

Creating Stairs in Sloping Terrain

Reference Number: **KB-00547**

Last Modified: **July 19, 2021**

The information in this article applies to:



QUESTION

My plan calls for a set of stairs that cuts into sloping terrain to join two sidewalks, but when I draw stairs in my plan, they do not follow the terrain or join to my sidewalks. What should I do?


ANSWER

You can create stairs that follow your terrain by drawing stairs in your desired area, while snapping them to landings at each end.

terrain stairs

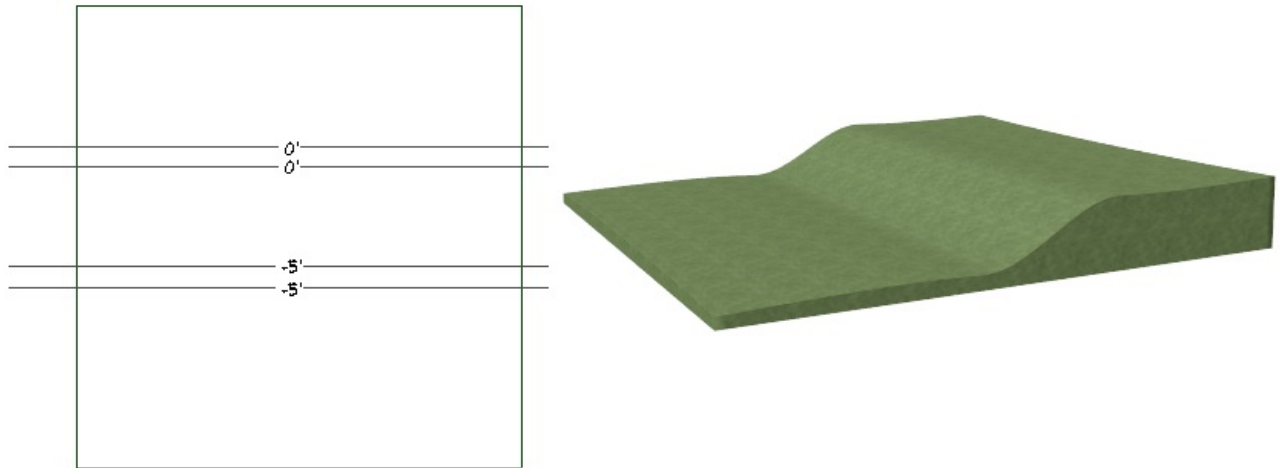
To create stair landings



The first step to creating stairs that follow the terrain in a plan is to create the landings that the stairs will attach to. We can define the heights of these landings to control the staircase's height, as well.

1. **Open**  the plan in which you want to create stairs in sloping terrain.

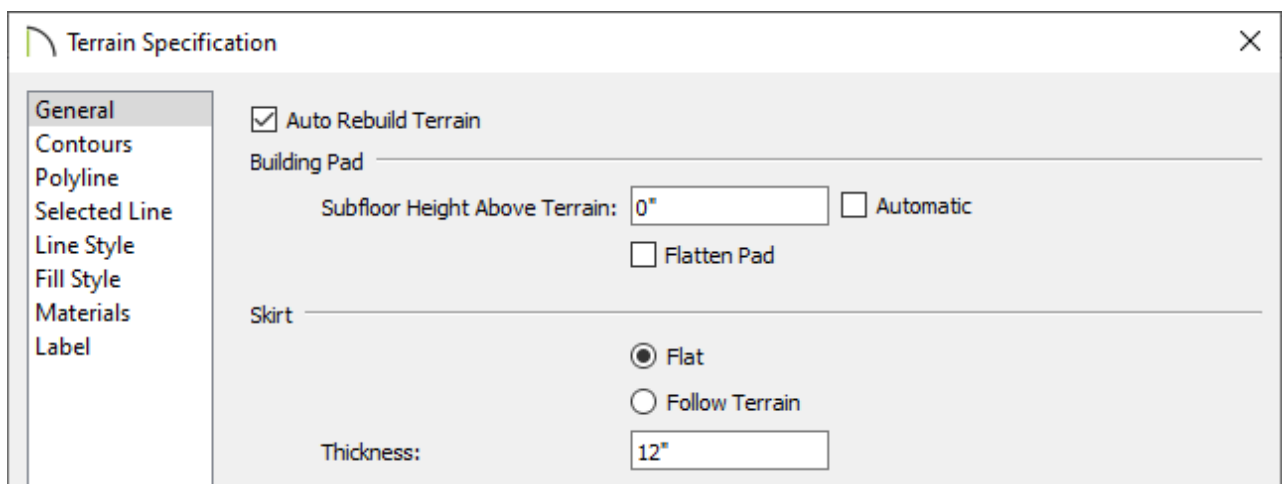
In this example, the terrain has a single slope between two flat areas, as shown in the

image below.

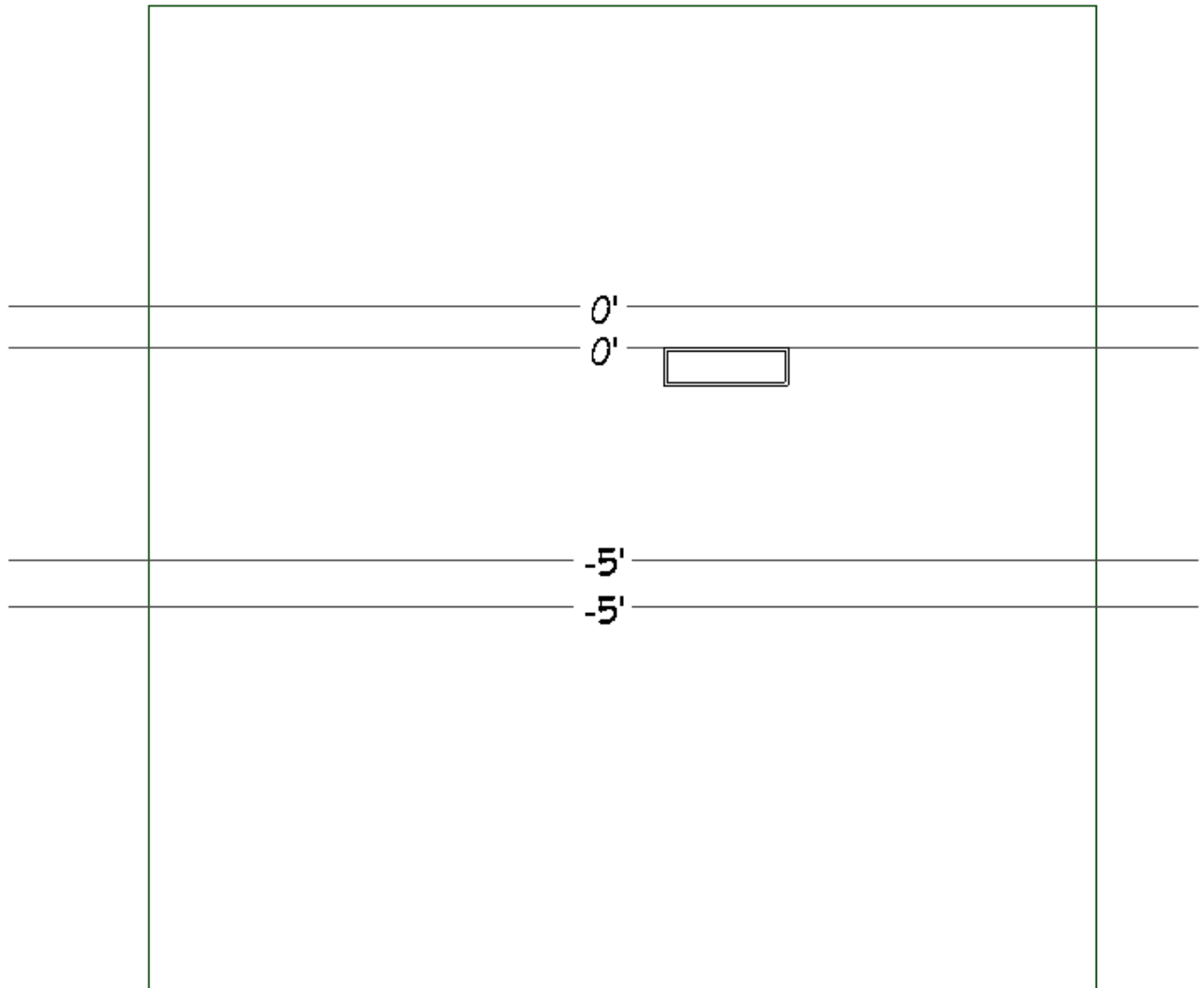


2. Select **Tools> Layer Settings> Display Options**  from the menu and turn off the display of the **Terrain, Primary Contours** layer, then click **OK**. While not strictly necessary, this will make drawing the landing and stairs easier.
3. Navigate to **Terrain> Terrain Specification**  from the menu.
4. On the **GENERAL** panel of the **Terrain Specification** dialog that displays, uncheck the **Automatic** box beside Subfloor Height Above Terrain, specify an appropriate value in this field, then click **OK**. This will help control how the landing's height relates to the terrain.


In this example, 0" is used.

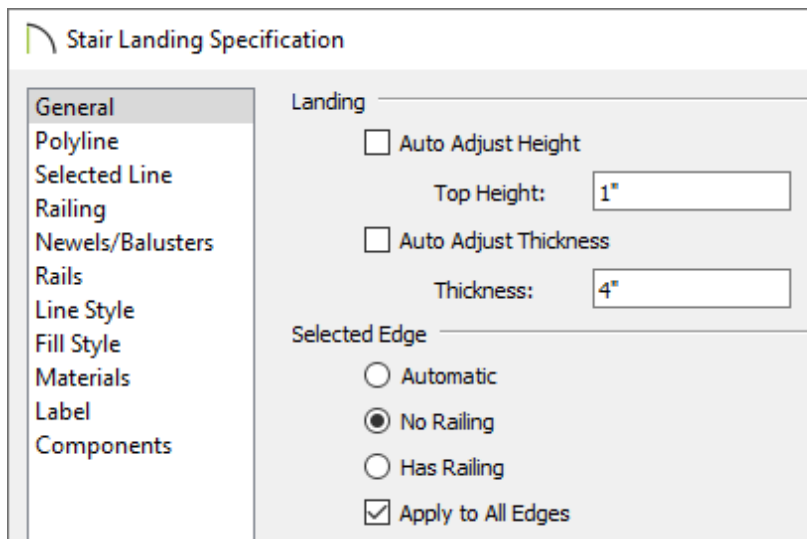




5. Select **Build> Stairs> Landing** , then click and drag to create a rectangular landing.

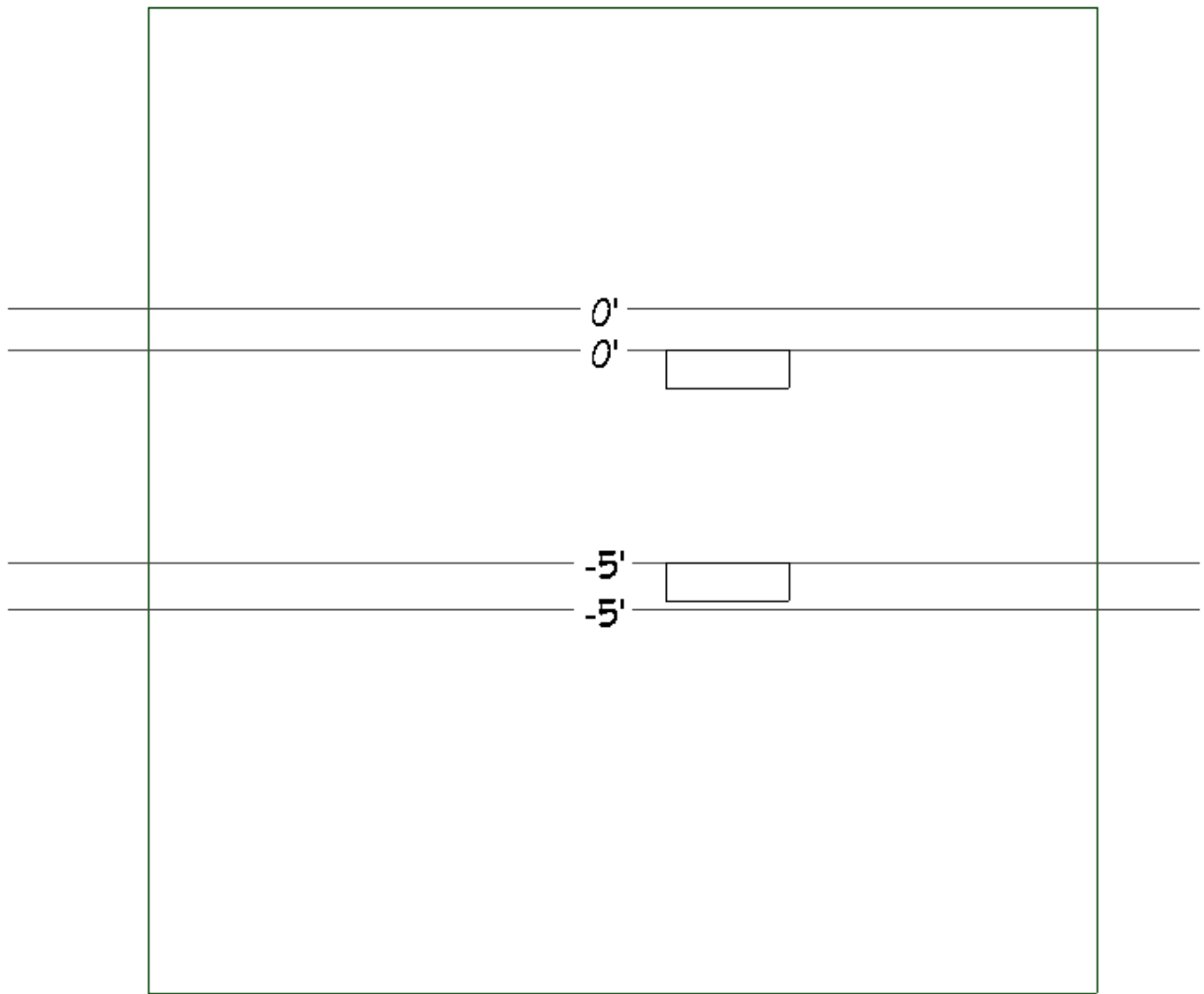


Note: While you can begin with either the top or bottom landing, you may find it easier to begin with the one closest to the height of your building pad.


6. Edit the size and shape as needed using the edit handles that display.
7. Select the newly created landing, then click the **Open Object**  edit button.
8. On the **GENERAL** panel of the **Stair Landing Specification** dialog, which opens next, specify the **Top Height** and **Thickness** of the landing, check the radio button beside **No Railing**, check the box for **Apply to All Edges**, then click **OK**.

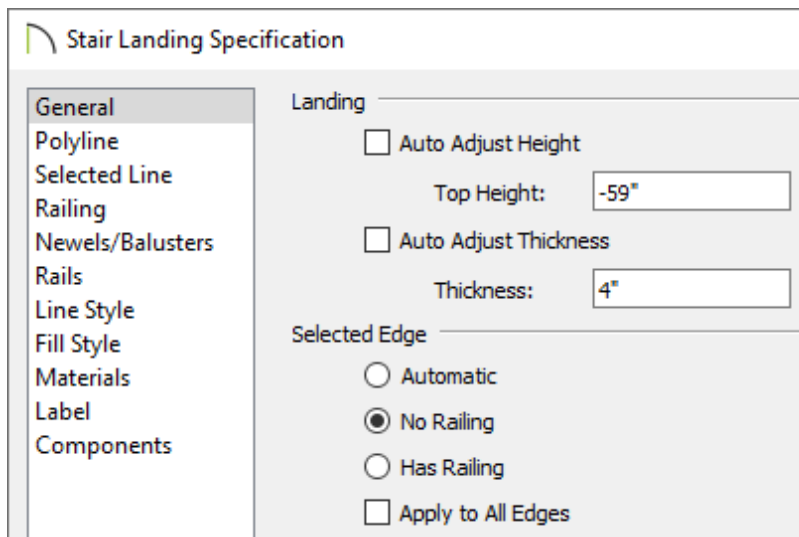



- The Height value of a stair landing is measured relative to the Default Subfloor Height of Floor 1, which is defined as 0".
 - Because the terrain's Subfloor Height Above Terrain value was set to 0", a Landing Top Height of 1" indicates the landing's top height will be 1" above any terrain elevation of 0".
9. With the stair landing still selected, click the **Copy/Paste**  edit button, then click and drag the **Move**  edit handle, releasing the mouse button to place a copy at the desired location.



If you need to position the copy with greater precision, consider using the Transform/Replicate Object edit button.






10. When the copied stair landing is in place, select it and click the **Open Object**  edit button. On the **GENERAL** panel of the **Stair Landing Specification** dialog, specify the **Top Height** of this new landing, then click **OK**.

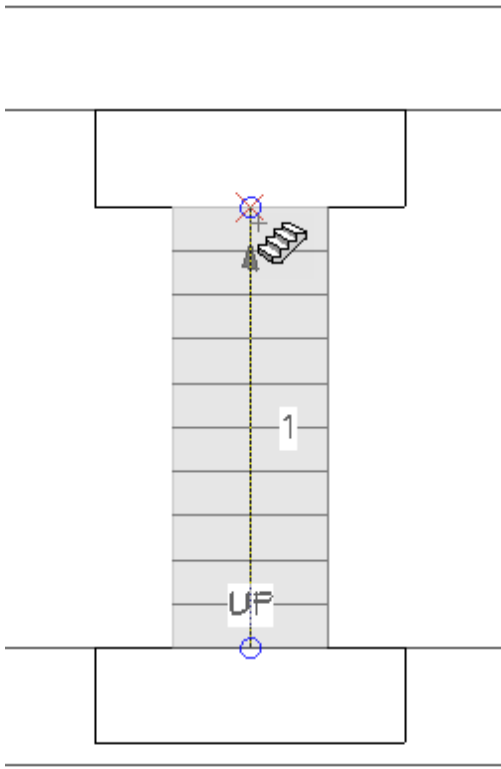




11. To check the heights of your landings relative to the terrain, select **3D> Create Orthographic View> Backclipped Cross Section**  from the menu, then click and drag a camera arrow parallel to the slope of your terrain and within the length of the landing.
12. If the landing and terrain are not near one another, return to floor plan view and make any necessary adjustments to the landing heights.

Depending on the requirements of your drawing, you may need to make changes to your slope, or your terrain's Subfloor Height Above Terrain value instead.

To draw stairs between landings

1. In floor plan view, select **Edit> Snap Settings** , from the menu and make sure that **Object Snaps**  are enabled, particularly **Midpoint**  snaps.
2. Select **Build> Stairs> Draw Stairs**  from the menu, then move your cursor to the landing with the lower Height value. Position it near the midpoint of the edge closest to the other landing.
3. When your cursor is over the midpoint, a triangular red **Midpoint**  snap indicator will display. Click and drag to the midpoint of the other landing, then release the mouse button. A staircase will be created and will be attached to the two landings.



4. Select the stairs and click the **Open Object**  edit button.
5. Make any changes you'd like in the **Staircase Specification** dialog, then click **OK** to apply your changes.
6. Create a **Camera**  view to see the results so far.



Notice that the terrain can be seen in parts of the staircase area. You can always modify the riser height by de-selecting the **Automatic Heights** checkbox located in the **Staircase Specification** dialog to make it rise over the terrain.

If the terrain continues to conflict with the staircase, consider using retaining walls placed around the stairs. You can also entirely remove the terrain from under the stairs using the Terrain Hole tool found by navigating to Terrain> Feature> Terrain Hole.



[\(https://chieftalk.chiefarchitect.com/\)](https://chieftalk.chiefarchitect.com/)

 [\(/blog/\)](#)



[\(<https://www.facebook.com/ChiefArchitect>\)](https://www.facebook.com/ChiefArchitect)



[\(<https://www.youtube.com/user/ChiefArchitectInc>\)](https://www.youtube.com/user/ChiefArchitectInc)



[\(<https://www.instagram.com/chiefarchitectsoftware/>\)](https://www.instagram.com/chiefarchitectsoftware/)



[\(<https://www.houzz.com/pro/chiefarchitect/>\)](https://www.houzz.com/pro/chiefarchitect/)



[\(<https://www.pinterest.com/chiefarchitect/>\)](https://www.pinterest.com/chiefarchitect/)

[208-292-3400 \(tel:+1-208-292-3400\)](tel:+1-208-292-3400)

© 2000–2021 Chief Architect, Inc.

[Terms of Use \(/company/terms.html\)](#)

[Privacy Policy \(/company/privacy.html\)](#)