

# Build DTM From Survey

Design Manual

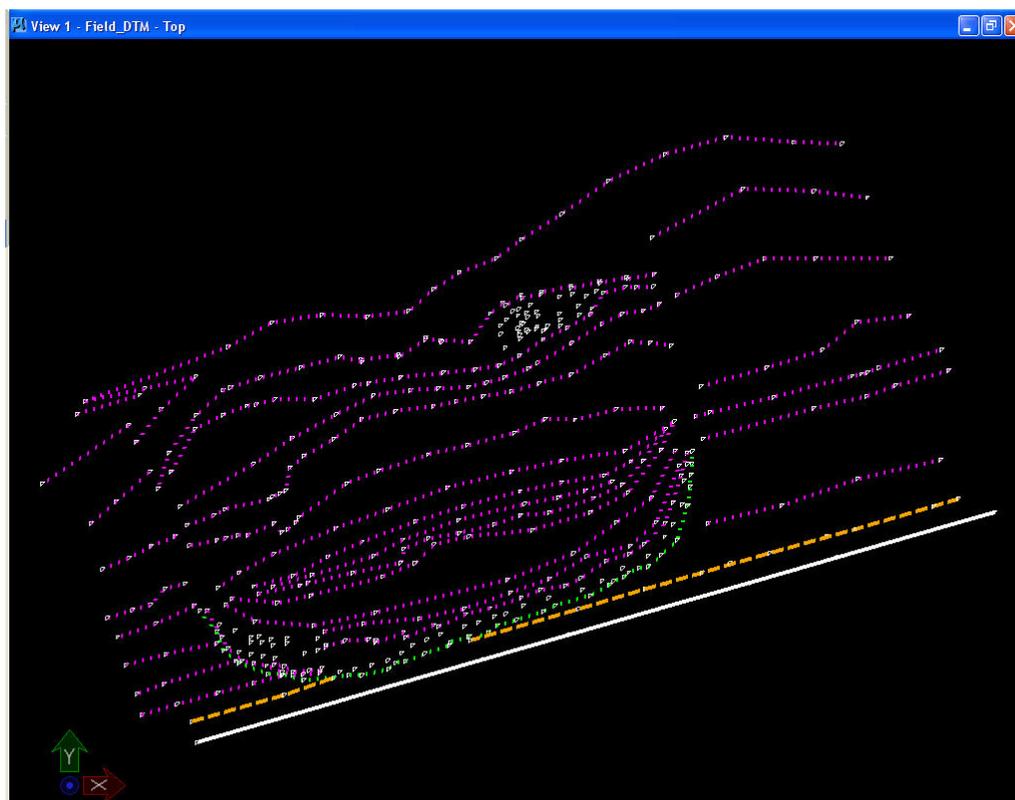
Chapter 40

Survey Information

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## Building DTM's from Survey Data

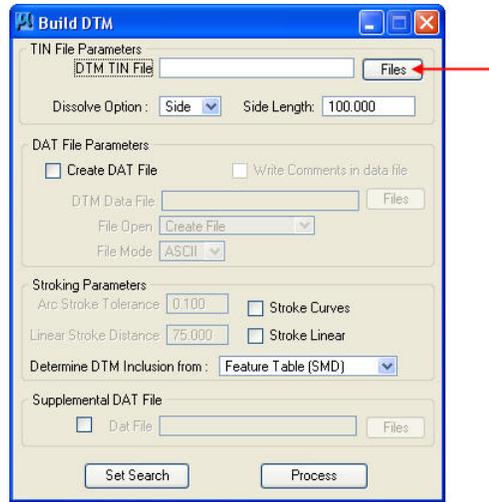
- 1) Within GEOPAK Survey there is an easy way to create a TIN file. This process looks at the survey information stored in your GPK file and compares this to the SMD to see if the item is good for ground. This process is perfect to use when you want to create a TIN for the purpose of reviewing your field data for busts.
- 2) One problem with this process is that you do not have a choice of what info is included in the TIN file. This process can create triangles that do not truly represent the existing ground. Customers who use this data may assume that the existing ground in these areas, because they are part of the tin, is accurate. Some examples of where this occurs is:
  - a. Where draws are surveyed far outside of the rest of the field shots.
  - b. Where the centerline of the roadway is shot for the additional 300' past the survey limits.
  - c. A point was edited and the Zone was not changed. GEOPAK will still consider this as good as ground.
- 3) Below is a picture of the field data used for this example.



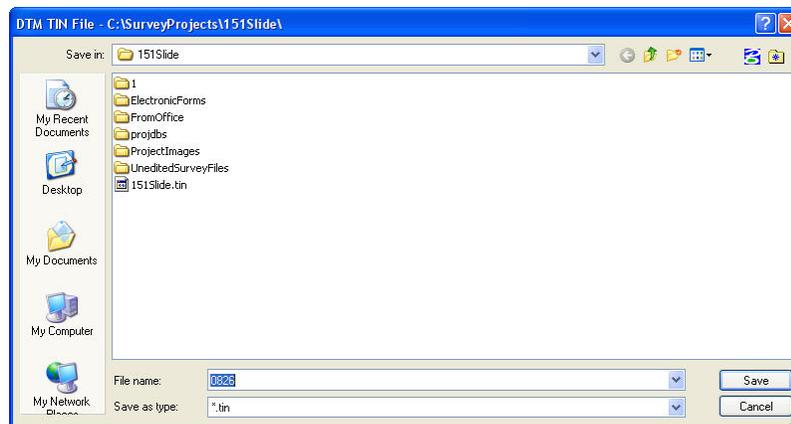
4) To use this process, on the *Survey* tool bar, select **DTM>Build DTM>From Survey Data**.



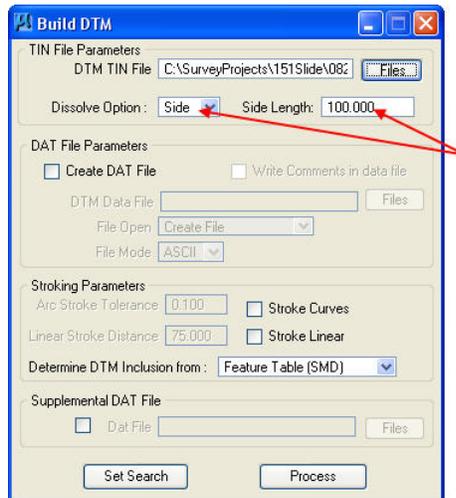
5) This will open the *Build DTM* dialog box. Press the **Files** button to name the TIN file.



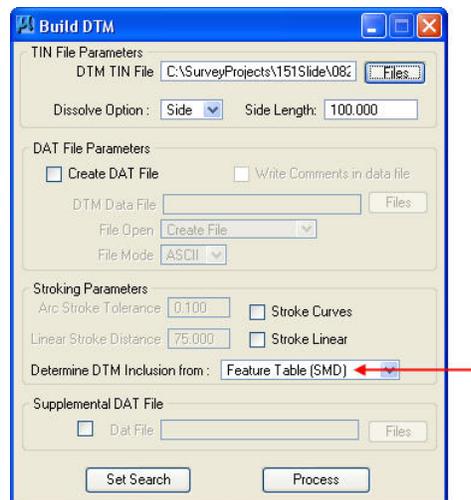
6) Make sure that the correct directory is selected and then name your file to match the SAP number of your project. Press the **Save** button.



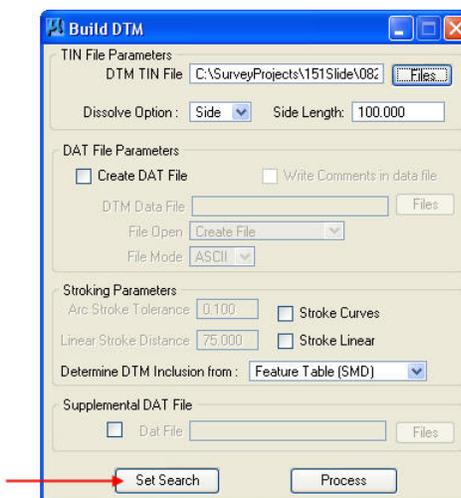
- 7) Make sure that the *Dissolve Option* is set to **Side** and that the *Side Length* is set to **100**. This should limit GEOPAK to only making triangles in the TIN that have sides of 100' or less.



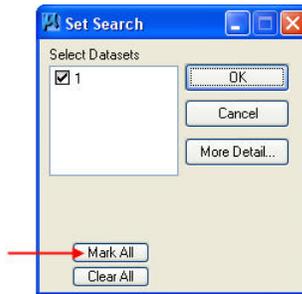
- 8) The *Determine DTM Inclusion from* should be set to **Feature Table (SMD)**. The SMD file contains the information that determines which feature codes are good for ground shots.



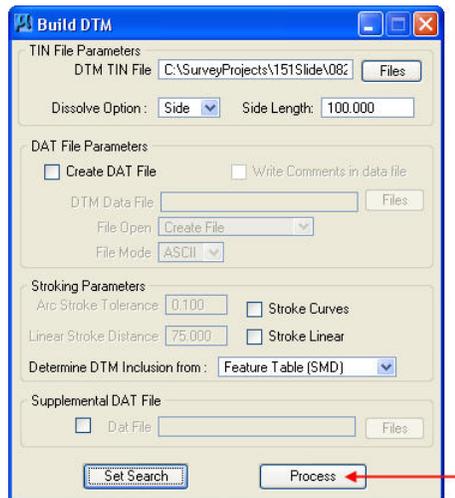
- 9) Press the **Set Search** button to tell GEOPAK what data sets should be included in the TIN.



- 10) You can click on individual data set names to place a check next to them to include only certain data sets within the tin. Most of the time you will want all of your data sets included in the TIN. To select all data sets, press the **Mark All** button. Press the **OK** button next.



- 11) When everything is set, press the Process button to create the TIN file.

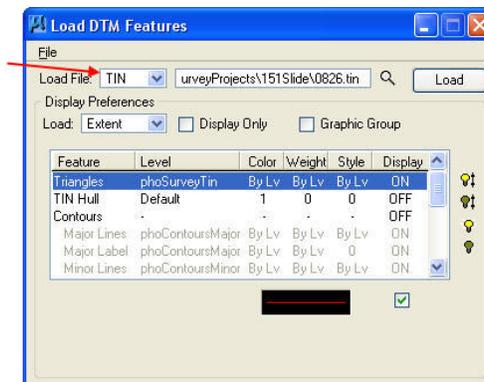


- 12) The TIN creation process is complete after the text stops flashing in the MicroStation task bar on the bottom of the window. Press the red X on the *Build DTM* dialog box to close this box.

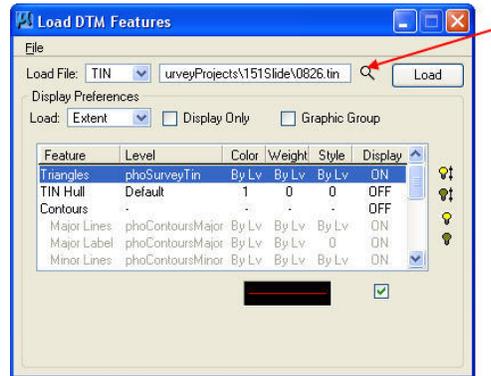
- 13) The TIN you just created will not automatically be drawn into the file. To visually see the TIN, select **DTM>Load DTM Features** on the *Survey* tool bar.



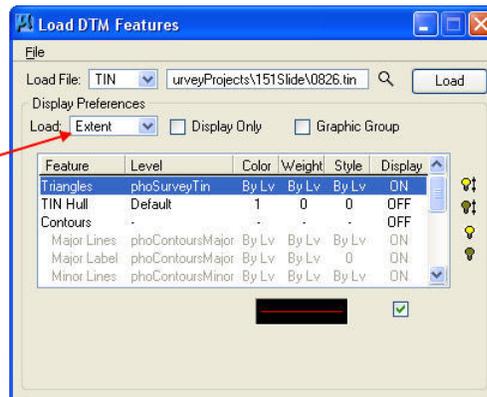
- 14) This opens the Load DTM Features dialog box. The *Load File* option should be set to **TIN**.



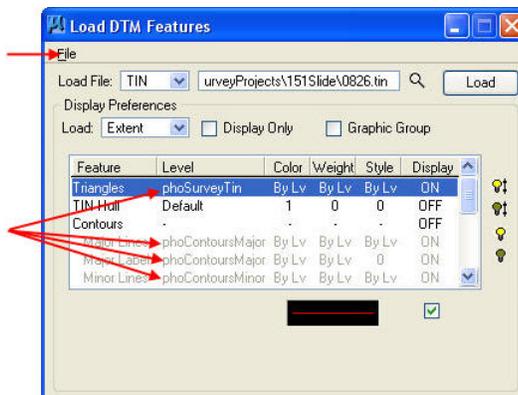
- 15) The TIN file you just created should automatically be shown in the TIN text box. If this is not correct, press the **magnifying glass** and browse to and select the correct TIN file.



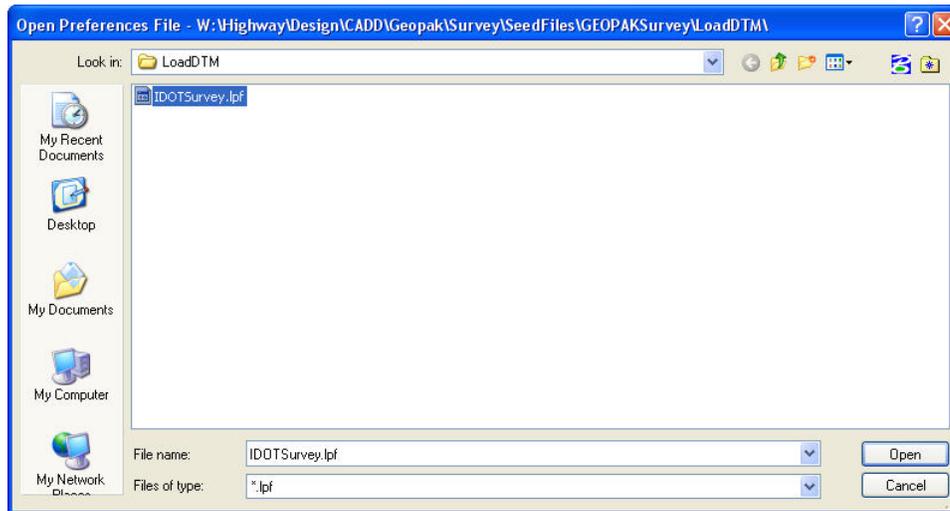
- 16) *Load* should be set to **Extent**. This will draw the complete TIN into your model.



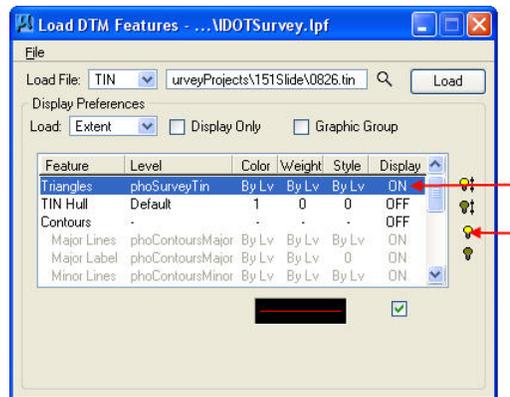
- 17) If your dialog box does not have the same levels as shown below, you will have to load the correct settings so that everything is drawn right. **Press File>Open** to choose the settings file.



- 18) Browse to the directory shown on the title bar in the picture below. Select the file **IDOTSurvey.lpf** and then press the **Open** button.



- 19) To draw the Triangles into the model, highlight the **Triangles** line and then press the light bulb. It should now say **ON** in the *Display* column. You can also double-click on the Triangles line to change the Display to ON.



- 20) When all of your settings look correct, press the **Load** button. The TIN triangles are now drawn into your model on level *phoSurveyTin*.

