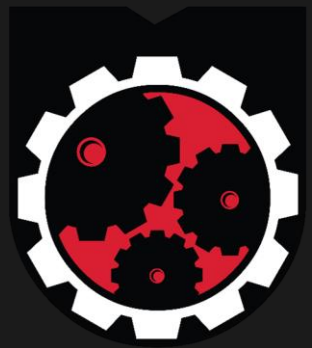


MARCH 2023

Introduction to CAD

UQ MARS x MESS



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Agenda

What is CAD?

Design Process

Intro to NX

Introductory Project

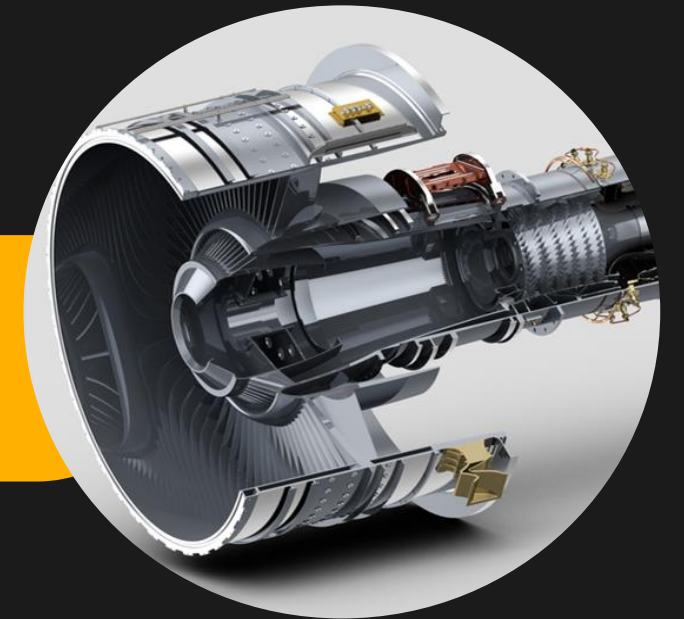
Help

Computer Aided Design (CAD)

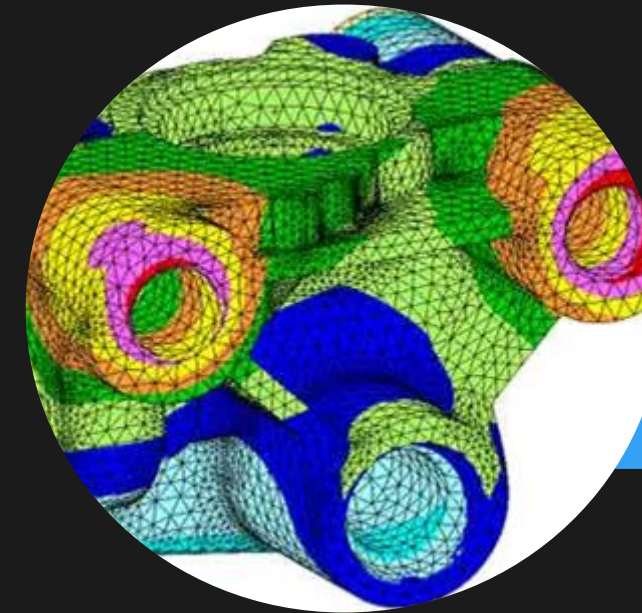
The use of computer software to aid in the design process.

CAD vs CADD vs BIM

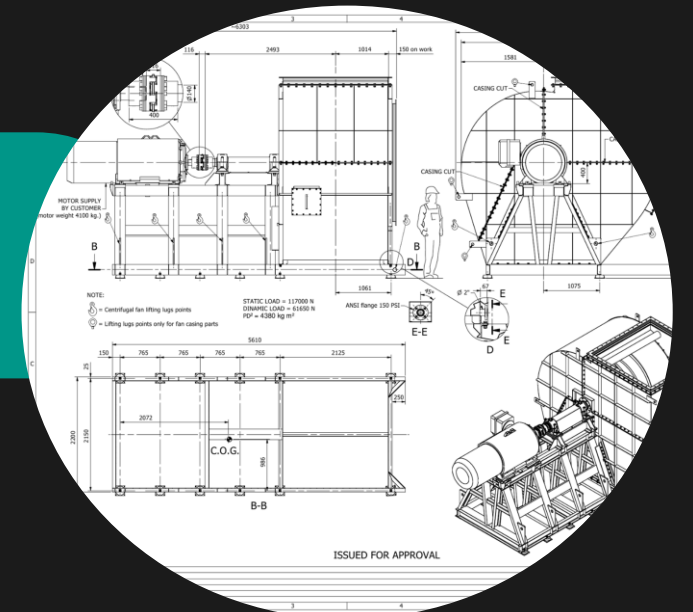
Creation



Analysis & Optimisation



Communication



What for?

Design new parts

Required for 3D Printing etc.

Model and analyse physical objects

Create Accurate Drawings

Download ready-made parts

Getting Better at CAD

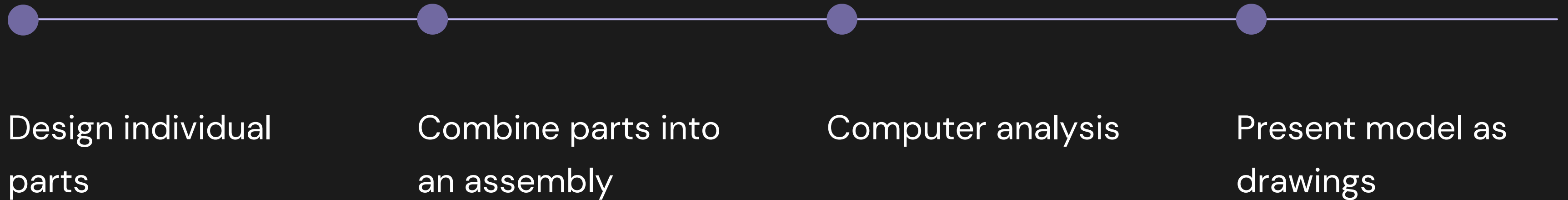
Understand the fundamentals

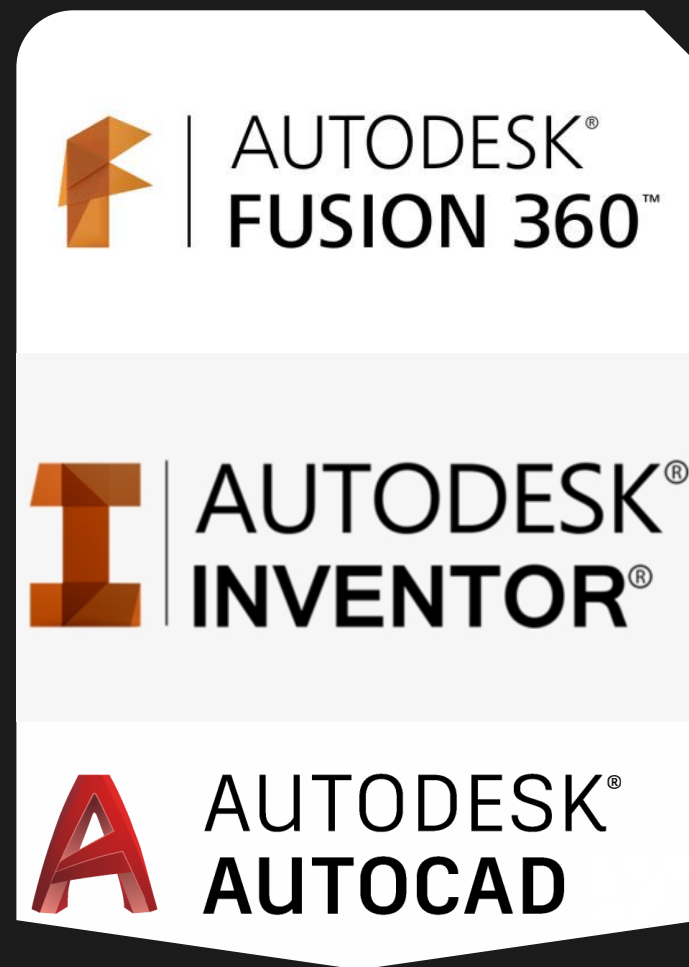
Tutorial videos & resources

Workshops!

Keep using it!

CAD Design Process





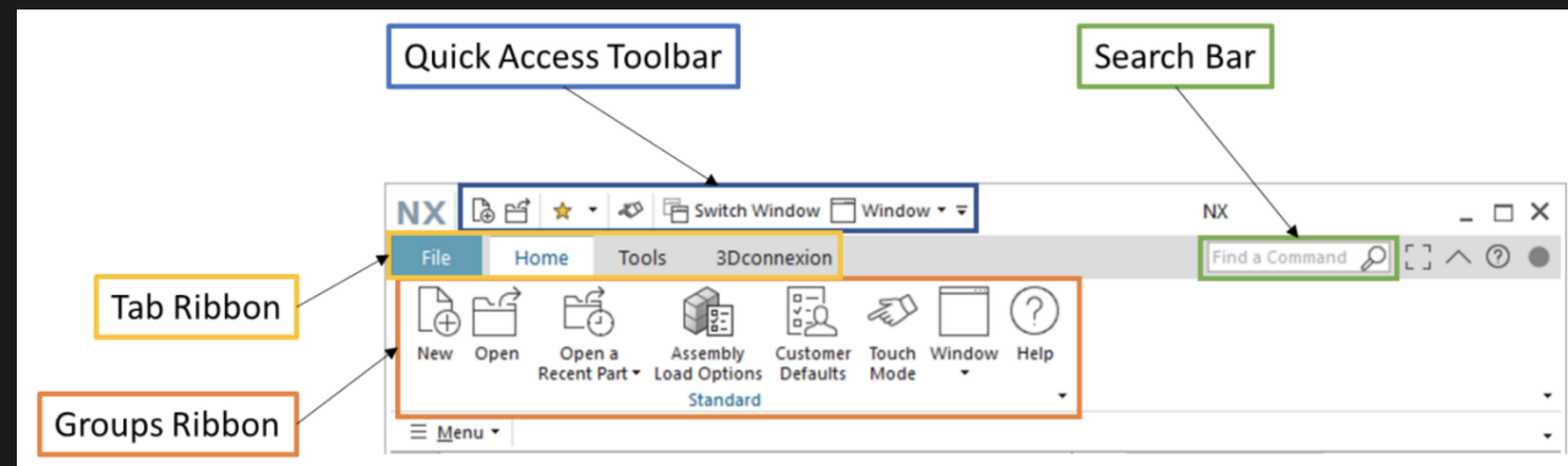
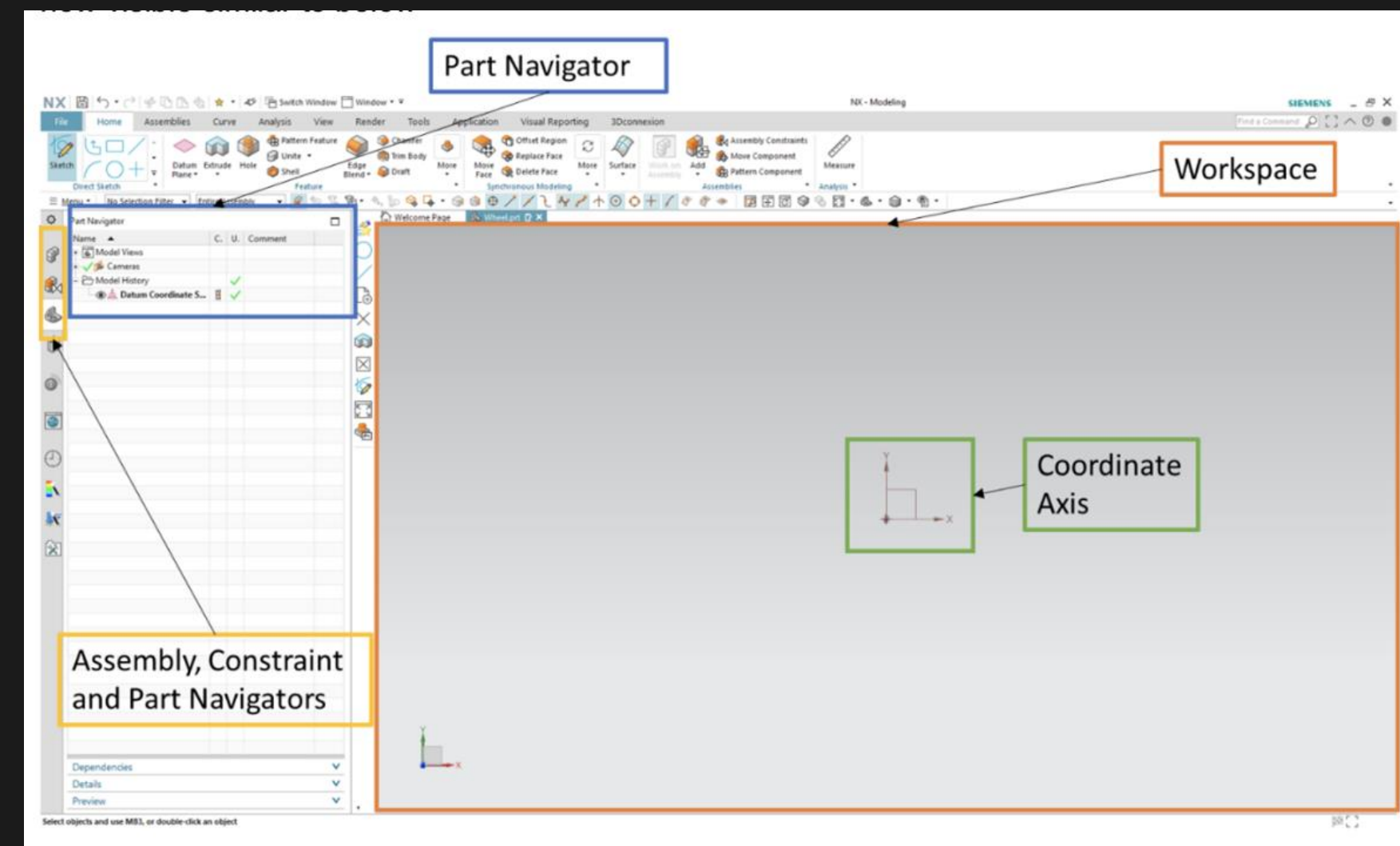
Software

- We will be using NX
- Alternatives are:
 - Autodesk Suite
 - Inventor
 - Solid Edge
 - SolidWorks
 - Blender*



Getting Around NX

- ❑ Navigating the UI
- ❑ Structure of parts and assemblies

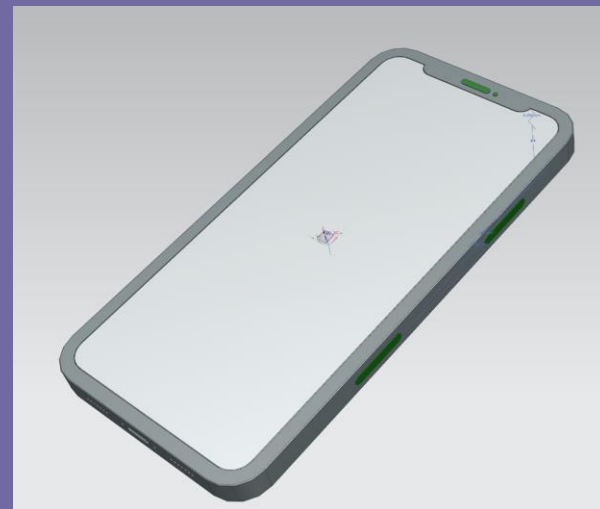


Introductory Project

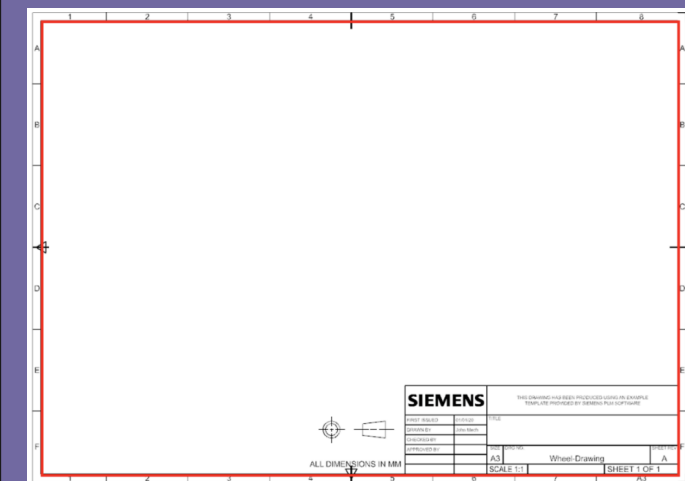
01



02

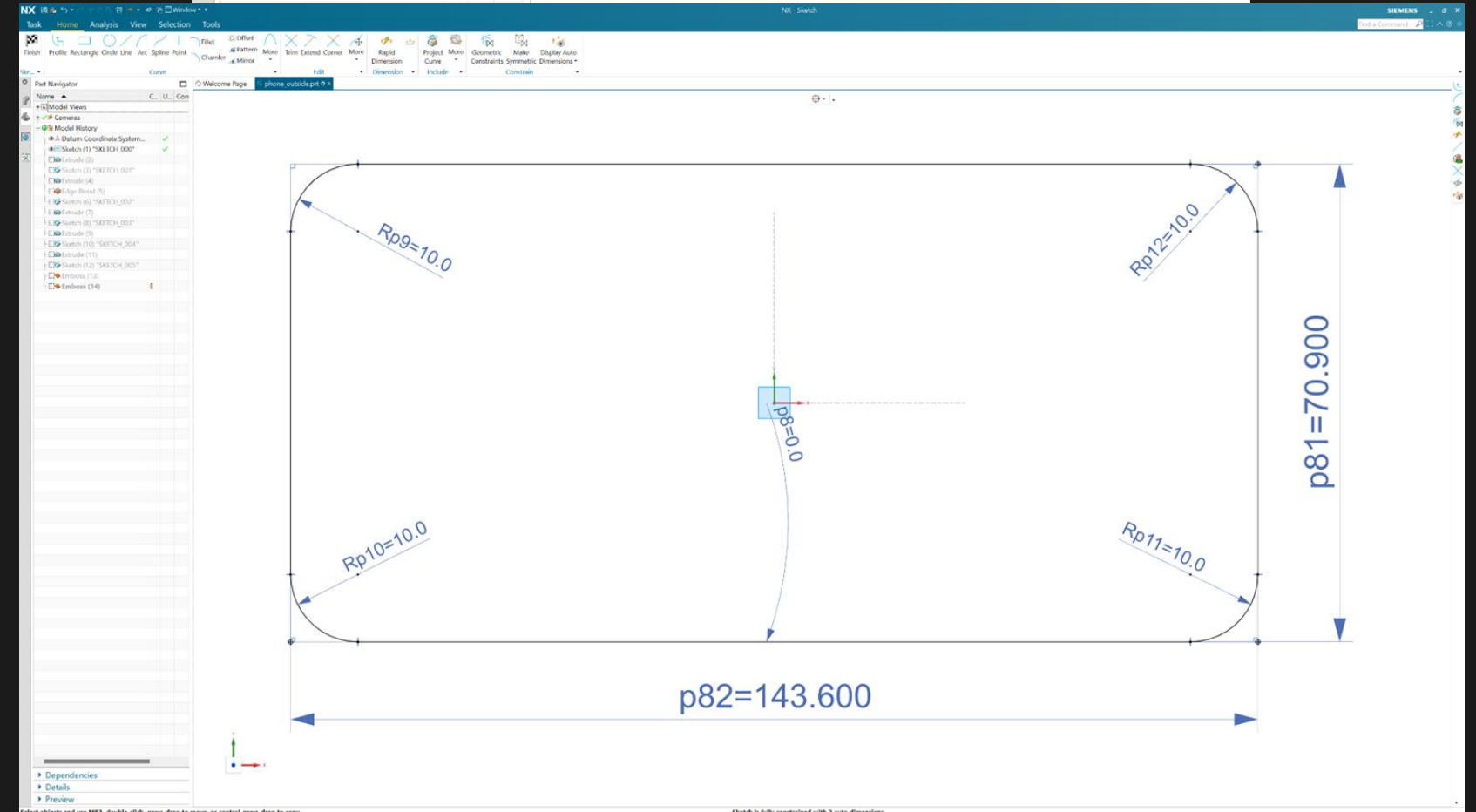
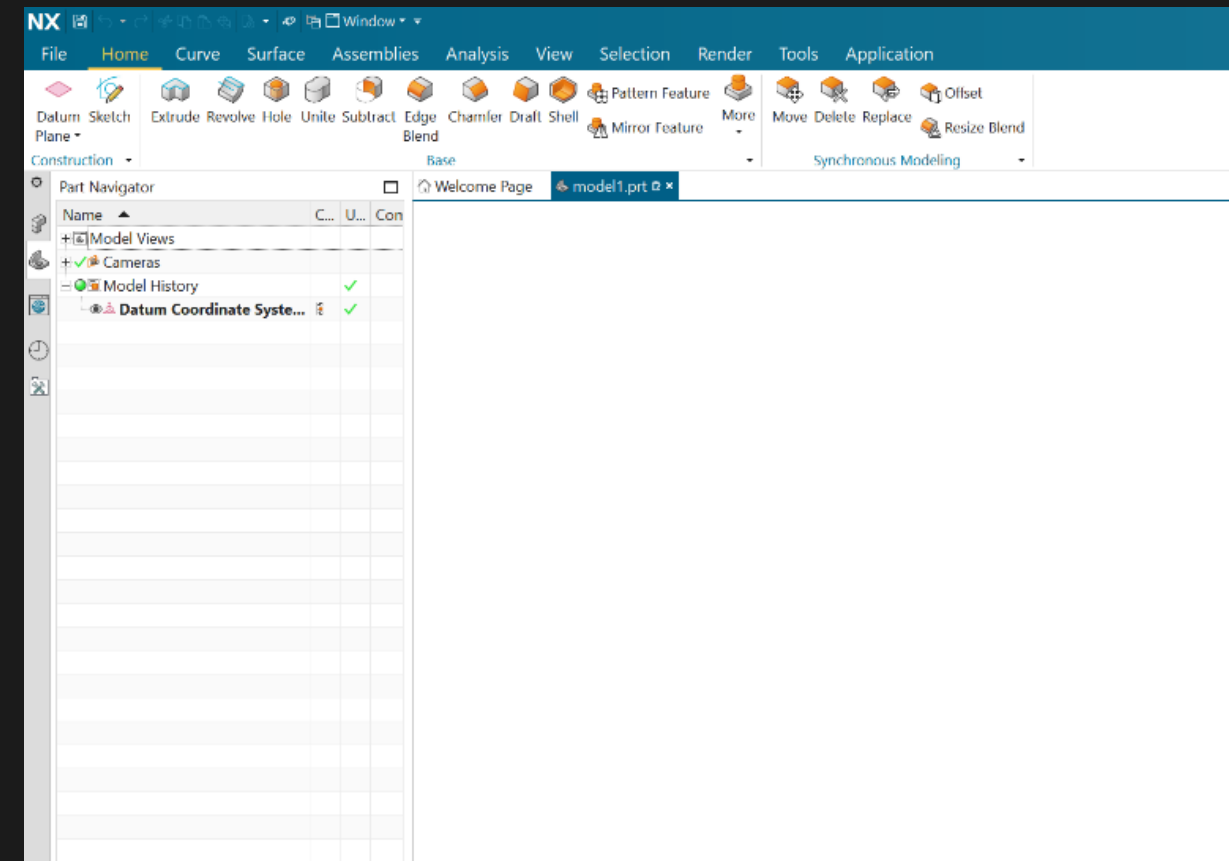


03



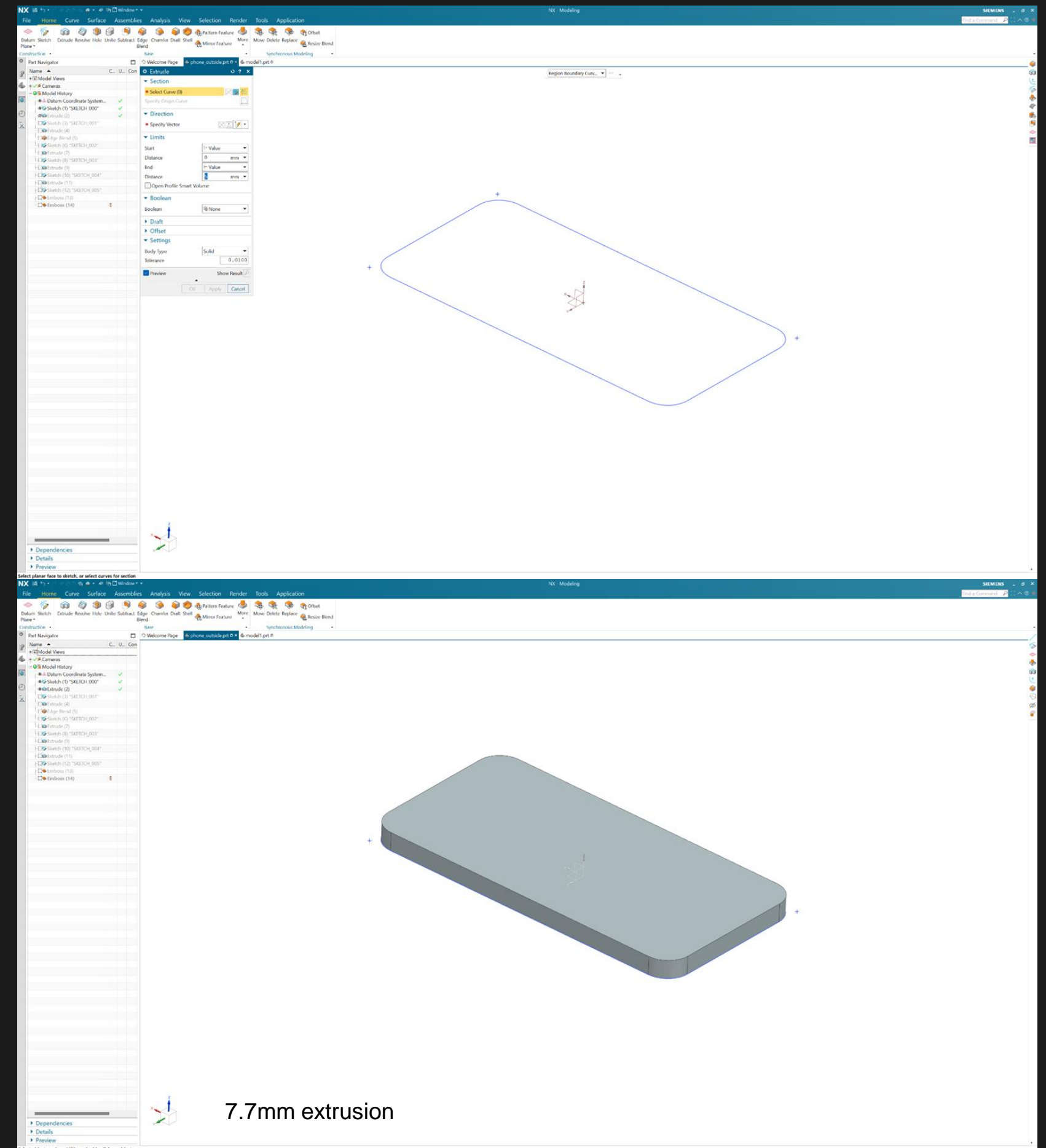
Creating Sketches

- ❑ Starting sketches
- ❑ Basic Shapes and Fillets
- ❑ Dimensions



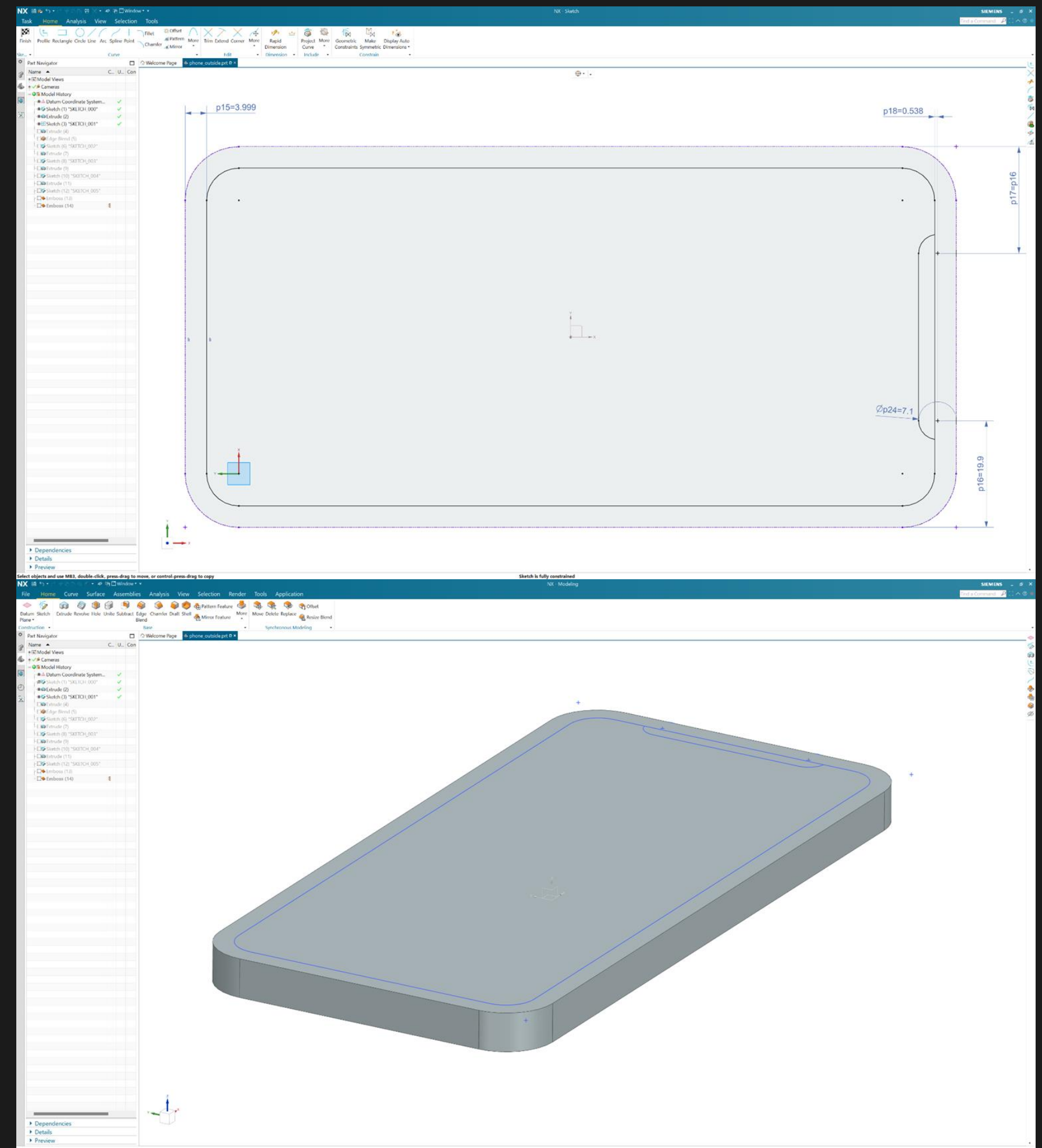
Making it 3D

❑ Extrusions



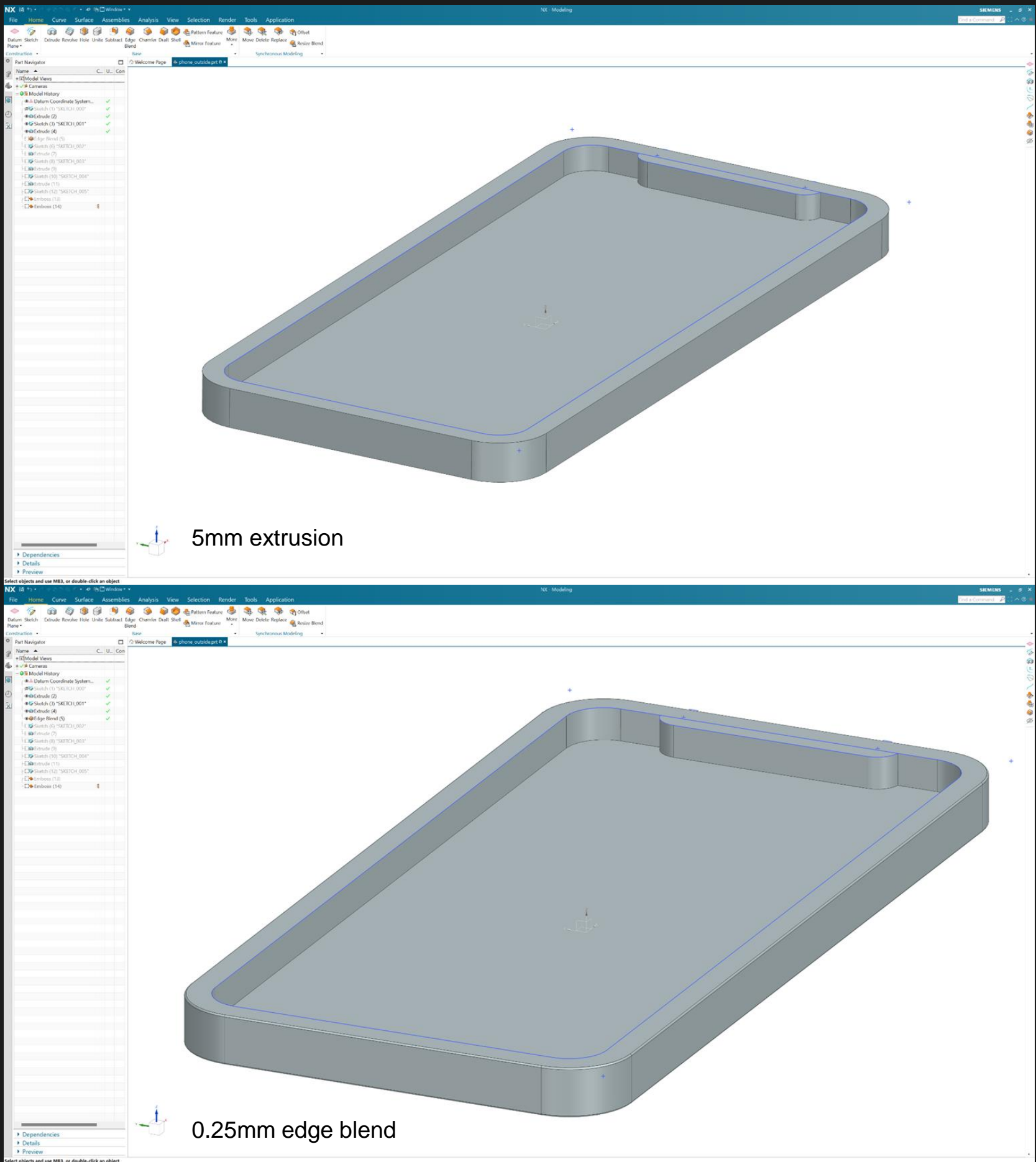
Sketches Pt. 2

- ❑ Projecting Geometry
- ❑ Offsets
- ❑ Constraints
- ❑ Construction Lines
- ❑ Trim Feature

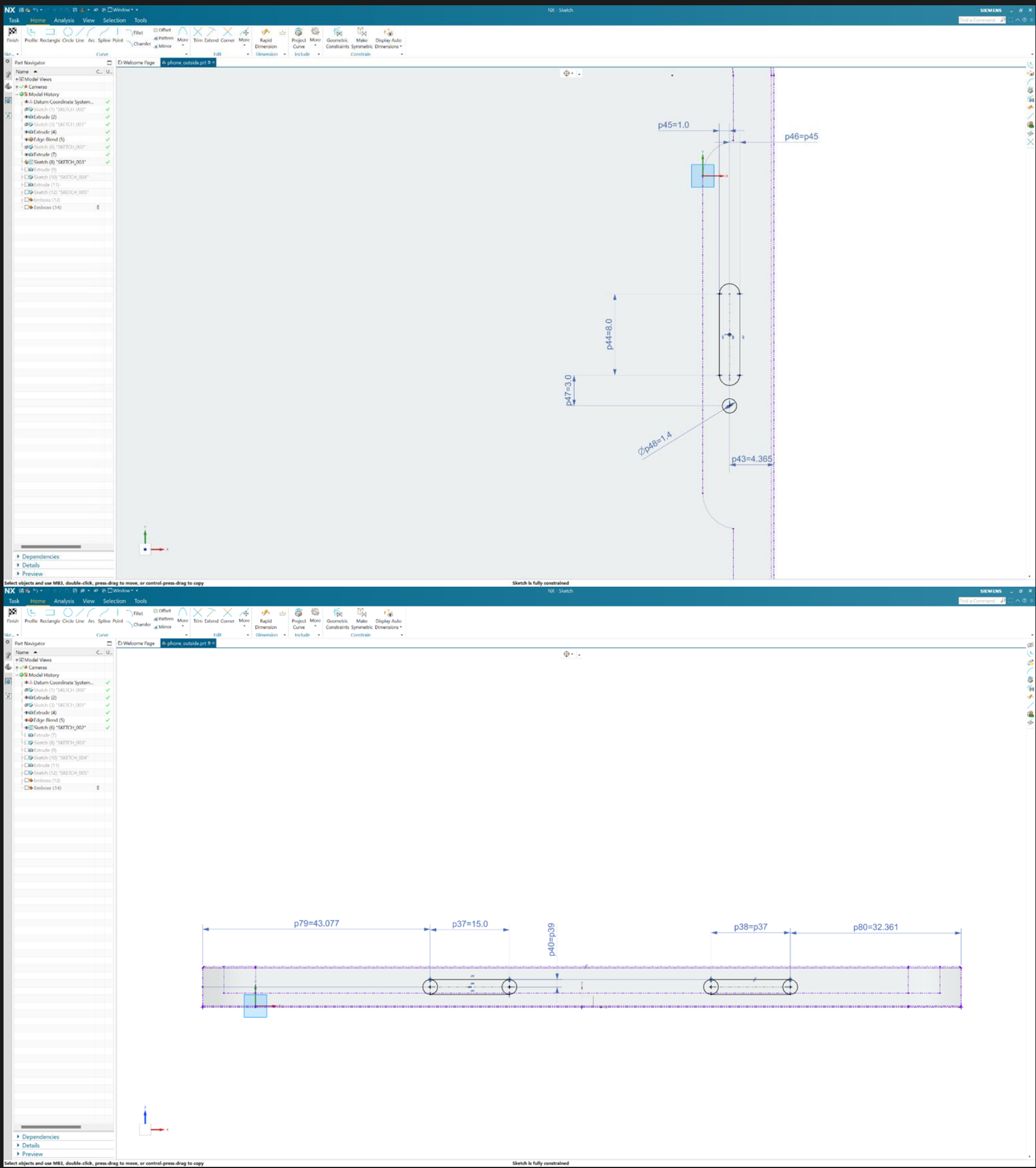
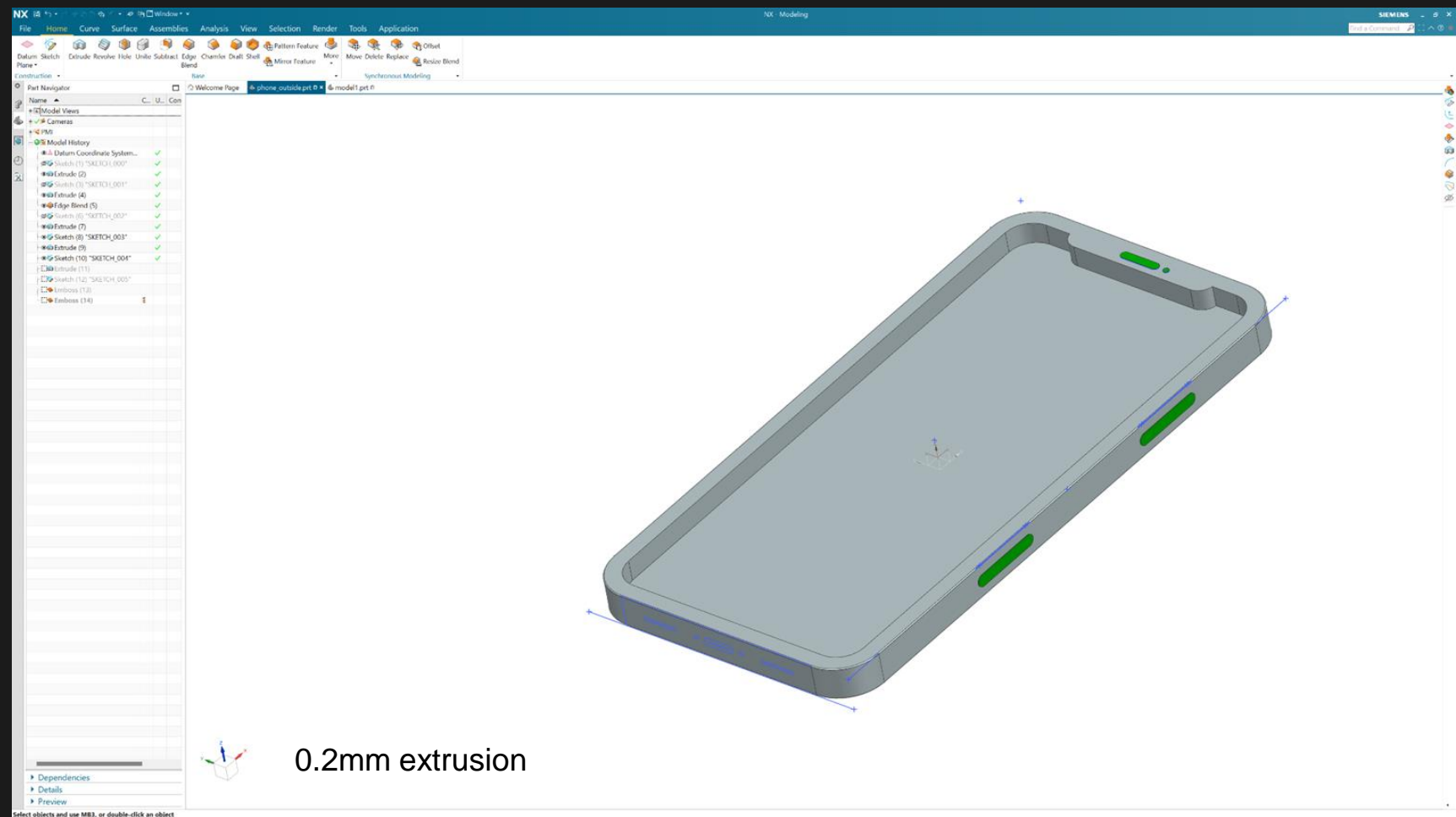


3D Features Pt. 2

- ❑ Extrusions (again)
- ❑ Fillets (Edge Blends)

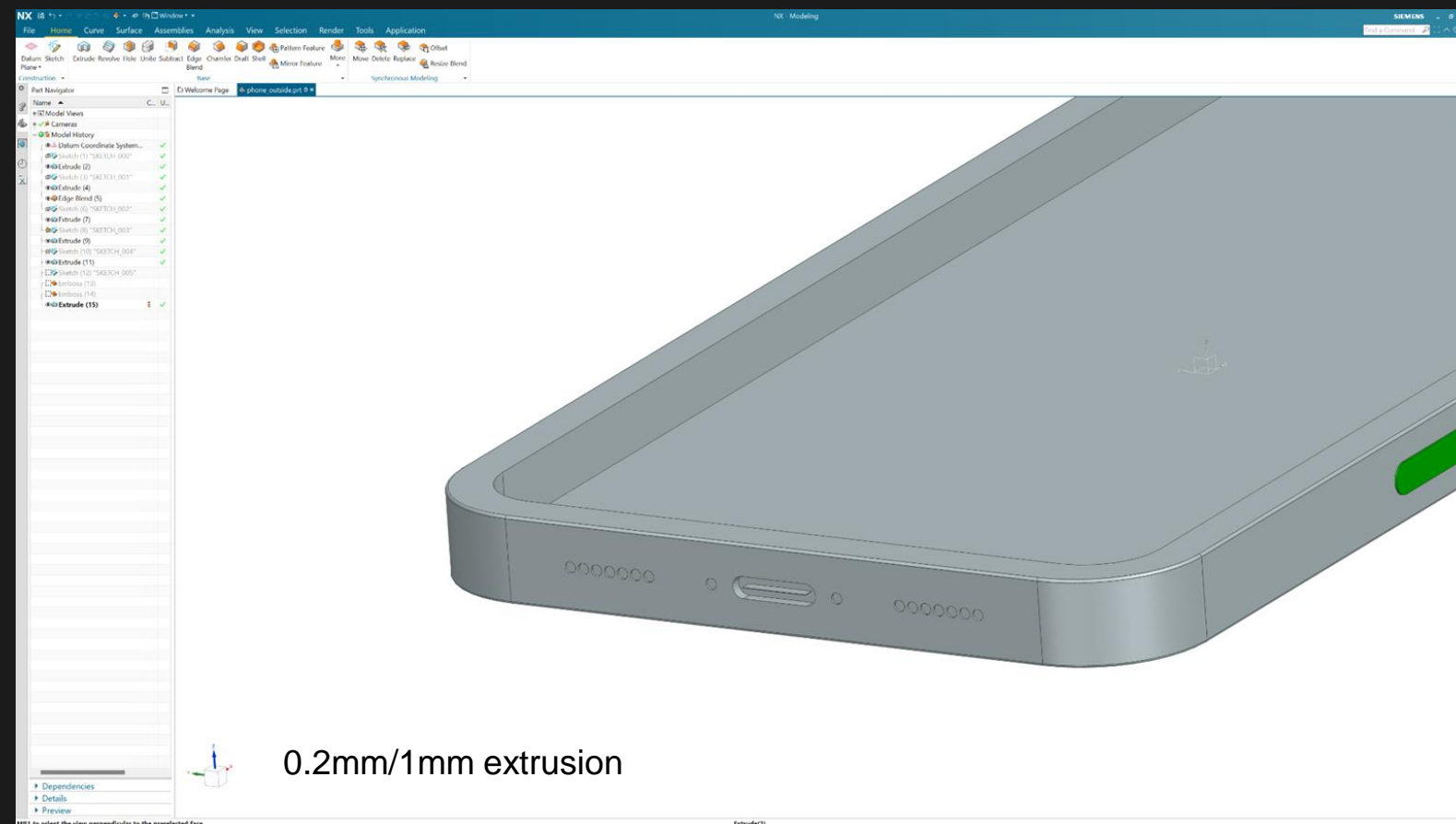
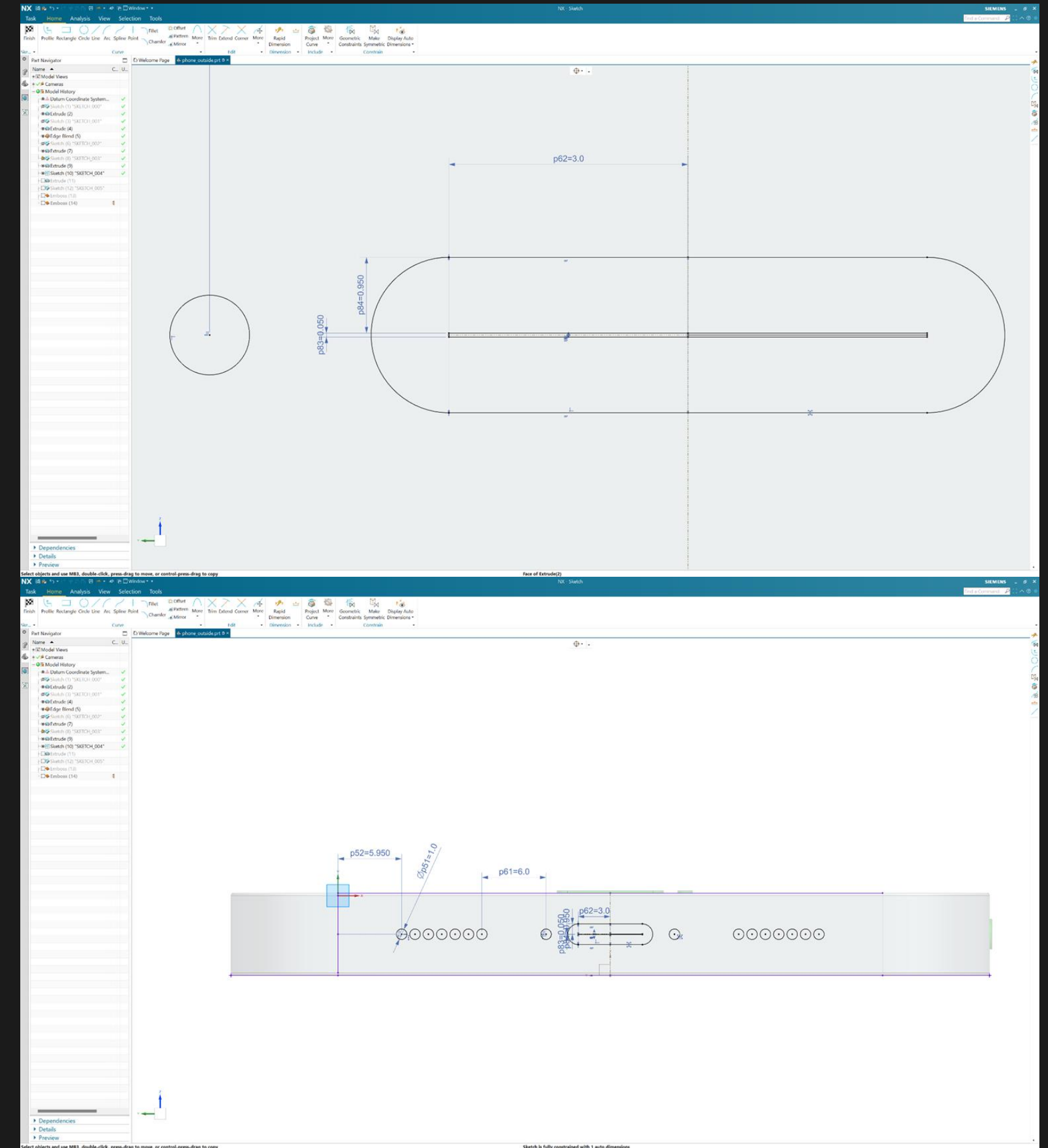


Details



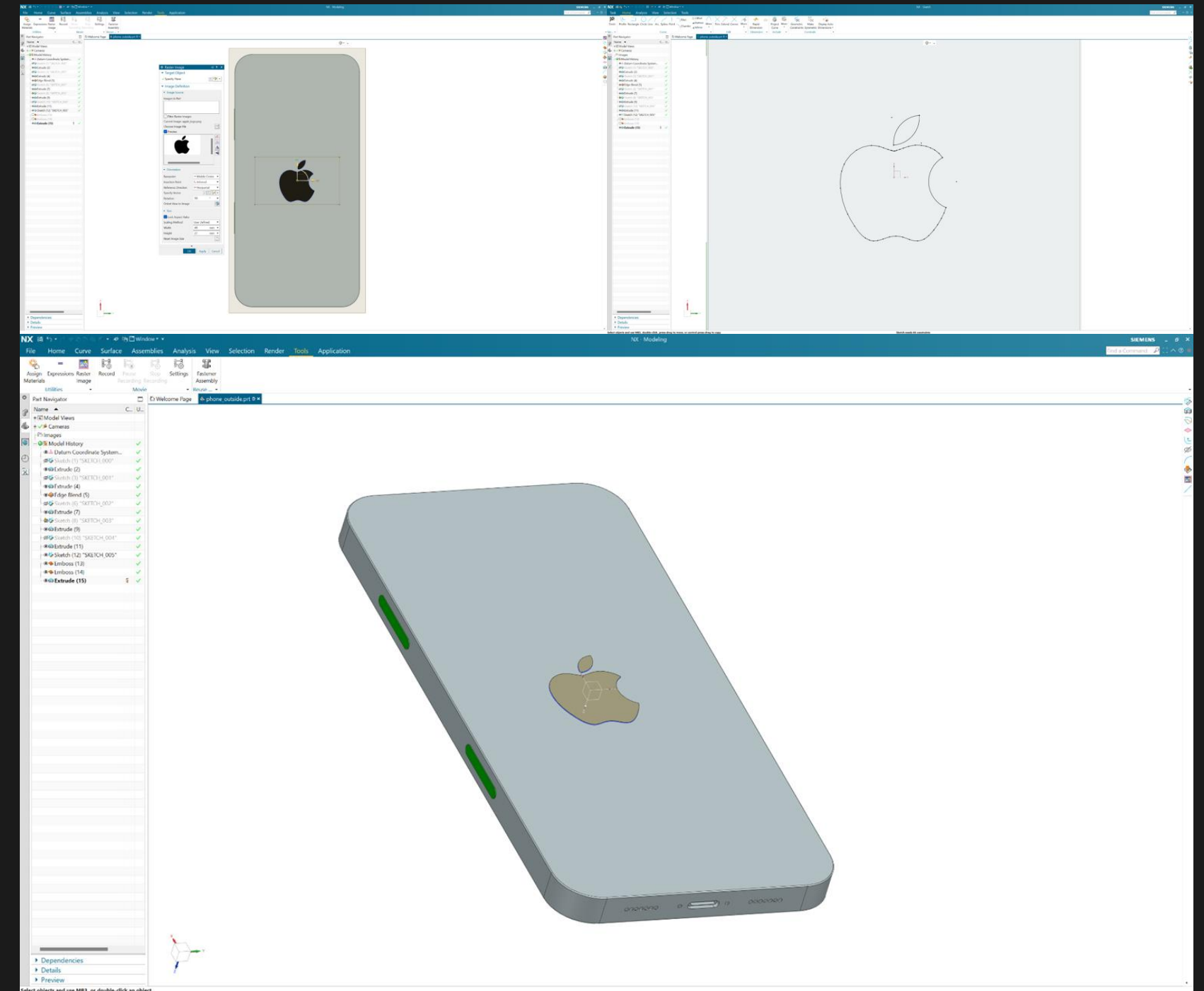
More Details

Patterns and Mirroring



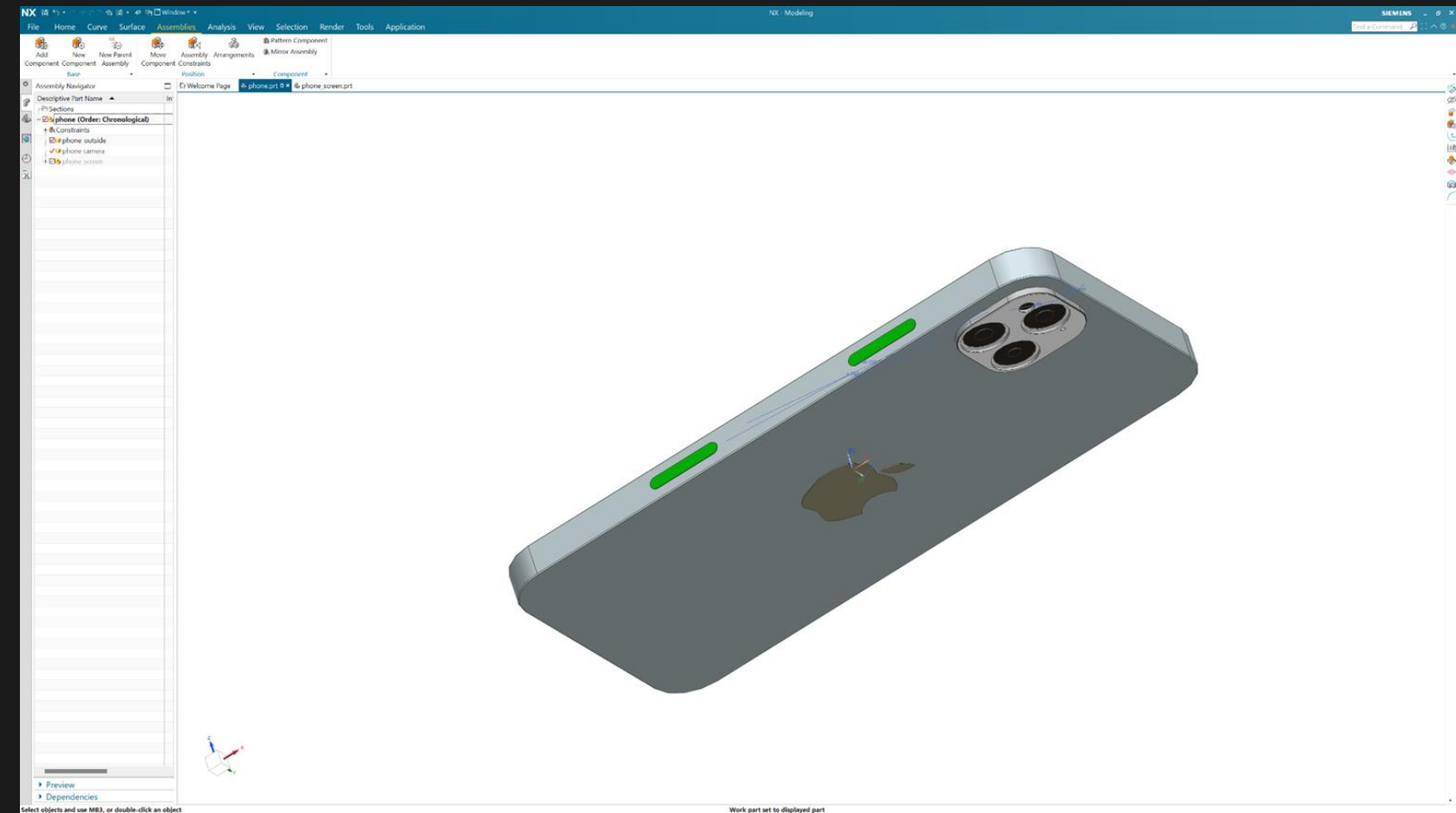
[More Details](#)

- ❑ Embossing
- ❑ Using images
- ❑ Complex shapes



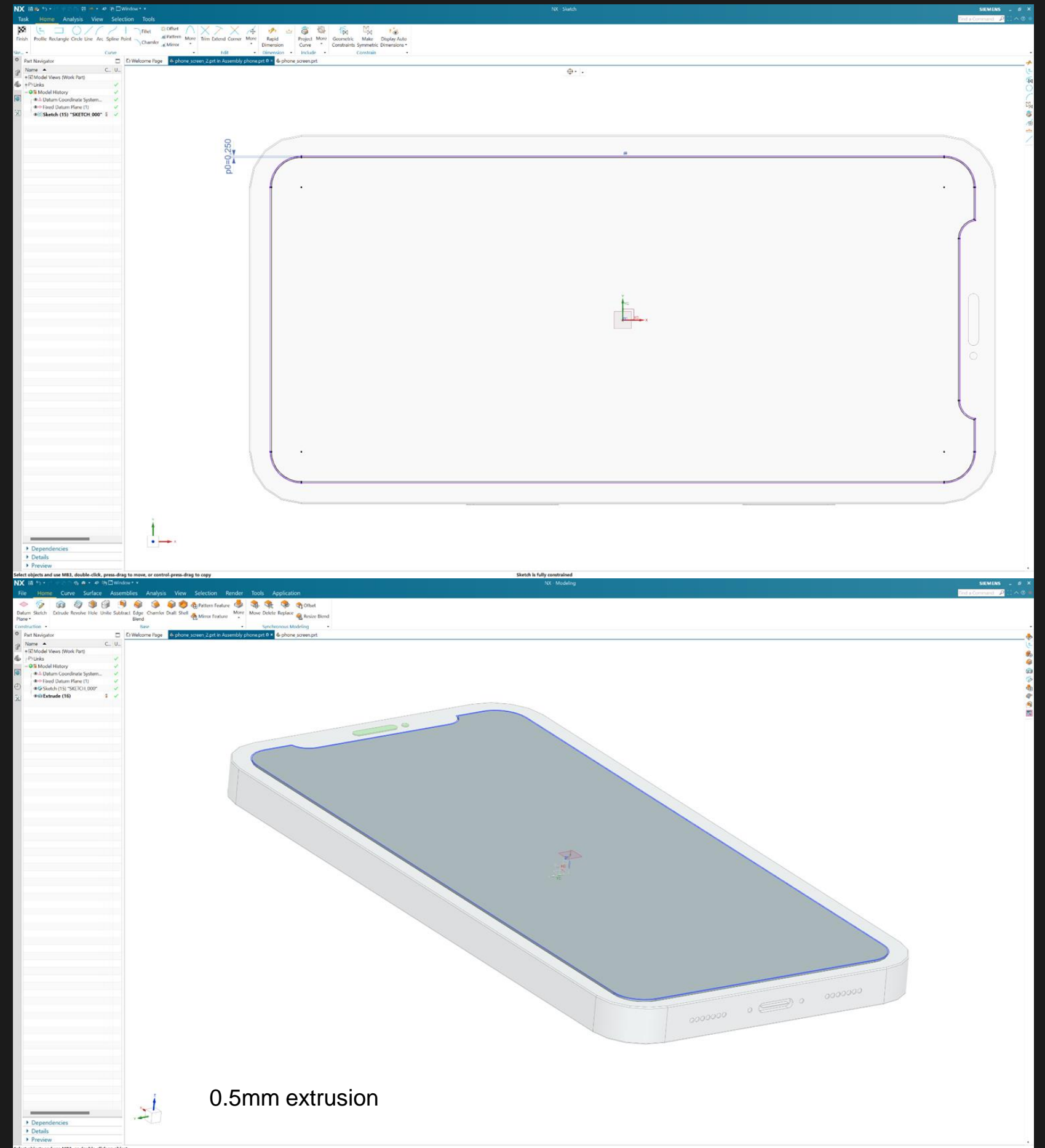
Assemblies

- ❑ Importing Parts
- ❑ Importing Downloaded Parts
- ❑ Constraining



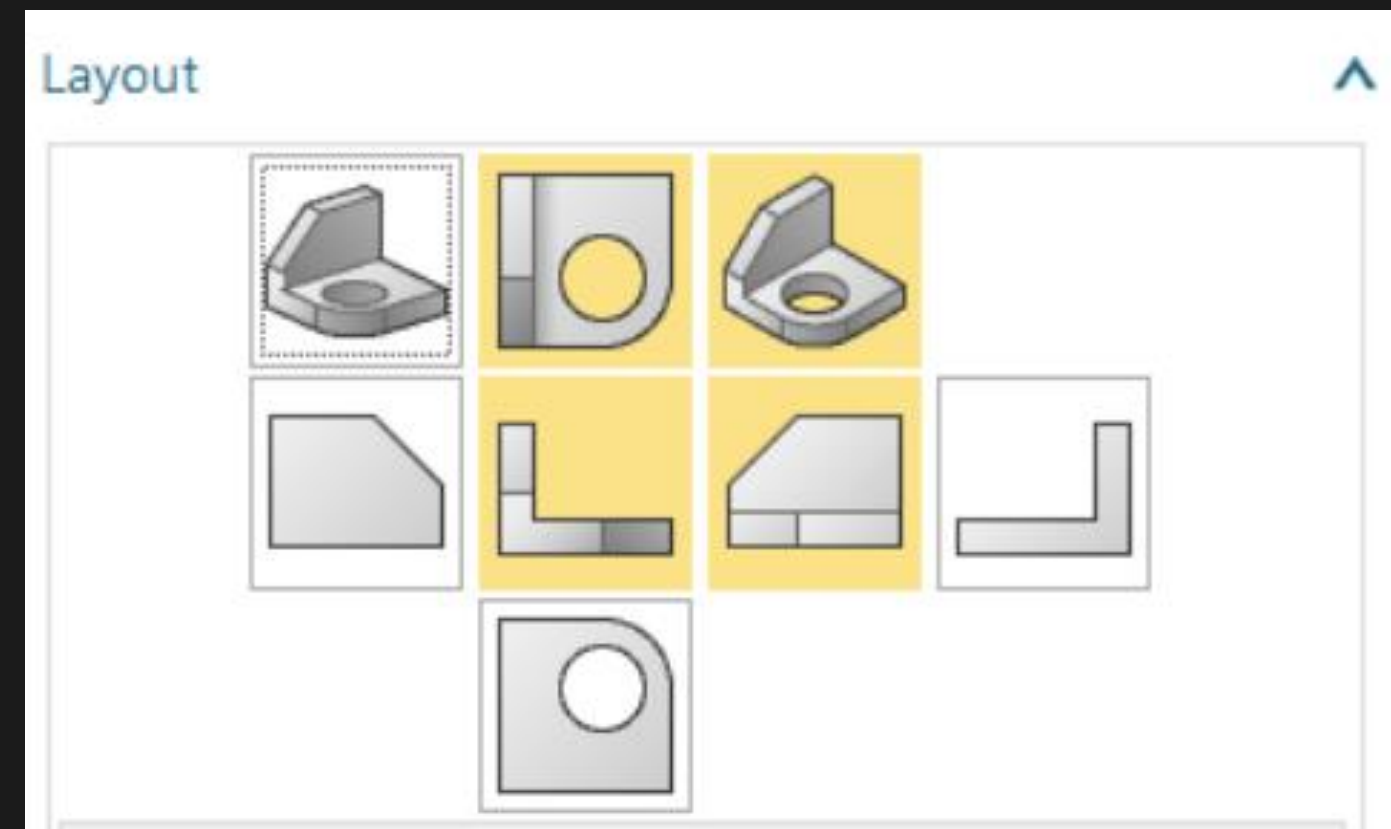
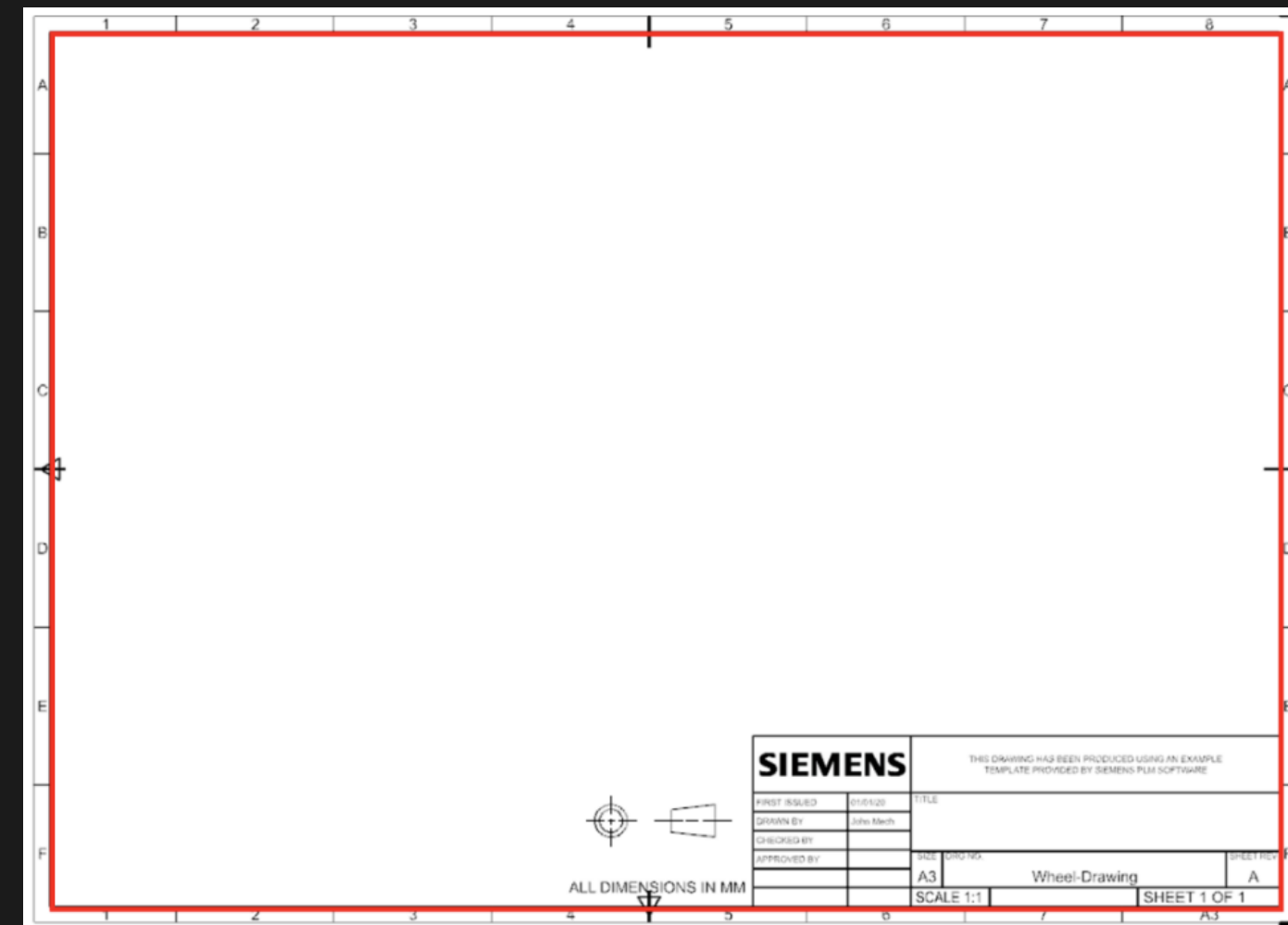
In-Place Parts

❑ Creating Parts in Assemblies



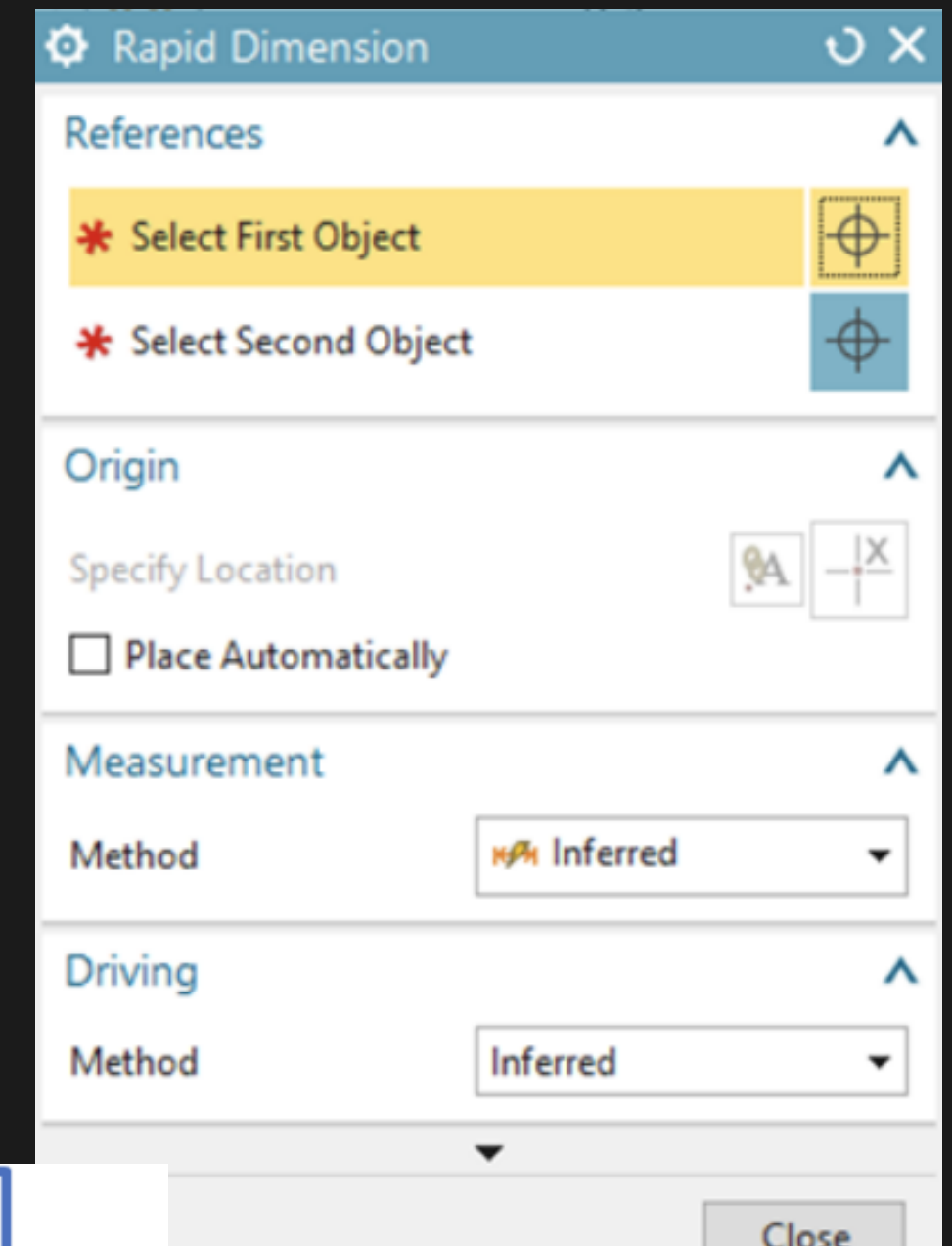
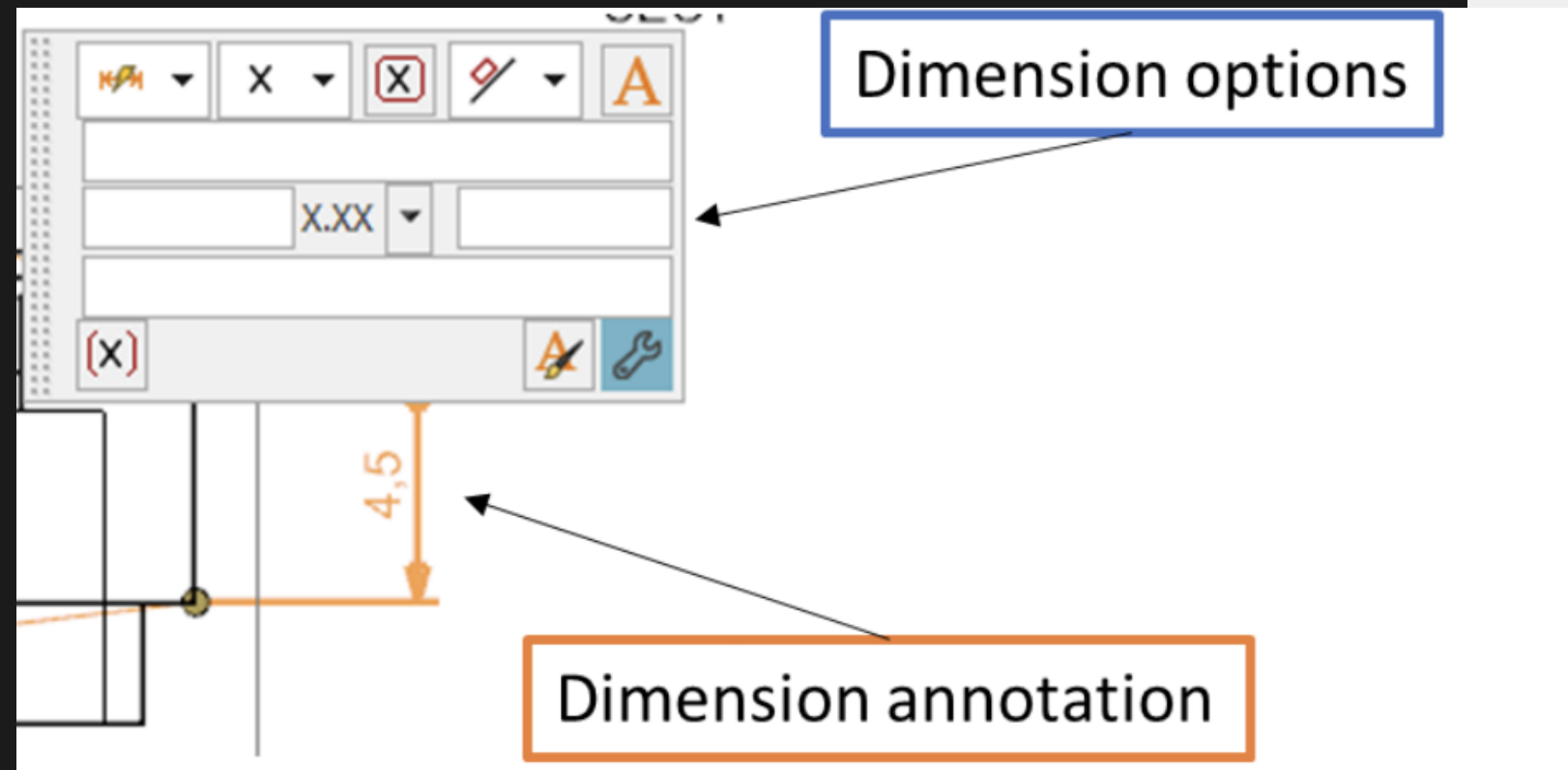
Drawings

- ❑ Creating Drawings
- ❑ Placing parts



Details

□ Dimensions

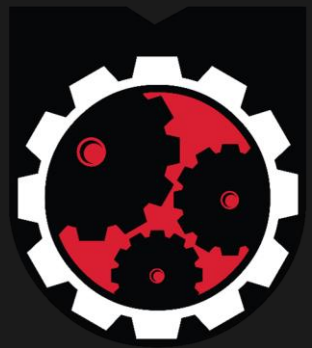




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