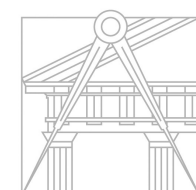


Representação Digital

2023-2024

U LISBOA

UNIVERSIDADE
DE LISBOA



FACULDADE DE ARQUITETURA
UNIVERSIDADE DE LISBOA

Mestrado Integrado em Arquitectura
Ano Lectivo 2023-2024 1º Semestre
Docente - Nuno Alão 2º Ano

20191454

MADALENA SILVA



ÍNDICE

- Semana 1 – slide 4**
- Semana 2 – slide 7**
- Semana 3 – slide 11**
- Semana 4 – slide 12**
- Semana 5 – slide 15**
- Semana 6 – slide 18**
- Semana 7 – slide 21**
- Semana 8 – slide 22 (Semana de Entrega do Trabalho 1 Fase 1)**
- Semana 9 – slide 30**
- Semana 10 – slide 33 (Semana de Entrega dos Polígonos 3D)**
- Semana 11 – slide 51 (Guggenheim)**
- Semana 12 – slide 65 (3ds max- Lamparina)**
- Semana 13 – slide 82 (Plana casa Siza 3D)**
- Semana 14 – slide (Semana de Entrega do Trabalho 1 Fase 2)**

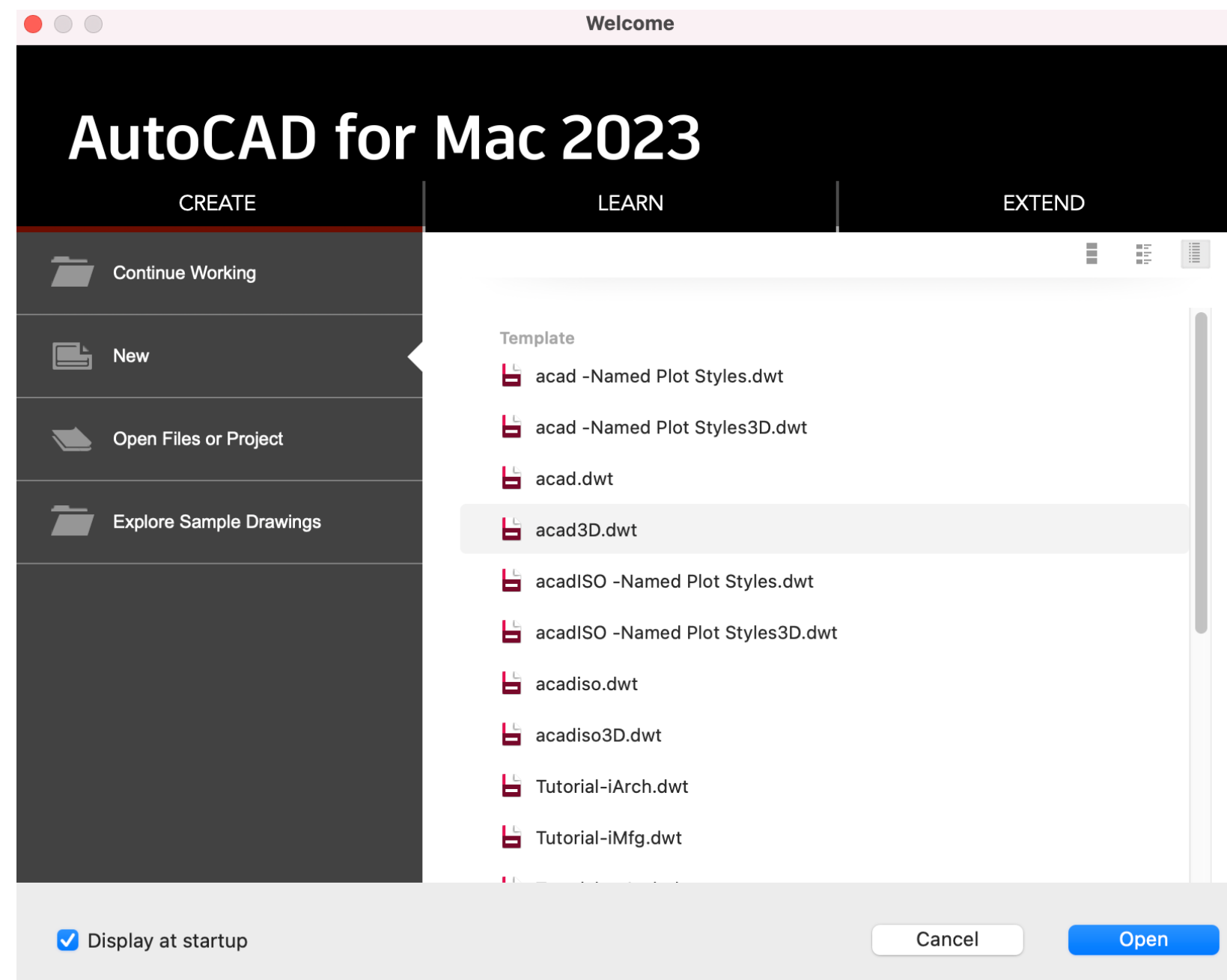
Autocad 2023

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
 - °: º
 - ª: ª
 - ´: &(letra)acute
 - `: &(letra)grave
 - ^: &(letra)circ
- Cor usada de fundo: palevioletred
- W3 Schools: html e CSS tutoriais

FileZilla:

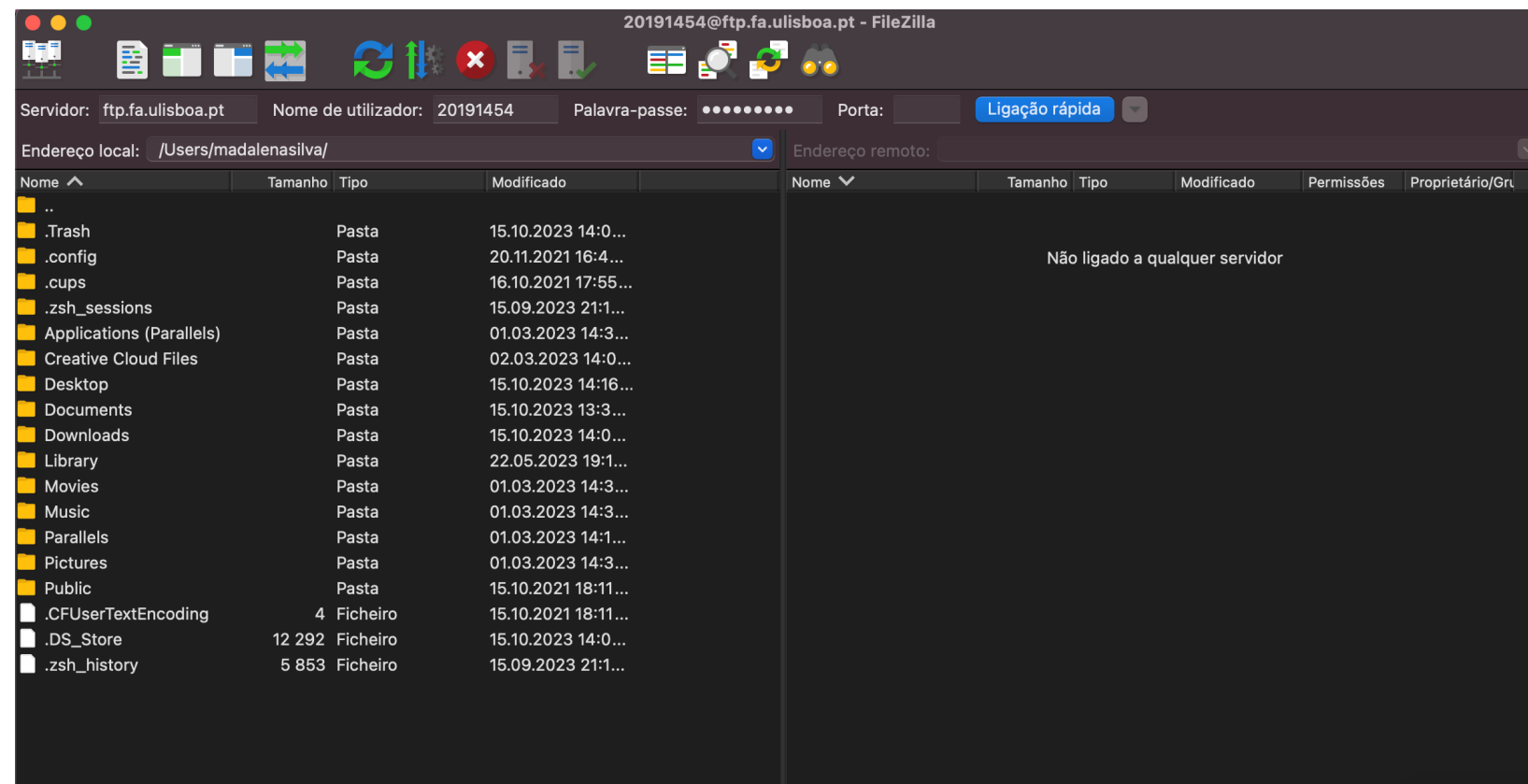
- Servidor: ftp.fa.ulisboa.pt
- Acesso: Utilizador (20191454) e palavra-passe do moodle
- Endereço remoto: /public_html
Para inserir o index.html, etc



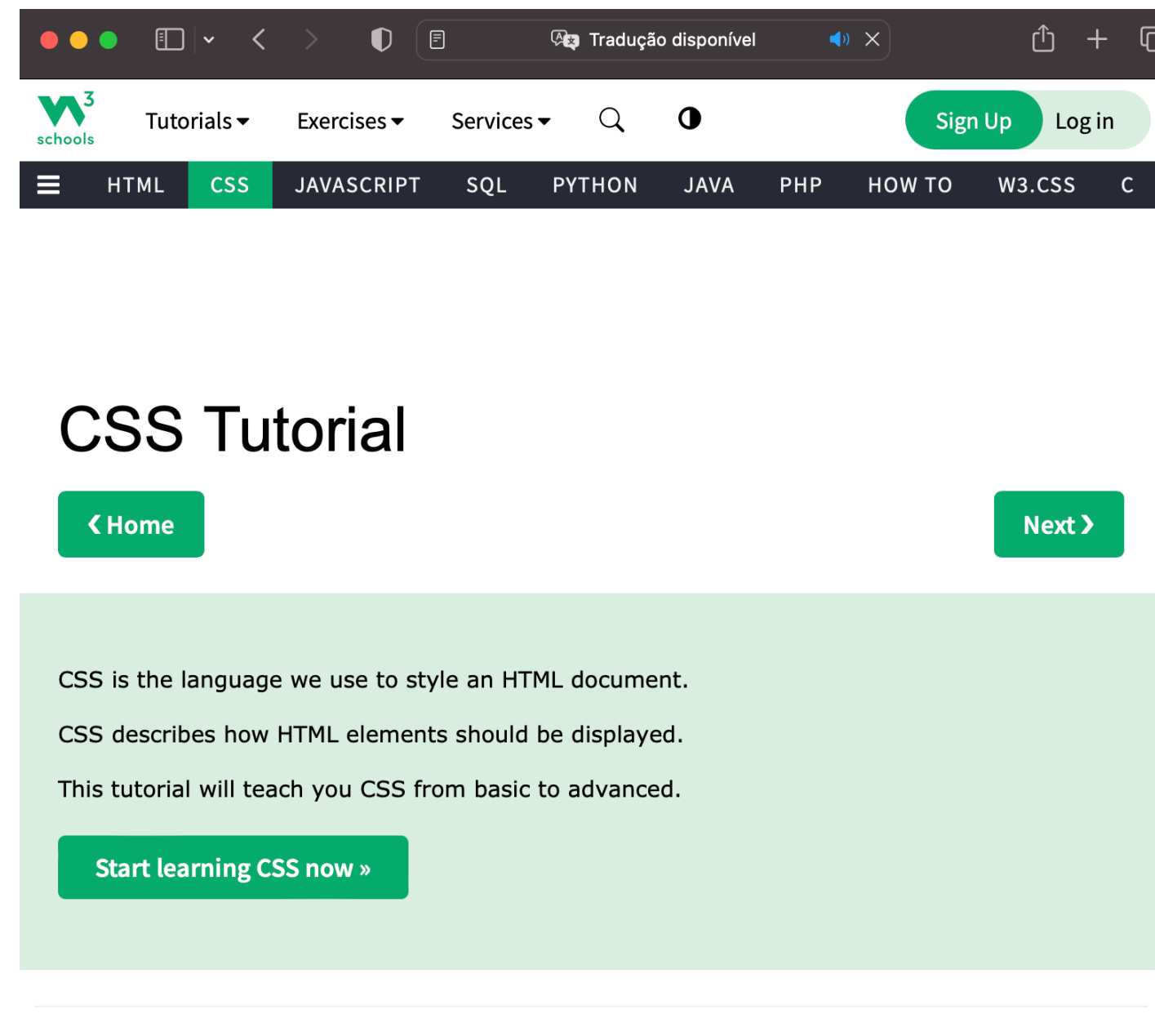
Autocad 2023



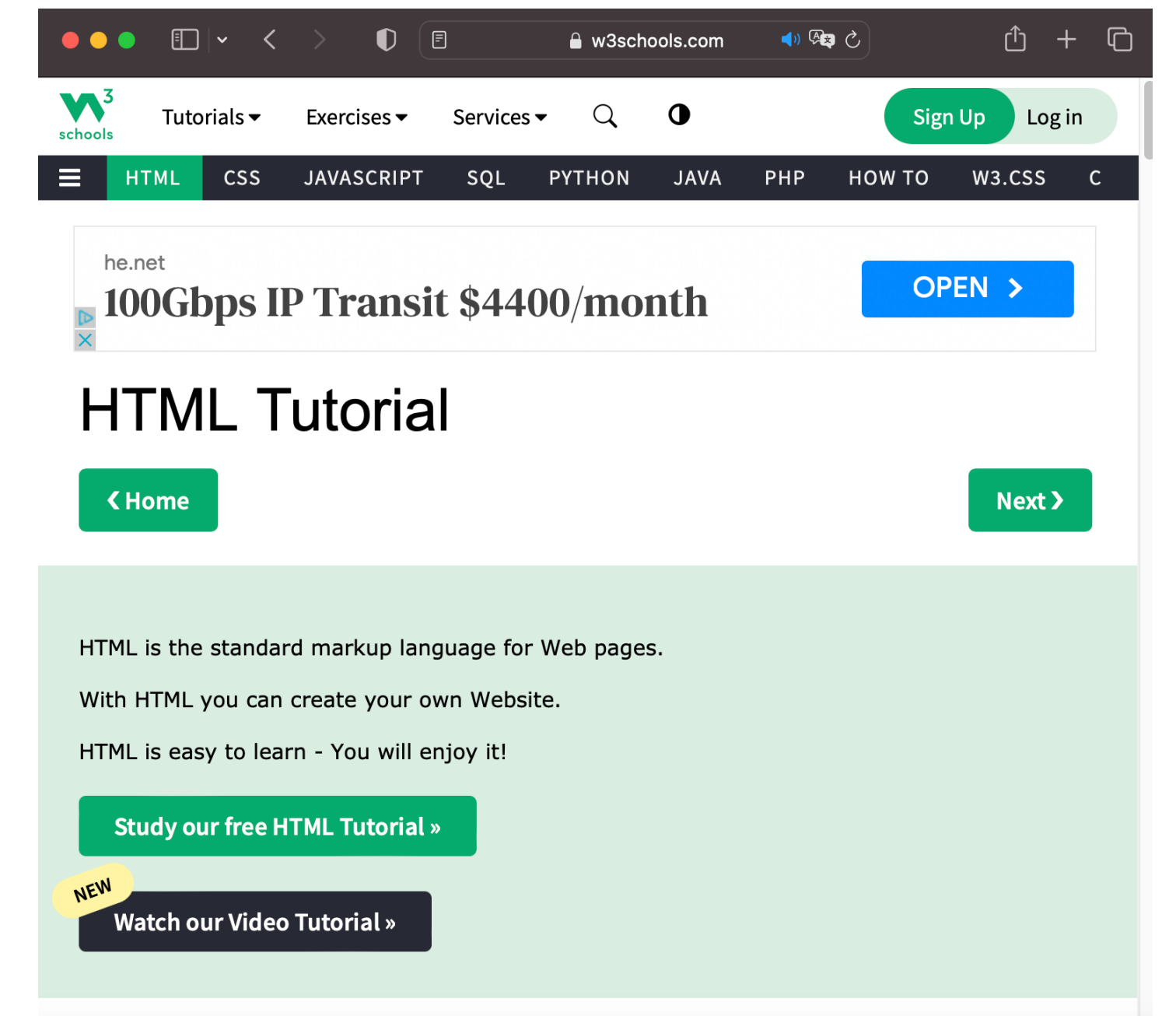
Bracketts
Edição de html



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:

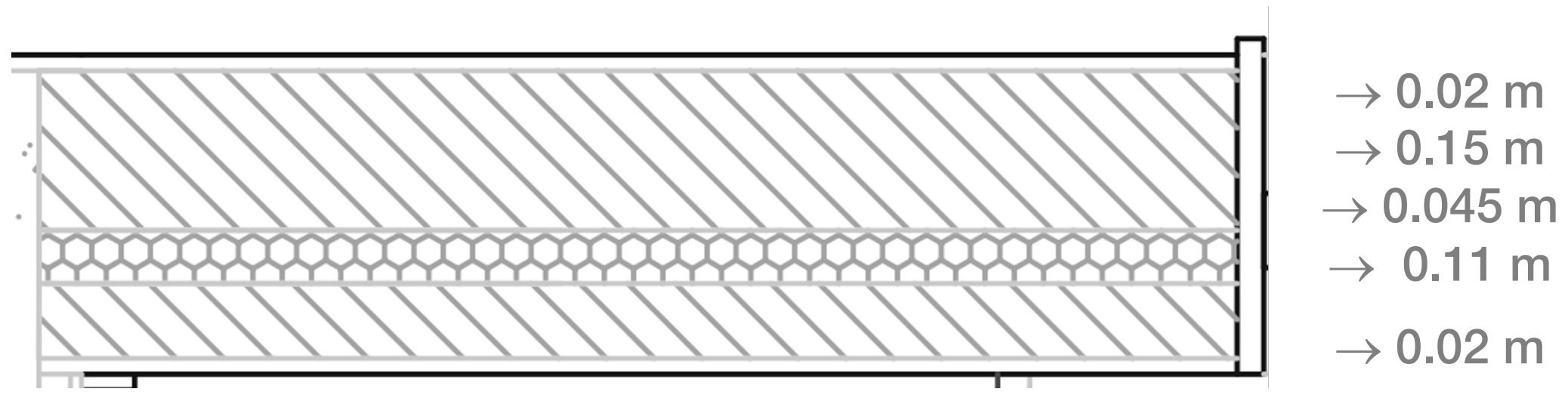
1º Descobrir a medida do real

-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_{4/10/2023 - 6/10/2023}

Autocad:

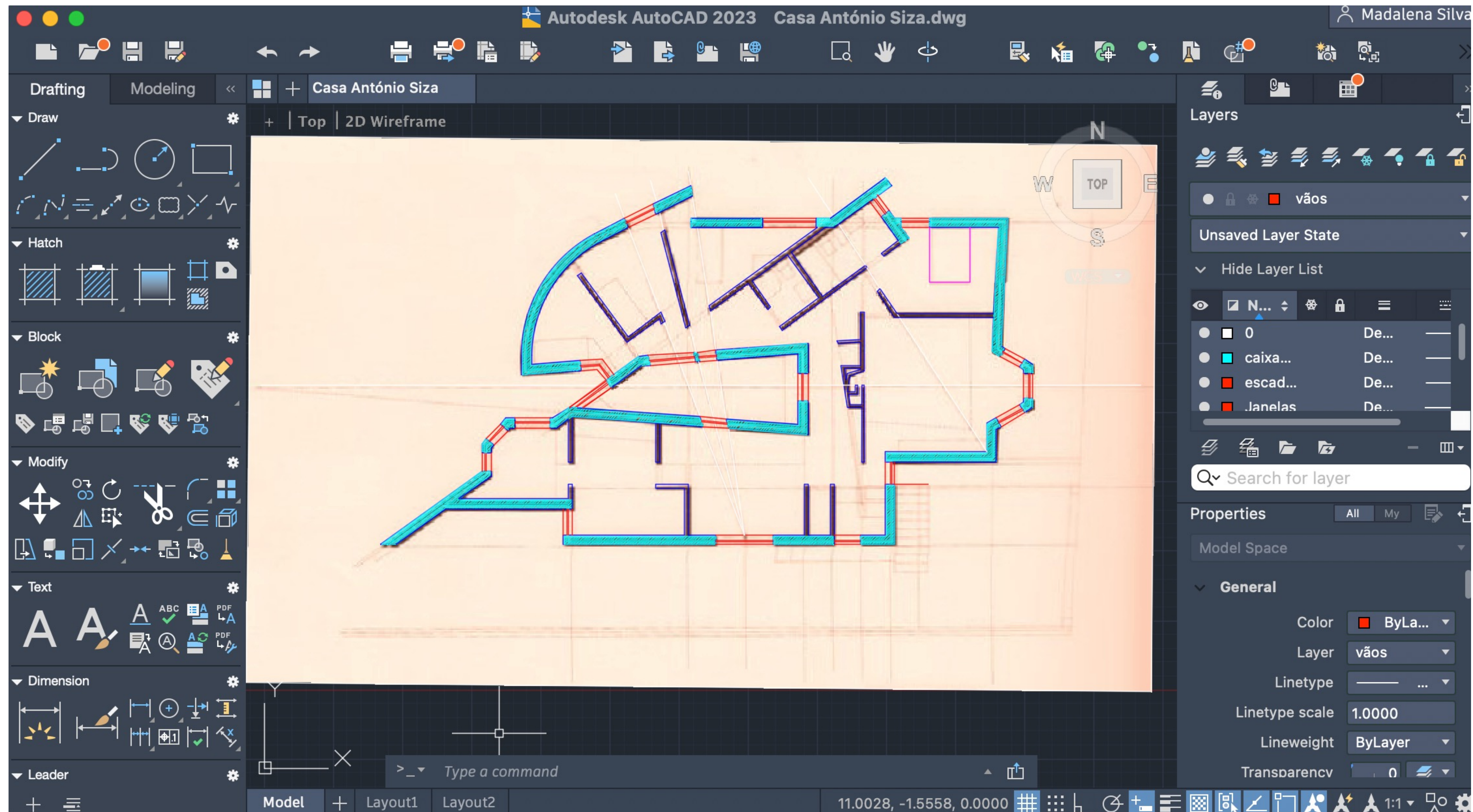
- Alinhar uma imagem

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

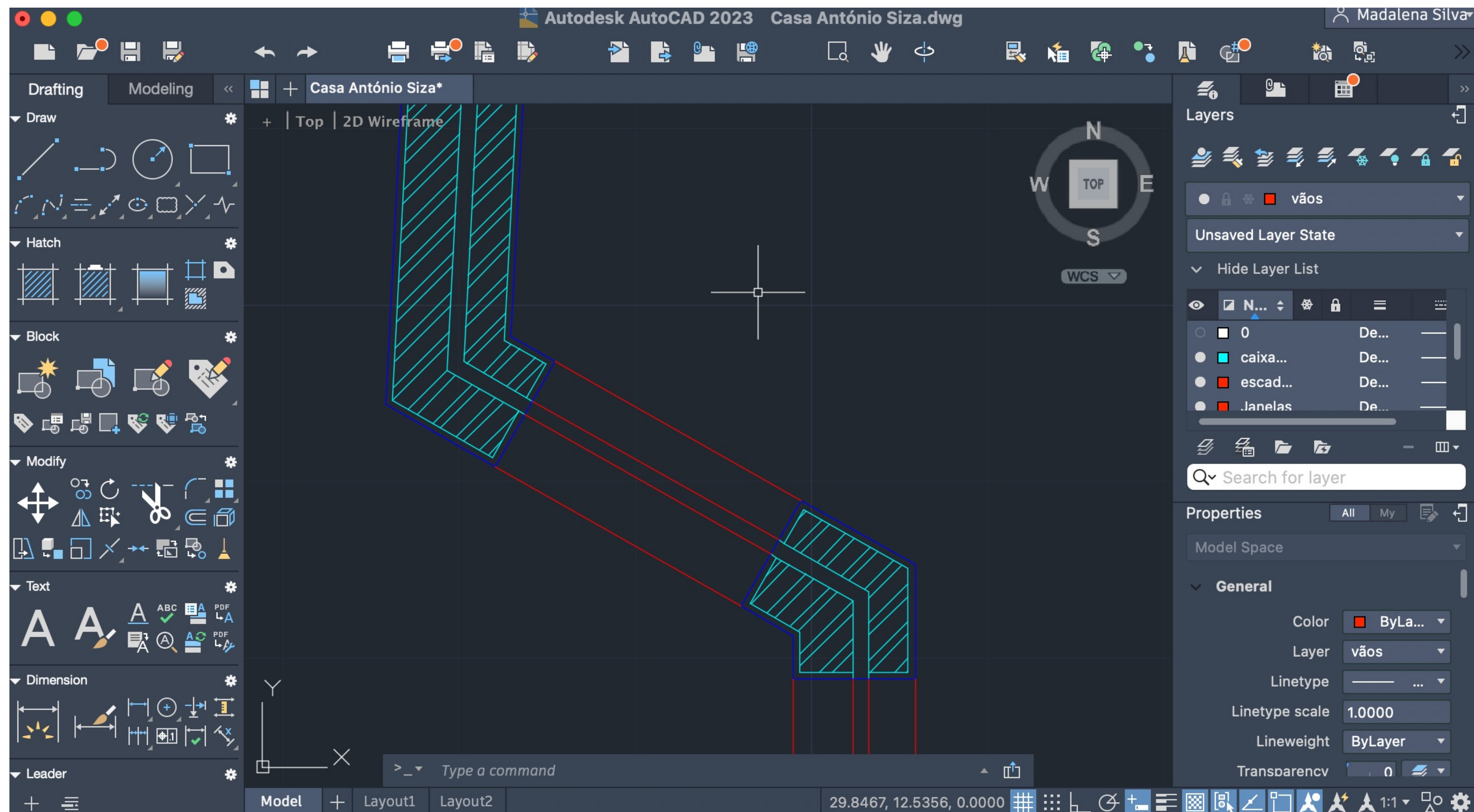
- Comandos:

- ARC: Arco (para a parede curva)



ReDig

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

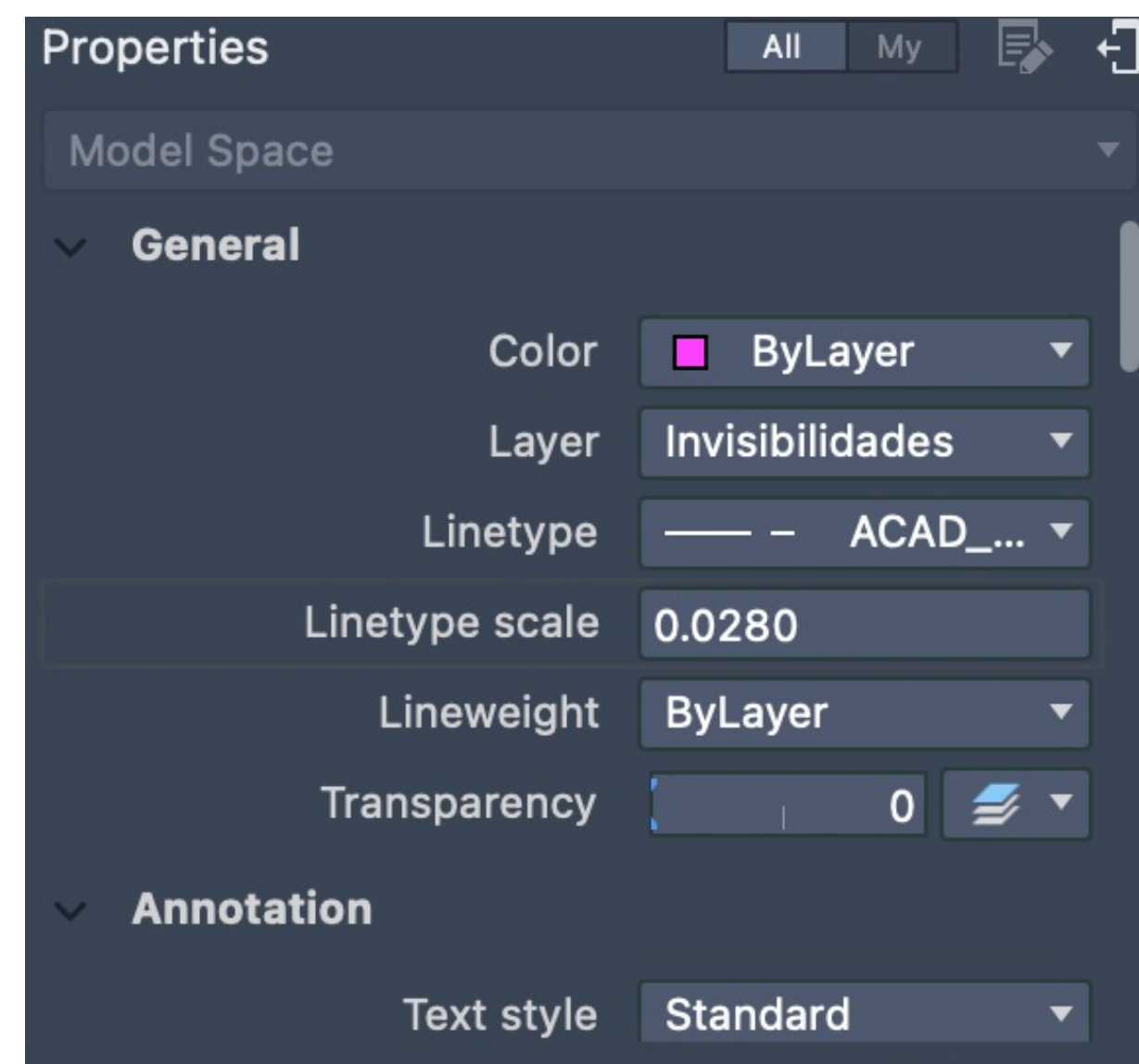


ReDig

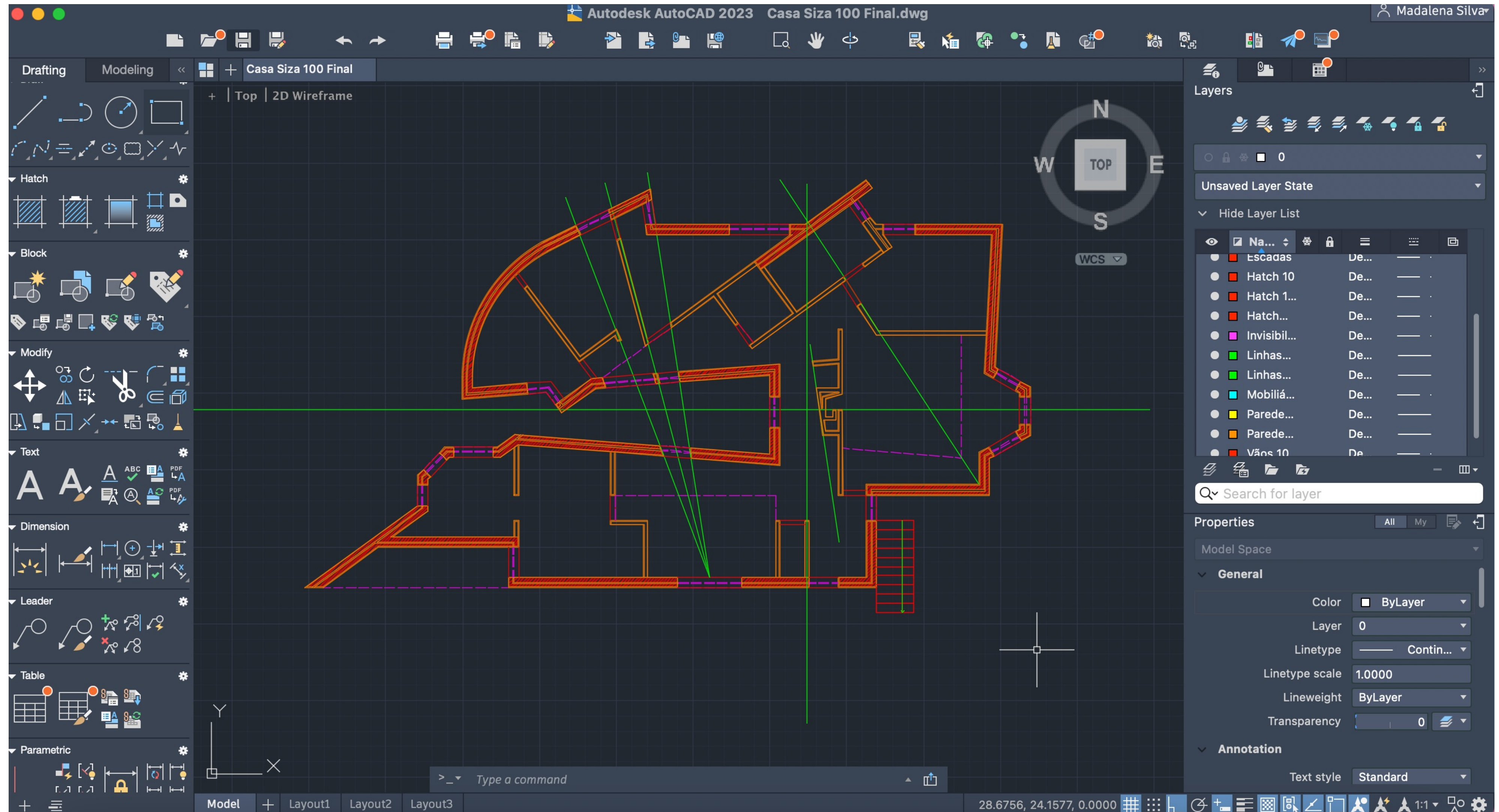
Semana 4_{10/10/2023 - 13/10/2023}

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

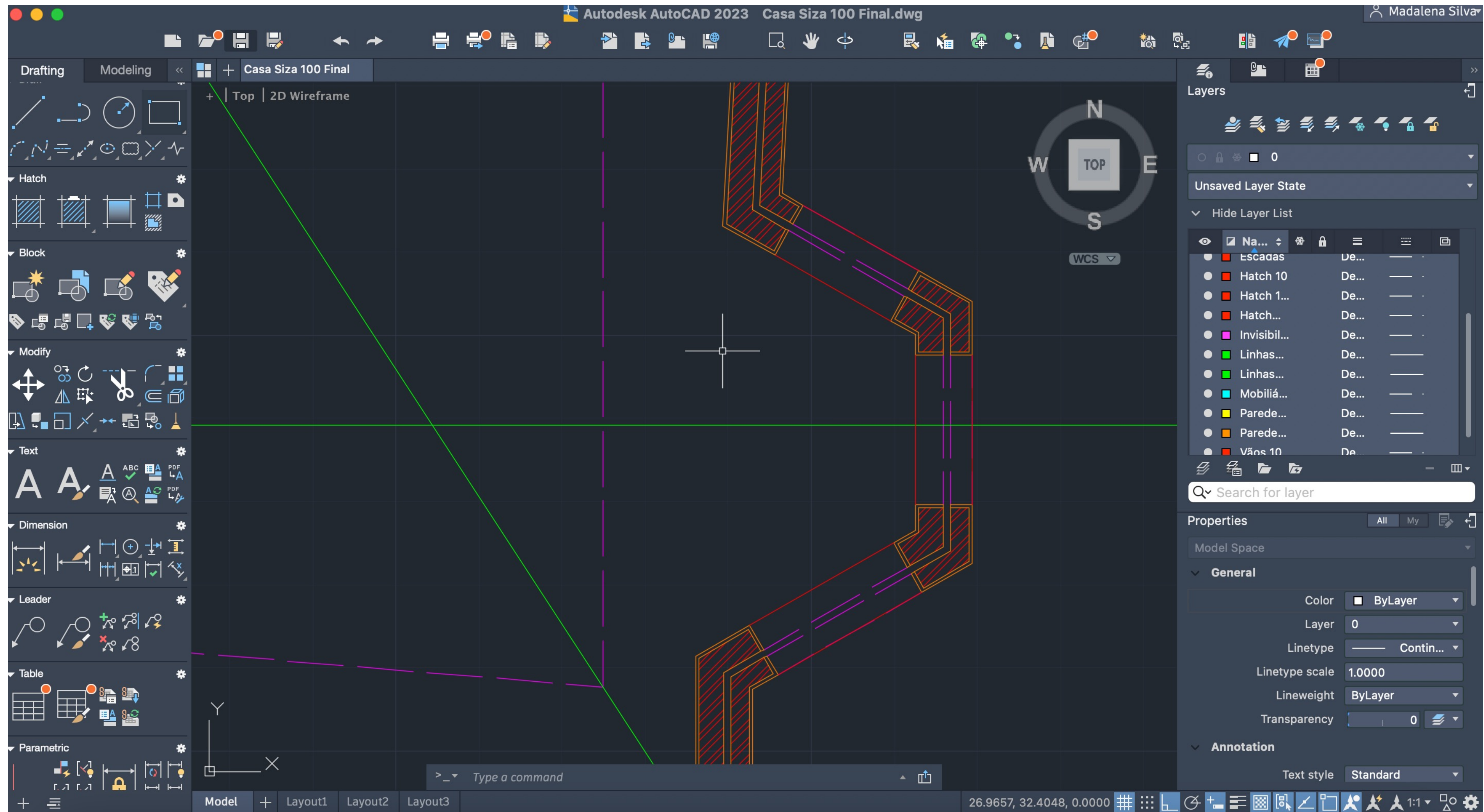


Propriedades da Layer das Insibilidades:
-Linetype: ACAD_ISO02W100



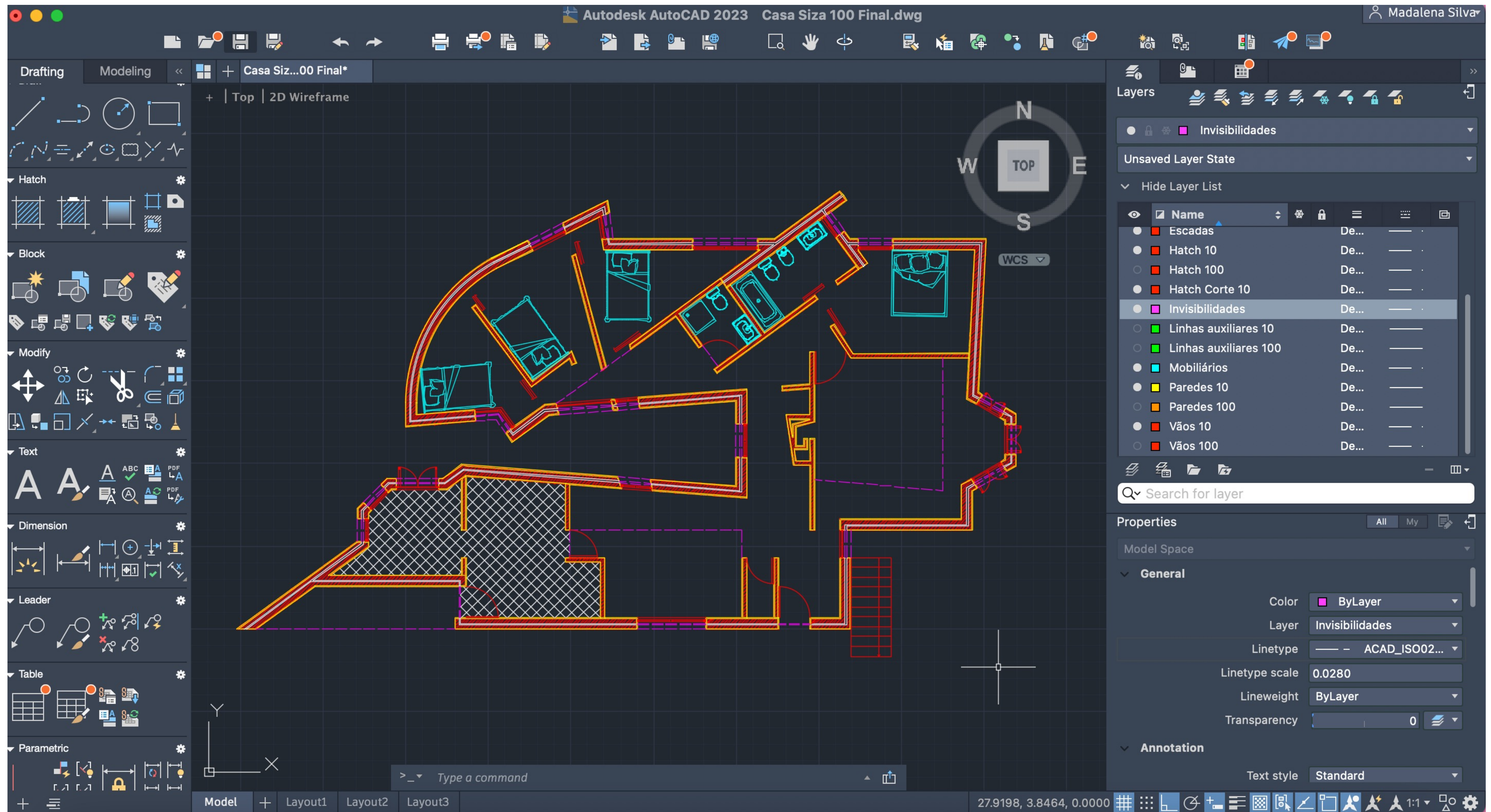
ReDig

Semana 5_{17/10/2023 - 20/10/2023}



ReDig

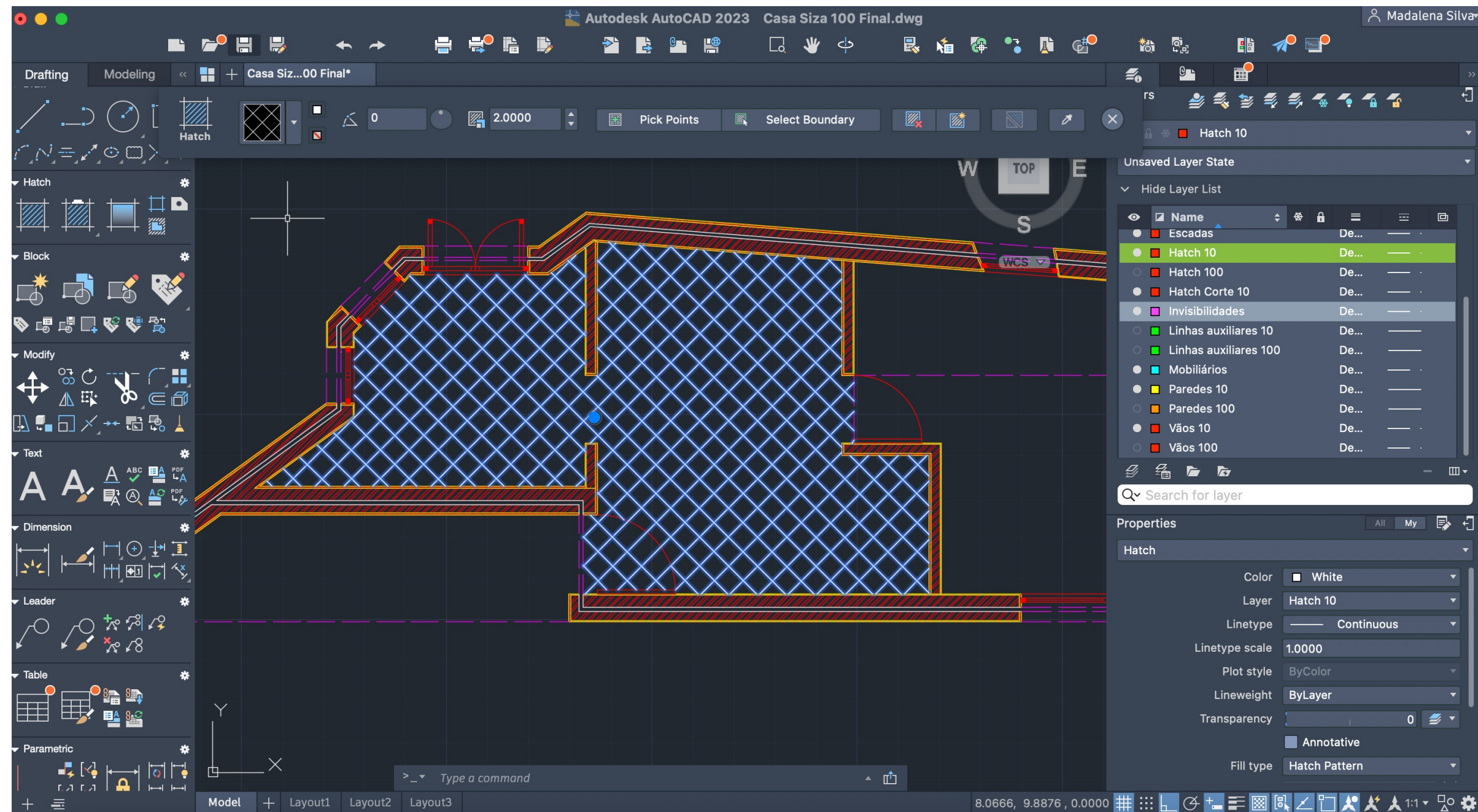
Semana 5_{17/10/2023 - 20/10/2023}



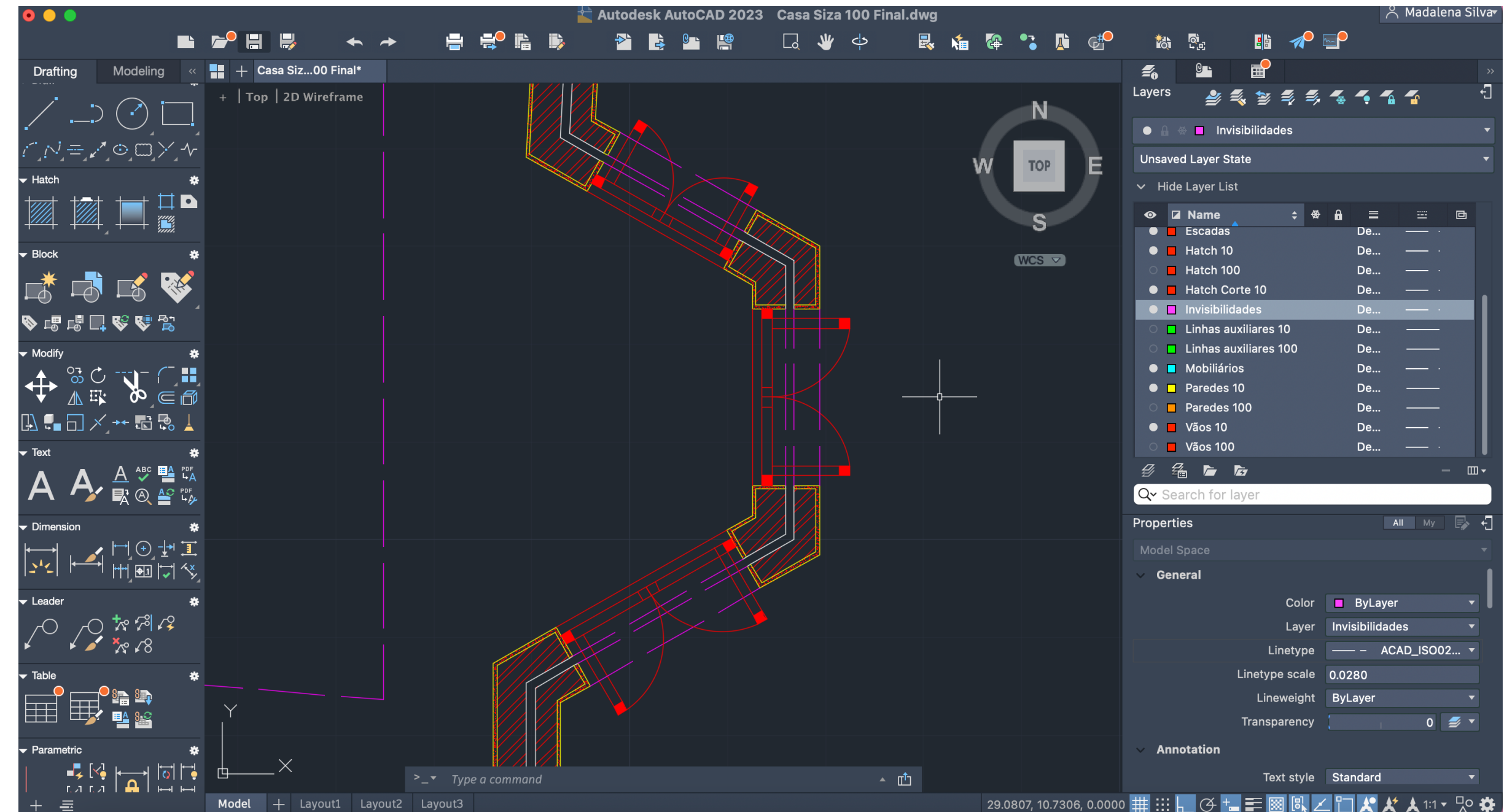
Planta 10

ReDig

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



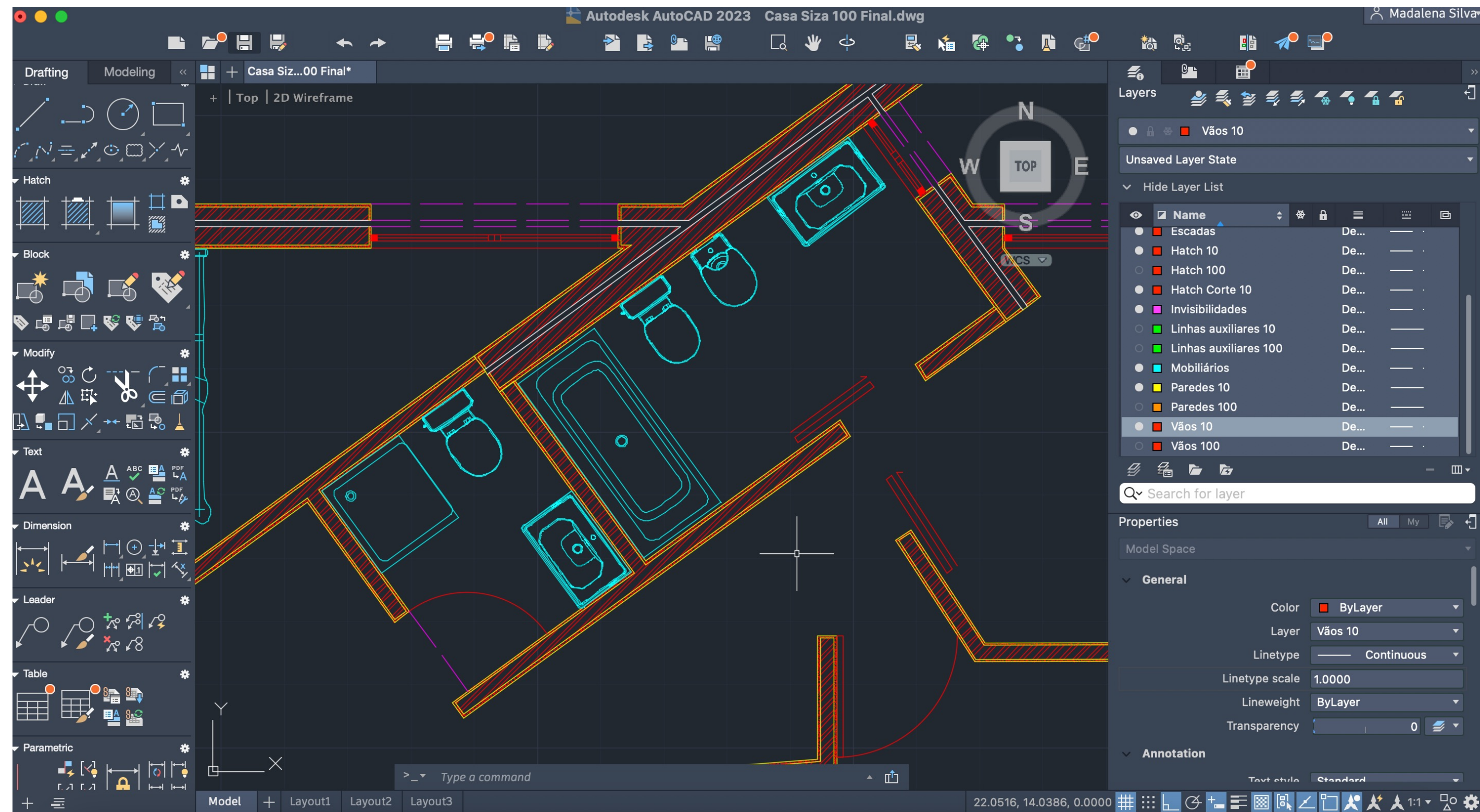
Pormenor da cozinha



Pormenor das janelas abertas

ReDig

Semana 6_{24/10/2023 - 27/10/2023}



Pormenor das casas de banho:
Produtos sanitários retirados do site www.roca.pt, descarrados em dwg, comando COPY

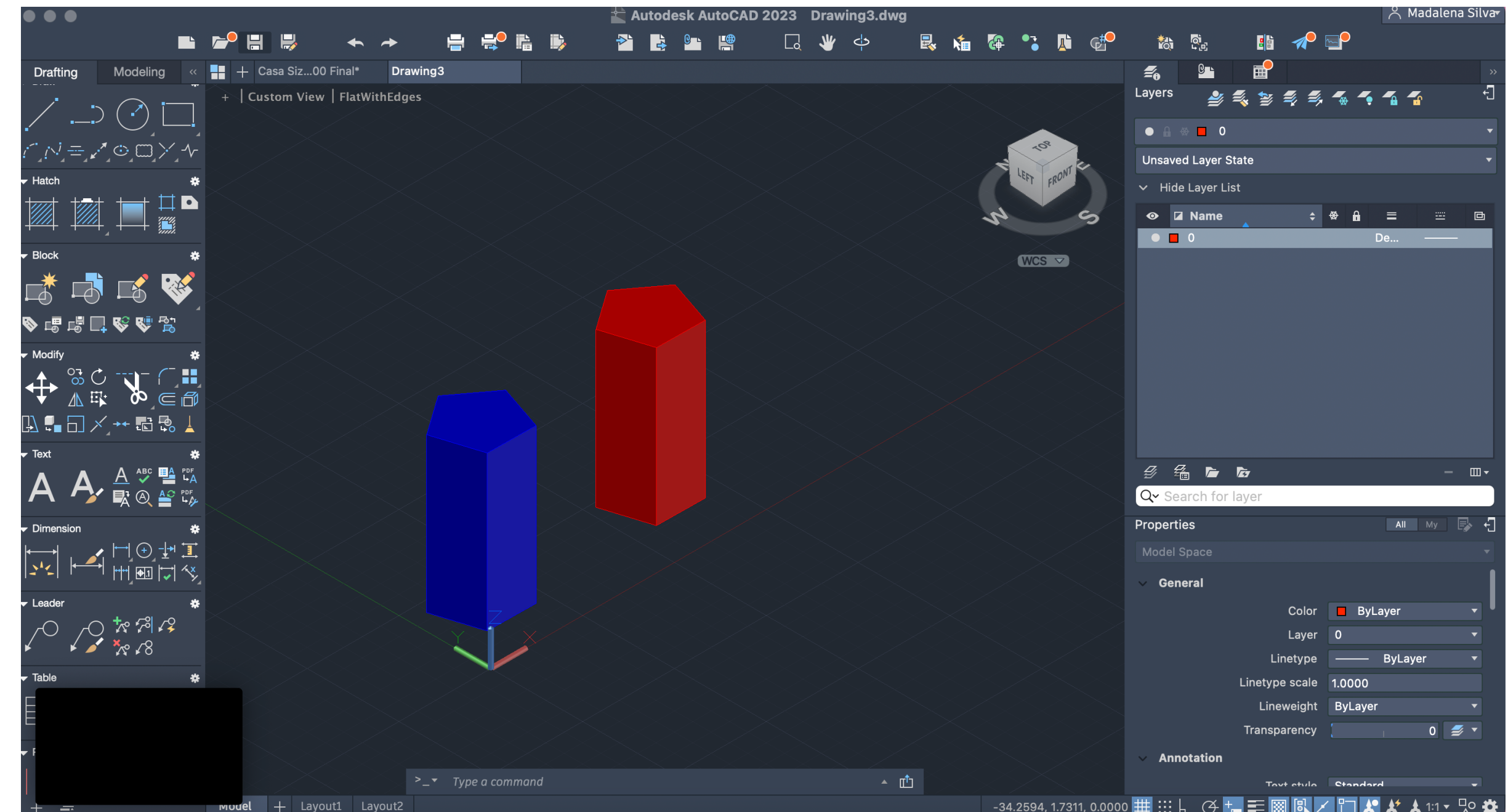
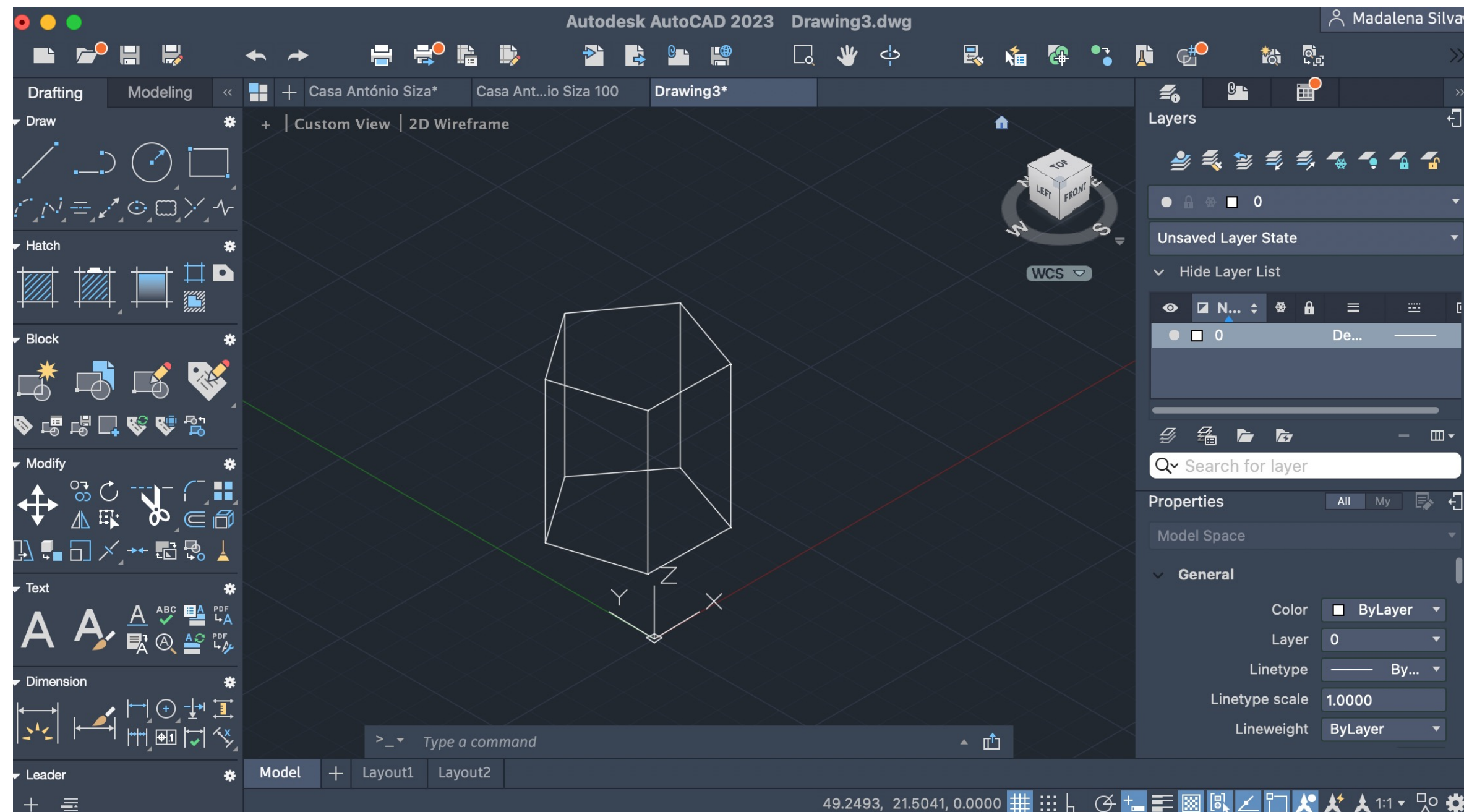
Pormenor das portas deslizantes e janelas fechadas

ReDig

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

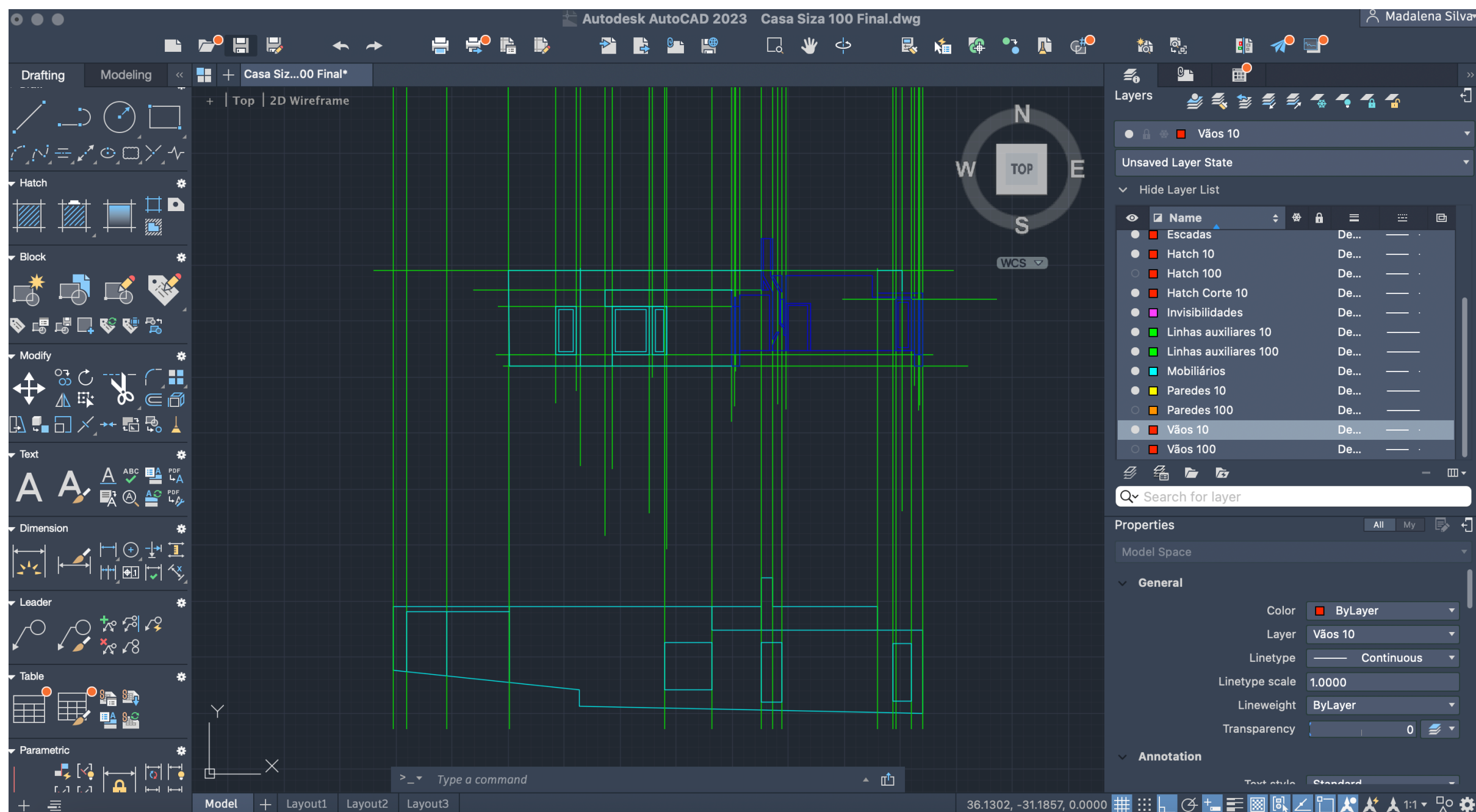
Autocad:

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

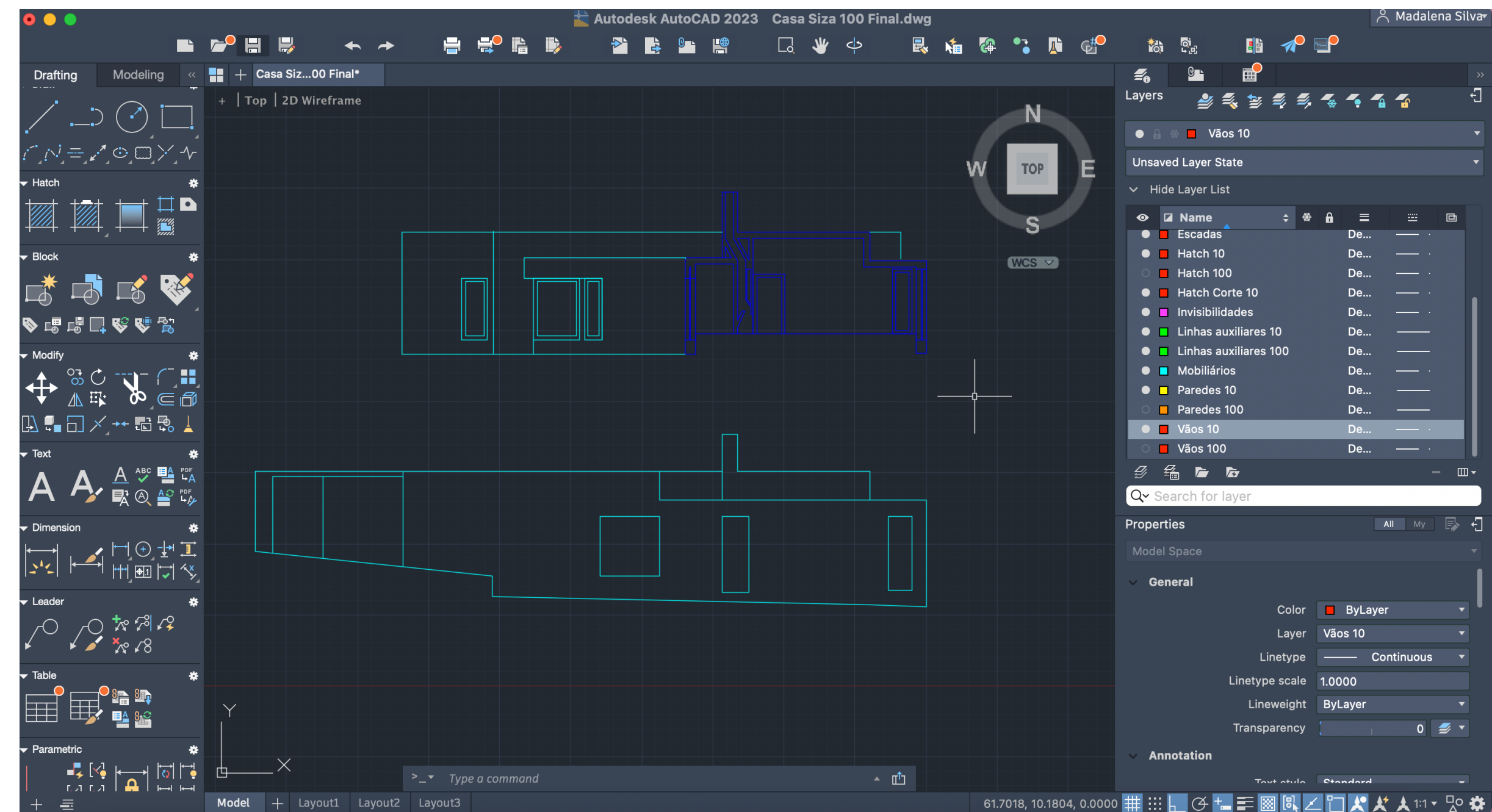


ReDig

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



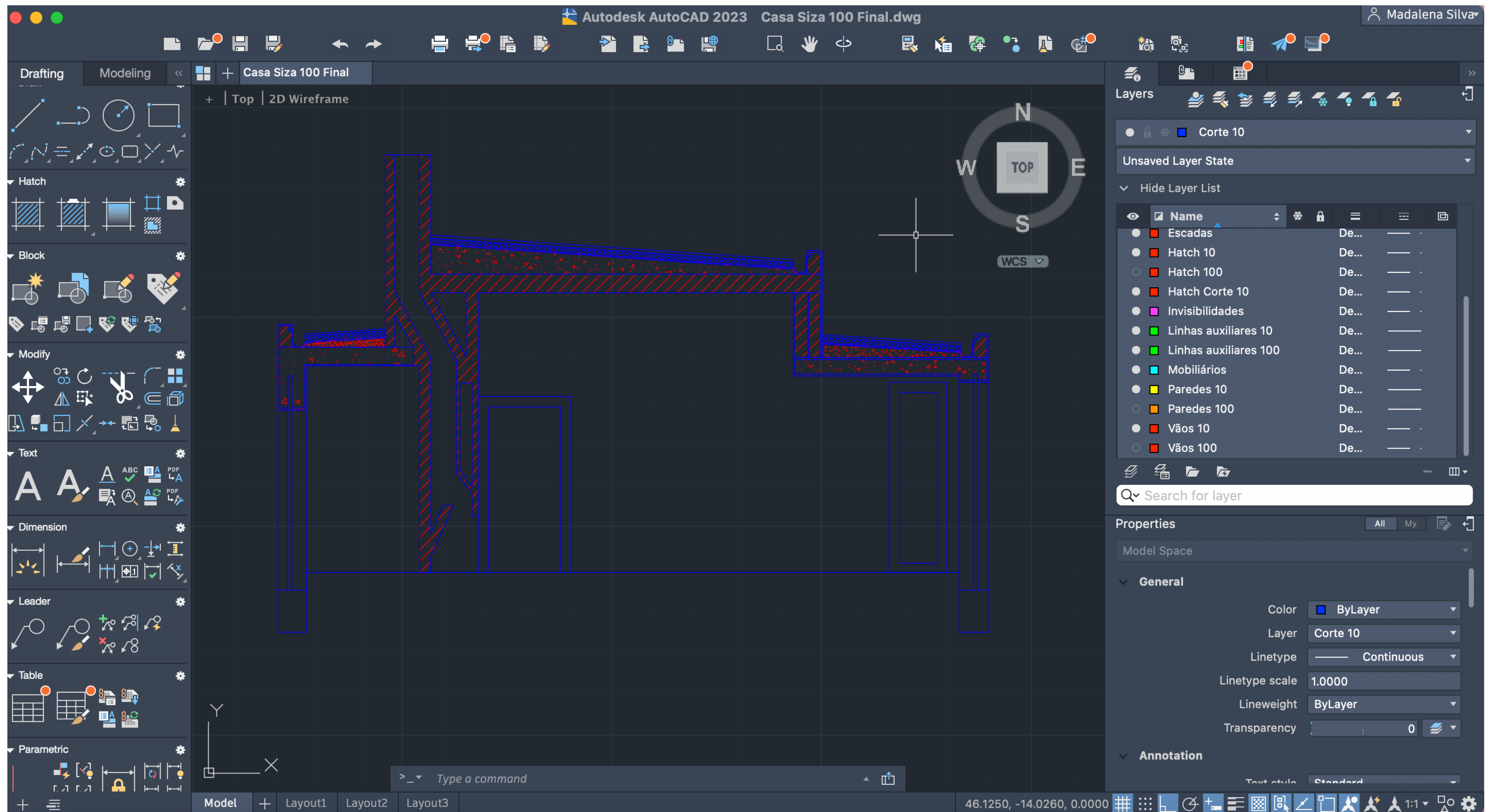
Corte e Alçado articulado



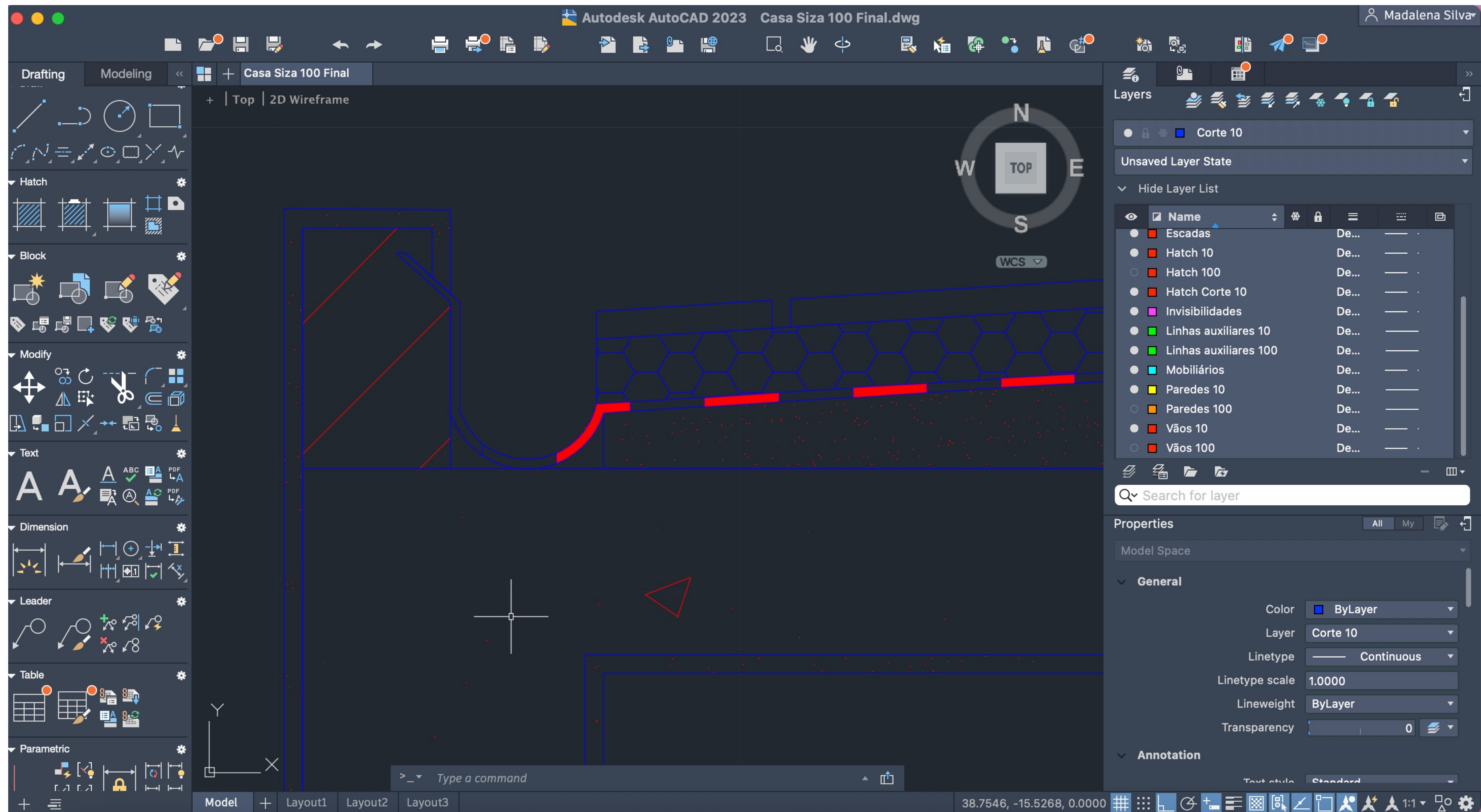
Corte e Alçado

ReDig

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



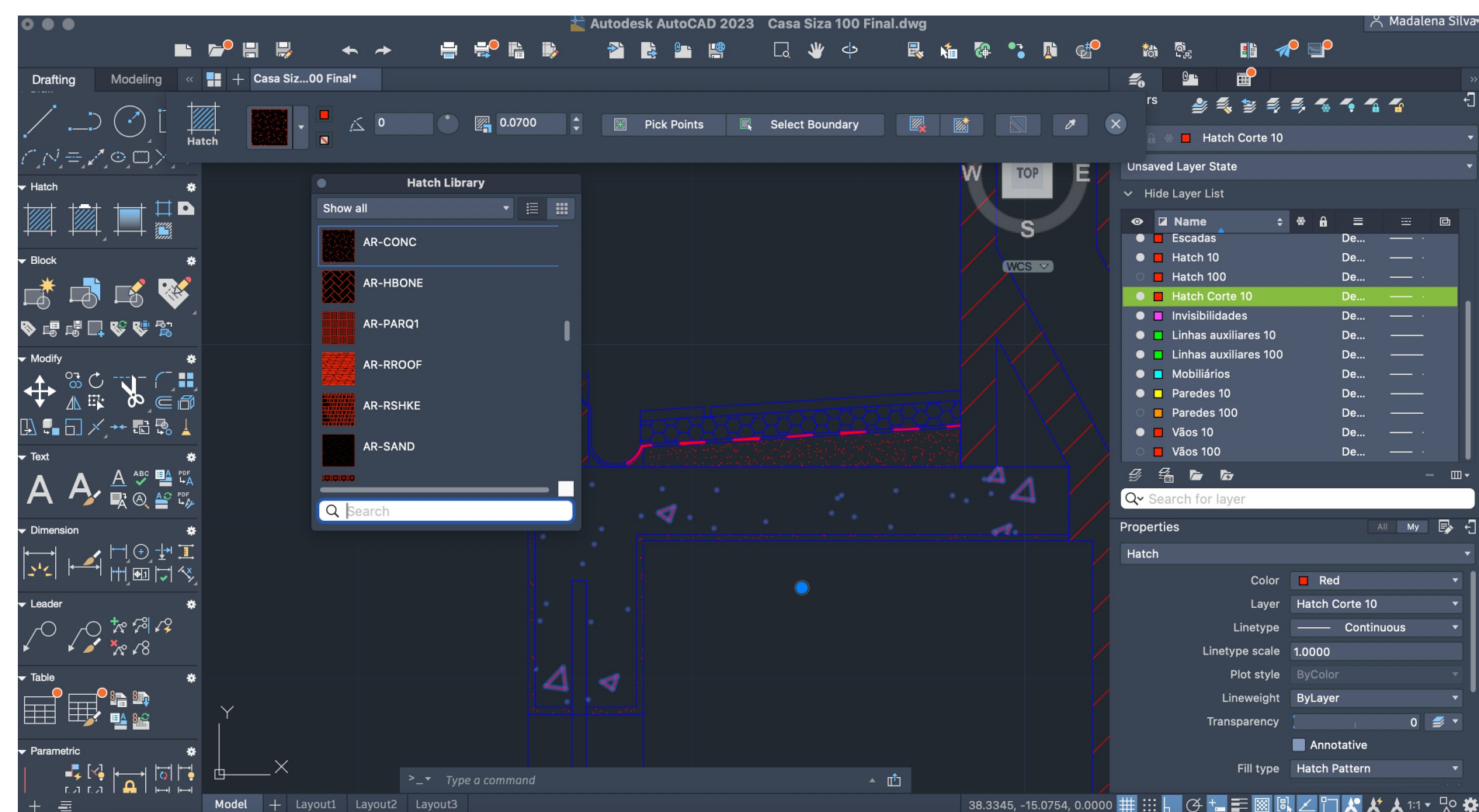
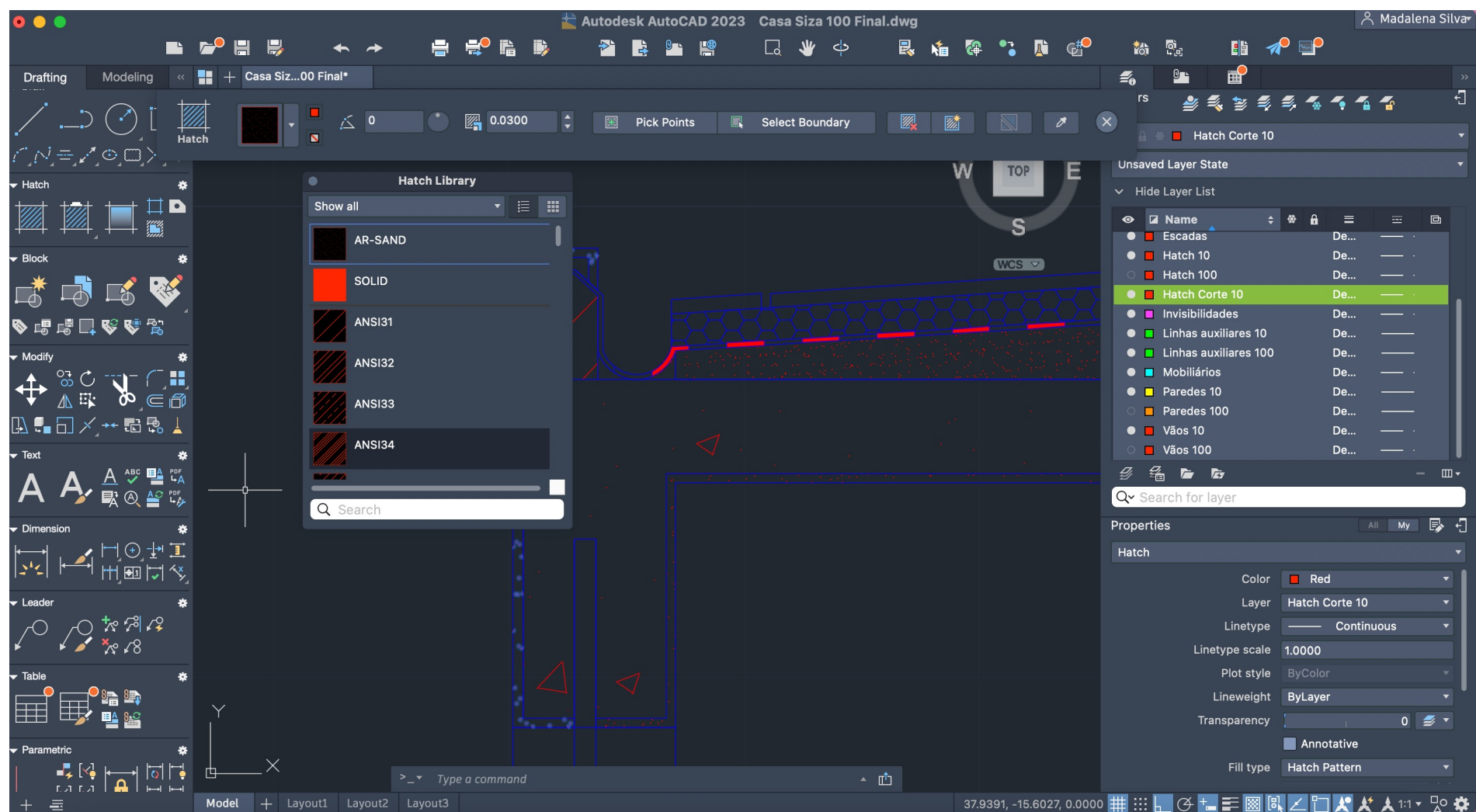
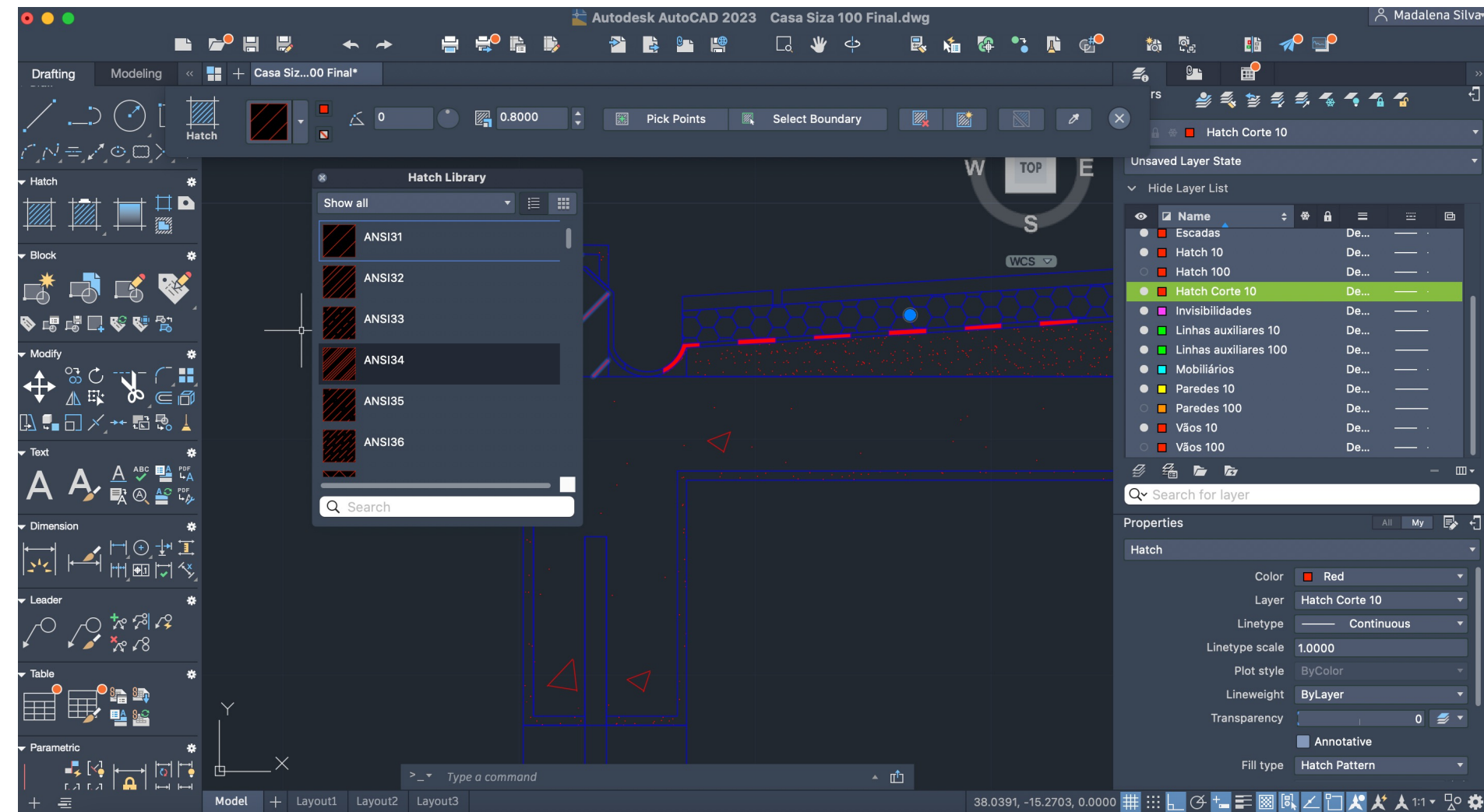
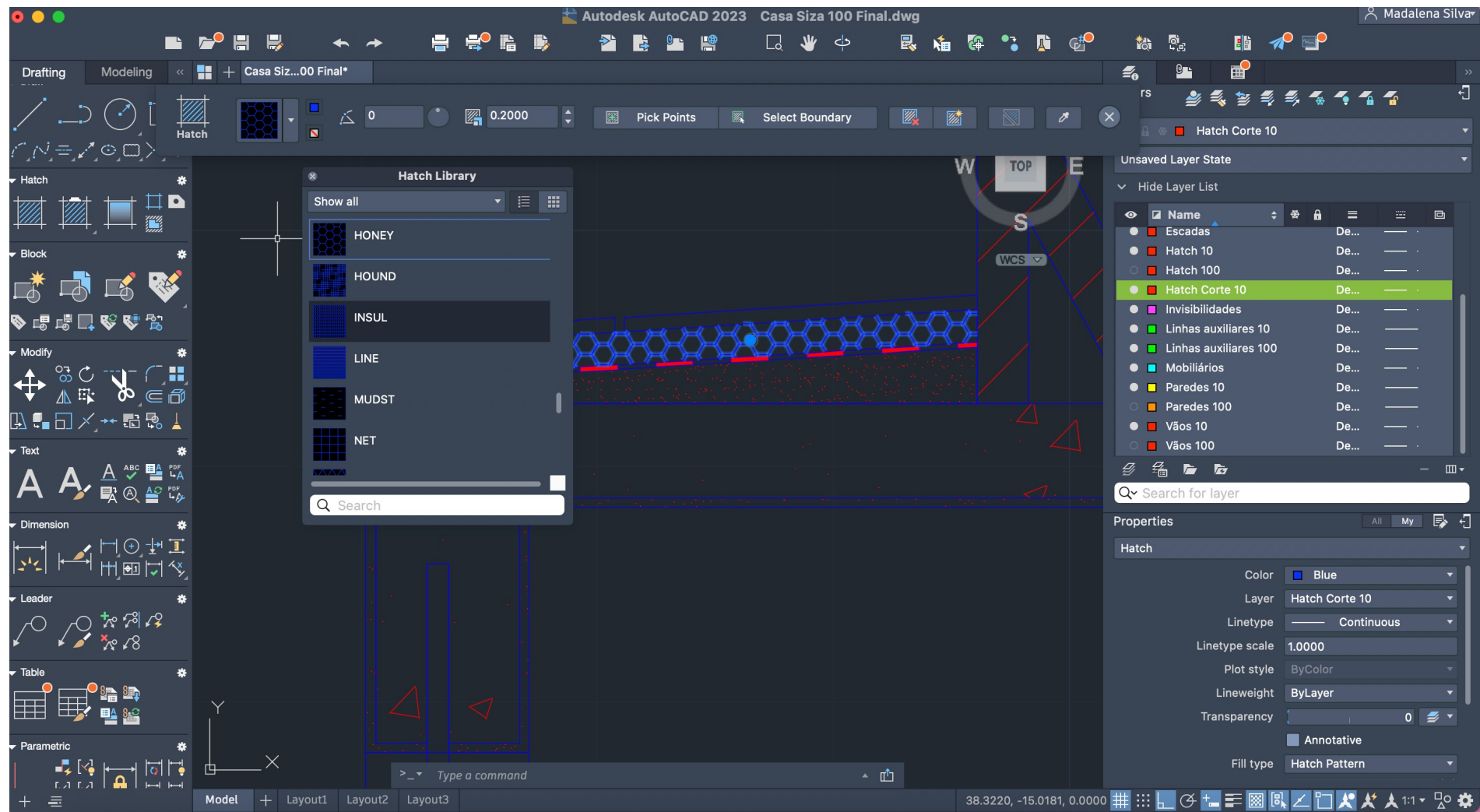
Pormenor de cobertura em corte



Pormenor de cobertura em corte

ReDig

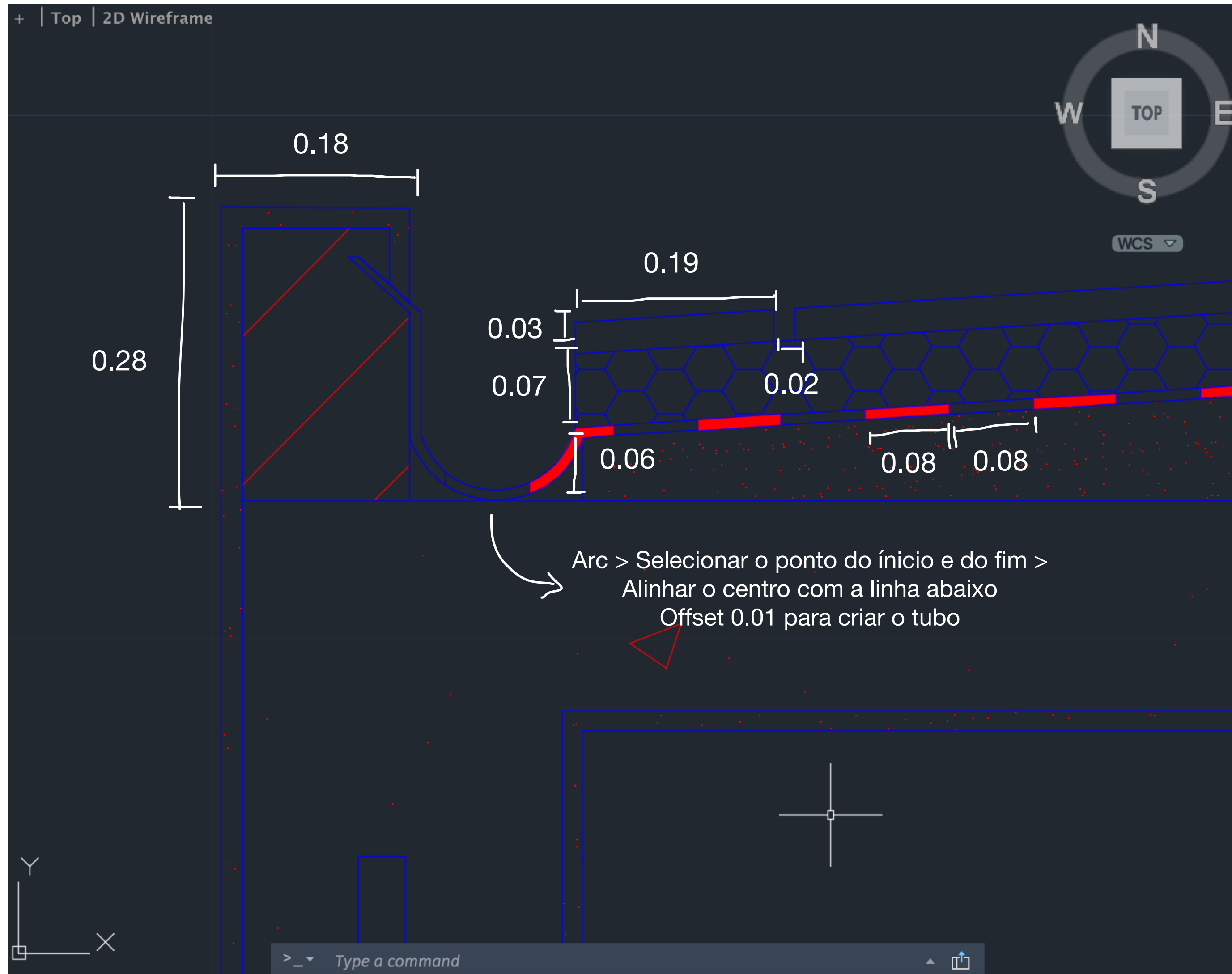
Semana 8 7/11/2023 - 10/11/2023

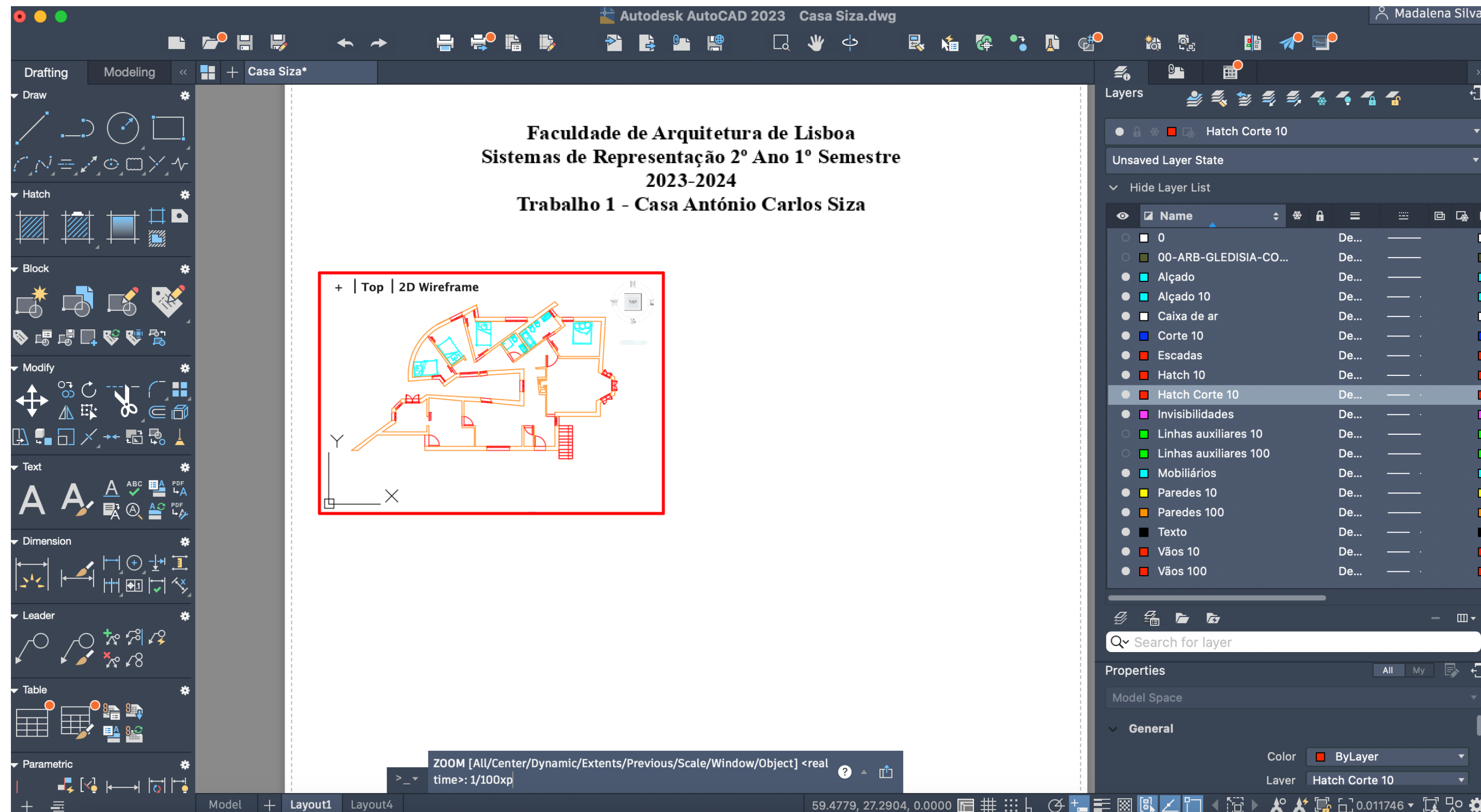


Hatches do pormenor

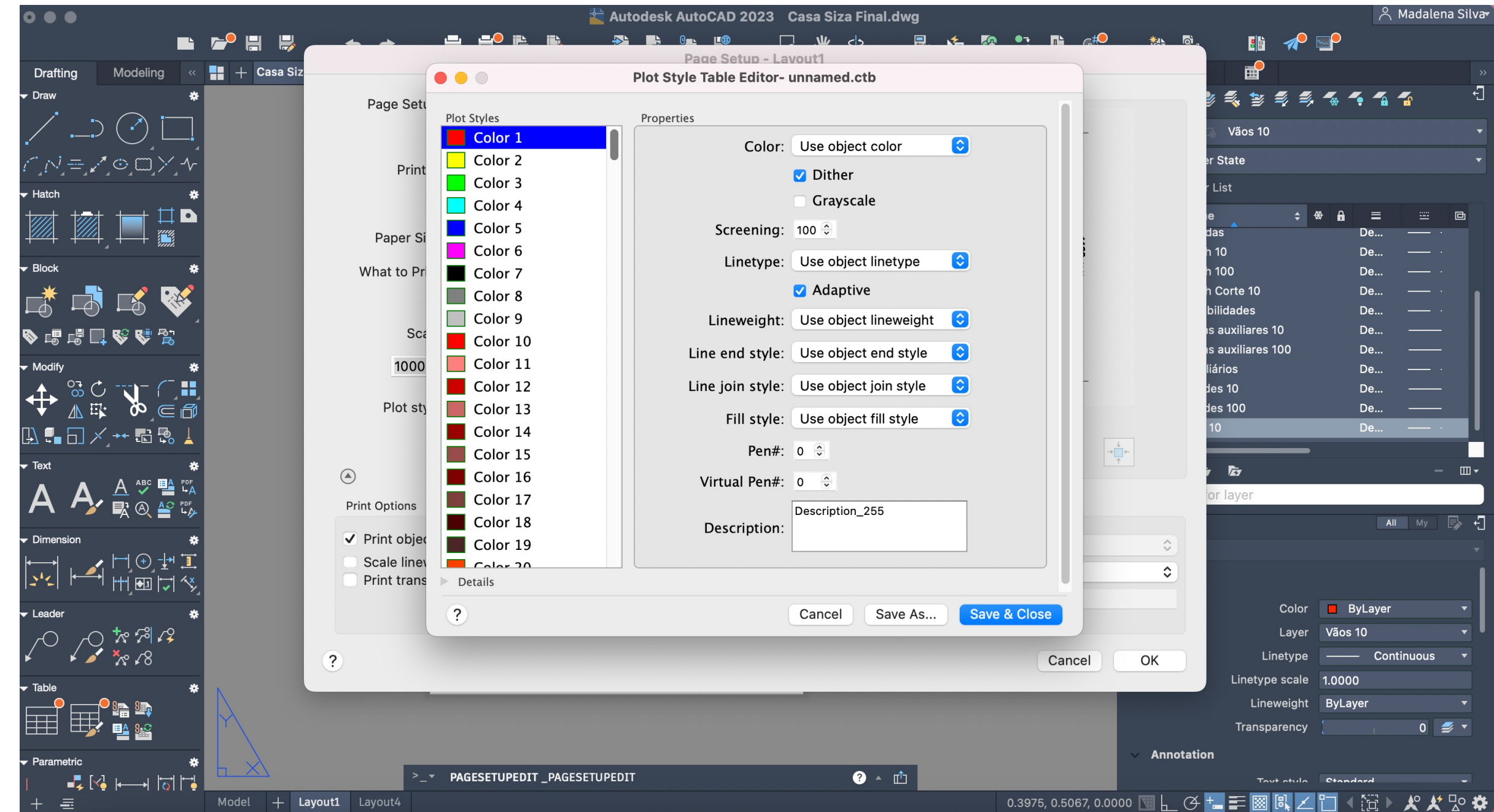
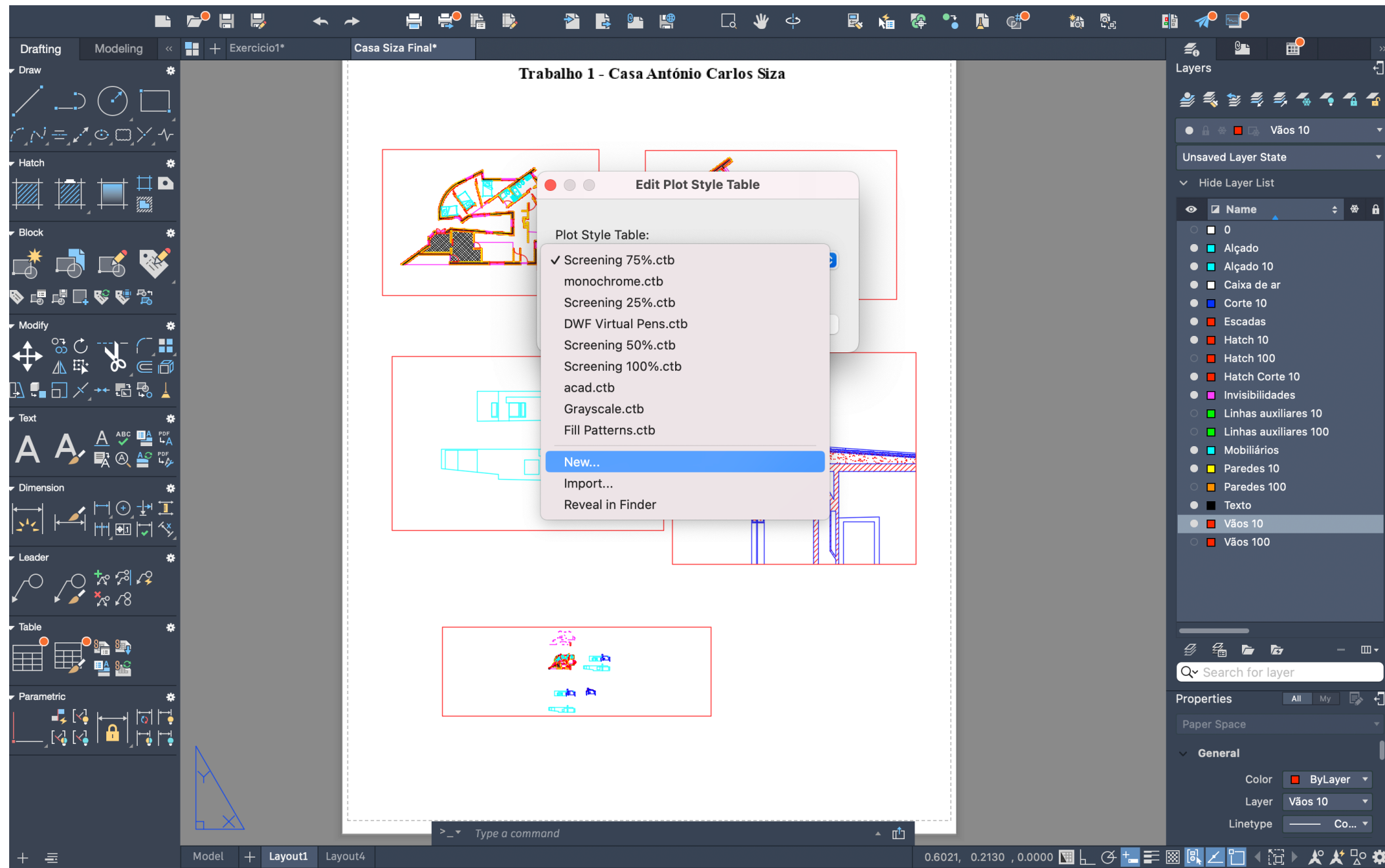
ReDig

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



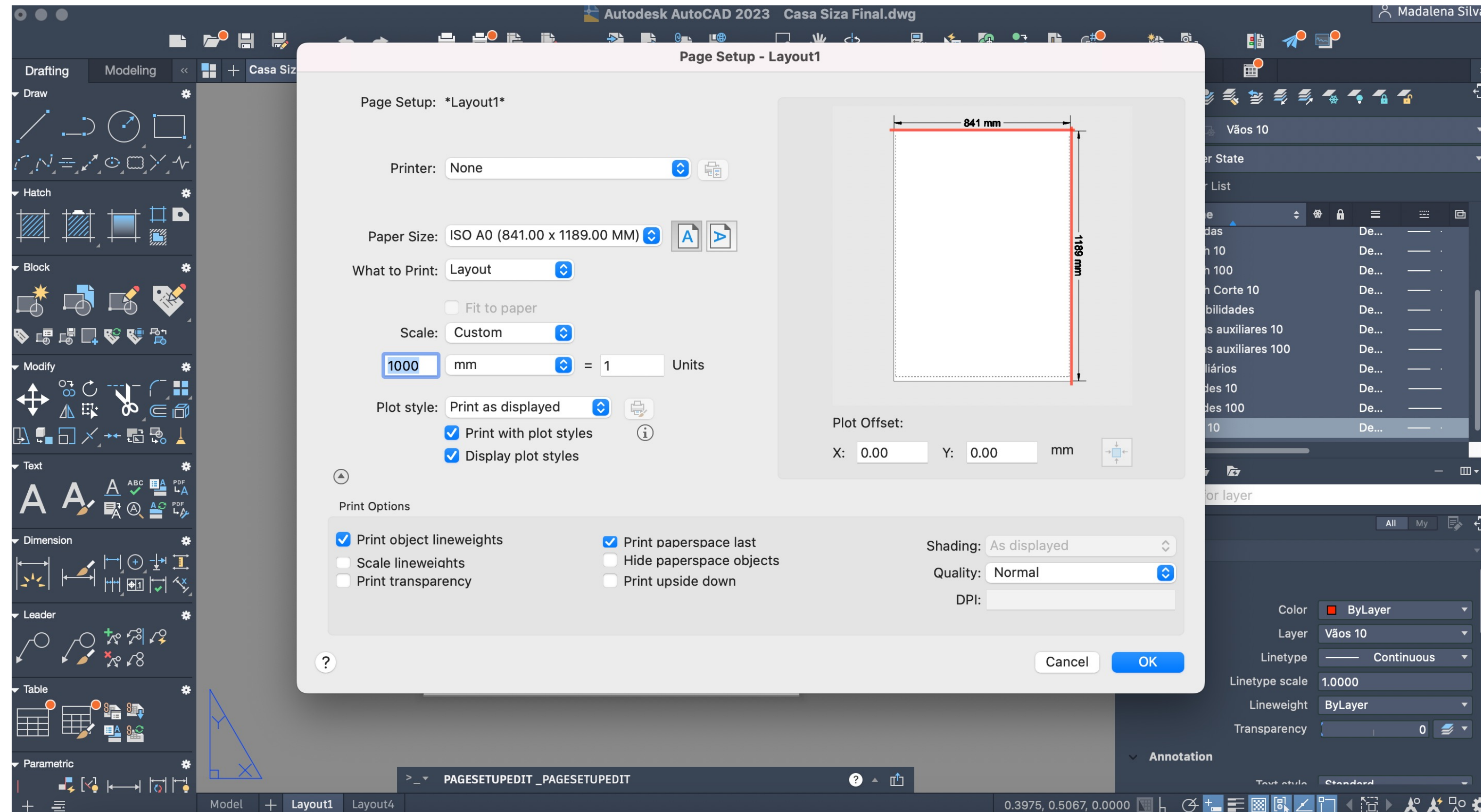


Viewport > Selecionar o tamanho do retângulo desejado > Escalar a imagem (Zoom > 1/100XP (exemplo))



ReDig

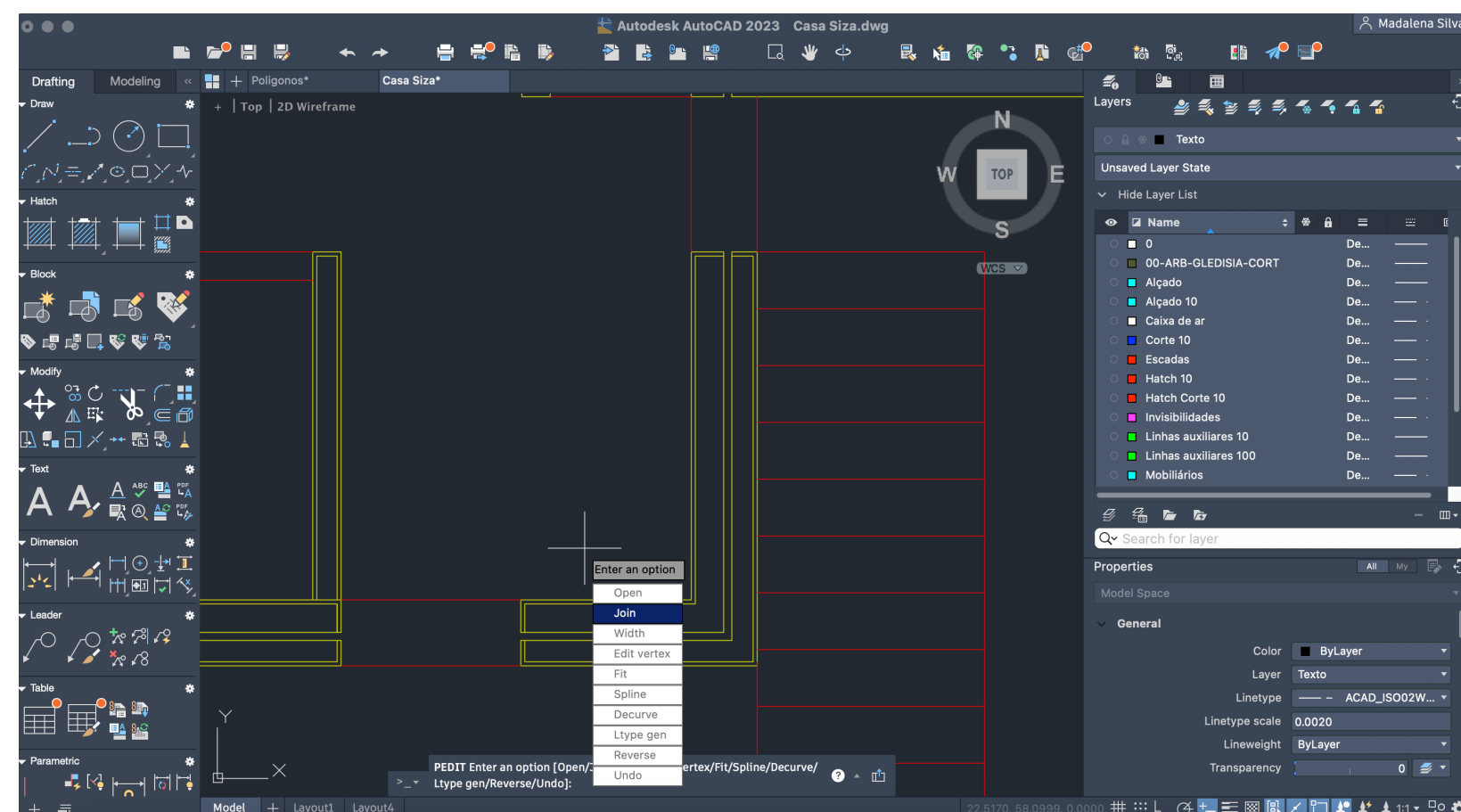
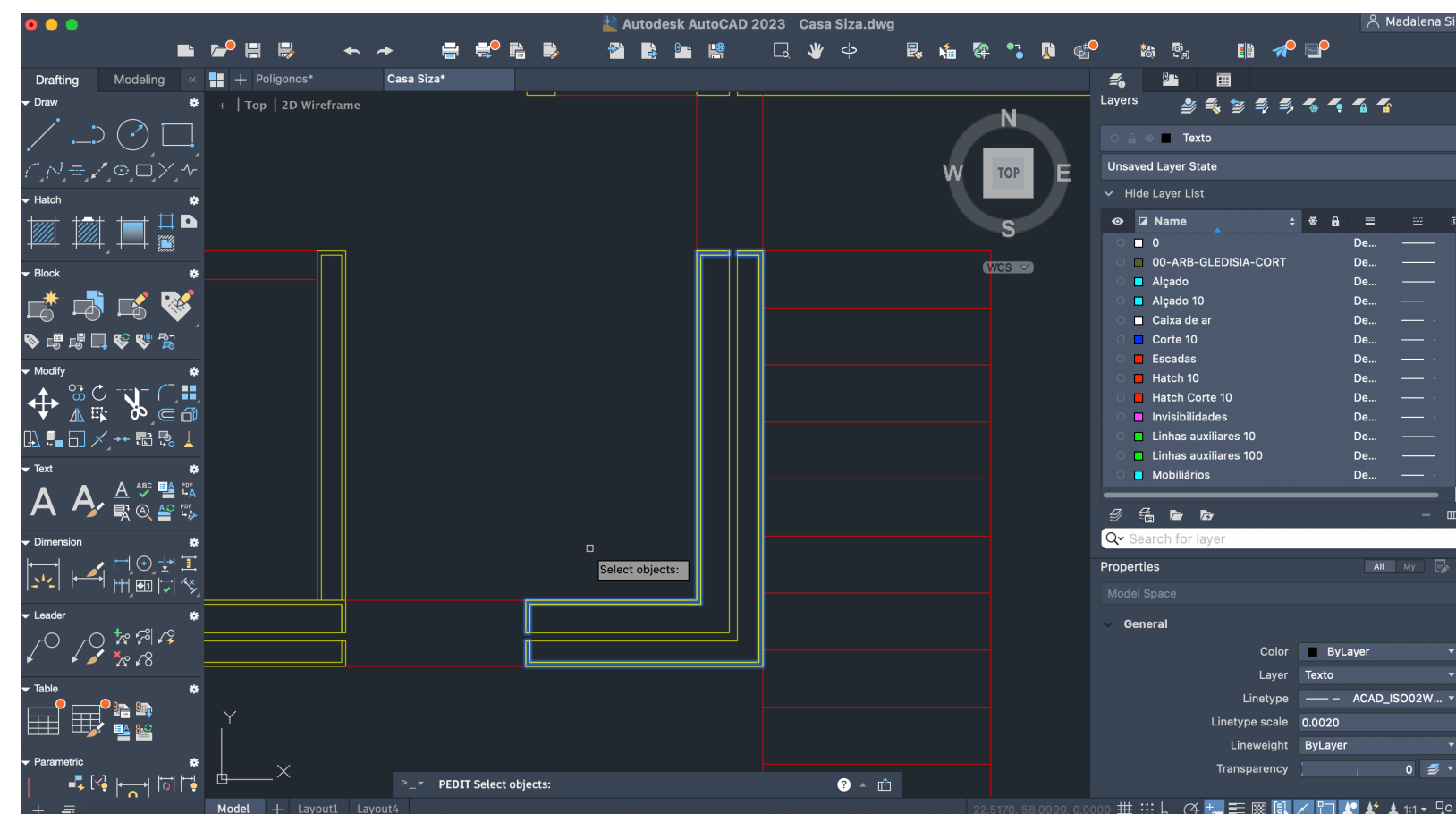
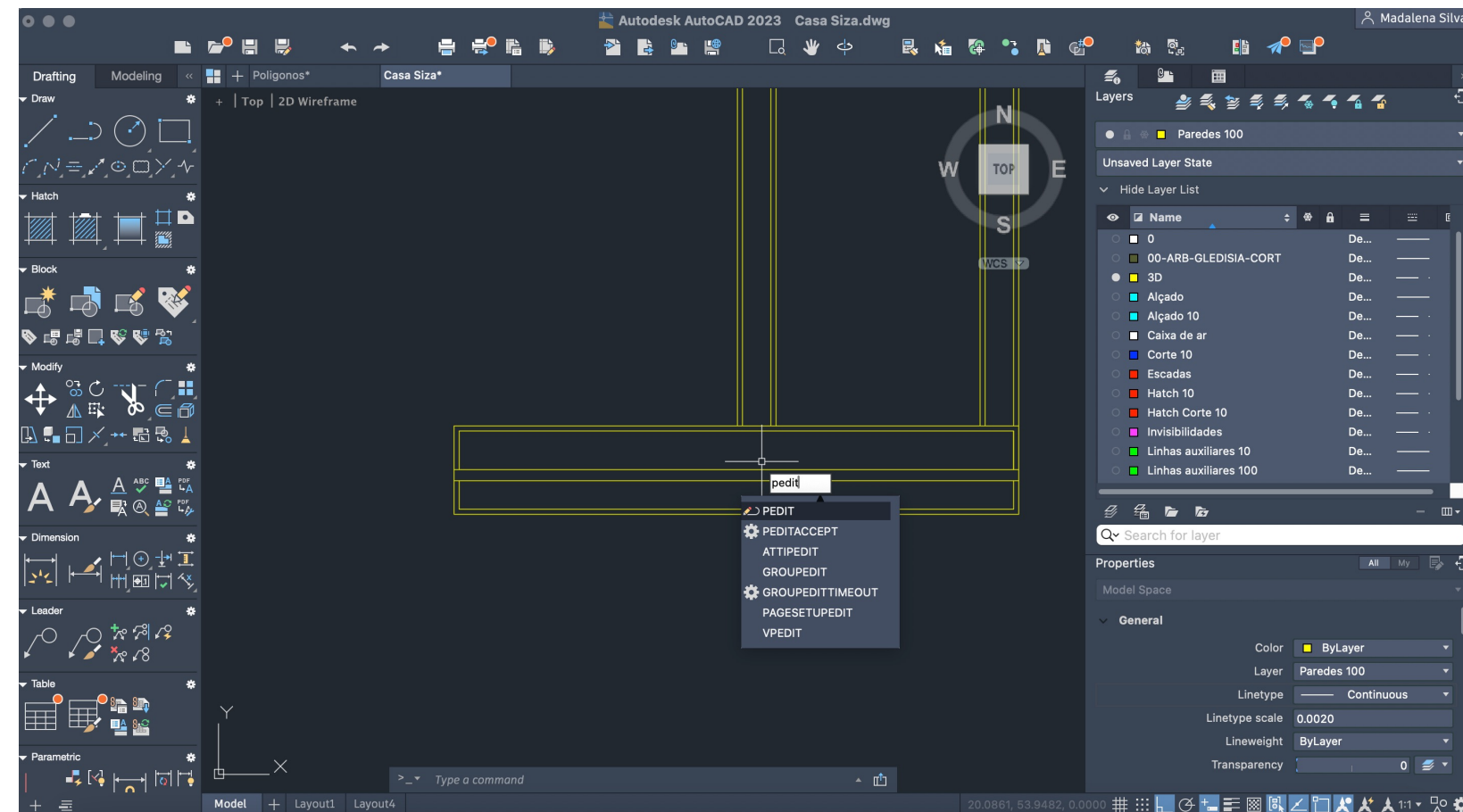
Semana 8 7/11/2023 - 10/11/2023



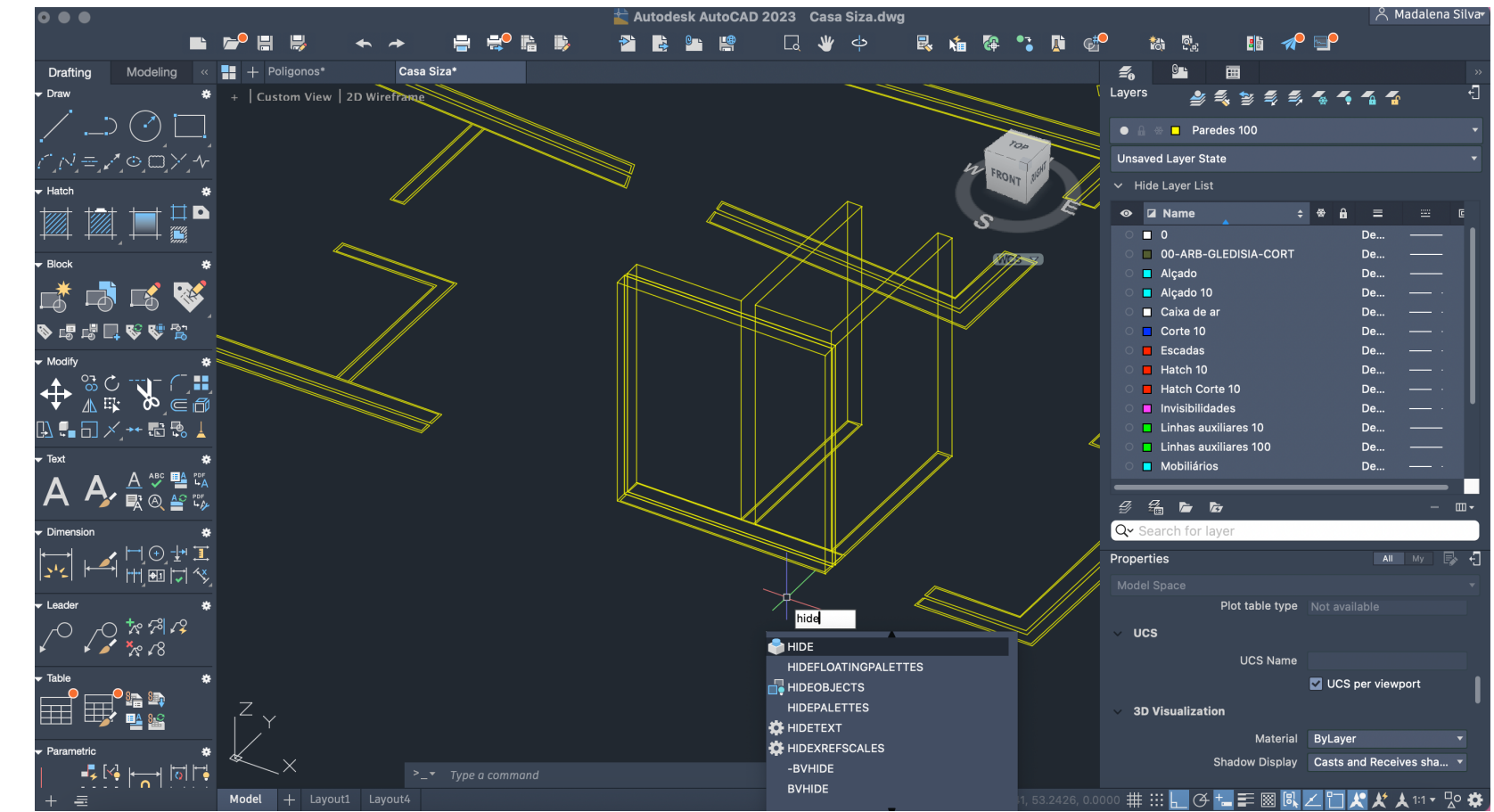
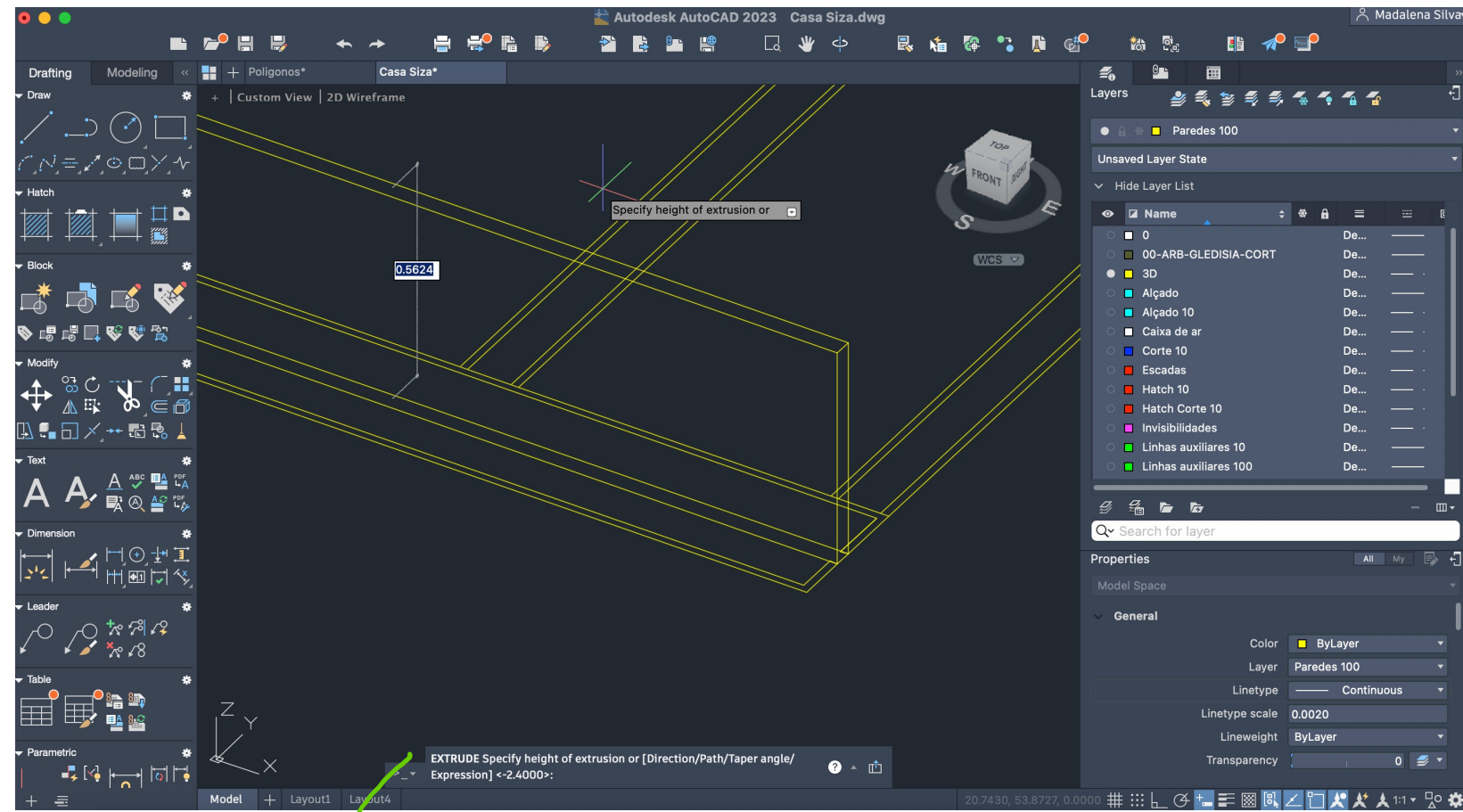
ReDig

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

Planta Casa António Casa Siza em 3D

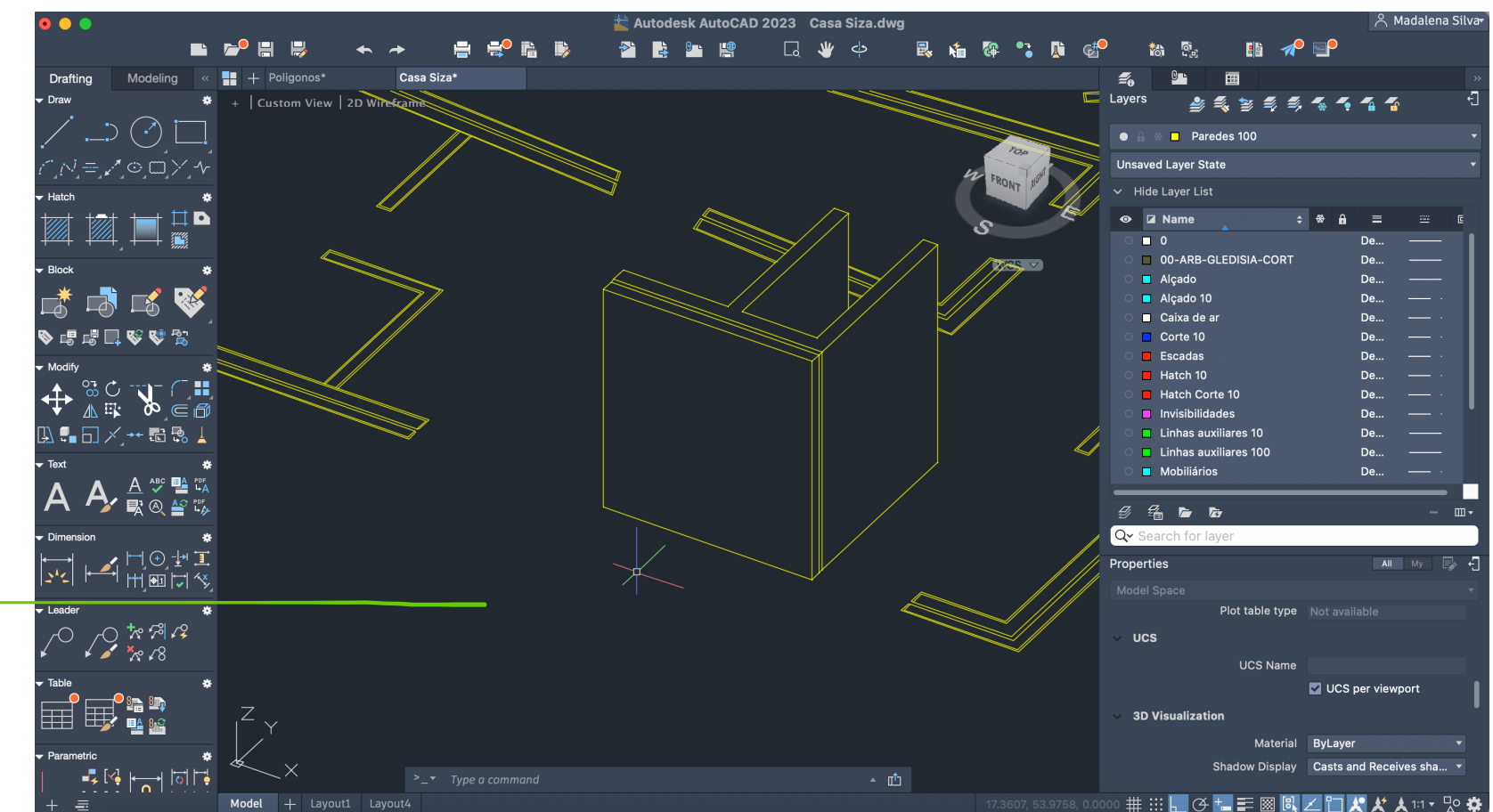


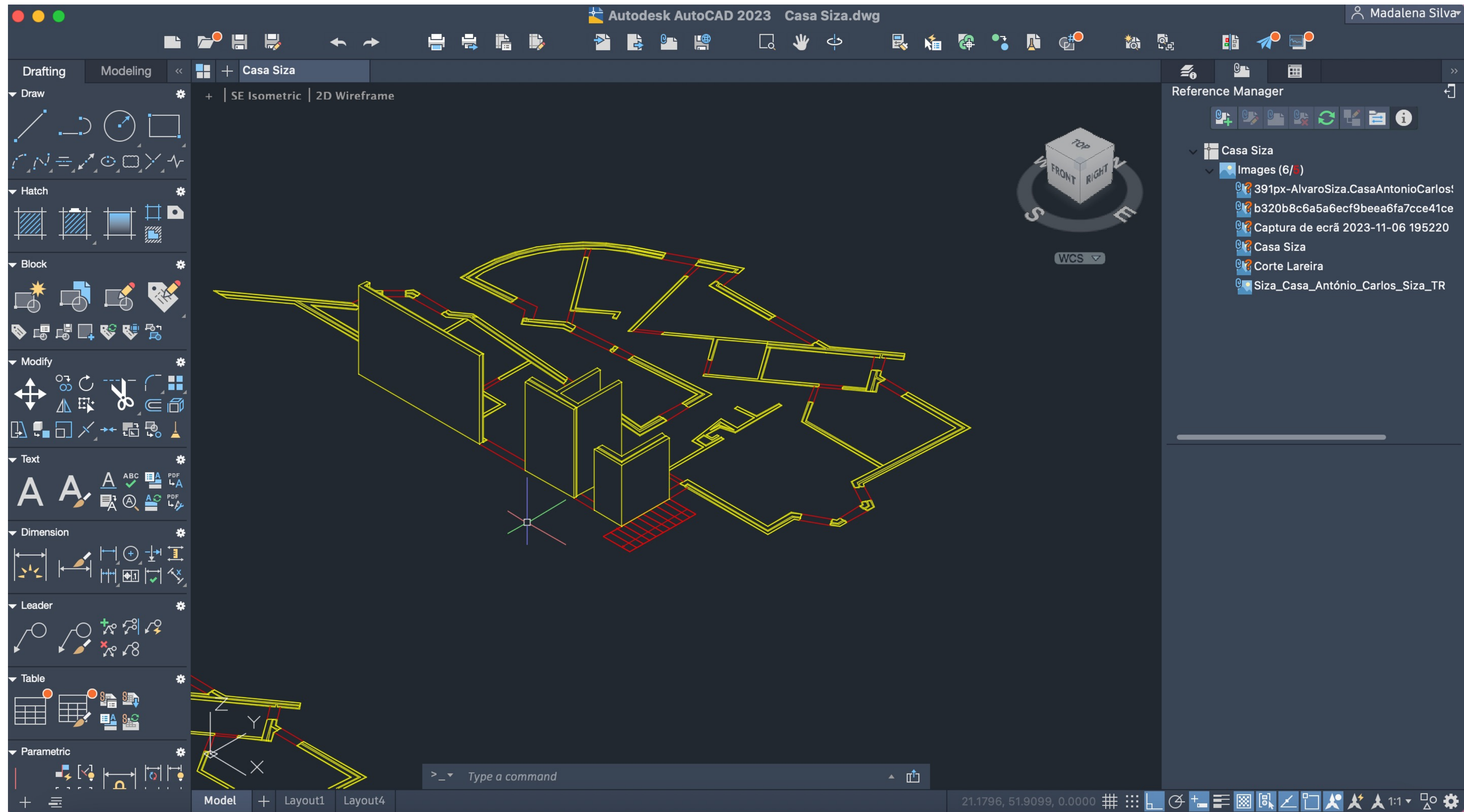
-PEDIT > JOIN : unir as paredes em polylines
-Para as janelas e as portas fazer 3 polylines:
uma da janela toda, uma da parede interior e
uma da parede exterior



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

Hide: melhor visualização do espaço

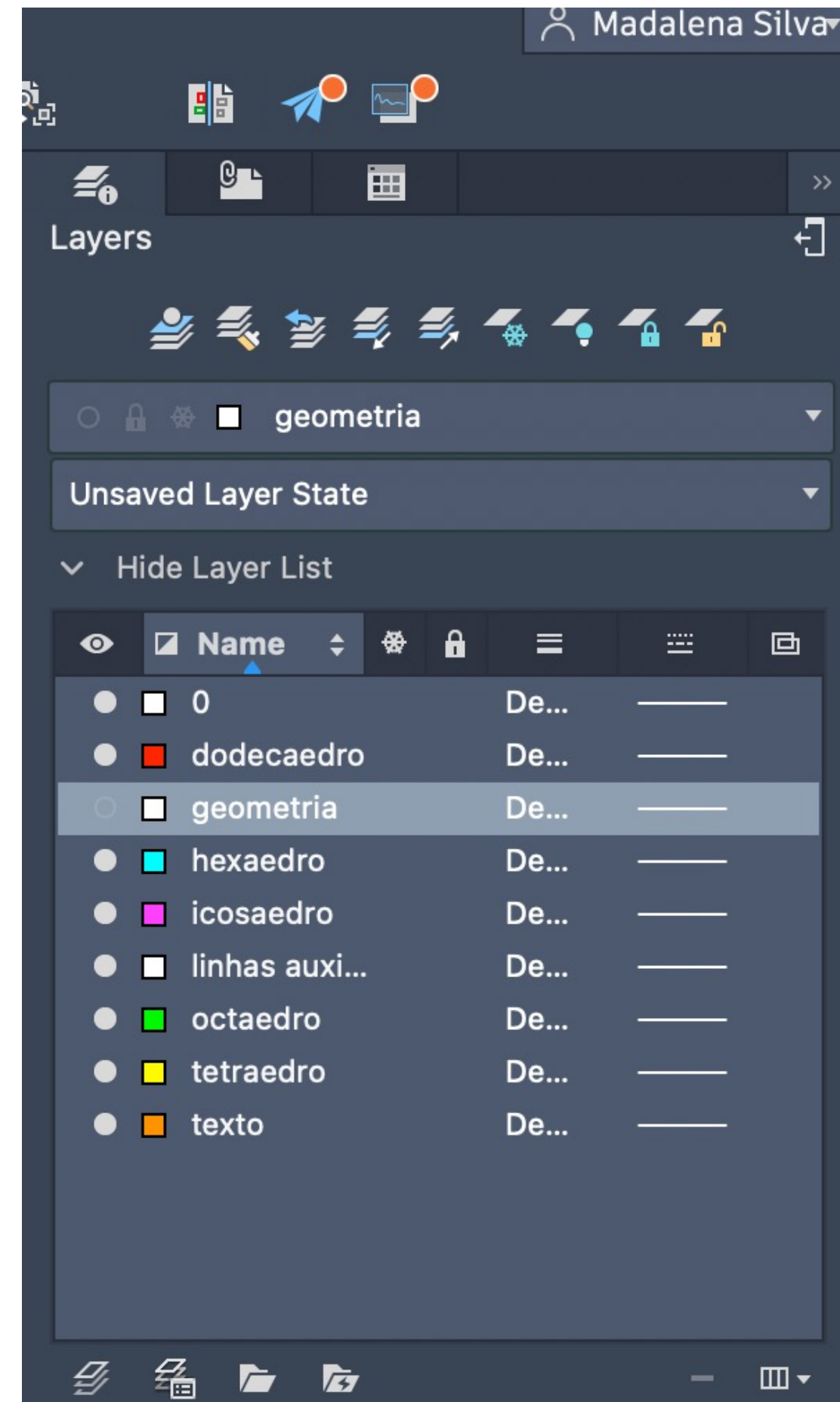




ReDig

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

Exercício dos Polígonos 3D



Criação de Layers

Tetraedro: 4 faces triangulares

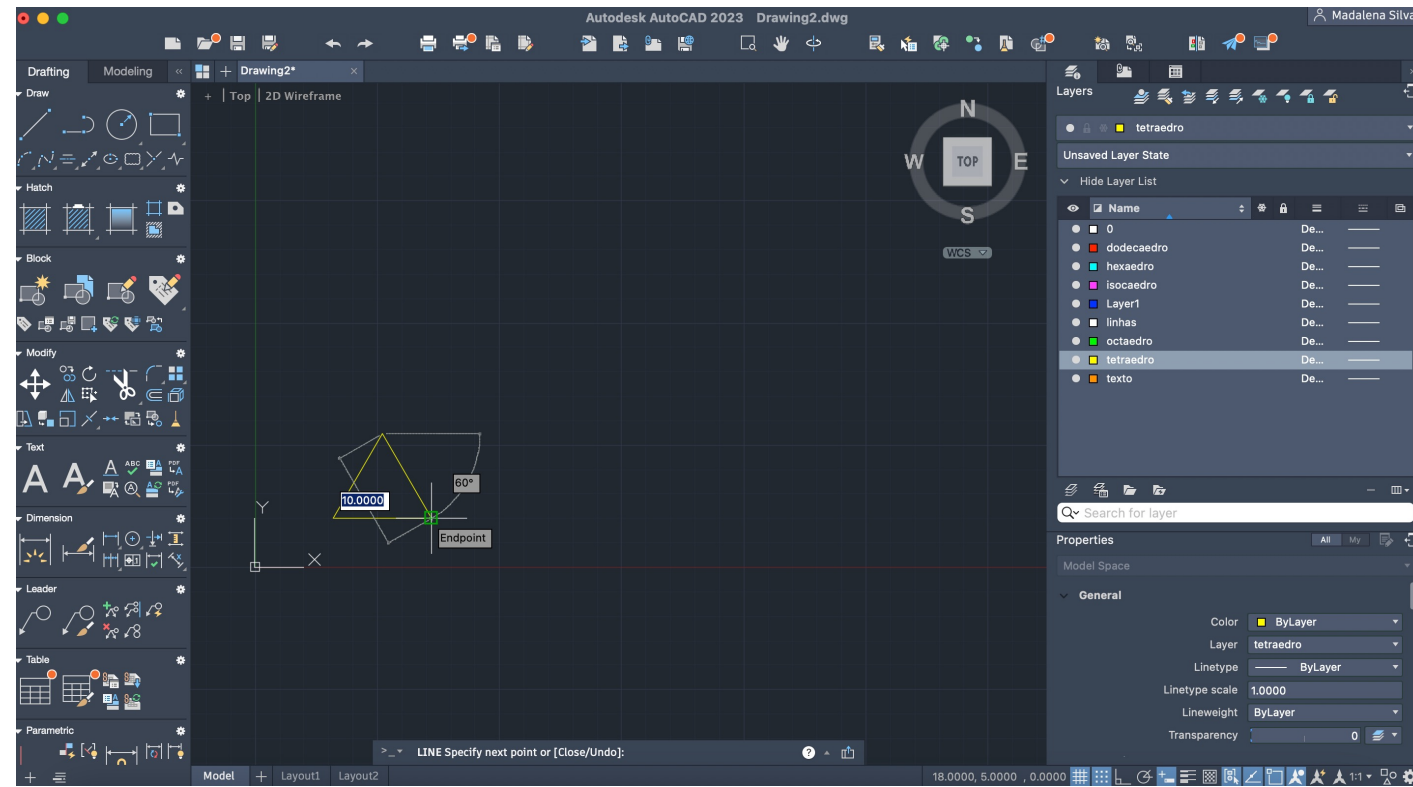
Hexaedro: 6 faces quadrangulares

Octaedro: 8 faces triangulares

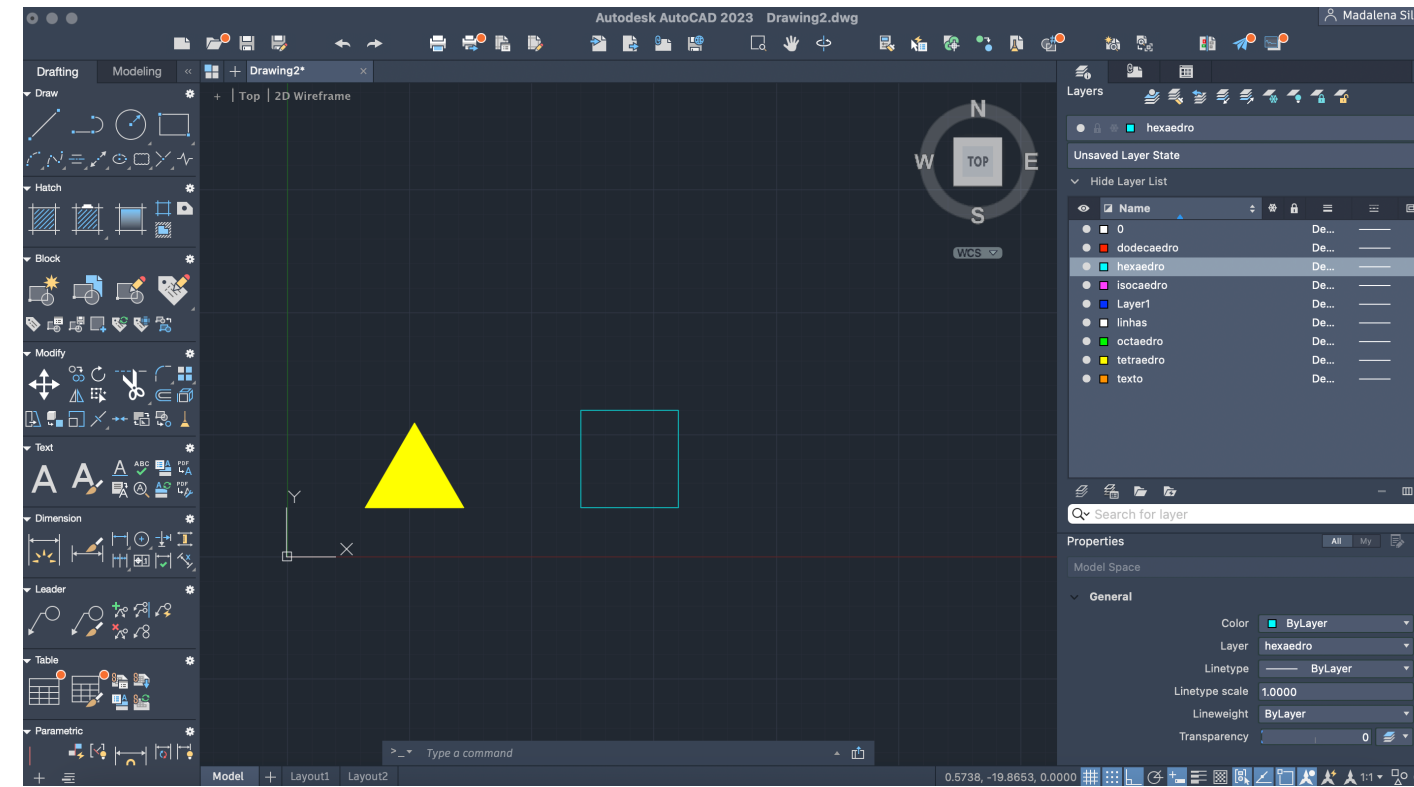
Dodecaedro: 12 faces pentagonais

Icosaedro: 20 faces triangulares

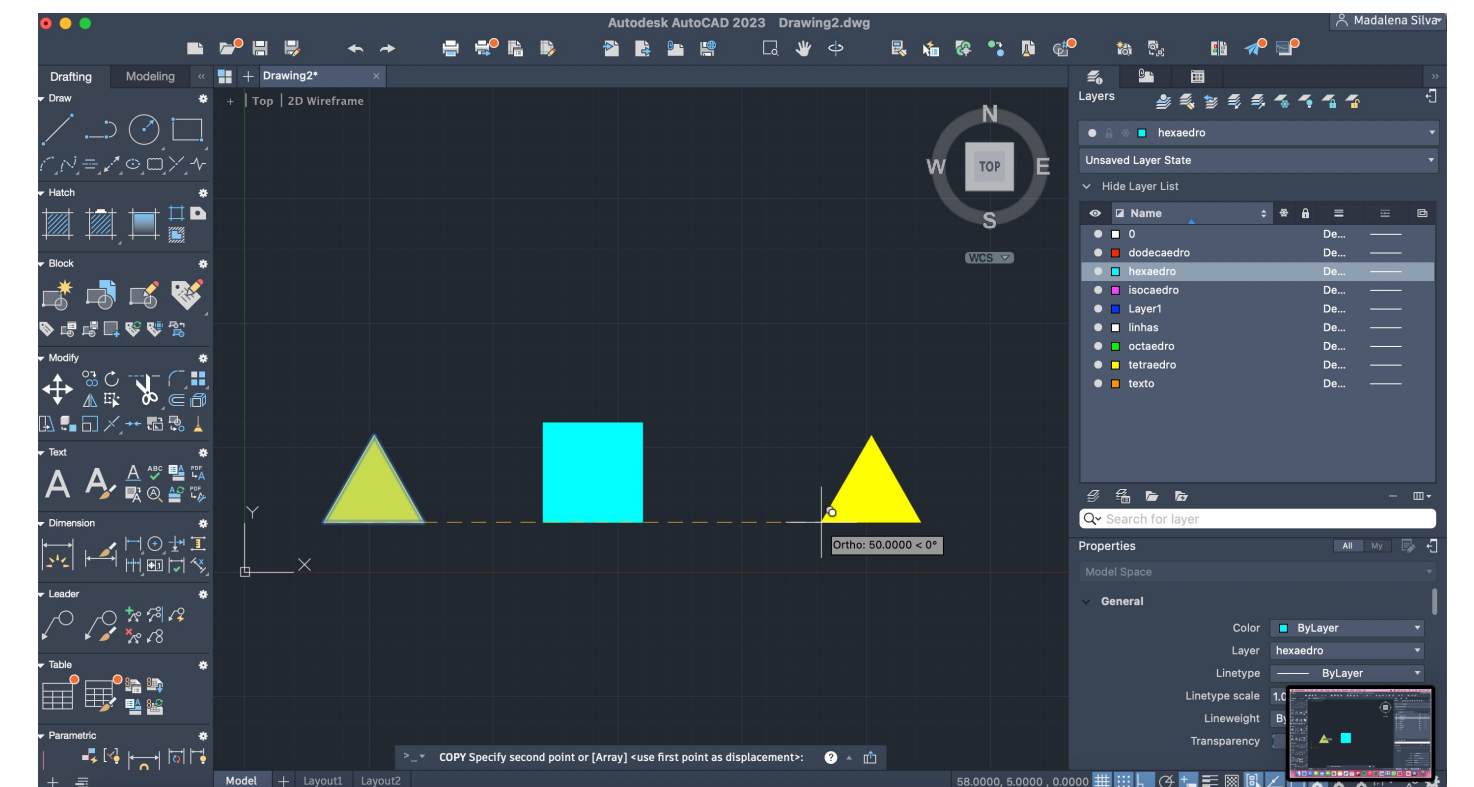
Exercício dos Polígonos



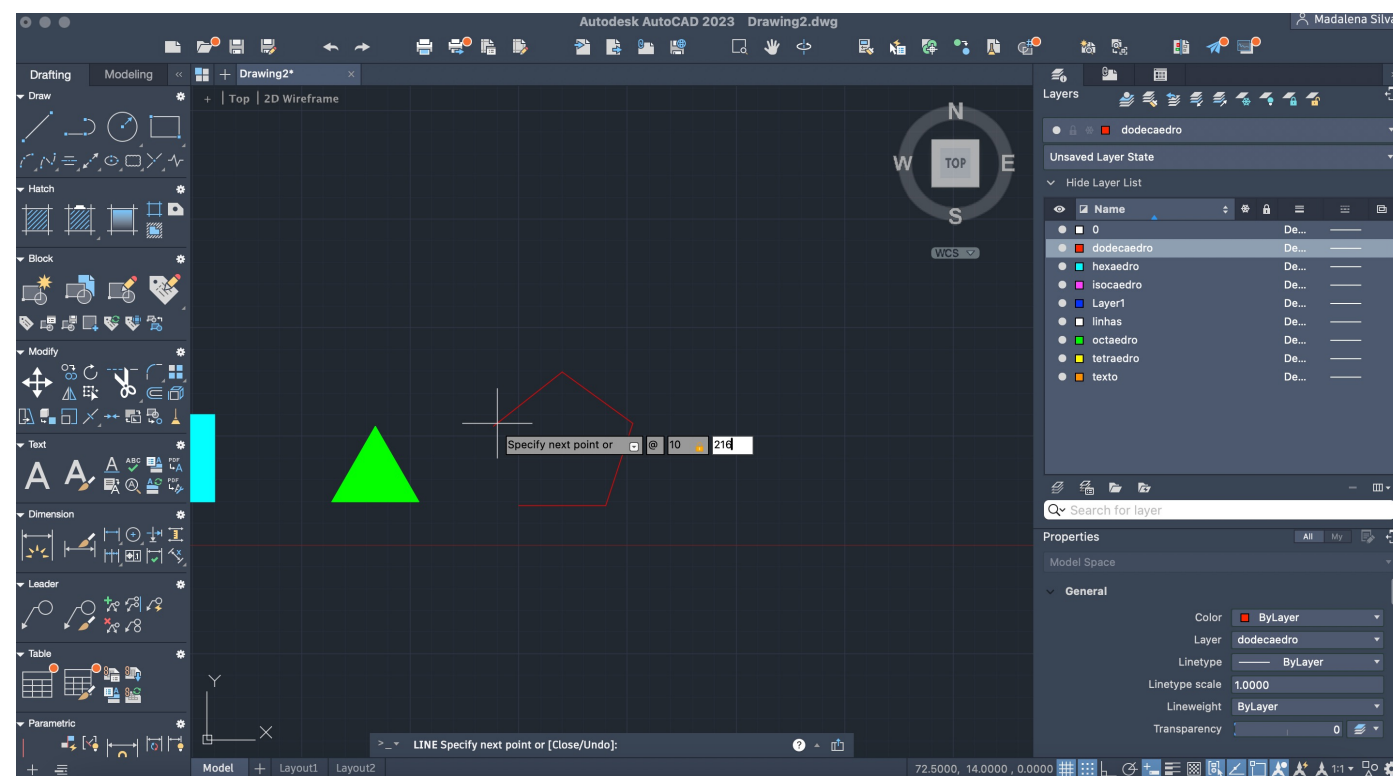
Tetraedro:
Line > 10 > @10,<60 > Fechar



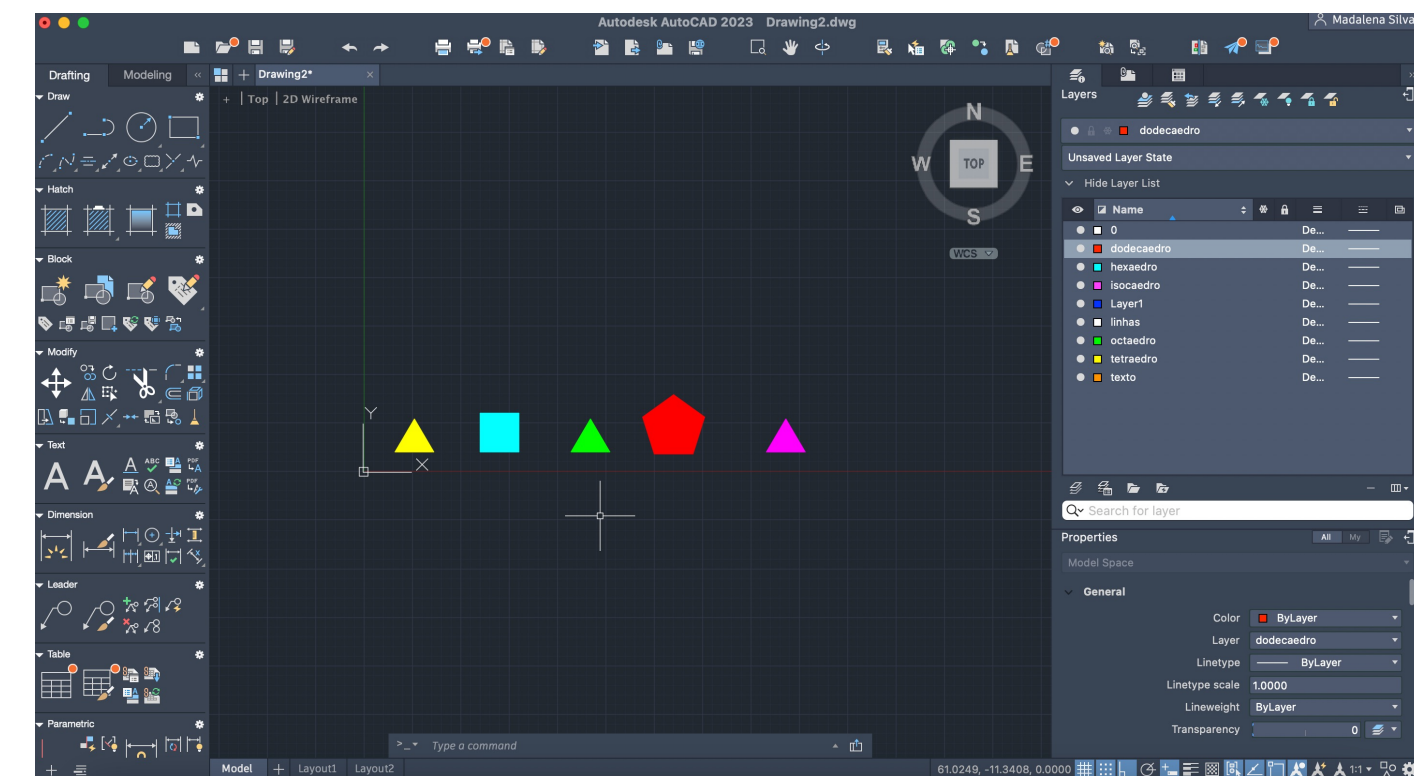
Hexaedro:
Ativar comando Ortho > Line > 10 > 10 > 10 Fechar



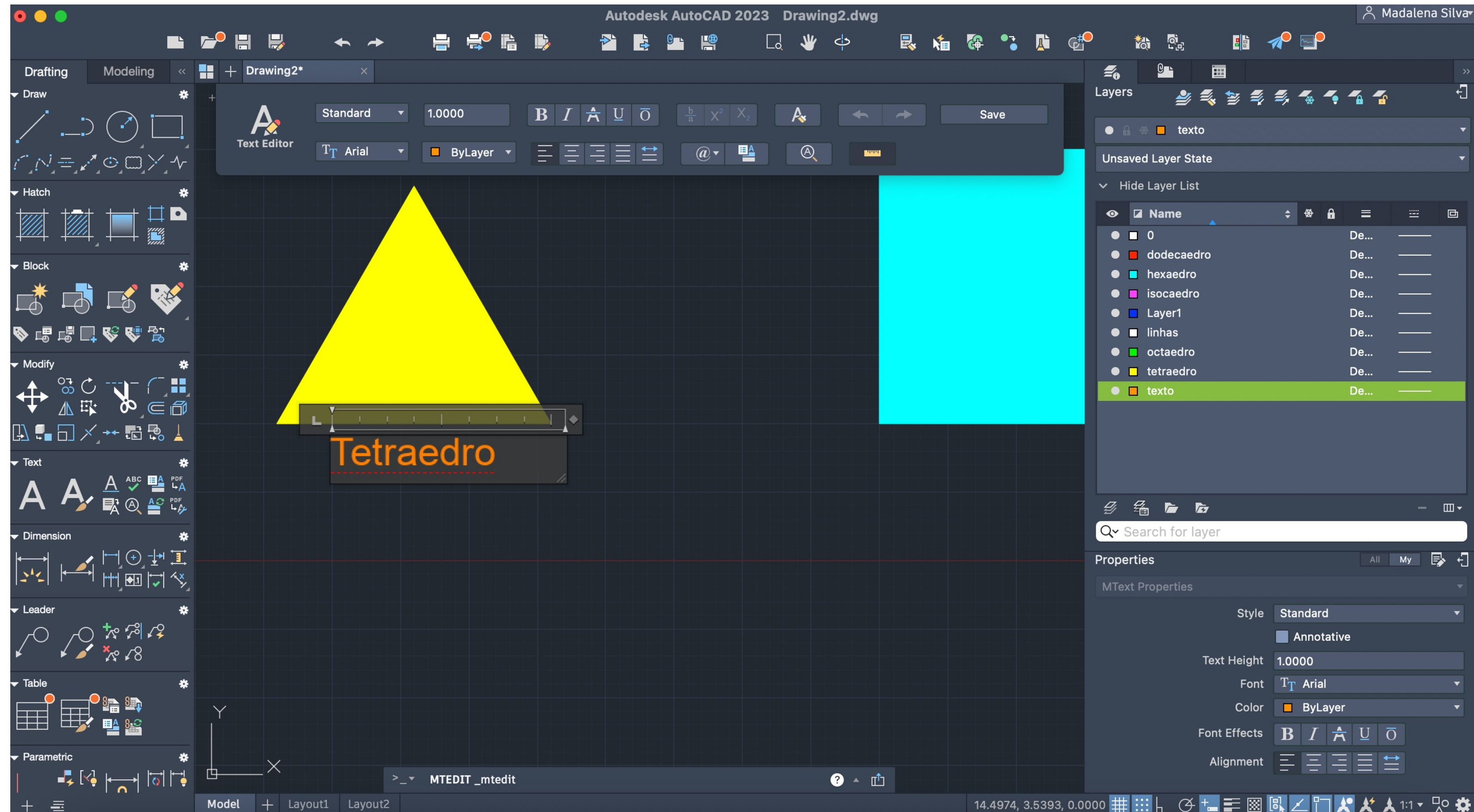
Octaedro:
Copy > Selecionar Tetraedro > Enter >
Ortho ON > Escolher o 2º Pomto



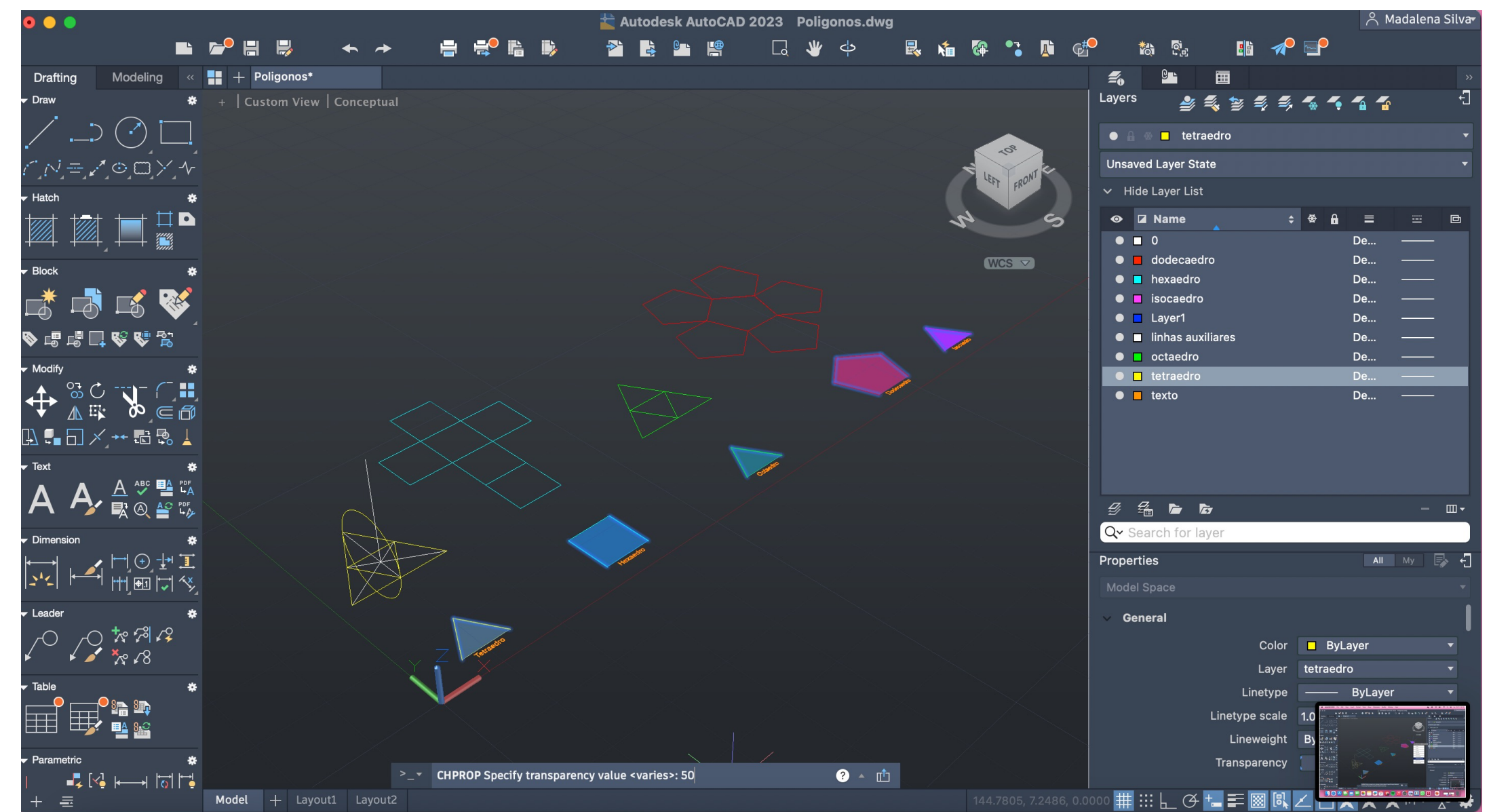
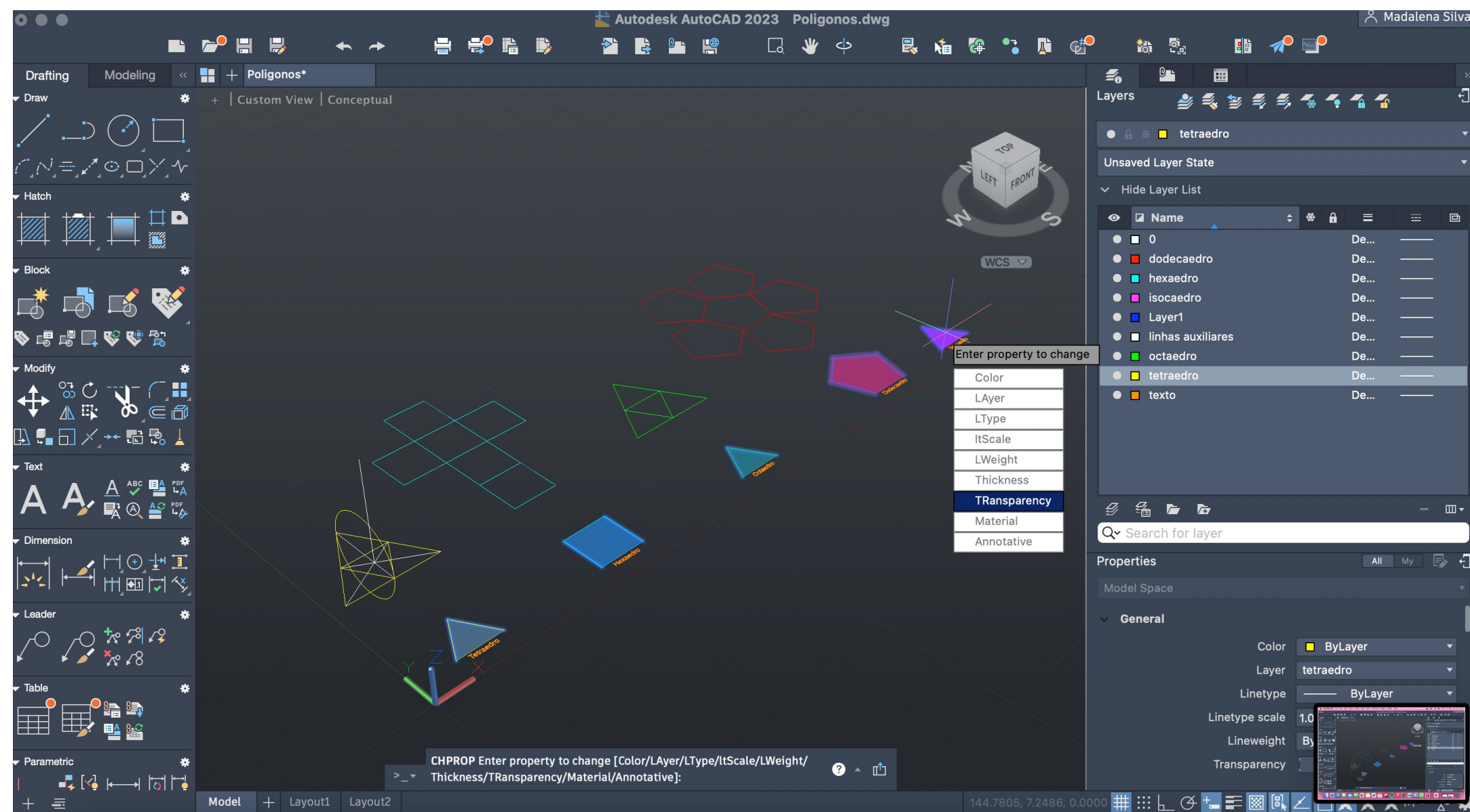
Dodecaedro:
Line > 10 > @10<74 > @10<144 > @10<216 >
Fechar



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

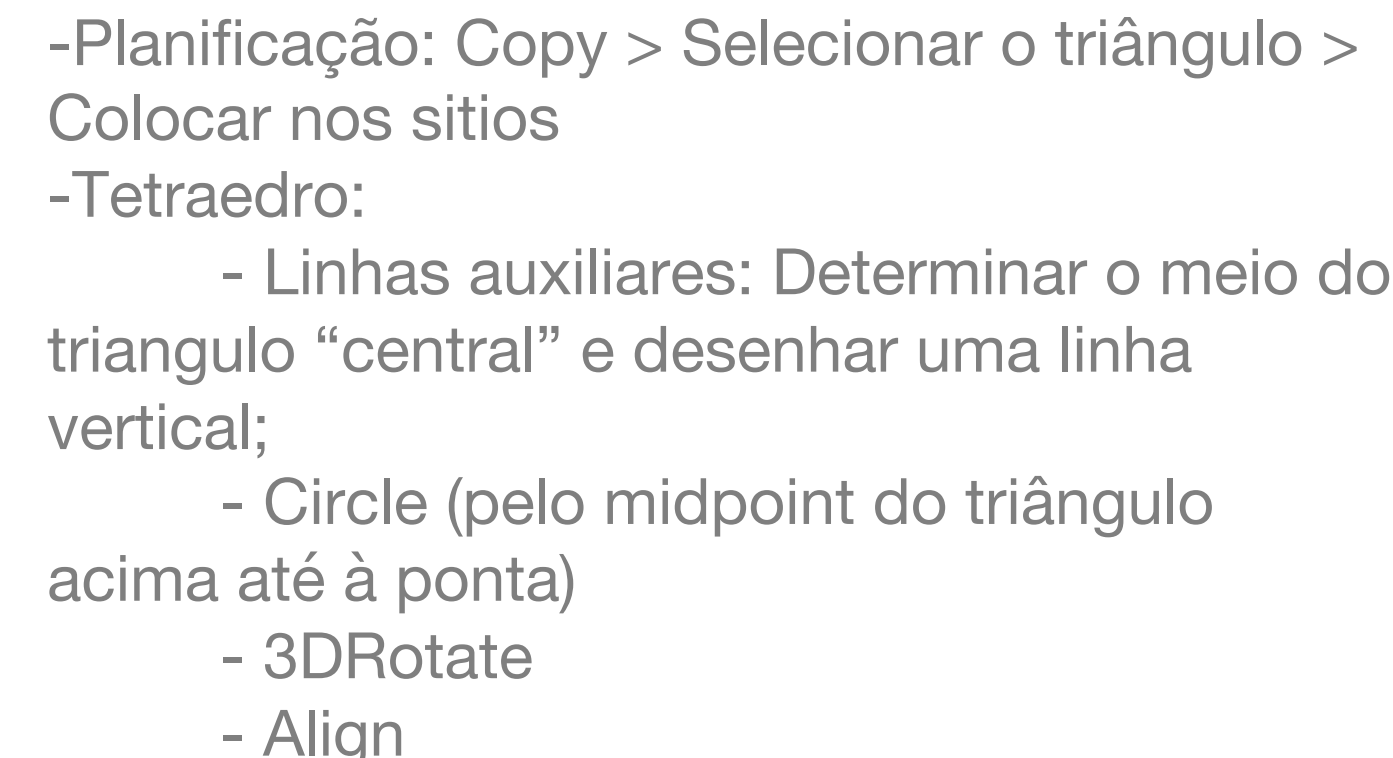
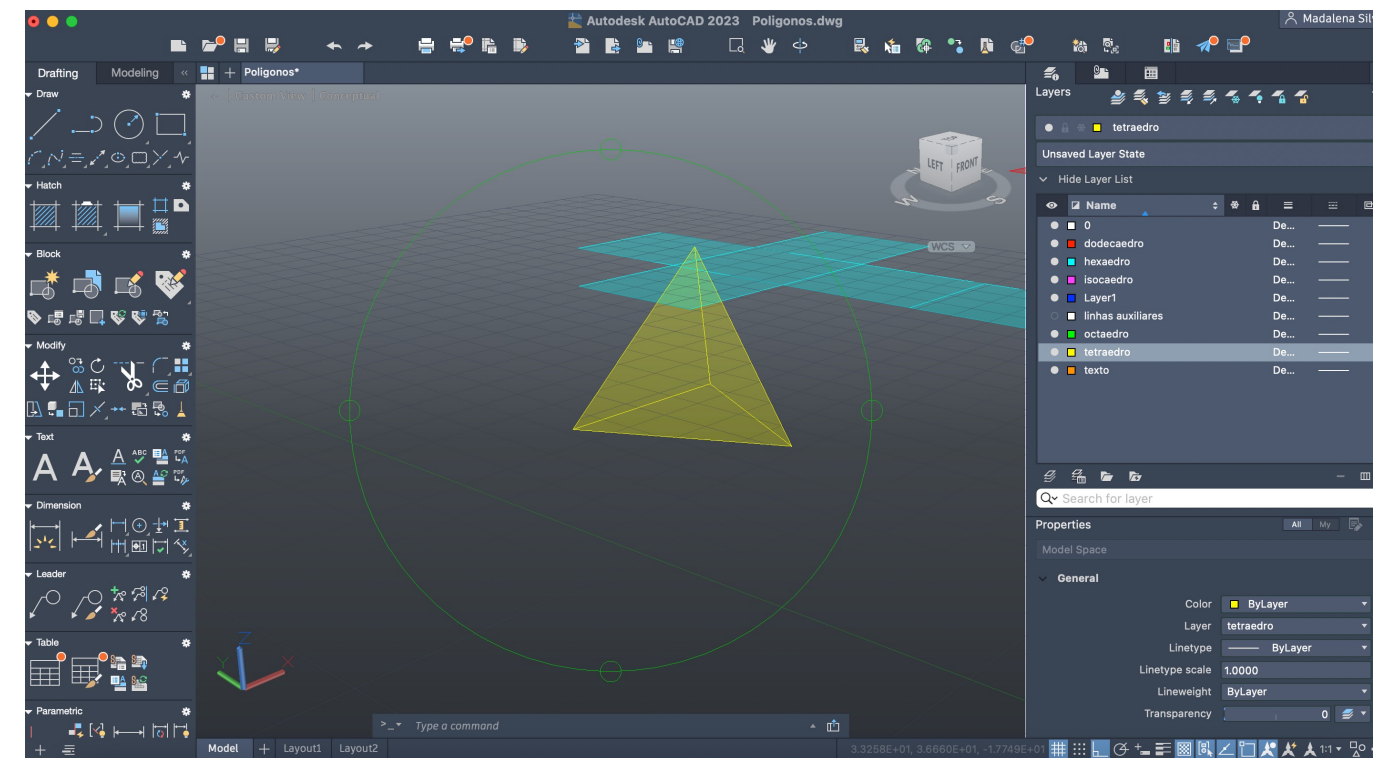
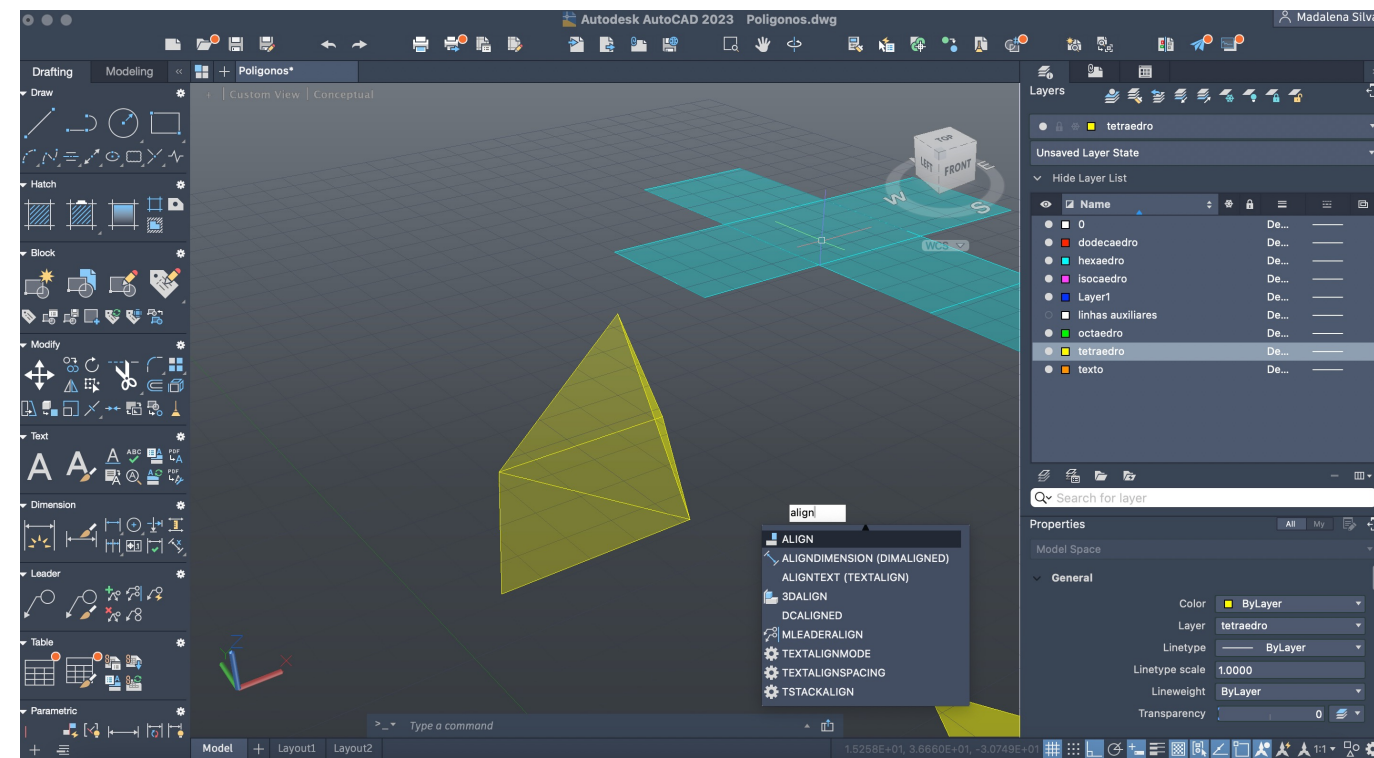
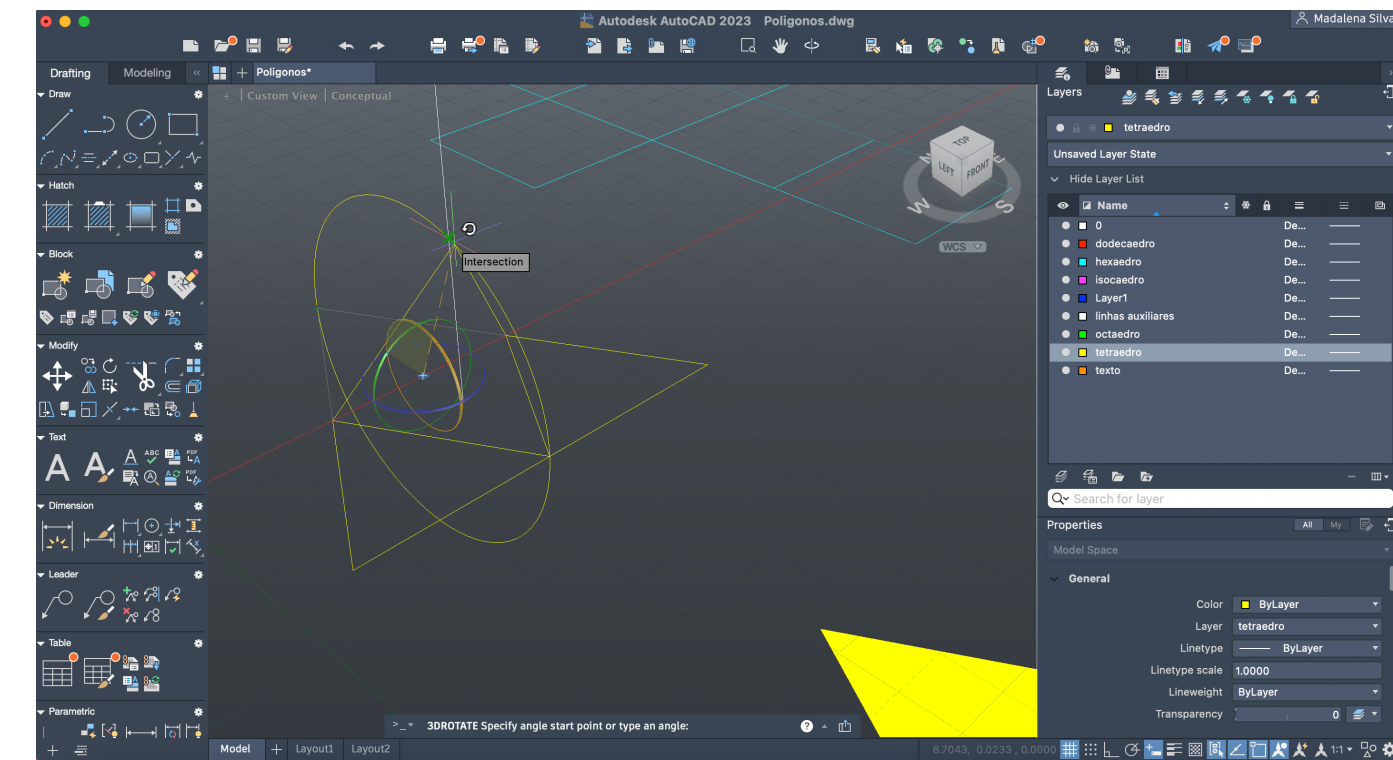
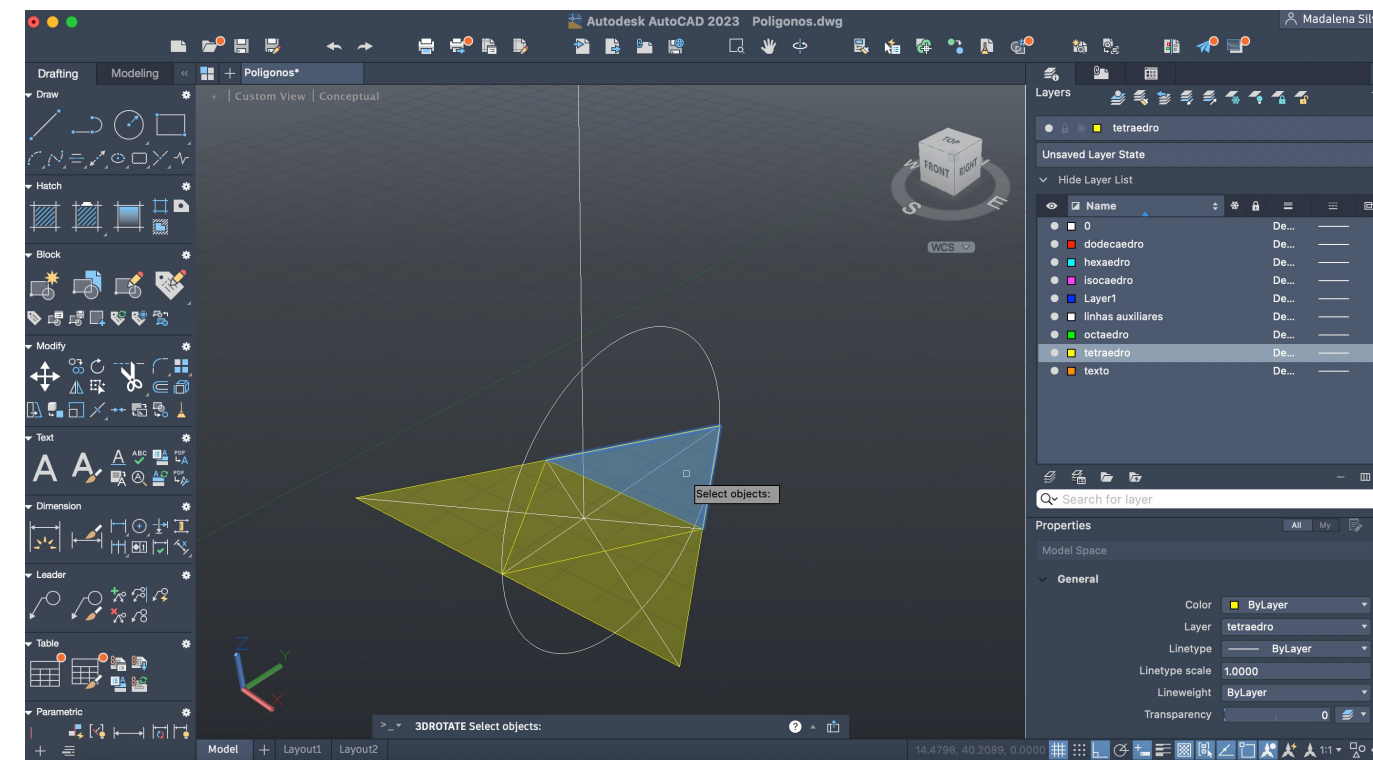
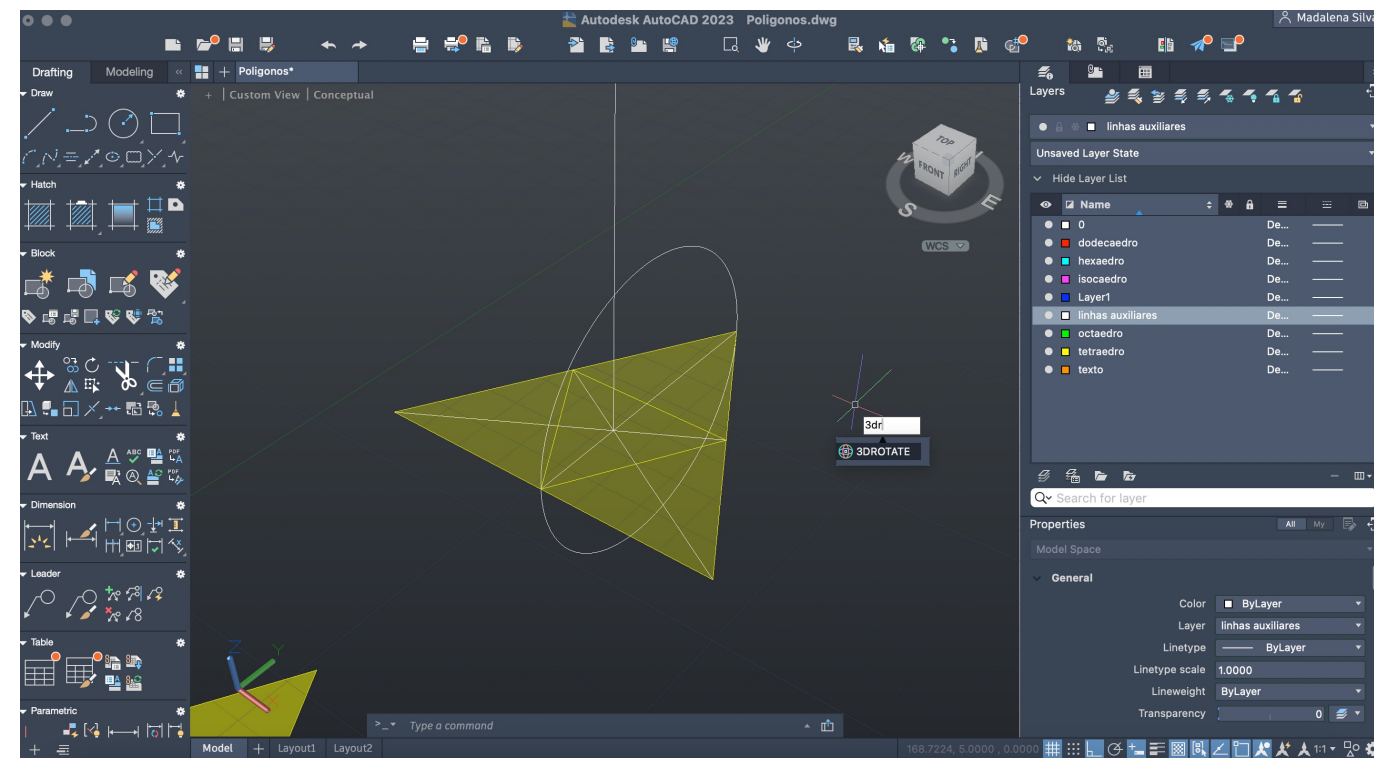


CHProp: Alterar as propriedades
Selecionar os hatches > chprop > Transparency > 50

ReDig

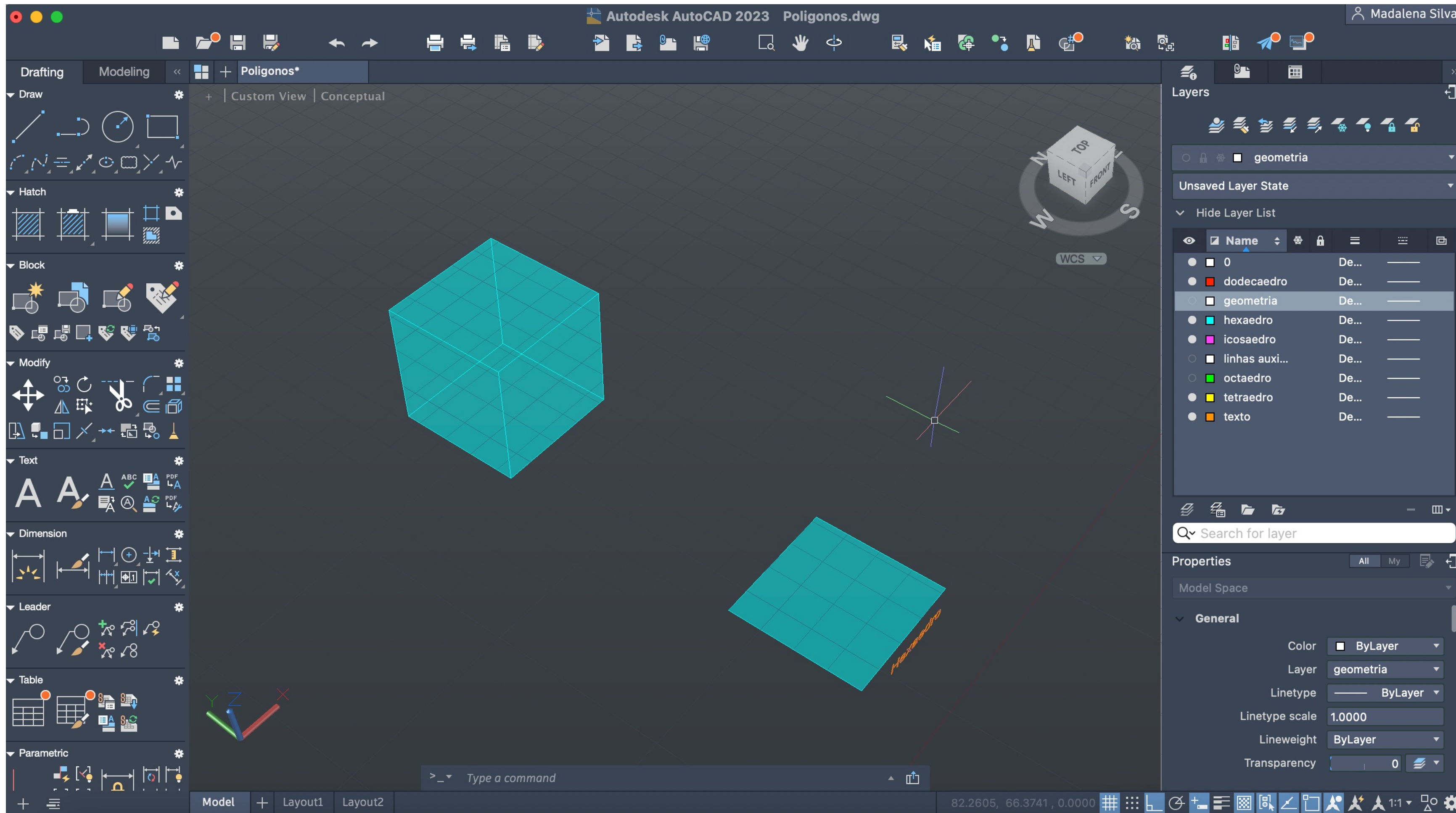
Semana 10_{21/11/2023 - 24/11/2023}

Tetraedro



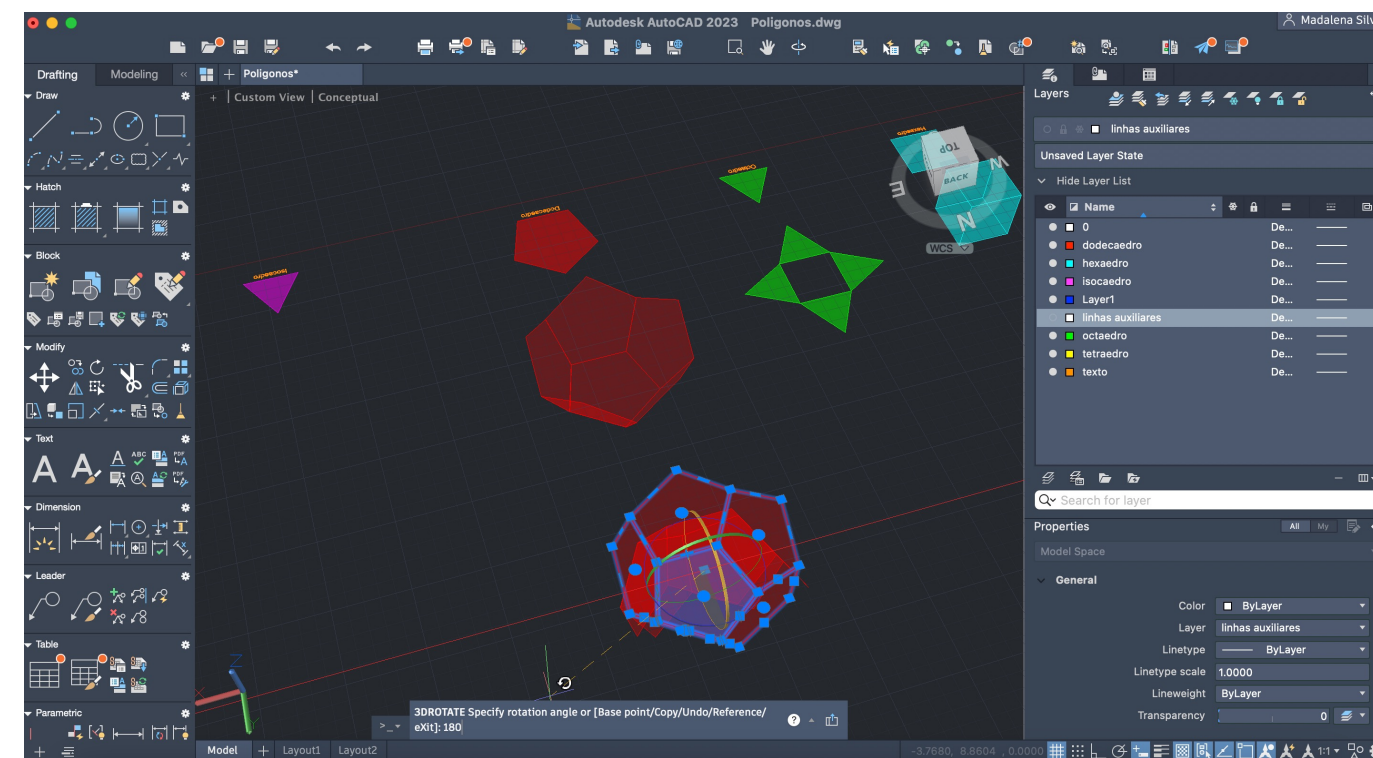
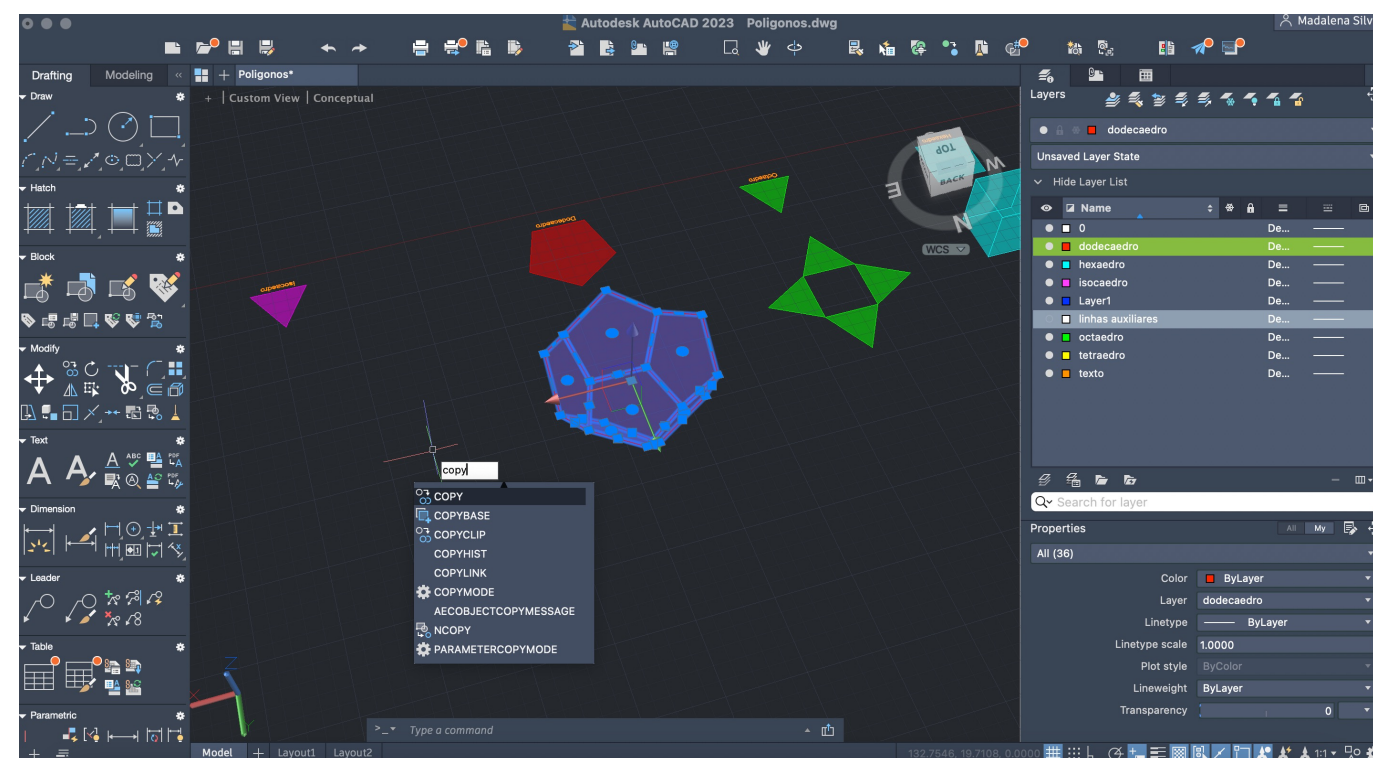
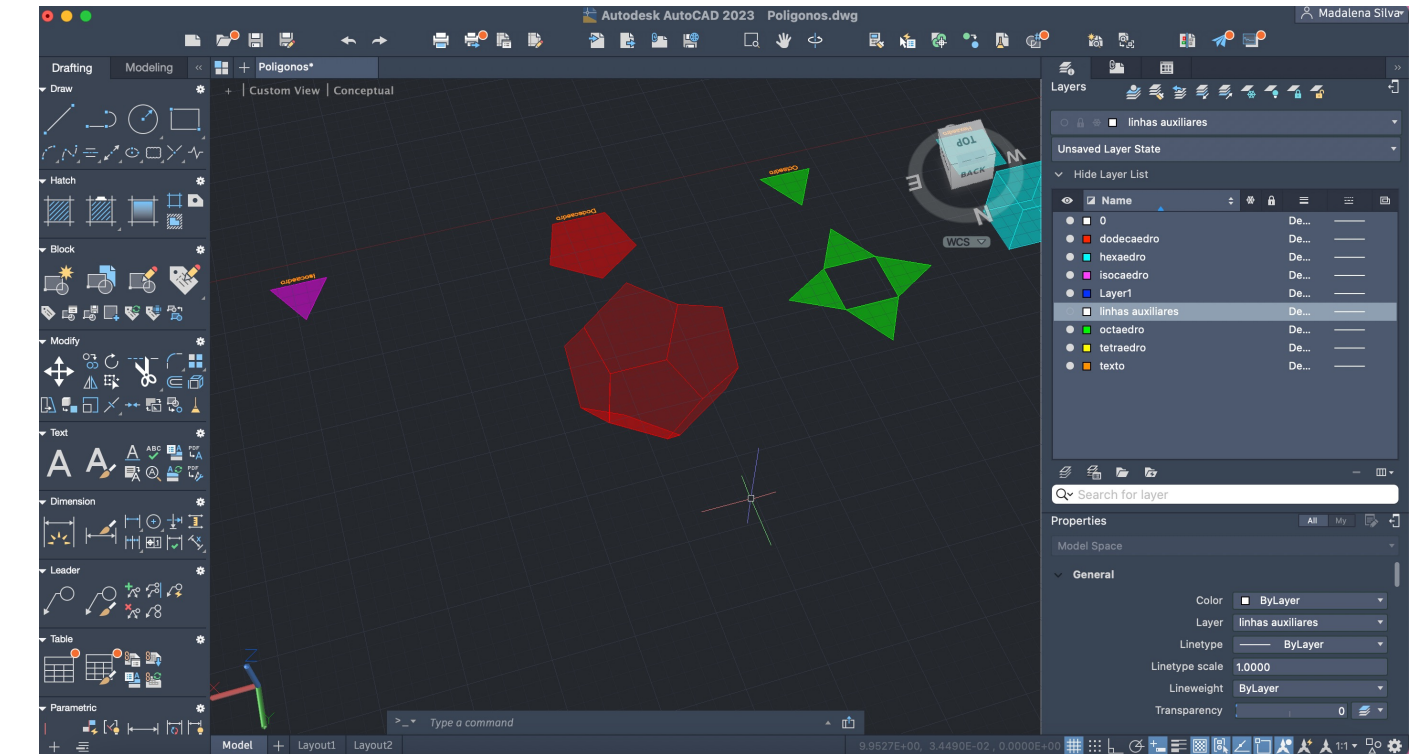
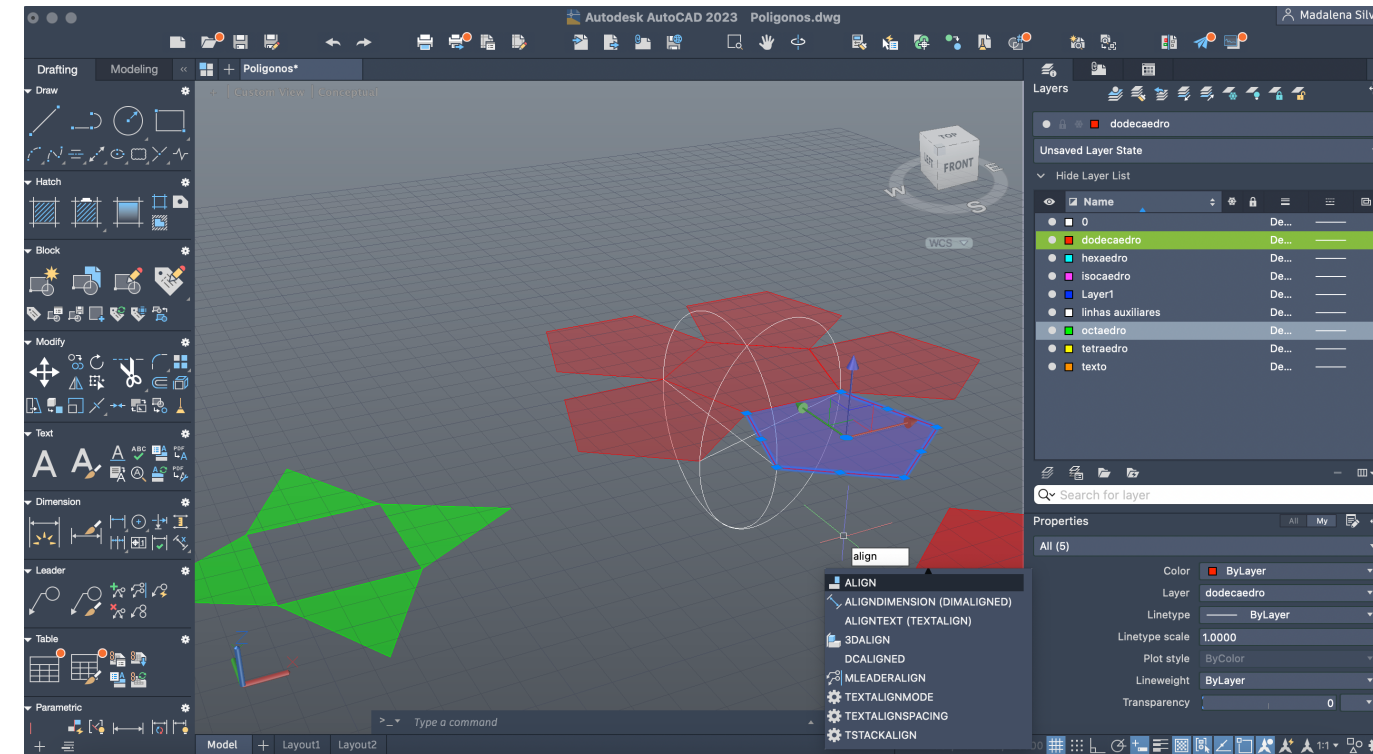
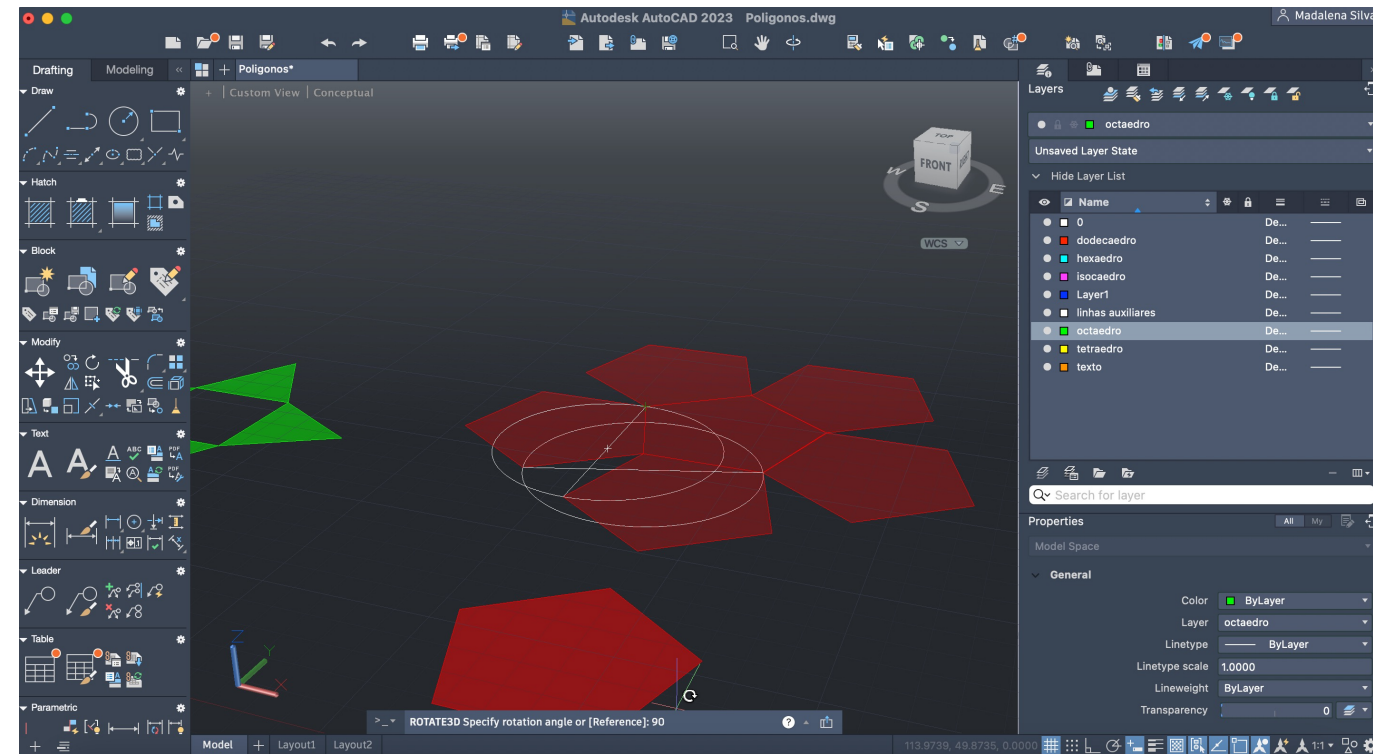
- Planificação: Copy > Selecionar o triângulo > Colocar nos sitios
- Tetraedro:
 - Linhas auxiliares: Determinar o meio do triangulo “central” e desenhar uma linha vertical;
 - Circle (pelo midpoint do triângulo acima até à ponta)
 - 3DRotate
 - Align

Hexaedro



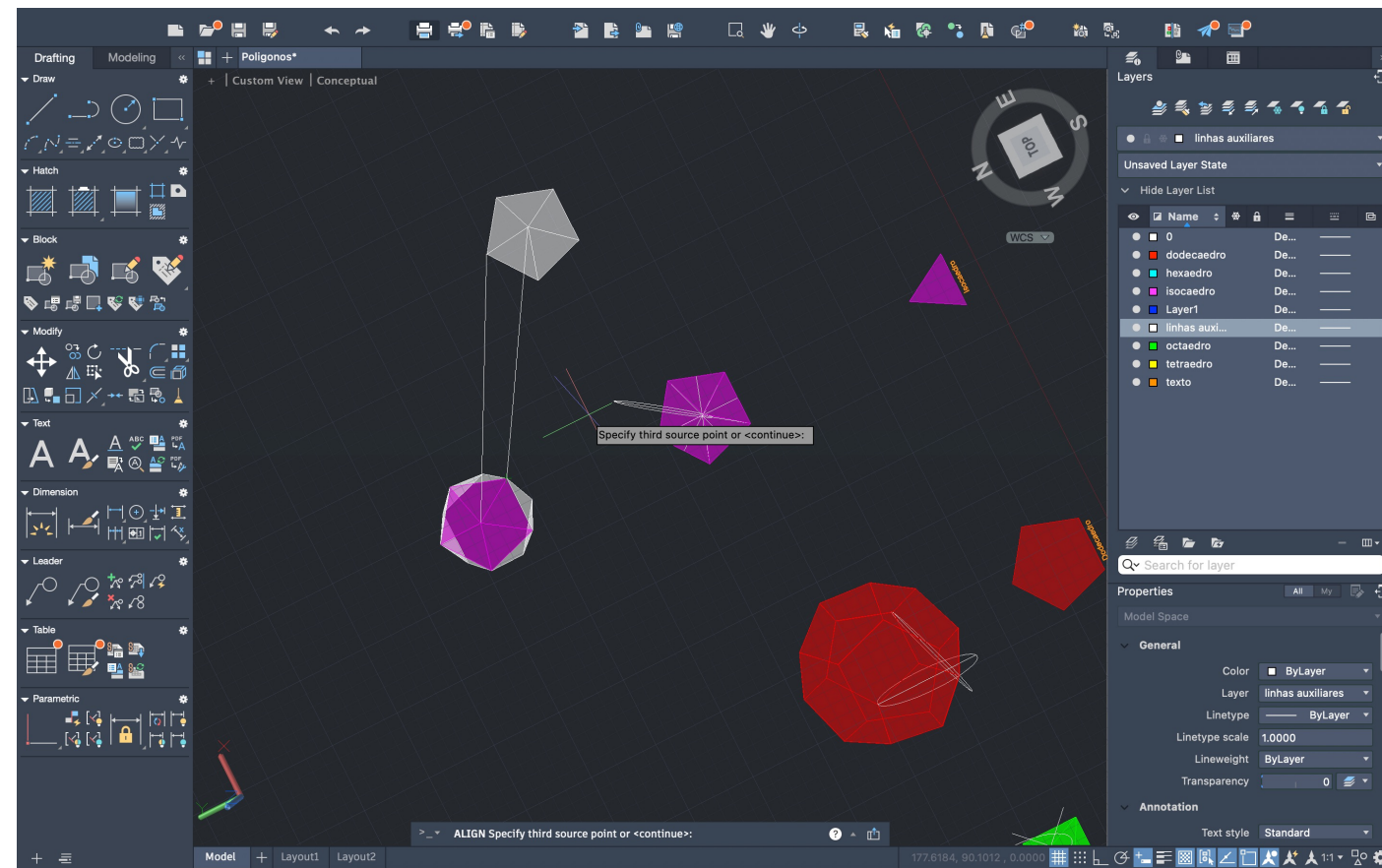
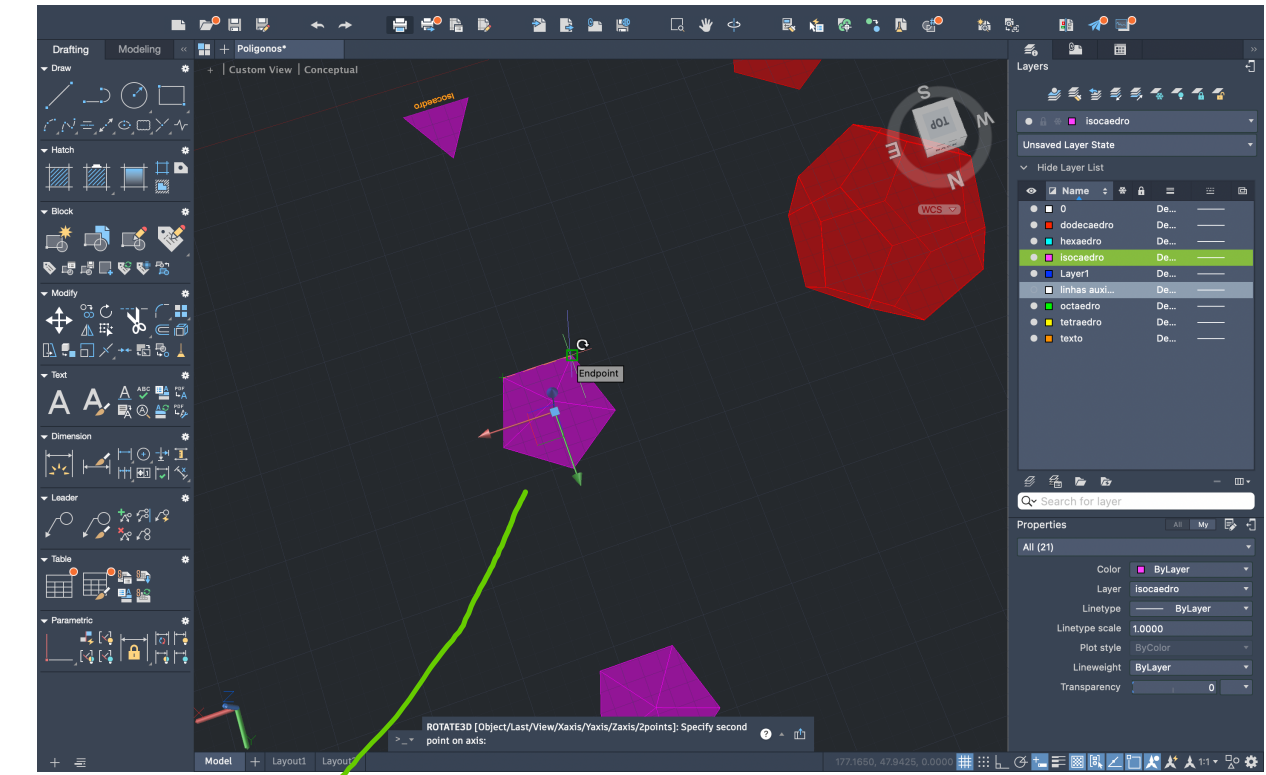
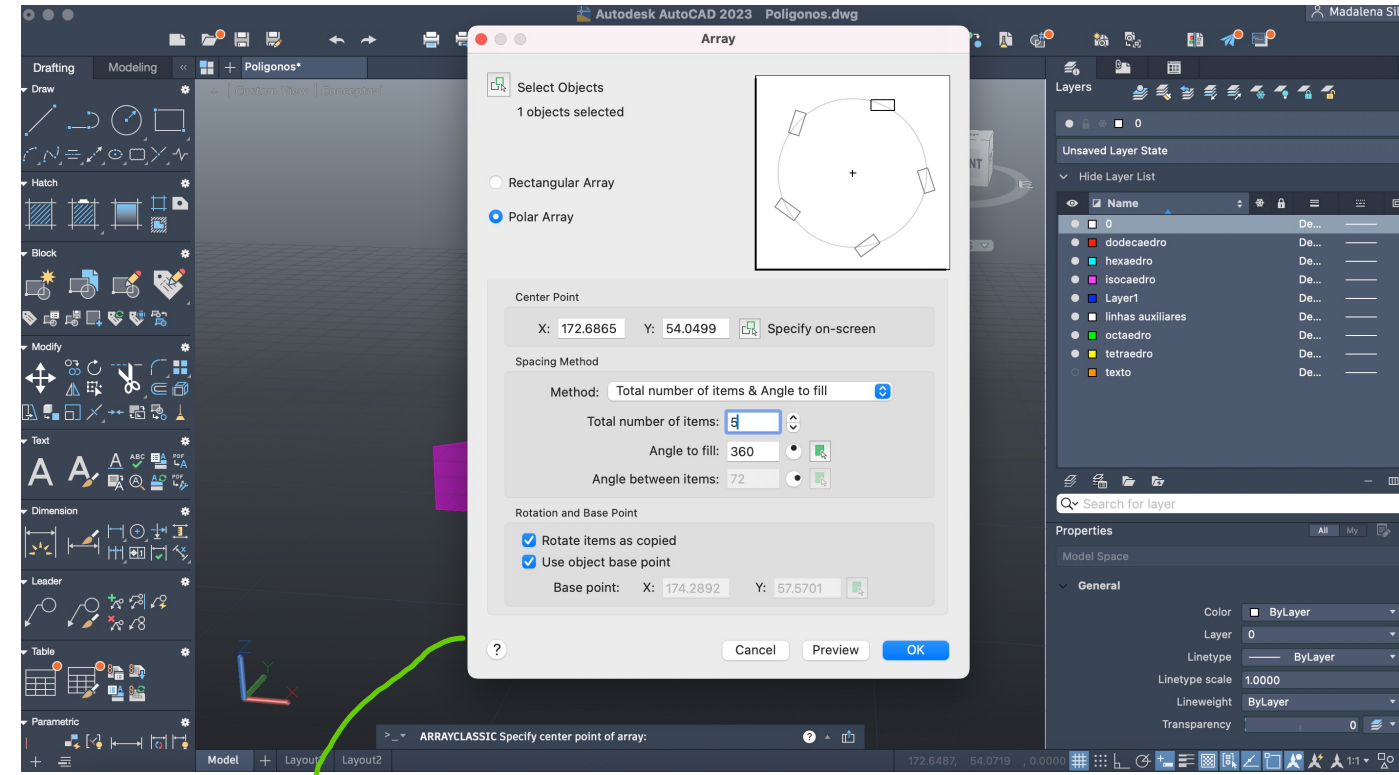
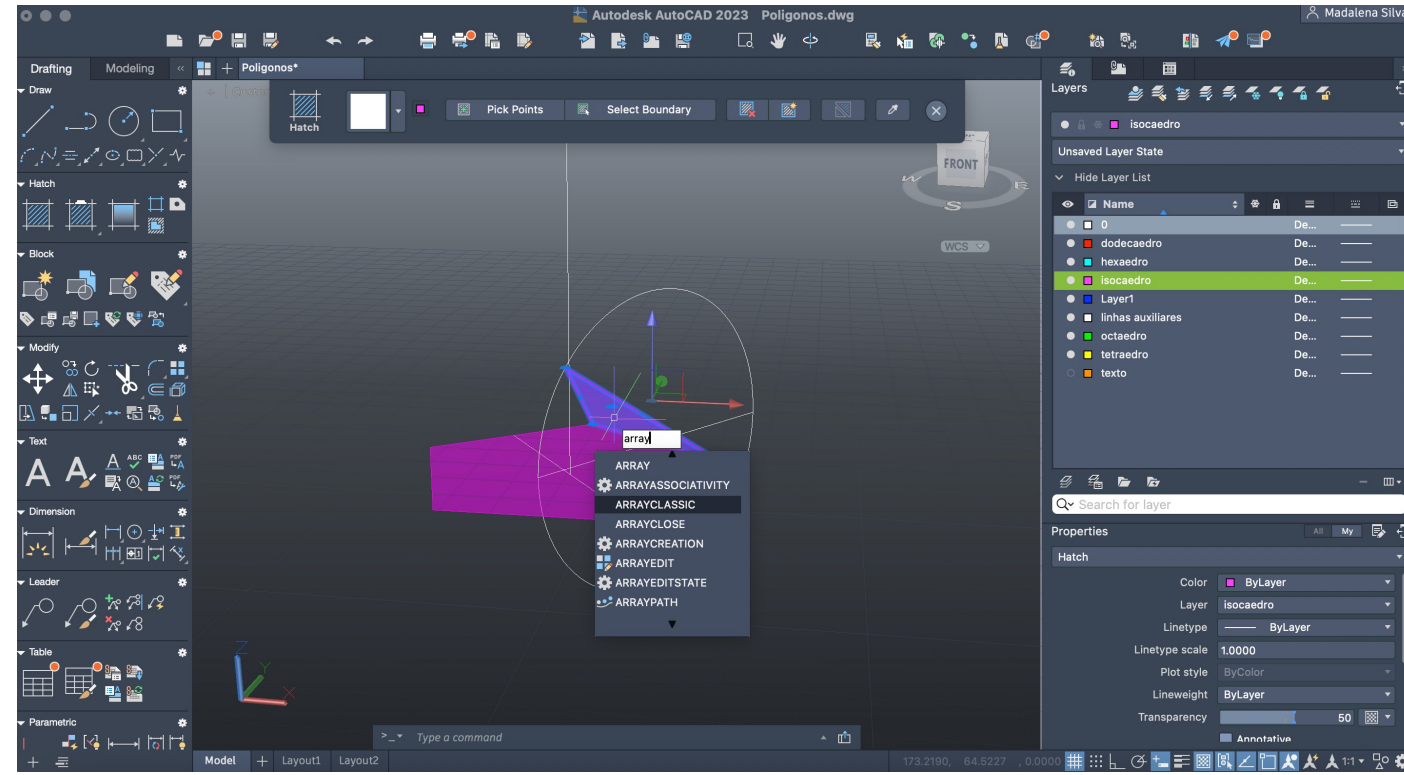
- Planificação: Copy > Selecionar o quadrado > Fazer a planificação (6 quadrados
- Hexaedro:
 - Align

Dodecaedro



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

Icosaedro

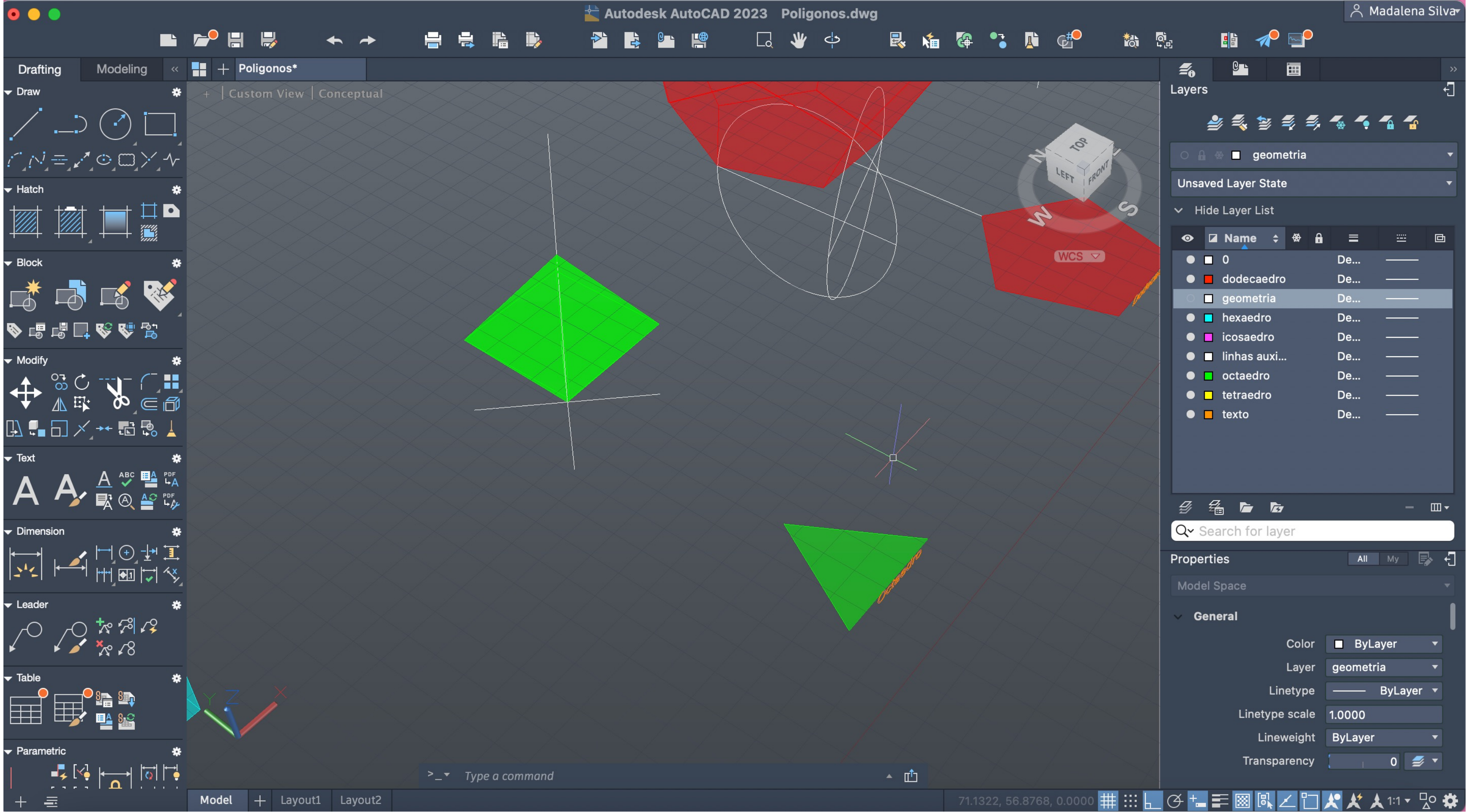


ArrayClassic

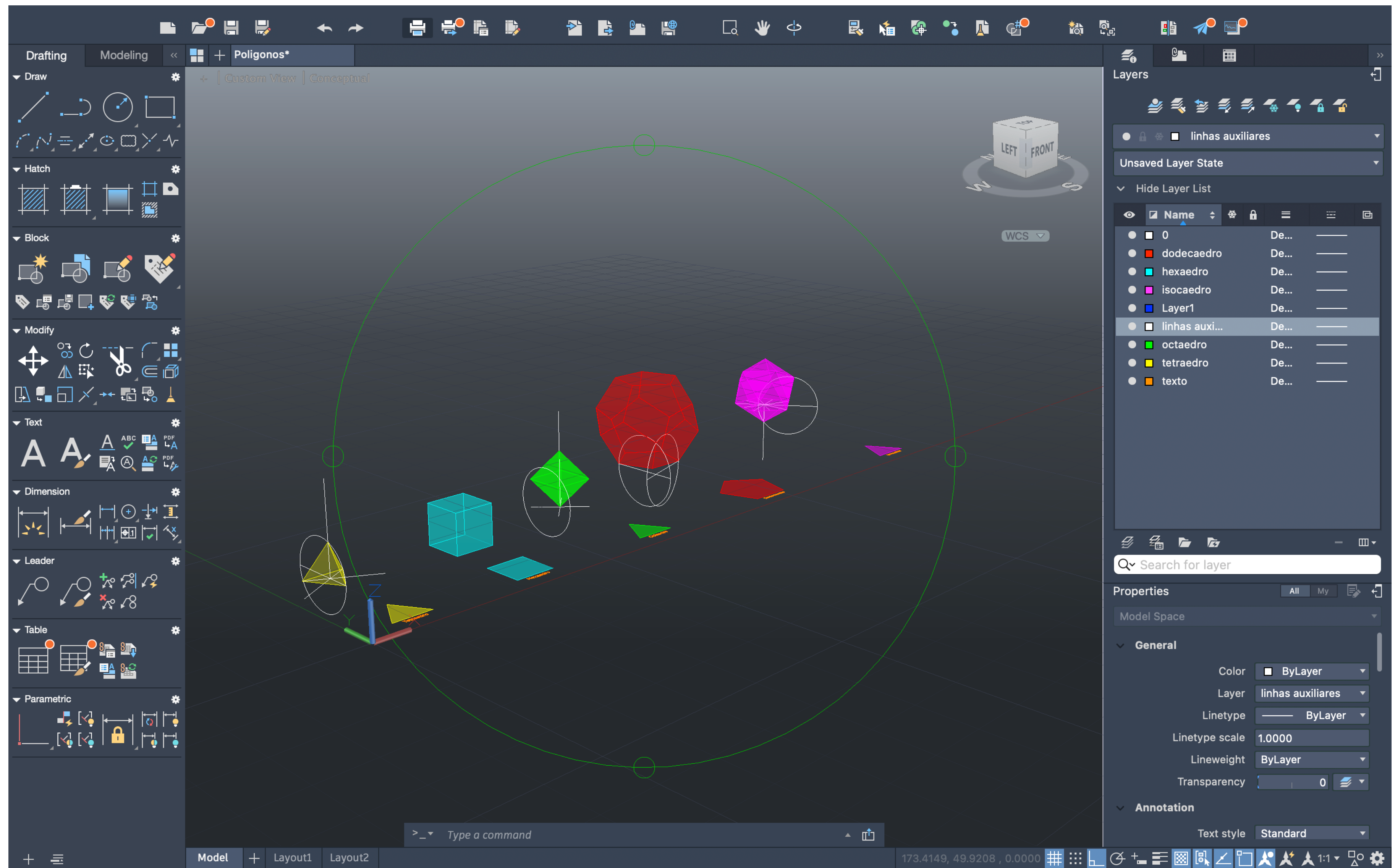
ReDig

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

Octaedro

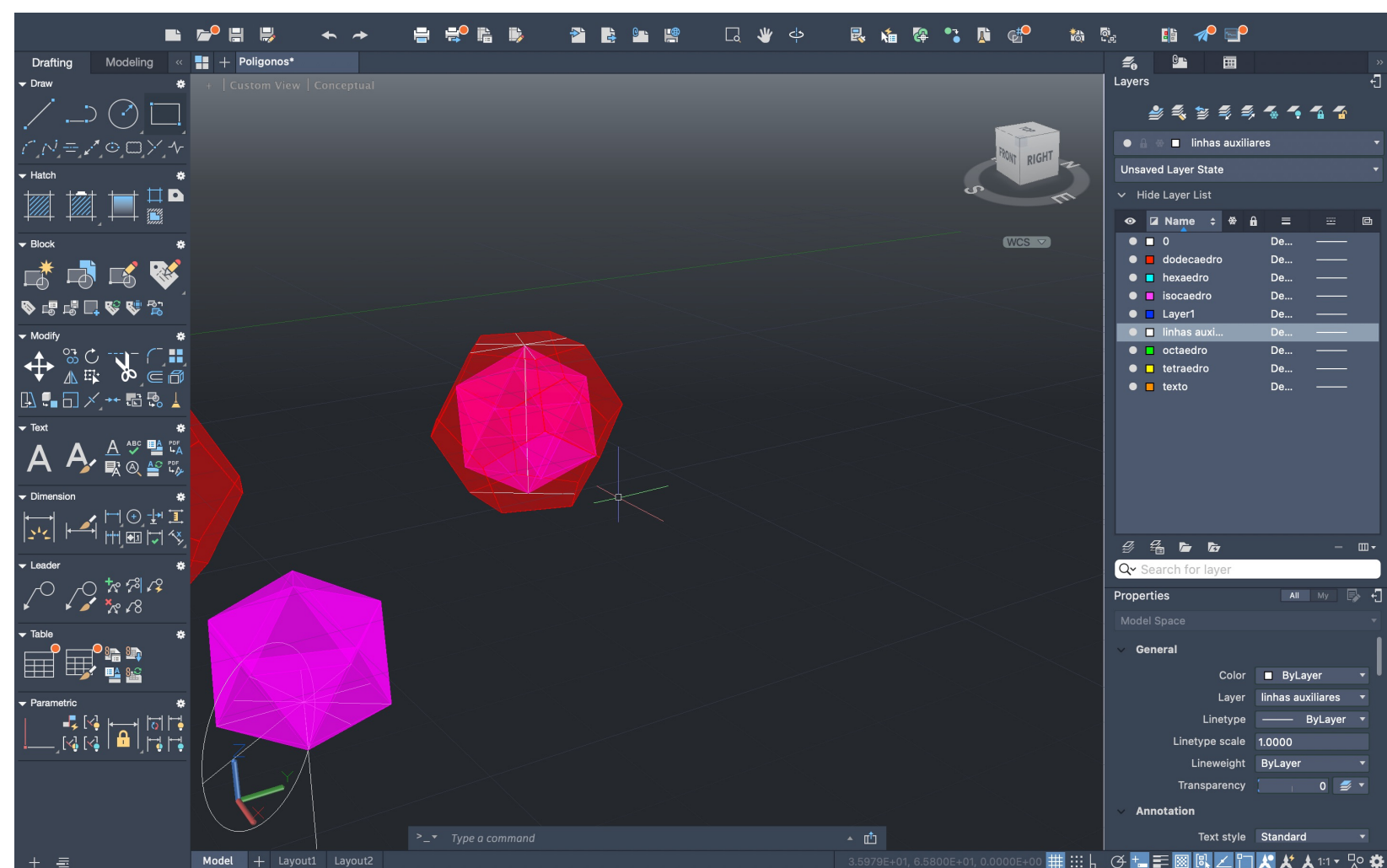
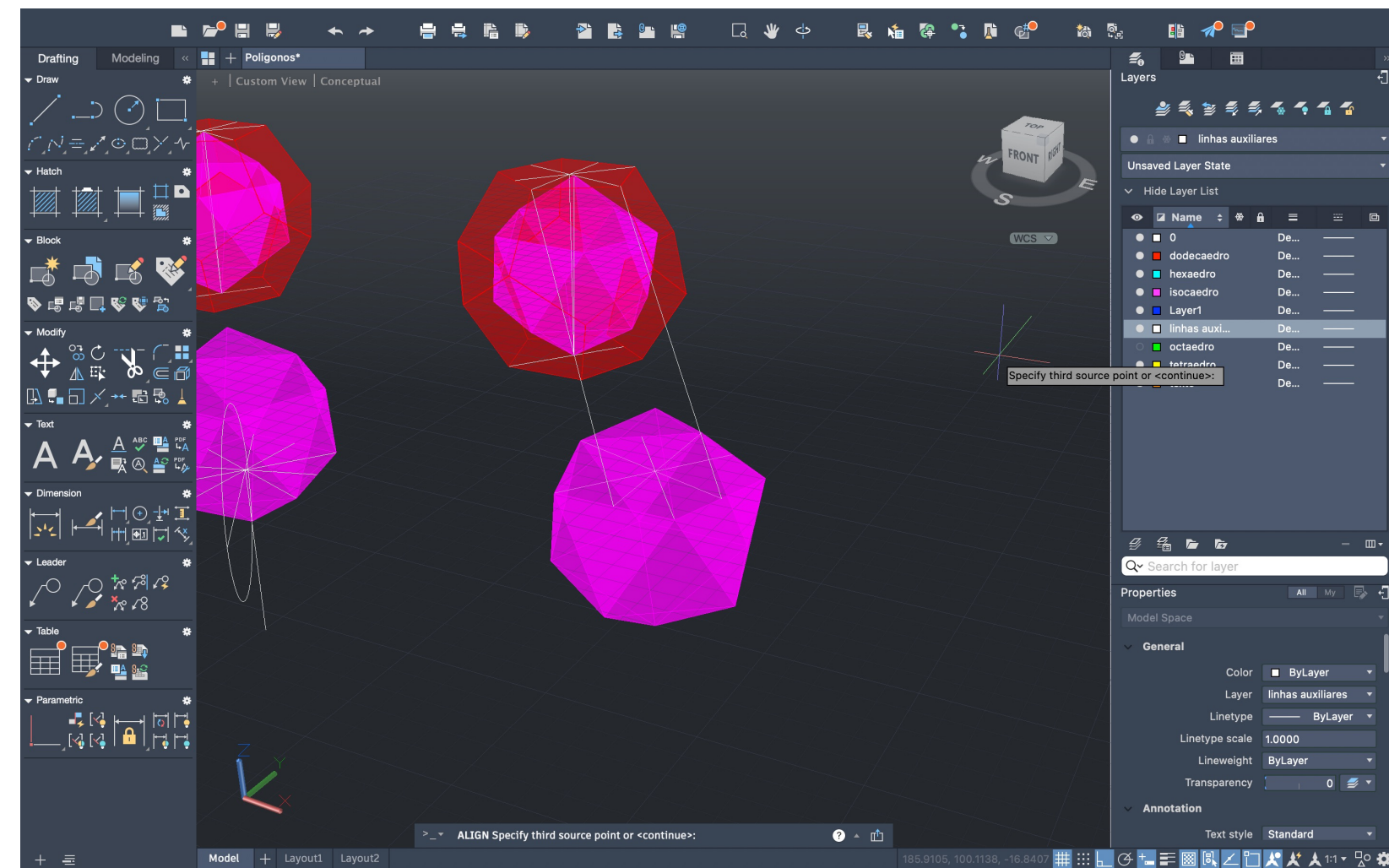
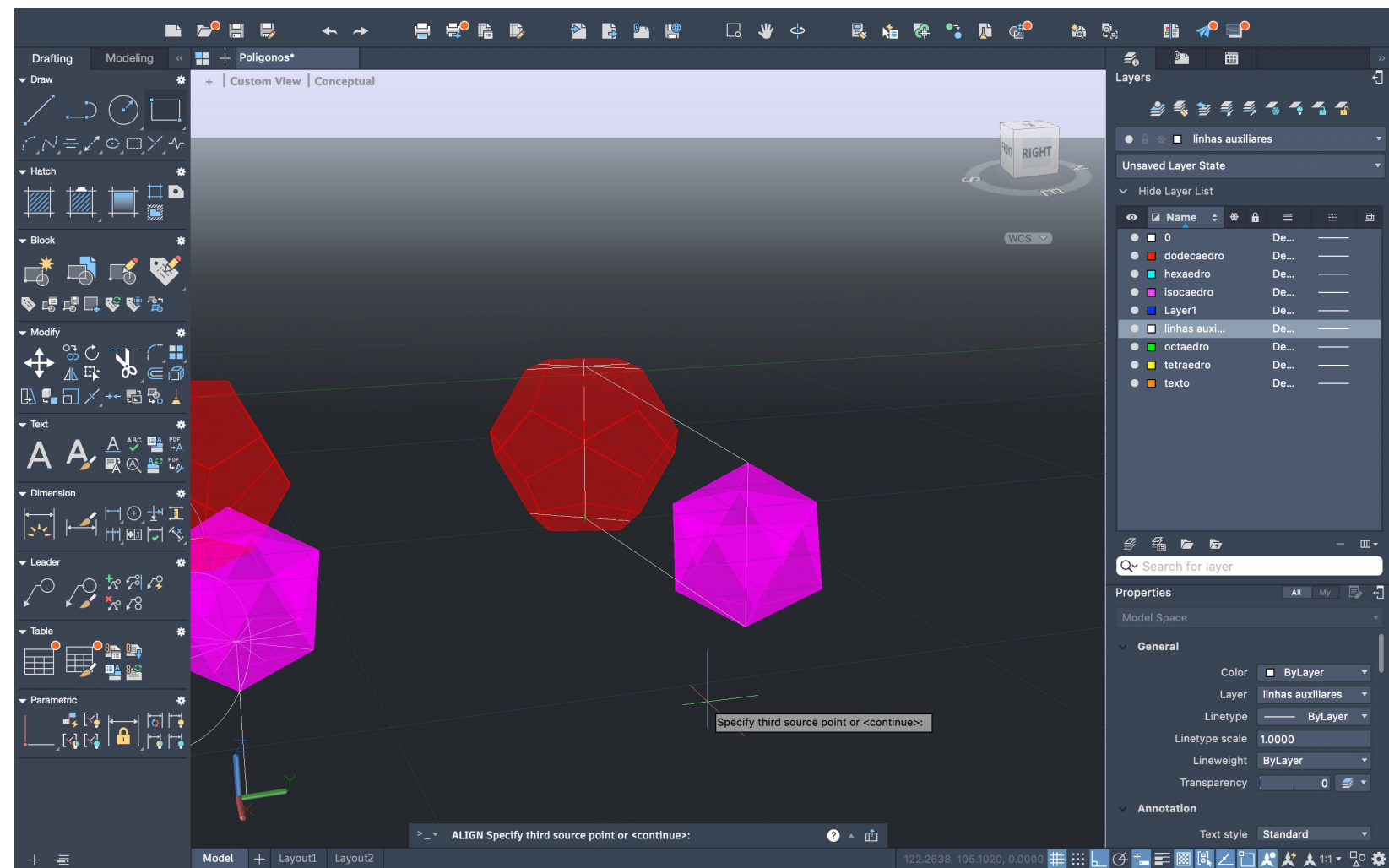


Processo igual ao tetraedro



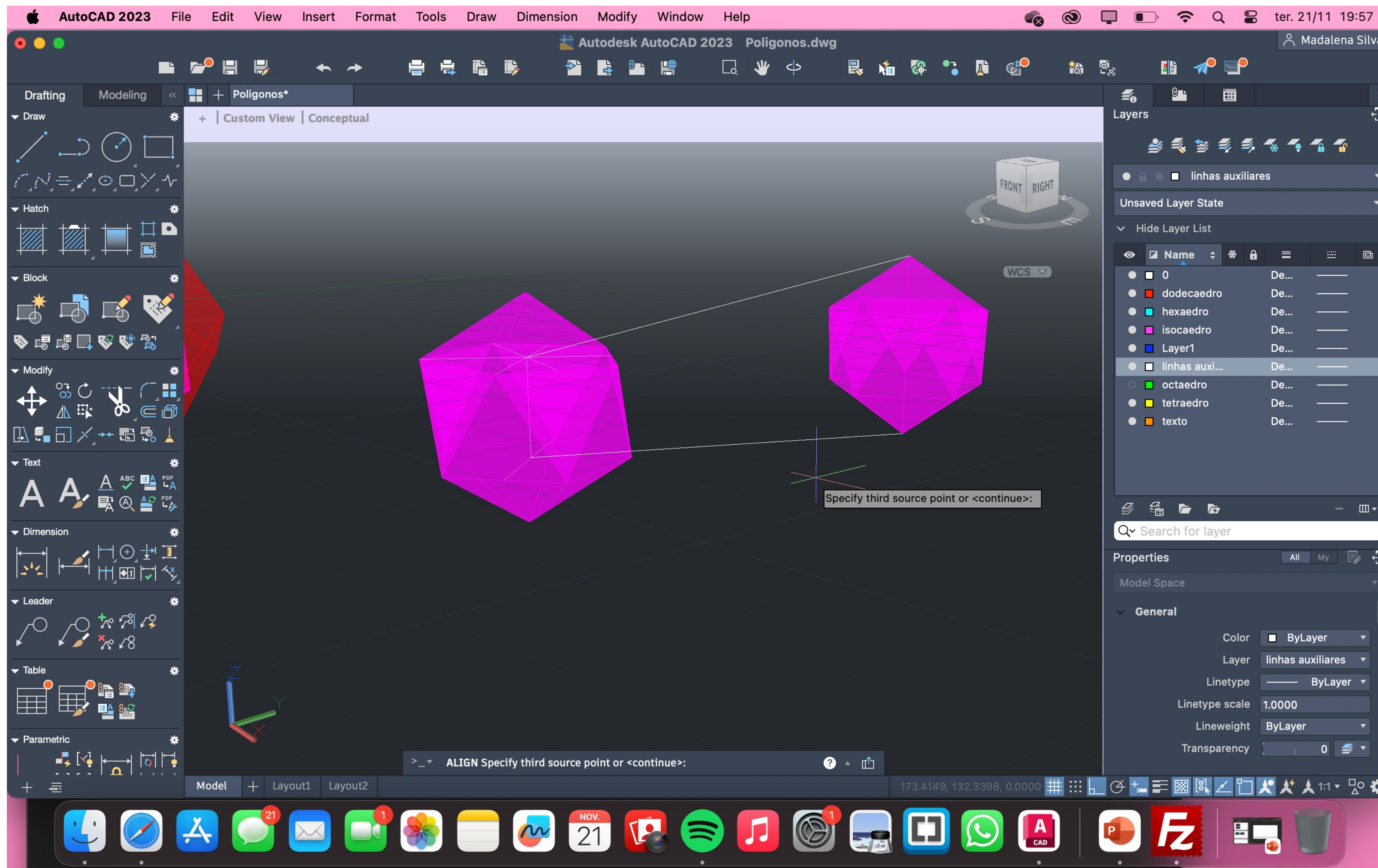
ReDig

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



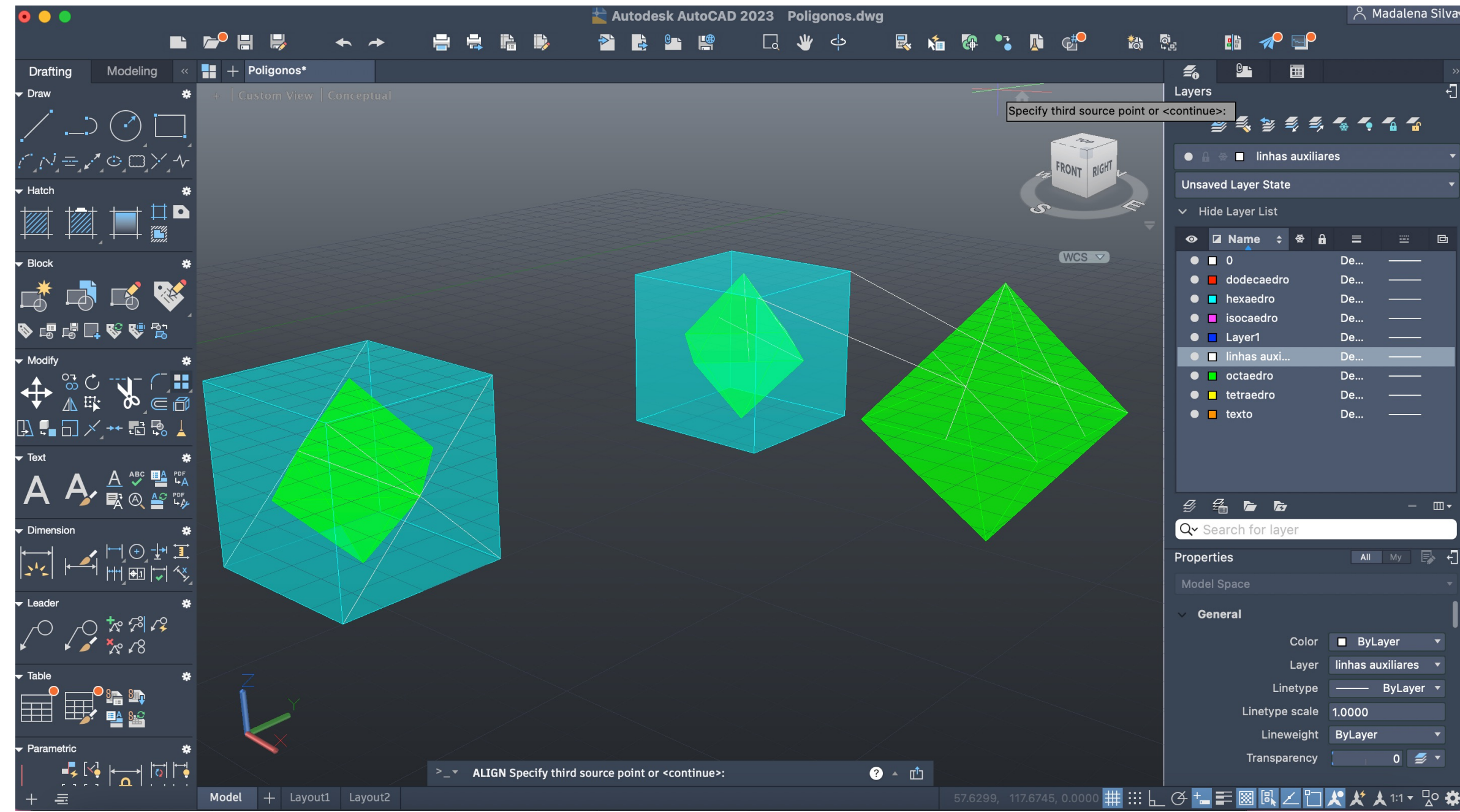
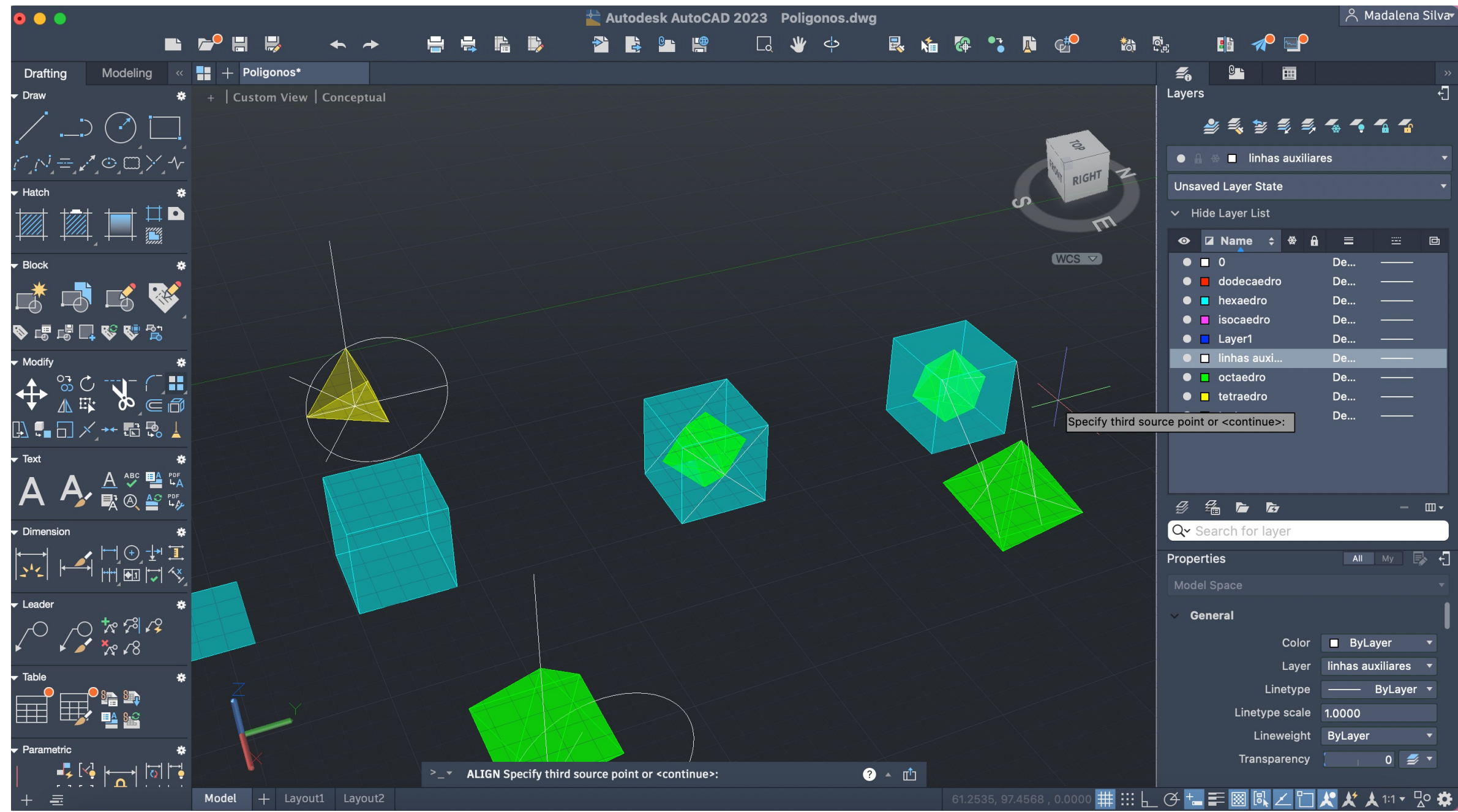
ReDig

Semana 10_{21/11/2023 - 24/11/2023}



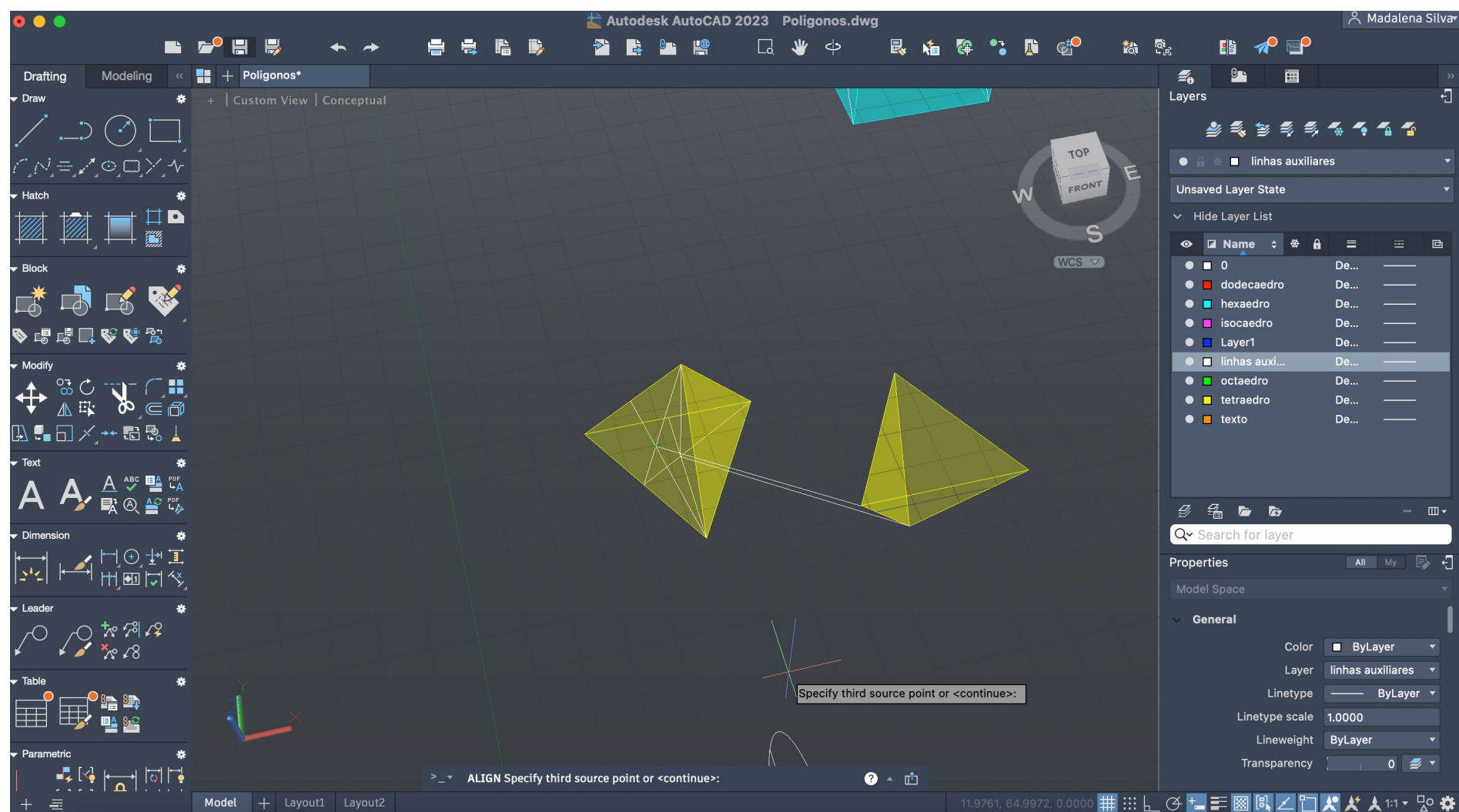
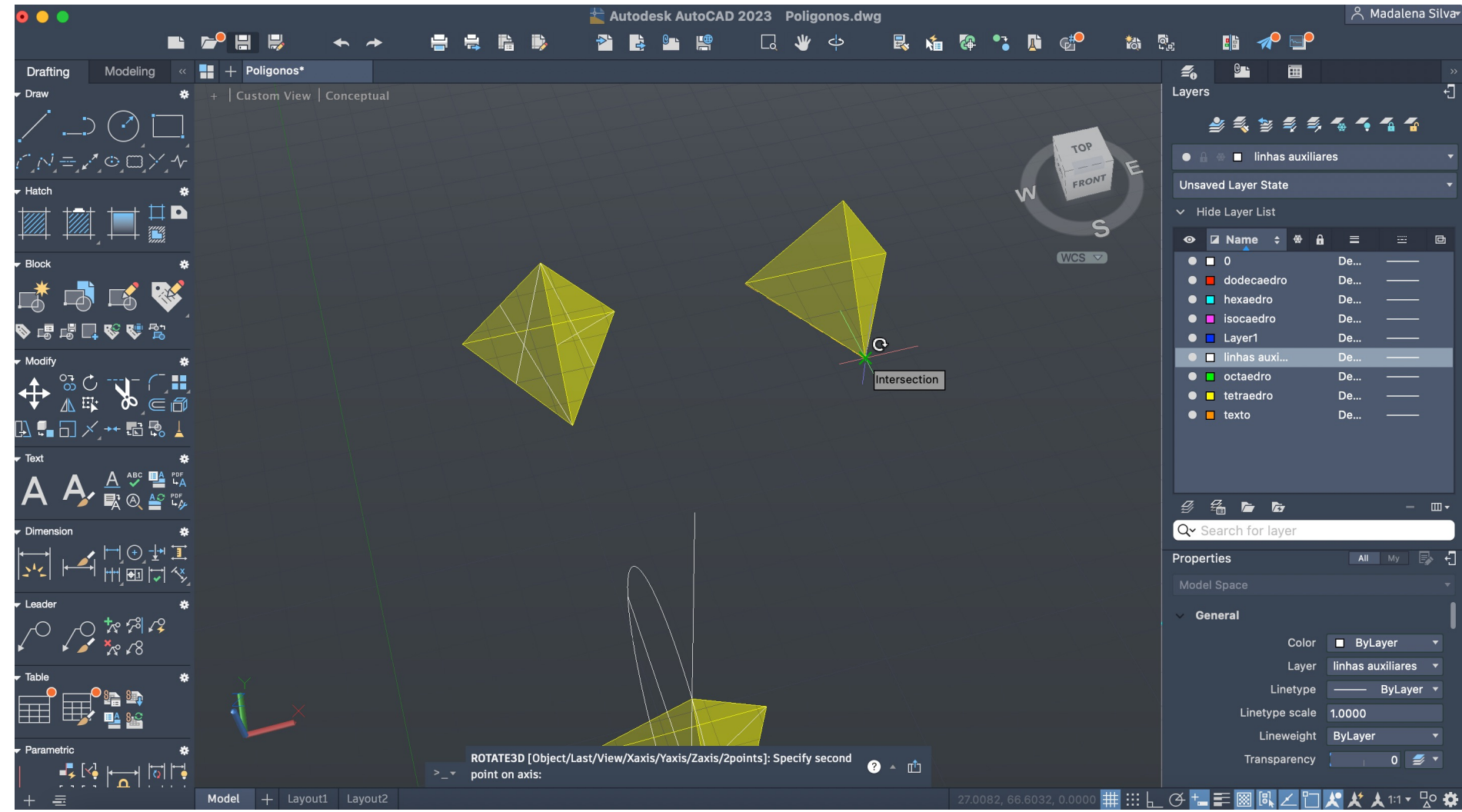
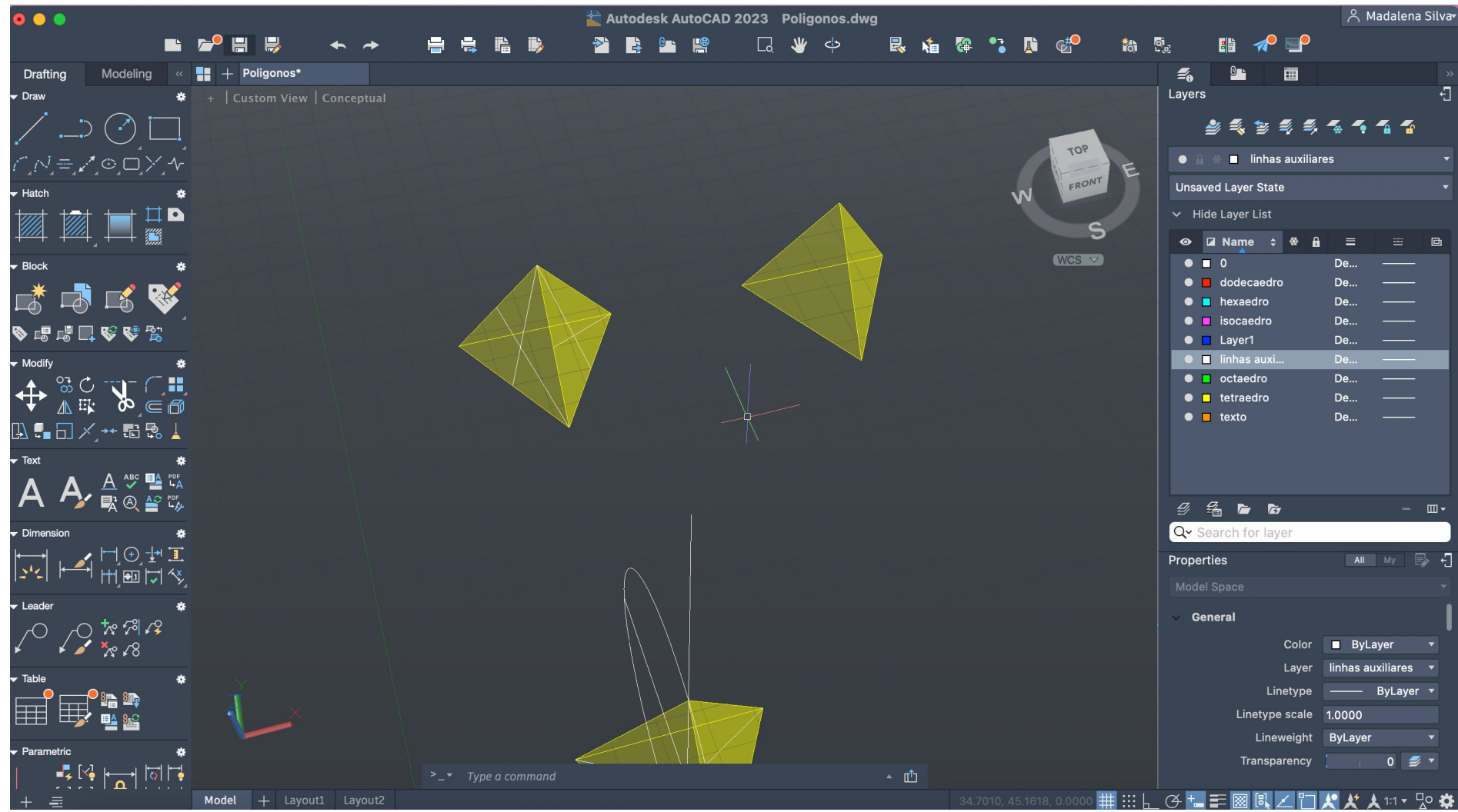
ReDig

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



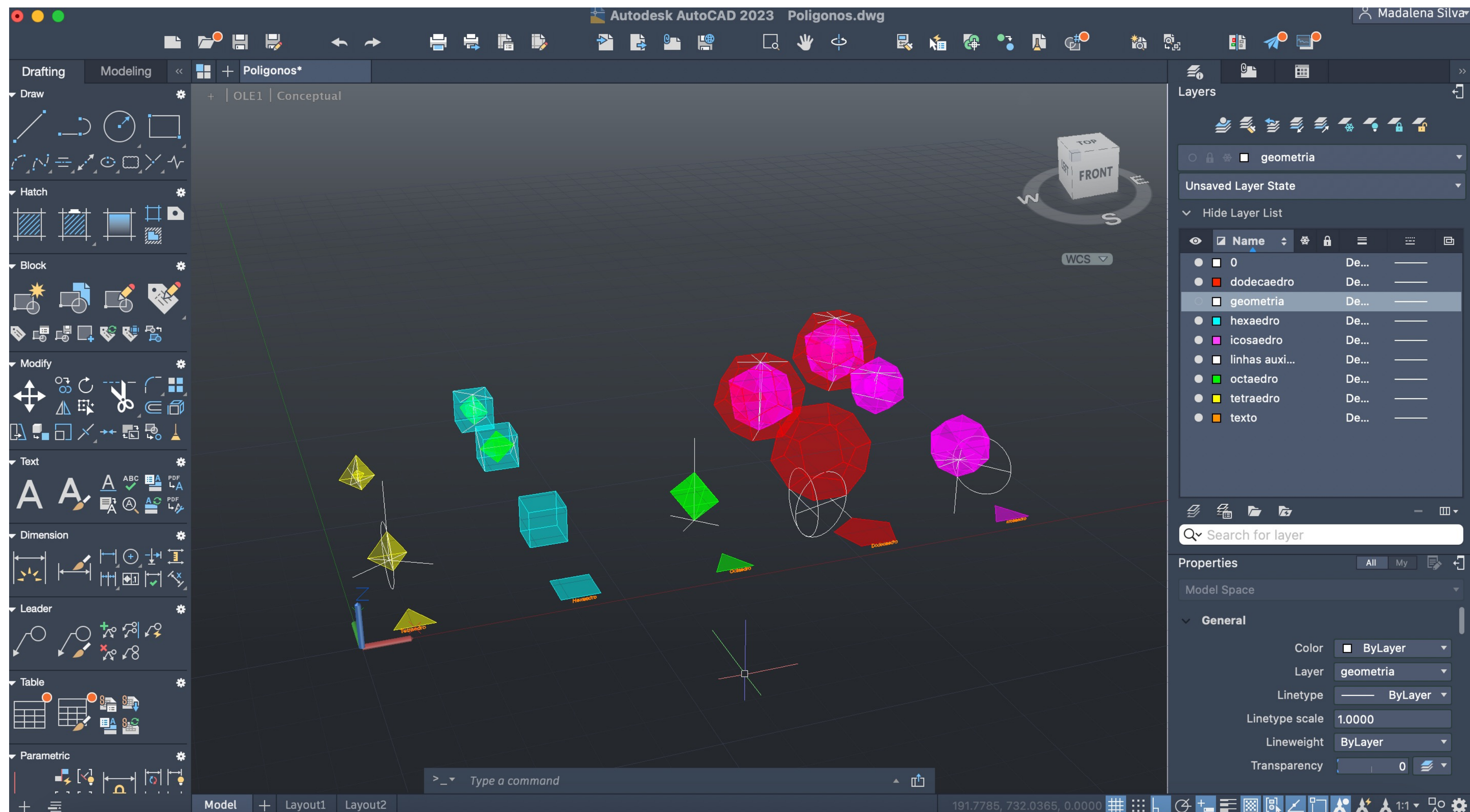
ReDig

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



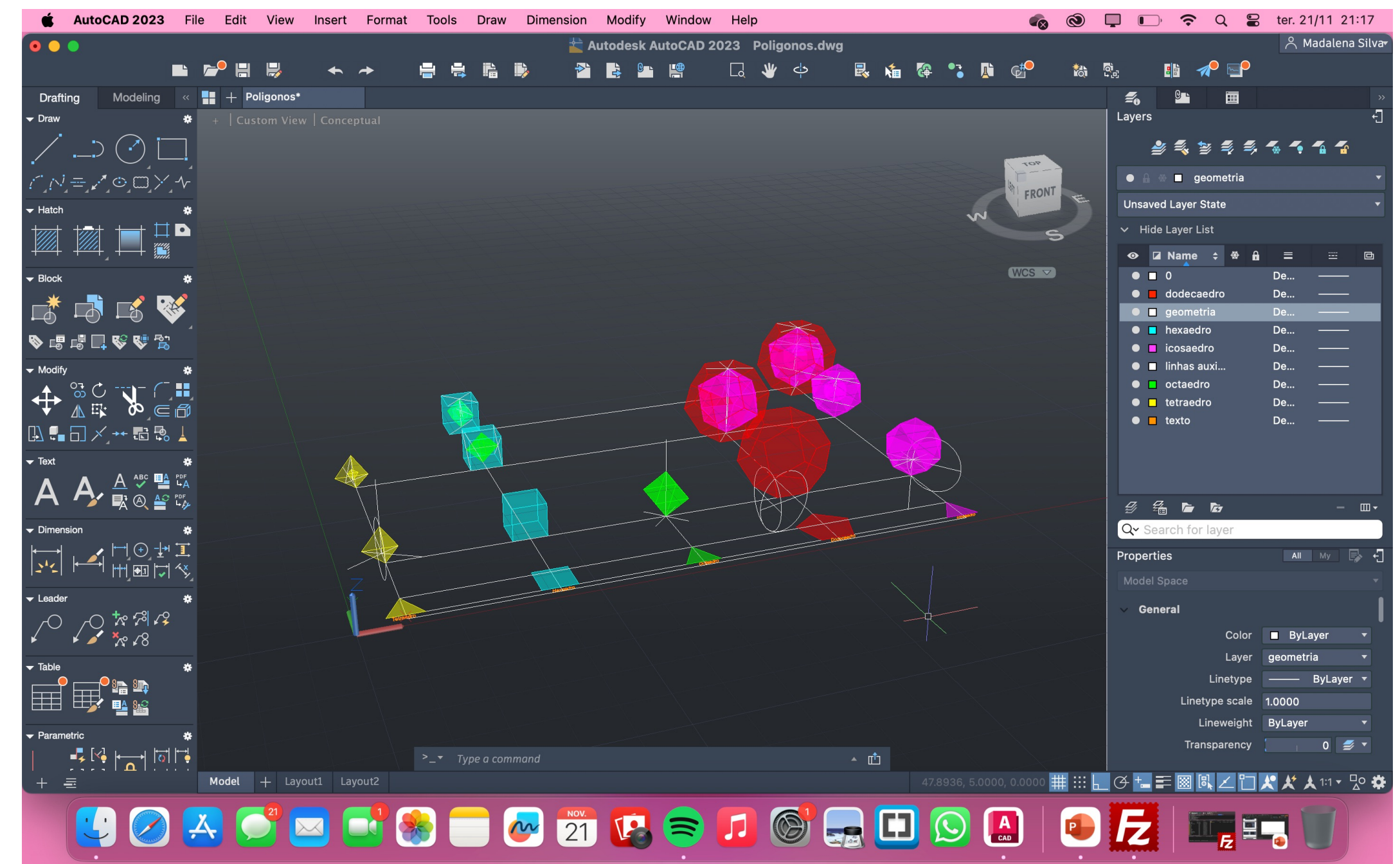
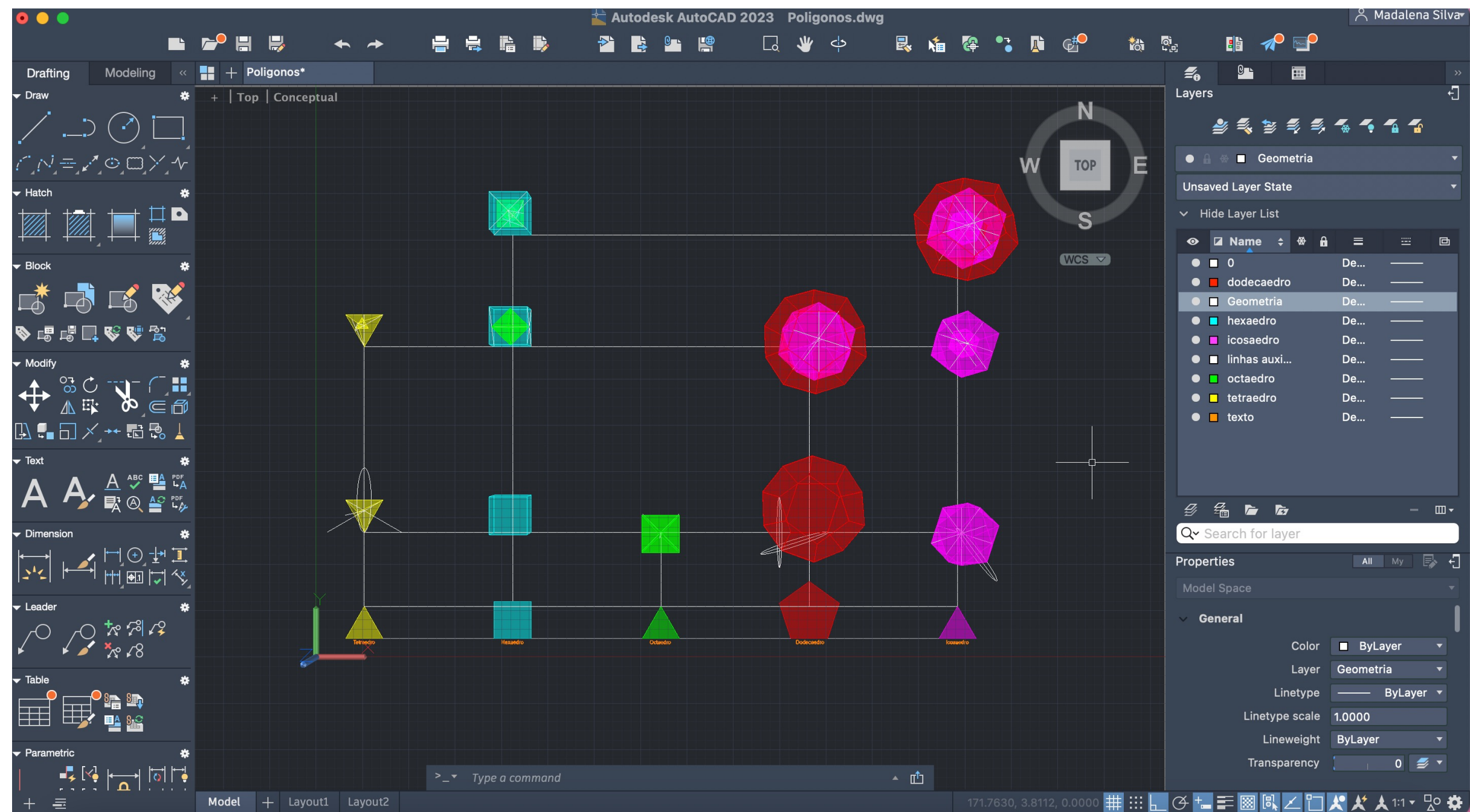
ReDig

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



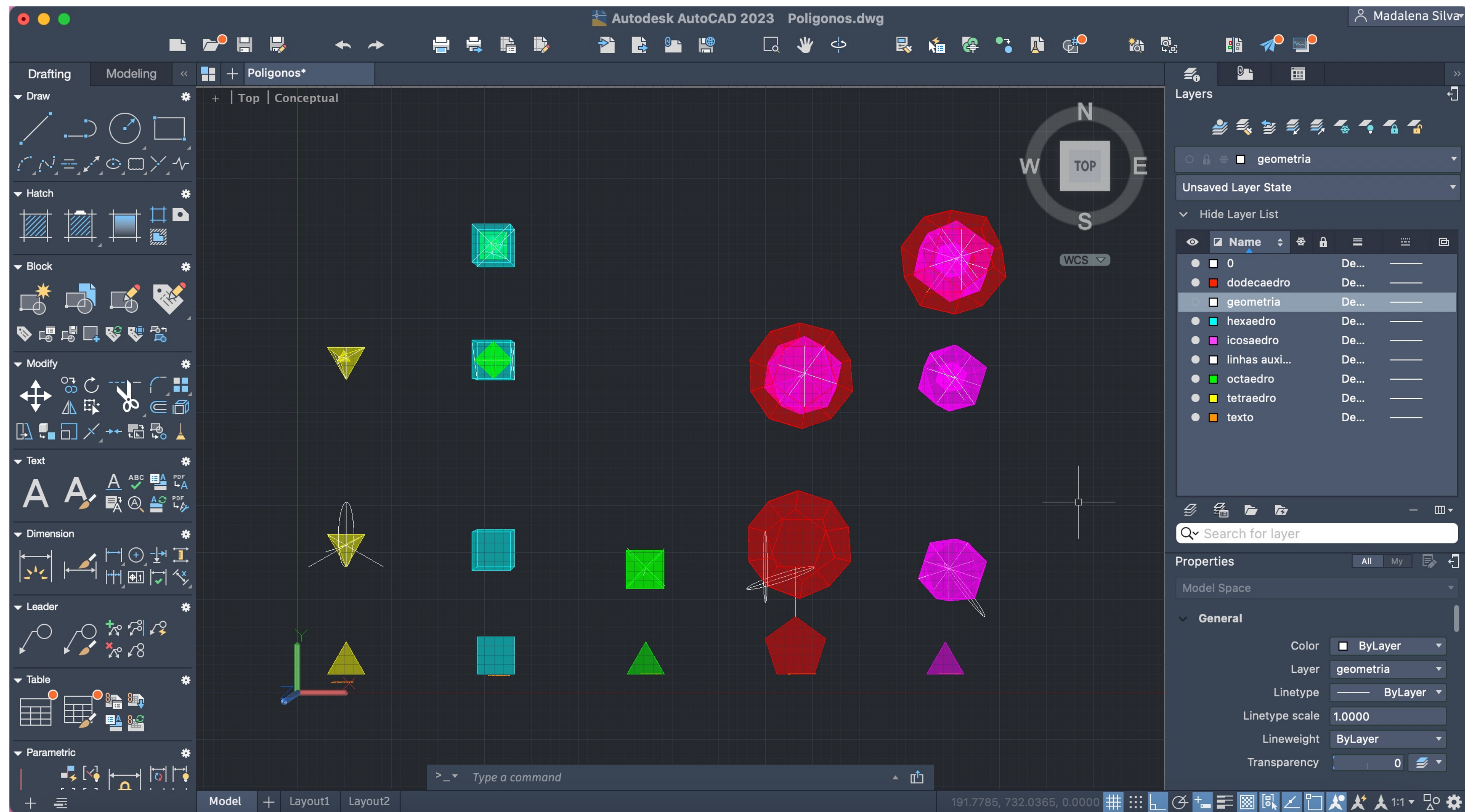
ReDig

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



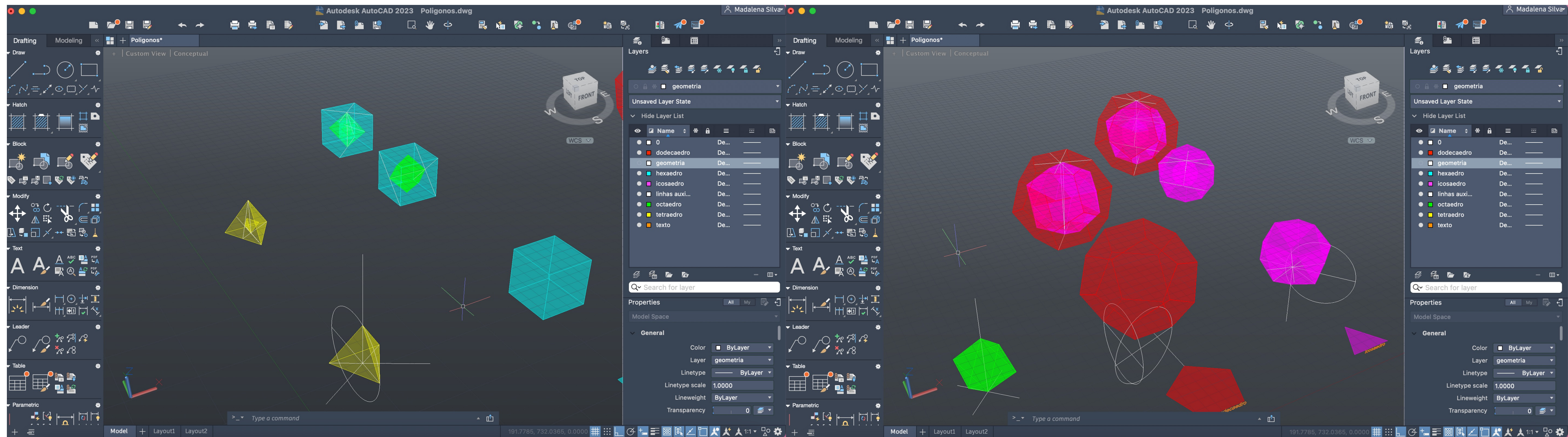
ReDig

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



ReDig

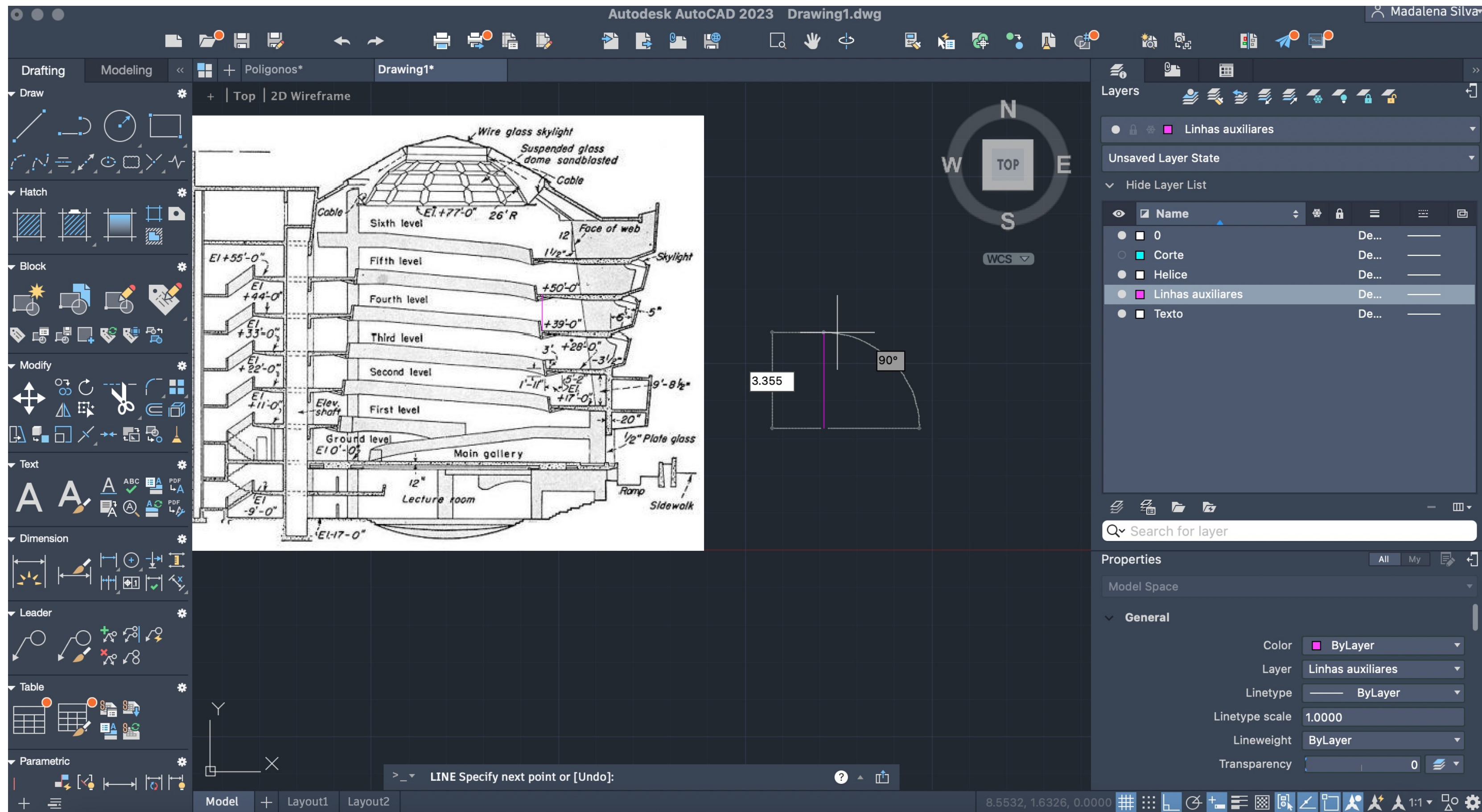
Semana 10 21/11/2023 - 24/11/2023



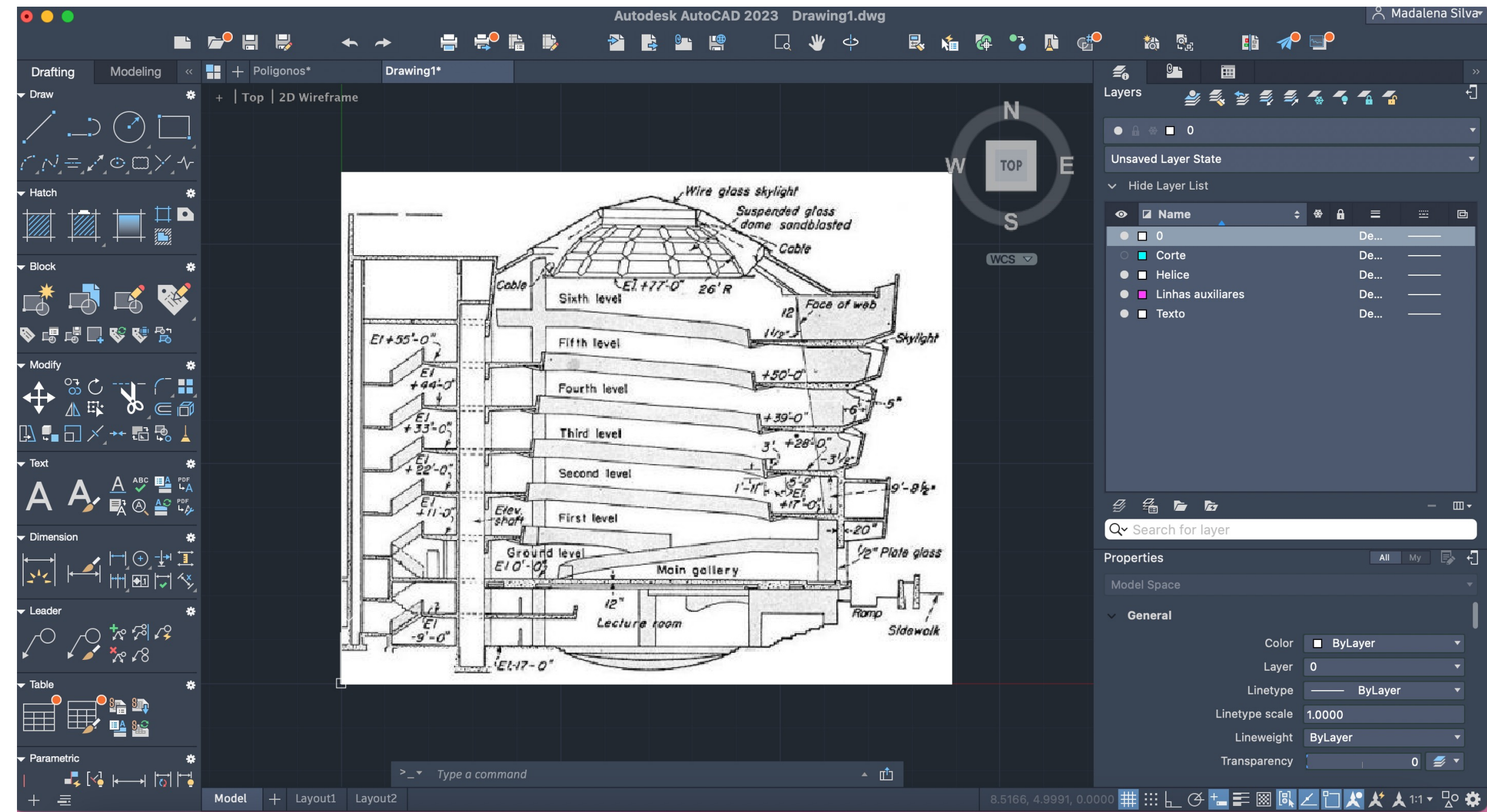
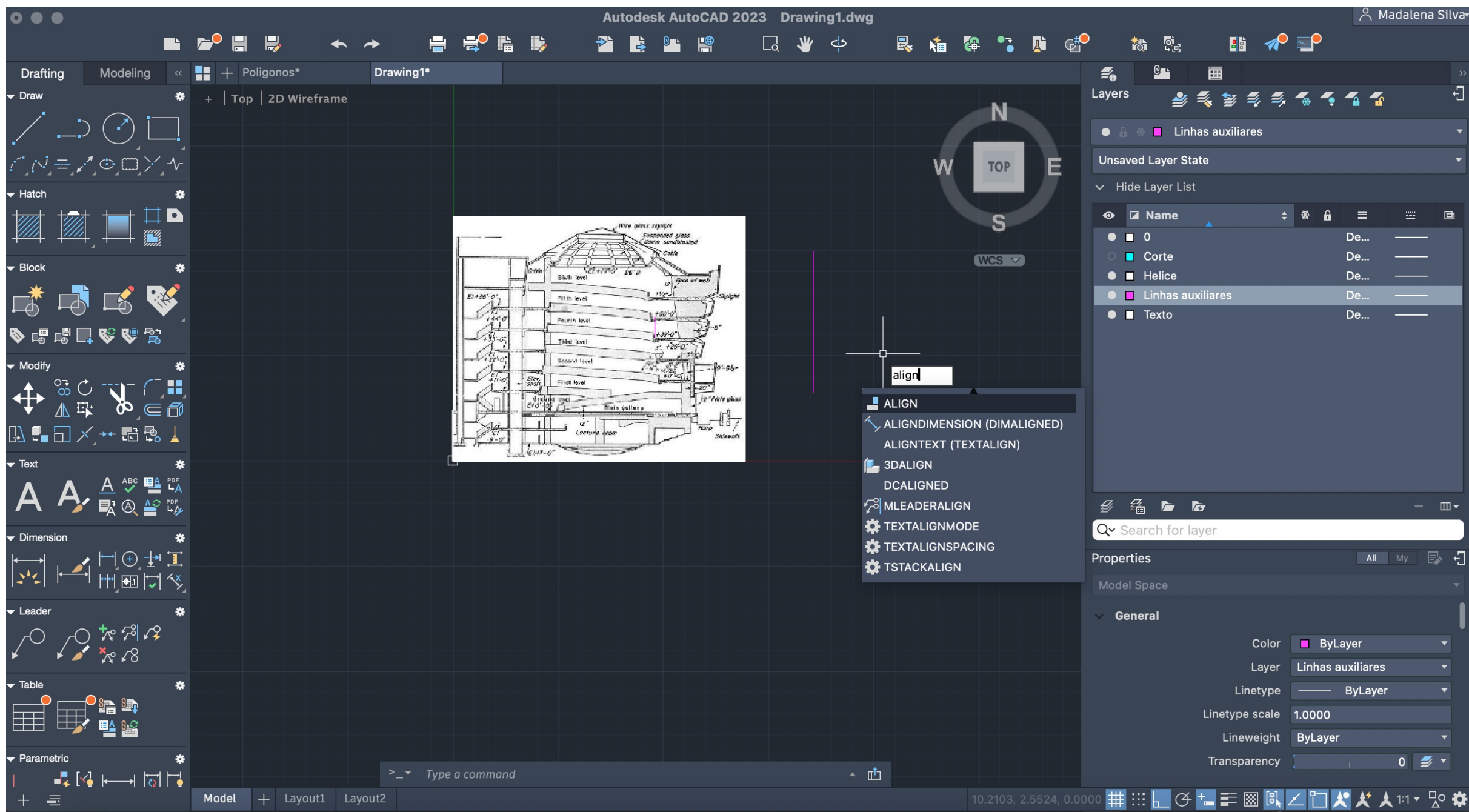
ReDig

Semana 10_{21/11/2023 - 24/11/2023}

Corte Guggenheim



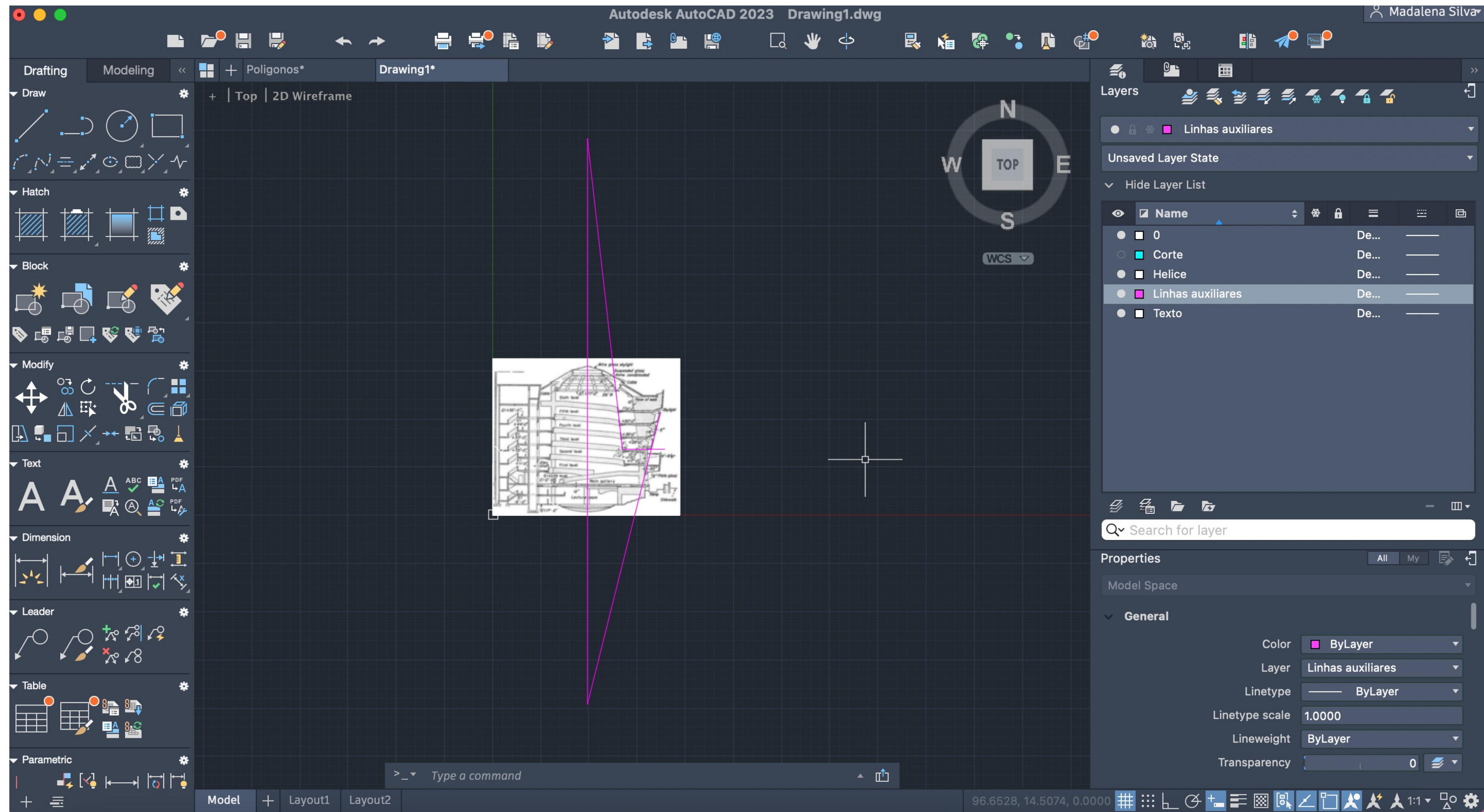
Attach
Line > medida do chão à cobertura de um
pisos
Line > 3.355
(1ft=0.305m; 0.305x11=3.355)



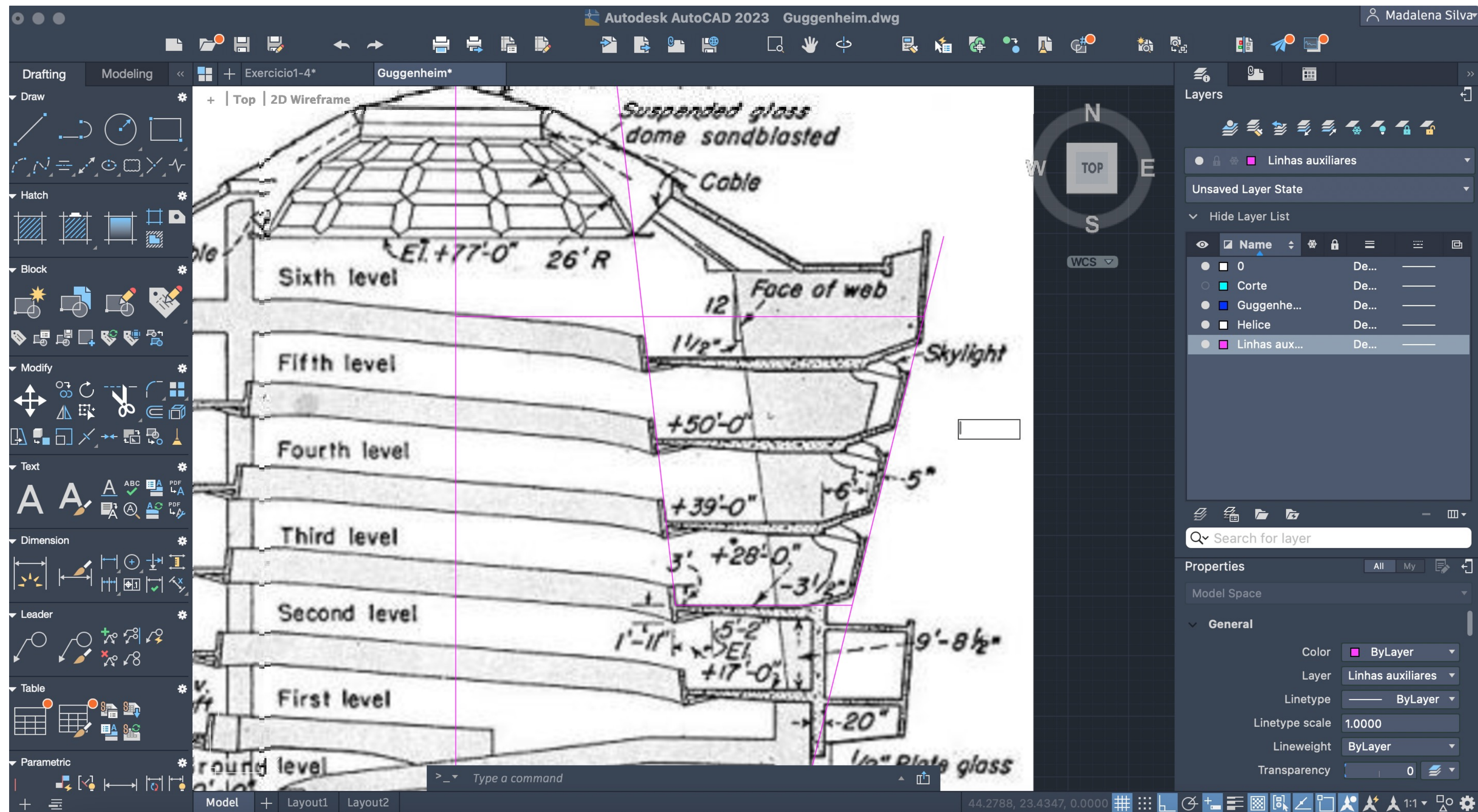
Align foto e lines para ficar à escala real

ReDig

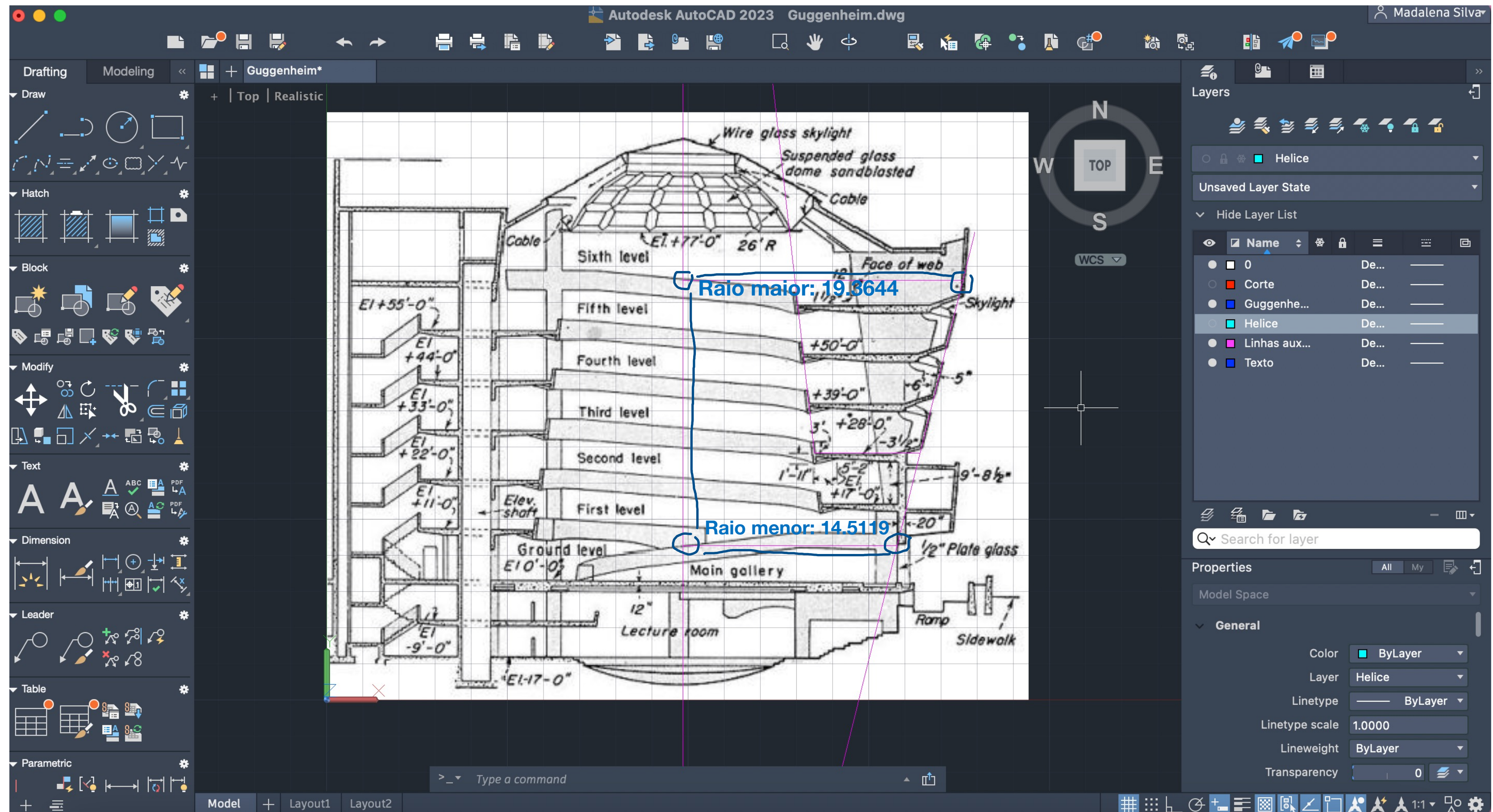
Semana 11 28/11/2023 - 1/12/2023



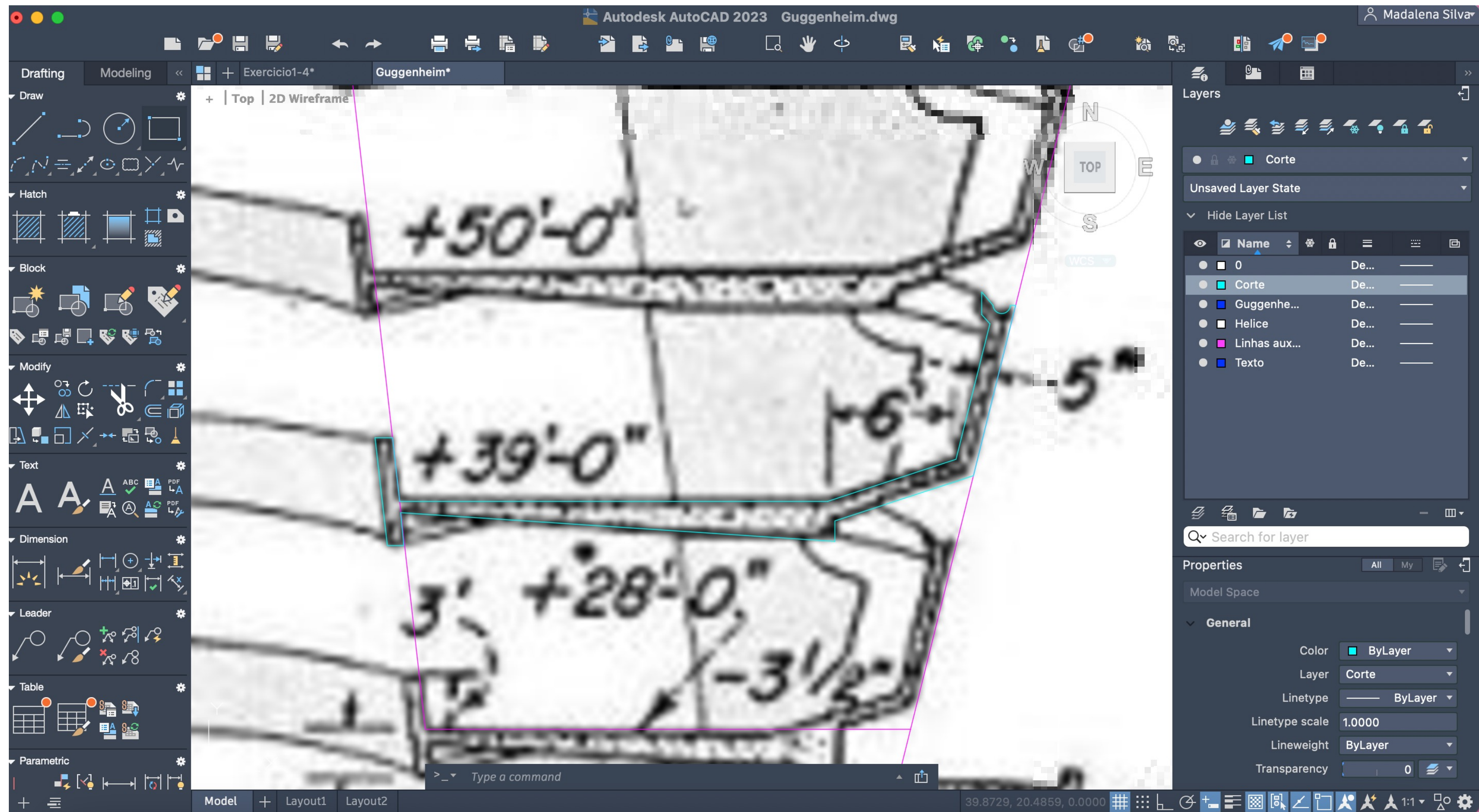
Linhas auxiliares



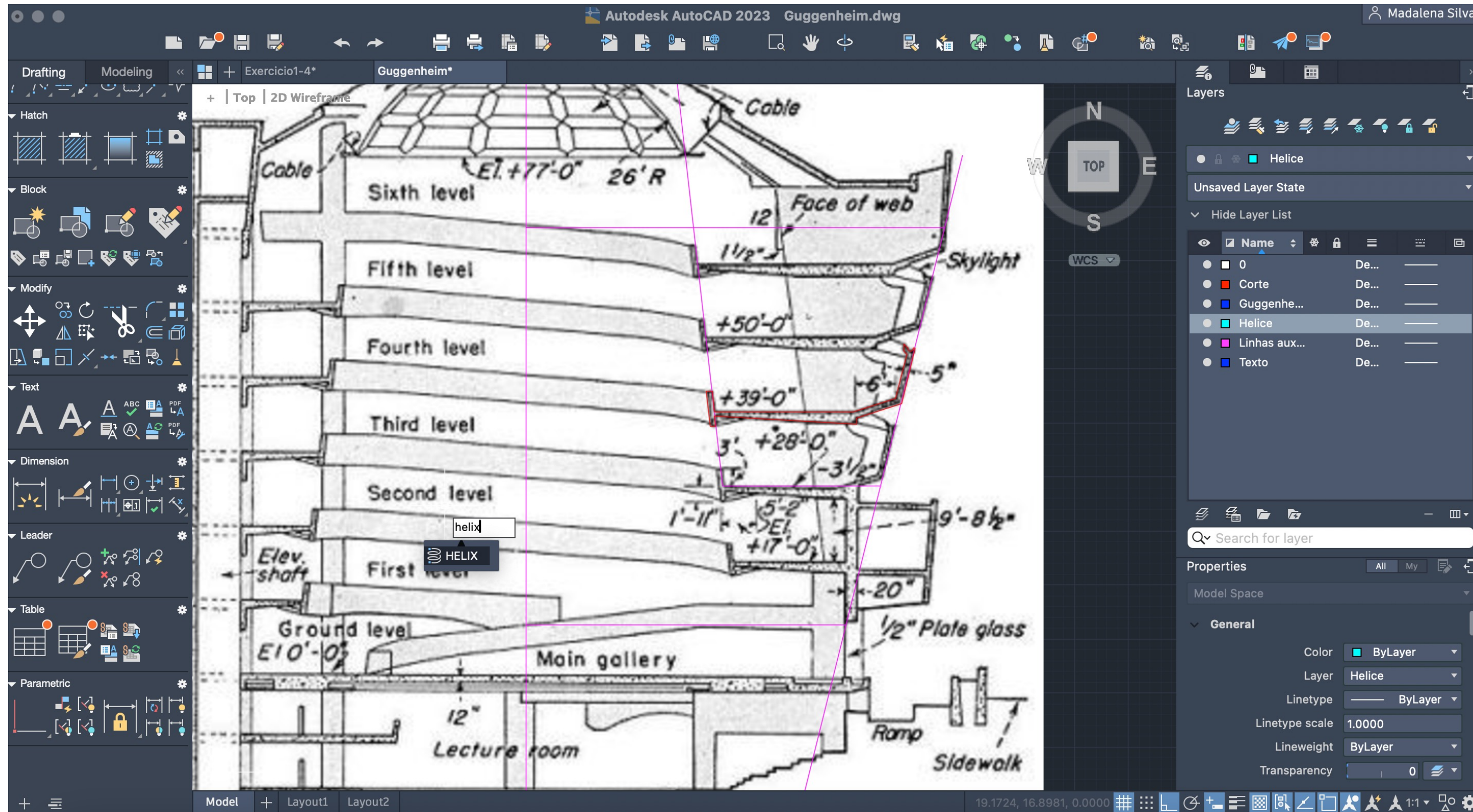
Linhas auxiliares



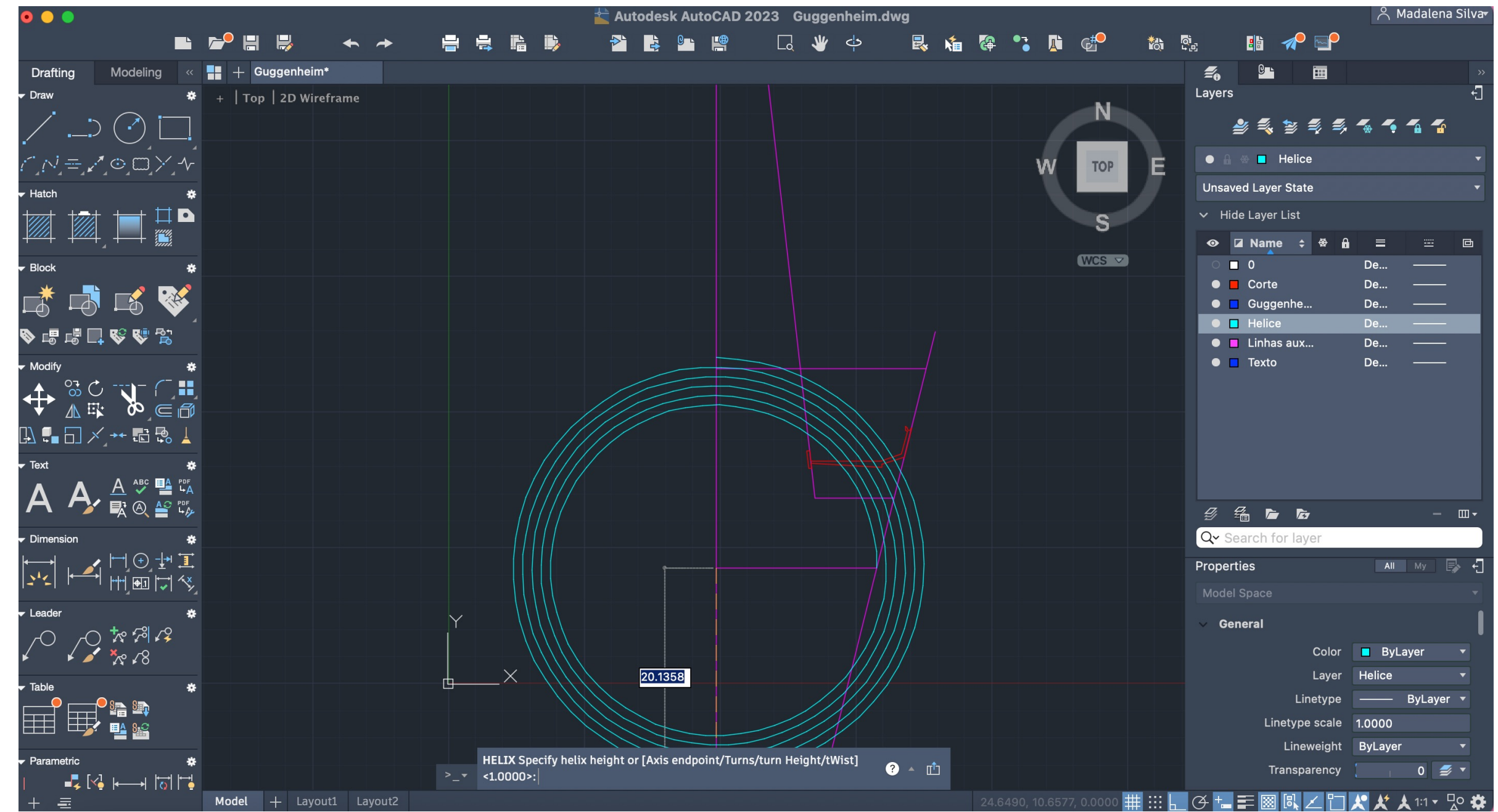
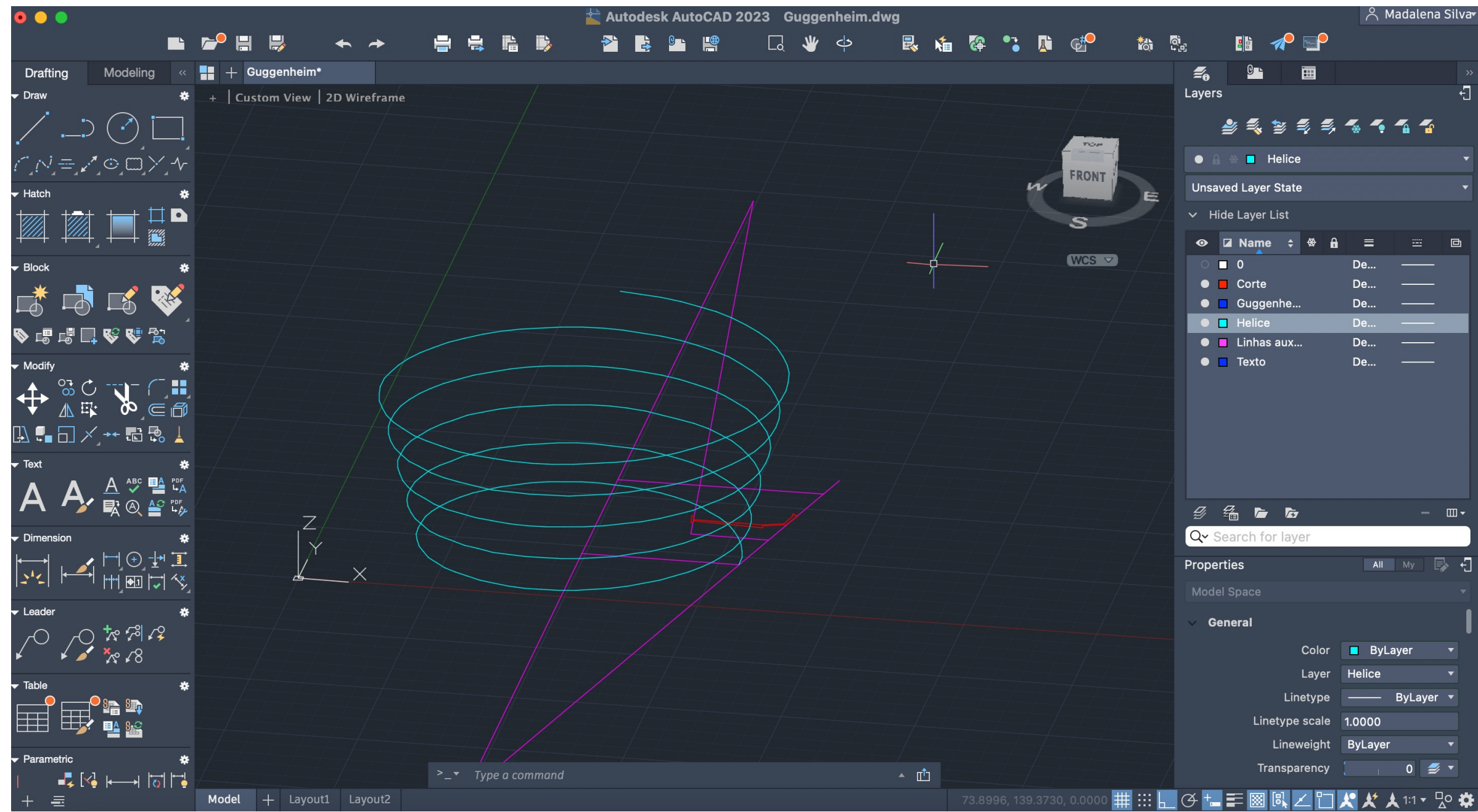
Medidas dos raios e da altura para a helice



Desenho do patamar

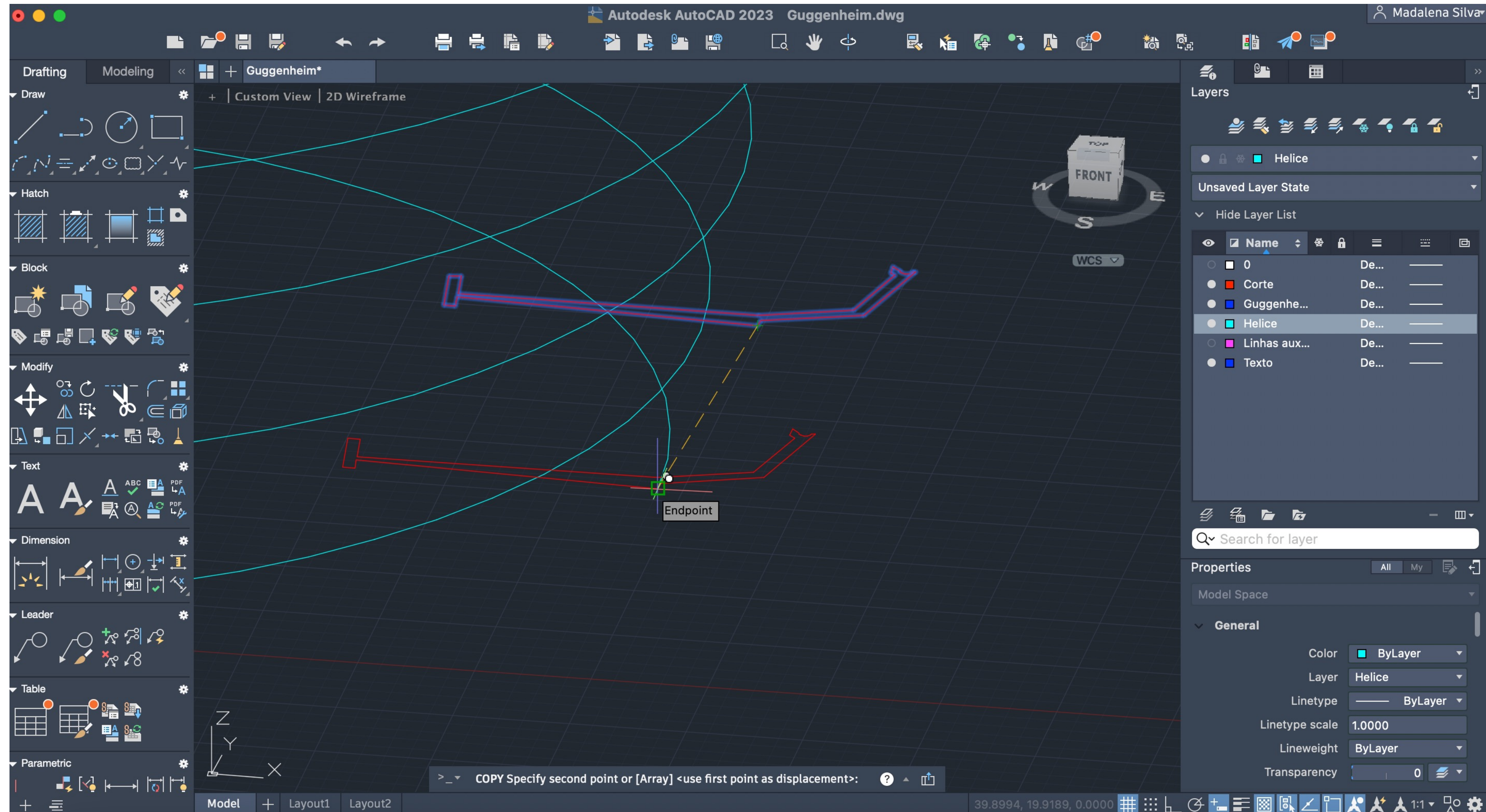


Helix > Seleccionar punto > Raio menor > Raio maior > Altura



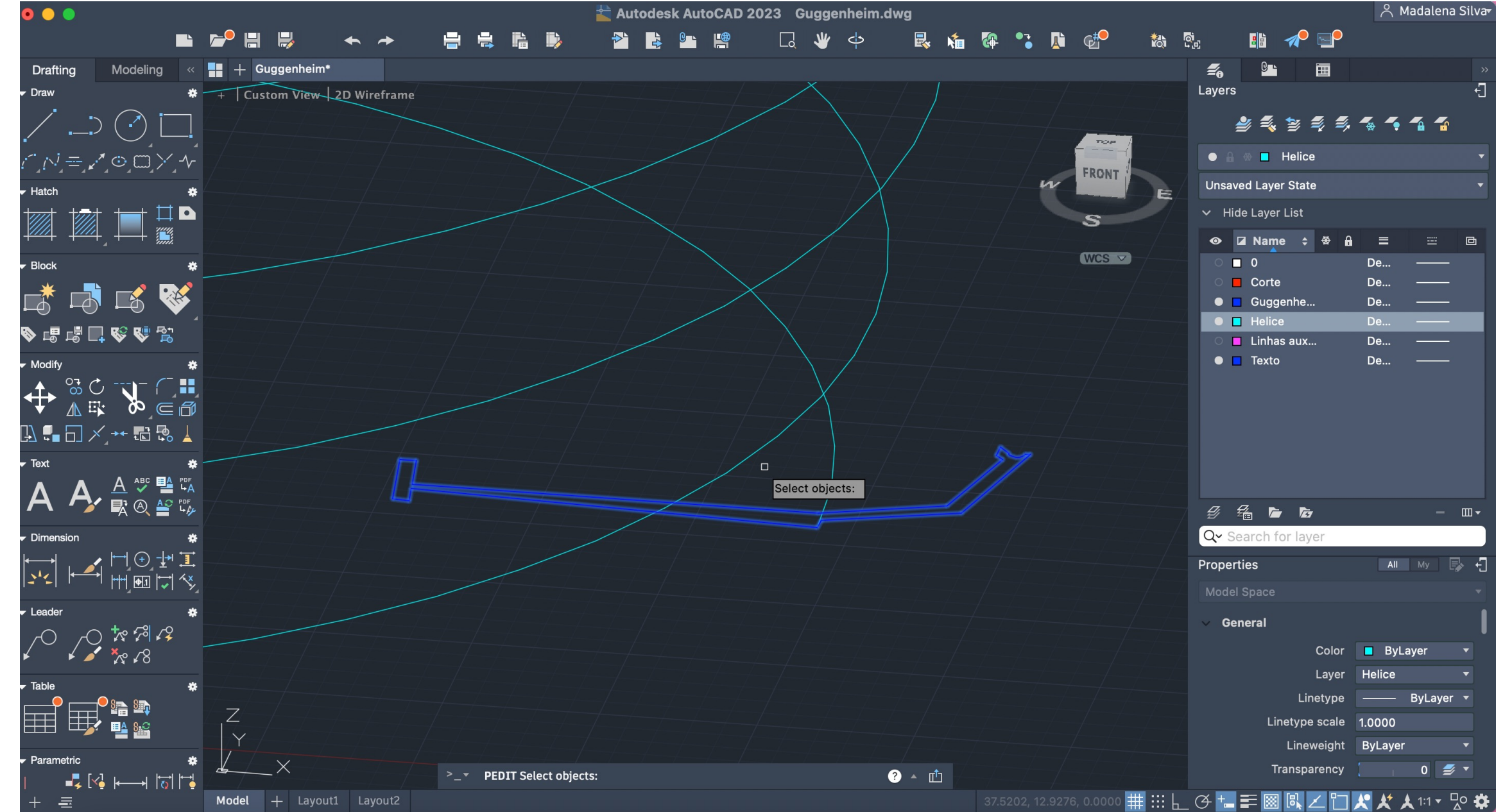
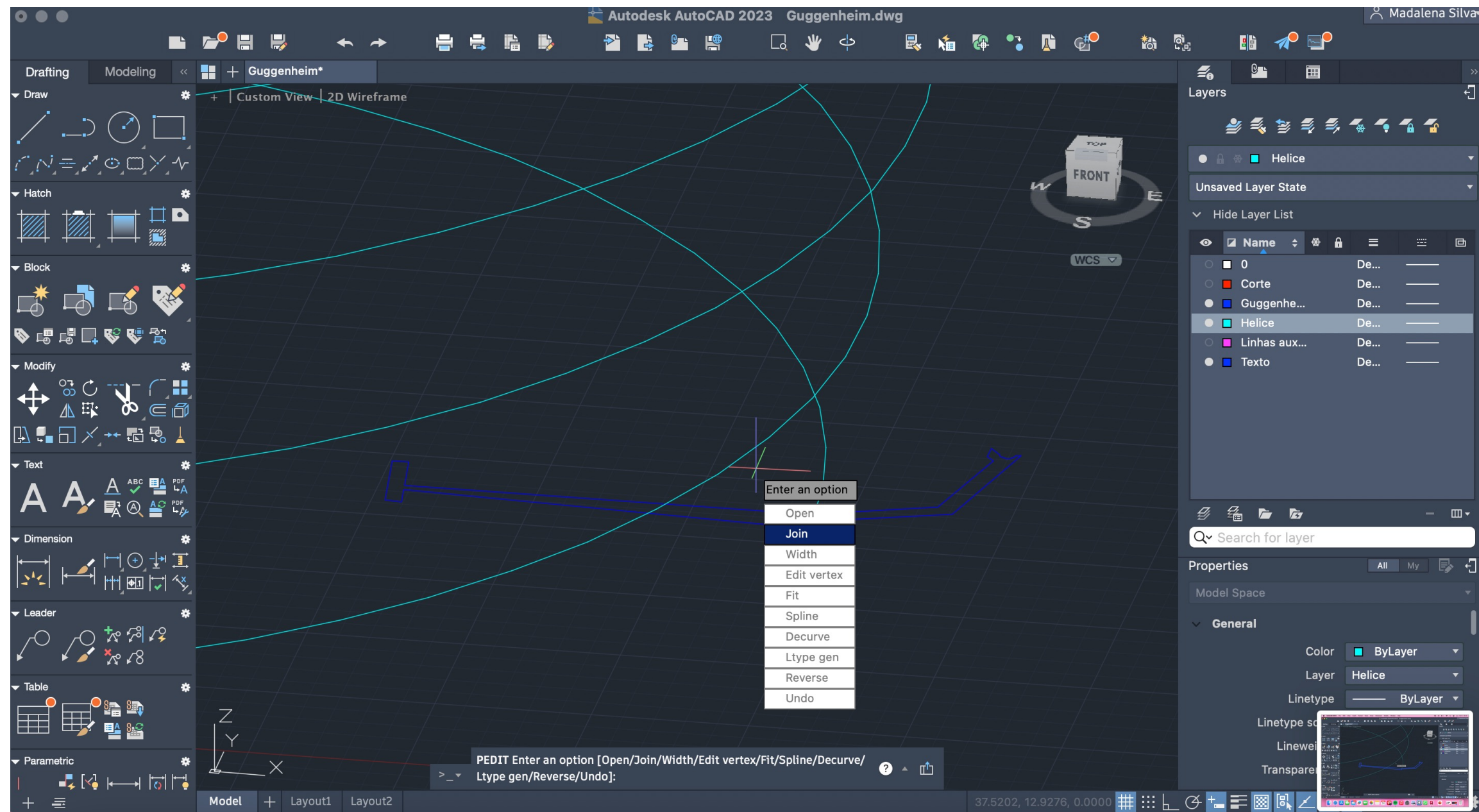
ReDig

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



ReDig

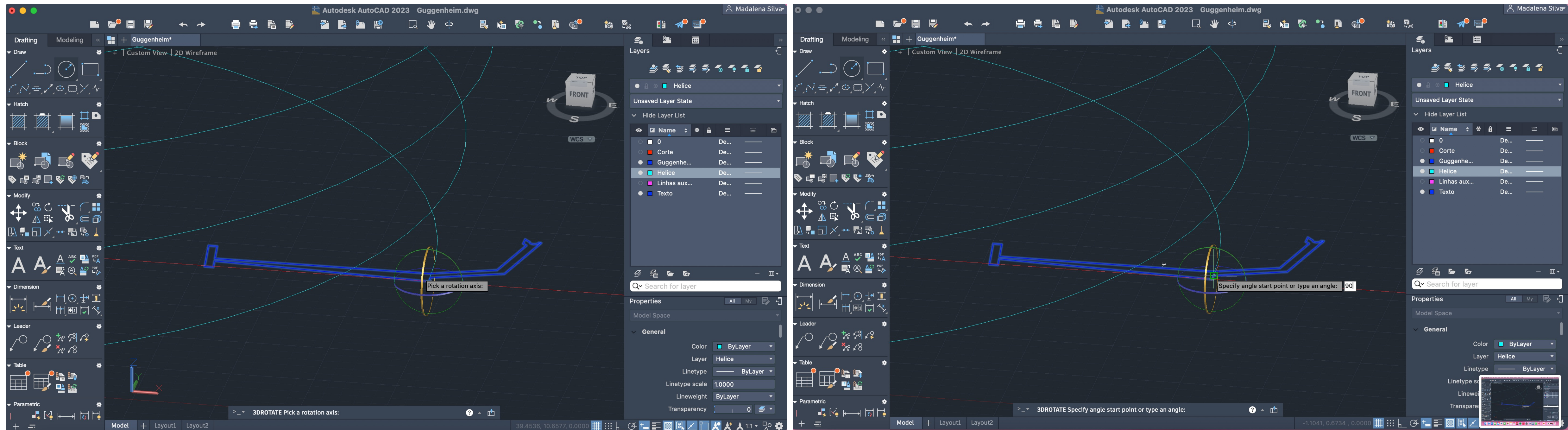
Semana 11 28/11/2023 - 1/12/2023



Pedit > Join (criar das lines uma polyline)

ReDig

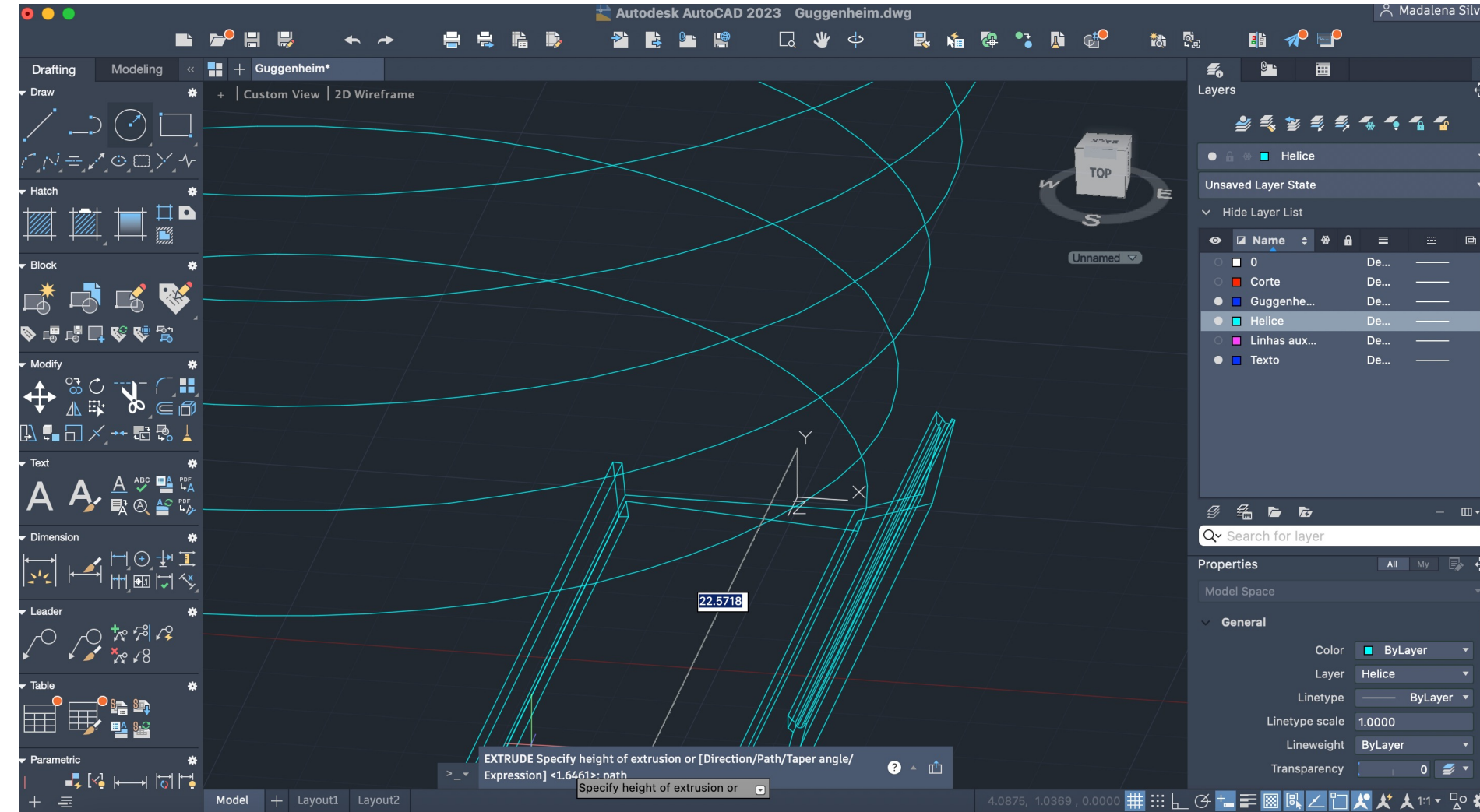
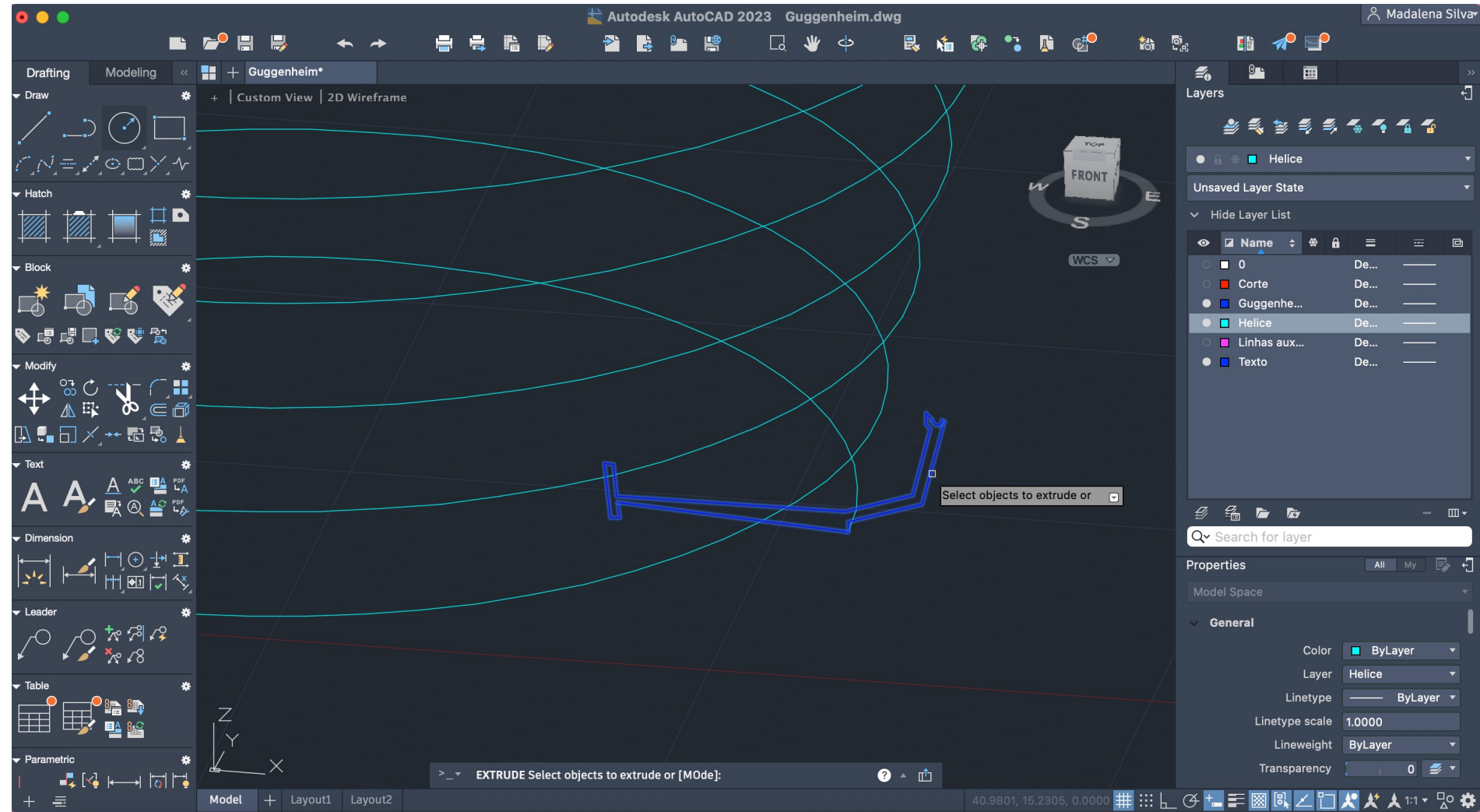
Semana 11 28/11/2023 - 1/12/2023



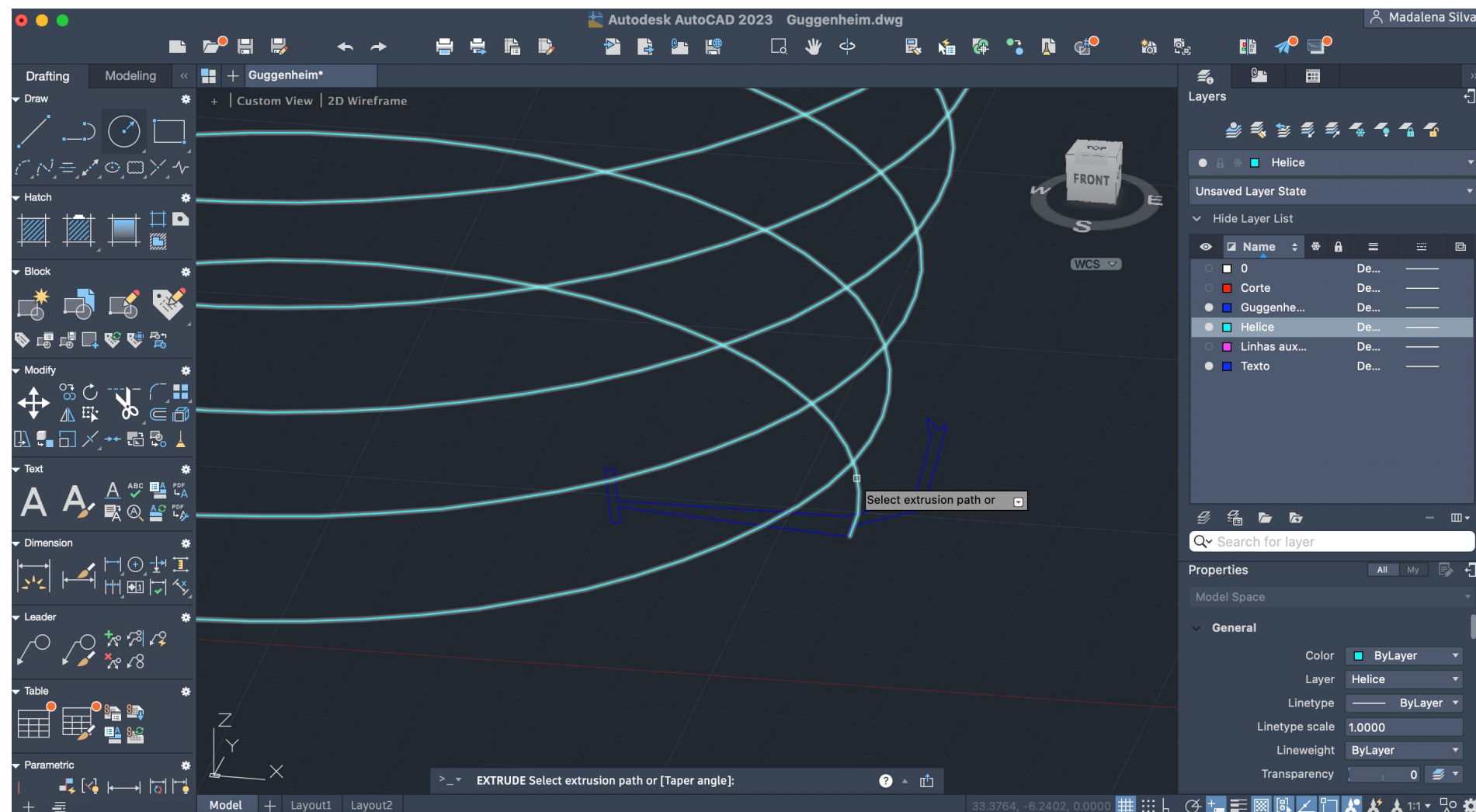
3drotate > Selecionar polyline > Selecionar ponto > Selecionar eixo de rotação (x) > 90°

ReDig

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

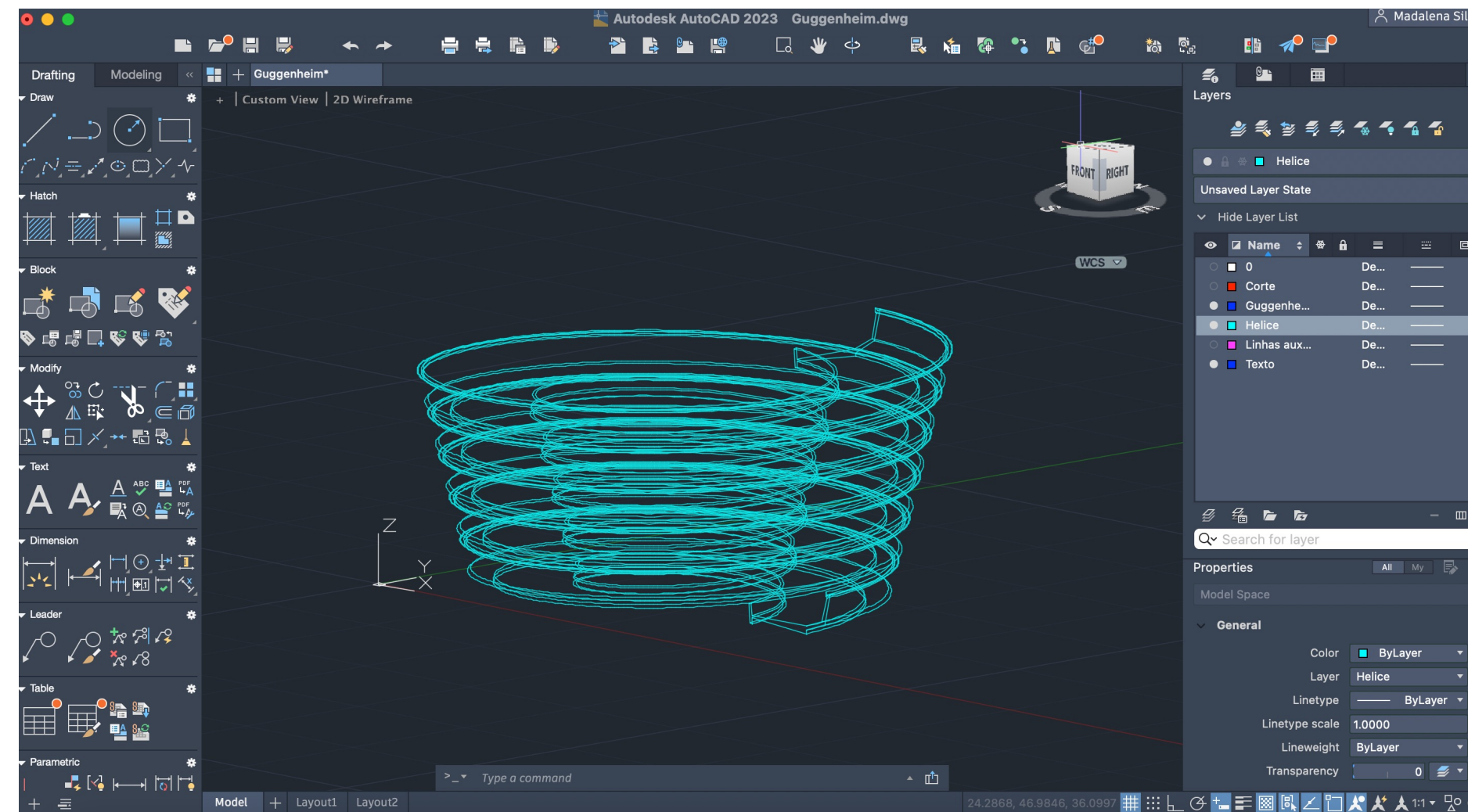
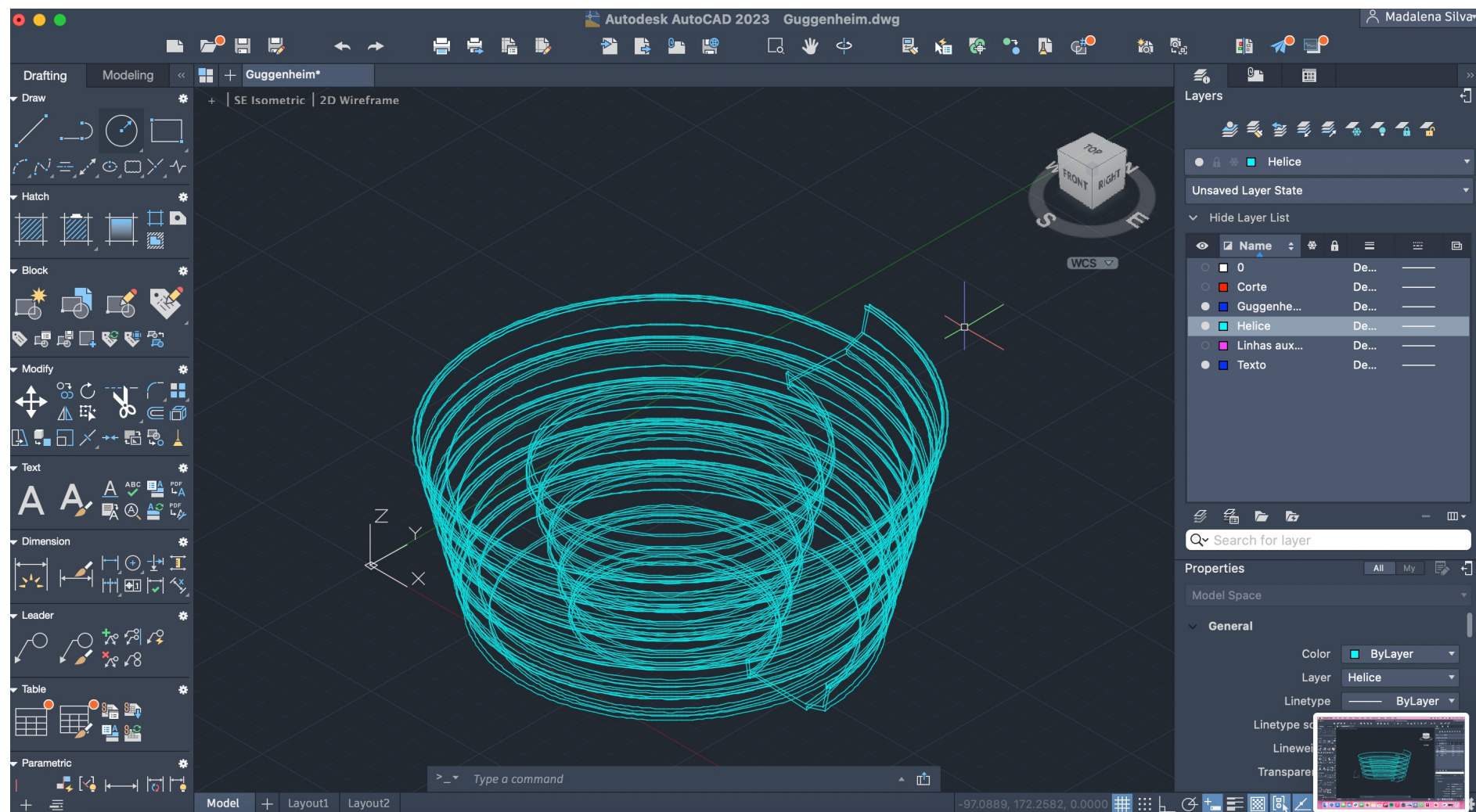


Extrude > Seleccionar a polyline > Path > Seleccionar a helice

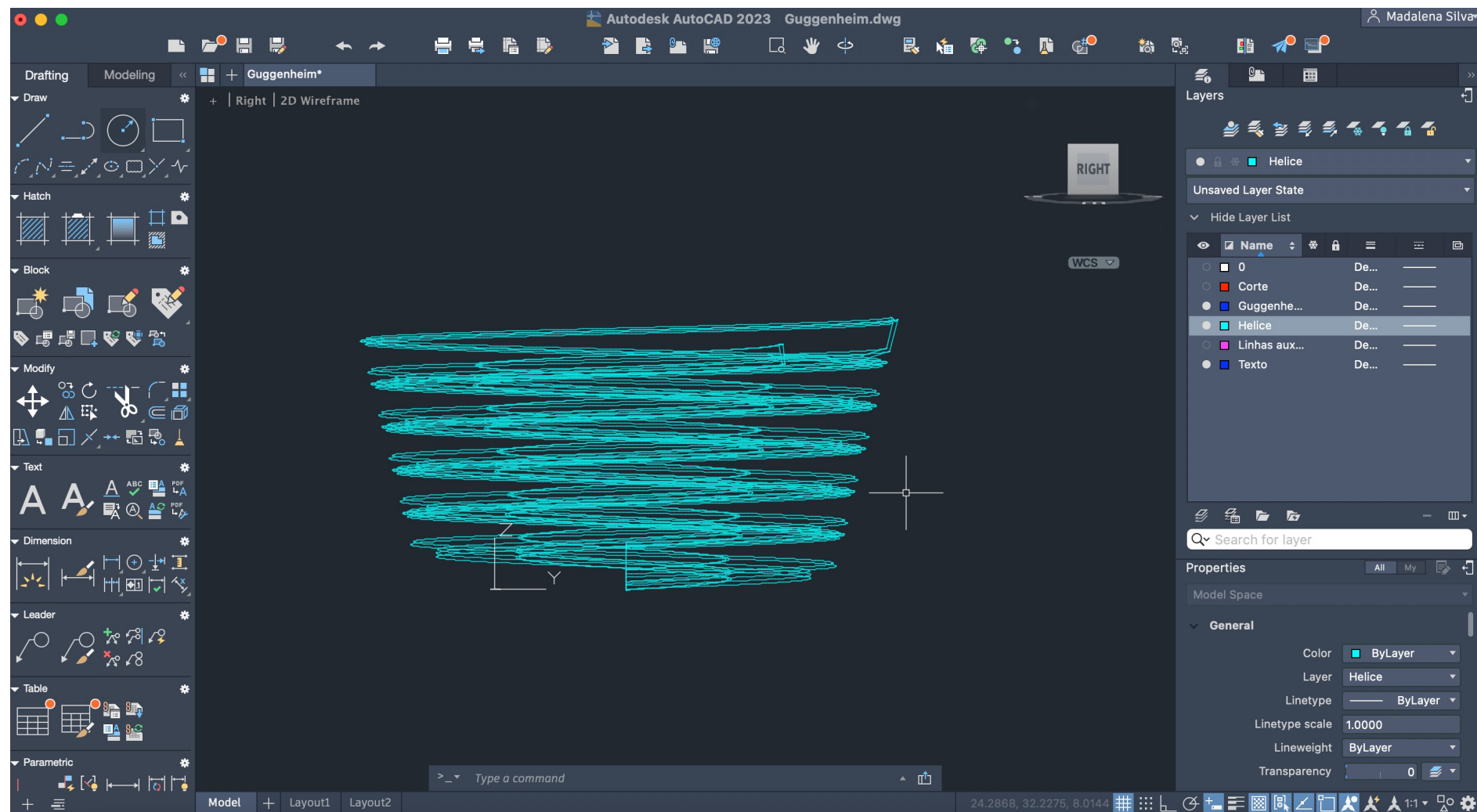


ReDig

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

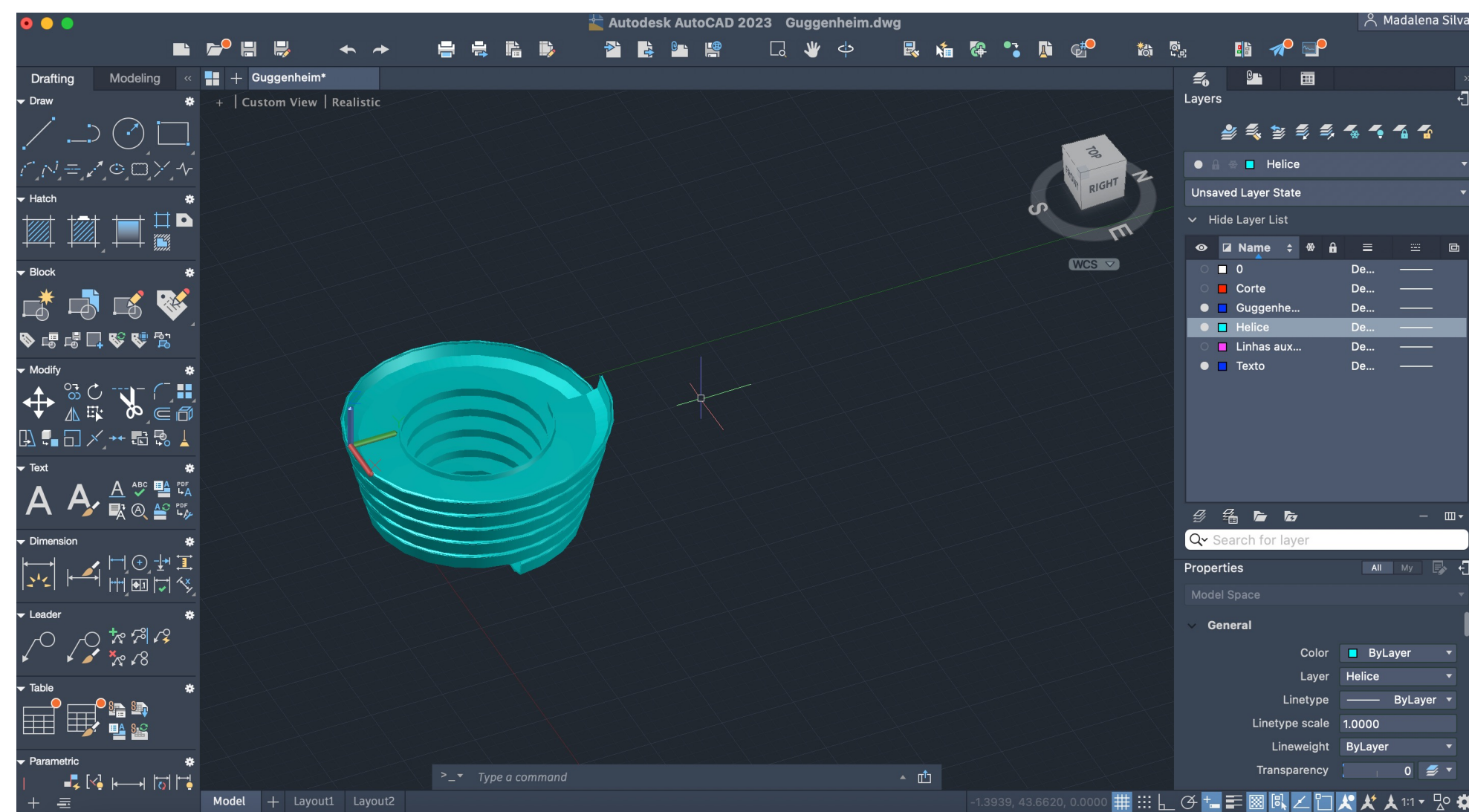
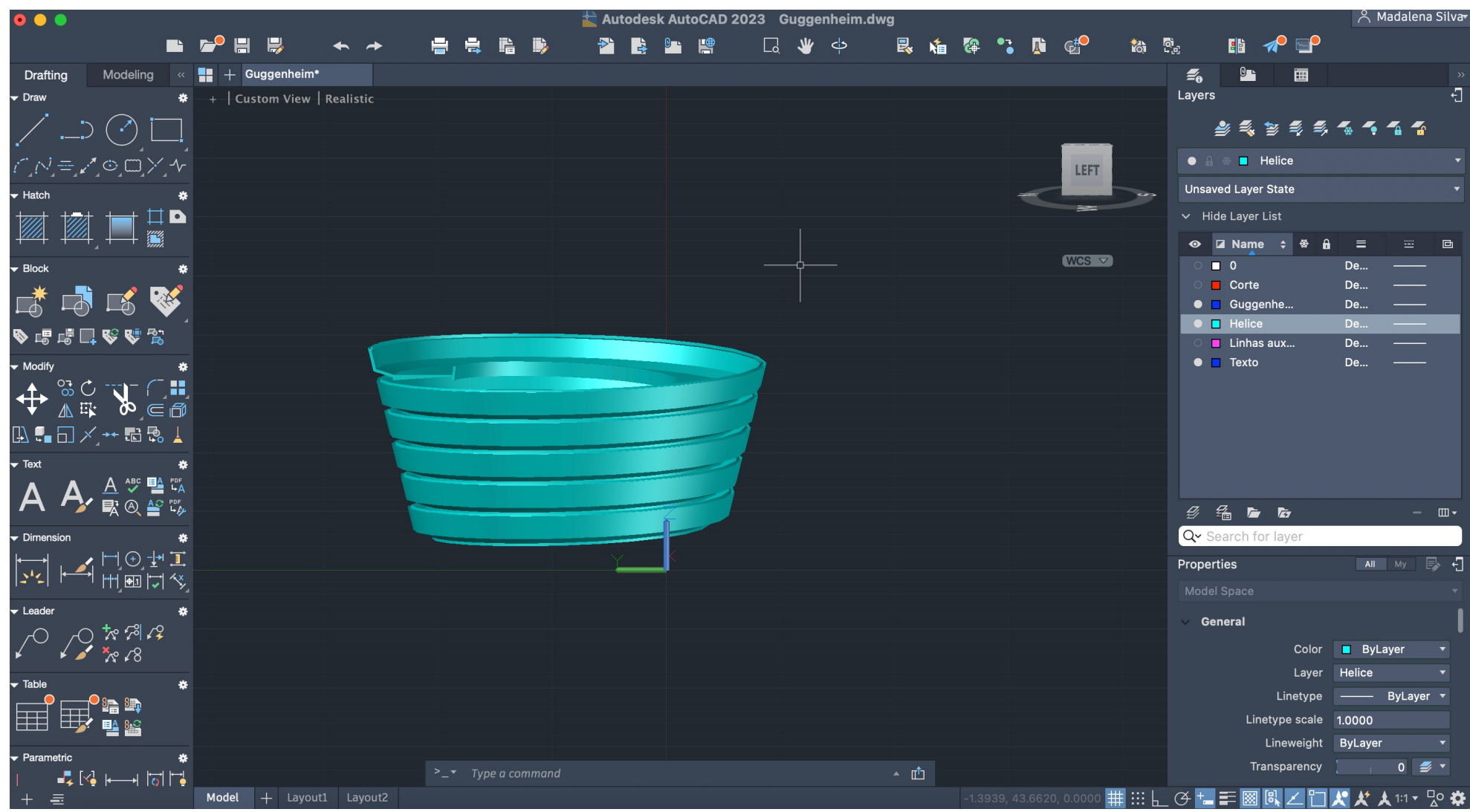
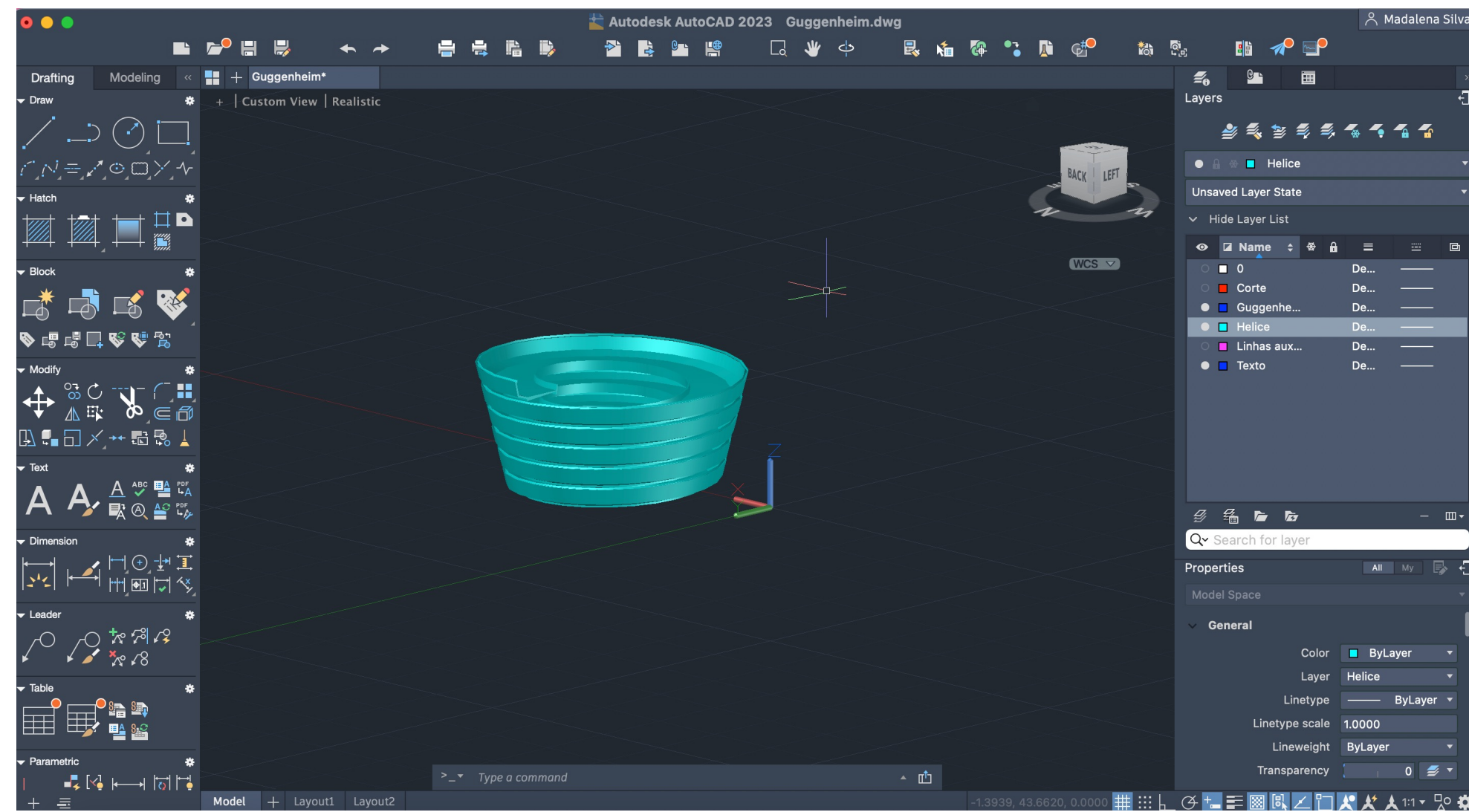
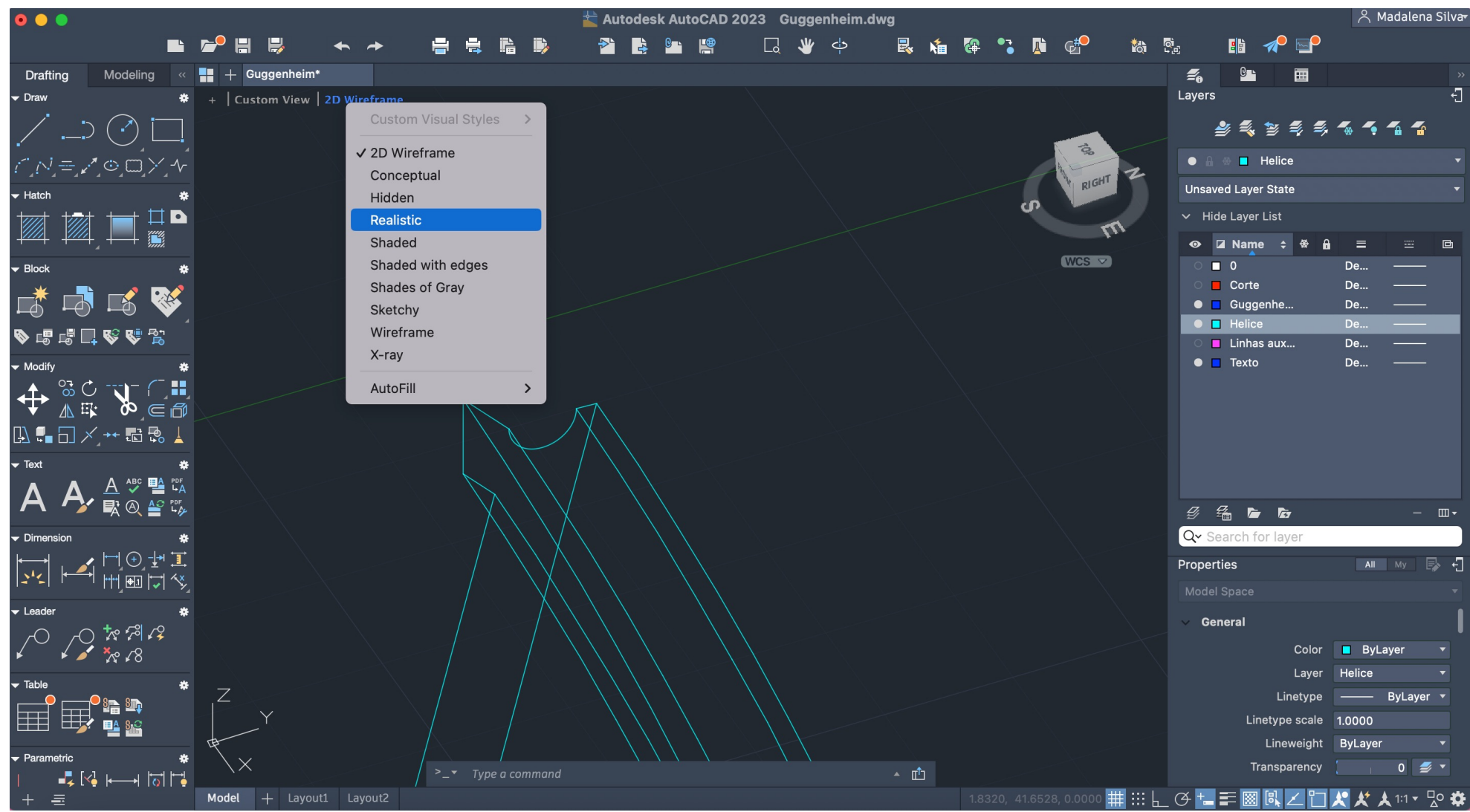


Resultado da helix



ReDig

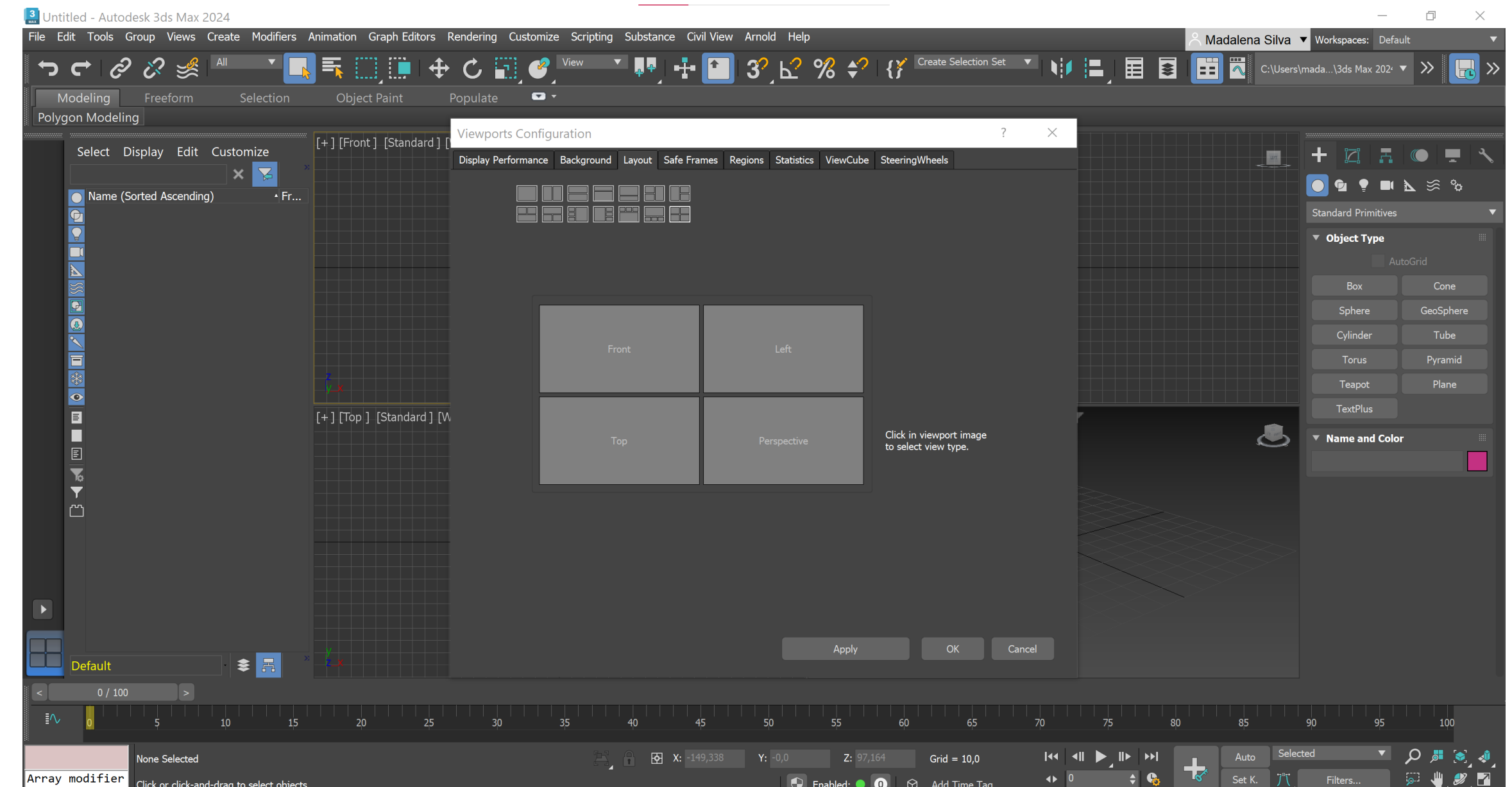
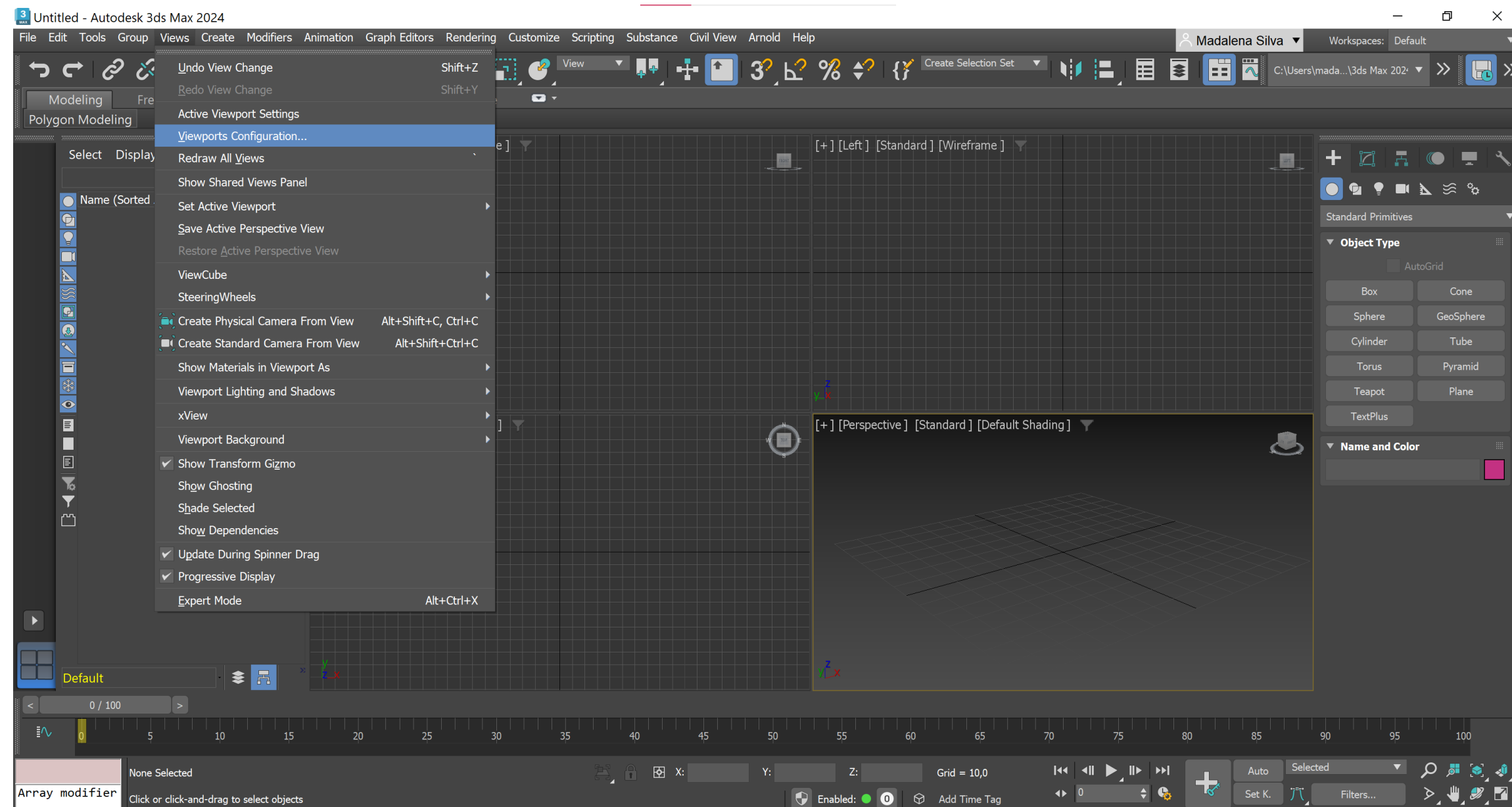
Semana 11 28/11/2023 - 1/12/2023



ReDig

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

Autocad 3ds Max

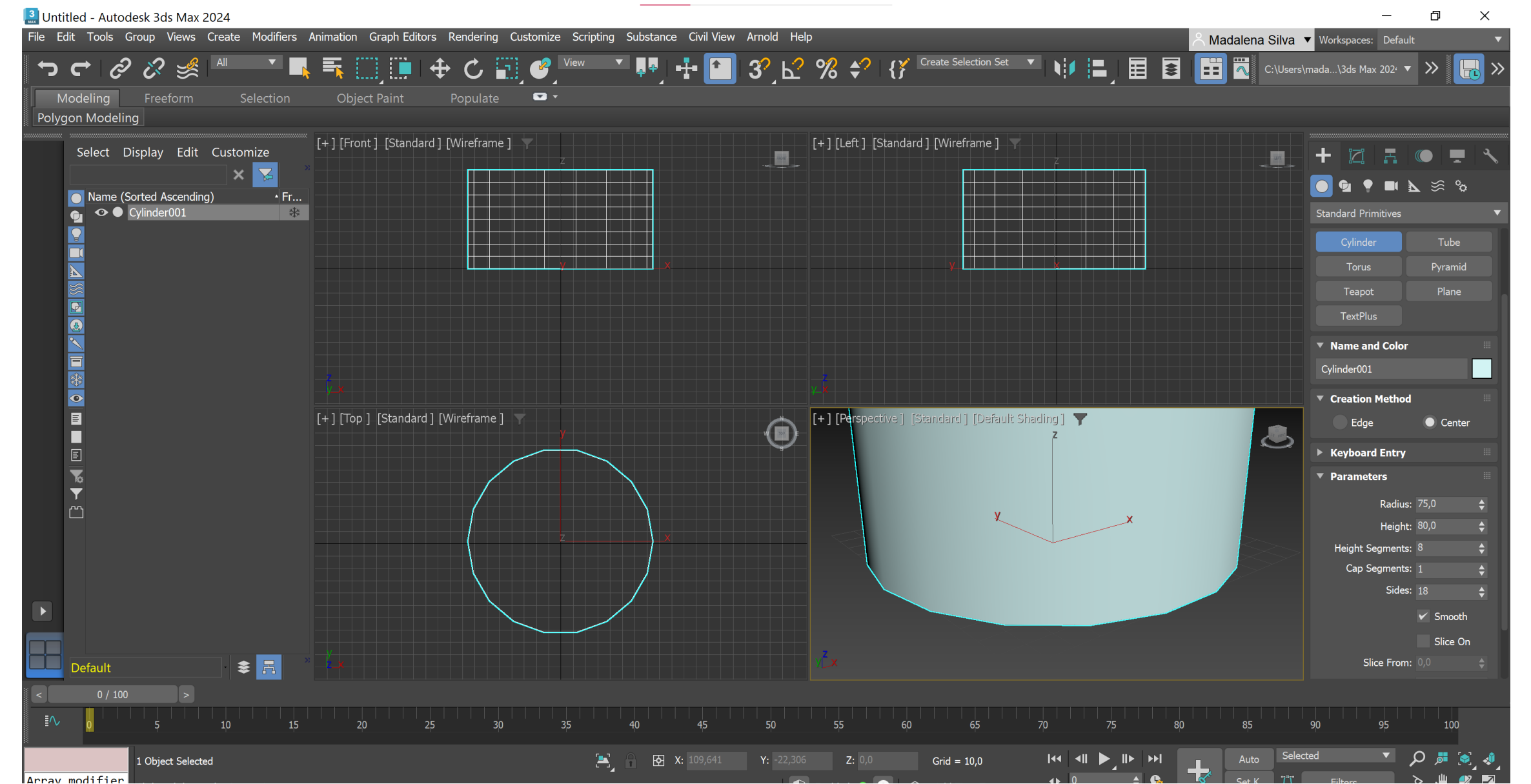
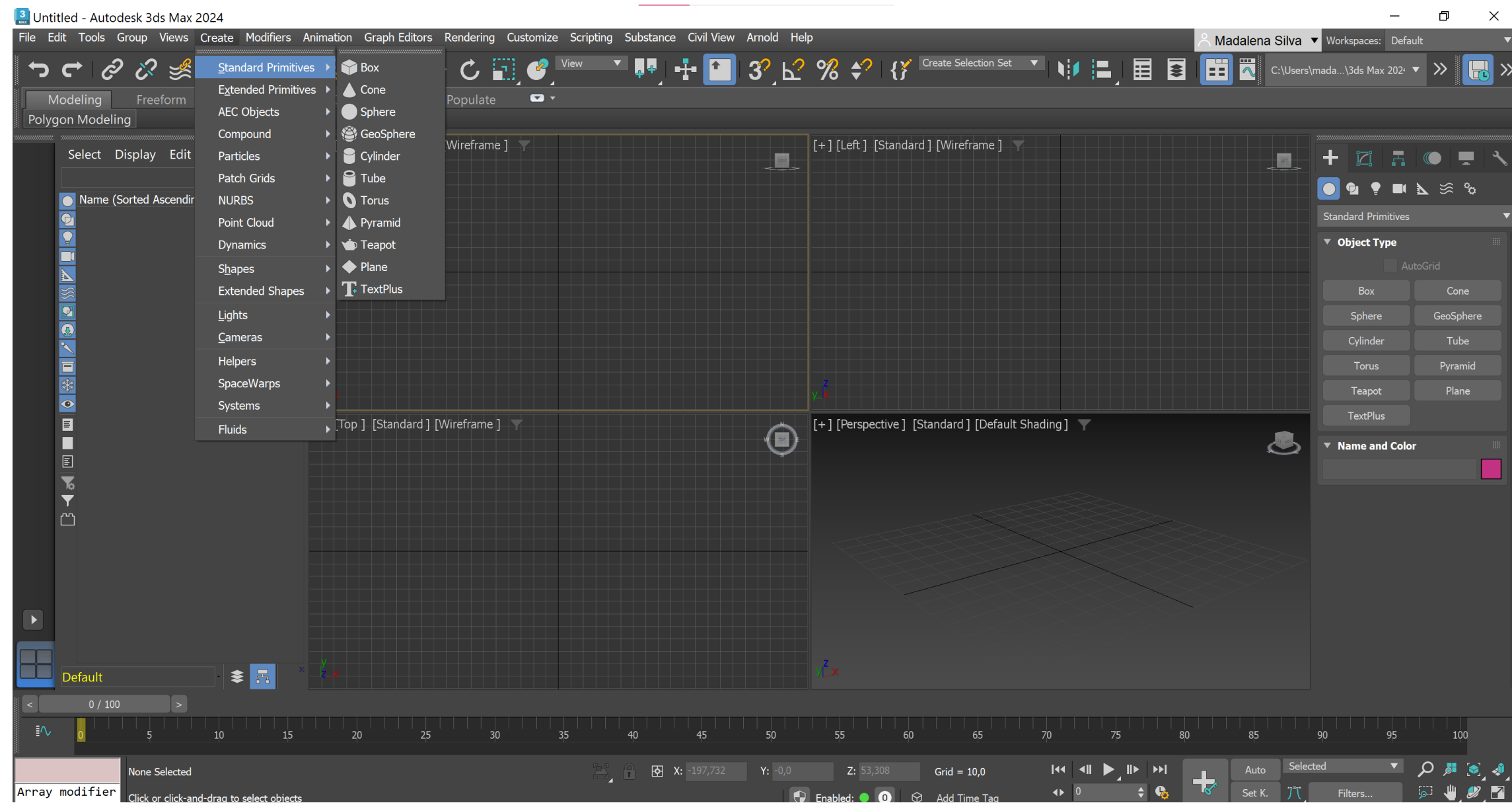


Visualização dos viewpoints: Front, left, Top, Perspective

ReDig

Semana 12_{5/12/2023 - 8/12/2023}

Lamparina

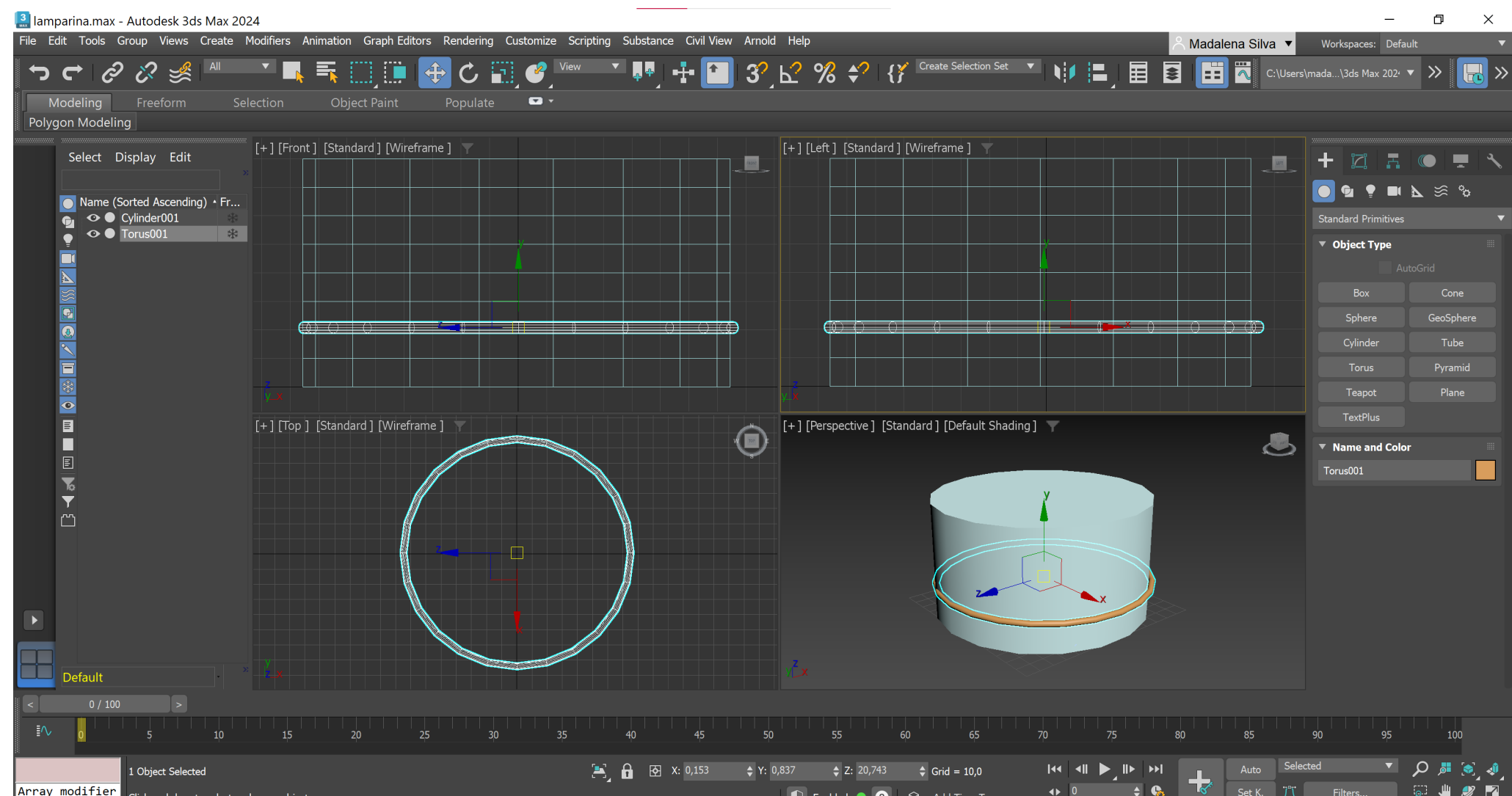
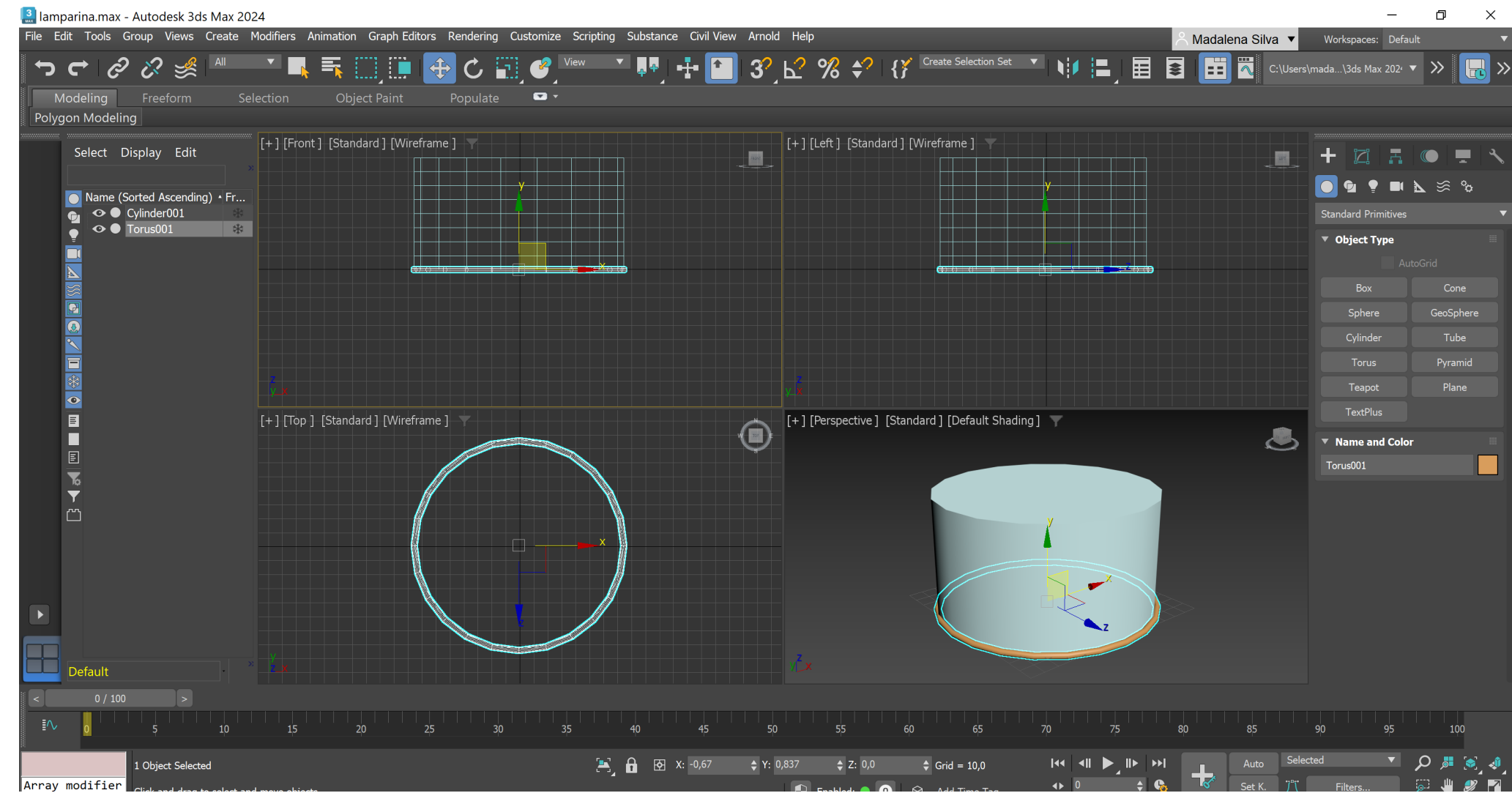
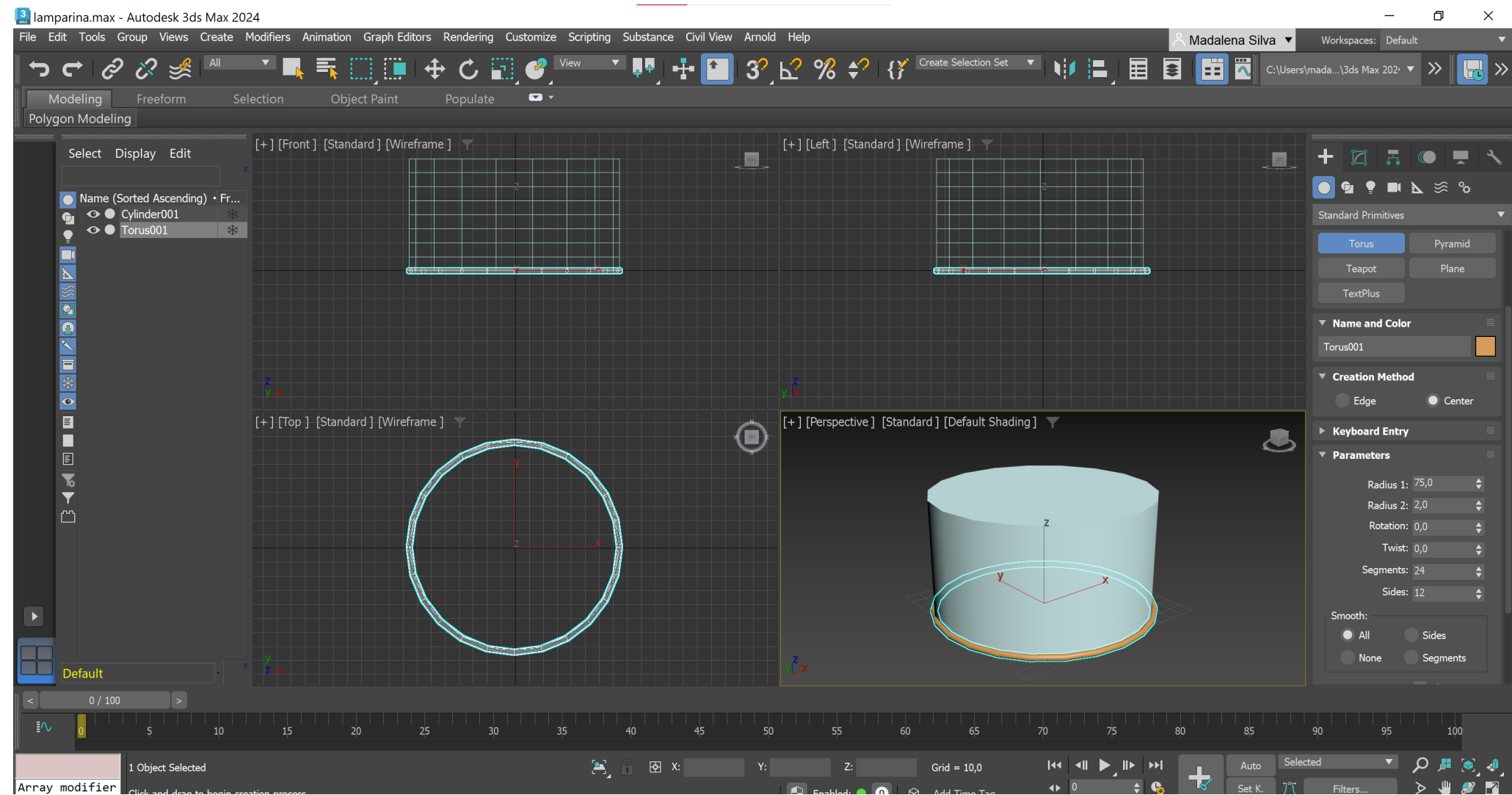


Create > Standard Primitives > Cylinder
Radius: 75
Height: 80
Height segments: 8

ReDig

Semana 12

5/12/2023 - 8/12/2023

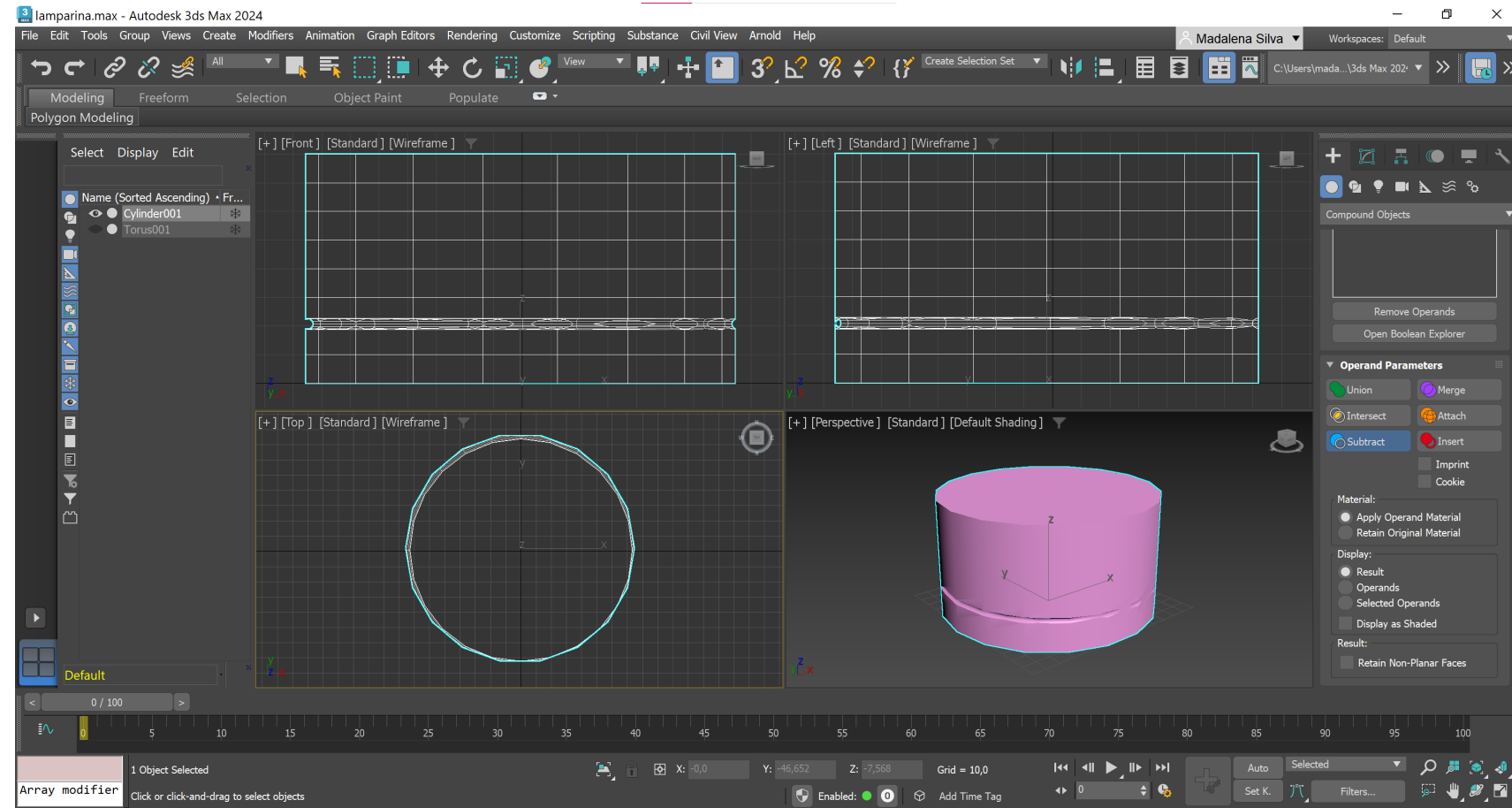
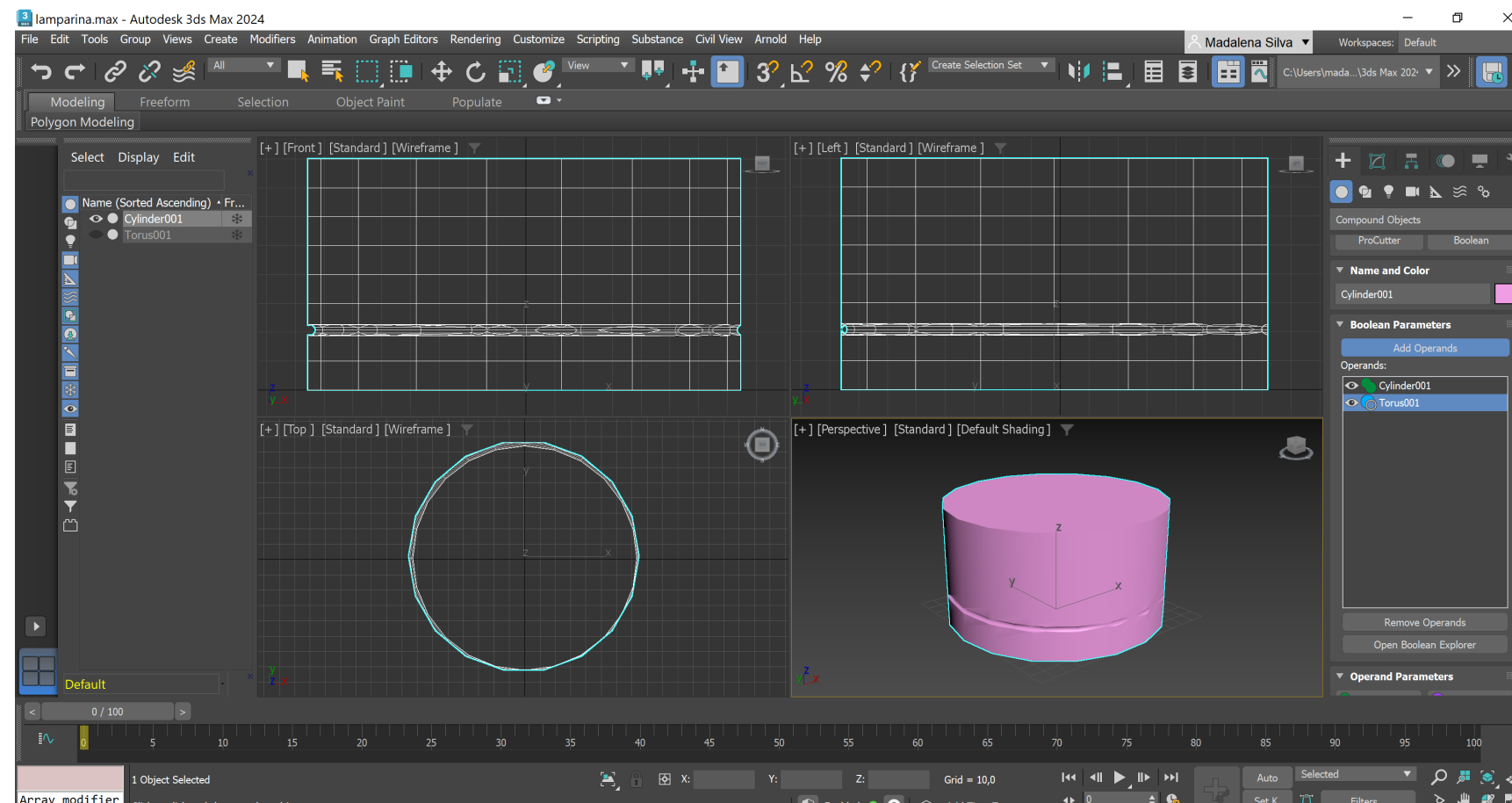
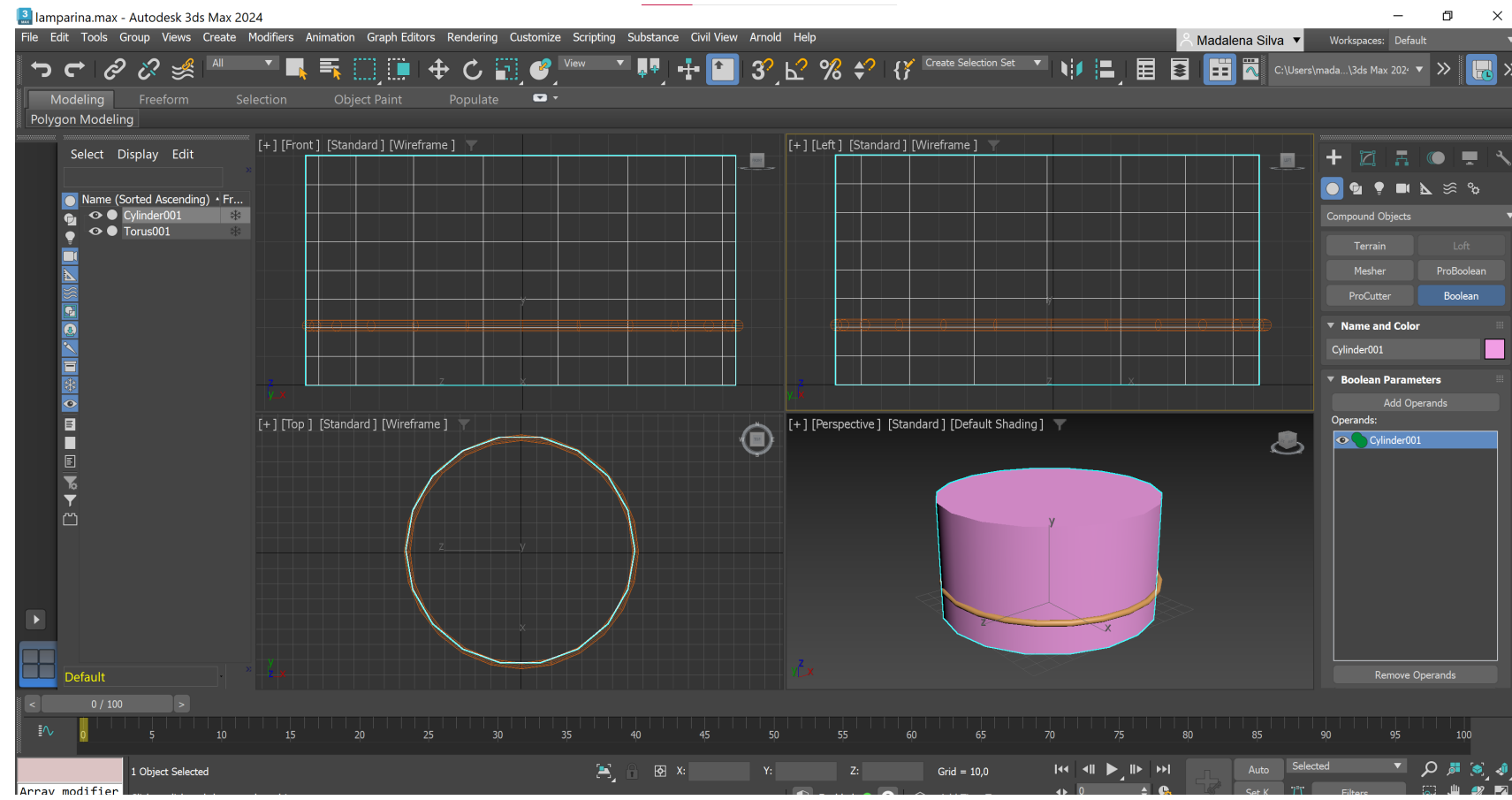
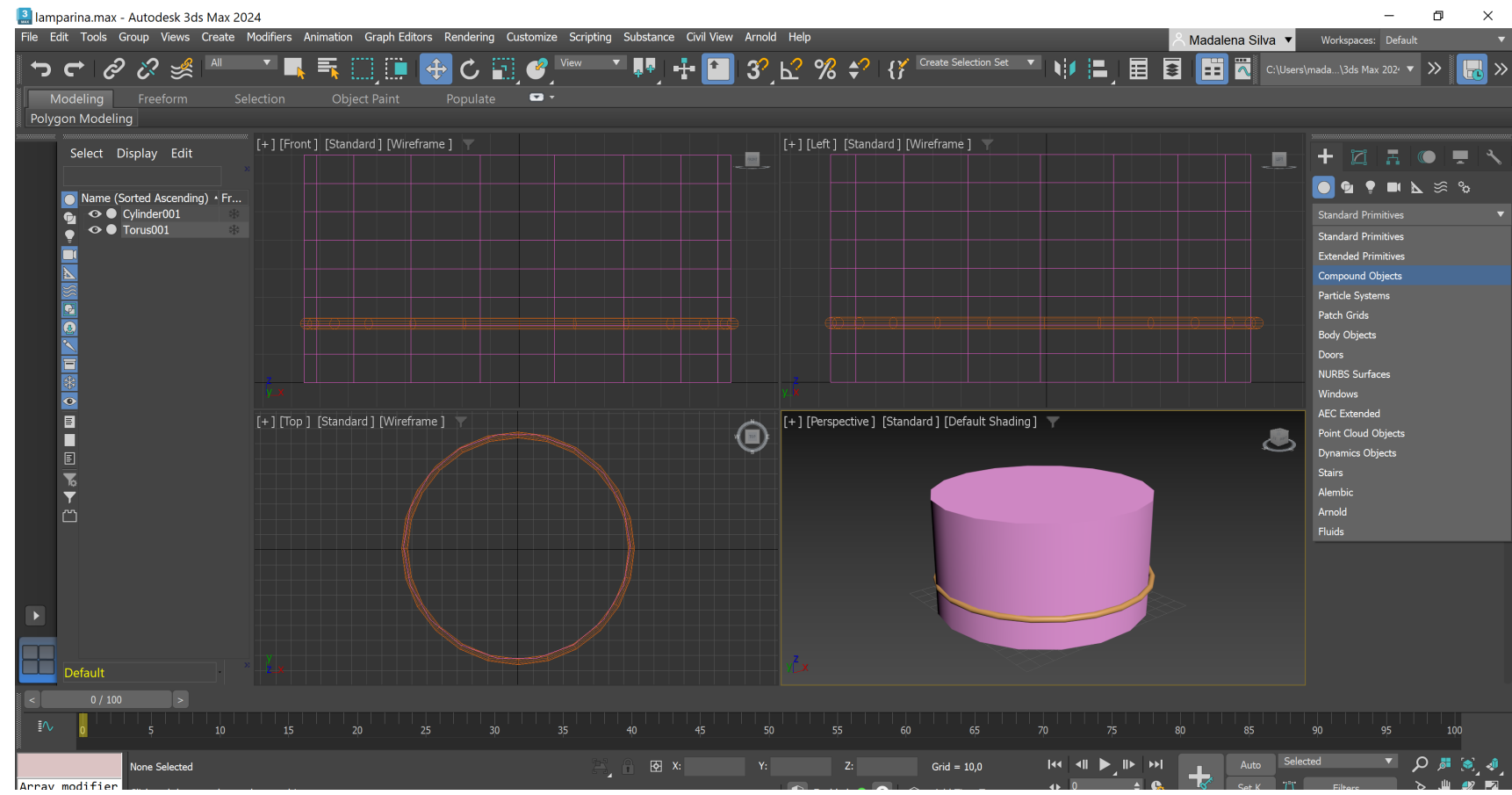


Create > Standard Primitives > Torus
Radius 1: 75
Radius 2: 2

Select and move Torus

ReDig

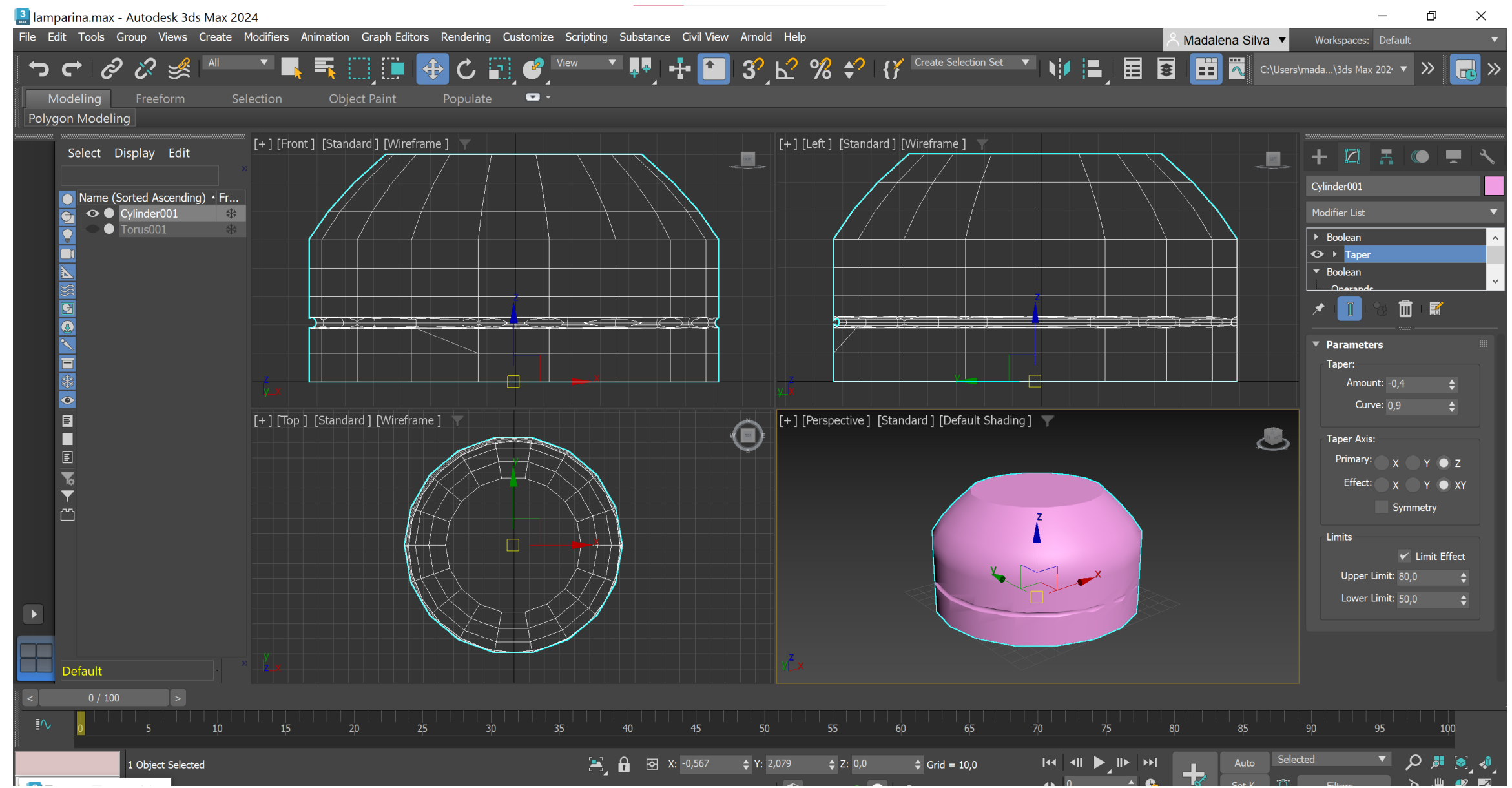
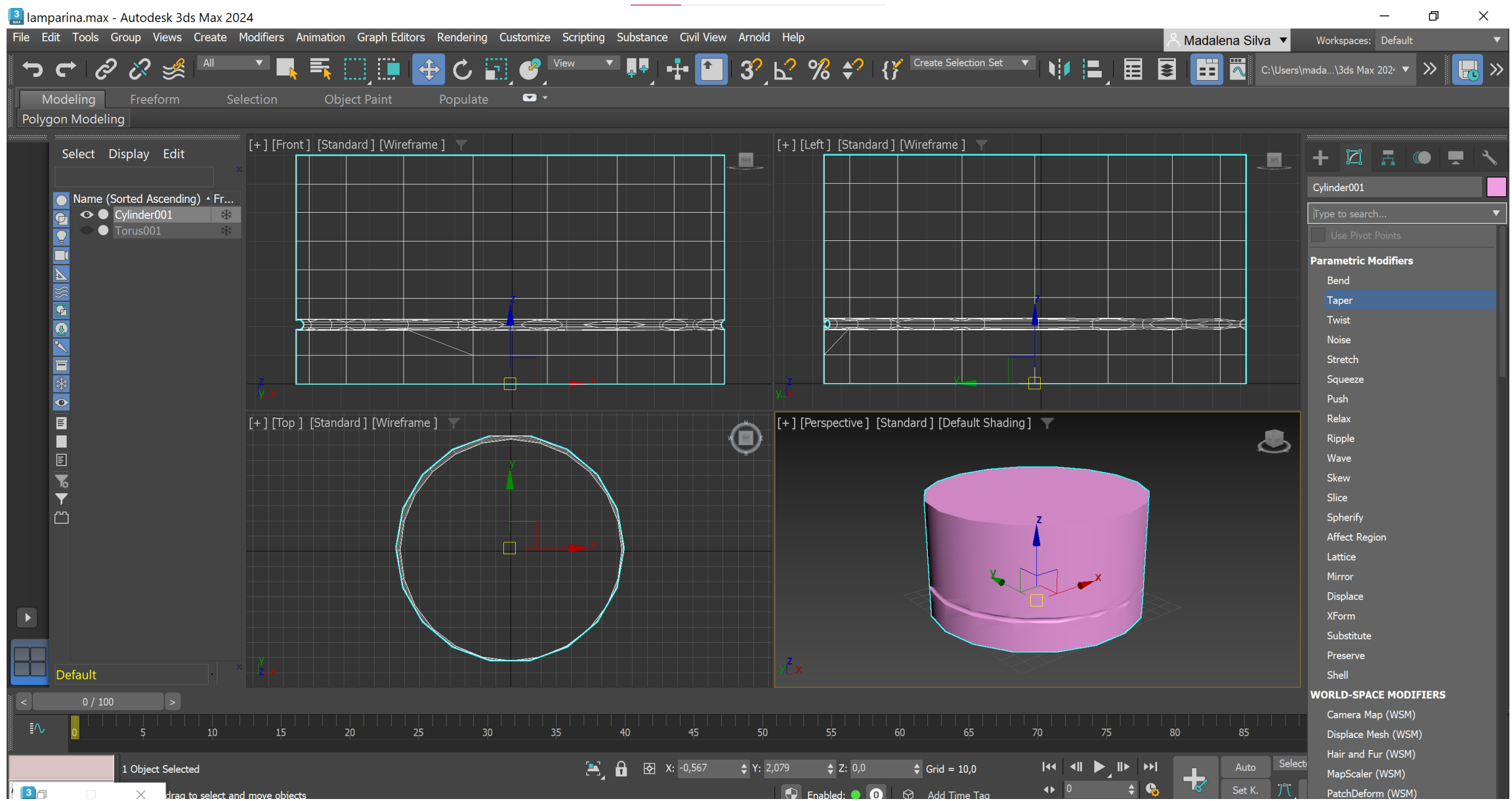
Semana 12_{5/12/2023 - 8/12/2023}



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

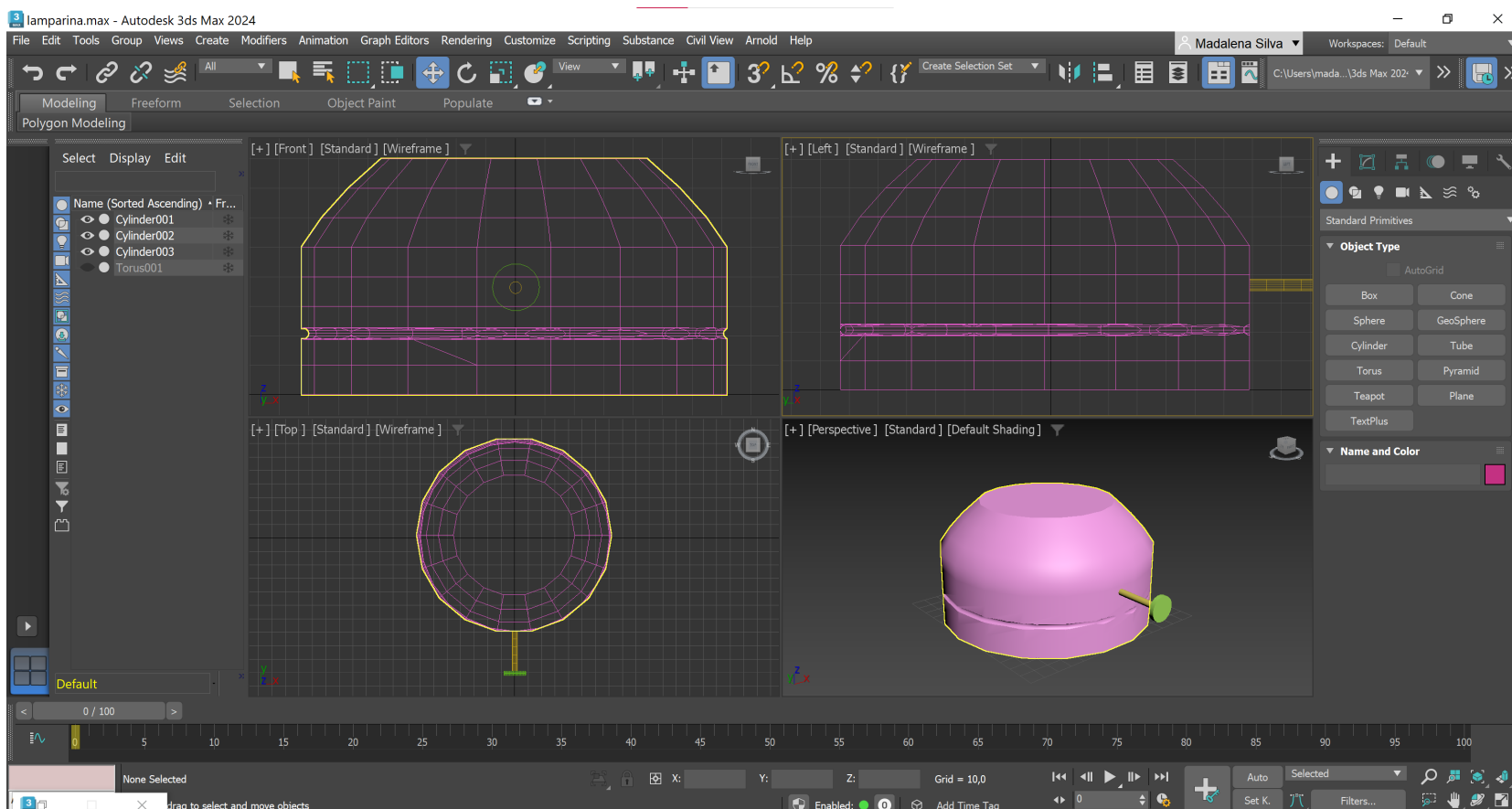
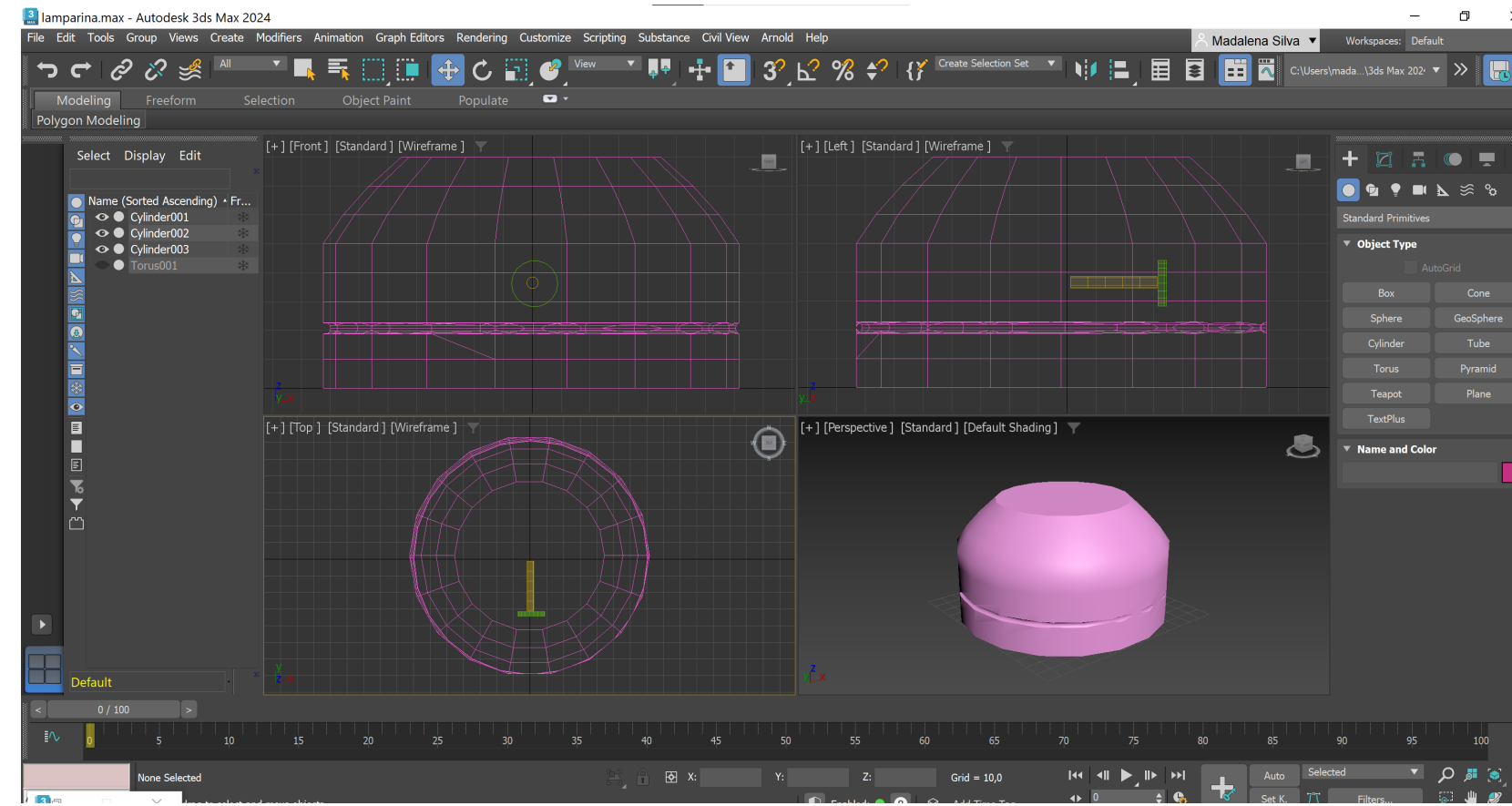
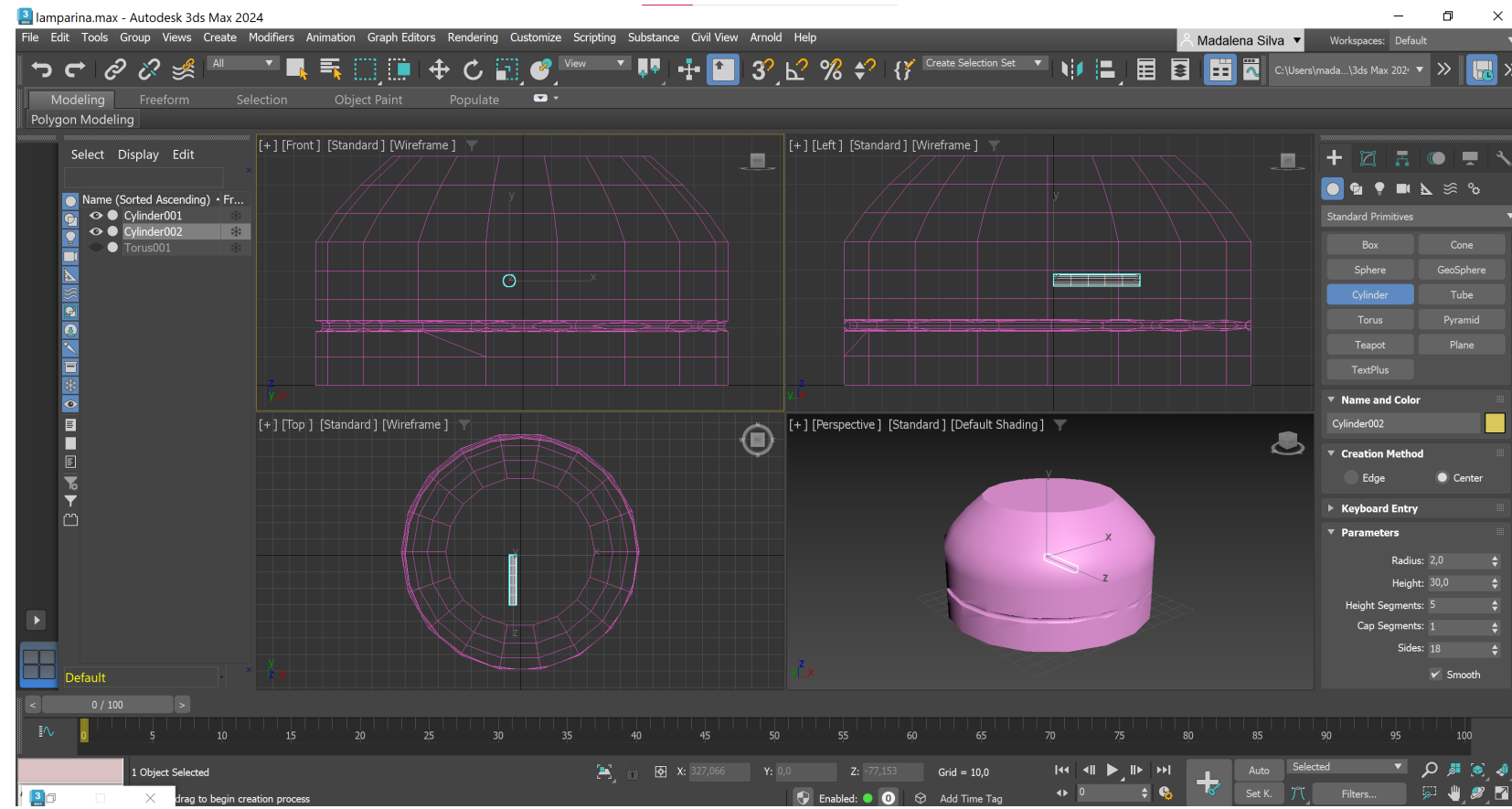
ReDig

Semana 12_{5/12/2023 - 8/12/2023}



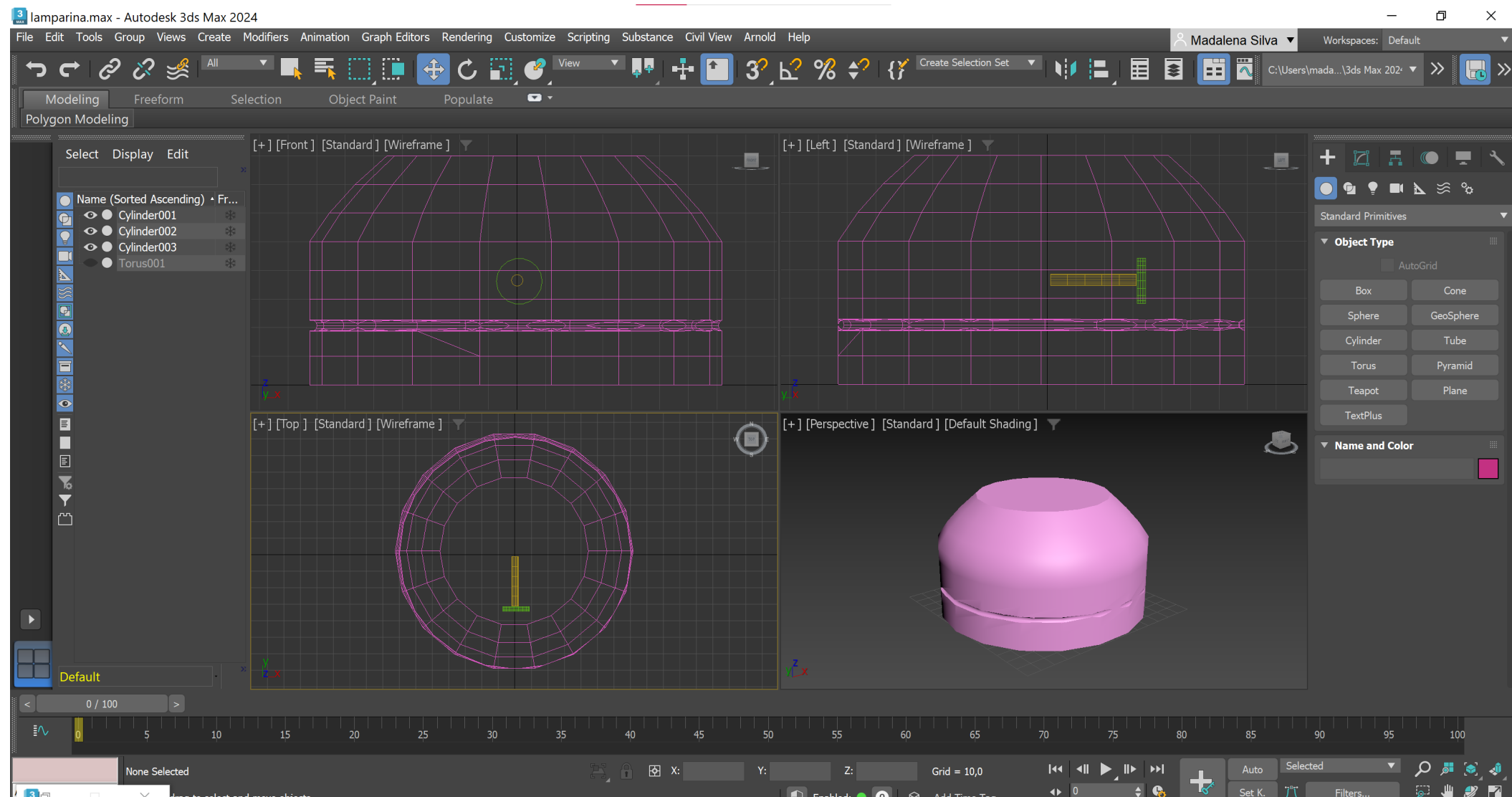
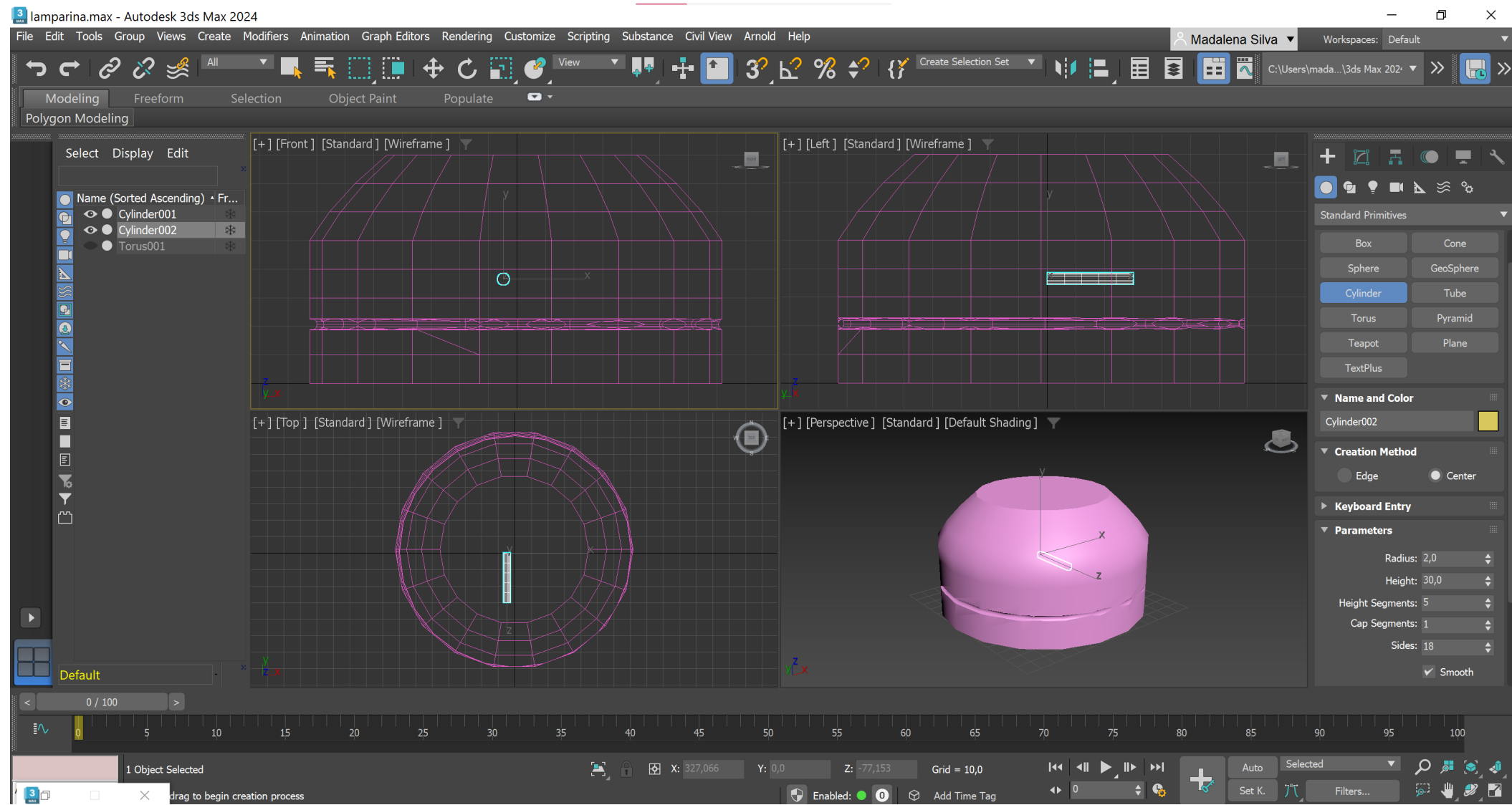
Parametric modifiers > Taper

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



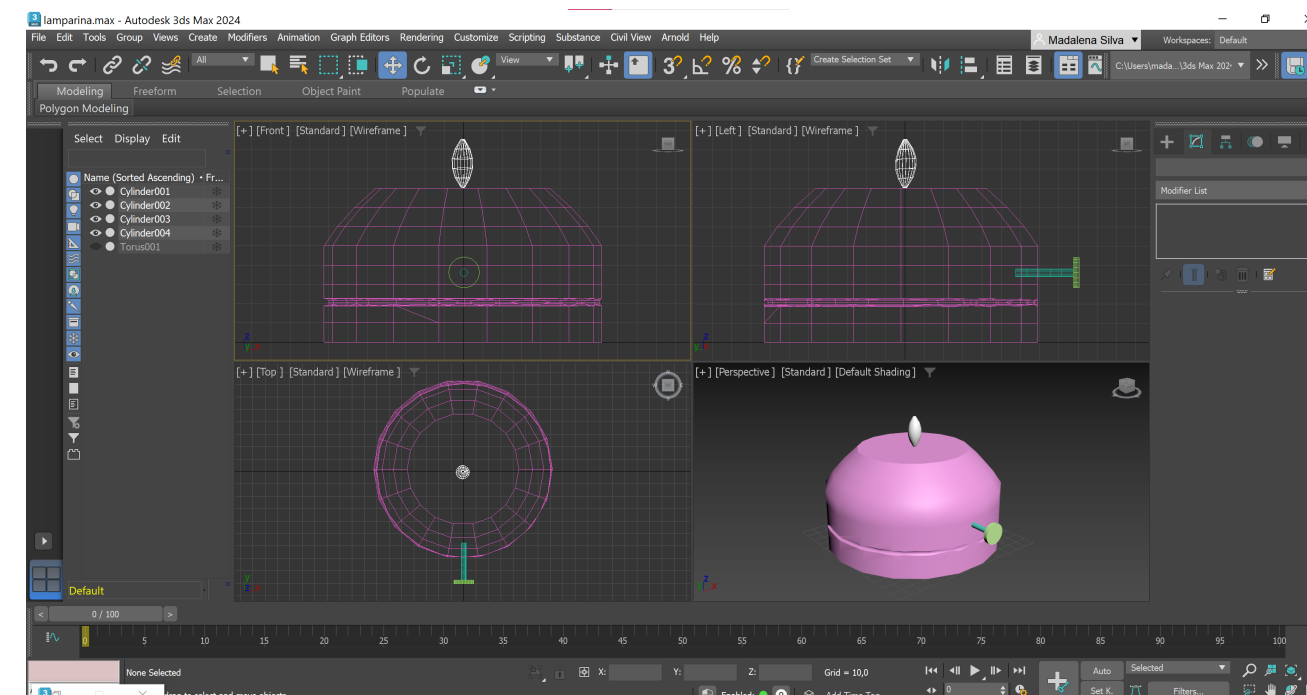
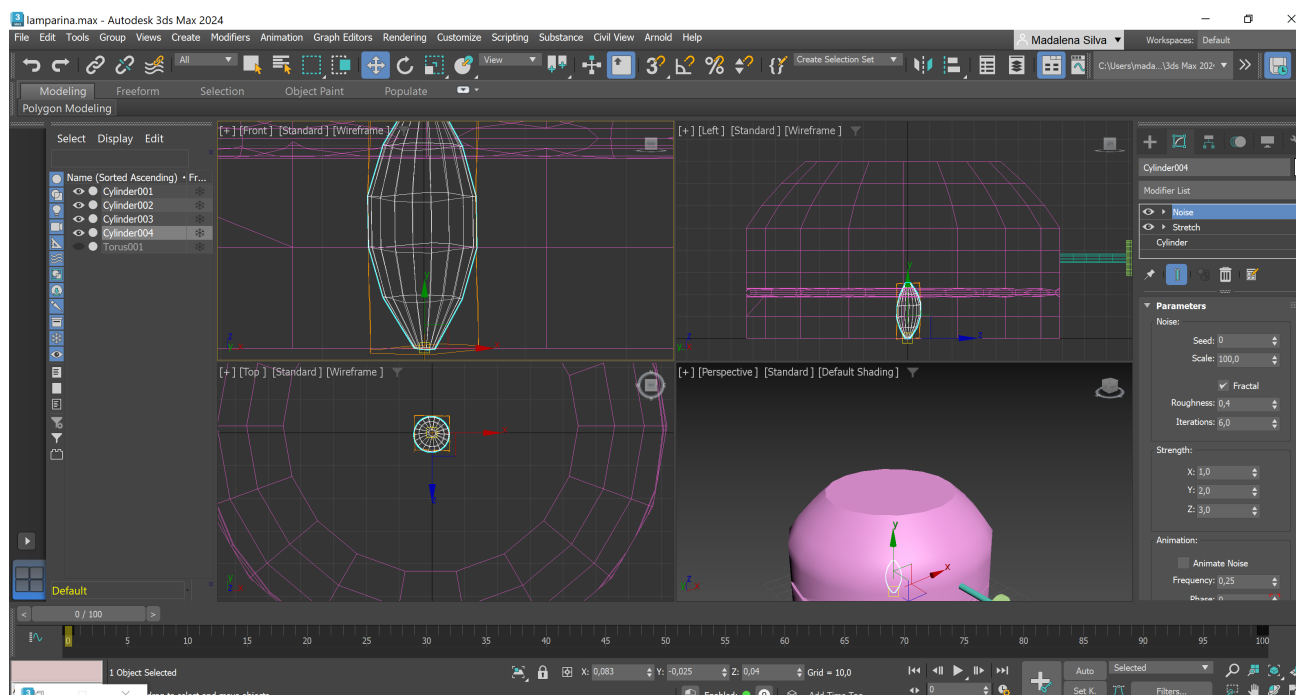
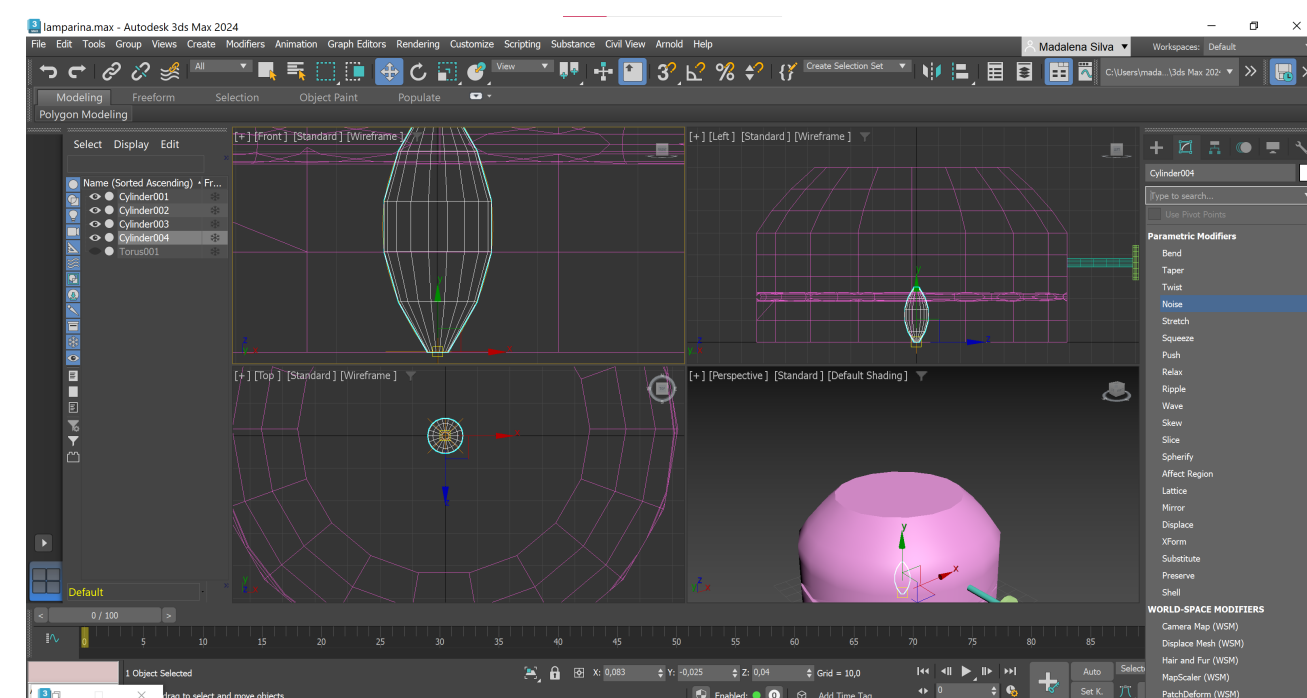
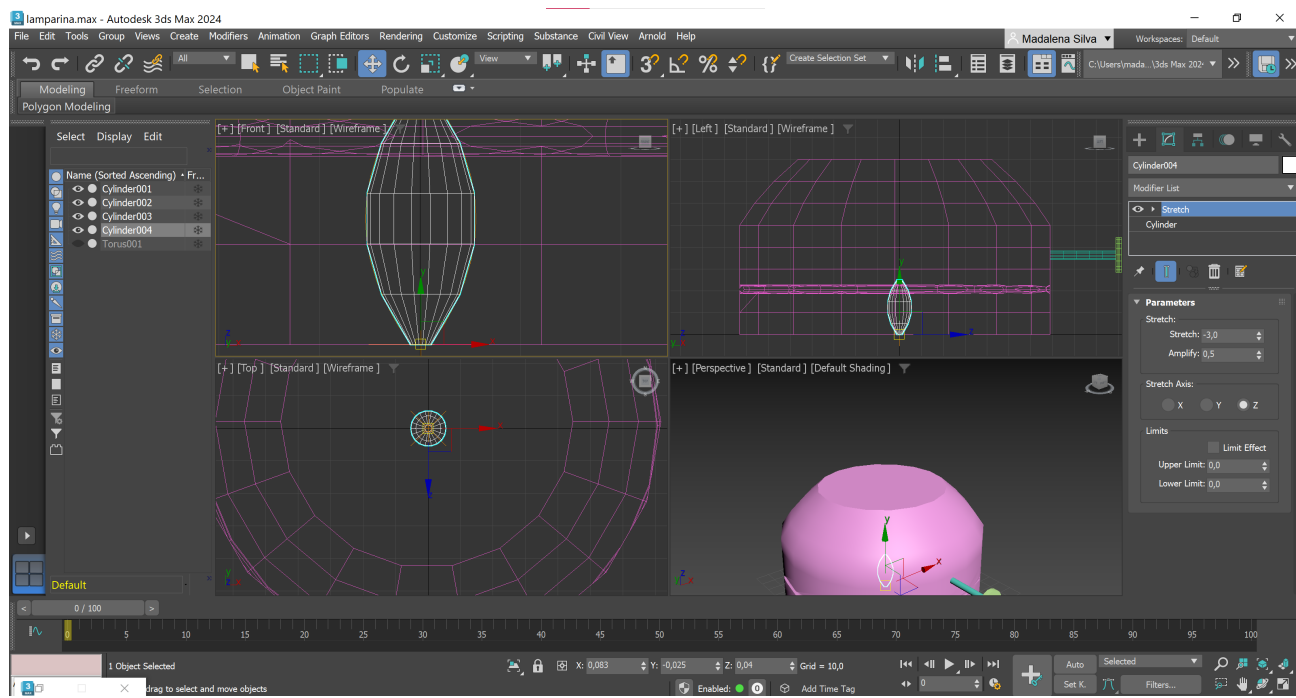
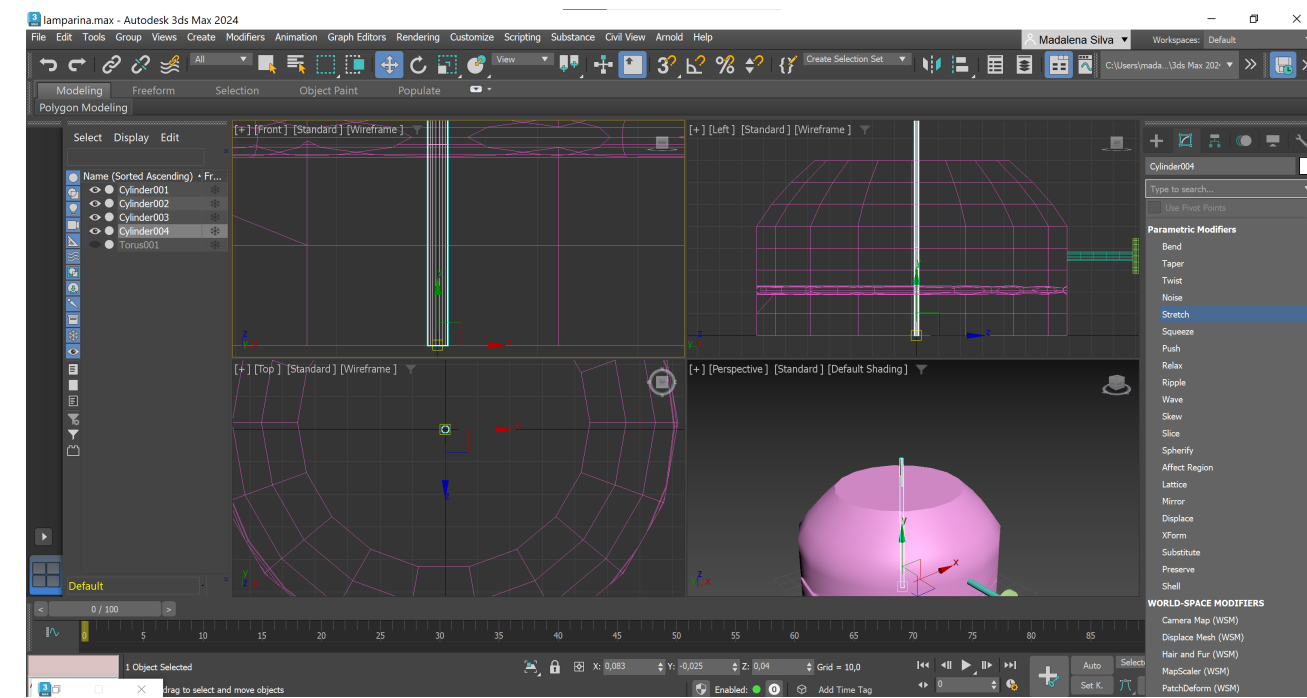
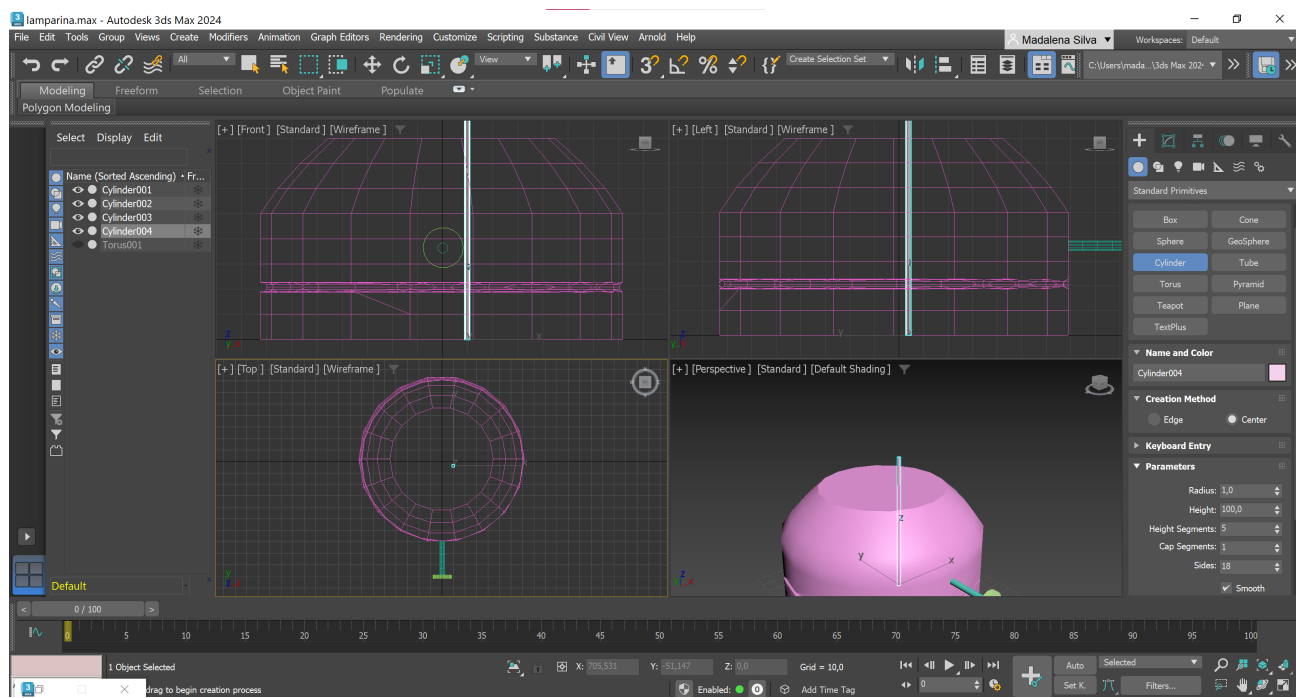
ReDig

Semana 12_{5/12/2023 - 8/12/2023}



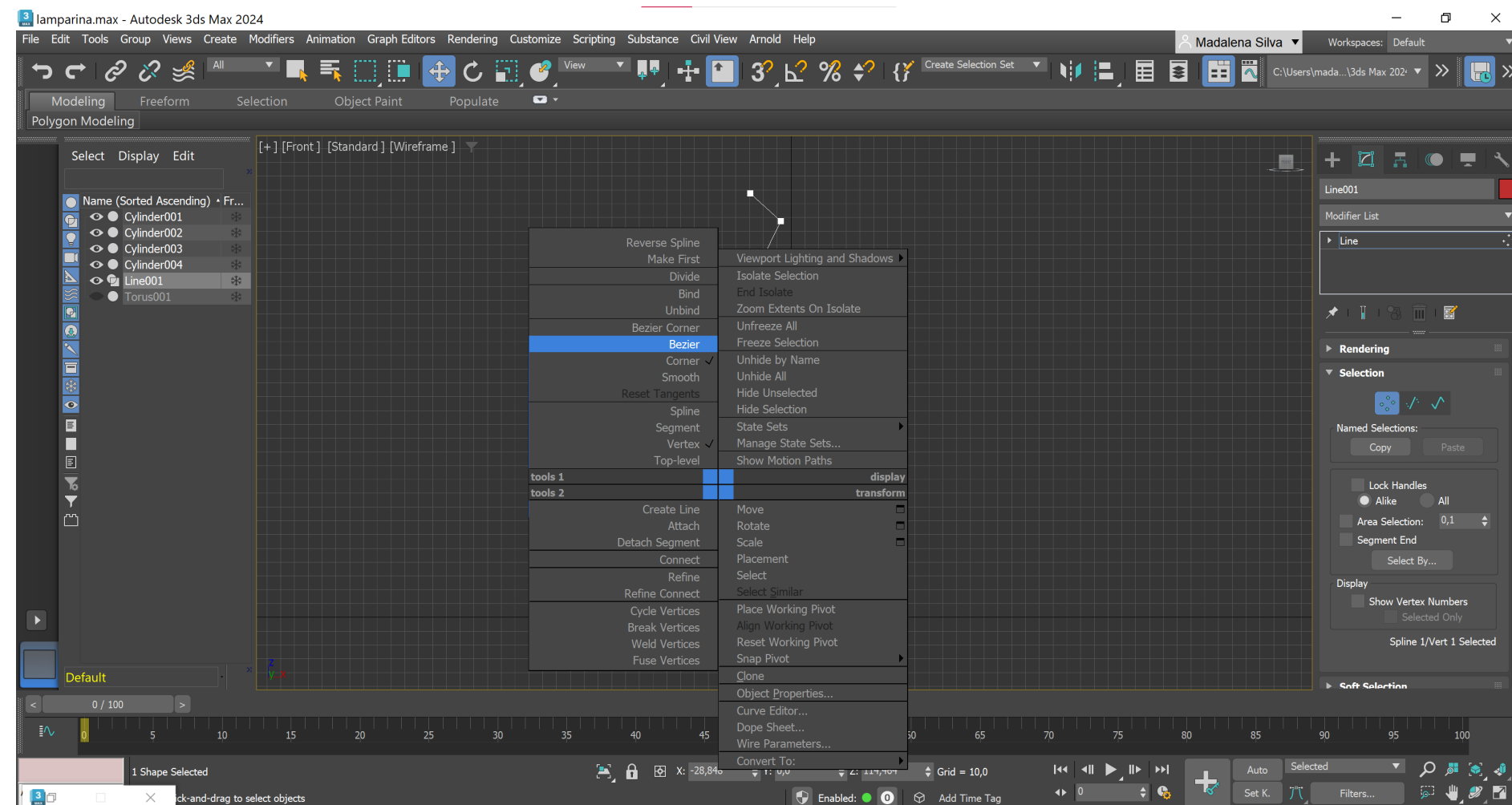
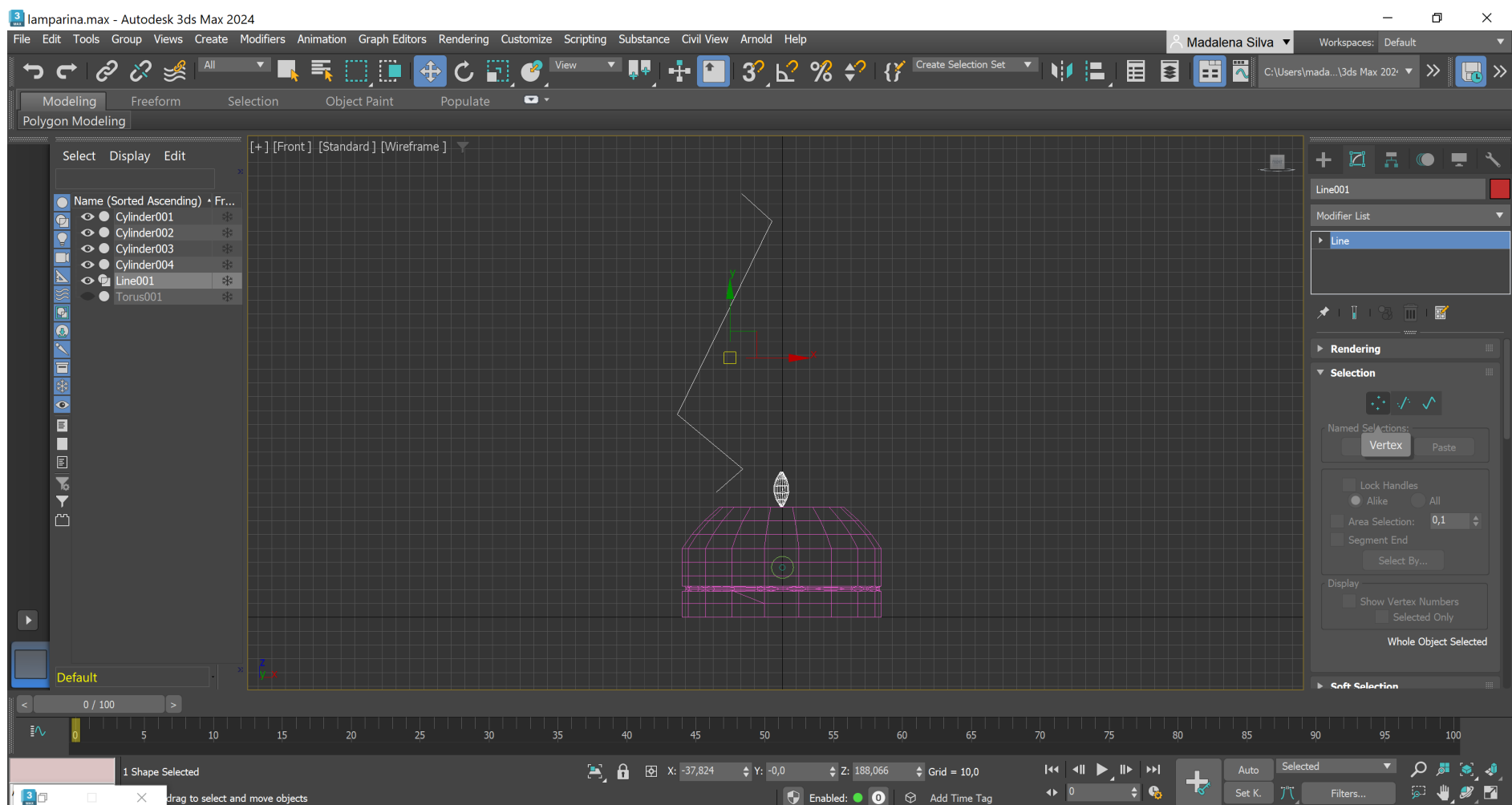
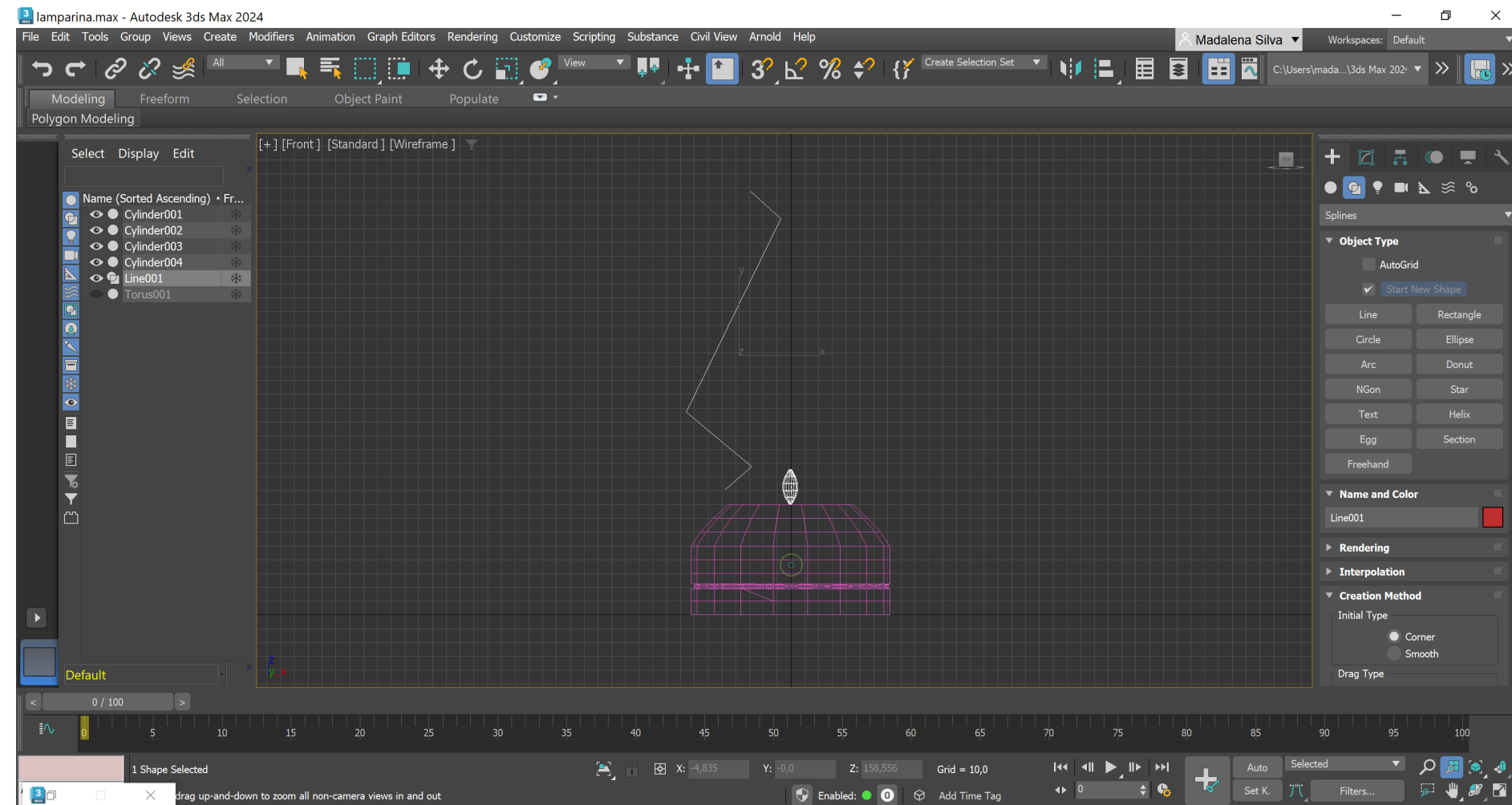
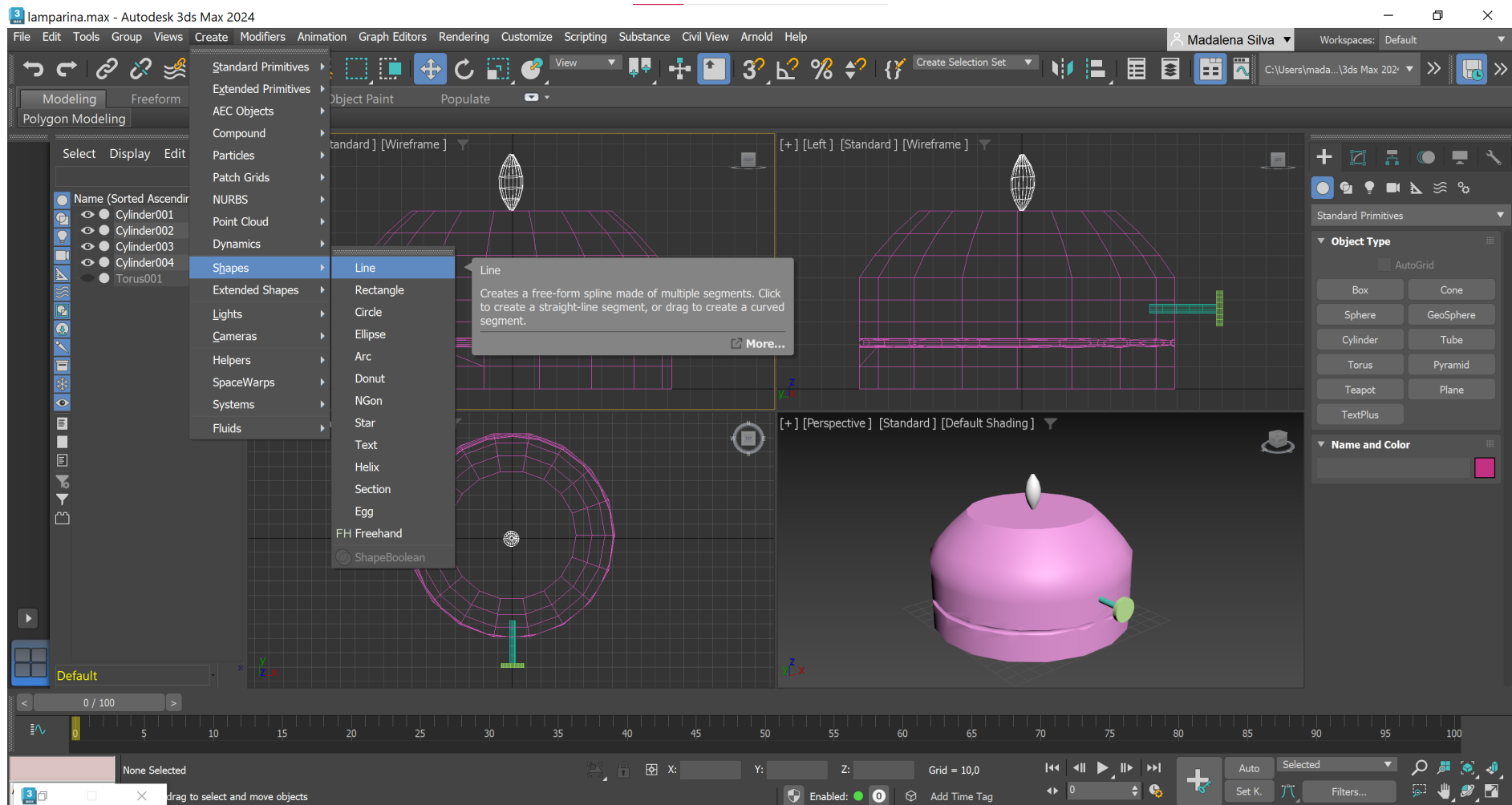
ReDig

Semana 12_{5/12/2023 - 8/12/2023}



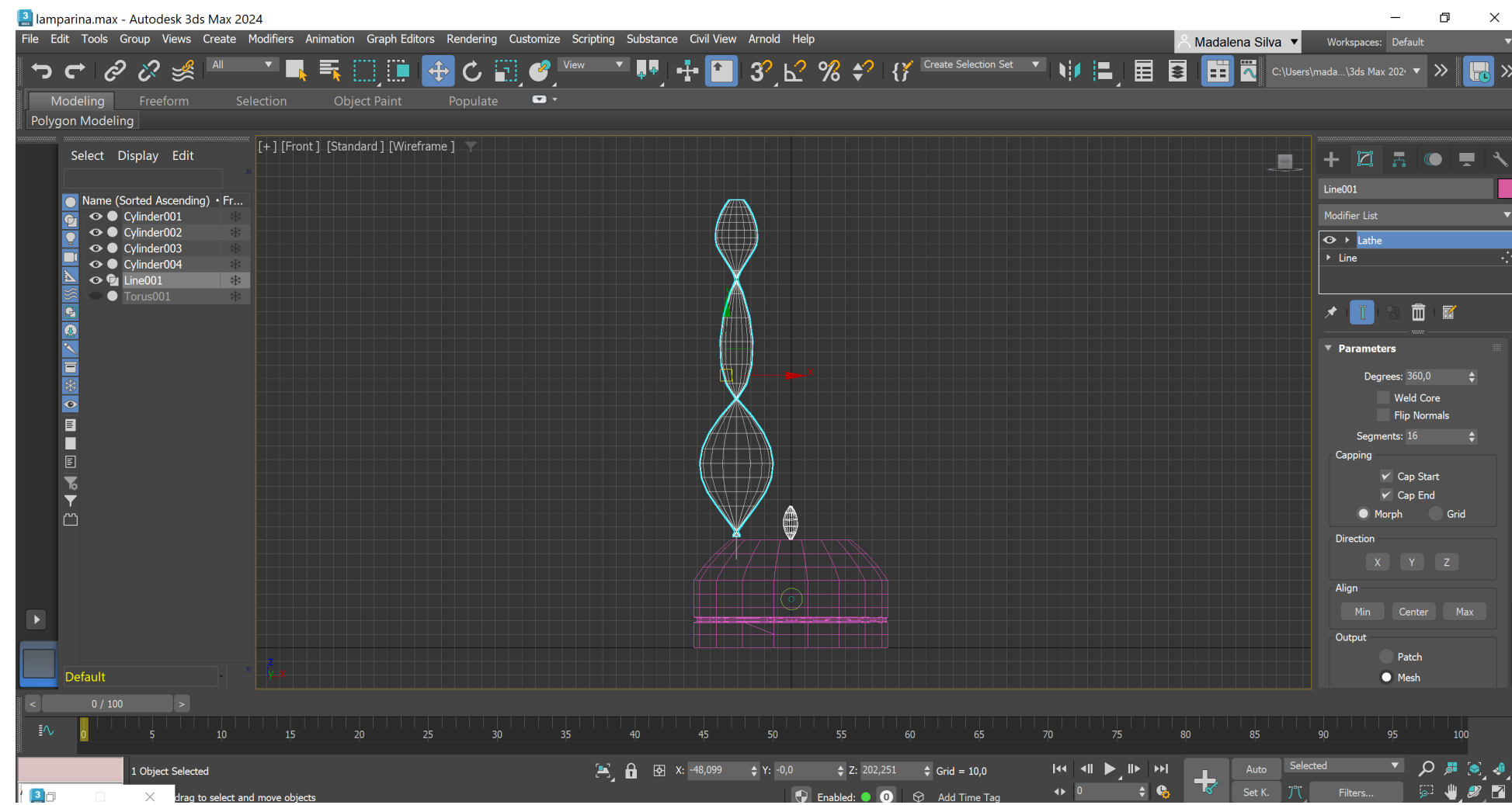
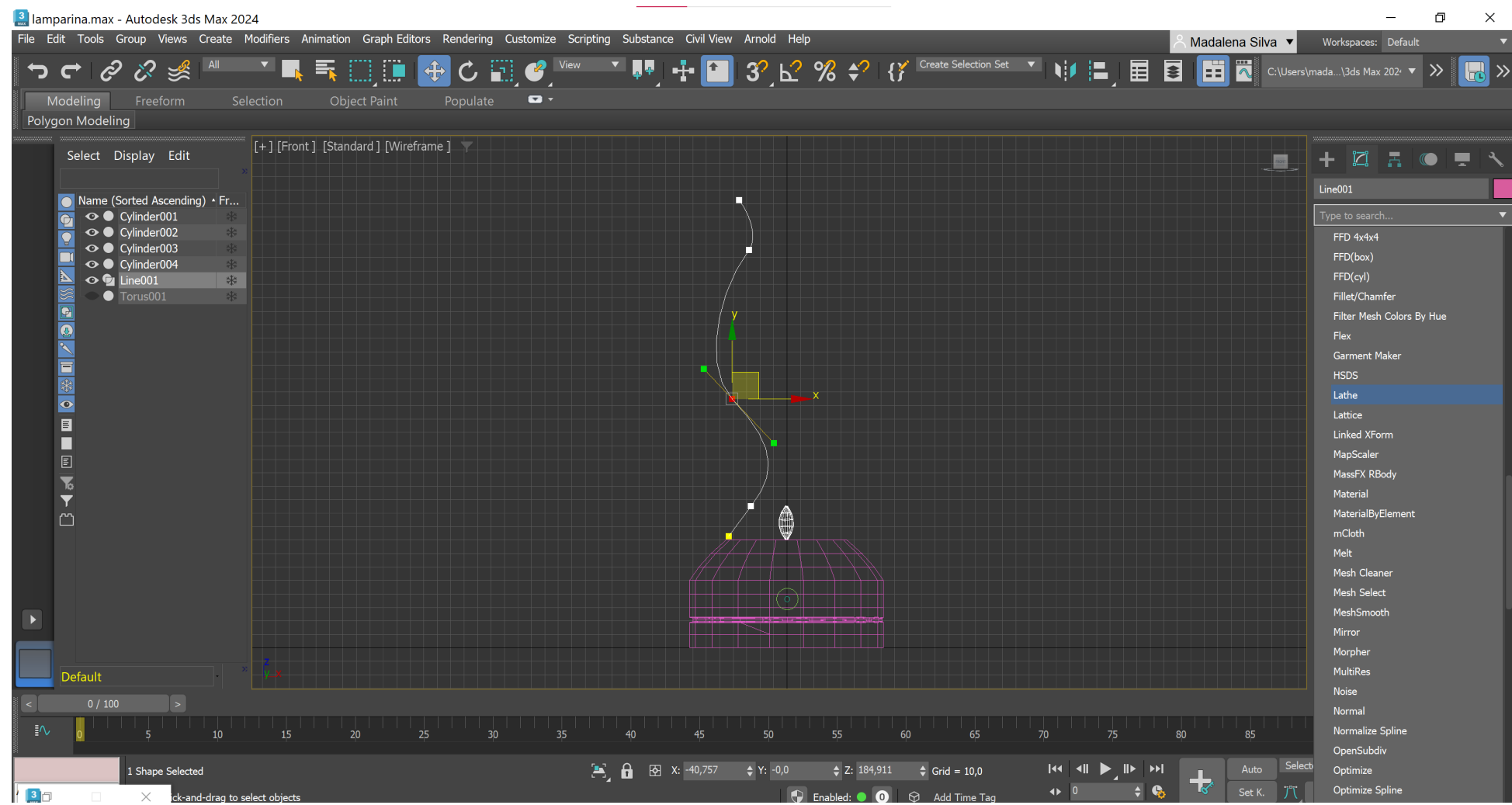
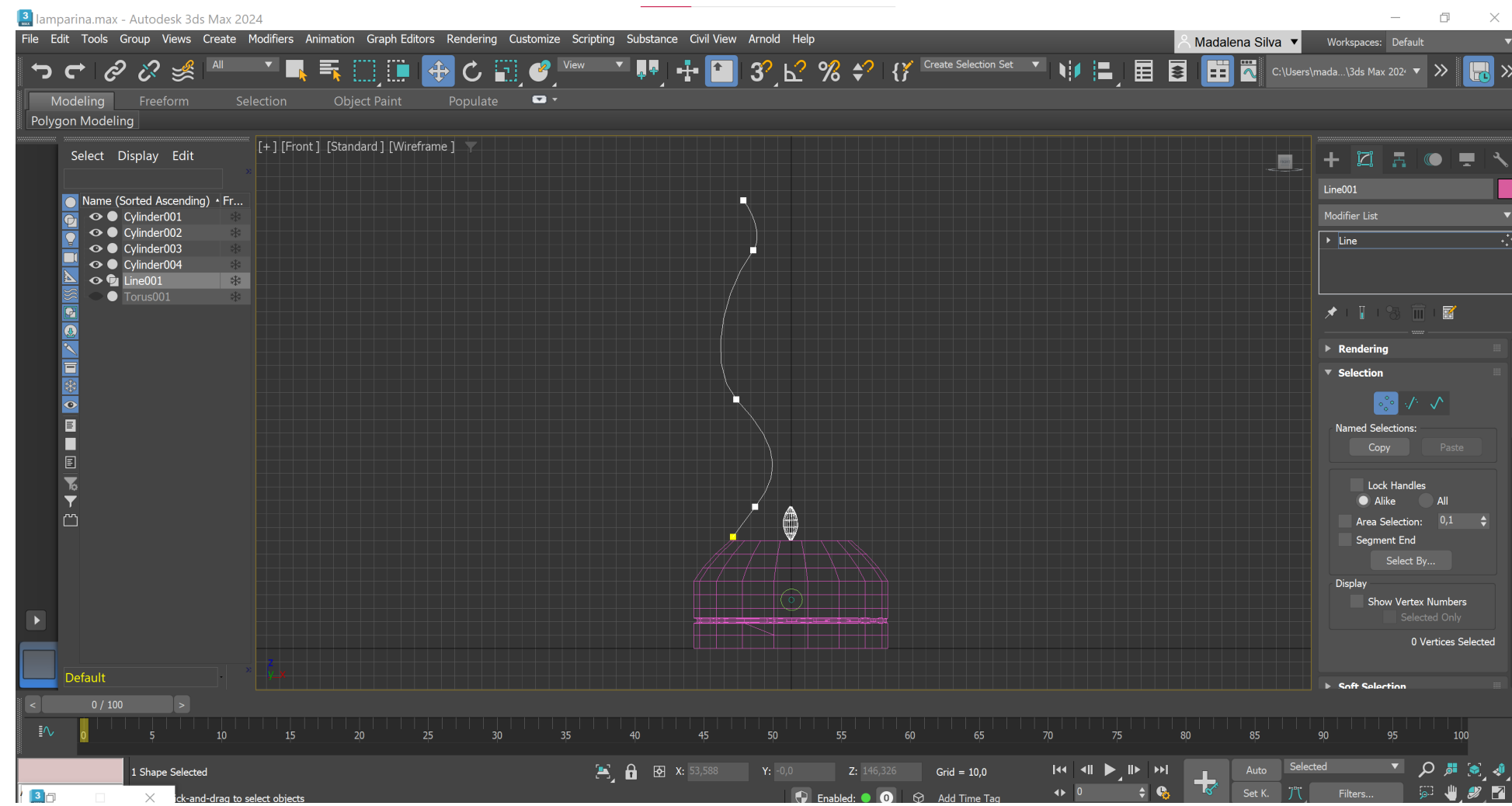
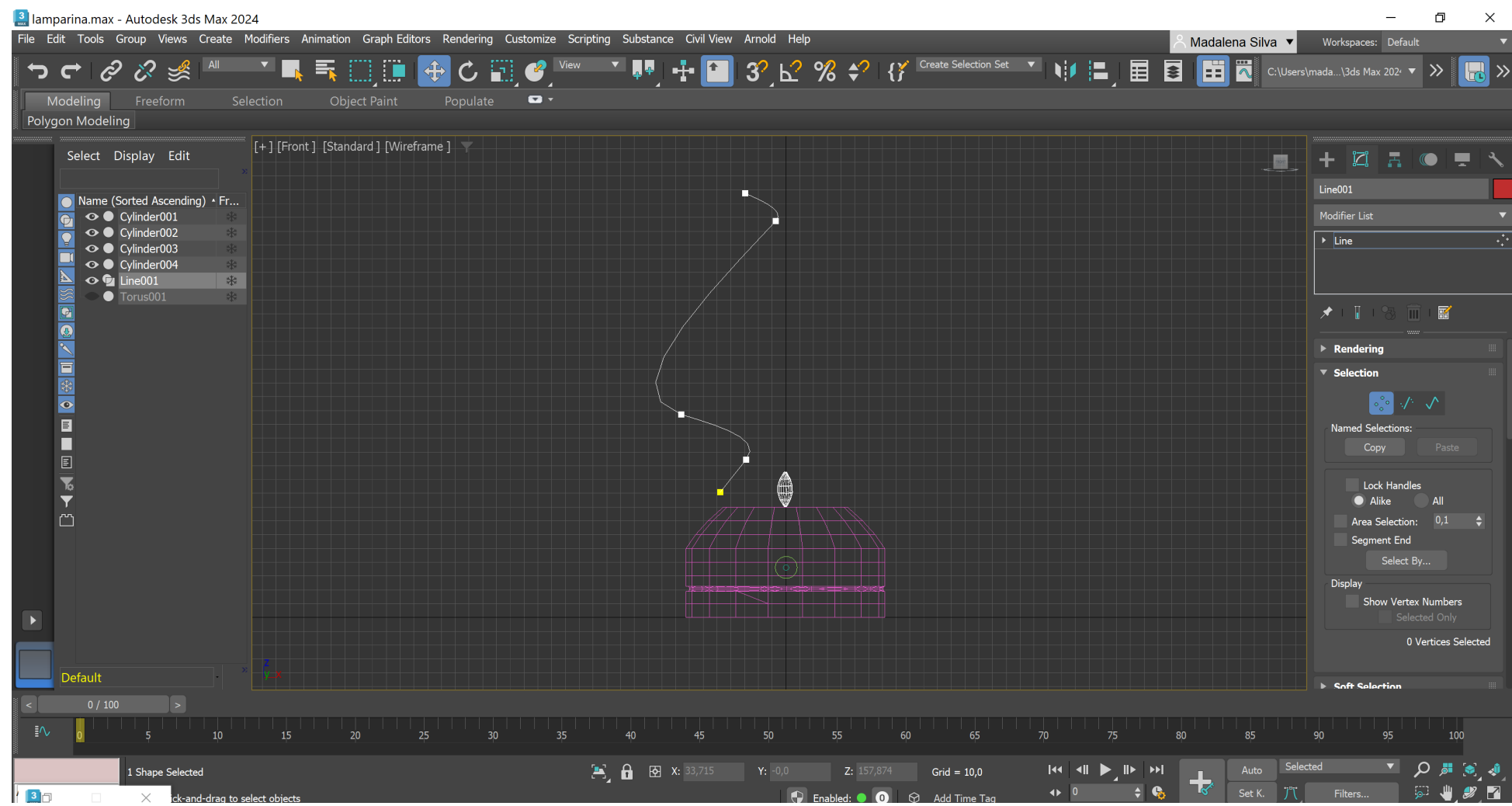
ReDig

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



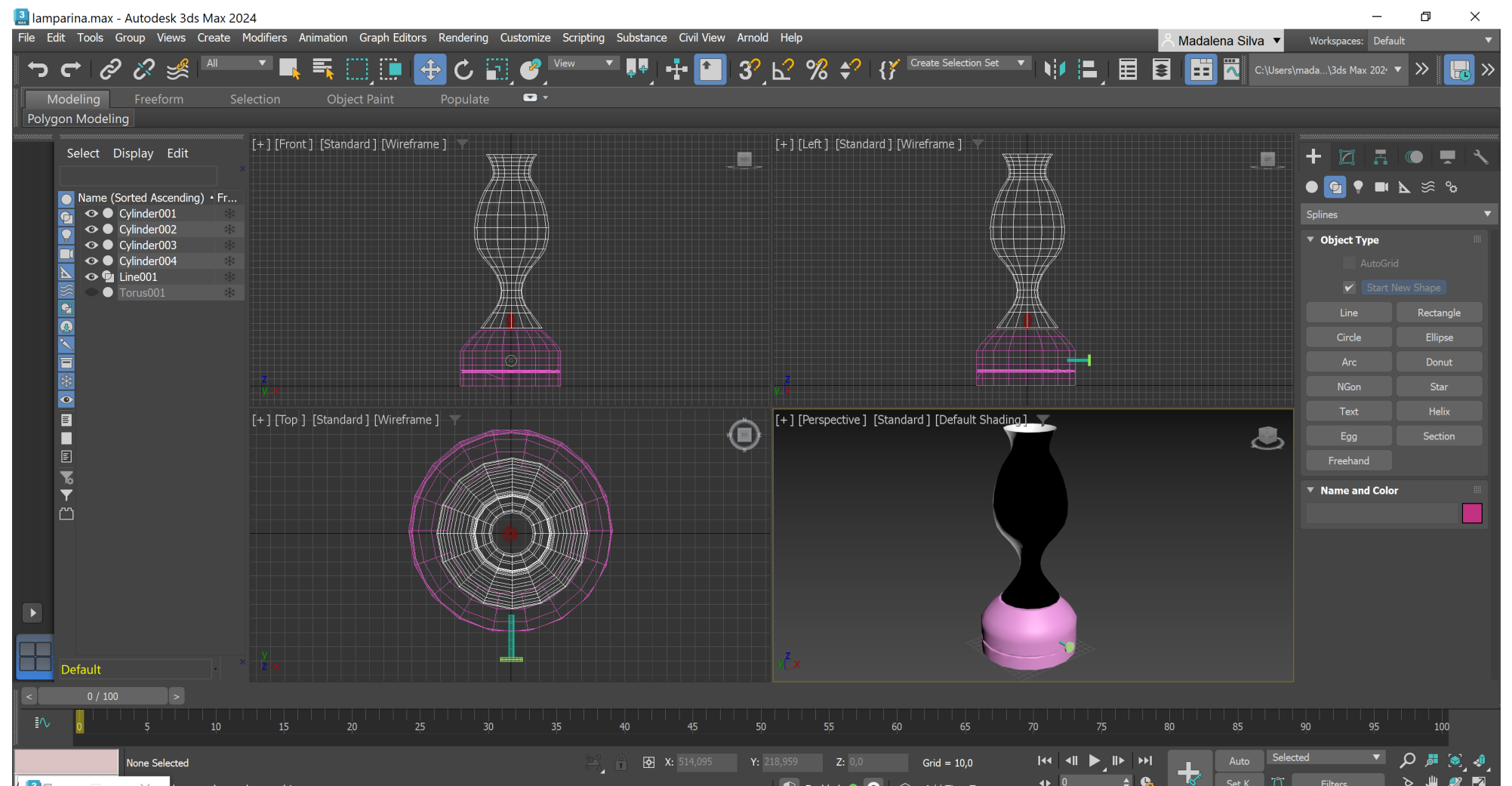
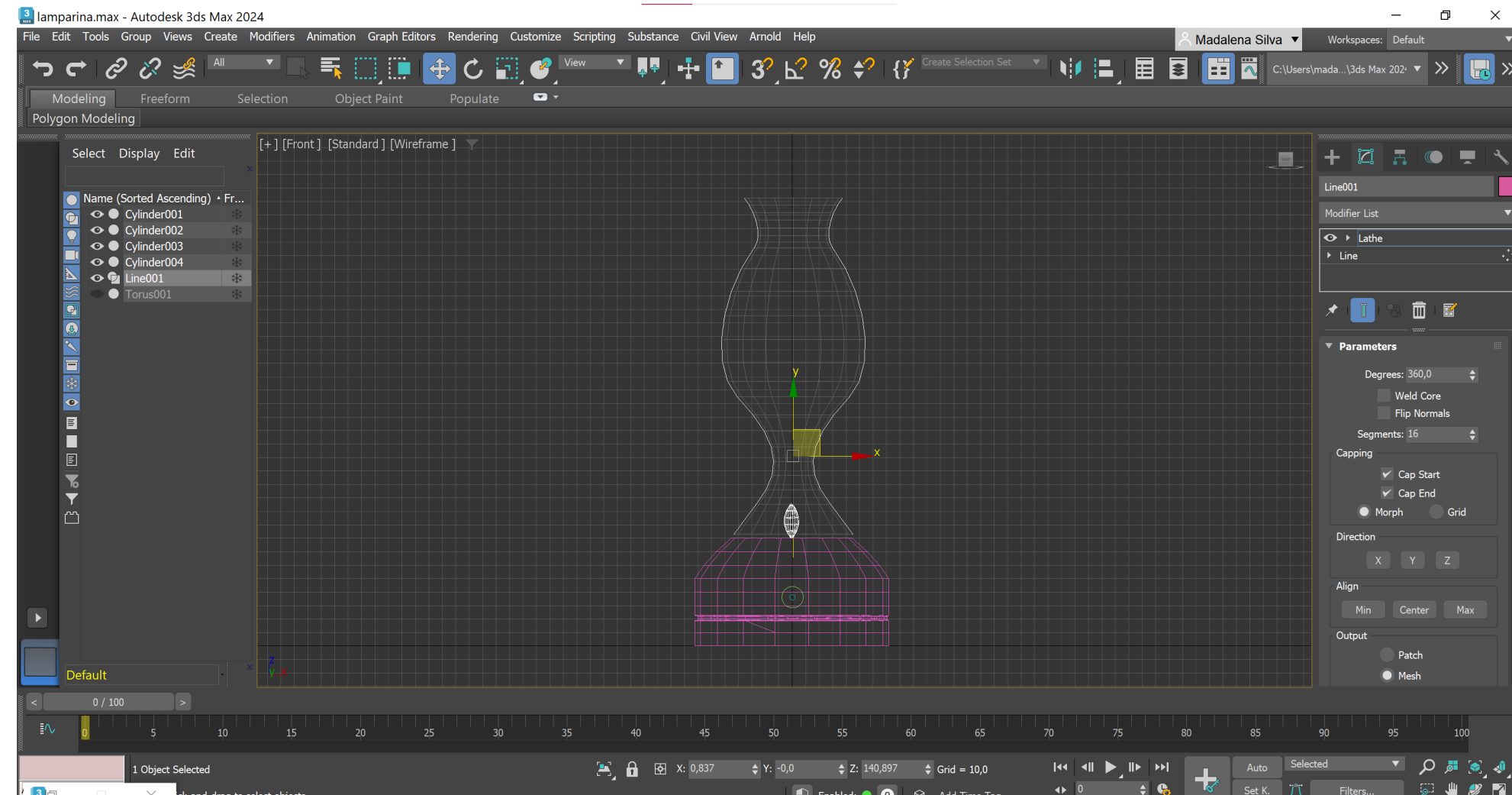
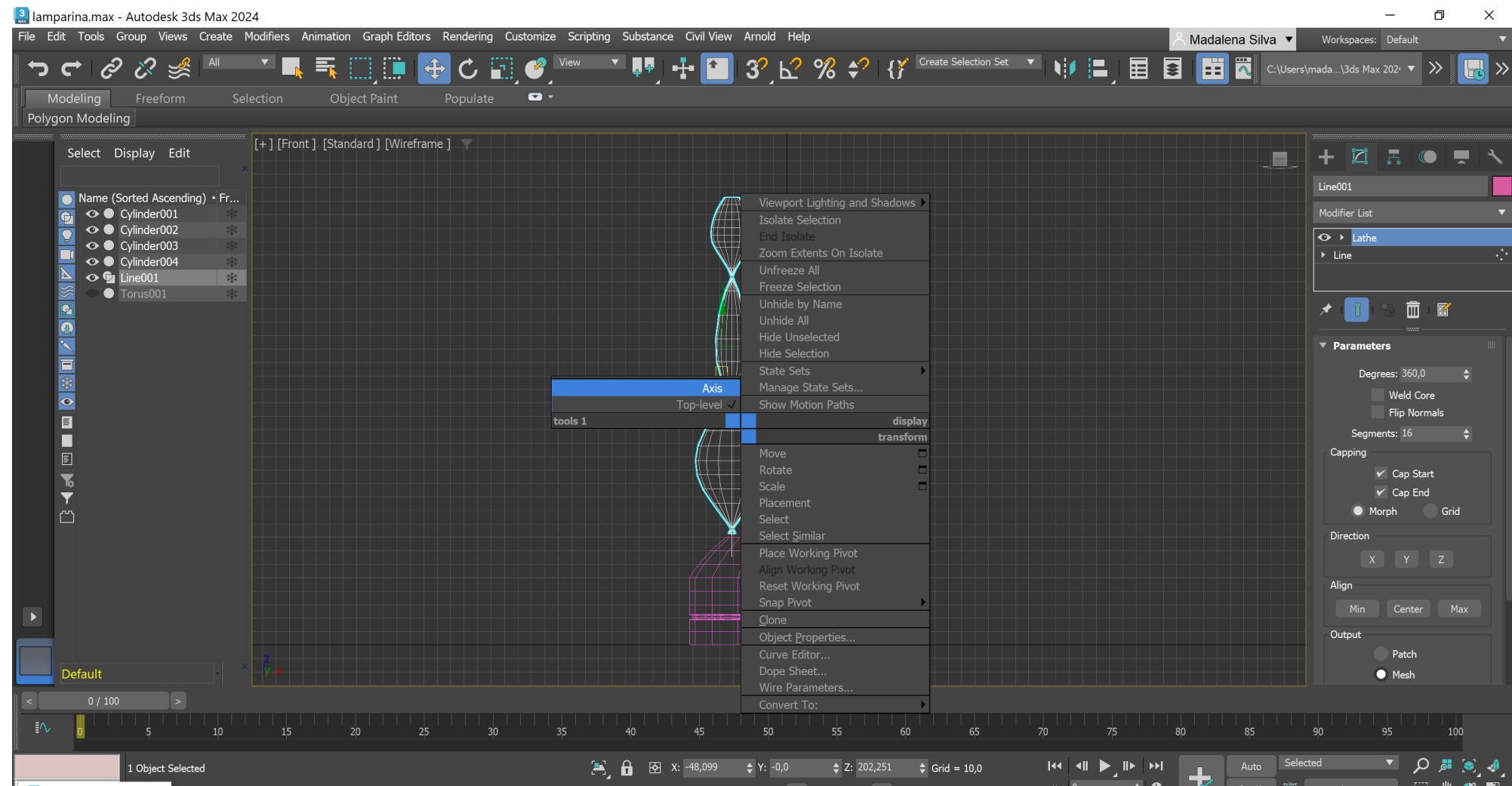
ReDig

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



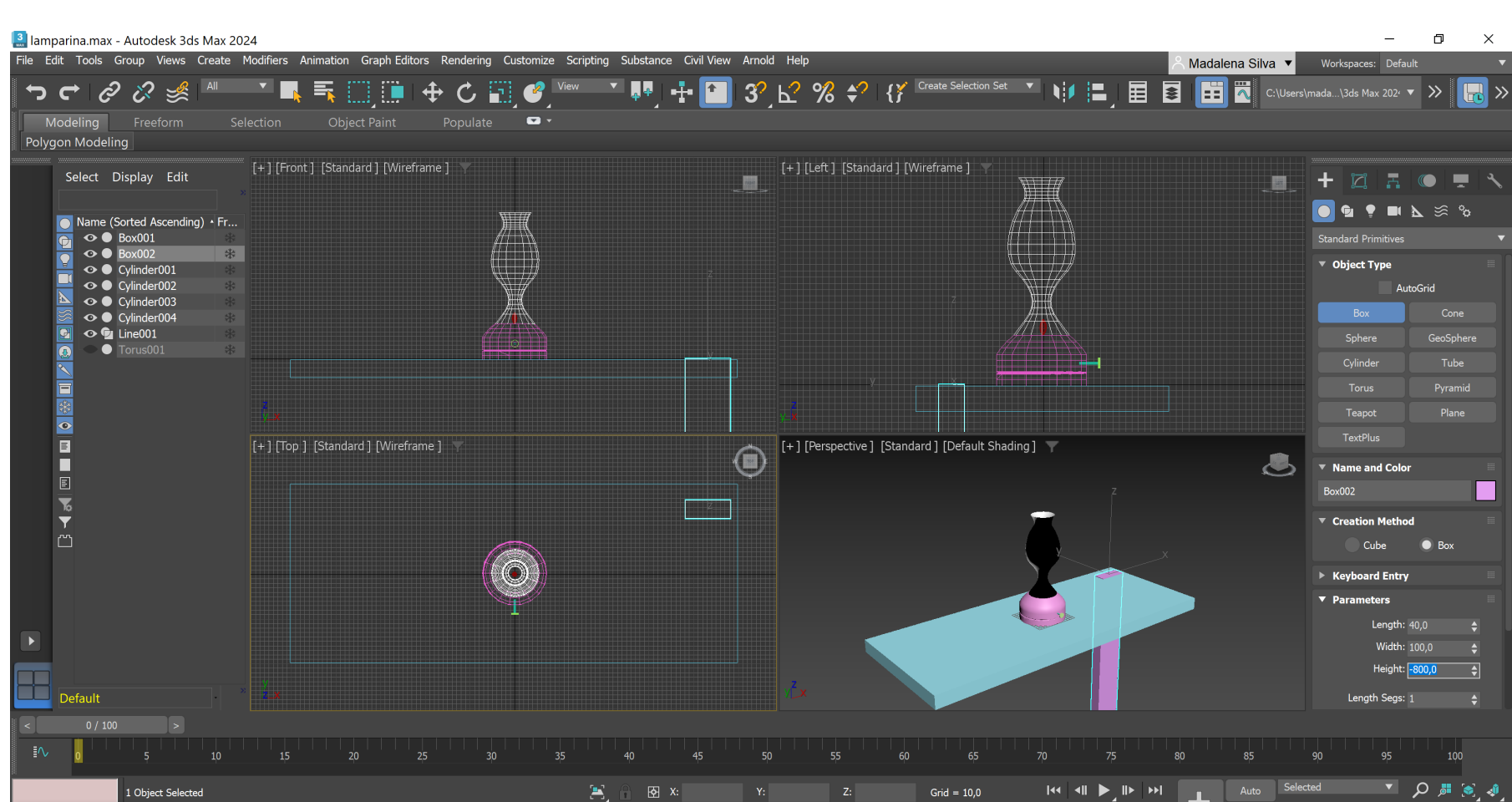
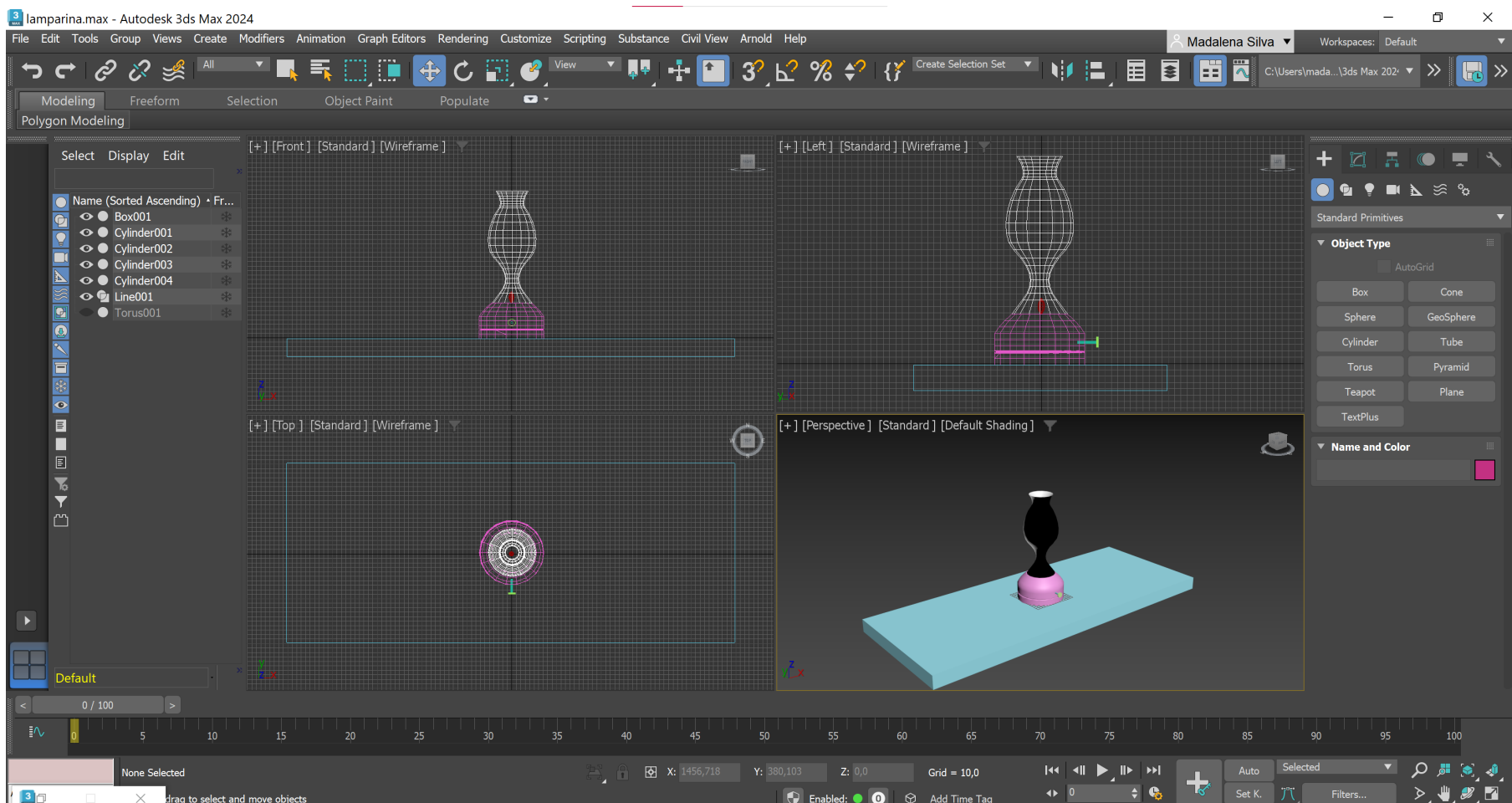
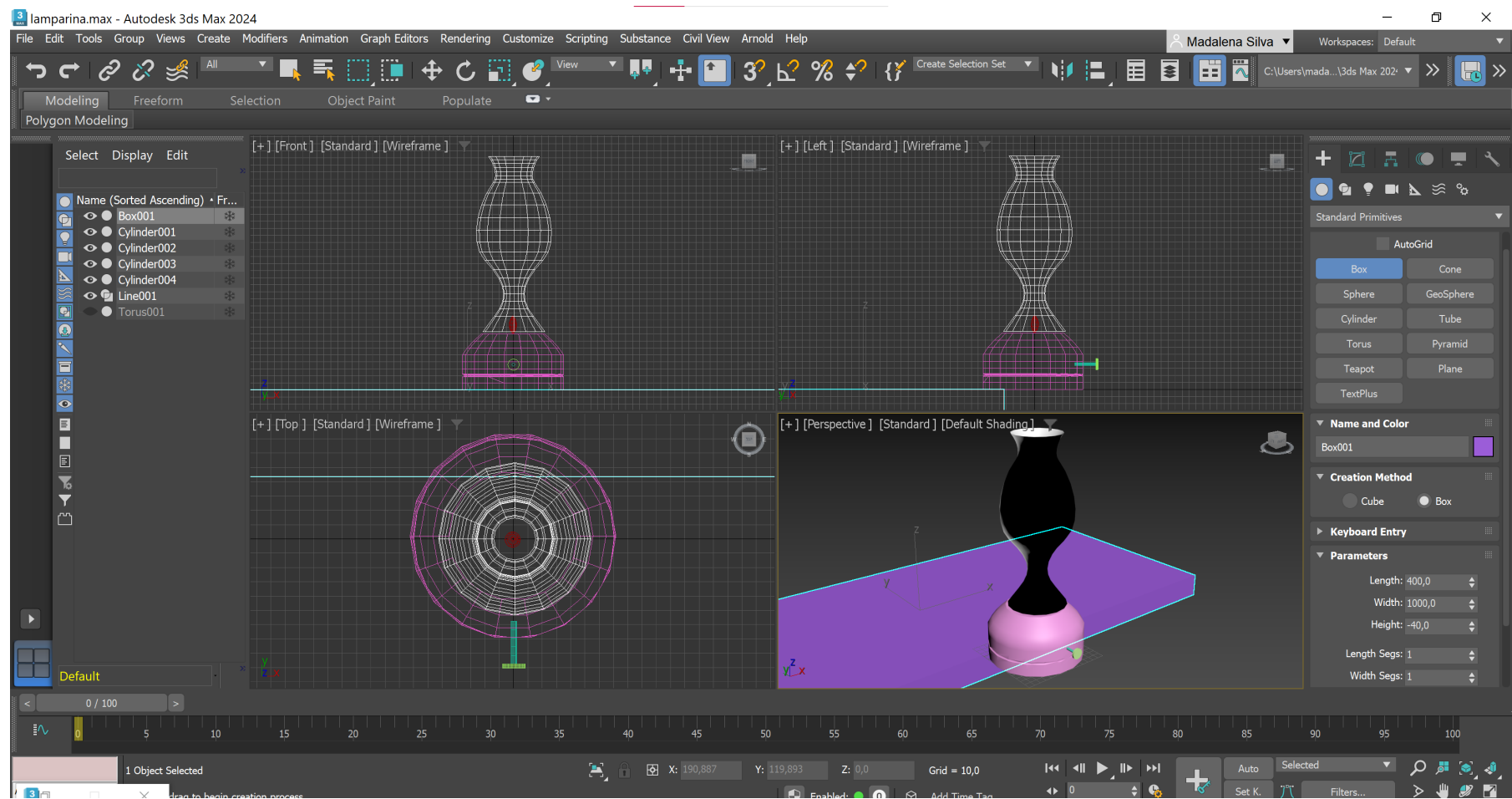
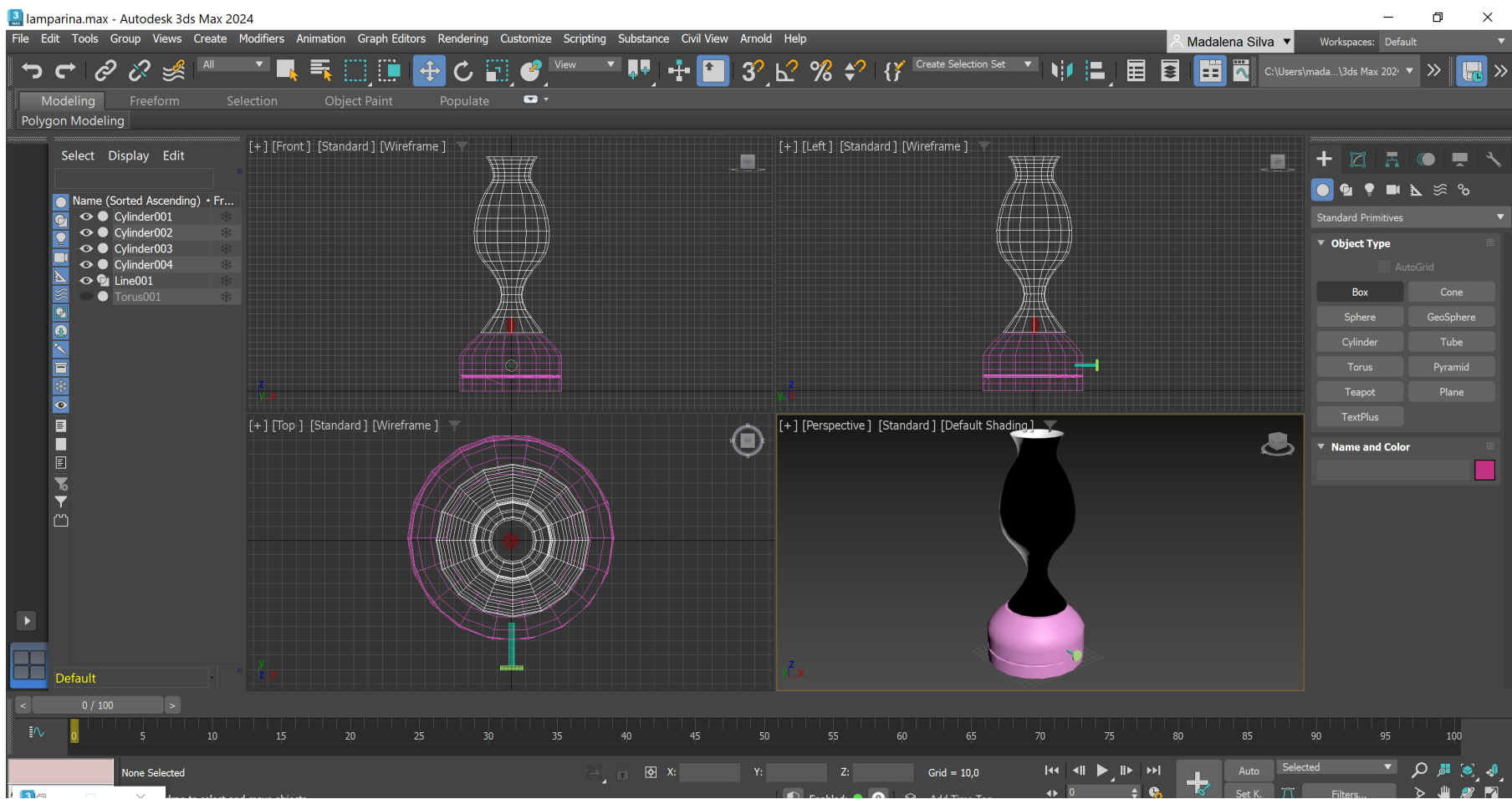
ReDig

Semana 12_{5/12/2023 - 8/12/2023}



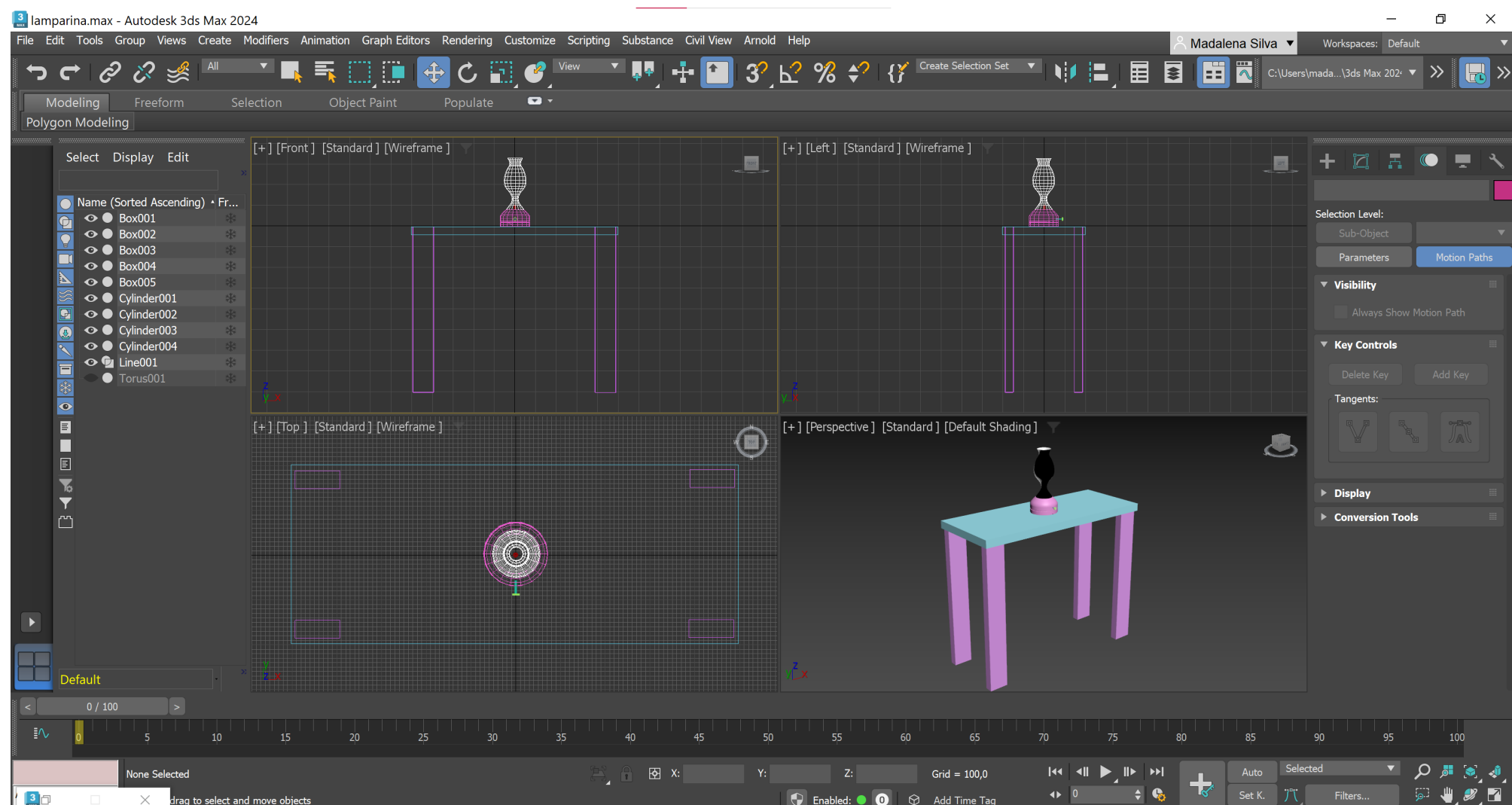
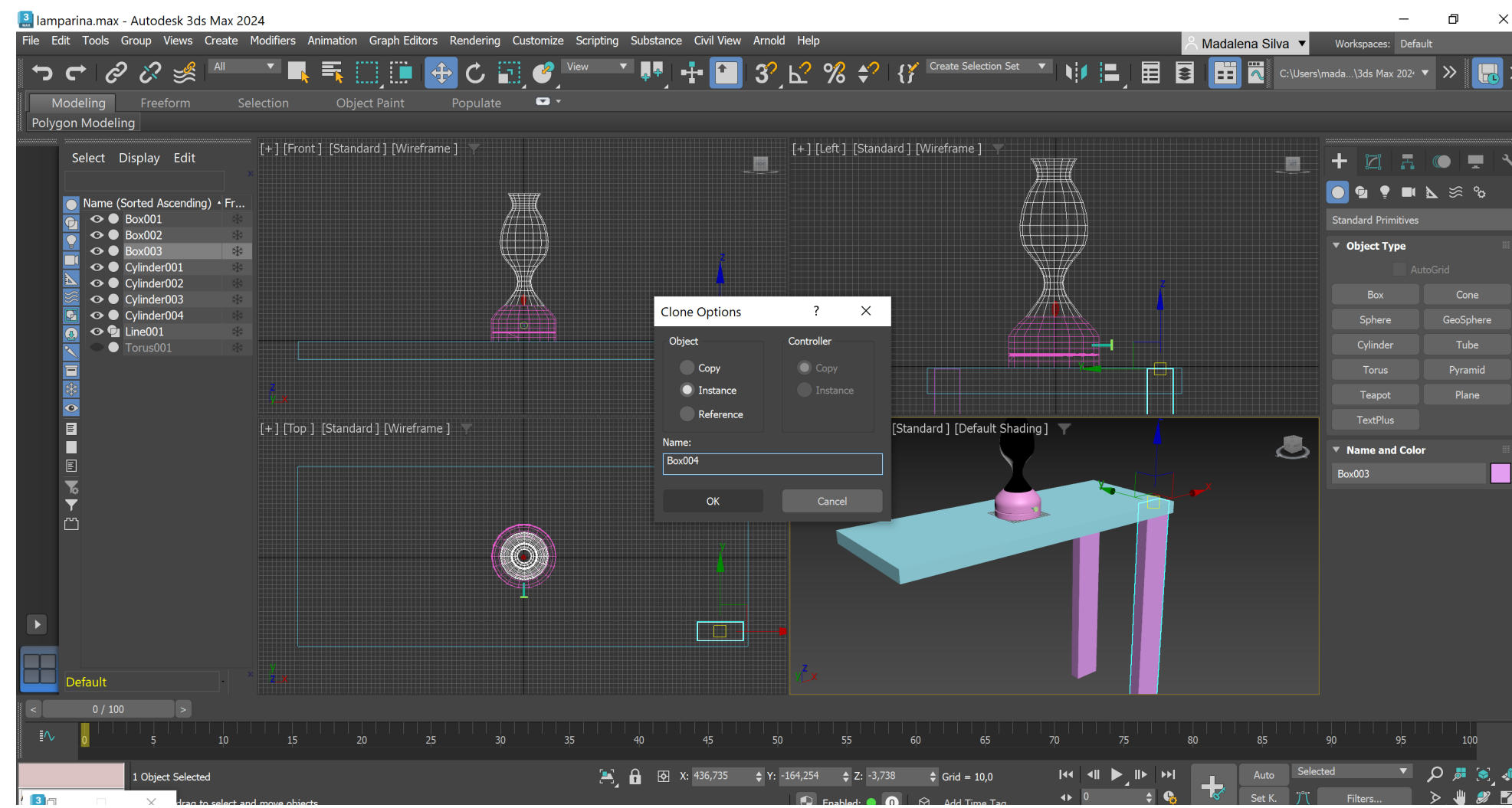
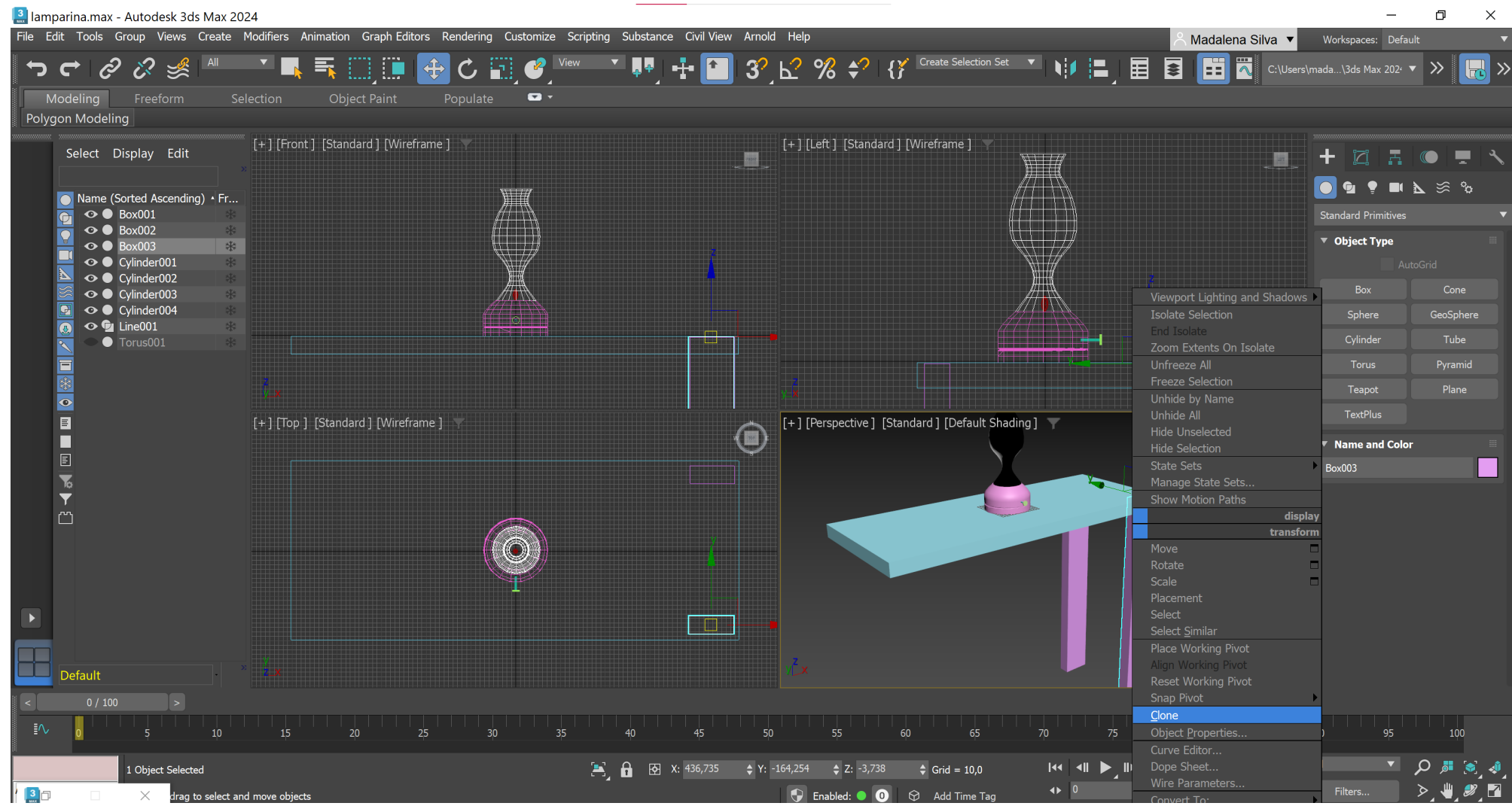
ReDig

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



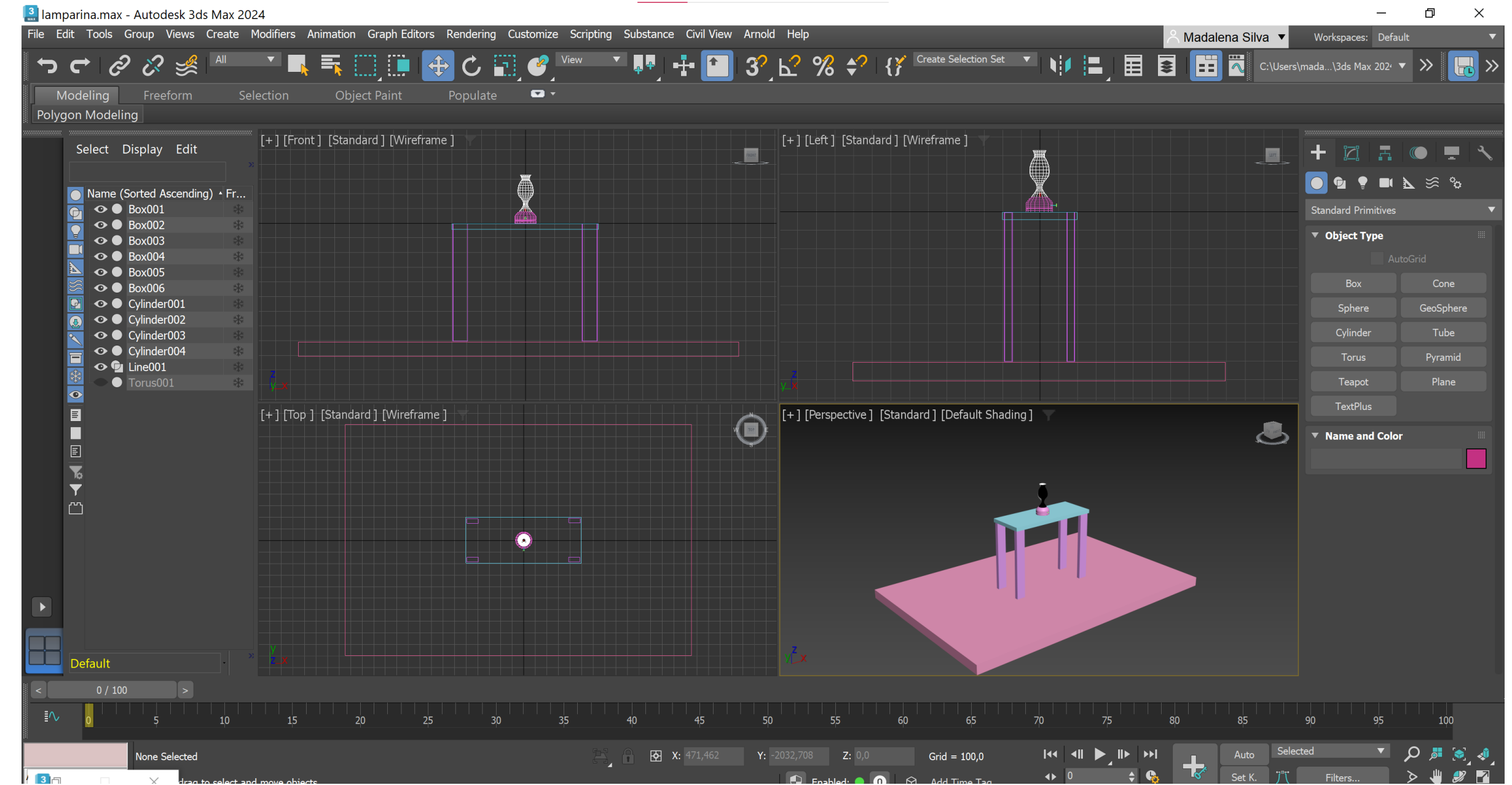
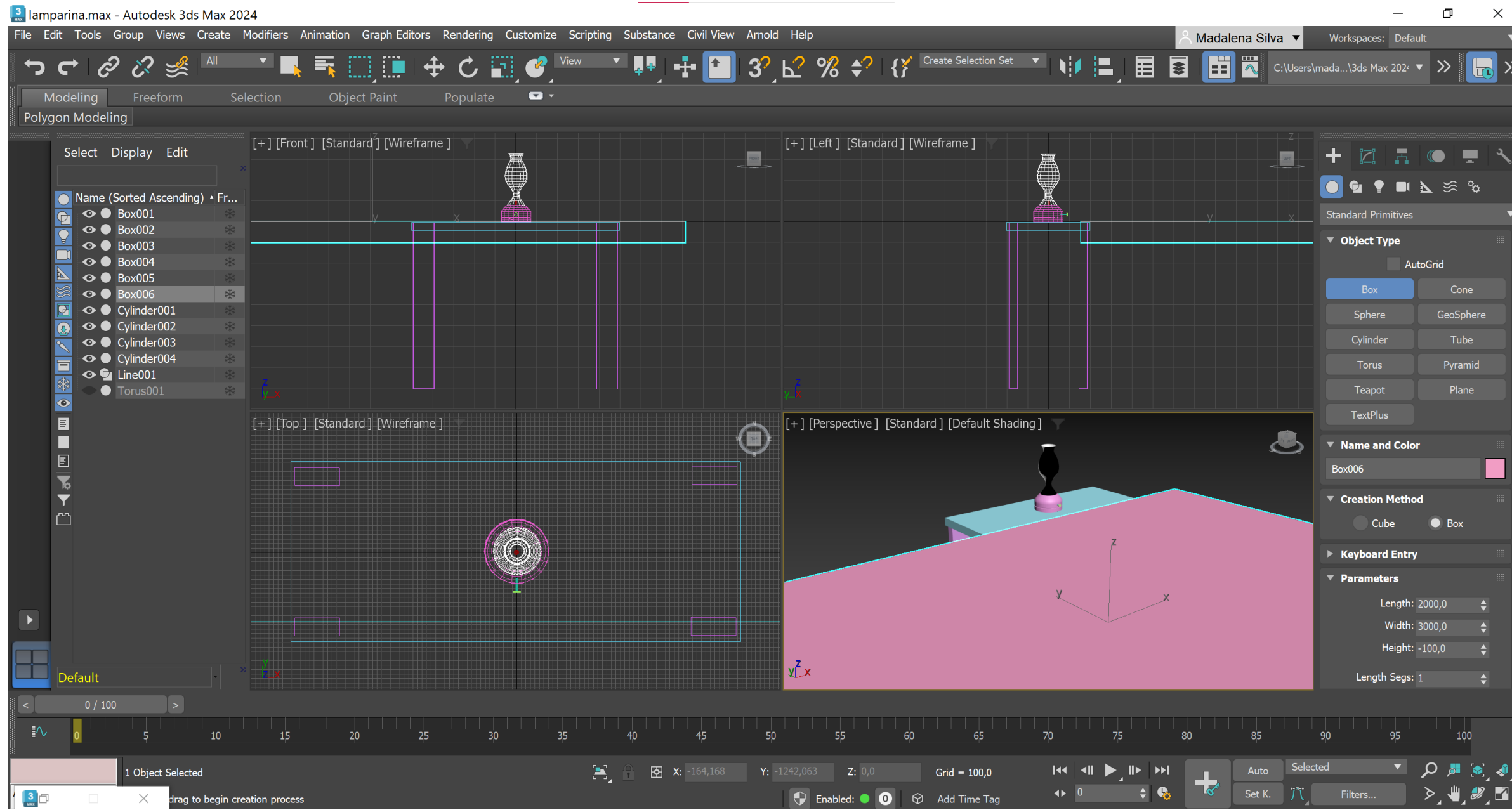
ReDig

Semana 12_{5/12/2023 - 8/12/2023}



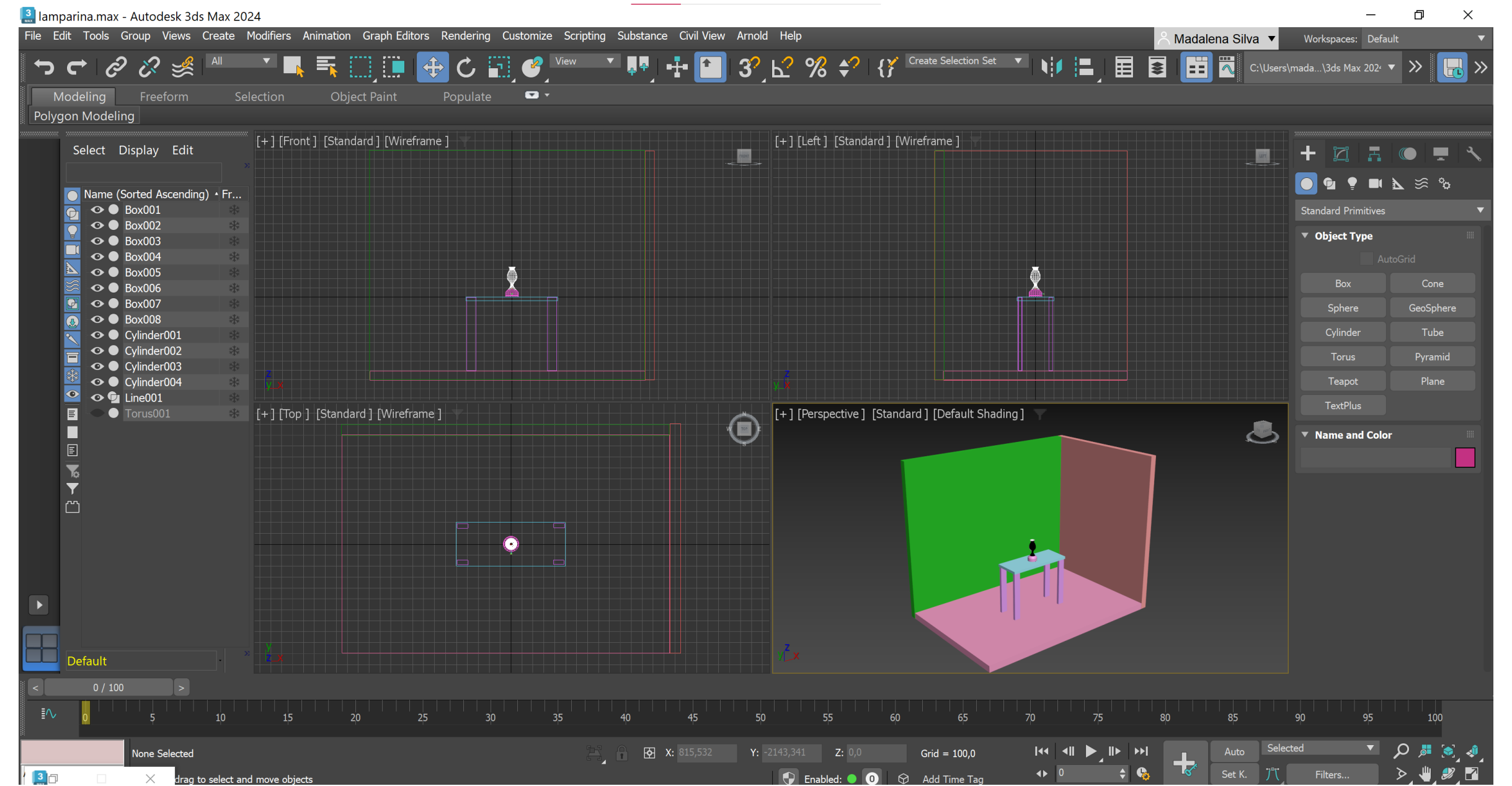
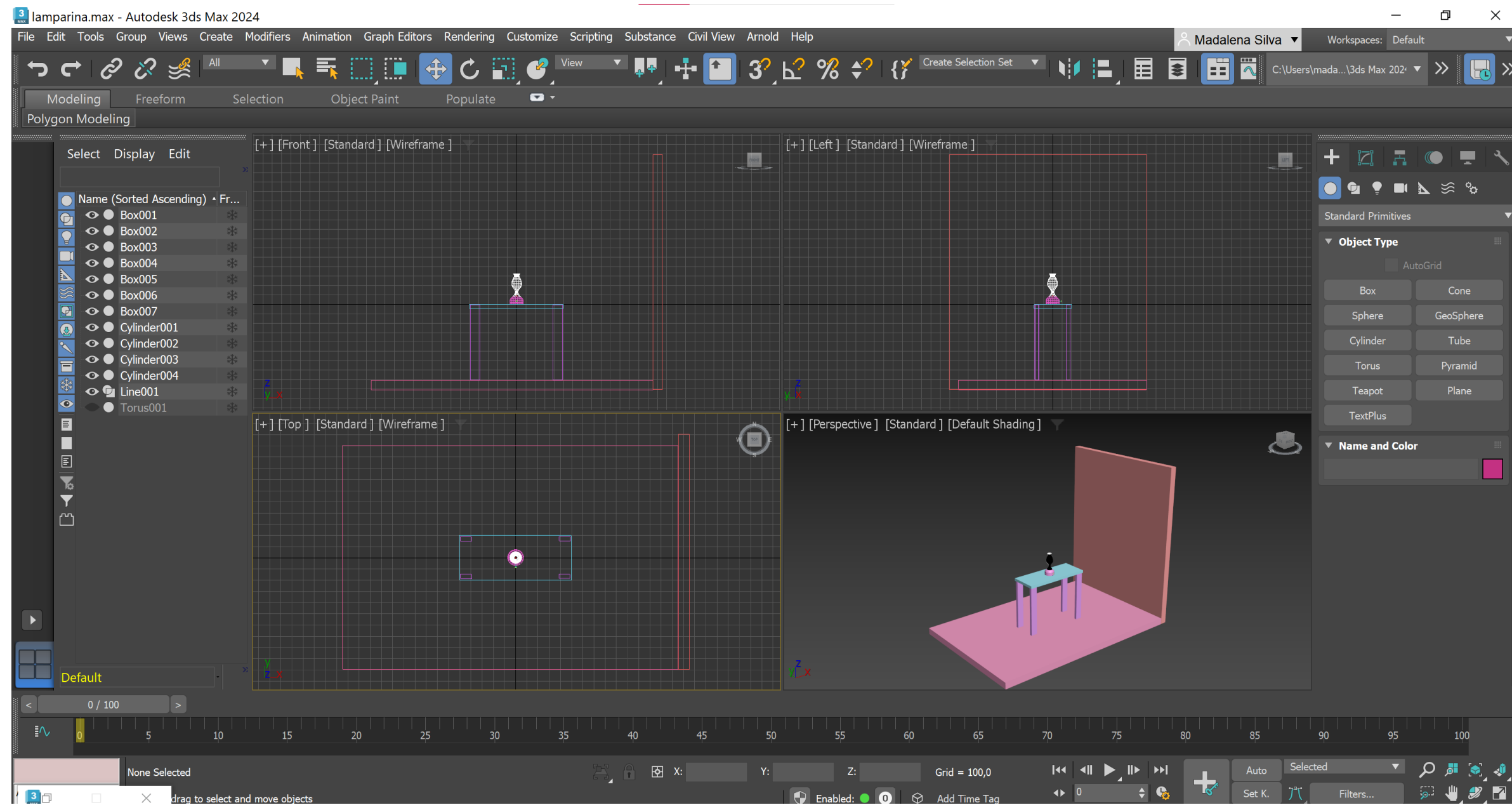
ReDig

Semana 12_{5/12/2023 - 8/12/2023}



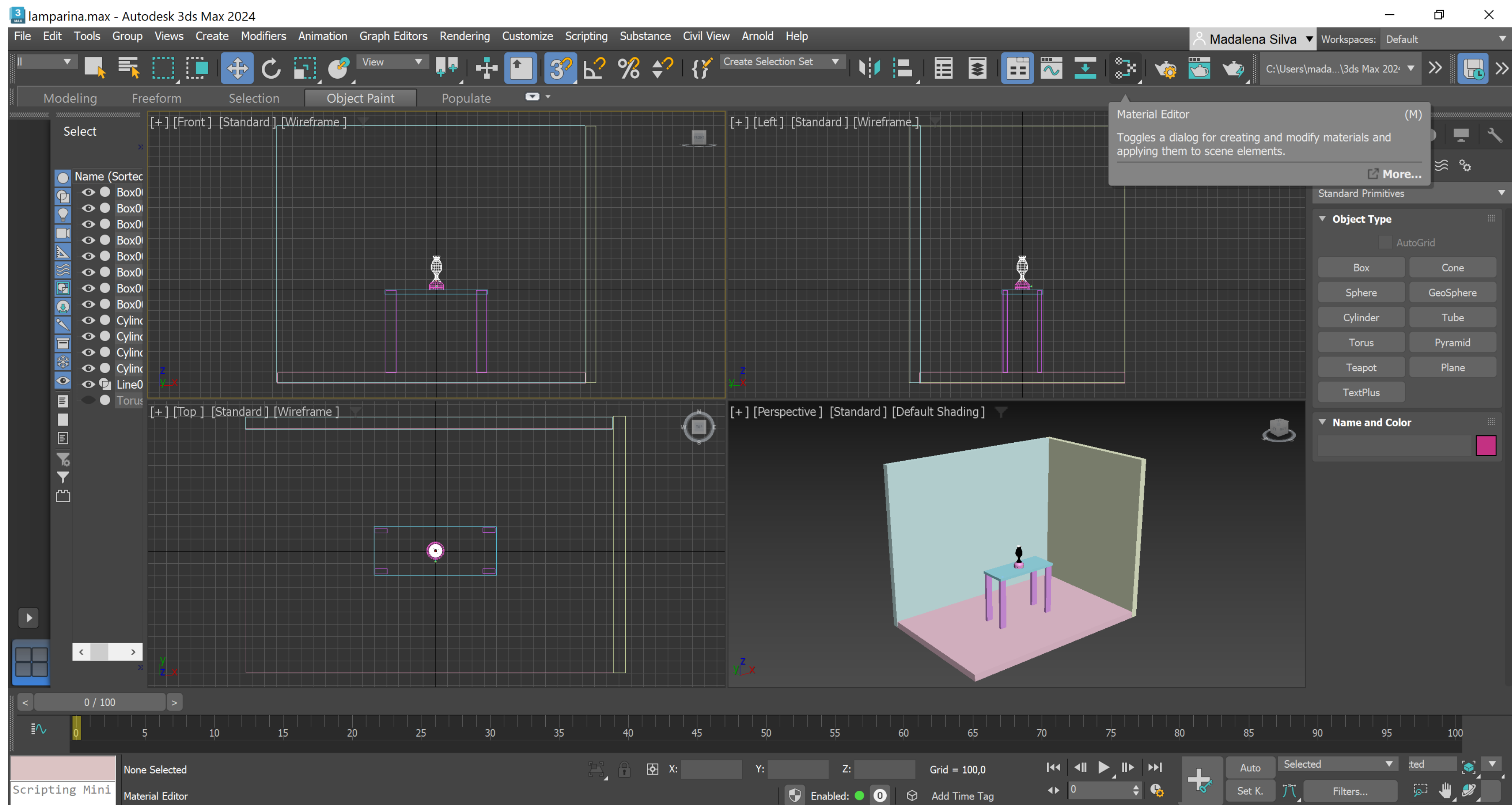
ReDig

Semana 12_{5/12/2023 - 8/12/2023}



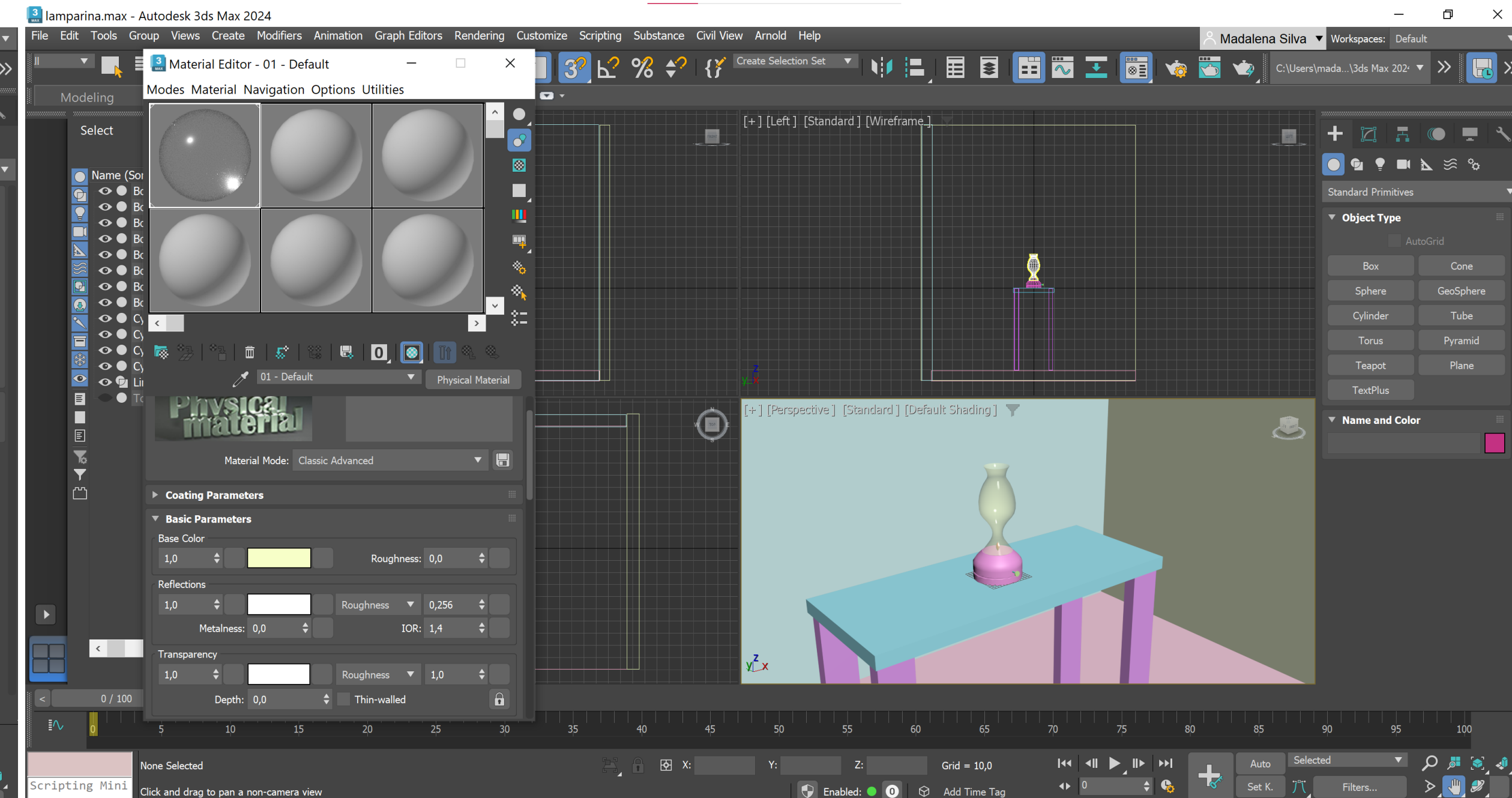
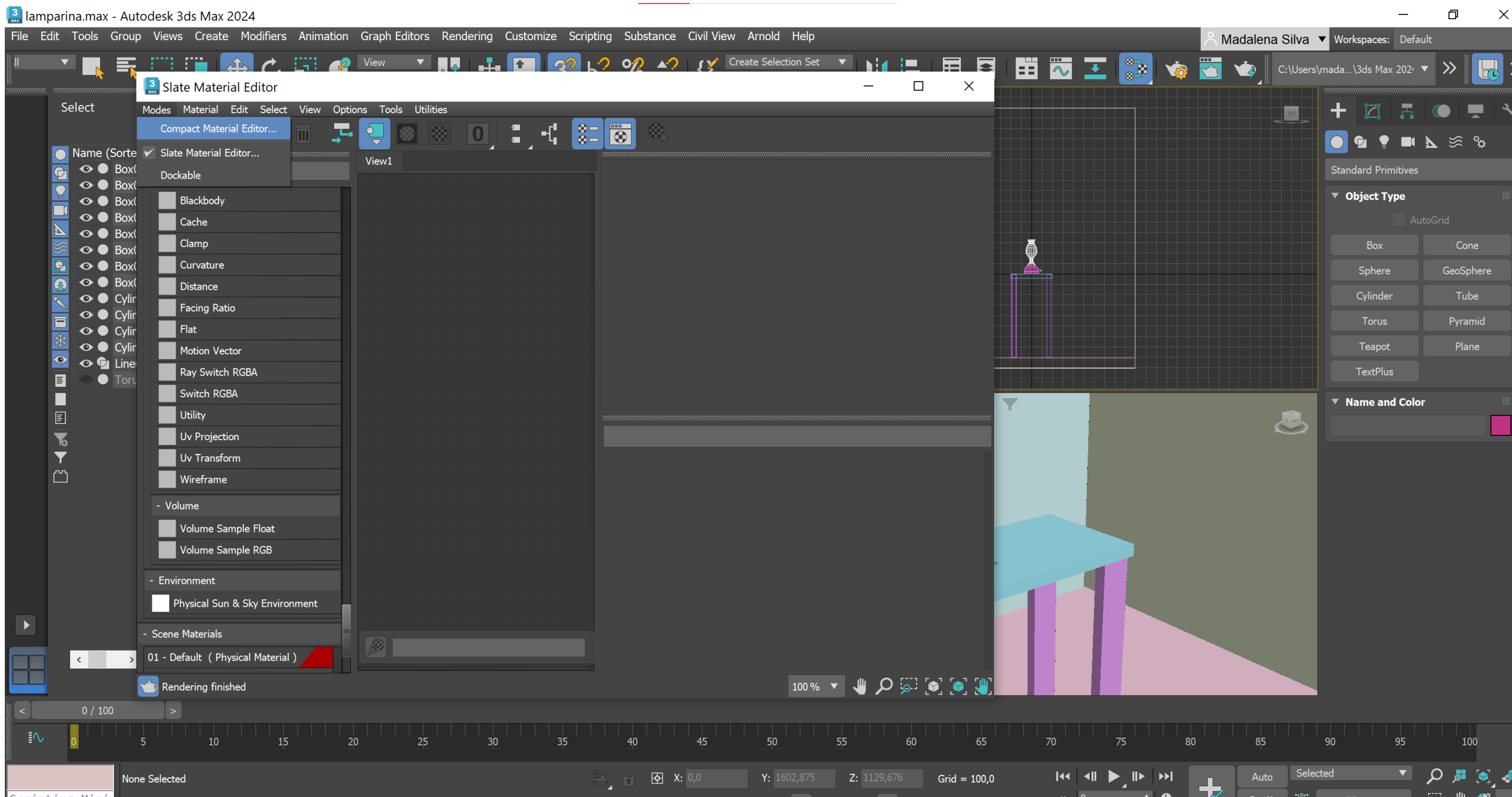
ReDig

Semana 12_{5/12/2023 - 8/12/2023}



ReDig

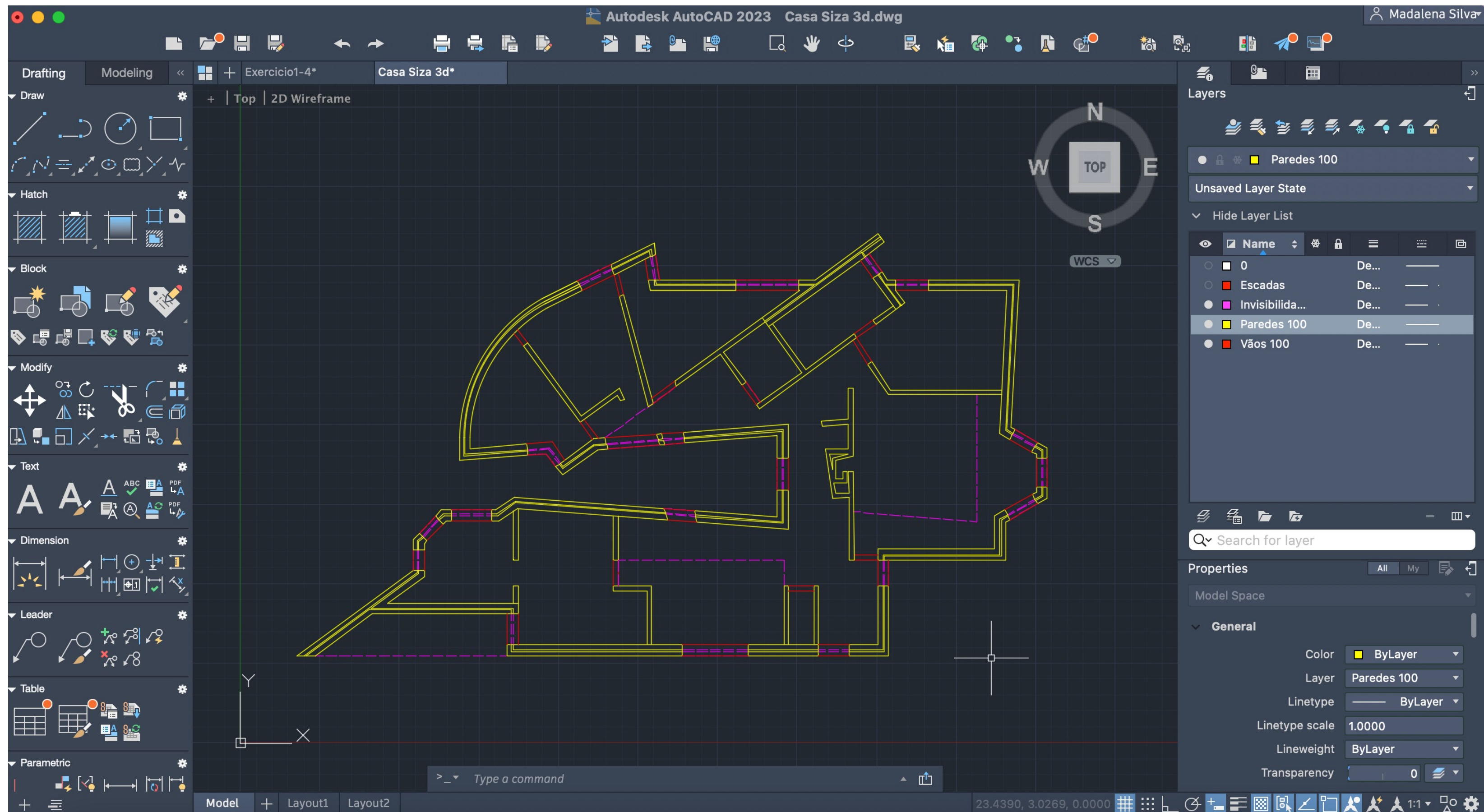
Semana 12 5/12/2023 - 8/12/2023



ReDig

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

Casa Siza 3d



Copy para um ficheiro de autocad novo

ReDig

Semana 13 12/12/2023 – 15/12/2023

ReDig

Semana 13_{12/12/2023 – 15/12/2023}

ReDig

Semana 13_{12/12/2023 – 15/12/2023}

ReDig

Semana 14_{19/12/2023}