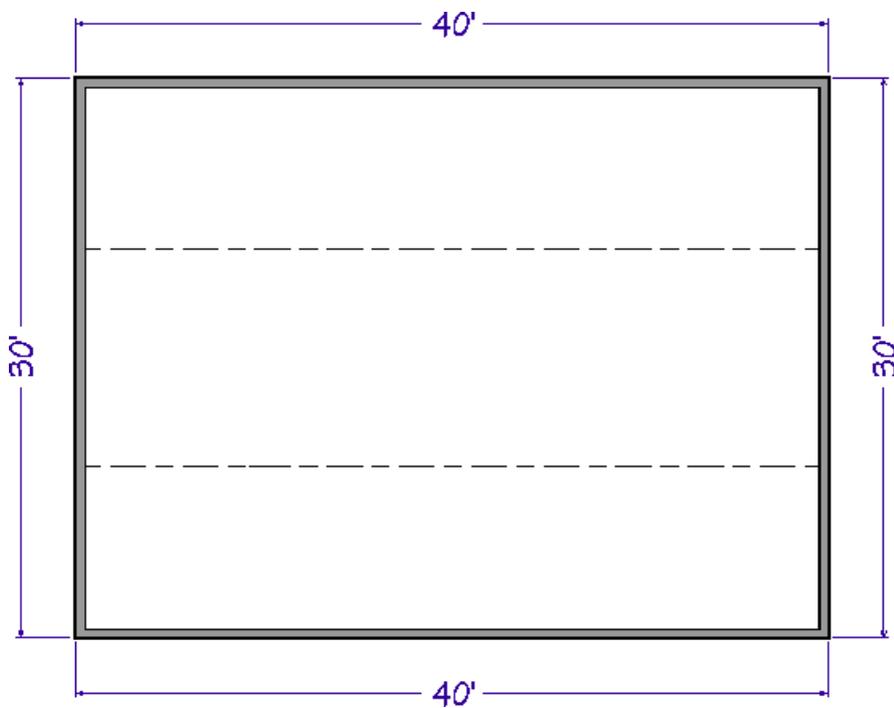
3. Select **Build> Floor> Build New Floor**  from the menu, and build a second floor derived from the 1st floor plan.
4. Select **Build> Roof> Build Roof**  from the menu, and on the **ROOF** panel of the **Build Roof** dialog:
 - Check the box beside **Build Roof Planes** or **Auto Rebuild Roofs**.
 - Select the **Trusses** Framing Method, then specify an appropriate **Heel Height**.

In this example, a Heel Height of 12" is specified.

In X14, Home Designer Pro 2023, and prior versions, check the **Trusses (no Birdsmouth)** box instead, uncheck the **Automatic Birdsmouth Cut** box, then specify your desired values.

- Specify the **Pitch (in 12)** of the roof to be built.
- In this example, a 12" in 12" pitch is used.
- Check the **Ignore Top (2nd) Floor** box.
 - Specify any additional settings to your liking, then click **OK** to close the dialog and build the roof as specified.

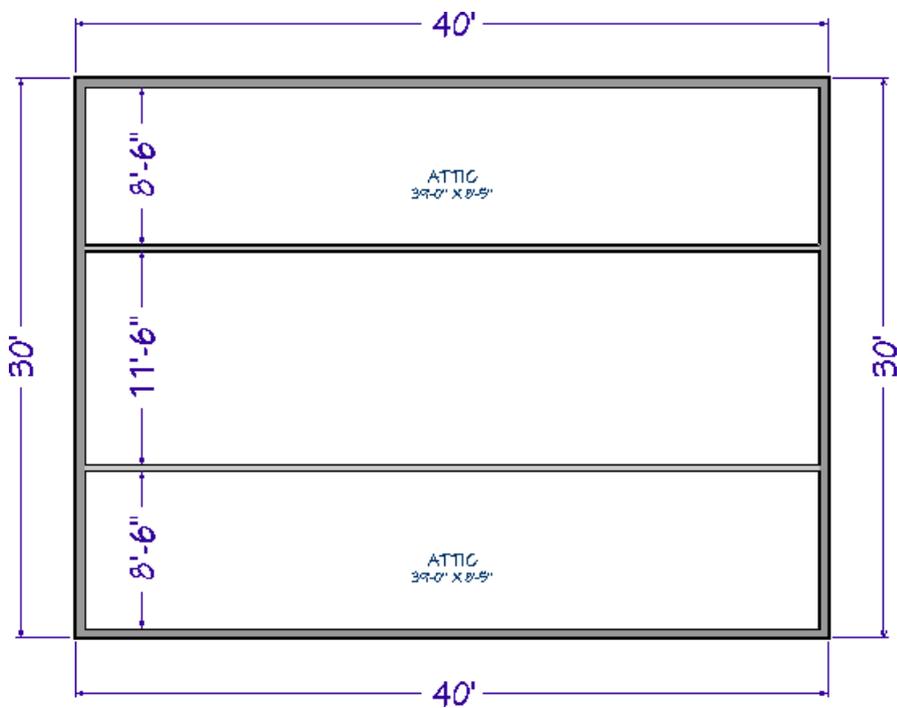
Notice the dashed lines that now display in the 2nd floor room area in a floor plan view. These are ceiling break lines, which represent the division between the flat, full height ceiling in the center of the room and the low, sloped ceilings on either side. The area with the flat, full height ceiling is loft area that will be accommodated by the open space at the center of your attic trusses.



5. Select **Build> Wall> Straight Interior Wall**  from the menu, then click and drag two interior walls along the ceiling break lines.
 - It's easiest to draw them near the ceiling lines, then move them into position after they are drawn.
 - If you want, you can create a custom wall type with sheetrock on only one side if the rooms with the low ceilings are to be unfinished.

6. Select the two interior walls and click the **Open Object**  edit button to open the **Wall Specification** dialog. On the **ROOF** panel, select **Knee Wall** to specify these walls as knee walls, then click **OK**.

7. Next, using the **Select Objects**  tool, click on one of the rooms with a low, sloped ceiling and click the **Open Object**  edit button to open the **Room Specification** dialog.
 - On the **GENERAL** panel, select **Attic** from the **Room Type** drop-down list.
 - Repeat this process with the room on the other side of the loft area.

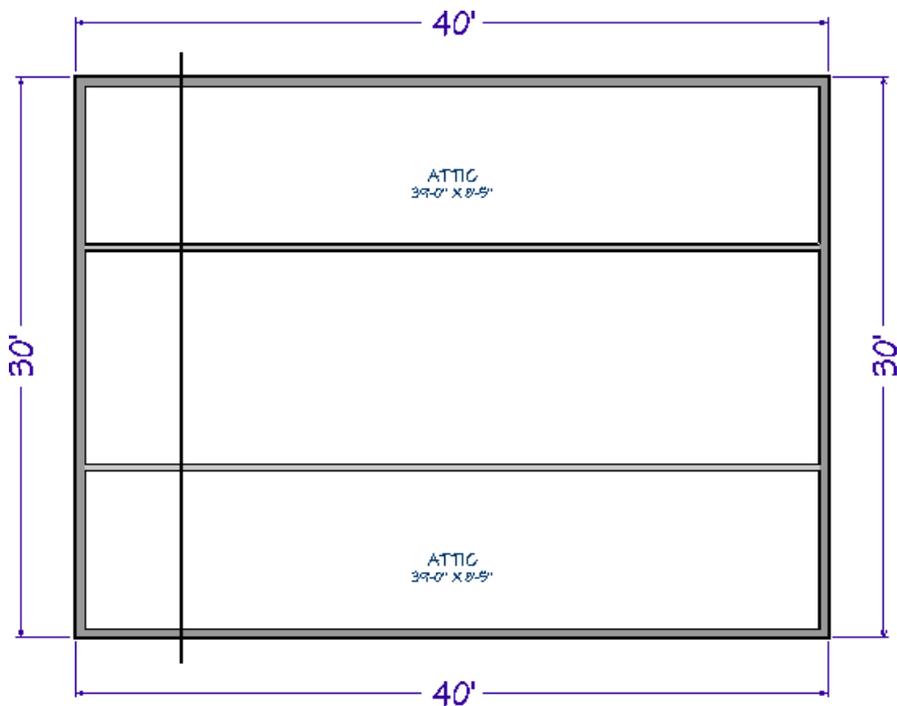


The conditions necessary to produce attic trusses are now in place.

To create attic trusses

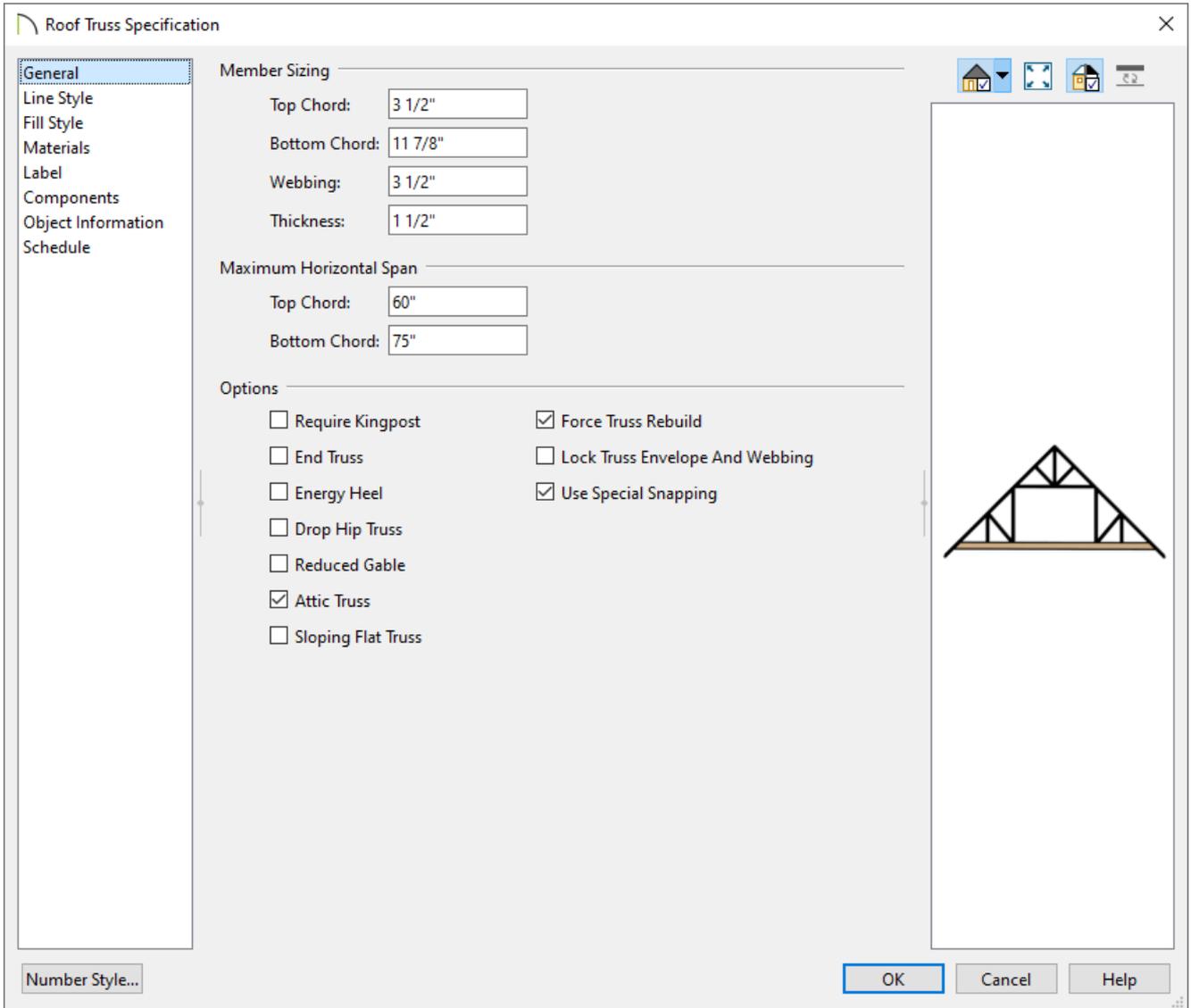
1. Select **Build> Framing> Roof Truss**  from the menu, then click and drag a line that is perpendicular to the ceiling break lines and runs from exterior wall to exterior wall.

The resulting truss will automatically extend out to the eaves.



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. Select the roof truss and click the **Open Object**  edit button. On the **GENERAL** panel of the **Roof Truss Specification** dialog:



- Change the **Bottom Chord** depth to match your floor structure depth for floor 2.

In this example, 11 7/8" is used.

- Check the **Attic Truss** box.
- Check the **Force Truss Rebuild** box.
- Click **OK** to close the dialog and apply your change.

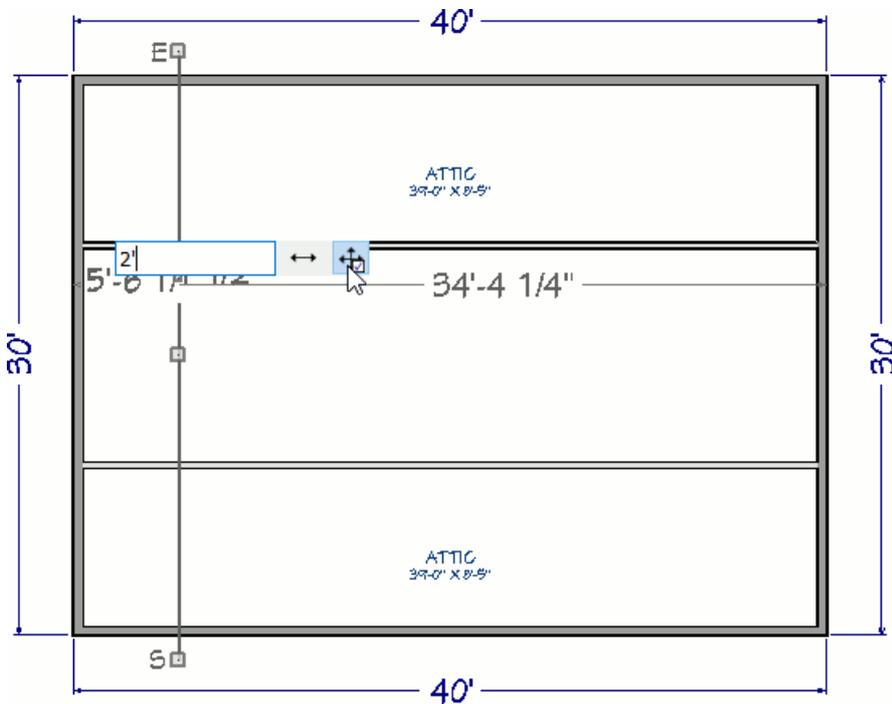
At this stage, you could also check the "Lock Truss Envelope And Webbing" box as well to prevent the truss detail from changing if your roof is complete.

3. Make sure **Temporary Dimensions**  are toggled on, enable the **Select Objects**  tool, then click on the

attic truss to select it.

Click on a temporary dimension that shows how far the truss is from either end wall, and type the distance that the first attic truss should be from the wall.

In this example, the truss is placed 2' from the outside of the wall's framing.

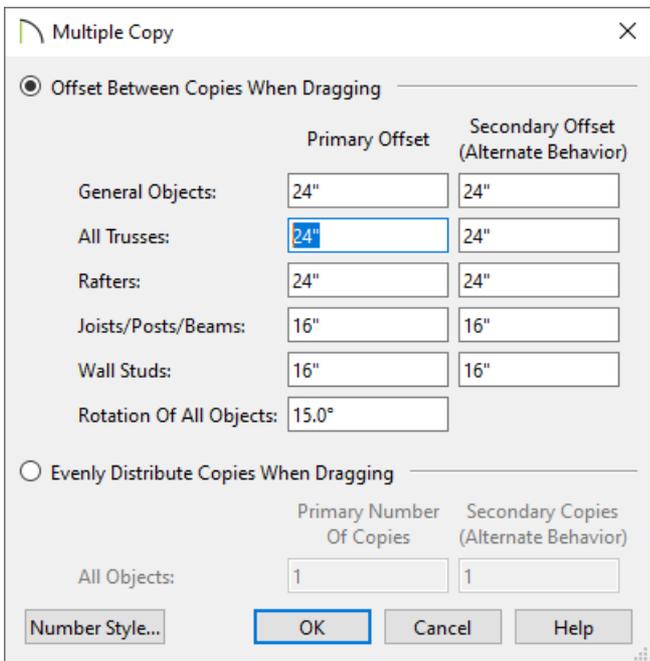


4. With the truss still selected, click the **Multiple Copy**  edit button.

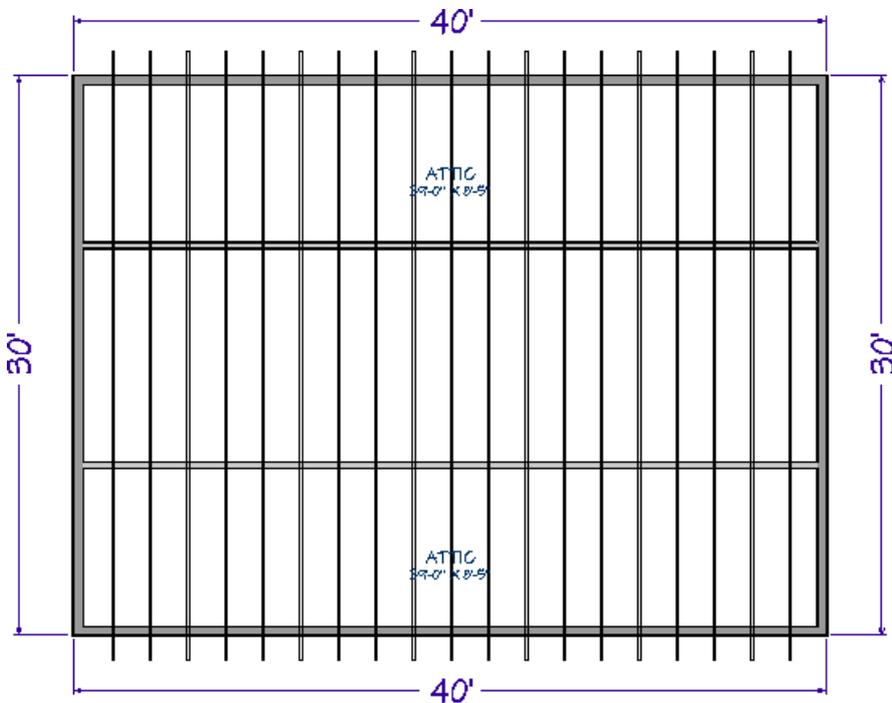
Note: Multiple Copy is not available in Home Designer Pro. Instead, use the Transform/Replicate edit tool. As an example, if you wanted to create 6 copies all separated a certain distance from each other, you would check the Copy box, set the Number of Copies to 6, then check the option for Move and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

5. Click the **Multiple Copy Interval**  secondary edit button to open the **Multiple Copy** dialog, specify the desired **Primary Offset** for **All Trusses**, then click **OK**.

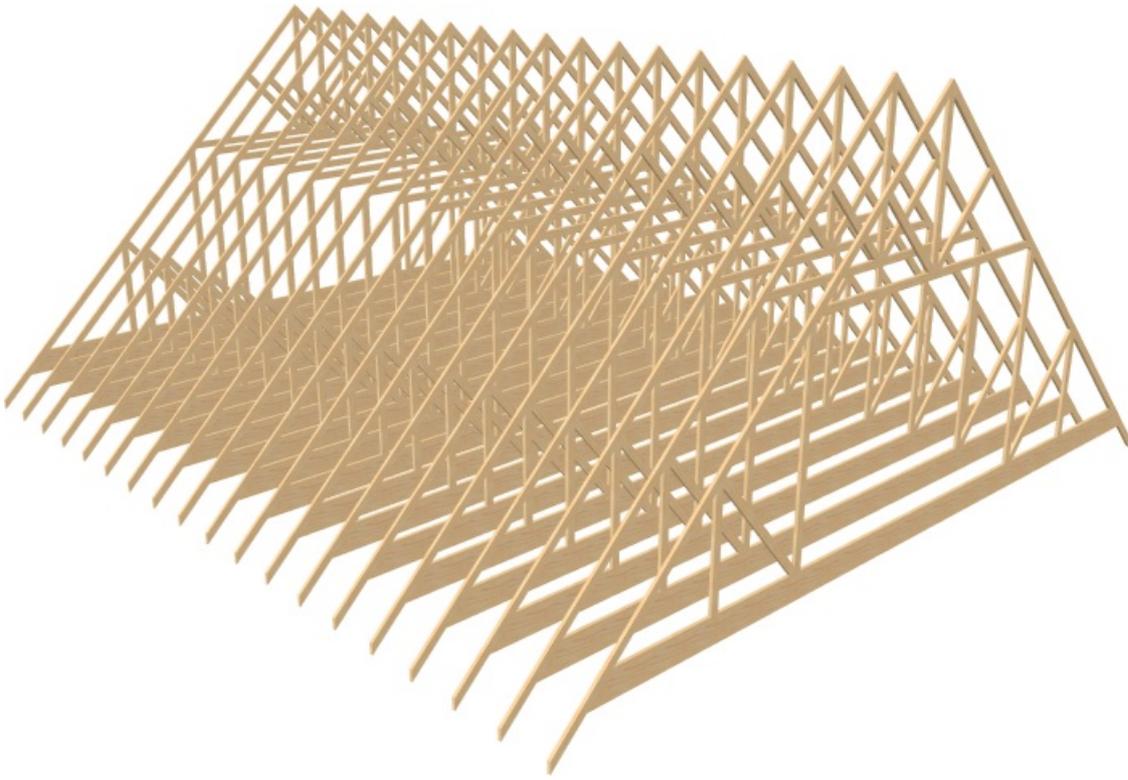
The Primary Offset is the interval at which trusses will be replicated when Multiple Copy is used. In this example, the default value of 24" is used.



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, in the direction of the opposite end wall.
 - As you drag, the preview outlines of new trusses display at 24" intervals.
 - When you release the mouse button, the new trusses are created.



7. Create a **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 , if needed.

Related Articles

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- 🏠 [General Framing Guidelines \(https://www.chiefarchitect.com/support/article/KB-00465/general-framing-guidelines.html\)](https://www.chiefarchitect.com/support/article/KB-00465/general-framing-guidelines.html)