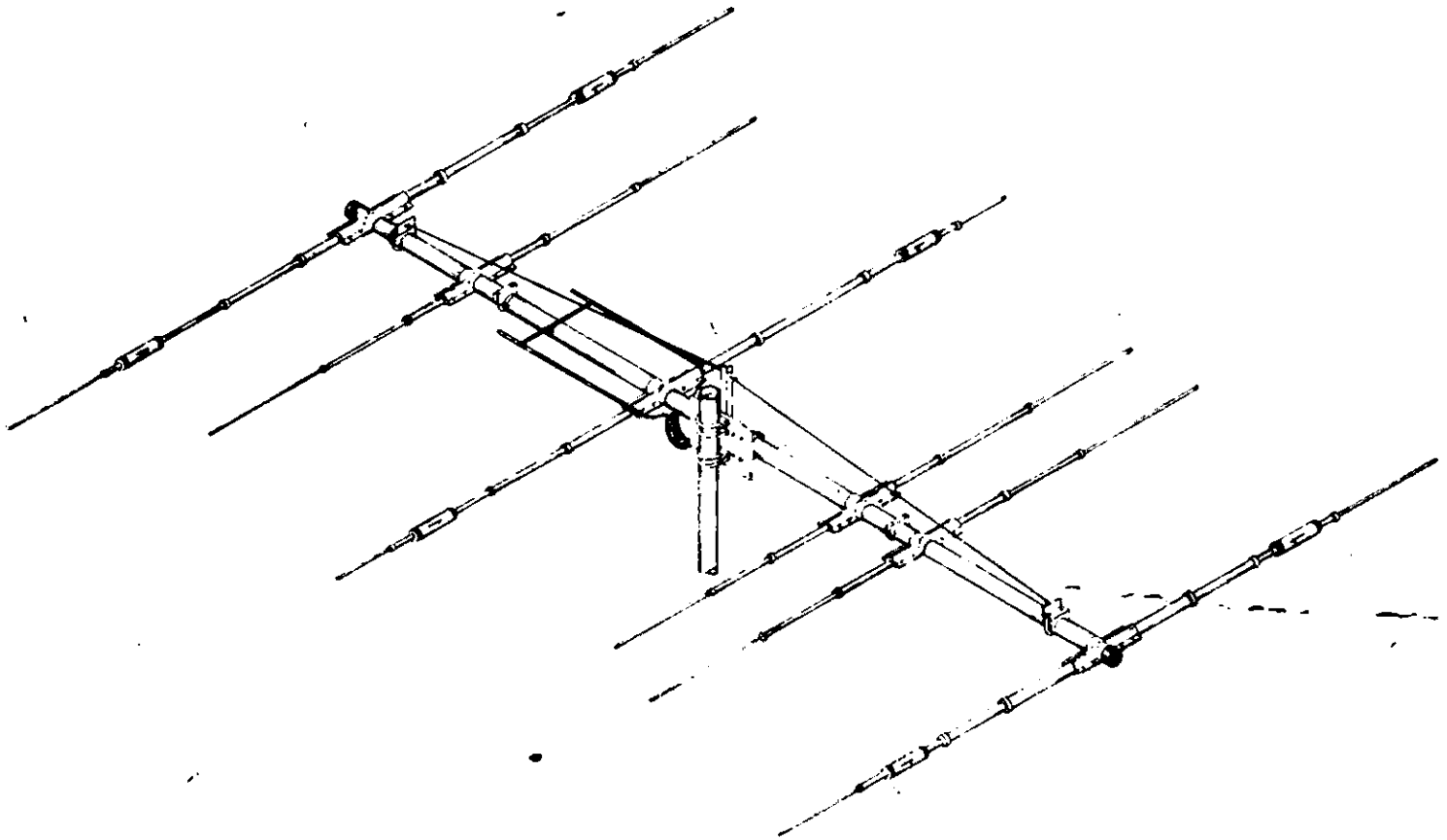


ASSEMBLY INSTRUCTIONS

6 Element Tribander
10, 15, 20 Meters



SY36

"WARNING"

*INSTALLATION OF THIS PRODUCT NEAR POWER
LINES IS DANGEROUS. FOR YOUR SAFETY, FOLLOW
THE INSTALLATION DIRECTIONS.*

W S I WILSON
SYSTEMS, INC.

4286 S. Polaris Ave., Las Vegas, Nevada 89103
(702) 739-7401 - Toll-Free Order Number 800-634-6898

**PARTS LIST
SYSTEM 36**

<u>PART</u>	<u>QTY.</u>	<u>O.D.</u>	<u>SIZE</u>	<u>LENGTH</u>	<u>DESCRIPTION</u>	<u>CHECK LIST</u>
- T113P	2	2"	.057"	69-3/4"	Alum. Tubing slotted one end	_____
- T32P	2	2"	.057"	80"	Alum. Tubing swaged 4 1/2" one end	_____
- T53	1	1.845"	.060"	80"	Alum. Tubing	_____
2.2 T27P	6	1-1/4"	.049"	36"	Alum. Tubing slotted one end	_____
2.2 T20P	6	1-1/8"	.049"	54"	Alum. Tubing swaged & slotted one end to accept 7/8" O.D. tubing	_____
T19P	2	7/8"	.049"	48"	Alum. Tubing swaged & slotted one end to accept 5/8" O.D. tubing	_____
T102P	4	7/8"	.049"	24"	Alum. Tubing swaged & slotted one end to accept 5/8" O.D. tubing	_____
T116P	2	7/8"	.049"	41"	Alum. Tubing slotted one end	_____
2 T98P	2	7/8"	.049"	26"	Alum. Tubing slotted one end	_____
- T107P	2	7/8"	.049"	12-1/2"	Alum. Tubing slotted one end	_____
T14P	6	5/8"	.049"	36"	Alum. Tubing slotted one end	_____
T108P	2	5/8"	.049"	43"	Alum. Tubing	_____
2 T73P	2	5/8"	.049"	30"	Alum. Tubing	_____
- T109P	2	5/8"	.049"	48"	Alum. Tubing	_____
T02	4	1/2"	.042"	60"	Alum. Tubing	_____
T03	2	1/2"	.042"	48"	Alum. Tubing	_____
T115P	2	3/8"	.035"	48"	Alum. Tubing flattened & pierced one end	_____
P01P	1		1/4" x 6"	8"	Boom-to-Mast Plate	_____
V03P	1		1" x 1"	24"	Guy Support	_____
BE6P	2				Boom-to-Element Plates (for insulators)	_____
BE7P	4				Boom-to-Element Plates (for 1 1/4" tubing)	_____
BE8P	6				Boom-to-Element Plates (for 7/8" tubing)	_____
TA6P	2				Radiator Traps (orange)	_____
TA7P	2				Reflector Traps (brown)	_____
TA8P	2				Director Traps (yellow)	_____
WD2P	1			25'	6/18 steel guy cable	_____
PR60	1			60'	Polypropylene rope	_____
RFC1	1				RF choke	_____
HARDWARE BAG NO. 1						
N01	34		5/16"-18		Hex Nuts	_____
N21	49		1/4"-20		Hex Nuts	_____
N25	2		12-24		Hex Nuts	_____
N06	3		10-24		Hex Nuts	_____
N02	30		5/16"		Lockwashers	_____
N22	49		1/4"		Lockwashers	_____
N14	2		No. 12		Lockwashers	_____
N26	5		No. 10		Flatwashers	_____
N12	3		No. 10		Lockwashers	_____
- S49	49		1/4" x 3/4"		Hex Bolts	_____
S39	12		1/4" x 1/2"		Hex Bolts	_____
N18P	4		5/16" x 4"		Eye Bolts (welded)	_____
S32	2		12-24 x 3/4"		Machine Screws	_____
S27	30		12-24 x 1/2"		Machine Screws	_____
S21	9		10-24 x 1/2"		Machine Screws	_____
N23	12		1/4-20		Square Nuts	_____
N13	32		12-24		Square Nuts	_____
N11	6		10-24		Square Nuts	_____
PL2	6		7/16"		Plastic Cap, black	_____
PL3	6		5/8"		Plastic Cap, black	_____
PL5	1		2"		Plastic Cap, black	_____
PL5R	1		2"		Plastic Cap, red	_____
F02	2		1-1/4"		Insulator Sleeves	_____
C01	2		3/8"		Alum. Clamps-D6	_____
W14P	8		1-1/4"		Alum. Clamps	_____
W10P	6		1"		Alum. Clamps	_____
W78P	5		7/8"		Alum. Clamps	_____
W34P	12		3/4"		Alum. Clamps	_____
W58P	6		5/8"		Alum. Clamps	_____
Z14P	1		1/2" x .060"	11"	Beta Rod Strap	_____
C19P	1		2"		Boom Strap	_____
PE1	2				Bag Penetrox	_____
HARDWARE BAG NO. 2						
- S01	13		2"		Saddles	_____
- BG2P	2		2"		Boom Guy Support Mounts	_____
HARDWARE BAG NO. 3						
- U01	13		2"		U-Bolts	_____
- SY36	1				Set of Instructions	_____

SYSTEM 36

20, 15, 10 METERS TRIBANDER

Band MHz	14-21-28	Longest Element:	29' 6 1/2"
Maximum power input	legal limit	Turning radius:	19' 1"
Gain (dBd)	up to 9 dB	Maximum mast diameter:	2" O.D.
VSWR at resonance	1.1:1	Surface area:	8.6 sq. ft.
Impedance:	50 ohms	Wind loading at 80 mph	215 lbs.
F/B ratio	up to 20 dB	Assembled weight (approx.)	53 lbs.
Boom (O.D. x length)	2" x 24' 2 1/2"	Shipping weight (approx.)	62 lbs.
No. elements	6	Maximum wind survival:	100 mph

PRELIMINARY INSTRUCTIONS

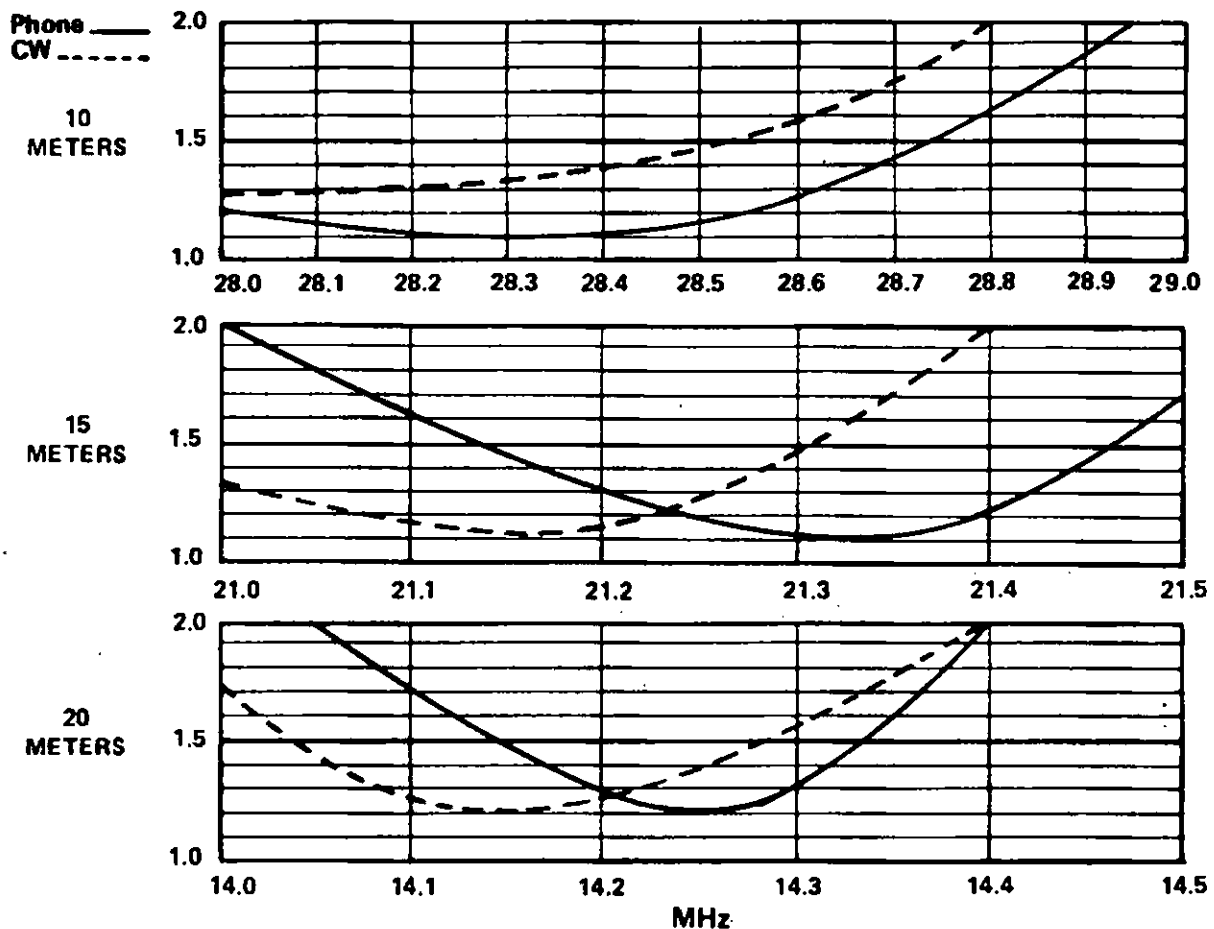
For the best results and the best use of your time, familiarize yourself with all parts and instructions before beginning assembly.

Begin assembly by unpacking everything and checking all your parts against the parts list. Do not proceed until you have determined that you have everything on the list, and each item in the quantity specified. If anything is missing, contact the Customer Service Dept. at Wilson Systems immediately, and tell us exactly what is missing. Do not begin assembling your antenna until you have all parts in hand.

Read your instructions completely, and be sure you understand them, before you start. Do not begin assembly until you are sure you have ample time to finish – a partially completed antenna is especially prone to damage, and parts scattered around are easily lost.

If you lose or damage any parts, or have any problems you cannot work out by yourself, call us! We have experienced dedicated people who understand your problems and are anxious to help you.

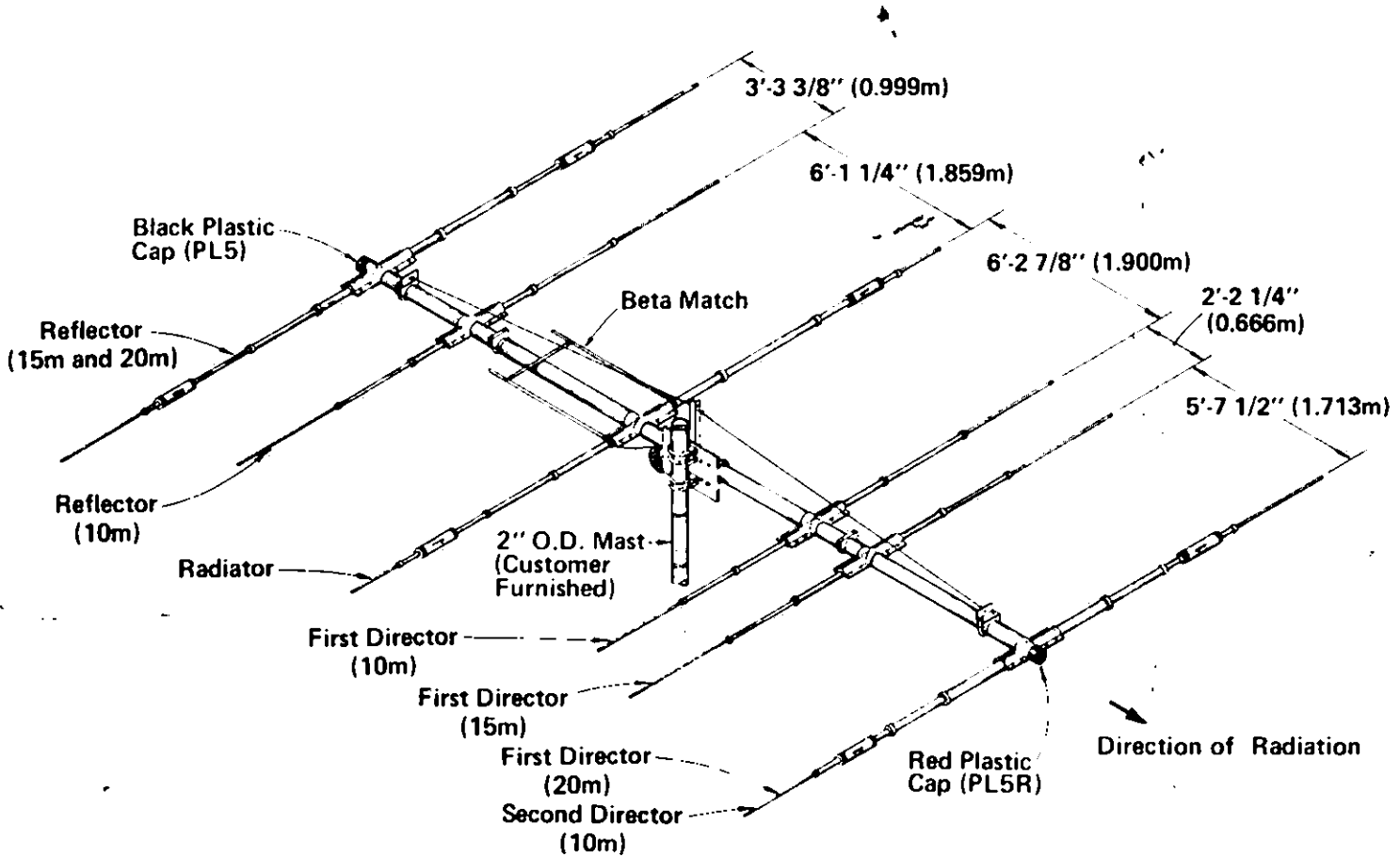
SWR CURVES



OVERALL DIMENSIONS

	Phone	CW
Reflector (15m and 20m)	29'-2 1/2" (8.896m)	29'-6 1/2" (8.997m)
Reflector (10m)	17'-10" (5.431m)	17'-10" (5.431m)
Radiator	24'-6" (7.461m)	24'-8" (7.513m)
1st Director (10m)	16'-7" (5.050m)	16'-7" (5.050m)
1st Director (15m)	21'-1" (6.420m)	21'-1" (6.420m)
1st Director (20m)	25'-6 3/4" (7.785m)	25'-6 3/4" (7.785m)
2nd Director (10m)		

For exact element dimensions see Figure 4.



BASIC ASSEMBLY PROCEDURE:

This figure shows what the antenna should look like when assembled. Specific assembly details are shown on following pages. Your basic order of assembly should be:

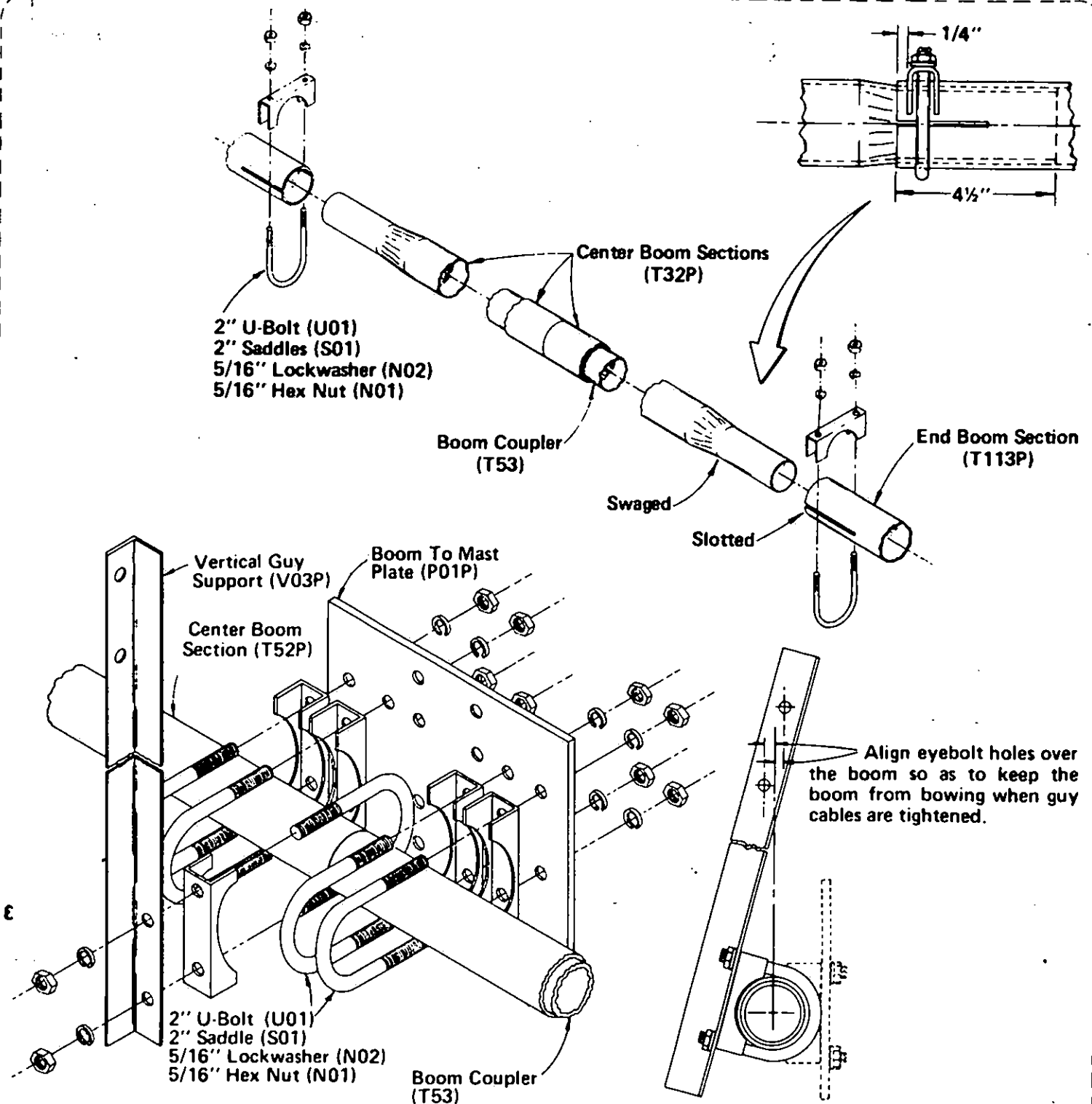
1. Put the boom together as shown in Figure 2.
2. Then assemble each element as shown in Figures 3, 4 and 5. Do the driven element first; and then each of the others in any order you choose. Mount each element loosely on the boom as soon as it is assembled. Locate them only approximately, and do not put the plastic caps on the ends at this time.
3. After the elements are all in place, move them to their exact positions, set them square to the boom and parallel to each other, and tighten all bolts and clamps. Recheck all dimensions, and correct any errors.
4. Install the guy cables per Figure 7A.
5. Recheck all dimensions again, and check the tightness of all bolts and clamps. Coat all bolts, screws, and nuts with silicon sealant. Put plastic caps on the ends of boom and elements.
6. Attach your coaxial cable to the balun as illustrated, and secure to the boom with tape.
7. Install the antenna on the mast per Figure 7B. Dress your coaxial cable down the mast and secure in several places with tape.

Figure 1

DRAWN
 APPROVED

SY36

08-01-79



BOOM ASSEMBLY:

First mark the center of the 80" (2.032m) alum. tubing (T53). Slide the unswaged ends of the center boom sections (T32P) over each end of the coupler so that they butt in the center. Attach the boom-to-mast plate (P01P) and the vertical guy support (V03P) at the boom center using 2" u-bolts, saddles and hardware as shown above. Be sure to slip the 2" u-bolt for attaching guy support over boom before securing mast plate.

Slide the slotted ends of the end boom sections (T113P) 4 1/2" (0.114m) over the swaged ends of the center boom sections and secure in the same manner as above. The overall length of the boom should be 24' 2 1/2" (7.373m).

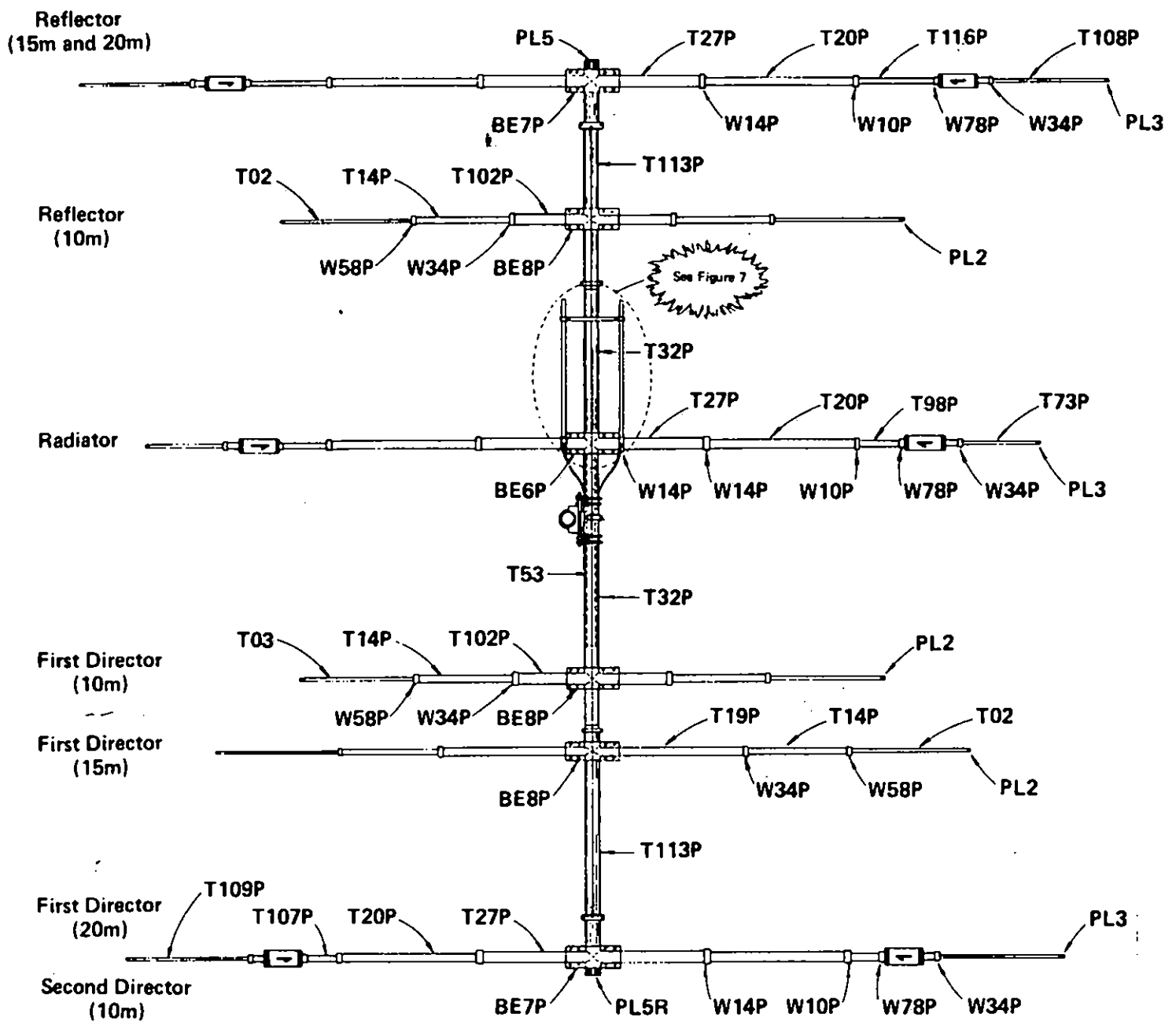
FIGURE 2

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(5)



PARTS IDENTIFICATION

ELEMENT ASSEMBLY:

Figures 3 and 4 show a top view of the assembled antenna, and gives part numbers and principal dimensions for assembling and installing the elements. Refer to the parts list (sheet 1) for complete descriptions and specifications and to Figures 5 and 6 for specific assembly details and hardware call outs.

All elements are symmetrical. Dimensions given are from end of tubing to end of tubing. See Figure 1 for the correct locations of the elements on the boom.

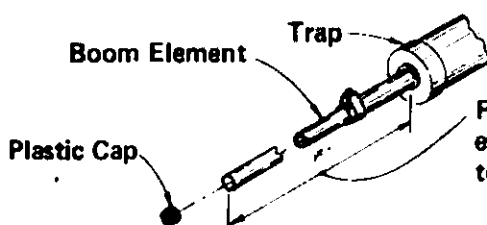
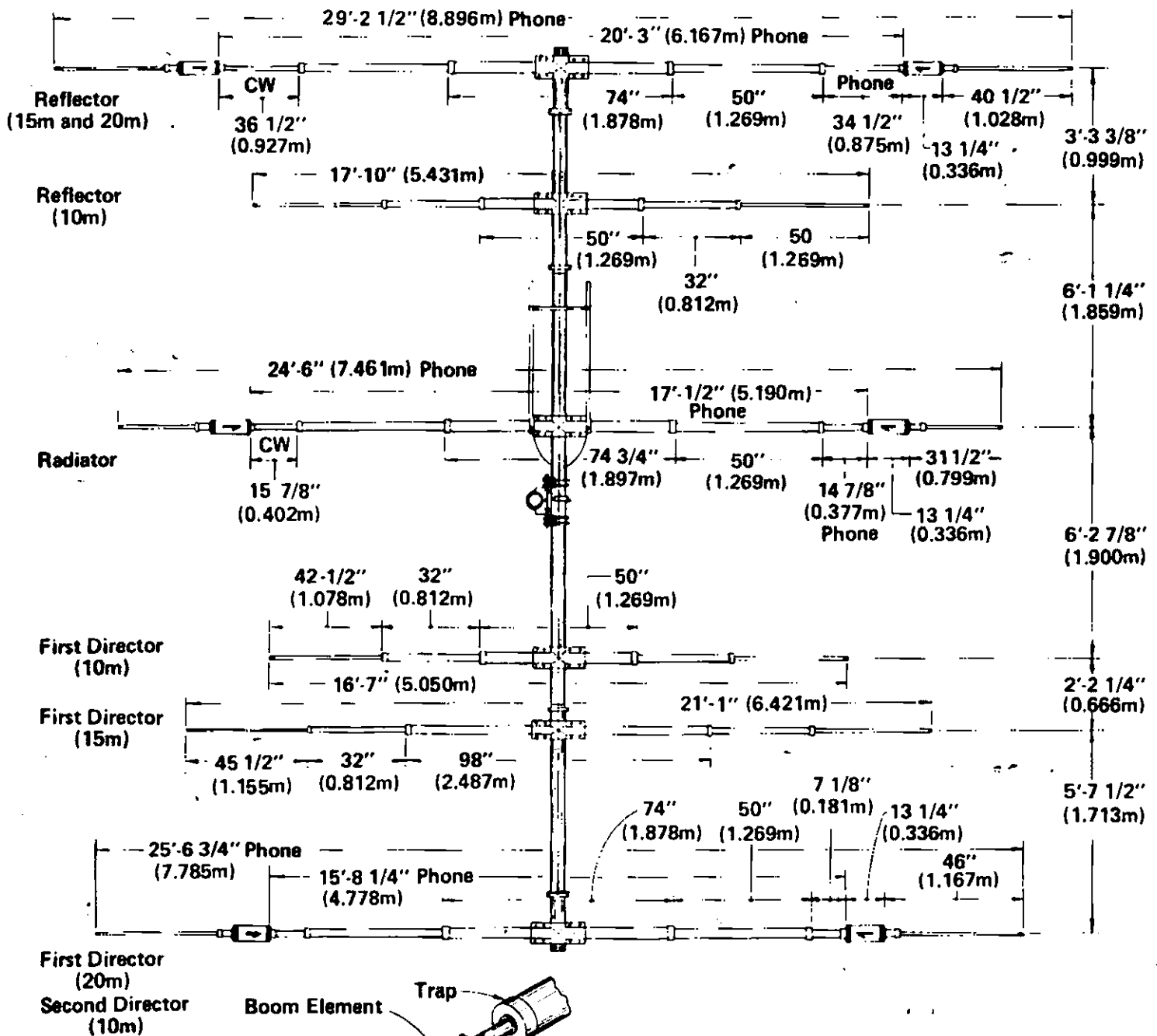
FIGURE 3

SY36

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 APPROVED ---

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(6)



Reflector, Radiator and Director Element end measurements are taken from end of Trap to end of Element with Plastic Cap removed.

Vibrations in your antenna due to light winds will cause the elements to sing and harden. If the elements over-harden they will become brittle and crack. In order to increase the life of your antenna we recommend the use of 5/16" polypropylene rope threaded through the elements as described below.

Cut a piece of rope 1/2 the length of the overall dimension (sheet 3) plus 6" (0.152m) more. With a match burn the ends of the rope to keep it from fraying. Thread the rope through the 7/8" O.D. tubing. Epoxy glue the rope to the inside of the tubing which will have the mounting plates attached. After the glue has set, thread each piece of the assembly onto the rope (clamp, tubing, clamp, tubing, etc.). When the entire element is assembled, dimensioned, and all hardware tightened, epoxy the other end of the rope to the end tube. Cut the end of the rope flush with the tube and place the plastic cap on the end.

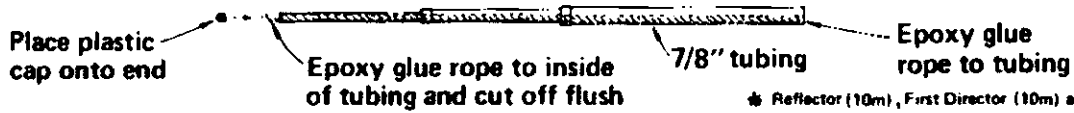


FIGURE 4

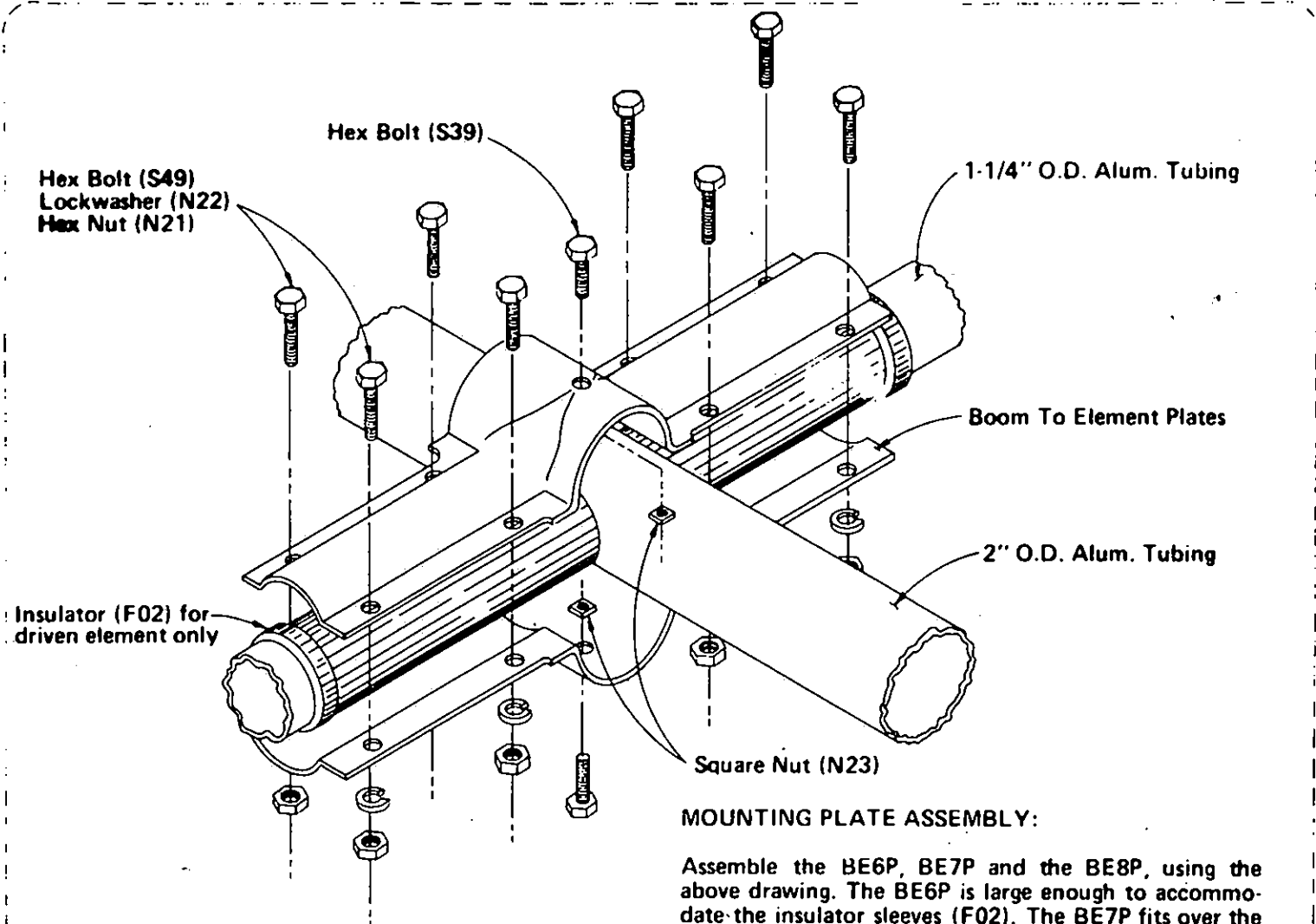
* Reflector (10m), First Director (10m) and First Director (15m) elements only.

DRAWN EDU
APPROVED EDU

SY36

08-01-79

(7)



MOUNTING PLATE ASSEMBLY:

Assemble the BE6P, BE7P and the BE8P, using the above drawing. The BE6P is large enough to accommodate the insulator sleeves (F02). The BE7P fits over the 1 1/4" O.D. alum. tubing, and the BE8P fits over the 7/8" tubing.

FIGURE 5

Assemble trap to element by inserting the machine screw through the hole in the trap.

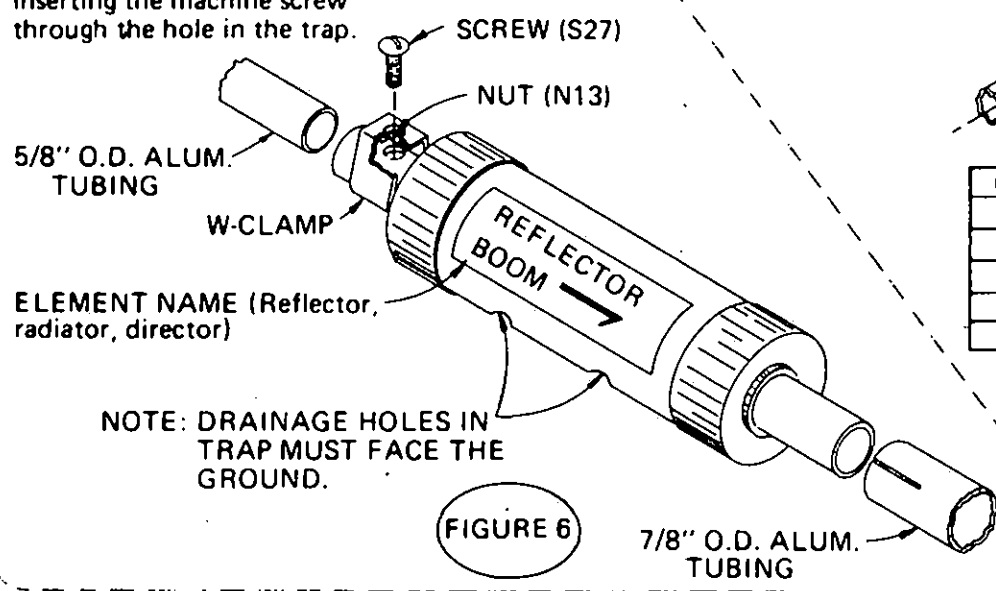
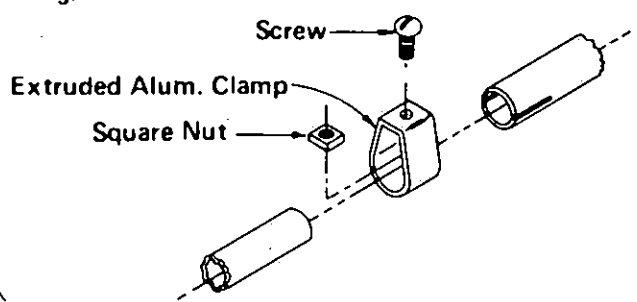


FIGURE 6



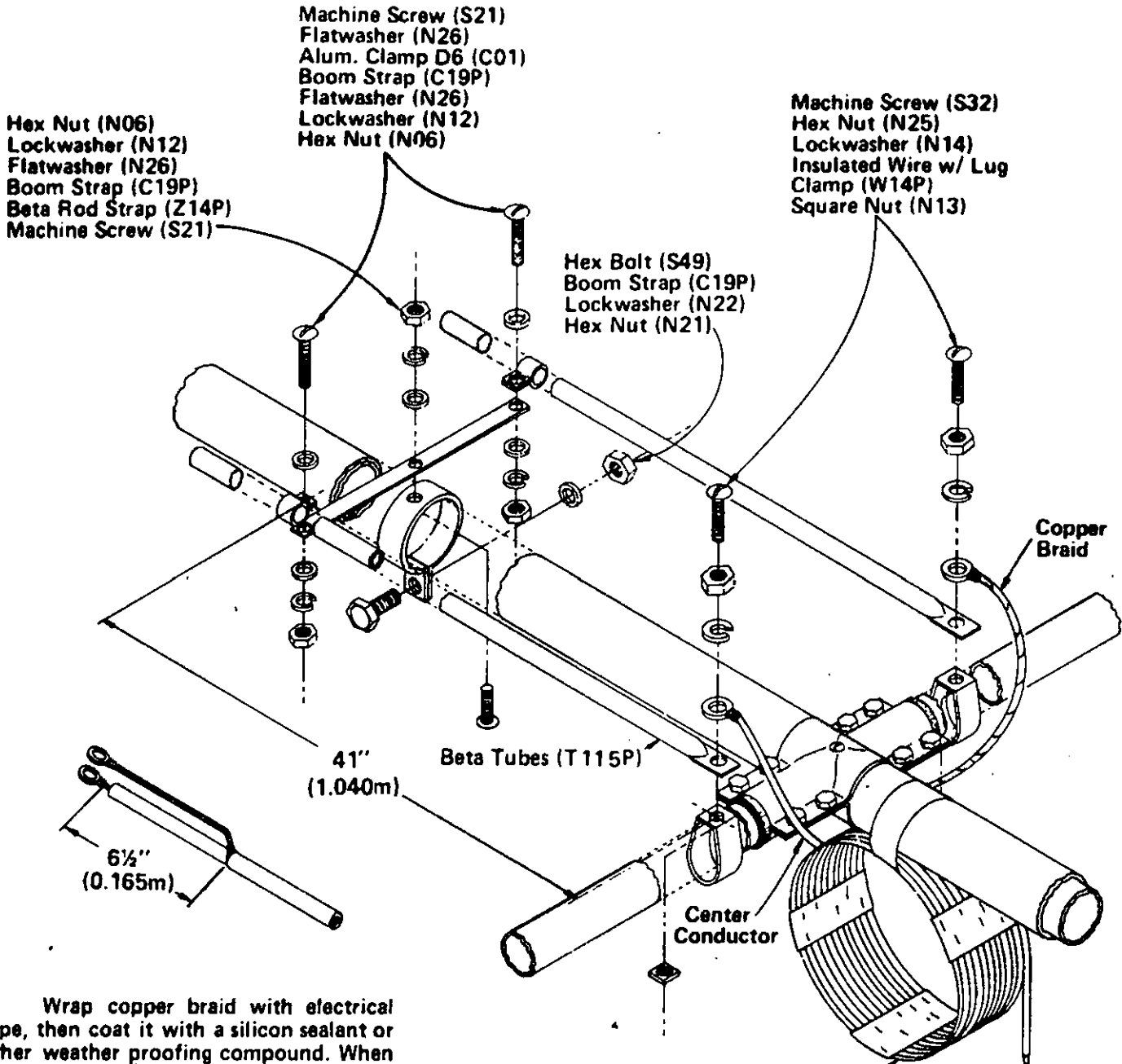
W-Clamp (Typical)

Clamp	Screw	Nut
W14	12-24 x 1/2"	12-24
W10	12-24 x 1/2"	12-24
W78	12-24 x 1/2"	12-24
W34	12-24 x 1/2"	12-24
W58	10-24 x 1/2"	10-24

NOTE: DRAINAGE HOLES IN TRAP MUST FACE THE GROUND.

DRAWN _____
APPROVED _____

SY36



Wrap copper braid with electrical tape, then coat it with a silicon sealant or other weather proofing compound. When assembling the copper braid to the driven element do not allow it to touch the boom at any time.

Tape securely to boom. Make RF Choke by winding 10 turns of RG-8x or -8u coaxial cable with a 6" inside diameter. (Diameter not critical).

Attach PL259 Connector and UG176 Reducer to this end of RFC1 (Customer supplied).

FIGURE 7

SY36

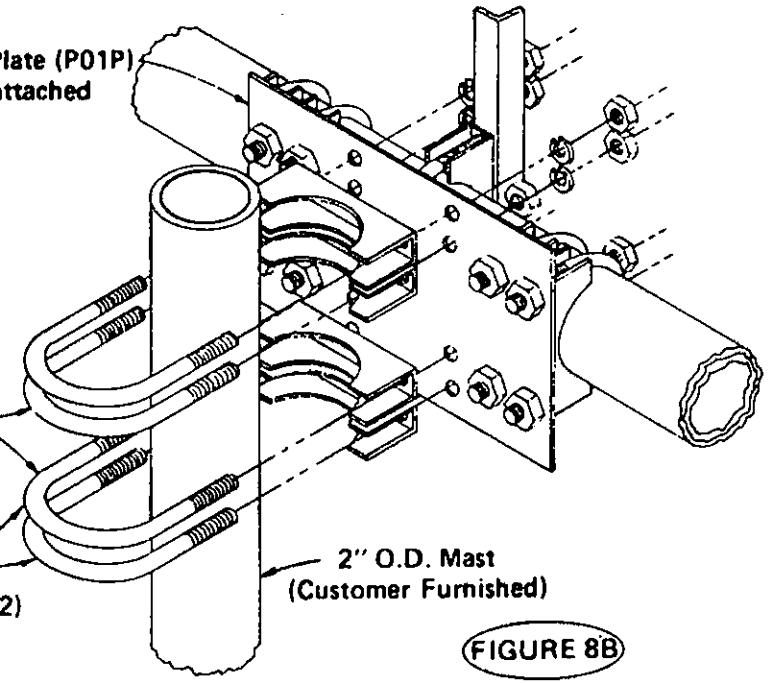
Drawn EPW
Approved KT

Boom to Mast Plate (P01P)
with boom attached

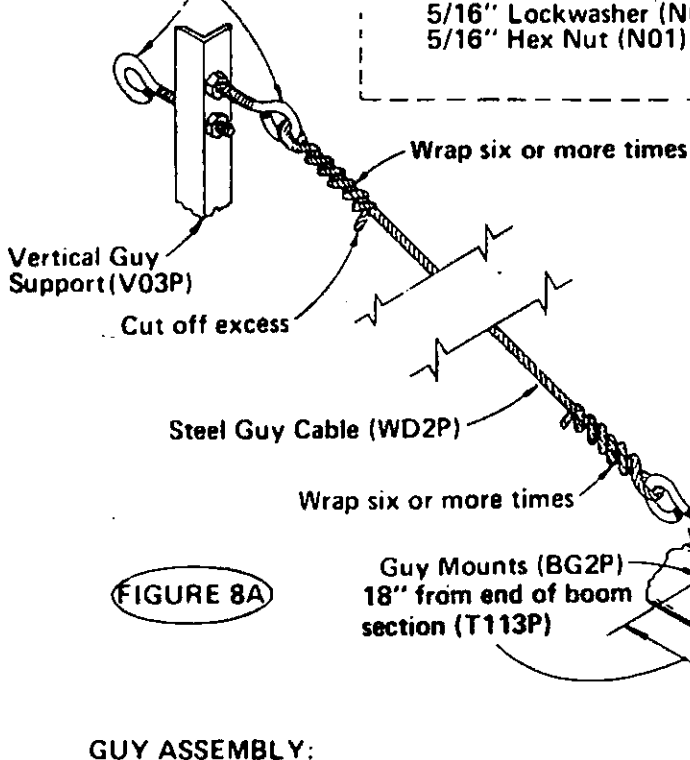
ANTENNA MOUNTING

The completed antenna mounts to a 2" O.D. mast (customer furnished) with 2" u-bolts, saddles, lockwashers and nuts, as shown.

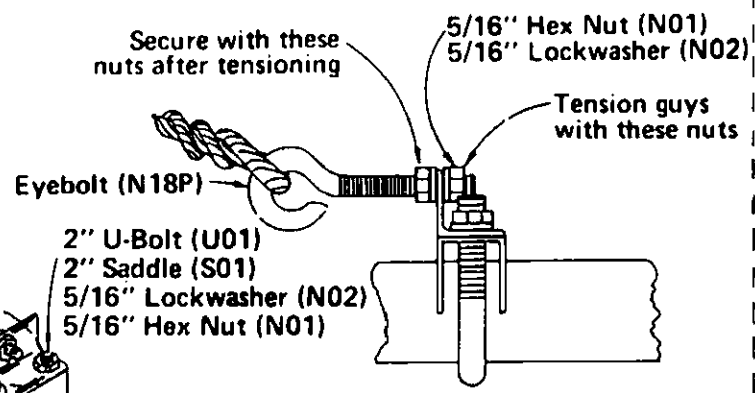
Assemble and tighten the two inner u-bolts before assembling the outer u-bolts.



Eyebolt (N18P)



Secure with these nuts after tensioning



GUY ASSEMBLY:

Cut the guy cable into two equal lengths.

Assemble one 5/16" hex nut (N01) to each of the four eyebolts (N18P). Turn the nut all the way up to the eye as far as it will go with light pressure only. These will be used to secure the eyebolts after guy tensioning.

Install two eye bolts in the top holes of the vertical guy support (V03P) - one eye in each direction. Install one eyebolt in the top hole of each of the two guy mounts (BG2P) - with the eyes towards the center of the boom. Install each bolt by inserting the end about 1/2" (12mm) through the hole, and threading a hex nut about six turns onto the end.

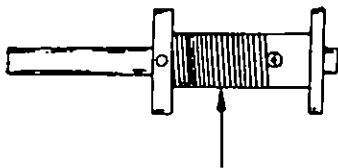
Install the guy cables between the eyes, as shown in this figure and in Figure 1. Allow approximately equal lengths of cable to extend through the eyes on each end, pull tight enough to remove the slack only, wrap six or more times, and cut off excess.

Tension the guys by tightening the nuts on the ends of the eyebolts. Tighten equally on both ends of each guy, and secure with the nuts on the opposite sides.

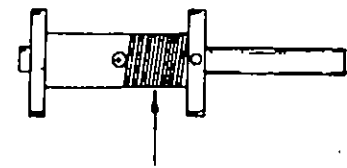
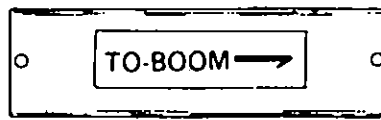
FIGURE 8

DRAWN _____
APPROVED _____

SY36



15 METER WINDING



10 METER WINDING

INSTRUCTIONS FOR DISASSEMBLING TRAP

IN THE EVENT IT IS EVER NECESSARY TO IDENTIFY THE TRAP ASSEMBLIES, PROCEED AS FOLLOWS:

REMOVE THE PLASTIC CAPS FROM ENDS OF TRAPS.
REMOVE SCREWS FROM ENDS OF TRAPS.

	<u>"To Boom" End</u>	<u>Away from Boom End</u>
REFLECTOR	0 Turns	24 Turns
RADIATOR	14½ Turns	24 Turns
DIRECTOR	14½ Turns	0 Turns

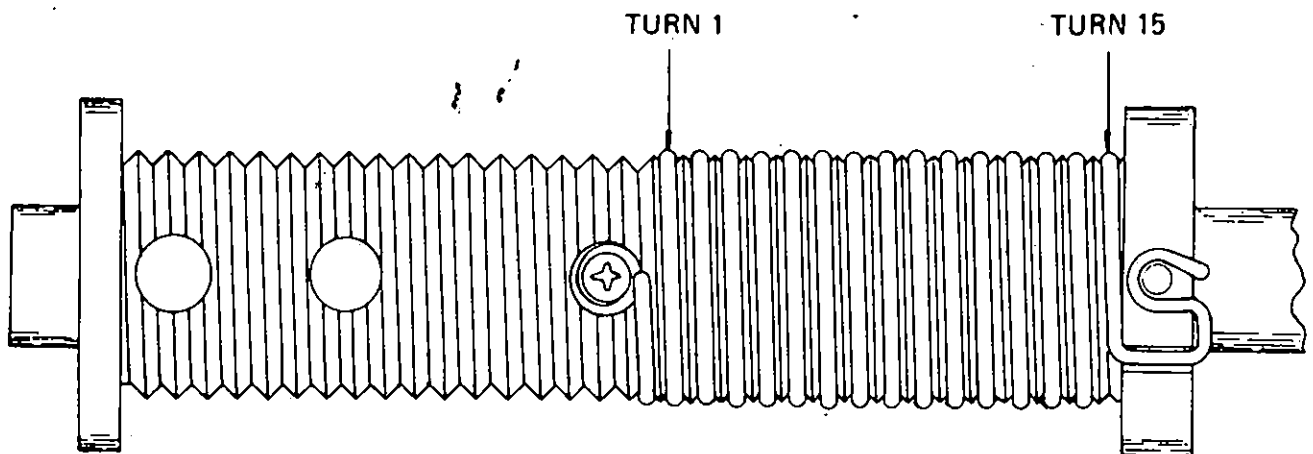


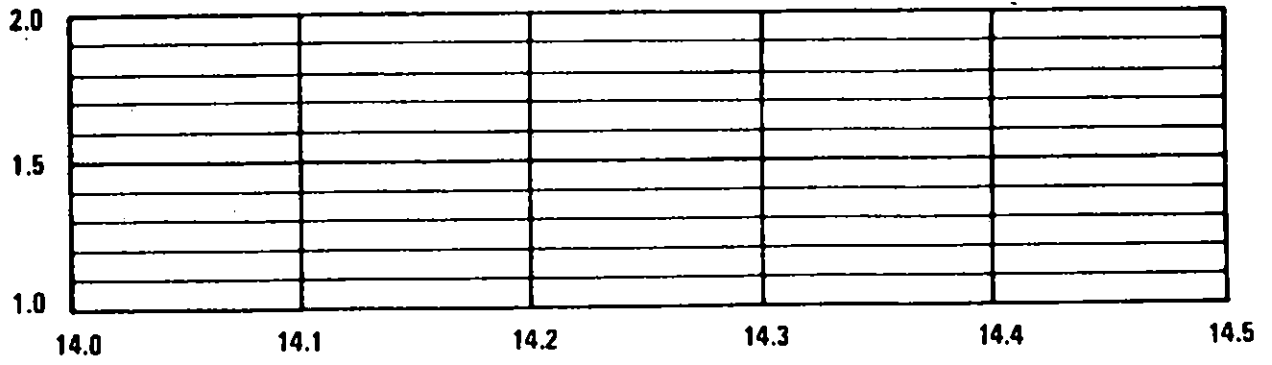
FIGURE 9

SY36

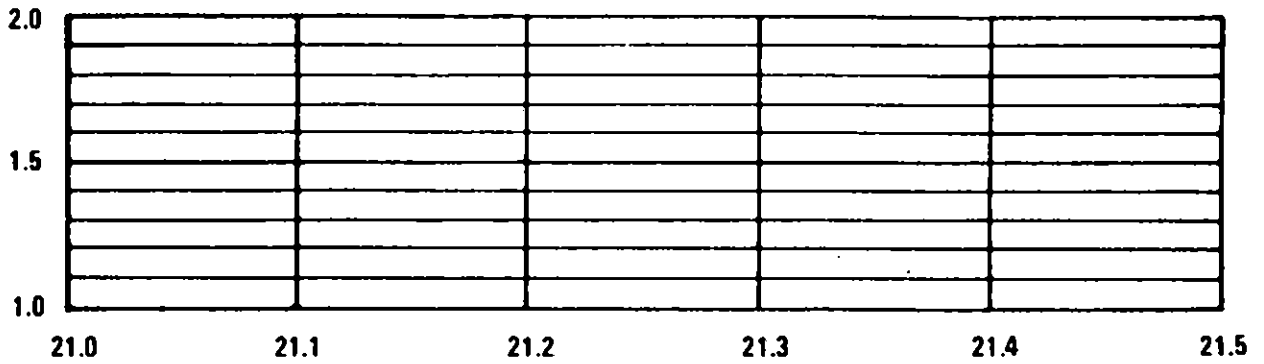
DRAWN E.T.W.
APPROVED 08-05-79 WT

SWR CHARTS

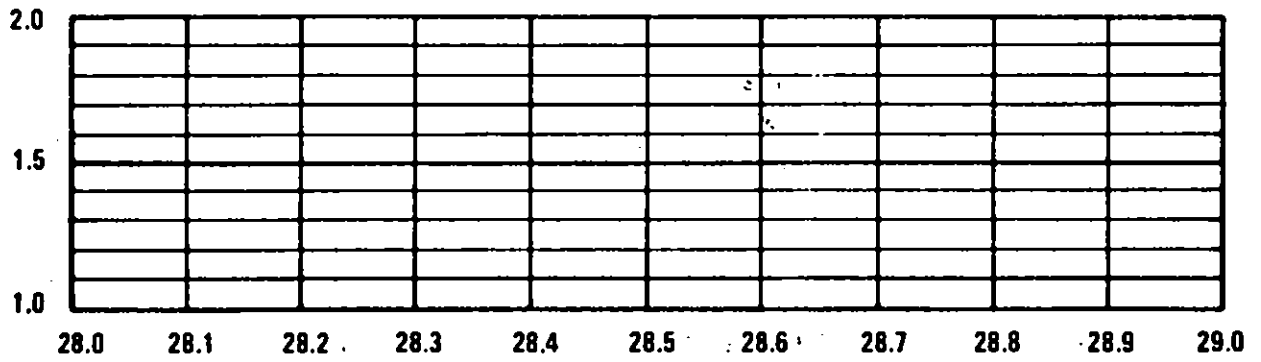
20
METERS



15
METERS



10
METERS



MHz

NOTES:
