

# Representação Digital

# 2023-2024

20191454

MADALENA SILVA



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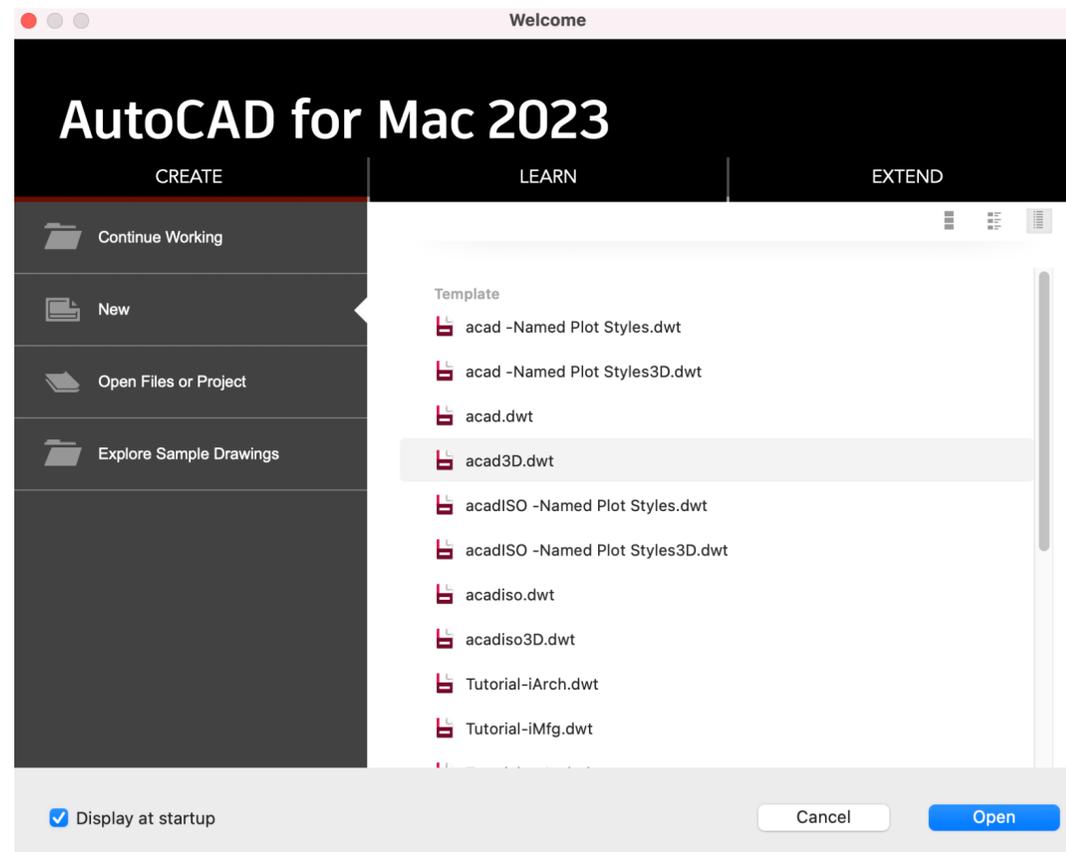
## *Autocad 2023*

### *Brackets:*

- Para inserir a foto, o “código” diz “src” (source); tem de estar localizada na mesma pasta que o ficheiro index.html a ser trabalhado e tem de se inserir o mesmo nome.
- Códigos para caracteres:
  - ç: &ccecil
  - ~: &(letra)tilde
  - °: &ordm
  - ª: &ordf
  - ´: &(letra)acute
  - `: &(letra)grave
  - ^: &(letra)circ
- Cor usada de fundo: palevioletred
- W3 Schools: html e CSS tutoriais

### *FileZilla:*

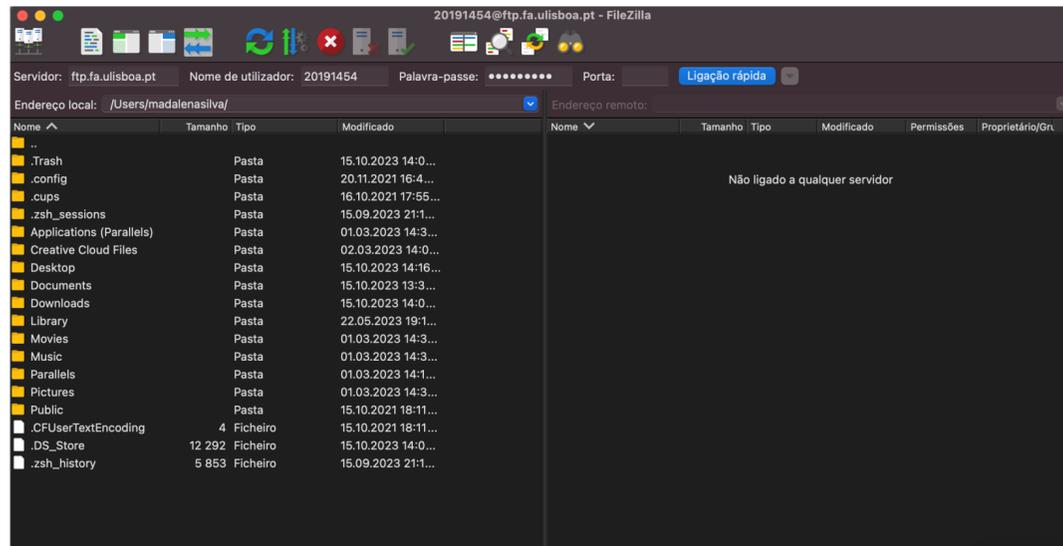
- Servidor: ftp.fa.ulisboa.pt
- Acesso: Utilizador (20191454) e palavra-passe do moodle
- Endereço remoto: /public\_html  
Para inserir o index.html, etc



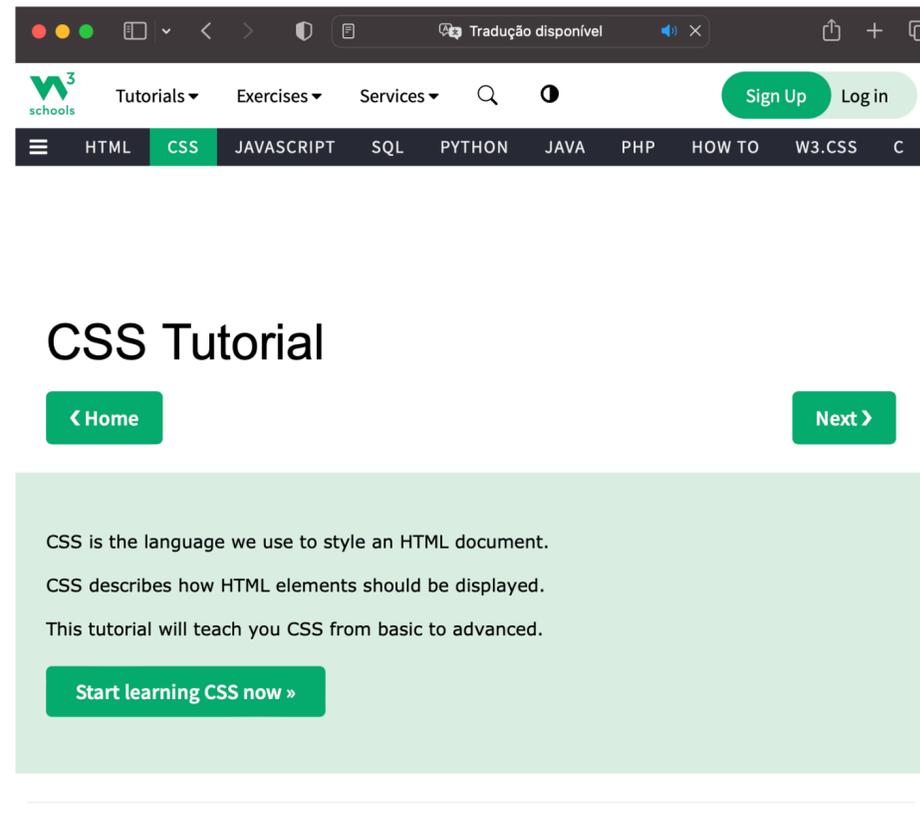
Autocad 2023



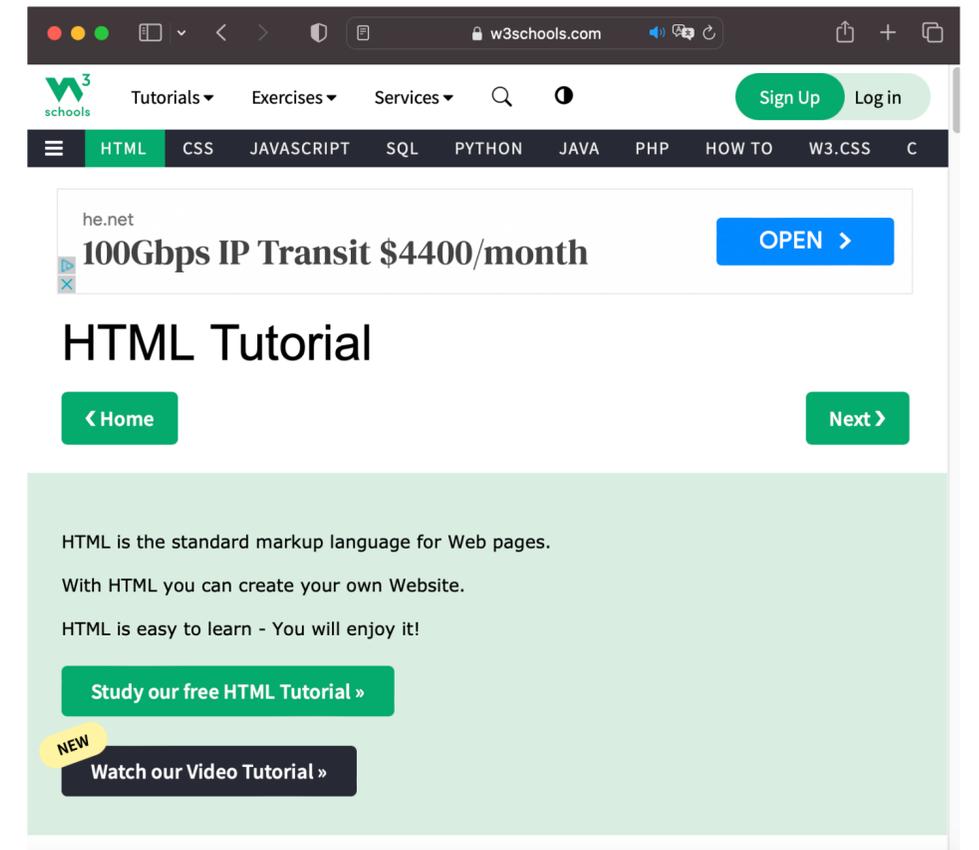
Bracketts  
Edição de html



Filezilla



W3 schools



(Assinar a folha de presenças sempre no mesmo número: 18)

*Autocad:*

- Comandos:

- U: Undo
- L- Line
- M- Move
- PL- PolyLine
- DTEXT- Escrever texto
- DIST- Medir distância
- SCALE- Escala (aumentar ou diminuir) o objeto;
- ALIGN- Alinha a escala

Coordenadas cartesianas (x,y,z)

Coordenadas absolutas: relativas ao 0 (0,0,0):

Coordenadas relativas: Relativas ao ponto anterior

Exemplo: A (4,3), B (5,9) - A(4,3), @B (1,6)

- Coordenadas absolutas: # (Shift+3)

- Coordenadas relativas: @

Coordenadas polares: dist. < ângulo

- Na construção do pentágono, a partir do primeiro lado: @VD<72°

**Exercício do Pentágono:**

- Line (10,10)
- #20,30
- @10<72
- @10<114
- @10<216
- Close

**Exercício de decalque da planta Casa Siza:**

- Linha de command: ATTACHED- anexar a imagem
- Paralelas: (Para paredes- Caixa de ar, paredes interiores e exteriores, etc)
  - LIST
  - DIST- Selecionar cada ponto manualmente
  - OFFSET- Distância medida

**Autocad:**

-Layers

-Comandos:

- CHPROP: Mudar propriedades das layers

- Exemplo: Mudar o objeto de layer

1º Definir cores nos vários layers para distinguir

2º Linha de comando > CHPROP > Selecionar o objeto > Mudar Propriedade > Layer > Escrever nome da Layer > Enter

- F8: Ortho ON/OFF

- Copy

- Rotate

- Z- Zoom

-Hatch: Mudar transparência

- E- Extend

- Group- Agrupar objetos

- Ungroup- Desagrupar grupos

- MIRROR

**Exercício do Pentágono:**

-Retângulos: 10x3

-DTEXT:

@10<144



## Exercício Casa Siza:

### - Comandos:

-SF (Scale Factor): DIM (Dimensão)  $\Rightarrow$  DIMR (Dimensão Real)

$$\text{DIMR} = \text{DIM} \times \text{SF}$$

$$\text{SF} = \text{DIMR} / \text{DIM}$$

### - Escalar a foto:

#### -Método A:

1º Descobrir a medida do real

-Por exemplo: Degraus  $\Rightarrow$  28cm;

Comprimento de uma cama  $\Rightarrow$  2m

2º Usar comando ALIGN

- Desenhar a linha no desenho uma das linhas em que se sabe o tamanho real

- ALIGN > ENTER > Selecionar a imagem a ser escalada > ENTER > Especificar o 1º ponto de origem e clicar no ponto do destino correspondente > Especificar o 2º ponto de origem e clicar no ponto do destino correspondente > ENTER

- Desenhar uma linha que seja o comprimento desejado que o comprimento de referência da imagem deve ser > ENTER

- Selecionar o objeto a ser dimensionado > SCALE > ENTER

- Clicar no ponto base > R (Referência)

- Clicar no primeiro ponto novamente e depois o segundo ponto da imagem existente a ser dimensionada > P (Ponto)

- Clicar no primeiro ponto da linha de referenciada desenhada > Clicar no novo ponto final > ENTER

#### -Método B:

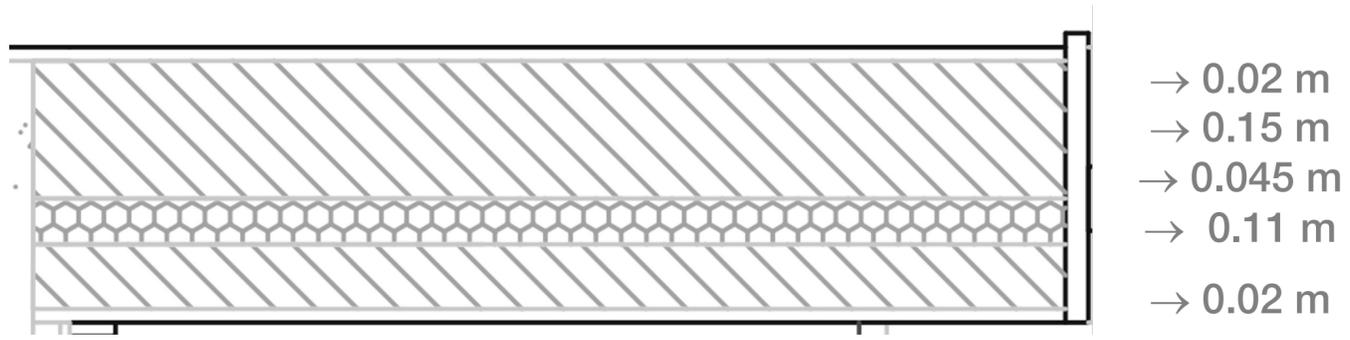
1º Descobrir a medida do real

-Por exemplo: Degraus  $\Rightarrow$  28cm;

Comprimento de uma cama  $\Rightarrow$  2m

2º SCALE > Selecionar a imagem > ENTER > Especificar o ponto na origem > R (Referência) > Selecionar a linha desenhada em que se sabe a medida original > Meter a medida que é no real > ENTER

Parede com caixa de ar:



- Hatch

- Hatch library: escolher o tipo de padrão

*Autocad:*

-Comandos:

-BR: Brake (Ponto de quebra)

ReDig

Semana 3<sub>4/10/2023 - 6/10/2023</sub>

*Autocad:*

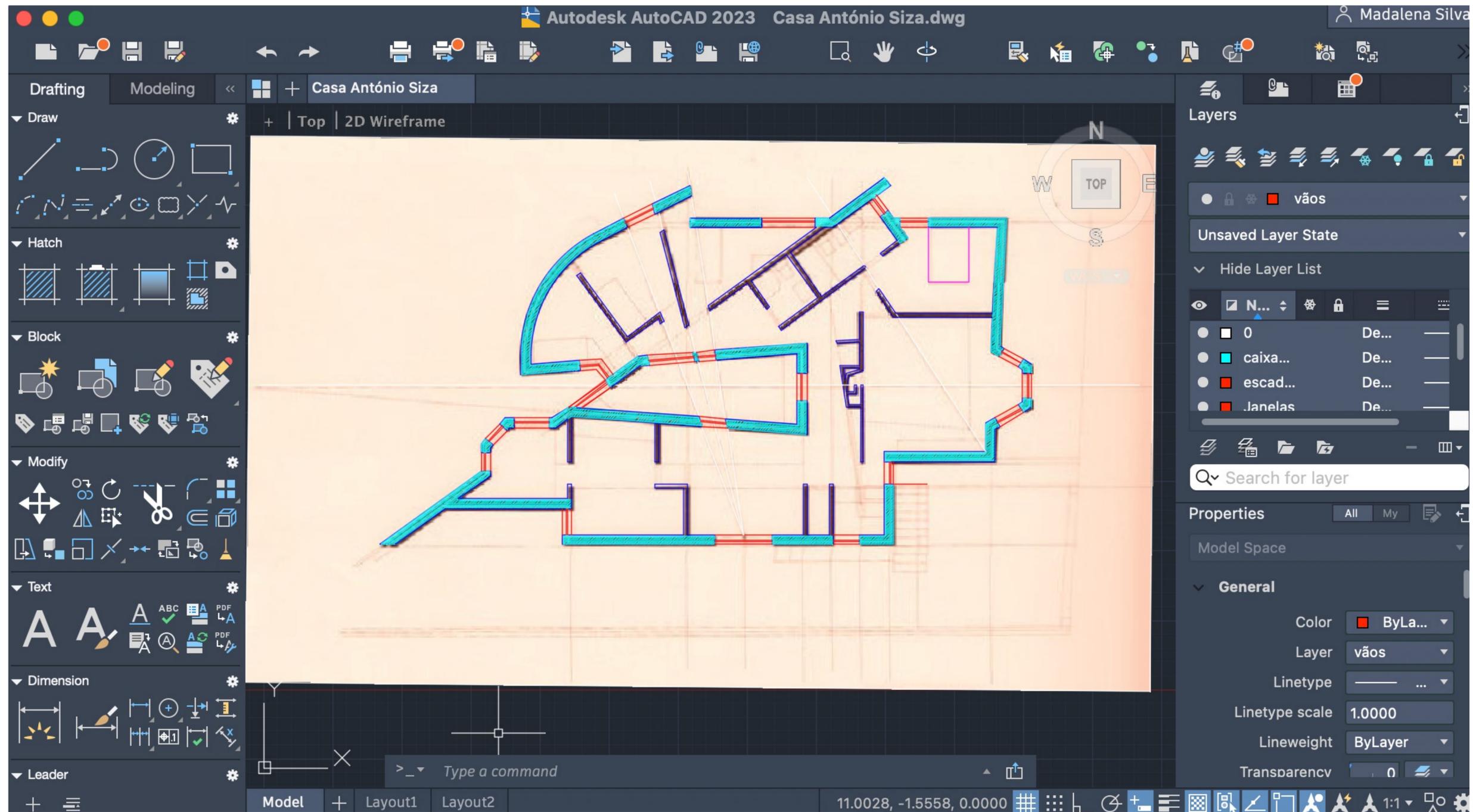
- Alinhar uma imagem

1º Desenhar uma linha direita que esteja representada na planta > MOVE para fora da imagem > MIRROR a linha desenhada > ALIGN > Selecionar os objetos (imagem e linha) > Selecionar os pontos correspondentes > ENTER

DATA DE ENTREGA: semana de 16. Outubro, até sexta feira

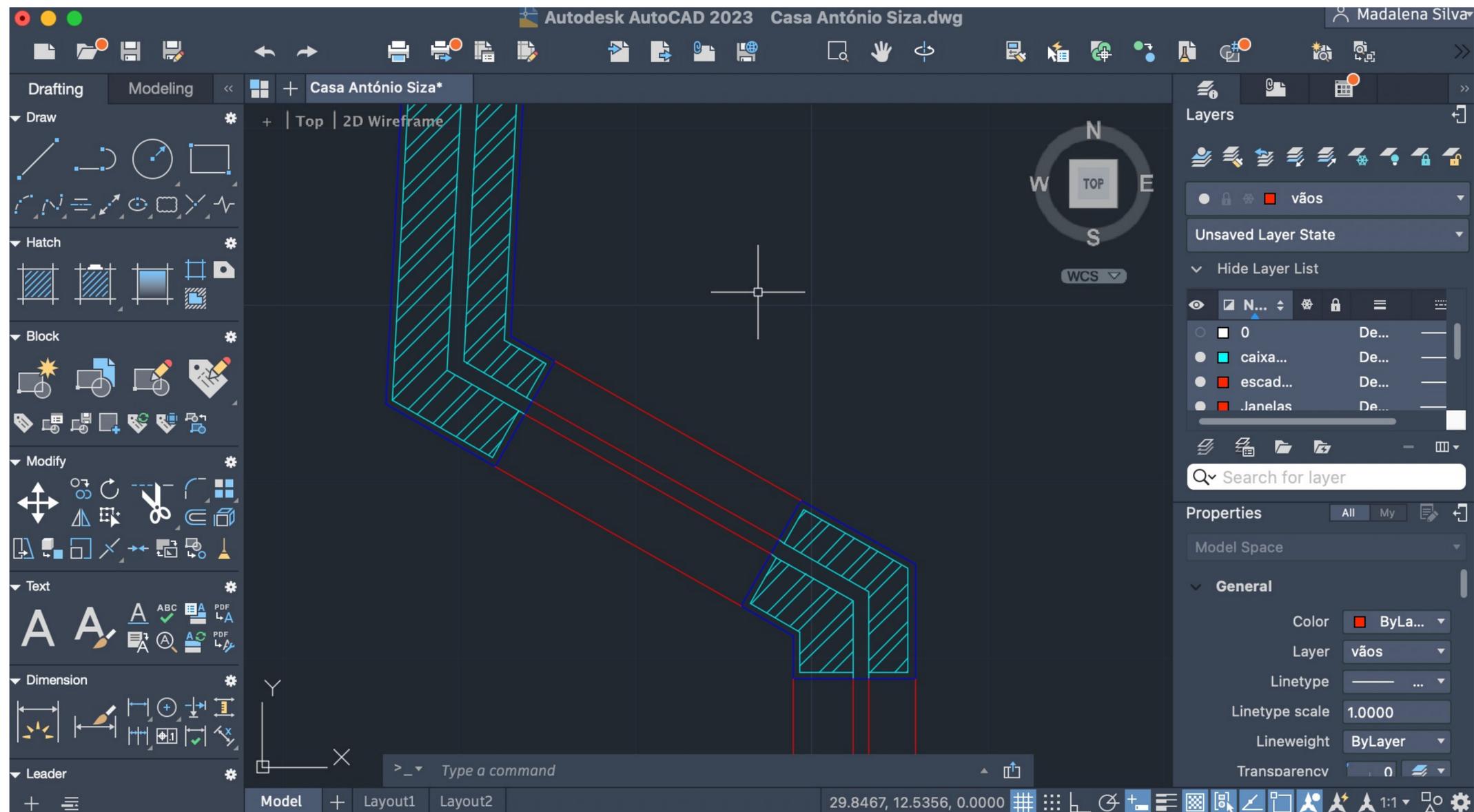
- Comandos:

- ARC: Arco (para a parede curva)



ReDig

Semana 4 10/10/2023 - 13/10/2023

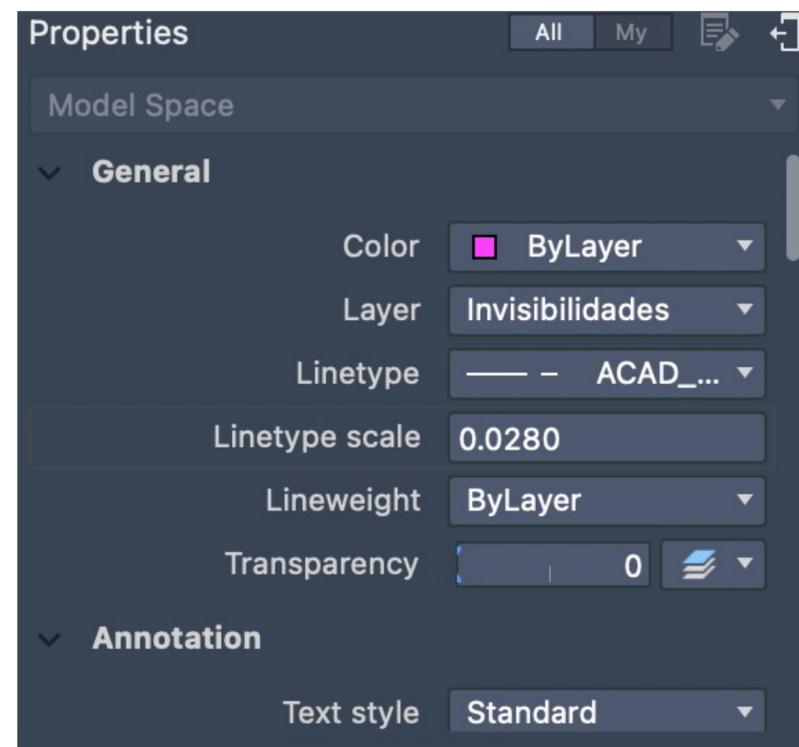


ReDig

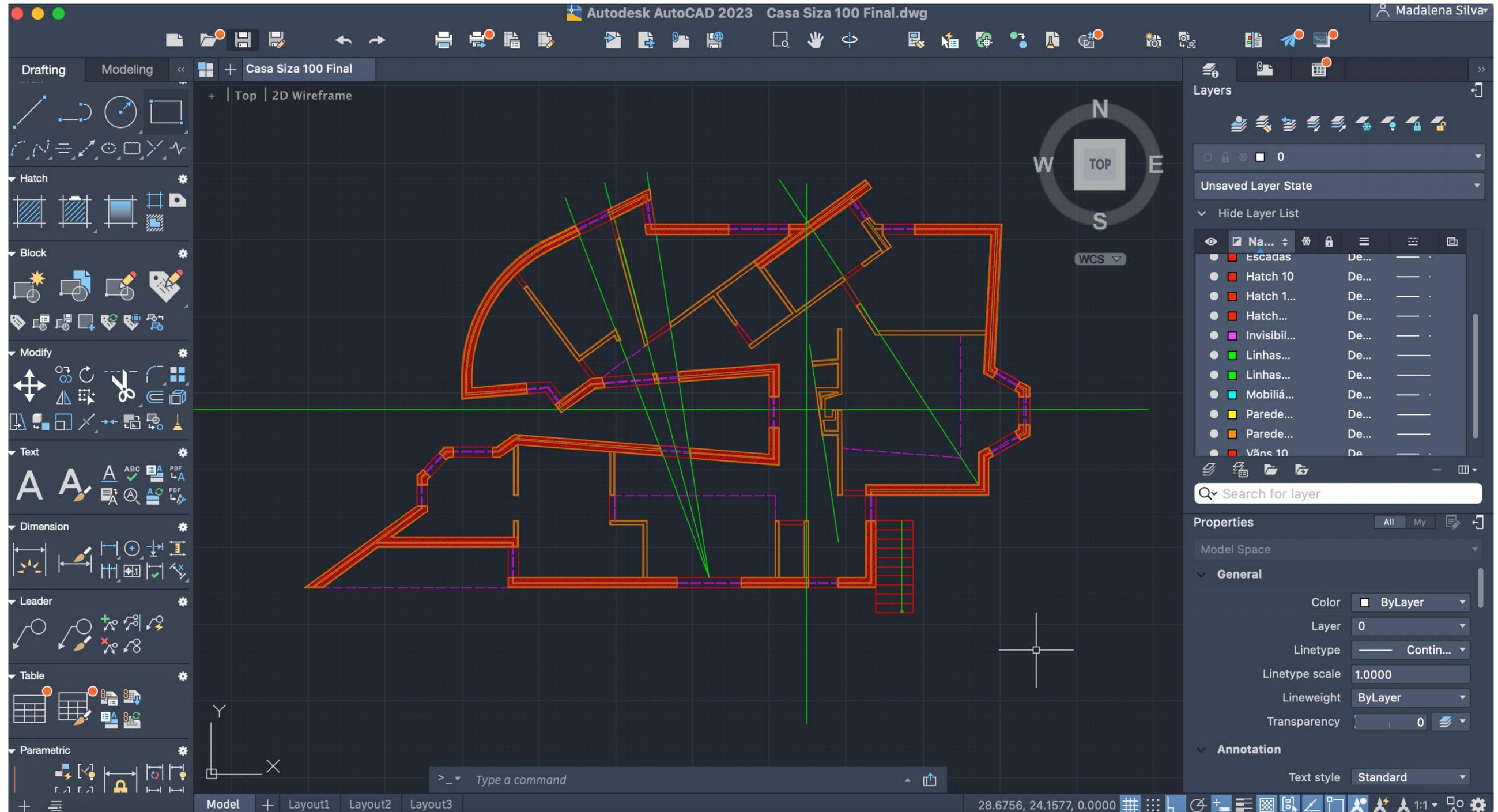
Semana 4<sub>10/10/2023 - 13/10/2023</sub>

*Autocad:*

- Entrega alterada para a semana 8
- Correções da planta 100: Planta com menos detalhe; paredes da lareira com 15cm.
- Planta 1º: Detalhe dos vãos (caixilhos); hatch nas paredes interiores, pavimento da cozinha; layer das invisibilidades

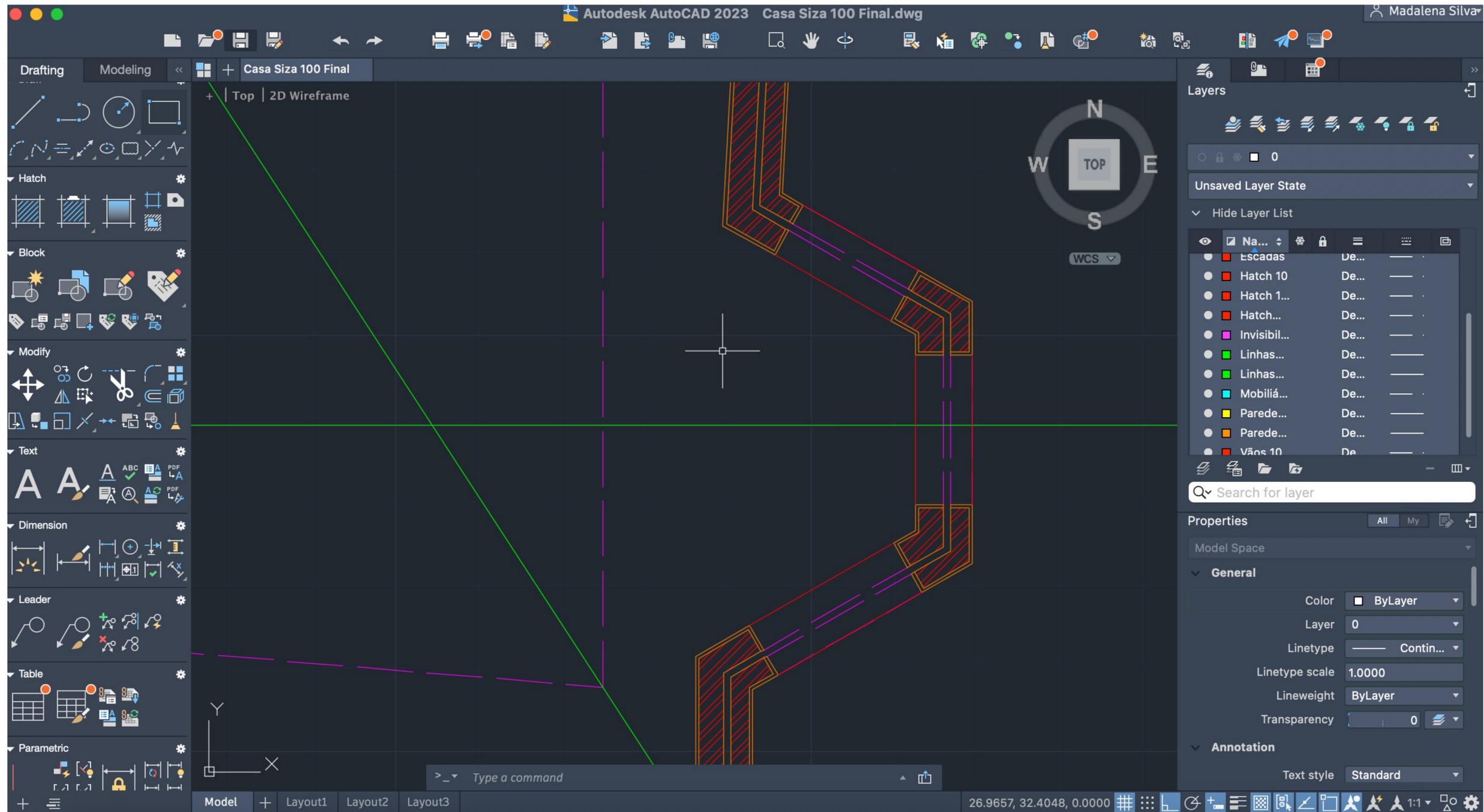


Propriedades da Layer das Insibilidades:  
-Linetype: ACAD\_ISO02W100



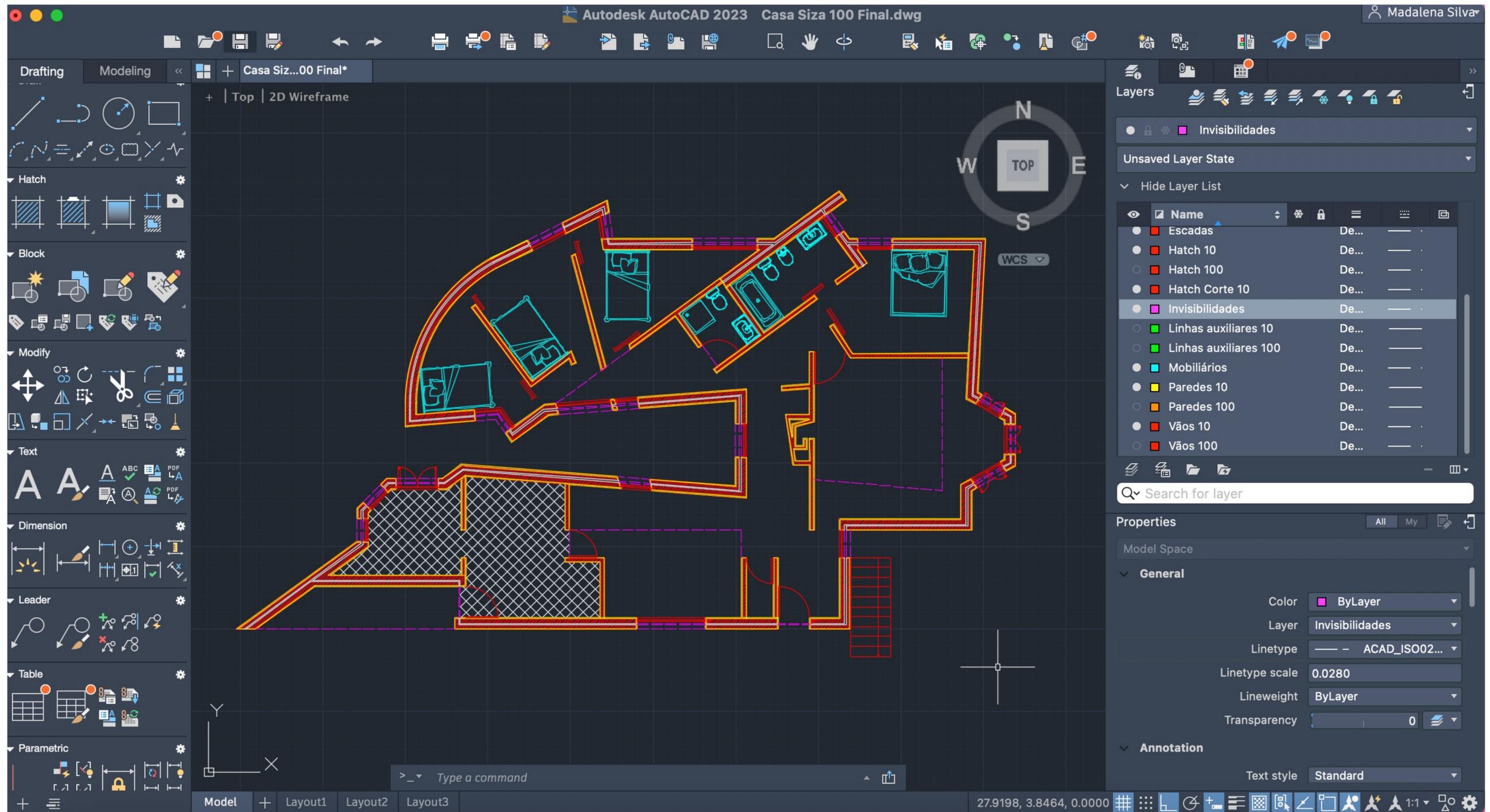
ReDig

Semana 5<sub>17/10/2023 - 20/10/2023</sub>



ReDig

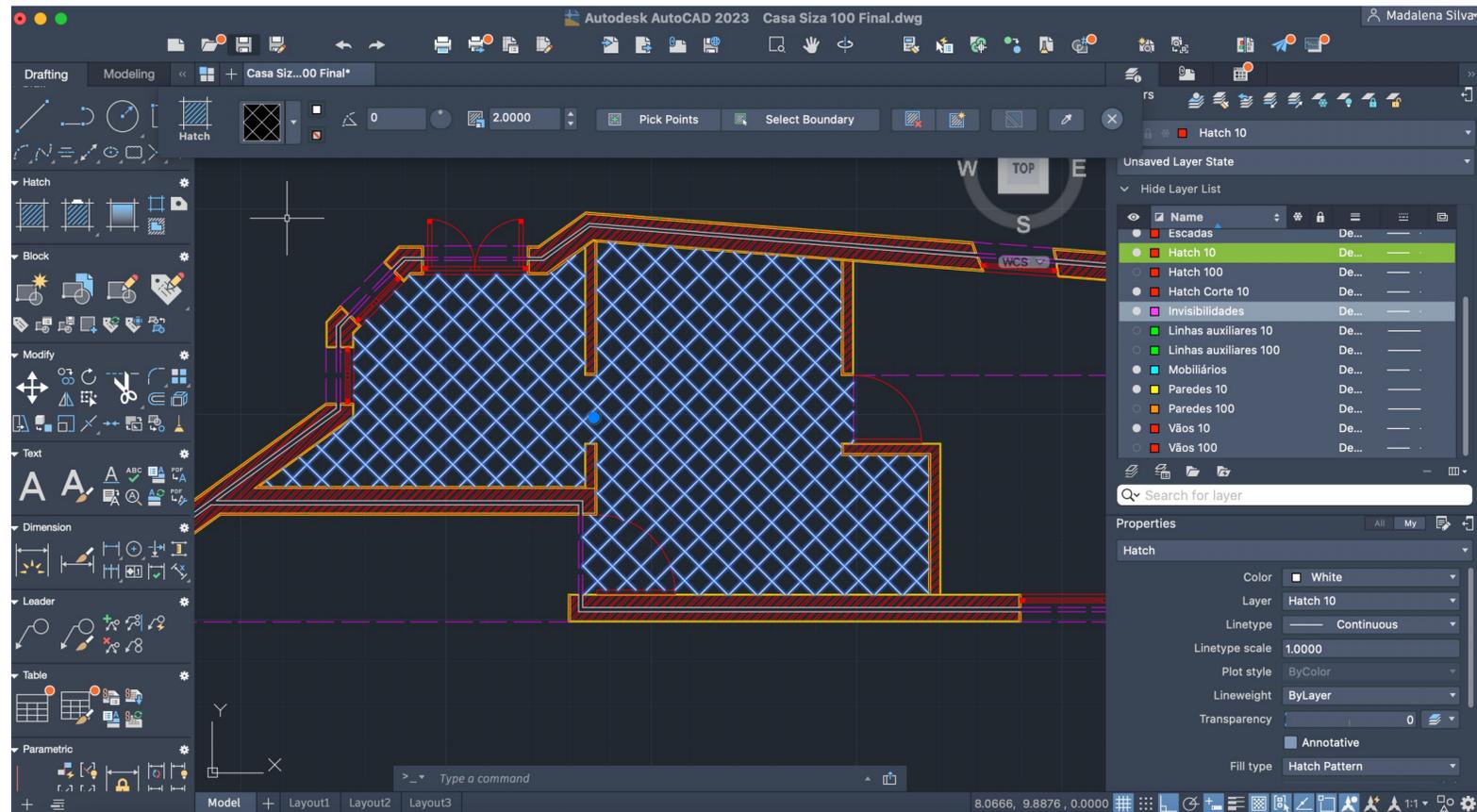
Semana 5<sub>17/10/2023 - 20/10/2023</sub>



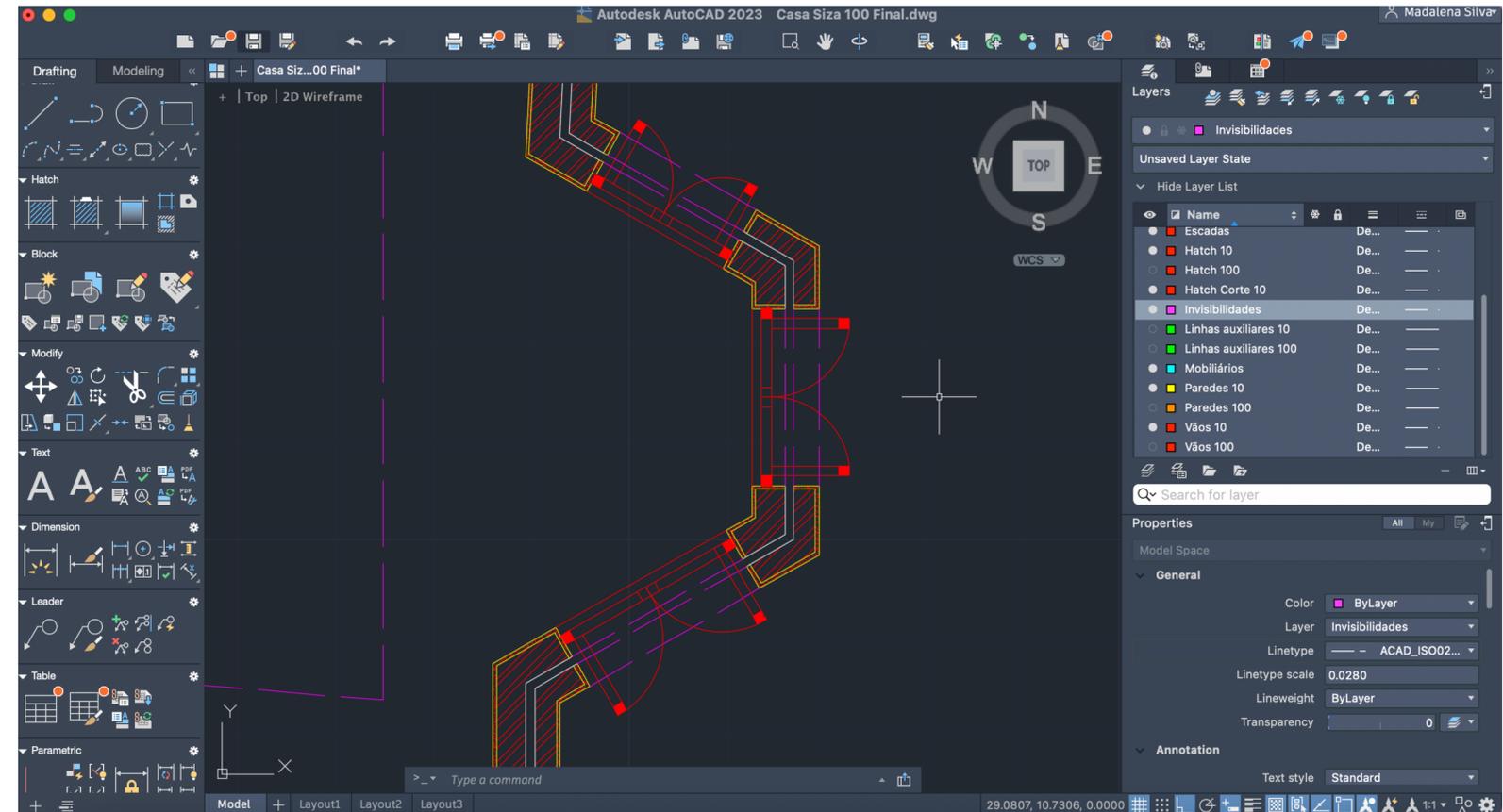
Planta 10

ReDig

Semana 6 24/10/2023 - 27/10/2023



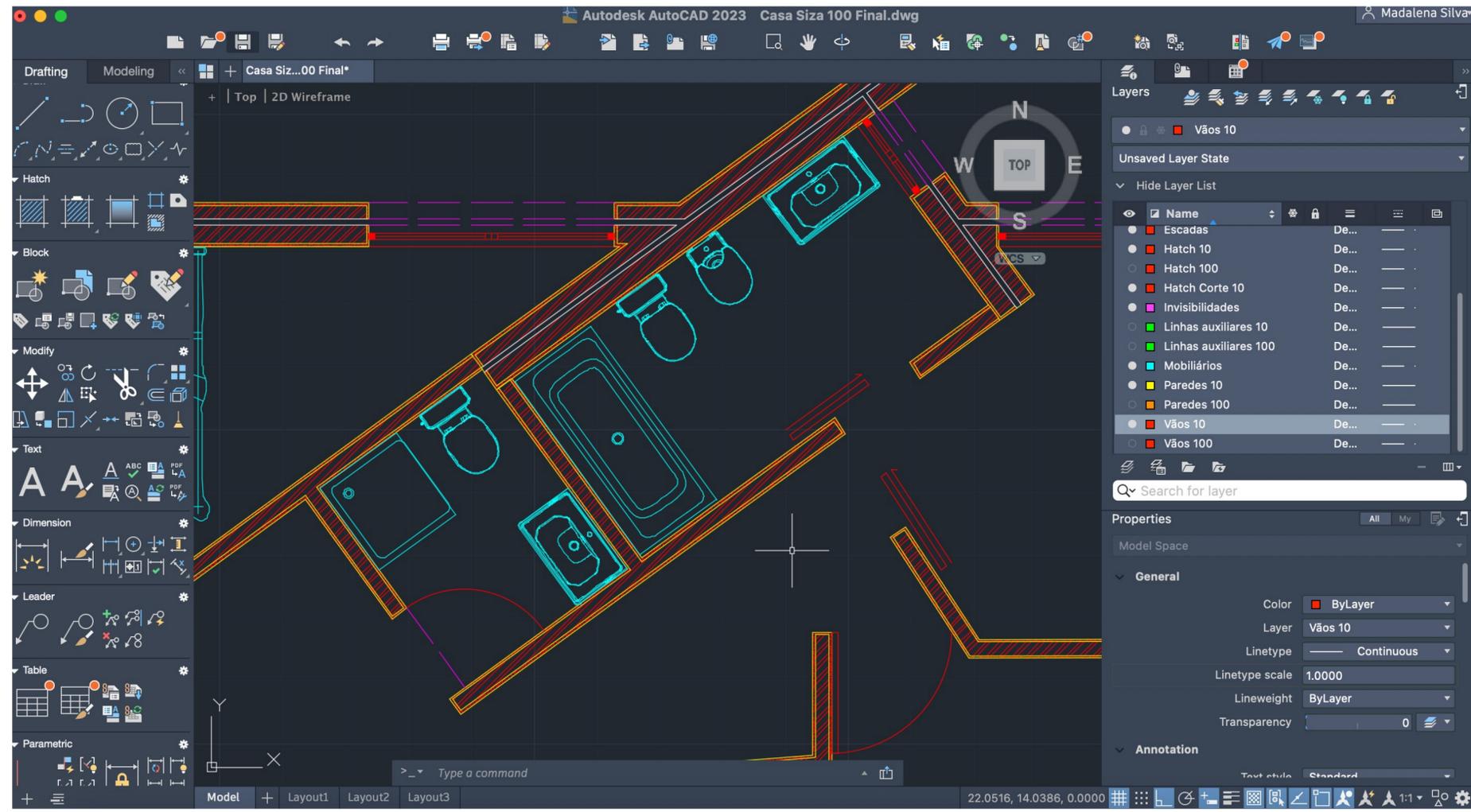
Pormenor da cozinha



Pormenor das janelas abertas

ReDig

Semana 6<sub>24/10/2023 - 27/10/2023</sub>

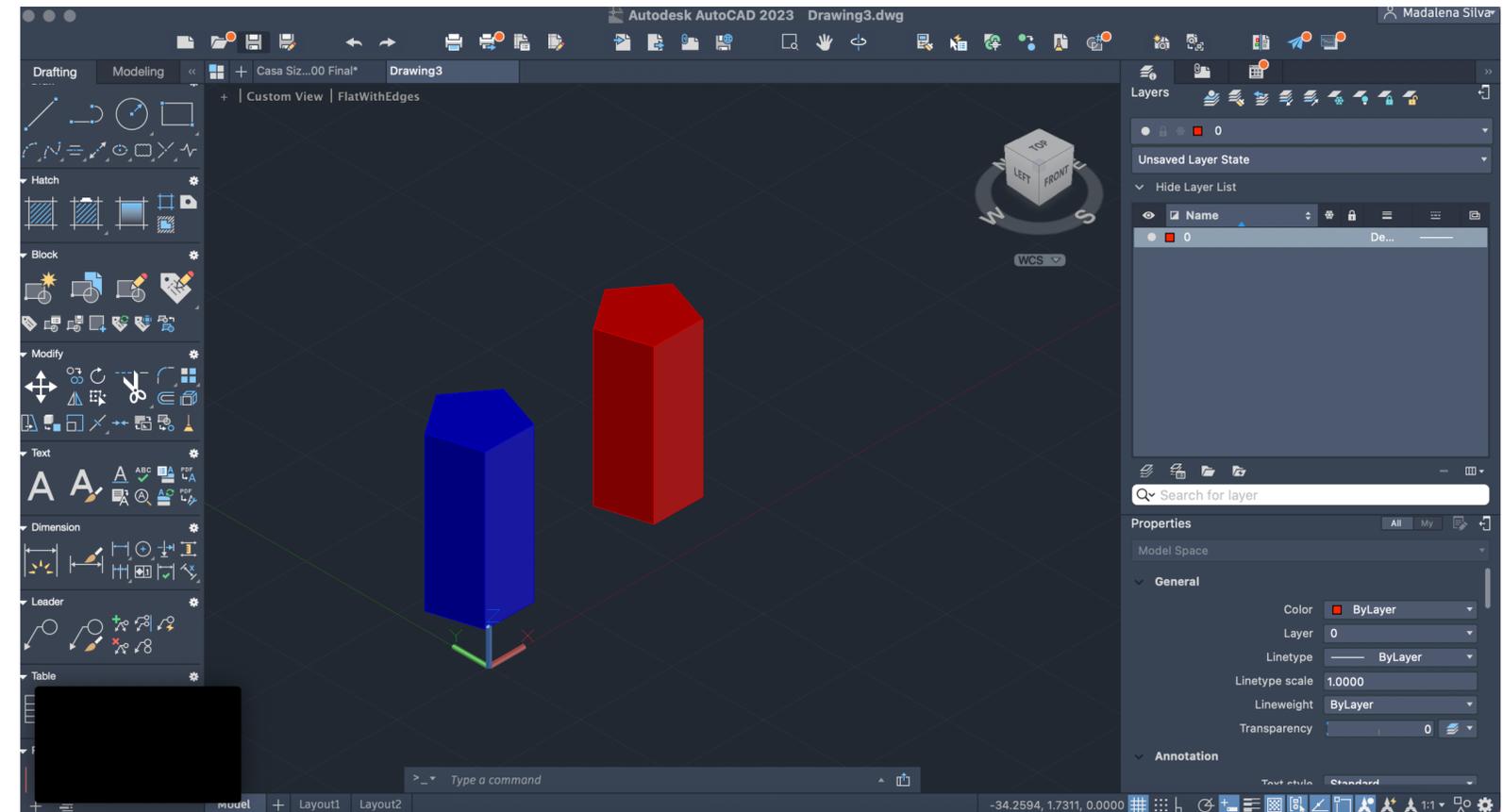
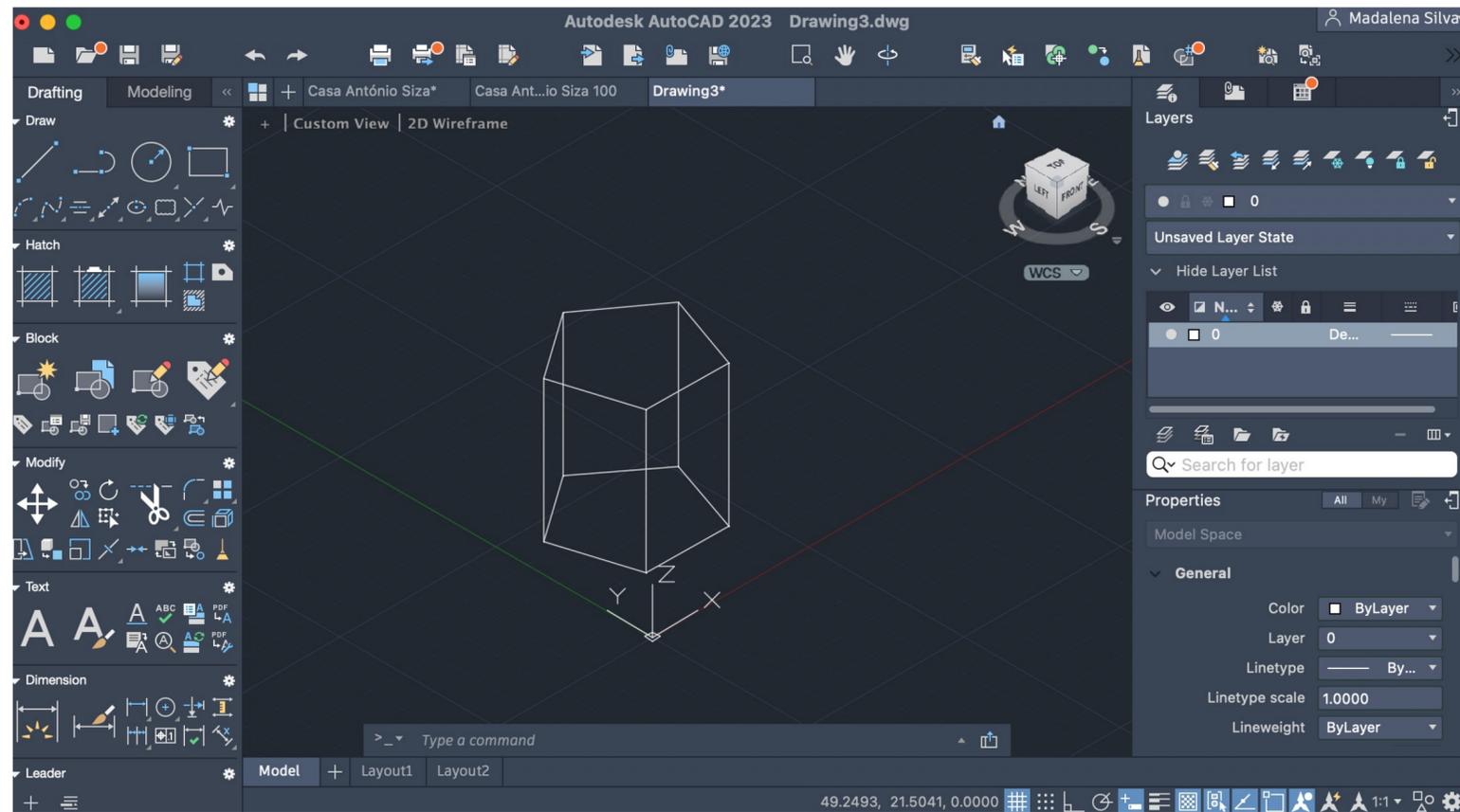


Pormenor das casas de banho:  
Produtos sanitários retirados do site [www.roca.pt](http://www.roca.pt), descarrados em dwg, comando COPY

Pormenor das portas deslizantes e janelas fechadas

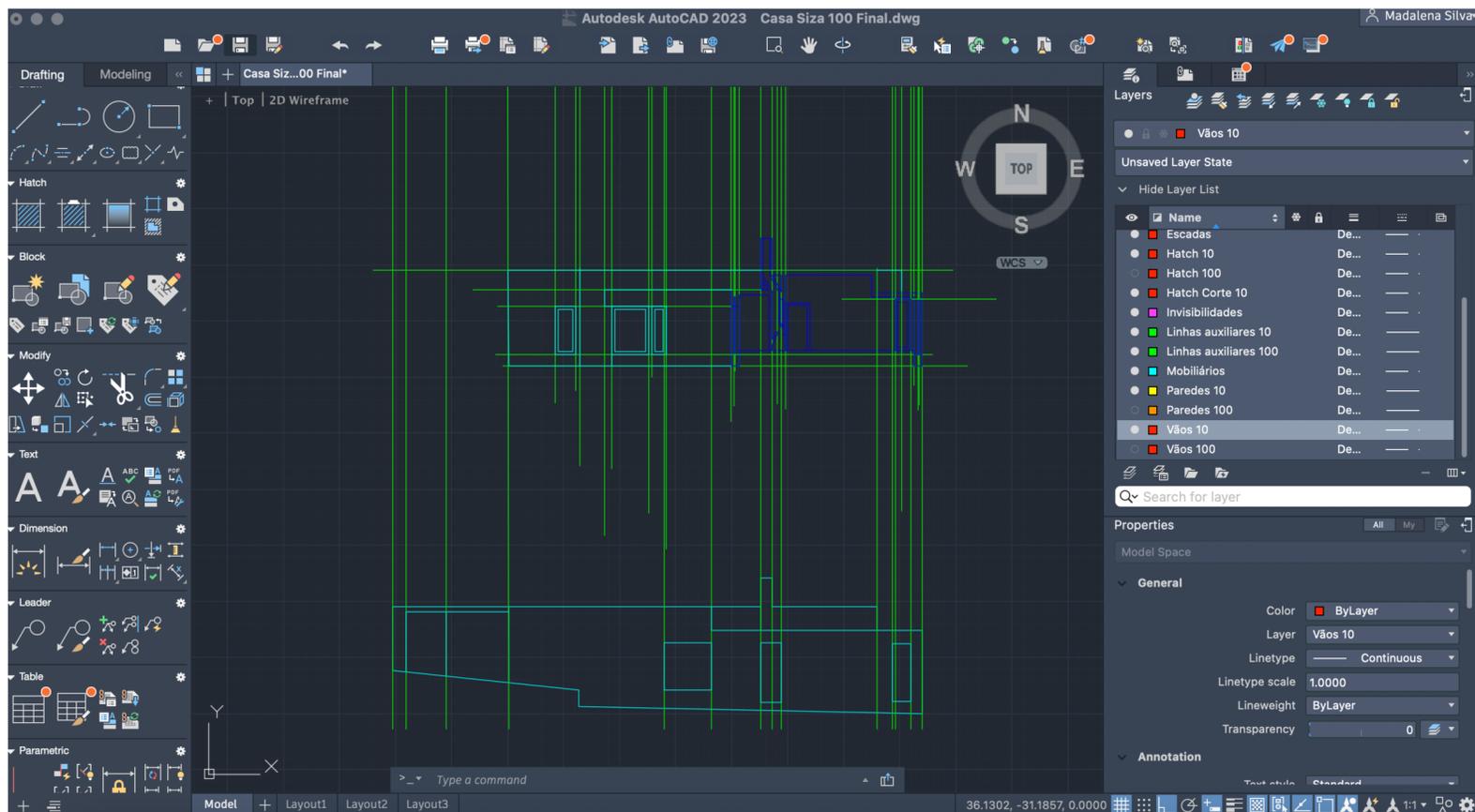
## Autocad:

- Hide: esconder arestas interiores
- Chprop
- Shade
- Extrude: simbolo da casa junto ao WCS
- Visual Styles

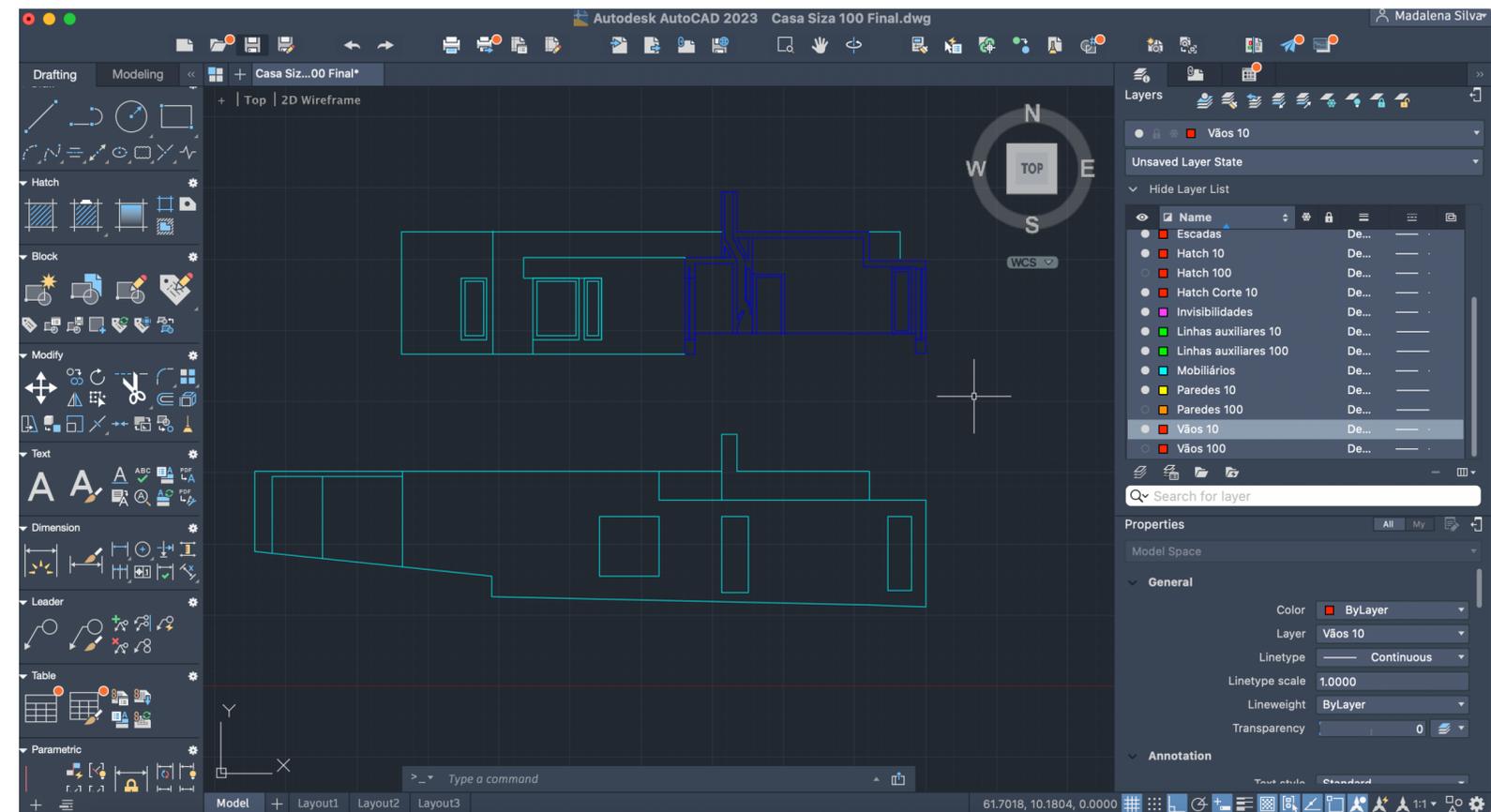


ReDig

Semana 7 31/10/2023 - 3/11/2023



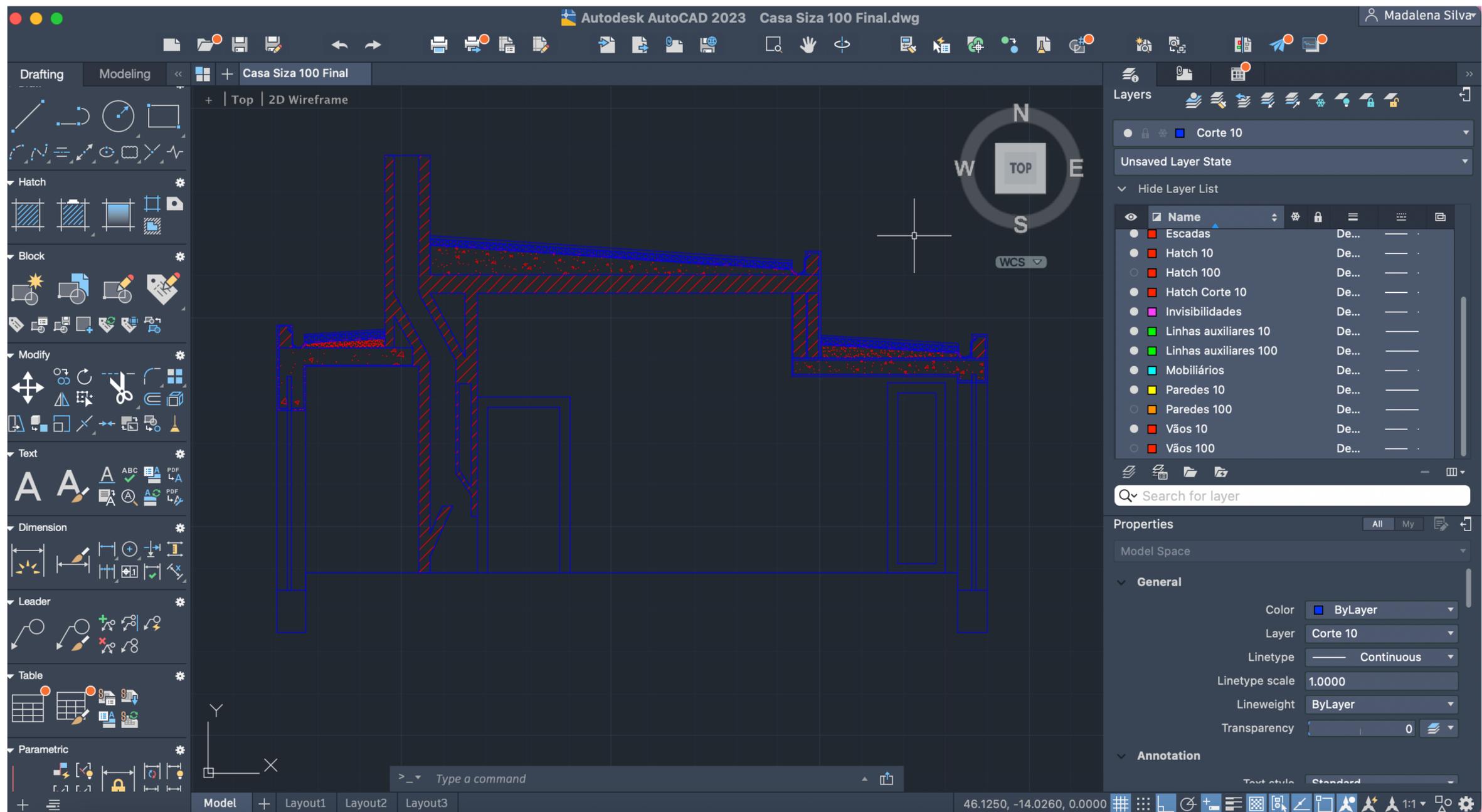
Corte e Alçado articulado



Corte e Alçado

ReDig

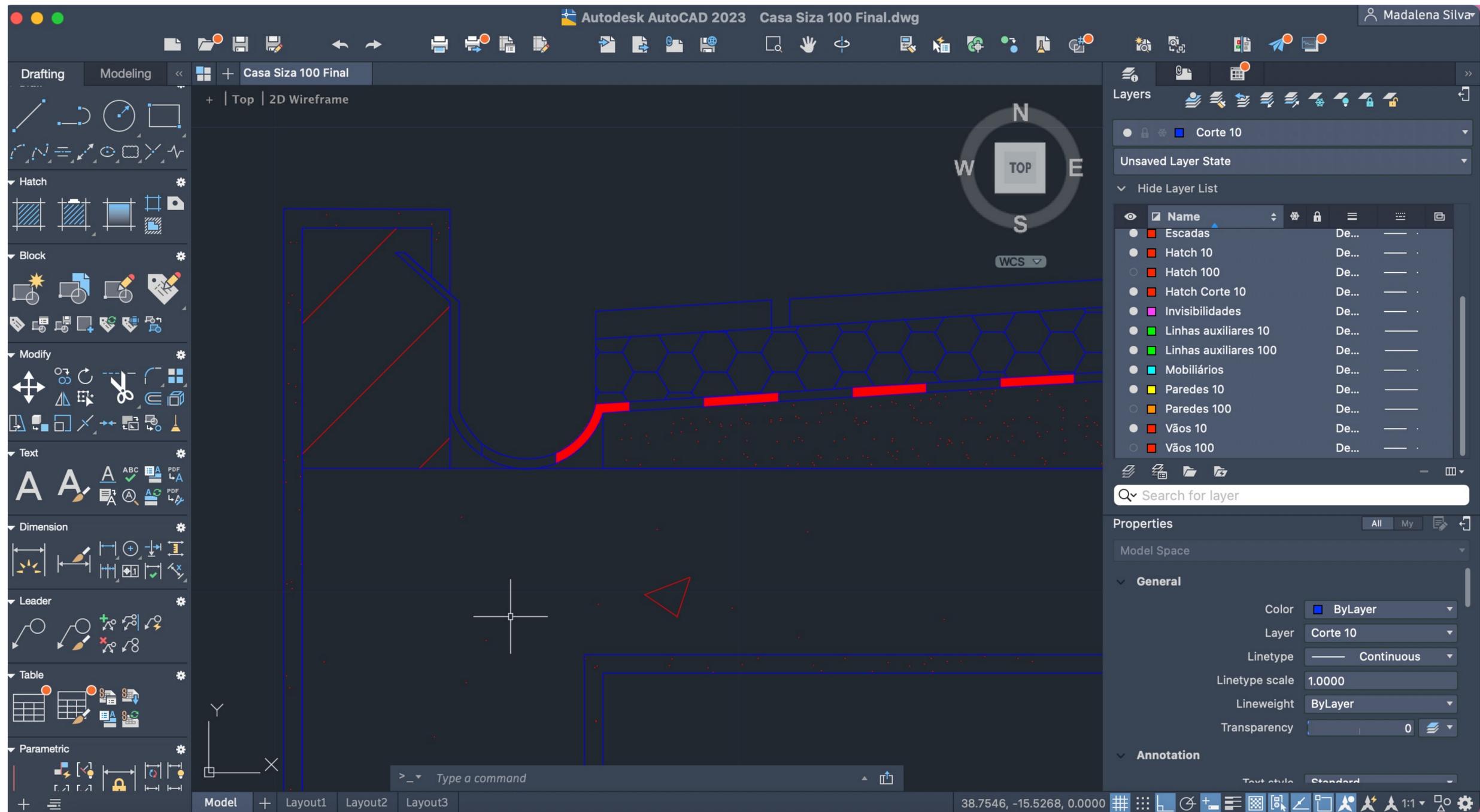
Semana 8 7/11/2023 - 10/11/2023



Pormenor de cobertura em corte

ReDig

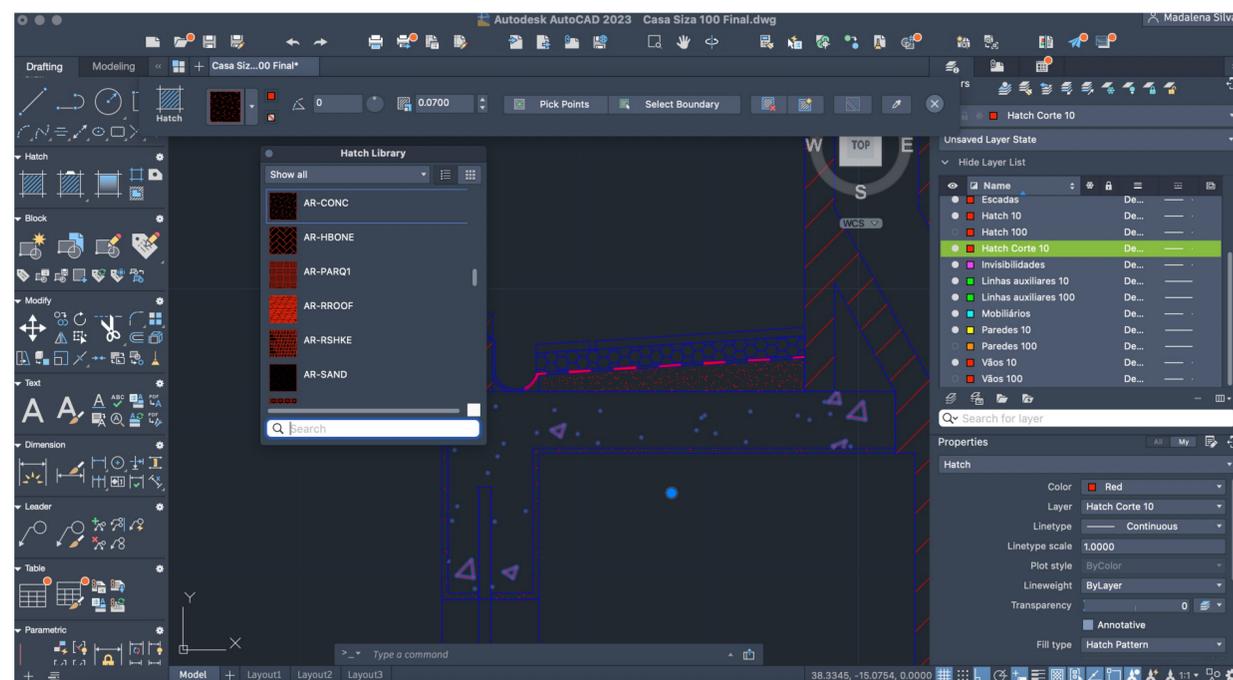
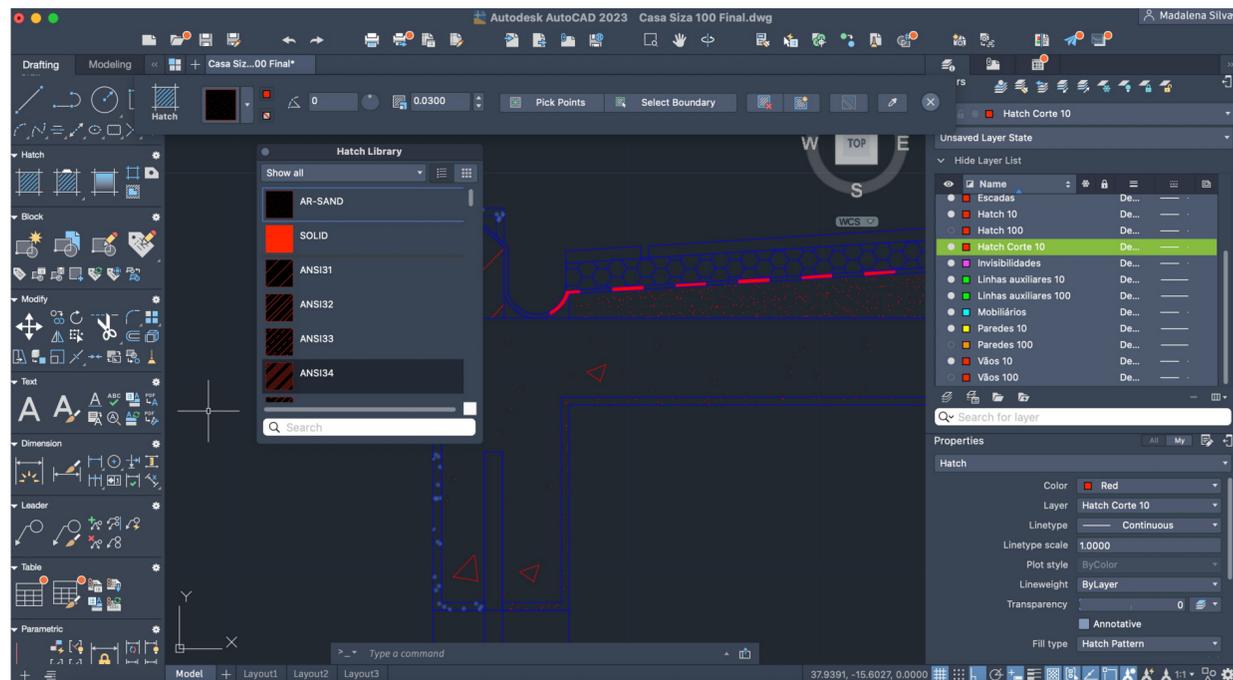
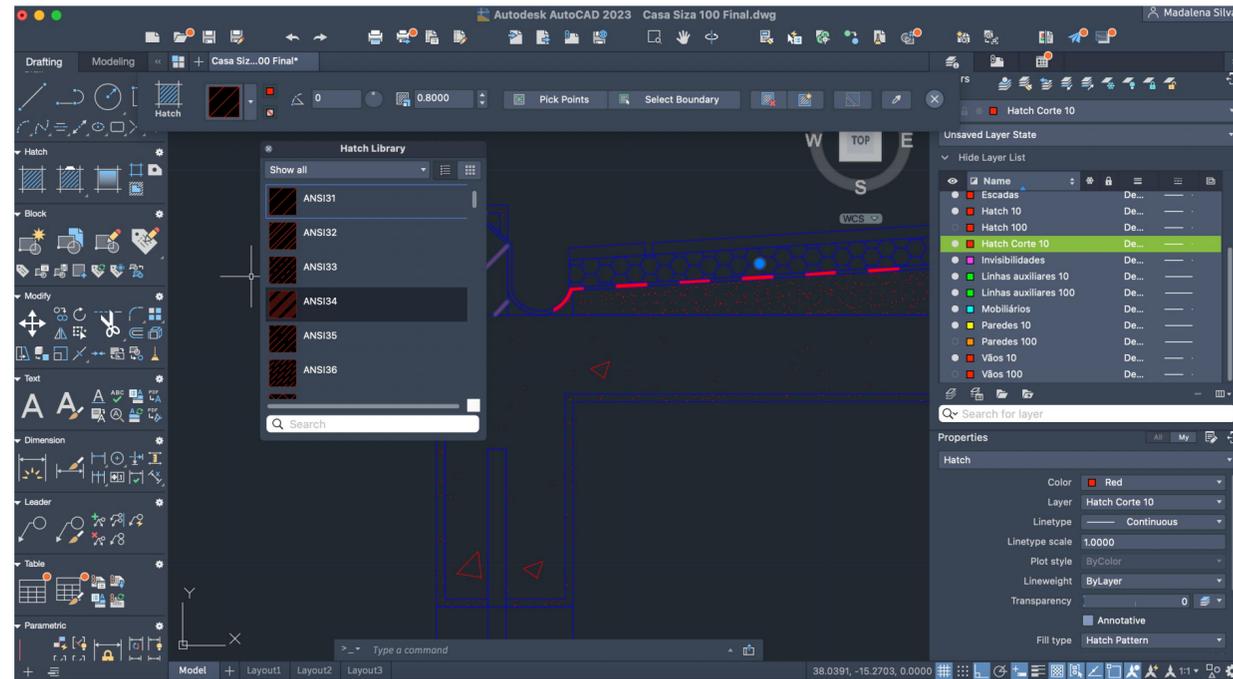
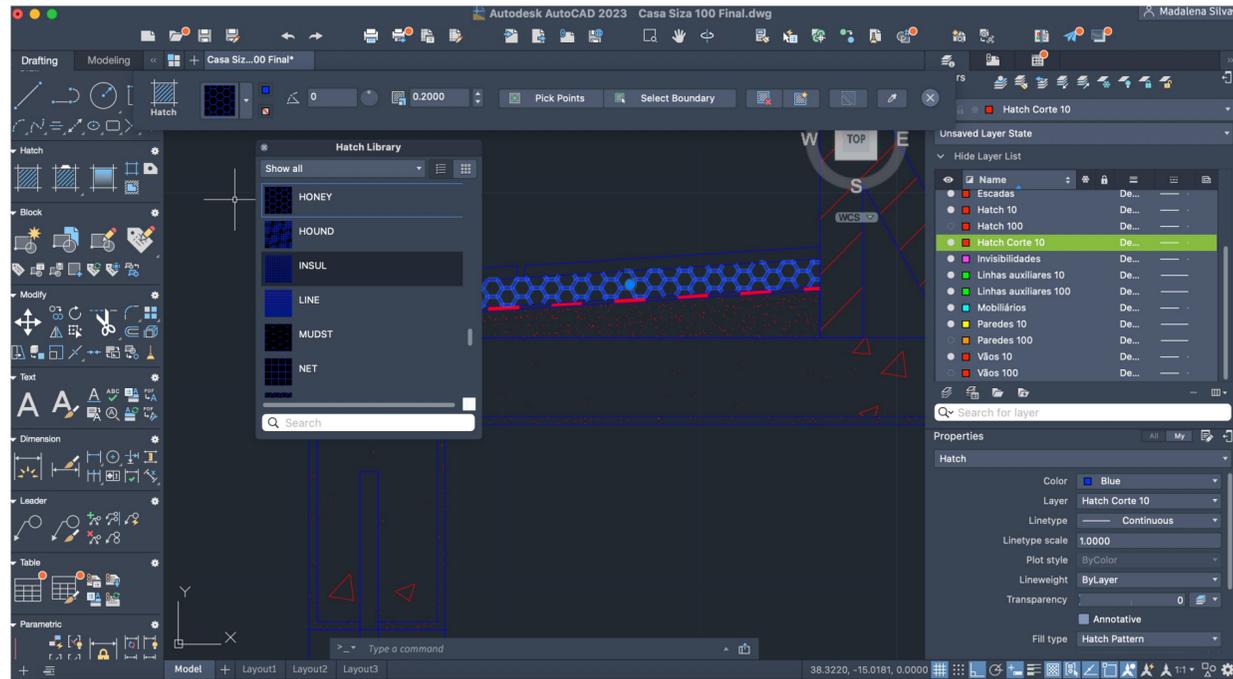
Semana 8 7/11/2023 - 10/11/2023



Pormenor de cobertura em corte

ReDig

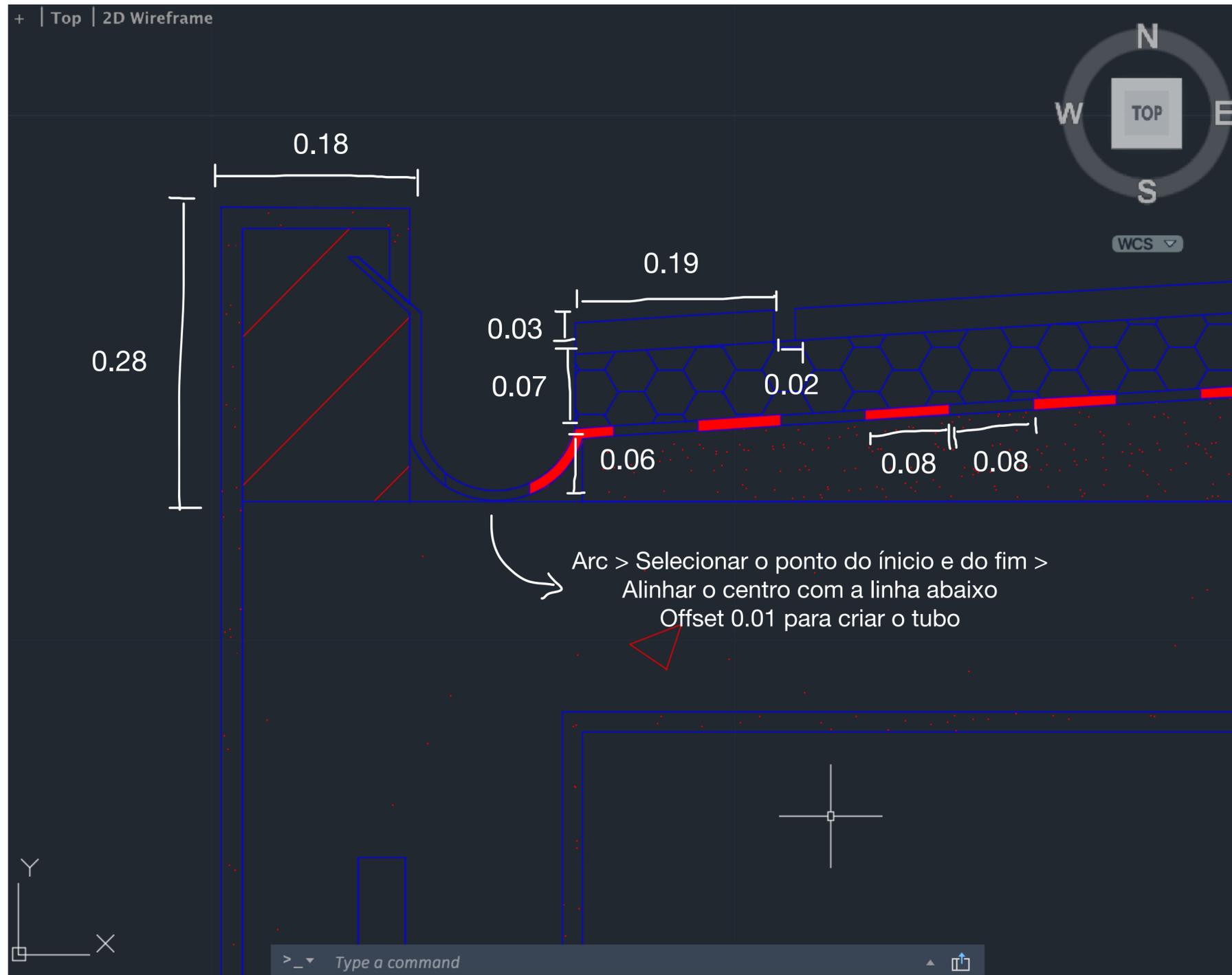
Semana 8 7/11/2023 - 10/11/2023

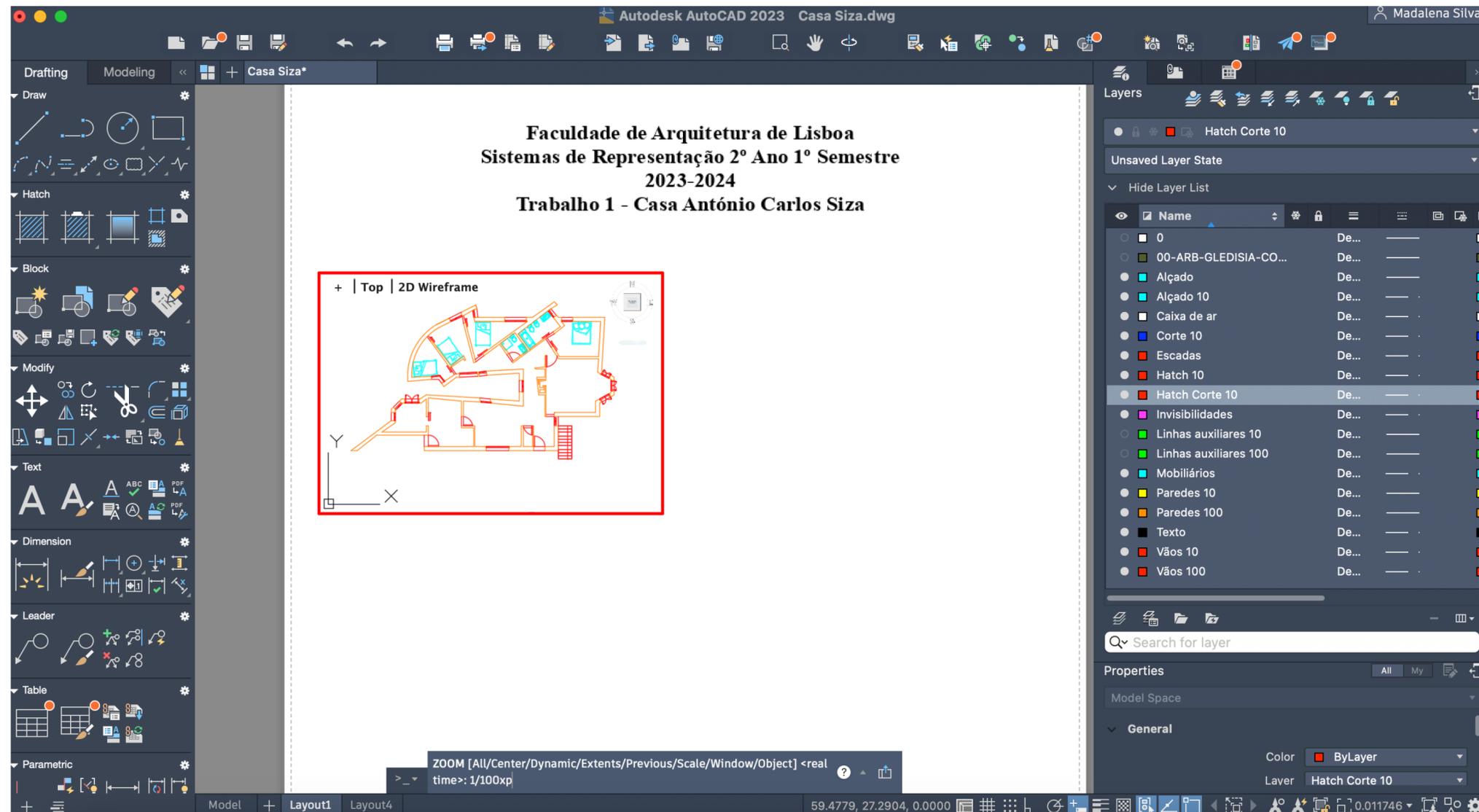


Hatches do pormenor

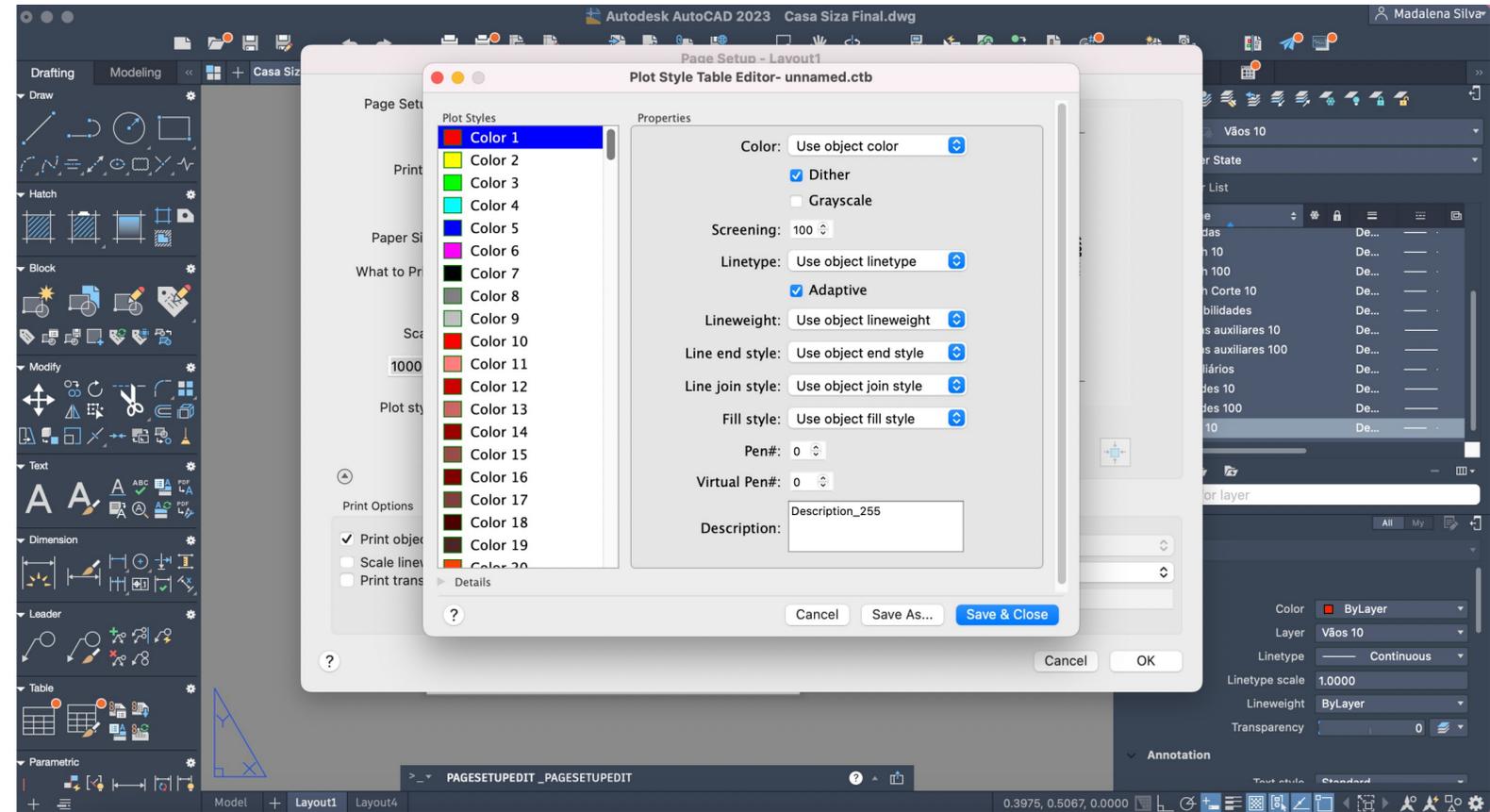
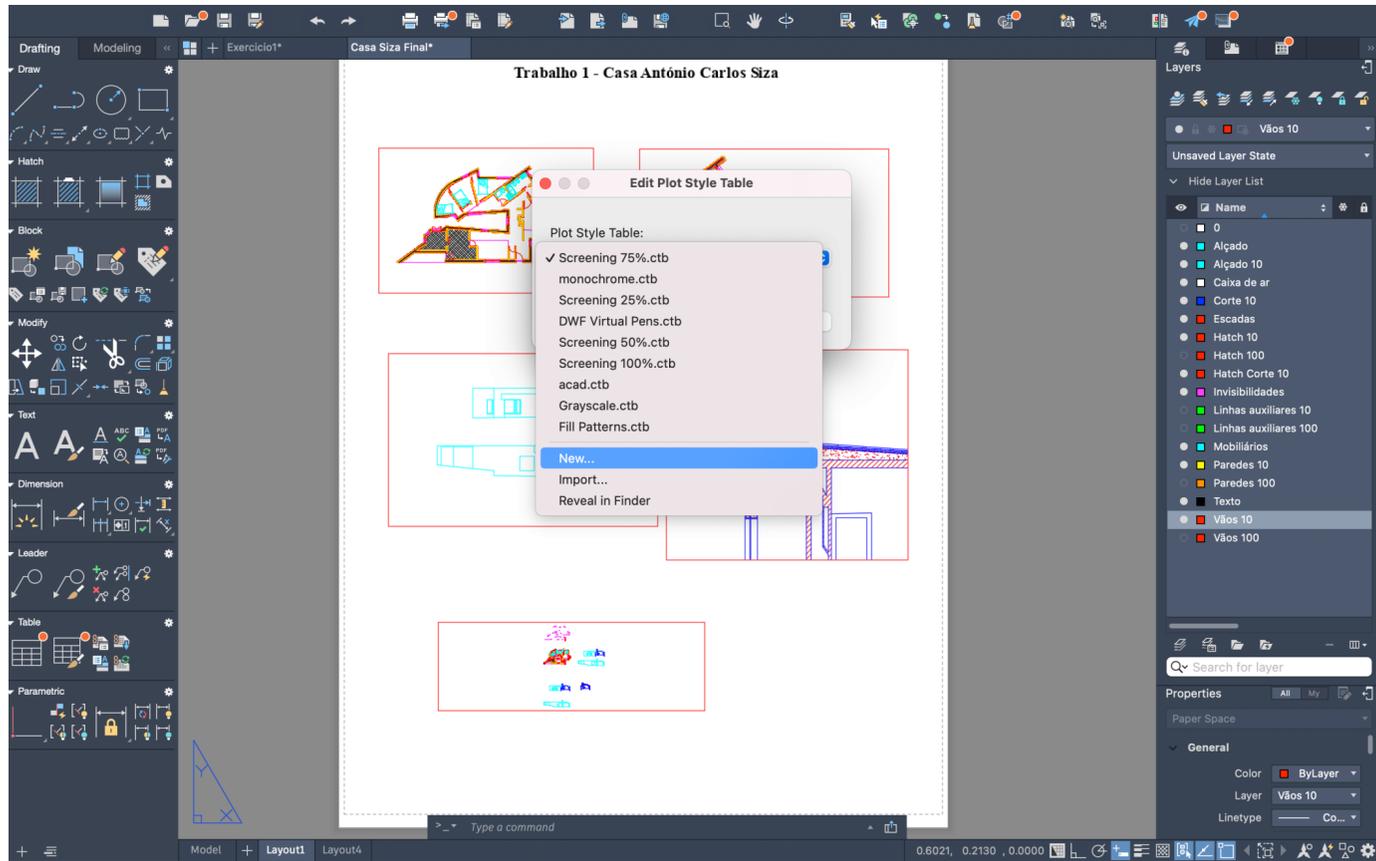
ReDig

Semana 8 7/11/2023 - 10/11/2023



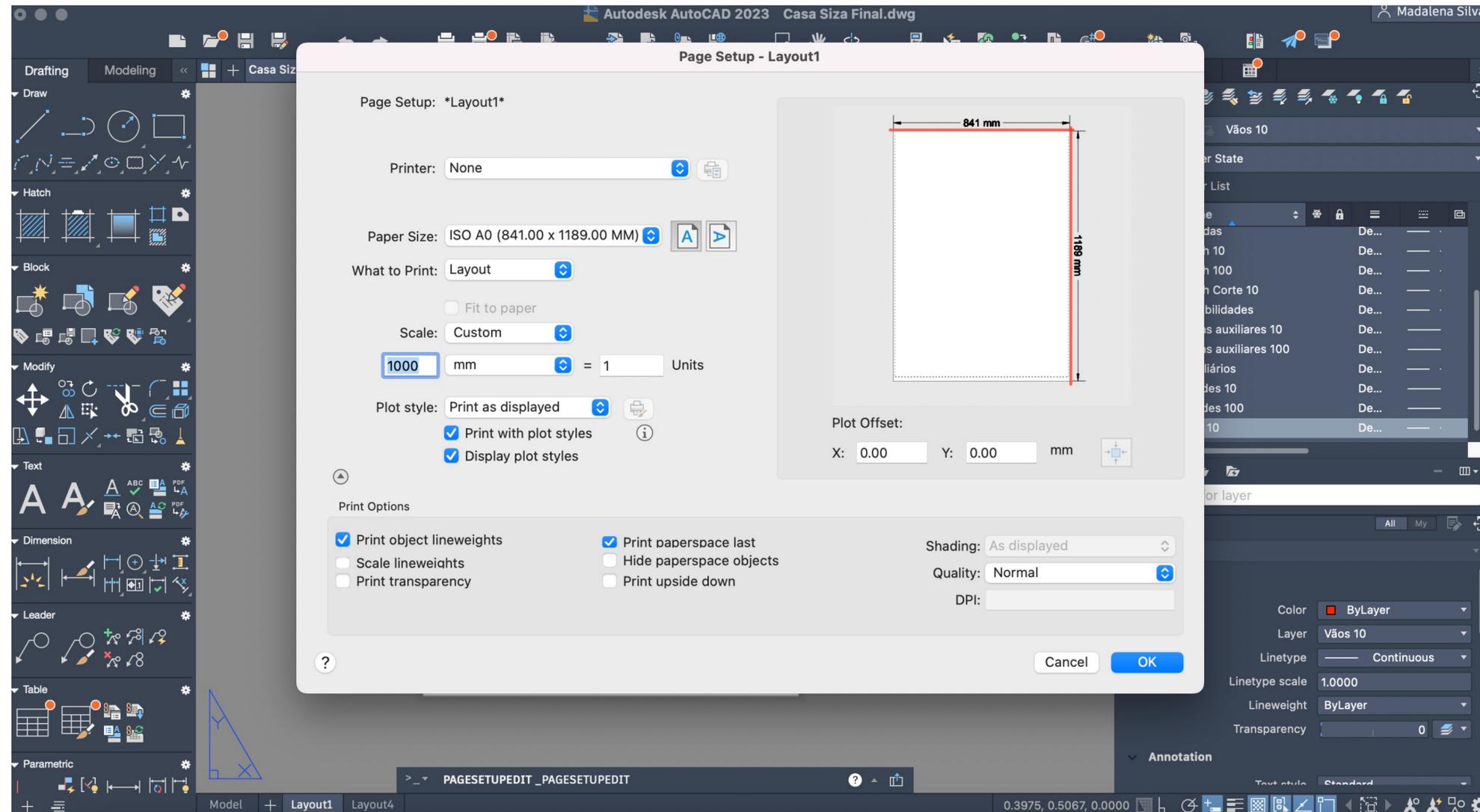


Viewport > Selecionar o tamanho do retângulo desejado > Escalar a imagem (Zoom > 1/100XP (exemplo))



ReDig

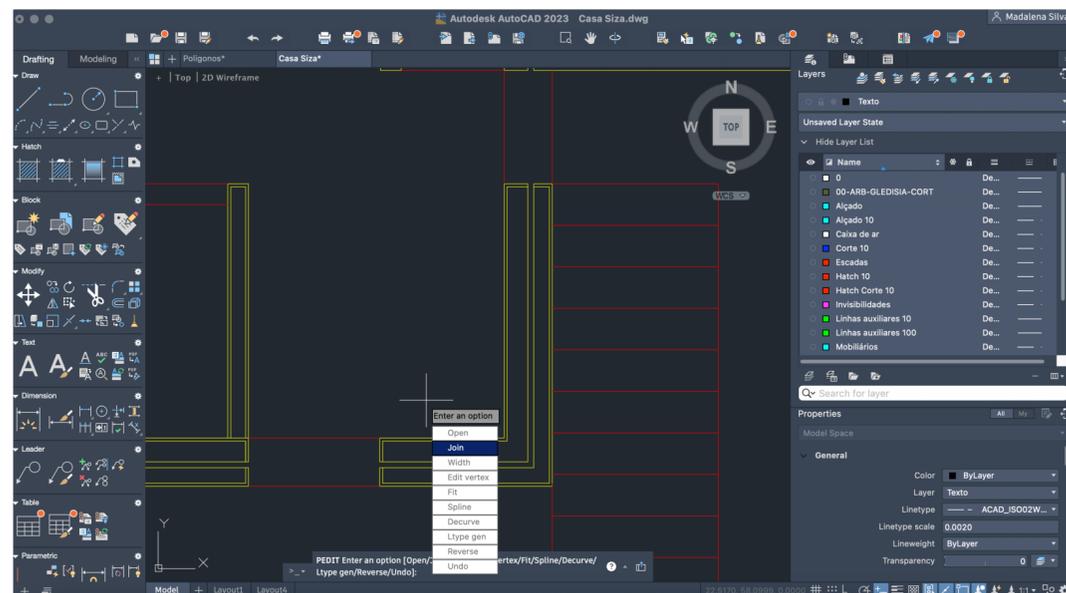
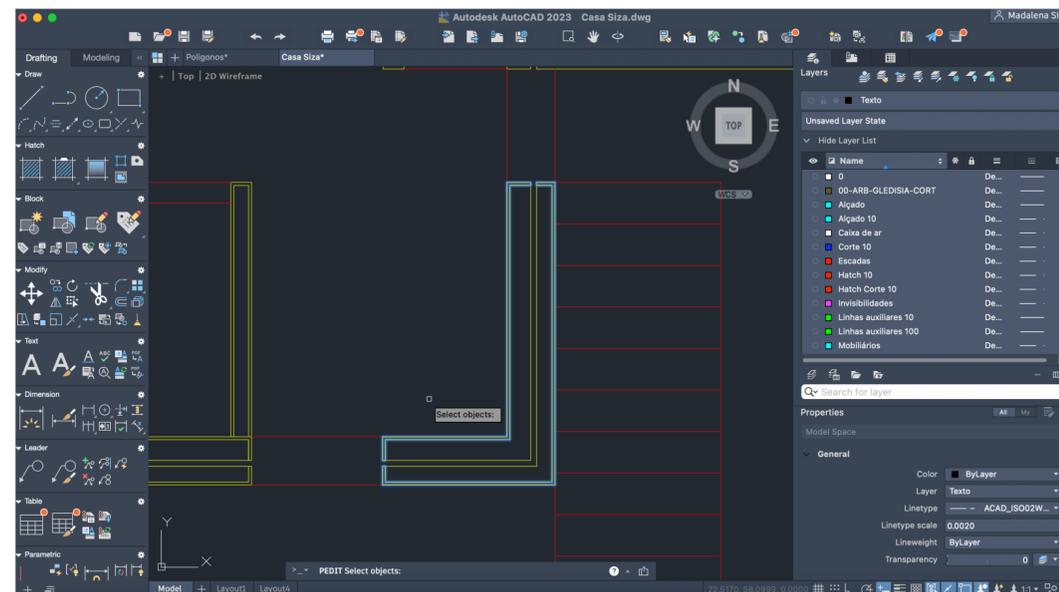
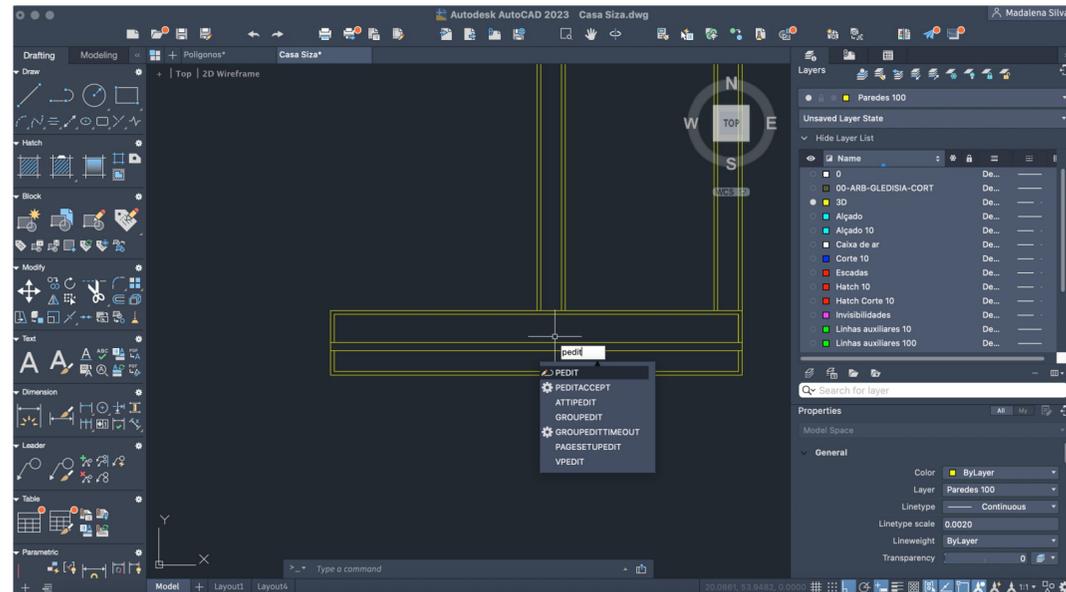
Semana 8 7/11/2023 - 10/11/2023



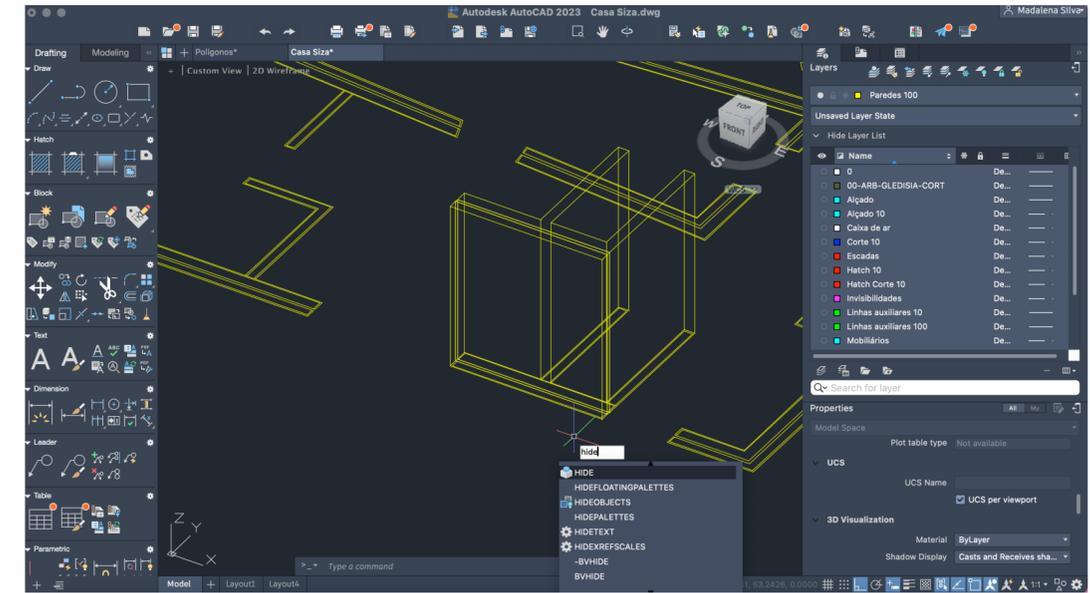
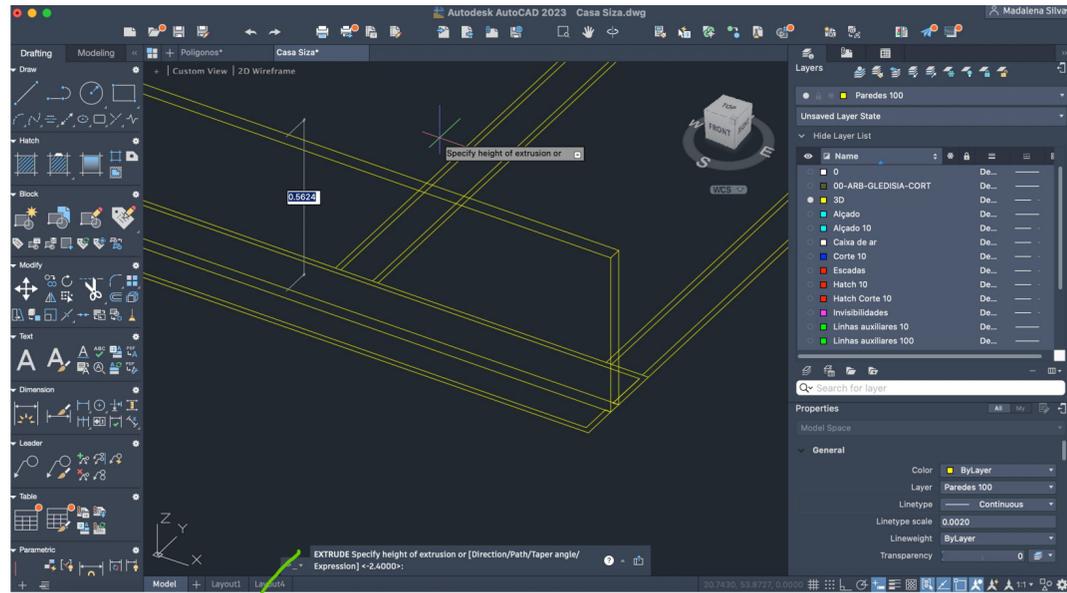
ReDig

Semana 8 7/11/2023 - 10/11/2023

# Planta Casa António Casa Siza em 3D

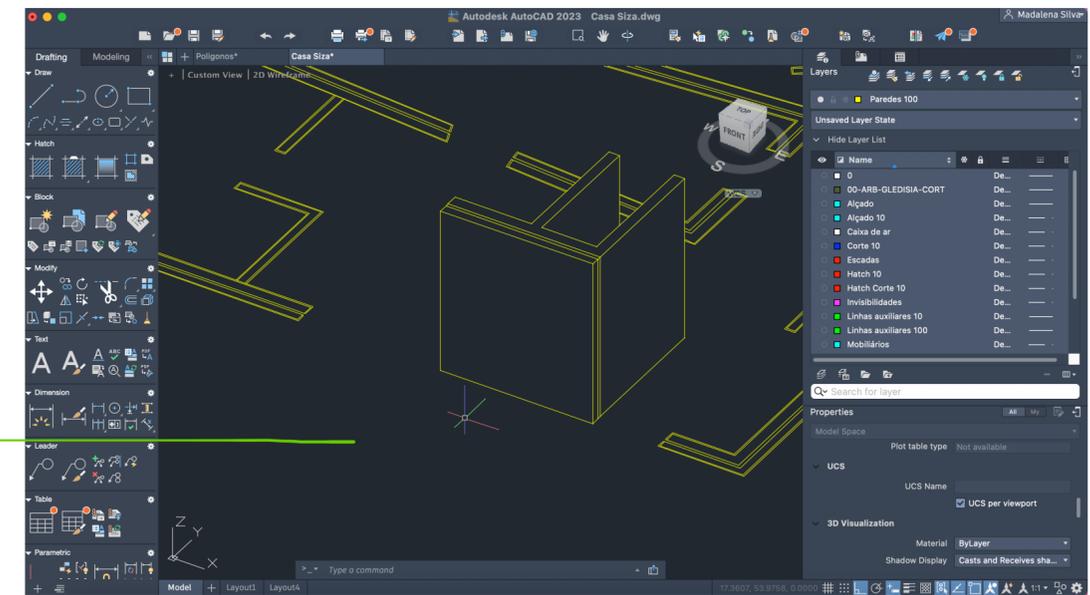


-PEDIT > JOIN : unir as paredes em polylines  
-Para as janelas e as portas fazer 3 polylines:  
uma da janela toda, uma da parede interior e  
uma da parede exterior



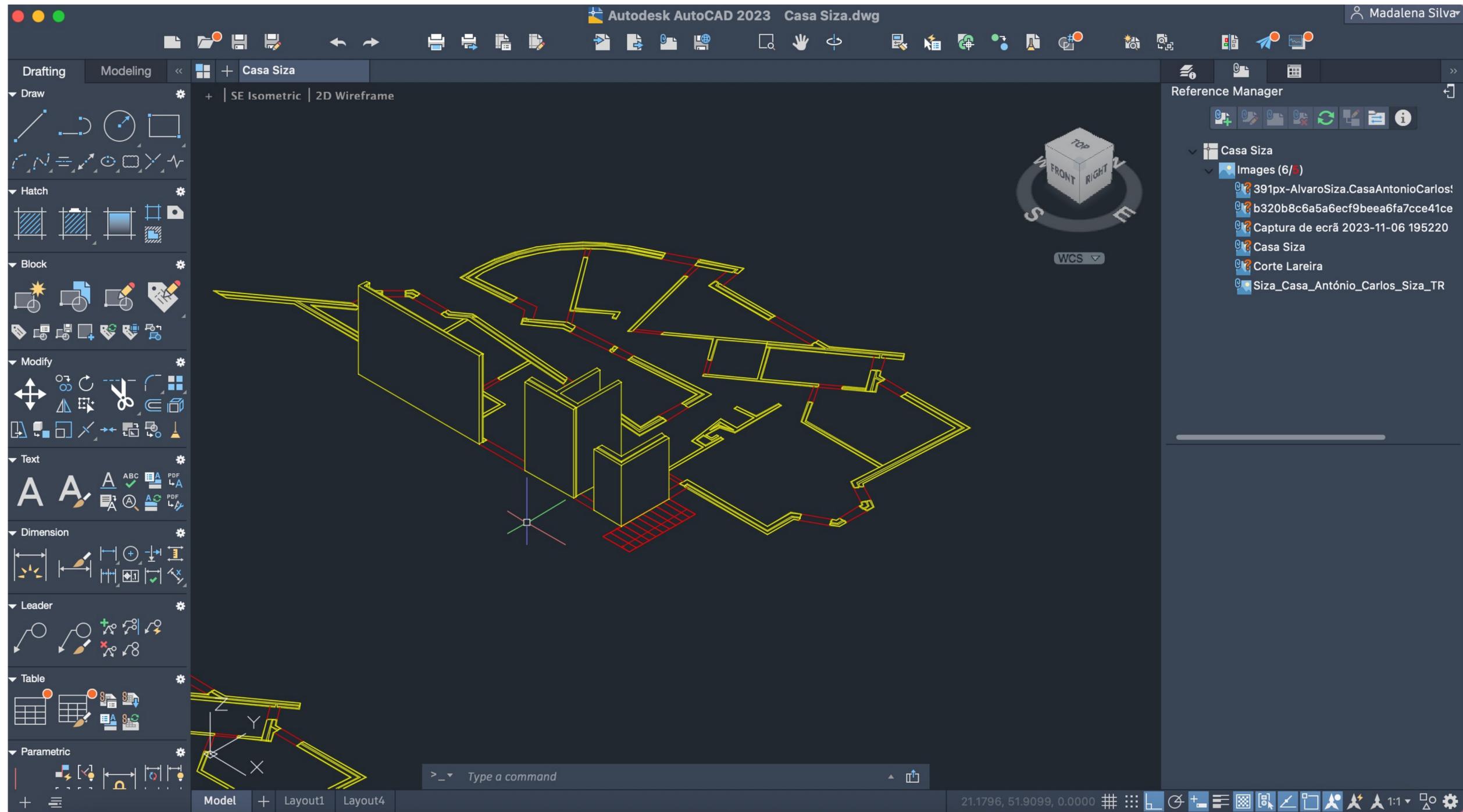
Extrude: Altura das paredes  
-4.7m para as paredes mais altas  
-3.7m para as paredes mais baixas

Hide: melhor visualização do espaço



ReDig

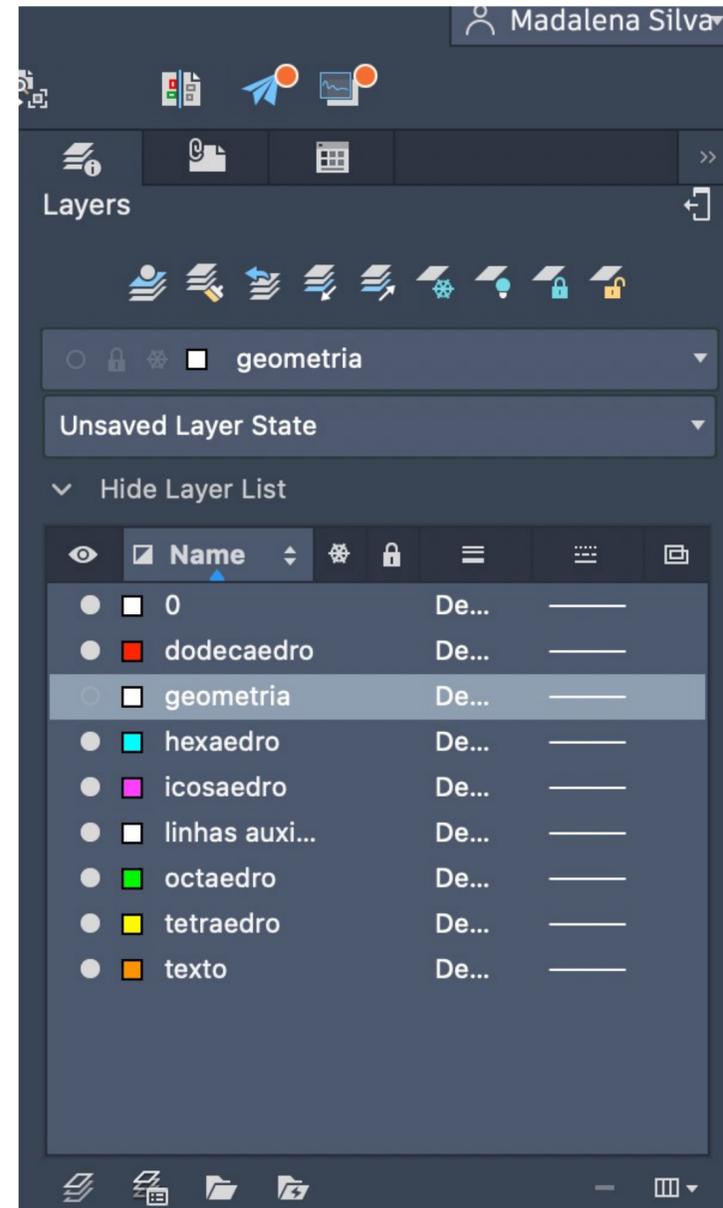
Semana 9 14/11/2023 - 17/11/2023



ReDig

Semana 9 14/11/2023 - 17/11/2023

## Exercício dos Polígonos 3D



### Criação de Layers

Tetraedro: 4 faces triangulares

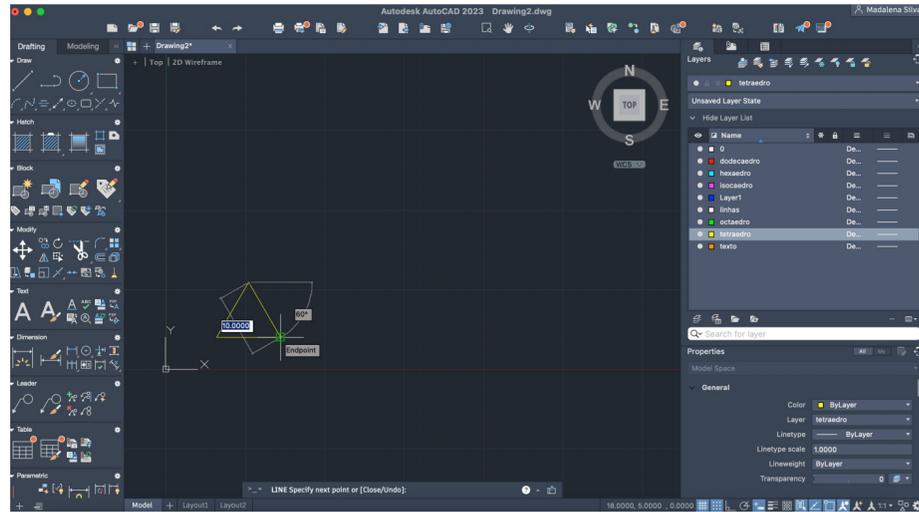
Hexaedro: 6 faces quadrangulares

Octaedro: 8 faces triangulares

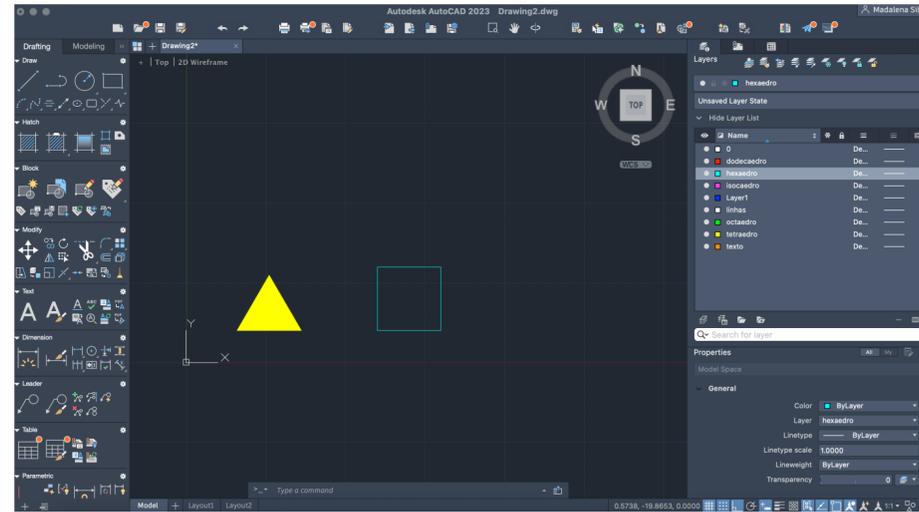
Dodecaedro: 12 faces pentagonais

Icosaedro: 20 faces triangulares

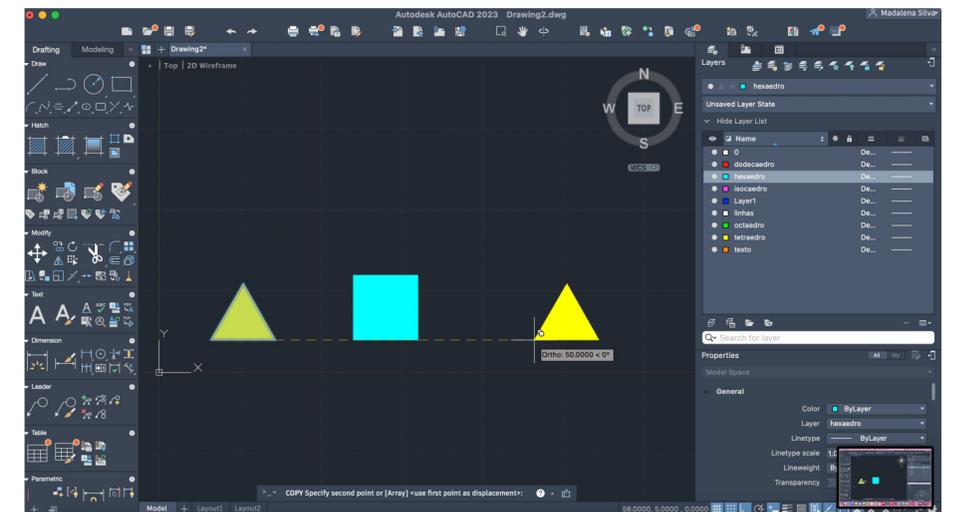
# Exercício dos Polígonos



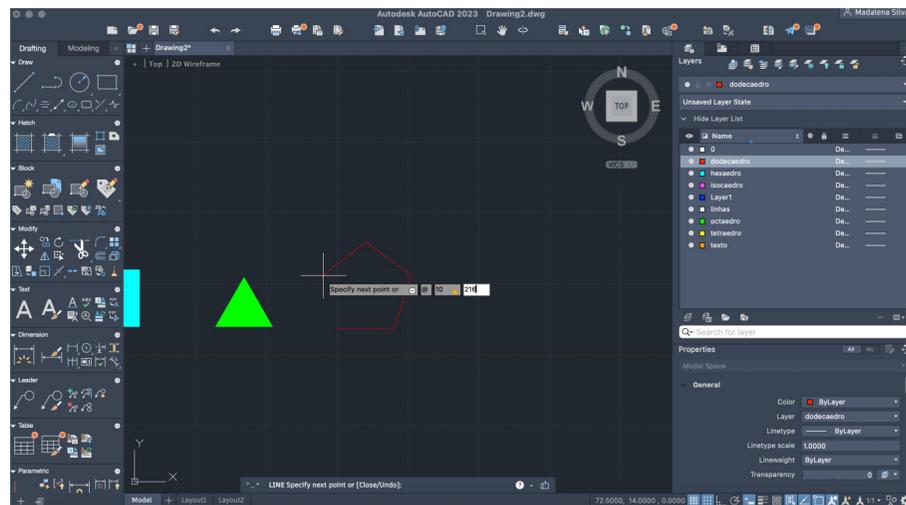
**Tetraedro:**  
Line > 10 > @10,<60 > Fechar



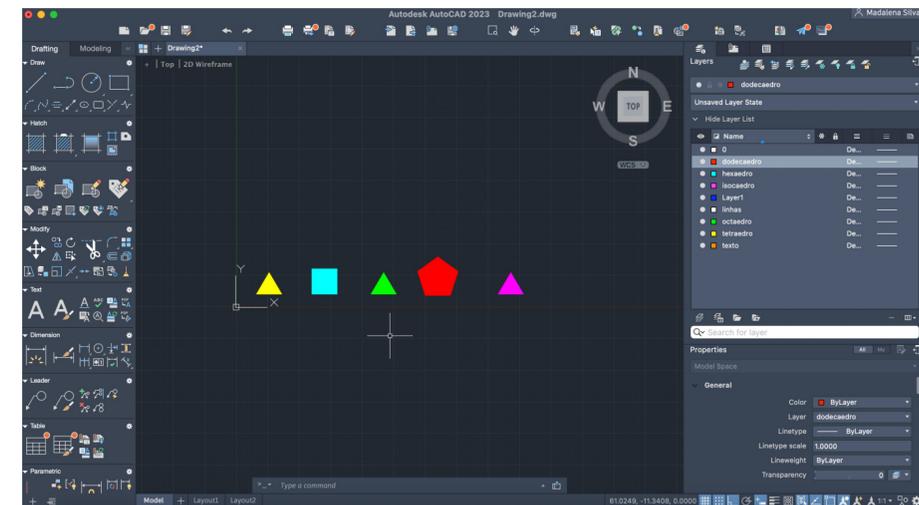
**Hexaedro:**  
Ativar comando Ortho > Line > 10 > 10 > 10 Fechar



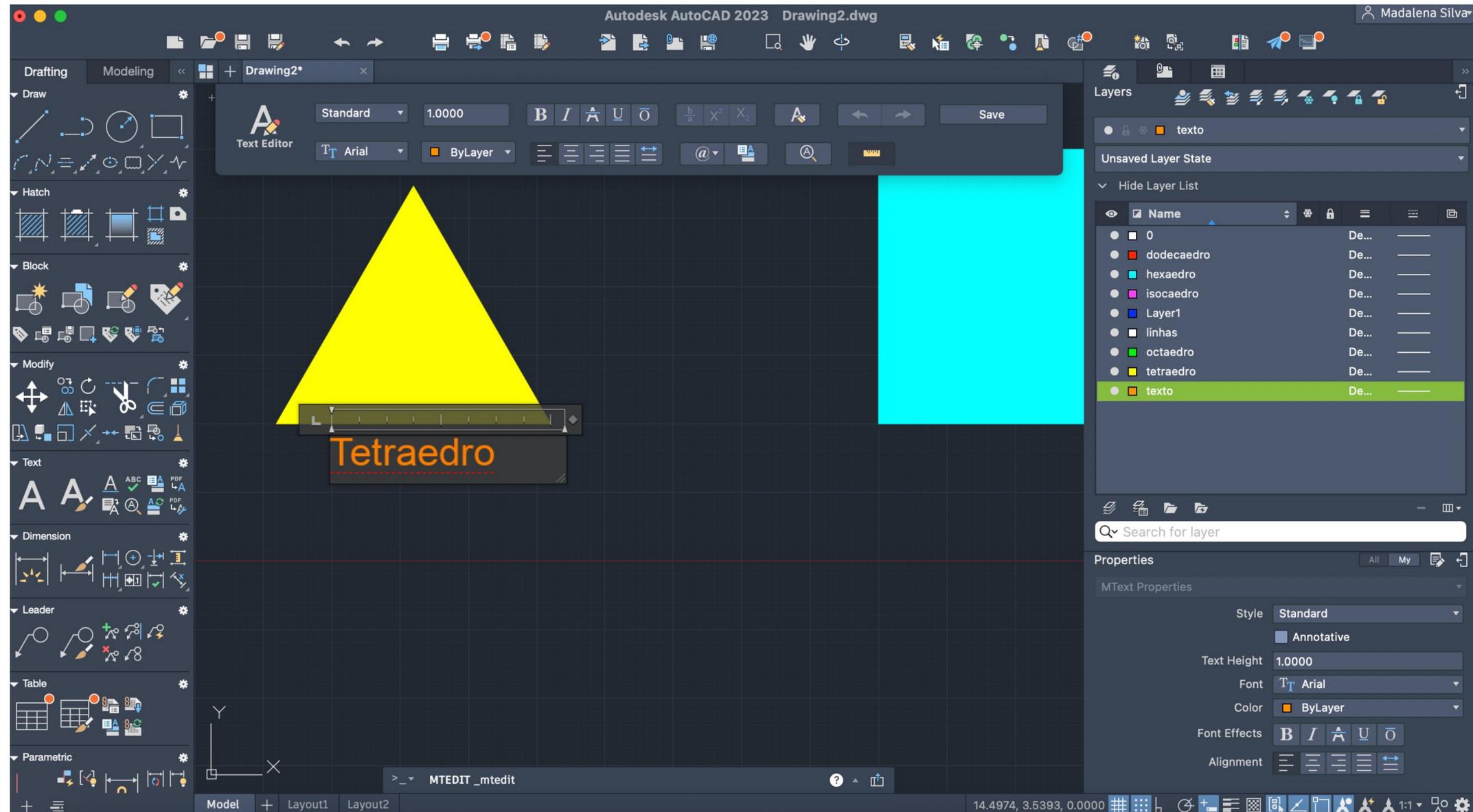
**Octaedro:**  
Copy > Selecionar Tetraedro > Enter >  
Ortho ON > Escolher o 2º Pomto



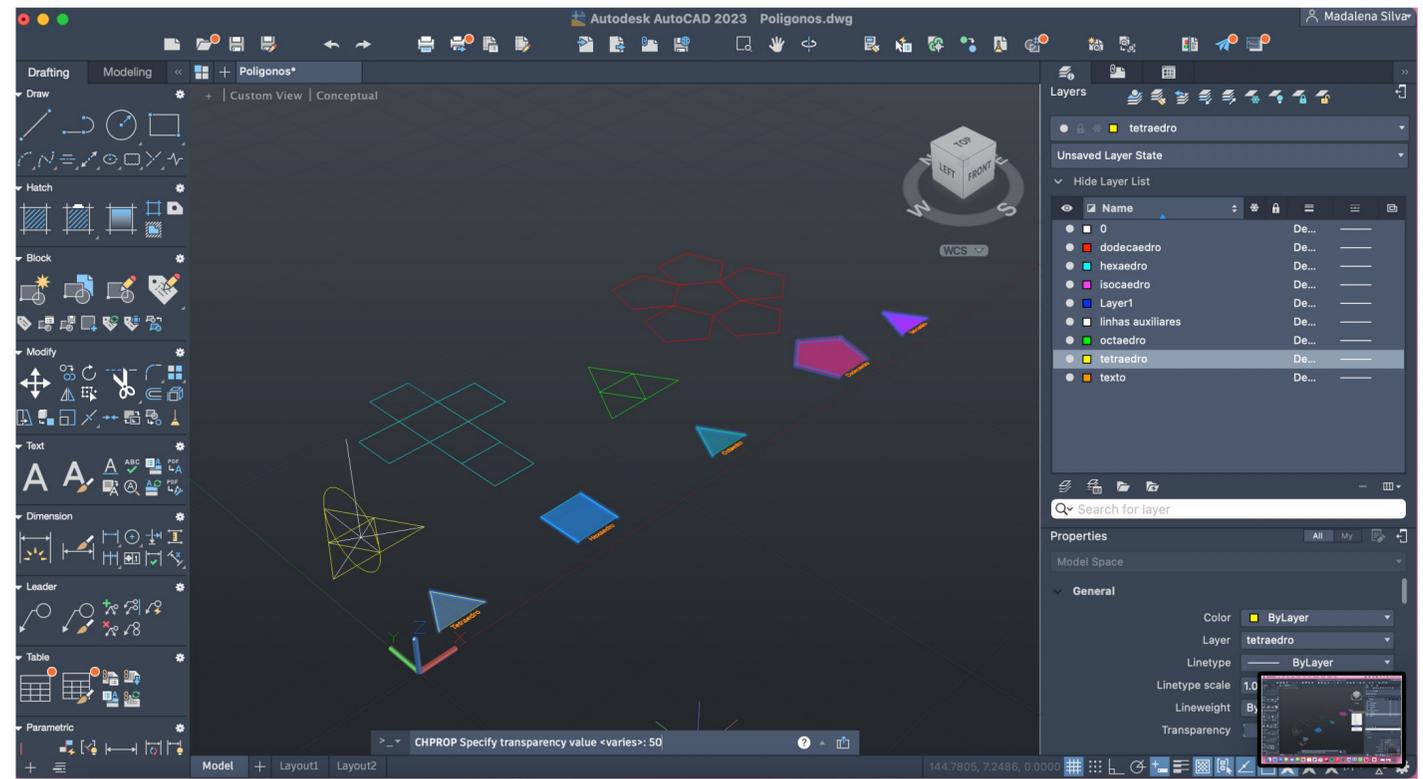
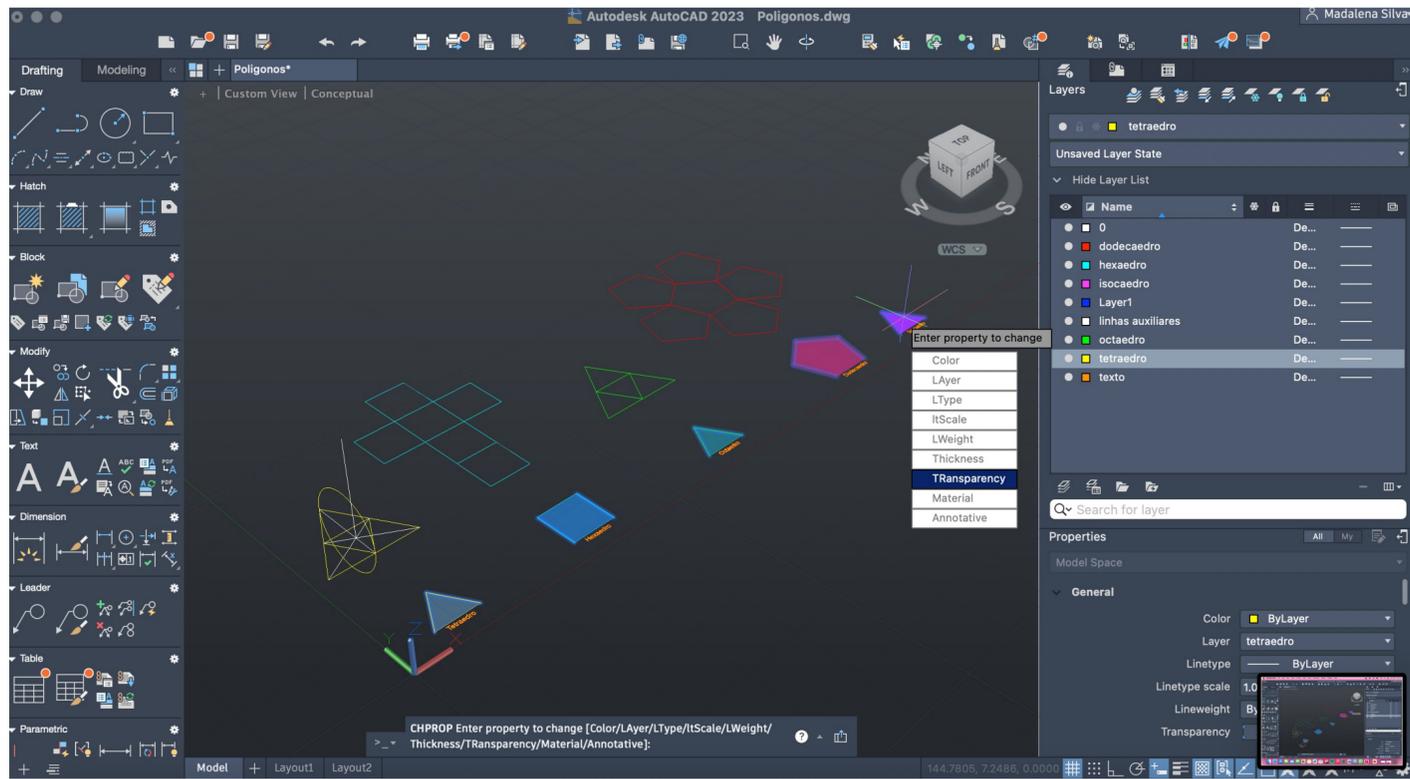
**Dodecaedro:**  
Line > 10 > @10<74 > @10<144 > @10<216 >  
Fechar



**Icosaedro:**  
Copy > Selecionar Tetraedro > Enter >  
Ortho ON > Escolher o 2º Pomto



**Layer Texto:**  
Identificar cada polígono  
- Tamanho da letra: 1.000  
- Tipo de letra: Arial

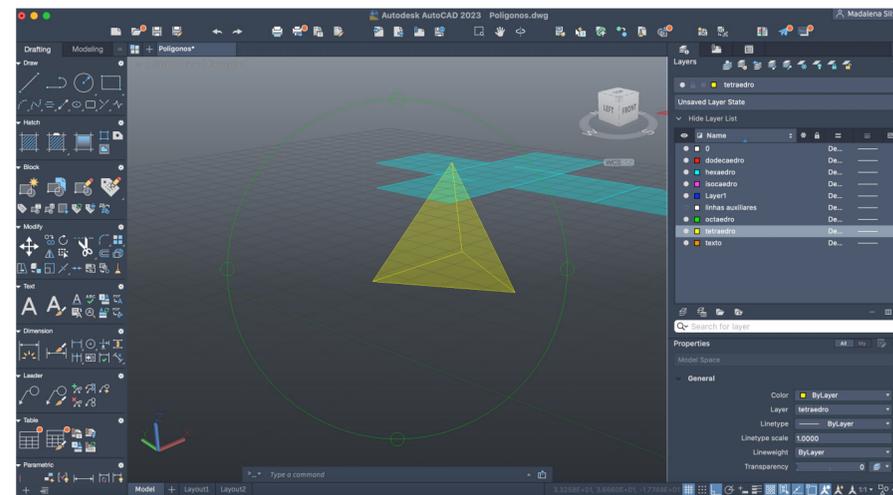
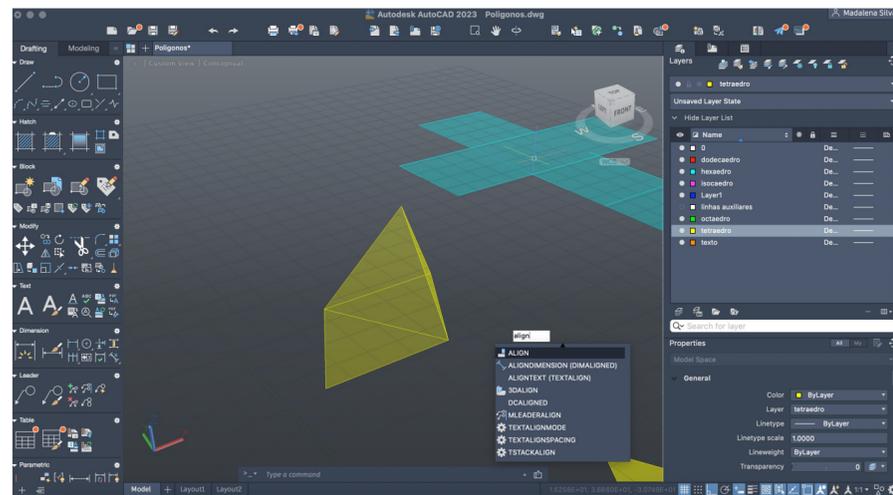
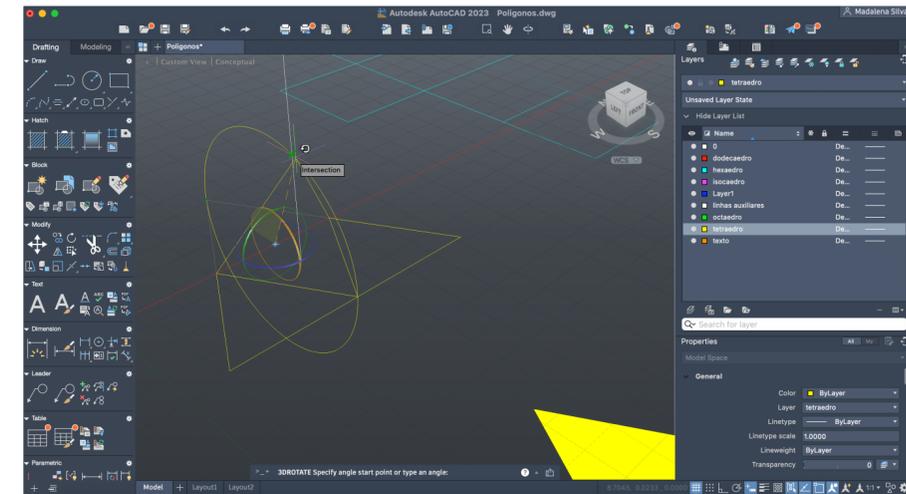
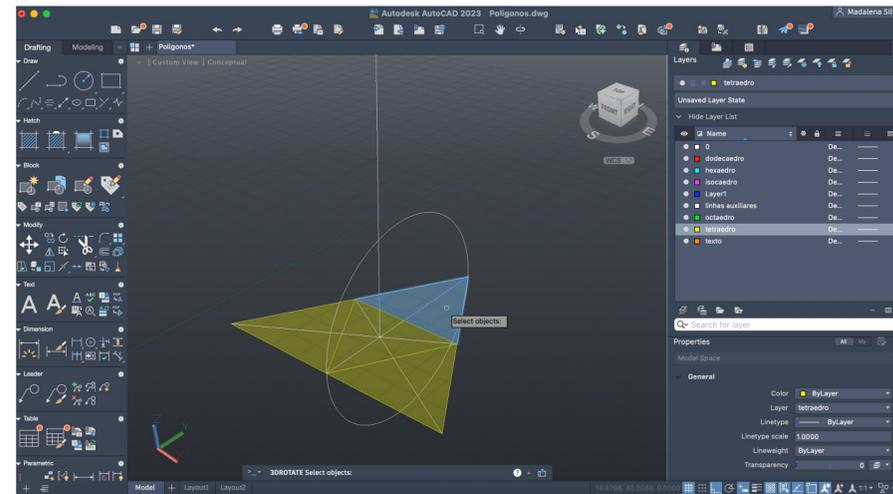
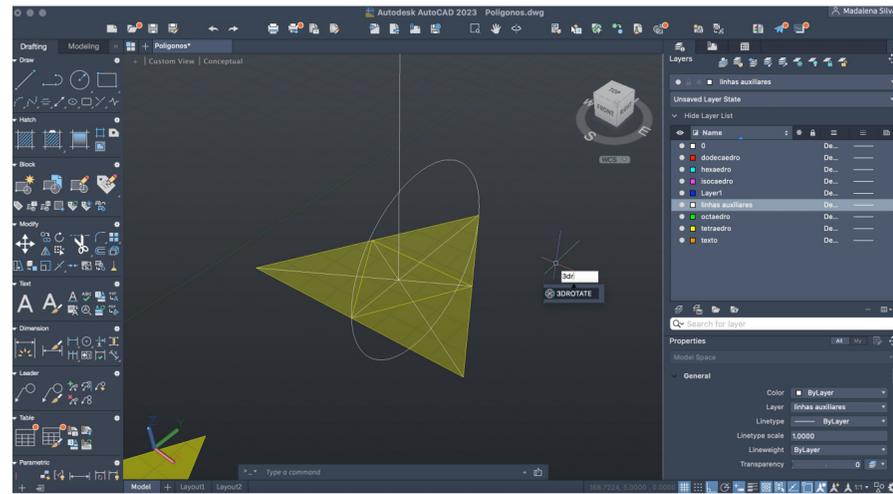


CHProp: Alterar as propriedades  
Selecionar os hatches > chprop > Transparency > 50

ReDig

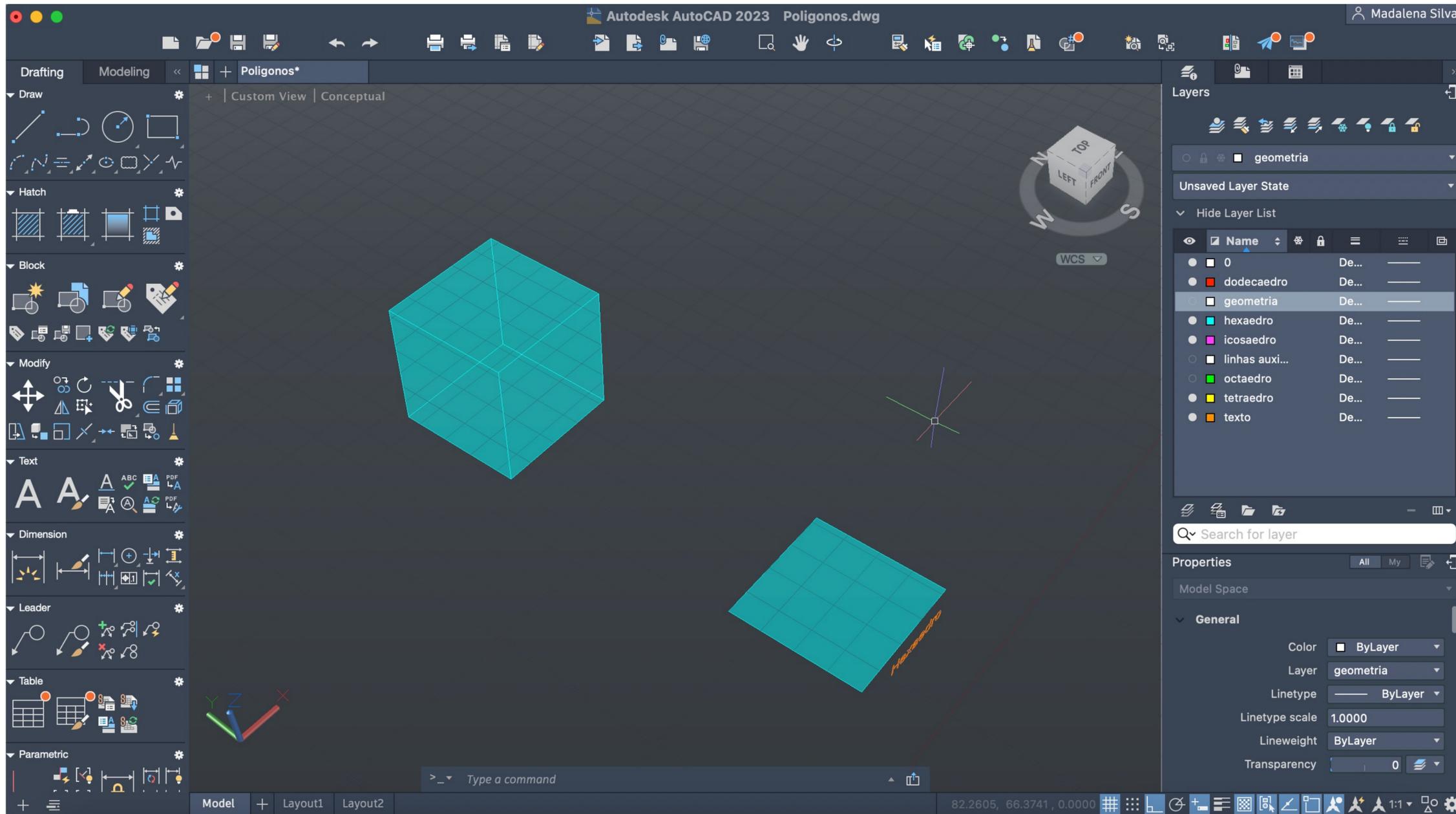
Semana 10<sub>21/11/2023 - 24/11/2023</sub>

# Tetraedro



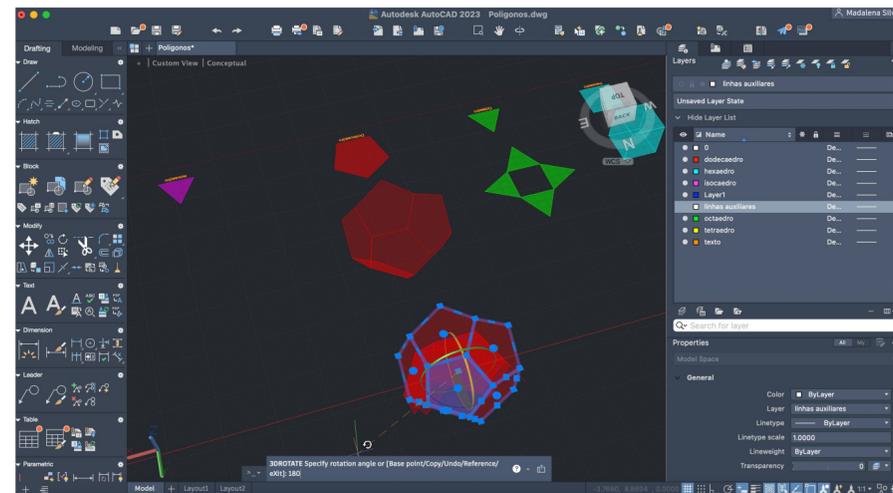
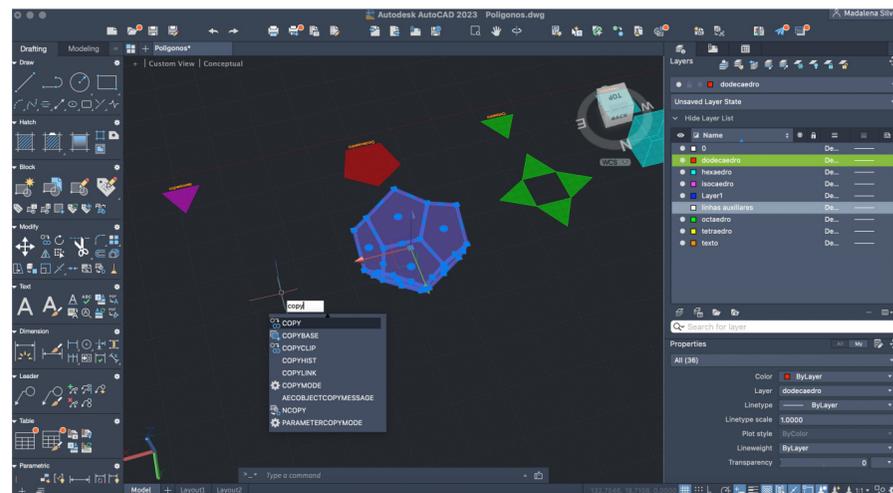
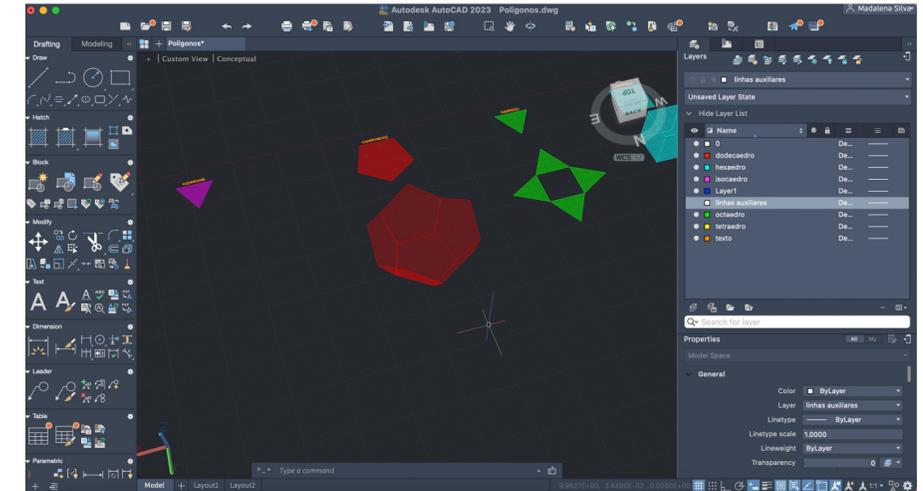
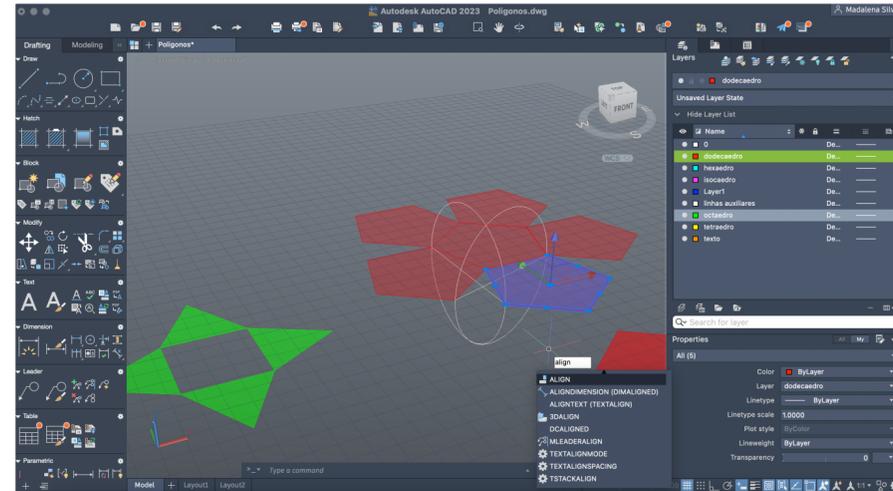
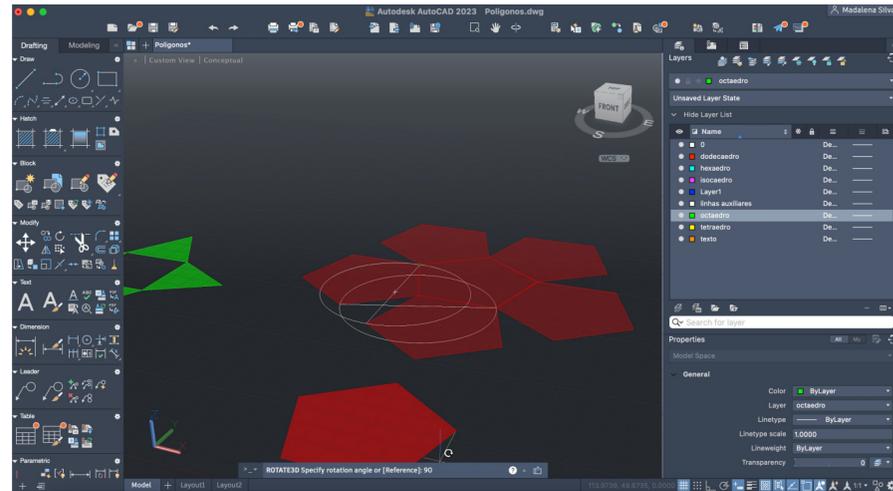
- Planificação: Copy > Selecionar o triângulo > Colocar nos sitios
- Tetraedro:
  - Linhas auxiliares: Determinar o meio do triangulo “central” e desenhar uma linha vertical;
  - Circle (pelo midpoint do triângulo acima até à ponta)
  - 3DRotate
  - Align

# Hexaedro



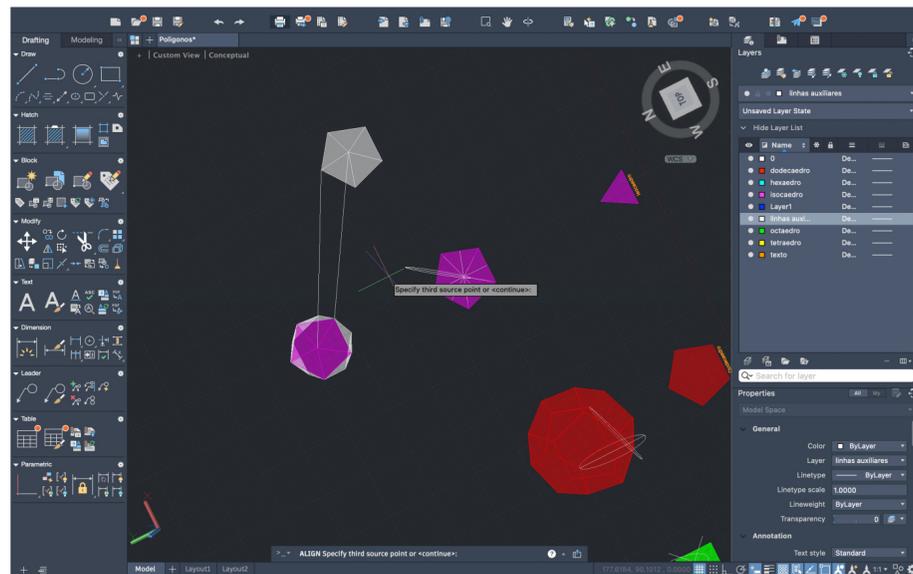
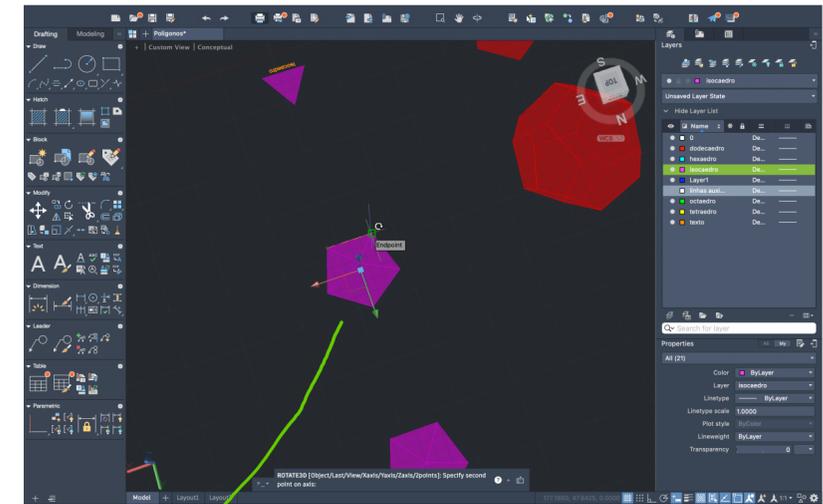
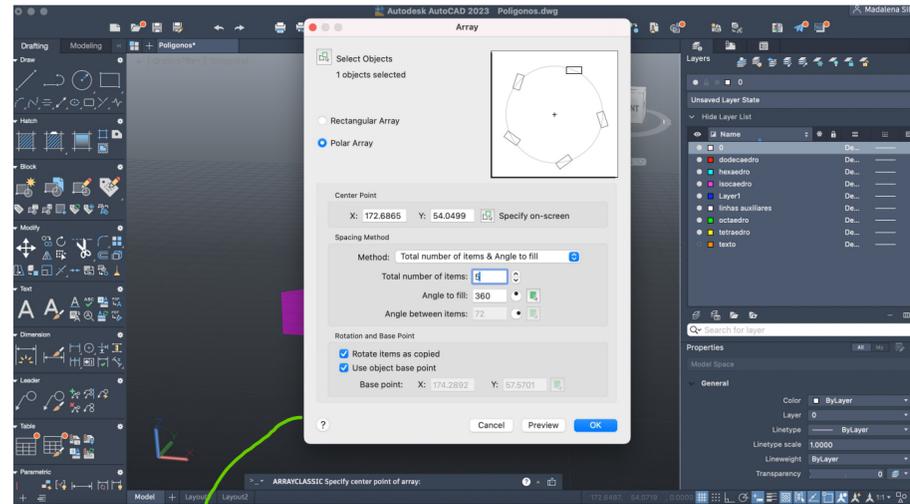
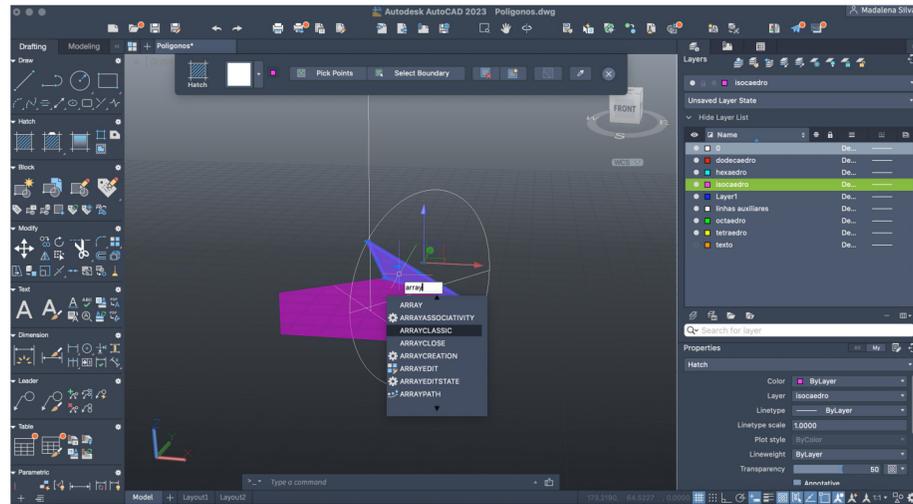
- Planificação: Copy > Selecionar o quadrado > Fazer a planificação (6 quadrados
- Hexaedro:
  - Align

# Dodecaedro



-Primeira fase do processo pelos mesmos passos que o tetraedro  
- Copy > Enter; 3DRotate; Move

# Icosaedro

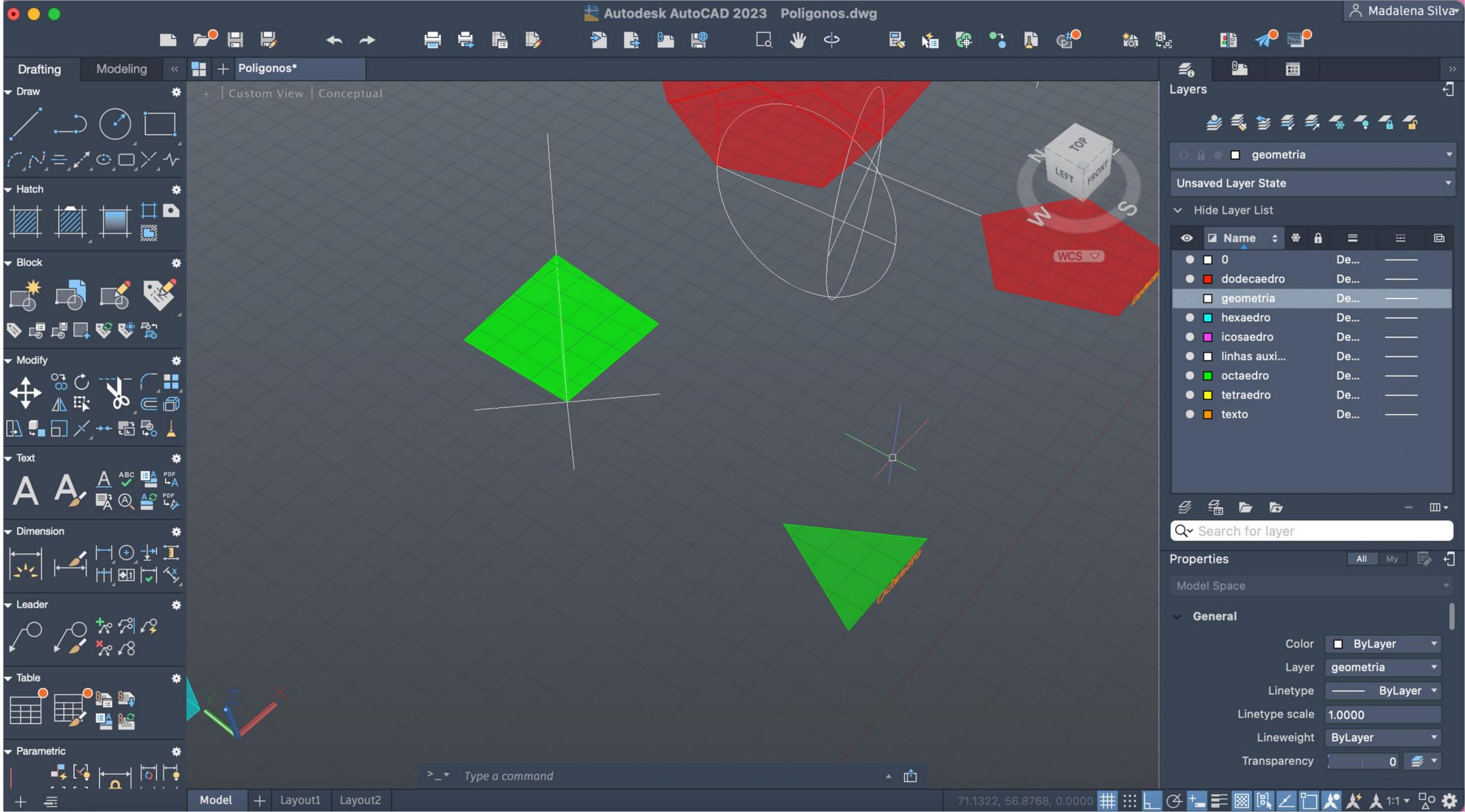


ArrayClassic

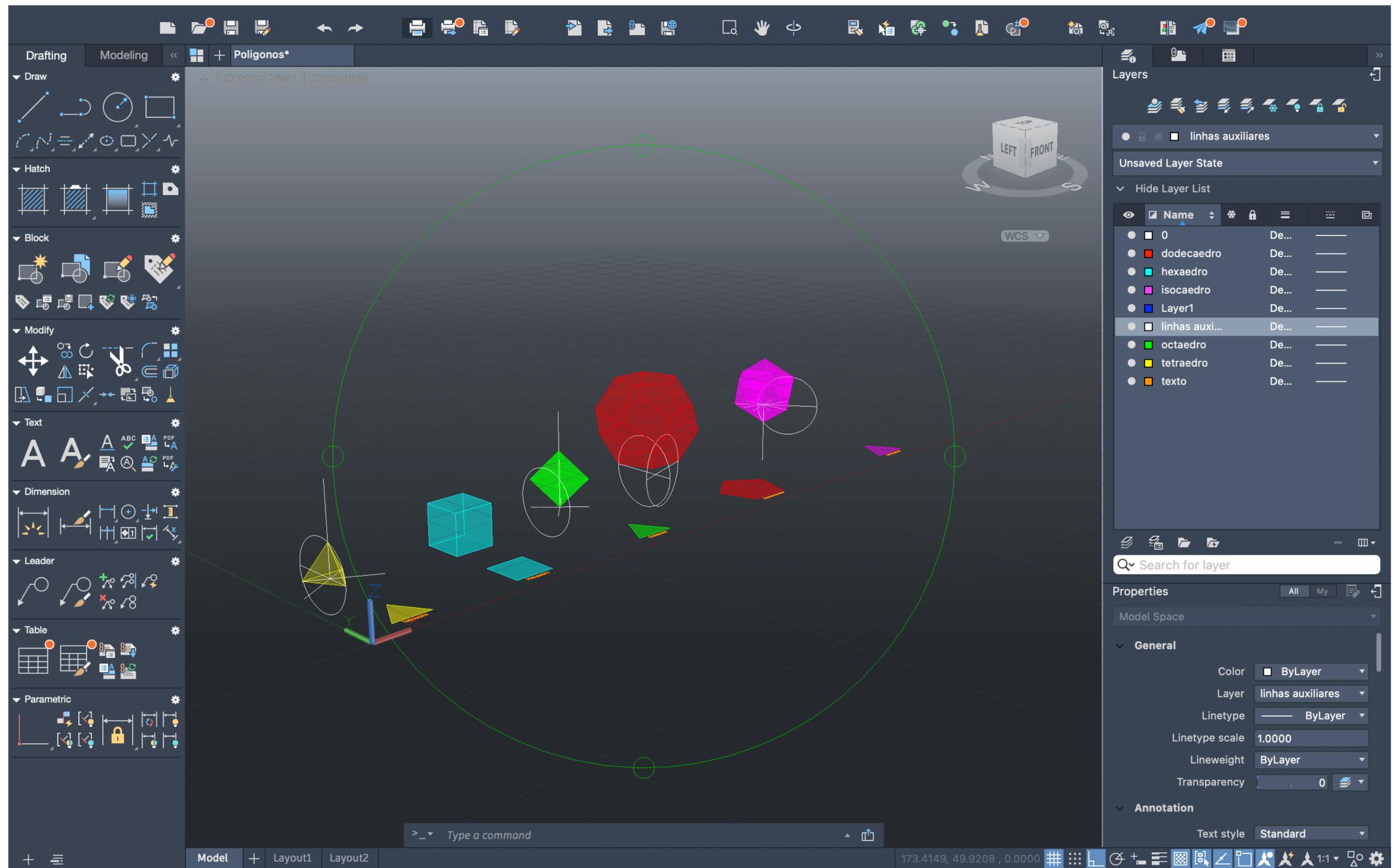
ReDig

Semana 10 21/11/2023 - 24/11/2023

# Octaedro

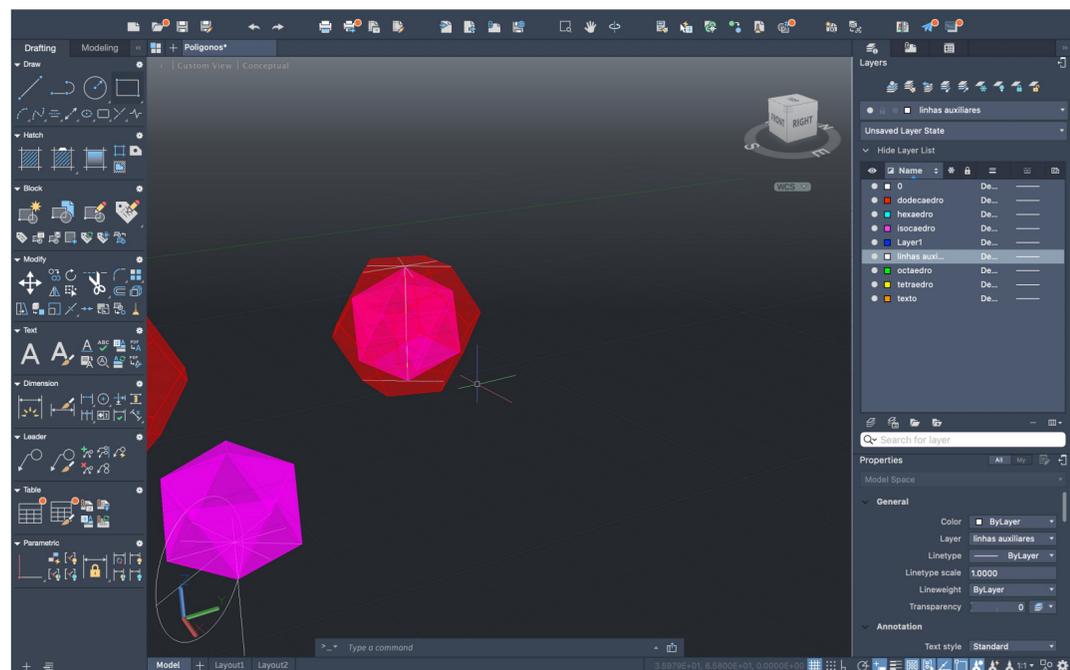
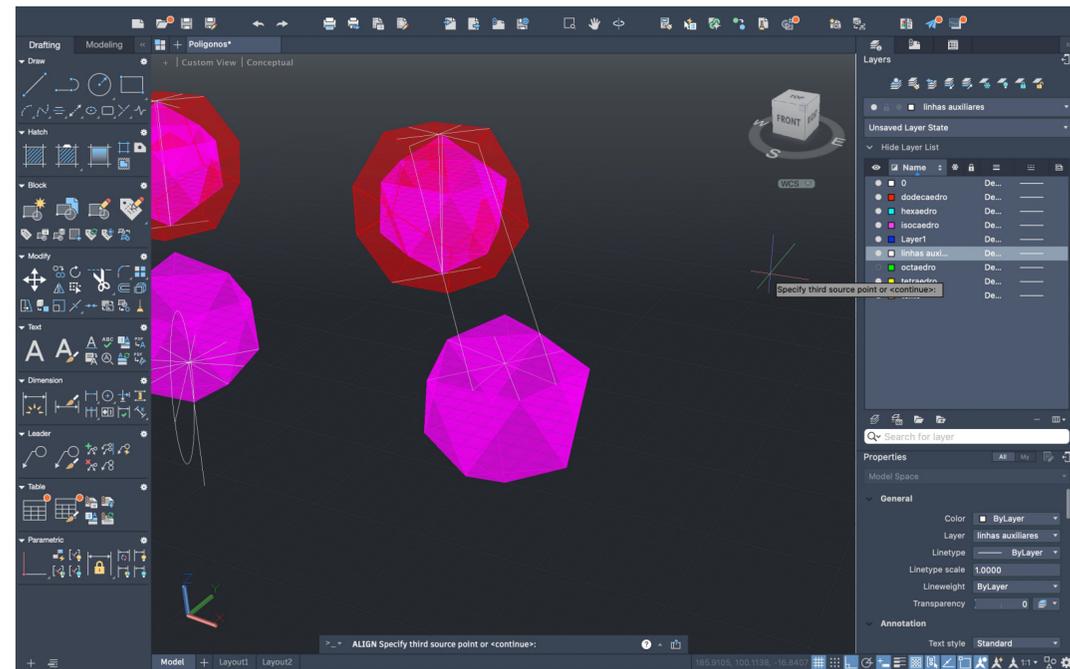
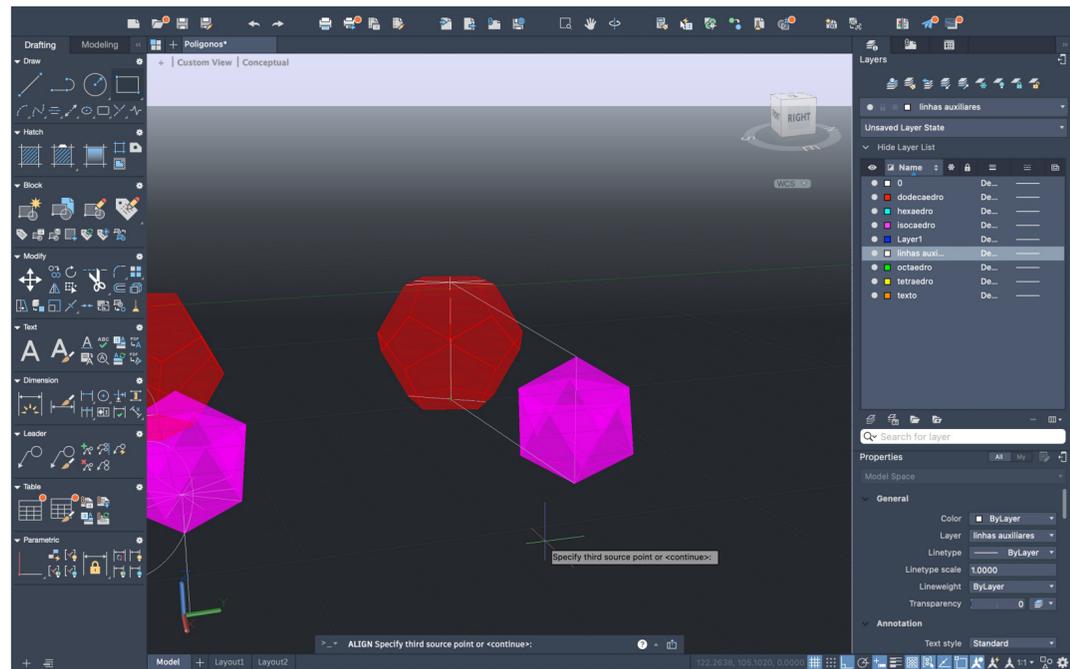


Processo igual ao tetraedro



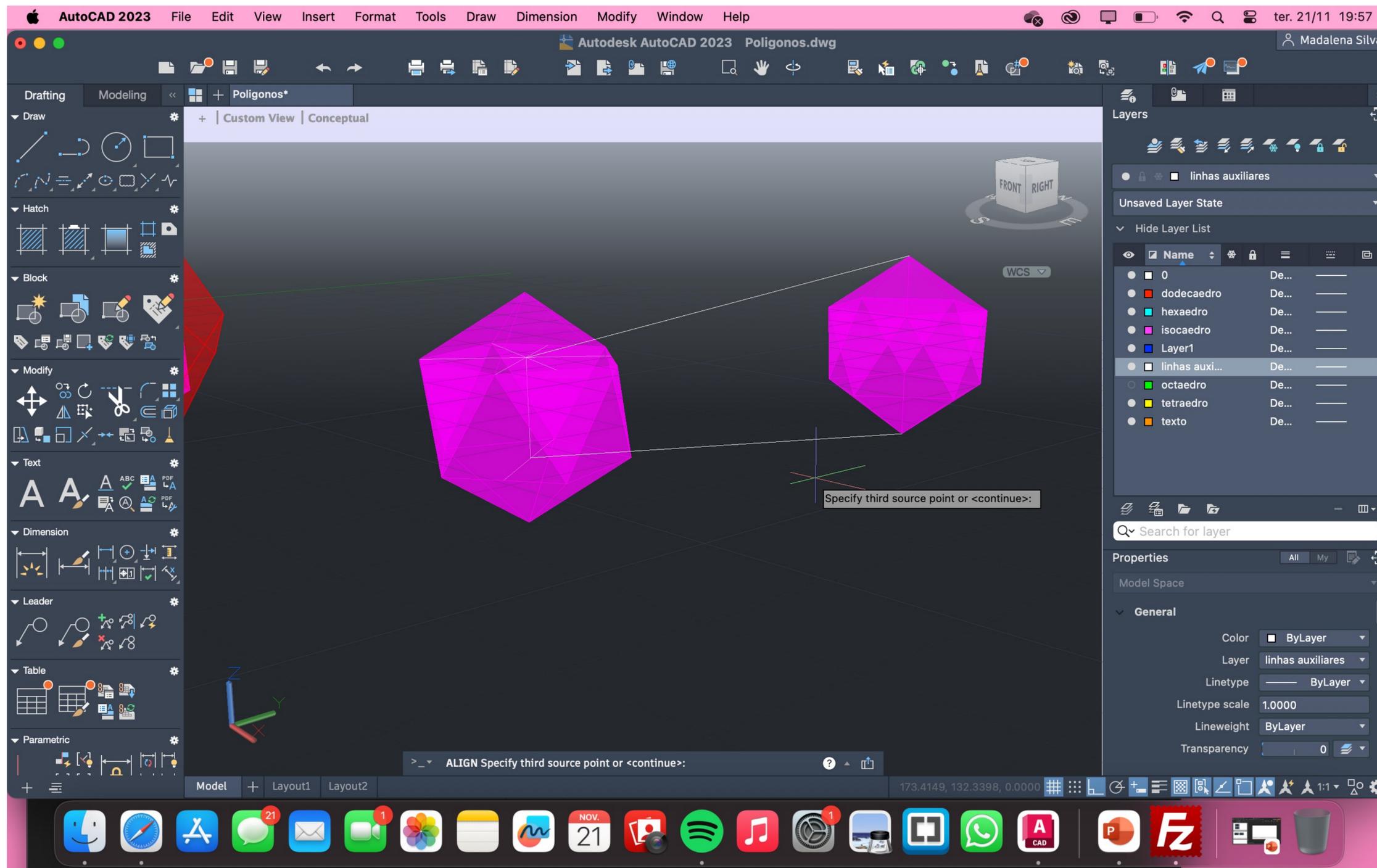
ReDig

Semana 10 21/11/2023 - 24/11/2023



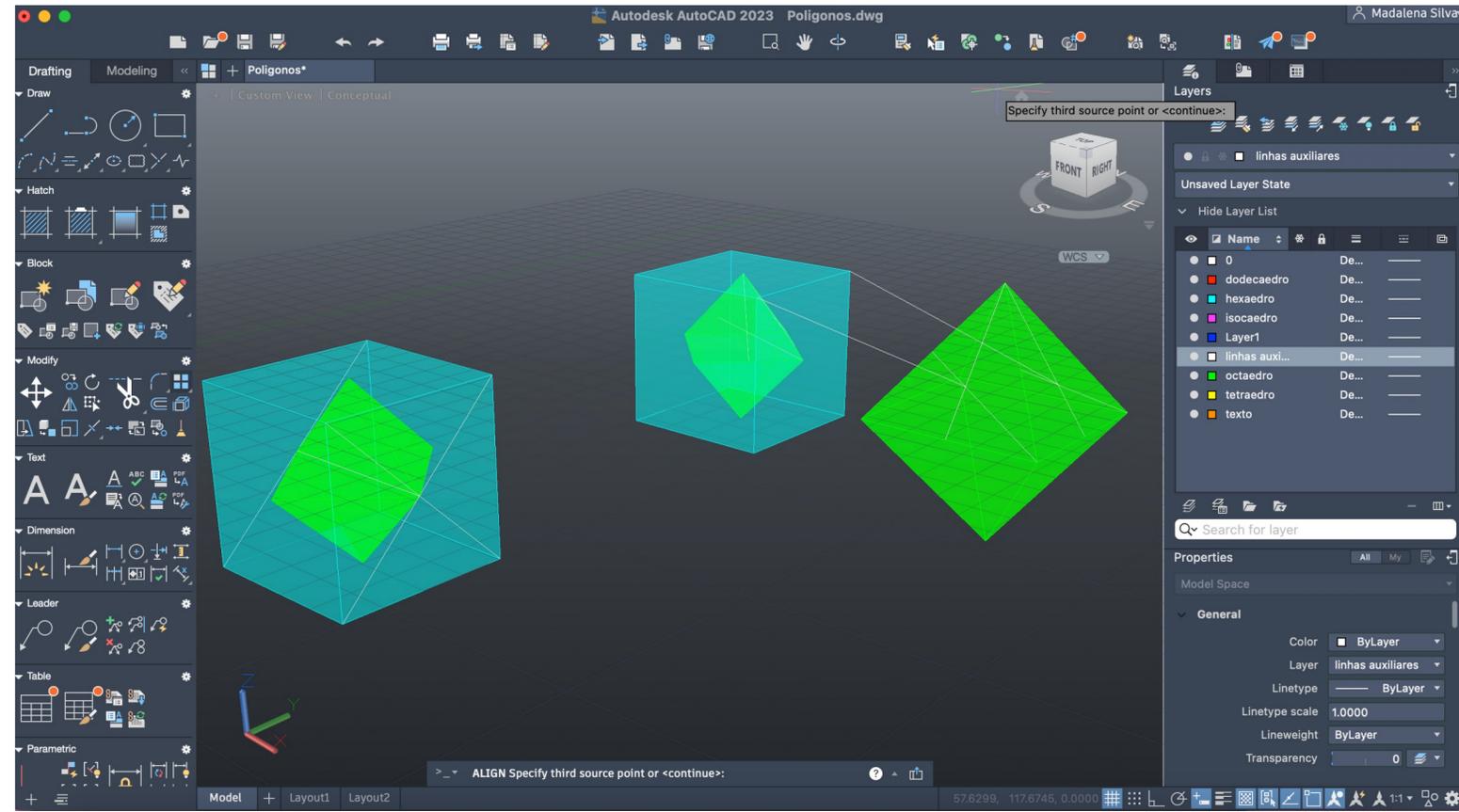
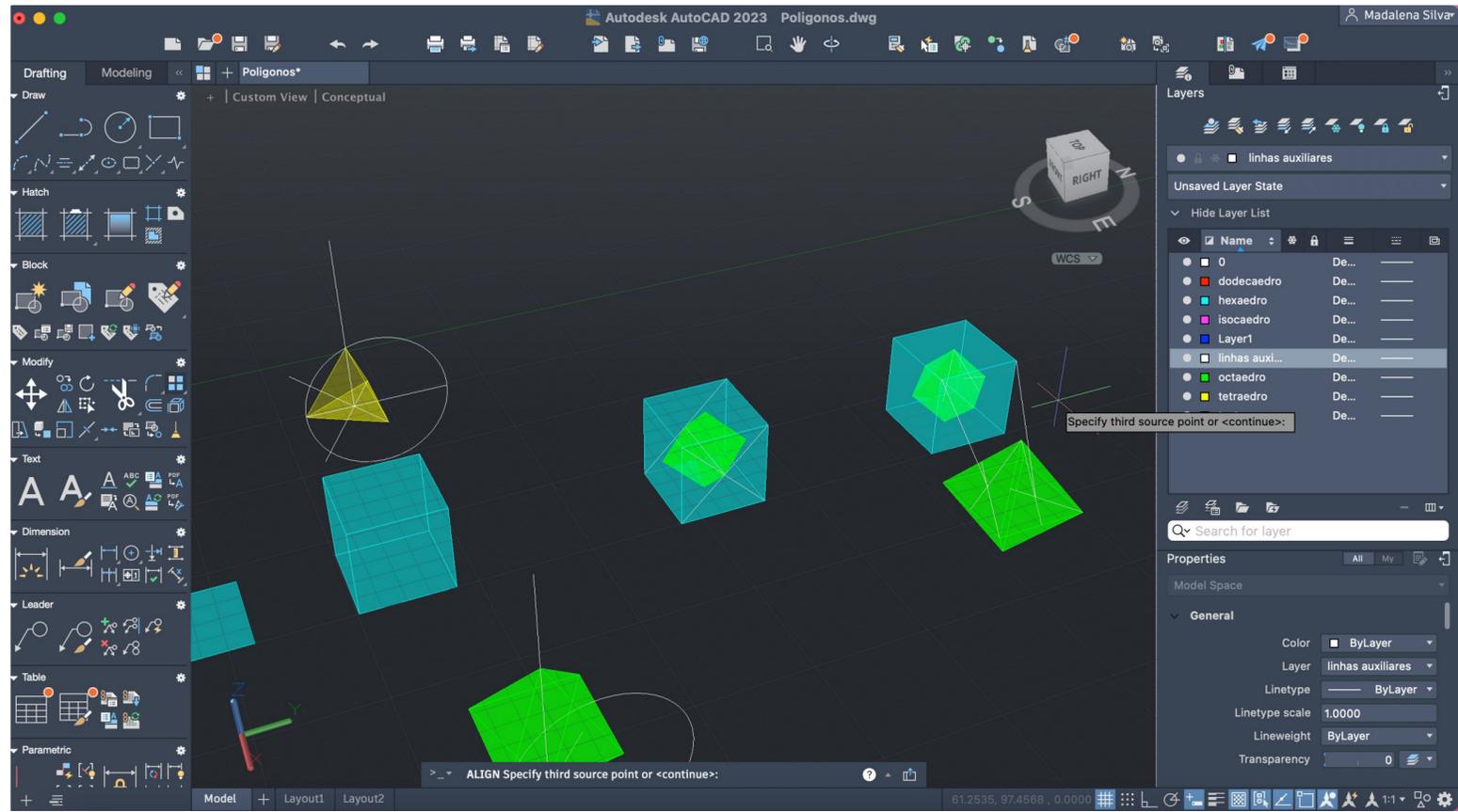
ReDig

Semana 10<sub>21/11/2023 - 24/11/2023</sub>



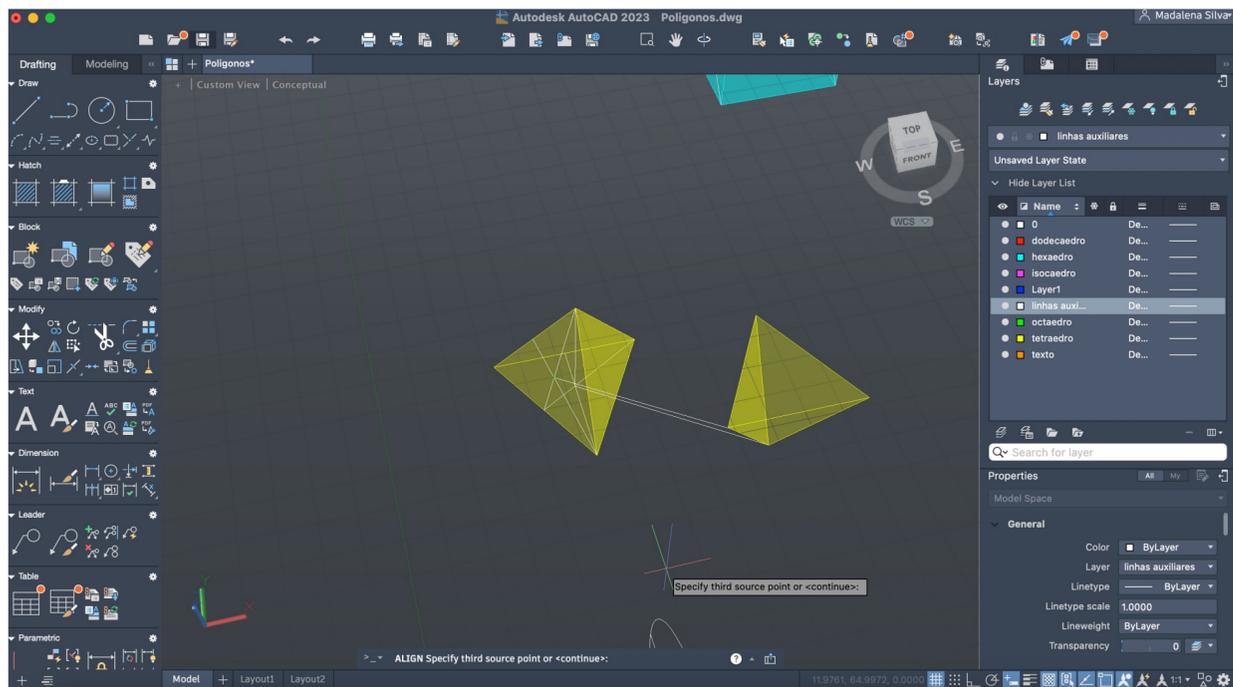
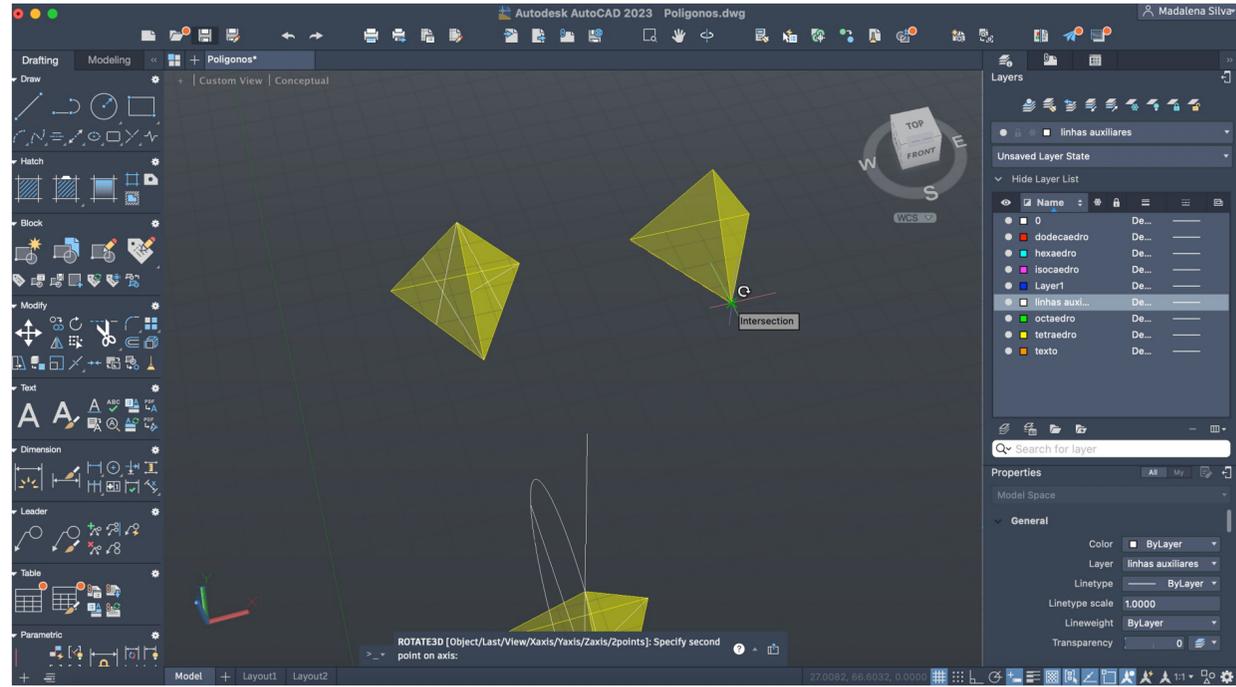
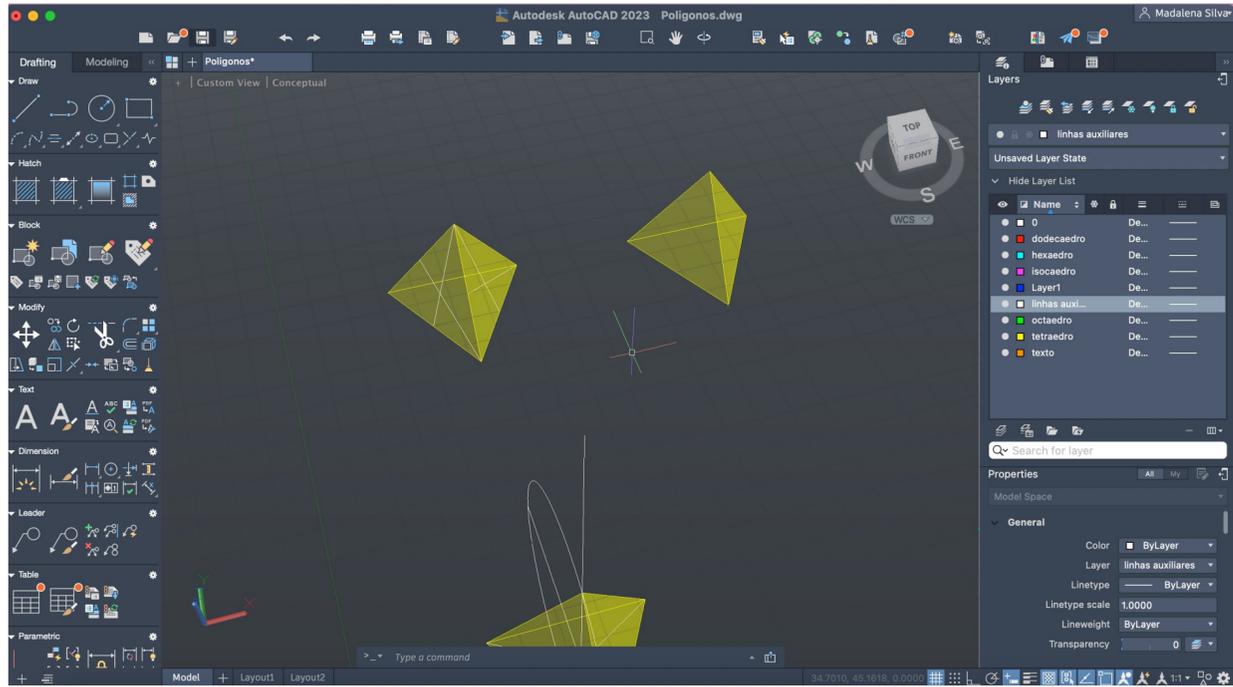
ReDig

Semana 10 21/11/2023 - 24/11/2023



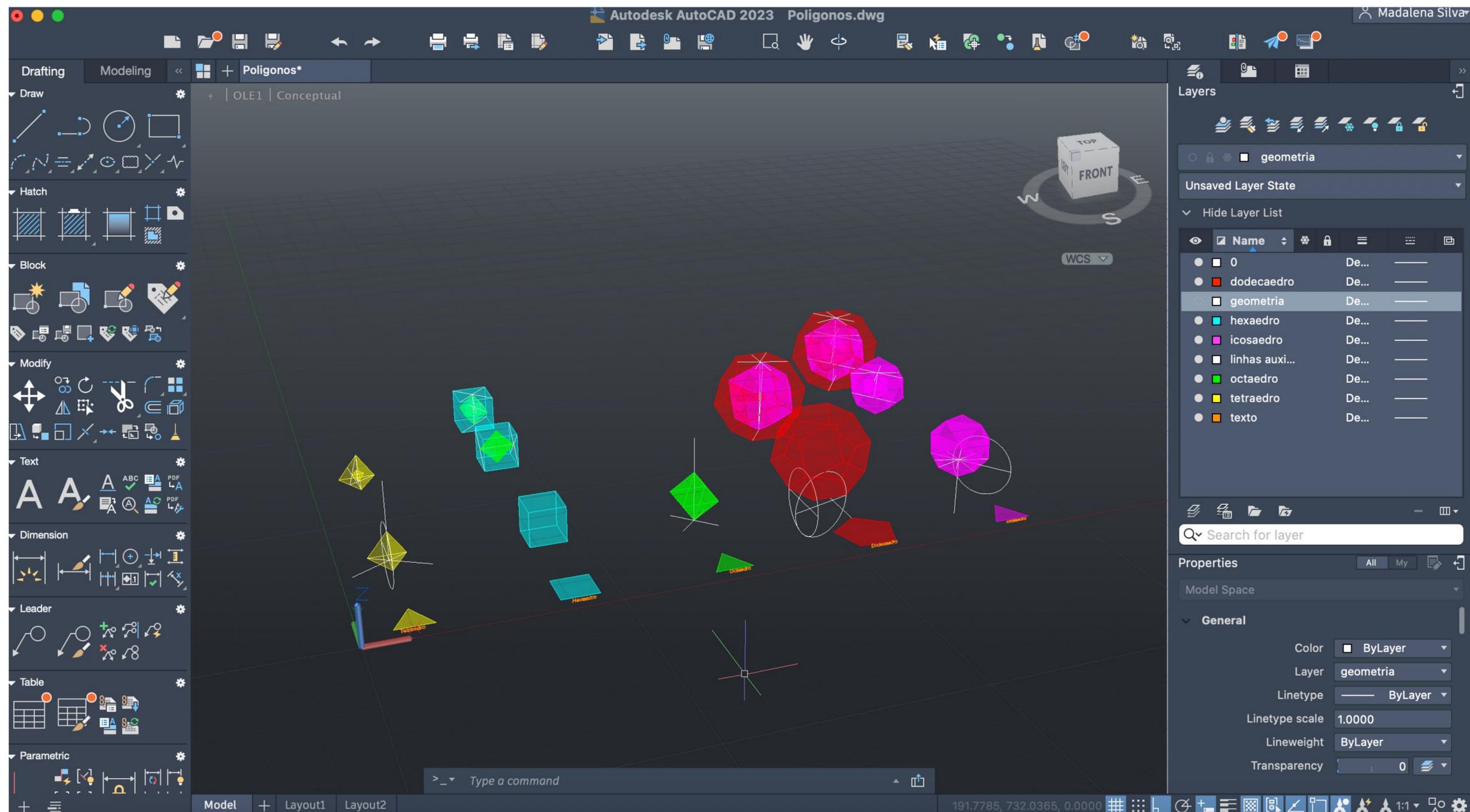
ReDig

Semana 10<sub>21/11/2023 - 24/11/2023</sub>



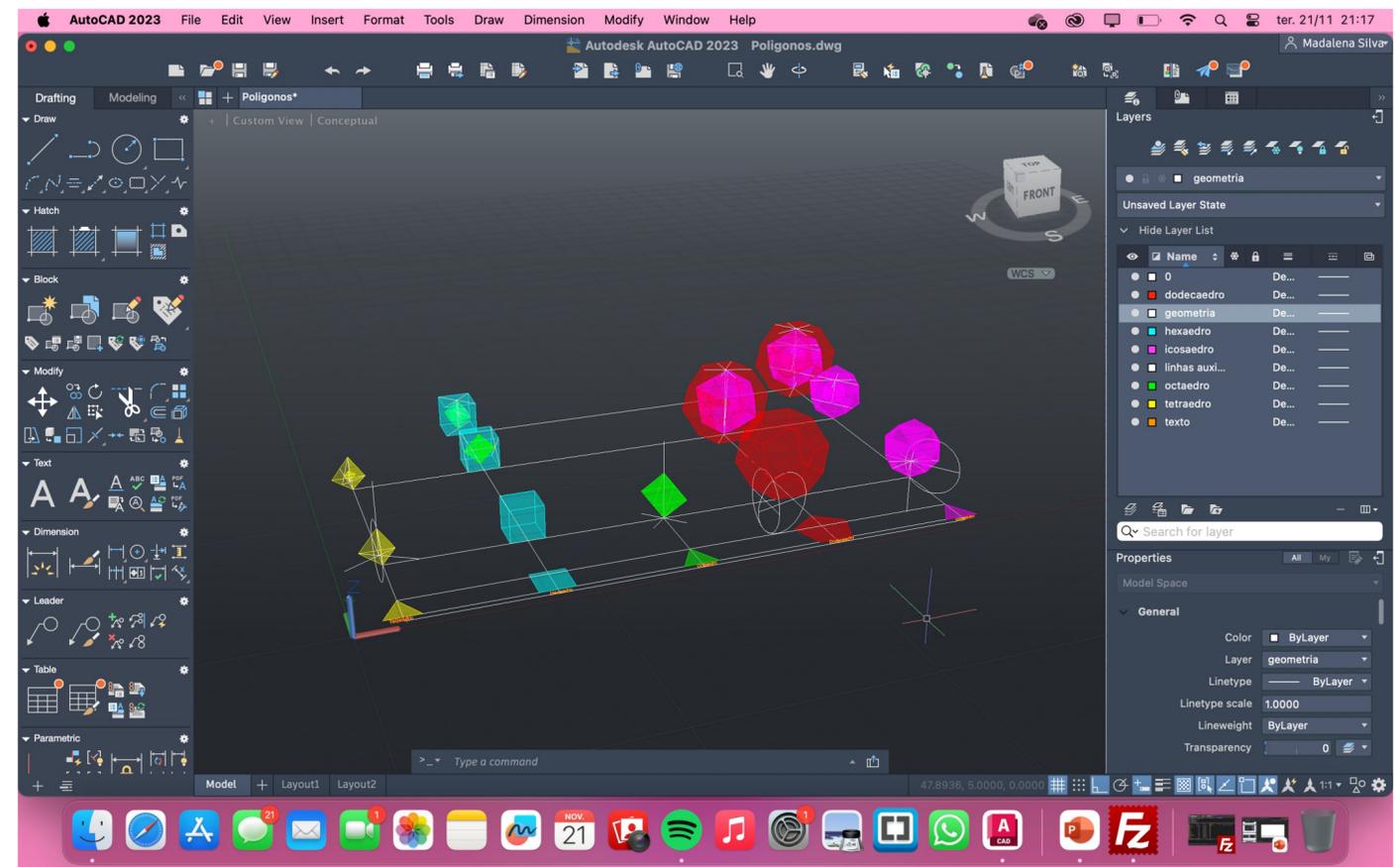
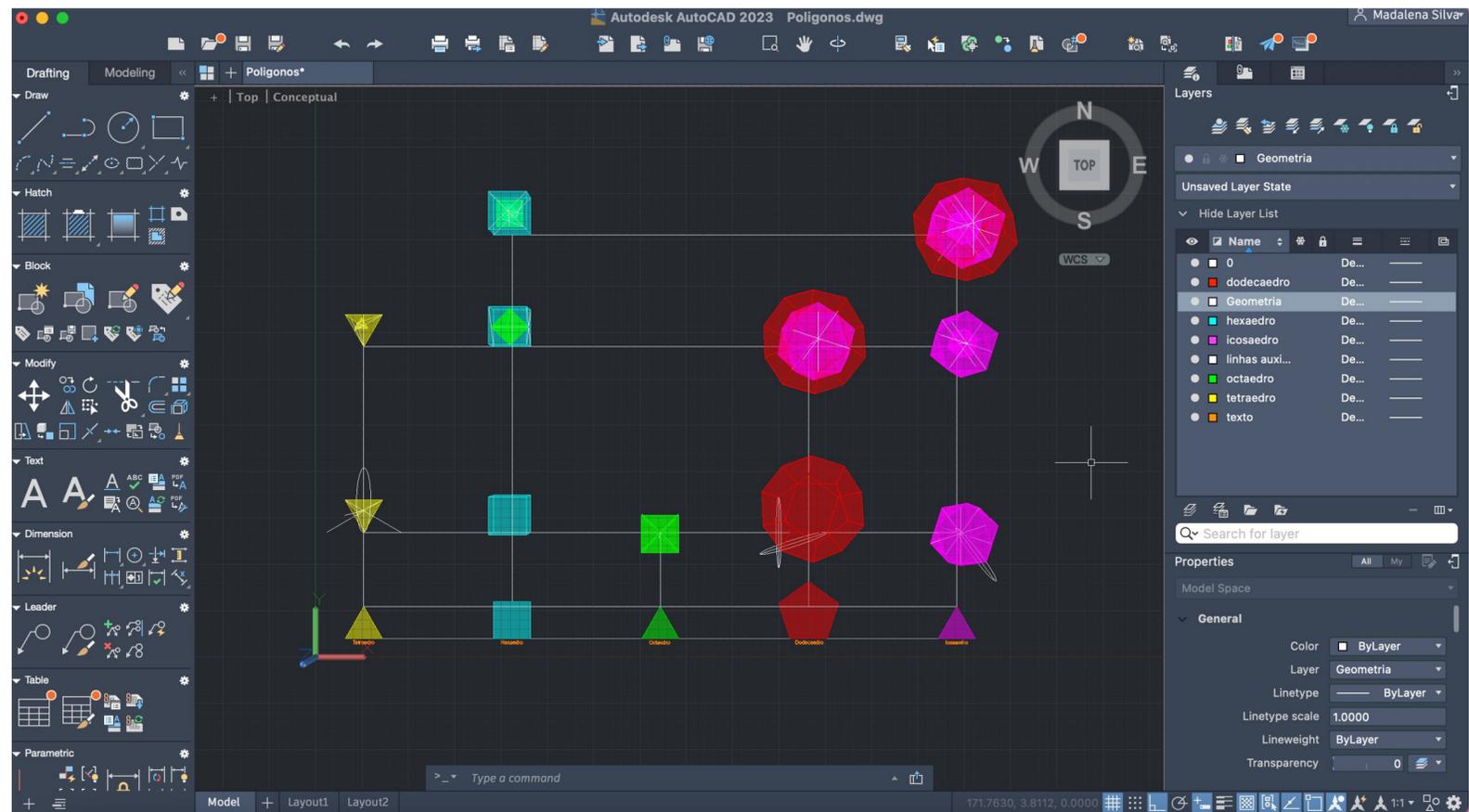
ReDig

Semana 10 21/11/2023 - 24/11/2023



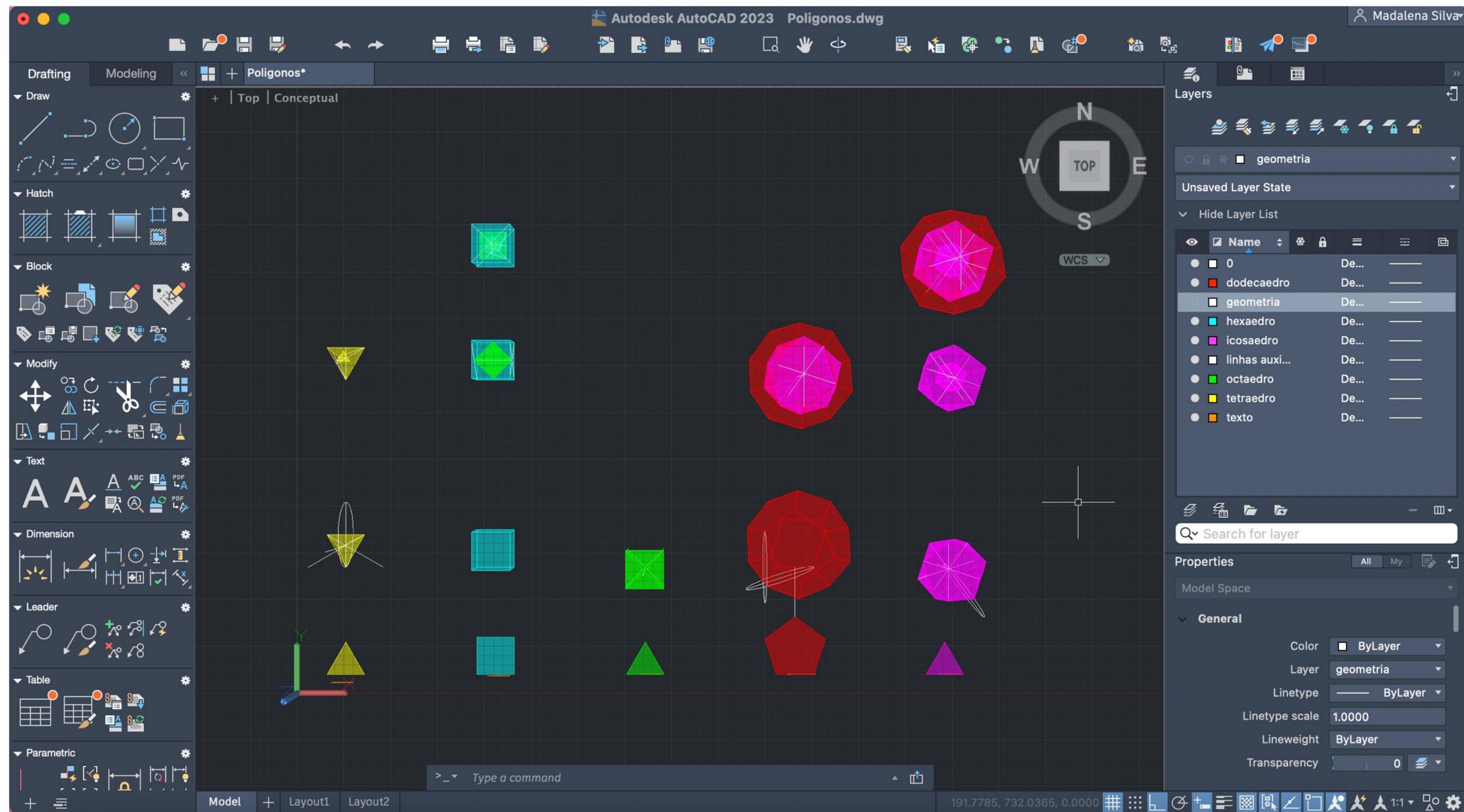
ReDig

Semana 10 21/11/2023 - 24/11/2023



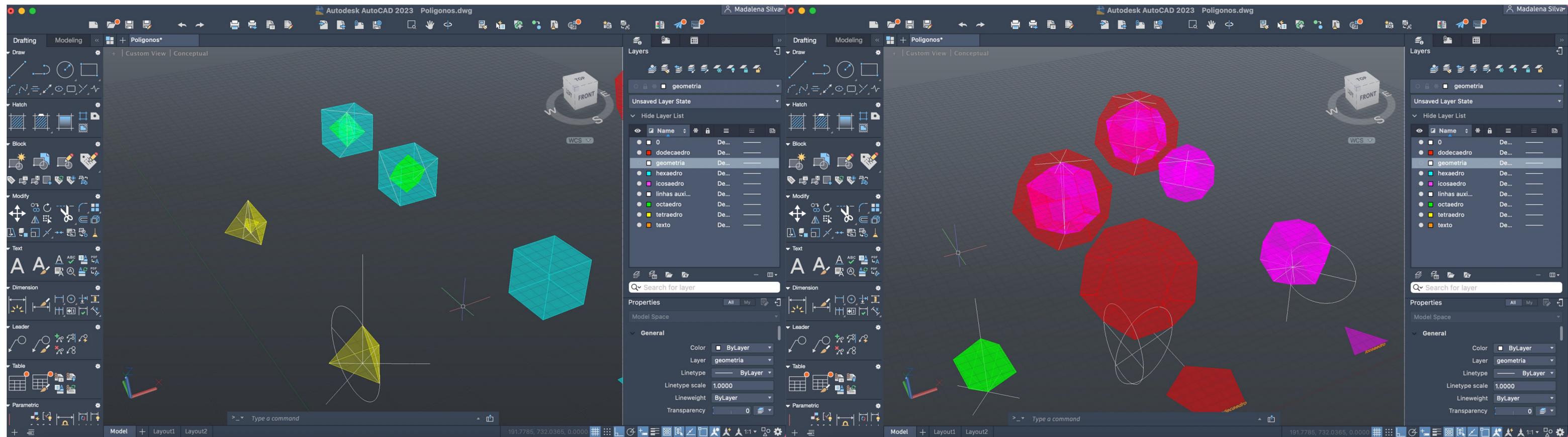
ReDig

Semana 10 21/11/2023 -24/11/2023



ReDig

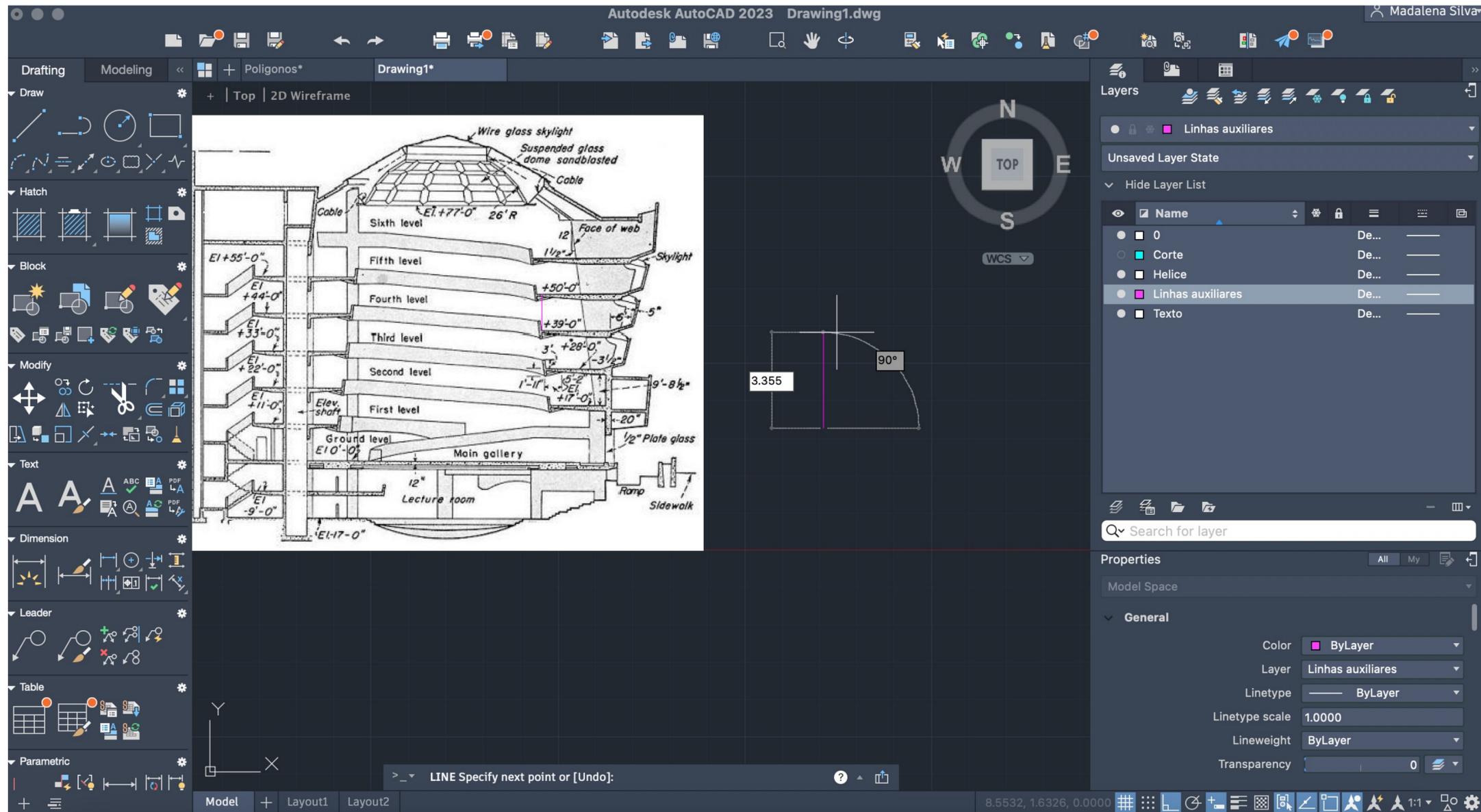
Semana 10 21/11/2023 - 24/11/2023



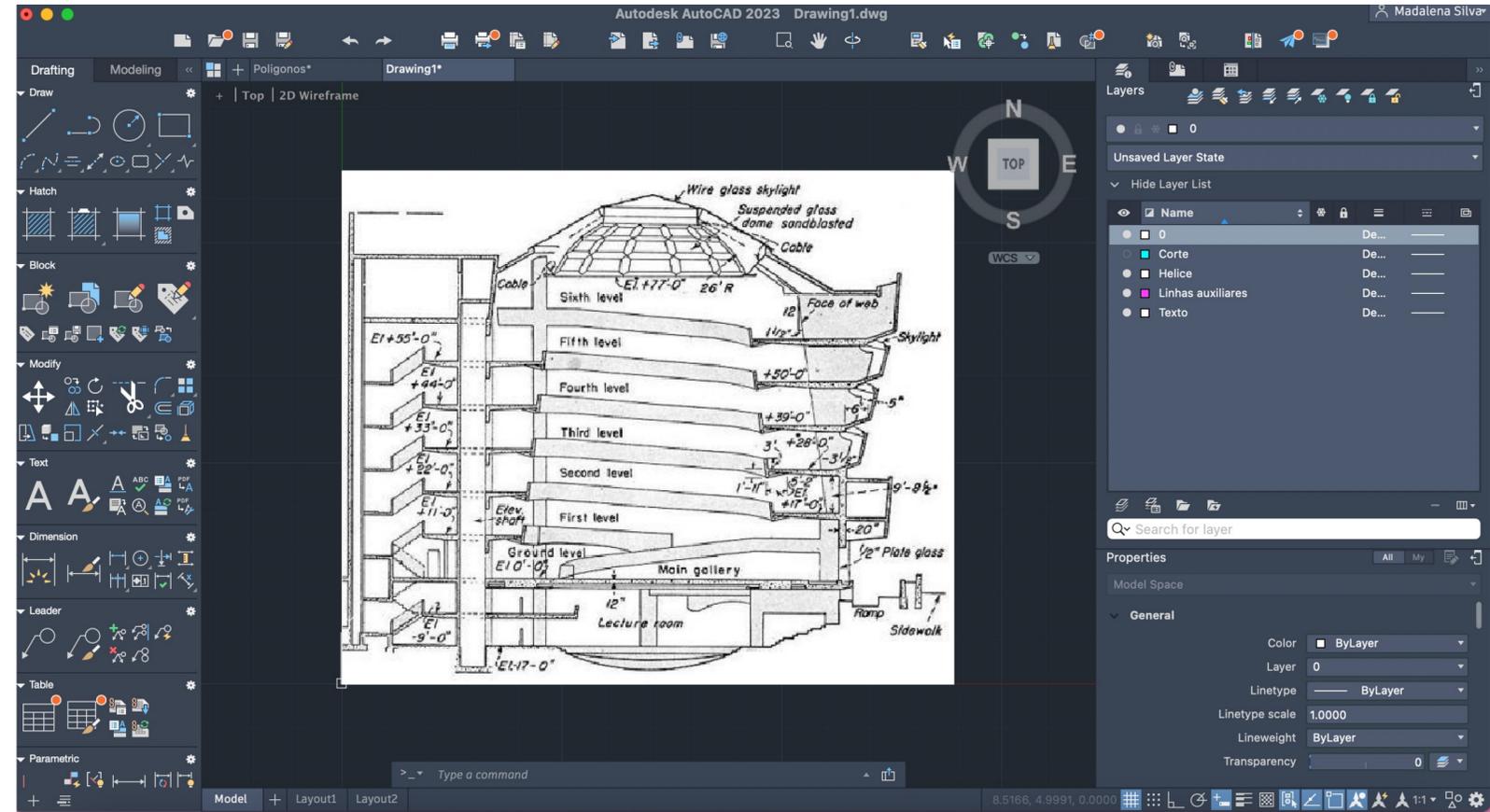
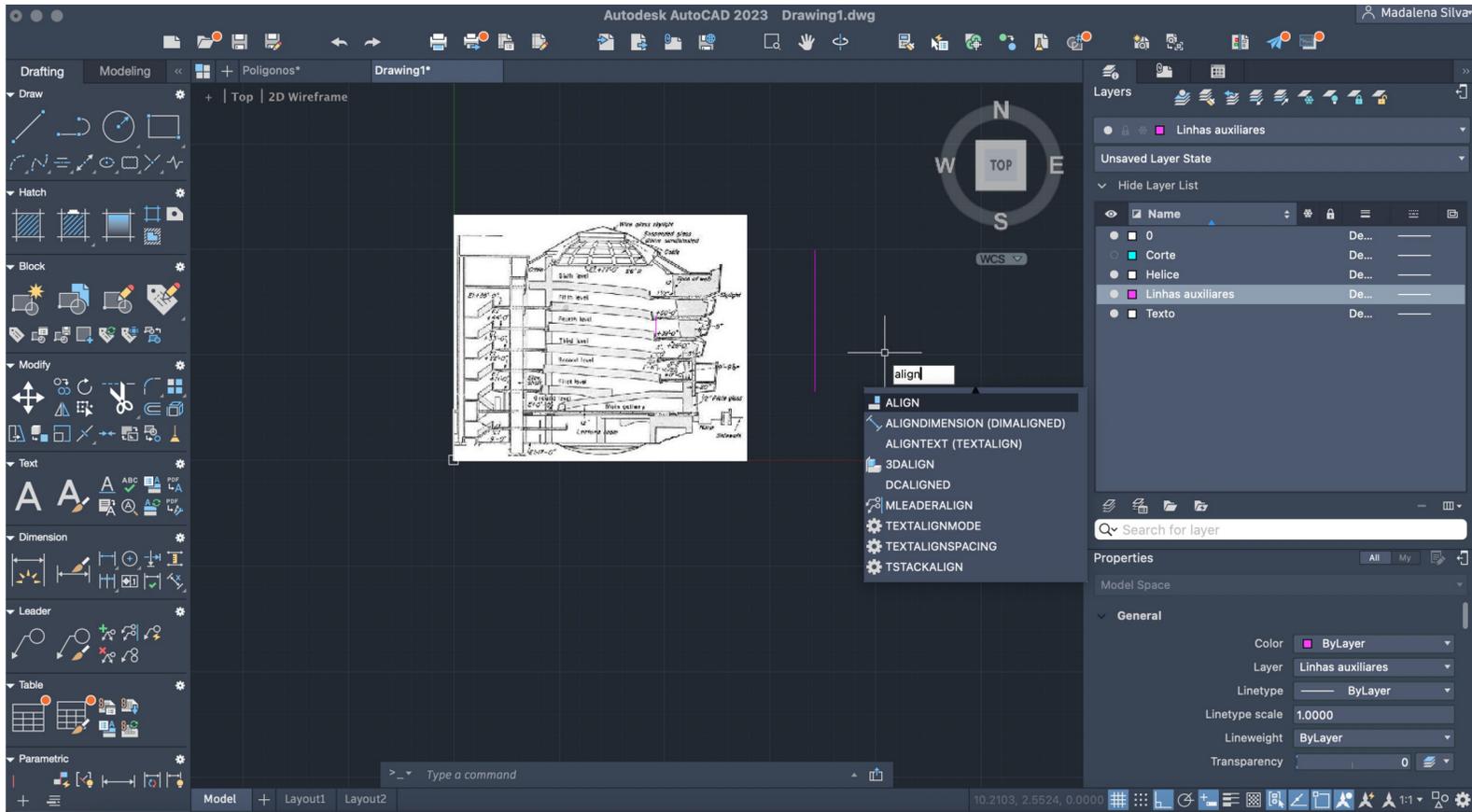
ReDig

Semana 10<sub>21/11/2023 - 24/11/2023</sub>

# Corte Guggenheim



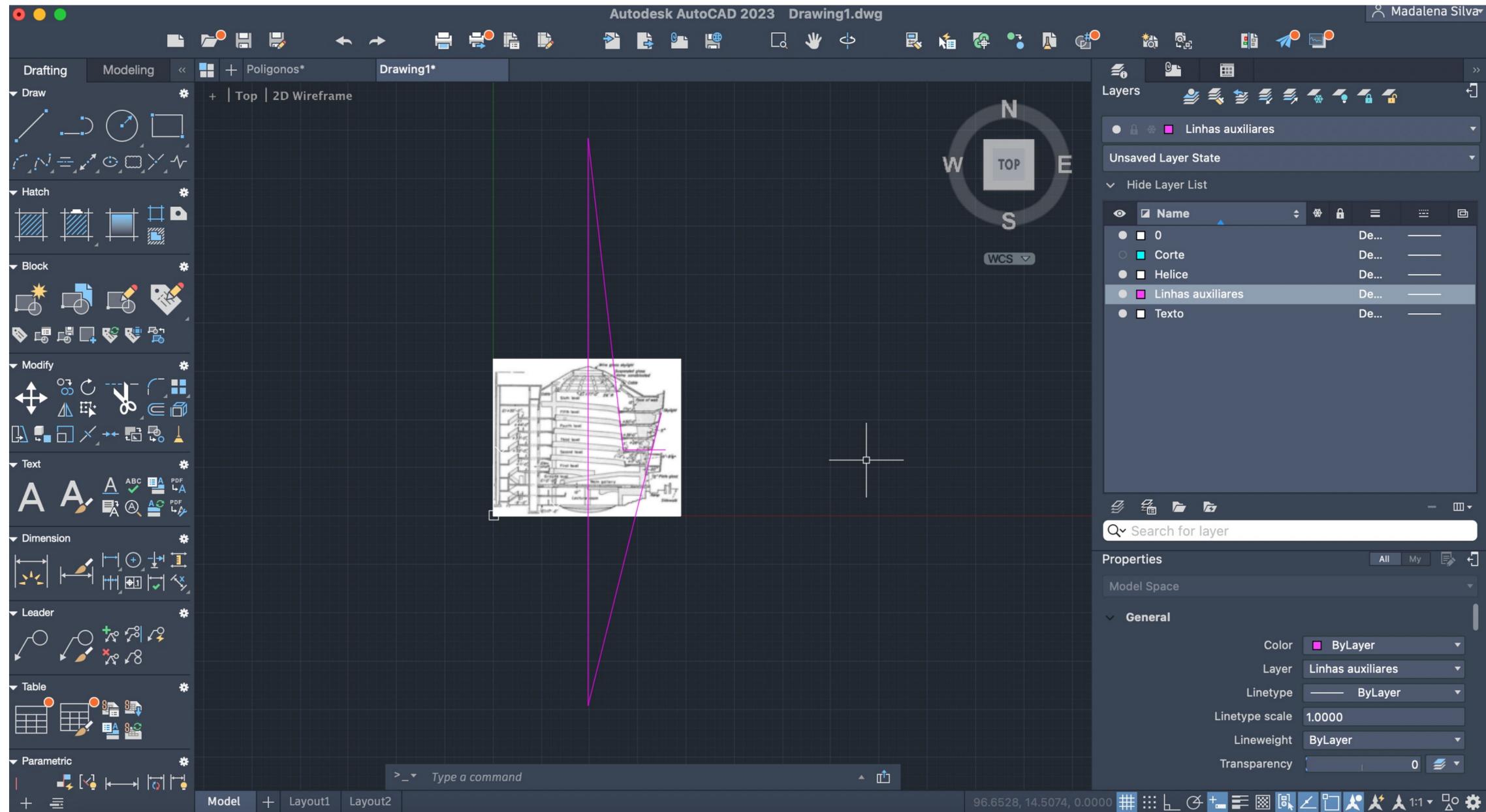
Attach  
Line > medida do chão à cobertura de um  
pisso  
Line > 3.355  
(1ft=0.305m; 0.305x11=3.355)



Align foto e lines para ficar à escala real

ReDig

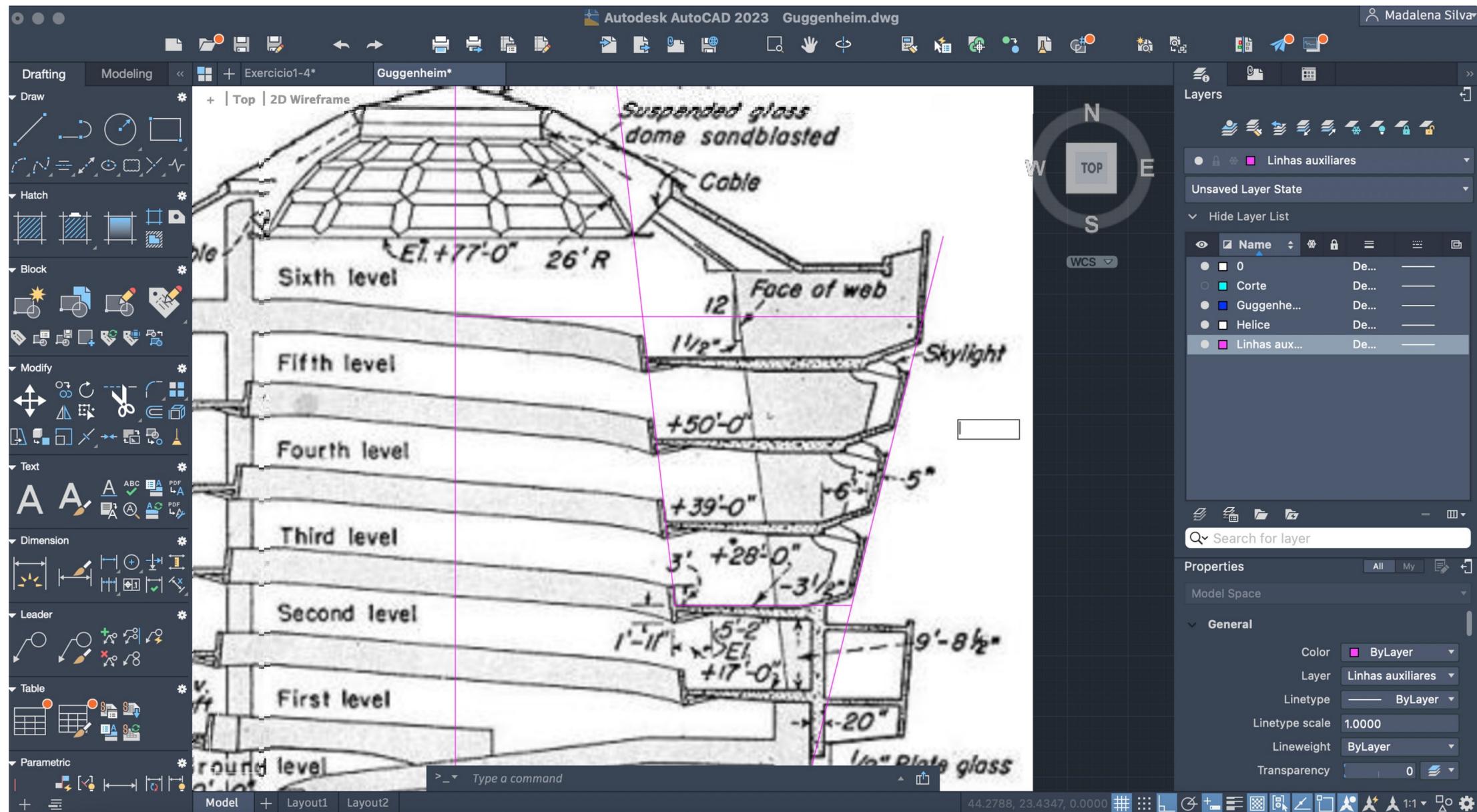
Semana 11 28/11/2023 - 1/12/2023



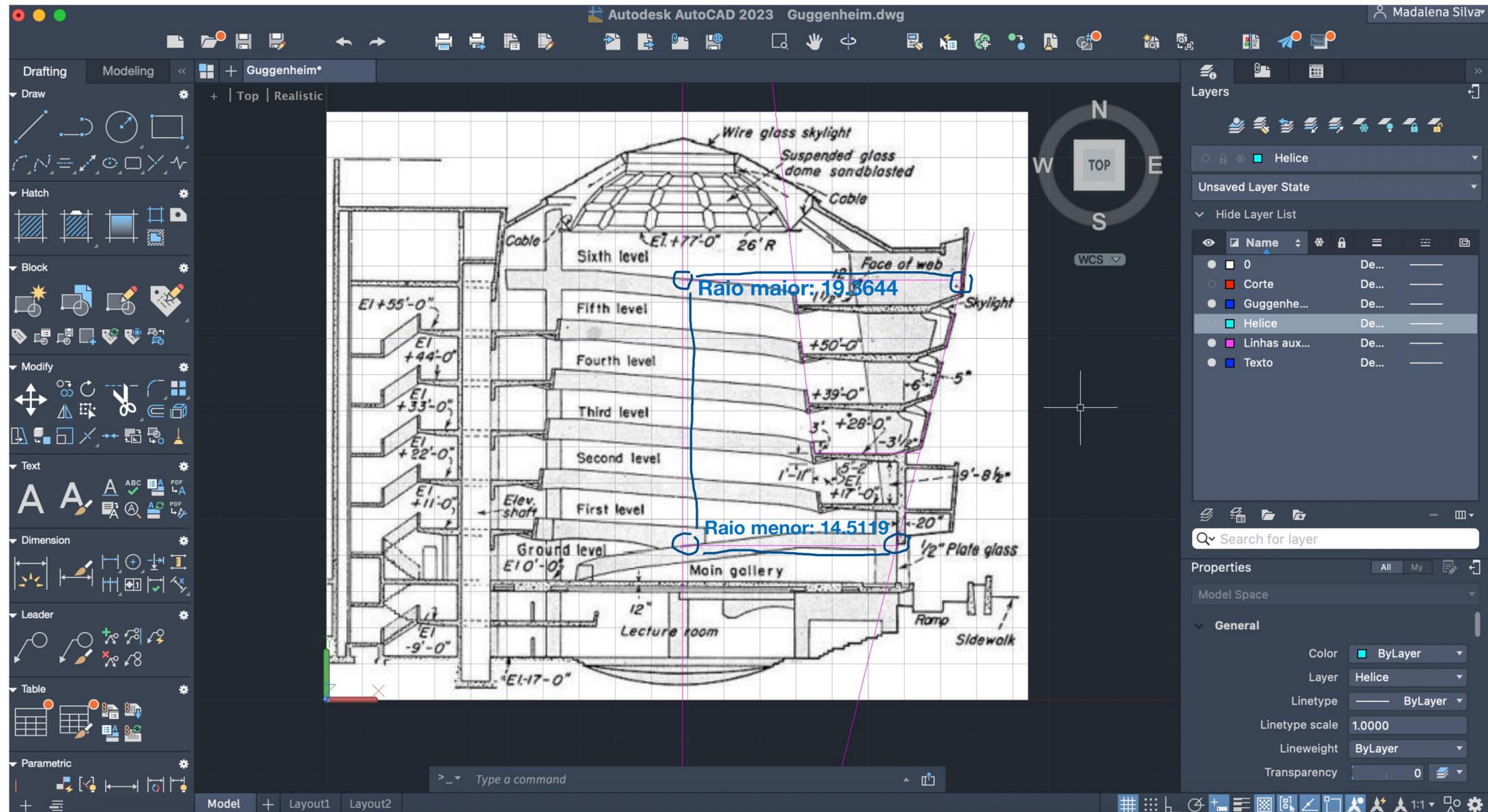
Linhas auxiliares

ReDig

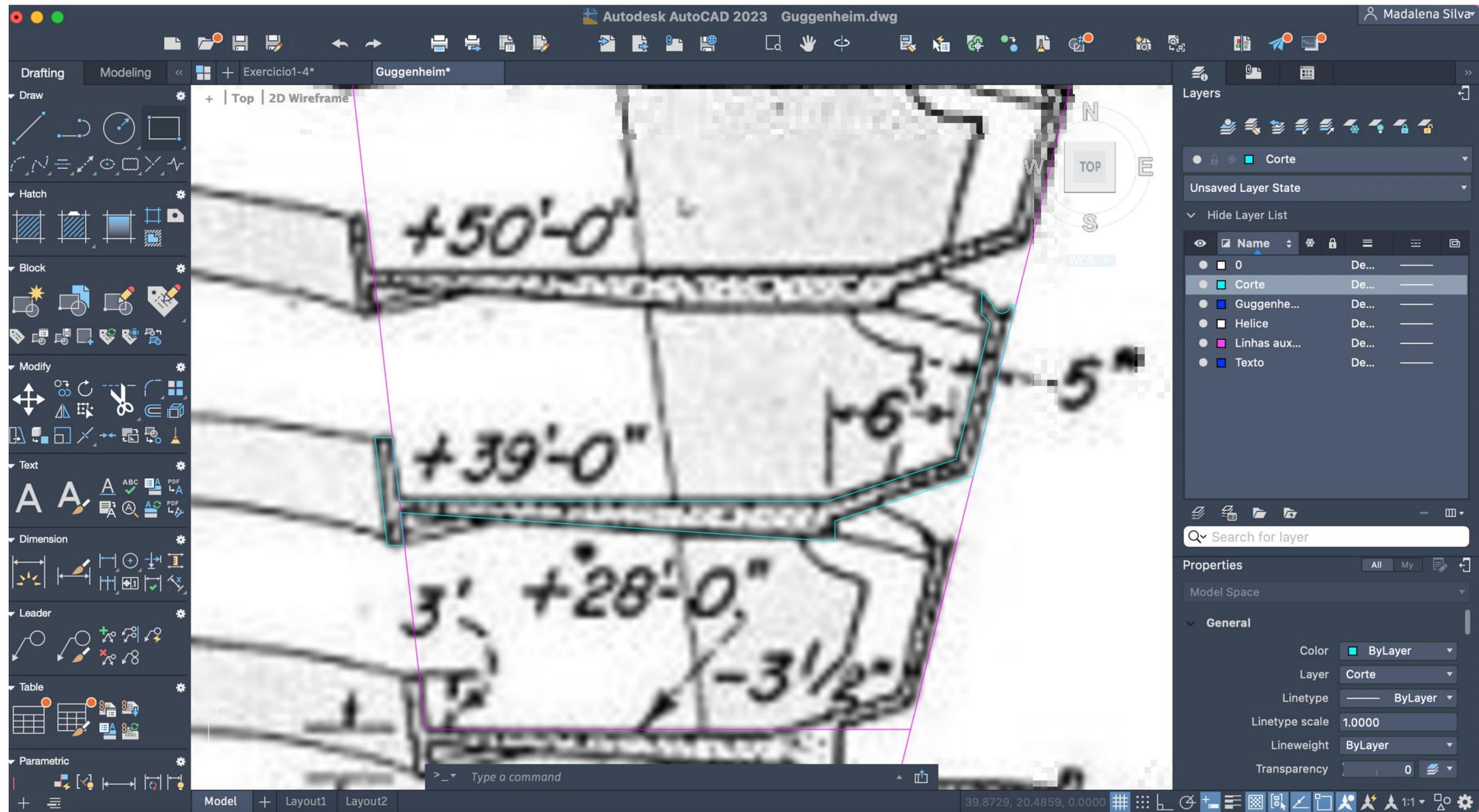
Semana 11 28/11/2023 - 1/12/2023



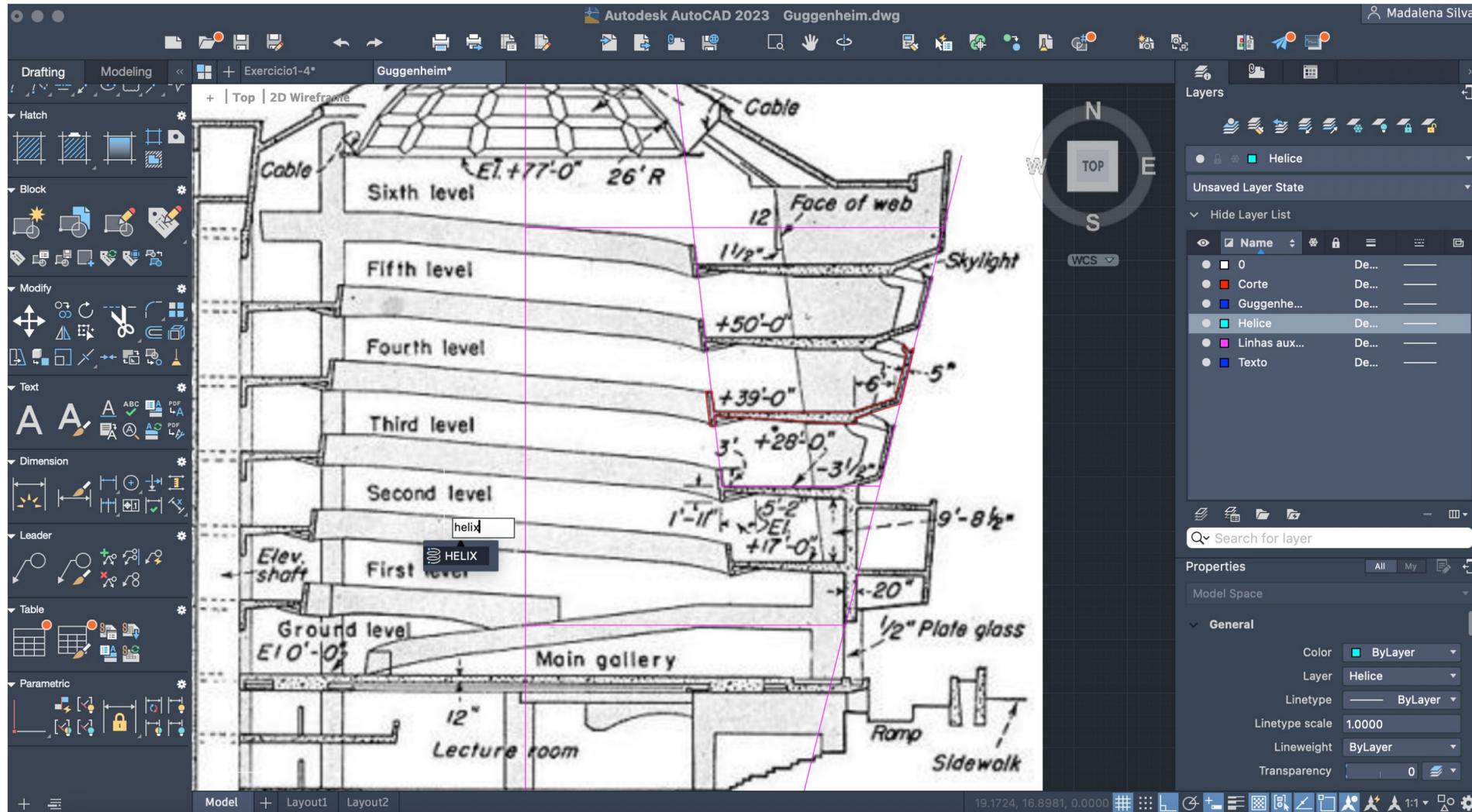
Linhas auxiliares



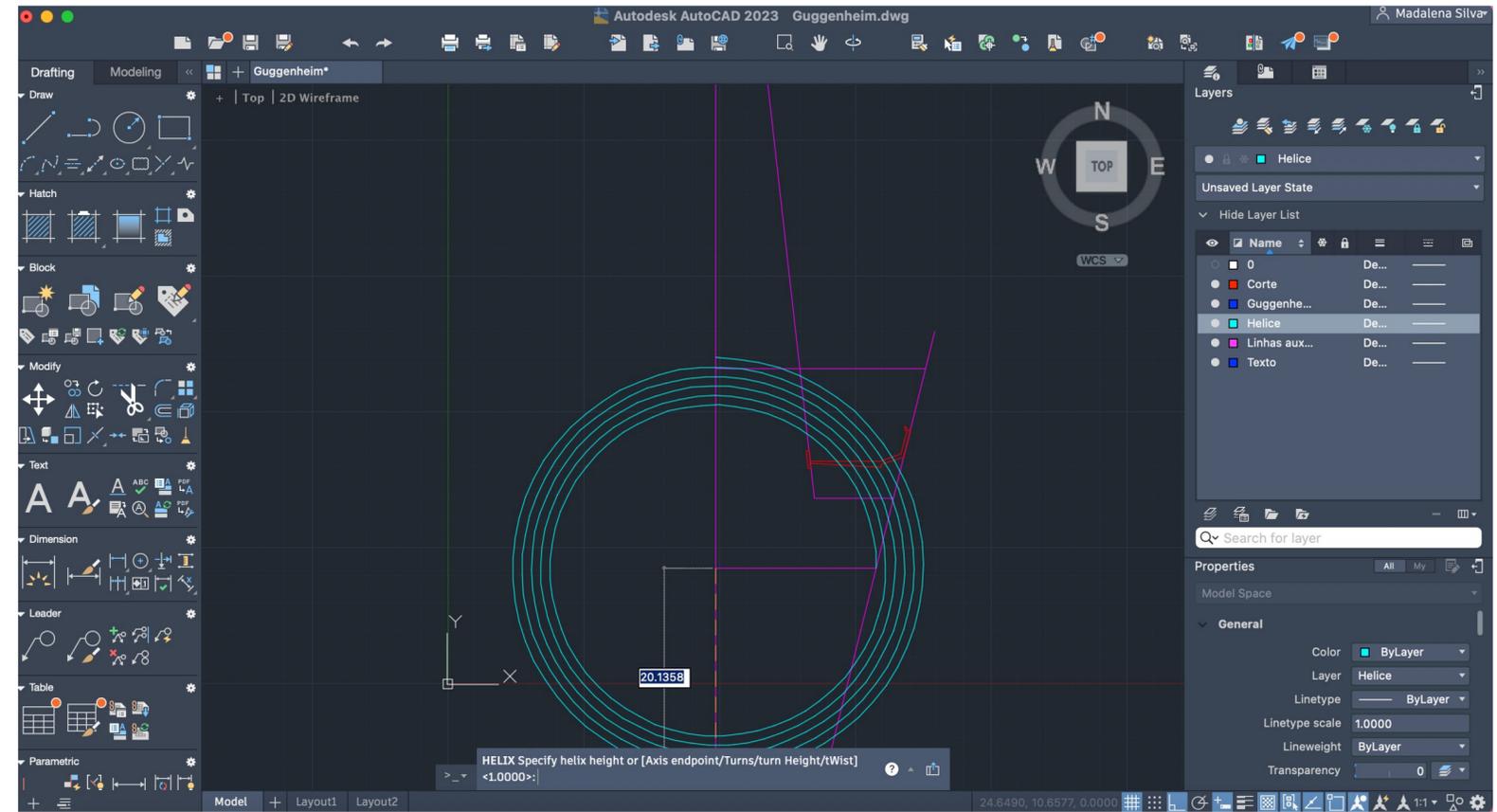
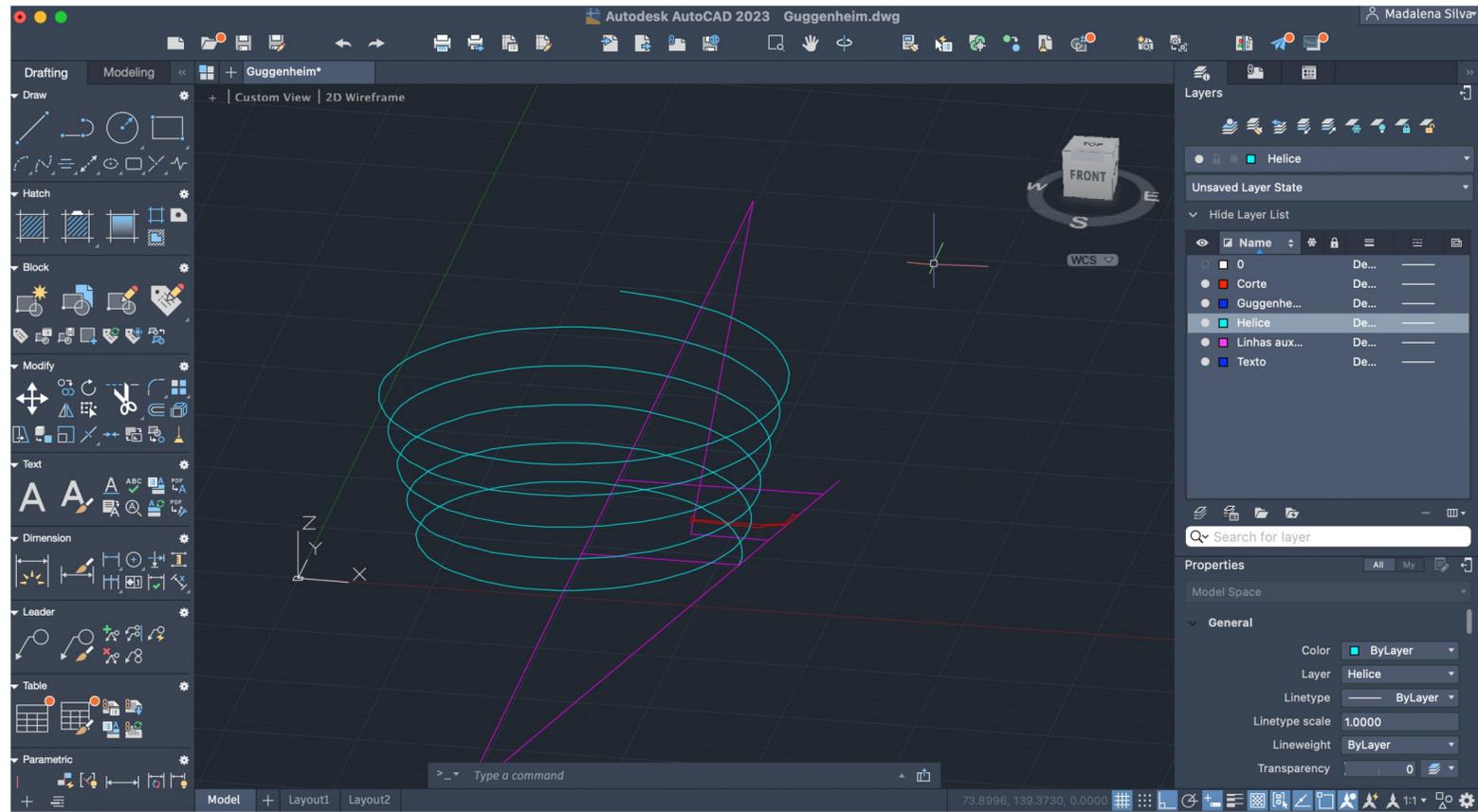
Medidas dos raios e da altura para a helice



Desenho do patamar

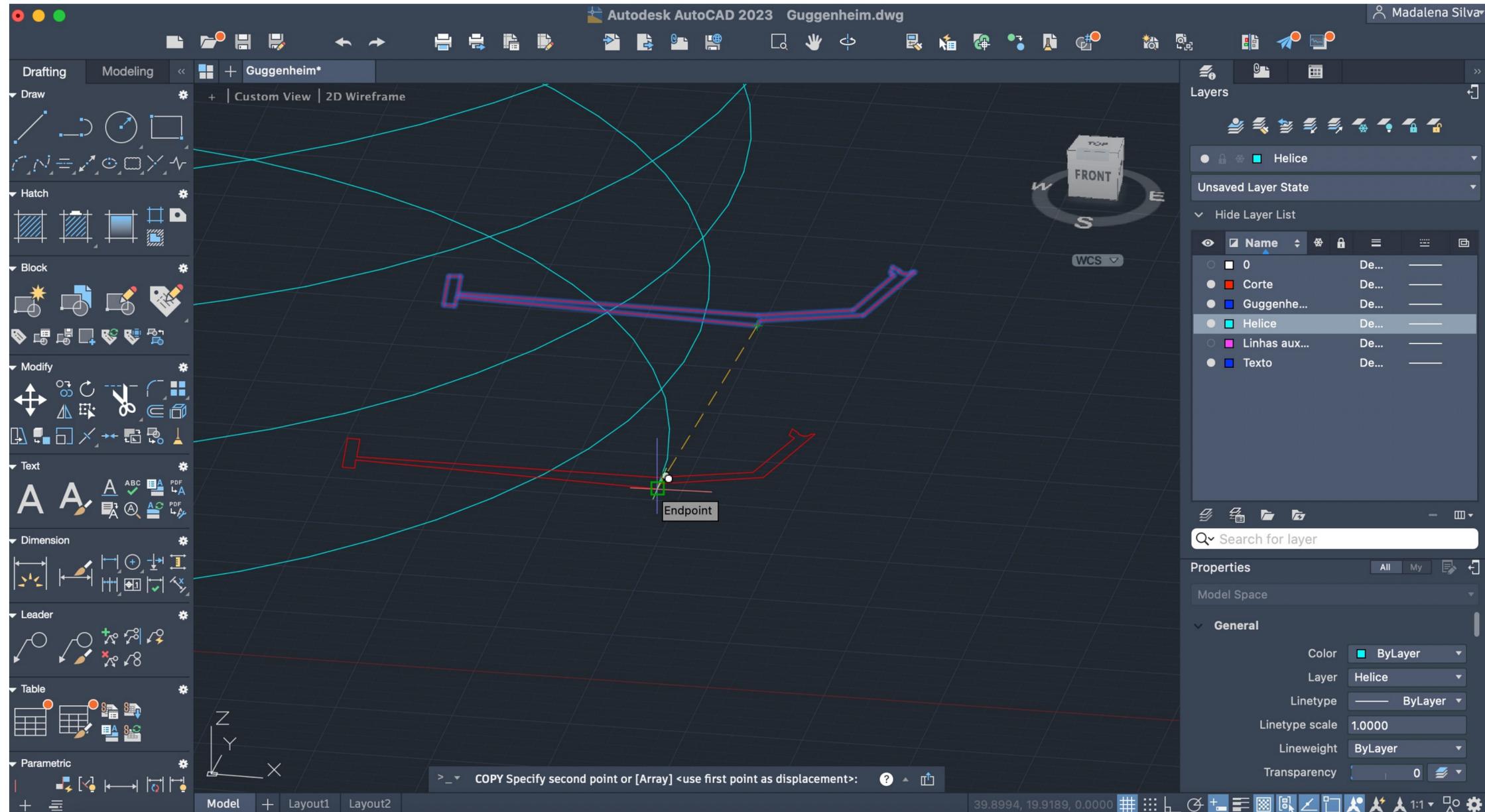


Helix > Selecionar ponto > Raio menor > Raio maior > Altura



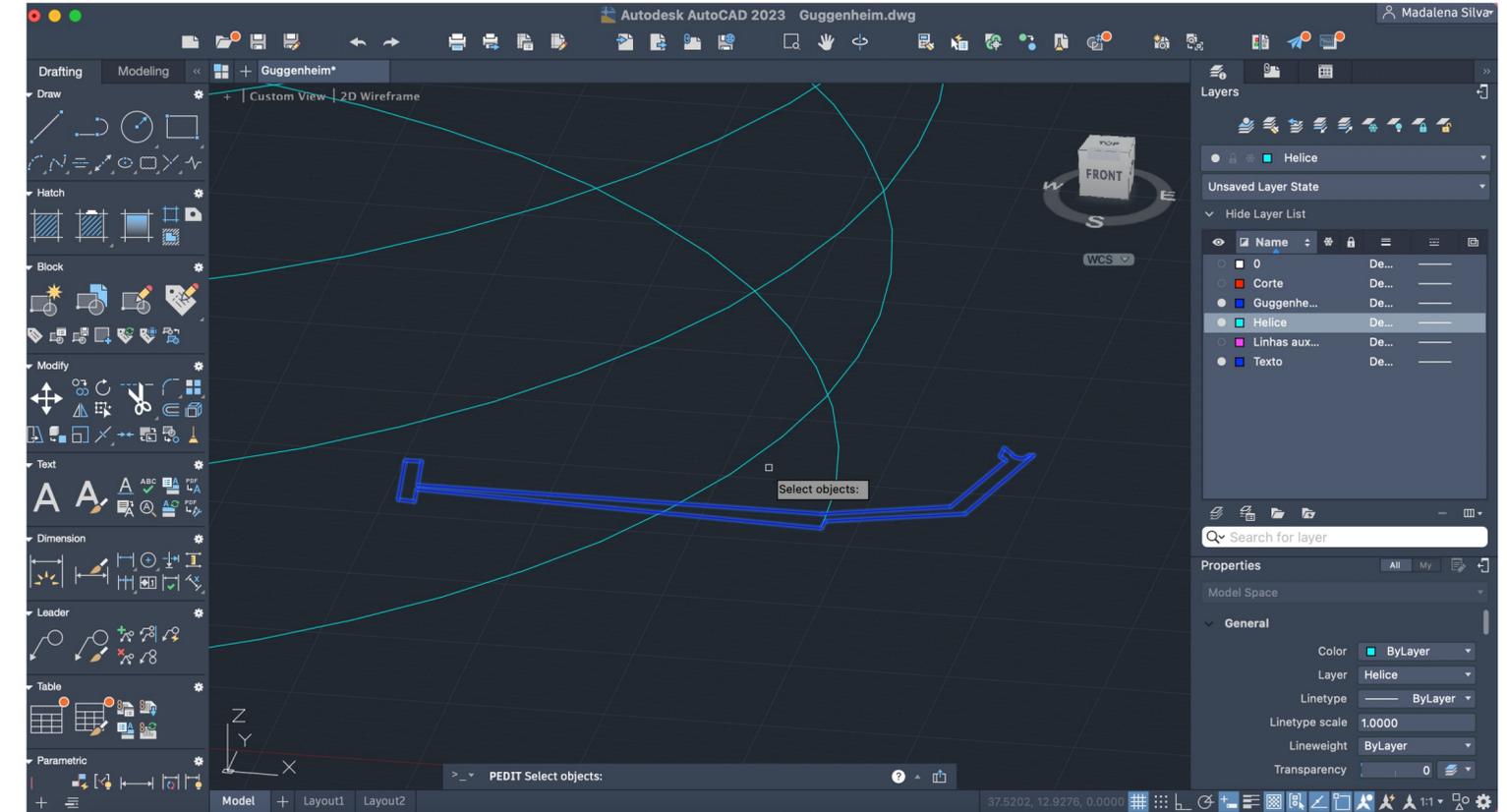
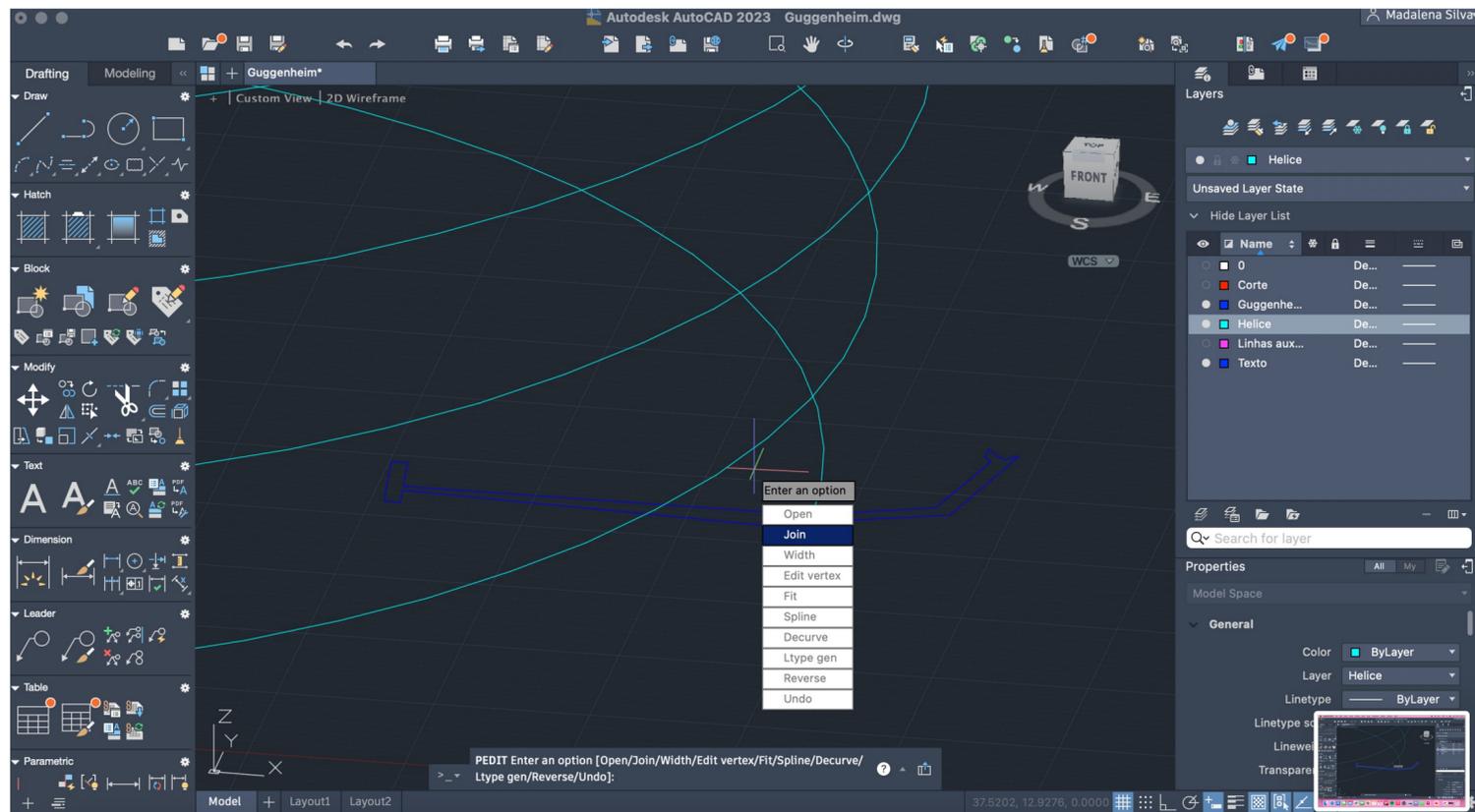
ReDig

Semana 11 28/11/2023 - 1/12/2023

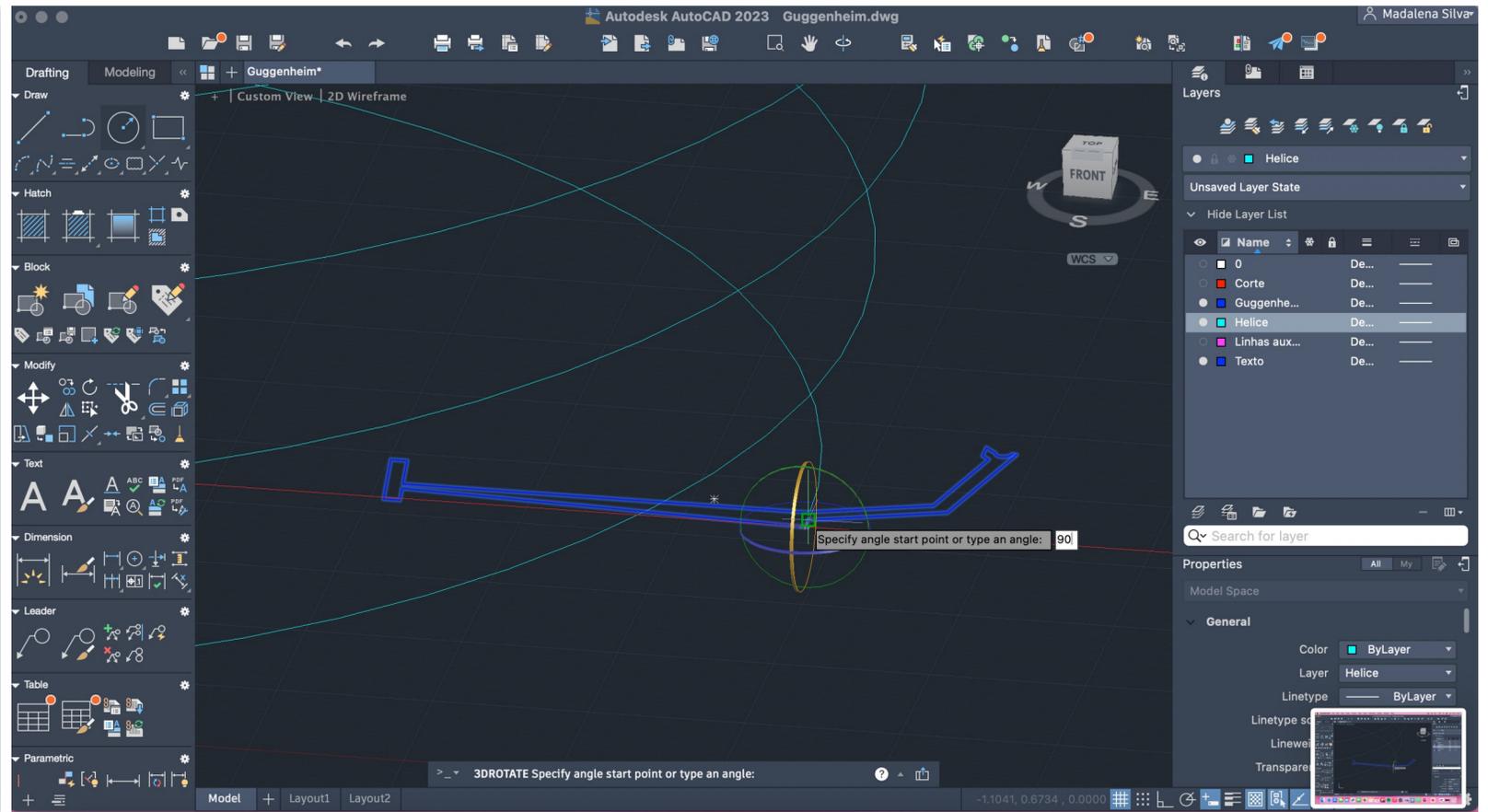
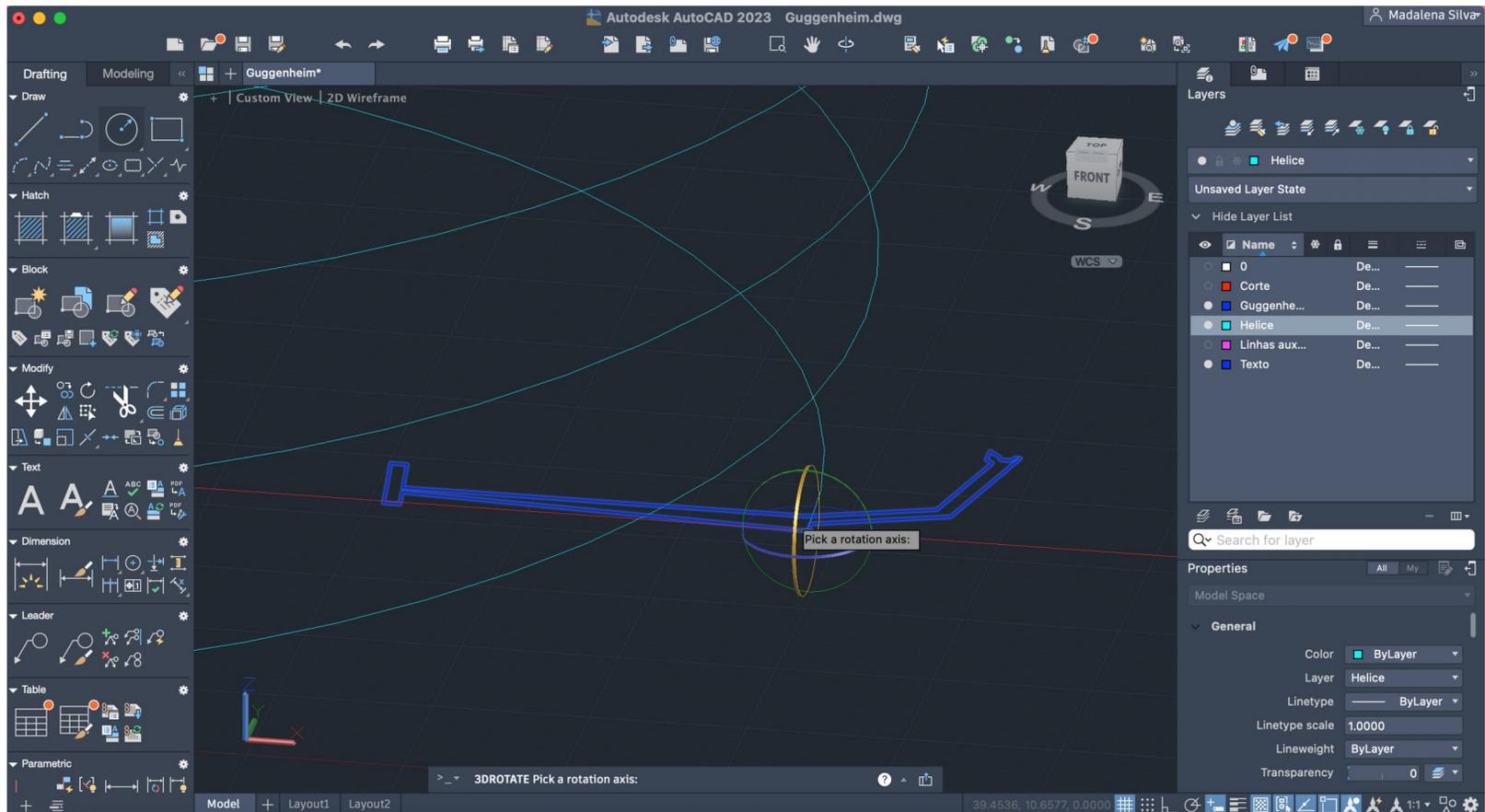


ReDig

Semana 11 28/11/2023 - 1/12/2023



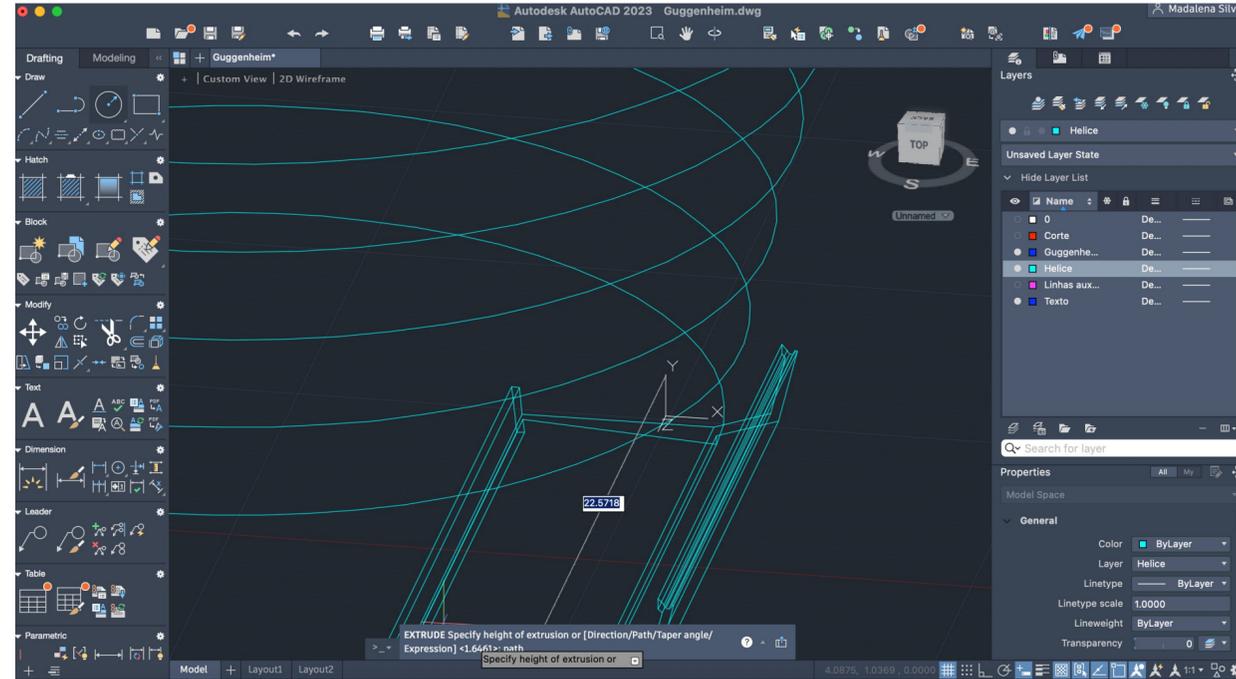
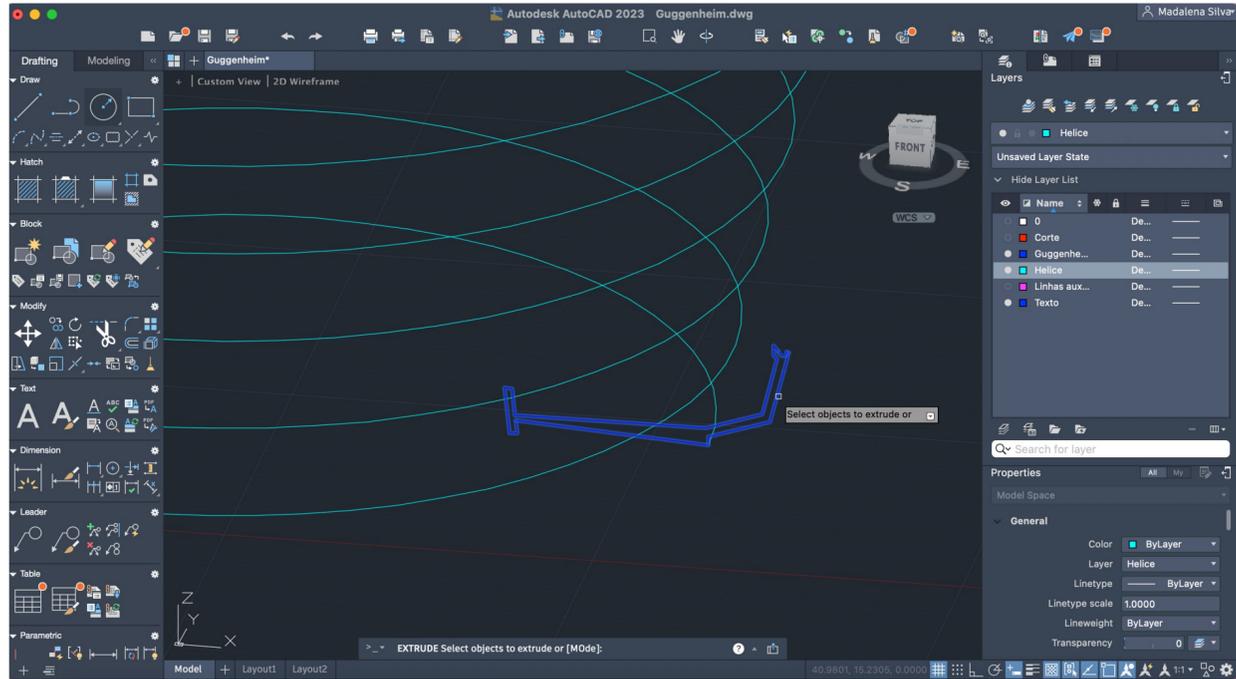
Pedit > Join (criar das lines uma polyline)



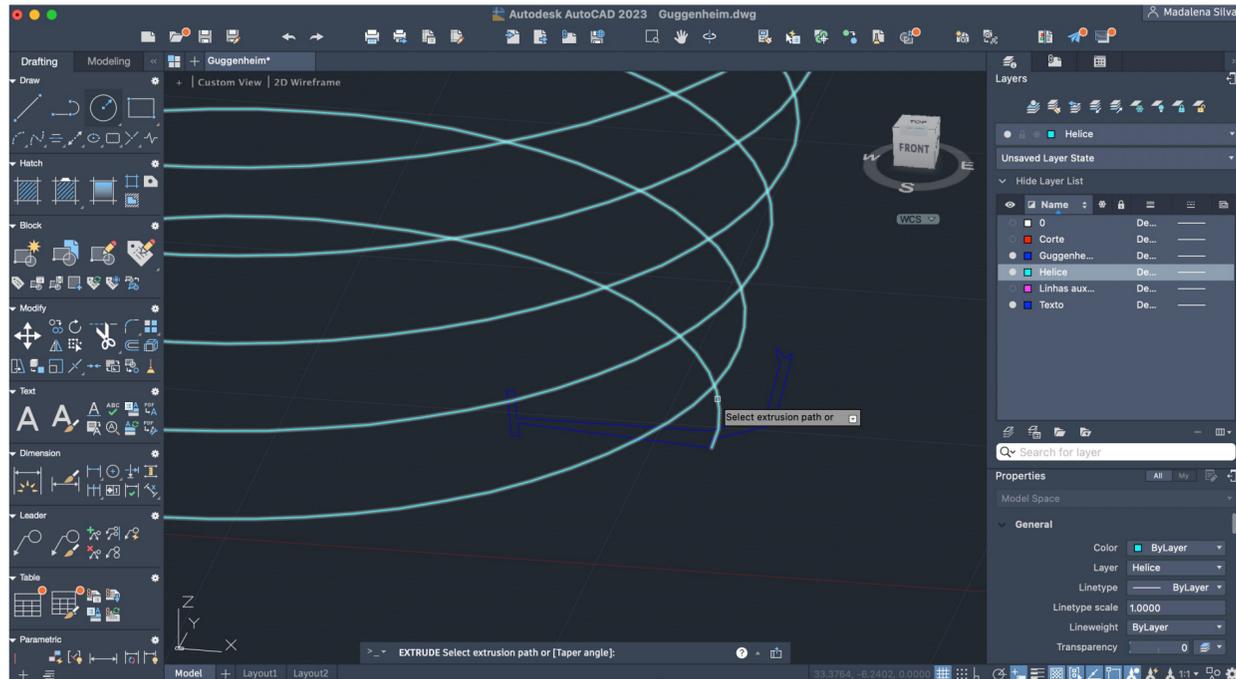
3drotate > Selecionar polyline > Selecionar ponto > Selecionar eixo de rotação (x) > 90°

ReDig

Semana 11 28/11/2023 - 1/12/2023

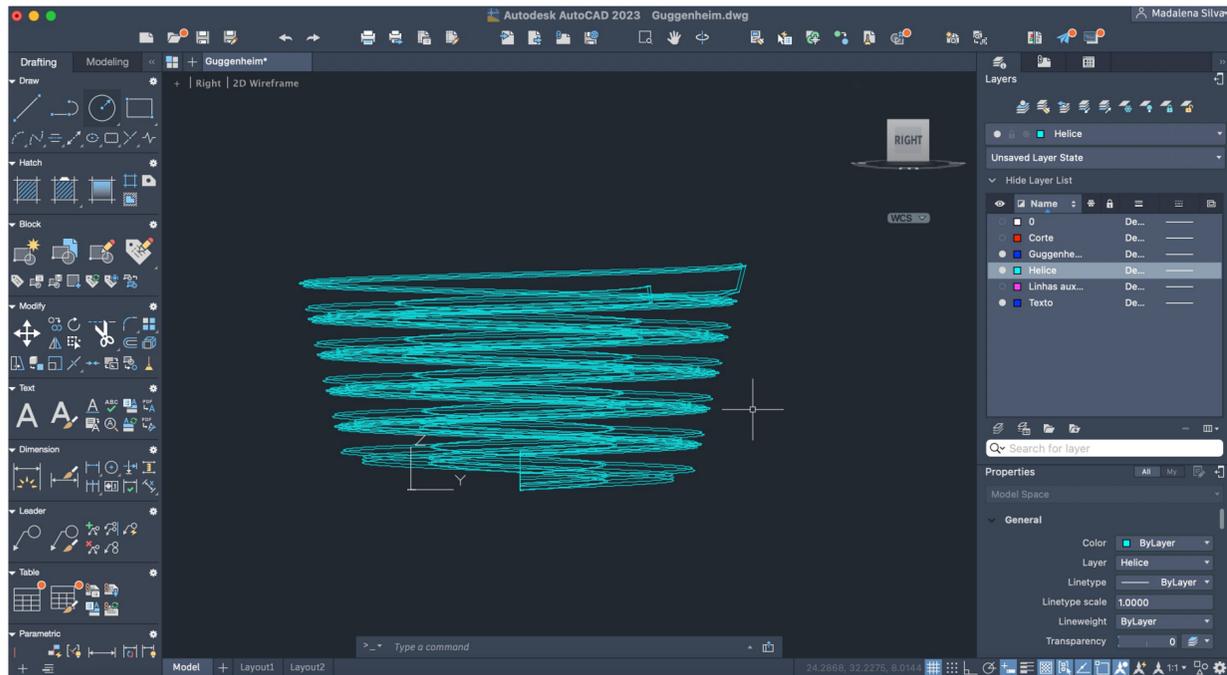
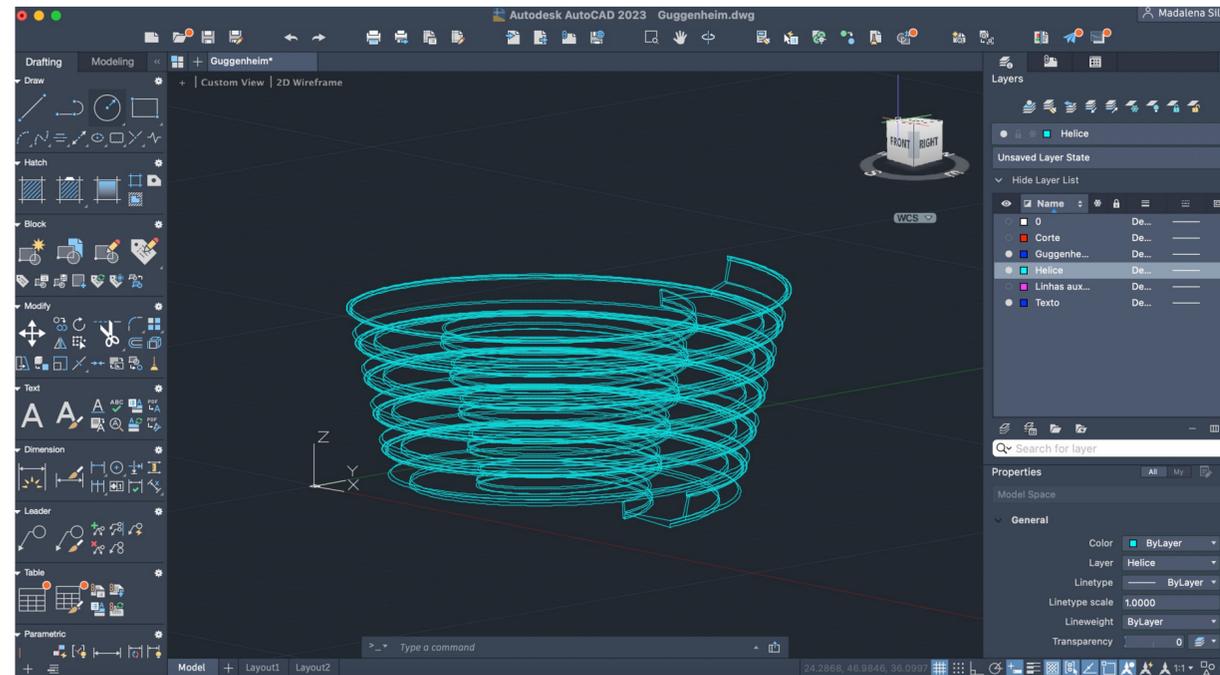
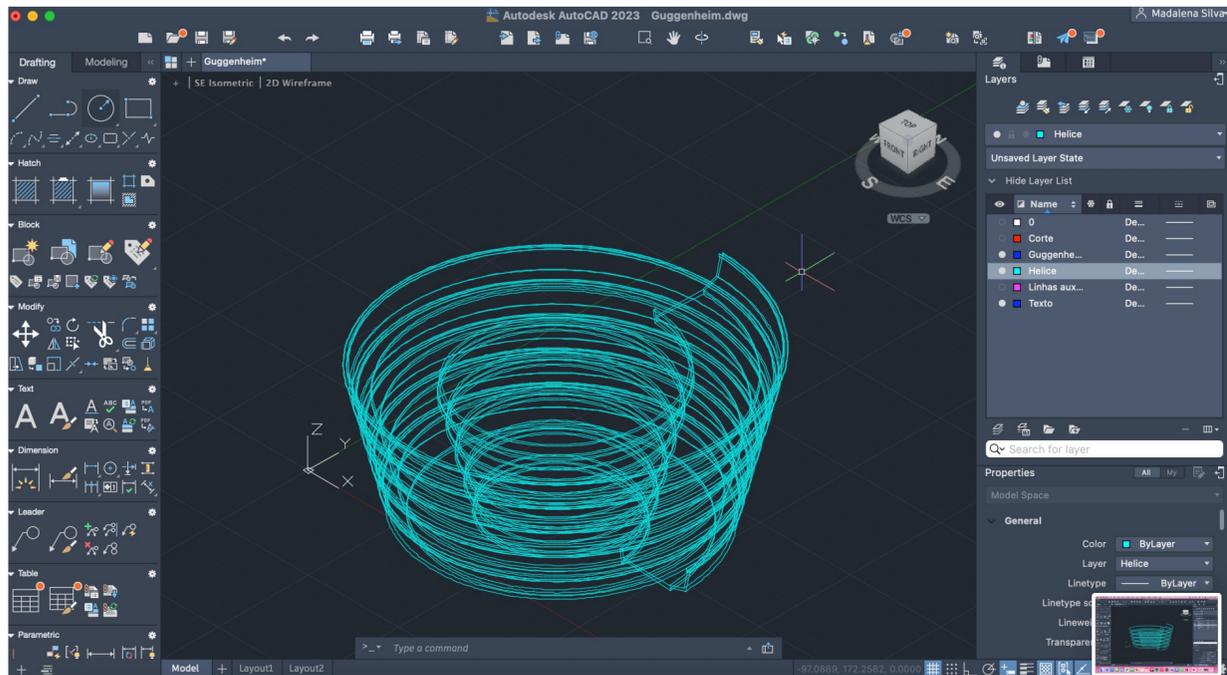


Extrude > Seleccionar a polyline > Path > Seleccionar a helice



ReDig

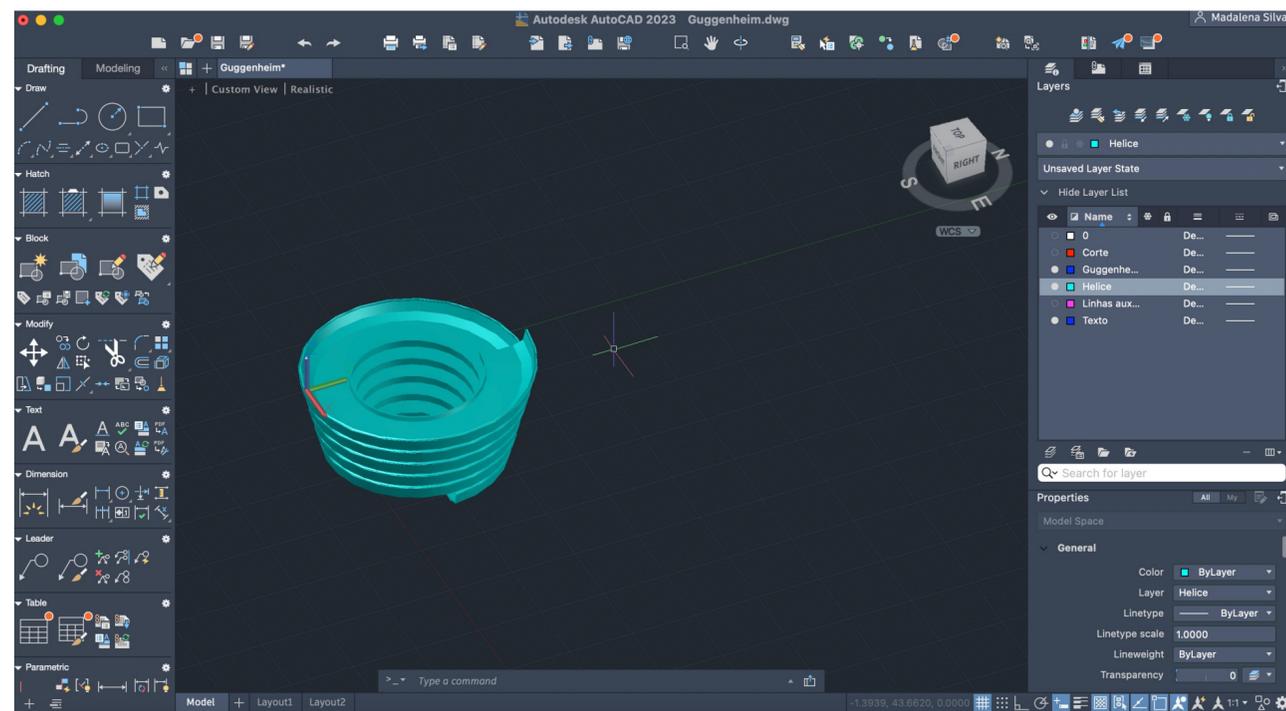
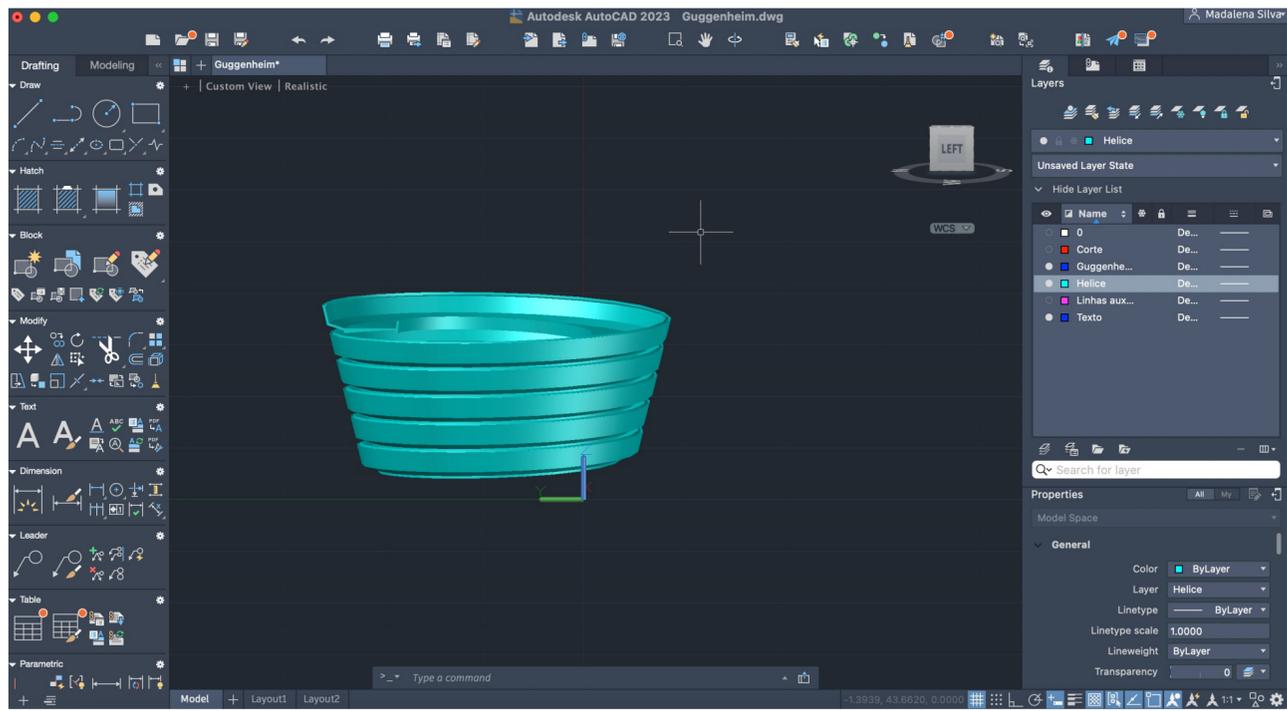
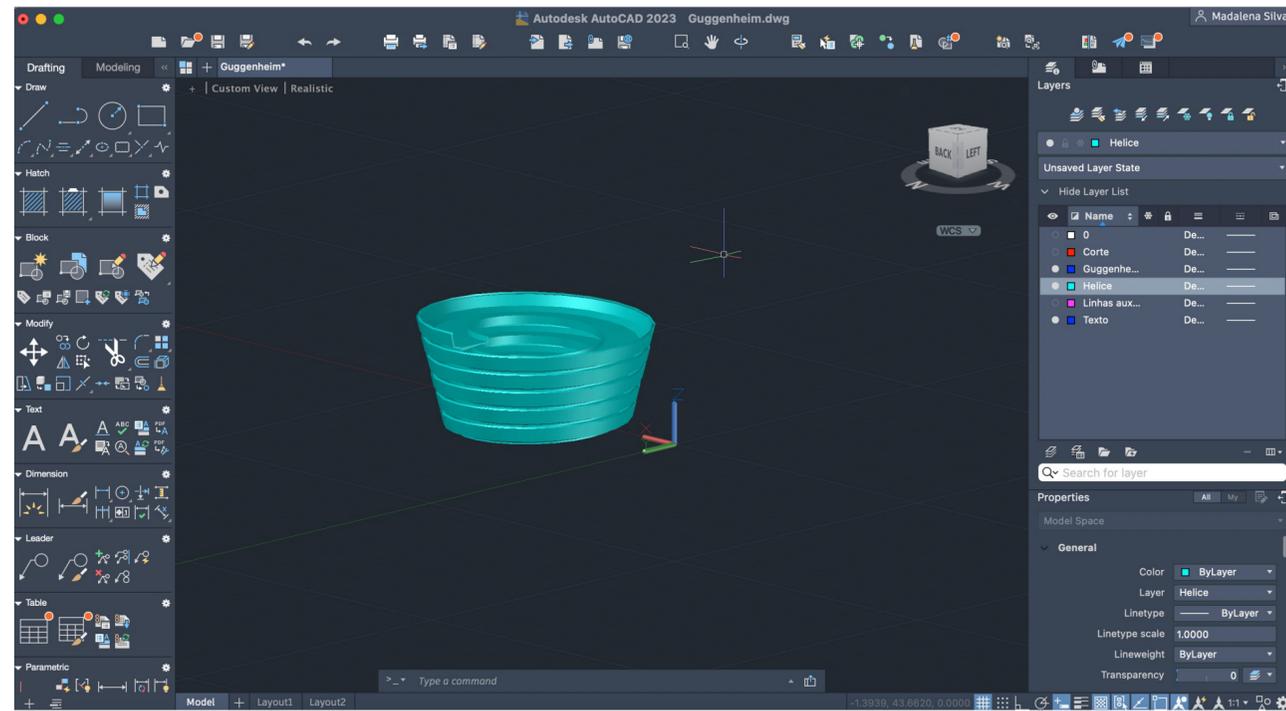
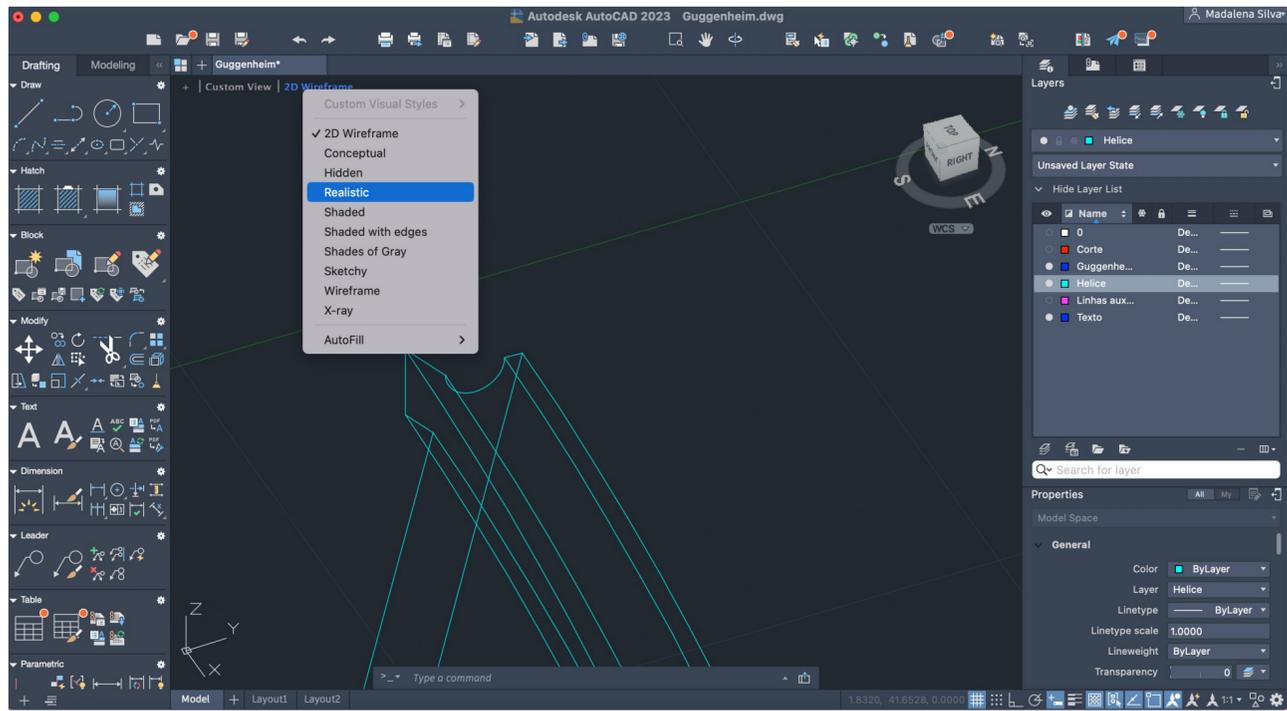
Semana 11 28/11/2023 - 1/12/2023



Resultado da helix

ReDig

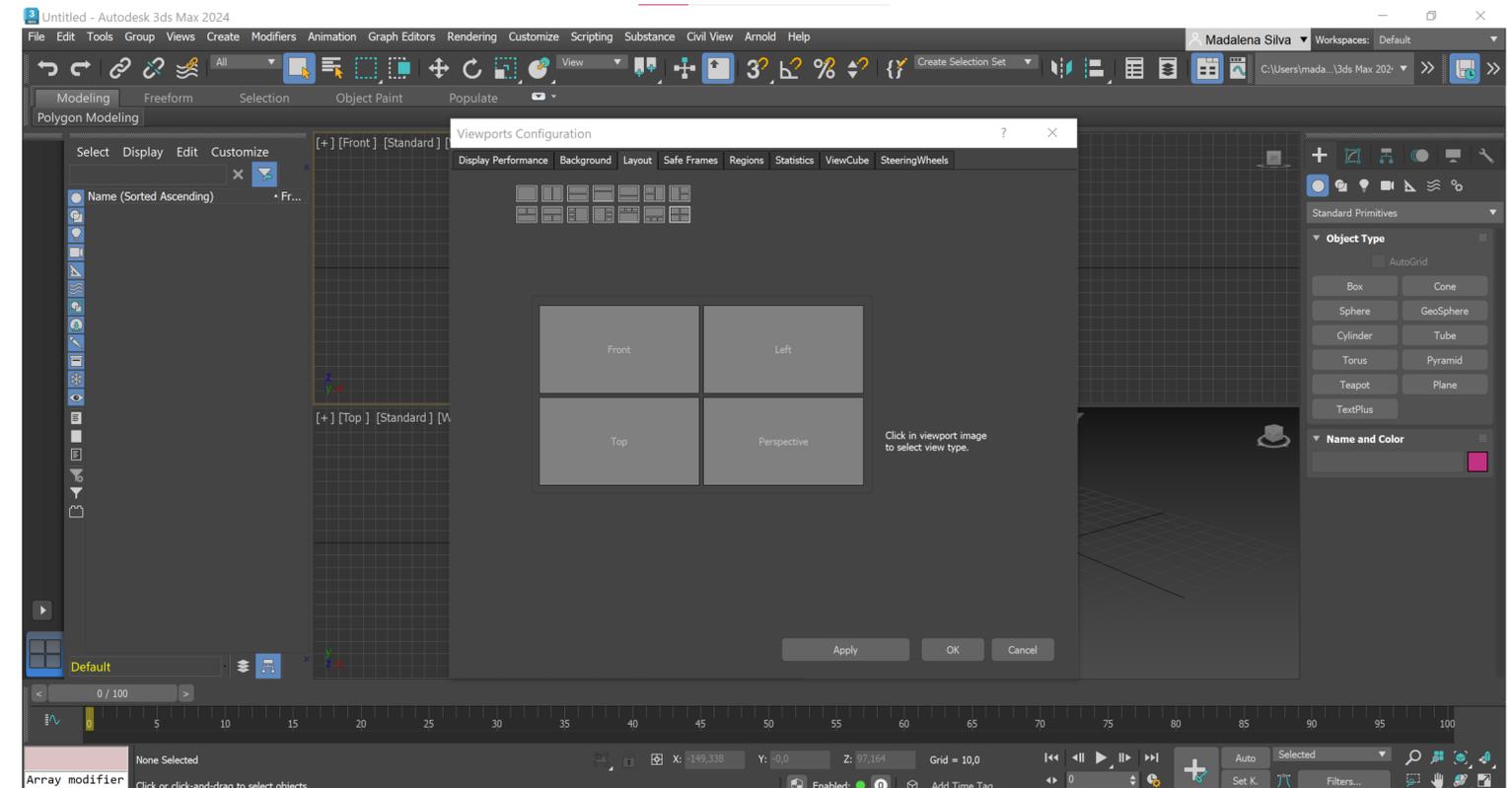
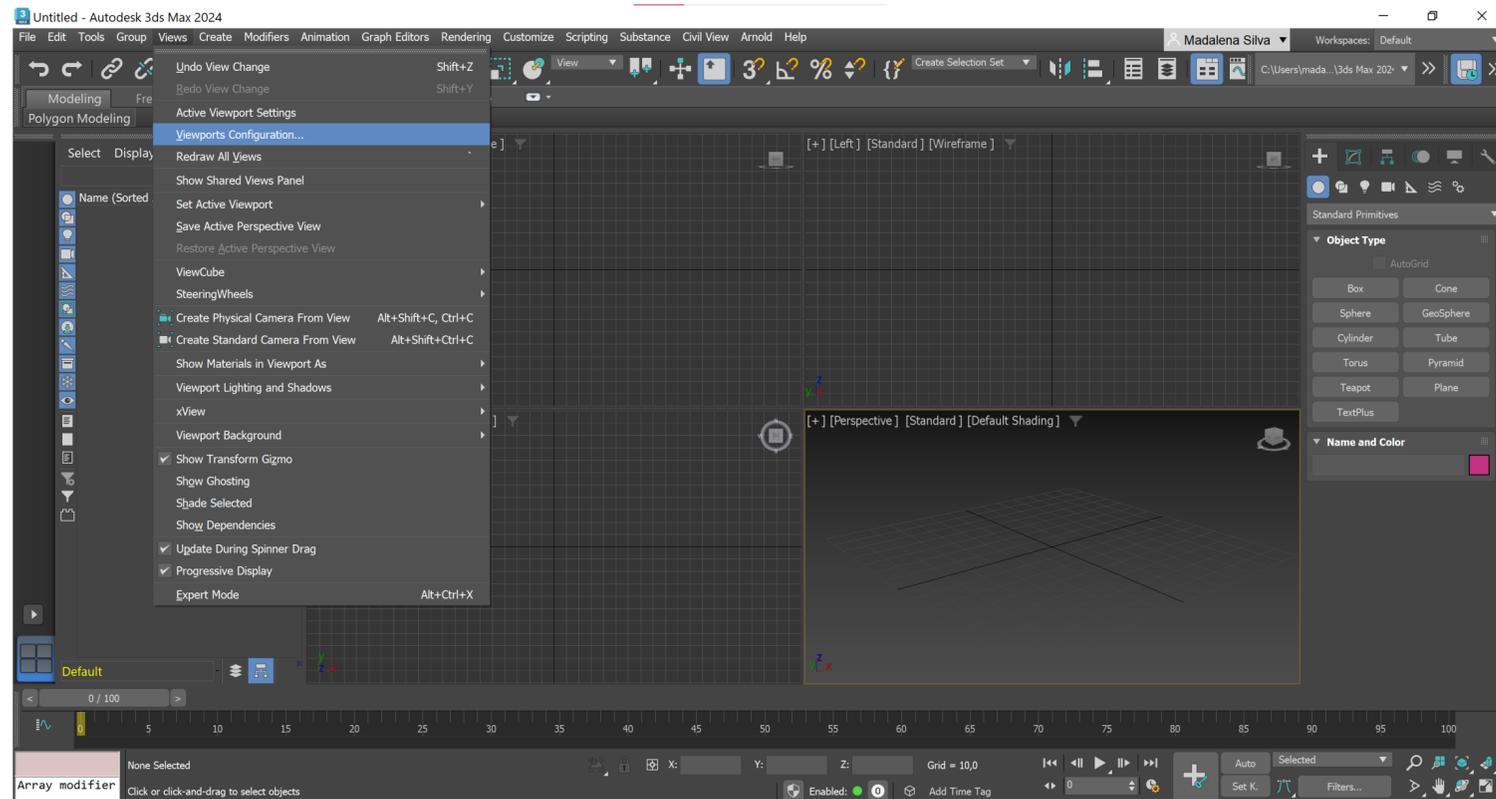
Semana 11 28/11/2023 - 1/12/2023



ReDig

Semana 11 28/11/2023 - 1/12/2023

# Autocad 3ds Max

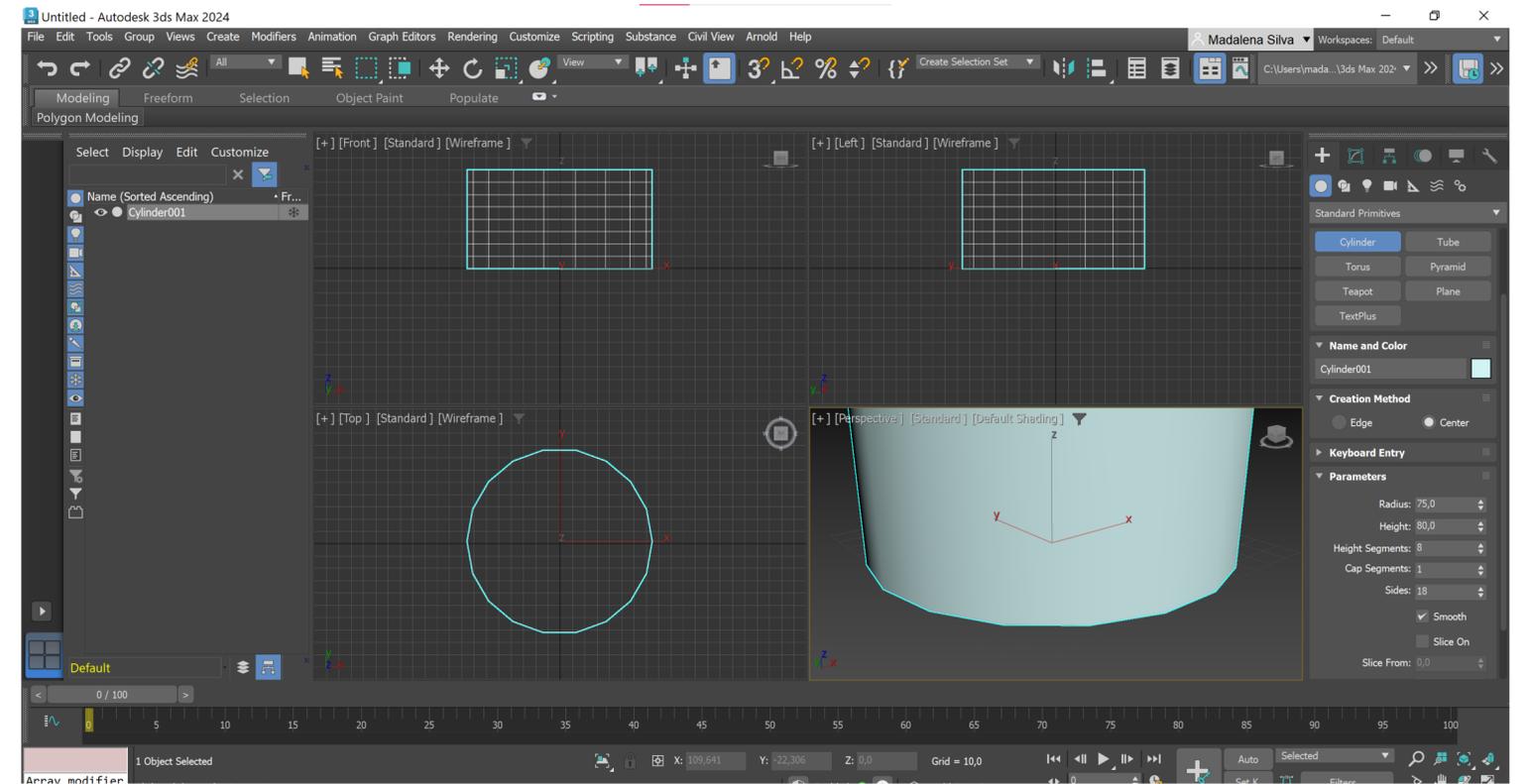
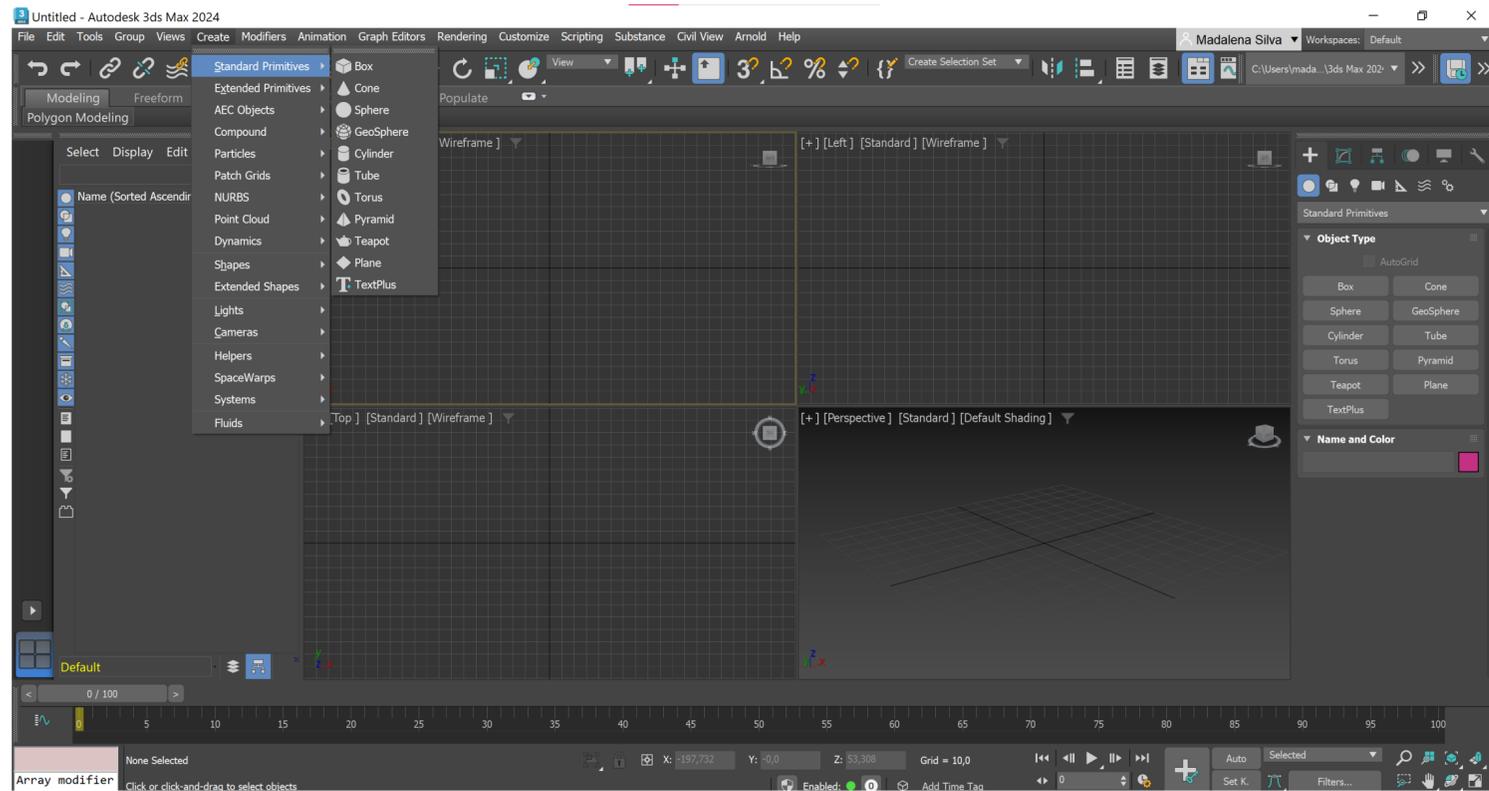


Visualização dos viewpoints: Front, left, Top, Perspective

ReDig

Semana 12<sub>5/12/2023 - 8/12/2023</sub>

# Lamparina

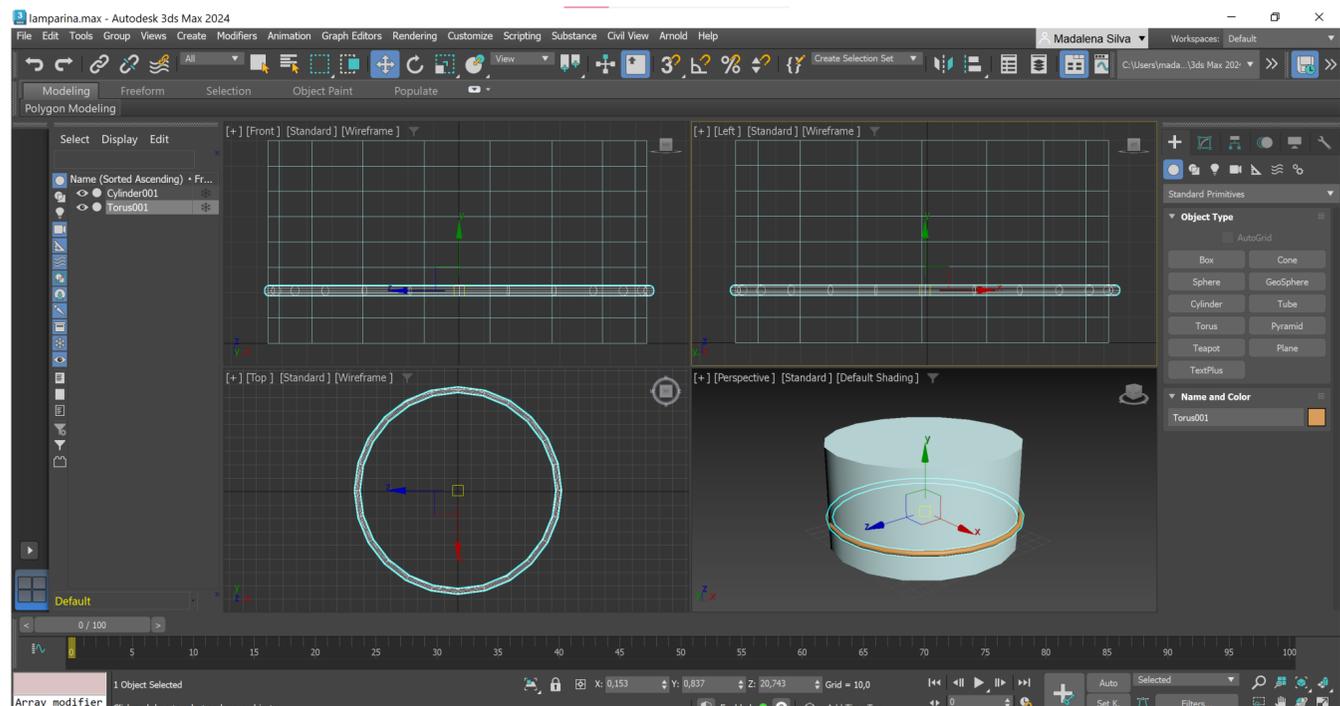
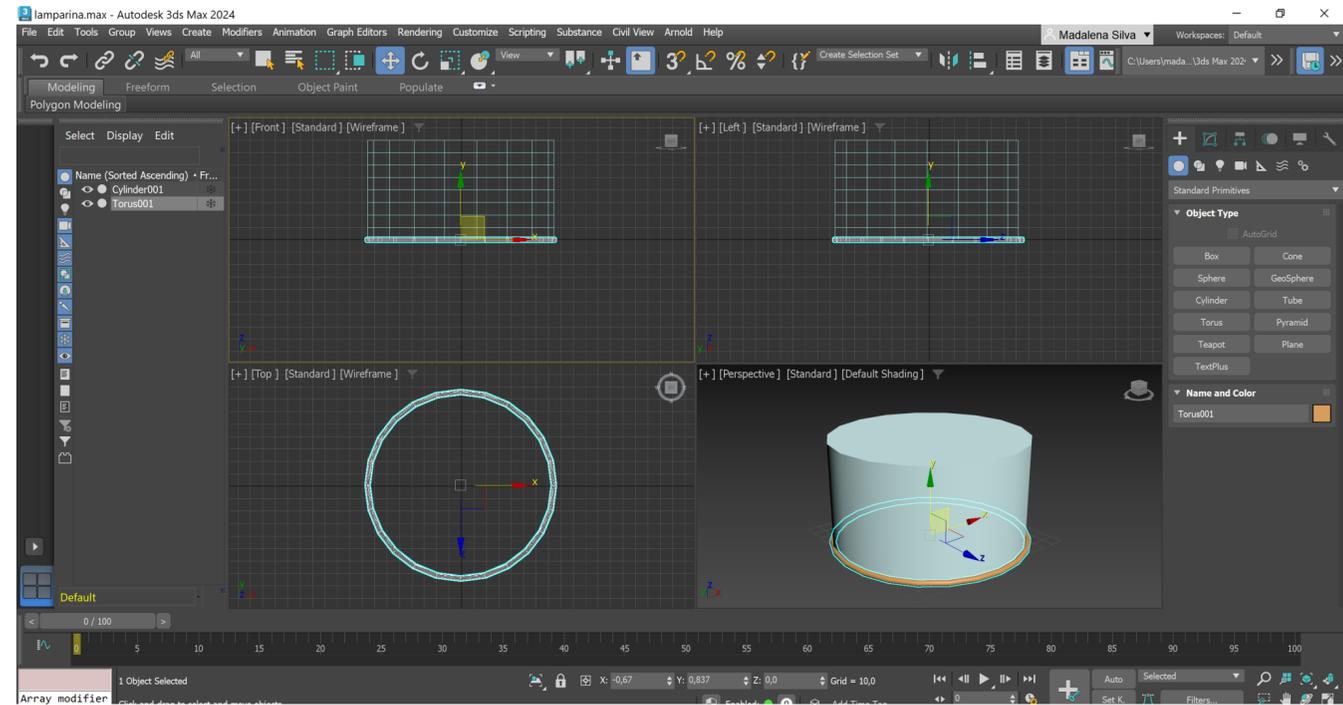
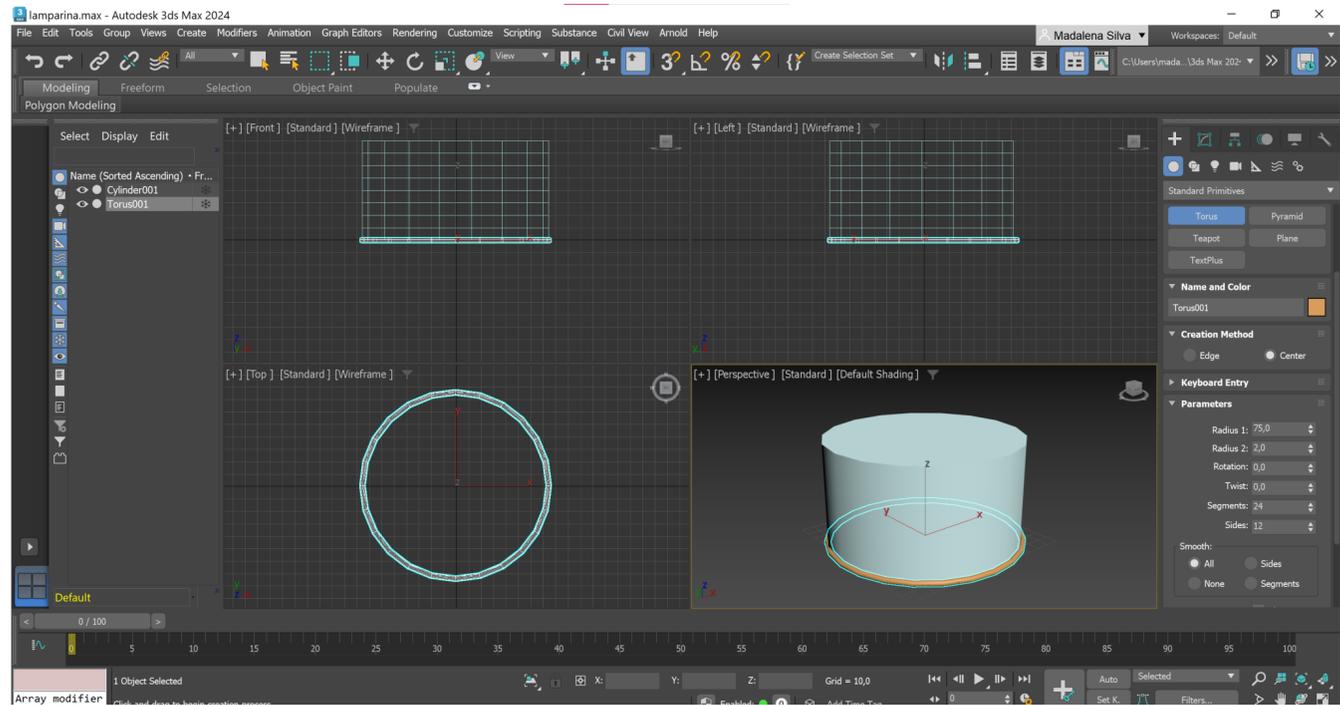


Create > Standard Primitives > Cylinder  
Radius: 75  
Height: 80  
Height segments: 8

# ReDig

# Semana 12

5/12/2023 - 8/12/2023

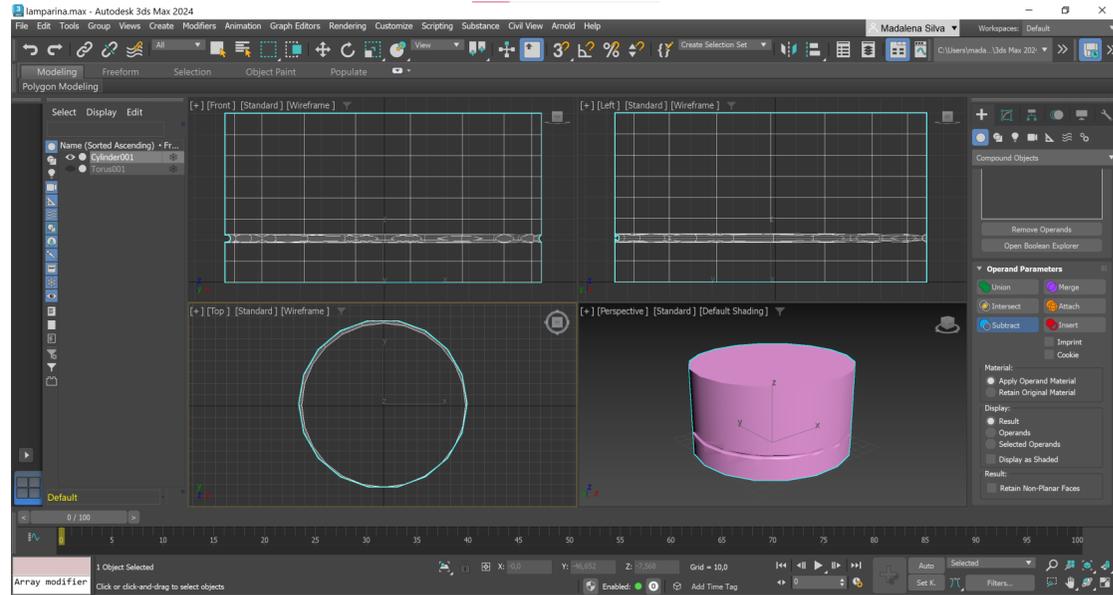
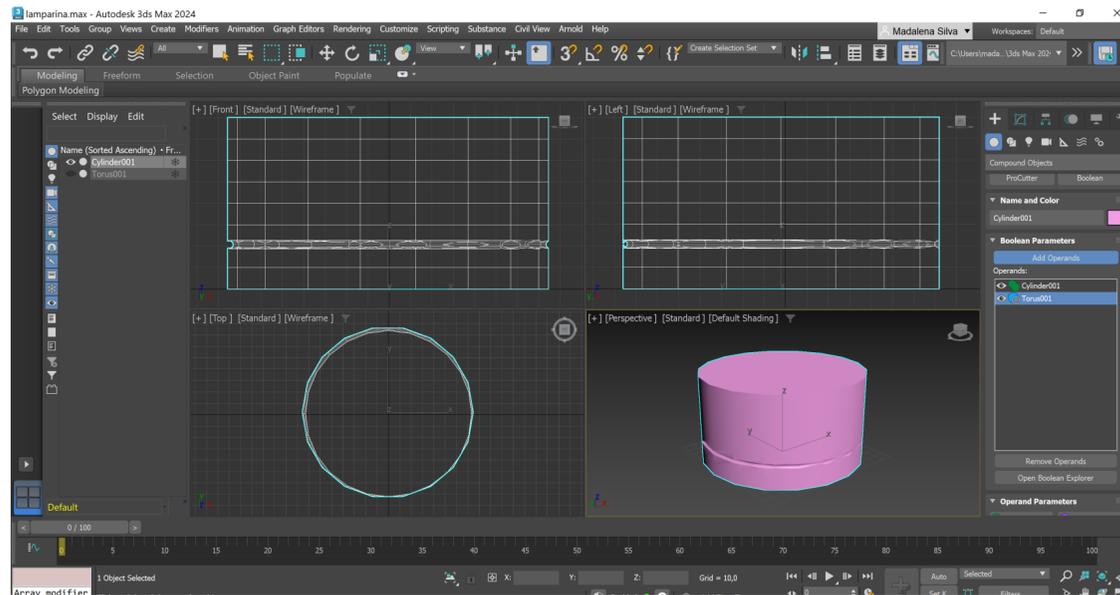
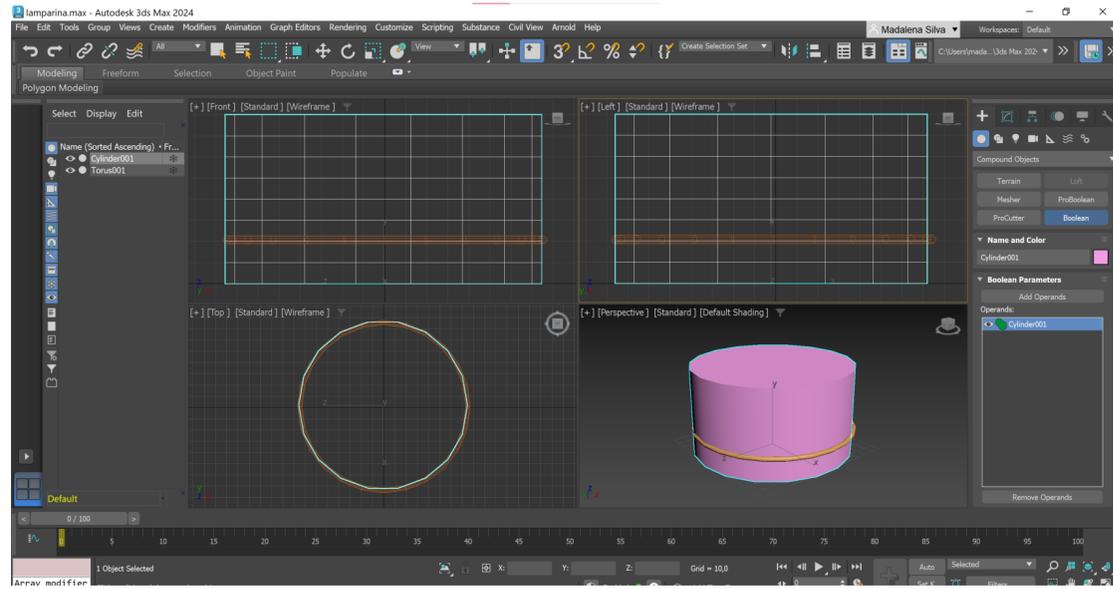
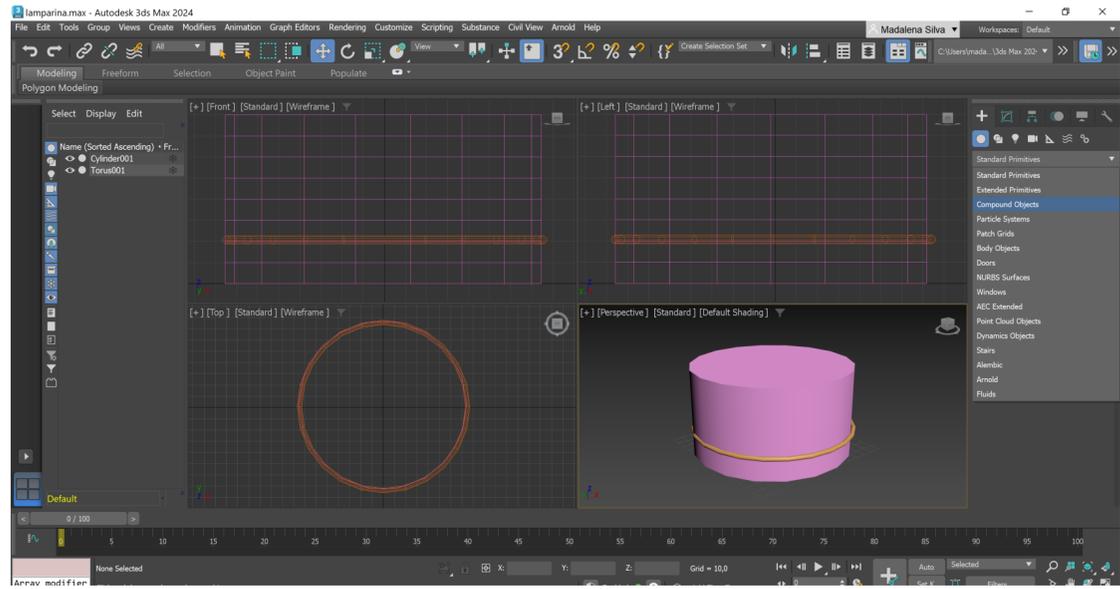


Create > Standard Primitives > Torus  
Radius 1: 75  
Radius 2: 2

Select and move Torus

ReDig

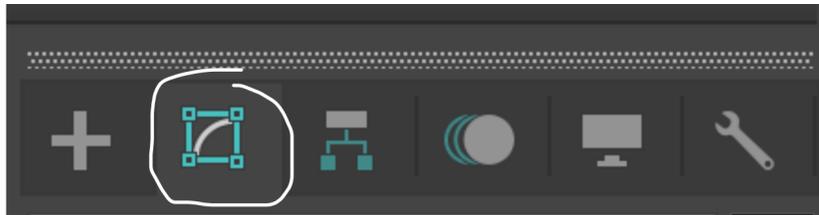
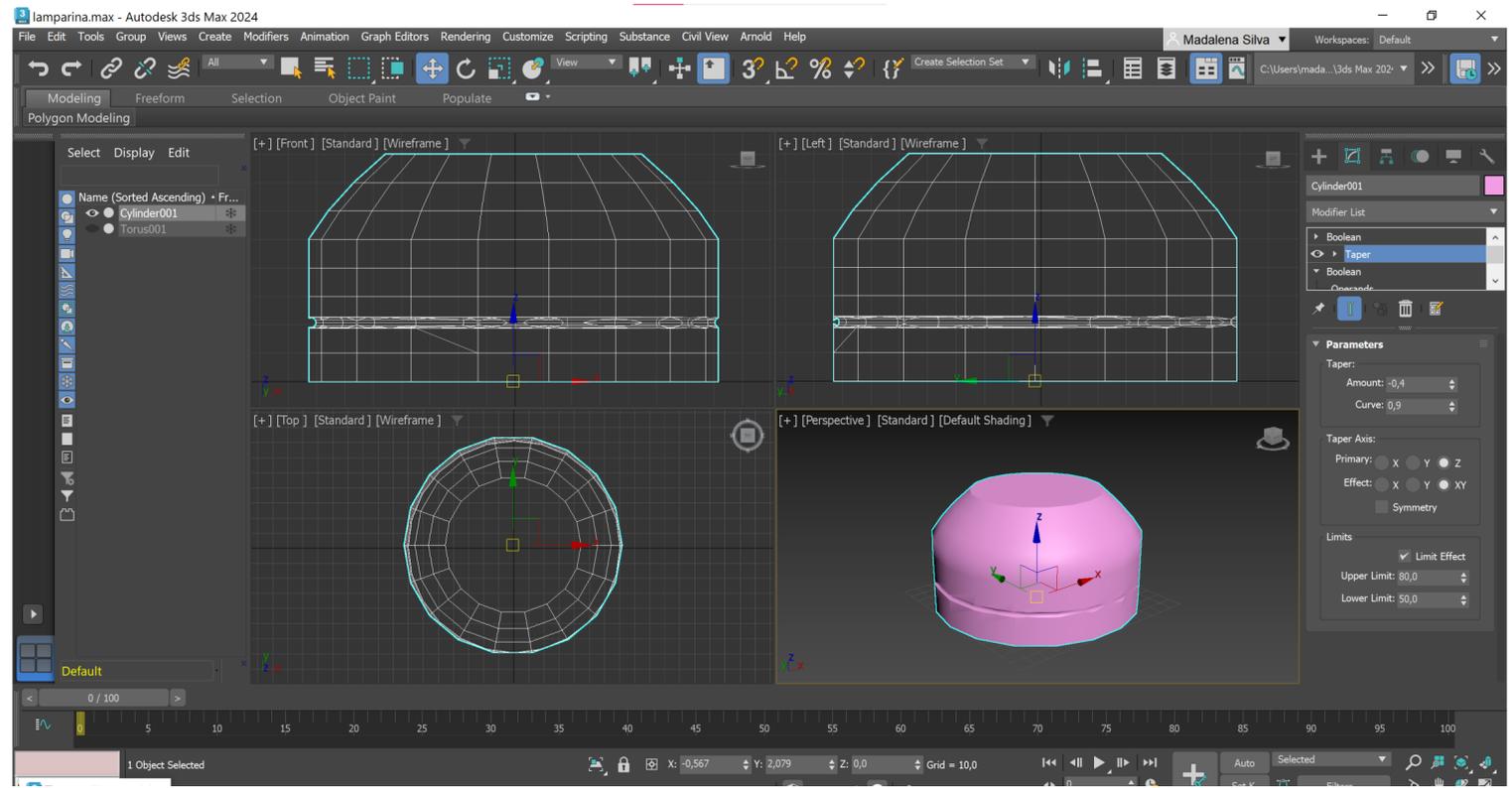
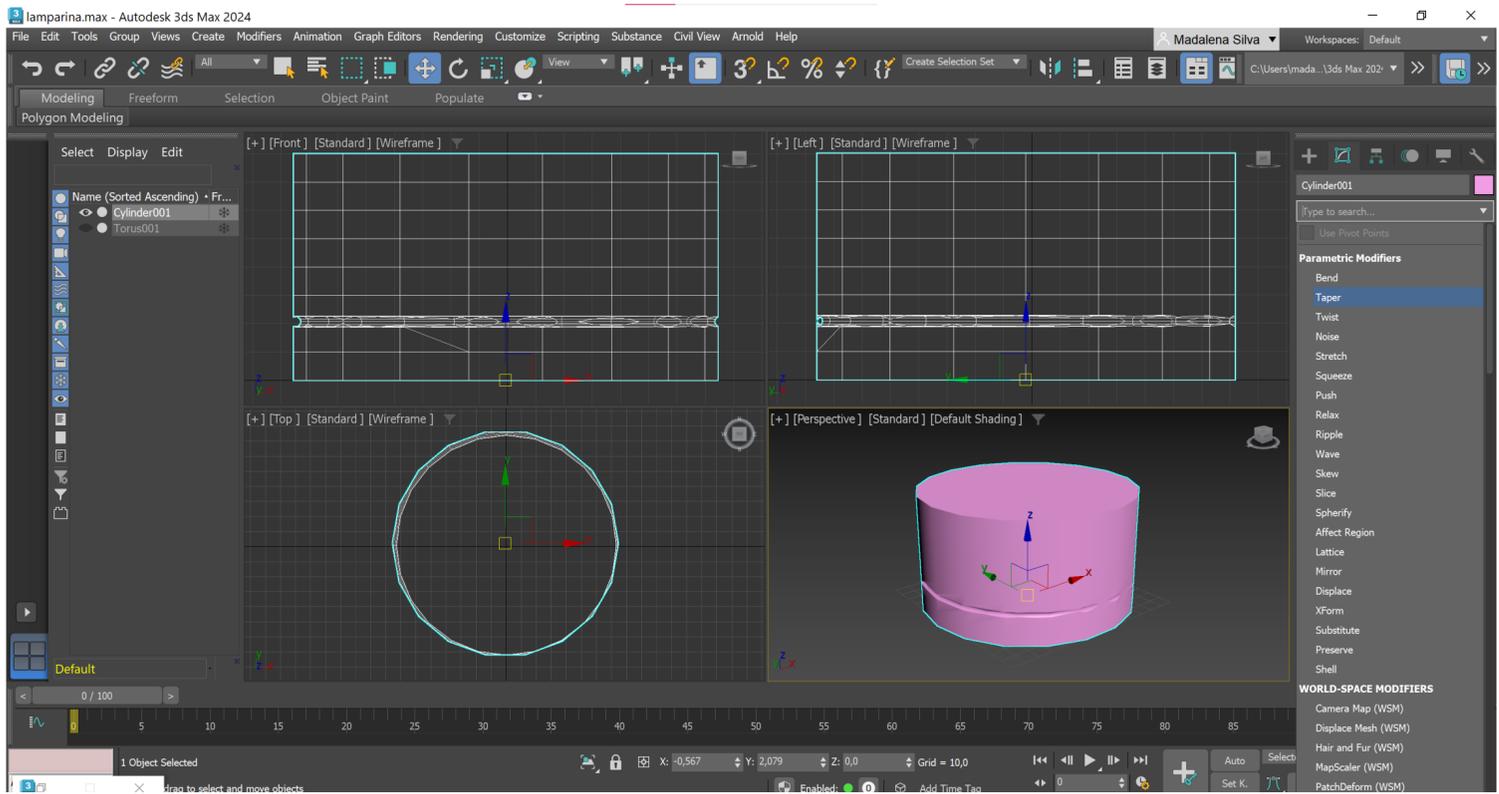
Semana 12<sub>5/12/2023 - 8/12/2023</sub>



Subtração do Torus ao Cylinder:  
Compound objects > Torus >  
Subtract

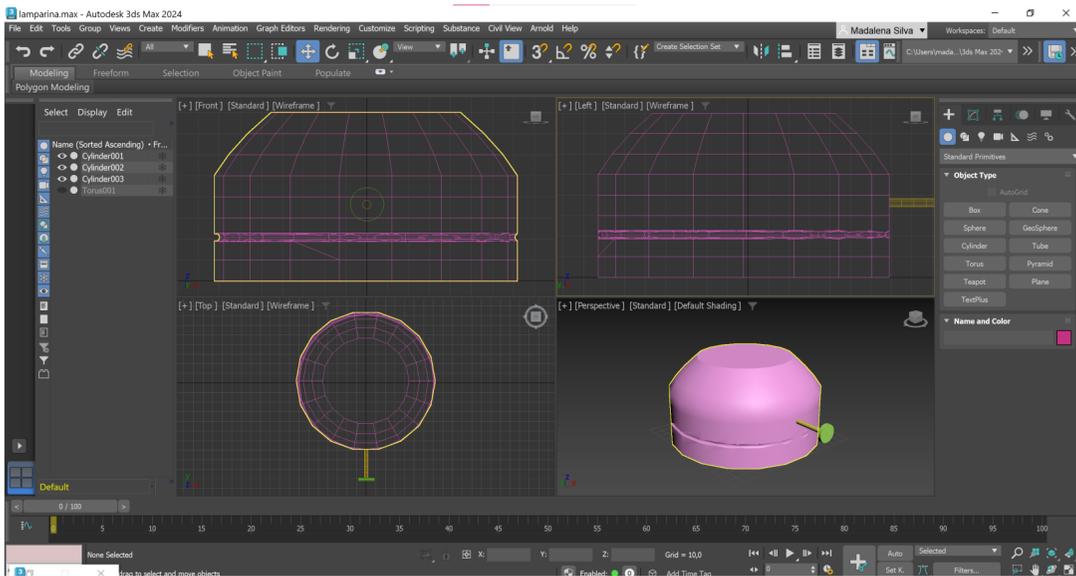
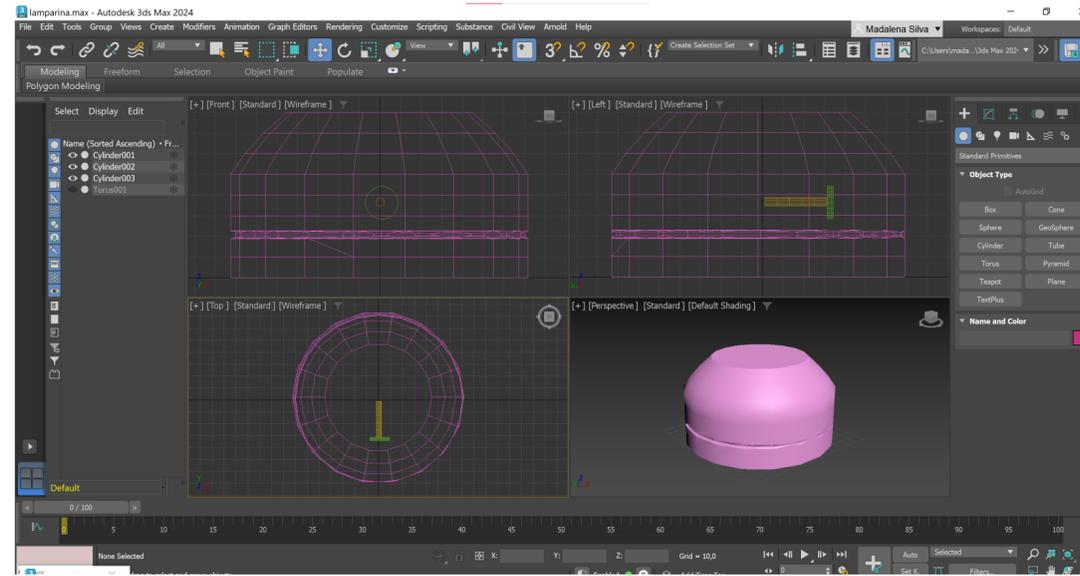
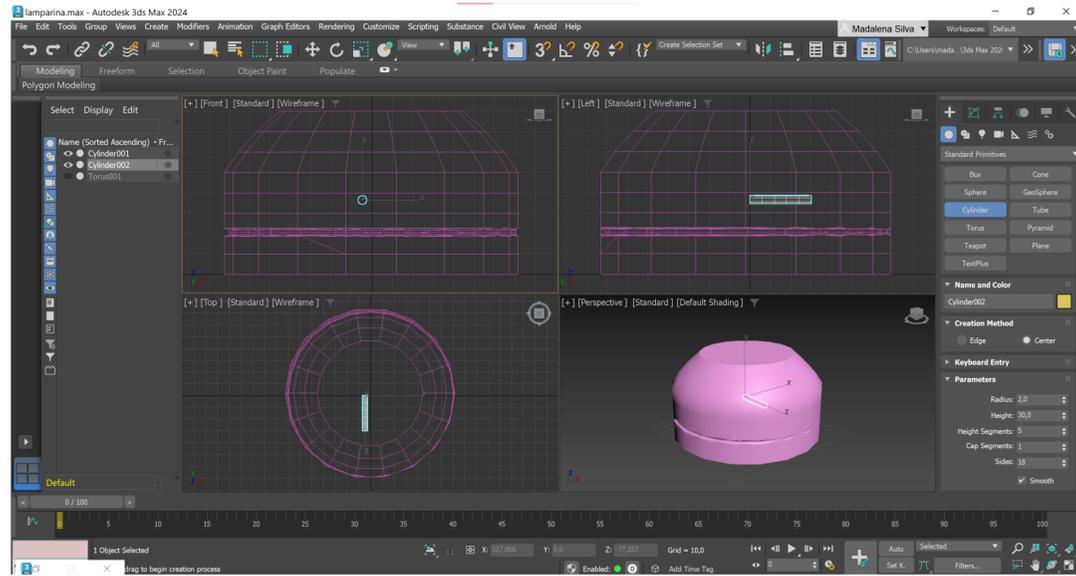
ReDig

Semana 12<sub>5/12/2023 - 8/12/2023</sub>



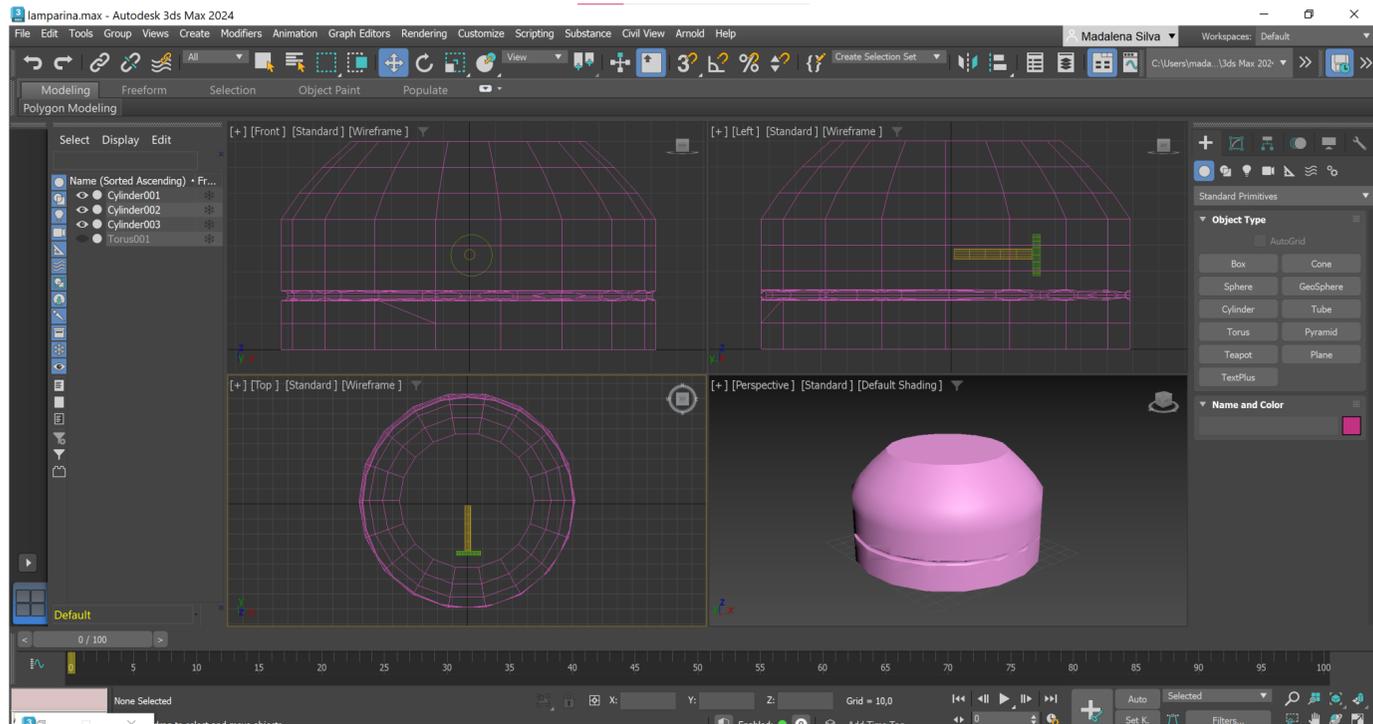
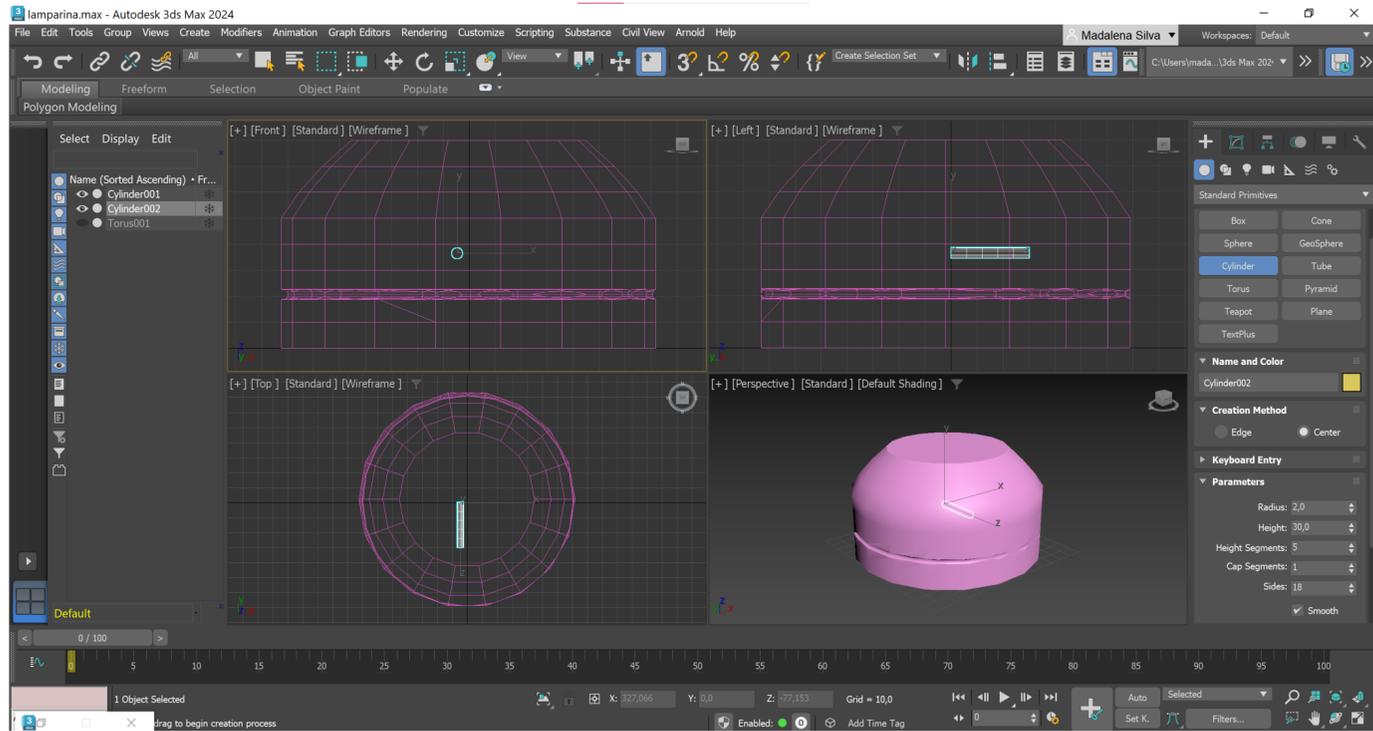
Parametric modifiers > Taper

Upper limit: 80  
Lower limit: 50  
Amount: -0.4  
Curve: 0.9



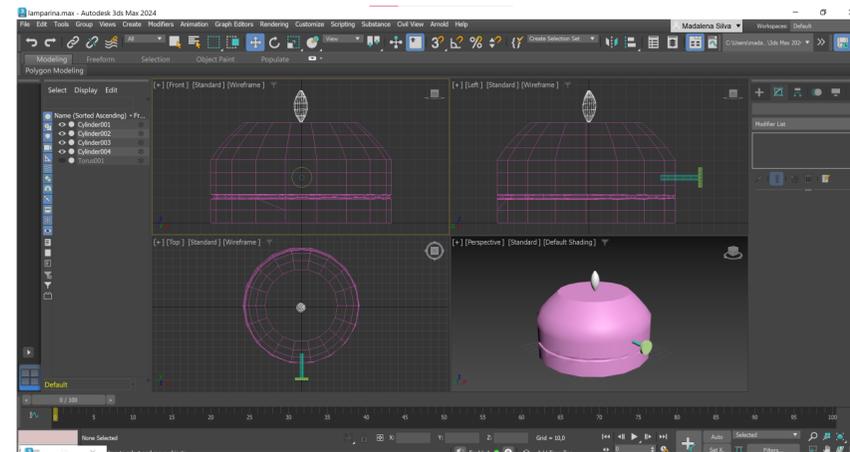
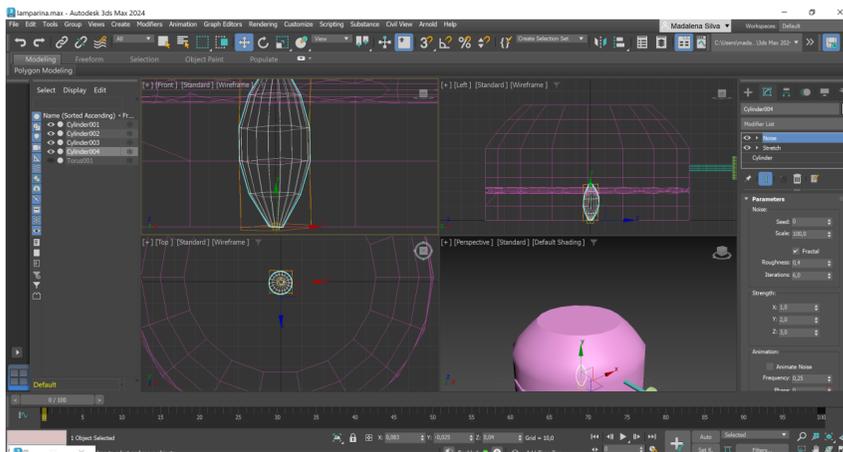
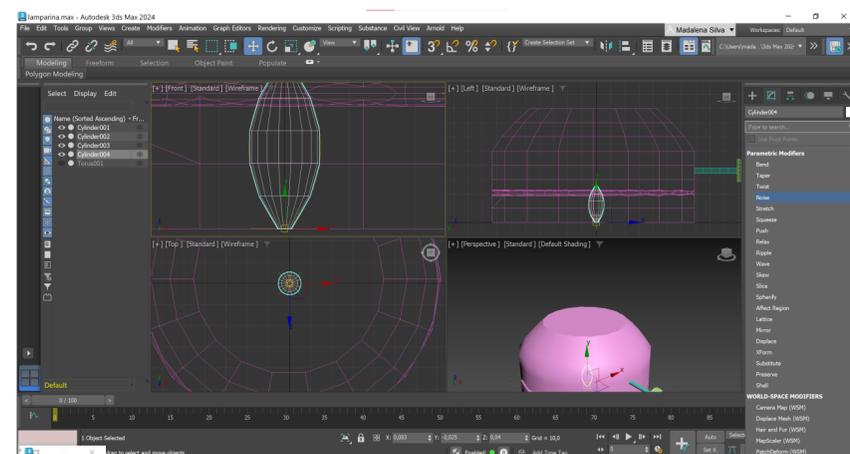
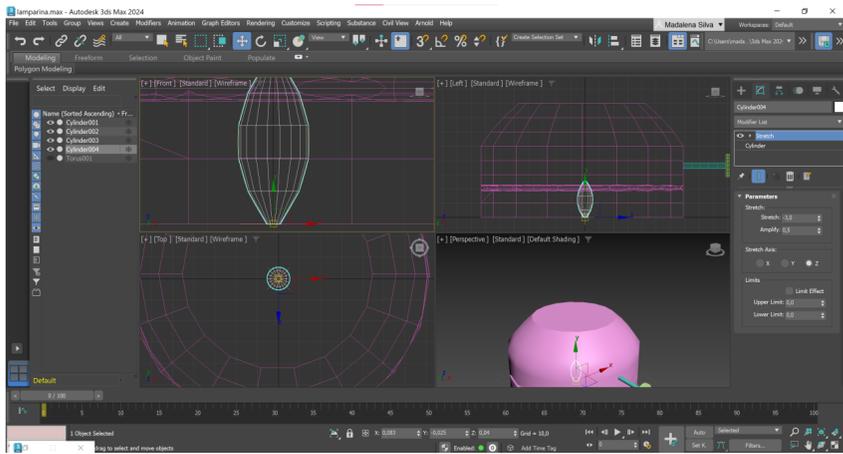
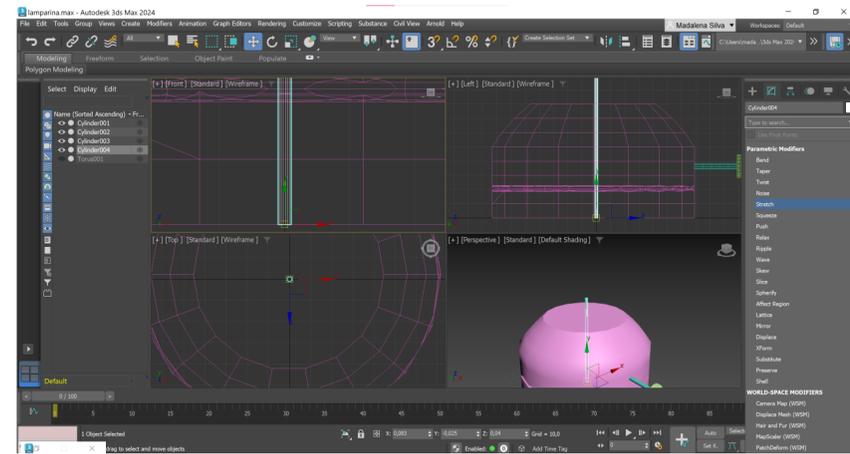
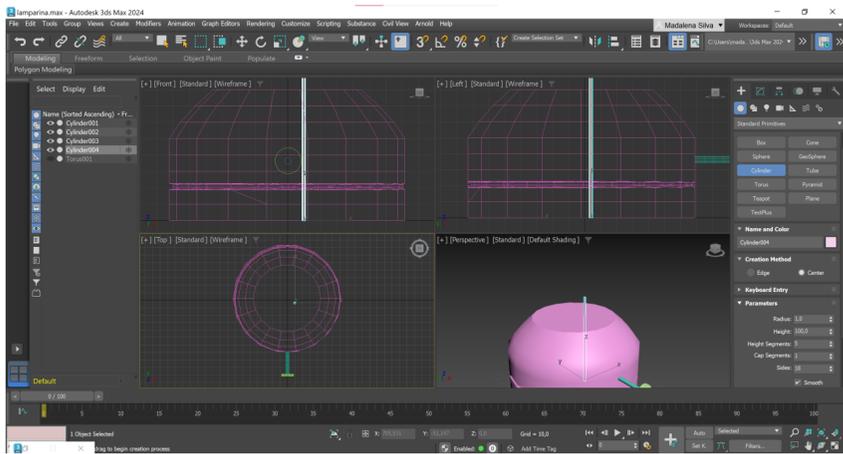
ReDig

Semana 12<sub>5/12/2023 - 8/12/2023</sub>



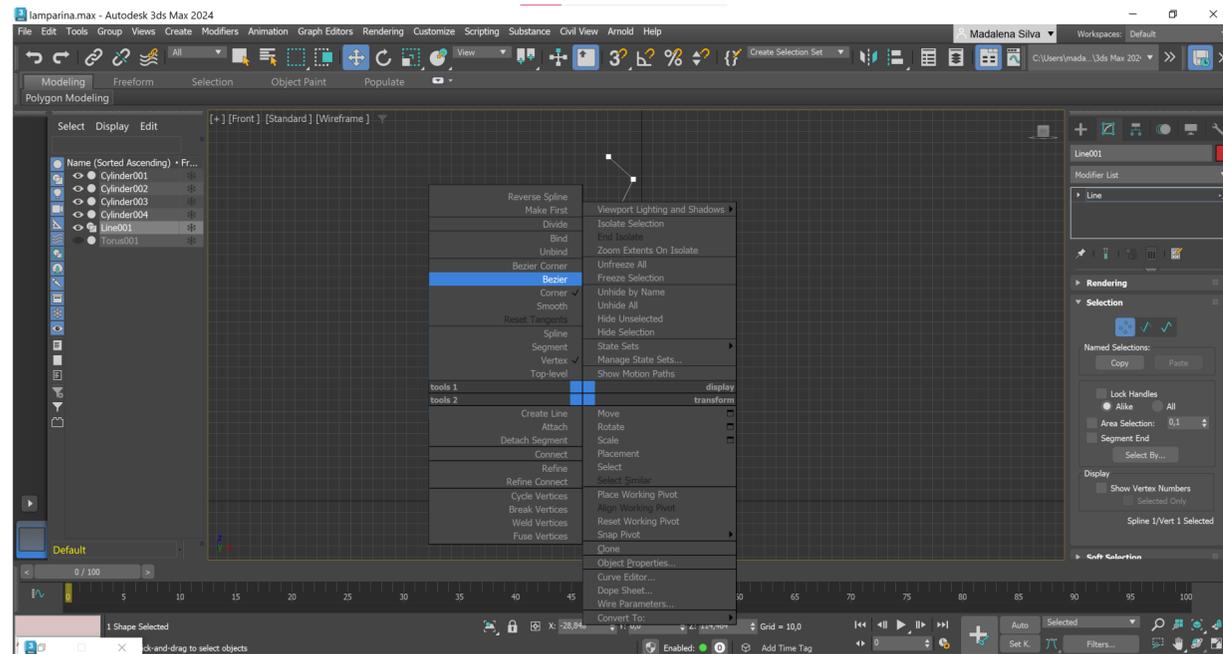
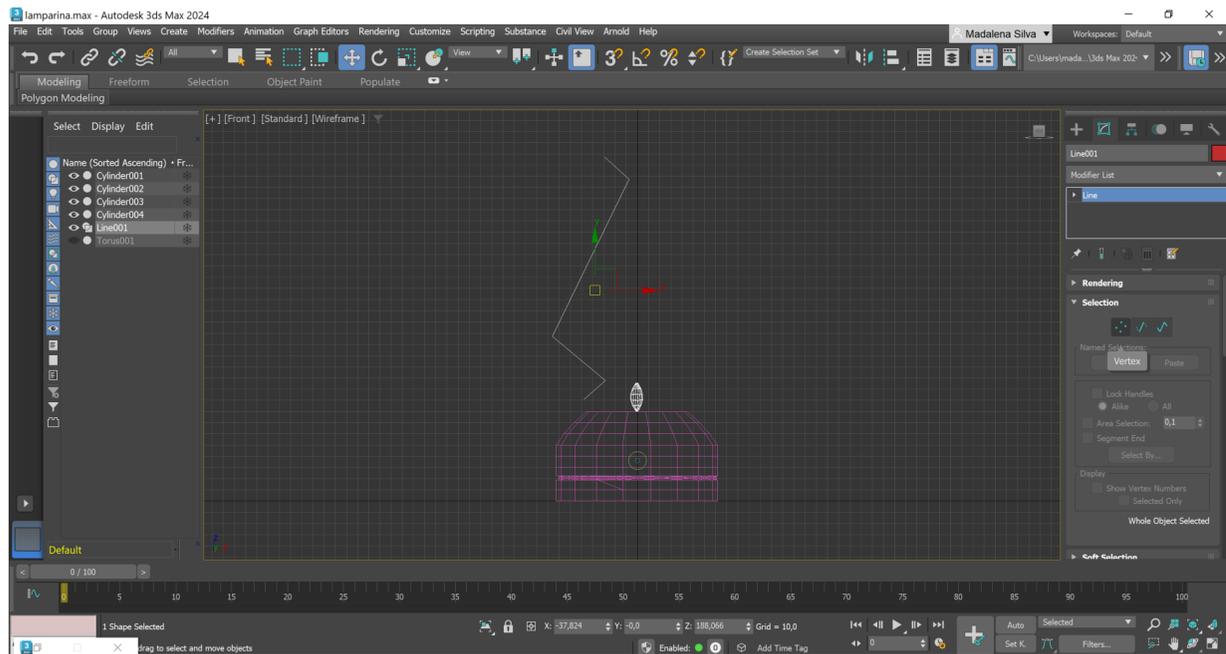
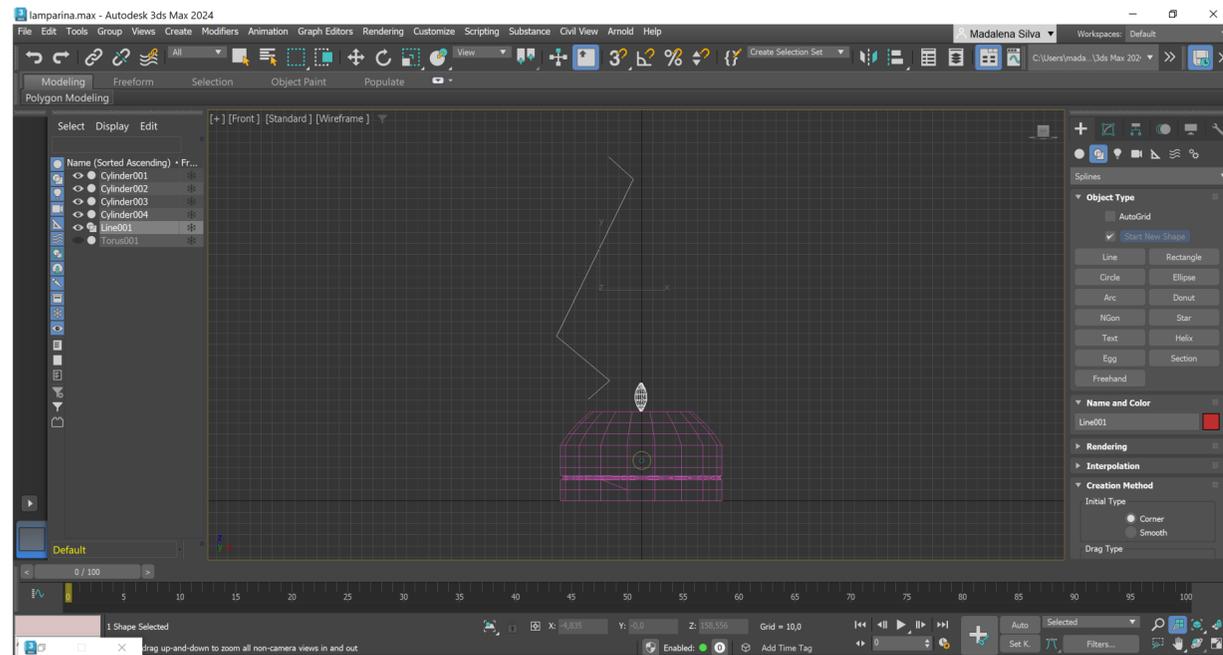
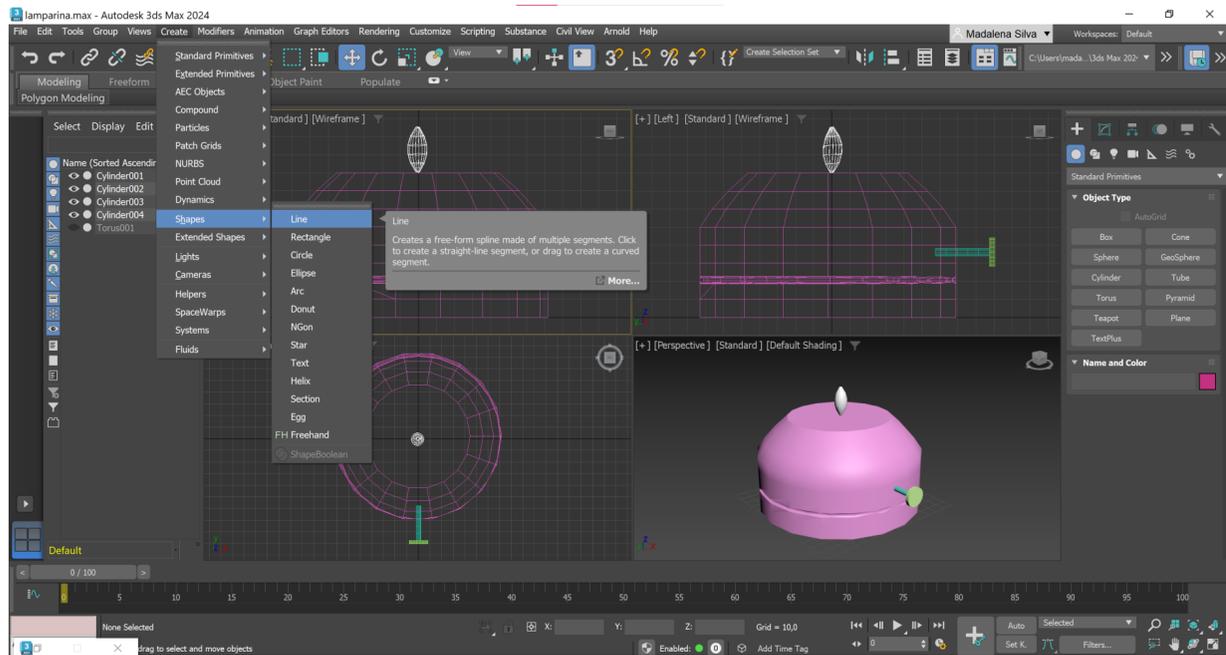
ReDig

Semana 12<sub>5/12/2023 - 8/12/2023</sub>



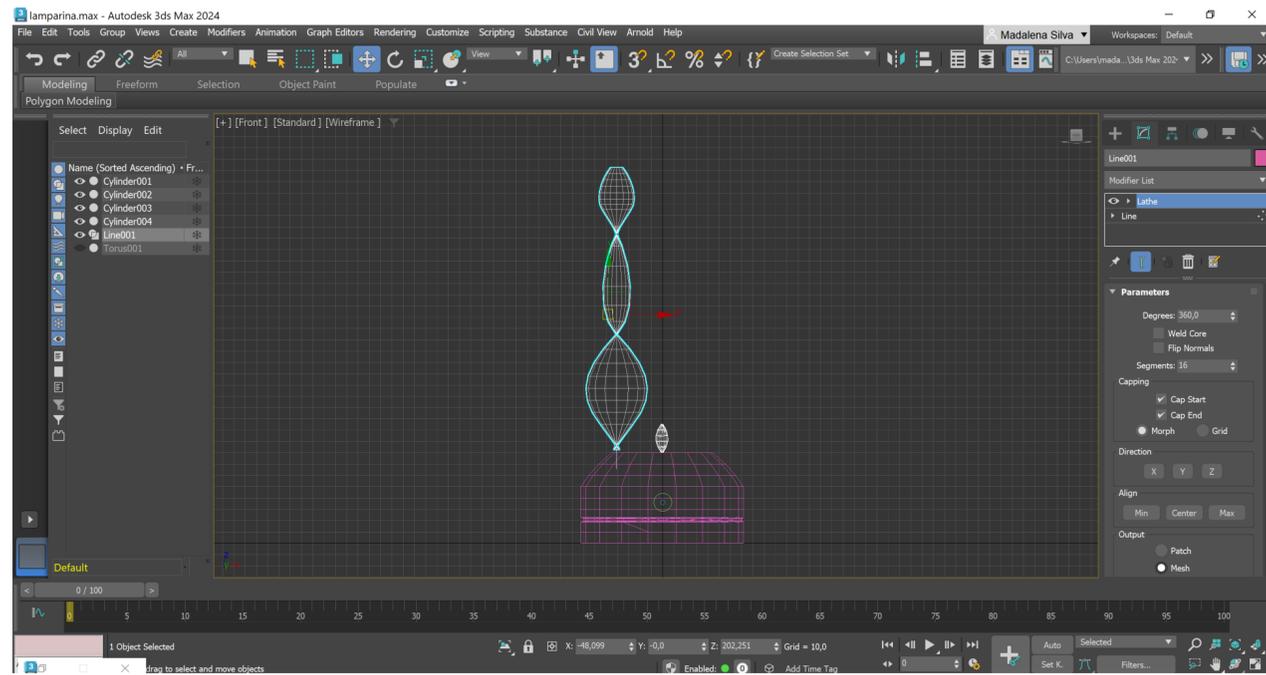
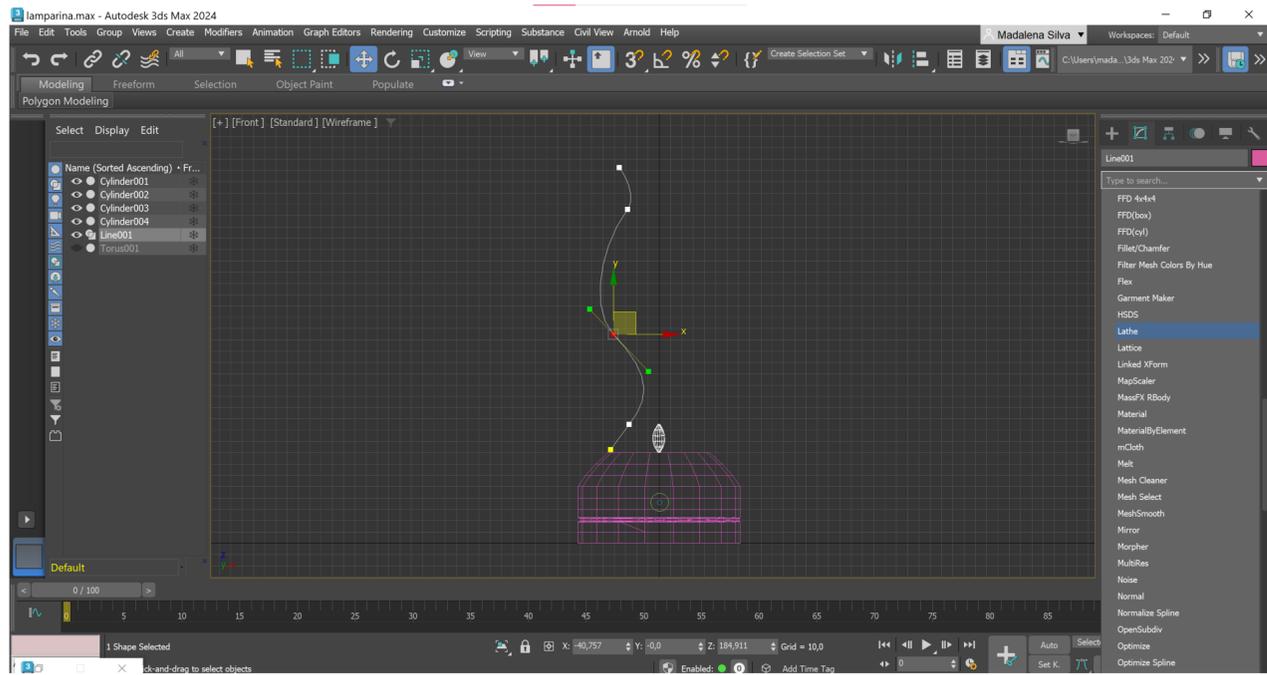
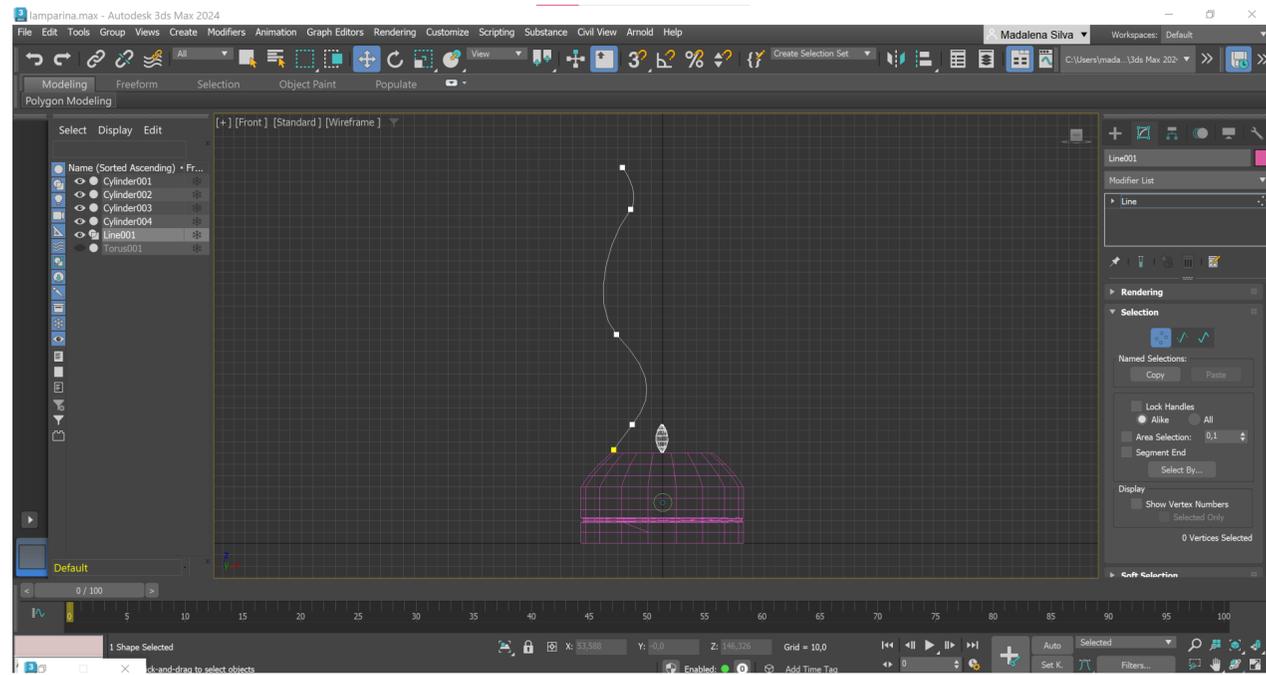
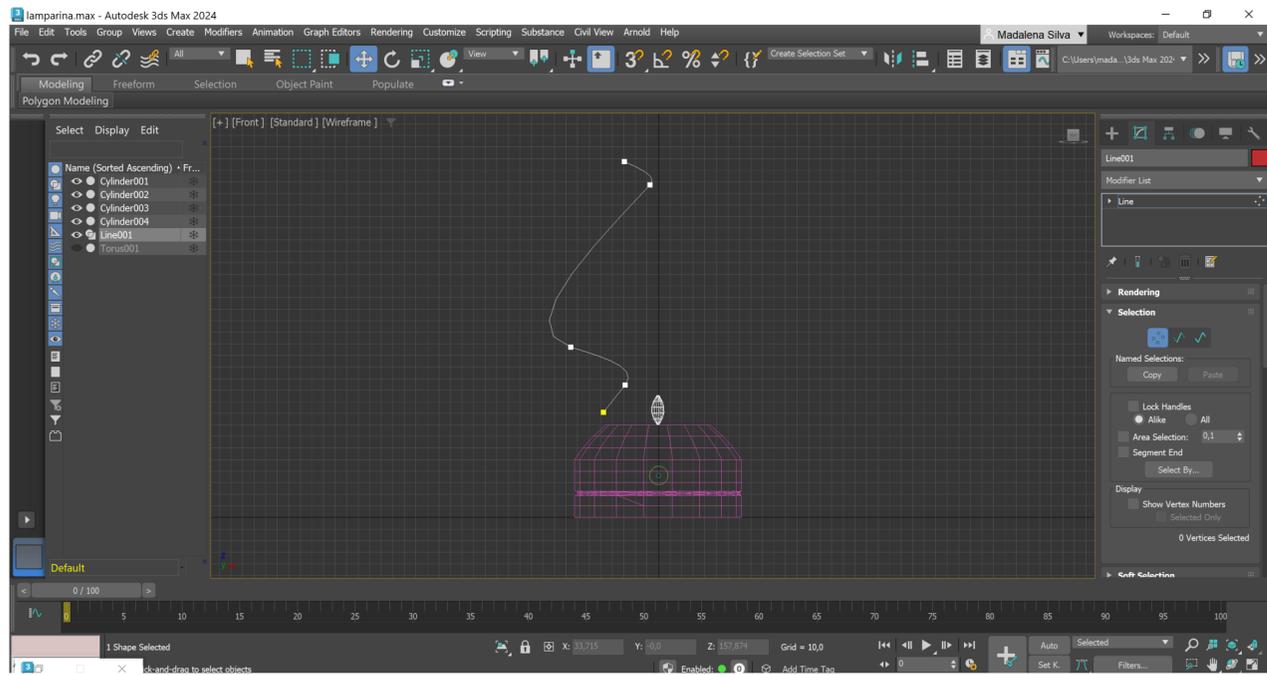
ReDig

Semana 21 5/12/2023 - 8/12/2023



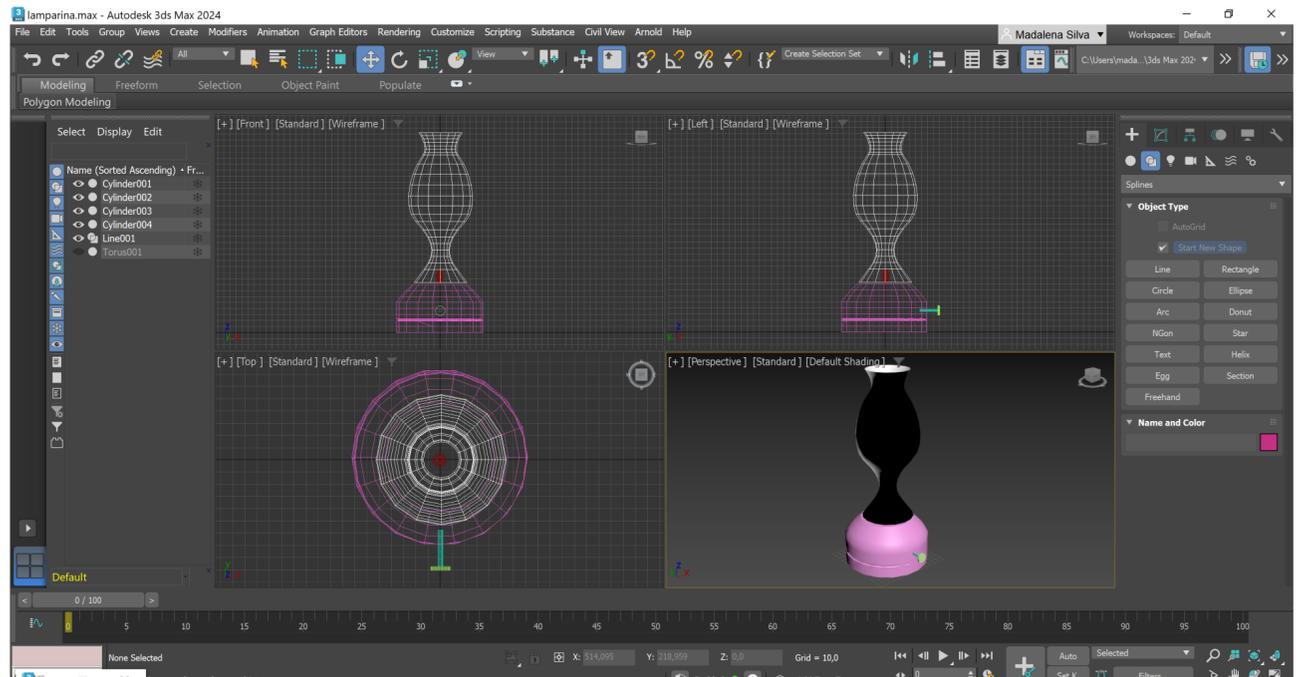
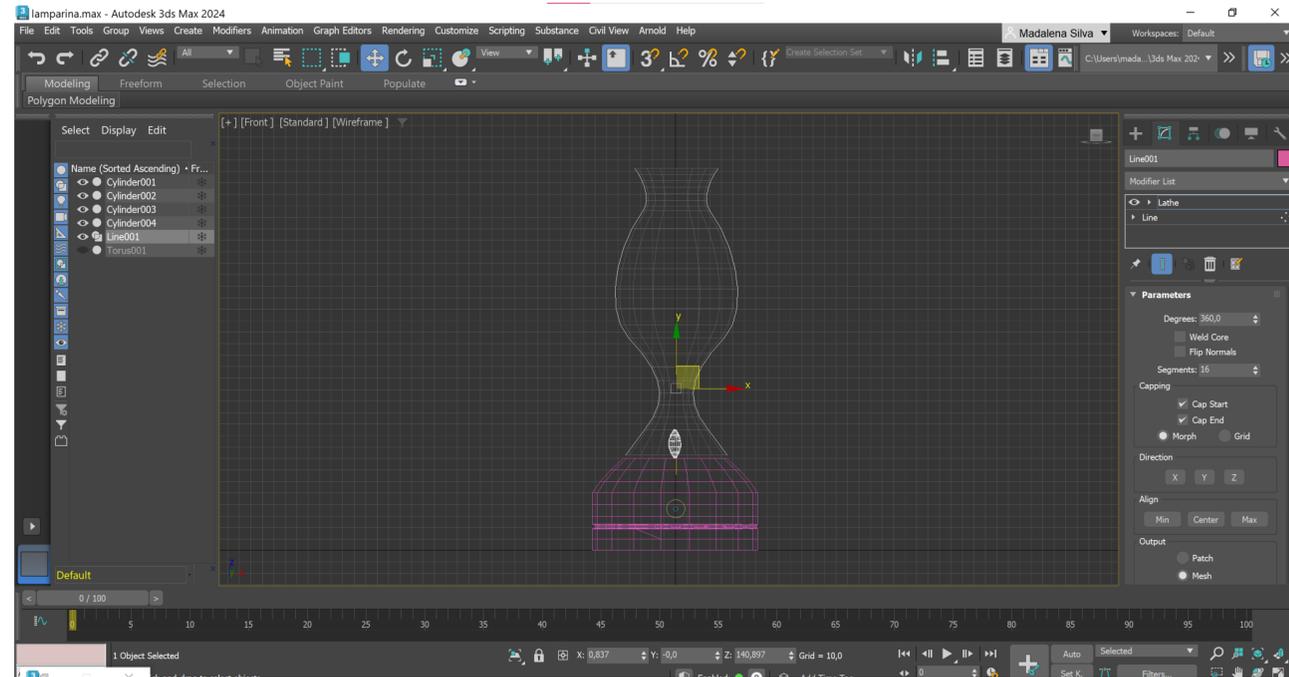
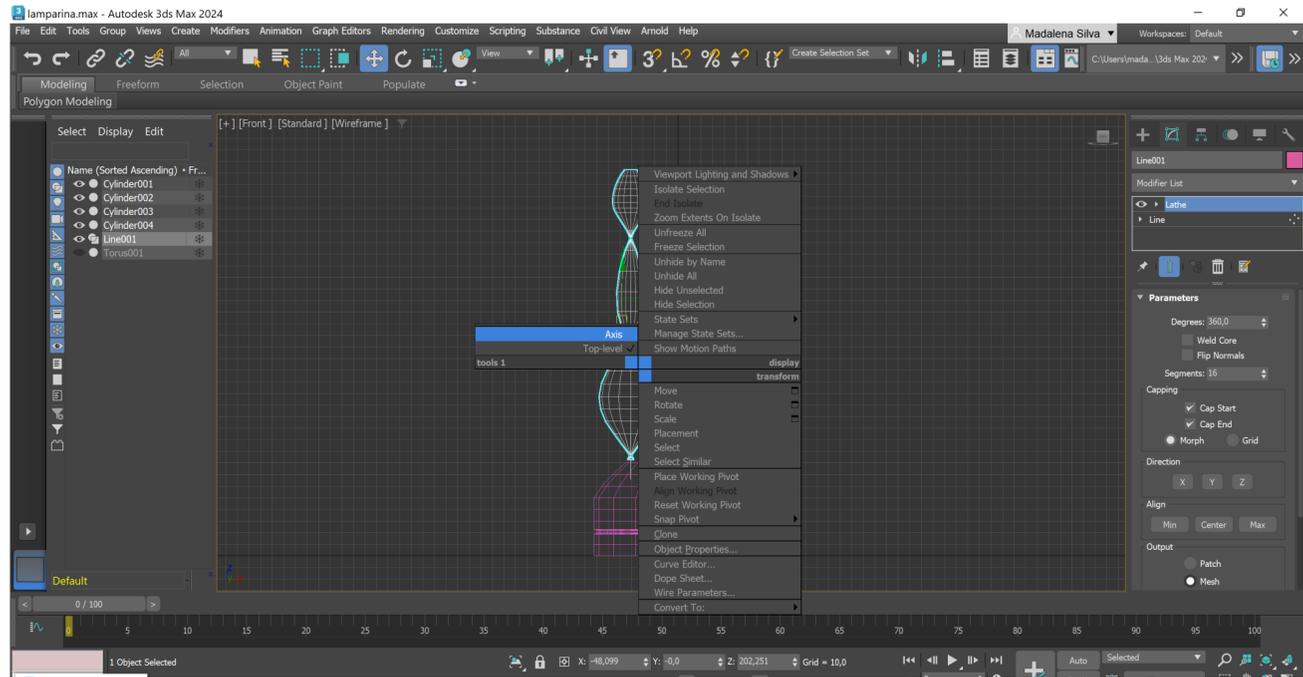
ReDig

Semana 11 5/12/2023 - 8/12/2023



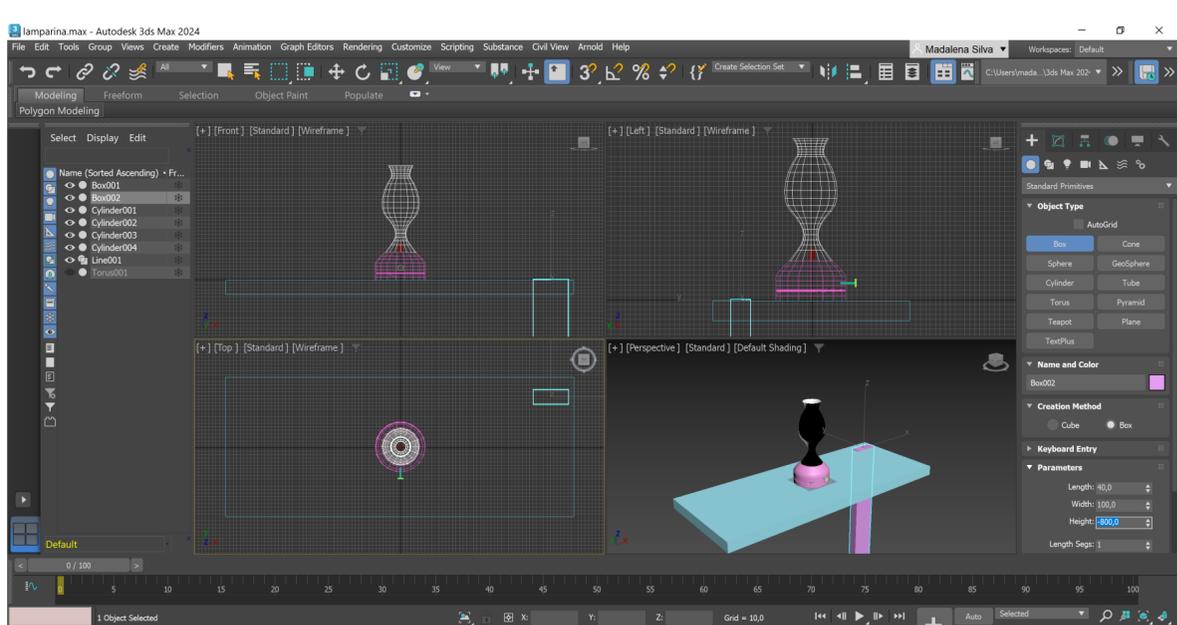
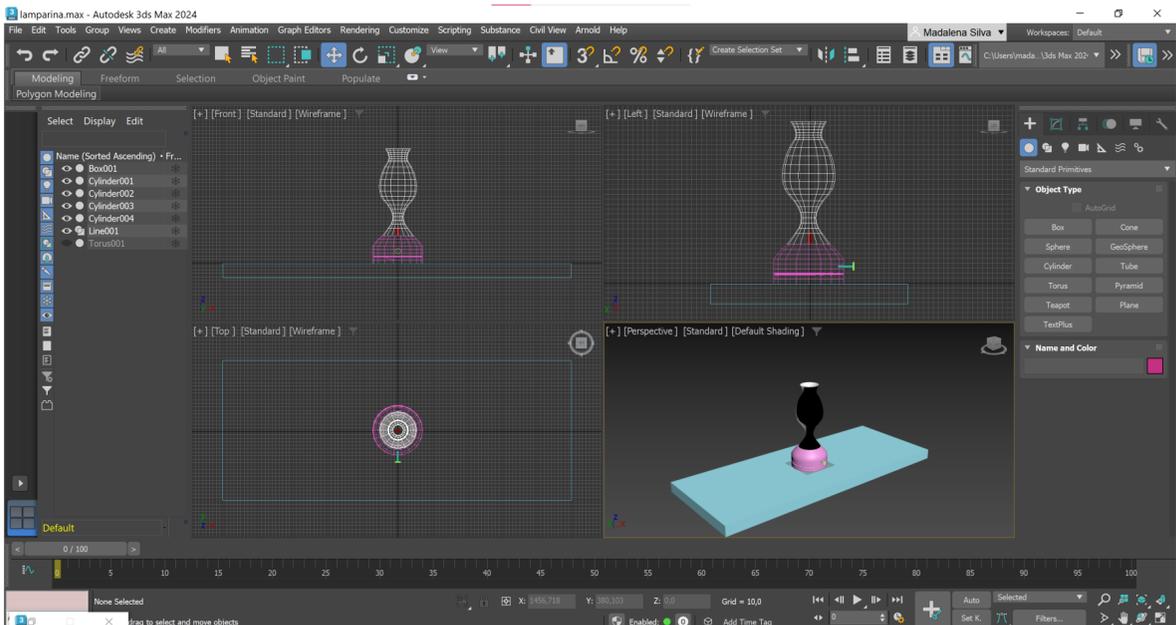
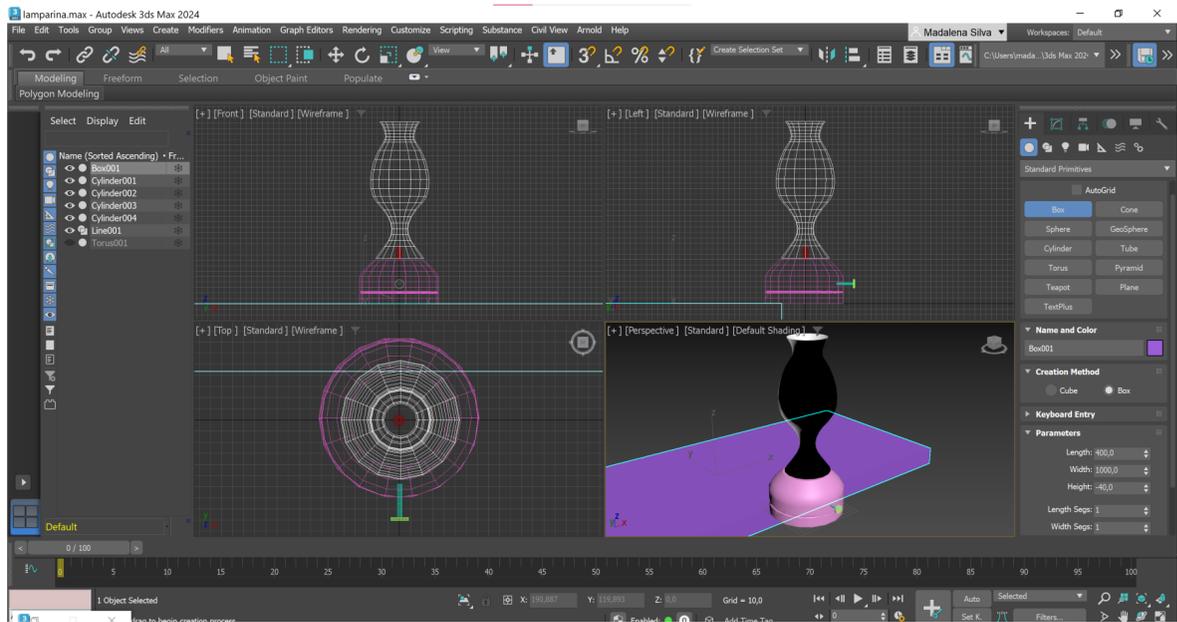
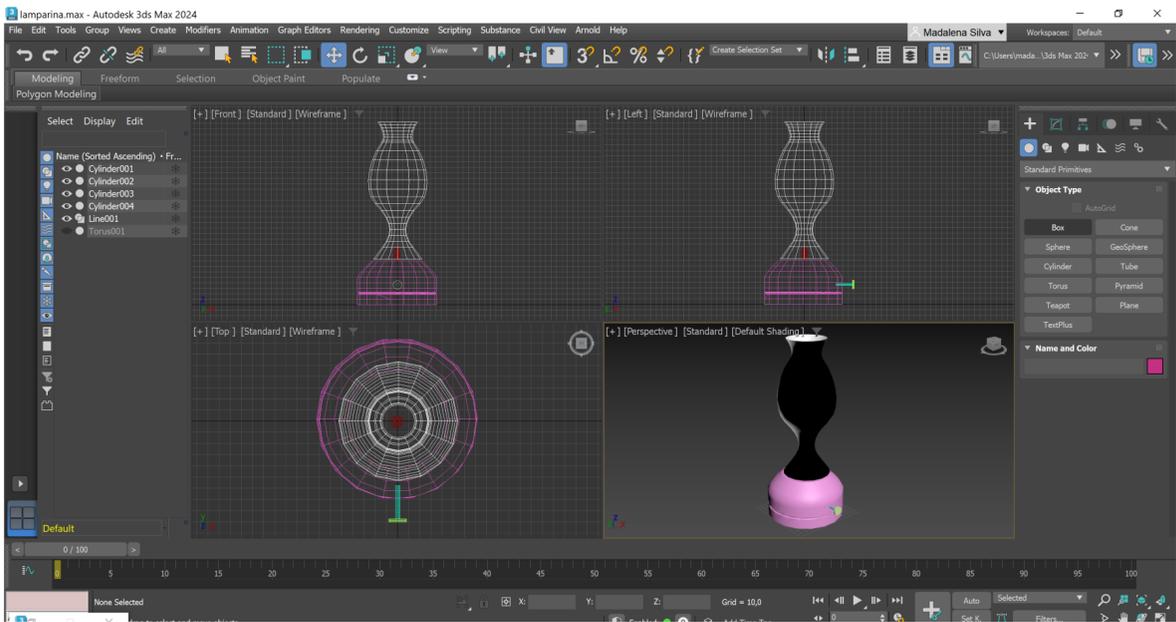
ReDig

Semana 12<sub>5/12/2023 - 8/12/2023</sub>



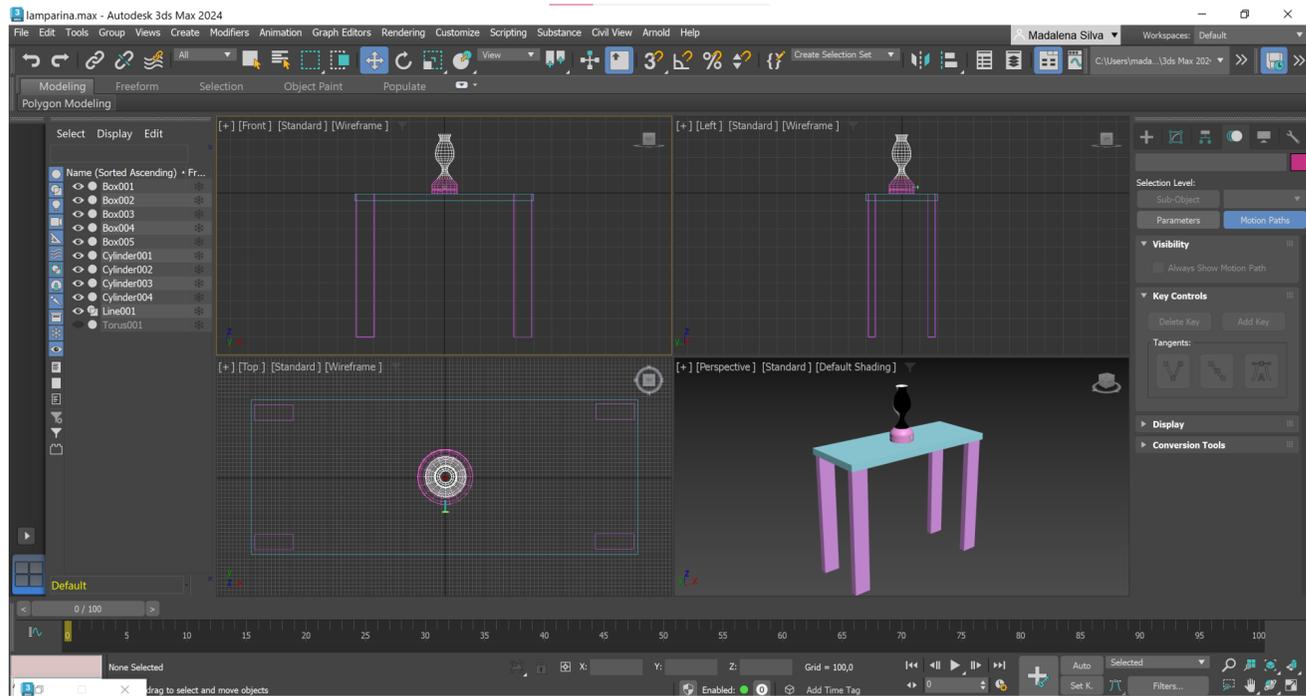
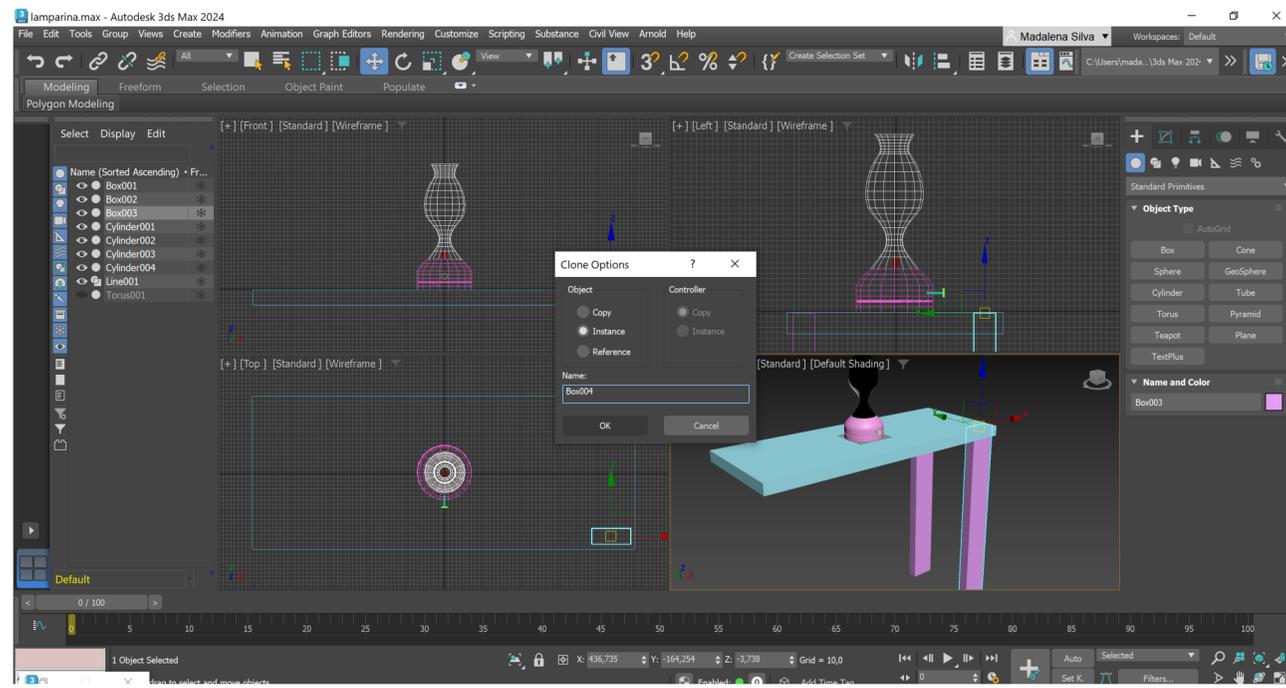
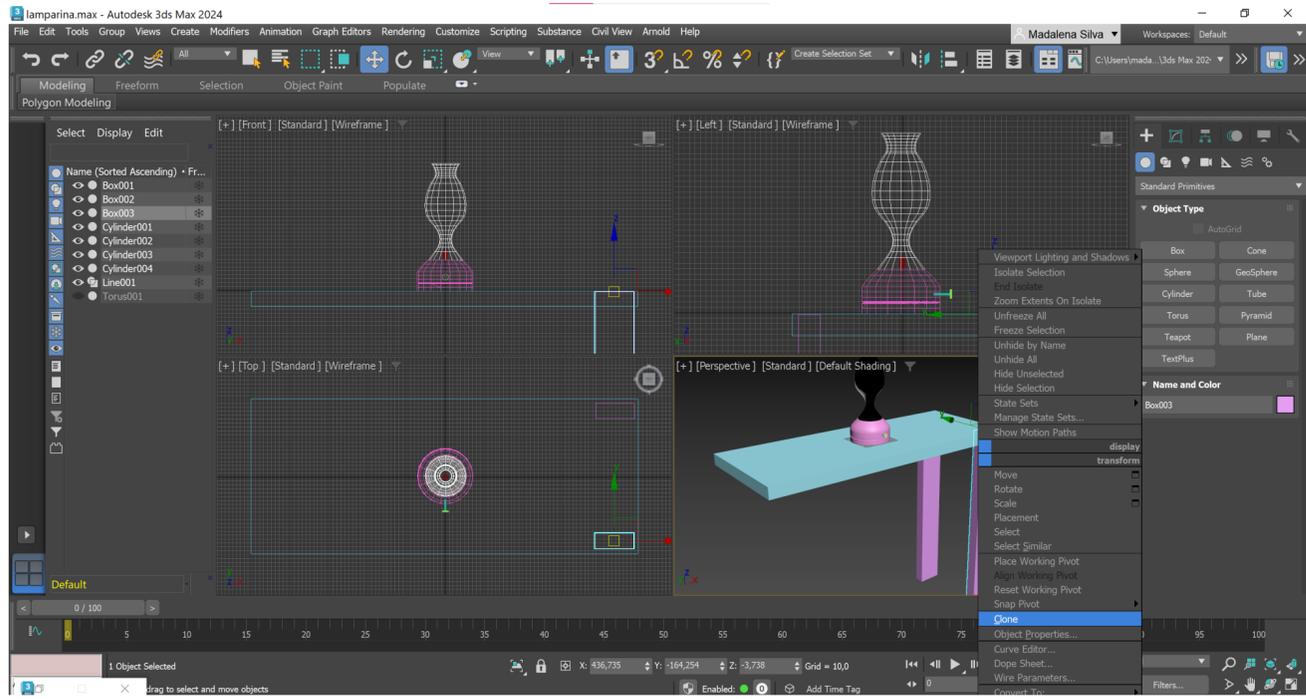
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Semana 12 5/12/2023 - 8/12/2023



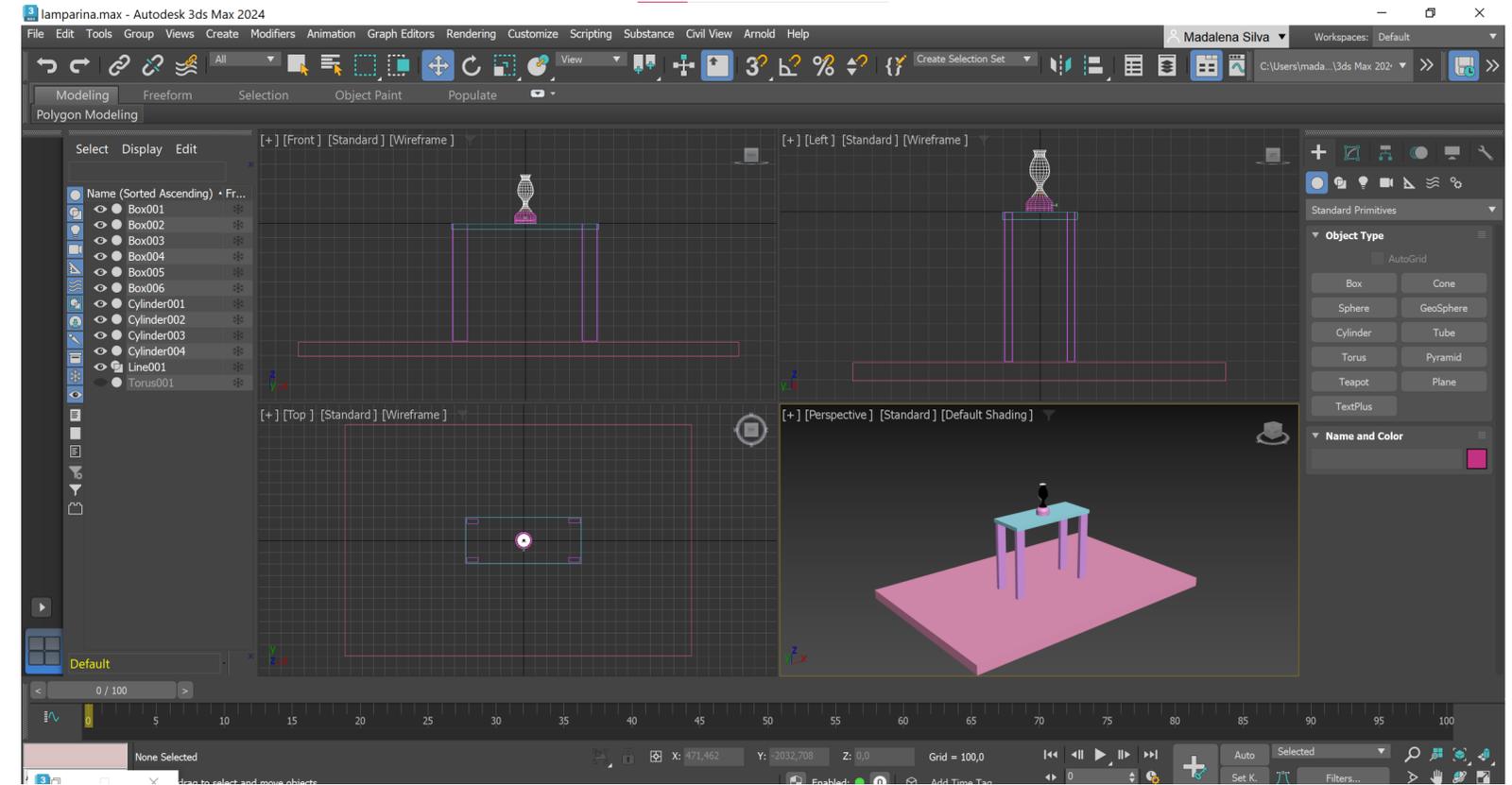
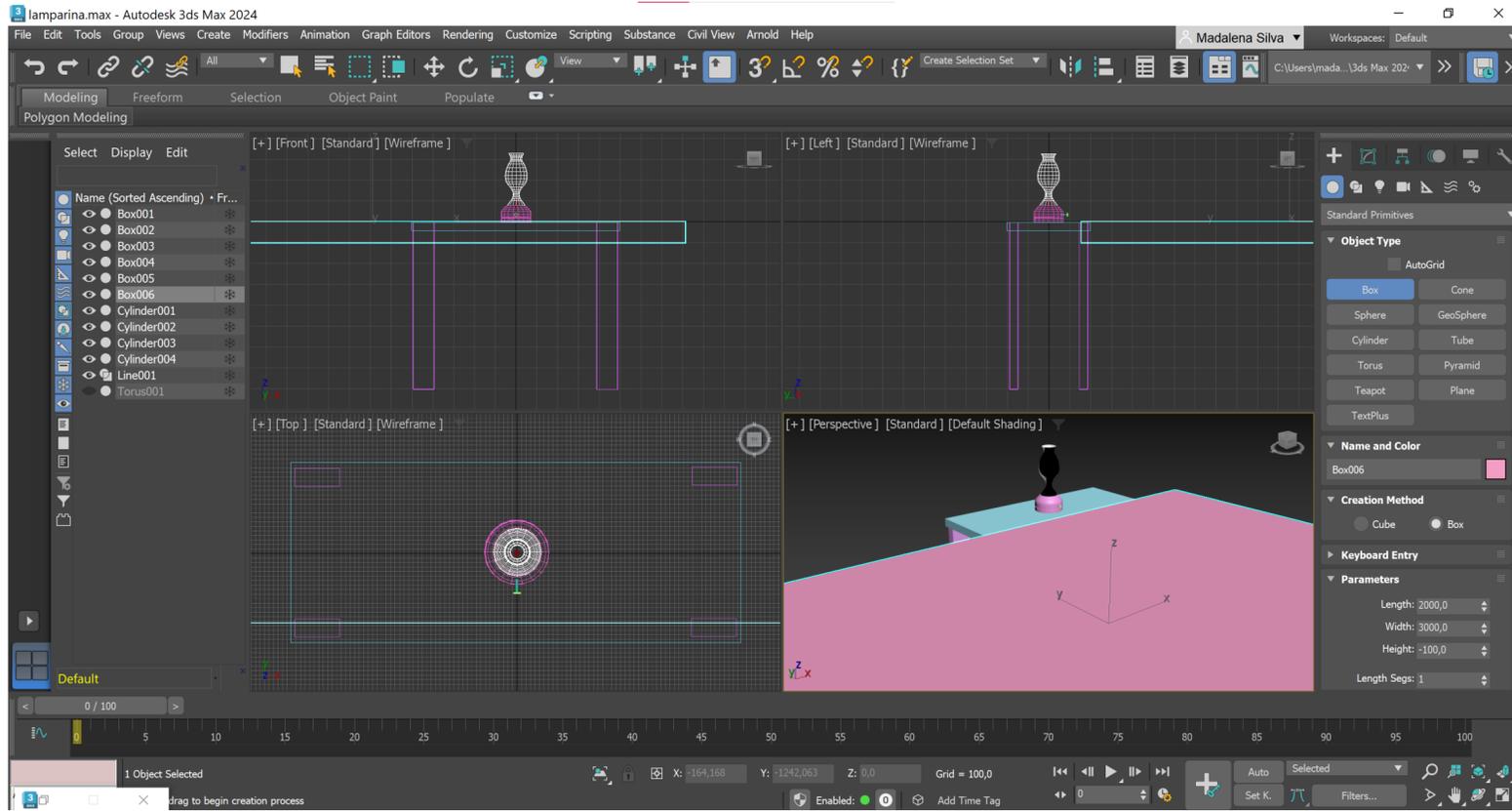
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Semana 12<sub>5/12/2023 - 8/12/2023</sub>



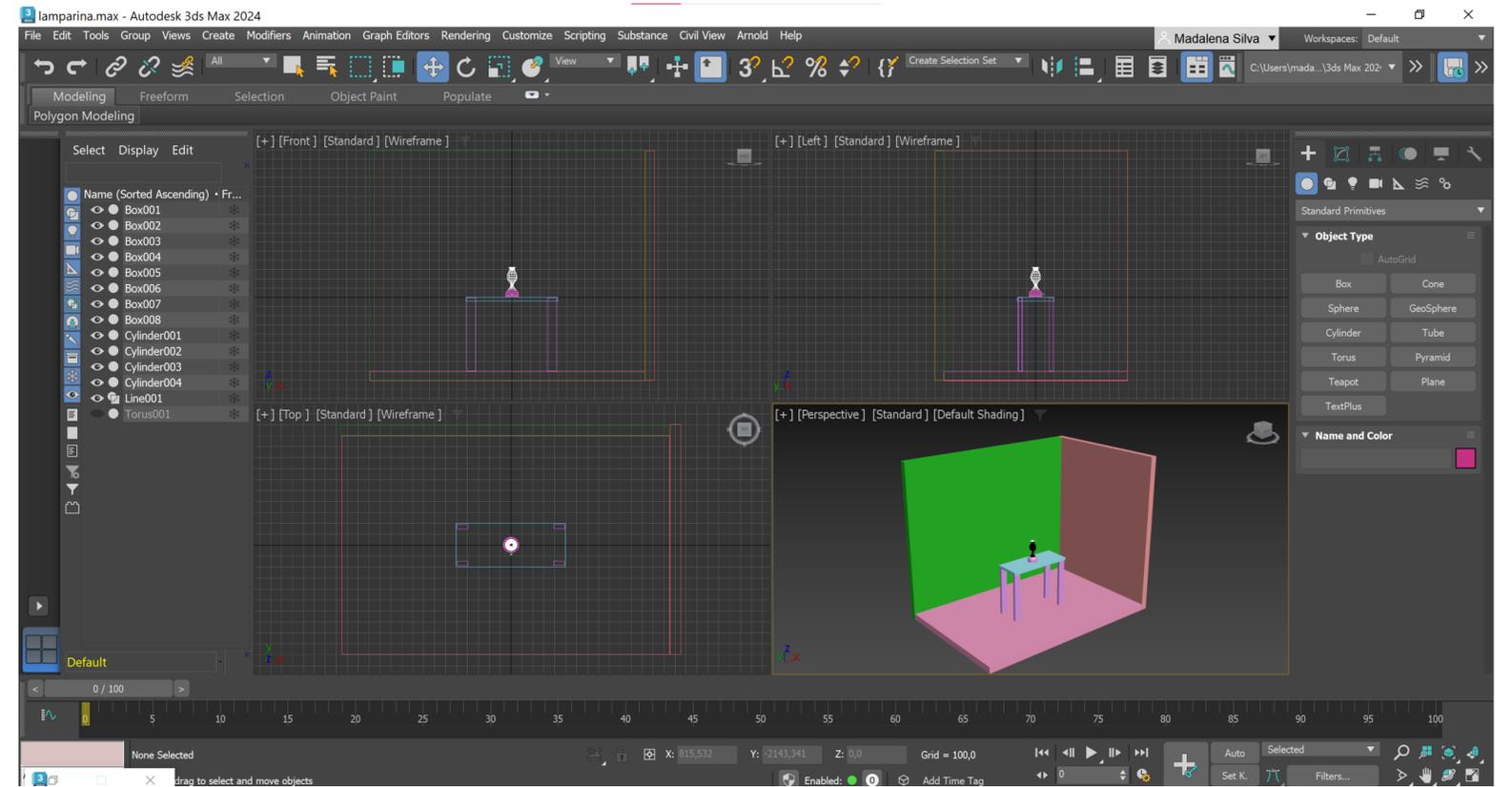
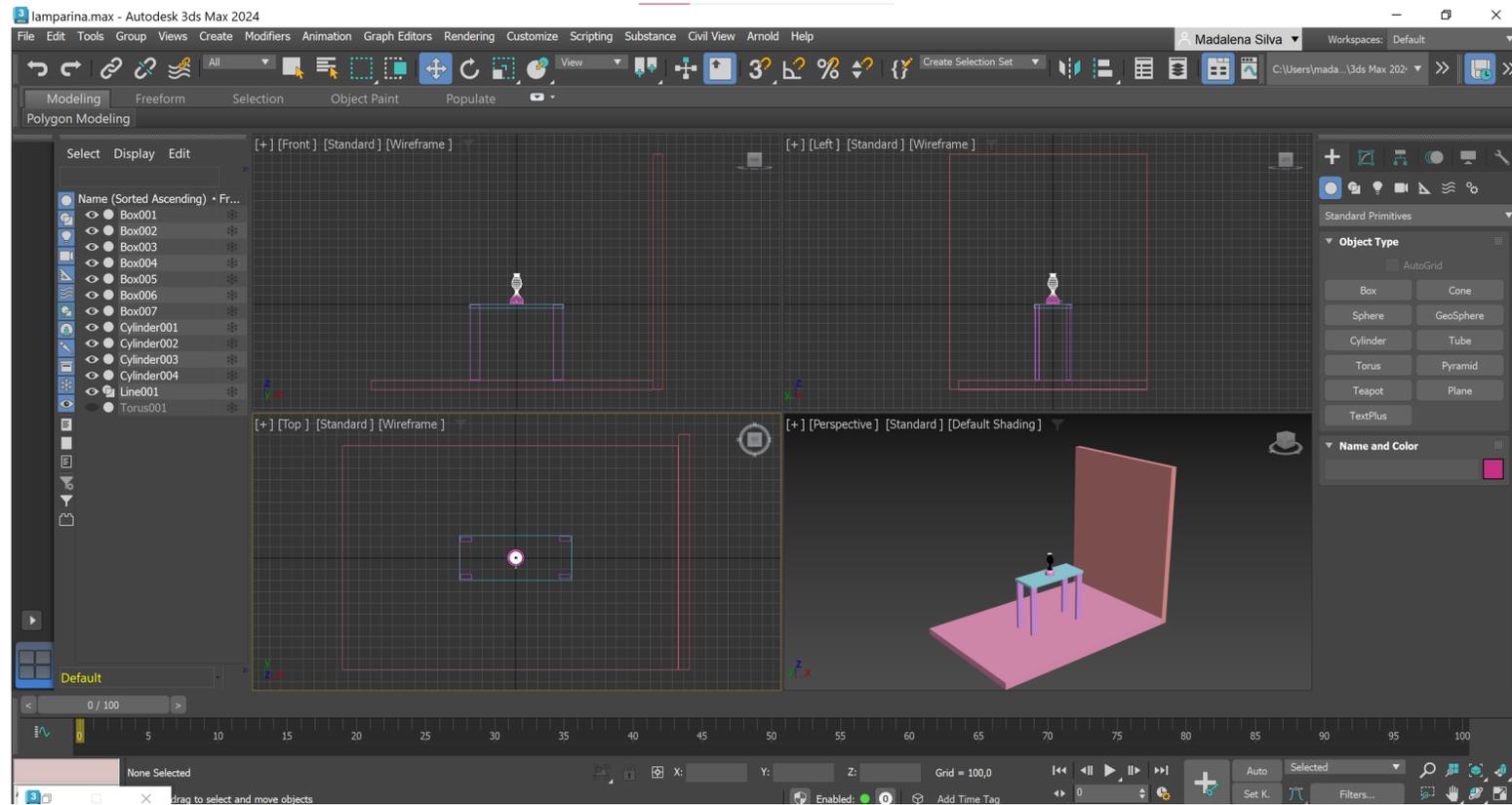
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Semana 12<sub>5/12/2023 - 8/12/2023</sub>



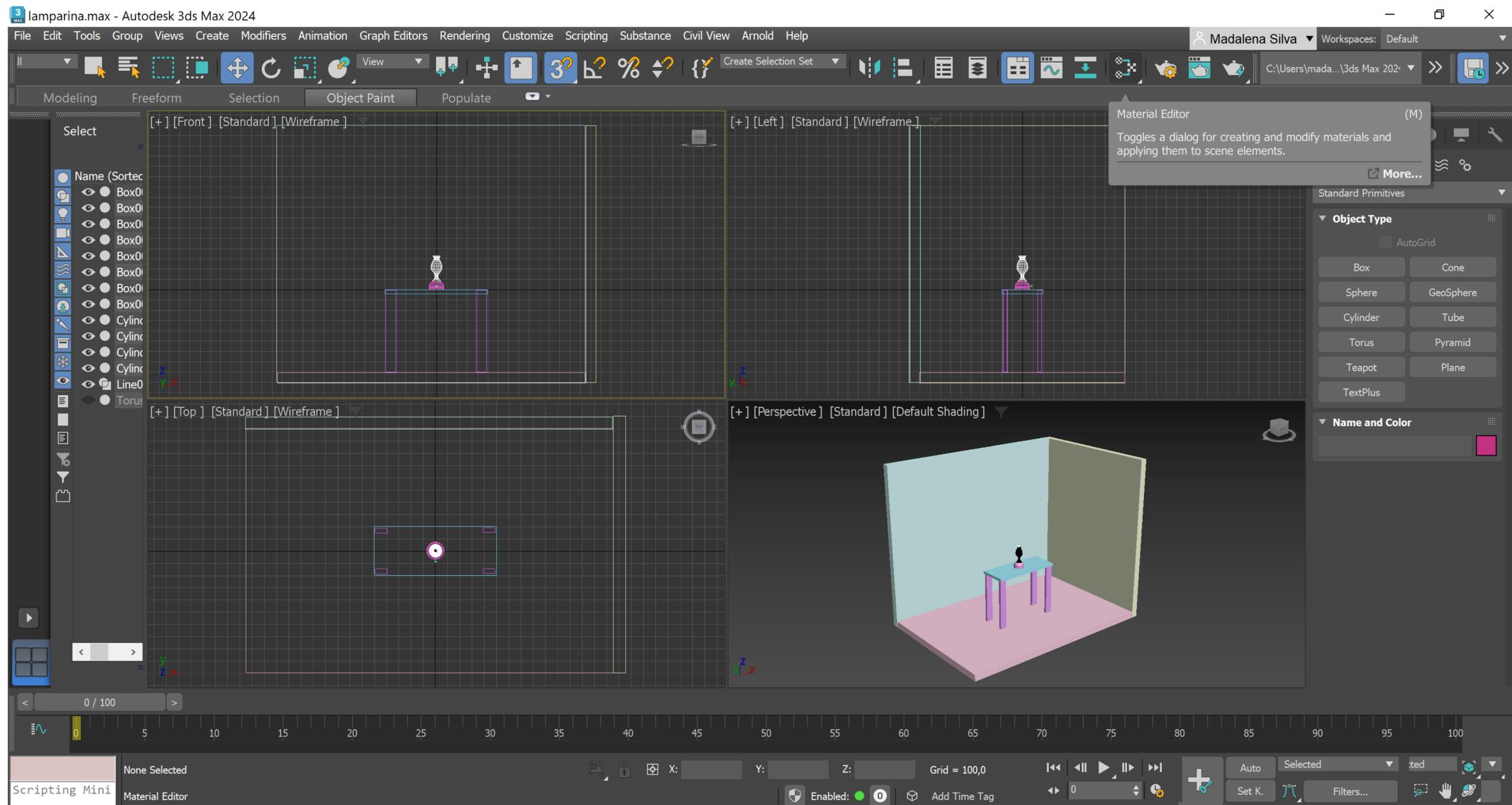
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Semana 12<sub>5/12/2023 - 8/12/2023</sub>



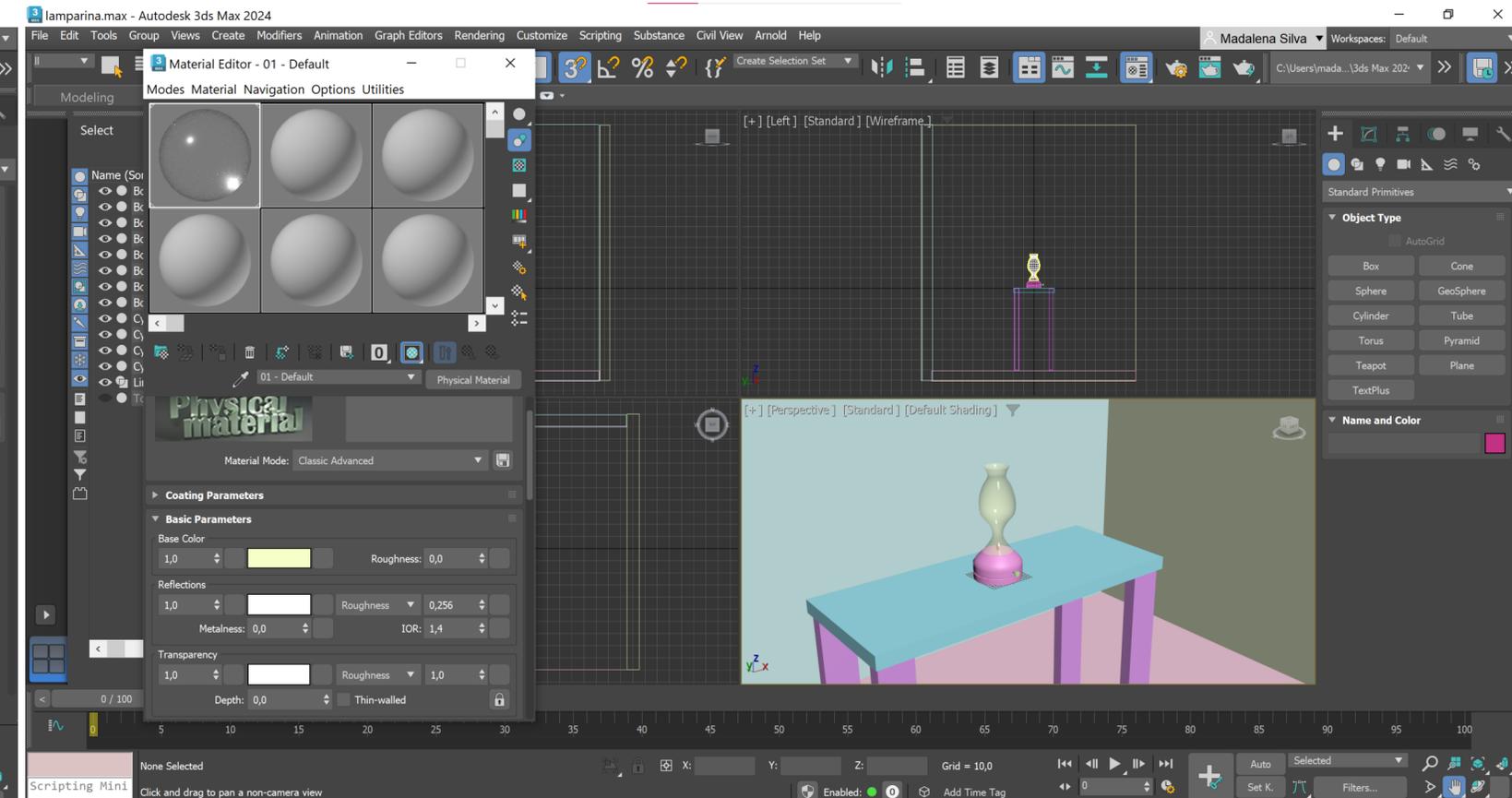
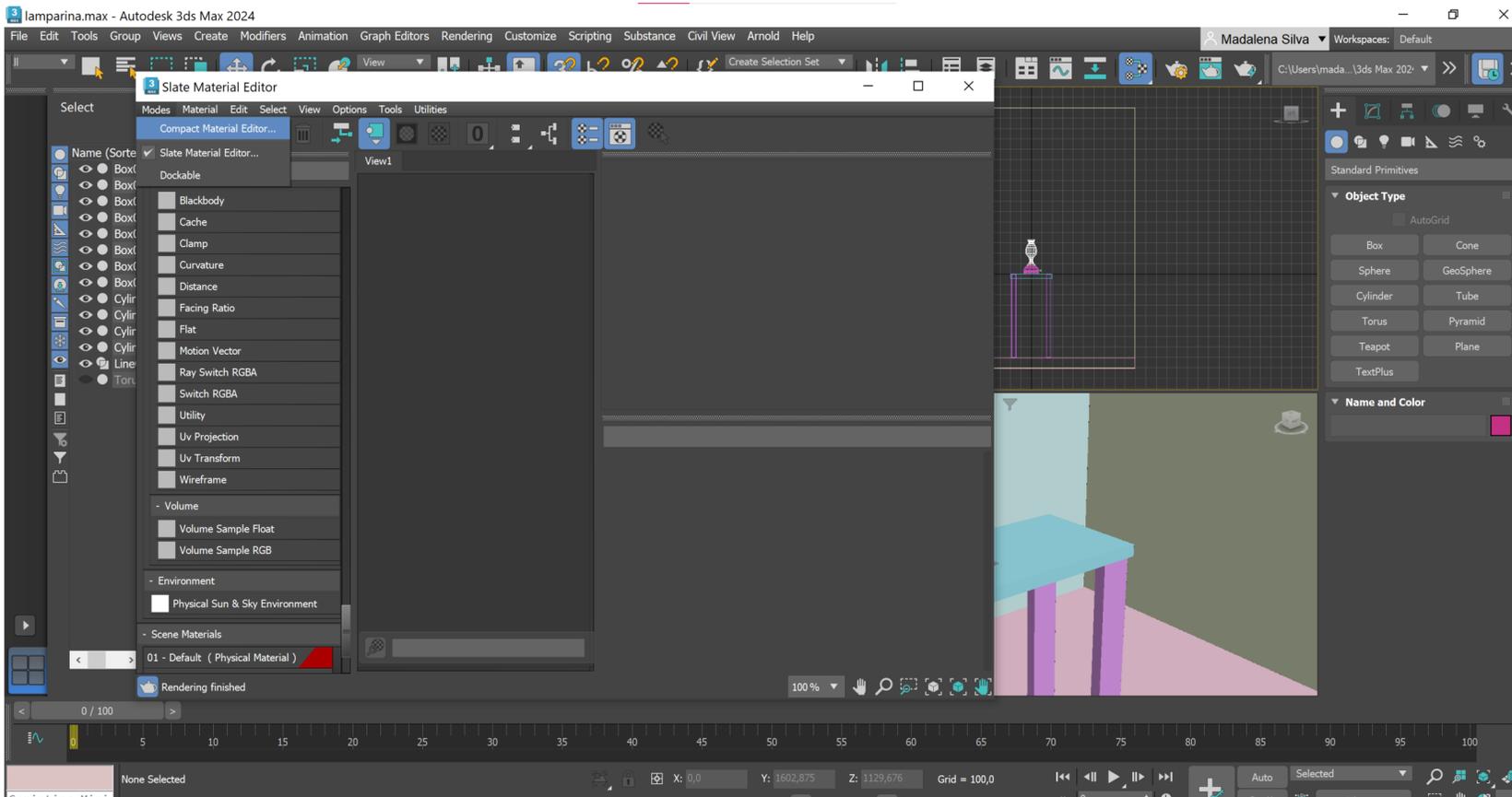
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Semana 12<sub>5/12/2023 - 8/12/2023</sub>



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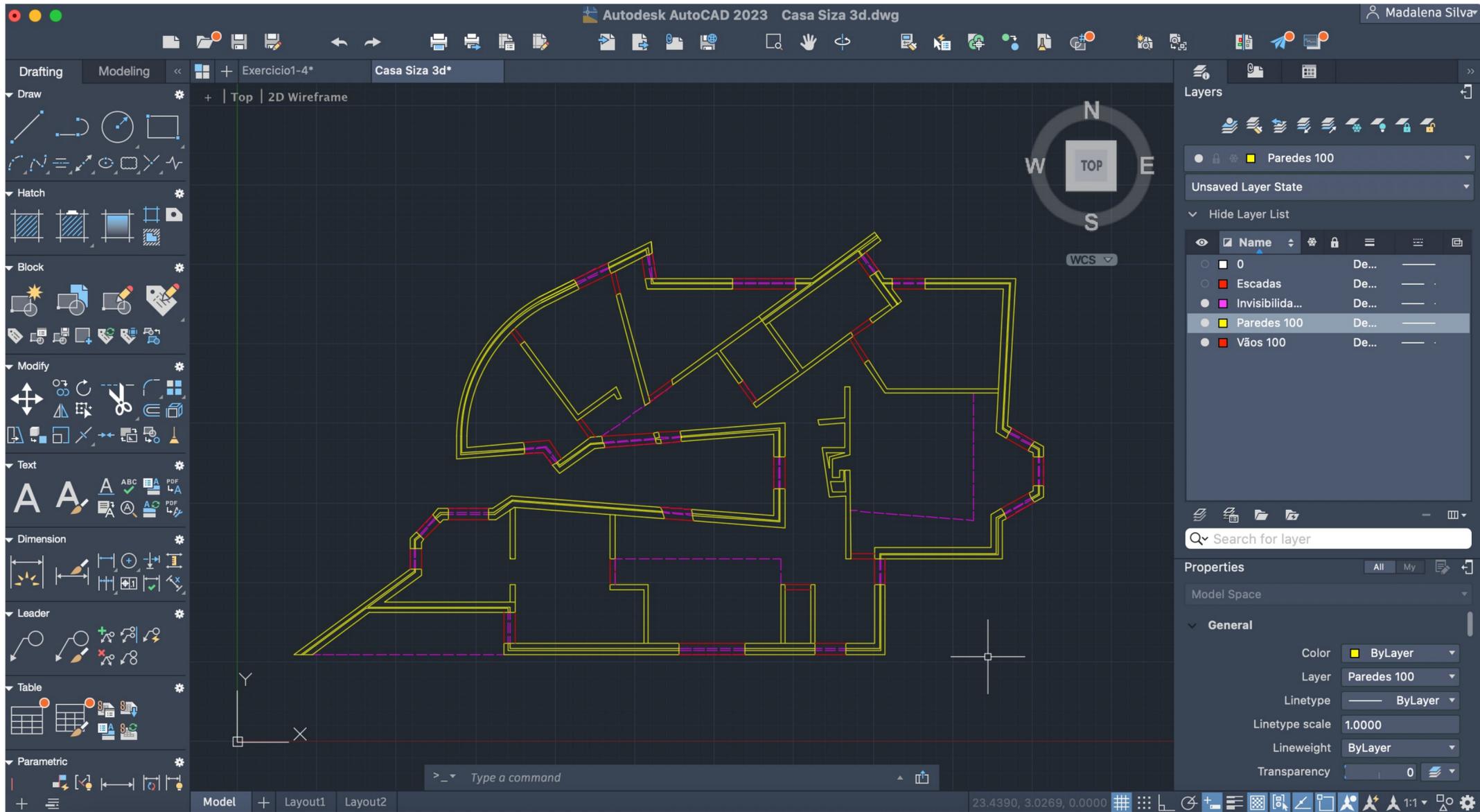
Semana 12 5/12/2023 - 8/12/2023



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Semana 12<sub>5/12/2023 – 8/12/2023</sub>

# Casa Siza 3d



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Semana 13 12/12/2023 – 15/12/2023

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Semana 13<sub>12/12/2023 – 15/12/2023</sub>

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Semana 13<sub>12/12/2023 – 15/12/2023</sub>

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Semana 14<sub>19/12/2023</sub>