DRAFT

Calculating Stockpile Volumes Using Average End Area Method

This example will demonstrate how to calculate the volume between several as-built surfaces (original ground, stripping and final surface) using the *Average End Area* method.

Prior to starting this example the following TIN surfaces were created from re-measure survey data:

OG.ter	original ground
Strip.ter	waste surface after the stripping of topsoil
Final.ter	undercut (or sub-cut) surface.

The data sets referred to in this example are located in the ***StockPileVolumes*** folder you down loaded and saved.

Creating a Baseline

In order to calculate Average End Area volumes it is necessary to create a baseline (centerline) alignment.

1. Open the Terrain module and choose menu *File* | *Open*, select *OG.ter*

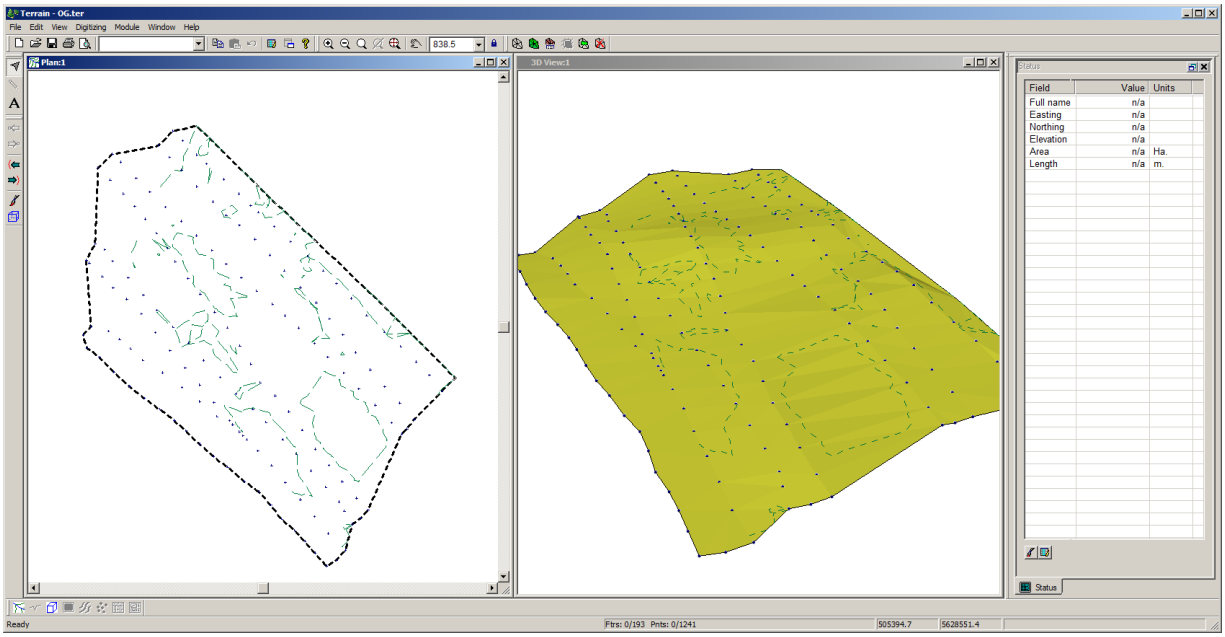

Figure 1: OG.ter

The next two steps will create a 'draped' centerline feature.

2. Choose menu Edit | New Feature. Set the feature properties as shown in Figure 2 below and click on *Mouse*.

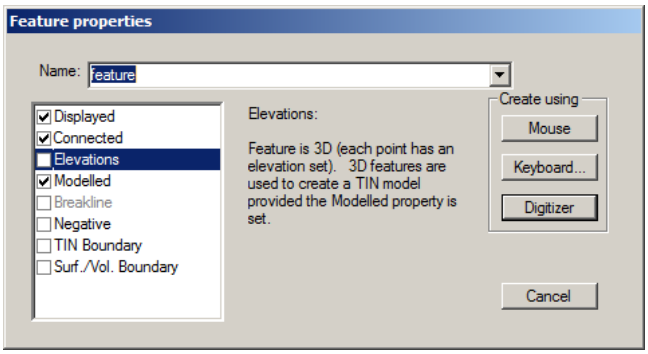

Figure 2: OG.ter

3. In the Plan Window draw a centerline feature as show in Figure 3.

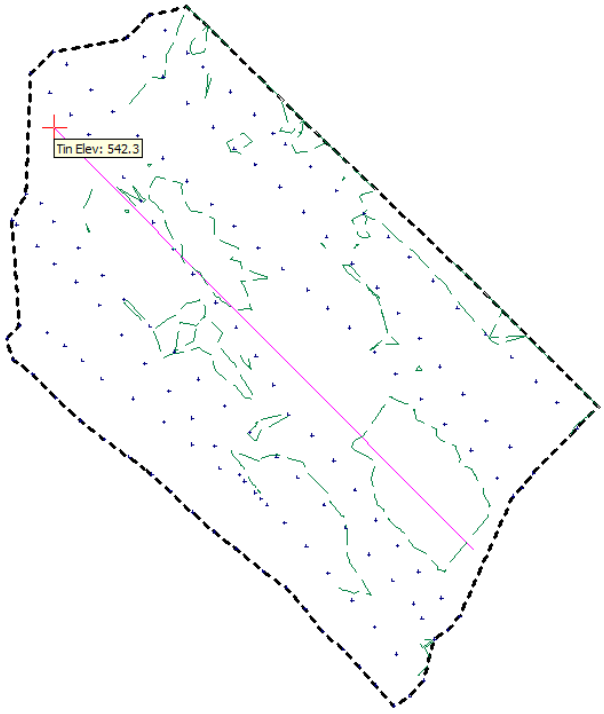

Figure 3: Drawing the Centerline Feature

4. Save the Terrain file with the centerline feature selected.

Creating a New Location Design

First step is to create a new Location design.

1. Open the Location module and choose menu *File | New*.

2. When prompted open the original ground terrain **\StockPileVolumes\ OG.ter**.

When the New Location start coordinates dialog appears, choose Terrain current feature, all points.

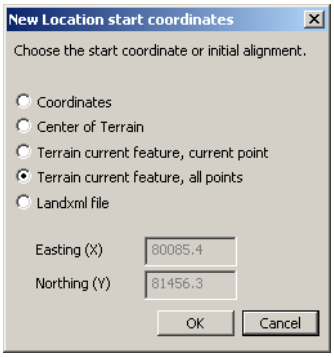

Figure 4: New location start coordinates dialog.

The selected option will read the initial alignment from the original ground terrain. Next step is to retrieve a screen layout (**StockPiles.dlt**) to ensure your screen displays matches the screen displays in this example.

3. *File | Retrieve Screen Layout* and open **StockPiles.dlt**.+

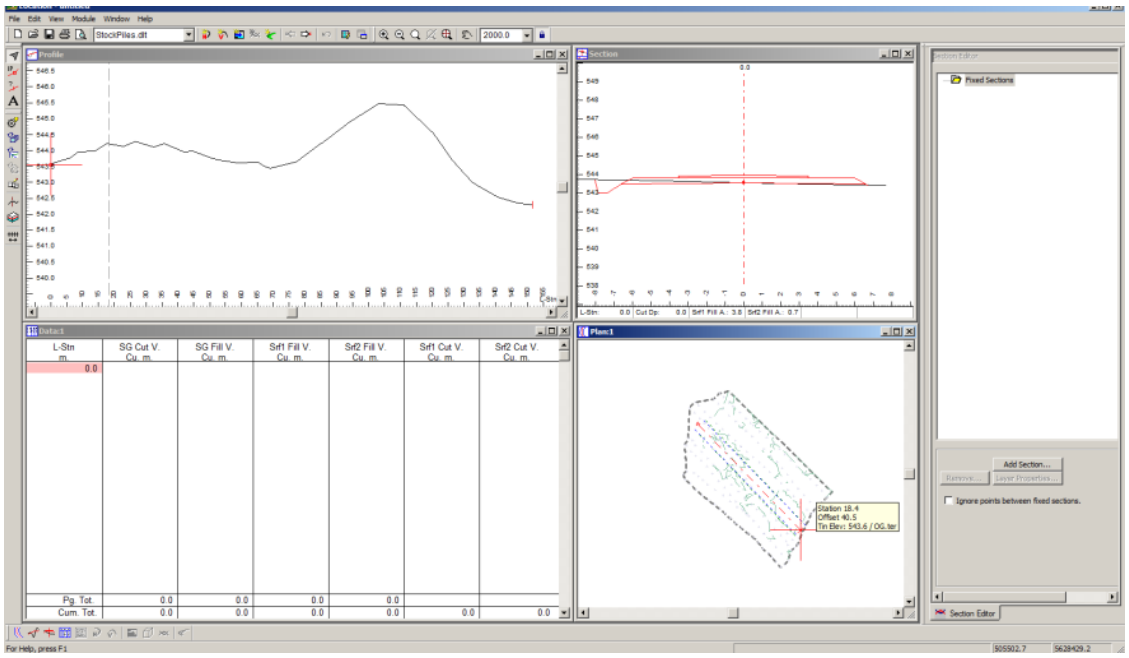

Figure 5: New location design.

Reference surfaces are used for display and control of sections and volumes. For this example they will be set to *stripped*, and *final* surfaces respectively.

4. Select *Module | Setup* to open the *Location Setup* dialog box below. Select the *Alignment* tab click on the *Terrains* button to open the dialog box below.

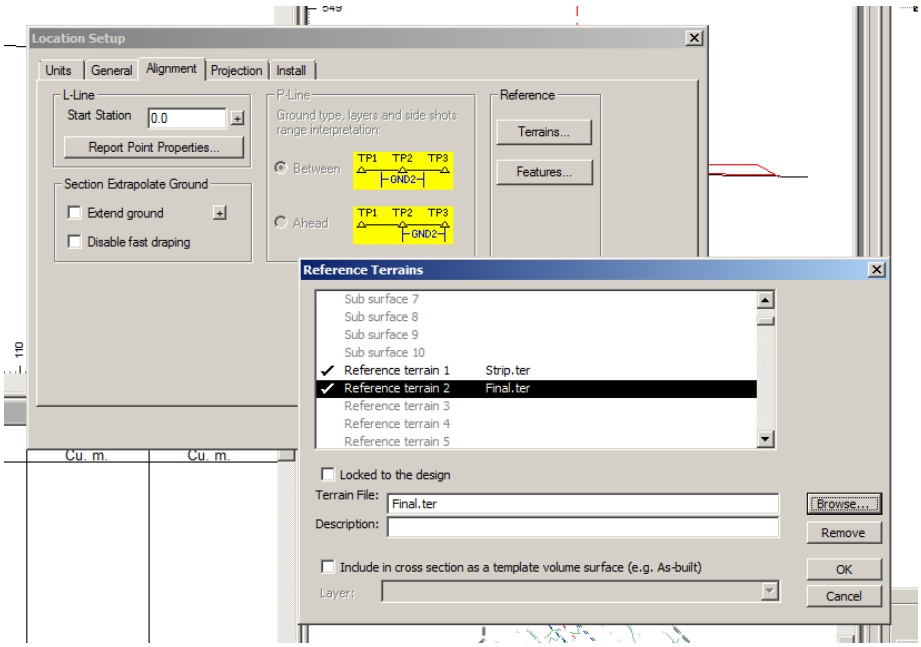

Figure 6: Setup Dialog

5. In the current dialog box (figure above), scroll down in the surface list and select *Reference terrain 1*. Click the *Browse* button and *Open* file **Strip.ter**.

6. Similarly, set *Reference terrain 2* to **Final.ter**.

7. Press *OK* twice to return to the main screen.

Setting Up the Cross Sections

Now to setup the *As-built surfaces* descriptions.

8. Choose menu Edit | Edit Templates (or use *Edit Templates* toolbar button) to open the template editor. Click on the *Open Table* button (lower left), browse to the folder containing this example and *Open* **Stockpile\FollowSurfaces.tpl** .

9. In the tree control select the first *Follow Surf. II* component (in the Follow Surface template). Click on *Properties*. Set the *Horizontal Extent* to 50 and the *Surface* to Reference terrain 1 (Strip surface) and press OK.

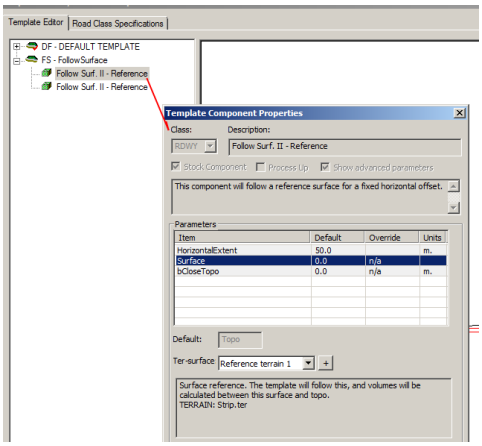

Figure 7: Component Properties

10. In the tree control, select the second *Follow Surf. II* component (in the Follow Surface template). Click on *Properties*. Set the *Horizontal Extent* to 50 and the *Surface* to Reference terrain 2 (Final surface). Press OK twice to return to the main screen.

11. Choose menu Edit | Assign Parameters by Range | Templates. Select the Follow Surface template, and press Add / Edit. Press OK to return to the main screen.

Setting Up Fixed Sections

Fixed sections allow you to easily display and edit cross sections.

12. In the *Fixed Section* Panel on the right side of the screen click on the *Add Section* button to open the dialog box below.

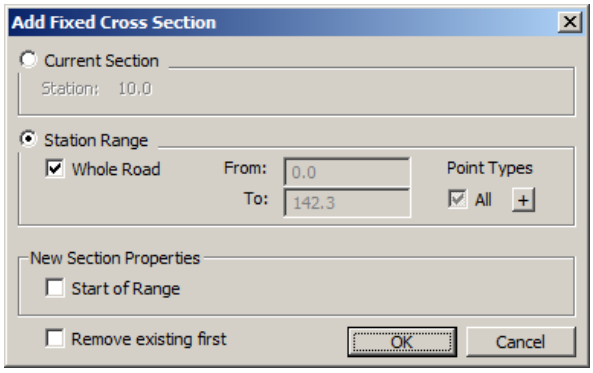

Figure 8: Add fixed cross section *dialog*

13. Enable *Station Range*. Do not enter in a station range at this time.

14. Under *Point Types* turn off *All*. Press the + button to open the *Point Type Selection* dialog box as shown below. Select *Auto interval points* (10.0m) Press OK.

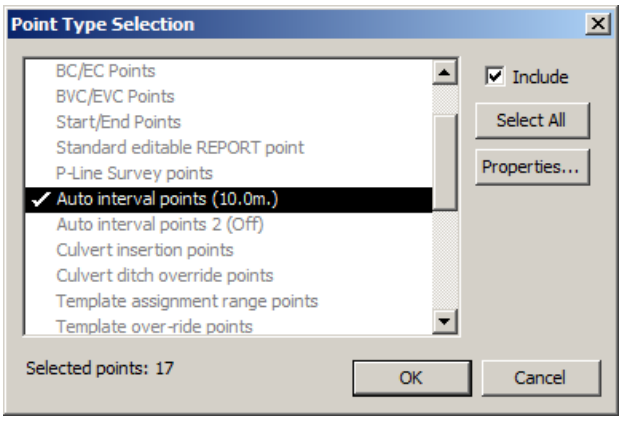

Figure 9: Selecting auto interval points set at 10 m

Notice that the new items appear in the *Section Editor* in a tree format.

15. Click on the ⊞ controls in the tree to expand a section (figure below)

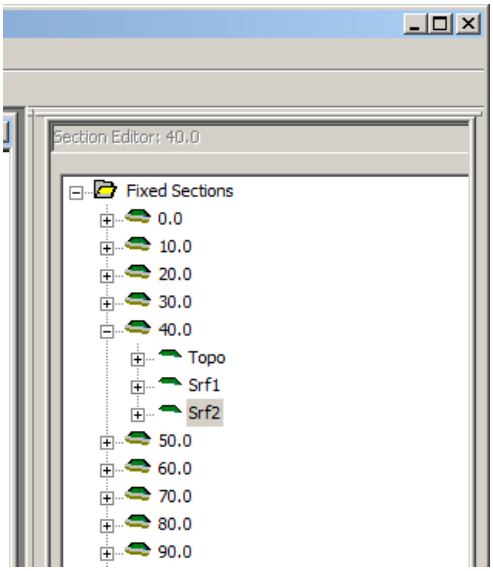

Figure 1: Section editor tree

This completes the steps required to setup a stock-pile calculation using equal end area calculation.

16. *File* | *Close*. Do not save changes.