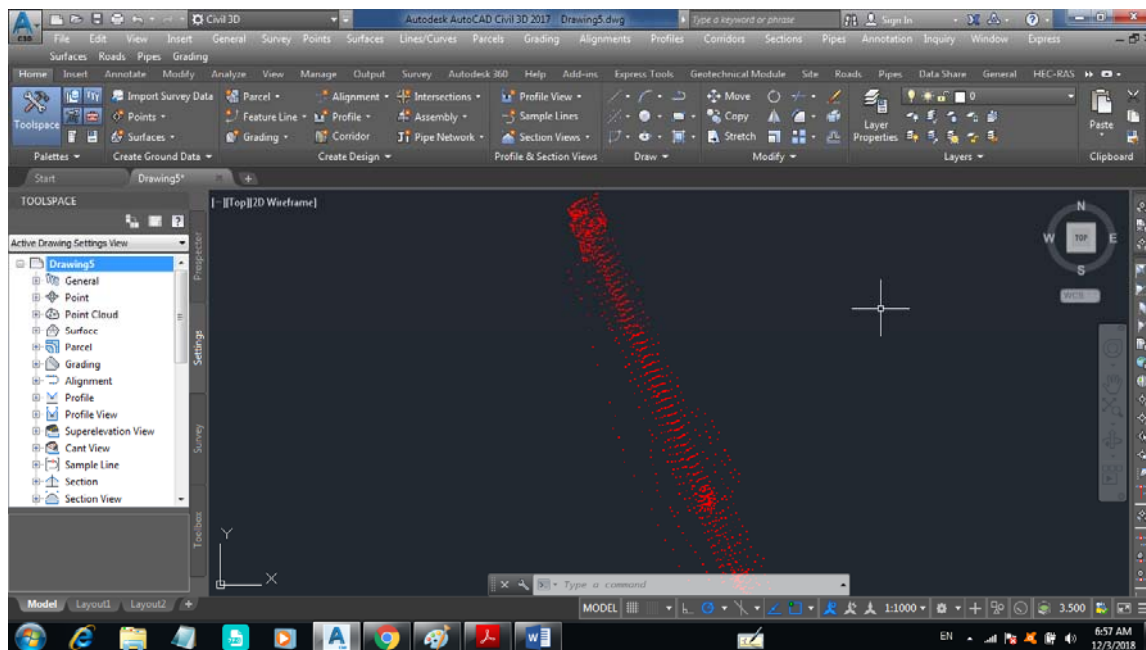


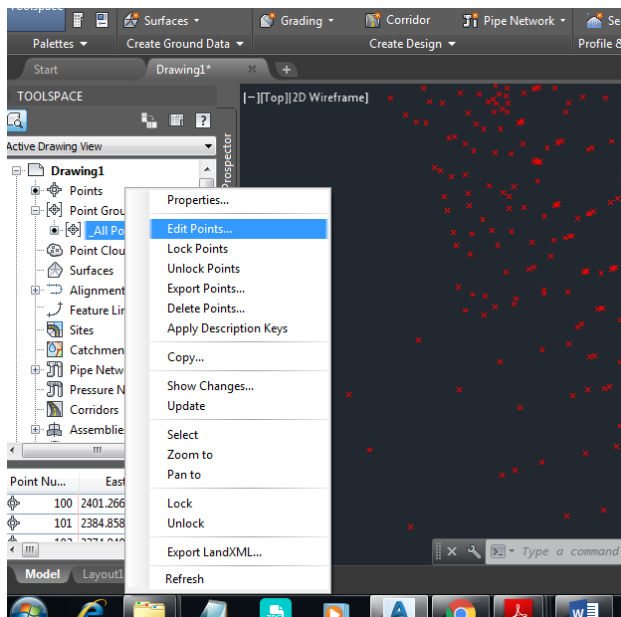
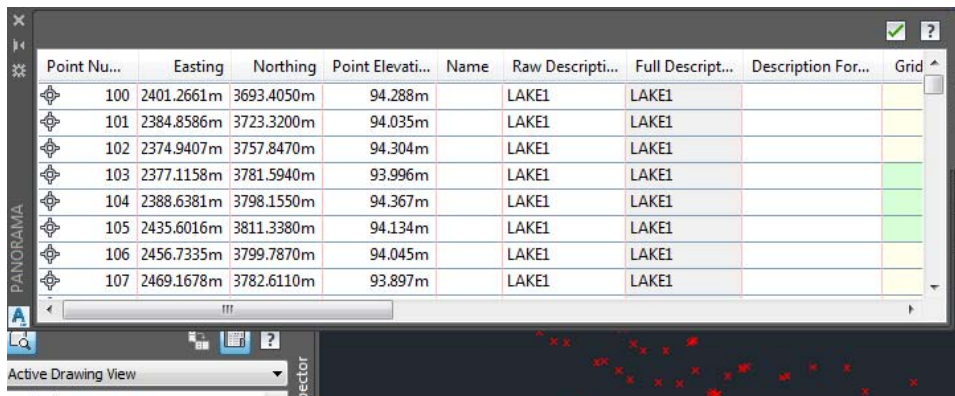
To show your inserted point, write ZE in the command line then press enter. This will show your points on screen as shown below.



### 3.1 Editing point presentation

#### 3.1.1 Editing point information

You can edit the points information such as coordinates, description.... etc. This can be done by right clicking on point group then select edit point. A new window will appear enabling you to edit the related information as shown in figure below.

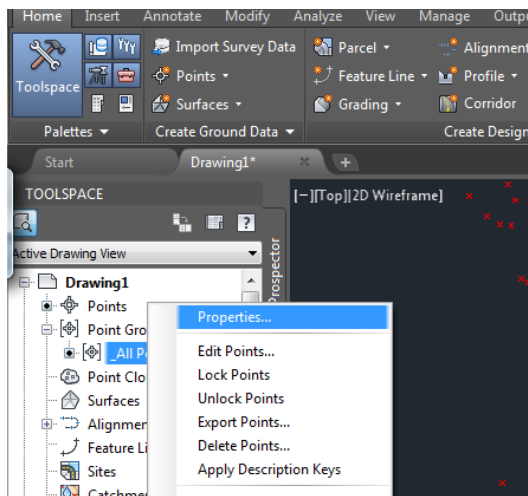



The screenshot shows the 'Point Editor' table, which displays a list of points with their coordinates, elevations, and descriptions. The table has columns for Point Number, Easting, Northing, Point Elevation, Name, Raw Description, Full Description, Description For, and Grid. The data is as follows:

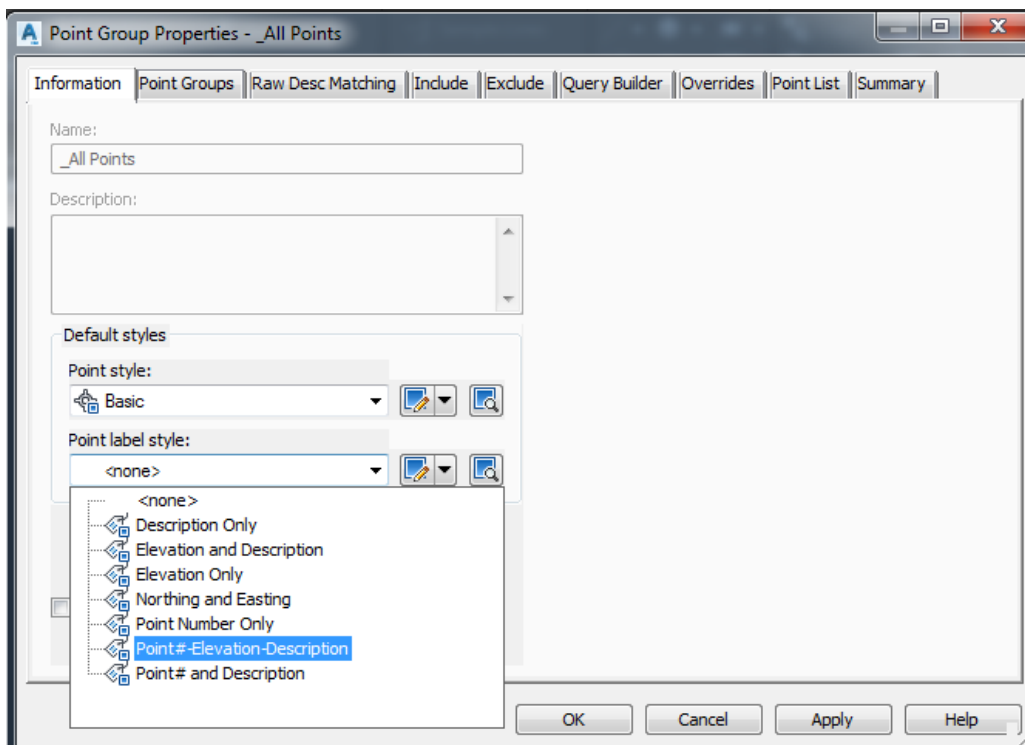
Point Nu...	Easting	Northing	Point Elevati...	Name	Raw Descripti...	Full Descript...	Description For...	Grid
100	2401.2661m	3693.4050m	94.288m		LAKE1	LAKE1		
101	2384.8586m	3723.3200m	94.035m		LAKE1	LAKE1		
102	2374.9407m	3757.8470m	94.304m		LAKE1	LAKE1		
103	2377.1158m	3781.5940m	93.996m		LAKE1	LAKE1		
104	2388.6381m	3798.1550m	94.367m		LAKE1	LAKE1		
105	2435.6016m	3811.3380m	94.134m		LAKE1	LAKE1		
106	2456.7335m	3799.7870m	94.045m		LAKE1	LAKE1		
107	2469.1678m	3782.6110m	93.897m		LAKE1	LAKE1		

### 3.1.2 Editing point presentation style

Sometimes you need to show specific information with points such as their coordinates, descriptions or elevations. AutoCAD civil allow you to show any type of information y as a part of points presentation. This can be done by pressing right click on point group (or specific point group) then select properties as shown in figure below.

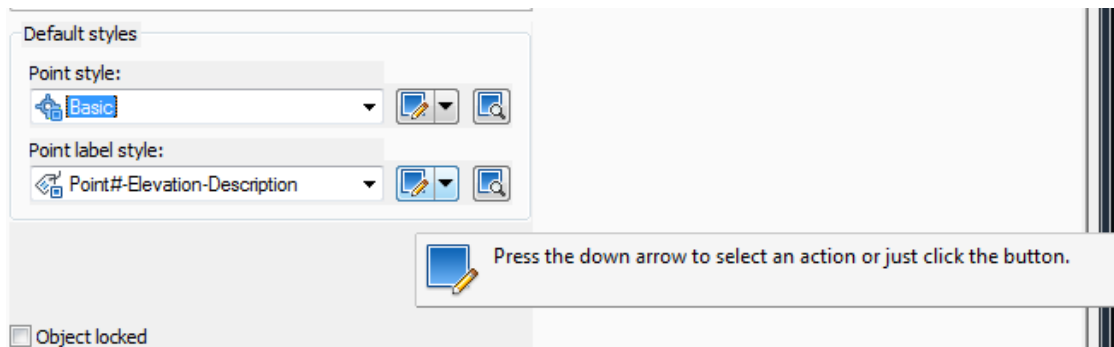


A new window will appear enabling you select the suitable point presentation style as shown in figure below. Then, press apply.....Ok. You will note the change in the point presentation on screen.

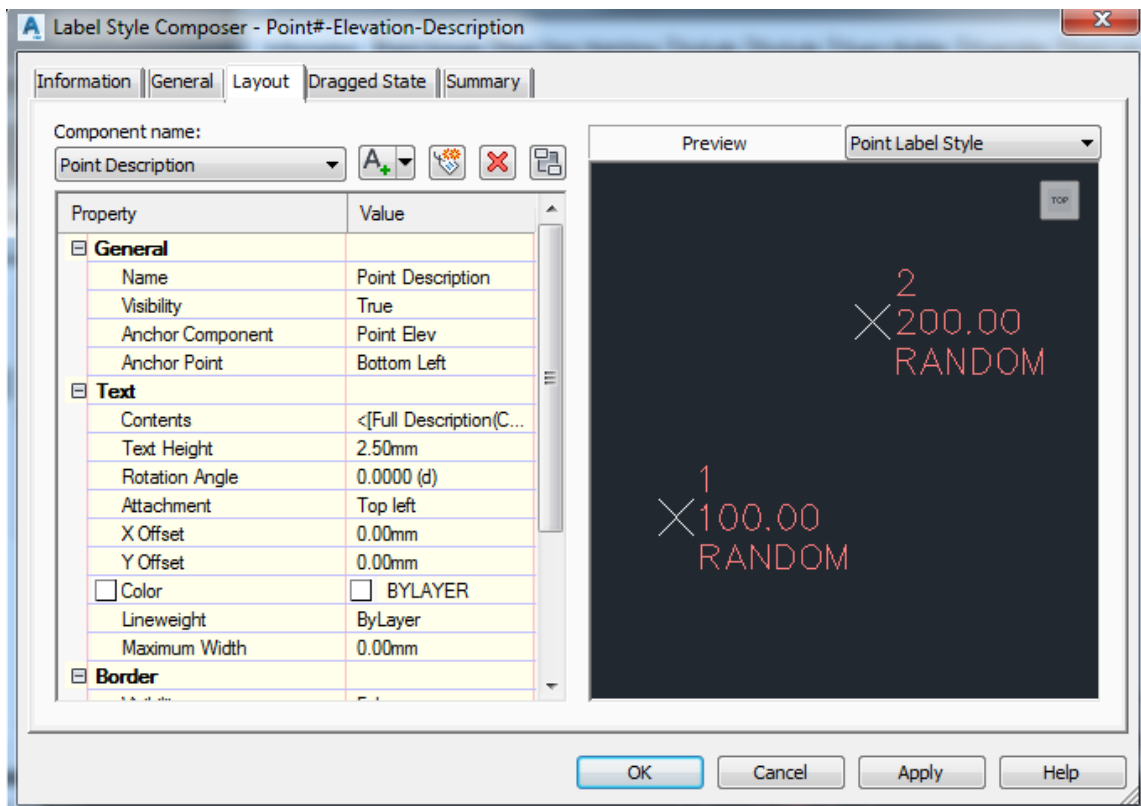


### 3.1.3 Editing point presentation height

This can be done by right clicking on point group-----choose properties -----then press the icon shown below.

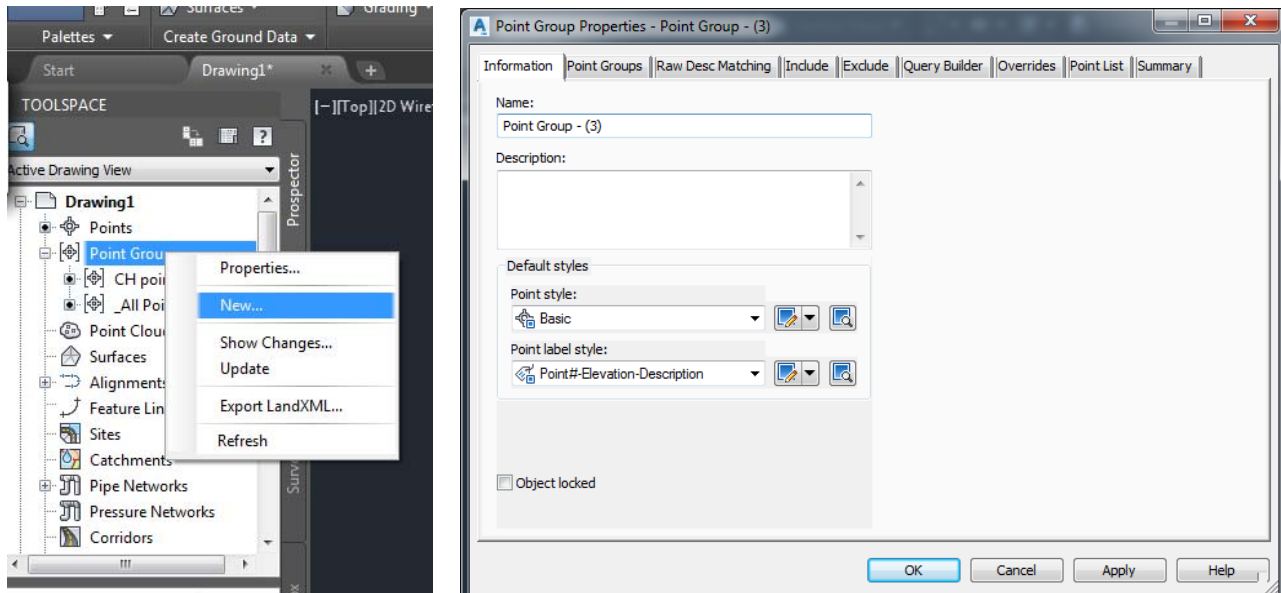


A new window will appear enabling you to edit text height for each presentation component.



### 3.1.4 Creating point groups

Right click on point group----- new-----then specify name and required setting for your new group



### 3.1.5 Deleting points

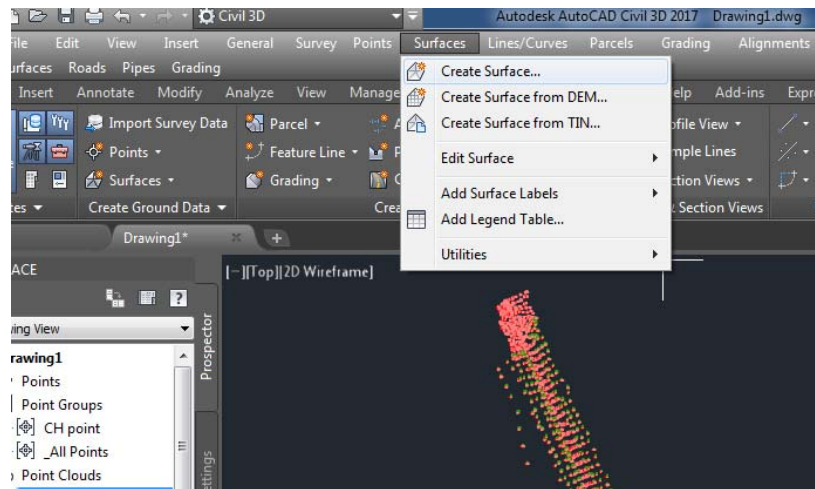
You can use AutoCAD commands to add, move or delete points from your drawing.

## 4 Surfaces

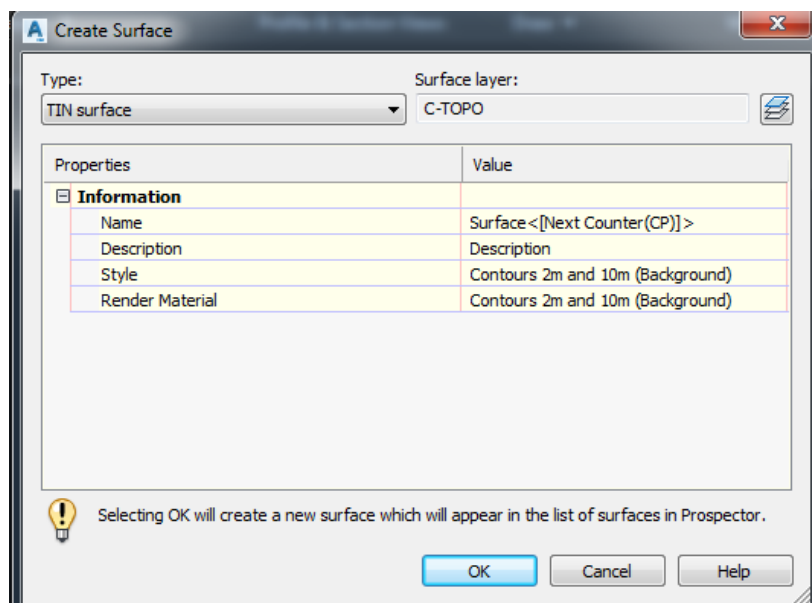
Surface in Civil 3D relates different surveying points in such way that each internal point with the surface can be found by the software.

### 4.1 Creating surface in Civil 3D

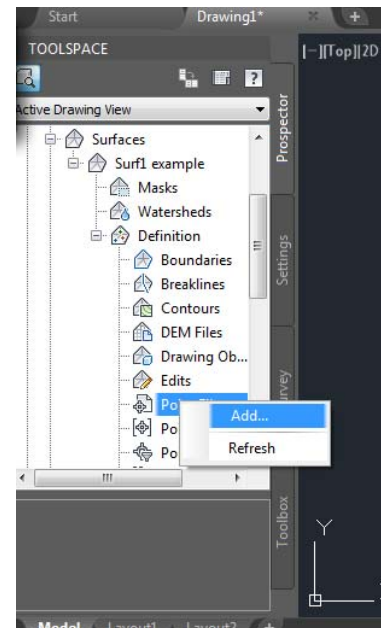
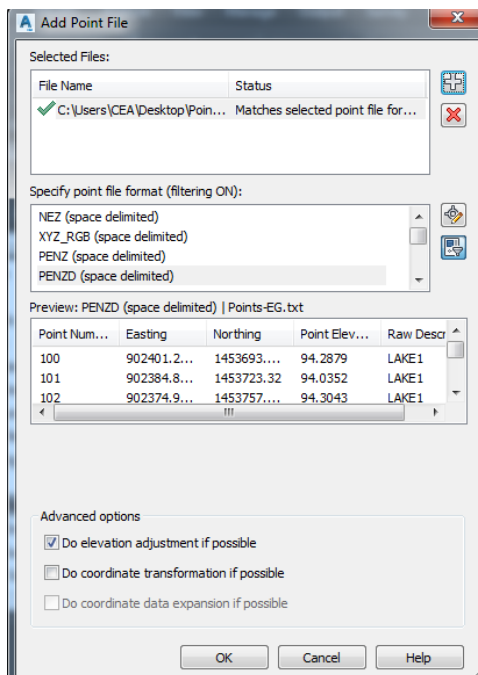
From menu bar choose surface---new surface as shown in figure.



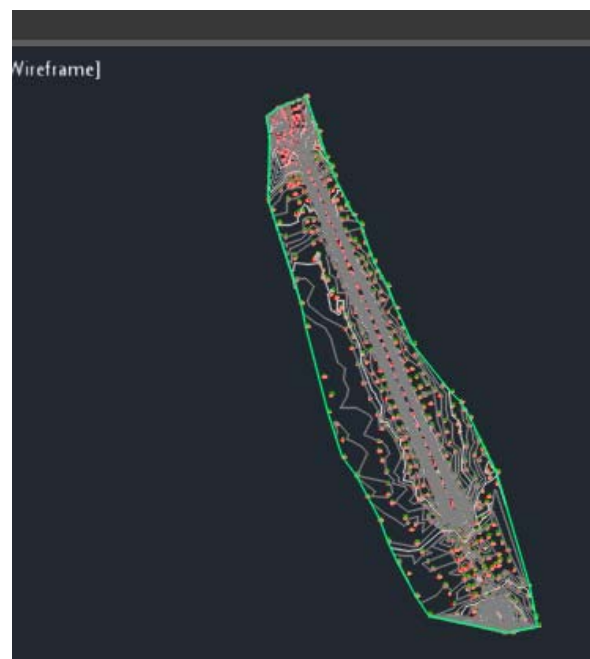
A new window will appear allow you to select a proper name and presentation style as shown in figure.



To add the point file to the surface choose the plus sign located before the surface name then expand the option then right click on points file (under point definition) as shown in figure. Then a new window will appear as shown below as discussed before.



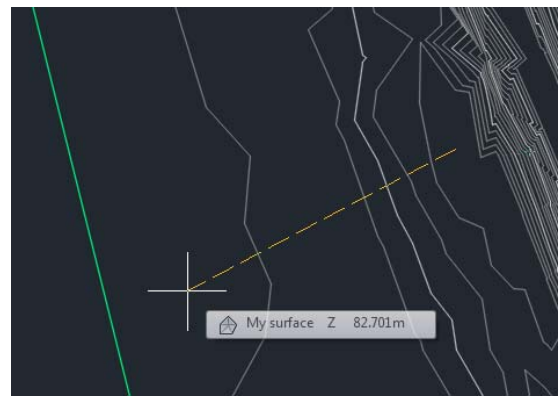
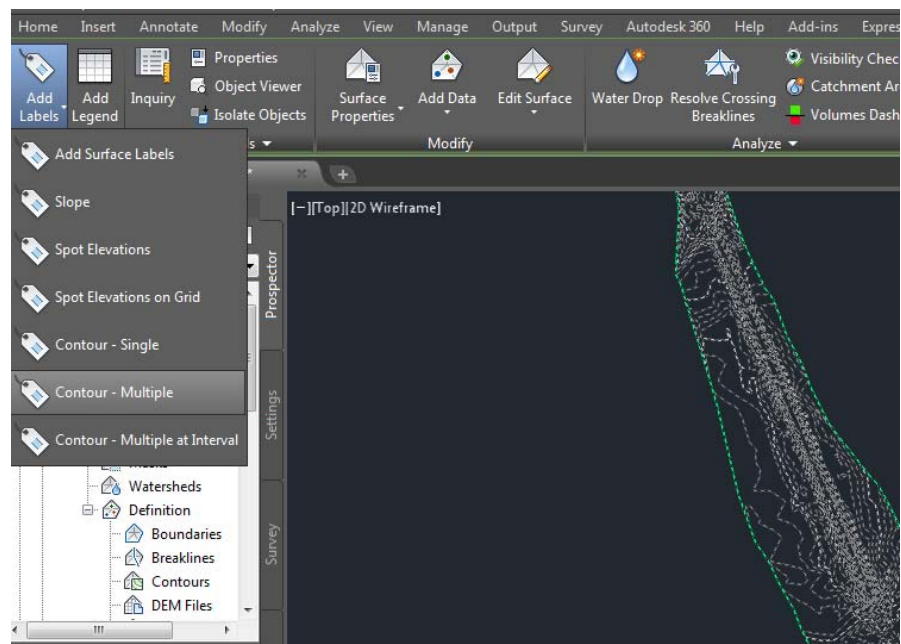
After file definition, the countour map will appear as shown in the figure



### 4.2 Editing surfaces

#### 4.2.1 Annotating contour lines

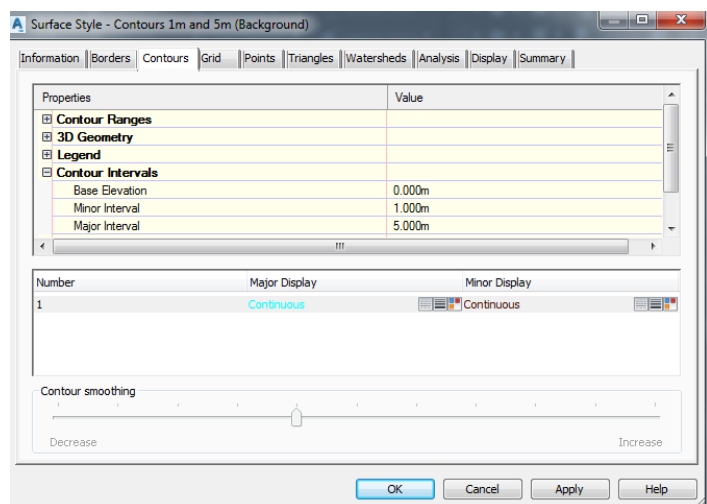
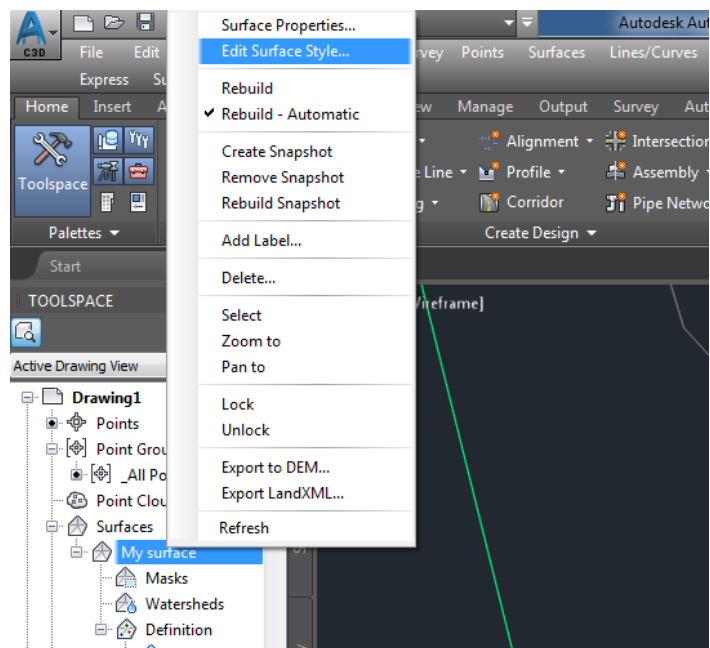
To add labels to the contours of the surface you should first select the current surface. This will change ribbons to the types related to surfaces. Click on Add Label ribbon and then select *Contour Multiple*. Finally, draw a line across the contours you want to add labels to them





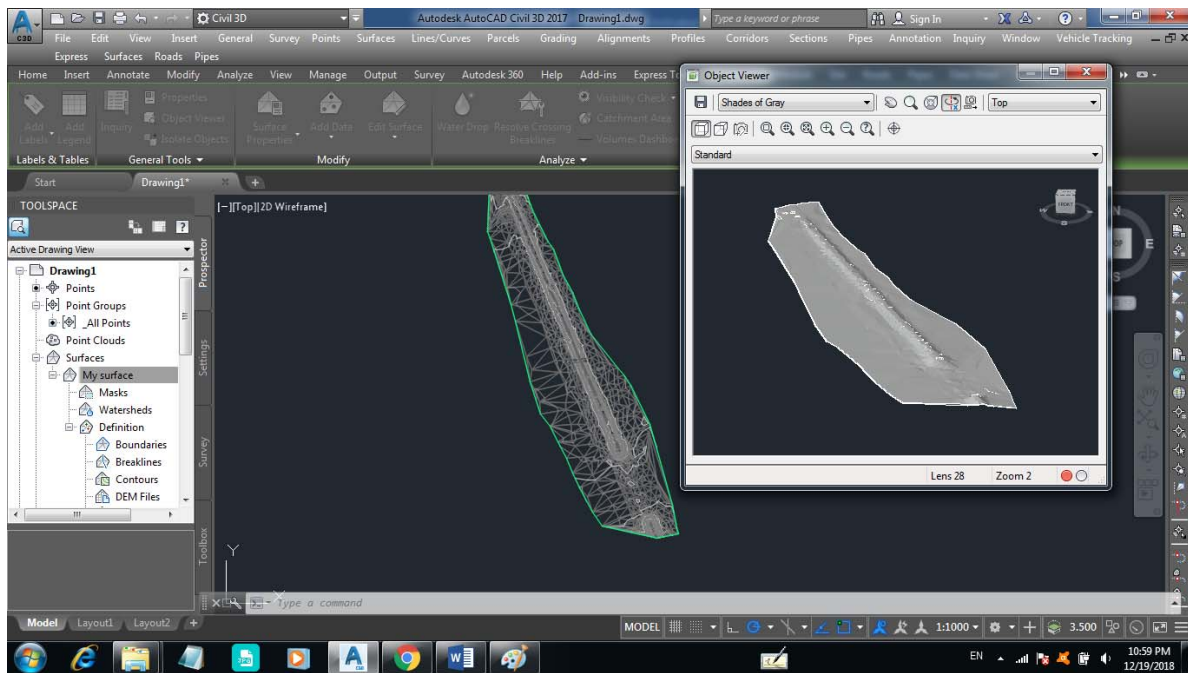
### 4.2.2 Changing contour intervals

To change the interval of the surface contours, simply right click on your surface name and select *Edit surface style*. Then, select *contour tab* and do the necessary modifications to the contour intervals (minor and major)



### 4.2.3 Changing surface presentation style and 3D presentation

Sometimes we need to present a 3-dimensional view for our surface. In this case, press right click on the surface name and select *surface properties*. A new window will appear enabling you to select another presentation style. From different styles select *countours and tringles*. Then, the surface appearance will change according to your selection. Press a click on the surface then choose object viewer from the related ribbons as shown in figure below.



## 5 Geomteric design basics related to AutoCAD Civil 3D

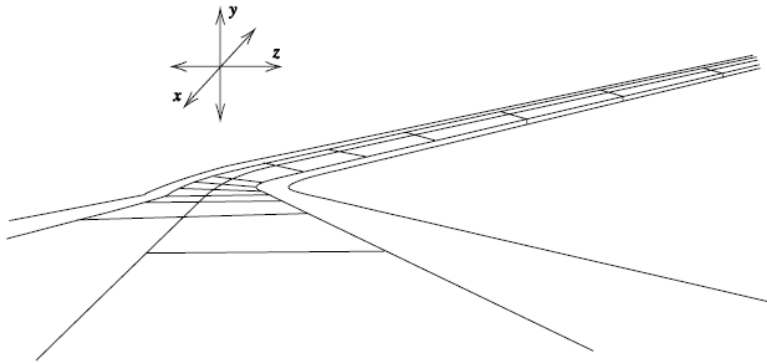


Figure 2.6: Three-dimensional view of highway alignment.

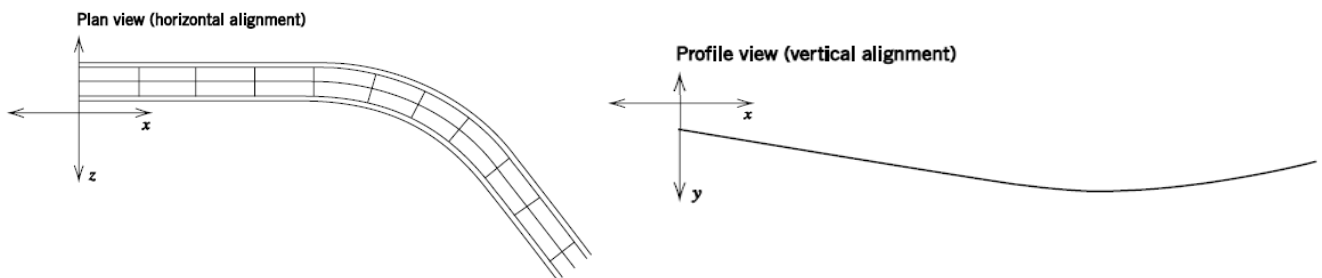


Figure 2.7: Simplified highway alignment: a. horizontal alignment and b. vertical alignment.