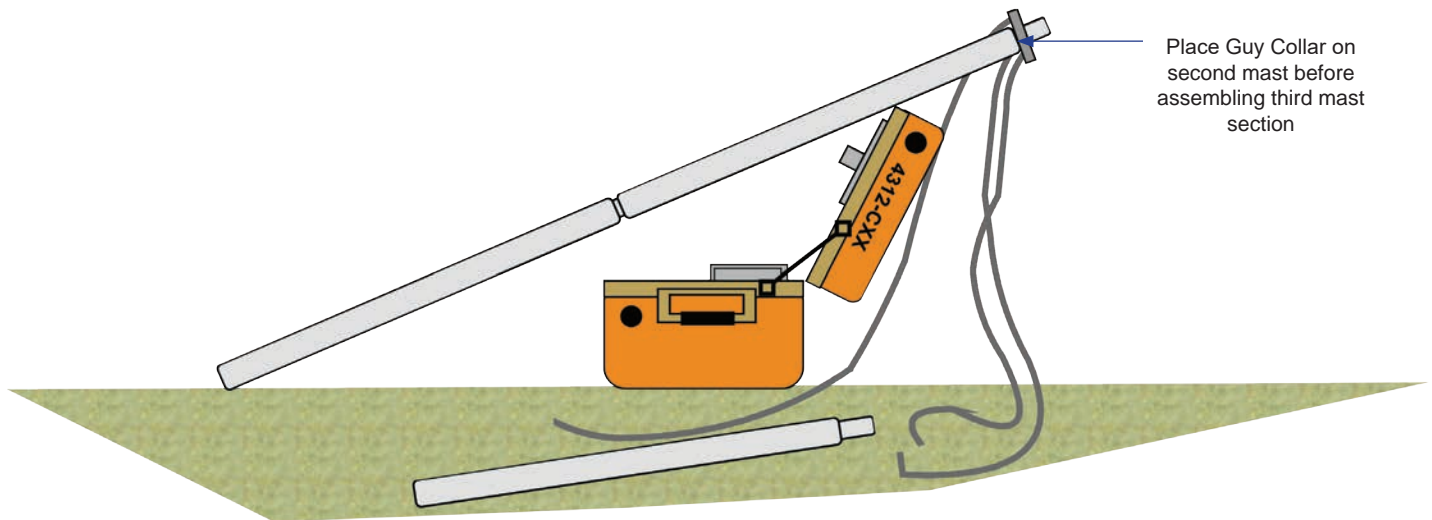


# ANTENNA INSTALLATION INSTRUCTIONS

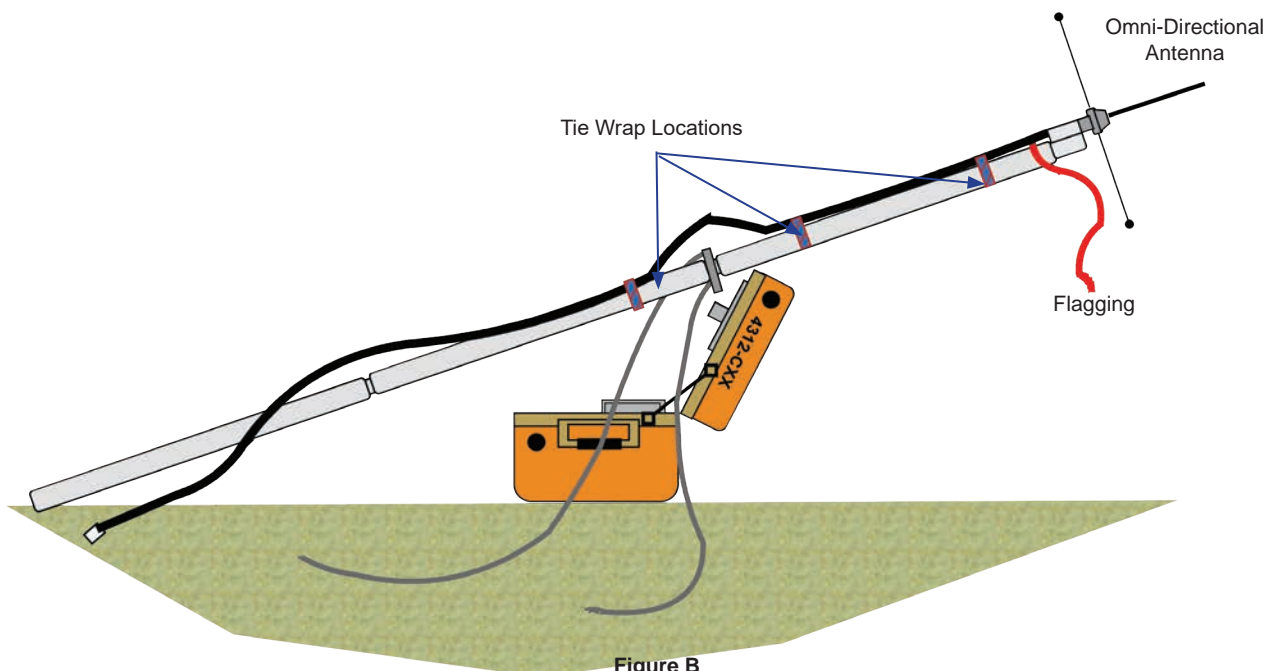
*Note: If setting up a linked system, NIRSC recommends starting with the Link antenna first.*

1. Place the equipment/box at the desired antenna location.
2. Assemble the two (2) mast sections first.
3. Place the guy collar on the end of the second mast before assembling the third mast section. **(See Figure A)**



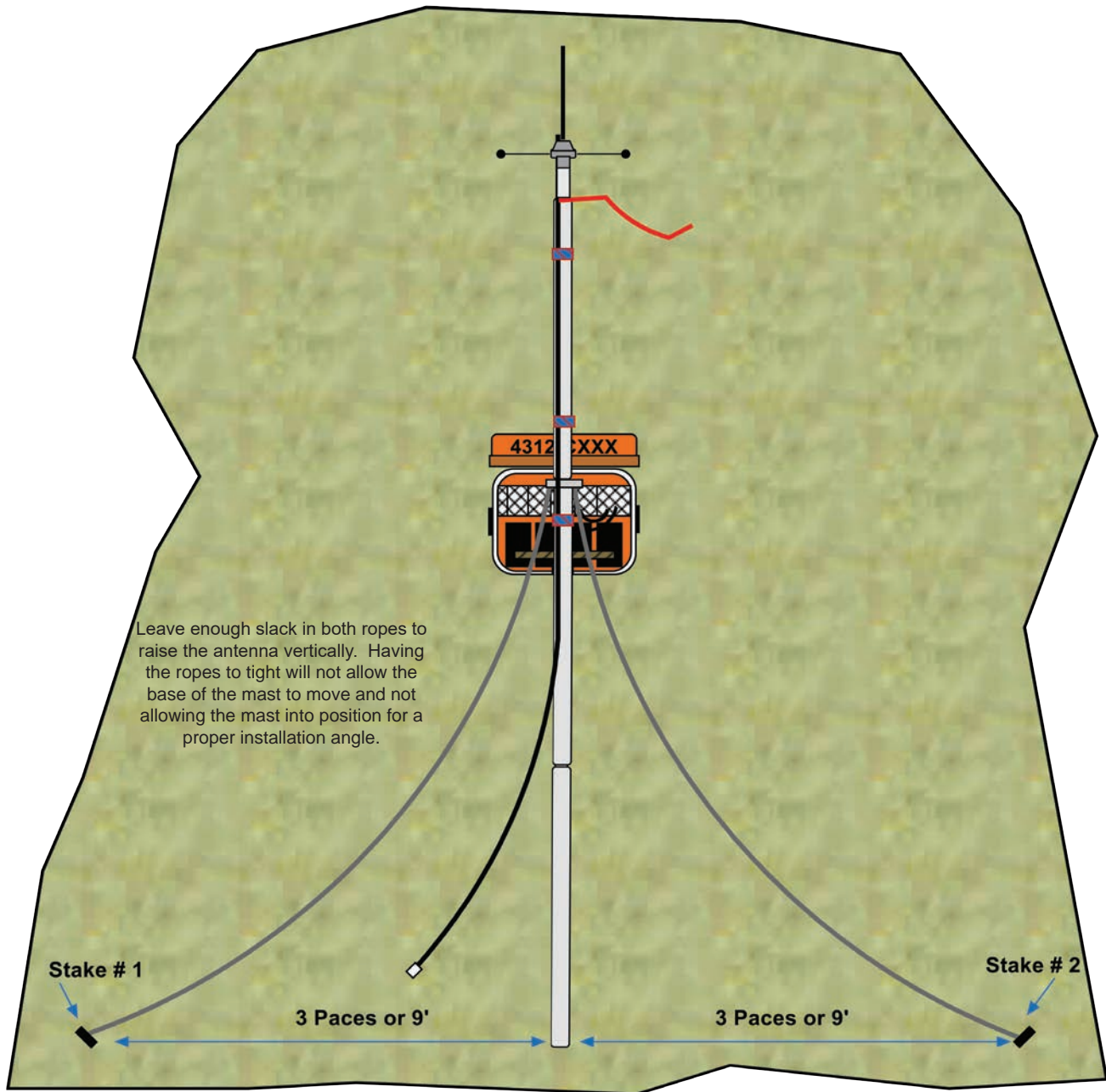
**Figure A**

4. Lay the assembled mast on the opened lid of the equipment/box with half of the 3rd section of the mast protruding beyond the lid of the equipment box. **(See Figure B)**
5. Install the antenna base onto the 3rd mast section. Raise all radial elements to the set holes and slide into groove to lock into place.
6. Connect the coax to the antenna base and secure the coax to the mast at three (3) places with provided tie wraps, 12 inches below the top of the mast and 12 inches above and below the guy collar, with a loop around the guy collar to prevent chafing the coax. **(See Figure B)**
7. Install the appropriate antenna whip (UHF or VHF) onto the antenna base.
8. Tear off a 2-3ft. long piece of flagging and tie it around the coax just below the antenna base.



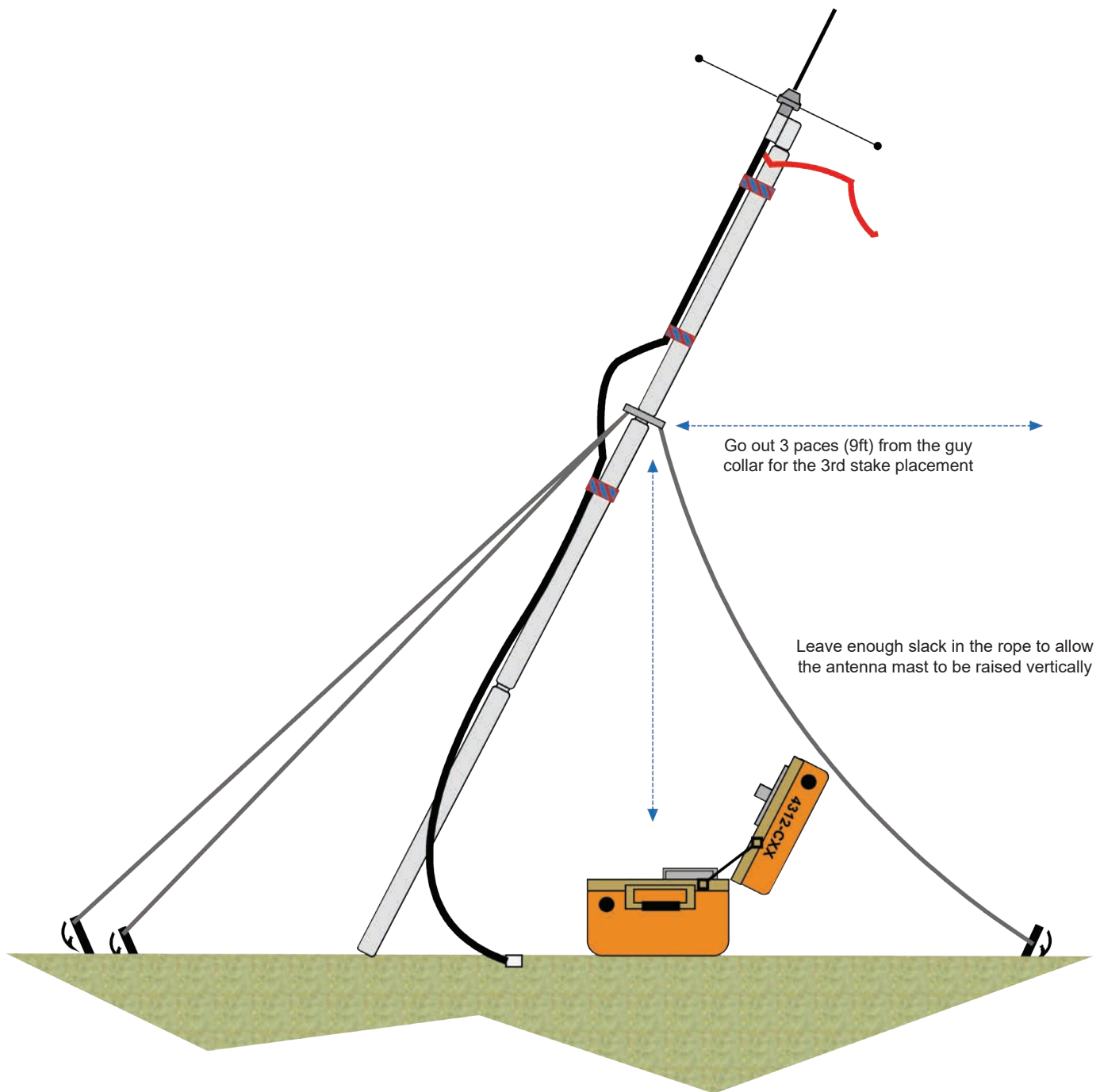
**Figure B**

9. Place two steel tent stakes, each 9 ft. (3 normal paces) perpendicular from the base of the antenna mast.
- Note: Drive the tent stakes in at an angle, with top end sloping away from the area where the equipment box and the antenna base will be located. Don't drive the tent stakes all the way down until all the guy ropes are secure in the following steps.*
10. Securely tie the ropes from the guy collar to each of the two tent stakes with either a trucker's hitch or a taut line hitch, leaving enough slack in the rope to raise the antenna vertically.
- Note: Use a knot that you are most comfortable with.*



**Figure C**

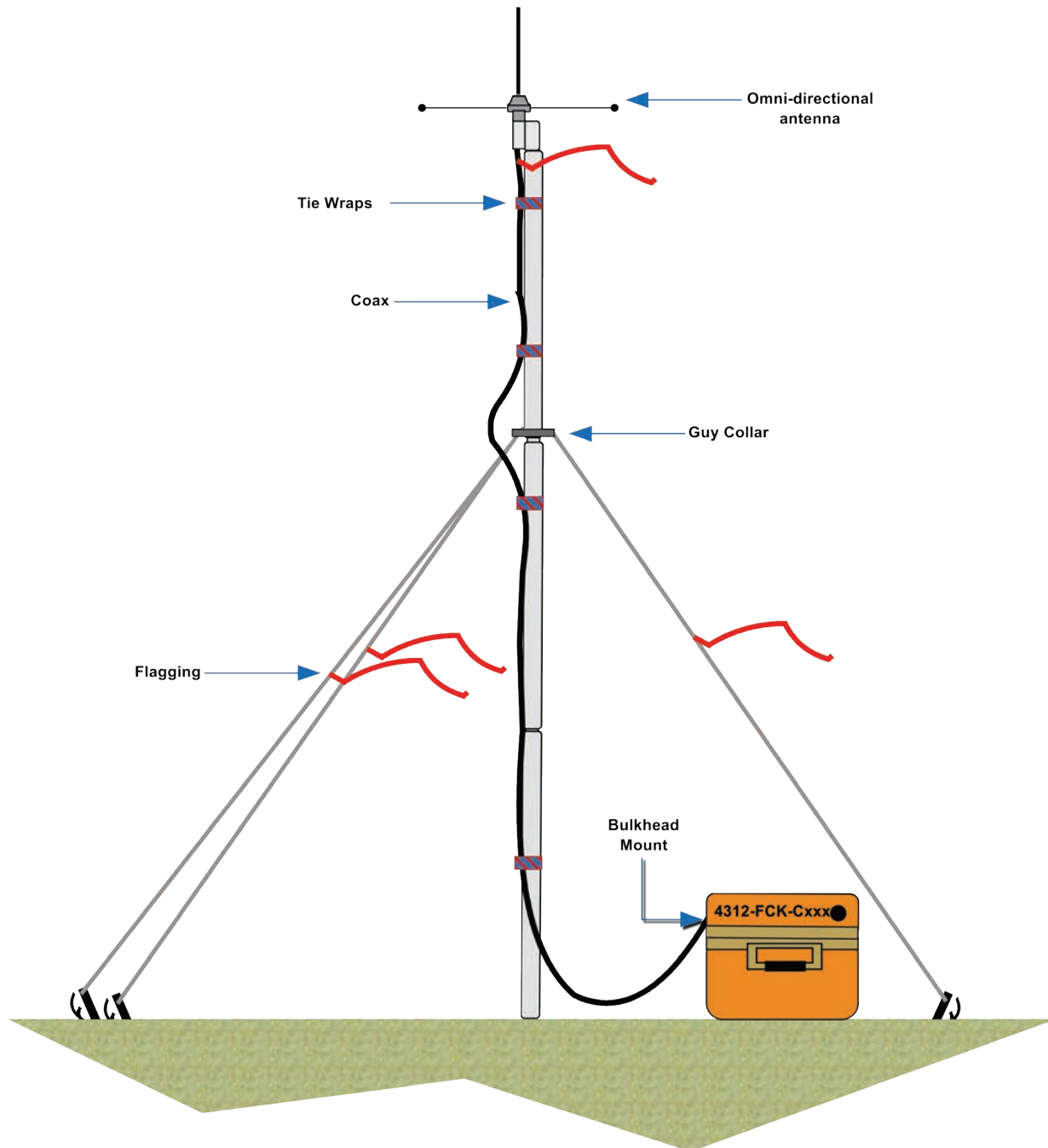
11. Stand the antenna up to nearly vertical by picking up the base of the mast and dragging it towards the equipment box. The antenna should stand alone which allows the installer to finish the install without the help of another individual. **(See Figure D)**  
*Note: In high wind situations, make sure the antenna is leaning away from the wind and not into the wind.*
12. Straight down from the guy collar, walk out 3 paces or 9 feet to find the placement of the 3rd tent stake. Place the 3rd tent stake at a location equidistant from the other two tent stakes and drive it in at an angle away from the antenna base.
13. Tie the remaining rope from the guy collar to the 3rd tent stake using either a trucker's hitch or taut line hitch. Leave enough slack in the rope of the 3rd stake to allow the antenna mast to be raised vertically.



**Figure D**

14. Stand the antenna vertically and tighten all three guy ropes if necessary. *(See Figure E)*  
*Note: Rope tension may need to be slightly eased in order to stand the antenna vertically.*
15. Hammer the 3 tent stakes down until the hook is flush with the ground.
16. Install at least 1, 2-3ft. long strip of flagging at eye level on each guy rope.
17. Attache the other end of the coax cable to the appropriate connector on the Bulkhead mount located on the back of the fiberglass box.  
*Note: The bulkhead mount connectors are clearly marked to facilitate proper installation.*
18. Attach a fourth tie wrap on the bottom mast section to secure the coax to the mast.
19. Secure the box by taping all uncovered box holes to prevent moisture and rodents from entering.

*Note: The antenna may be lowered by slightly lifting up the base and moving it towards the perimeter.*



**Figure E**

# LINK ANTENNA INSTALLATION INSTRUCTIONS

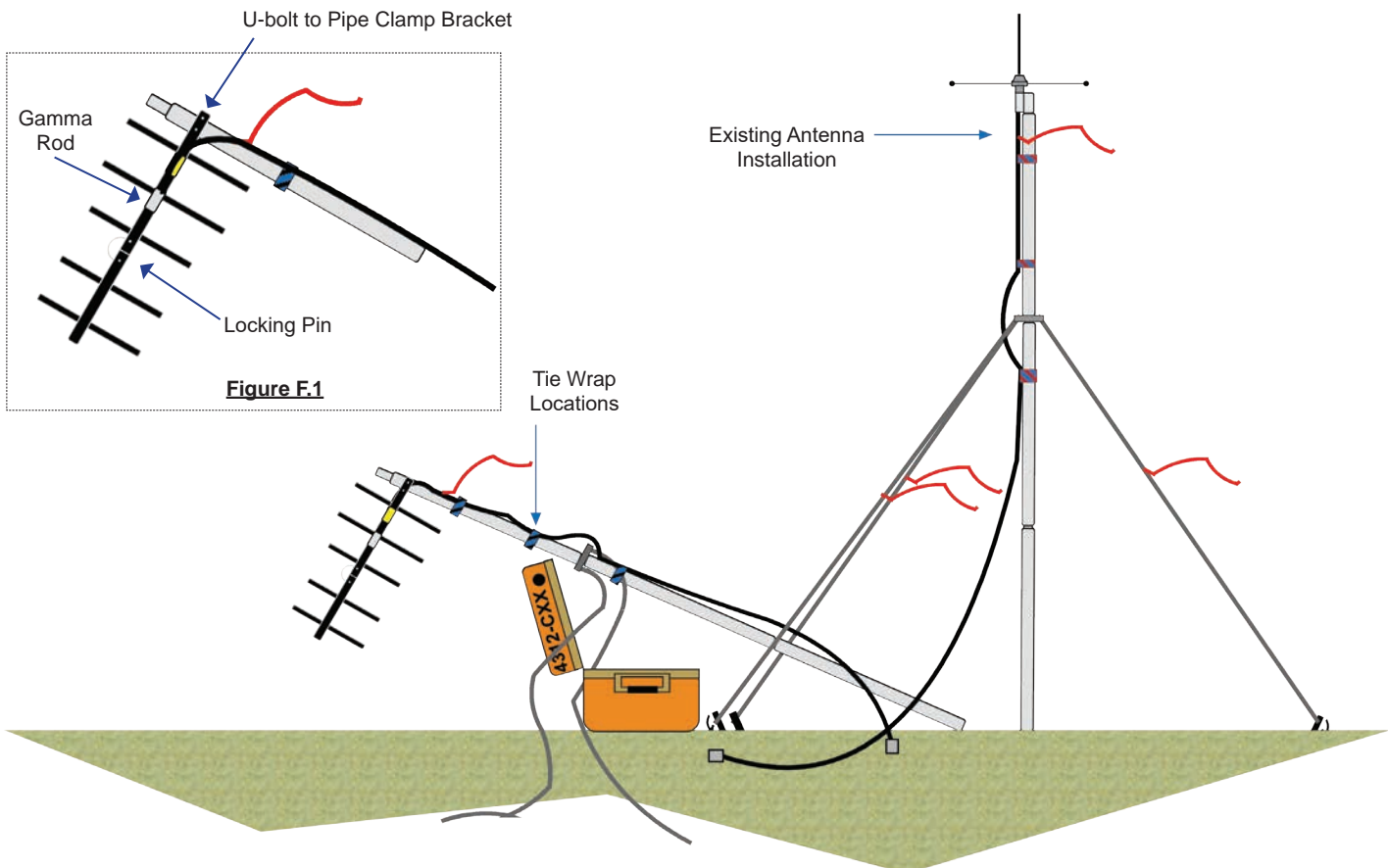
*Note: The Link Antenna Installation Instructions are assuming that the Omni-directional Antenna has been previously installed at the site.*

1. Disconnect the coax from the bulkhead connector and move the equipment box about 3 paces from the existing mast.
2. Rotate the equipment box and open the lid so that the opened lid will accommodate placing the mast in line with the desired target, and in line with the two other tent stakes placed earlier in the first antenna setup.
3. Assemble the two (2) mast sections first.
4. Place the guy collar on the end of the second mast before assembling the third mast section.
5. Lay the assembled mast on the opened lid of the equipment/box with half of the third section of the mast protruding beyond the lid of the equipment box. **(See Figure F)**
6. Install the appropriate antenna on the 3rd mast section. If an omni-directional antenna is being used, be sure to match the proper antenna base and to raise and lock the radials. If a Yagi is being used, assemble the antenna and ensure the locking pin is in place before clamping the pipe clamp bracket to the top of the mast. **(See Figure F.1)**

**Note: The Gamma Rod must be facing down for weather considerations.**

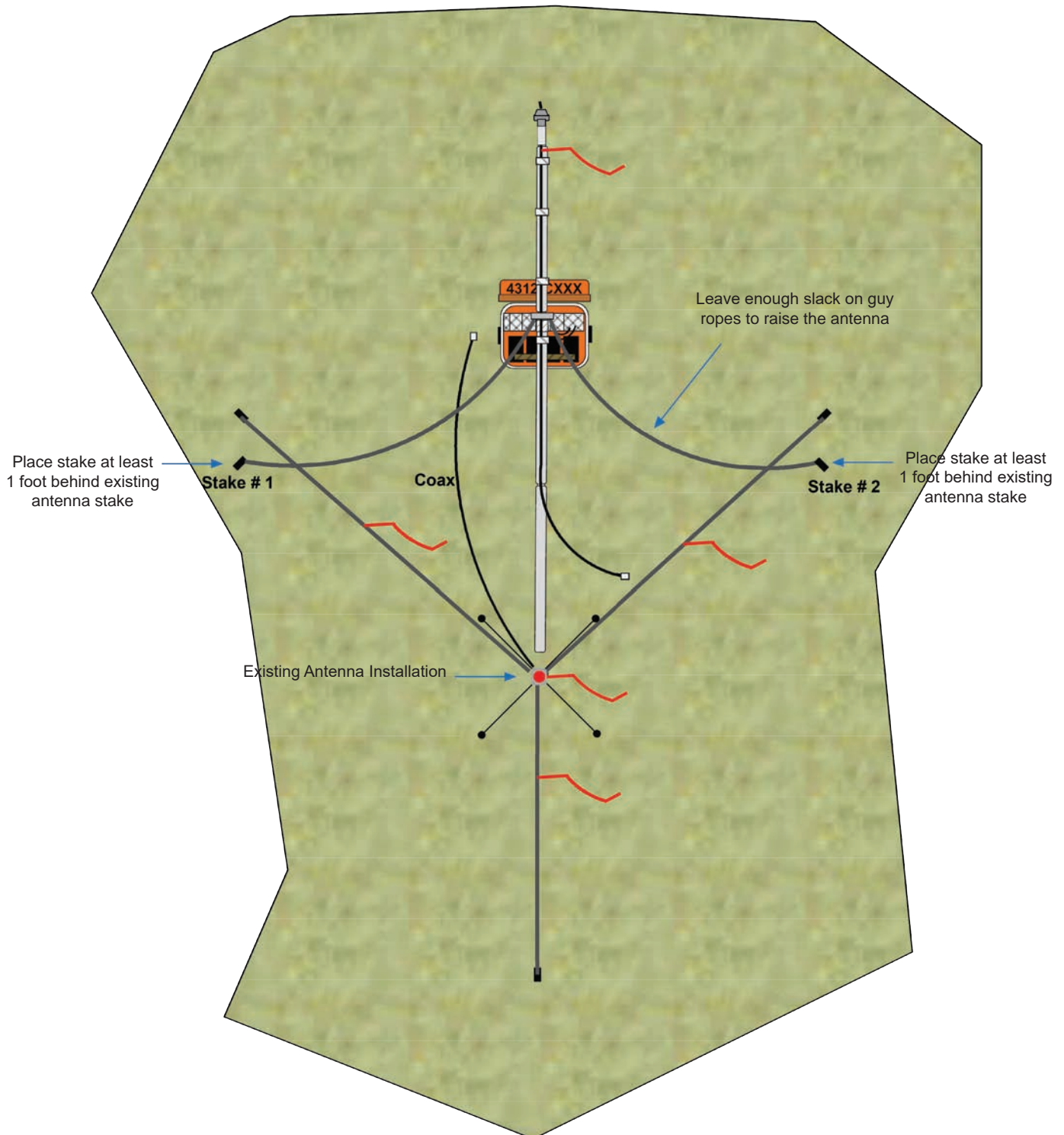
**NIRSC Yagi Antennas have a 50 degree Vertical and 60 Degree Horizontal beam widths.**

7. Connect the coax to the selected antenna base or Yagi.
8. Secure the coax to the antenna mast at three places with provided tie wraps, 12 inches below the antenna base and 12 inches above and below the guy collar, with a loop around the guy collar to prevent chafing the coax.
9. Tear off a 2-3ft piece of flagging and tie it around the coax just below the antenna base.





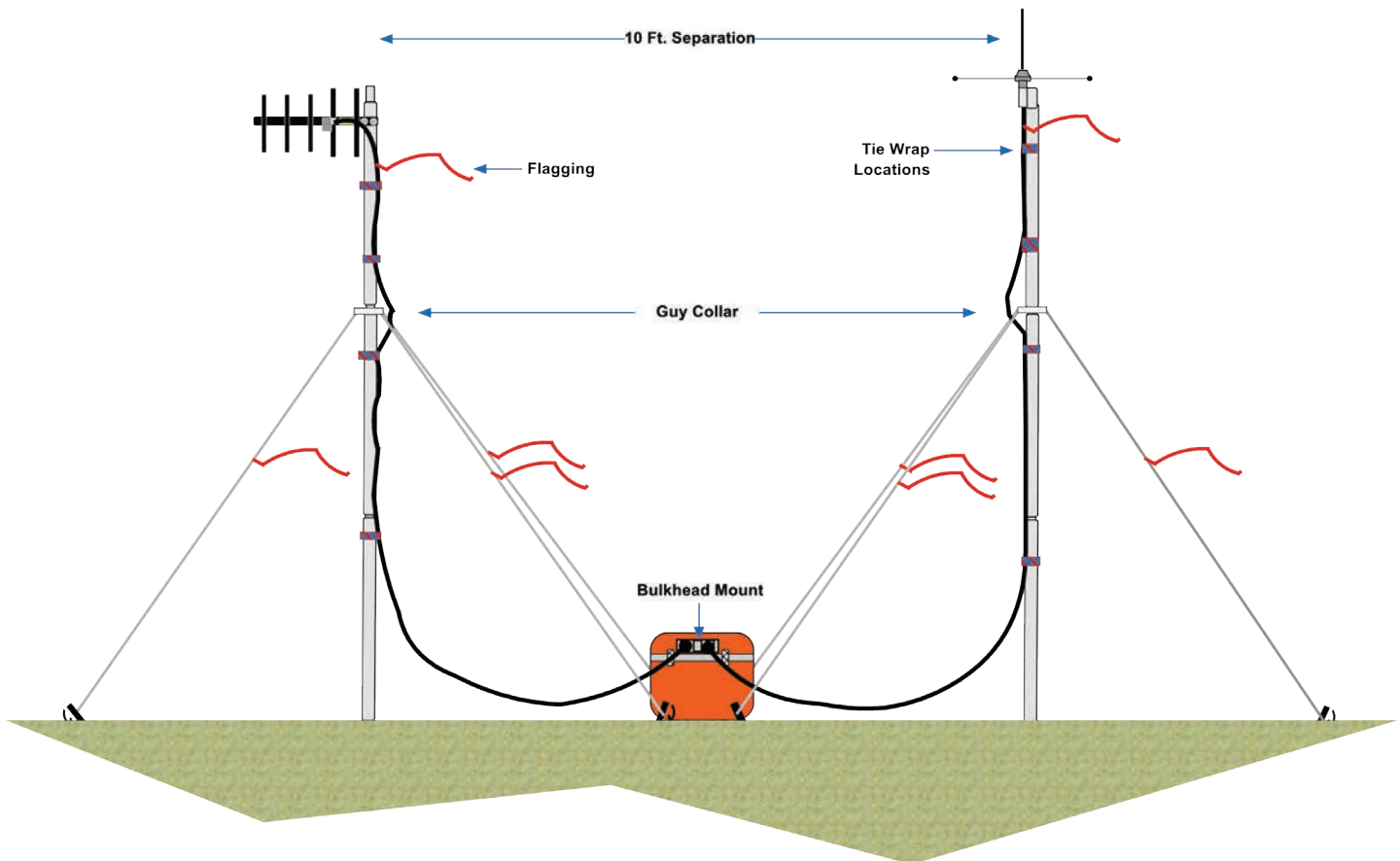
10. Place two tent stakes in-line with the existing two antenna stakes. **(See Figure G)**  
*Note: Drive the tent stakes in at an angle, with stake tops sloping away from the area where the equipment box and the antenna base will be located. Don't drive the tent stakes all the way down until all the guy ropes are secured in the following steps.*
11. Securely tie the ropes from the guy collar to each of the two tent stakes with either a trucker's hitch or a taut line hitch, leaving enough slack in the ropes to raise the antenna vertically.  
*Note: Use a knot that you are most comfortable with.*
12. Tent stake #3 should be in line with the end of the antenna whip and should be marked at this time.



**Figure G**

13. Stand the antenna up to nearly vertical by picking up the base of the mast and dragging it towards the equipment box. The antenna should stand alone which allows the installer to finish the install without the help of another individual. **(See figure D on previous pages for reference)**
  14. Straight down from the guy collar, walk out 3 paces or 9 feet to find the placement of the 3 tent stake. Place the 3rd tent stake at a location equidistant from the other two tent stakes and drive it in at an angle away from the antenna base. **(See figure D on previous pages for reference)**
  15. Tie the remaining rope from the guy collar to the 3rd tent stake using either a trucker's hitch or a taut line hitch.
  16. Stand the antenna vertically, and tighten any loose ropes. **(See Figure H)**
  17. Install at least 1, 2-3ft long strip of flagging at eye level on each guy rope.
  18. Attache the coax cables to the appropriate connectors on the Bulkhead mount located on the back of the fiberglass box.
- Note: The bulkhead mount connectors are clearly marked to facilitate proper installation.*
19. Tie wrap the remaining bottom portion of the coax cables to the bottom mast.
  20. Close the equipment box and secure the box by covering any holes with filament tape to prevent moisture and rodents from entering.

*Note: The antenna may be lowered by slightly lifting up the base and moving it towards the perimeter. It may be desirable to put flagging around the perimeter of the stakes or around the entire area. Be sure to pick up all flagging, tape, and other debris when removing the equipment.*

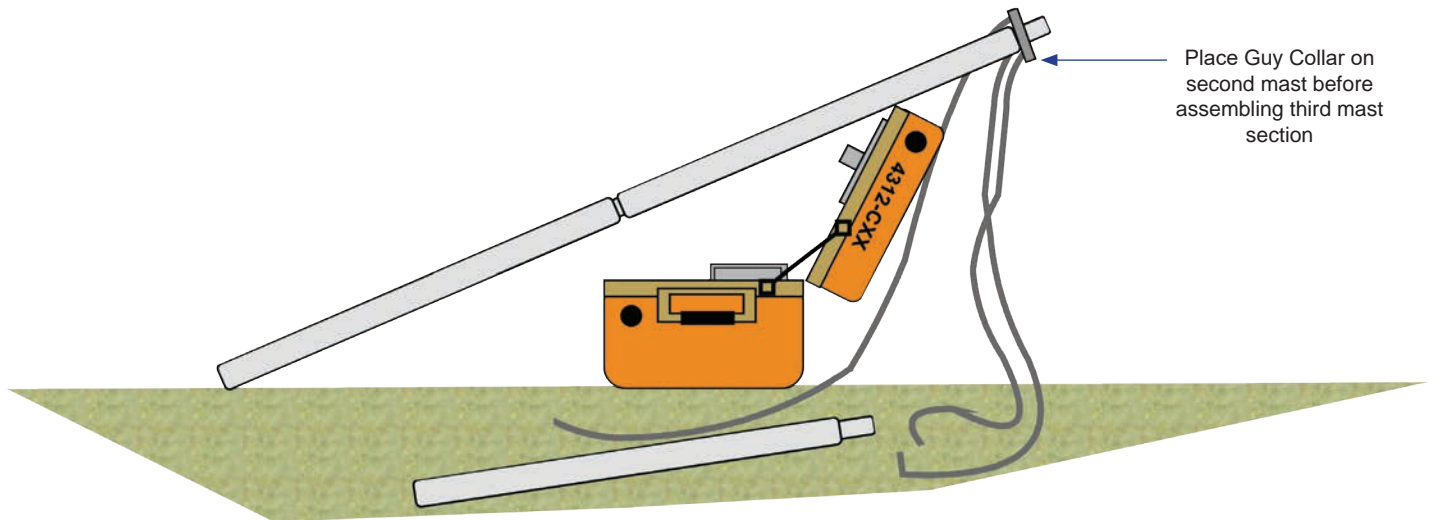


**Figure H**

# ONE MAST LINK ANTENNA INSTALLATION INSTRUCTIONS

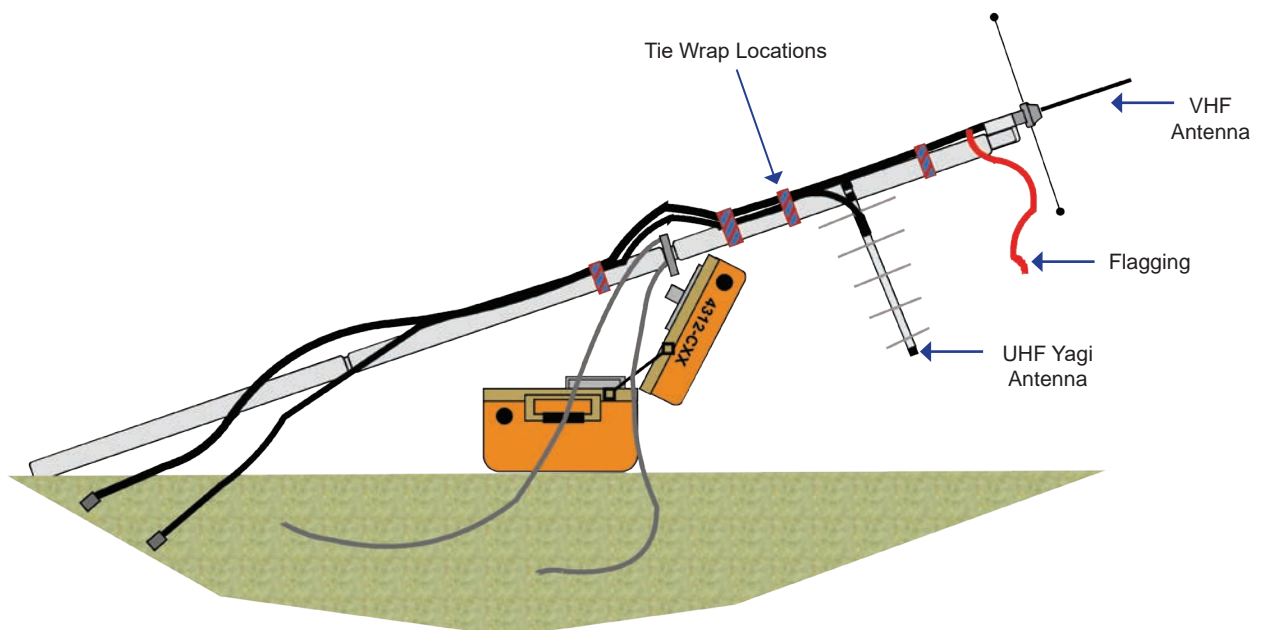
Due to terrain or other limitations, it might be necessary to place both VHF and UHF Yagi antennas on one set of mast.

1. Place the equipment/box at the desired antenna location.
2. Assemble the two (2) mast sections first.
3. Place the guy collar on the end of the second mast before assembling the third mast section. *(See Figure A)*



**Figure A**

4. Lay the assembled mast on the opened lid of the equipment/box with half of the 3rd section of the mast protruding beyond the lid of the equipment box.
5. Assemble the Yagi antenna and install it half way down the 3rd mast section. *(See Figure B)*  
**Note: The Gamma Rod must be facing down for weather considerations.**  
**NIRSC Yagi Antennas have a 50 degree Vertical and 60 Degree Horizontal beam widths.**
6. Install the VHF antenna base and appropriate VHF whip onto the 3rd mast section. Raise all radials and lock into place.
7. Connect the coax to the VHF antenna Base. Connect the second coax to the Yagi antenna. Secure both coax cables to the mast at four places with tie wraps adding a loop around the guy collar to prevent chafing the coax cables.

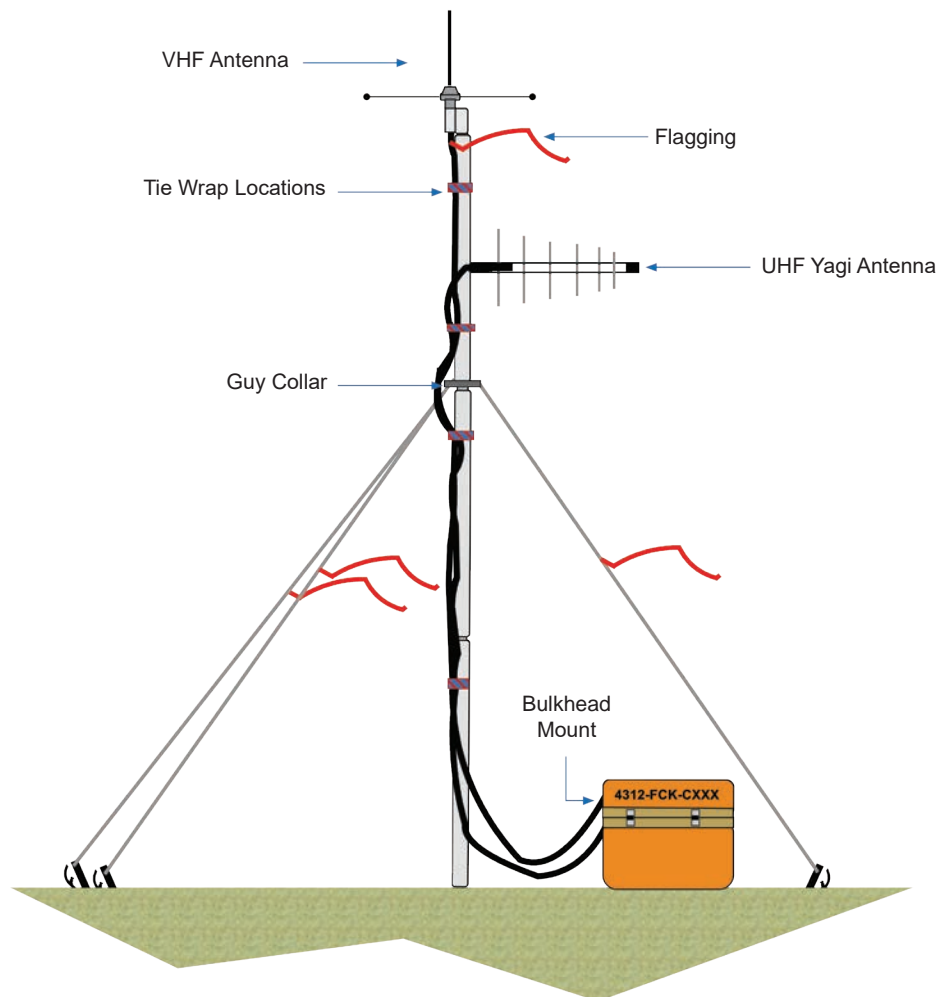


**Figure B**



8. Place two steel tent stakes, each 9 ft. (3 normal paces) perpendicular from the base of the antenna mast.  
*Note: Drive the tent stakes in at an angle, with top end sloping away from the area where the equipment box and the antenna base will be located. Don't drive the tent stakes all the way down until all the guy ropes are secure in the following steps.*
9. Securely tie the ropes from the guy collar to each of the two tent stakes with either a trucker's hitch or a taut line hitch, leaving enough slack in the rope to raise the antenna vertically. *Note: Use a knot that you are most comfortable with.*
10. Stand the antenna up to nearly vertical by picking up the base of the mast and dragging it towards the equipment box. The antenna should stand alone which allows the installer to finish the install without the help of another individual. **( See Figure D from previous pages )**  
*Note: In high wind situations, make sure the antenna is leaning away from the wind and not into the wind.*
11. Straight down from the guy collar, walk out 3 paces or 9 feet to find the placement of the 3rd tent stake. Place the 3rd tent stake at a location equidistant from the other two tent stakes and drive it in at an angle away from the antenna base. **( See Figure D from previous pages )**
12. Tie the remaining rope from the guy collar to the 3rd tent stake using either a trucker's hitch or taut line hitch. Leave enough slack in the rope of the 3rd stake to allow the antenna mast to be raised vertically.
13. Stand the antenna vertically and tighten all three guy ropes if necessary. **( See Figure C )**
14. Hammer the 3 tent stakes down until the hook is flush with the ground.
15. Install at least 1, 2-3ft. long strip of flagging at eye level on each guy rope.
16. Attache the other ends of the coax cables to the appropriate connector on the Bulkhead mount located on the back of the fiberglass box.
 

*Note: The bulkhead mount connectors are clearly marked to facilitate proper installation.*
17. Tie wrap the remaining bottom portion of the coax cables to the bottom mast.
19. Secure the box by taping all uncovered box holes to prevent moisture and rodents from entering.



**Figure C**