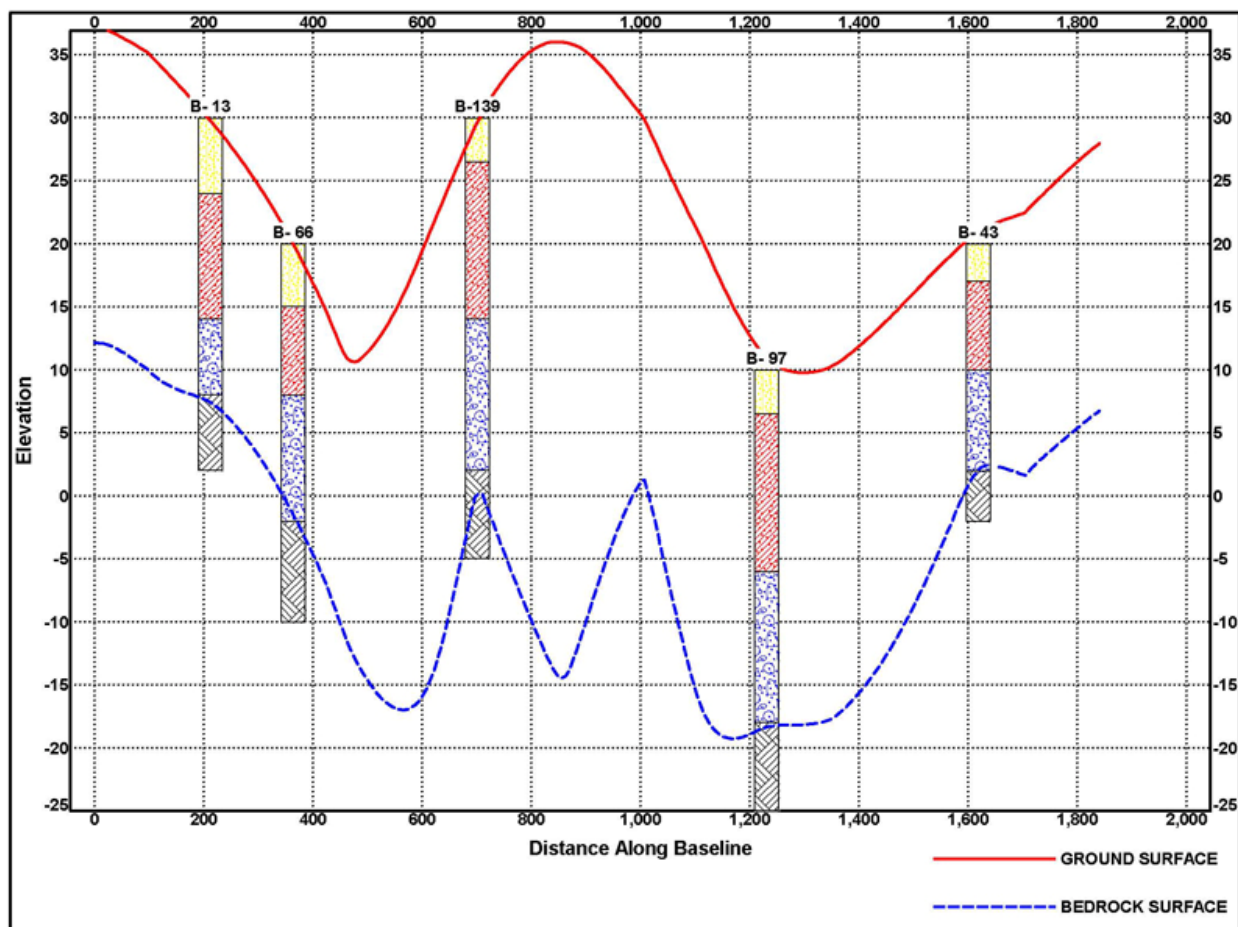


Working with Surfaces in gINT

“Support for surfaces has turned what used to be a complicated and painful exercise of placing sections of 3D models onto fences into a single click operation. This means that I can produce (and more importantly re-produce) fences showing sections through 3D models at will. This makes data analysis easy and thorough.”

- Tony Daly, Mouchel Parkman, Trowbridge, UK

In any subsurface investigation, various surfaces can be mapped. Some examples are: top of ground, bottom of fill (made ground), top of groundwater, and top of bedrock. Surfaces such as these can be stored in gINT and then the profile lines cut through the surfaces can be shown on 2D fence diagrams, as shown in the following example:



The two surface lines represent the ground surface and top of bedrock along the fence baseline.

Note: Fence diagram reporting is only available gINT Professional.

In modeling programs, surfaces are mathematically represented with two types of files: TIN (Triangulated Irregular Network) and Grid. gINT supports gridded surfaces. Gridded surfaces describe some “Z” value at equally spaced “X” (East) and “Y” (North) values. The “Z” values in the above example are ground and bedrock surface elevations.

The first step in working with surfaces is to obtain the required Z value at each borehole (X and Y). You can extract the required data in the Input application by selecting **File > Import/Export > Export Contouring Data**. For more information on contouring data, see **Help > Commands > Alphabetical List > Export Contouring Data**.

Another way to perform contouring data export, if your needs are more complex and cannot be fully met by this command, is to use Text Table reports. See the How To Guide topic "Exporting Data to a Contouring Program" (**Help > Contents > How To Guide > General**) for many examples of exporting.

Your XYZ data may not necessarily come from gINT. For example, you may have ground survey data that have many more data points than the number of boreholes in your project or a geophysical survey may have been run that maps a layer interface across the entire site. However the XYZ data are obtained, the vast majority of the time these data will not be on a regular grid of east and north values. The process of converting the irregular XY data to a regular grid is called "gridding." There are many methods for performing this conversion. gINT does not perform gridding but can read grid files generated by RockWorks, Surfer, and Surpac. You can import your original XYZ data file into one of these programs, perform the gridding, and then generate a grid file.

The next step is to store your surface grid file or files in the associate project. In gINT, select the INPUT tab and then choose **Additional Modules > Surfaces Support**. After the Surfaces Support option is checked, a "Surfaces" group tab appears. Click on the Surfaces tab and, then select **File > New** to import the grid file. You can create as many surfaces as you want.

To use the surfaces, in OUTPUT, select the Fences tab (only available in gINT Professional) and locate the **Surfaces (2D only)** field in the middle panel of the screen. This field is disabled if the project does not have associated surfaces. Click on the browse button and select the surfaces you want. If your baseline cuts through any part of a surface, you will see the surface profile line, as long as the line is within the vertical extents of the fence data frame.

For complete details on working with surfaces, see **Help > Contents > Input Application > Surfaces**.