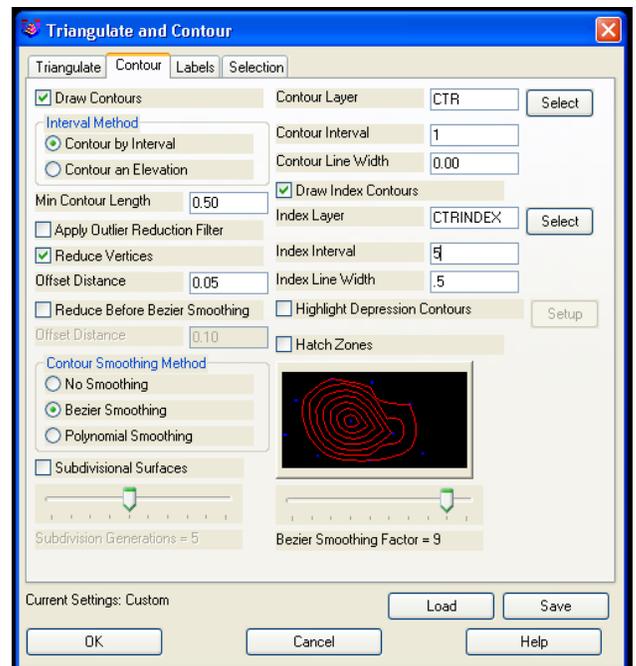
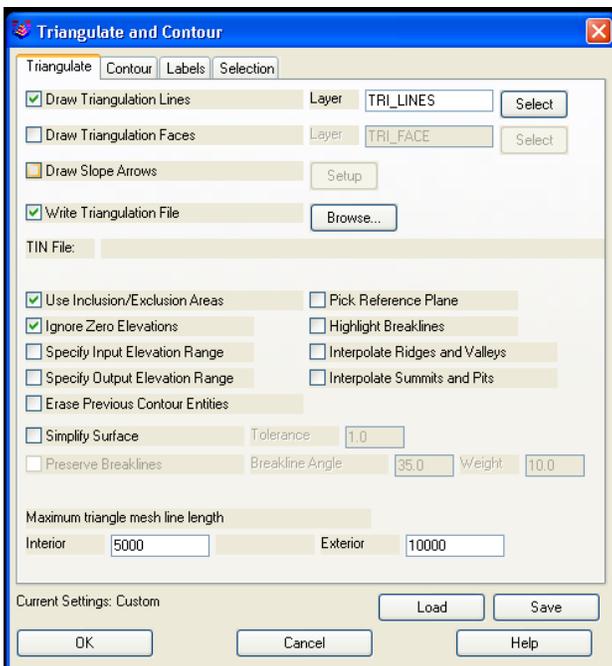


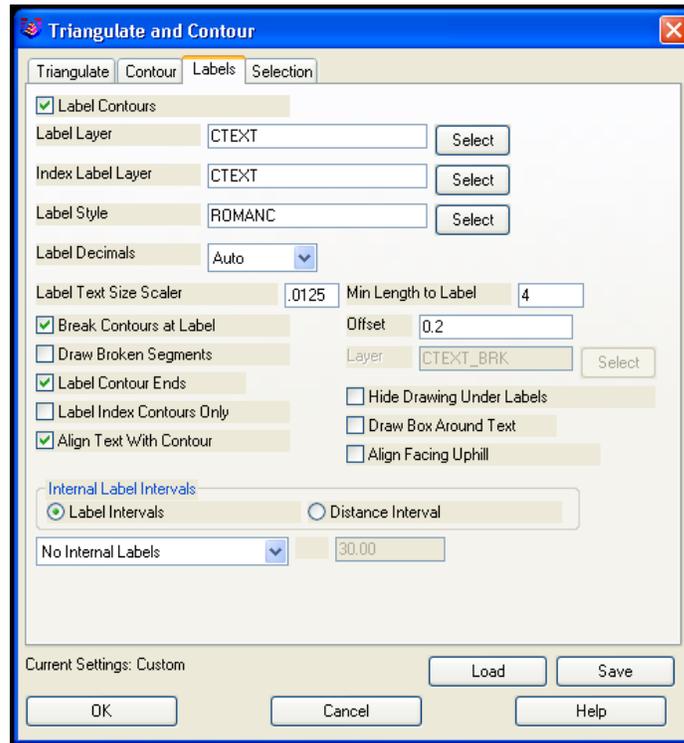
## Creating Contours

Contours can be created once the points are downloaded, boundary lines created, and break lines drawn. It's a good idea to draw in the buildings and other features now before the contours are drawn. During these instructions any Carlson module can be used (civil or survey). Remember to save your drawing!

- 1) Isolate the layers: **points, boundary lines, break lines.**
  - a) **View Menu** → **Isolate**
  - b) Select objects listed above to isolate and press “**enter**”
  
- 2) Draw contours: **Surface Menu** → **Triangulate & Contour**. A box will appear.
  - a) Under the triangulate tab check the **Write Triangulation File** box. Save the file. By creating a triangulation file (tin file) commands can easily be used to figure volumes and profiles.
  - b) Under the following tabs: triangulate, contour, and labels. Check the boxes that are in the figures below. Depending on your preference different options can be checked and unchecked. When the contour by interval is check, specify the contour interval and index interval.
  - c) The selection tab controls what type of entities Triangulate and Contour uses. This is generally left turned off.
  - d) Once everything is checked click “**OK**”.



**NRCS**  
**Pennsylvania**  
Carlson/AutoCAD 2008 Instructions



- e) At the command line you will be prompted to select the inclusion perimeter. Select the inclusion boundary line and hit **enter**.
- f) Next you're prompted for the exclusion perimeter, if you have any select them and hit **enter**, or hit enter for none.
- g) The command line will prompt you to select the points and breaklines. Do this by typing **all** enter. \*Only use "all" if the points and breaklines you wish to contour are turned on, otherwise manually select the points and breaklines.\*

```
Select the Inclusion perimeter polylines or ENTER for none.  
Select objects: 1 found  
Select objects:  
Select the Exclusion perimeter polylines or ENTER for none.  
Select objects:  
Select the points and breaklines to Triangulate.  
Select objects: Specify opposite corner: 522 found, 173 groups
```

- 3) The map should now be contoured. Check the contours immediately for accuracy if an error log appears find and zoom to the error and fix. Generally errors reported include Crossing Breaklines, Vertical Edges, and Breakline T-Intersections. If the error can't be found or fixed, recreate the contours.