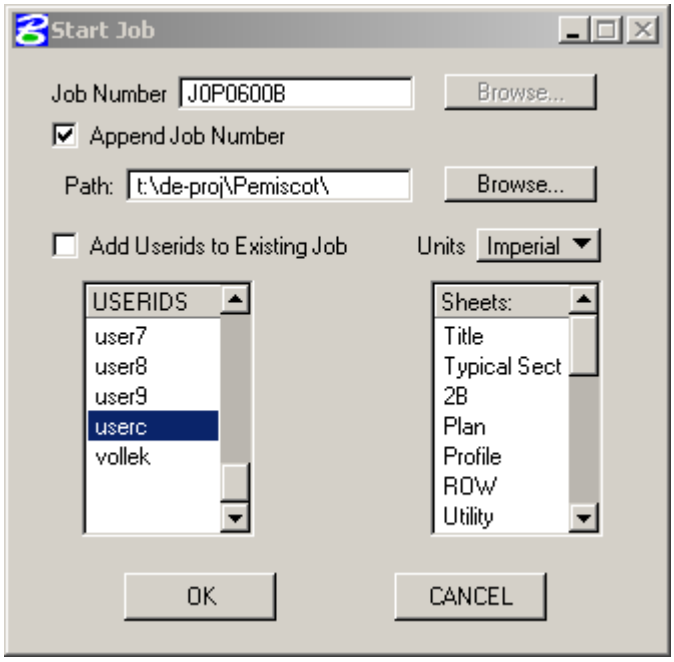
Borrow Pit (Tin File Method)

1) Get into any MicroStation file and create the Project Folder and default MicroStation Files by selecting **MoDOT > Start GeoPak Job/Add User**.



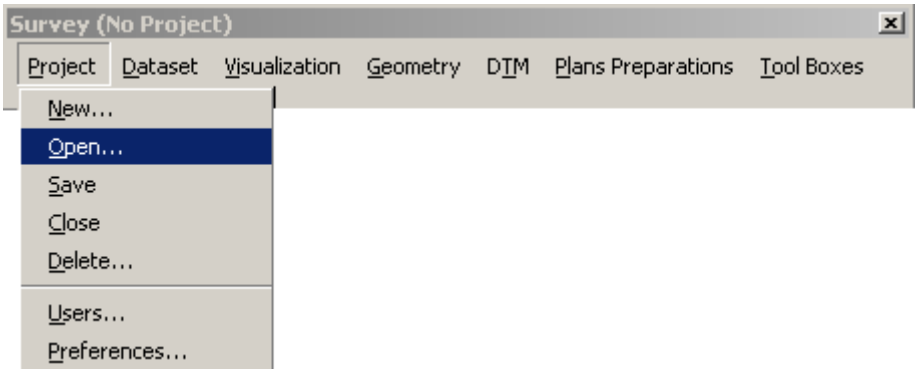
2) Open T:\de-proj\Pemiscot\J0P0600B\data**plan_J0P0600B.dgn**

3) Using Windows Explorer go to **T:\de-proj\Survey Data\Borrow Pit** and copy all of the files in that folder to **T:\de-proj\Pemiscot\J0P0600B\data**

4) Open GeoPak Survey by selecting the following:

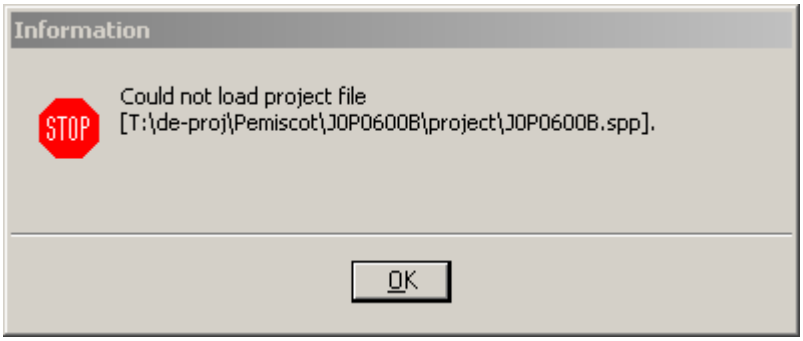
Applications > GeoPak Survey > Survey

5) In the Survey menu bar select **Project > Open**

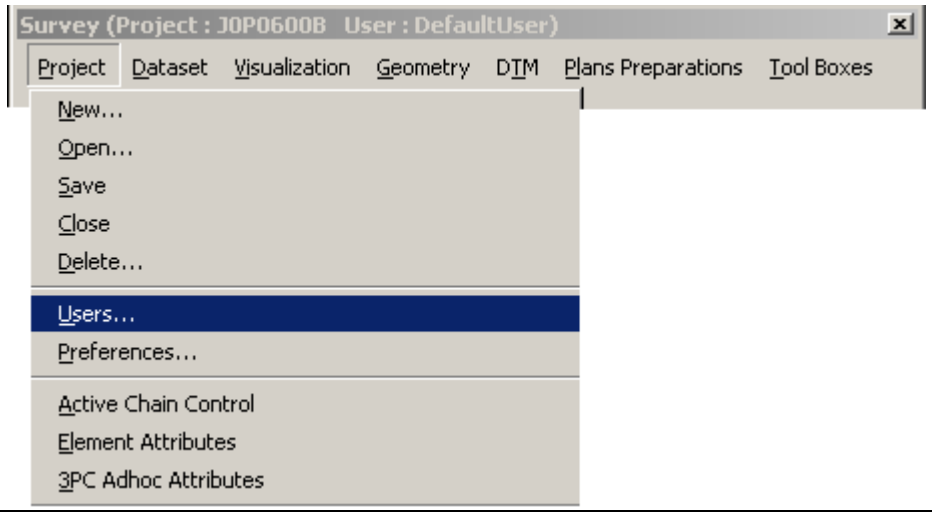


6) Select the following file **T:\de-proj\Pemiscot\J0P0600B\project\J0P0600B.prj**

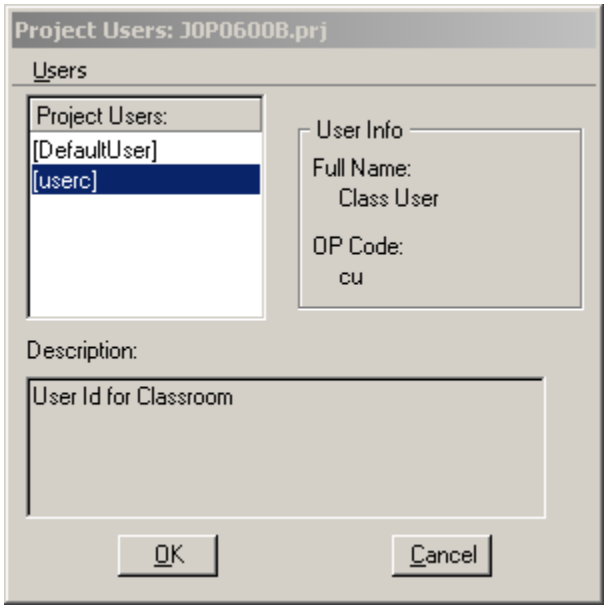
7) Select "OK" to the following Dialog.



8) In the Survey menu bar select **Project > Users**

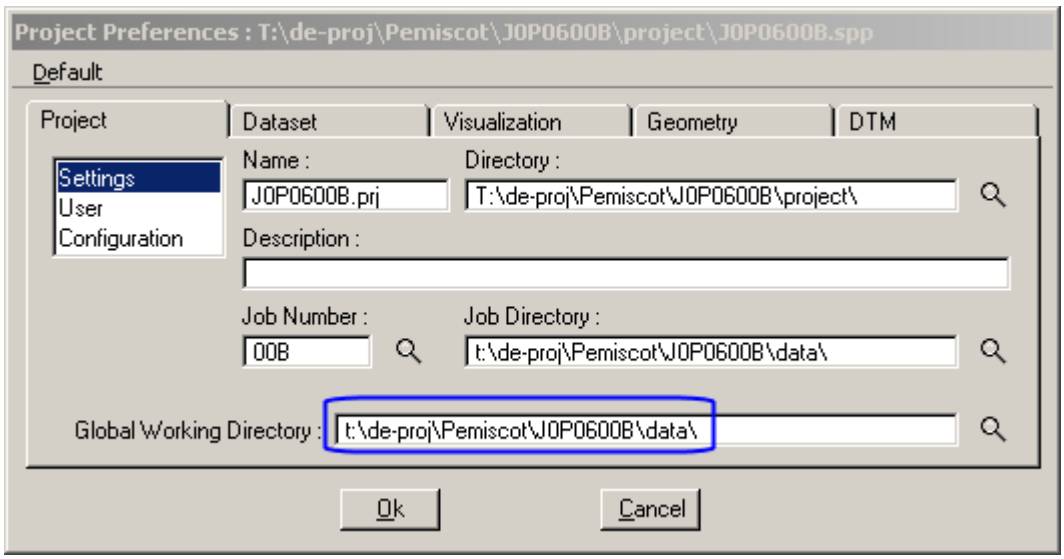


9) Select Userc as the Project User and then select “OK”.

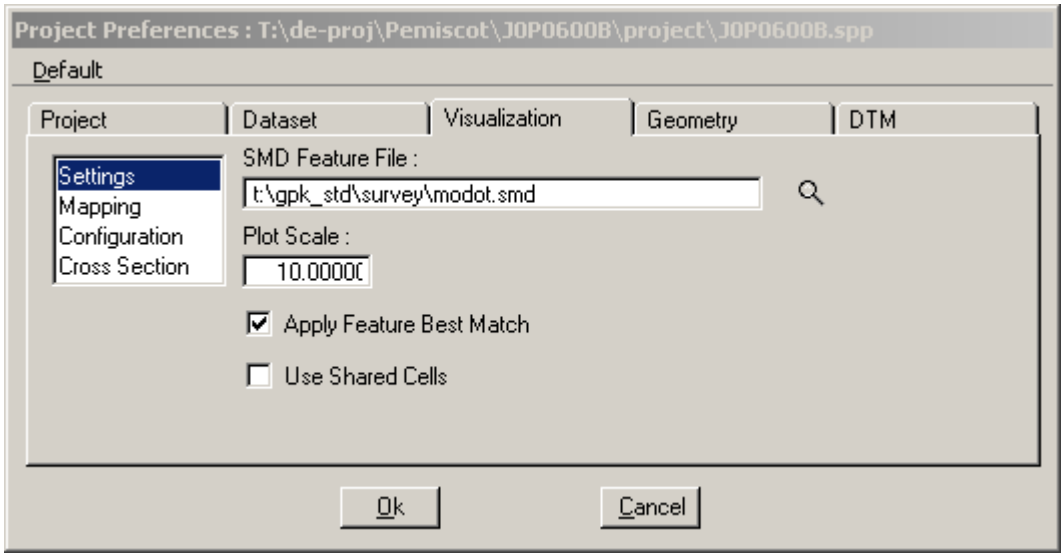


10) Open your **Project Preferences** by selecting **Project** > **Preferences**

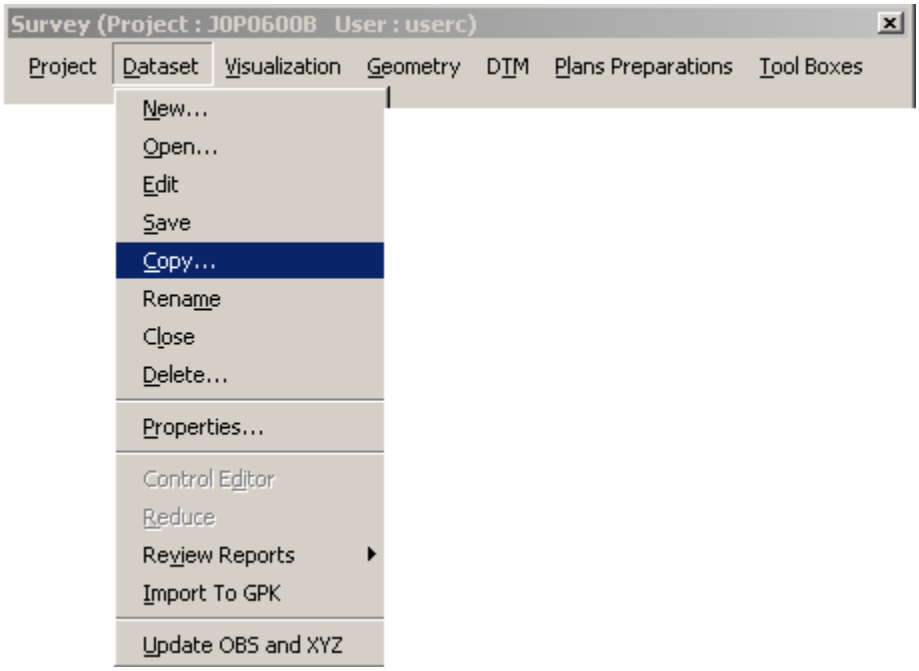
Point the Global Working Directory to **T:\de-proj\Pemiscot\J0P0600B\data**



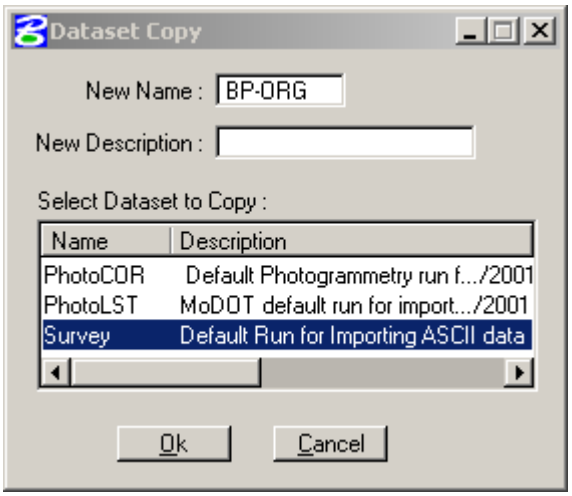
11) Under the **Visualization Tab** select "Setting" and set the **Plot Scale = 10** and the hit the "**OK**" button.



12) In the Survey menu bar select **Dataset** > **Copy**

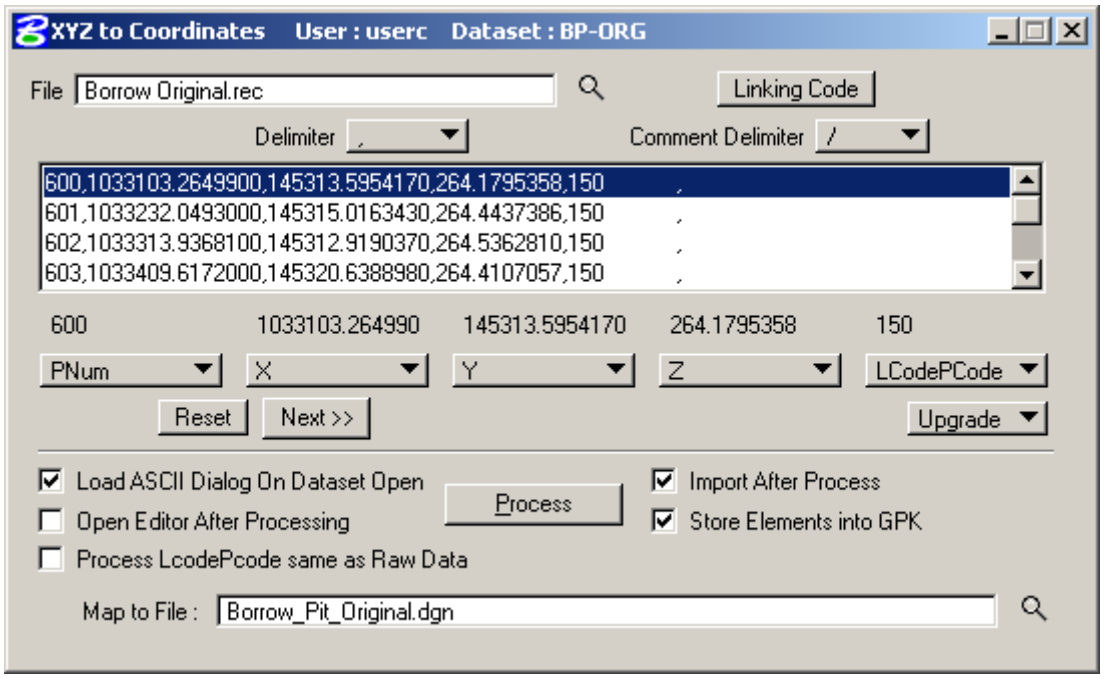


13) Copy the "**Survey**" Dataset. Call the new Dataset **BP-ORG** (See Below).



14) Fill out the **XYZ to Coordinate** dialog as below:

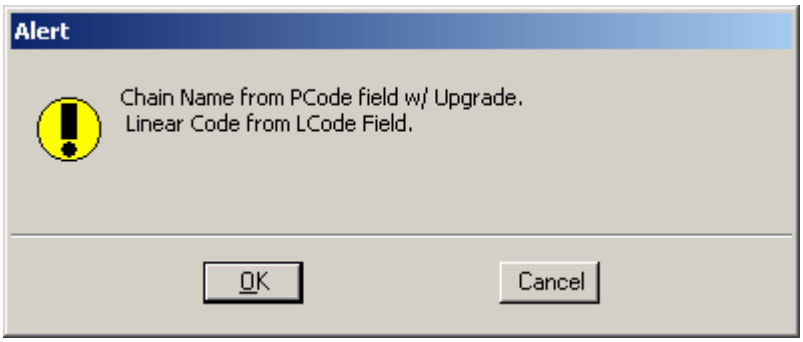
- Browse for a **REC file** in the Data folder named = **Borrow_Original.rec**



- Type in the **Map to File** name = **Borrow_Pit_Original.dgn** The Survey Data will be mapped to this file. You cannot browse for this file because it does not exist at this point.

- Highlight the first line in the REC file and select the "**Process**" Button.

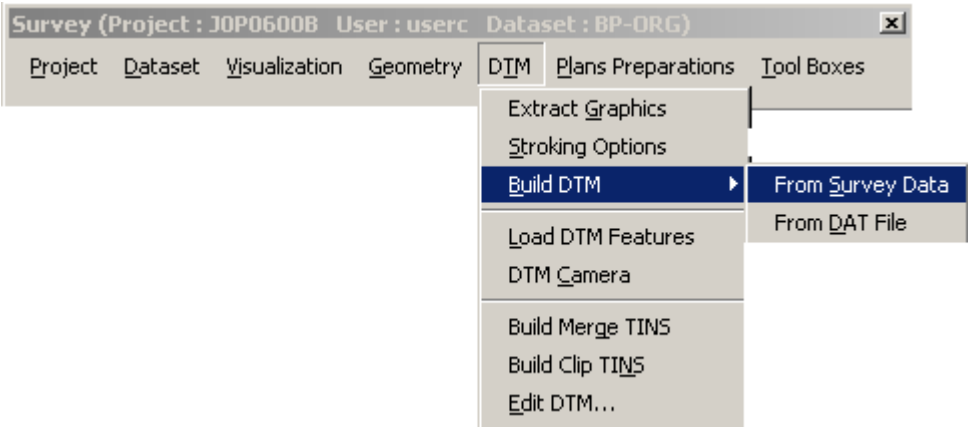
15) Ignore "**Alert**" dialog by selecting "**OK**"



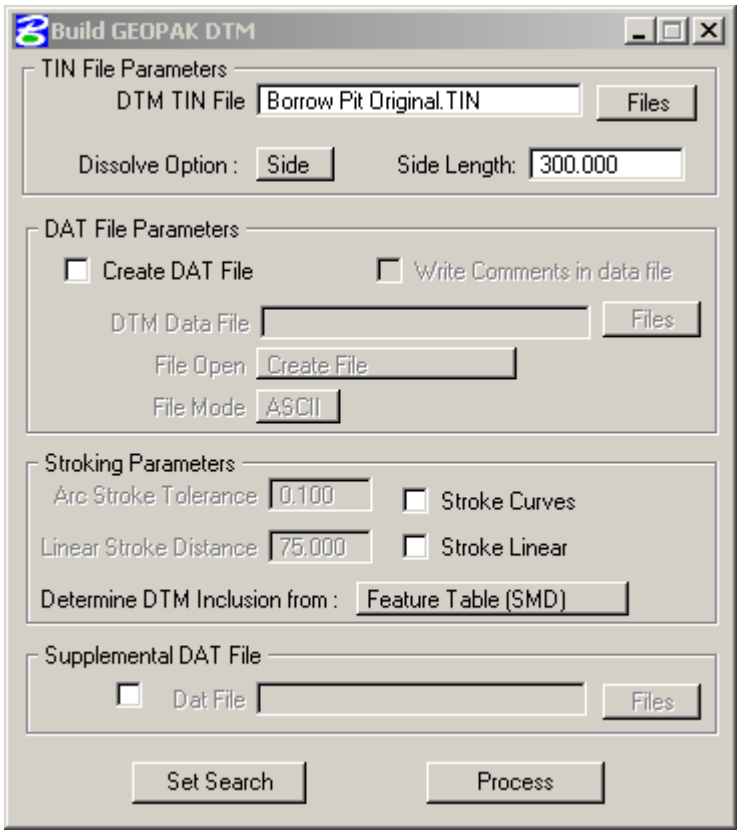
16) Do a MicroStation Fit View "**Fit View**" and the Borrow Pit Survey shots will appear.

17) Close down the **XYZ to Coordinate** dialog.

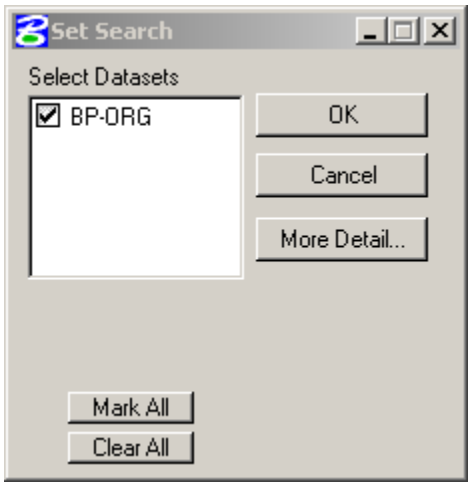
18) In the Survey menu bar select **DTM** > **Build DTM** > **From Survey Data**



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



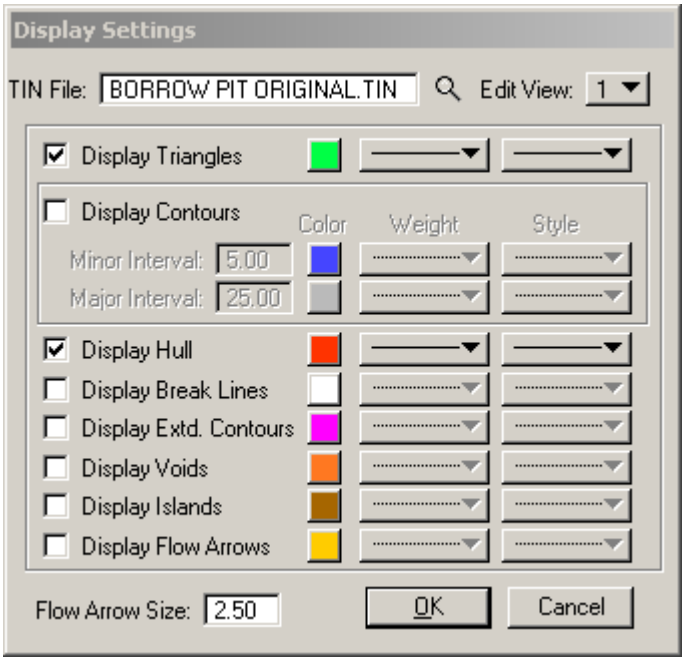
In addition, select "**Set Search**" and make sure "**BP-ORG**" is checked. If so select "**OK**".



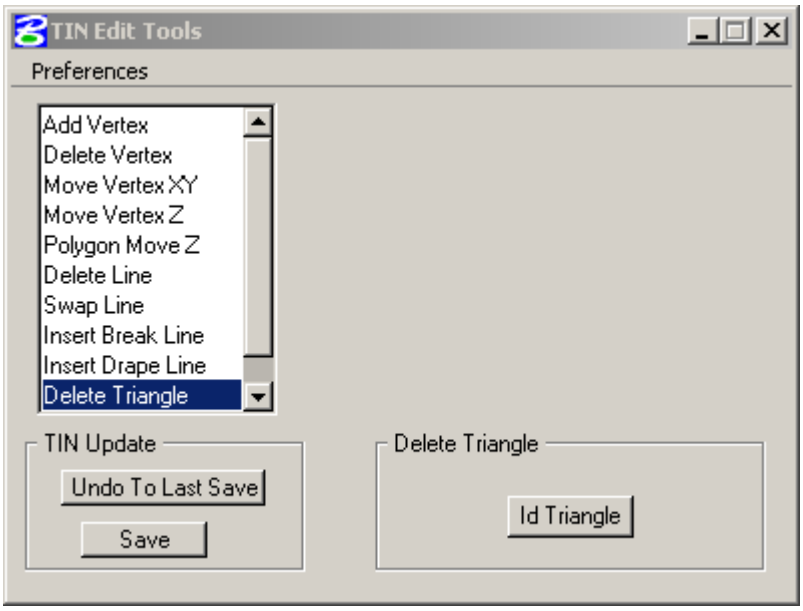
Select the "**Process**" button.

20) To View & Edit the new TIN file go to the Survey menu bar & select **DTM > Edit DTM**

Set the **Display Preferences** as below.

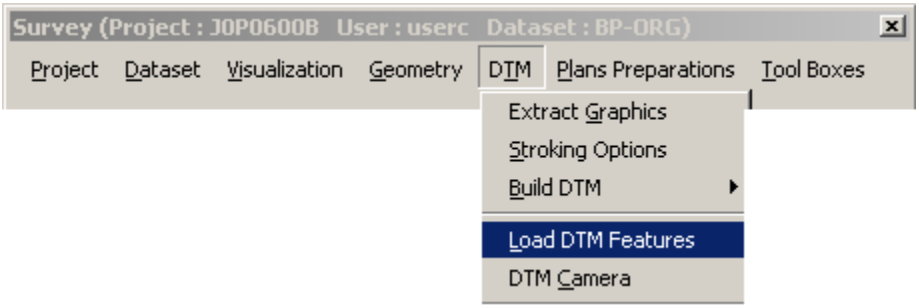


Use the **Delete Triangle** option and remove any Bogus Tin lines on the outside of the Tin.

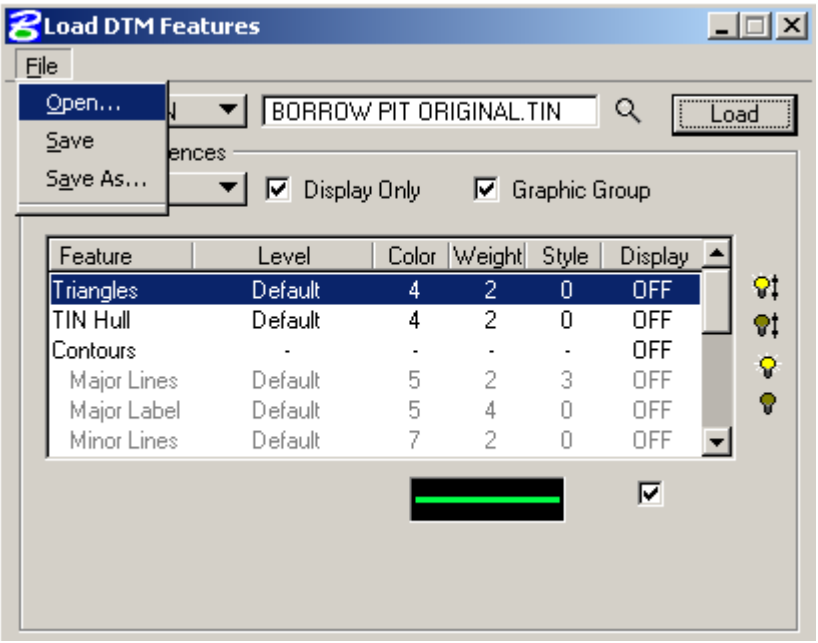


After deleting, the bogus tin legs select "**Save**" and **Close** the Tin Edit tools.

21) Next were going to plot the Tin Hull (boundaries) of the Borrow Pit Original Tin. To do this go to the Survey menu bar and select **DTM > Load DTM**

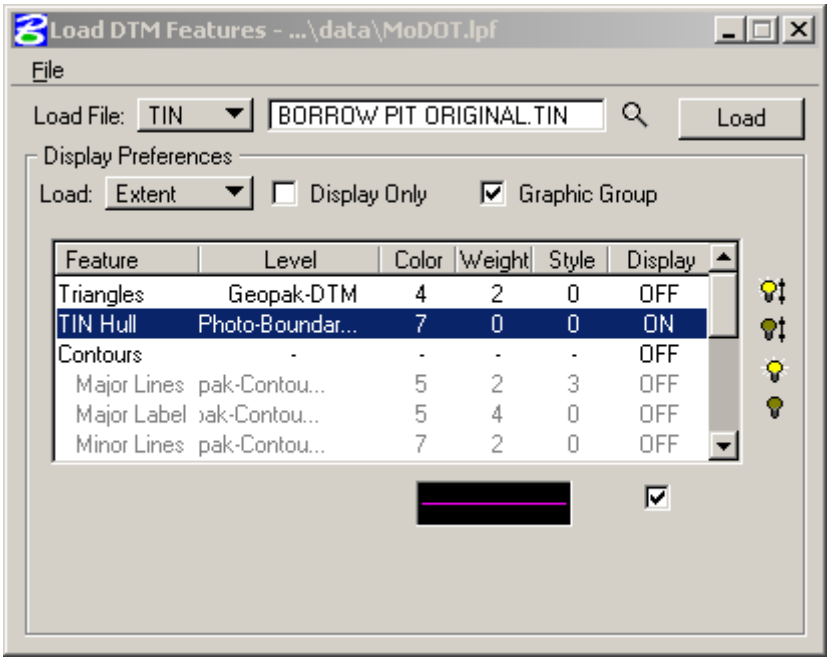


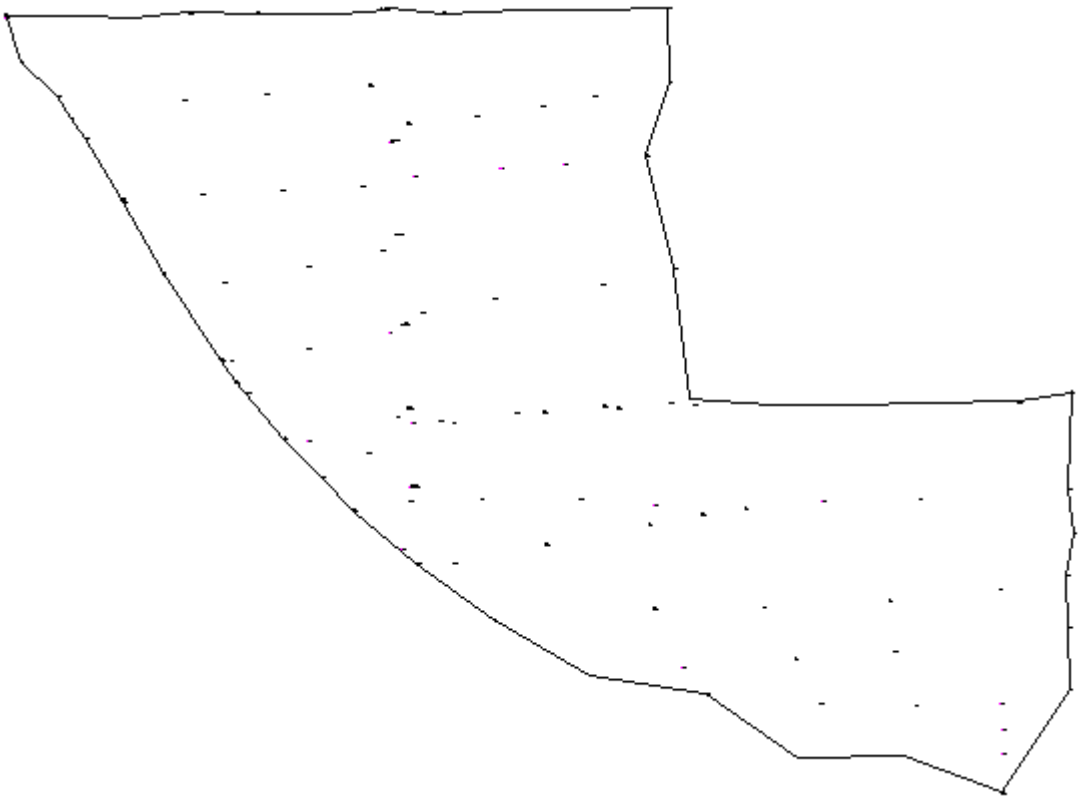
- Within the Load DTM Features set all the Feature Preferences by selecting **File > Open**



- Select the **MoDOT.LPF** that is located within the data folder.

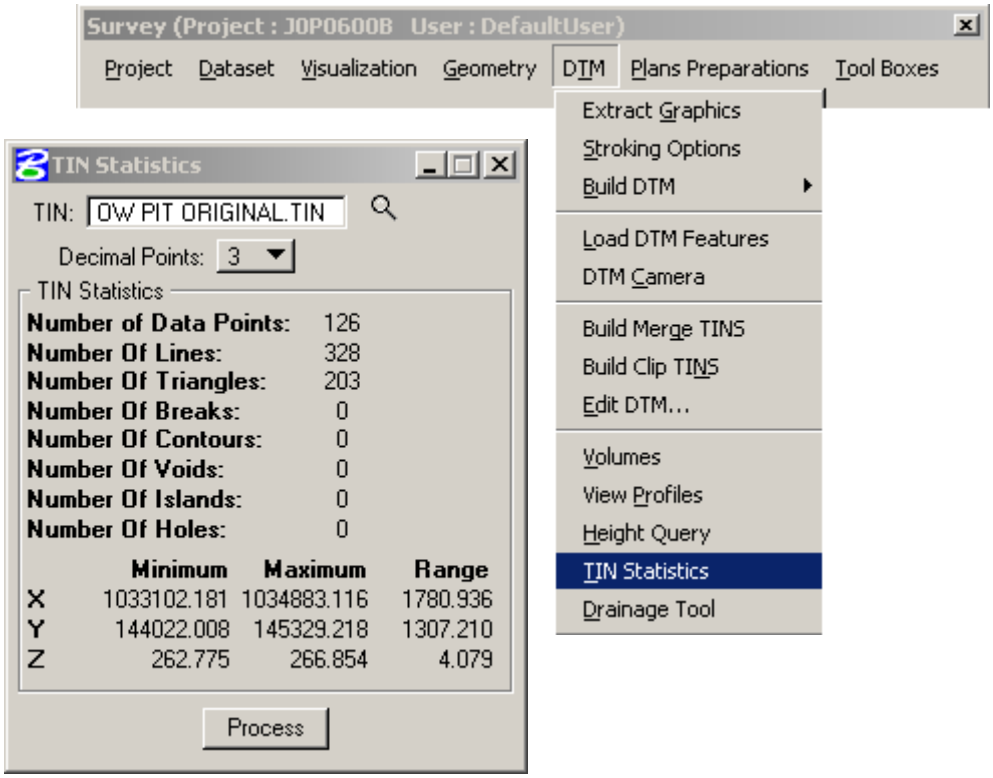
22) Set up the **Load DTM Features** dialog as below. Make sure that only **Graphic Group** is only checked on. We are only going to load the **Tin Hull** (outer boundaries) of the DTM.



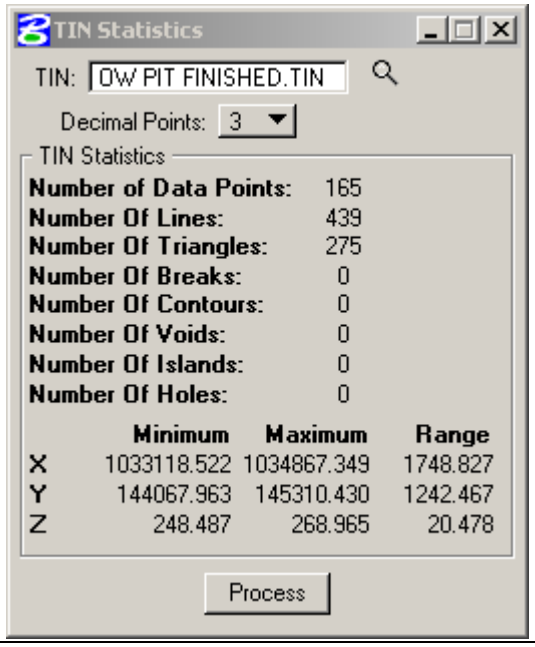


23) In the Survey menu bar select **DTM > Build DTM > From Survey Data**

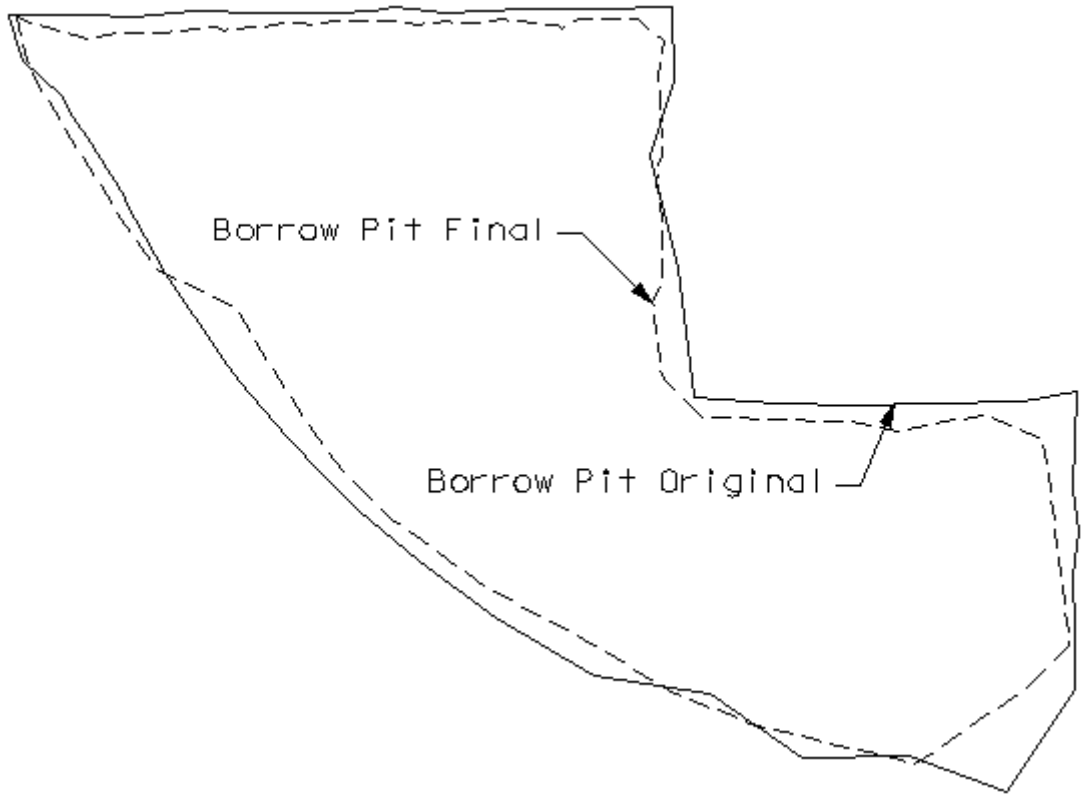
Select Borrow Pit Original



24) Repeat **steps 10 through 22** for the Survey file called **Borrow Finished.REC**

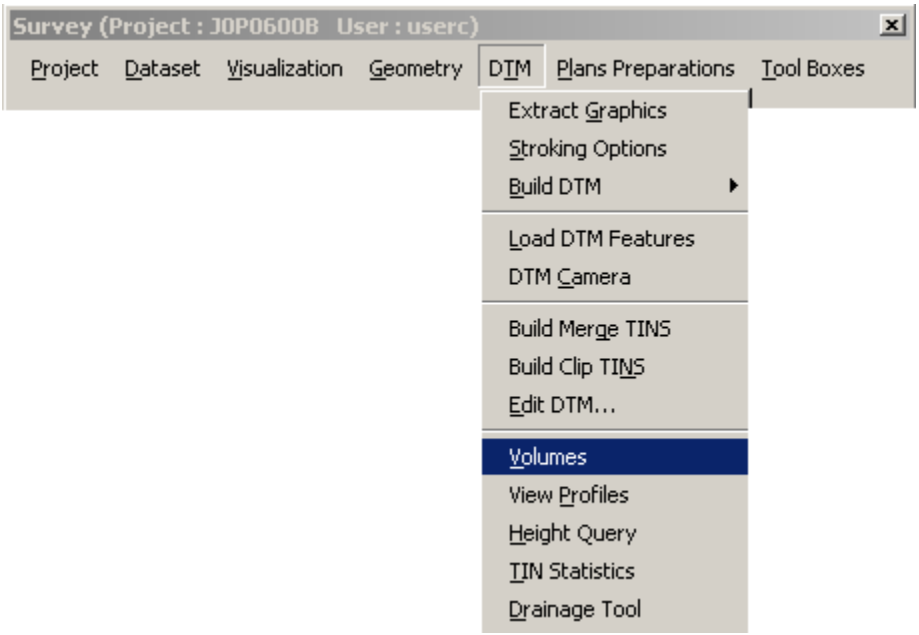


* 25) When you compare the Original and the Finished Tins, the Original Tin should completely enclose the Finished Tin. In our class example, this is not the case. In the areas where the Finished Tin is outside the Original Tin there will be no Earthwork calculated.

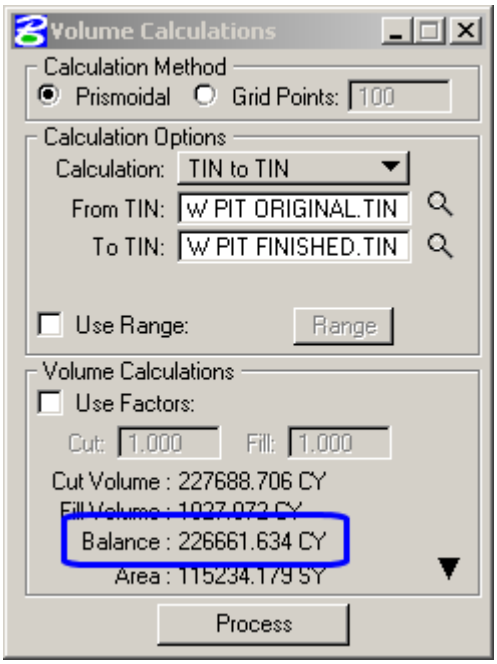


26) Now that we have the 2 tin files created we can now calculate the volume between them. To do this we'll need to use the DTM (Digital Terrain Model) Tools.

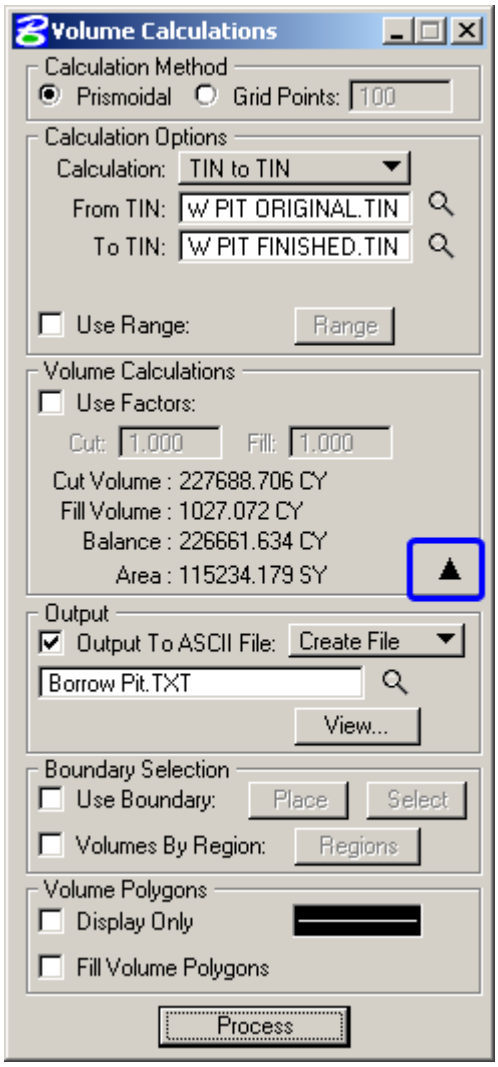
In the Survey menu bar select **DTM > Volumes**



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



28) To get a **Printout** of the Borrow Pit Volume, click on the down Arrow and toggle on "**Output**"




```
************************************************************************
**                                                                    **
** GEOPAK TIN to TIN Volume Report -- Sun Nov 20 17:14:42 2005
**                                                                    **
** From TIN <BORROW PIT ORIGINAL.TIN> to TIN <BORROW PIT FINISHED.TIN>
**                                                                    **
** Prismoidal Volume
**                                                                    **
**                                                                    **
************************************************************************
**                                                                    **
**  Total Cut =    227688.706 Cubic Yards
**  Total Fill =     1027.072 Cubic Yards
**  Area =         115234.179 Sq Yards
**  Balance =      226661.634 Cubic Yards
**                                                                    **
************************************************************************
```