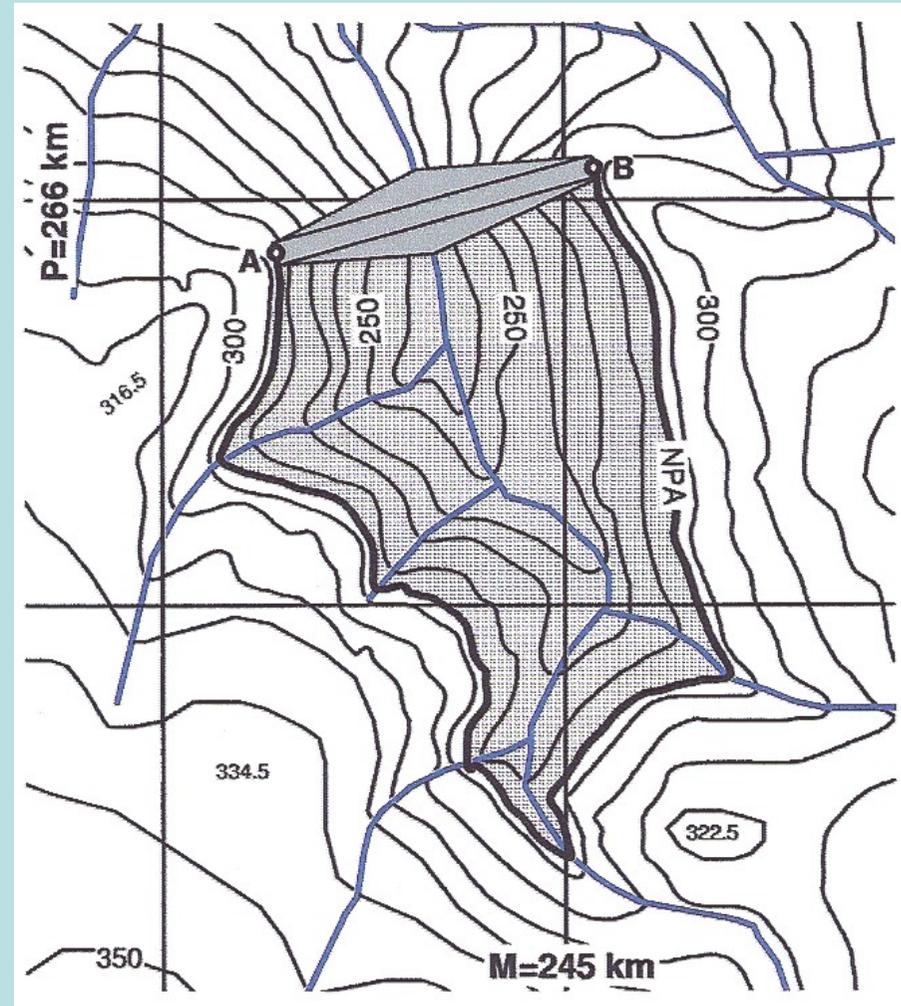
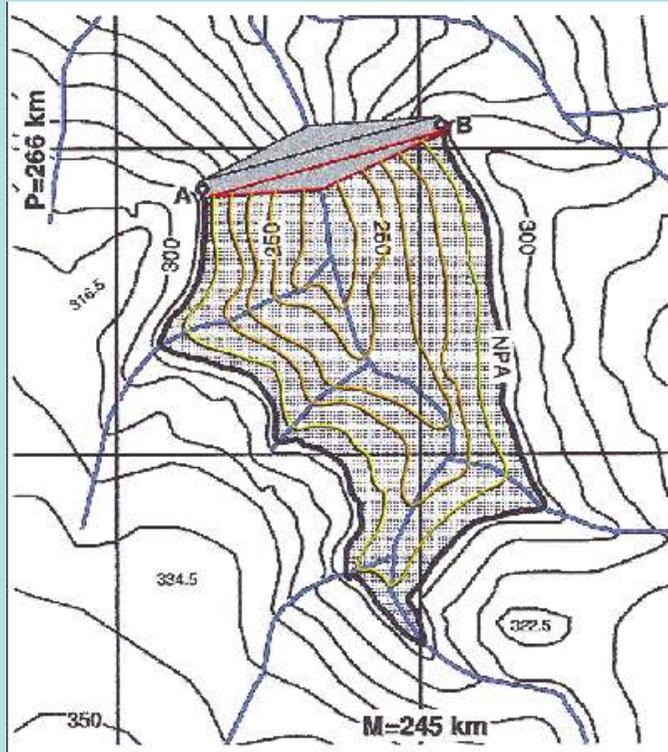


Topografia Aplicada – movimento de terras

Exemplo: Considerando a imagem barragem.tif e supondo o coroamento da barragem à cota 290 m: **a)** digitalize a 3D a informação contida nessa imagem **b)** escale a informação digitalizada utilizando a quadrícula quilométrica **c)** georeferencie correctamente a informação digitalizada **d)** considerando a albufeira cheia até à cota 280 m, calcule o volume de água armazenado **e)** considerando a albufeira cheia até ao nível de pleno abastecimento (NPA), calcule o volume de água armazenado **f)** qual é a taludação do paramento montante da barragem? **g)** suponha que após o enchimento se entendeu necessário reforçar a estrutura da barragem aumentando a taludação do paramento jzante para o valor 1/2.5; represente esta obra.

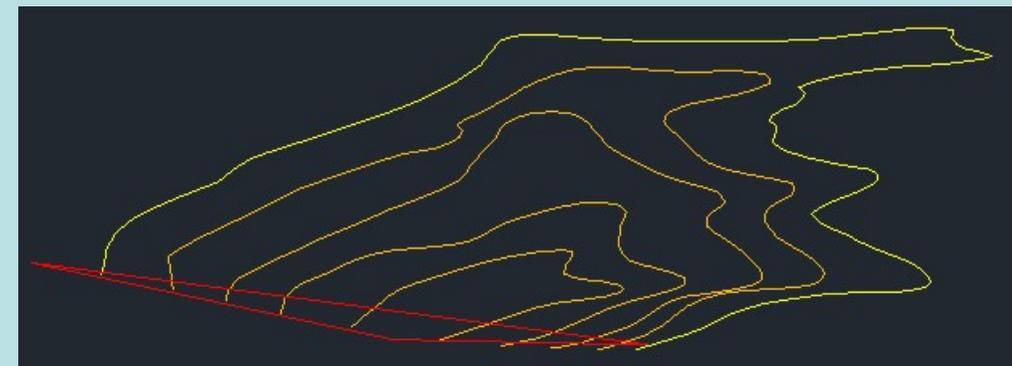


Topografia Aplicada – movimento de terras



Digitalizar as curvas de nível contidas no interior da bacia da baragem assim como o coroamento e o paramento montante de acordo com os layers indicados.

S...	Name	O...	Fre...	L...	Color	Linetype	Lineweig...
	0				wh...	Continu...	— Defa...
	280				yel...	Continu...	— Defa...
✓	C-TOPO				wh...	Continu...	— Defa...
	coroamento				red	Continu...	— 0.35...
	curvas de nivel				40	Continu...	— Defa...
	paramento				red	Continu...	— 0.35...

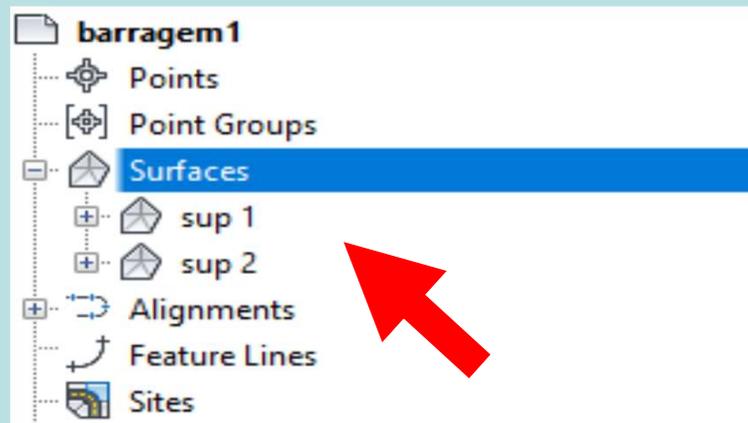


Topografia Aplicada – movimento de terras

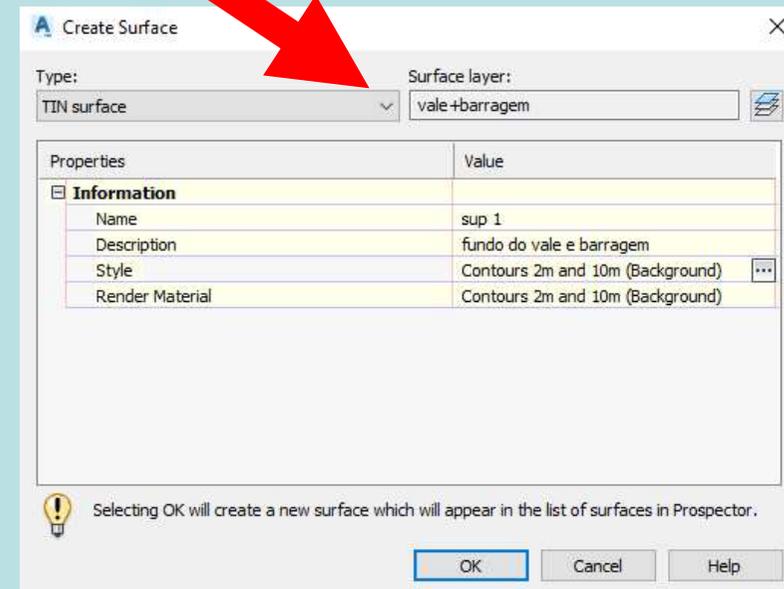
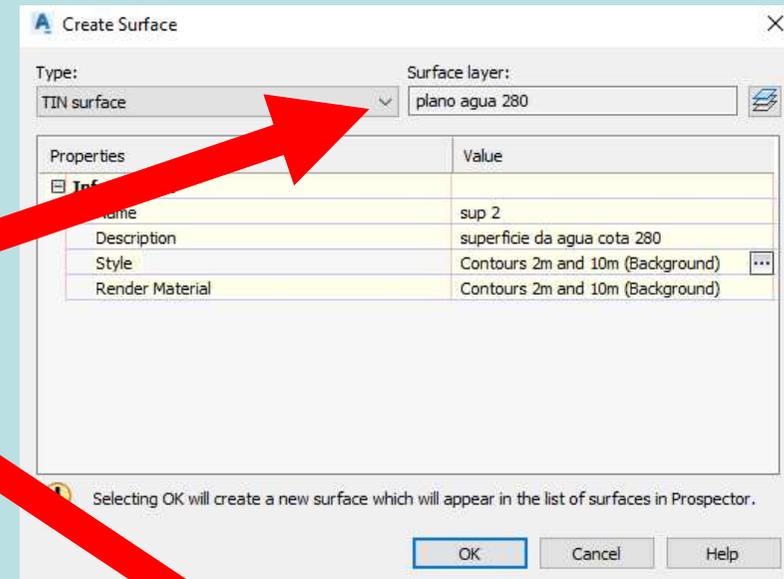


S...	Name	O...	Fre...	L...	Color
	0				wh...
	280				yel...
	C-TOPO				wh...
	coroamento				red
	curvas de nível				40
	paramento				red
	plano agua 280				40
	vale+barragem				40
	sup 1				
	sup 2				

Acrescentar 2 layers que vão conter as 2 superfícies necessárias.

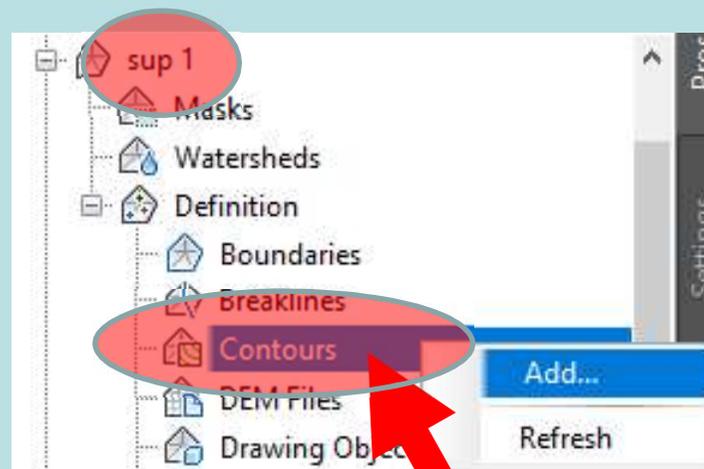
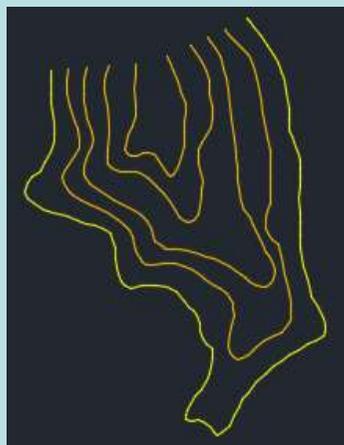


Criar as superfícies sup 1 e sup 2.

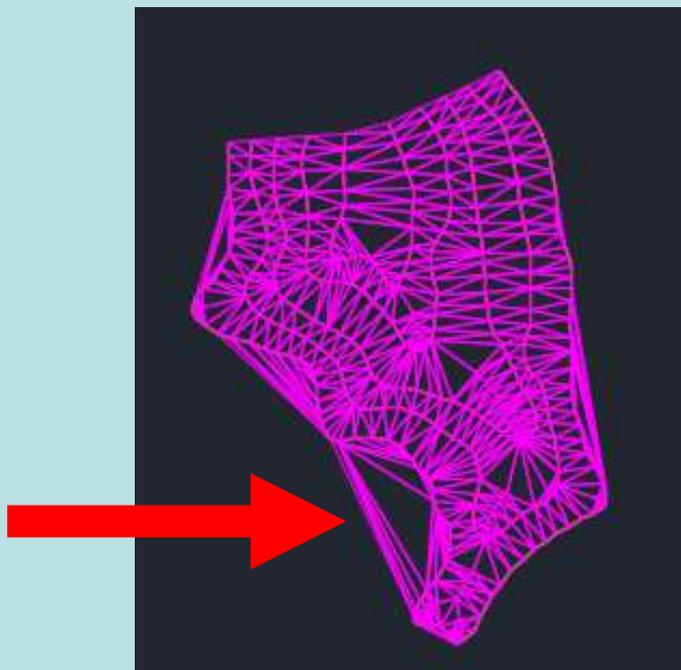


Topografia Aplicada – movimento de terras

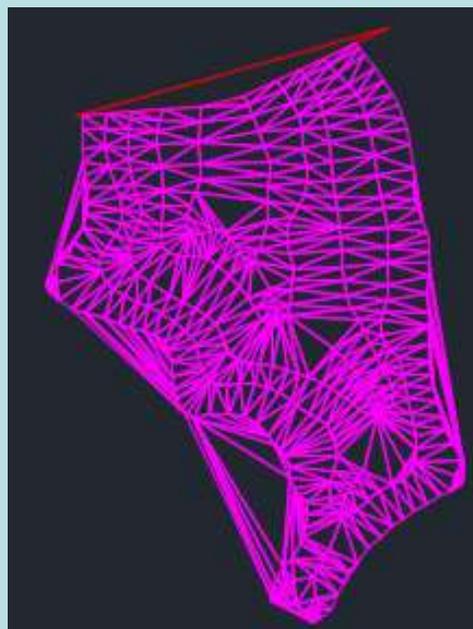
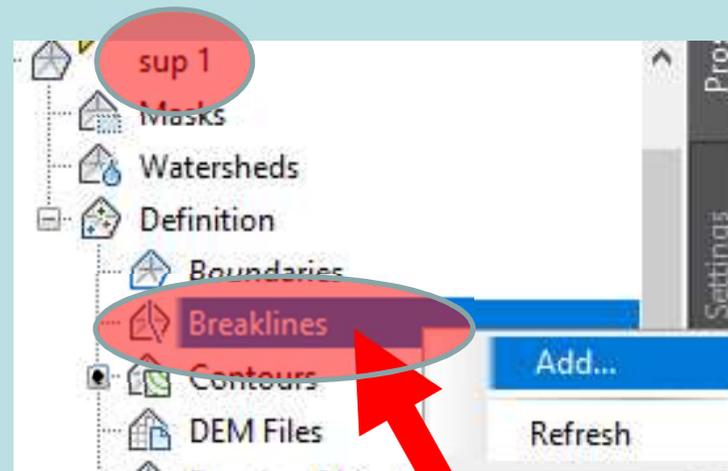
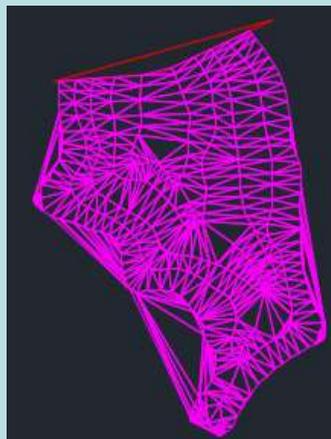
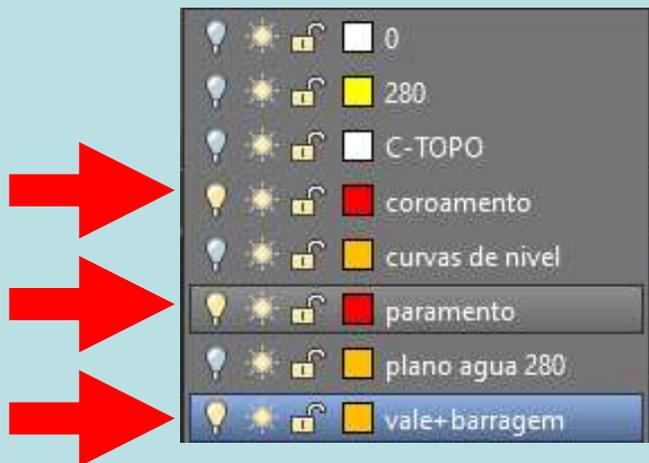
sup 1:



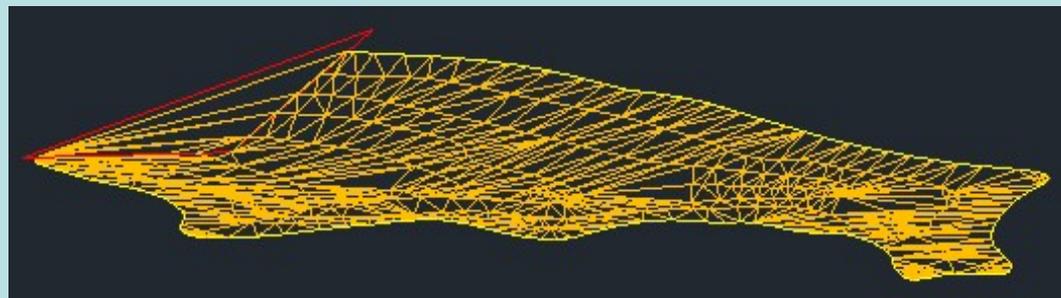
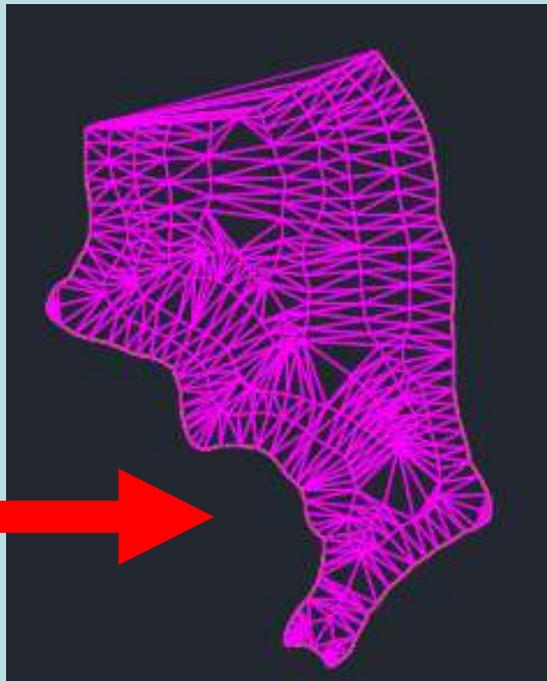
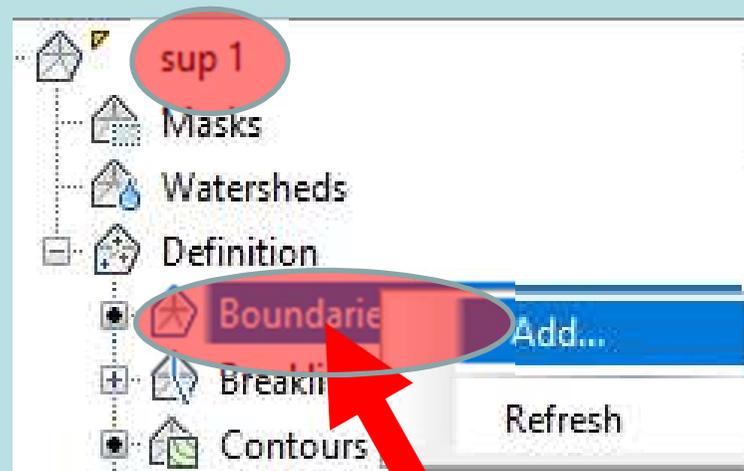
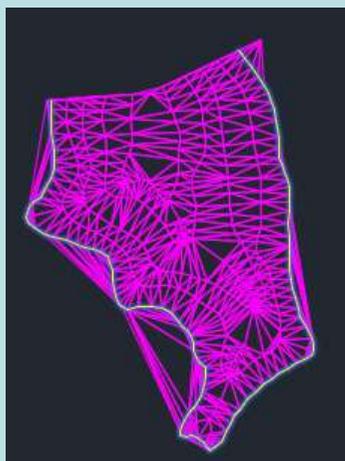
layer activo



Topografia Aplicada – movimento de terras

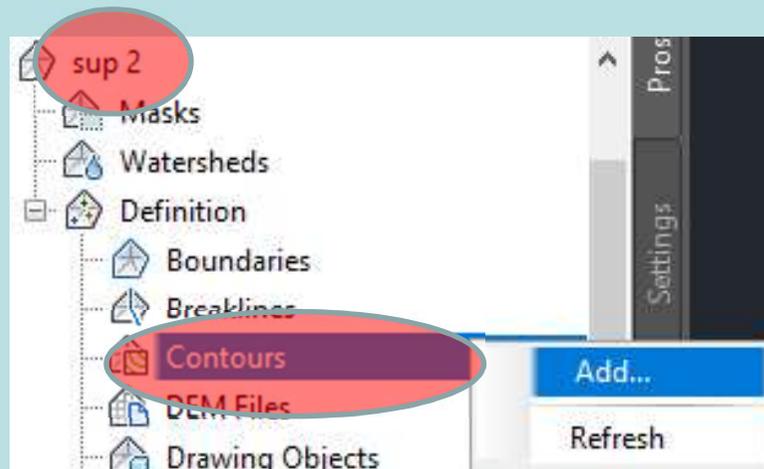


Topografia Aplicada – movimento de terras

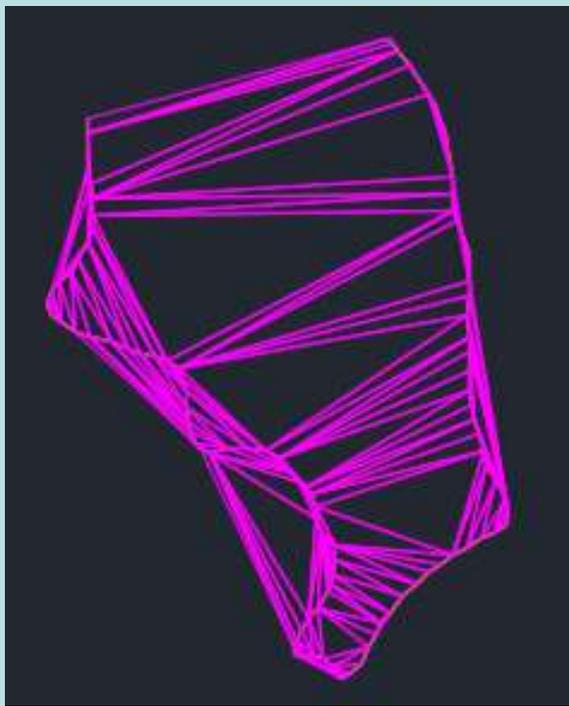


Topografia Aplicada – movimento de terras

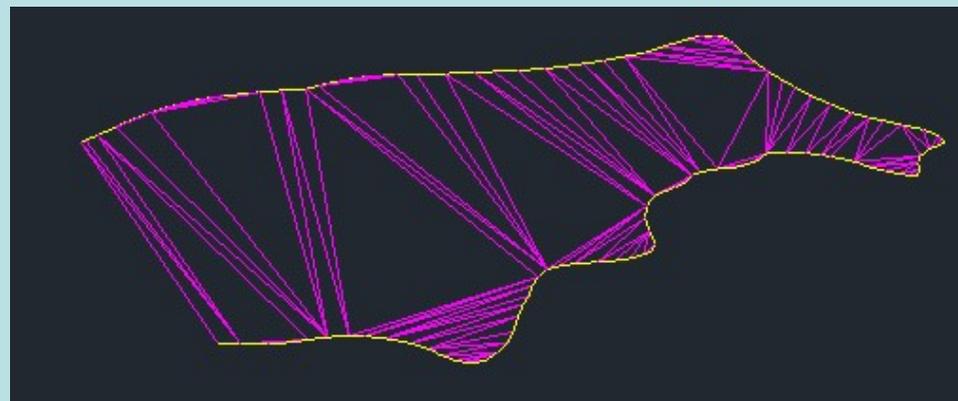
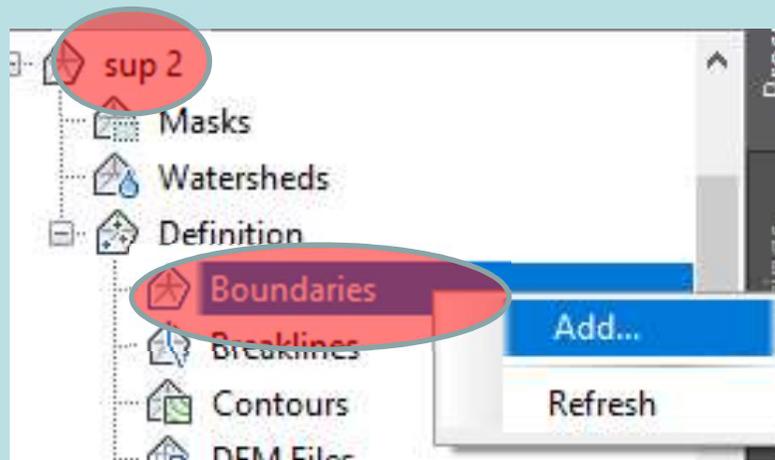
sup 2:



layer activo



Topografia Aplicada – movimento de terras



Topografia Aplicada – movimento de terras

The image shows the Autodesk AutoCAD Civil 3D 2018 interface. The 'Analyze' tab is highlighted in the ribbon. The 'Create Surface' dialog box is open, showing the following settings:

- Type: TIN volume surface
- Surface layer: C-TOPO
- Properties table:

Properties	Value
Information	
Name	Surface <[Next Counter(CP)] >
Description	Description
Style	Contours 2m and 10m (Background)
Render Material	Contours 2m and 10m (Background)
Volume surfaces	
Base Surface	sup 2
Comparison Surface	sup 1
Cut Factor	1.000
Fill Factor	1.000

Selecting OK will create a new surface which will appear in the list of surfaces in Prospector.

The Prospector table below shows the resulting surface data:

Name	B	Mid-Ordinate ...	Cut Factor	Fill Factor	Style	2d Area(sq.m)	Cut(adjusted)(Cu. ...	Fill(adjusted)(Cu. ...	Net(adjuste
Surface4			1.000	1.000	Contours 2...	834736.66	14537426.57	6234.45	14531192.12