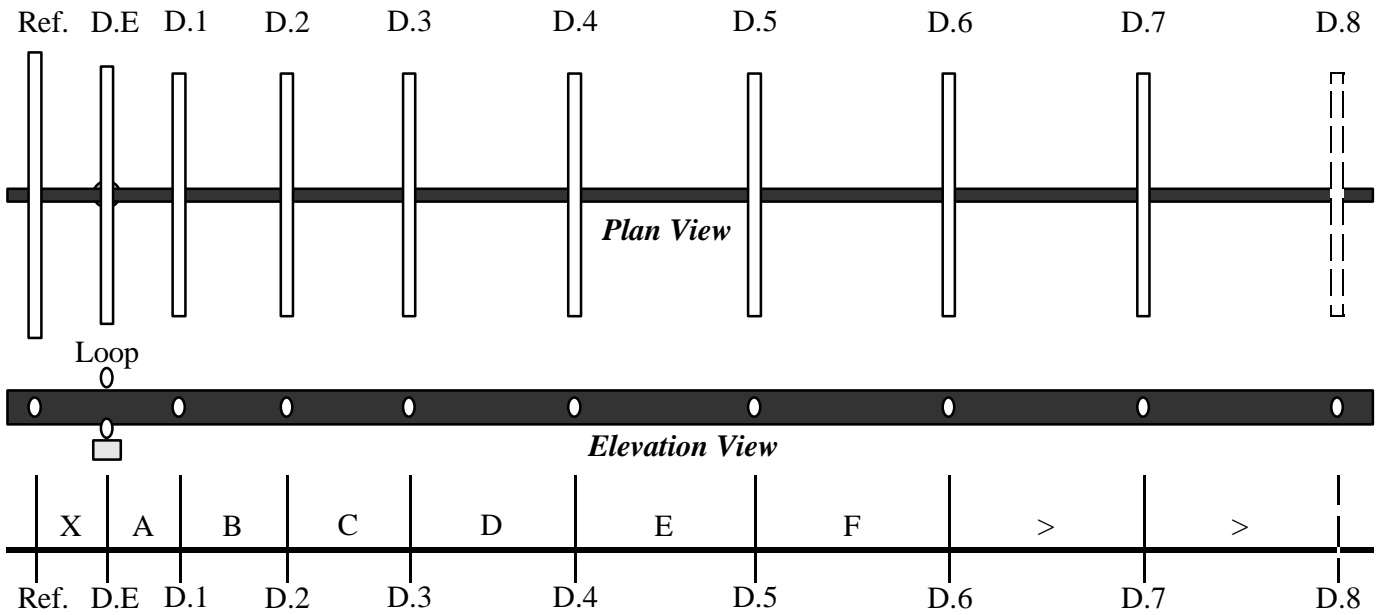


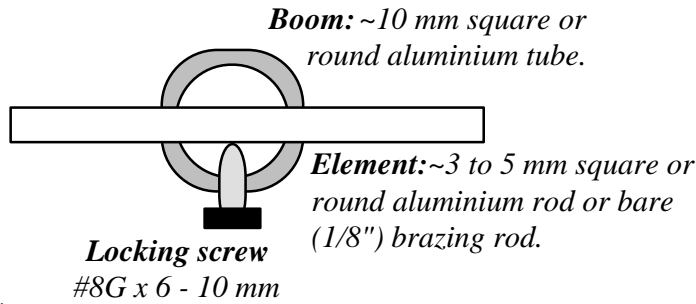
Amateur Television (ATV) Antenna Design 1250Mhz

- 1990's design used by VK3KHB based on a modified Loop Yagi - (updated May 2000) - Page 1 of 2



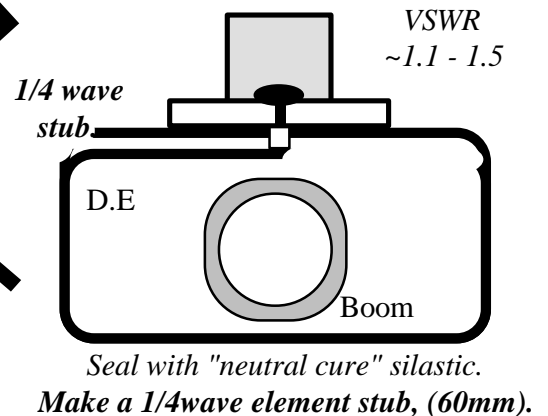
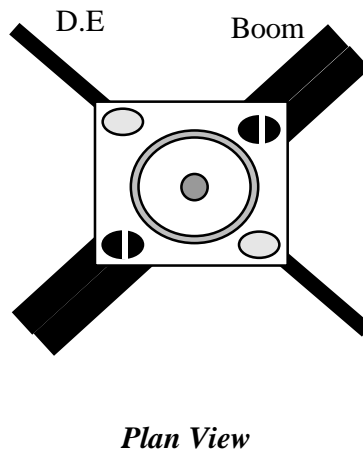
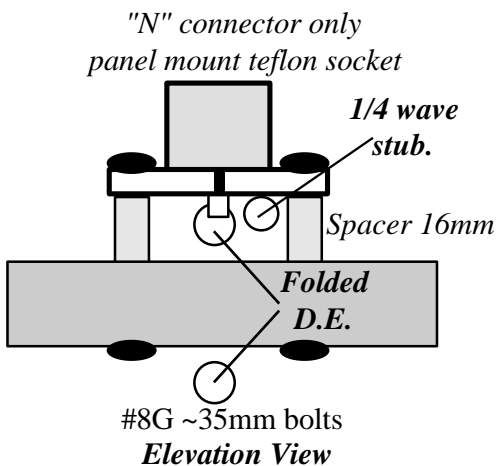
Element Spacing (Millimetres)

X	52.0mm
A	29.1
B	45.0
C	52.9
D	60.9
E	67.8
F	73.8
>	76.8mm
Keep adding ~3 - 4mm	



Element Length (Millimetres)

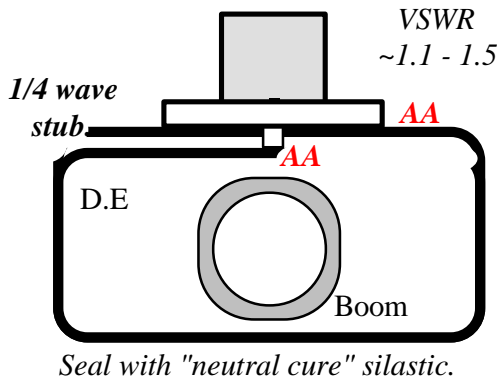
Ref.	124.0mm
D.E	120 (240mm folded)
D.1	106
D.2	105
D.3	104
D.4	103
D.5	101
D.6	100
D.7	100
D.8	098
D.n	Deminish by 2mm every 2 elements...



This design used parts from most local hardware stores, physical construction can vary, use parts that are strong to withstand winds, light to hoist on a pole, screws & bolts that are rust resistant. Seal the D.E. loop in a "neutral cure" silicone, others may chemically attack the solder joins / parts. Elements should be even along the boom, locking screws should just hold element to boom. Element hole should be exactly same size as element or slightly smaller and tapped in with small hammer to maximize holding strength. Driven element should be thick copper wire for easy of soldering. Overall length is 300mm see page 2 why.

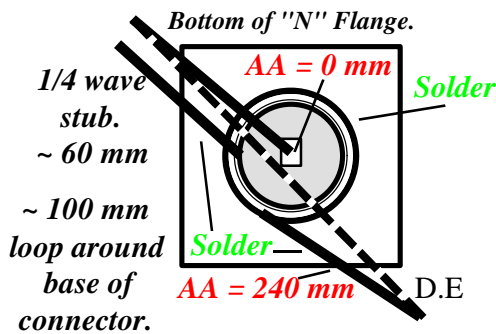
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The Driven Element is best made from thick 3mm coated copper wire. The overall length is ~400 mm, which is the D.E. plus a mechanical loop around the "N" connector plus 1/4 matching stub. (240 + 100 + 60).

Section AA is the D.E. of 240 mm long for 1250 Mhz ($\lambda/300 / 1250 = WL$) A loop around the "base" of the "N" connector for mechanical stability. An open ended 1/4 wave VSWR match stub, kept ~ 3mm parallel to the DE element under the "HOT" side, as shown.



Cut a 400 mm piece of 3 mm diameter laminated or coated copper wire. Start at one end and measure 240 mm, add another 5 -10 mm and start creating a square loop, around 25 mm per side. This creates a solid base for the D.E. to withstand winds, and handling without fear of breaking. Continue this loop out to the other side, parallel to the "HOT" side of the 240 mm D.E. for around 60 mm.

Solder the DE to the "N" connector lug. Flexing the DE loop should see the "N" lug move (rotate) with the copper wire, the solder joint should not break. Now solder the "base" loop to the connector, starting at the 240 mm point, around the loop and to the start of the 1/4 wave stub.

Experiment with spacing between D.E. and stub, usually 3 - 10 mm will show dramatic VSWR effects. Also try and get the "N" lug point close to the boom, as this assist VSWR too.