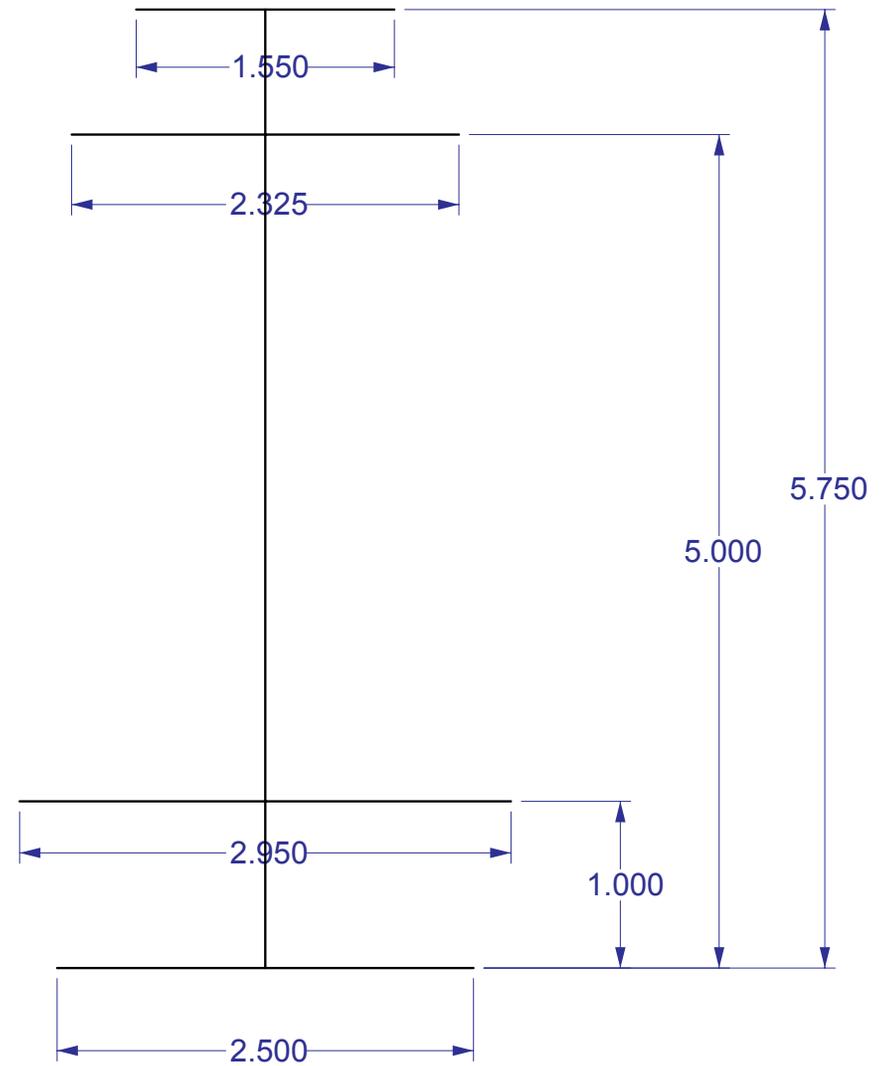
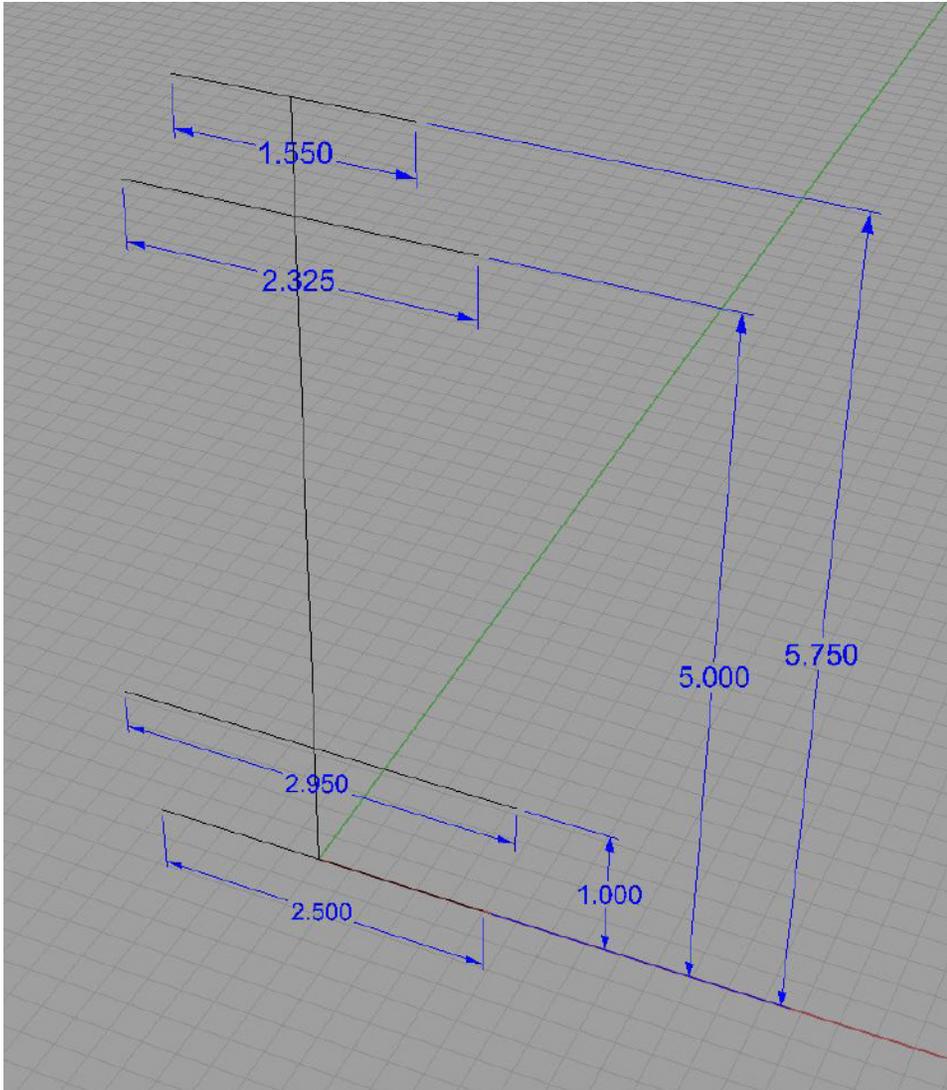


TUTORIAL:  
MUSTARD BOTTLE SHELL

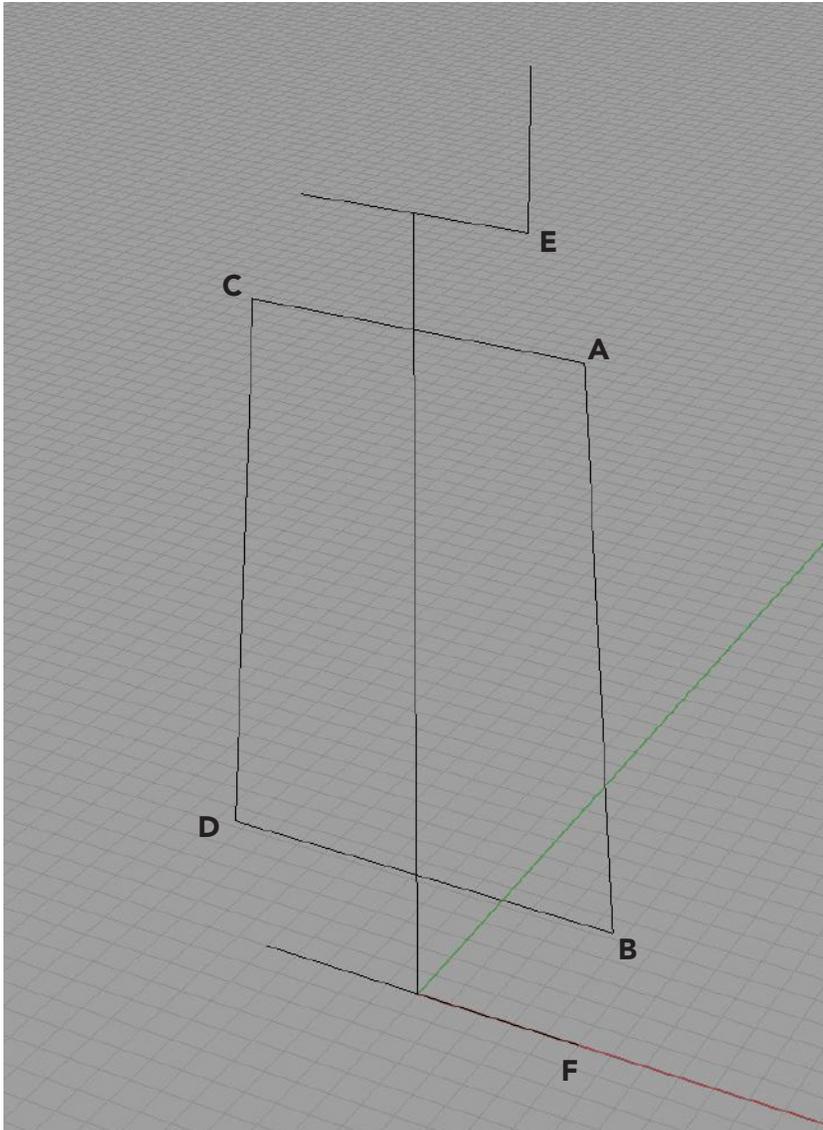


1. Recreate the geometry illustrated below. These curves will serve as construction geometry to assist with drawing the front profile of the container.



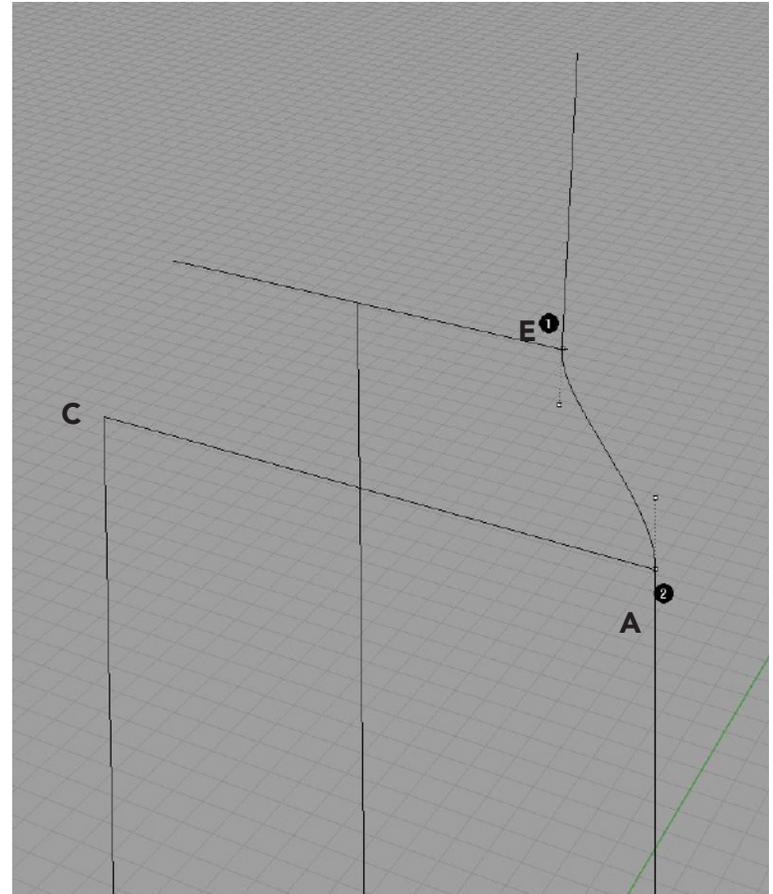
2. Draw a line that connects points "A" and "B" as shown below. Repeat to connect points "C" and "D". These lines make up part of the front profile of the container.

3. Snapping to the endpoint near point "E", draw a line that extends vertically (length is not important) as shown below. This line will be used to construct part of the front profile of the container.

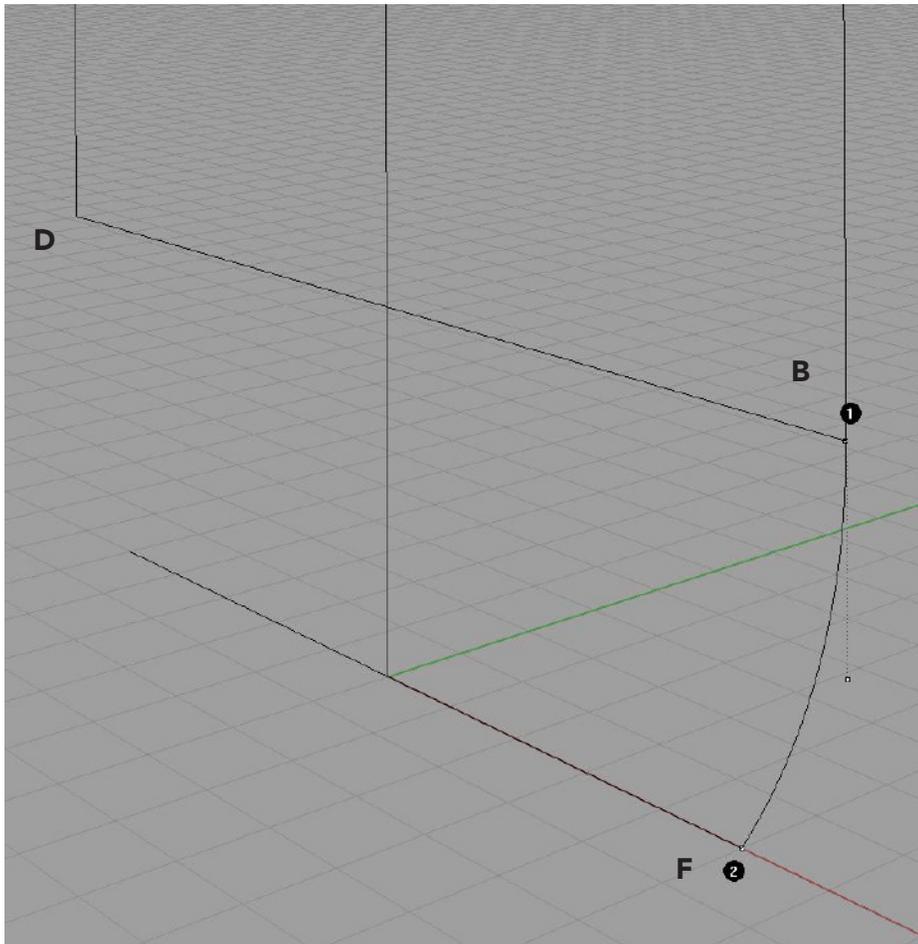


4. Launch the "adjustable blend curve" command (type "blendcrv" into command line)

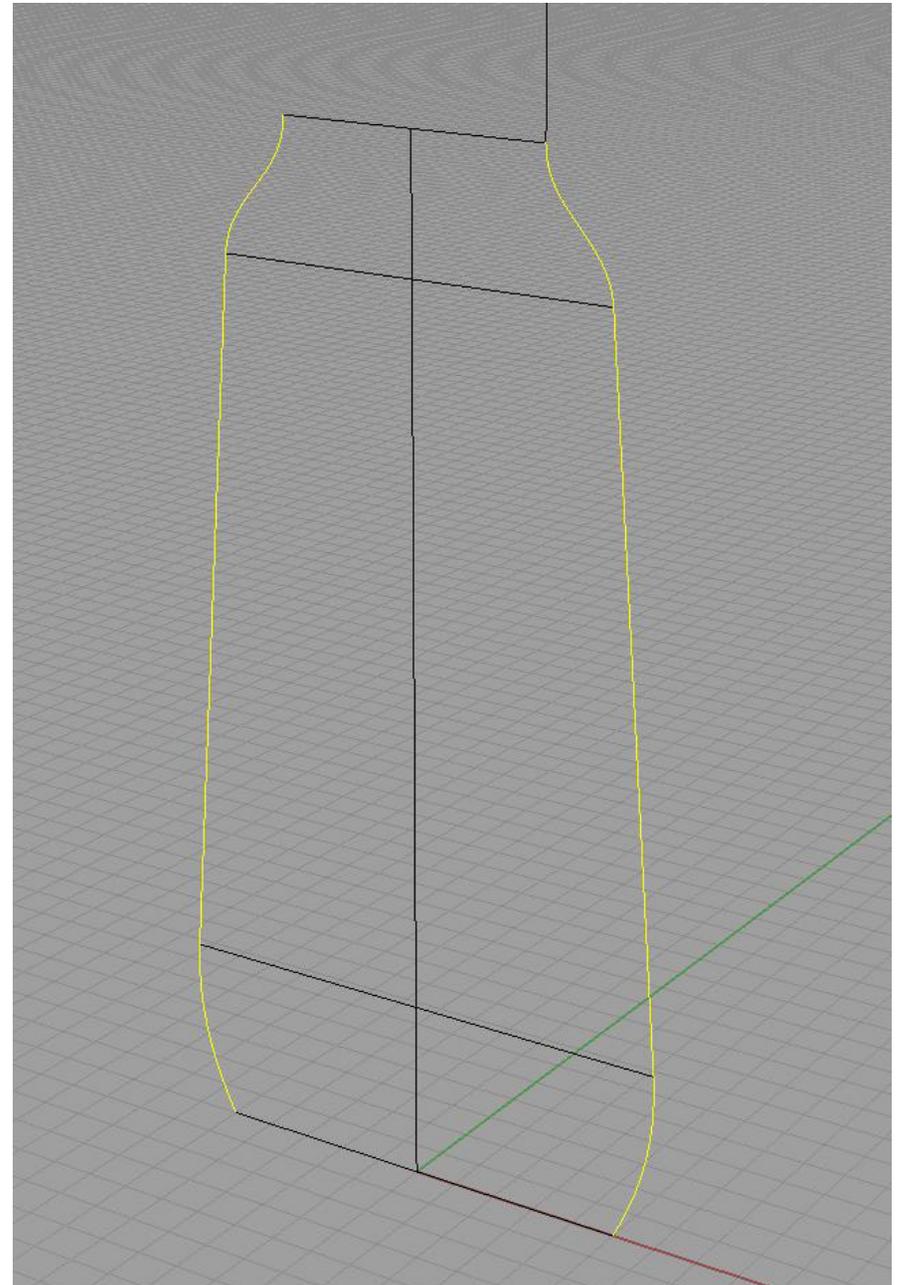
- select the end of the vertical line near point "E" as the first curve to blend
- select the end of the angled line near point "A" as the second curve to blend.
- click in the command line to adjust the options for "Continuity\_1" to "G1"
- repeat to set the options for "Continuity\_2" to "G2"
- drag the points to adjust the curvature. hold the shift key while dragging a point to make the adjustments symmetrical
- press enter to complete the adjustable blend curve command (for more information on the adjustable blend curve see the help file)



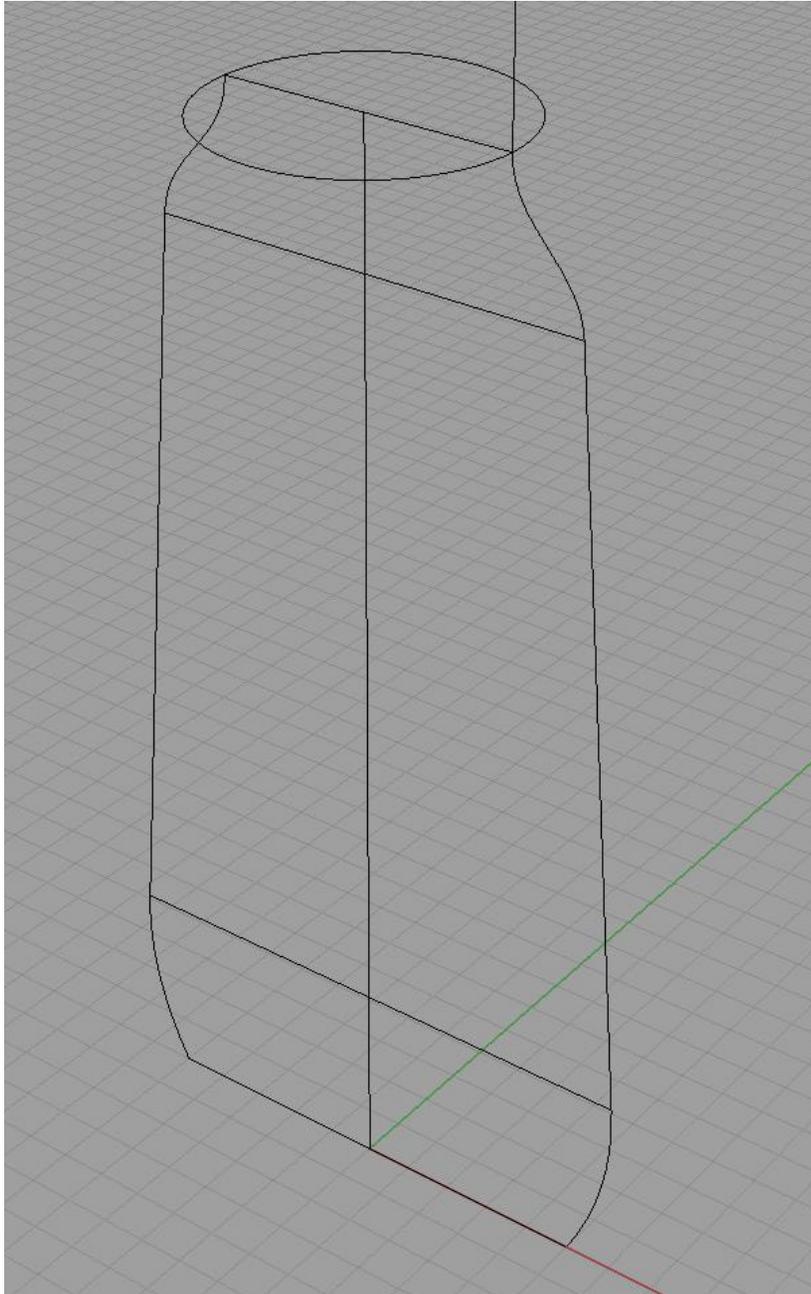
5. Re-launch the "adjustable blend curve" command (press enter to relaunch the last command, or type "blendcrv" into command line)
  - a. select the end of the angled line near point "B" as the first curve to blend
  - b. select the end of the base line near point "F" as the second curve to blend.
  - c. click in the command line to adjust the options for "Continuity\_1" to "G1"
  - d. repeat to set the options for "Continuity\_2" to "G0"
  - e. drag the points to adjust the curvature.
  - f. press enter to complete the adjustable blend curve command



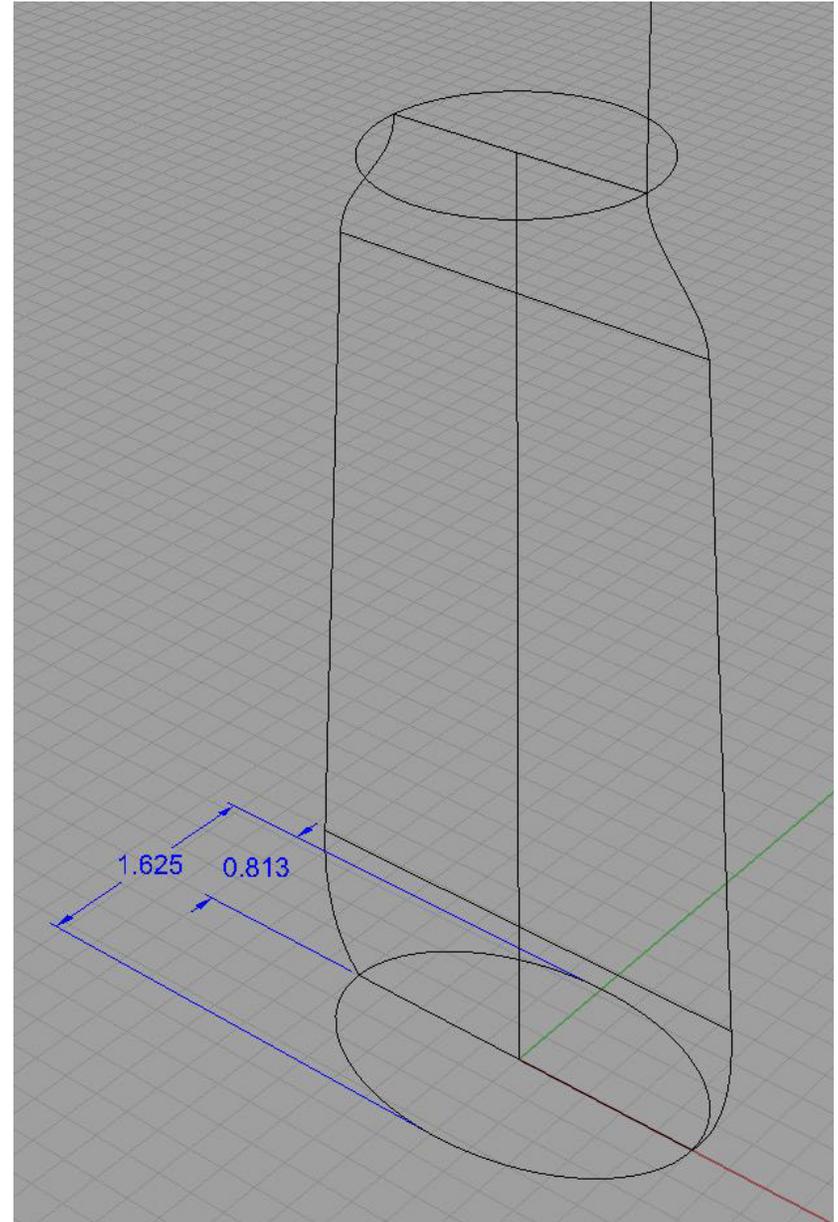
6. Mirror the two adjustable blend curves to the opposite side
7. Join the blend curves to the angled lines to create two separate curves



8. Draw a circle with centerpoint that coincides with the endpoint of the vertical construction line and has a diameter that snaps to the end of the adjustable blend curves

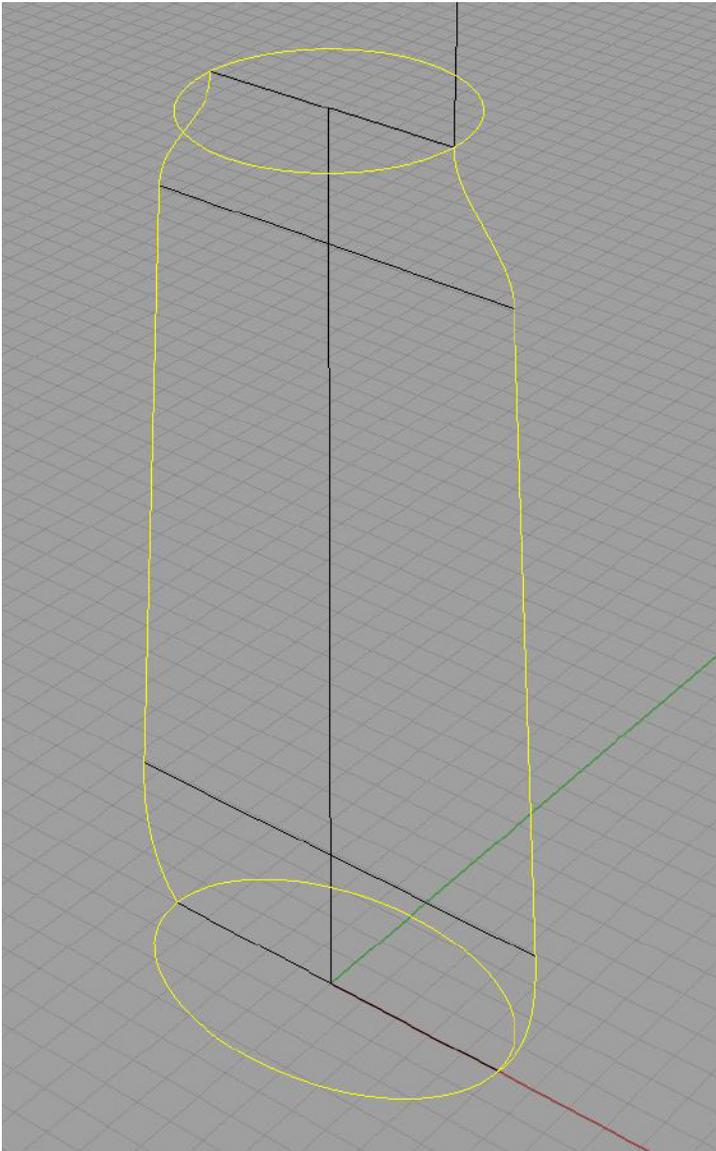


9. Draw an ellipse with a centerpoint that snaps to the base of the vertical construction line, a major diameter that snaps to the endpoint of the bottom construction line, and a minor diameter of 1.625" (see image below for reference).

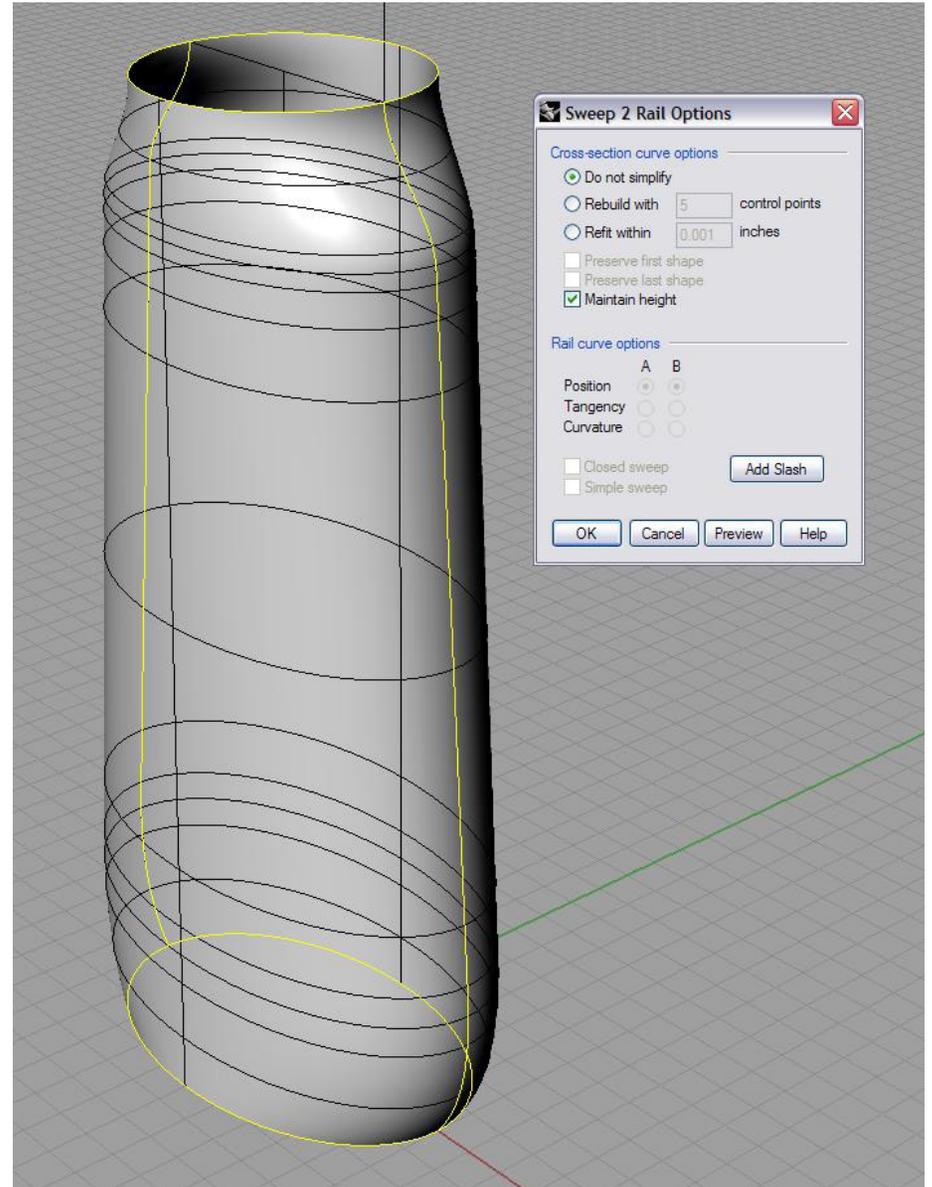


10. Turn on the shaded viewport, then launch the 2 rail sweep command (type "sweep2" into the command line, or from the menu choose Surface>Sweep 2 rails.

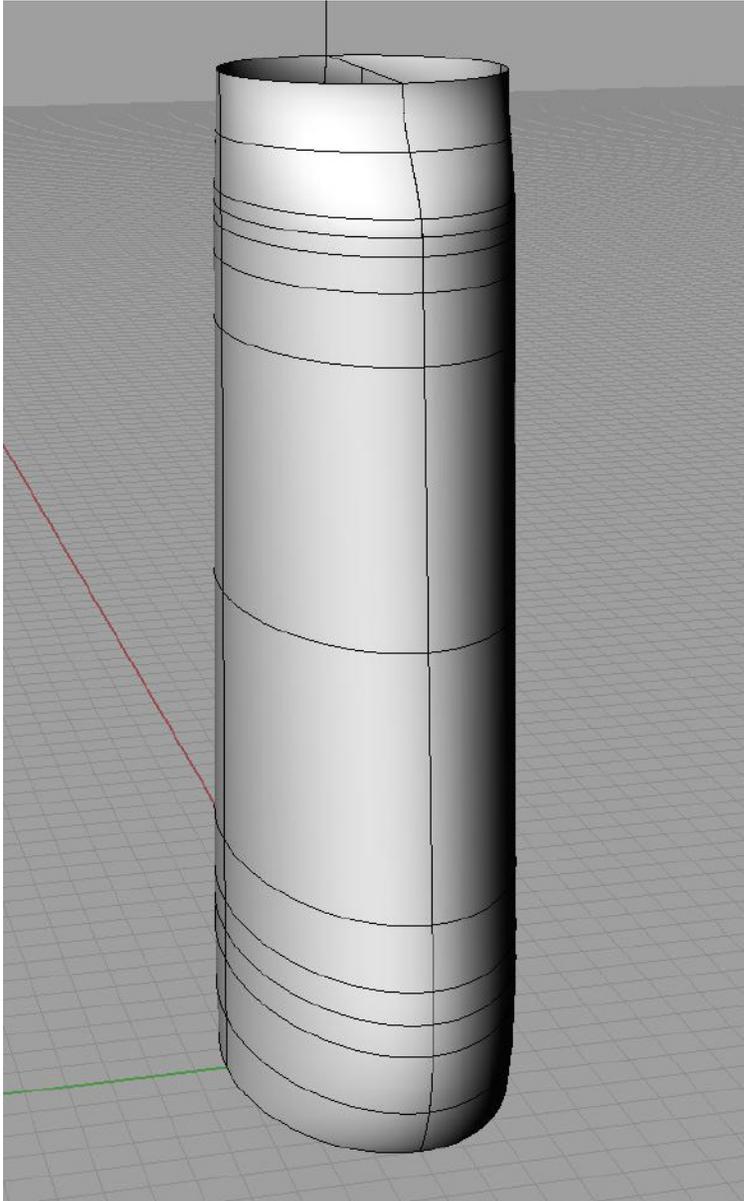
- select the one of the two joined curves as the first rail
- select the other of the two joined curves as the second rail
- select the circle and the ellipse as the cross section curves



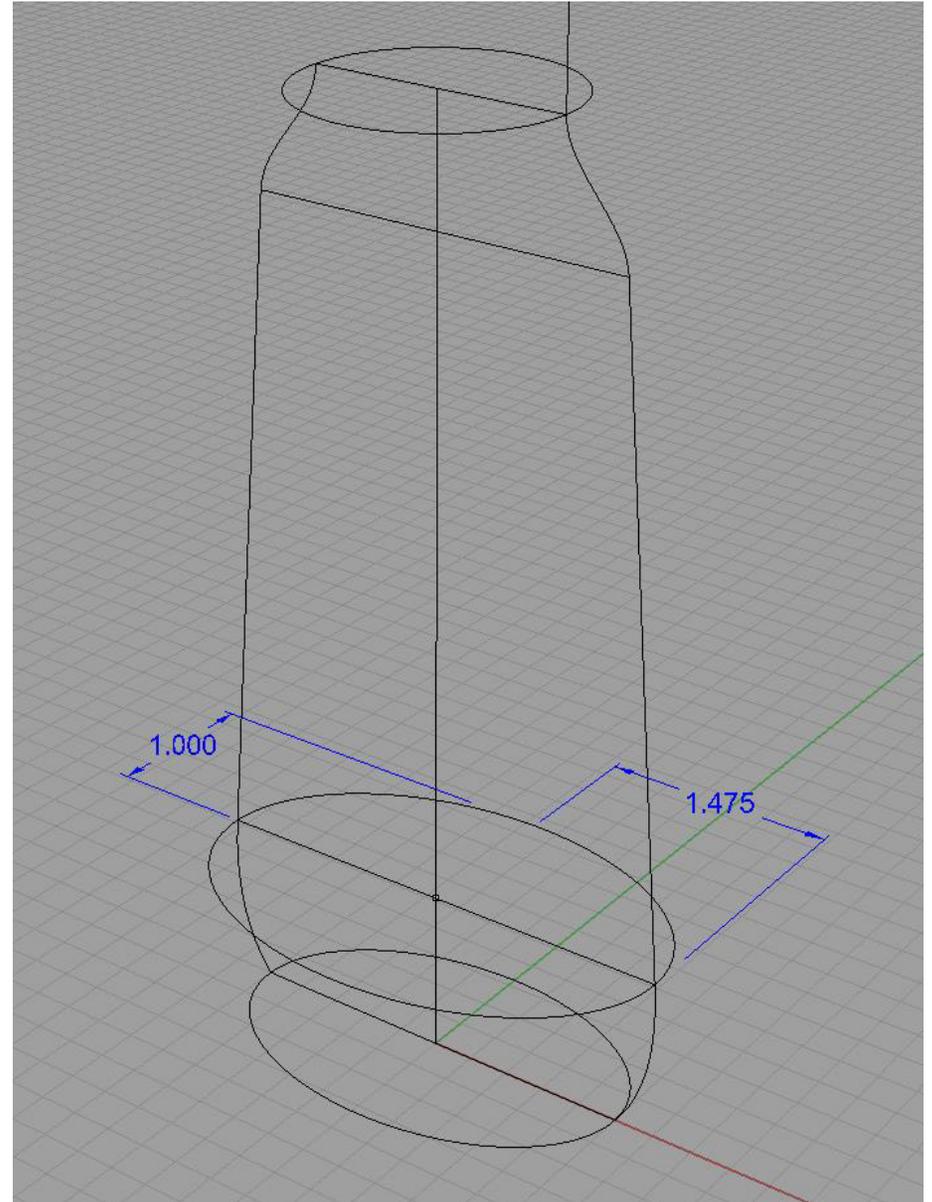
11. Press the preview button to compare the difference between the different "Cross Section Curve Options". Compare the difference with "Maintain height" checked and unchecked. With "Do not simplify" and "Maintain height" checked, click OK to build the surface.



12. Examine the resulting surface. Notice that the front view is a good match, but the side profile is flat and not reflective of the true shape of the container. To have more control over the side profile of the model, another cross section will be added and the sweep 2 rail command will be tried again. Delete the surface to clear the workspace for the next attempt.

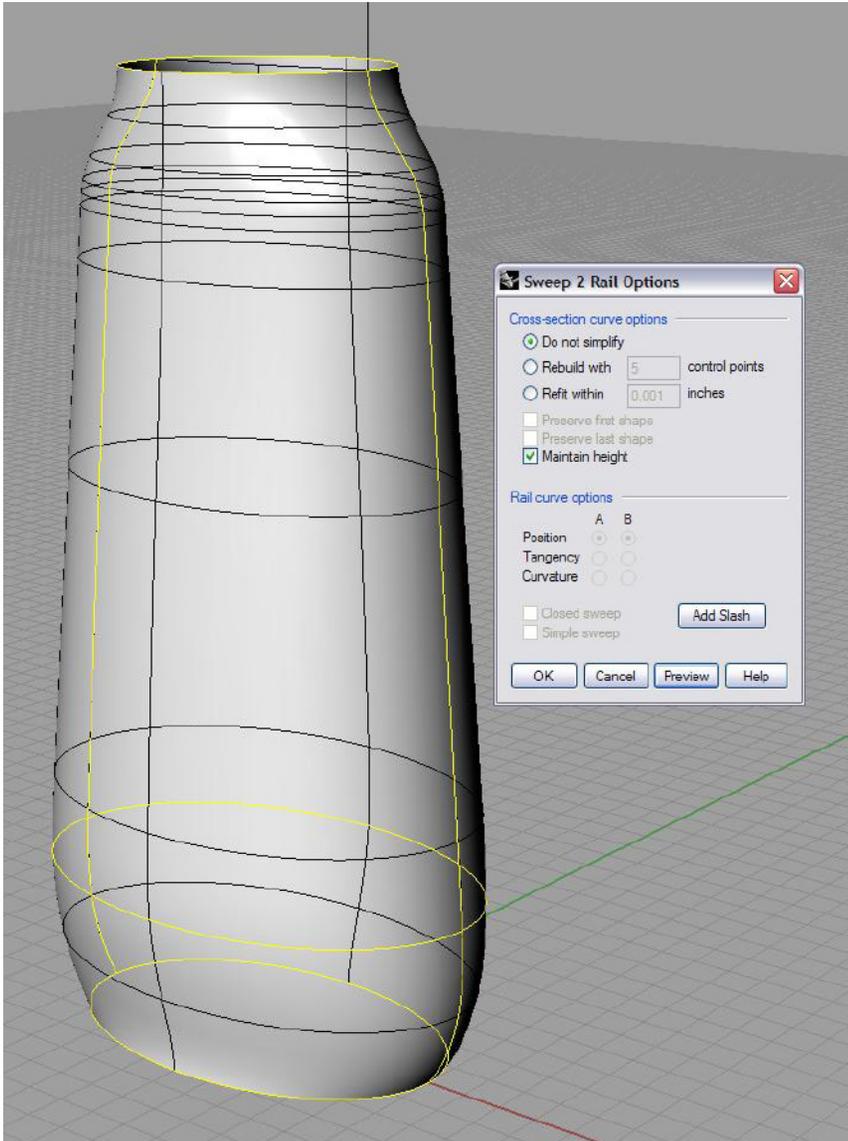


13. Draw the ellipse indicated below

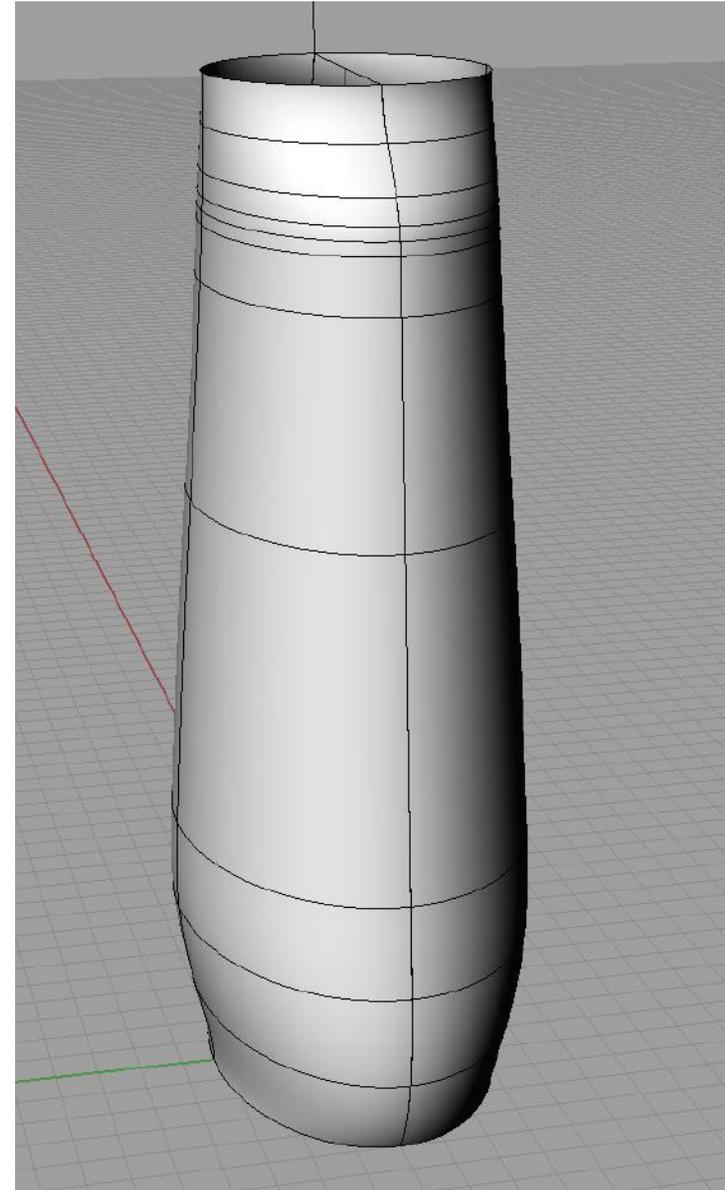


14. With the "shaded viewport" mode active, launch the sweep 2 rails command.

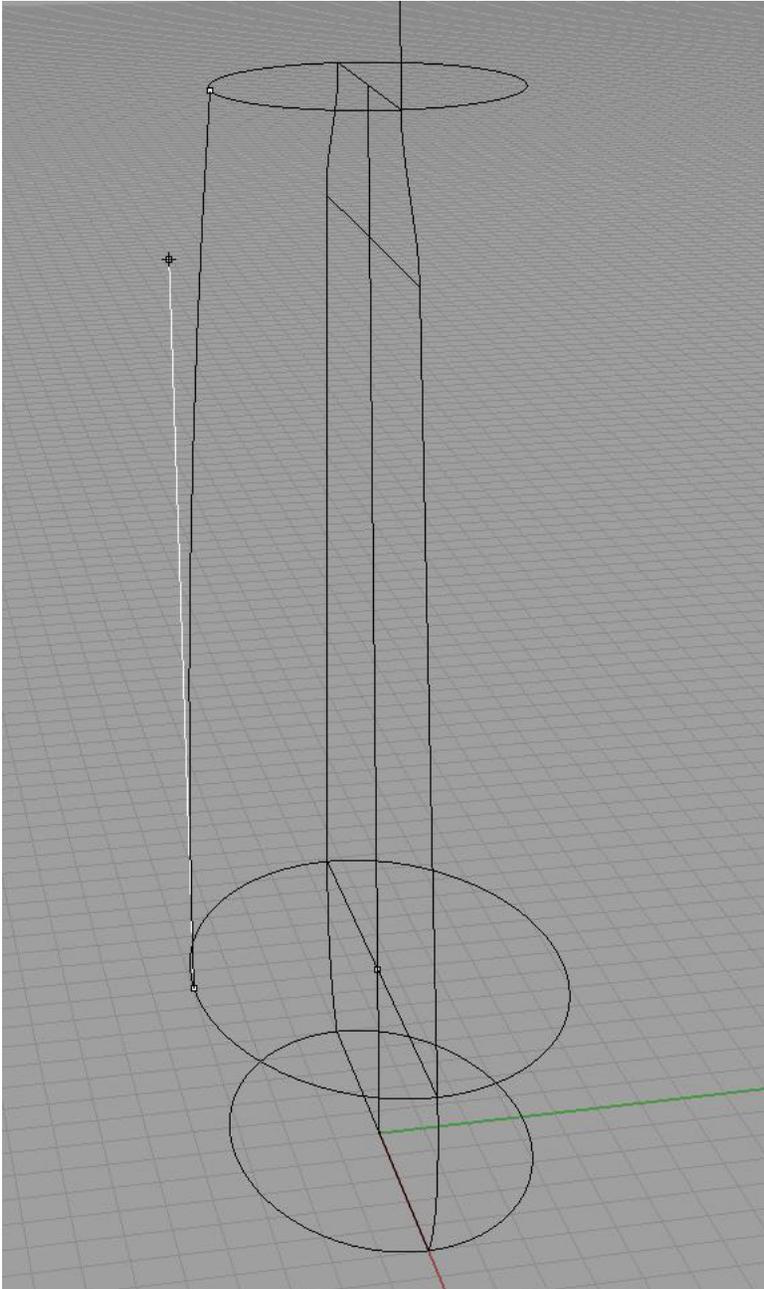
- select the same two curves for the rails that were used in the previous attempt
- select the two ellipses and the circle as the cross section curves
- compare the options with different configurations - use the preview button to check the results without committing.
- with "Do not simplify" and "Maintain height" selected, click OK.



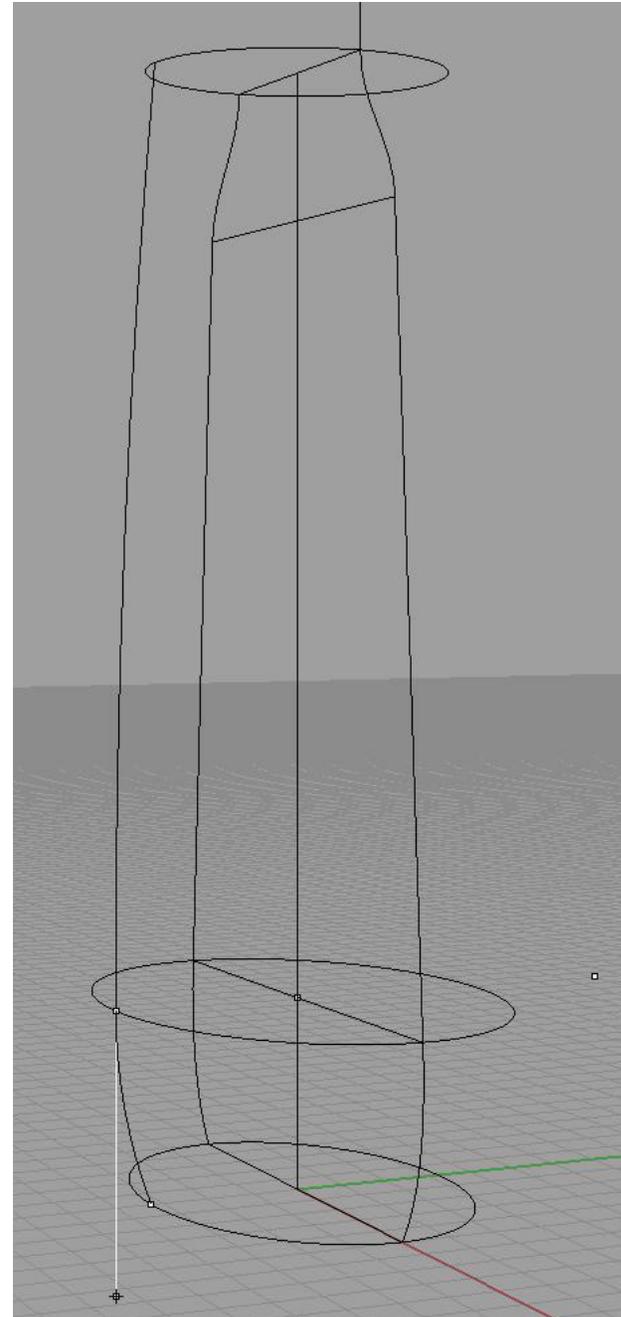
15. Examine the resulting surface. Notice that the front view is a good match, and the side profile is an improvement, but still not reflective of the true shape of the container. To have more control over the side profile of the model, additional rails will be created to build Curve Network Surface. Delete the surface to clear the workspace for the next attempt.



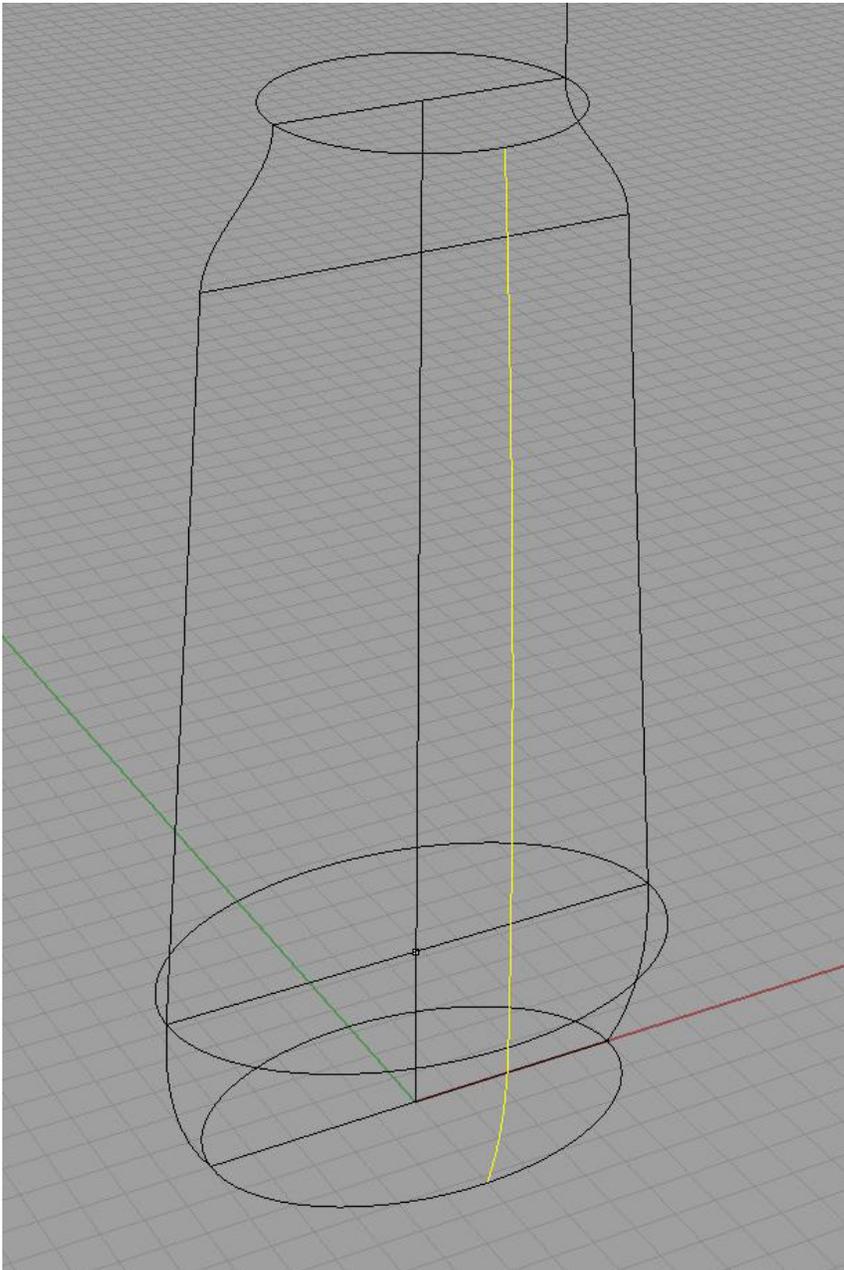
16. Draw a tangent arc that starts at the quadrant of the middle ellipse, ends at the quadrant of the top circle, and is vertically upward as the direction at start.



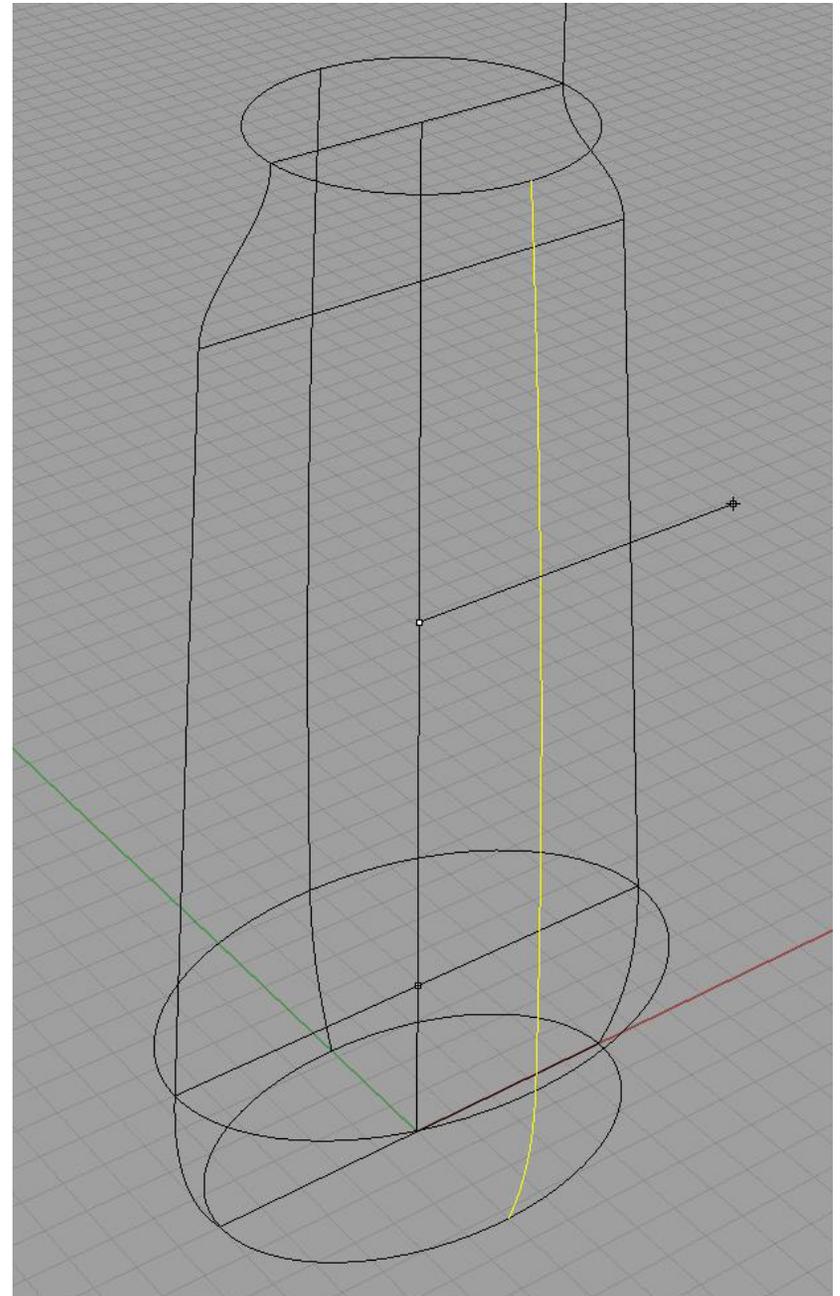
17. Draw a tangent arc that starts at the quadrant of the middle ellipse, ends at the quadrant of the bottom ellipse, and is vertically downward as the direction at start.



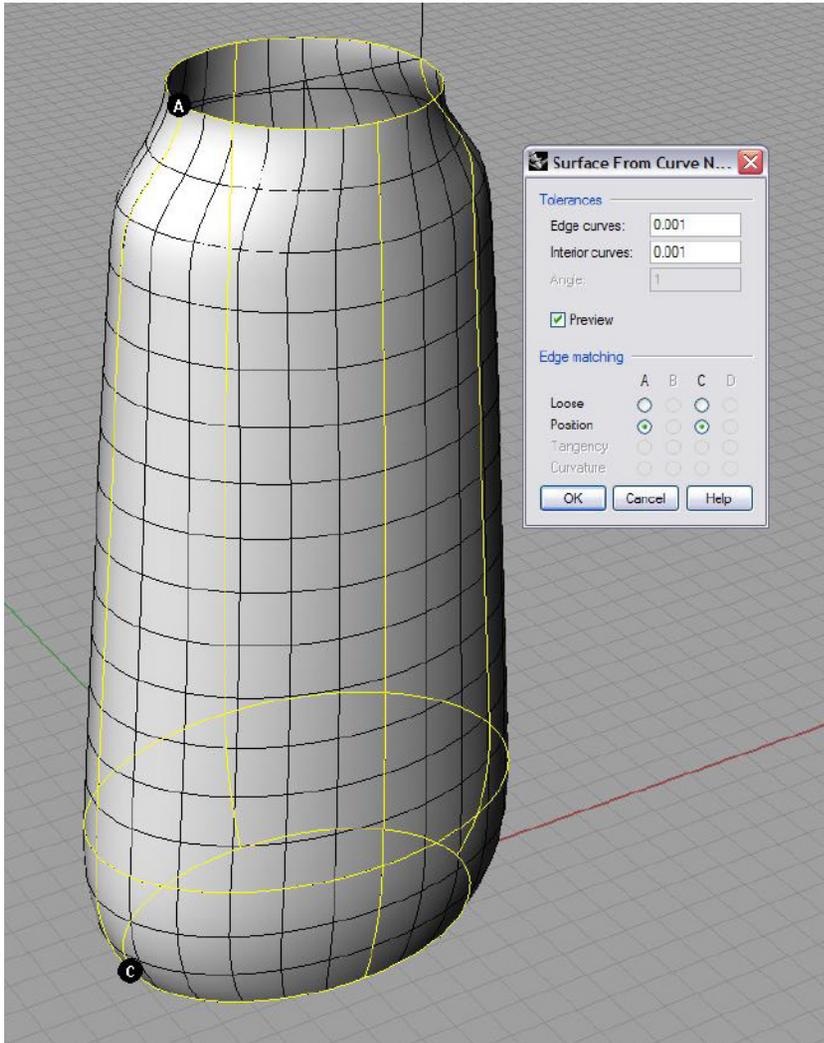
18. Join the two tangent arcs into a single curve



19. Mirror the joined tangent arcs to the adjacent side.



20. Launch the Curve Network command (type "NetworkSrf" into the command line or select from the menu Surface>Curve Network).
- select the 4 vertical rail curves and the three horizontal cross section curves
  - press enter to complete the selection process
  - set the tolerances to .001" (for both) and set edge matching to "Position". check the "Preview" box to preview the results.
  - click OK to build the surface



21. Examine the resulting surface. This surface now captures the true shape of the container, but it was built with a minimum of input curves. For more information about the Curve Network Surface command, see the help file.

