A. Add Configuration.
Step 1. If necessary, open your Beam1 part file.

Step 2. If necessary, click Model tab at the bottom left of the graphics area.

Step 3. Click Configurations Manager tab in the Feature Manager to display the Configuration Manager, Fig. 1.

Step 4. Rename Default Configuration to BOTTOM TRUSS, Fig. 1. To rename, slowly click the Default name and key-in the new name.

Step 5. Right click BEAM1 Configuration(s) part and click Add Configuration, Fig. 2.

Step 6. In the Add Configuration Manager set: under Configuration Name Fig. 3 key-in BEAM JOINTS click OK.

Step 7. Click Feature Manager design tree tab at the top of the Configuration Manager to display Feature Manager, Fig. 4.

B. Sketch for Weldments.
Step 1. Click the side face of long member and click Sketch on the Content toolbar, Fig. 5.

Step 2. Click Normal To on the Standard Views toolbar. (Ctrl-8)

Step 3. Click Line (L) on the Sketch toolbar.

Step 4. Draw vertical line up from top corner of member. Draw horizontal line across to right end of beam, Fig. 6. Use interfering line to align with right end of beam. Horizontal/Vertical sketch relation icon will appear.
Step 5. Click **Smart Dimension** (S) on the Sketch toolbar.

Step 6. Dimension 2 between **bottom edge** of beam and horizontal line, Fig. 7.

Step 7. Click **Line** (L) on the Sketch toolbar.

Step 8. Draw **3 vertical lines** from **top edge** of beam to top line. Draw one of the lines from Midpoint of beam edge, Fig. 8. Be sure lines create Coincident relation with top line. To terminate chain, double click back on the line you have just drawn.

Step 9. Draw **diagonal lines** from ends of vertical lines, Fig. 9.

Step 10. **Right click drawing and click Select** from menu to unselect Line tool.

Step 11. **Ctrl click all three diagonal lines** to select all three. Release Ctrl key and click **Make Equal** on the Content toolbar, Fig. 10.

Step 12. Click **Exit Sketch** on the Sketch toolbar.

Step 13. Save. Use **Ctrl-S**.
C. Structural Members.

Step 1. Click Weldments on the Command Manager toolbar.

Step 2. Click Structural Member on the Weldments toolbar.

Step 3. In the Structural Member Property Manager set:
   - under Standard: My Profiles, Fig. 12
   - under Type: Balsa
   - under Size: .125 x .125

   First click top horizontal line and then left vertical line, Fig. 13

   Click End Butt2, Fig. 12

   Confirm both members inside lines.


Step 5. Click Locate Profile button, Fig. 12.

Step 6. Click TOP RIGHT POINT of profile sketch, Fig. 14 and Fig. 15.

Fig. 13

Fig. 14

Fig. 15
Step 7. Click **Right** on the Standard Views toolbar. (**Ctrl-4**)  

Step 8. Click **New Group** (2) button, **Fig. 16**  

click the 3 **vertical members lines**, **Fig. 17**.

![Fig. 17](Image)

Step 9. Click **Trimetric** on the Standard Views toolbar.

Step 10. Click **Locate Profile** button, **Fig. 16**.

Step 11. Click **OUTSIDE MIDDLE POINT** of profile sketch, **Fig. 18** and **Fig. 19**.

![Wrong Member not on Member](Image)  
![Correct](Image)
Step 12. Click **Right** on the Standard Views toolbar. (**Ctrl-4**)

Step 13. Click **New Group (3) button, Fig. 20**

   click the 3 diagonal members lines, Fig. 21.

![Fig. 21](image)

Step 14. Click **Trimetric** on the Standard Views toolbar.

Step 15. Click **Locate Profile** button, Fig. 20.

Step 16. Click **TOP CORNER of profile sketch, Fig. 22 and Fig. 23.**

Step 17. Click **Right** on the Standard Views toolbar. (**Ctrl-4**)

Step 18. Confirm members appear as shown in **Fig. 24** and click **OK**.

Step 19. Save. Use **Ctrl-S**.
D. Trim Members.

Step 1. Click **Trim/Extend** on the Weldments toolbar.

Step 2. In the Trim/Extend Property Manager set:
- under Corner Type, **Fig. 25**
  - select **End Trim**
- under Bodies to be Trimmed
  - click the 3 **vertical members** (not center post), **Fig. 26**
- under Trimming Boundary
  - click in Faces/Bodies field, **Fig. 25**
  - click **bottom horizontal member**, **Fig. 26**
  - toggle the trimming callouts **below the horizontal member** to **Discard**

  ![Fig. 25](image)

  ![Fig. 26](image)

  click **Keep Visible** and **OK**, **Fig. 25**. The Push Pin on allows to trim additional members.
Step 3. In the Trim/Extend Property Manager set:
under Bodies to be Trimmed
   click the 3 diagonal members, Fig. 28
   uncheck Allow extension
under Trimming Boundary
   click in Faces/Bodies field, Fig. 27
   click bottom horizontal member, Fig. 28

click OK and click Cancel.
E. **Hide Sketch.**  
Step 1. Click **Sketch3** in the Feature Manager and click **Hide** on the Content menu, Fig. 30.

F. **Mirror Members.**  
Step 1. Click **Front Plane** in the Feature Manager to select the plane, Fig. 31.

Step 2. Click **Mirror** on the Features toolbar.

Step 3. In the Mirror Property Manager set:  
under **Mirror Face/Plane**, Fig. 32  
**Front Plane** should be selected
expand Bodies to Mirror
click **vertical and diagonal members except center post**, Fig. 33
click OK.

G. **Add to New Folder.**  
Step 1. Shift-click to select Sketch3, Structural Member1 and Features in the Feature Manager. Release Shift key and right click and select **Add to New Folder** on the Content menu, Fig. 35. To use Shift-click, click Sketch3, hold down Shift key and click Mirror1. Release Shift key and right click and select Add to New Folder.

Step 2. Key-in **LEFT TRUSS** for folder name, Fig. 36.
H. Mirror Left Truss.

Step 1. Click **Right Plane** in the Feature Manager to select the plane, **Fig. 37**.

Step 2. Click **Mirror** on the Features toolbar.

Step 3. In the Mirror Property Manager set:
- under Mirror Face/Plane, **Fig. 38**
  - **Right Plane** should be selected
- expand Bodies to Mirror
- click **all members of Left Truss** (all members visible in Side View except bottom horizontal member), **Fig. 39**
- click **Trimetric** on the Standard Views toolbar to view mirror
- click OK.

**Fig. 37**

**Fig. 38**

**Fig. 39**

**Fig. 40**

**Fig. 41**
1. Linear Pattern.

Step 1. Click Linear on the Features toolbar.

Step 2. In the Linear Property Manager set:
- under Direction 1, Fig. 42
  - for Pattern Direction
    - click vertical edge of a vertical member, Fig. 43
    - click Reverse Direction, Fig. 42
    - Direction arrow should point up, if arrow is pointing in wrong direction, unselect Reverse Direction, Fig. 42
- Spacing 1.875 or 2 -.125
  - expand Bodies to Pattern
  - click all cross members in Bottom Truss, Fig. 43
  - click OK.

Step 3. Save. Use Ctrl-S.