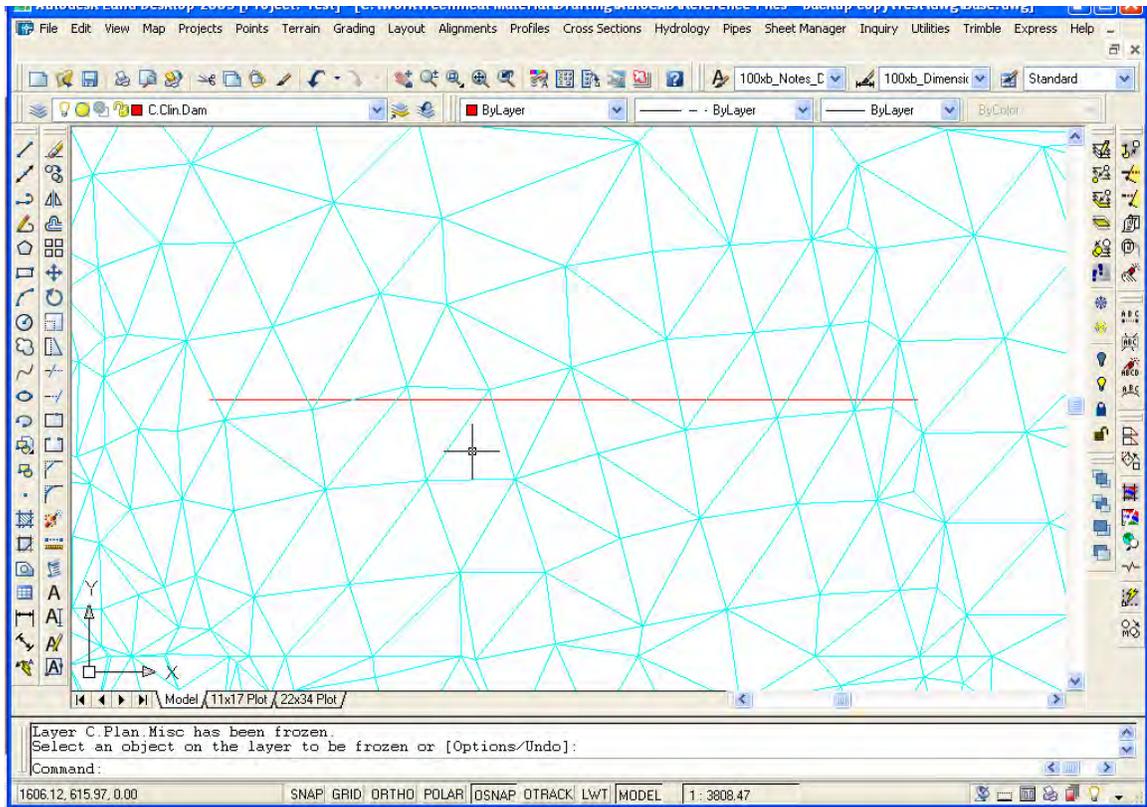


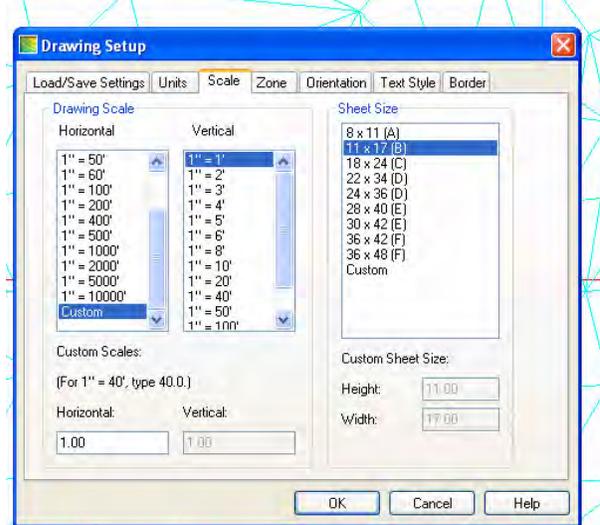
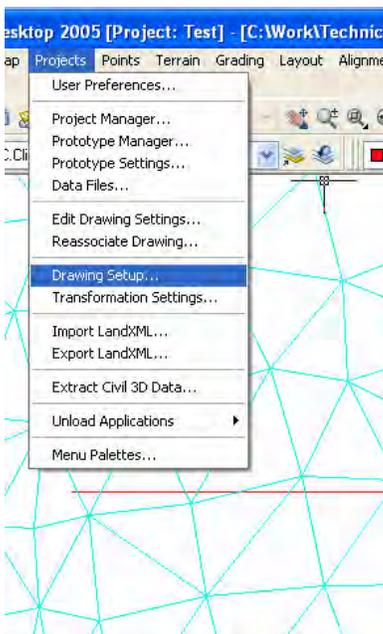
## PLOTTING A SINGLE PROFILE

Before creating profiles in a drawing, you must have a terrain model built for the surface that you want to create a profile for and alignment defined that will be used to cut the profile.

In this example, we have a terrain model built for the original ground, and an alignment has been defined.

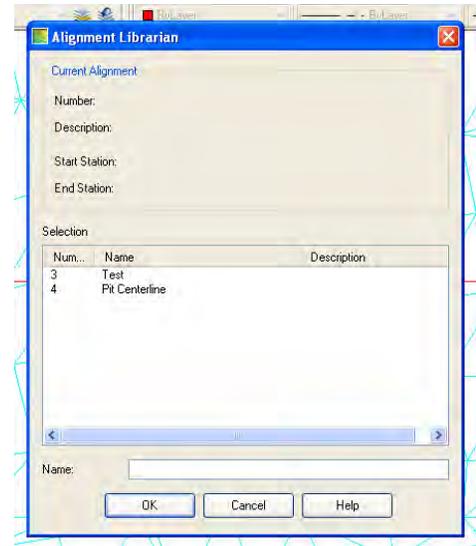
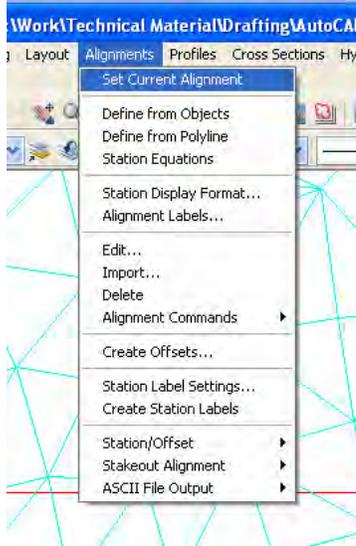


1. First, check your drawing setup to verify that your vertical scale is set to 1:1. This will make it easier for you to determine the scale at which to plot your profile later.

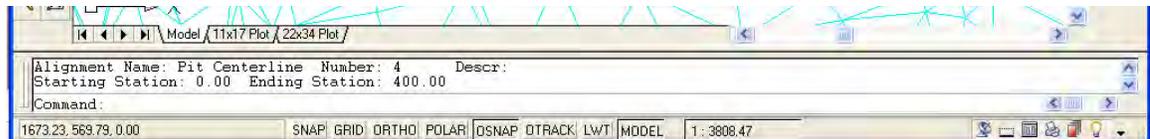


## PLOTTING A SINGLE PROFILE

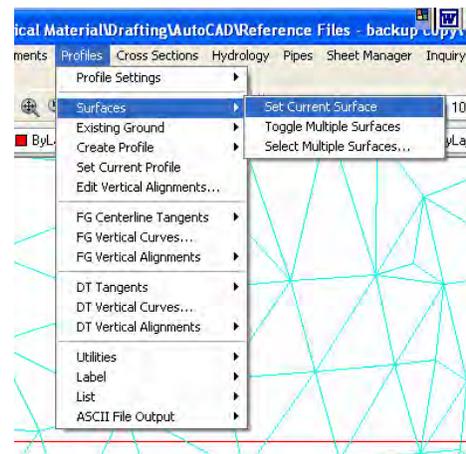
- The profile that you will be creating will contain text that will be inserted at the size of the drawing's current text style so you must check to make sure that the current text style is the size that you want to have displayed in your profile. A 100 scale text with a height of 9 is usually a good starting point for text that will be visible for most profiles that will be created.
- Set the alignment that you want to use current. This is done through the Set Current Alignment command under the Alignments drop-down menu. You will be prompted at the command line to select an alignment. Hit enter to bring up the Alignment Librarian window which lists all of the alignments you currently have designed for your project.



Choose the alignment that you want from the list and click on the OK button to make it the current alignment. In this case, we are going to cut a profile using the Pit Centerline alignment. A dialog will be displayed at the command line verifying the alignment that you just set current.

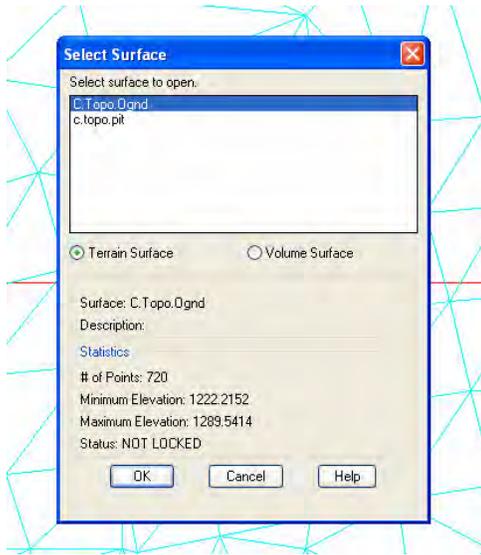


- After you have set the alignment current, choose the terrain model that you want to create a profile for. This is done through the Surfaces > Set Current Surface command under the Profiles drop-down menu.

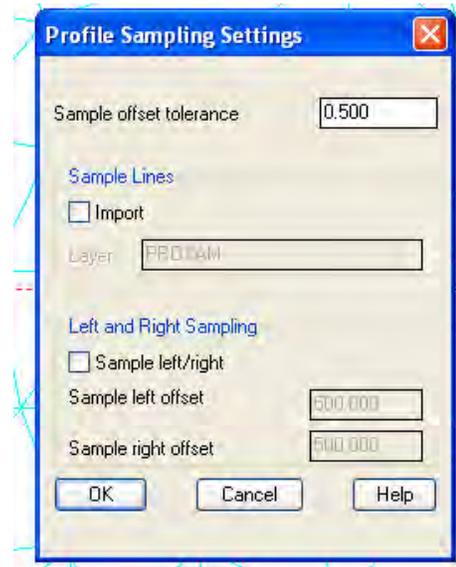
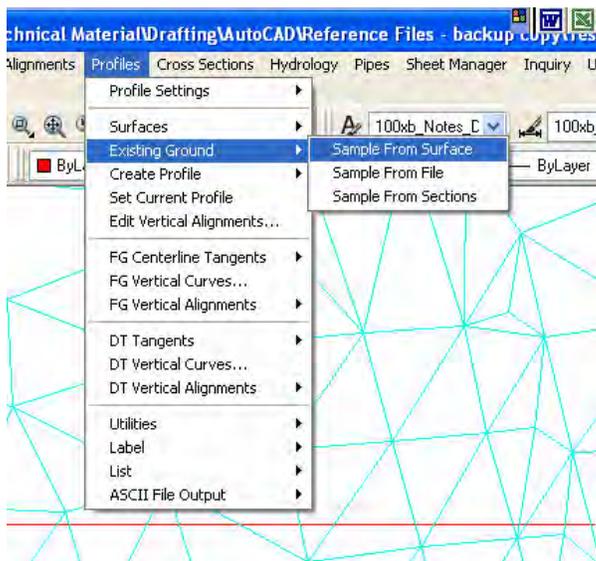


## PLOTTING A SINGLE PROFILE

The Select Surface window will appear. Choose the surface that you want to use to create the profile and click on the OK button.



5. Now that you have chosen a surface for which to create a profile, you must sample that surface. This step will gather profile information for the surface along the alignment that you selected in Step 3. Go to Existing Ground > Sample from Surface under the Profile drop-down menu.



The Profile Sampling Settings window will appear. If you wanted to, you could sample for parallel profiles left and right of the alignment that you are using to create your profile. This option is often used in highway work for sampling profiles for the ditches on either side of a roadway.

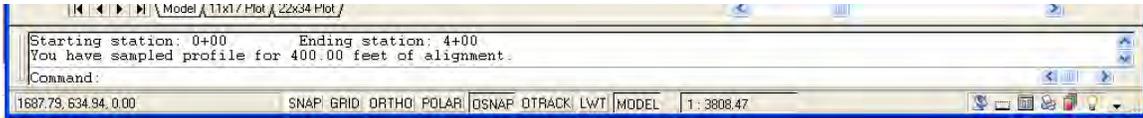
Also notice that information about the current alignment that you used to sample along is displayed at the command line.

Click on the OK button to sample the terrain surface along the current alignment. You will be prompted at the command line to choose a beginning and ending station. The

## PLOTTING A SINGLE PROFILE

program will default to the beginning and ending stations of the alignment that you are using, but you can choose different stations within that alignment if you wish.

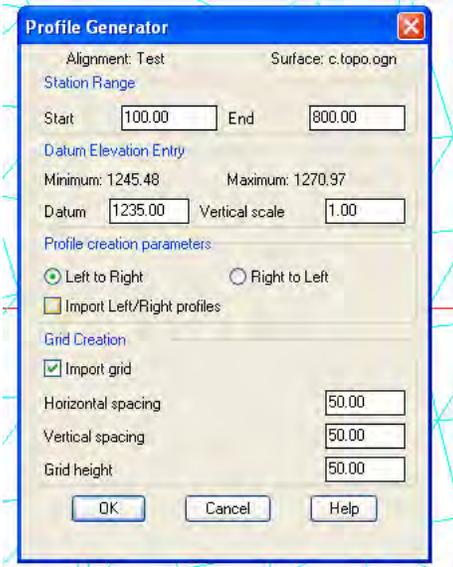
After you have chosen a beginning and ending station, the profile will be sampled and a verification message will be displayed at the command line.



6. You now have sampled a profile for a terrain surface along an alignment. You are now ready to plot the profile. Choose the Create Profile > Full Profile command under the Profiles drop-down menu.

The Profile Generator window will appear. The starting and ending stations in the station range area will default to the beginning and ending stations of the alignment that you used to sample the profile. These stations can be changed to different starting and ending stations within the alignment's station range.

Under the Datum Elevation Entry area, the minimum and maximum elevations along the profile will be displayed. A datum elevation

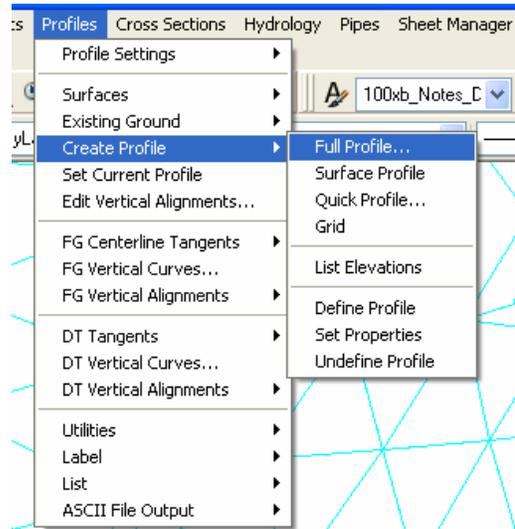


has been chosen automatically

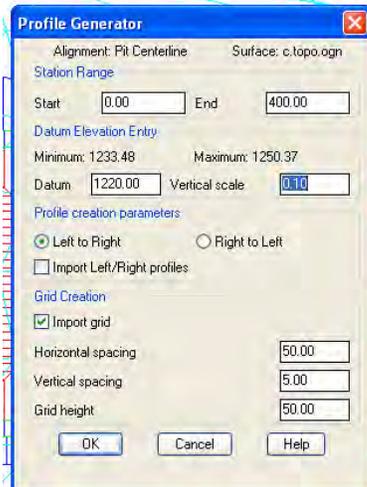
but can be changed if needed. There is also a box in this area to change the vertical scale which is discussed more thoroughly on the next page.

Under the Profile Creation Parameters area, you can control whether the profile is plotted left to right or right to left.

Under the Grid Creation area, you can choose to display a grid with your profile and control the spacing and height. The vertical spacing of the grid is not tied to the vertical scale so enter the spacing that you want regardless of whether or not the vertical scale of the profile has been exaggerated.



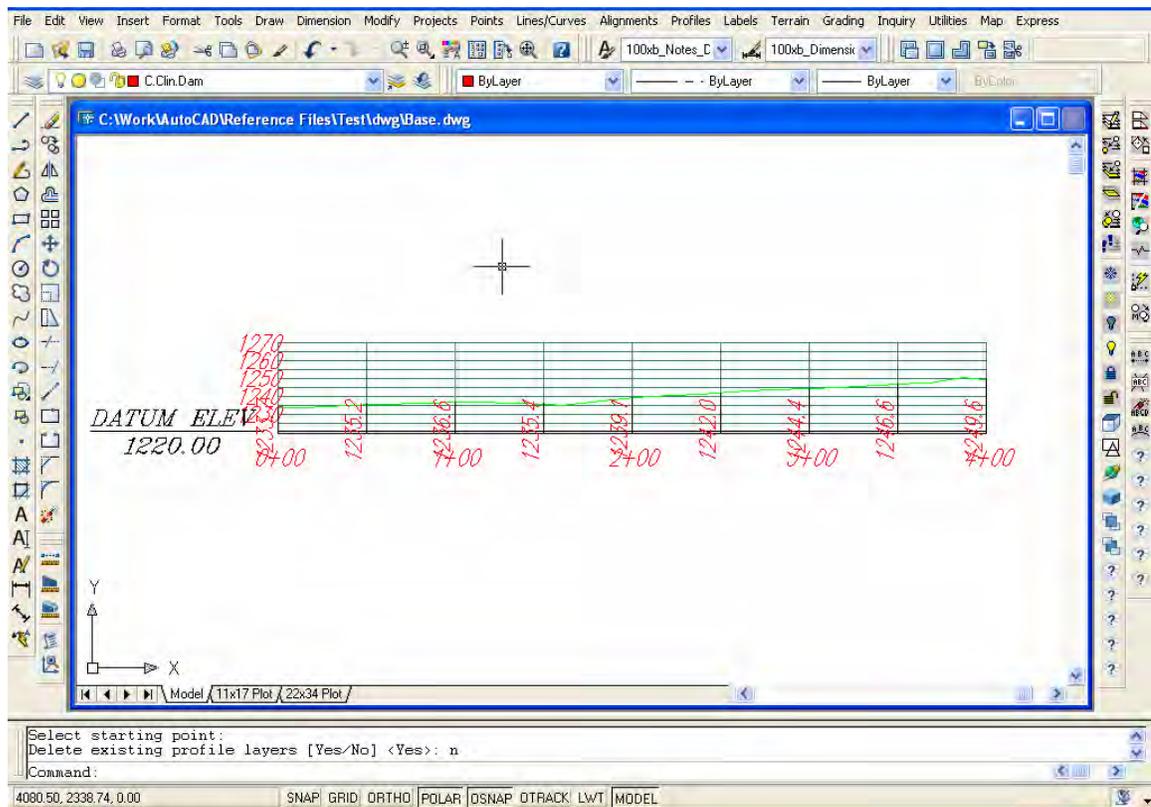
## PLOTTING A SINGLE PROFILE



The Profile Generator window allows you to control the vertical scale of the plotted profile. Assume, for example, that you want to plot the profile using a vertical scale which has been exaggerated by a factor of 10. This would mean that a 10-foot difference in elevation would measure as 100 feet. Exaggerating a vertical scale is a good way to enhance the visibility of the profile, particularly in areas where the profile is relatively flat.

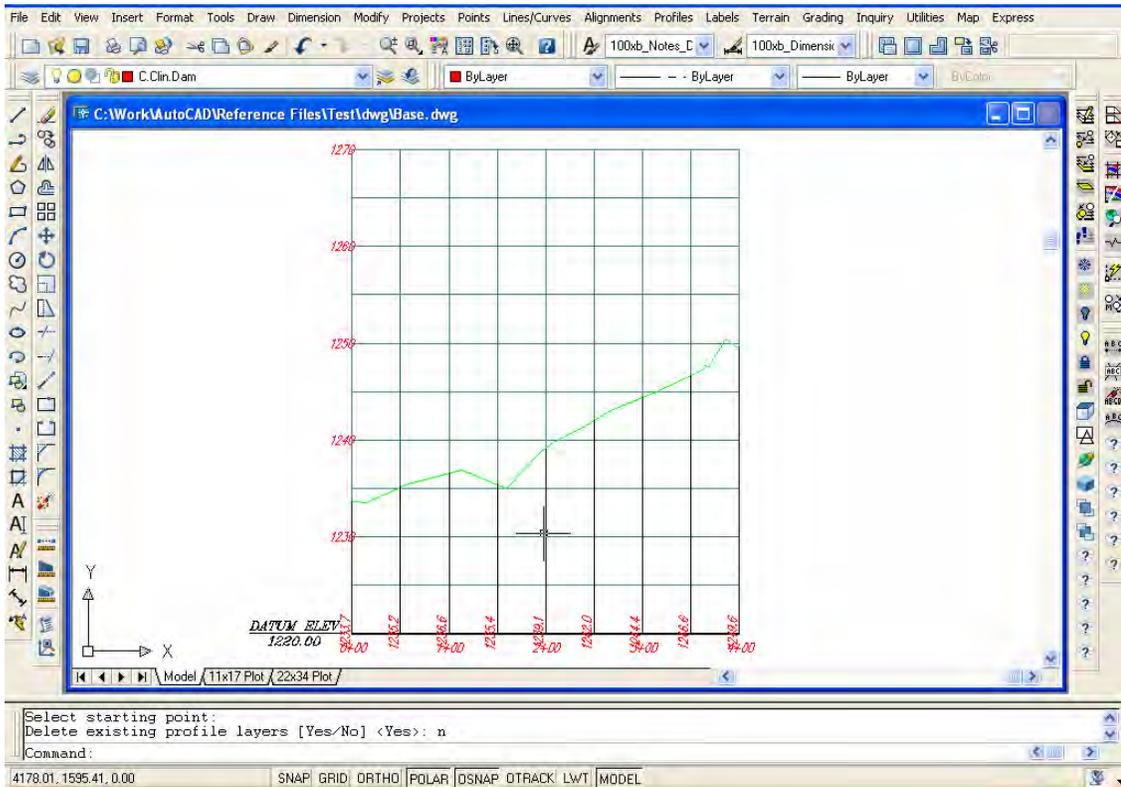
When specifying an exaggerated profile, enter a vertical scale value in the Profile Generator window. This value will be the actual difference in elevation (in the above example, this would be 10 feet) divided by the distance that this elevation difference would measure when plotted (this would be 100 feet in the above example for an exaggeration factor of 10).

Below is an example of how a profile will display without an exaggerated vertical scale (the vertical scale in the profile generator is 1.00). Notice how flat the profile plots using this vertical scale.



## PLOTTING A SINGLE PROFILE

Now, compare the above profile to the one below, which is plotted with a vertical scale exaggerated by a factor of 10 (the vertical scale in the Profile Generator window was given a value of  $10/100 = 0.10$ ).



7. Click on the OK button after you finish entering the information in the Profile Generator window. You will be prompted at the command line to select a starting point. This is a point in the drawing where you will click which will be the bottom left side of your plotted profile if you are creating the profile from left to right or the bottom right-hand side if you are plotting the profile from right to left. After you select a starting point, you will be asked at the command line if you want to delete existing profile layers. Choose yes or no and hit enter to plot the profile.