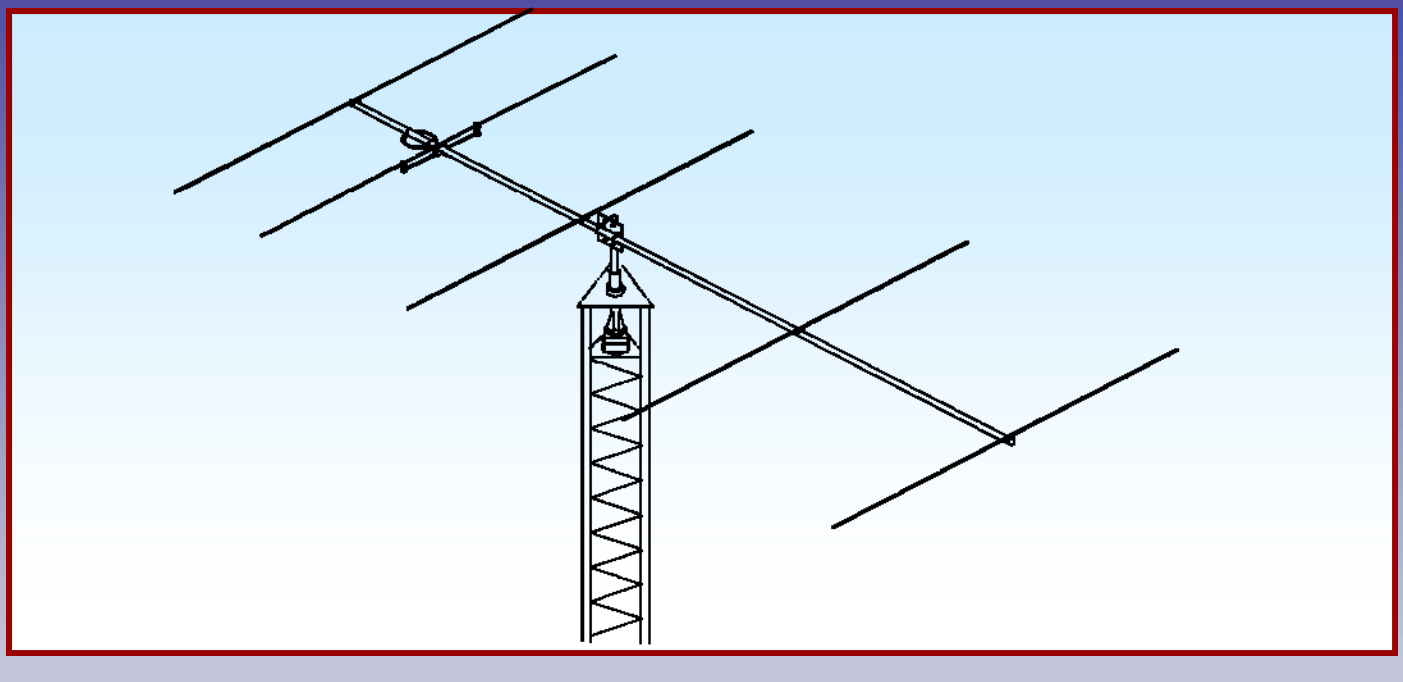
M2 Antenna Systems, Inc.
Model No: 150-5



SPECIFICATIONS:

Model	150-5	Power Handling	1500 W
Frequency Range	148 To 152mHz	Boom Length / Dia.	60” /1-1/2”
*Gain, (FS)	10.5 dBi	Balun	4:1 Coaxial
Front to back	17.5 Min.	Lighting Protection	All Element Grounded
Beamwidth	E=48° H=64°	Element Type	3/8 Tube
Match Type	‘T” Match	Mast Size	2” Nom.
Feed Impedance.	50 Ohms	Wind area / Survival	125 MPH
Maximum VSWR	>1.5:1	Weight / Ship Wt.	6 Lbs. / 8 Lbs.
Input Connector	“N” Female		

***Subtract 2.14 from dBi for dBd / FS = Free Space**

FEATURES:

The 150-5 Yagi is computer optimized for 4 mHz. The gain is flat within 0.1 dB. The antenna is to be used as a gain reference and test antenna at 150 mHz.

It features rugged, grounded construction and rear mounting so any polarity can be selected and set quickly with no interaction from the mounting structure.

If need be, it can handle 1500W of continuous power.

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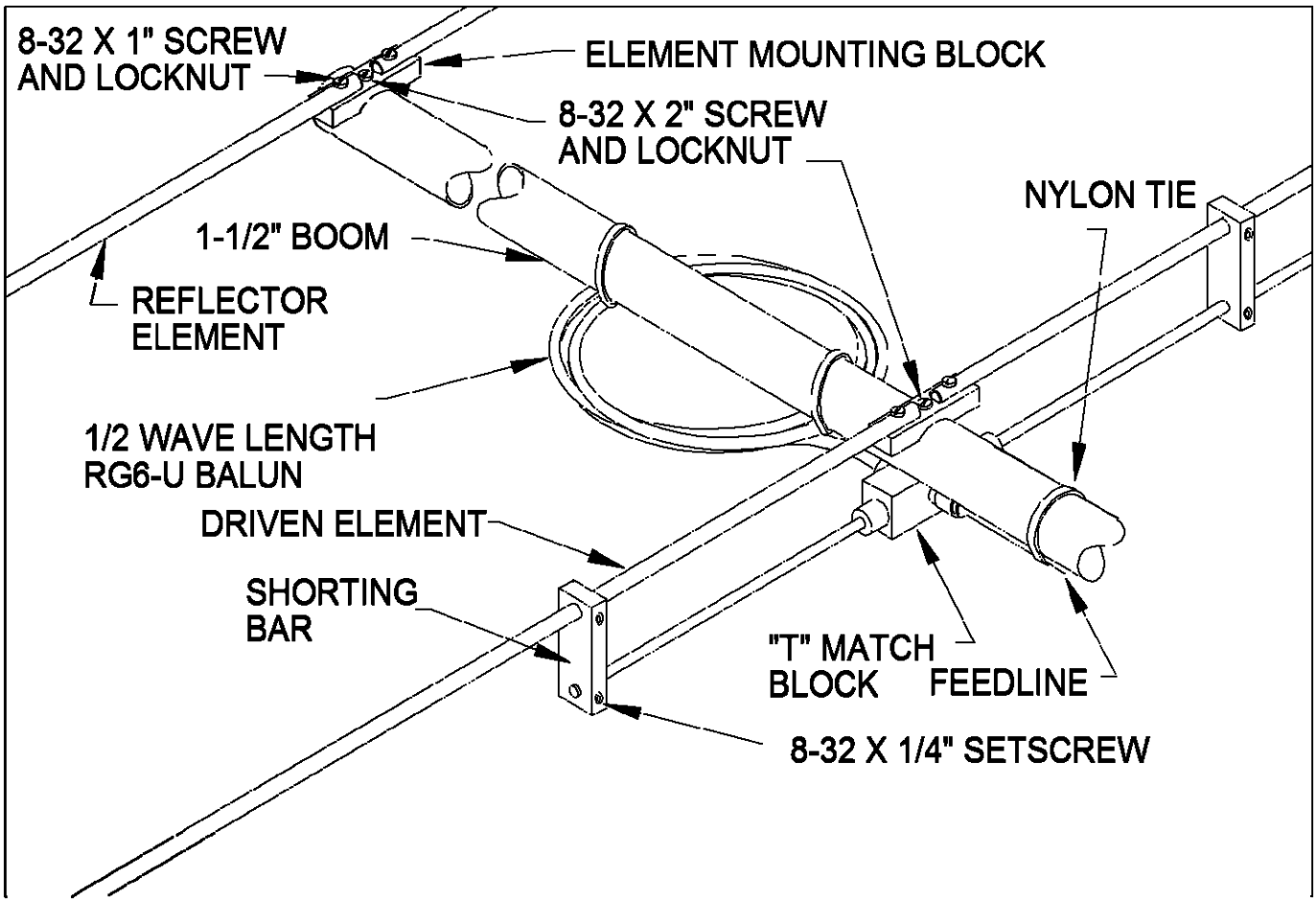
150-5 ASSEMBLY MANUAL

TOOLS REQUIRED: Screwdriver, 11/32 wrench, socket or nut driver, a 7/16" wrench and 1/2" wrench and socket, tape measure.

2. Use the Dimension Sheet as reference for installing the ELEMENT HALVES on to the ELEMENT MOUNTING BLOCKS. For each element insert a 1/4 x 10” Element Support Rod from the drilled end. Secure the rod / element assemblies to the element mounting blocks with (10) 8-32 x 1" screws and locknuts. Install screws from bottom of blocks.

3. Mount the longest element (REFLECTOR) to the hole at the rear end of the boom using a 8-32 x 2" screw and locknut. Tighten securely.

4. Mount the DRIVEN ELEMENT next, threading the 8-32 x 2” screw into the 'T' MATCH BLOCK held



to the underside of the boom. Orient the match block with the “N” feed connector pointed to the front. Mount the remaining DIRECTOR ELEMENTS. Carefully note lengths on Dimension Sheet:.

5. Thread the gold SEAL NUTS all the way onto the two small connectors on the 'T' match block **with the black neoprene side out.** Then connect the balun connectors and tighten them **GENTLY** with a 7/16" end wrench. Now run the seal nuts up against the face of the balun connectors and tighten them about 1/2 turn with a 1/2" end wrench. Secure coiled balun to boom with two nylon ties. The balun does not need to be coiled. It can be unrolled and fastened to the boom to the front or rear.

6. Install two 8-32 x 1/4” Set screws into each SHORTING BAR. Then slide a SHORTING BAR onto each DRIVEN ELEMENT HALF and position per the DIMENSION SHEET. Align rods and element

halves parallel and tighten the set screws with the 5/64" Allen wrench provided.

7. Install the feedline or a short section long enough to reach the boom center and on down the mast and on past the the top of the tower. If the short section is used then the main feedline can be attached at the time of installation on the tower. Tightening the Male 'N' connector carefully, and route the cable forward on the boom, securing it with the cable ties provided. Stop about 24" in front of the first director.

8. Mount the BOOM TO MAST PLATE perpendicular to elements at or near the physical balance point of the antenna. Secure with the 1-1/2" U-bolts, 5/16" stainless steel lockwashers and nuts. Do not over-tighten as severe boom distortion and subsequent weakening can occur. 2" U-bolts are supplied for attaching the plate to your mast.

9. When the antenna is installed in position on the mast, the main feedline can be connected and sealed at that time. REMEMBER to support the feedline at the antenna boom and on the mast. Leave an adequate feedline loop for rotation around the tower. When stacking this antenna with other HF models, maintain a minimum 5' of separation; more if practical. Mount horizontally polarized VHF and UHF antennas at least 40" above or below this antenna to minimize interaction.

10. **INSTALLATION AND STACKING INFORMATION**

A. A mast or cross boom that supports the antenna ***in the element plane*** must be non conductive (fiberglass, etc). The feed line must also always exit the antenna at 90 degrees or perpendicular to the elements for at least 60 inches.

B. To protect your investment in this high performance antenna, always use high quality coax and connectors. Old, corroded, or poor quality materials are common sources of ***serious*** performance losses and annoying intermittence.

C. If possible, test the antenna, connectors and feedline BEFORE installing to your mast or tower. Set antenna on a tall ladder or temporary mast. Check for continuity and match across the bandwidth. It should be similar to rated specifications.

D. STACKING REMINDERS:
1. All driven element blocks MUST be oriented to the same side of boom.
2. All boom-to-mast plates MUST be mounted at the same point on the boom.
3. Feed / phasing lines MUST be of equal electrical length or multiples of 1 wavelength in order to maintain equal phasing in the array. Improper phasing can severely deteriorate performance.

If you are unsure about stacking multiple antennas, please call **M^2** and let us help you DO IT RIGHT

THIS COMPLETES THE ANTENNA ASSEMBLY.

Carefully manufactured by:
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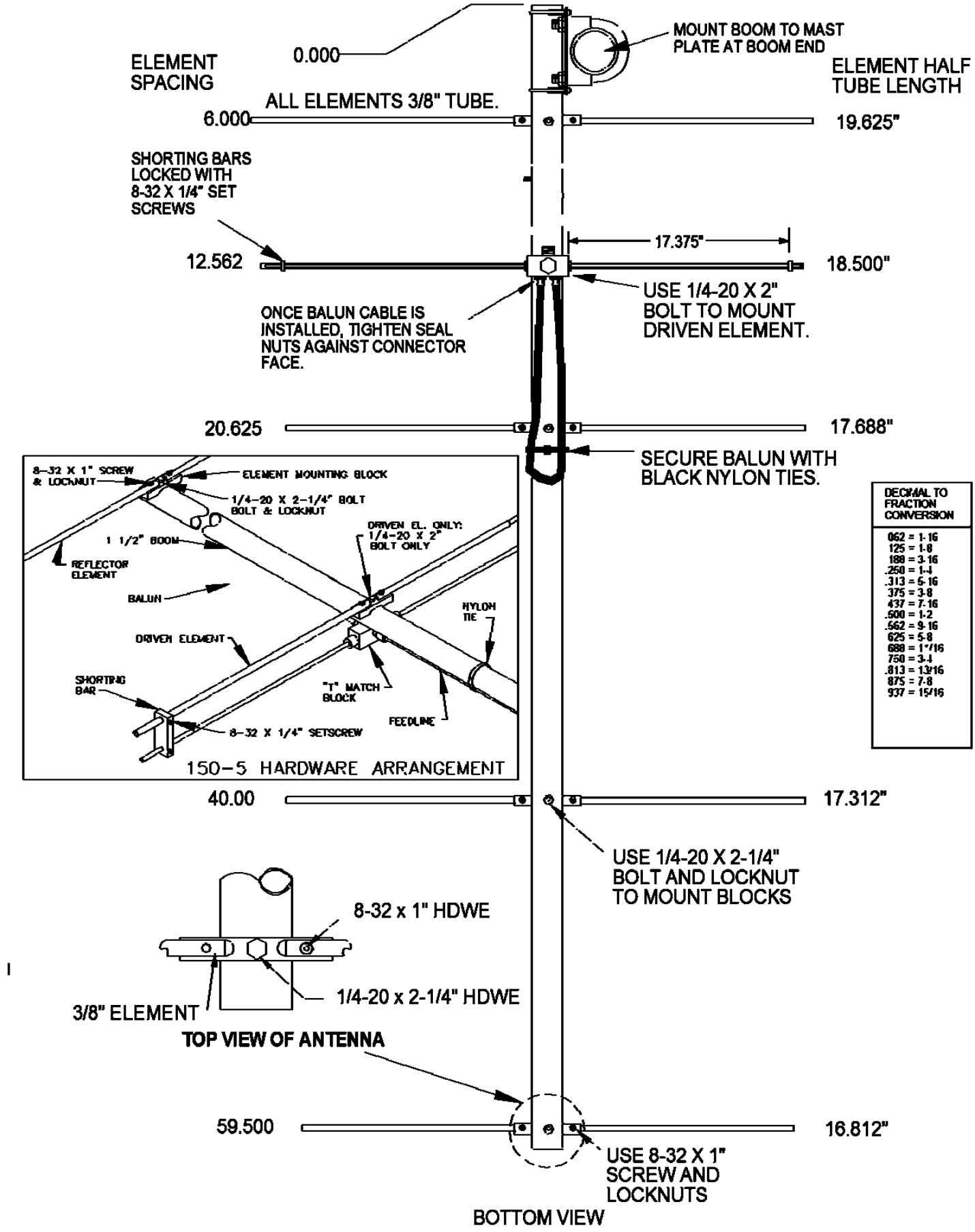
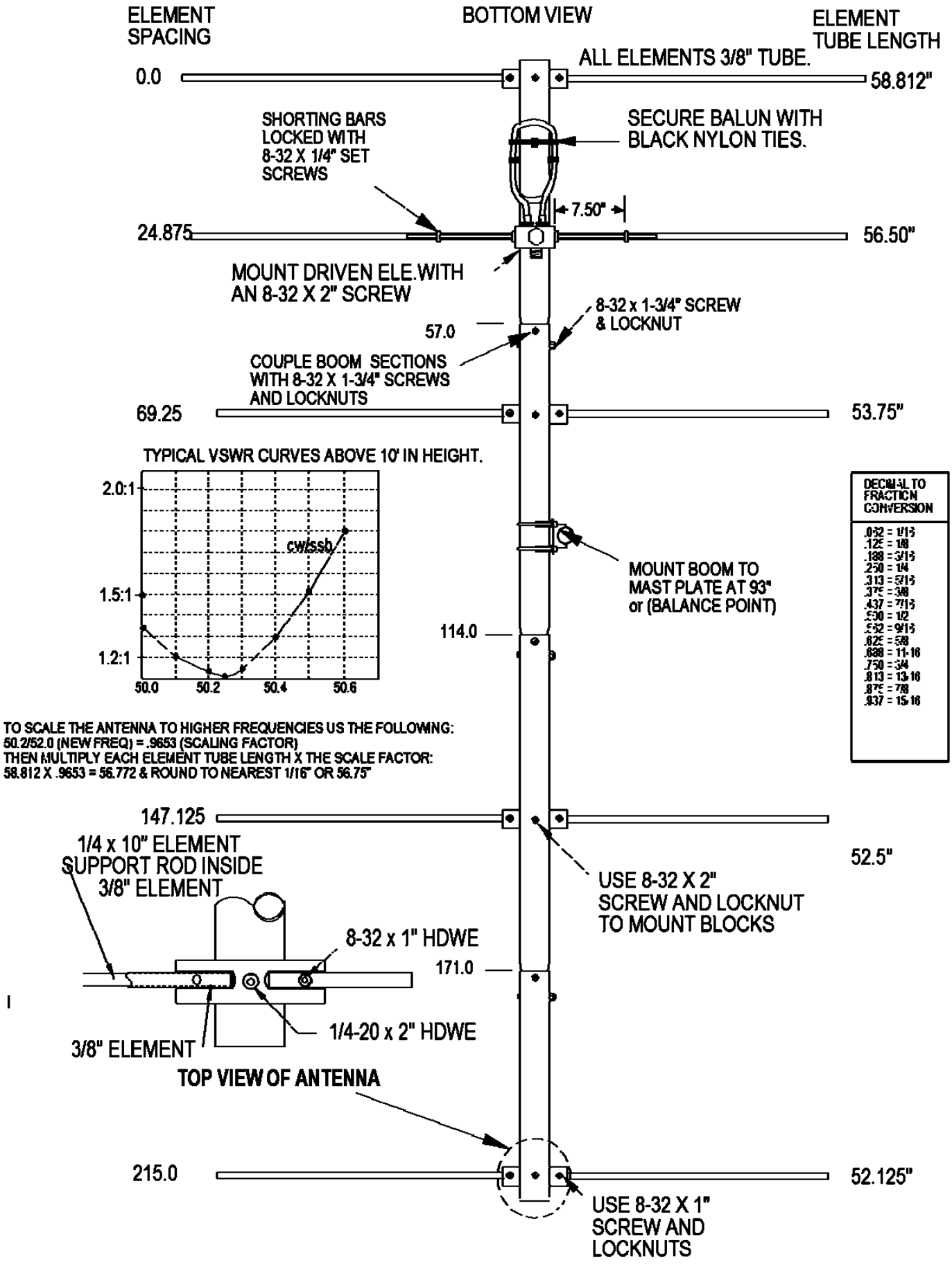
150-5 DIMENSION SHEET



150-5 DIMENSION SHEET



150-5 PARTS & HARDWARE

DESCRIPTION	QTY.
Boom Section #1 1-1/2 x .065 x 60" Aluminum.	1
Element halves, 3/8” x See Dimension Sheet.	10
Driven `T' Match Assembly with “N” Connector	1
Balun, 4:1, 1/2 wave, RG-6U.	1
Boom Plate 4 x 6 x 3/16 Alum.	1
U-Bolt 2"	2
U-Bolt 1 1/2"	2
Assembly Instructions	1

HARDWARE BAG

Shorting Bars 3/4 x 1/4 x 2-7/8" Machined Aluminum	2
Element Mounting Blocks 3/4 x 3/8 x 3" Aluminum	5
Screw 8-32 X 1" Pan Head SS	10
Bolt, 1/4-20 x 2” Hex Head SS	1
Bolt, 1/4-20 x 2 1/4” Hex Head SS	4
Locknut 8-32 SS	10
Locknut 1/4-20 SS	4
Nuts 5/16-18 SS	8
Lock Washers 5/16 Split Ring SS	8
Cable Ties 8" Black	4
Screw Internal Hex Set 8-32 x 1/4 SS	4
Allen Wrench 5/64”	1
Nut Seals	2

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