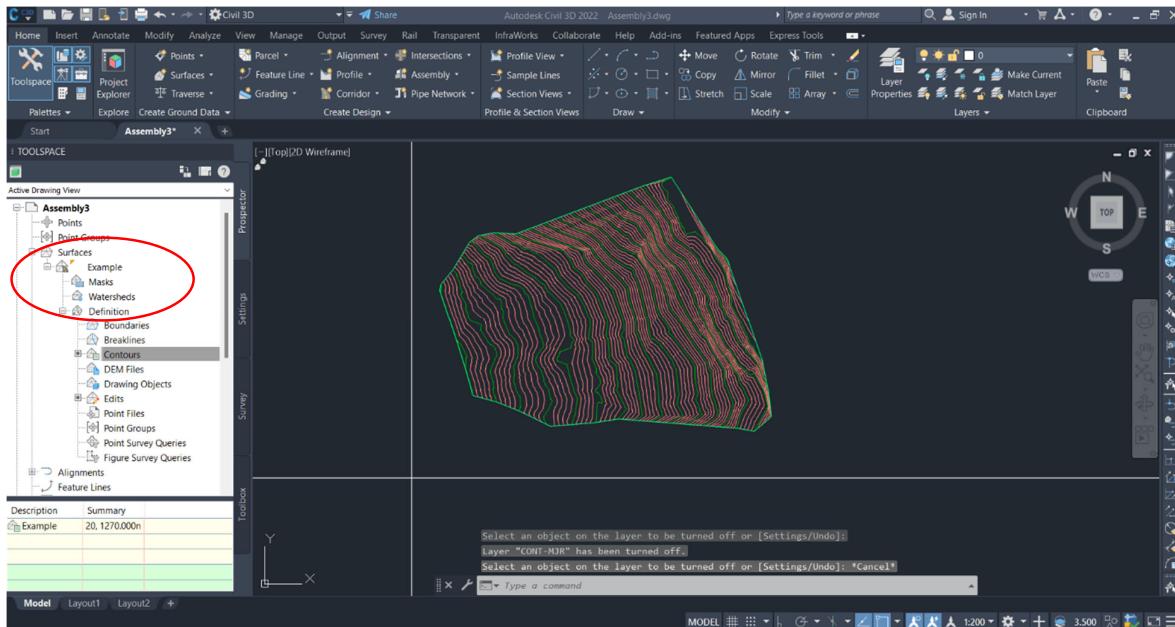


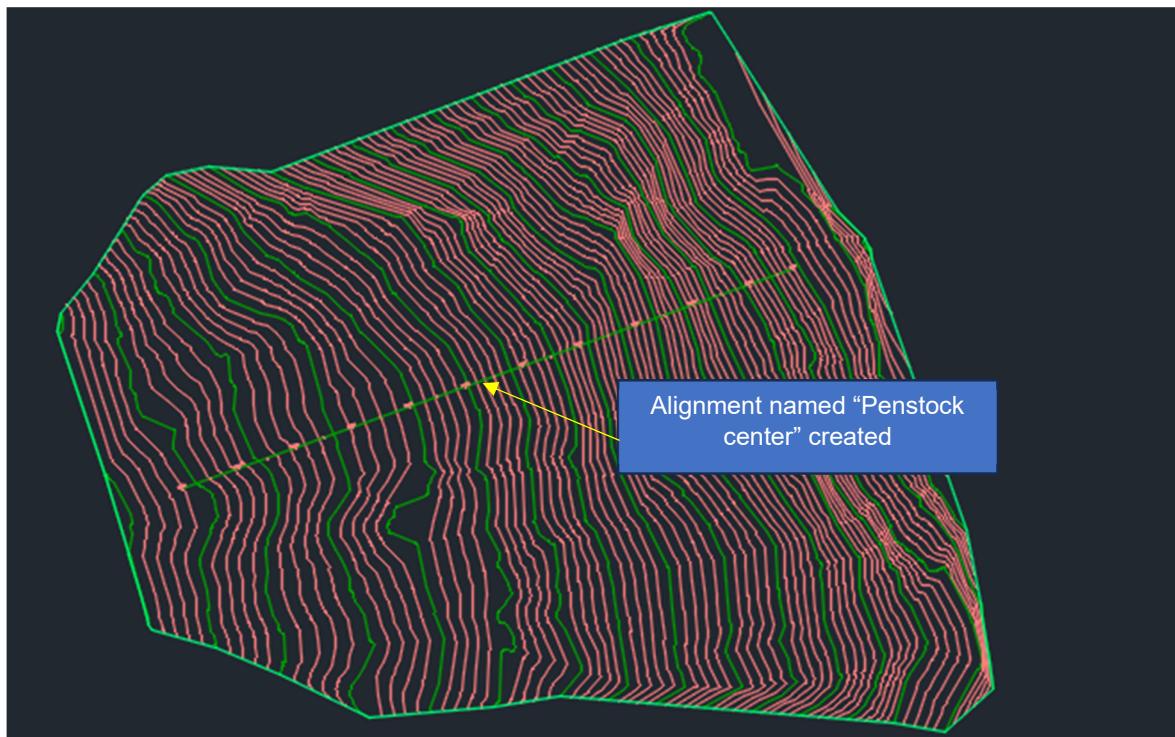
Excavation lines of alignment (Penstock, pipe, culvert) using Assembly and Corridor in Civil 3D

- Create “Surface” using survey data (Survey points or contour data) provided.

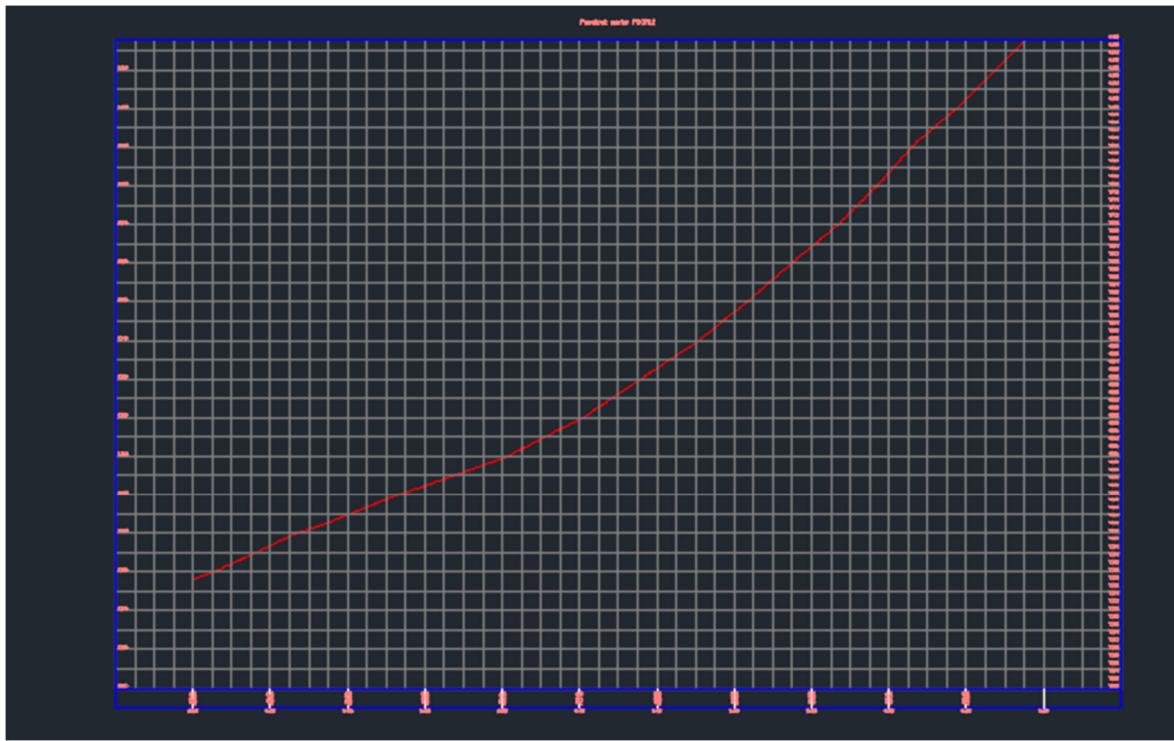


Here surface name is “Example” and existing contour has been defined to make surface.

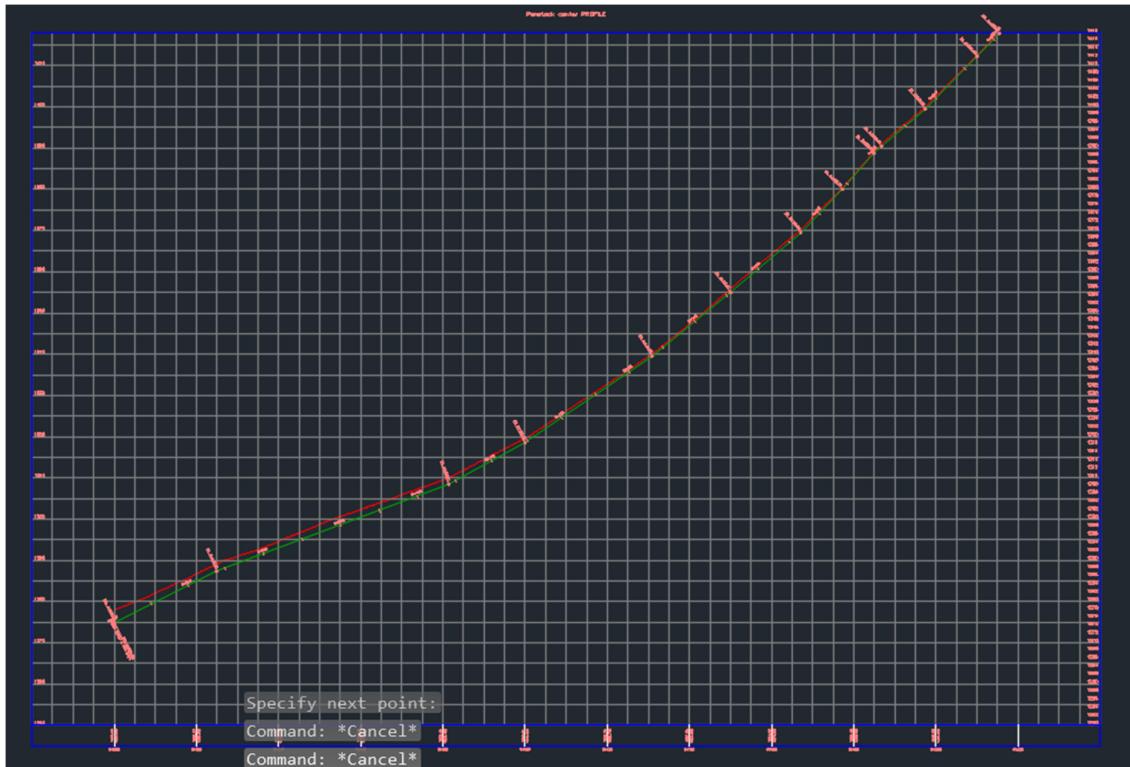
- Create alignment along the required location either using polylines already created or using “Alignment Creation Tool”



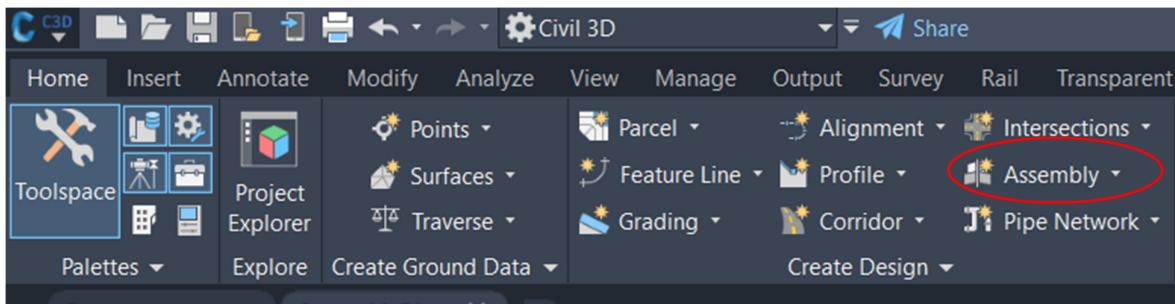
- Create profile using “Create Surface Profile” for the same alignment which we have created earlier.



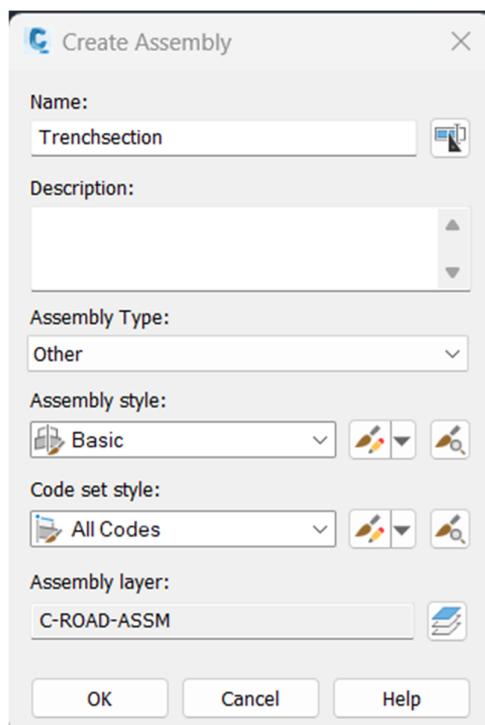
- Now create profile for the formation line of penstock/pipe/culvert in the same profile using "Profile Creation Tools" or polyline created on profile.



- Create "Assembly" → Home→ Create Design→Assembly→Click on "Create Assembly". Click OK after providing information.



Assembly named "Trenchsection" has been created.



Let say the trench section shall be

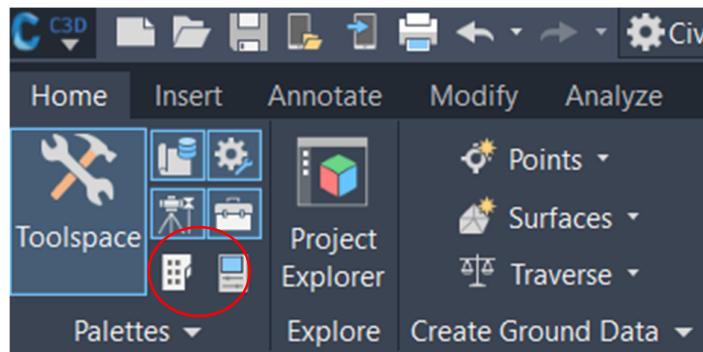
Bottom width	=5.0m
Side slope:	=1:3 (H: V)
Berm width	=1.0m
Berm depth	=5.0m

For 5.0m of height and side slope of 1:3, the horizontal width is

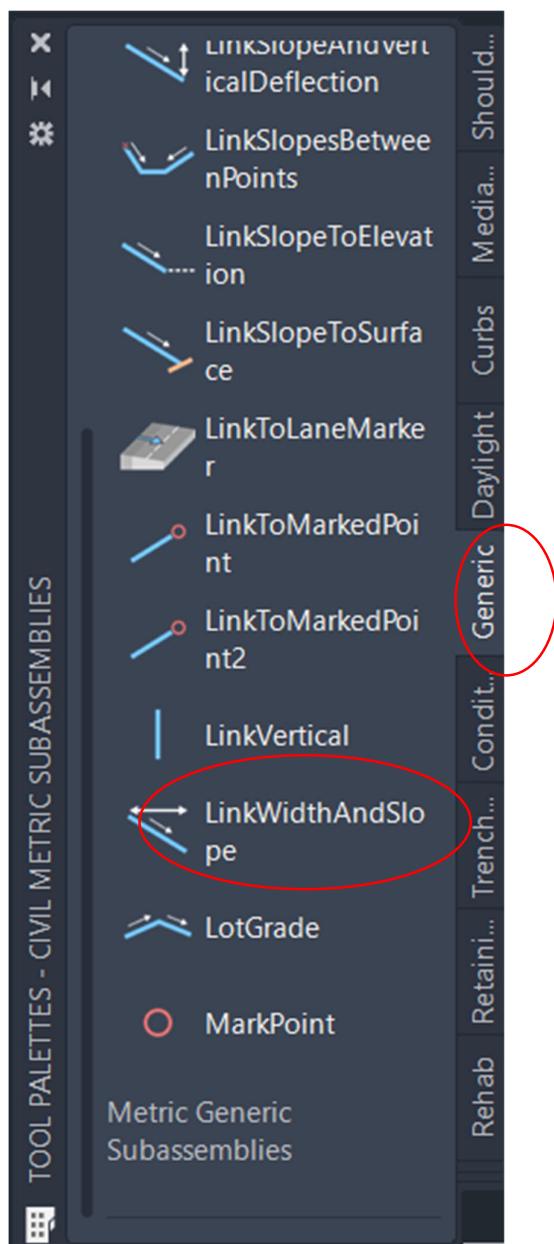
$$= \frac{5}{3} = 1.667$$

Now create assembly using horizontal distance of 1.667m and elevation difference of 5.0m.

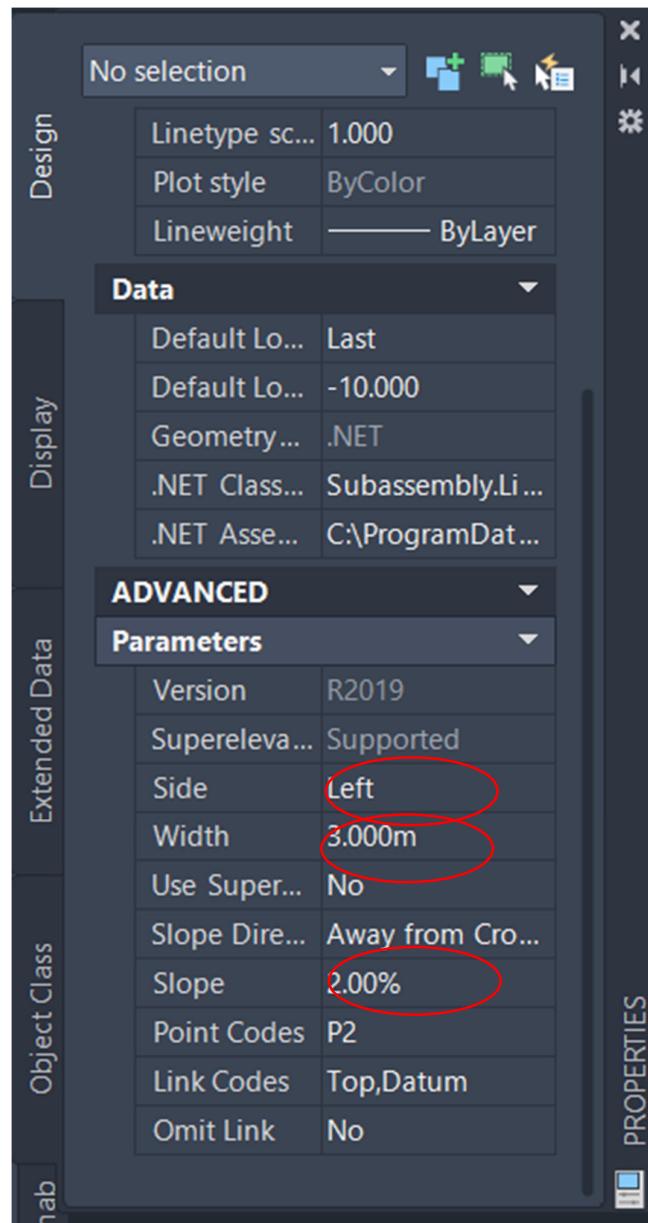
- Click on "Palettes" → Home → Palettes → Click on Symbol. Then go on Generic and create cross section of penstock/pipe/Culvert's excavation line using "LinkWidthAndSlope".



Now following msg box will be displayed



Click on "LinkWidthAndSlope". Then click on parameter on displayed msg box



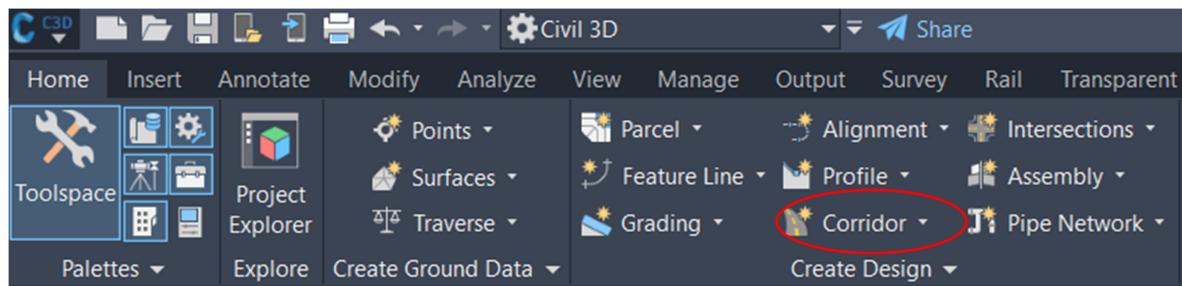
Side shall be Right if line to be made at right, left if line to be made at left.

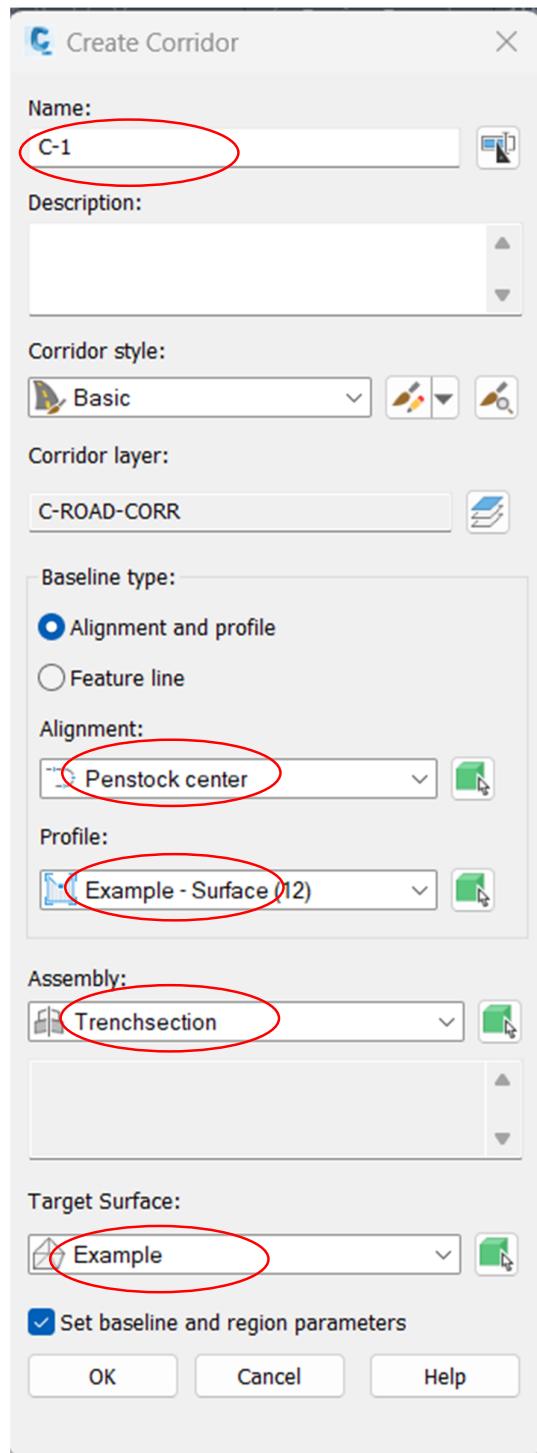
Width shall be half of bottom width to make trench symmetrical with alignment. Similarly, to make side slope width shall be 1.667m and slope shall be $3/1 \times 100 = 300\%$. To make berm, width = 1.0m , slope = 0% .

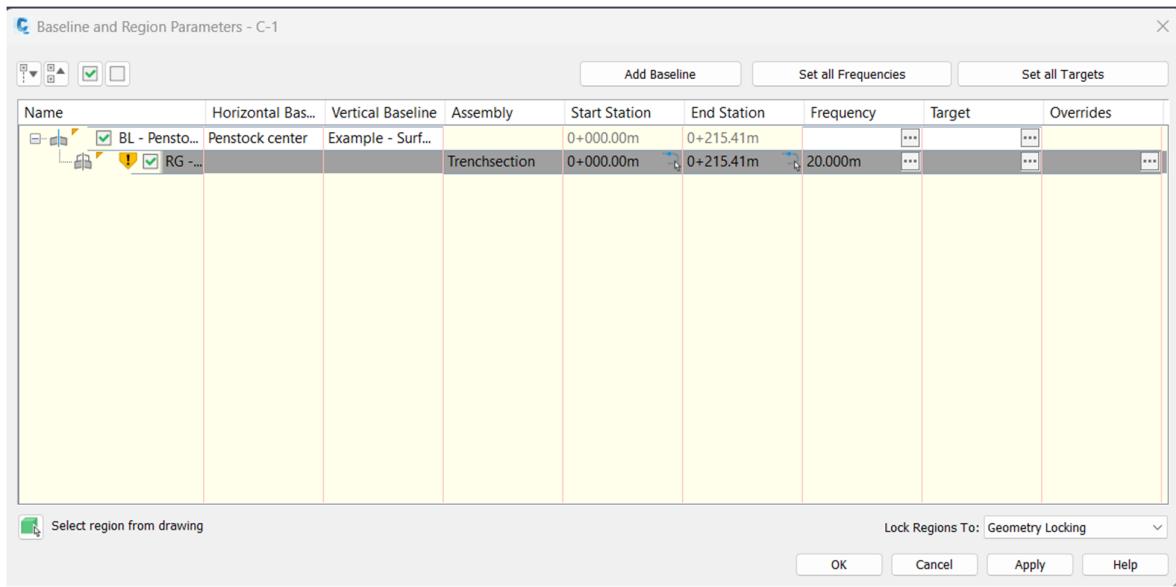
The assembly shall be like this



- Create "Corridor" → Home → Create Design → Click on "Corridor" → Create corridor using Surface, Assembly, Alignment already created.

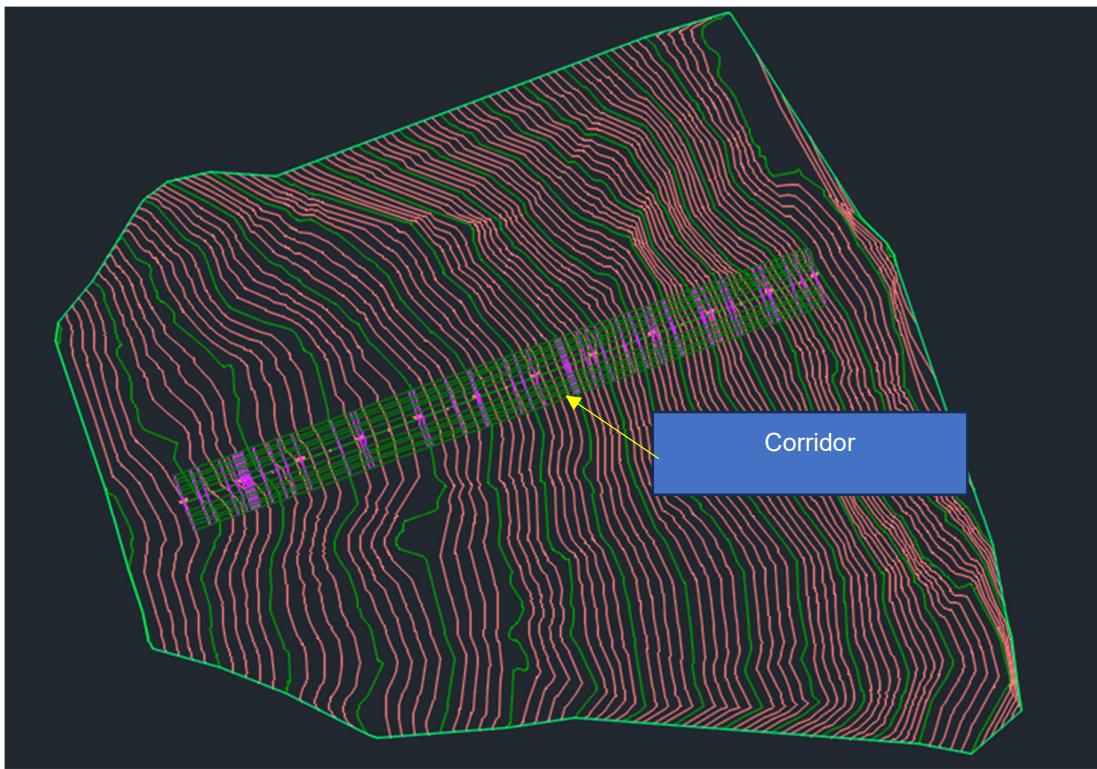






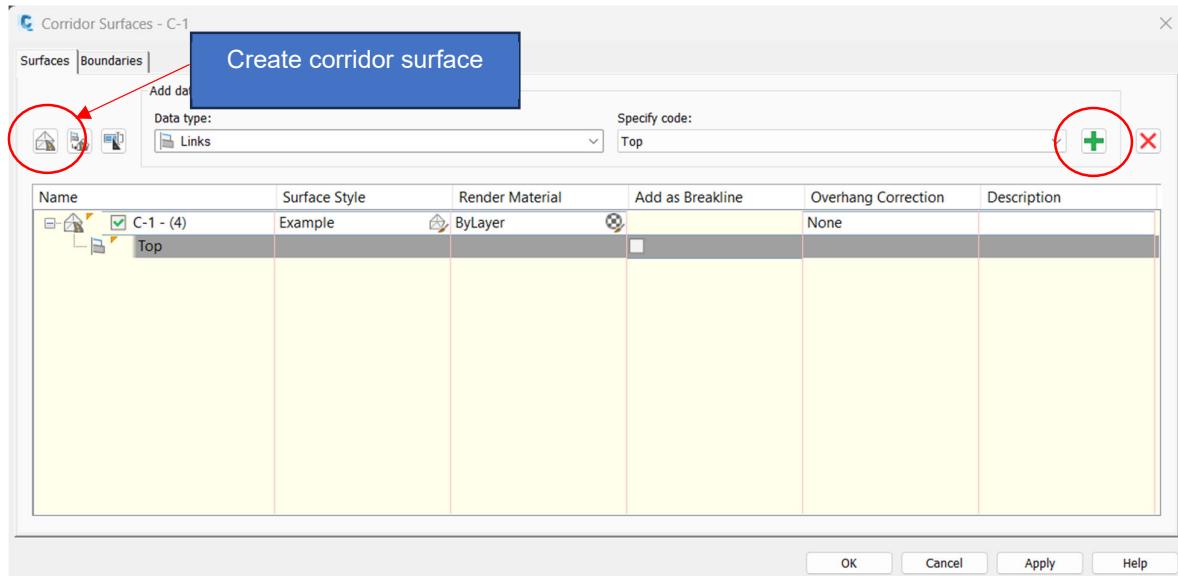
Click on displayed msg box

Then corridor will be created.



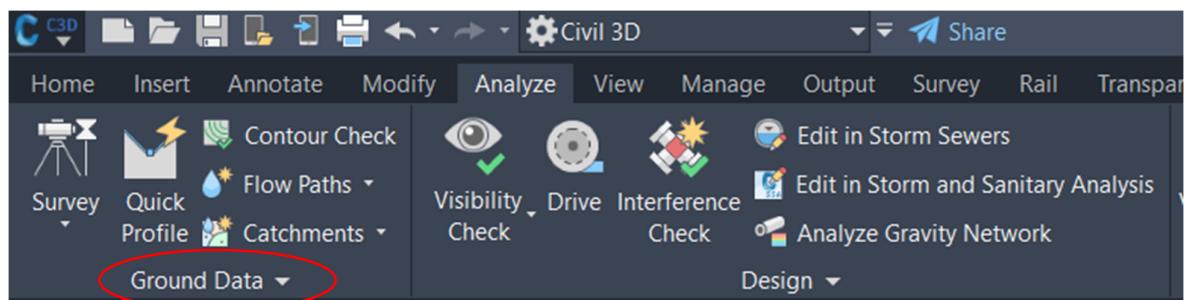
Rebuild corridor

- After creating corridor, Right click on Corridor and Click on "Corridor Surface" and click on "Create a corridor surface" then click Data type to link, specify → Top and then add.



Then Click "OK" and the rebuild corridor

- Analyze: Analyze → Ground date → Minimum Distance between surface. Click both surfaces.



Click on "Ground Data", minimum Distance between surface will be displayed and then click on both surfaces "Example" and "C-1".

- Then excavation line will be created on plan.