

# AutoCAD Civil 3D® 2008

## Adding a Cut/Fill Line

By Jonathan Christie, E.I.T.

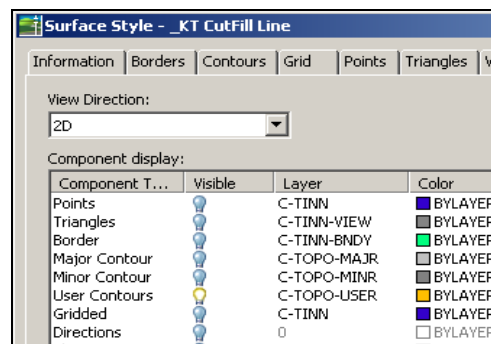
**Problem:** After performing site grading, you want to be able to show the limits of cut and fill for the site.

**Solution:** As we grade our site, we will compile this information into a finished grade surface. From this we can create a comparison surface which will highlight the elevation difference between the existing ground and the proposed design.

### 1. To add the cut/fill limit line, create a custom style.

Take the following steps:

- In the **Settings** tab, under **Surface>Styles>\_No Display**, right-click and select **Copy**.
- On the **Information** tab of the style editor, give the style an appropriate name, such as **CutFill**.
- Switch to the **Display** tab.
- On the Display tab, **turn on** the light bulb for **User Contours** so this item will be visible when using this style.
- Click **OK** to close the dialogue box.



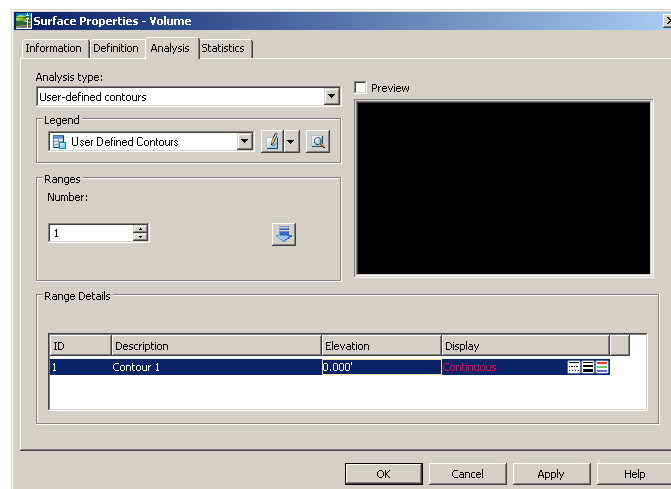
### 2. Create a volume surface to compare existing and proposed surfaces.

- In the **Toolspace**, right-click on **Surface**, and select **New**.
- In the **Create Surface** dialogue box, select **TIN Volume Surface** from the **Type** pulldown in the upper left hand corner.
- Name the volume surface and assign it the **CutFill** style we just created.
- At the bottom of the dialogue box, choose the surfaces you will compare.

### 3. Add the user-defined contour by using analysis tools.

Now that the surface is created, we can add the user-defined contour by using the analysis tools.

- Right-click on the volume surface and select **Properties**.
- Go to the **Analysis** tab.
- From the pulldown, select **User Defined Contours**.
- Choose **1** for the number of ranges in the center of the box.
- Press the down arrow to the right to perform the desired analysis.
- In the **Range Details** window, edit the **Elevation** to be **0.00**, which will represent the border of cut (negative volumes) and fill (positive volumes).



### 4. Finalize cut/fill line.

Zoom to see where the cut/fill line is located. Leave the volume surface displayed using the **CutFill** style for plotting purposes. By leaving the volume surface displayed as such, the custom contours will update automatically should the proposed surface change, meaning fewer edits.

If you need the linework, you can extract it from the surface by using **Surfaces>Utilities>Extract Objects From Surface**. Select the displayed cut/fill line. A window will pop up and ask which items you want to extract, so select **User Defined Contours**.



## About Jonathan Christie

Jonathan Christie is an Application Engineer at KETIV Technology. His civil engineering experience includes road design with Boswell Engineering, in addition to surveying, structural design and underwater inspection. Jonathan also has previous experience working within the Autodesk reseller channel, where he provided AutoCAD and Civil 3D training and other technical support services.

Jonathan earned his Engineer in Training (E.I.T.) certification and a B.S. in Civil and Environmental Engineering from Lafayette College. He has received Autodesk certifications in AutoCAD and Civil 3D. He has also completed training for the Autodesk Implementation Expert Program (AIEP), formerly called ICE.

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