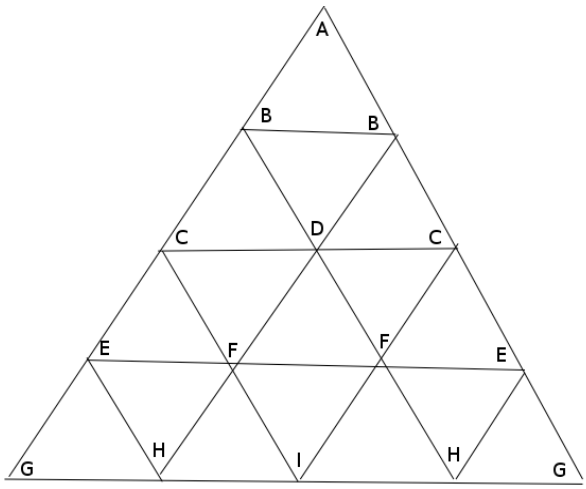
Low Profile Parabolic Dome

(Radius = twice the height)

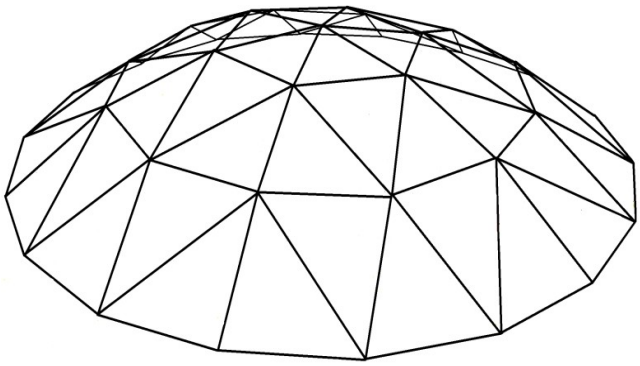


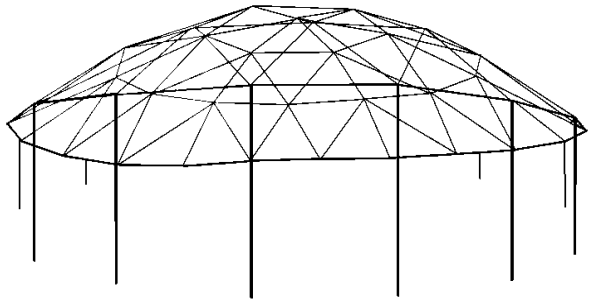
I first considered a parabolic format when I wanted to add space to an existing spherical dome. Of course once you have a half sphere, anything you add to the bottom of it is going to make the bottom diameter smaller. Not so with a paraboloid. Anything you add to the bottom edge will make it wider as well as taller.

The struts in the table below are identified in the left column in the table below, by the letters on their ends in illustration to the left.

Multiply the numbers in the “Chord Factor” column times the desired radius, to determine the length of each strut.

Note that the illustrations below shows only the innermost three courses, but the layout and table contain data for four. The illustration on the right shows the dome propped up at an angle.





Precision is essential here, because as you can see from this table there is less than one percent difference in length between the first two struts. Don't let this precision scare you, because I have already proven these calculations with two actual structures.

In “other radius” column you may name your own radius and list that value times the chord factors.

If you are doing a bolt-together structure, be sure to add 1” to your strut lengths so the center of your holes can be ½” in from each end.

Strut Name	Chord Factor	Length for 12'radius	Length for other radius	Strut Name	Chord Factor	Length for 12'radius	Length for other radius
AB	0.2519	3.0233		EF	0.2605	3.1257	
BB	0.2500	3.0000		EG	0.3322	3.9863	
BC	0.2670	3.2		EH	0.4018	4.8219	
BD	0.3237	3.8844		FF	0.2605	3.1257	
CD	0.2588	3.1058		FH	0.3407	4.0881	
CE	0.2948	3.5377		FI	0.3649	4.3786	
CF	0.3635	4.3622		GH	0.2611	3.1326	
DF	0.3135	3.5377		HI	0.2611	3.1326	