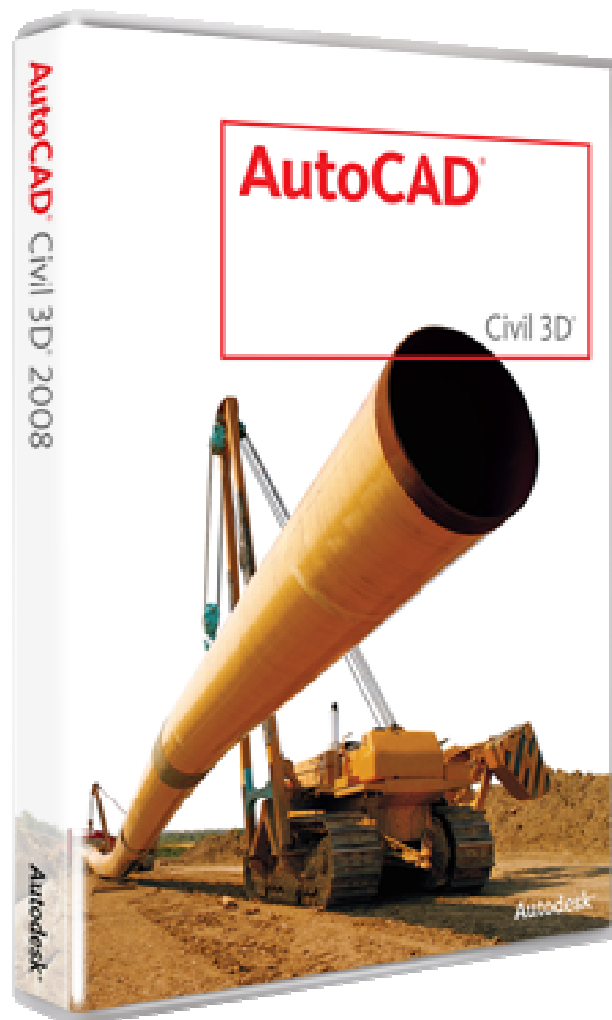


AutoCAD Civil 3D 2008

Enhanced Cross Sections

Created September 2007

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For the latest information

www.autodesk.co.uk/civil3D

www.autodesk.com/fromthegroundup - European Blog site for all tips and tricks

Introduction

To date Cross sections in Civil 3D have been based around the band styles with surfaces and label styles on Corridors.

The requirements of the UK and Ireland and also a number of other countries in Europe and beyond require the majority of the design information to be placed in the bands with a line from the object and location where the information comes from.

This poses a number of issues

- Overlapping text
- Existing and proposed levels at Corridor points
- Removing the need to explode data and retain dynamic control

This document will outline techniques to resolve these issues and create far better cross sections than has been possible before. The techniques are only possible in the 2008 and onwards due to additional control added to meet this requirement in this version.

Prerequisites

- AutoCAD Civil 3D 2008
- _Autodesk Civil 3D 2008 UK_IE bylayer.dwt
- Cross section drafting tools toolpallette

Styles used to copy into your own template/drawing

General – Markers

Offset and Level
Ordinate Central
Ordinate Left Extra Width
Ordinate Right Extra Width
Ordinate to Left
Ordinate to Right

Code Set Styles

Design Assembly
Cross Section Views

Section

_Existing Ground Labels with Ordinates

Section View

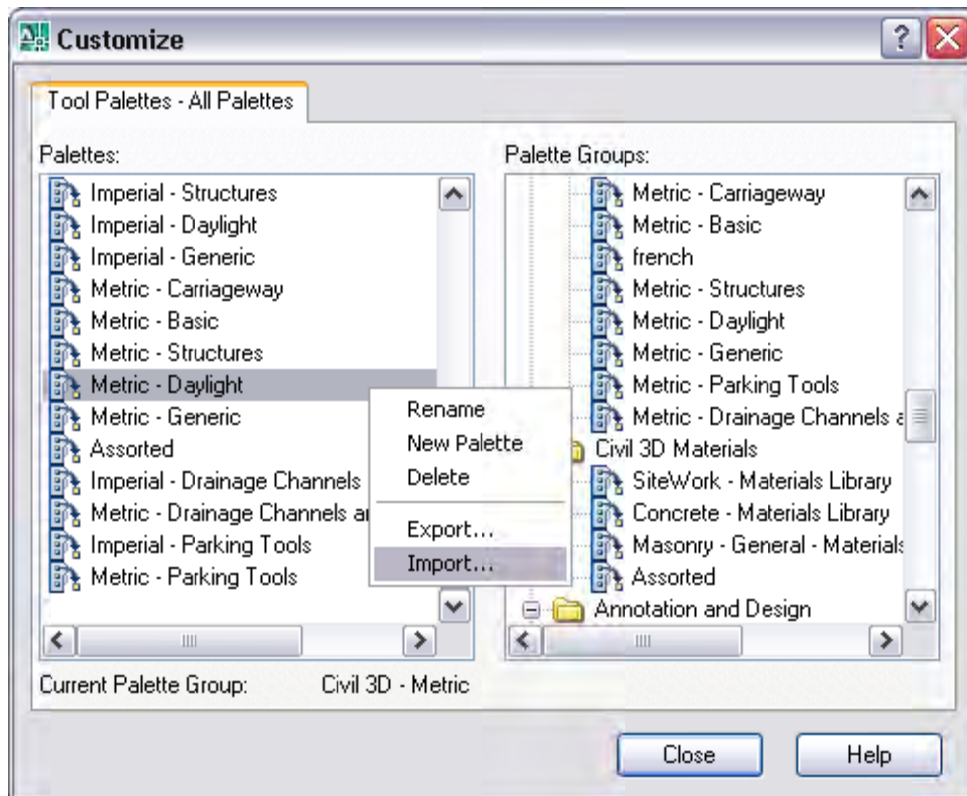
_Corridor Design Bands

Installation of the Toolpallette

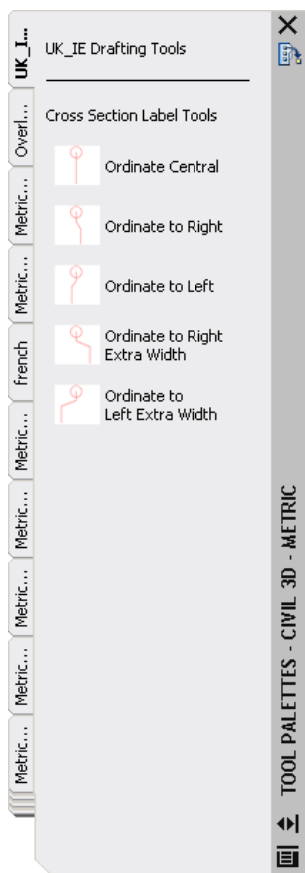
Copy the XTP pallette file and related folder to a location.

Within Civil 3D, right click on the toolpallette and click on 'Customize Toolpalletes'

Right click on the left hand pane and choose import pallette



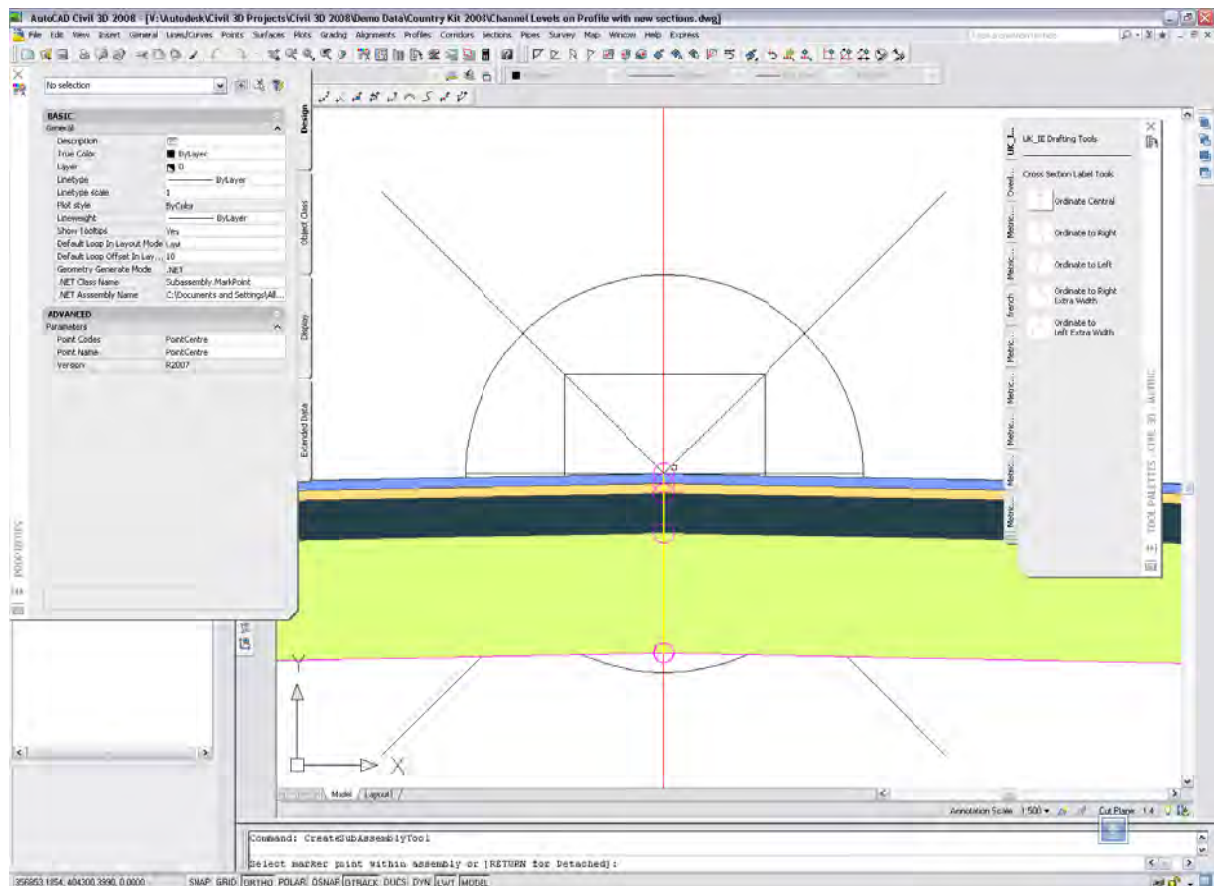
Choose the XTP file from the location that it was saved to.
 The toolpalette will insert into your current palette group. Move the palette up or down to a preferred location.



Use of the UK_IE Drafting tools toolpalette

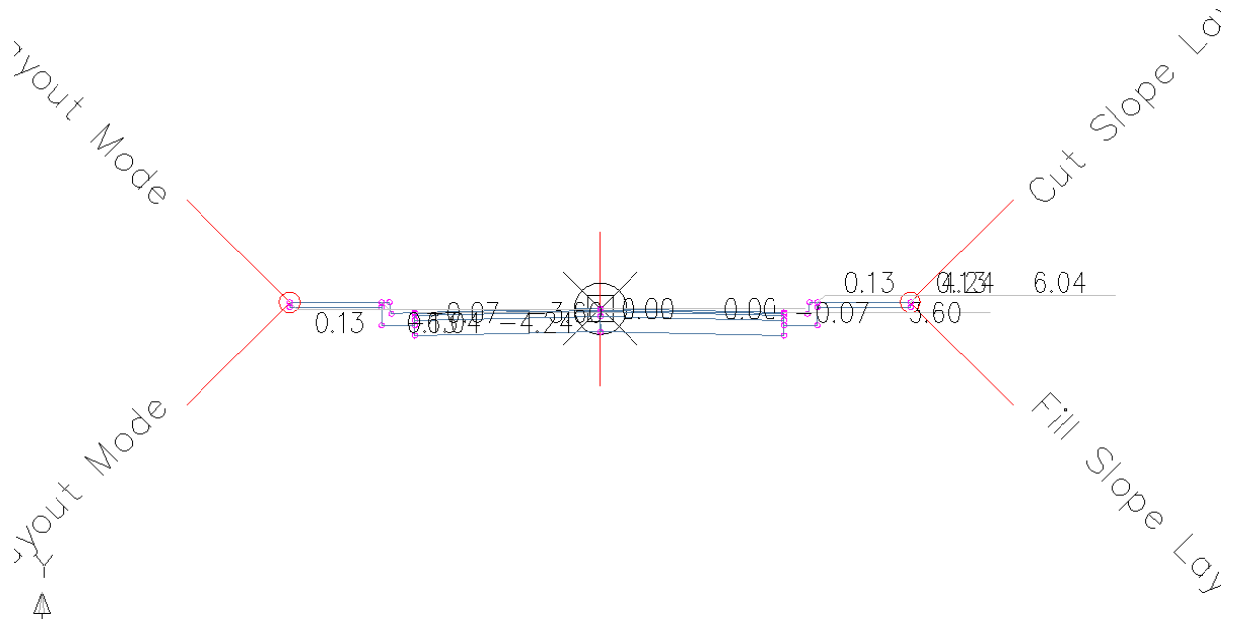
These commands in the toolpalette create a 'Marked Point' and a Label on assemblies in the place where you want corridor information. The various options are designed to assist in ensuring that text does not overlap in the bands. Therefore there are left/right and extra left/right options. These provide an adjustment in the band to move the text to one side from the vertical ordinate/candle line into the band below in the cross section.

To apply these labels, click on the appropriate label and then select the subassembly hook point

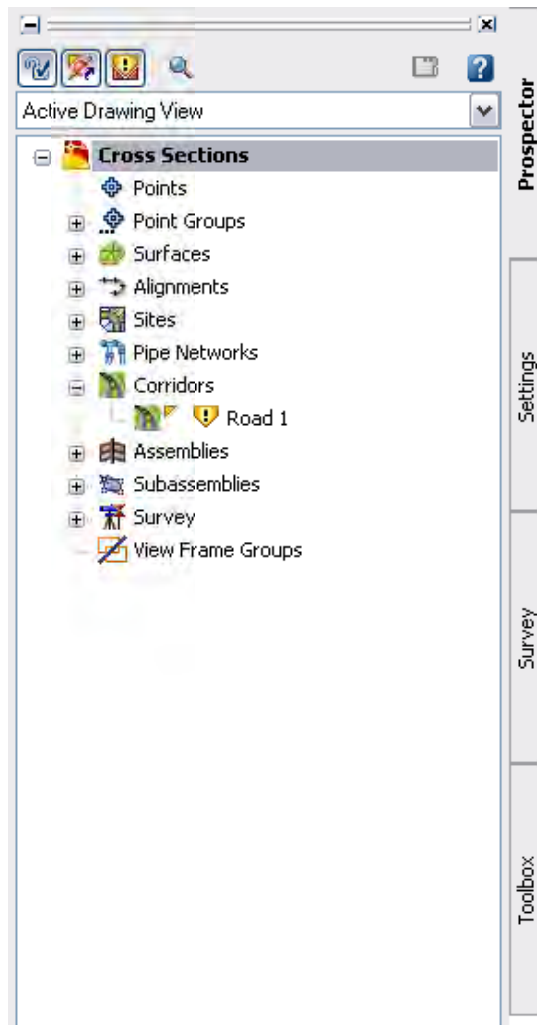


Depending on the code set style you have in place may not show any change in the assembly.

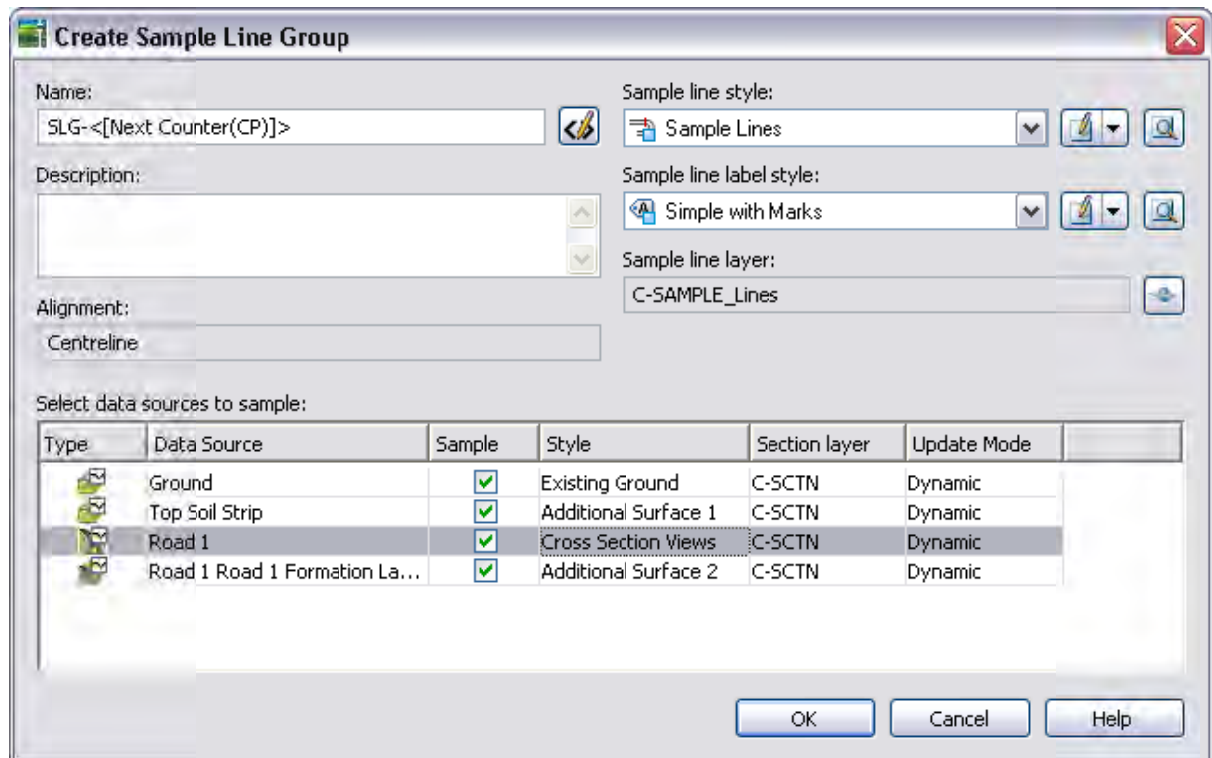
To view the labels and of course the ability to delete and replace with a different one. Within the UK_IE template you can change the style to the 'Design Style' code set style from Assembly properties.



Here you can see the labels on the assembly and also the adjustments. The labels can be simply deleted and replaced at anytime. When the labels are placed on the assembly you will notice that the corridor will report that it is out of date and requires a rebuild due to the change in the assembly.

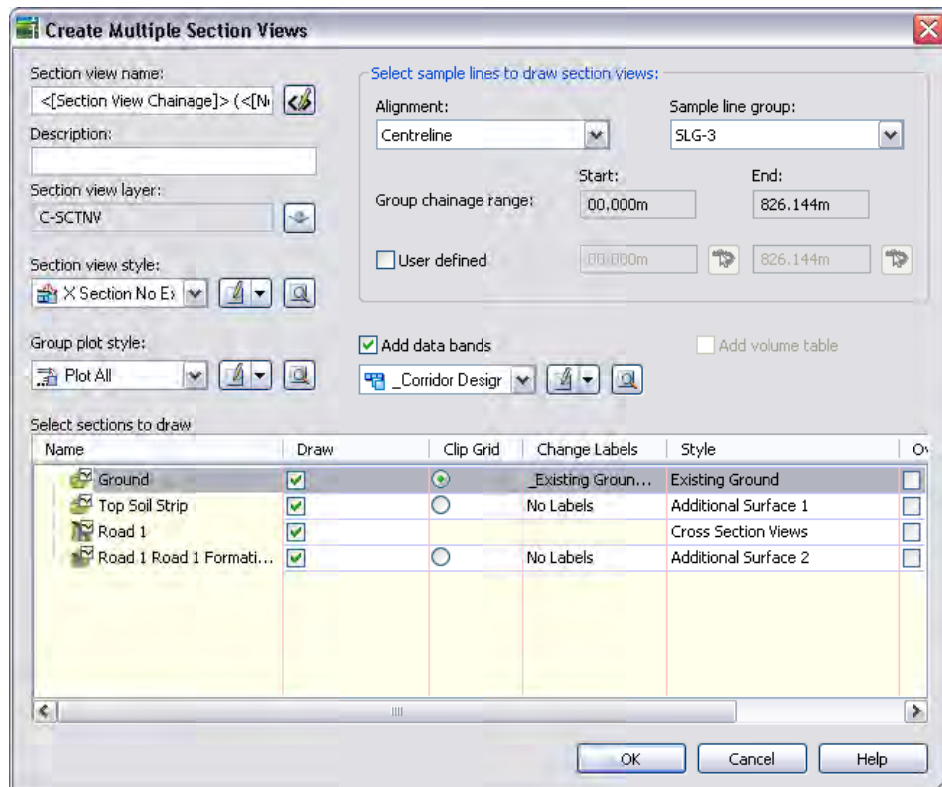


Next create the 'Sample Lines' from the menu and change the styles as shown.



In this case the corridor the style can be set to 'Cross Section Views' and also set other surfaces to have a different section style (ie. line colour and type).

Then section to a chainage interval or corridor changes as normal. When creating 'Multiple Section Views' there are some additional settings to be set before drawing.



The label value is not affected in any way, we are just moving the 'dragged state' of the label. Also you can choose to delete text and also the ordinate line using the same selection method and clicking the delete key.

Before adjusting any labels, do your requirements need the levels for the existing ground at the same position of the corridor?

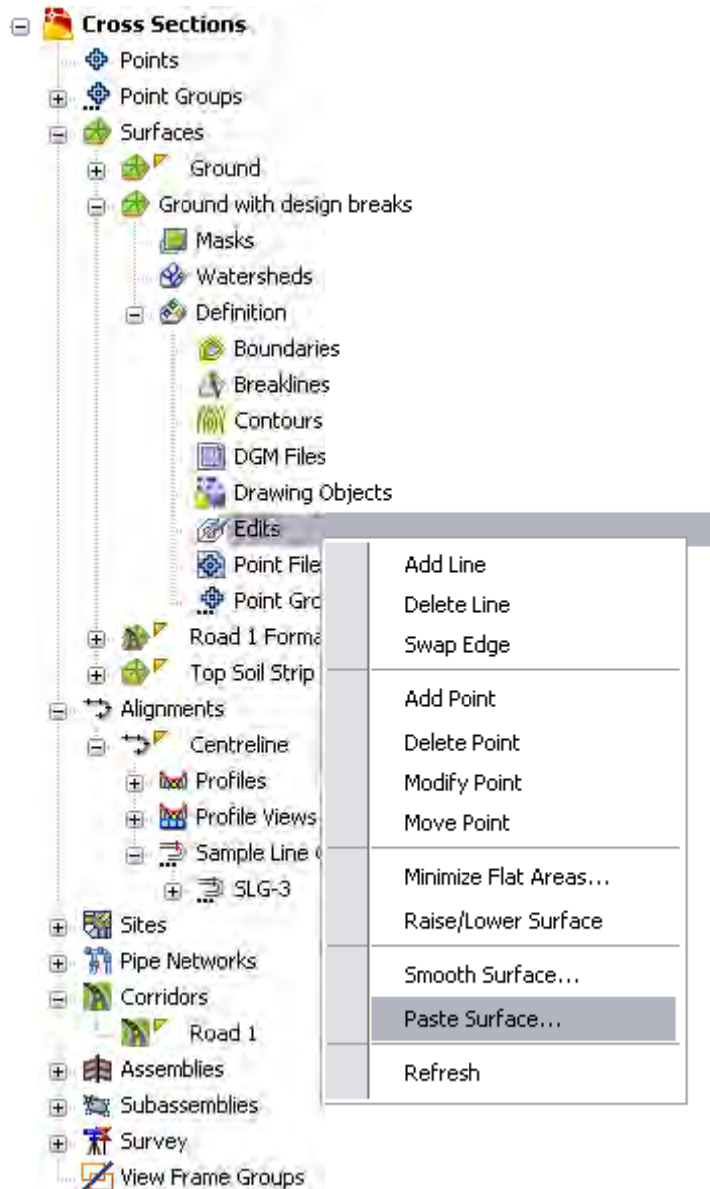
This can be done. However the following method is a static one at this time, so is worth carrying out at the end of the design and or when is necessary. Also your cross section intervals need to match the corridor intervals (i.e. if you corridor interval is at 25m do not section at 20m, as only the two will only match every 100m).

What is required is to add a grade break to the ground surface so that labels will be created at the same location and the corridor.

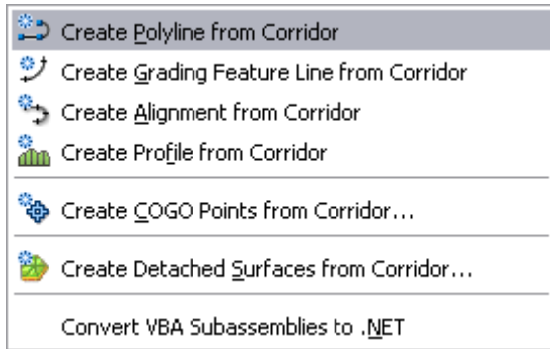
Never adjust the existing ground surface, as this is the record of what has been surveyed.

Create a new surface, with a name such as 'Ground with design breaks (date)'

Under definition of the new surface, paste in the Ground surface.



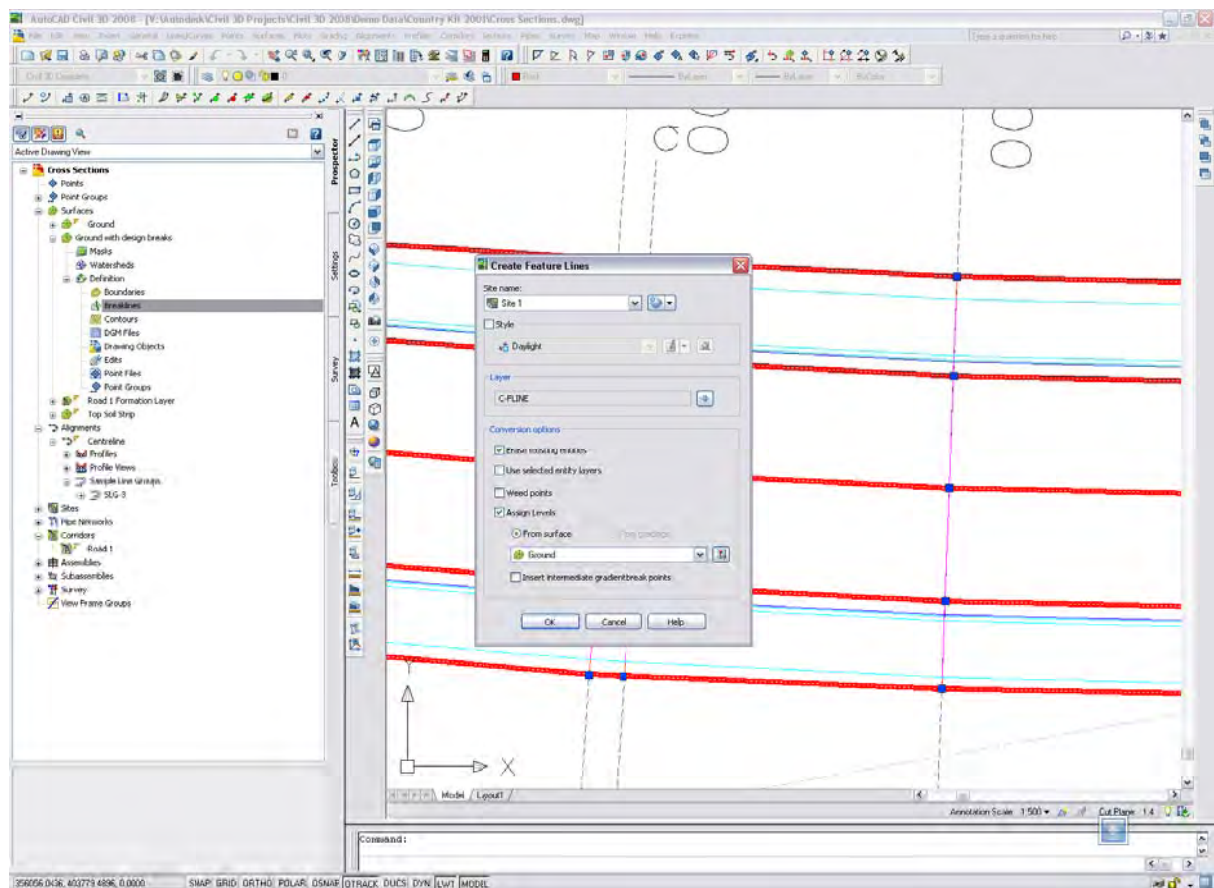
Then from the corridor menu, under utilities export the feature lines as polylines that you would like to have existing levels from. Pick on the lines in the plan view.



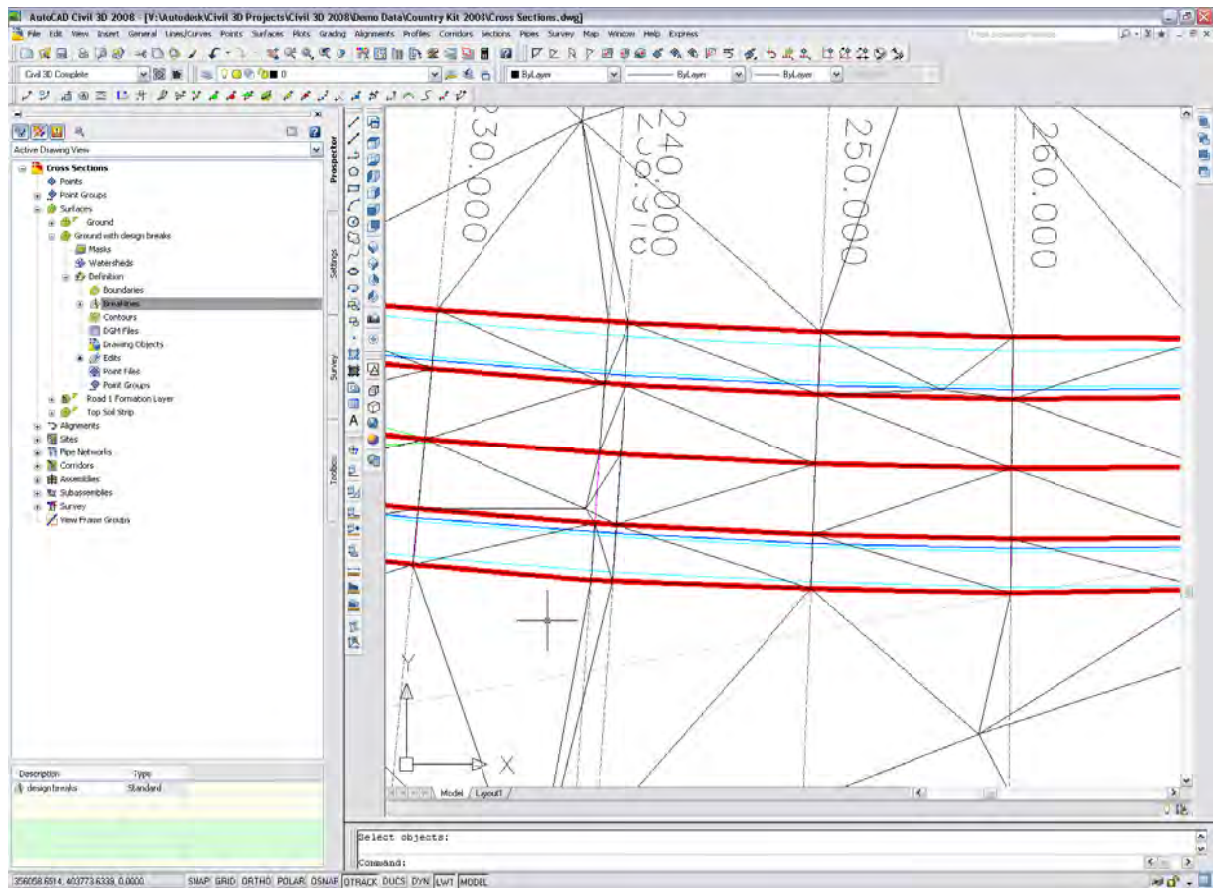
Add these lines now as breaklines to the surface you have just made. These 3D polylines are at the proposed levels, so they need to be levelled to the existing ground level. They are only required to create a break in the surface. To level them to the ground surface, select create feature line from object and select the polylines just created.



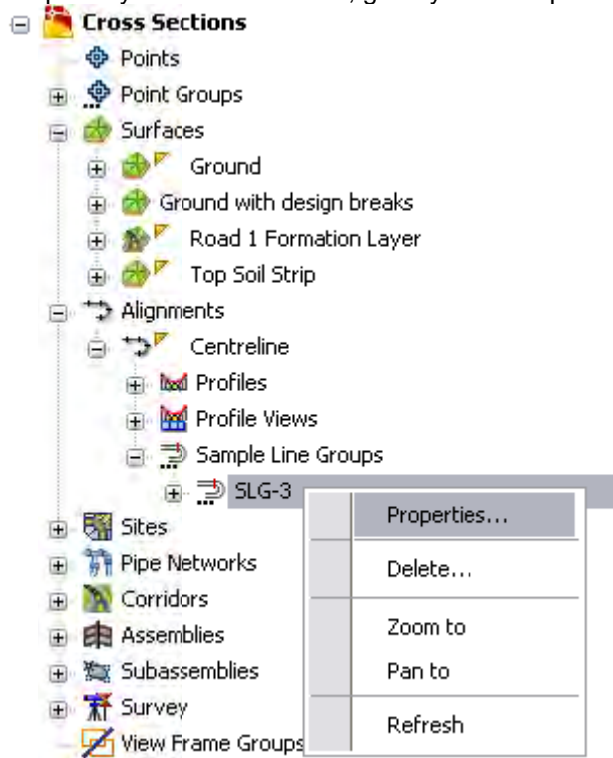
From this panel choose to 'Assign Levels' and choose the Ground surface without intermediate gradient break points. This will maintain the horizontal position but take levels from the ground surface.



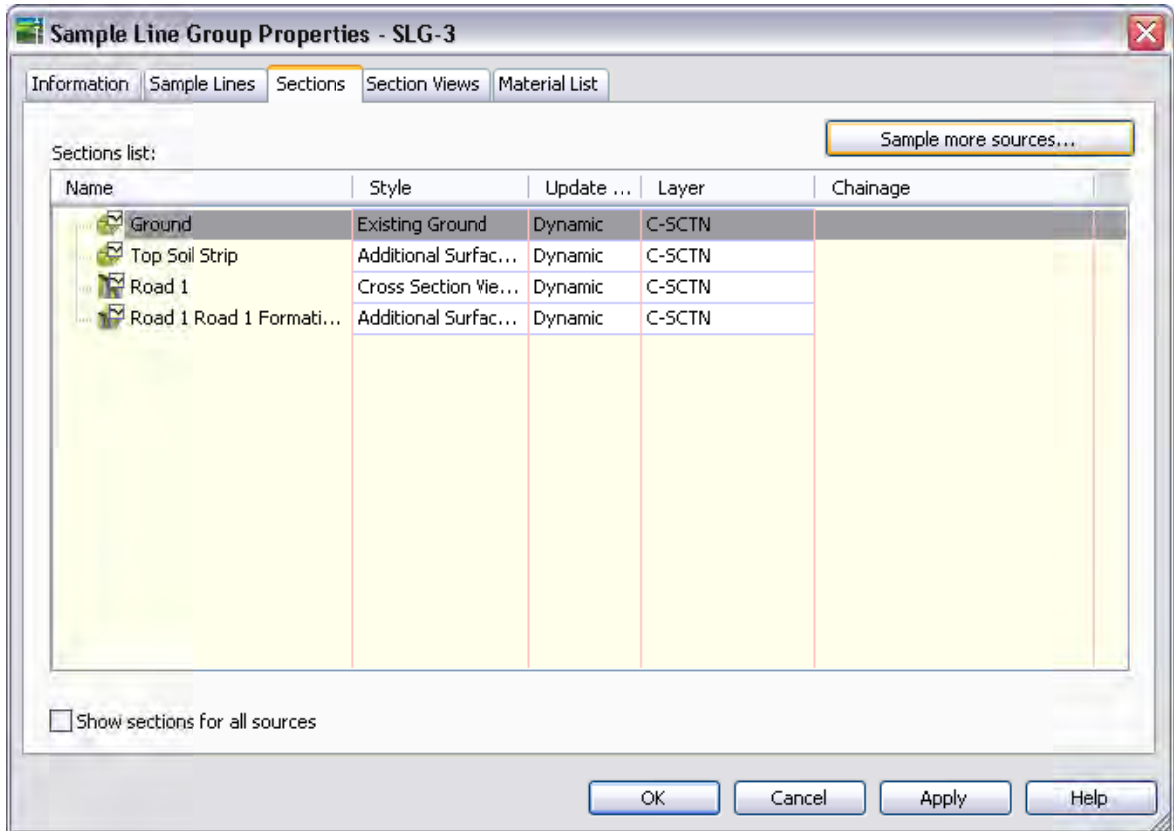
Then add these lines as breaklines to your new surface.



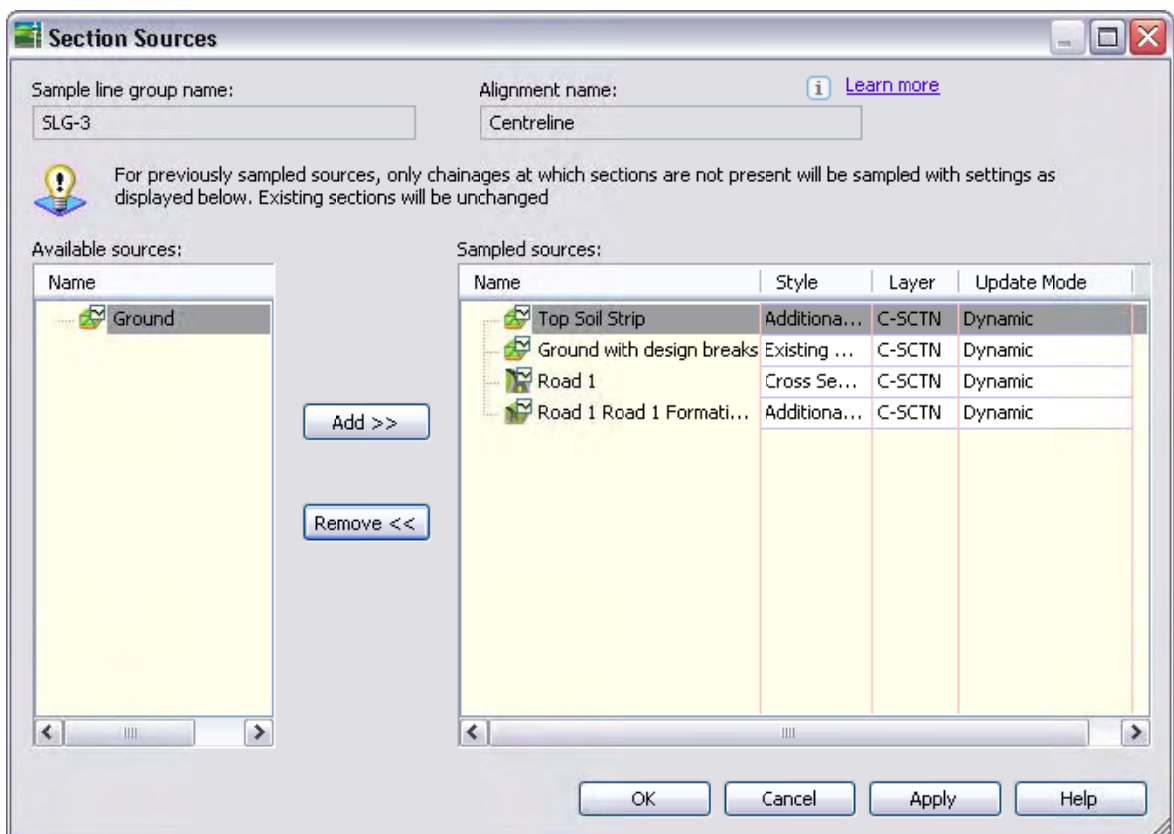
To update your cross sections, go to your 'Sample Line Group' and properties.



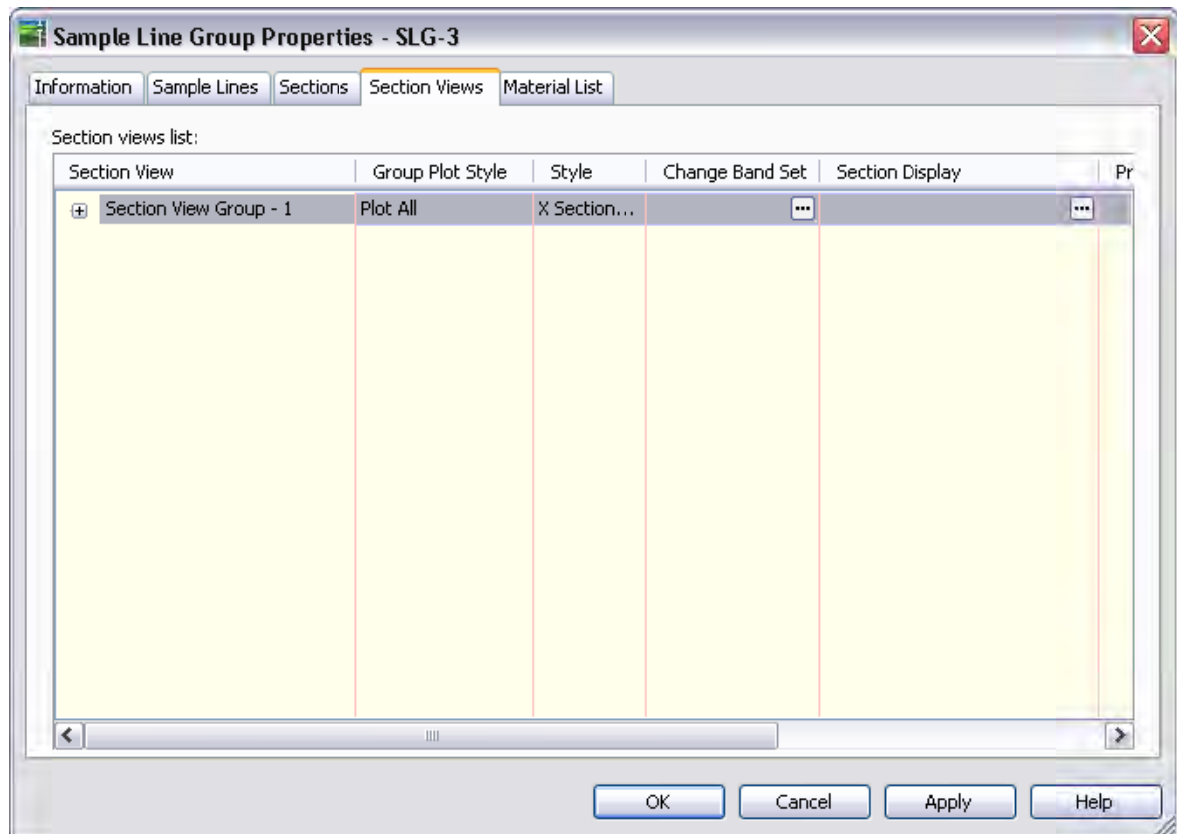
Select the 'Sections' tab and then 'Sample more sources'



What we can do is swap out the original ground surface for our new surface with the grade breaks.
So remove the original Ground surface and add the new surface



Go to the 'Section Views' tab and Section Display



For the new surface, change the labels to `_Existing Ground Labels with Ordinates` and click OK and look at the updated cross sections

