

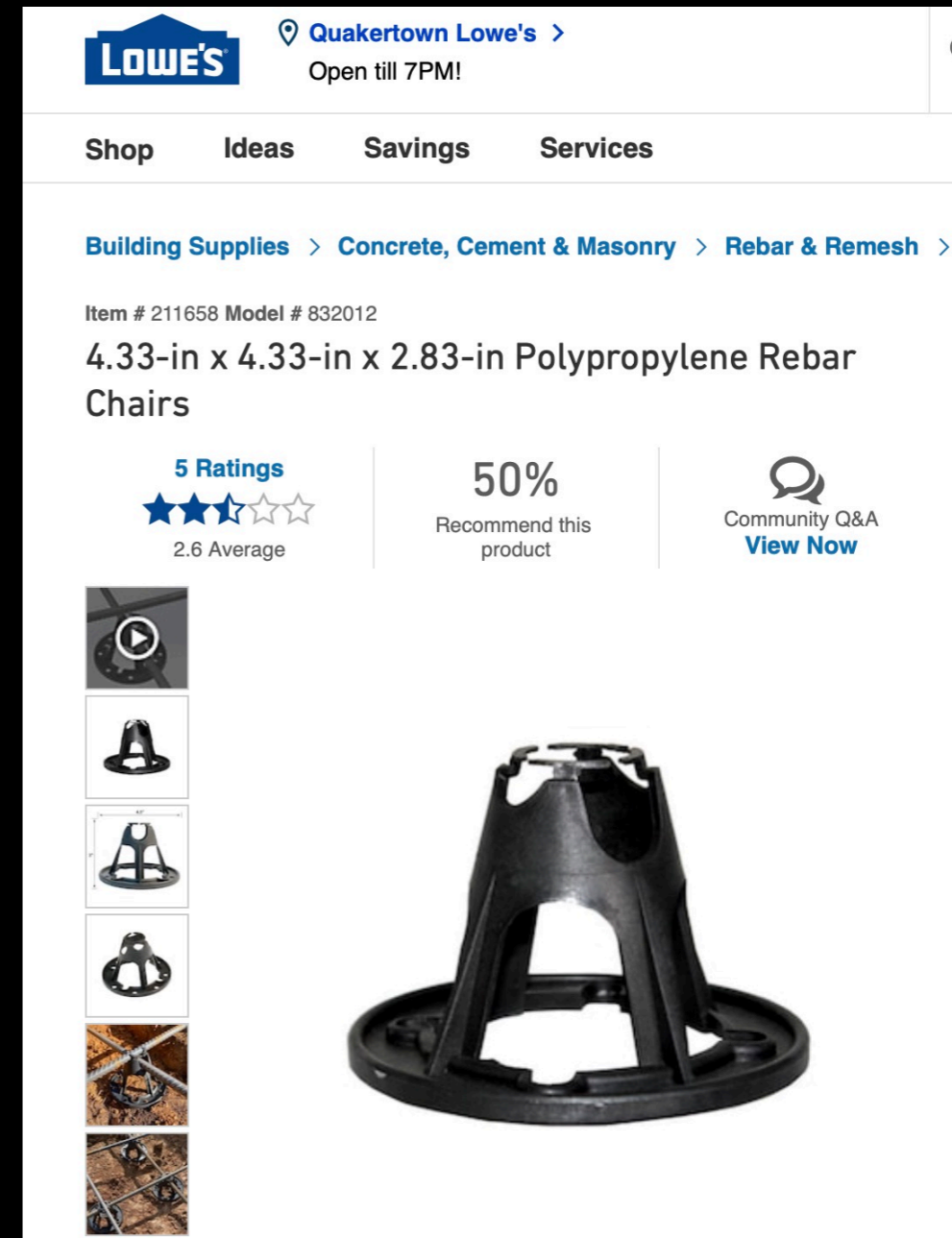
Rebar Chair 10 Meter Antenna

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Build by: W3RKL

Rebar Chair

- That 🙌 is a Rebar Chair!
- This is used to support rebar in a concrete foundation
- It can be found directly near the rebar section at Lowe's.
- The cost is \$0.48!



How the Rebar Chair is used

- This image shows the the upper most rebar chair.
- The rebar chair is used to separate the 4 counterpoise (wires).
- The counterpoise wires are kept out and away from the coax (not shown) that would run up from below and connect into the SO-239 connector.
- The upper vertical single element (wire) is pulled or hung



Configuration of the upper rebar chair, SO-239 and wires

- Here you can see how the 4 counterpoise wires are connected to the SO-239 and run down the holes in the rebar chair.
- The upper wire is soldered to the center conductor stud of the SO-239.



Configuration of the upper rebar chair, SO-239 and wires

- This image show the bottom of the upper rebar chair.
- This image also shows a connector (PL-259-UHF) on the SO-239 so cheap TV coax could be used.
- IF coax with PL-259 is used omit this connector.
- The bolts used to connect the wire crimps to the SO-239 were the bolts supplied with the SO-239.
- Wire zip-ties were added to the counterpoise wires just below the holes in the rebar chair to keep things from moving



Configuration of the upper rebar chair, SO-239 and wires

- This is the top view of the upper rebar chair.
- Wire zip-ties were added to the upper single element (wire) to provide strain relief to the solder joint.



Connection of the upper element

- This simple shows one way to terminate the upper element for hanging.



Middle rebar chair(s)

- This shows how lower rebar chairs are used to keep the counterpoise wires separated and away from the coax (not shown)
- The coax would run up through the center of the rebar chairs.
- This configuration shields the coax from RF and allows the vertical mounting of this antenna design.
- Another rebar would be used at the bottom; But this would be upside down.
- Add wire zip-ties the hold the rebar chair up.



Using a push-up mast for mounting

- This antenna likes to be pulled up with a rope connected to the end of the upper element.
- Hang from a tree or through a tree or what ever non conductive structure you have.
- The image here show my deployment on a fiberglass push up mast.
- I run the mast up through the center of the rebar chairs
- I connected the end of the upper element to the top of the mast.
- This works well but initial tuning is made more difficult than needed due to lowering and raising the mast with the rebar chair antenna attached.
- Also note: this was my first build where I used 5 rebar chairs and a balun instead of the SO-239.
- The current build only uses 3 rebar chairs (top, middle, and bottom), and an SO-239. The balun added weight!

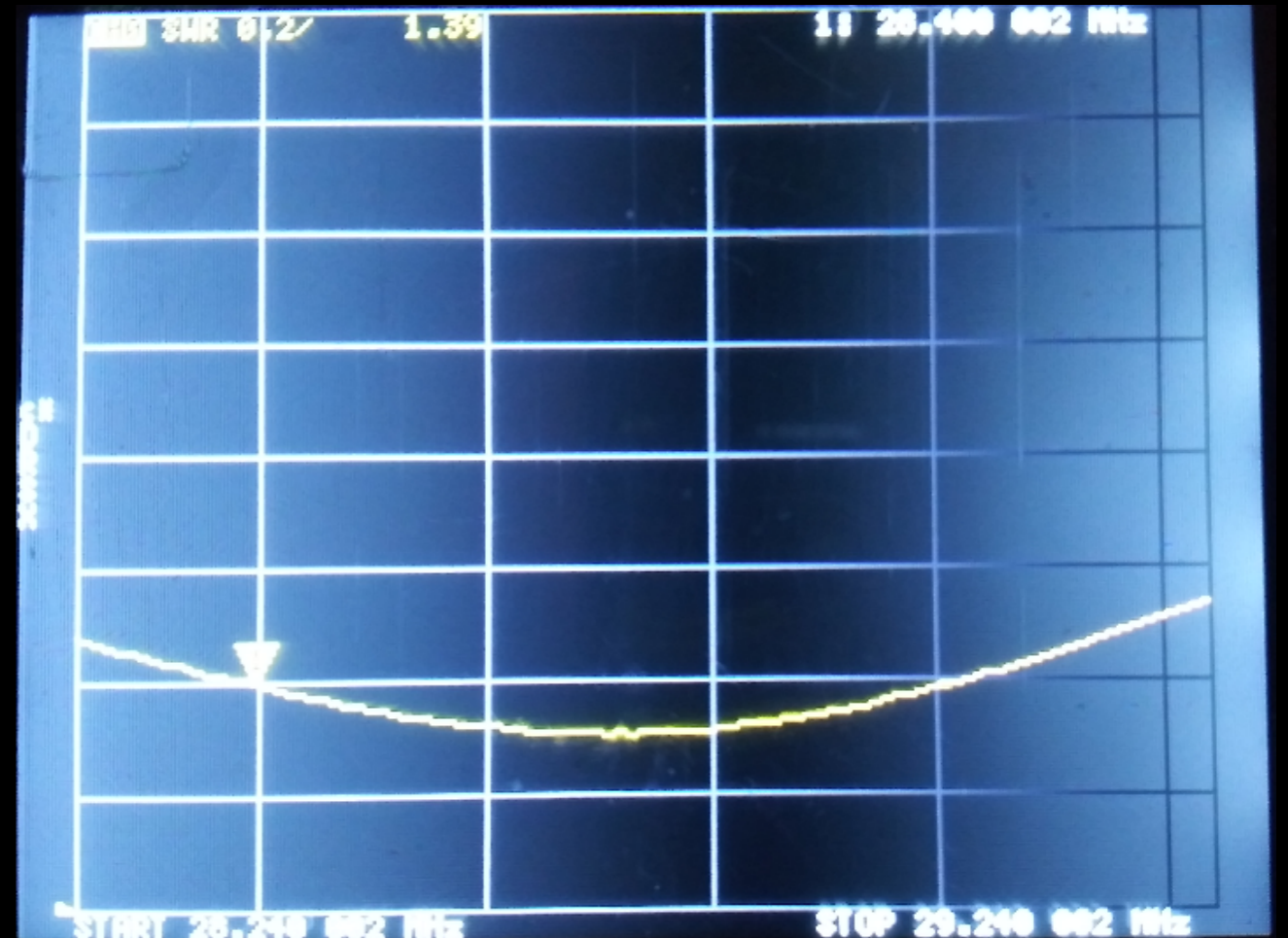


Wire Lengths and Tuning

- Same as 10 meter half wave dipole.
- Each element is ~ 8.24 feet long. Cut yours longer and trim to length
- Dan-WA3NFV suggests 8'-3" for all wire lengths.
- The four counter poise should be kept at the length and not trimmed for initial tuning.
- The upper element can be longer initially and trimmed for tuning.
- Trimming of the counter poise should be left as a last resort for tuning.

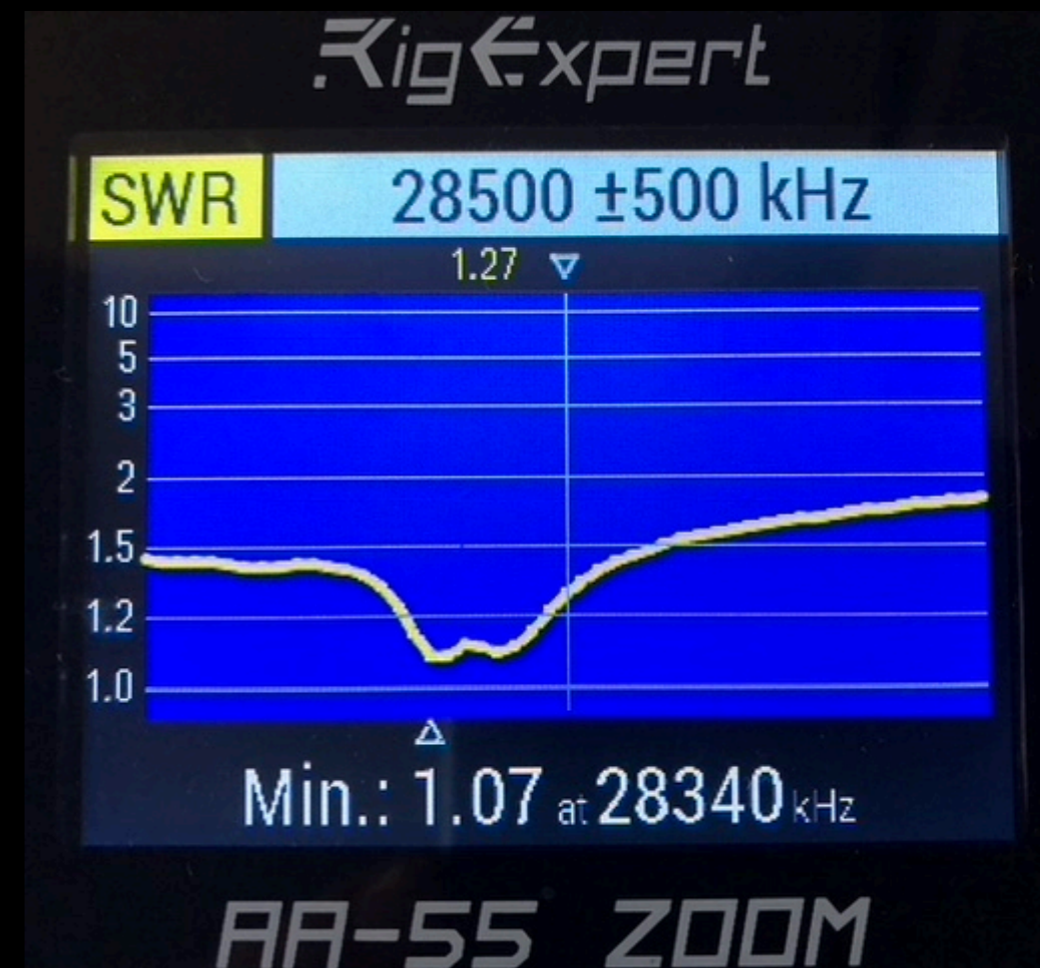
VSWR Plot From Dan- WA3NFV

- This shows a VSWR of 1.39 @ 28.400
From Dan's - WA3NFV build



VSWR Plot From Dan- WA3NFV

- This shows a VSWR of 1.07 @ 28.340
From my first build, and a VSWR of <
2:1 from 28.000 - 29.000.



Have Fun!