That CAD Girl
jennifer dibona
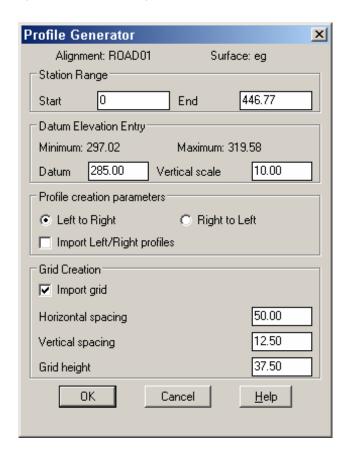
Overview of Profiles

Initial Setup

- Make sure that you are attached to the correct Land Desktop project database.
- Make sure that you have already defined all horizontal alignments.
- Make sure you have a good existing ground topo and Land Desktop surface built prior to starting profiles.
- Go to the Scales tab in Projects→Drawing Setup and set the correct horizontal and vertical scales.
- Set the current alignment
- Set the current surface
- Load the Civil Design Menu Palette
- Go to Profiles→ Profile Settings→ Labels and Prefix and put an asterisk " * " in the box next to Layer Prefix

Create Existing Ground Profile

1. Sample the existing ground profile - Profiles→ Existing Ground→ Sample From Surface
2. Import the profile and grid into the drawing - Profiles→ Create Profile→ Full Profile

- For the grid to be imported along with the profile, you'll need to check the box next to "Import Grid"
- Import Left/Right profiles will only work if left and right sampling was set during the sampling step
- Press the OK button
- Select the bottom left corner for the profile and grid
- By using an asterisk for the layer prefix, the alignment name will be placed in front of all default profile layer names so you can answer "Yes" when prompted to Erase the Old Layers. The only profile that will be erased is the one for the current alignment.
3. View the existing ground profile in tabular format – Profiles→ Edit Vertical Alignment. Select the Existing tab and the Center profile.

Create a Proposed Vertical Profile
1. Go to Profiles→ FG Centerline Tangents→ Set Current Layer
2. Go to Profiles→ FG Centerline Tangents→ Create Tangents to draw in the approximate proposed profile. You can use the Station, Elevation and Length options shown at the command line to enter specific PVI locations and elevations or you can simply use the mouse to sketch in the PVI locations. The profile you have now sketched is simply a series of lines that are on a specific layer. These lines can be extended, grip-edited or otherwise modified. The only critical points are that they must be lines (instead of polylines), all line segments must meet endpoint to endpoint and must be on the designated layer.
3. After sketching in the proposed profile, you need to define the lines as a Vertical Alignment. Go to Profiles→ FG Vertical Alignments→ Define FG Centerline. You'll be prompted for the starting point. Select the first vertical tangent CLOSEST TO THE 0+00 END of the line. Then put a window around the rest of the vertical alignment segments. Follow the remaining prompts.
4. You can now look at or edit this in tabular format through the Profiles→ Edit Vertical Alignments under the Finished Ground tab.
5. To label the new proposed vertical alignment, go to Profiles→ FG Vertical Alignments→ Import. Answer "Yes" or "No" depending on what labeling you'd like to insert. Again, when prompted to erase the existing layers, it will only erase the proposed vertical profile for the current alignment that you've just sketched in.

Editing A Profile
1. Once imported into the drawing, you can grip edit any of the vertical tangents or PVIs. However, the profile will need to be Redefined through Profiles→ FG Vertical Alignments→ Define FG Centerline. To label the revised profile, Reimport the profile through Profiles→ FG Vertical Alignments→ Import.
2. Anytime that a proposed vertical alignment is edited through the Vertical Alignment editor, you'll need to Reimport the profile to reflect the changes. When closing the Vertical Alignment Editor you'll be prompted to import the changes.

Smoothing A Profile For Representing A Waterline Or Force Main
1. Use the Layer Isolate command to isolate the profile. Use PEDIT to join the line segments. Then use the spline option inside the PEDIT command to smooth out the PVIs.
2. Warning – this should be the very last step because smoothing makes the Vertical Alignment fairly worthless.

General Profile Notes
- You can use the FG Centerline Tangents→ Create Tangents or the regular line command to sketch in a profile. The segments must be lines, meet endpoint to endpoint and be on the correct layer to work. Using either method to create the vertical tangents does NOT result in a defined Vertical Alignment in the Land Desktop database. These entities must still be DEFINED as a vertical alignment through Profiles→ FG Vertical Alignments→ Define FG Alignment.
- After defining the vertical alignment, you'll have to Import the Vertical Alignment to reflect what is truly defined in the database. You'll also have to take this step to label the PVIs and the vertical tangents.
- Once the vertical alignment has been imported, it can be edited in the Vertical Alignment Editor or by using basic AutoCAD commands such as Move, Copy, Trim, Extend, etc. because the vertical alignment entities are just basic lines. Any changes made by either method will still need to be imported via Profiles→ FG Vertical Alignments→ Import.