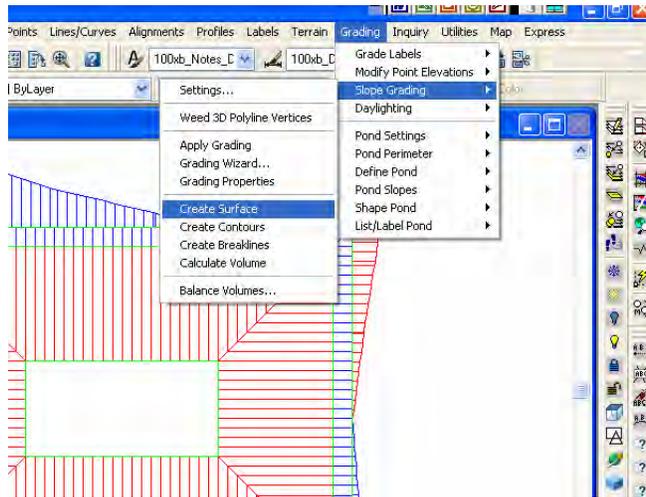
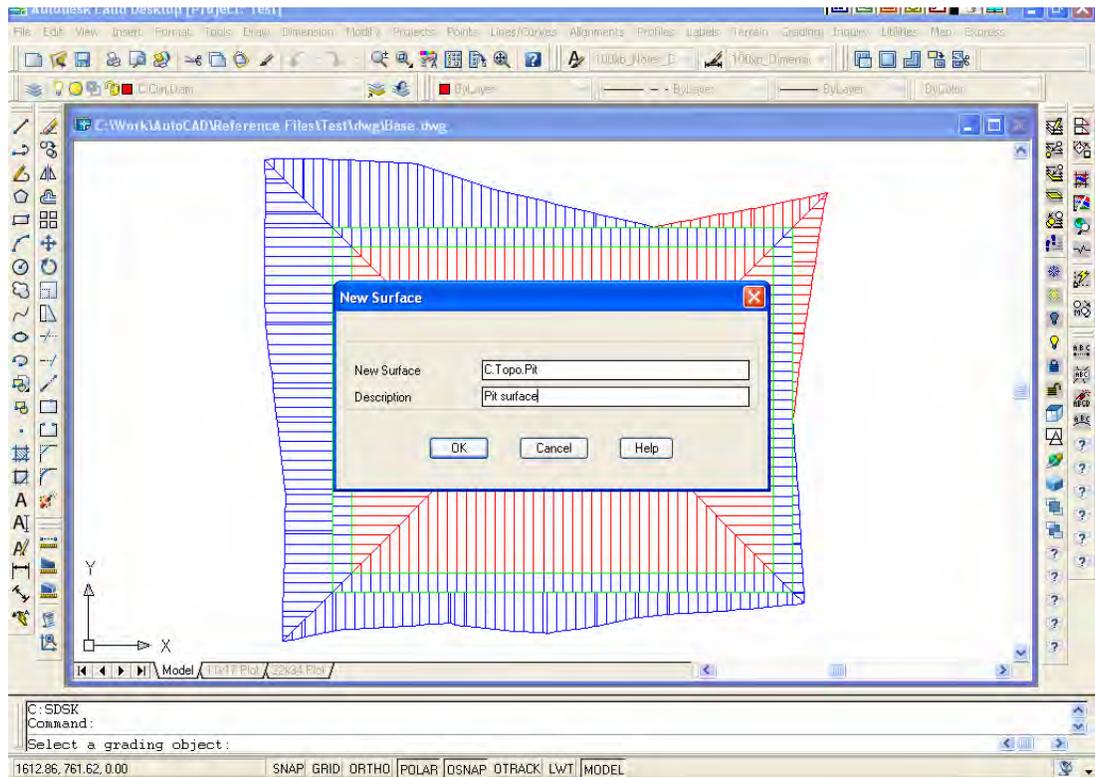


CREATING SURFACES FROM COMPOSITE GRADING OBJECTS

1. Start by creating a surface using the outermost grading object. This would be the grading object which ties in to the existing ground terrain surface.
 - a. Under Slope Grading, choose Create Surface

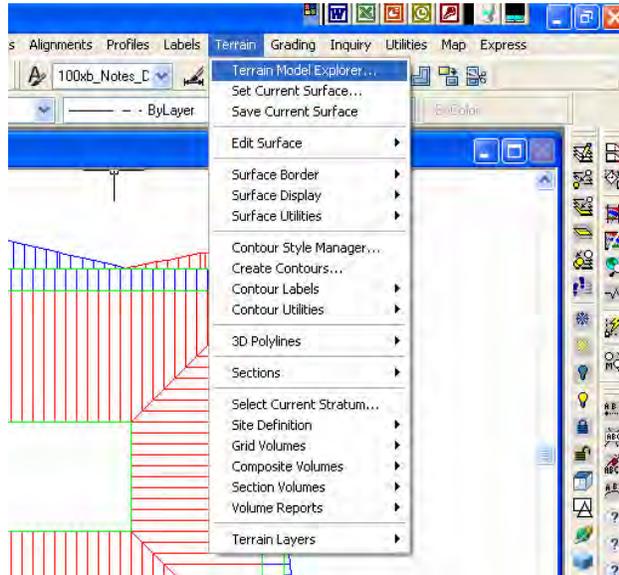


- b. At the command prompt, you will be asked to select a grading object. Choose the outermost grading object--the one which ties in to existing ground.
- c. A window will appear which will prompt you to provide a name and a description for the new surface that you will create based on the grading object.

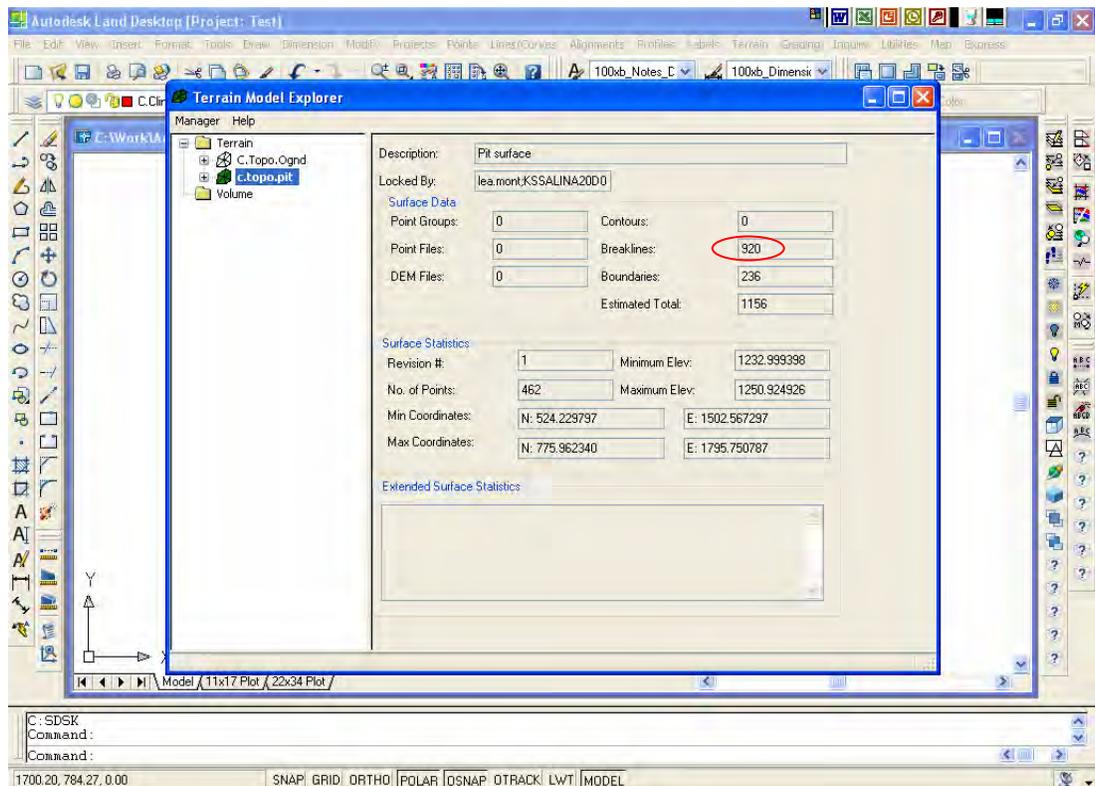


CREATING SURFACES FROM COMPOSITE GRADING OBJECTS

- d. After you have provided a name and description and clicked on the OK button, a new surface will be created based on the outermost grading object. You can verify that the surface has been created by viewing it in Terrain Model Explorer.



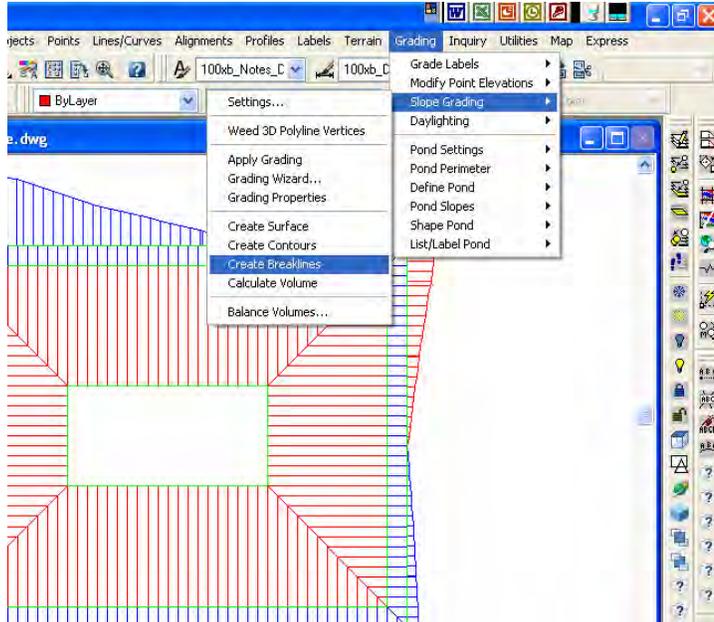
- e. You can see that you now have a surface with the name that you provided in Step 1c. Click on the surface name to display information about the surface. Notice the number of breaklines that are part of the surface at this point (in this case, 920)



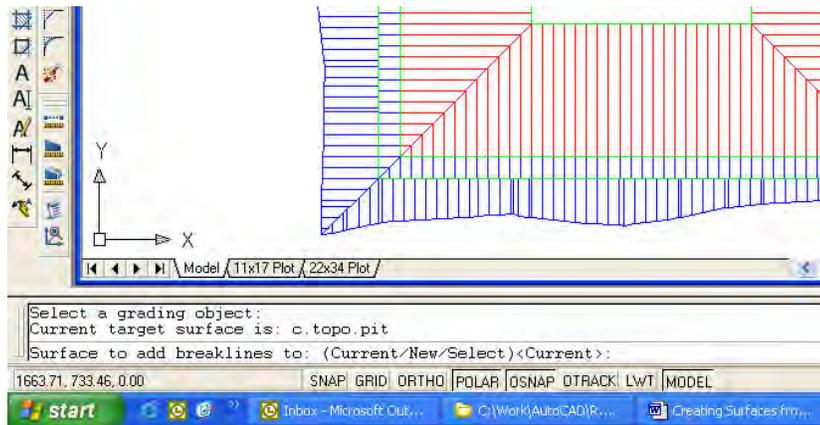
CREATING SURFACES FROM COMPOSITE GRADING OBJECTS

- f. At this point, the only information contained in the surface is that which is related to the outermost grading object. In order to incorporate the other grading objects into the surface, their data must be added as breakline data.

2. Continue to add data from the rest of the grading objects by creating breaklines.

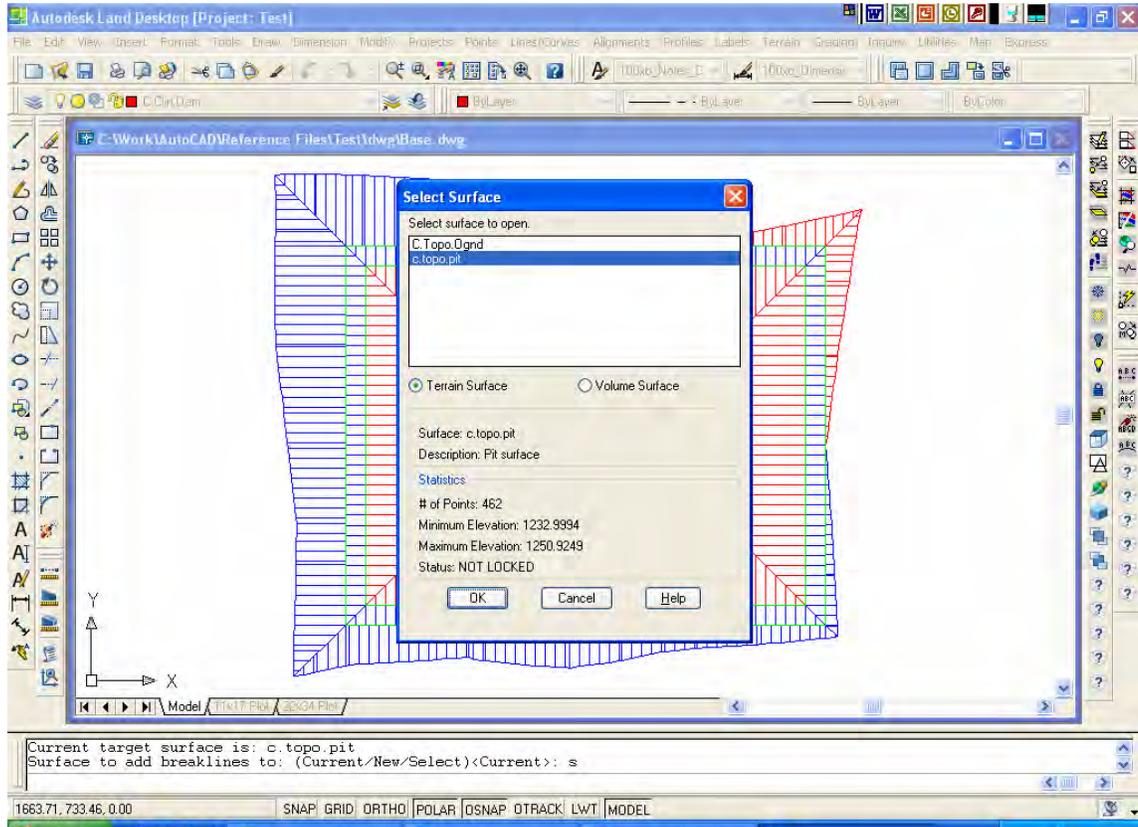


- a. You must work inward starting with the grading object that is adjacent to the object that you selected to create the surface from in Step 1b above. Once you select the next grading object, you will be asked at the command line to choose a surface to add the breaklines to.

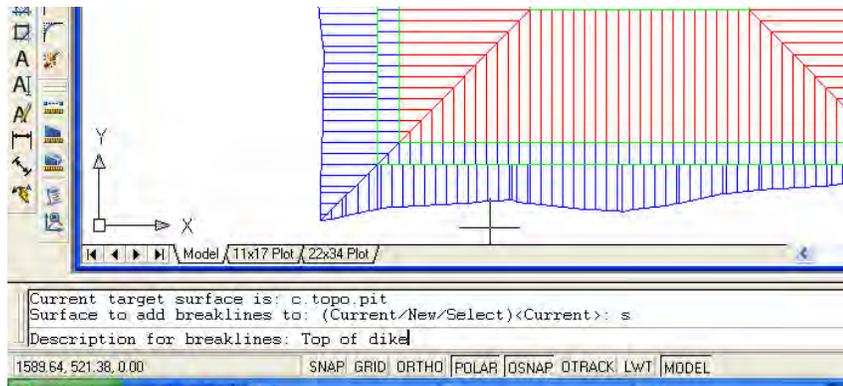


CREATING SURFACES FROM COMPOSITE GRADING OBJECTS

- b. Typing S at the command line at this point will bring up the Select Surface window where you can choose which surface to add the breakline data to. In this case, we want to add the breakline data to the surface that was created in Step 1c.

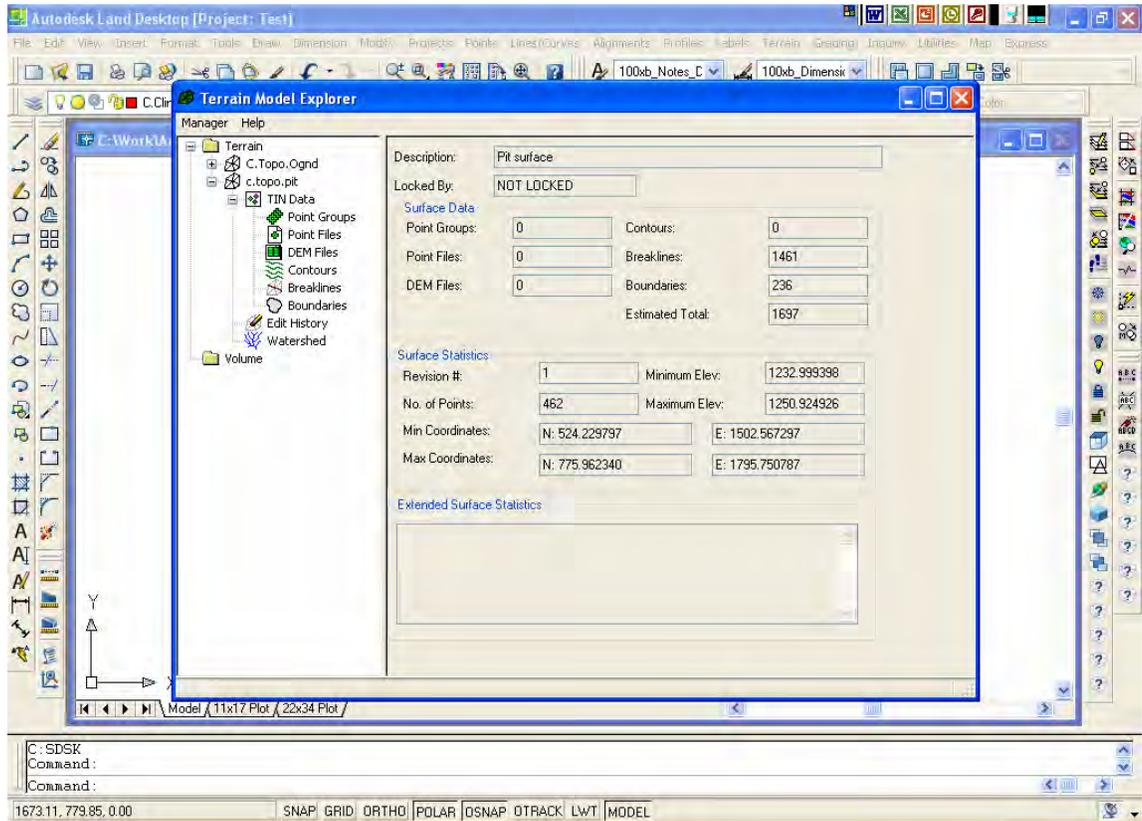


- c. You will now be prompted for a description for the breaklines at the command line. This description is optional, but you can provide one if you want to keep track of the breaklines that you have added to the surface.



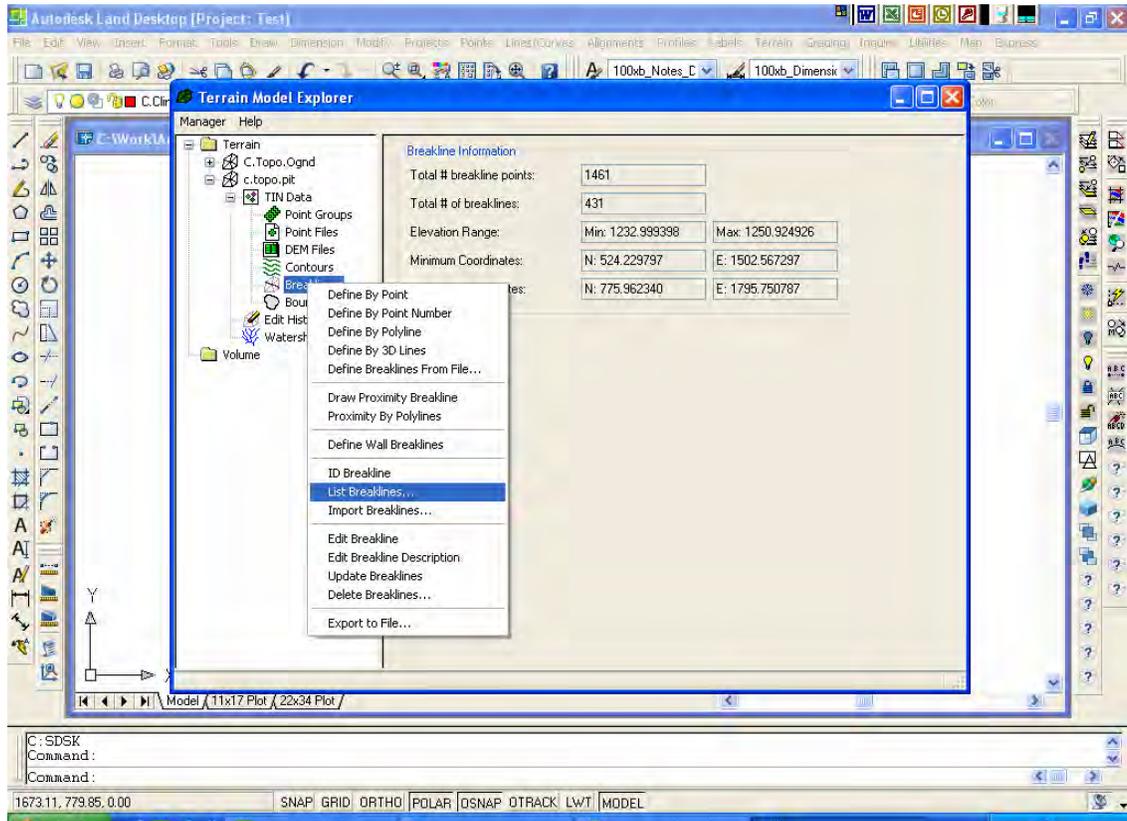
CREATING SURFACES FROM COMPOSITE GRADING OBJECTS

- d. You can verify that the breakline data has been added to the surface by going back into Terrain Model Explorer. Notice that the number of breaklines has changed from the value that you saw in Step 1e.

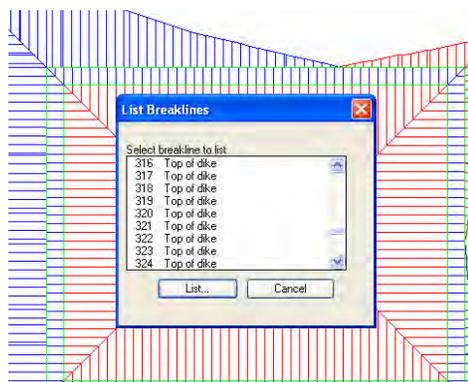
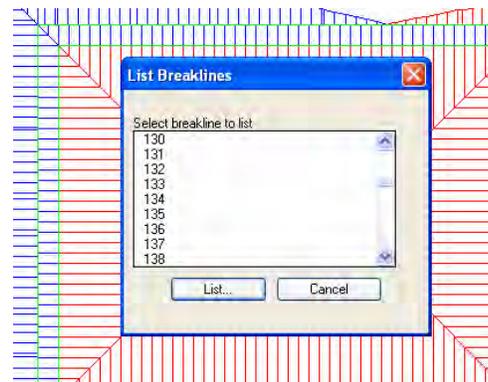


CREATING SURFACES FROM COMPOSITE GRADING OBJECTS

- e. You can list the breaklines included in the surface by clicking on the + to the left of the surface name to expand the menu for the surface. Right click on Breaklines and choose List Breaklines...



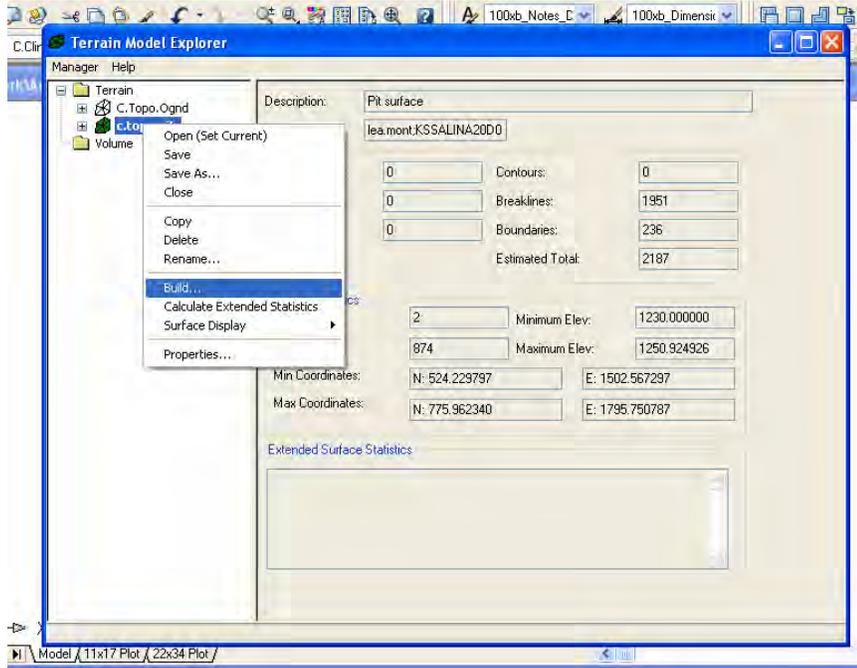
- f. A window will appear listing all of the breaklines that are part of the surface. The breaklines at the top of the list will be those that were created in Step 1 from the outermost grading object. These breaklines will not have a description displayed to the right of the breakline number because one was not provided when the surface was created.



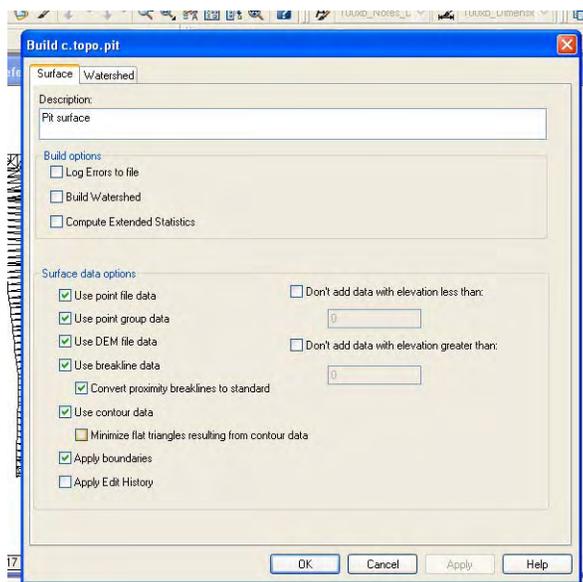
If you scroll down closer to the bottom of the list, you will find breaklines that have descriptions to the right of the breakline number (assuming you provided a description in Step 2c)

CREATING SURFACES FROM COMPOSITE GRADING OBJECTS

3. Continue to add grading objects as breaklines, working inward from the outermost object that intersects with original ground until you reach the innermost of the grading objects. When you have worked through all of the objects, you will have a final surface that represents all of the objects in the composite grading object.
4. When you are finished adding grading objects to the surface, rebuild the surface to make sure that all updates are current.
 - a. In Terrain Model Explorer, right click on the terrain name and choose Build...

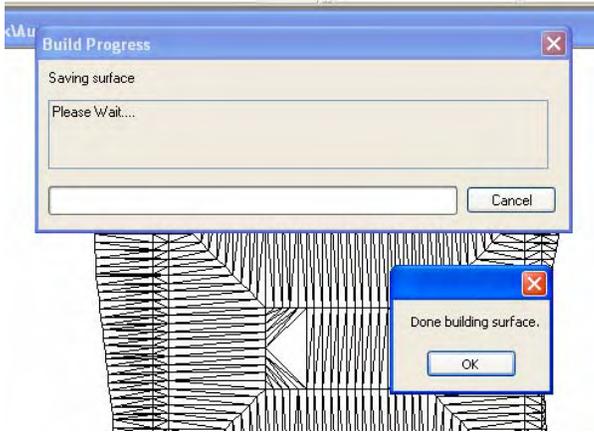


- b. A window will appear in which you can choose data to be used when building the terrain model. It is not necessary to deselect types of data that are not being used to build the model, but it is necessary to ensure that data that is being used (in this example, breakline data) is checked.



CREATING SURFACES FROM COMPOSITE GRADING OBJECTS

- c. Click on the OK button, and the terrain will be built. A verification window will appear when the program is finished building the surface.



5. You will now have created a surface which represents the composite grading object.