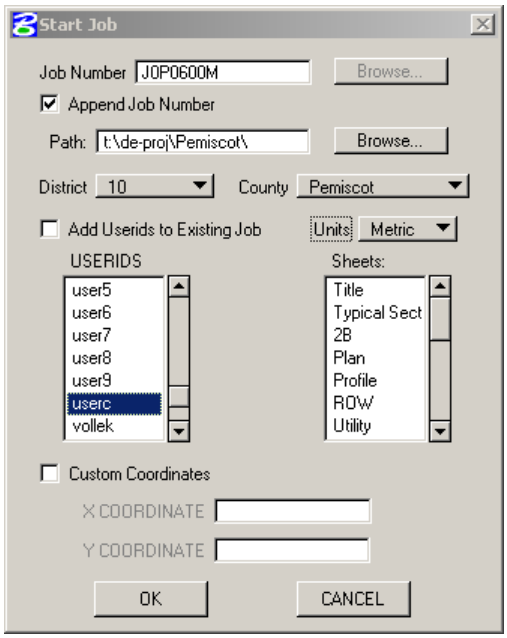
1) Create Project Folder and default MicroStation Files.

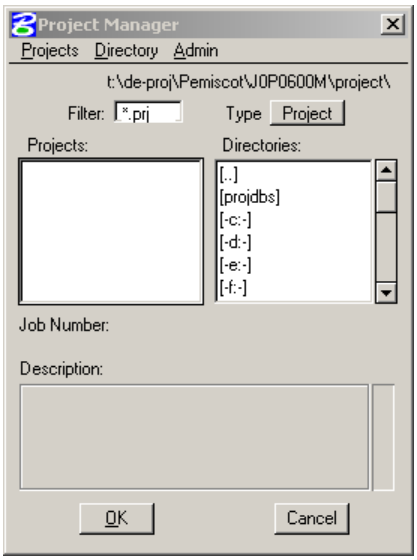


2) Open T:\de-proj\Pemiscot\J0P0600B\data**plan_J0P0600M.dgn**

3) Create J0P0600B Project in GeoPak by selecting the following:

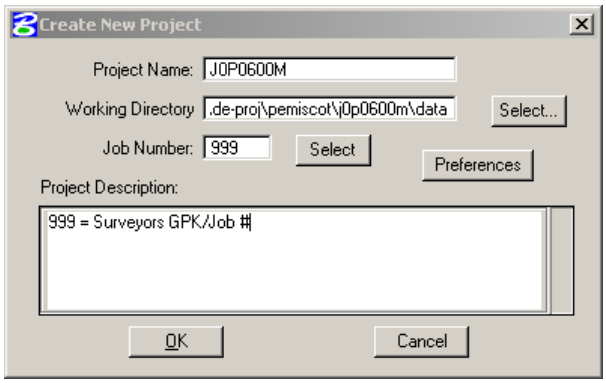
Applications > GeoPak Survey > Project Manager

4) In Project Manager set the path to **T:\de-roj\Pemiscot\J0P0600M\Project**

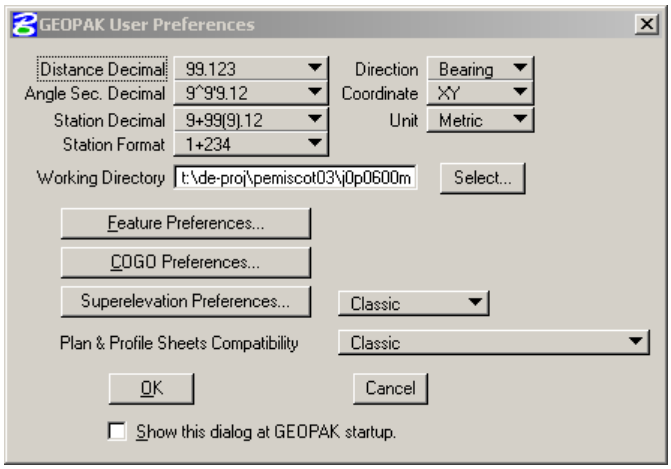


5) Go to the project pull down in the upper left corner and select "**New**"

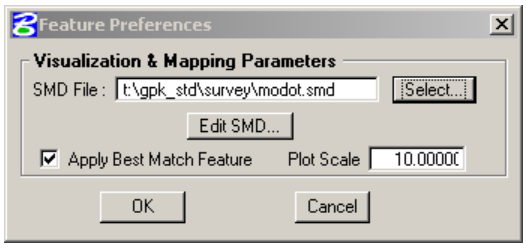
6) Fill out the "**Create New Project**" dialog the same as below.



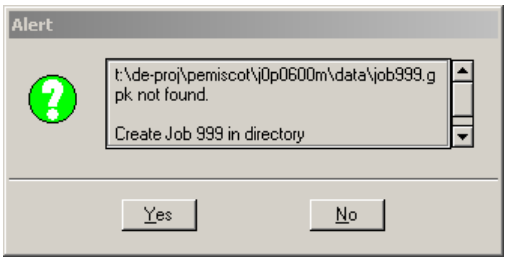
7) Click on "**Preferences**" and set as below:



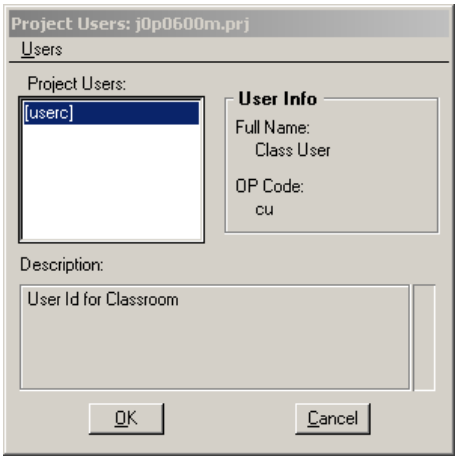
8) Click on Feature Preferences and make sure "**Apply Best Match Feature**" is checked on.



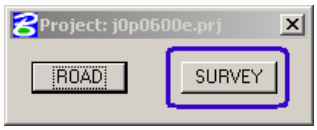
8a) Click "**OK**" to the "**User Preferences**" and the "**Create New Project**" dialogs. Then select "**OK**" to the creation of the job999.gpk ➔



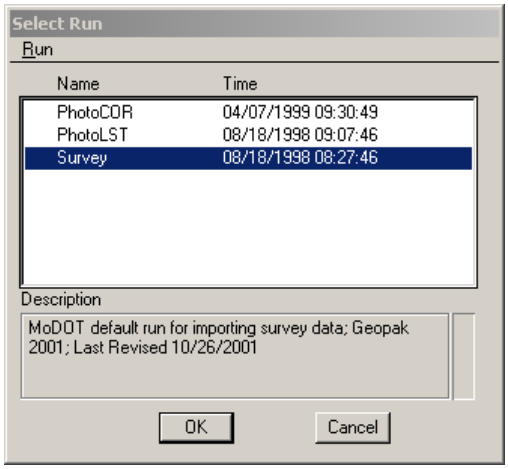
9) For the Project User select "**userc**"

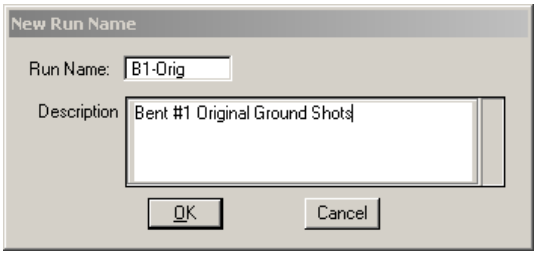


10) Select "**Survey**"



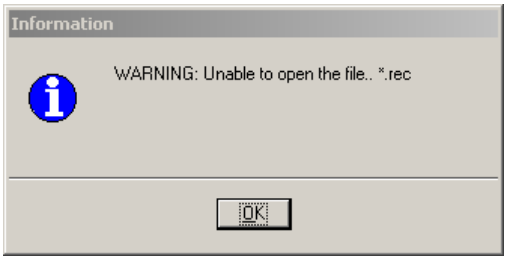
11) Do a "**Run > Copy > Run**" and select the "**Survey**" Run. Call the new run **B1-ORG** (See Below).

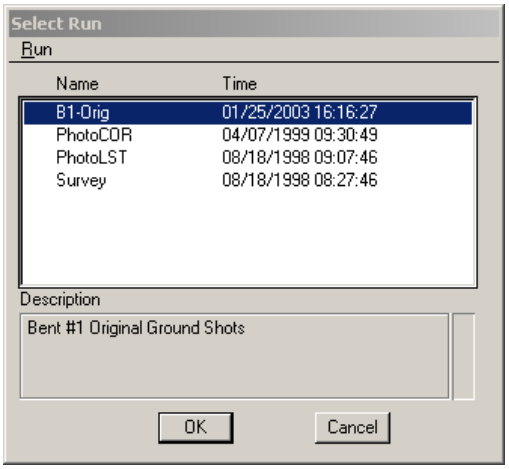




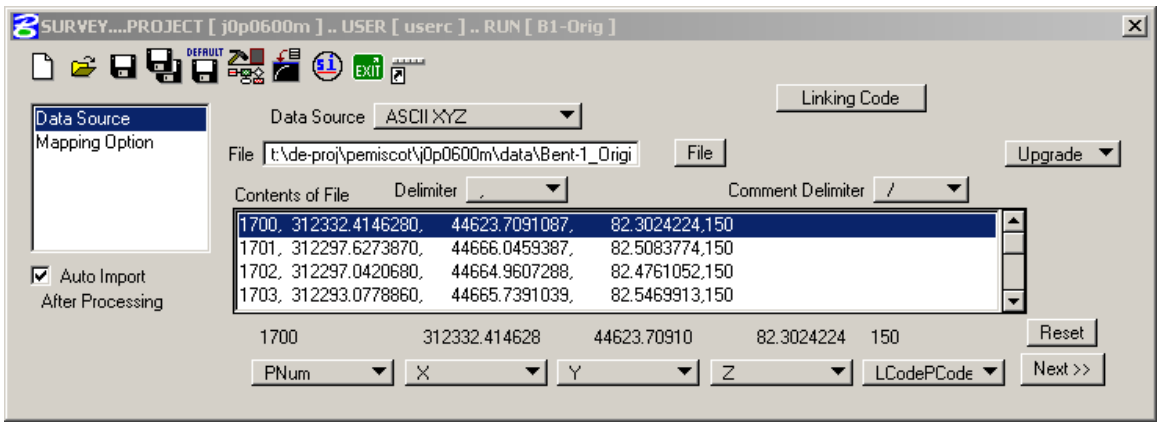
12) Select the **B1-ORG** run and select "**OK**" ➔

Ignore Dialog box below

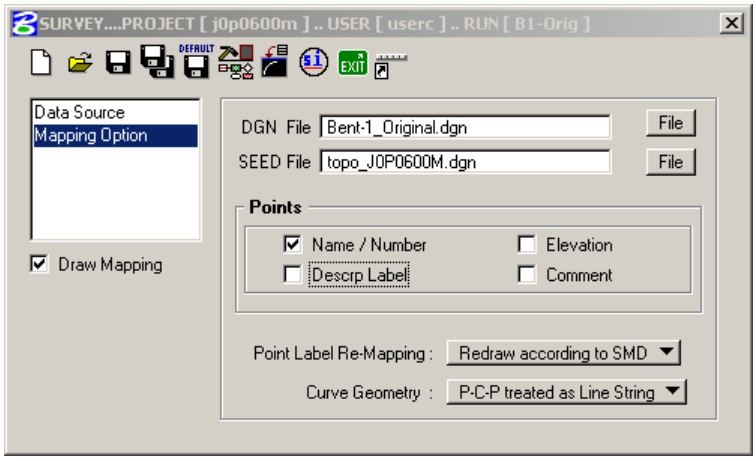




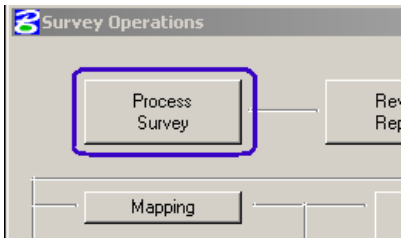
13) Set the "**Data Source**" Dialog same as below:



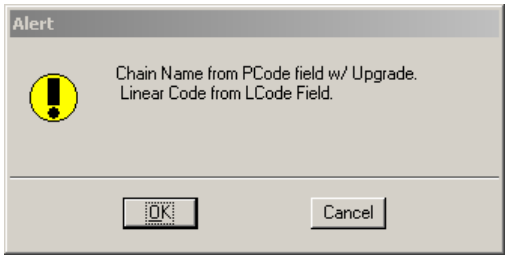
14) Set the "**Mapping Option**" Dialog same as below and save the run.



15) Select "**Process Survey**"

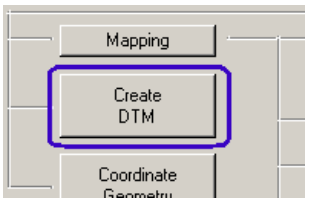


16) Ignore "**Alert**" dialog by selecting "**OK**"

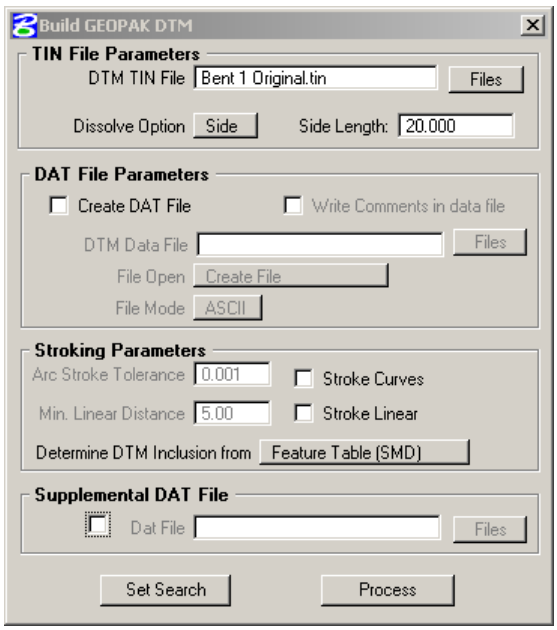


17) Do a MicroStation Fit View "**Fit View**" and the Borrow Pit Survey shots should appear.

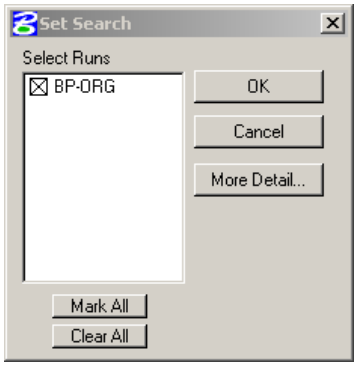
18) Select "**Create DTM**" from the Survey Operations dialog.



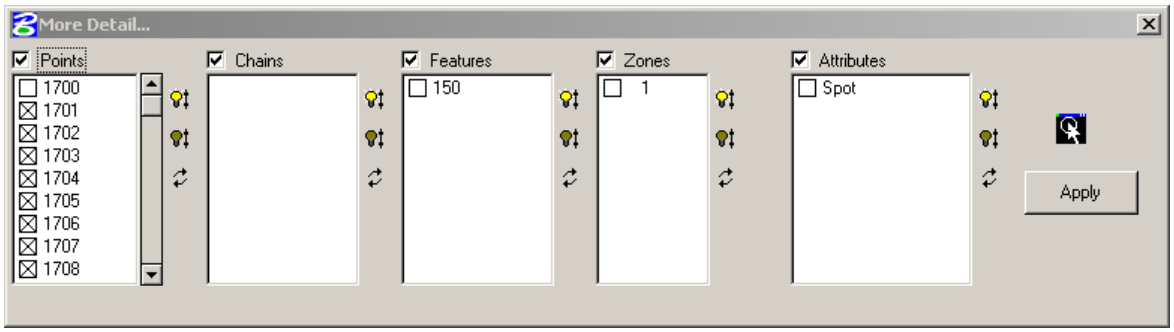
19) Fill out the "**Build GeoPak DTM**" dialog as below.



Also select "**Set Search**" and check "**BP-ORG**"



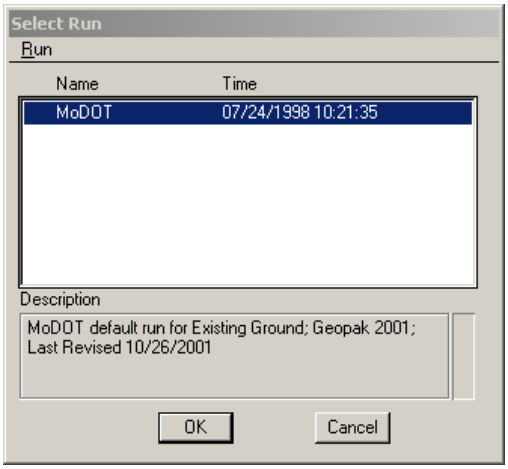
Select "**More Detail**" and chose all points and **deselect** point **1700** (Control Point).



20) View the tin file using the "Load DTM Features" pull down by selecting the following:

Applications > GeoPak Road > DTM Tools

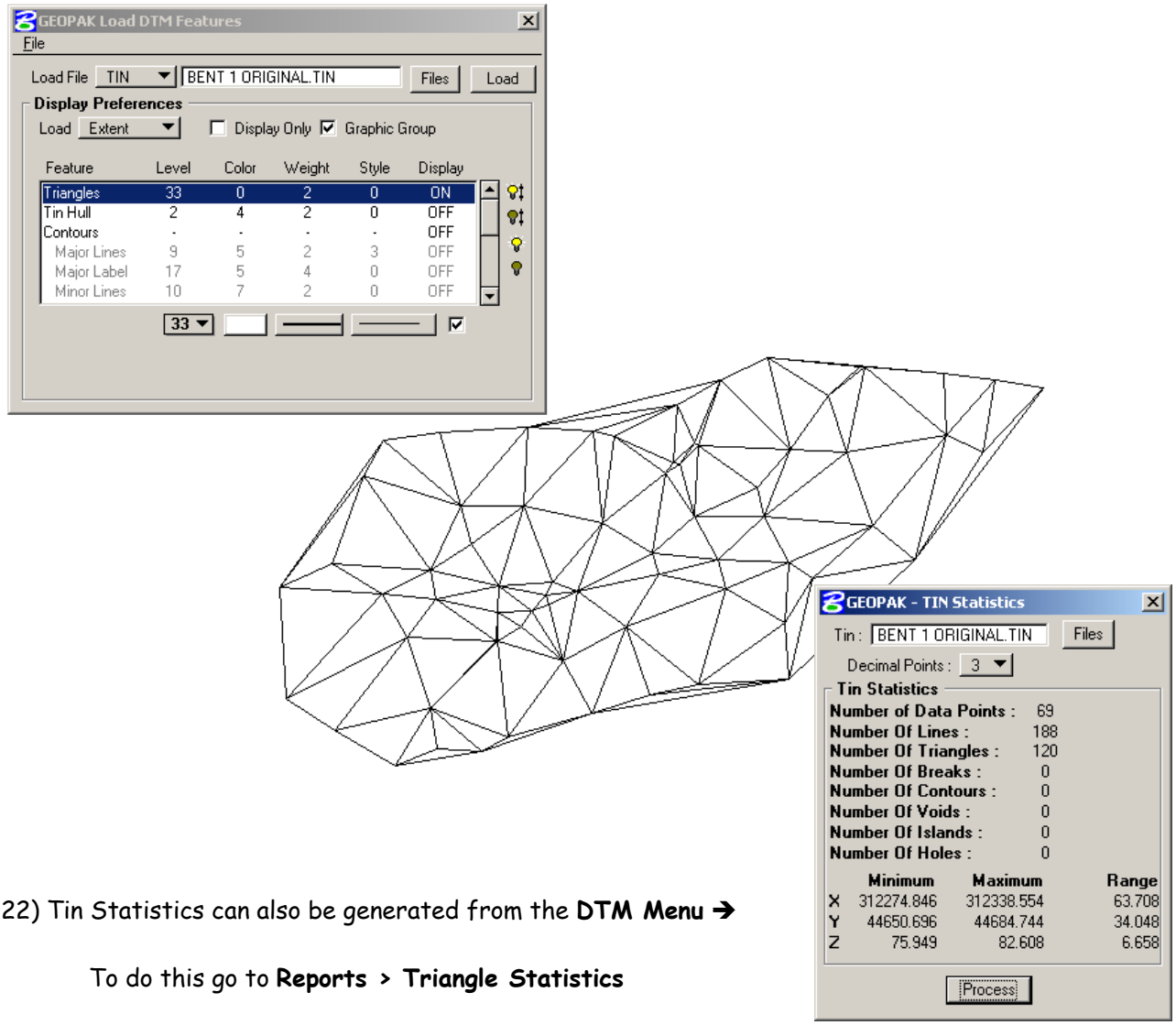
Select the "**MoDOT**" run and hit "**OK**" ➔



Select the "**DTM Menu**" Icon ➔

Now Select the "**Load**" pull down ➔

21) Fill out The "**GeoPak Load DTM Features**" Dialog same as below:



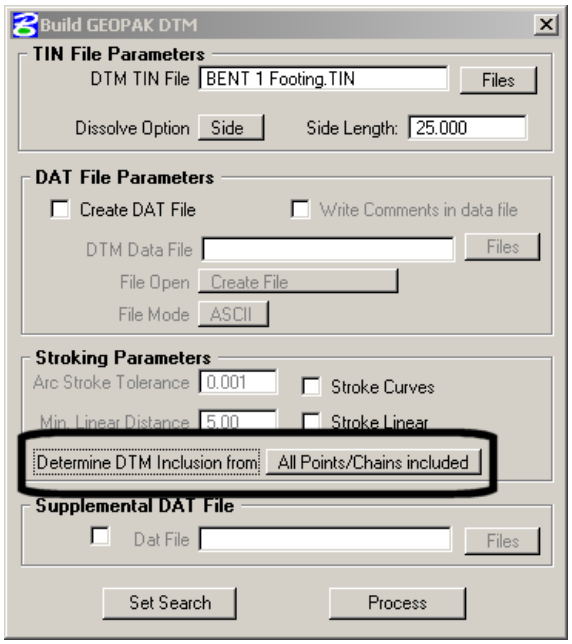
22) Tin Statistics can also be generated from the **DTM Menu** ➔

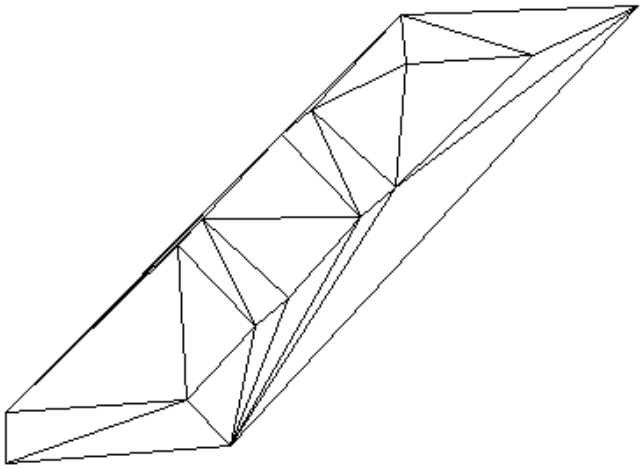
To do this go to **Reports > Triangle Statistics**

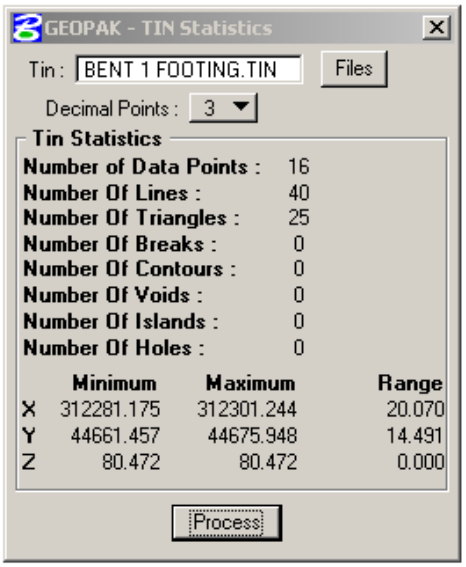
23) Repeat **steps 10 through 22** for the Survey file called **Bent-1 Footing.REC**

When creating the DTM (Tin) change the DTM Inclusion from "**Feature Table (SMD)**" to "**All Points/ Chains Included**". The survey data was coded as a 750 , which is the code for a Profile of a Bridge Deck.

GeoPak will exclude certain items from the DTM based on the survey code used (Example trees).

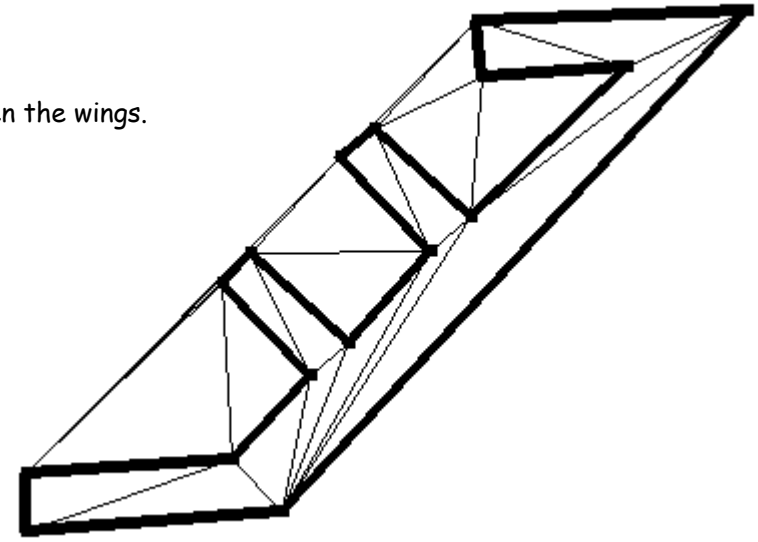






24) Before Earthwork can be calculated we must edit the **Bent 1 Footing.TIN**. If we used the **Bent 1 Footing.TIN** as it is now, the earthwork would include the area between the wings. The **Bent 1 Footing tin** needs to be modified to remove the area between the wings.

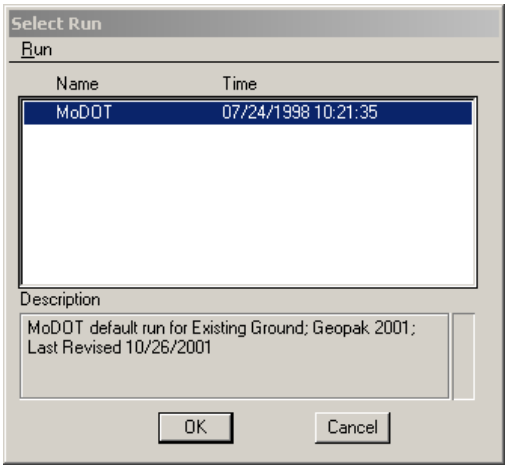
Remove Tin from these areas between the wings.



25) To remove the tin from the areas between the bent wings use the DTM (Digital Terrain Model) Tools.

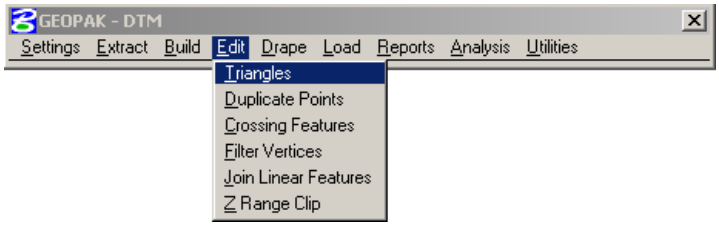
Applications > GeoPak Road > DTM Tools

Select the "**MoDOT**" run and hit "**OK**" ➔

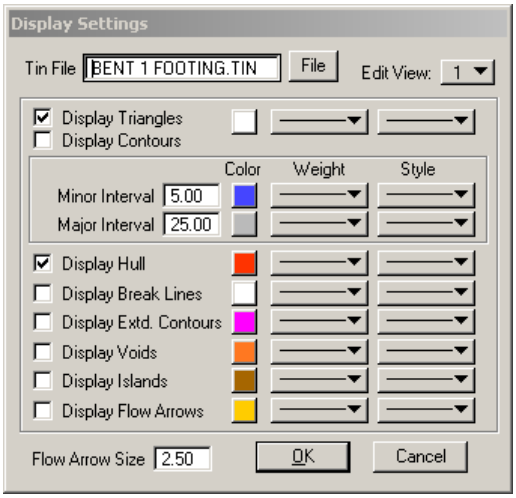


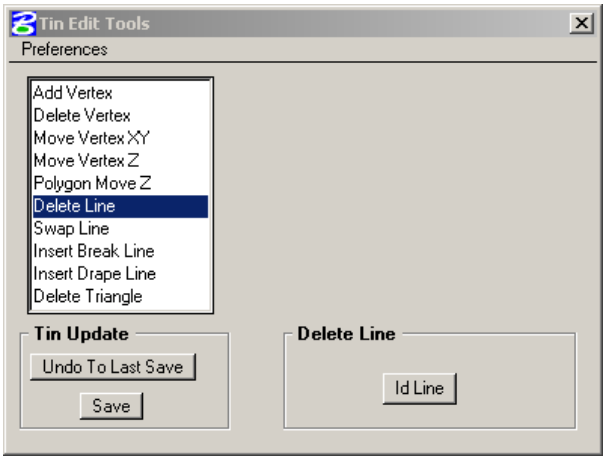
Select the "**DTM Menu**" Icon ➔

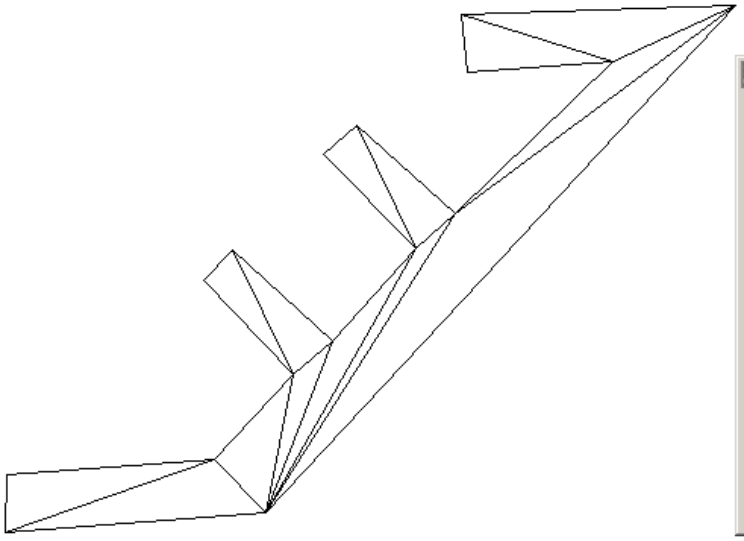
Now Select the "**Load**" pull down ➔

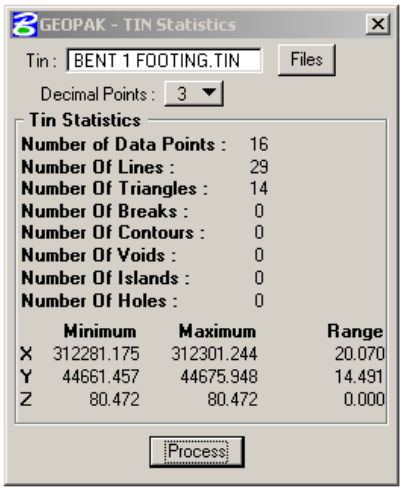


26) Within the Tin Edit Tools the **Display Settings** need to be set first (below left). Next use either the **Delete Line** or **Delete Triangle** Options to remove the Tin from the area between the bent wings.





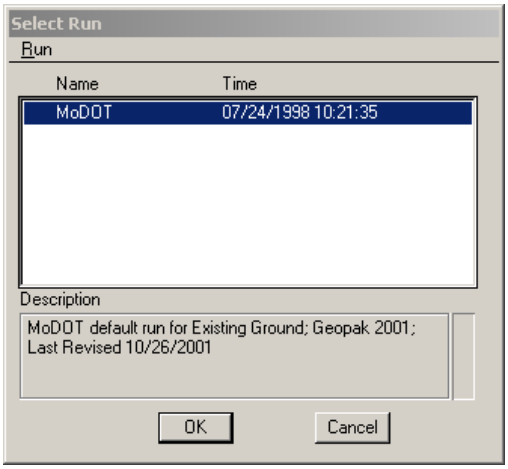




27*) Now that we have the 2 tin files created we can now calculate the volume between them. To do this we'll need to use the DTM (Digital Terrain Model) Tools.

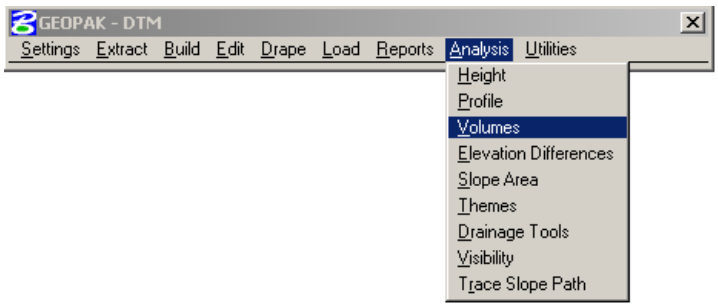
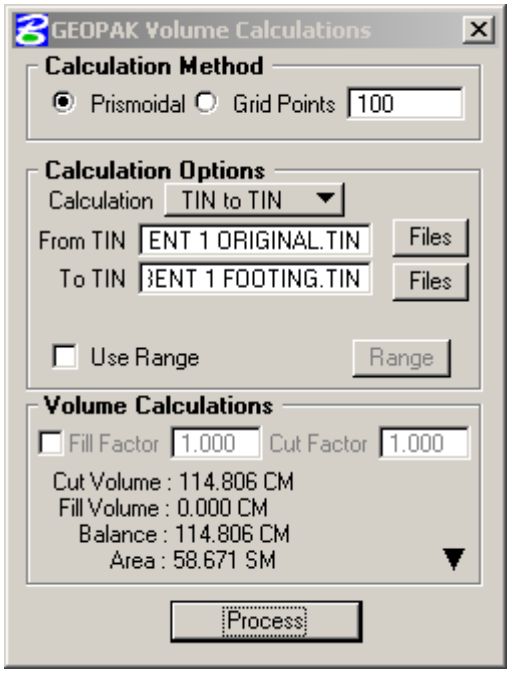
Applications > GeoPak Road > DTM Tools

Select the "**MoDOT**" run and hit "**OK**" ➔ ➔



Select the "**DTM Menu**" Icon ➔

Now select the "**Analysis**" pull-down ➔



28) Define the "**From** and **To TIN**" and hit "**Process**"