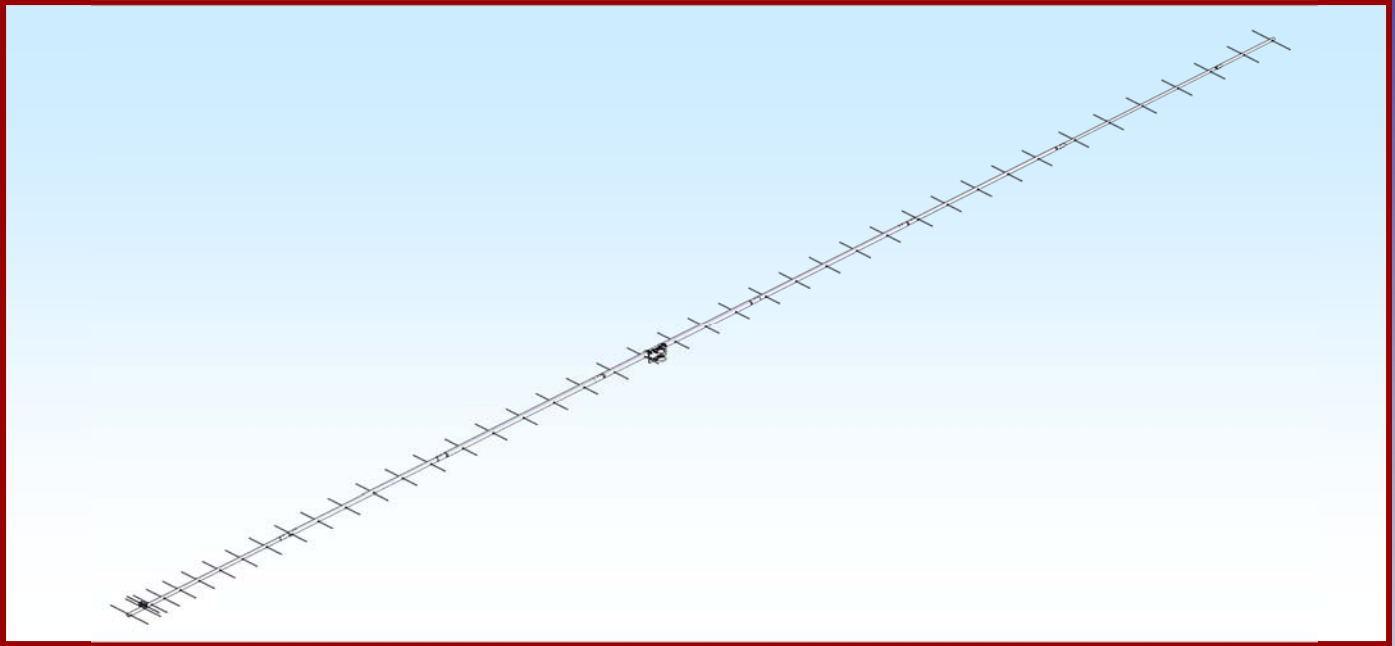




# M2 Antenna Systems, Inc. Model No: 432-15WL



## SPECIFICATIONS:

Model .....	432-15WL	Power Handling .....	1 kW
Frequency Range.....	430 To 436 MHz	Boom Length / Dia.....	416" / 1.5,1.25,1.0 &.75"
*Gain .....	21.5 dBi	Maximum Element Length.....	13-5/8"
Front to back .....	22 dB Typical	Turning Radius: .....	19'
Beamwidth .....	E=15° H=16°	Stacking Distance.....	96" High & 96" Wide
Feed type .....	Folded Dipole	Mast Size.....	1-1/2" to 2" Nom.
Feed Impedance. ....	50 Ohms Unbalanced	Wind area / Survival .....	2.8 Sq. Ft. / 100 MPH
Maximum VSWR.....	1.2:1 Typical	Weight / Ship Wt.....	13Lbs. / 14 Lbs.
Input Connector.....	"N" Female		

**\*Subtract 2.14 from dBi for dBd**

## FEATURES:

The 432-15WL uses the 432-23WLA as it's starting point. This allows '13WLA owners to easily upgrade to the new '15WL by changing the element set and adding a new boom tip section . The 432-15WL produces over 25.3 dBd gain in a four Yagi array, its also an excellent stand alone antenna with flatter match and broader bandwidth.. The driven element is a modified and adjustable folded dipole. Its heart is a unique machined aluminum Driven Element Module. All three connectors on the module are threaded in and feature 'O' ring seals. Internal connections are encapsulated in a space age silicone gel with nearly 4 times the dielectric strength of air. Each parasitic element is a solid 3/16" rod, mounted through the boom on a UV stabilized, black polyethylene button insulator and locked in place with stainless steel shaft retainers.

The 432-15WL is available as an ADD ON KIT or as a new standalone antenna. It has been designed for outstanding performance and long term electrical and mechanical integrity.

# 432-15WL UPGRADE MANUAL

## New Installation

1. Follow the 432-13WL assembly manual instructions, but do not use BOOM SECTION #7(3/4" X .049 X 27") & 3/16" ELEMENT SET. Instead, use BOOM SECTION #7 (3/4" X .049 X 60" SOE), BOOM SECTION #8 (3/4" X .049 X 21") & 3/16" ELEMENT SET supplied with the 432-15WL upgrade kit. (SEE PICTURE #1 & #2).
2. Trim Driven Element Rod to = 5-3/16" & adjust Shorting Bar dimension. (SEE PICTURE #3).

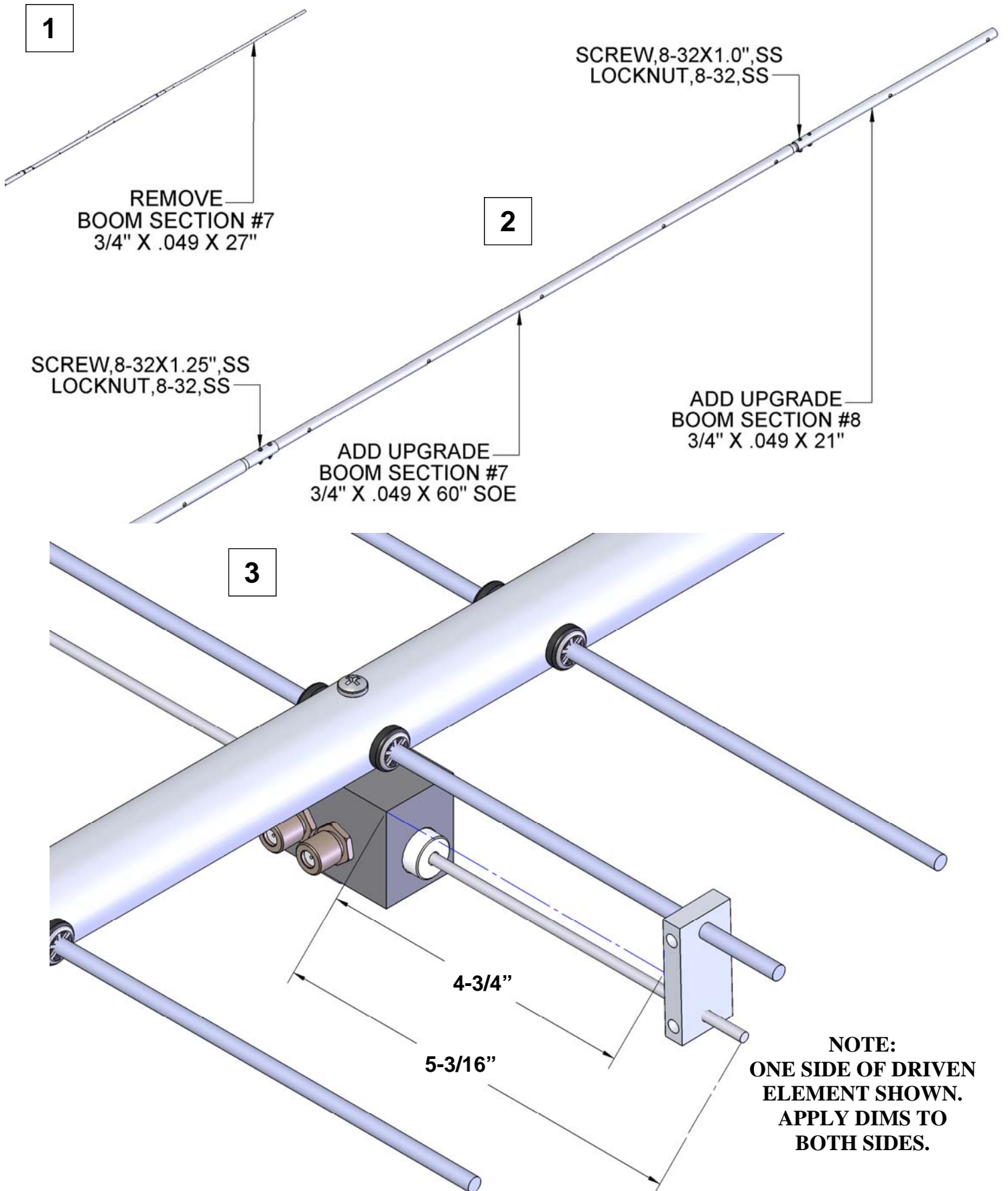
## Existing 432-13WL Upgrade

1. Remove all elements. Note: retainers will no longer be usable. We have supplied new ones in the hardware upgrade kit. Please save button insulators, these will be re-used.
2. Remove BOOM SECTION #7 (3/4" X .049 X 27"). Replace with new 432-15WL UPGRADE BOOM SECTION #7 (3/4" X .049 X 60" SOE) supplied in 432-15WL upgrade kit. (SEE PICTURE #1 & #2).
3. Install BOOM SECTION #8 (3/4" X .049 X 21") supplied in 432-15WL upgrade kit. (SEE PICTURE #1 & #2).
4. Install new 3/16" element set. (SEE DIMENSION SHEET). We have supplied in upgrade hardware kit, new retainers & extra buttons.
5. Trim Driven Element Rods to = 5-3/16" & adjust Shorting Bars (SEE PICTURE #3).

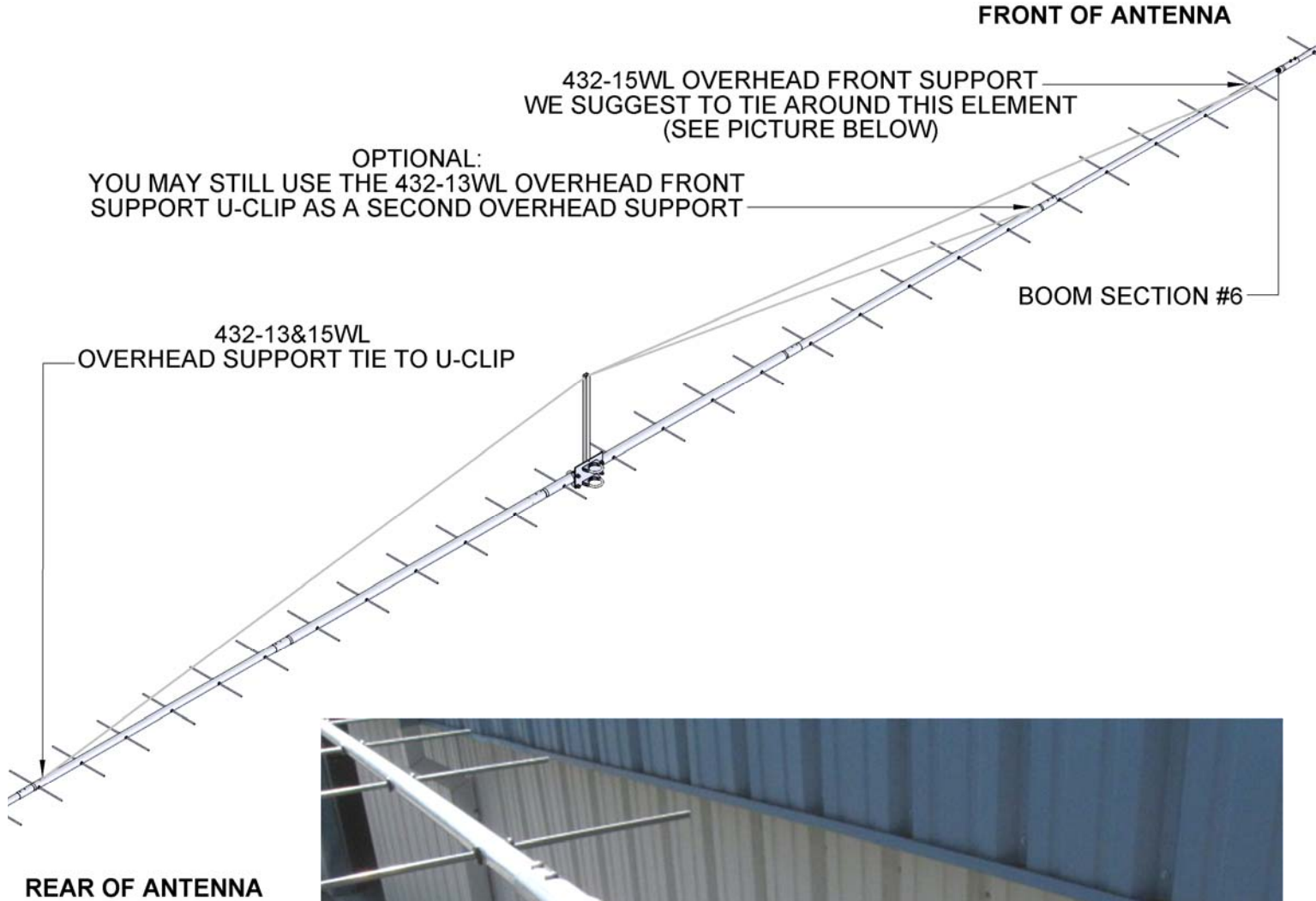
## 3/16" Element Rod Installation Reminders

1. Lay out the elements by length and position as shown the DIMENSION sheet. Start with the reflector element and push on a black button insulator to about 1/2" from center. Insert the element through the holes 1/2" from the rear of the boom and install the second button, snugging it up into boom. **DO NOT BOTHER WITH ACCURATELY CENTERING** the element at this time and **DO NOT INSTALL** the stainless steel internal locking SHAFT RETAINERS yet. This is easier to do after all the elements are installed in the boom.
2. Install the 3/16" DRIVEN ELEMENT as you did the reflector. Then continue with the installation of the DIRECTORS. **Note that the Director Elements do not consistently diminish in length from rear to front, so pay close attention to length and position.**
3. Now center the elements. Use a tape measure to EQUALIZE the element length on each side of the boom. Once you have all the elements centered, sight down the element tips from the rear comparing each side. Look for any obvious discrepancies and correct if found.
4. NOTE: The SHAFT RETAINERS should always be used for permanent and long term antenna installations. For portable or temporary use, or whenever it is anticipated that the antenna will be disassembled within a short time, the retainers may be left off. The button insulators, alone, hold the elements quite securely. The SHAFT RETAINERS are installed on both sides of each element rod, butted on the button insulators. To start the retainers, use thumb and index finger to hold one over end of the 3/8 x 3" push tube, retainer dished into tube. Hold the element firmly and start the retainer onto the rod by applying pressure with the push tube. Push the retainer until up tight against the button insulator (Locking pliers, **lightly** clamped up against opposite button insulator will help maintain center reference and keep you from pushing the first retainer too far). Repeat for the opposite side. Continue installing retainers until all elements are locked in place.

# 432-15WL UPGRADE ASSEMBLY

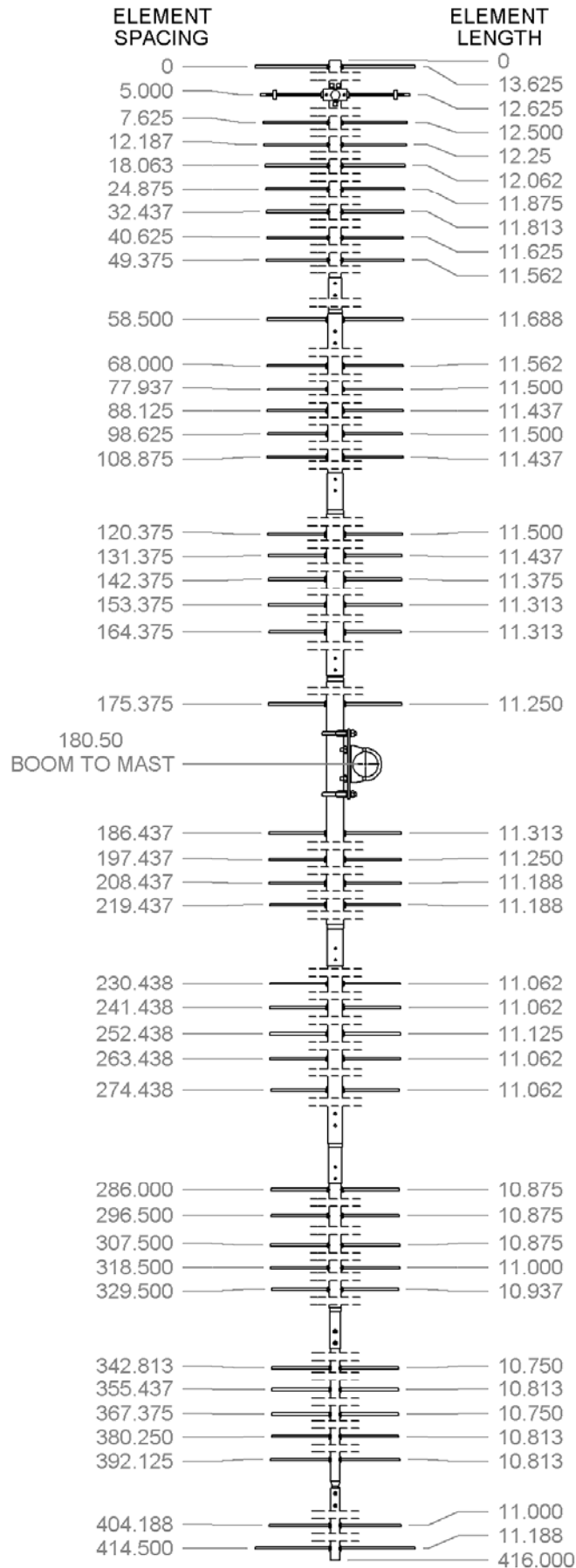


# 432-15WL OVERHEAD SUPPORT



# 432-15WL DIMENSION SHEET

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



# 432-15WL PARTS & HARDWARE

DESCRIPTION.....	QTY
BOOM SECTION #7: 3/4" X .049 X 60" SOE .....	1
BOOM SECTION #8: 3/4" X .049 X 21" .....	1
ELEMENT RODS, 3/16 X SEE DRAWING .....	42
KEVLAR, .075 X 11' .....	1

**HARDWARE:**

BUTTON INSULATORS.....	10
SHAFT RETAINERS .....	85
PUSH TUBE, 3/8" X 3" .....	1
SCREW, 8-32 X 1.0", SS .....	2
LOCKNUT, 8-32, SS .....	2

**M<sup>2</sup> ANTENNA SYSTEMS, INC.**

4402 N. SELLAND AVE.

FRESNO, CA 93722

(559) 432-8873 FAX: 432-3059

[www.m2inc.com](http://www.m2inc.com) Email: [sales@m2inc.com](mailto:sales@m2inc.com)