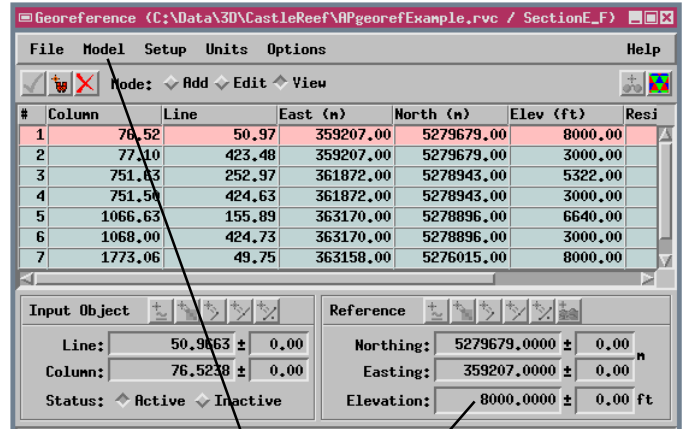


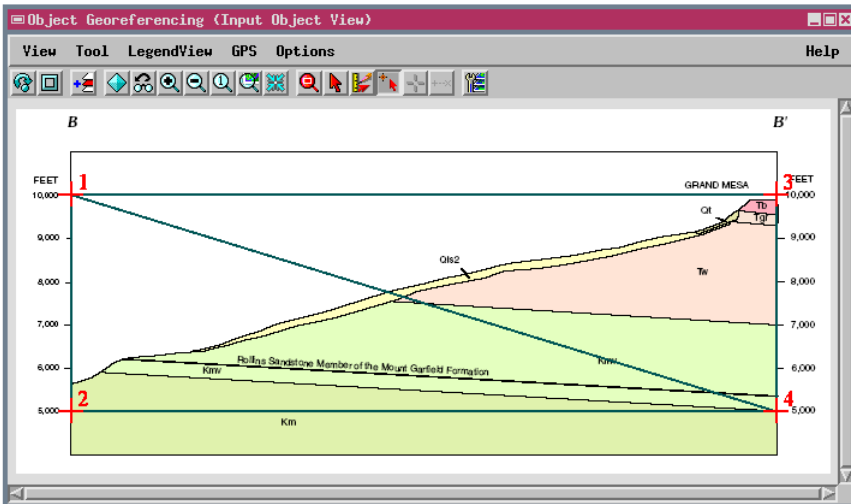
Georeferencing Manifold Surfaces

A manifold contains its own shape and position information in the form of a set of 3D georeference control points defined using the 3D Piecewise Affine geometric model. This model connects the control points to form a triangular mesh that defines a projective surface for 3D perspective display of the raster or vector manifold. The Georeference process provides a 2D view of the input object with overlays showing the control points and resulting triangulation (which is based solely on the distribution of the control points in this flat, 2D view). Also available is an optional 3D perspective view so you can assess the 3D results of adding or editing control points.

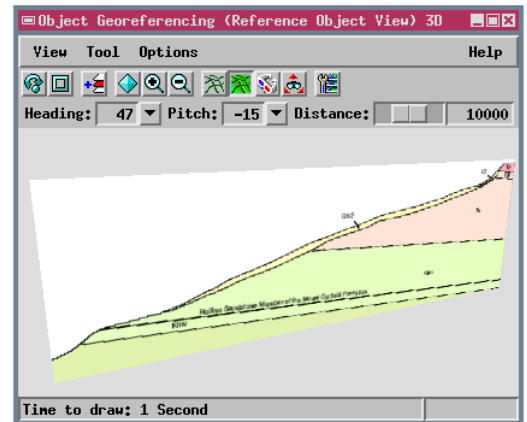
If the manifold object represents a single planar surface (such as a planar vertical cross-section), then four accurate 3D control points near the corners of the object (defining two triangles) is sufficient for correct perspective viewing. For more complex manifold surfaces (multiple planes or curving surfaces) with many more control points, the Piecewise Control dialog window provides tools that let you edit the triangulation (see the color plate entitled *Editing Manifold Surface Triangulation* for more information).



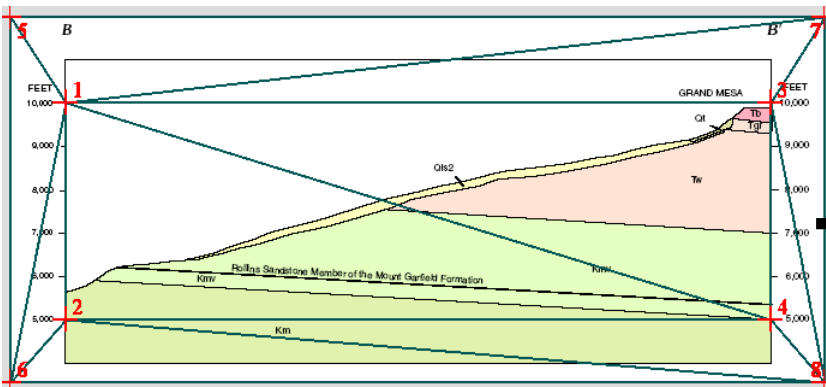
To set up manifold georeferencing for a vector or raster object, select 3D Piecewise Affine from the Model menu, then enter an elevation value along with the map coordinates for each control point. Note that you can use the Units menu to choose the most convenient units for coordinate input and listing (meters in this example) and for the elevation (feet in this example).



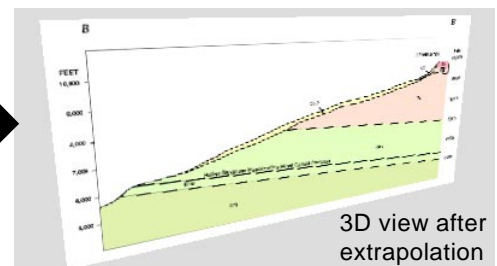
Input Object View (2D) of a vertical, planar, geologic cross-section (raster object) with the triangulation created from the 3D control points. Choose Show 3D Reference View from the Options menu on the Georeference window to open a 3D perspective view of the manifold (shown to the right).



In the 3D window you can view the manifold in Solid mode (as shown above) or in wireframe mode (which shows a perspective view of only the triangulation). In Solid view only the part of the manifold object inside the boundary of the control point triangulation is rendered to the screen. (This is true for 3D views of manifolds in any TNT process.)



If parts of the manifold that you wish to view in solid mode lie outside the limits of your control points, you can use the Extrapolate Boundary Control Points icon button on the Piecewise Control window to automatically create extrapolated points at the corners of the object (points 5, 6, 7, and 8 above). The coordinates of each extrapolated point are computed to lie in the plane of the nearest triangle.



Extrapolate Boundary Control Points

