

How to:

Use a COGO point spot grid to create a surface, to generate e.g. contours

Who are SenSat?

SenSat is a technology startup creating simulated construction sites accurately and efficiently, allowing you to visualise and analyse the physical world on your computer or mobile device.

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Creating a Surface and Contour Lines in Civil 3D

We've created this guide to show you how to use a COGO point spot grid to create a surface, to generate e.g. contours

01

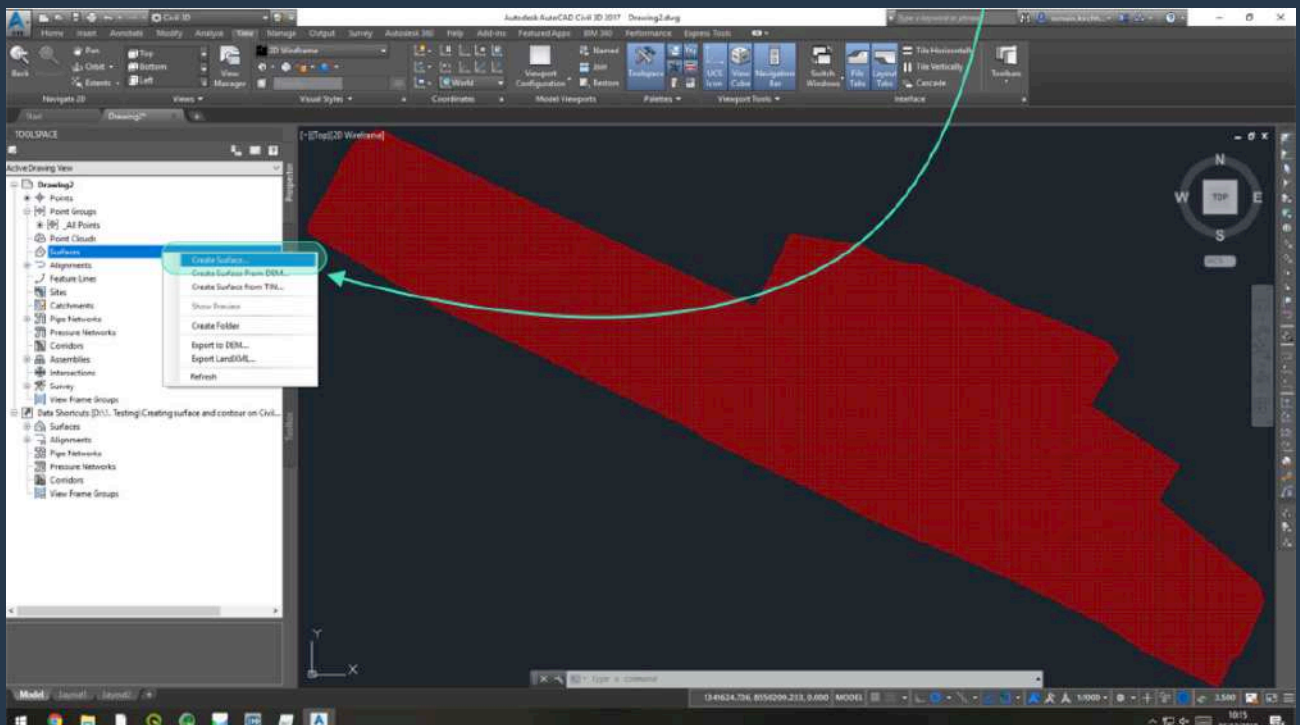
Getting the points in Civil

- a) In order to create a surface (which can be used to create contours, slope lines, contours etc.), the first step involves having the points in a useable format in Civil 3D
- b) [Here](#) is a guide for making COGO points from the spot grid of a CAD drawing
- c) [Here](#) is a guide for importing a points file into Civil 3D

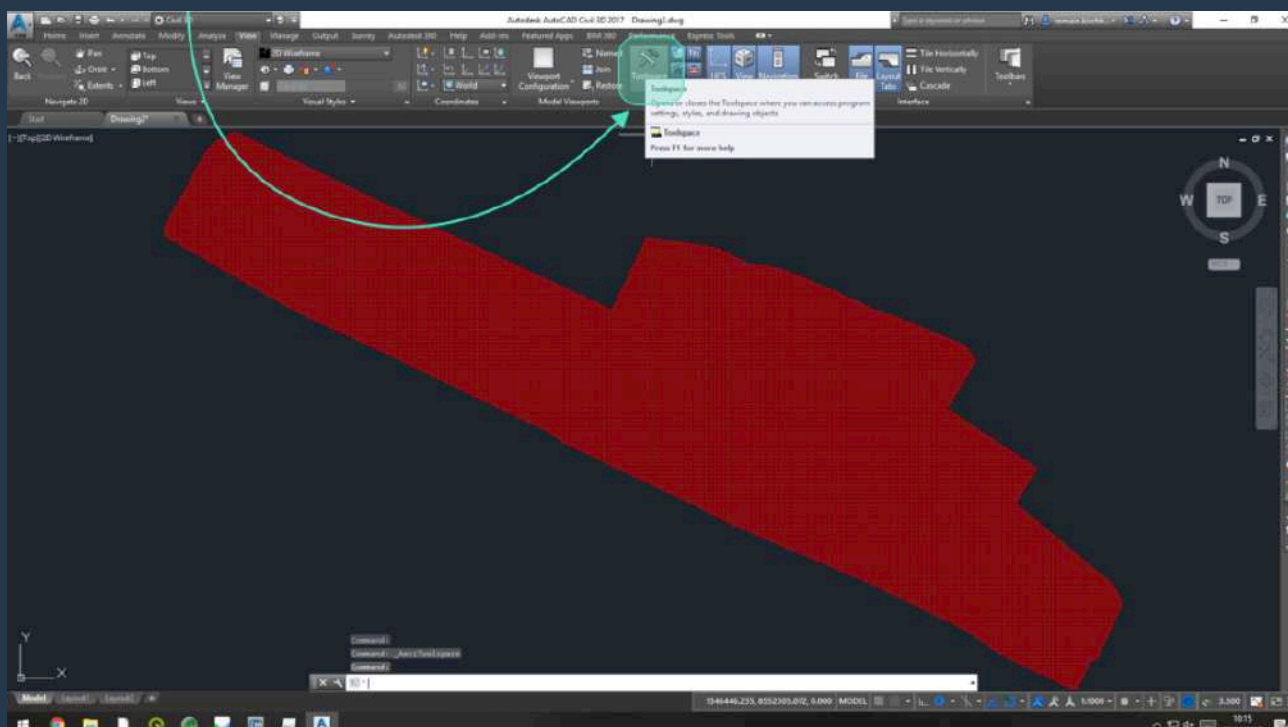
02

Creating a surface from the points

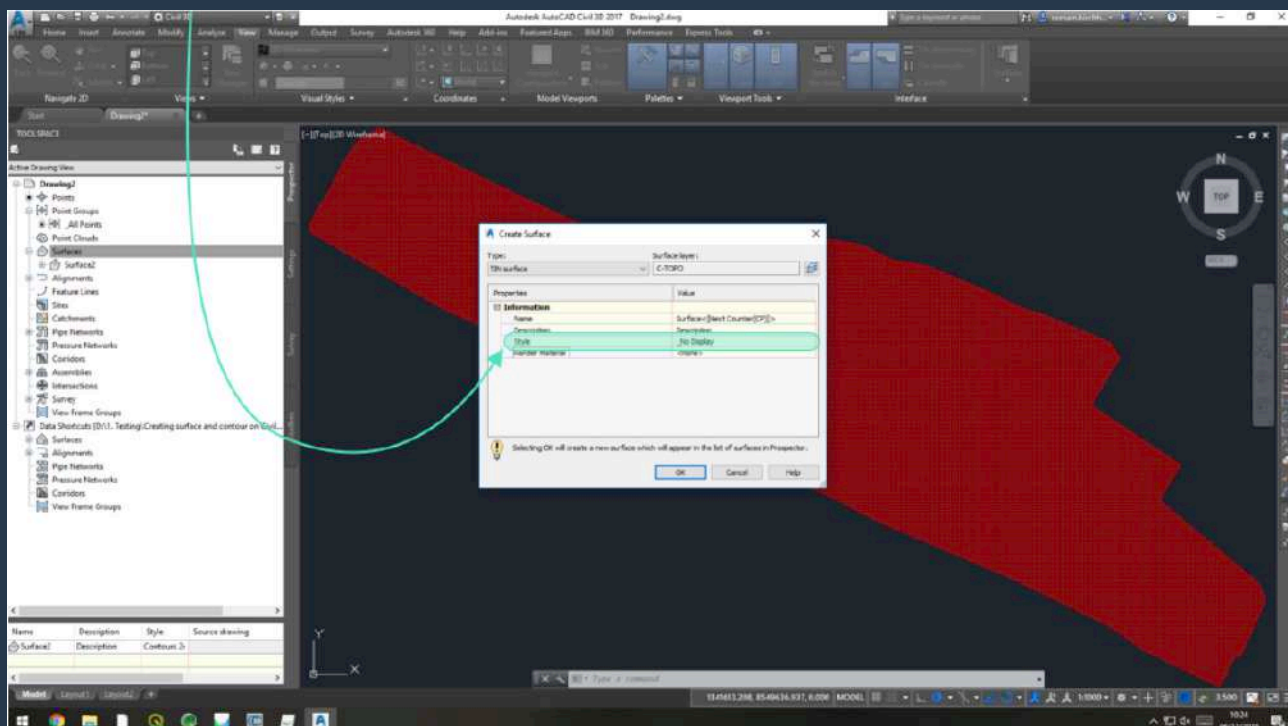
- a) In the prospector menu, right-click on "Surfaces" and select "Create Surface"



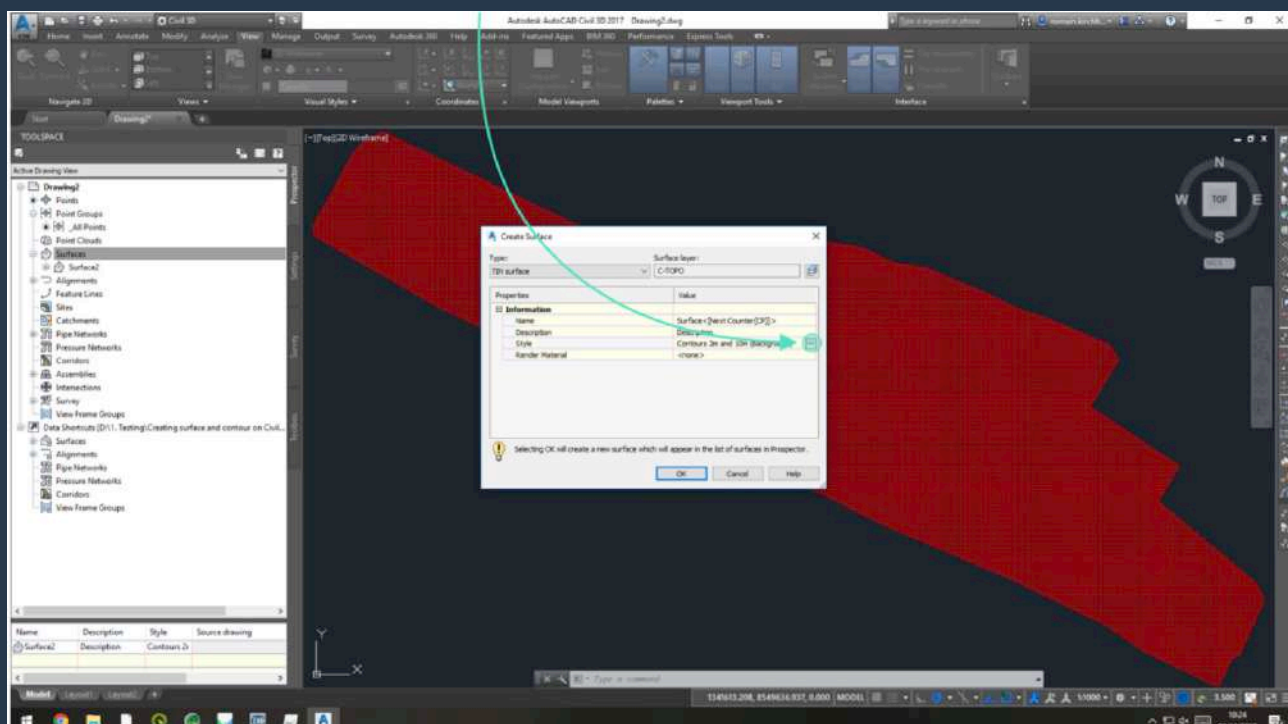
i. If the Prospector menu is not viewable on the left as per the above screenshot, click “Toolspace” (View > Tool space)



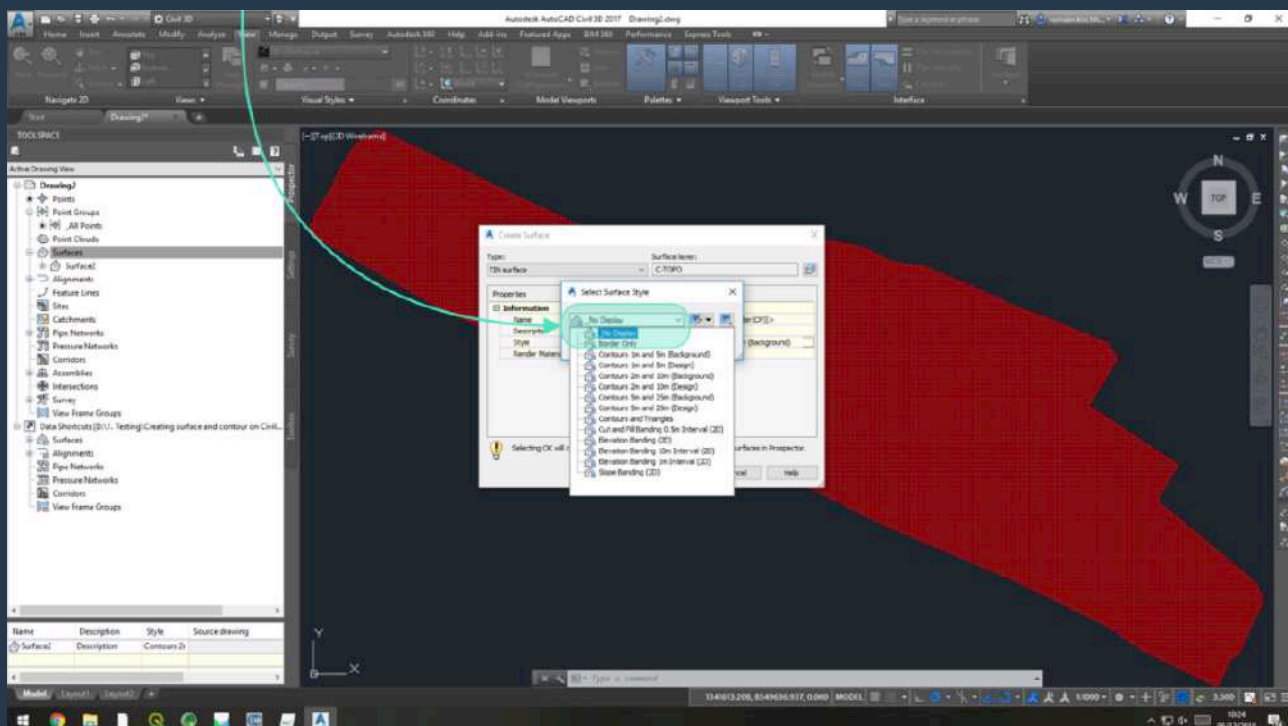
b) From the “Create Surface” Menu that comes up, make sure “Style” is set to “_No Display” and hit “OK”



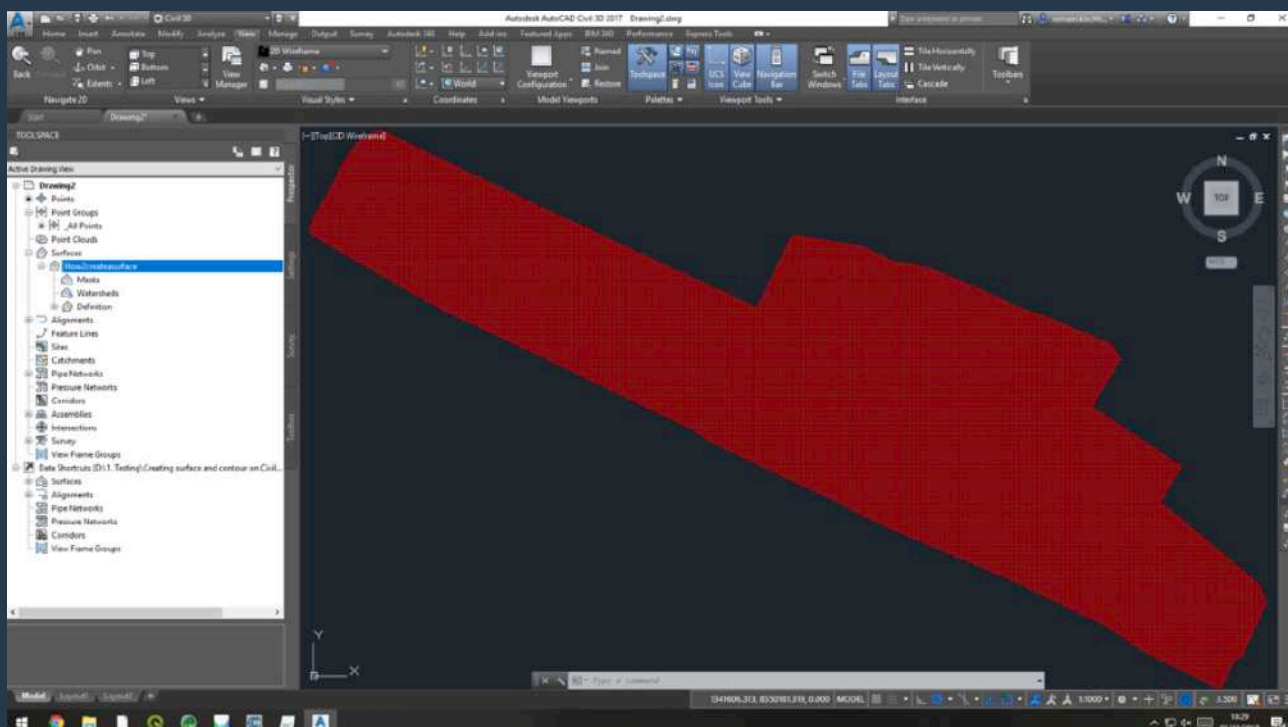
i. If it isn't set to “_No Display”) then click the three dots button next to “Style”...



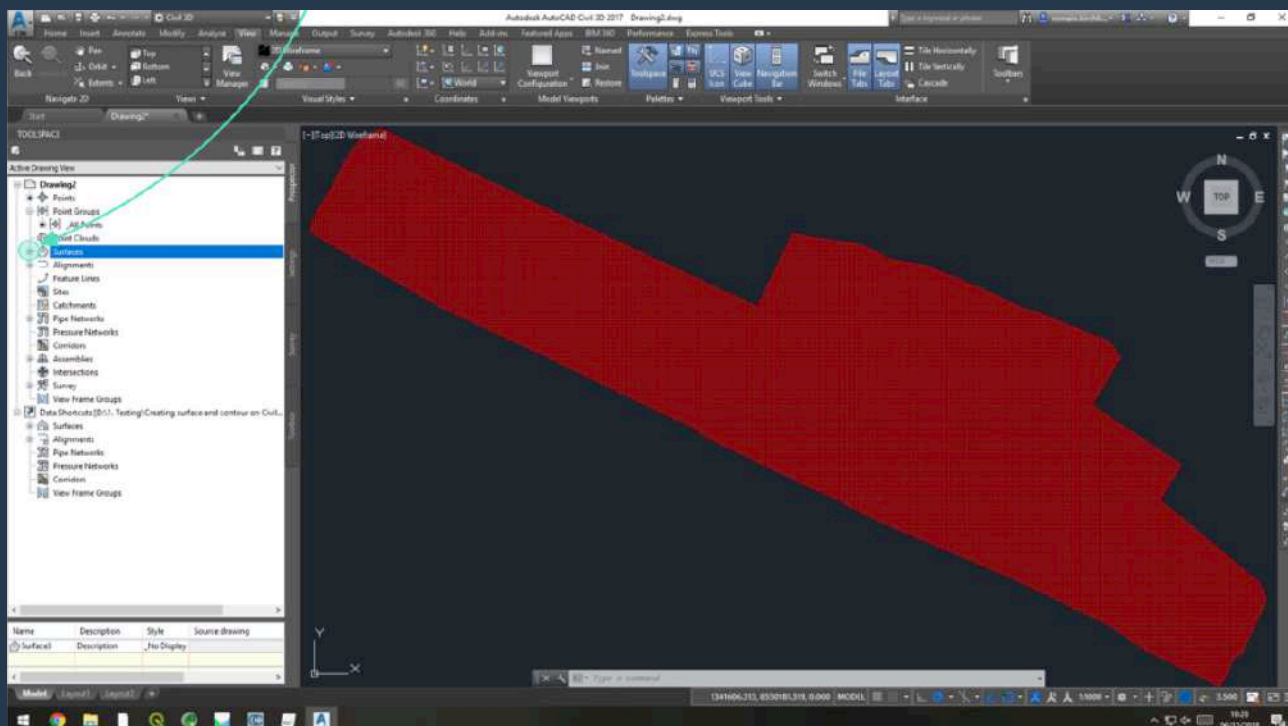
ii. ...and then select the surface style “_No Display”



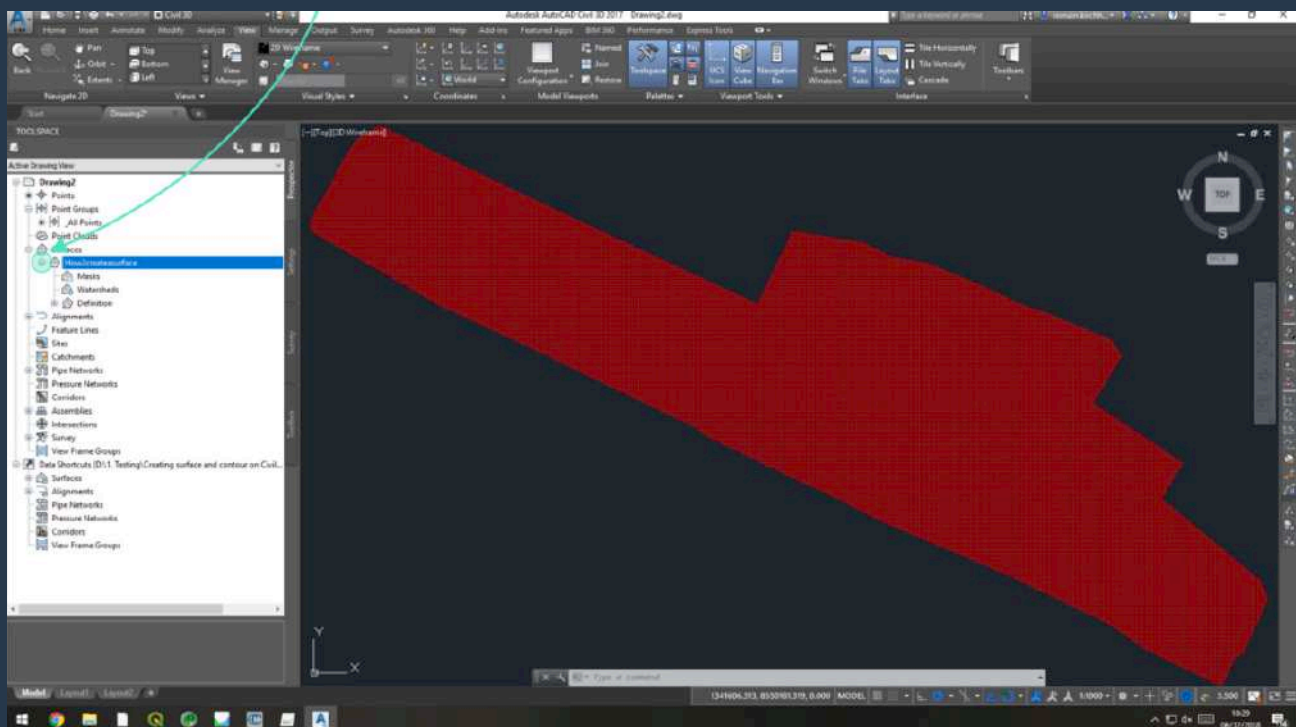
iii. Surface created!



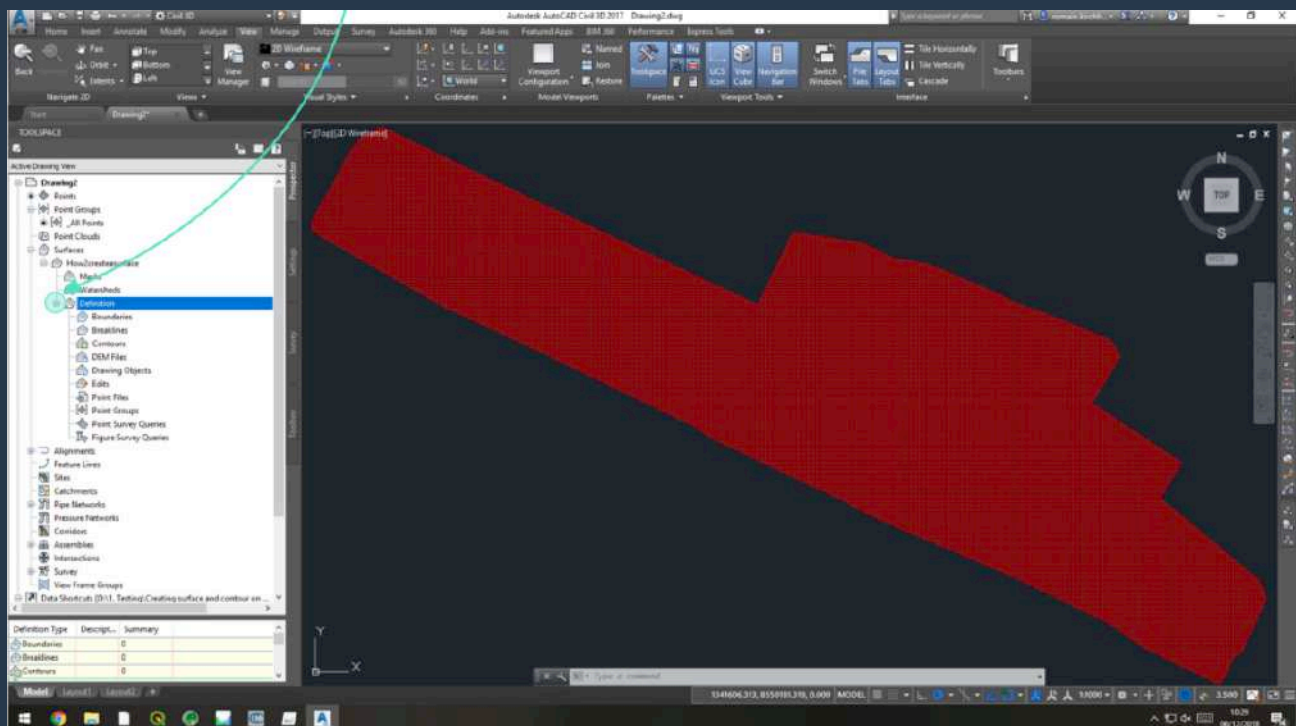
c) Now you must attach the points to the surface. In the Prospector menu, click the plus button to expand the “Surfaces” drop down



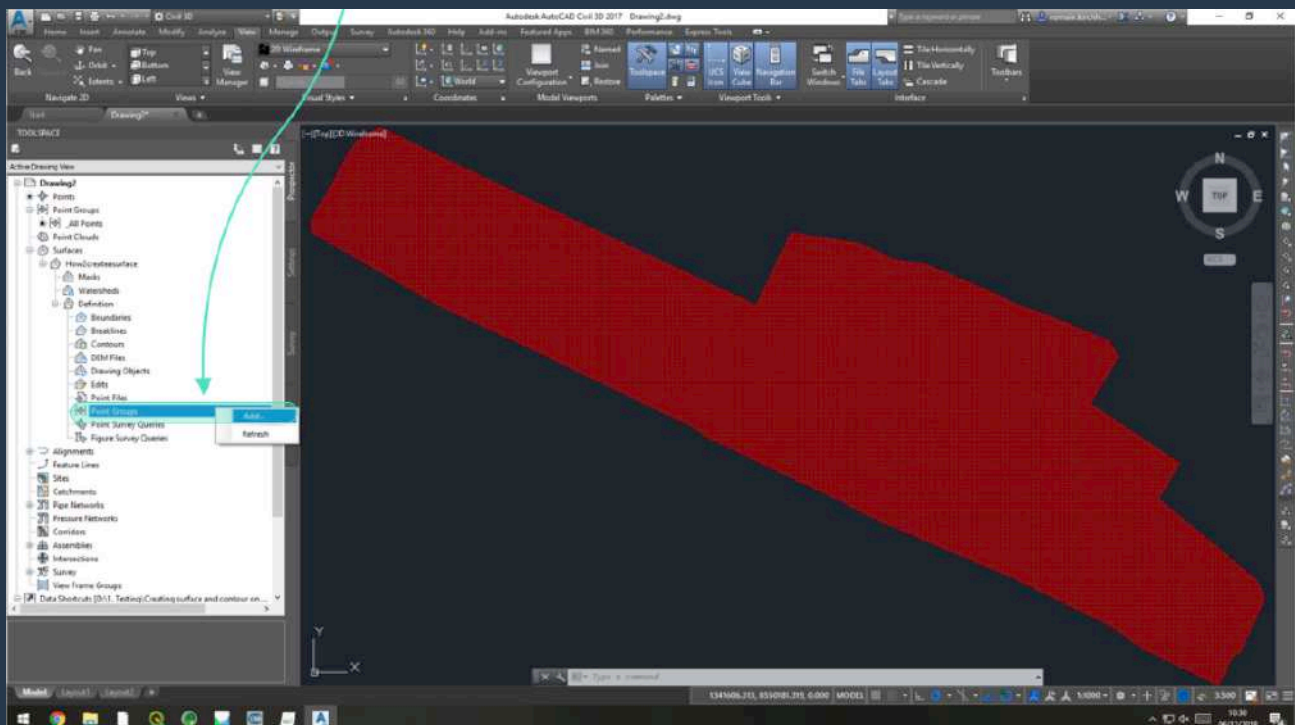
d) Click the plus button on the surface we just created to expand it's options



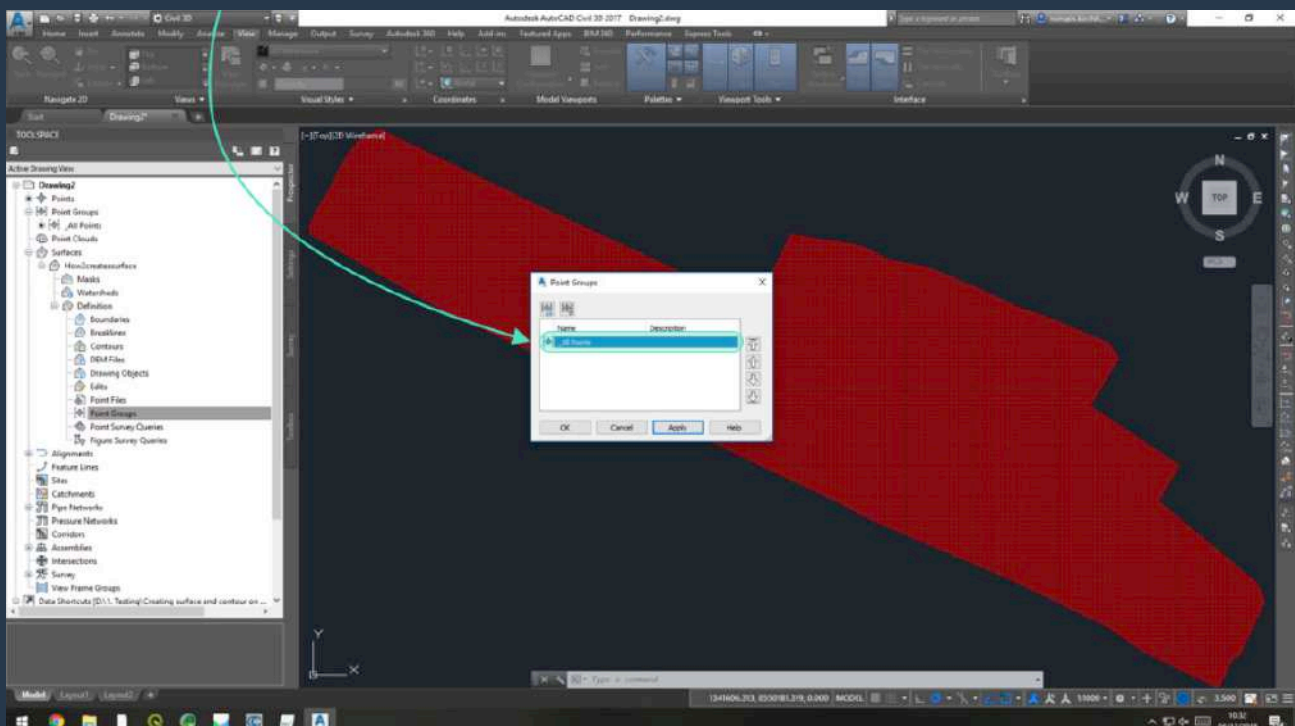
e) Click the plus button on the “Definition” section to expand options



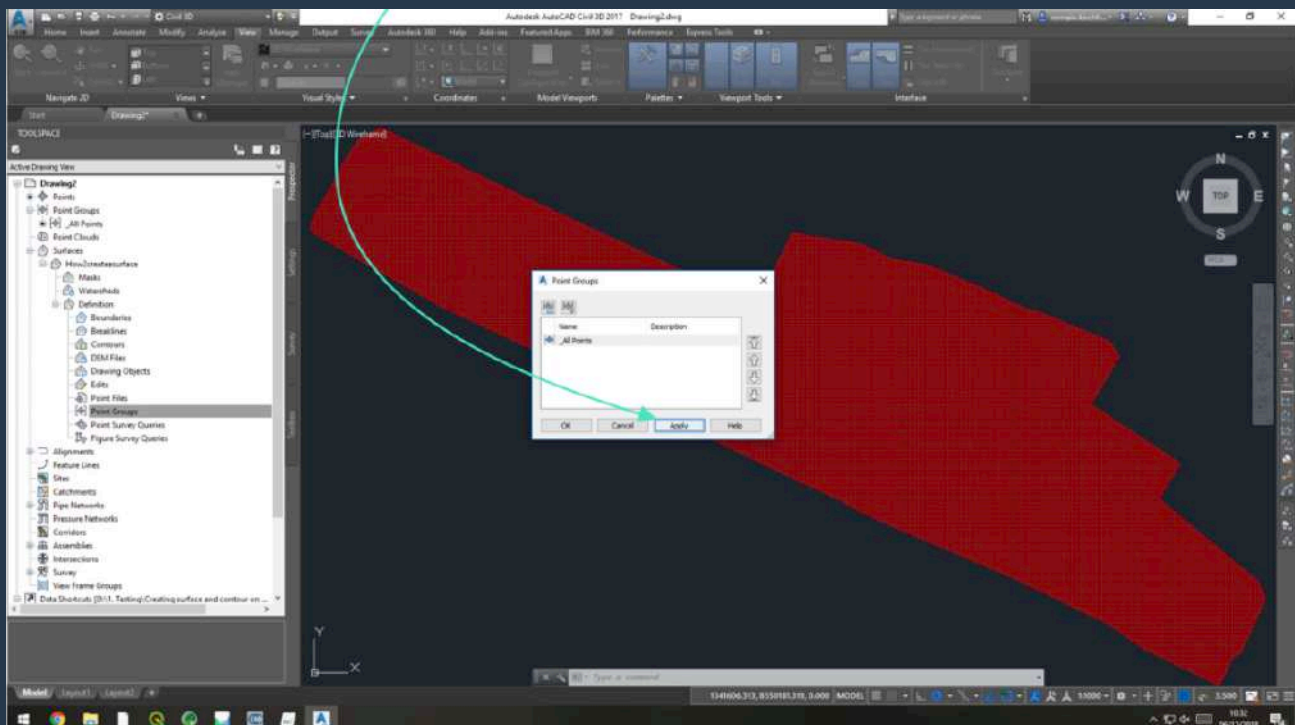
f) Right click on “Point Groups” and select “Add”



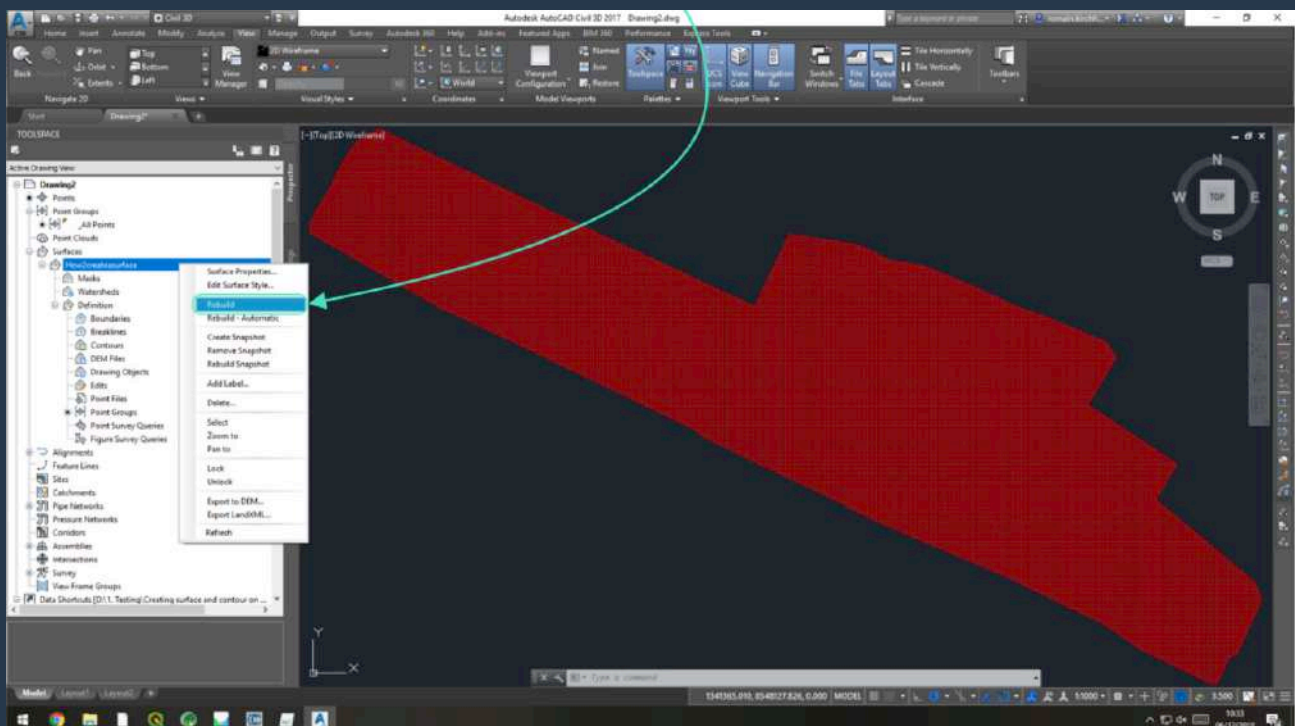
g) Select “All Points” or the Point Group with the desired points in it. For more info on Point Groups, click [here](#) and reference Step H.



h) Hit “Apply” and then “OK”



i) Right click on the surface and select “Rebuild”

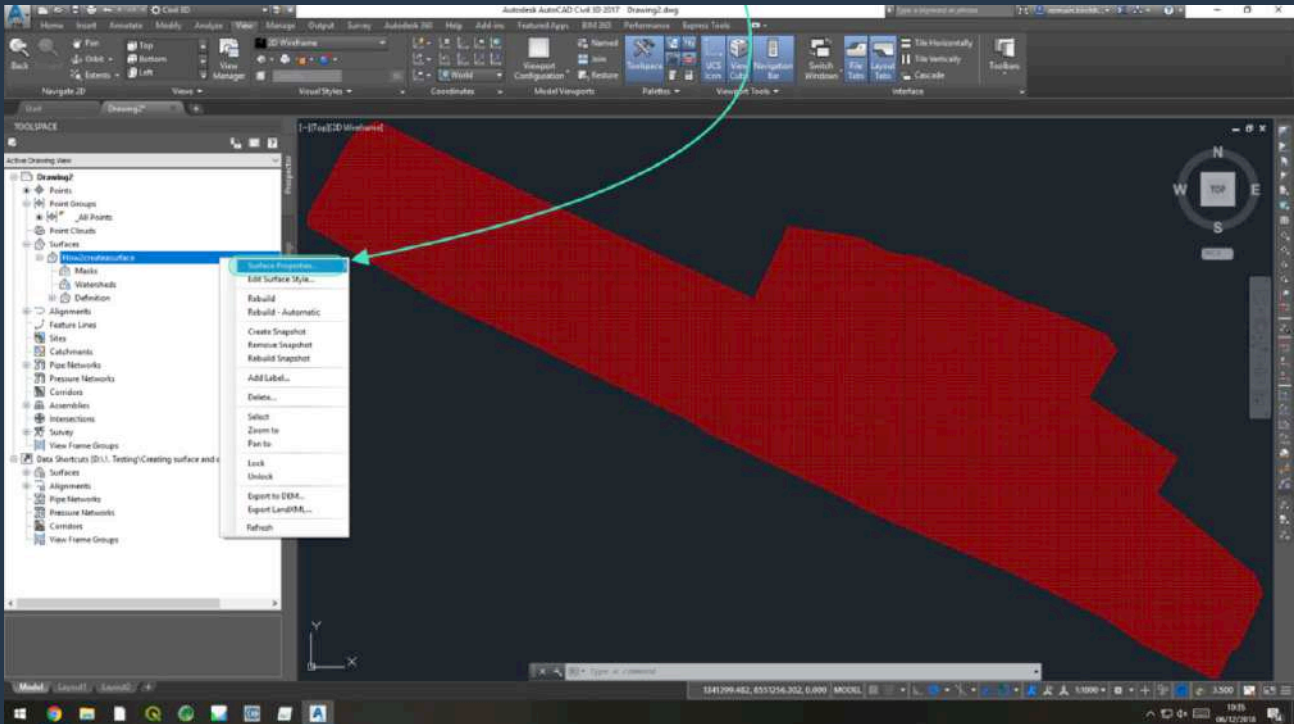


You have now created a surface encompassing the points (nothing will happen visually).

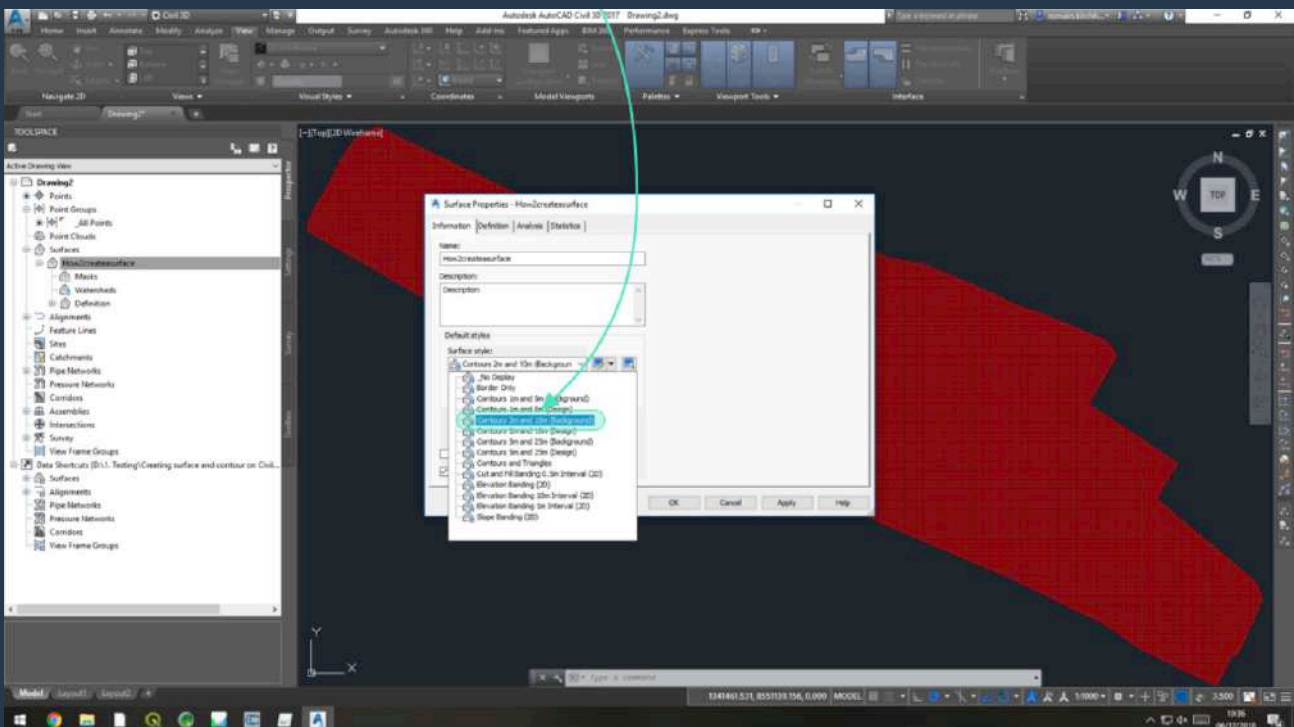
03

Creating a contour from the surface

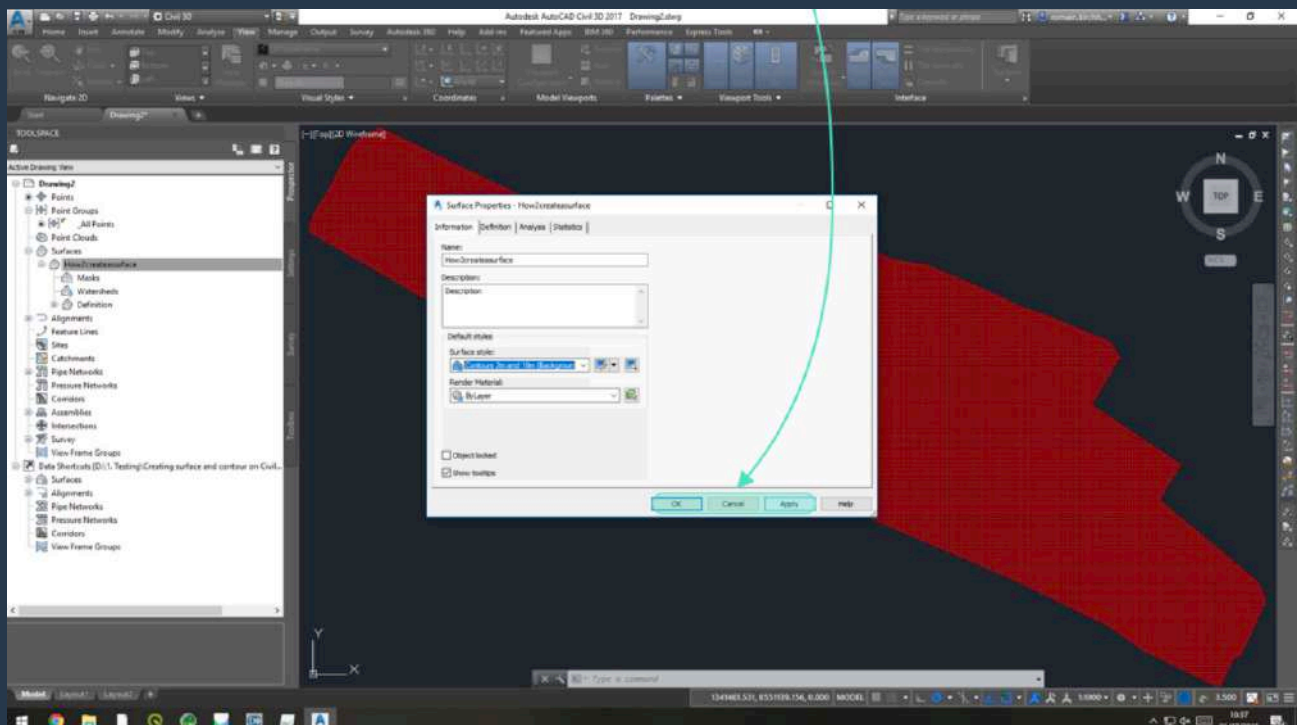
a) Right click on the surface, and select “Surface Properties”



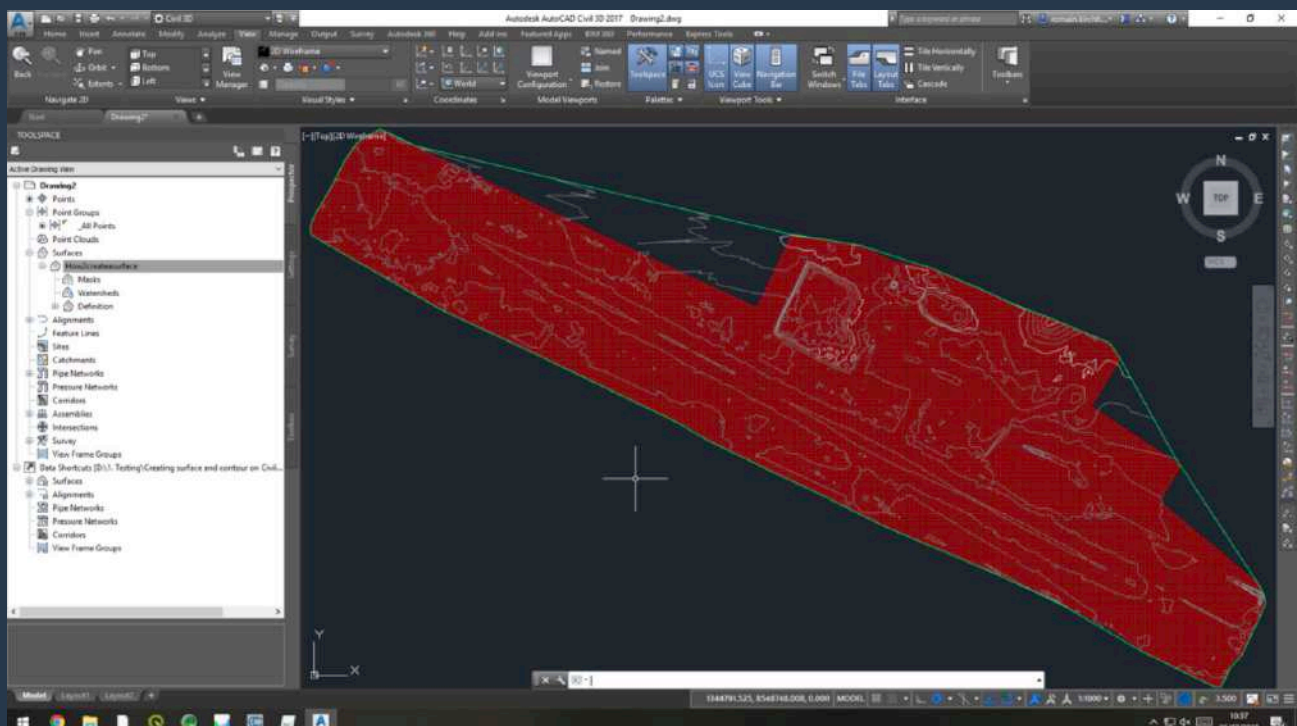
b) Under “Surface style” (Information > Surface style) select “Contours 2m and 10m (Background)”



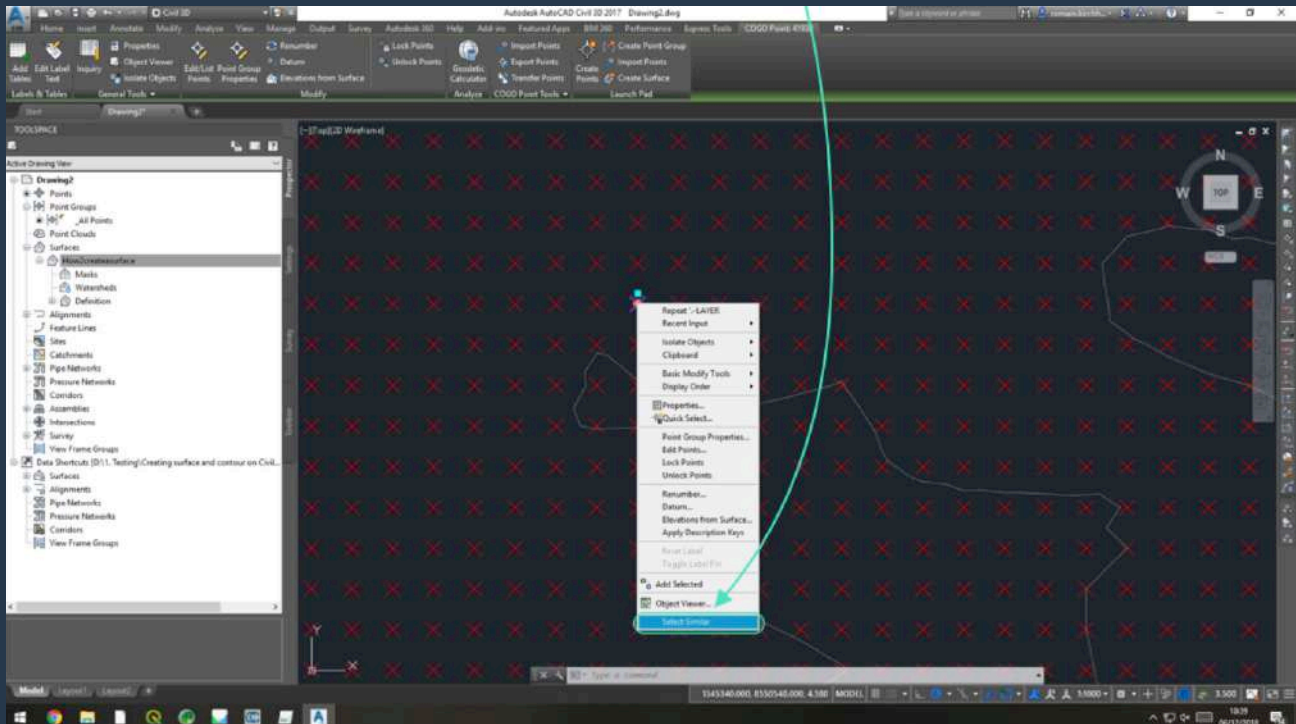
c) Hit “Apply” and then “OK”



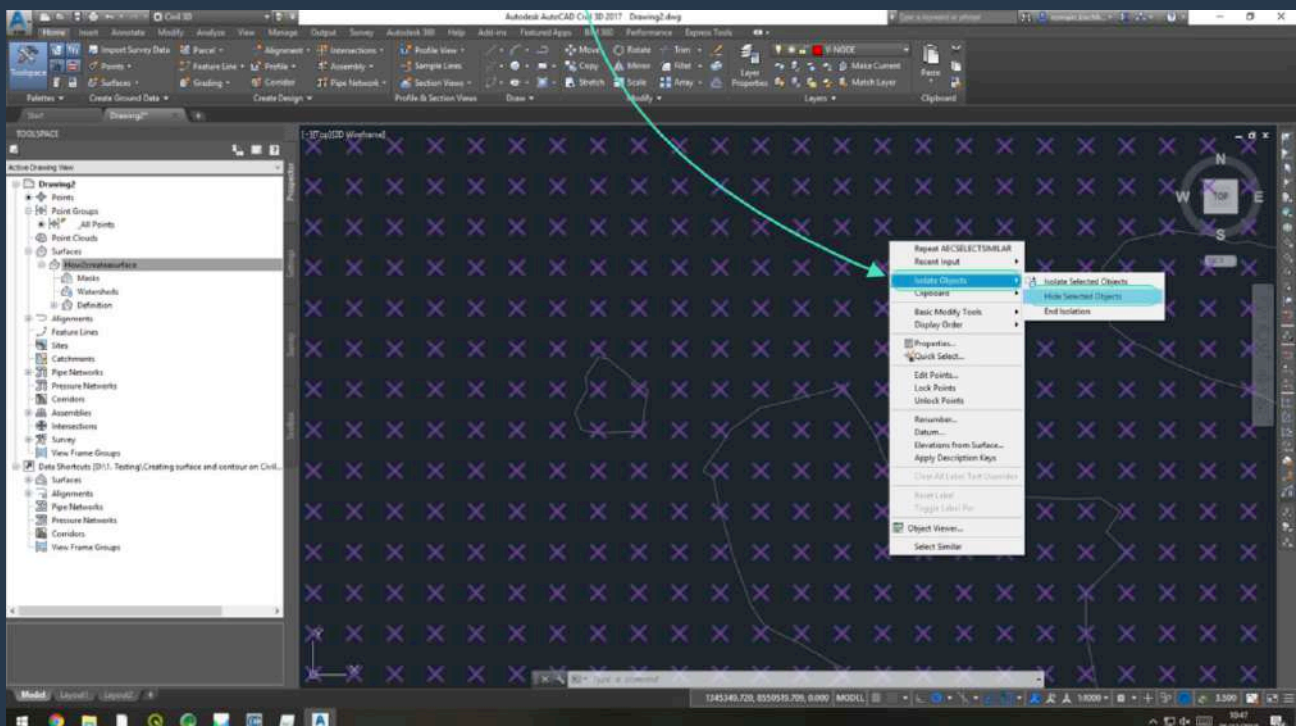
d) You should now see contours!



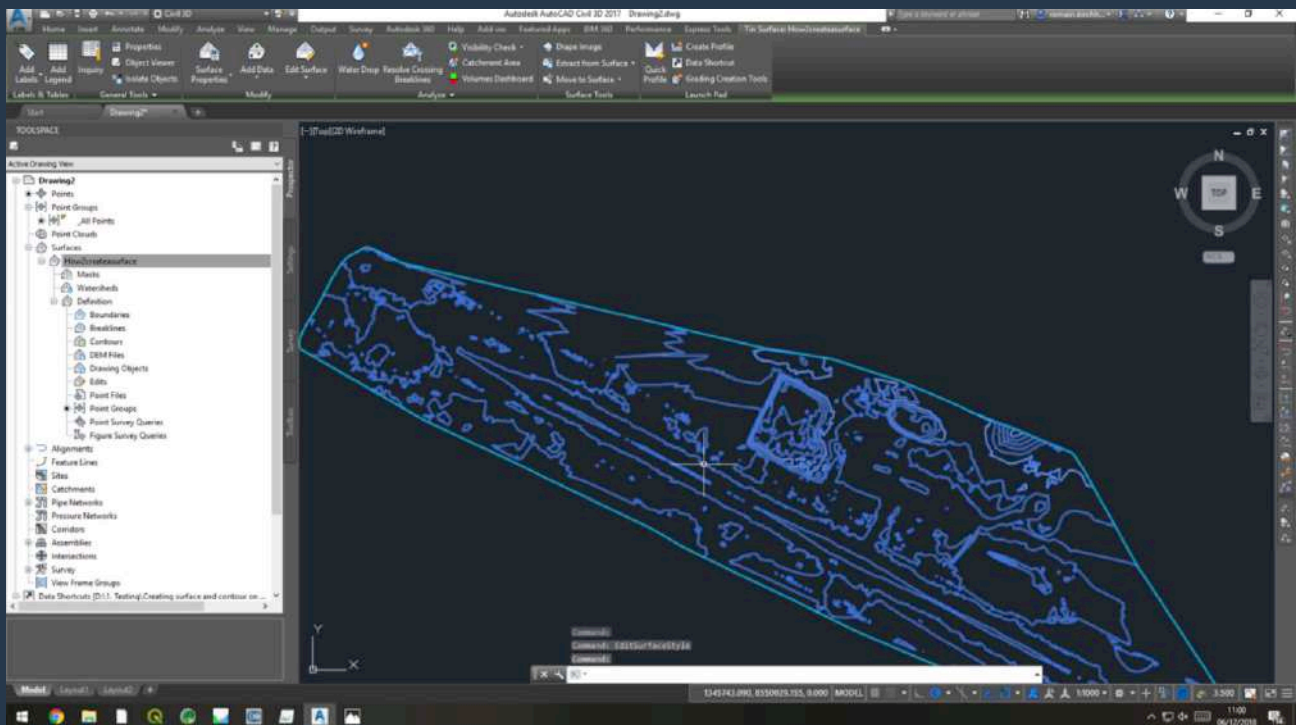
- e) To remove the points and only see the contours:
- Select a point, right click and select "Select Similar"



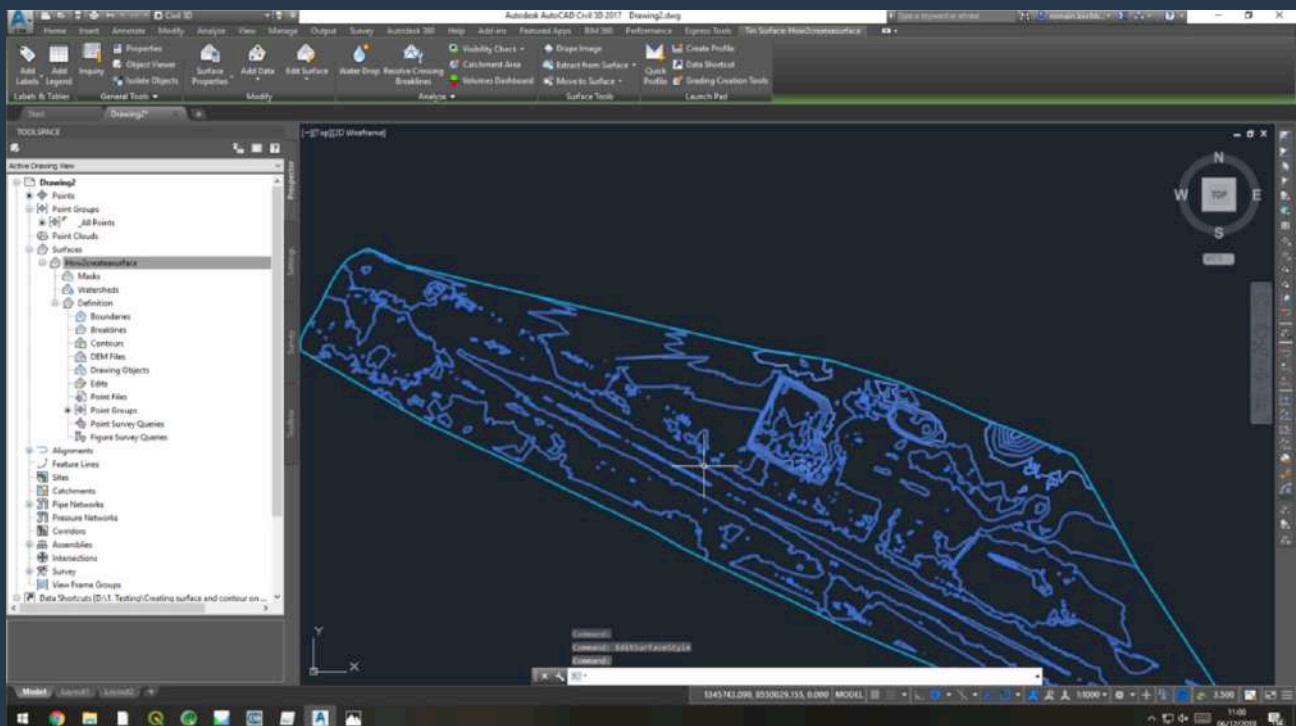
- After all the points are highlighted, right-click and select "Hide Selected Objects" (Isolate Objects > Hide Selected Objects)



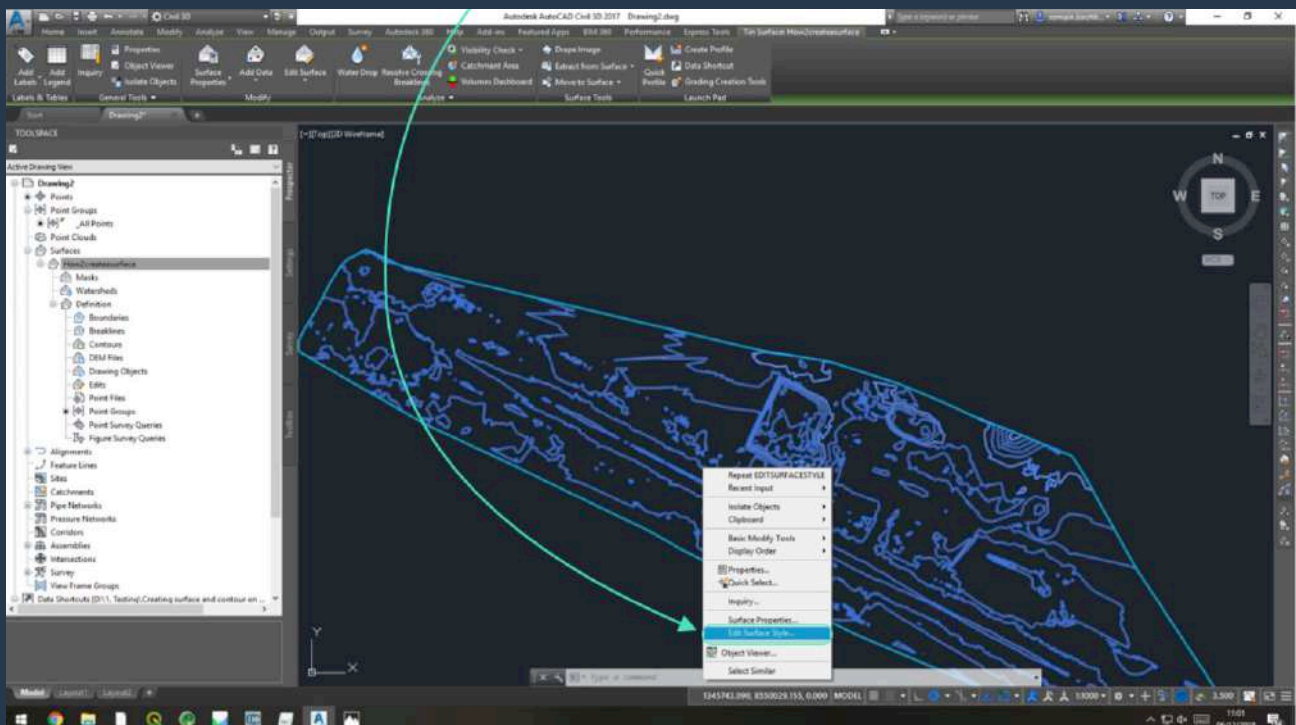
iii. Boom! You should only see Contours.



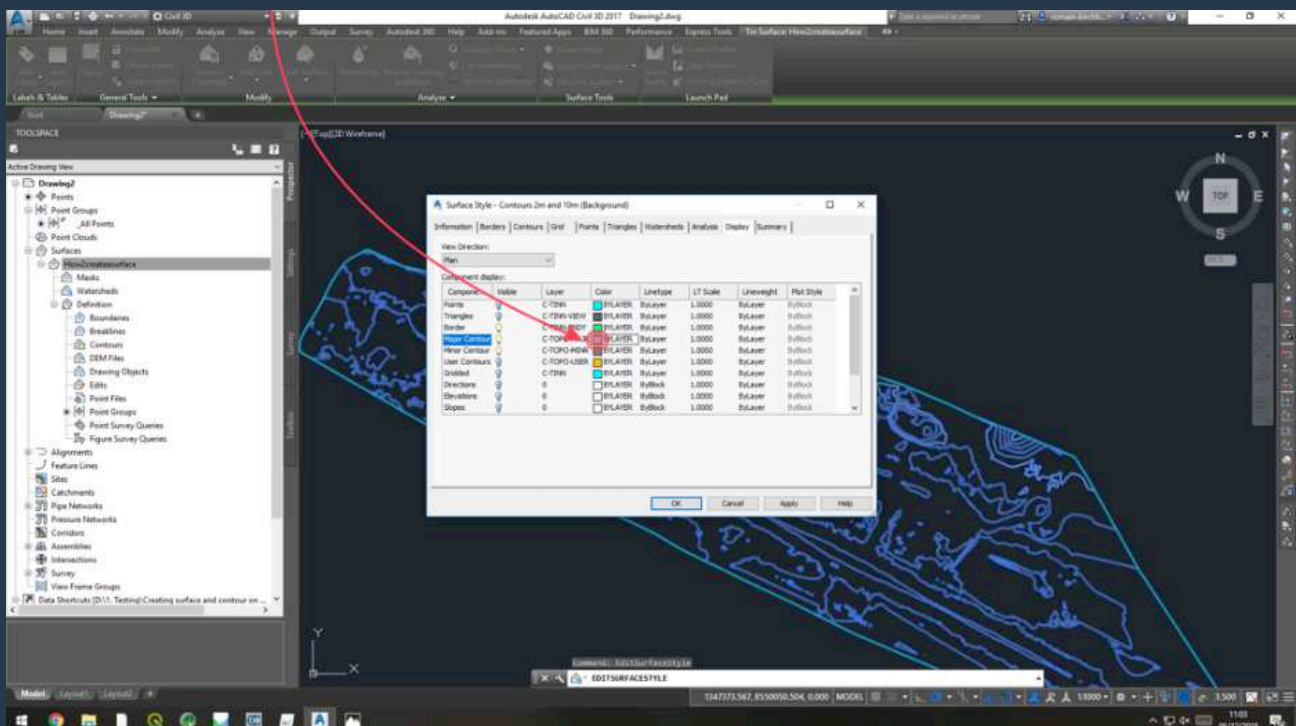
f) To change the colour of the major contours
i. Click on the contours



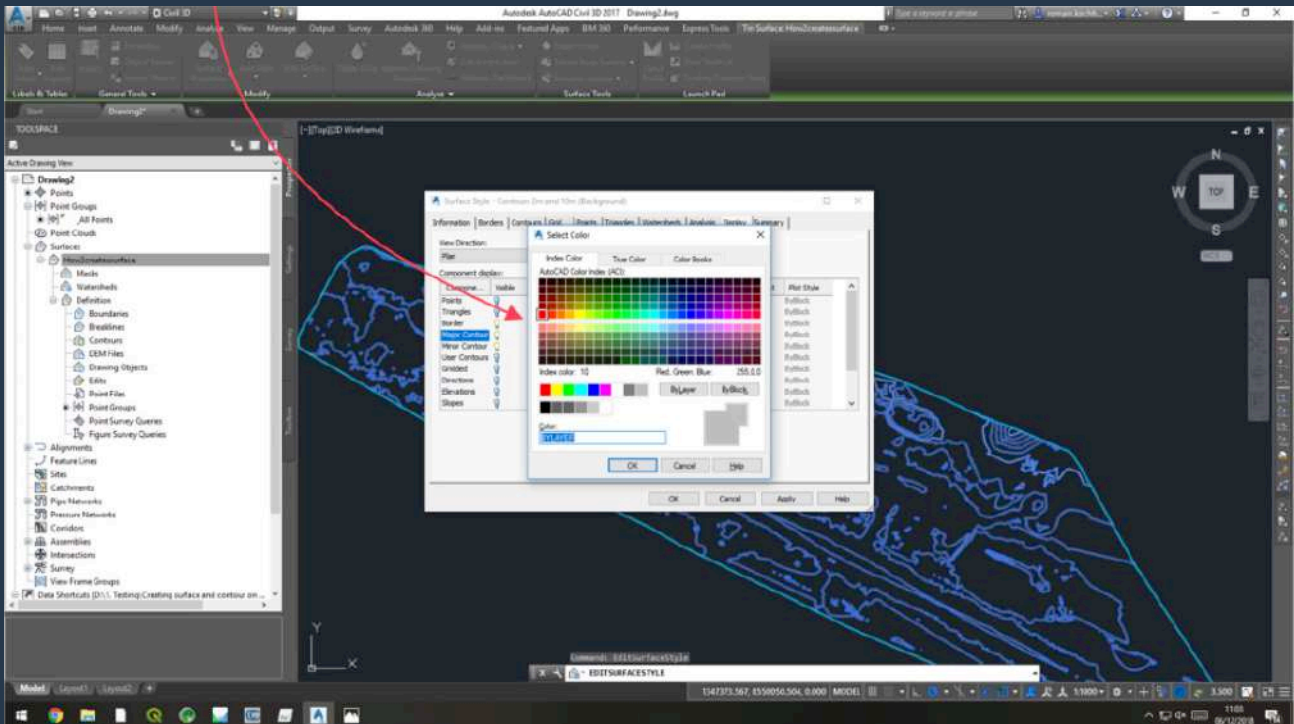
ii. Right click and select “Edit Surface Style...”



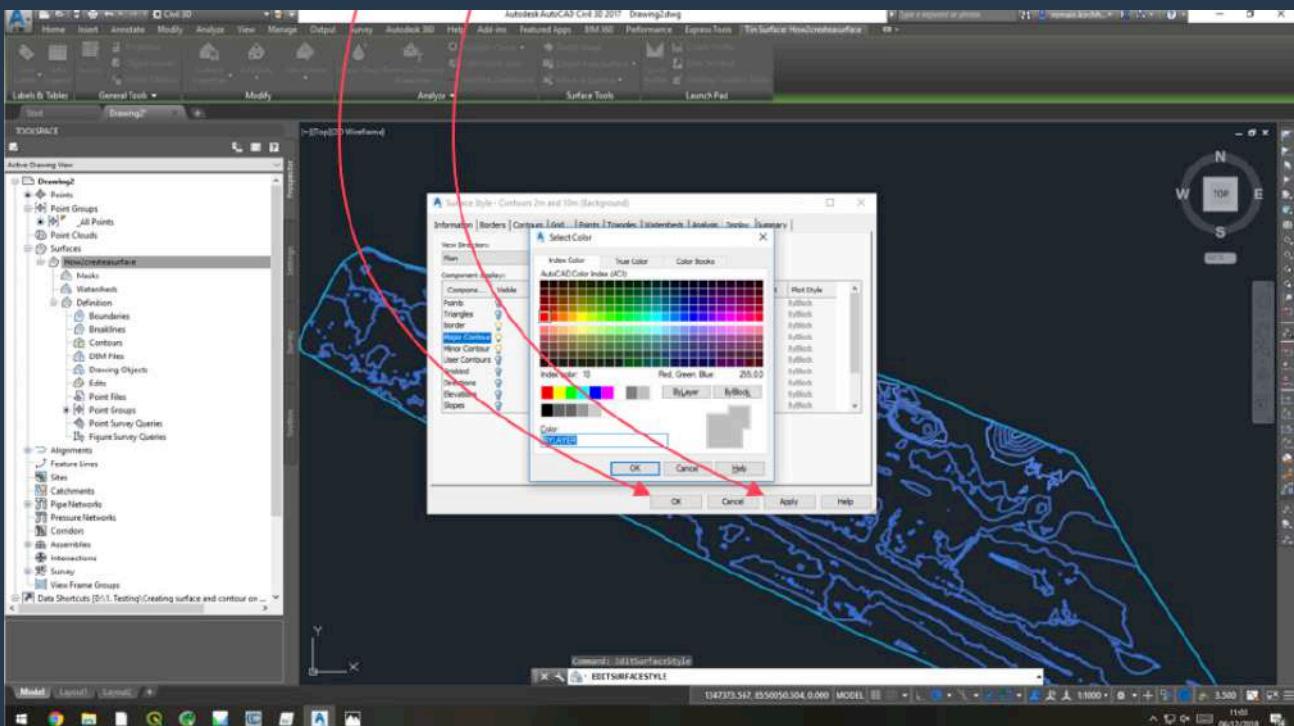
iii. In the “Display” tab, under Major Contour click on the colour square...



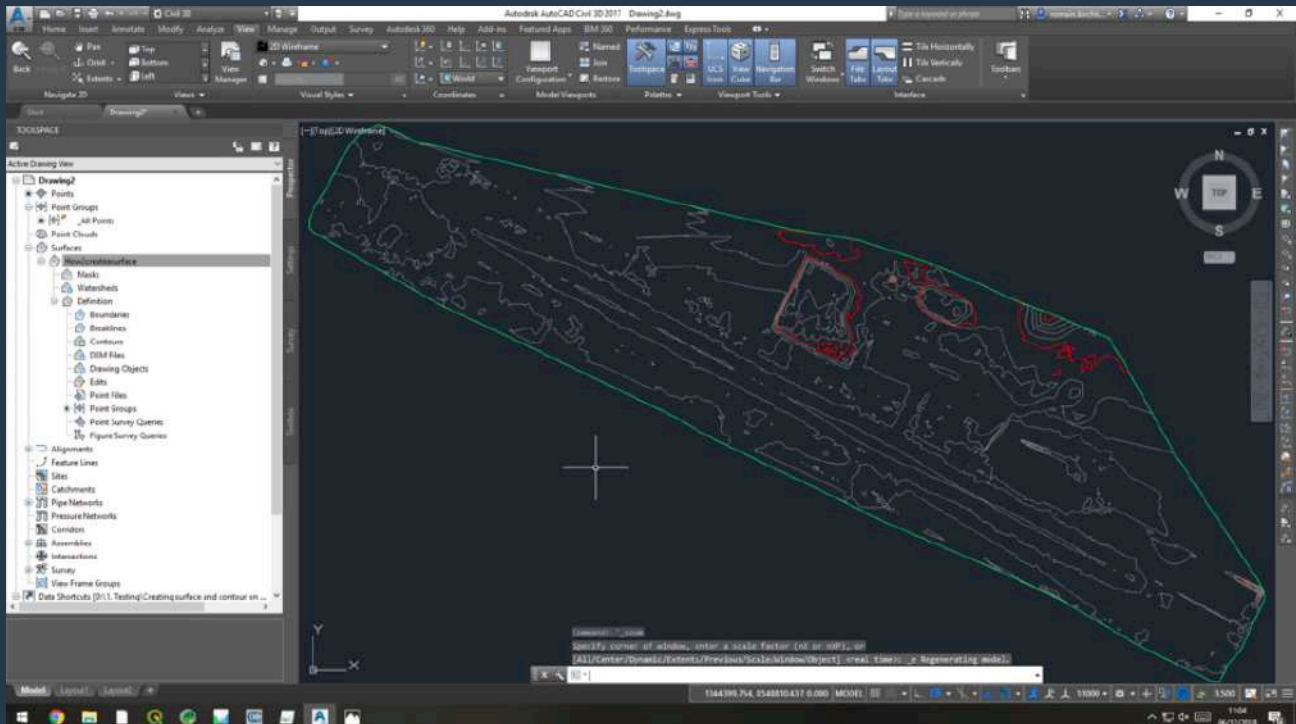
iv. ...and select a new colour. Then click “OK”



v. Hit “Apply” and then “OK”

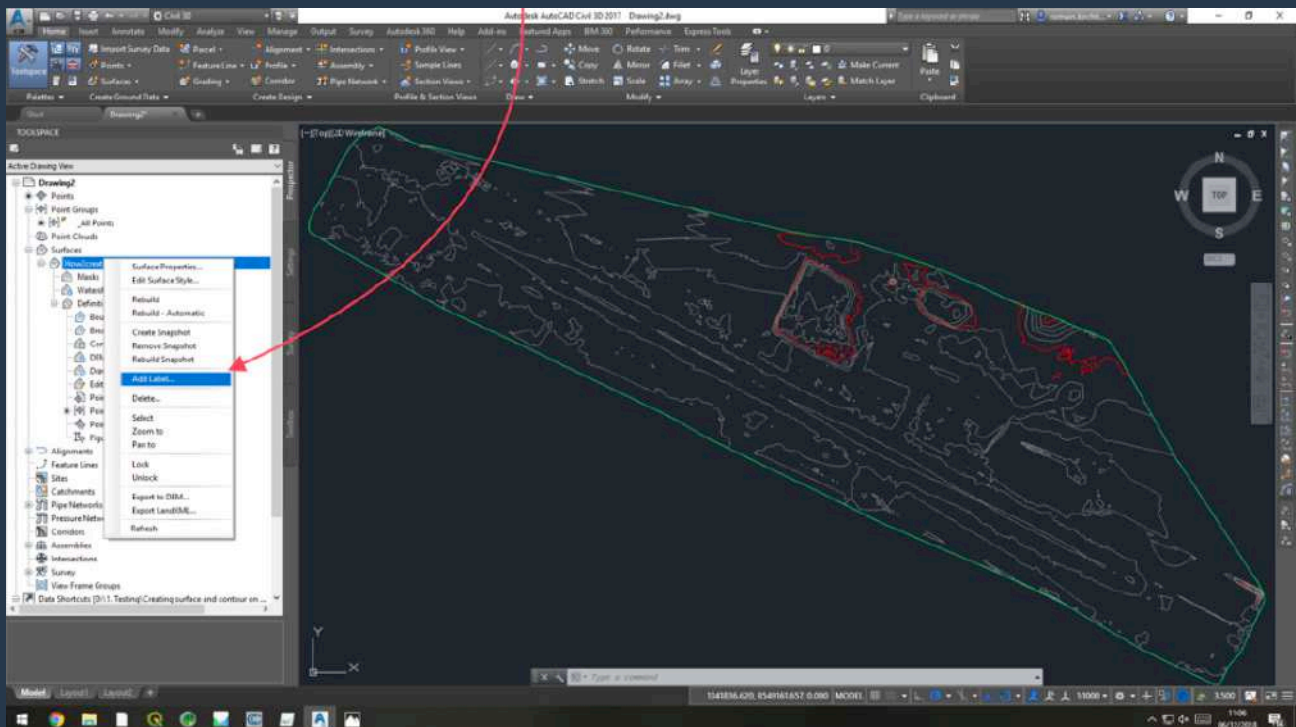


vi. Bish, bash, bosch. Done

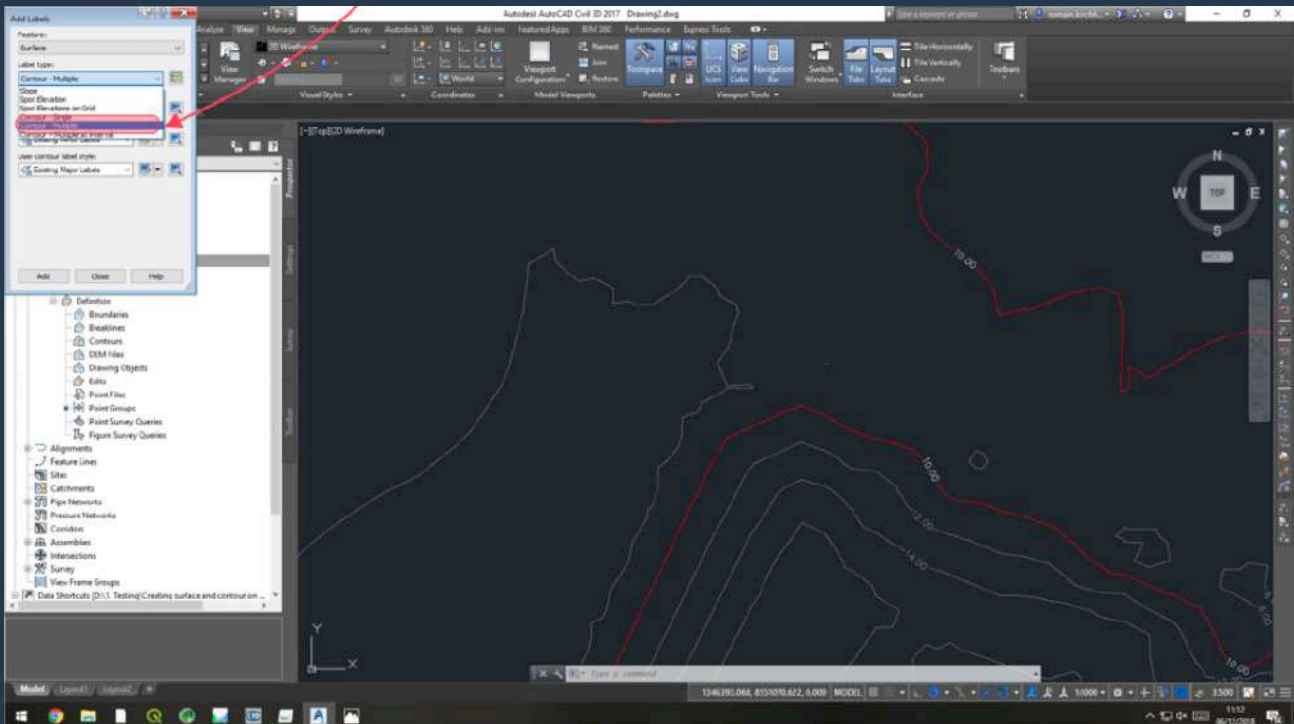


g) To label the contours with heights

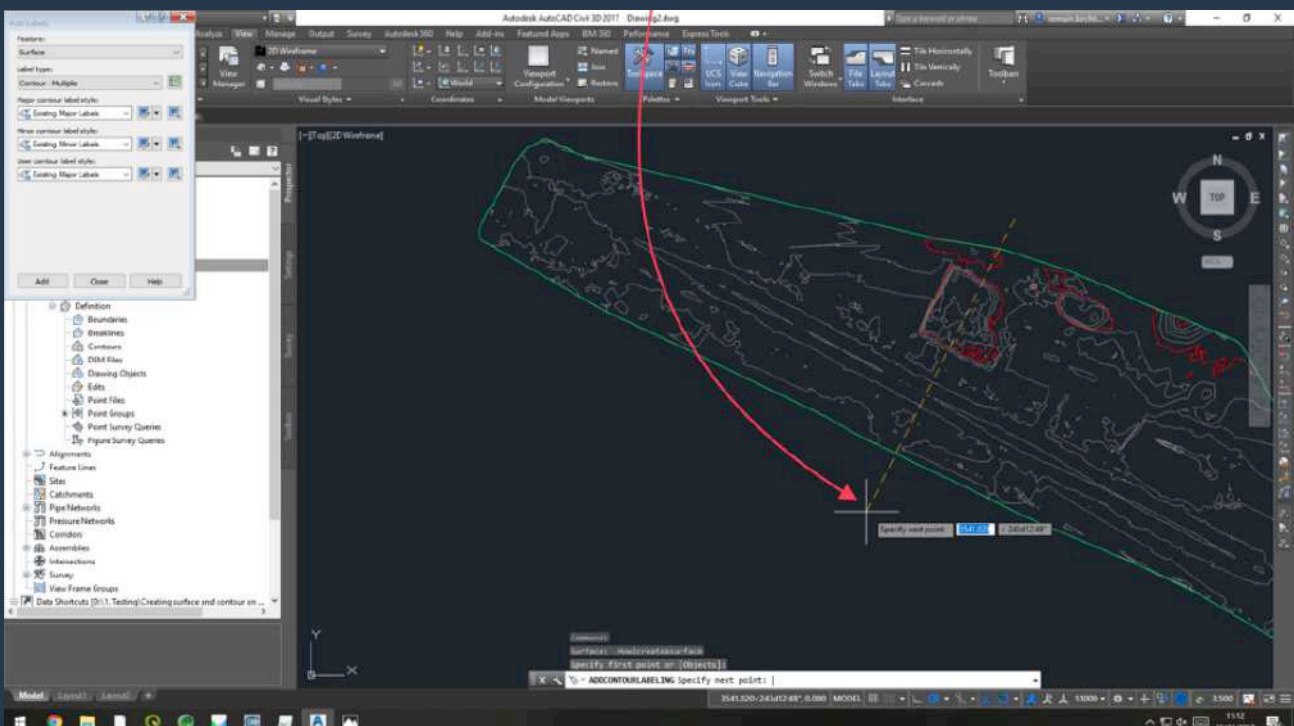
i. Right click on the surface, and select "Add Label"



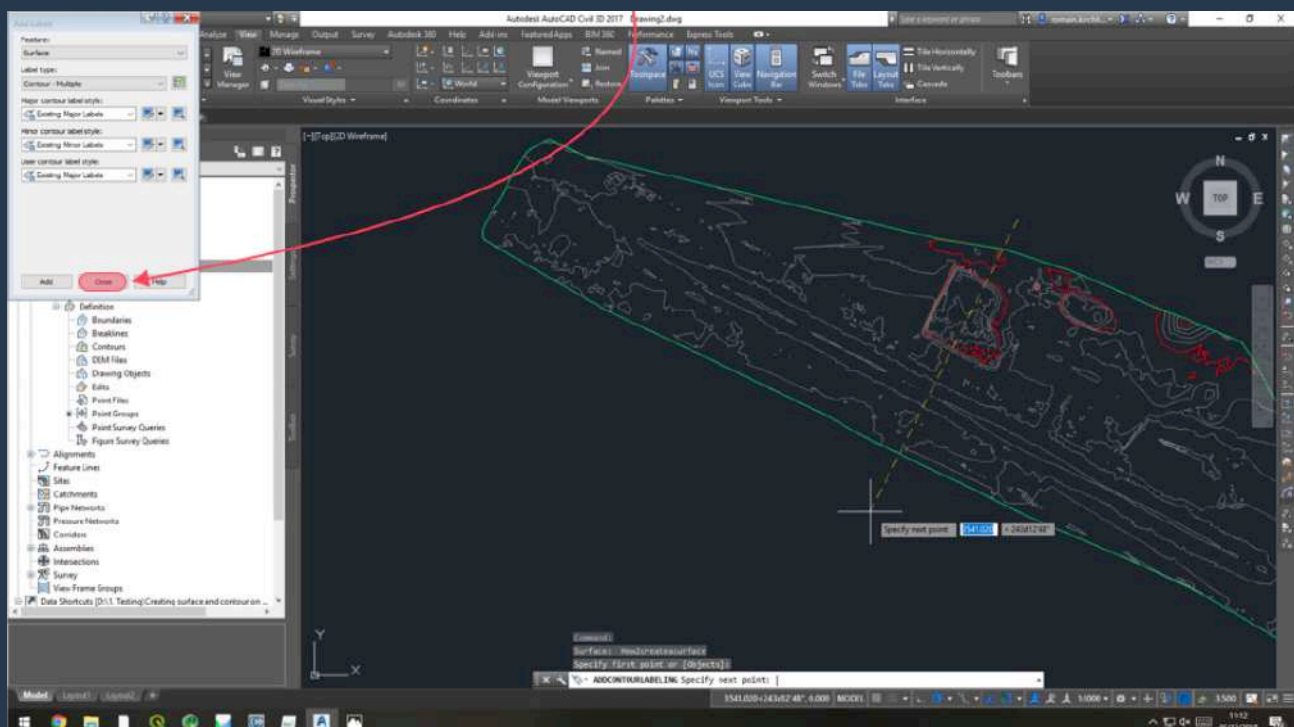
- ii. Ensure “Feature” is set to “Surface”, and “Label type” is set to “Contour - Multiple”



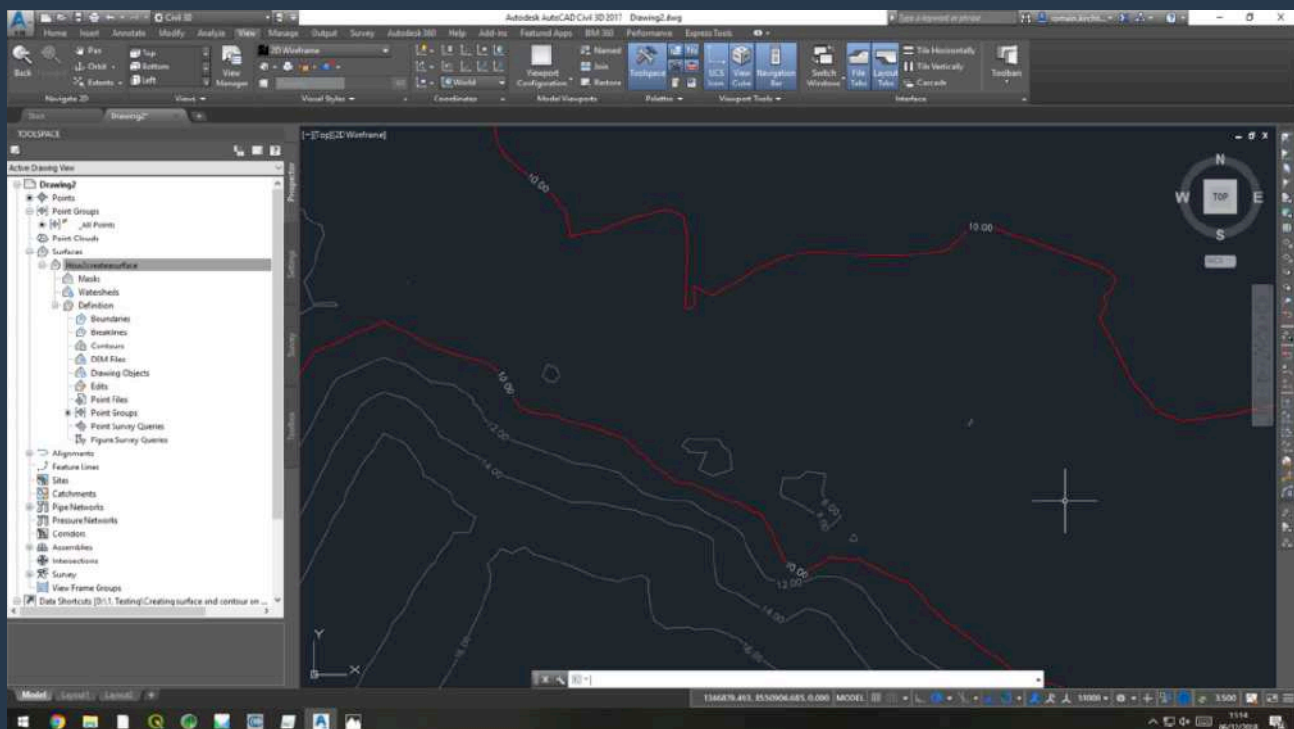
- iii. Click “Add” and then draw lines across the contours as per where you want to see the contour labels:



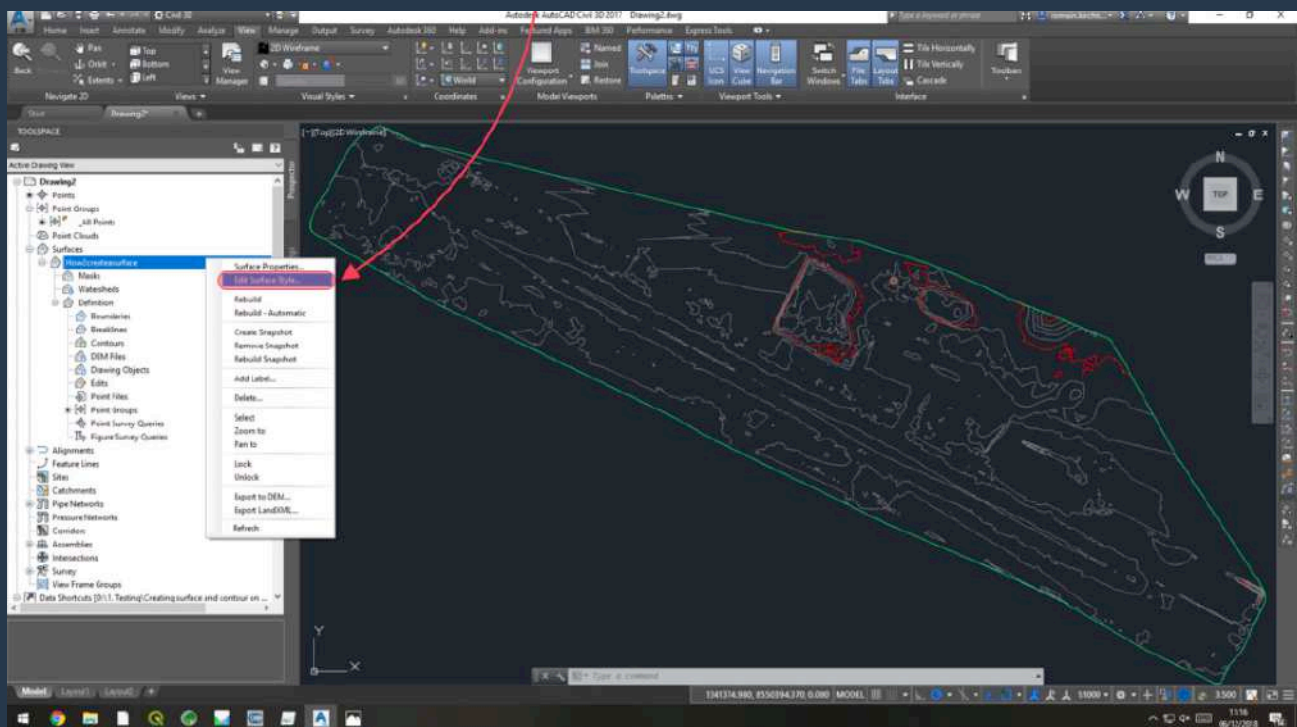
iv. Click “Close”...



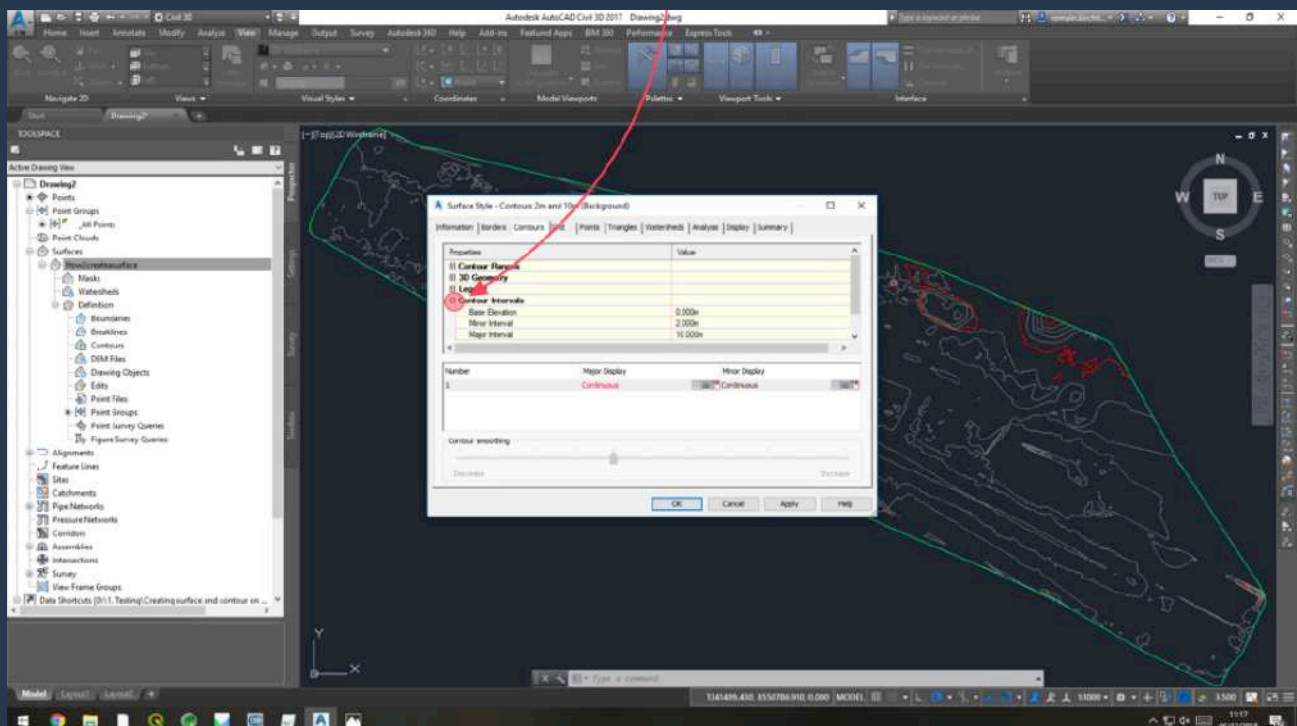
v. ...and then marvel at your contour labels.



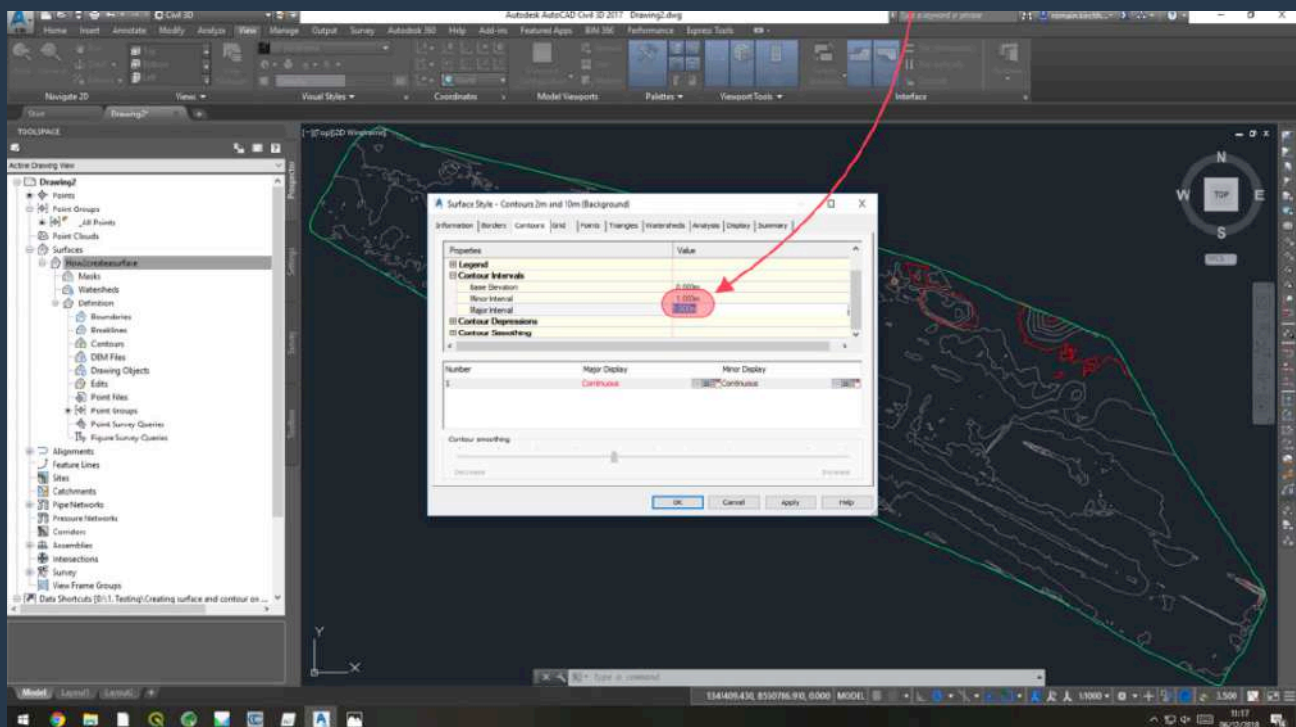
- h) To change the interval of the contours:
- i. Right click on the surface, and select “Edit Surface Style”



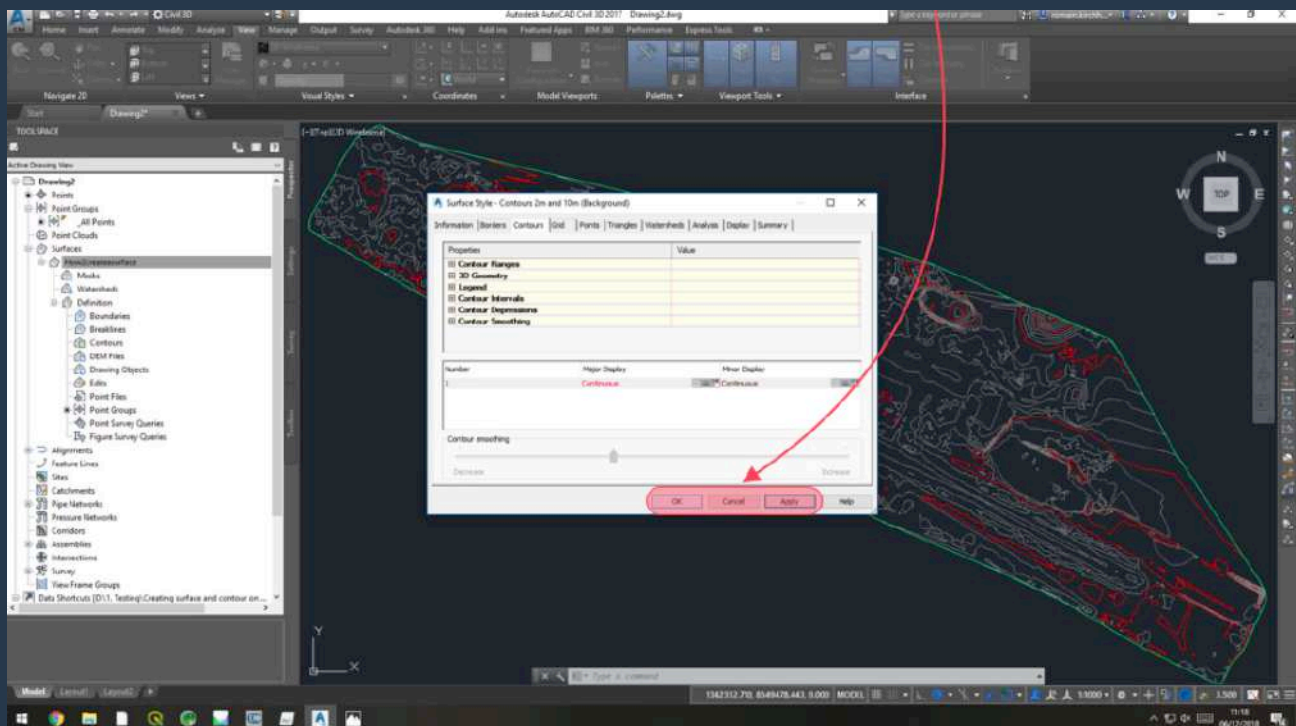
- ii. In the “Contour” tab, click on the plus button next to “Contour Intervals”



iii. Edit the “Minor” and “Major” interval (e.g. to 1m and 5m)



iv. Hit “Apply” and then “OK”



v. You go Glen Coco! You should now see a different set of contour intervals

