Surface Clipping

Design Manual
Chapter 21
Automation Tools
Instructions
Originally Issued: 06-30-11

Overview

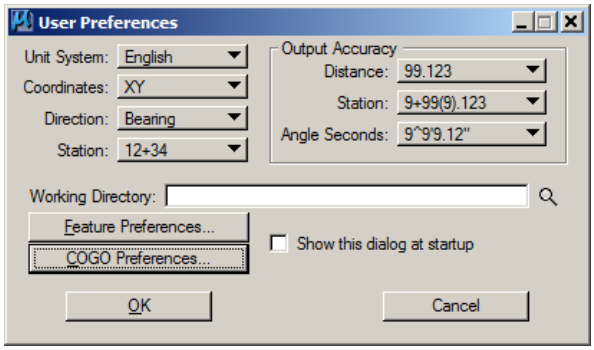
Surface Clipping is a feature that provides the ability to remove areas of overlapping surfaces. This would be useful such as when a proposed surface goes into a "cut situation" and is then "covered" by the existing ground surface that is above the proposed. Until the overlapping portions of the existing surface are removed, portions of the proposed are hidden.

Prerequisites

Set the Geopak **User Preferences** appropriately for your project, accessed from the MicroStation pull-down menu as listed below.

Applications > Geopak > Road > User Preferences

This should display the **User Preferences** dialog, as shown at the right.

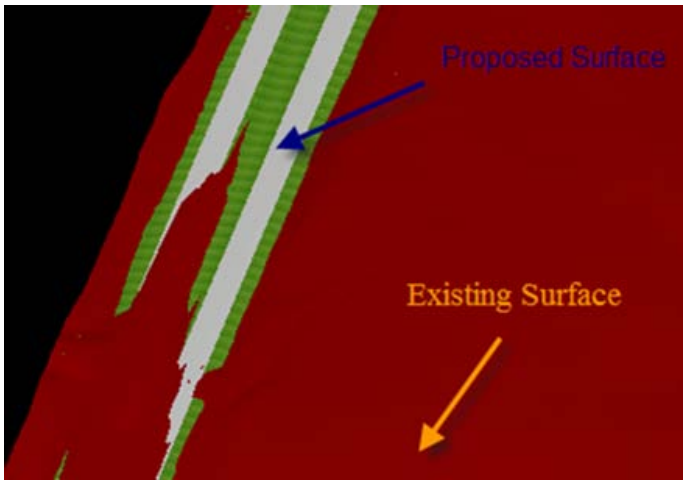


Items needed

- Existing ground surface ".tin" file
- Proposed surface ".tin" file

Note in the graphic at the right how there is an overlap between the proposed surface and the existing ground surface. The red existing surface continues to cover portions of the gray and green proposed surface, when the proposed surface cuts under the existing.

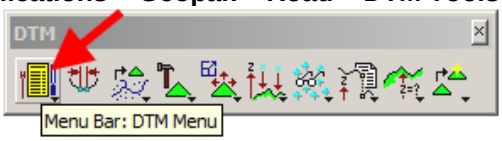
In this example we will clip the existing surface that is covering up the proposed surface. (An example of a finished product is at the end of this document.)



Access the **Load DTM Features** dialog by following the following steps:

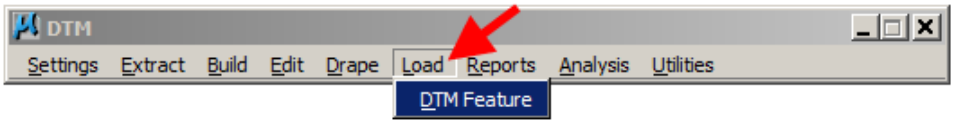
From the MicroStation > Applications pull-down menu -

Applications > Geopak > Road > DTM Tools > Menu Bar: DTM Menu



The above process will produce the **DTM** menu shown below. Access the **DTM Feature** dialog, as shown.

Load > DTM Features



NOTE: For complete details on the **Load DTM Features** dialog, see the Bentley help file.

To draw the "**TIN Hull**" of the existing ground and proposed surface:

As shown at the right, *select*:

Load File: TIN

Use the Browse button ( ) to locate and select the surface "**.tin**" file.

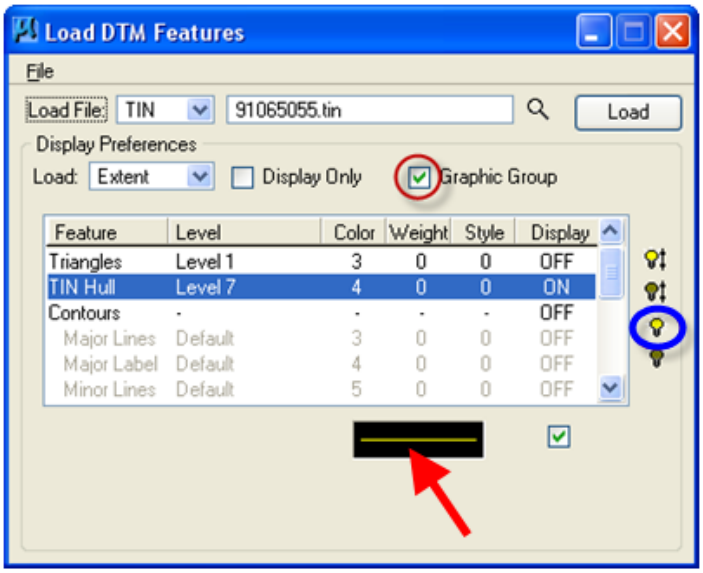
In the **Display Preferences** area**:**

Select - **Load: Extent**

Check - (☑) **Graphic Group** (red oval)

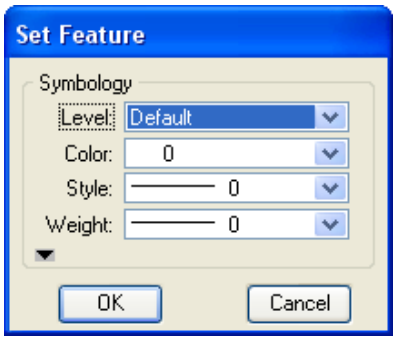
Select - the "**TIN Hull**" Feature

On the right side of the **Load DTM Features** dialog, select the "**Item On**" light bulb, as shown by the blue oval. This will activate the **TIN Hull** Feature to **ON**.

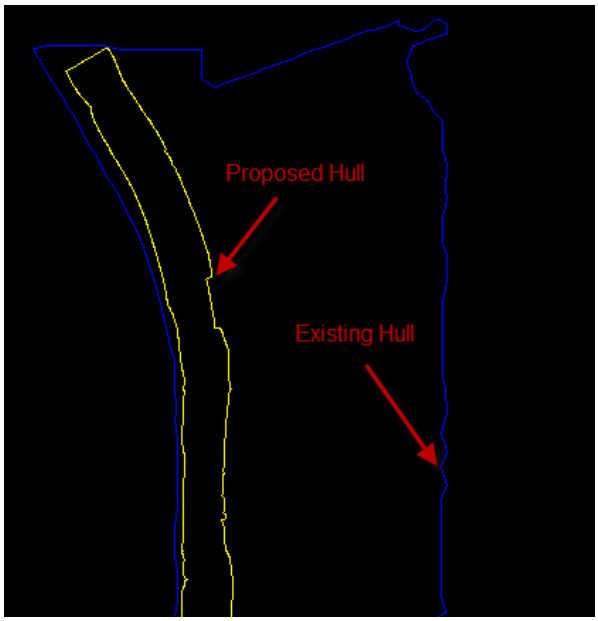


Double-Click the 'Set Feature' dialog option, as shown by the red arrow above. This will open the '**Set Feature**' dialog, as shown at the right. Set the correct **Symbology** features corresponding to the "**TIN Hull**" that is to be drawn in the design file.

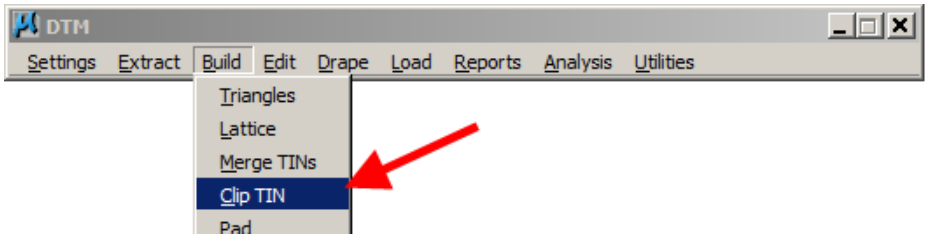
When finished, *click* the **OK** button and then *click* the **Load** button in the **Load DTM Features** dialog, shown above. This should then draw the "**TIN Hull**(s)", as shown below.



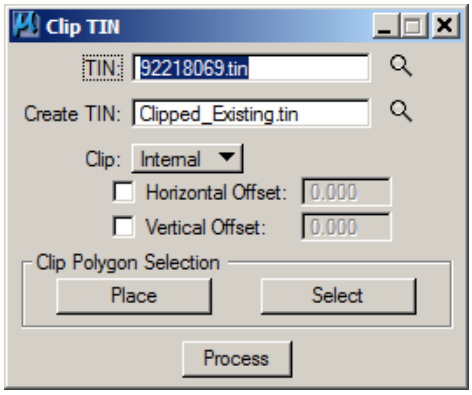
An example of a drawn **TIN Hull** is shown at the right.



From the **DTM** menu, *select* **Build > Clip TIN**, as shown at the right.



The **Clip TIN** dialog should then display, as shown at the right.



In the **TIN** field, use the browse button ( ) to locate and select the appropriate **TIN** file

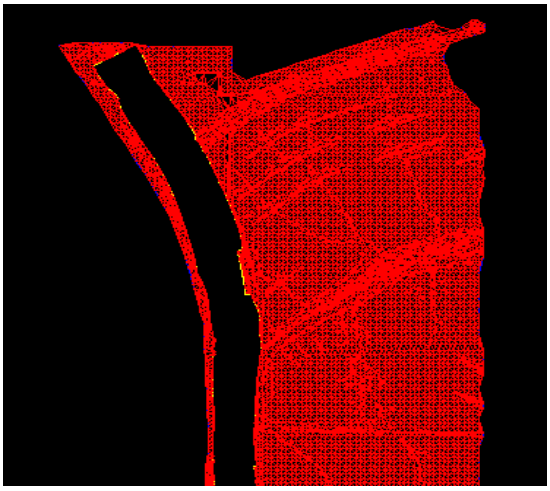
In the **Create TIN** field, browse to the correct folder for file storage and provide a name for the “new existing ground .tin file” that will have the proposed surface .tin removed or clipped away.

In the **Clip** field *select* **Internal**

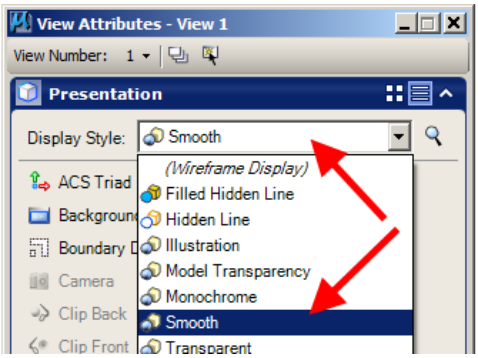
In the **Clip Polygon Selection** area, *click* the **Select** button and with the curser, manually select (click on) the Proposed **TIN HULL** drawn in the MicroStation file and accept the element selection.

Click the **Process** button to commence building the clipped “.tin”.

Draw the new Clipped .tin surface triangles.

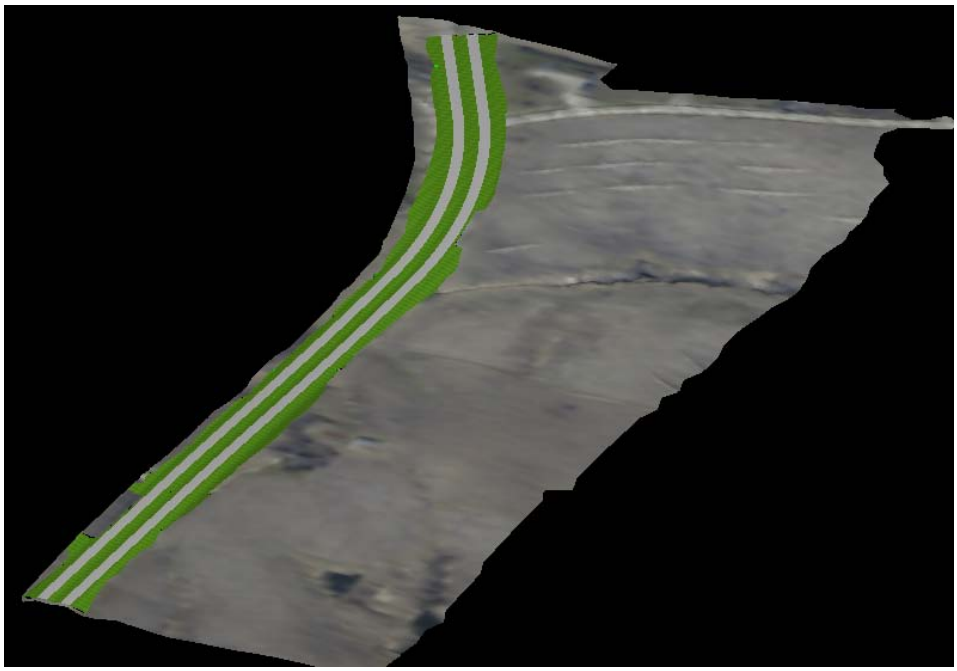


In the MicroStation **Settings > View Attributes** dialog, set the **Display Style** as **Smooth,** as shown at the right.



The resulting “clipped” and “smoothed” surface would appear as shown below, with no area of the proposed surface hidden by the existing.

Note the existing ground has a draped image. For details, see 21B-300.



Chronology of Changes to Design Manual Section:

021b-158 Surface Clipping

6/30/2011	NEW
	New