

Turnstile for 137.5 MHz

USING $\frac{1}{2}$ in Alu Tubing

$$\frac{1}{2}\lambda \text{ (feet)} = \frac{492 \times K}{f \text{ (MHz)}} = \frac{492 K}{137.5} = 3.578 \text{ feet}$$

or 42.938 inches

K is ratio of λ to conductor dia, $\lambda = 85.87$ inches

cond dia = .500

$$K = \frac{85}{.5} = 171 \text{ @ chart, } \boxed{K = .97}$$

$$K\lambda = \boxed{41.06 \text{ inches}}$$

$$\lambda = \frac{984}{f \text{ (MHz)}} = 7.156 \text{ ft} = 85.876 \text{ inches}$$

$$\frac{3}{8}\lambda = \boxed{32.2 \text{ inches}}$$

AT 137.5 MHz

$\lambda = 85.88$ inches

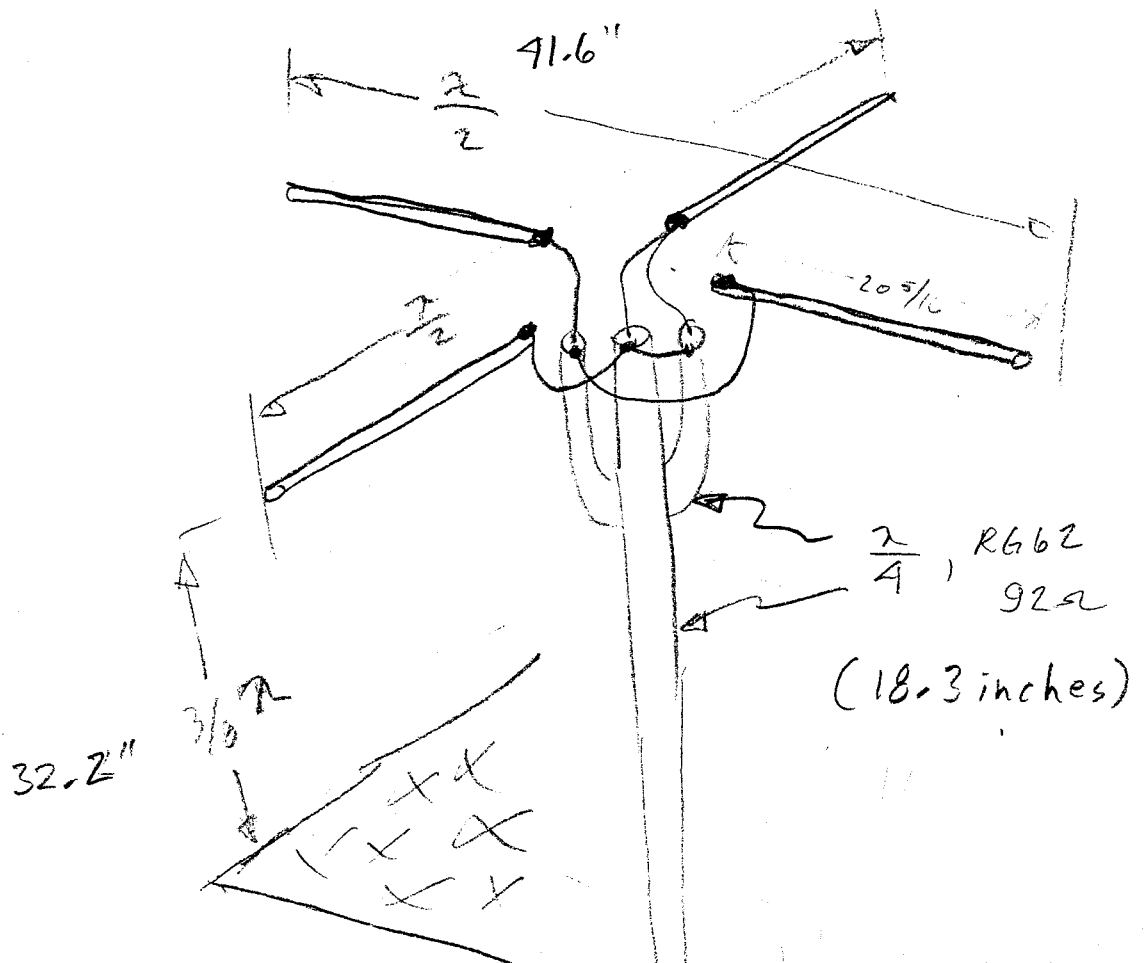
$\frac{\lambda}{8} = 32.2$ inches

$\frac{\lambda}{2} = 42.94$ inches

$\frac{\lambda}{4} = 21.47$ inches

Matching coef VF = .853 (Measured)

$$\frac{\lambda}{4} L = \frac{984}{f \text{ (A)}} (VF) = \frac{984 (.853)}{137.5 \text{ (A)}} = 1.526 \text{ ft} = 18.31 \text{ inches}$$



Elements = $\frac{1}{2}$ " OD Alu
 TOTAL LENGTH 41.6"
 1 inch spacing in center
 SPACE $\frac{3}{8}$ " (32.2") above
 4ft x 4ft of Alu
 wire reflector.

RG58
 feed line
 Any length

NOT TO SCALE

TO RCVR

Sta A 6 SEP 89

