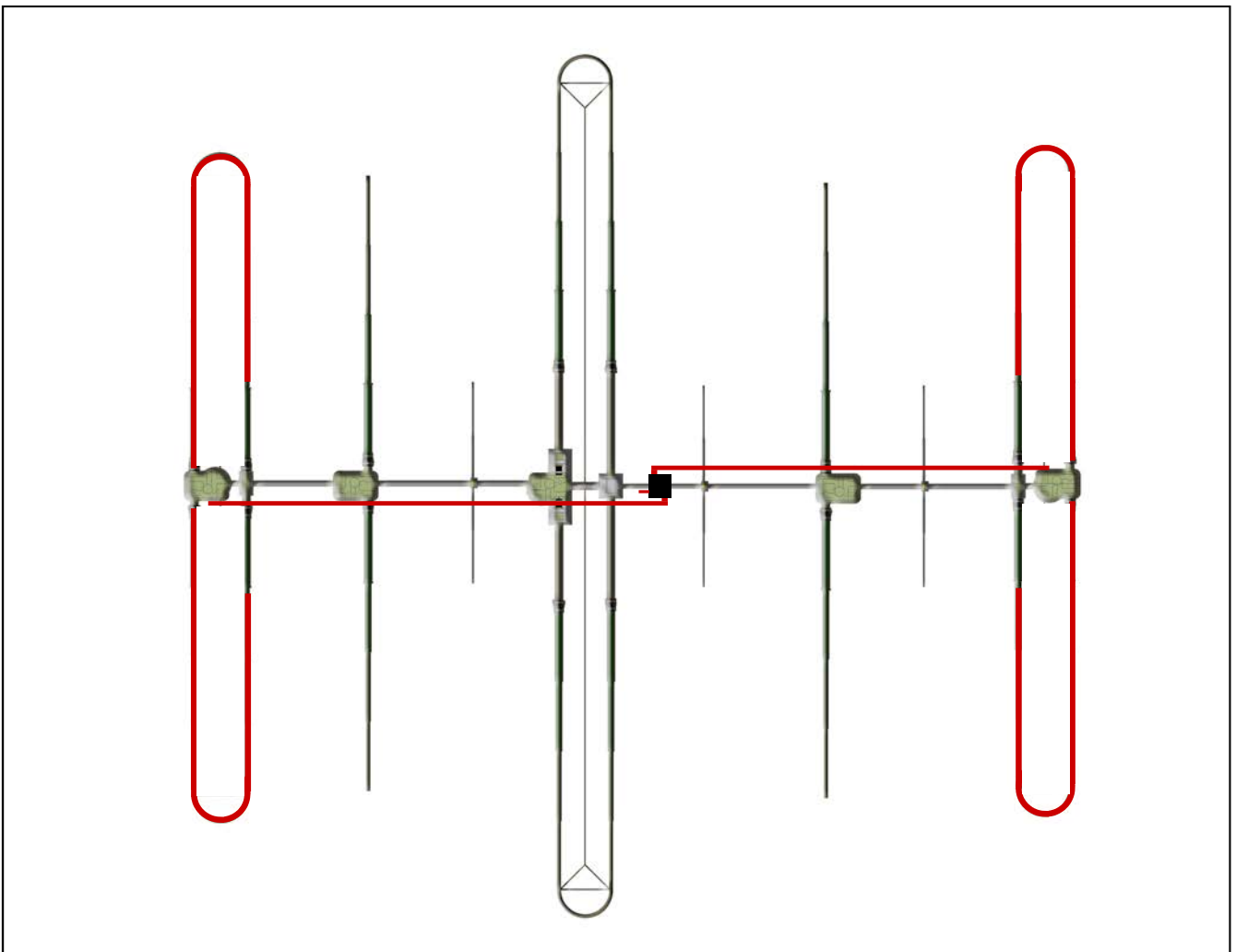


**DB42
80m Dipole Option
Installation Instructions**



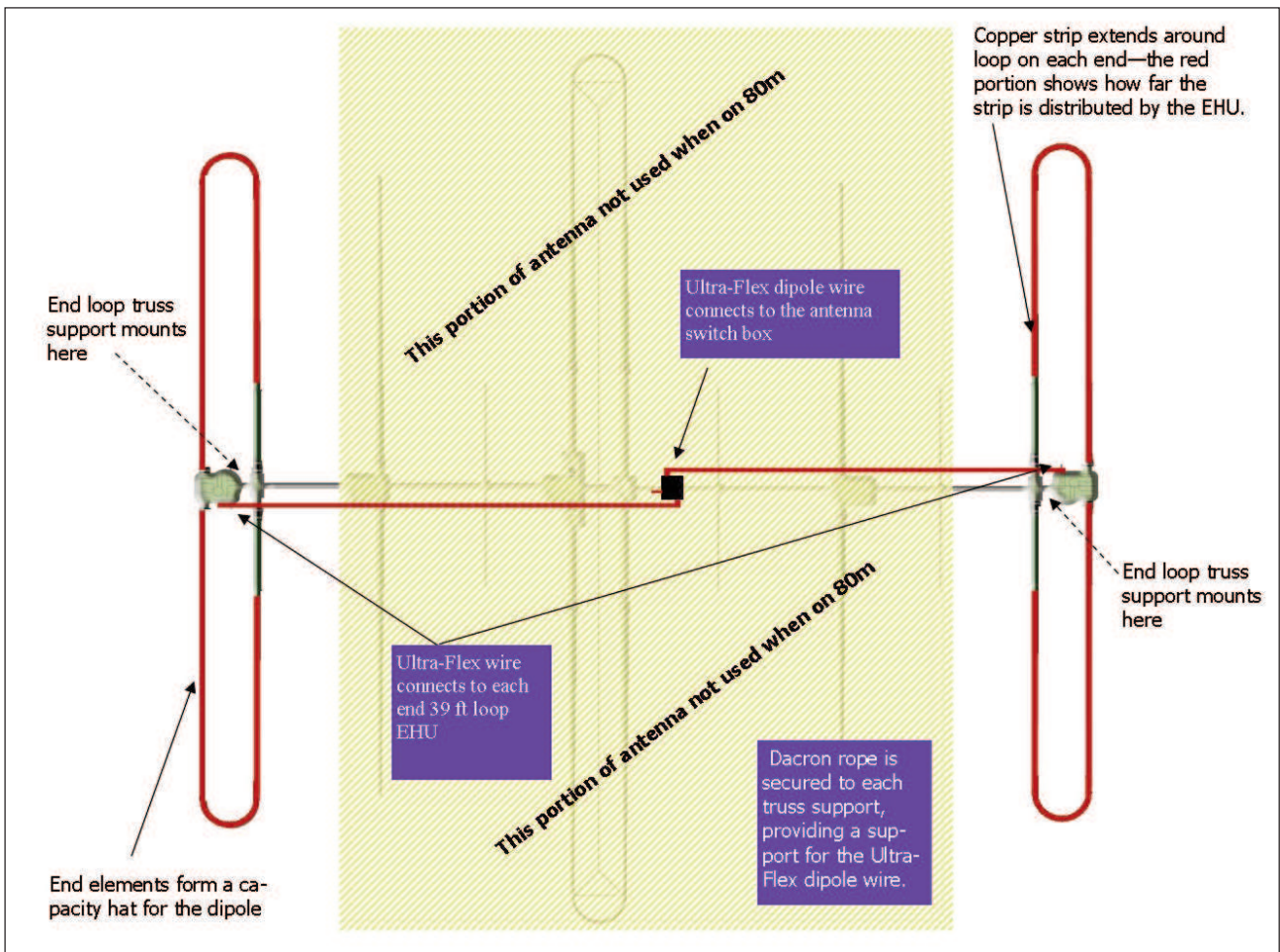
The 80m dipole option is a wire dipole that runs above and parallel to the boom. One end of the wire dipole connects to the reflector element center, the other end connects to director 2. This forms an "H" shaped dipole, as shown below in figure X.

The two passive elements act as large capacity hats that are tunable via the SDA 100 controller. This capacity loading is very efficient, so the DB42 dipole is only -0.7 dB below a full sized dipole on 80m. The dipole wires connected to the passive elements have no effect whatsoever on the performance of the antenna when using the Yagi on other frequencies, because the wires are connected at the zero current point in the center of each element.

The 80m dipole is an option that can be purchased for the DB42 Yagi. It can be installed during the process of building the DB42, or it can be installed afterwards. This option should only be installed with the antenna on the ground.

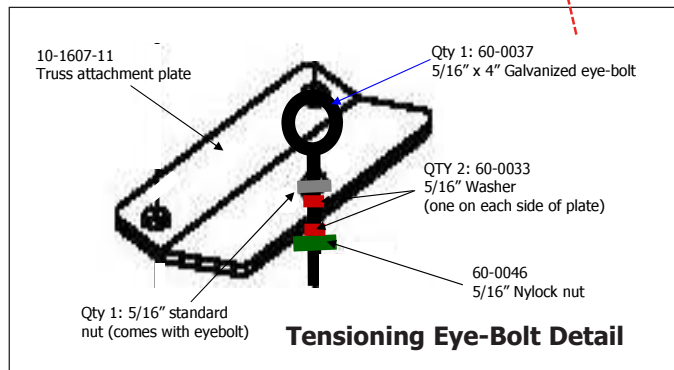
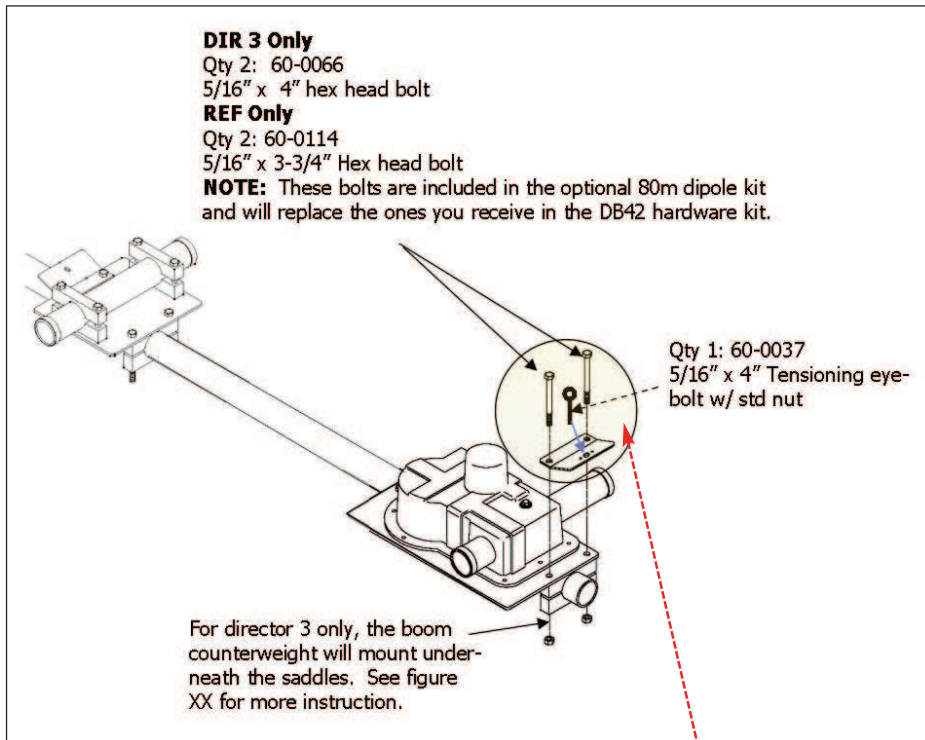
When the 80m dipole option is purchased, truss assemblies for each of the 39 foot end loop elements are included. In the process of assembly, you will be using hardware from the DB42 standard antenna kits, truss assembly kits and the 80m dipole kit.

Refer to SECTION XX for mounting the truss and truss support that will be required for supporting the 80m dipole. Figure X below shows the working components used when the antenna is on 80m.



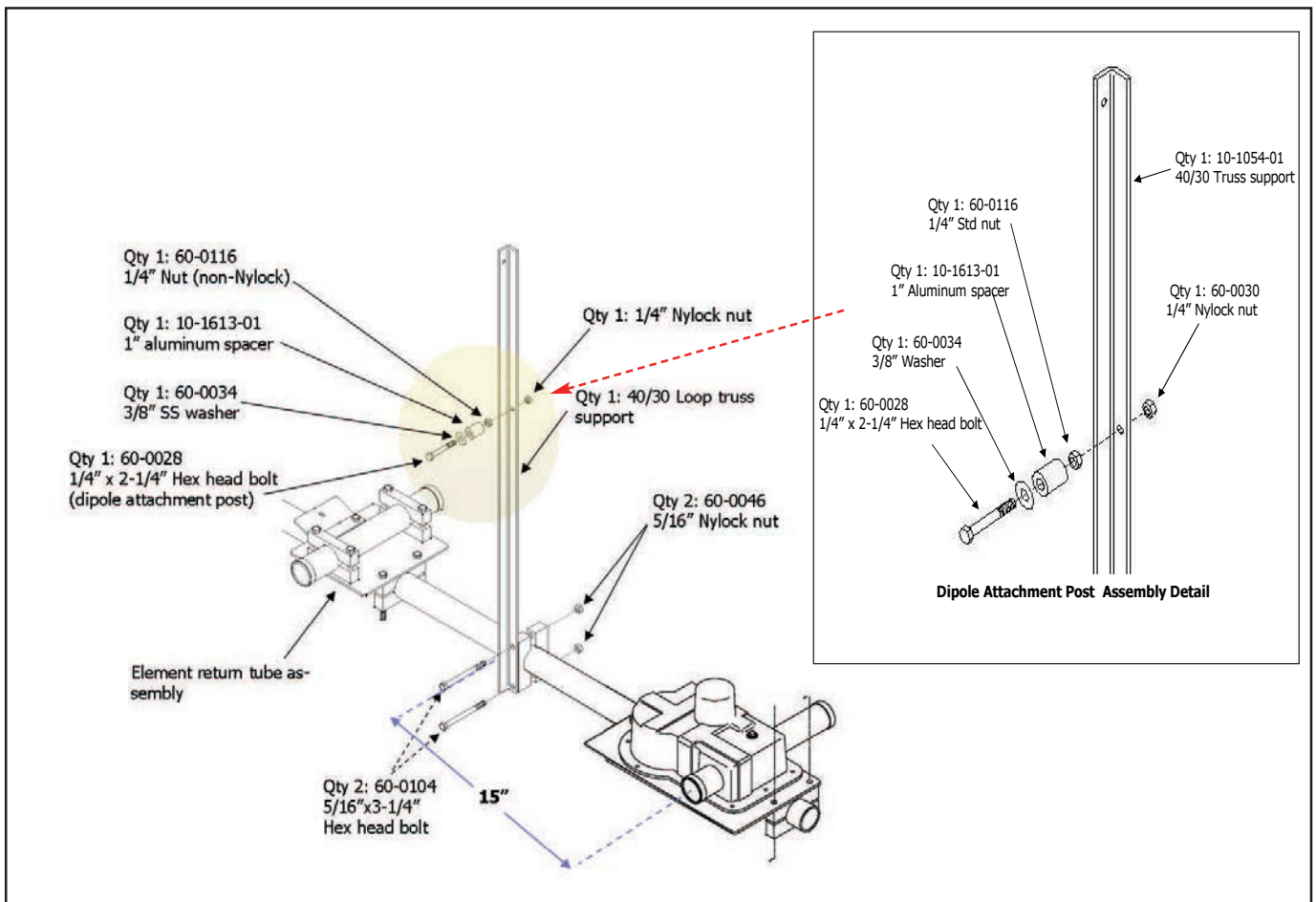
NOTES:

- The reflector EHU and Director 3 EHU should be installed as shown in section XX of this manual with one exception - when the optional 80m dipole is purchased, the truss attachment plate needs to be installed on each side of the boom as shown in figure XX.
- When installing the truss attachment plate, use the longer bolts included in the 80m dipole kit in place of the standard bolts included with the DB42 hardware as shown in figure XX. The standard length bolts will not be used, remove them from the assembly process.
- Mount the tensioning eye-bolt to the truss attachment assembly as shown in figure XX. Secure it loosely, using only 2 or 3 threads. These will be tightened later.



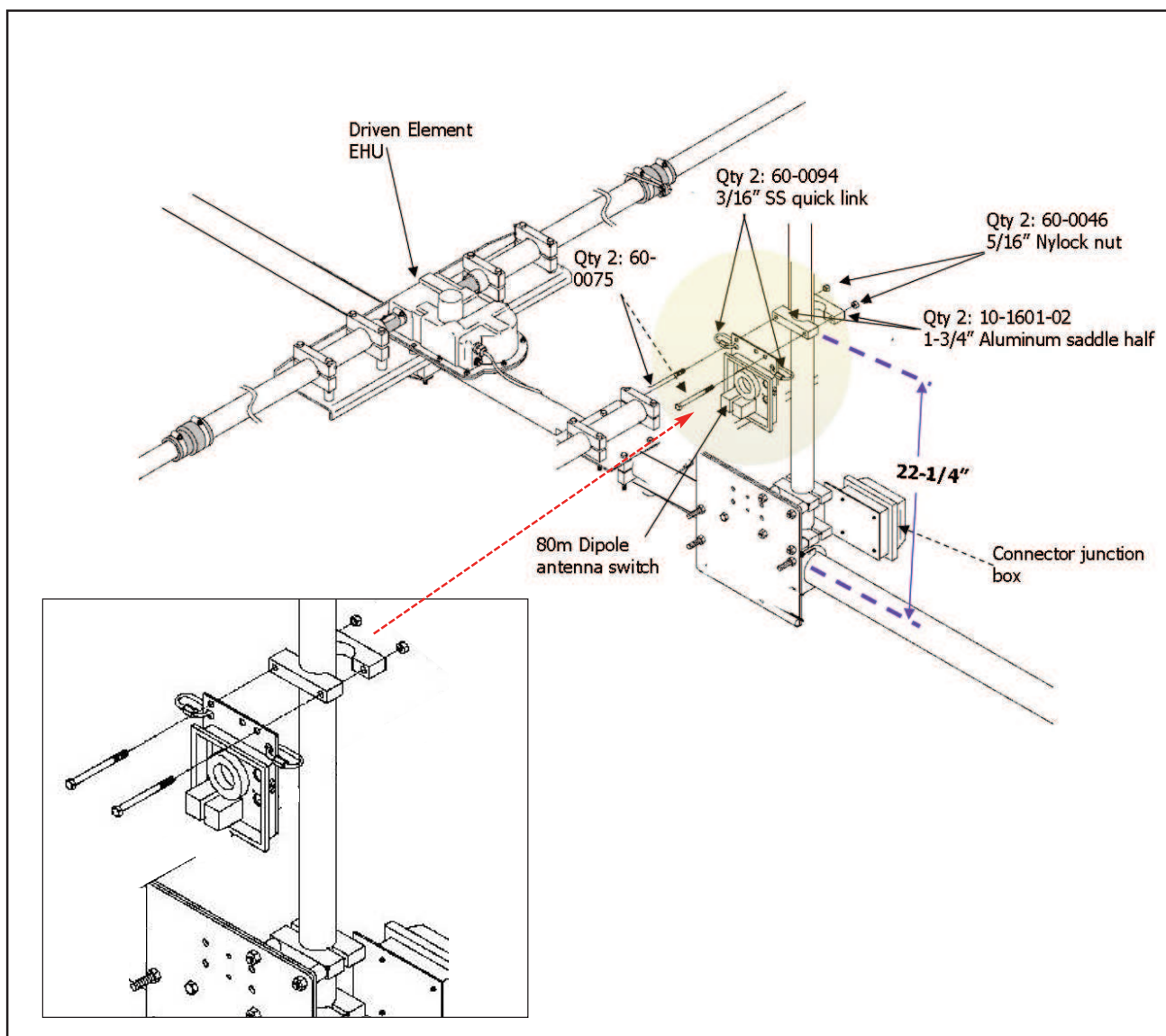
NOTES

- We recommend you install each of the 39 ft loop element truss supports first as shown in figure XX, but do not attach the dacron rope to the truss supports until after the 80m dipole installation is completed. This keeps the dacron ropes for the truss supports from getting in your way.
- Follow the instructions in section XX for installing the truss supports.
- Once the truss supports are attached to the boom as shown in figure XX, install the dipole attachment post assembly as shown in figure XX. The post itself will be tightened firmly using the 1/4" standard nut and the nylock nut. leave a small amount of space between the 3/8" washer and the 1/2" aluminum spacer to accommodate the wrapping of the Dacron rope, covered later in this section.
- Repeat for each side of boom.



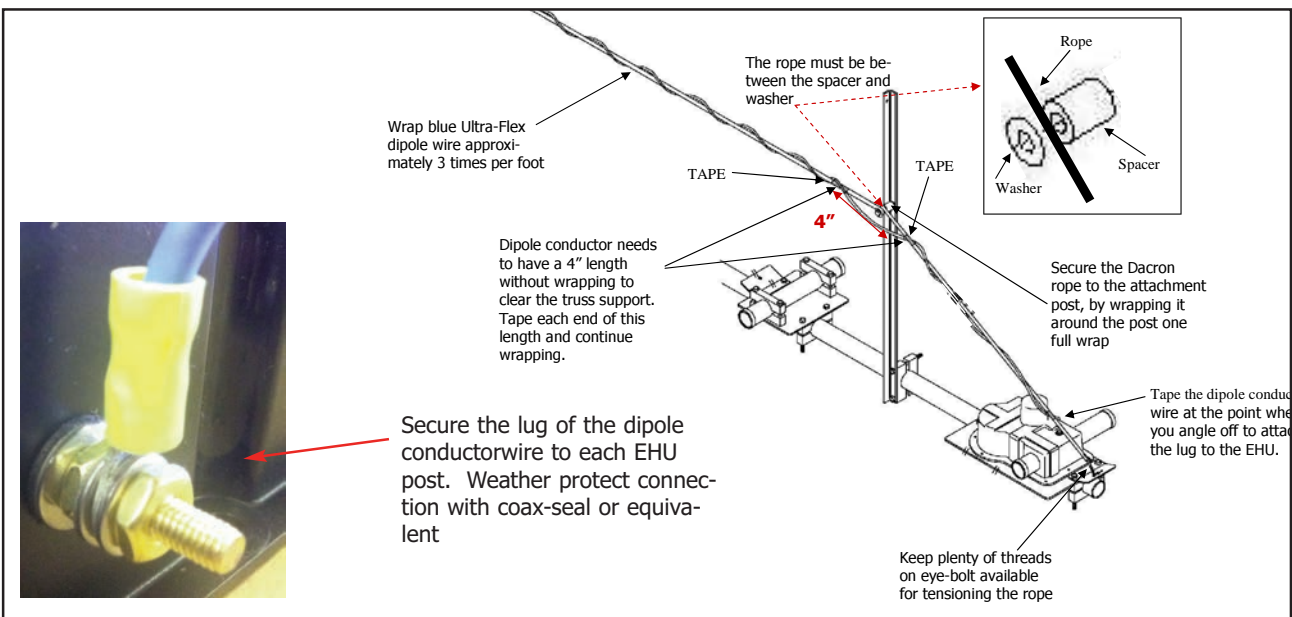
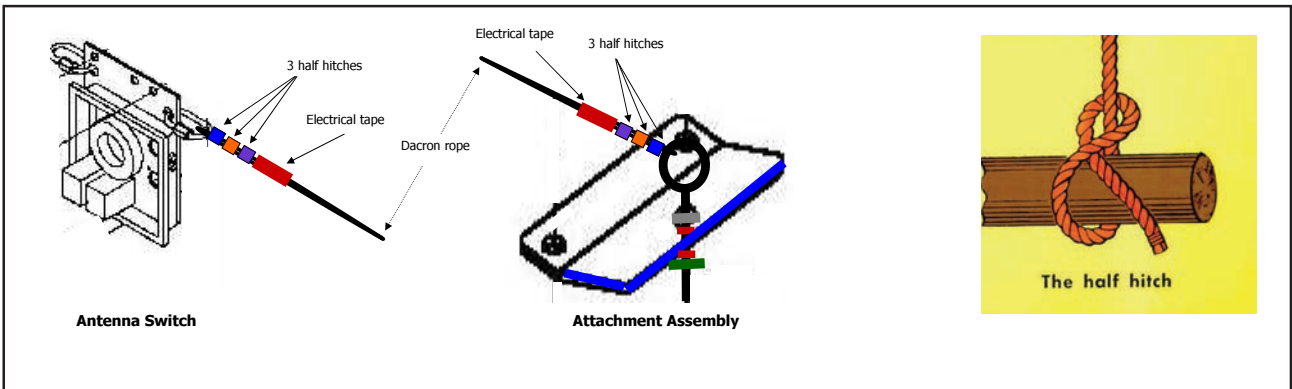
NOTES

- Follow figure XX for mounting the 80m dipole antenna switch.
- Secure the stainless steel quick links to the mounting plate of the antenna switch.
- DO NOT attach the lid of the antenna switch until wiring is completed, it will make wiring difficult and the cover is almost impossible to remove once you attach the hinges.
- Be certain you mount the antenna switch so that the top edge of the saddles are 22-1/4" above the top of the boom.



NOTES:

- The Dacron rope will come in one continuous piece. Loop one end of the piece through the truss attachment plate eye-bolt as shown in Figure XX. Tie 3 half hitch knots. Figure XX shows how to make a single half hitch. To make multiple half hitches, simply repeat. Leave about 2" of dacron rope leader after the third half hitch knot. Tape the leader to the rope as shown in figure XX and melt the ends to avoid fraying.
- Pull the Dacron rope tightly towards the truss attachment post and loop the rope around the post one full wrap as shown in figure XX, keeping tension on the rope. The rope must be between the stainless steel washer and the aluminum spacer, as shown in figure XX.
- Keeping tension on the rope, pull the rope to the quick links that you have already installed on the antenna switch mounting plate. Insert through the link, pulling tight and tie 3 half hitch knots. Leaving approximately 2" of leader, cut the Dacron rope.
- You will use the remaining rope for the other half of the support line. Following the same steps.
- On each end of the dipole conductor support line, tighten the tensioning eyebolts so that the support line is tight enough to support the blue Ultra-flex dipole conductor wire.
- Attach the lug of the blue Ultraflex wire to the brass EHU studs. pull the Ultra-flex wire to the dacron support line, leaving enough play to that it does not pull on the lug. Tape with electrical tape. Wrap the Ultra-flex 3 times per foot, as shown in figure XX. Be sure to leave 4" of space between wraps when you pass the truss supports, taping each side of the space as shown in figure XX. Continue wrapping until you reach the antenna switch. Tape the Ultraflex to the support line where the leader ends. You will need to trim the Ultraflex for connection to the antenna switch.
- Repeat for other side of dipole.



NOTES:

- Be sure to tighten all coax connectors so they are snug. Weather-proof with a coax sealant.
- Tape all cables to the appropriate boom or mast to prevent sagging, which could create tension on the cables.
- DO NOT kink or curve the cable to a radius of less than 3 inches. Allow for natural bends and secure cables to the boom of mast of the antenna.
- Do not secure the cable to anything that has a sharp edge including aluminum saddles, bolts, mounting plates etc.
- Connect the 4 ft coax jumper 21-6301-70 from the driven element EHU to the SO239 labeled "OUT" located on the rear of the 80m dipole switch as shown in figure XX.
- Connect the primary feed line (coming from the shack) to the SO239 labeled "IN" located on the rear of the 80m dipole switch.
- Connect the 4 conductor from the antenna switch terminal block to the connector junction box as shown in figure XX. The wiring sequence is shown in figure XX.

