



EN1740 Computer Aided Visualization and Design

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Last Time:

- Introduction to part modeling *Best Practices*
- Model some parts
 - In class exercises including
 - Extrude
 - Revolve
 - Hole
 - Round
 - Chamfer
 - Pattern

Tonight:

- Parent – Child



Parent-Child Relationships

When a previous feature (or a part of a previous feature) is used as a reference for a new feature, a Parent-Child Relationship is created

The GOOD:

- These relationships establish Design Intent
- Modifying several features can be done all at once

The BAD:

- Modifying or Deleting a Parent can have a significant effect on Child features

Let's try this out on with an exercise



Building Design Intent with Parent-Child

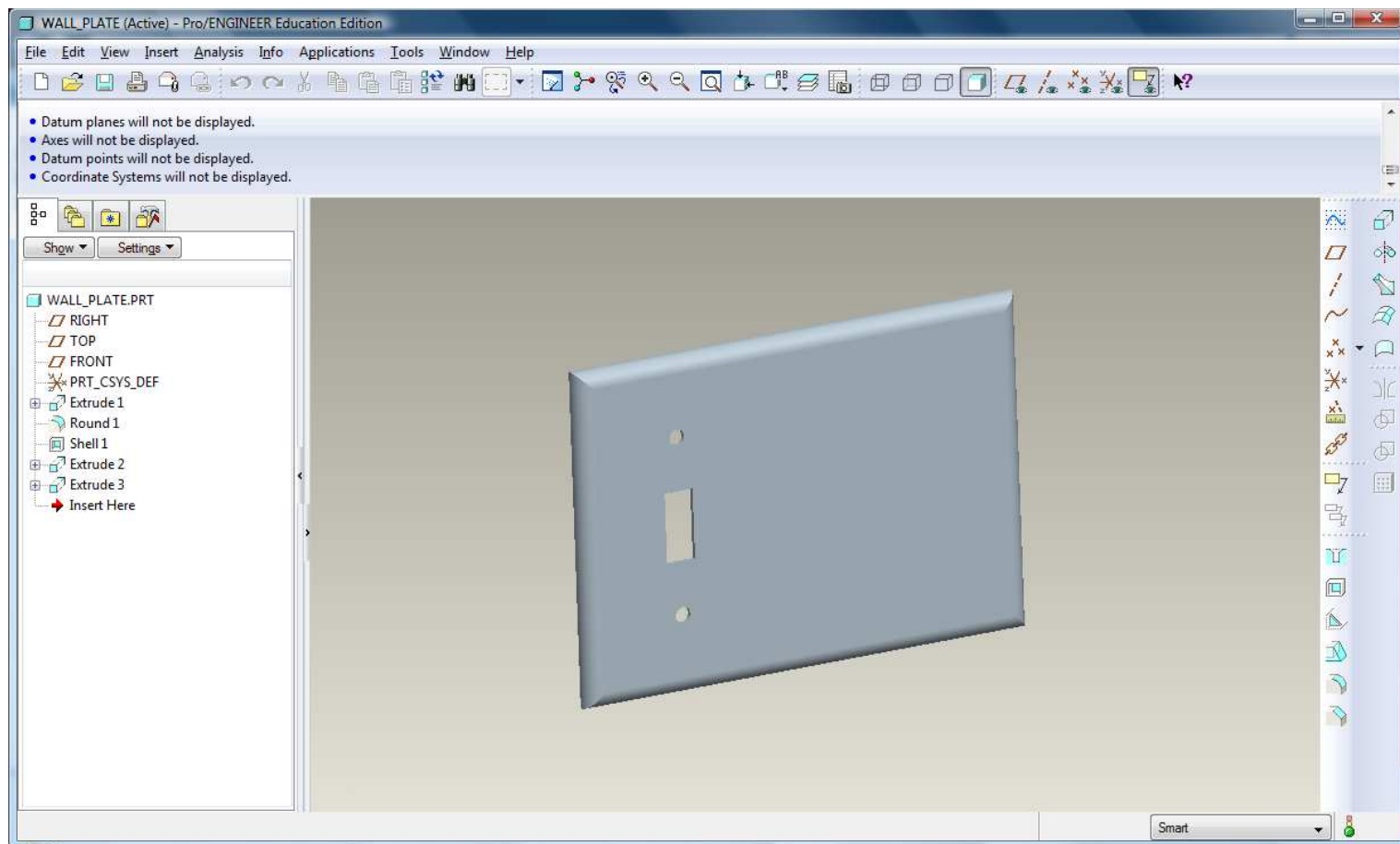
What's the best way to
dimension something like
this?





EXERCISE - Building Design Intent with Parent-Child

What not to do and how to fix it

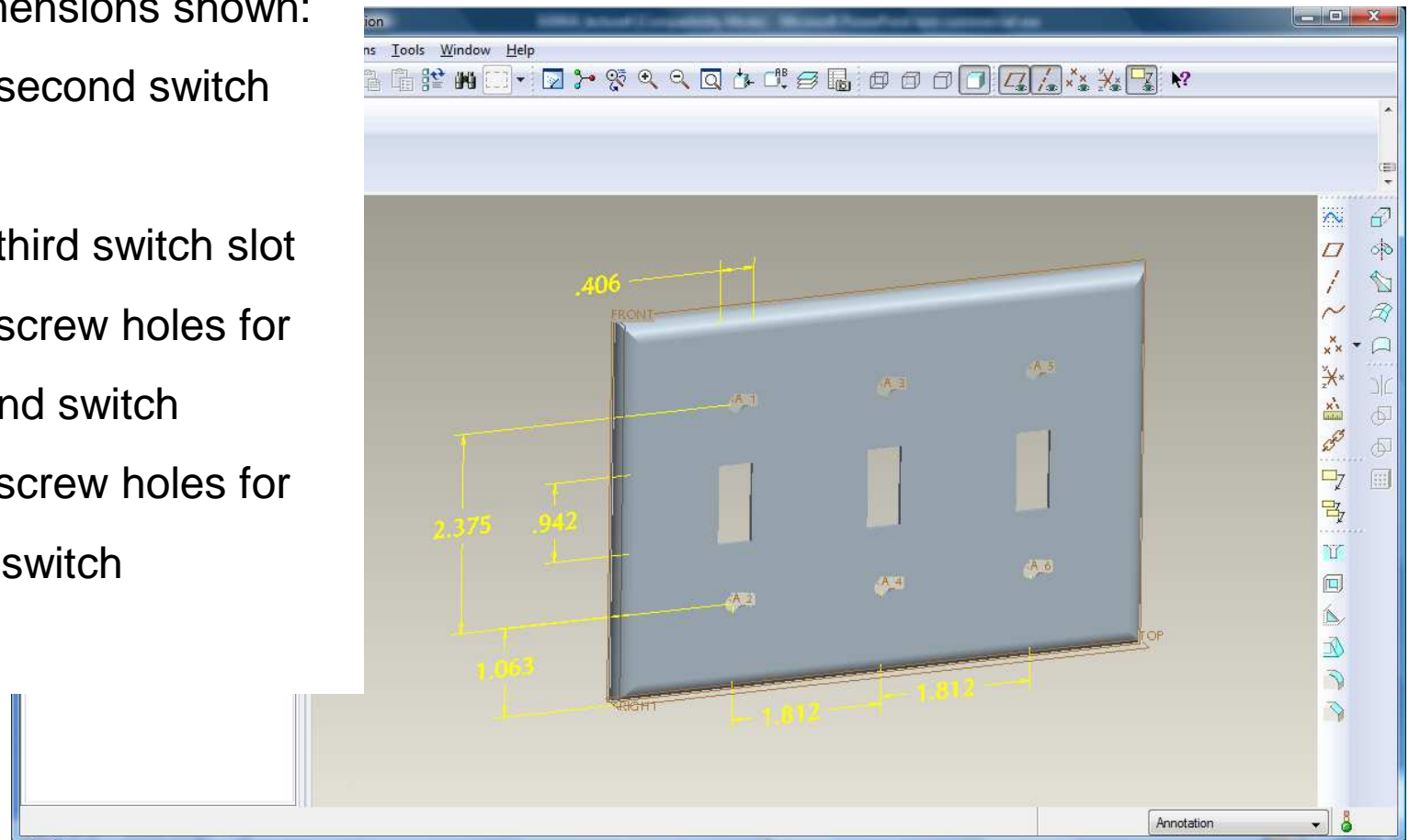




EXERCISE - Building Design Intent with Parent-Child

Add the remaining features from the dimensions shown:

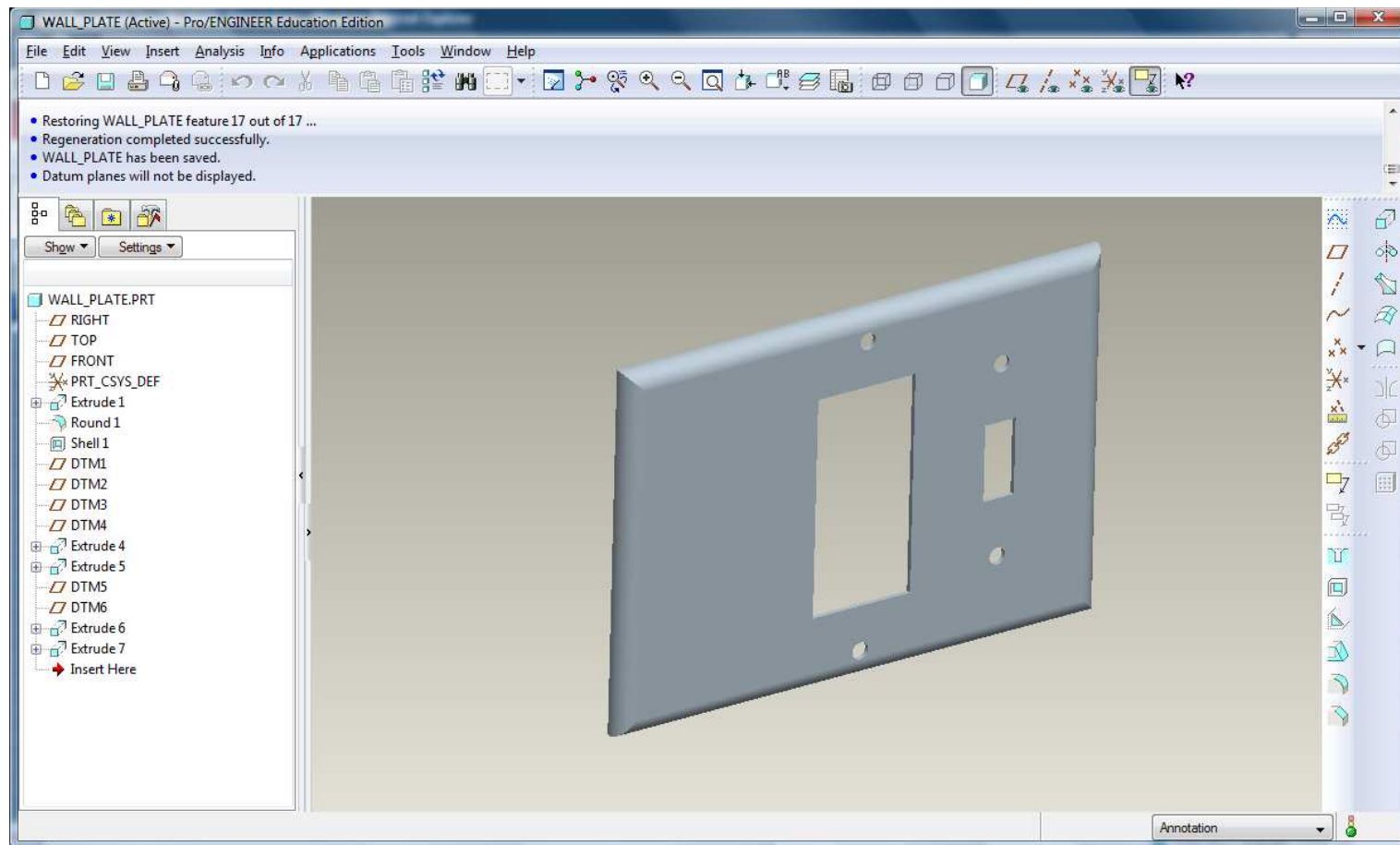
1. Add the second switch slot
2. Add the third switch slot
3. Add the screw holes for the second switch
4. Add the screw holes for the third switch
5. Save





EXERCISE - Building Design Intent with Parent-Child

You just received an Engineering Change Notice to change to this

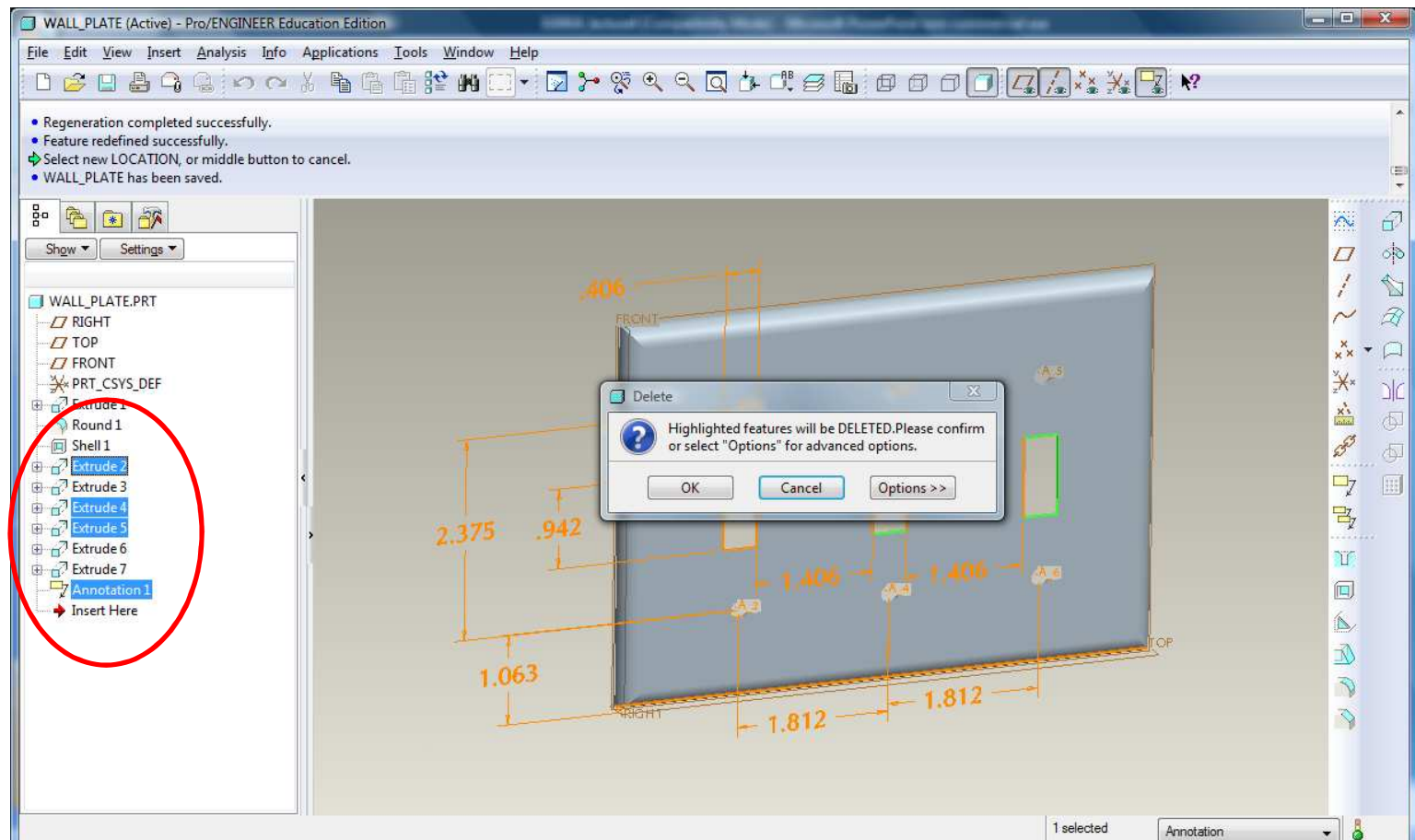




EXERCISE - Building Design Intent with Parent-Child

Right click on the first slot in the model tree and try to delete it....uh oh.

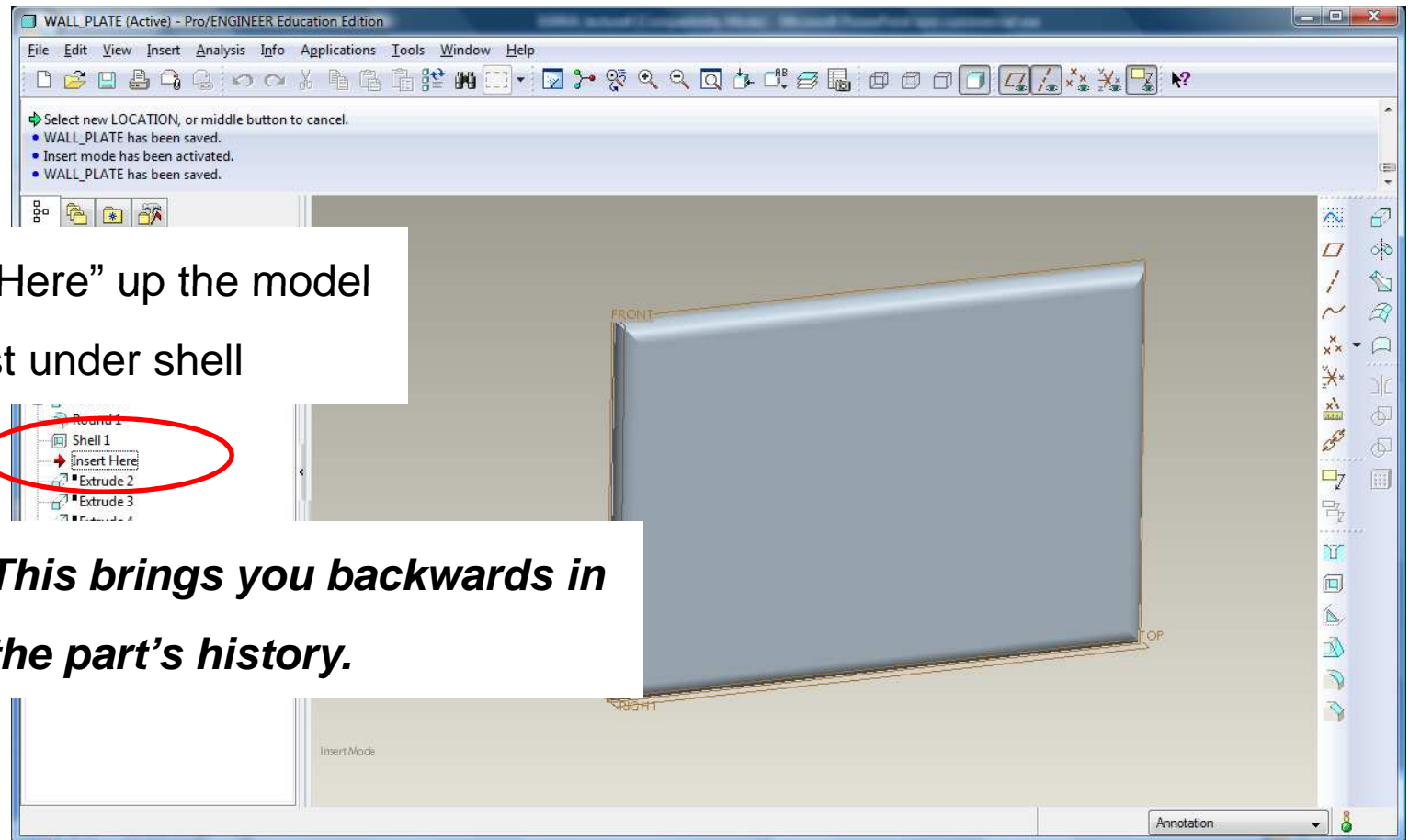
(Click Cancel)





EXERCISE - Building Design Intent with Parent-Child

Let's rebuild this model making it more flexible, but still capturing Design Intent



Drag "Insert Here" up the model tree to be just under shell

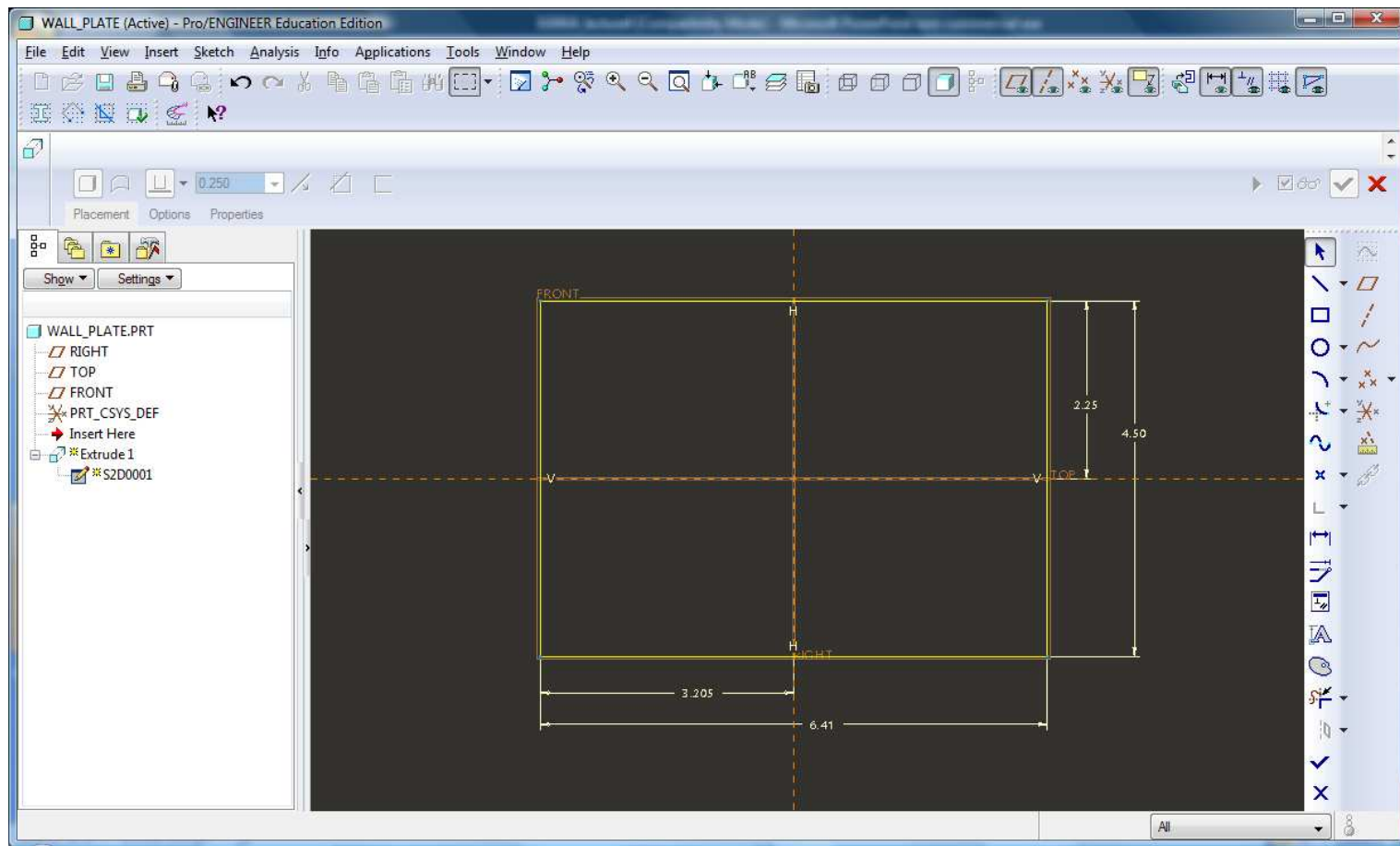
This brings you backwards in the part's history.



EXERCISE - Building Design Intent with Parent-Child

Edit the first Extrude feature

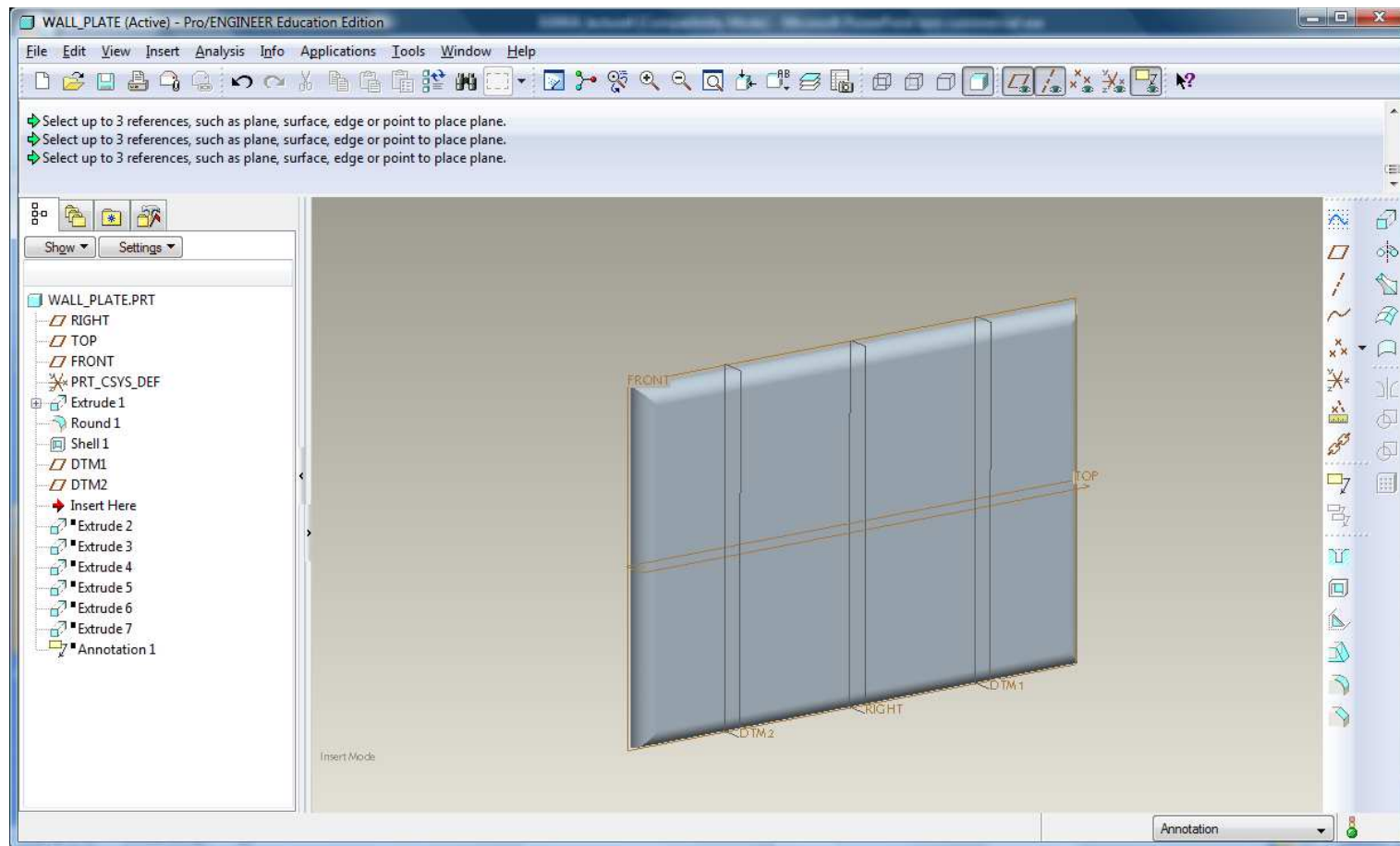
Center the 4.500 X 6.410in plate on the default datum planes





EXERCISE - Building Design Intent with Parent-Child

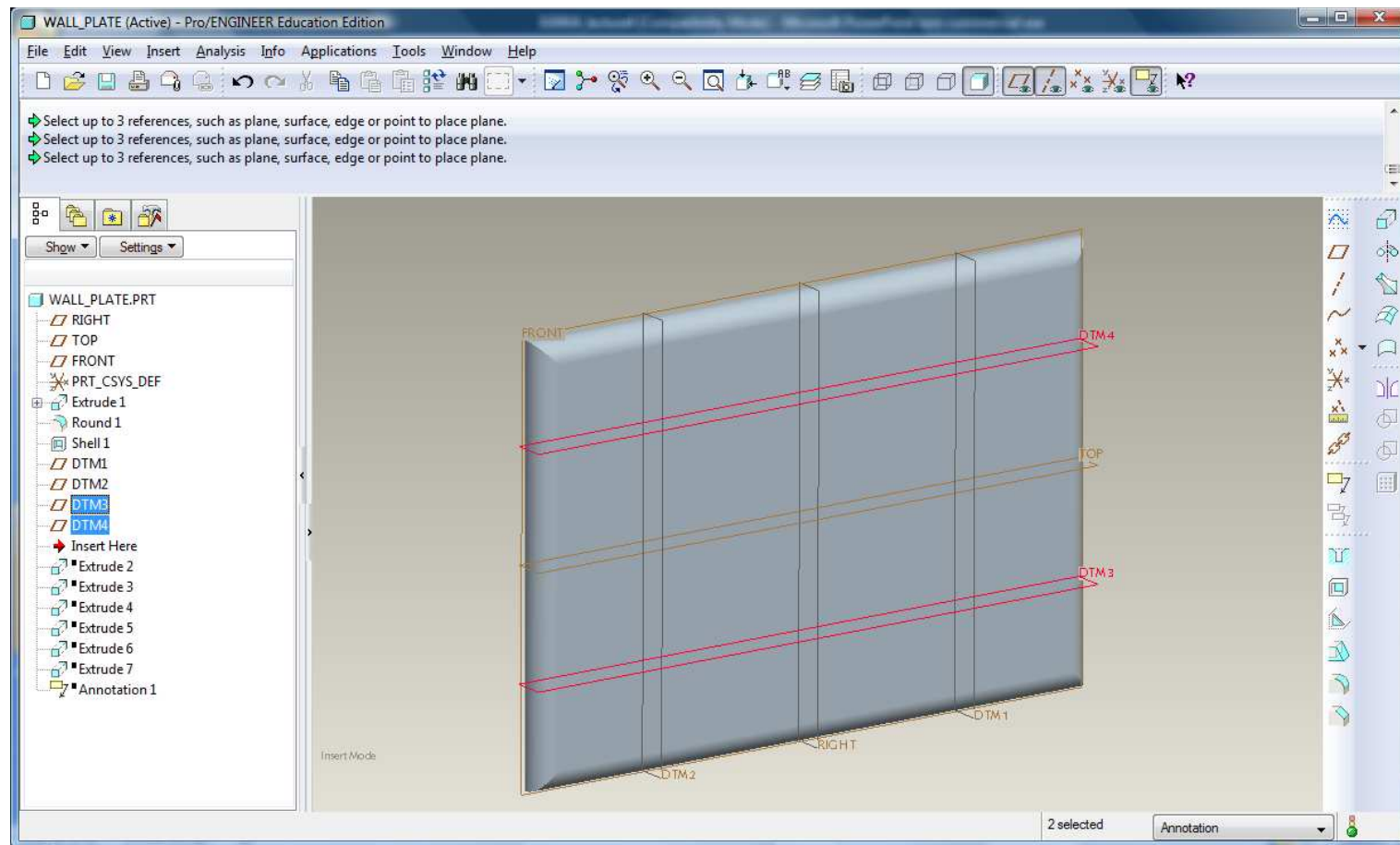
Create two new datum planes, offset 1.812in on each side of the RIGHT datum





EXERCISE - Building Design Intent with Parent-Child

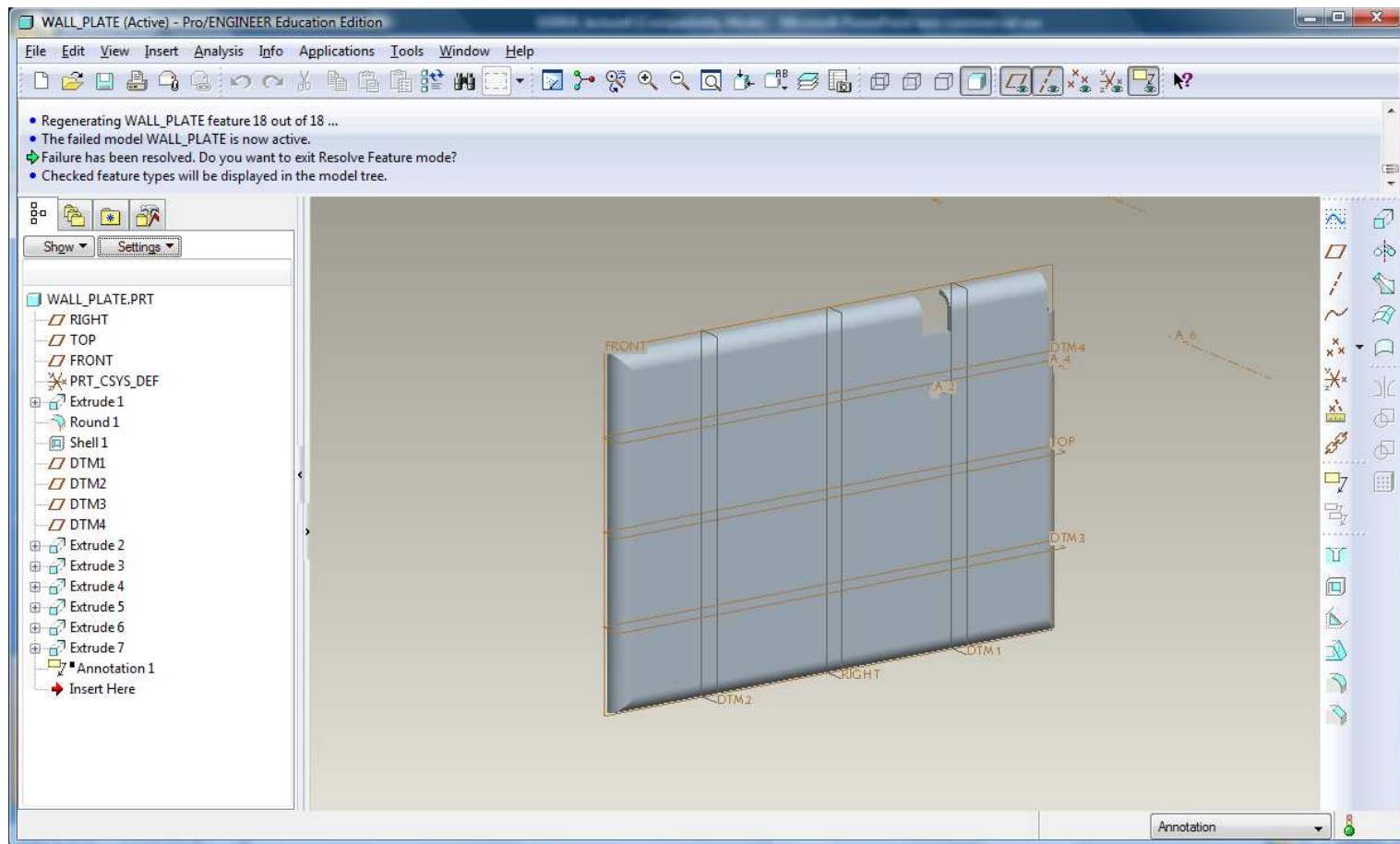
Create two new datum planes, offset 1.188in on each side of the TOP datum





EXERCISE - Building Design Intent with Parent-Child

Resume everything except the Annotation feature

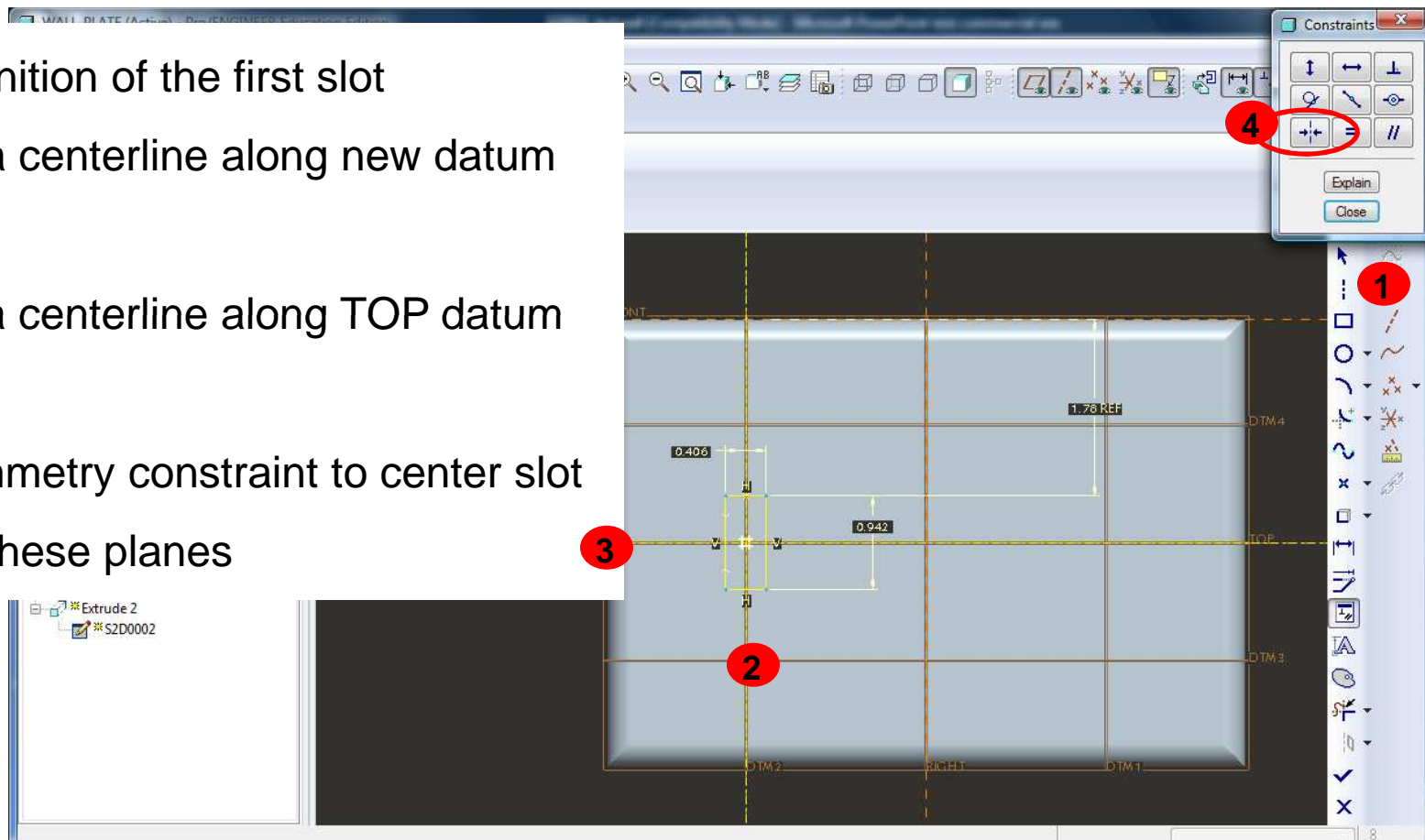




EXERCISE - Building Design Intent with Parent-Child

Edit the first slot (Extrude 2)

- 1 Edit definition of the first slot
- 2 Sketch a centerline along new datum plane
- 3 Sketch a centerline along TOP datum plane
- 4 Use symmetry constraint to center slot around these planes



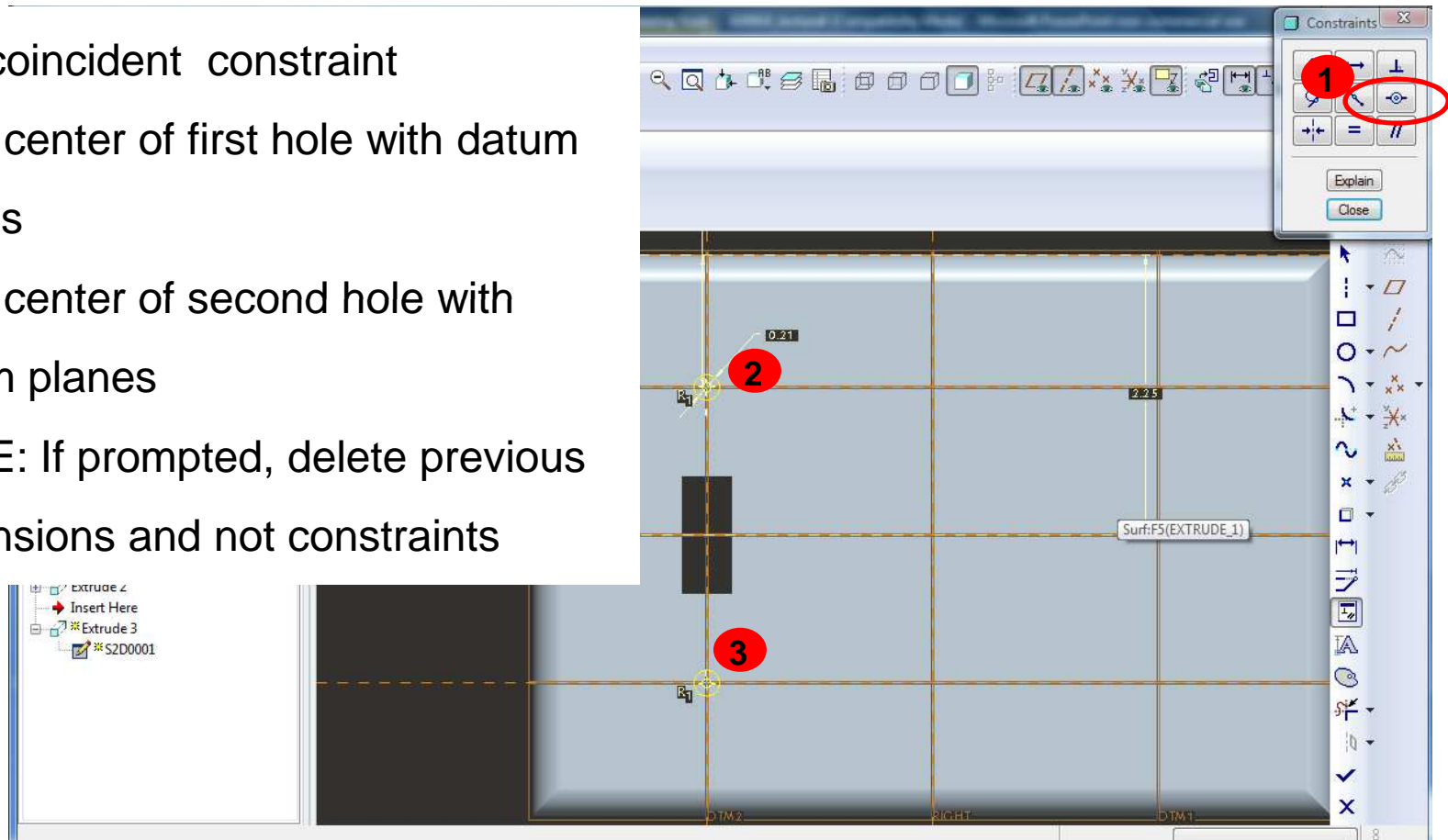


EXERCISE - Building Design Intent with Parent-Child

Edit the first through holes (Extrude 3)

- 1 Use coincident constraint
- 2 Align center of first hole with datum planes
- 3 Align center of second hole with datum planes

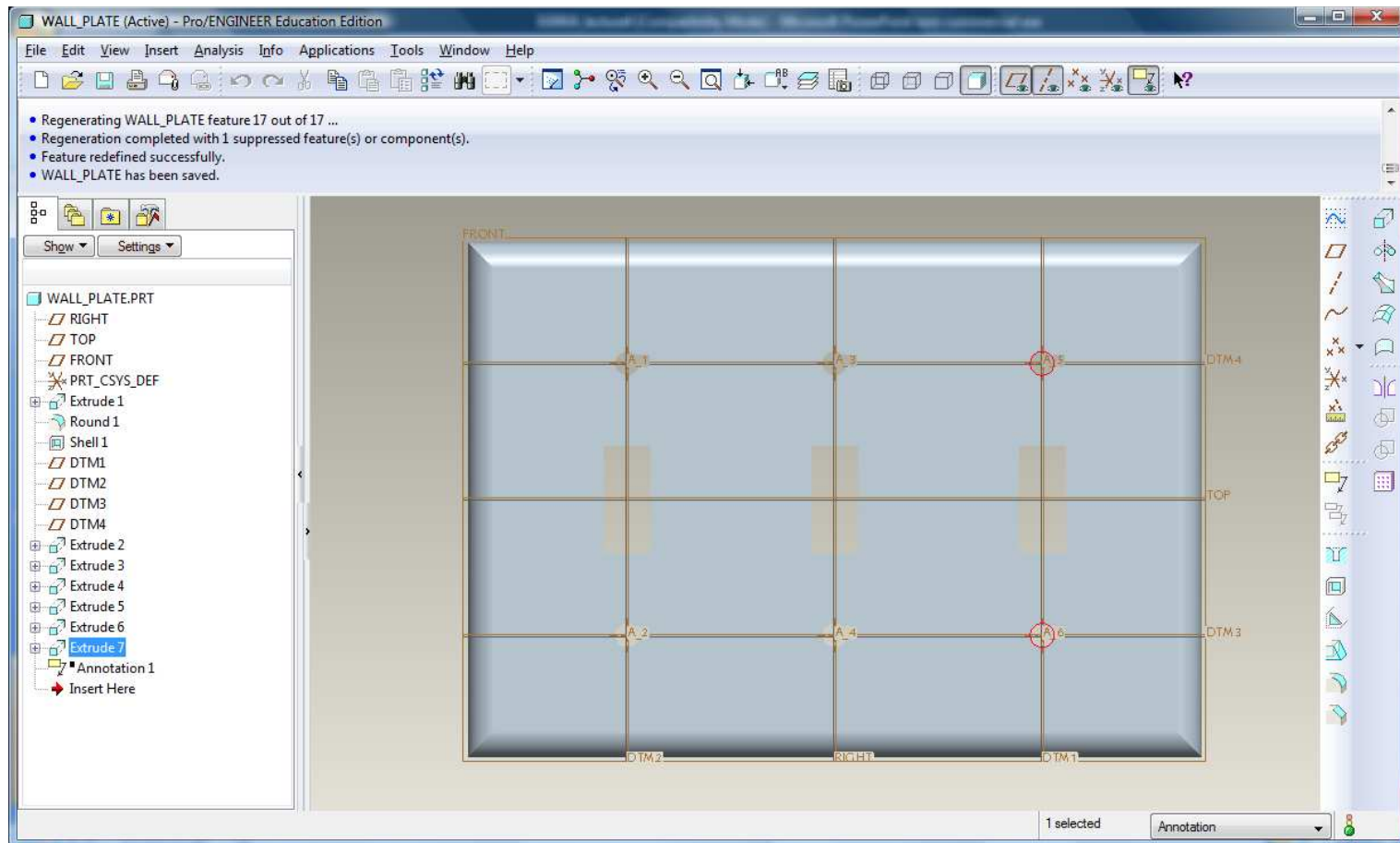
NOTE: If prompted, delete previous dimensions and not constraints





EXERCISE - Building Design Intent with Parent-Child

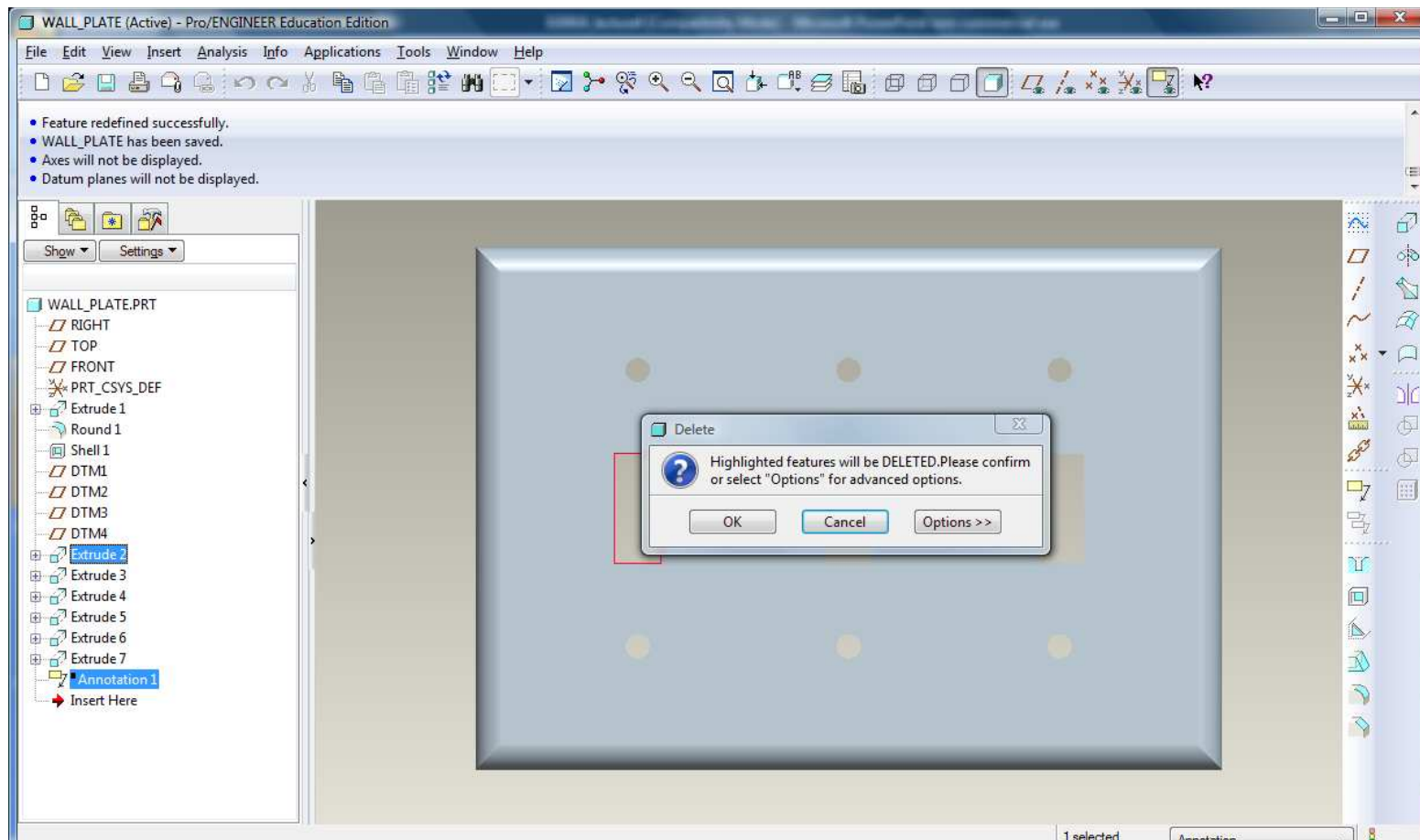
Repeat with other two slots and other two sets of screw holes





EXERCISE - Building Design Intent with Parent-Child

Now try and delete first slot => No problem.





EXERCISE - Building Design Intent with Parent-Child

Following the previous examples modify plate to this.

