

BCARA 2M Cubical Quad Antenna Construction

This antenna was designed with standard cubical quad formulas for 145 MHz to calculate the lengths of the wire elements but the antenna came out instead resonate closer to 146 MHz.

The Boom utilized is a Square 1-1/4" white Vinyl railing Balusters made by Fiberon P/N 44551 and found at Lowe's. It's far easier to drill the holes in the center of a flat surface than a round one. The Balusters are 33.5" long just enough to mount the antenna from the reflector end of the antenna if desired.

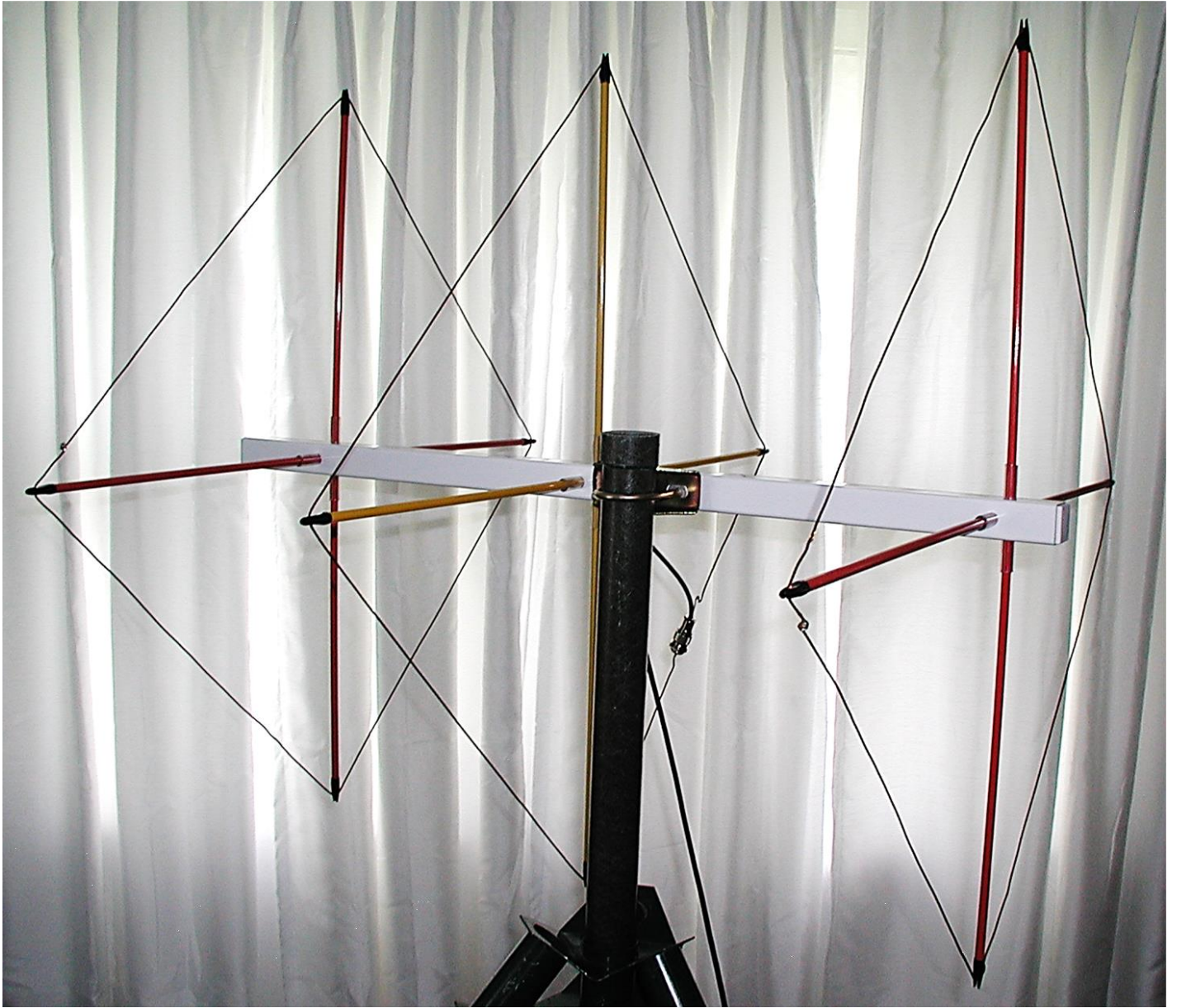
Clear 5/16" ID vinyl tubing is used to hold the spreaders in place. Also, the clear tubing should shrink in the sunlight for a tighter fit if using the antenna outdoors for fixed use. Epoxy glue can be used to secure the Vinyl tubing for permanent applications. This allows for readjustments while the glue is setting during construction.

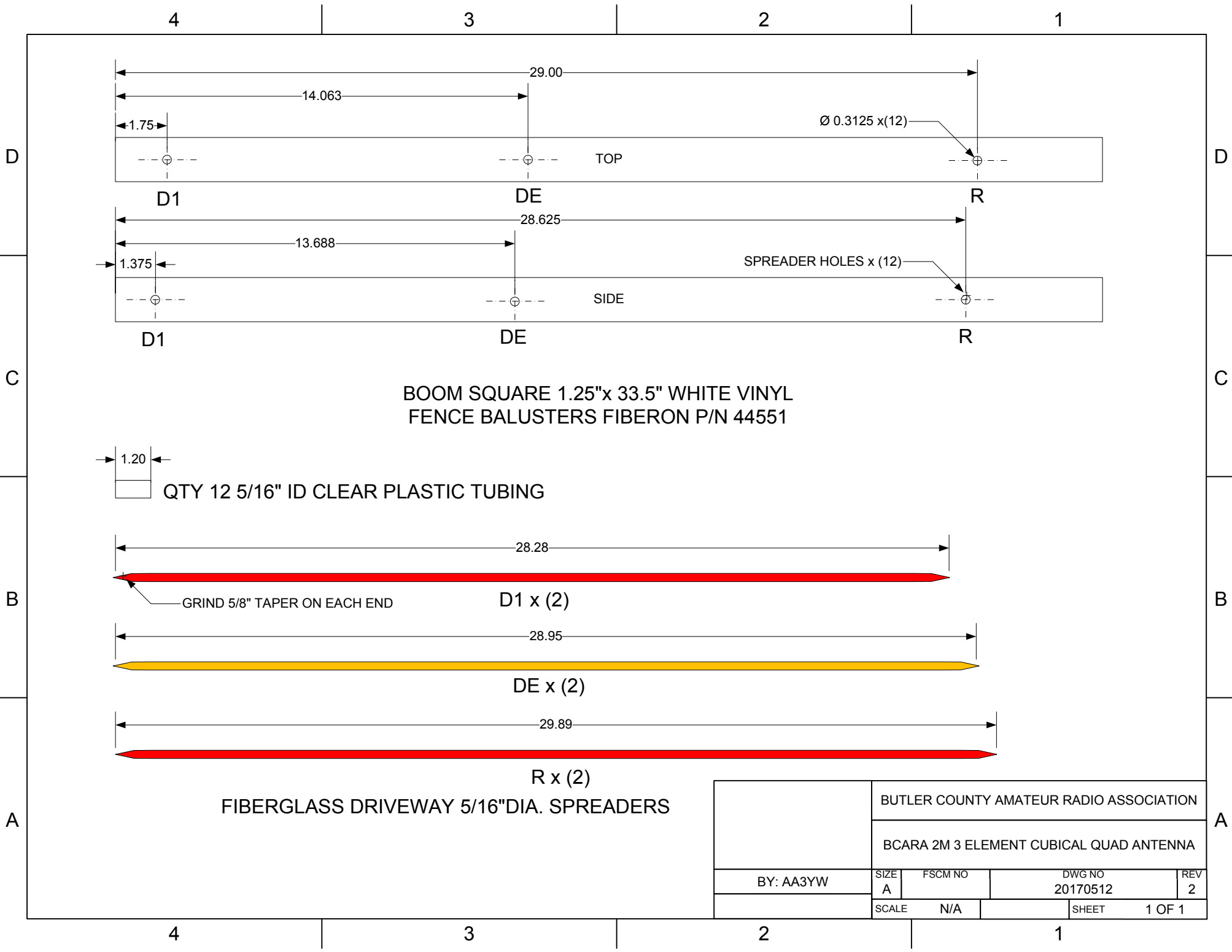
Black arrow nochs are used at the end of each spreader to hold the element wire in-place. These nochs can be glued to the spreaders if desired using epoxy glue.

This antenna driven element is fed at the center with a 50 ohm coaxial SO239 connector. If the antenna is rotated so the connector is flat on the bottom, then the antenna is horizontally polarized. If the antenna is rotated so that the connector is on the side, then the antenna is vertically polarized. This rotation can be done if the antenna is mounted in a V block or a metal pipe is mounted in the long reflector end of the boom behind the reflector. The antenna can also be mounted directly to the boom using a U bolt behind the Director element as shown in the photo below. This works very well and makes the antenna both horizontally and vertically polarized.

Parts

- 1-1/4" White Vinyl Square Baluster 33.5 long FIBEFON P/N 44551 Available at Lowe's.
- 2 each 1-1/4" (30 mm) white square tube caps.
- 6 each 4' long 5/16" dia. fiberglass Drive Way markers. Color your choice. Purchased on Amazon.
- 1 SO239 50 Ohm chassis connector.
- 1 each Uninsulated crimp-on 6-32 ring terminal.
- 5/16" I.D. x 15" Clear vinyl tubing. Cut to 1.2" sections.
- 12 each 5/15" Black Plastic Arrow nocks.
- At least 21' (6.4 m) of 14 gauge stranded copper antenna wire.
- One 4-40 pan head Phillips 3/8" long SS screw and one SS 4-40 locknut.





BOOM SQUARE 1.25"x 33.5" WHITE VINYL
 FENCE BALUSTERS FIBERON P/N 44551

1.20
 QTY 12 5/16" ID CLEAR PLASTIC TUBING



FIBERGLASS DRIVEWAY 5/16"DIA. SPREADERS

		BUTLER COUNTY AMATEUR RADIO ASSOCIATION		
		BCARA 2M 3 ELEMENT CUBICAL QUAD ANTENNA		
BY: AA3YW	SIZE A	FSCM NO	DWG NO 20170512	REV 2
	SCALE	N/A	SHEET	1 OF 1