

## Antenna Assembly Instructions

These instructions are furnished by Paul Atkinson and Jim MacLean. We have had excellent results with many installations up to the present. This antenna is a version of the classic turnstile reflector which you will find discussed in various ARRL handbooks etc. It is non directional, rugged, weather protected, and reasonable to build.

Begin with a 2" PVC pipe end cap with flat end. Drill holes as in figure 1. Make the bottom of the hole tangent to the end cap bottom. Redrill the holes as in figure 2 to allow the elements to be inserted from the inside. Cut four elements from 1/4" aluminum rod 20 5/8" long. Measure carefully; cut accurately. Install a terminal lug in the end of each element as shown in figure 3. Tin the lug before you install it. Insert the elements into the end cap and align in an "X" on a flat surface. Space as shown in figures 4 and 5. Fill the end cap with epoxy glue to cover the rods but not all the terminal lugs! Use the 2 hour kind not five minute kind. Prepare an harness as shown in figure 6 and connect according to figures 4 and 6. Be careful here to do a neat, short-lead job which doesn't break or short. Pay attention to the diagram or you will get the wrong polarization sense. Tie up the harness carefully into a loop which will fit into the 2" PVC pipe support. The RG 62 forms one loop and the RG 58 loops twice. Goop up the junction area with lots of Silicone II for protection and support. A piece of 2" PVC pipe is the vertical support and most preamps will fit about one half way down the pipe where it will be out of the weather. Let the cable exit out a hole near the base. The base is anything you can dream up which will support the antenna 31" above a ground screen. We use hardware cloth which lies on the roof or in a wood or PVC frame. The ground screen dimensions are not critical but should be at least 3' square. You don't have to tie the screen to ground. A flat roof works best but shallow pitch roofs work also. One installation mounted the antenna at the roof peak and let the screen bend down on both sides of the shallow pitch. Rocks or sandbags or sand in the PVC structure pipes holds the antenna down.

This works well for us. Experiments may yield improved performance. If you build this antenna from our instructions, let us know how you did and any comments to improve it. Other references include Dr. Taggart's column in 73 Magazine, ARRL Antenna Handbook, The Satellite Experimenter's Handbook (ARRL), The Weather Satellite Handbook.

Good Luck,

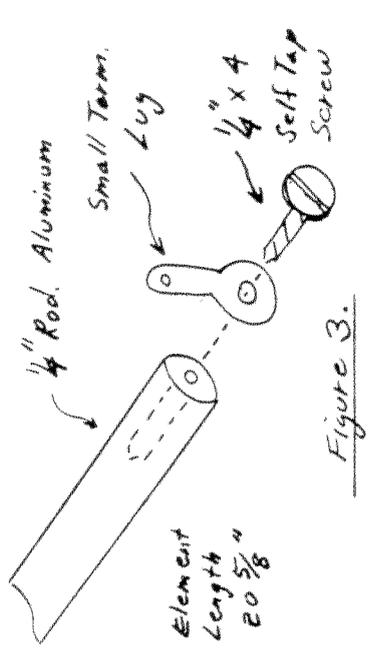


Figure 3.

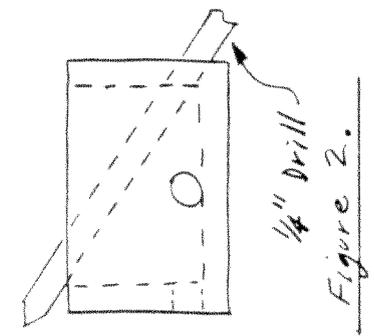


Figure 2.

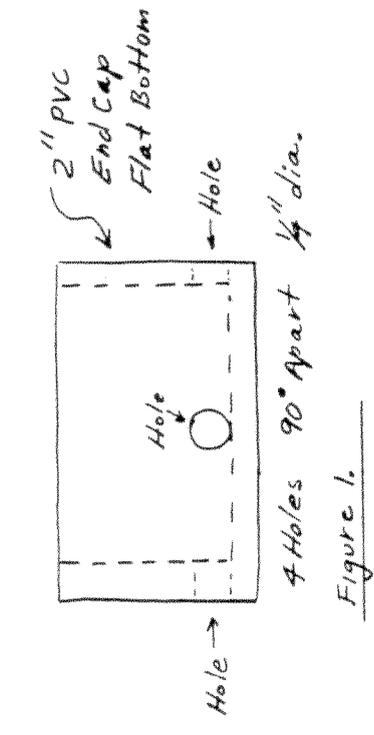


Figure 1.

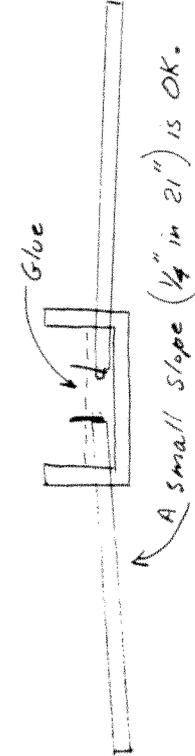


Figure 5.

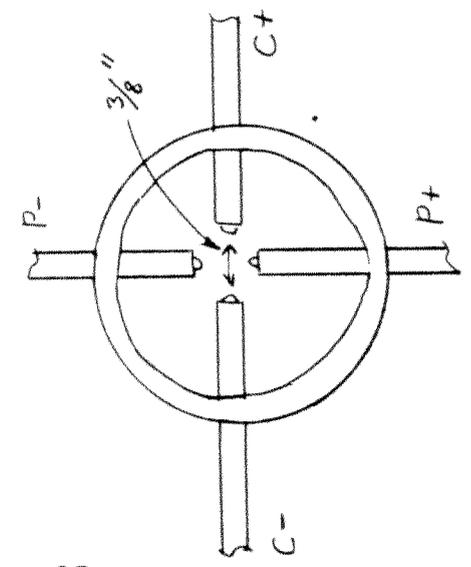
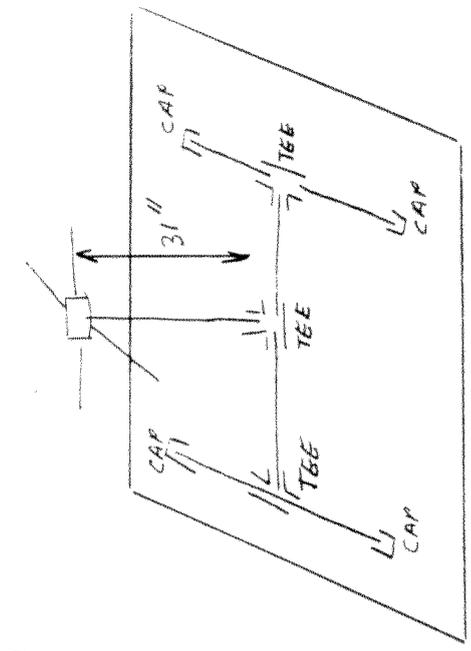


Figure 4.

Bottom view - looking into the open end of the PVC Cap



1/4" Hardware Cloth 3' x 5' (roughly)

Antenna Elements are 31" above hardware cloth. Figure 7.

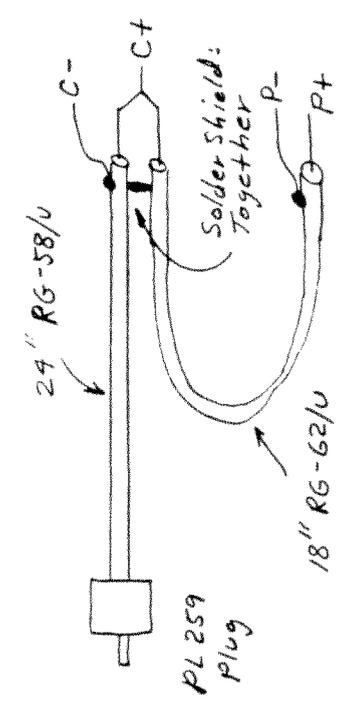


Figure 6.