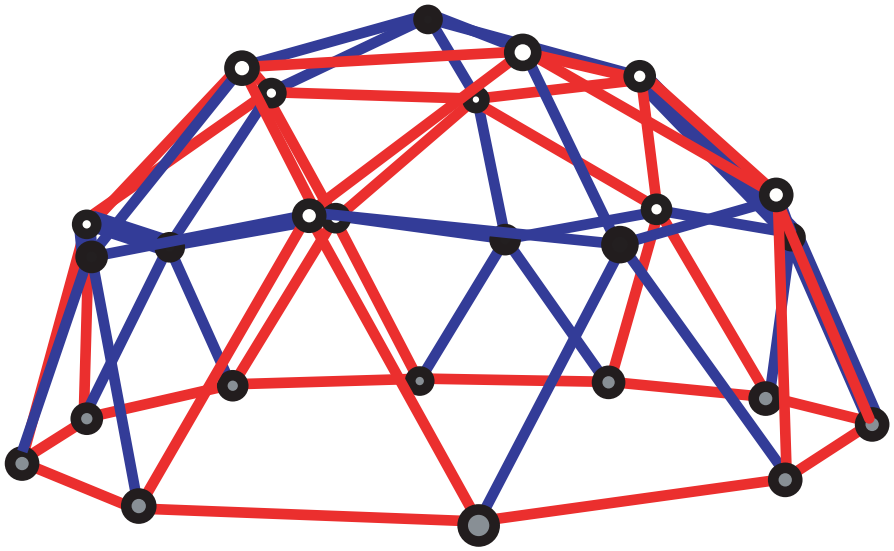
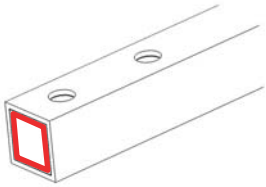
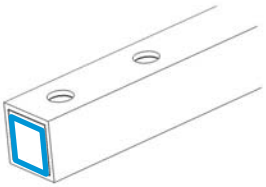


Geodesic Dome Kit

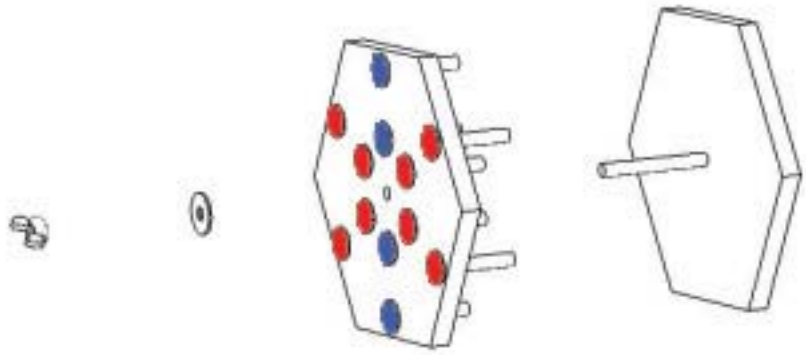
By Willy Yonkers



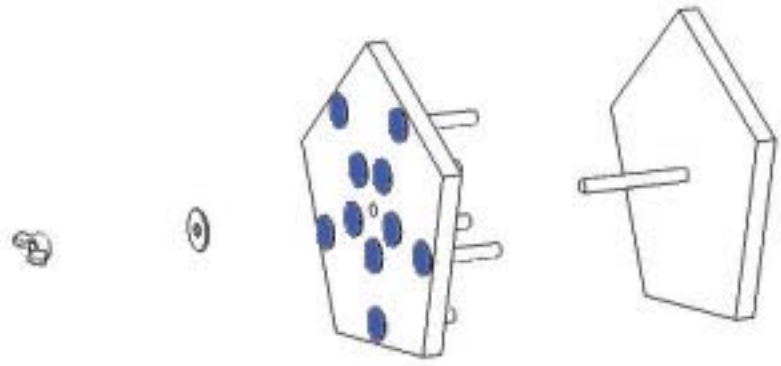
35 red struts (47")



30 blue struts (41 1/2")



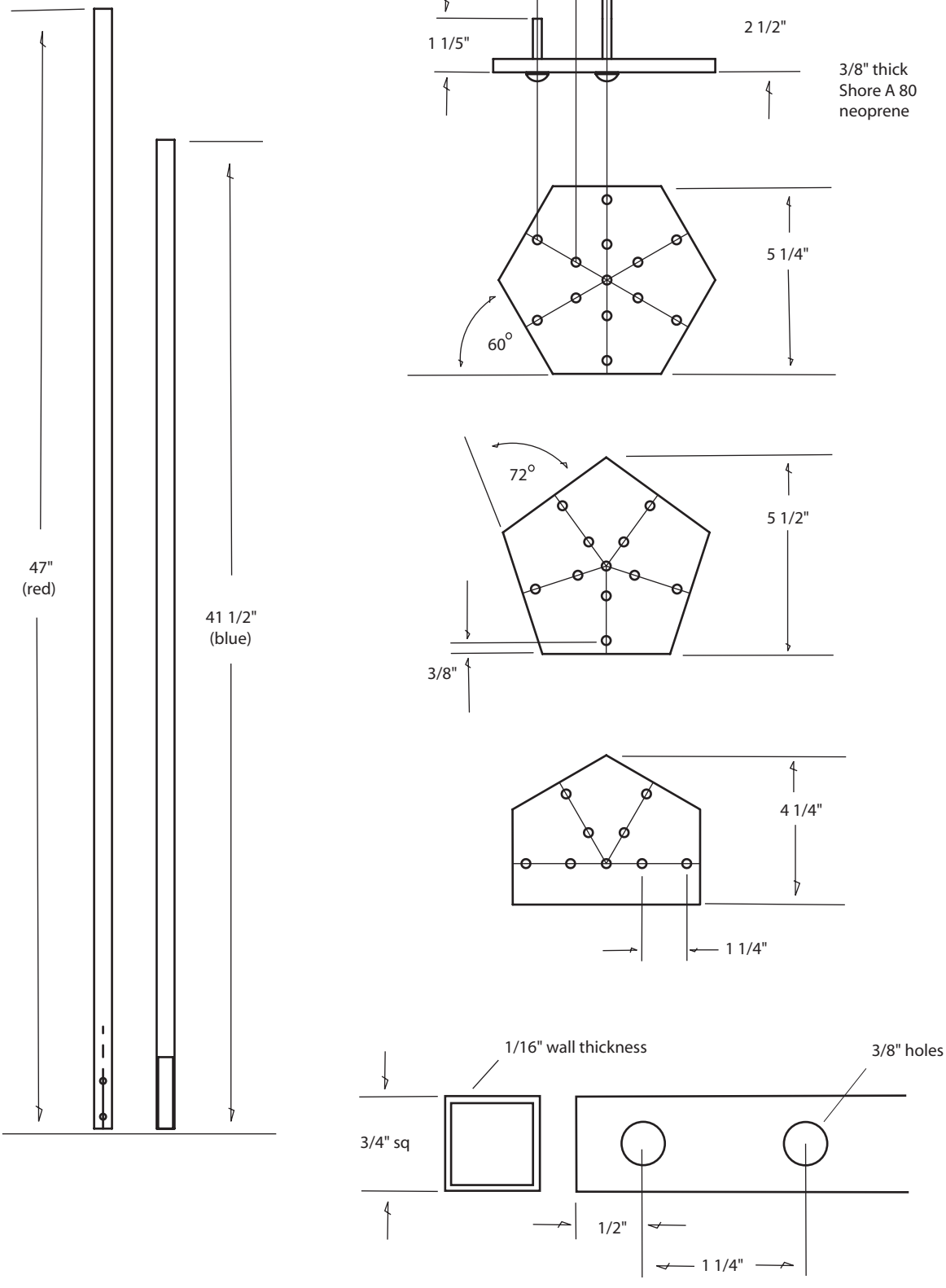
10 6 way hubs



6 5 way hubs

10 4 way hubs
(5 in each direction)

Geodesic dome - parts



Geodesic dome - dimensions

- The aluminum for the red and blue struts can be obtained online at McMaser Carr, or at an aluminum wholesaler at about half the cost. Look for places that sell "extruded aluminum" and also check to see if they'll cut it to length for you. If not, you can cut them on the chop saw.

- Rip wood for the inserts so they slip into the struts easily, and then cut them about 3 inches long. Paint and sand them before assembly so they will appear cleaner, like a plastic insert, not just a painted end of a stick. When you do glue in the inserts, use 5 minute epoxy, and just dab a bit on each side of the insert before sticking it in the strut. If they are tight, you can push them in against a wall, or if very tight, just throw the strut at the floor, like a spear to jam the insert in. I tried to avoid hammering them in because the struts seemed like they were bending.

- Drill the holes in the struts on the drill press using a good machinists vice clamped down to the table. I just put some tape with a mark on it to show me where to put the first hole, and then slid the strut to the edge of the vice for the other one. Make sure the far end of the strut is supported so the holes don't start getting more and more angled. Be very careful when drilling the holes, they are a bit bigger than the bolts, but if they are too far apart it won't fit, and will be garbage, or if they are not centered correctly, they look really bad.

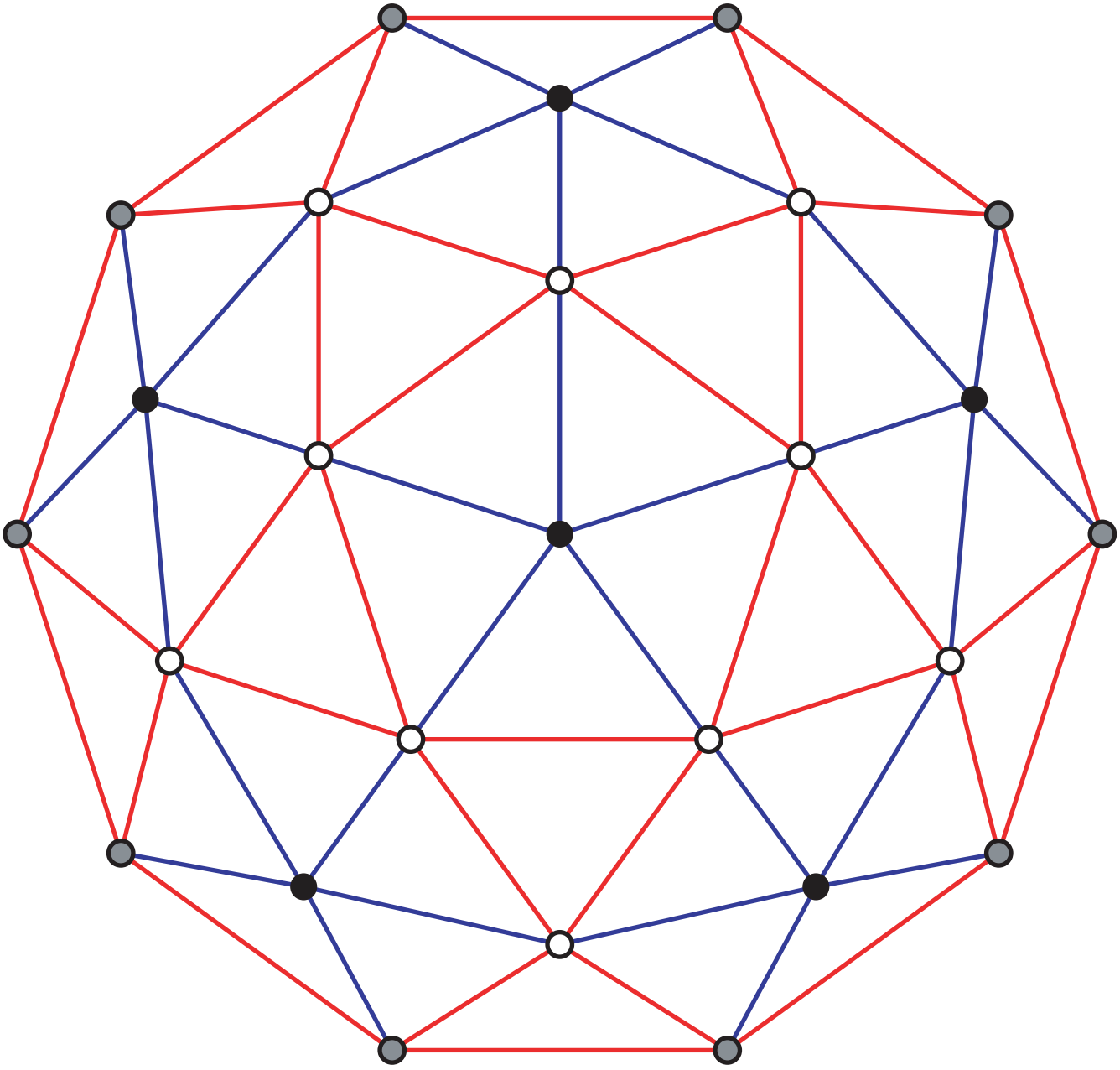
- Sand and de-burr all the metal parts to get rid of anything that might hurt the kids.

- The rubber sheet material for the hubs and caps can be obtained at McMaster Carr. It is "shore A 80 neoprene" (shore A 80 refers to the hardness, and neoprene is the kind of rubber) Cut the rubber only with a utility knife, or snap off OLFA blade - If you cut too much rubber with the power tools, **It Will Set Off The Fire Alarm.** Cutting with a knife works best if you bend open the cut as you go so there is less blade friction. Have plenty of extra blades handy.

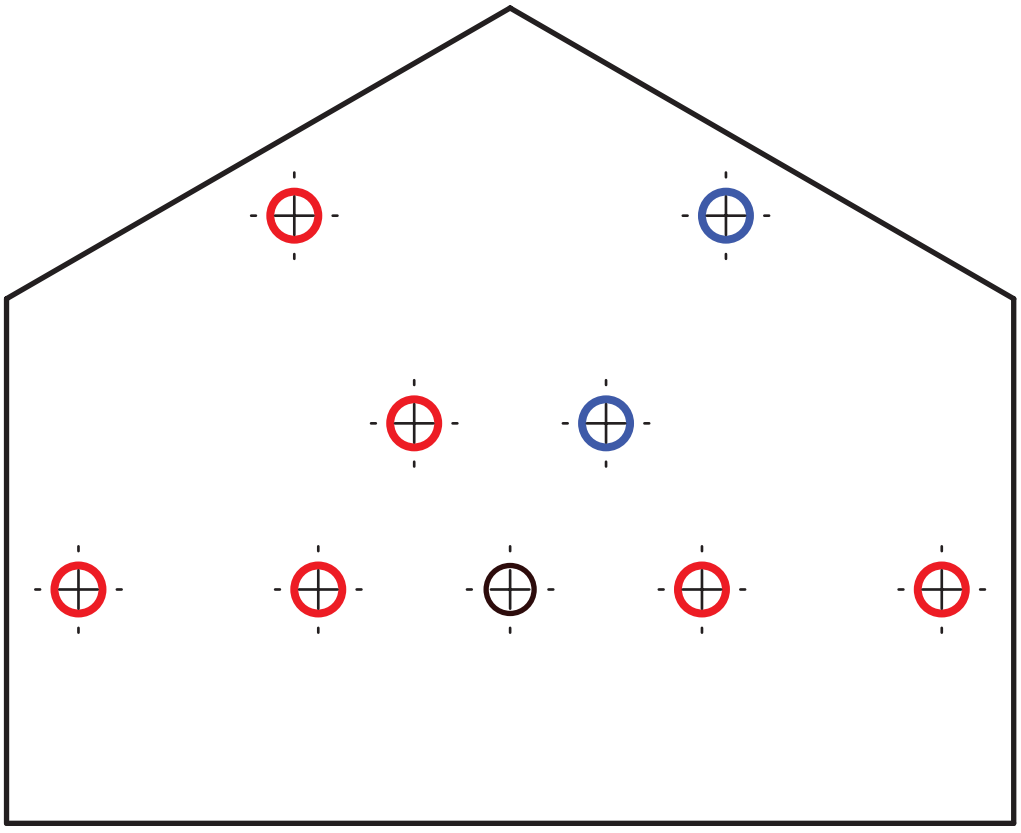
- Make templates for drilling the hub and cap holes out of at least 1/2 inch plywood and use a clamp to hold the template down,. Make sure you use a sacrificial board underneath, because the rubber really pulls the drill down when it's through.

- It's much easier and nicer looking to paint the bolts for the hubs before they are assembled.

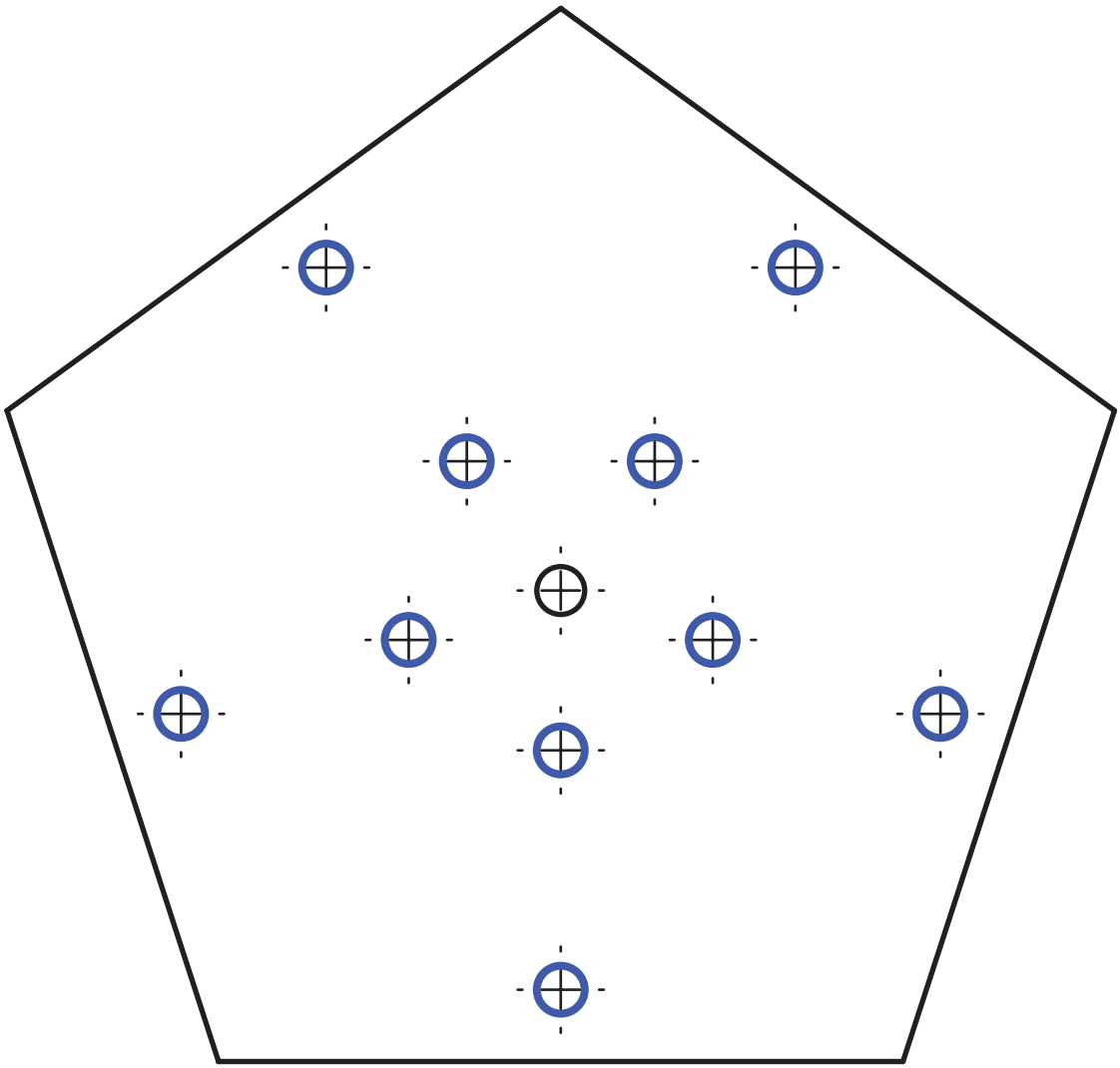
- Getting the bolts into the rubber is the most arduous part of the process. Sometime you will need to get them started by twisting them in with a pair of vice-grips. You can also simply push them in with your thumbs, but that really starts to hurt after about 5. I've had some success with positioning the hole over a gap in the table and hammering the bolts in that way. Without the gap, the rubber bounces too much, and never goes in. You can also experiment with the size of the holes, as drilling a 1/4 inch hole through rubber never produces a 1/4 inch hole.



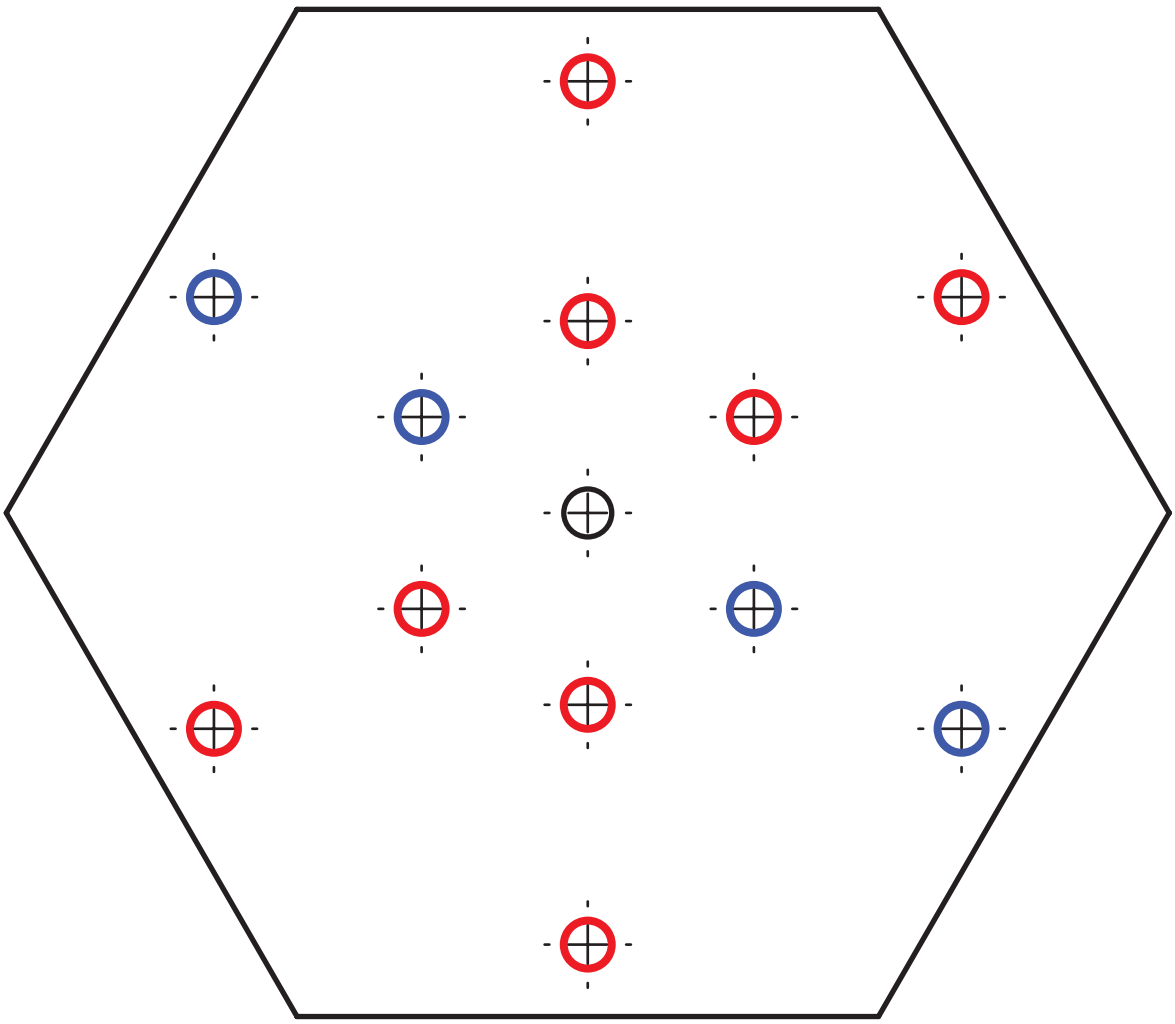
Geodesic dome - plan view



Geodesic dome - 4 way hub template (5 to the left, 5 to the right)



Geodesic dome - 5 way hub template (6 total)



Geodesic dome - 6 way hub template (10 total)