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Chapter 4: Survey Manager

Overview

Survey Manager is used to input raw survey data into MicroStation and GEOPAK. This will allow the user to create a **.tin**, and a topo file, and also input surveyed cross sections used in the final design. Survey Manager will also allow the user to make modifications to the data if there is a bust in the original survey. This section will describe the workflows used to input and modify the survey data provided by surveyors.

SMD File

This file contains the parameters GEOPAK uses to draw the survey data, including information such as:

- The cell to be associated with the survey shot.
- The elements to be included in the DTM. For example, a ground shot would be included in the DTM, and a fire hydrant will not be included.
- The shots that should be part of a string, such as an edge of pavement line.
- The shots that should be part of a break line
- The shots that are spot elevations.

The CFLHD standard **.smd** file is **CFLHD_2013_Features_Codes.smd**. This file can be attached by clicking on the Feature Preferences button in the GEOPAK User Preferences dialog box, as shown in the GEOPAK preferences chapter.



The Survey cell library, **smrowV8-k2006.cel**, must also be attached for the **.smd** file above to produce the desired symbology. See chapter 8, Cell Libraries, for more information on attaching the correct cell library.

Importing Survey Data

The survey team should provide an ASCII file with a **.cor** extension. This file will be in a comma-separated format. The columns will be point number, northing, easting, elevation, point code/line code and then a semi colon with any comments. GEOPAK will read this file and, if the correct **.smd** file is referenced, draw the survey data using the standard level symbology.

Workflow 1 will describe the procedure for importing the **.cor** file into GEOPAK.

Workflow 1: Importing Survey Data

To access this workflow, follow this link:

http://flh.fhwa.dot.gov/resources/cadd/cfl/documents/Workflow_4.1_v8i.pdf

Making Corrections

There will be times when there is a problem in the survey and a correction to a chain or a point will need to be made. If you know where this point is in the **.cor** file, it is easy enough to fix. But the size of the **.cor** file can be too large to find the error without spending a large amount of time. The most efficient way is to fix it using the Chain and Point Editing features in Survey Manager. Workflow 2 will describe the procedure for editing a chain and Workflow 3 will describe how to edit a point.

Workflow 2: Survey Chain Editing

To access this workflow, follow this link:

http://flh.fhwa.dot.gov/resources/cadd/cfl/documents/Workflow_4.2_v8i.pdf



By using the Chain Editing tool, the user can break a chain, add points to the chain, and delete points. GEOPAK will also highlight the point that is selected.

Workflow 3: Survey Point Editing

To access this workflow, follow this link:

http://flh.fhwa.dot.gov/resources/cadd/cfl/documents/Workflow_4.3_v8i.pdf

Reference Hub Cross Sections

Once the alignment is set, the surveyors will provide a Reference Hub survey. These are provided in a **.soe** file. These sections will need to be imported into the cross section cells for comparison to the existing sections based on the tin and then the proposed sections will need to be modified to tie into the surveyed sections. Workflow 4 will describe the procedure for importing the **.soe** file into the existing cells cross-section cells.

Workflow 4: Importing Reference Hub Sections

To access this workflow, follow this link:

http://flh.fhwa.dot.gov/resources/cadd/cfl/documents/Workflow_4.4_v8i.pdf