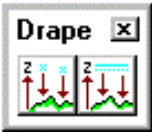


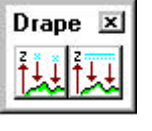
Draping

13.1 Overview

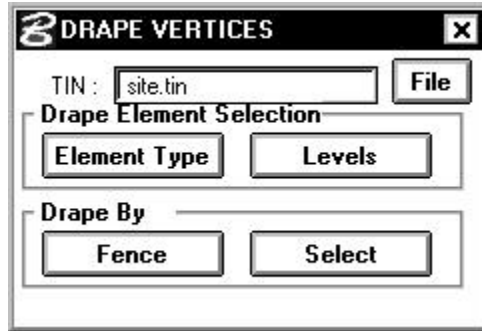
Feature / Function	Drape elements onto a triangulated model.
Tools	
DTM Menu Bar	Drape > Vertices, Vectors

GEOPAK provides tools to drape MicroStation elements onto a triangulated model. Two draping tools are available: vertices and vectors. The vertices draping tool adjusts the Z-coordinate values of MicroStation element vertices to the surface of the triangulated model. The vector draping tool creates a series of line strings by draping of each linear reference element onto the triangulated model. Hence, each vertex of the created line string reflects either a vertex of the original linear element projected onto the triangulated model or an intersection between the original linear element and a triangle edge projected onto the triangulated model.

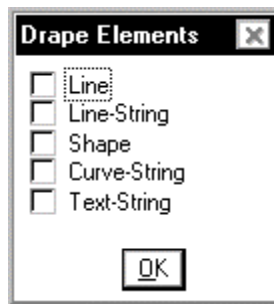
13.2 Drape Vertices

Feature / Function	Adjust Z-values of MicroStation element vertices coincident with a TIN model.
Tool	
DTM Menu Bar	Drape > Vertices

The Drape Vertices dialog, which adjusts the Z-coordinates of MicroStation element vertices, is depicted below. The dialog is depicted below.



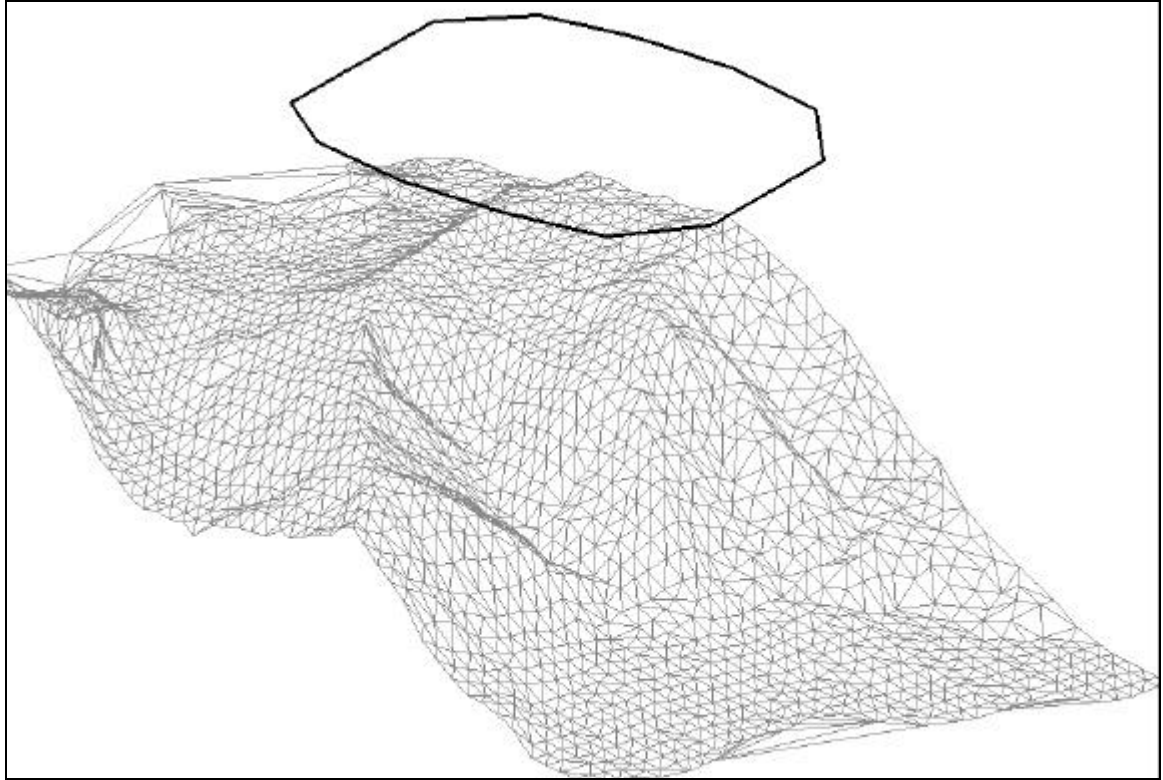
The first step is to type the name of the triangulated model into the **TIN File** keyin field. Then, the element types and levels of elements that are to be draped are defined. This is accomplished via two separate dialogs invoked by the **Element Type** and **Levels** push buttons. Valid element types are depicted in the graphic below.



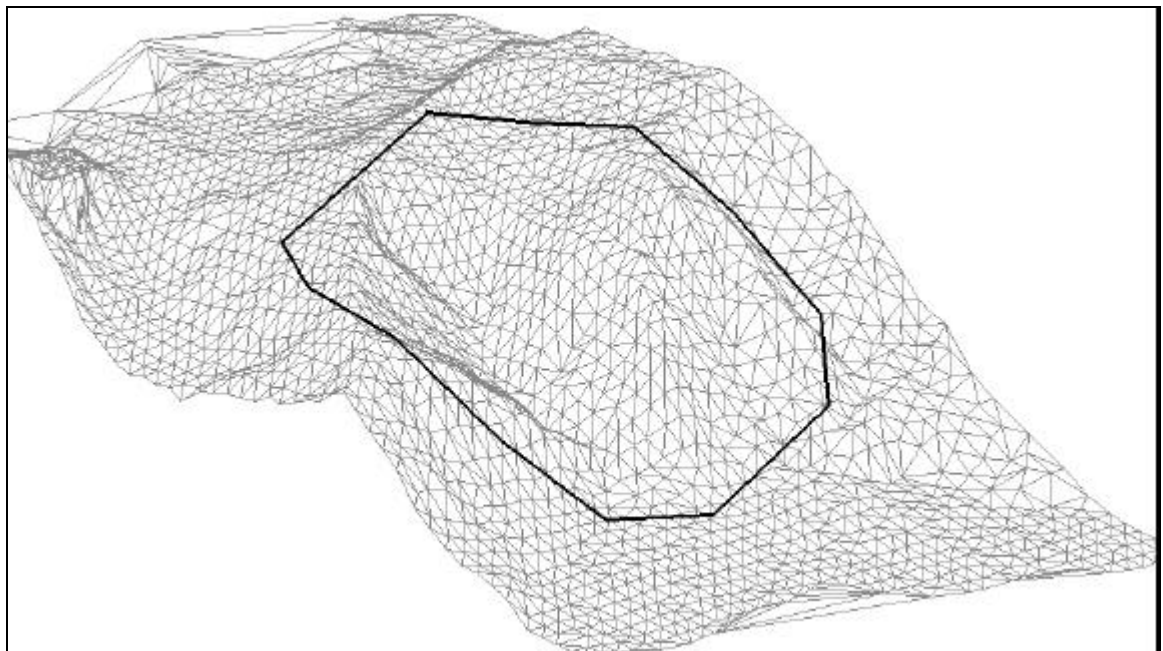
Element types and levels must be defined even if the draping element is to be individually selected.

The vertices draping tool adjusts the Z-coordinate values of MicroStation element vertices to the surface of the triangulated model. For elements such as cells, text, ellipses and points, only the origin of the element is adjusted. For example, a draped text string remains planar. The Z-coordinate at the origin of the text string is adjusted to an elevation on the surface of the triangulated model.

For elements with several vertices, the Z-coordinate for each individual vertex is adjusted to an elevation on the surface of the triangulated model. Consider the shape element depicted below. Prior to processing, this shape element is located several hundred meters above the triangulated model.



The image below depicts the adjusted shape vertices.



The identification of the MicroStation elements to be draped can be performed by one of two methods: Select or Fence. The following subsections will detail each method.

13.2.1 Select Method

The Select method permits the selection of each specific element that is to be draped. The following outlines the sequence of operations for the Select method.

1. Establish the desired dialog settings. This includes defining the triangulation model onto which the element is to be draped. In addition, you must define the level and type for the range of elements that might be selected. These are defined via dialogs that are invoked by pressing the **Levels** and **Element Types** buttons.
2. Press the **Select** button.
3. Identify the MicroStation element that is to be draped. The element will highlight. Another **data point** is then required to accept the element. Upon acceptance, the element will be draped onto the triangulation model.


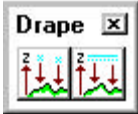
13.2.2 Fence Method

The Fence method permits the selection of every element that satisfies both the fence criteria as well as the search criteria defined via the dialogs invoked by the **Levels** and **Element Types** push buttons. MicroStation **inside**, **overlap** and **clip fence** options are supported.

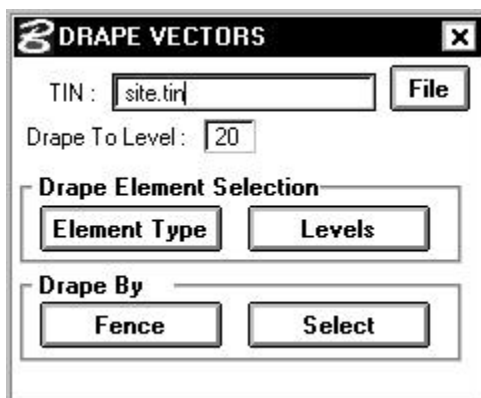
The following outlines the sequence of operations associated with the Fence method.

1. Establish the desired dialog settings. This includes defining the triangulation model onto which the element is to be draped. In addition, you must define the level and type for the range of elements that might be selected. These are defined via dialogs that are invoked by pressing the **Levels** and **Element Types** push buttons.
2. Place a MicroStation **fence** around the range of elements to be draped. Then adjust the fence option to **inside**, **overlap**, or **clip**.
3. Press the **Fence** push button. This Processing will not begin until you select a **data point**. This requirement is identical to the steps necessary for MicroStation fence operations.

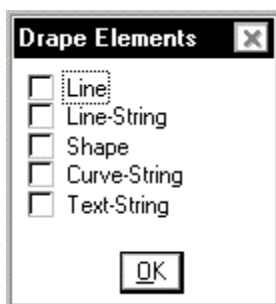
13.3 Drape Vectors

Feature / Function	Drapes MicroStation elements maintaining their X, Y coordinate values, while modifying the Z coordinate coincident with a TIN model.
Tool	 
DTM Menu Bar	Drape > Vectors

The vector draping tool creates a series of line strings by draping linear reference elements onto the triangulated model. This dialog is invoked by pulling down **Drape > Vectors** from the GEOPAK DTM menu bar.



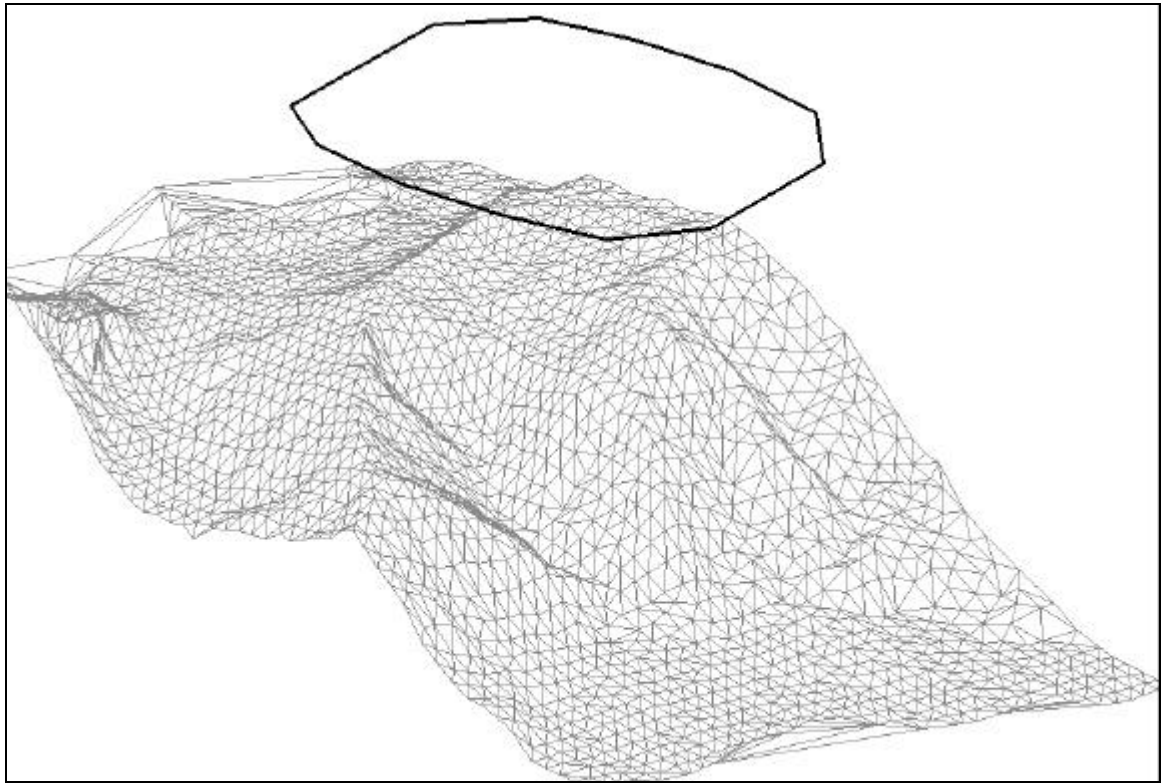
The first step is to type the name of the triangulated model into the **TIN File** keyin field. Then, the element types and levels of elements that are to be draped are defined. This is accomplished via two separate dialogs invoked by the **Element Type** and **Levels** buttons. Valid element types are depicted in the graphic below.



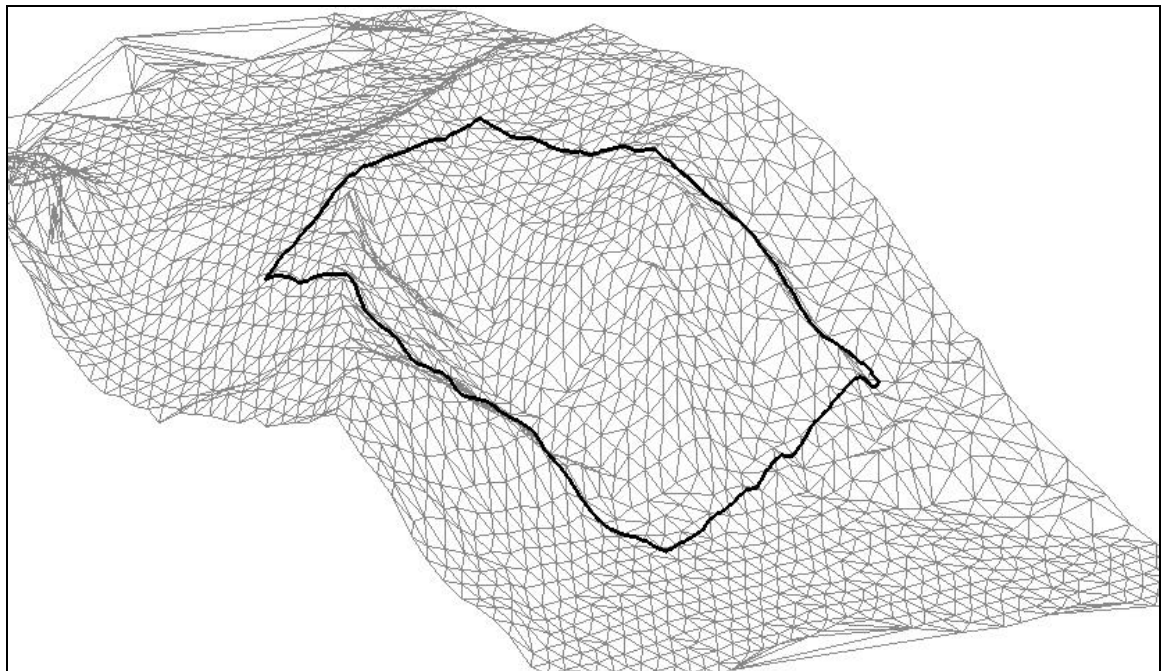
Element types and levels must be defined even if the draping element is to be individually selected.

The images below serve to illustrate how the Draping Vector dialog creates the series of draped line strings. The first image illustrates the

triangulated model and the element to be draped which is located several hundred meters above the triangulated model.



The image below depicts the result of the draping vector process.



The draped image reflects a series of line strings where each component line string vertex reflects either a vertex of the original linear element projected onto the triangulated model or an intersection between the original linear element and a triangle edge projected onto the triangulated model.

Unlike the Drape Vertices dialog, the Drape Vector dialog produces a copy of the reference element. The Drape Vertices dialog actually makes adjustments to the actual identified elements.