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Eagle Point Solution to a Frequently Asked Question

How to Create an Original Ground Surface Model

Summary:

This document explains the process of creating a original ground surface model, placing contours, adding breaklines, locking the surface model to protect it, and plotting the contours.

Product: Eagle Point Software™ 2001

Release: 2001 Q4 or 1.4.0 and greater

Platform: All

Related documents: *How to Import Points into Eagle Point*

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As always, should you have any questions regarding any phase of installation, contact Eagle Point Technical Assistance at (800) 477-0909.

Eagle Point Steps Using the NRCS/EP Customized Menu

Notation Method

Button to Press *Displayed Text* Icon Action {Text to Enter} Menu Item...

Preparing Surface Model Settings for Original Ground

1. From AutoCAD, click *NRCS/EP... Create Contours... Manage Surface Model....*
2. Click the **New Surface Model Icon**. This brings up New Surface Model box.
3. Click on the **Library icon** (looks like books on a shelf) and select the *Original Ground* surface model. Click Load Prototype. Click Yes. Click Close.
4. Input a Description name. E.g. {Ognd}, which would represent original ground.
5. Once you have settings done click OK.
6. Click Close to close out Manage Surface Models.

Draw a Boundary for the Surface Model

1. In AutoCAD, click on the **Layer Manager Icon**.
2. Set the *1.Brdr* layer to current.
3. Click OK close out of Layer Manager.
4. Click **Polyline** and draw a border around outside of the survey points without snapping to the points. To close the line cleanly, type {C} and press Enter. This will represent an outer limit for the surface model.

Creating a Surface Model for Original Ground

1. From AutoCAD, click *NRCS/EP... Create Contours... Triangulate Surface Model....*
2. Pull down the name. E.g. *Ognd*.
3. Pull down to set boundary line to *Select*.

4. Place a checkmark by *Display Model* if you want to see a temporary set of triangulation. Place a checkmark by *Place Triangles* if you want to have triangulation objects placed into the drawing.
5. Click Apply. [When repeating this step (like adding breaklines) a TIN message box appears just click YES to overwrite.] Pay attention to your AutoCAD command lines as you continue.
6. Use AutoCAD selection methods to pick the objects to triangulate. One way to do this is by drawing a selection window. Once objects are selected press the Enter key.
7. The command line should now ask you to select boundary. Select boundary by clicking with your mouse the border.
8. Click Close on the Triangulate Surface Model.

Placing the Contour Lines into CAD

1. From AutoCAD, click *NRCS/EP... Create Contours... Make Intermediate & Index...*
2. Click Settings and verify or change the contour interval. Click OK.
3. Usually no checkmarks are placed in any of the boxes.
4. Click Apply. Contours will appear in CAD.
5. Click Close.
6. Review the contours and determine if you want to add breaklines.

Adding Labels for Contours

1. From AutoCAD, click *NRCS/EP... Create Contours... Annotate...*
2. Verify the correct surface model.
3. Click Annotation Settings.
4. Pull down Annotation Location to *Middle* and checkmark *Break Contour*. Checkmark Annotation Direction as *Uphill/Downhill*.
5. Click OK.
6. Method is usually *Crossing*.
7. Click Apply.
8. Click in CAD to select the starting point of the string of contour labels. Start at a lower elevation to get the text rotation correct.
9. Click the ending point for the line of labels near the higher elevation.
10. If the contour labels are not what you want, use the AutoCAD **Undo Icon** multiple times to return back to the unlabeled contour lines.
11. Click Close.

Adding Breaklines to Get More Realistic Contours

1. In AutoCAD, click on the **Layer Manager Icon**.
2. Select the *V.Brkl* or *V.Brkl.Flow.Line* or *V.Brkl.Bank* layer. Set to Current.
3. Click OK close out of Layer Manager.
4. Right click the **Osnap Status**. Click *Settings...* and checkmark only *Node* and *Object Snap On*. Click OK.
5. Draw breaklines using AutoCAD **3D Polyline** and snap to the nodes.
6. From AutoCAD Click *NRCS/EP... Create Contours... Erase Existing Objects...* **Note: Eagle Point cannot erase objects that are on frozen or locked layers.**
7. Checkmark *Contours* and any other items that have been placed into CAD. Click Apply.
8. Repeat Creating a Surface Model and Placing the Contour Lines.

Locking a Surface Model to Protect It

Lock the EP data for the surface model.

1. From AutoCAD, click *NRCS/EP... Create Contours... Manage Surface Models...*
2. Click on the correct surface model name. E.g. *Ognd*.
3. Click the **Lock Icon**. This will protect the EP surface model.
4. Click Close.

Lock the layers of the CAD graphics.

5. In AutoCAD, click on the **Layer Manager Icon**.
6. Select the contour layers. E.g. *C.Topo.Ognd.Indx* and *C.Topo.Ognd.Intr* layer. Click the *Lock* column.
7. Click . The graphics in CAD are locked. You will not be able to use the *Break Contours* method of labeling the contours if the layer is locked.

Plotting Contours

Refer to *How to Import Points into Eagle Point* for Plotting the Survey Points Using AutoCAD Paperspace in combination with Selecting Layers to Not Plot Within a Viewport.

Submitted by Norman Friedrich.