

# Engineering Drawing and Graphics

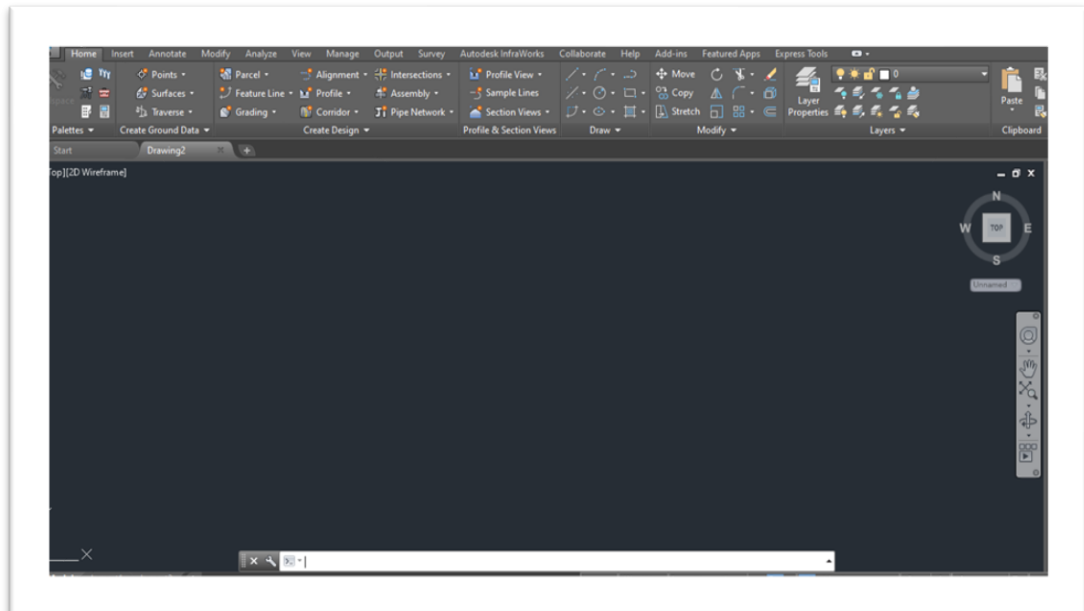
## LAB # 6: Cross Sections

### ■ Cross Sections:

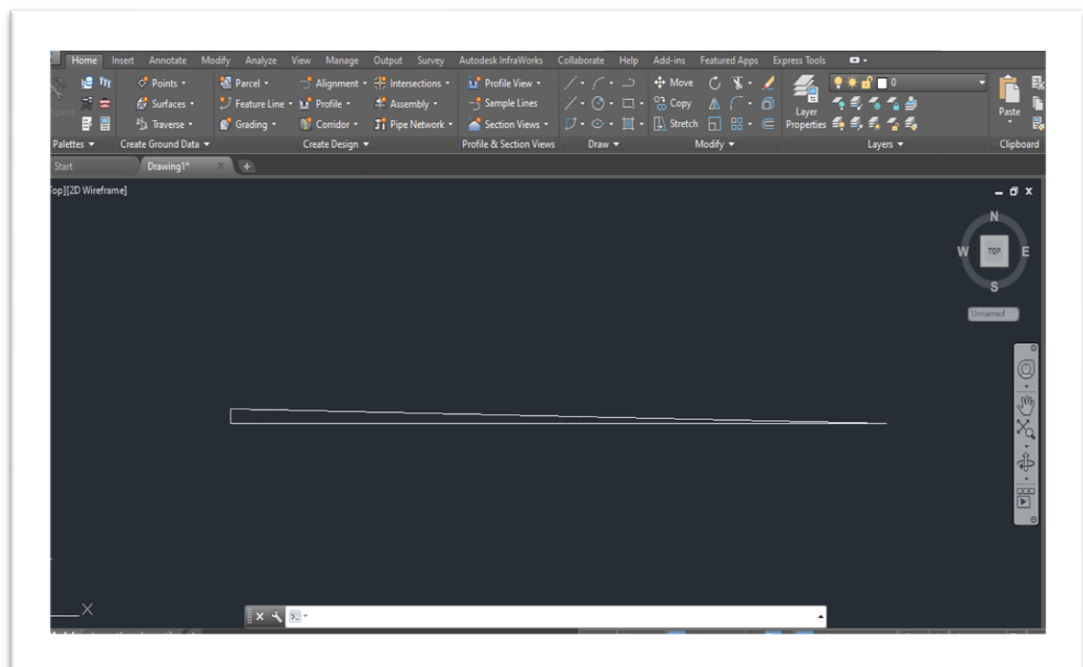
Cross sections are necessary for measurement of earthwork volumes in roadway construction. They are profile views of the ground, perpendicular to the centerline or base line, and indicate ground elevations at points of change in the ground slope.

### ❖ Steps to draw cross-sections:

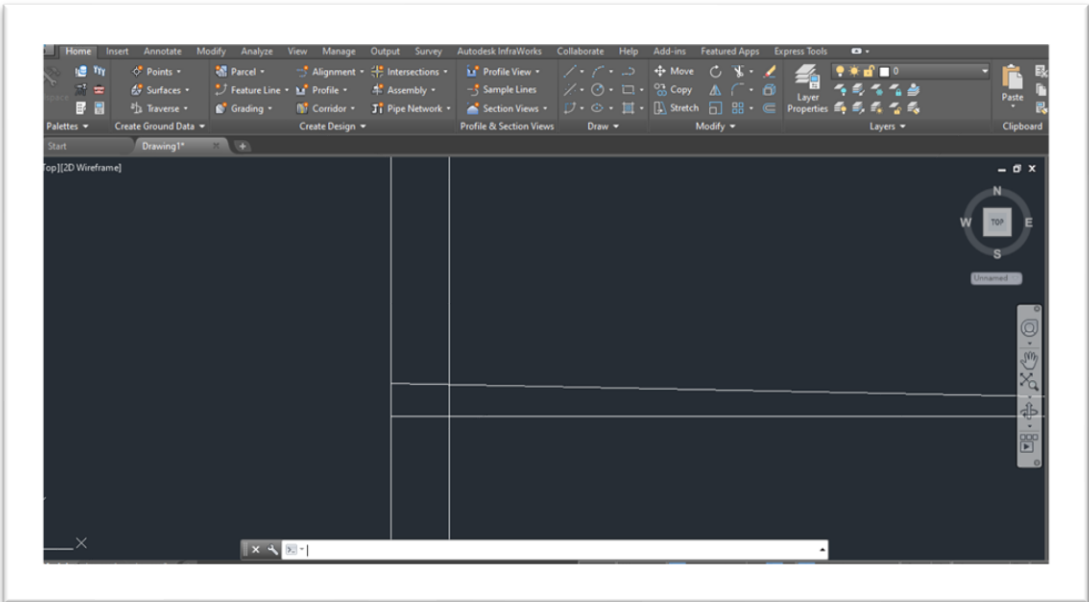
- *Open civil 3D and create a new drawing.*



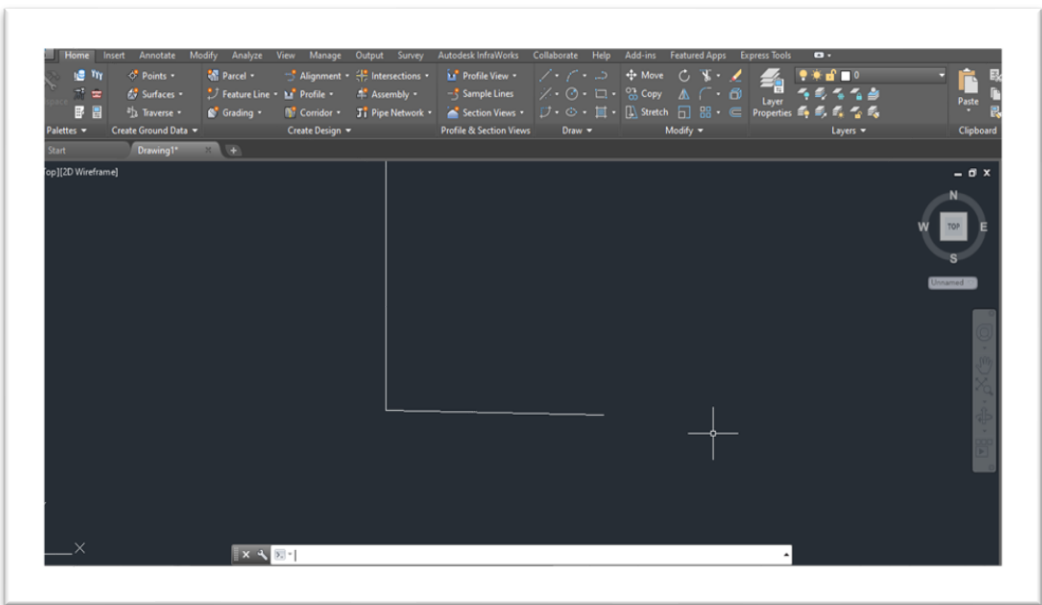
- *By using polyline command (**pl+enter**) draw slope of 2% .*



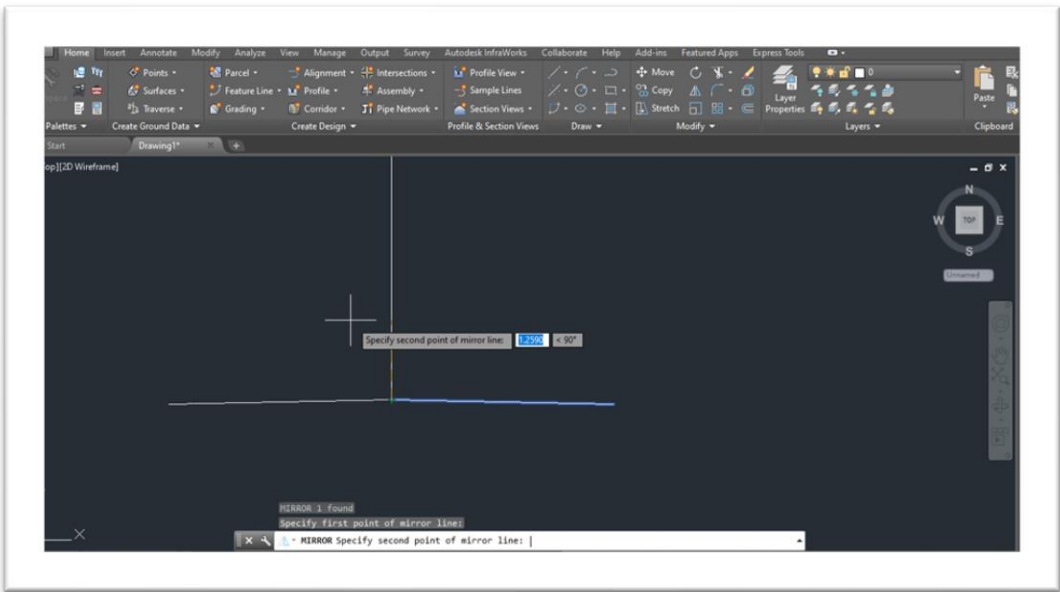
- Draw an vertical infinite line by using **(xl+enter)** then take offset of 3.56 metres



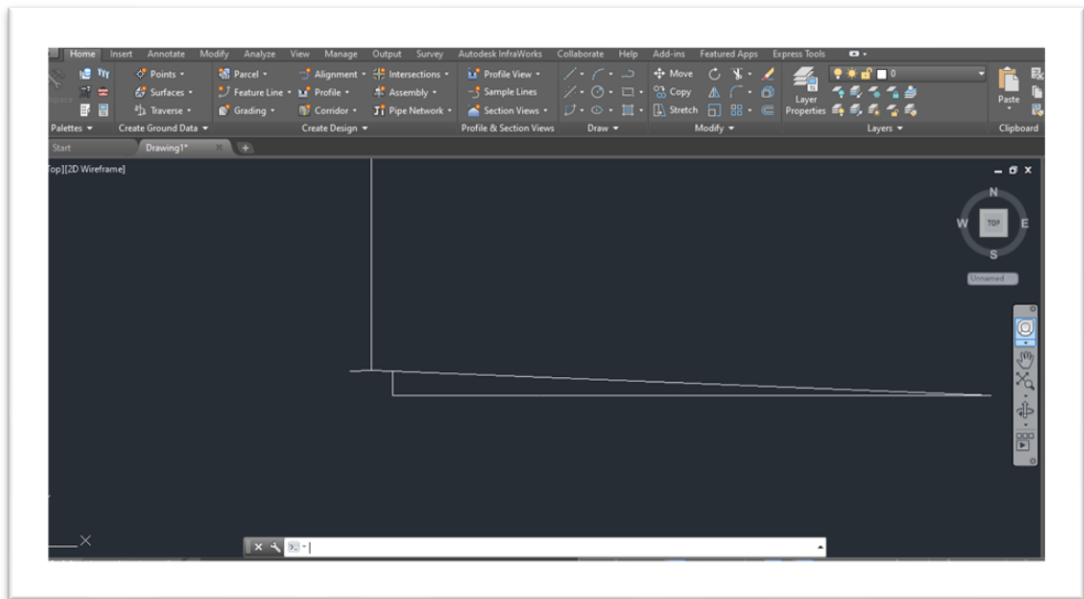
- Use trim command to remove unnecessary lines .



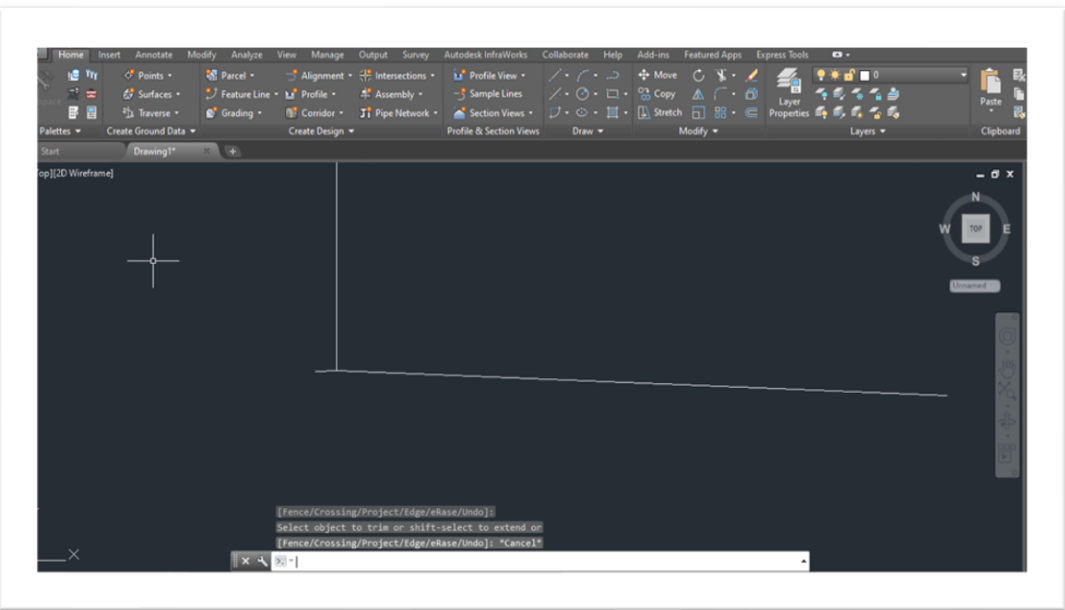
- Use mirror command to make the slope line on left side.



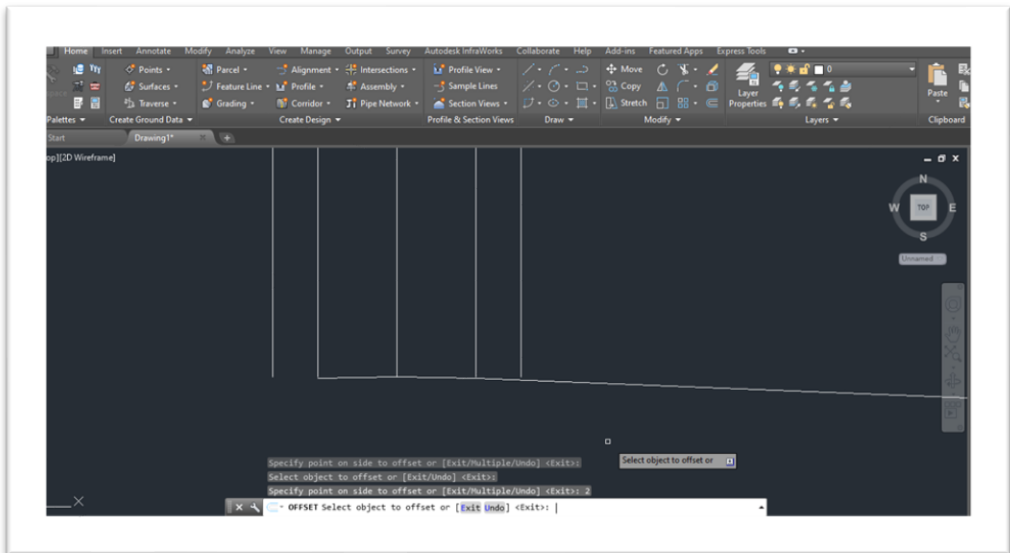
- Draw a slope of 4% , by using polyline command, from edge of slope.



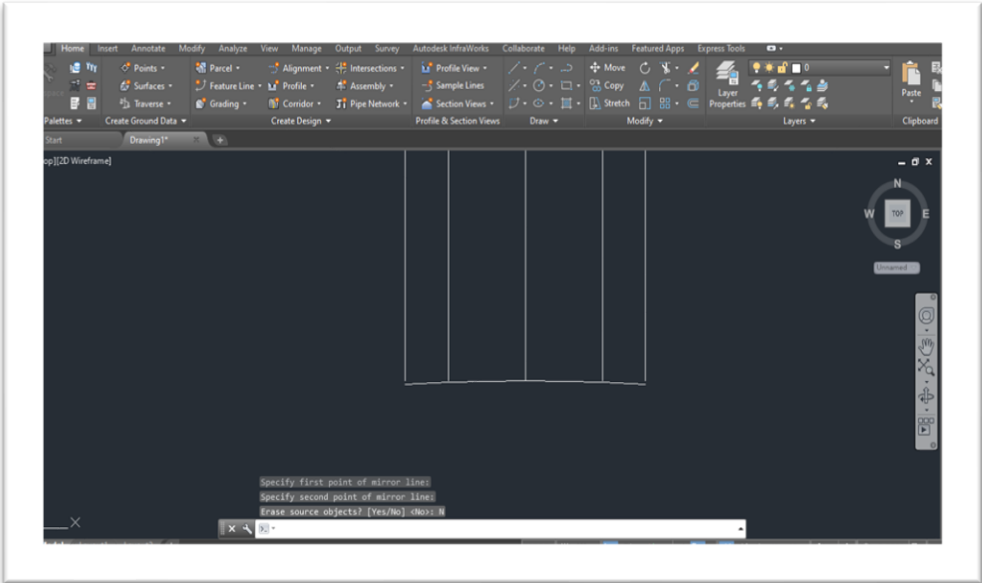
- Remove the unnecessary lines again.



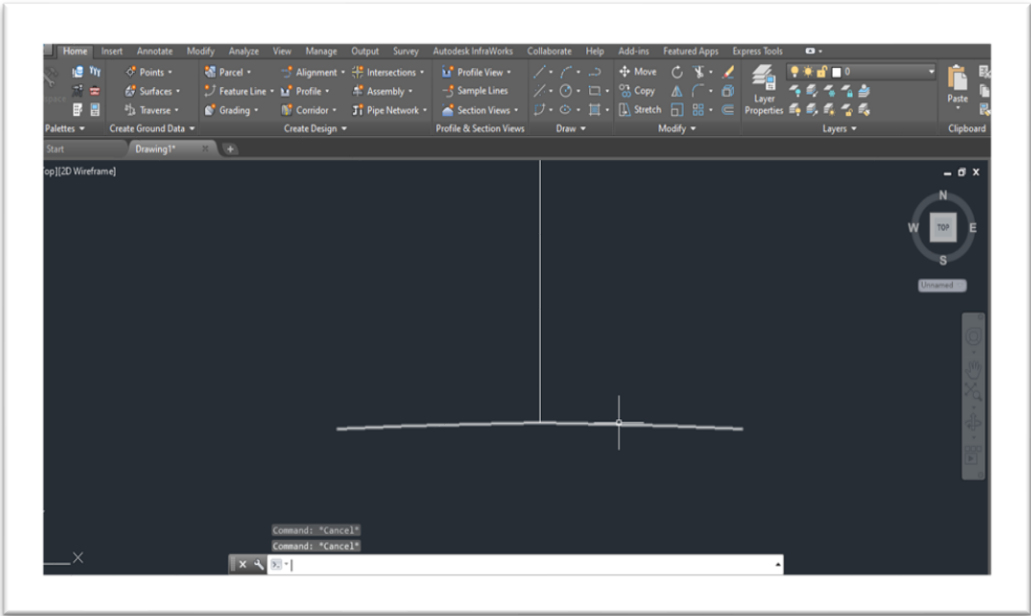
- Draw offset of 3.56 and 2 from the middle line on bothsides



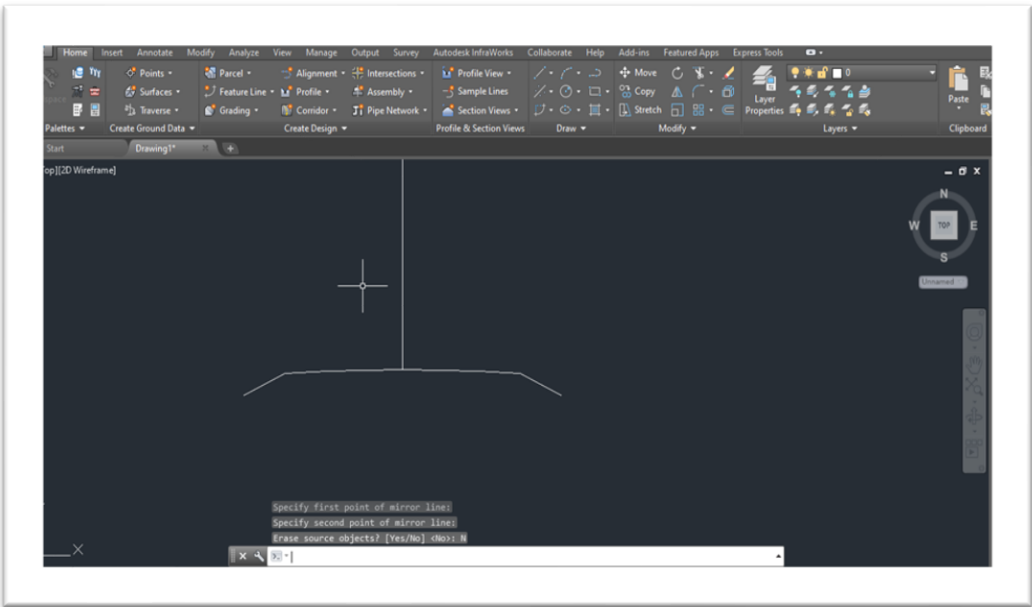
- Use trim and mirror on left side of the figure



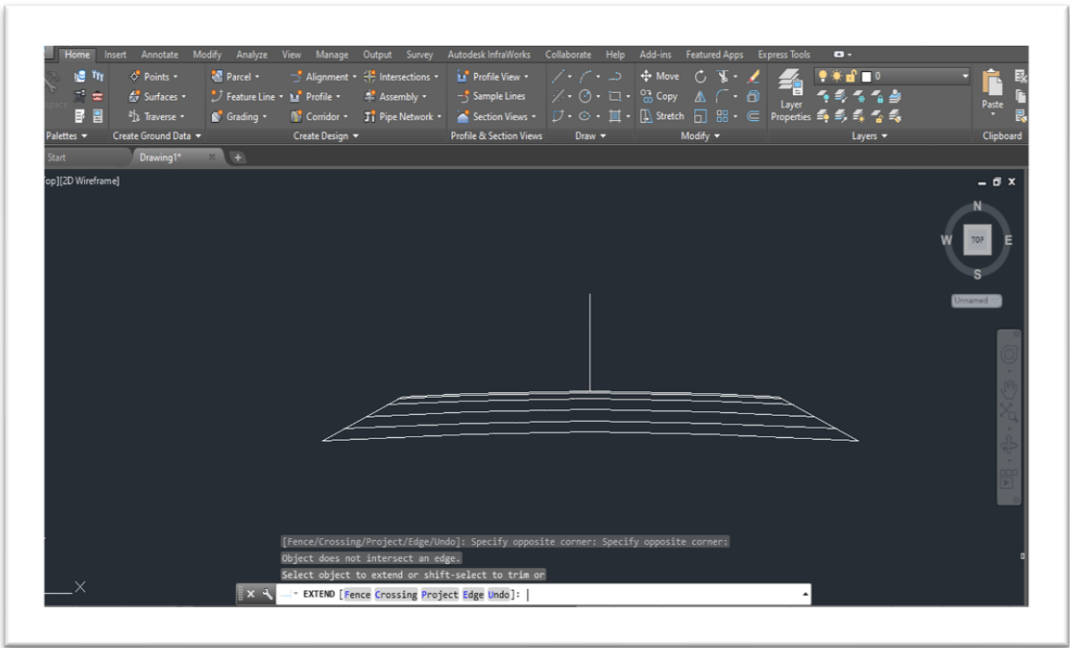
- After trimming join the base line by using join command (**J+enter**).



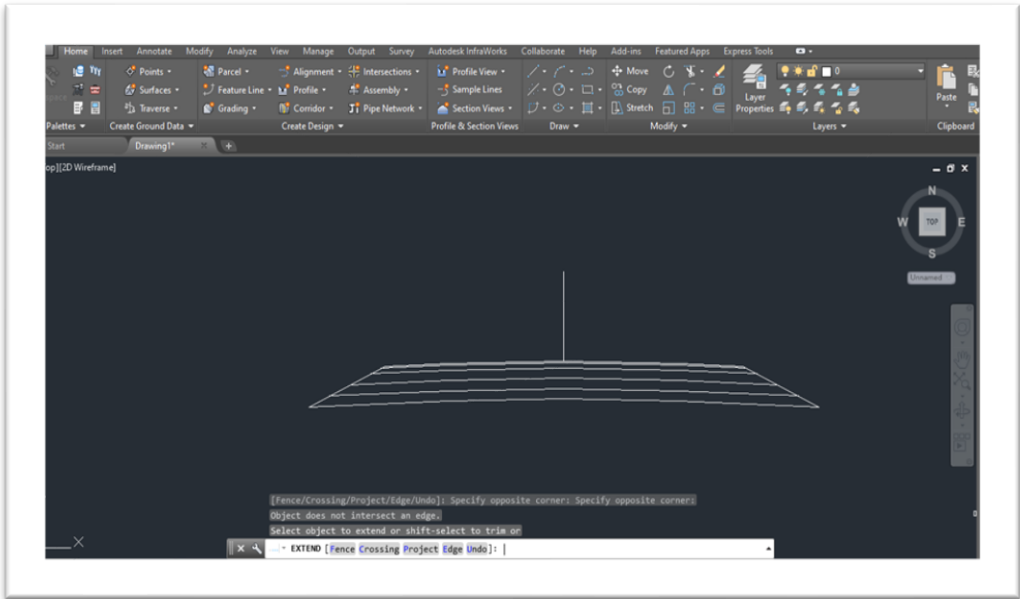
- Draw a slope of 1:2 then use trim command to remove unwanted lines and mirror the slope on left side.



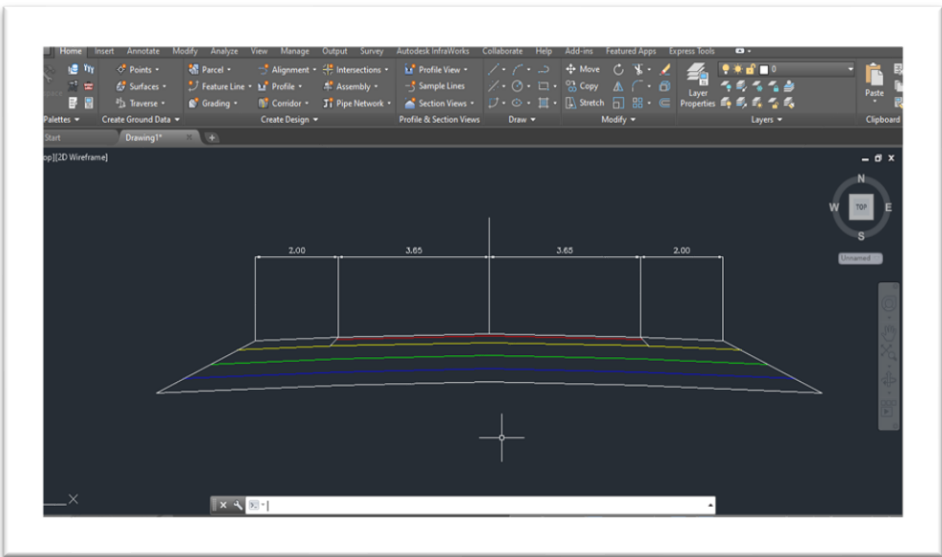
- Draw offset of 0.05 ,0.15, 0.3,0.3 and 0.3 on base line then extend all the lines to slope by using extend command.



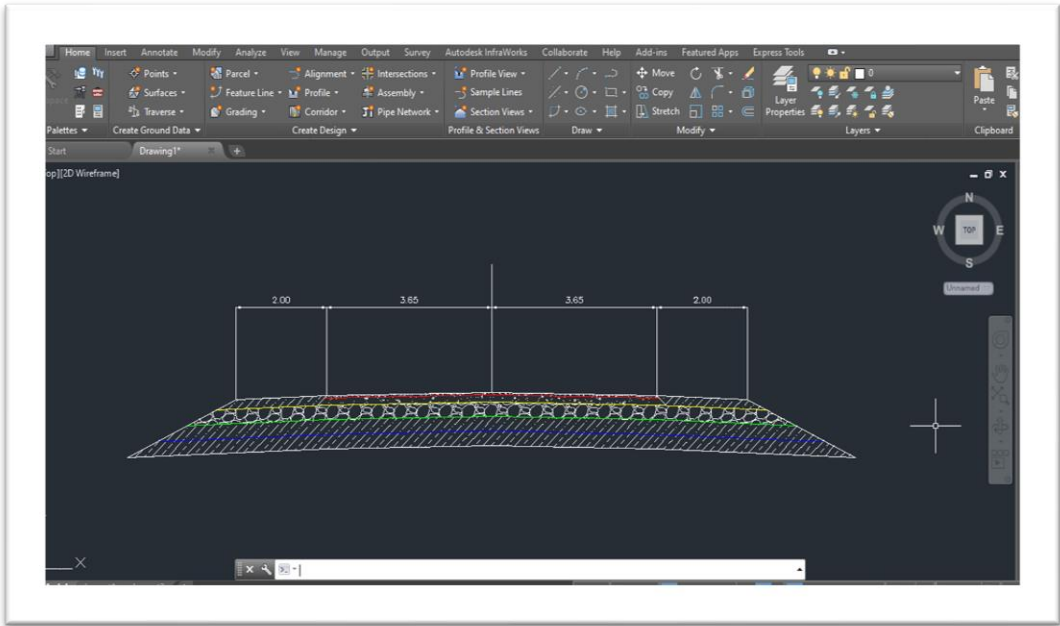
- Draw a slope of 1:1 on 3.65 distance ,remove some lines and use mirror command.



- draw dimensions of the cross section and continue the dimension by using DCO+enter



- Now hatch the cross section with different patterns.



- Label the cross section ,draw two triangles of 1:2 on both sides of shoulder .

