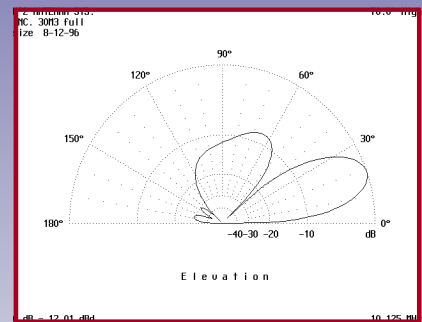
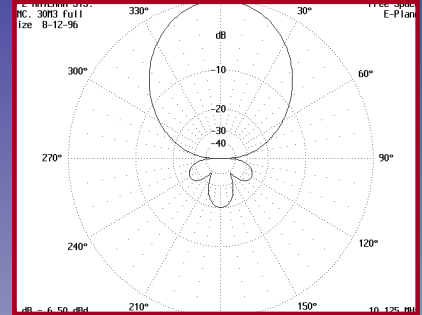
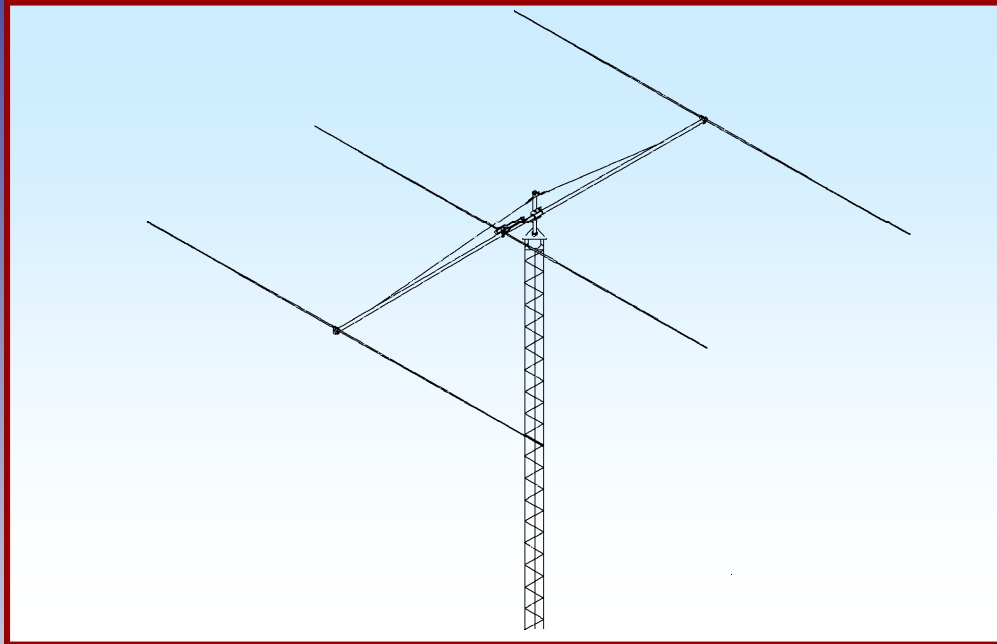




# M2 Antenna Systems, Inc.

## Model No: 30M3



### SPECIFICATIONS:

Model .....	30M3	Power Handling .....	3 kW
Frequency Range .....	10.1 To 10.150 MHz	Boom Length / Dia .....	30 Ft. / 3" x .125 Wall
*Gain, (FS).....	8.5 dBi	Element Length / Dia. ....	51' / 1-1/2" To 3/8"
Front to back.....	20 dB	Turning Radius: .....	28 Ft.
Beamwidth .....	E=55°	Stacking Distance .....	64' To 74'
Feed type.....	Hair pin match	Mast Size .....	2" to 3" Nom.
Feed Impedance.....	50 Ohms Unbalanced	Wind area / Survival .....	10 Sq. Ft. / 100 MPH
Maximum VSWR .....	1.2:1	Weight / Ship Wt. ....	100 Lbs. / 149 Lbs.
Input Connector .....	SO-239 Others optional		

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

### FEATURES:

This antenna really lights up band! Sun spots up or down: who cares. Day or night 10 MHz is always open somewhere! The 30M3 lets you have all the fun you deserve. And because of it's 100 mph rating you won't lose any sleep on those stormy nights. The 30M3 provides performance and durability. Physically, the Yagi is a medium spaced, manageable 3 element of very rugged construction. A pair of machined, 1/2" thick aluminum boom-to-element plates secure each element with double cradle clamps to the 3" x .125" wall boom. Elements taper in size from 1-1/2" to wind area reducing 3/8" tips. Each inner section is double walled at critical points to achieve a 100 MPH wind survival rating. All hardware, except U-bolts, is stainless steel.

# 30M3 ASSEMBLY MANUAL

Tools required: Screwdriver, Phillips and slot, 11/32 nut driver ore equivalent, 7/16", 1/2 and 9/16" end wrench or sockets.

NOTE: Refer to the 'ASSEMBLY DETAILS' AND 'DIMENSIONS' SHEETS

1. Begin by assembling the center section of the three (3) elements. Locate the (2) 1-1/4" diameter, 24" long solid aluminum rods that form the center splice sleeves for the director and reflector. Slide a 1-3/8"x 23" sleeve and the 1 1/2 x 60" section over each half and secure with 1/4-20 x 2" bolts and locknuts.

2. Repeat step #1 using the 1-1/4" diameter fiberglass center section for the DRIVEN ELEMENT (D.E.). Pin the 1-3/8" sleeve and 1 1/2 diameter sections with two 1/4-20 x 2-1/2" bolts. Then place two 1" x 1-1/4" x 1/4" clamp blocks over each bolt. Orient the clamp blocks so the 3/8" half round grooves face each other. Add the locknut but do not tighten. The Beta rods will be inserted in these clamp blocks later.

3. Next, assemble the center element to boom clamps onto the center of each 1-1/4" middle section. Center the element and secure each clamp with six 1/4-20 x 2-1/2" bolts and lockwashers. Keep the plates parallel as you tighten the assembly. On the driven element clamp assembly, also install the balun mounting bracket. and orient the bolts through the element halves so the studs are up. This sets up the correct orientation for the beta rod clamps.

4. Assemble the rest of the element tip sections as noted in the ELEMENT ASSEMBLY DETAILS.

5. Assemble the boom as shown on the DIMENSION SHEET. Install the two 3/8" EYEBOLTS and secure with 3/8-16 nuts and lock washers.

6. Orient the eyebolts up and mount the REFLECTOR center section on the boom placing the rear clamp about 1/2 inch from the rear of the boom.

7. Next mount the Driven element and the director center sections per the DIMENSION SHEET.

8. Assemble the Beta match system as shown in the sketches.

9. Add the element tips noting the different tip lengths for each element.

10 locate the balance point and mount the BOOM TO MAST PLATE as close to it as possible without interfering with the Beta tube. Orient the plate perpendicular to the elements. and secure with the two 3" U-bolts.

# 30M3 ASSEMBLY MANUAL

11. Next insert a standard 2" U-bolt through the turnbuckle plate. Insert this assembly through the top set of u-bolt holes in the boom to mast plate from the boom side and add the nuts loosely. This operation centers the turnbuckle plate correctly without putting in a temporary mast section. Open the turnbuckles evenly until just one thread appears inside the body at each end of the turnbuckle. Hook the turnbuckles onto the plate.

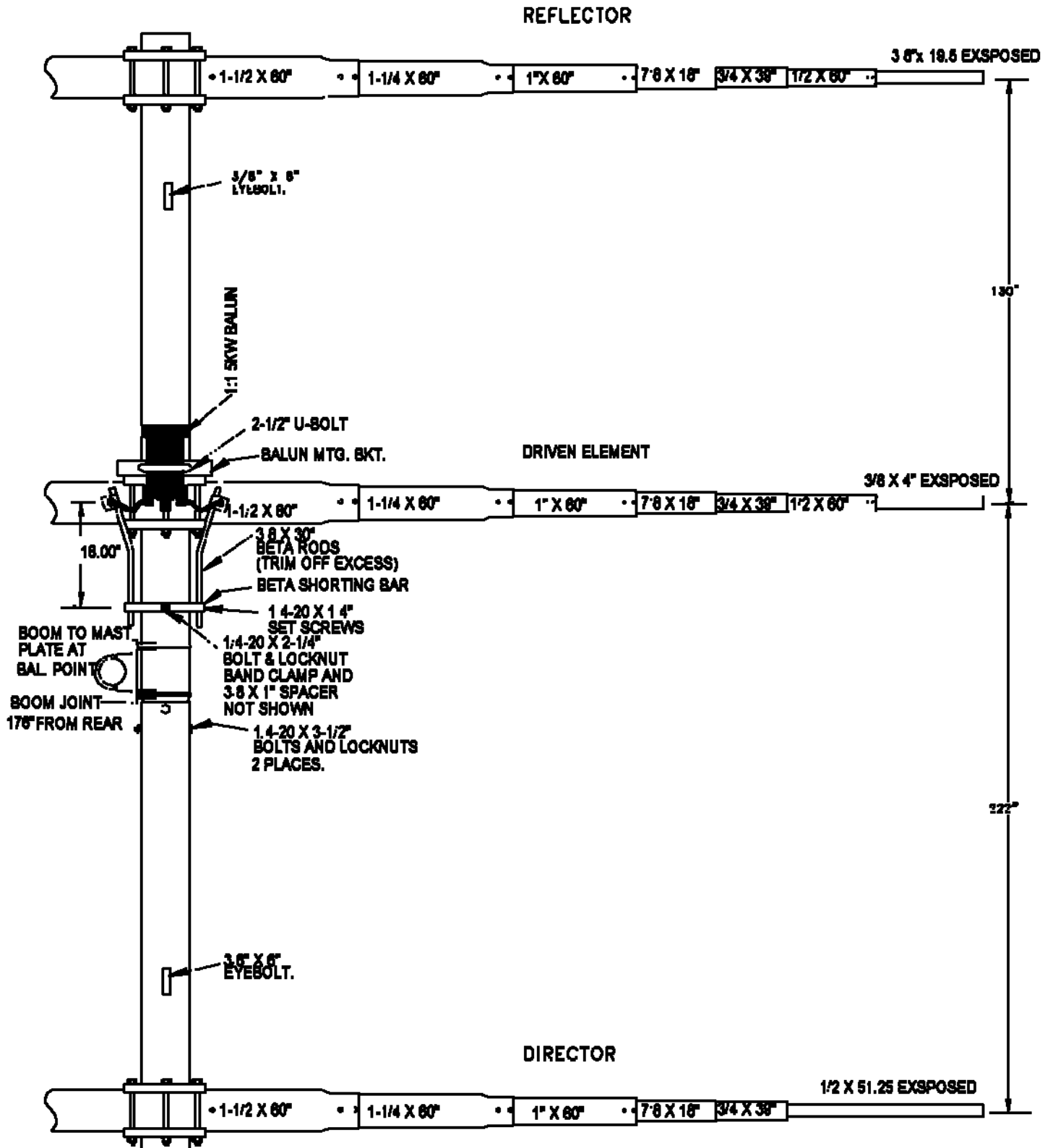
12. Tie one end of the 5/16' dacron cord to an eyebolt using 3 half hitches or equivalent. Pull the knots tight. Without cutting the cord, tie the other end to the other eyebolt. Return to the boom to mast plate, center the cord and cut it so you have an even amount to attach to the turnbuckle eyes. Loop one cord through a turnbuckle, pull the cord tight and secure as you did at the eyebolts. Repeat for the other turnbuckle. Now remove the turnbuckle assembly from the boom to mast plate. and raise it above the boom until the boom is level. This is the approximate height you will need above the boom to secure the turnbuckle assembly during final assembly on the mast.

THIS COMPLETES THE ANTENNA ASSEMBLY

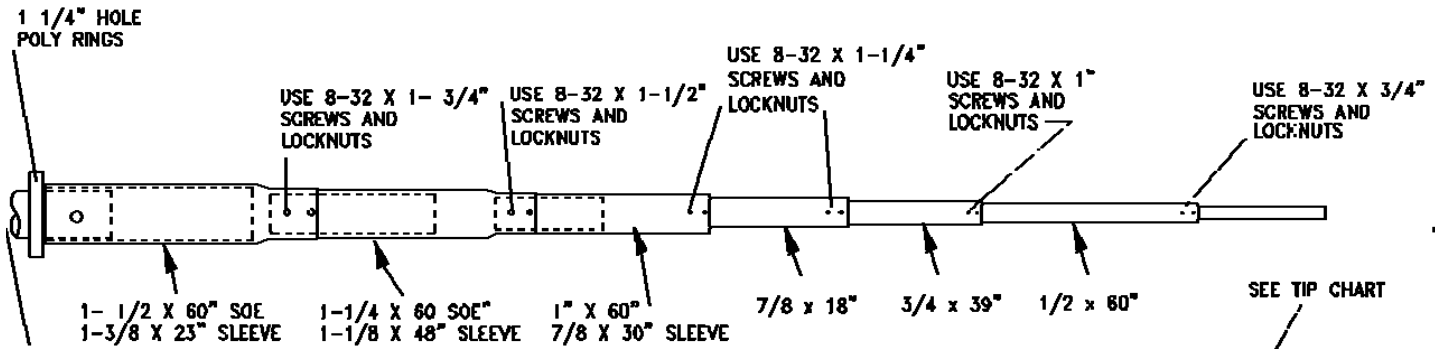
CAREFULLY DESIGNED MANUFACTURED BY:

**M<sup>2</sup> Antenna Systems, Inc.**  
4402 N. Selland Ave.  
Fresno, CA 93722  
559-432-8873 FAX 432-3059

# 30M3 DIMENSION SHEET



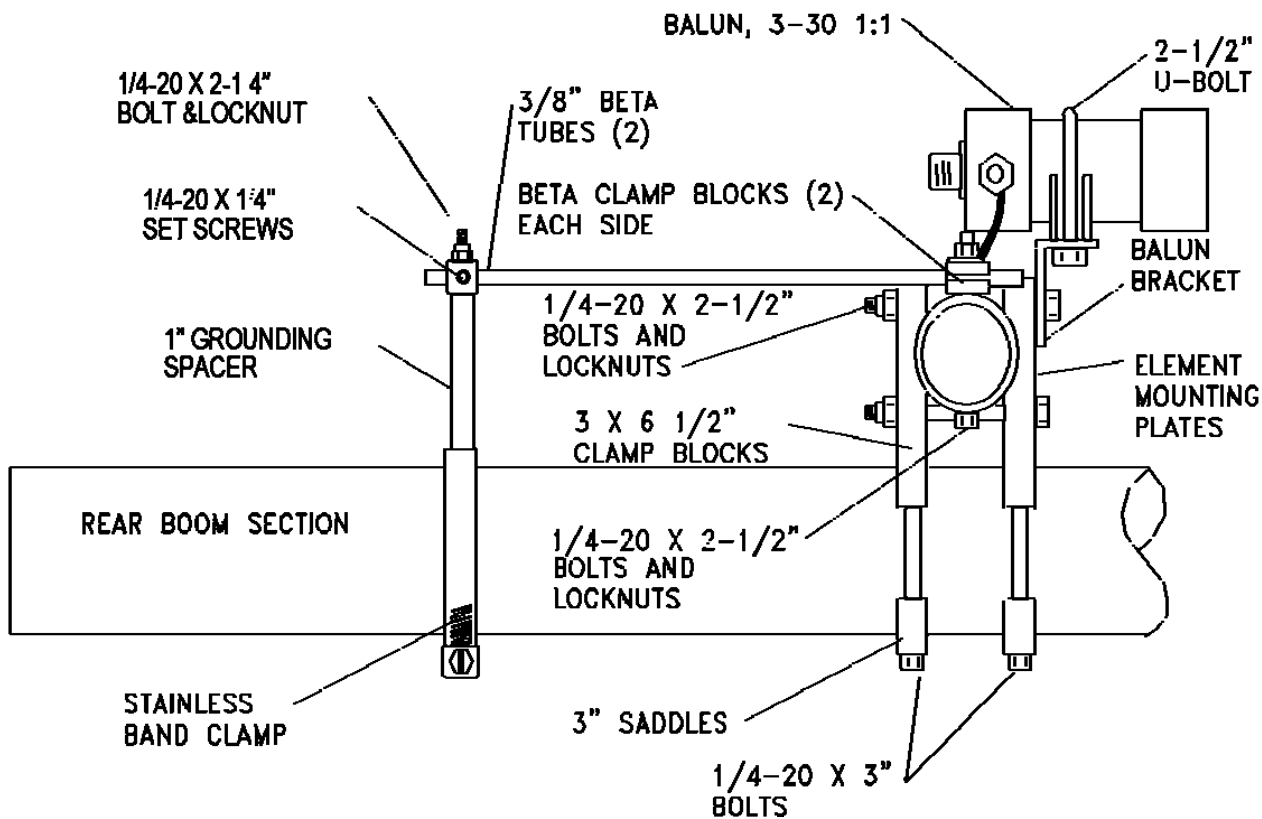
# 30M3 ASSEMBLY DETAILS



1-1/4 X 24"  
CENTER COUPLING.  
REFL. AND DIR.  
USE ALUM.  
D.E. USES  
FIBERGLASS  
WITH TWO WHITE  
POLYRINGS BETWEEN  
ELEMENT HALVES AND  
THE ELEMENT MOUNTING  
PLATES.

TIP LENGTH CHART		
REFLECTOR	3/8"	TUBE 22.5"
DRIVEN	3/8"	TUBE 7.0"
DIRECTOR	1/2"	TUBE 54.25"

## SIDE VIEW DRIVEN ELEMENT



# 30M3 PARTS & HARDWARE

DESCRIPTION	QTY
Boom section, 3 X .125 X 180" SOE	1
Boom section, 3 X .125 X 180 plain	1
Element center splice, 1-1/4" round alum. rod X 24"	2
Element center insulator, 1-1/4" round fiberglass rod X 24"	1
Element section, 1-1/2 X .058 X 60" SOE	6
Sleeve, 1-3/8 X .058 X 23"	6
Element section, 1-1/4 X .058 X 60"	6
Sleeve, 1-1/8 X .058 X 48"	6
Element section, 1 X .058 X 60"	6
Sleeve, 7/8 X .058 X 30"	6
Element section, 7/8 x .058 x 18"	6
Element section, 3/4 X .058 X 39 SOE	6
Element section, 1/2 X .049 X 60"	4
Element section, 1/2 X .049 X 54.25"	2
Element section, 3/8 .049 X 22.5"	2
Element section, 3/8 x .049 x 7.0	2
Element mounting plate, X 3" X 6" mach. alum. (.625 rad)	6
Saddle clamps, 1 X 1/2 X 4"	6
Band clamp, 2-1/2 TO 3-1/2" SS	1
Beta rod, 3/8 X .049 X 30", bent at 25 degrees	2
Shorting bar, 1/2" X 1/2" X 5" mach. alum.	1
Clamp block, 1 X 1 1/4 X .25" mach. alum., 3/8" diameter	4
Spacer, 3/8 X .049 X 1"	1
Polydisc, 1-1/4"	2
Turnbuckle plate 2 X .5 X 3/16" alum.	1
Turnbuckle, 3/8 X 6"	2
Boom to mast plate, 8 X 8 X .25" punched alum.	1
Mounting bracket, balun, 1 X 1 X 5" angle alum.	1
U-bolt and saddle, 3"	2
U-bolt and saddle 2-1/2"	1
U-bolt and saddle, 2" heavy duty, 3/8-16 thread	4
U-bolt and saddle, 2" standard	1
Eye bolt, 3/8" X 6"	2
Dacron rope, 5/16" X 24 ft.	1
Balun assy 1:1	1
Assembly Manual	1
<b>HARDWARE</b>	
Bolt, 1/4-20 x 3-1/2" ss hex cap	2
Bolt, 1/4-20 x 3" ss hex cap	12
Bolt, 1/4-20 x 2-1/2" ss hex cap	20
Bolt, 1/4-20 x 2-1/4" ss hex cap	1
Bolt, 1/4-20 x 2.0" ss hex cap	4
Set screw, 1/4-20 x 1/4" ss	2
Screw, 8-32 x 1-3/4" ss pan head	12
Screw, 8-32 x 1-1/2": ss pan head	12
Screw, 8-32 x 1-1/4" ss pan head	12
Screw, 8-32 x 1" ss pan head	24
Screw, 8-32 x 3/4 ss pan head	12
Nut, 3/8-16 ss	14
Lock washer, 3/8" split ring ss	14
Nut, 5/16-18 ss	2
Lockwasher, 5/16" split ring ss	2
Nut, 1/4-20 locking, ss	30
Nut 8-32 ss locking	72
Nylon ties, large 14" black	3
Allen wrench, 1/8"	1
Penetrox cup	1

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