Flat Creek Observatory on Kerr Lake in NC

Bob White constructed in June 2004 this version of Scott Horstman's 11' 6'' square roll-off roof observatory. The first three photos are of the "finished" observatory. The subsequent photos outline some variations in the design.

The base used additional connecting joists, which framed the pier. The lower part of the pier was a cylinder of about 14” diameter and 30” deep. The upper part of the pier was poured later into a tube with 12” diameter and 48” high. Be sure to put the concrete into the tube from different directions so as to keep the tube vertical. The top of the pier is 26” above the floor.

The postholes were dug using a single-person auger and a hand digger. The auger catches on roots, rocks and phone lines. My back is still hurting and I have not yet gotten the repair bill for the phone line. Use a two-person auger and have the phone company mark the lines.

Warped lumber was the biggest construction problem. Select your lumber carefully. If the project is done over several weeks, then uneven drying of the wood will cause additional warping. Some of this can be partially corrected by applying water to the dried side, but in many cases I just had to buy new wood. Warped wood in the roll-off tracks (top and bottom) will cause the roll-off roof to be more difficult to move.

Use strings to make sure the tracks are level and parallel.

I used cedar siding and a metal roof. Both of these drove up the final cost by about $1.0K to $3.9K. The wood door was pre-hung with the top 12.5” cut off.

I used metal plates to achieve stronger bi-directional nail patterns.

The mounting plate had to be augmented to accommodate my equatorial mount, which has a metal cylinder extending into the tripod. This was done by cutting a 2” diameter hole in a 2”x6” lumber and using a 36 cents pvc 2” coupler for strength. This should be replaced by metal, but so far it has been acceptable.

The electrical is a single 20-ampere circuit with two sockets and dual lights on the north wall, and one outdoor light. The motor for the roll-off roof is considered “very cool.” My laptop just barely is able to connect to our home wireless internet.

I enjoyed doing this project and was able to easily follow Scott’s plans. The only thing not included was clear skies. But, I fixed that by using these chimes, which expel all unwanted clouds at night.