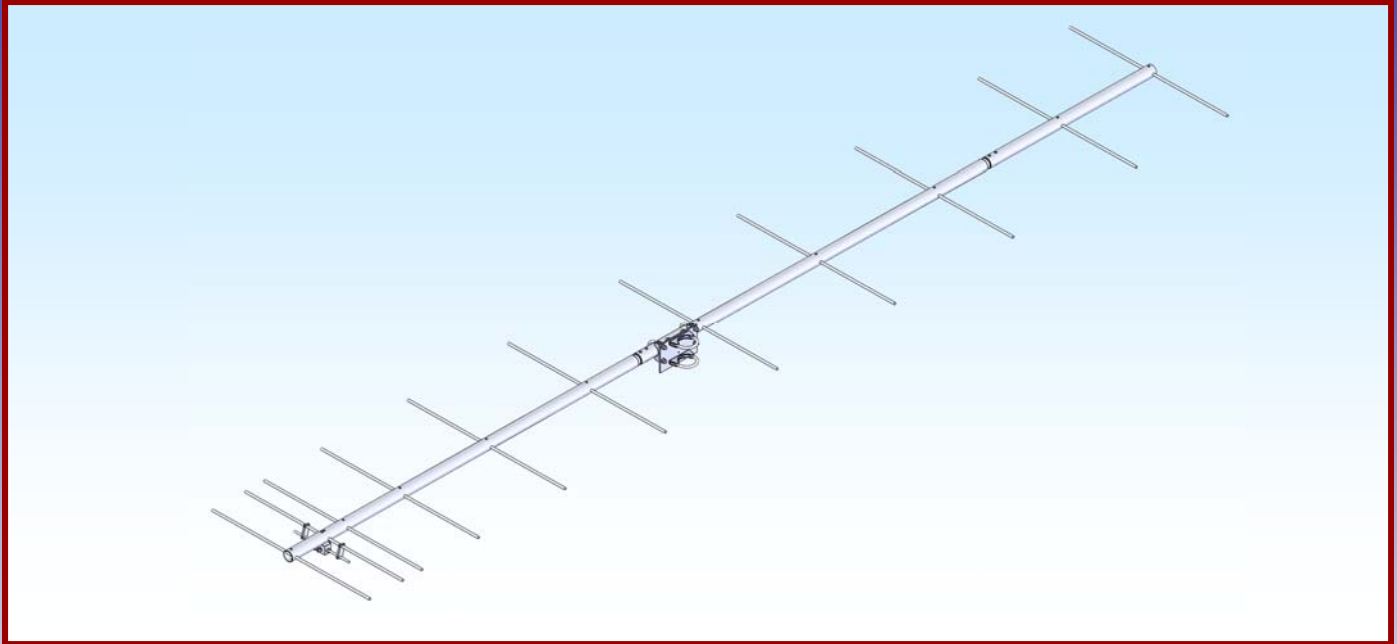




# M2 Antenna Systems, Inc. Model No: 235-11



## SPECIFICATIONS:

|                      |                     |                             |                       |
|----------------------|---------------------|-----------------------------|-----------------------|
| Model .....          | 235-11              | Power Handling .....        | 1200W                 |
| Frequency Range..... | 230 To 240 MHz      | Boom Length / Dia.....      | 141" / 1-1/2"         |
| *Gain .....          | 15.07 dBi           | Maximum Element Length..... | 25-3/4"               |
| Front to back .....  | 23 dB Typical       | Turning Radius: .....       | 80"                   |
| Beamwidth .....      | E=30 deg. H=35 deg. | Stacking Distance.....      | 84" High & 80" Wide   |
| Feed type .....      | "T" Match           | Mast Size.....              | 1-1/2" to 2" Nom.     |
| Feed Impedance. .... | 50 Ohms Unbalanced  | Wind area / Survival .....  | 1.1 Sq. Ft. / 100 MPH |
| Maximum VSWR.....    | 1.5:1 Max           | Weight / Ship Wt.....       | 8 Lbs. / 13 Lbs.      |
| Input Connector..... | "N" Female          |                             |                       |

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

## FEATURES:

Performance has been computer optimized to meet your application. Physical construction emphasizes long term electrical and mechanical durability. Elements are rod 5/16" 6061-T6 aluminum, grounded to the boom. The driven element "T" Match uses a CNC machined central block with O-ring sealed connectors. Internal connections are encapsulated in a silicone gel with a dielectric strength 3.7 times greater than air for enhanced power handling. Balun connectors are triple O-ring sealed to the coax.

# 235-11 ASSEMBLY MANUAL

TOOLS REQUIRED: Screwdriver, 11/32 wrench, socket or spintite, a 7/16" and 1/2" wrench or socket, tape measure. For best results please review instructions before assembly.

1. Assemble the boom (SEE DIMENSION SHEET).
2. Install the boom to mast plate with two 2" U-bolts and cradles, placing it at about 53" from the rear of the boom.
3. Layout the elements using dimension sheet and Install using 6-32 X 1" screws to hold elements in place. **Note:** Leave Driven Element Rod screw loose until shorting bars are positioned (SEE DRIVEN ELEMENT DETAIL PAGE).
4. Install Driven Element Assembly & Shorting Bars.  
(SEE DRIVEN ELEMENT DETAIL PAGE & DIMENSION SHEET).
5. Install the two gold SEAL NUTS on the Driven Element Balun connectors with the black neoprene face out. Locate the 1/2 wavelength balun cable assembly and form into a large "U" shaped loop. Tighten up the 7/16" balun connector nuts gently with a 7/16" end wrench first. Then run the seal nuts up against the face of the connectors and tighten about 1/2 turn more with a 1/2" end wrench. Tuck Balun into rear of boom and secure.
6. Install the feed line. Route feed line on the underside of boom towards Boom to Mast Plate and secure with nylon ties.

This completes the assembly.

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

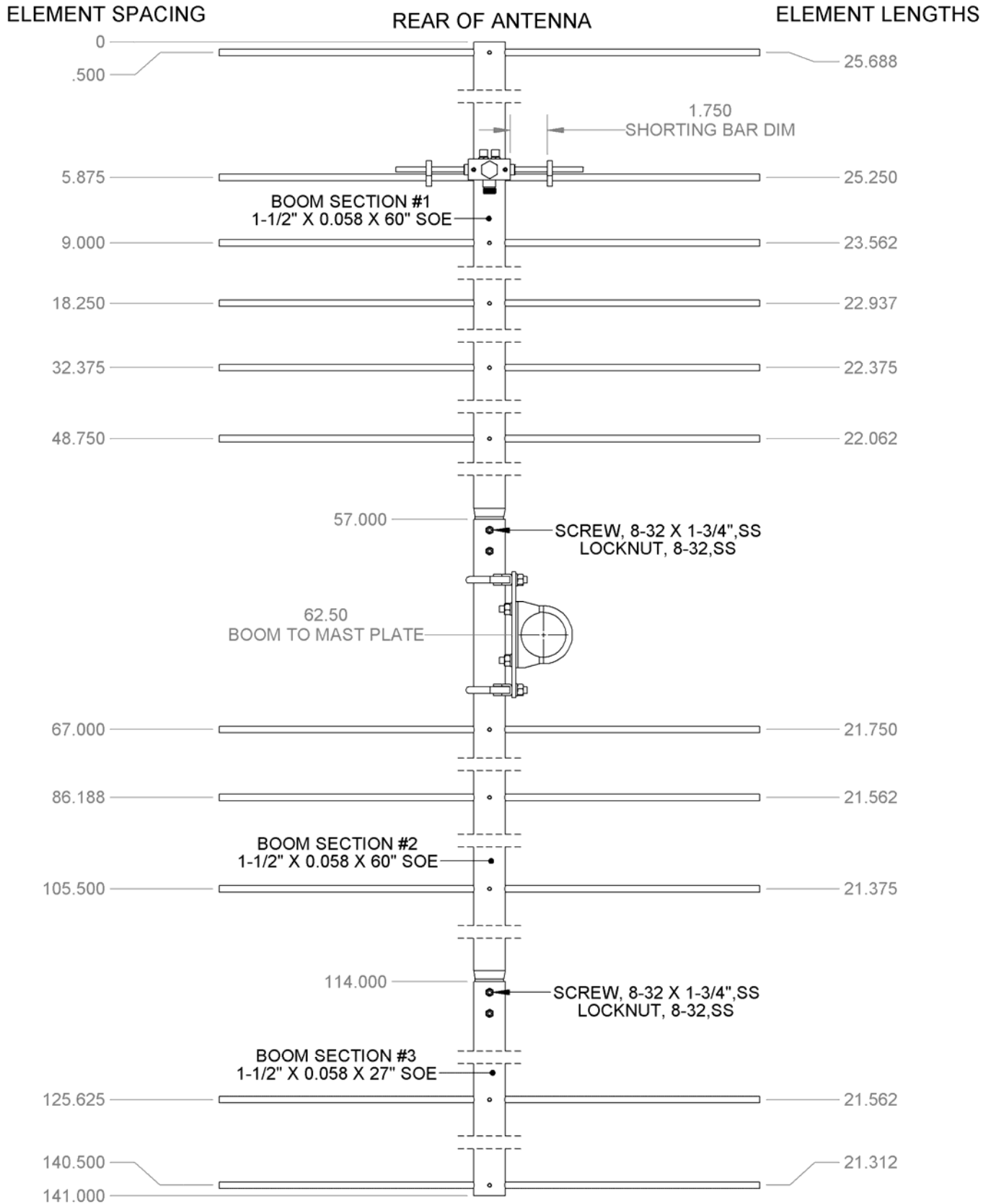
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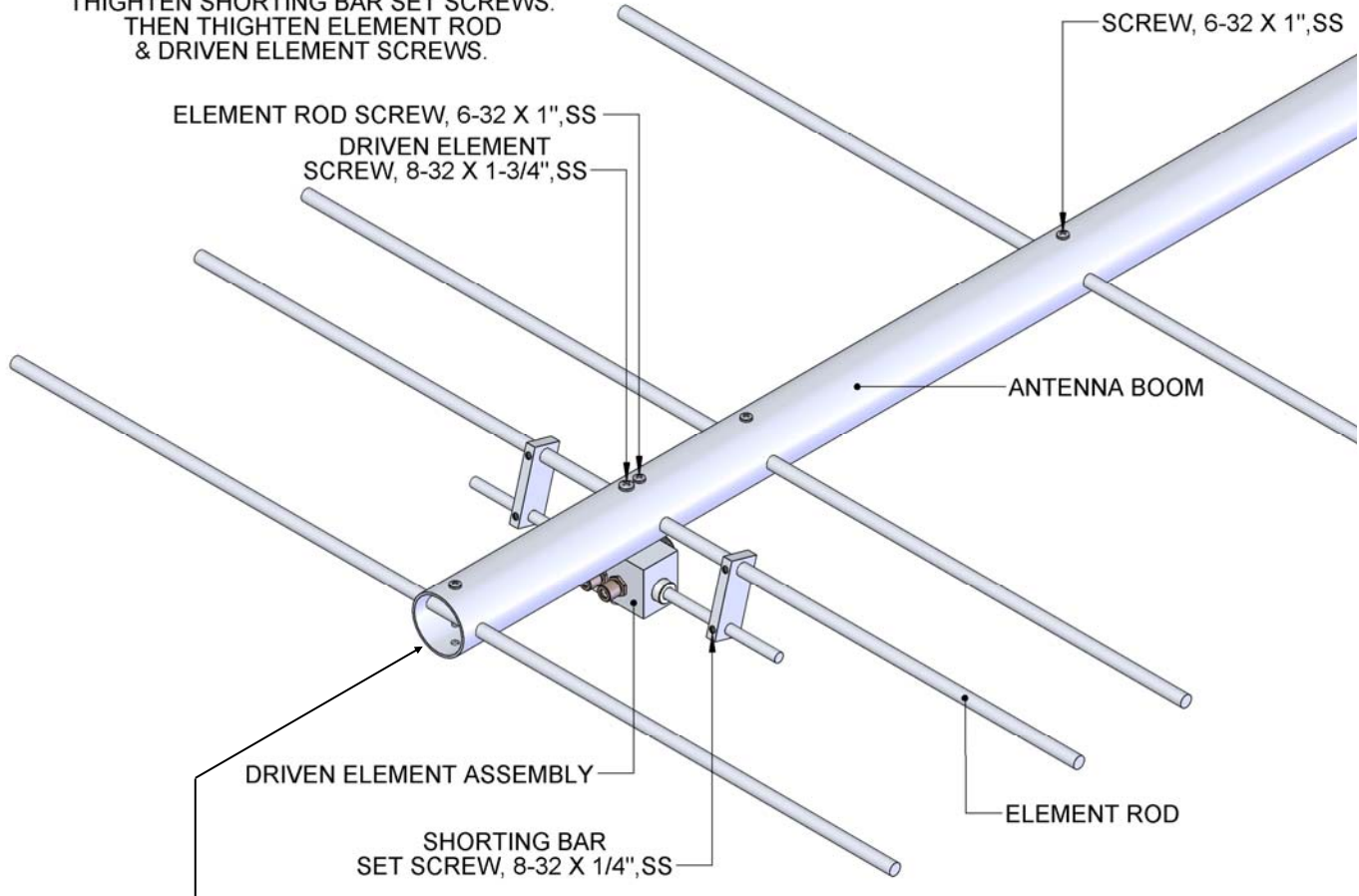
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# 235-11 DIMENSION SHEET



# 235-11 DRIVEN ELEMENT DETAIL

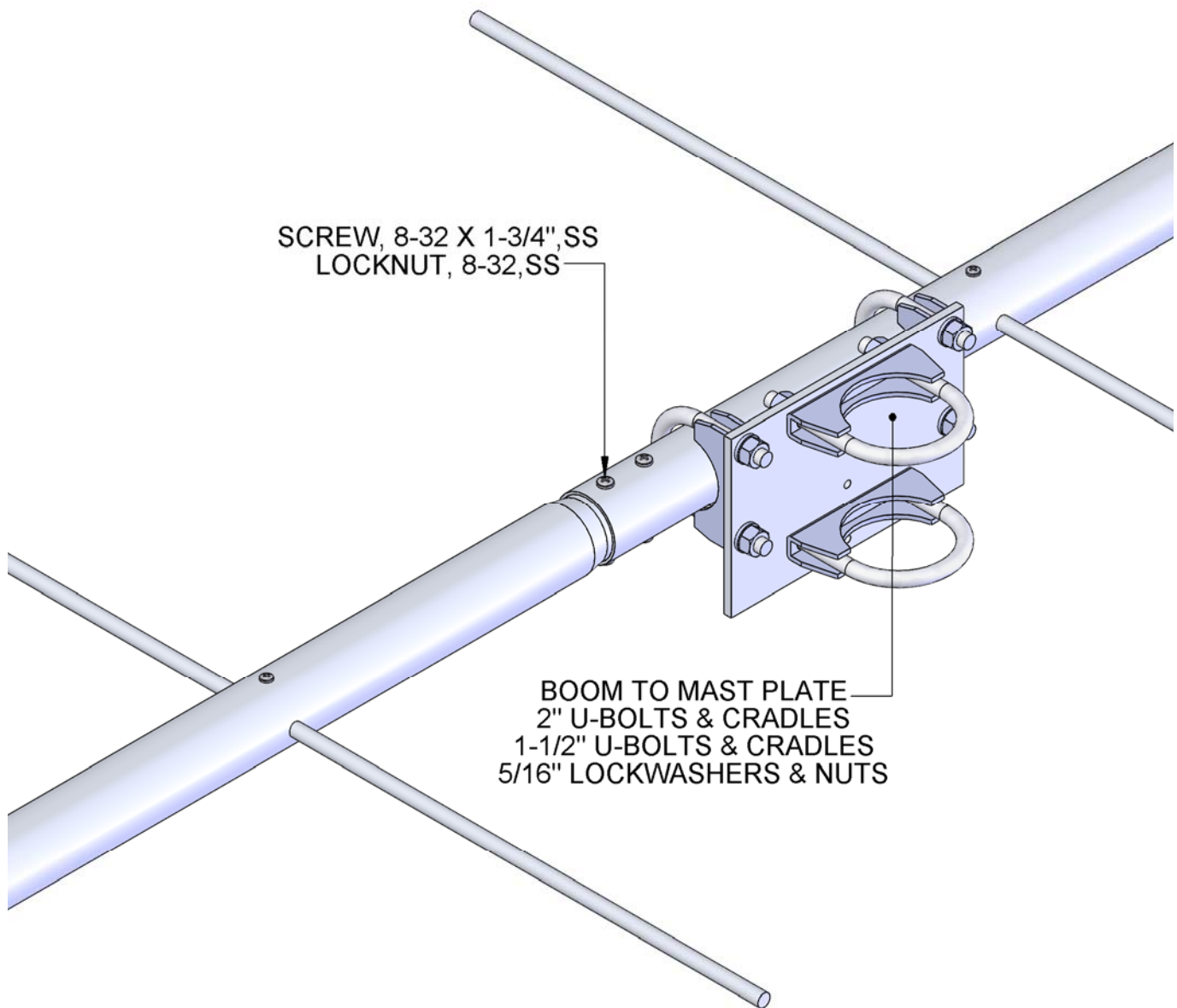
**NOTE:**  
INSTALL DRIVEN ELEMENT ASSEMBLY,  
ELEMENT ROD & SHORTING BARS  
AS SHOWN, BUT KEEP HARWARE LOOSE.  
IT'S IMPORTANT TO POSITION SHORTING BARS AS  
SPECIFIED ON DIMENSION SHEET.  
TIGHTEN SHORTING BAR SET SCREWS.  
THEN TIGHTEN ELEMENT ROD  
& DRIVEN ELEMENT SCREWS.



**NOTE:**  
TUCK BALUN INTO REAR OF BOOM AS SHOWN BELOW.  
SECURE WITH TAPE OR NYLON TIES.



# 235-11 BOOM TO MAST PLATE DETAIL



# 235-11 PARTS & HARDWARE

| DESCRIPTION  | QTY |
|--|-----|
| BOOM SECTION #1, 1-1/2" X .058 X 60" SOE .....     | 1   |
| BOOM SECTION #2, 1-1/2" X .058 X 60" SOE .....     | 1   |
| BOOM SECTION #3, 1-1/2" X .058 X 27" .....         | 1   |
| ELEMENT ROD, 5/16" X SEE DIM SHEET .....           | 11  |
| DRIVEN ELEMENT ASSEMBLY .....                      | 1   |
| BALUN CABLE, RG-6U X 22-1/2" .....                 | 1   |
| SHORTING BAR, 3/4" X 1/4" X 1-7/8" .....           | 2   |
| BOOM TO MAST PLATE, 4 X 6 X 1/4" (M2APT0022) ..... | 1   |
| U-BOLT AND CRADLE, 2" .....                        | 2   |
| U-BOLT AND CRADLE, 1-1/2" .....                    | 2   |
| ASSEMBLY MANUAL.....                               | 1   |
| <b>HARDWARE</b>                                    |     |
| NUT, 5/16-18 SS.....                               | 8   |
| LOCKWASHER 5/16 SS.....                            | 8   |
| SCREW, 8-32 X 1-3/4", SS.....                      | 5   |
| SET SCREW, 8-32 X 1/4",SS.....                     | 4   |
| LOCKNUT, 8-32, SS.....                             | 4   |
| SCREW, 6-32 X 1",SS.....                           | 15  |
| SEAL NUT, 3/8-32 .....                             | 2   |
| ALLEN WRENCH 5/64 .....                            | 1   |
| NYLON TIES LARGE .....                             | 5   |

Carefully designed and manufactured by:

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