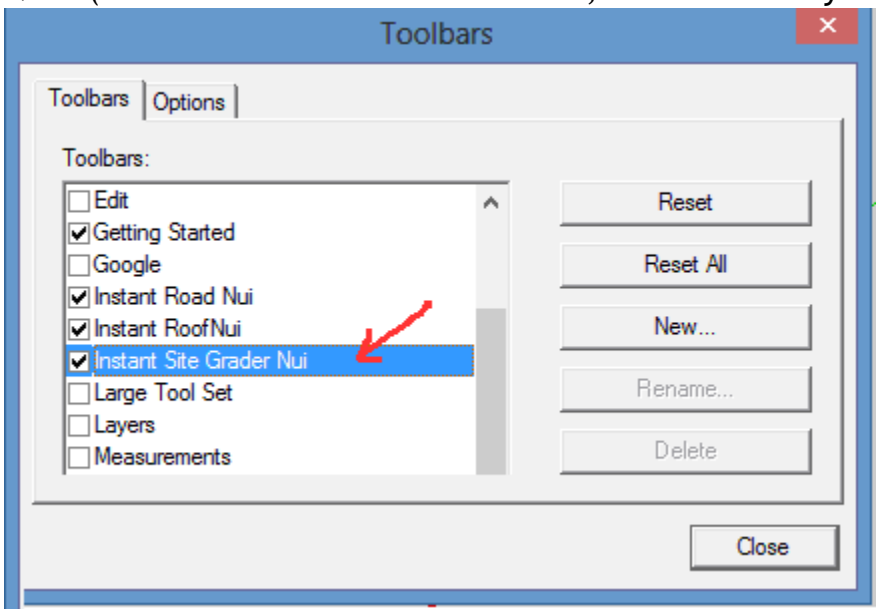
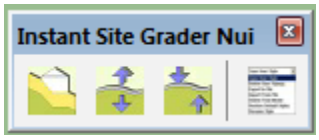
Instant Site Grader Quick Start

To use the toolbar, open the Toobars dialog and check "Instant Site Grader Nui" (*This tutorial uses architectural units, but metric or any other Sketchup units may be used*))

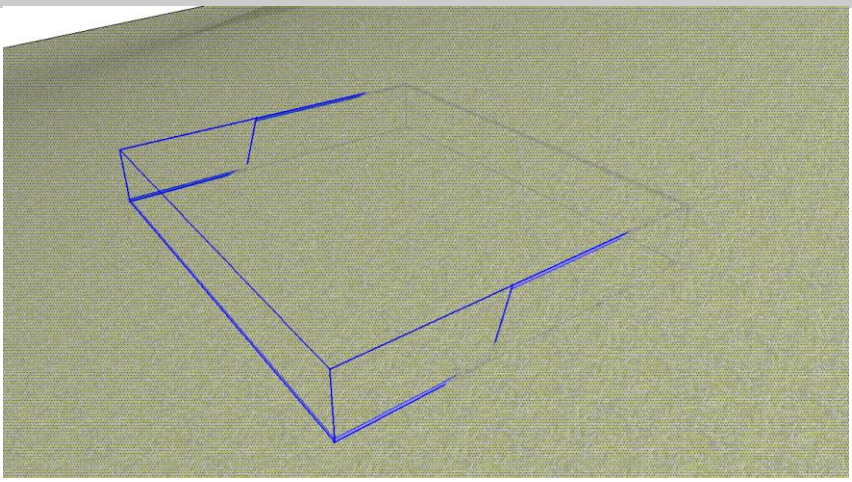


The Instant Site Grader Nui tool bar:

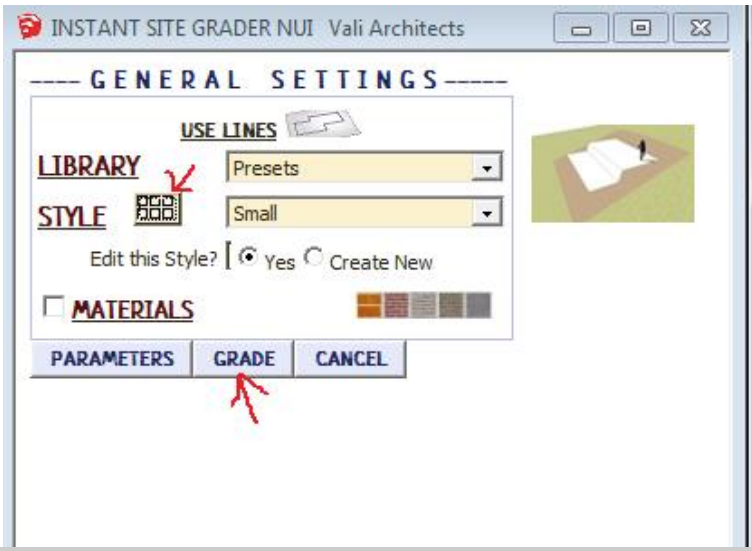


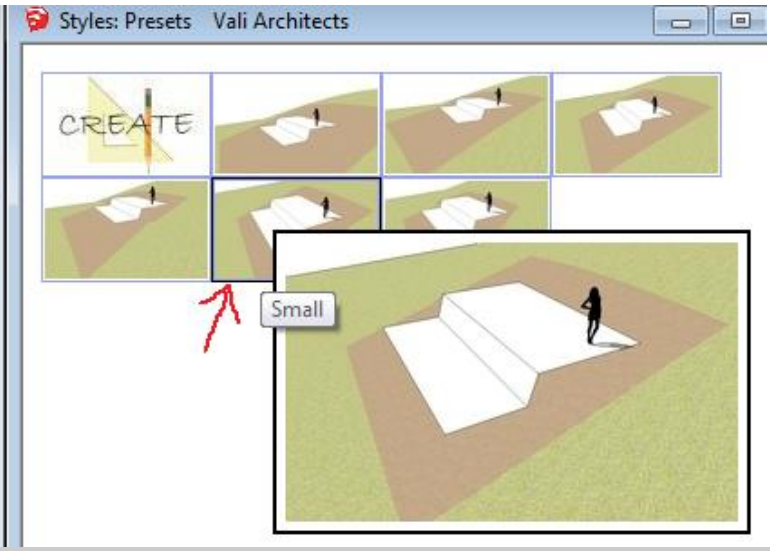
Lesson 1. Grade around Loop

1.1 Draw a terrain using the Sandbox tool or any other method. (*Terrains are simply a face or multiple connected faces with smoothed edges. The terrain must be active. Explode it or open it for editing if it is in a group.*) Create an empty group and draw a closed loop of lines or curves within the group. (*Try to make the loop continuous. Sloped lines are OK but not vertical. The script tries to fix small gaps and vertical lines, but it is best to avoid both*) The loop and estimated size of the graded area must fit well within the extents of the terrain. Select the terrain and the group

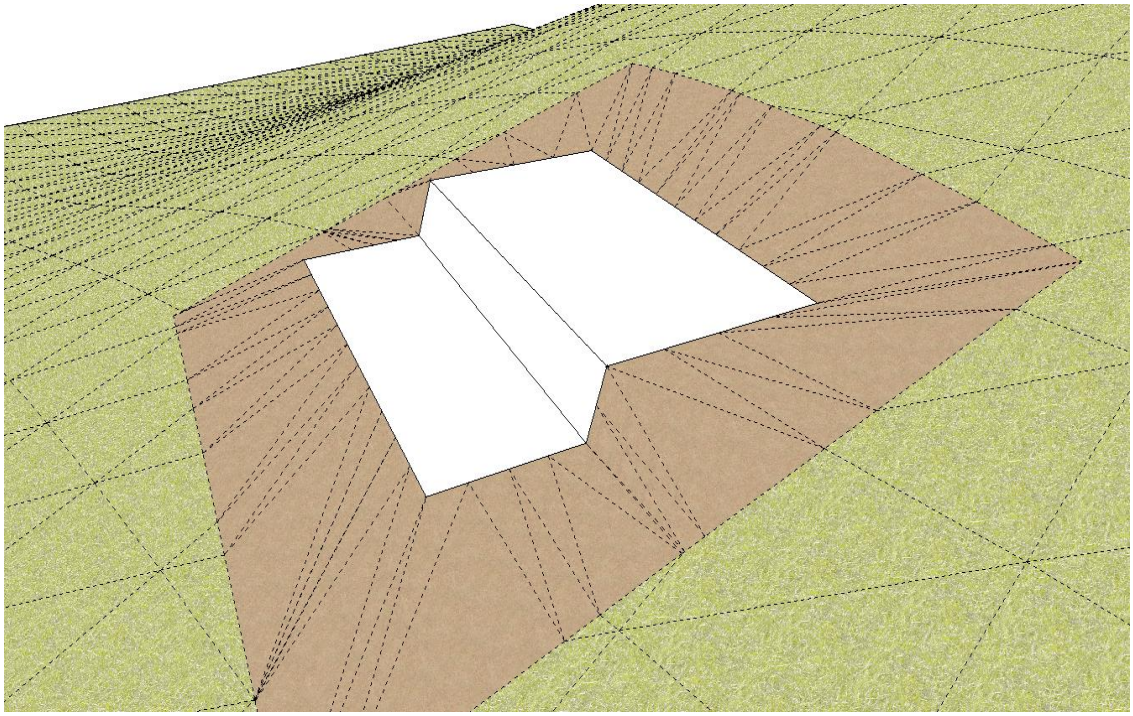


1.2 Choose “Plugins/ Vali Architects / Instant Site Grader Nui / Grade around Loop or Object” or on the Instant Site Grader Nui toolbar click the  symbol. Click the image menu button  to display preset style images and select the “Small” style. Click “Grade”



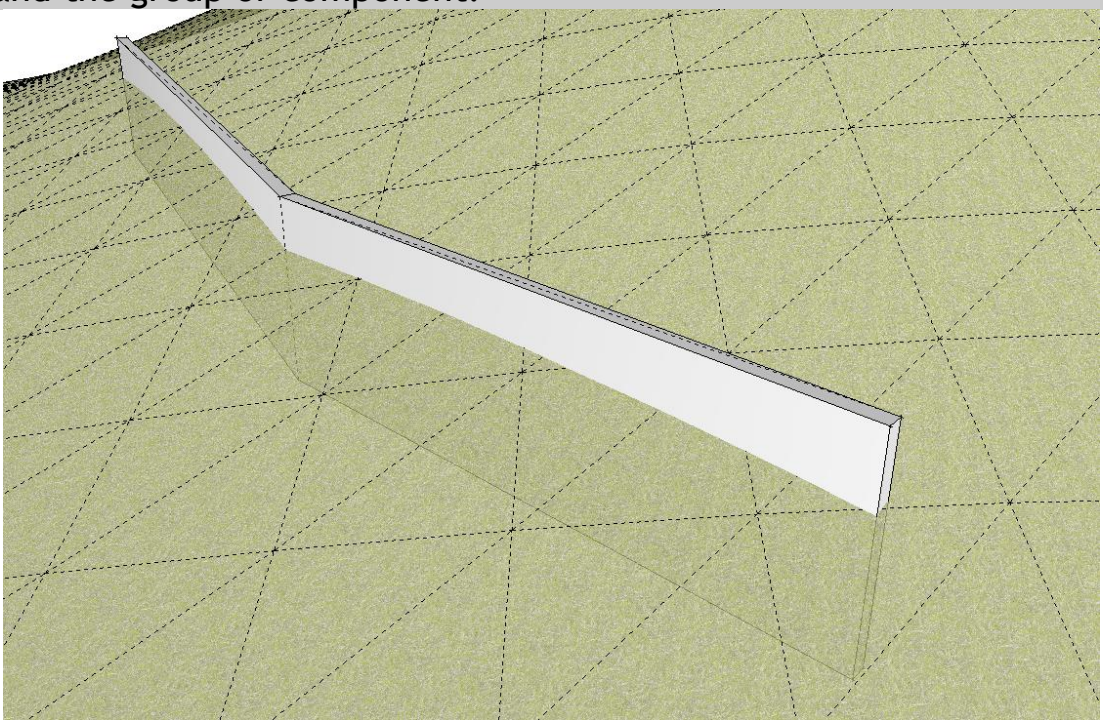


1.3 The output will be something like this.

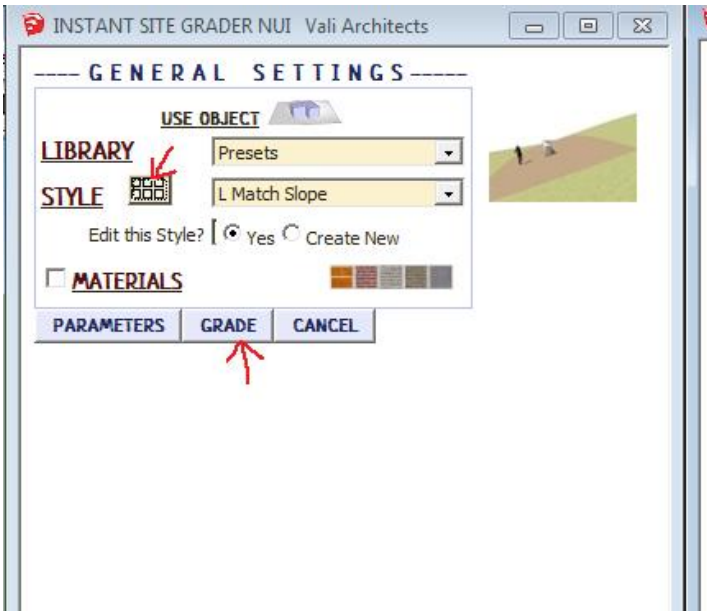


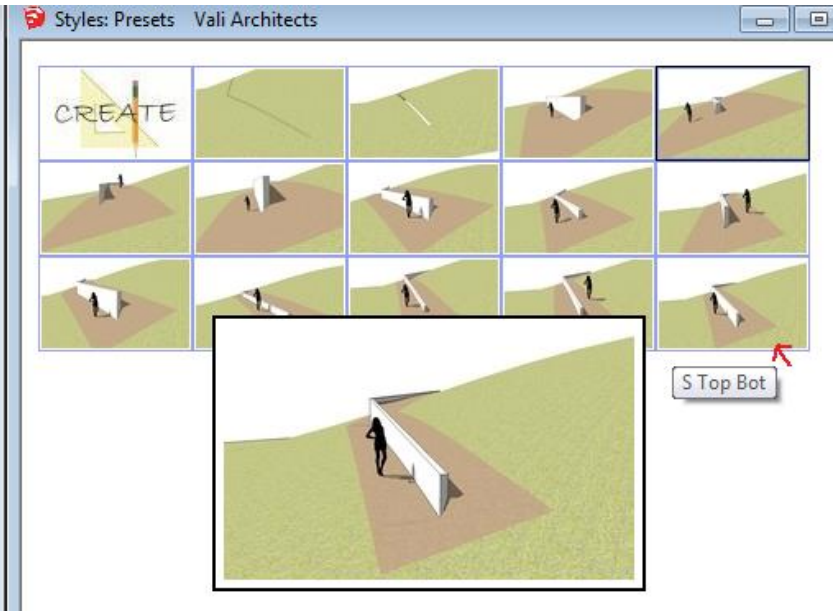
Lesson 2. Grade around Object

2.1 Draw a terrain using the Sandbox tool or any other method. Create a group or component including vertical faces that pass through the terrain and in a closed loop. (*I made this method with my Instant Wall script in mind, so I just made a simple wall shape*) The object and estimated size of the graded area must fit well within the extents of the terrain. Select the terrain and the group or component.

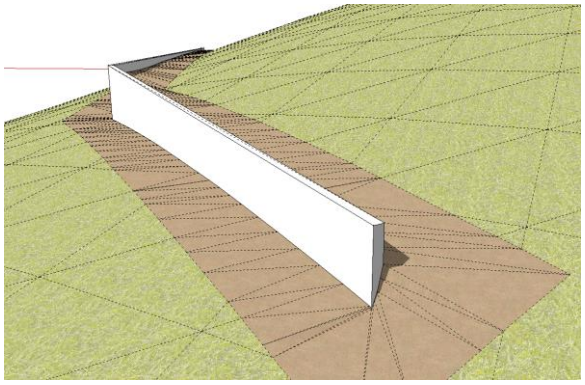


2.2 Choose "Plugins/ Vali Architects / Instant Site Grader Nui / Grade around Loop or Object" or on the Instant Site Grader Nui toolbar click the  symbol. Click the image menu button  to display preset style images and select the "S Top Bot" style. Click "Grade"

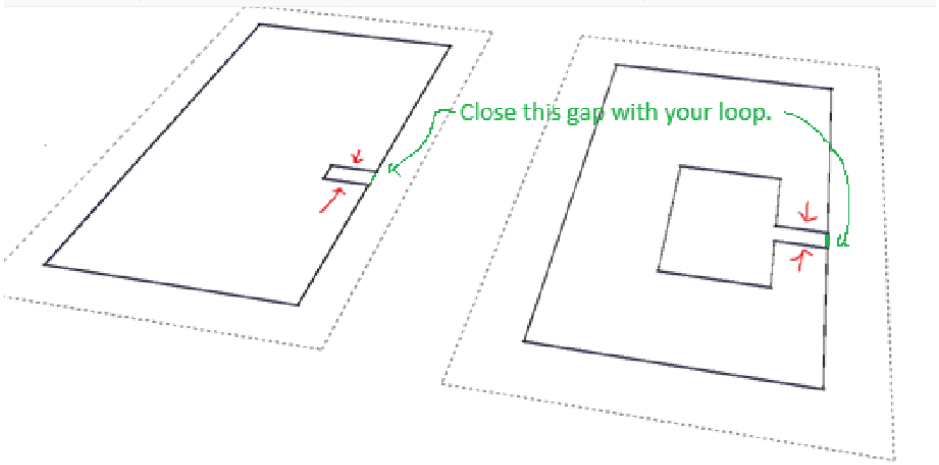




2.3 The output will be something like this.



1 Avoid occlusions in the outline that are less than 2x shoulder width. If these exist in your loop, draw a line across the gap and can fill in the area manually later using a face(s) or Sketchup sandbox tools.

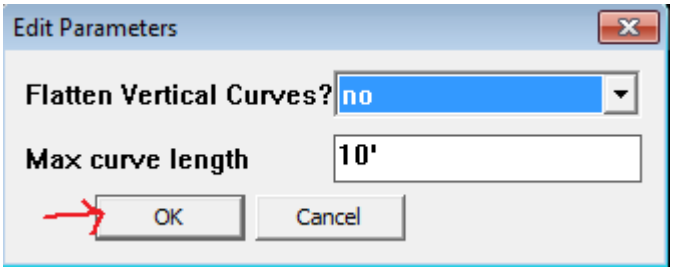


2. All of the geometry including shoulder must fit within the boundary of the terrain - If you are unsure, make your terrain larger.

3. Input groups should be created in place and should not be copied, rotated, scaled, etc. Explode and regroup before running the script if unsure. (Exception is "Use Object" method wich can use component instances)

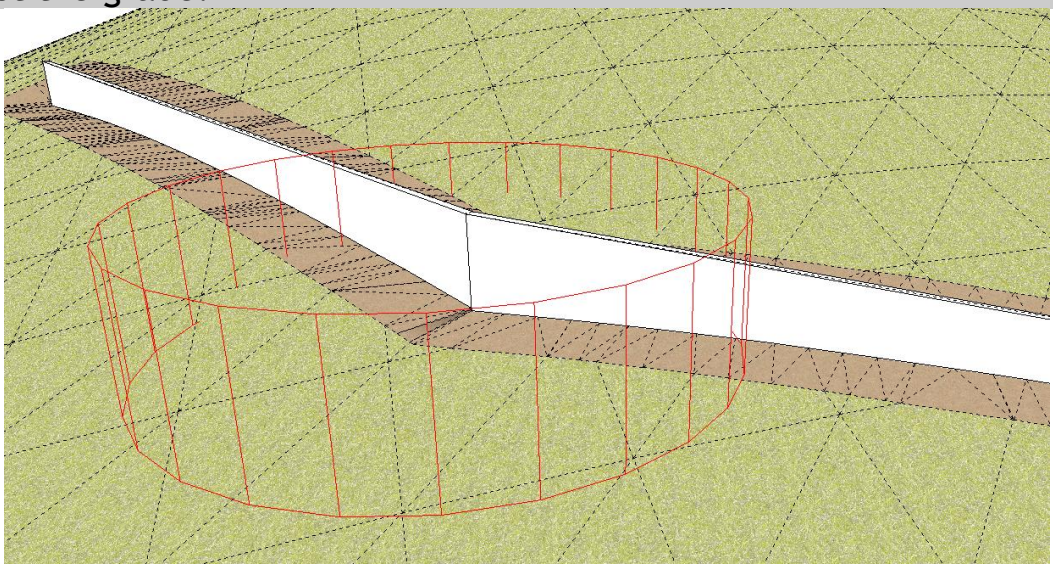
Lesson 3. Adjust Terrain Edge Height

3.1 Using the model from lesson 2 above, Choose "Plugins/ Vali Architects / Instant Site Grader Nui / Adjust Terrain Edge Height" or on the Instant Site Grader Nui toolbar click the  symbol. Just click "OK" on the parameter screen.

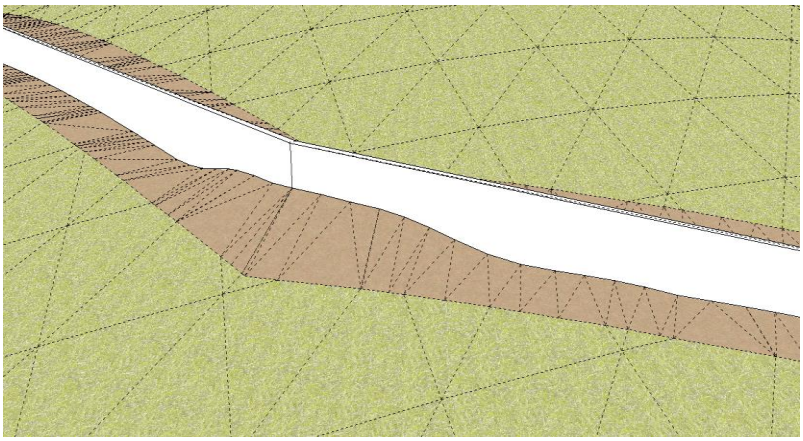


3.2 Locate the center of the circle on the side on one side of the wall and pull up or

down to adjust the grade."

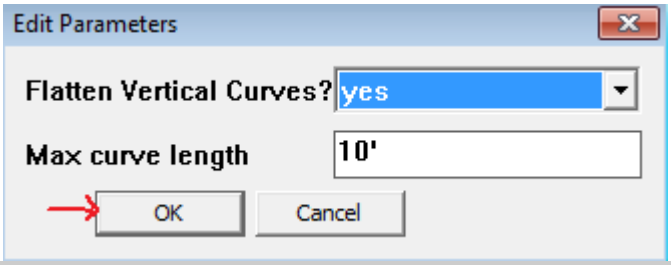


3.3 The output will be something like this.

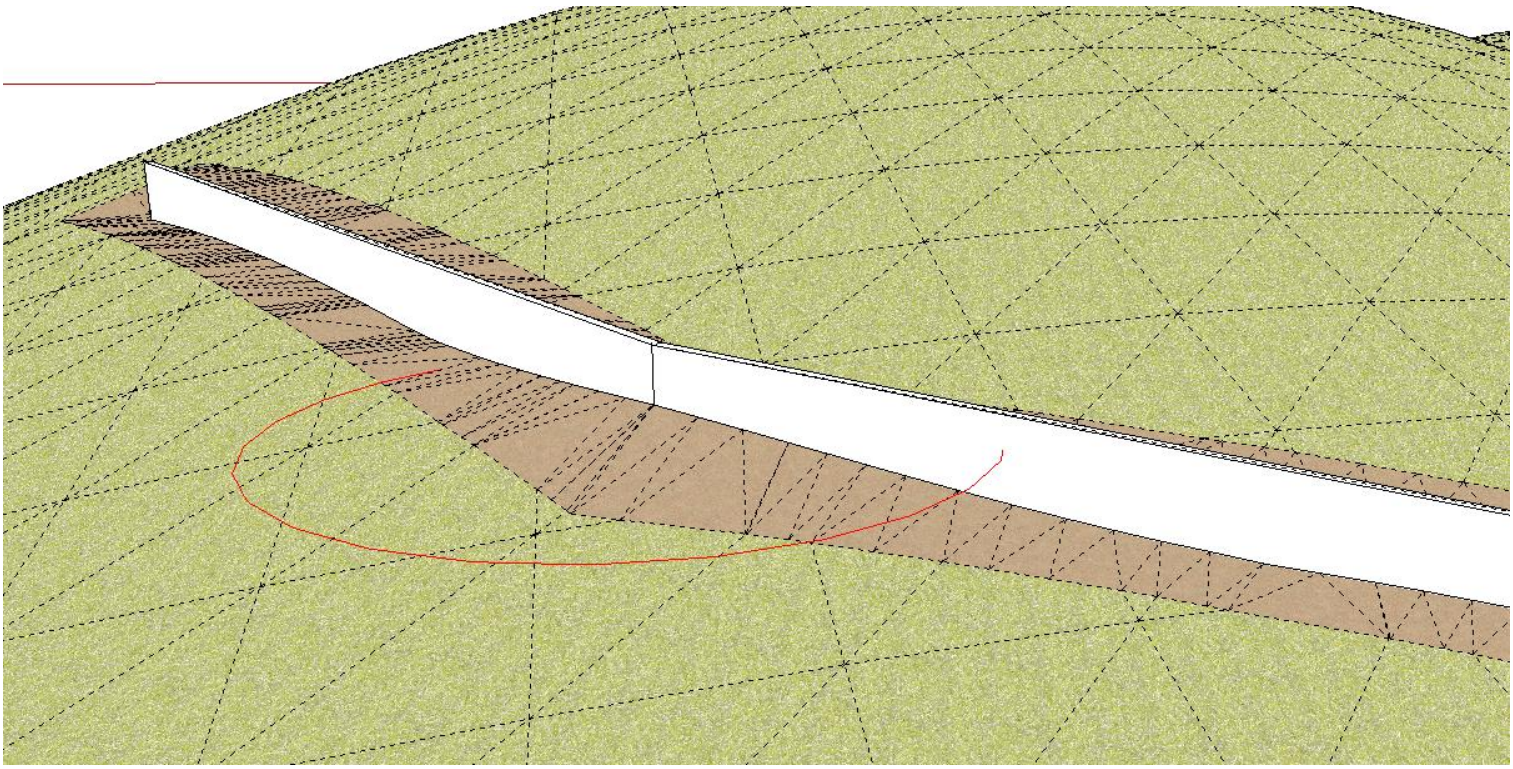


Lesson 4. Smooth Terrain Edge

4.1 Using the model from lesson 2 above, Choose "Plugins/ Vali Architects / Instant Site Grader Nui / Smooth Terrain Edge" or on the Instant Site Grader Nui toolbar click the symbol. Just click "OK" on the parameter screen.

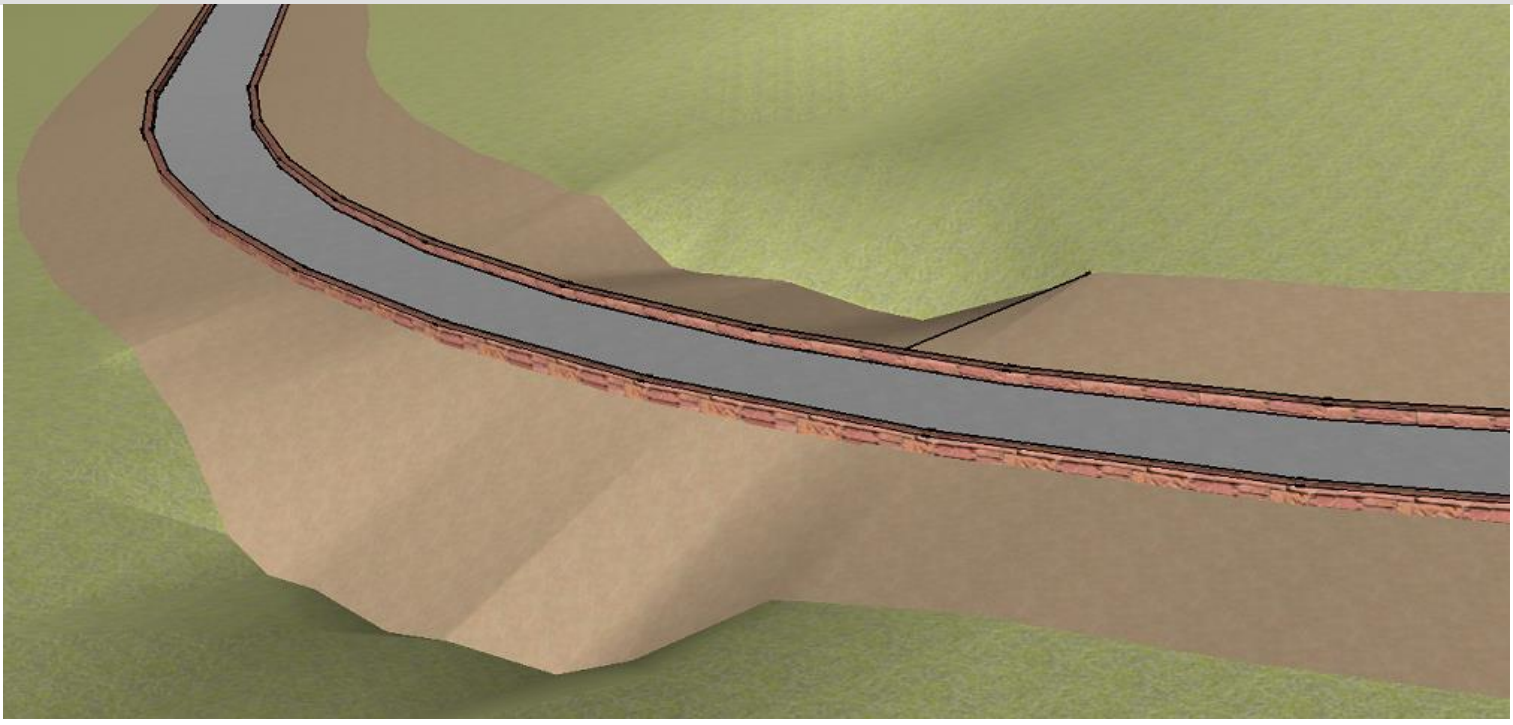


4.2 Locate the center of the circle on the side on one side of the wall and click the location. The output will be something like this.

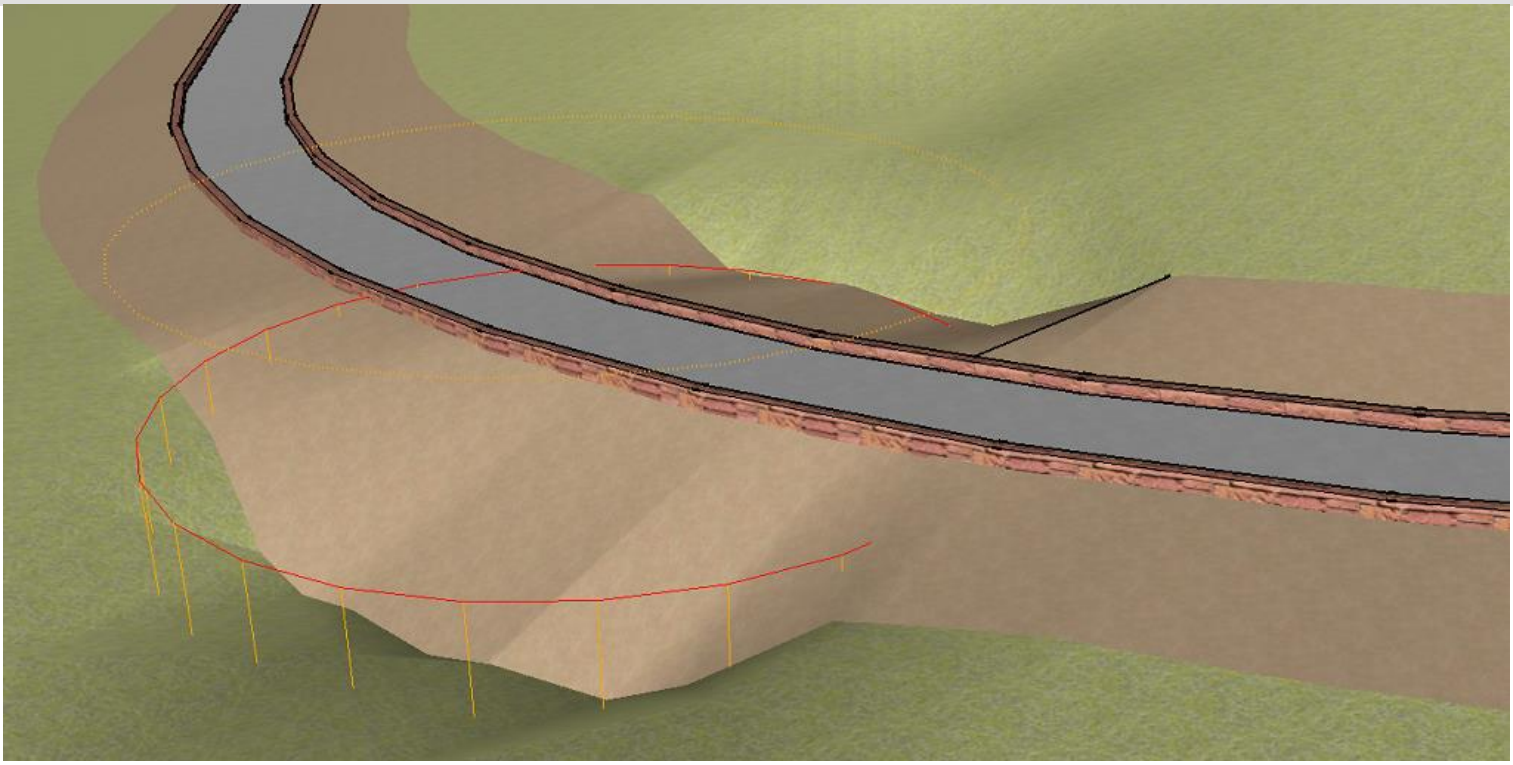


Lesson 5. Adjust Terrain Edge Height around Road *I used Instant Road Nui, but a road made by any other method should be similar.*

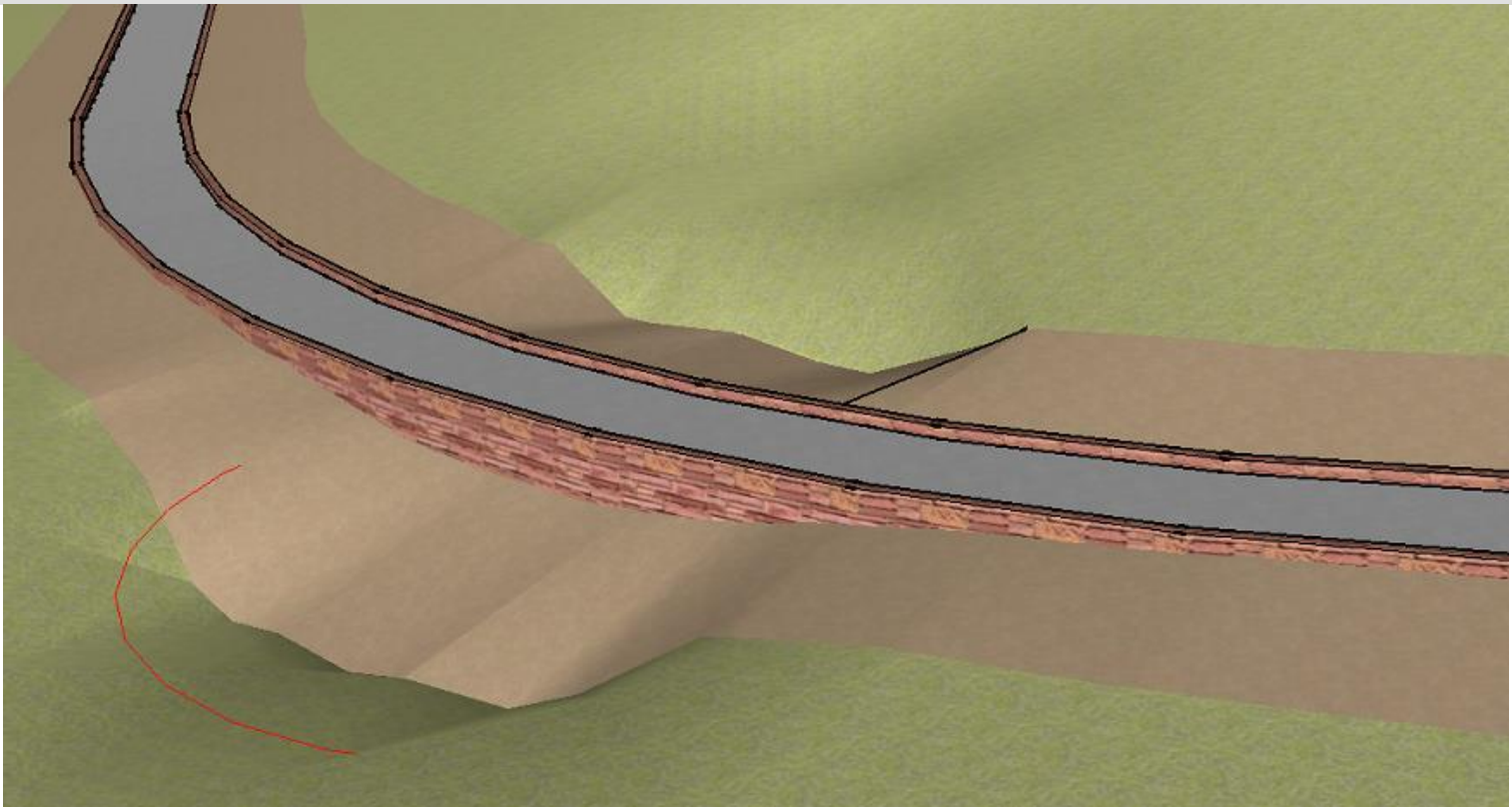
5.1 Here I made a simple road using Instant Road Nui. It runs over a gully where I want to make the curb act as a retaining wall, so I set the road parameter to extend the bottom of the curb below the terrain some distance.



5.2 Using the  tool from lesson 3, I pulled the grade down at the gully.



5.3 The exposed curb now serves as a retaining wall.

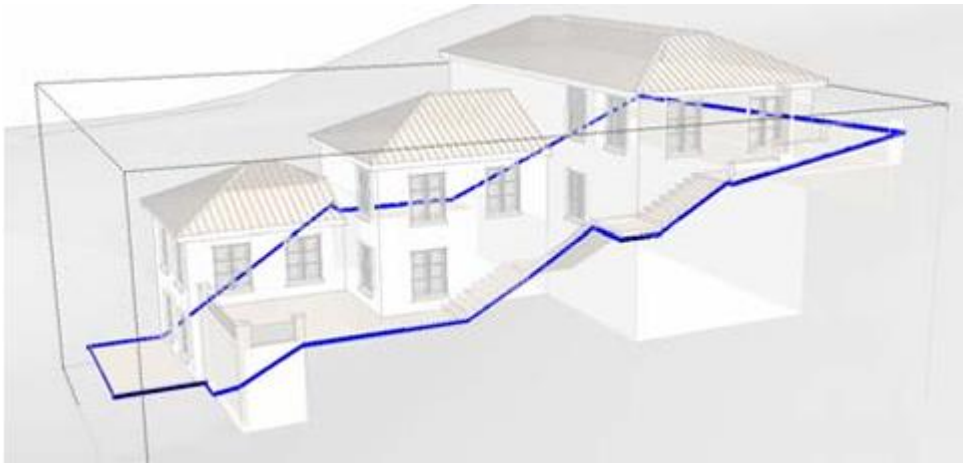


More Examples

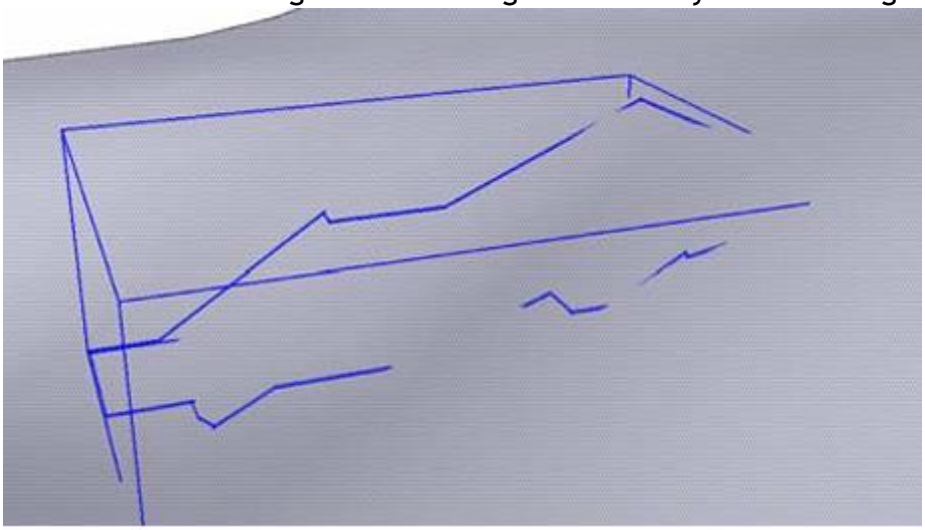
1. Start with a building component and a terrain mesh. Place the building in the terrain:



2. Create an empty new group. Within the group, draw a closed loop of lines around the building where you want the terrain to align:



. 3. Hide the building so it doesn't get in the way. Select the group and terrain.

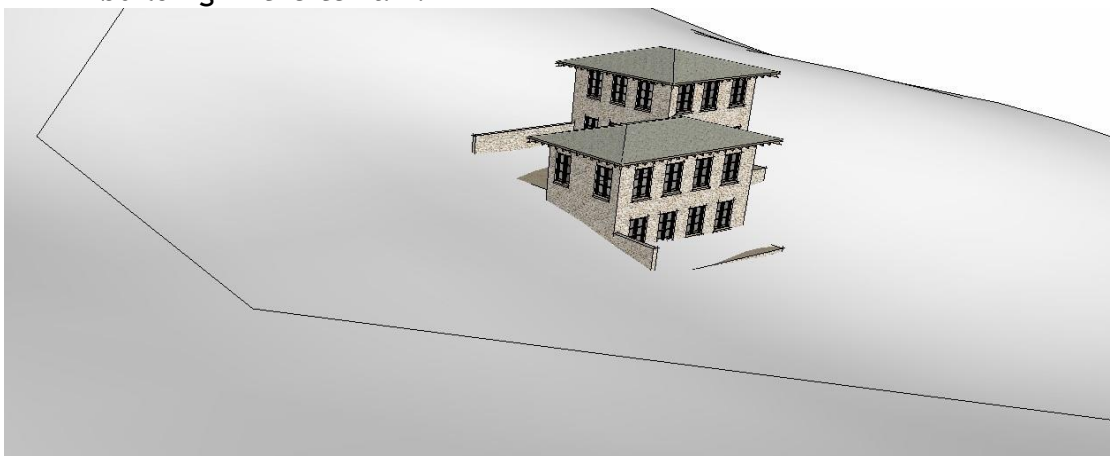


4. Follow steps 1.2 and 1.3 above.

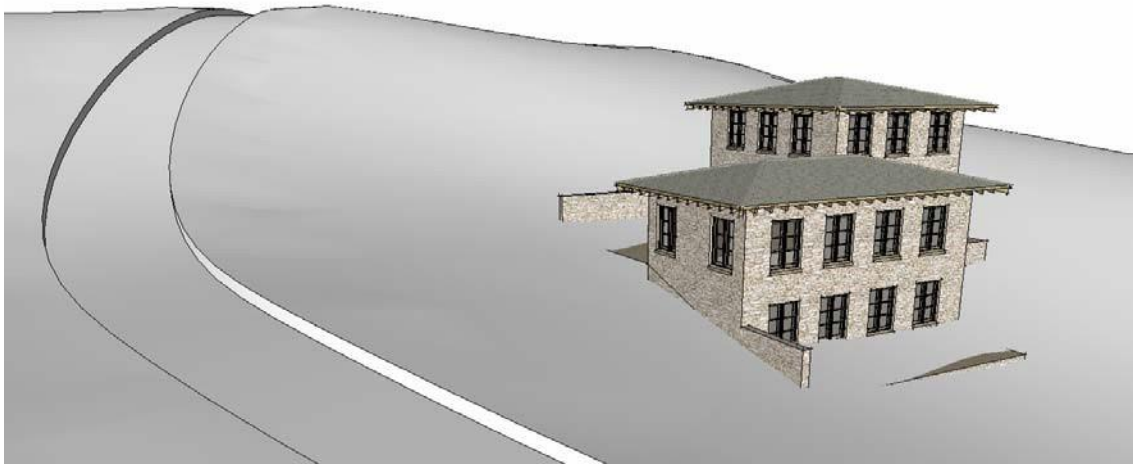


Make driveway connection between building and road.

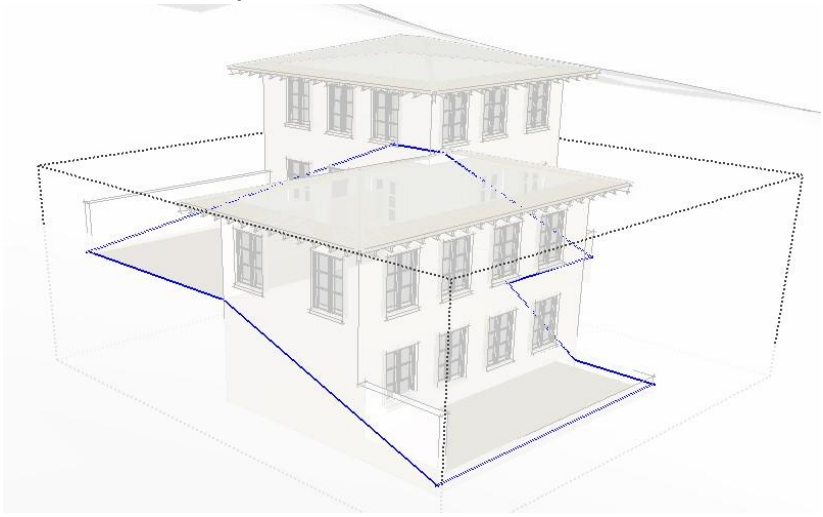
5. Start with a building component; and a terrain mesh with a road. Place the building in the terrain.

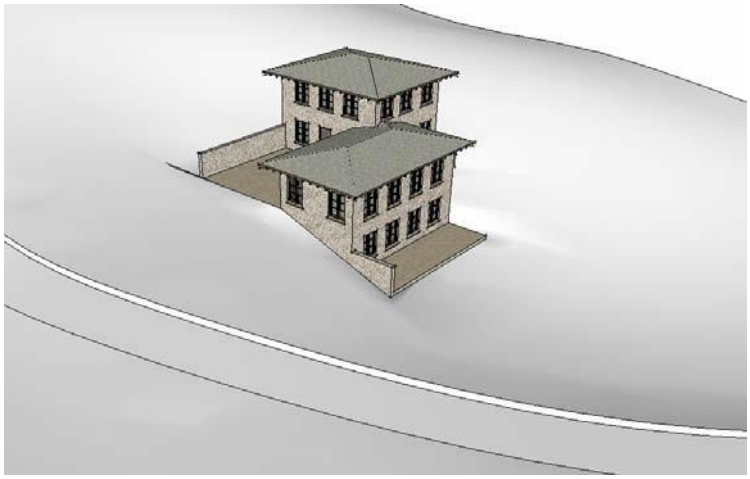


6. Here I created the road using *Instant Road*

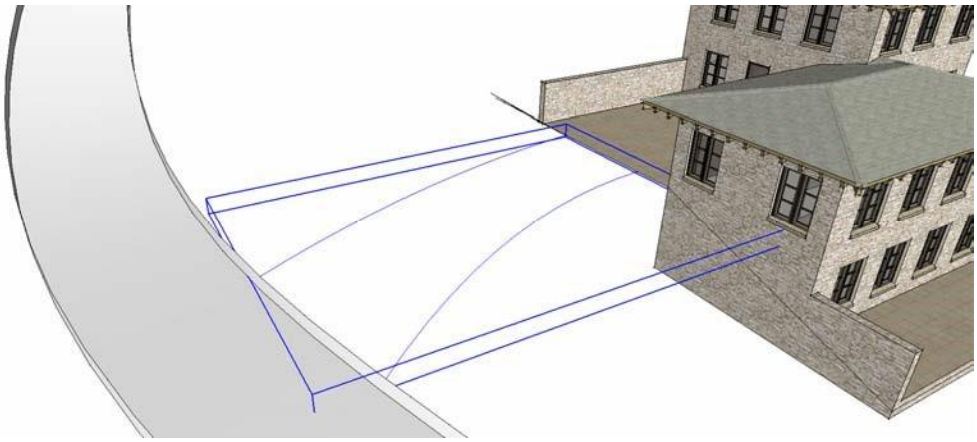


7. Follow steps 1.2 and 1.3 above



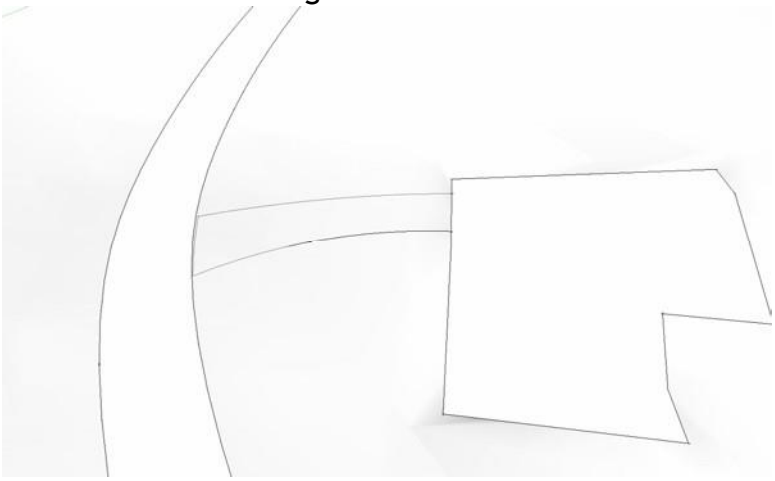


8. **Make Driveway Outline:** Make separate layers for the road and building and terrain. Turn OFF the terrain layer. Create a new group and draw the driveway connection outline between the road and the building. Select the group and choose "**Edit / Copy**" to make a copy on the clipboard. It will be used to make the driveway surface later.

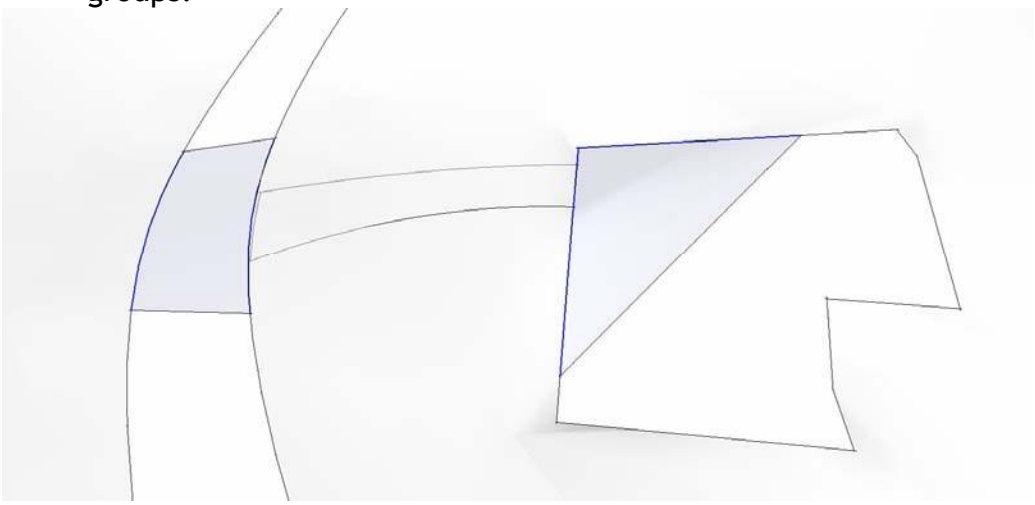


9. Turn ON the terrain layer and turn OFF the building and road layers. Here's the point where we grade the terrain around the driveway outline. But there's a

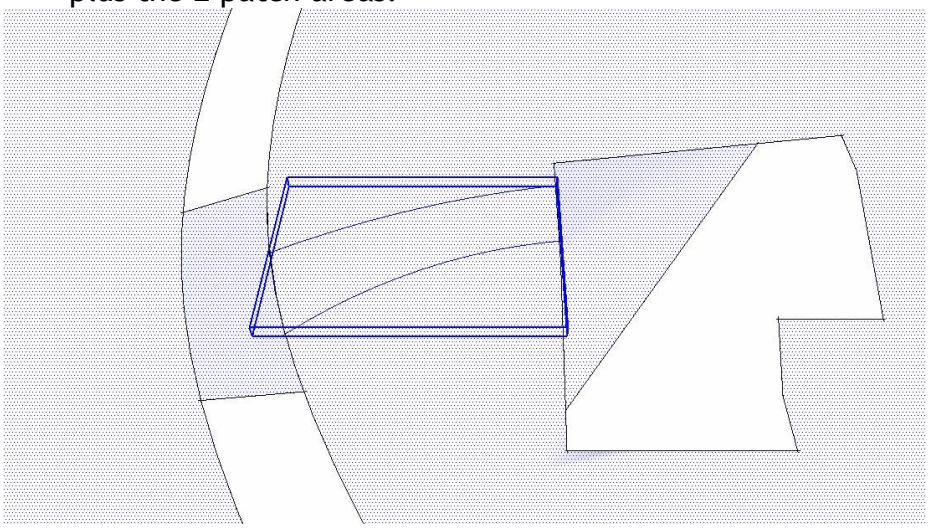
problem: Instant Site Grader requires that the terrain be larger than the outline plus the offset distance, yet there are holes where the driveway abuts the road and the building:



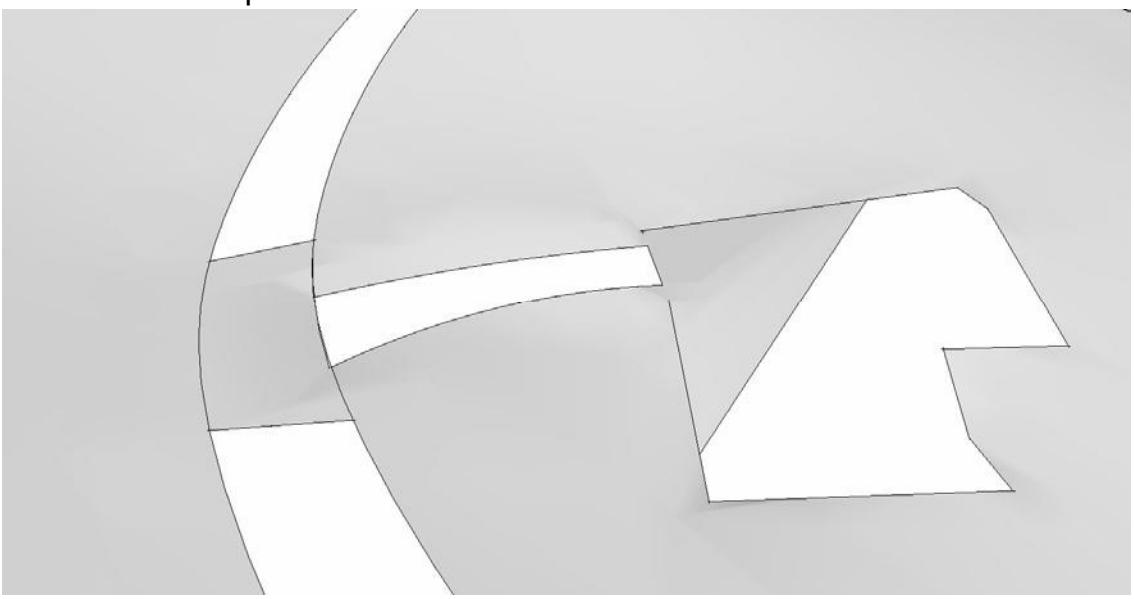
10. **Make Patches:** The solution is to make temporary "patches" to extend the terrain. I window selected both sides of the section of road shown and chose "**Draw / Sandbox / From Contours**" to make the one patch, and window selected 2 sides of the house outline and repeated. Explode both of these new patch groups.



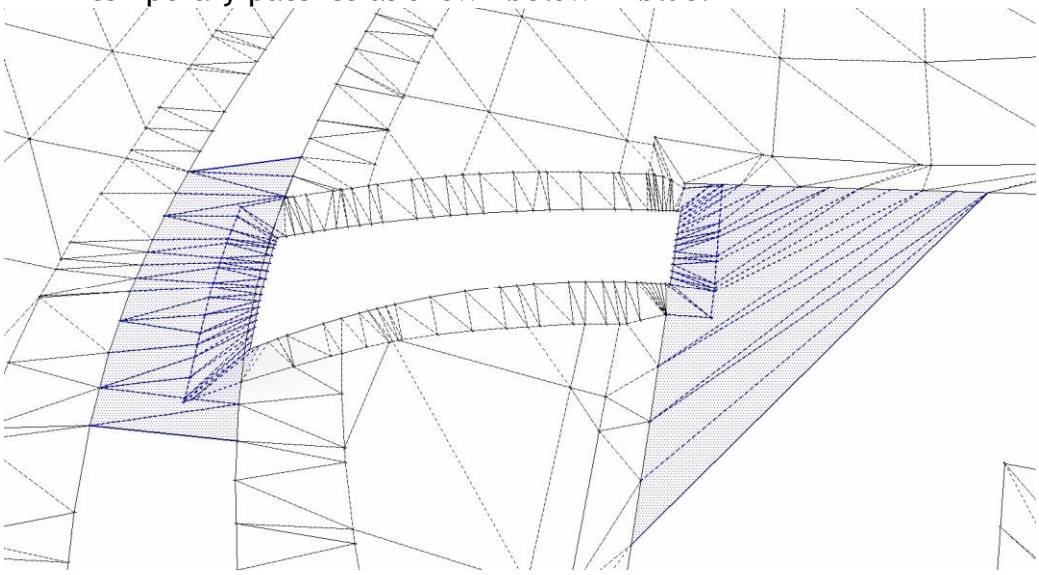
11. **Grade the terrain:** Select the driveway connection outline group plus the terrain plus the 2 patch areas.



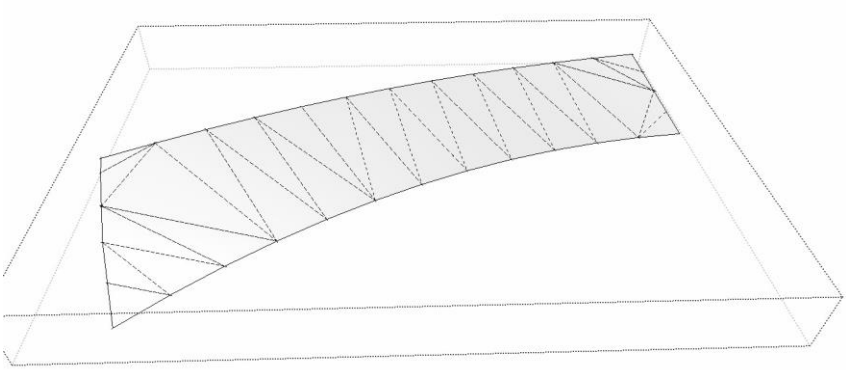
12. Follow steps 1.2 and 1.3 above



13. **Erase the Temporary patches:** Choose "**View / Hidden Geometry**". Erase the temporary patches as shown below in blue:



14. **Draw the Driveway surface:** Choose "**Edit / Paste in Place**" to paste from the clipboard a new instance of the driveway connection outline group we copied in step 5. Double click the group, select the edges and choose "**Draw / Sandbox / From Contours**":

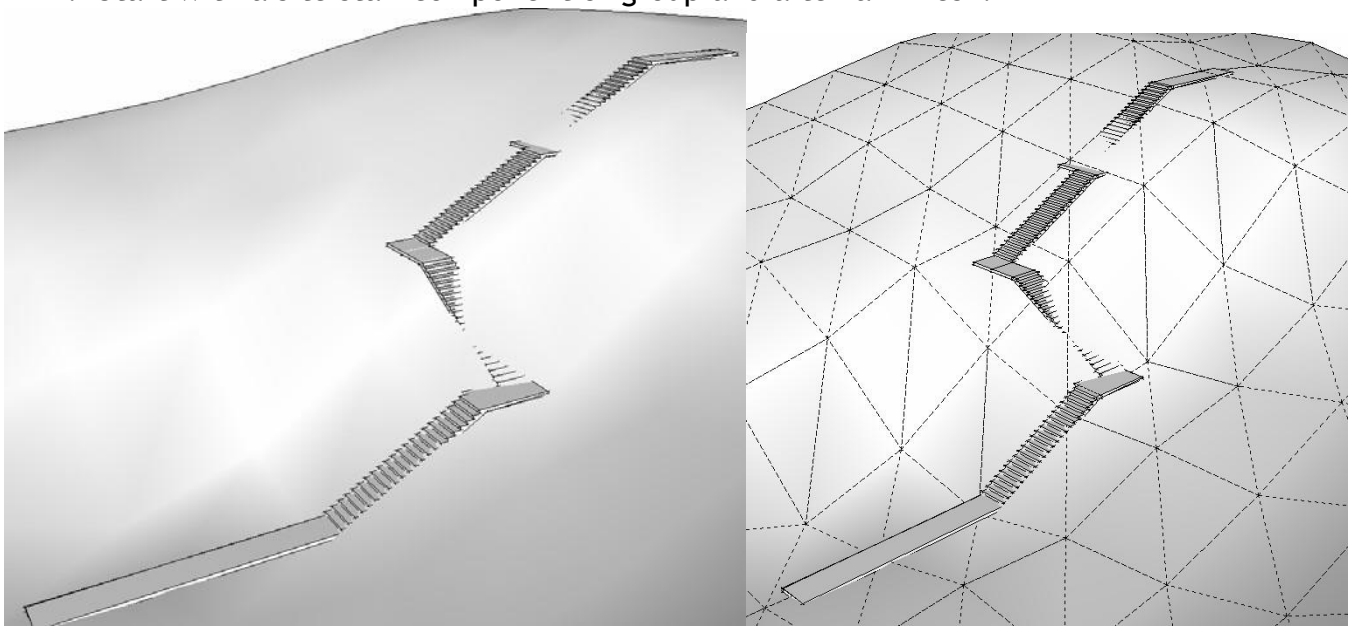


15. We’re done with the geometry. Turn back on the building and road layers, add materials and some entourage:

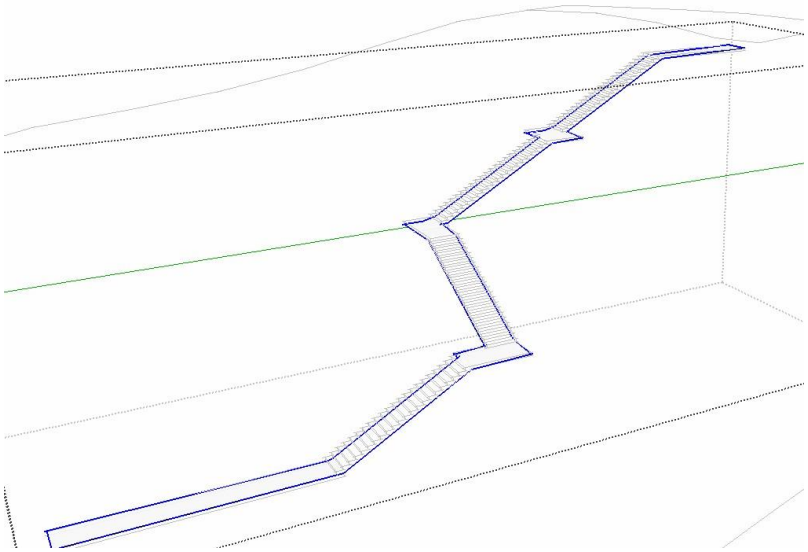


Grade terrain around site stairway.

1. Start with a site stair component or group and a terrain mesh.



2. Draw a closed loop of edges around the stair and enclose the edges in a group.



3. Follow steps 1.2 and 1.3 above

