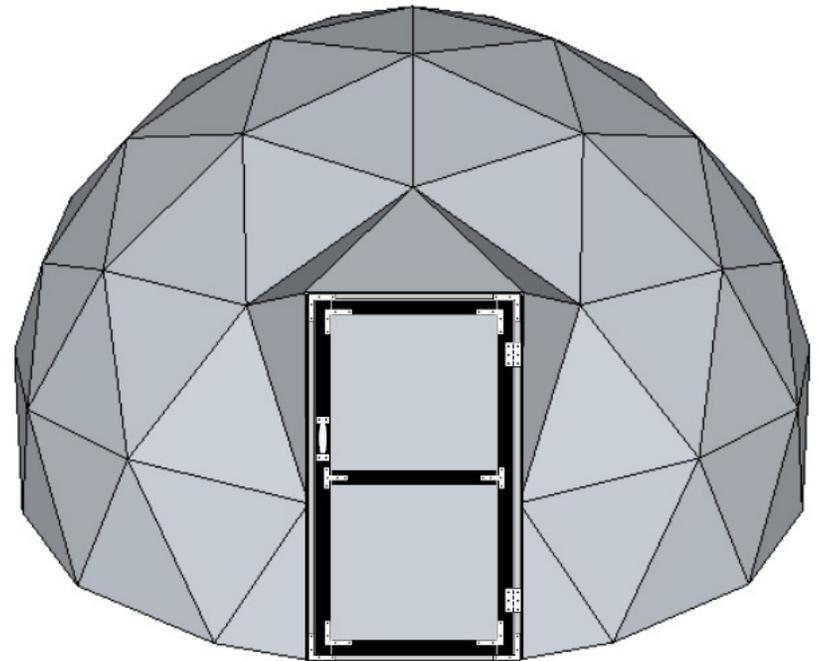




Sunrise Domes.com
Geodesic Solutions

Assembly Manual
- *3v Frequency* -
Star Doorway



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Rules For Safe Assembly

- **Wear safety glasses**
- Beware of sharp edges
- Use recommended tools when assembling
- Work on a flat, clean area free of clutter
- Keep children and onlookers out of the work area
- Use a step ladder for hard to reach places
- It is highly suggested that you do not work alone
- Never climb or stand on the dome, especially when the dome is not completed.

Unpacking And Loose Parts

- Remove boxes for nuts and bolts and put aside
- Remove struts from packaging and separate into piles.
- Place all pieces out of the way

Tools

- **7/16** inch Wrench and Ratchet
- Vice grips (highly recommended)
- Safety glasses
- Gloves
- Step ladder

Assembly Instructions

Note: Be sure to read through each step completely before attempting to start the step.

Step 1:

- Start by picking a point to work from. This will be called your datum. Place one of the pieces labeled D on the ground at this point so you remember where it is. This is the point above which your doorway will eventually be formed.

Step 2:

- Next you will need to lie out the initial ring of the dome. Count out 5 B's and 10 G's and place them on the ground, end to end, in a (G – B – G) (G – B – G) pattern starting at the datum. Once you have done this you may want to stand your stepladder on the ground in the center of the ring, as it may become difficult to get the ladder into the dome after construction has begun.

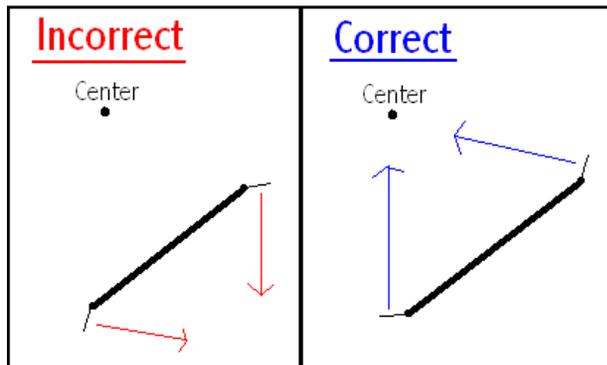


Figure 2 – Attention: The bent edges of each strut must be placed towards the center of the dome or the dome will not fit together.

Step 3:

- Count out 10 B's, 10 C's and 10 F's. Place these in a zigzag pattern of F - B - C - C - B - F on the ground, connecting tip to tail, starting at the datum. The pattern will repeat 5 times.

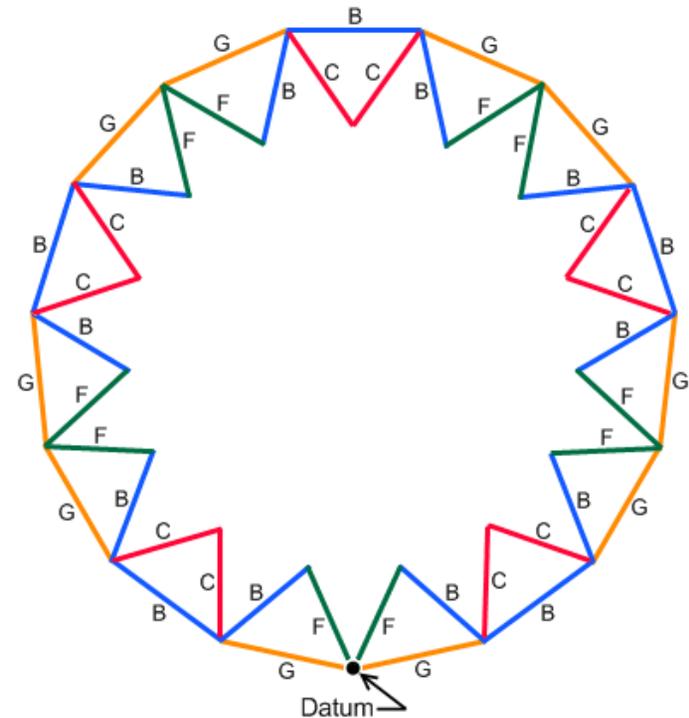


Figure 3 - F-B-C-C-B-F zigzag pattern along bottom row.

Step 4:

- Attach each joint with a bolt and nut. Tighten only as much as necessary to remove gaps between metal ends. If the dome is to be covered, make sure bolt ends are inserted facing inward toward the center of the dome. If the dome is to be uncovered, as in a trellis, you may want the bolts to point outward.

Step 5:

- Next count out 5 B's and 10 C's. Walk up the inward pointing triangles as gently and evenly as possible until they point upwards. If you don't have an assistant to help you, use chairs or other props to hold the ring as you go.

Beginning at the joint above the center of the Datum, use a repeating B – C – C pattern to connect the tops of the upward pointing triangles. See Figure 5.

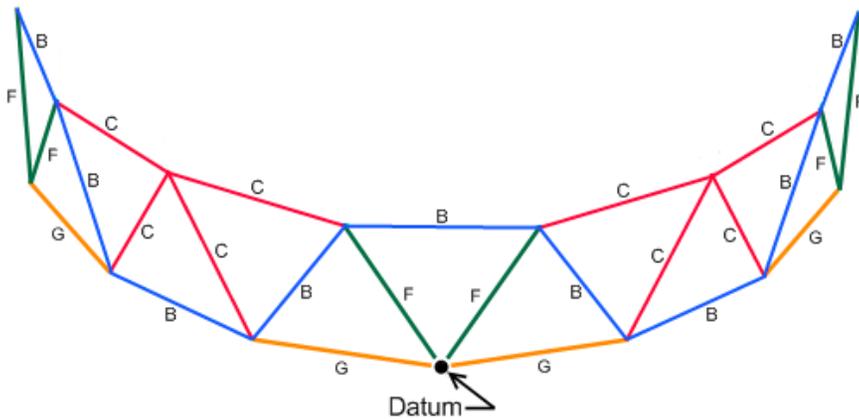


Figure 5 - Cross struts installed.

Step 17:

▪ At the top of the dome should now remain an empty pentagon. Connect an A strut to each of the pentagon's vertices and then connect all A's at the center. Congratulations, you have now completed assembly of the Basic Frame!

- If you purchased the optional door, proceed to the door installation instructions.

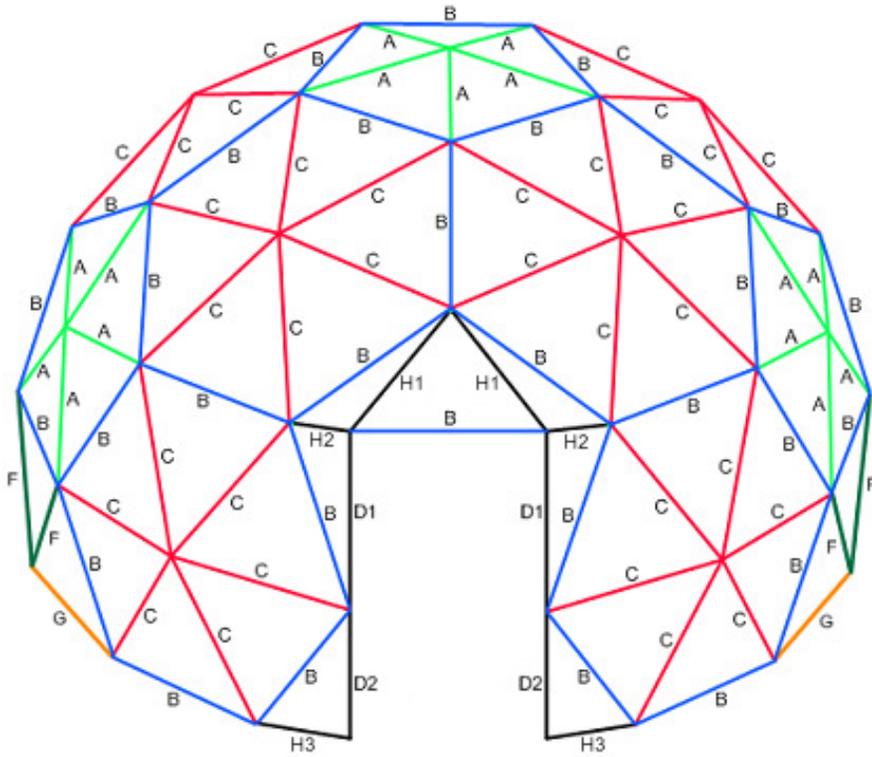


Figure 17 – Adding Vertical B struts.

Step 6:

▪ Count out 10 A's, 10 B's, and 10 C's. Beginning above the datum, use the repeating zigzag pattern A – B – C – C – B – A to make a new set of upward pointing triangles as shown in Figure 6 (the pattern will repeat 5 times). The new bolts you add in this step (and all subsequent steps) should point inwards, towards the center of the dome.

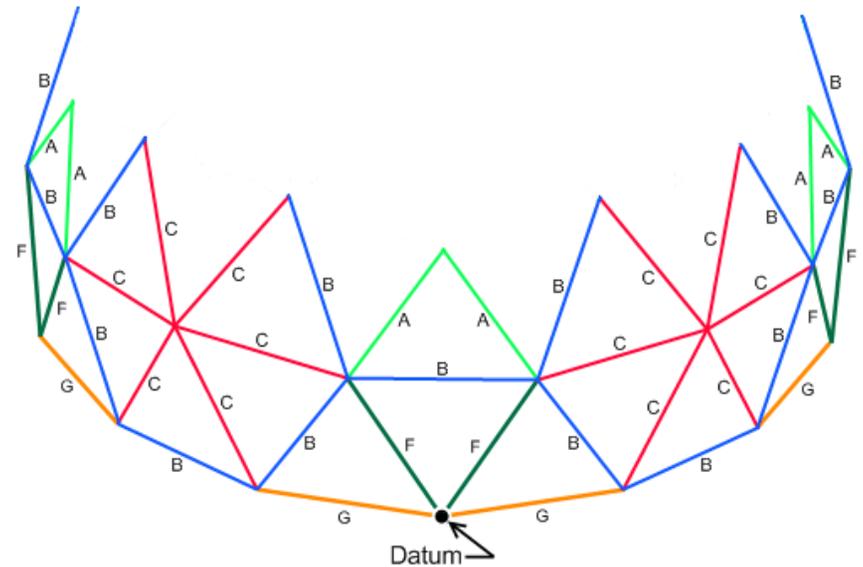


Figure 6 - Adding zigzag row (A-B-C-C-B-A pattern)

Step 7:

- Next count out 10 A's and 5 B's. Starting above the Datum, use a repeating A – B – A pattern to connect the tips of the triangles formed in the previous step. See Figure 7.

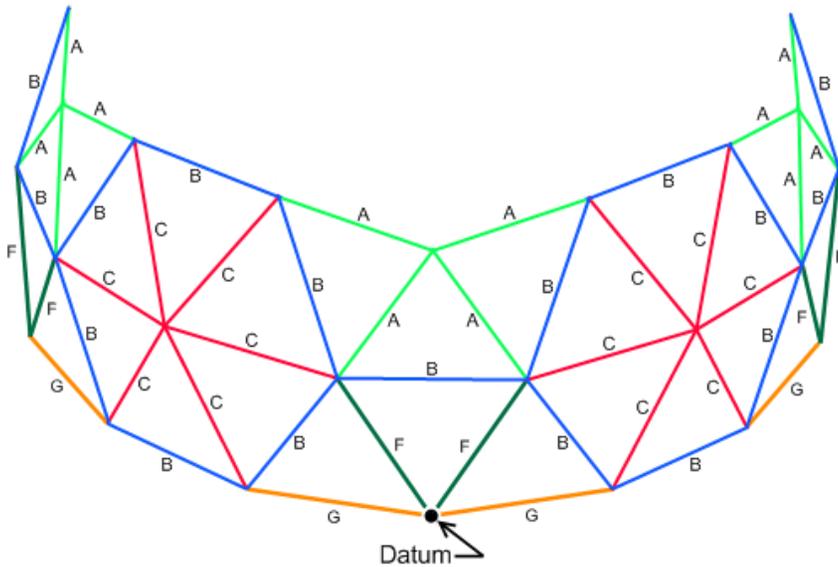


Figure 7 - Adding cross struts in A-B-A pattern.

Step 16:

- Count out 5 B's and use them to connect the tips of the triangles formed in the previous step. This will create the outline of the uppermost pentagon. See Figure 15.

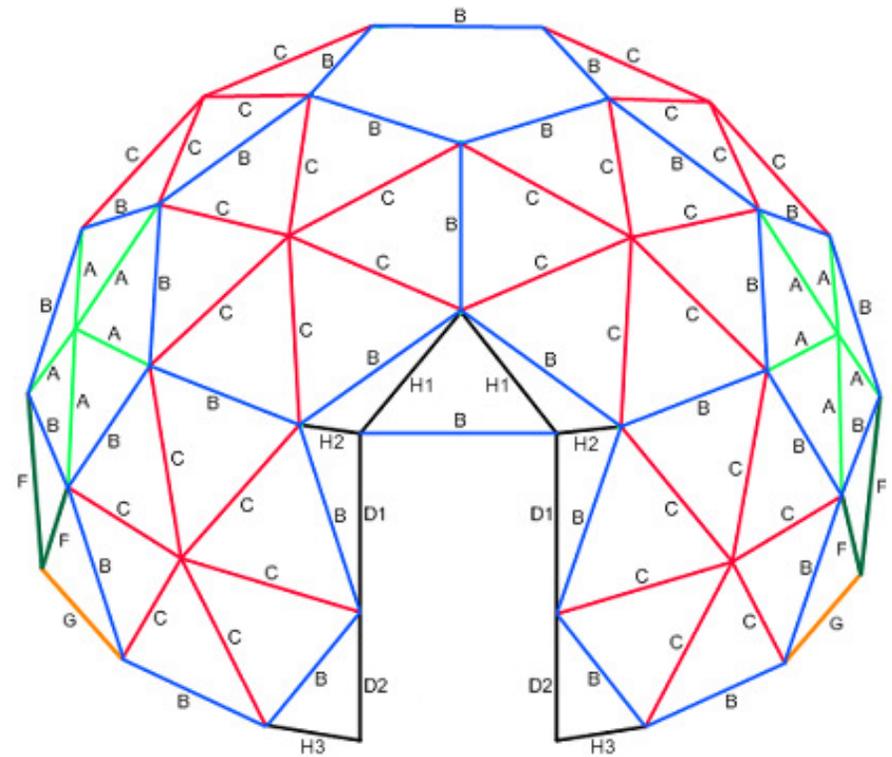


Figure 16 – Install 5 B struts.

Step 15:

- Count out 10 C's. First, connect two C struts to the tips of the vertical B struts installed in the previous step. Then swivel the new C struts to connect to the frame as shown in Figure 14.

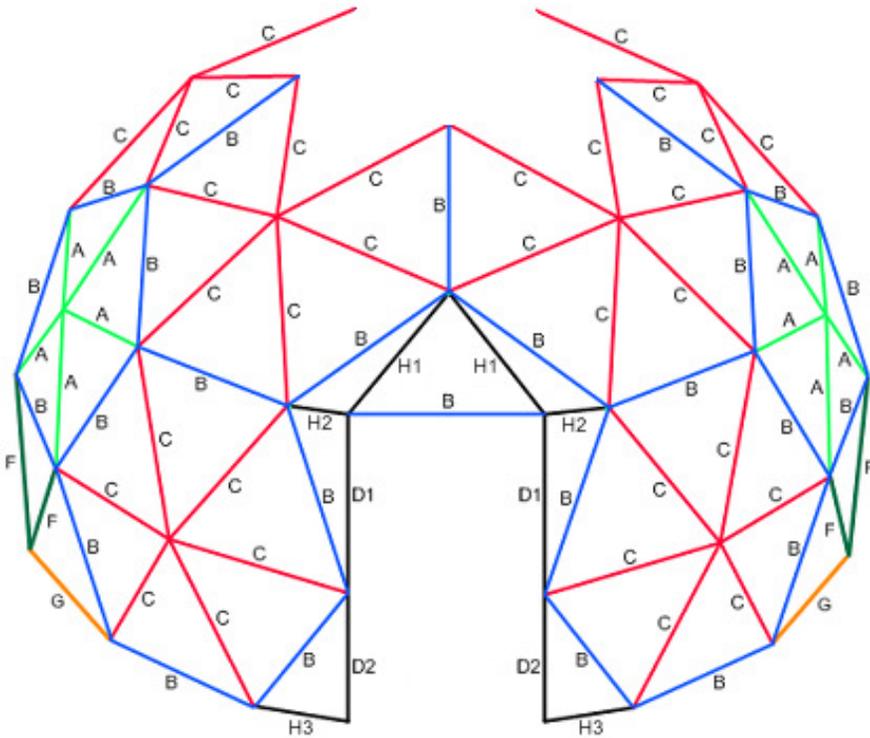


Figure 15 – Install 10 C struts.

Step 8:

- Next count out 5 A's. Install these struts in a vertical orientation so that they match Figure 8. Be sure you are installing each A strut at a joint where four other A struts come together.

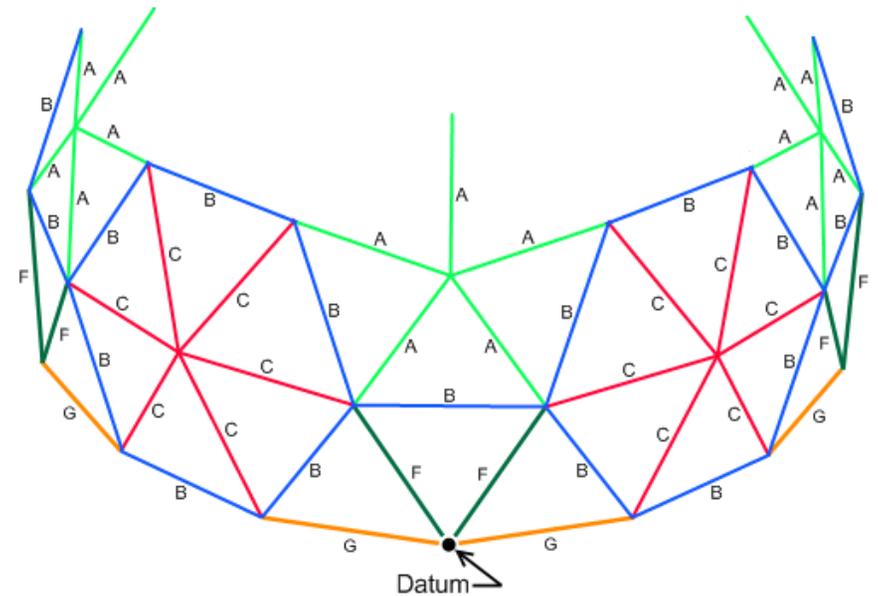


Figure 8 - Add 5 A's to the structure.

Step 9:

- Count out 10 B's, and 10 C's. In this step you will insert struts in a zigzag, B - C - C - B pattern, starting at the top of the vertical A strut above the datum. The first B strut should be connected to the top of the A strut, then swiveled so that it points diagonally downward to the right, and connected at its other end to the nearest joint. See Figure 9.

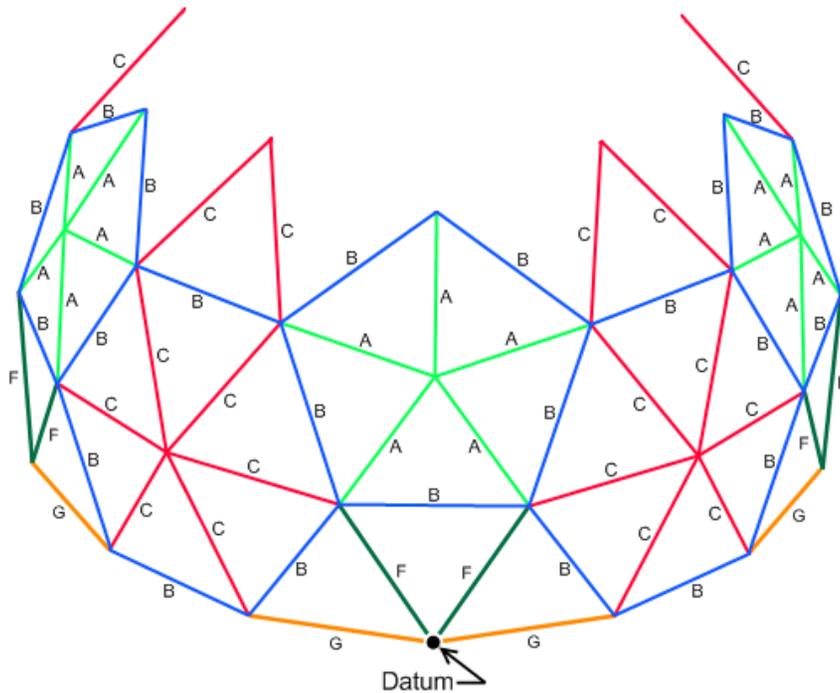


Figure 9 - Completing pentagons and adding triangles to cross struts.

Step 14:

- Next count out 5 B's. Install these struts in a vertical orientation so that they match Figure 14. Be sure you are installing each B strut at a joint where there is a vertical A strut beneath it, with the exception of the joint above the doorway.

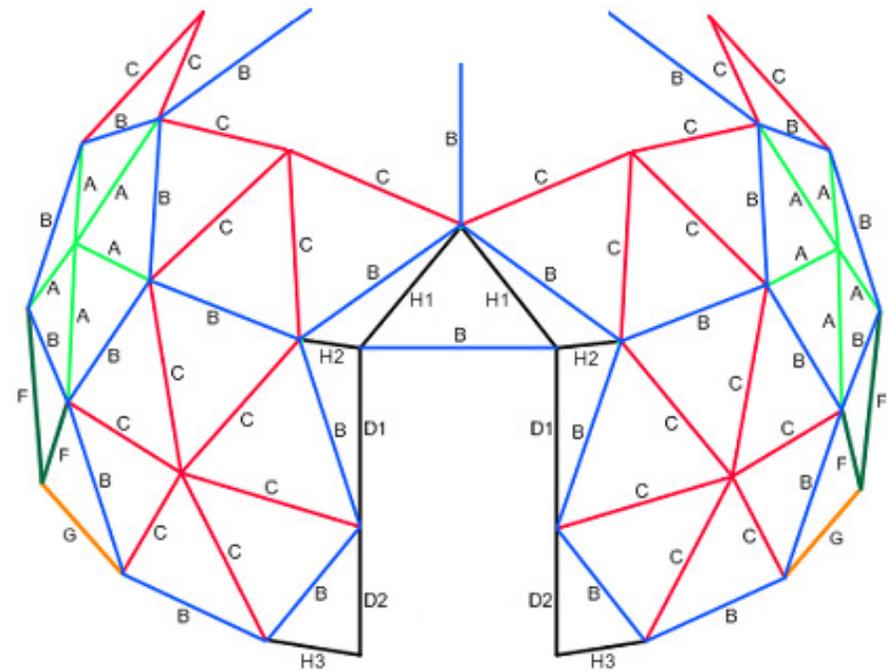


Figure 14 - Add 5 vertical B struts.

Step 13:

- In this step you will create the Star doorway. Install 2 R's, 1 B, 2 H1's, 2 D1's, 2 D2's, and 2 H2's in accordance with Figure 13 below.

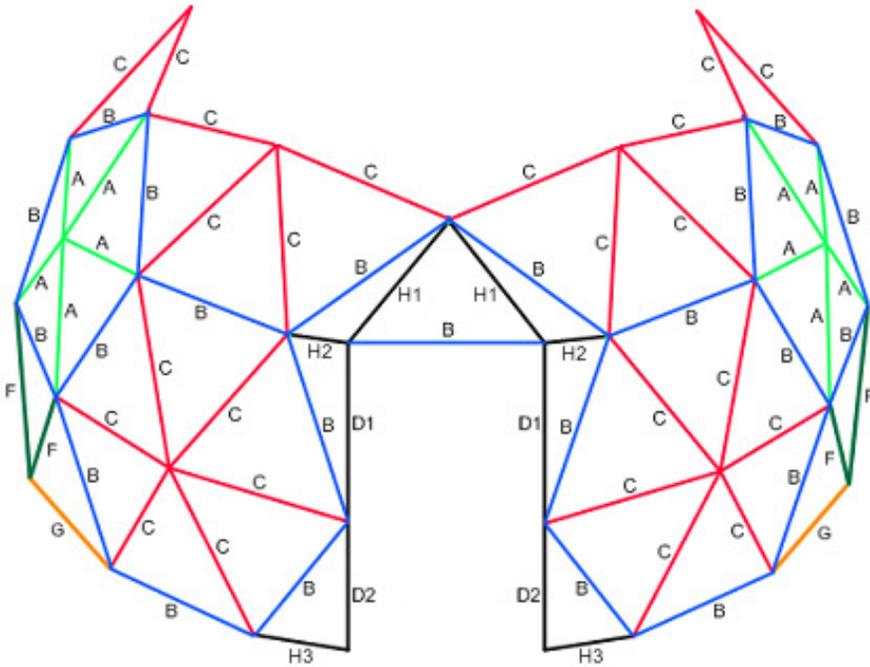


Figure 13 – Install the doorway struts.

Step 10:

- Count out 10 C's. Starting above the datum, use the C struts to connect the tops of each of the triangles formed in the last step. See Figure 10.

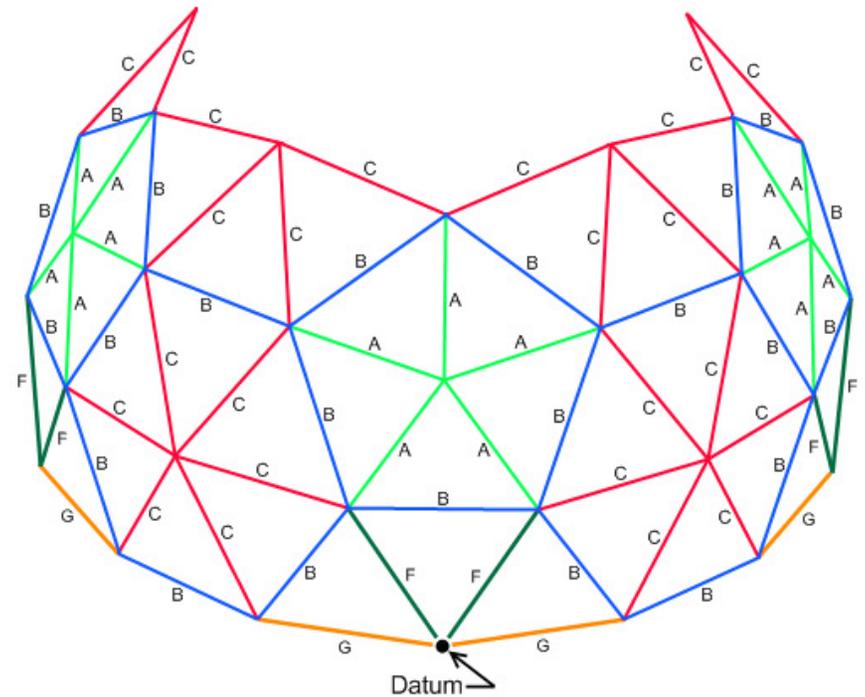


Figure 10 - Attach cross struts (All C's).

Step 11:

- In this step you will remove some struts to make room for the door. Start by removing the 5 A's above the datum. See Figure 11.

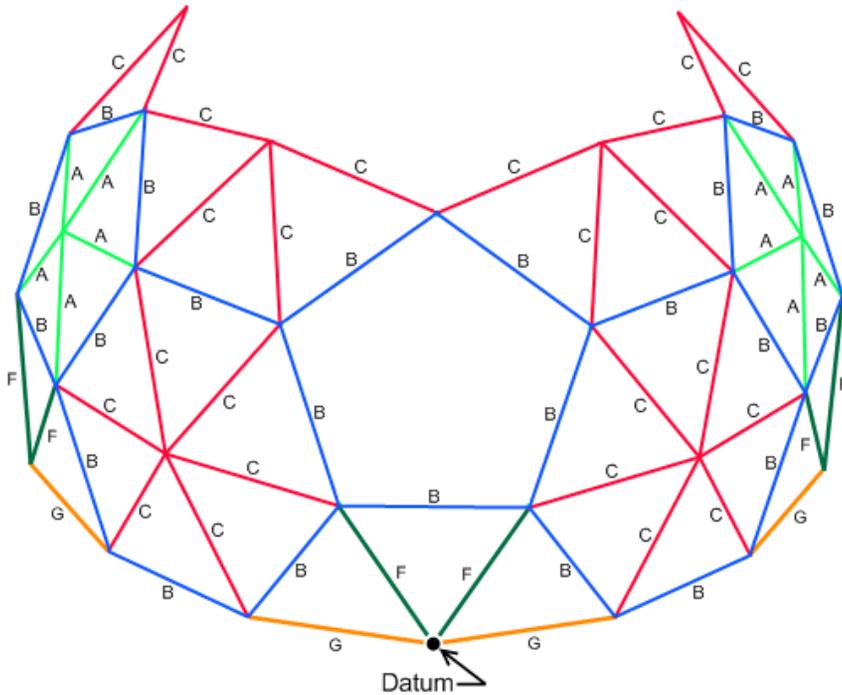


Figure 11 - Remove A's for door.

Step 12:

- Next remove the upside down triangle above the datum, consisting of struts B-F-F, as well as the 2 G struts to either side of the datum. See Figure 12.

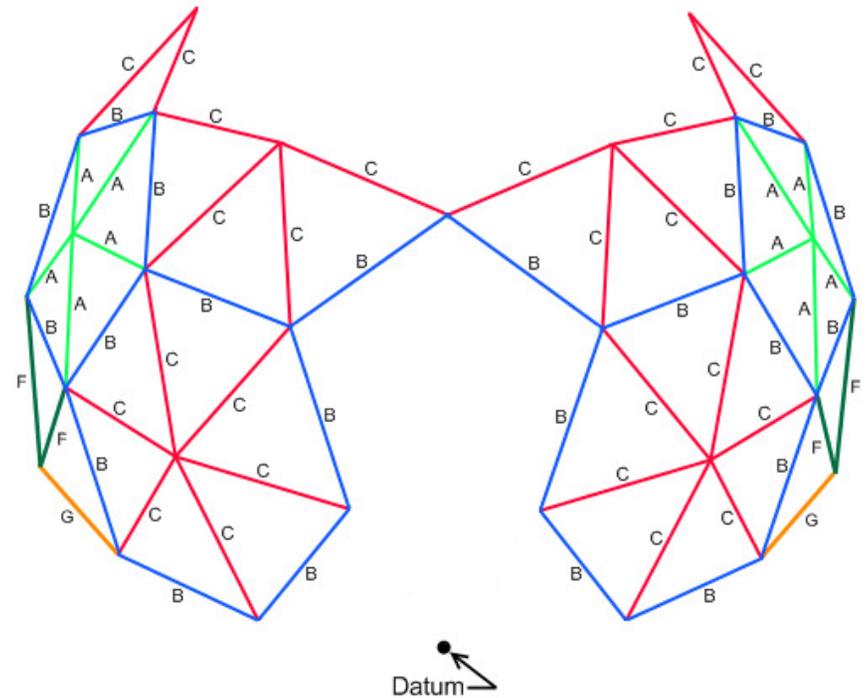


Figure 12 - Remove B-F-F triangle and G struts.