Chief Architect® X10
Tutorial Guide

Professional Design & Drafting Software

Chief Architect, Inc.
6500 N. Mineral Dr.
Coeur d'Alene, Idaho 83815
chiefarchitect.com

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Floor Plan Tutorials

The Floor Plan Tutorials describe best practices for drawing a building's floor plan in Chief Architect, including:

- Exterior Walls
- Interior Walls
- Multiple Floors
- Interior Stairs
- Doors and Windows
- Decks and Porches

Chapter 1:

Exterior Walls

The first step in creating a structure in Chief Architect is to draw the exterior walls on Floor 1 of the plan.

Learning Objectives

This lesson describes best practices in Chief Architect for beginning a new plan and laying out the exterior, or perimeter, walls of a structure. Concepts introduced include:

- File Management
- Drawing Walls
- Zooming and Panning
- Working with Wall Type Definitions
- Setting the Defaults
- Drawing Exterior Walls
- Creating Room Definition
- Creating 3D Views
- Creating Dimension Lines
- Adjusting Wall Positions
- Creating File Revisions

File Management

Regardless of the kind of work you do on your computer, good file management is a useful skill. The first step in starting a new project in any application is to specify a save location and a name for the file.

Save Location

It is important to know where your files are saved. By default, most programs will save to your Documents folder because this is the location that Windows and macOS operating systems prefer. You might instead prefer your Desktop, which is another location acceptable to your operating system. You should, however, avoid saving your files in any location that is intended for software installation or for files that the operating system uses. You should also avoid saving your files at a network location or on a removable device, as this can cause program slowness and may introduce the risk of data loss.

Folders and Subfolders

While you can save all of your files directly into the Documents folder, it will become more and more difficult to find the files you need as their numbers increase. To avoid this, organize your files into folders.

Folders may be created for a variety of purposes; for organizing Chief Architect files, an effective approach is to create a folder for each of your projects. Projects can be identified by client name, site address, a design name, or even an account number - choose one that allows you to find a specific project quickly.

You can also organize projects into subfolders. If you have a client who has multiple projects, consider creating a folder identified by the client name or their account number, and inside of it adding folders named after the site addresses or design titles.

Always remember, though, that both Windows and macOS operating systems place a limit of 255 total characters on each file's total pathname, so folder names should be kept as short as possible and the use of subfolders should be limited to one or two levels.

Naming Convention

Choosing an effective naming convention is important in Chief Architect in large part because of the need to manage multiple file revisions. Each revision's name should give an indication of its contents, but must also be short enough that its pathname does not exceed 255 characters.

- Avoid unnecessary information in file names. For example, the title block on a project's construction documents might state "Johnson Family Primary Residence", but your plan file name can be limited to just "Johnson Home". File Management

- Use abbreviations instead of full words. For example use "kit" instead of "kitchen".
- Indicate dates using numbers. For example, "112317" can be used instead of "November 23 2017".

It is important to distinguish your working drawing from your revisions. One way to do this is to name your working drawing in all capital letters while naming revisions using lower case.

To save a new plan file

1. Begin by selecting **File> New Plan** to open a new, blank plan.
2. Select **File**> **Save As** . In the **Save Plan File** dialog, browse to your Documents folder.
3. Create a new folder for this project and name it Chic Cottage.
4. Navigate into the newly created Chic Cottage folder so that it becomes the Save location for your plan file.
5. For the File name, type CHIC COTTAGE-CURRENT. You have now created the main working drawing for this project.

The full pathname for this new plan file is C:\Users\<your user account name>\Documents\Chic Cottage\CHIC COTTAGE-CURRENT.plan in Windows, which has a total of 58 characters not including the characters in your User Account name. This is a good starting pathname that will give you flexibility later on as you save revisions and possibly need to create additional subfolders.

Saving Your Work

It is a very good idea to save your files often as you work, and this guide will remind you to do so regularly. It is also a good idea to implement a revision strategy. See “Creating File Revisions” on page 38.

Productivity Tips

As you learn how to lay out the exterior walls of a project, keep in mind these tips to improve your productivity.

Drawing and Editing

- Setting defaults before you draw saves time and reduces the chance of error.
- Draw exterior walls with Grid Snaps enabled.
- Draw walls to an approximate length and then position them with accuracy using dimensions.

Content

- A selection of name brand siding material catalogs are available for download in the "Materials and Surfaces" category of the 3D Library. Select **Library> Get Additional Content Online** to launch your default web browser to that page.
- Create template plans that have your custom wall types set as defaults, and ready for use when you begin a new plan. See “Template Files” on page 97 of the Reference Manual.
- Wall types that have been customized can be imported into other plans. See “Exporting and Importing Wall Types” on page 389 of the Reference Manual.
- Customized wall types can also be saved in the Library for future use.

Interface

- The Status Bar at the bottom of the program window reports useful information about the active tool, the selected object, and more. See “The Status Bar” on page 43 of the Reference Manual.
- Use the middle mouse button to pan and zoom the current view.

Keyboard Hotkeys

- F1 - Help for the current context
- Spacebar - Select Objects
- F6 - Fill Window
- Ctrl + E - Open Object edit tool
- Ctrl + S - Save

Although Temporary Dimensions are toggled off in most of images in this tutorial, it is assumed that they are on for the purposes of following the steps. Select **View> Temporary Dimensions** and confirm that there is a check mark in lower right corner of the tool icon. See “Temporary Dimensions” on page 468 of the Reference Manual.

Drawing Walls

Walls are arguably the most important type of object in Chief Architect because they define most of every building’s structure. Walls are structural elements in and of themselves; but they are also used to define rooms, which are required in order to create floor and ceiling platforms.

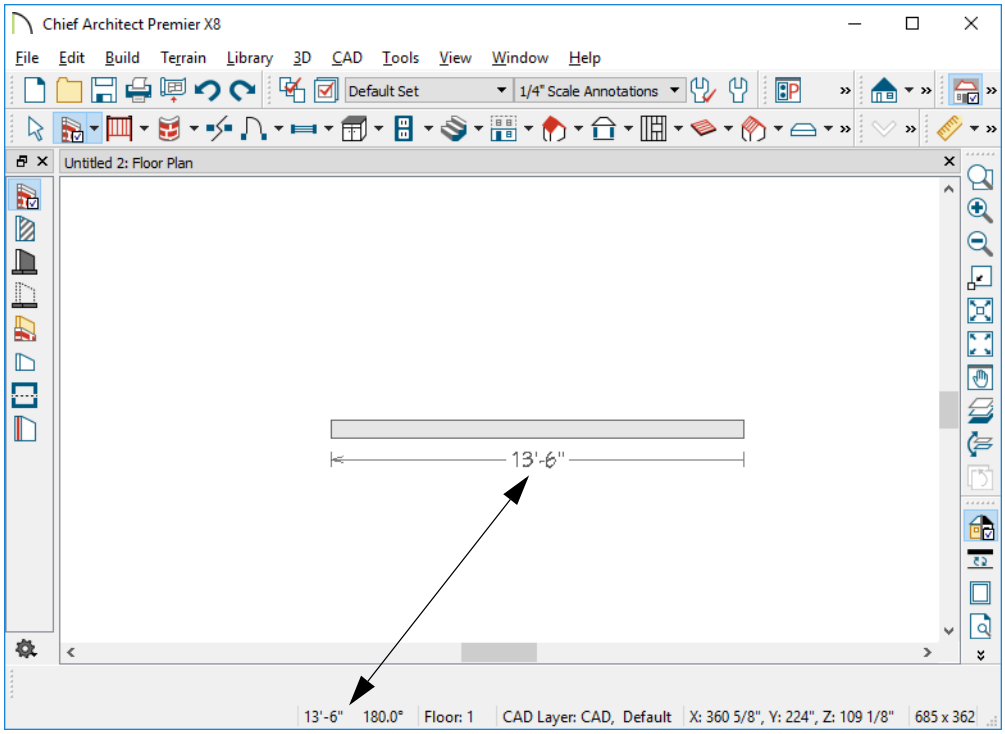
> Note: Whenever possible, default settings should be specified before objects of that type are drawn. As this is the case, most lessons in this guide begin with a Setting the Default section. This lesson is unique in that it begins with drawing an object in order to demonstrate what defaults do.

To draw a wall

1. When drawing a structure's perimeter walls, it is recommended that you make sure **Grid Snaps** are turned on. You may choose to disable them, though, once the shell walls are in position. See "Snap Behaviors" on page 167 of the Reference Manual for more information.

2. Select **Build> Wall> Straight Exterior Wall** from the menu or click the corresponding toolbar button, then click and drag to draw a line from right to left.

3. As you draw a wall, its length displays in two places: below the wall and in the Status Bar at the bottom of the screen:



4. The wall's angle is also shown in the Status Bar. Wall angles are restricted to 15° increments, which makes drawing straight walls easy; however, you can toggle Angle Snaps on and off by selecting **Edit> Snap Settings> Angle Snaps** or pressing the F10 key. See "Snap Behaviors" on page 167 of the Reference Manual for more information.

5. When the wall is between 13 and 14 feet long and its angle is described as 180°, release the mouse button to create the wall.

6. As you draw walls, do not worry about their exact length. In Chief Architect, walls can be sketched out at their approximate lengths, allowing you to think creatively rather than focus on entering exact values. Once walls are in place, they can be positioned precisely using dimensions, which will be described later.

Zooming and Panning

Chief Architect plans can vary considerably in size, and often contain objects that are very large and those that are very small. You can control what objects are on-screen and how much detail is visible at any time by zooming and panning. For more information, see "Window and View Tools" on page 153 of the Reference Manual.

There are a number of ways to zoom and pan in the program, but one of the easiest is to use the scroll wheel on your mouse: scroll to zoom in or out, click and drag to pan.

To use the Zoom and Undo Zoom tools

1. For a closer view of a certain area, click the **Zoom** tool, click and drag a box around the area you want to see in detail, and release the mouse button. That area fills the screen. For more information, see "Window and View Tools" on page 153 of the Reference Manual.
2. To return to the previous zoom factor, select **Window> Undo Zoom**.
3. If you can't see all the exterior dimension lines at once, select **Window> Fill Window Building Only** to center your plan on screen.

Working with Wall Type Definitions

Zoom in on the wall in your plan so you can see its layers and notice its appearance. The lines and colors represent the layers of the wall assembly, including its siding, sheathing, framing, and drywall. All of these characteristics are part of the wall's Wall Type Definition. For more information, see "Wall Type Definitions" on page 383 of the Reference Manual.

To specify a wall's Wall Type

1. Click the **Select Objects** button, then click on the wall to select it.
2. Click the **Open Object** edit button and go to the WALL TYPES panel of the **Wall Specification** dialog. Notice:
   - The **Wall Type** name, "Siding-6".
   - The 3D preview. Click and drag to rotate the preview.

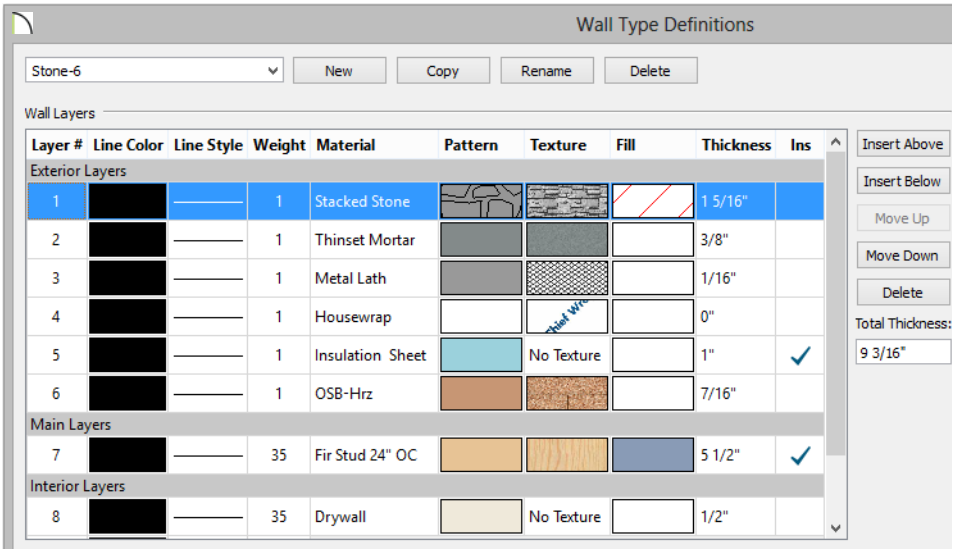
- Click the **Plan View** button above the preview.

3. Click the **Wall Type** drop-down and note that there are numerous other wall types available. Select a different wall type and notice the object preview, which changes to show the new wall type. Switch back to "Siding-6".
4. Click the **Define** button to open the **Wall Type Definitions** dialog. Notice that the wall type is composed of multiple layers with different materials and specific thicknesses.
5. Click the **Cancel** button to close both dialogs without making any changes.

The Wall Type Definitions dialog can also be accessed from the program menu.

To create a new Wall Type

1. Select **Build> Wall> Define Wall Types** , then select "Siding-6" from the drop-down list at the top left corner of the dialog.
2. Click the **Copy** button, then type a short, descriptive Name for the new Wall Type. Here, "Stone-6" is used.
3. Specify a new **Thickness** for Layer 1 of this Wall Type:
   - Click in the Thickness cell for Layer 1.
   - Type 1 5/16" in the text field, then press the Enter key.
4. Specify a new **Material** for Layer 1 of this Wall Type:
   - Click in the Material, Pattern, or Texture cell for Layer 1.
   - In the **Select Material** dialog, type "Stacked Stone" in the Search field near the top of the dialog box.
   - If need be, scroll to find the material of that name, select it, and click OK.
5. Specify a new **Fill** for Layer 1 of this Wall Type:
   - Click in the Fill cell for Layer 1.
   - In the **Layer Fill Style** dialog, select "Angle2 Hatch" from the **Type** drop-down list. Select a Color, and Spacing, then click OK.
6. With the "Stacked Stone" layer still selected, click the **Insert Below** button. A copy of the selected layer is created directly below the original. Specify "Thinset Mortar" as the Material, a Fill of "None", and a Thickness of 3/8".
7. Repeat step 6 to create a new layer below the "Thinset Mortar". Specify a **Material** of "Wire Mesh", a **Fill** of "None", and a **Thickness** of 1/16".
8. Create one more layer below the "Housewrap" layer. Specify a **Material** of "Insulation Sheet", a **Fill** of "None", and a **Thickness** of 1".
9. To help distinguish your new custom wall type from other walls, you can give its Main Layer a distinct color, such as yellow.



10. Click OK to close the dialog and create your new Wall Type.
11. When you are finished, select **File> Save** .

Setting the Defaults

In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. Setting defaults early can improve efficiency and also helps to avoid introducing errors into the drawing. When drawing the shell of a plan, there are several defaults of particular importance.

To change the Default Exterior Wall Type

1. Select **Edit> Default Settings** to open the **Default Settings** dialog. , then click the **Edit** button.
2. On the WALL TYPES panel of **Exterior Wall Defaults** dialog:
   - Note that the selected **Wall Type** is "Siding-6".
   - Select "Stone-6" from the drop-down list, then click OK.
3. Click the **Done** button to close the **Default Settings** dialog.
4. Select **Build> Wall> Straight Exterior Wall** and draw another wall connected to the left end of the existing wall, dragging in an upward direction about 10 feet. Notice:

- The two walls snap together, forming an intersection.
- Even though this wall and the wall to its right were drawn using the same tool, they have different Wall Types because a change was made to the default settings after the first wall was drawn.

5. Select the vertical "Siding-6" wall and click the **Open Object** edit button. On the WALL TYPES panel of the **Wall Specification** dialog, select "Stone-6" from the **Wall Type** drop-down list and click OK.

The Exterior Wall tool is used to draw a single wall type, like Siding-6 or Stone-6. Occasionally, though, walls are made of two different wall types: one built above the other. In Chief Architect, this kind of wall configuration is referred to as a Pony Wall. See “Pony Walls” on page 351 of the Reference Manual.

To specify the Default Pony Wall

1. Select **Edit> Default Settings**, expand the "Walls" category, select "Pony Wall", and click the **Edit** button.
2. In the **Pony Wall Defaults** dialog, select "Siding-6" as the **Upper Wall Type** and "Stone-6" as the **Lower Wall Type**.
3. Specify the **Lower Wall Height** as 20", then click OK.

The default floor structures can be set for different categories of rooms in the Room Defaults dialogs. These are considered critical because they influence the overall height of a structure. While not critical, the default floor and ceiling finishes can also be set in these dialogs. See "To set flooring defaults" on page 240 of the Finish Materials Tutorial.

To set the default floor structures

1. In the **Default Settings** dialog, expand the "Floors and Rooms" category, select "Floor/Ceiling Platform", and click the **Edit** button.
2. In the **Floor/Ceiling Platform Defaults** dialog, click the **Edit** button to the right of the **Floor Structure** label.
3. In the **Floor Structure Specification** dialog:
   - Click in **Thickness** field for Layer 1 and notice that it is composed of 3/4" OSB sheets.
   - Click in the **Thickness** field for Layer 2 and note that it is composed of a fir framing material and that its **Structure Type** is I-Joist.
   - Change Layer 2’s **Structure Type** to "Lumber" and its **Thickness** 11 1/4" to represent floor joists of conventional 2x12 lumber, then click OK.
4. The **Ceiling Structure** can be edited in a similar manner; however, it will not be changed in this example.
5. Click OK to return to the **Default Settings** dialog, then open the **Room Types** dialog. Select "Garage" from the list of room types and click the **Edit** button.

6. On the STRUCTURE panel of the **Garage Room Type Defaults** dialog:
   - The default floor structure for Garage, Porch, and Slab room types can be set here.
   - In this example, 4" of concrete will be used so no changes are needed.
7. Click Cancel and to return to the **Default Settings** dialog.

When the exterior walls are finished, they will form the shell of Floor 1; so now is also a good time to set up important structural default settings in the Floor 1 Defaults dialog.

To set the Floor 1 Defaults

1. In the Default Settings dialog, select "Current Floor" from the tree list and click the **Edit** button.
2. On the STRUCTURE panel of the **Floor 1 Defaults** dialog
   - Specify the **Ceiling Height** as 97 1/8".
   - Note, too, that the Floor Structure of 12" is drawn from the floor structure set in the Normal Room Defaults dialog.
3. When you are finished, remember to **Save** your work.

NOTE: The default Floor Height for Floor 1 cannot be changed. It is always 0.

Although dimensions are not structural objects, it is a good idea to set up how they locate structural objects as well. See “To create automatic exterior dimension lines” on page 33.

Drawing Exterior Walls

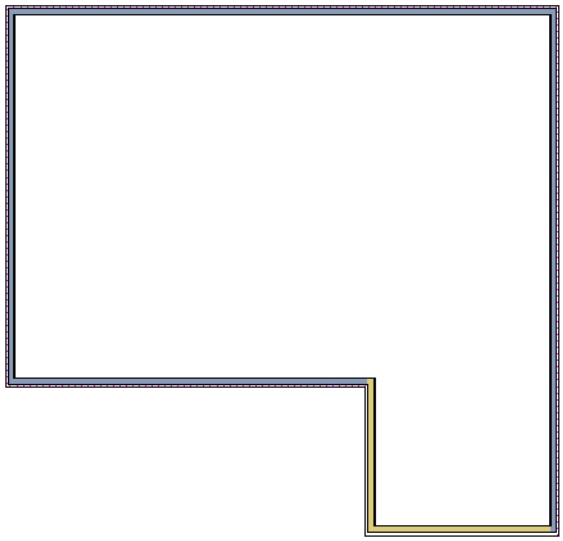
When drawing walls, do not try to size or position them precisely - they can be more easily positioned after they are created. For more information, see “Walls, Railings, and Fencing” on page 339 of the Reference Manual.

The first two walls drawn in this plan were created using the Exterior Wall tool and the remaining walls will be Pony Walls

To draw exterior walls

1. Select **Build> Wall> Pony Wall** , then click and drag a wall from the top of the vertical wall, extending about 28’ to the left.
2. Note that walls can be drawn in two ways:
   - Left-click, drag, and release to draw a wall. Place the pointer over an existing wall end and repeat to create a new wall section connected to the previous one.
   - Right-click, drag, and release. Move the pointer to a new location and click once to draw a new wall section connected to the previous one. Continue clicking to create more walls. See “Continuous Wall Drawing” on page 359 of the Reference Manual.

3. Continue drawing walls, creating a rough outline of the building's exterior, as shown in the following image:



- Exact dimensions are not important yet, but keep the final size of the structure in mind as you draw. The overall lengths of this building's sides are approximately 40'.
- It is helpful to draw exterior walls in a clockwise direction to ensure the proper orientation of wall surfaces.

4. When you are finished, **Save** your work.

Creating Room Definition

When the exterior walls completely enclose an area, room definition is established and a Living Area label that states enclosed area's size is created. For more information, see "Living Area" on page 422 of the Reference Manual.

When a room is defined, floor and ceiling platforms are also automatically created within it.

To confirm a room's structure

1. Click the **Select Objects** button, then click in an empty space in the room to select it. When a room is selected, it will become highlighted.

2. Click the **Open Object** edit button to open the **Room Specification** dialog.

3. On the STRUCTURE panel, notice that the **Ceiling Height** is 97 1/8": the value set in the Floor 1 Defaults dialog.
4. Also note that the Floor Structure matches what was set in the Normal Room Defaults dialog, then click Cancel.

It is important to remember that in order for a room to be created, there can be no gaps in the walls that surround it. There are a number of ways to create openings in walls, however, and these will be discussed in the Doors and Windows Tutorial. See, too, “Using Room Dividers” on page 55.

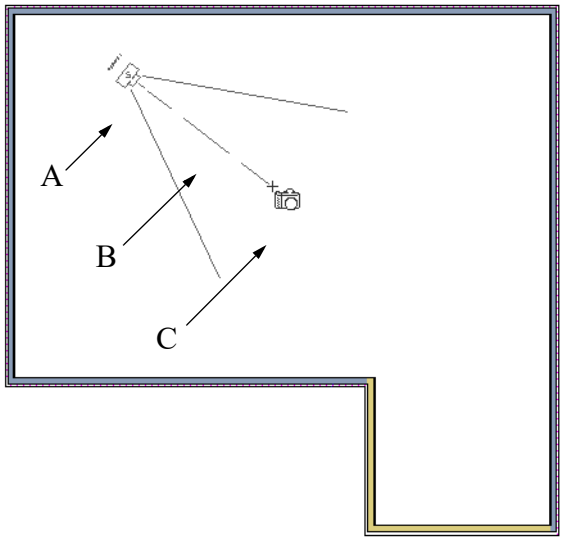
Rooms are discussed in further detail in the Interior Walls and Interior Design Tutorials. See "Room Types" on page 45 of the Interior Walls Tutorial and “Interior Design Tutorials” on page 203.

Creating 3D Views

As you draw walls in floor plan view, a 3D model is also being developed. Create a 3D view of the model to see how it looks so far. For more information, see “3D Views” on page 1041 of the Reference Manual.

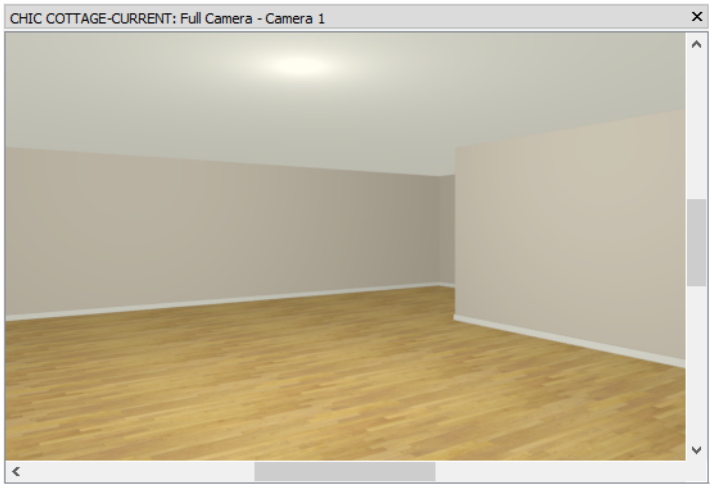
To create a camera view

1. Select **Window> Fill Window** to zoom out as needed to fill the view window with the entire drawing.
2. Select **3D> Create Perspective View> Full Camera**, then click and drag to draw a camera inside of the area enclosed by walls.



- The point where you click (A) defines the location of the camera.
- The line created as you drag (B) defines the direction of perspective.
- The point where the mouse is released (C) is the camera's focal point.

3. Release the mouse button to create the 3D camera view and notice that the program has automatically generated a floor platform and a ceiling in the area enclosed by the walls.

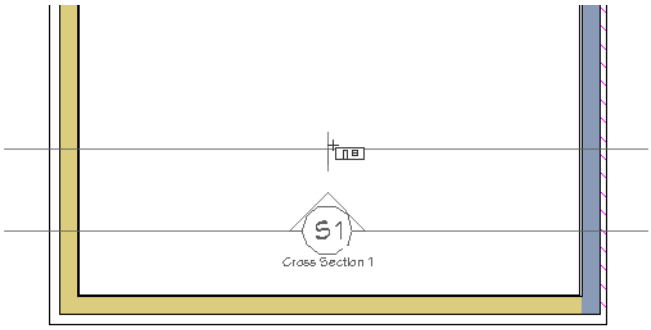


4. Notice, too, the mouse pointer icon . This indicates that the **Mouse-Orbit Camera** tool is active.
   - Click and drag the mouse in a circular direction and notice that the camera's direction rotates in response.
   - For more information, see "Repositioning Cameras" on page 1060 of the Reference Manual.
5. If you select a different tool, Mouse Orbit Camera will become disabled. Select **3D> Move Camera With Mouse> Mouse-Orbit Camera** to enable it again.
6. To return to floor plan view, select **File> Close View**.

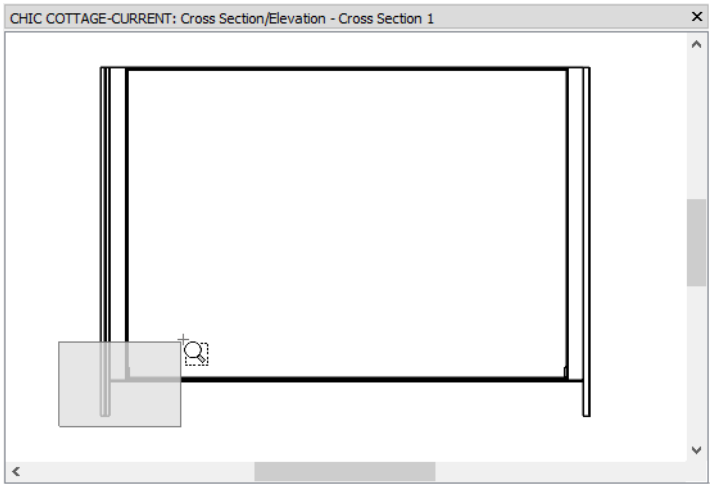
The structure of this room can be examined in more detail in a different type of camera view: a Backclipped Cross Section.

To create a Backclipped Cross Section

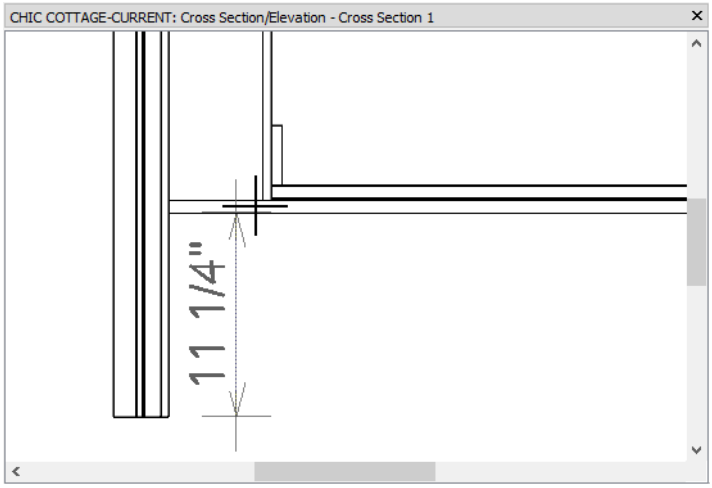
1. Select **3D> Create Orthographic View> Backclipped Cross Section**, then:
   - Click and drag vertically to create a camera inside the bump out at the bottom right of the drawing.
   - Limit the length of the camera line to one or two plan feet and make sure that you draw the camera either straight up or straight down on-screen.



2. **Zoom** in on the bottom left corner of the structure so the wall and floor layers can be seen.



3. Select **CAD> Dimension> Tape Measure** , then click and drag to draw temporary dimension lines that measure the depths of these layers.



- The distances between lines in the wall correspond to the layers of its Wall Type Definition.
- The distances between lines in the floor correspond to the layers of the Floor Structure and Floor Finish Definitions set in the **Floor/Ceiling Platform Defaults** dialog

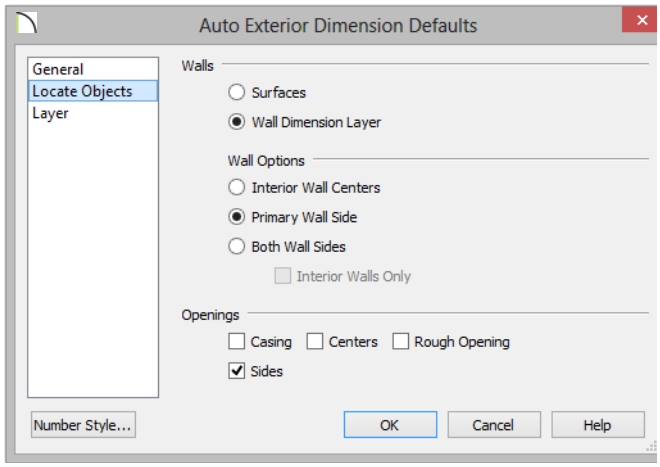
4. Select **File> Close View** to return to floor plan view.

Creating Dimension Lines

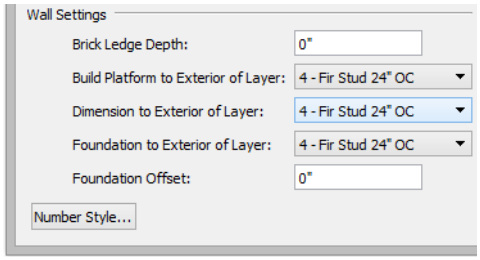
Dimension lines can be used to measure and position a wide variety of objects, including walls. A selection of automatically generated and manually drawn dimensions is available. For more information, see “Dimensions” on page 445 of the Reference Manual.

To set dimension defaults for locating walls

1. Select **Edit> Default Settings**, click the arrow next to "Dimension" to expand the category, then select "Auto Exterior Dimensions" and click the **Edit** button.
2. On the LOCATE OBJECTS panel of the **Auto Exterior Dimension Defaults** dialog, note that there two options for locating Walls: at their **Surfaces** and at their **Wall Dimension Layers**.



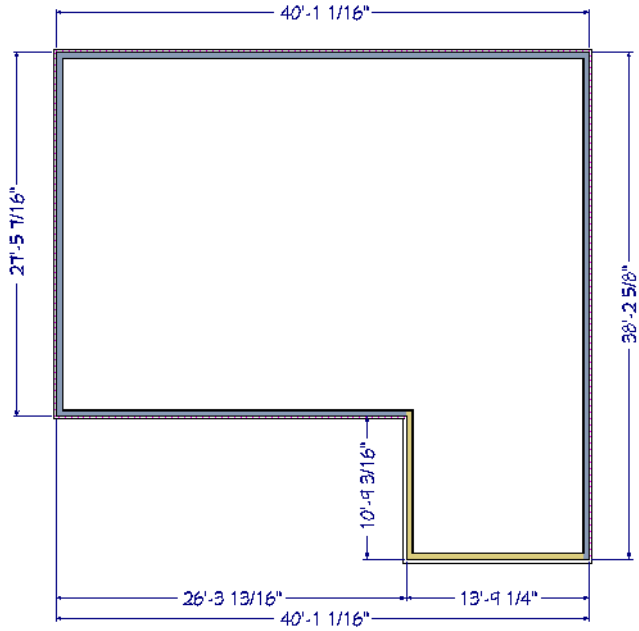
   - The **Surfaces** option directs Auto Exterior Dimensions to locate wall surfaces
   - The **Wall Dimension Layer** option allows you to specify a particular layer for each Wall Type for dimensions to locate.
3. Leave **Wall Dimension Layer** selected and click **Cancel**, then click **Done** to close both dialogs.
4. Select **Build> Wall> Define Wall Types** and in the **Wall Type Definitions** dialog:



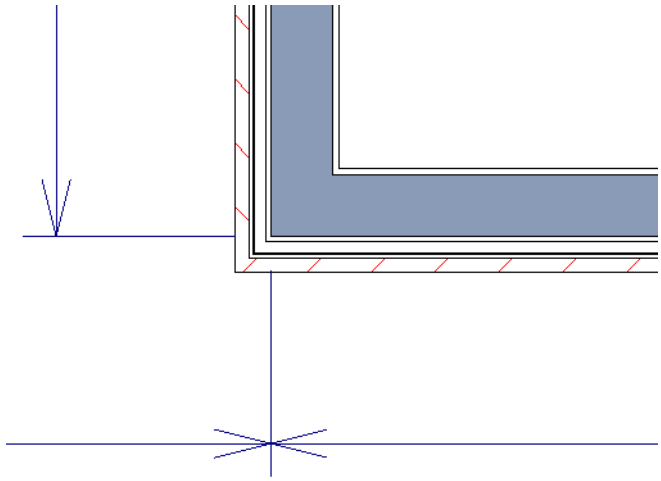
- Select "Siding-6" from the drop-down list at the top of the dialog.
- Note that **Dimension to Exterior of Layer** is set to "4: Fir Stud 24" OC". This means that dimensions will locate the outside of this wall type's framing layer.
- Click Cancel to close the dialog without making any changes.

To create automatic exterior dimension lines

1. Select **CAD> Automatic Dimensions > Auto Exterior Dimensions** .



2. **Zoom** in on the far left corner at the front of the building.



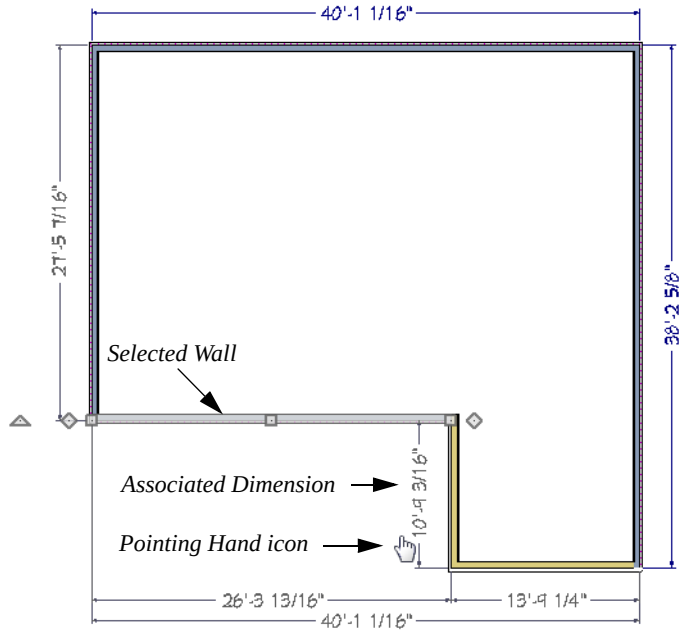
3. Note that the dimension lines locate the walls at the outside of their framing layer.

Adjusting Wall Positions

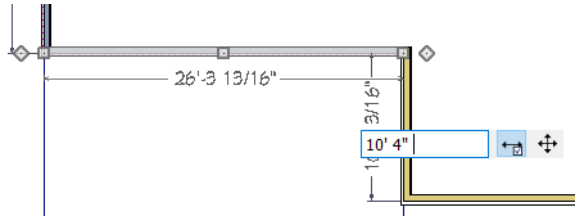
With the perimeter walls in place, you can adjust their position. There are several ways to do this, but the fastest and most accurate uses dimension lines. For more information, see “Moving Objects Using Dimensions” on page 479 of the Reference Manual.

To move walls using dimensions

1. Begin by selecting **Window> Fill Window Building Only** .
2. Click the **Select Objects** button, then click on a wall that you want to move. Here, the horizontal wall at the lower left of the plan is selected.
3. Click on a dimension line that indicates how far the selected wall is from another wall. There are a couple of ways to determine which dimensions can be used for this purpose:
   - Move the selected wall and see which dimensions update.
   - Move your pointer over a dimension. If it is an associated dimension, the icon will change to a Pointing Hand .

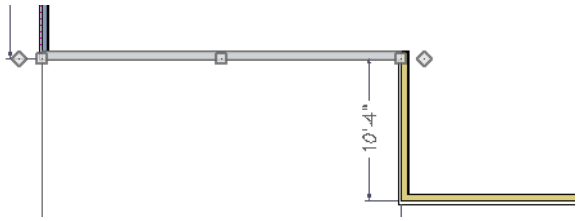


4. With the Pointing Hand icon visible, click on the associated dimension and enter a new value.

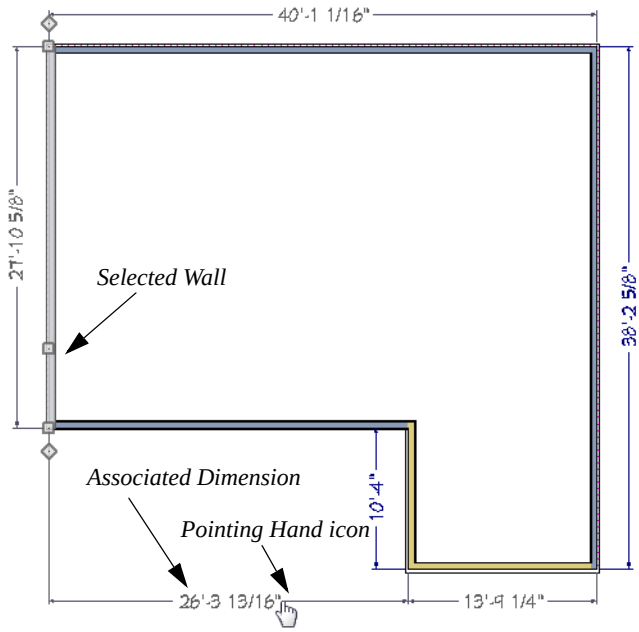


- Remember: Type an apostrophe to denote feet and quotes to denote inches.
- If neither apostrophes nor quotes are included, inches will be used.

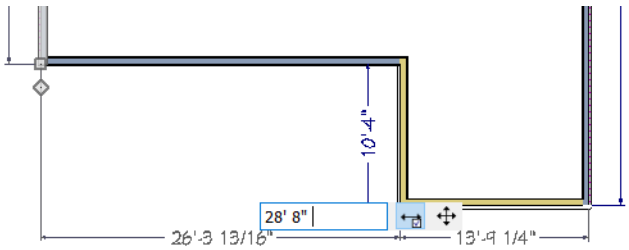
5. Press the Enter key on your keyboard to move the wall to the newly specified distance.



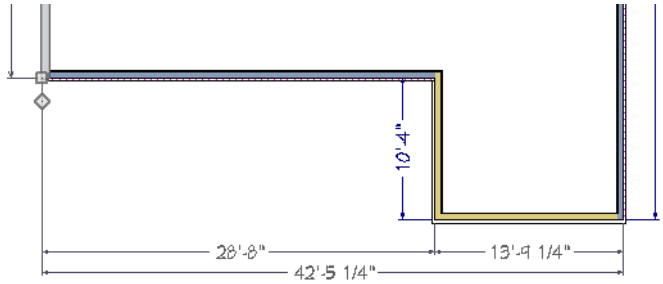
6. Repeat this process, proceeding in a clockwise direction: select the vertical wall on the left.



7. Mouse over a dimension line that shows how far the selected wall is from another wall. When the Pointing Hand icon is visible, click, then type in a new distance value.

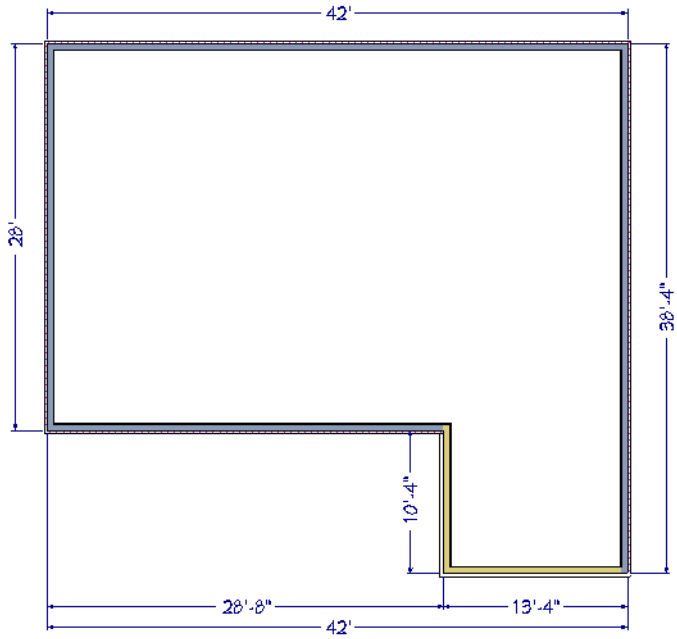


8. Press the Enter key to move the wall to the specified distance.



When using dimensions to reposition walls, work around the structure in the same direction: either clockwise or counterclockwise.

When you are finished, your dimensions should match those in the following image:



9. Remember to **Save** your work.

Dimensions can also be used to change the length of a selected wall. See “Editing Walls” on page 366 of the Reference Manual.

To resize a wall using dimensions

1. Select a wall that you would like to resize.
2. Move your mouse pointer over a dimension line that states the length of the selected wall.
3. When the Pointing Hand icon displays, click on the associated dimension and then:
   - Select **Move Both Ends** to resize the selected wall by adjusting the position of both of its endpoints equally.
   - If the selected wall is oriented horizontally, select **Move Left End** to move only the wall's left endpoint or select **Move Right End** to move only its right endpoint.
   - If the selected wall is oriented vertically, select **Move Top End** to move only the wall's top endpoint or select **Move Bottom End** to move only its bottom endpoint.
   - Type the desired length in the text field and press the Enter key.
4. The wall will resize according to the option you selected. If an end moves, any walls connected to that end will also move.

Although using dimensions is generally the fastest and most accurate way to move walls, you can also move them using their edit handles.

To move walls using their edit handles

1. Click the **Select Objects** tool then click on an exterior wall to select it.
2. Click and drag the Move edit handle that displays at the position along the wall where you clicked. Walls can be moved perpendicular to the direction that they are drawn.
3. As you move the wall, the dimension lines that indicate how far it is from other walls will update.
4. When you are finished positioning walls, remember to **Save** your work.

If you have difficulty positioning a wall at a particular location, try zooming in on it using either the **Zoom** or **Zoom In** tool or by scrolling with your mouse wheel.

You can also use the arrow keys on your keyboard to nudge a selected wall or other object up, down, left, or right on-screen.

You can continue working on this plan in the Interior Walls Tutorial.

Creating File Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed.

When you are finished working on a file and are ready to close it, **Save** your work. Before closing it, though, create a copy of the file with a different name that indicates what it contains so you can distinguish it from other revisions.

To save a plan revision

1. Select **File**> **Save As** .
2. In the **Save Plan File** dialog, confirm that your Chic Cottage folder is selected as the Save location.
3. For the File name, type a the name of the project followed by a short description of the current state of the drawing; for example, Chic Cottage-Shell.

Review

This lesson describes the best practices for starting a new plan and laying out exterior walls. It also discusses the important default settings associated with starting a new plan. These critical defaults include the Normal Room Defaults, Floor 1 Defaults, Wall Defaults, and Dimension Defaults, and they are considered critical because they determine the size of the structure.

- To save a new plan file
- To draw a wall
- To use the Zoom and Undo Zoom tools
- To specify a wall's Wall Type
- To create a new Wall Type
- To change the Default Exterior Wall Type
- To specify the Default Pony Wall
- To set the default floor structures
- To set the Floor 1 Defaults
- To draw exterior walls
- To confirm a room's structure
- To create a camera view
- To create a Backclipped Cross Section
- To set dimension defaults for locating walls
- To create automatic exterior dimension lines
- To move walls using dimensions
- To resize a wall using dimensions
- To move walls using their edit handles
- To save a plan revision

Assessment Questions

Why is it good practice to create file revisions?

What are default settings and why are they important?

What important defaults should you set up before drawing exterior walls?

Why are structural defaults considered critical?

What is room definition and why is it important?

What is the difference between Interior Dimensions and other types of dimensions like Auto Exterior Dimensions?

What are two different ways to move walls?

When creating a new wall type, why is it a good idea to specify a unique color for the Main Layer?

What can you see in a cross section view that camera views do not show?

Chapter 2:

Interior Walls

With the exterior walls in place, interior walls can be added to create rooms.

Learning Objectives

The previous lesson, Exterior Walls, explained how to draw and position the exterior walls of the main entry level of a structure in Chief Architect. This lesson describes best practices for creating interior rooms. Concepts introduced include:

- Setting the Defaults
- Drawing Interior Walls
- Room Types
- Modifying Interior Wall Types
- Using Room Dividers
- Positioning Interior Walls
- Working with Wall Connections

File Management

This tutorial continues where the Exterior Walls tutorial left off. At this point, both the Chic Cottage-shell and CHIC COTTAGE-CURRENT plans contain the same information, so you could open either one and continue working. However, Chic Cottage-Shell.plan was created specifically to serve as a revision or archive file so it will be left unchanged.

To continue working on the Chic Cottage project, select **File> Open Plan** . If need be, browse to Documents\Chic Cottage, select CHIC COTTAGE-CURRENT, and click Open.

Select **File> Open Recent Files** and notice that CHIC COTTAGE-CURRENT is included in the Recent Files List. The Recent Files List is also a convenient way to resume work on files you have been working on; however, it is not an alternative to knowing where your files are located and having a good file revision strategy in place. See "File Management" on page 18 of the Exterior Walls Tutorial.

It is a very good idea to save your files often as you work, and this guide reminds you to do so regularly.

Productivity Tips

As you learn how to create interior rooms, keep in mind these tips to improve your productivity.

Drawing and Editing

- When rooms are subdivided or merged, attributes from the larger room will be inherited by the smaller one.
- Select multiple objects for editing by holding down the Shift key.

Content

- Like exterior walls, customized interior wall types can be exported and imported in a template plan as well as added to the Library for future use.

Interface

- Use Object Snap Indicators like Midpoint and Intersection snaps to position and align walls with accuracy.
- **Perspective Floor Overviews** are a useful way to view the relationships between room spaces.

Keyboard Hotkeys

- F1 - Help for the current context
- F6 - Fill Window
- Ctrl + W - Close View
- Ctrl + S - Save

Setting the Defaults

In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. Setting defaults early can improve efficiency and also helps to avoid introducing errors into the drawing. When drawing interior walls, there are several defaults that should be borne in mind.

The Room Type Defaults dialogs can be used to set critical floor and ceiling structure definitions, as well as non-critical default finish materials for various room types. See "To set the default floor structures" on page 25 of the Exterior Walls Tutorial. and "To set flooring defaults" on page 240 of the Finish Materials Tutorial.

The Floor Defaults dialogs allow you to set up important structural defaults on a floor by floor basis. See "To set the Floor 1 Defaults" on page 26 of the Exterior Walls Tutorial.

Before drawing interior walls, make sure that the Default Interior Wall meets your needs. See "Working with Wall Type Definitions" on page 22 of the Exterior Walls Tutorial.

To set the Interior Wall Defaults

1. Select **Edit> Default Settings** to open the **Default Settings** dialog.
   - Click the arrow beside "Walls" to expand the category.
   - Select "Interior Wall" and click the **Edit** button.
2. On the WALL TYPES panel of the **Interior Wall Defaults** dialog, the selected wall type is named "Interior-4". Click the **Define** button.
3. In the **Wall Type Definitions** dialog, notice that it is composed of 2x4 framing with drywall on each side.
4. This wall type works well for most purposes, so click Cancel and then Done to close both dialogs.

There are several options for controlling how dimension lines locate interior walls that should be set before dimensions to these walls are drawn. See “Positioning Interior Walls” on page 56.

When adding interior walls, you may find it helpful to select the Auto Refresh option for Auto Exterior Dimensions. This can be done in the Auto Exterior Dimension Defaults dialog. See "To set Auto Exterior Dimension Defaults" on page 101 of the Doors and Windows Tutorial.

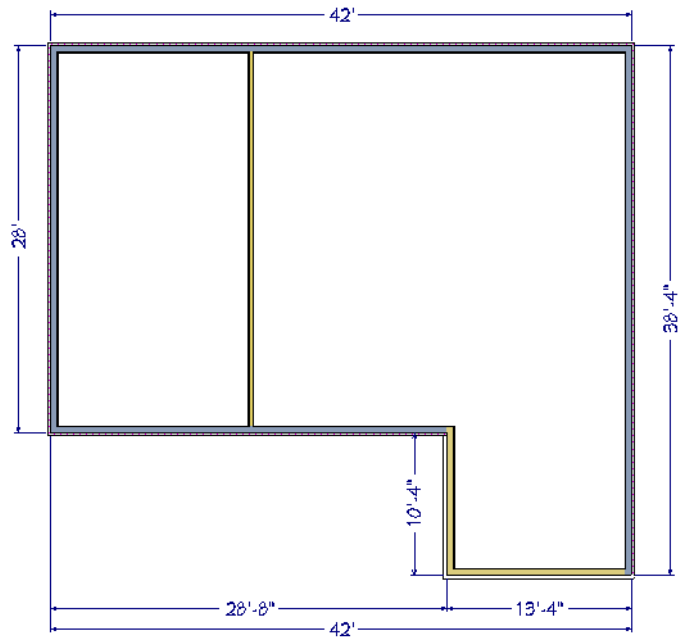
Drawing Interior Walls

With the exterior walls in position, you can add interior walls to create multiple rooms. For more information, see “Rooms” on page 411 of the Reference Manual.

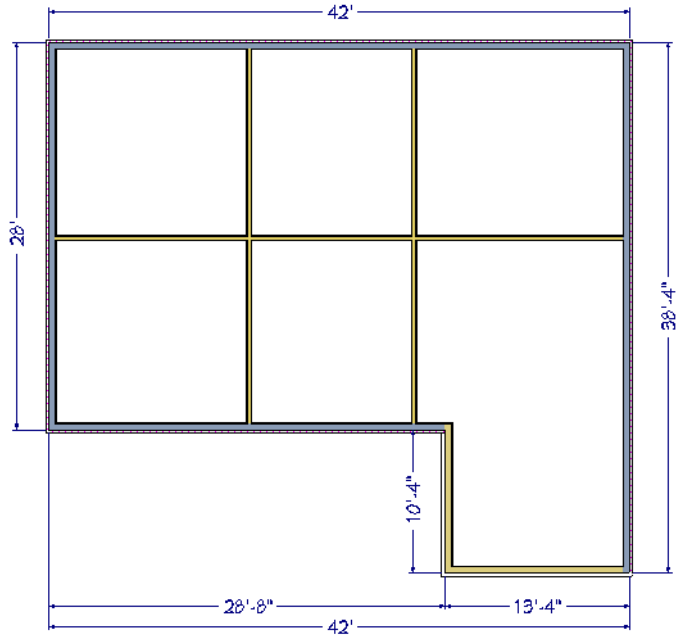
To define rooms using interior walls

1. Select **Build> Wall> Straight Interior Wall** , then move your mouse pointer over the horizontal wall at the lower left of the structure. When your mouse is near the midpoint of that wall, click and drag upward to the back wall of the structure.

   - When **Object Snaps** are enabled, a red **Midpoint** snap indicator will display when your mouse is over the midpoint of the wall. For more information, see "Object Snaps" on page 168 of the Reference Manual.
   - As with exterior walls, though, it's not necessary to position interior walls exactly as you draw: they can be adjusted later on.



2. Draw a second vertical interior wall to the right of the first one.
3. Finally, draw a horizontal wall across the middle of the structure:



4. When you are finished, remember to **Save** your work.

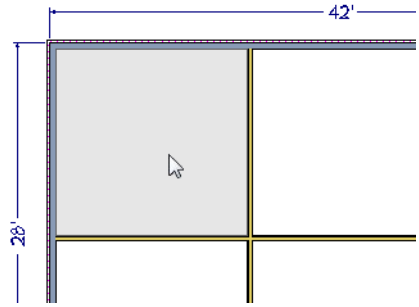
The floor plan has been divided into six separate zones, which can now be assigned Room Types that reflect how the spaces will be used.

Room Types

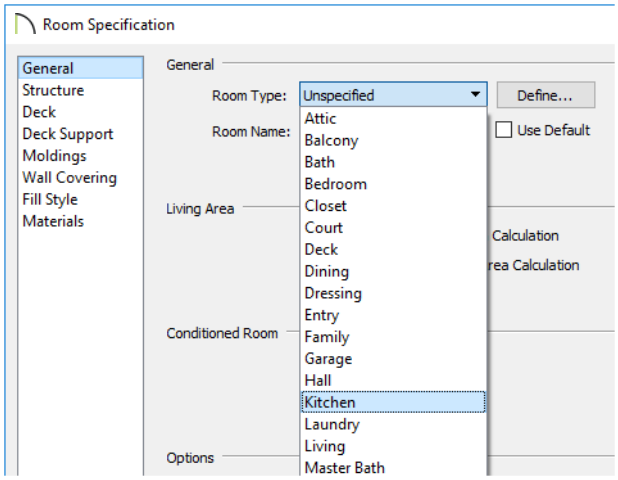
Rooms in Chief Architect are given special attributes when they are assigned a Room Type. For example, porches use a concrete floor material and have a ceiling and roof, while decks use floor planking and have no ceiling or roof. For more information, see “Room Types and Functions” on page 414 of the Reference Manual.

To specify a room type

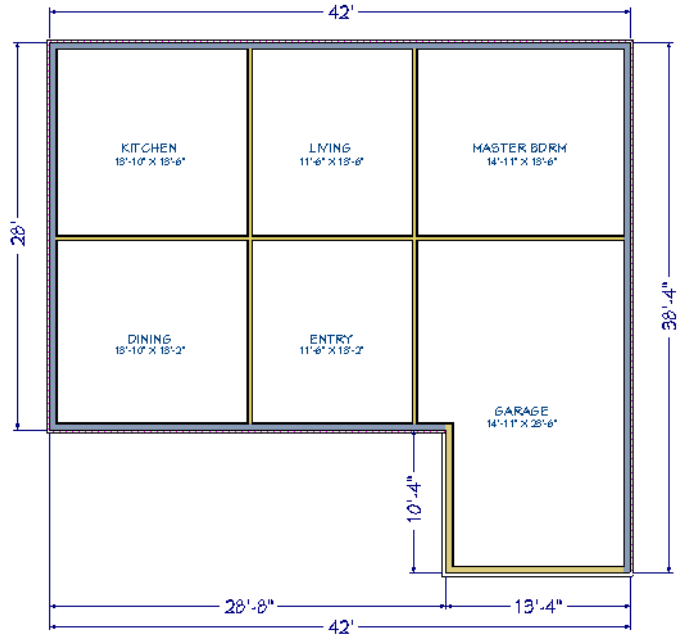
1. Click the **Select Objects** button, then click in the room at the top left corner of the structure to select it.



2. When the room is selected, it will become highlighted and you can click the **Open Object** edit button to open its specification dialog.
3. On the GENERAL panel of the **Room Specification** dialog, select "Kitchen" from the **Room Type** drop-down list.



4. On the STRUCTURE panel of the dialog, click the **Edit** button beside **Floor Finish** and notice that the material assigned to Layer 1 is tile rather than wood. Click OK.
5. Repeat steps 1-3 to create a Dining room, Living room, Entry, Master Bedroom, and Garage, as shown in the following image:



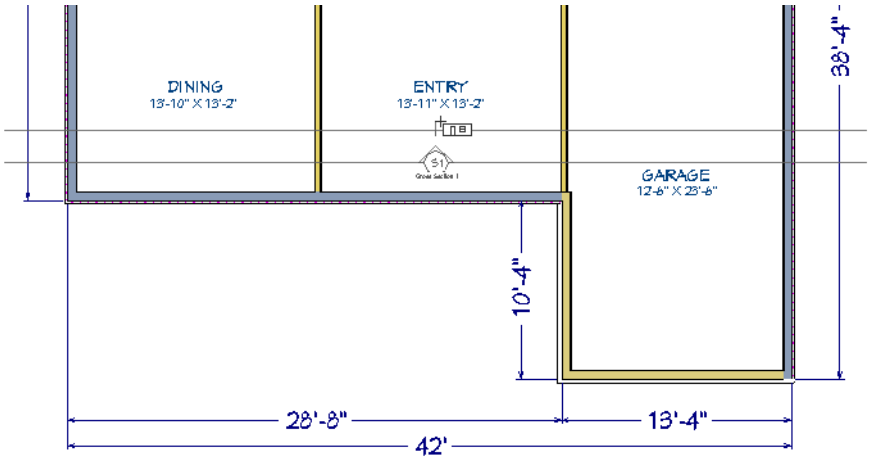
- Notice that the horizontal wall snaps at intersecting walls and that a new, separate wall segment is drawn on the other side.

6. Remember to **Save** your work.

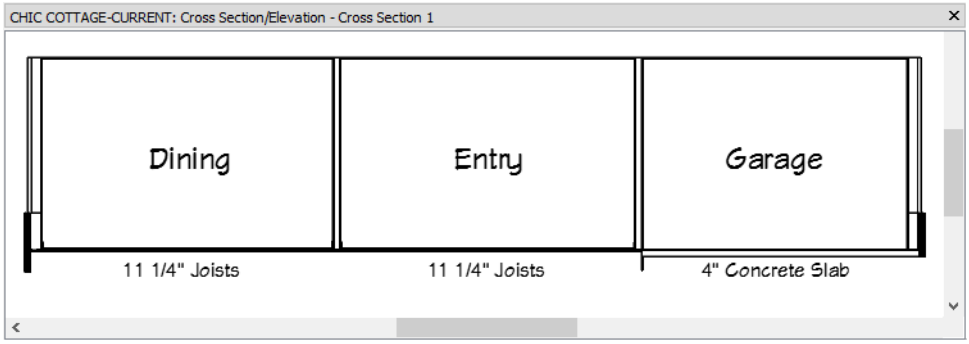
Differences in these rooms' properties can be seen in 3D views.

To view room types in 3D

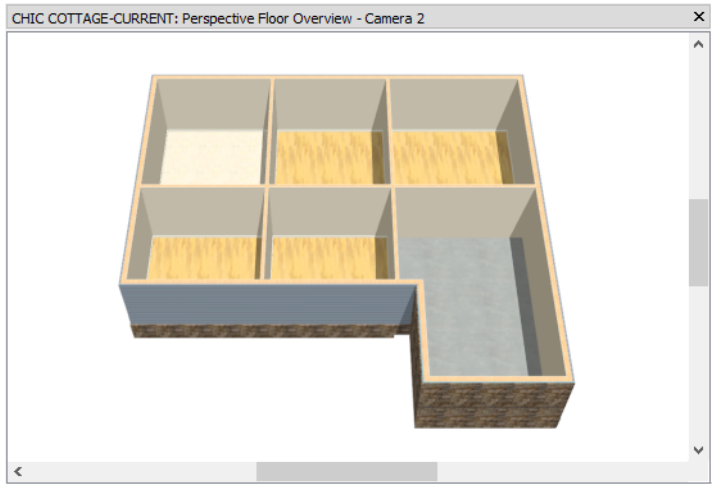
1. Select **3D> Create Orthographic View> Backclipped Cross Section**, then:



- Click and drag vertically to create a camera inside the Entry room.
- Limit the length of the camera's line of sight to one or two plan feet and make sure that you draw the camera either straight up or straight down on-screen.
- Notice that the Garage has a different floor structure than the Entry or Living rooms:



2. Select **3D> Create Perspective View> Perspective Floor Overview** to see differences in floor finish materials.

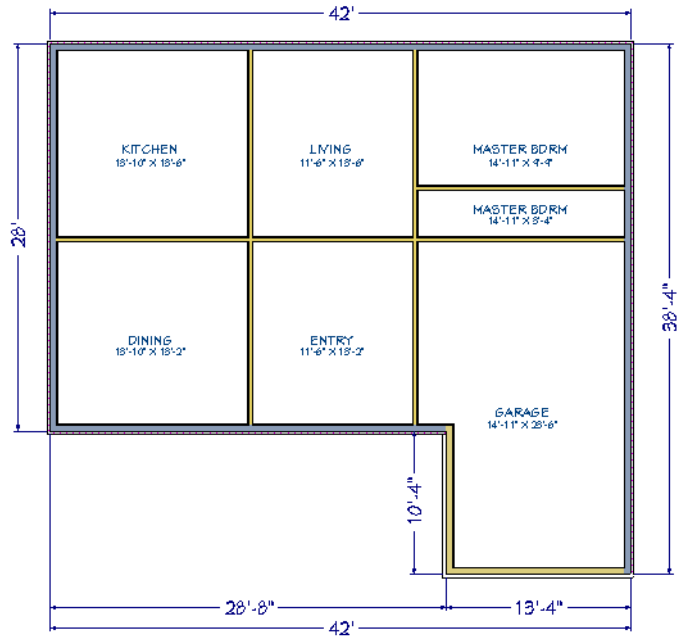


3. Select **File> Close View** in both views to return to floor plan view.

The six room areas created thus far can be subdivided further to create additional rooms.

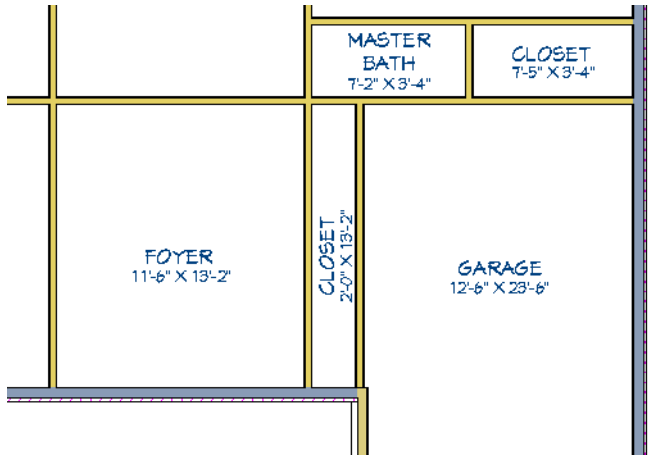
To subdivide room areas

1. Select **Build> Wall> Straight Interior Wall** , then click and drag from right to left to divide the Master Bedroom into two separate rooms.



- Notice that the new room inherits the Room Type of the larger room that it was created in.

2. Draw a vertical interior wall subdividing the lower Master Bedroom.
3. On the right side of the Garage, draw one more vertical interior wall straight up from the left exterior Garage wall.
   - The new wall and the exterior wall that it's collinear with are aligned at the exterior surface of their framing layers. This creates a small jog on the interior that will be easily corrected later on. See "To make walls collinear" on page 60.
4. Click the **Select Objects** button, then assign room types to the new rooms as shown in the following image:



In the above illustration, note that a number of changes have been made to the room labels.

To control the display of room labels

1. Click the **Select Objects** button, click on a room label to select it, then click the **Delete** edit button.
2. To restore a room label that has been deleted, select the room in question and click the **Open Object** edit button. On the GENERAL panel of the **Room Specification** dialog, check **Show Room Label** and click OK.
3. Room labels can wrap to a second line: click on the Master Bath label to select it, then click and drag a resize handle on either side of its bounding box inward until the bounding box becomes thinner and increases in height.
4. To change the name of a room such as the Entry, select it and click the **Open Object** edit button. On the GENERAL panel of the **Room Specification** dialog, uncheck **Use Room Type**, type a **Room Name** like "Foyer" in the text field, and click OK.
5. Room labels can also be rotated and moved using their edit handles. Select a room label, then click and drag the triangular Rotate edit handle to display it vertically instead of horizontally. Click and drag the square Move edit handle at the center of the label to adjust its position.
6. Select **Tools> Layer Settings> Display Options**, then:
   - Type "room" into the **Name Filter** field.
   - The "Room Labels" layer controls the overall display of room labels.

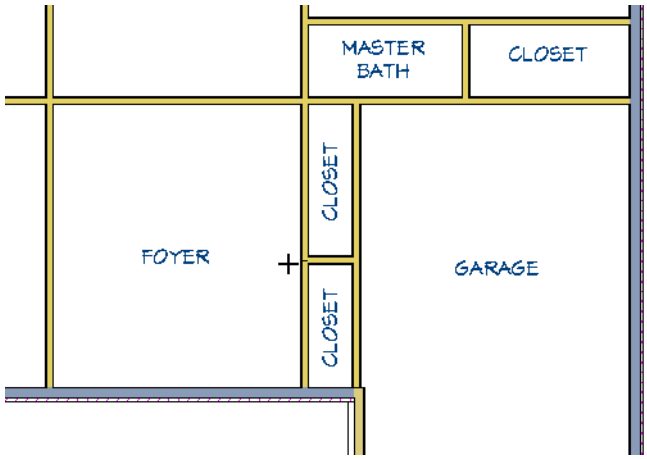
- The "Interior Area", "Interior Dimensions", and "Standard Area" layers control what room size information displays underneath the room name.
- Click in the Disp column to remove the check mark for the "Rooms, Interior Dimensions" layer to turn its display off, then click OK.

7. When room labels look the way you want, **Save** your work.

Two rooms can be merged into one by either moving or deleting the wall that separates them. The smaller room will inherit properties from the larger one.

To merge room areas

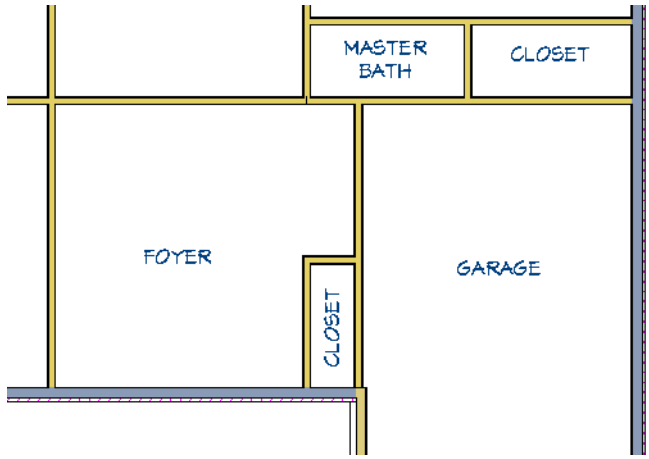
1. Draw a horizontal **Straight Interior Wall** to divide the Closet to the right of the Foyer into two separate Closet rooms.
2. Select **Build> Wall> Break Wall** and then:



- Click on the vertical wall separating the Entry from the two Closets, at the intersection of the horizontal wall dividing the Closets.
- Click the **Select Objects** button to deactivate the Break Wall tool.

Note: The Break Wall tool will remain active until a different tool is selected.

3. Select and resize the vertical wall separating the upper Closet from the Foyer:
   - Click and drag the square Resize handle located at the bottom end of the wall and drag it upward until it snaps to the vertical wall separating the Entry and Living rooms.
   - The upper Closet room disappears and inherits the Room Type of the larger Foyer room that it merged into.



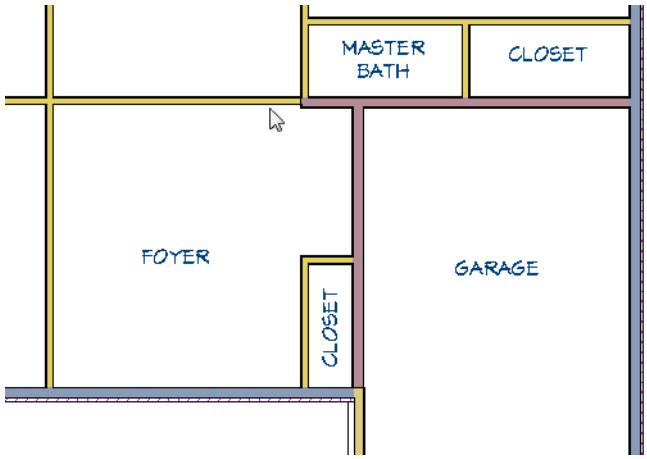
4. Remember to **Save** as you work.

Modifying Interior Wall Types

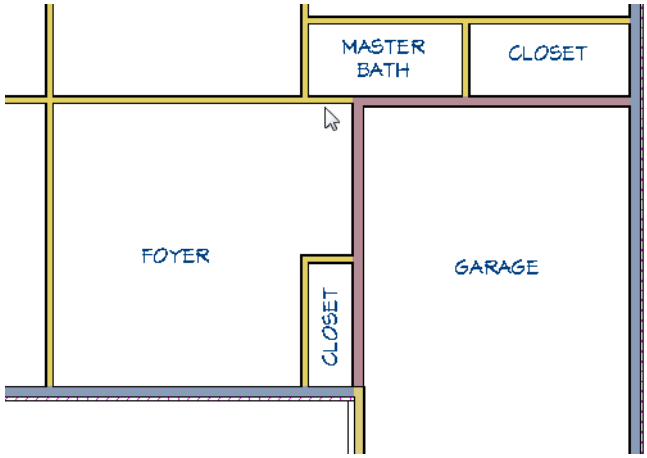
Interior walls are typically built using 2 x 4 stock. Some interior walls, however, need to be thicker to accommodate plumbing or to provide support for the floor above.

To specify a different wall type

1. Click the **Select Objects** button, then click on the horizontal wall separating the Garage from the Master Bath.
2. Next, hold down the Shift key and click on the wall separating the Garage from the Foyer. This will select the two walls as a group. See “Shift and Ctrl Select” on page 216 of the Reference Manual.
3. Click the **Open Object** edit button, and on the WALL TYPES panel of the **Wall Specification** dialog,
   - Click the arrow next to the Vector View button above the object preview on the right side of the dialog and select **Show Plan View** from the drop-down list.
   - Click the **Wall Type** drop-down and choose "Fire-6" from the list.
   - Notice that the preview updates to show the new, thicker wall type.
   - Click the **Define** button and note that the exterior layer material is a fire-rated drywall.
   - Change the Fill of the Main Layer to a Solid pale red color.
   - Click OK to close both dialogs.



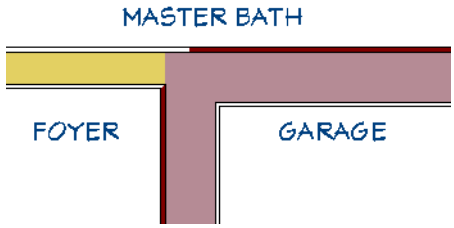
4. Select the horizontal wall separating the Foyer from the Living room, then click and drag the edit handle on its right end until it snaps to the vertical Fire-6 wall separating the Garage from the Foyer.



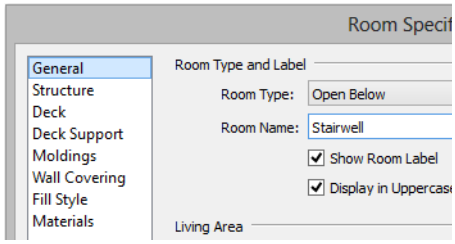
It is sometimes necessary to flip a wall's layers from one side to the other.

To reverse a wall's layers

1. Zoom in on the intersection of the two Fire-6 walls and notice that the red fire-rated drywall layer is facing away from the Garage.
2. Use the Shift key to select the two Fire-6 walls as a group, as described above.



3. Click the **Reverse Layers** edit button to flip the two walls' layers so that the fire-rated drywall faces the Garage.



4. When you are finished, **Save** your work.

Using Room Dividers

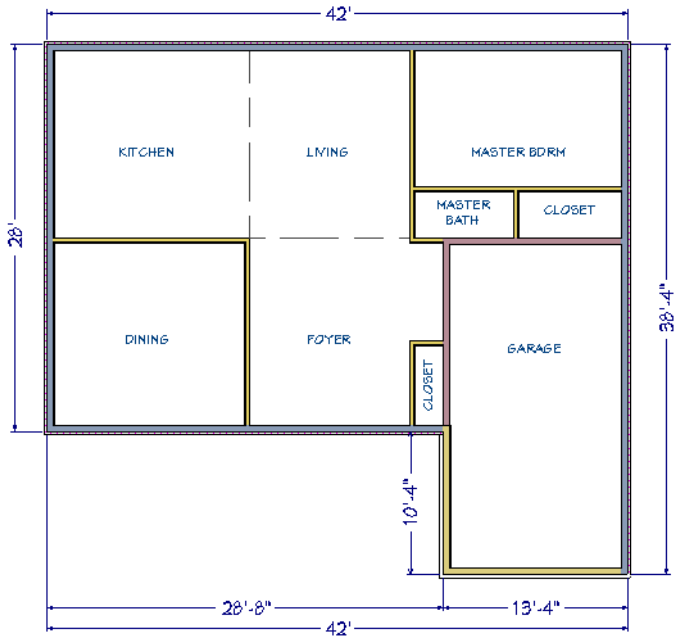
Rooms are not always divided by a physical wall. For example, two separate room areas may be suggested by a change in the ceiling height or flooring material. In Chief Architect, a Room Divider or invisible wall can be used to define rooms without creating an actual wall. For more information, see "Room Dividers and Invisible Walls" on page 353 of the Reference Manual.

A Room Divider is drawn the same way other walls are: select **Build> Wall> Room Divider**, then click and drag in any direction.

To change a wall into a room divider

1. Select **Build> Wall> Break Wall** and then click on the wall separating the Living room from the Foyer where it intersects the left wall of the Master Bath room
2. Click the **Select Objects** button, then click on the wall segment separating the Living room from the Foyer to select it.
3. Click the **Open Object** edit button.

4. On the WALL TYPES panel of the **Wall Specification** dialog, select "Room Divider" from the **Wall Type** drop-down list.
5. On the GENERAL panel:
   - Note that the **Thickness** of the wall is reduced to 0" and that the object preview on the right side of the dialog box now shows the wall as it looks in floor plan view.
   - Check **Invisible** and **No Locate**. No Locate prevents the Room Divider from being located by Auto Exterior Dimensions. For more information, see “General Panel” on page 390 of the Reference Manual.
   - Click OK.
6. Repeat these steps to change the wall separating the Kitchen and Living rooms into a Room Divider, as well.



7. Remember to **Save** your work.

Positioning Interior Walls

Like exterior walls, interior walls can be moved using their dimensions or their edit handles. It is a good idea to make sure that Dimension Defaults are set so that they meet your needs. See "To set dimension defaults for locating walls" on page 32 of the Exterior Walls Tutorial.

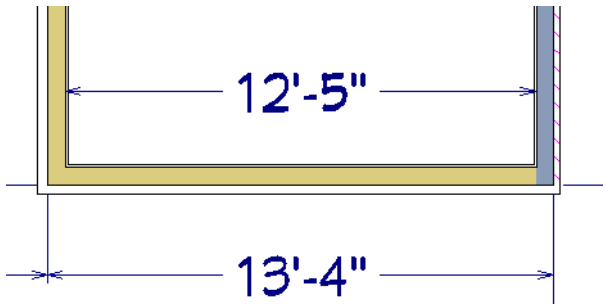
The Interior Dimension tool is ideal for laying out interior walls because unlike other Dimension Tools, it always locates exterior walls on their interior sides. This allows you to easily see the sizes of all of your rooms' interiors and adjust them as needed.

To set dimension defaults to locate interior walls

1. Select **Edit> Default Settings**, click the arrow next to "Dimension" to expand the category, then select "Dimensions" and click the **Edit** button.
2. In the **Saved Dimension Defaults** dialog:
   - Notice that there are multiple saved defaults for different scales as well as different purposes such as Electrical and Framing plans.
   - Note that "1/4" Scale Dimensions" is listed as the **Currently Active Dimension Defaults** selected and that it is selected in the list.
   - Click the **Edit** button.
3. On the LOCATE OBJECTS panel of the **1/4" Scale Dimension Defaults** dialog, notice that the Walls settings are the same as those for Auto Exterior Dimensions:
   - Walls can be located either at their **Surfaces** or their **Wall Dimension Layer**, which is typically the framing layer.
   - There are three **Wall Options** for locating interior walls, as well: at Interior Wall Centers, Primary Wall Side, and Both Wall Sides.
   - These settings are set the same as those for Auto Exterior Dimensions and can be left unchanged for this example. See "To set dimension defaults for locating walls" on page 32 of the Exterior Walls Tutorial.
4. Click Cancel and then Done to return to floor plan view.

To draw an interior dimension line

1. **Zoom** out until you can see the front left corner of the front bump out.
2. Select **CAD> Dimension> Interior Dimension**, then click and drag from side to side across the inside of the Garage.



3. Notice that the Auto Exterior Dimension and the Interior Dimension report different lengths for the same wall.
   - This is because Auto Exterior Dimensions locate the outside of the framing by default, while Interior Dimensions locate the inside of the framing.
   - The difference, 11", is equal to the thickness of the two walls' framing layers, which are each 5 1/2" thick.

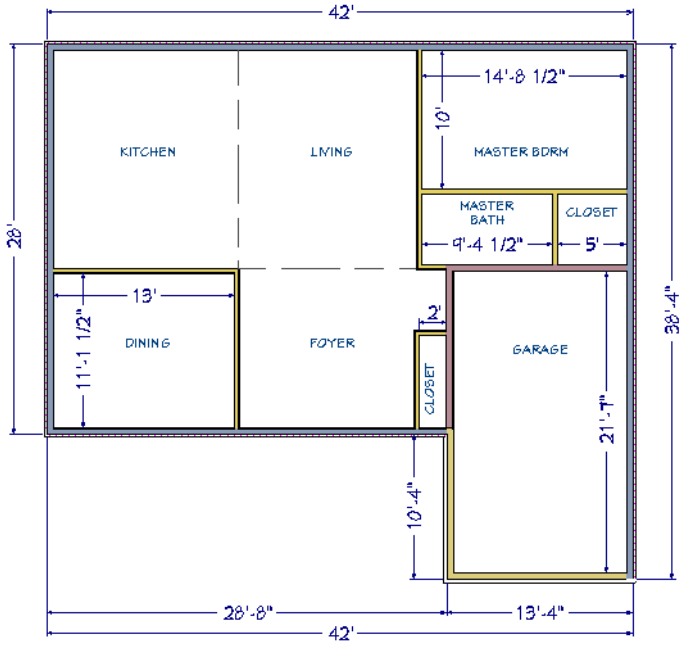
Interior Dimensions can be produced along each wall in a room, or along each wall for all rooms on the current floor, with a single click.

To dimension an entire room

1. Select **Window> Fill Window** so the plan fills the extents of view window.
2. Click the **Select Objects** button, then click in the Entry room to select it.
3. Click the **Auto Interior Dimension** edit button. A dimension line is generated along each of the walls that define the Entry.
4. If you would like to generate a full set of dimensions in all rooms, select **CAD> Automatic Dimension> Auto Interior Dimensions**.

Interior walls can be located by and repositioned using any type of dimension line. See "Adjusting Wall Positions" on page 34 of the Exterior Walls Tutorial.

Reposition the interior walls in this plan so their dimensions match those in the following image:



When your interior walls are in position, you may find it helpful to delete some or all of the dimension lines. For more information, see “Deleting Dimension Lines” on page 435 of the Reference Manual.

To delete a dimension line

1. Click the **Select Objects** button, then click on a a dimension line to select it.
2. Click the **Delete** edit button, select **Edit> Delete** , or press the Delete key on the keyboard.

To delete all dimensions at once

1. Select **Edit> Delete Objects** to open the **Delete Objects** dialog. See “Delete Objects Dialog” on page 283 of the Reference Manual.
2. Select the **All Rooms On This Floor** radio button, then under the CAD heading:
   - Check **Automatic Dimensions** to delete automatically generated dimension lines created by the **Auto Interior Dimension** and **Auto Exterior Dimensions** tools,

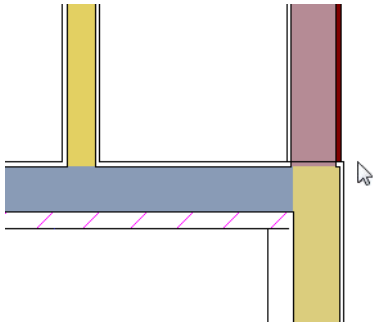
- Check **Manual Dimensions** to delete manually-drawn dimension lines such as those drawn by the **Interior Dimension** tool.
- Click the **Delete** button to delete the specified objects.
- Click the Done button to close the dialog.

Working with Wall Connections

Wall segments that are collinear but have different Wall Types usually snap together so that the outside of their Main Layers are aligned. In some situations, though, they can become unaligned. Walls can be easily realigned using their edit handles.

To make walls collinear

1. **Zoom** in on the left side of the Garage, where the Fire-6 wall meets the exterior walls.
2. Notice that the vertical walls are not perfectly aligned, producing a slight jog:

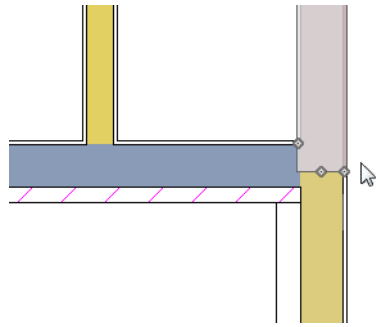


3. Click the **Select Objects** button, then click on the Fire-6 wall to select it.
4. Using the square Move edit handle that displays along the wall at the point where you clicked, gently drag the Fire-6 wall slightly to the right.
   - When **Object Snaps** are enabled, a red **Intersection** snap indicator will display when the inside surfaces of the two walls meet. For more information, see “Object Snaps” on page 168 of the Reference Manual.
5. When the wall snaps into position, release the mouse button.
6. Select the front wall of the Closet and adjust its position so that the Closet depth is 2’.

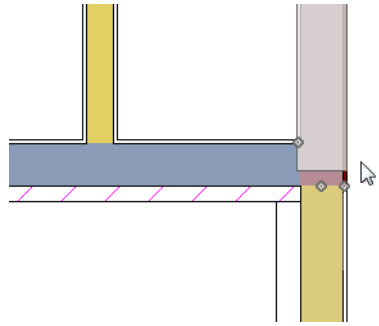
With these two collinear walls properly aligned, their intersection can now be adjusted using the Edit Wall Layer Intersection edit handles. see “Wall Layer Intersections Edit Handles” on page 371 of the Reference Manual.

To use the Edit Wall Layer Intersection edit handles

1. Select the Fire-6 wall and click the **Edit Wall Layer Intersection** edit handle.



2. Click and drag the edit handle located in the middle of the Main Layer and drag it downward until it reaches the outside surface of the horizontal wall's Main Layer.
3. Repeat step 2 with the edit handle located in the middle of the red fire-rated drywall.



4. When you are finished, **Save** your work.

Creating Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed.

When you are finished working on a file and are ready to close it, **Save** your work. Before closing it, though, create a copy of the file with a different name that indicates what it contains so you can distinguish it from other revisions.

To save a plan revision

1. Select **File**> **Save As** .
2. In the **Save Plan File** dialog, make sure that the save location is your Chic Cottage folder.
3. For the File name, type a the name of the project followed by a short description of the current state of the drawing; for example, Chic Cottage-InteriorWalls.

Review

This lesson describes the best practices for drawing interior walls and creating interior rooms.

- To set the Interior Wall Defaults
- To define rooms using interior walls
- To specify a room type
- To view room types in 3D
- To subdivide room areas
- To control the display of room labels
- To merge room areas
- To specify a different wall type
- To reverse a wall's layers
- To change a wall into a room divider
- To set dimension defaults to locate interior walls
- To draw an interior dimension line
- To dimension an entire room
- To delete a dimension line
- To delete all dimensions at once
- To make walls collinear
- To use the Edit Wall Layer Intersection edit handles

Assessment Questions

What are some reasons that is it helpful to specify Room Types?

What are two differences between the "Kitchen" and "Garage" Room Types?

Where can you change the information that displays at the bottom of room labels?

How are Room Dividers useful?

What is the thickness of a Room Divider?

How do Auto Exterior Dimensions and Interior Dimensions locate walls differently?

What are two ways to delete dimension lines?

Chapter 3:

Multiple Floors

Creating new floors in a plan is easy; but whenever possible, it is best to do so after the first floor plan has been finalized.

Learning Objectives

This lesson describes best practices in Chief Architect for adding floors to a design. Concepts introduced include:

- Creating New Floor Levels
- Creating a Foundation
- Aligning Walls Between Floors

File Management

This tutorial continues where the Interior Walls tutorial left off. At this point, both the Chic Cottage-InteriorWalls and CHIC COTTAGE-CURRENT plans contain the same information, so you could open either one and continue working. However, Chic Cottage-InteriorWalls.plan was created specifically to serve as a revision or archive file so it will be left unchanged.

To continue working on the Chic Cottage project, select **File> Open Plan** . If need be, browse to Documents\Chic Cottage, select CHIC COTTAGE-CURRENT, and click Open.

Alternatively, select **File> Recent Files** and choose CHIC COTTAGE-CURRENT from the Recent Files List. The Recent Files List is a convenient way to access files you have been working on; however, it is not an alternative to knowing where your files are located and having a good file revision strategy in place. See "File Management" on page 18 of the Exterior Walls Tutorial.

It is a very good idea to save your files often as you work, and this guide reminds you to do so regularly.

Productivity Tips

As you learn how to add floor levels to a project, keep in mind these tips to improve your productivity.

Drawing and Editing

- It is best to add new floors after the walls on Floor 1 are in place.
- Setting Floor and Foundation Defaults as new floors are built saves time and reduces the changes of introducing errors.
- Align walls between floors using the **Align with Floor Above** and **Align with Floor Below** edit buttons.
- The **Copy** and **Paste Hold Position** commands can be used to align walls and other objects between floors as well.

Interface

- There are several ways to navigate multiple floors in a plan: the **Up One Floor** and **Down One Floor** buttons, the **Change Floor/Reference** tool, and the Project Browser.
- Use the Reference Floor Display to display walls and other objects located on a floor other than the Current Floor.

Keyboard Hotkeys

- F1 - Help for the current context
- F6 - Fill Window
- F9 - Reference Floor Display
- arrow keys - nudge selected object
- Ctrl+C - Copy
- Alt+Shift+V - Paste Hold Position
- Ctrl + S - Save

Setting the Defaults

In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. Setting defaults early can improve efficiency and also helps to avoid introducing errors into the drawing. When adding floors to a plan, there are several defaults of particular importance.

The Floor 2 Defaults allows you to set the default ceiling height for the floor as well as floor and ceiling structure definitions. See “To add a second floor” on page 65.

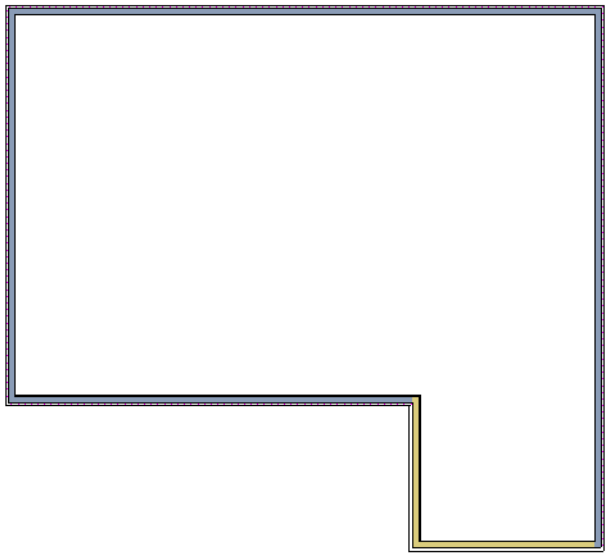
Foundation Defaults specify the type of foundation to be built as well as important defaults such as wall height and slab thickness. See “Creating a Foundation” on page 68.

Creating New Floor Levels

A plan file can have up to 30 floors. For more information, see “Multiple Floors” on page 713 of the Reference Manual.

To add a second floor

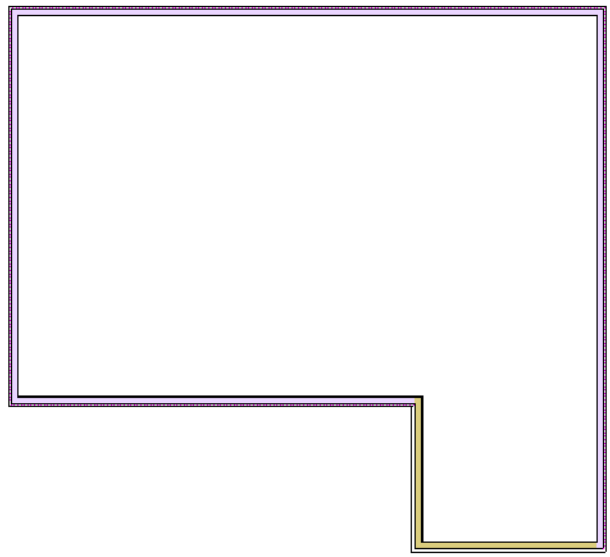
1. Select **Build> Floor> Build New Floor** .
2. In the **New Floor** dialog, select **Derive new 2nd floor plan from the 1st floor plan**.
   - This option produces a second floor shell using the same wall types as the exterior walls on Floor 1. Walls created over Pony Walls inherit the upper wall type.
   - You could instead create a blank second floor and then draw the second story walls manually; however, it is usually faster to automatically generate the perimeter walls and then edit them as needed.
3. Click **OK** to close the **New Floor** dialog and open the **Floor 2 Defaults** dialog.
   - Note that the default **Rough Ceiling** height is 97 1/8" and click OK.
   - Later on, this dialog will be used to specify a default floor covering. See "To set flooring defaults by floor" on page 242 of the Finish Materials Tutorial.
4. Click **OK** and a floor plan for the second floor is created based on the exterior walls of the first floor plan.



It’s not uncommon for the upper walls of a home to have a different siding material than the walls below.

To customize the second floor wall type

1. Select **Build> Wall> Define Wall Type** to open the **Wall Type Definitions** dialog.
2. At the top left corner of the dialog, select "Siding-6" from the drop-down list and click the **Copy** button.
3. Name the new wall type "Shingle-6", then:
   - Specify a Thickness for Layer 1 of 3/4".
   - Specify the Material for Layer 1 as Shake-Natural.
   - To help distinguish this wall type, change the Fill for Layer 4 to a Solid pale purple color.
   - Click OK to create the new wall type and close the dialog.
4. Shift + select the Siding-6 walls on Floor 2 and click the **Open Object** edit button.
5. On the WALL TYPES panel of the **Wall Specification** dialog, select "Shingle-6" from the drop-down list and click OK.



6. When you are finished, remember to **Save** your work.

Now that there is more than one floor in the plan, it's important to be able to navigate between them.

To navigate between floors

1. Click the **Down One Floor** button to go to Floor 1.
2. Click the **Up One Floor** button to return to Floor 2.
3. Select **Tools> Reference Floors> Change Floor/Reference** or click the toolbar button of the same name located between the Up and Down One Floor buttons to see a list of all of the floors in your plan and choose the one you'd like to go to.

You can also see a list of all floors in the plan and navigate to any of them in the Project Browser. Select **View> Project Browser**, expand the Floors folder, right-click on a floor, and select **Open View** from the contextual menu. See "Project Browser" on page 75 of the Reference Manual.

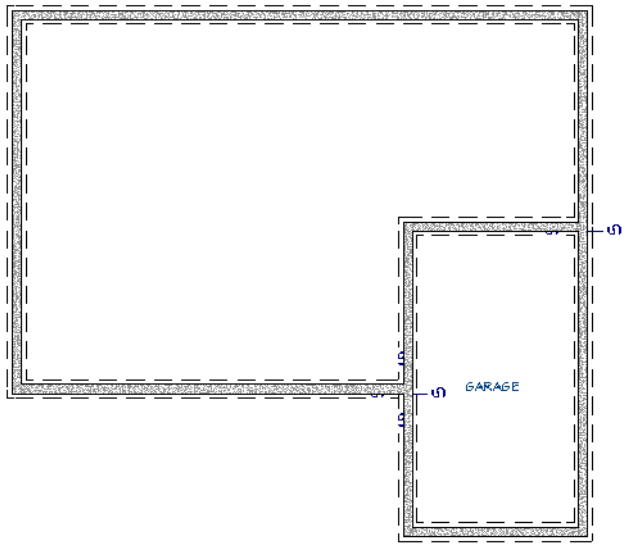
In addition to the current floor, you can display a second floor for reference. See "To align walls between floors" on page 71, below.

Creating a Foundation

When the rooms on Floor 1 have been defined, a foundation can be created beneath them. See “Foundations” on page 687 of the Reference Manual.

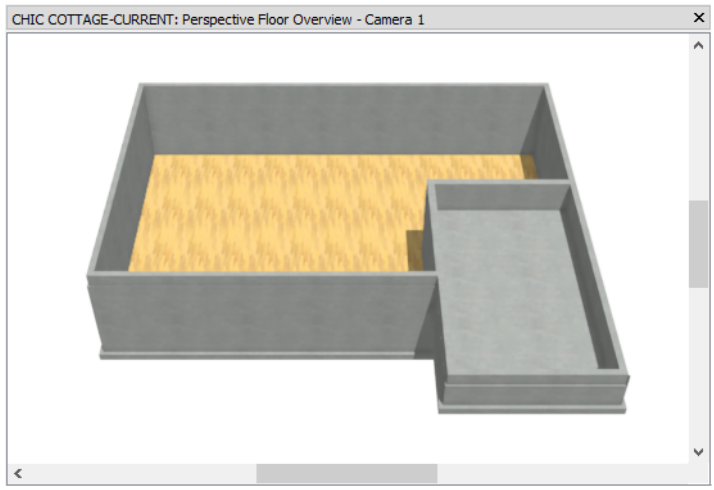
To create a basement foundation

1. Select **Build> Floor> Build Foundation** . In the **Build Foundation** dialog. On the FOUNDATION panel:
   - Under the Foundation Type heading, select **Walls with Footings**.
   - Under the Stem Walls heading, change the **Minimum Stem Wall Height** to 113 1/8" inches. This will provide room for standard stud length furred walls of 109 1/8" plus a 4" slab floor.
   - Under the Garage Options heading, leave Garage Floor to Stem Wall Top at 12" but change the **Minimum Garage Height** to 37 1/2". This will produce a 12" curb around the garage and stem walls that extend 24" below the top of the Garage slab.
   - Click **OK** to close the dialog and create a foundation level for the plan.
2. Select **Derive New Foundation Plan From the First Floor Plan** and click **OK** to close the **New Floor** dialog and create a foundation.



3. Notice that the Garage’s foundation is separated from the rest of the foundation plan and that "S" Markers indicate where the stem wall top height changes. See “Foundation Defaults” on page 688 of the Reference Manual.

4. Select **3D> Create Perspective View> Perspective Floor Overview** .



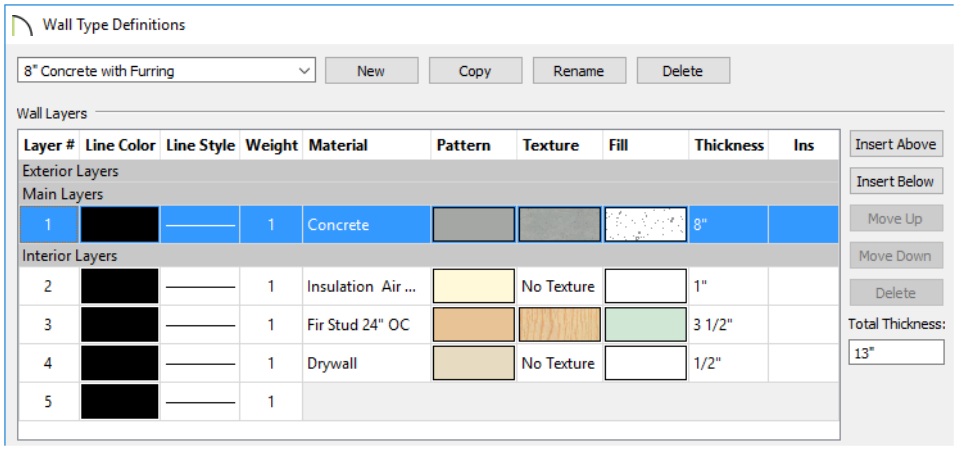
5. Click the **Select Objects** button, then click on the floor surface of the Garage area.
6. Click the **Open Object** edit button, and on the STRUCTURE panel of the **Room Specification** dialog, notice that **Room Supplies Floor for the Room Above** is checked. This indicates that the Garage room on Floor 1 inherits its concrete floor and curbs from this room on Floor 0. Click Cancel to close the dialog.
7. Select **File> Close View** to return to floor plan view.

Basement walls often have furring to accommodate insulation, electrical, and plumbing and a finish surface like drywall.

To create a furred basement wall type

1. Select **Build> Wall> Define Wall Types** to open the **Wall Type Definitions** dialog.
2. Select "8" Concrete Stem Wall" from the drop-down list at the top of the dialog, then click the **Copy** button.
3. Notice that the new wall type's name is "8" Concrete Stem Wall, Copy", then click in the text field where its name is stated and change it to "8" Concrete with Furring".
4. Click the **Insert Below** button to create a new layer, identical to the first.
5. With this new layer selected, click the **Move Down** button to move the new layer from the "Main Layers" section to the "Interior Layers" section.
6. Click the **Insert Below** button two more times to create a total of three Interior Layers, then modify the three layers as follows:

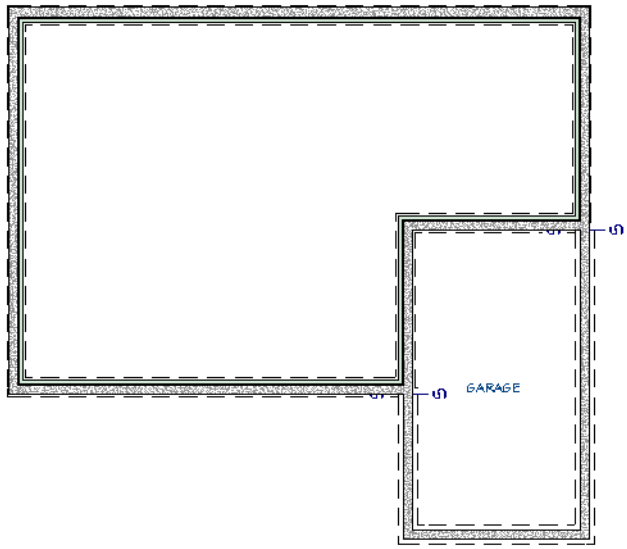
- Specify Layer 2 as the Insulation Air Gap material with a Thickness of 1" and no Fill.
- Specify Layer 3 as the Fir Stud 24" OC material with a Thickness of 3 1/2" and a pale green Solid Fill color.
- Specify Layer 4 as Drywall with a Thickness of 1/2" and no Fill.



7. Click OK to close the dialog and create the new wall type.

To replace the basement wall type

1. Select **Build> Wall> Break Wall**, then click along the right vertical wall, where it is intersected by the horizontal wall at the back of the garage area.
2. Click the **Select Objects** button, then click on the wall segment located above the intersection to select it.
3. Hold down the Shift key, then click each of the walls that define the basement area, adding them to the selection set.
4. Click the **Open Object** edit button to open the **Wall Specification** dialog.
5. On the WALL TYPES panel, select "8" Concrete with Furring" from the **Wall Type** drop-down list, then click OK.



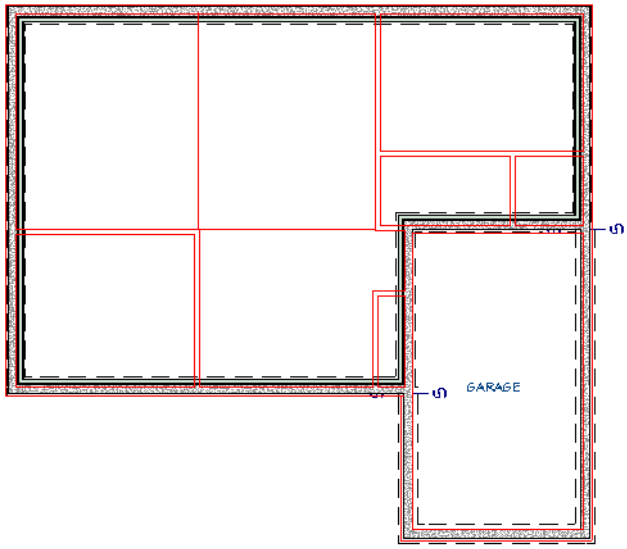
6. Remember to **Save** your work.

Aligning Walls Between Floors

In any plan with multiple floors, some walls may need to be perfectly aligned from one floor to the next. Here, the walls that will form one side of a stairwell will be aligned. For more information, see “Aligning Walls Between Floors” on page 374 of the Reference Manual.

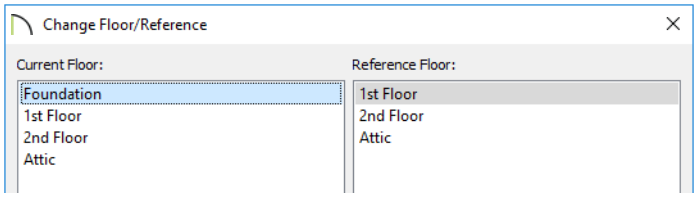
To align walls between floors

1. Select **Tools> Reference Floors> Reference Floor Display** .



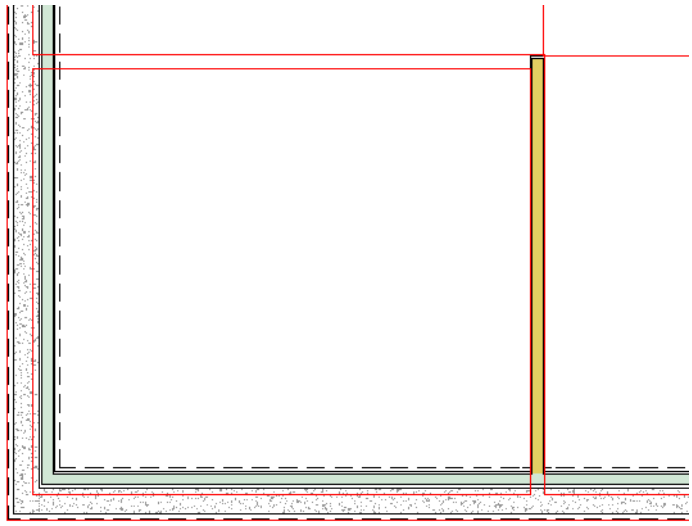
- The walls on Floor 1 are shown in red for reference.
- Notice that the edge lines of the exterior walls are highlighted in light blue: this indicates that they are exactly aligned with the walls below.

2. Click the **Change Floor/Reference** button to open the **Change Floor/Reference** dialog. Notice that the Current Floor and Reference Floor are listed and can be changed here, then click Cancel.



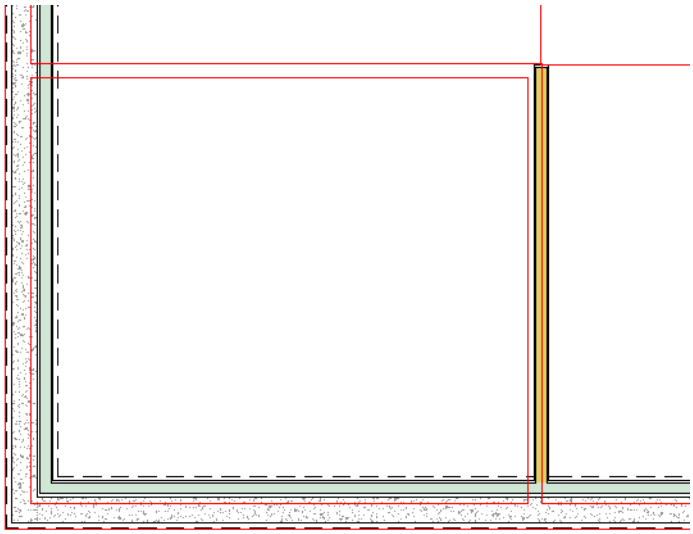
3. **Zoom** in on the left side of the plan.

4. Select **Build> Wall> Straight Interior Wall**, then draw a vertical wall over the wall visible in the Reference Floor Display on the left side of the plan.



- If you are sufficiently zoomed in, the new wall will snap into alignment with the wall shown in the Reference Floor Display.
- Its edge lines will be highlighted, indicating that they are drawn over Reference Floor Display lines.

5. Click the **Select Objects** button, then select the newly drawn interior wall.
6. Press the right arrow key on your keyboard once to Nudge the wall 1" to the right. Notice:



- The wall's edge lines are no longer highlighted and the red lines representing the wall on the floor above can be seen in the Reference Display.
- On the edit toolbar, the **Align With Wall Above** edit button is now available.

7. Click the **Align With Wall Above** button. The wall is moved back into alignment with the wall below and the edit button disappears.

Another way to ensure that walls are aligned between floors is to use the Copy and Paste Hold Position tools. For more information, see "Paste Hold Position" on page 178 of the Reference Manual.

To copy and paste walls between floors

1. Select the interior wall, then select **Edit> Copy**.
2. Click the **Up One Floor** button twice to go to Floor 2.
3. Select **Edit> Paste> Paste Hold Position**. A copy of the interior wall selected on Floor 0 is created directly above the original.
4. Don't forget to **Save** your work.

You can continue working on this plan in the Interior Stairs Tutorial.

Creating Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed.

When you are finished working on a file and are ready to close it, **Save** your work. Before closing it, though, create a copy of the file with a different name that indicates what it contains so you can distinguish it from other revisions.

To save a plan revision

1. Select **File**> **Save As** .
2. In the **Save Plan File** dialog, make sure that the save location is your Chic Cottage folder.
3. For the File name, type a the name of the project followed by a short description of the current state of the drawing; for example, Chic Cottage-Floors.

Review

This lesson describes the best practices for adding a foundation and new floors to a structure.

- To add a second floor
- To customize the second floor wall type
- To navigate between floors
- To create a basement foundation
- To create a furred basement wall type
- To replace the basement wall type
- To align walls between floors
- To copy and paste walls between floors

Assessment Questions

When building a new floor, why is it beneficial to derive the new floor plan from an existing floor?

What are two ways to switch from one floor to another?

What is the name of the tool that lets you view the location of objects on another floor without going to that floor?

What are two ways to align walls between floors?

What are two attributes of a "Garage" Room Type are created when the foundation is generated?

What does an "S" marker along a foundation wall mean?

Chapter 4:

Interior Stairs

Stairs and staircase rooms connect multiple floors in a plan.

Learning Objectives

This lesson describes best practices in Chief Architect for creating stairs and introduces working in section views. Concepts introduced include:

- Setting the Defaults
- Adding Stairs
- Working in Cross Section Views
- Creating a Stairwell
- Confirming Headroom Clearance
- Creating a Stacked Staircase

File Management

This tutorial continues where the Multiple Floors tutorial left off. At this point, both the Chic Cottage-Floors and CHIC COTTAGE-CURRENT plans contain the same information, so you could open either one and continue working. However, Chic Cottage-Floors.plan was created specifically to serve as a revision or archive file so it will be left unchanged.

To continue working on the Chic Cottage project, select **File> Open Plan** . If need be, browse to Documents\Chic Cottage, select CHIC COTTAGE-CURRENT, and click Open.

Alternatively, select **File> Open Recent Files** and choose CHIC COTTAGE-CURRENT from the Recent Files List. The Recent Files List is a convenient way to access files you have been working on; however, it is not an alternative to knowing where your files are located and having a good file revision strategy in place. See "File Management" on page 18 of the Exterior Walls Tutorial.

It is a very good idea to save your files often as you work, and this guide reminds you to do so regularly.

Productivity Tips

As you learn how to create stairs and stairwells, keep in mind these tips to improve your productivity.

Drawing and Editing

- Stairs automatically detect floor platform heights and create consistent risers and treads to meet standard building practices.
- Click between two stair sections with the Draw Stairs tool to create a landing.
- Use the Tape Measure tool to quickly measure distances without drawing a permanent dimension line.

Content

- Cross Section/Elevation views can be annotated with text and dimensions and saved for use later on.

Interface

- Tiling 2D and 3D views can help in the positioning of objects like stairs.
- Use the Reference Floor Display to display walls and other objects located on a floor other than the Current Floor.
- Multiple line items in a list, as well as multiple objects, can be group-selected using the Shift and Ctrl keys. See “Shift and Ctrl Select” on page 216 of the Reference Manual.
- Saved camera views are listed and can be accessed from the Project Browser side window.

Keyboard Hotkeys

- F1 - Help for the current context
- Tab key - Select Next Object edit tool
- Shift + F6 - Tile Vertically
- F9 - Reference Floor Display
- Ctrl+C - Copy
- Alt+Shift+V - Paste Hold Position
- Ctrl + S - Save

Setting the Defaults

In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. Setting defaults early can improve efficiency and also helps to avoid introducing errors into the drawing. When drawing stairs, there are several defaults that should be borne in mind.

Before adding stairs, it is best to make sure that your floor and ceiling heights have all been finalized. If changes are made affect the floor heights, the total rise and run of a set of stairs may also be affected. See “Stair and Ramp Defaults” on page 726 of the Reference Manual.

Before drawing interior stairs, it is a good idea to set the Interior Stair Defaults to meet your needs. See “To set the interior stair defaults” on page 79.

Since stairwell rooms are often defined by railings, it is a good idea to set the Railing Defaults before they are created. See “To set the railing defaults” on page 85.

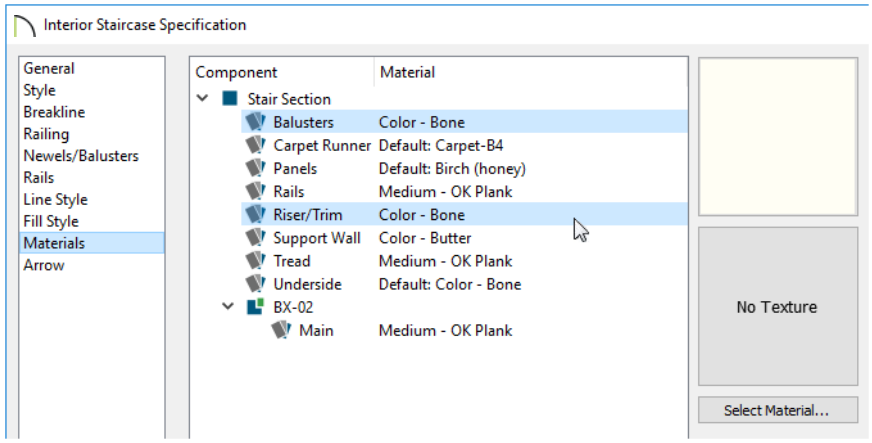
Adding Stairs

Stairs are drawn in an upward direction, from the current floor to the floor above, and locate floor platforms automatically. For more information, see “The Stair Tools” on page 727 of the Reference Manual.

Sometimes, only a few steps are needed to reach between the floors in different rooms.

To set the interior stair defaults

1. Select **Edit> Default Settings** to open the **Default Settings** dialog. Click the arrow to the left of "Stairs and Ramps" to expand the category, select "Interior Stairs", then click the **Edit** button.
2. On the GENERAL panel of the **Interior Stair Defaults** dialog, specify the Width as 44".
3. On the NEWELS/BALUSTERS panel, under the **Newels** heading:
   - Specify the **Width** as 4".
   - Uncheck **Rail Passes Over Newel**.
   - Specify the **Height** as 44".
   - Click the **Library** button.
4. In the **Select Library Object** dialog:
   - Browse to Chief Architect Core Catalogs> Architectural> Millwork> Balusters, Newels & Posts> Boxed.
   - Select "BX-02" and click OK.
5. On the MATERIALS panel:



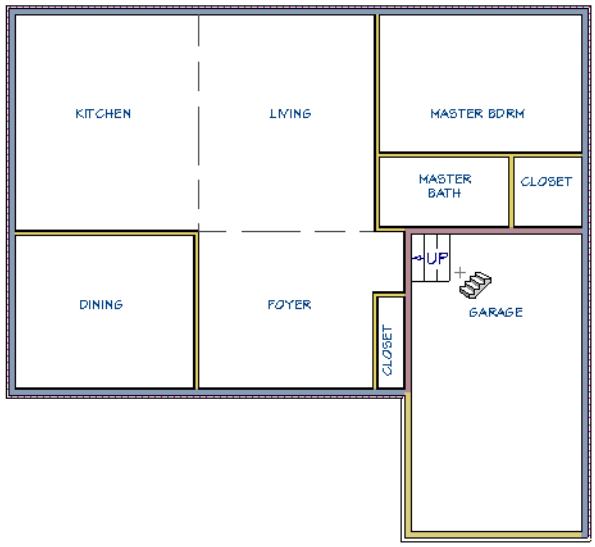
- Select the "Balusters" component, then hold down the Ctrl key and click on the "Riser/Trim" component and the "Main" component of the BX-02 newel to add them to the selection.
- Click the **Select Material** button and select "Color - Bone" from the PLAN MATERIALS panel of the **Select Material** dialog.
- Ctrl + select the "Rails" and "Tread" components as described above and assign the "Dark - OK Plank" material to them.

6. Click OK and then Done to close both dialogs.

The floor finish materials for rooms will be set to match the stairs later on. See "Specifying Flooring Materials" on page 240 of the Finish Materials Tutorial.

To create stairs between rooms

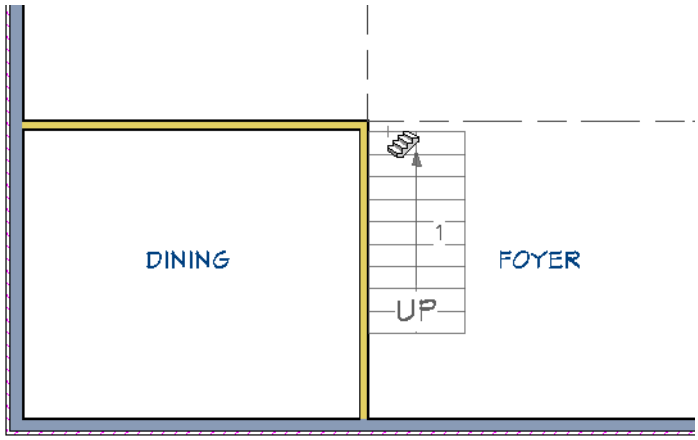
1. Go to Floor 1, then **Zoom** out so the Garage can be seen.
2. Select **Build> Stairs> Straight Stairs**, then move the mouse into the top left corner of the Garage room.
3. Click once to create a short stair section that spans the difference in floor height between the Garage and Foyer rooms.
4. Notice that the stairs have a direction arrow and an "UP" label, indicating that they are drawn in an upward direction.



Stairs can also be drawn to span different floor levels.

To create a staircase between floors

1. **Zoom** in on the Foyer room.
2. Select **Build> Stairs> Draw Stairs**, then click to the right of the wall separating the Foyer from the Dining room and drag upward. Notice:



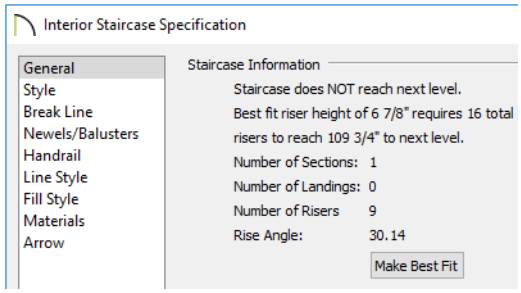
- The stairs have an "UP" label and an arrow indicating their direction.
- The stairs snap to the side of the room automatically.
- When you release the mouse button, a staircase is created.

To position a staircase

1. Select **CAD> Dimension> Manual Dimension** from the menu, then click and drag a dimension line from the bottom end of the stairs to the horizontal exterior wall of the Foyer.
2. By default, the dimension line will locate the outside surface of the wall's Main Layer. Click on the dimension line to select it, then click and drag the diamond-shaped end edit handle back until it snaps to the inside surface of the Main Layer.
3. Click the **Select Objects** button, then click on the staircase to select it and move your mouse pointer over the dimension line.
4. When the mouse pointer changes to a Pointing Hand icon, click once, enter 4' 6" in the inline text field, and press Enter.

To adjust a staircase's rise and run

1. Click on the stairs to select it, then click the **Open Object** edit button. On the GENERAL panel of the **Staircase Specification** dialog, notice:



   - The **Staircase Information** at the top of the dialog indicates that the selected staircase does not reach Floor 2 and recommends a total of 16 risers.
   - It also states the current **Number of Risers** and the **Rise Angle** for reference.
2. Under the "Advanced Options" heading, select **Lock Bottom**. As changes are made to the settings here that affect the staircase's length, its bottom end will not move, staying in the location that you specified above.
3. Click the **Make Best Fit** button. Notice that staircase now reaches the next floor and that the Number of Risers and Rise Angle are modified.
4. Still on the GENERAL panel:

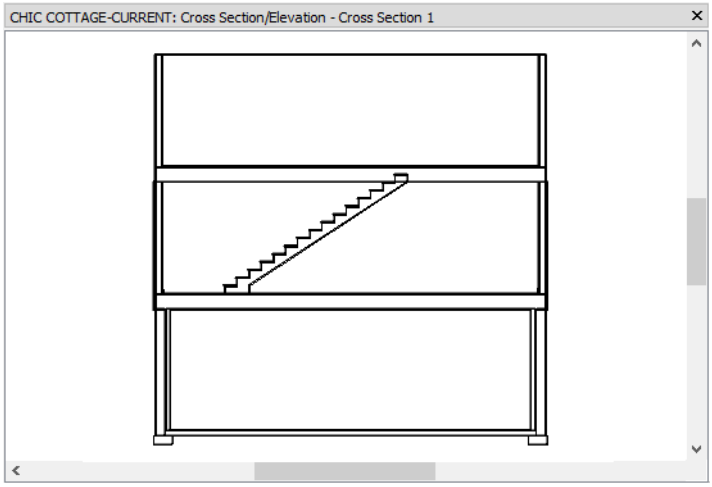
- Under "Advanced Options", select **Lock Number of Treads**.
- Change the **Tread Depth** to 10 1/2". Note that Riser Height stays the same but overall **Length** is adjusted.
- Click OK.

Working in Cross Section Views

Cross section views are often required in construction documents, and are also helpful to reference as you develop your drawing. See “Working in Multiple Views” on page 157 of the Reference Manual.

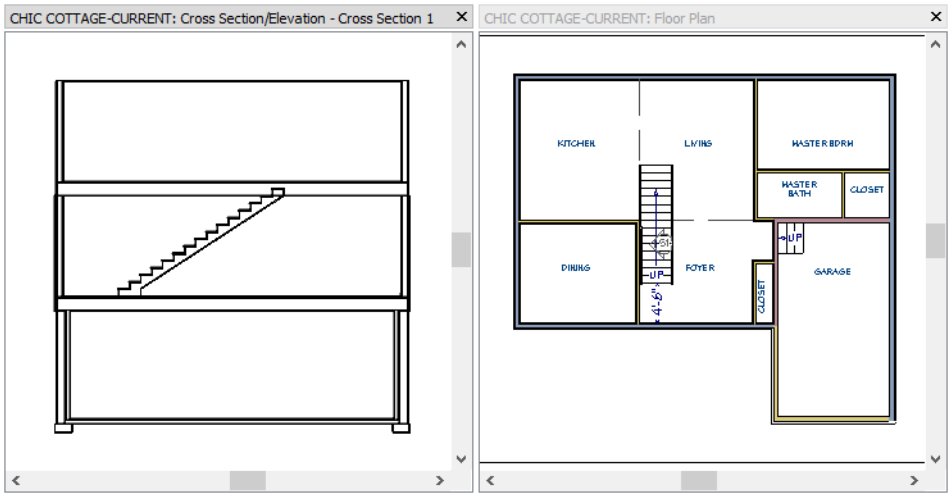
To tile floor plan and section views

1. Select **3D> Create Orthographic View> Backclipped Cross Section**, then click and drag a horizontal camera from left to right, entirely within the width of the staircase:



   - Notice that the stairs are connected to the floor platform on Floor 2.
   - Note, too, that the floor platform is unbroken with no passage between floors.

2. Select **Window> Tile Vertically** to tile the backclipped cross section and floor plan views side by side.



3. Notice that the cross section's title bar is darker in color than that of the floor plan view. The darker title bar indicates that the cross section is the currently active view.

Stair sections are often included in construction documents, so this backclipped cross section view can be saved for use later on. See "Sending Section and Elevation Views to Layout" on page 591 of the Sending Views to Layout Tutorial.

To save a camera view

1. Select **3D> Save Active Camera** .
2. Select **3D> Edit Active Camera** to open the **Camera Specification** dialog.
   - On the CAMERA panel, type a short, descriptive **Name** for the camera, like "Stair Section".
   - On the PLAN DISPLAY panel, notice that the camera is set to display as a callout in floor plan view, and that its Callout Label is S1.
   - On the LAYER panel, notice that the camera is located on the "Cameras" layer. This layer controls its display in floor plan view.
   - Click OK to close the dialog and apply your changes.
3. Before continuing, **Save** your work.

Saved camera views are listed in the Project Browser using their camera Name. See "Project Browser" on page 75 of the Reference Manual.

Creating a Stairwell

A stairwell is simply an interior room that has been assigned the Room Type “Open Below” so that it has no floor platform. The Stairwell for a given staircase is always found on the floor above the stairs.

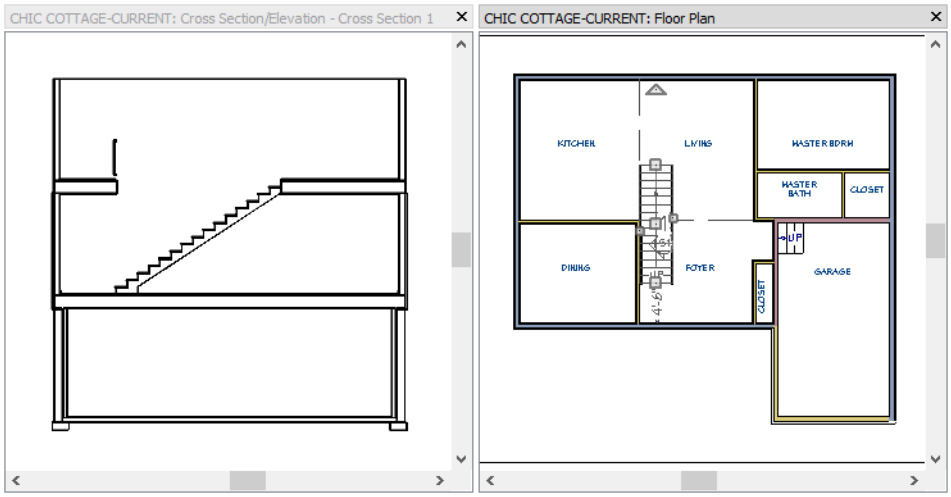
In the Multiple Floors Tutorial, interior walls were aligned between floors to create one side of a Stairwell for the stairs to Floor 2. See "Aligning Walls Between Floors" on page 71 of the Multiple Floors Tutorial.

To set the railing defaults

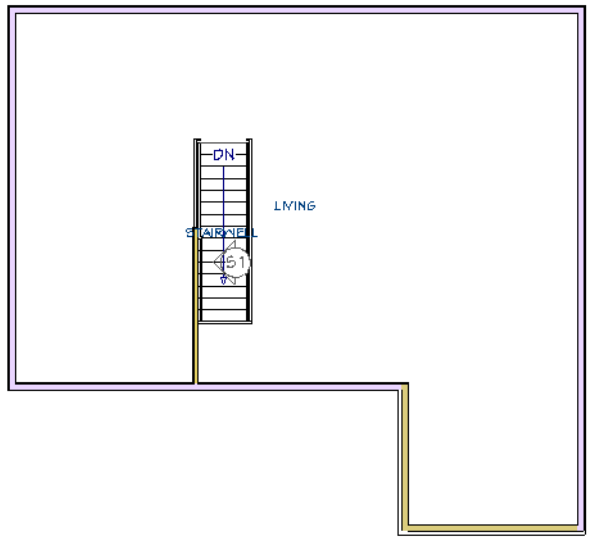
1. Select **Edit> Default Settings** to open the **Default Settings** dialog. Click the arrow to the left of "Walls" to expand the category, select "Railing", then click the **Edit** button.
2. On the RAIL STYLE panel of the **Railing Defaults** dialog, uncheck **Post to Rail**.
3. On the NEWELS/BALUSTERS panel, under the **Newels/Posts** heading:
   - Specify the **Width** as 4".
   - Specify the **Height** as 38".
   - Click the **Library** button.
4. In the **Select Library Object** dialog:
   - Browse to Chief Architect Core Catalogs> Architectural> Millwork> Balusters, Newels & Posts> Boxed.
   - Select "BX-02" and click OK.
5. On the MATERIALS panel:
   - Select the "Balusters" component, click the **Select Material** button, and select the "Color - Bone" material.
   - Select the "Rail" component, then hold down the Ctrl key and click on the "Main" component of the BX-02 newel to add it to the selection.
   - Click the **Select Material** button and select "Color - Bone" from the PLAN MATERIALS panel of the **Select Material** dialog.
6. Click OK and then Done to close both dialogs.

To create an automatic stairwell

1. Click in the floor plan view window to make it active, click the **Select Objects** button, then click on the staircase to select it.
2. Click the **Auto Stairwell** edit button and notice that in the cross section view, the floor platform above the staircase has been removed.



3. With the floor plan view window still the active view, select **Window> Tab Windows** to minimize the cross section but leave it open, then go **Up One Floor** to Floor 2.
4. Notice that a new room has been created to the right of the vertical interior wall.



- The existing framed wall forms part of the Auto Stairwell, and Railings are created to enclose the rest of the space.

- The vertical Railing at the top of the stairs has a Doorway opening in it.

5. When you are finished, **Save** your work.

Confirming Headroom Clearance

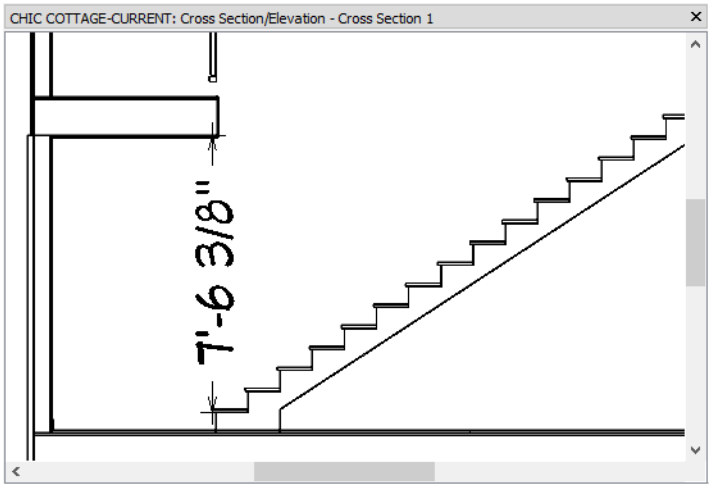
An important consideration in designing a staircase is adequate headroom, which can be measured in a cross section view such as the one created above. There are several ways to make an existing view window active, including:

- Click on the tab that states the name of the desired view.
- Open the **Window** menu, then select the desired view from the list of open views at the bottom of the menu.

For more options, see “Working in Multiple Views” on page 157 of the Reference Manual.

To draw dimension lines in a cross section view

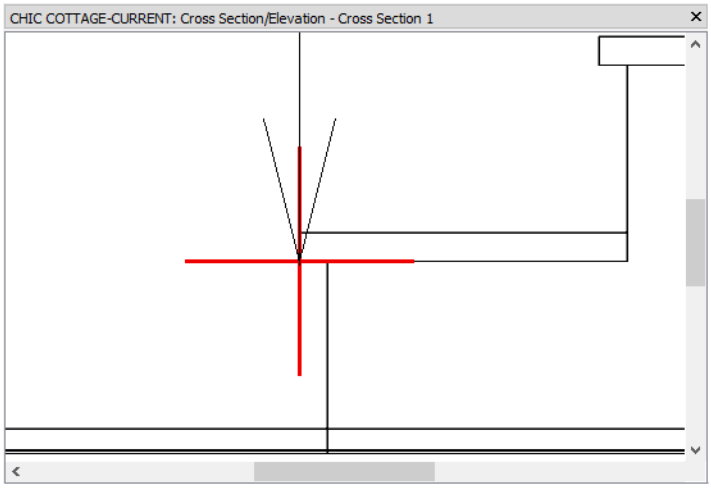
1. **Zoom** in on the bottom end of the stairs on Floor 1, making sure that you can also see the ceiling.
2. Select **CAD> Dimensions> End to End Dimension**, then click and drag a vertical dimension line from the top outer edge of the stair nosing up to the ceiling surface.
3. As you drag, notice that the dimension line preview locates the second tread of the stairs. This is because this tread is located within the Reach distance set in the Dimension Defaults dialog. See “Setup Panel” on page 448 of the Reference Manual.
4. When the dimension line preview locates the ceiling, release the mouse button.



5. An Information message will explain that the dimension line locates point markers instead of architectural objects in the model. Click OK.

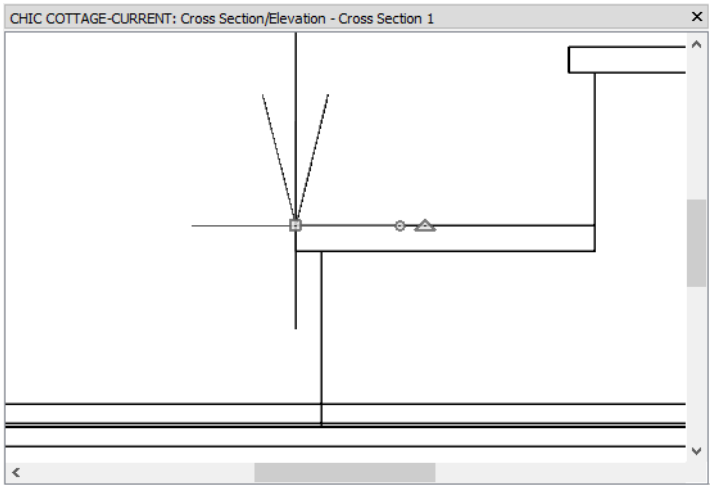
To confirm headroom clearance in a stairwell

1. **Zoom** in on the bottom stair tread and notice:

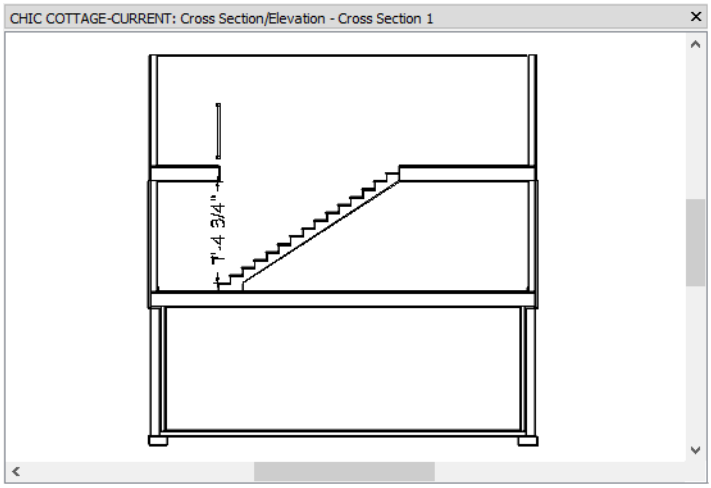


- There is a cross-shaped Point Marker at the end of the dimension line (here, shown in red and with thicker than normal lines for clarity).
- The Point Marker is aligned with the bottom of the tread rather than the top.

2. Click the **Select Objects** button, then click on the Point Marker to select it.
   - If you select the dimension line instead, click the **Select Next Object** edit button or press the Spacebar on your keyboard.
   - The selected object's type is indicated on the left side of the Status Bar. See "The Status Bar" on page 43 of the Reference Manual.
3. Click and drag its square Move edit handle upward. When **Object Snaps** are enabled, it will snap to the top of the tread.



4. Pan upward until the ceiling comes into view. There are two ways to pan in a view:
   - Select **Window> Pan Window**, then click and hold, drag downward, and release the mouse button.
   - Click and hold the middle mouse button, drag downward, and release.
5. When the ceiling can be seen:
   - Notice what the Point Marker at the end of the dimension line is aligned with.
   - If it is aligned with the ceiling framing at the back of the ceiling surface layer, select it and move it downward so that it is aligned with the ceiling surface.
6. Select **Window> Fill Window** to zoom out so the entire cross section can be seen in the view window.



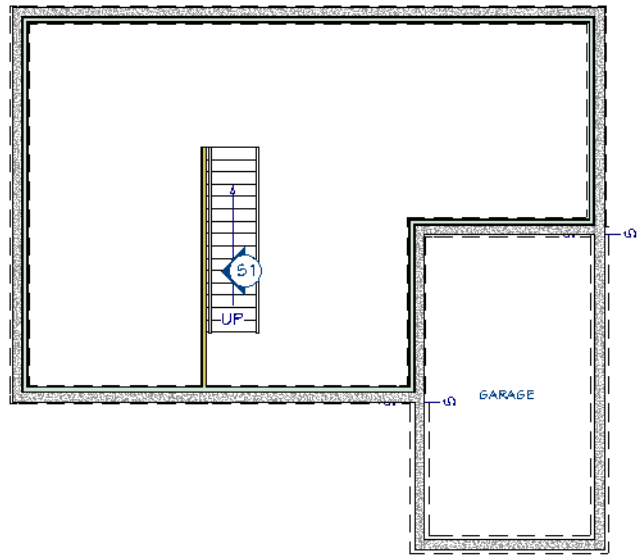
7. Select **File> Close** to return to floor plan view, and remember to **Save** your work.

Creating a Stacked Staircase

Staircases are often stacked above one another to save floor space.

To create stacked staircases

1. Click the **Down One Floor** button to return to Floor 1.
2. Click the **Select Objects** button, then click on the staircase to select it.
3. Select **Edit> Copy**.
4. Click the **Down One Floor** button to go to Floor 0.
5. Select **Edit> Paste> Paste Hold Position**. A copy of the staircase selected on Floor 0 is created directly below the original.
6. Click the **Select Objects** button, then select the wall located to the left of the staircase. Extend its top end upward until it reaches the top end of the staircase.



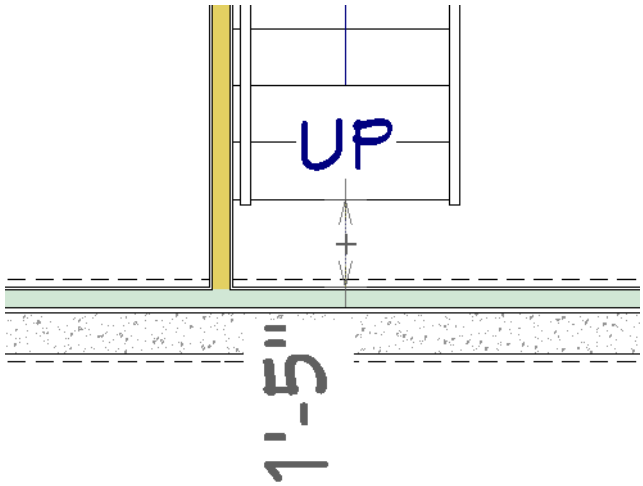
Since the ceiling height on Floor 0 is taller than on Floor 1, the length and height of the basement stairs should be examined.

To examine stair structure

1. With the newly pasted staircase still selected, click the **Open Object** edit button.
2. On the GENERAL panel of the **Staircase Specification** dialog, note that:
   - The Staircase Information states although the stairs do reach the next level, they are described as steep.
   - The **Riser Height** is 7 5/8", which meets most residential building codes.

> Building codes can vary considerably by location. It is your responsibility to make sure that your design meets the building codes for your project site.

3. This time, the top of the stairs is at the correct location, directly below the stairs above, so select **Lock Top**.
4. Click the **Make Best Fit** button, then click OK.
5. **Zoom** in on the bottom end of the basement stairs.
6. Select **CAD> Dimensions> Tape Measure**, then click and drag a temporary dimension line between the bottom of the stairs and the vertical exterior wall.

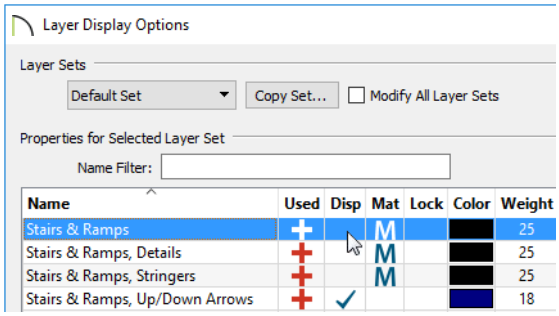


7. This distance is too narrow to serve as a passage, so select **Edit> Undo** from the menu to restore the stairs original rise and run.
8. Select the staircase and click the **Auto Stairwell** edit button.
9. **Save** your work, then go **Up One Floor** to Floor 1, which is where the new stairwell was created.

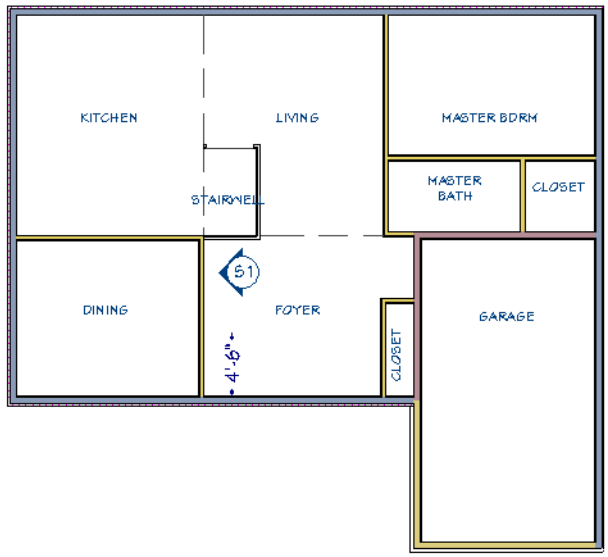
Stairwells are an example of spaces where objects are drawn close together or even over one another. In situations like this, it is helpful to turn the display of some objects off. See “Layers” on page 184 of the Reference Manual.

To turn off the display of objects

1. Select **Tools> Layer Settings> Display Options**.
2. In the **Layer Display Options** dialog:



- Press the S key on your keyboard to automatically scroll to the layer names that begin with the letter S.
- Locate the "Stairs & Ramps" layer and click once in the "Disp" column to remove the check mark.
- Click OK to close the dialog and turn off the "Stairs & Ramps" layer in floor plan view.

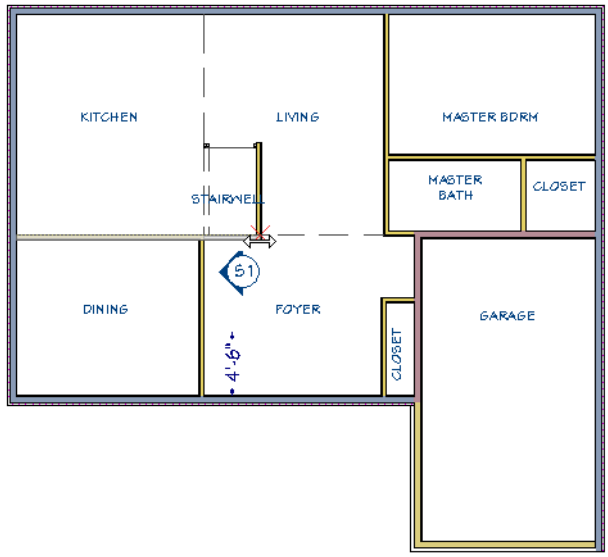


Note: Although the "Stairs & Ramps" layer has been turned off, the dimension line that locates the stairs on Floor 1 can still be seen.

With the display of the staircase turned off, it is now easy to see the railing walls of the Auto Stairwell so that they can be modified. Here, the railings will be replaced by walls using several methods.

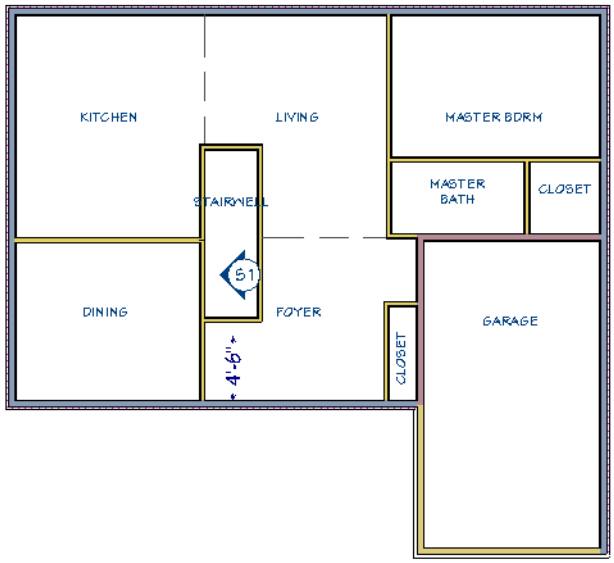
To edit Auto Stairwell railings

1. Click the **Select Objects** button, then click on the vertical wall separating the Stairwell from the Living room.
2. Click the **Open Object** edit button, and in the **Railing Specification** dialog:
   - On the GENERAL panel, uncheck **Railing** and **No Locate**.
   - On the WALL TYPES panel, select "Interior-4" from the **Type** drop-down list, then click OK.
3. Select the horizontal wall separating the Dining room from the Kitchen.



   - Click and drag its right end edit handle to the left until it snaps to the horizontal wall on the other side of the Stairwell.
   - As you drag, the Interior-4 wall replaces the railing.
4. Select the vertical wall separating the Dining room from the Foyer and use its top end edit handle to replace the invisible Room Divider above it, as described above.
5. Select the wall separating the Stairwell from the Kitchen, click the diamond-shaped Same Wall Type edit handle located above the top end of the wall and drag it to the right, replacing the railing and the opening in it. See “Edit Handles for Walls” on page 370 of the Reference Manual.

6. Select the horizontal wall separating the Stairwell from the Foyer.
   - Click on the Temporary Dimension that states how far it is from the exterior wall of the Foyer.
   - In the inline text field, type 6’ and press Enter to move the wall.



7. Go **Up One Floor** to Floor 2 and extend the length of the full height wall on the left side of the staircase until it reaches the top end of the staircase. See “To create stacked staircases” on page 90.

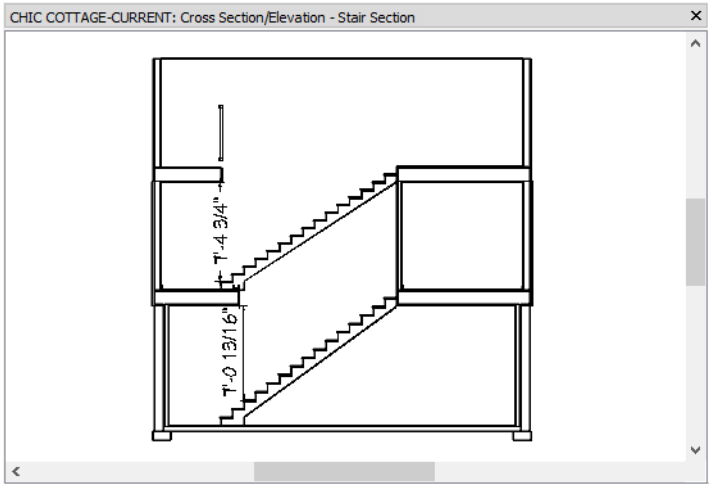
8. When you are finished, **Save** your work.

As with the first run of stairs, it is a good idea to confirm headroom clearance for the basement stairs. See “Confirming Headroom Clearance” on page 87.

To confirm headroom clearance

1. Open the saved "Stair Section" backclipped cross section camera created earlier. There are two ways to do this:
   - Select the camera callout in floor plan view and click the **Open View** edit button.
   - Select **View> Project Browser**, expand the Cross Sections folder, right-click on the "Stair Section" and select Open View from the contextual menu. See “Project Browser” on page 75 of the Reference Manual.

2. **Zoom** in on the basement stairs and use an **End to End Dimension** line to measure the headroom of the stairs on Floor 0.



3. When you are finished, **Save** your work and select **File> Close** to close the section view and return to floor plan view.

You can continue working on this plan in the Doors and Windows Tutorial.

Creating Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed.

When you are finished working on a file and are ready to close it, **Save** your work. Before closing it, though, create a copy of the file with a different name that indicates what it contains so you can distinguish it from other revisions.

To save a plan revision

1. Select **File> Save As** .
2. In the **Save Plan File** dialog, make sure that the save location is your Chic Cottage folder.
3. For the File name, type a the name of the project followed by a short description of the current state of the drawing; for example, Chic Cottage-Stairs.

Review

This lesson describes the best practices for creating interior stairs and stairwell rooms.

- To create stairs between rooms
- To create a staircase between floors
- To position a staircase
- To adjust a staircase's rise and run
- To tile floor plan and section views
- To save a camera view
- To create an automatic stairwell
- To draw dimension lines in a cross section view
- To confirm headroom clearance in a stairwell
- To create stacked staircases
- To examine stair structure
- To turn off the display of objects
- To edit Auto Stairwell railings
- To confirm headroom clearance

Assessment Questions

If you draw interior stairs on Floor 1, what floor level do those stairs try to snap to?

What Room Type is a Stairwell?

What tool can you use to create a Stairwell automatically?

In what kind of view can you check the headroom of a staircase?

What tools are used to create a stacked staircase?

Why is it sometimes helpful to turn off layers as you work?

Chapter 5:

Doors and Windows

Windows and doors are placed directly into walls and can be customized to reflect a wide variety of architectural styles.

Learning Objectives

This lesson describes best practices in Chief Architect for placing and customizing doors and windows. Concepts introduced include:

- File Management
- Setting the Defaults
- Placing Doors
- Editing Doors
- Using Library Content
- Placing and Editing Windows
- Positioning Doors and Windows
- Replicating Doors and Windows

File Management

This tutorial continues where the Interior Stairs tutorial left off. At this point, both the Chic Cottage-Stairs and CHIC COTTAGE-CURRENT plans contain the same information, so you

could open either one and continue working. However, Chic Cottage-Stairs.plan was created specifically to serve as a revision or archive file so it will be left unchanged.

To continue working on the Chic Cottage project, select **File> Open Plan** . If need be, browse to Documents\Chic Cottage, select CHIC COTTAGE-CURRENT, and click Open.

Alternatively, select **File> Recent Files** and choose CHIC COTTAGE-CURRENT from the Recent Files List. The Recent Files List is a convenient way to access files you have been working on; however, it is not an alternative to knowing where your files are located and having a good file revision strategy in place. See “File Management” on page 18.

It is a very good idea to save your files often as you work, and this guide reminds you to do so regularly.

Productivity Tips

As you learn how to add doors and windows to a plan, keep in mind these tips to improve your productivity.

Drawing and Editing

- The **Hinged Door** and **Sliding Door** tools will create either an exterior or interior door, depending on where it is placed. See “Interior vs Exterior Doors” on page 532 of the Reference Manual.
- The **Center Object** edit tool allows you to center doors, windows, and other objects relative to a room or another object. See “Using Center Object” on page 256 of the Reference Manual.
- The **Transform/Replicate Object** edit tool lets you replicate objects like windows at regular intervals. See “Using Transform/Replicate Object” on page 266 of the Reference Manual.

Content

- A selection of name brand door and window catalogs are available for download from the 3D Library. Select **Library> Get Additional Content Online** to launch your default web browser to that page.
- Set up the door and window defaults in your template plans so they are ready for use when you begin a new plan. See “Template Files” on page 97 of the Reference Manual.

Interface

- The Select Library Object dialog is a modal version of the Library Browser that lets you assign accents like hardware and moldings to objects like doors and windows.

- The Select Material dialog is similar to the Select Library Object dialog and lets you assign materials to objects.

Keyboard Hotkeys

- F1 - Help for the current context
- Ctrl + E - Open Object edit tool
- Ctrl + C - Concentric Resize
- Ctrl + S - Save

Setting the Defaults

In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. Setting defaults early can improve efficiency and also helps to avoid introducing errors into the drawing. When placing doors and windows, there are several defaults that should be borne in mind.

Each Door Tool has at least one defaults dialog. Before placing doors, all of them should be set up to meet your needs. See “To set the Door Defaults” on page 102.

Hinged and Sliding Doors are commonly used as both interior and exterior doors. As such, they have two sets of defaults: Interior and Exterior. For more information, see “Interior vs Exterior Doors” on page 532 of the Reference Manual.

Doors and many of their components - including hardware and casing - are represented using symbols from the library. See “Using Library Content” on page 107.

To make sure that all doors use the same default materials, regardless of which Door Tool is used to create them or whether the door is placed directly from the library, specify the desired materials in the Material Defaults dialog. See “Material Defaults Dialog” on page 1013 of the Reference Manual.

Window Defaults determine the initial window size, type, and more. See “To set Window Defaults” on page 111.

In order to position doors and windows in a manner that meets your needs, Dimension Defaults should be set. For more information, see “To set Dimension Defaults” on page 115.

As doors and windows are added, Auto Exterior Dimensions can be set to automatically refresh so that they locate these objects as they are added.

To set Auto Exterior Dimension Defaults

1. Select **Edit> Default Settings** , click the arrow next to "Dimension" to expand the category, then select "Auto Exterior Dimensions" and click the **Edit** button.

2. On the GENERAL panel of the **Auto Exterior Dimension Defaults** dialog, check **Auto Refresh Dimensions**.
3. On the LOCATE OBJECTS panel, notice that there are four options for locating **Openings**: **Casing**, **Centers**, **Rough Opening**, and **Sides**. Sides is selected by default and refers to the outside of the window frame. Leave it selected and click OK.

Placing Doors

The six Door Tools can be used to place a variety of different doors in interior and exterior walls. For more information, see “Doors” on page 531 of the Reference Manual.

Each Door Tool has at least one defaults dialog. Here, the Interior Door Defaults dialog is examined; however, you should make sure all Door Defaults meet your needs.

To set the Door Defaults

1. Select **Edit> Default Settings** , click the arrow next to "Door" in the tree list to expand the category.
2. Notice that there is a defaults dialog for each of the Door Tools.
3. Select "Interior Door" from the tree list and click the **Edit** button.
4. In the **Interior Door Defaults** dialog:
5. On the GENERAL panel, notice that the **Door Style** is "Door P04" and that it is shown in the object preview on the right. "Door P04" is a panel door available in the library. For more information, see “To choose a door style from the library” on page 108.
6. On the CASING panel, note that when no **Casing Profile** is specified, a basic stock profile is used. For information about changing the casing, see “To specify a door’s casing” on page 108.
7. Additional options such as hardware and millwork can also be specified, as well. See “Using Library Content” on page 107.
8. Click OK to return to the **Default Settings** dialog. You can examine each of the Door Defaults dialogs if you wish, and click Done when you are finished.

To add hinged doors

1. Select **Build> Door> Hinged Door** , then move the mouse pointer over the exterior wall of the Foyer room.
2. When the mouse pointer is over the exterior wall:
   - Click the mouse button and hold it down.
   - Move the mouse along the wall to change the hinge side of the door to be placed.
   - Move the mouse from one side of the wall to the other to change which way it opens.

- As you move the mouse, the door preview outline will update.

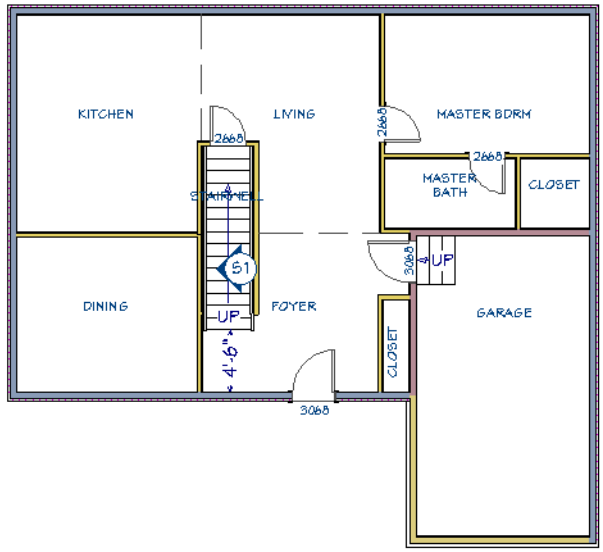
3. When the door preview's hinges are on the right side and it is opening inward, release the mouse button to create an exterior hinged door.

4. Select the new door, click the **Open Object** edit button, and note that:
   - The dialog's title is **Exterior Door Specification**.
   - The door style features three lites and a craftsman style dentil detail.
   - Move your mouse pointer into the object preview pane, then click and drag to rotate the preview. Notice that the door has an Exterior and Interior side.
   - Click Cancel.

5. Place a **Hinged Door** in the wall separating the Master Bedroom from the Closet.

6. Select this new door and click the **Open Object** edit button. Notice:
   - The **Interior Door Specification** dialog opens this time.
   - The preview shows an interior panel door rather than an exterior craftsman style door.
   - Click Cancel.

7. Place three additional hinged doors as shown here:



To add a sliding door

1. **Zoom** in on the back exterior wall of the Kitchen.

2. Select **Build> Door> Sliding Door** and move the mouse pointer over the wall.

3. When the mouse pointer is over the wall:

- Click the mouse button and hold it down.
- Move the mouse from left to right to change which side of the door is moveable.
- As you move the mouse, the door preview outline will update.

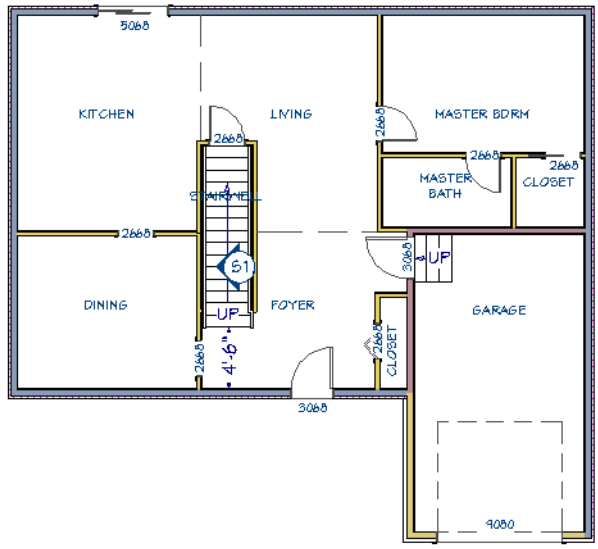
4. When the door preview's hinges are on the right side and it is opening inward, release the mouse button to create an exterior sliding door.

5. Select the new door and click the **Open Object** edit button. Note that this dialog's title is **Exterior Door Specification**, then click Cancel.

A variety of other door types can be placed, as well.

To add other types of doors

1. Select **Window> Fill Window** .
2. Select **Build> Door> Doorway** and click on the wall separating the Foyer from the Dining room.
3. Select **Build> Door> Bifold Door** , then move the mouse pointer over the wall separating the Foyer from the Closet.
4. When the mouse pointer is over the wall:
   - Click the mouse button and hold it down.
   - Move the mouse up and down along the wall to change the hinge side of the door that will be placed.
   - Move the mouse button side to side, perpendicular to the wall, to change the direction that the door opens.
   - As you move the mouse, the door preview outline will update.
5. When the door preview's opens toward the Foyer, release the mouse button to create a single bi-fold door.
6. Select **Build> Door> Pocket Door** , then move the mouse pointer over the wall separating the Master Bedroom from its Closet.
7. When the mouse pointer is over the right side of the wall, near the vertical exterior wall:
   - Click the mouse button and hold it down.
   - Move the mouse to the left to change the side of the door that slides into the wall.
   - As you move the mouse, the door preview outline will update.
8. When the door preview's opens toward the Master Bath, release the mouse button to create a pocket door.
9. Select **Build> Door> Garage Door** , then click on the front wall of the Garage to place a garage door at that location. Garage doors do not have hinge sides and always open in the same direction.



10. When you are finished, remember to **Save** your work.

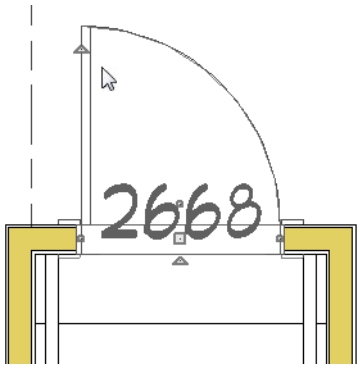
Editing Doors

Once a door has been placed, it can be selected and edited. For more information, see “Editing Doors” on page 537 of the Reference Manual.

A door’s hinge and swing side can be set when it is created, but it can also be changed at any time. See “Changing Door Swings” on page 539 of the Reference Manual.

To change the door swing

1. **Zoom** in on the door located at the top end of the staircase.
2. Click the **Change Opening/Hinge Side** edit button and notice that the side of the door that the hinges are on changes.
3. Click the **Change Swing Side** edit button and notice that the door now opens into the Stairwell rather than into the Living room.
4. With the door still selected, notice the triangular edit handle located near the far end of the door swing arch.



5. Click and drag this handle and notice:
   - The mouse pointer icon changes to a curved Rotate icon.
   - Drag along the arch to control how far open the door appears.
   - Drag a line parallel to the wall to change the door's hinge side.
   - Drag a line perpendicular to the wall to change the door's swing side.
6. When the door's hinges are on the left and it opens out into the Living room, release the mouse button.

A door's edit handles can also be used to change its size. It can also be resized using dimensions as well as in the Door Specification dialog. See "Editing Doors" on page 537.

To change a door's size

1. Click the **Select Objects** button, then click on the Bifold closet door in the Foyer to select it.
2. Click and drag the resize edit handles at each end to make the door wider. To resize the door concentrically, hold down the C key while dragging an end edit handle. See "Concentric" on page 210 of the Reference Manual.
3. With the door still selected, click the **Open Object** edit button. On the GENERAL panel of the **Interior Door Specification** dialog, specify the **Width** as 60" and click OK.

To change a glass door's lites

1. Select the Sliding door in the Kitchen and click the **Open Object** edit button.
2. On the LITES panel of the **Exterior Door Specification** dialog, set the **Lites Across** to 3 and **Lites Vertical** to 5, then click OK.
3. Don't forget to **Save** your work.

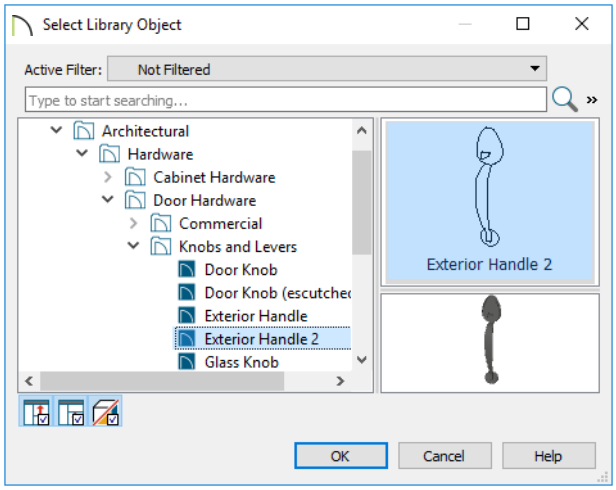
Using Library Content

Doors provide an excellent example of how the content in the Library Browser can be used to customize and enhance your designs. There are a variety of different objects that can be assigned to a door, including hardware, casing, a door style, and materials. See “Inserted Objects” on page 940 of the Reference Manual.

The Select Library Objects dialog is a modal version of the Library Browser that allows you to assign library items to a selected object. It only lists items in the library that can be used for the task at hand, making it easy to browse for relevant objects.

To specify door hardware

1. Select the exterior door in the Foyer and click the **Open Object** edit button.
2. On the HARDWARE panel of the **Exterior Door Specification** dialog, select "Library" from the **Exterior Handle** drop-down list, or click the **Library** button to its right.
3. In the **Select Library Object** dialog:

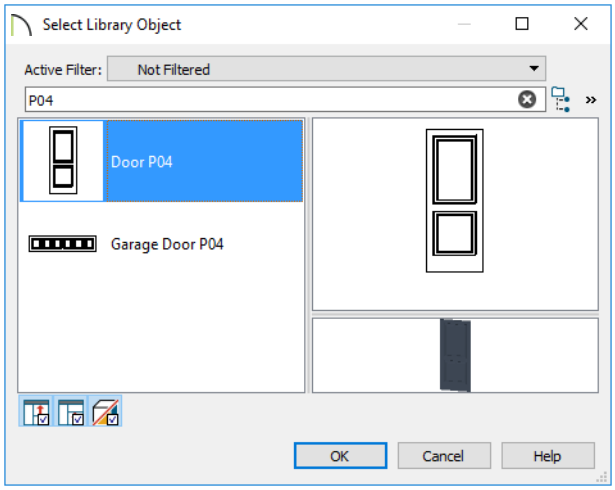


   - Browse to Chief Architect Core Catalogs> Architectural> Hardware> Door Hardware> Knobs and Levers.
   - Open the Knobs and Levers folder, select the Exterior Handle 2, and click OK.
4. Repeat this process to open the Locks folder and choose the Dead Bolt (interior) symbol as the **Interior Lock**.
5. Repeat this process once more to select the Dead Bolt (exterior) symbol as the **Exterior Lock**. then click OK to close the dialog and apply your changes.

The Select Library Object dialog also has a Search function, which lets you find a specific object quickly: for example, the P04 door style which is the default for interior hinged doors.

To choose a door style from the library

1. Click on the hinged door between the Foyer and the Garage to select it.
   - If the stairs or wall becomes selected instead, click the **Select Next Object** edit button until the door becomes the selected object.
2. When the door is selected, click the **Open Object** edit button.
3. On the GENERAL panel of the **Exterior Door Specification** dialog:
   - Notice that this Hinged Door is using the same Craftsman style door as the front door.
   - Click the **Library** button to the right of the **Style** drop-down list.
4. In the **Select Library Object** dialog,



   - Type P04 in the Search field and notice that the search results appear below.
   - Select Door P04 and click OK to return to the specification dialog.

For best results, door and window casing should be set in the Defaults dialogs prior to placing any doors or windows.

To specify a door's casing

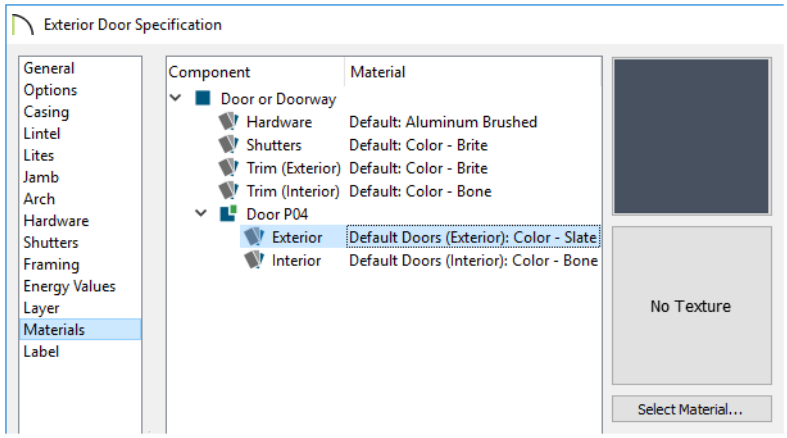
1. With the specification dialog for the door between the Foyer and Garage still open:
2. On the CASING panel, change the Exterior Casing dimensions to match the Interior Casing.

3. Click the **Exterior Casing Profile Library** button and browse to Chief Architect Core Catalogs> Architectural> Moldings> Casing to find a selection of door and window casing profiles. Select one and click OK.
4. Click the **Clear** button to restore the default stock profile.

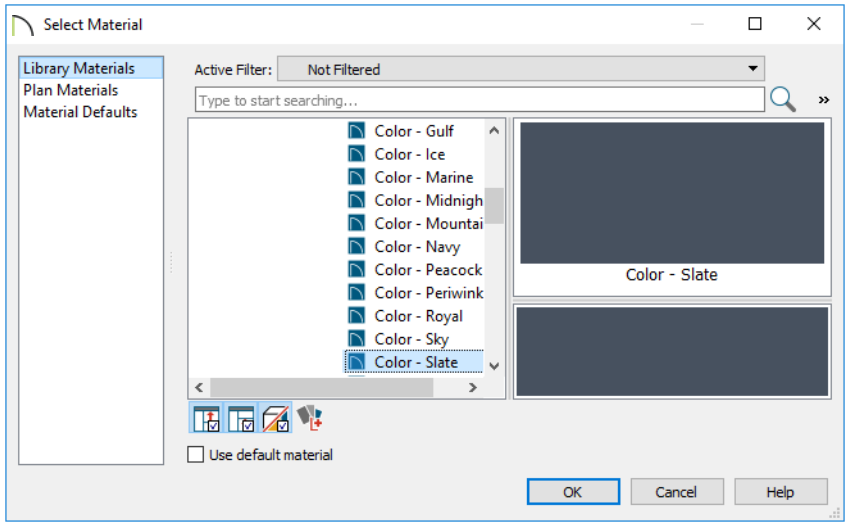
Materials can also be assigned to objects from the library. The Select Material dialog is similar to the Select Library Object dialog but has additional options.

To choose a material from the library

1. With the specification dialog for the door between the Foyer and Garage still open, go to the MATERIALS panel.
2. In the tree list on the left, click on the "Exterior" component of Door P04 to select it.

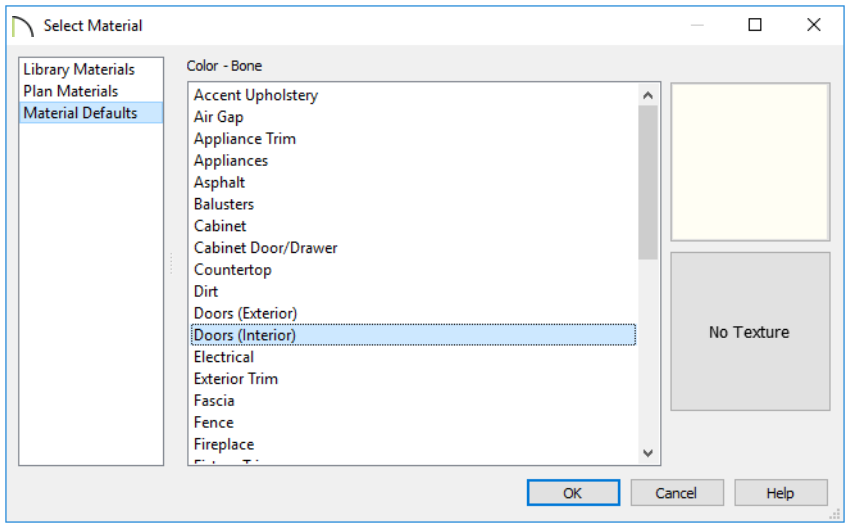


   - Notice that it has the same Slate blue color as the Craftsman style front door and that the material is described as "Default Doors (Exterior)".
   - The Interior component, on the other hand, has a Bone white color and is described as "Default Doors (Interior)".
   - Click the **Select Material** button.
3. The **Select Material** dialog has three panels:



- The LIBRARY MATERIALS panel allows you to select from any material from the library. By default, the dialog opens with this panel active and the currently selected material shown selected in the library tree list.
- The PLAN MATERIALS panel allows you to select from a list of materials associated with the current plan.
- The MATERIAL DEFAULTS panel allows you to select a material defined as a default for a particular purpose.
- Color - Bone can be found on all three of these panels.

4. Select the MATERIAL DEFAULTS panel, select "Doors (Interior)" from the list, note that the specified material is "Color - Bone", and click OK.



5. When you are finished, remember to **Save** your work.

Placing and Editing Windows

Like doors, windows are designed to be placed into walls and are highly editable. For more information, see “Windows” on page 561 of the Reference Manual.

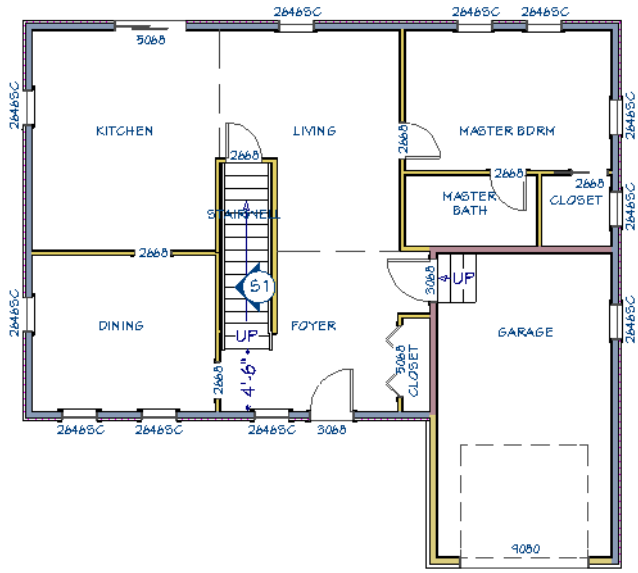
To set Window Defaults

1. Select **Edit> Default Settings**, select "Window" from the tree list, and click the **Edit** button.
2. On the GENERAL panel of the Window Defaults dialog:
   - Specify the **Window Type** as "Single Casement".
   - Specify the **Width** as 30".
   - Specify the **Height** as 54".
3. On the LITES panel, specify the **Lites Across** as 3 and **Lites Vertical** as 4, then click OK.
4. Click the **Done** button to exit out of the **Default Settings** dialog.
5. **Save** your changes.

To place a window

1. Select **Build> Window> Window**.

2. Click on the exterior wall of the Foyer, to the right of the wall, to place a window at that location.
3. Continue clicking to place a total of 11 windows:



To edit a window

1. Select the window in the Foyer and click the **Open Object** edit button.
2. On the GENERAL panel of the **Window Specification** dialog:
   - Select "Fixed Glass" from the **Window Type** drop-down list.
   - Specify the **Width** as 12" and the **Height** as 77".
3. On the LITES panel, specify the **Lites Across** as 1 and **Lites Vertical** as 5, then click OK.
4. Select the window in the kitchen and click the **Open Object** edit button.
5. On the GENERAL panel of the **Window Specification** dialog:
   - Specify the **Height** as 36".
   - Note that the **Floor to Bottom** height increases to 44".
6. On the LITES panel, specify the **Lites Vertical** as 3, then click OK.
7. Select the window in the Garage and open its specification dialog. On the GENERAL panel:
   - Change the **Window Type** to "Fixed Glass".
   - Change the **Height** to 48".
   - Select "Absolute" as the **Elevation Reference**, then specify the **Elevation at Top** as 80" so its height matches that of the other windows and doors.

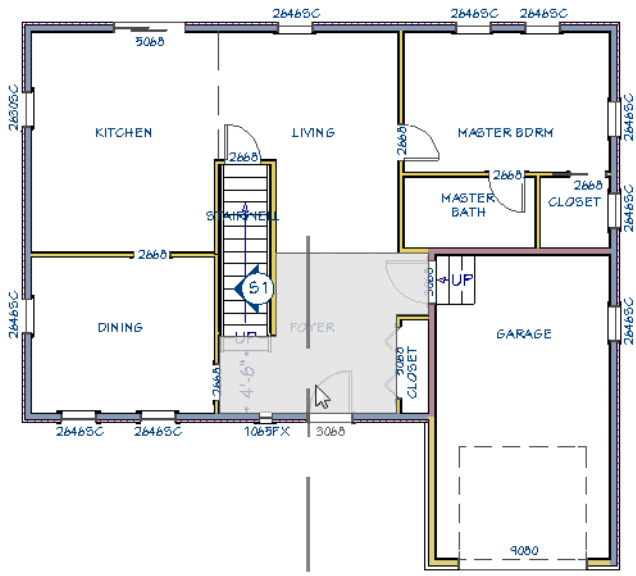
8. On the LITES panel, change the number of **Lites Vertical** to 3, then click OK.
9. When you are finished, remember to **Save** your work.

Positioning Doors and Windows

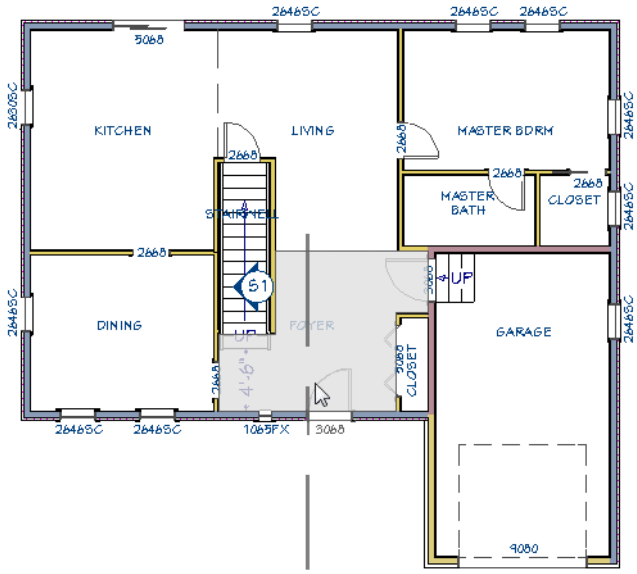
There are a number of ways to move doors and windows: using their edit handles, various edit tools, as well as dimensions.

To center a wall opening

1. Select the front exterior door in the Foyer and click the **Center Object** edit button.
2. Move the mouse pointer into the Foyer, near the wall that the window is located in.

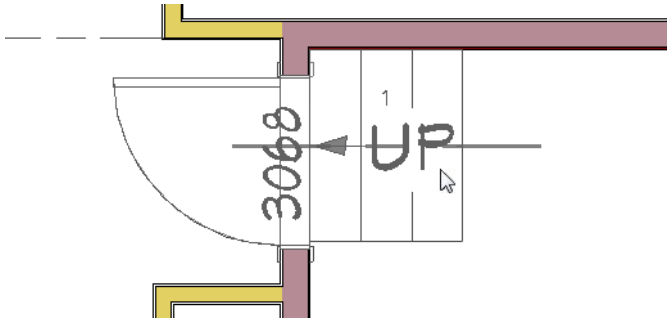


3. Notice that the Foyer room becomes highlighted and a dashed vertical centering axis displays at the midpoint of the exterior wall.
4. Now move the mouse pointer up to the invisible Room Divider separating the Foyer from the Living area.



5. When a dashed vertical centering axis displays at the midpoint of the Room Divider, click once. The door becomes aligned with the center of the Room Divider.

6. **Zoom** in on the Foyer, then select the door between the Foyer and Garage and click the **Center Object** edit button.



7. Move the mouse pointer over the Garage stairs, and when a horizontal centering axis displays down the middle of the stairs, click once.

8. Use the **Center Object** edit button to center:
   - The window in the Living room
   - The window in the Kitchen

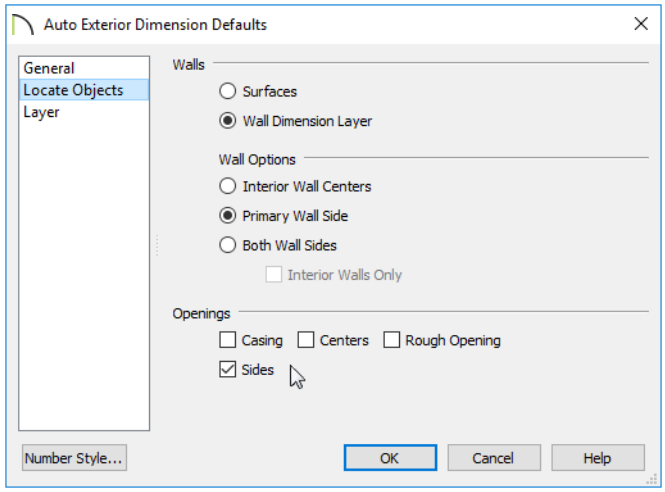
- The window on the left side of the Dining room
- The window on the left side of the Master Bedroom
- The window in the Master Bedroom Closet
- The Garage door.
- The Foyer Closet door

9. When you are finished, remember to **Save** your work.

It is a good idea to take a few moments to make sure that your various Dimension Defaults are set up so that they meet your needs and are consistent.

To set Dimension Defaults

1. Select **Edit> Default Settings** to open the **Default Settings** dialog and click the arrow next to "Dimension" in the tree list to expand the category.
   - Notice that there are a number of Dimension Defaults dialogs. How doors and windows are located can be specified in all but the two NKBA Defaults dialogs.
   - Select "Auto Exterior Dimensions" in the tree list and click the **Edit** button.
2. On the LOCATE OBJECTS panel of the **Auto Exterior Dimension Defaults** dialog, notice that there are several options for locating wall openings:



   - Select **Sides** to locate the sides of doors and windows, then click OK.
3. Next, select "Dimensions" in the tree list and click the **Edit** button. The **Saved Dimension Defaults** dialog opens.
   - Manually-drawn dimension lines have multiple Saved Defaults, which you can use to save considerable time when you annotate your drawings. See “Multiple Saved Defaults” on page 89 of the Reference Manual.

- Select 1/4" Scale Dimension Defaults and click the **Edit** button.

4. On the LOCATE OBJECTS panel of the **Dimension Defaults** dialog:
   - Note that there are numerous options for controlling many objects in addition to walls and wall openings.
   - Under the Openings heading, select **Sides** to locate the sides of doors and windows, then click OK.
5. Click Done to close the **Default Settings** dialog.

To position doors and windows using dimensions

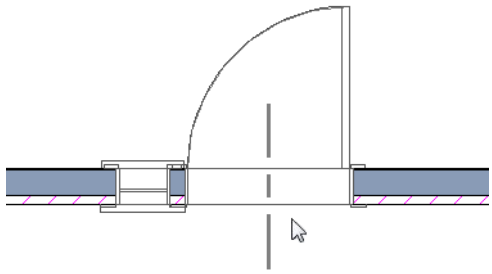
1. Select **CAD> Dimensions > Auto Exterior Dimensions** .
   - The **Auto Exterior Dimensions** tool creates a full set of dimensions around the entire perimeter of the structure and are indispensable for construction documents.
   - For the purposes of positioning a few windows, though, some manually drawn dimension lines will suffice.
2. Select **Edit> Undo** .
3. **Zoom** in on the exterior wall of the Dining room and Foyer.
4. Select **CAD> Dimensions> Manual Dimension** , then:
   - Click and drag to draw a dimension line between the two Dining room windows
   - Draw a dimension line between the Foyer window and front door, as well.
5. Click the **Select Objects** button, then adjust the positions of the foyer window:
   - Click on one of the Foyer window to select it.
   - Move your mouse pointer over the dimension line that states its distance from the front door and click once.
   - In the inline text field, type 4 and press the Enter key on the keyboard.
6. Repeat step 5 to position the Dining room windows 3’ 6" apart.
7. Center the two Dining room windows in the room:
   - With one of the windows still selected, hold down the Shift key and click on the other Dining room window to select the two as a group.
   - Use the **Center Objects** edit button to center both windows in the Dining room as described in To center a wall opening, above.
8. Repeat steps 4-7 to space the two windows in the back wall of the Master Bedroom 4" apart, then center them in the room.
9. When you are finished, remember to **Save** your work.

Replicating Doors and Windows

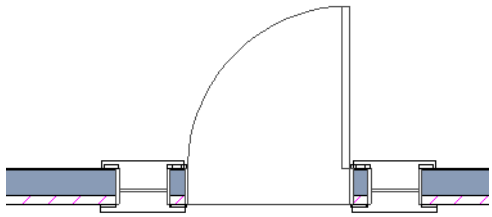
Like most objects, doors and windows can be copied and pasted. Here, reflected copies and copies at regular intervals are created. For more information, see “Copying and Pasting Objects” on page 176 of the Reference Manual.

To create a reflected copy of a window

1. Select the narrow window to the left of the front door in the Foyer.
2. Click the **Copy/Paste** edit button, then click the **Reflect About Object** edit button.

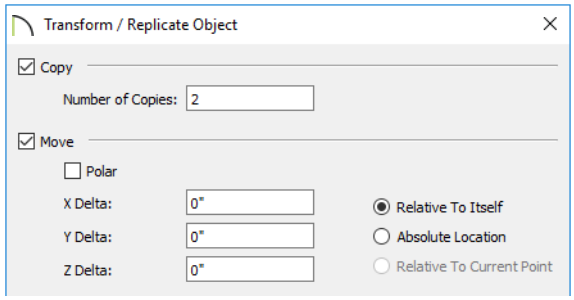


3. Move your mouse pointer over the front door. When you see a dashed vertical reflection axis, click once. A copy of the window is created on the other side of the door.



To copy windows at regular intervals

1. Select the window in the Kitchen and click the **Transform/Replicate Object** edit button.
2. In the **Transform/Replicate Object** dialog:

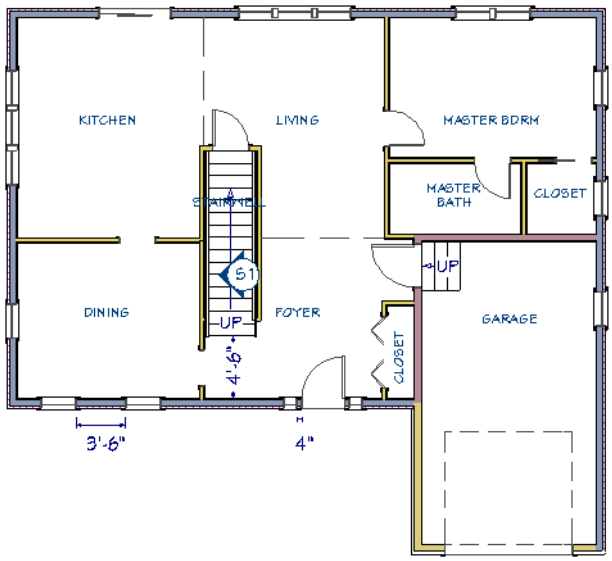


- Check the box beside **Copy** and change the **Number of Copies** to 2.
- Check the box beside **Move**, then specify the **Y Delta** value as -34".
- When you click OK, two copies of the window are created at 34" intervals along the same wall as the original.

3. With the two newly created windows selected, hold down the Shift key and click on the original window to add it to the selection set.

4. With all three windows selected, use the **Center Object** edit tool to center them in the Kitchen, as described above. See “To center a wall opening” on page 113.

5. Repeat these steps to create a grouping of three windows centered in the Living room.



6. When you have finished, **Save** your work.

Creating Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed.

When you are finished working on a file and are ready to close it, **Save** your work. Before closing it, though, create a copy of the file with a different name that indicates what it contains so you can distinguish it from other revisions.

To save a plan revision

1. Select **File**> **Save As** .
2. In the **Save Plan File** dialog, make sure that the save location is your Chic Cottage folder.
3. For the File name, type a the name of the project followed by a short description of the current state of the drawing; for example, Chic Cottage-Windows.

Review

This lesson describes the best practices for adding doors and windows to a design.

- To set the Door Defaults
- To add hinged doors
- To add a sliding door
- To add other types of doors
- To change the door swing
- To change a door's size
- To change a glass door's lites
- To specify door hardware
- To choose a door style from the library
- To specify a door's casing
- To choose a material from the library
- To set Window Defaults
- To place a window
- To edit a window
- To center a wall opening
- To set Dimension Defaults
- To position doors and windows using dimensions
- To create a reflected copy of a window
- To copy windows at regular intervals

Assessment Questions

What are the different ways to specify or change the hinge side of a door? The swing side?

What are three examples of door and window attributes that are found in the Library?

What are the different ways to change the width of a door or window?

What tool can be used to create multiple windows at once?

What edit tools are useful for creating identical windows on either side of a door or window?

Where do you specify how Auto Exterior Dimensions locate doors and windows?

Chapter 6:

Decks and Porches

Deck and Porch rooms are Room Types with a number of special characteristics.

Learning Objectives

This lesson describes best practices in Chief Architect for creating Deck and Porch rooms. Concepts introduced include:

- Setting the Defaults
- Railings for Decks and Porches
- Creating Deck Rooms
- Creating Porch Rooms
- Drawing Deck Stairs
- Creating Concrete Stairs

File Management

This tutorial continues where the Doors and Windows tutorial left off. At this point, both the Chic Cottage-Windows and CHIC COTTAGE-CURRENT plans contain the same information, so you could open either one and continue working. However, Chic Cottage-Windows.plan was created specifically to serve as a revision or archive file so it will be left unchanged.

To continue working on the Chic Cottage project, select **File> Open Plan** . If need be, browse to Documents\Chic Cottage, select CHIC COTTAGE-CURRENT, and click Open.

Alternatively, select **File> Recent Files** and choose CHIC COTTAGE-CURRENT from the Recent Files List. The Recent Files List is a convenient way to access files you have been working on; however, it is not an alternative to knowing where your files are located and having a good file revision strategy in place. See "File Management" on page 18 of the Exterior Walls Tutorial.

It is a very good idea to save your files often as you work, and this guide reminds you to do so regularly.

Productivity Tips

As you learn how to create Deck and Porch rooms, keep in mind these tips to improve your productivity.

Drawing and Editing

- When Deck Railings define a room, the room is specified as a Deck automatically.
- Deck posts and beams generate automatically on the floor below the Deck room.
- Stairs placed outside of a room will draw in a downward direction and seek the terrain.
- The Center Object edit tool can be used to center a selected object relative to another object.

Content

- Create template plans that have the Deck and Porch Room Type Defaults set the way you want them, ready for use when you begin a new plan. See “Template Files” on page 97 of the Reference Manual.
- A selection of name brand deck planking catalogs are available for download in the "Materials and Surfaces" category of the 3D Library. Select **Library> Get Additional Content Online** to launch your default web browser to that page.

Interface

- Object Snaps can be helpful when positioning one object relative to another. See “Object Snaps” on page 168 of the Reference Manual.
- Temporary Dimensions display when an object like a wall is selected and can be used to move that object. See “Temporary Dimensions” on page 468 of the Reference Manual.
- Multiple line items in a list, as well as multiple objects, can be group-selected using the Shift and Ctrl keys. See “Shift and Ctrl Select” on page 216 of the Reference Manual.

Keyboard Hotkeys

- F1 - Help for the current context
- F6 - Fill Window
- Ctrl + W - Close View
- Ctrl + S - Save

Setting the Defaults

In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. Setting defaults early can improve efficiency and also helps to avoid introducing errors into the drawing. When creating Deck and Porch rooms, there are several defaults that should be borne in mind.

Before drawing the railings that define Deck rooms, the Deck Railing Defaults should be set. See “To set the Deck Railing Defaults” on page 123.

Similarly, the defaults for Half Walls, which will be used here to define a Porch, can be set in advance. See “To set the Half Wall Defaults” on page 125.

Structural characteristics of Deck and Porch rooms should be set before Deck and Porch rooms are created. See “To set Deck Room Defaults” on page 125 and “To set Porch Room Defaults” on page 128.

Before drawing stairs on the exterior of the structure, it is a good idea to set the Exterior Stair Defaults. See “To set the Exterior Stair Defaults” on page 133.

Railings for Decks and Porches

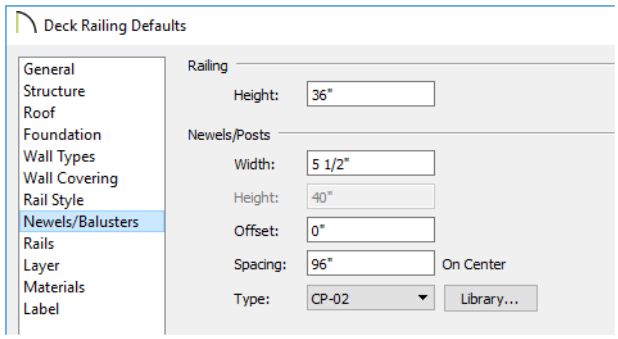
Railings are typically used to define Deck and Porch rooms. There are two types: regular Railings and Deck Railings. Railings For more information, see “Railing and Deck Tools” on page 346 of the Reference Manual.

Deck Railings use a single layer wall type so there is no siding material on the sides of deck platforms.

To set the Deck Railing Defaults

1. Select **Edit> Default Settings** . In the **Default Settings** dialog, click the arrow next to "Walls" in the tree list to expand the category.
2. Select "Deck Railing Defaults" and click the **Edit** button to open the **Deck Railing Defaults** dialog.

3. On the WALL TYPES panel, note that the default **Wall Type** is "Deck Railing/Fence" and click the **Define** button.
4. In the **Wall Type Definitions** dialog:
   - Notice that the "Deck Railing/Fence" wall type is composed of a single 3 1/2" layer of framing.
   - In the **Wall Layers** table, click in the **Thickness** field, then type 5 1/2".
   - Click OK to return to the **Deck Railing Defaults** dialog.
5. On the RAIL STYLE panel, check **Post to Beam**.
6. On the NEWELS/BALUSTERS panel:



   - Select a **Newels/Posts Type** from the **Library**. Here, the capped post "CP-02" is used.
   - Specify the **Newels/Posts Width** as 5 1/2".
7. On the MATERIALS panel:
   - Select the "Balusters" component, then hold down the Ctrl key and click on the "Beam", "Rail", and "Newel" component to add them to the selection.
   - Click the **Select Material** button and select "Color - Brite" from the LIBRARY MATERIALS panel of the **Select Material** dialog.
8. Click OK to close the dialog and apply your changes.

Unlike Deck Railings, regular Railings are intended to define rooms with enclosed floor platforms. In the Interior Stairs tutorial, interior railings with newels and balusters are generated by the Auto Stairwell edit tool. See "To create an automatic stairwell" on page 85 of the Interior Stairs Tutorial.

To set the Railing Defaults

1. With the **Default Settings** dialog still open, select "Railing Defaults" and click the **Edit** button to open the **Railing Defaults** dialog.
2. On the WALL TYPES panel, note that the default **Wall Type** is "Interior Railing" and click the **Define** button.

3. In the **Wall Type Definitions** dialog, notice that the "Interior Railing" wall type is composed of three layers: a 3 1/2" framing layer surrounded by two layers of 1/2" drywall.
4. Click **Cancel** to return to the **Default Settings** dialog.

Like other types of Railings, Half Walls can also be drawn to define exterior rooms like Porches.

To set the Half Wall Defaults

1. With the **Default Settings** dialog still open, select "Half Wall Defaults" and click the **Edit** button to open the **Half Wall Defaults** dialog.
2. On the WALL TYPES panel, note that the default **Wall Type** is "Interior-4" - the same wall type used for interior walls. See "Drawing Interior Walls" on page 43 of the Interior Walls Tutorial.
3. Select "Siding-6" from the **Wall Type** drop-down list.
4. Check the box beside **Pony Wall** and notice:
   - The **Lower Wall Type** is "Stone-6", the same as that set in the **Pony Wall Defaults** dialog.
   - The **Elevation of Lower Wall Top** is 20", also inherited from **Pony Wall Defaults**. See "To specify the Default Pony Wall" on page 25 of the Exterior Walls Tutorial.
5. Click **OK** to close the **Half Wall Defaults** dialog, then click **Done** to close the **Default Settings** dialog.
6. Remember to **Save** your work.

Creating Deck Rooms

Decks are exterior rooms that are defined by the deck railings and exterior walls that enclose them. For more information, see “Room Types and Functions” on page 414 of the Reference Manual.

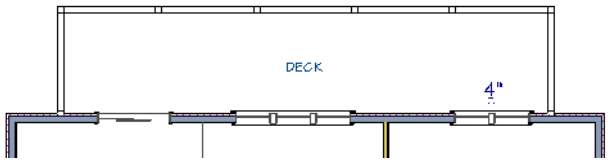
To set Deck Room Defaults

1. Select **Edit> Default Settings**, and in the **Default Settings** dialog:
   - Click the arrow beside "Floors and Rooms" to expand the category.
   - Select "Room Types" and click the **Edit** button.
2. In the **Room Types** dialog, scroll down the list, select "Deck", and click the **Edit** button.
3. On the STRUCTURE panel of the **Deck Room Type Defaults** dialog:
   - Notice that the **Default** check box to the right of the **Floor Finish Edit** button is unchecked and that its total thickness is 0".
   - Click the **Planks/Joists Edit** button.

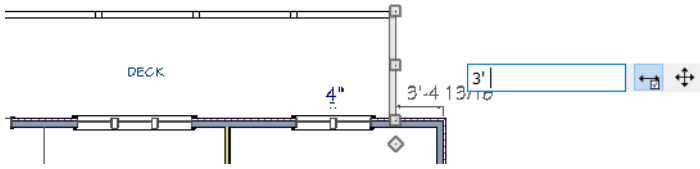
4. In the **Floor Structure Definition** dialog, change the **Thickness** of Layer 1 to 1" and click OK.
5. On the DECK panel of the **Deck Room Defaults** dialog, change the **Plank Width** to 5 1/4" and the **Plank Gap Width** to 1/4".
6. On the DECK SUPPORT panel:
   - Notice that the **Deck Post Footings** have a **Height Above Terrain** setting with a value of 6".
   - Specify the **Deck Post Footings Thickness** as 30". This value is the footings total height, measured from top to bottom.
7. Click OK and then Done to close all dialogs.

To draw a deck

1. Go to Floor 1, then **Zoom** out so the back exterior wall can be seen.
2. Select **Build> Railing and Deck> Straight Deck Railing** .
3. Click and drag to draw three Deck Railings at the back of the structure.
   - The Status Bar at the bottom of the program window will state a wall's length and angle as it is being drawn.
   - Notice that when a room is created using **Deck Railing** , the room is automatically specified as a Deck and given a room label.



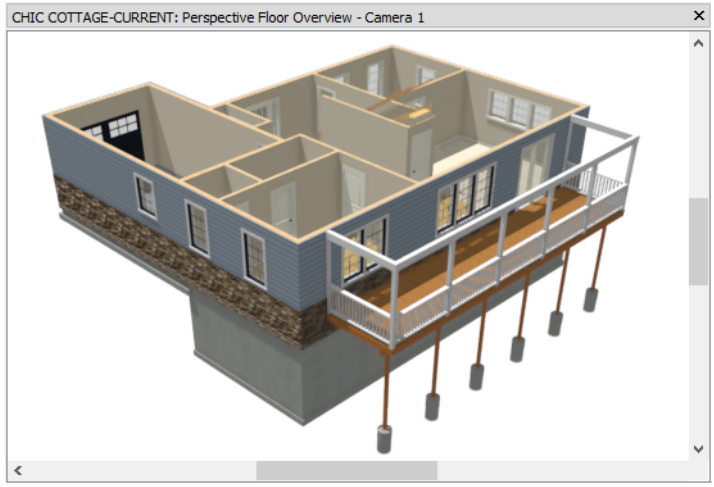
4. Select **CAD> Dimensions> Manual Dimension** , then click and drag a horizontal dimension line between the back right corner of the house and the vertical deck railing on the right.
5. Click the **Select Objects** button, then click on the right vertical deck railing to select it.



- Click on the Manual Dimension that reports the selected railing's distance from the corner of the house.
- Type 3' in the inline text field and press the Enter key.

6. Select the left vertical deck railing, then click on the Temporary Dimension that reports its distance from the right deck railing. In the inline text field, type 36' and press Enter.
7. Select the horizontal deck railing, then click on the Temporary Dimension that reports its distance from the exterior wall of the house. Type 8' in the inline text field and press Enter.
8. Click in the Deck room to select it, then click the **Open Object** edit button to open the **Room Specification** dialog. On the STRUCTURE panel, note that by default, **Roof Over This Room** and **Ceiling Over This Room** are unchecked, then click Cancel.
9. Select **3D> Create Perspective View> Perspective Floor Overview** ,

   - Click and drag using the **Mouse-Orbit Camera** tool until the Deck room can be seen.
   - Notice that the program automatically generates planking, joists, beams, and posts with footings.
   - Note, too, that the post footings are located at the same height as the foundation wall footings because there is no terrain present.



10. Select **File> Close View** to return to floor plan view and remember to **Save** your work.

Creating Porch Rooms

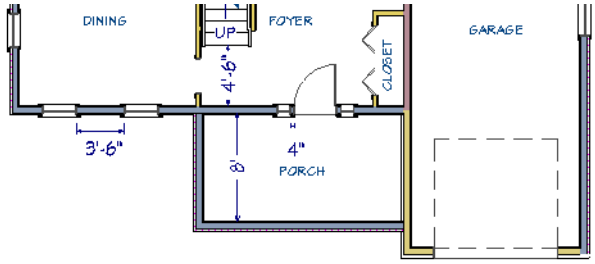
Porches are another special room type with characteristics of both interior and exterior rooms.

To set Porch Room Defaults

1. Select **Edit> Default Settings**, and in the **Default Settings** dialog:
   - Click the arrow beside "Floors and Rooms" to expand the category.
   - Select "Room Types" and click the **Edit** button.
2. In the **Room Types** dialog, scroll down the list, select "Porch", and click the **Edit** button.
3. On the STRUCTURE panel of the **Porch Room Type Defaults** dialog, click the **Floor Structure Edit** button and note that the floor is constructed of 4" of concrete.
4. Click **Cancel** to close all three dialogs.

To create a porch

1. On Floor 1, **Zoom** out so the front exterior wall can be seen.
2. Select **Build> Wall> Straight Half Wall**, then click and drag to draw two half walls enclosing the area outside of the front door.
3. Draw an Interior Dimension from the front horizontal wall to the back of the Porch, then position the front wall 8’ from the back wall.
4. Select the left vertical wall and drag its Move edit handle to align it with the interior wall separating the Dining room and Foyer.



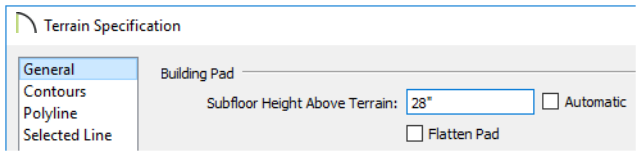
5. Click the **Select Objects** button, then click in the newly created room to select it.
6. Click the **Open Object** edit button, and in the **Room Specification** dialog:
7. On the GENERAL panel, select "Porch" from the Room Type drop-down list.
8. On the STRUCTURE panel, notice that unlike Decks, Porch rooms have **Roof** and **Ceiling Over This Room** checked.
9. Click OK, and then **Save** your work.

Creating Porch and Deck Supports

Because porch stem walls and deck post footings are measured relative to grade, now is a good time to add terrain to the plan. The terrain should always be drawn on either Floor 0 or 1. For more information, see “Terrain” on page 1199 of the Reference Manual.

To create a terrain perimeter

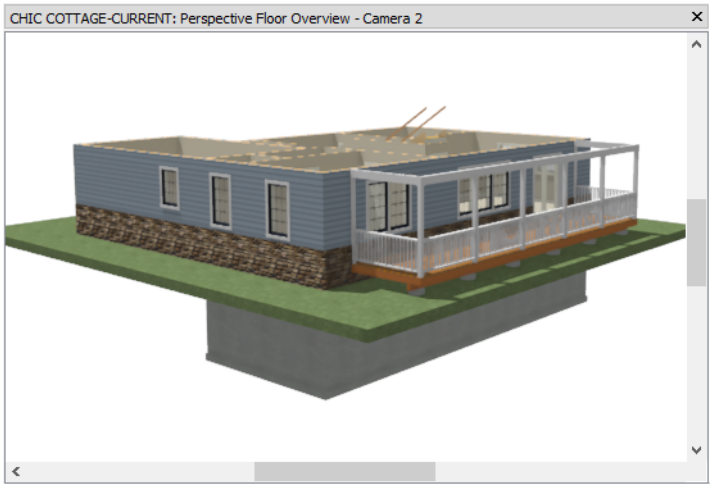
1. Go **Up One Floor** to Floor 1.
2. Select **Terrain> Create Terrain Perimeter**.
3. Select **Window> Fill Window** so that the Terrain Perimeter can be seen.
4. Select **Terrain> Terrain Specification** and on the GENERAL panel of the **Terrain Specification** dialog:



   - Under the Building Pad heading, uncheck **Automatic**.
   - Specify the **Subfloor Height Above Terrain** as 28", then click OK.
   - This will place the terrain 28" below the first floor’s subfloor and about 1" below the slab floor in the Garage.
5. Click the **Select Objects** button, then click on the Terrain Perimeter to select it.
6. Use Temporary Dimensions to make the Terrain Perimeter polyline smaller:
   - Select the top horizontal edge, then click on the Temporary Dimension that reports its distance from the bottom edge.
   - Click in the inline text field and type 60’, then press the Enter key.
7. Use the **Center Object** edit tool to center the terrain on the right side of the house:

- With the Terrain Perimeter still selected, click the **Center Object** edit button.
- Move the mouse pointer over the right side of the house, along or just outside the right vertical exterior wall.
- When you see a horizontal centering axis across the center of the wall, click once to center the terrain relative to the length of that wall.
- Here, the outline of the Exterior Room is highlighted, indicating that the terrain will be centered along its right edge.

8. Create a **Perspective Floor Overview** and **Orbit** the camera so the back Deck can be seen. Notice that the post footings now only extend down to the level of the terrain.

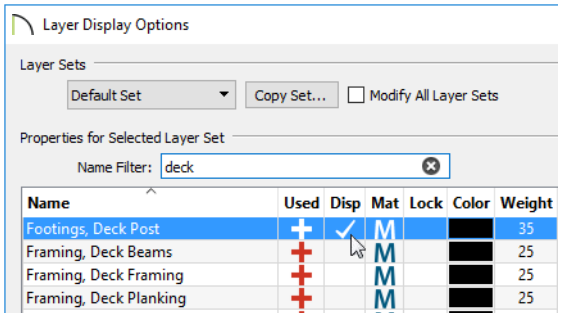


9. Select **File> Close View** to return to floor plan view.

The footings for deck posts are generated automatically and are set to display by default in most 3D views but not in floor plan view. See “Displaying Foundations” on page 693 of the Reference Manual.

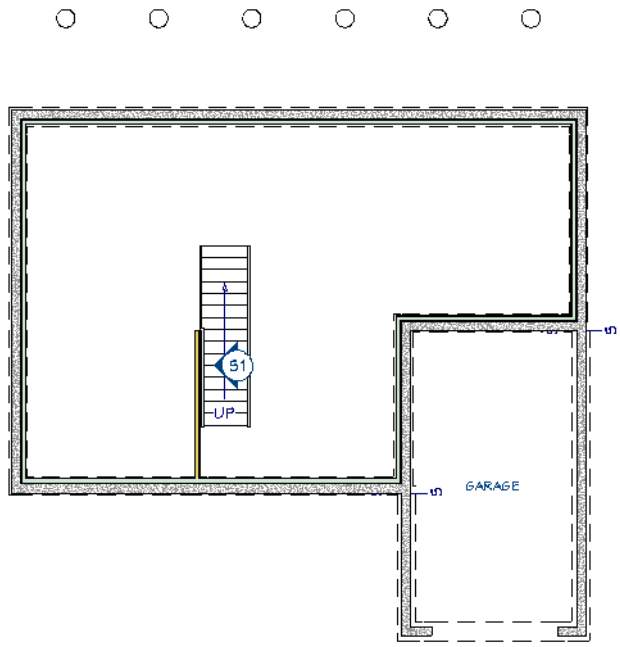
To turn on the display of objects

1. Go **Down One Floor** to Floor 0.
2. Select **Tools> Layer Settings> Display Options** .
3. In the **Layer Display Options** dialog:



- Type the word "deck" in the **Name Filter** field. As you type, the names of the layers listed in the table will be filtered in response.

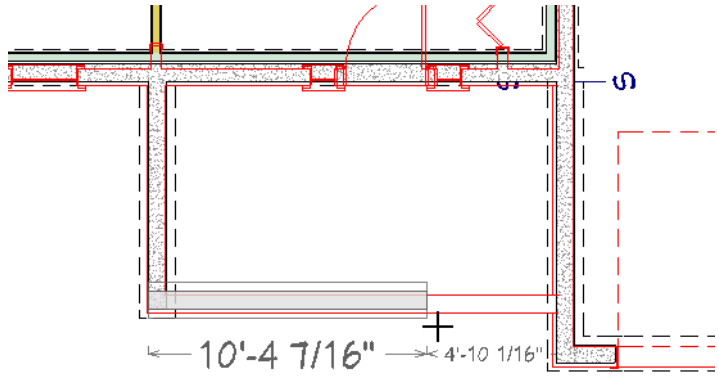
- Locate the "Footings, Deck Post" layer and click once in the "Disp" column to add a check mark.
- Click OK to close the dialog and turn on the "Footings, Deck Post" layer in floor plan view.



Porches have slab floors and do not typically receive foundations; however, this porch is raised off the terrain and will need stem walls to support it.

To draw porch stem walls

1. Select **Tools> Reference Floors> Reference Floor Display** .
2. Select **Build> Wall> Straight Foundation Wall** , then click and drag over the walls of the Porch visible in the Reference Display.



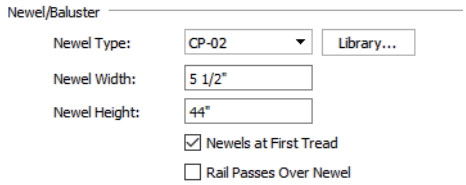
3. Select each new foundation wall and click the **Align with Wall Above** edit button to bring them two walls into alignment with the Porch walls above.
4. Click the **Select Objects** button, then click in the room defined by the porch stem walls to select it.
5. Click the **Open Object** edit button, and on the STRUCTURE panel of the **Room Specification** dialog:
   - Specify the **Stem Wall Height** as 37 1/2".
   - Uncheck **Floor Under this Room**.
   - Click OK to close the dialog and apply your changes.
6. When you are finished, select **Tools> Reference Floors> Reference Floor Display** to turn off the Reference Floor, and **Save** your work.

Drawing Deck Stairs

A set of stairs can now be drawn to connect the deck to the terrain. For more information, see “Stairs, Ramps, and Landings” on page 725 of the Reference Manual

To set the Exterior Stair Defaults

1. Select **Edit> Default Settings**. In the **Default Settings** dialog, click the arrow next to "Stairs and Ramps" in the tree list to expand the category.
2. Select "Exterior Stairs" and click the **Edit** button to open the **Exterior Stair Defaults** dialog.
3. On the NEWELS/BALUSTERS panel:

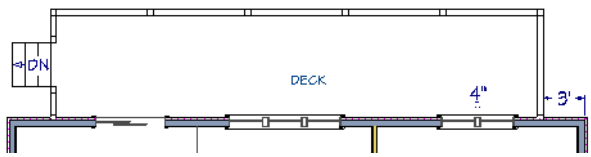


- Select the same **Newel Type** from the **Library** as used by the Deck Railing: capped post "CP-02".
- Specify the **Newel Width** as 5 1/2".
- Uncheck **Rail Passes Over Newel**.
- Specify the **Newel Height** as 44".

4. On the MATERIALS panel:
   - Assign the color "Brite" to the Baluster, Beam, and Main CP-02 newel components.
   - Assign "Pine (honey)" to the Tread component, then click OK.

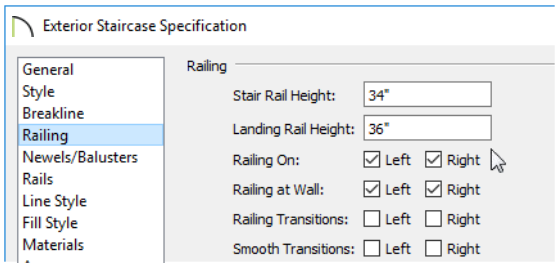
To draw deck stairs to the terrain

1. Go **Up One Floor** to Floor 1, then **Zoom** in on the left side of the Deck room.
2. Select **Build> Stairs> Straight Stairs**, then move the mouse just outside the vertical deck railing on the left side of the Deck room.
3. When Object Snaps are enabled, a Midpoint snap indicator will display when the pointer is over the Deck Railing's center point.
4. Click once to create a short stair section that spans the difference in height between the Deck and the terrain. Notice:

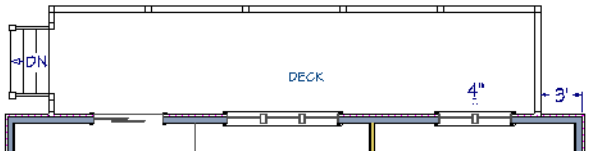


- Unlike interior stairs, which build up to the floor above and have an "UP" label, exterior stairs have a "DN" label.
- A **Doorway** opening is automatically added to the deck railing at the top of a staircase.

5. Select the stair section and click the **Open Object** edit button.
6. On the GENERAL panel of the **Staircase Specification** dialog, specify the **Width** as 5'.
7. On the RAILING panel, check the boxes beside **Railing On Left** and **Right**, then click OK.



8. Notice:



- The stair section resizes about its center line and remains centered along the railing.
- The doorway in the Deck Railing resizes automatically, as well.

9. **Save** your work.

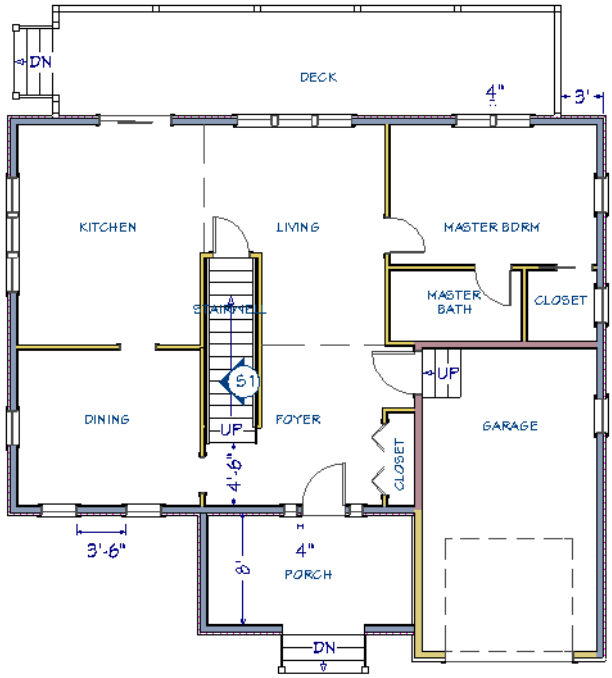
Creating Concrete Stairs

Stairs can be edited to represent various construction methods. See “Other Special Railings and Stairs” on page 747 of the Reference Manual for more information.

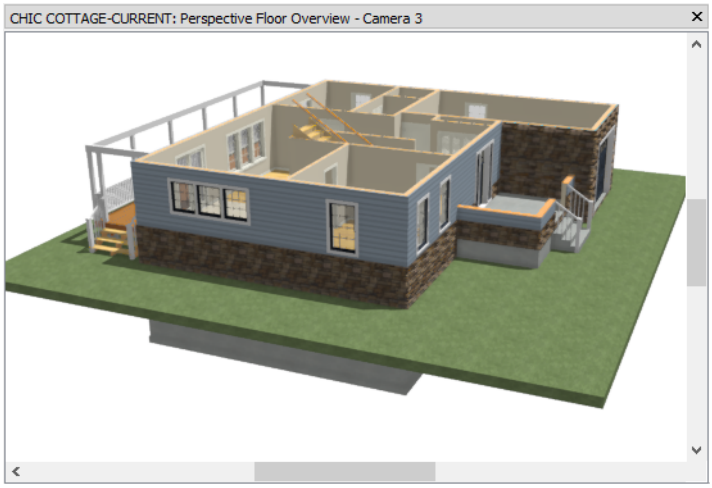
To create concrete porch stairs

1. In the floor plan view, select **Build> Stairs> Straight Stairs** .
2. Click just outside the front horizontal wall of the Porch room to place a stair section at that location.
3. Select the new stair section and center it relative to the front door:
   - Click the **Center Object** edit button.
   - Move the mouse pointer over the front door.
   - When you see a vertical centering axis across the center of the door, click once to center the stairs relative to the door. See “Using Center Object” on page 256 of the Reference Manual.
4. With the stairs still selected, click the **Open Object** edit button to open the **Exterior Staircase Specification** dialog.

5. On the GENERAL panel, specify the **Width** as 6’.
6. On the STYLE panel:
   - Uncheck **Open Underneath** and **Open Risers**.
   - Specify the **Tread Overhang** as 0".
7. On the RAILING panel, check the boxes beside **Railing On Left** and **Right**.
8. On the MATERIALS panel:
   - Select the "Riser/Trim" component, then hold down the Ctrl key and click on the "Support Wall" and "Tread" components to add them to the selection.
   - Click the **Select Material** button and select a "Concrete" material from the **Select Material** dialog.



9. You can see the results in a **Perspective Floor Overview**



10. When you are finished, close the camera view and **Save** your work.

Creating Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed.

When you are finished working on a file and are ready to close it, **Save** your work. Before closing it, though, create a copy of the file with a different name that indicates what it contains so you can distinguish it from other revisions.

To save a plan revision

1. Select **File**> **Save As** .
2. In the **Save Plan File** dialog, make sure that the save location is your Chic Cottage folder.
3. For the File name, type a the name of the project followed by a short description of the current state of the drawing; for example, Chic Cottage-Deck.

Review

This lesson describes the best practices for creating porch and deck rooms.

- To set the Deck Railing Defaults
- To set the Railing Defaults
- To set the Half Wall Defaults
- To set Deck Room Defaults

- To draw a deck
- To set Porch Room Defaults
- To create a porch
- To create a terrain perimeter
- To turn on the display of objects
- To draw porch stem walls
- To set the Exterior Stair Defaults
- To draw deck stairs to the terrain
- To create concrete porch stairs

Assessment Questions

What are two ways that Deck Railing walls are different from other types of railings?

What are two structural differences between Deck and Porch rooms?

How do you specify whether a room is included in the total Living Area?

Where can the deck plank gap and width be set?

What tool is used to create deck and porch stairs?

Roof Tutorials

The Roof Tutorials describe best practices for creating basic roof styles in Chief Architect and then adding a roof to Chic Cottage:

- Basic Roof Styles
- Chic Cottage Roof
- Dormers

Chapter 7:

Basic Roof Styles

This tutorial uses a simple, rectangular structure to explain how to create common roof styles using roof style directives assigned to the exterior walls.

Learning Objectives

This lesson describes best practices in Chief Architect for creating common roof styles and conditions. Concepts introduced include:

- Automatic Roof Styles
- Hip Roofs
- Gable Roofs
- Dutch Gable Roofs
- Shed Roofs
- Offset Gable Roofs
- Gambrel Roofs
- Gull Wing Roofs
- Half Hip Roofs
- Mansard Roofs
- Finding the Start of an Upper Pitch
- Using the Break Wall Tool to Modify Roofs

Productivity Tips

As you learn how to create the common roof styles, keep in mind these tips to improve your productivity.

Drawing and Editing

- The **Change to Gable Wall(s)** edit button is a shortcut for the Full Gable Wall attribute in the Wall Specification dialog.
- The **Join Roof Planes** edit tool resizes roof planes so they meet along geometrically correct ridge, hip, and valley lines.

Interface

- Tiling 2D and 3D views can make it easier to manually edit a roof design.
- The Auto Rebuild Roof and tiled views are often helpful during roof design - in large plans, both can cause slowness on some systems.
- Turn off Auto Rebuild Roof when roof is done to avoid unwanted changes to the roof.

Keyboard Hotkeys

- F1 - Help for the current context
- Ctrl + R - Build Roof
- 2 - Join Roof Planes edit tool
- B - Break Wall
- Ctrl + S - Save

Automatic Roof Styles

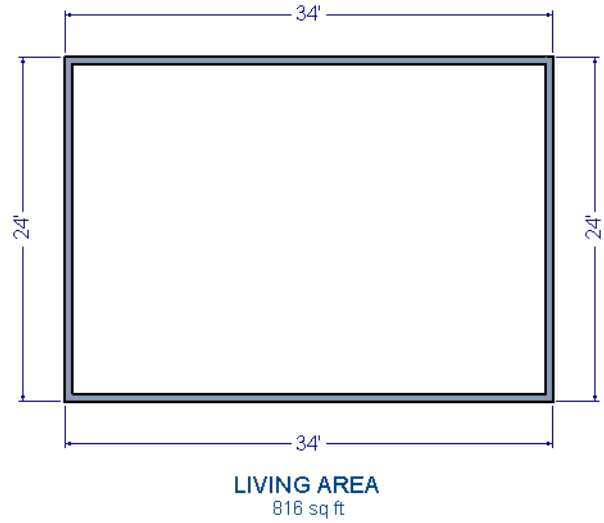
By default, Chief Architect will generate a roof plane bearing on each exterior wall that does not have a room-defining wall directly above it, and will use the pitch specified in the **Build Roof** dialog. The result is a hip style roof; however, if you need a different condition over a particular wall to produce another roof style, you can define it in that wall's specification dialog.

Individual walls can be selected and edited in both 2D and 3D views. When multiple walls need to be edited, however, it is usually quicker and easier to work in floor plan view: in part, because you can hold down the Shift key and group-select walls. See "Editing Walls" on page 366 of the Reference Manual.

To begin a new plan

1. If any plans are open, select **File> Close All** from the menu.
2. Select **File> New Plan** to open a new plan.

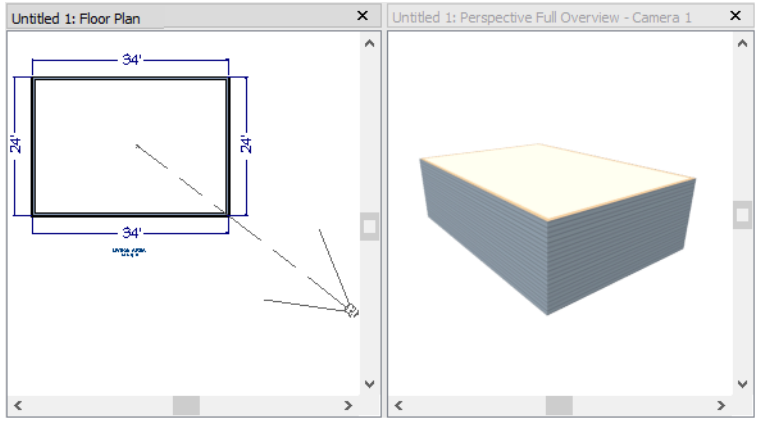
3. Select **Build> Wall> Straight Exterior Wall** and draw a rectangular floor plan, measuring about 34 feet by 24 feet (approximately 10.4 m by 7.3 m), in a clockwise direction. See “Drawing Walls” on page 356 of the Reference Manual.



4. Select **3D> Create Perspective View> Perspective Full Overview** .

   • If you wish, you can select **3D> Toggle Textures** from the menu to turn off the display of material textures and represent all materials using solid colors.

5. Select **Window> Tile Vertically** to see both views at the same time.



To set a wall's roof directives

1. Click the **Select Objects** button, then click on a wall to select it.
   - To select multiple walls, hold down the Shift key on the keyboard and click on additional walls to add them to the selection set.
2. Click the **Open Object** button to open the **Wall Specification** dialog.
3. On the ROOF panel:
   - The **Roof Options** control how the roof builds over the selected wall.
   - The **Pitch Options** control how steep the roof that bears on the selected wall is.
   - The **Overhang** setting lets you specify how far the roof above extends past the wall's exterior.
   - The **Auto Roof Return** settings let you specify and customize automatic roof returns.
   - **Lower Wall Type if Split by Butting Roof** lets you create a lower wall type that follows the underside of an adjacent roof plane, if one is present.

The Roof Styles described in this tutorial use only the **Roof** and **Pitch Options**.

To reset all roof directives

1. Select **Edit> Reset to Defaults**.
2. In the **Reset to Defaults** dialog, set the Reset Scope to **All Floors**, check **Roof Directives in Walls**, and click **OK**.

Attic Walls

When a roof is generated, attic walls may also be generated. An Attic wall fills the space between the walls that define a room and the roof above. The triangular-shaped wall of a gable, for example, is created using an Attic wall.

In this tutorial, all Attic walls will generate on the Attic floor; however, in more complex models they may generate on numbered living floors. If you do not want to see attic walls in floor plan view, you can turn off their display.

To turn off the display of attic walls

1. In floor plan view, select **Tools> Layer Settings> Display Options** (or press the ~ key) to open the **Display Options** dialog.
2. Find "Walls, Attic" in the Name column, remove the check from the Display column for this item, and click OK. For more information, see "Layer Display Options Dialog" on page 190 of the Reference Manual.

Deleting Roofs

Whether a roof was drawn manually or automatically generated, deleting roof planes is easy:

- Select an individual roof plane and **Delete** it.
- Select **Build> Roof> Delete Roof Planes** to delete all roof planes in the plan.
- Select **Edit> Delete Objects** and in the **Delete Objects** dialog, select either **All Rooms On This Floor** or **All Floors**; place a check beside **Roof Planes**; and click the **Delete** button to delete all roof planes either on the current floor or in the plan.

To turn on/off Auto Rebuild Roofs

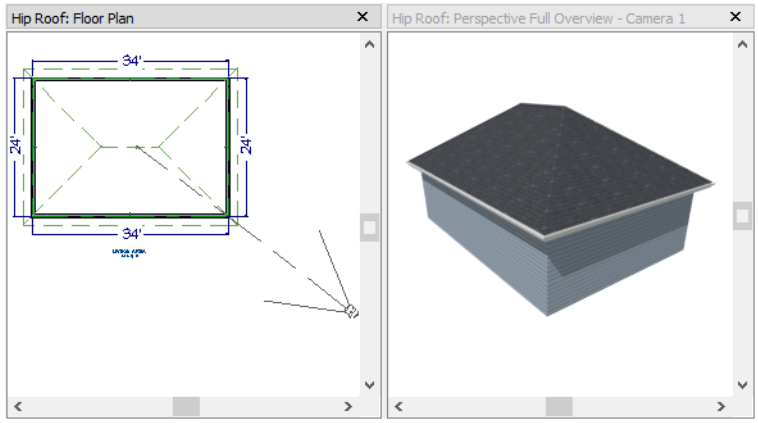
1. Select **Build> Roof> Build Roof** from the menu.
2. On the ROOF panel of the **Build Roof** dialog, check or uncheck **Auto Rebuild Roofs** and click **OK**.

Hip Roofs

When roofs are automatically generated, a roof plane is built over every exterior wall in the plan that does not have another wall drawn above it. The result is referred to as a hip roof.

To create a hip roof

1. Begin with the basic rectangular structure described in “To begin a new plan” on page 142.
2. Select **Build> Roof> Build Roof** from the menu to open the **Build Roof** dialog.
3. Check **Build Roof Planes** and click **OK** to generate a hip roof.

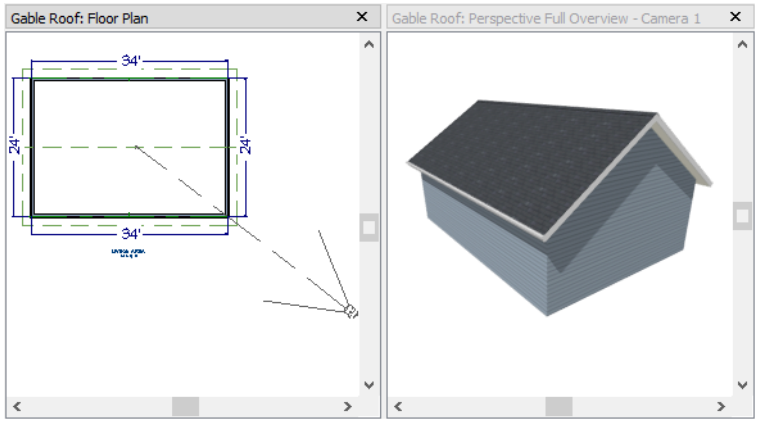


Gable Roofs

If you would like a gable over a particular wall rather than a roof plane bearing on it, you can specify it as a **Full Gable Wall** in the **Wall Specification** dialog. To create basic gable roof, two walls should be specified as **Full Gable Wall**.

To create a gable roof

1. Begin with the basic rectangular structure described in "To begin a new plan" on page 142.
2. Click the **Select Objects** tool, select the vertical wall on the left, hold down the Shift key, and select the vertical wall on the right. The two walls should be group-selected.
3. Open the **Wall Specification** dialog and on the ROOF panel, check **Full Gable Wall** and click **OK**. See "To set a wall's roof directives" on page 144.
   - Alternatively, you can click the **Change to Gable Wall(s)** edit button.
   - To remove the Full Gable Wall attribute from a selected wall, click the **Change to Hip Wall(s)** edit button.
4. Select **Build> Roof> Build Roof** to open the **Build Roof** dialog, check **Build Roof Planes**, and click **OK**.

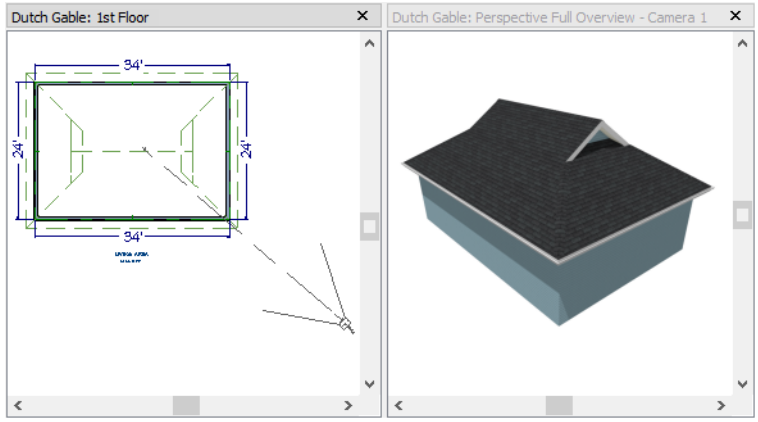


Dutch Gable Roofs

A Dutch gable, sometimes called a Dutch hip, is a combination of hip and gable roof styles in which a gable is located at the end of the ridge, at the top of a hip roof plane.

To create a Dutch gable roof

1. Begin with the basic rectangular structure described in “To begin a new plan” on page 142.
2. Click the **Select Objects** tool, select the vertical wall on the left, hold down the Shift key, and select the vertical wall on the right. The two walls should be group-selected.
3. Open the **Wall Specification** dialog and on the ROOF panel, change the following settings:
   - Check the box beside **Dutch Gable Roof**.
   - Specify the **Starts at Height** as 180".
4. Click **OK** to close the **Wall Specification** dialog. See “To set a wall’s roof directives” on page 144.
5. Select **Build> Roof> Build Roof** to open the **Build Roof** dialog, check **Build Roof Planes**, and click **OK**.



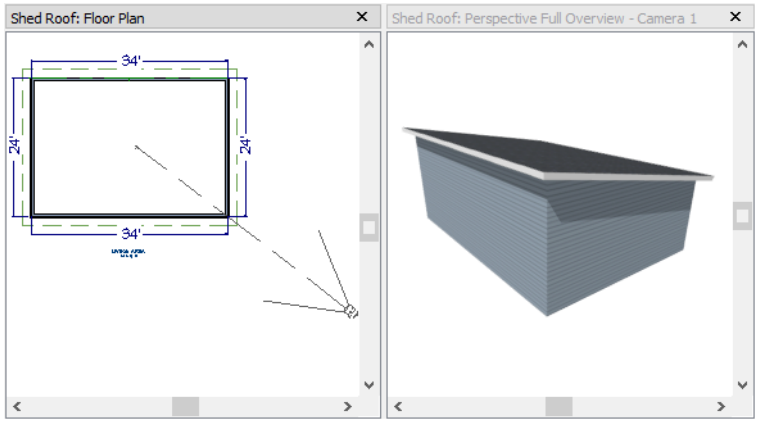
Shed Roofs

To create a single, sloping roof plane, or shed roof, two walls must be specified as **Full Gable Walls**, and one must be a **High Shed/Gable Wall**.

To create a shed roof

1. Begin with the basic rectangular structure described in “To begin a new plan” on page 142.
2. As in the Gable Roofs example, specify the left and right vertical walls as **Full Gable Walls**.
3. Select the lower horizontal wall and open its **Wall Specification** dialog. On the ROOF panel, check **High Shed/Gable Wall** and click **OK**. See “To set a wall’s roof directives” on page 144.

4. Select **Build> Roof> Build Roof** to open the **Build Roof** dialog, specify a **Pitch** of 2 in 12, check **Build Roof Planes**, and click **OK**.

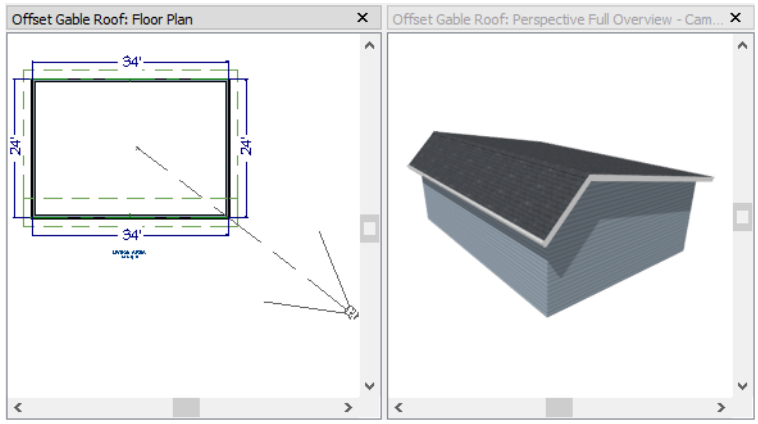


Offset Gable Roofs

An offset gable is a type of gable roof with different pitches on each of the two roof planes and a ridge that is offset from the building's center line. Assign a different pitch to the two roof planes in the **Wall Specification** dialog for the wall supporting each one.

To create an offset gable roof

1. Begin with the basic rectangular structure described in "To begin a new plan" on page 142.
2. As in the Gable Roofs example, specify the left and right vertical walls as **Full Gable Walls**.
3. Select the lower horizontal wall and open its **Wall Specification** dialog. On the ROOF panel, leave the **Roof Options** unchecked and change the **Pitch** to 12 in 12. See "To set a wall's roof directives" on page 144.
4. Select **Build> Roof> Build Roof** to open the **Build Roof** dialog, check **Build Roof Planes**, specify the **Pitch** as 2 in 12, and click **OK**.

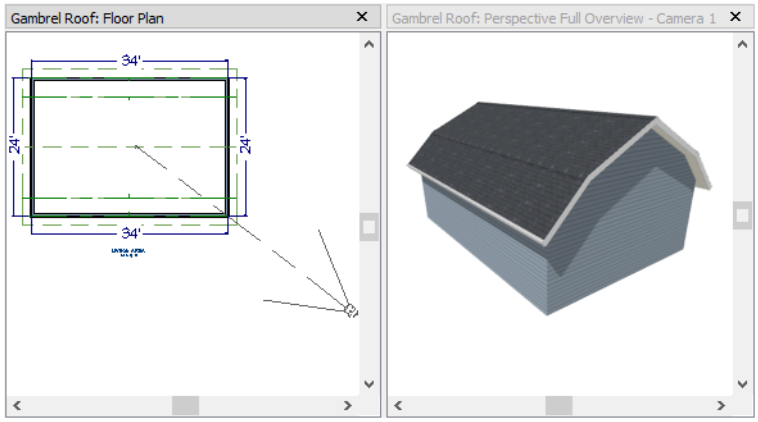


Gambrel Roofs

A gambrel or barn style roof has two pitches on each side of the ridge. The first (lower) pitch on either side is steeper than the pitch near the ridge.

To create a gambrel roof

1. Begin with the basic rectangular structure described in “To begin a new plan” on page 142.
2. As in the Gable Roofs example, specify the left and right vertical walls as **Full Gable Walls**.
3. Click the **Select Objects** tool, select the horizontal wall on the top, hold down the Shift key, and select the horizontal wall on the bottom. The two walls should be group-selected.
4. Open the **Wall Specification** dialog and on the ROOF panel, change the following settings:
   - Make sure that the **Pitch** value is followed by (D), which means that is set to use the default.
   - Check the box beside **Upper Pitch**.
   - Specify the **Upper Pitch** as 6 in 12 and the **Starts at Height** as 156".
   - To learn more, see “Finding the Start of an Upper Pitch” on page 153.
5. Click **OK** to close the **Wall Specification** dialog. See “To set a wall’s roof directives” on page 144.
6. Open the **Build Roof** dialog, check **Build Roof Planes**, specify the **Pitch** as 12 in 12, and click **OK**.



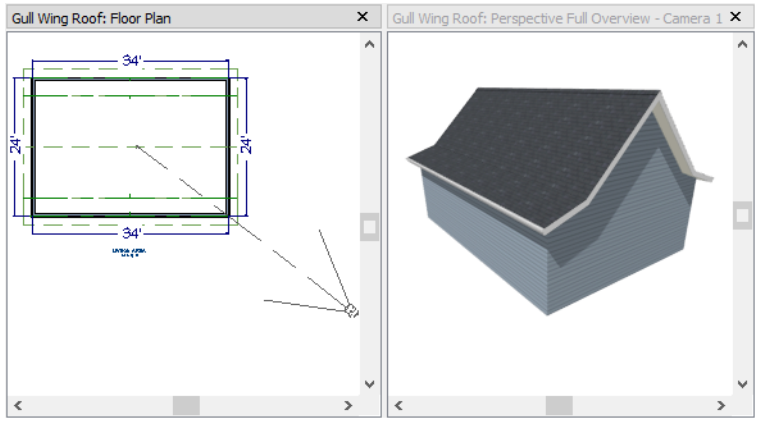
Experiment with alternate pitches and overhangs. Also, try varying the height at which the second pitch begins so that you can see the effect it has on the gambrel roof design.

Gull Wing Roofs

A gull wing roof has two pitches on either side of the ridge, as a gambrel does; but the first pitch of a gull wing is shallower than the steeper upper pitch.

To create a gull wing roof

1. Begin with the basic rectangular structure described in “To begin a new plan” on page 142.
2. As in the Gable Roofs example, specify the left and right vertical walls as **Full Gable Walls**.
3. Click the **Select Objects** tool, select one of the horizontal walls, hold down the Shift key, and select the other horizontal wall. The two walls should be group-selected.
4. Open the **Wall Specification** dialog and on the ROOF panel, change the following settings:
   - Make sure that the **Pitch** value is followed by (D), which means that is set to use the default.
   - Place a check in the box beside **Upper** Pitch.
   - Change the **Upper Pitch** as 12 in 12 and change the **Starts at Height** to 125".
5. Click **OK** to close the dialog. See “To set a wall’s roof directives” on page 144.
6. Click the **Build Roof** tool, specify a **Pitch** of 3 in 12, check **Build Roof Planes**, and click **OK** in the **Build Roof** dialog.



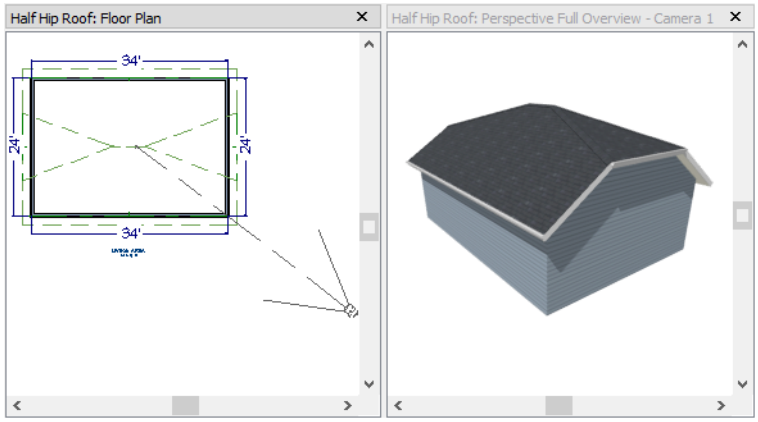
Experiment with the height at which the second pitch begins so that you can see the effect it has on the gull wing roof design.

Half Hip Roofs

A half hip roof has two gable ends. At the top of each gable is a small hip that extends to the ridge.

To create a half hip roof

1. Begin with the basic rectangular structure described in “To begin a new plan” on page 142.
2. As in the Gable Roofs example, specify the left and right vertical walls as **Full Gable Walls**. In addition, change the following **Pitch Option** settings:
   - Check the box beside **Upper Pitch**.
   - Specify the **Upper Pitch** as 3 in 12 and set the **Starts at Height** at 170".
3. Click the **Build Roof** tool, check **Build Roof Planes**, and click **OK** in the **Build Roof** dialog.

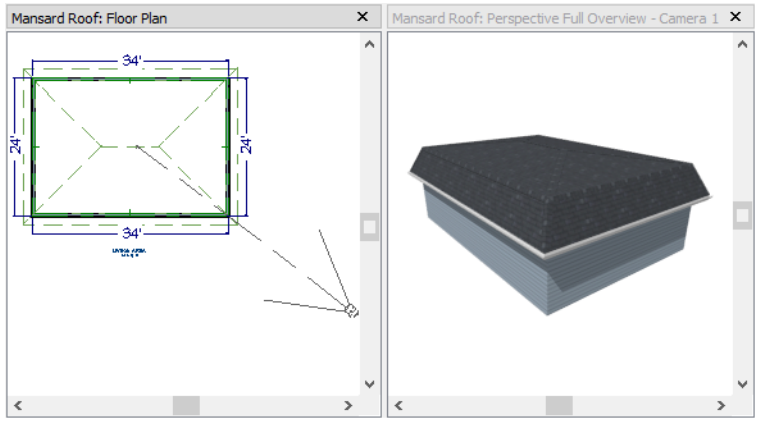


Mansard Roofs

A mansard roof is a hip roof with two pitches on the roof sections above each exterior walls: an extremely steep lower pitch and a gently sloping upper pitch.

To create a mansard roof

1. Begin with the basic rectangular structure described in “To begin a new plan” on page 142.
2. Click the **Select Objects** tool, select one of the exterior walls, hold down the Shift key, and click on the remaining walls to select them as a group.
3. Open the **Wall Specification** dialog and on the Roof panel, and change the following settings:
   - Check the box beside **Upper Pitch**.
   - Specify the **Upper Pitch** as 1.5 in 12 and the **Starts at Height** as 132".
4. Click **OK** to close the dialog. See “To set a wall’s roof directives” on page 144.
5. Click the **Build Roof** tool, specify a **Pitch** of 24 in 12, check **Build Roof Planes**, and click **OK** in the **Build Roof** dialog.

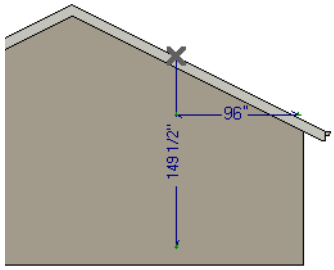


Finding the Start of an Upper Pitch

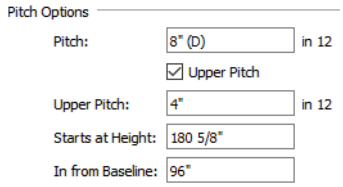
When creating a roof style with lower and upper pitches, you can determine the exact Starts at Height or In From Baseline values that you need in an elevation view.

To find the start of an upper pitch

1. Generate the roof using only the first, lower pitch. Be sure to define all the roof information for each wall (gable, hip, first pitch, etc.).
2. Create a cross section view that includes the roof plane that will have the second pitch. See "Cross Section/Elevation Views" on page 1052.
3. Select **CAD> Points> Place Point**, click to place a temporary point near the location where you want the second pitch to start, and then either:
   - Using the **Point-to-Point Dimension** tool, drag a dimension line from the floor on Floor 1 (which has a height of 0 by default) to the temporary point.
   - Using the **Point-to-Point Dimension** tool, drag a dimension line from the baseline to the vertical plane of the temporary point.



4. Enter either of these values in the **Wall Specification** dialog. You can press the Tab key to update the other value. Click **OK** to close the dialog.



5. Open the **Build Roof** dialog, check **Build Roof Planes** and click **OK** to rebuild the roof.

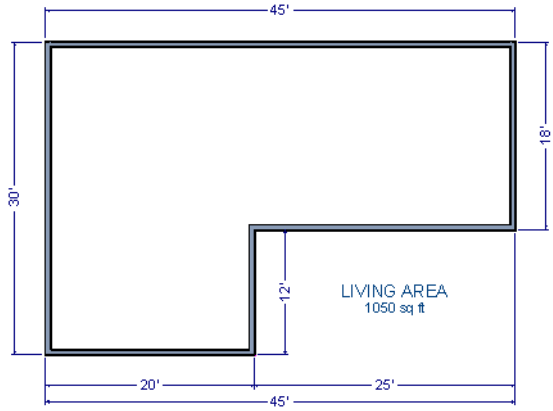
Using the Break Wall Tool to Modify Roofs

Many homes have more than one roof type built above a single exterior wall. One common example is a reverse gable roof, created when a house has gable walls that are perpendicular to one another, as in an L-shaped home.

A reverse gable roof on an L-shaped home can be created using the **Break Wall** tool.

To create an L-shaped home

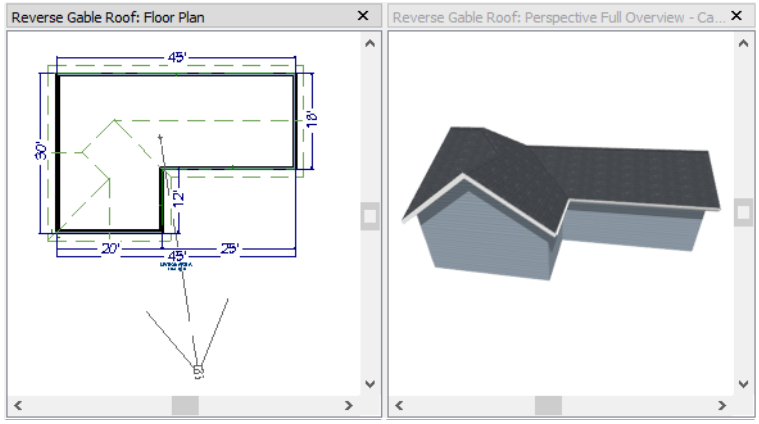
1. Select **File> Close All** from the menu.
2. Select **File> New Plan** to open a new plan.
3. Draw an L-shaped house with the following dimensions:
   - Left wall - 30 feet long
   - Upper wall - 45 feet long.
   - Right wall 18 feet long.
   - Lower wall extending left from the right wall - 25 feet long.
   - Vertical wall connecting two lower walls - 12 feet long.
   - Lower wall extending right from the left wall - 20 feet long.



To create a reverse gable in this plan, three gable walls are required: two running vertically and one horizontally.

To add a gable roof to the plan

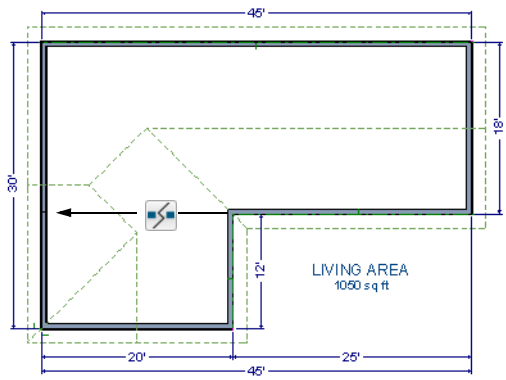
1. Check **Full Gable Wall** on the Roof panel of the **Wall Specification** dialog for these three walls:
   - The far left vertical wall
   - The far right vertical wall
   - The bottom left horizontal wall
2. Click the **Build Roof** button to open the **Build Roof** dialog and click **OK** to build the roof. The roof will look like this:



The gable wall on the left produces roof planes that extend too high and interfere with the roof over the front extension of the house. To avoid this, use the Break Wall tool to divide the left wall into two different sections. The upper section can then be specified as a Full Gable without affecting the lower section.

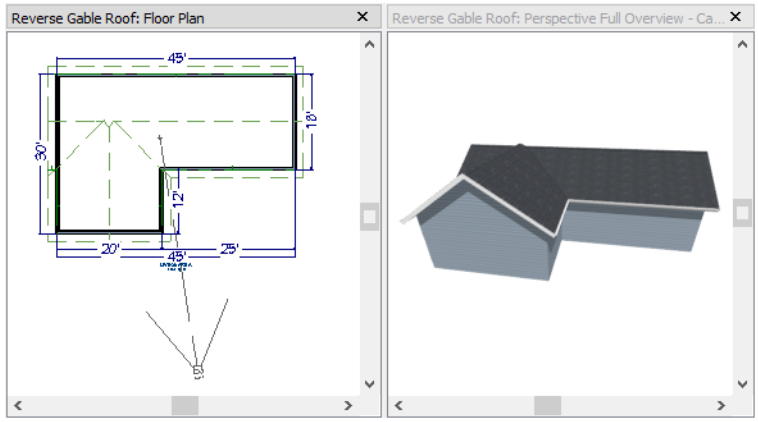
To use the Break Wall tool

1. Select **Build> Wall> Break Wall** and click the far left wall at a point even with the lower right wall.

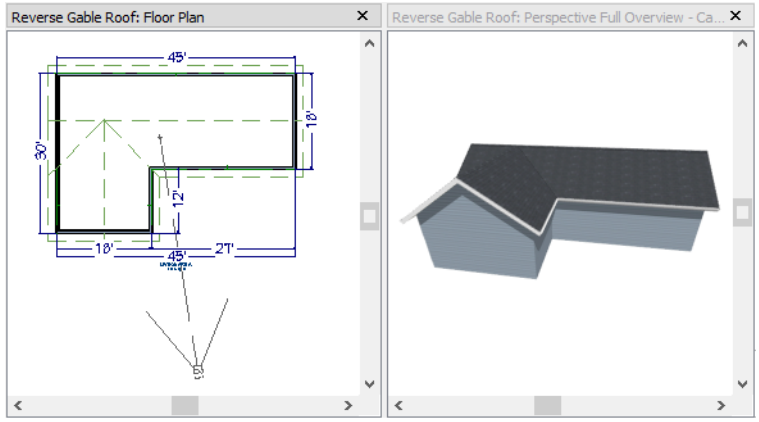


2. Open the lower portion of the wall for specification and on the Roof panel of the **Wall Specification** dialog, clear the **Full Gable Wall** checkbox and click **OK**.
3. Click the **Build Roof** button and click **OK** to build a roof based on the new wall specifications.

You now have two full gable roof sections meeting to form your L-shaped roof. Your plan should look like the following image:



Notice the step in the ridge line. This can be corrected by resizing the lower gable wall. Select the vertical wall to the right of the bottom gable wall and move it to the left 2 feet, reducing the length of the gable wall from 20 to 18 feet. When you are finished, rebuild the roof.



Creating Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed. The file created in this tutorial was created in order to practice basic roof styles and does not contribute to the Chic Cottage project. As a result, it does not need to follow your Chic Cottage file naming convention. If you would like to save it, select File Save and give it a name like "Practice - Auto Roofs". You can save it in your Chic Cottage folder or in another location if you prefer.

Review

This lesson describes the best practices for automatically generating a number of basic roof styles.

- To begin a new plan
- To set a wall's roof directives
- To reset all roof directives
- To turn off the display of attic walls
- To turn on/off Auto Rebuild Roofs
- To create a hip roof
- To create a gable roof
- To create a shed roof
- To create an offset gable roof
- To create a gambrel roof
- To create a gull wing roof
- To create a half hip roof
- To create a mansard roof
- To find the start of an upper pitch
- To create an L-shaped home
- To use the Break Wall tool

Assessment Questions

What kind of roof does the program automatically generate by default?

Where is the Auto Rebuild Roofs check box located?

Where can you specify that an automatic roof plane be assigned a non-default pitch?

What roof directive do the two side walls of a shed roof require?

What edit tool allows you to divide a wall into two separate segments?

Chapter 8:

Chic Cottage Roof

With a basic understanding of how automatically generated roofs work, a roof can be created in the Chic Cottage plan.

Learning Objectives

This lesson describes techniques that can be used to create a custom roof for Chic Cottage. Concepts introduced include:

- Setting the Defaults
- Adding a Roof to Chic Cottage
- Controlling Roof Height
- Creating a Curved Roof
- Adding Roof Details

File Management

This tutorial continues where the Decks and Porches tutorial left off. At this point, both the Chic Cottage-Deck and CHIC COTTAGE-CURRENT plans contain the same information, so you could open either one and continue working. However, Chic Cottage-Deck.plan was created specifically to serve as a revision or archive file so it will be left unchanged.

To continue working on the Chic Cottage project, select **File> Open Plan** . If need be, browse to Documents\Chic Cottage, select CHIC COTTAGE-CURRENT, and click Open.

Alternatively, select **File> Recent Files** and choose CHIC COTTAGE-CURRENT from the Recent Files List. The Recent Files List is a convenient way to access files you have been working on; however, it is not an alternative to knowing where your files are located and having a good file revision strategy in place. See "File Management" on page 18 of the Exterior Walls Tutorial.

It is a very good idea to save your files often as you work, and this guide reminds you to do so regularly.

Productivity Tips

As you learn how to create the roof in Chic Cottage, keep in mind these tips to improve your productivity.

Drawing and Editing

- Many roof designs are best created by generating a roof automatically and then manually editing individual roof planes.
- The **Join Roof Planes** edit tool lets you join the edges of two roof planes along a line or arc to form a geometrically correct valley, hip, or ridge. See “Join Roof Planes” on page 793 of the Reference Manual.

Content

- A selection of name brand roofing catalogs are available for download from the 3D Library.

  Select **Library> Get Additional Content Online** to launch your default web browser to that page.

Interface

- Tiling 2D and 3D views can make it easier to manually edit a roof design.
- Auto Rebuild Roofs and tiled views are often helpful during roof design - in large plans, both can cause slowness on some systems.
- When a roof design is complete, be sure to turn off Auto Rebuild to avoid unwanted changes.

Keyboard Hotkeys

- F1 - Help for the current context
- Ctrl + E - Open Object edit tool
- Ctrl + R - Build Roof
- F6 - Fill Window
- F9 - Reference Floor Display
- 3 - Break Line edit tool
- 2 - Join Roof Planes edit tool
- Ctrl + S - Save

Setting the Defaults

In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. Setting defaults early can improve efficiency and also helps to avoid introducing errors into the drawing. When creating a roof, there are a number of defaults that should be borne in mind.

Settings in the Floor Defaults dialogs that affect the overall height of a structure will also affect roof height. These include the default Ceiling Heights and Floor and Ceiling Platform Thicknesses. See “To set the Floor 1 Defaults” on page 26 and "To set the default floor structures" on page 25 of the Exterior Walls Tutorial.

The structure of individual rooms can be customized, and will also affect how roofs build. In addition, a room can be set to have a roof above it, or not. See “To add a shed roof over the deck” on page 168.

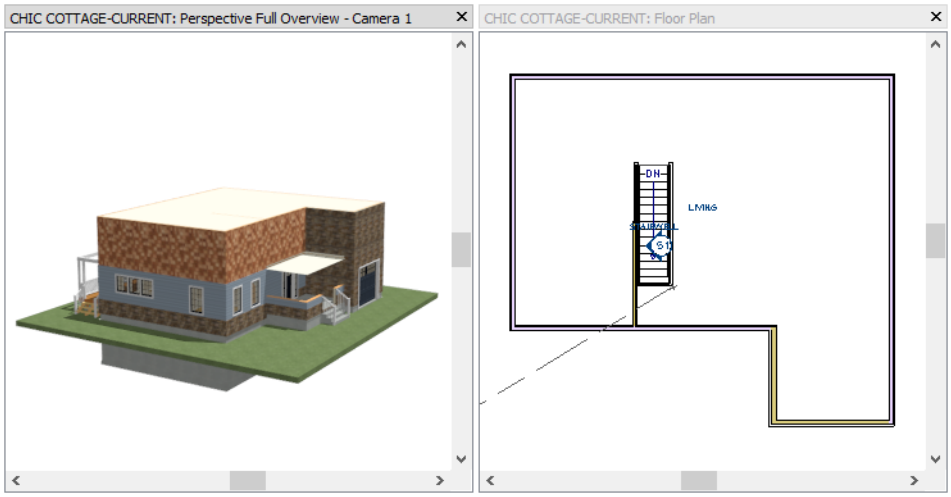
The settings in the Roof Defaults control the structure and appearance of the roof itself. See “To set the roof defaults” on page 162.

Working in Camera Views

Roofs can often be best worked on and understood when 2D and 3D views are tiled.

To tile floor plan and camera views

1. Go **Up One Floor** to Floor 2.
2. Select **3D> Create Perspective View> Perspective Full Overview**.
3. Select **Window> Tile Vertically** to tile the overview and floor plan views side by side.
4. Click and drag with the **Mouse-Orbit Camera** tool active to orbit the camera around the model until the side of the Porch can be seen.
5. Notice that the overview’s title bar is darker in color than that of the floor plan view. The darker title bar indicates that the overview is the currently active view.



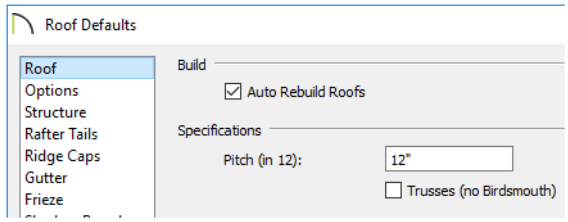
6. Click on the floor plan view's title bar or anywhere within the view window to make it the currently active view instead.

Adding a Roof to Chic Cottage

By default, Chief Architect builds a roof plane bearing on each exterior wall, producing a hip roof style. See "Hip Roofs" on page 145 of the Basic Roof Styles Tutorial.

To set the roof defaults

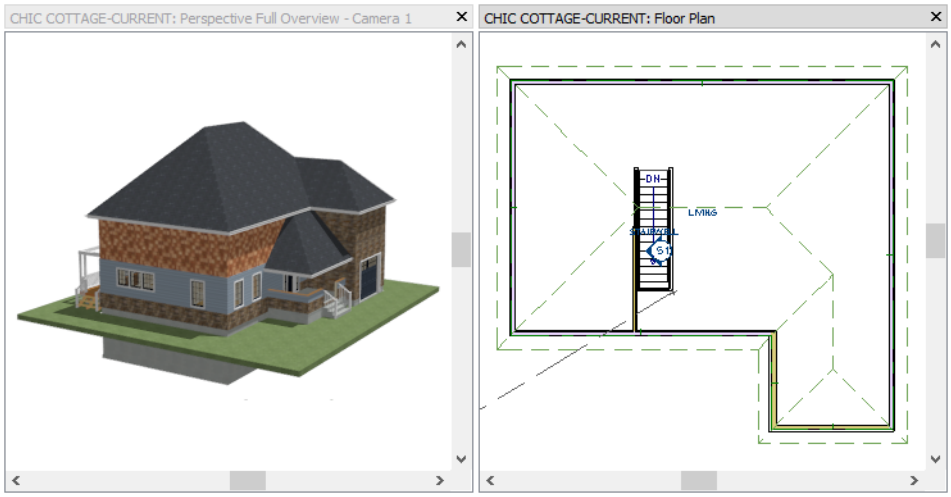
1. Select **Edit> Default Settings**, select "Roof" in the tree list and click the **Edit** button.
2. On the ROOF panel of the **Roof Defaults** dialog:



   - Check **Auto Rebuild Roofs**.
   - Specify the **Pitch** as 12" in 12".
3. On the STRUCTURE panel, specify the roof surface material, rafter depth, and other details of how the roof planes are to be constructed. In this example, the default settings are used.

See "Setting the Defaults" on page 431 of the Roof and Ceiling Framing Tutorial.

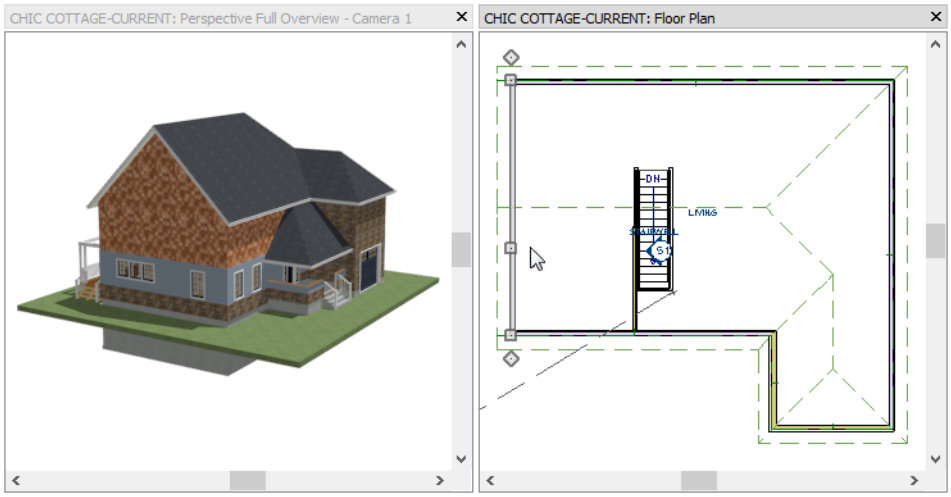
4. Click OK and then Done to close both dialogs and apply your change.



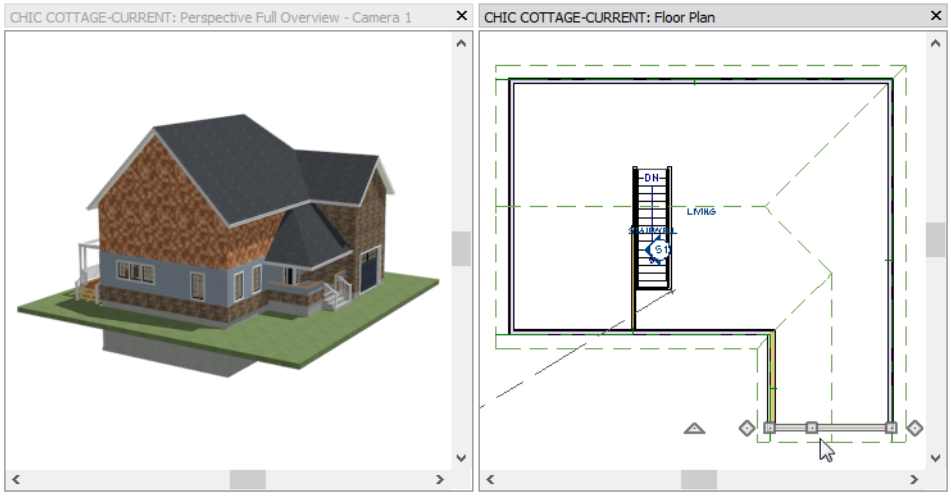
With Auto Rebuild Roof checked, a roof builds automatically and will rebuild any time a change is made to the model that affects the roof. See “Automatic Roofs” on page 777 of the Reference Manual.

To add gable walls

1. In floor plan view, click the **Select Objects** button, then click on the vertical wall on the left side of the plan to select it.
2. There are two ways to specify this wall as a gable wall:
   - Check **Full Gable Wall** on the ROOF panel of its **Wall Specification** dialog.
   - Click the **Change to Gable Wall(s)** edit button.



3. Specify the front wall of the Garage as a Full Gable Wall, as well.

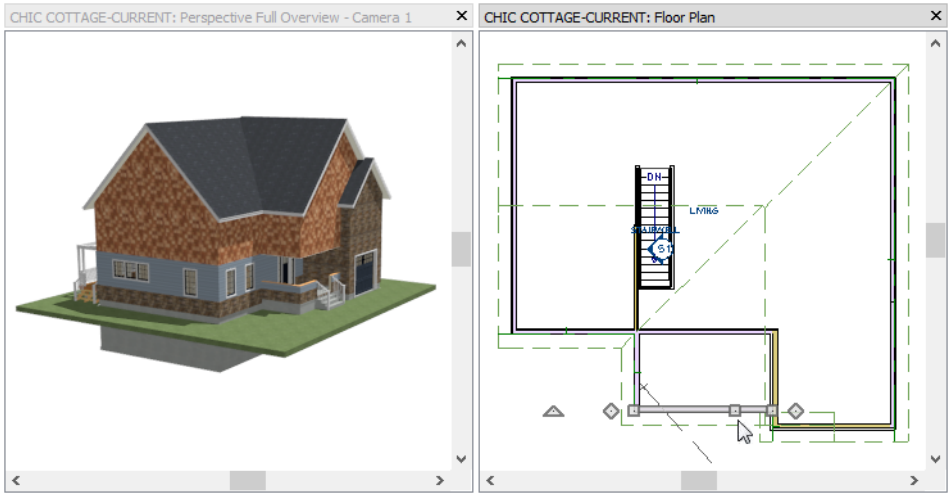


The Porch roof is built over the first floor, so it is lower than the rest of the roof. By adding a room above it, that roof can be raised and a nested gable created.

To create a nested gable

1. Select **Tools> Reference Floors> Reference Floor Display** or press the F9 key, then **Zoom** in on the Porch area in the front of the structure.

2. Select **Build> Wall> Straight Exterior Wall**, then click and drag two walls over the red lines representing the porch Half Walls on Floor 1.
3. Specify the two walls as the "Shingle-6" wall type. See "To customize the second floor wall type" on page 66 of the Multiple Floors Tutorial.
4. Confirm that the walls are aligned with the Half Walls below. See "To align walls between floors" on page 71 of the Multiple Floors Tutorial.
5. Select the horizontal wall and specify it as **Full Gable Wall**.

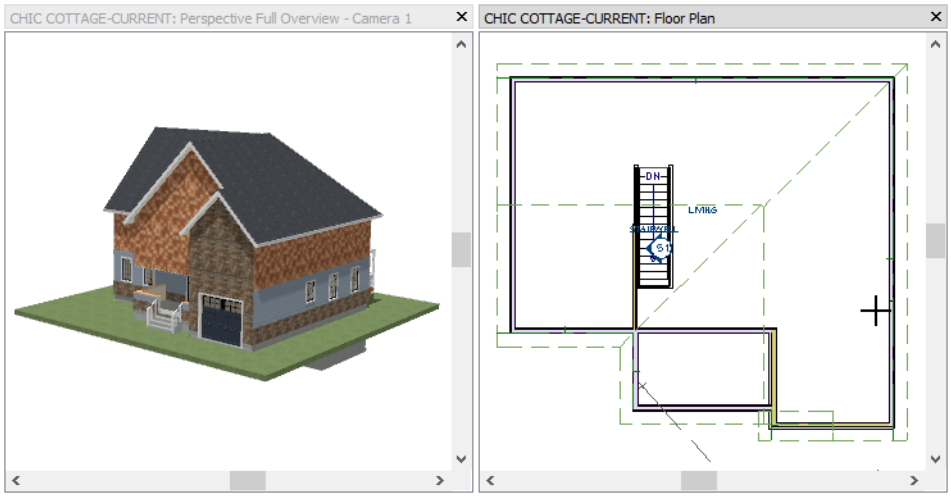


6. When you are finished, select **Tools> Reference Floors> Reference Floor Display** or press the F9 key to turn the Reference Floor Display off again.

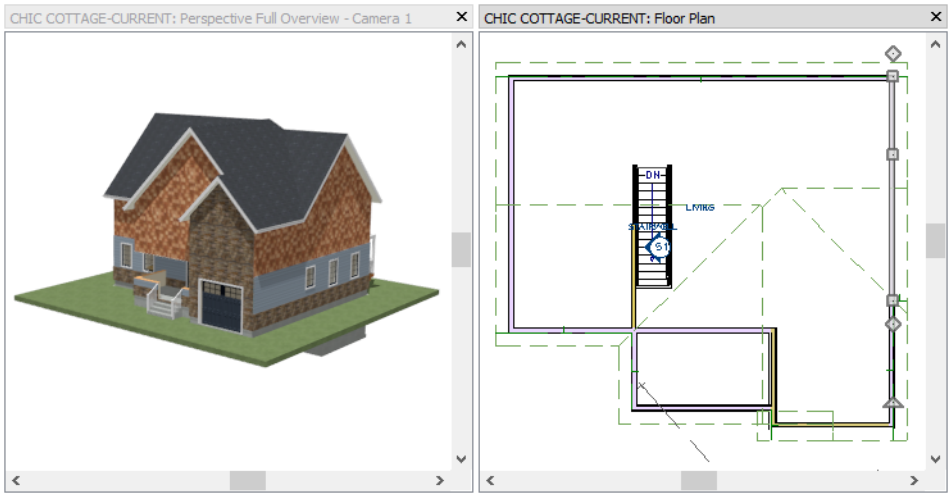
The vertical wall on the right also needs a gable above it: but only over the portion that is located behind the garage bump out.

To create a reverse gable

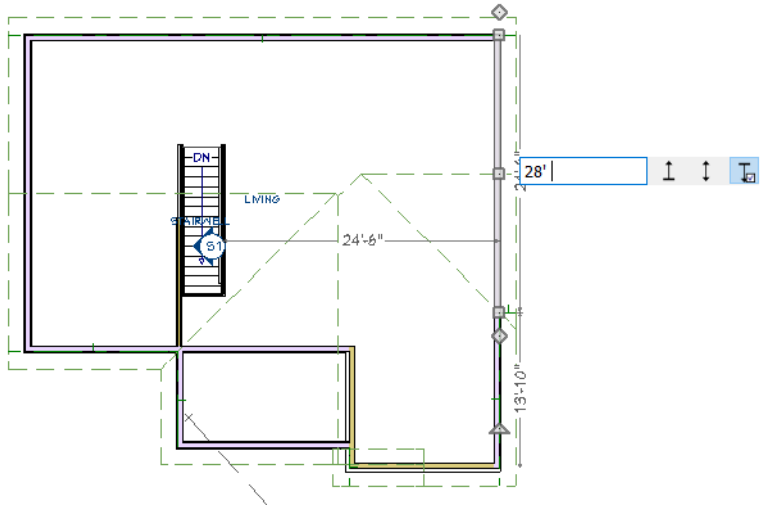
1. Click in the overview to make it the active window, then use the **Mouse-Orbit Camera** tool to orbit the camera around the model until the right side of the structure can be seen.
2. Return to the floor plan view window and select **Build> Wall> Break Wall**.
3. Click once on the right vertical wall, anywhere along the back part of the Garage room.



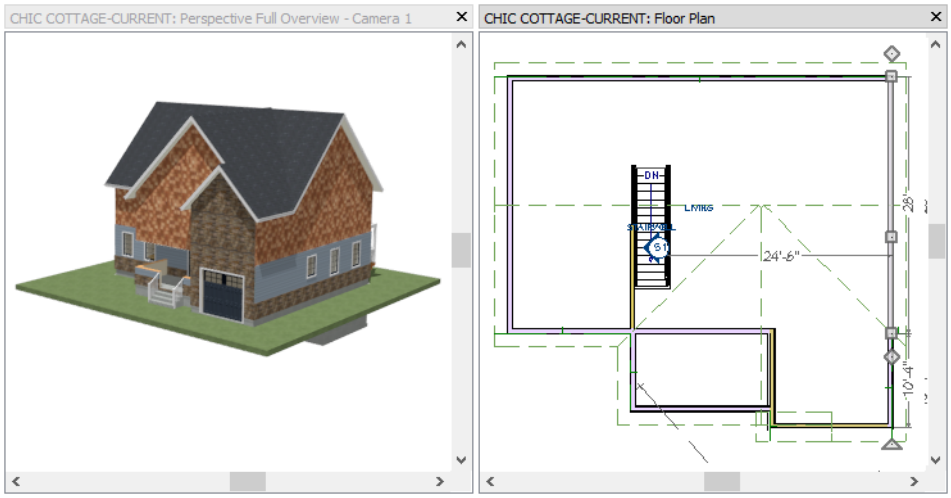
4. Click the **Select Objects** button, then click on the back portion of the vertical wall and specify it as a **Full Gable Wall**.



5. With the wall still selected:
   - Click on the temporary dimension line that reports its length.
   - In the inline text field, type 28’ to match the length of the opposite exterior wall and press Enter.



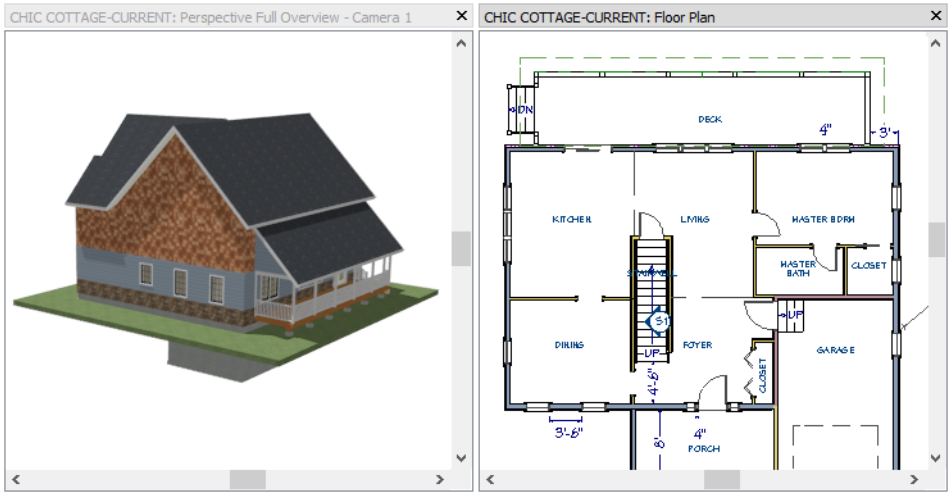
6. The gable on the right is now identical to the gable on the left and a single ridge line generates across the structure.



By default, Deck rooms do not have a ceiling or a roof. Once created, though, Decks can be customized.

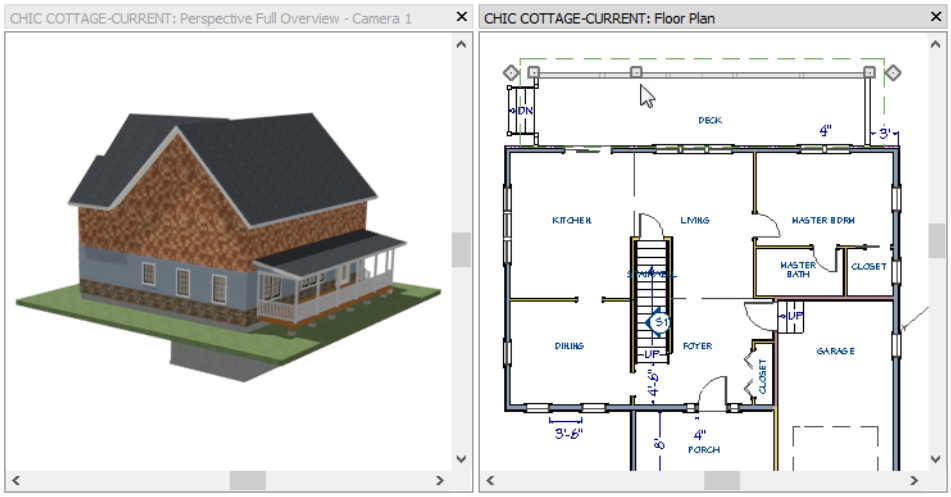
To add a shed roof over the deck

1. Click in the overview to make it the active window, then use the **Mouse-Orbit Camera** tool to orbit the camera around the model until the Deck room can be seen.
2. Return to the floor plan view window and go **Down One Floor** to Floor 1.
3. Click the **Select Objects** button, then click in the Deck room to select it.
4. Click the **Open Object** edit button, and on the STRUCTURE panel of the **Room Specification** dialog, check the box beside **Roof Over This Room** and **Ceiling Over This Room** and click OK.
5. Specify the two vertical side railings of the Deck as **Full Gable Walls**.



6. Select the horizontal deck railing and click the **Open Object** edit button.
7. On the ROOF panel of the **Railing Specification** dialog, specify the **Pitch** as 2" in 12".

> When specifying the Pitch, be sure to remove the (D), which stands for "default", from the text field. If you do not, the program will retain the default value regardless of what else you type.



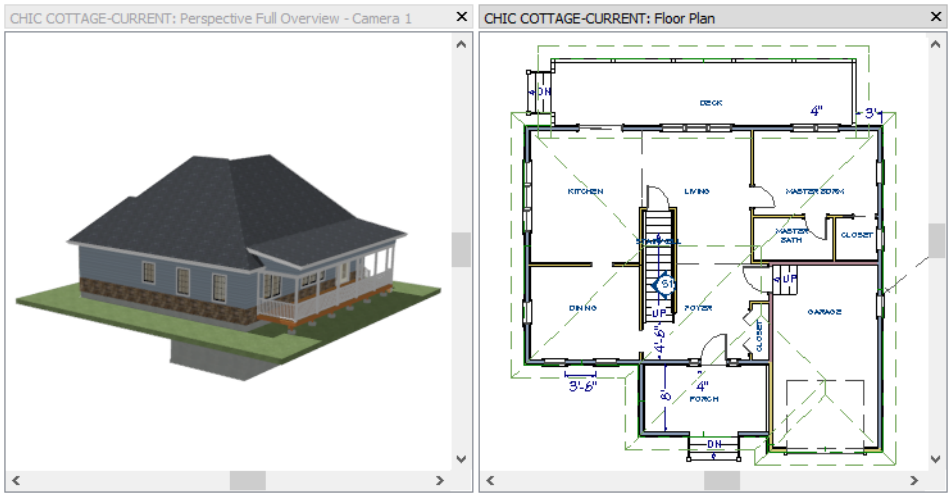
8. When you are finished, remember to **Save** your work.

Controlling Roof Height

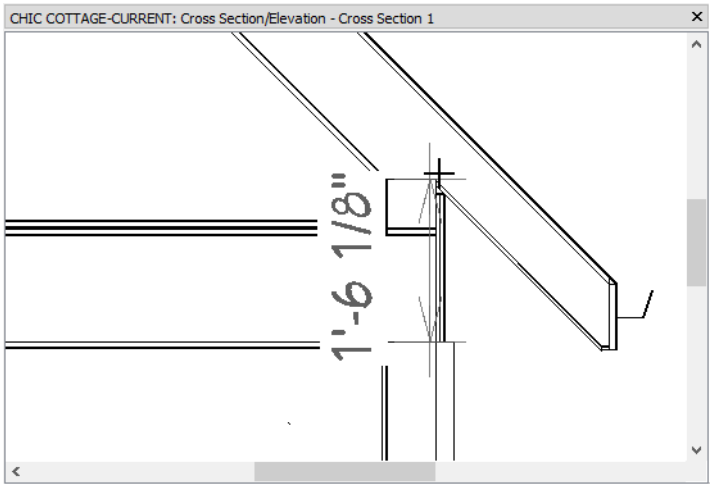
There are a number of ways to control and customize roof heights. By default, they are based on the ceiling heights of the rooms below.

To create a story and a half

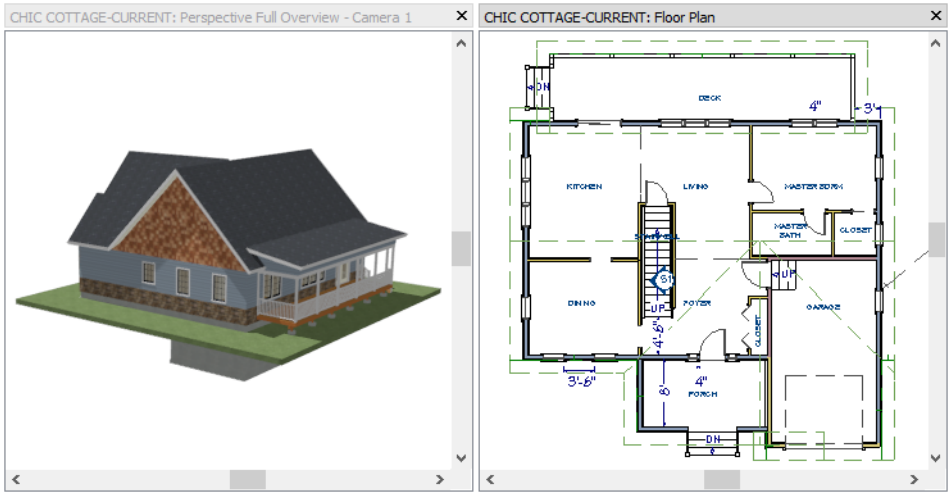
1. Select **Build> Roof> Build Roof** .
2. On the ROOF panel of the **Build Roof** dialog, under the "Roof Height" heading:
   - Specify the **Raise/Lower from Ceiling Height** value as 18 1/8".
   - Check the box beside **Ignore Top Floor**.
   - Click OK.



3. Notice how the roof builds now:
   - The roof builds over the ceilings on Floor 1 instead of Floor 2.
   - The roof directives of the walls on Floor 1 are used instead of those on Floor 2.
4. Select **3D> Create Orthographic View> Backclipped Cross Section**, then:
   - Click and drag horizontally to create a camera inside the Kitchen room.
   - Limit the length of the camera line to one or two plan feet and make sure that you draw the camera either straight left to right or straight right to left on-screen.
   - For more information, see “To create a Backclipped Cross Section” on page 30.
5. **Zoom** in on the right side of the section view, where the right wall meets the roof.
6. Select **CAD> Dimension> Tape Measure**, then click and drag to draw a temporary dimension line that measures the distance from the top of the wall to the bottom of the roof plane that bears on it.



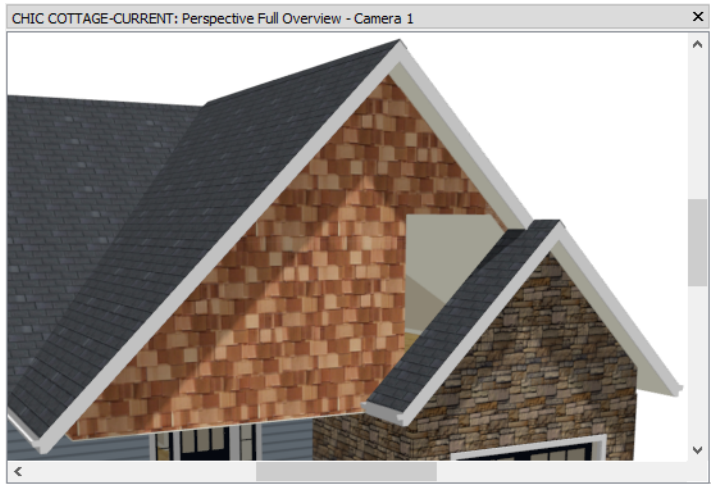
7. Notice that the distance matches the **Raise/Lower from Ceiling Height** value set in the **Build Roof** dialog, then select **File> Close** to return to the floor plan view window.
8. On Floor 1, specify the front walls of the Garage and the Porch as a **Full Gable Walls**. See “To add gable walls” on page 163.
9. Specify the two side walls of the main structure as **Full Gable Walls**, as described above. See “To create a reverse gable” on page 165.



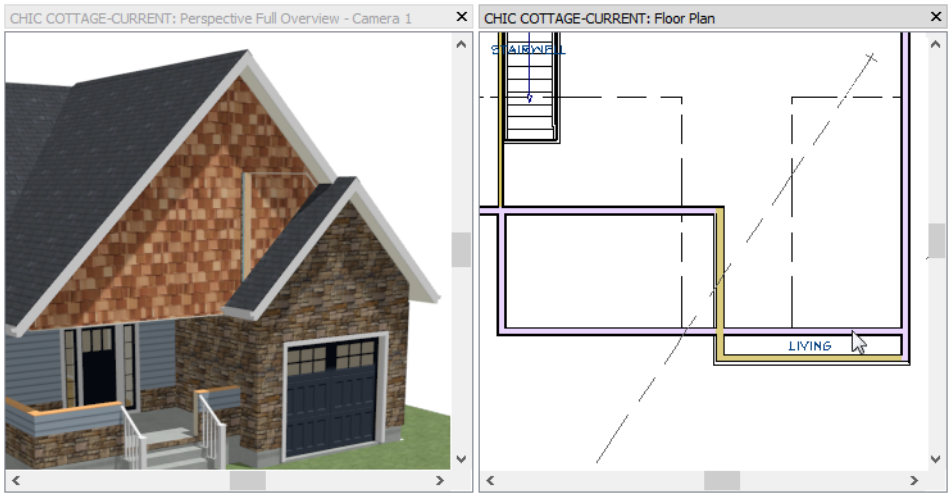
Lowering the roof also reduces the top heights of many of the walls. In the front of the structure, the gable over the garage door now has a gap behind it.

To edit the nested gable wall

1. Click in the overview to make it the active window, then use the **Mouse-Orbit Camera** tool to orbit the camera around the model until the front of the structure can be seen.
2. **Zoom** in on the gable over the Porch and Garage rooms and notice the gap in the wall.

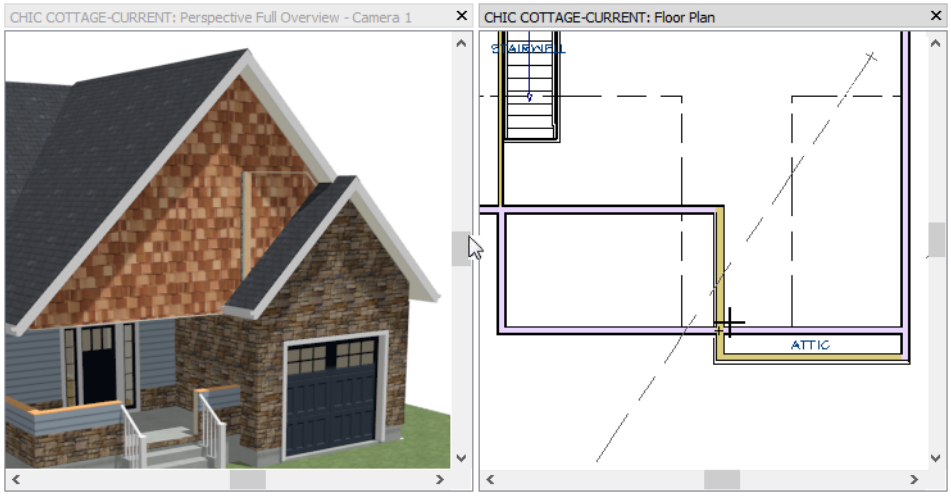


3. Return to the floor plan view window, go **Up One Floor** to Floor 2, and zoom in on the area over the Porch and Garage rooms.
4. Click the **Select Objects** button, then click on the horizontal wall located over the front of the Porch room to select it.
5. Click and drag its right end edit handle to the right until it reaches the vertical exterior wall on the right side of the structure. The gap seen in the camera view will be closed.
6. Click in the small rectangular "Living" room that is created over the front of the Garage, then click the **Open Object** edit button.



7. On the GENERAL panel of the **Room Specification** dialog, select "Attic" from the **Room Type** drop-down list, then click OK. See “Effects of Room Functions” on page 415 of the Reference Manual.

8. Select **Build> Wall> Break Wall** , then:



- Click once at the intersection of the vertical wall on the left side of the Attic room and the back horizontal wall.

- This will prevent the vertical wall from building through the horizontal Shingle-6 wall.

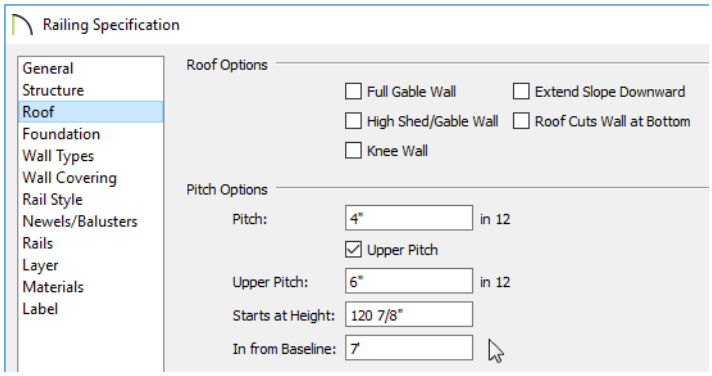
9. Remember to **Save** your work.

Creating a Curved Roof

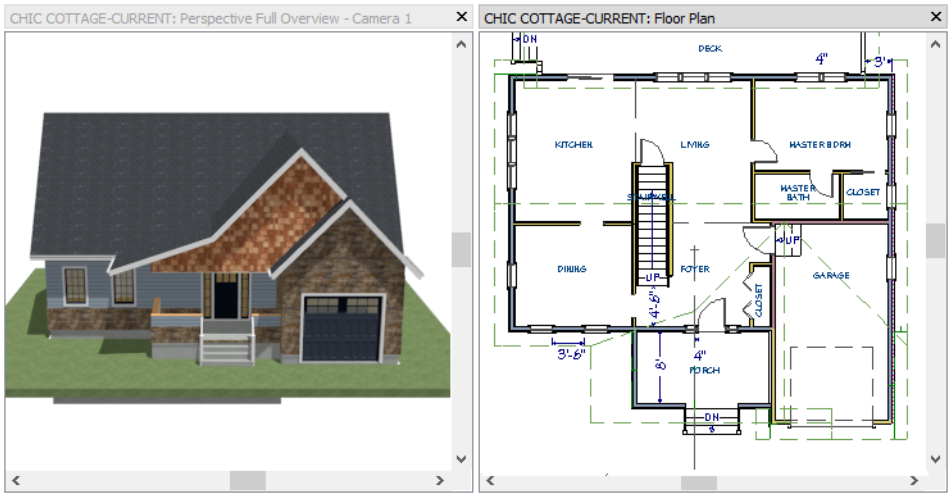
Custom roof configurations can be created by generating a roof automatically and then editing individual roof planes. See “Automatic vs. Manual Roofs” on page 774 of the Reference Manual.

To add a gull wing

1. With the floor plan view window active, go **Down One Floor** to Floor 1.
2. Click the **Select Objects** button, then click on the vertical Half Wall on the left side of the Porch room to select it.
3. Click the **Open Object** edit button, and on the ROOF panel of the **Railing Specification** dialog:



- Specify the **Pitch** as 4" in 12".
- Check the box beside **Upper Pitch**.
- Specify the Upper Pitch as 12" in 12".
- Specify the **In From Baseline** value as 7’ and click OK.

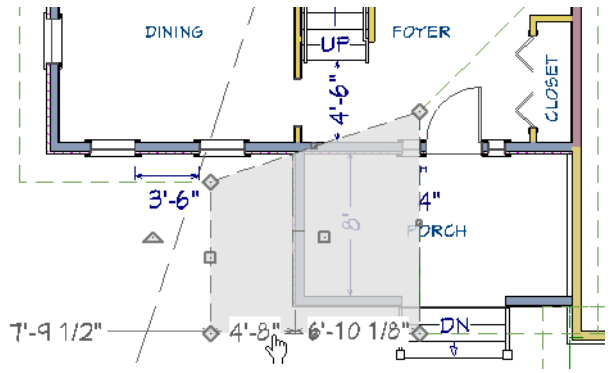


4. Notice that because of the reduced pitch, the lower Porch roof has a deeper eave so that it can have the same fascia height as the adjacent roof eave.

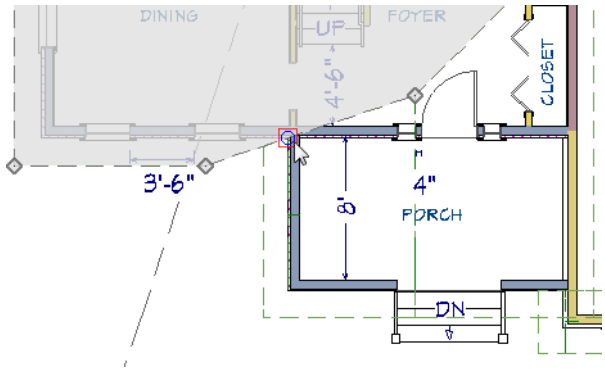
Once created, roof planes can be individually selected and edited. In order to edit a roof plane, Auto Rebuild Roofs must be turned off.

To edit roof overhangs

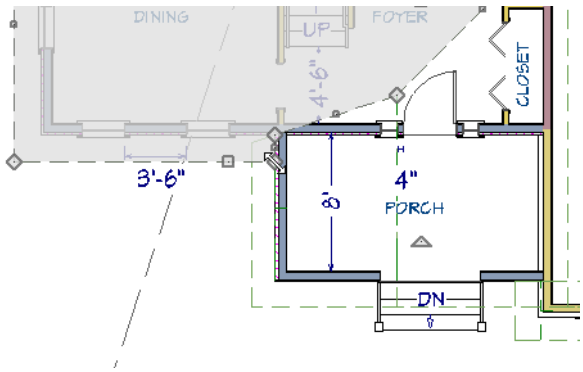
1. In the floor plan view window, **Zoom** in on the Porch, Foyer, and Dining rooms.
2. Click the **Select Objects** button, then click on the edge of the roof plane located over the left porch Half Wall to select it.
3. Click on the Temporary Dimension that reports how far the eave edge is from the framing layer of the Half Wall.



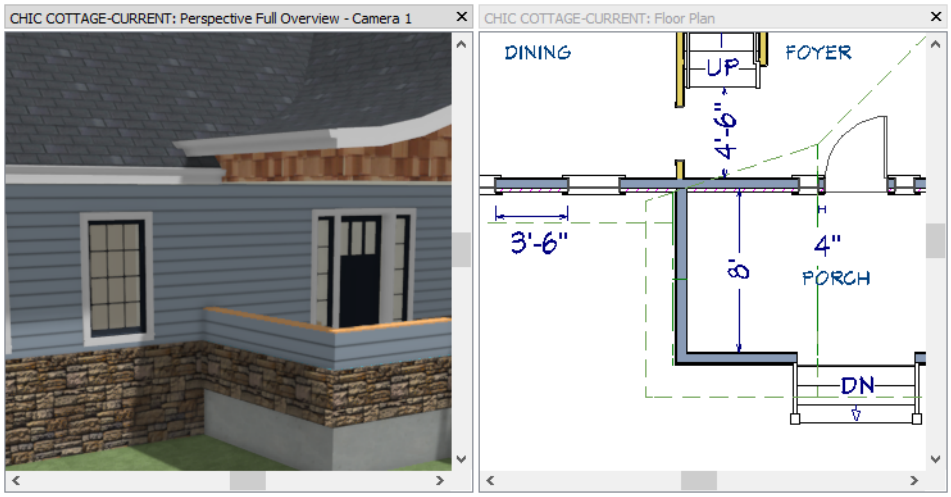
4. A Question message box will ask if you want to turn off Auto Rebuild Roofs. Click Yes to close the message box and continue editing the selected roof plane.
5. Type 18" in the inline text field and press the Enter key.
6. Next, select the main roof plane located over the Foyer and Dining rooms.
7. Click the **Break Line** edit button, then move your mouse pointer over the point where the roof plane's angled valley edge crosses the exterior of the Porch's side wall.



8. When the red **Endpoint** snap indicator displays, click once to break the angled edge into two segments and add a corner edit handle at that point.
9. Click on the corner edit handle located between the horizontal eave edge and the angled valley edge and drag to the right until it meets the surface of the Porch side wall.



10. To see the results in 3D, **Orbit** the camera so that the valley behind the Porch can be seen.

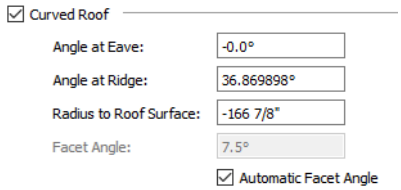


The horizontal eave of the main roof now extends under the higher eave of the Porch roof.

To create a curved roof plane

1. Click the **Select Objects** button, then click on the edge of the roof plane located over the left porch Half Wall to select it.

2. Click the **Open Object** edit button, and on the ROOF panel of the **Roof Plane Specification** dialog:

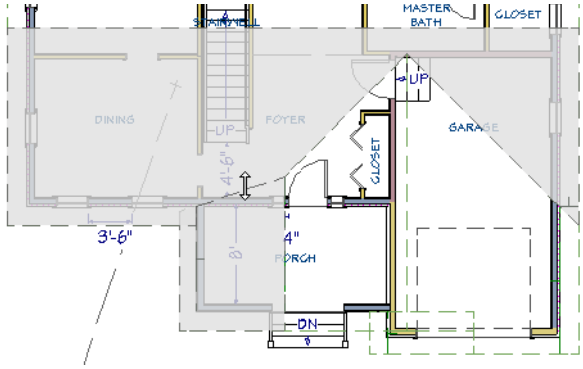


   - Check the box beside **Curved Roof**.
   - Specify the **Angle at Eave** as 0°, then press the Tab key to update the other settings.
   - Notice that the **Angle at Ridge** and **Radius to Roof Surface** both update.
   - Click OK.

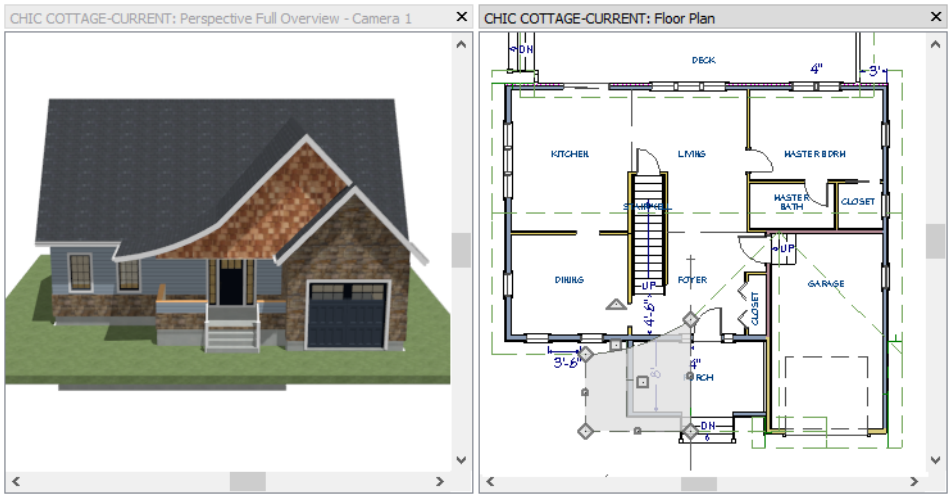
3. Click on the edge of the Porch roof plane that extends over the Foyer room to make it the Selected Edge. See “Selected Edge” on page 214 of the Reference Manual.

4. Click the **Join Roof Planes** edit button, then move your mouse pointer into the Foyer room.

5. When the larger roof plane becomes highlighted, click once.



6. The two roof planes now meet along a curved valley.



7. When you are finished, **Save** your work.

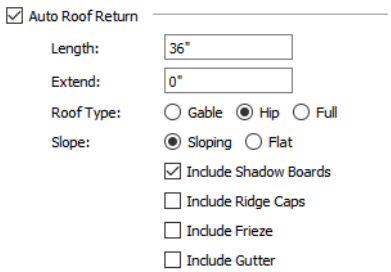
Adding Roof Details

Chief Architect offers a variety of tools for adding architectural detail to a roof design.

Auto Roof Returns can be specified for any wall, and will generate on Full Gable Walls. See “Roof Returns” on page 829 of the Reference Manual.

To add roof returns

1. Select the wall at the front of the Garage and click the **Open Object** edit button.
2. On the ROOF panel of the **Wall Specification** dialog:

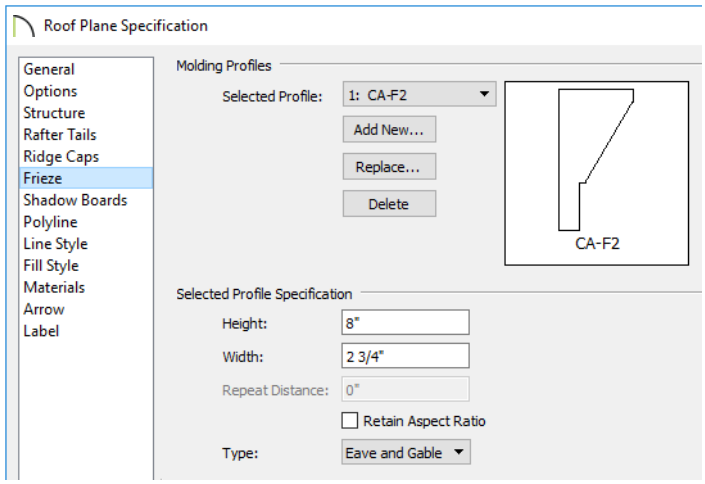


   - Check the box beside **Auto Roof Return**.
   - Specify the **Roof Type** as **Hip**.
   - Check the box beside **Include Frieze**.
   - Click OK.

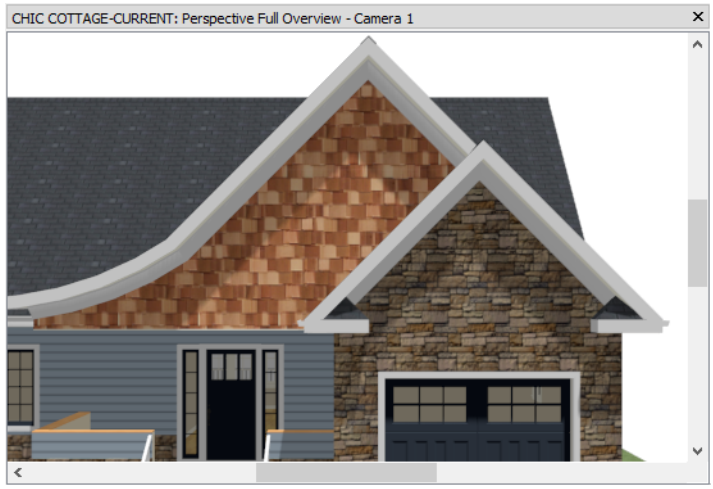
Frieze molding can be specified in the Roof Defaults and Build Roof dialogs. Since the Porch roof has been manually edited, though, rebuilding the roof is not the best option.

To add frieze moldings

1. Select **Build> Roof> Edit All Roof Planes** .
2. On the GENERAL panel of the **Roof Plane Specification** dialog:
   - Notice that most of the values are reported as "No Change".
   - This is because this dialog is shared by all roof planes in the plan: as though they had been group-selected.
3. On the FRIEZE panel, click the **Add New** button.
4. In the **Select Library Object** dialog:
   - Type the word 'Frieze' in the Search field.
   - Right-click on an item in the search results and select **Show in Browser** from the contextual menu to see its location in the tree list.
   - Select the "CA-F2" profile and click OK



5. Confirm that the frieze molding Type is set to "Eave and Gable", then click OK to add frieze molding under the eaves of the roof.
6. Frieze molding can be seen in the 3D overview if you Zoom in on the overhang area of any wall.



7. Remember to **Save** your work.

The Dormers tutorial describes several ways that dormers can be added to the Chic Cottage roof.

Creating Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed.

When you are finished working on a file and are ready to close it, **Save** your work. Before closing it, though, create a copy of the file with a different name that indicates what it contains so you can distinguish it from other revisions.

To save a plan revision

1. Select **File**> **Save As** .
2. In the **Save Plan File** dialog, make sure that the save location is your Chic Cottage folder.
3. For the File name, type a the name of the project followed by a short description of the current state of the drawing; for example, Chic Cottage-Roof.

Review

This lesson describes the best practices for creating automatically generated and manually edited roofs.

- To tile floor plan and camera views
- To set the roof defaults
- To add gable walls
- To create a nested gable
- To create a reverse gable
- To add a shed roof over the deck
- To create a story and a half
- To edit the nested gable wall
- To add a gull wing
- To edit roof overhangs
- To create a curved roof plane
- To add roof returns
- To add frieze moldings

Assessment Questions

What edit tool is used to set the roof directives for the side walls of a shed roof?

What settings are modified to produce an automatic gull wing roof?

What edit tool allows you to add a new corner to a roof plane?

What edit tool allows you to join two roof planes along a valley, hip, or ridge?

By default, what determines the initial height of a roof over a structure?

In what dialog are automatic roof returns specified?

Chapter 9:

Dormers

Dormers can be created in three different ways: they can be placed using the Auto Dormer tools; generated when the rest of the roof is built; and their individual components can be drawn manually.

Learning Objectives

This lesson describes best practices in Chief Architect for creating dormers. Concepts introduced include:

- Placing an Auto Floating Dormer
- Placing a Structural Auto Dormer
- Generating a Structural Dormer
- Drawing a Dormer Manually

File Management

In this tutorial, an alternative to the roof created in the Chic Cottage Roof tutorial will be produced. Since it is a design option, it will be saved in its own file rather than the main working file.

At this point, both the Chic Cottage-Roof and CHIC COTTAGE-CURRENT plans contain the same information, so you could open either one and continue working. However, Chic Cottage-

Roof.plan was created specifically to serve as a revision or archive file so as a matter of practice, it will be left unchanged.

Select **File> Open Plan** . If need be, browse to Documents\Chic Cottage, select CHIC COTTAGE-CURRENT, and click Open.

To create a plan option file

1. Select **File> New Plan** to open a new, blank plan.
2. Select **File**> **Save As** . In the **Save Plan File** dialog, browse to your Documents\Chic Cottage folder so that it is the Save location for your plan file.
3. For the **File name**, type Chic Cottage-Dormer Option. and click the **Save** button.

It is a very good idea to save your files often as you work, and this guide reminds you to do so regularly.

Productivity Tips

As you learn how to create the roof in Chic Cottage, keep in mind these tips to improve your productivity.

Drawing and Editing

- The **Join Roof Planes** edit tool lets you join the edges of two roof planes along a line or arc to form a geometrically correct valley, hip, or ridge. See “Join Roof Planes” on page 793 of the Reference Manual.
- Like other objects, Auto Dormers can be positioned using dimensions, temporary dimensions, and the **Center Object** edit tool.

Interface

- Tiling 2D and 3D views can make it easier to manually edit a roof design.

Keyboard Hotkeys

- F1 - Help for the current context
- Ctrl + R - Build Roof
- 3 - Break Line edit tool
- 2 - Join Roof Planes edit tool
- Ctrl + S - Save

Setting the Defaults

In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. Setting defaults early can improve efficiency and also helps to avoid introducing errors into the drawing. When creating dormers, there are several defaults that should be borne in mind.

When manually drawing dormers, settings in the Roof Defaults dialog as well as a number of other structural defaults is important. See "Setting the Defaults" on page 161 of the Chic Cottage Roof Tutorial.

Before placing Auto Dormers, the Dormer Defaults should be also set. See “Setting the Defaults” on page 185.

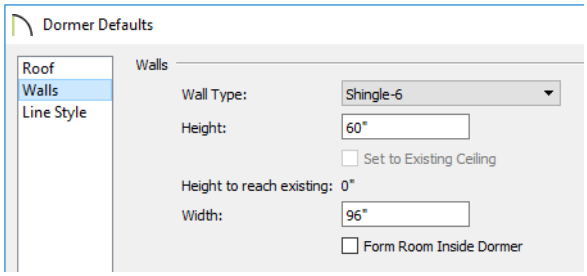
Dormer windows derive most of their settings from the Window Defaults, so if multiple dormers will be created, consider modifying these as well. See “To set the Window Defaults” on page 186.

Placing an Auto Floating Dormer

An Auto Floating Dormer is a non-structural dormer that rests on top of the roof.

To set the Dormer Defaults

1. Select **Edit> Default Settings** to open the **Default Settings** dialog, then click on "Dormer" in the tree list and click the **Edit** button.
2. On the ROOF panel of the **Dormer Defaults** dialog, under the Fascia/Rafters heading, check the box beside **Frieze**.
3. On the WALLS panel:



- Select "Shingle-6" from the **Wall Type** drop-down list.
- Specify the **Width** as 96".
- Click OK.

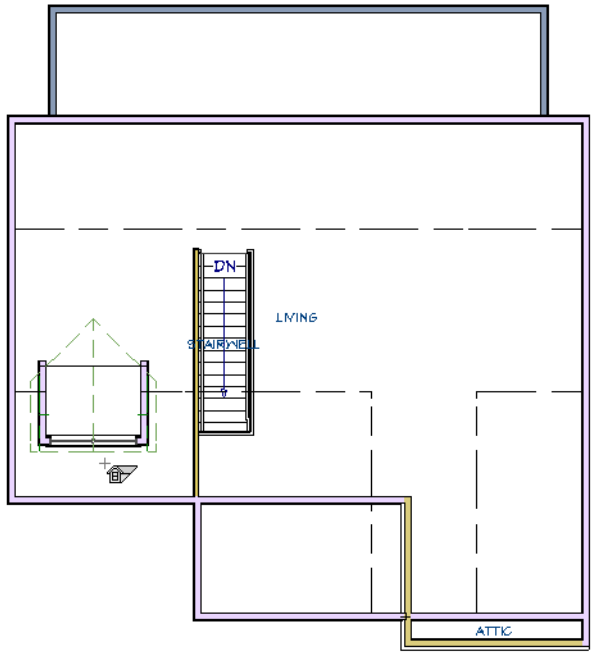
The windows in Auto Dormers derive most of their initial settings from the Window Defaults dialog. Since the other windows in this plan have already been placed, adjusting the default settings for use in dormers will save time and help to avoid errors.

To set the Window Defaults

1. In the **Default Settings** dialog, click on "Window", then click the **Edit** button.
2. On the GENERAL panel of the **Window Defaults** dialog:
   - Select "Double Casement" from the **Window Type** drop-down list.
   - Specify the **Width** as 72" and the **Height** as 48".
   - Specify the **Floor to Top** height as 93 1/2".
3. On the LITES panel, specify the **Lites Vertical** as 3 and click OK.
4. Click Done to close the **Default Settings** dialog.

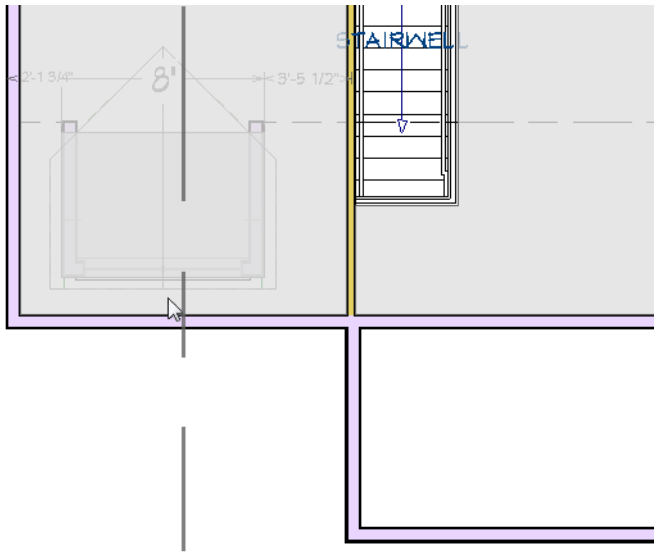
To place an Auto Floating Dormer

1. Go **Up One Floor** to Floor 2 of Chic Cottage and **Zoom** in on the left side of the structure.
2. Select **Build> Roof> Auto Floating Dormer** .
3. Click once in the space to the left of the staircase to place a dormer at that location.



To position an Auto Floating Dormer

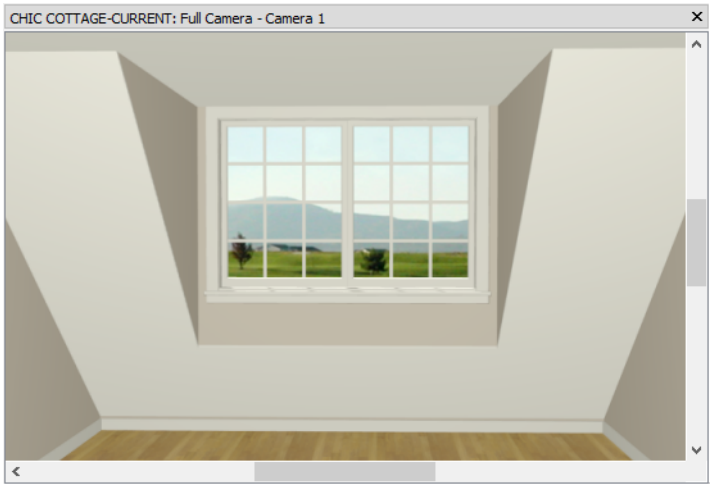
1. Click the **Select Objects** button, then click on the front or side wall of the dormer to select it.
2. If the window becomes selected instead, click the **Select Next Object** edit button.
3. With the dormer selected, click on the Temporary Dimension line that reports how far its front wall is from the exterior wall in front of it.
4. In the inline text field, type 2’ and press the Enter key.
5. With the dormer still selected, click the **Center Object** edit button, then:
   - Move the mouse pointer into the room area just in front of the dormer.
   - When a dashed vertical centering axis line displays, click once.



Dormer windows inherit nearly all of their initial settings from the Window Defaults dialog. Their size, on the other hand, is always based on the size of the dormer's front window.

To edit an Auto Floating Dormer window

1. Click the **Select Objects** button, then click on the dormer window to select it.
2. Click the **Open Object** edit button, and on the GENERAL panel of the **Window Specification** dialog:
   - Specify the **Width** as 72" and the **Height** as 48".
   - Specify the **Floor to Top** as 56", then click OK.
3. Create a **Full Camera** view of the interior of the dormer to see the results.



- Notice that none of the dormer walls extend down to the floor.

4. When you are finished, close the camera view and **Save** your work.

Placing a Structural Auto Dormer

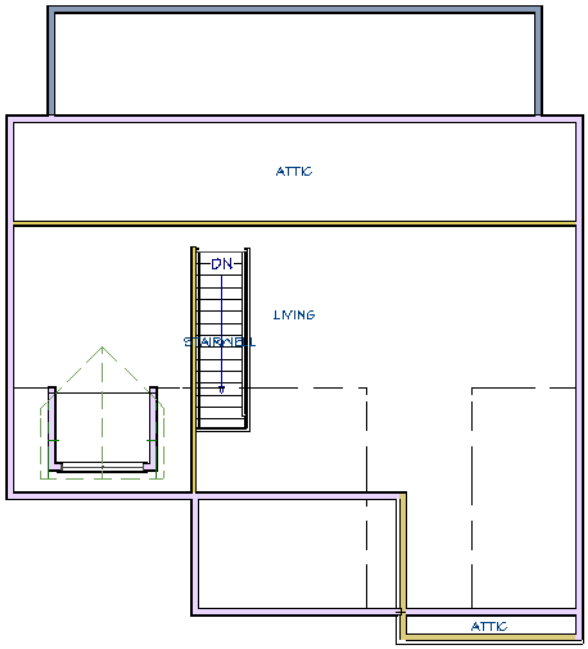
Auto Dormers use the same defaults that Auto Floating Dormers use, but because they are structural dormers, they have more requirements than Auto Floating Dormers.

The unused space next to and sometimes in front of a structural Auto Dormer should be specified as an Attic room and separated from the living area by a Knee Wall. See “Knee Walls” on page 378 of the Reference Manual.

To create a knee wall and Attic room

1. Select **Build> Wall> Straight Interior Wall**, then draw a horizontal wall across the back of the structure, near the Ceiling Break line.
2. Select the new wall and click the **Open Object** edit button.
3. On the ROOF panel of the **Wall Specification** dialog, check the box beside **Knee Wall** and click OK.
4. With the wall still selected, click on the Temporary Dimension that reports how far it is from the back horizontal exterior wall. In the inline text field, type 8’ and press the Enter key.

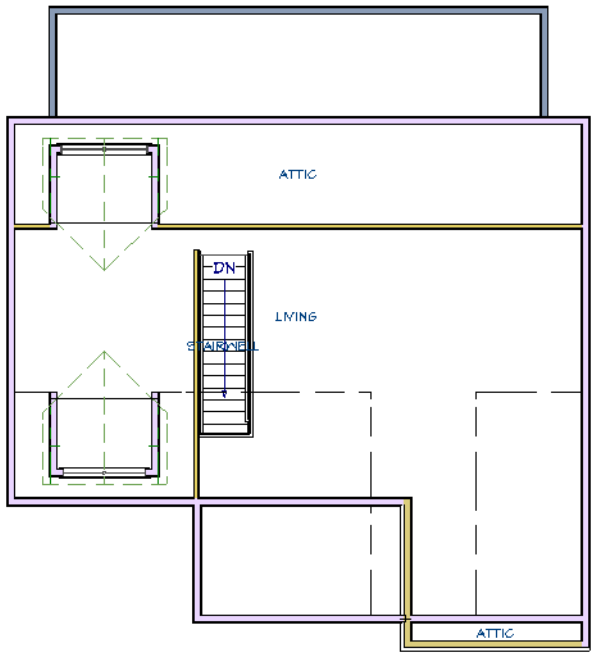
5. Click the **Select Objects** button, then click in the narrow room defined by the Knee Wall and click the **Open Object** edit button.
6. On the GENERAL panel of the **Room Specification** dialog, select "Attic" from the **Room Type** drop-down list and click OK.



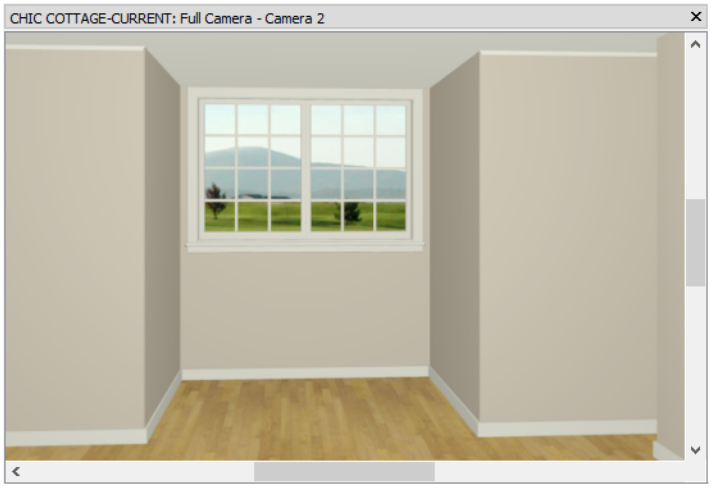
To place an Auto Dormer

1. Select **Build> Roof> Auto Dormer**, then click once in the Attic room, between the Knee Wall and exterior wall.
2. Click the **Select Objects** button, then click on the front or side wall of the dormer to select it.
3. If the window becomes selected instead, click the **Select Next Object** edit button.
4. Click the **Center Object** edit button, then:
   - Move the mouse pointer over the center of the Auto Floating Dormer.
   - When a dashed vertical centering axis line displays, click once.
5. With the dormer still selected, click on the Temporary Dimension line that reports how far its front wall is from the back exterior wall.

6. In the inline text field, type 2’ and press the Enter key.



7. Modify the new dormer’s window, as described above. See “To edit an Auto Floating Dormer window” on page 188.
   - Specify the window’s **Width** as 72" and its **Height** as 48".
   - Specify the **Floor to Top** height as 93 1/2".
8. Create a Full Camera view of the interior of this dormer to see the results.



- Notice that unlike the Auto Floating Dormer, all three of this dormer's walls bear on the floor.

9. Close the camera view and remember to **Save** your work.

Generating a Structural Dormer

A dormer can also be produced when the roof is built by creating the necessary structural conditions inside of the house. For details about this approach, see Knowledge Base article KB-00449 at www.chiefarchitect.com/support/database.html.

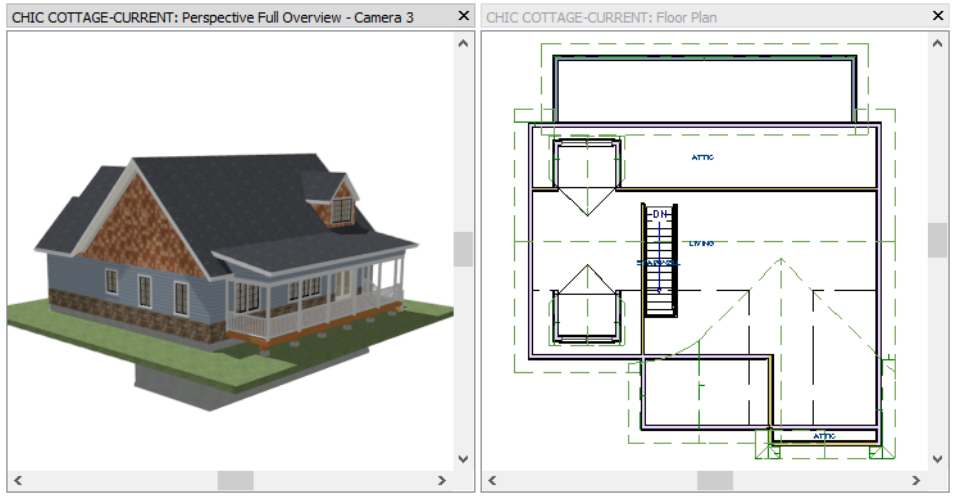
Drawing a Dormer Manually

Automatic Dormers are actually a collection of different architectural objects blocked together. These component objects can be created individually to produce a manually-drawn dormer.

To move the display of roof planes

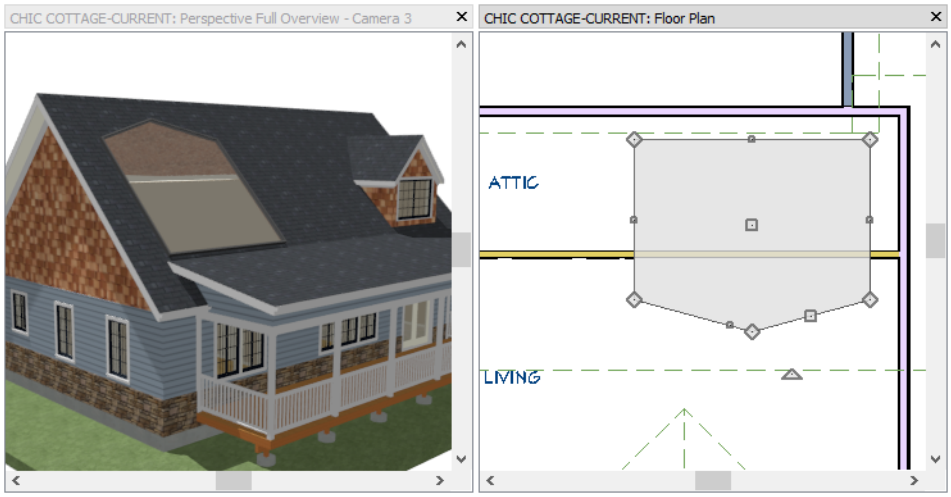
1. Select **3D> Create Perspective View> Perspective Full Overview** . Orbit around until the back of the structure can be seen.
2. Select **Window> Tile Vertically** , then make the floor plan view the active window.
3. Go **Down One Floor** to Floor 1 and **Zoom** out until the entire structure can be seen.

4. Select **Build> Roof> Roof Plane**, then:
   - Click and drag a rectangular selection marquee around the entire structure.
   - Notice that the Status Bar states that seven objects are selected.
5. Click the **Display On Floor Above** edit button and notice that the roof planes disappear.
6. Go **Up One Floor** and note that the roof planes are now found on Floor 2.



To create a roof hole

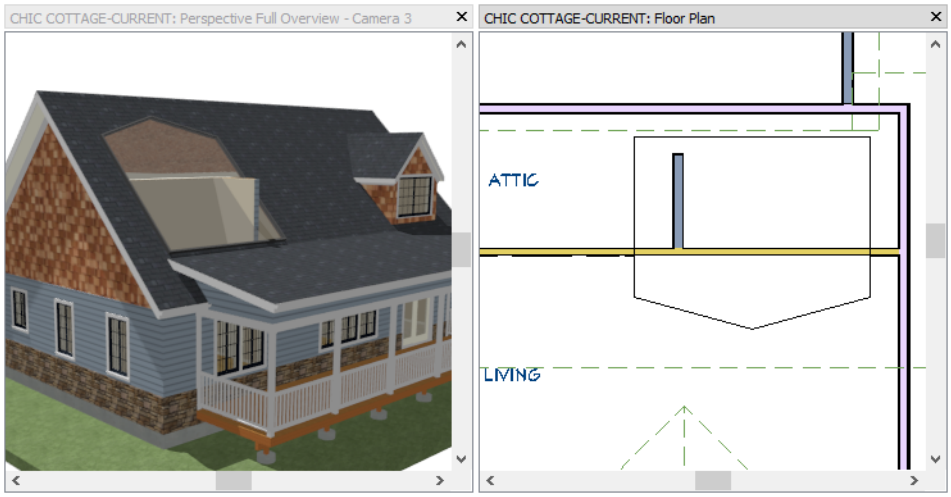
1. **Zoom** in on the right back corner of the structure in floor plan view, then select **Build> Roof> Skylight** and click and drag to draw a rectangular over the Attic and knee wall.
   - Make sure the rectangle is larger than the Auto Dormer to its left but does not extend past the edges of the roof plane that contains it.
2. Select the Skylight and click the **Open Object** edit button.
3. On the GENERAL panel of the **Roof Hole/Skylight Specification** dialog, uncheck **Skylight** and click OK.
4. With the roof hole still selected, add an extra edge to its shape:



- Click the **Break Line** edit tool.
- Move your mouse pointer over the horizontal edge that is closest to the front of the structure and click once.
- Click and drag the new Reshape edit handle that displays at the point where you clicked and drag it towards the front of the building.
- Make sure that you do not drag the handle past the roof plane's horizontal ridge edge.

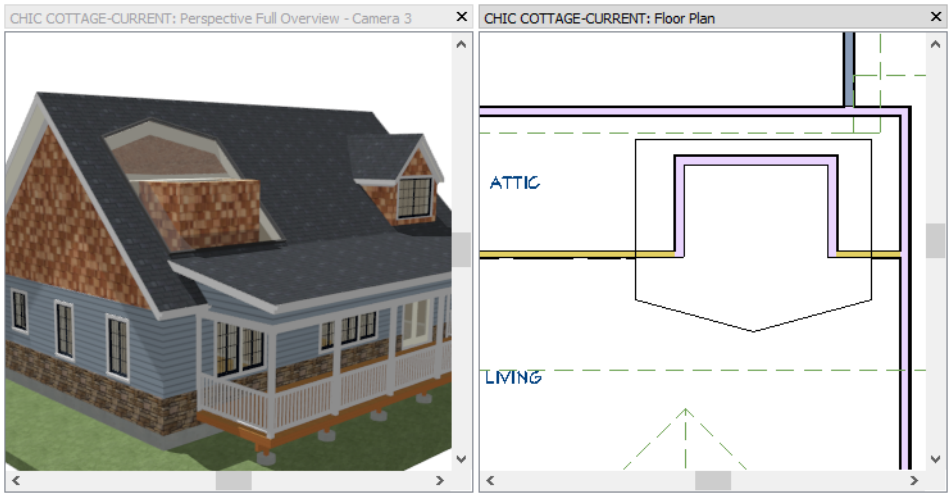
To draw the dormer walls

1. **S**elect **Build> Wall> Exterior Wall** and draw a wall segment located inside of the roof hole polyline.

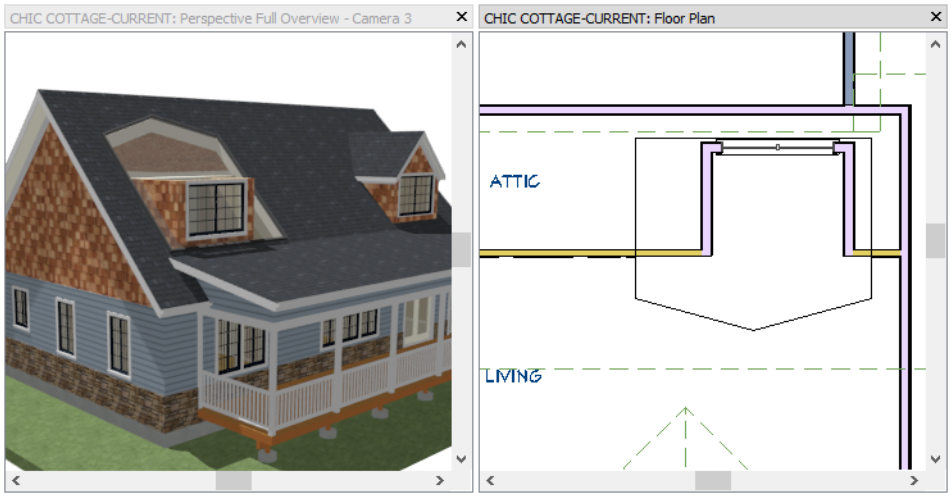


- Begin at the horizontal knee wall and draw upwards into the Attic room.
- Notice that the new wall segment extends up through the roof hole.

2. Draw two more exterior walls to create a small room on the Attic side of the knee wall, inside the area of the roof hole.
3. Assign the "Shingle-6" **Wall Type** to the three new exterior walls. See "To customize the second floor wall type" on page 66 of the Multiple Floors Tutorial.
4. Select **Build> Wall> Break Wall** , then click once at each intersection where the vertical dormer walls meet the knee wall.
5. Click the **Select Objects** button, then click on the wall segment located between the two wall breaks and click the **Delete** button.



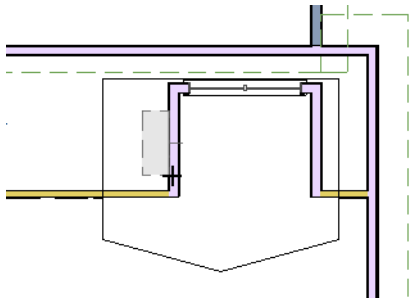
6. Click on the right vertical dormer wall to select it, then:
   - Click on the Temporary Dimension that reports how far it is from the vertical exterior wall on the right.
   - In the inline text field, type 3’ and press the Enter key.
7. Click on the left vertical dormer wall to select it, then:
   - Click on the Temporary Dimension that reports how far it is from the right vertical side wall.
   - In the inline text field, type 8’ and press the Enter key.
8. Click on the horizontal dormer wall to select it, then:
   - Click on the Temporary Dimension that reports how far it is from the back exterior wall.
   - In the inline text field, type 2’ and press the Enter key.
9. Do not be concerned if any of the walls are no longer located within the area of the roof hole: the hole will be edited to fit the dormer perfectly in a moment.
10. Select **Build> Window> Window** , then:
    - Move the mouse pointer over the horizontal dormer wall.
    - When the Midpoint snap indicator displays, click once.



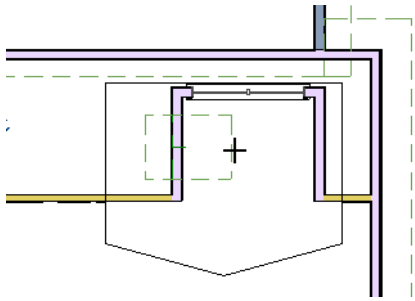
Roof planes are often generated automatically; but they can also be drawn manually. See “To draw a roof plane” on page 789 of the Reference Manual.

To draw the dormer roof planes

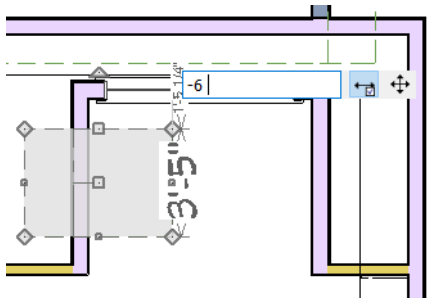
1. Select **Build> Roof> Roof Plane** , then move your mouse pointer over the left vertical dormer wall.
2. Click and drag along the length of the wall to create the roof plane’s Baseline.
   - By default, the Baseline will snap to the outside of the wall’s Main Layer. See “The Main Layer” on page 383 of the Reference Manual.
   - As you draw the Baseline, a rectangular preview outline indicates the location of the eave area.



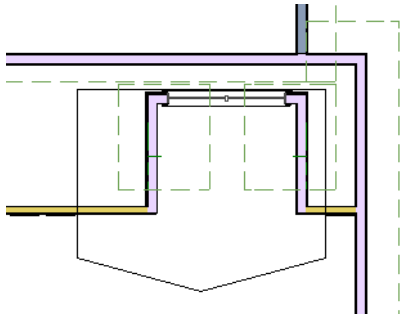
3. Move your mouse pointer to the right, so it is located between the two vertical "Shingle-6" walls to specify the direction of the roof plane’s pitch and location of its ridge.



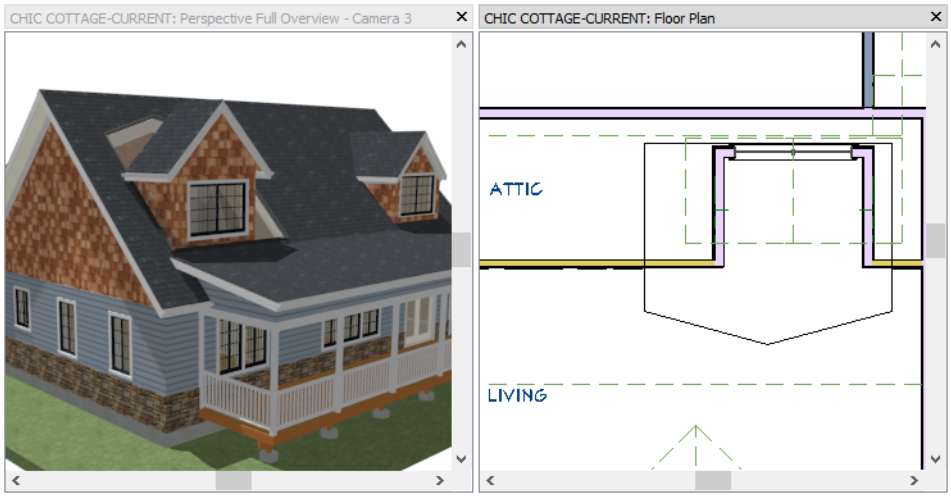
4. Click once to create the roof plane.
5. Select the top horizontal edge of the new roof plane and click on the Temporary Dimension that reports how far it is from the horizontal "Shingle-6" wall.



   - In the inline text field, type -6" and press the Enter key.
   - Notice that typing a negative number move the selected edge to the opposite side of the wall.
6. Repeat steps 2 through 5 to create a roof plane with a Baseline over the right vertical "Shingle-6" wall.



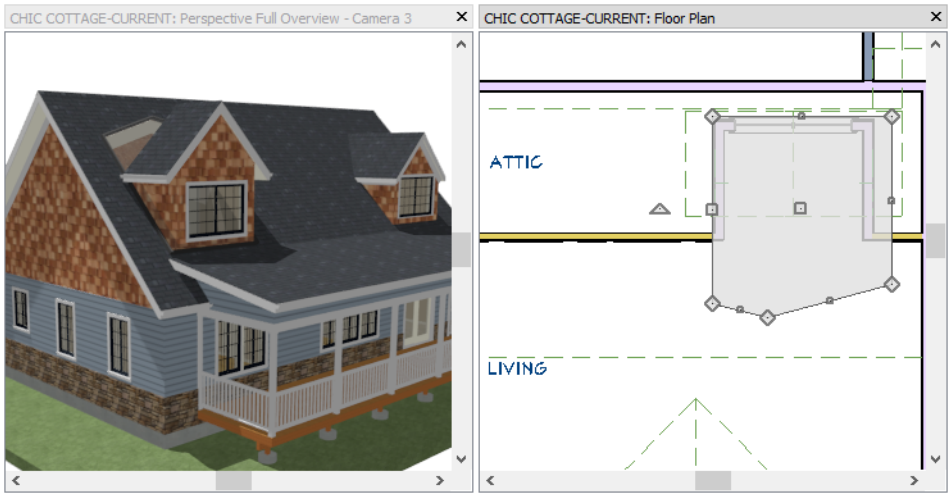
7. Join the two roof planes to create the dormer roof ridge:



- Select the left roof plane and click on its right vertical edge to make it the Selected Edge.
- Click the **Join Roof Planes** edit button.
- Move your mouse pointer over the right roof plane.
- When it becomes highlighted, click once. The two roof planes meet along the geometrically correct ridge line.

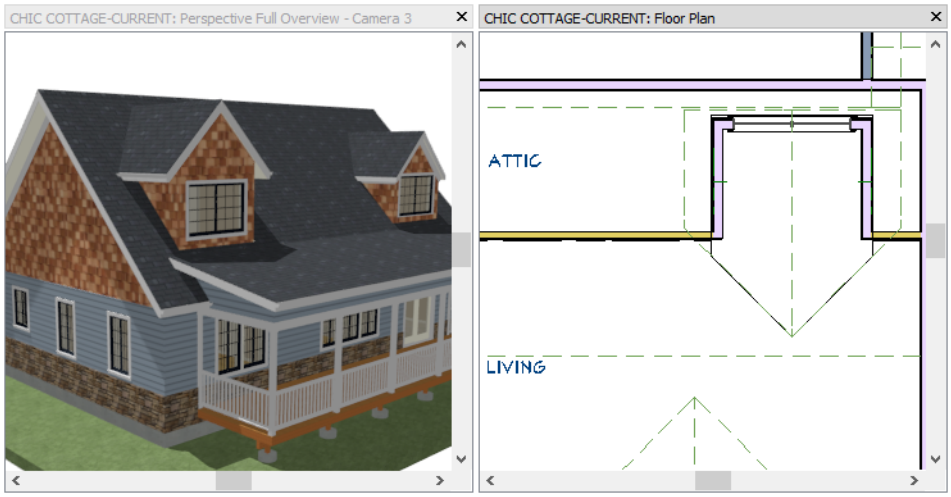
To edit the dormer roof hole

1. Still in floor plan view, select the vertical edge on the left side of the roof hole, then:



- Click the Resize edit handle that displays where you clicked to select the edge.
- Use the Resize handle to drag the roof hole edge until it snaps to the outside of the left dormer wall.

2. Repeat step 1 to snap the right edge of the roof hole to the right dormer wall.
3. Repeat step 1 to snap the horizontal edge of the roof hole to the horizontal dormer wall with the window.
4. Join the left roof plane with the larger roof to create a valley:
   - Select the left roof plane and click on its bottom horizontal edge to make it the Selected Edge.
   - Click the **Join Roof Planes** edit button.
   - Move your mouse pointer over the angled edge on the left side of the roof hole.
   - When it becomes highlighted, click once. The two roof planes meet along the geometrically correct valley line.
5. Repeat step 8 to join the right roof plane with the larger roof.



6. When you are finished, **Save** your work.

Creating Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed.

When you are finished working on a file and are ready to close it, **Save** your work. Before closing it, though, create a copy of the file with a different name that indicates what it contains so you can distinguish it from other revisions.

To save a plan revision

1. Select **File**> **Save As** .
2. In the **Save Plan File** dialog, make sure that the save location is your Chic Cottage folder.
3. For the File name, type a the name of the project followed by a short description of the current state of the drawing; for example, Chic Cottage-Dormers.

Review

This lesson describes the best practices for creating automatically generated and manually drawn dormers.

- To set the Dormer Defaults
- To set the Window Defaults

- To place an Auto Floating Dormer
- To position an Auto Floating Dormer
- To edit an Auto Floating Dormer window
- To create a knee wall and Attic room
- To place an Auto Dormer
- To move the display of roof planes
- To create a roof hole
- To draw the dormer walls
- To draw the dormer roof planes
- To edit the dormer roof hole

Assessment Questions

What is the difference between an Auto Floating Dormer and an Auto Dormer?

What setting should be applied to an interior wall that separates a living area from an Attic room?

What drawing tool can be used to create a hole in a roof plane?

What edit tool can be used to make the roof planes over a dormer meet the edges of a roof hole?

Interior Design Tutorials

The Interior Design Tutorials describe best practices for adding elements of interior design to a drawing in Chief Architect:

- Custom Ceilings
- Finish Materials
- Room Moldings
- Interior Furnishings

Chapter 10:

Custom Ceilings

By default, Chief Architect automatically produces a flat ceiling in most types of rooms. There are various options for modifying this automatic ceiling, however.

Learning Objectives

This lesson describes best practices in Chief Architect for customizing ceilings. Concepts introduced include:

- Creating a Lowered Ceiling
- Creating a Cathedral Ceiling
- Drawing a Trey or Coffered Ceiling

File Management

This tutorial continues where the Dormers tutorial left off. At this point, both the Chic Cottage-Dormers and CHIC COTTAGE-CURRENT plans contain the same information, so you could open either one and continue working. However, Chic Cottage-Dormers.plan was created specifically to serve as a revision or archive file so it will be left unchanged.

To continue working on the Chic Cottage project, select **File> Open Plan** . If need be, browse to Documents\Chic Cottage, select CHIC COTTAGE-CURRENT, and click Open.

Alternatively, select **File> Recent Files** and choose CHIC COTTAGE-CURRENT from the Recent Files List. The Recent Files List is a convenient way to access files you have been working on; however, it is not an alternative to knowing where your files are located and having a good file revision strategy in place. See "File Management" on page 18 of the Exterior Walls Tutorial.

It is a very good idea to save your files often as you work, and this guide reminds you to do so regularly.

Productivity Tips

As you learn how to create different types of custom ceilings, keep in mind these tips to improve your productivity.

Drawing and Editing

- The **Soffit** tool can be used to model a wide variety of straight-sided objects and is particularly useful for objects that attach to walls.
- The **Copy/Paste** and **Reflect About Object** edit tools can be used to make reflected copies of Soffits and other objects.

Content

- Create template plans that have your custom ceiling finish definitions set as defaults, and ready for use when you begin a new plan. See “Template Files” on page 97 of the Reference Manual.

Interface

- **Backclipped Cross Section** views are useful for viewing details of a model’s internal structure.
- Tiling views can help confirm that changes made in 2D have the desired effect in 3D.

Keyboard Hotkeys

- F1 - Help for the current context
- Spacebar - Select Objects
- Ctrl + E - Open Object edit tool
- Ctrl + S - Save

Setting the Defaults

In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. Setting defaults early can improve efficiency and also

helps to avoid introducing errors into the drawing. When creating ceilings, there are several defaults that should be borne in mind.

Before creating custom ceilings, it's a good idea to make sure that all aspects of the structure that influence ceiling height are set. See "Setting the Defaults" on page 24 of the Exterior Walls Tutorial and "Setting the Defaults" on page 65 of the Multiple Floors Tutorial.

It's also a good idea to set the defaults for ceiling finishes.

To set the default ceiling finish

1. Select **Edit> Default Settings** to open the **Default Settings** dialog. Click the arrow to the left of "Floors and Rooms" to expand the category, select "Floor/Ceiling Platform", then click the **Edit** button.
2. In the **Floor/Ceiling Platform** dialog, click the **Ceiling Finish Edit** button.
3. In the **Ceiling Finish Definition** dialog, note that the ceiling finish is composed of two layers: drywall and a paint color.
4. Click OK to close both dialogs and return to the **Default Settings** dialog.

To set the default ceiling finish for room types

1. In the **Default Settings** dialog, under the "Floors and Rooms" category, select "Room Types" and click the **Edit** button.
2. In the **Room Types** dialog, notice that a selected Room Type can be edited, copied, renamed, and deleted.
3. Select "Garage" from the list and click the **Edit** button.
4. On the STRUCTURE panel, click the **Ceiling Finish Edit** button to open the **Ceiling Finish Definition** dialog:
   - Select Layer 1 of the ceiling finish definition, and increase its Thickness to 5/8".
   - Click the **Select Material** button and specify Layer 1's material as "Fire Rated Drywall".
5. Click OK three times to return to the **Default Settings** dialog, then click Done.

A customized ceiling finish can also be used to create a lowered ceiling. See "To set lowered ceiling defaults" on page 209.

Soffits are a useful tool for creating different types of trey and coffered ceilings. See "To set the Soffit Defaults" on page 214.

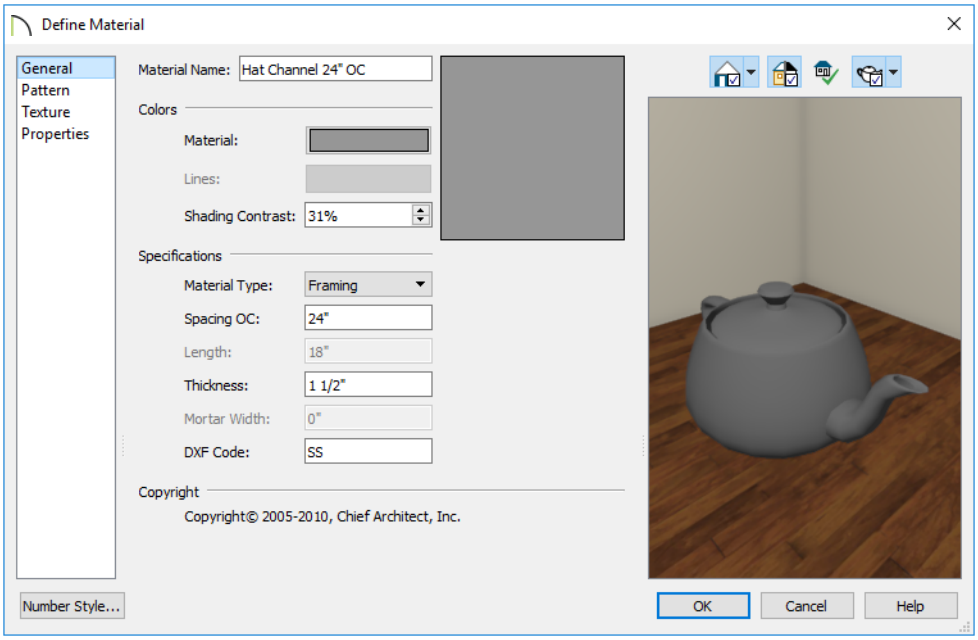
Creating a Lowered Ceiling

You can define a lowered or dropped ceiling without affecting the top heights of the walls by modifying the Ceiling Finish Definition. For more information, see “Floor and Room Defaults” on page 413.

In the Floor 0 Defaults dialog, space in the ceiling can be allotted for soundproofing drywall hat channels.

To create a custom hat channel material

1. Select **3D> Materials> Plan Materials** , and in the **Plan Materials** dialog, click the **New** button.
2. On the GENERAL panel of the **Define Material** dialog:



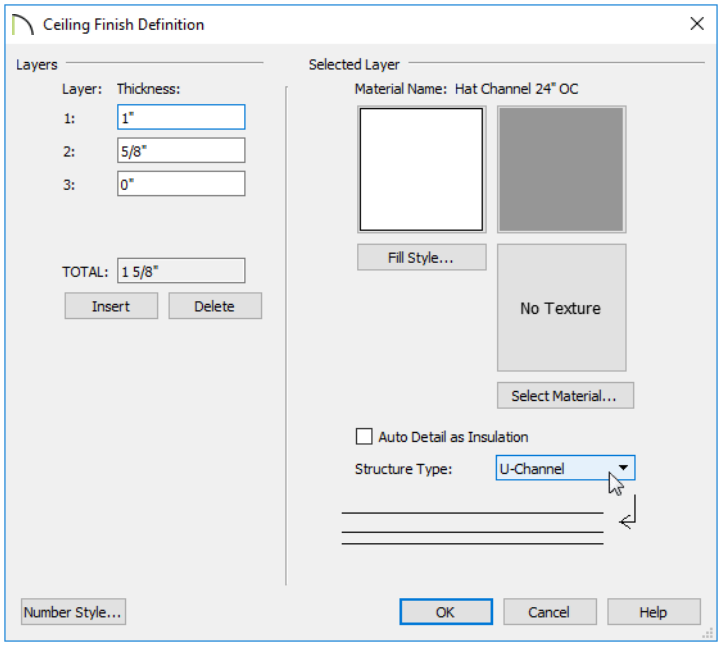
- Type a short, descriptive **Material Name** such as "Hat Channel 24" OC".
- Click the **Material Color** box and select a grey color to represent this material in 3D views.
- Specify the **Material Type** as "Framing".
- Specify the **Spacing OC** as 24".
- Specify the **Thickness** as 1".

- Click OK.

3. In the **Plan Materials** dialog:
   - Select the new "Hat Channel 24" OC" material in the list on the left.
   - Click the **Add to Library** button.
   - Click OK to close the dialog and add the new material to the User Catalog in the library for use in this and other plans.

To set lowered ceiling defaults

1. Go **Down One Floor** to Floor 0.
2. Select **Edit> Default Settings** to open the **Default Settings** dialog. Under the "Floors and Rooms" category, select "Current Floor" and click the **Edit** button.
3. On the STRUCTURE panel of the **Floor 0 Defaults** dialog, click the **Ceiling Finish Edit** button.
4. In the **Ceiling Finish Definition** dialog:
   - Click in the **Thickness** field for Layer 1 to make it the selected layer.
   - Click the **Insert** button to add a layer above it.
   - Click the **Select Material** button.
5. In the **Select Material** dialog, select your new "Hat Channel 24" OC" material, created above. It can be selected on either the LIBRARY MATERIALS or PLAN MATERIALS panel.
   - On the LIBRARY MATERIALS panel, it will be found in the User Catalog.
   - On the PLAN MATERIALS panel, all materials in the current plan are listed alphabetically.
   - Click OK.
6. Returning to the **Ceiling Finish Definition** dialog:



- Specify the new Layer 1's **Thickness** as 1".
- Specify the **Structure Type** as "U Channel" to distinguish the hat channels from regular furring when framing is generated later on.

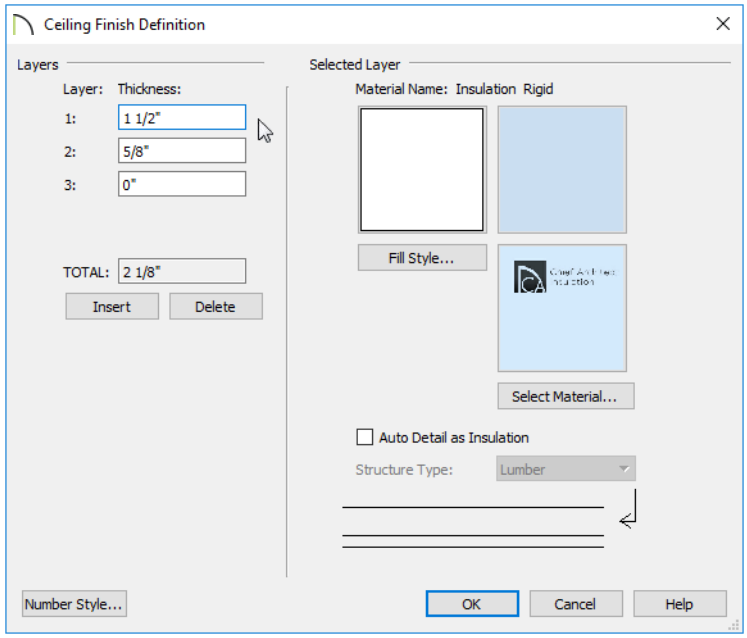
7. Click OK and then Done to close all dialogs.

See "To generate floor and ceiling framing" on page 400 of the Floor Framing Tutorial.

Extra insulation can be added to the Garage ceiling using a similar method.

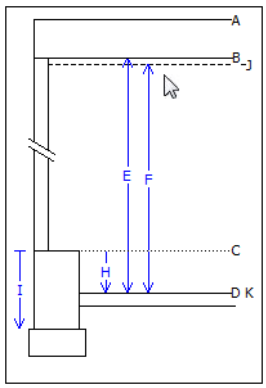
To specify a lowered ceiling

1. Go **Up One Floor** to Floor 1.
2. Click the **Select Objects** button, then click in an empty space in the Garage room to select it.
3. Click the **Open Object** edit button to open the **Room Specification** dialog.
4. On the STRUCTURE panel, click the **Ceiling Finish Edit** button to open the **Ceiling Finish Definition** dialog:



- Select Layer 1 of the ceiling finish definition, and notice that its material is 5/8" of "Fire Rated Drywall".
- With Layer 1 still selected, click the **Insert** button to create a new layer above it.
- Specify the new layer's **Thickness** as 1 1/2".
- Click the **Select Material** button and specify the new layer's material as "Insulation Rigid".

5. Click OK to close both dialogs.
6. Notice that the cross section diagram at the top of the dialog shows the new Finished Ceiling height (F).



To remove a ceiling finish

1. Go **Down One Floor** to Floor 0.
2. Click the **Select Objects** button, then click in an empty space in the room below the Porch to select it.
3. Click the **Open Object** edit button to open the **Room Specification** dialog.
4. On the STRUCTURE panel, click the **Ceiling Finish Edit** button.
5. In the **Ceiling Finish Definition** dialog, select each of the layers and click the **Delete** button.
6. Click OK to close both dialogs.
7. When you are finished, be sure to **Save** your work.

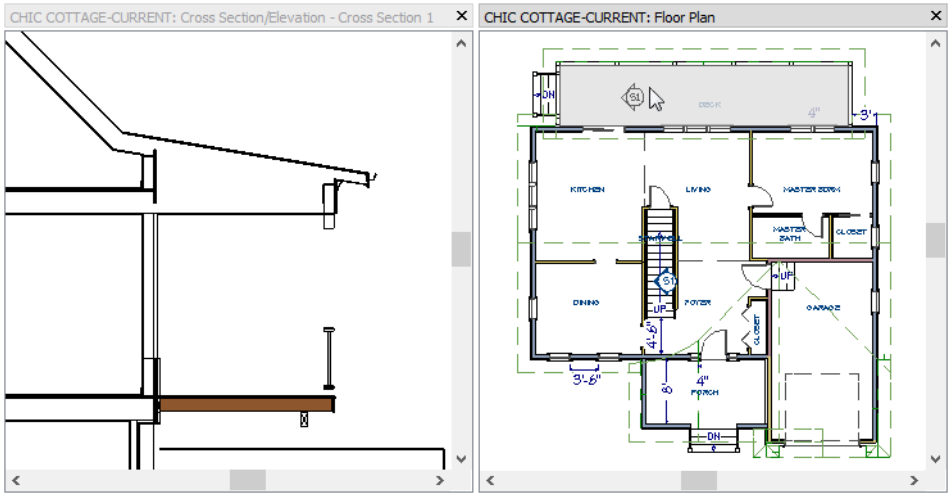
Creating a Cathedral Ceiling

A cathedral ceiling has the same pitch as the roof and can be easily created using the underside of the roof above the room.

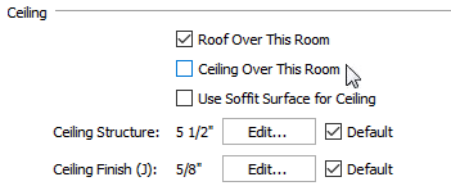
To create a cathedral ceiling

1. Go to Floor 1, and create a **Backclipped Cross Section** view inside of the Deck. Be sure to draw the camera arrow horizontally, either left to right or right to left.
2. Select **Window> Tile Vertically** to tile the two views side by side and Zoom in on the Deck room.

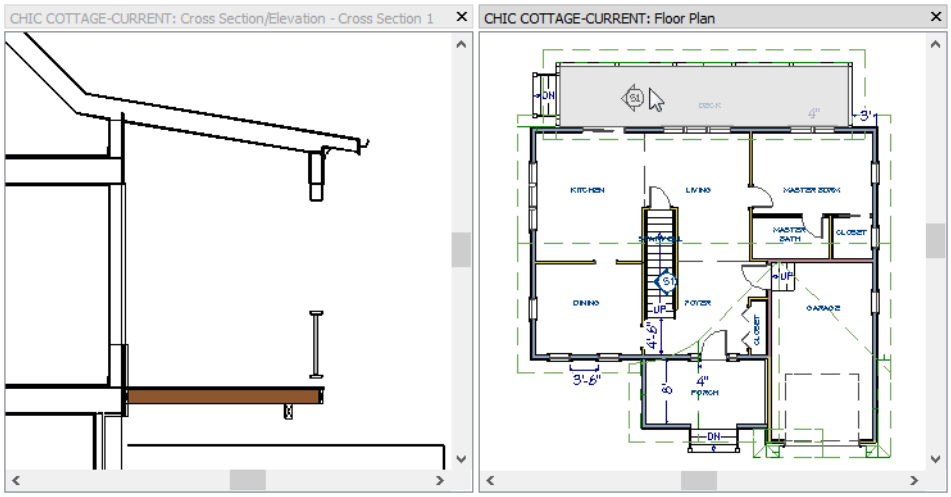
3. Return to the floor plan view window, click the **Select Objects** button, and select the Deck room.



4. Click the **Open Object** edit button. On the STRUCTURE panel of the **Room Specification** dialog, uncheck **Ceiling Over This Room** and click OK.



5. Notice that the Deck's ceiling is now the underside of its shed roof.



Note that if the roof is rebuilt after the ceiling height is adjusted upward, the new roof will be raised to match the new ceiling height and the sloped ceilings will not be retained.

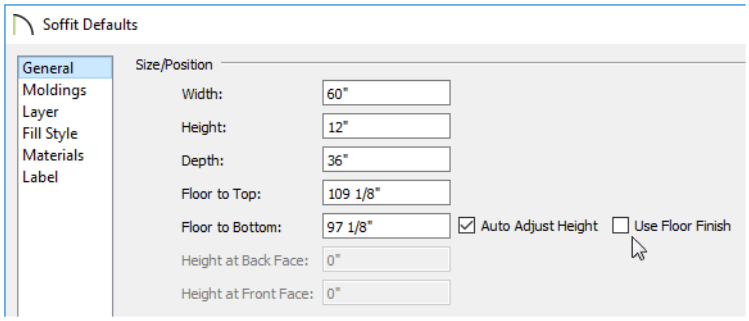
By default, cathedral ceiling use the ceiling material set in the **Room Specification** dialog. If you require a different material on a given roof plane, uncheck **Use Room Ceiling Finish** in the **Roof Plane Specification** dialog. See “Options Panel” on page 801.

Drawing a Trey or Coffered Ceiling

A trey ceiling is an area within a ceiling that is raised and has either vertical or sloping sides. A standard trey ceiling can be easily created by placing Soffits around the perimeter of the room.

To set the Soffit Defaults

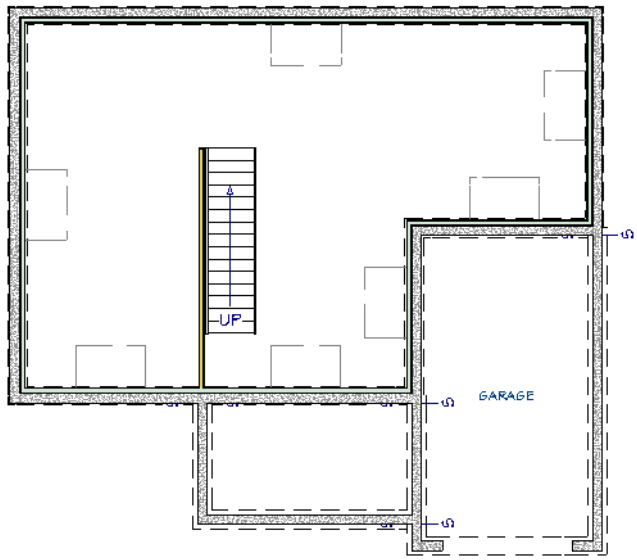
1. Select **Edit> Default Settings**, click the arrow next to "Cabinets" to expand the category, select "Soffit" in the list, and click the **Edit** button.
2. On the GENERAL panel of the **Soffit Defaults** dialog:



- Specify the **Height** as 12", the **Width** as 60", and the **Depth** as 36".
- Specify the **Floor to Top** as 109 1/8", which is the Rough Ceiling Height of the basement room.
- Uncheck **Use Floor Finish**, since the Rough Ceiling Height is measured from the slab rather than the floor finish then click OK.

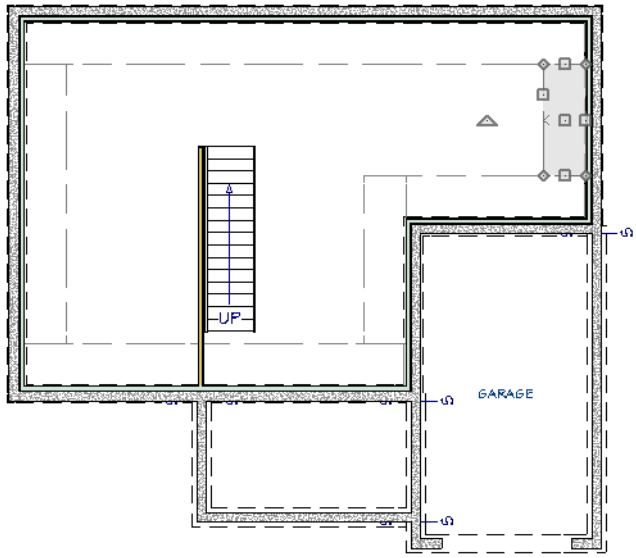
To create a trey ceiling using Soffits

1. Go to Floor 0, then select **Build> Cabinet> Soffit** .
2. Click along each of the exterior walls of the basement room to place a soffit at that location.

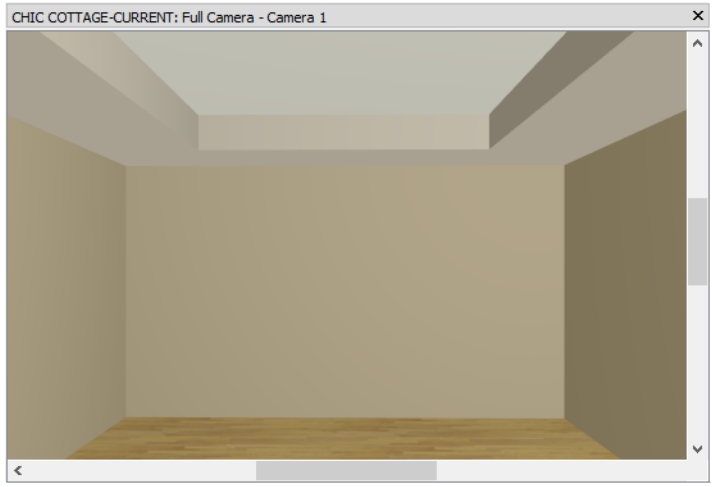


- Soffits, like other cabinet objects, will snap to the side of a nearby wall.
- Soffits should not extend through intersecting walls, so place two soffits along the wall separating the basement from the Porch area: one on each side of the staircase wall.

3. Select one of the soffits and use its edit handles to extend it across the length of the room.
4. Repeat this step with each of the soffits until they completely encircle the ceiling.



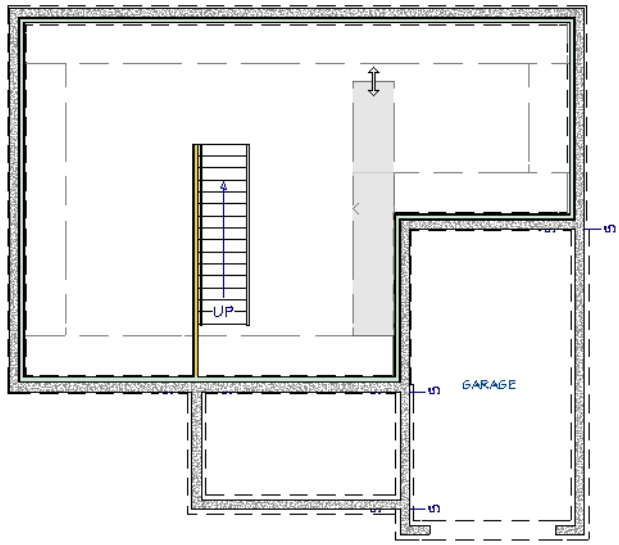
5. Create a **Full Camera** view in the basement room to see the results.



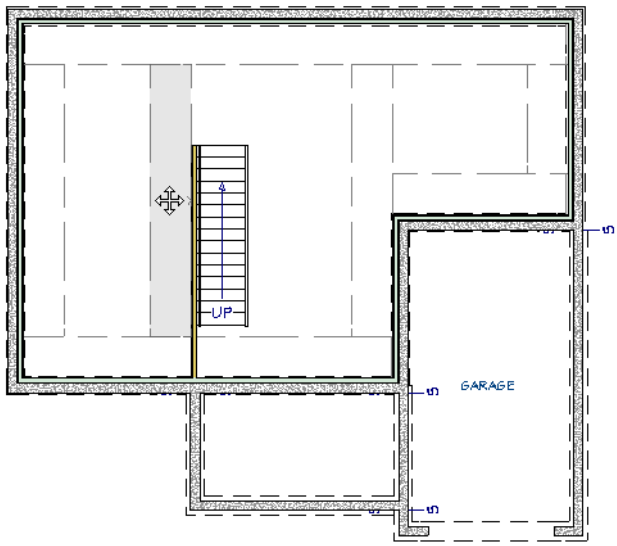
A coffered ceiling can be created by simply replicating additional Soffits across the middle of the room.

To create a coffered ceiling using Soffits

1. Select **Window> Swap Views** to return to floor plan view.
2. Click the **Select Objects** button, then select the soffit located against the vertical wall separating the basement from the Garage area.
3. Click the Resize edit handle located on the soffit's top edge and extend it upward until it meets the vertical soffit against the back wall of the basement.

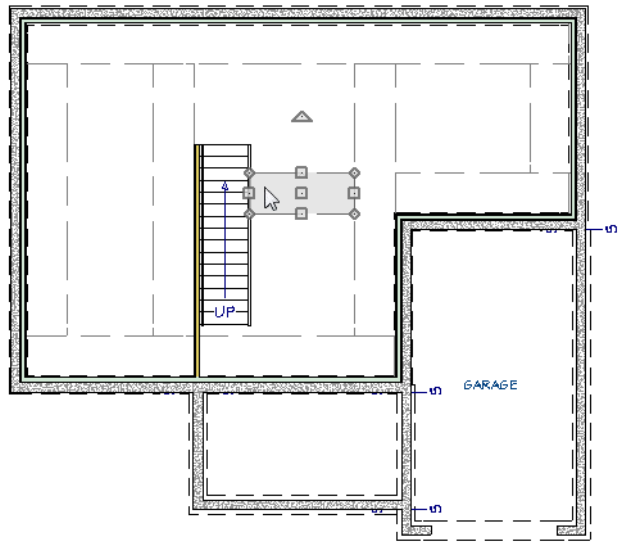


4. Select the soffit located against the vertical wall on the left side of them basement, then:



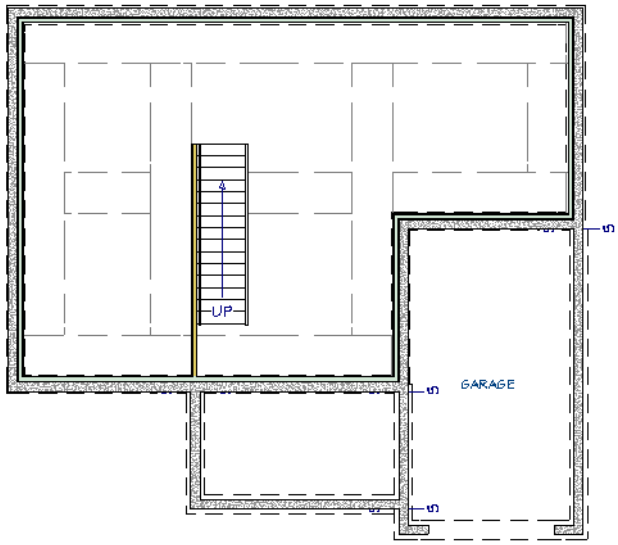
- Click the **Copy/Paste** edit button.
- Click the soffit's Move edit handle located at its center and drag to the right.
- When the object preview outline snaps to the wall next to the staircase, click once.

5. Select the soffit located against the vertical wall separating the basement from the Garage area, then:
   - Click on the Resize edit handle located on the soffit's top edge.
   - Drag it upward until it meets the vertical soffit against the back wall of the basement.
6. Select the soffit located against the horizontal wall separating the basement from the Garage area, then:

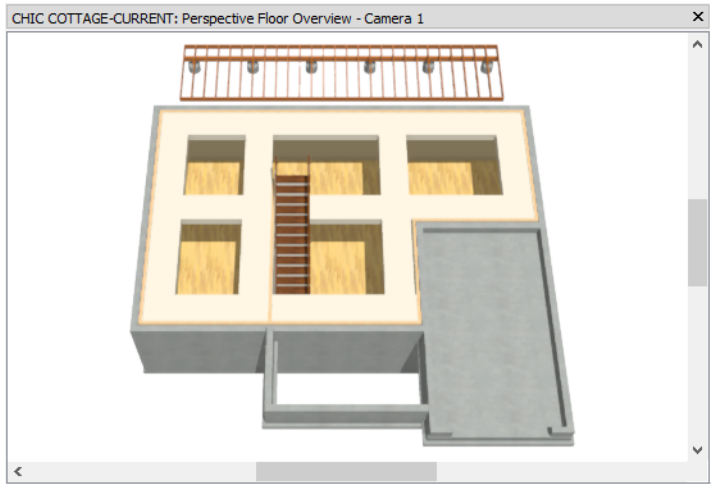


- Click the **Copy/Paste** edit button
- Click the **Reflect About Object** edit button.
- Move the mouse pointer over top edge of the vertical soffit immediately to its left.
- When a vertical reflection axis displays, click once.
- Use the Resize handle on the left side of the new soffit to snap it to the side of the staircase.

7. Select the newly created soffit and repeat step 6 to create one more copy on the left side of the basement, between the two horizontal soffits.
   - You can reflect the soffit about either the staircase or the soffit to its left.
   - In either case, both the left and right sides will need to be moved using the Resize edit handles.



8. The results can be seen in a **Perspective Floor Overview** view.



9. When you are finished, **Save** your work.

There are other ways to produce trey and coffered ceilings, as well. Visit www.chiefarchitect.com/support/database.html for more information.

Creating Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed.

When you are finished working on a file and are ready to close it, **Save** your work. Before closing it, though, create a copy of the file with a different name that indicates what it contains so you can distinguish it from other revisions.

To save a plan revision

1. Select **File**> **Save As** .
2. In the **Save Plan File** dialog, make sure that the save location is your Chic Cottage folder.
3. For the File name, type a the name of the project followed by a short description of the current state of the drawing; for example, Chic Cottage-Ceilings.

Review

This lesson describes the best practices for creating various types of custom ceilings, including lowered ceilings and custom ceiling finishes, trey ceilings, and coffered ceilings. It also discusses the important default settings associated with ceilings.

- To set the default ceiling finish
- To set the default ceiling finish for room types
- To create a custom hat channel material
- To set lowered ceiling defaults
- To specify a lowered ceiling
- To remove a ceiling finish
- To create a cathedral ceiling
- To set the Soffit Defaults
- To create a trey ceiling using Soffits
- To create a coffered ceiling using Soffits

Assessment Questions

In what dialog should a lowered ceiling be defined?

How does a lowered ceiling affect the structure of a room?

What supplies the surface of a cathedral ceiling?

What tool can be used to create a trey or coffered ceiling

What two edit tools can be used to create identical objects on either side of a room?

Chapter 11:

Finish Materials

The finish materials applied to walls and floors are an important aspect of a plan's interior.

Learning Objectives

This lesson describes best practices in Chief Architect for applying finish materials to walls and floors. Concepts introduced include:

- Applying Wall Finish Materials
- Using Wall Material Regions
- Specifying Flooring Materials
- Using Floor Material Regions

File Management

This tutorial continues where the Custom Ceilings tutorial left off. At this point, both the Chic Cottage-Ceilings and CHIC COTTAGE-CURRENT plans contain the same information, so you could open either one and continue working. However, Chic Cottage-Ceilings.plan was created specifically to serve as a revision or archive file so it will be left unchanged.

To continue working on the Chic Cottage project, select **File> Open Plan** . If need be, browse to Documents\Chic Cottage, select CHIC COTTAGE-CURRENT, and click Open.

Alternatively, select **File> Recent Files** and choose CHIC COTTAGE-CURRENT from the Recent Files List. The Recent Files List is a convenient way to access files you have been working on; however, it is not an alternative to knowing where your files are located and having a good file revision strategy in place. See "File Management" on page 18 of the Exterior Walls Tutorial.

It is a very good idea to save your files often as you work, and this guide reminds you to do so regularly.

Productivity Tips

As you learn how to create finish materials to walls and floors, keep in mind these tips to improve your productivity.

Drawing and Editing

- The **Material Painter** is a powerful and flexible way to assign materials to objects in 3D views.

Content

- A selection of name brand paint, flooring, and other materials are available for download in the "Materials and Surfaces" category of the 3D Library. Select **Library> Get Additional Content Online** to launch your default web browser to that page.
- Create template plans with your preferred wall and floor finish materials set as defaults when you begin a new plan. See “Template Files” on page 97 of the Reference Manual.
- Group paint colors, floor finishes, and other materials that you often use together in custom library folders in the User Catalog. See “Adding New Folders” on page 934 of the Reference Manual.

Interface

- **Perspective Floor Overviews** are a useful way to view the relationships between room spaces.
- The **Wall Elevation** tool lets you create an elevation of a wall that is confined to a single room in the plan.

Keyboard Hotkeys

- F1 - Help for the current context
- Tab - Select Next Object
- Spacebar - Select Objects
- Ctrl + B - Break Wall
- Ctrl + E - Open Object edit tool
- Ctrl + S - Save

Setting the Defaults

In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. Setting defaults early can improve efficiency and also helps to avoid introducing errors into the drawing. When specifying finish materials, there are several defaults that can be useful.

If there is a particular paint color or finish material that you plan to use on most wall surfaces, consider adding it to the Wall Type Definition of your default wall types. See "To change the Default Exterior Wall Type" on page 24 of the Exterior Walls Tutorial and "To set the Interior Wall Defaults" on page 43 of the Interior Walls Tutorial.

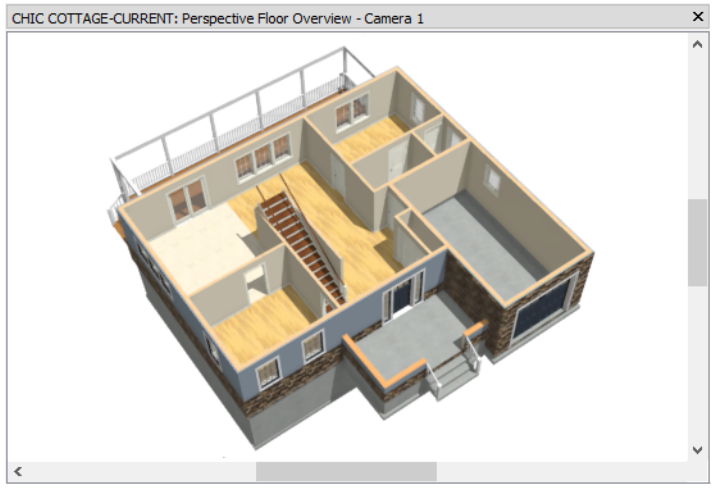
Floor finish materials can be specified for different room types in the Floor/Ceiling Platform and Room Type Defaults dialogs. See “Specifying Flooring Materials” on page 240.

Applying Wall Finish Materials

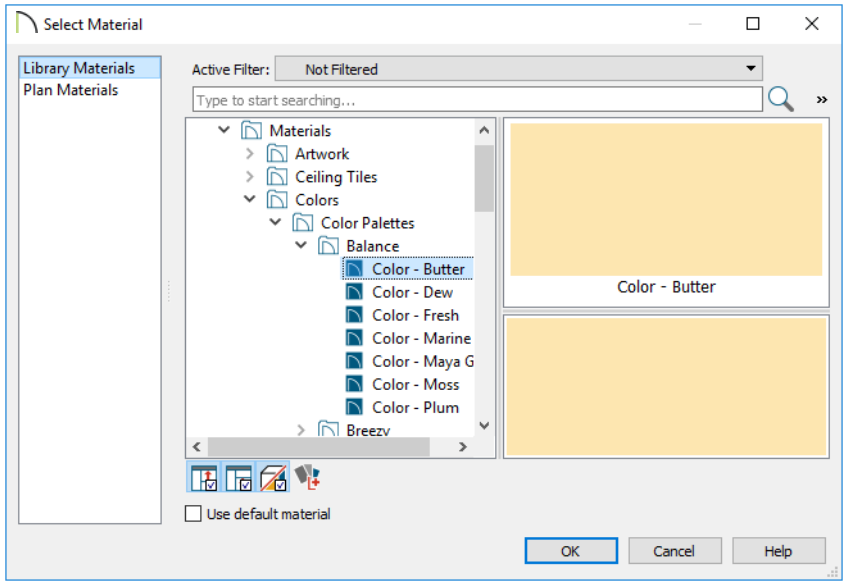
A Floor Overview is a good place to customize wall materials because the relationships between walls can be easily seen, and the Material Painter tool can be used to apply new materials to surfaces in the view. It has five Modes that allow you to control the scope of each paint operation. See “The Material Painter” on page 1014 of the Reference Manual.

To specify the wall finish for all rooms

1. Go to Floor 1, then select **3D> Create Perspective View> Perspective Floor Overview** .
2. Use the **Mouse-Orbit Camera** tool to orbit the camera upward so that the interior rooms can be seen. See "To create a camera view" on page 28 of the Exterior Walls Tutorial.

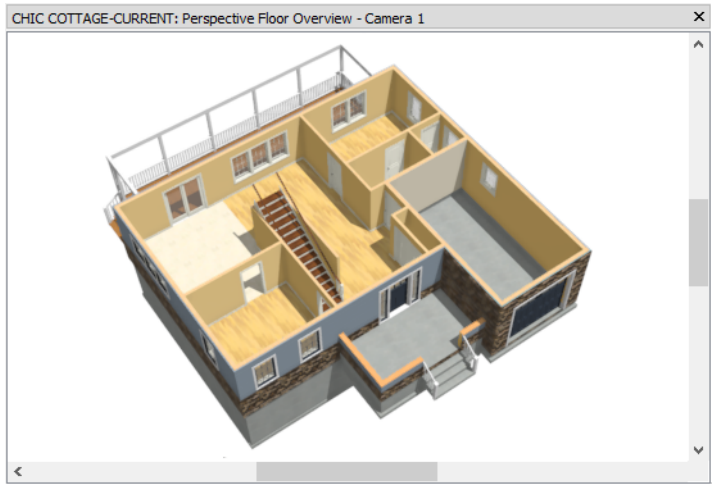


3. Select **3D> Material Painter> Material Painter Plan Mode** .
4. Select **3D> Material Painter> Material Painter** .
5. On the LIBRARY MATERIALS panel of the **Select Material** dialog:



- Browse to Chief Architect Core Catalogs> Materials> Colors> Color Palettes> Balance.
- Select the material named "Color - Butter", then click OK.
- Notice that your mouse pointer now displays a spray can icon.

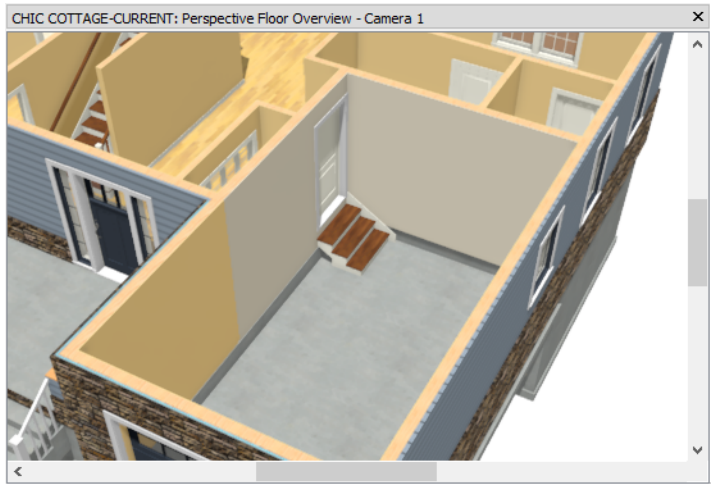
6. Click once on any interior wall surface and notice that nearly all walls become painted.



7. While the **Perspective Floor Overview** is active, go **Up One Floor** to Floor 2.
8. Select **3D> Material> Adjust Material Definition**, then click on an interior wall surface and note that the material on that surface is "Color - Butter". Click Cancel.
9. Go down to Floor 0 and repeat step 8 to confirm that the interior wall surfaces have been painted "Color - Butter". When you are finished, return to Floor 1.

To use the Material Eyedropper

1. **Zoom** in on the Garage and Orbit around so the wall between it and the Foyer can be seen.



- Notice that two of the walls were not painted.
- This is because these two walls have a Fire Rated Drywall material instead of standard Drywall used by the other walls.

2. Select **3D> Material Painter> Material Eyedropper**, then:
   - Notice that your mouse pointer now displays an eyedropper icon.
   - Click on a wall surface that has "Color - Butter" applied to it and notice that the mouse pointer icon changes to a spray can.
3. Click once on either fire wall. Because the **Material Painter Plan Mode** is still active, both walls will be painted.

With the primary wall color for the plan applied, you can now apply custom colors to specific rooms. This can be done in the Room Specification dialog or using the Material Painter.

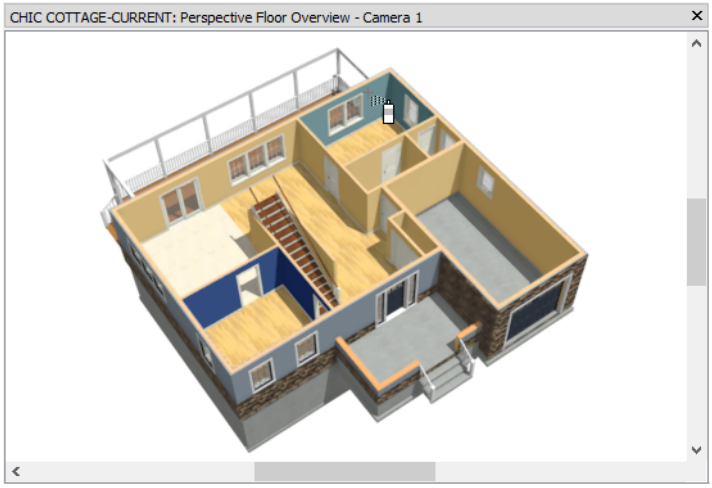
To specify the wall finish for a room

1. **Zoom** out and orbit the camera until all interior rooms can be seen again.
2. Click the **Select Objects** button, then click on the floor of the Dining room to select it.
3. Click the **Open Object** edit button to open the **Room Specification** dialog. On the MATERIALS panel:

- Click on the "Walls" component in the tree list to select it and note that "Color - Butter" is currently specified as its material.
- Click the **Select Material** button to open the **Select Material** dialog and select "Color - Fresh" from the Balance folder in the Library.
- Click OK to close the **Room Specification** dialog and apply your change.

4. Select **3D> Material Painter> Material Painter Room Mode** .

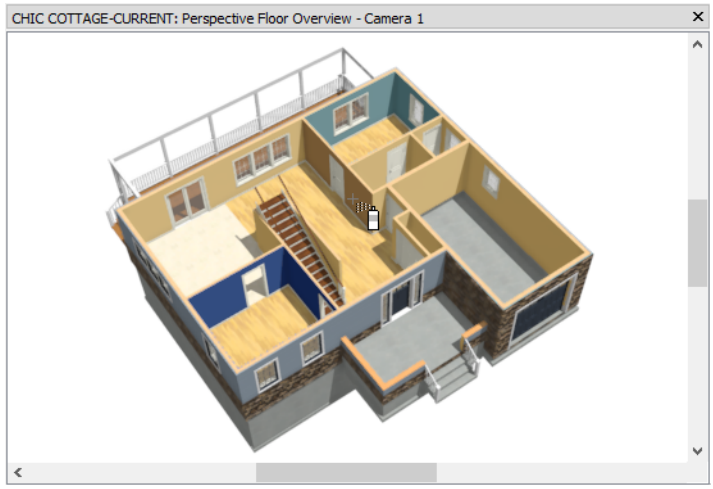
5. Select **3D> Material Painter> Material Painter** and apply the "Color - Dew" material to the Master Bedroom walls.



An accent wall can be created by specifying a different material for one wall. Just as with rooms, this can be done in the Wall Specification dialog or using the Material Painter.

To specify a custom finish for a single wall

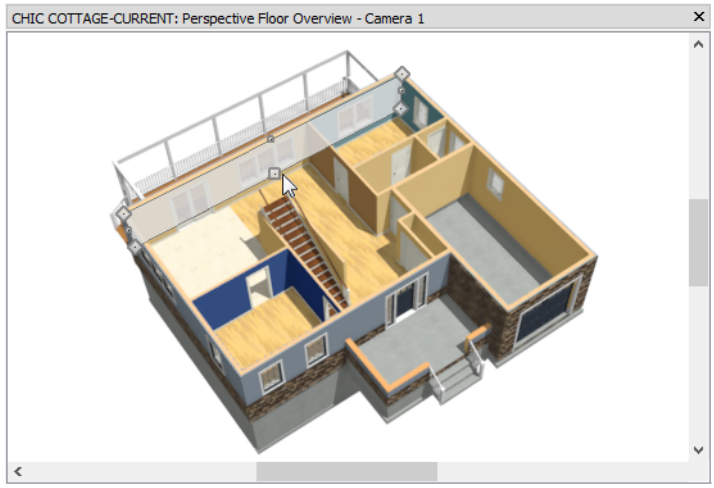
1. Select **3D> Material Painter> Material Painter Object Mode** .
2. Select **3D> Material Painter> Material Painter** .
3. In the **Select Material** dialog:
   - Notice that the LIBRARY MATERIALS panel opens with the last material used displaying in the tree list and the preview panes.
   - Still in the Balance library folder, select the material named "Color - Maya Gold", then click OK.
4. Click on the wall separating the Dining room from the Master Bedroom to paint it.



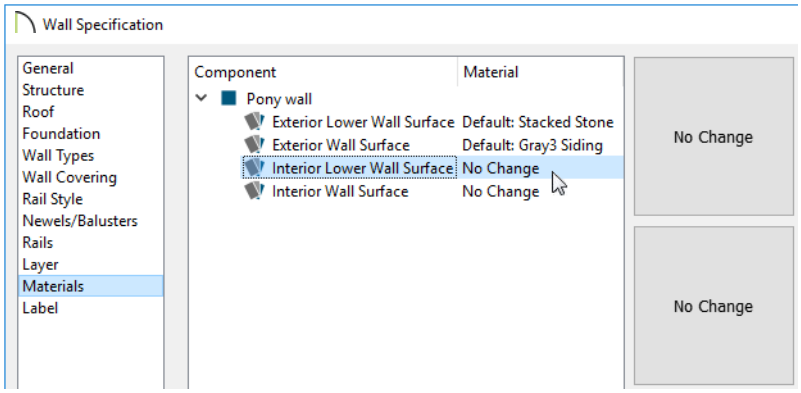
In order to edit a wall in 3D, it first must be selected.

To select a wall in 3D

1. Click the **Select Objects** button, then click in the Living room, on the exterior wall separating the Living room from the Deck.
2. Notice that the Living room becomes selected by default.
3. Click the **Select Next Object** edit button or press the Tab key to select the wall instead.



4. Click the **Open Object** edit button to open the **Wall Specification** dialog.
5. On the MATERIALS panel:



- Notice that because this wall is a Pony Wall, it has two interior components: "Interior Lower Wall Surface" and "Interior Wall Surface". See “Interior and Exterior Surfaces” on page 385 of the Reference Manual.
- Note that these Interior Wall Surface components are described as "No Change".
- This is because the wall spans three rooms, and one has a different wall finish material than the others.
- Click Cancel.

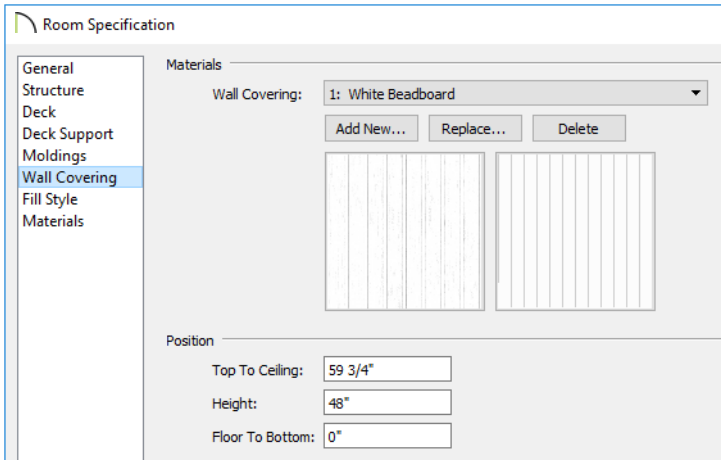
6. Remember to **Save** your work.

Applying Wall Coverings

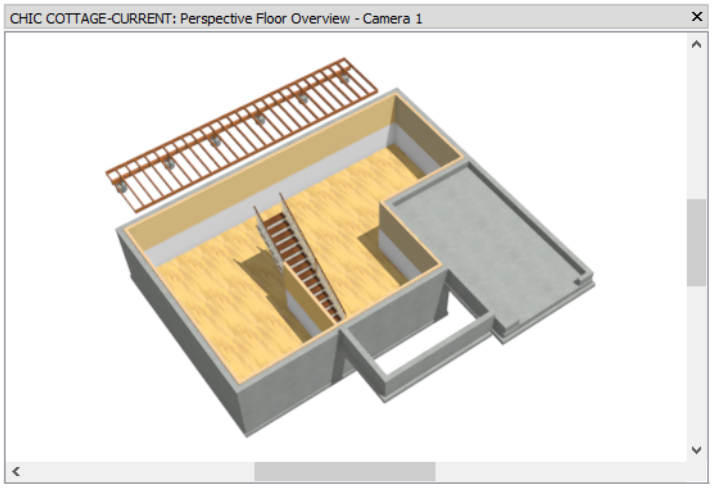
Wall coverings can be used in addition to a wall's surface material to create accents like wallpaper borders or wainscoting. For more information about wall coverings, see "Wall Materials" on page 363 of the Reference Manual.

To apply a wall covering

1. Go **Down One Floor** to Floor 0.
2. Select the basement room and click the **Open Object** edit button to open the **Room Specification** dialog.
3. On the WALL COVERING panel:



- Click the **Add New** button to open the **Select Material** dialog.
- Browse to Chief Architect Core Catalogs> Materials> Siding & Paneling> Beadboard.
- Select the White Beadboard material and click OK.
- Change the **Height** to 48" and the **Floor to Bottom** value to 0".
- Click OK.



4. When you are finished, **Save** your work.

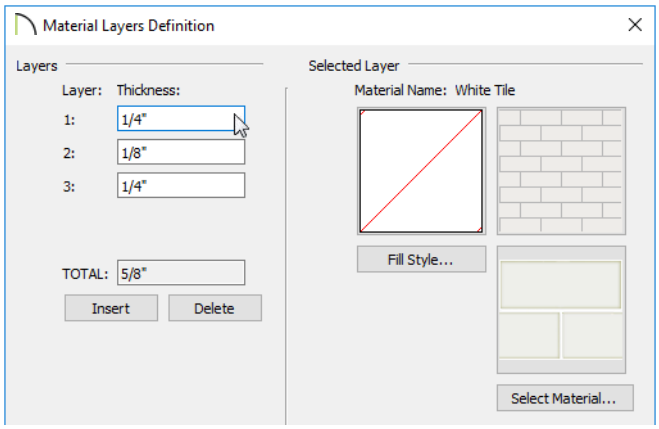
> Additional wall covering materials are available for download. See “Downloading Library Content” on page 929 of the Reference Manual.

Using Wall Material Regions

Unlike a Wall Covering, Wall Material Regions do more than just apply a material to the surface of a wall: they actually replace the wall surface layer with a different material. They also have depth and can extend out past the surface of the wall.

To set the Wall Material Region defaults

1. Select **Edit> Default Settings**, and in the **Default Settings** dialog:
   - Click the arrow next to "Material Region" to expand the category.
   - Select "Wall Material Region" and click the **Edit** button.
2. On the STRUCTURE panel of the **Wall Material Region Defaults** dialog:
   - Notice that **Cut Finish Layers of Parent Object** is checked.
   - This means that by default, a wall material region will cut into and replace the finish layers of the wall it is placed onto.
   - Click the **Edit** button.
3. In the **Material Layers Definition** dialog:



- Click in the **Thickness** field for each of the layers.
- Notice that the default region is composed of layers of backer board, thinset mortar, and tile, then click OK.

4. Click OK and then Done to close the remaining dialogs.

This tile surround will be positioned 19" above the floor to accommodate a bathtub that will be placed later on. See "To place bathroom fixtures" on page 345 of the Appliances and Fixtures Tutorial.

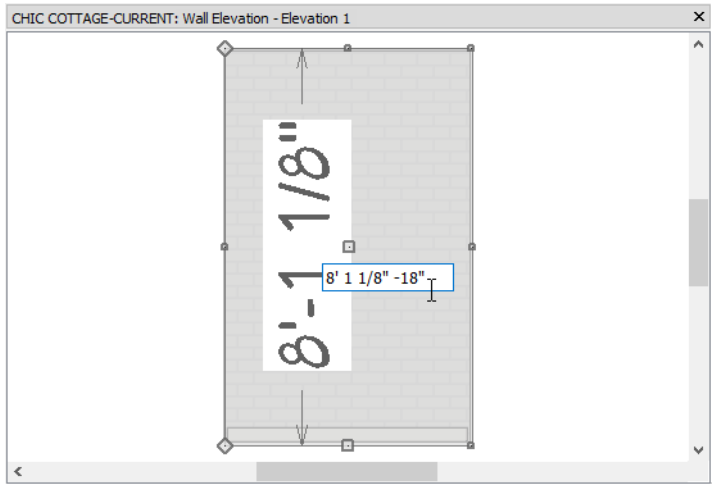
To create a Wall Elevation view

1. Select **3D> Create Orthographic View> Wall Elevation** ,
2. Click and drag a camera arrow located inside the Master Bath room, pointed straight at the vertical wall on the left side of the room.
3. The resulting camera view shows only the portion of the left vertical wall that defines the Master Bedroom. Any objects located between the camera and the wall in the current room will display in a Wall Elevation, as well.

To resize a Wall Material Region with accuracy, make sure that Temporary Dimensions are toggled on. Select **View> Temporary Dimensions** and confirm that there is a check mark in lower right corner of the tool icon. See “Temporary Dimensions” on page 468 of the Reference Manual.

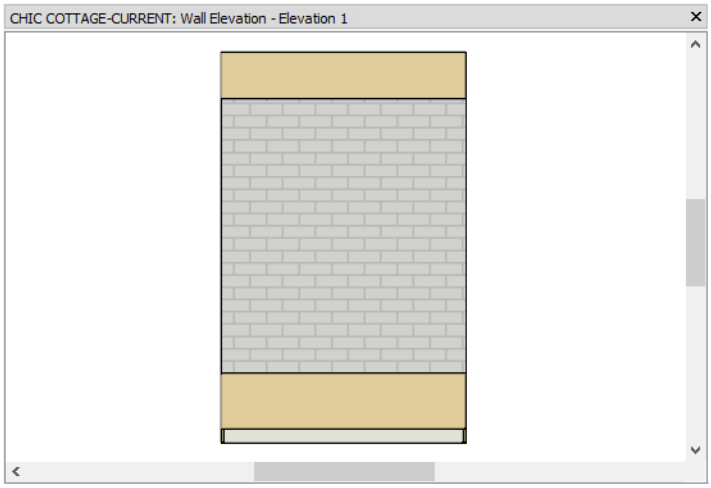
To create a tile shower surround

1. Select **Build Wall> Wall Material Region** , then click once on the wall surface. A Wall Material Region that covers the entire wall is created and is initially selected.
2. Move the bottom edge of the region upward:

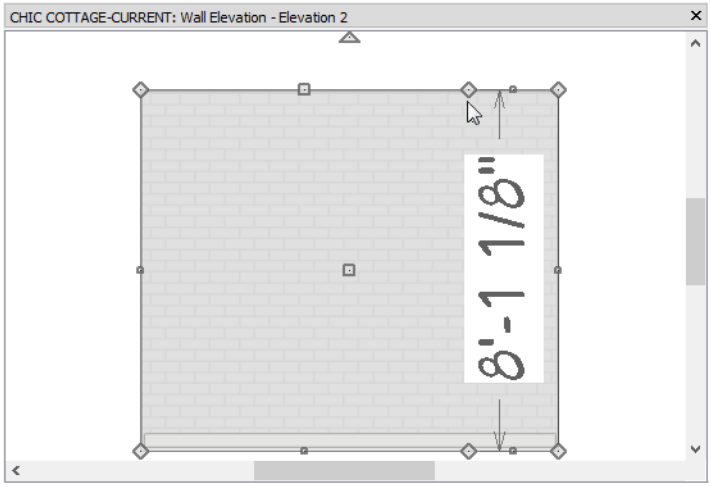


- Click on the edit handle at the center of the bottom edge of the region to select it.
- Move the mouse pointer over the temporary dimension that reports the region's height.
- When the mouse pointer changes to a pointing hand icon, click on the dimension line.
- Click in the inline text field, to the right of the existing value, then type -18 after that value and press the Enter key.
- The bottom edge moves upward 18", reducing the total height of the Region by that amount.

3. Click on the top edge of the Region to select it, then repeat step 3 to lower the top edge by 12".



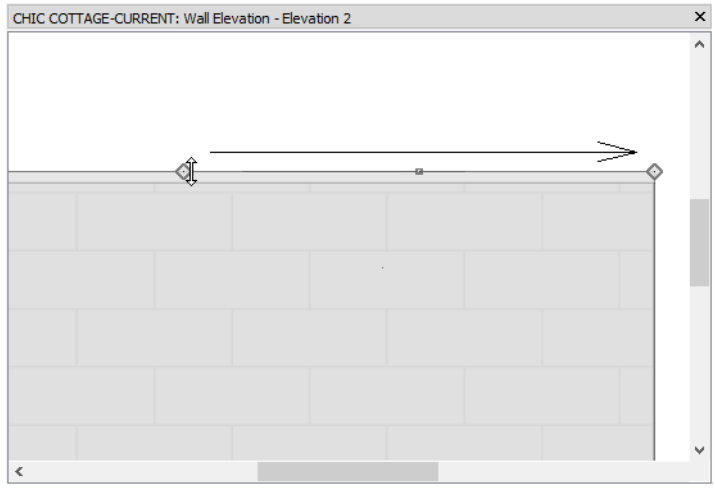
4. Select **File> Close View** to close the current Wall Elevation view.
5. Create a new **Wall Elevation** view in the Master Bath room, this time pointed at the bottom horizontal wall
6. Click to create a **Wall Material Region** that covers this wall as described above.



- Notice that the top and bottom edges of this Region are composed of two segments separated by diamond-shaped Reshape edit handles.

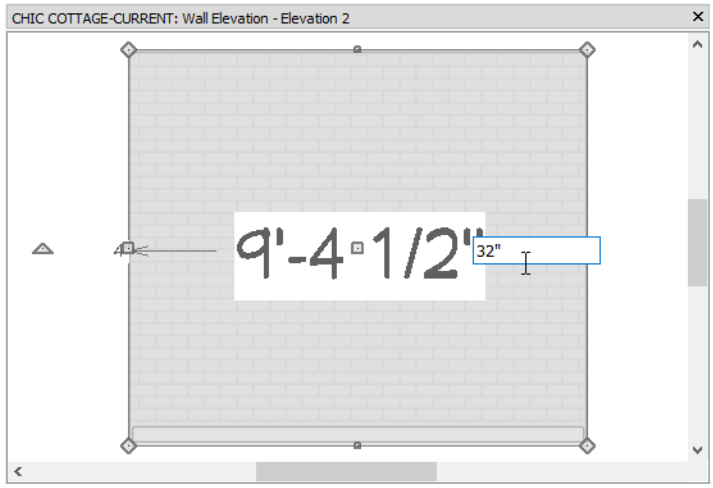
- This is because the Master Bath is defined by two separate walls along this side rather than a single wall.

7. With the Region selected, use its edit handles to merge the two segments on each edge:

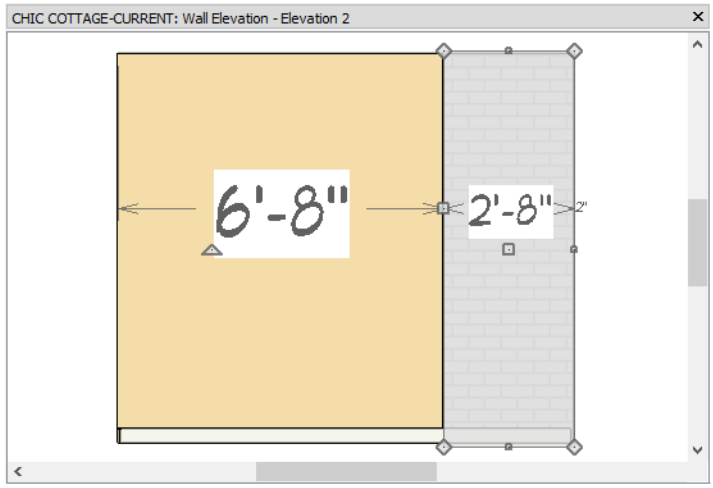


- Zoom in on the top right corner of the Region.
- Click on the diamond-shaped Reshape handle where the two top segments meet.
- Drag the handle to the right until it snaps to the Region's top right corner.
- Repeat these steps to merge the two bottom segments into one.

8. Repeat steps 2 and 3, above, to adjust the heights of the Region's top and bottom edges.
9. Select the left vertical edge of the Region and:



- Click on the dimension that reports how far it is from the right edge.
- Type 32" and press the Enter key.

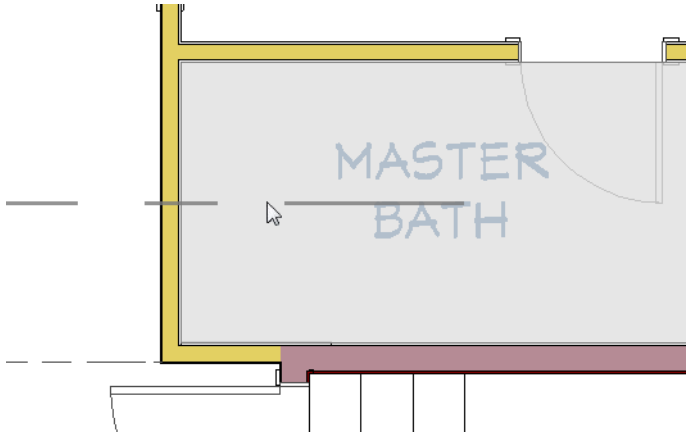


10. Select **File> Close View** to close the current Wall Elevation view.

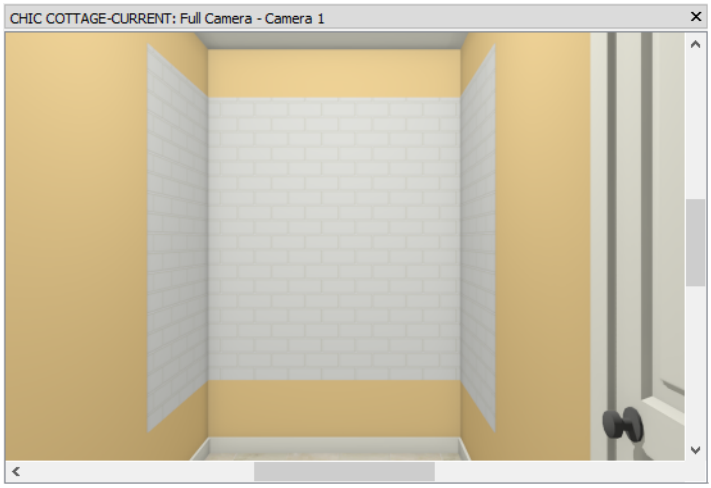
To complete the tile shower surround, make a copy of the Wall Material Region on the opposite wall.

To copy a Wall Material Region

1. **Zoom** in on the lower left corner of the Master Bath room and notice that a rectangular shape extends out past the horizontal wall's sheetrock. This is the second Wall Material Region created above.
2. Click the **Select Objects** button, then click on the Wall Material Region to select it.
   - To confirm that a Material Region is the selected object, look at the left side of the Status Bar at the bottom of the program window.
   - If the Wall is selected instead, click the **Select Next Object** edit button.
3. Zoom out so the top horizontal wall of the Master Bath can be seen.
4. With the Wall Material Region still selected, click the **Copy/Paste** edit button.
5. Click the **Reflect About Object** edit button, then:



   - Move the mouse pointer up into the Master Bath room.
   - When the room becomes highlighted and a horizontal dashed reflection axis line displays, click once.
   - A copy of the Wall Material Region is created on the opposite wall and is selected.
6. You can see the results in a Full Camera view inside of the Master Bath.



7. When you are finished, remember to **Save** your work.

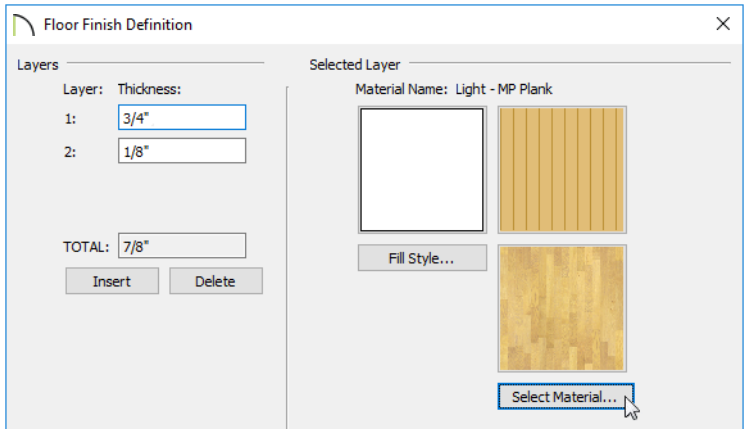
Custom Backsplashes are a type of Wall Material Region that does not cut into the existing wall surface by default.

Specifying Flooring Materials

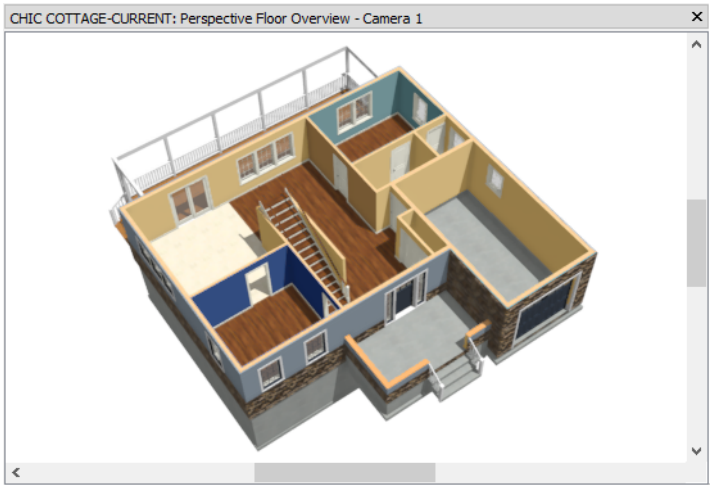
Just like with walls, flooring materials can be set in a Perspective Floor Overview.

To set flooring defaults

1. On Floor 1, select **3D> Create Perspective View> Perspective Floor Overview**.
2. Select **Edit> Default Settings** to open the **Default Settings** dialog:
   - Click the arrow beside "Floors and Rooms" to expand the category.
   - Select "Floor/Ceiling Platform", and click the **Edit** button.
3. In the **Floor/Ceiling Platform Defaults** dialog, click the **Floor Finish Edit** button to open the **Floor Finish Definition** dialog.



4. Click in the **Thickness** field for Layer 1 to select it, then click the **Select Material** button.
5. On the LIBRARY MATERIALS panel of the **Select Material** dialog:
   - Browse to Chief Architect Core Catalogs> Materials> Flooring> Wood> Oak.
   - Select the "Dark - OK Plank" material and click OK.
6. Click OK once more to return to the **Default Settings** dialog and notice that in the 3D view behind the dialog, all rooms aside from the Kitchen, Bath, Garage, and Porch update to display the new default flooring material.
7. Click Done to close the **Default Settings** dialog.



8. Go **Down One Floor** to Floor 0 and notice that the room on this floor is also using the new default flooring material.

The flooring material specified in the Floor/Ceiling Platform Defaults dialog is the default material for all floors; however, each floor can have a different default flooring material if you choose.

To set flooring defaults by floor

1. Go Up to Floor 2 and select **Edit> Default Settings**.
   - Click the arrow beside "Floors and Rooms" to expand the category.
   - Select "Current Floor" and click the **Edit** button.
2. On the STRUCTURE panel the **Floor 2 Defaults** dialog:
   - Notice that the **Default** check box to the right of the **Floor Finish Edit** button is checked, which means that Floor 2 is currently using the default floor finish set in the Floor/Ceiling Platform Defaults.
   - Click the **Floor Finish Edit** button to open the **Floor Finish Definition** dialog.
3. Click in the **Thickness** field for Layer 1 to select it, then click the **Select Material** button.
4. On the LIBRARY MATERIALS panel of the **Select Material** dialog:
   - Browse to Chief Architect Core Catalogs> Materials> Flooring> Carpet.
   - Select the a carpet material and click OK.
5. In the **Floor 2 Defaults** dialog, notice that the **Floor Finish Default** check box is now unchecked. This mean that this setting is no longer tied to the Floor Finish setting in the Floor/Ceiling Platform Defaults dialog.

The flooring material specified in the Current Floor Defaults dialog is the default material for all Room Types on that floor. Some Room Types like Kitchen, Bath, Garage, and Porch are typically set up with their own unique default materials, however.

To set flooring defaults by Room Type

1. Go **Down One Floor** to Floor 1 again and Orbit as needed so that the floor of the Master Bath can be seen.
2. Select **Edit> Default Settings**, and in the **Default Settings** dialog:
   - Click the arrow beside "Floors and Rooms" to expand the category.
   - Select "Room Types" and click the **Edit** button.
3. In the **Room Types** dialog, scroll down the list, select "Master Bath", and click the **Edit** button.
4. On the STRUCTURE panel of the **Master Bath Room Type Defaults** dialog:
   - Notice that the **Default** check box to the right of the **Floor Finish Edit** button is unchecked.

- This means that this room type is not using the default material set in the **Floor 1 Defaults** dialog, and explains why the Master Bath room's floor finish did not change when the "Dark - OK Plank" material set as the default, above.
- You can click the **Floor Finish Edit** button and specify a different default material for Master Bath rooms, if you wish.

5. Click OK and then Done to close all dialogs.

In addition, flooring materials can be specified for each room individually.

To specify a custom floor material

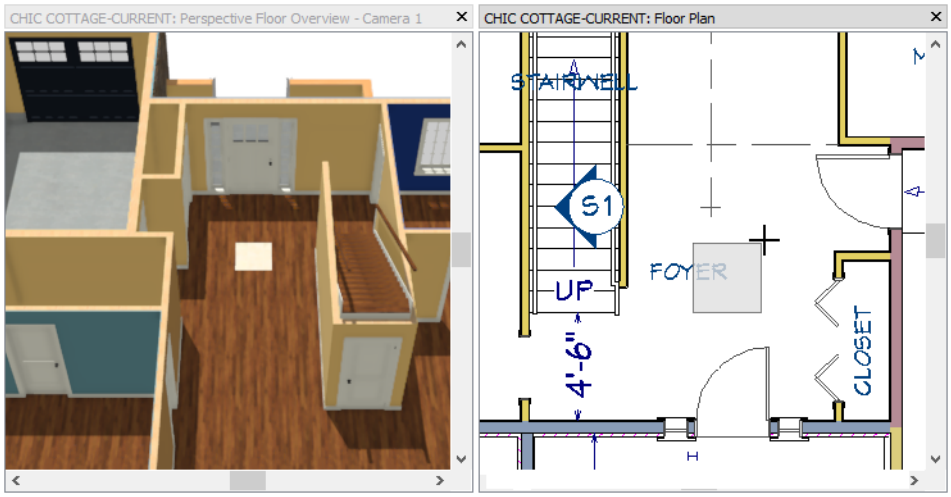
1. Click the **Select Objects** button, then click on the floor surface in the Kitchen to select the room.
2. Click the **Open Object** edit button, and on the STRUCTURE panel of the **Room Specification** dialog:
   - Notice that the **Default** check box to the right of the **Floor Finish Edit** button is checked, which means that the room is using the default floor finish for its Room Type.
   - Click the **Floor Finish Edit** button.
3. In the **Floor Finish Definition** dialog, click in the **Thickness** field for Layer 1 to select it, then click the **Select Material** button.
4. On the LIBRARY MATERIALS panel of the **Select Material** dialog, search for "Dark - OK Plank", select it, and click OK.
5. Click OK once more to return to the **Room Specification** dialog.
   - Notice that the **Default** check box to the right of the **Floor Finish Edit** button is now unchecked.
   - This is because the selected room is no longer using the default floor finish for its Room Type.
   - Click OK.
6. When you are finished, remember to **Save** your work.

Using Floor Material Regions

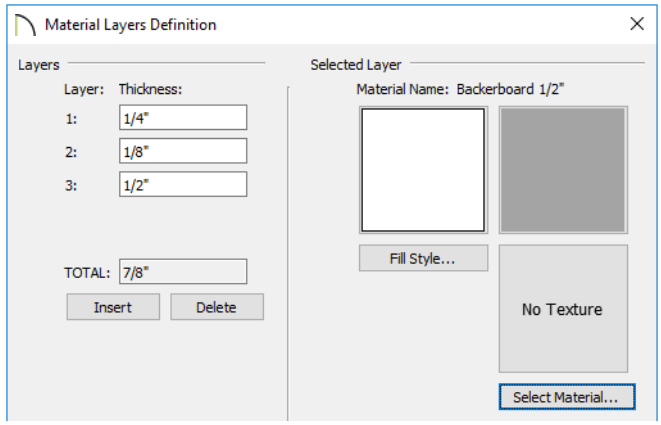
Like Floor Material Regions, Wall Material Regions replace a portion of a room's floor surface layer with a different material. They also have depth and can extend up past the surface of the floor if need be.

To add a Floor Material Region

1. In the Perspective Floor Overview, orbit around until the front door in the Foyer room can be seen, then **Zoom** in.
2. Select **Window> Tile Vertically** to tile the Overview and floor plan view side by side.
3. Click in the floor plan view window to make it active and **Zoom** in on the Foyer room.
4. Select **Build> Floor> Floor Material Region**, then click and drag a rectangle in the middle of the Foyer room. Do not worry about exact size or position right now.



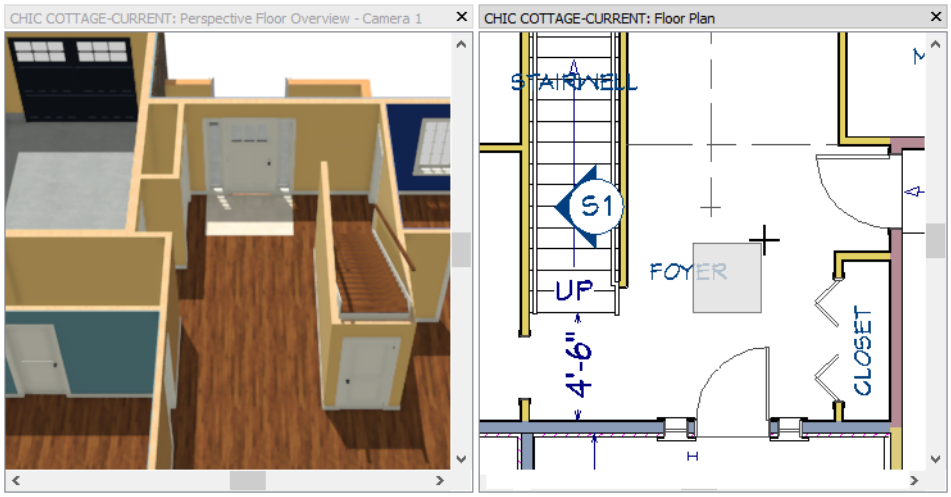
5. Click on the Floor Material Region to select it, then click the **Open Object** edit button.
6. In the **Material Region Specification** dialog:
   - Notice that **Cut Finish Layers of Parent Object** is checked.
   - Click the **Edit** button.
7. In the **Material Layers Definition** dialog:



- Click below the layers assembly diagram on the right side of the dialog, below the Selected Layer information.
- Click the **Insert** button to add a new layer below all of the existing layers.
- Specify Layer 3's **Thickness** as 1/2".
- With Layer 3 selected, click the **Select Material** button and specify its material as "Backerboard 1/2".
- Notice that the **TOTAL Thickness** is 7/8", which is the same as the surrounding floor platform, then click OK.

To resize and position a Floor Material Region

1. Click the **Select Objects** button, then click on the Floor Material Region to select it.
2. Click and drag the edit handle that displays in the middle of its bottom edge to extend its bottom edge until it snaps to the front door wall's interior surface.
3. Use Temporary Dimensions to resize it to 72" wide and 48" deep.



4. Remember to **Save** your work.

Creating Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed.

When you are finished working on a file and are ready to close it, **Save** your work. Before closing it, though, create a copy of the file with a different name that indicates what it contains so you can distinguish it from other revisions.

To save a plan revision

1. Select **File**> **Save As** .
2. In the **Save Plan File** dialog, make sure that the save location is your Chic Cottage folder.
3. For the File name, type a the name of the project followed by a short description of the current state of the drawing; for example, Chic Cottage-Materials.

Review

This lesson describes the best practices for assigning finish materials to walls and floors using a variety of techniques and tools.

- To specify the wall finish for all rooms
- To use the Material Eyedropper

- To specify the wall finish for a room
- To specify a custom finish for a single wall
- To select a wall in 3D
- To apply a wall covering
- To create a Wall Elevation view
- To create a tile shower surround
- To copy a Wall Material Region
- To set flooring defaults
- To set flooring defaults by floor
- To specify a custom floor material
- To add a Floor Material Region
- To resize and position a Floor Material Region

Assessment Questions

What Material Painter mode is best for applying a paint color to all interior walls in a plan?

What are two ways to assign a paint color to all the walls of a particular room?

How is a Wall Material Region different from a Wall Covering?

What is the name of the dialog where the default floor finish for all rooms can be set?

How can you tell if a room is set to use the default floor finish material?

Chapter 12:

Room Moldings

Moldings are a common design feature on the interior and exterior of homes.

Learning Objectives

This lesson describes best practices in Chief Architect for adding base, crown, and chair rail moldings to rooms. Concepts introduced include:

- Applying Room Moldings
- Using Molding Polylines

File Management

This tutorial continues where the Finish Materials tutorial left off. At this point, both the Chic Cottage-Materials and CHIC COTTAGE-CURRENT plans contain the same information, so you could open either one and continue working. However, Chic Cottage-Materials.plan was created specifically to serve as a revision or archive file so it will be left unchanged.

To continue working on the Chic Cottage project, select **File> Open Plan** . If need be, browse to Documents\Chic Cottage, select CHIC COTTAGE-CURRENT, and click Open.

Alternatively, select **File> Recent Files** and choose CHIC COTTAGE-CURRENT from the Recent Files List. The Recent Files List is a convenient way to access files you have been working on; however, it is not an alternative to knowing where your files are located and

having a good file revision strategy in place. See "File Management" on page 18 of the Exterior Walls Tutorial.

It is a very good idea to save your files often as you work, and this guide reminds you to do so regularly.

Productivity Tips

As you learn how to add moldings to rooms, keep in mind these tips to improve your productivity.

Drawing and Editing

- Each floor has an Exterior Room that can be used to edit that floor's exterior in various ways, including adding horizontal molding around the perimeter. See "To select the Exterior Room" on page 255.
- When a polyline-based object is selected, the edge that you clicked on is the Selected Edge and can often be edited in special ways. See "Selected Edge" on page 214 of the Reference Manual.

Content

- You can create your own custom molding profiles and save them in the Library for future use. See "Molding Profiles" on page 905.
- Create template plans with your preferred room moldings set as defaults when you begin a new plan. See "Template Files" on page 97 of the Reference Manual.
- Create template plans that have your custom wall types set as defaults, and ready for use when you begin a new plan. See "Template Files" on page 97 of the Reference Manual.
- A selection of moldings and millwork catalogs are available for download in the "Millwork" category of the 3D Library. Select **Library> Get Additional Content Online** to launch your default web browser to that page.

Keyboard Hotkeys

- F1 - Help for the current context
- Spacebar - Select Objects
- Ctrl + E - Open Object edit tool
- Ctrl + S - Save

Setting the Defaults

In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. Setting defaults early can improve efficiency and also

helps to avoid introducing errors into the drawing. When adding interior moldings, there are a number of defaults that should be borne in mind.

Base, crown and chair rail molding defaults can be assigned to each floor in your plan. See “To specify the default room moldings” on page 251.

Moldings, or casing, can also be applied to doors and windows. For more information, see "Setting the Defaults" on page 101 of the Doors and Windows Tutorial.

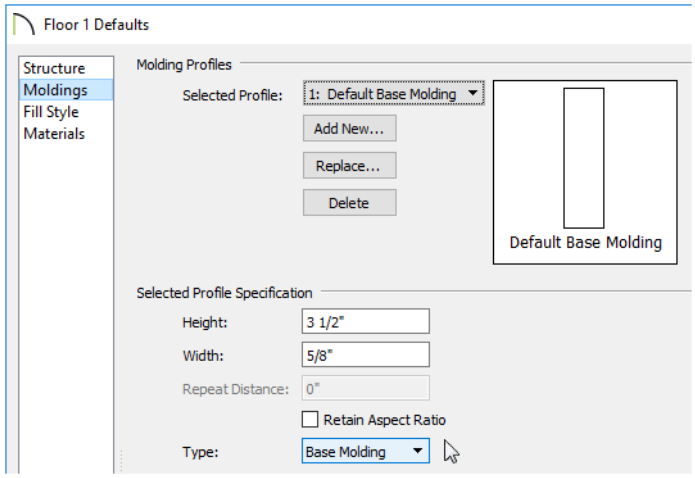
Moldings can be assigned to cabinets, as well. See "Adding Moldings and Millwork" on page 287 of the Cabinet Styles Tutorial.

Applying Room Moldings

Base, crown and chair rail moldings can be specified by floor, and also customized for individual rooms.

To specify the default room moldings

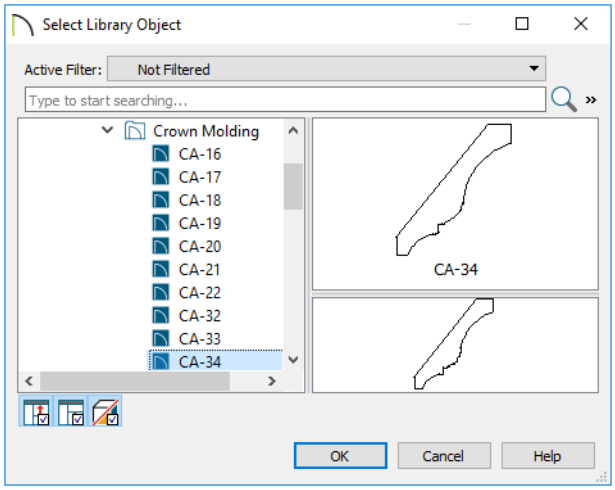
1. On Floor 1, select **Edit> Default Settings** to open the **Default Settings** dialog.
   - Click the arrow beside "Floors and Rooms" to expand the category.
   - Select "Current Floor" and click the **Edit** button.
2. On the MOLDINGS panel of the **Floor 1 Defaults** dialog, note that the **Selected Profile** is Default Base Molding and that its **Type** is "Base Molding".



3. Click the **Replace** button to open the **Select Library Object** dialog, then:
   - Browse to Chief Architect Core Catalogs> Architectural> Moldings> Base Molding.

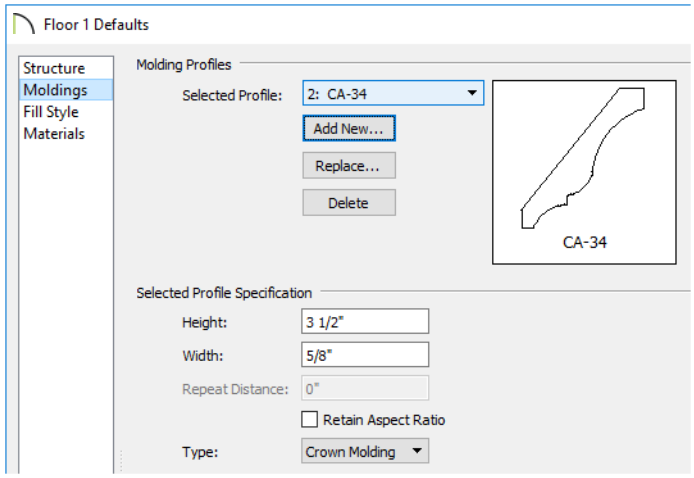
• Select CA-28 and click OK.

4. Click the **Add New** button to open the **Select Library Object** dialog again.



• Browse to Chief Architect Core Catalogs> Architectural> Moldings> Crown Molding.
• Select CA-34 and click OK.

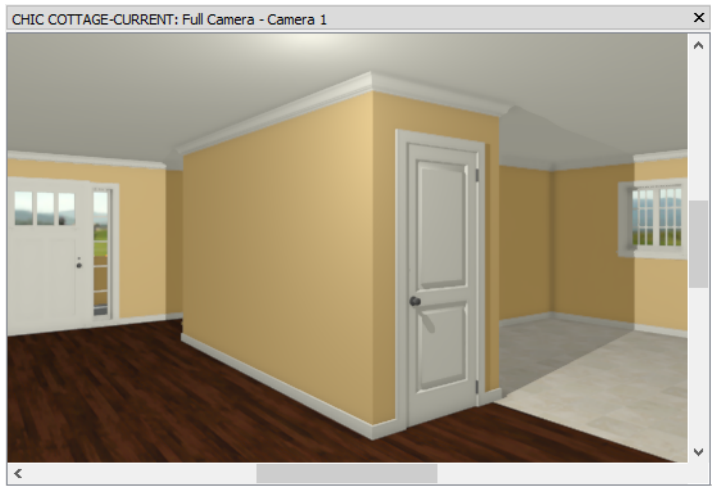
5. On the MOLDINGS panel of the **Floor 1 Defaults** dialog:



• Notice that the **Selected Molding** is listed as "2: CA-34". The 2: indicates that this is the second molding profile assigned to the defaults for this floor.
• Note, too, that the **Type** for this molding is "Crown Molding".

6. Click OK and then Done to close both dialogs.

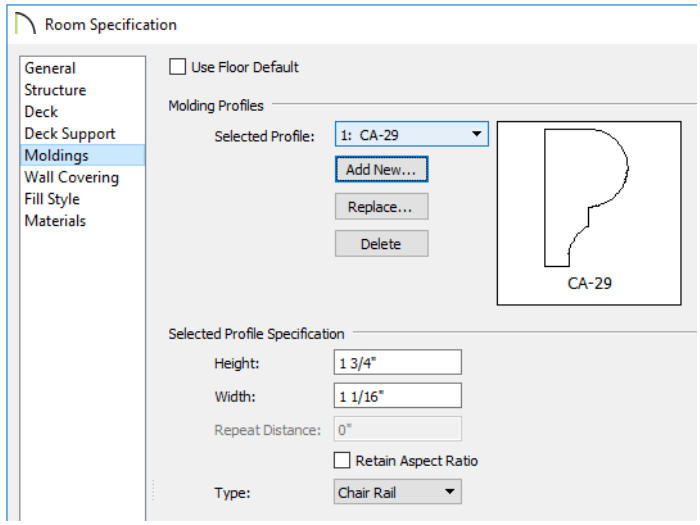
7. The results can be seen in an interior **Full Camera** view.



By default, Stairwells and other Open Below rooms do not receive moldings. Neither do exterior rooms like Porches and hybrid rooms like Garages. However, moldings can be specified for individual rooms.

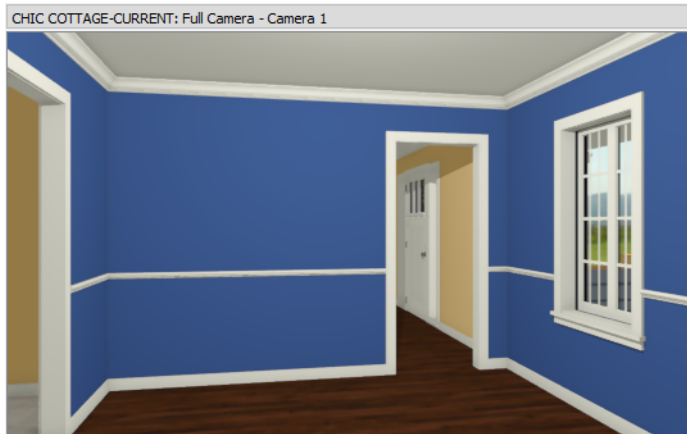
To customize a room's moldings

1. Click the **Select Objects** button, then click in a blank space in the Dining room to select it.
2. Click the **Open Object** edit button to open the **Room Specification** dialog.
3. On the MOLDINGS panel of the **Room Specification** dialog, uncheck **Use Default**, then:



- Click the **Add New** button.
- Browse to Moldings> Chair Rail and select "CA-29" from the library.
- Confirm that "Chair Rail" is selected as the molding **Type**.
- Click OK to close the dialog and apply your change.

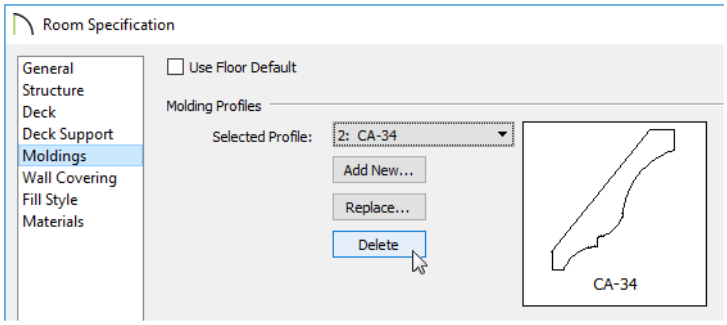
4. The results can be seen in an interior **Full Camera** view of the Dining room.



Not all moldings make sense in all rooms and can be removed when they are not needed.

To remove molding from a room

1. Select **File> Close View** to return to floor plan view, then click the **Select Objects** button and click in a blank space in the front Closet to select it.
2. Click the **Open Object** edit button to open the **Room Specification** dialog.
3. On the MOLDINGS panel:



- Uncheck **Use Floor Default**.
- Select the "2: CA-34" crown molding from the **Selected Profile** drop-down list.
- Click the **Delete** button.
- Click OK to close the **Room Specification** dialog.

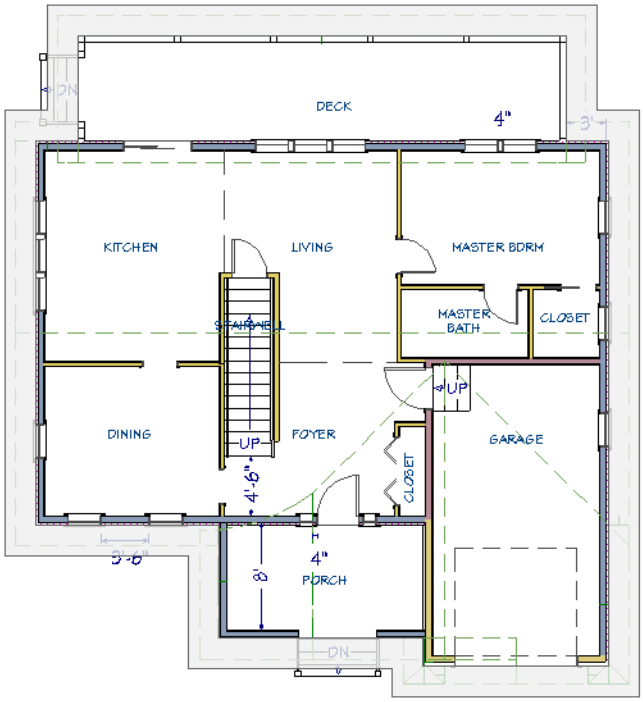
4. When you are finished, remember to **Save** your work.

Using Molding Polylines

Moldings are also important to exterior design. Here, a horizontal transition board or "belly band" will be added that follows the shape of the structure's exterior. For more information, see "Molding Polylines" on page 911 of the Reference Manual. See, too, "The Exterior Room" on page 418 of the Reference Manual.

To select the Exterior Room

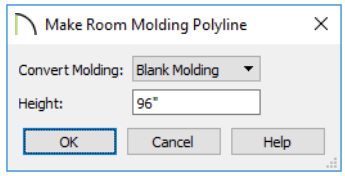
1. Click the **Select Objects** button, then click once just outside of an exterior wall.
   - Most likely, the wall or a roof plane will become selected.
   - The type of object currently selected is stated on the left side of the Status Bar at the bottom of the program window.
2. Click the **Select Next Objects** button until the Exterior Room becomes selected.



3. When the Exterior Room is selected:
   - A band around the exterior of the structure will become highlighted.
   - The words "Exterior room" will display on the left side of the Status Bar.

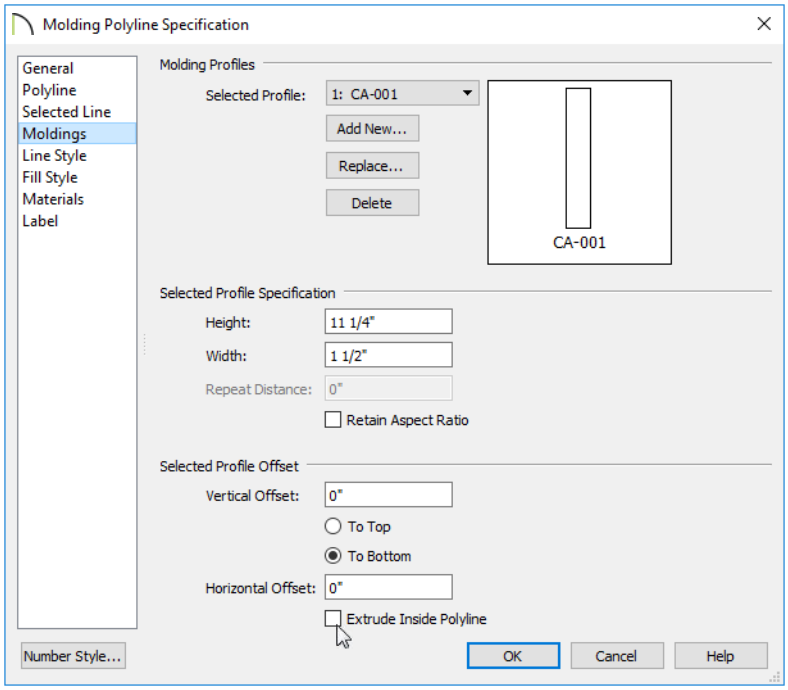
To create an exterior room molding

1. Select **3D> Create Perspective View> Perspective Full Overview** .
2. Select **Window> Tile Vertically** , then return to the floor plan view window.
3. Select the Exterior Room as described above and click the **Make Room Molding Polyline** edit button.
4. In the **Make Room Molding Polyline** dialog:



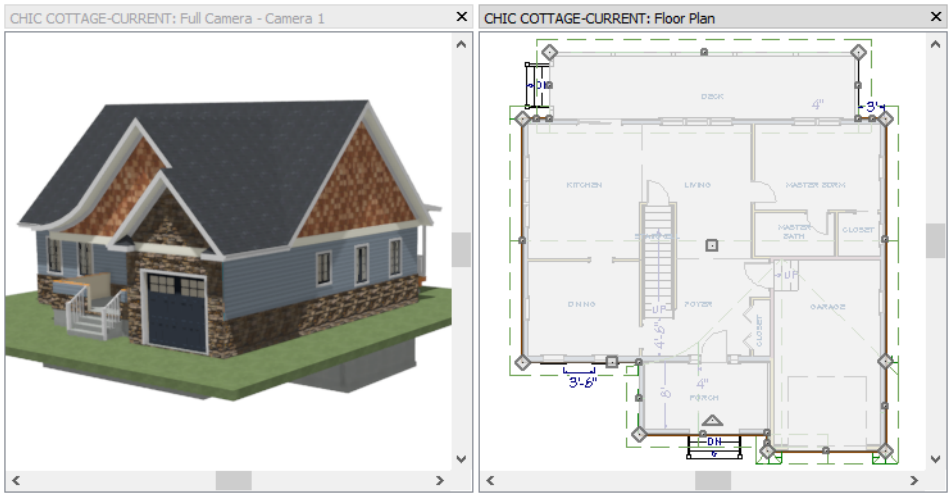
- Select "Blank Molding" from the **Convert Molding** drop-down list.
- Specify the **Height** as 96" and click OK.

5. With the newly created Molding Polyline selected, click the **Open Object** edit button.
6. On the MOLDINGS panel of the **Molding Polyline Specification** dialog:



- Click the **Add New** button, and assign base molding "CA-001" to the selected polyline.
- Specify the molding profile's **Height** as 11 1/4" and its **Width** as 1 1/2".
- Uncheck **Extrude Inside Polyline**, then click OK.

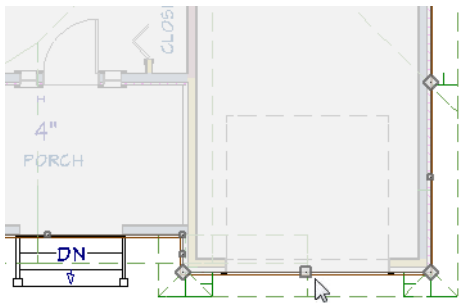
7. Click in the overview window and Orbit around the model. Notice that the molding is present around all sides of the structure: including over the railings of the Porch and Deck.



Once a Molding Polyline has been created, it can be modified in either floor plan or a 3D view.

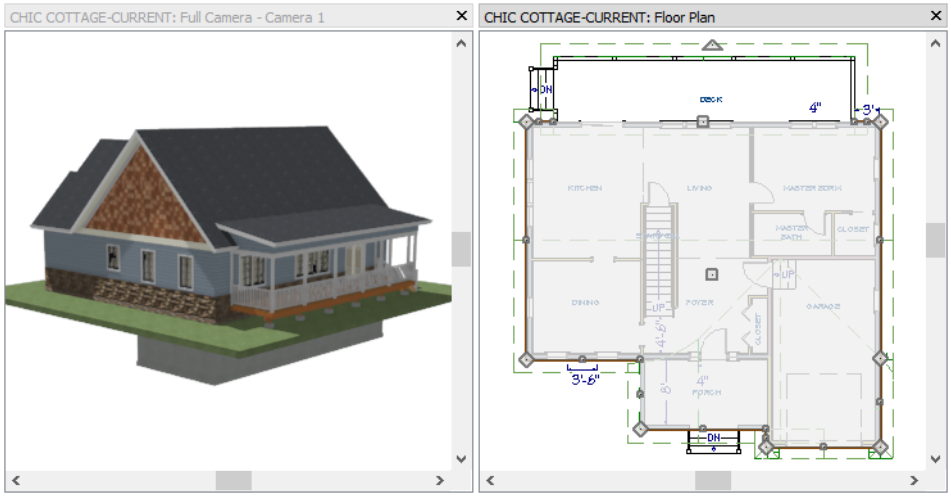
To edit a Molding Polyline

1. Orbit the overview camera until the Porch can be seen.
2. Click the **Select Objects** button, then click on the edge of the Molding Polyline located over the front of the Garage to make it the Selected Edge. See “Selected Edge” on page 214 of the Reference Manual.



3. Click the **Open Object** edit button, and on the GENERAL panel of the **Molding Polyline Specification** dialog, check **No Molding on Selected Edge** and click OK.
4. Click on the edge located over the side of the Porch to make it the Selected Edge and click the **Remove Molding from Selected Edge** edit button.
5. Orbit the camera so that the Deck can be seen, then return to the floor plan view window.

6. Click the **Select Objects** button, then click on the molding polyline to select it. If a wall becomes selected instead, use the **Select Next Object** edit tool, described above.
7. Click the edit handle located at the center of the horizontal Deck railing and drag it down until it snaps to the back wall of the house.



8. When you have finished, remember to **Save** your work.

Creating Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed.

When you are finished working on a file and are ready to close it, **Save** your work. Before closing it, though, create a copy of the file with a different name that indicates what it contains so you can distinguish it from other revisions.

To save a plan revision

1. Select **File**> **Save As** .
2. In the **Save Plan File** dialog, make sure that the save location is your Chic Cottage folder.
3. For the File name, type a the name of the project followed by a short description of the current state of the drawing; for example, Chic Cottage-Moldings.

Review

This lesson describes the best practices for assigning moldings to rooms, including the Exterior Room

- To specify the default room moldings
- To customize a room's moldings
- To remove molding from a room
- To select the Exterior Room
- To create an exterior room molding
- To edit a Molding Polyline

Assessment Questions

In what dialog can you specify the default room moldings for a plan?

How do you select the Exterior Room?

What type of object can be used to create a horizontal band around a building's exterior?

Chapter 13:

Interior Furnishings

Furnishings can help with space planning and are an important element of presentation views.

Learning Objectives

This lesson describes best practices in Chief Architect for adding a variety of furniture and accessories to a plan. Concepts introduced include:

- Setting the Defaults
- Navigating the Library
- Placing Library Objects
- Customizing Library Objects
- Using Architectural Blocks

File Management

This tutorial continues where the Room Moldings tutorial left off. At this point, both the Chic Cottage-Moldings and CHIC COTTAGE-CURRENT plans contain the same information, so you could open either one and continue working. However, Chic Cottage-Moldings.plan was created specifically to serve as a revision or archive file so it will be left unchanged.

To continue working on the Chic Cottage project, select **File> Open Plan** . If need be, browse to Documents\Chic Cottage, select CHIC COTTAGE-CURRENT, and click Open.

Alternatively, select **File> Recent Files** and choose CHIC COTTAGE-CURRENT from the Recent Files List. The Recent Files List is a convenient way to access files you have been working on; however, it is not an alternative to knowing where your files are located and having a good file revision strategy in place. See “File Management” on page 18.

It is a very good idea to save your files often as you work, and this guide reminds you to do so regularly.

Productivity Tips

As you learn how to add furnishings to a plan, keep in mind these tips to improve your productivity.

Drawing and Editing

- Use the Material Defaults dialog to specify the materials initially assigned to furniture objects placed from the Library Browser.
- Hold down the Ctrl key when moving or resizing an object to override snapping and other movement restrictions.

Content

- A wide selection of accessories and furniture are available for download from the Chief Architect 3D Library. Select **Library> Get Additional Content Online** to launch your default web browser to that page.
- Create Architectural Blocks of furniture groupings and add them to the library for future use.

Interface

- Use the **Search Filtering Options** in the Library Browser to help you focus the results of Library Browser Searches. See “The Library” on page 921 of the Reference Manual
- Right-click on an item in the Library Browser to access a contextual menu with a variety of options.

Keyboard Hotkeys

- F1 - Help for the current context
- Ctrl - override movement restrictions
- C - Concentric Edit Behavior
- Ctrl + S - Save

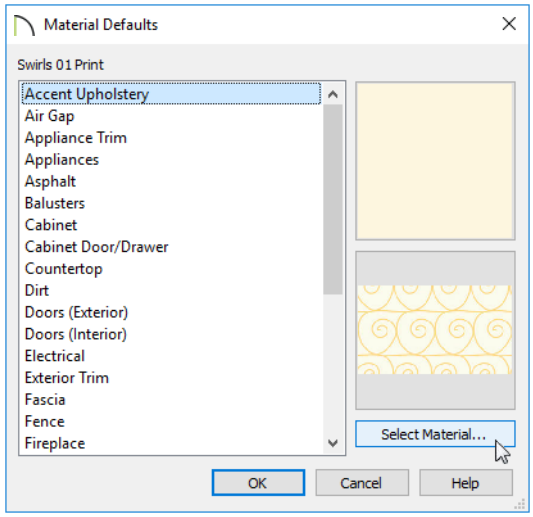
Setting the Defaults

In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. Setting defaults early can improve efficiency and also helps to avoid introducing errors into the drawing. When placing symbols from the Library, the settings in the Material Defaults dialog can be helpful.

Some furnishing objects in the library have been assigned particular materials to complement the object's design and initially use those materials regardless of the overall style of the plans they are placed into. Some furnishings, however, inherit the default materials furniture and upholstery that can set differently for each plan in the Material Defaults dialog. See "Material Defaults" on page 1013 of the Reference Manual.

To set the Material Defaults for upholstery

1. Select **Edit> Default Settings**, click on "Materials" in the list and click the **Edit** button.
2. In the **Material Defaults** dialog, select the "Accent Upholstery" item in the list.



3. Click the **Select Material** button and on the LIBRARY MATERIALS panel of the **Select Material** dialog:
   - Choose a default fabric material for fabric accents and pillows placed into the current plan from the library, then click OK.
   - A selection of "Fabrics and Wall Coverings" can be found in the Core Catalogs.
   - Here, a blue Kerchief fabric is selected. To find it, Search for "Kerchief"

4. In the **Material Defaults** dialog, scroll down the list, select "Furniture", and notice that the material specified for this item is "Birch 3".
5. Next, select "Furniture Upholstery" and click the **Select Material** button.
6. On the LIBRARY MATERIALS panel of the **Select Material** dialog:
   - Browse to Chief Architect Core Catalogs> Materials> Fabrics and Wall Coverings> Textured> Paris and select "Paris 1".
   - Click OK.
7. Click Done, then **Save** your work.

Navigating the Library

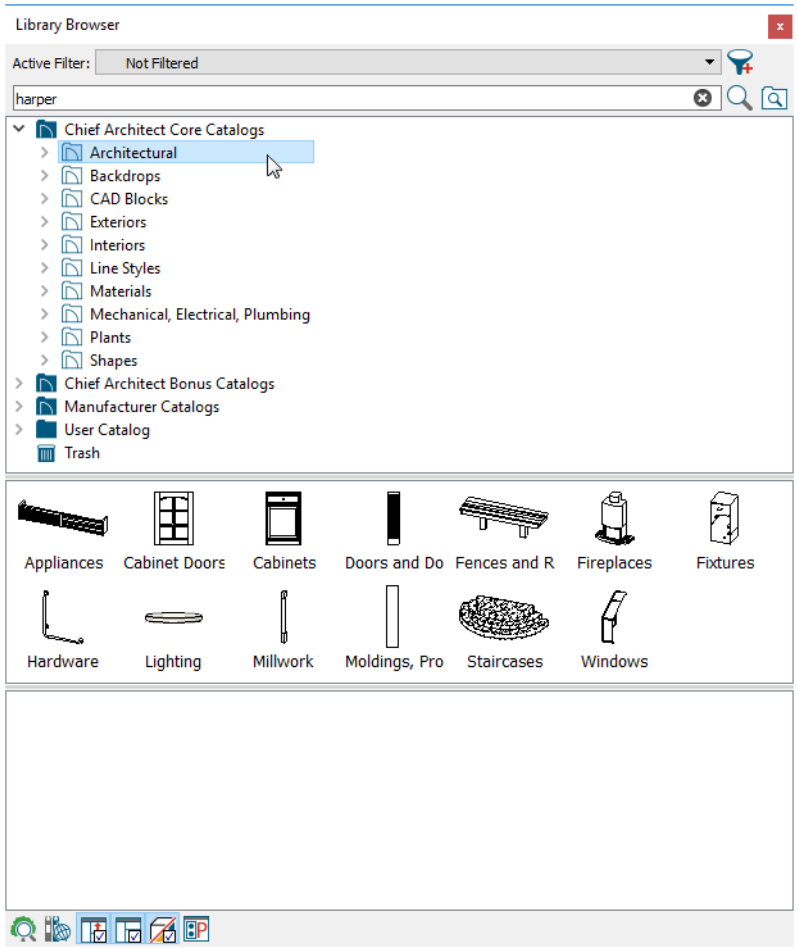
Chief Architect's Library contains thousands of objects that can be used in your plans. For more information, see "The Library" on page 921 of the Reference Manual.

To open the Library Browser, select **View> Library Browser** .

To get an idea of what options are available to you, you can browse the contents of the Library.

To browse the library

1. Notice that the Library is organized into five categories: the Core Catalogs, Manufacturer Catalogs, Bonus Catalogs, User Catalog, and the Trash.
2. Click the arrow to the left of Chief Architect Core Catalogs to expand the category.
3. Click on the name of a catalog or folder and examples of objects within it will display in the Library Preview Pane.
4. The Core Catalogs is organized into catalogs of related items. Click the arrow next to any catalog or folder to expand it and show its contents in the tree list.

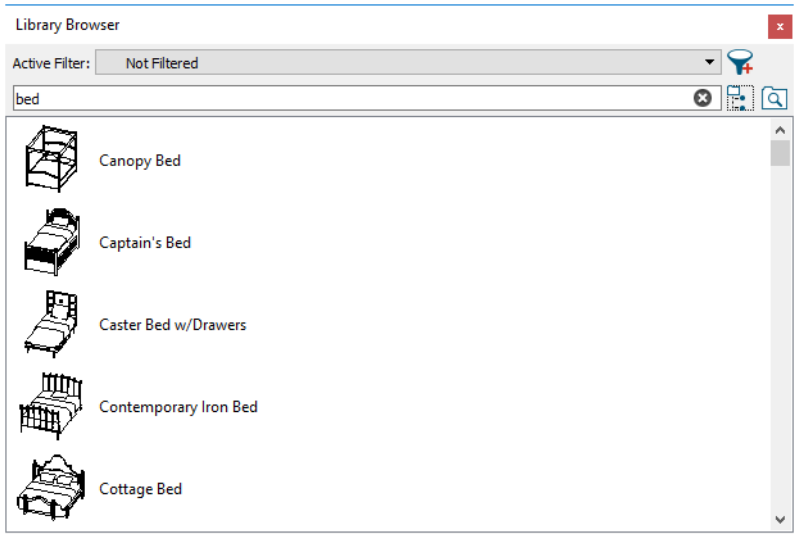


5. To expand all of the catalogs and folders within a library item, right-click on it and select Expand All from the contextual menu.
6. To collapse a catalog or folder, click the down arrow to its left or right-click on it and select Collapse All from the contextual menu.

When you know what you want to find in the Library, you can save time by searching. The text field located above the Library tree list is used to search its contents.

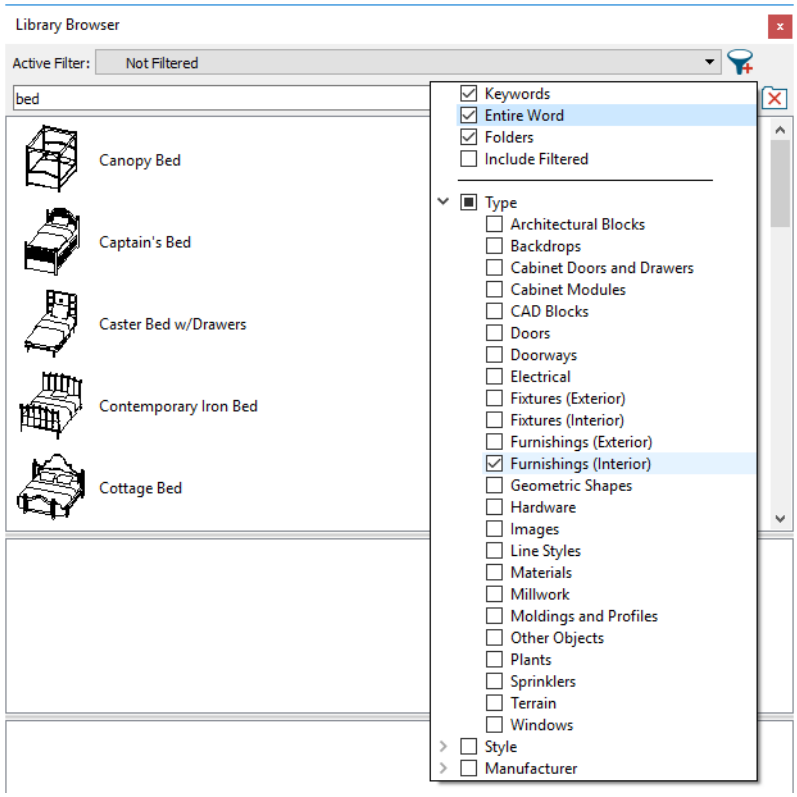
To search the Library

1. Begin typing in the Search text field.
2. As you type, the tree list is replaced by search results.



- All items with "bed" in any part of their search attributes are included.
- In this example, the search results include beds of all sizes as well as a variety of items besides furniture.

3. To see where the selected item is located in the Library Browser, right-click on it and select **Show in Browser** from the contextual menu.
4. To switch from a list of search results to the Library Browser tree view, click the **Browse** button to the right of the text field.
5. To narrow the search results, click the **Search Filtering Options** button, then:



- Check the box beside **Entire Word**.
- Click the arrow beside **Type** then check the box beside **Furnishings (Interior)**.
- Now only items with the word "bed" in their attributes and are interior furnishing will be included in the search results.

6. So that the current **Search Filtering Options** do not affect future searches, be sure to uncheck **Entire Word** and **Furnishings (Interior)** again.

7. When you are finished, **Save** your work.

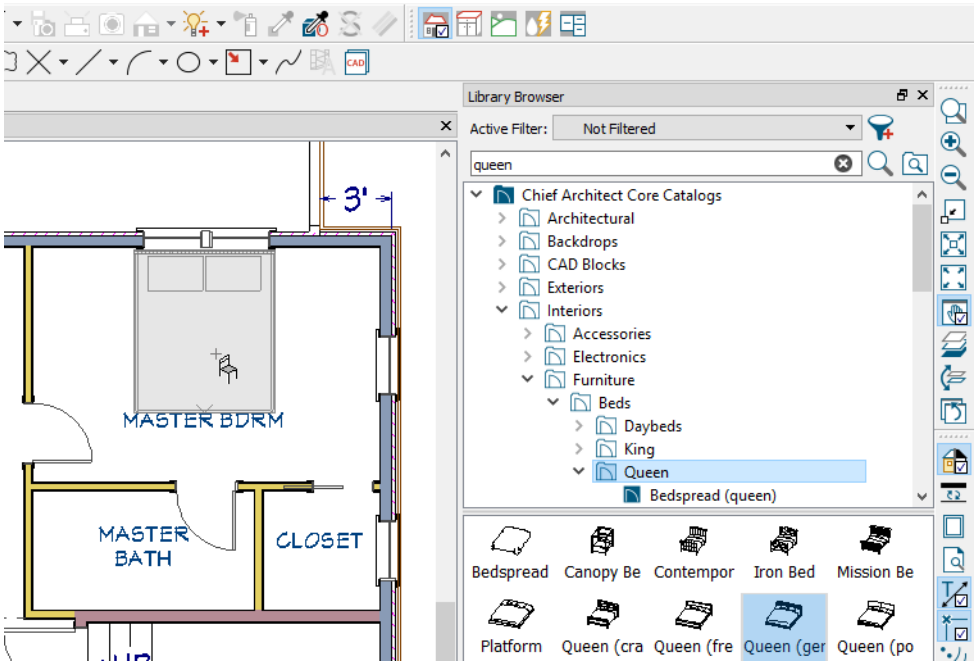
Placing Library Objects

A variety of items in the Library are designed to be assigned to other objects: for example, handles, locks, and hinges are meant to be assigned to doors. For more information, see "Using Library Content" on page 107 of the Doors and Windows Tutorial.

A wide selection of other library symbols, on the other hand, are designed to stand alone as fixtures and furnishing objects. For more information, see “Placing Library Objects” on page 939 of the Reference Manual.

To place a furniture object in a plan

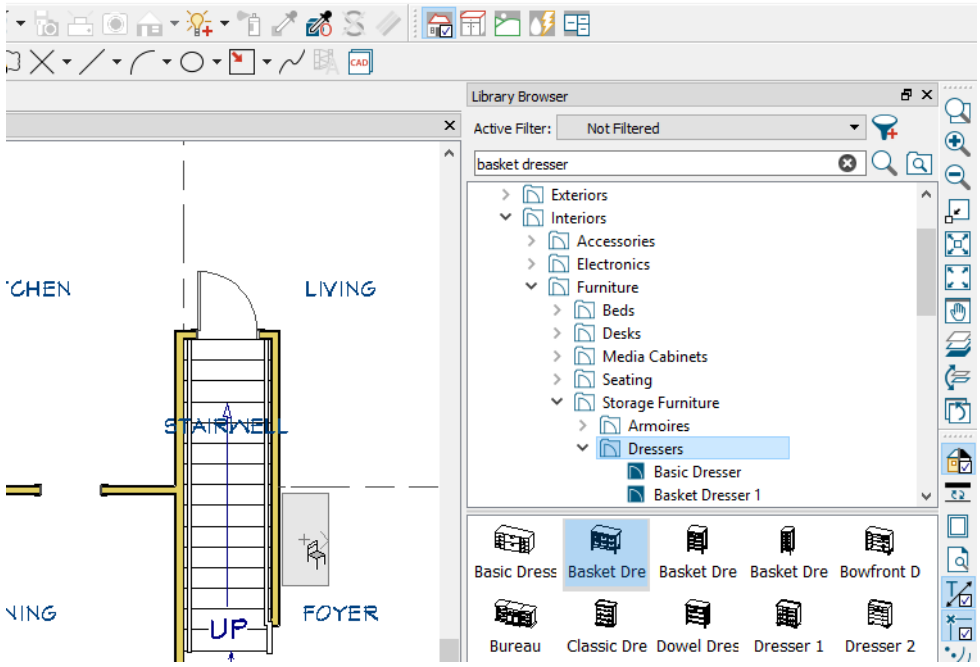
1. In the Search text field, type "queen".
   - As you type, a selection of queen sized beds as well as other items are listed below.
   - Right-click on the "Beds / Queen" folder and select **Show in Browser** from the contextual menu.
2. Click on a bed in the "Queen" folder to see it in greater detail in the Preview Pane and select it for placement.



When you select a library object and move the mouse pointer into a view window, the pointer icon indicates the type of library object selected, a preview outline of the object follows your pointer as you move it, and basic information displays in the Status Bar at the bottom of the program window.

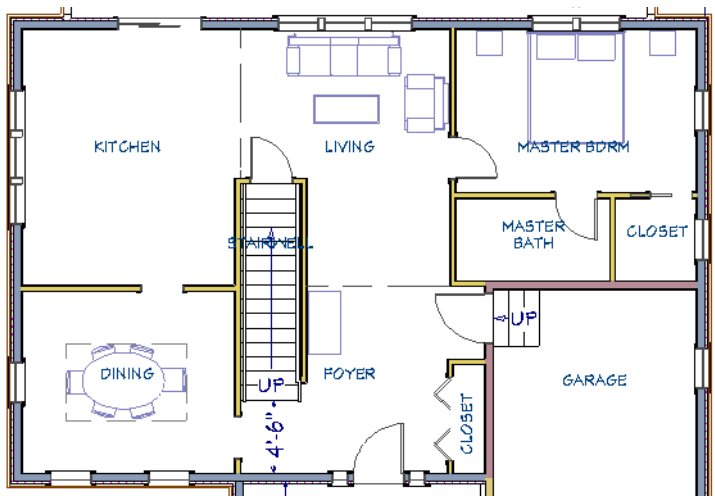
3. Move your mouse pointer around the perimeter of the Master Bedroom and notice that the bed’s preview outline snaps to the nearest wall, orienting it so that its back faces the wall.

4. When the bed's preview outline is located under the windows, click once to place a bed at that location.
5. Place a "Single Drawer" end table on each side of the bed in the Master Bedroom.
6. Place a dresser such as "Basket Dresser 1" in the Foyer, against the wall of the Staircase.



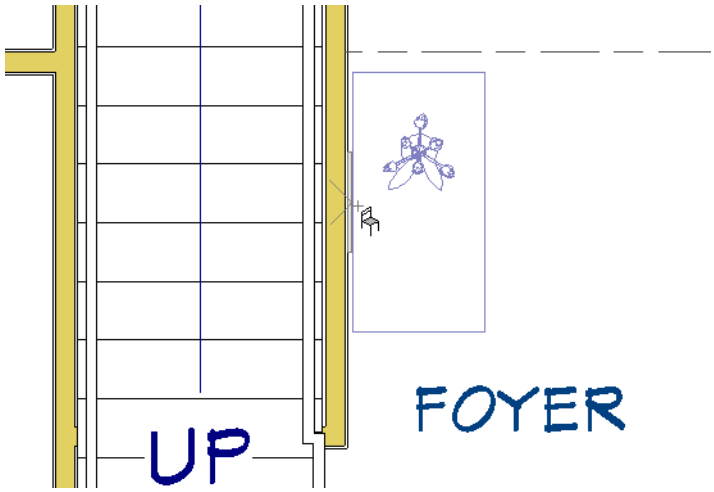
To place a furniture set in a plan

1. In the Search text field, type "sets".
   - The search results include a selection of grouped dining sets as well as components of various dining, seating, and lighting sets.
   - Right-click on the "Dining Tables / Dining Sets" folder and select **Show in Browser** from the contextual menu.
2. Select a grouped dining set and place it in the Dining room.
3. Right-click on a sofa and select Show in Browser from the contextual menu.
4. Place a matching loveseat and chair in the Living room.

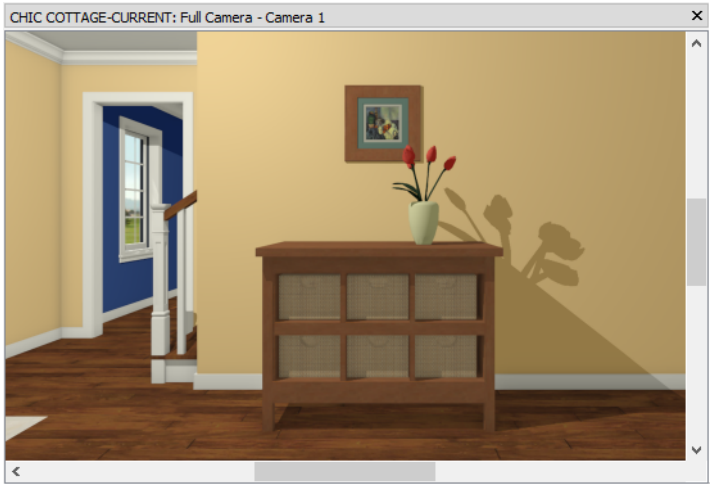


To add decorative furnishings

1. Browse to Chief Architect Core Catalogs> Interiors> Accessories.
2. **Zoom** in on the Foyer room and place a vase from the "Vases & Pots" catalog on the dresser.
3. Browse to the Square folder in the Mirrors & Frames catalog, select the "Double Mat Frame", and place it on the wall at the back of the dresser.



4. Select **3D> Create Perspective View> Full Camera** , then click and drag a camera arrow in the Foyer, from right to left, in the direction of the dresser.

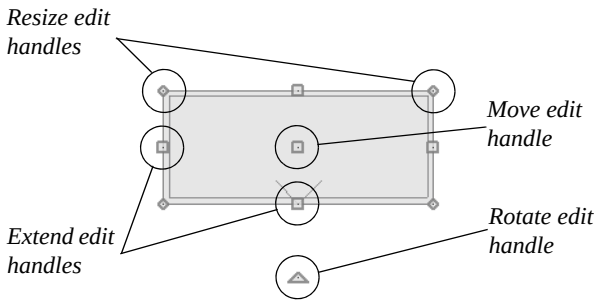


Customizing Library Objects

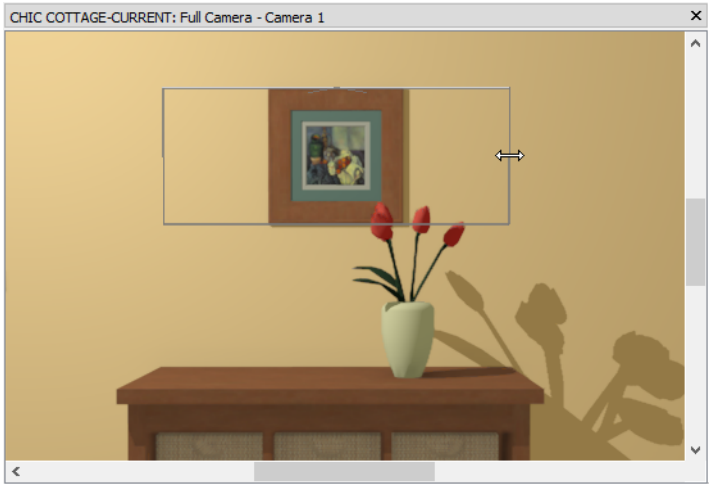
Once a library object has been placed into a plan, it can be edited in a variety of ways in both 2D and 3D views. See “Editing Library Objects” on page 944 of the Reference Manual.

To modify a symbol from the Library

1. Click the **Select Objects** button, then click on the coffee table in the Living room to select it. Notice that the table has ten edit handles that can be used to resize, reshape, and rotate it:

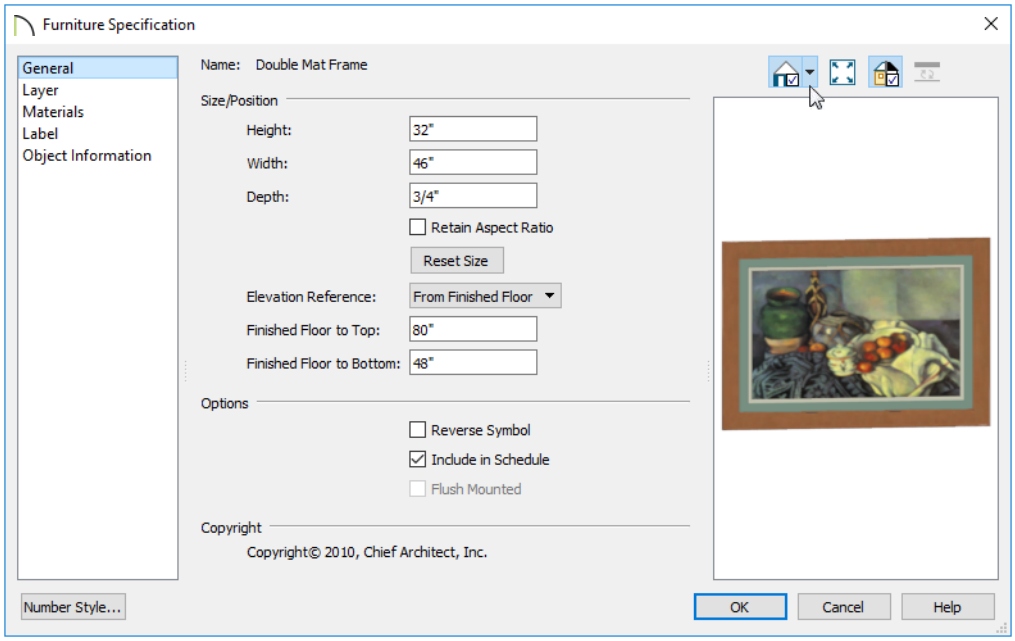


2. Select **Window> Select Next Tab** to return to the camera view in the Foyer.
3. Click the **Select Objects** button and click on the frame to select it. When selected on its side in a camera view, the frame displays only four edit handles: an Extend handle along each side.
4. Use these edit handles to resize and reshape the frame so it better suits the aspect ratio of the painting.
5. To resize the frame concentrically, hold down the C key as you drag an edit handle. See “Concentric” on page 210 of the Reference Manual.



6. You can specify the size of the frame with greater precision in its specification dialog.

   With the frame still selected, click the **Open Object** edit button. See “Symbol Object Specification Dialogs” on page 947 of the Reference Manual.
7. On the GENERAL panel of the **Furniture Specification** dialog:



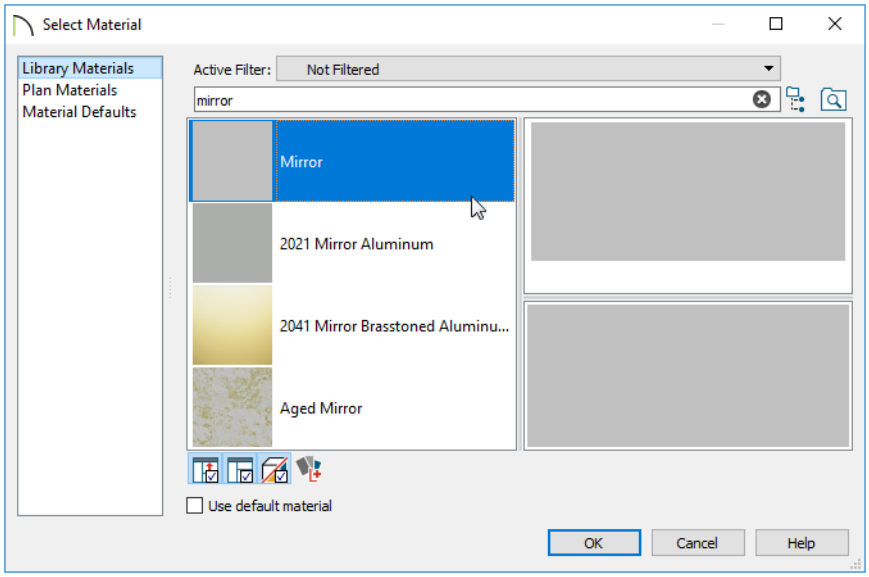
- Select the Standard Rendering Technique from the drop-down above the preview pane so the painting can be seen instead of a solid color.
- Specify the **Finished Floor to Top** as 80".
- Make any adjustments to the **Height** and **Width** that you would like.

You can create custom materials for use in picture frames. For details, see Knowledge Base article KB-00007 at www.chiefarchitect.com/support/database.html.

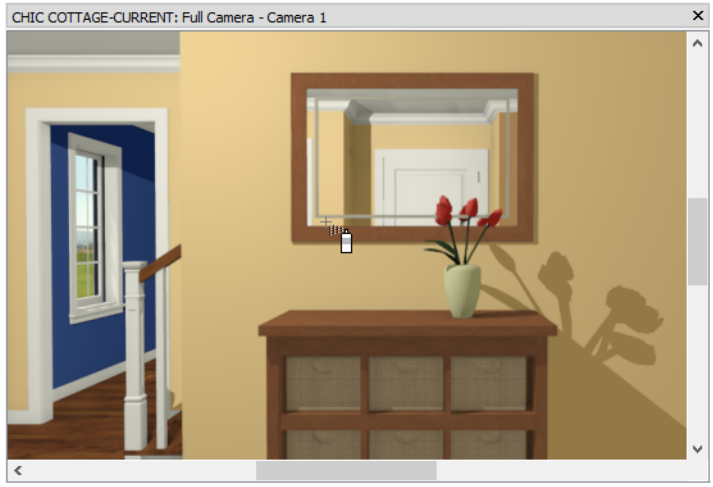
By replacing the painting texture inside the frame, it can instead be turned into a hall mirror.

To create a mirror

1. On the MATERIALS panel of the **Furniture Specification** dialog, select the "Image" component and click the **Select Material** button.
2. On the LIBRARY MATERIALS panel of the **Select Material** dialog, Search for "mirror", select the solid grey "Mirror" material.



3. Click OK to close both dialogs and apply your changes.
4. Select **3D> Camera View Options> Toggle Reflections** .
5. Select **3D> Material Painter> Component Mode** .
6. Select **3D> Material Painter> Material Eyedropper** , then:



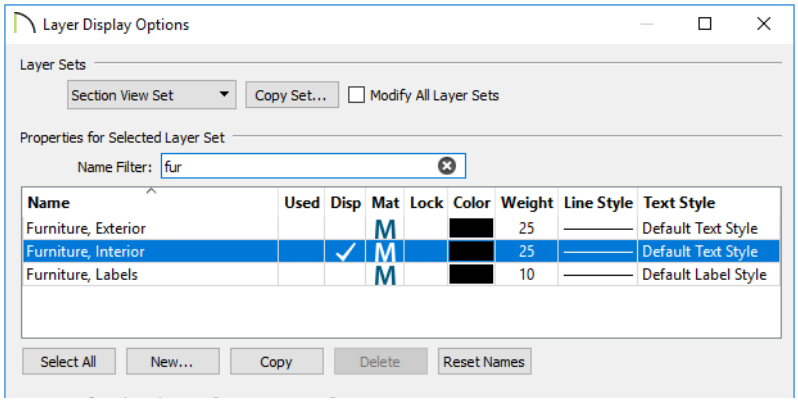
- Notice that the regular mouse pointer is replaced with an Eyedropper icon.
- Click on the mirror material in the center of the frame to load it into the eyedropper.
- The mouse icon changes from an eyedropper into a spray can.
- Click on the green mat just inside the wood of the frame.
- The mirror material replaces the green mat, leaving a rectangular white accent that follows the shape of the mirror.

7. When you are finished, select **File> Close View** to return to floor plan view.

You can replace a library object in your plan with a different item from the Library using the **Replace From Library** edit tool. This can be particularly helpful if you have multiple copies of the same object and would like to replace them all at once.

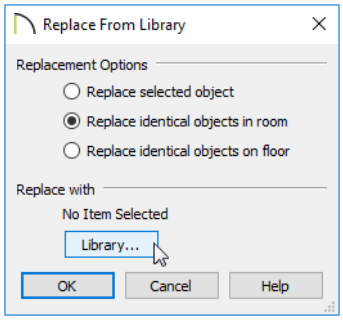
To replace a library object

1. Select **3D> Create Orthographic View> Wall Elevation**, then click in the Master Bedroom and drag to draw a camera arrow pointed straight up on screen, towards the back wall.
2. Turn on the display of interior furnishings in the current view type.



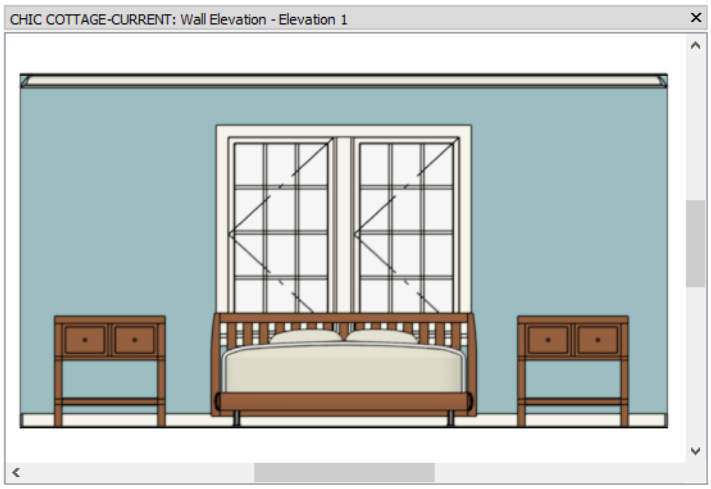
- Select **Tools> Layer Settings> Display Options** to open the **Layer Display Options** dialog:
- In the **Name Filter** field, begin typing the word "furniture". The list of layers will be filtered to match as you type.
- Select the "Furniture, Interior" layer and click in the **Disp** column to add a check mark.
- Click OK to close the dialog and turn on the layer.

3. Click the **Select Objects** button, then click on one of the end tables to select it.
4. Click the **Replace From Library** edit button to open the **Replace From Library** dialog.



- Select one of the **Replacement identical objects in room**.
- Click the **Library** button.

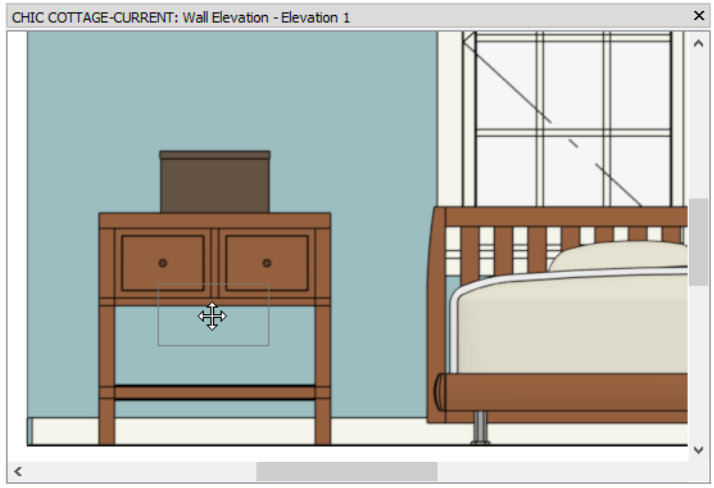
5. In the **Select Library Object** dialog:
   - Type "bedside" in the Search field.
   - Select the "Manning Bedside Table" from the Search results and click OK.
6. Click **OK** once more to close the **Replace from Library** dialog and notice that both tables are replaced by the new bedside table.
7. Notice, too, that these tables are not using the default furniture material like the bed is. Use the **Material Eyedropper** to apply the lighter colored Birch wood to the tables, as described above.



Many accessory symbols are set up to snap to a nearby wall or rest on top of a table. You can override this behavior to place items inside larger objects like storage furniture. See “Unrestricted Movement” on page 250 of the Reference Manual.

To place an accessory inside a furniture object

1. Select **Window> Select Next Tab** to return to floor plan view while leaving the Wall Elevation view in the Master Bedroom open.
2. In the Library Browser, search for "box", select the "Storage Box", and move your mouse pointer into the Master Bedroom.
3. Click once on one of the bedside tables to place a box at that location.
4. Select **Window> Select Next Tab** to return to the Wall Elevation view again.
5. **Zoom** in on the table with the Storage Box and notice that the box is resting on top of the table.
6. Click the **Select Objects** button, then click on the box and try to drag it downwards toward the lower shelf. The box does not move because the table already occupies that space.
7. Hold down the Ctrl key and try again. The Ctrl key allows you to override movement restrictions so you can position the box on the lower shelf, inside the table.



8. When you are finished, select **File> Close View** to return to floor plan view.
9. Remember to **Save** your work.

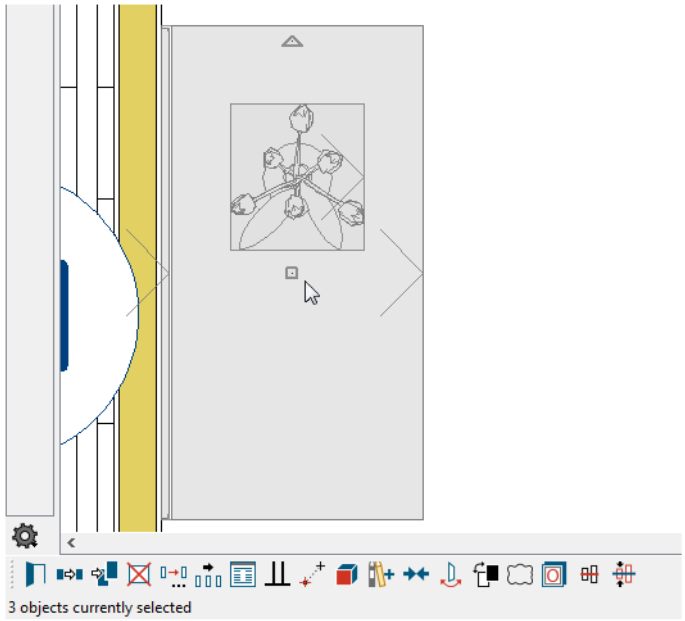
Using Architectural Blocks

Architectural Blocks are groups of objects like furniture and accessories that are blocked together so they can be placed, moved, rotated and even deleted as though they were a single

object. See “Architectural Blocks” on page 969 of the Reference Manual.

To create an Architectural Block

1. **Zoom** in on the dresser in the Foyer.
2. Click the **Select Objects** button, then click on the wall frame to select it.
3. With the frame selected, hold down the Ctrl key and click on the vase to add it to the selection set.
4. Continue holding down the Ctrl key and click on the dresser to select it, as well.
5. The Status Bar should now report "3 objects currently selected" at the bottom left corner of the program window.
6. Click the **Make Architectural Block** edit button and notice that the Status bar now reports that an "Architectural Block" is the selected object.



7. Click and drag the selected Architectural Block’s Move edit handle to move it away from the wall and notice that the dresser, vase, and wall frame all move together as a single unit.
8. Select **Edit> Undo** to return the Architectural Block to its original location.

Architectural Blocks provide a way to furnish and accessorize a plan quickly and easily. When you’ve created one that can be useful in other projects, add it to the library. See “Adding

Library Content" on page 932 of the Reference Manual.

To add an Architectural Block to the library

1. Click on the Architectural Block to select it.
2. Click the **Add to Library** edit button to add the block to the User Catalog in the Library Browser.
3. Right-click on the new item in the User Catalog and select **Rename** from the contextual menu to change the name from "Untitled" to something descriptive like "Foyer Table".

If you want, you can organize the content in your User Catalog by creating folders and then moving items into those folders. For more, see "Organizing the Library" on page 934 of the Reference Manual.

To explode an architectural block

1. Select the Architectural Block in the Foyer.
2. Click the **Explode Architectural Block** edit button.
3. Notice that the Status Bar now reports that "3 objects currently selected" again.
4. When you are finished, remember to **Save** your work.

Creating Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed.

When you are finished working on a file and are ready to close it, **Save** your work. Before closing it, though, create a copy of the file with a different name that indicates what it contains so you can distinguish it from other revisions.

To save a plan revision

1. Select **File**> **Save As** .
2. In the **Save Plan File** dialog, make sure that the save location is your Chic Cottage folder.
3. For the File name, type a the name of the project followed by a short description of the current state of the drawing; for example, Chic Cottage-Furnishings.

Review

This lesson describes the best practices for adding furniture and accessories to a plan

- To browse the library
- To search the Library

- To place a furniture object in a plan
- To place a furniture set in a plan
- To add decorative furnishings
- To modify a symbol from the Library
- To create a mirror
- To replace a library object
- To place an accessory inside a furniture object
- To create an Architectural Block
- To add an Architectural Block to the library
- To explode an architectural block

Assessment Questions

How do the Material Defaults affect furnishing objects placed from the Library Browser?

What are two ways to find an object in the Library Browser?

What edit tool lets you substitute all instances of an object with a different object from the library?

What key on the keyboard lets you move an object through another object, overriding movement restrictions

What is an Architectural Block?

Kitchen & Bath Tutorials

The Kitchen and Bath Tutorials describe best practices for designing kitchens and baths in Chief Architect:

- Cabinet Styles
- Cabinet Layout
- Appliances and Fixtures
- Light Fixtures
- Electrical Objects

Chapter 14:

Cabinet Styles

Cabinet objects support a high degree of customization, allowing you to model a wide variety of styles.

Learning Objectives

This lesson describes best practices in Chief Architect for customizing cabinet styles. Concepts introduced include:

- Setting the Defaults
- Modifying Cabinet Fronts
- Specifying Door and Drawer Styles
- Adding Moldings and Millwork
- Applying Custom Materials
- Updating Cabinet Defaults

File Management

This tutorial continues where the Interior Furnishings tutorial left off. At this point, both the Chic Cottage-Furnishings and CHIC COTTAGE-CURRENT plans contain the same information, so you could open either one and continue working. However, Chic Cottage-

Furnishings.plan was created specifically to serve as a revision or archive file so it will be left unchanged.

To continue working on the Chic Cottage project, select **File> Open Plan** . If need be, browse to Documents\Chic Cottage, select CHIC COTTAGE-CURRENT, and click Open.

Alternatively, select **File> Recent Files** and choose CHIC COTTAGE-CURRENT from the Recent Files List. The Recent Files List is a convenient way to access files you have been working on; however, it is not an alternative to knowing where your files are located and having a good file revision strategy in place. See “Creating File Revisions” on page 306.

It is a very good idea to save your files often as you work, and this guide reminds you to do so regularly.

Productivity Tips

As you learn how to customize cabinet styles, keep in mind these tips to improve your productivity.

Drawing and Editing

- Use the Material Defaults dialog to specify the materials initially assigned to cabinet doors and drawers placed from the Library Browser.
- The **Match Properties** edit tool lets you assign selected attributes from one object to another.
- The **Set as Default** edit tool allows you to apply a selected object’s specifications to the defaults for that type of object.

Content

- A selection of name brand cabinet catalogs are available for download in the "Cabinets" category of the 3D Library. Select **Library> Get Additional Content Online** to launch your default web browser to that page.
- Create template plans that have your custom cabinet styles set as the defaults and ready for use when you begin a new plan. See “Template Files” on page 97 of the Reference Manual.

Interface

- Cabinet doors and drawers can be applied to a cabinet directly from the library: select the door or drawer in the Library Browser, then click once on the cabinet in a camera or floor plan view.

Keyboard Hotkeys

- F1 - Help for the current context
- Spacebar - Select Objects

- Ctrl + E - Open Object edit tool
- Ctrl + S - Save

Setting the Defaults

In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. Setting defaults early can improve efficiency and also helps to avoid introducing errors into the drawing. When placing cabinets, there are several defaults that should be borne in mind.

Before placing cabinets, it is a good idea to set the Cabinet Defaults so that they meet your needs.

An alternative to setting all desired specifications, you can place a cabinet into a plan, customize its construction and appearance, and then apply all of its settings as the defaults for its object type. See “Updating Cabinet Defaults” on page 298.

When a cabinet door, drawer, or panel is inserted into a cabinet, it inherits the default "Cabinet Door/Drawer" material set in the Material Defaults dialog for the current plan. See “To set the Material Defaults” on page 300.

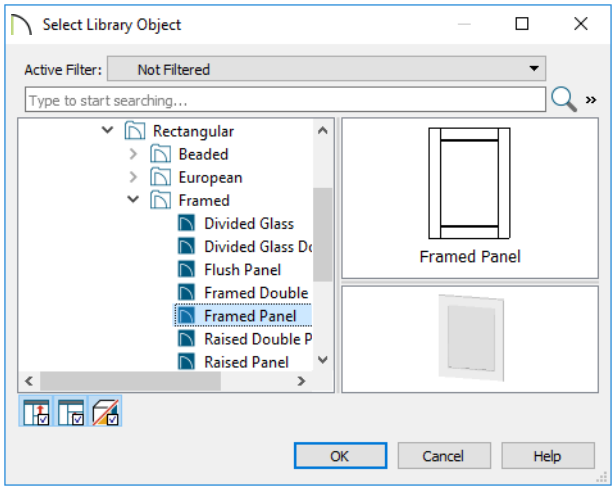
Specifying Door and Drawer Styles

A variety of custom door and drawer styles is available in the Library and can be specified in the Cabinet Defaults dialogs as well as applied to a cabinet in either its specification dialog or in a 3D view.

It is recommended that you set the defaults for an object before placing instances of that object in a plan. A slightly different alternative to this best practice is to place a single instance of an object, customize it, and then set its attributes as the defaults before placing more objects.

To specify a custom door or drawer style

1. Select **Build> Cabinet> Base Cabinet** , then click in the Kitchen near the windows to place a base cabinet against the left vertical wall.
2. Click the **Select Objects** button, then click on the base cabinet to select it and click the **Open Object** edit button.
3. On the DOOR/DRAWER panel of the **Base Cabinet Specification** dialog, click the **Library** button under the door heading.
4. In the **Select Library Object** dialog:

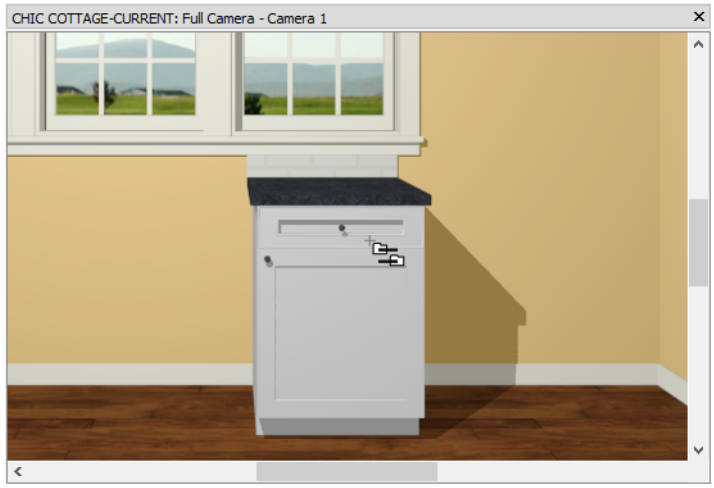


- Browse to Chief Architect Core Catalogs> Architectural> Cabinet Doors, Drawers and Panels> Rectangular> Framed.
- Select the "Framed Panel" door and click OK to close both dialogs.

Doors and drawers can also be applied directly from the library. The process is best seen in a camera view.

To apply a door or drawer style in 3D views

1. Select **3D> Create Perspective View> Full Camera** , then click and drag to draw a camera arrow pointed at the front of the base cabinet.
2. Select **View> Library Browser** to open the Library Browser.
3. Browse to Chief Architect Core Catalogs> Architectural> Cabinet Doors, Drawers and Panels> Drawer Fronts> Beaded and select the "Beaded Frame" drawer.
4. Move your mouse pointer into the view window and position it over the cabinet. Notice that it displays the Replace from Library icon.



5. Click anywhere on the base cabinet to apply the selected drawer front to the cabinet.
   - Library items specified as drawer fronts will be assigned to any drawers or false drawer front items on a cabinet.
   - Library items specified as doors will be assigned to any door or door panel front items on a cabinet.
6. When you are finished, **Save** your work.

Adding Moldings and Millwork

Just like doors, windows, and rooms, cabinets can be customized using moldings. See "Applying Room Moldings" on page 251 of the Room Moldings Tutorial.

As with door and drawer styles, it is best practice to set the defaults for cabinet moldings and millwork prior to placing the cabinets; however, the Set as Default edit tool allows for a slightly different approach.

To specify a counter edge profile

1. Click the **Select Objects** button, then click on the base cabinet in the kitchen to select it.
2. Click the **Open Object** edit button to open the **Base Cabinet Specification** dialog.
3. On the GENERAL panel, note that the Countertop Thickness is 1 1/2".
4. On the MOLDINGS panel, click the **Add New** button.

5. In the **Select Library Object** dialog, browse to Chief Architect Core Catalogs> Architectural> Molding> Chair Rail. Select "CA-29" and click OK.
6. Returning to the MOLDINGS panel:
   - Notice that the selected molding now displays in the preview window and that its name is listed as the **Selected Profile**.
   - Under the Selected Profile Specification heading, check the box beside **Retain Aspect Ratio**.
   - Specify the **Height** as 1 1/2" to match the Countertop Thickness and notice that the Width value adjusts so the profile becomes smaller without its shape being distorted.
   - Click OK to close the dialog and apply your changes.

All new moldings are initially assigned the same material as the cabinet. This, however, can be changed if you wish. See “Applying Custom Materials” on page 300 for more information.

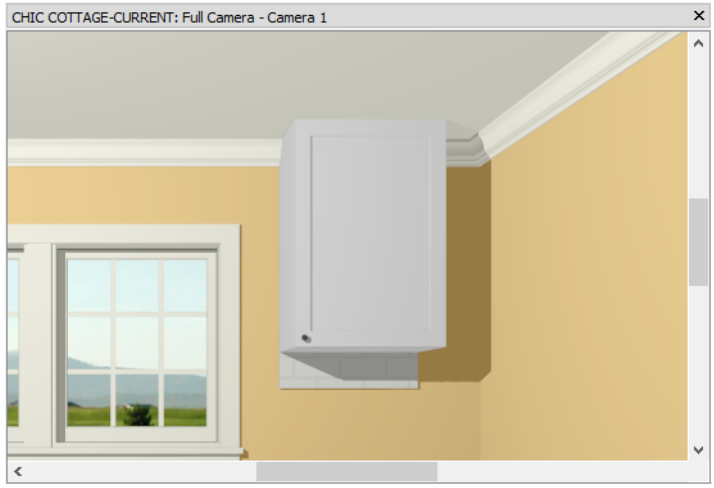
Before adding crown molding to wall cabinets, it’s important that the correct cabinet height be established.

To find the finished ceiling height

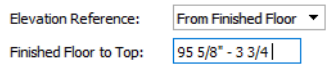
1. Click the **Select Objects** button, then click on the floor surface of the Kitchen to select it.
2. Click the **Open Object** edit button.
3. On the STRUCTURE panel of the **Room Specification** dialog, note that the **Finished Ceiling** value is 95 5/8" and click OK.

To apply crown molding

1. Select **Build> Cabinet> Wall Cabinet**, then click to place a wall cabinet on the left vertical wall in the Kitchen.
2. Select the cabinet and click the **Open Object** edit button.
3. On the GENERAL panel of the **Wall Cabinet Specification** dialog, specify the **Finished Floor to Top** value as 95 5/8".
4. On the MOLDINGS panel, click the **Add New** button.
5. In the **Select Library Object** dialog, browse to Chief Architect Core Catalogs> Architectural> Molding> Crown Molding. Select "CA-34" and click OK.
   - Specify the **Vertical Offset** as -3 3/4", which is the height of the molding profile then make sure that **From Top** is selected.
   - Click OK to close the dialog and apply your changes.

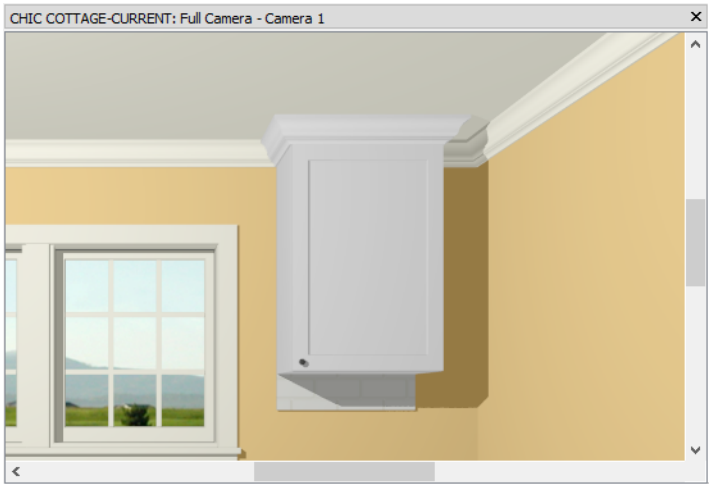


6. Notice that the top of the cabinet touches the ceiling so that the crown molding cannot be seen. To correct this, adjust the cabinet's Finished Floor to Top height:
   - With the wall cabinet still selected, click the Open Object edit button once more.
   - On the GENERAL panel of the **Wall Cabinet Specification** dialog, click in the **Finished Floor to Top** value to place the cursor after the current value of 95 5/8".



   - Press the space bar, then press the - key followed by 3 3/4", which is the height of the CA-34 crown molding.

• Press the Space bar to update the dialog settings and notice the new value: 91 7/8", then click OK.

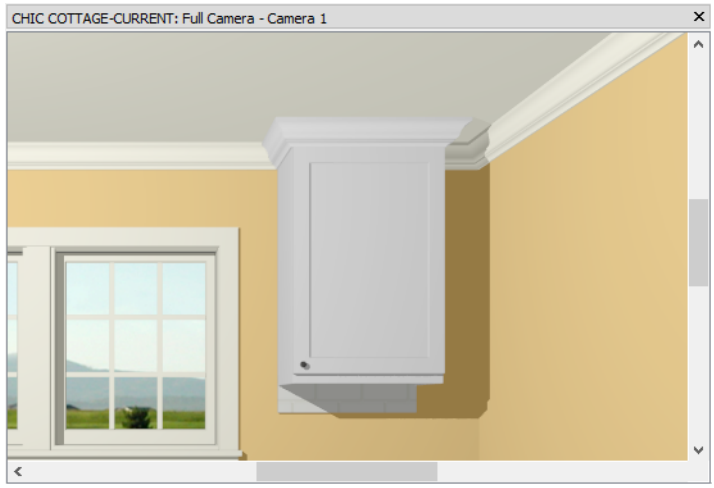


Notice that the room's crown molding and the cabinet's have slightly different white colors. As with the countertop profile, the crown molding receives the same molding as the cabinet by default. See "Applying Custom Materials" on page 300.

Light rails are also a type of molding and can be applied using a similar approach.

To add a light rail

1. With the wall cabinet still selected, click the **Open Object** edit button and return to the MOLDINGS panel of the **Wall Cabinet Specification** dialog.
2. Click the **Add New** button, and in the **Select Library Object** dialog, browse to Chief Architect Core Catalogs> Architectural> Molding> Base Molding. Select "CA-001" and click OK.
3. Notice that the **Selected Profile** is described as "2: CA-001". The 2: indicates that this is the second molding profile assigned to this cabinet.
4. Specify the **Height** as 1 1/2" and the **Width** as 1/2".
5. Specify the **Vertical Offset** as -1 1/2", select the **From Bottom** radio button.
6. Specify the **Horizontal Offset** as - 1/2" to make the light rail flush with the cabinet box, then click OK.



7. Select **File> Close View** to return to floor plan view, and remember to **Save** your work.

Millwork items such as feet can also be applied to cabinets. See “To add cabinet feet” on page 297.

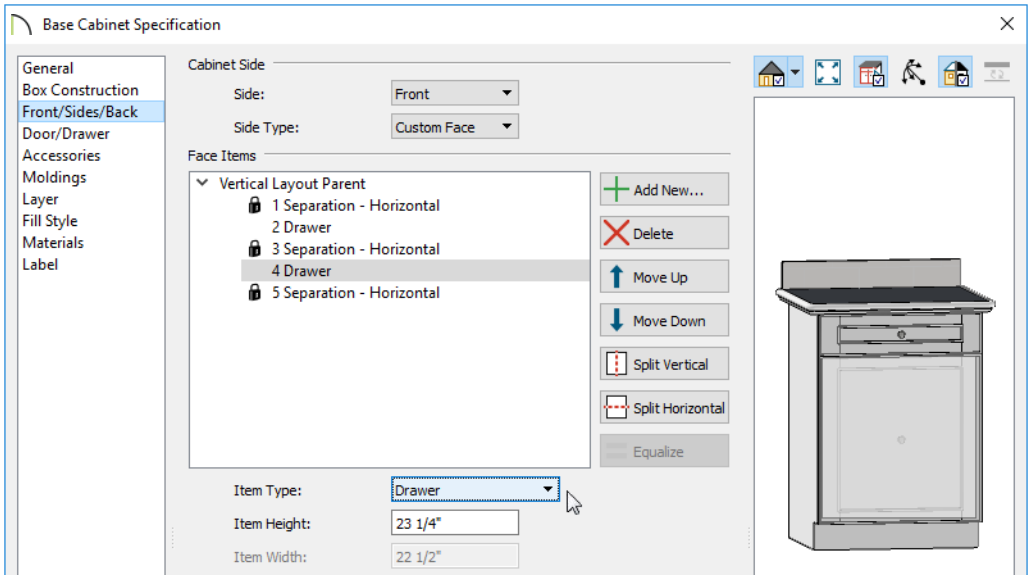
Modifying Cabinet Fronts

The layout of doors, drawers, and other items on a cabinet front can also be customized.

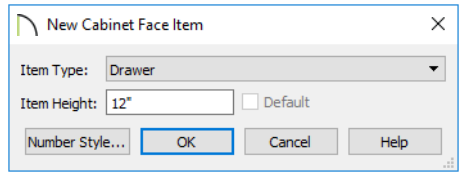
To create a drawer base

1. Create a copy of the customized base cabinet next to the original:
   - Click the **Select Objects** button, then click on the cabinet to select it.
   - Click the **Copy/Paste** edit button.
   - Position the mouse pointer along the left wall of the Kitchen, closer to the top right corner than the existing cabinet and click once.
2. Click on the new base cabinet to select it.
3. Click the **Open Object** edit button and on the FRONT panel of the **Base Cabinet Specification** dialog:
   - Click on the drawer in the preview pane on the right side of the dialog to select it.
   - Notice that its **Item Type** is "Drawer", and its **Item Height**, 5".
4. Next, click on the cabinet door in the preview pane.

- Notice that its **Item Type** is "Auto Right Door". This means that if the cabinet is over 24" wide, it will change to a double door, but if it is under 24" wide, it will be a single right-handed door.
- Select "Drawer" from the **Item Type** drop-down list instead.

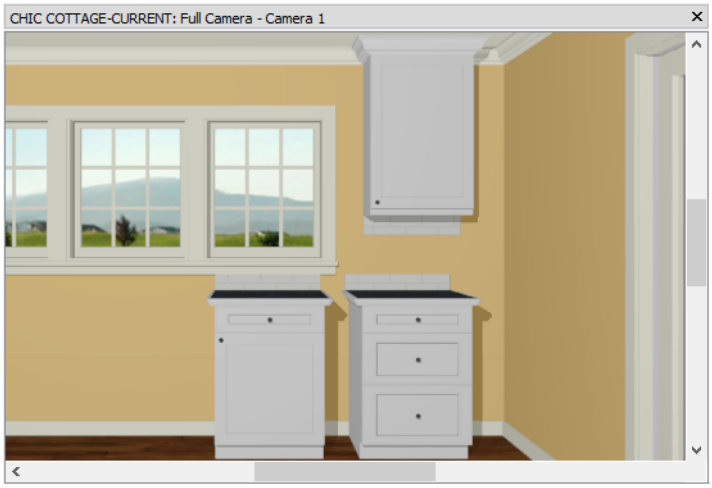


5. Click the **Add New** button, and in the **New Cabinet Face Item** dialog:



- Select "Drawer" from the **Item Type** drop-down list.
- Specify the **Height** as 12" and click OK.

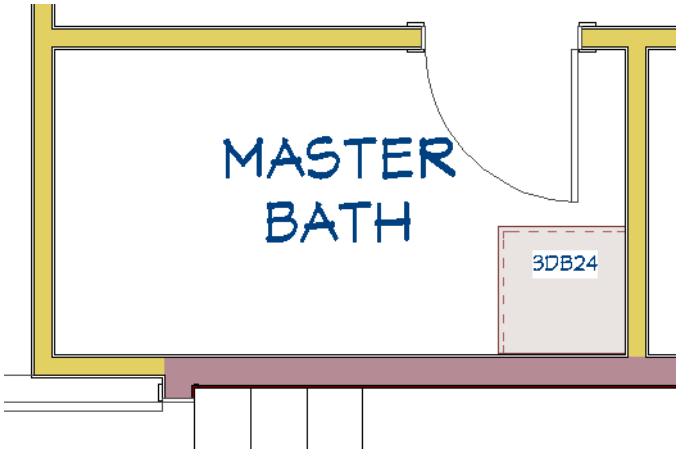
6. Click OK to close the **Base Cabinet Specification** dialog.



The new drawer base can be further customized to serve as a vanity in the Master Bath.

To change cabinet box construction and overlay

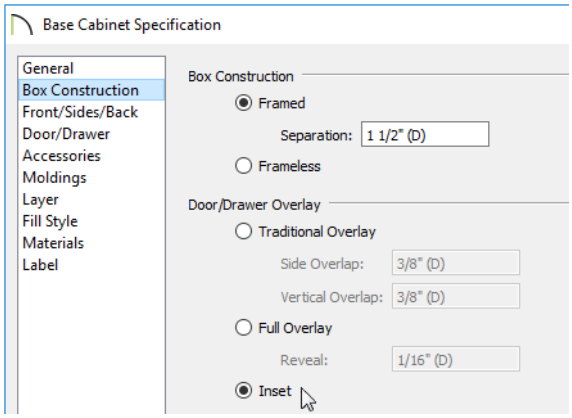
1. Select the drawer bank in the Kitchen and click the **Copy/Paste** edit button.



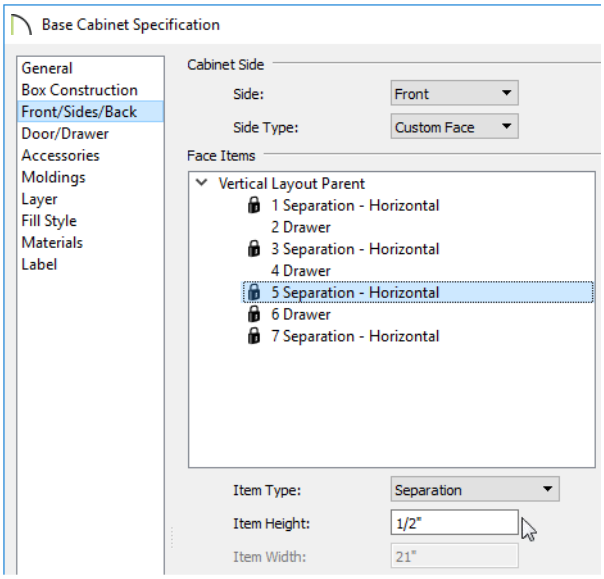
   - Click once along the lower horizontal wall in the Master Bath, in front of the door, to place a copy of the drawer bank at that location.
   - Select the new cabinet and move it into the lower right corner of the Master Bath using its edit handles.

2. With the new cabinet selected, click the **Open Object** edit button.

3. On the BOX CONSTRUCTION panel of the **Base Cabinet Specification** dialog, select **Framed** and **Inset**.



4. On the FRONT/SIDES/BACK panel:

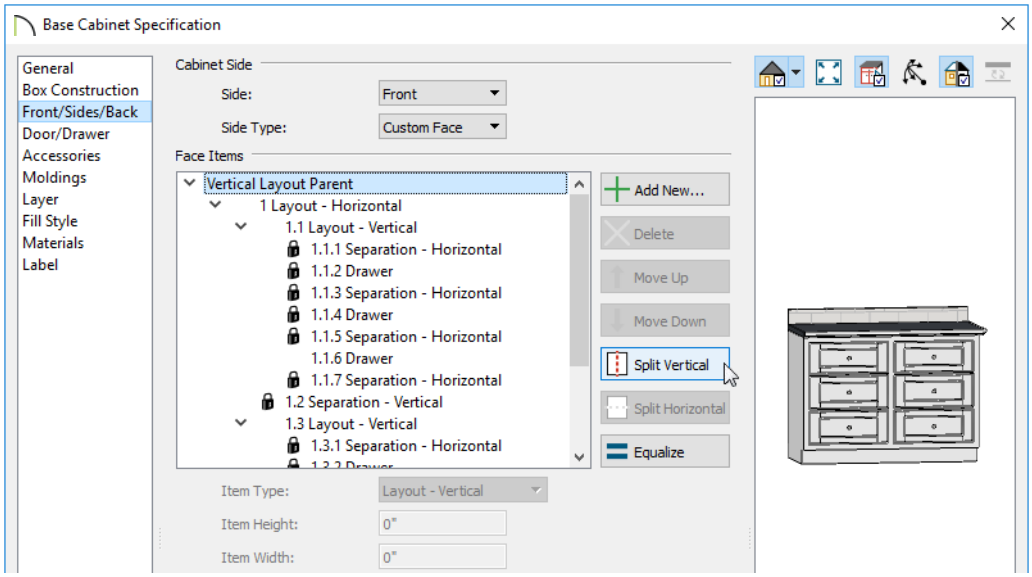


- Select "Custom Face" from the **Side Type** drop-down list, or click on the cabinet in the preview pane on the right side of the dialog.
- Click on line item "3 Separation - Horizontal" in the list of **Face Items**.
- Specify the **Item Height** as 1/2".
- Specify the **Item Height** of line item "5 Separation - Horizontal" as 1/2", as well.

5. Click OK to close the dialog and apply your changes.

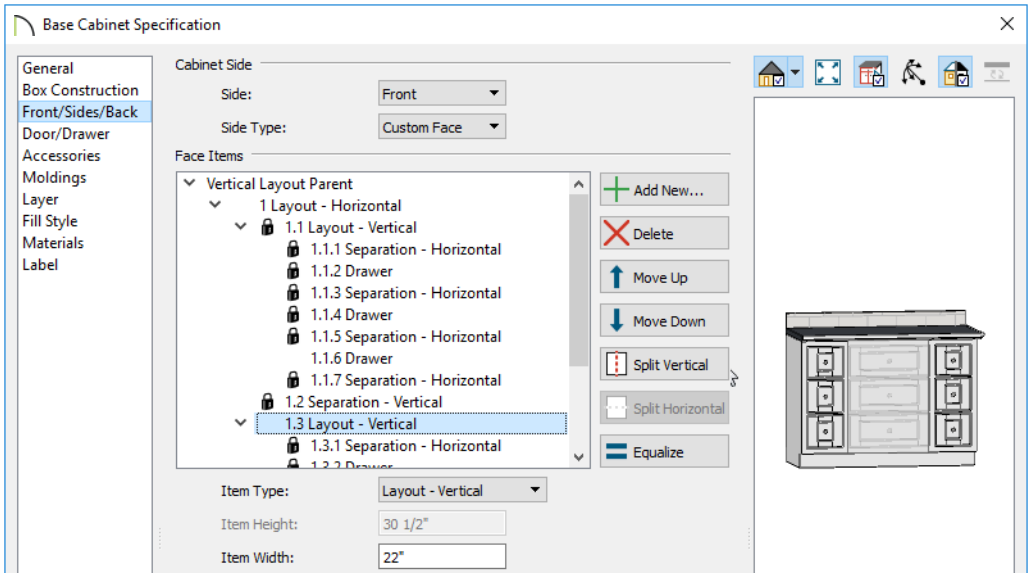
To create a split cabinet front

1. Open the **Base Cabinet Specification** dialog again and on the GENERAL panel, specify the **Width** as 48".
2. On the FRONT/SIDES/BACK panel, specify the **Item Height** of the top drawer as 8 1/2" and the Item Height of the bottom two drawers as 9".
3. Next, divide the cabinet front into two vertical sections:



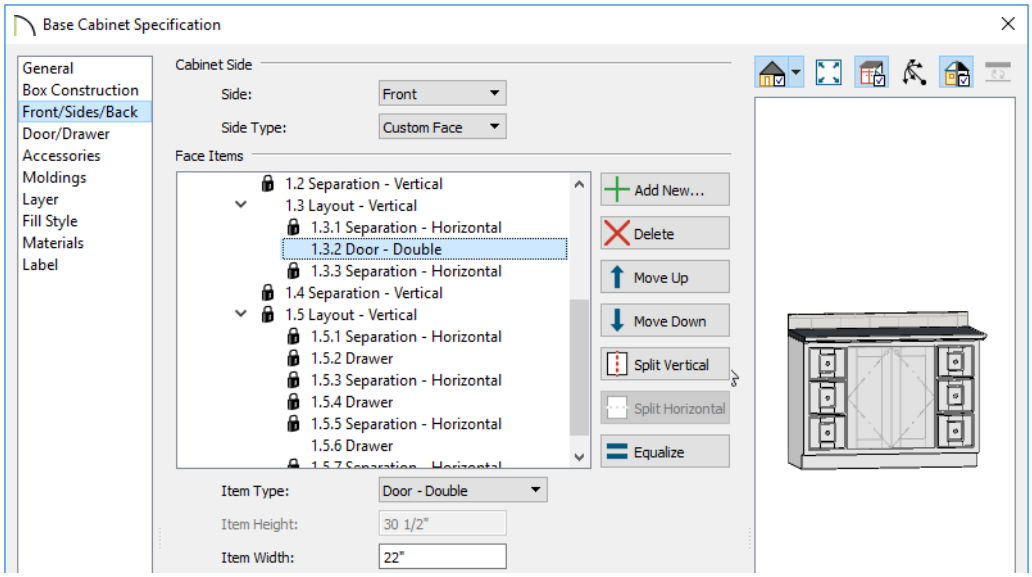
- Click on "Vertical Layout Parent" at the top of the **Face Items** list to select it.
- Click the **Split Vertical** button to divide the stack of drawers into two stacks, side by side.

4. Vertically divide the stack of drawers on the left to make a total of three vertical sections:
   - In the **Face Items** list, click on line item "1.1 Layout - Vertical" to select it.
   - Notice that the vertical section on the left side of the cabinet becomes selected in the preview pane.
   - Click the **Split Vertical** button to divide the stack of drawers into two smaller stacks, side by side.
5. Specify the **Item Widths** of the three vertical sections:



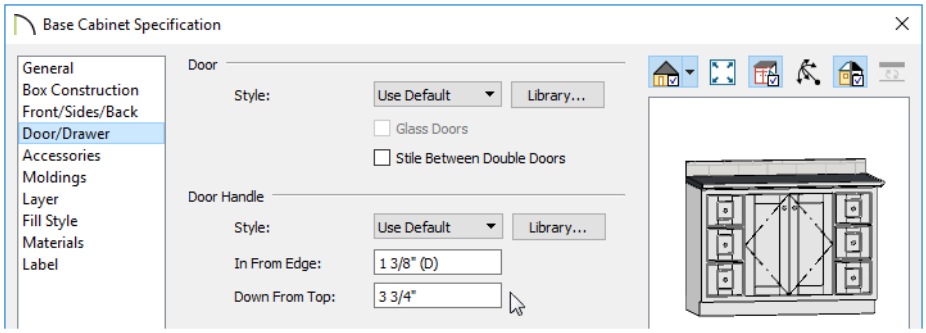
- With "1.1 Layout - Vertical" still selected, specify the **Item Width** as 10".
- Scroll down the **Face Items** list, select "1.5 Layout - Vertical" and specify its **Item Width** as 10" as well.
- Select "1.3 Layout - Vertical" in the **Face Items** list and confirm that its **Item Width** is 22".

6. Specify the **Item Widths** of the two vertical separation pieces:
   - Select line item "1.2 Separation - Vertical" and specify its **Item Width** as 1/2".
   - Specify the **Item Width** of "1.4 Separation - Vertical" as 1/2".
7. Replace the three drawers in the center with a door:



- Click on the top drawer in the middle vertical selection and click the **Delete** button.
- Delete the top drawer once more.
- Select the remaining middle drawer and specify its **Item Type** as "Door - Double".

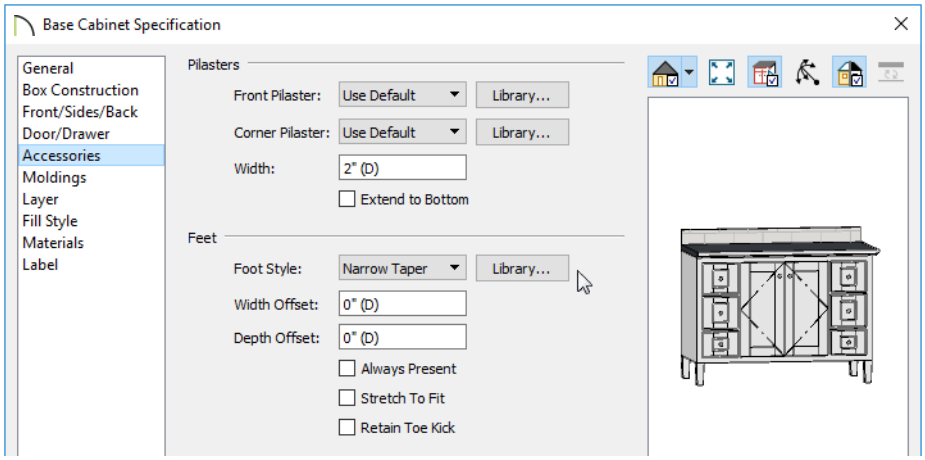
8. On the DOOR/DRAWER panel, under the Door Handle heading, specify the **Down From Top** value as 3 3/4" and click OK.



To add cabinet feet

1. Select the base cabinet in the Master Bathroom and click the **Open Object** edit button.
2. On the GENERAL panel of the **Base Cabinet Specification** dialog, specify the **Toe Kick Height** as 6".
3. On the ACCESSORIES panel, click the **Library** button next to **Foot Style**.

4. In the **Select Library Object** dialog, browse to Chief Architect Core Catalogs> Architectural> Millwork> Cabinet Feet. Select "Narrow Taper" and click OK.



5. Click OK to close the **Base Cabinet Specification** dialog, as well.

6. When you are finished, remember to **Save** your work.

A sink can be added to this cabinet later on. See "To add a drop-in sink" on page 339 of the Appliances and Fixtures Tutorial.

Custom materials can be assigned to this bathroom vanity, as well.

Updating Cabinet Defaults

Once a base cabinet has been customized to meet your needs, you can apply its attributes to the Base Cabinet Defaults dialog so that the Base Cabinet tool creates new cabinets that are identical to the one you modified. For more information, see “Set as Default” on page 88 of the Reference Manual.

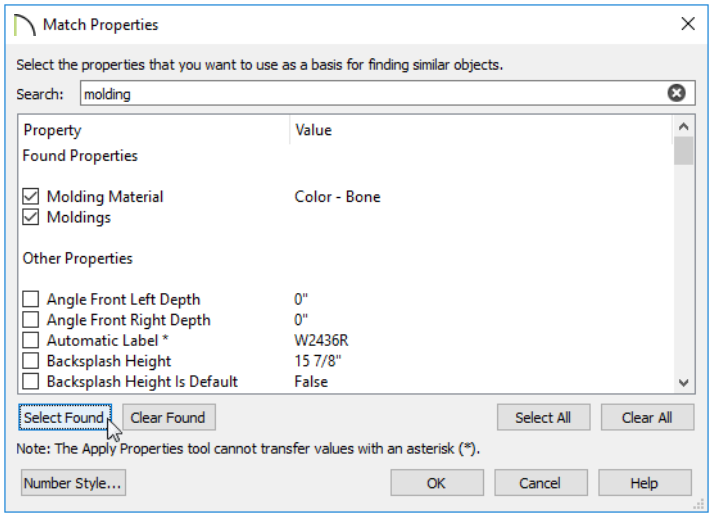
To use the Set as Default tool

1. Select the customized drawer base cabinet in the Kitchen.
2. Click the **Set as Default** edit button.
3. A message will confirm that the Base Cabinet Defaults have been updated.
4. Select the wall cabinet and click the **Set as Default** edit button.
5. A message will confirm that the Wall Cabinet Defaults have been updated.

Many of the customized features of your wall cabinet can also be applied to full height cabinets, and then saved as the defaults for those cabinet types, as well.

To use the Match Properties tool

1. Select **Build> Cabinet> Full Height** , then click to place a tall cabinet in the bottom right corner of the Kitchen.
2. Select the customized wall cabinet in the Kitchen and click the **Match Properties** edit button.
3. In the **Match Properties** dialog:



   - Type "molding" in the **Search** field and notice that Found Properties matching your search term are moved to the top of the list.
   - Check the boxes beside "Molding Material" and "Moldings" or simply click the **Select Found** button located below the list.
   - Click OK.
4. Next, click the **Apply Properties** edit button and click once on the full height cabinet.
5. Click the **Select Objects** button, then select the full height cabinet and click the **Open Object** edit button.
6. On the GENERAL panel of the **Full Height Cabinet Specification** dialog:
   - Specify the **Height** as 91 7/8", which is the top height of the wall cabinet created earlier.
   - Specify the **Depth** as 12".

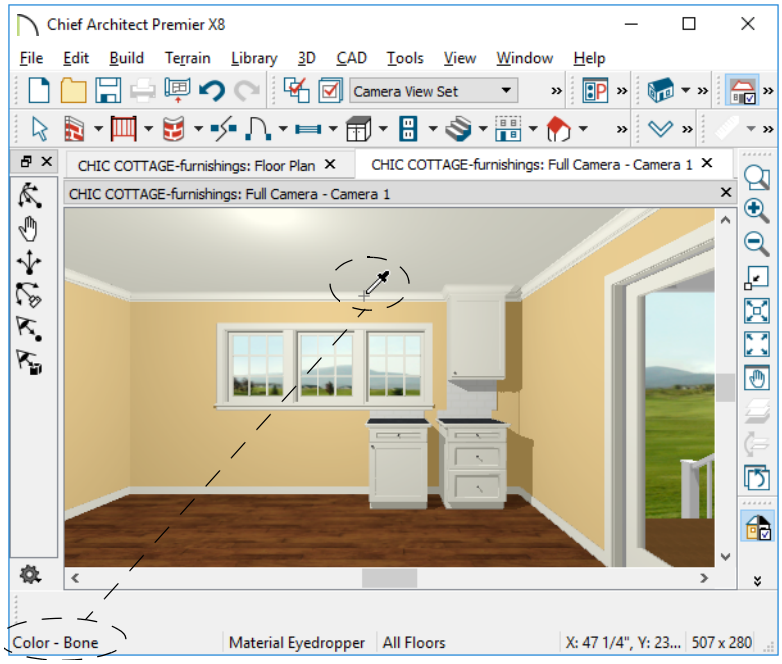
7. On the MOLDINGS panel:
   - Notice that the "CA-34" crown molding is assigned to the cabinet with the same -3 3/4" **Vertical Offset** as the wall cabinet.
   - Select "CA-001" from the **Selected Profile** drop-down list, click the **Delete** button, then click OK
8. With the full height cabinet still selected, click the **Set as Default** edit button
9. A message will confirm that the Full Height Cabinet Defaults have been updated.
10. Remember to **Save** your work.

Applying Custom Materials

Material Defaults offer a way to specify the default material for broad categories of objects - including those placed from the library - rather than specific types of objects. Cabinets offer a good example of their usefulness, which can be seen in 3D views.

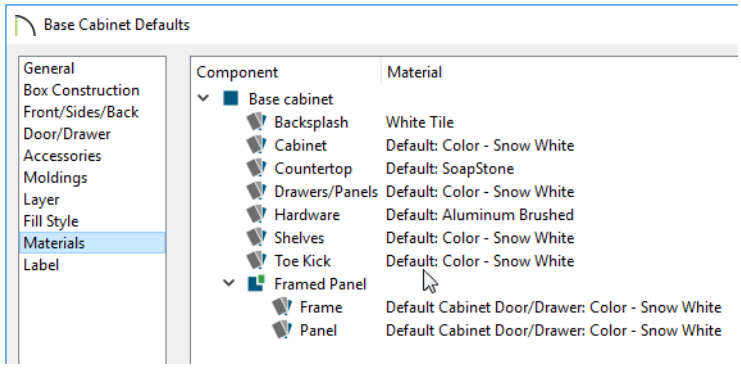
To set the Material Defaults

1. Select **3D> Create Perspective View> Full Camera**, then click and drag to draw a camera arrow pointed at the cabinets in the Kitchen.
2. Select **3D> Material Painter> Material Eyedropper**, then:



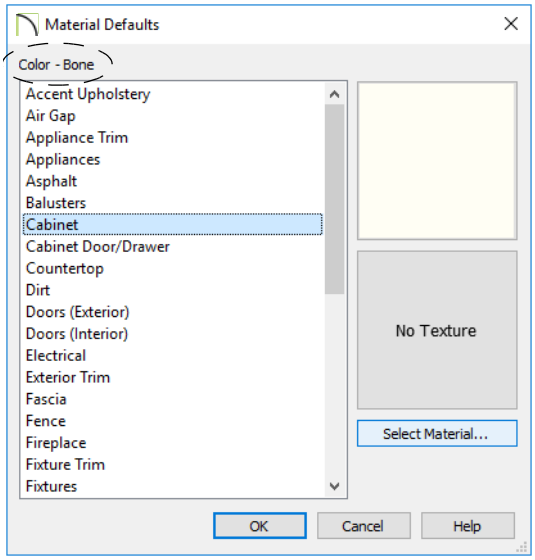
- Notice that the mouse pointer displays an eyedropper icon.
- Move the mouse pointer over the wall cabinet's crown molding and note that the name of its material, "Color - Snow White" is stated on the left side of the Status Bar at the bottom of the window.
- Now move the mouse pointer over the room's crown molding and note that its material is "Color - Bone".

3. Select **Edit> Default Settings** and in the **Default Settings** dialog, click the arrow next to "Cabinets" to expand the category, select "Base Cabinet" and click the **Edit** button.
4. On the MATERIALS panel of the **Base Cabinet Defaults** dialog:



- Notice that nearly all of the items in the list of components has "Default" stated before the material name.
- This means that these components are drawing their material assignments from the **Material Defaults** dialog.
- Click Cancel to return to the **Default Settings** dialog.

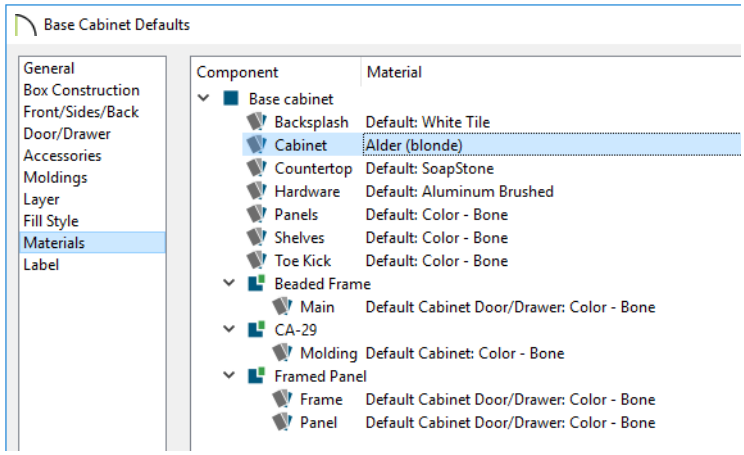
5. Select "Materials" in the list and click the **Edit** button.
6. In the **Material Defaults** dialog, scroll to find the "Cabinet" line item. Select it and click the **Select Material** button.
7. In the **Select Material** dialog, go to the PLAN MATERIALS panel and choose "Color - Bone" from the list of materials used in the current plan and click OK.



8. In the **Material Defaults** dialog, select the "Cabinet Door/Drawer" line item and apply "Color - Bone" to it, as well.
9. Click OK and then Done to close all three dialogs, and use the **Material Eyedropper** to confirm that the color of all of the cabinets along with their doors and drawers has changed to "Color - Bone".

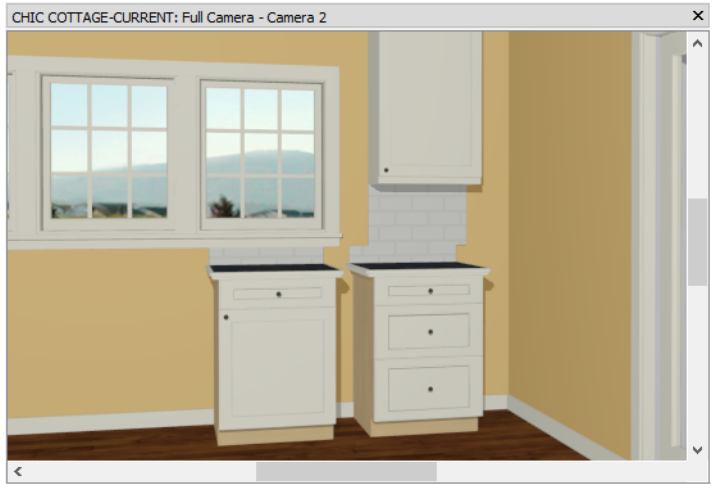
To set the base cabinet material defaults

1. Select **Edit> Default Settings** and in the **Default Settings** dialog, click the arrow next to "Cabinets" to expand the category, select "Base Cabinet" and click the **Edit** button.
2. On the MATERIALS panel of the **Base Cabinet Defaults** dialog, click on the Cabinet component in the tree list to select it and note that "Default: Color - Bone" is currently specified as its material.
3. Click the **Select Material** button to open the **Select Material** dialog, select the "Alder (blonde)" wood material in the Library, and click OK.
4. Returning to the **Base Cabinet Defaults** dialog, notice that it no longer says "Default:" before the material name because the material is not being drawn from the Material Defaults dialog any longer.



5. Assign the "Alder (blonde)" material to the following components: Panel, Shelves, Toe Kick, Beaded Frame Main, and the Framed Panel Frame and Panel.
6. Select the CA-29 Molding component and click the **Select Material** button. On the PLAN MATERIALS panel of the **Select Material** dialog, select "SoapStone" from the list of materials used in the plan, then click OK.
7. Click OK and then Done to close both dialogs and apply your changes.

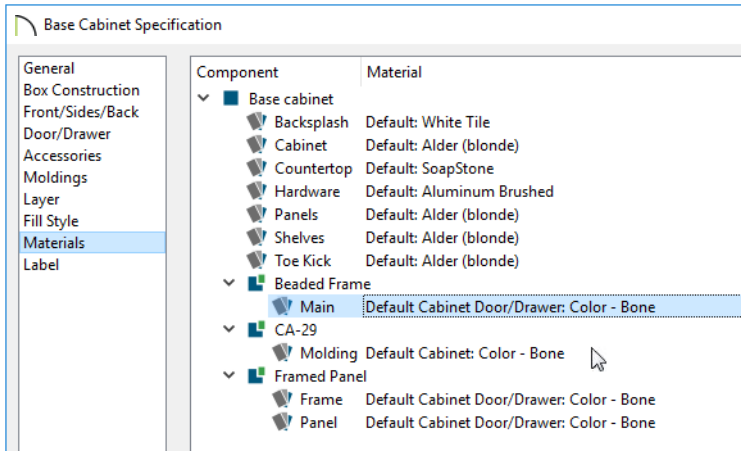
8. Create a **Camera** view in the Kitchen to see the results, and notice that the cabinet doors and drawers selected from the Library are still using the "Color - Bone" material.



Customizing materials on individual cabinets is best done after doors, drawers, hardware, millwork, and moldings is have been finalized. This is because these objects use the materials set in the Material Defaults dialog by default. When applying custom finish materials to a cabinet, the Material Painter Modes can be very helpful.

To specify custom materials on cabinets

1. Click the **Select Objects** button, then select one of the base cabinets and click the **Open Object** edit button.
2. On the MATERIALS panel of the **Base Cabinet Specification** dialog:



- Notice that all of the components that are still using "Default: Color - Bone" are associated with objects that were assigned to the cabinet from the Library: the Beaded Frame drawer, CA-29 countertop profile, and Framed Panel door.
- Assign the "Alder (blonde)" material to the Beaded Frame and Framed Panel door components.
- Assign the "SoapStone" material to the CA-29 molding component, then click OK.

3. Select **3D> Material Painter> Material Painter Object Mode** .
4. Select **3D> Material Painter> Material Eyedropper** , then click on any surface displaying the "Alder (blonde)" material.
5. When the mouse pointer displays a spray can icon, click on a surface of the drawer base that has the "Color - Bone" material to replace it with "Alder (blonde)".
6. Select **3D> Material Painter> Material Painter Component Mode** .
7. Use the **Material Eyedropper** to assign the "SoapStone" material to the countertop profile on the drawer base.

8. Select **File> Close** to return to floor plan view and **Zoom** out so that the Master Bath can be seen.
9. Assign the materials "Cherry-2" and "SoapStone" to the vanity cabinet in the Master Bath as described in step 2.
10. When you are finished, **Save** your work.

Creating File Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed.

When you are finished working on a file and are ready to close it, **Save** your work. Before closing it, though, create a copy of the file with a different name that indicates what it contains so you can distinguish it from other revisions.

To save a plan revision

1. Select **File> Save As** .
2. In the **Save Plan File** dialog, make sure that the save location is your Chic Cottage folder.
3. For the File name, type a the name of the project followed by a short description of the current state of the drawing; for example, Chic Cottage-CabinetStyle.

Review

This lesson describes the best practices for setting the style of the default cabinets.

- To specify a custom door or drawer style
- To apply a door or drawer style in 3D views
- To specify a counter edge profile
- To find the finished ceiling height
- To apply crown molding
- To add a light rail
- To create a drawer base
- To change cabinet box construction and overlay
- To create a split cabinet front
- To add cabinet feet
- To use the Set as Default tool
- To use the Match Properties tool
- To set the Material Defaults
- To set the base cabinet material defaults
- To specify custom materials on cabinets

Assessment Questions

What are two ways that cabinet doors and drawers can be assigned to a cabinet?

What type of object is used to add counter edge profiles and light rails to cabinets?

What option in the Cabinet Specification dialog lets you create a set drawers next to a door?

What tool let you assign certain properties of one object to another object in the plan?

Chapter 15:

Cabinet Layout

Laying out cabinets with different sizes and face items requires precision, and is made easy with snapping, bumping, and a variety of editing tools.

Learning Objectives

This lesson describes best practices in Chief Architect for placing and arranging cabinets. Concepts introduced include:

- Setting the Defaults
- Laying out Base Cabinets
- Creating a Kitchen Island
- Adding Wall Cabinets and Soffits
- Placing Full Height Cabinets

File Management

This tutorial continues where the Cabinet Styles tutorial left off. At this point, both the Chic Cottage-CabinetStyle and CHIC COTTAGE-CURRENT plans contain the same information, so you could open either one and continue working. However, Chic Cottage-CabinetStyle.plan was created specifically to serve as a revision or archive file so it will be left unchanged.

To continue working on the Chic Cottage project, select **File> Open Plan** . If need be, browse to Documents\Chic Cottage, select CHIC COTTAGE-CURRENT, and click Open.

Alternatively, select **File> Recent Files** and choose CHIC COTTAGE-CURRENT from the Recent Files List. The Recent Files List is a convenient way to access files you have been working on; however, it is not an alternative to knowing where your files are located and having a good file revision strategy in place. See “Creating File Revisions” on page 330.

It is a very good idea to save your files often as you work, and this guide reminds you to do so regularly.

Productivity Tips

As you learn how to lay out a cabinet design in a plan, keep in mind these tips to improve your productivity.

Drawing and Editing

- Create a single drawer base or other special cabinet and then copy it to produce any additional ones that you need.
- Use the **Center Object** edit tool to center cabinets relative to windows, other cabinets, or other objects.
- The **Reflect About Object** edit tool lets you move a cabinet to the other side of another cabinet; use with the **Copy/Paste** edit tool to create identical cabinets on either side.

Content

- Create Architectural Blocks of cabinet groupings like islands and add them to the library for future use.

Interface

- Because cabinets often have different combinations of face items, it is often helpful to design their layout in a Wall Elevation or other camera view.

Keyboard Hotkeys

- F1 - Help for the current context
- Spacebar - Select Objects
- Ctrl + E - Open Object edit tool
- Ctrl + S - Save

Setting the Defaults

In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. Setting defaults early can improve efficiency and also helps to avoid introducing errors into the drawing. When adding cabinets to a plan, there are several defaults of particular importance.

Before placing cabinets, it is a good idea to set the Cabinet Defaults so that they meet your needs. Cabinet style, construction, and materials can all be set in advance. See "Cabinet Styles" on page 283 of the Cabinet Styles Tutorial

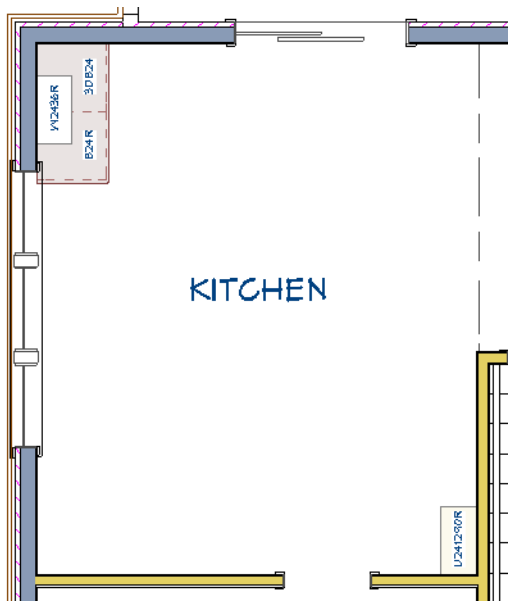
When a cabinet door, drawer, or panel is inserted into a cabinet, it inherits the default "Cabinet Door/Drawer" material set in the Material Defaults dialog for the current plan. See "To set the Material Defaults" on page 300 of the Cabinet Styles Tutorial.

Laying out Base Cabinets

Several cabinets were placed in the Cabinet Styles tutorial for the purposes of setting defaults using the Set as Default edit tool. Additional cabinets can now be added to create a kitchen cabinet layout. See the Cabinet Styles Tutorial on page 283.

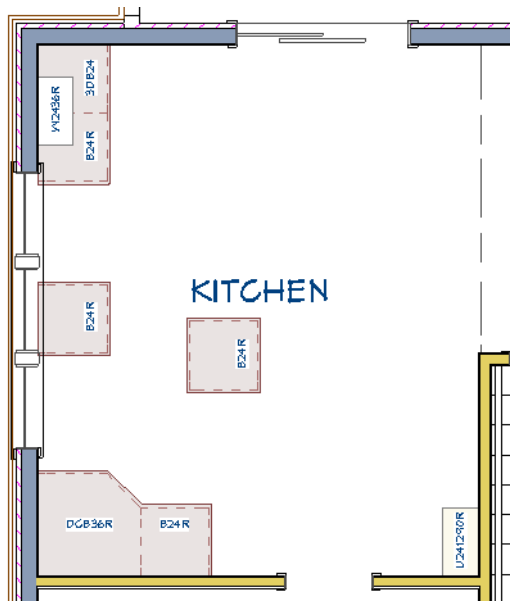
To bump and push cabinets

1. Zoom in on the Kitchen area in floor plan view.
2. Click the **Select Objects** button, then click on either of the base cabinets that were placed in the Cabinet Styles tutorial.
3. Move your mouse pointer over the square Move edit handle located at the cabinet's center, then click and drag to move the cabinet in the direction of the other cabinet.
   - When the selected cabinet's editing preview outline reaches the other cabinet, it bumps into it and stops.
4. Release the mouse button again, and then repeat the same action: click and drag the Move edit handle towards the other cabinet.
   - Notice that this time, the selected cabinet pushes the other cabinet, moving them both.
   - Drag upward until the cabinets bump into the corner of the room.



To place base cabinets

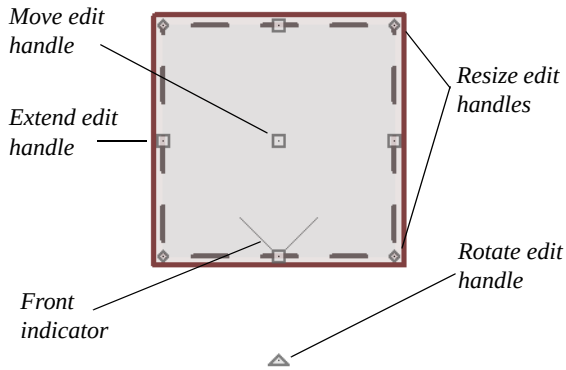
1. Select **Build> Cabinet> Base Cabinet** , then click to place a base cabinet along the left vertical wall in the kitchen, in front of the middle window. Notice that its back snaps to the wall surface automatically.
2. Place another base cabinet in the middle of the room and notice that it is oriented in the same direction as the existing cabinets nearby.
3. Move the mouse pointer into the bottom left corner of the Kitchen room and notice that the shape of the cabinet preview outline changes. Click to place a corner cabinet.
4. Place one more cabinet along the wall separating the Kitchen from the Dining room, just to the right of the corner cabinet.



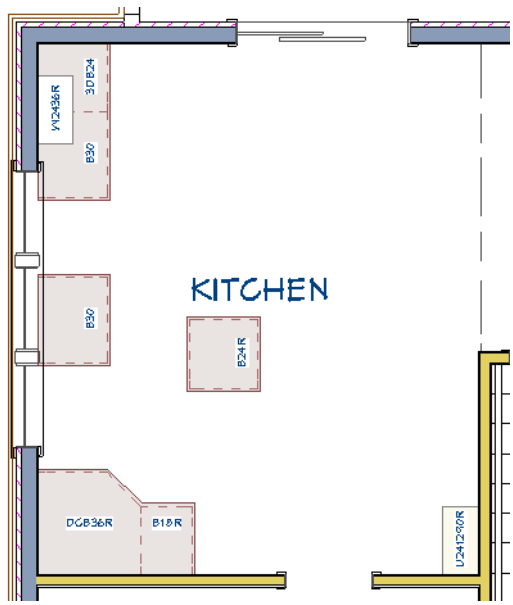
Often, the base cabinet located under a window is wider than average to accommodate a sink.

To resize a cabinet

1. A cabinet can be selected in several ways:
   - Click on it while the **Select Objects** tool is active.
   - Click on it while the **Cabinet Tool** used to create it is active.
   - Right-click on it when any tool is active.
2. Select the cabinet under the window, and notice that edit handles and a front indicator display.



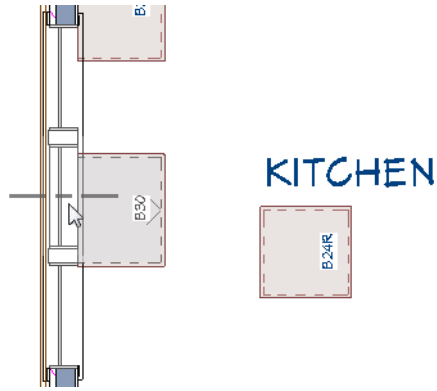
3. Move your mouse pointer over its various edit handles. The arrow that displays indicates what function that handle performs, as does the Status Bar. See “Editing Box-Based Objects” on page 237 of the Reference Manual.
4. Click and drag one of the cabinet’s horizontal sides to adjust its width.
   - As you drag, notice the Temporary Dimension that reports its width changes in 3" increments. Cabinets resize in this manner to conform to standard cabinet sizes.
   - Notice that its label updates as well. When it is 24" wide, the label is B24R; when it is 27" wide, it becomes B27R.
   - Do not release the mouse button. Instead, press the Esc key to restore the cabinet to its original size.
5. Click the **Open Object** edit button and on the GENERAL panel of the **Base Cabinet Specification** dialog, specify the **Width** as 30" and click OK.
6. Using either its edit handles or specification dialog, make the cabinet next to the corner cabinet 18" in width.
7. Specify the other drawer base cabinet along the left vertical wall as 30" wide, as well.



When a cabinet is located under a window, it is typically centered on it.

To center a cabinet

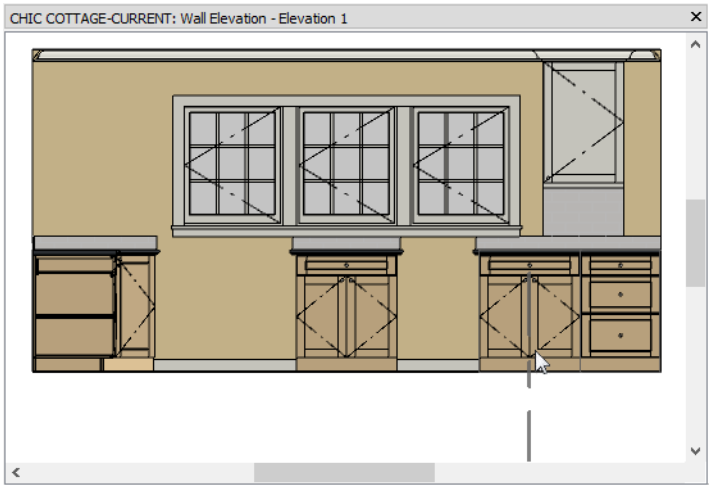
1. With the base cabinet still selected, click the **Center Objects** edit button.
2. Move your mouse pointer over the middle window.
3. When a dashed horizontal centering axis displays in the window, click once.



While default cabinets are easily placed using the Base Cabinet tool, special cabinets like the drawer base take some time to create. When more than one is needed, though, it can be copied and pasted. The drawer base in this plan can be distinguished in floor plan view by its label; however, it is much easier to see in a Wall Elevation view.

To copy and paste cabinets

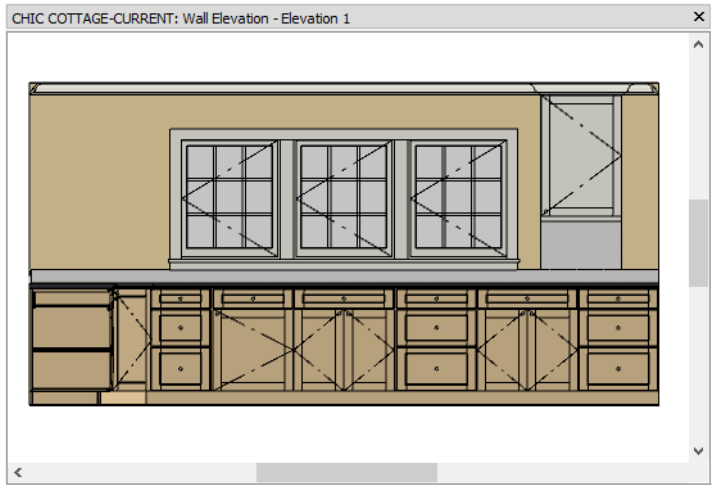
1. Select **3D> Create Orthographic View> Wall Elevation** , then click and drag a camera arrow in the Kitchen room, pointed towards the left vertical wall. Be sure to draw the camera arrow perfectly horizontal.
2. Select the drawer base on the right, click the **Copy/Paste** edit button, then click the **Sticky Mode** edit button.
3. Click the **Reflect About Object** edit button, then:



   - Move your mouse pointer over the 2-door cabinet to its left.
   - When a dashed vertical reflection axis displays, click once.
   - A copy of the original drawer base is created on the other side of the door base.
4. With the newly pasted drawer base selected, click the **Reflect About Object** edit button.
5. Move your mouse pointer over the 2-door sink base cabinet to its left.
   - When a dashed vertical reflection axis displays, click once.
   - Another copy of the drawer base is created on the left side of the sink base.
6. Click **Main Edit Mode** to get out of Sticky Mode but leave the new cabinet selected.

7. Resize the selected drawer base to a **Width** of 18", then click and drag it to the left until it bumps into the corner cabinet.

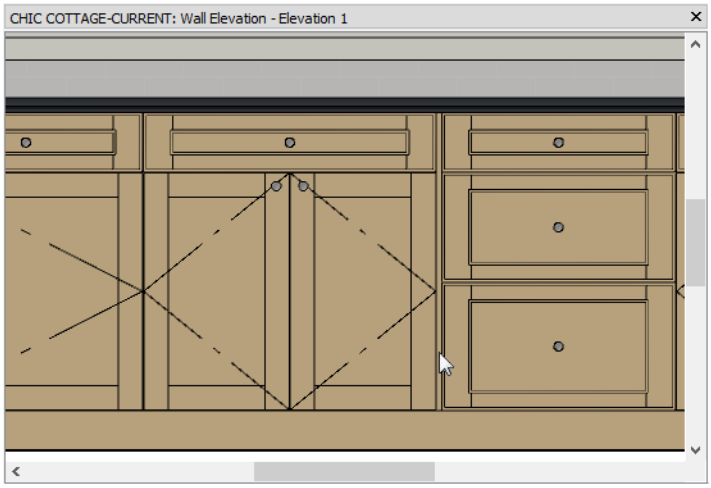
8. To finish the layout, select **Build> Cabinet> Base Cabinet** and click to place a cabinet in the gap between the sink base and the drawer base to its left.



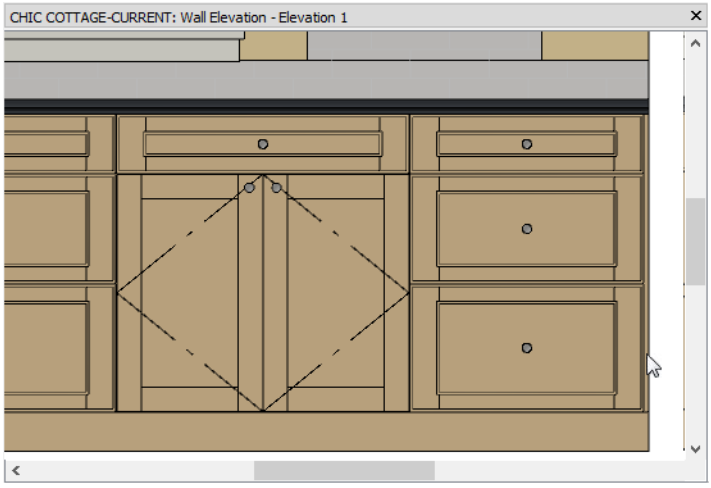
Small gaps between cabinets or between cabinets and walls are filled in with fillers automatically. For more information, see “Cabinet Fillers” on page 611 of the Reference Manual.

To control partition lines and filler locations

1. **Zoom** in on the right half of the Kitchen room and notice that the partition between the sink base and the drawer base to its right is wider than the others.

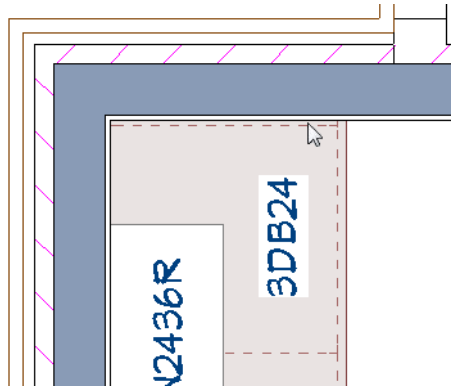


2. Click the **Select Objects** button, then click on the drawer bank on the right side of the Kitchen to select it.
3. Click the cabinet's Move edit handle and drag slowly to the left.

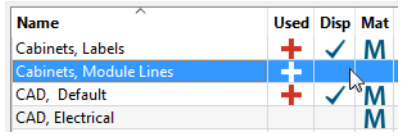


- When you see the cabinet and two cabinets to its left shift and bump against the sink base cabinet, release the mouse button.
- Notice that the wider than average separation now is located on the far right, next to the wall.

4. Select **File> Close View** to return to floor plan view and **Zoom** in on the top left corner of the Kitchen. Note that cabinet fillers can also be see in floor plan view.



5. Select **Tools> Layer Settings> Display Options**, and in the **Layer Display Options** dialog:



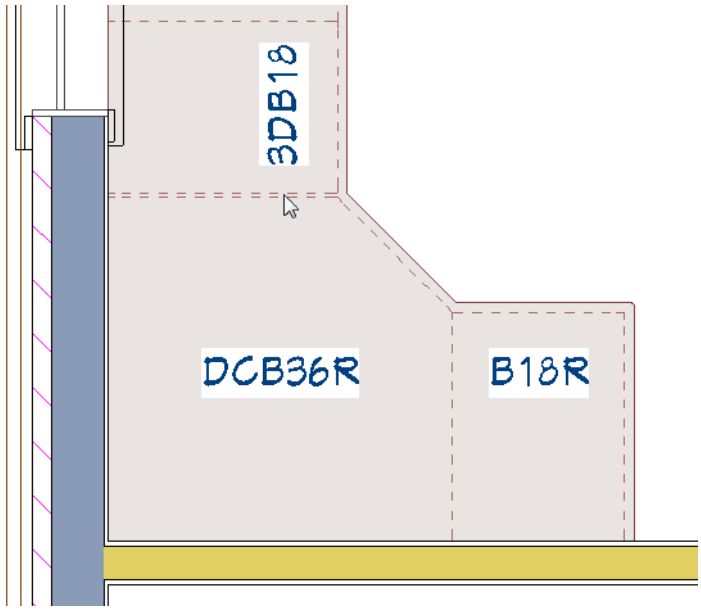
   - Locate the "Cabinets, Module Lines" layer in the list.
   - Click in the Display column for this layer to remove the check mark.
   - Click OK and notice that the dashed lines representing the sides of base cabinet boxes no longer display.

6. Select **Edit> Undo** to turn the display of the "Cabinets, Module Lines" layer on again.
7. Pan down to the bottom left corner of the kitchen:

   - Select **Window> Pan Window** or click and hold the middle mouse button.
   - Drag the mouse pointer in an upward direction, then release the mouse button when the lower left corner of the Kitchen comes into view.

8. Select the drawer base located against the left vertical wall, next to the corner cabinet.
9. Click the cabinet's Move edit handle and drag slowly upward.

   - When you see the cabinet and the one to its right shift and bump against the sink base, release the mouse button.
   - Notice that there is a wider than average separation between the corner cabinet and the drawer base.



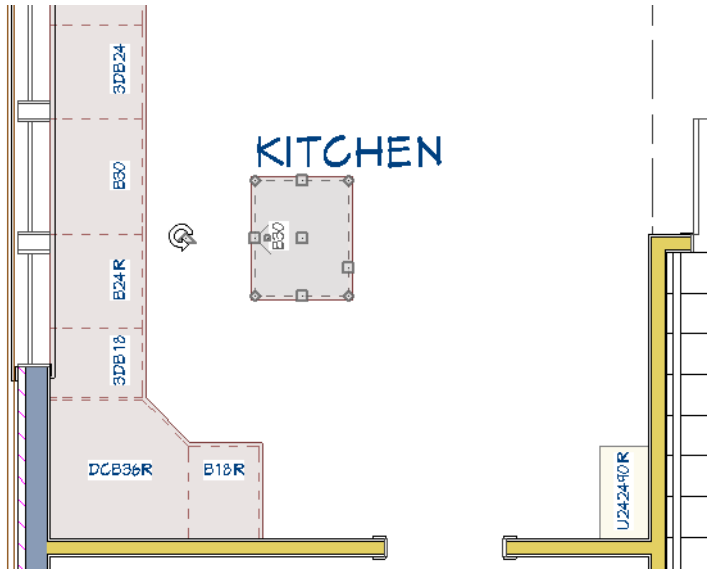
10. When you are finished, **Save** your work.

Creating a Kitchen Island

Kitchen islands can have a wide variety of cabinet configurations and styles.

To create a cabinet island

1. Click the **Select Objects** button, then click on the base cabinet located in the middle of the kitchen to select it.
2. Using either its edit handles or its specification dialog, increase its **Width** to 30".
3. With the cabinet still selected, rotate it so it faces to the left:

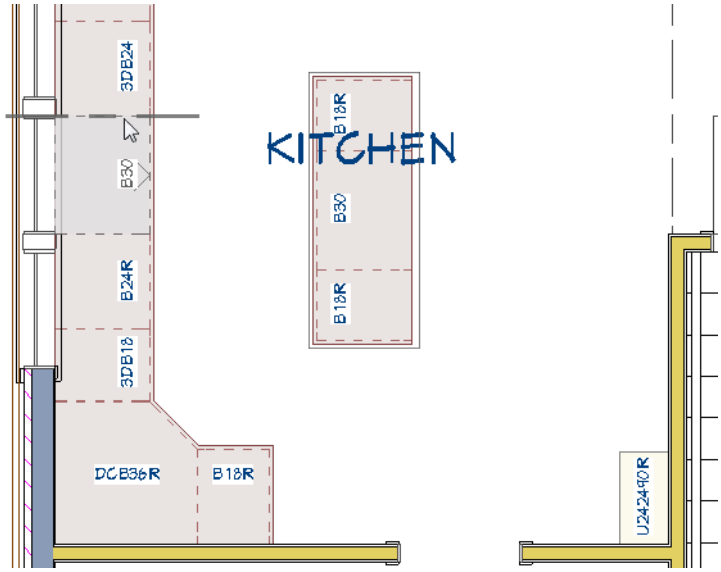


- Move your mouse pointer over the triangular Rotate edit handle.
- Click and drag in a circular motion until the cabinet has rotated 180°, then release the mouse button.

4. With the cabinet still selected:
   - Click on the Temporary Dimension that reports how far it is away from the cabinets located against the wall.
   - In the inline text field, type 42" and press the Enter key.
5. Place 18" wide drawer bases on both sides of the island cabinet:
   - Select the drawer base located on either side of the corner cabinet
   - Click the **Copy/Paste** edit button, then click the **Sticky Mode** edit button.
   - Click once on each side of the island cabinet.
   - Notice that the pasted drawer bases are oriented in the same direction as the cabinet that they are placed beside.
   - Click **Main Edit Mode** to get out of Sticky Mode but leave the new cabinet selected.
6. Select the three island cabinets as a group:
   - With one of the drawer bases still selected, hold down the Shift key.
   - Click on each of the other island cabinets to add them to the selection set.
   - The total number of selected objects is stated on the left side of the Status Bar.
7. Click the **Open Object** edit button. On the GENERAL panel of the **Base Cabinet Specification** dialog, under the Countertop heading:

- Uncheck the box beside **Uniform**.
- Delete everything in the **Back** text field and replace it with 0".
- Be sure to delete the (D), which stands for Default.
- Click OK.

8. With the three cabinets still group-selected, center the island on the side of the sink base:



- Click the **Center Object** edit button and move your mouse pointer over the top horizontal edge of the sink base.
- When a dashed horizontal centering axis displays along the edge of the sink base, click once to center the grouped kitchen island cabinets relative to that edge.

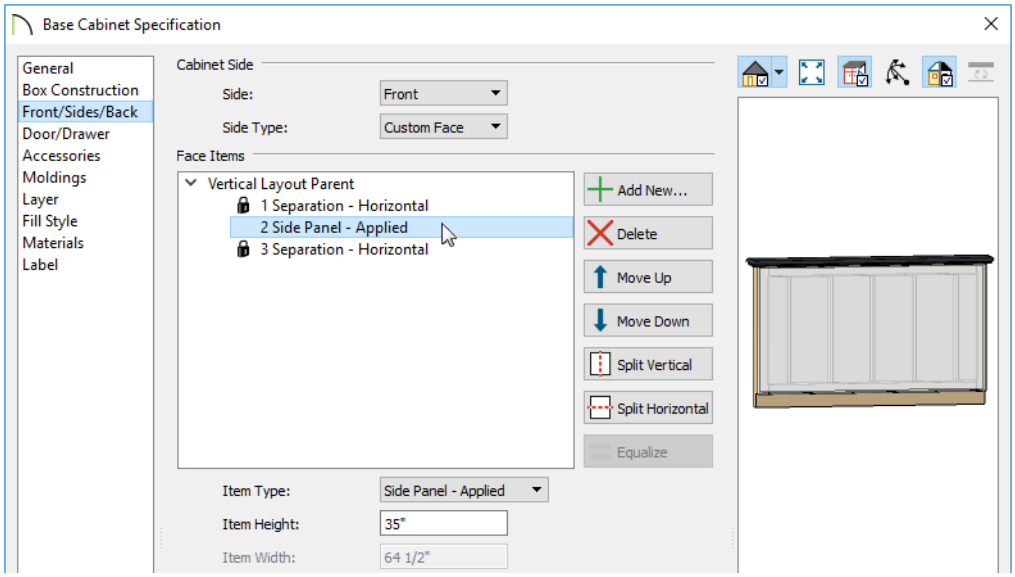
9. At this point, you may find it helpful to move the Kitchen room label. See "To control the display of room labels" on page 51 of the Interior Walls Tutorial.

Using a number of the techniques introduced in the Cabinet Styles tutorial, a base cabinet can also be modified to serve as the support for a breakfast bar.

To add a breakfast bar

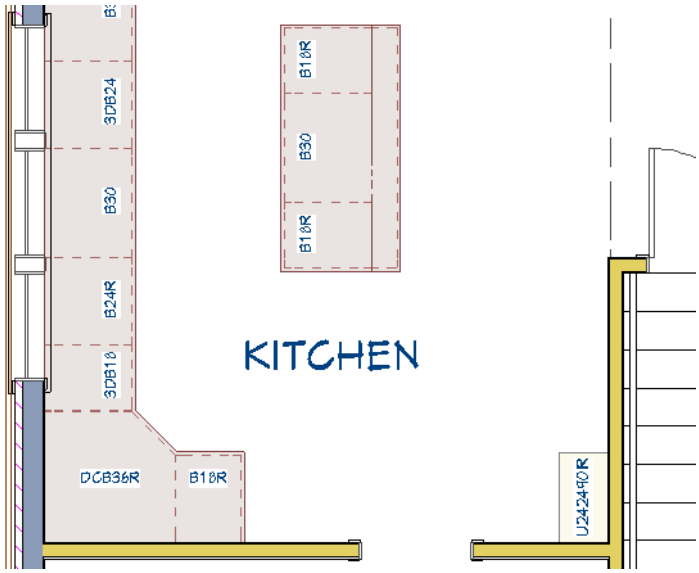
1. Select **Build> Cabinet> Base Cabinet**, then click to place a base cabinet at the back of the island cabinets.
2. Select the new cabinet and click the **Open Object** edit button.
3. On the GENERAL panel of the **Base Cabinet Specification** dialog, specify the **Depth** as 7" and the **Height** as 42".

4. On the FRONT/SIDES/BACK panel:



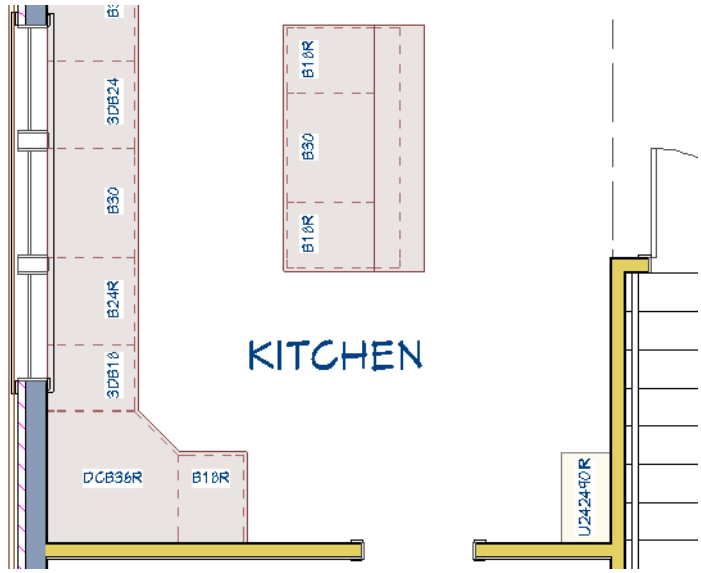
- Select the drawer and click the **Delete** button.
- Select the door and specify its **Item Type** as "Side Panel - Applied".

5. On the ACCESSORIES panel, click the **Library** button next to **Panel Style**.
6. In the **Select Library Object** dialog, browse to Chief Architect Core Catalogs> Architectural> Cabinet Doors, Drawers & Panels> Doors> Beaded, select the "Beaded Beadboard" panel and click OK.
7. On the MATERIALS panel, select the "Beaded Beadboard" component, assign the "Alder (blonde)" material to it, and click OK.
8. Using the edit handles, snap each side of the cabinet to the sides of the drawer bases so that its Width equals the total width of the other three island cabinets.



To create a custom countertop

1. With the back cabinet still selected, click the **Generate Custom Countertop** edit button.
2. Click on the right vertical edge of the countertop polyline to select it, then:
3. Click on the Temporary Dimension that reports the overhang distance from the selected edge to the cabinet box.
4. You may need to **Zoom** in on this dimension in order to click on it.
5. In the inline text field, type 12" and press the Enter key.



chiefarchitect.com.

Like furnishings, cabinets can be blocked together into a single unit. See "Using Architectural Blocks" on page 277 of the Interior Furnishings Tutorial.

To create an architectural block

1. **Zoom** out so that the entire kitchen island can be seen.
2. Click the **Select Objects** button, then click on the Kitchen room label to select it.
3. Hold down the Shift key, then click and drag to draw a rectangular selection marquee around the island.
   - When you release the mouse button, the four cabinets and the Custom Countertop will become selected, while the room label will become deselected.
   - The total number of selected objects will be stated on the left side of the Status Bar.
4. With the five objects that make up the island selected, click the **Make Architectural Block** edit button.
5. When you are finished, remember to **Save** your work.

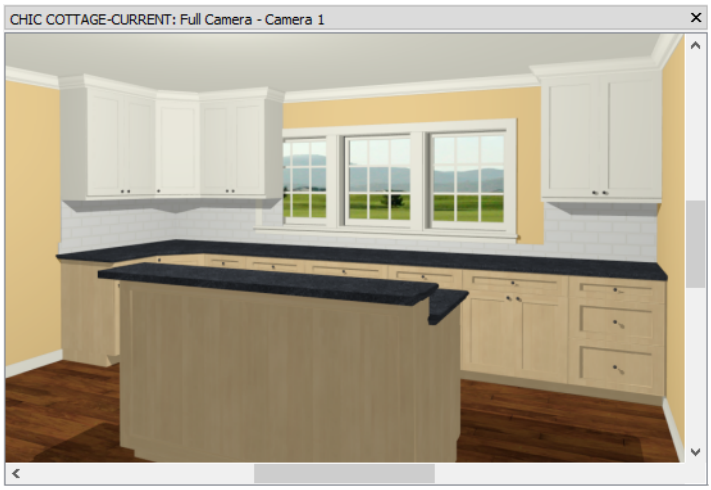
Adding Wall Cabinets and Soffits

Wall cabinets and soffits can be added in much the same manner as base cabinets.

A wall cabinet was placed in the Cabinet Styles tutorial for the purposes of setting defaults using the Set as Default edit tool. Additional wall cabinets can now be placed. See “Cabinet Styles” on page 283.

To place and edit wall cabinets

1. Select **Build> Cabinet> Wall Cabinet** .
2. Move the mouse pointer into the lower left corner of the Kitchen, and when the preview outline changes from a standard rectangular to a corner cabinet shape, click once.
3. Click once on either side of the corner cabinet to create a wall cabinet on the left vertical wall, and one on the horizontal wall separating the Kitchen from the Dining room.
4. Select the wall cabinet in the upper left corner of the Kitchen and:
   - Move it into the corner using its Move edit handle.
   - Resize it to 36" in width.
5. Select the wall cabinet next to the corner cabinet on the left vertical wall and resize it to 12" in width.
6. Select the wall cabinet on the right side of the corner cabinet and resize it to 30" in width.
7. Create a Full Camera view of the Kitchen to see the results.



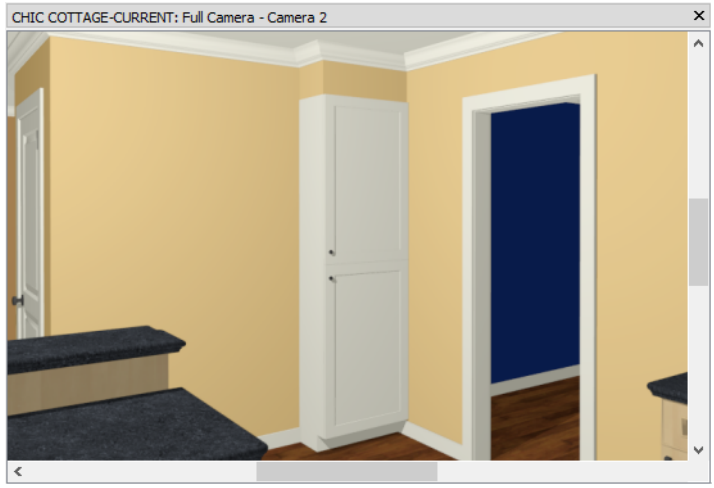
The Soffit tool is a versatile tool that can be used for a wide variety of applications, but its primary purpose is to fill in gaps between wall and full height cabinets and the ceiling. In Chic Cottage, the wall cabinets are positioned so that their crown molding reaches the ceiling. Rather than use a full height cabinet with a custom height to do the same thing, a standard height cabinet can be used, and the space above filled with a soffit.

To set the soffit defaults

1. Click the **Select Objects** button, then click on the full height cabinet in the Kitchen to select it and click the Open Object edit button.
2. On the GENERAL panel of the **Full Height Cabinet Specification** dialog, specify the **Height** as 84".
3. Select **Edit> Default Settings** , and in the **Default Settings** dialog, click the arrow next to "Cabinets" to expand the category, select "Soffit" and click the **Edit** button.
4. On the GENERAL panel of the **Soffit Defaults** dialog, specify the **Height** as 12", the **Depth** as 12", and the **Floor to Bottom** value as 84".
5. On the MATERIALS panel, specify the soffit material as "Color - Butter" to match the wall finish color in the Kitchen, then click OK.

To place soffits

1. Select **Build> Cabinet> Soffit** then click above the full height cabinet in the Kitchen to place a soffit above it.
2. Create a Camera view in the Kitchen, pointed towards the wall cabinet.
3. Notice that the room's crown molding wraps around the soffit automatically.



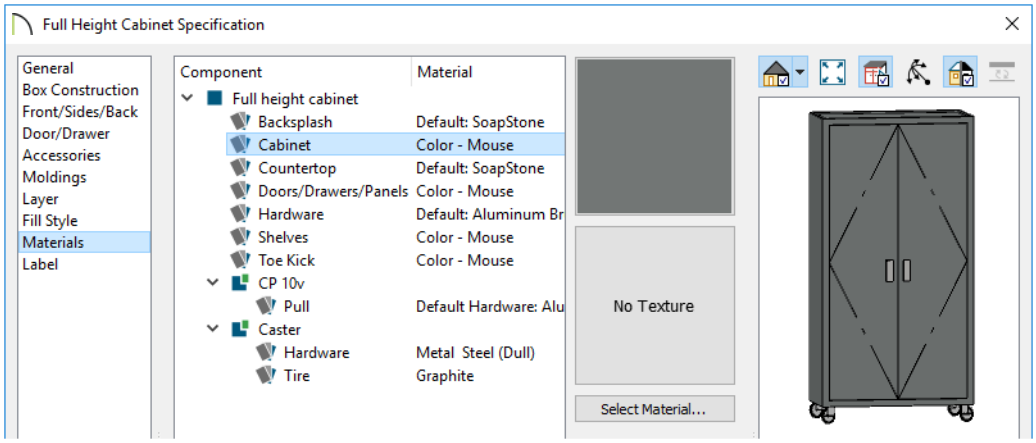
4. Select **File> Close View** to return to floor plan view, and remember to **Save** your work.

Placing Full Height Cabinets

A full height cabinet was placed in the Cabinet Styles tutorial for the purposes of setting defaults using the Set as Default edit tool. See “Cabinet Styles” on page 283.

To place and edit full height cabinets

1. Select **Build> Cabinet> Full Height** , then click along the back horizontal wall of the Garage to place a cabinet at that location.
2. Select the cabinet and click the **Open Object** edit button.
3. On the GENERAL panel, specify the **Height** as 72", the **Width** as 36", and the Depth as 18".
4. On the BOX CONSTRUCTION panel, click the radio buttons beside **Framed** and **Inset**.
5. On the FRONT/SIDES/BACK panel:
   - Select the upper door and click the **Delete** button.
   - Notice that it is replaced by an Opening item with shelves.
   - Select the "2 Opening" in the list of **Face Items** and click the **Delete** button.
6. On the DOOR/DRAWER panel:
   - Select "Slab" from the **Door Style** drop-down list.
   - Click the **Library** button beside **Door Handle Style**, and
7. In the **Select Library Object** dialog, browse to Chief Architect Core Catalogs> Architectural> Hardware> Cabinet Hardware> Pulls, select "CP 10v", and click OK.
8. Returning to the DOOR/DRAWER panel, specify the **In From Edge** value as 2".
9. On the ACCESSORIES panel:
   - Specify "Caster" as the **Foot Style**.
   - Check the box beside **Always Present**.
   - See "To add cabinet feet" on page 297 of the Cabinet Styles Tutorial.
10. On the MATERIALS panel, assign the "Color - Mouse" material to the following components: Cabinet, Doors/Drawers/Panels, and Shelves.

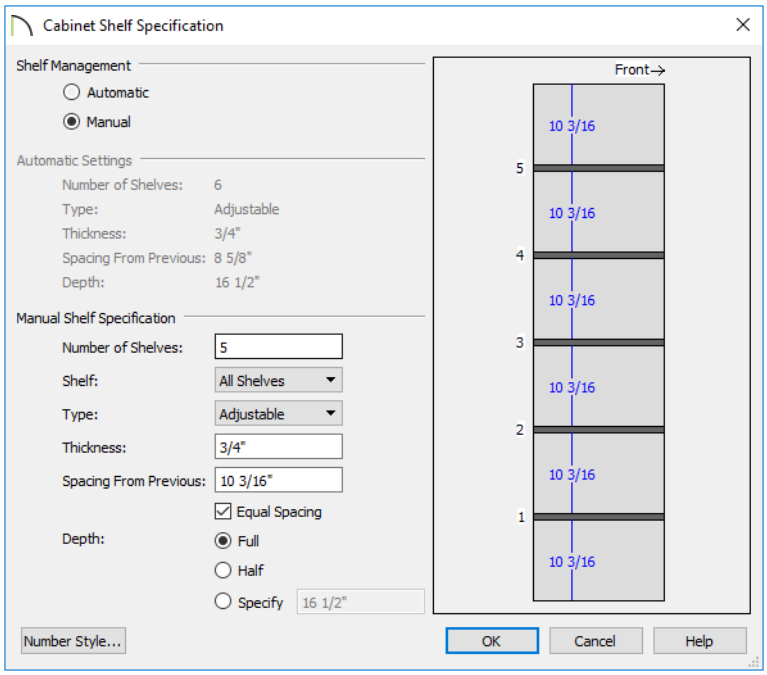


11. Click OK to close the dialog and apply your changes.

The shelves in all Door and Opening cabinet face items are adjustable.

To adjust cabinet shelves

1. With the full height cabinet still selected, click the **Open Object** edit button to open the **Full Height Cabinet Specification** dialog again.
2. On the FRONT/SIDES/BACK panel:
   - Select the Door face item.
   - Click the **Specify** button to the right of the **Shelves** label.
3. In the **Cabinet Shelf Specification** dialog:



- Click the radio button beside Manual.
- Specify the **Number of Shelves** as 5, then click OK.

4. Click OK to close the **Full Height Cabinet Specification** dialog and apply your change.
5. When you are finished, remember to **Save** your work.

Creating File Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed.

When you are finished working on a file and are ready to close it, **Save** your work. Before closing it, though, create a copy of the file with a different name that indicates what it contains so you can distinguish it from other revisions.

To save a plan revision

1. Select **File**> **Save As** .
2. In the **Save Plan File** dialog, make sure that the save location is your Chic Cottage folder.

3. For the File name, type a the name of the project followed by a short description of the current state of the drawing; for example, Chic Cottage-Cabinets.

Review

This lesson describes the best practices for placing cabinets. It also discussed the important default settings associated with cabinets.

- To bump and push cabinets
- To place base cabinets
- To resize a cabinet
- To center a cabinet
- To copy and paste cabinets
- To control partition lines and filler locations
- To create a cabinet island
- To add a breakfast bar
- To create a custom countertop
- To create an architectural block
- To place and edit wall cabinets
- To set the soffit defaults
- To place soffits
- To place and edit full height cabinets
- To adjust cabinet shelves

Assessment Questions

What edit tool can be used to align a cabinet with another object, such as a window?

What two edit tools can be used to create identical cabinets on either side of cabinet?

How do you remove the dashed lines between cabinet boxes in floor plan view?

What tool allows you to create a counter that is independent of any base cabinet?

What tool can be used to create an island that acts like a single object?

Chapter 16:

Appliances and Fixtures

Along with cabinets, fixtures and appliances are essential to kitchen and bath layouts.

Learning Objectives

This lesson describes best practices in Chief Architect for placing appliances and fixtures. Concepts introduced include:

- Placing Appliances
- Placing Fixtures
- Editing Appliances and Fixtures

File Management

This tutorial continues where the Cabinet Layout tutorial left off. At this point, both the Chic Cottage-Cabinets and CHIC COTTAGE-CURRENT plans contain the same information, so you could open either one and continue working. However, Chic Cottage-Cabinets.plan was created specifically to serve as a revision or archive file so it will be left unchanged.

To continue working on the Chic Cottage project, select **File> Open Plan** . If need be, browse to Documents\Chic Cottage, select CHIC COTTAGE-CURRENT, and click Open.

Alternatively, select **File> Recent Files** and choose CHIC COTTAGE-CURRENT from the Recent Files List. The Recent Files List is a convenient way to access files you have been working on; however, it is not an alternative to knowing where your files are located and having a good file revision strategy in place. See “Creating File Revisions” on page 348.

It is a very good idea to save your files often as you work, and this guide reminds you to do so regularly.

Productivity Tips

As you learn how to place appliances in a plan, keep in mind these tips to improve your productivity.

Drawing and Editing

- Use the **Center Object** edit tool to center cabinets relative to windows, other cabinets, or other objects.
- The **Reflect About Object** edit tool lets you move a cabinet to the other side of another cabinet; use with the **Copy/Paste** edit tool to create identical cabinets on either side.

Content

- A wide selection of name brand appliances are available for download from the Chief Architect 3D Library. Select **Library> Get Additional Content Online** to launch your default web browser to that page.
- Create Architectural Blocks of cabinet groupings like cooktop islands and add them to the library for future use.

Interface

- Because appliances are often placed in or beside cabinets, it is often helpful to design their layout in a Wall Elevation or other camera view.

Keyboard Hotkeys

- F1 - Help for the current context
- Ctrl + L - Library Browser
- Spacebar - Select Objects
- Ctrl + E - Open Object edit tool
- Ctrl + S - Save

Setting the Defaults

In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. Setting defaults early can improve efficiency and also helps to avoid introducing errors into the drawing. When placing symbols from the Library, the settings in the Material Defaults dialog can be helpful.

Some appliances in the library have been assigned particular materials because those are the standard for that particular item, and they initially use those materials regardless of the overall style of the plans they are placed into. Some appliances, however, are available in multiple finishes and are set up inherit the default appliance materials that can set differently for each plan in the Material Defaults dialog. See “Material Defaults” on page 1013 of the Reference Manual.

When adding fixtures and appliances to a plan, it is helpful to set the Material Defaults for "Appliances", "Appliance Trim", "Fixtures, and "Fixture Trim".

Placing Appliances

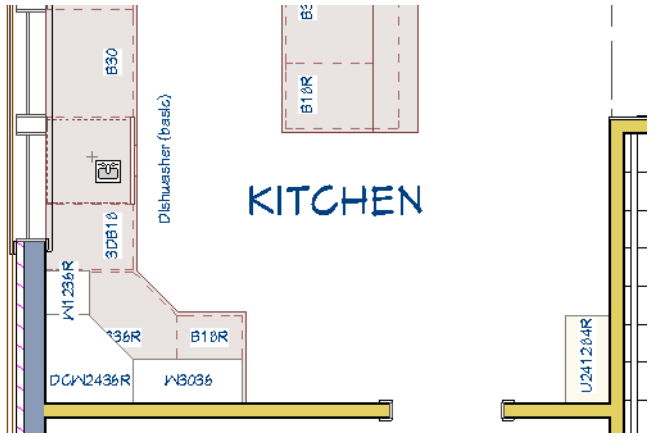
Unlike objects like cabinets that have drawing tools, appliances and fixtures are placed into plans from the Library. As such, they do not have default settings. For more information, see “Native Objects vs Symbols” on page 945 of the Reference Manual.

Appliances fall into two basic categories: freestanding and built-in. See “Placing Library Objects” on page 939 of the Reference Manual for more information.

To place built-in appliances

1. Select **View> Library Browser** to open the Library Browser.
2. Browse to Chief Architect Core Catalogs> Architectural> Appliances> Dishwashers.
3. Select a dishwasher for placement, and move your mouse pointer into the drawing area.

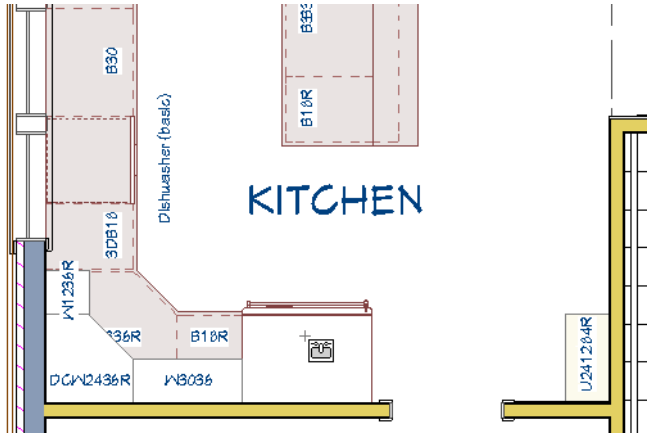
   Notice that the pointer displays the Fixtures icon.
4. Click once on the 24" wide cabinet located just below the sink base to place a dishwasher at that location. Notice that the cabinet label is replaced by the dishwasher’s label.



Note: Only one front mounted fixture can be inserted into a cabinet in this manner. Additional front fixtures can be added in the Cabinet Specification dialog. For more information, see “Front/Sides/Back Panel” on page 632 of the Reference Manual.

To place freestanding appliances

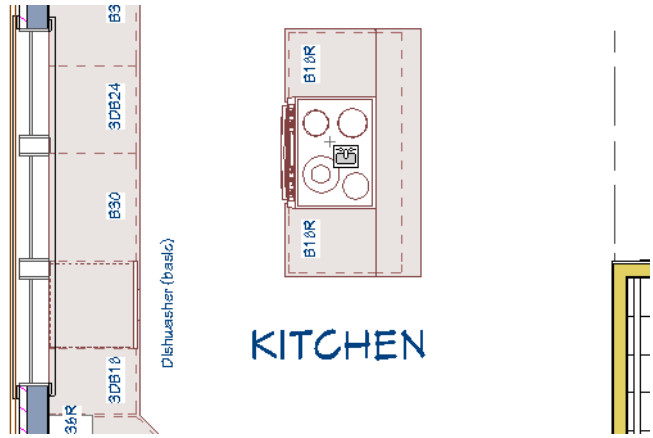
1. Select **View> Library Browser** to open the Library Browser.
2. In the Chief Architect Core Catalogs, browse to Architectural> Appliances> Refrigerators> Standard Size.
3. Select a Bottom Mount Refrigerator, then click along wall separating the Kitchen from the Dining room to place a refrigerator next to the cabinets.



Like furnishings, Appliances and cabinets can be blocked together to form a single unit. See "Using Architectural Blocks" on page 277 of the Interior Furnishings Tutorial.

To modify an architectural block

1. Click the **Select Objects** button, then click on the kitchen island Architectural Block to select it.
2. Click the **Explode Block** edit button to break the block into its component objects.
3. Select the 30" wide middle cabinet and **Delete** it.
4. In the Library, browse to Chief Architect Core Catalogs> Appliances> Ranges> Slide-In and select the "Flat Top Range".
5. Move the mouse pointer into the space left by the deleted cabinet and click once to place the range.



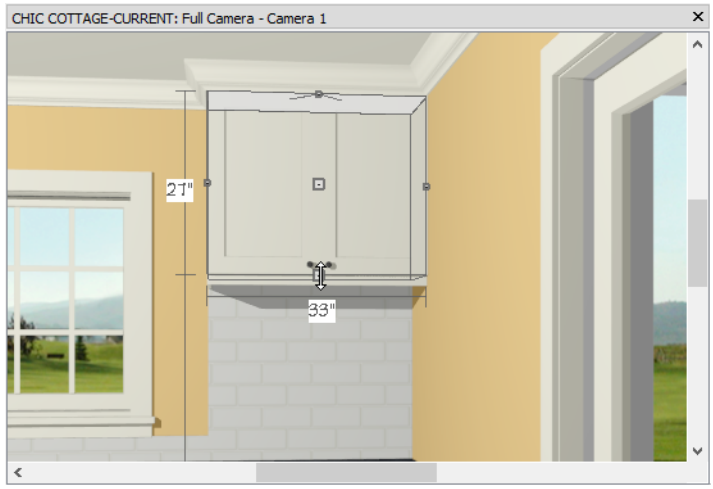
6. Browse to the Hoods> Large folder, select the "Glass Island Hood", and place it over the island.
7. Select the vent hood and Rotate it so it faces the same direction as the range.
8. Group-select the appliances and cabinets that make up the island and click the **Make Architectural Block** edit button. See "To create an architectural block" on page 325 of the Cabinet Layout Tutorial.

Some appliances are free-standing, but designed to mount under a cabinet.

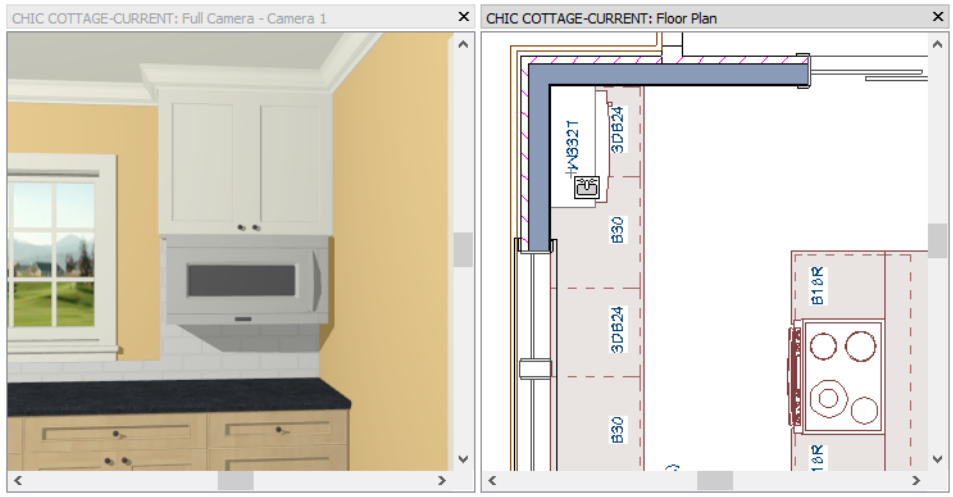
To place an undermount appliance

1. Create a Camera view in the Kitchen, pointed at the wall cabinet in the upper left corner.

2. Click the **Select Objects** button, then click on the wall cabinet to select it, and use the Resize edit handle located along its bottom edge to raise the bottom edge up until the Temporary Dimension reports its height as 27".



3. With the wall cabinet still selected, click the **Open Object** edit button, and on the MOLDINGS panel of the **Wall Cabinet Specification** dialog:
   - Select "2: CA-001" from the **Selected Profile** drop-down list.
   - Click the **Delete** button, then click OK.
   - See "To add a light rail" on page 290 of the Cabinet Styles Tutorial.
4. Select **Window> Tile Vertically**, then click in the floor plan view window to make it the active view and **Zoom** in on the upper left corner of the Kitchen.
5. In the Library Browser, search for "microwave",
6. Select "Under Cabinet Microwave" in the list of search results, then move the mouse pointer over the wall cabinet at the top left corner of the Kitchen.
7. Click on the wall cabinet in the floor plan view window to place a microwave under it.



8. If need be, you can use the **Center Objects** edit tool to center the microwave under the wall cabinet. See "To center a cabinet" on page 315 of the Cabinet Layout Tutorial.

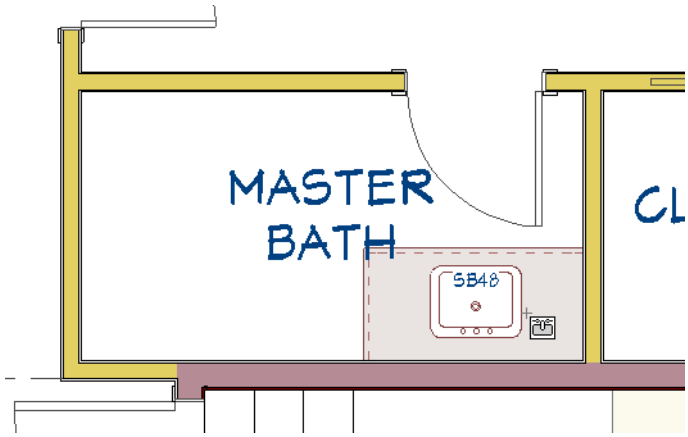
9. When you are finished, close the Camera view and **Save** your work.

Placing Fixtures

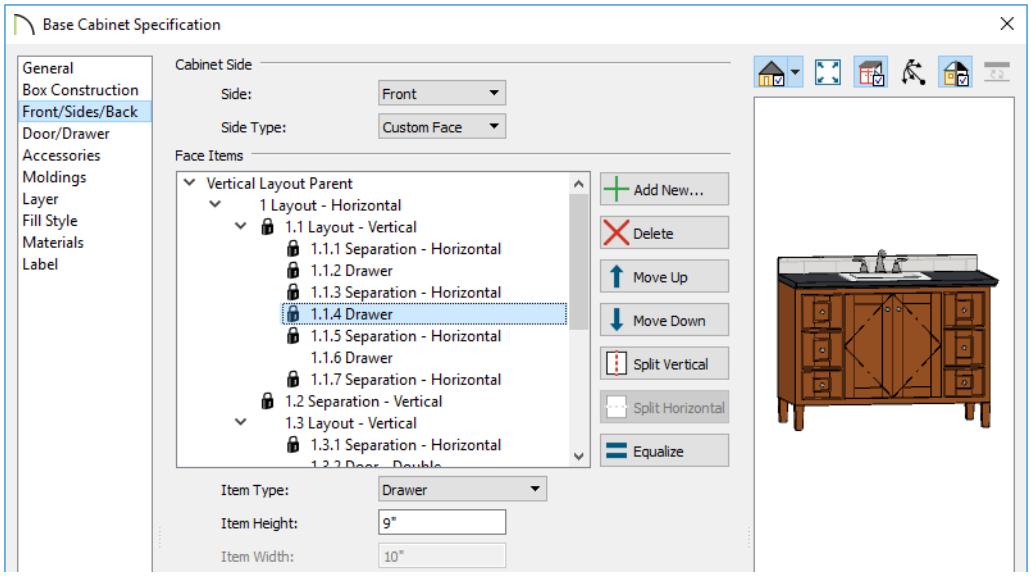
Like appliances, plumbing fixtures can be either free-standing or inserted into cabinets.

To add a drop-in sink

1. Select **View> Library Browser** to open the Library Browser.
2. In the Chief Architect Core Catalogs, browse to Architectural> Fixtures> Sinks> Bathroom Sinks> Vanity.
3. Select the "Rectangular Sink", then click once on base cabinet located in the Master Bath to insert the sink into that cabinet.



4. A warning message will note that to accommodate the sink, all top drawers will be converted to False Drawers. Click OK.
5. Select the cabinet and click the **Open Object** edit button.
6. On the FRONT/SIDES/BACK panel of the Base Cabinet Specification dialog:

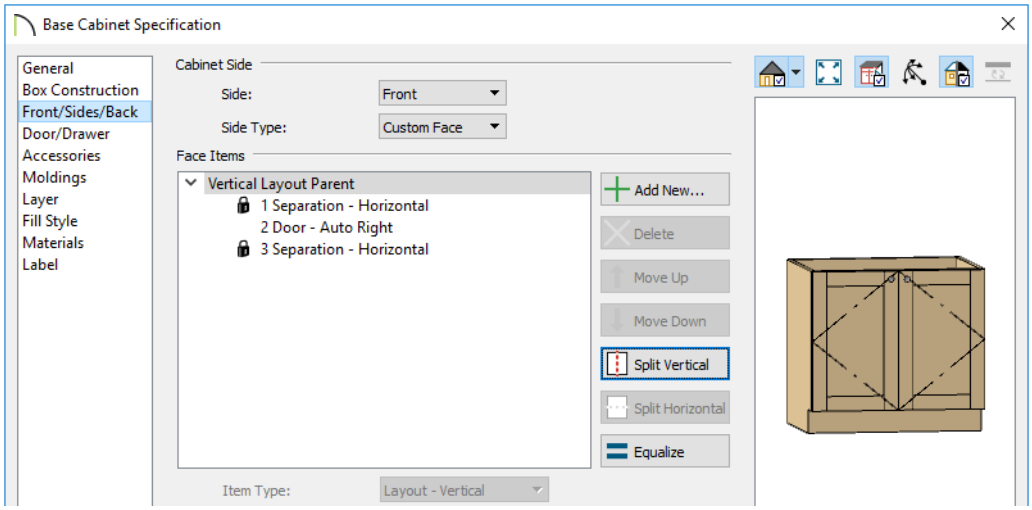


- Click on the top left drawer in the preview to select it and change its **Item Type** to "Drawer",
- Specify the top right drawer as a "Drawer" as well, then click OK.

Drop-in and undermount sinks are inserted objects. Vessel and apron sinks, on the other hand, are stand-alone objects. To place an apron sink, the cabinet that holds it must first be modified and an optional Custom Backsplash drawn.

To create an apron sink base

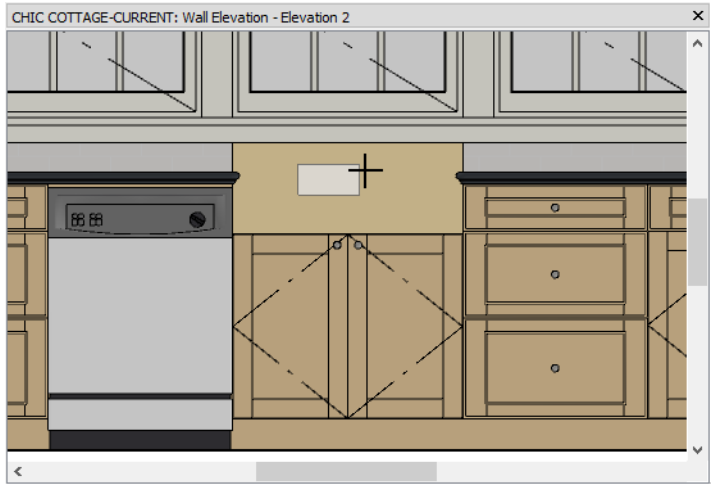
1. Click the **Select Objects** button, then click on the 30" wide sink base cabinet located under the windows in the Kitchen.
2. Click the **Open Object** edit button, and on the GENERAL panel of the **Base Cabinet Specification** dialog:
   - Specify the **Height** as 28".
   - Specify the **Countertop Thickness** as 0". Be sure to remove the (D), which stands for default, or the cabinet will continue to use the default thickness, regardless of what you type.
3. On the FRONT/SIDES/BACK panel, click on the drawer in the preview pane, then click the **Delete** button and click OK.
4. On the MOLDINGS panel, click the Delete button to remove the "CA-29" countertop profile from this cabinet and click OK.



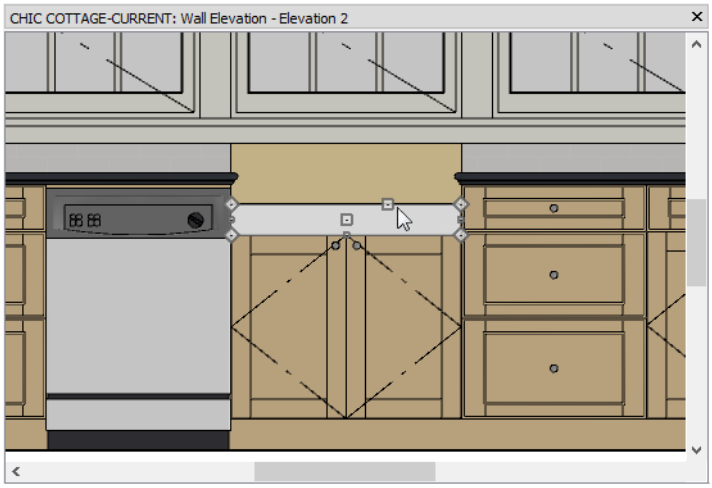
To add a Custom Backsplash

1. Select **3D> Create Orthographic View> Wall Elevation**. then click and drag a camera arrow in the Kitchen, pointed towards the apron sink. Be sure to draw the camera arrow perfectly horizontal.

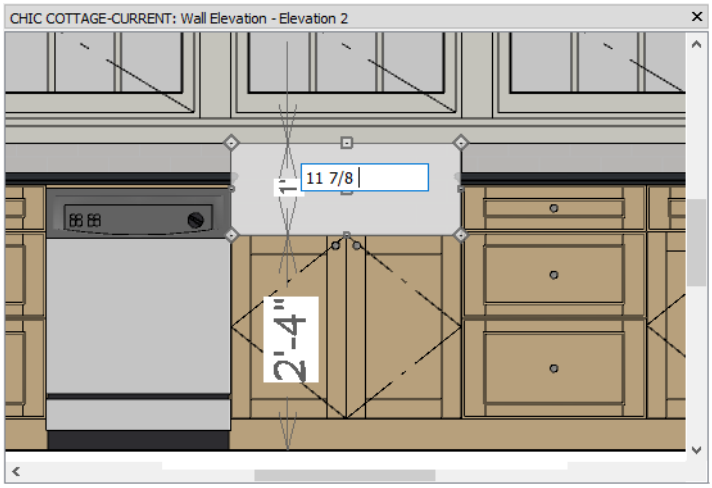
2. Select **Build> Cabinet> Custom Backsplash** , then click and drag to draw a rectangular shape above the apron sink base.



3. Align the left side of the backsplash polyline with the left side of the apron sink base:
   - Click on the backsplash polyline to select it, then click the **Point to Point Move** edit button.
   - Click once on the lower left corner of the backsplash polyline.
   - Move the mouse pointer over the upper left corner of the apron sink base.
   - When an Endpoint snap indicator displays, click once.
4. Click on the right vertical edge of the backsplash and drag it to the right until it reaches the end of the apron sink base.

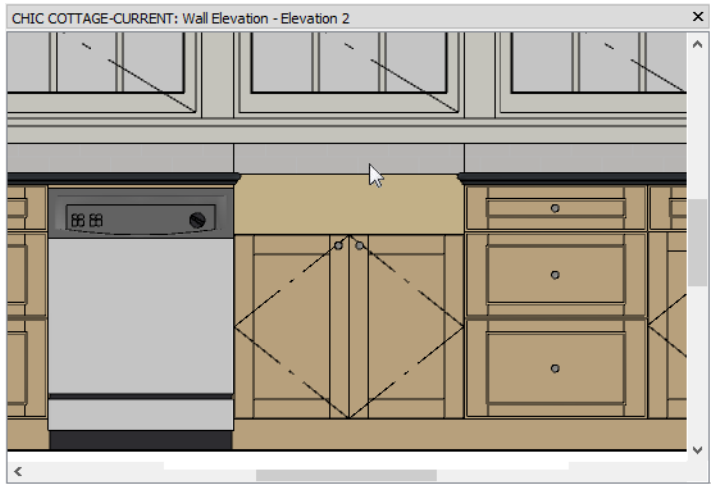


5. Click on the top horizontal edge of the backsplash and drag it upward until it meets the window casing.
6. Notice that the backsplash actually extends slightly into the window casing. With the top edge of the backsplash still the Selected Edge:



   - Click on the Temporary Dimension that reports its distance from the bottom edge.
   - In the inline text file, type 11 7/8" and press the Enter key.
7. Click on the bottom horizontal edge, then:
   - Click on the Temporary Dimension that reports its distance from the top edge.

• In the inline text file, type 4" and press the Enter key.



8. Select **File> Close View** to return to floor plan view.

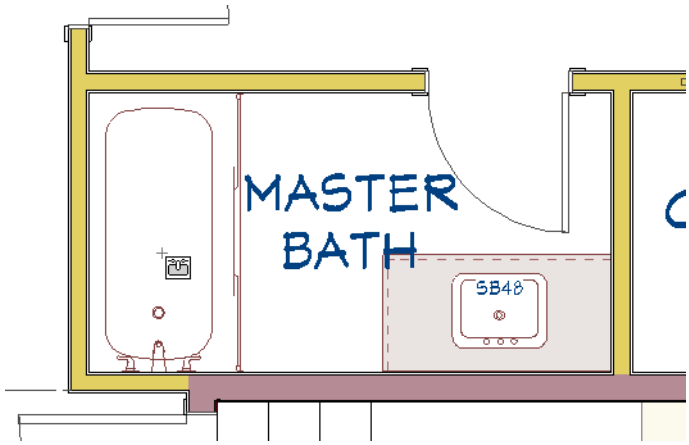
To place an apron sink

1. In the Library Browser, browse to Chief Architect Core Catalogs> Fixtures> Sinks> Kitchen Sinks> Apron Front.
2. Select the "Apron Front Sink" and click on the edited base cabinet to place the sink on top of it.
3. Create a **Full Camera** view in the Kitchen to see the results. When you are finished, select **File> Close View**.

Some fixtures, notably toilets, have bounding boxes that help to prevent them from being placed in spaces too small to meet most building codes.

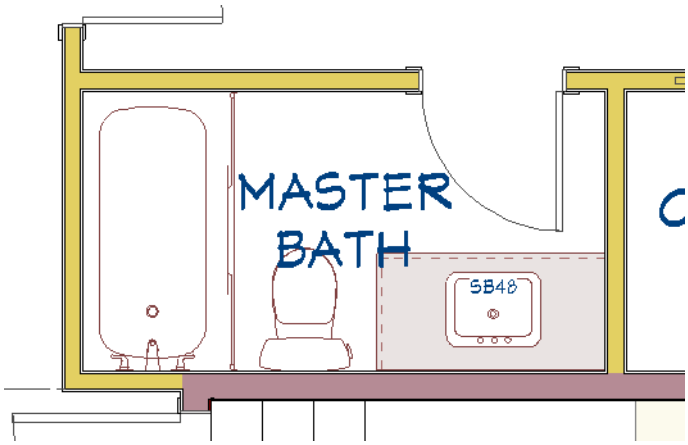
To place bathroom fixtures

1. In floor plan view, **Zoom** in on the Master Bath.
2. Browse to Chief Architect Core Catalogs> Architectural> Fixtures> Bathtubs> Standard Tubs and select "Standard Tub 1".
3. Move the mouse pointer into left side of the Master Bath, then:



- Move the mouse pointer from wall to wall and notice that the bathtub's preview outline snaps to the nearest wall.
- When the preview outline is snapped to the left vertical wall and the V-shaped front indicator points to the right, click once to place the bathtub.

4. Browse to the Toilets folder and select the "Standard Toilet".
5. Move your mouse pointer into the space between the bathtub and the cabinet, then:
   - Move it left to right and notice that it can only move a couple of inches on either side.
   - This is because most building codes require 15" of space on each side of a toilet's center line.
6. Click once to place the toilet at that location.



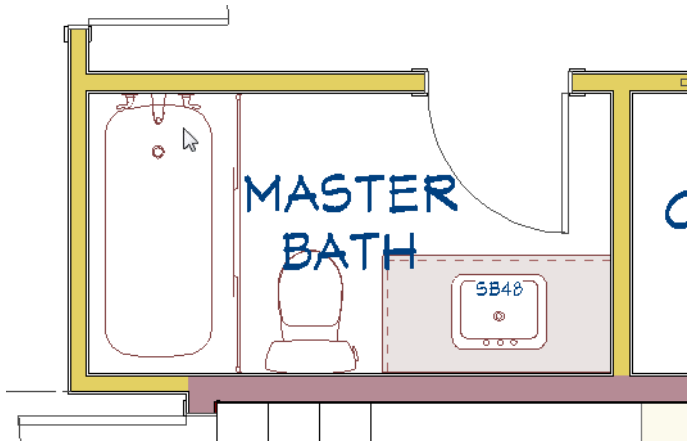
7. When you are finished, **Save** your work.

Editing Appliances and Fixtures

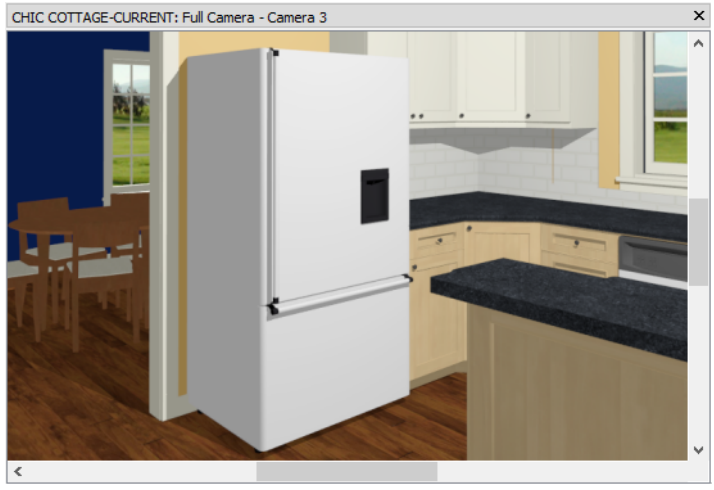
Like most objects, fixtures and appliances can be modified using their edit handles and their specification dialogs.

To reverse a fixture symbol

1. Click on the bathtub to select it and click the **Open Object** edit button.
2. On the GENERAL panel of the **Fixture Specification** dialog:
   - Check **Reverse Symbol** and click OK.
   - Notice that the faucet and drain move to the other side of the tub.



3. **Zoom** out so the Kitchen can be seen.
4. Select **3D> Create Perspective View> Full Camera**, then click and drag to draw a camera arrow in the Kitchen, pointed at the refrigerator.



5. Click the **Select Objects** button, then click on the refrigerator to select it.
6. Click the **Open Object** edit button, and on the GENERAL panel of the **Fixture Specification** dialog, check the box next to **Reverse Symbol** and click OK.
7. Notice that the door handle moves to the opposite side of the refrigerator.

8. When you are finished, close the Camera view and **Save** your work.

Creating File Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed.

When you are finished working on a file and are ready to close it, **Save** your work. Before closing it, though, create a copy of the file with a different name that indicates what it contains so you can distinguish it from other revisions.

To save a plan revision

1. Select **File**> **Save As** .
2. In the **Save Plan File** dialog, make sure that the save location is your Chic Cottage folder.
3. For the File name, type a the name of the project followed by a short description of the current state of the drawing; for example, Chic Cottage-Fixtures.

Review

This lesson describes the best practices for placing fixtures and appliances.

- To place built-in appliances
- To place freestanding appliances
- To modify an architectural block
- To place an undermount appliance

- To add a drop-in sink
- To create an apron sink base
- To place bathroom fixtures
- To reverse a fixture symbol

Assessment Questions

What are the two basic categories of appliance fixtures?

How can a cabinet drawer be removed?

How are apron sink symbols different from drop-in sinks?

What tool can be used to position one object relative to a point on another object?

What setting lets you flip features like opening handles from one side of a fixture to the other?

Chapter 17:

Light Fixtures

Lighting is an important practical and aesthetic consideration in any building plan.

Learning Objectives

This lesson describes best practices in Chief Architect for adding light fixtures to a plan. Concepts introduced include:

- Adding Ceiling Lighting
- Adding Wall Lights
- Adding Cabinet, Table, and Floor Lights

File Management

This tutorial continues where the Appliances and Fixtures tutorial left off. At this point, both the Chic Cottage-Appliances and CHIC COTTAGE-CURRENT plans contain the same information, so you could open either one and continue working. However, Chic Cottage-Appliances.plan was created specifically to serve as a revision or archive file so it will be left unchanged.

To continue working on the Chic Cottage project, select **File> Open Plan** . If need be, browse to Documents\Chic Cottage, select CHIC COTTAGE-CURRENT, and click Open.

Alternatively, select **File> Recent Files** and choose CHIC COTTAGE-CURRENT from the Recent Files List. The Recent Files List is a convenient way to access files you have been working on; however, it is not an alternative to knowing where your files are located and having a good file revision strategy in place. See “Creating File Revisions” on page 372.

It is a very good idea to save your files often as you work, and this guide reminds you to do so regularly.

Productivity Tips

As you learn how to add lighting to a plan, keep in mind these tips to improve your productivity.

Drawing and Editing

- Use the **Center Object** edit tool to center a light fixture relative to a window, cabinet, or other object.
- The **Reflect About Object** edit tool lets you move one light to the other side of another light; use with the **Copy/Paste** edit tool to create a row of evenly spaced fixtures.
- Make a dimension line locate an additional object by adding an extension line to it.

Content

- A selection of Lighting catalogs is available for download from the Chief Architect 3D Library. Select **Library> Get Additional Content Online** to launch your default web browser to that page.
- Create template plans that have your custom light fixtures set as the defaults and ready for use when you begin a new plan. See “Template Files” on page 97 of the Reference Manual.

Interface

- Annotation Sets let you activate a set of defaults and layer settings for a specific purpose: for example, an electrical plan. See “Annotation Sets” on page 93 of the Reference Manual.

Keyboard Hotkeys

- F1 - Help for the current context
- Ctrl + L - Library Browser
- Spacebar - Select Objects
- Tab while moving - Enter Coordinates
- Ctrl + E - Open Object edit tool
- Ctrl + S - Save

Setting the Defaults

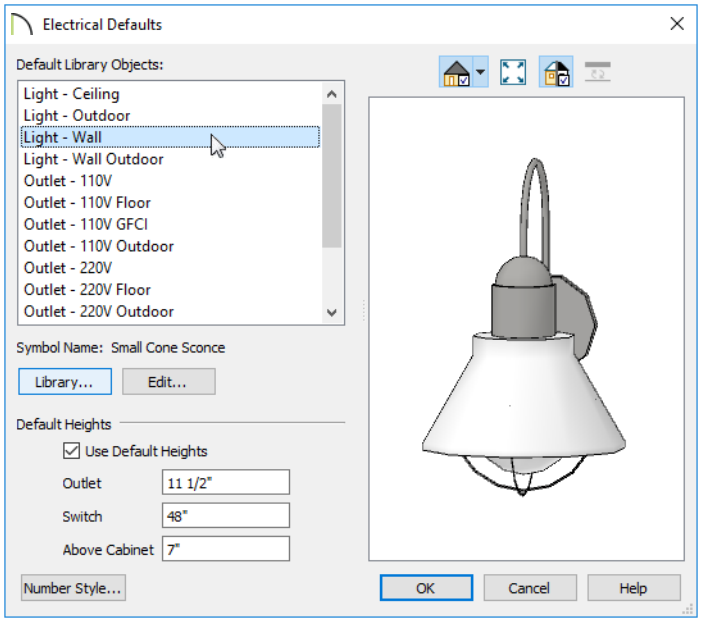
In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. Setting defaults early can improve efficiency and also helps to avoid introducing errors into the drawing. When adding light fixtures to a plan, there are several defaults that should be set in advance.

When positioning electrical objects, it is a good idea to make sure your Dimension Defaults are set to meet your needs. See “To set the dimension defaults” on page 356.

Unlike other drawing tools, the Electrical Tools place symbol objects. You can specify which symbols are placed by these tools in the Electrical Defaults dialog. Here, the default Light fixtures will be set; however, the defaults for outlets and switches can also be specified.

To set the Electrical Defaults for light fixtures

1. Select **Edit> Default Settings** , and in the **Default Settings** dialog, select "Electrical" in the tree list and click the **Edit** button.
2. In the **Electrical Defaults** dialog, notice that there is a scrollable list of electrical objects for a variety of different purposes.



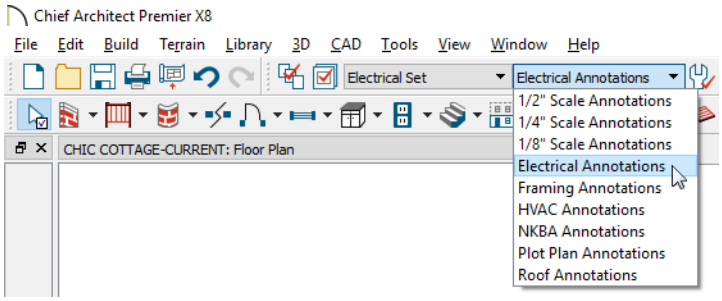
3. Select "Light - Ceiling" and notice that the default symbol is a 4" Recessed can light.

4. Select "Light - Outdoor" and notice that the default symbol is a bollard light.
5. Select "Light - Wall" and click the **Library** button.
6. In the **Select Library Object** dialog, search for the "Small Cone Sconce", select it, and click OK.
7. Select "Light - Wall Outdoor", click the **Library** button, and specify the "Wide Brim Sconce".
8. Click OK and then Done to close both dialogs and apply your changes.

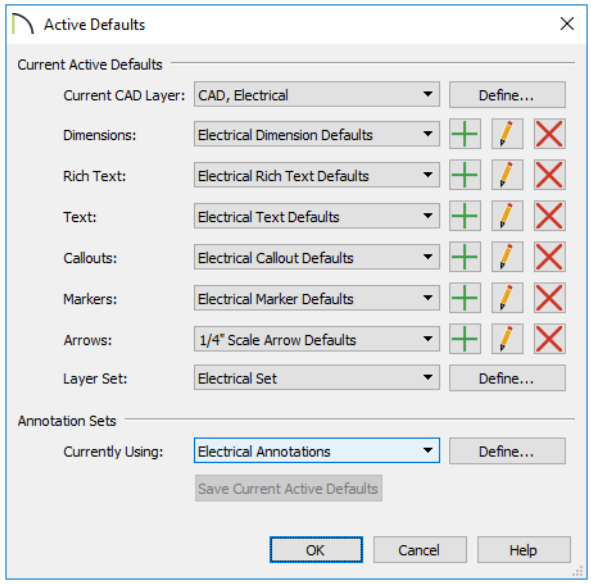
An electrical plan is an example of a plan view that requires certain objects like electrical notes to display while others, like roof planes, do not. You can easily switch to a layer set specifically for electrical plans, and enable defaults that place text, dimensions, and other annotations on special layers for that purpose. See “Annotation Sets” on page 93 of the Reference Manual.

To switch to Electrical annotation defaults

1. Click the **Active Annotation Set Control** drop-down in the toolbar and select "Electrical Annotations" from the list.



2. Notice:
   - The **Active Layer Set Control** drop-down to its left now lists "Electrical Set" as active.
   - The appearance of objects in floor plan view changes. Notably, for example, wall layers and roofs no longer display.
3. To see what else has changed, select **Edit> Default Settings** and in the **Default Settings** dialog, select "Active Defaults" and click the **Edit** button.
4. In the **Active Defaults** dialog:



- Notice that most of the Active Defaults' names begin with the word "Electrical".
- This means that they are set up for use specifically in electrical drawings and will create objects on layers that only display when the Electrical Layer Set is active.

5. Click Cancel and then Done to return to floor plan view.

6. When you are finished, **Save** your work.

Adding Ceiling Lighting

The Light tool will place a different fixture, depending on where you click: when you click on a wall, an interior or exterior sconce will be placed; when you click in the middle of a room, a ceiling mounted fixture will be placed; if you click outside of a structure, a path light will be created. For more information, see "Light Fixtures" on page 652 of the Reference Manual.

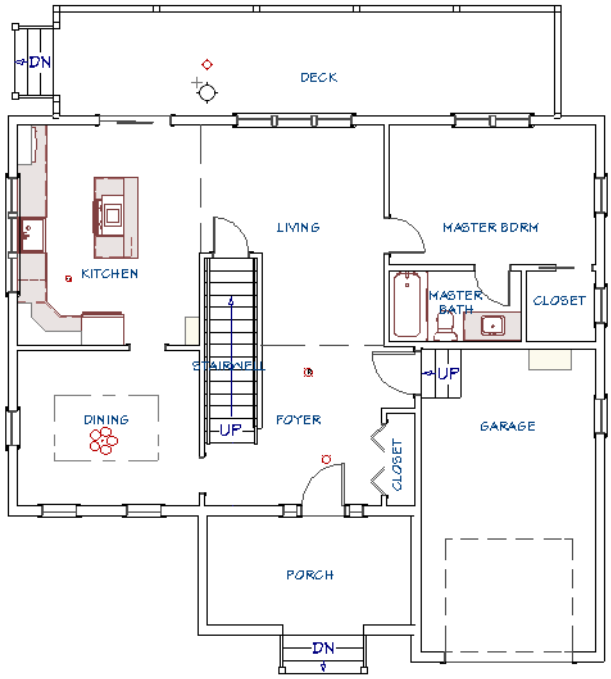
Lighting is often described as having three categories: ambient, task, and accent. Ceiling lights provide examples of all three.

Light fixtures can be placed using the Light tool as well as from the Library.

To add ceiling light fixtures

1. Select **Build> Electrical> Light**, then click in the Kitchen, between the island and the sink. A recessed can light, as specified in the **Electrical Defaults** dialog, is created.

2. Select **View> Library Browser** to open the Library Browser.
3. Browse to Chief Architect Core Catalogs> Architectural> Lighting> Chandeliers> Single Tier.
4. Select the "Bowl Chandelier" and click in the Dining area to place a copy at that location.
5. Browse to the Lighting> Ceiling Mounted> Flush Mount folder, select the "Half Dome" symbol, and click in the Foyer, near the front door.
6. Browse to the Lighting> Ceiling Mounted> Recessed folder, select the "Eyeball (rotated)" and click in the Foyer, in line with the door to the Garage.
7. Browse to the Lighting> Pendants folder, select the "Craftsman Lantern", and click an empty space in the Deck.



Once a room has a can light in it, that light can be positioned and then replicated to produce evenly spaced ambient lights.

To set the dimension defaults

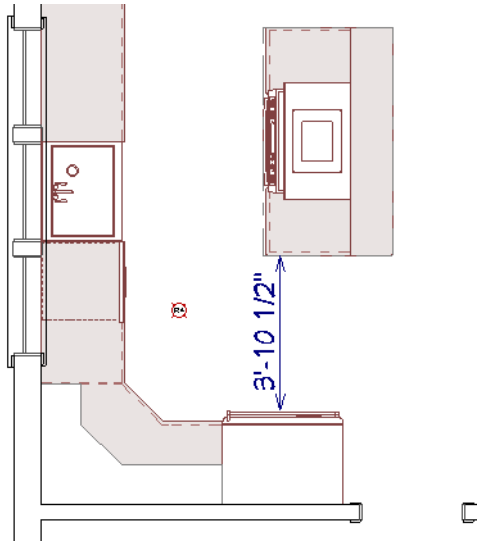
1. Select **Edit> Default Settings**, click the arrow next to "Dimension" to expand the category, then select "Dimensions" and click the **Edit** button.

2. In the **Saved Dimension Defaults** dialog that opens next, notice that "Electrical Dimension Defaults" is selected and click the **Edit** button.
3. On the LOCATE OBJECTS panel of the **Dimension Defaults** dialog:
   - Notice that "Electrical Dimension Defaults" is stated in the title bar.
   - Under the Cabinets heading, check the box beside **Sides**.
   - Under the Fixtures/Appliances heading, check the box beside **Sides/Corners**.
   - Click OK and then Done to close both dialogs and apply your changes.

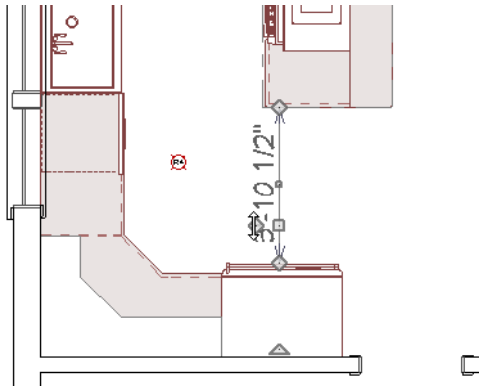
Ceiling can lights are often positioned at regular intervals. There are several ways to achieve this.

To position a ceiling light

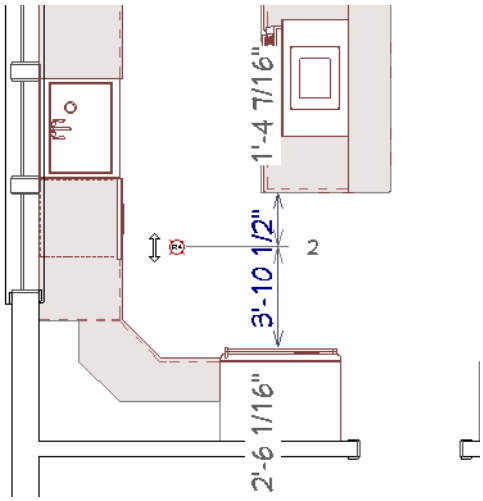
1. **Zoom** in on the Kitchen.
2. Click the **Select Objects** button, then click on the recessed can light to select it.
3. Select **CAD> Dimensions> Manual Dimension**, then:



   - Click and drag to draw a vertical dimension line from the bottom edge of the island to the front of the refrigerator.
   - The dimension line will locate the cabinet edge the front of the refrigerator.
4. Click the **Select Objects** button, then click on the dimension line to select it. Then:



- Click and drag the diamond-shaped Add Extension Line edit handle towards the light.
- When an extension line to the light displays, release the mouse button.

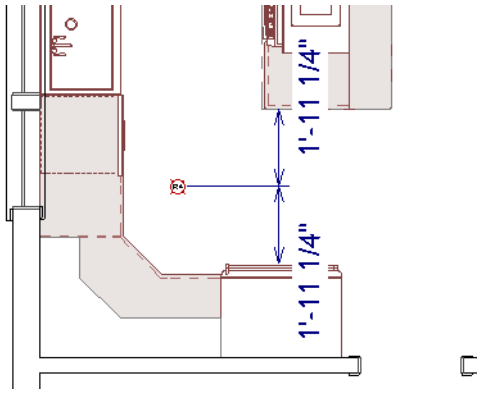


- The dimension line now locates the light fixture as well as the two cabinets.

5. Click on the can light to select it.

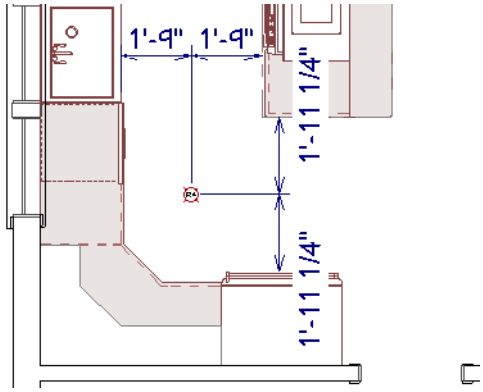
   - If the dimension line is selected instead, click the **Select Next Object** edit button or press the Tab key as needed until the light becomes selected.
   - The type of object currently selected is stated at the bottom left corner of the program window, in the Status Bar.

6. With the light fixture selected:



- Click on one of the dimension labels.
- In the inline text field, type in a new dimension and press the Enter key.
- The light will move to the new position that you specified.
- The space between the island and refrigerator is 3’ 10 1/2" wide, so typing 23 1/4" will center the light between the two.

7. Repeat this process to center the light in the space between the front of the island and the sink base.



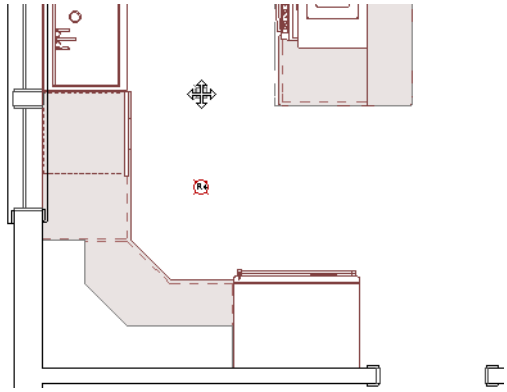
8. When you are finished, the dimension lines can be deleted if you wish. See "To delete a dimension line" on page 59 of the Interior Walls Tutorial.

There are a number of ways to replicate objects like light fixtures. The best method to use will depend on the specific circumstances and your needs.

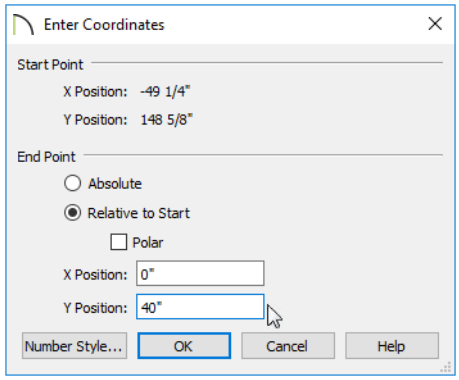
To specify ceiling light spacing

1. Click on the can light to select it, then click the **Copy/Paste** edit button.

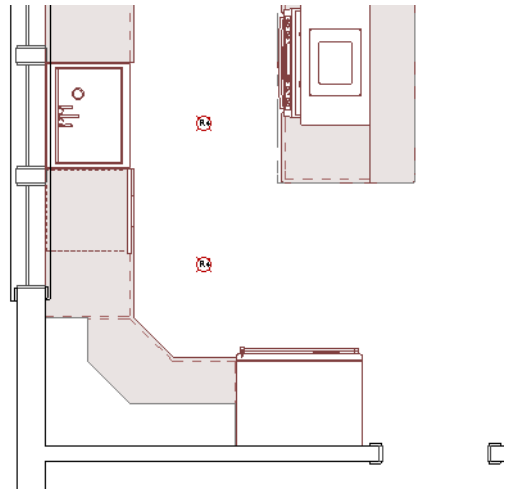
2. Click and drag the Move edit handle upward and with the mouse button held down, press the Tab key.



3. In the **Enter Coordinates** dialog, specify **End Point Y Position** as 40".

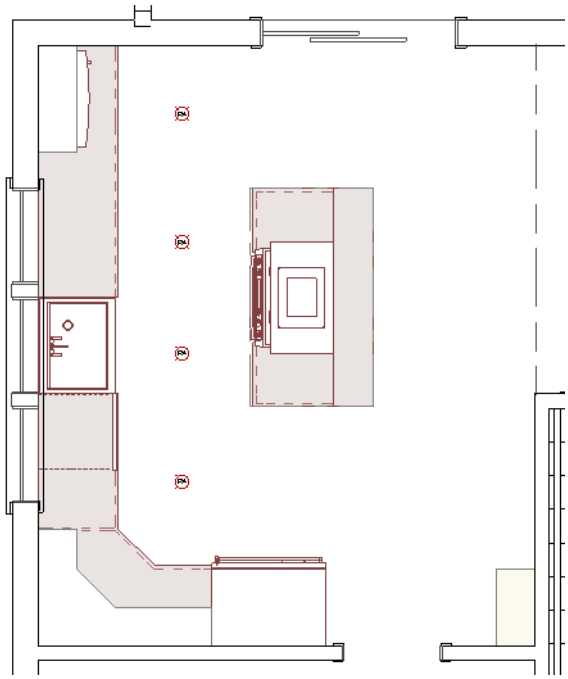


4. When you click OK, a copy of the can light is created 40" above the original on-screen.

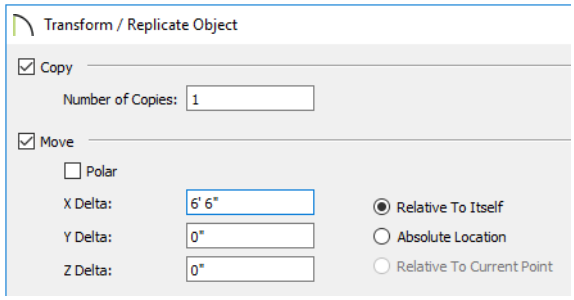


5. With the new can light still selected, hold down the Shift key and click on the other can light to add it to the selection set:

   - Click the **Copy/Paste** edit button.
   - Click the **Reflect About Object** edit button.
   - Move your mouse pointer over the original can light and look for a horizontal dashed reflection axis line.
   - When you see the reflection axis, click once to make a copy of the light identically spaced on the other side of the original.



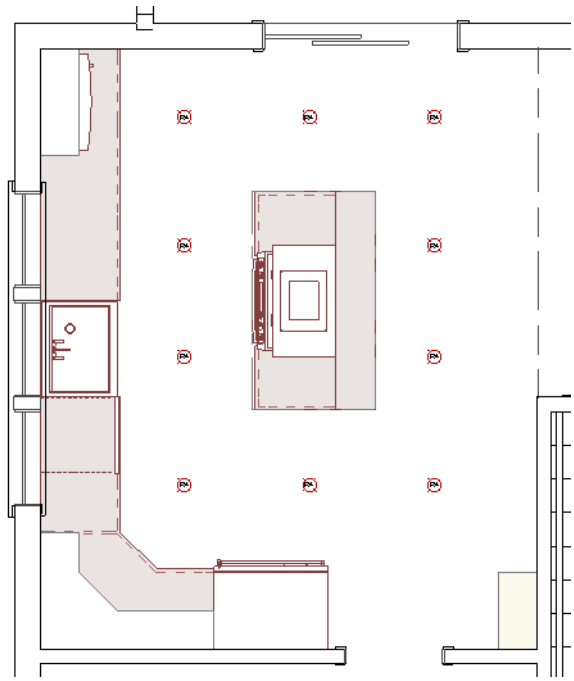
6. Use the Shift key to select all four can lights as a group and click the **Transform/ Replicate Object** edit button. In the **Transform/Replicate Object** dialog:



- Check the box beside **Copy** and specify the **Number of Copies** as 1.
- Under the Move heading, specify the **X Delta** value as 6’ 6".
- Click OK.

7. With the four newly pasted can lights selected, click on the two middle lights one at a time to remove them from the selection set.

8. With the top and bottom lights still selected, click the **Transform/Replicate Object** edit button and:
   - Check the box beside **Copy** and specify the **Number of Copies** as 1.
   - Specify the **X Delta** value as - 3’ 3". This value is half the distance used previously, and the negative value will position the copies to the left of the originals rather than to the right.
   - Click OK.

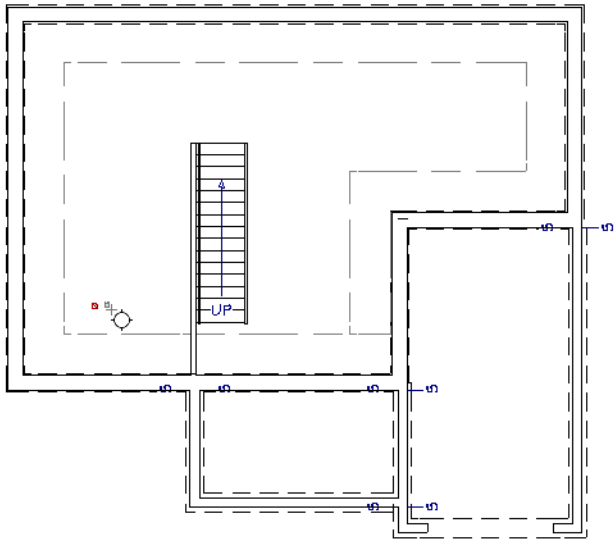


9. Remember to **Save** your work.

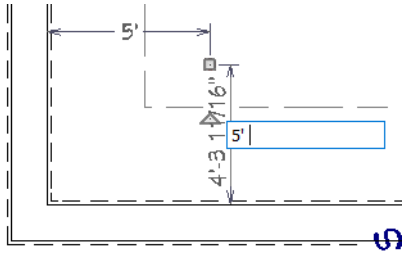
In some spaces, a regularly spaced array of ceiling lights is required.

To create an array of lights

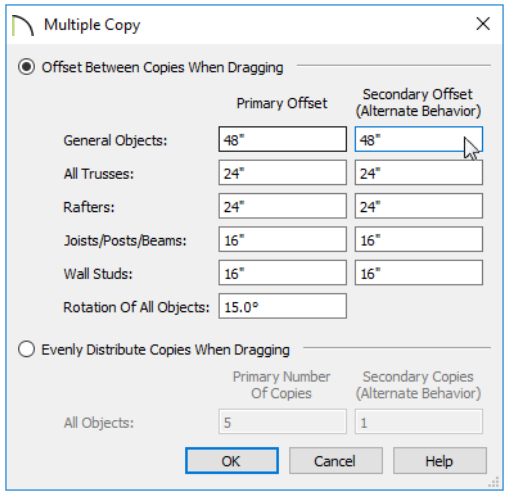
1. Go **Down One Floor** to Floor 0.
2. Select **Build> Electrical> Light**, and place a can light in the lower left corner of the basement.



3. Select **CAD> Dimensions> End to End Dimension**, then click and drag to draw dimension lines between the can light and the two nearest exterior walls.
4. Click the **Select Objects** button, then click on the can light to select it.
5. Click on each dimension line, and in the inline text field, type 5’ and press the Enter key.

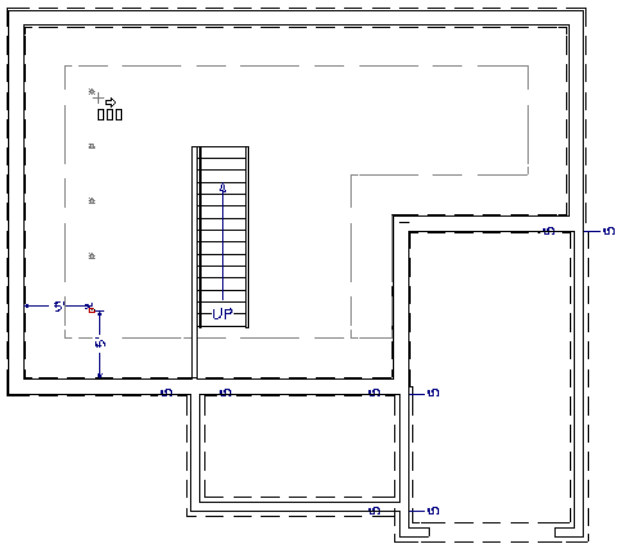


6. With the can light still selected, click the **Multiple Copy** edit button.
7. Next, click the **Multiple Copy Interval** edit button, and in the **Multiple Copy Interval** dialog:

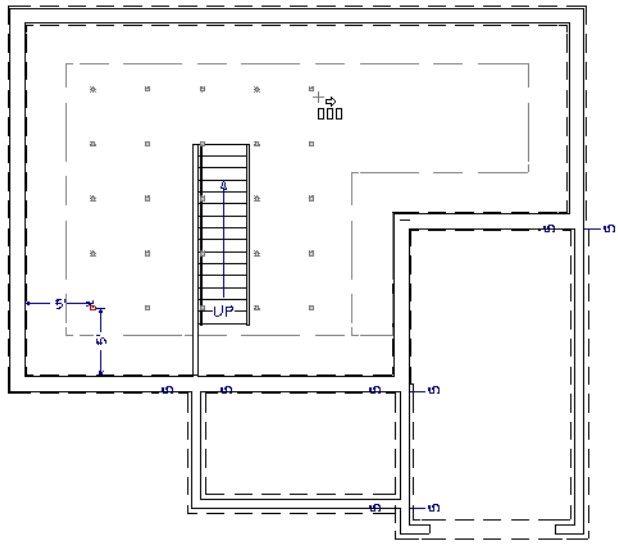


- For **General Objects**, specify the **Primary Offset** as 48".
- For **General Objects**, specify the **Secondary Offset** as 48".
- Click OK.

8. Move the mouse pointer over the can light, and when the pointer displays the Multiple Copy icon, right-click and drag upward to create a row of evenly-spaced copies.

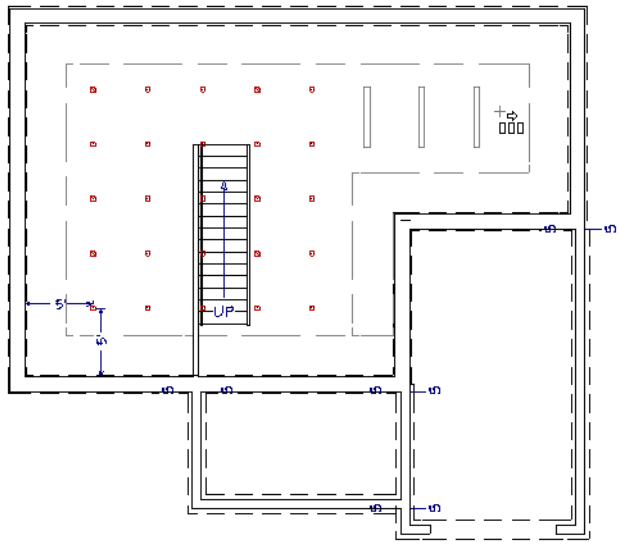


9. Release the right mouse button, then:



- With no mouse button pressed, drag to the right, across the wider portion of the basement.
- Click once to create an array of lights in the wider portion of the basement.

10. With the top right can light selected, click on the light directly below it to add it to the selection set, then:



- Click the **Multiple Copy** edit button.
- This time, left-click and drag to the right.
- Release the mouse button to create three more pairs of lights.

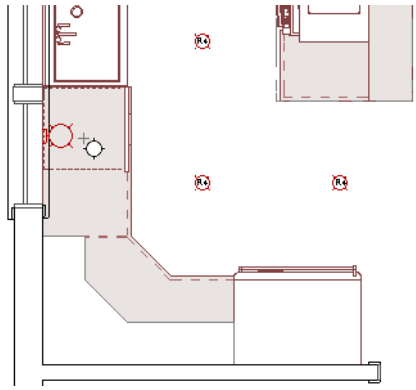
11. When you are finished, go **Up One Floor** to Floor 1 and remember to **Save** your work.

Adding Wall Lights

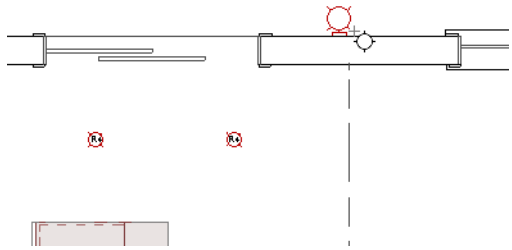
Wall lights can also add ambient, task and accent lighting.

To add wall lights

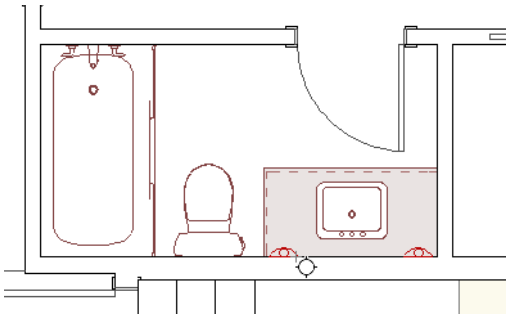
1. Select **Build> Electrical> Light**, then click in the Kitchen, on the wall over the sink to place a sconce light at that location.



2. Click on the light to select it and click the **Open Object** edit button. In the **Electrical Service Specification** dialog, note that the light is the "Small Cone Sconce" specified as the default interior wall light, then click the Cancel button.
3. With the **Light** tool still active, click in the Deck, to the right of the sliding door.



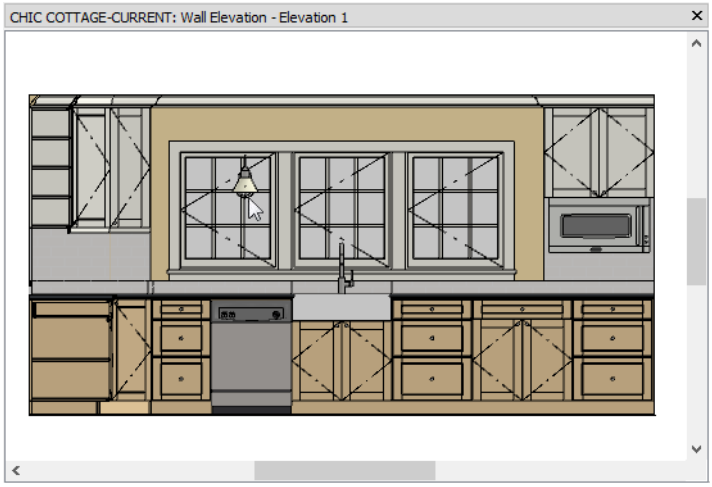
4. Select this new light and click the **Open Object** edit button. Notice that this light is the "Wide Brim Sconce" specified as the default exterior wall light, then click the Cancel button.
5. In the **Library Browser**, browse to Chief Architect Core Catalogs> Architectural> Lighting> Wall Mounted> Flush Mount.
6. Select the "Prism Sconce", then click in the Master Bath to place two sconces: one above each side of the vanity.



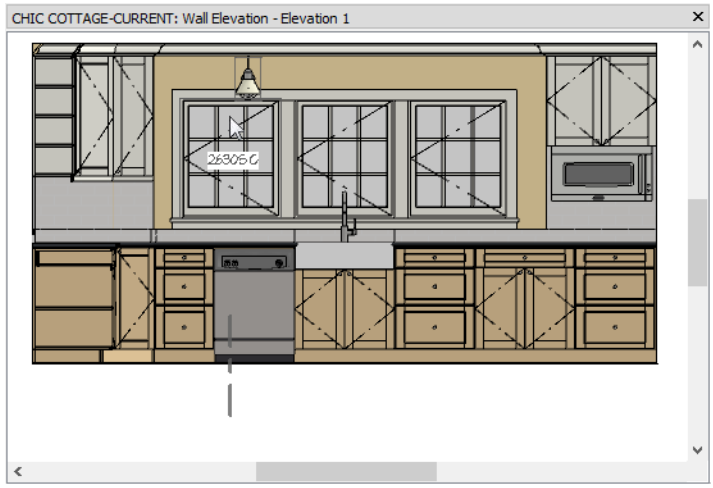
Once placed, wall lights can be modified. Properties like height are sometimes most easily adjusted in a 3D view.

To edit wall lights

1. Select **3D> Create Orthographic View> Wall Elevation** , then click and drag a camera arrow in the Kitchen room, pointed towards the left vertical wall. Be sure to draw the camera arrow perfectly horizontal.
2. Click the **Select Objects** button, then click on the wall sconce to select it.

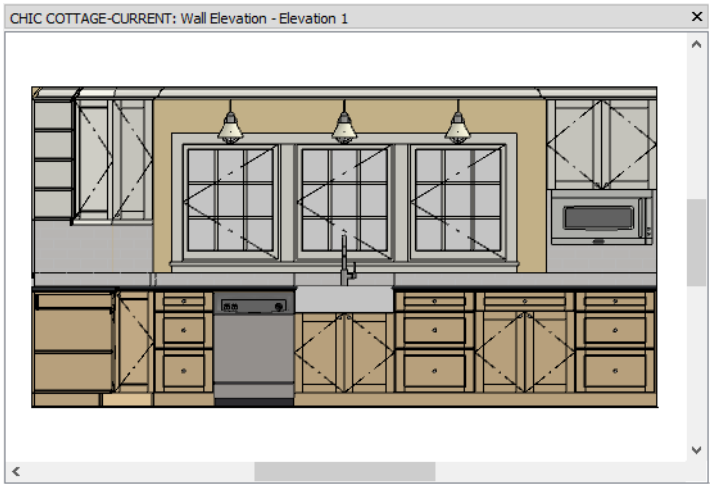


3. Click the **Open Object** edit button, and on the GENERAL panel of the **Electrical Service Specification** dialog, change the **Height to Center** to 86" and click OK.
4. With the sconce still selected, center it over the left window:



- Click the **Center Object** edit button.
- Move your mouse pointer over the left window.
- Look for an outline to display around the window and a vertical dashed centering axis to display below it, near the bottom of the view extents.
- When the outline and centering axis can be seen, click once to center the sconce.

5. Click the **Copy/Paste** edit button, then drag the sconce's Move edit handle to create a copy over the middle window.
6. Use the **Center Object** edit tool to center the new sconce over the middle window.
7. Repeat steps 4 - 6 to create a light centered over the right window as well.



8. The position of the bathroom sconces and art light can be adjusted in the same manner.
9. When you are finished, select **File> Close** to return to floor plan view.
10. Remember to **Save** your work.

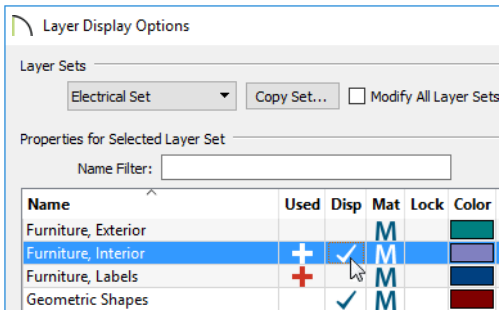
Adding Cabinet, Table, and Floor Lights

A variety of additional light fixtures are available in the Library Browser that are designed to be cabinet-mounted or rest on a table or the floor.

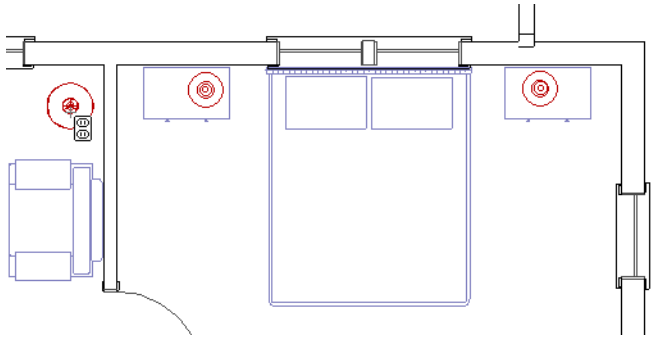
In order to place table and floor lamps, the display of furnishings should be turned on.

To add table and floor lights

1. Select **Tools> Layer Settings> Display Options**. In the **Layer Display Options** dialog, scroll to the "Furniture, Interior" layer and click in the Disp. column to add a check mark, then click OK.



2. In the **Library Browser** , browse to Chief Architect Core Catalogs> Architectural> Lighting> Lamps> Table Lamps.
3. Select the "Table Lamp", move the mouse pointer into the Master Bedroom, and click to place a lamp on each of the night stands.
4. In the Library, browse to Lamps> Floor Lamps.
5. Select a "Floor Lamp", and click to place a lamp in the top right corner of the Living room.



6. When you are finished, **Save** your work.

Creating File Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed.

When you are finished working on a file and are ready to close it, **Save** your work. Before closing it, though, create a copy of the file with a different name that indicates what it contains so you can distinguish it from other revisions.

To save a plan revision

1. Select **File**> **Save As** .
2. In the **Save Plan File** dialog, make sure that the save location is your Chic Cottage folder.
3. For the File name, type a the name of the project followed by a short description of the current state of the drawing; for example, Chic Cottage-Lighting.

Review

This lesson describes the best practices for adding lighting to a plan.

- To set the Electrical Defaults for light fixtures
- To add ceiling light fixtures
- To position a ceiling light
- To specify ceiling light spacing
- To create an array of lights
- To add wall lights
- To edit wall lights
- To add table and floor lights

Assessment Questions

How does the Light tool behave differently depending on where you click?

What are two ways you can get a dimension line to locate a light fixture?

What are two edit tools that can be used to create an evenly spaced set of ceiling lights?

What edit tool lets you efficiently create an array or grid of ceiling lights?

Chapter 18:

Electrical Objects

Like lighting, electrical switches and outlets are an important practical consideration. So, too, are data and security items like jacks and smoke detectors.

Learning Objectives

This lesson describes best practices in Chief Architect for placing electrical, data, and security items. Concepts introduced include:

- Placing Outlets
- Placing Switches
- Drawing Electrical Connections
- Adding Data and Security Items

File Management

This tutorial continues where the Light Fixtures tutorial left off. At this point, both the Chic Cottage-Lighting and CHIC COTTAGE-CURRENT plans contain the same information, so you could open either one and continue working. However, Chic Cottage-Lighting.plan was created specifically to serve as a revision or archive file so it will be left unchanged.

To continue working on the Chic Cottage project, select **File> Open Plan** . If need be, browse to Documents\Chic Cottage, select CHIC COTTAGE-CURRENT, and click Open.

Alternatively, select **File> Recent Files** and choose CHIC COTTAGE-CURRENT from the Recent Files List. The Recent Files List is a convenient way to access files you have been working on; however, it is not an alternative to knowing where your files are located and having a good file revision strategy in place. See “Creating File Revisions” on page 391.

It is a very good idea to save your files often as you work, and this guide reminds you to do so regularly.

Productivity Tips

As you learn how to add electrical objects to a plan, keep in mind these tips to improve your productivity.

Drawing and Editing

- Use the **Center Object** edit tool to center a light fixture relative to a window, cabinet, or other object.
- The **Reflect About Object** edit tool lets you move one outlet to the other side of another outlet; use with the **Copy/Paste** edit tool to create a row of evenly spaced outlets.
- Make a dimension line locate an additional object by adding an extension line to it.

Content

- A selection of special outlets, switches, and data and security items is available in the Core Catalogs of the Library Browser.
- Create template plans that have your preferred switches and outlets set as the defaults and ready for use when you begin a new plan. See “Template Files” on page 97 of the Reference Manual.

Interface

- Wall mounted items like outlets and switches are often best edited in camera views.

Keyboard Hotkeys

- F1 - Help for the current context
- Ctrl + L - Library Browser
- Spacebar - Select Objects
- Tab while moving - Enter Coordinates
- Ctrl + E - Open Object edit tool
- Ctrl + S - Save

Setting the Defaults

In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. Setting defaults early can improve efficiency and also helps to avoid introducing errors into the drawing. When adding electrical objects to a plan, it is a good idea to set your Electrical Defaults in advance.

Unlike other drawing tools, Electrical Tools place symbols from the Library. You can specify which symbols are placed by these tools in the Electrical Defaults dialog. See "To set the Electrical Defaults for light fixtures" on page 353 of the Light Fixtures Tutorial.

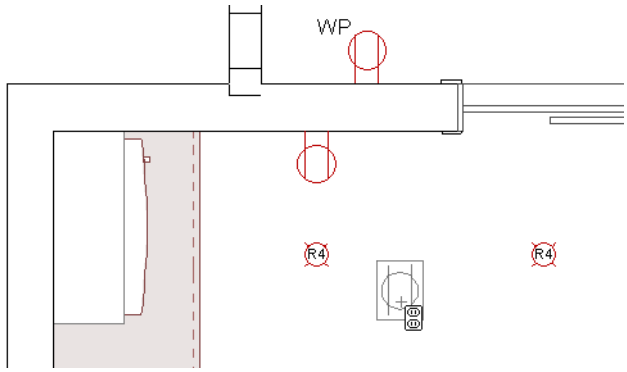
An electrical layout is an example of a plan view that requires its own set of annotations and layer settings. See "To switch to Electrical annotation defaults" on page 354 of the Light Fixtures Tutorial.

Placing Outlets

Electrical Outlets can be placed using the 110V and 220V tools, as well as from the Library.

To place wall and floor outlets

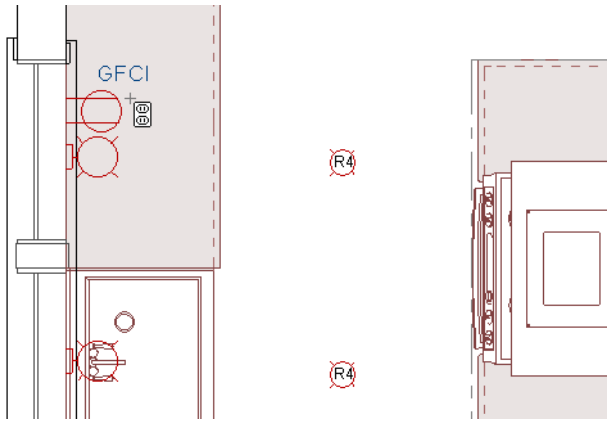
1. **Zoom** in on the Kitchen.
2. Select **Build> Electrical> 110V Outlet**, then click along the wall at the back of the refrigerator to place a 110V outlet at that location.
3. Place another 110 volt outlet to the left of the sliding door to the Deck.
4. Place a third in the Deck room, also to the left of the sliding door. Note that its symbol includes the letters WP, which stands for "weatherproof".
5. Move the mouse pointer an empty space in the Kitchen and notice that the object preview outline has a square around it, indicating that a floor outlet can be placed at that location.



6. Click the **Select Objects** button, then click on one of the 110 volt outlets to select it.
   - If you select a different object like a wall or refrigerator instead, click the **Select Next Object** edit button until the outlet becomes selected.
   - You can see what kind of object is currently selected on the left side of the Status Bar.
7. With the outlet selected, click the **Open Object** edit button and on the GENERAL panel of the **Electrical Service Specification** dialog, notice that the **Height to Center** is 11 1/2" and click Cancel.

To place an outlet above the countertop

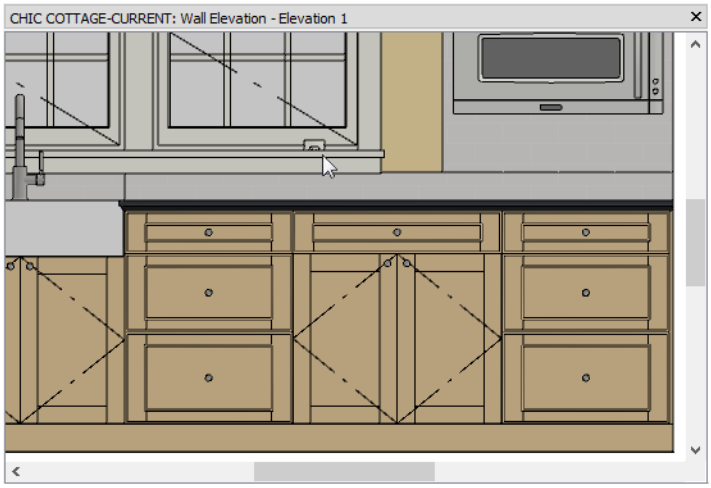
1. Select **View> Library Browser**, then browse to Chief Architect Core Catalogs> Mechanical, Electrical, Plumbing> Electrical> Outlets> Surface Mounted> 110V.
2. Select the "GFCI" symbol, then move the mouse pointer into the drawing area and click along the left vertical wall, under a window, to place a GFCI outlet at that location.



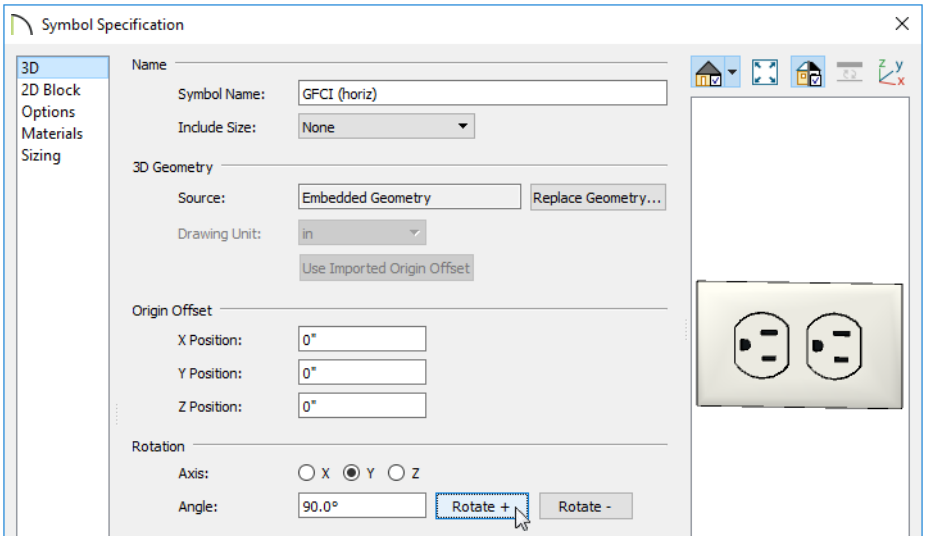
3. Click on the outlet to select it and click the **Open Object** edit button. On the GENERAL panel of the **Electrical Service Specification** dialog:
   - Specify the **Height to Center** as 43".
   - This will position it 6" above the countertop.
   - Click OK.

To customize an electrical symbol

1. Select **3D> Create Orthographic View> Wall Elevation**, then click between the kitchen island and the cabinets to the left, and drag a camera arrow to the left.
2. In the Wall Elevation view, **Zoom** in on the outlet and notice that the outlet is located inside of the window and is partially hidden by the sill and casing.



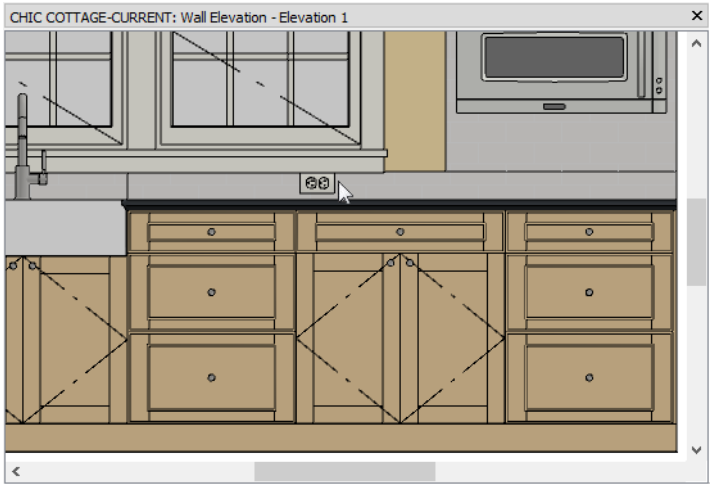
3. Click the **Select Objects** button, then click on the outlet to select it and click the **Open Symbol** edit button.
4. On the 3D panel of the **Symbol Specification** dialog:



- Under the Rotation heading, click the **Y Axis** radio button, then click the **Rotate +** button one time.
- Notice that the symbol in the preview pane rotates to become horizontally oriented.

- In the **Symbol Name** field at the top of the panel, change the name to GFCI (horiz), then click OK.

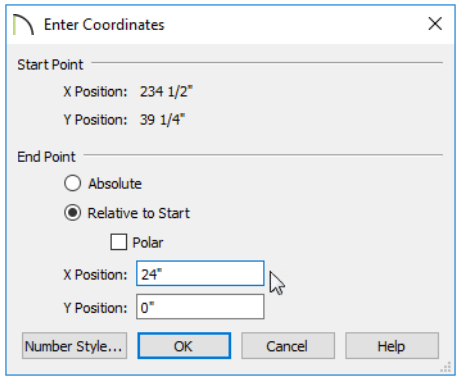
5. With the outlet still selected, click the **Open Object** edit button, and on the GENERAL panel of the **Electrical Service Specification** dialog, change the **Height to Center** to 39 1/4" and click OK.



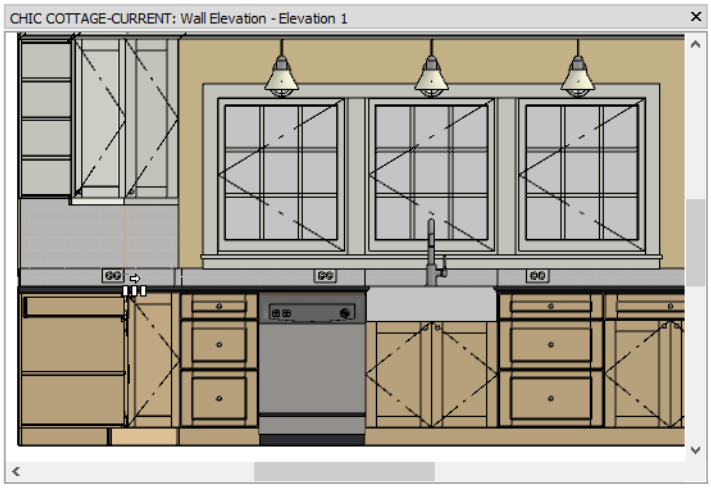
6. Click the **Add to Library** edit button to add the customized outlet to the User Catalog so it can be easily accessed for use in other plans. See “Add to Library” on page 932 of the Reference Manual.

To lay out kitchen counter outlets

1. With the outlet still selected, click the **Center Object** edit button.
2. Move the mouse pointer over the apron sink base, and when a vertical centering axis displays, click once to center the outlet under the window.
3. Click the outlet’s square Move edit handle and drag to the right, and with the mouse button held down, press the Tab key.
4. In the **Enter Coordinates** dialog, specify **End Point X Position** as 24" and click OK.



5. Click the **Multiple Copy** edit button, then:
   - Click the **Multiple Copy Interval** edit button.
   - In the **Multiple Copy Interval** dialog, confirm that the **Primary Offset** value for **General Objects** is 48" and click OK.
   - Click the **Sticky Mode** edit button.
6. Move the mouse pointer over the outlet's square Move handle and drag to the left to create two copies of the original, spaced 48" apart.

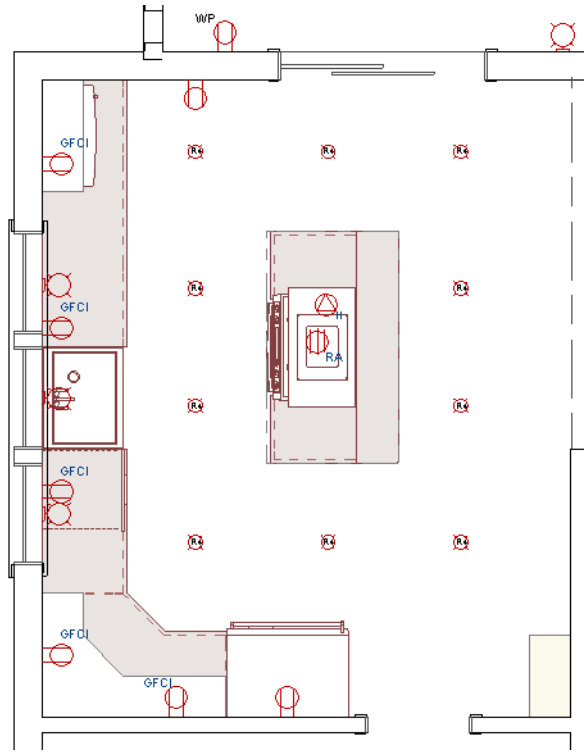


7. Click the original outlet's move handle and drag to the right to create one more copy.
8. Select **File> Close View** to return to floor plan view.
9. Copy and paste one more GFCI outlet on the horizontal wall, to the left of the refrigerator:

- Select one of the existing GFCI outlets.
- Click the **Copy/Paste** edit button.
- Click once along the horizontal wall to place a final GFCI outlet.

To add outlets from the library

1. Select **View> Library Browser**, then browse to Chief Architect Core Catalogs> Mechanical, Electrical, Plumbing> Electrical> Outlets> Floor Mounted> Appliances.
2. Select the "Electric Range" symbol, then move the mouse pointer into the drawing area.
3. When the pointer is over the island, click once to place a 220 volt outlet for a range.
4. In the Library, select "Hood w/ Vent" and place this symbol in the island as well.

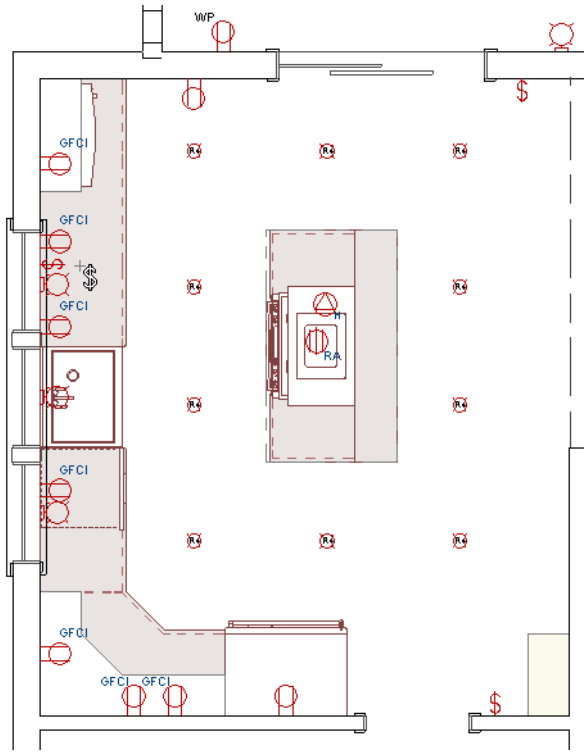


Placing Switches

With lights and outlets in place, electrical switches to control them are needed.

To place switches

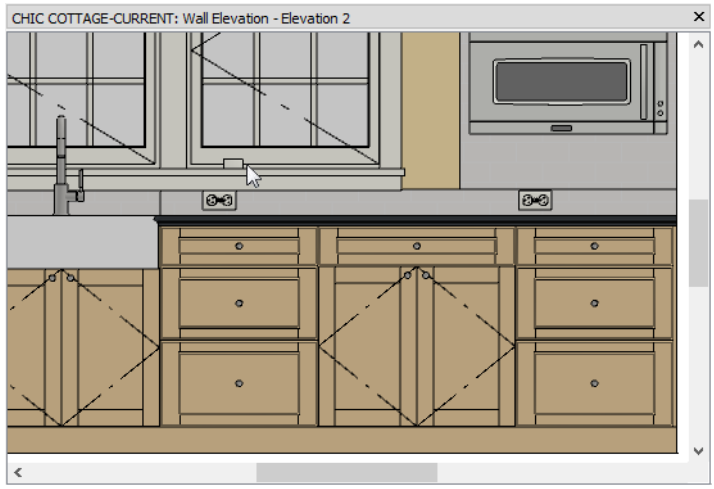
1. Select **Build> Electrical> Switch** $, then click on the back horizontal wall, to the right of the sliding door to the Deck to place a switch at that location.
2. Place a second switch to the right of the doorway into the Dining room.
3. Place a third switch along the left vertical wall, below the window closest to the microwave.



Multiple single switches can be positioned side-by-side to form multi-gang switches. Multi-gang outlets can also be created using this technique. Like outlets, switches are often best edited in a 3D view.

To edit switches

1. Select **3D> Create Orthographic View> Wall Elevation**, then click between the kitchen island and the cabinets to the left, and drag a camera arrow to the left.
2. In the Wall Elevation view, **Zoom** in on the switch and notice that just like the first GFCI that was placed, the outlet is located inside of the window and is partially hidden by the sill and casing.

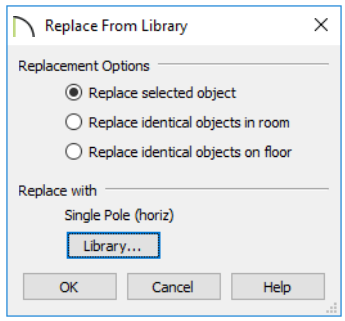


3. The switch can be edited as described above. See “To customize an electrical symbol” on page 379.

Alternatively, you can select a different symbol from the Library:

To replace an electrical symbol

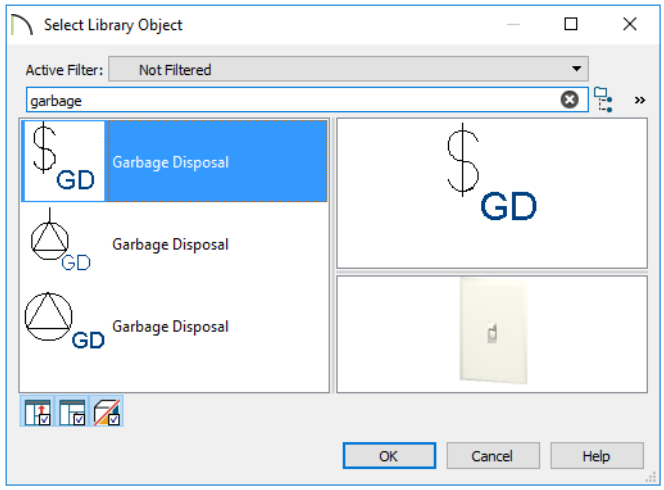
1. Click the **Select Objects** button, then click on the switch to select it.
2. Click the **Replace from Library** edit button.
3. In the **Replace From Library** dialog:
   - Select the **Replace selected object** radio button.
   - Click the **Library** button.
4. In the **Select Library Object** dialog, search for "single pole", select the "Single Pole (horiz)" symbol, and click OK.
5. Returning to the **Replace from Library** dialog, notice that "Single Pole (horiz)" is listed under the Replace with heading, then click OK.



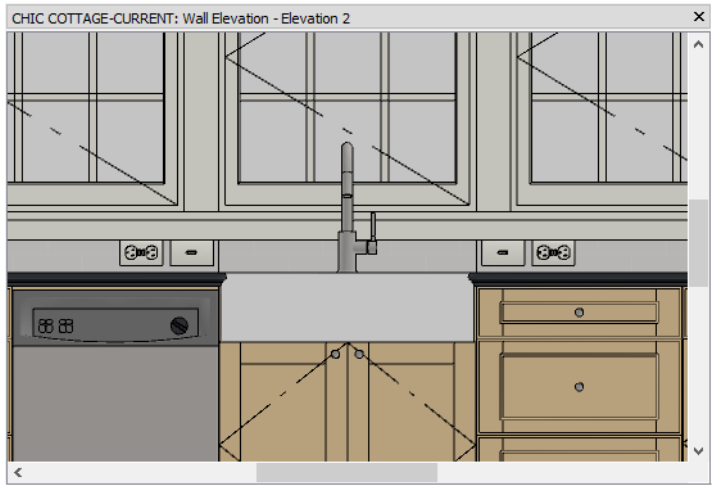
6. Click on the new switch to select it and click the **Open Object** edit button.
7. On the GENERAL panel of the **Electrical Service Specification** dialog, change the **Height to Center** to 39 1/4" and click OK

To add special switches

1. Select the "Single Pole (horiz) switch and, if needed, move it to the left or right so it doesn't conflict with the nearby GFCI outlet.
2. Make a copy of the switch on the other side of the sink:
   - Click the **Copy/Paste** edit button.
   - Click the **Reflect About Object** edit button.
   - Move the mouse pointer over the apron sink base.
   - When a vertical reflection axis displays, click once to create a copy of the original switch on the other side of the sink.
3. With the newly copied switch selected, click the **Replace from Library** edit button again.
4. Replace the standard switch with the "Garbage Disposal" switch from the Library.

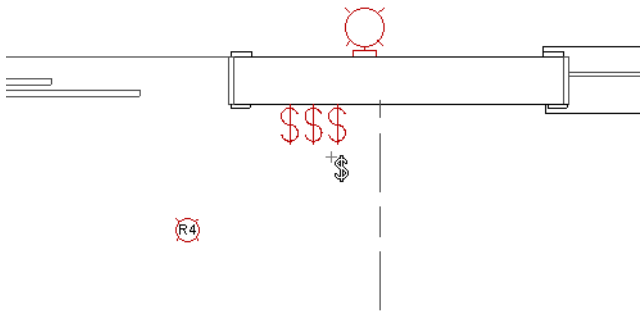


5. Adjust the "Garbage Disposal's" rotation and height as described above. See “To customize an electrical symbol” on page 379.



To create multi-gang switches

1. **Zoom** in on the switch located near the sliding door to the Deck.
2. Use the **Switch** tool to place two more switches to right of the existing switch.
3. Click the **Select Objects** button, then use the switches' Move edit handles to adjust their spacing so they represent a 3-gang switch in a manner that meets your needs.



4. Place a second switch to the right of the doorway to the Dining room as well.
5. Create a **Camera** view in the kitchen to see the results.

As long as each outlet is within 9" (225 mm) of its neighbor, they will look like they share a single plate in 3D views.

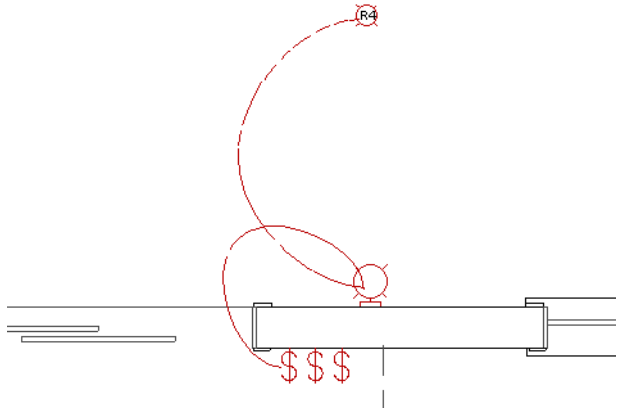
6. When you are finished, select **File> Close View** and **Save** your work.

Drawing Electrical Connections

With lights, outlets, and switches in place, wiring connections can be drawn. For more information, see “Connect Electrical” on page 655 of the Reference Manual.

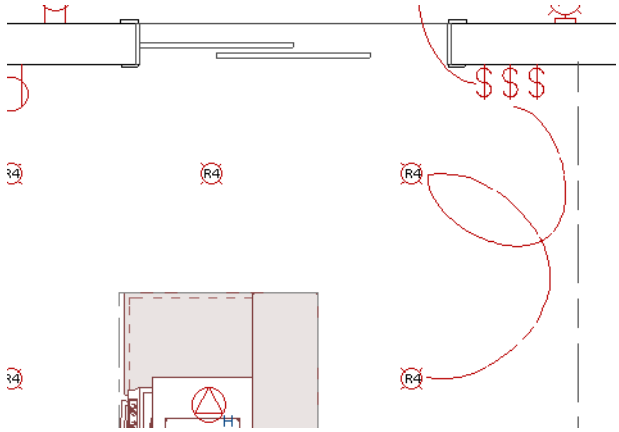
To draw electrical connections

1. Select **Build> Electrical> Connect Electrical** , then click on the switch that is closest to the sliding door to the Deck.
2. Hold the mouse button down, drag a line to the exterior wall light on the Deck, and release the mouse button to create an Electrical Connection spline.
3. Draw a second spline between the wall light and the Deck ceiling light.

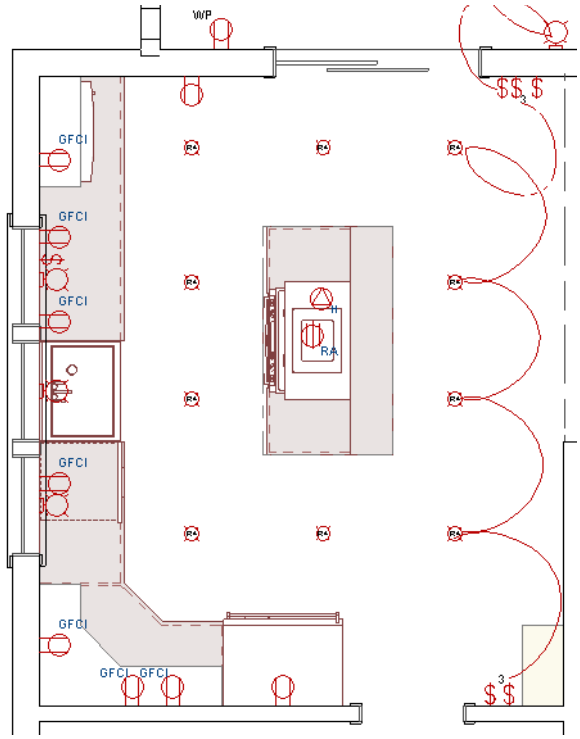


To create three way connections

1. Use the **Connect Electrical** tool to draw an Electrical Connection spline between the middle switch to the right of the sliding door and the top right can light in the Kitchen.
2. Draw another spline between the top right can light and the light located below it.



3. Continue drawing splines to connect the four lights on the right side of the Kitchen.
4. Draw a final spline from the bottom right can light to a switch located to the right of the doorway to the Dining room.



5. Notice that when the circuit has switches on each end, they automatically become 3 Way switches.
6. When you are finished, be sure to **Save** your work.

Once drawn, Electrical Connection splines can be selected and edited like other spline-based objects. See “Editing Spline Based Objects” on page 240 of the Reference Manual.

Adding Data and Security Items

A selection of data and security objects is available in the Library.

To add data and security symbols

1. Select **View> Library Browser** to open the Library Browser side window.

2. Browse to Chief Architect Core Catalogs> Mechanical, Electrical, Plumbing> Electrical.
3. Notice that there is a selection of Detectors and Alarms, Jacks, and other Special Symbols.
4. Select any of these symbols to place them in your plan.
5. When you are finished, remember to **Save** your work.

Creating File Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed.

When you are finished working on a file and are ready to close it, **Save** your work. Before closing it, though, create a copy of the file with a different name that indicates what it contains so you can distinguish it from other revisions.

To save a plan revision

1. Select **File**> **Save As** .
2. In the **Save Plan File** dialog, make sure that the save location is your Chic Cottage folder.
3. For the File name, type a the name of the project followed by a short description of the current state of the drawing; for example, Chic Cottage-Electrical.

Review

This lesson describes the best practices for placing electrical outlets and switches.

- To place wall and floor outlets
- To place an outlet above the countertop
- To customize an electrical symbol
- To lay out kitchen counter outlets
- To add outlets from the library
- To place switches
- To edit switches
- To replace an electrical symbol
- To add special switches
- To create multi-gang switches
- To draw electrical connections
- To create three way connections
- To add data and security symbols

Assessment Questions

How does the Outlet tool behave differently depending on where you click?

What edit button should you click if you want to rotate a selected symbol like an Outlet?

How do you create multi-gang Switches?

What tool can be used to connect Switches to Lights and Outlets?

Framing Tutorials

The Framing Tutorials describe best practices for generating and editing framing in Chief Architect:

- Floor Framing
- Wall Framing
- Roof and Ceiling Framing

Chapter 19:

Floor Framing

Floor platforms are framed using joists and beams, often using a combination of automatic and manually edited framing. Lowered ceilings can be added under floor platforms, as well.

Learning Objectives

This lesson describes best practices in Chief Architect for generating floor and ceiling framing. Concepts introduced include:

- Generating Floor and Lowered Ceiling Framing
- Using Bearing Walls
- Adding Posts and Beams
- Editing Floor and Ceiling Framing

File Management

This tutorial continues where the Electrical Objects tutorial left off. At this point, both the Chic Cottage-Electrical and CHIC COTTAGE-CURRENT plans contain the same information, so you could open either one and continue working. However, Chic Cottage-Electrical.plan was created specifically to serve as a revision or archive file so it will be left unchanged.

To continue working on the Chic Cottage project, select **File> Open Plan** . If need be, browse to Documents\Chic Cottage, select CHIC COTTAGE-CURRENT, and click Open.

Alternatively, select **File> Recent Files** and choose CHIC COTTAGE-CURRENT from the Recent Files List. The Recent Files List is a convenient way to access files you have been working on; however, it is not an alternative to knowing where your files are located and having a good file revision strategy in place. See “Creating File Revisions” on page 412.

It is a very good idea to save your files often as you work, and this guide reminds you to do so regularly.

Productivity Tips

As you learn how to create floor and ceiling framing, keep in mind these tips to improve your productivity.

Drawing and Editing

- Before generating framing, place a **Framing Reference Marker** at the point where you would like the framing layout to be measured from.
- Most framing plans are a combination of manually drawn and automatically generated framing objects.

Content

- Create template plans that have your preferred structural defaults set and ready for use when you begin a new plan. See “Template Files” on page 97 of the Reference Manual.

Interface

- When drawing and editing framing, it may be helpful to turn off **Grid Snaps** . **Object Snaps** , however, should be left on.
- Annotation Sets let you activate a set of defaults and layer settings for a specific purpose: for example, framing plans. See “Annotation Sets” on page 93 of the Reference Manual.

Keyboard Hotkeys

- F1 - Help for the current context
- Spacebar - Select Objects
- Ctrl + E - Open Object edit tool
- Ctrl + S - Save

Setting the Defaults

In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. Setting defaults early can improve efficiency and also helps to avoid introducing errors into the drawing. When adding floor and ceiling framing to a plan, there are several defaults of particular importance.

Settings in the Floor Defaults dialogs that affect the overall height of a structure will also affect the heights of floor and ceiling platforms. See "To set the Floor 1 Defaults" on page 26 of the Exterior Walls Tutorial.

Floor Defaults also include the default Ceiling Heights and Floor and Ceiling Platform Thicknesses. See "To set the default floor structures" on page 25 of the Exterior Walls Tutorial.

The structure of individual rooms can be customized, as well. See "Custom Ceilings" on page 205 of the Custom Ceilings Tutorial.

When working with framing objects, it is often helpful to toggle Grid Snaps off. Object Snaps, however, should be toggled on.

To set the Snap Settings

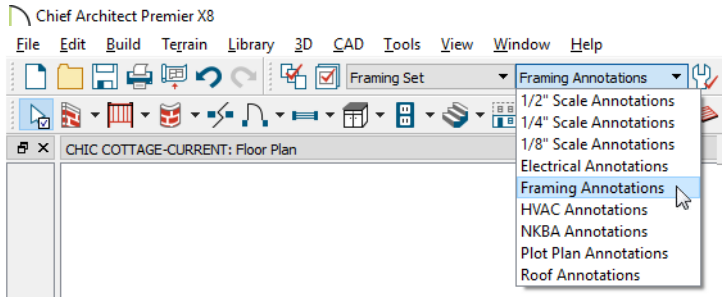
1. Begin by turning off Grid Snaps: select **Edit> Snap Settings>** and notice whether there is a small check mark in the icon to the left of **Grid Snaps** .
   - If there is a check mark, Grid Snaps are currently toggled on. To turn them off, click on **Grid Snaps** in the submenu.
   - If there is no check mark, Grid Snaps are already toggled off.
2. Make sure that Object Snaps are turned on: select **Edit> Snap Settings> Object Snaps** .

Before generating framing, it is a good idea to place a Framing Reference Marker to specify the point where the framing layout is measured from. See “Framing Reference Marker” on page 843 of the Reference Manual.

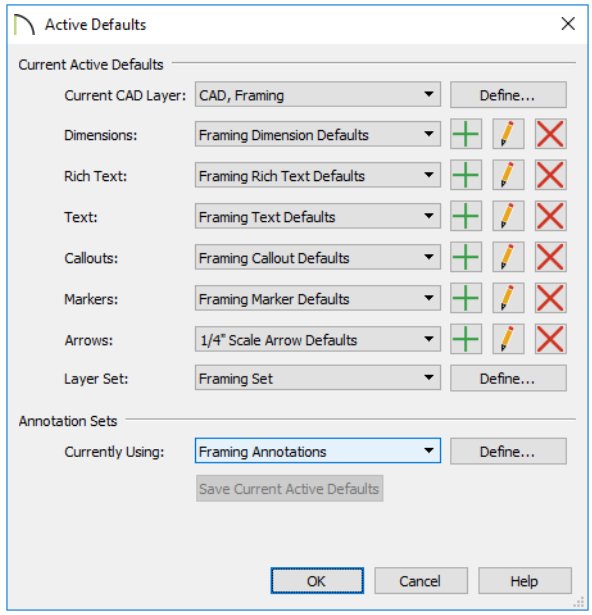
Like electrical plans, framing plans are an example of a view that requires its own set of annotations and layer settings.

To switch to the Framing Annotation Set

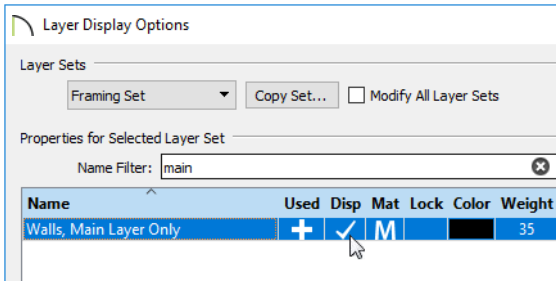
1. Click the **Active Annotation Set Control** drop-down in the toolbar and select "Framing Annotations" from the list.



2. Notice:
   - The **Active Layer Set Control** drop-down to its left now lists "Framing Set" as active.
   - The appearance of objects in floor plan view changes. Notably, for example, wall layers and cabinets no longer display.
3. To see what else has changed, select **Edit> Default Settings** and in the **Default Settings** dialog, select "Active Defaults" and click the **Edit** button.
4. In the **Active Defaults** dialog:



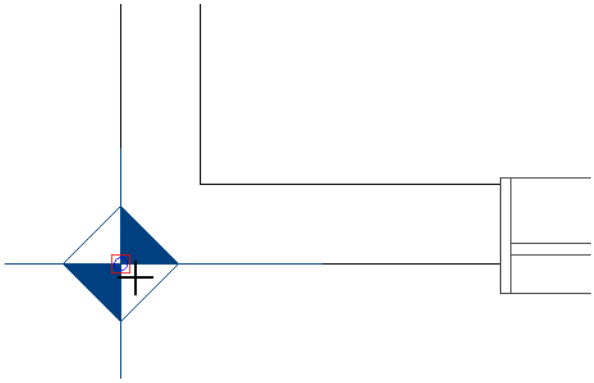
   - Notice that most of the Active Defaults' names begin with the word "Framing".
   - This means that they are set up for use specifically in framing plans and will create objects on layers that only display when the Framing Layer Set is active.
5. Click Cancel and then Done to return to floor plan view.
6. Select **Tools> Layer Settings> Display Options** .
7. In the **Layer Display Options** dialog:



- In the **Name Filter** field, type "main". As you type, list of layers is filtered to only show layer names that include the characters you typed.
- Locate the "Walls, Main Layer Only" layer and click once in the "Disp" column to add a check mark.
- Click OK to close the dialog and turn on the "Walls, Main Layer Only" layer in the Framing layer set.

To place a Framing Reference Marker

1. Go to Floor 1 and **Zoom** in on the lower left corner of the structure.
2. Select **Build> Framing> Framing Reference Marker** and move the mouse pointer over the wall intersection.
3. When an **Endpoint** snap indicator displays at the outside corner of the wall framing, click once to place a Framing Reference Marker at that location.



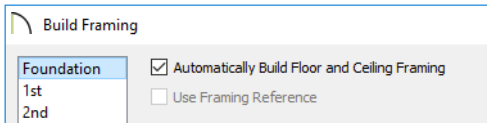
4. When you are finished, **Save** your work.

Generating Floor and Lowered Ceiling Framing

Floor and lowered ceiling framing display on the same floor and can be automatically generated at the same time.

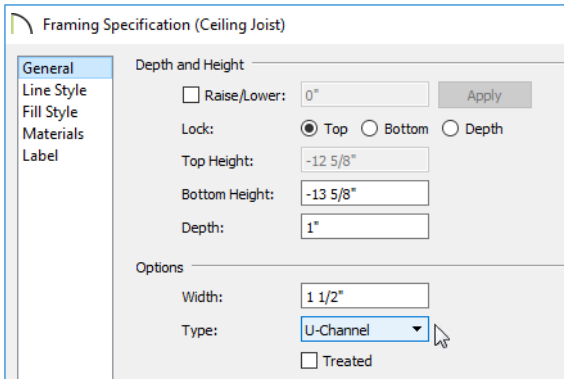
To generate floor and ceiling framing

1. Go **Down One Floor** to Floor 0 and select **Window> Fill Window**.
2. Select **Build> Framing> Build Framing**.
3. On the FOUNDATION panel of the **Build Framing** dialog, check the box beside **Automatically Build Floor and Ceiling Framing** and click OK.



> Note: When Automatically Build Floor and Ceiling Framing is checked on any panel of the Build Framing dialog, floor and ceiling framing will generate automatically for all floors, and will rebuild any time changes are made to the model that affect floor or ceiling platforms.

4. Notice that two types of framing is created: floor joists, which have a dark purple line color, and ceiling joists, which have a bright pink line color.
5. Click the **Select Objects** button and click on one of the pink ceiling joists to select it. Notice that it is described as a Ceiling Joist on the left side of the Status Bar.
6. Click the **Open Object** edit button and in the **Framing Specification (Ceiling Joist)** dialog:

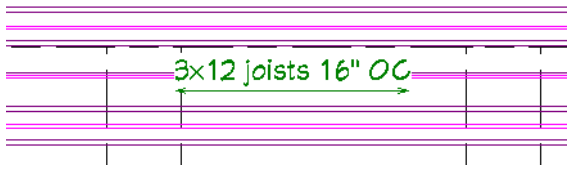


- Notice that it is a U Channel framing member with a **Depth** of 1".
- This lowered ceiling framing component was set up to represent sound-proofing hat channels in the Custom Ceilings tutorial. See "To set lowered ceiling defaults" on page 209 of the Custom Ceilings Tutorial.

There are several ways to change the direction of floor and ceiling joists. The Joist Direction Line tool is one of them, although it is typically only useful in situations where joists can span in either direction and still be structurally sound. See “Joist Direction Lines” on page 860 of the Reference Manual.

To use a Joist Direction Line

1. Select **Build> Framing> Joist Direction** .
2. Click inside of the basement room and drag to draw a horizontal line.
3. When you release the mouse button, notice that the floor and ceiling joists rebuild to follow the same direction as the Joist Direction Line.



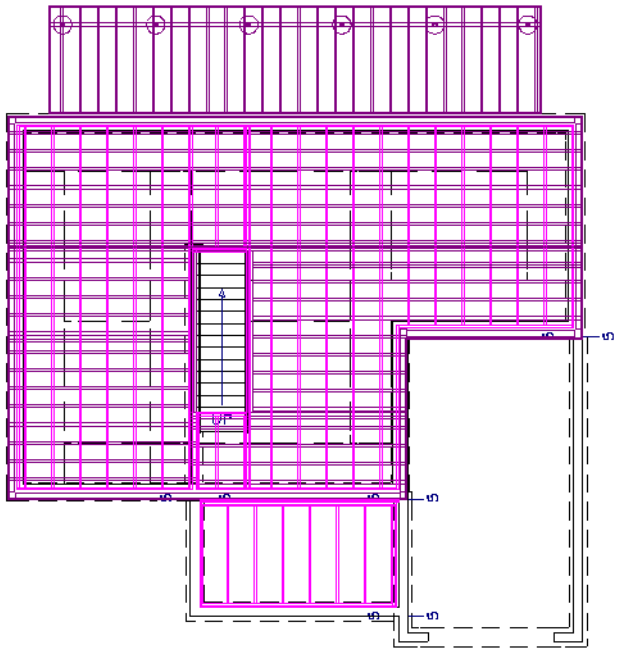
4. Select **Edit> Undo** to remove the Joist Direction Line.
5. When you are finished, **Save** your work.

Using Bearing Walls

Another way to control joist direction is by specifying key walls as Bearing Walls that floor and ceiling joists can bear on. This is the recommended method in most situations because it affects the structure by allowing shorter joist spans. See “Using Bearing Walls” on page 402 of the Reference Manual.

To specify an interior bearing wall

1. Click the **Select Objects** button, then click on the wall to the left of the staircase to select it.
   - If a different object is selected instead, click the **Select Next Object** edit button.
   - The type of object selected is stated on the left side of the Status Bar.
2. Click the **Open Object** edit button, and on the GENERAL panel of the **Wall Specification** dialog:
   - Check the box beside **Foundation Wall**.
   - Notice that a footing is added under the wall in its dialog preview.
3. On the STRUCTURE panel, check the box beside **Bearing Wall** and click OK.



4. Notice that the lowered ceiling joists continue to run vertically, while the floor joists now run horizontally and lap over the wall. The reason for this is that lowered ceiling framing does not bear on walls, so it is unaffected by this change.

5. When you are finished, **Save** your work.

Adding Posts and Beams

One other way to modify the structure and produce shorter joist spans is by adding posts and beams that floor and ceiling joists can bear on. For more information, see “Adding Posts and Beams” on page 403 of the Reference Manual.

To set the post and beam defaults

1. Select **Edit> Default Settings**, and in the **Default Settings** dialog, select "Framing" in the list and click the **Edit** button.
2. On the BEAMS panel of the **Framing Defaults** dialog:
   - Click the radio button beside **With Joists**.
   - Click the **Edit Floor Beam Defaults** button. Note that the default beams are Lumber measuring 12" x 3 1/2", then click OK.
3. On the POSTS panel:
   - Click the radio button beside **Square**.
   - Click the **Edit Post Defaults** button. Note that the default posts are set as Lumber measuring 3 1/2" x 3 1/2", then click OK.
4. Click OK and then Done to close both dialogs and apply your changes.

The Framing Layer Set is set up to make working with framing efficient. There are some situations, though, when the Default Set works better.

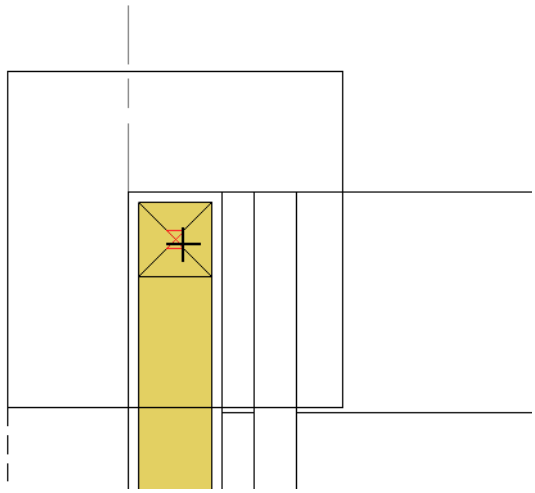
To add a post

1. With the posts and beams in place, click the **Active Layer Set Control** drop-down and select "Default Set". Notice that the **Active Annotation Set Control** now states "Using Active Defaults".

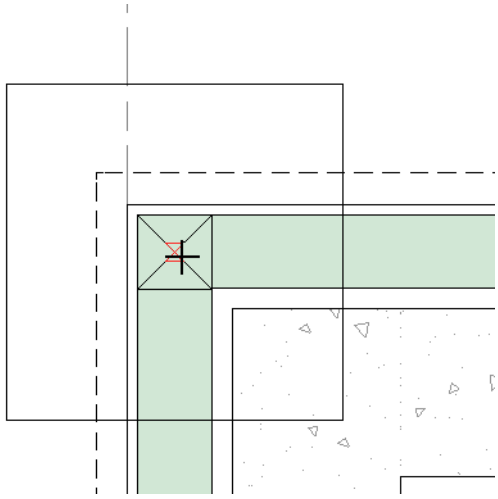
2. Select **Tools> Layer Settings> Display Options**, and in the **Layer Display Options** dialog, turn off the display of the "Framing, Labels" layer.

3. **Zoom** in on the top end of the interior wall next to the stairwell.

4. Select **Build> Framing> Post with Footing**, then move the mouse pointer over the end of the wall and click once to place a post inside of the wall’s framing layer.



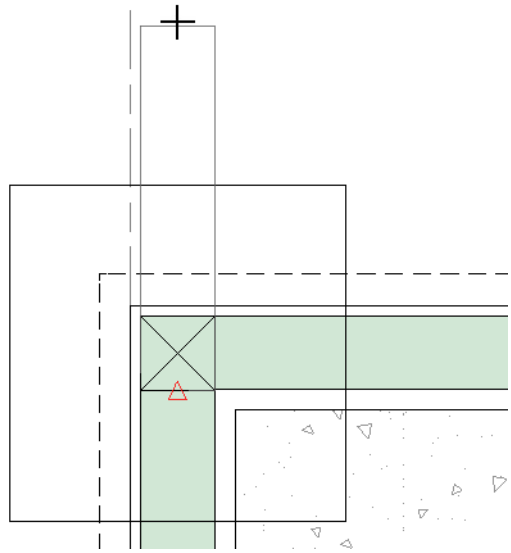
5. The a message will ask whether you want to turn on the "Framing, Posts" layer. Click the Yes button.
6. Place a second Post with Footing in the corner of the wall furring at the top left corner of the Garage area.



With the posts in place, beams can be drawn.

To add a beam at joist level

1. Select **Build> Framing> Floor/Ceiling Beam**, then:

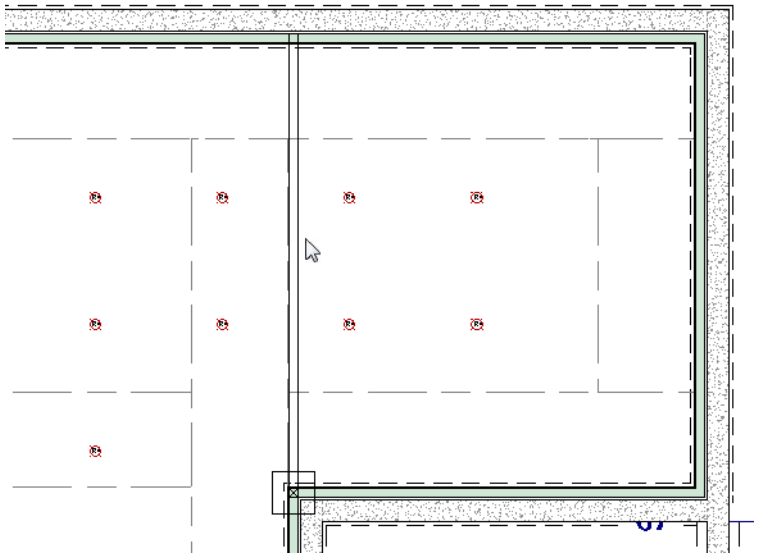


- Move the mouse pointer over the bottom edge of the post near the Garage.
- When the Midpoint snap indicator displays, click the mouse button.
- Drag upward to draw a floor beam.

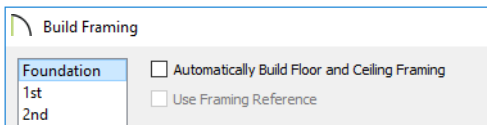
2. **Zoom** out so the back wall of the basement can be seen.

> If you zoom out using the mouse scroll wheel, the beam will remain selected.

3. Extend the floor beam upward until it reaches the outside surface of the back basement wall's furring layer.



4. Click the **Active Layer Set Control** drop-down and select "Framing Set" again. Notice that the Active Annotation Set Drop-Down states "Framing Annotations" again, as well.
5. Notice that the ceiling framing has rebuilt in response to the beam. Unlike Bearing Walls, beams do affect lowered ceiling framing.
6. Select the beam and click the **Open Object** edit button. On the GENERAL panel of the **Framing Specification (Floor Beam)** dialog:
   - Notice that the **Top Height** is -3/4", which puts it directly underneath the subfloor on Floor 1, even with the tops of the joists.
   - Uncheck **Bearing Beam**, then click OK.
7. Notice that the ceiling framing rebuilds using its original vertical orientation.
8. Select **Build> Framing> Build Framing**, and on the FOUNDATION panel of the **Build Framing** dialog, uncheck **Automatically Build Floor and Ceiling Framing**, and click OK.

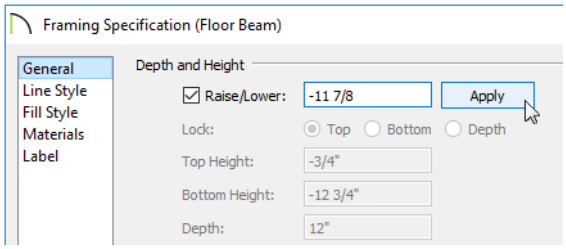


9. Select the beam, click the **Open Object** edit button, and check **Bearing Beam** again.

To create a beam that runs under the floor joists, you can either change the default Placement setting for beams to Under Joists, or you can draw a beam and then edit its height.

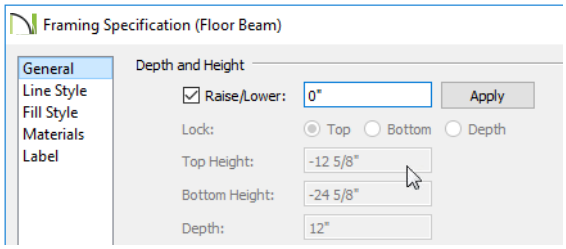
To place a beam below the joists

1. **Zoom** in on the post located at top end of the wall next to the staircase.
2. Select **Build> Framing> Floor/Ceiling Beam**, then draw a beam from the post to the back basement wall, as described above.
3. Select the beam and click the **Open Object** edit button.
4. On the GENERAL panel of the **Framing Specification (Floor Beam)** dialog:



- Note that the **Top Height** is -3/4", which puts it directly underneath the subfloor on Floor 1, even with the tops of the joists.
- Check the box beside **Raise/Lower**, and in the field to the right, type -11 7/8", which is the depth of the floor joists.

5. Click the **Apply** button and:

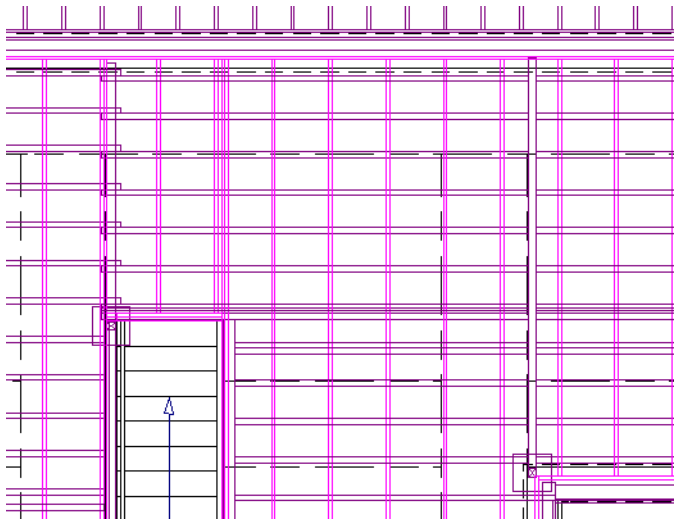


- Notice that the **Top** and **Bottom Height** values adjust to this change.
- Click OK to close the dialog and apply the change in height to the beam.

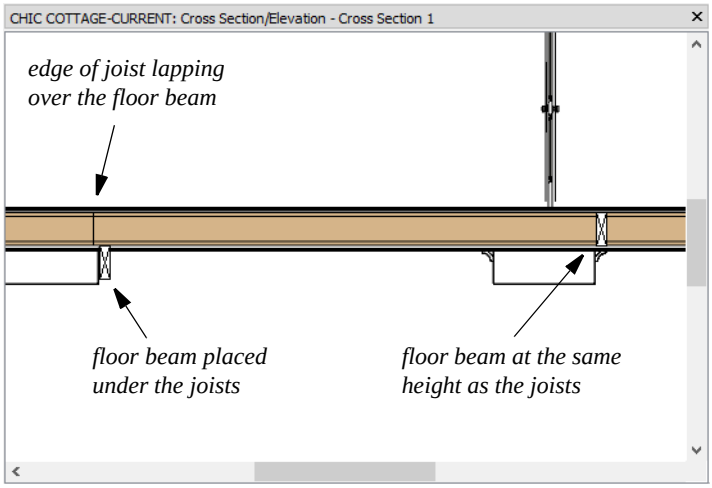
At this point, the lowered ceiling framing is correct but the floor framing needs to be rebuilt to bear on the beams that were added.

To rebuild floor framing

1. Select **Build> Framing> Build Framing** , and on the FOUNDATION panel of the **Build Framing** dialog, check **Build Floor Framing**, and click OK.
2. Notice:
   - The lowered ceiling joists run vertically, while the floor joists run horizontally.
   - The joists lap over the beam on the left.
   - The joists butt against the beam on the right.



3. The difference can also be seen in a Backclipped Cross Section view. Select **3D> Create Orthographic View> Backclipped Cross Section** , then click and drag a short camera arrow in the basement area. Be sure to draw the camera arrow straight up on-screen.



4. When you are finished, select **File> Close View** and **Save** your work.

Editing Floor and Ceiling Framing

Once floor and ceiling framing have been generated, it can be modified. Floor and ceiling framing can be moved and resized using their edit handles, edit tools, and specification dialogs.

When selecting and editing individual framing members, it is often helpful to either turn off or lock certain layers. This will prevent objects on those layers from being selected and inadvertently edited. One way to do this is to switch to a different Layer Set; another way is to create a custom Layer Set specifically for working on certain types of objects.

To create and use a custom Layer Set

1. Select **Tools> Layer Settings> Display Options**, and in the **Layer Display Options** dialog, click the **Copy Set** button.
2. In the **New Layer Set** dialog, type a short, descriptive **Name** for the new Layer Set, such as "Framing Set - Working" and click OK.
3. Returning to the **Layer Display Options** dialog:
   - Lock the "Cabinets, Soffits" layer.
   - Turn off the display of the "Footings" layer.
   - Turn off the display of the "Framing, Floor Joists" layer.
   - Lock the "Walls, Foundation" layer.
   - Turn on the "Walls, Layers" layer, then click OK.

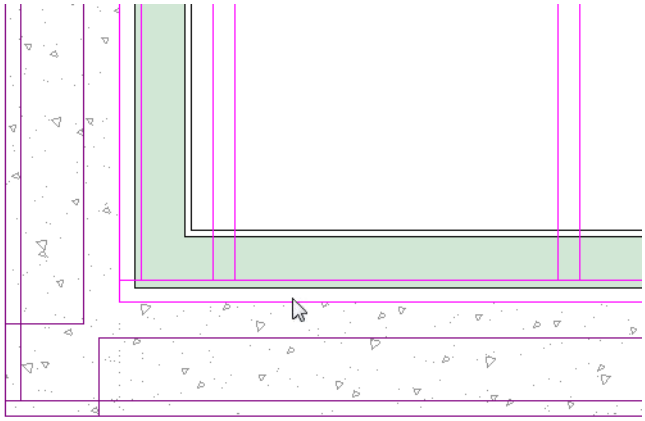
4. Click the **Active Layer Set Control** drop-down and select "Framing Set - Working" from the list.
5. Notice that the display of the floor framing and soffits is turned off.

The "Framing Set - Working" can now be changed as needed while editing framing objects, while the original "Framing Set" will be ready for use when it is time to create framing plans for printing. See "Sending Floor Plan Views to Layout" on page 587 of the Sending Views to Layout Tutorial.

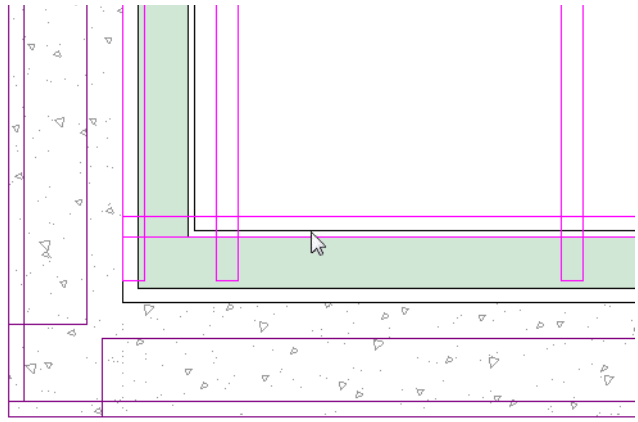
The lowered ceiling framing in Chic Cottage is for sound-proofing only, so it does not need to extend over the exterior concrete walls like the structural floor platform does.

To move joists

1. Select **Edit> Snap Settings> Bumping/Pushing** to turn off the bumping and pushing behavior.
2. **Zoom** in on the bottom left corner of the basement.
3. Click the **Select Objects** button, then click on the horizontal ceiling joist located over the concrete basement wall.

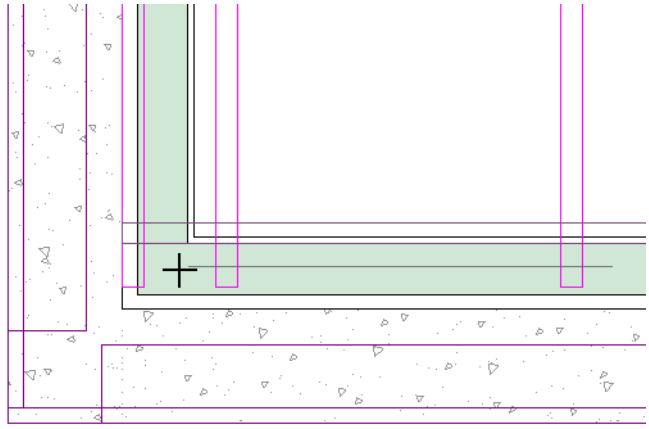


   - If a different object is selected instead, click the **Select Next Object** edit button.
   - The type of object selected is stated on the left side of the Status Bar.
4. Click the joist's Move edit handle and drag upwards until its bottom edge aligns with the inside edge of the basement wall's furring layer.
5. Notice that there are now ceiling joists that extend down past its bottom edge.

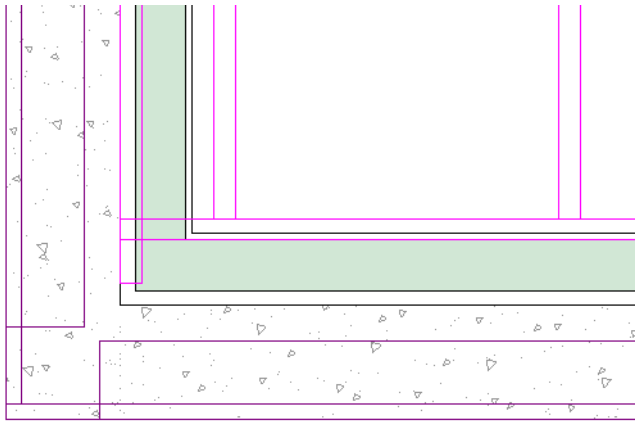


To trim joists

1. With the horizontal ceiling joist still selected:
   - Click the **Trim Object(s)** edit button.
   - Click the **Sticky Mode** edit button.
2. Move your mouse pointer just below the select joist, between the ends of the vertical ceiling joists that extend over the concrete wall.
3. Click and drag a temporary cutting line through one or more of the vertical ceiling joists ends.



4. When you release the mouse button, the vertical joists are trimmed to the top edge of the selected horizontal ceiling joist.



5. Continue clicking and dragging to trim all of the vertical joists that extend over the selected horizontal joist.

To delete a joist

1. Select the vertical lowered ceiling joist located over the left basement wall.
2. Click the **Delete** edit button or press the Delete key on your keyboard.
3. When you are finished, **Save** your work.

Creating File Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed.

When you are finished working on a file and are ready to close it, **Save** your work. Before closing it, though, create a copy of the file with a different name that indicates what it contains so you can distinguish it from other revisions.

To save a plan revision

1. Select **File**> **Save As** .
2. In the **Save Plan File** dialog, make sure that the save location is your Chic Cottage folder.
3. For the File name, type a the name of the project followed by a short description of the current state of the drawing; for example, Chic Cottage-Floor Framing.

Review

This lesson describes the best practices for creating and editing floor and lowered ceiling framing.

- To place a Framing Reference Marker
- To switch to the Framing Annotation Set
- To generate floor and ceiling framing
- To use a Joist Direction Line
- To specify an interior bearing wall
- To set the post and beam defaults
- To add a post
- To add a beam at joist level
- To place a beam below the joists
- To rebuild floor framing
- To create and use a custom Layer Set
- To move joists
- To trim joists
- To delete a joist

Assessment Questions

What does a Framing Reference Marker do?

When working on framing, what is helpful about switching to the Framing Annotation Set?

What determines the direction of automatically generated joists?

What effect does an interior bearing wall have on the floor framing in Chic Cottage?

What is the difference between the two floor beams drawn in Chic Cottage?

What edit tool can be used to adjust the lengths of multiple joists?

Chapter 20:

Wall Framing

Wall framing is typically generated automatically, and can be edited in a Wall Detail view.

Learning Objectives

This lesson describes best practices in Chief Architect for generating wall framing. Concepts introduced include:

In this tutorial you'll learn about:

- Generating Wall Framing
- Editing Wall Framing
- Specifying Stud Spacing
- Regenerating Wall Framing
- Working in Wall Details

File Management

This tutorial continues where the Floor Framing tutorial left off. At this point, both the Chic Cottage-Floor Framing and CHIC COTTAGE-CURRENT plans contain the same information, so you could open either one and continue working. However, Chic Cottage-Floor Framing.plan was created specifically to serve as a revision or archive file so it will be left unchanged.

To continue working on the Chic Cottage project, select **File> Open Plan** . If need be, browse to Documents\Chic Cottage, select CHIC COTTAGE-CURRENT, and click Open.

Alternatively, select **File> Recent Files** and choose CHIC COTTAGE-CURRENT from the Recent Files List. The Recent Files List is a convenient way to access files you have been working on; however, it is not an alternative to knowing where your files are located and having a good file revision strategy in place. See “Creating File Revisions” on page 428.

It is a very good idea to save your files often as you work, and this guide reminds you to do so regularly.

Productivity Tips

As you learn how to create wall framing, keep in mind these tips to improve your productivity.

Drawing and Editing

- Before generating framing, place a **Framing Reference Marker** at the point where you would like the framing layout to be measured from.
- Wall framing can often be edited most effectively in a Wall Detail view.

Content

- Create template plans that have your preferred structural defaults set and ready for use when you begin a new plan. See “Template Files” on page 97 of the Reference Manual.

Interface

- Wall Details and other saved views are listed in and can be opened from the Project Browser side window.
- When drawing and editing framing, it may be helpful to turn off **Grid Snaps** . **Object Snaps** , however, should be left on.
- Annotation Sets let you activate a set of defaults and layer settings for a specific purpose: for example, framing plans. See “Annotation Sets” on page 93 of the Reference Manual.

Keyboard Hotkeys

- F1 - Help for the current context
- Spacebar - Select Objects
- ‘ - Layer Display Options
- Ctrl + E - Open Object edit tool
- Ctrl + S - Save

Setting the Defaults

In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. Setting defaults early can improve efficiency and also helps to avoid introducing errors into the drawing. When adding wall framing to a plan, there are a number of defaults of particular importance.

Many of the defaults associated with wall framing are set in the Wall Type Definitions assigned to the walls in the plan. See "Working with Wall Type Definitions" on page 22 of the Exterior Walls Tutorial.

Settings in the Floor Defaults dialogs that affect the overall height of a structure will also naturally affect wall heights. See "To set the Floor 1 Defaults" on page 26 of the Exterior Walls Tutorial.

The structure of individual rooms can be customized, and may also affect wall heights. See “Custom Ceilings” on page 205.

The defaults for wall top and bottom plates, headers, and more can be set in the Framing Defaults dialog. See “Build Framing Dialog” on page 844 of the Reference Manual.

Door and window rough openings are specified in their respective defaults dialogs, and can be customized in their individual specification dialogs. See “Framing Panel” on page 556 of the Reference Manual.

Before generating framing, it is a good idea to place a Framing Reference Marker to specify the point where the framing layout is measured from. See "To place a Framing Reference Marker" on page 399 of the Floor Framing Tutorial.

When working with framing objects, it is often helpful to toggle **Grid Snaps** off. **Object Snaps**, however, should be toggled on. See "To set the Snap Settings" on page 397 of the Floor Framing Tutorial.

Generating Wall Framing

Wall framing is always generated automatically using the Build Framing dialog. See “Wall Framing” on page 836 of the Reference Manual.

To generate wall framing

1. Select **Build> Framing> Build Framing** .
2. On the WALL panel of the **Build Framing** dialog:

- Notice that the **Use Wall Framing Material** check box is checked. This means that the properties of wall framing can be specified for each Wall Type.
- Check the box next to **Build Wall Framing** and click OK.

3. In floor plan view, only wall studs will display, regardless of which layers are turned on.
4. Select **3D> Create Perspective View> Perspective Framing Overview** to see the plates, headers, and sills.
5. When you are finished, select **File> Close View** and **Save** your work.

Editing Wall Framing

Once generated, wall framing can be edited to produce a variety of configurations.

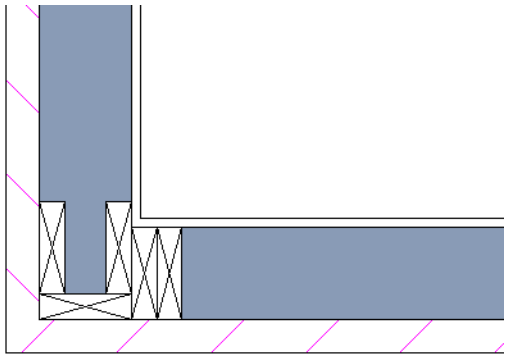
Because wall framing is generated inside of walls, it is helpful to modify some layer settings before trying to select and edit it.

To modify layer settings

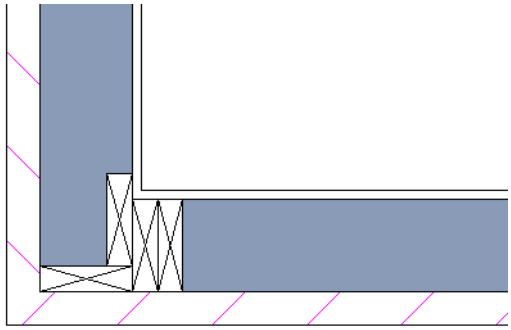
1. Select **Tools> Layer Settings> Display Options** .
2. In the **Layer Display Options** dialog:
   - Turn off the display of the "Framing, Ceiling Joists" layer.
   - Lock the "Walls, Railings" layer, then click OK.

To edit wall studs

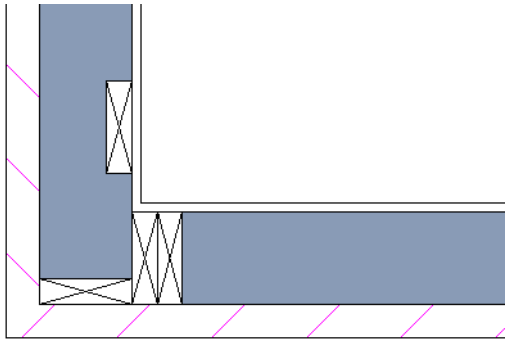
1. Go **Up One Floor** to Floor 1 and **Zoom** in on the lower left corner of the Porch.



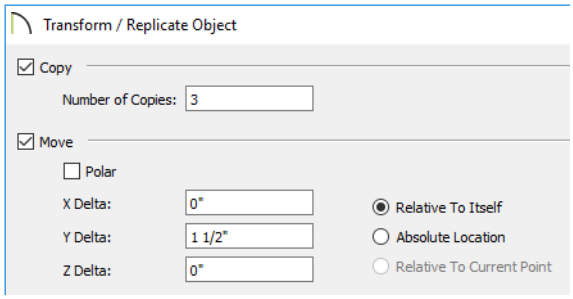
2. Click the **Select Objects** button, then click on the vertical corner wall stud on the left and **Delete** it.



3. Click on the remaining vertical corner wall stud and use its Move edit handle to move it upward, out of the corner.

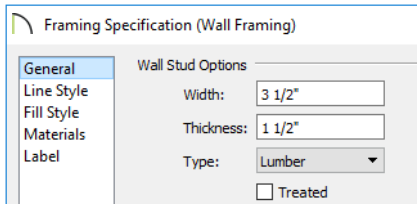


4. Select the horizontal corner wall stud and click the **Transform/Replicate Object** edit button. In the **Transform/Replicate Object** dialog:

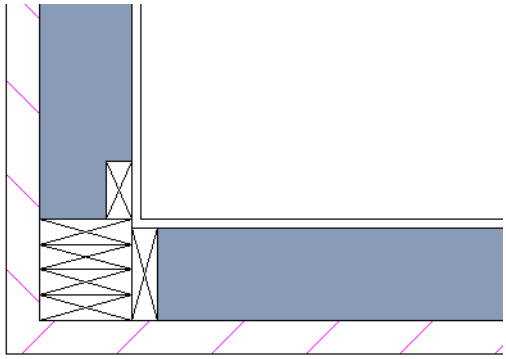


- Check the box beside **Copy** and specify the **Number of Copies** as 3.
- Confirm that the box beside **Move** is checked and specify the **Y Delta** value as 1 1/2".
- Click OK to create a total of 4 horizontal corner studs.

5. Select the vertical corner stud that was moved in step 2 and click the **Open Object** edit button.
6. On the GENERAL panel of the **Framing Specification (Wall Framing)** dialog, specify the Width as 3 1/2" and click OK.



7. With the vertical stud still selected, click the **Point to Point Move** edit button, then:
   - Move the mouse pointer over the stud's lower right corner. When the Endpoint Snap Indicator displays, click once.
   - Move the mouse pointer over the top right corner of the top horizontal corner stud. When the Endpoint Snap Indicator displays, click once.
8. Select the vertical stud on right side of the corner studs and **Delete** it.



9. When you are finished, **Save** your work.

Specifying Stud Spacing

By default, stud spacing is set in the properties of the material assigned to each wall type's framing layer. Although like all defaults, it is best to set this up as early as possible, you can change a wall type's stud spacing after wall framing is built.

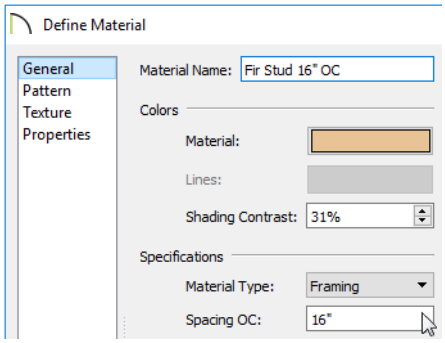
Although not a common requirement, it is possible to specify stud thickness and spacing for all walls in throughout a plan.

To specify stud spacing for an entire plan

1. Select **Build> Framing> Build Framing** .
2. On the WALL panel of the **Build Framing** dialog:
   - Uncheck **Use Wall Framing Material**.
   - Specify the desired **Stud Thickness** to be used plan wide.
   - Specify the desired **Stud Spacing** to be used plan-wide.
   - Check the box next to **Build Wall Framing**.
   - If you were to click OK, all of the wall framing in Chic Cottage would be deleted and replaced by studs spaced as specified here.
3. Because both 16" OC and 24" OC spacing is used in Chic Cottage, click Cancel to close the dialog without rebuilding any framing.

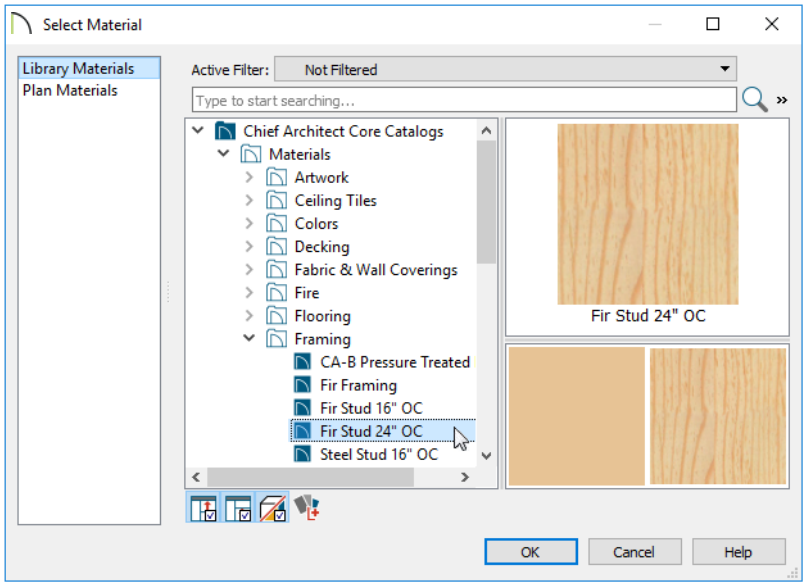
To specify stud spacing by wall type

1. Go **Down One Floor** to Floor 0.
2. Select **Build> Wall> Define Wall Types** .
3. In the **Wall Type Definitions** dialog:
   - Select the "8" Concrete with Furring" wall type from the drop-down list at the top left corner of the dialog.
   - Notice that the Material for Layer 3 is named "Fir Stud 16" OC".
   - Double-click on this layer name to open the **Select Material** dialog.
4. Go to the PLAN MATERIALS panel of the **Select Material** dialog and click the **Edit** button.
5. On the GENERAL panel of the **Define Material** dialog, notice:



- The **Material Type** is "Framing".
- The **Spacing OC** is 16".
- Modifying the properties of this material would affect it anywhere it is used in the plan, so click Cancel to close the dialog.

6. In the **Select Material** dialog:



- Notice that there is another "Fir Stud" material listed: "Fir Stud 24" OC".
- Select the "Fir Stud 24" OC" material.

7. Click OK to close all both dialogs.

8. Remember to **Save** your work.

Notice that the framing in the basement walls does not change. In order for it to update, it will have to be regenerated.

Regenerating Wall Framing

In order for changes to a setting like stud spacing to affect framing, the framing needs to be rebuilt. There are three ways that this can be accomplished:

- Check **Automatically Build Wall Framing** on the WALL panel of the **Build Framing** dialog.
- Check **Build Wall Framing** on the WALL panel of the **Build Framing** dialog.
- Use the **Build Framing for Selected Object(s)** edit tool.

When either Build Wall Framing or Automatically Build Wall Framing is checked in the Build Framing dialog, wall framing is generated plan-wide. This means that manually edited wall framing will be deleted and replaced unless precautions are taken.

To regenerate wall framing

1. Select **Build> Framing> Build Framing** , and on the WALL panel of the **Build Framing** dialog, check **Build Wall Framing** and click OK.
2. Notice that:
   - The spacing of the basement wall framing increases.
   - Although the "Walls, Foundation" layer is currently locked, it is still possible to make changes to these walls. If objects are on a locked layer, it only means that they cannot be selected.
3. Go **Up One Floor** to Floor 1.
4. **Zoom** in on the Porch and notice that the customized wall corner framing has been replaced.
5. Select **Edit> Undo** to undo the previous action and restore the wall corner framing.

To rebuild framing in selected walls

1. Go **Down One Floor** to Floor 0 and notice that the basement wall framing is spaced at 16" on center again.
2. Select **Tools> Layer Settings> Display Options** , and in the **Layer Display Options** dialog, unlock the "Walls, Foundation" layer.
3. Click the **Select Objects** button, then select the basement walls as a group:

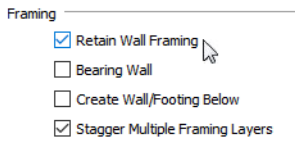
- Click on one of the basement walls to select it.
- Hold down the Shift key and click on the other walls that define the basement area to add them to the selection set.

4. When all six of the basement walls are selected, click the **Build Framing for Selected Object(s)** edit button.

Wall framing should only be edited when you are confident that you will not need to regenerate wall framing throughout the plan. To avoid losing your work, though, you can specify that a wall's framing not be rebuilt.

To retain wall framing

1. Go **Up One Floor** to Floor 1.
2. Select **Tools> Layer Settings> Display Options**, unlock the "Walls, Railings" layer, and click OK.
3. Click the **Select Objects** button, then click on the front railing of the Porch to select it.
4. Press the Shift key and click on the side Porch railing to add it to the selection set.
5. Click the **Open Object** edit button, and on the STRUCTURE panel of the **Railing Specification** dialog, check **Retain Wall Framing** and click OK.



6. Select **Build> Framing> Build Framing**, and on the WALL panel of the **Build Framing** dialog, check **Build Wall Framing** and click OK.
7. Notice that this time, the customized wall corner framing is not replaced.
8. When you are finished, **Save** your work.

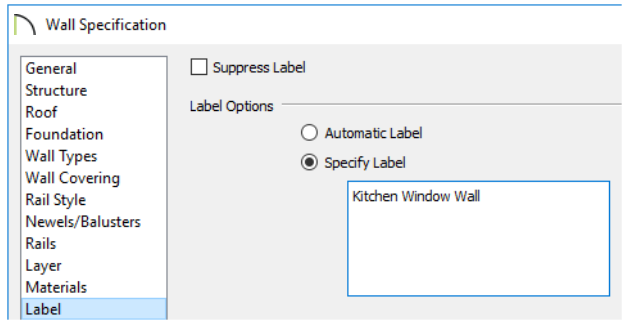
Working in Wall Details

Wall Details are a special type of view in which only the studs, plates and headers used to frame a selected wall display. For more information, see "In Wall Detail Views" on page 864 of the Reference Manual.

By default, Wall Details use the naming convention "Wall Detail - X", where X is simply a number. A more descriptive name can be assigned to any Wall Detail by customizing the associated wall's label.

To specify a Wall Detail's name

1. In floor plan view, click the **Select Objects** button, then click on the wall that contains the front door.
2. Click the **Open Object** edit button and on the LABEL panel of the **Wall Specification** dialog:

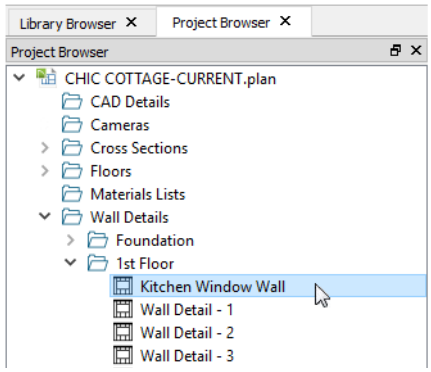


- Click the radio button beside **Specify Label**.
- Notice that the text field becomes populated by the name of the Wall Detail associated with the wall.
- Delete the default name and type a short description like "Kitchen Window Wall", then click OK.

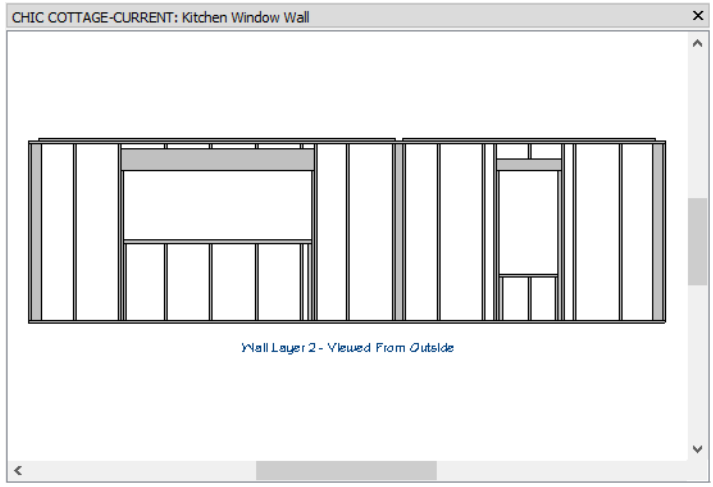
A Wall Detail can be opened in either of two ways: by selecting a wall and clicking the **Wall Detail** edit button, and using the Project Browser. See "Project Browser" on page 75 of the Reference Manual.

To find and open a Wall Detail view

1. If the Project Browser side window is not open, select **View> Project Browser** to open it.
2. If the Library Browser displays in front of the Project Browser, click on the Project Browser's tab to make it active.
3. Click the arrow next to "Wall Details" to expand a list of subfolders, one for each floor in the plan.
4. Click the arrow next to the "1st Floor" subfolder to expand a list of the Wall Details for all walls on Floor 1 of the CHIC COTTAGE-CURRENT plan.



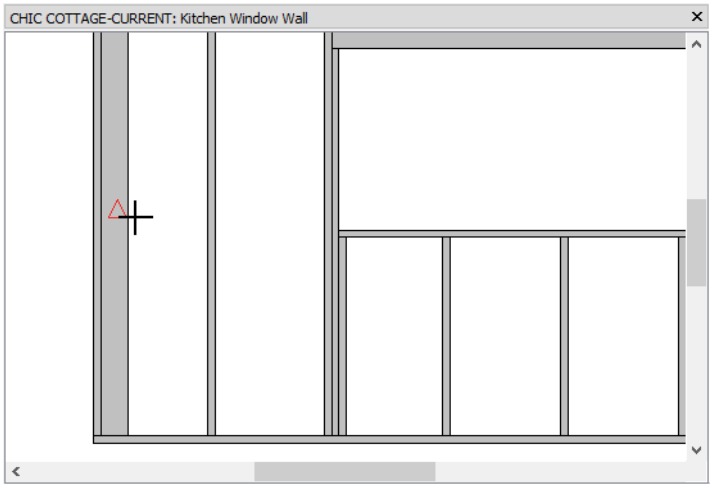
5. The "Kitchen Window Wall" detail should be the first item in the "1st Floor" folder. Right-click on it and select **Open View** from the contextual menu.



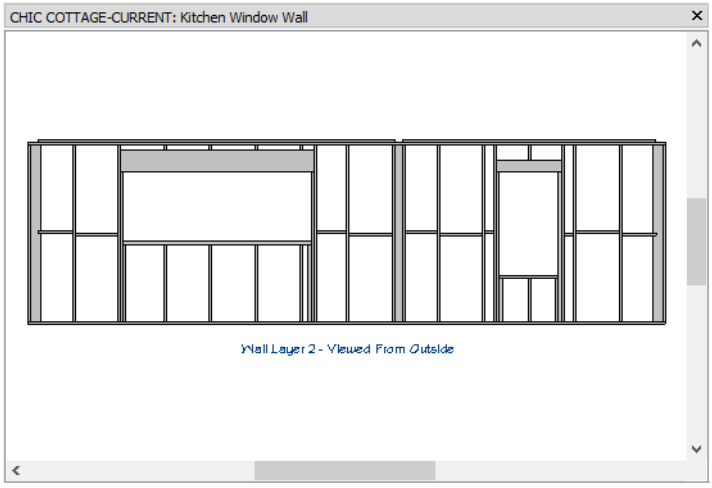
Wall framing can be selected and edited in a Wall Detail. Wall Details are also the only views in which Wall Bridging can be drawn. For more information, see “Wall Bridging” on page 841 of the Reference Manual.

To draw Wall Bridging in a Wall Detail

1. Select **Build> Framing> Build Framing**, and on the WALL panel of the **Build Framing** dialog, note that Blocking is set to draw **Staggered**, then click **Cancel**.
2. Select **Build> Framing> Wall Bridging**, then move your mouse pointer over the midpoint of either end wall stud.



3. When the Midpoint snap indicator displays, click and drag a horizontal line across the wall until you reach the side of the first window.
4. Repeat these steps to create blocking between the windows and at the other end of the wall.



5. When you are finished, select **File> Close View** and remember to **Save** your work.

If you rebuild wall framing after manually editing in a Wall Detail, your changes will be lost. To protect changes made to a wall's framing, check Retain Wall Framing in the Wall Specification dialog. See "To retain wall framing" on page 424.

Creating File Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed.

When you are finished working on a file and are ready to close it, **Save** your work. Before closing it, though, create a copy of the file with a different name that indicates what it contains so you can distinguish it from other revisions.

To save a plan revision

1. Select **File**> **Save As** .
2. In the **Save Plan File** dialog, make sure that the save location is your Chic Cottage folder.
3. For the File name, type a the name of the project followed by a short description of the current state of the drawing; for example, Chic Cottage-Wall Framing.

Review

This lesson describes the best practices for generating and editing wall framing.

- To generate wall framing
- To modify layer settings
- To edit wall studs
- To specify stud spacing for an entire plan
- To specify stud spacing by wall type
- To regenerate wall framing
- To rebuild framing in selected walls
- To retain wall framing
- To specify a Wall Detail's name
- To find and open a Wall Detail view
- To draw Wall Bridging in a Wall Detail

Assessment Questions

What is the one type of wall framing object that can be seen in floor plan view?

Where should wall stud spacing be set in most cases?

Where is the default rough opening size for doors and windows set?

What can you do to prevent objects on a particular layer from being selected?

What are two ways that manually edited wall framing can be protected when other wall framing needs to be rebuilt?

How is Wall Bridging drawn?

Chapter 21:

Roof and Ceiling Framing

Roof and ceiling framing are typically generated automatically and then edited as needed.

Learning Objectives

This lesson describes best practices in Chief Architect for generating roof framing. Concepts introduced include:

- Setting the Defaults
- Generating Roof Framing
- Modifying Roof Framing
- Editing Roof Framing
- Generating Ceiling Framing
- Editing Ceiling Framing

File Management

This tutorial continues where the Wall Framing tutorial left off. At this point, both the Chic Cottage-Wall Framing and CHIC COTTAGE-CURRENT plans contain the same information, so you could open either one and continue working. However, Chic Cottage-Wall Framing.plan was created specifically to serve as a revision or archive file so it will be left unchanged.

To continue working on the Chic Cottage project, select **File> Open Plan** . If need be, browse to Documents\Chic Cottage, select CHIC COTTAGE-CURRENT, and click Open.

Alternatively, select **File> Recent Files** and choose CHIC COTTAGE-CURRENT from the Recent Files List. The Recent Files List is a convenient way to access files you have been working on; however, it is not an alternative to knowing where your files are located and having a good file revision strategy in place. See “Creating File Revisions” on page 445.

It is a very good idea to save your files often as you work, and this guide reminds you to do so regularly.

Productivity Tips

As you learn how to create roof framing, keep in mind these tips to improve your productivity.

Drawing and Editing

- The **Paste Hold Position** tool lets you create a copy of an object at the identical position as the original, but on a different floor.
- Select a group of objects of the same type by activating the tool used to draw them, holding down the Shift key, and then drawing a selection marquee.

Content

- Create template plans that have your preferred structural defaults set and ready for use when you begin a new plan. See “Template Files” on page 97 of the Reference Manual.
- Template plans can also include custom Layer Sets.

Interface

- When drawing and editing framing, it may be helpful to turn off **Grid Snaps** . **Object Snaps** , however, should be left on.
- Tiling 2D and 3D views can help in the positioning of objects like posts.

Keyboard Hotkeys

- F1 - Help for the current context
- Spacebar - Select Objects
- F9 - Reference Floor Display
- Ctrl + E - Open Object edit tool
- Ctrl + S - Save

Setting the Defaults

In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. Setting defaults early can improve efficiency and also helps to avoid introducing errors into the drawing. When adding roof framing to a plan, there are several defaults of particular importance.

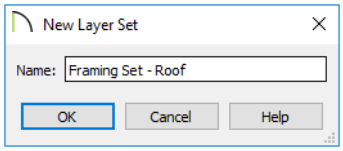
Primarily, since roof framing generates inside of the roof planes, it is important that the roof be completely correct before you build roof framing. If you design a roof and then later on decide that its structure needs to be changed, you need to either edit the roof planes or rebuild the roof. See “Roof Framing Defaults” on page 725 of the Reference Manual.

Before generating framing, place a Framing Reference Marker to set where framing layout is pulled from. See "To place a Framing Reference Marker" on page 399 of the Floor Framing Tutorial.

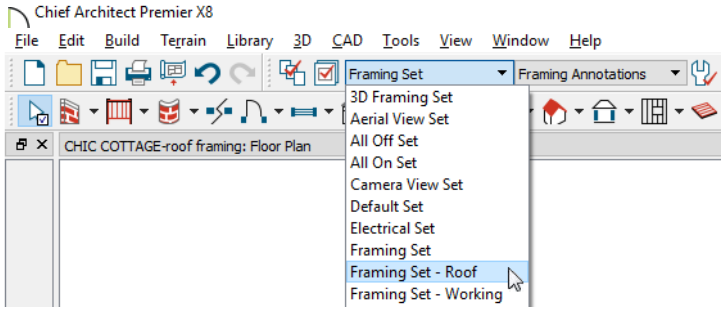
As with other types of framing objects, when working on roof and ceiling framing it is often helpful to toggle Grid Snaps off. Object Snaps, however, should be toggled on. See "To set the Snap Settings" on page 397 of the Floor Framing Tutorial.

To create and use a custom Layer Set

1. Select **Tools> Layer Settings> Display Options** , and in the **Layer Display Options** dialog:
   - Make sure that the "Framing Set" is selected in the Layer Sets drop-down list at the top of the dialog.
   - Click the **Copy Set** button to the right of the drop-down.
2. In the **New Layer Set** dialog, type a short, descriptive **Name** for the new Layer Set, such as "Framing Set - Roof" and click OK.



3. Returning to the **Layer Display Options** dialog:
   - Turn off the display of the "Doors, Labels" layer.
   - Turn off the display of the "Framing, Floor Joists" layer.
   - Turn off the display of the "Windows, Labels" layer.
4. Click the **Active Layer Set Control** drop-down and select "Framing Set - Roof" from the list.



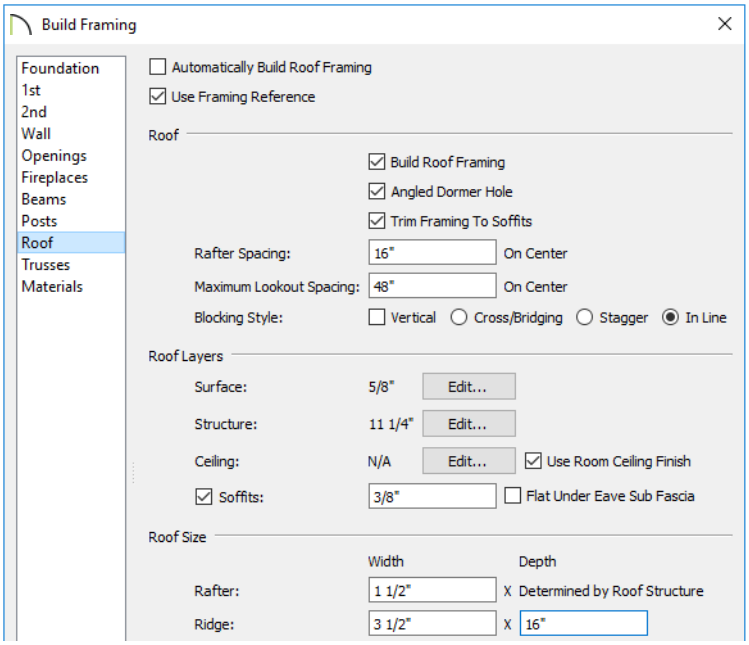
5. Notice that the display of the floor joists and the door and window labels is turned off.
6. **Save** your work.

Generating Roof Framing

Roof defaults can be set in both the Framing Defaults and the Build Roof dialogs. See “Roof Framing Defaults” on page 725 of the Reference Manual.

To generate roof framing

1. Select **Build> Roof> Build Roof** .
2. On the STRUCTURE panel of the **Build Roof** dialog:
   - Check **Use Framing Reference**.
   - Specify the **Spacing** as 16" on center.
   - Under the Roof Layers heading, click the **Edit** button to the right of **Structure**.
3. In the **Roof Structure Definition** dialog, increase the depth of the framing to 11 1/4" and click OK.
4. Returning to the STRUCTURE panel:



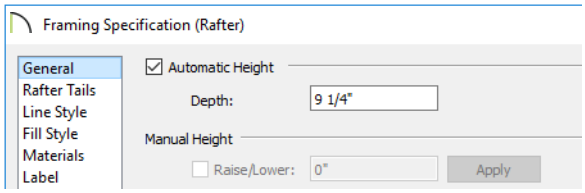
- Specify the **Width** of the **Ridge** board as 3 1/2" and its **Depth** as 16".
- Check the box beside **Build Roof Framing** and click OK

5. Note that a message warns that the changes made to the roof framing defaults will not affect the existing roof planes.
   - This will be addressed in the Modifying Roof Framing section, below.
   - Click OK to close the message box.

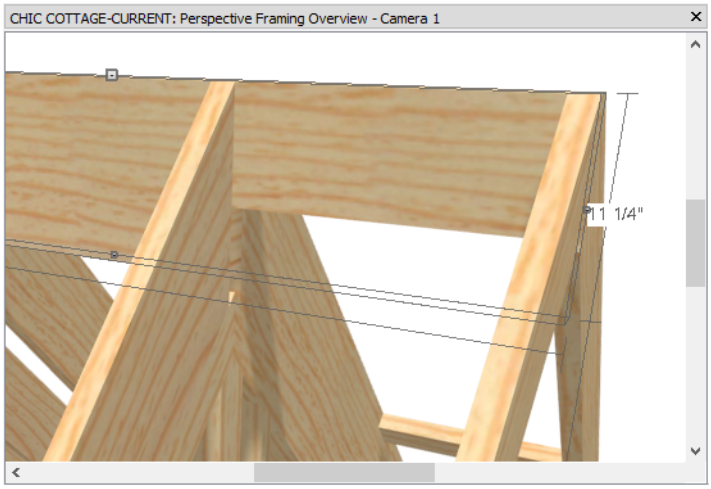
The meaning of the warning message becomes clear when the newly generated roof framing is examined. Roof framing can be viewed in both 2D and 3D views.

To examine roof framing

1. Click the **Select Objects** button, then click on a roof rafter to select it.
2. Click the **Open Object** edit button. On the GENERAL panel of the **Framing Specification (Rafter)** dialog, note that the **Depth** is 9 1/4" rather than the 11 1/4" specified above, then click Cancel.



3. Select **3D> Create Perspective View> Perspective Framing Overview** .
4. **Zoom** in on the ridge of the roof.
5. Click the **Select Objects** button, then click on the ridge board to select it. Notice that a Temporary Dimension reports its depth as 11 1/4" rather than the 16" specified above.



6. With the ridge board selected, click the **Open Object** edit button. On the GENERAL panel of the **Framing Specification (Rafter Ridge)** dialog, confirm that the **Depth** is 11 1/4" then click Cancel.
7. Select **File> Close View** and **Save** your work.

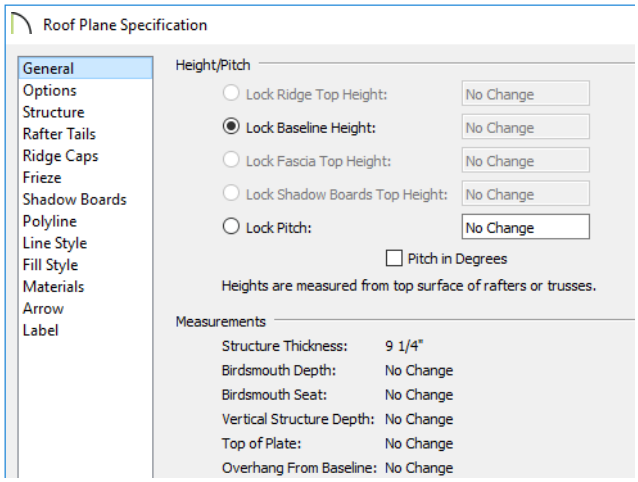
The reason why the roof framing does not reflect the current defaults is that the roof framing is generated based on the current state of the roof planes in the plan - not the defaults. The roof planes in this plan were created using earlier structural default settings and as a result, they have framing specifications that are different from the current defaults. In order to produce roof framing that does use the new defaults, the roof will need to be edited and the framing, rebuilt.

Modifying Roof Framing

In order to apply changes made to the roof framing defaults to the roof already drawn in a plan, the roof must either be rebuilt, or edited. Since Chic Cottage's roof planes have been manually edited, it will be more efficient to edit the existing roof planes.

To modify the entire roof structure

1. Select **Build> Roof> Edit All Roof Planes** .
2. On the GENERAL panel of the **Roof Plane Specification** dialog:



   - Notice that most of the values are reported as "No Change".
   - This is because this dialog is shared by all roof planes in the plan: as though they had been group-selected.
3. On the STRUCTURE panel:
   - Specify the **Rafter Spacing** as 16".
   - Click the **Edit** button to the right of **Structure** and specify the framing depth as 11 1/4".
   - Specify the **Ridge Width** as 3 1/2" and its **Depth** as 16".
4. Also on the STRUCTURE panel, check the box beside **Build Roof Framing**, then click OK to close the dialog, apply your changes to the roof planes, and rebuild roof framing.
5. Select a roof rafter and the ridge board to confirm their new sizes. See "To examine roof framing" on page 433.

A similar approach can be used to modify the framing for a single roof plane. An easy way to select a roof plane when roof framing displays is using the Roof Plane tool.

To modify a single roof plane's structure

1. Select **Build> Roof> Roof Plane**, then click on the roof plane over the Deck room to select it.
2. Click the **Open Object** edit button, and on the STRUCTURE panel of the **Roof Plane Specification** dialog:
   - Specify the **Rafter Spacing** as 24".
   - Click the **Edit** button to the right of **Structure** and specify the framing depth as 7 1/4".
   - Click OK to close the dialog and apply your changes to the selected roof plane.
3. With the roof plane still selected, click the **Build Framing for Selected Object(s)** edit button.
4. Select a roof rafter over the Deck to confirm its size. See "To examine roof framing" on page 433.
5. Remember to **Save** your work.

Editing Roof Framing

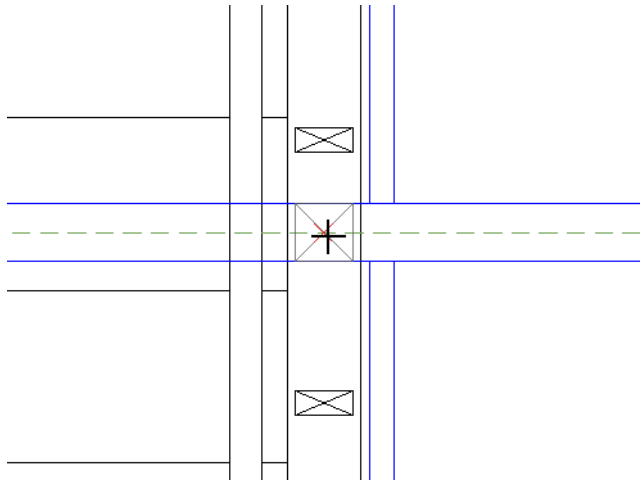
Like other types of framing, roof framing can be edited after it is created. Here, the ridge board will be divided in two and supported by posts where the two boards meet.

To set the Post defaults

1. Select **Edit> Default Settings** to open the **Default Settings** dialog. Select "Framing" and click the Edit button.
2. On the POSTS panel of the **Framing Defaults** dialog:
   - Notice that you can specify the defaults for post footings created using the Post with Footing tool.
   - Click the **Edit Post Defaults** button.
   - On the GENERAL panel of the **Post Defaults** dialog, confirm that the **Width** values are both 3 1/2" and click OK.
3. Click OK and then Done to close both dialogs.

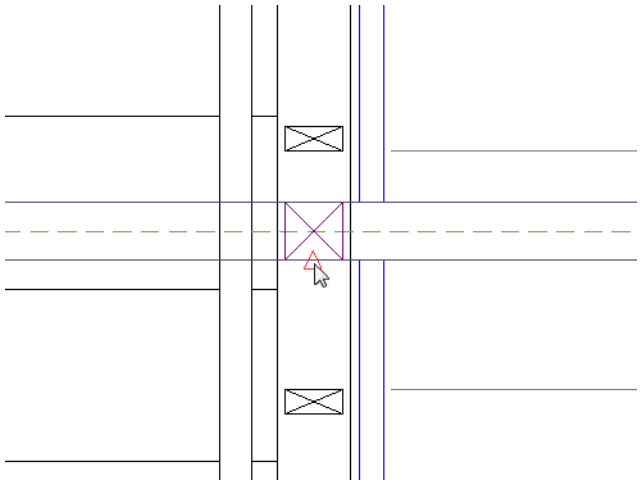
To break the ridge beam over a post

1. **Zoom** in on the vertical wall on the right side of the Stairwell.
2. Select **Build> Framing> Post**, then:

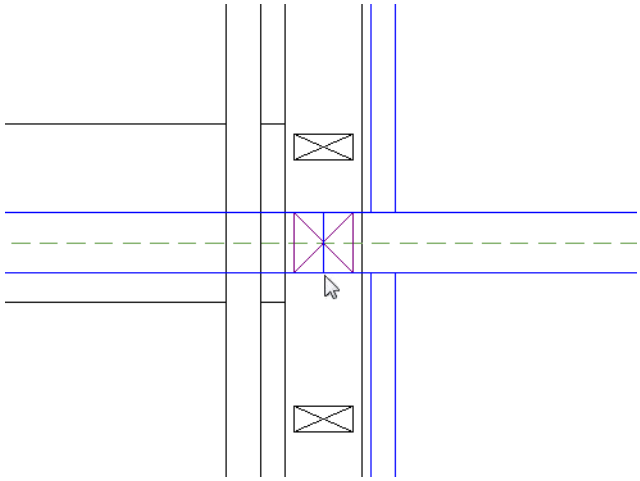


- Move your mouse pointer over the point where the roof ridge passes over the center of the vertical wall.
- When the **Intersection** Snap Indicator displays, click once to place a post that is centered in the wall and under the roof ridge.

3. Click the **Select Objects** button, then click on the horizontal ridge board that runs along the ridge of the roof.
   - If another object becomes selected instead, click the **Select Next Object** edit button.
   - When the ridge board is selected, the selected object will be described as a Rafter Ridge in the Status Bar.
4. Click the **Break Line** edit button, then:
   - Move your mouse pointer over the bottom edge of the post.



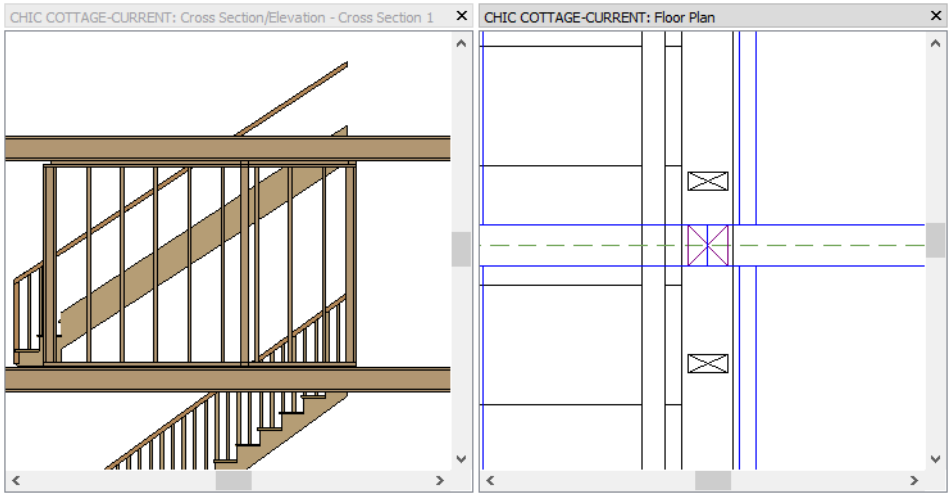
- When the **Midpoint** Snap Indicator displays, click once to break the ridge board in two along the center line of the post.



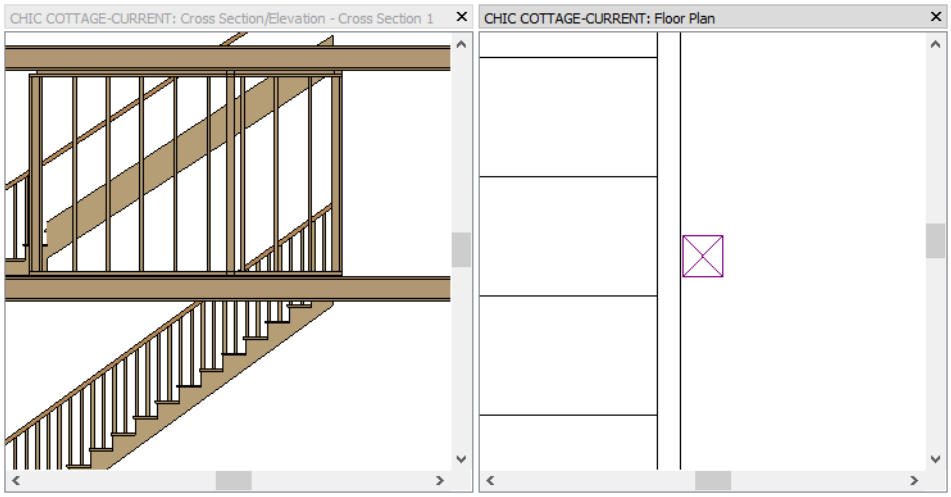
To stack load-bearing posts

1. Select **3D> Create Orthographic View> Backclipped Cross Section**, then click and drag a horizontal camera arrow pointed at the new post. Make sure that the camera arrow is perfectly horizontal and that it extends past the post.
2. Click the **Active Layer Set Control** drop-down in the top toolbar and select "3D Framing Set". Notice that now, only framing objects display in the cross section view.

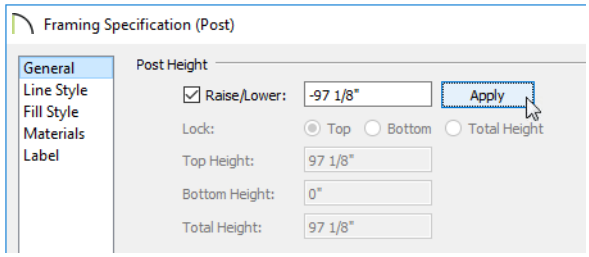
3. Select **Window> Tile Vertically** to tile the cross section and floor plan views side by side, then click in the floor plan to make it the active window.



4. Click the **Select Objects** button and click on the post to select it, then:
   - Select **Edit> Copy**.
   - Go **Down One Floor** to Floor 0.
   - Select **Edit> Paste> Paste Hold Position** to create a copy of the post in the same location as original.
5. Notice that although a new post has been created, it cannot be seen in the cross section. This is because although the post is on a different floor, it has the same absolute height as the original.



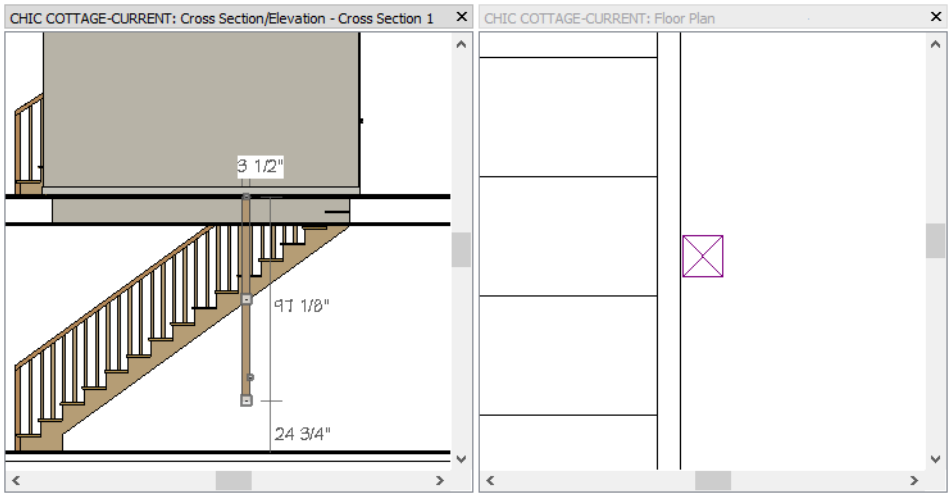
6. With the newly pasted post still selected, click the **Open Object** edit button. On the GENERAL panel of the **Framing Specification (Post)** dialog:



   - Notice that the **Top Height** is 97 1/8", which is the ceiling height for rooms on Floor 1.
   - Check the box beside **Raise/Lower** and type -97 1/8" in the text field.
   - Click the **Apply** button and notice that the **Top Height** is now 0".

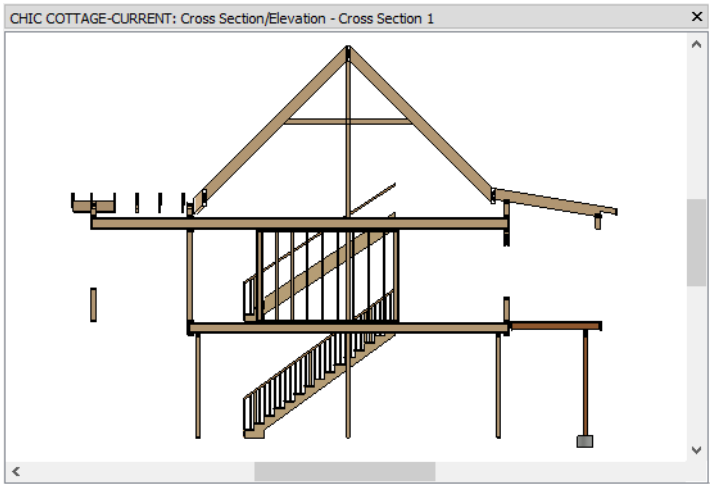
7. Click the **Active Layer Set Control** drop-down in the top toolbar and select "Section View Set" again. Notice that the post's bottom edge does not reach the slab.

8. Click in the cross section view to make it active, then click the **Select Objects** button and click on the post to select it. Next:



- **Zoom** in on the bottom of the new post.
- Use its edit handles to extend its bottom edge down until it snaps to the slab.

9. Repeat these steps to create a post on Floor 2 that extends up to support the ridge board. This time, **Raise/Lower** the post by a positive value of 97 1/8".



10. When you are finished, close the backclipped cross section view and **Save** your work.

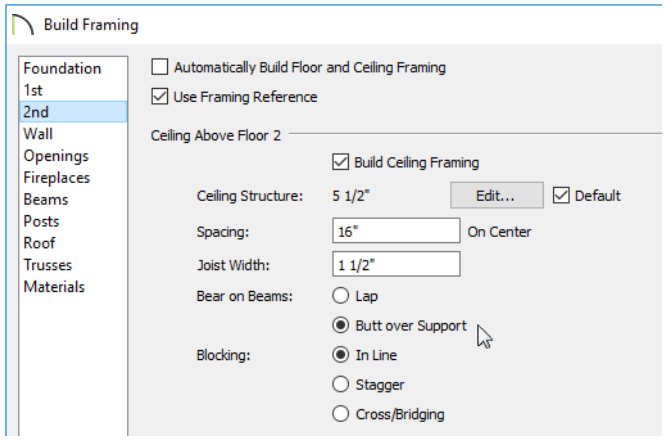
Generating Ceiling Framing

On Floors 0 and 1, all of the ceilings are supported by floor platforms. There is no living space above Floor 2, so the ceiling framing doesn't need to be as deep.

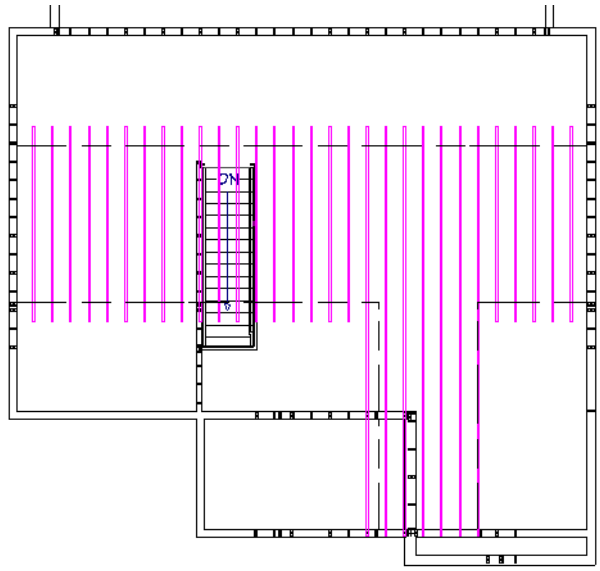
Framing defaults can be set in both the Framing Defaults and the Build Framing dialogs.

To generate ceiling framing

1. On Floor 2, notice that ceiling framing was generated earlier when **Automatically Build Floor and Ceiling Framing** was checked. See "To generate floor and ceiling framing" on page 400 of the Floor Framing Tutorial.
2. Select **Build> Framing> Build Framing** .
3. On the 2ND panel of the **Build Framing** dialog:



   - Check **Use Framing Reference**.
   - Check **Build Ceiling Framing**.
   - Specify the **Spacing** as 16" on center.
   - Select the radio button beside **Butt over Support**.
   - Click OK.
4. Notice that the ceiling joists are only generated in the area where a flat, full-height ceiling is present.



5. **Save** your work.

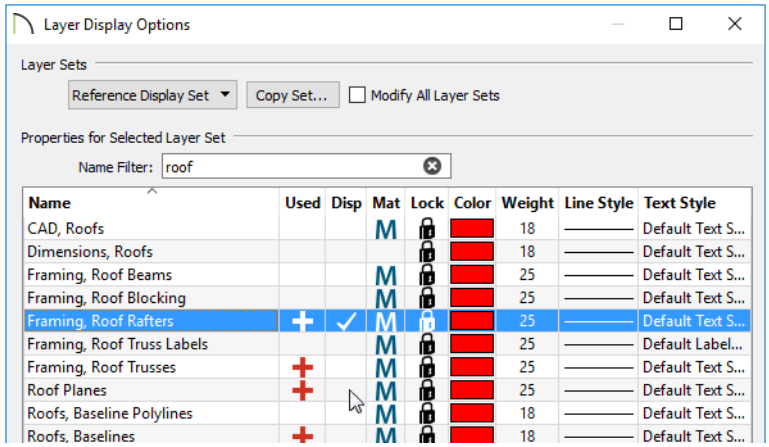
Editing Ceiling Framing

Ceiling joists can be edited in the same way that floor joists can. See "Editing Floor and Ceiling Framing" on page 409 of the Floor Framing Tutorial.

Here, the ceiling framing layout will be shifted so that the joists butt against the sides of the rafters rather than being aligned with their centers.

To customize the Reference Floor Display

1. Select **Window> Fill Window** or **Zoom** out until the entire floor plan can be seen.
2. Select **Tools> Reference Floors> Reference Floor Display**.
3. Select **Tools> Reference Floors> Reference Floor Display Options**.
4. In the **Layer Display Options** dialog, notice that the "Reference Display Set" is the selected Layer Set.
5. In the **Name Filter** field, type the word "roof", then:



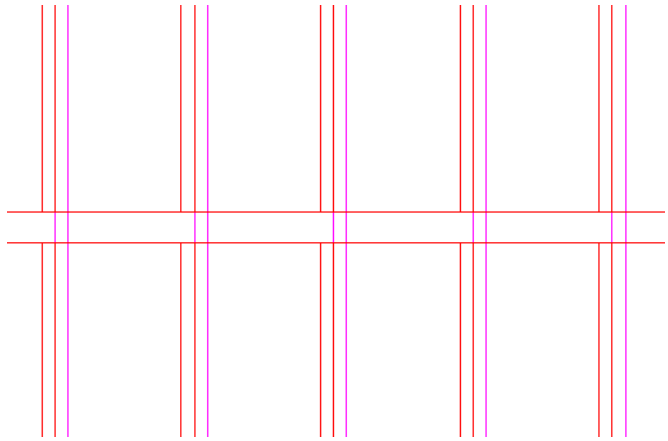
- Turn on the display of the "Framing, Roof Rafters" layer.
- Turn off the display of the "Roof Planes" layer.
- Click OK to close the dialog and apply your changes.

6. Notice that roof rafters are now represented in the Reference Floor Display, and that they are aligned with the ceiling joists.

The ceiling framing on Floor 2 can be easily selected while the Joist tool is active. See “Selecting Similar Objects” on page 213 of the Reference Manual.

To shift the ceiling framing layout

1. Select **Build> Framing> Joist**, then hold down the Shift key and click and drag a rectangular selection marquee around the drawing.
2. When you release the mouse button, notice that the Status Bar reports the number of objects that are selected.
3. To confirm that all of the selected objects are ceiling joists, click the **Open Object** edit button:
   - Note that the title of the dialog that opens is **Framing Specification (Ceiling Joist)**.
   - Click the Cancel button.
4. With the array of ceiling joists still selected, click the **Transform/Replicate Object** edit button. In the **Transform/Replicate Objects** dialog:
   - Check the box beside **Move**.
   - Specify the **X Delta** value as 1 1/2", then click OK.
5. **Zoom** in on the joists and confirm that they are now positioned against the sides of the rafters instead of being aligned with them.



6. When you are finished, **Save** your work.

Creating File Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed.

When you are finished working on a file and are ready to close it, **Save** your work. Before closing it, though, create a copy of the file with a different name that indicates what it contains so you can distinguish it from other revisions.

To save a plan revision

1. Select **File**> **Save As** .
2. In the **Save Plan File** dialog, make sure that the save location is your Chic Cottage folder.
3. For the File name, type a the name of the project followed by a short description of the current state of the drawing; for example, Chic Cottage-Floor Framing.

Review

This lesson describes the best practices for creating and editing roof and ceiling framing.

- To create and use a custom Layer Set
- To generate roof framing
- To examine roof framing
- To modify the entire roof structure
- To modify a single roof plane's structure
- To break the ridge beam over a post
- To stack load-bearing posts
- To generate ceiling framing
- To shift the ceiling framing layout

Assessment Questions

When roof framing is generated, are the current framing defaults used, or the current roof plane specifications?

What tool allows you to change the specifications of all roof planes at once?

What edit tool allows you to rebuild the framing for an individual roof plane?

What tool allows you to create a copy of an object at the same location as the original?

Landscaping Tutorials

The Landscaping Tutorials describe best practices for creating site plans and landscaping in Chief Architect:

- Site Plans
- Terrain Elevation
- Driveways, Sidewalks, and Roads
- Landscaping Design

Chapter 22:

Site Plans

A plot plan is essentially a map of a property's legal description. Plot plans usually have a North Pointer and can also include other features such as the location of buildings and setback lines.

Learning Objectives

This lesson describes best practices in Chief Architect for creating a plot plan. Concepts introduced include:

- Tracing a Lot Image
- Importing a DXF/DWG
- Drawing a Lot Perimeter
- Adding Setback Lines
- Converting a Plot Plan into Terrain
- Defining the Direction of North
- Positioning the Structure

File Management

This tutorial describes how to create a plot plan. Unlike other tutorials in this series, this process will be done in new plan rather than in CHIC COTTAGE-CURRENT.plan. This will allow the direction of North to be defined in two different ways: one, for the purposes of a site plan and one for all other purposes.

To save a new plan file

1. Select **File> New Plan** to open a new, blank plan.
2. Select **File**> **Save As** . In the **Save Plan File** dialog, browse to your Documents\Chic Cottage folder so that it is the Save location for your site plan file.
3. For the **File name**, type Chic Cottage-Plot Plan. and click the **Save** button.

It is a very good idea to save your files often as you work, and this guide reminds you to do so regularly.

Productivity Tips

As you learn how to create a plot plan, keep in mind these tips to improve your productivity.

Drawing and Editing

- Use the **Input Line** tool to create a series of lines with specific starting points, lengths and angles.
- Use the Concentric Edit Behavior to concentrically resize objects using in increments that you specify.

Interface

- The Number Style/Angle Style dialog controls how length and angle values are entered and display in dialogs and the Status Bar.
- Annotation Sets let you activate a set of defaults and layer settings for a specific purpose: for example, a plot plan. See “Annotation Sets” on page 93 of the Reference Manual.
- When drawing and editing a plot plan polyline, it may be helpful to turn off **Grid Snaps** . **Object Snaps** , however, should be left on.

Keyboard Hotkeys

- F1 - Help for the current context
- Spacebar - Select Objects
- Ctrl + E - Open Object edit tool
- Ctrl + S - Save

Setting the Defaults

In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. Setting defaults early can improve efficiency and also helps to avoid introducing errors into the drawing. When creating a plot plan, it is a good idea to set your CAD and Annotation Defaults in advance.

A plot plan is an example of a plan view that requires certain objects like site plan notes to display while others, like cabinets and furniture, do not. You can easily switch to a layer set specifically for plot plans, and enable defaults that place text, dimensions, and other annotations on special layers for that purpose. See “To set the Annotation Defaults” on page 451.

Before drawing a plot plan, it is helpful to set the General CAD Defaults to meet your needs for this task. See “To set the CAD Defaults” on page 452.

Tracing a Lot Image

One fast and easy way to create a lot perimeter is to import an image of the lot and then trace over it. To see a demonstration of the process, see the "Trace a Terrain Lot Image to Create a Site Plan or Terrain Perimeter" tutorial video at video.chiefarchitect.com.

Importing a DXF/DWG

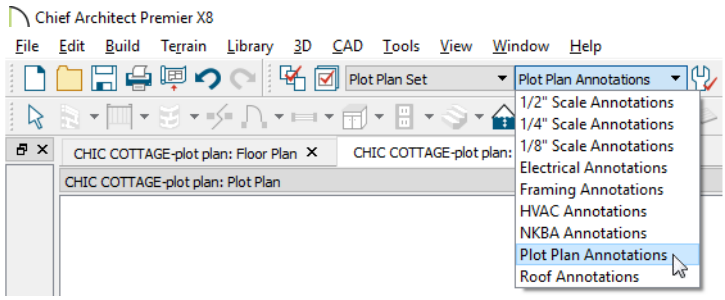
Often, plot plans and elevation data are available in DXF/DWG file format, which can be imported into Chief Architect. For more information, see “Import Drawing Assistant” on page 1176 of the Reference Manual.

Drawing a Lot Perimeter

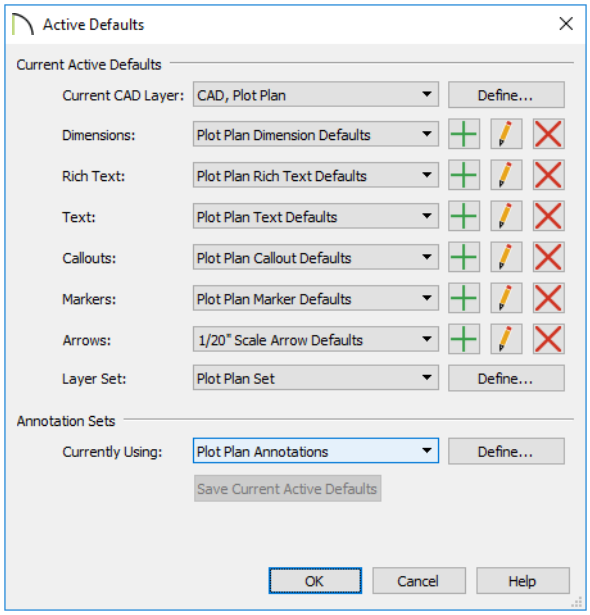
Plot plans can also be drawn using the CAD Tools. A plot plan can be drawn in floor plan view or, if you prefer, in a CAD Detail. See “CAD Details” on page 333 of the Reference Manual.

To set the Annotation Defaults

1. Click the **Active Annotation Set Control** drop-down in the top toolbar and select "Plot Plan Annotations" from the list.



2. Notice that the **Active Layer Set Control** drop-down to its left now lists "Plot Plan Set" as active.
3. To see what else has changed, select **Edit> Default Settings** and in the **Default Settings** dialog, select "Active Defaults" and click the **Edit** button.
4. In the **Active Defaults** dialog:

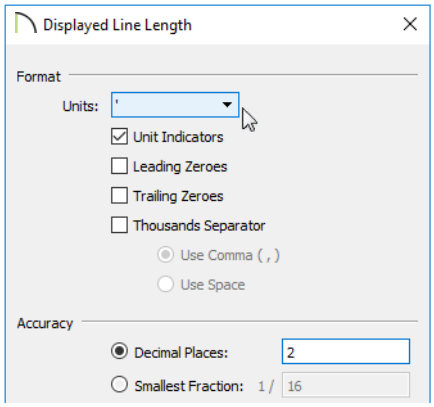


- Notice that most of the saved defaults listed under **Current Active Defaults** settings have "Plot Plan" in the name.
- This means that they are specifically set up for use in plot plans and will create objects on layers that only display when the Plot Plan Layer Set is active.
- Click Cancel to return to the **Default Settings** dialog.

For more information, see “Annotation Sets” on page 93 of the Reference Manual.

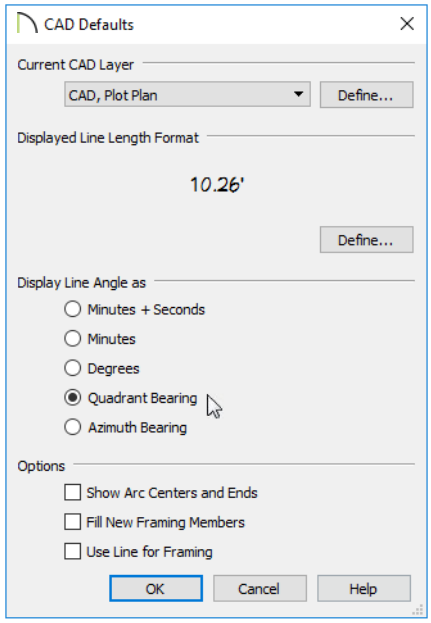
To set the CAD Defaults

1. In the **Default Settings** dialog, expand the CAD category, select "General CAD", and click the **Edit** button.
2. In the **CAD Defaults** dialog, click the **Define** button under the Displayed Line Length Format heading.
3. In the **Displayed Line Length** dialog:



- Click the **Units** drop-down and choose either "ft" or the ’ sign from the list.
- Select the **Decimal Places** radio button and specify 2 as the number of decimals.
- Click OK.

4. Returning to the **CAD Defaults** dialog, select the **Quadrant Bearing** radio button located under the Display Line Angle as heading.

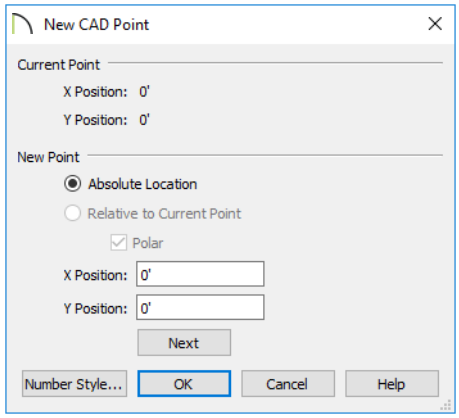


5. Click **OK**, then click **Done** to close both dialogs.

Before drawing a plot perimeter using the lot description, you need to indicate where you want the starting point to be located in your drawing area. Here, we will place it at the origin. See “3D Drafting” on page 32 of the Reference Manual.

To define the starting point

1. Select **CAD> Points> Input Point** to open the **New CAD Point** dialog. See “Input Point” on page 293 of the Reference Manual.



2. Select the **Absolute Location** radio button.
3. Specify both the **X** and **Y Position** of the point as 0. This will place the point at the origin of the drawing space: (0,0).
4. Click **OK** to close the dialog and create a point at (0,0). This is the Current Point that will serve as the Start Point for the first line of the plot plan.
5. Select **Window> Pan Window**, then click in the drawing area and drag up and to the right to bring the Current Point to the center of the view window.
6. For a better view of the plot lines as they are created, you can **Zoom** out a bit, as well.

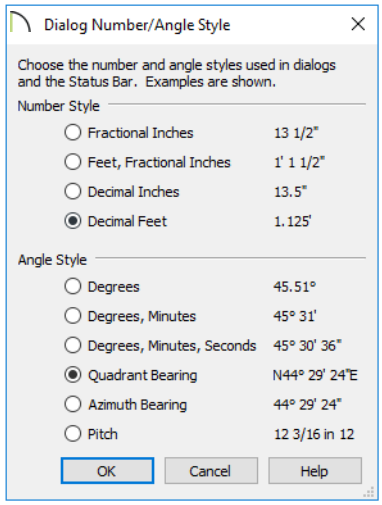
With the starting point of the property description in place, the lines can be added using the Input Line tool. See “Input Line” on page 297 of the Reference Manual.

In this example, this lot description is used:

Distance	Bearing	Radius
155.69’	N 61 25 10 E	---
118.65’	S 28 29 35 E	---
154.37	N 49 59 11 E	---
150.00	---	450’

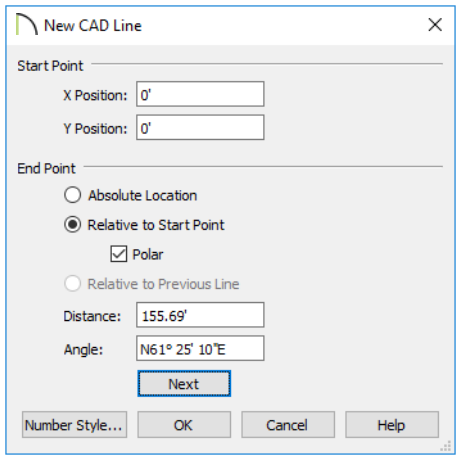
To create a plot plan polyline

1. Select **CAD> Lines> Input Line** to open the **New CAD Line** dialog.
   - Notice that the Start Point is at (0,0): the location of the Current CAD Point.
   - Click on the dialog’s title bar and drag it over to the side of the program window so it covers as little of the drawing window as possible.
2. Click the **Number Style** button and in the **Number Style/Angle Style** dialog:

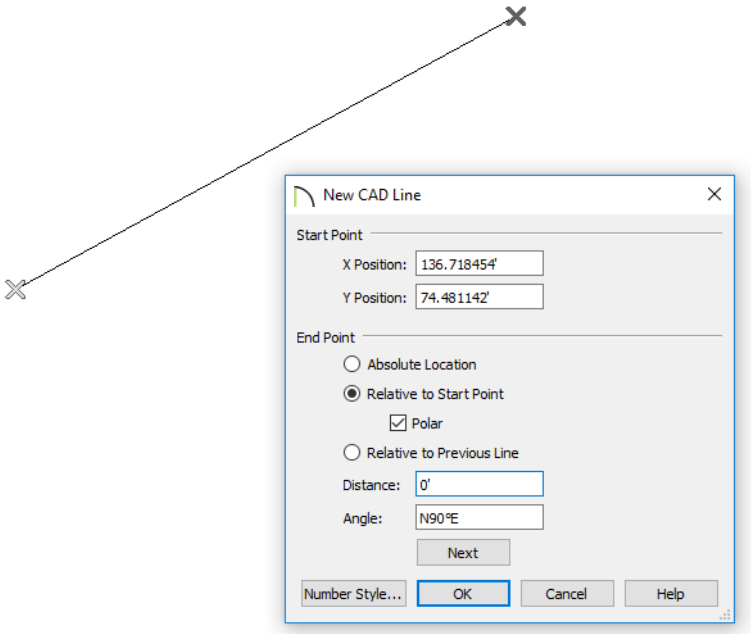


   - Select **Decimal Feet** as the Number Style;
   - Select **Quadrant Bearing** as the Angle Style. See “Dialog Number/Angle Style Dialog” on page 137 of the Reference Manual for more information.
   - Click **OK** to return to the **New CAD Line** dialog
3. Select **Relative to Start Point** and check the box beside **Polar**.
4. Using decimal feet, enter the length of the first side of the property boundary’s legal description in the **Distance** field.
5. Enter the direction of that line in the **Angle** field. To enter an angle using Quadrant Bearings, type:
   - The primary direction (N or S), followed by a space; then,

- The angle in degrees, minutes, and seconds with a space after each value; then,
- The secondary direction (E or W).
- Press the Tab key and notice that the program adds degree, minute, and second symbols automatically.



6. Click **Next** and notice:



- The **Start Point** is no longer (0,0).
- In the drawing area, a line now extends out from the point at (0,0).
- If you have zoomed out far enough, you can also see that there is a new CAD Point at the end of the line. This is the new Current Point.

7. Enter the **Distance** and **Angle** of the next property line and click the **Next** button.
8. Continue until all property lines are entered, then click **OK** to close the **New CAD Line** dialog.

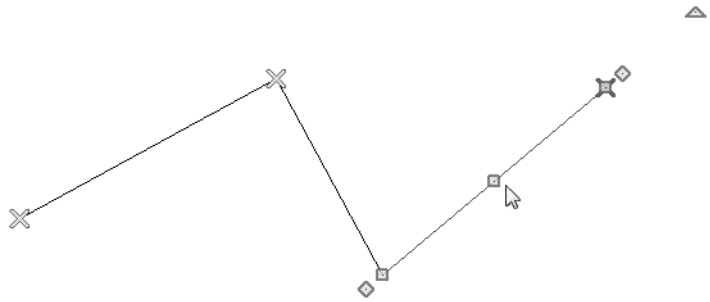
In most cases, the resulting polyline will be closed, with the end point of the last line the same as the start point of the first.

> Note: The angle of a given line can be described differently depending on which end is used as the start point. Some property descriptions proceed in the same direction around the perimeter, whereas some do not.

If you realize that a line is entered incorrectly or that its direction is reversed, you can easily correct the problem. Here, for example, the first two lines proceed in a clockwise direction around the perimeter while the third line is described in a counterclockwise direction.

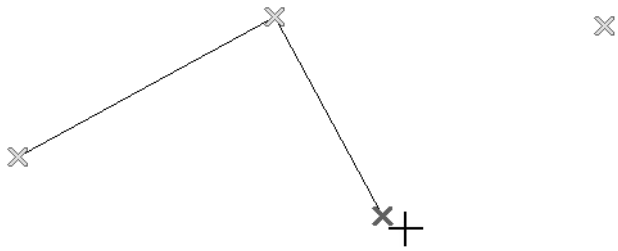
To correct an error

1. If a line is incorrect, click **OK** to close the **New CAD Line** dialog.
2. Select **CAD> Lines> Disconnect Edges**, then:



- Click on the incorrect segment to select it.
- Notice that it is the only segment along the polyline to display edit handles.

3. Click the **Delete** button to remove the problem edge.
4. Select **CAD> Point> Place Point**, then click at the end of the last correct line to create a new Current Point.



5. Select **CAD> Lines> Input Line** and continue entering data in the **New CAD Line** dialog.

If the direction of a lot line is reversed, simply enter the opposite direction letters to address it.

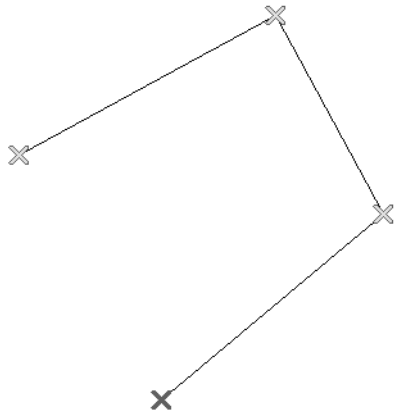
To reverse the direction of a property line

1. Select **CAD> Lines> Input Line**.
2. In the **New CAD Line** dialog, enter the **Distance** in decimal feet as normal.
3. Enter the reversed direction in the **Angle** field:
   - Type the reversed primary direction (S instead of N or N instead of S), followed by a space; then,
   - Enter the angle in degrees, minutes, and seconds with a space after each value; then,
   - Type the reversed secondary direction (W instead of E or E instead of W).
   - Here, S 69 40 44 W is entered instead of N 69 40 44 E.

The easiest way to create a curved property line is to draw it manually.

To create a curved property line

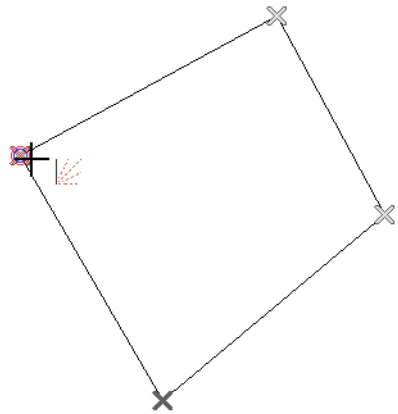
1. Use the **Input Line** tool to input all perimeter edges except for the curved edge, as described above.



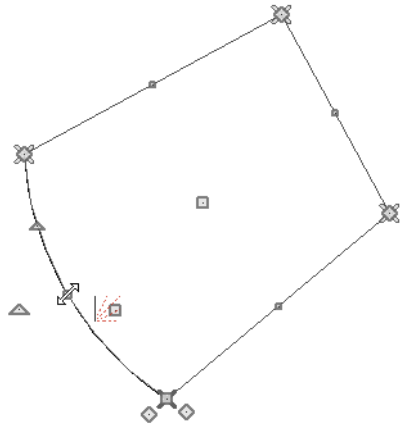
2. To ensure that the existing edges do not change length, temporarily toggle off Angle Snaps.

   - Select **Edit> Snap Settings> Angle Snaps** to remove the check mark from the tool icon.
   - Notice that the Angle Snaps icon now follows your mouse pointer to remind you that this important Snap Behavior is currently toggled off.

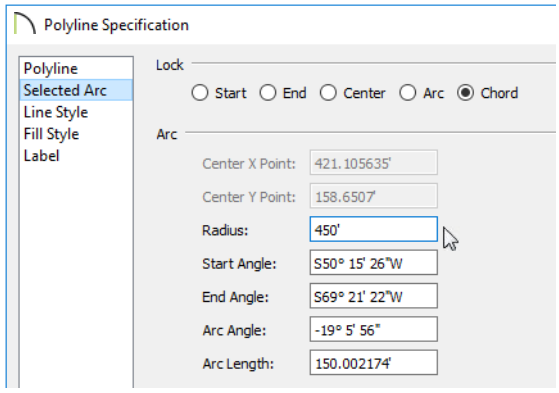
3. Select **CAD> Lines> Draw Line**, then move your mouse pointer over one the end points of the open polyline and drag a line to the other open end of the polyline.



4. Click on a property line to select it, then click the **Change Line/Arc** edit button to turn this line into an arc.



5. If necessary, use the triangular Reshape edit handle to make the arc curve in the same direction as the actual property edge. Here, the edge curves outward.
6. With the curved edge selected, click the **Open Object** edit button to open the **Polyline Specification** dialog.
7. On the SELECTED ARC panel:



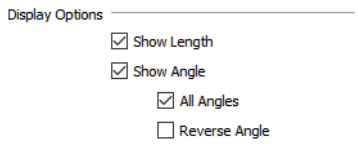
- Click the **Lock Chord** radio button.
- Specify the length of the **Radius**. Here, 450’ is used.
- Alternatively, the **Arc Length** could be entered.
- Click OK to close the dialog and apply your changes to the Selected Edge.

8. Select **CAD> Points> Delete Temporary Points** to remove the CAD points that were added as the plot plan was created.

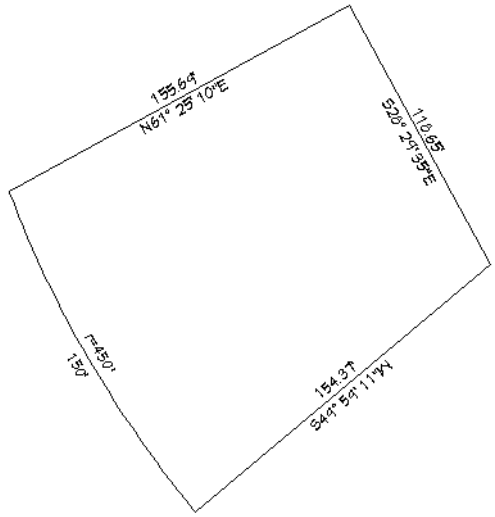
9. Select **Edit> Snap Settings> Angle Snaps** to turn Angle Snaps back on.

To display line length, bearing, and radius

1. Click the plot plan polyline to select it, then click the **Open Object** edit button.
2. On the LINE STYLE panel of the **Polyline Specification** dialog:



- Check **Show Length**, **Show Angle**,
- Make sure that **All Angles** is checked, then click OK.



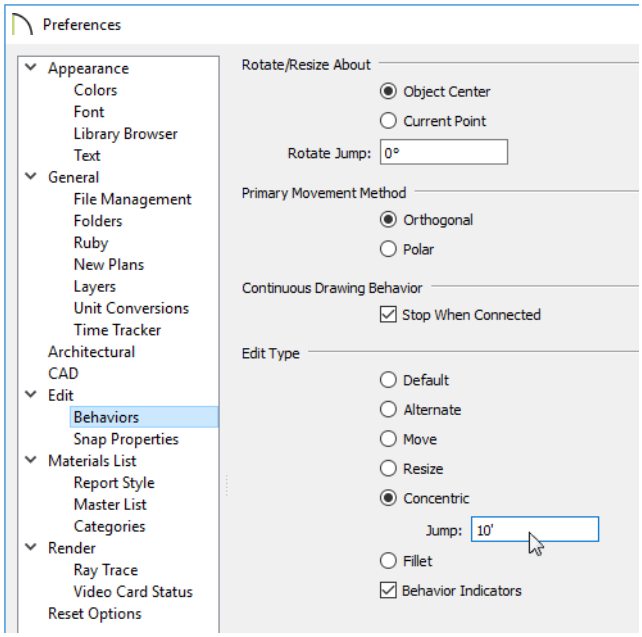
3. When you are finished, **Save** your work.

Adding Setback Lines

Setback lines can be added by creating a copy of the plot plan polyline that is resized using the Concentric Edit Behavior. See “Defaults, Preferences, and Edit Behaviors” on page 208 of the Reference Manual.

To create setback lines

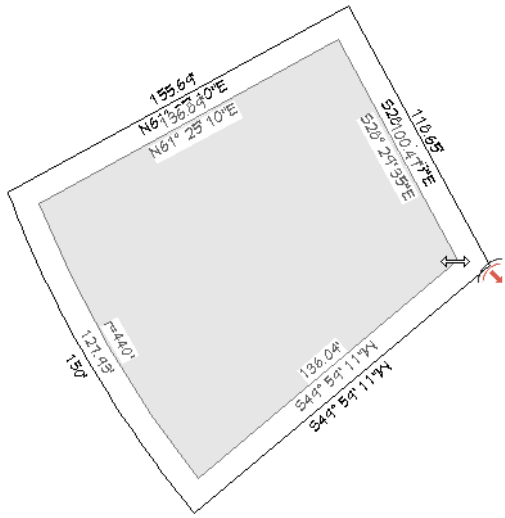
1. Select **Edit> Preferences** , and on the BEHAVIORS panel of the **Preferences** dialog:



   - Select the **Concentric** radio button under the Edit Type heading.
   - In the **Jump** field, type in the required setback distance, such as 10', and click **OK**.
   - When you return to floor plan view, notice that the **Concentric** tool icon follows your mouse pointer, reminding you that this alternative behavior is active.

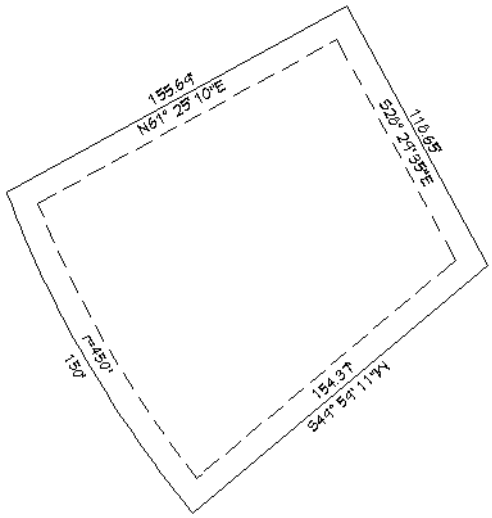
2. Click the **Select Objects** button, then click on the plot plan polyline to select it.

3. Click the **Copy/Paste** edit button, then:



- Move your mouse pointer over a corner edit handle,
- Click and drag towards the center of the polyline.
- When a second, inner polyline appears, release the mouse.

4. Select the inner polyline and click the **Open Object** edit button to open the **Polyline Specification** dialog. On the LINE STYLE panel:
   - Select a dashed line **Style** from the drop-down list.
   - Uncheck **Show Length** and **Show Angle**, then click **OK**.



5. When you have finished creating the concentric copy, select **Edit> Edit Behaviors> Default** to restore the default edit behavior.

If you want, you can place the setback polyline on its own custom layer so that its display can be controlled independent of the perimeter polyline. See “Layers” on page 184 of the Reference Manual.

To place the setback polyline on a new layer

1. Select **Tools> Layer Settings> Display Options** to open the **Layer Display Options** dialog.
2. Click the **New** button at the bottom of the dialog to open the **New Layer Name** dialog. Type a short, descriptive name such as "CAD, Setback Lines", then click OK.
3. Click OK to close the **Layer Display Options** dialog.
4. In floor plan view, select the setback line and click the **Open Object** edit button.
5. On the LINE STYLE panel of the **Polyline Specification** dialog, click the **Layer** drop-down, select new "CAD, Setback Lines" layer from the list, then click OK.
6. Remember to **Save** your work.

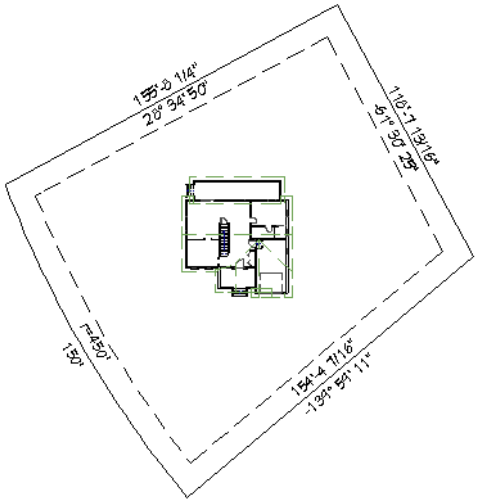
Converting a Plot Plan into Terrain

The plot plan drawn above is a 2D CAD object that will be useful in a site plan. It can also be converted in to a 3D Terrain Perimeter in which you can model the lot's slope and landscaping. For more information, see "Terrain Perimeter" on page 1200 of the Reference Manual.

So that the terrain and landscaping can be included in the same 3D model as the house, the plot plan perimeter must first be copied and pasted into the CHIC COTTAGE-CURRENT plan.

To copy the plot plan polyline into floor plan view

1. Click the **Select Objects** tool, then click on the plot plan perimeter to select it. Hold down the Shift key and click on the setback polyline to add it to the selection set.
2. With the two objects selected, select **Edit> Copy**.
3. Select **File> Open Recent Files** and select CHIC COTTAGE-CURRENT to open it.
4. In floor plan view, go to Floor 1. See "To navigate between floors" on page 67 of the Multiple Floors Tutorial.
5. Notice that "Framing Annotations" is selected in the **Active Annotation Set Control** drop-down, then select "Plot Plan Annotations" instead.
6. Select **Edit> Paste> Paste** then click in the drawing area near the house to place a copy of the two polylines.

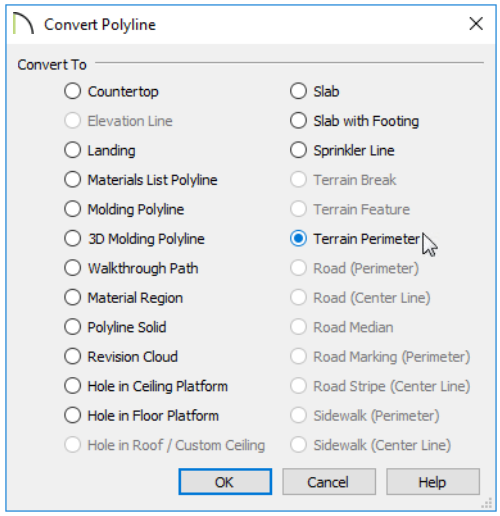


7. If you do not see both plot plan polylines, select **Window> Fill Window** or **Zoom** out until they come into view.
8. Notice, too, that the line lengths and bearings are specified in feet and inches and degrees rather than decimal feet and Quadrant Bearings.
   - This is because the settings in the CAD Defaults dialog, including the line length and angle formats, are view-specific.
   - Since this is not the plot plan drawing, these CAD Defaults do not need to be changed.

If you would like to use the Plot Plan perimeter polyline as your Terrain Perimeter, you must first delete the existing Terrain Perimeter created in the Decks and Porches tutorial.

To convert to a terrain perimeter

1. Select the existing Terrain Perimeter and **Delete** it.
2. Select the newly pasted plot plan perimeter polyline and click the **Convert Polyline** edit button. See "Convert Polyline" on page 266 of the Reference Manual.
3. In the **Convert Polyline** dialog, select **Terrain Perimeter**, then click OK.



4. When you are finished, **Save** your work.

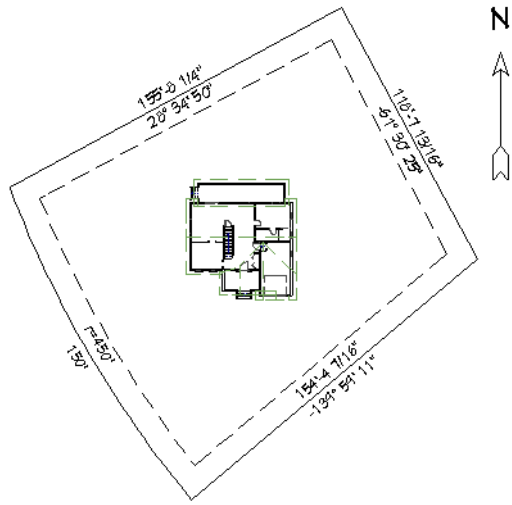
Defining the Direction of North

By default, North is assumed to be straight up on-screen, which is typical of most plot plans. Most building entrances do not face due South, however, so in CHIC COTTAGE-CURRENT, specifying a different direction for North will be necessary.

The North Pointer tool allows you to specify a different direction for North, and affecting the direction of sunlight and shadows, as well as where Quadrant Bearings are measured from. For more information, see “North Pointer” on page 1098 of the Reference Manual.

To add a North Pointer

1. Select **CAD> Lines> North Pointer** , then click and drag to create a North Pointer.
2. The North Pointer should initially be drawn so that it points straight up on-screen.
3. Notice that the bearings of the lot’s sides do not change when the North pointer is drawn straight up.



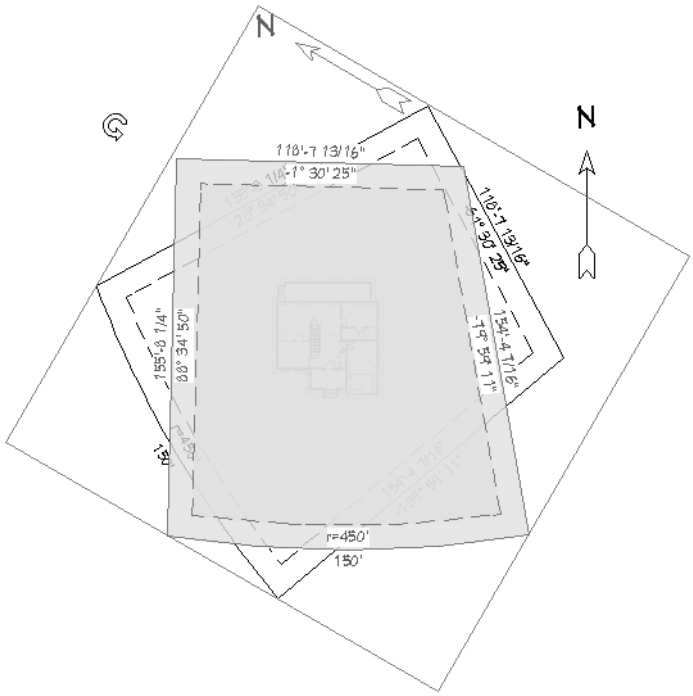
Currently, the back line of the lot is oriented at an angle on the right side of the polyline. It should, however, be parallel with the back of the house, or horizontal on-screen. The lot, setback lines, and North Pointer can be rotated together to achieve this.

To rotate the lot

1. Select the setback polyline, Terrain Perimeter, and North Pointer as a group:
   - Click the **Select Objects** button, then click on the setback polyline to select it.

- Hold down the Shift key and click on the plot plan perimeter to add it to the selection set.
- With the Shift key still pressed, click on the North Pointer to add it to the selection set, as well.

2. With these three objects selected, click the Rotate handle and drag in a counterclockwise motion until the back edge of the lot appears perpendicular on-screen.
3. To override Angle Snaps, hold down the Ctrl key while dragging.



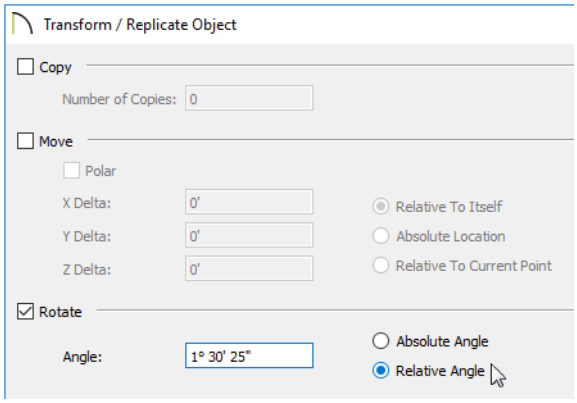
If you need to rotate the lot so that a particular edge is at an exact angle, use the Transform/Replicate Object edit tool. See “Transform/Replicate Object Dialog” on page 269 of the Reference Manual.

In this example, the back lot line needs to be parallel to the back wall of Chic Cottage.

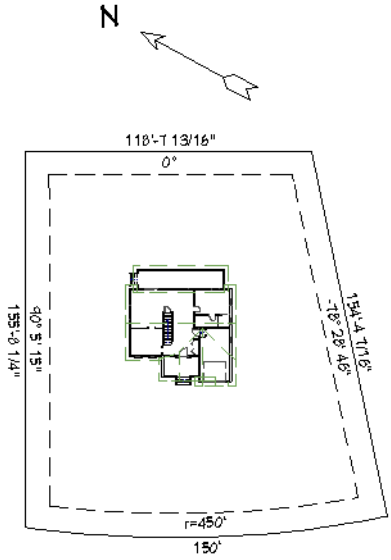
To rotate the lot to a specific angle

1. Make a note of the angle of the back lot line. Here, it is -1°30’ 25".
2. Select the setback polyline, Terrain Perimeter, and North Pointer as a group, as described above, and click the **Transform/Replicate Object** edit button.

3. In the **Transform/Replicate Object** dialog:



- Check the box beside **Rotate**.
- Click the **Number Style** button, and in the **Dialog Number/Angle Style** dialog, select **Degrees, Minutes, Seconds** as the Angle Style and click OK.
- Returning to the Transform/Replicate Object dialog, type 1 30 25 in the **Angle** field.
- Press the Tab key and confirm that the value updates to 1° 30’ 25"
- Make sure the **Relative Angle** radio button is selected and click OK.



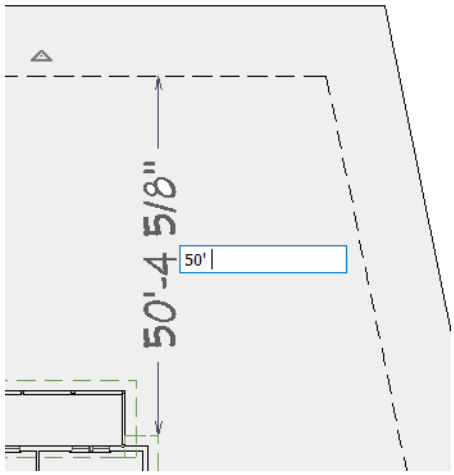
4. Before moving on, be sure to **Save** your work.

Positioning the Structure

If a point on the building needs to be located a particular distance from the lot line, or at a particular point relative to a lot corner, the lot lines can now be moved to meet that requirement. Here, the lot will be positioned so that the main roof at the back right corner is 50’ from the back setback line, and 30’ from the right setback line.

To position a structure using dimensions

1. **Zoom** in on the back right portion of the lot so that the back setback line and the back corner of the main roof can be clearly seen.
2. Select **CAD> Dimensions> End to End Dimension**, then click and drag a dimension line from the roof corner to the setback line.
3. Click the **Select Objects** button, then click on the setback polyline to select it. Hold down the Shift key and click on the Terrain Perimeter to add it to the selection set.
4. With the two objects selected, click on the End to End Dimension line.



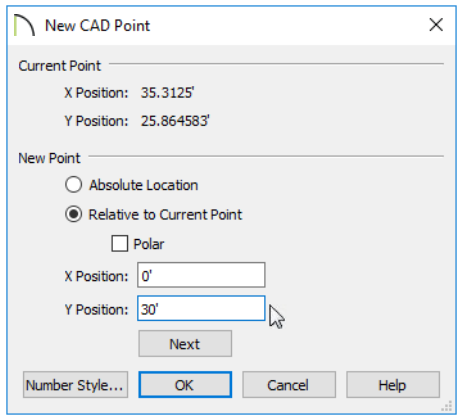
5. In the inline text field, type 50’ and press the Enter key.

When the roof line or wall in question is not parallel to the setback line that it needs to be measured from, a different method can be used.

To position a structure using CAD points

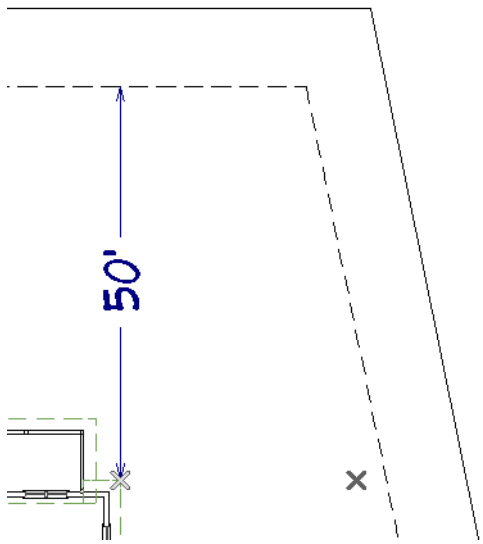
1. Select **CAD> Point> Place Point**, and then click at a reference point along the perimeter of the building or, as in this example the corner of the roof.

2. Select **CAD> Points> Input Point** to open the **New CAD Point** dialog.

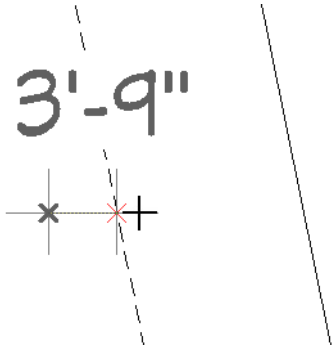


- Select **Relative to Current Point**.
- Make sure that **Polar** is unchecked.
- Using the **X Position** and **Y Position** fields, specify the distance that a known point on the property line should be from the Current Point placed in step 2.
- Here, a value of 30’ is specified for the **Y Position**.

3. When you click **OK**, a point is created at the specified location. Use this point as a reference to accurately position the setback lines and Terrain Perimeter.

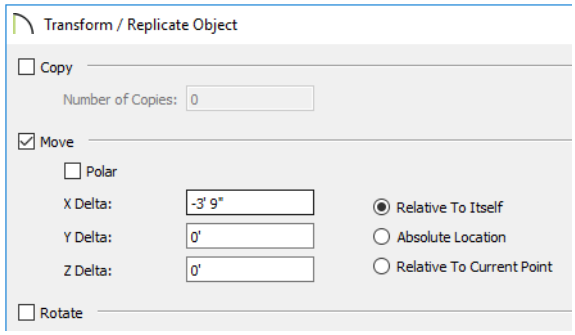


4. Select **CAD> Dimensions> Tape Measure**, then:



   - Click and drag a temporary dimension line the Current Point to the setback line.
   - Make a note of the distance. Here, it is 3’ 9".

5. Click the **Select Objects** button, then click on the setback polyline to select it. Hold down the Shift key and click on the Terrain Perimeter to add it to the selection set.
6. With the two objects selected, click the **Transform/Replicate Object** edit button.
7. In the **Transform/Replicate Object** dialog:



   - Uncheck the box beside **Rotate**.
   - Check the box beside **Move**.
   - Specify the distance that you need to move the selected objects in the **X Delta** or **Y Delta** field.
   - Here, the **X Delta** is specified as - 3’ 9". A negative value is used because the selected objects need to move to left, or in the negative direction along the X axis.

8. Press the Tab key and notice that the value changes to -3.75’. This is because Decimal Feet is still the specified Number Style.
   - Click the **Number Style** button and change the Number Style to **Fractional Inches**.

- Change the Angle Style to **Degrees**, as well.
- Click OK to close both dialogs and apply your changes.

9. When you are finished, **Save** your work.

Creating File Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed.

Currently, there are two files open: Chic Cottage - Plot Plan and CHIC COTTAGE CURRENT. Chic Cottage - Plot Plan is a special file created specifically for the purpose of drawing a plot plan. Click on its tab to make it the current view, select **File> Save** and then **File> Close View**.

Next, with CHIC COTTAGE-CURRENT open, **Save** your work. Before closing it, though, create a copy of the file with a different name that indicates what it contains so you can distinguish it from other revisions.

To save a plan revision

1. Select **File**> **Save As** .
2. In the **Save Plan File** dialog, make sure that the save location is your Chic Cottage folder.
3. For the File name, type a the name of the project followed by a short description of the current state of the drawing; for example, Chic Cottage-Lot Lines.

Review

This lesson describes the best practices for creating a plot plan. It also discussed the important default settings associated with drawing CAD objects. These defaults include Annotation Sets and CAD Defaults.

- To set the Annotation Defaults
- To set the CAD Defaults
- To define the starting point
- To create a plot plan polyline
- To correct an error
- To reverse the direction of a property line
- To create a curved property line
- To display line length, bearing, and radius
- To create setback lines
- To place the setback polyline on a new layer
- To copy the plot plan polyline into floor plan view
- To convert to a terrain perimeter
- To add a North Pointer

- To rotate the lot
- To rotate the lot to a specific angle
- To position a structure using dimensions
- To position a structure using CAD points

Assessment Questions

What is the name of the drawing tool that lets you define lines and arcs by entering their length and bearing?

Where can you specify that the length values in dialog boxes be entered using feet instead of inches?

In what dialog can you specify that the angles of polyline edges be described using Quadrant Bearings in floor plan view?

What Edit Behavior is useful for creating setback lines?

What tool allows you to change a CAD polyline into a Terrain Perimeter?

What edit tool can be used to rotate the Terrain, setback lines, and North Pointer to a specific angle?

Chapter 23:

Terrain Elevation

Adding elevation data to a plan allows you to model sloping terrain.

Learning Objectives

This lesson describes best practices in Chief Architect for creating sloped terrain. Concepts introduced include:

- Adjusting the Building Pad Height
- Importing Elevation Data
- Drawing Elevation Data
- Controlling the Terrain's Slope
- Adding a Retaining Wall

File Management

This tutorial continues where the Site Plans Tutorial left off. At this point, both the Chic Cottage-Lot Lines and CHIC COTTAGE-CURRENT plans contain the same information, so you could open either one and continue working. However, Chic Cottage-Lot Lines.plan was created specifically to serve as a revision or archive file so it will be left unchanged.

To continue working on the Chic Cottage project, select **File> Open Plan** . If need be, browse to Documents\Chic Cottage, select CHIC COTTAGE-CURRENT, and click Open.

Alternatively, select **File> Open Recent Files** and choose CHIC COTTAGE-CURRENT from the Recent Files List. The Recent Files List is a convenient way to access files you have been working on; however, it is not an alternative to knowing where your files are located and having a good file revision strategy in place. See "File Management" on page 18 of the Exterior Walls Tutorial.

It is a very good idea to save your files often as you work, and this guide reminds you to do so regularly.

Productivity Tips

As you learn how to add elevation data to terrain, keep in mind these tips to improve your productivity.

Drawing and Editing

- The distance between two Elevation Lines with different Elevation values influences how steep the terrain not just between them but also beyond.
- Control the height of the building relative to the terrain using the Building Pad settings in the Terrain Specification dialog.

Content

- Site plans and elevation data are project-specific, but you can still leverage existing content to improve your efficiency by importing elevation data from DXF/DWG, text, and GPS files.

Interface

- An important angle like that of a lot line can be added to the list of Allowed Angles, making it easy to draw additional objects at that exact angle.
- Tiling 2D and 3D views is often helpful when drawing and editing Elevation Data.

Keyboard Hotkeys

- F1 - Help for the current context
- Spacebar - Select Objects
- ‘ - Layer Display Options
- Ctrl + E - Open Object edit tool
- Ctrl + S - Save

Setting the Defaults

In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. Setting defaults early can improve efficiency and also helps to avoid introducing errors into the drawing. When creating adding elevation data to a plan, it is a good idea to set your CAD and Annotation Defaults in advance.

Before Elevation Data can be drawn or imported, a Terrain Perimeter must be created. See "Converting a Plot Plan into Terrain" on page 465 of the Site Plans Tutorial.

When working with Elevation Data, it is helpful make sure Object Snaps are toggled on. Select **Edit> Snap Settings>** and confirm that there is a small check mark in the icon to the left of **Object Snaps** . For more information, see “Object Snaps” on page 168 of the Reference Manual.

In the Site Plans Tutorial, a lot perimeter with accurately angled sides was created and then copied into the CHIC COTTAGE-CURRENT plan. When adding elevation data to this plan, being able to snap to those specific angles can be useful.

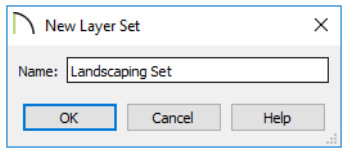
To specify Allowed Angles

1. Select **Edit> Default Settings** , and in the **Default Settings** dialog click on "Plan" in the list and click the **Edit** button.
2. In the **General Plan Defaults** dialog, click the **Number Style** button and in the **Dialog Number/Angle Style** dialog, select **Quadrant Bearings** as the **Number Style** and click OK.
3. Returning to the **General Plan Defaults** dialog:
4. Under the Allowed Angles heading, click the radio button beside **7 1/2 Degrees and Additional Angles**.
5. In the first **Additional Angles** field, type the bearing of the angled perimeter line the right side of the lot: S50° 7' 10"W.
6. When you are finished, click the **Number Style** button and specify **Fractional Inches** as the **Number Style** and click OK.
7. Notice that the angle is now described in degrees.
8. Click OK and then Done to close both dialogs and apply your changes.

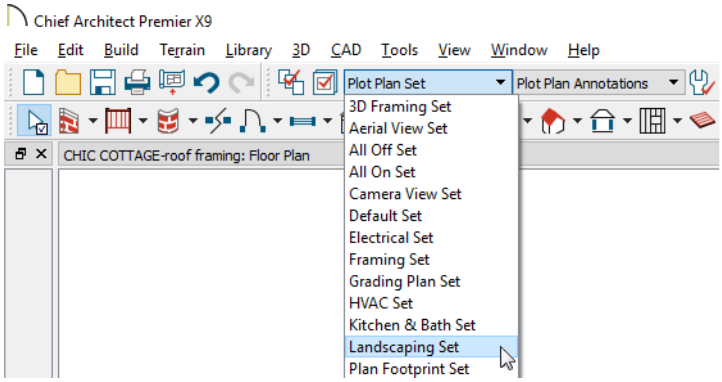
In the Site Plans Tutorial, the Plot Plan Annotations set was selected. For the purposes of adding elevation data, though, a modified layer set will be useful.

To create and use a custom Layer Set

1. Select **Tools> Layer Settings> Display Options** , and in the **Layer Display Options** dialog, click the **Copy Set** button.
2. In the **New Layer Set** dialog, type a short, descriptive **Name** for the new Layer Set, such as "Landscaping Set" and click OK.



3. Returning to the **Layer Display Options** dialog:
   - Turn on the display of the "Terrain, Primary Contours" layer.
   - Turn off the display of the "Roof Planes" layer, then click OK.
4. Click the **Active Layer Set Control** drop-down and select "Landscaping Set" from the list.



5. Notice that the **Active Annotation Set Control** drop-down now reports "Using Active Defaults". This simply means that all of the conditions associated with the Plot Plan Annotations are not currently active - in this case, the layer set. See “Using Active Defaults” on page 94 of the Reference Manual.
6. **Save** your work.

Adjusting the Building Pad Height

When a Terrain Perimeter was created in the Decks and Porches Tutorial, the Building Pad Elevation was set 28" below the main floor level. See "To create a terrain perimeter" on page 129 of the Decks and Porches Tutorial

That original terrain was deleted and replaced in the Site Plans Tutorial, but the original Building Pad Elevation places the terrain just below the garage floor and should still be used

To set the building pad elevation

1. Select **Terrain> Terrain Specification** .
2. On the GENERAL panel of the **Terrain Specification** dialog:

   - Under the Building Pad heading, uncheck **Automatic**.
   - Specify the **Subfloor Height Above Terrain** as 28", then click OK.
   - This will place the terrain 28" below the first floor's subfloor and about 1" below the slab floor in the Garage.
3. **Save** your work.

Importing Elevation Data

Elevation data for a given parcel is often available in electronic format from a surveyor or assessor's office. Importing this data can save considerable time in developing a 3D model of the terrain. See "Importing Elevation Data" on page 1230 of the Reference Manual.

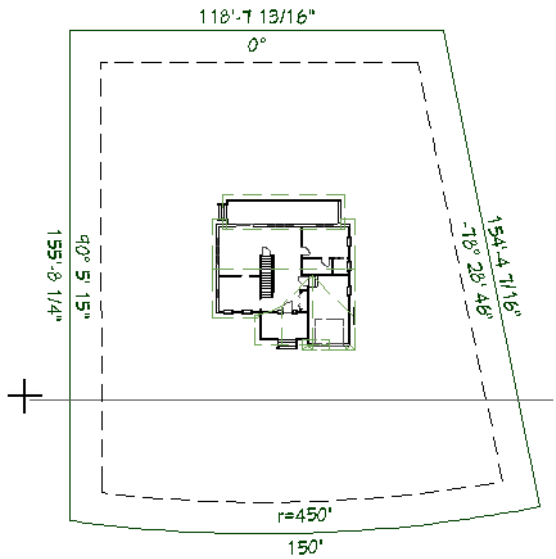
Elevation data can be imported from files of several different formats, as the "Importing Terrain Elevation Data" video explains at www.chiefarchitect.com/videos/.

Drawing Elevation Data

Elevation data can be added to a plan using the Elevation Data Tools.

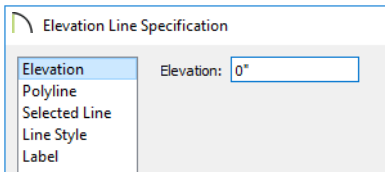
To draw an Elevation Line

1. Go to Floor 1 and select **Window> Fill Window** or **Zoom** out until the Terrain Perimeter can be seen.
2. Select **Terrain> Elevation Data> Elevation Line**, then:

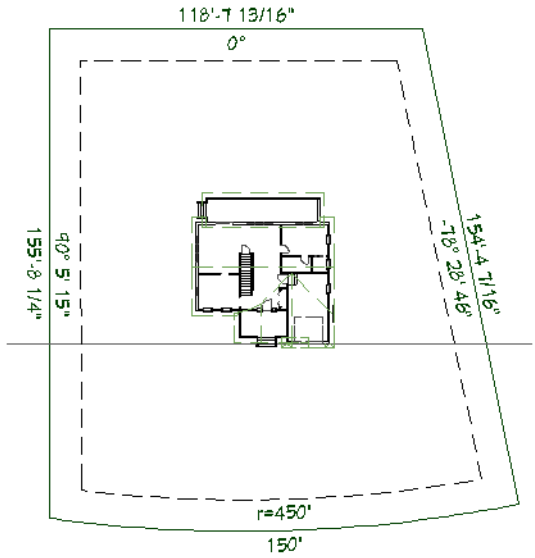


- Click and drag to draw a horizontal line across the entire Terrain Perimeter.
- The Elevation Line can snap to the edges of the Terrain Perimeter or it can extend past the edges.
- Here, the Elevation Lines extend past the edges because they are easier to see and select.

3. Select the Elevation Line and click the **Open Object** edit button.
4. On the GENERAL panel of the **Elevation Line Specification** dialog, note that its **Elevation** value is 0".



5. Because Elevation Data is often described using feet and inches, click the **Number Style** button and in the **Number Style/Angle Style** dialog:
   - Select **Decimal Feet** as the Number Style.
   - Click OK to close both dialogs.
6. With the Elevation Line still selected:



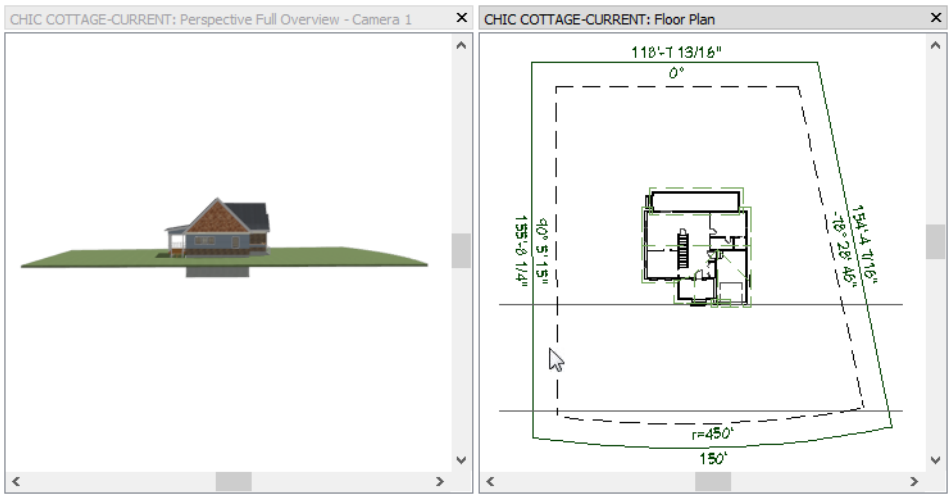
   - Use its Move edit handle to snap it to the front wall of the Garage.
   - Press the Down Arrow key once to move it 1" from the wall.

Sometimes, Elevation Data can be best worked on and understood when 2D and 3D views are tiled.

To create a slope

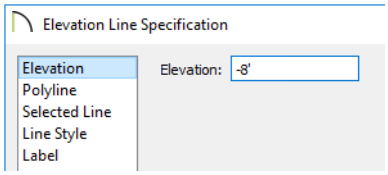
1. Select **3D> Create Perspective View> Perspective Full Overview** .
2. Select **Window> Tile Vertically** to tile the overview and floor plan views side by side.
3. Click and drag with the **Mouse-Orbit Camera** tool active to orbit the camera around to the right side of the model so you can better see the slope as it is created.
4. Click in the floor plan view to make it active, then click the **Select Objects** button and click on the Elevation Line to select it.

5. Create a copy of the Elevation Line:



- Click the **Copy/Paste** edit button.
- Click the line's Move edit handle and drag downward towards the bottom of the Terrain Perimeter.
- When the mouse pointer is between the bottom setback line and the edge of the terrain, release the mouse button to create a copy of the Elevation Line at that location.
- Notice that in the 3D Overview window, no change is made to the terrain's slope.

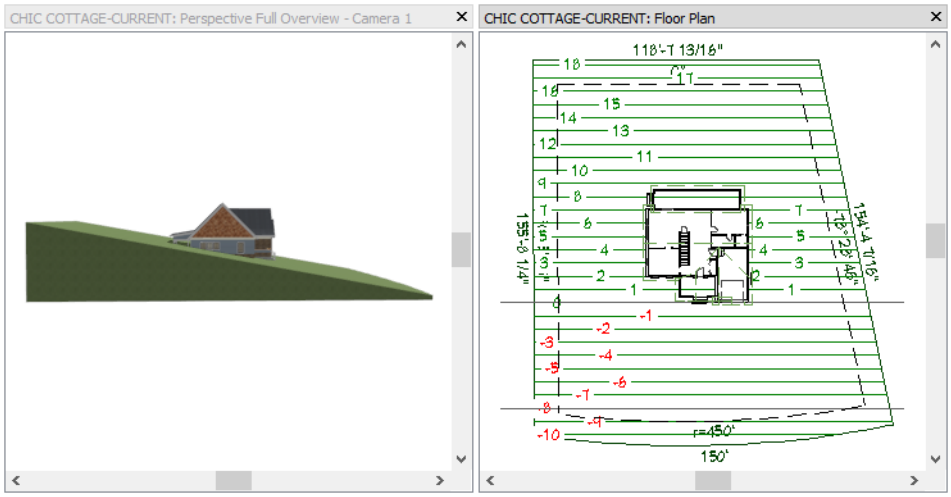
6. With the newly pasted Elevation Line selected, click the **Open Object** edit button.
7. On the GENERAL panel of the **Elevation Line Specification** dialog:



- Note that like the original, its **Elevation** value is 0".
- Change this value to -8'.
- Click OK.

8. In the floor plan view window, notice that there are now evenly-spaced, horizontal contour lines displaying throughout the Terrain Perimeter.

9. In the Overview window, notice that the terrain features a single, continuous slope from the front of the lot to the back.



10. When you are finished, **Save** your work.

Controlling the Terrain's Slope

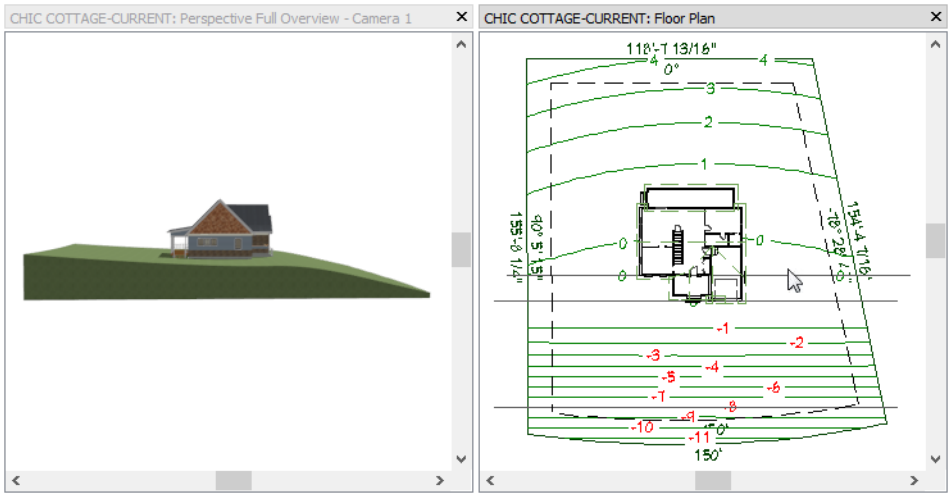
To produce terrain that changes height, you simply need to add two pieces of Elevation Data with different Elevation values. To control the slope that is produced, however, you will need to add additional Elevation Data and modify the spacing and height.

To create changes in slope

1. In the floor plan view window, select the original Elevation Line and make another copy of it:

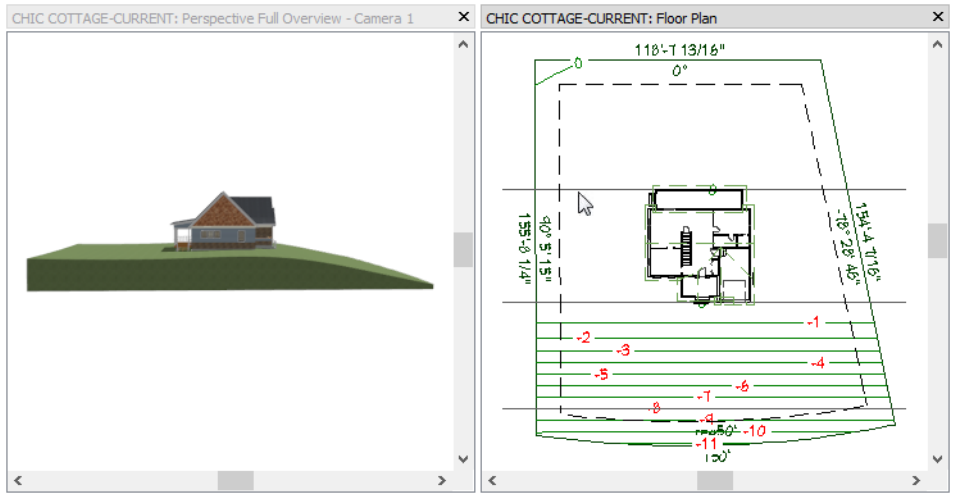
   - Click the **Copy/Paste** edit button.
   - Click the line's Move edit handle and drag upward towards the back of the Porch.
   - When the mouse pointer is reaches the back of the Porch, release the mouse button to create a copy of the Elevation Line at that location.

2. In the floor plan view window, notice:

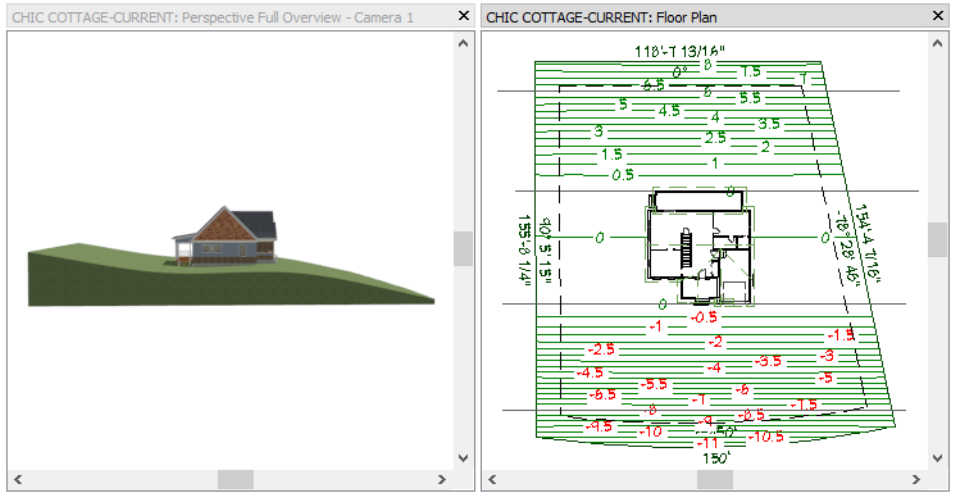


   - The contour lines above the top two Elevation Lines are more spread out than those located below them.
   - The contour numbers indicate that the slope continues to climb upward towards the back of the lot.
3. In the 3D Overview window, note that the terrain's slope flattens out near the front of the house but slowly begins to increase in elevation again.

4. Move the Elevation Line from the back of the Porch to the back of the Deck and notice that the terrain flattens out around the house as well as at the back of the lot.



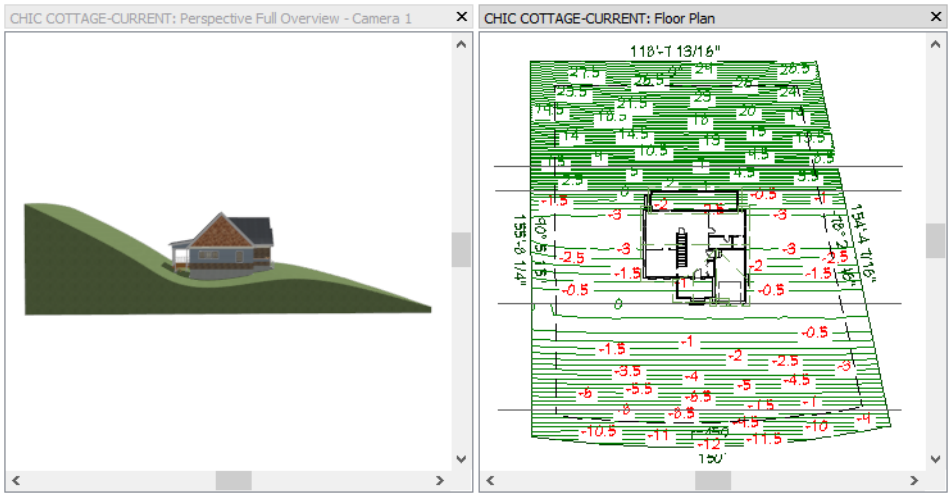
5. Create one more copy of the original Elevation Line near the top edge of the Terrain Perimeter and specify its **Elevation** as 6'.



The steepness of a slope is determined by the difference between two elevation lines and the distance between them.

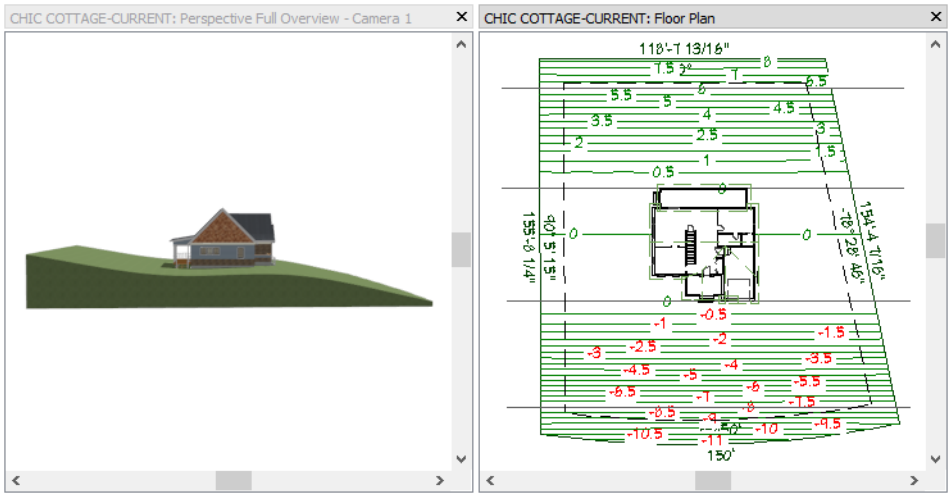
To control slope steepness

1. Select the Elevation Line near the top of the Terrain Perimeter and using its edit handles or Temporary Dimensions, move the new Elevation Line about 4’ from the back of the Deck.
2. Notice what happens:

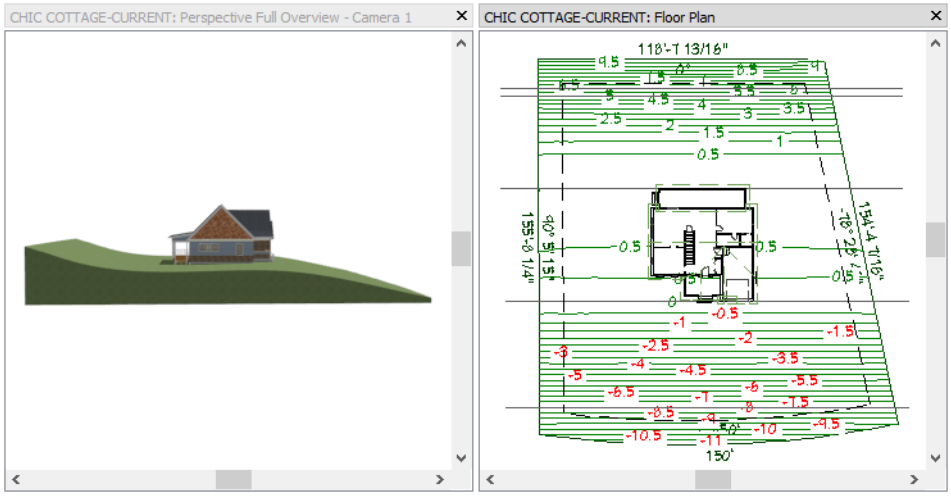


- The terrain increases in height by 6’ over a span of only 4’, which produces a steep slope from the Deck that continues to the back of the lot.
- In order to produce a smoothly curving terrain that passes through the two Elevation Lines at the back of the Deck as well as the two other Elevation Lines, a wave shape is created, with a trough located between the two Elevation Lines at 0’.

3. Now move the selected Elevation Line about 2' down from the back setback line.



4. Create a copy of the back Elevation Line located between it and the back of the Deck.
5. With this new Elevation Line selected, specify its Elevation value as 5' and position it 3' from the back Elevation Line.



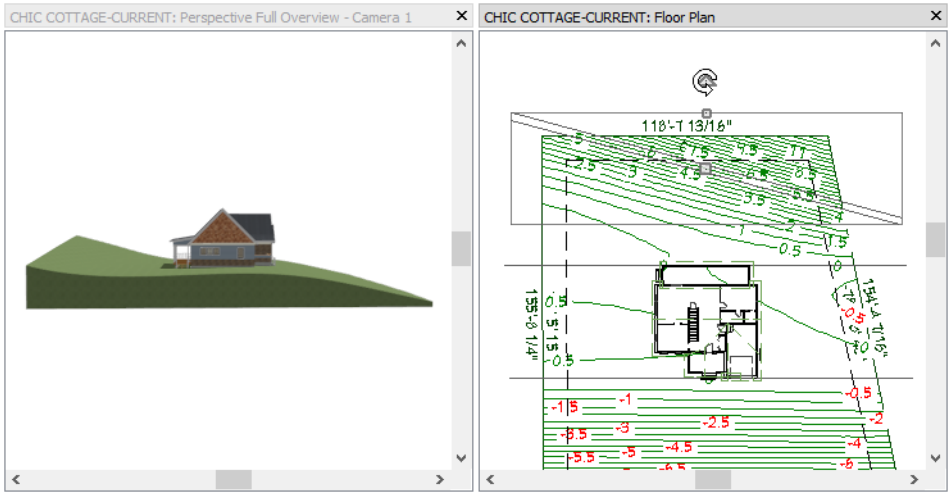
6. Notice that the slope steepness is shallow behind the Deck but increases near the back of the lot.

Slope direction can be modified by simply changing the angles of your Elevation Lines. There are a number of ways to do this.

> ⚠ To avoid conflicting data and unexpected results, Elevation Lines with different Elevation values should never touch or cross one another.

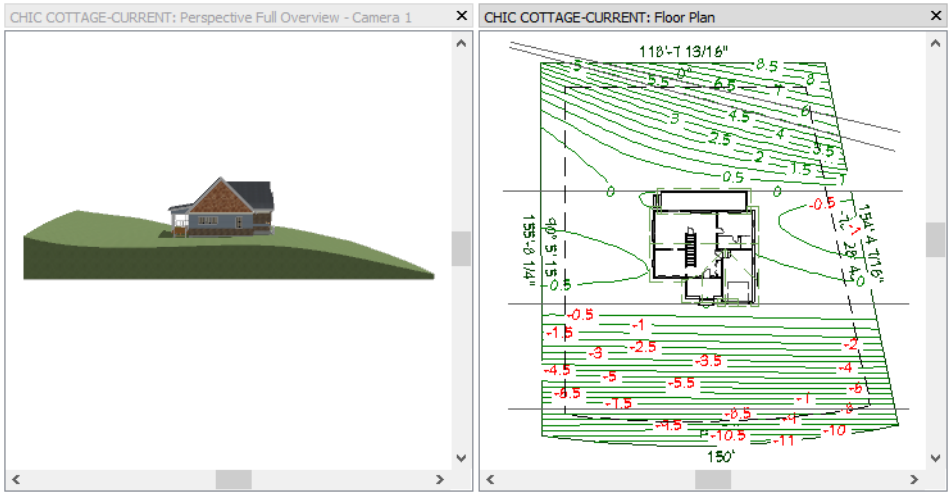
To set slope direction

1. Select and rotate the top two Elevation Lines as a group:



   - Click on the top Elevation Line.
   - Hold down the Shift key and click on the Elevation Line located below it.
   - Click and slowly drag the triangular Rotate edit handle in a clockwise direction.
   - Notice that the rotated angle is stated in the Status Bar, near the center.
   - When the selection is rotated to 15°, release the mouse button.
2. Select the top Elevation Line and move one of its ends:
   - Click and drag the square Resize handle located on the right end of the Elevation Line.
   - Drag upward until the line snaps at a 15° angle relative to its original orientation.
   - Now hold down the Ctrl key to override movement restrictions and drag downward.
   - When the Status Bar reports a value of around 13°, release the mouse button.
3. To specify a precise angle, click the **Open Object** edit button. On the SELECTED LINE panel of the **Elevation Line Specification** dialog:
   - Lock the **Center**.

- Specify an **Angle** of -13° and click OK.

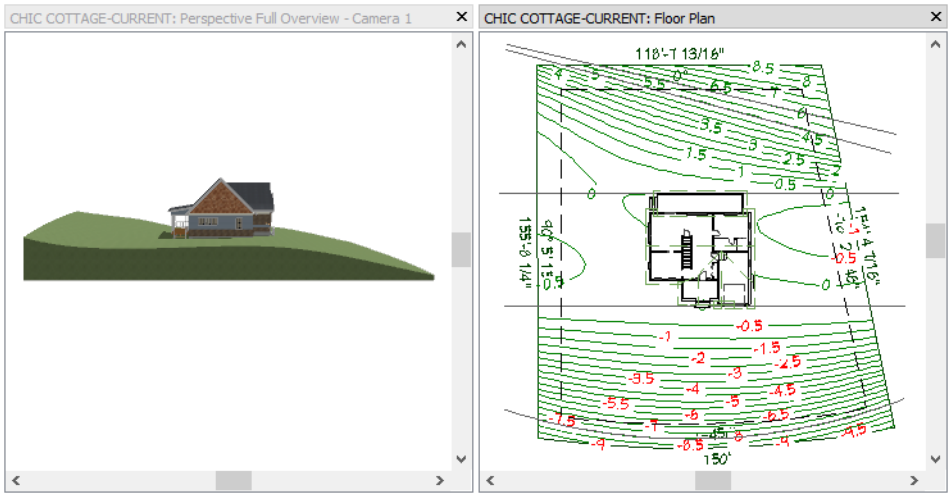


4. Select the bottom Elevation Line located near the front of the lot and make it parallel to the chord of the curved lot edge:
   - Click the **Make Parallel** edit button.
   - Move the mouse pointer over the bottom edge of either the Terrain Perimeter or the setback lines polyline, near either corner.
   - When the polyline becomes highlighted and a nearly horizontal, dashed alignment axis displays, click once.
5. To confirm that the line's angle matches that of the arc's chord, click the **Open Object** edit button.
6. On the SELECTED LINE panel of the **Elevation Line Specification** dialog, note the **Angle** value and click Cancel.
7. Select the curved edge of the Terrain Perimeter or the setback lines polyline and click the **Open Object** edit button.
8. On the SELECTED ARC panel of the dialog:
   - Confirm that the **Chord Angle** equals the angle of the line, then click Cancel.
   - Note that the same angle can be described in one of two ways: using a positive value between 0° and 180°, or using a negative value between 0° and -180°.

To create a curved elevation line

1. Select the Elevation Line located near the curved front edge of the Terrain Perimeter.
2. Click the **Change Line/Arc** edit button.

3. Click the arc's triangular Reshape edit handle and drag downward to change the location of the arc's center point.

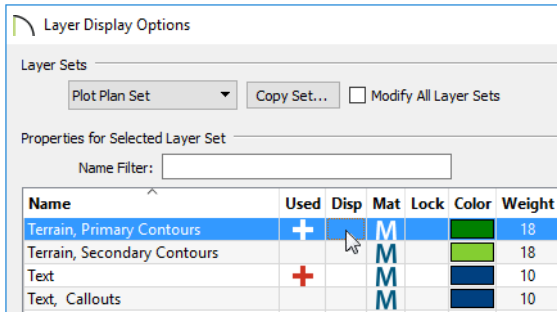


4. With the arc still selected, click the **Open Object** button.
5. On the SELECTED ARC panel of the **Elevation Line Specification** dialog,
   - Click the radio button beside **Chord** to Lock it.
   - Specify the **Radius** as 450', then click OK.

An Elevation Polyline is created when two or more Elevation Lines are snapped together. When an Elevation Polyline forms a closed shape, the result is an Elevation Region. There are several ways to create Elevation Polylines. For more information, see "Elevation Regions" on page 1205 of the Reference Manual.

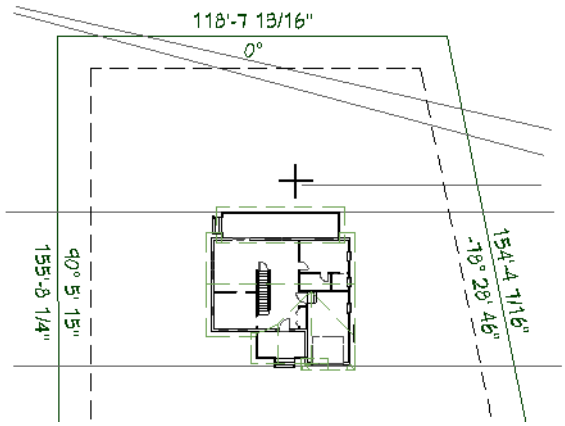
To create an Elevation Polyline

1. Select **Tools> Layer Settings> Display Options**. In the **Layer Display Options** dialog:



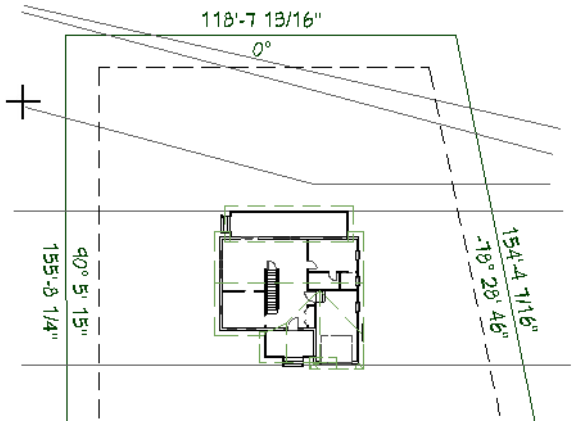
- Press the T key on your keyboard to automatically scroll to the layer names that begin with the letter T.
- Locate the "Terrain, Primary Contours" layer and click once in the "Disp" column to remove the check mark.
- Click OK to close the dialog and turn off the "Terrain, Primary Contours" layer in floor plan view.

1. Select **Terrain> Elevation Data> Elevation Line**, then:



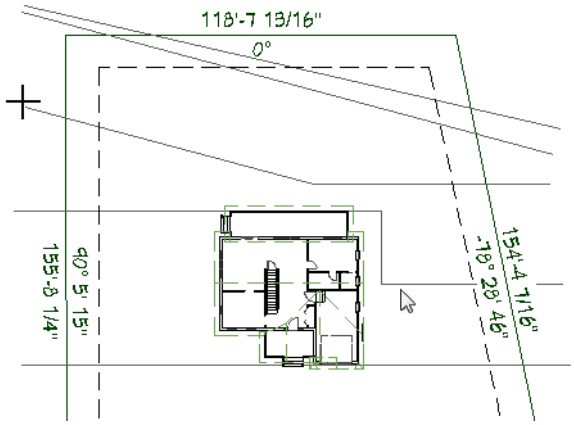
- Move the mouse pointer to the right side of the Terrain Perimeter, between the Elevation Line at back of the Deck and the lowest end of the angled Elevation Lines.
- Click and drag to draw a horizontal Elevation Line that ends in the middle of the terrain.

2. With the **Elevation Line** tool still selected:



- Move the mouse pointer over the left end of the new Elevation Line.
- Click the diamond-shaped edit handle and drag upward and to the left to draw and angled Elevation Line.
- When the Status Bar reports that the angle of the new Elevation Line is 15° and the line extends to the edge of the Terrain Perimeter, release the mouse button.

3. Click on the Elevation Line located at the back of the Deck to select it, then:



- Click the **Break Line** edit button.
- Move the mouse pointer over the right side of the line.
- Click once to add a new corner and edit handle at that location.

4. Click on the square edit handle located to the right end of new corner and drag downward. When the new line segment reaches the middle of the house, release the mouse button.

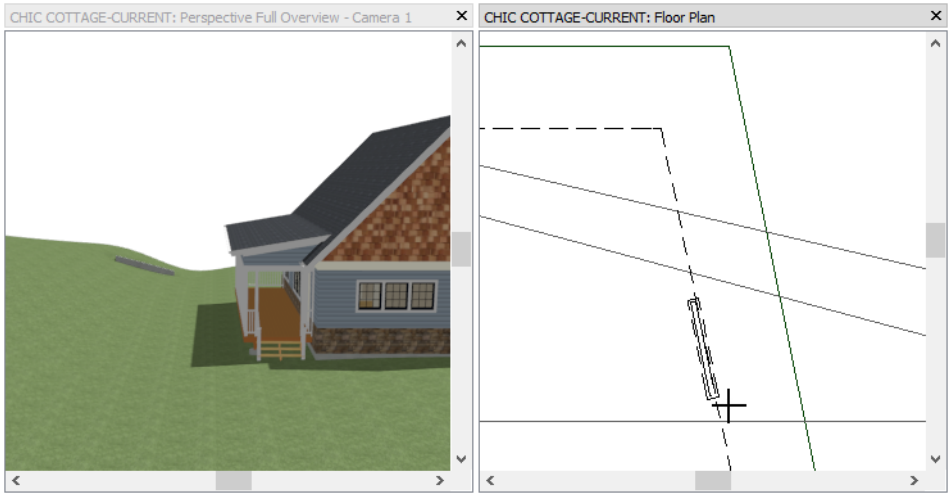
5. When you are finished, **Save** your work.

Adding a Retaining Wall

Retaining Walls are different from other types of walls in that the Elevation Data on either side of them does not interact with each other. For more information, see “Retaining Walls” on page 1212 of the Reference Manual.

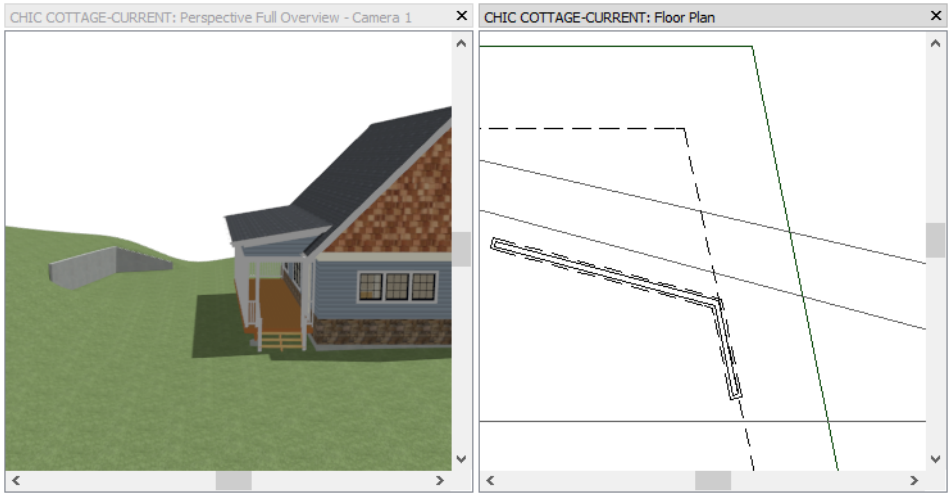
To draw a retaining wall

1. In both the floor plan view and Overview window, **Zoom** in on the back right corner of the Terrain Perimeter.
2. Click in the floor plan view window to make it the active view and select **Terrain> Terrain Walls> Straight Retaining Wall**. Next:



- Click on the setback polyline, just below the lowest angled Elevation Line.
- Drag in a downward direction, following the path of the setback line.
- Before the retaining wall preview outline reaches the horizontal Elevation Line, release the mouse button.

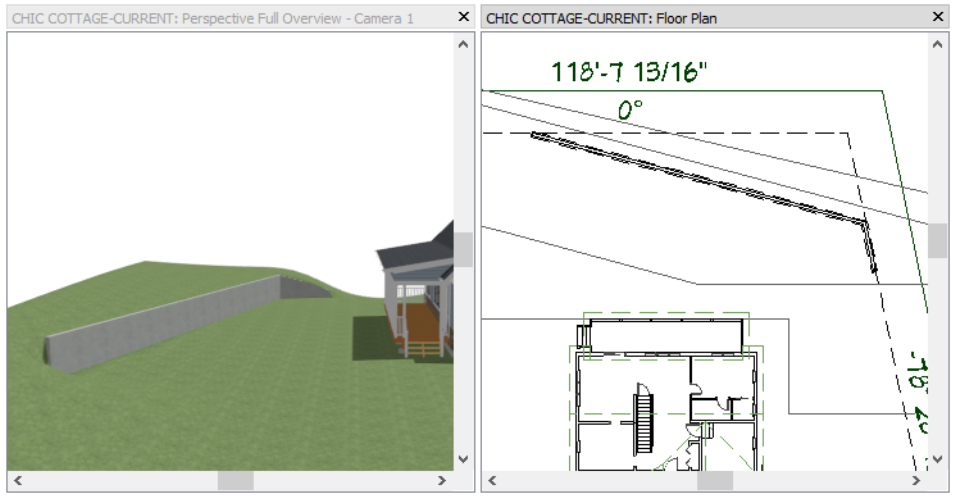
3. With the **Straight Retaining Wall** tool still selected:



   - Move the mouse pointer over the top end of the new Retaining Wall.
   - Click and drag upwards and to the left to draw a new angled Retaining Wall.
   - When the Status Bar reports that the angle of the new wall is 15°, release the mouse button.

4. Select **Window> Fill Window** or **Zoom** out until entire top setback line can be seen.

5. Select the angled retaining wall, then click and drag its left end edit handle until it reaches the top setback line.

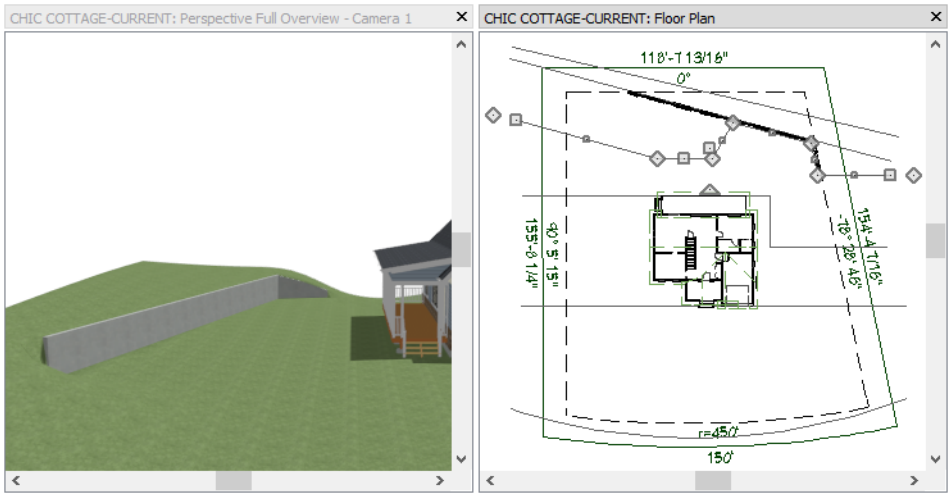


The default height of a retaining wall is determined by the height of the terrain on either side of it.

To specify the wall's top and bottom heights

1. Click the **Select Objects** button, then click on the angled Elevation Line located just above the new Retaining Wall.
2. Click on the Temporary Dimension that reports how far the line is from the wall and in the inline text field, type 8" and press the Enter key.
3. Select the Elevation Polyline located just below the retaining wall and use the Break Line tool to add four new breaks to the line.
4. Use the Elevation Polyline's edit handles to reshape it so that two edges are parallel to the retaining walls.

5. Use Temporary Dimensions to position those two edges 8" from the retaining walls.



6. Remember to **Save** your work.

Creating File Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed.

When you are finished working on a file and are ready to close it, **Save** your work. Before closing it, though, create a copy of the file with a different name that indicates what it contains so you can distinguish it from other revisions.

To save a plan revision

1. Select **File**> **Save As** .
2. In the **Save Plan File** dialog, make sure that the save location is your Chic Cottage folder.
3. For the File name, type a the name of the project followed by a short description of the current state of the drawing; for example, Chic Cottage-Terrain.

Review

This lesson describes the best practices for adding elevation data to create sloped terrain. It also discussed the important default settings associated with drawing CAD objects. These defaults include Annotation Sets and CAD Defaults.

- To specify Allowed Angles
- To create and use a custom Layer Set
- To set the building pad elevation
- To draw an Elevation Line
- To create a slope
- To create changes in slope
- To control slope steepness
- To set slope direction
- To create a curved elevation line
- To create an Elevation Polyline
- To draw a retaining wall
- To specify the wall's top and bottom heights

Assessment Questions

What dialog is the best place to make adjustments to the height of the terrain relative to the building?

What is required in order to have terrain that slopes?

How can you turn on the display of contour lines in floor plan view?

What is the name of the edit tool that changes a straight line into an arc?

What is the name of the edit tool that lets you add a new edge to a line or polyline?

What determines the height of a Retaining Wall?

Chapter 24:

Driveways, Sidewalks, and Roads

Roads, sidewalks, and driveways are an important aspect of a landscaping plan.

Learning Objectives

This lesson describes best practices in Chief Architect for creating roads, driveways, and sidewalks. Concepts introduced include:

- Drawing a Road
- Adding a Driveway
- Creating Sidewalks

File Management

This tutorial continues where the Terrain Elevation Tutorial left off. At this point, both the Chic Cottage-Terrain and CHIC COTTAGE-CURRENT plans contain the same information, so you

could open either one and continue working. However, Chic Cottage-Terrain.plan was created specifically to serve as a revision or archive file so it will be left unchanged.

To continue working on the Chic Cottage project, select **File> Open Plan** . If need be, browse to Documents\Chic Cottage, select CHIC COTTAGE-CURRENT, and click Open.

Alternatively, select **File> Open Recent Files** and choose CHIC COTTAGE-CURRENT from the Recent Files List. The Recent Files List is a convenient way to access files you have been working on; however, it is not an alternative to knowing where your files are located and having a good file revision strategy in place. See “Creating File Revisions” on page 514.

It is a very good idea to save your files often as you work, and this guide reminds you to do so regularly.

Productivity Tips

As you learn how to draw roads, driveways, and sidewalks, keep in mind these tips to improve your productivity.

Drawing and Editing

- Road objects only display in 3D views where they cross the Terrain Perimeter.
- To override movement restrictions and make fine adjustments as you draw or edit, hold down the Ctrl key.

Interface

- The Number Style/Angle Style dialog controls how length values are entered and display in dialogs and the Status Bar. When working with large objects like a roads, it can be helpful to set the Dialog Number Style as Feet and Fractional Inches instead of Fractional Inches.
- When drawing and editing road objects, it is usually helpful to make sure that **Object Snaps** are toggled on.

Keyboard Hotkeys

- F1 - Help for the current context
- Spacebar - Select Objects
- Ctrl + E - Open Object edit tool
- Ctrl + S - Save

Setting the Defaults

In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. Setting defaults early can improve efficiency and also helps to avoid introducing errors into the drawing. When drawing road objects, it’s a good idea

to begin by setting the Road, Driveway, and Sidewalk Defaults to meet your needs. See “Road and Sidewalk Defaults” on page 1239 of the Reference Manual.

Drawing a Road

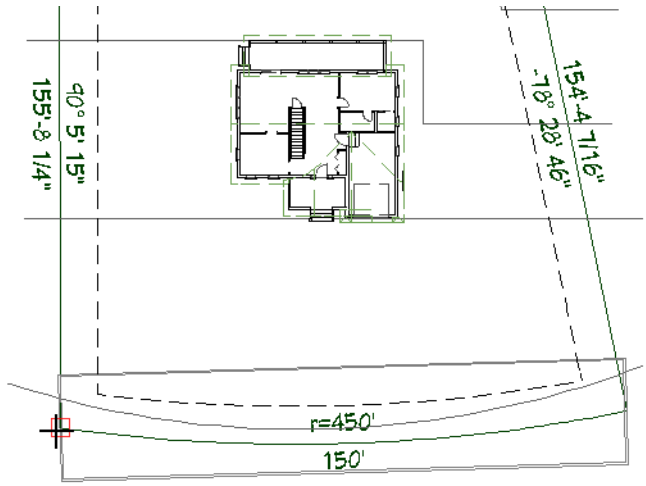
The location of roads is an important consideration when developing a landscaping plan and are typically included in site maps, as well.

To set the road defaults

1. Select **Edit> Default Settings** . In the **Default Settings** dialog, click the arrow beside "Roads, Sidewalks and Driveways" to expand the category, select "Road" and click the **Edit** button.
2. On the GENERAL panel of the **Road Defaults** dialog, specify the **Width** as 28’.
3. On the CURB panel, note that roads can generate raised curbs along their edges and that those curbs can cut driveways and sidewalks.
4. Click OK and then Done to close both dialogs.

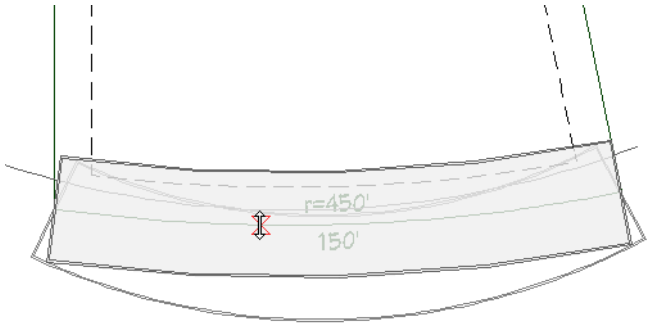
To draw and edit a road

1. Go to Floor 1 and select **Window> Fill Window** or **Zoom** out until the Terrain Perimeter can be seen.
2. Select **Terrain> Road> Straight Road** . then:



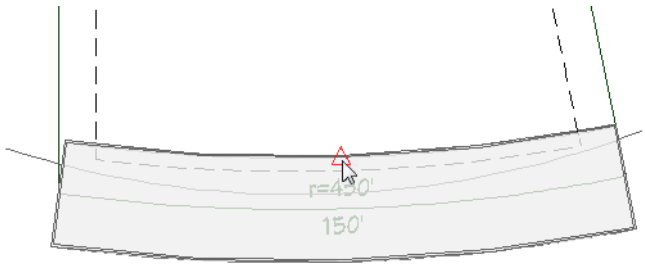
- Move the mouse pointer over the bottom right corner of the Terrain Perimeter.
- Click and drag to the left to draw a road across the bottom of the Terrain Perimeter.
- Move the mouse pointer over the lower left corner, and when a **Midpoint** snap indicator displays and the Road preview outline angles downward slightly, release the mouse button.

3. Click on the road to select it, then click the **Change Line/Arc** edit button. Next:



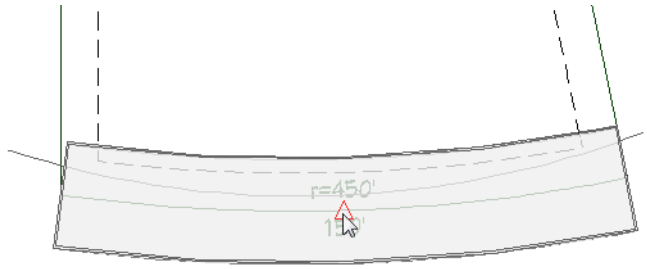
- Click the arc's triangular Reshape edit handle and drag it toward the curved edge of the Terrain Perimeter.
- When you see the **On Object** Snap Indicator, release the mouse button.

4. With the road still selected, click the **Point to Point Move** edit button, then:

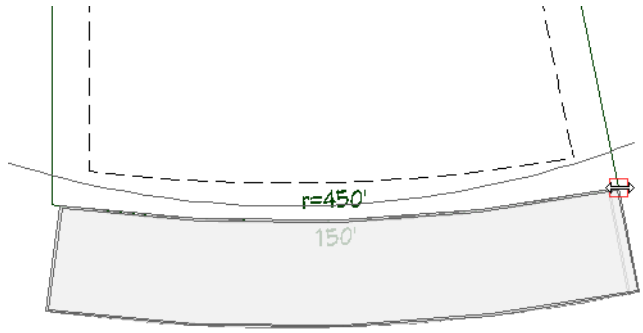


- Move your mouse pointer over the top edge of the road.

- When the **Midpoint** snap indicator displays, click the mouse button.

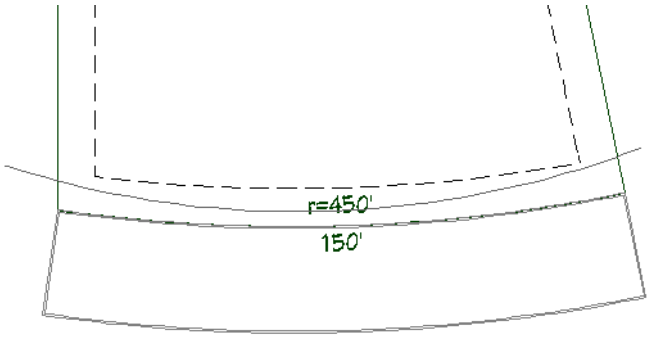


- Move the mouse pointer over the curved edge of the Terrain Perimeter.
- When the **Midpoint** snap indicator displays, click the mouse button.



5. Click the road's right end edit handle and drag to the right:
   - Move the mouse pointer over the bottom right corner of the Terrain Perimeter.

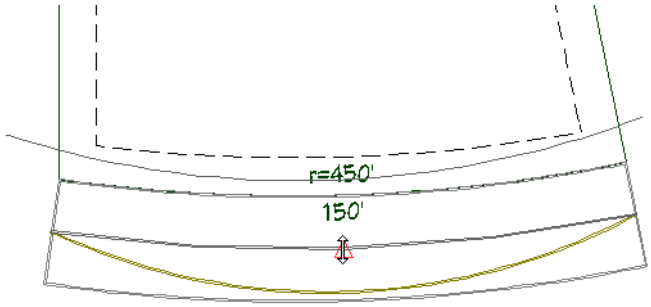
- When the **Endpoint** snap indicator displays, release the mouse button.



Road stripes are often found along the center line of a road, but can be placed anywhere within a road. Here, a road stripe will mark out a bike lane.

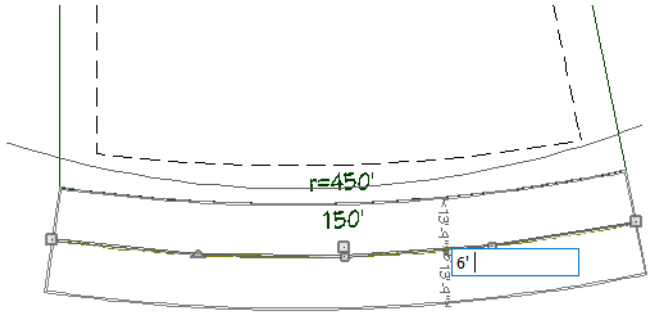
To add a road stripe

1. Select **Terrain> Road> Road Stripe**, then click and drag from the midpoint on the left side of the road to the mid point on the right.
2. Click on the new road stripe to select it and click the **Change Line/Arc** edit button.
3. Click and drag the triangular Reshape edit handle towards the center of the road. When the **Midpoint** snap indicator displays, release the mouse button.



4. With the Road Stripe still selected:
   - Click on the Temporary Dimension that reports how far the Road Stripe is from the bottom edge of the road.

- In the inline text field, type 6’ and press the Enter key.

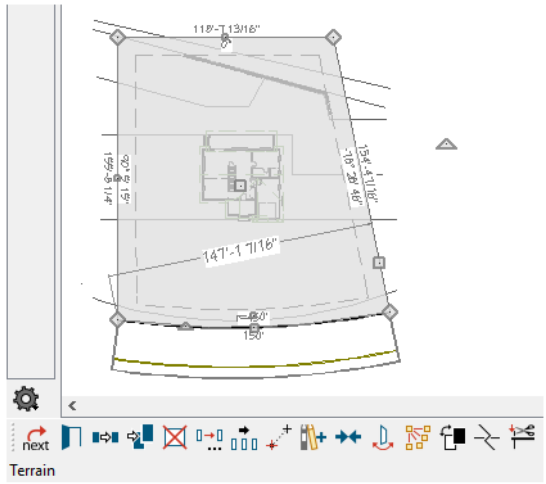


In order to display in 3D views, the road must be located inside of the Terrain Perimeter.

To display a road in 3D views

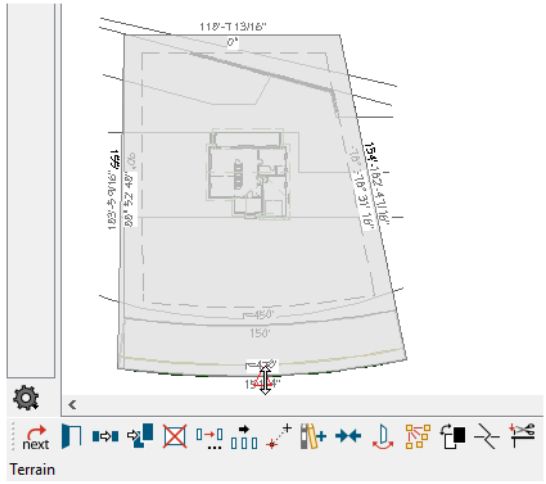
1. Click the **Select Objects** button, then click on the Terrain Perimeter to select it.
2. Click the **Copy and Paste in Place** edit button.
   - A copy of the Terrain Perimeter is created in the same location as the original, and is selected.
   - Since only one Terrain Perimeter can exist in a plan, the new copy is a CAD polyline.
3. With the newly created polyline selected, click the **Open Object** edit button. On the **Line Style** panel of the **Polyline Specification** dialog, select "CAD, Plot Plan" from the **Layer** drop-down list and click OK.

4. Select Terrain Perimeter again.



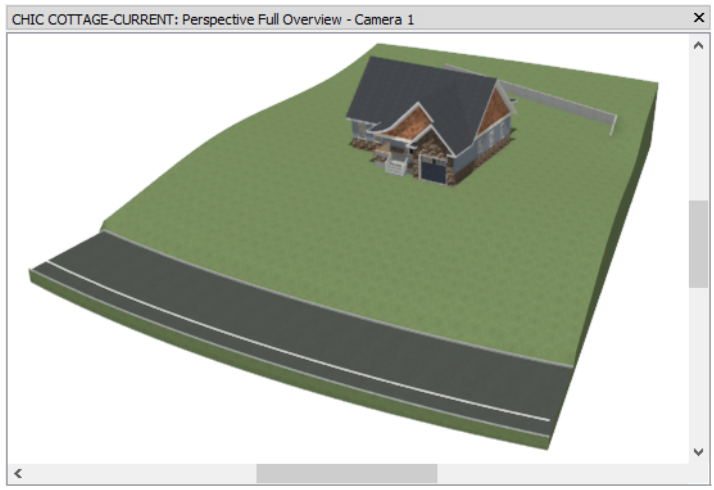
- If the copied polyline becomes selected instead, click the **Select Next Object** edit button.
- The type of object that is currently selected is stated on the left side of the Status Bar. The Terrain Perimeter will be described as "Terrain", while the copied polyline will be described as a "Special Polyline".

5. Click the small Resize edit handle on the curved edge and drag downward until the curved polyline edge snaps to bottom edge of road.



6. With Terrain still selected, click the **Open Object** edit button. On the LINE STYLE panel of the **Terrain Specification** dialog, uncheck **Show Length** and **Show Angle**, click OK.

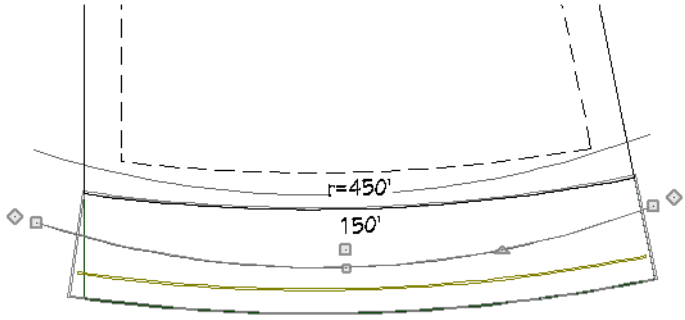
7. Create a **Perspective Full Overview** to see the results.



Roads are flat across their width and measure their height from the height of the terrain along their center line.

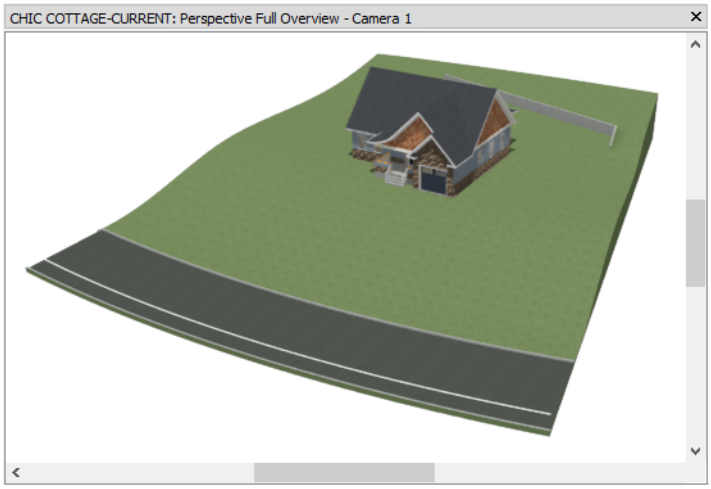
To control road height

1. Select **Window> Swap Views**, to return to floor plan view without closing the overview camera.
2. Select the curved Elevation Line located near the bottom of the plot plan polyline. Next:



- Click the **Copy/Paste** edit button.
- Click and drag the Elevation Line's Move edit handle downward.
- When the mouse pointer is positioned near the center of the road, release the mouse button to create a new curved Elevation Line at that location.

3. Select **Window> Swap Views**, to return to the overview and notice that the slope down to the road is more gradual now.



4. Click the **Select Objects** button, then select the road and click the **Open Object** edit button.
5. On the GENERAL panel of the **Road Specification** dialog, note that the **Height** is 1" and click Cancel.
6. When you are finished, select **File> Close View** and **Save** your work.

Adding a Driveway

A driveway can now be added to the plan.

To set the driveway defaults

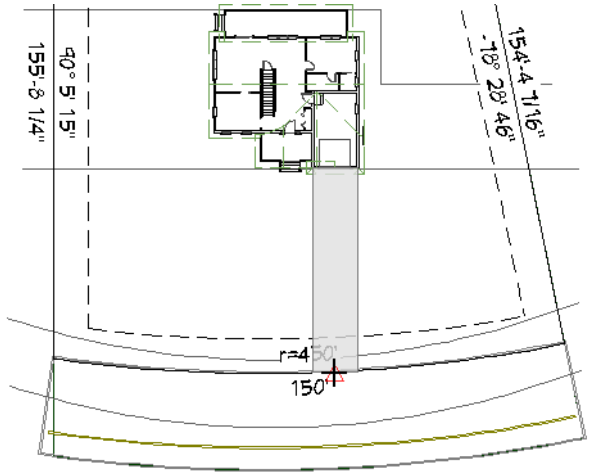
1. Select **Edit> Default Settings**. In the **Default Settings** dialog. click the arrow beside "Roads, Sidewalks and Driveways" to expand the category, select "Driveway" and click the **Edit** button.
2. On the GENERAL panel of the **Driveway Defaults** dialog:

- Specify the **Width** as 13’.
- Under the Flare heading, check the box beside **End** and specify the **Width** as 3’.

3. On the MATERIALS panel, select the "Driveway" component in the list on the left, then click the **Select Material** button.
4. On the LIBRARY MATERIALS panel of the **Select Material** dialog, search for and select the "Blacktop 1" material, then click OK.
5. Click OK and then Done to close both dialogs and apply your changes.

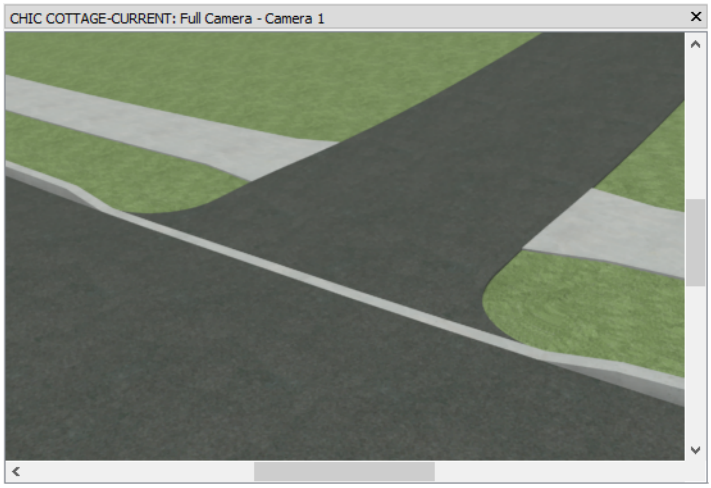
To draw a driveway

1. Select **Terrain> Driveway> Straight Driveway** then:
2. Move your mouse pointer in front of the Garage.
3. When the **Midpoint** snap indicator displays, click and drag straight down.



4. When the driveway preview outlines reaches the road, release the mouse button and create a driveway.

5. Create a Camera view near the intersection of the driveway and the road to see the results.



6. When you are finished, **Save** your work.

Creating Sidewalks

Sidewalks can be generated using two different tools in Chief Architect.

To set the sidewalk defaults

1. Select **Edit> Default Settings**. In the **Default Settings** dialog, click the arrow beside "Roads, Sidewalks and Driveways" to expand the category, select "Sidewalk" and click the **Edit** button.
2. On the GENERAL panel of the **Sidewalk Defaults** dialog, specify the **Width** as 60" or 5'.
3. Click OK and then Done to close both dialogs and apply your changes.

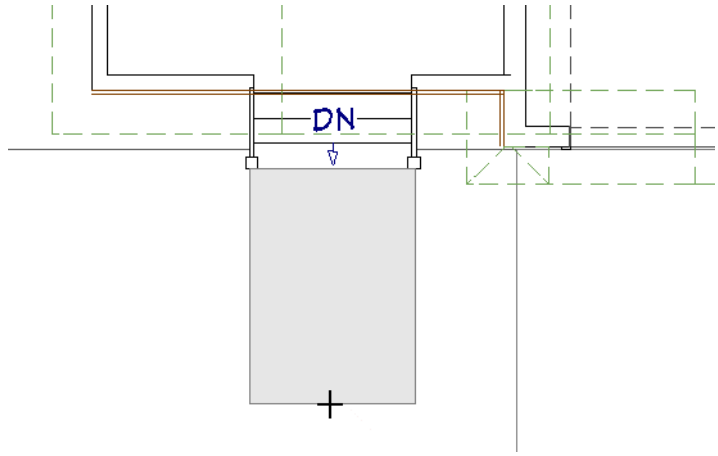
To generate automatic sidewalks

1. Click the **Select Objects** button, then click on the road to select it.
2. Click the **Auto Generate Sidewalks** edit button.
3. In the **Automatically Generate Sidewalks** dialog, specify the **Offset from Road** as 60" and click OK.
4. Create a Perspective Full Overview and notice that the sidewalk on the far side of the road does not display in 3D views because it is located outside of the Terrain Perimeter.

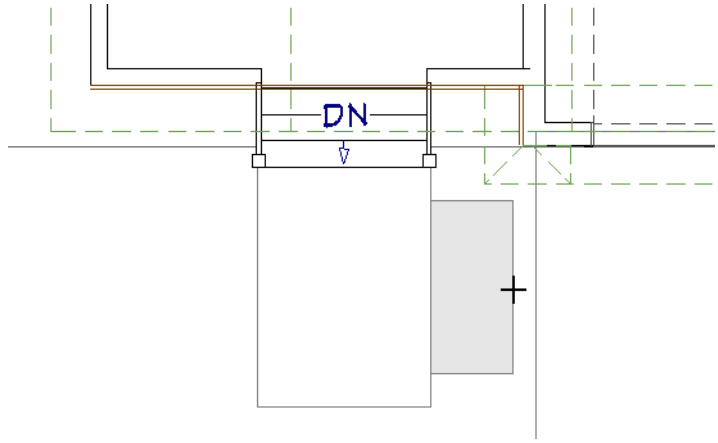
5. Select **File> Close View** to return to floor plan view.

To draw a sidewalk

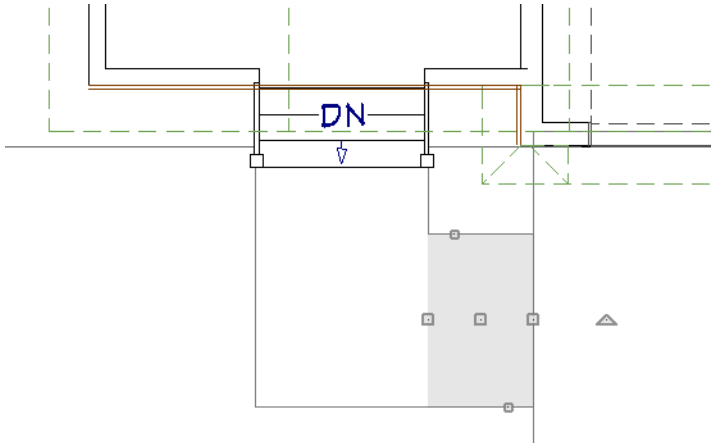
1. **Zoom** in on the area around the front porch stairs.
2. Select **Terrain> Sidewalk> Straight Sidewalk**, then:



   - Move your mouse pointer over the bottom edge of the stairs.
   - When a **Midpoint** snap indicator displays, click and drag straight down several plan feet to draw a sidewalk.
3. Click along the sidewalk's right side and drag to draw a second segment towards the driveway.



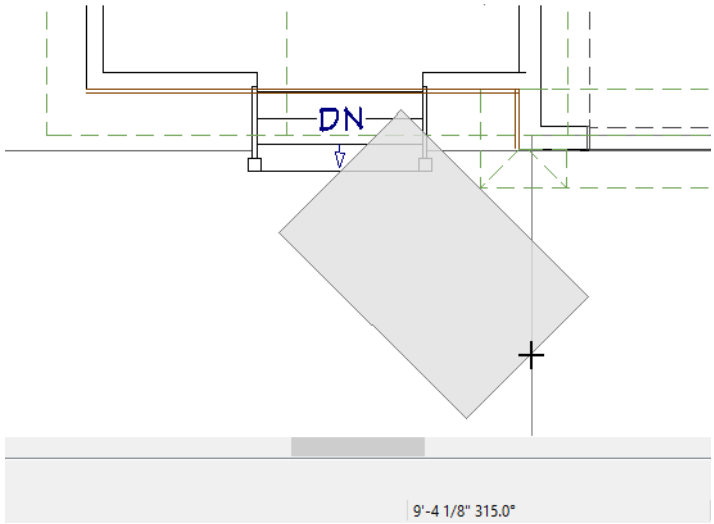
4. Click on the horizontal sidewalk segment to select it, then click and drag its Move edit handle downward until it snaps to the bottom edge of the vertical segment.



A curved sidewalk can be created instead of an L-shape with straight sides.

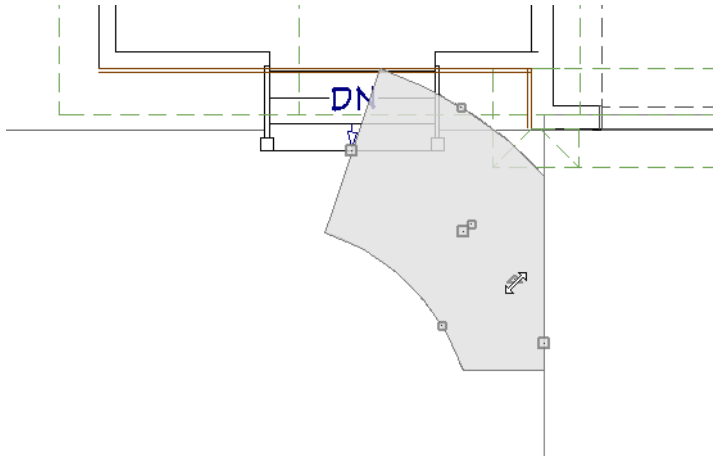
To create a curved sidewalk

1. Begin by selecting the two sidewalk segments created above and **Deleting** them.
2. Select **Terrain> Sidewalk> Straight Sidewalk**, then:



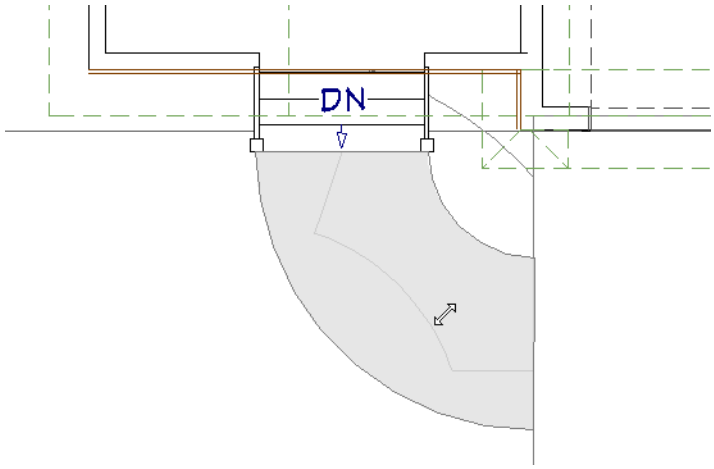
- Move your mouse pointer over the bottom edge of the stairs.
- When a **Midpoint** snap indicator displays, click and drag at an angle, down and towards the right until it reaches the left edge of the driveway.
- Notice the Status Bar reports the angle of the sidewalk as it is being drawn. When the Status Bar reports and angle of 315°, release the mouse button.

3. Select the newly drawn sidewalk and click the **Change Line/Arc** edit button.



- Click the arc's triangular Reshape edit handle and drag it down and to the left.
- When the top edge becomes a horizontal line and the right edge becomes a vertical line, release the mouse button.

- To override movement restrictions and make fine adjustments to the sidewalk's arc, hold down the Ctrl key while you drag the Reshape edit handle.



4. When you are finished, **Save** your work.

Creating File Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed.

When you are finished working on a file and are ready to close it, **Save** your work. Before closing it, though, create a copy of the file with a different name that indicates what it contains so you can distinguish it from other revisions.

To save a plan revision

1. Select **File**> **Save As** .
2. In the **Save Plan File** dialog, make sure that the save location is your Chic Cottage folder.
3. For the File name, type a the name of the project followed by a short description of the current state of the drawing; for example, Chic Cottage-Driveway.

Review

This lesson describes the best practices for generating and editing roads, driveways, and sidewalks.

- To draw and edit a road
- To add a road stripe
- To display a road in 3D views
- To control road height
- To set the driveway defaults
- To draw a driveway
- To set the sidewalk defaults
- To draw a sidewalk
- To create a curved sidewalk

Assessment Questions

Where can you set the default for whether driveways cut the curb on roads?

Where must road objects be located in order to be seen in 3D views?

Where can you specify that driveways have flares at their ends?

What edit tool changes a straight line into an arc?

Chapter 25:

Landscaping Design

With the elevation data and hardscaping in place, planting areas can be created.

Learning Objectives

This lesson describes best practices in Chief Architect for creating planting areas. Concepts introduced include:

- Creating Terrain Features
- Drawing Terrain Walls and Fencing
- Placing Plants

File Management

This tutorial continues where the Driveways, Sidewalks, and Roads Tutorial left off. At this point, both the Chic Cottage-Driveway and CHIC COTTAGE-CURRENT plans contain the same information, so you could open either one and continue working. However, Chic Cottage-Driveway.plan was created specifically to serve as a revision or archive file so it will be left unchanged.

To continue working on the Chic Cottage project, select **File> Open Plan** . If need be, browse to Documents\Chic Cottage, select CHIC COTTAGE-CURRENT, and click Open.

Alternatively, select **File> Open Recent Files** and choose CHIC COTTAGE-CURRENT from the Recent Files List. The Recent Files List is a convenient way to access files you have been working on; however, it is not an alternative to knowing where your files are located and having a good file revision strategy in place. See “File Management” on page 18.

It is a very good idea to save your files often as you work, and this guide reminds you to do so regularly.

Productivity Tips

As you learn how to draw terrain features and place plants, keep in mind these tips to improve your productivity.

Drawing and Editing

- The Selected Edge of a polyline-based object can be edited in a variety of ways using the edit tools.
- To override movement restrictions and make fine adjustments as you draw or edit, hold down the Ctrl key.

Content

- A selection of plant images is available for download from the Chief Architect 3D Library.

  Select **Library> Get Additional Content Online** to launch your default web browser to that page.

Interface

- The Status Bar at the bottom of the program window reports useful information like the angle an object is being drawn at and what type of object is selected.
- When drawing and editing a plot plan polyline, it may be helpful to turn off **Grid Snaps** . **Object Snaps** , however, are often very helpful.

Keyboard Hotkeys

- F1 - Help for the current context
- Spacebar - Select Objects
- 3 - Break Line edit tool
- Ctrl + E - Open Object edit tool
- Ctrl + Z - Undo
- Ctrl + S - Save

Setting the Defaults

In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. Setting defaults early can improve efficiency and also helps to avoid introducing errors into the drawing. Adding landscaping features, there are several defaults to bear in mind.

Before drawing Fencing, it is a good idea to set the Fencing Defaults to meet your needs. See “To set the fencing defaults” on page 529.

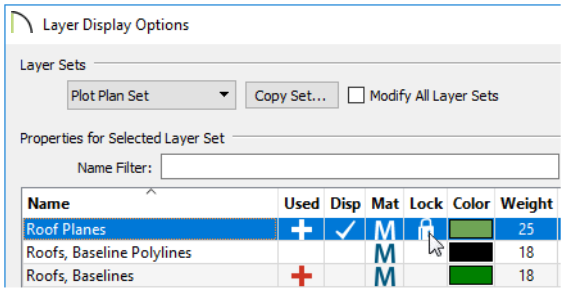
When drawing Garden Beds, setting the default material for "Dirt" in the Material Defaults dialog can be helpful. See “To set the material defaults for Garden Beds” on page 520.

The default material for generic Terrain Features can also be set; however, Terrain Features use the "Foundation/Slab" material default, which is also the default for slabs and foundation wall footings, so it is best to leave as a concrete material.

In the Terrain Elevation Tutorial, a custom Landscaping layer set was created. This layer set can be modified to make it even better suited for working on landscaping drawings.

To modify a custom Layer Set

1. Select **Tools> Layer Settings> Display Options** .
2. In the **Layer Display Options** dialog:



- Turn on the display of the "Roof Planes" layer and Lock it, as well.
- Turn off the display of the "Moldings" layer.
- Click OK to close the dialog and apply your changes.

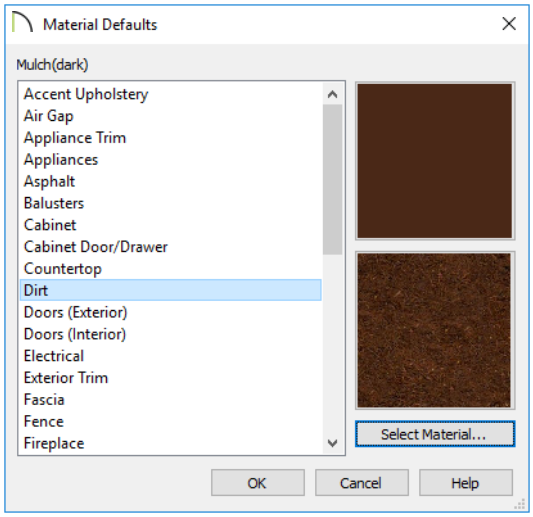
3. **Save** your work.

Creating Terrain Features

Terrain Features are used to apply special materials over the surface of the terrain - from paving to mulch to water. See “Terrain Feature Tools” on page 1208 of the Reference Manual for more information.

To set the material defaults for Garden Beds

1. Select **Edit> Default Settings** . In the **Default Settings** dialog, select "Materials" and click the Edit button.
2. In the **Material Defaults** dialog, select the "Dirt" component from the list on the left and click the **Select Material** button.
3. On the LIBRARY MATERIALS panel of the **Select Material** dialog:
   - Browse to Chief Architect Core Catalogs> Materials> Landscaping> Bark.
   - Select a bark landscaping material and click the OK button.
   - Here, "Mulch (dark)" is used.

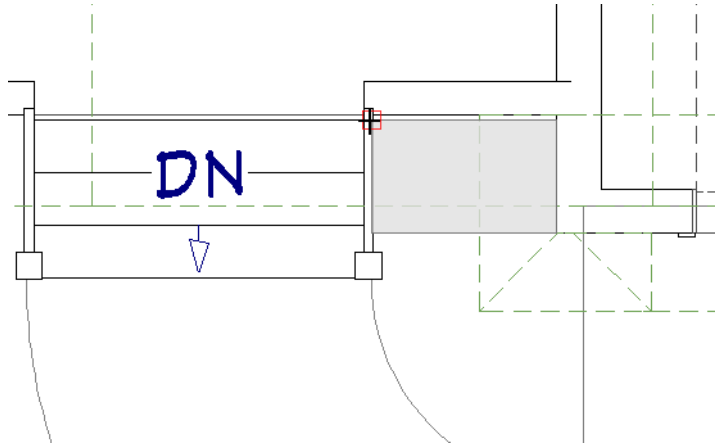


4. Click OK and then Done to close both dialogs.

Garden Beds and other Terrain Features are closed polyline-based objects and can be drawn and edited like other closed polylines. See “Editing Closed-Polyline Based Objects” on page 231 of the Reference Manual.

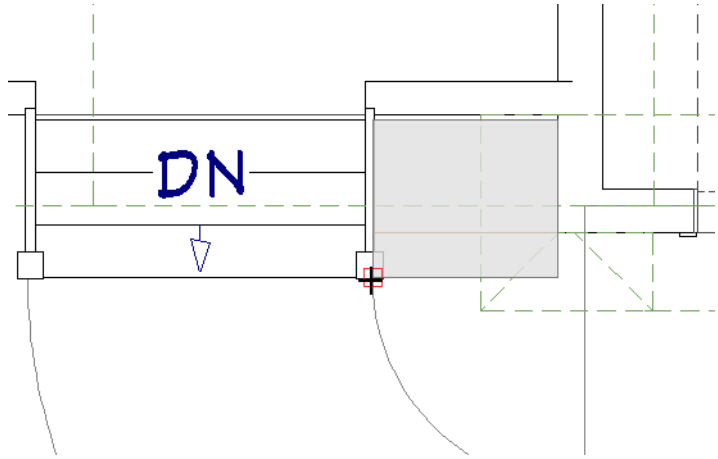
To create and edit a Garden Bed

1. **Zoom** in on the right side of the front porch stairs.
2. Select **Terrain> Garden Bed> Polyline Garden Bed**, then:



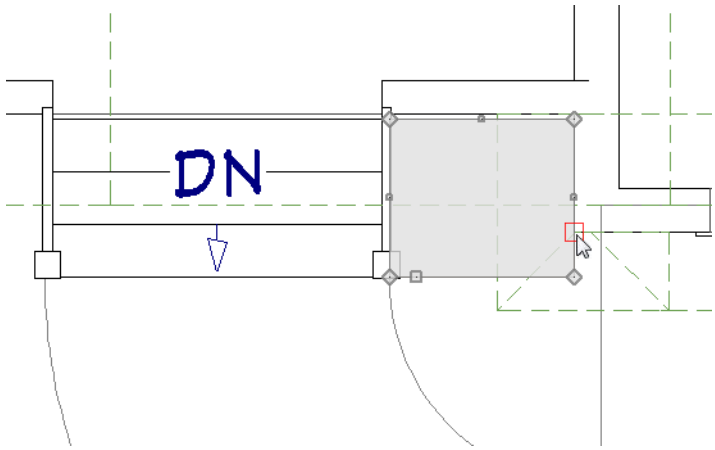
   - Move your mouse pointer over the bottom left corner of the Garage.
   - Click and drag up and to the left until the mouse pointer snaps to the back right corner side of the stairs, where they meet the porch railing wall.

3. Click on the Garden Bed polyline to select it, then:



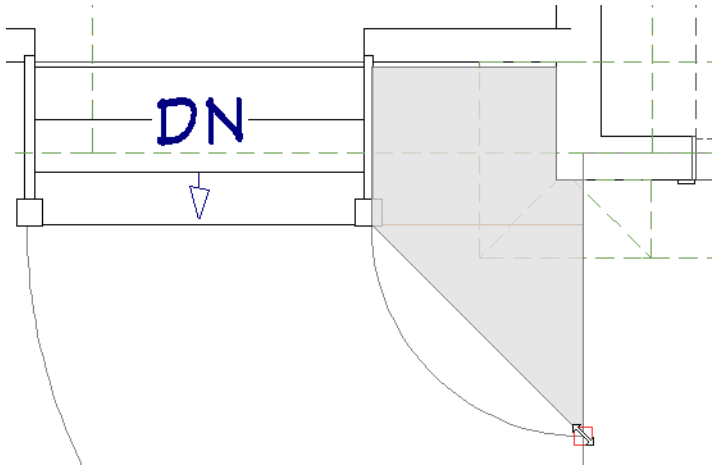
   - Click the square edit handle that displays on the bottom edge.
   - Drag the handle down until the left.
   - When it snaps to the top right corner of the sidewalk, release the mouse button.

4. Click the **Break Line** edit button, then:

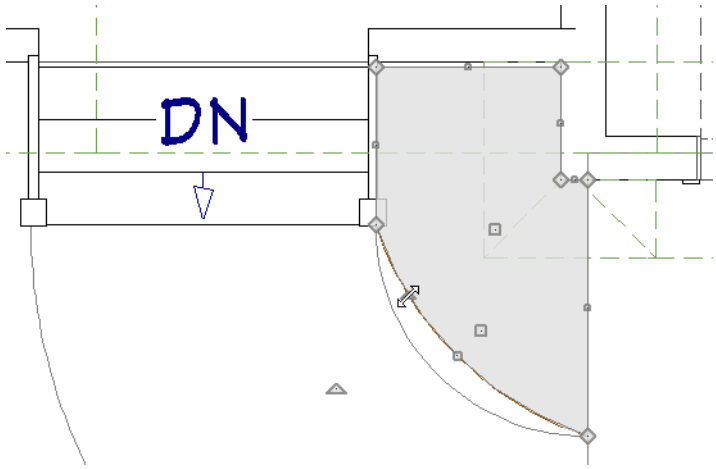


- Click once on the right vertical edge of the Garden Bed, where it meets the corner of the Garage.
- A new diamond-shaped corner edit handle is created at that point.

5. Select the square edit handle that displays just below the new corner handle and drag to the right until the Garden Bed edge snaps to the driveway.
6. Click the edit handle at the Garden Bed's bottom right corner and drag downward until it meets the point where the sidewalk meets the driveway.



7. Click on the angled edge of the Garden Bed to make it the Selected Edge, then:



- Click the **Change Line/Arc** edit button.
- Click the triangular Reshape Arc edit button that displays along the curved edge.
- Drag downward until the curved edge snaps to the inside curve of the sidewalk.

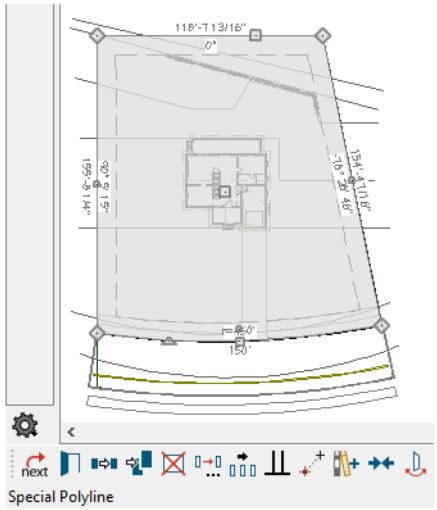
8. The results can be seen in a camera view.

9. Select **File> Close View** to return to floor plan view.

A generic Terrain Feature can also be created using the Convert Polyline edit tool. To save time, existing objects are used to produce the desired shape.

To create a planting border

1. Click the **Select Objects** button, then click on the special polyline representing the lot perimeter.

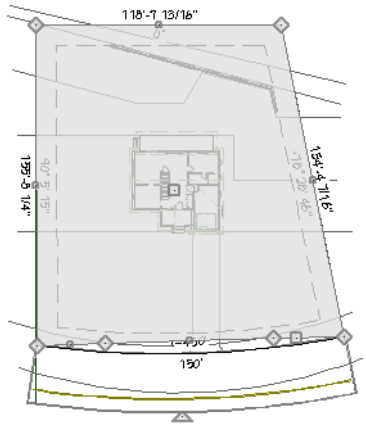


   - Check the left side of the Status Bar at the bottom of the program window to confirm that the polyline is selected.
   - If the Terrain is selected instead, click the **Select Next Object** edit button to select the polyline.

2. With the special polyline selected, click the **Copy/Paste in Place** edit button to create an identical copy placed directly over the original.
3. With the new polyline selected, click the **Convert to Plain Polyline** edit button.
4. With the new polyline still selected, now click the **Convert Polyline** edit button. In the **Convert Polyline** dialog, select the radio button beside **Terrain Feature** and click OK.
5. In the **Terrain Feature Specification** dialog:
   - On the GENERAL panel, specify the **Height** and **Depth** as 1".
   - On the LINE STYLE panel, click to add a check mark to the **Layer Default** check box to place this terrain feature on the "Terrain Features" layer like the Garden Bed.
   - Also on the LINE STYLE panel, uncheck **Show Length** and **Show Angle**.
   - On the MATERIALS panel, notice that this feature has a concrete material assigned to it. Click the **Select Material** button and choose the "Mulch (dark)" material.
   - Click OK to close the dialog and apply your changes.
6. With the Terrain Feature still selected, straighten the curved edge adjacent to the road:

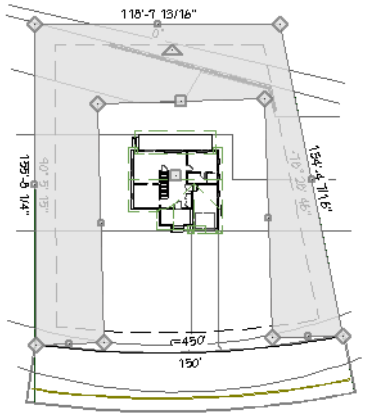
- Click on the curved edge to make it the Selected Edge.
- Click the **Change Line/Arc** edit button.

7. Add two new corner edit handles along the bottom edge of the Terrain Feature:



- Click the **Break Line** edit button, then click the **Sticky Mode** edit button.
- Click on the bottom edge of the Terrain Feature, near the left vertical property line.
- Click once more on the bottom edge, this time near the right vertical property line.
- Click the **Main Edit Mode** edit button.

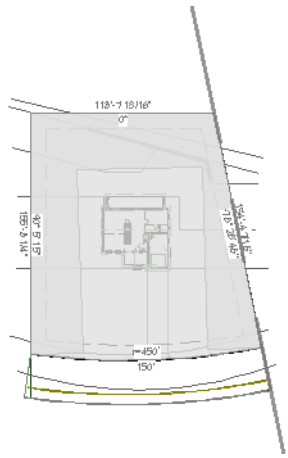
8. Click the square edit handle located between the two new corner handles and drag upward past the back Deck railing of the house.



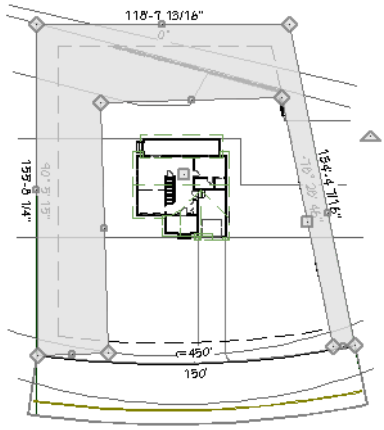
Additional edit tools along with Object Snaps can be used to align the Selected Edge of the Terrain Feature with other objects in the drawing such as the setback lines and Retaining Walls. See “Selected Edge” on page 214 of the Reference Manual.

To align the planting border edges with other objects

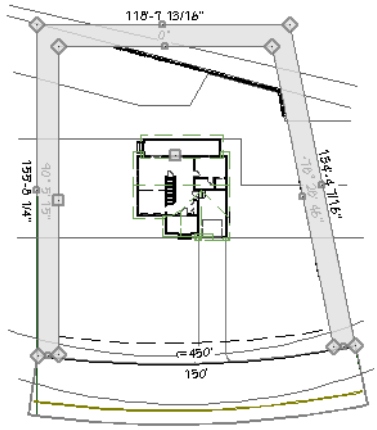
1. Click on the inside vertical edge on the right side of the Terrain Feature to make it the Selected Edge.
2. Click the **Make Parallel/Perpendicular** edit button.



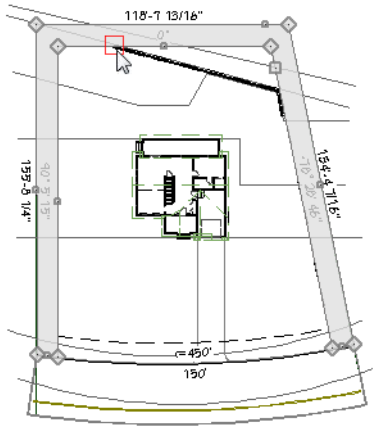
   - Move the mouse pointer over the angled setback line on the right.
   - When the special lot lines polyline becomes highlighted and a dashed alignment axis line displays along its right edge, click once.
   - The angle of the Selected Edge changes, becoming parallel with the lot edge line.
3. Click the Selected Edge’s square move handle and drag it until it snaps to the angled setback line.



4. Repeat steps 1-3 to align the other two inside edges of the Terrain Feature with the back and left setback lines.

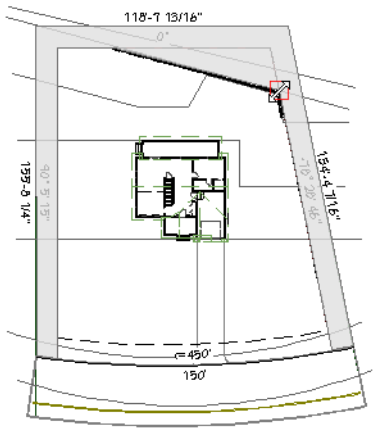


5. Add an extra inside edge that follows the back Retaining Wall:



- With the Terrain Feature still selected, click the **Break Line** edit button.
- Click once on the inside edge that follows the back setback line, near the end of the back Retaining Wall.
- A new diamond-shaped corner edit handle is created at the point where you click.

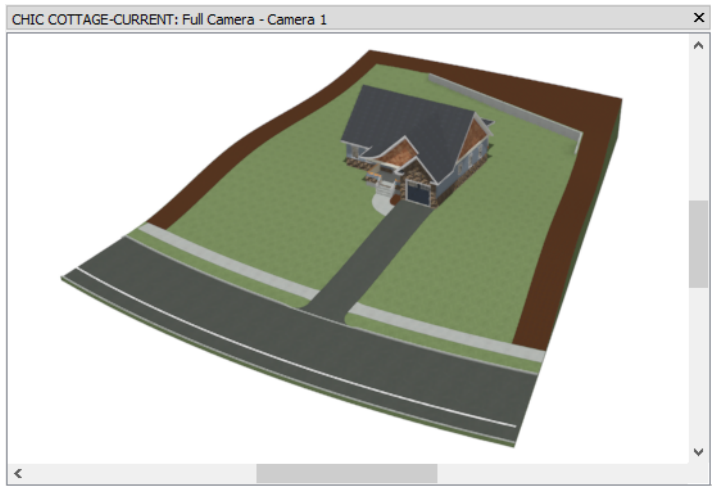
6. Click on the inside corner edit handle on the right side of the Terrain Feature, located behind the back Retaining Wall, then:



- Drag downward until the corner snaps to the back corner of the Retaining Walls.
- Release the mouse button.

7. Using the edit handles, pull the bottom edges on each side of the polyline back so they do not extend past the sidewalk.

8. Create a **Camera** view to see the results.



9. When you are finished, select **File> Close View** and **Save** your work.

Drawing Terrain Walls and Fencing

Like Terrain Features but unlike regular walls, Terrain Walls and Fences follow the contours of the terrain. For more information, see “Terrain Wall and Curb Tools” on page 1212 of the Reference Manual.

To set the fencing defaults

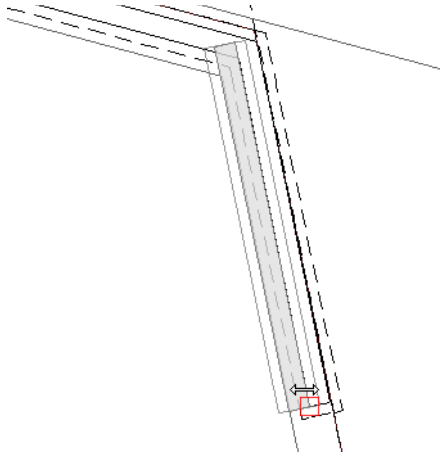
1. Select **Edit> Default Settings** to open the **Default Settings** dialog. Click the arrow to the left of "Walls" to expand the category, select "Fencing", then click the **Edit** button.
2. On the NEWELS/BALUSTERS panel of the **Fencing Defaults** dialog:
   - Specify the **Railing Height** as 72".
   - Specify the **Newels/Posts Height** as 74".
   - Click the **Library** button to the right of the **Type** drop-down list for Panels.
3. In the **Select Library Object** dialog:
   - Notice that the dialog opens with the current panel selected in the library tree list.
   - Browse to Chief Architect Core Catalogs> Architectural> Fences and Railings> Ironwork and select the "Pole" panel from the list.
   - Click OK.
4. On the RAIL STYLE panel of the **Fencing Defaults** dialog:

- Check the boxes beside **Include Top Rail** and **Include Bottom Rail**.
- Check **Raise Bottom** and specify the distance as 2".

5. On the RAILS panel:
   - Select "Top Rail" from the drop-down list.
   - Specify the **Height** and **Width** as 5 1/2" and 1 1/2", respectively.
   - Select "Bottom Rail" from the drop-down list and assign the same **Height** and **Width** values as the Top Rail.
6. On the MATERIALS panel, assign the "Pine (dark)" material to the "Newel" and Rail components:
   - Click on the "Newel" component to select it.
   - Hold down the Ctrl key and click on the "Rail" component to select it as well.
   - Click the **Select Material** button.
7. On the LIBRARY MATERIALS panel of the **Select Material** dialog, search for "Pine (dark)", select this material, and click OK.
8. Click OK and then Done to close both dialogs and apply your changes.

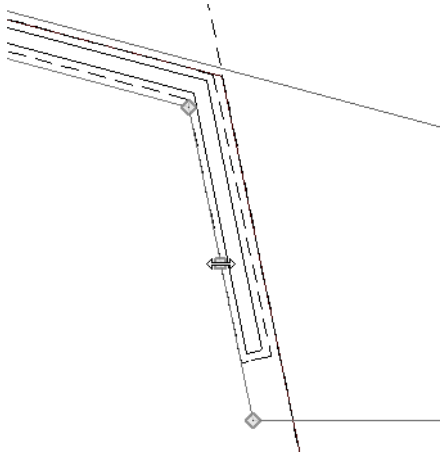
To draw and customize fencing

1. Select **Build> Fencing> Straight Fencing** then click and drag along the left vertical setback line, from the sidewalk up to the back setback line.
2. Draw two more fences along the back and right angled setback lines.
3. **Zoom** in on the back right corner of the lot and:
   - Notice that the fence drawn along the setback line has replaced the angled Retaining Wall at that location. This is because two wall objects cannot be drawn at the same location in Chief Architect.
   - Select **File> Undo** until the Retaining Wall is restored.
4. Click on the angled Retaining Wall near its bottom end to select it, then:



- Click on the Move edit handle that displays along the wall's edge at the point where you clicked.
- Avoid the small square Move handles that display on the footing edges.
- Drag slowly towards the left.
- When an **Endpoint** snap indicator displays at the original location of the wall's bottom left corner, release the mouse button.

5. Click the **Select Objects** button, then select the Elevation Polyline that follows the angled Retaining Wall's low side. Use its Move edit handle to position it just outside the Retaining Wall's footing line.



Because fencing is simply a special type of wall, a gate can be added just the way a door can.

To place a gate

1. Select **View> Library Browser** to open the Library Browser.
2. In the Core Catalogs, browse to Architectural> Fences & Railings> Gates and select a gate. Here, the "Wrought Iron Gate (arched)" is used.
3. Click on the back fence near the left corner to place the selected gate at that location.
4. Select the gate and click the **Open Object** edit button.
5. On the GENERAL panel of the **Interior Door Specification** dialog, specify the **Height** as 72" and click OK.

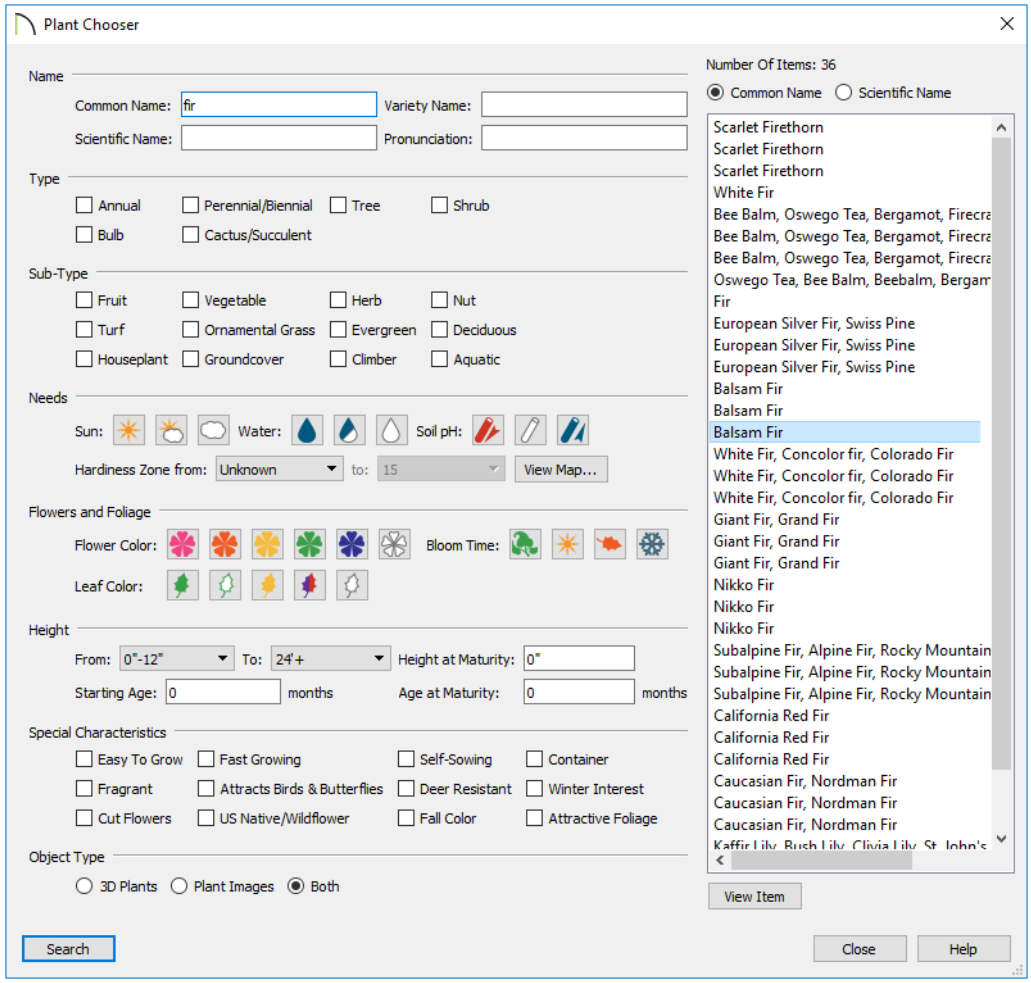
Placing Plants

Plants are represented using image objects that offer a high degree of realism without significantly increasing the surface count of the 3D model. For more information about library objects, see “Plant Tools” on page 1252 of the Reference Manual.

The Plant Chooser allows you to search the plants in the library using a variety of parameters, including the plant’s common name.

To search using the Plant Chooser

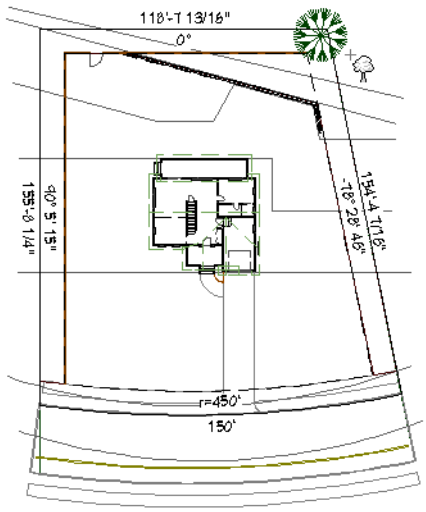
1. Open the Plant Chooser in either of two ways:
   - Click the **Plant Chooser** button at the bottom of the Library Browser.
   - Select **Terrain> Plant> Plant Chooser**.
2. In the **Plant Chooser** dialog:



- Type “fir” in the **Common Name** field.
- Click the **Search** button at the bottom left corner.
- The search results are listed on the right side of the dialog.

3. Above the search results, select the **Common Name** radio button.
4. Select a Balsam Fir from the search results, then:
   - Click the **View Item** button to open the **Plant Information** dialog, where you can read size and growing information about the selected plant.
   - Click the **Close** button to close the dialog, locate the plant in the Library Browser, and select it for placement.

5. Notice that your mouse pointer displays the Plant icon and that a preview of a 2D tree symbol follows it. Click once to place a copy of the tree image at that location.

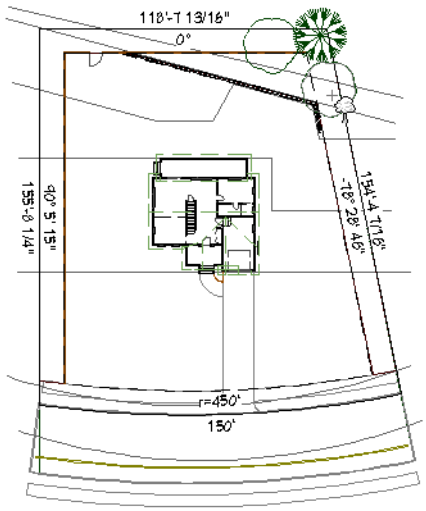


6. You can continue clicking to place more copies of the selected tree if you wish, or choose a different drawing tool.

You can also browse the Library Browser and select plants for placement in your plan.

To browse the Plants library category

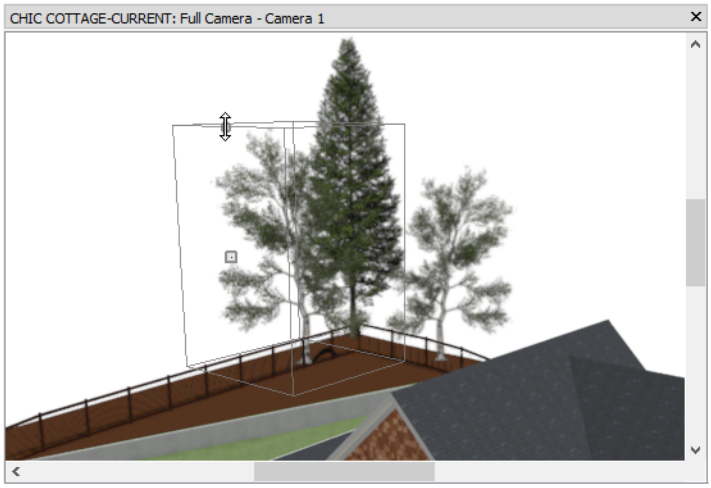
1. If the Library Browser is not open, select **View> Library Browser** to open it.
2. In the Core Catalogs, browse to Plants> Trees> Deciduous.
3. Note the many tree species to choose from. Many of these folders contain subfolders with different varieties of that species.
4. Browse to Betula> Betula papyrifera and select the adult paper birch tree for placement.
5. Place two copies of the selected tree at the back right corner of the lot, in the planting area behind the retaining walls.



Plants can be edited in both floor plan and 3D views. Making minor changes to plants can make multiple instances of the same image look more natural.

To modify plant images

1. Select **3D> Create Perspective View> Perspective Full Overview** and **Orbit** the camera so the trees can be clearly seen.
2. Click the **Select Objects** button, then click on one of the birch trees to select it.
3. Click the **Open Object** edit button, and on the IMAGE panel of the **Plant Image Specification** dialog, check the box beside **Reverse Image** and click OK.
4. With the tree image still selected:

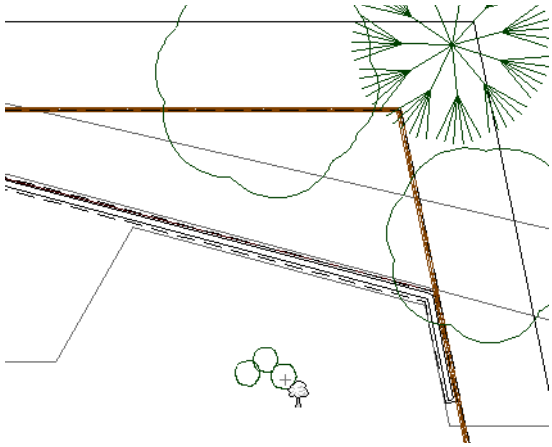


- Notice that it has two edit handles: a Move handle at its center and a Resize handle along its top edge.
- Click and drag the resize handle upward to make the image larger or downward to make it smaller.

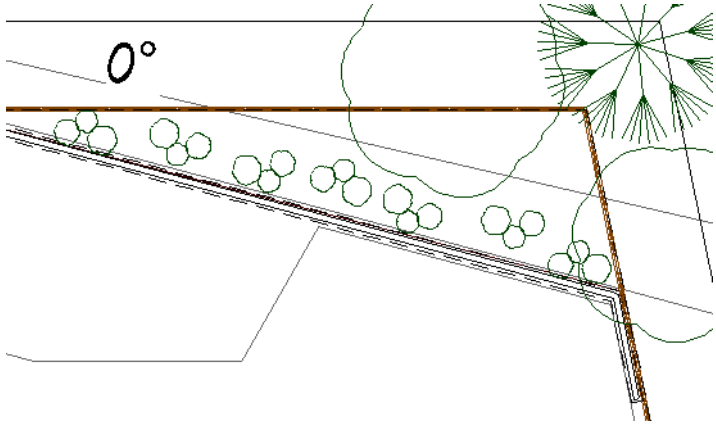
Some plants look best when clustered into groups.

To block plants into groups

1. Use the Plant Chooser or browse the library to find the Evergreen Shrub named "Rhododendron (cream)".
2. Place three instances of this shrub in an open space, away from other objects.



3. Edit the three plant images as described above.
4. When they look the way you want them to, select them as a group:
   - Click the **Select Objects** button, then click on one rhododendron to select it.
   - Hold down the Shift key, then click on the other two rhododendrons to add them to the selection set.
   - The total number of selected objects will be stated on the left side of the Status Bar.
5. With the three rhododendrons selected, click the **Make Architectural Block** edit button.
6. The selected architectural block has two edit handles: a square Move handle and triangular rotate handle. Move the block into the planting area behind the Retaining Walls and rotate it as you see fit.
7. Use the **Copy/Paste** edit button to make additional copies of this architectural block along the length of the angled Retaining Wall, rotating each of them to a different angle.



8. Select one of the blocks and click the **Explode Architectural Block** edit button. The individual plants can now be edited individually.
9. When you are finished, **Save** your work.

Creating File Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed.

When you are finished working on a file and are ready to close it, **Save** your work. Before closing it, though, create a copy of the file with a different name that indicates what it contains so you can distinguish it from other revisions.

To save a plan revision

1. Select **File**> **Save As** .
2. In the **Save Plan File** dialog, make sure that the save location is your Chic Cottage folder.
3. For the File name, type a the name of the project followed by a short description of the current state of the drawing; for example, Chic Cottage-Landscaping.

Review

This lesson describes the best practices for adding planting areas to a landscaping plan.

- To modify a custom Layer Set
- To set the material defaults for Garden Beds
- To create and edit a Garden Bed
- To create a planting border
- To align the planting border edges with other objects
- To set the fencing defaults
- To draw and customize fencing
- To place a gate
- To search using the Plant Chooser
- To browse the Plants library category
- To modify plant images
- To block plants into groups

Assessment Questions

Where are the default materials for Garden Beds and regular Terrain Features set?

What edit tool creates a copy of an object at the same location as the original with one click?

What edit tool lets you change the angle of an object or an object edge to match that of another object?

What dialog lets you search for the common names of plants?

Layout Tutorials

The Layout Tutorials describe best practices for creating layout files in Chief Architect for producing construction documents:

- Layout Page Templates
- Title Blocks and Borders
- Sending Views to Layout

Chapter 26:

Layout Page Templates

The first step in creating an effective layout template file is to create the required page templates.

Learning Objectives

This lesson describes best practices in Chief Architect for creating and assigning layout page templates. Concepts introduced include:

- Setting the Defaults
- Specifying Layout Page Templates
- Assigning Page Templates
- Assigning Page Titles
- Creating a Page Numbering Convention

File Management

Just as with plan files, it is very important that you use a file naming convention that meets your needs and organize your files effectively. See "File Management" on page 18 of the Exterior Walls Tutorial.

Unlike most of the plan files in this series, the layout file created in this lesson is intended to be used as a template for future projects rather than for one specific project.

To save a new layout file

1. Begin by selecting **File> New Layout** to open a new, blank layout file.
2. Select **File**> **Save As**. In the **Save Plan File** dialog, browse to your Documents folder.
3. Open the Chief Architect X10 Data folder, then open the Templates folder.
4. For the **File name**, type MY LAYOUT TEMPLATE. You have now created a layout file that you can customize to meet your needs.

It is a very good idea to save your files often as you work, and this guide reminds you to do so regularly.

Productivity Tips

As you learn how to create layout page templates, keep in mind these tips to improve your productivity.

Content

- Layout page templates should be set up as part of your layout template files so that they are ready for use whenever you begin a new layout. See “Template Files” on page 97 of the Reference Manual.

Interface

- The Project Browser side window lists the pages of the current layout file and provides a convenient way to organize and access them.

Keyboard Hotkeys

- F1 - Help for the current context
- Spacebar - Select Objects
- F6 - Fill Window
- Ctrl + E - Open Object edit tool
- Ctrl + S - Save

Setting the Defaults

In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. There are no default settings that come into play when setting up and assigning layout page templates; rather, this information will serve as the part of the default setup in your layout template files.

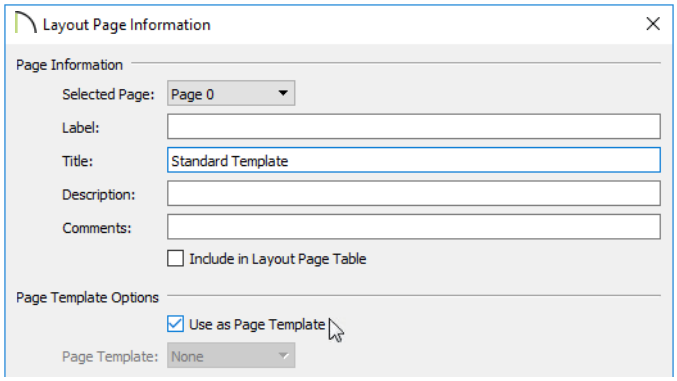
Specifying Layout Page Templates

Layout Page Templates allow you to create one or more title blocks and borders and then assign them to the layout pages of your choice. Unlike regular pages with content, Layout Page Templates do not print as part of a print range. See “Layout Page Templates” on page 1311.

In this example, two Page Templates will be specified: one for the cover sheet and general notes, and one for the sheets that follow it.

To specify a page template

1. If your program version does not have the Project Browser feature, select **Tools> Layout> Page Down** to go to Page 0.
2. Select **Tools> Layout> Edit Page Information**, and in the **Layout Page Information** dialog:



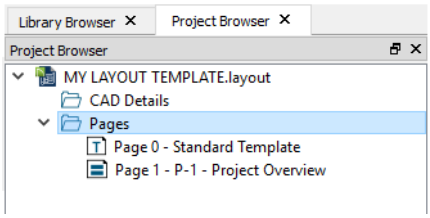
- Notice that the current Title is Page Template.
- Change the **Title** to "Standard Template".
- Confirm that **Use as Page Template** is checked under the Page Template Options heading.
- Click **OK** to close the dialog and apply your changes.

Page templates can also be specified in the Project Browser. By default, the Project Browser side window is docked to the right side of the program window.

To specify a page template in the Project Browser

1. If the Project Browser side window is not open, select **View> Project Browser** to open it.

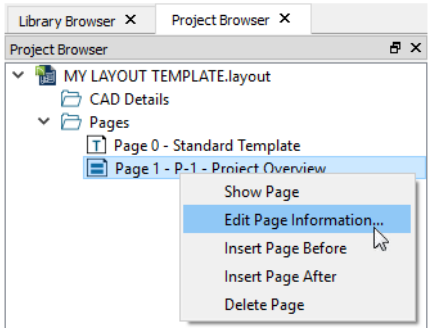
2. If the Library Browser displays in front of the Project Browser, click on the Project Browser's tab to make it active.
3. Click the arrow next to the "Pages" folder to expand a list of the pages in the layout file that are currently in use. In a new layout, only Pages 0 and 1 will be listed.



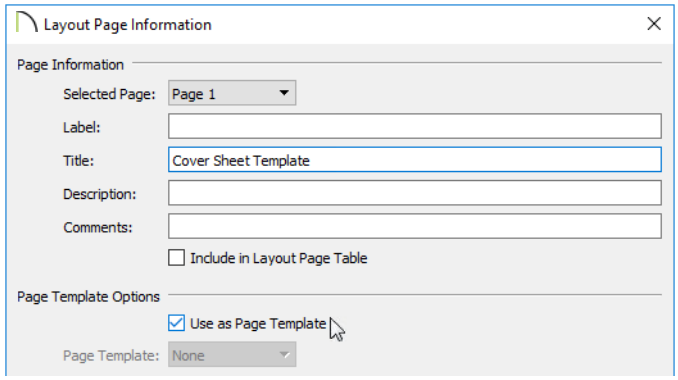
- Notice the icons beside each page. Page 0 is specified as a Page Template, while Page 1 is a page with content.

> Page 1 is listed as a page with content because it has a piece of text on it. See "Layout Page Tables" on page 1314.

4. Right-click on Page 1 in the Project Browser and select **Edit Page Information** .

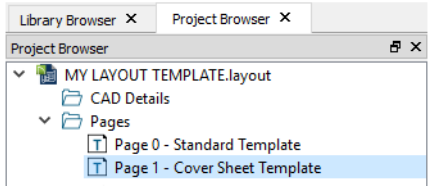


5. In the **Layout Page Information** dialog:



- Delete the information in the **Label** field.
- Change the **Title** to "Cover Sheet Template".
- Check the box beside **Use as Page Template** and click **OK**.

6. In the Project Browser, notice that Page 1's icon has changed and now indicates that it is a Page Template rather than a page with content.



7. When you are finished, **Save** your work.

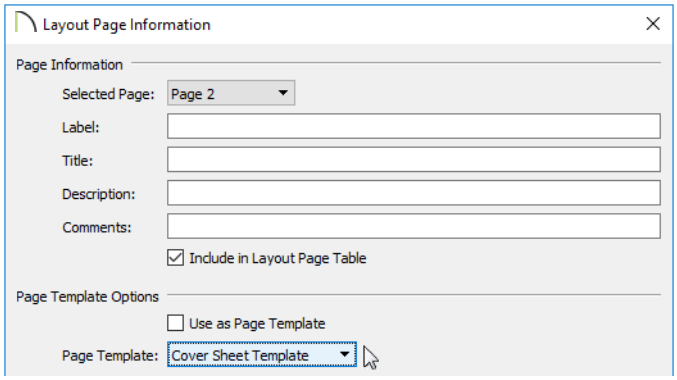
Using the same steps, you can set aside layout pages for any additional Page Templates that you might need for different disciplines and sheet types.

Assigning Page Templates

Once multiple Page Templates have been created, they can be assigned to non-template pages: either blank or with content. You can wait and do this when you actually send views to layout for a project, or you can save time and set aside pages for specific purposes beforehand.

To assign the Cover Sheet Template

1. Select **Tools> Layout> Edit Page Information** .
2. In the **Layout Page Information** dialog, select "Page 2" from the **Selected Page** drop-down list and then:

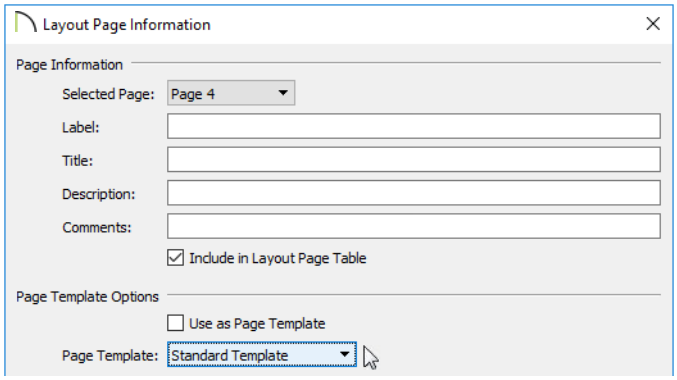


- Under the Page Template Options heading, click arrow next to the **Page Template** and select "Standard Template" from the drop-down list.

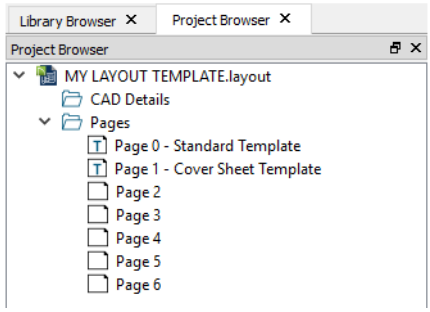
3. Next, select "Page 3" from the **Selected Page** drop-down list and choose "Cover Page Template" from the Page Template drop-down list.

To assign the Standard page template

1. Still in the **Layout Page Information** dialog, select "Page 4" from the **Selected Page** drop-down list, then choose "Standard Template" from the **Page Template** drop-down list.



2. Repeat this process to assign the "Standard Template" to pages 5 and 6.
3. Click OK to close the dialog and apply your changes.
4. In the Project Browser, notice that notice that pages 2 - 6 are now listed as blank pages.



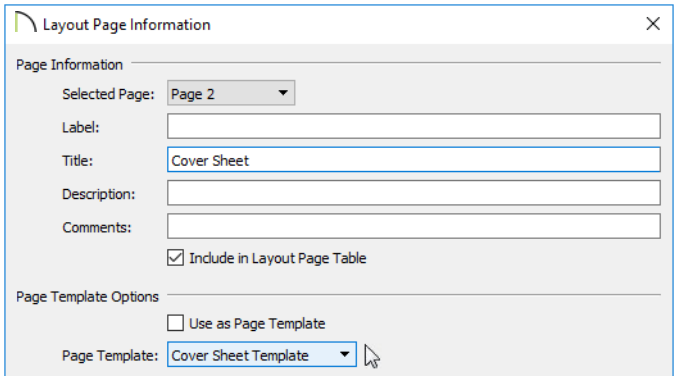
5. When you are finished, remember to **Save** your work.

Assigning Page Titles

A short, descriptive page title lets you identify the purpose that each layout page has been set up for.

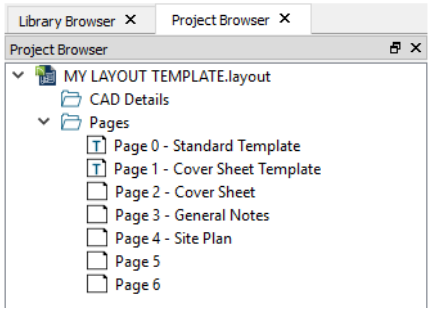
To assign page titles

1. Select **Tools> Layout> Edit Page Information** .
2. In the **Layout Page Information** dialog:



   - Select "Page 2" from the **Selected Page** drop-down list.
   - Specify the **Title** as Cover Sheet.
3. Next, select "Page 3" from the **Selected Page** drop-down list and specify its **Title** as General Notes.

4. Next, select "Page 4" from the **Selected Page** drop-down list and specify its **Title** as Site Plan.
5. Click OK to close the dialog and apply your changes.
6. In the Project Browser, notice that notice that pages 2 - 4 now have titles.



7. When you are finished, remember to **Save** your work.

The remaining layout pages can be assigned Titles when their Page Numbers are assigned.

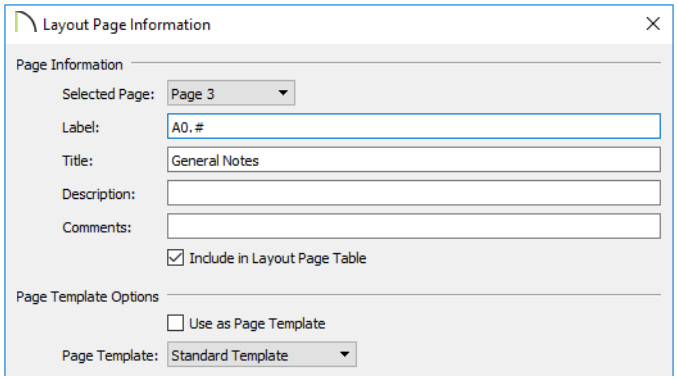
Creating a Page Numbering Convention

There are a number of ways to include page numbers on layout pages. The most versatile uses the Page Label and allows you to set up custom page numbering conventions using the Layout Page Information dialog. See “Layout Page Numbering” on page 1310 of the Reference Manual.

In your own layout template file, you can assign sheet numbers that you typically use in advance and use the numbering convention of your choice. Here, a fairly typical variation of the US National CAD Standard page numbering convention is used.

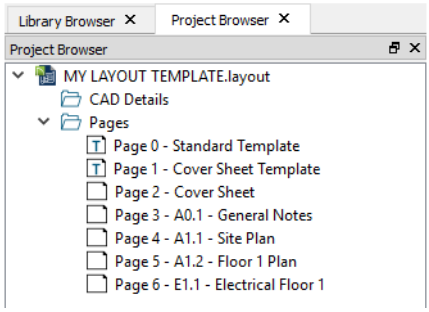
To assign page numbers

1. Select **Tools> Layout> Edit Page Information**.
2. In the **Layout Page Information** dialog, select "Page 3" from the **Selected Page** drop-down list and then:



- Note that its **Title** is General Notes.
- Specify the **Label** as A0.#.

3. Select "Page 4" from the **Selected Page** drop-down list, then:
   - Note that its **Title** is Site Plan.
   - Specify the **Label** as A1.#.
4. Select "Page 5" from the **Selected Page** drop-down list, then:
   - Specify its **Title** as Floor 1 Plan.
   - Specify the **Label** as A1.#.
5. Select "Page 6" from the **Selected Page** drop-down list, then:
   - Specify that its **Title** as Electical Floor 1.
   - Specify the **Label** as E1.#.
6. Click OK to close the dialog and apply your changes.
7. In the Project Browser, notice that A0, A1, and E1 are all treated as separate prefixes.



If you type a pound sign # in the Label field, the characters before it will be treated as a numbering prefix, and the # will be replaced by the current page number on the layout sheet. See “Layout Page Numbering” on page 1310 of the Reference Manual.

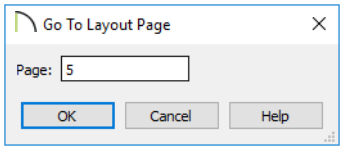
8. When you are finished, remember to **Save** your work.

Inserting Layout Pages

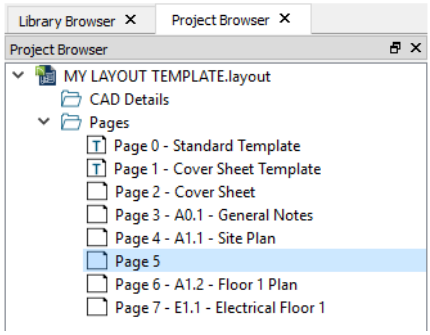
If you need to add additional disciplines, types, and/or pages, they can be easily inserted at any time: either in a specific project or in your layout template file.

To insert new layout pages

1. Select **Tools> Layout> Change Layout Page** or click the button that reports the current page number and go to page 5, which was set aside for the Floor 1 Plan.



2. Select **Tools> Layout> Insert Page Before** to add a page before the current page. The new page 5 will become the active page and the original page 5 will move to page 6.
3. In the Project Browser, notice that page 5 has no sheet number or title.

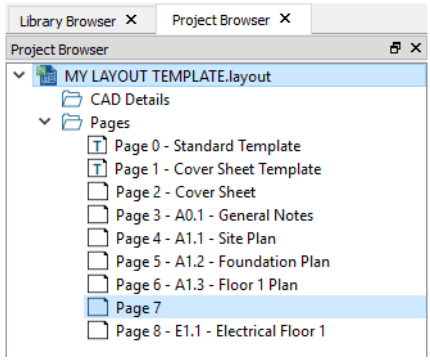


4. Select **Tools> Layout> Edit Page Information**. and in the **Layout Page Information** dialog:

- Notice that the new page's Label and Title are blank.
- Specify the **Label** as A1.#.
- Specify the **Title** as Foundation Plan.
- Confirm that the Page Template is "Standard Template", then click OK.

5. Select **Tools> Layout> Page Up** and go to page 6, which was set aside for the Floor 1 Plan.

6. Select **Insert Page After**. Page 6 is unchanged, the new page becomes page 7 and is active, and the original page 7 becomes page 8.

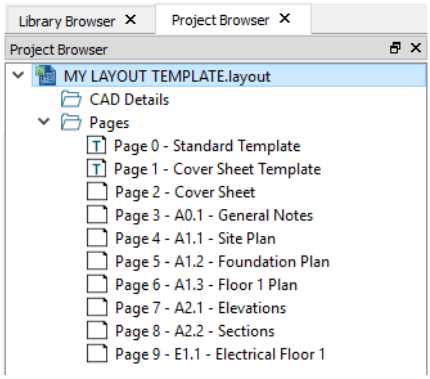


7. Select **Tools> Layout> Edit Page Information**. In the **Layout Page Information** dialog:
   - Select "Page 7" from the **Selected Page** drop-down list and notice that its Label and Title are blank.
   - Specify the **Label** as A2.#.
   - Specify the **Title** as Elevations.
   - Confirm that the Page Template is "Standard Template", then click OK.

The Project Browser offers an efficient alternative way to insert pages.

To insert new layout pages using the Project Browser

1. In the Project Browser, right-click on page 7 and select **Insert Page After**.
2. Notice that the list of pages grows by one and that page 8 is listed as a blank page.
3. Right-click on page 8 and select **Edit Page Information**.
4. In the **Layout Page Information** dialog,
   - Specify the **Label** as A2.#.
   - Specify the **Title** as Sections.
   - Confirm that the Page Template is "Standard Template", then click OK.



5. Remember to **Save** your work.

Once your Page Templates have been defined as such, you can create a border and title block for each that matches how it will be used. See “Title Blocks and Borders” on page 555.

Creating File Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed.

When you are finished working on a file and are ready to close it, **Save** your work. Before closing it, though, create a copy of the file with a different name that indicates what it contains so you can distinguish it from other revisions.

To save a layout revision

1. Select **File**> **Save As** .
2. In the **Save Layout File** dialog, make sure that the save location is your Chief Architect X10 Data\Templates folder.
3. For the **File name**, type My Layout Template as the name of the file followed by a short description of the current state of the drawing; for example, My Layout Template_Page Templates.

Review

This lesson describes the best practices for setting up page templates in a layout file.

- To save a new layout file
- To specify a page template

- To specify a page template in the Project Browser
- To assign the Cover Sheet Template
- To assign the Standard page template
- To assign page titles
- To assign page numbers
- To insert new layout pages
- To insert new layout pages using the Project Browser

Assessment Questions

What is the name of the side window that lists all of the pages of the current layout file?

What are three categories of pages that are listed in this side window?

What information should be included on a page template?

What is the name of the dialog in which you can assign sheet titles to layout pages?

What character can you type into a page's Label to set up custom page numbering conventions?

Chapter 27:

Title Blocks and Borders

This tutorial describes tools and techniques for creating title blocks and borders for construction documents.

Learning Objectives

This lesson describes best practices in Chief Architect for generating floor and ceiling framing. Concepts introduced include:

- Setting the Defaults
- Setting up the Drawing Sheet
- Setting the Defaults
- Creating a Title Block
- Using Text Macros
- Including a Revision Table
- Creating a Cover Sheet Template
- Creating a Custom Layout Template

File Management

This tutorial continues where the Layout Page Templates tutorial left off. At this point, both the My Layout Template_Page Templates and MY LAYOUT TEMPLATE layout files contain the same information, so you could open either one and continue working. However, My Layout

Template_Page Templates.layout was created specifically to serve as a revision or archive file so it will be left unchanged.

To continue working on MY LAYOUT TEMPLATE, select **File> Open Layout** . If need be, browse to Documents\Chief Architect X10 Data, select the file, and click Open.

Alternatively, select **File> Recent Files** and choose MY LAYOUT TEMPLATE from the Recent Files List. The Recent Files List is a convenient way to access files you have been working on; however, it is not an alternative to knowing where your files are located and having a good file revision strategy in place. See “Creating File Revisions” on page 583.

It is a very good idea to save your files often as you work, and this guide reminds you to do so regularly.

Productivity Tips

As you learn how to create layout page templates, keep in mind these tips to improve your productivity.

Drawing and Editing

- The **Center Object** edit tool can be used to center text and other CAD objects inside of CAD polylines.
- Text Macros can be added to report page numbers and other information automatically.

Content

- Import an image of your company logo to display in your construction documents.
- Create one or more layout template files that can be used whenever you begin a new layout. See “Template Files” on page 97 of the Reference Manual.

Interface

- When designing a layout title block and border, it is helpful to have Grid Snaps toggled on.
- The Grid Snap Unit also determines how far a selected object is Nudged when the arrow keys are pressed.

Keyboard Hotkeys

- F1 - Help for the current context
- Spacebar - Select Objects
- Arrow keys - Nudge selected object
- F6 - Fill Window
- Ctrl + E - Open Object edit tool
- Ctrl + S - Save

Although Temporary Dimensions are toggled off in most of images in this tutorial, it is assumed that they are on for the purposes of following the steps. Select View> Temporary

Dimensions and confirm that there is a check mark in lower right corner of the tool icon. See “Temporary Dimensions” on page 468 of the Reference Manual.

Setting the Defaults

In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. Setting defaults early can improve efficiency and also helps to avoid introducing errors into the drawing. When creating a layout title block and border, there are several defaults of particular importance.

Before drawing a title block and border, you need to define the size and shape of the Drawing Sheet. See “Setting up the Drawing Sheet” on page 557.

Grid Snaps are very useful when drawing and positioning CAD objects for a layout title block. You can set the Grid Snap Unit in the General Layout Defaults dialog. See “To set the Grid Snap Unit and Nudge distance” on page 559.

It is a good idea to set the default line style, weight, and other attributes of CAD objects that you draw on the layout sheet prior to drawing them. See “To set the default CAD line weight and style” on page 560.

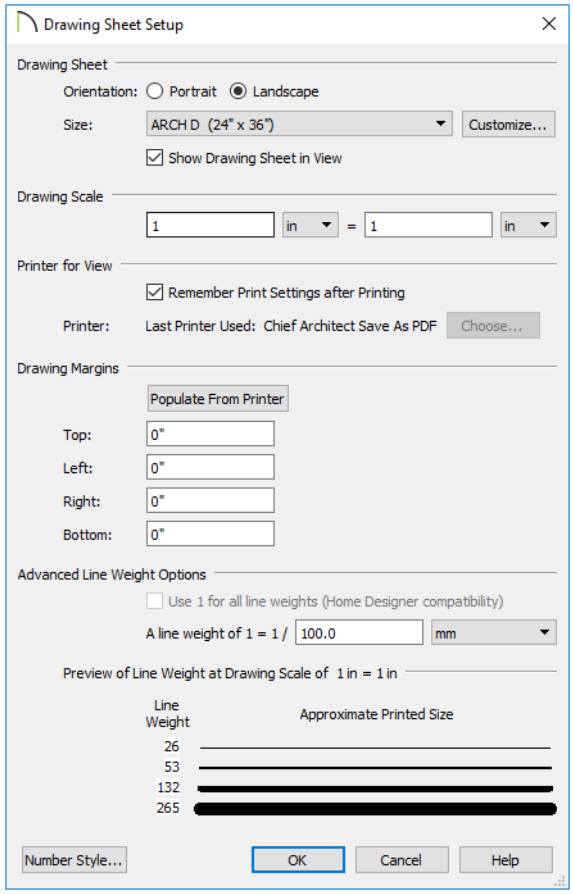
Before adding text to the layout, be sure that the Rich Text Defaults are set to meet your requirements. See “To set the Rich Text Defaults” on page 566.

Setting up the Drawing Sheet

Before sending views to layout, it is recommended that you set up your drawing sheet and then use the CAD, Text, and editing tools to create a border and title block for your layout page on one or more Page Templates. For information about the Drawing Sheet, see “Drawing Sheet” on page 1326 of the Reference Manual.

To set up the layout sheet

1. Select **File> Print> Drawing Sheet Setup** to open the **Drawing Sheet Setup** dialog.



2. Specify the **Orientation** and **Size** of the **Drawing Sheet**.
3. The **Drawing Scale** for layout files should always be 1 in = 1 in (1 mm = 1 mm in metric files). For more information, see “Drawing Sheet Setup Dialog” on page 1322 of the Reference Manual.
4. You can also specify the drawing sheet’s **Margins** if you want.
5. Click **OK** when you are finished.
6. Select **Window> Fill Window** so that you can see the entire drawing sheet.
7. When you are finished, select **File> Save**.

Drawing a Layout Border

The layout template files that are installed with Chief Architect have a title block and border already drawn in them. You can use these as they are, modify them to suit your needs, or delete them and create your own.

Although the CAD and Text objects that make up an existing layout border can be edited, it is sometimes easier to simply create a new border from scratch.

It is often helpful to toggle Grid Snaps off when working certain tasks in a plan file. When working in layout, on the other hand, Grid Snaps should almost always be toggled on. See “Grid Snaps” on page 172 of the Reference Manual.

To set the Grid Snap Unit and Nudge distance

1. Select **Edit> Default Settings** , and in the Default Settings dialog click on "Layout" and click the **Edit** button.
2. In the **General Layout Defaults** dialog:
   - Make sure that **Use Snap Grid/Units** is checked.
   - Specify the **Grid Snap Unit** as 1/8" and click OK.

To delete an existing layout border

1. Select **View> Drawing Sheet** to turn off the display of the Drawing Sheet. This will prevent the Drawing Sheet from being selected when the title block and border are group-selected.
2. Select **Tools> Layout> Page Down** to go to Page 0 and **Zoom** out so you can see the entire title block and border.
3. Click the **Select Objects** button, then click and drag to draw a rectangular selection marquee around the entire drawing. When you release the mouse button, all of the objects within the selection marquee will be selected as a group.
4. Select **Edit> Delete** , click the **Delete** edit button, or press the Delete key on your keyboard to delete the entire title block and border.
5. Select **View> Drawing Sheet** to turn the display of the Drawing Sheet back on.

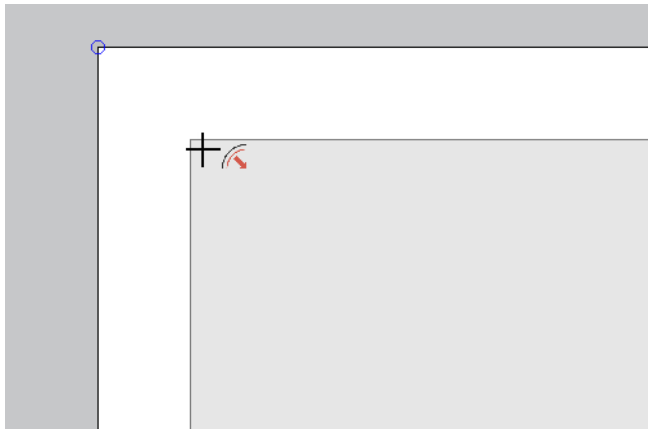
As an alternative to deleting an existing title block and border, you can select **Tools> Layout> Page Up** to go to an empty page and draw a new one there. That page should then be specified as a Page Template. See "Specifying Layout Page Templates" on page 543 of the Layout Page Templates Tutorial.

To set the default CAD line weight and style

1. Select **Tools> Layer Settings> Display Options** .
2. In the **Layout Page Display Options** dialog:
3. Click on the "CAD, Default" layer to select it and notice that its attributes can be edited below the list of layers.
4. The default **Line Weight** of 18 and the solid **Line Style** are typical for CAD lines on a construction sheet, so click Cancel to close the dialog without making any changes.

To create a new layout border

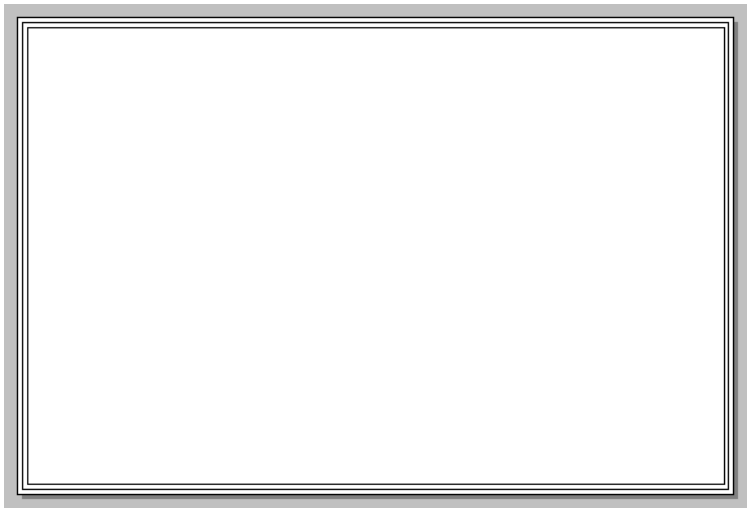
1. Make sure that **Object Snaps** are enabled, particular **Endpoint** snaps.
2. Select **Edit> Preferences** , then go to the BEHAVIORS panel of the **Preferences** dialog. For more information, see “Behaviors Panel” on page 125 of the Reference Manual.
   - Under the **Edit Type** heading, select **Concentric**.
   - Specify the **Jump** value as the distance you would like your border to be drawn from the edge of the drawing sheet.
   - Here, 1/8" is used.
3. Click OK to close the dialog and make the **Concentric Edit Behavior** active and notice that the mouse pointer displays the Concentric icon, reminding you that this non-default behavior is active.
4. Select **CAD> Boxes**> **Rectangular Polyline** , then click and drag a rectangle beginning at one corner of the drawing sheet and ending at the opposite corner.
   - Watch for the red snap indicators that will display at each corner when Endpoint snaps are enabled.
5. Click on the rectangular polyline to select it, then:
   - Look at left side of the Status Bar to confirm that a Standard Polyline is selected.
   - If the Sheet Boundary is selected instead, click the **Select Next Object** edit button.
6. **Zoom** in on one corner of the polyline, then click and slowly drag a corner edit handle towards its center.



- When you reach the your specified **Concentric Jump** distance, the polyline's preview outline will resize so that its edges are that distance from the drawing sheet edges.
- Continue dragging inward and the preview outline will resize again each time you reach the next Concentric Jump increment.
- When you reach the desired Concentric Jump increment, release the mouse button.

7. You can create a double border in a similar manner. With the polyline still selected:

- Click the **Copy/Paste** edit button.
- Click and drag one of the corner edit handles towards the center. A concentric copy of the polyline is made when you reach the **Concentric Jump** distance.



8. When you are finished, it is a good idea to restore the **Default Edit Behavior**. To do this, select **Edit> Edit Behaviors> Default** .
9. Before moving on, remember to **Save** your work.

You can adjust the line weight, style and color for any CAD object in its specification dialog. See “Line Style Panel” on page 301 of the Reference Manual.

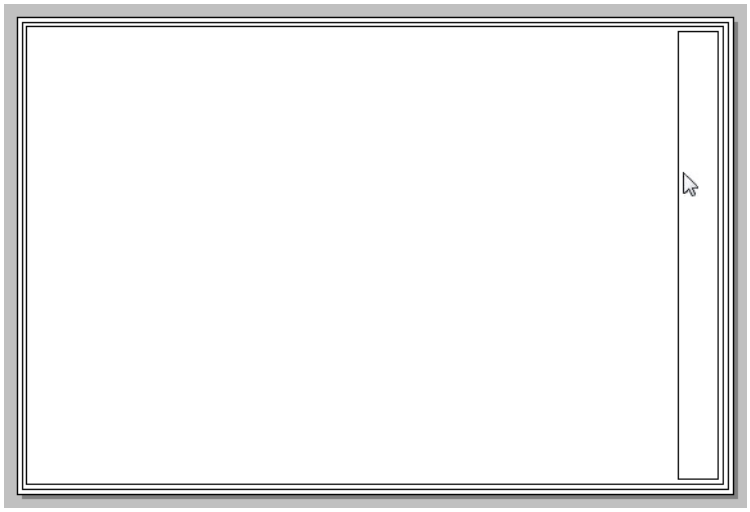
If you would like, you can fillet the corners of the border polylines using the Fillet Lines edit tool. For more information, see “Fillet Lines” on page 261 of the Reference Manual.

Creating a Title Block

With the border drawn, a title block can be added. Here, a vertical title block is added to the right side of the sheet.

To create a title block frame

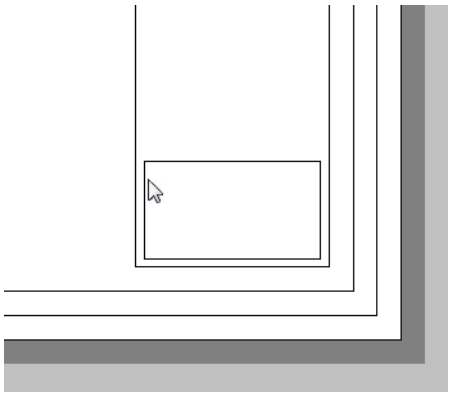
1. Select the inner border polyline created above and create a concentrically resized copy inside of it:
   - **Zoom** in on one corner of the polyline.
   - Click the **Copy/Paste** edit button.
   - This time, hold down the C key, which is the temporary hotkey for the Concentric edit behavior.
   - Click and drag one of the corner edit handles towards the center. A concentric copy of the polyline is made when you reach the **Concentric Jump** distance.
   - Here, two Concentric Jumps are used to resize the polyline by 1/4".
2. With the newly created polyline selected, click on its left vertical edge to make it the Selected Edge.
3. Click on the Temporary Dimension that reports how far the Selected Edge is from the polyline’s opposite vertical edge.
4. In the inline text field, type 2" and press the Enter Key.



With the title block's area defined, separate frames can be created for the information it will contain.

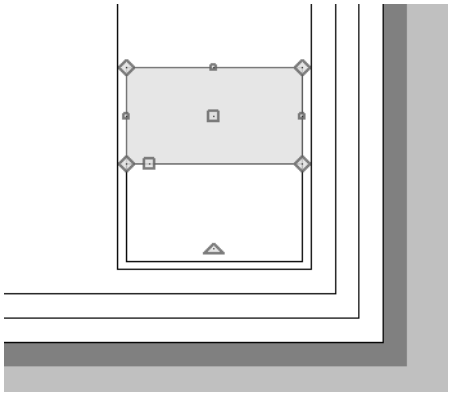
To add a title block component frame

1. Select the title block frame and create a concentrically resized copy inside of it:
   - **Zoom** in on one corner of the polyline.
   - Click the **Copy/Paste** edit button.
   - Hold down the C key to enable the Concentric edit behavior.
   - Click and drag one of the corner edit handles towards the center, and release the mouse button when you reach the **Concentric Jump** distance of 1/8".
2. Click on the top horizontal edge of the new polyline to make it the Selected Edge, then:
3. Click on the Temporary Dimension that reports how far the Selected Edge is from the polyline's bottom horizontal edge.
4. In the inline text field, type 1" and press the Enter Key.



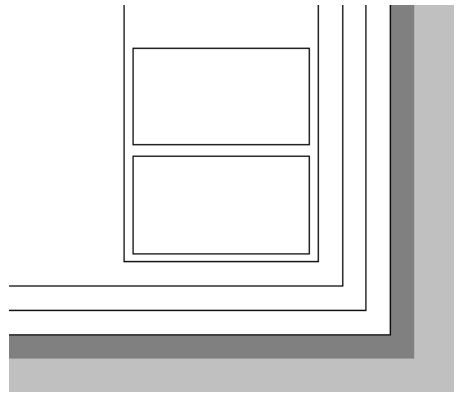
To replicate component frames

1. Select the component frame and click the **Copy/Paste** edit button.
2. Click the **Point to Point Move** edit button, then:
   - Click once on the lower left corner of the component frame.
   - Click once on the upper left corner of the component frame.
   - A copy of the frame is created, and is positioned so that its lower left corner is snapped to the upper left corner of the original.

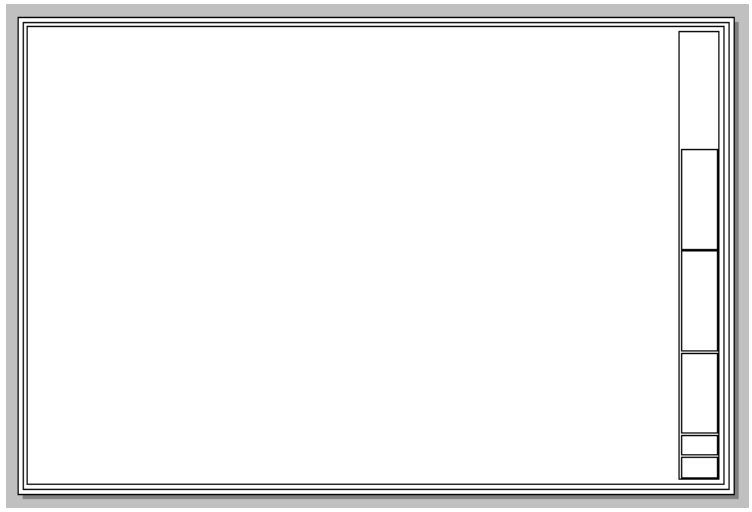


3. With the new component frame selected, press the Up Arrow key one time to nudge it upward 1/8".

> The Nudge distance is equal to file's the Grid Snap Unit. See "Nudging" on page 250 of the Reference Manual.



4. Create a third component frame above the first two using the same process.
5. Make the third frame 4" in height using Temporary Dimensions.
6. Repeat these steps to create:
   - A fourth frame 5" in height.
   - A fifth frame 4" in height.
   - A blank space at the top of the title block frame will remain.



7. When you are finished, remember to **Save** your work.

Adding Title Block Text

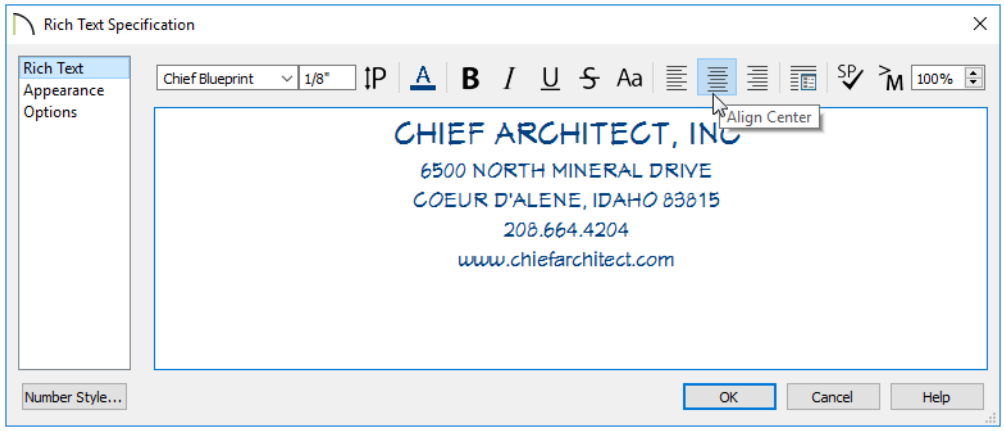
Text can now be created and centered with in the title block frames.

To set the Rich Text Defaults

1. Select **Edit> Default Settings** to open the **Default Settings** dialog. , select "Rich Text", then click the **Edit** button.
2. In the **Saved Rich Text Defaults** dialog, click the **Edit** button.
3. On the RICH TEXT panel of **Rich Text Defaults** dialog:
   - You can specify the default font that you want to use as well as its size. Here, the "Chief Blueprint" font sized at 1/8" is used.
   - Although you can specify special styles like Bold and Italic, it is usually best to not enable these by default.
   - You can type in the text field; however, whatever is entered in the defaults dialog will appear in all newly created Rich Text objects and is not recommended.
4. Click OK and then Done to close both dialogs and apply your changes.

To add company information

1. Select **CAD> Text> Rich Text**, then click in an empty space on the right side of the drawing sheet.
2. On the RICH TEXT panel of the **Rich Text Specification** dialog:



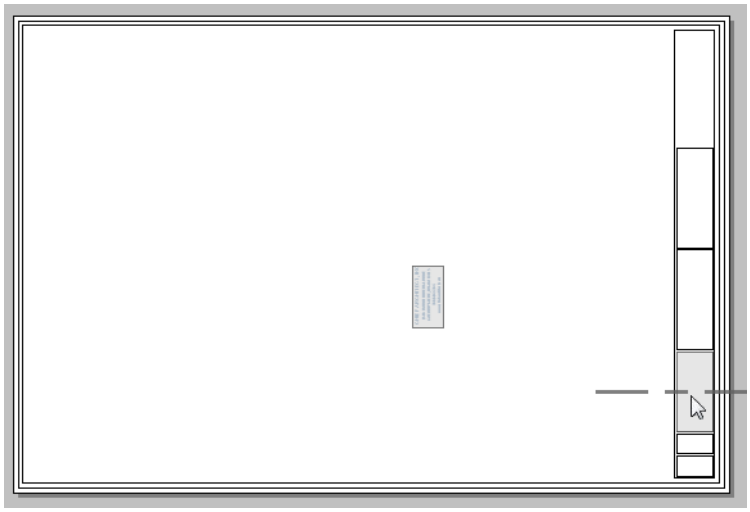
   - Begin by clicking the **Align Center** button.
   - In the main text field, type your company name and contact information.

- To change the size of the company name, highlight it with the mouse and then type the desired size in the text field above. Here, 3/16" is used instead of 1/8".
- Click **OK** to close the dialog and create the text at the point where you clicked.

3. Use the triangular Rotate edit handle to rotate the selected objects 90° to the right, so the text faces the right side of the sheet.

To center text in a frame

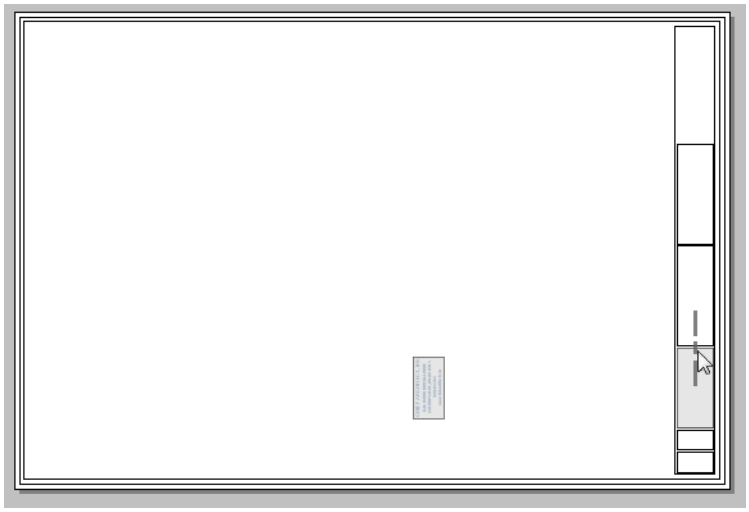
1. Click the **Center Object** edit button, then:



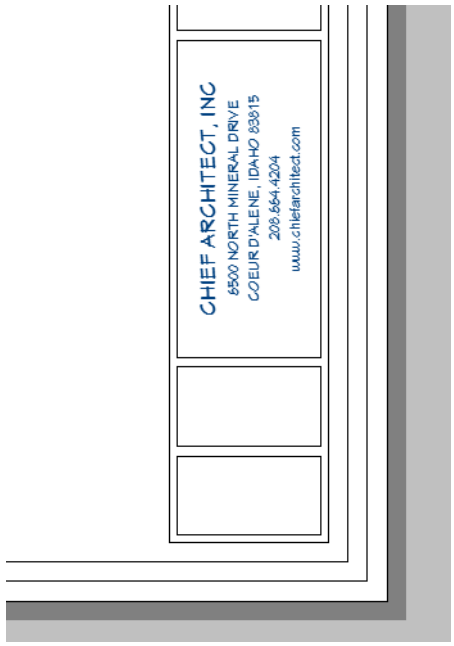
- Move your mouse pointer over left side of the 4" high frame, just above the two 2" frames.

- When a horizontal centering axis displays, click once to center the text relative to the 4" frame.

2. With the text still selected, click the **Center Object** edit button once more. Next:



- Move your mouse pointer over the top edge of the 4" high frame.
- When a vertical centering axis displays, click once to center the text relative to the 4" frame.



Project information can be added to the 5" high frame located just above the company information.

3. When you are finished, remember to **Save** your work.

Using Text Macros

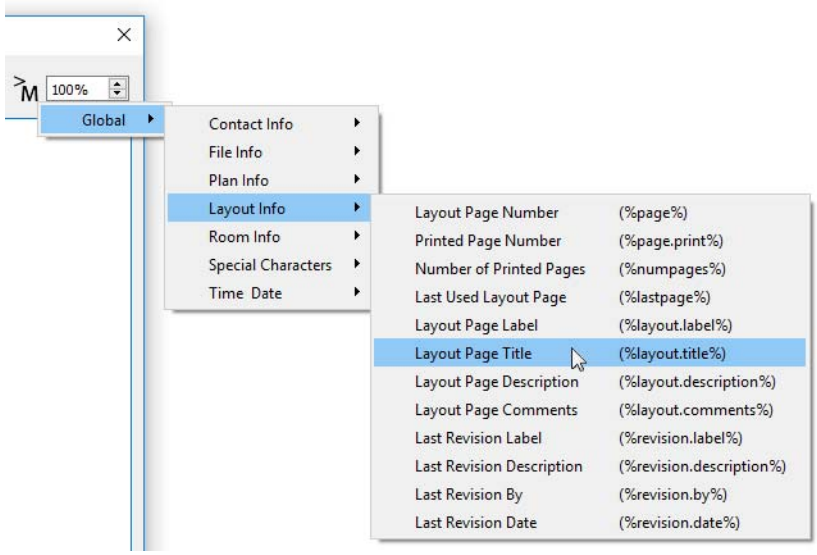
Text Macros can be used to automatically populate the text with information like the sheet title, sheet number, and the current date. For more information, see “Text Macros” on page 522 of the Reference Manual.

Each of your layout pages can be assigned its own unique Title, which will display dynamically using the same text object. For more information, see “Layout Page Templates” on page 541.

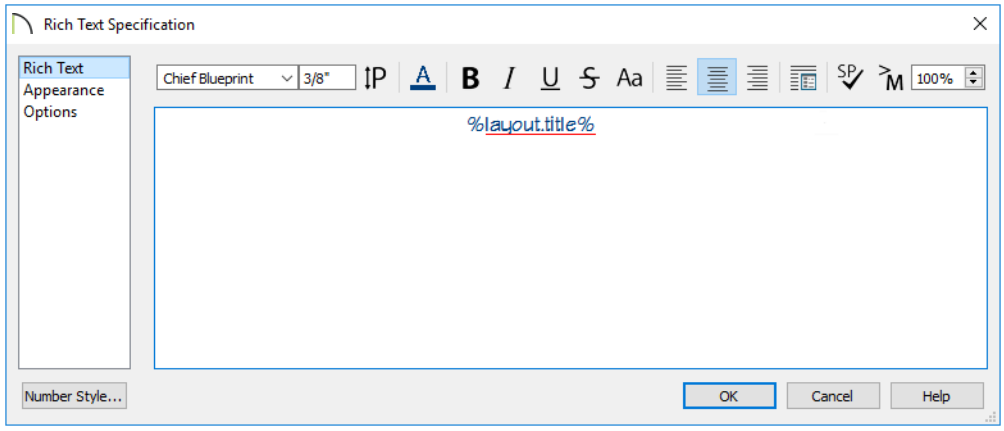
To add a sheet title

1. Create a **Rich Text** object to the left of the title block.
2. On the TEXT panel of the **Rich Text Specification** dialog:
   - Click the **Align Center** button.
   - Increase the text size to 1/4".

• Click the **Insert Macro** button.



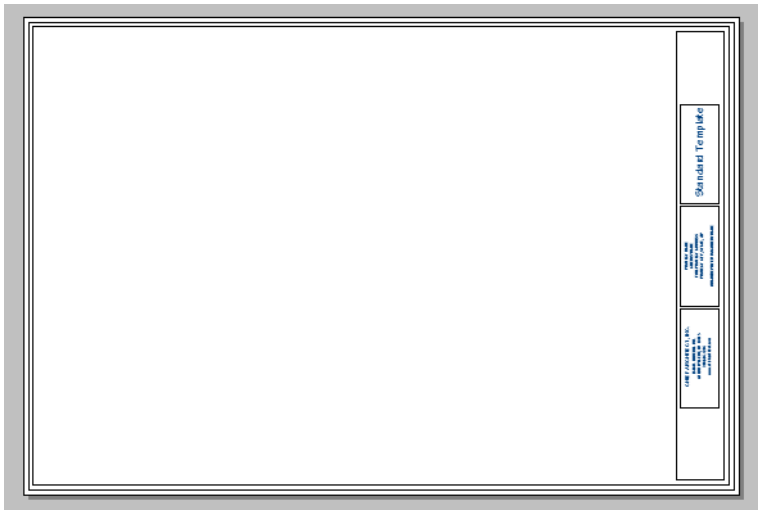
• Browse to **Global> Layout Info** and select "Layout Page Title".



• Note that the Text object now contains the macro: %layout.title%, then click OK

3. Notice that the Text object now says "Standard Template". This is the title that was assigned to Page 0 in the Layout Page Templates tutorial. See "To specify a page template" on page 543 of the Layout Page Templates Tutorial.
4. Rotate the text so it faces to the right.

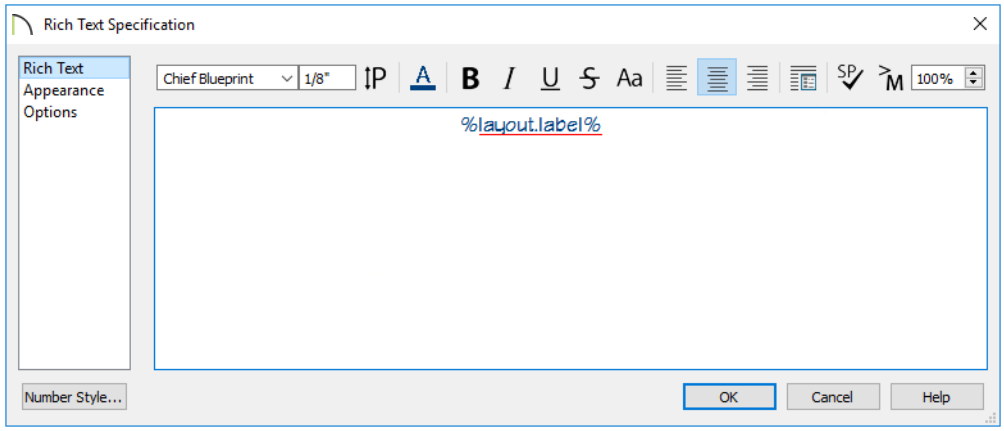
5. Use the **Center Object** edit tool to center the text inside of the frame located just above the project information, as described in “To center text in a frame” on page 567.



There are a number of page number macros, but the most versatile is used here and will allow you to set up custom page numbering conventions using the Layout Page Information dialog. See “Layout Page Numbering” on page 1310 of the Reference Manual.

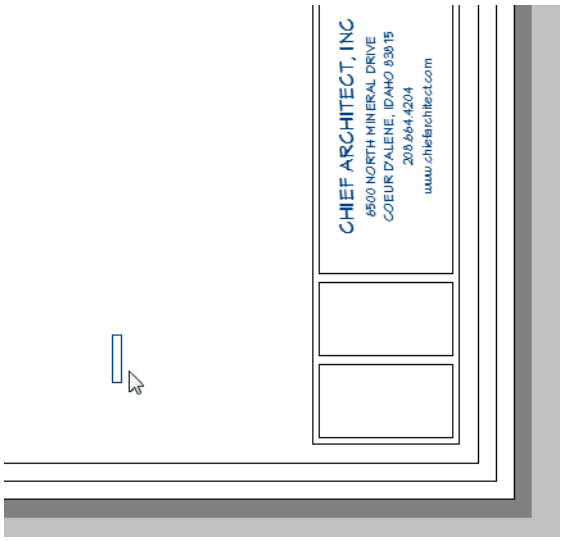
To add a sheet number

1. Select **CAD> Text> Rich Text**, then click in an empty space in the drawing sheet.
2. On the TEXT panel of the **Rich Text Specification** dialog:

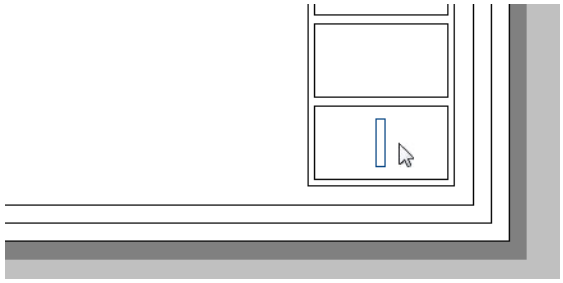


- Specify the text size as 1/4"
- Click the **Align Center** button.
- Click the **Insert Macro** button.
- Browse to **Global> Layout Info** and select "Layout Page Label".
- Note that the Text object now contains the macro: %layout.label%.

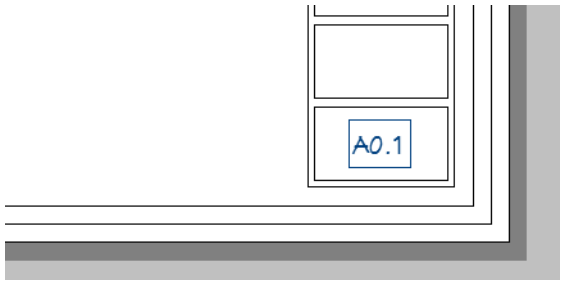
3. On the APPEARANCE panel, check **Border**, then click OK.
4. Notice that only the Text object's border displays. This is because the current page does not have a Label specified in the **Layout Page Information** dialog like it does a Title.



5. Use the **Center Object** edit tool to center the text inside of the frame located at the bottom of the title bar, as described in “To center text in a frame” on page 567.



6. Go to Page 3 and note that the %layout.label% is now displaying as "A0.1". This is the page number for the General Notes, created in "To assign page numbers" on page 548 of the Layout Page Templates Tutorial.



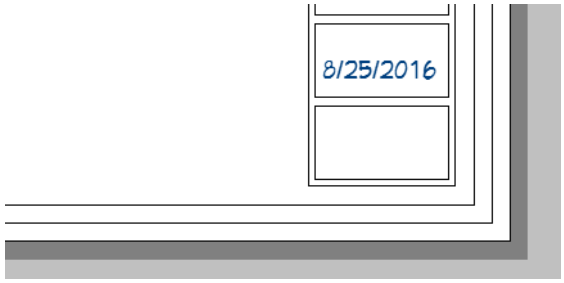
7. Go back to Page 0, select the layout label text object, and click the **Open Object** edit button.
8. On the APPEARANCE panel of the **Rich Text Specification** dialog, uncheck **Border** and click OK.

To add the current date

1. With the layout label text still selected, click the **Copy/Paste** edit button.
2. Click the **Point to Point Move** edit button, then:
   - Click on the top right corner of the frame around the selected text.
   - Click on the top right corner of the frame directly above.
   - A copy of the Text is created, centered in the frame above the original.
3. With the newly pasted Text still selected, click the **Open Object** edit button.
4. On the RICH TEXT panel of the **Rich Text Specification** dialog:

- Delete the existing macro text
- Click the **Insert Macro** button.
- Browse to **Global> Time Date** and select "Short Date".
- Note that the Text object now contains the macro: %date.short% and click OK.

5. Notice that the Text object now reports the current date.



6. When you are finished, remember to **Save** your work.

Including a Revision Table

Revisions can be added to any page, and can be listed in a Revision Table. For more information, see “Revision Tables” on page 1314 of the Reference Manual.

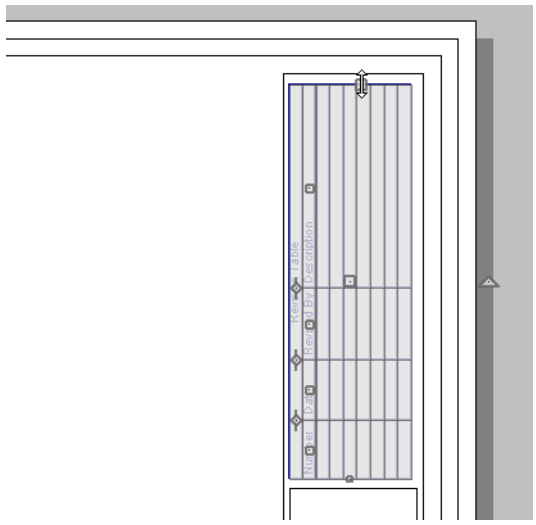
To place a revision table

1. Select **Tools> Layout> Layout Revision Table**, then click in the middle of the drawing sheet to place a Revision Table at that location.

Revision Table			
Number	Date	Revised By	Description

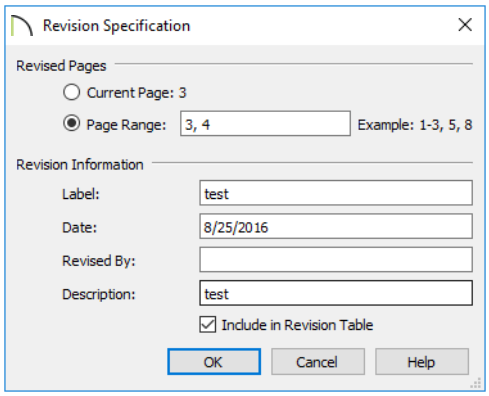
2. Select the Revision Table and rotate it 90° using its edit handle.
3. Click the **Point to Point Move** edit tool:
   - Click on the lower left corner of the Revision Table.
   - Click on the upper left corner of the border around the sheet title.
4. With the Revision Table still selected, press the Up Arrow key once to move it up 1/8".

5. With the Revision Table still selected, click the **Open Object** edit button. On the GENERAL panel of the **Revision Table Specification** dialog, specify the **Minimum Rows** as 7, then click OK.
6. Click the Resize edit handle that displays along the top edge of the Revision Table and drag upwards until it is 1/8" from the title block frame.



To add a revision to a page

1. To go Page 3 and select **Tools> Layout> Edit Page Information** .
2. In the **Layout Page Information** dialog, under the Page Revisions heading, click the **New** button.
3. In the **Revision Specification** dialog:



- Specify the **Page Range** as 3,4.
- Add a brief label and description, then click OK.

4. Notice that the new revision is listed under the Page Revisions heading for Pages 3 and 4.
5. Click OK and note that the Revision Table on Pages 3 and 4 displays the new revision, while on the other pages, it does not.
6. Return to Page 3 and select **Edit> Undo** to remove the test revision from Pages 3 and 4.
7. Remember to **Save** your work.

Creating a Cover Sheet Template

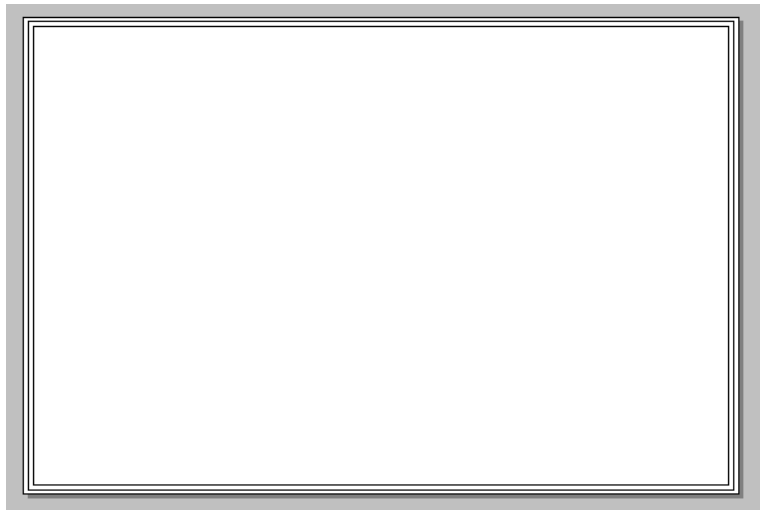
A variation of the title block and border can be created for use on the cover sheet. See "To assign the Cover Sheet Template" on page 545 of the Layout Page Templates Tutorial.

In this example, the Cover Sheet Template will use the same border as the Standard Sheet Template, but not the title block. It will instead feature the project name and address, a sheet index, a space for a large presentation view.

To copy the border

1. Select **Tools> Layout> Page Down** to go to Page 0.
2. **Zoom** in on the top left corner of the Drawing Sheet.
3. Click the **Select Objects** button, then click on the outer border polyline to select it.
4. Hold down the Shift key and click on the inner border polyline to add it to the selection set.
5. Select **Edit> Copy**.

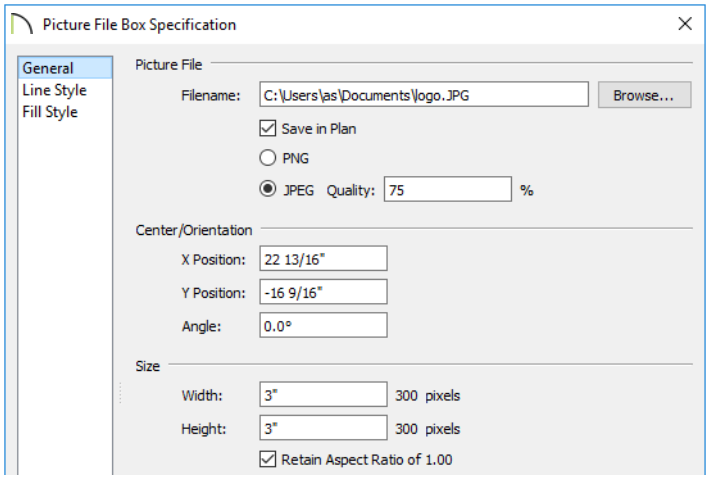
6. Select **Tools> Layout> Page Up** to go to Page 1.
7. Select **Edit> Paste> Paste Hold Position**.
8. Note that the new border is positioned inside the Drawing Sheet exactly like the original.



A company logo can be added to the title block by importing and embedding an image. For more information, see “Importing Pictures” on page 1147 of the Reference Manual.

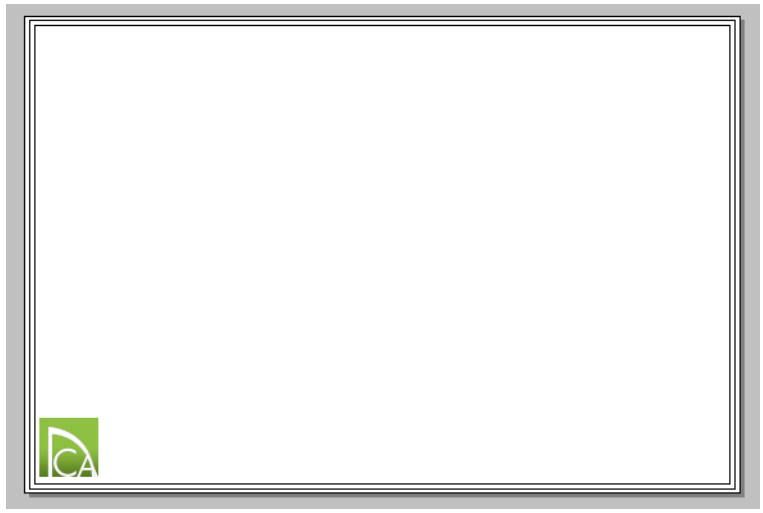
To import a logo image

1. Select **File> Import> Import Picture**.
2. In the **Import Picture File** dialog, browse to a company logo or other image file saved on your computer, select it, and click the **Open** button.
3. The picture will be imported at its actual size, but can be edited.
4. Click the **Select Objects** button, then click on the imported picture to select it.
5. Click the **Open Object** edit button, and on the GENERAL panel of the **Picture File Box Specification** dialog:



- Check the box beside **Save in Plan**.
- Under the Size heading, make sure that **Retain Aspect Ratio of** is checked.
- Specify the desired **Height** and **Width**.
- Here, a square image is sized at 3" x 3".
- Click OK to close the dialog.

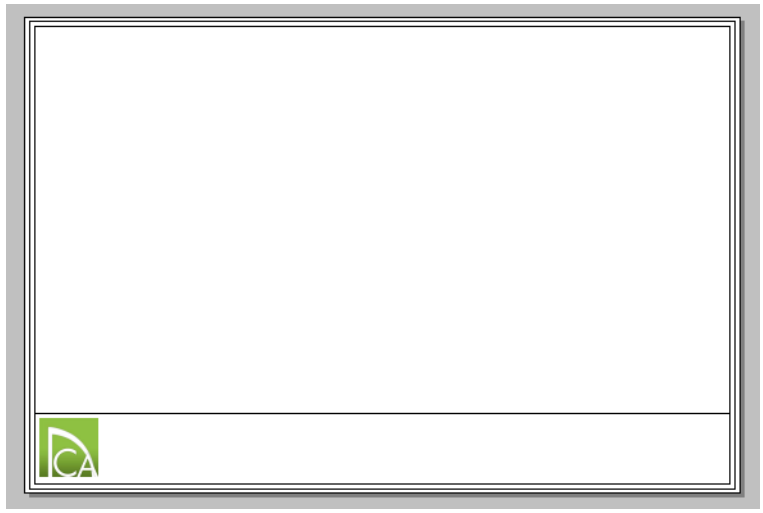
6. With the picture still selected, click the **Point to Point Move** edit button, then:
   - Click on the lower left corner of the image.
   - Click on the lower left corner of the inner border polyline.
7. Press the Up Arrow key twice, and the Right Arrow key twice to nudge the image 1/4" in from the border polyline.



Company and project information can be positioned and oriented using the same techniques used to create the standard page template. See “Adding Title Block Text” on page 566.

To create a title bar

1. Select **CAD> Lines> Draw Line**, then click and drag to draw a horizontal line across the length of the inner border polyline anywhere above the imported picture.

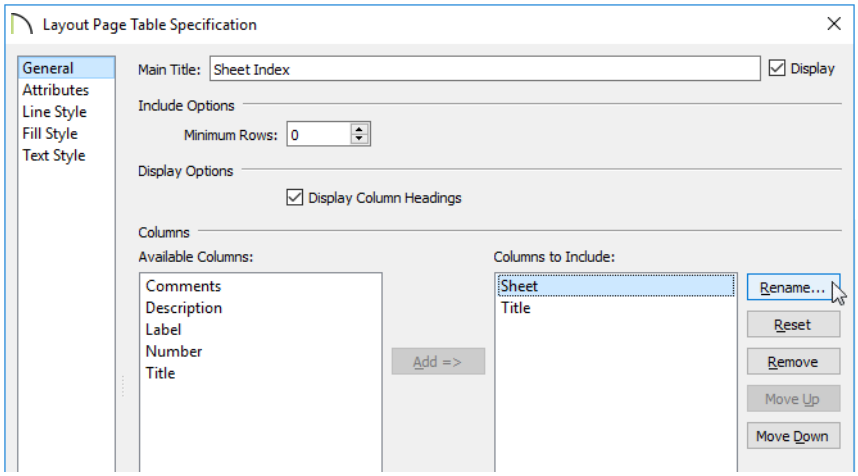


2. Click on the line, then move it down until it snaps to the top edge of the imported picture.
3. With the line still selected, press the Up Arrow key twice to create a 1/4" gap between it and the picture.
4. Place **Rich Text** objects with company and project information.

5. Here, the company information is centered along the right vertical edge of the imported logo image. It is **Aligned Left** and positioned 1/4" to the right of logo.
6. The project information is located 1/4" to the left of the inner border polyline, and is **Aligned Right**.

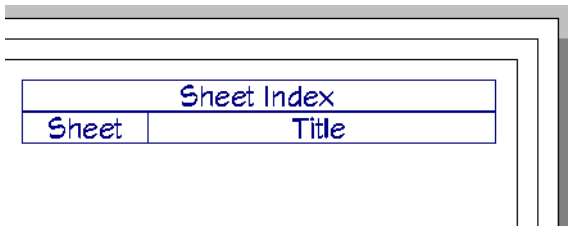
To add a sheet index

1. Select **Tools> Layout> Layout Page Table**, then click once in the drawing area to create a layout page table at that location.
2. Click on the new table to select it, then click the **Open Object** edit button.
3. On the GENERAL panel of the **Layout Page Table Specification** dialog, specify the table's **Name**. Here, "Sheet Index" is used.
4. Also on the GENERAL panel, organize and name the **Columns to Include**:



- Select "Description" and click the **Remove** button.
- Select "Comments" and click the **Remove** button.
- Select "Label" and click the Rename button.
- In the Schedule Column Name dialog, type "Sheet" and click OK.

5. On the ATTRIBUTES panel of the **Layout Page Table Specification** dialog, select "Centered" from the **Alignment** drop-down list.
6. On the TEXT STYLE panel:
   - Select a **Font** from the drop-down list.
   - Specify the desired **Character Height**. Here, 1/4" is used.
   - Click OK.
7. With the table still selected, use the edit handles to resize the columns as you wish.
8. Use the **Point to Point Move** edit button and Nudge keys to position the table in the top right corner of the border.



Because the non-template pages of the layout are currently blank, no pages are listed in the table. When views, text, or CAD are added to each page, the table will become populated.

All of the text in a Layout Page Table uses the same Text Style. To create a title with a larger font, use a separate Rich Text object.

To create a custom layout page table title

1. Select the Layout Page Table, then click the **Open Object** edit button.
2. On the GENERAL panel of the **Layout Page Table Specification** dialog, uncheck the box beside **Display**, to the right of the **Main Title** text field, then click OK.
3. With the table still selected, use its edit handles to move downward on screen to make room for a text object above it.
4. Select **CAD> Text> Rich Text**, then click in the drawing area, near the Layout Page Table.
5. On the RICH TEXT panel of the **Rich Text Specification** dialog:
   - Specify the desired font size. Here, 5/8" is used.
   - Click the **Align Center** button.
   - Type the desired title, then click OK.
6. Use the edit handles, Point to Point Move and Center Object edit tools to position the table and its custom title as desired.

7. When you are finished, **Save** your work.

The left side of the cover sheet can now be used for one or more presentation views, while the right side will be used by the Sheet Index as it expands to list sheets.

Creating File Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed.

When you are finished working on a file and are ready to close it, **Save** your work. Before closing it, though, create a copy of the file with a different name that indicates what it contains so you can distinguish it from other revisions.

To save a layout revision

1. Select **File**> **Save As** .
2. In the **Save Layout File** dialog, make sure that the save location is your Chief Architect X10 Data\Templates folder.
3. For the **File name**, type My Layout Template as the name of the file followed by a short description of the current state of the drawing; for example, My Layout Template_Title Block.

Creating a Custom Layout Template

The MY LAYOUT TEMPLATE.layout file now has page templates, a title block and a border and is ready for use as the basis for a new layout file for Chic Cottage.

To specify a custom layout template

1. Select **Edit> Preferences** from the menu.
2. On the NEW PLANS panel of the **Preferences** dialog:
   - Make sure that the radio button next to **Imperial Units** is selected.
   - Click the **Browse** button to the right of the Imperial Units **Layout Template** field.
3. In the **Select a Layout Template File** dialog:
   - Browse to Documents/Chief X9 Data/Templates.
   - Select the MY LAYOUT TEMPLATE layout file and click OK.
4. Settings in the **Preferences** dialog are saved when you exit out of the program, so now is a good time to select **File> Exit** to quit the program.

Review

This lesson describes the best practices for creating custom layout borders and title blocks.

- To set up the layout sheet
- To set the Grid Snap Unit and Nudge distance
- To delete an existing layout border
- To set the default CAD line weight and style
- To create a new layout border
- To create a title block frame
- To add a title block component frame
- To replicate component frames
- To set the Rich Text Defaults
- To add company information
- To center text in a frame
- To add a sheet title
- To add a sheet number
- To add the current date
- To place a revision table
- To add a revision to a page
- To copy the border
- To import a logo image
- To create a title bar
- To add a sheet index
- To create a custom layout page table title
- To specify a custom layout template

Assessment Questions

What are two things that the Snap Grid Unit controls?

What are two ways to enable the Concentric Edit Behavior?

What edit tool lets you align an object along an axis that runs through another object's side?

What edit tool lets you snap the corner of one object to a point on another object?

How do you specify two different font sizes in a single Rich Text object

Describe how a company logo can be added to a layout page.

Name two uses for text macros on a layout page?

What are two types of tables that are available for use in layout files?

Where can you specify the template file used when a new layout is created?

Chapter 28:

Sending Views to Layout

With a layout template file set up, views can now be sent to sent to layout and arranged on a page for printing.

Learning Objectives

This lesson describes best practices in Chief Architect for sending views to layout. Concepts introduced include:

In this module you will learn about:

- Setting the Defaults
- Sending Floor Plan Views to Layout
- Sending Section and Elevation Views to Layout
- Sending Perspective Views to Layout
- Printing Layout Files

File Management

This tutorial continues where the Layout Page Templates tutorial left off. At this point, both the My Layout Template_Page Templates and MY LAYOUT TEMPLATE layout files contain the

same information, and you could open either one and continue working. However, My Layout Template_Page Templates.layout was created specifically to serve as a revision or archive file so it will be left unchanged. Similarly, MY LAYOUT TEMPLATE has been specified as a layout template file and should not have views sent directly to it.

Instead of working in either of those files, select **File> New Layout** . Notice that the new, untitled layout file features the custom title block and border that you created in the Title Blocks and Borders Tutorial and that the Project Browser lists its pages using the Layout Page Information that you specified in the Layout Page Templates Tutorial.

To save a new layout file

1. Select **File**> **Save As** . In the **Save Plan File** dialog, browse to your Documents folder.
2. Navigate into your Chic Cottage folder so that it becomes the Save location for your layout file.
3. For the File name, type CHIC COTTAGE. You have now created the main layout file for the Chic Cottage project.

It is a very good idea to save your files often as you work, and this guide reminds you to do so regularly.

Layout Links to Plan Files

In order to send any view to layout, first open both the destination layout file and the plan file. Once a view has been sent from a plan file to a layout, the files are considered to be linked. To help avoid breaking layout links, it is recommended that these two files have the same name and be saved in the same folder in your computer. See “Organizing Your Files” on page 55 of the Reference Manual and “Managing Layout Links” on page 1305 of the Reference Manual.

Productivity Tips

As you learn how to send views to layout, keep in mind these tips to improve your productivity.

Drawing and Editing

- When set up correctly, layer sets like the Plot Plan Set and Electrical Set can meet your needs while working and also when sending views to layout for printing.

Interface

- Use the information in the Project Browser to send different types of views to the correct layout page quickly.

Keyboard Hotkeys

- F1 - Help for the current context
- Ctrl + U - Send to Layout

- Spacebar - Select Objects
- Arrow keys - Nudge selected object
- F6 - Fill Window
- Ctrl + Tab - Select Next Tab
- Ctrl + E - Open Object edit tool
- Ctrl + S - Save

Setting the Defaults

In Chief Architect, the initial attributes of most objects can be specified prior to actually drawing them using Default Settings. Setting defaults early can improve efficiency and also helps to avoid introducing errors into the drawing. When sending views to layout, there are several defaults of particular importance.

Before sending views to layout, it is a good idea to create a layout template that meets your needs, including the proper sheet size, page organization, and a title block with your company information. See the Layout Page Templates Tutorial on page 541 and the Title Blocks and Borders Tutorial on page 555.

Views sent to layout may use different scales. To save time, make sure that the Drawing Scale that you expect to use most frequently is set as the default in the plan. See “To set the default Drawing Scale for plan views” on page 587.

The Drawing Scale of the layout file itself, however, should always be 1 in = 1 in. See "To set up the layout sheet" on page 557 of the Title Blocks and Borders Tutorial.

Sending Floor Plan Views to Layout

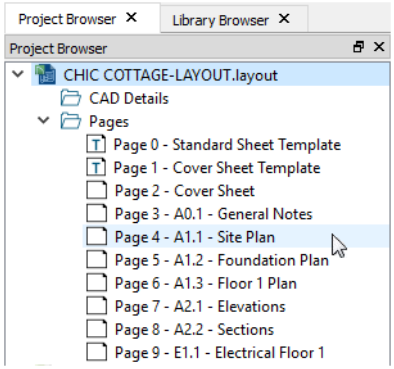
Most construction documents have multiple floor plan views sent to layout for a variety of purposes. Here, two examples, a site plan and electrical plan, will be sent.

To set the default Drawing Scale for plan views

1. Select **File> Open Plan** and open the CHIC COTTAGE-CURRENT plan saved in your Chic Cottage folder.
2. Select **File> Print> Drawing Sheet Setup** .
3. In the **Drawing Sheet Setup** dialog:
   - Specify the **Drawing Scale** as the most common scale that your layout views will use.
   - Here, 1/4 in = 1 ft will be used.
   - Click OK to close the dialog and apply your change.

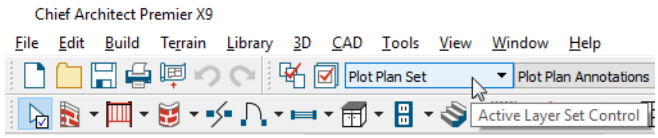
To send a site plan to layout

1. If the Project Browser side window is not open, select **View> Project Browser** to open it.



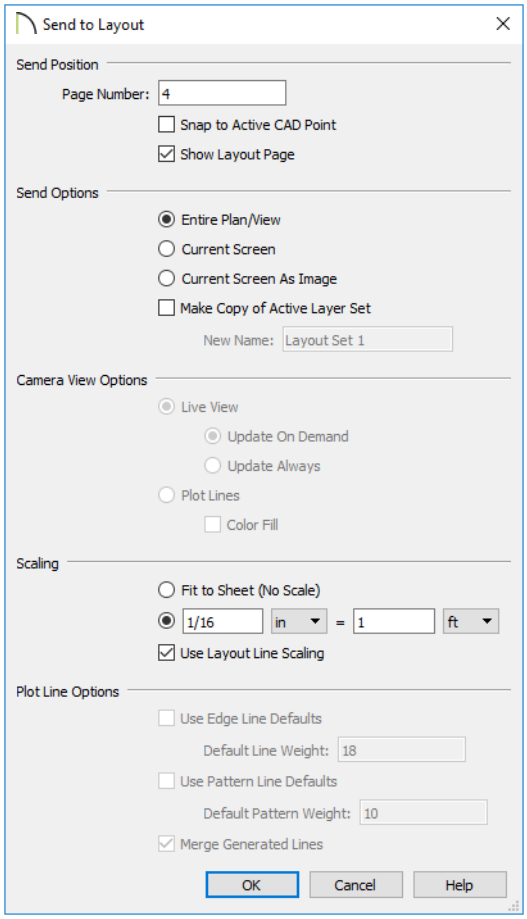
   - If the Library Browser displays in front of the Project Browser, click on the Project Browser's tab to make it active.
   - Click the arrow next to the "Pages" folder to expand the list of your customized layout pages.
   - As you send views to layout, refer to this list to determine which page to send each view to. The site plan, for example, should be sent to Page 4.

2. Select **File> Open Plan** and open the CHIC COTTAGE-CURRENT plan saved in your Chic Cottage folder.
3. Select **Window> Fill Window**.
4. Confirm that the "Plot Plan Set" is displayed in the **Active Layer Set Control**.



   - If it is not, click drop-down and select "Plot Set" from the list.
   - Selecting this layer set turns off the display of layers that aren't necessary for a site plan, such as cabinets, millwork and door and window labels. See "Layer Sets" on page 187 of the Reference Manual.

5. Select **File> Send to Layout** to open the **Send to Layout** dialog:

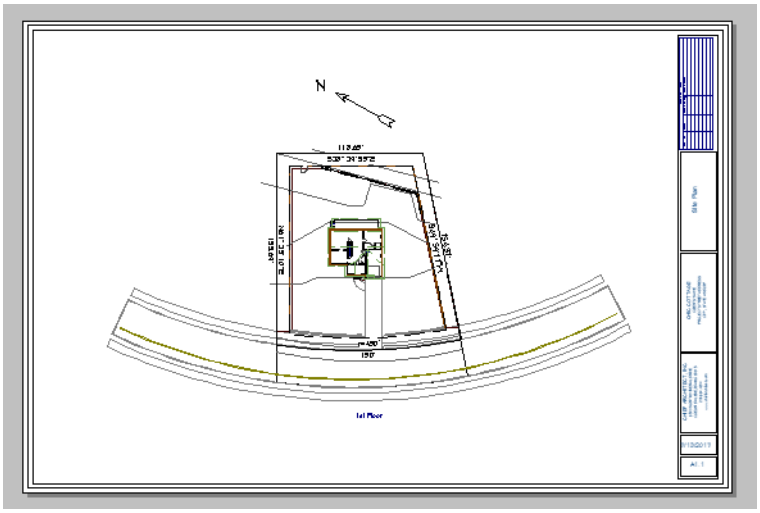


- Under Send Position, type **Page Number** 4 and confirm in the Project Browser that this page is set up for the Site Plan.
- Leave **Show Layout Page** checked so that when you click **OK**, the layout window will become active.
- Under Send Options, select **Entire Plan/View**.
- Make sure that **Make Copy of Active Layer Set** is unchecked. This means that once sent to layout, the view will use the Plot Plan Set and changes made to this layer set will affect the view.
- Under Scaling, notice that the default scale of 1/4 in = 1 ft is used by default. Site plans are typically a lot larger than a floor plan, though, so specify 1/16 **in** = 1 **ft**.

6. Click **OK** to send the view to the center of the specified layout page.

- An Information message will display with information about the layer set referenced by the new view.
- Check the box beside **Do not show this message again** to prevent this message from opening in the future, then click OK. See “Message Boxes” on page 44 of the Reference Manual.

Click the Check Knowledge Base button in the Information message box for more information about layout layer sets.



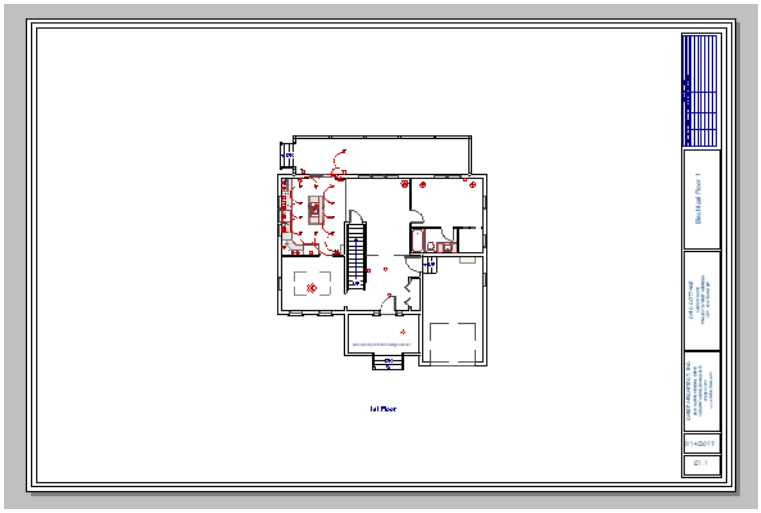
Use the Text Tools to add a legal lot description, directions to the site, and any other notes that you may need on a site plan page.

Additional plan views can be sent to layout in a similar manner.

To send a plan view to layout

1. Select **Window> Select Next Tab** to return to floor plan view.
2. Click the **Active Layer Set Control** arrow and select "Electrical Set" from the drop-down list.
3. Select **File> Send to Layout** to open the **Send to Layout** dialog:
   - Specify **Page Number** 9 as the Send Position and confirm in the Project Browser that this page is set up for an Electrical Plan.
   - Confirm that **Make Copy of Active Layer Set** is still unchecked.
   - Note that the Scaling is once again set to the default of 1/4 in = 1 ft.

• Click OK to send the view to the specified page.



4. When you are finished, **Save** the work you have done so far in the layout file.

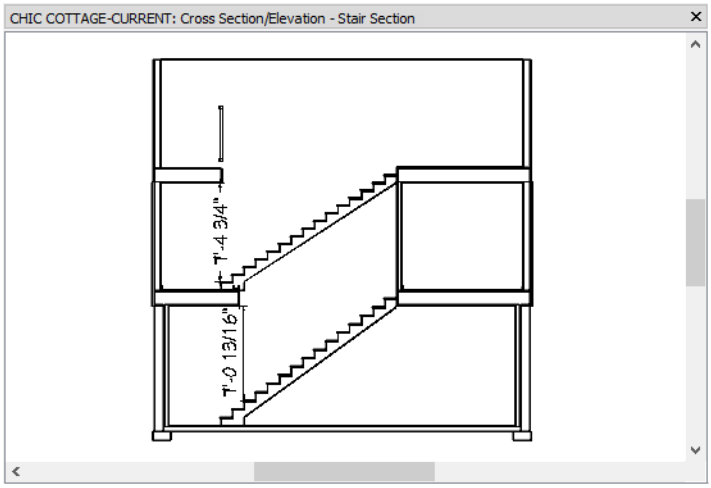
Sending Section and Elevation Views to Layout

Cross Section/Elevation, **Backclipped Cross Section** and **Wall Elevation** views can also be sent to layout. See “Cross Section/Elevation Views” on page 1052 of the Reference Manual.

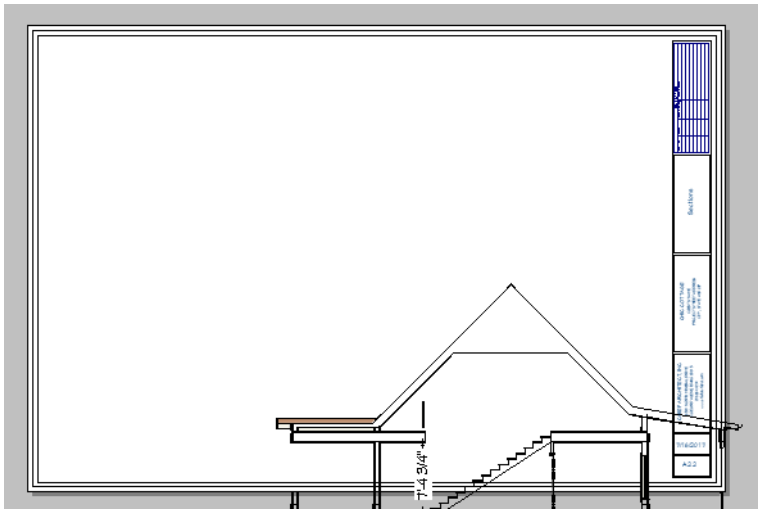
Saved cross section/elevation views are listed in the Project Browser and can be sent to layout at any time.

To send a section view to layout

1. The Project Browser side window should already be open but if is not, select **View> Project Browser** to open it.
2. Under the "CHIC COTTAGE-CURRENT" heading:
   • Click the arrow next to the "Cross Sections" folder to expand the list of saved cross section/elevation views.
   • Notice that the "Exterior Elevation - Right" created above is listed, along with the "Stair Section" created in the Interior Stairs Tutorial. See "Working in Cross Section Views" on page 83 of the Interior Stairs Tutorial.
3. Right-click on the saved "Stair Section" and select **Open View** from the contextual menu.



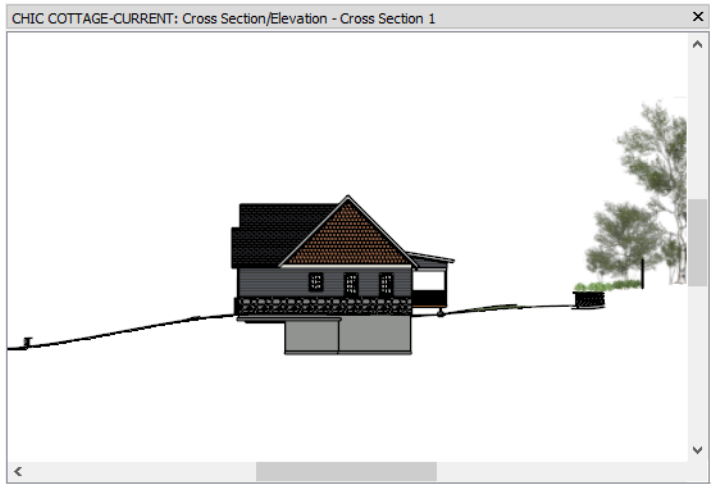
4. Select **File> Send to Layout** to open the **Send to Layout** dialog:
   - Specify **Page Number** 8 as the Send Position and confirm in the Project Browser that this page is set up for Sections.
   - Confirm that **Make Copy of Active Layer Set** is still unchecked.
   - Change the Scaling to 1/2 in = 1 ft.
   - Click OK to send the view to the specified page.
5. An Information message will inform you that the view is too large to fit on the drawing sheet. The layout box can be resized to fit, as described below, so click OK.
6. A second message will inform you that the new "Layout Sections" layer set was created and is saved with the plan file. Click OK.



Notice that the layout box is sized to include the entire Terrain Perimeter as well as accommodate the height of the trees. This layout box can be cropped and moved to fit onto the layout page, as described in “To crop and move a layout box” on page 597, below.

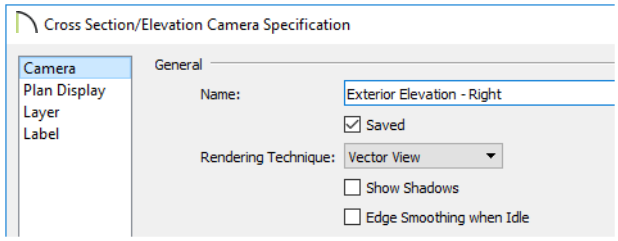
To send an elevation view to layout

1. Select **3D> Create Orthographic View> Backclipped Cross Section**, then create an elevation view of the right side of the structure:
   - Click to place the camera location in the terrain, outside of the roof overhang area.
   - Make sure that the camera’s line of sight extends into but not past the front porch stairs.
   - Make sure that the camera’s line of sight is perfectly horizontal.



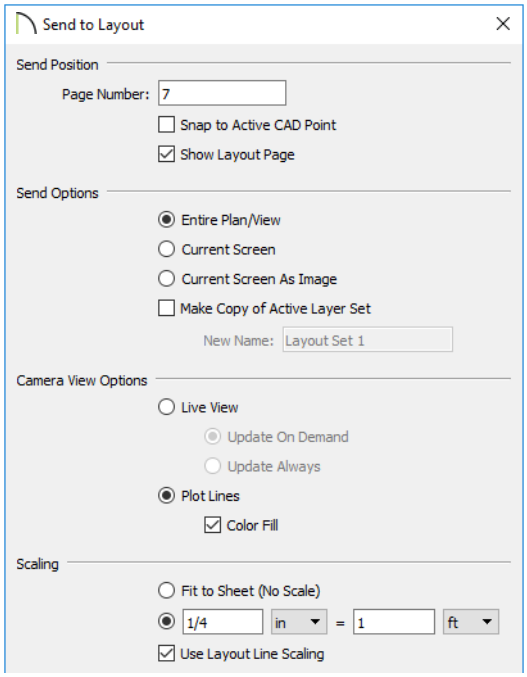
2. **Zoom** in and use the CAD and Text tools to add any annotations that the view might require, such as roof heights, pitches, material specifications, or other notes.

3. Select **3D> Edit Active Camera**, and in the **Cross Section/Elevation Camera Specification** dialog:

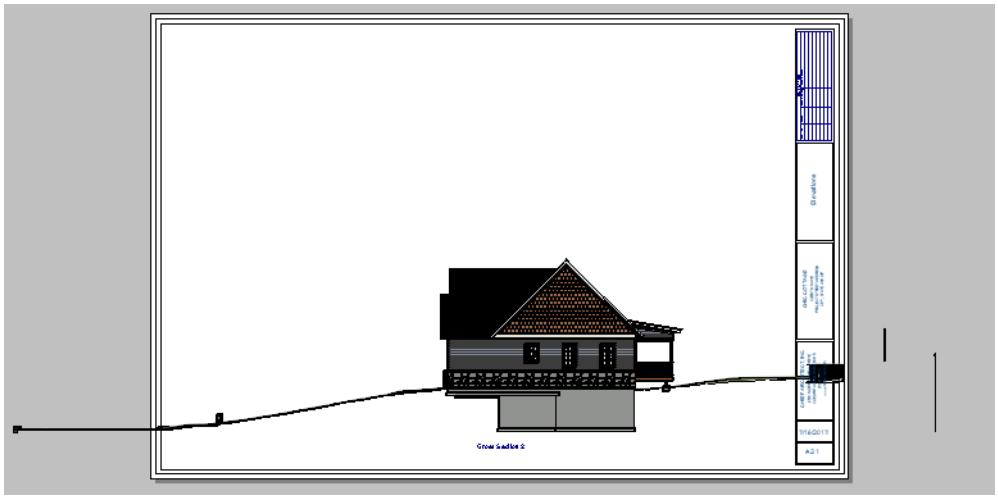


   - Give the view a short, descriptive **Name** such as "Exterior Elevation - Right".
   - Notice that the **Saved** check box under the Name field becomes checked automatically.
   - Click OK.

4. Select **File> Send to Layout** to open the **Send to Layout** dialog.



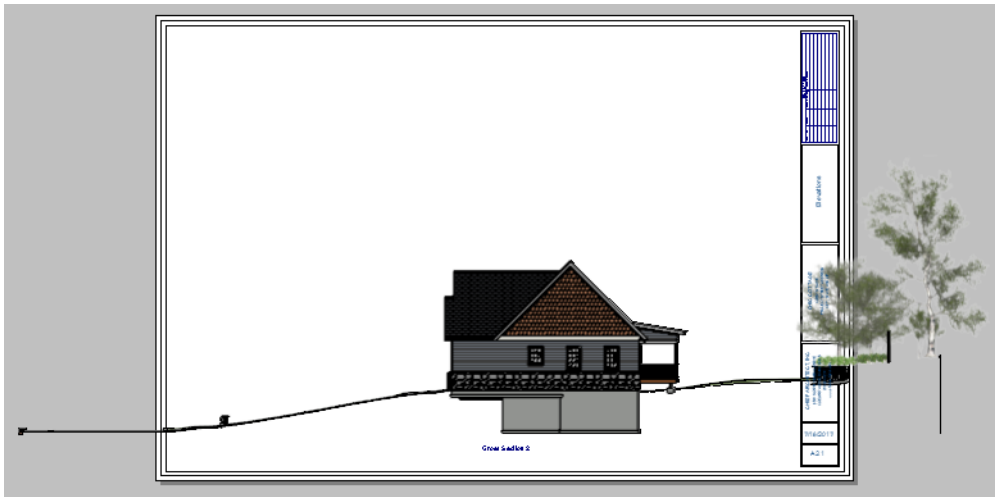
- Select **Page Number** 7 as the Send Position and confirm in the Project Browser that this page is set up for Elevations.
- Make sure that **Make Copy of Active Layer Set** is unchecked.
- Select the **Plot Lines** radio button and check the box beside **Color Fill**.
- Under Scaling, use the default 1/4 **in** = 1 **ft** drawing scale.
- Click OK to send the view to layout.



Notice that images like trees are not included in Plot Line views sent to layout. See “Plot Line Views” on page 1295 of the Reference Manual.

To change a layout view’s Camera View Options

1. Click on the elevation view on the layout page to select it, then click the **Open Object** edit button.
2. On the GENERAL panel of the **Layout Box Specification** dialog, select the **Live View** radio button and click OK.

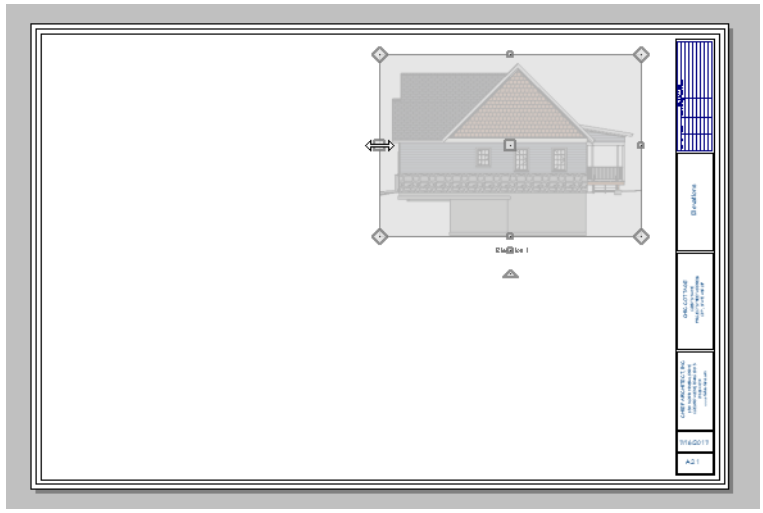


Live Views offer a number of benefits; however, they must be linked to a saved camera view. If the Exterior Elevation - Right camera were deleted, its layout view box would be empty. See “Semi-Dynamic Views” on page 1294 of the Reference Manual.

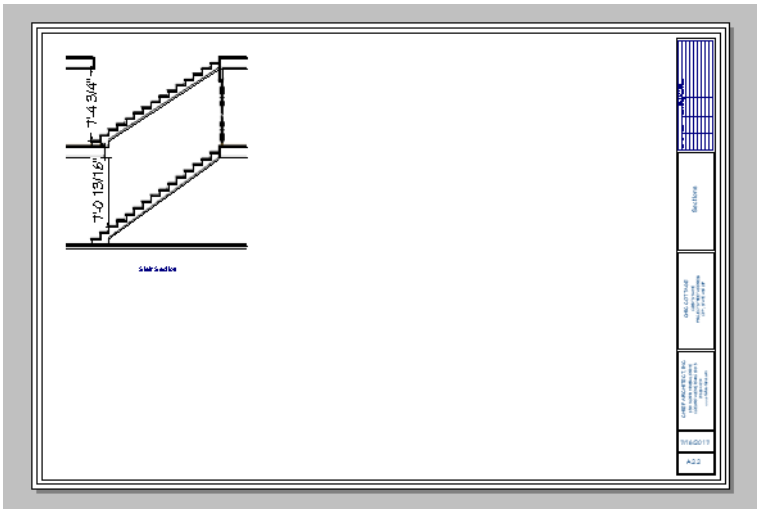
All views sent to layout can be moved, cropped, and even rotated. See “Editing Box-Based Objects” on page 237 of the Reference Manual.

To crop and move a layout box

1. Click on the section view on the layout page to select it.
2. Click and drag the view box’s left, right, and top edges inward so the box only displays the house and a few plan feet of the terrain on either side.
3. Click and drag the square Move edit handle at the view box’s center to position it in one corner of the layout page.



4. Go to page 8, then resize and move the Stair Section view using its edit handles as well. This view can be cropped so that only the stairwell is shown.



5. With the Stair Section view still selected, click the **Open View** edit button to return to the original section view in the plan.
6. Select **File> Close View** to return to the layout page.
   - In the **Update View to Layout** dialog, click OK.
   - If you had made changes in the elevation view, clicking OK would update those changes to the layout view. Here, no changes were made, so it doesn't matter.
7. When you are finished, **Save** the work you have done so far in the layout file.
8. Now is also a good time to return to the plan file and **Save** it as well, so your new elevation camera is saved.

Once a full size cross section/elevation view has been cropped and moved, there is typically room to send additional views to the same page if you wish.

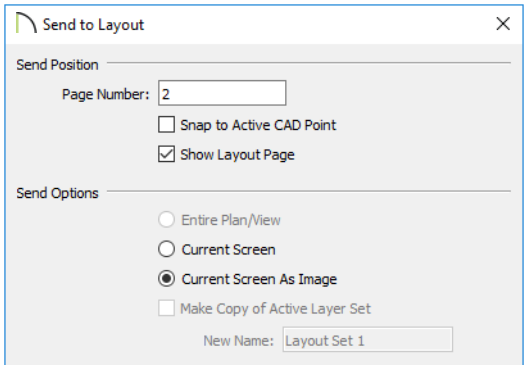
Sending Perspective Views to Layout

Perspective views add visual appeal and clarity to your documentation. Sending a presentation view as a static image rather than a dynamic view allows you to easily control its size.

To send a perspective view to layout

1. Return to floor plan view.
2. Select **3D> Create Perspective View> Full Camera** and create a 3D view.

3. Orbit the camera to an angle that you like, then select **3D> Edit Active Camera** .
4. On the CAMERA panel of the **Perspective Full Overview Specification** dialog:
   - Type a short, descriptive **Name** for the camera, such as "Cover Sheet View".
   - Check the box beside **Edge Smoothing When Idle** to improved the appearance of angled lines in the scene. See “Edge Smoothing” on page 1089 of the Reference Manual.
   - Click OK.
5. Select **File> Send to Layout** to open the **Send to Layout** dialog.



   - Specify **Page Number** 2 as the Send Position and confirm in the Project Browser that this page is set up for the Cover Sheet.
   - Under Send Options, select the **Current Screen as Image** radio button.
   - Notice that nearly all of the options available for the previous views sent to layout are now unavailable.
   - Click OK to send the view to the specified page.
6. Click the **Select Objects** button, then click on the view sent to page 2 to select it.
   - Notice that in the Status Bar, it is described as a Picture File Box rather than a Layout Box.
7. Use the box’s edit handles to resize and crop the image as needed:

- Click and drag a corner Resize handle to change the size of the picture box while maintaining its aspect ratio.
- Click and drag a side Reshape handle to crop the extents of the picture within the box.
- For more information about editing picture boxes, see “Editing Pictures, Metafiles, and PDF Boxes” on page 1157 of the Reference Manual.

8. When you are finished, **Save** the layout file.

Repeat this process for any other camera views you may want to send to layout. Or, try using a different Rendering Technique such as Technical Illustration or Line Drawing. For more information, see “Rendering Techniques” on page 1106 of the Reference Manual.

Printing Layout Files

Layout files can be printed on a local printer or plotter, or to a PDF file. A PDF, or Portable Document Format file saves all of the printable information associated with a document such as a layout and makes it available for both viewing and printing without using the software originally used to create it. PDFs are easy to create and provide you with an efficient way to share your work with others or send documents to a print service.

Chief Architect has a built-in PDF writer, which you can select as your printer in any of the program’s Print dialogs. Alternatively, you can print to PDF using a PDF writer installed on your computer. For more information, see “Printing to a PDF File” on page 1329 of the Reference Manual.

To print to PDF

1. Select **File> Print> Print> Print** .
2. In the **Print Layout** dialog:
   - Select "Chief Architect Save as PDF" from the **Destination Name** drop-down list.
   - Make sure that the **Paper Size** is ARCH D (24" x 36").
   - Confirm that all the other settings in the dialog meet your needs.
   - Click the **Save as PDF** button.
3. In the **Choose PDF File Name** dialog:
   - Specify a short, descriptive File name such as CHIC COTTAGE FINAL.
   - Navigate to your Documents directory and open the Chic Cottage folder to make it the save location, then click the **Save** button.

Creating File Revisions

Saving revisions of your files allows you to develop different ideas for a project as well as create a history of your work that you can refer back to when needed. Generally speaking, there are few reasons to create revisions of a layout file. It's not common for your page organization to require radical changes. And, because most views sent to layout update automatically, they are a reflection of the current state of the working drawing.

If, however, you create more than one final version of a plan, multiple versions of the layout may be required as well. For example, if you were to create construction drawings for Chic Cottage with dormers as well as without, you would need two layouts: CHIC COTTAGE and CHIC COTTAGE DORMERS.

Review

This lesson describes the best practices for sending views to layout.

- To set the default Drawing Scale for plan views
- To send a site plan to layout
- To send a plan view to layout
- To send a section view to layout
- To send an elevation view to layout
- To change a layout view's Camera View Options
- To crop and move a layout box
- To send a perspective view to layout

Assessment Questions

Where do you set the default drawing scale for all views sent to layout from a given plan file?

How is the information in the Project Browser helpful when sending views to layout?

What is one difference between Live Views and Plot Line views sent to layout?

What kind of view sent to layout can be resized using its corner edit handles?