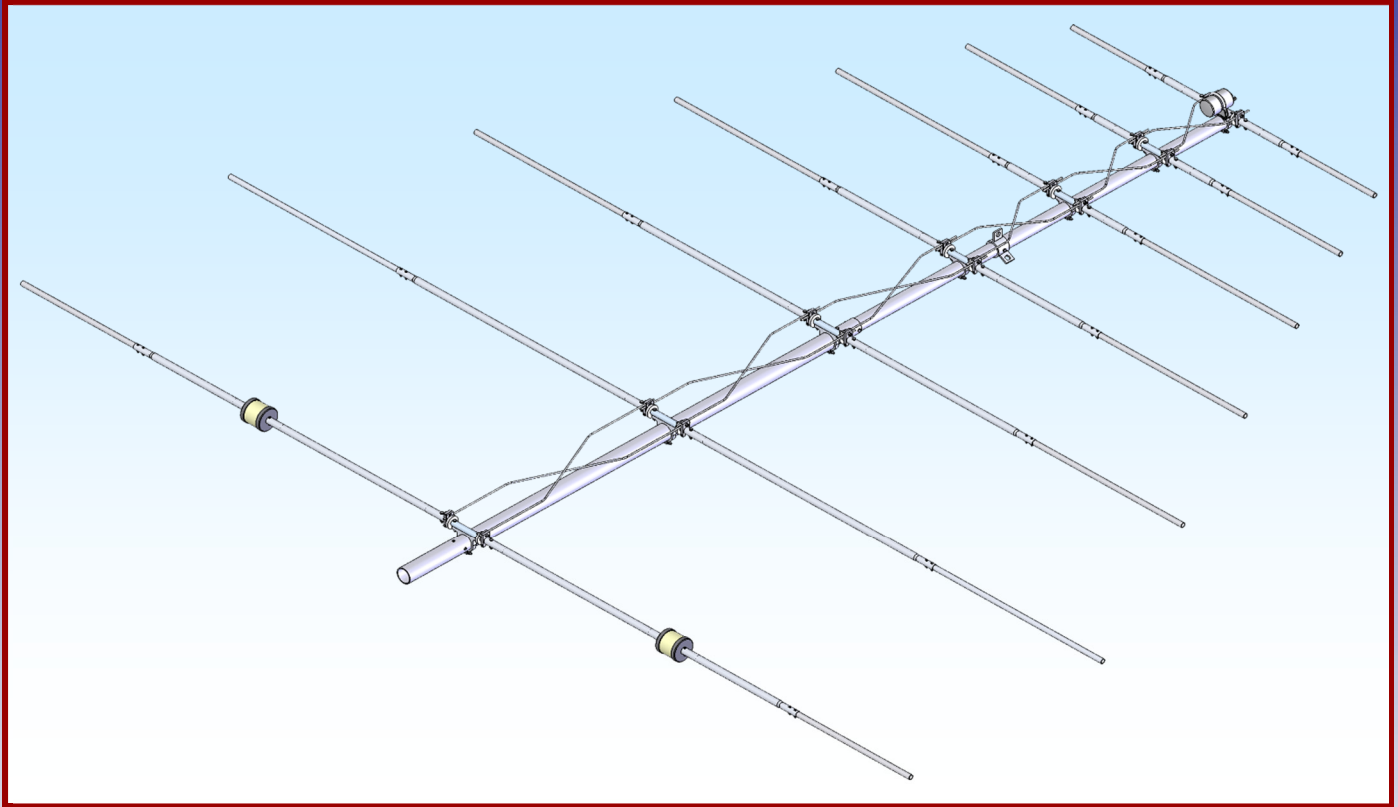




M2 Antenna Systems, Inc.

Model No: 30-70LP7



SPECIFICATIONS:

Model	30-70LP7	Power Handling	500 Watts, Higher avl.
Frequency Range.....	30 To 70 MHz	Boom Length / Dia	157' / 2-1/2" To 2"
*Gain, (FS)	6.0 dBi Nominal	Maximum Element Length.....	169"
Front to back	15 dB Typical	Stacking Distance.....	Consult with factory
Beamwidth	70, azimuth, elev. 138	Mast Size	2" or 3"
Feed type	4:1 Balun	Wind area / Survival	7.0 Sq. Ft. / 100 MPH
Feed Impedance.....	50 Ohms Unbalanced	Weight / Ship Wt.....	65 Lbs. / 72 Lbs.
Maximum VSWR.....	1.5:1 Typical		
Input Connector.....	"N", Others opt.		

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

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30-70LP7 ASSEMBLY MANUAL

BEFORE YOU BEGIN:

All installations are unique in some way, which means it's OK to preassemble certain hardware, or rearrange the assembly process to meet specific site requirements. A quick review of the assembly notes and drawings should help firm up the appropriate strategy. Please remember to double-check all hardware for tightness **BEFORE** it becomes inaccessible. Tools handy for assembly process: screwdriver, 11/32, 7/16, 1/2, 9/16 and 5/8" nut drivers, end wrenches and/or sockets, measuring tape.

Two containers of zinc paste (Penetrox, Noalox, or equiv.) has been provided to enhance and maintain the quality of all electrical junctions on this antenna. Apply a thin coat wherever two pieces of aluminum come in contact or any other electrical connections are made. It is also useful on screw and bolt threads as an ANTI SEIZE compound.

1. Antenna boom assembly.

Locate boom sections. Refer to parts & hardware list to help identify each boom section using tube diameters & lengths as well as hardware needed to assemble crossboom. We recommend the use of some type of buck stands / saw horses to hold the antenna boom during the assembly procedure.

Note: Elements use "slip on" style element ring clamps. Be sure to slip these element clamps onto proper boom section. Note: Front Support Welded Assembly must slip on the 2" Boom Section between elements #4 & #5 at approximately 43" from the front end of the antenna. Refer to Boom & Element detail sheet for proper element clamp placement on antenna boom.

2. Element half assemblies

Locate all Fiberglass centers + tubes + hardware and layout by size. Look for tube differences within the same size (exp. hole sizes, hole spacing & tube swages). Refer to element center detail sheets & dimension sheet for more detailed information.

Note: Locate phase line blocks & install at this time.

30-70LP7 ASSEMBLY MANUAL

3. Antenna Phase Lines

Locate all your 3/16" phase line rods, phase line standoffs and layout by size. Refer to phase line detailed sheet and see pictures form more information. The biggest phase line is used towards the rear of the antenna and diminish in size (length) as you move towards the front of the antenna.

Note: Only phase lines #1, #2 & #3 require phase line standoffs. Phase lines #4, #5 #6 do not require. Phase line standoffs, but make sure rods are well bent so rods do not touch each other and at crossover point.

For phase lines #1 thru #3 feed the phase line standoff thru rods so the spacer sits at the crossover point between the lines. Hold the spacer in place loosely around the boom with a large nylon tie but don't tighten it yet.

Apply a small amount of conductive paste to the rod ends and feed ends into the clamp block Channels until approximately 1" extends beyond clamp. Insert the other rod ends into the clamp block assemblies, but do not tighten. While installing the phase lines, you might find that some of them will extend 1" - 2" past their respective clamp blocks. **This is OK.** You can trim them back, in order to fit flush with the clamp block faces, if you desire.

4. Balun & Feed line

Refer to Balun detail page for more information.

Secure the BALUN to the BALUN MOUNTING PLATE with a 2-1/2" U-bolt and cradle. Tighten nuts only enough to secure balun. **DO NOT OVER TIGHTEN - BALUN HOUSING COULD BE DAMAGED!**

Position balun with the connector pointing towards the front of the boom and leads easily reaching phasing line clamps screw studs. Note: Apply some zinc paste to the lugs on the balun leads and place over each screw stud. Replace the nuts and re-tighten.

Attach feed line section to Balun and route phase line as desired. Secure at regular intervals with tape or nylon ties.

5. Overhead Support

Refer to Rear mount & Balun detail page for more information.

6. Additional Information

Check ALL hardware for tightness. Check ALL element sections, especially tip sections, for correct placement and exposed dimensions.

THIS COMPLETES THE ANTENNA ASSEMBLY

Carefully designed and manufactured by:

M² ANTENNA SYSTEMS, INC.

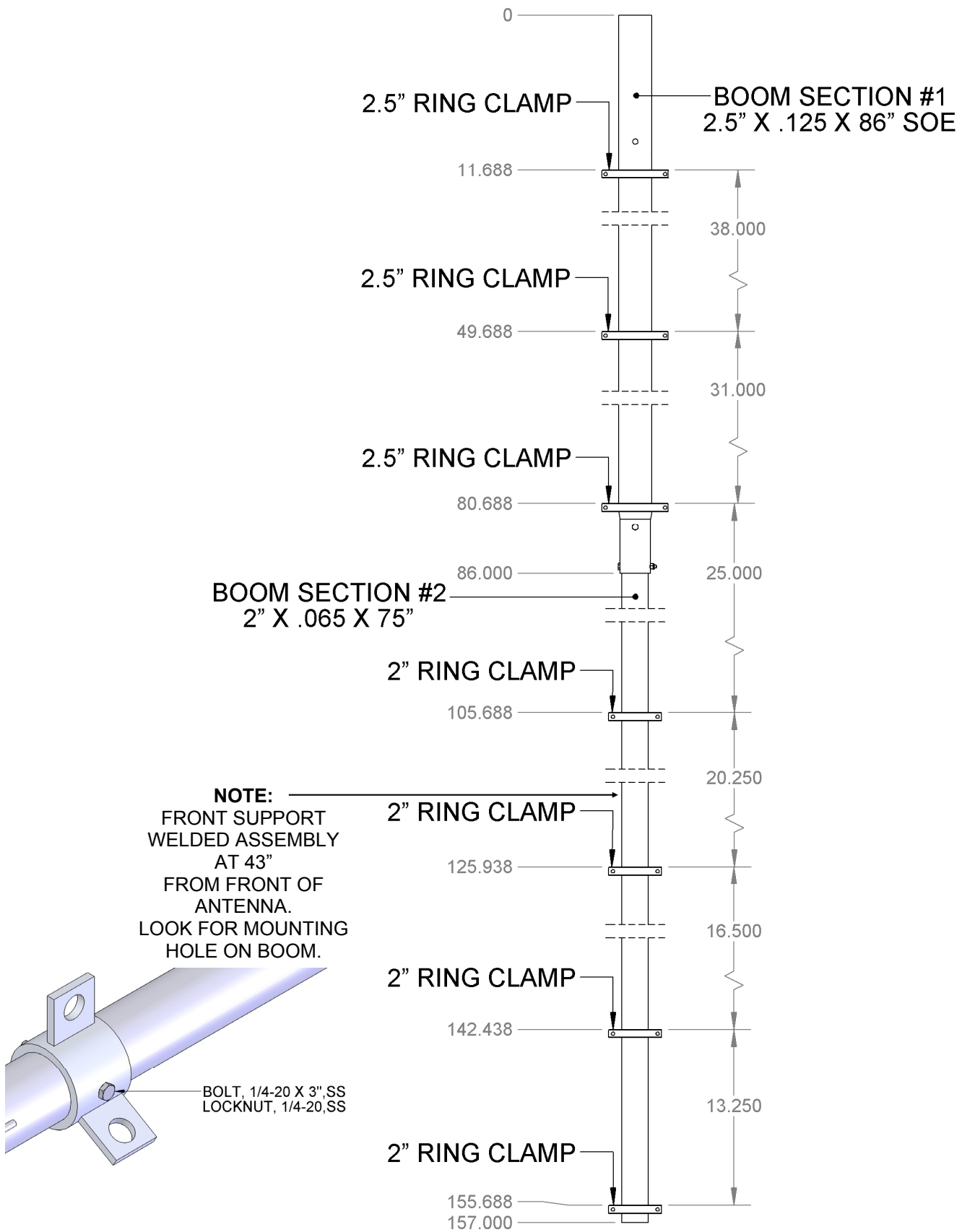
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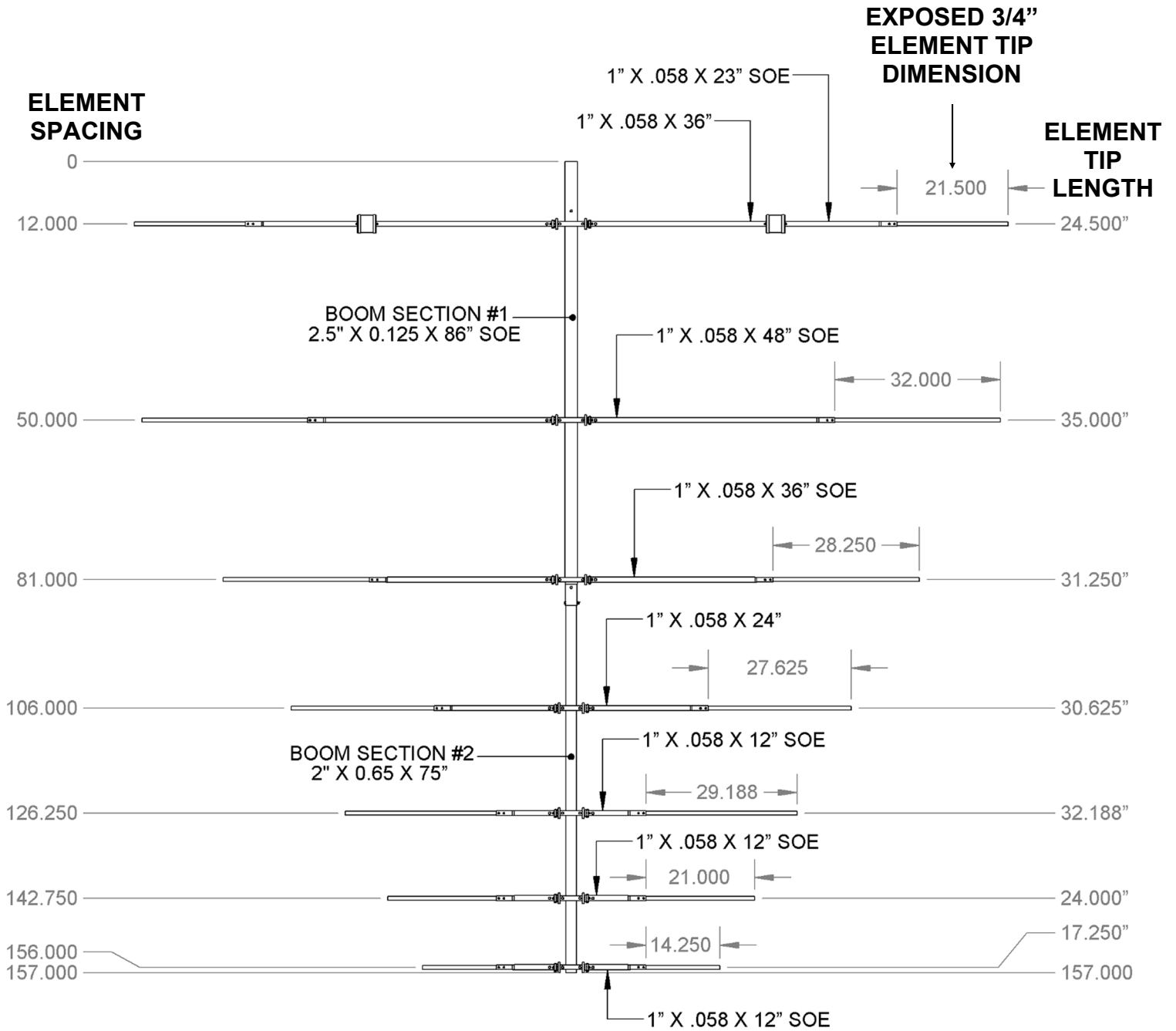
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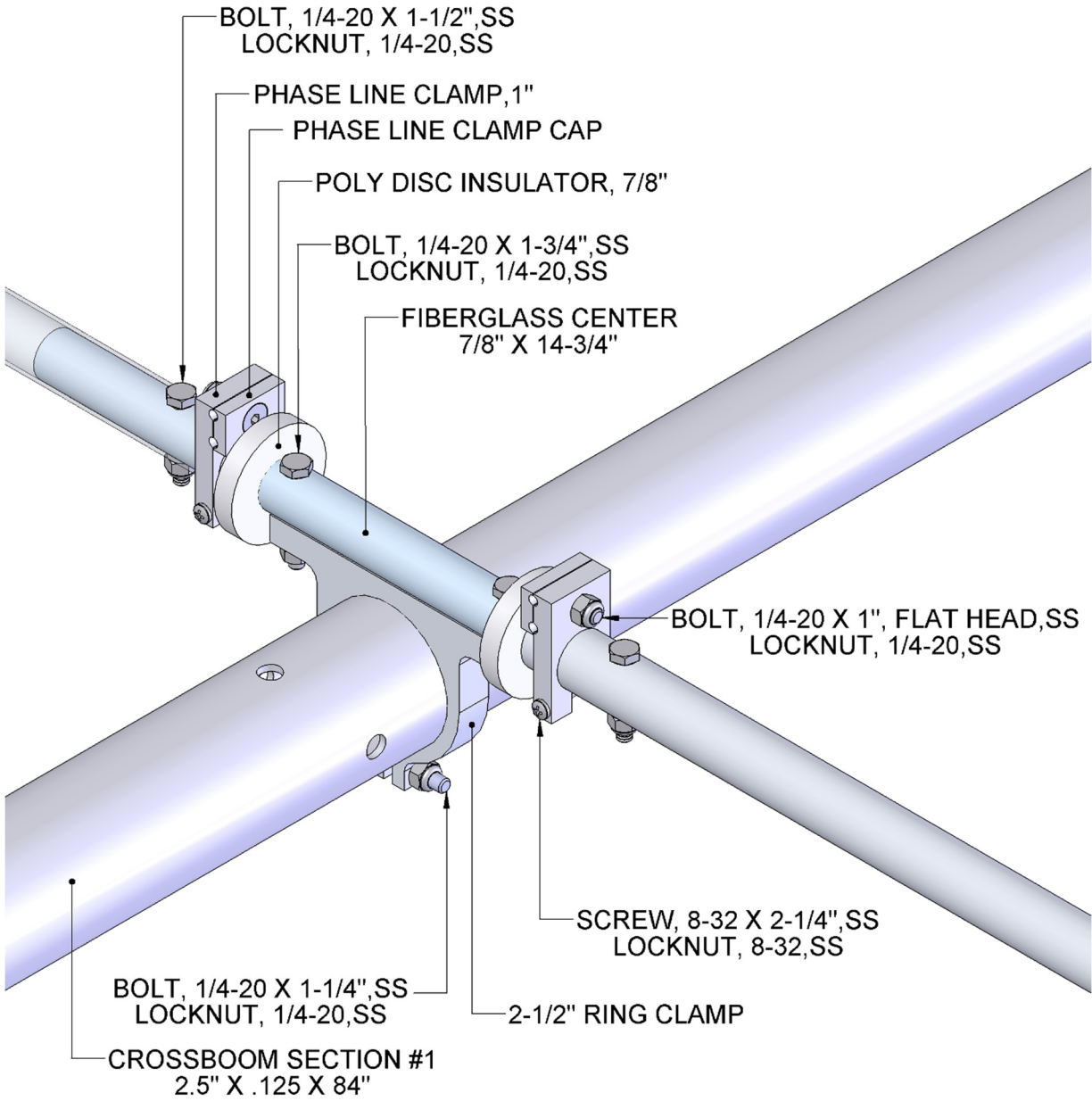
30-70LP7 BOOM & ELEMENT LAYOUT



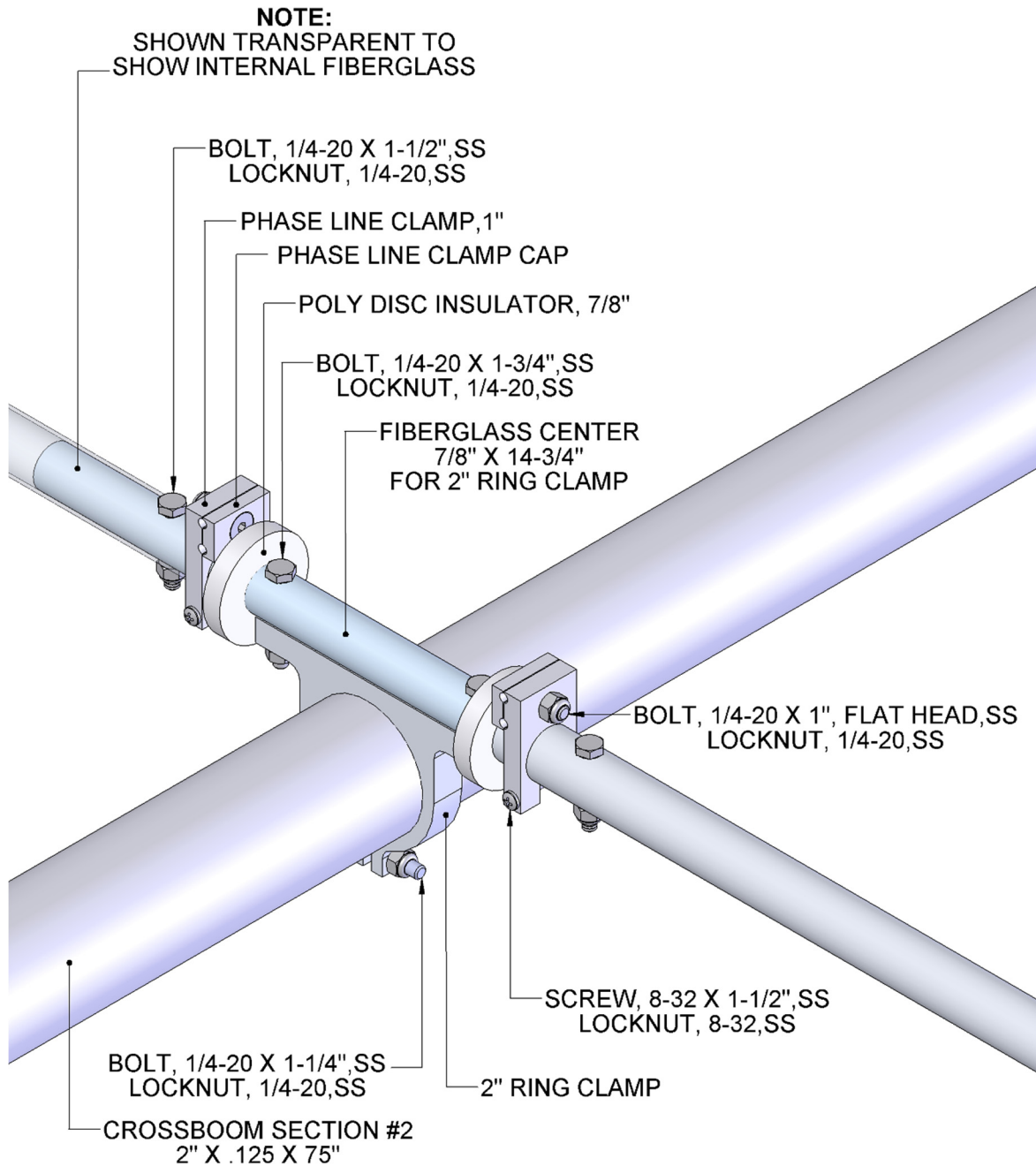
30-70LP7 DIMENSION SHEET



ELEMENT CENTER #1, #2 & #3

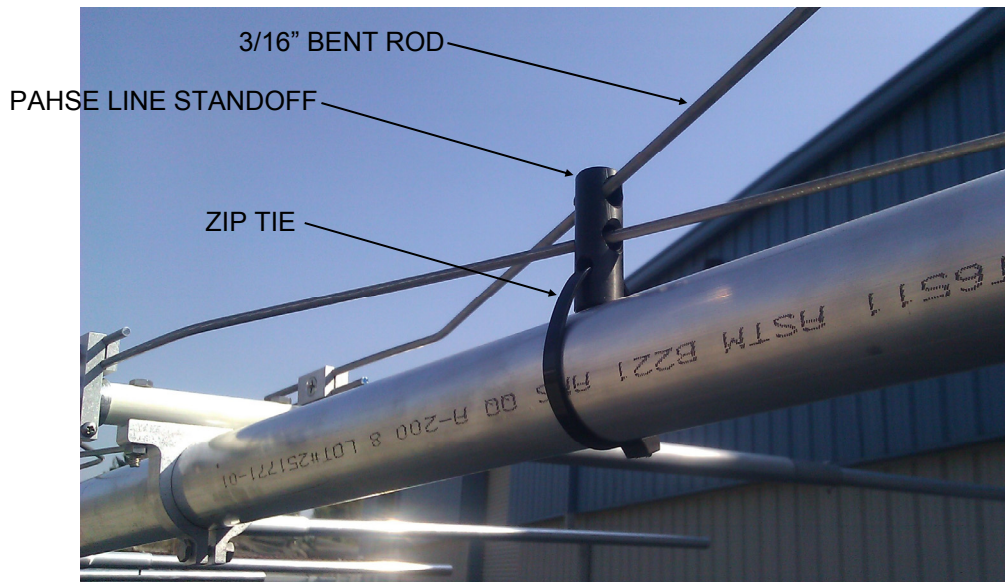
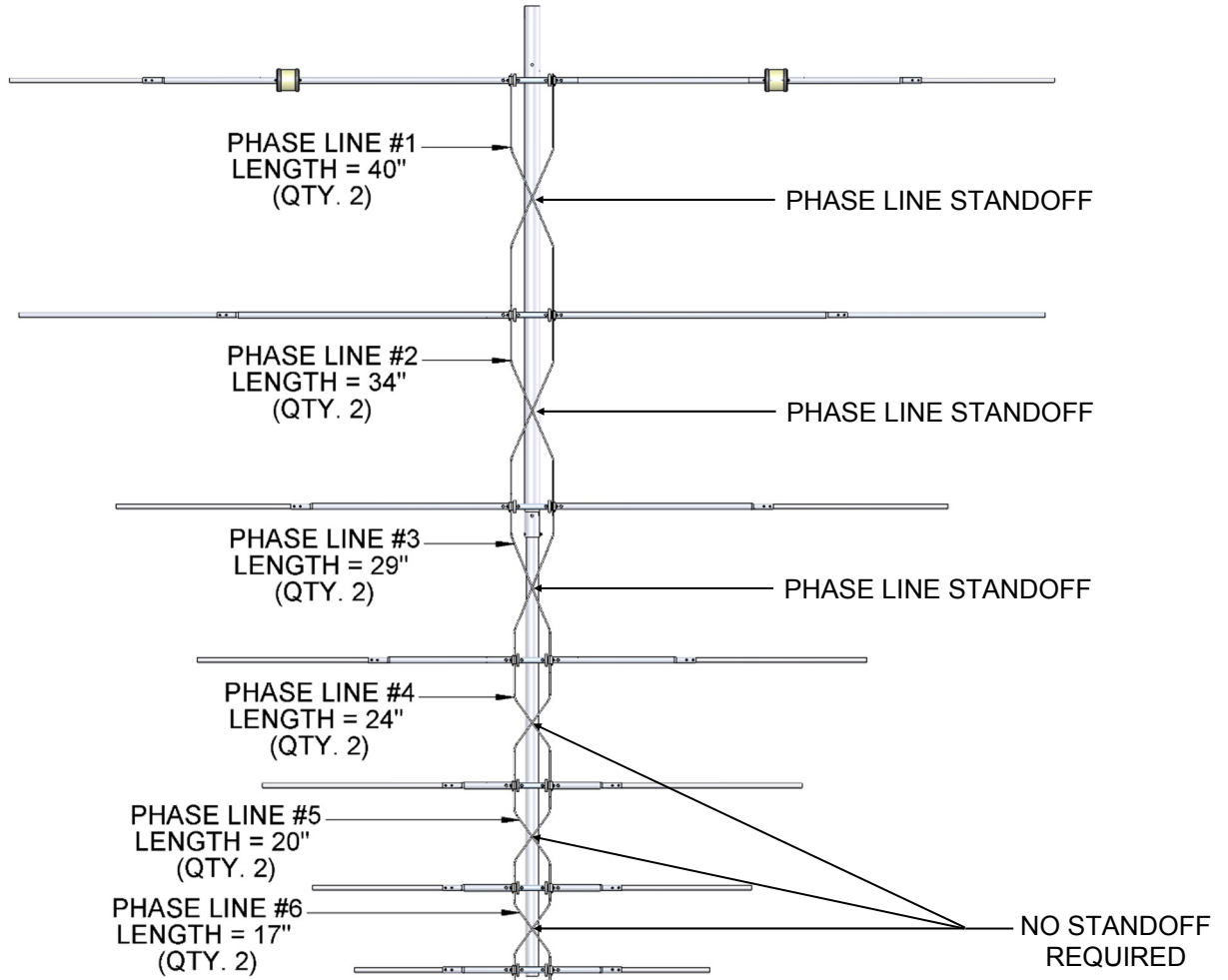


ELEMENT CENTER #4, #5, #6 & #7



30-70LP7 PHASE LINE STANDOFFS

NOTE:
PHASE LINES WILL GRADUALLY
GET SMALLER IN LENGTH
TOWARDS THE FRONT OF ANTENNA.



30-70LP7 BALUN DETAL

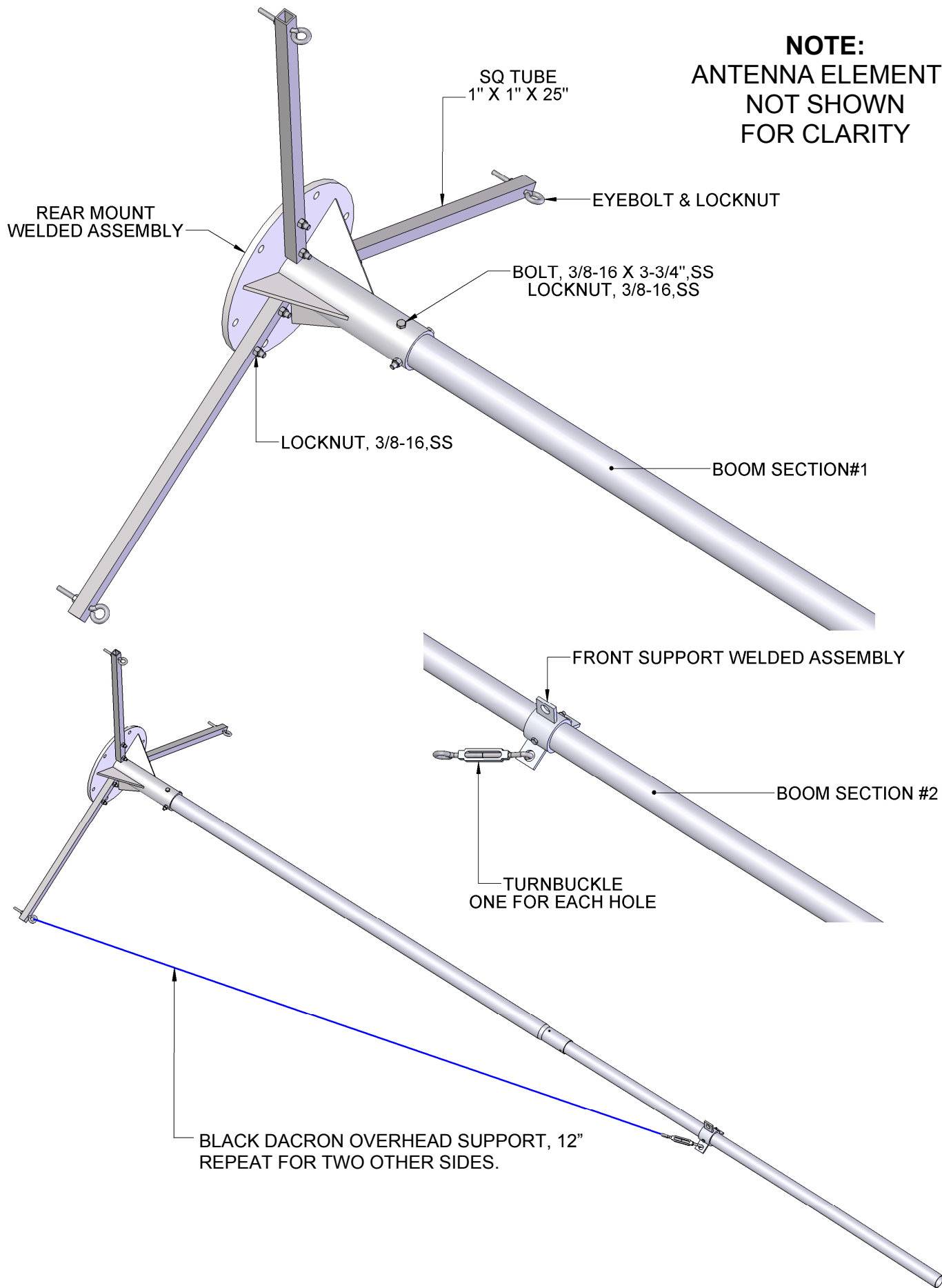


NOTE:

USING EXSISITING HARDWARE, INSTALL BALUN MOUNTING PLATE TO ELEMENT #7 CENTER FIBERGLASS. SECURE BALUN USING 2-1/2" U-BOLT AND CRADLE WITH 5/16" HARDWARE. **CAUTION: DO NO OVER THIGHTEN, DAMAGE MAY OCCURE TO BALUN.** ROUTE AND CONNECT BALUN LEADS TO PHASE LINE CLAMP BLOCK AS SHOWN ABOVE.

REAR MOUNT & OVERHEAD SUPPORT

NOTE:
ANTENNA ELEMENTS
NOT SHOWN
FOR CLARITY



30-70LP7 PARTS & HARDWARE

DESCRIPTION.....	QTY
BOOM SECTION #1: 2.5" X .125 X 86" SOE	1
BOOM SECTION #2: 2" X .065 X 75"	1
HALF ELEMENT COIL ASSEMBLY	2
ELE 2 SEC 1: 1" X .058 X 48" SOE.....	2
ELE 3 SEC 1: 1" X .058 X 36" SOE.....	2
ELE 4 SEC 1: 1" X .058 X 24" SOE.....	2
ELE 5-7 SEC 1: 1" X .058 X 12" SOE	6
ELEMENT TIPS, 3/4" X .049 X SEE CHART	12
BENT PHASE LINE, 3/16" X 40".....	2
BENT PHASE LINE, 3/16" X 34".....	2
BENT PHASE LINE, 3/16" X 29".....	2
BENT PHASE LINE, 3/16" X 24".....	2
BENT PHASE LINE, 3/16" X 20".....	2
BENT PHASE LINE, 3/16" X 17".....	2
FIBERGLASS INSULATOR, 7/8" X 14.750 (M2AFG0030).....	4
FIBERGLASS INSULATOR, 7/8" X 14.750 (M2AFG0031).....	3
REAR MOUNT WELD ASSEMBLY.....	1
FRONT SUPPORT WELDED ASSEMBLY.....	1
OVERHEAD SUPPORT SQ TUBE, 1" X 1" X 25".....	3
RING CLAMP, 2.5" (M2AEC0220).....	3
RING CLAMP, 2" (M2AEC0200).....	4
PHASE LINE CLAMP (M2APL0033).....	14
PHASE LINE CLAMP CAP (M2APL0067)	14
POLY DISC INSULATOR (M2ADI0040)	14
PHASE LINE STANDOFF, 3/4" X 2.25 (M2ASO0060).....	3
BALUN PLATE, .125" X 2" X 4" (M2APT0018)	1
4:1 BALUN ASSEMBLY (20-90 MHZ) SHORT BLACK CAN	1
BLACK DACRON OVERHEAD SUPPORT, 3/16" X 12'	3
TURNBUCKLE, 5/16 X 6" ZINC	3
EYEBOLT, 5/16-18 X 4",SS	3
CABLE TIE, 14".....	10
PENETROX / ZINC PASTE CUP.....	1
ASSEMBLY MANUAL.....	1

HARDWARE:

U-BOLT & CRADLE, 2-1/2"	1
BOLT, 3/8-16X3-3/4", SS	2
LOCKNUT, 3/8-16, SS	8
LOCKWASHERS, 5/16, SS.....	5
NUT, 5/16-18, SS.....	5
BOLT, 1/4-20 X 3", SS	1
BOLT, 1/4-20 X 2-3/4", SS	2
BOLT, 1/4-20 X 1-3/4", SS	14
BOLT, 1/4-20 X 1-1/2", SS	14
BOLT, 1/4-20 X 1-1/4", SS	7
BOLT, 1/4-20 X 1", FLAT HEAD ALLEN,SS	14
LOCKWASHERS, 1/4, SS.....	14
NUT, 1/4-20, SS.....	14
LOCKNUT, 1/4-20, SS	38
SCREW, 8-32 X 1-1/2", SS	14
SCREW, 8-32 X 1-1/4", SS	32
LOCKNUT, 8-32, SS.....	46

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