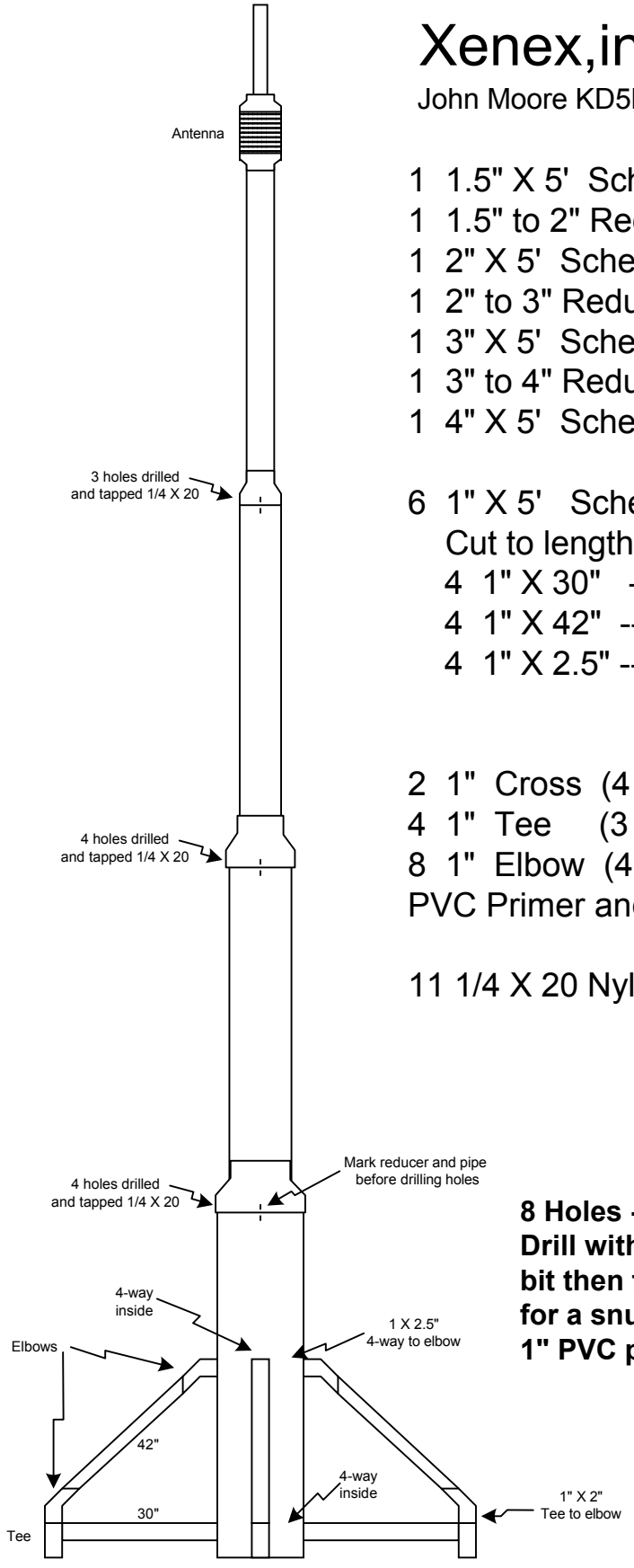
20 Foot Portable PVC Tower

Xenex,inc.

John Moore KD5RVX

Height: 20 Ft.
Weight: 25 lbs.
Cost of materials: 50 $



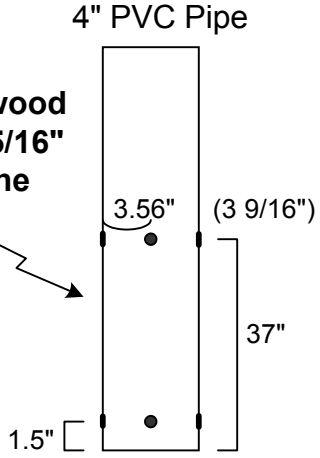
1 1.5" X 5' Schedule 40 PVC
1 1.5" to 2" Reducer -- glue to 1.5" pipe
1 2" X 5' Schedule 40 PVC
1 2" to 3" Reducer -- glue to 2" pipe
1 3" X 5' Schedule 40 PVC
1 3" to 4" Reducer -- glue to 3" pipe
1 4" X 5' Schedule 40 PVC

6 1" X 5' Schedule 40 PVC (or 3 10' sections)
Cut to lengths:
4 1" X 30" -- lower 4-way to tee
4 1" X 42" -- lower elbow to upper elbow
4 1" X 2.5" -- upper 4-way to upper elbow
Tee

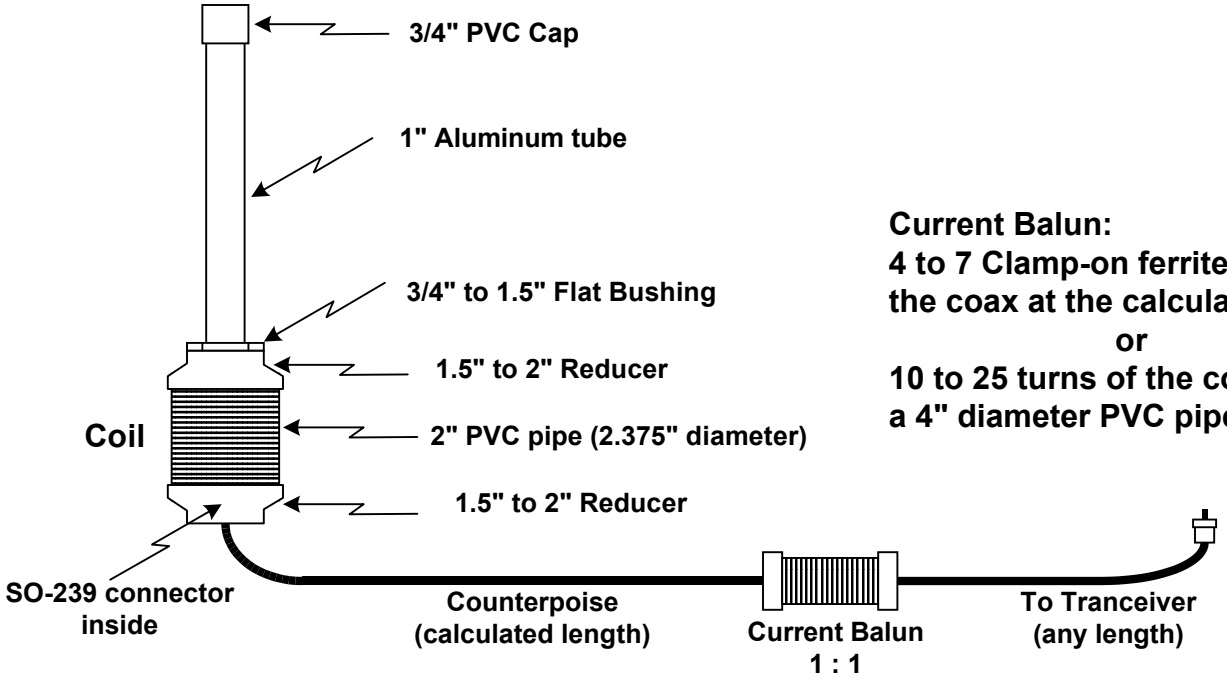
2 1" Cross (4 Way Coupler)
4 1" Tee (3 Way Coupler)
8 1" Elbow (45 degree)
PVC Primer and cement

11 1/4 X 20 Nylon screws 1/2" long

8 Holes -- 1-5/16" Drill with 1-1/4" wood bit then file to 1-5/16" for a snug fit of the 1" PVC pipe.



KD5RVX MicroVert Antenna



Current Balun:
4 to 7 Clamp-on ferrite beads on the coax at the calculated length
or
10 to 25 turns of the coax around a 4" diameter PVC pipe.

Formulas

Ls = 185 / F
Where:
Ls = radiator length in inches
F = freq in megaHertz

Cs = 0.485 Ls (1 / log (0.575 (Ls/d)))
Where:
Cs = radiator capacitance in pF
Ls = radiator length in inches
d = radiator outside diameter in inches

$L = (159 / F)^2 / Cs$
Where:
L = inductance in microHeneries (uH)
F = Freq in megaHertz
Cs = radiator capacitance in pF

Coil Winding

$$L = \frac{d^2 t^2}{18d + 40b}$$

Where:
L = inductance in uH
d = coil diameter in inches
t = number of turns
b = coil length in inches

Coax Counterpoise Length

Lx = 190 / F
Where:
Lx = counterpoise length in feet
F = freq in megaHertz

Juergen Schaefer , DL7PE, is the author and designer of the "DL7PE Microvert "antenna.
This information is restricted to the private and personal use of radio amateurs.
Commercial use is not permitted.

References:
[1] Jurgen Schaefer
DL7PE-Microvert
http://www.AntenneX.com , 2001