

<p><b>Notation Method</b></p> <p><b>Button to Press</b> <i>Displayed Text</i> <b>Icon</b> <u>Action</u> {Text to Enter} <i>Menu Item...</i></p>
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### Inserting Georeferenced images

Insert an Ortho photo first and a USGS map second.

1. In AutoCad, click on the **Layer Manager Icon**.
2. Set the *I.Doqs* layer to current for Ortho photos or *I.Drgs* for USGS maps.
3. Click **OK** close out of Layer Manager.
4. From AutoCAD Click *Map... Image... Insert...*
5. Browse to the image file- usually located in the G: drive (geodata). E.g.  
*G:\doqqs\highlandvilleNE.tif*. DOQ photos by quarter quadrangle name. USGS drgs by lat/long/row/column name. *G:\drgs\43093\o43093c7.jpg*.
6. Checkmark Modify Correlation.
7. Click **Open**.
8. Pulldown Units for Insertion Point to *Meters*.
9. Click **OK**.
10. For USGS drgs: Select the image. Right click. Click *Properties*. Pulldown transparency to *Yes*. Click transparency color **...** Click **Select <** . Select the color in the image that you want to have be transparent. Click **OK**.

### Displaying a limited portion of an Image

1. In AutoCad, select the image.
  2. Pulldown *Modify... Clip... Image...*
  3. Input {N} for New. Press Enter
  4. Input {R} for Rectangular. Press Enter
  5. Click Upper left corner of your planned image display.
  6. Click Lower right corner of your planned image display.
- If image is on top of objects: Select the image. Click *Tools... Display Order... Send to back...*

### Preparing the Surface Model Settings of a Digital Elevation Model

A Digital Elevation Model (DEM) is a good planning tool. It is based on points located every 30 meters in a grid.

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 *Digital Elevation Model* surface model. Click **Load Prototype**. Click **Yes**. Click **Close**.
4. Input a Description name. E.g {DEM}, 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 DEM Surface model

If you want a limited area for the DEM surface model to be created, create a boundary.

1. In AutoCad, click on the **Layer Manager Icon**.
2. Set the *I.Brdr* layer to current.
3. Click **OK** close out of Layer Manager.
4. Click **Polyline** and draw a border around the area being planned. To close the line cleanly, type {C} and press **Enter**.

### Creating a Surface model for a DEM

1. From AutoCAD Click *NRCS/EP... Create Contours... Triangulate Surface Model...*
1. Pulldown the name - for example *DEM*.
2. Pulldown to set boundary line to *Select* if you are using a boundary to limit the area used for the DEM.
3. You will probably not want to *Display Model* or *Place Triangles* because of the large area of the DEM.
4. Checkmark Use External Point Files.
5. Click **Build File List**
6. Click **New External File**
7. Browse to the file name: E.g. *G:\IaDEM\43093\o43093c7.txt*.
8. Pulldown X,Y,Z, Description.
9. Click **OK**
10. Click **Close**
11. Click **Apply**.
12. The external data points will be used. Usually no CAD objects will need to be selected. Press **enter**.
13. If you have chosen to use a boundary, the command line should now ask you to select boundary. Select boundary by clicking with your mouse the border.
14. 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. Recommended settings: Smoothing {0}, Polynomial {0}, Intermediate {4}, Index {20}, Construction Method *LWpolylines*. Changing these can increase processing time excessively. 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.