

Exercise 17-1

This exercise uses the GEOPAK Earthwork tool to obtain a preliminary estimate of the earthwork on the job. Typically adjustments to the profile and the proposed cross sections are needed to refine the earthwork. Consequently earthwork needs to be run several times throughout the design of a project.

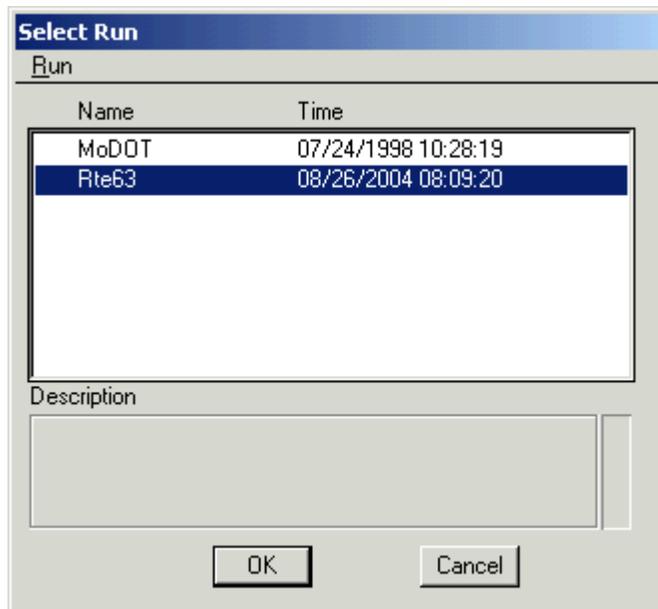
1. Open the MicroStation file
t:\de-proj\randolph\j2p0200\data\rte63_xs_j2p0200.dgn.

2. In the project **t:\de-proj\randolph\j2p0200\project\j2p0200.prj** (Job: cu1 and User: ClsUser), select the **Rte63** working alignment in the Road Project dialog.

3. Choose **Earthwork** from the **Project Manager** dialog.

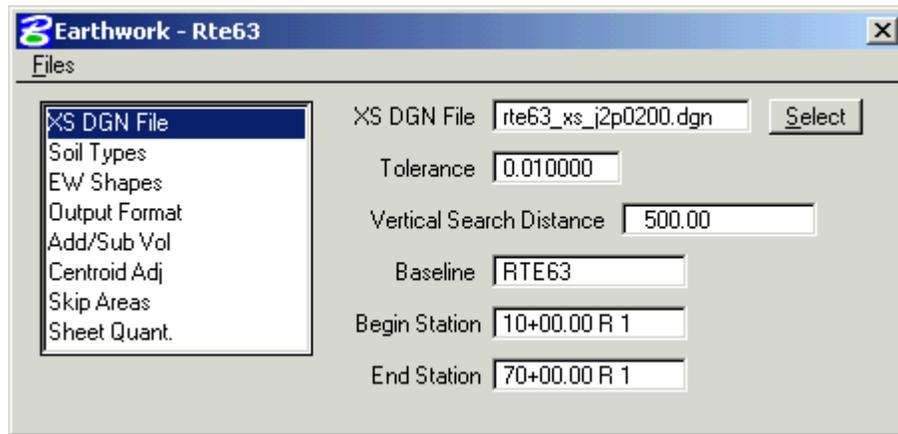


Copy the **MoDOT** run to **Rte63**, and open the **Rte63** run.



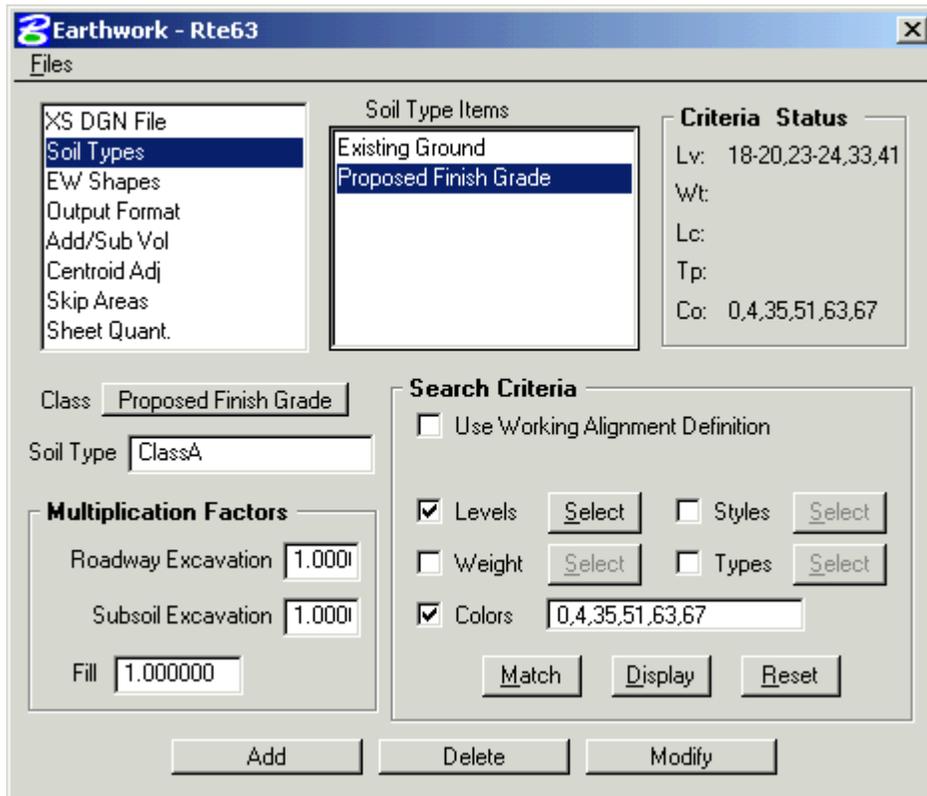
4. Be sure the following items are set in the **XS DGN File** section of the dialog:

XS DGN File **rte63_xs_j2p0200.dgn**
 Tolerance **0.01**
 Baseline **Rte63**
 Begin Station *First cross section*
 End Station *Last cross section*



5. In the **Soil Types** section create the following **Soil Type Items**.

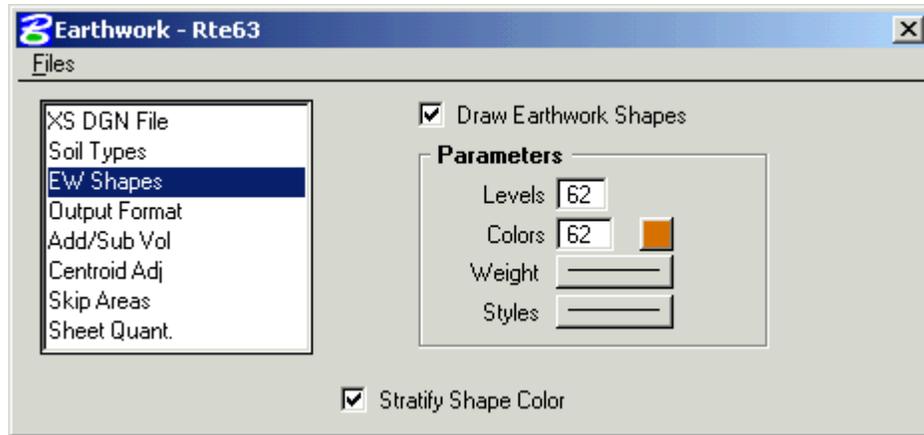
<u>Class</u>	<u>Soil Type</u>	<u>Search Criteria</u>	
Existing Ground	ClassA	Lv: 57	Co: 90
Proposed Finish Grade	ClassA	Lv:18-20, 23-24, 33, 41	Co: 0, 4, 35, 51, 63, 67



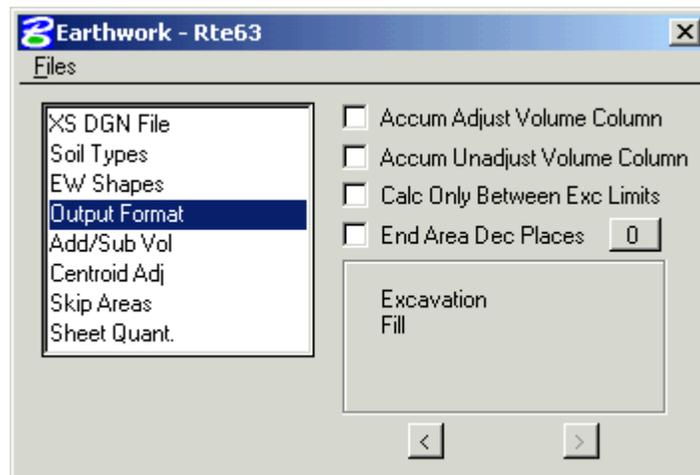
6. For the **EW Shapes** toggle on **Draw Earthwork Shapes** and **Stratify Shape Color**.

Set the following **Parameters**:

Levels **62**
 Colors **62**
 Weight **4**
 Styles **0 (Solid Line)**



7. Set the Output Format to **Excavation and Fill**.



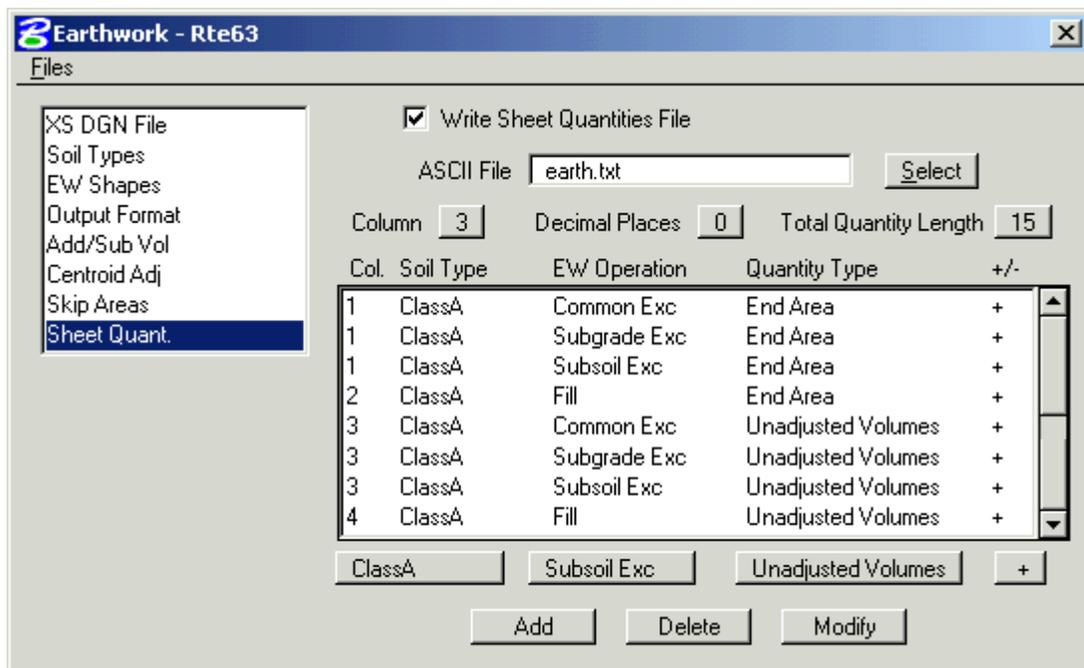
8. Leave the default setting for the following sections of the Earthwork dialog:

Add/Sub Vol.
Centroid Adj.
Skip Areas.

9. In the **Sheet Quant.** Section, toggle on the **Write Sheet Quantities File**.

ASCII file: **earth.txt**
 Decimal Places: **0** Total Quantity Length **15**

<u>Col.</u>	<u>Soil Type</u>	<u>EW Operation</u>	<u>Quantity Type</u>	<u>+/-</u>
1	ClassA	Common Exec	Endarea	+
1	ClassA	Subgrade Exec	Endarea	+
1	ClassA	Subsoil Exec	Endarea	+
2	ClassA	Fill	Endarea	+
3	ClassA	Common Exec	Unadjusted Volumes	+
3	ClassA	Subgrade Exec	Unadjusted Volumes	+
3	ClassA	Subsoil Exec	Unadjusted Volumes	+
4	ClassA	Fill	Unadjusted Volumes	+



10. **Save the settings** for the dialog.



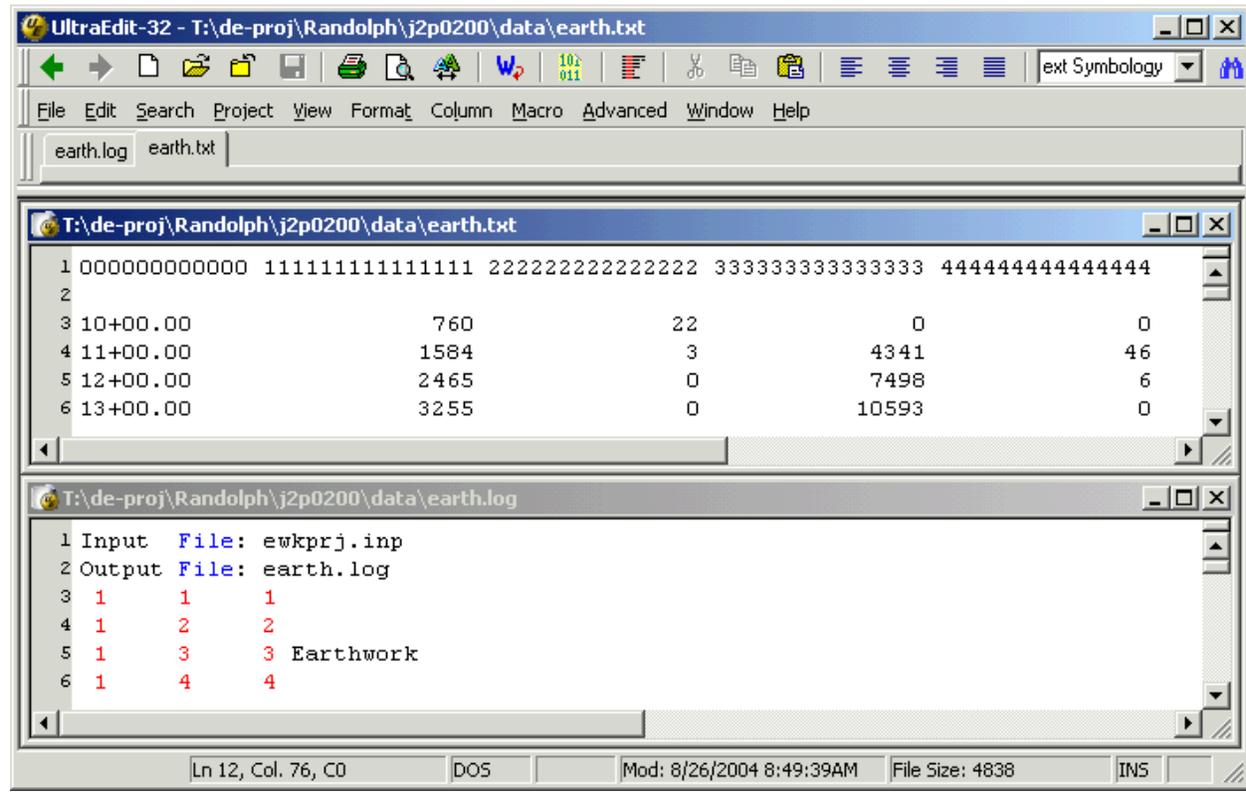
11. Run the earthwork.



Set the **Log File** option to **Log File**, and name the log file **earth.log**.

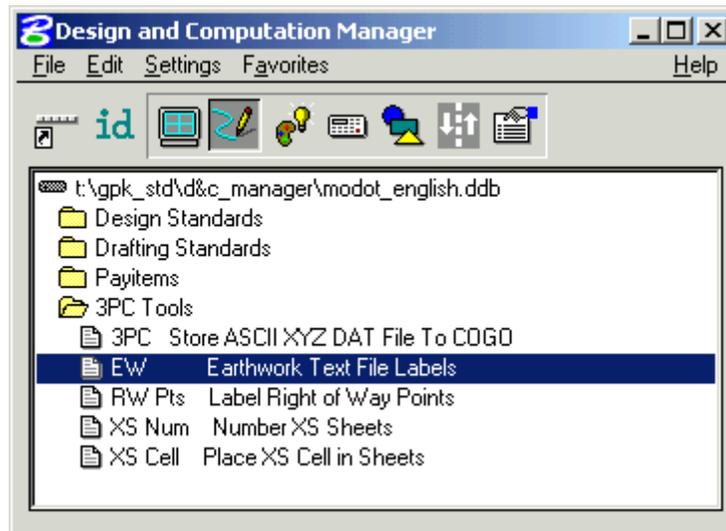


12. Review the **earth.log**, and the **earth.txt** files.

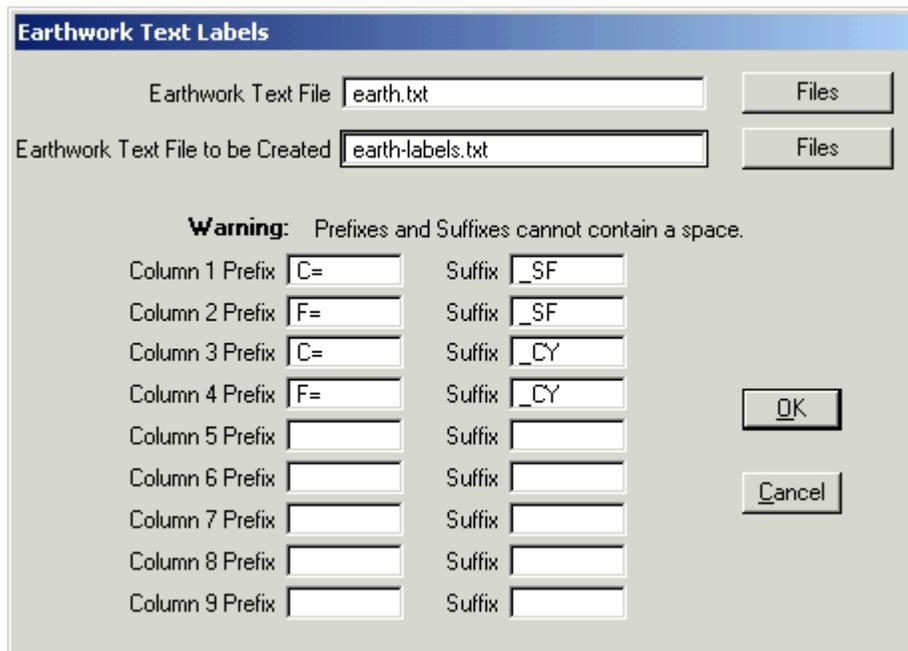


13. When Earthwork has finished running without errors exit the Earthwork run and save the settings.

14. To add the labels to the earth.txt file, open **Design and Computation Manager**. Navigate to **3PC Tools** and double click on **EW Earthwork Text File Labels** as shown in the following figure.



This will open the following dialog. Fill it out as shown and press OK. (**Note:** the file name **earth-labels.txt** needs to be typed in because it does not exist yet.)



15. Review the **earth-labels.txt** file.