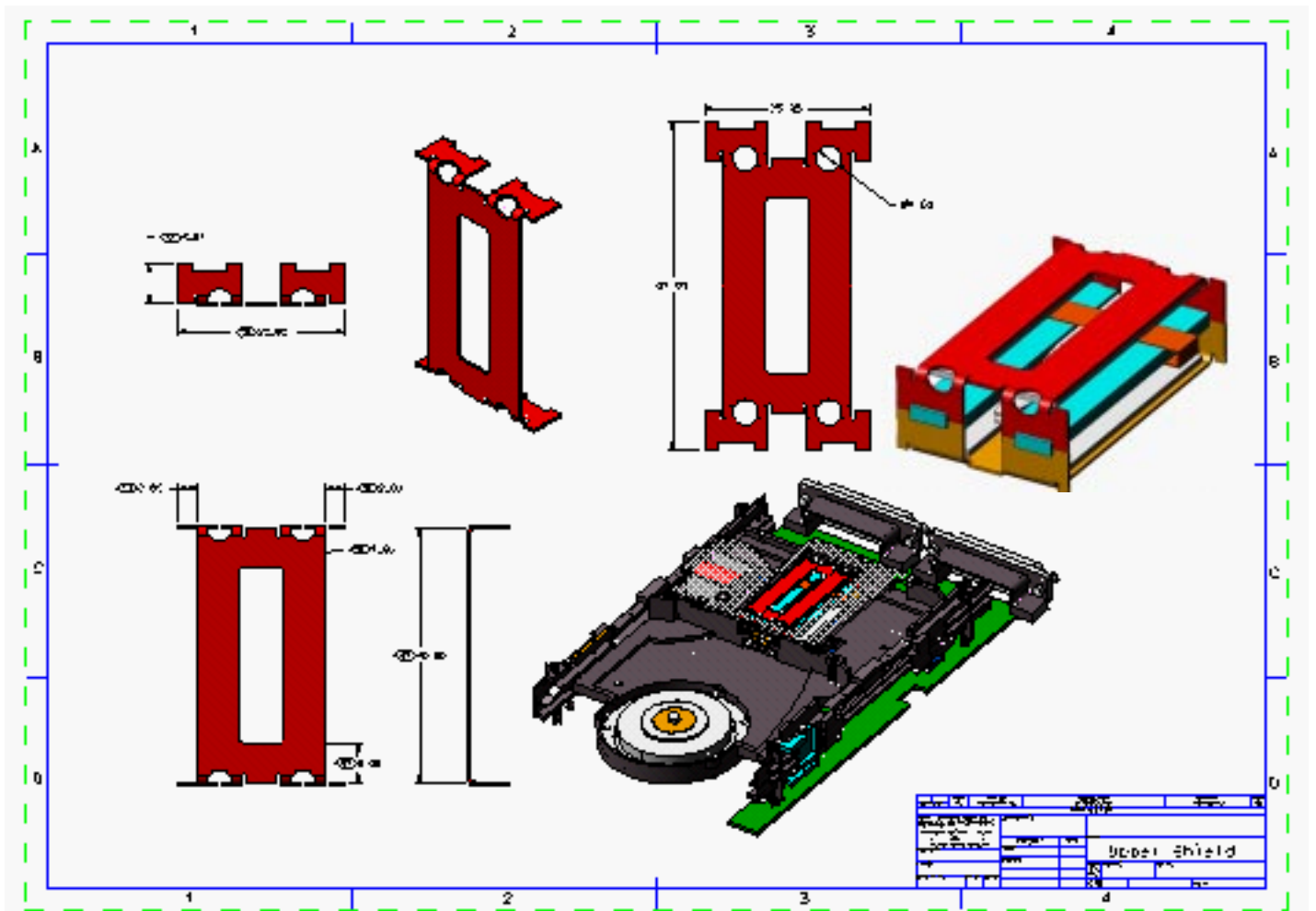# Zip Demo
Sheet Metal Vignette

CHECKLIST

Preparation

1. de.mm.SelectiveBooleanSW: 1   (in .ideas_param6 file)
2.

Demonstration Installation and Setup

- Copy or unload the demo files to a local directory

- cd to the directory containing the demo files

- Uncompress all files if necessary
            find . –name "" –exec uncompress {} \;*

- Start I-DEAS
        Project   = **Any**
        Model File   = **No model file**
        Application = **Design**
        Task   = **Master Modeler**

- File, Import, I-DEAS Design Universal File
        'Zip_SheetMetal_Vignette.unv'

- Do the following manually or run
        'Zip_SheetMetal_Vignette.prg'

- **Options, units, MM**

- **Appearance, MB3, Defaults, Sheet Metal, Bend R=1,
  Stress Relief Type=Circle, OK**

- **Display Filters, Workplane=off, Parts, Coordinate Sys=off,
  Centerpoints/centerlines=off, OK, Assembly, Assembly Name (Top)=off,
  OK**

- **Shading Options, Hardare support, Backlighting=On, OK
  Outline=Black, OK**

- **Line Options, Line Attributes, Iso Lines=Off, Seams=Off, OK, OK**

- **Line Options, Line Attributes, Silhouette=Off, OK, OK**

- **Manage Bins, Get 'Upper Shielding' from '1.0 Sheet Metal' Bin, Dismiss**

- **Iso view, Autoscale**

- **Appearance, MB3, ALL, MB2, Translucency=50, Active in Viewport=1, OK**

- **Manage Bins, Get 'Zip Drive' from 'Final Assembly' bin, Dismiss**

- **Autoscale, MG 1.4**

- **Master Modeler...Master Assembly**

- **Run the 'symbols.prg' program file**

- **Save – use any name you like, i.e.,
        'Zip_SheetMetal_Vignette'**
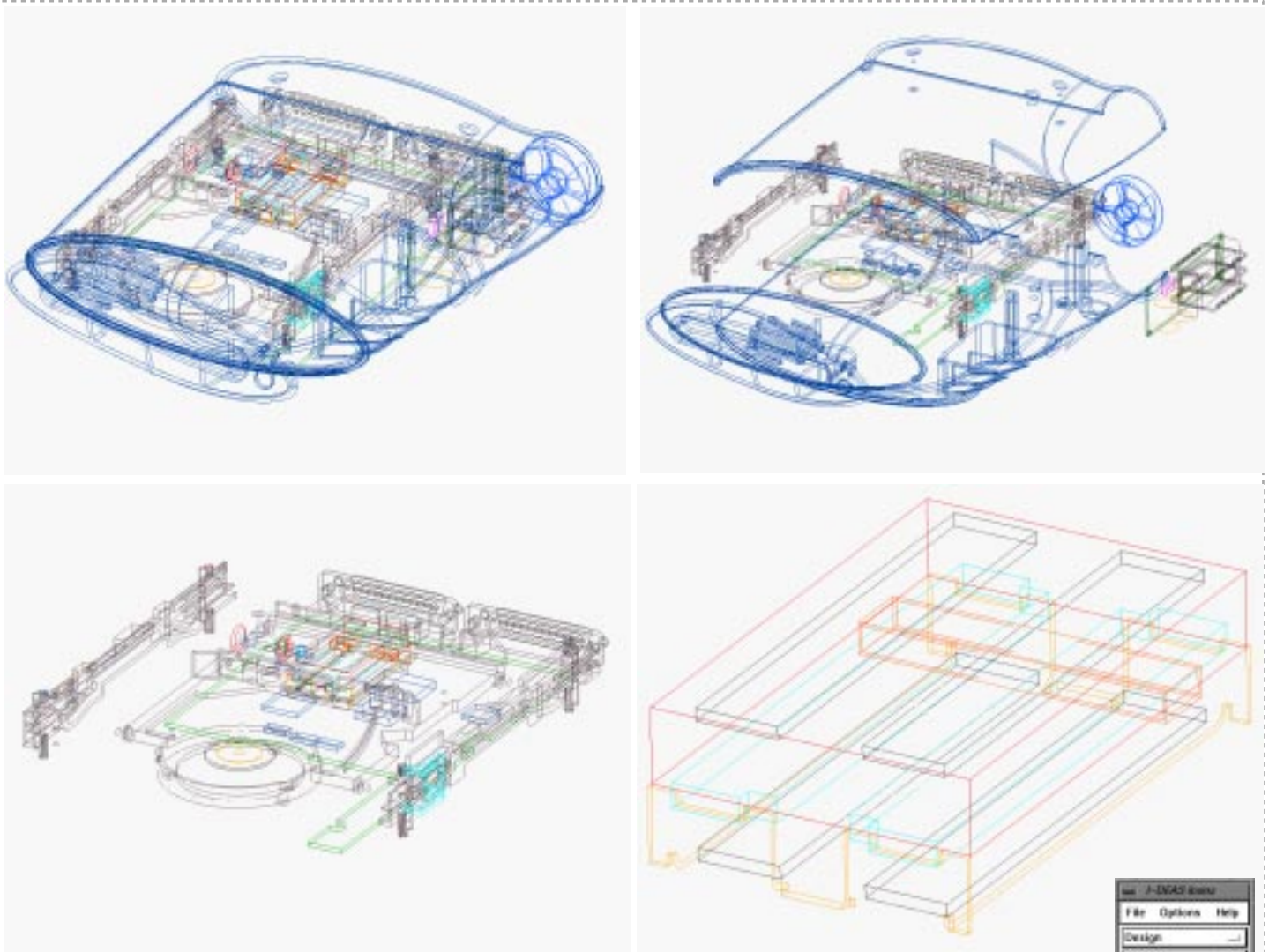
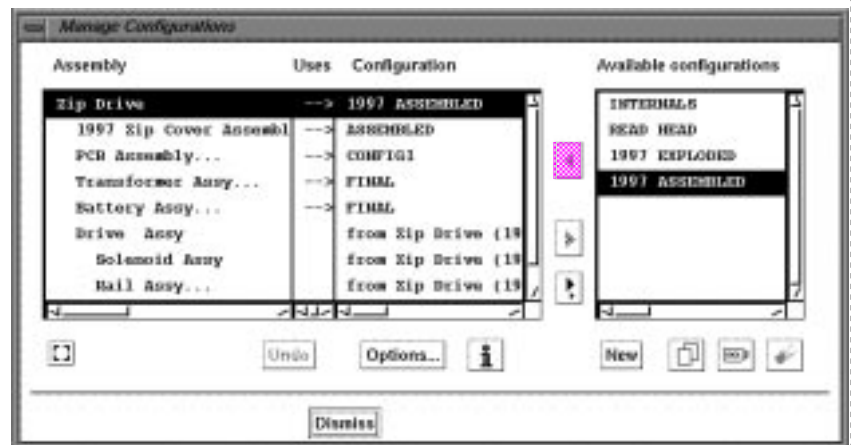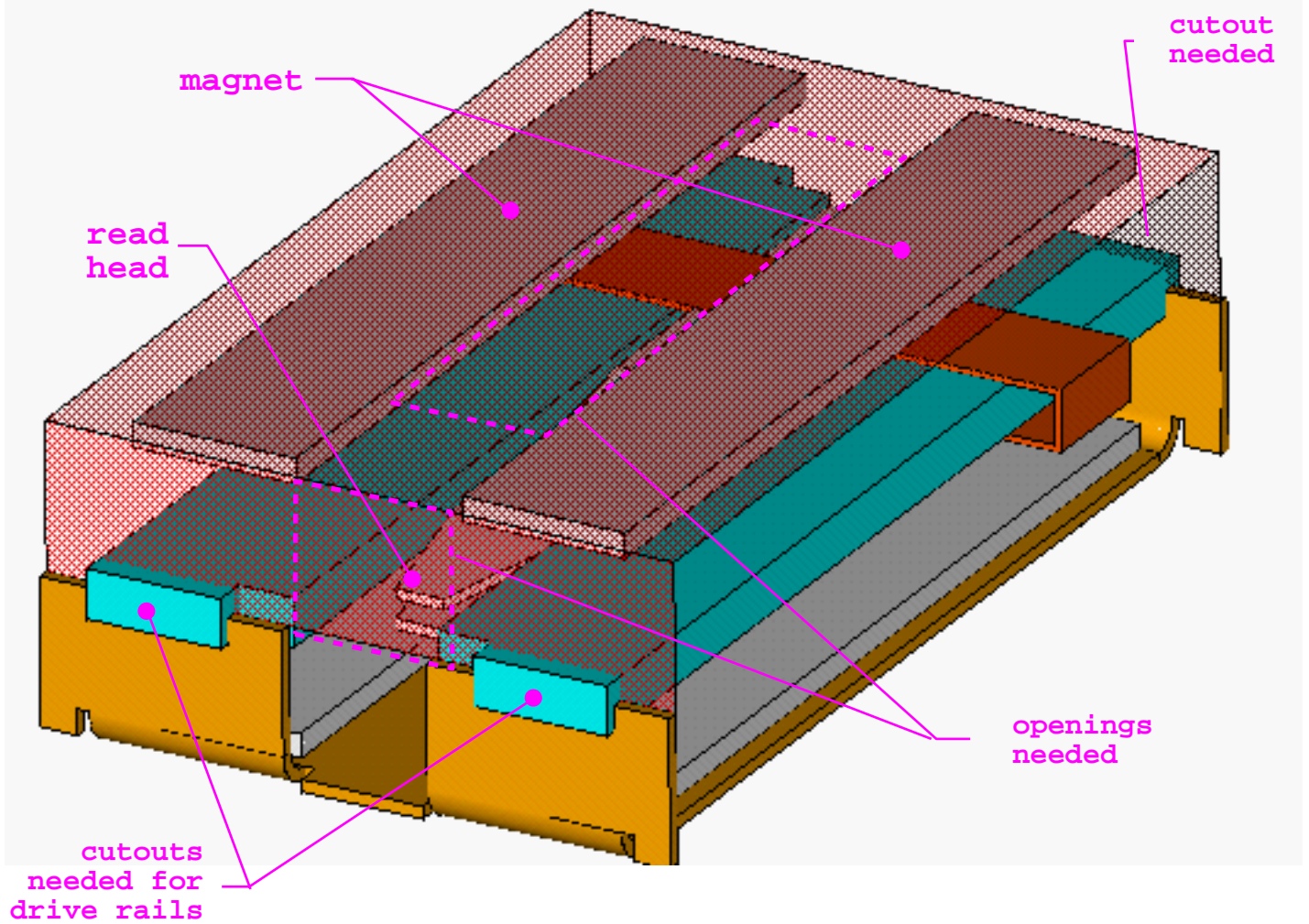**The model file opens with the Zip assembly on the screen.**

• Manage Configurations

Progressively run through the following configurations
1997 Assembled, 1997 Exploded, Internals, Read Head by using
**the left pointing arrow., Dismiss**

• 'asv' or U1 from Icon panel

•Autoscale

• 'U1'

cutout
needed

magnet

read
head

openings
needed

cutouts
needed for
drive rails

Our job is to create a sheet metal shield in the volume
allocated/indicated by the translucent red bounding box. The
shield needs to cover the two magnets, have an opening from the
top/front/back to allow access to the read head, and have
cutouts for the drive rails (basically it needs to look like
the bottom shield, the part name 'magnet base', with the
addition of a cutout on top).
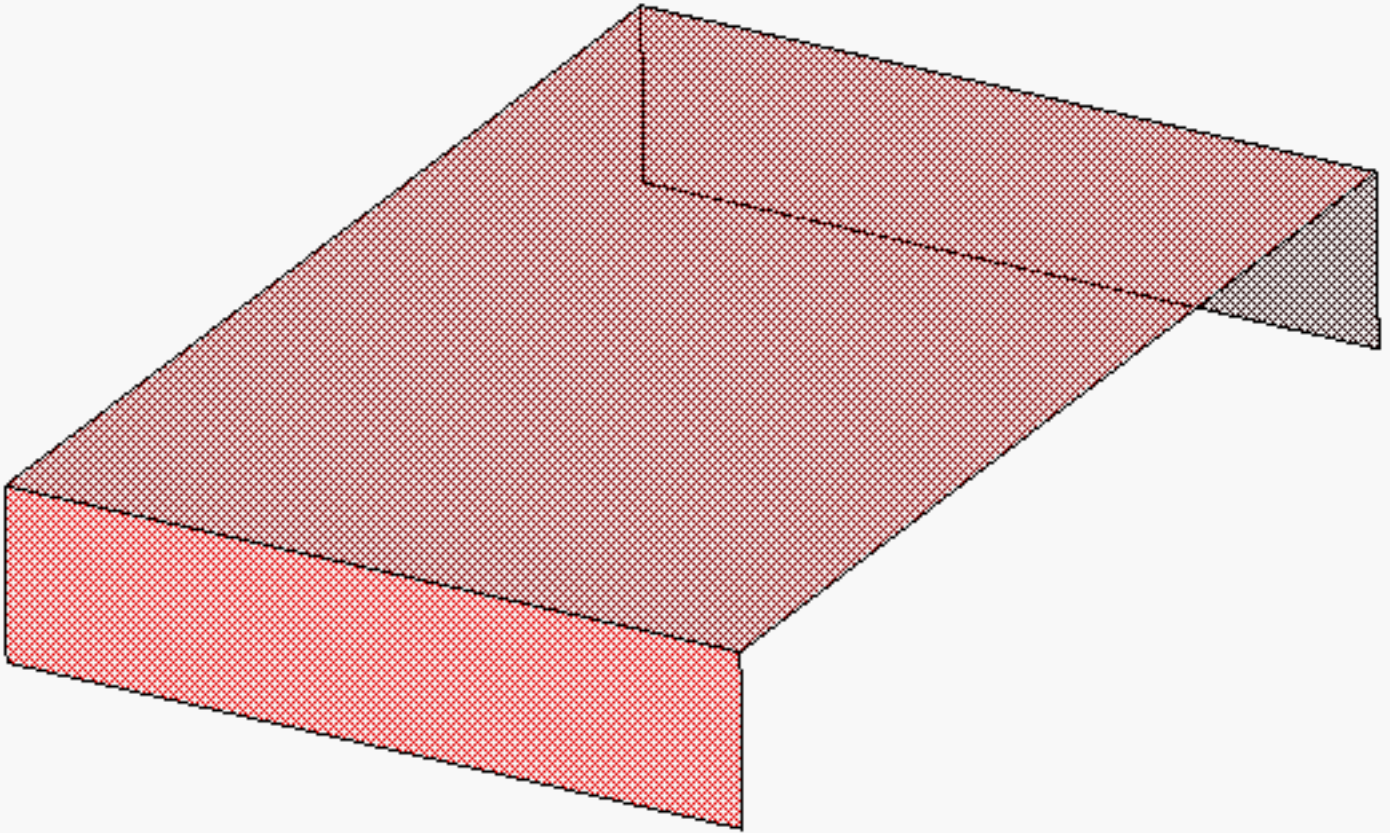
- **Master Assembly...Master Modeler**

- **Delete...**the two side and bottom surfaces off of the bounding volume.

- **SIP**   on top face of red bounding volume

Draw this line from 1 to 2. After picking at 1, MB3 and focus on the edge. The dimension will be created as illustrated.

focus points

focus

2

1
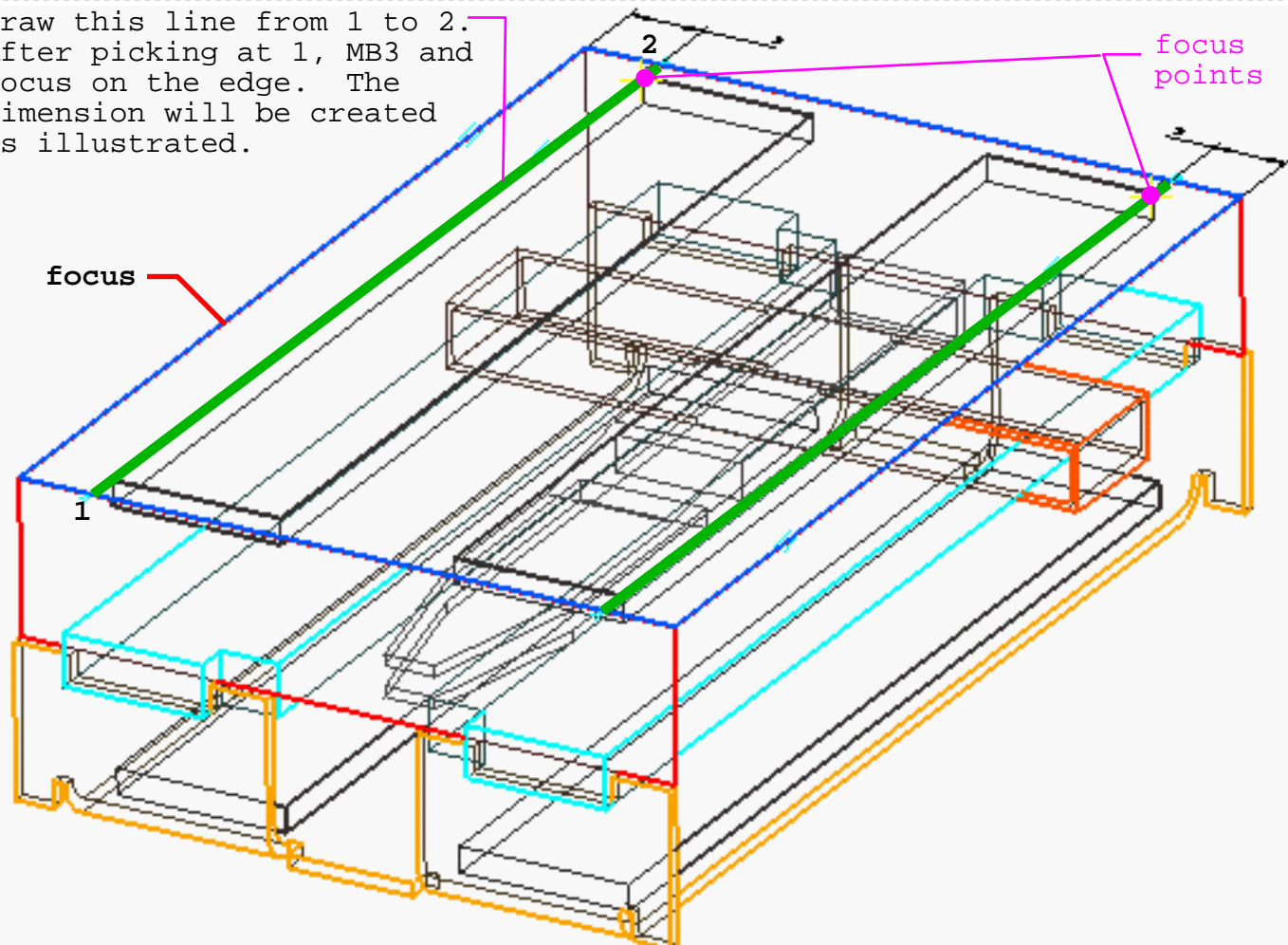
Designing in the context of the Assembly...

- **Line**

Draw 2 lines on the top SIP plane by focusing off of the magnet corner points shown. After you pick the first line start point, focus to the outside blue edge to get the Dynamic Navigator to create the dimension shown. Repeat for the right side. You might have to relocate the right hand side dimension text.
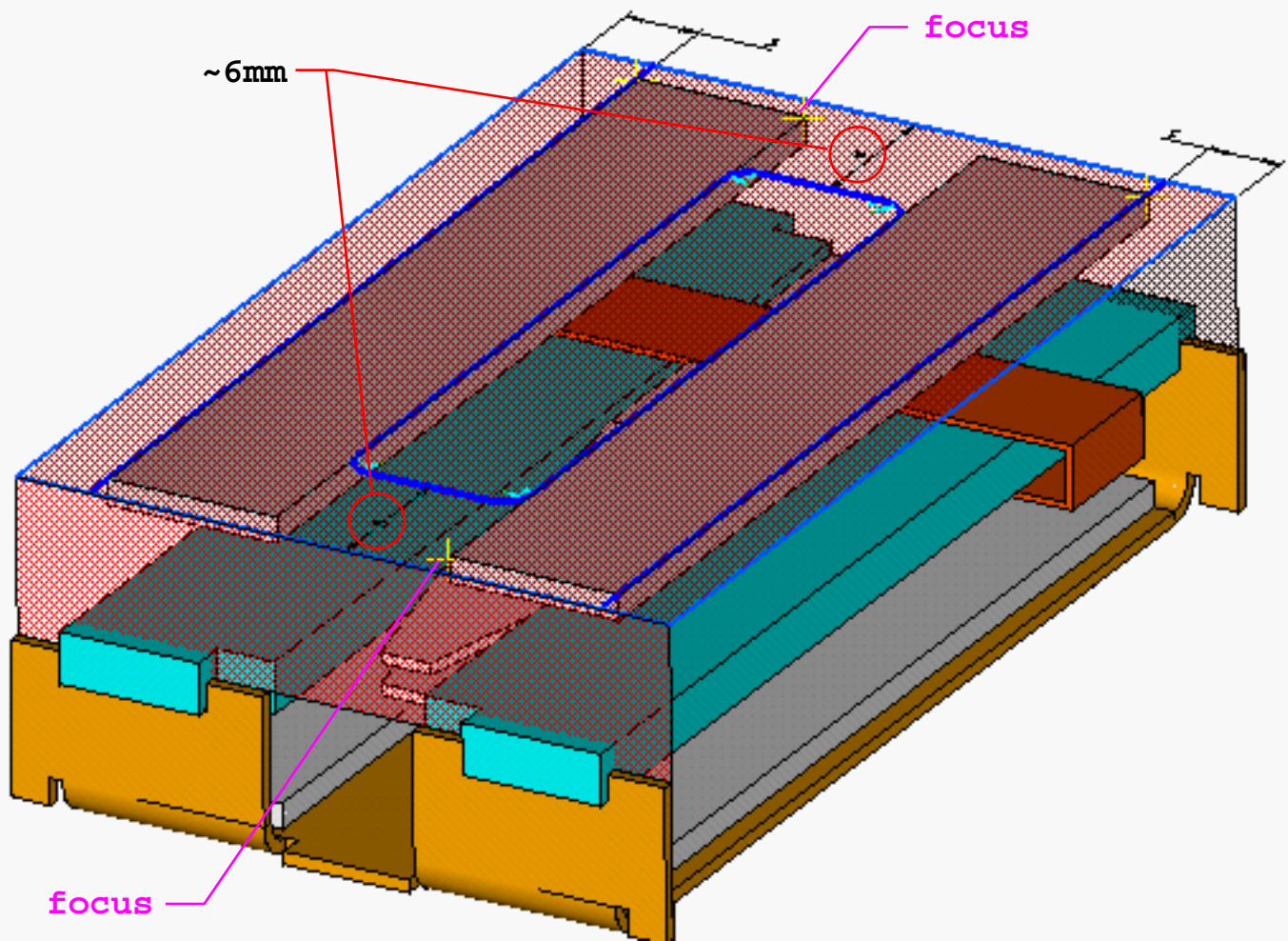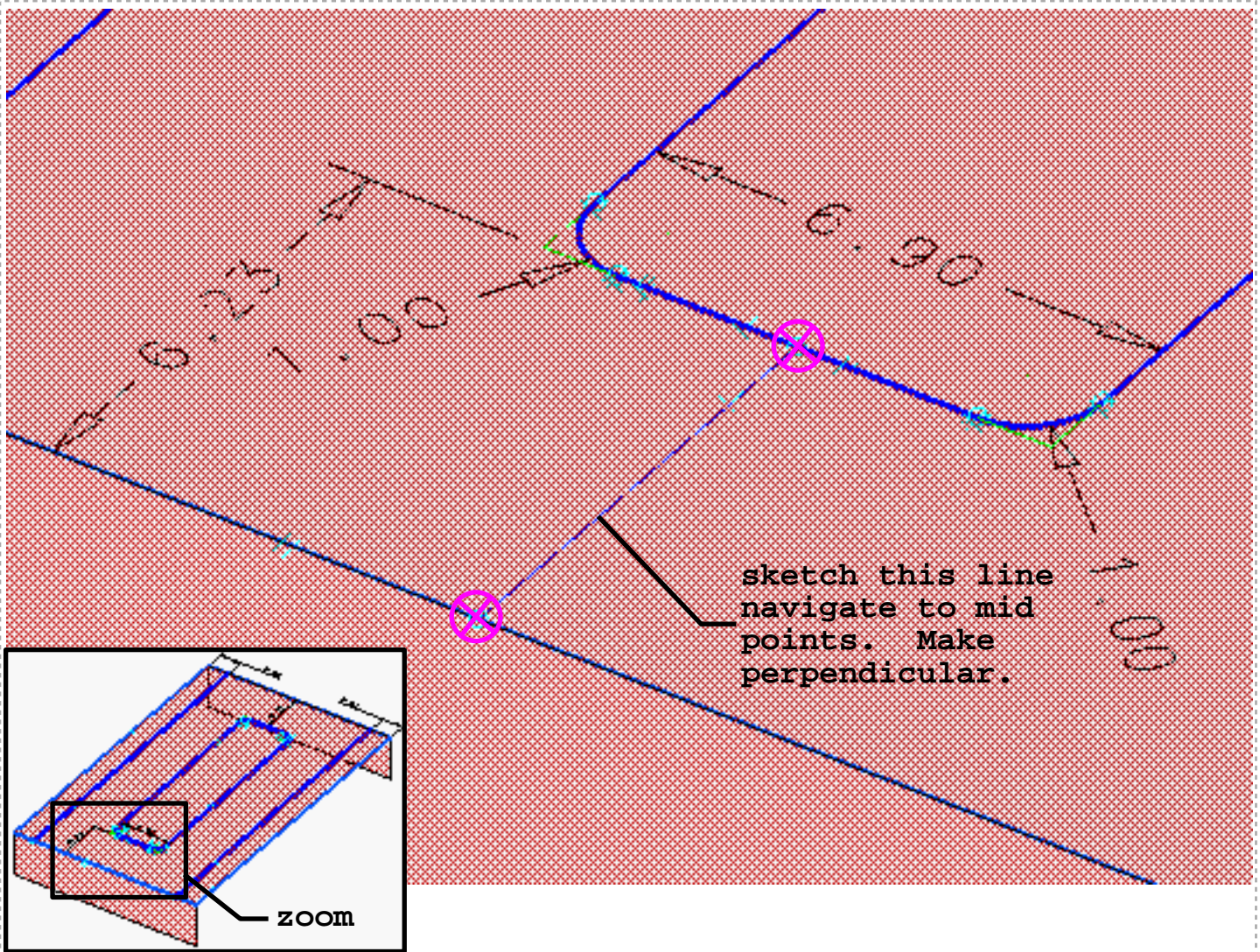
Designing in the context of the Assembly...

● **Rectangle by 2 Corners**

**Draw the rectangle as shown by focusing off of the 2 inner magnet corners**

● **Dimension...**as shown. The numbers are not critical. They should be roughly 6mm.

● **Delete**...pick a yellow wireframe point, MB3, All, MB2, MB2.

● **Section**...MB3, Stop as Intersections=Off, OK, Make a section out of the box and the two previously sketched lines (change section color if necessary so audience can see it).

● **Fillet**...using the wireframe fillet command, pick section, MB2, Trim/Extend=Off, Radius=1mm, OK. Put a 1mm radius fillet on all 4 corners of the box.

● **'U1'** toggle the assembly visibility off

sketch this line
navigate to mid
points. Make
perpendicular.

zoom

Designing in the context of the Assembly...

- **Zoom...**zoom into front area as shown

- **Line...**sketch the line capturing the 2 midpoints as shown.

- **Constrain...**perpendicularize the just sketched line and the line from the section (the section will be fully constrained at this point.)

- **Autoscale**

pick here for
region to keep
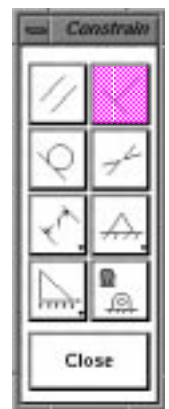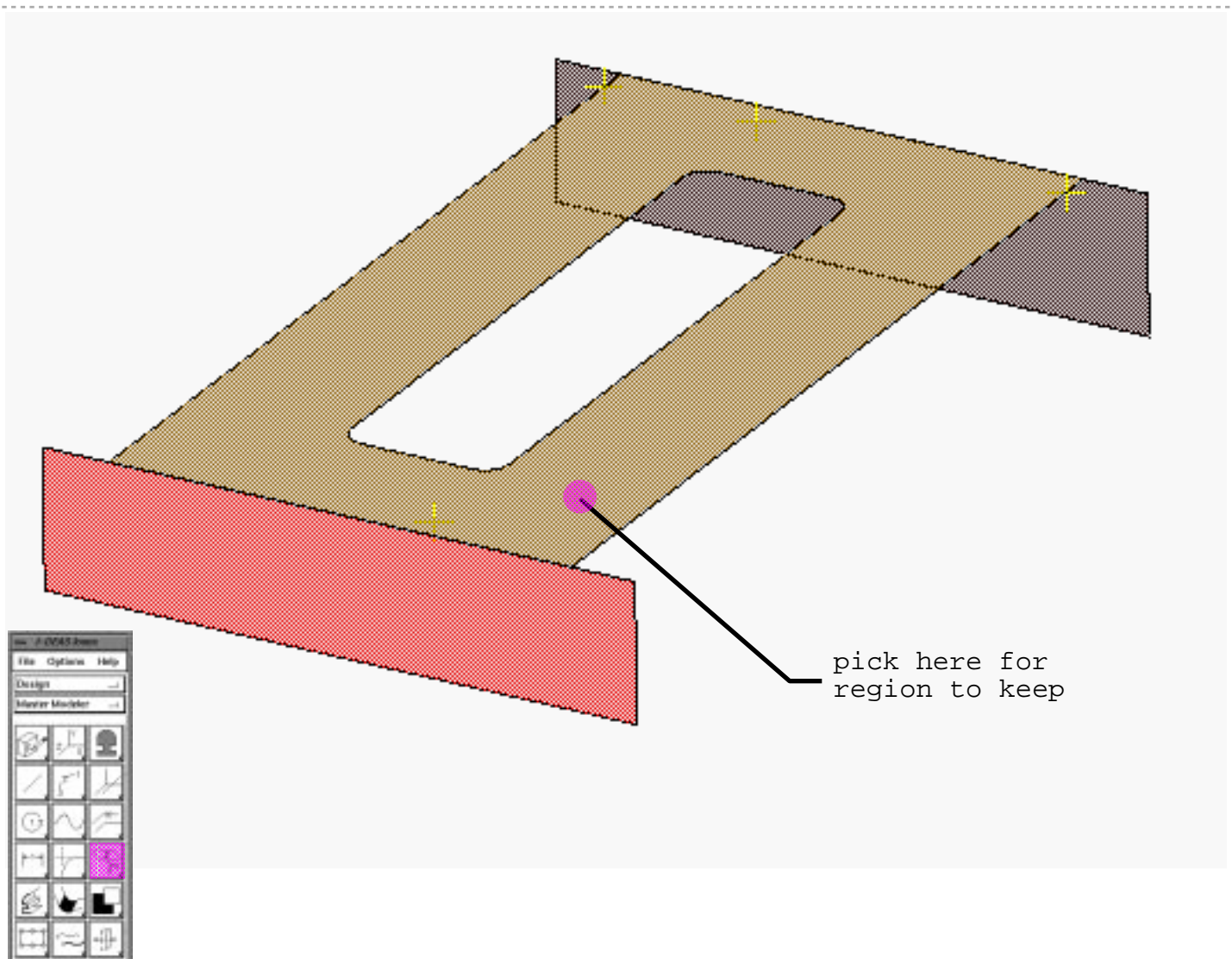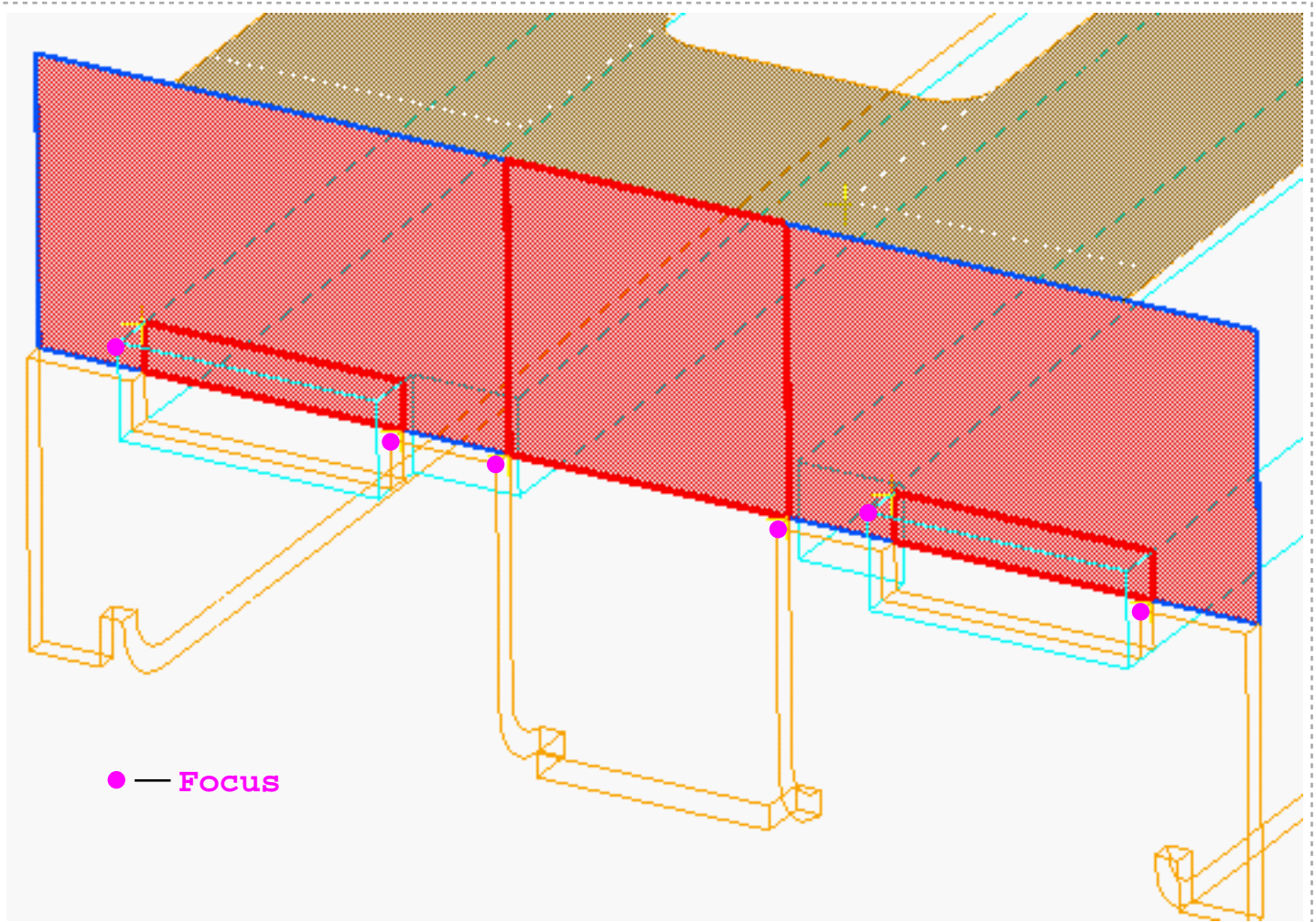
Detailed Part Design...

• **Trim at Curve**

  Pick the top surface to trim
  Use the section as the trimming curve
  Pick as shown for region to keep

• **'U1'** toggle the assembly visibility on

U2 U3
U4 U5 U6
Close

●—**Focus**

Designing in the Context of the Assembly...

- **Zoom...**zoom in around front face

- **SIP...**sketch in place on front face

- **Rectangle by 2 Corners**
>MB3, Navigator, Linear dimensioning=Off, OK
>Sketch in the 3 rectangles as shown. Use the focus points shown.

- **Build Section**...make a section out of the 3 rectangles

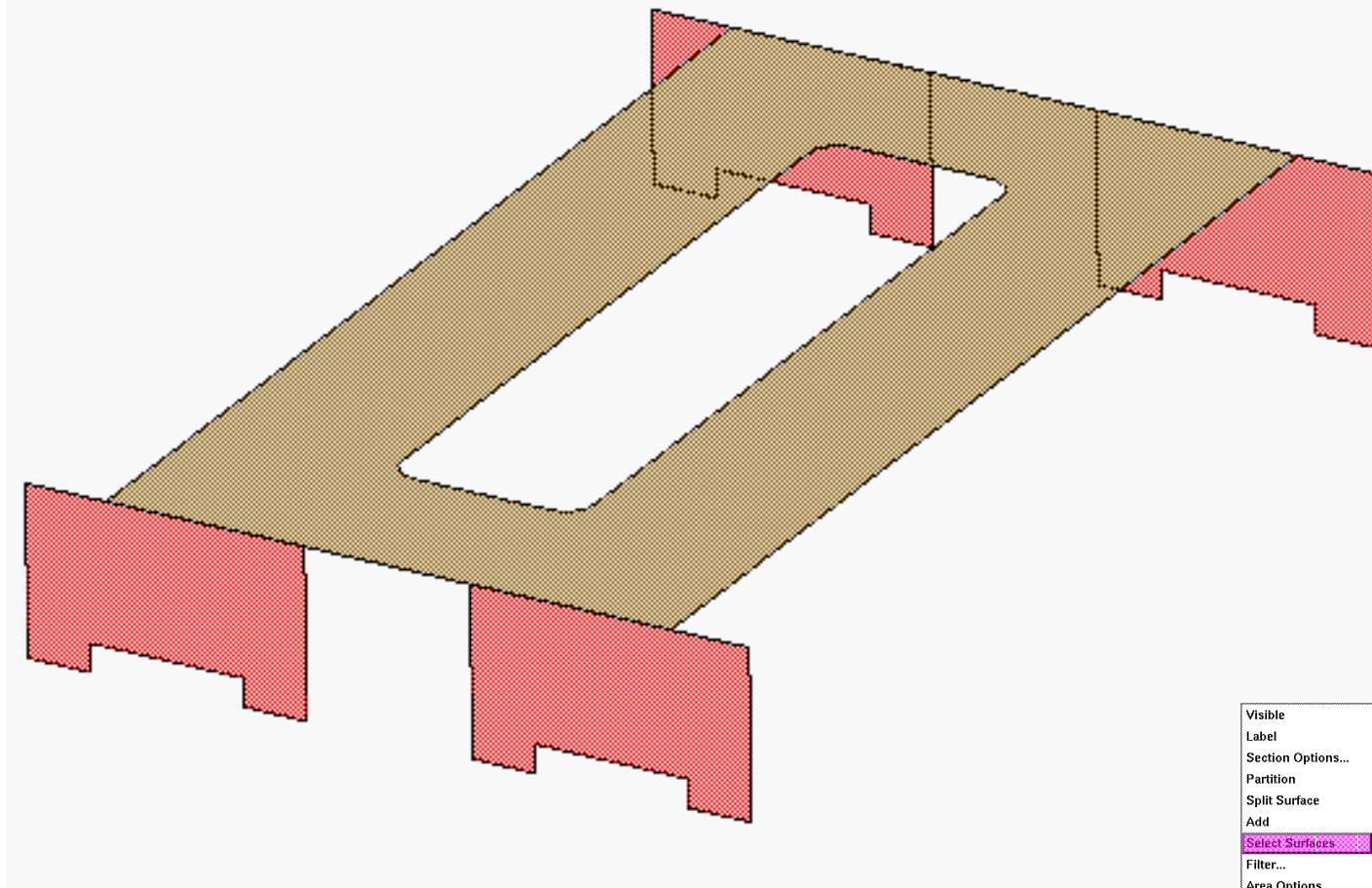- **Appearance**...change as necessary for visibility considerations
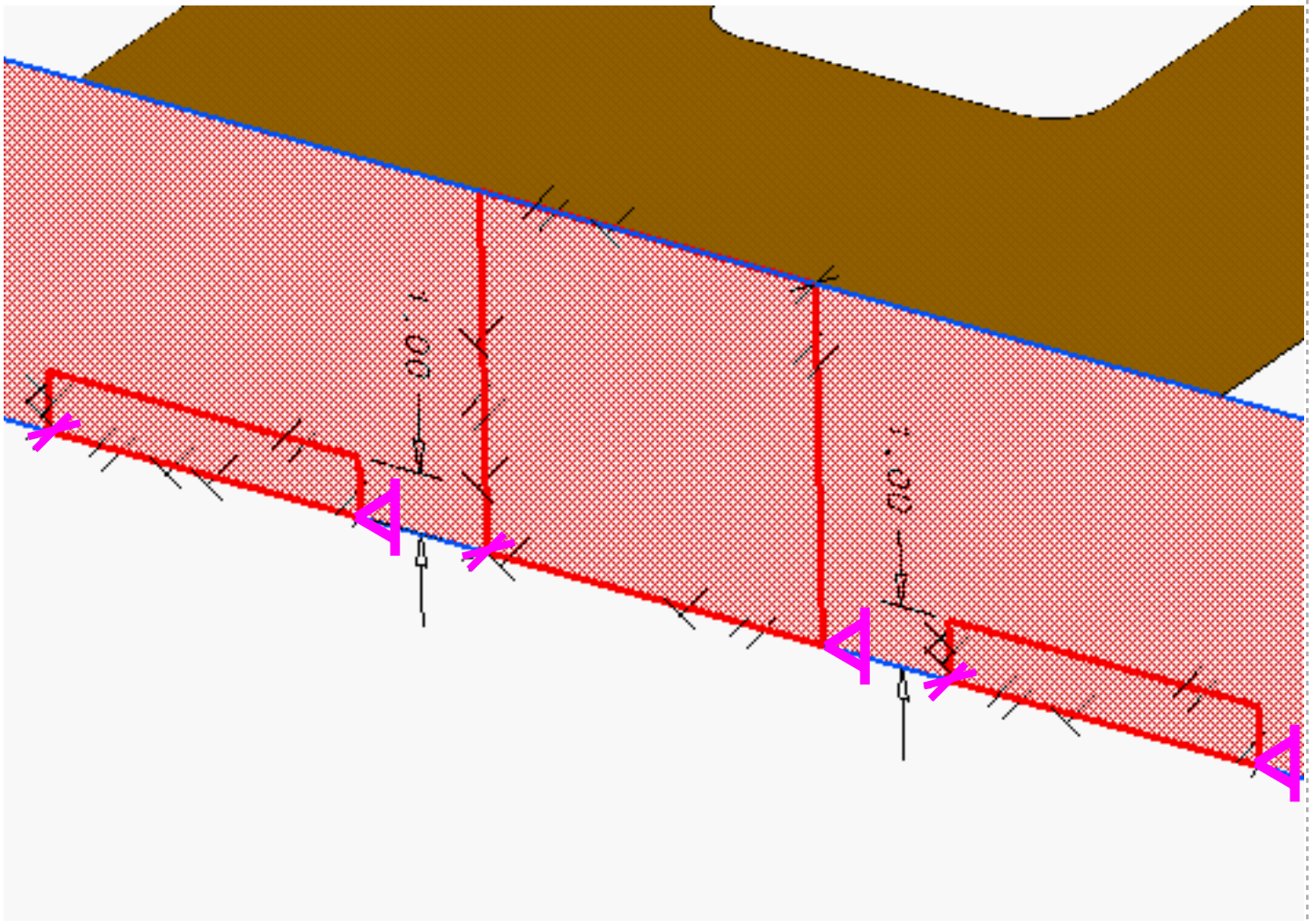
Establishing Design Intent...

- **'U1'...**toggle assy visibility if necessary

- **Delete**...pick a yellow wireframe point, MB3, All, MB2, MB2.

- **Constrain and Dimension, Coincident...**make coincident the lower left hand side of each rectangle with the bottom edge

- **Horizontal Ground...**horizontally ground the 3 lower right hand rectangular points as shown using the Horizontal Ground icon.

- **Dimension...**put in the two vertical dimensions shown.

- **'cvv'...**turn off the constraint visibility

Menu:
- Visible
- Label
- Section Options...
- Partition
- Split Surface
- Add
- Select Surfaces
- Filter...
- Area Options...
- Reconsider
- Deselect All
- Related To
- Use Design Groups...
- Done
- Show
- View
- Highlight Selection
- Backup
- Cancel

Surface Modeling ...

• **Extrude...**MB3, Select Surfaces, Pick Section, MB2, verify thru-all/cut-out/arrow directions, OK, pick front and back face, MB2

Or if you don't have the 'de.mm.SelectiveBooleanSW:1' in your param file:

• **Extrude...**MB3, Split Surface, Pick Section, MB2, verify thru all/arrow direction, OK, pick front and back face, MB2

• **Delete...**MB3, Filter, Surface, Pick only, Delete the 6 surfaces shown, MB2, MB2

• **Save**
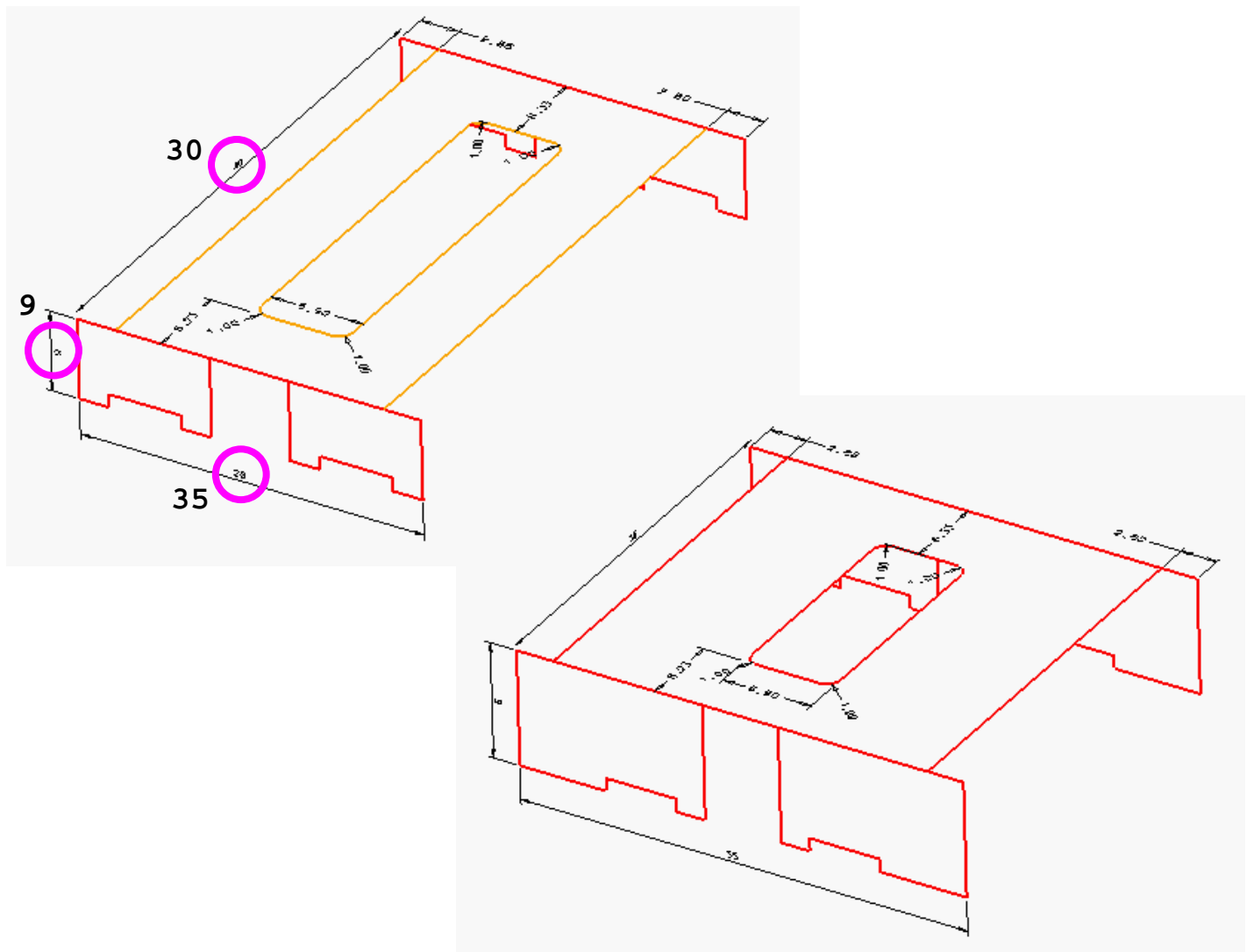
Illustrate dimension driven changes ...

• **Modify...**pick the part, MB2, MB2 (to show the dimensions)**,** change the dimensions shown to the values indicated (move the 35mm down under the part use the 'et' global symbol).

• **Update...**Point out the preservation of design intent

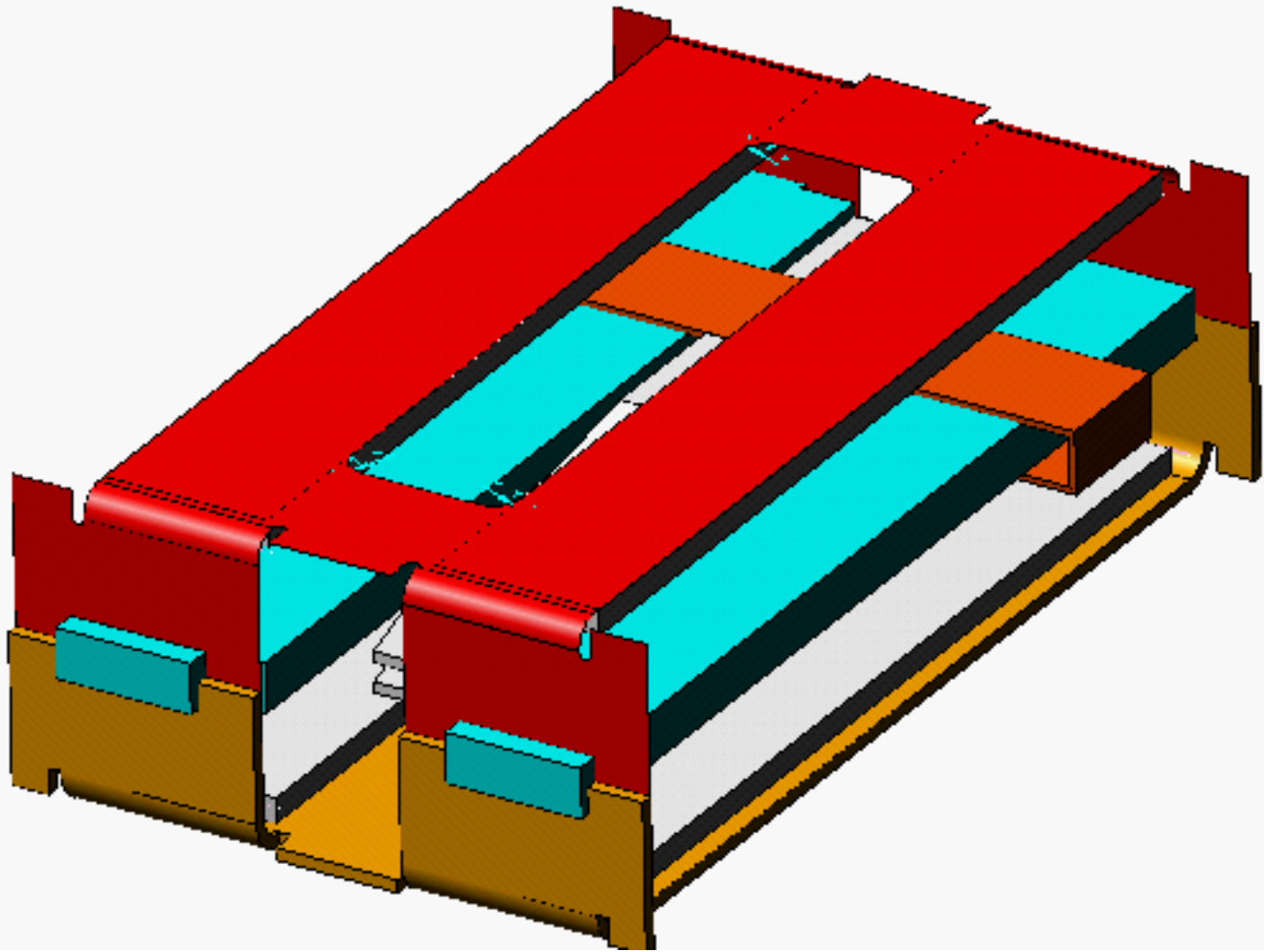• **Control-Z...**'undo' the changes or change the numbers back manually.
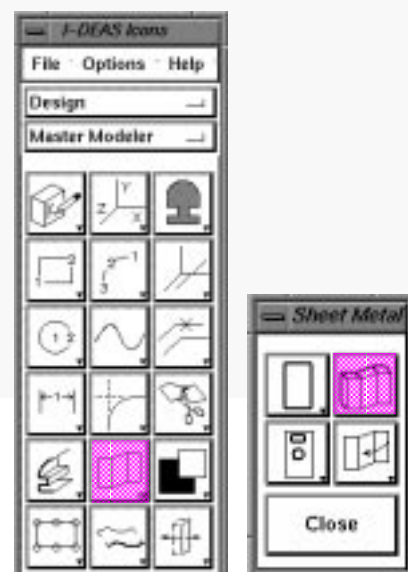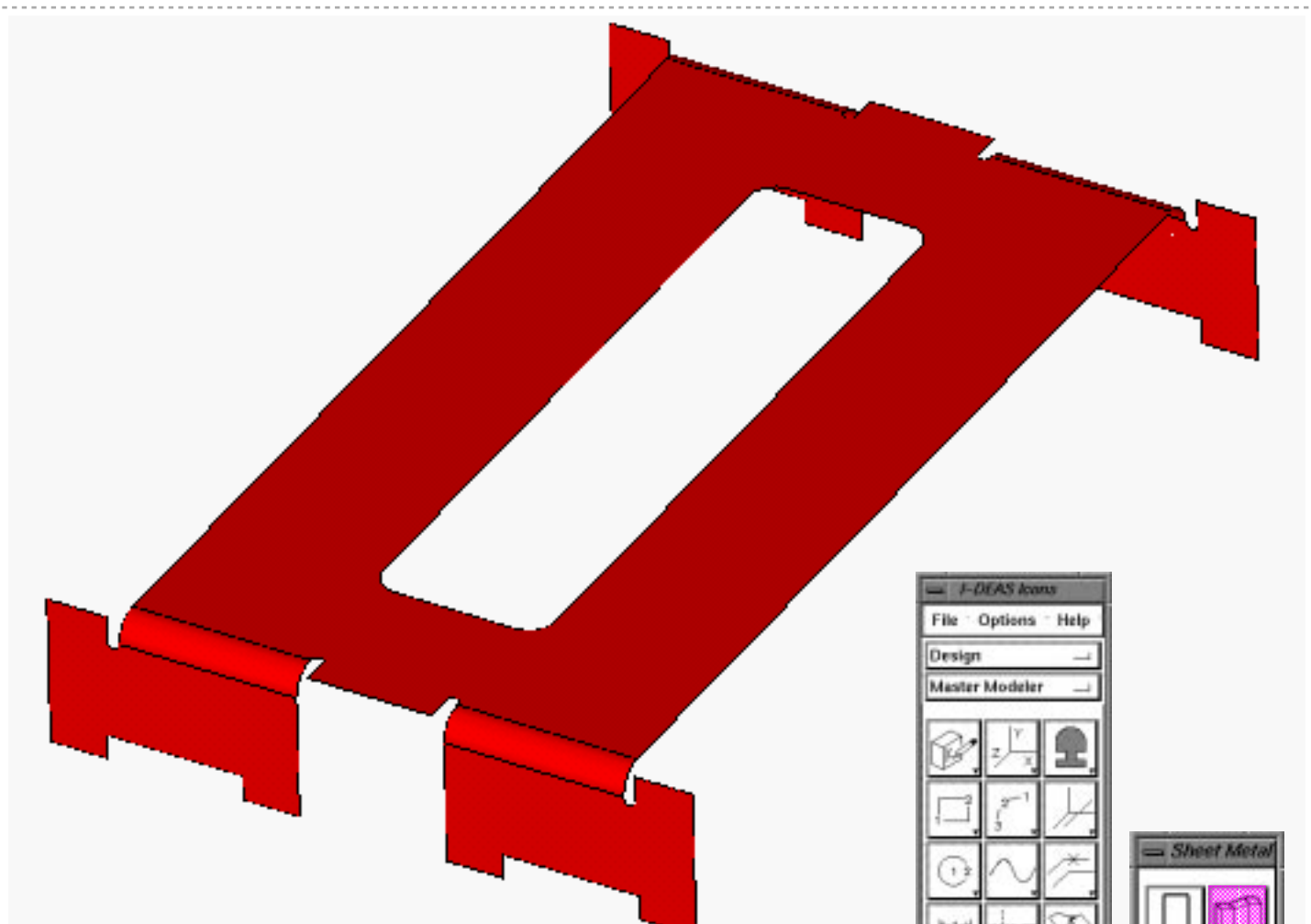
Sheet Metal Modeling ...

● **Sheet Metal...Sheetmetal**, pick the part, 0.5MM THK, OK, OK, pick top
face, Yes, MB3, All, MB2, **:** , MB2
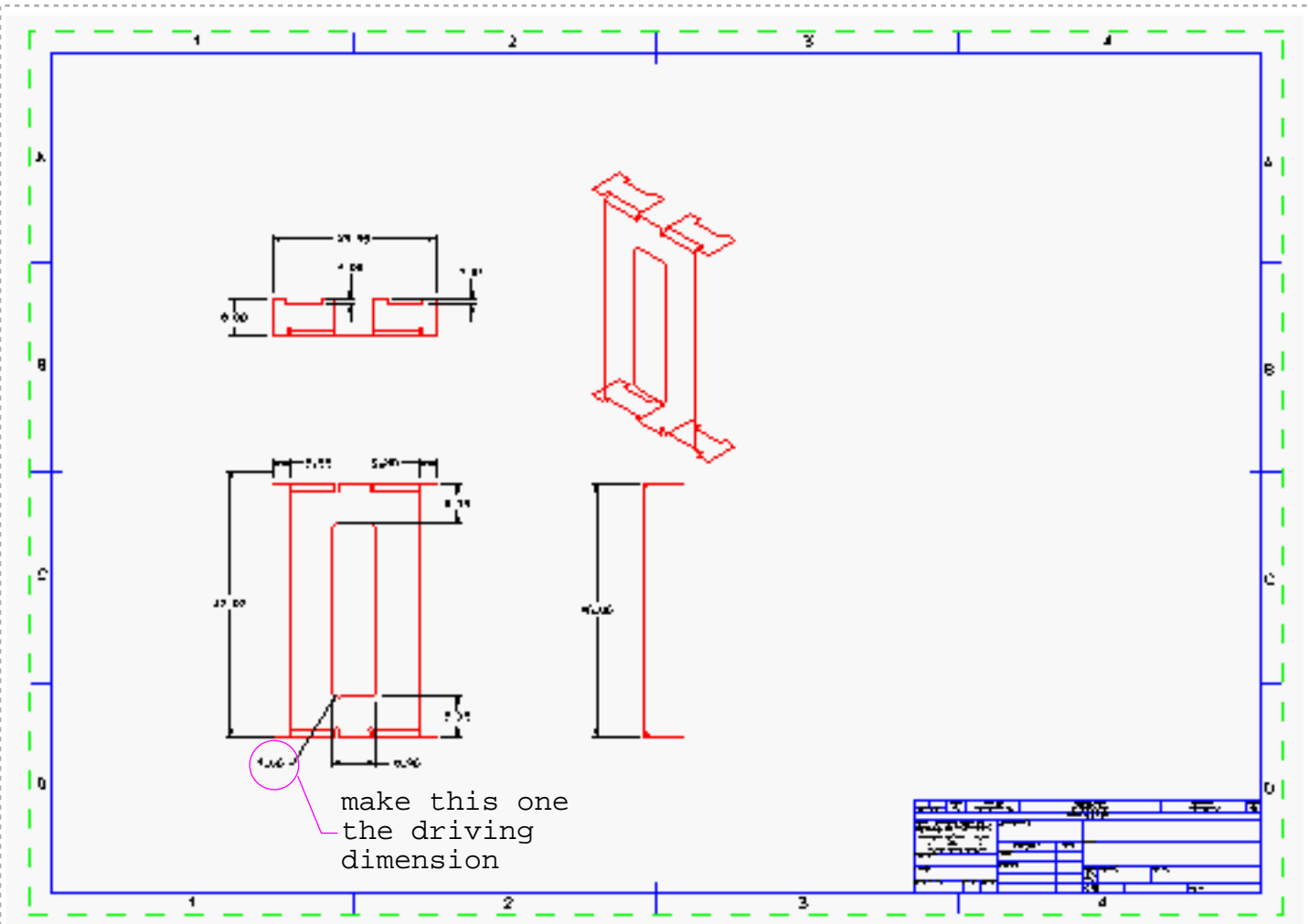
verify that this form looks like this ->
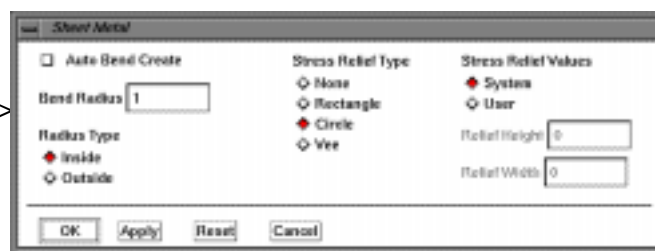
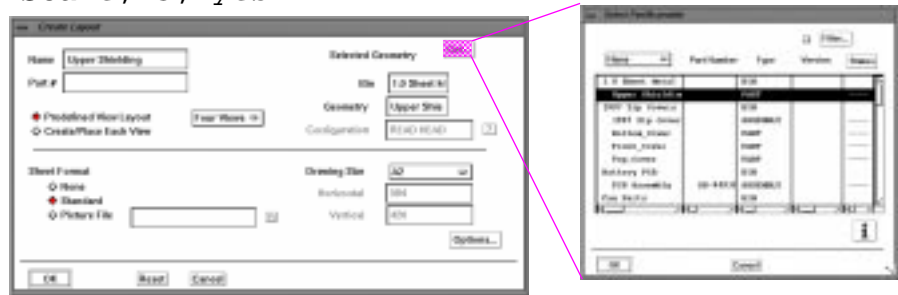● **Shade...**pan around part and show stress relief/bends.

Verifying Fit...

● **'U1'...**toggle on the assembly visibility to show fit.

make this one
the driving
dimension

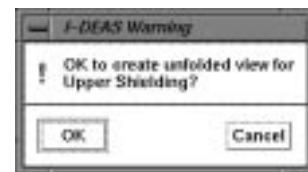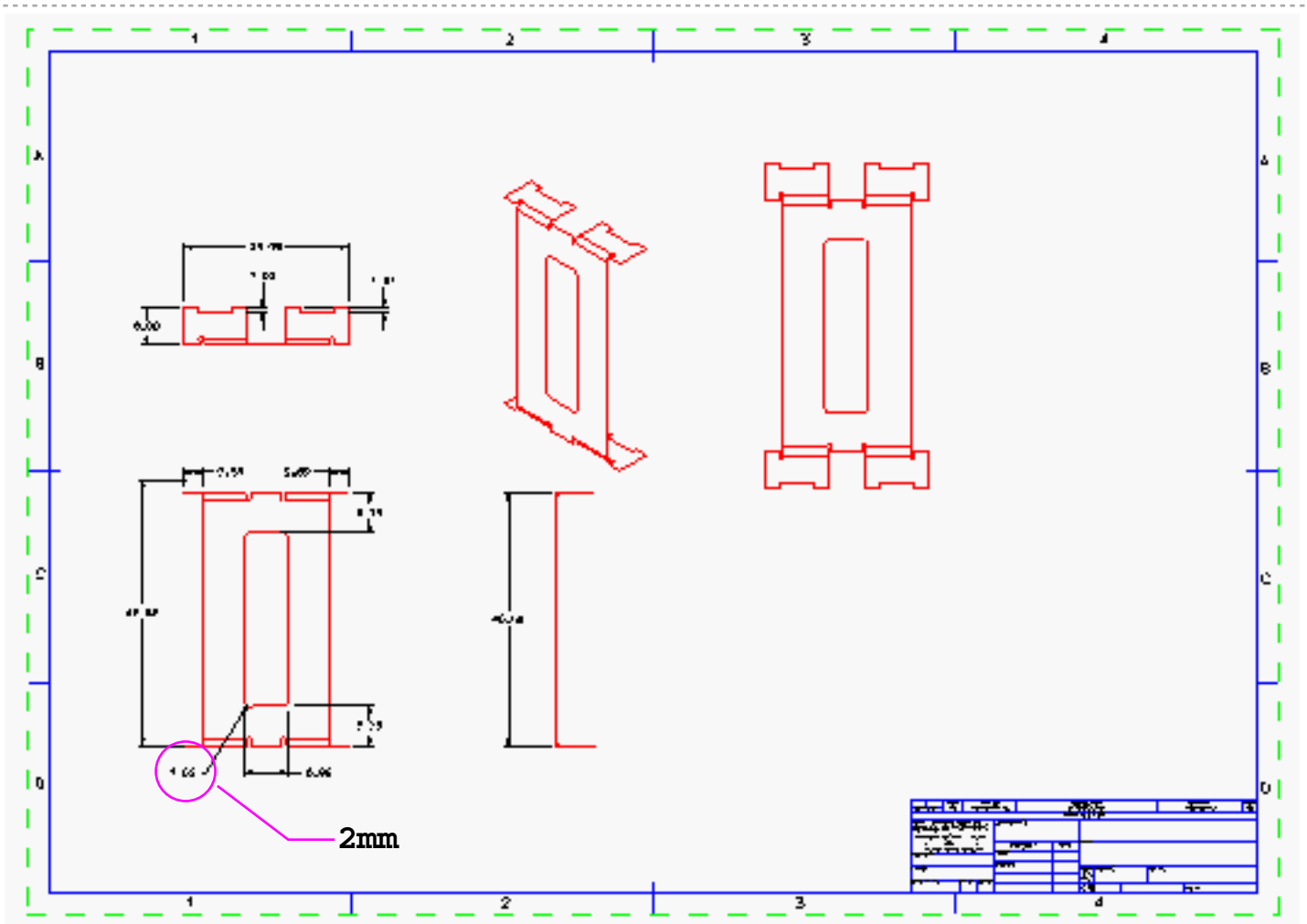- **Master Modeler ... Drafting Setup**

- **Create Layout...**(fill the form out), OK, Change View, Rotate about Screen, 90, Done, Change Scale, 3, yes

- **Move (view)...** MB3, all, drag down and to the left

- **Move** (the regular move)...relocate the dimensions as necessary to clean up the drawing. Use the 'et' global symbol

- **'dimm'...**a global symbol that runs a dimension matching program file, ('Pick the Driving dimension', pick one of the fillet radius dimensions, 'Pick the Driven dimensions', pick the other 3 fillet dimensions), MB2.

2mm

OK to create unfolded view for Upper Shielding?

OK   Cancel

Making Changes From The Drawing...

- **Unfolded...**OK, place as shown, MB2 (add a flaten view)

- **Modify...** change the fillet radius from 1mm to 2mm

- **Update...**(all the fillet radii change, the flatened view changes as well)
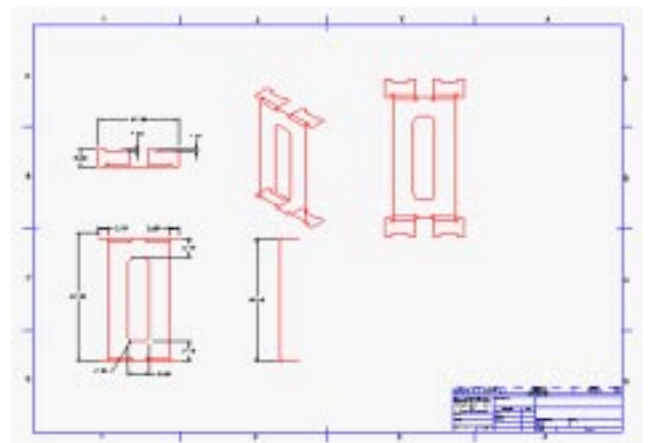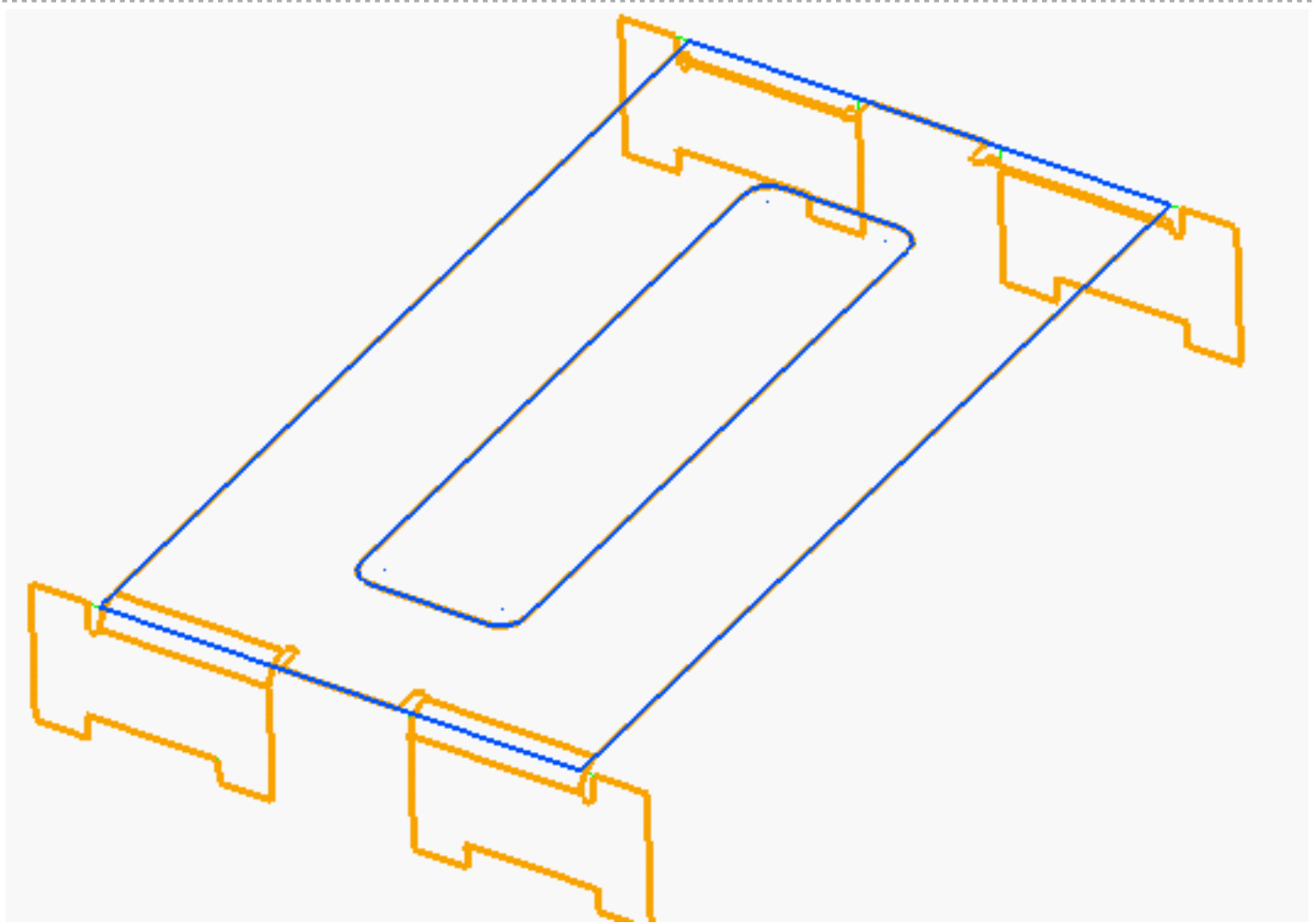
Drafting Setup ... Master Modeler

- **'cll'...**global symbol to toggle centerline visibility

- **Redi**

- **Modify...**double click on a centerline to get the 'SheetMetalSolidData9' feature, MB2, wireframe

- **SIP...**pick the top face

Unfold and fold some of the bends
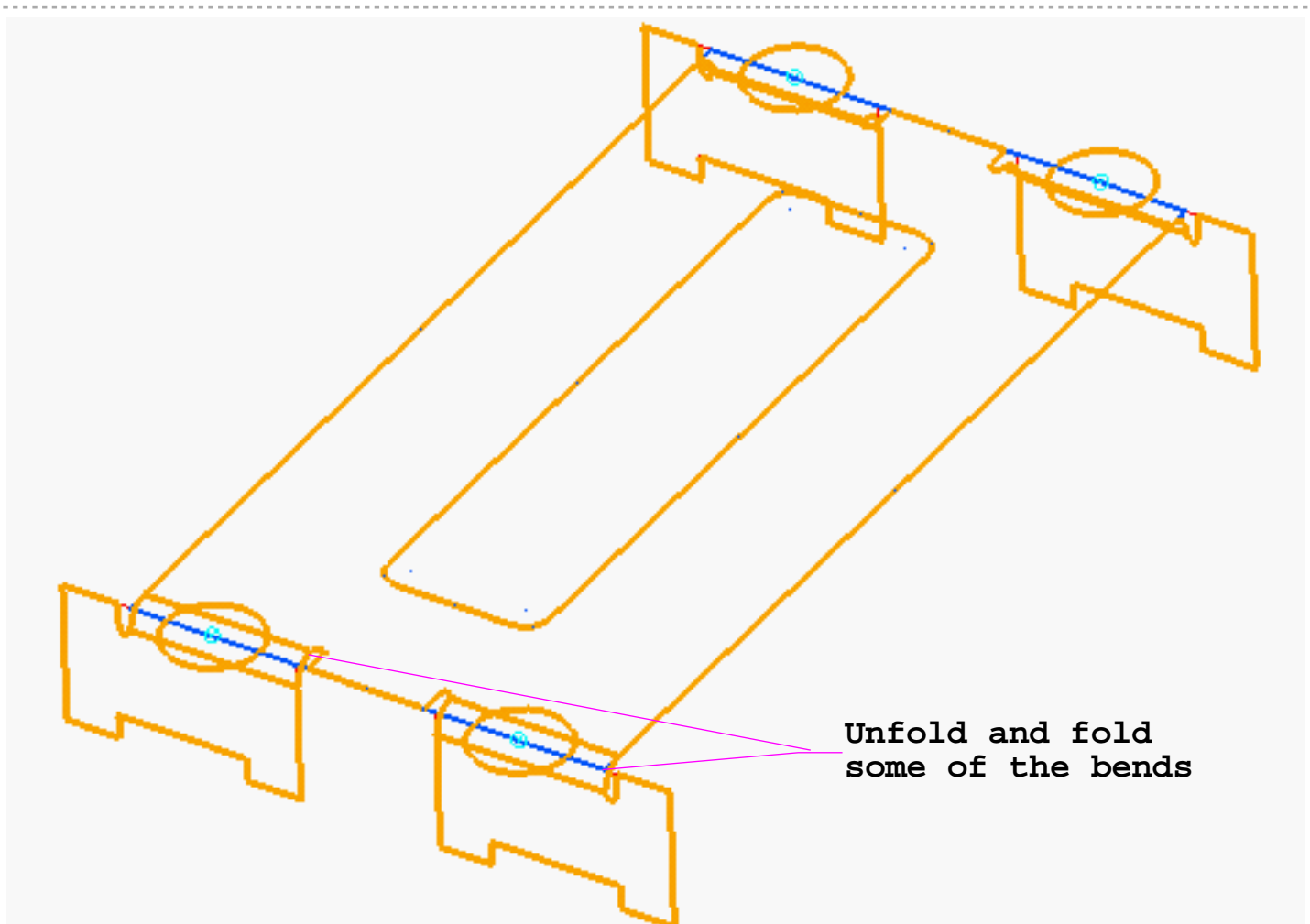
Add Sheetmetal punch

● **Circle, center edge...**MB3, Options, radius=2mm, OK, place as shown making sure to capture the center constraint on the blue edge, MB2.

● **Preselect 1 of the circles, MB3, All**

● **Build Section**

● **Punch Hole...**pick part, pick hole sections, MB2, MB2

● **Unfold Panel/Fold Panel**...pick a bend and exercise it.

● **Update**

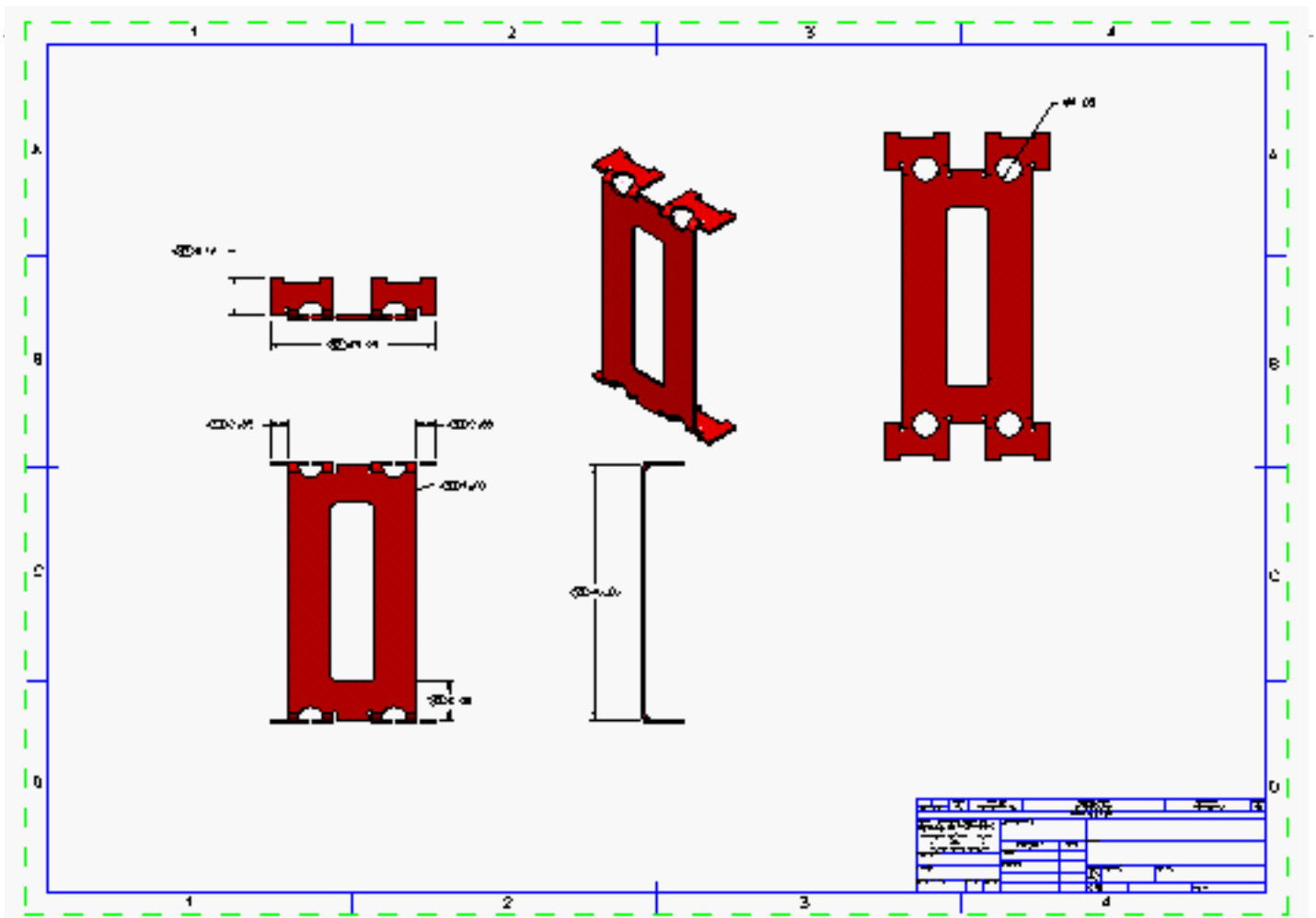● **Update**

● **Shade**

● **Save**
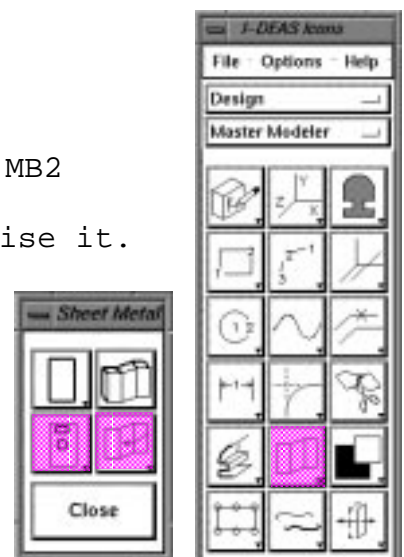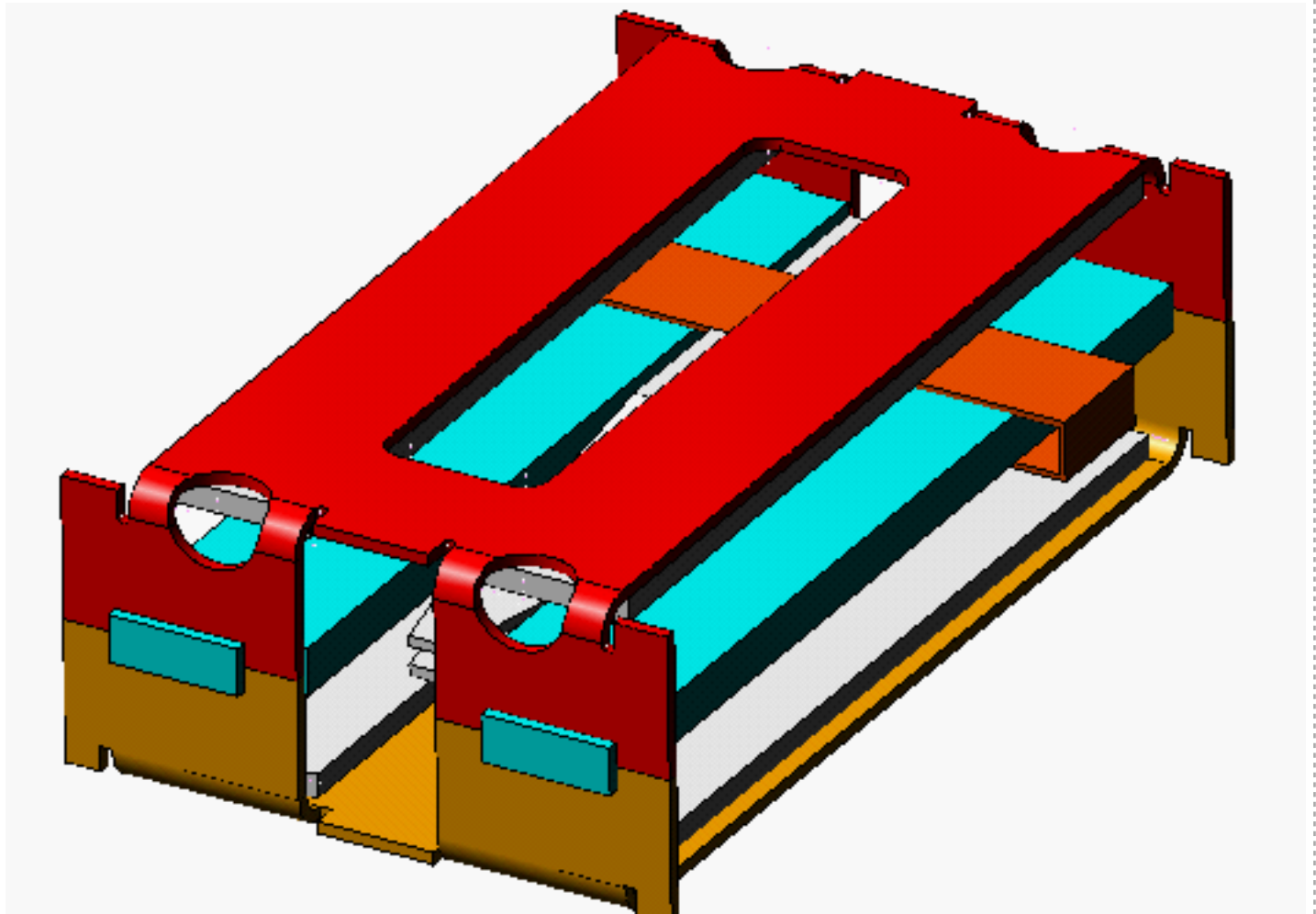
Thicken the part...

• **Shell...**pick the part, MB2, Okay

• **Appearance...**make the part a uniform color

• **'asv' or 'U1'**

• **Shade...**zoom-in to show punch/stress relief detail

• **'LL1' and/or 'LL2' and/or 'LL3'...**use these global symbols to toggle the light sources to get the desired shading

• **Line Display**

• **Save**

• **Master Modeler...Drafting Setup**

Show the updated drawing.

- **Dimension...**annotate the flattened view as desired

-