



**4096-442**  
**Revision H**

**May 13, 2002**

**ASSEMBLY MANUAL**

# **3.8M C & Ku-BAND Rx/Tx ANTENNA SYSTEM**

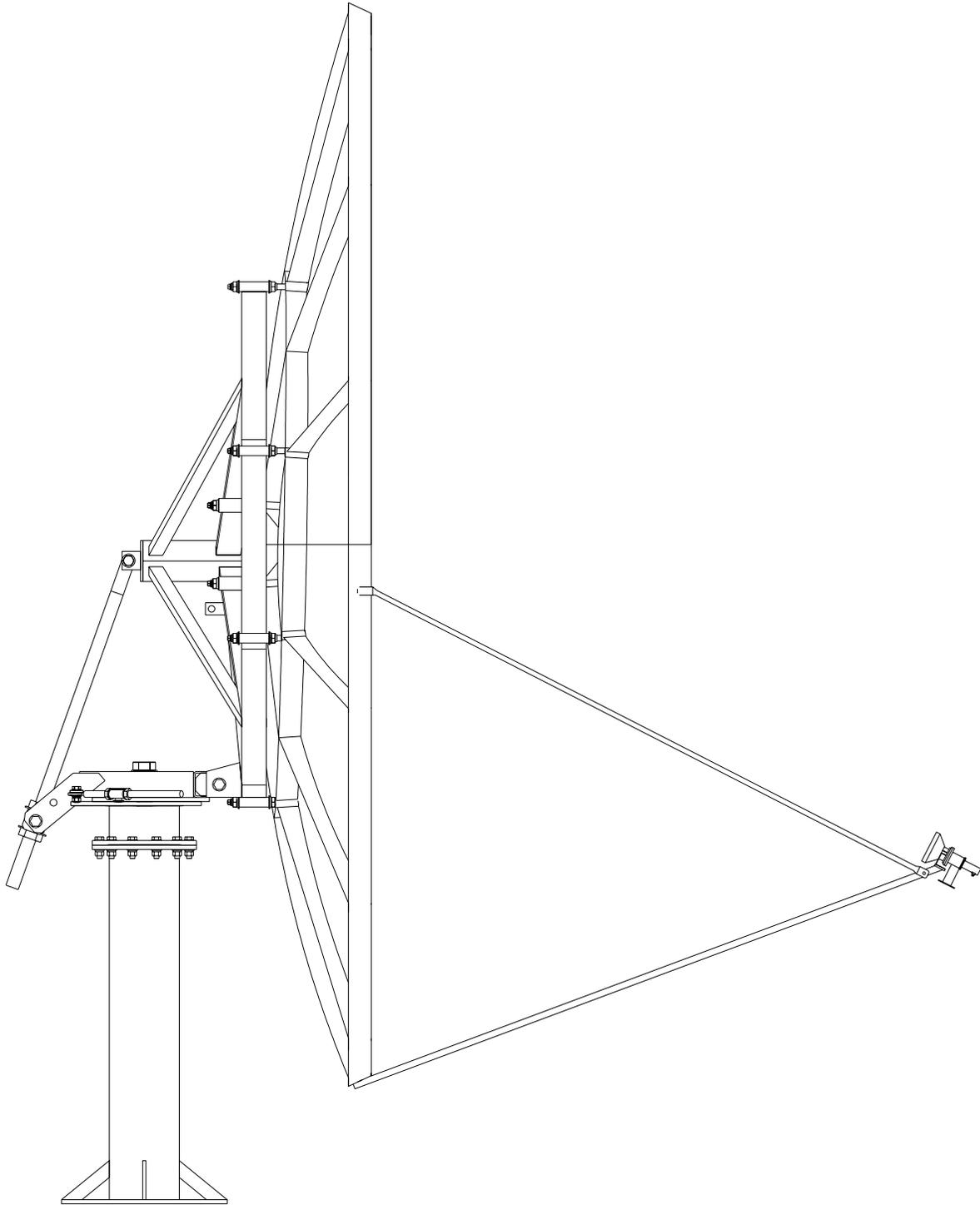
**PRODELIN CORPORATION**  
**1500 Prodelin Drive**  
**Newton NC 28658**

## 3.8M C & Ku-BAND Rx/Tx ANTENNA SYSTEM

<b>H</b>	<b>Revised Per ECN#3094</b>	<b>10/7/04</b>	
<b>G</b>	<b>Remove Label Text</b>	<b>5/13/02</b>	<b>RAH</b>
<b>F</b>	<b>Revised Address</b>	<b>1/21/02</b>	<b>RAH</b>
<b>E</b>	<b>Revised Part numbers Page 9</b>	<b>6/21/00</b>	<b>RAH</b>
<b>D</b>	<b>Revised and updated for old back frame</b>	<b>04/29/98</b>	<b>RAH</b>
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**SECTION I            GENERAL INFORMATION****1.0    INTRODUCTION**

This manual describes the assembly and installation of Prodelin's 3.8M C and Ku Band Rx/Tx antenna system. The Prodelin 3.8M is a rugged, reliable antenna system that will operate at C-band and Ku-band frequencies with high efficiency and at the same time successfully withstand the effects of the environment.

These instructions are listed by sections that cover all areas of assembly and installation. Additional sections are included in the manual to provide information on antenna alignment to the satellite and maintenance.

**1.1    UNPACKING AND INSPECTION**

- 1.    UNPACKING & INSPECTION** - The antenna containers should be unpacked and inspected at the earliest date to ensure that all material has been received and is in good condition. A complete packing list for each major component is supplied.

**CAUTION: DO NOT DRAG REFLECTOR SUPPORT FRAME ON THE ADJUSTMENT THREAD RODS AS THESE ARE FACTORY SET AND MUST NOT BE ALTERED!!**

- 2.    FREIGHT DAMAGE** - Any damage to materials while in transit should be immediately directed to the freight carrier. He will instruct you on the matters regarding any freight damage claims.
- 3.    MATERIAL - MISSING OR DAMAGED** - Any questions regarding missing or damaged materials that is not due to freight carrier should be directed to Prodelin's Customer Service Department at:

**PRODELIN CORPORATION  
1500 Prodelin Drive  
Newton NC 28658  
USA  
(828) 464-4141**

**1.2 MECHANICAL INSTALLATION TOOLS**

<b>HARDWARE SIZE</b>	<b>SAE WRENCH SIZE</b>	<b>METRIC WRENCH SIZE</b>	<b>MAXIMUM REC. TORQUE</b>
<b>1 / 4"</b>	<b>5 / 16"</b>	<b>8 mm</b>	<b>8 in-lbs</b>
<b>5 / 16"</b>	<b>1 / 2"</b>	<b>11 mm</b>	<b>49 in-lbs</b>
<b>3 / 8"</b>	<b>9/16"</b>	<b>14 mm</b>	<b>15 ft-lbs</b>
<b>1 / 2"</b>	<b>3 / 4"</b>	<b>20 mm</b>	<b>35 ft-lbs</b>
<b>3 / 4"</b>	<b>1 – 1 / 8"</b>	<b>28 mm</b>	<b>160 ft-lbs</b>
<b>7 / 8"</b>	<b>1 – 1 / 4"</b>	<b>32 mm</b>	<b>190 ft-lbs</b>
<b>1"</b>	<b>1 – 1 / 2"</b>	<b>38 mm</b>	<b>220 ft-lbs</b>

Also recommended for installation:

Adjustable Crescent Wrench 10"  
Ratchet (3 / 8" & 1 / 2" Drive)  
3" Wrench ( socket, crescent or pipe) for 2" bolt  
Allen Wrench, 5/32"  
Screw Driver ( standard and cross blade)  
Inclinometer  
Compass  
Step Ladder

**1.3 SITE SELECTION**

In order to achieve maximum performance of your antenna system, it is important to select the correct location for the antenna. The following guidelines should be observed when selecting a site for the installation.

1. The line of site to the satellite should be clear of any obstructions, such as trees or buildings.
2. The site should be relatively flat and level for ease of installation and access to the antenna.
3. The site should be checked for underground obstruction, such as buried cables or pipes.
4. All local building codes should be adhered to (i.e. grounding, foundation requirements, zoning rules, setbacks, etc.).

**SECTION II SUGGESTED MAST AND FOUNDATIONS**

**NOTE:** Due to the wide variety of soil conditions, Prodelin Corporation does not warrant that any particular design or size of foundation is appropriate for any locality or earth station installation. It is the responsibility of the installer/user to determine if it meets the site/locality requirements. If there is any doubt, have it checked by an architect or structural engineer.

## **2.0 IN-GROUND MAST MOUNT**

Figure 1 shows a suggested In-Ground Mast. The pipe is a 15 ft. length of 10" schedule 40. Due to the high cost of shipping, Prodelin recommends site procurement. Note that the Az/EI Positioner Interface is a Slip Flange, which Prodelin can supply, (P/N 0156-898) and must be welded as shown.

## **2.1 PEDESTAL FOUNDATION**

Figure 2 shows a suggested Pad Foundation and figure 3 shows a suggested Pier Foundation. Both foundations utilize Prodelin's Pedestal Mount. To install the Pedestal Mount foundation, follow the steps below.

1. Install one [1] 1-8 hex nut and one [1] 1" flatwasher (items 2,3) onto the anchor rod (item 5), then insert the anchor rod into one of the holes in the plywood template (item 6) and install another 1-8 hex nut and 1" flatwasher. Repeat this procedure for the remaining anchor rods. This will keep all the anchor rods in the straight and proper orientation when the concrete is poured. Next, install two [2] 1-8 hex nuts and one [1] flatwasher (items 2,3) on the other end of each anchor rod. See following pad layout and figures 2 & 3.
2. Once the site location is determined, dig up the area where the foundation will be installed. Be careful not to dig too deep because the soil in the bottom and sides of the foundation should be undisturbed. Position the reinforcing bars as shown. Position the anchor rods so that the flatwashers are positioned under the reinforcing bars. Pour concrete and allow to dry for 24 hours.
3. Once the concrete is dry, remove the plywood template and screw the lower hex nuts as far down on the anchor rods as possible. Then install the mast pipe (item 1) on to the anchor rods. Adjust the lower hex nuts until the mast pipe is level in the vertical position. Reinstall the flatwashers, lockwashers and hex nuts. With the mast pipe tightened down, fill the space between the concrete slab and the mast pipe base with grout.

## **IN-GROUND MAST MOUNT**

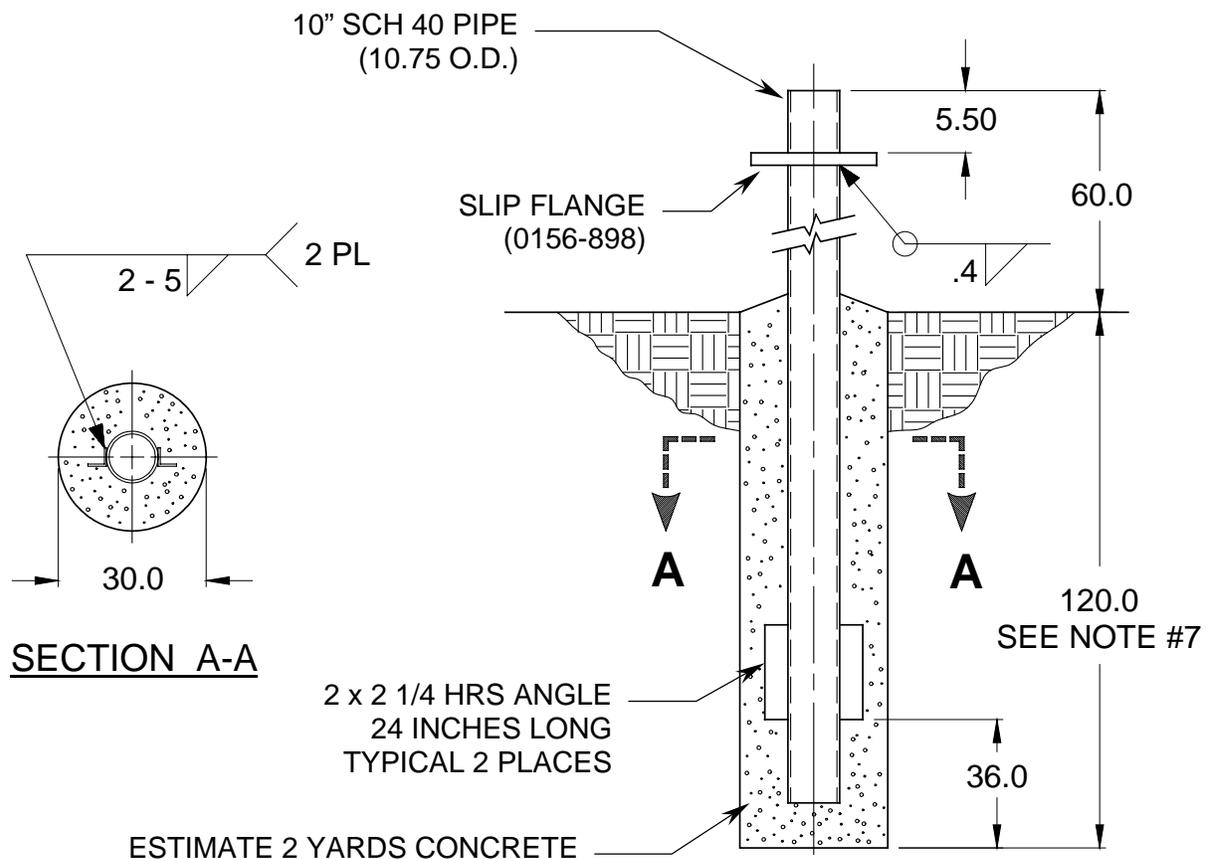


Figure 1.

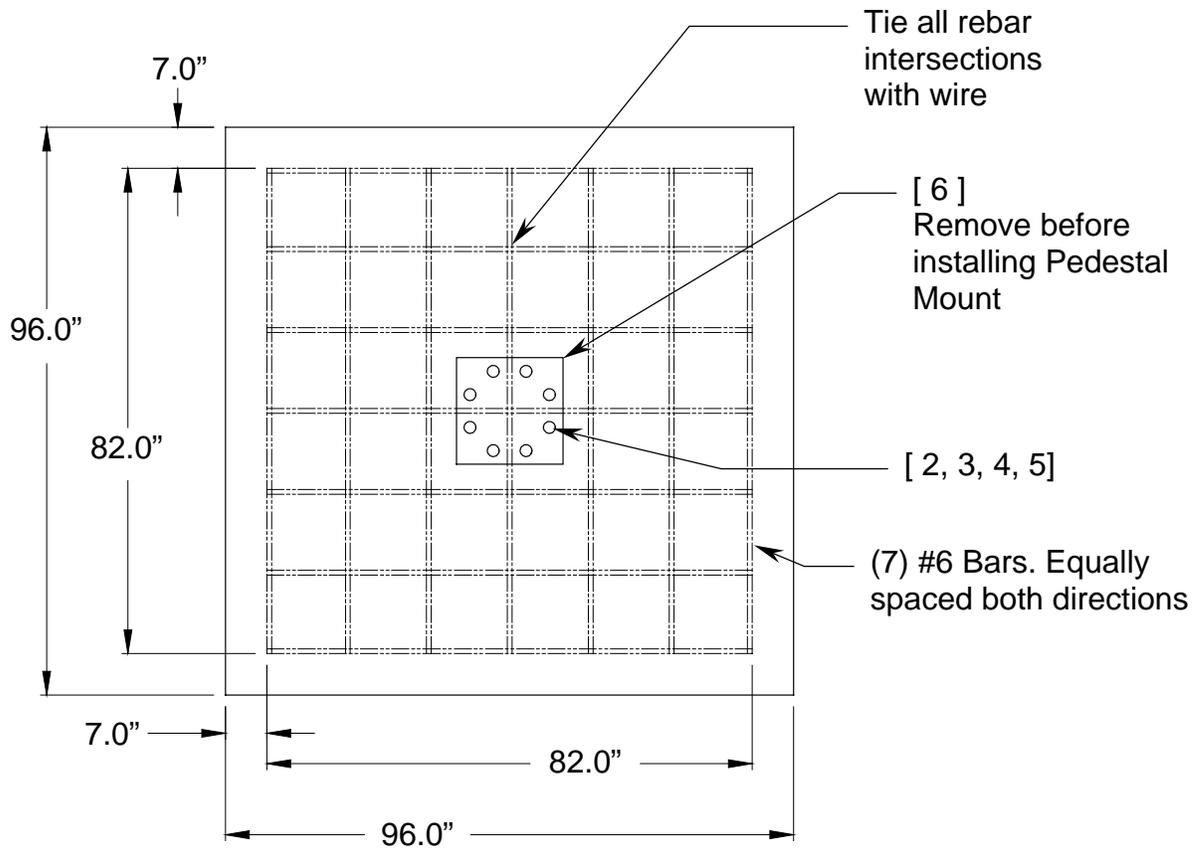
**NOTES:**

1. 2 x 2 x 1/4 HRS ANGLE & 10" SCHEDULE 40 PIPE SHOULD CONFORM WITH ASTM A36 STRUCTURAL STEEL.
2. ALL CONCRETE SHOULD CONFORM TO BUILDING CODE STANDARDS AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS. (PER ACI-318-77)
3. SOIL BEARING CAPACITY SHOULD BE NO LESS THAN 2000 PSF.
4. CONCRETE SHOULD BE POURED AGAINST UNDISTURBED SOIL.
5. ALLOW CONCRETE 24 HOUR SET TIME BEFORE INSTALLATION OF ANTENNA.
6. THE ANTENNA SHOULD BE PROPERLY GROUNDED TO MEET APPLICABLE LOCAL CODES.
7. MINIMUM DEPTH AS SHOWN OR EXTENDED TO LOCAL FROST LINE.

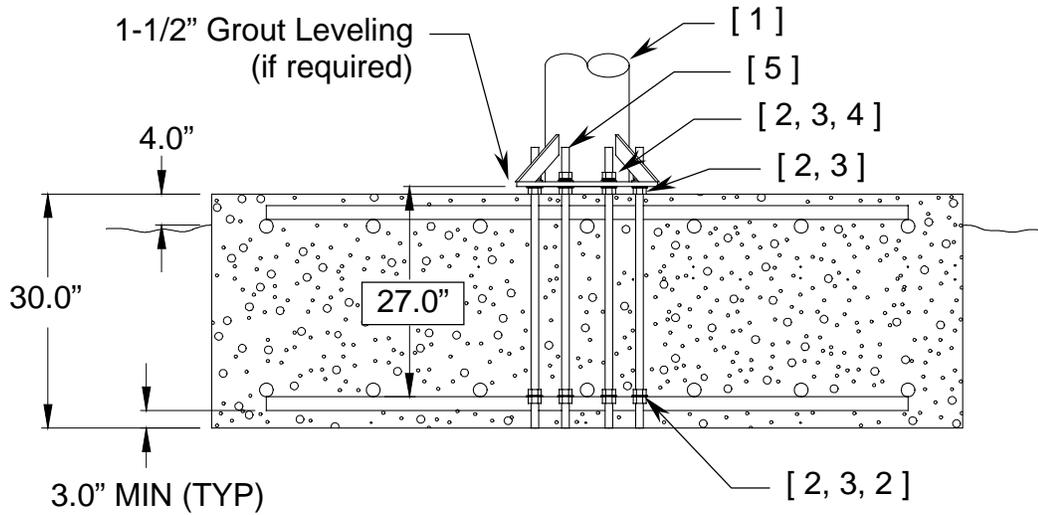
(PRODELIN CORP. DOES NOT REPRESENT OR WARRANT THAT ANY PARTICULAR DESIGN OR SIZE OF FOUNDATION IS APPROPRIATE FOR ANY LOCALITY OR EARTH STATION INSTALLATION.)

**PEDESTAL FOUNDATIONS**

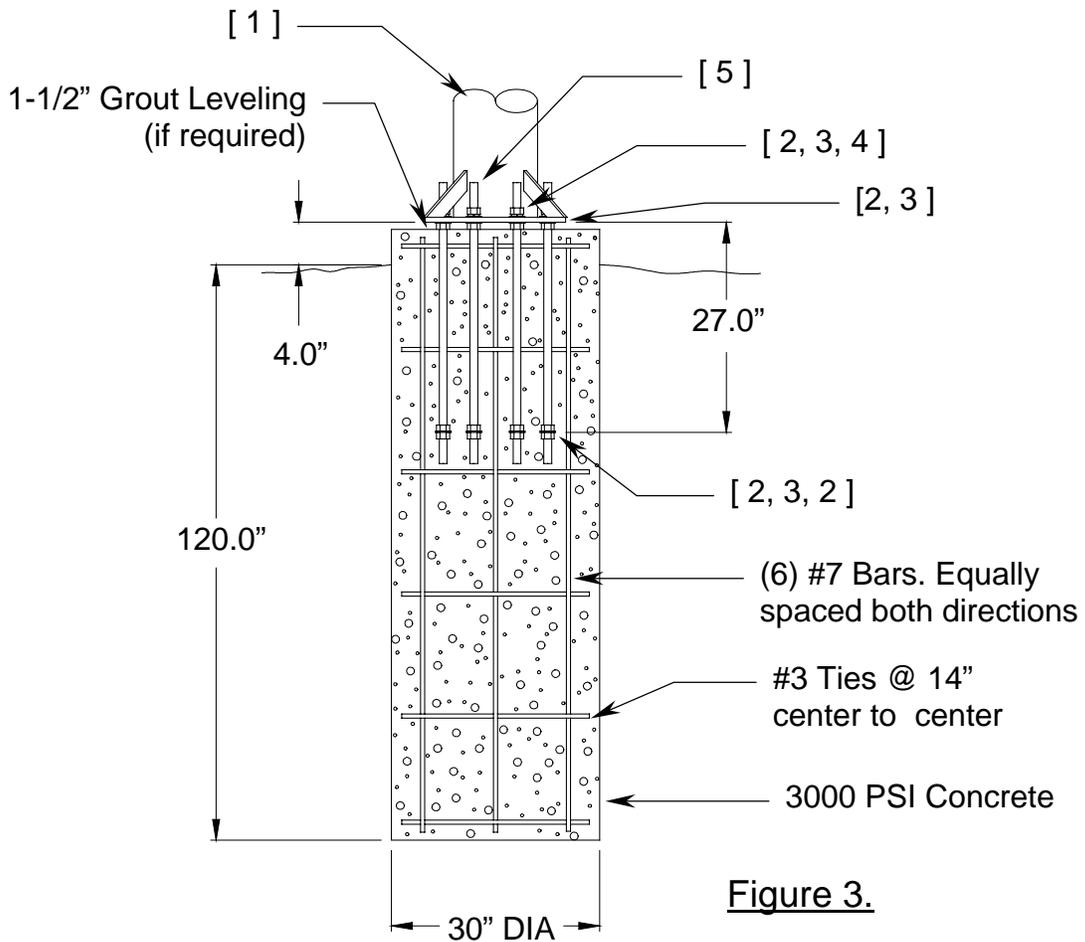
FOUNDATION PART LIST			
ITEM NO.	PART NO.	DESCRIPTION	QTY
1	0490-285	3.8M PEDESTAL MAST PIPE	1
2	8107-007	1-8 HEX NUT	32
3	8201-049	1" FLATWASHER	24
4	8202-046	1" LOCKWASHER	8
5	0180-238	1 - 8 X 36" ANCHOR ROD	8
6	0274-013	TEMPLATE, PLYWOOD	1



**PAD LAYOUT**



**Figure 2.**



**Figure 3.**

**SECTION III      REFLECTOR AND SUPPORT ASSEMBLY**

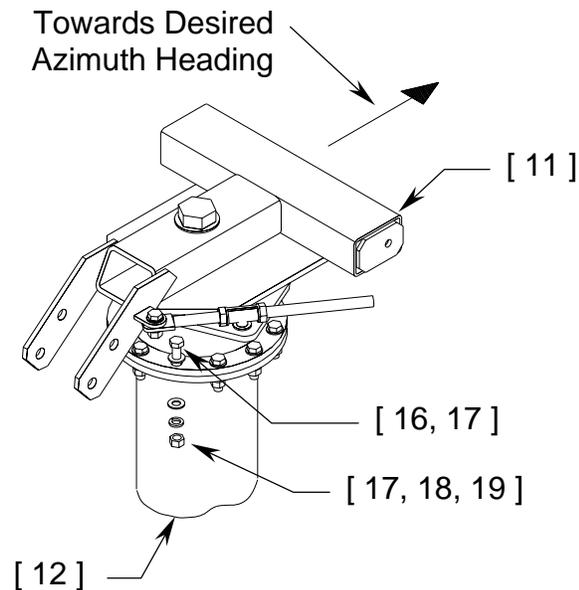
<b>REFLECTOR AND SUPPORT ASSEMBLY PART LIST – TABLE 3.0</b>			
<b>ITEM NO.</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>
1	0159-273	THREADED INSERT - # 1	2
2	0159-272	THREADED INSERT - # 2	2
3	0159-276	THREADED INSERT - # 3	2
4	0159-271	THREADED INSERT - # 4	2
5	0159-275	THREADED INSERT - # 5	2
6	0159-274	THREADED INSERT - # 6	2
7	Varies	REFLECTOR, QUADRANT # 1	1
8	Varies	REFLECTOR, QUADRANT # 2	1
9	Varies	REFLECTOR, QUADRANT # 3	1
10	Varies	REFLECTOR, QUADRANT # 4	1
11	0181-262	Az/EI POSITIONER ASSEMBLY	1
12	0490-285	PEDESTAL MAST	1
13	0181-716	REFLECTOR SUPPORT ASSEMBLY	1
14	0181-263	ELEVATION ROD ASSEMBLY (1" THREADED ROD)	1
15	0181-265	ELEVATION ROD ASSEMBLY	1
16	8035-024	BOLT, 3/4 -10 x 3.00	12
17	8201-045	FLATWASHER, 3/4"	24
18	8202-045	LOCKWASHER, 3/4"	12
19	8106-002	NUT, HEX 3/4"	12
20	8201-052	FLATWASHER, 7/8"	12

<b>PART LIST - CONTINUED</b>			
<b>ITEM NO.</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY</b>
21	8202-052	LOCKWASHER, 7/8"	12
22	8110-007	NUT, HEX 7/8"	12
23	8033-064	BOLT, 1/2 – 13 x 8.00	4
24	8033-072	BOLT, 1/2 – 13 x 9.00	4
25	8033-096	BOLT, 1/2 – 13 x 12.00	4
26	8201-033	FLATWASHER, 1/2"	12
27	8202-043	LOCKWASHER, 1/2"	12
28	0168-260	SPACER, 3.8M REFLECTOR LOCATOR	12
29	8032-012	BOLT, 3/8 – 16 x 1.50	32
30	8201-042	FLATWASHER, 3/8"	64
31	8202-042	LOCKWASHER, 3/8"	32
32	8102-007	NUT, HEX 3/8"	32
33	8036-016	BOLT, 1 – 8 x 2.00	4
34	8036-036	BOLT, 1 – 8 x 4.50	2
35	8036-024	BOLT, 1 – 8 x 3.00	2
36	8201-049	FLATWASHER, 1"	10
37	8202-046	LOCKWASHER, 1"	8
38	8107-007	NUT, HEX 1"	2

**CAUTION:** During the assembly procedure, the sequence of instructions must be

followed. **Do Not Tighten Any Hardware Until Instructed.** Refer to the antenna assembly parts list and the following steps.

### 3.1 Az/EI POSITIONER INSTALLATION



#### **STEP 1:**

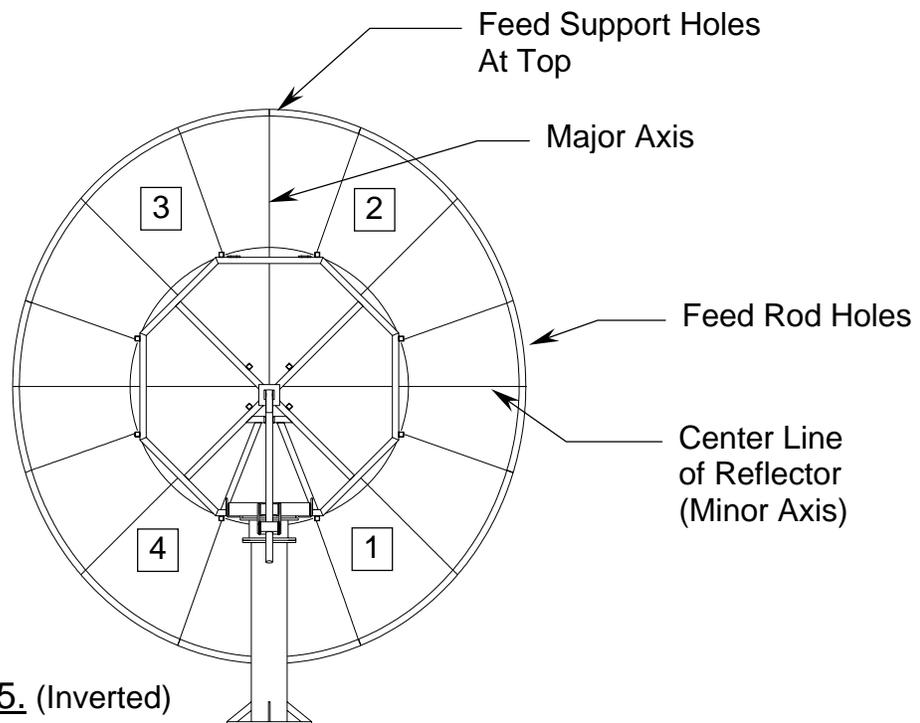
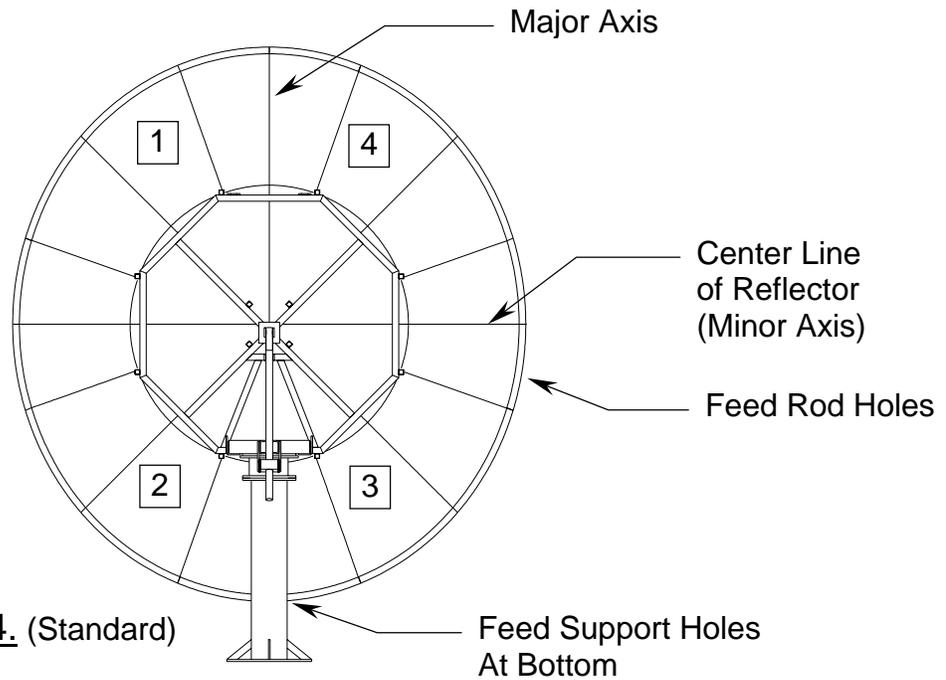
- A) Lift the Az/EI positioner assembly (item 11) on top of the pedestal mast (item 12) so that it rests upon the slip flange.
- B) Rotate the positioner assembly towards the desired azimuth heading as shown.
- C) Once the position is located, rotate the positioner in either direction to the nearest set of holes. The result is a coarse azimuth setting (+/- 30 deg.). The fine azimuth setting will be set later.
- D) Secure the positioner to the pedestal with 3/4" hardware (items 16,17,18,19).

### 3.2 REFLECTOR QUADRANT ORIENTATION

The 3.8M reflector quadrants can be assembled in either the standard or inverted positions. The reflector quadrants are numbered 1, 2, 3 and 4. These numbers can be found on the back of each quadrant embossed into the fiberglass. Note that each quadrant has a longer side (major axis) and a shorter side (minor axis). In the standard upright position, the antenna elevation angle range is between 12 and 90 degrees. When viewed from behind in the standard position (feed support at the bottom), quadrant #1 should be in the upper left; #2 is lower left; #3 is lower right and #4 in the upper right position. See Figure 4.

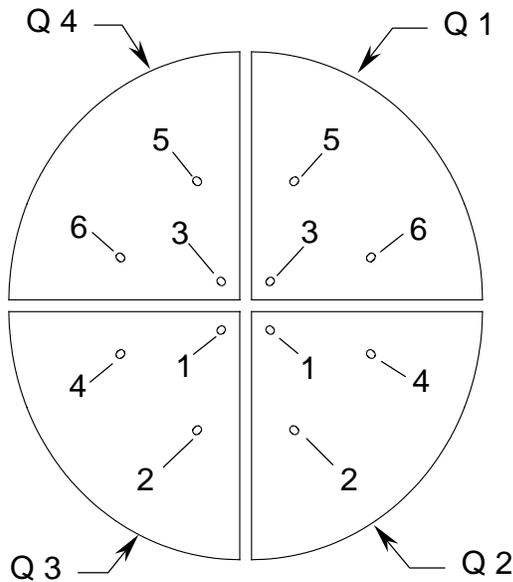
However, to allow a lower profile installation or in areas of high snow accumulation, the reflector can be assembled in the inverted position (feed support at the top). In this position, quadrant #1 would be in the lower right; #2 upper right; #3 in upper left and #4 in lower left position. See Figure 5.

*Please note that it is not recommended to invert systems with the Anti-Ice feature. The inverted assembly would prohibit proper heating element location.*



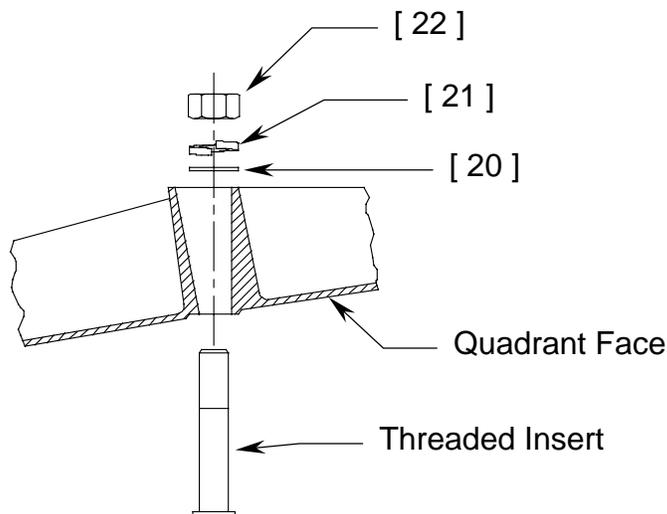
3.3 **REFLECTOR SUPPORT ASSEMBLY**

**WARNING!** The reflector support frame includes a precision alignment feature. Do not drop or drag the frame during the installation process. Do not attempt to adjust the round tube spacers in the frame assembly, as these are factory pre-set. If these spacers are loose or damaged, or there is any obvious damage to the frame, then you must obtain replacement parts for a successful installation.

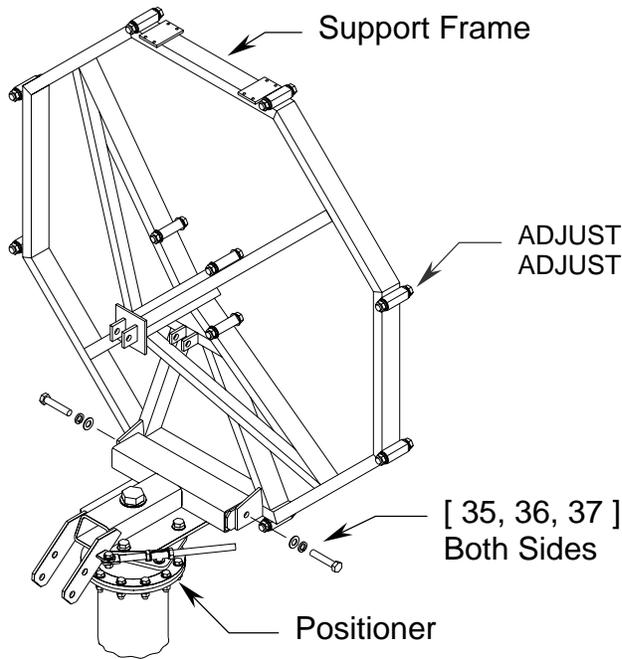


**STEP 1:**

- A) Before beginning antenna assembly. Install 12 threaded inserts (items 1-6) thru the face of each reflector quadrant. Note that there are 6 different insert lengths, 2 of each. Each insert must be in the correct position in each quadrant for correct assembly. The top of each insert is stamped with a insert number ( 1 thru 6). The numbers shown in the illustration correspond with the stamped numbers on the inserts.
- B) Secure inserts with 7/8" hardware ( items 20, 21, 22 ). Snug but do not tighten.



**STEP 2:**

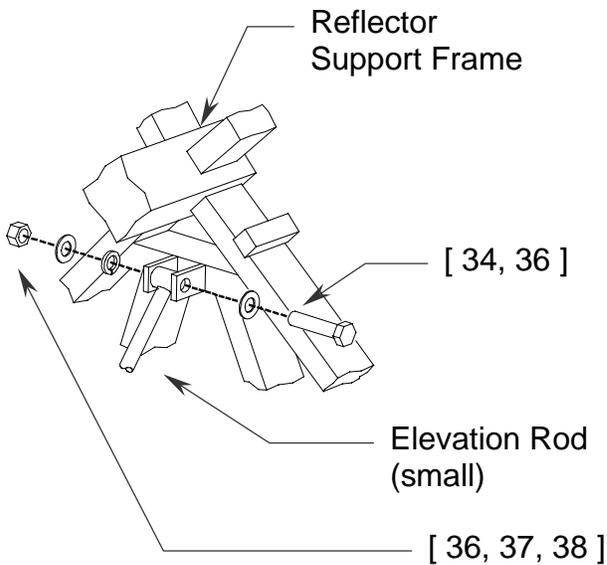


Lift the assembled support frame to the Az/EI positioner and secure with 1" hardware ( items 35, 36, 37 ).

ADJUSTMENT SPACERS MUST NOT BE ADJUSTED OR DAMAGED IN ANY WAY.

[ 35, 36, 37 ]  
Both Sides

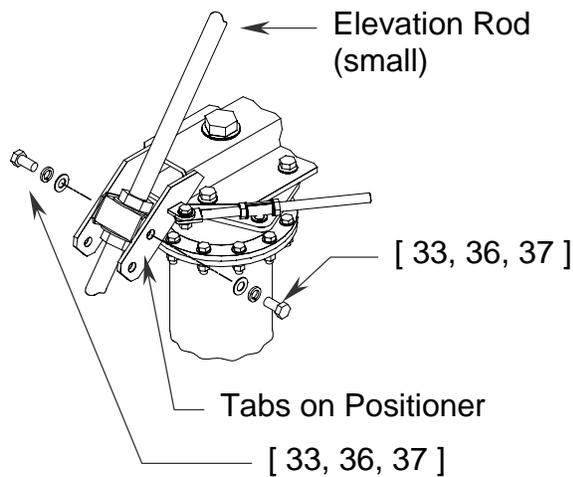
Positioner



**STEP 3:**

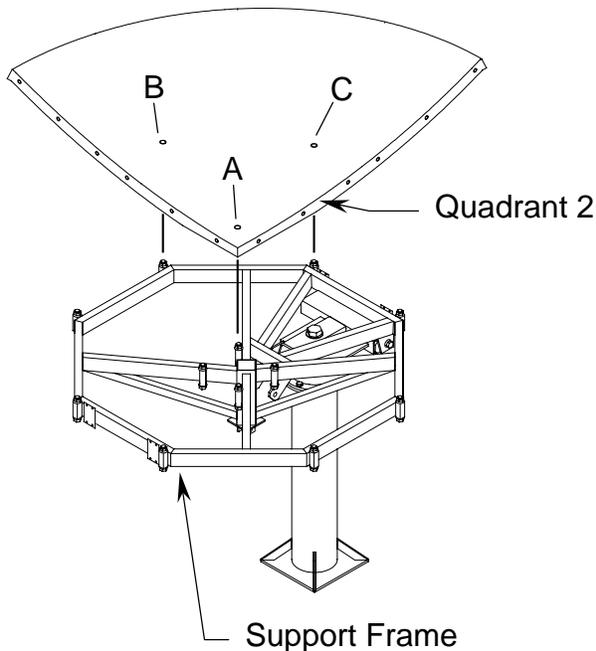
Attach the small elevation rod assembly (*used for antenna assembly only*) to the inner set of tabs on the reflector support with 1" hardware (items 34, 36, 37, 38 ).

**STEP 4:**

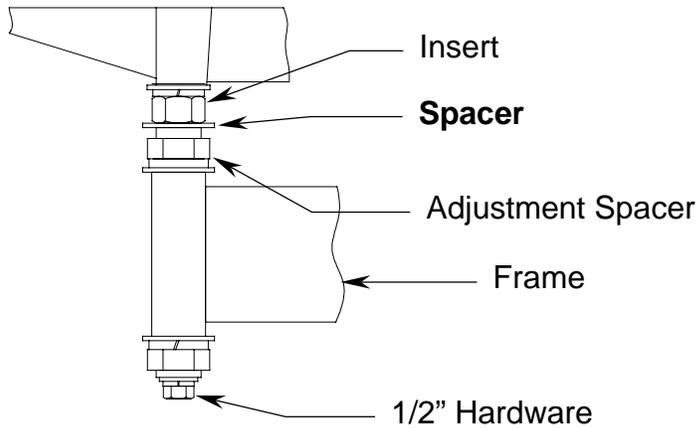


- A) Loosen the nuts on the small elevation rod so that the block has some freedom to move.
- B) position the block between the tabs on the positioner in between the two upper holes and secure block with 1" hardware ( items 33,36,37 ).
- C) Adjust the reflector support frame so that it lays back on the positioner by adjusting the 1" hex nuts on the elevation rod. Tighten 1" hardware securely.

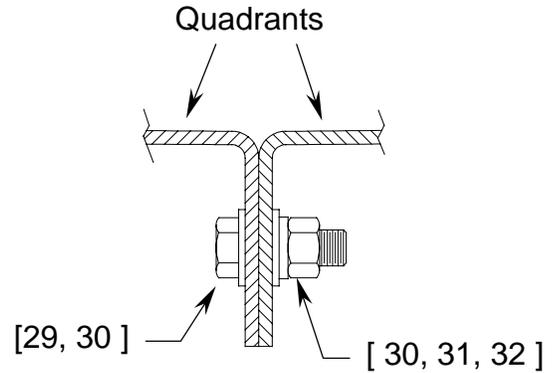
**STEP 5:**



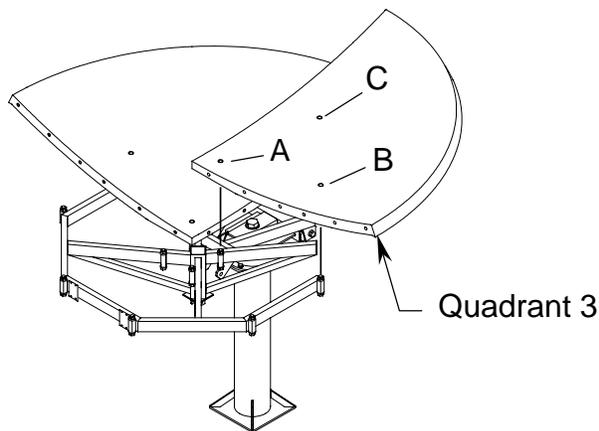
- A) Position quadrant 2 (quadrant 4 for inverted) to the bottom left side of the frame as shown. **Note** that it may be necessary to loosen the 3 reflector inserts to attain the proper alignment with the 3 tubes in the support frame. this procedure may occur with each of the quadrants.
- B) After the quadrant is in position, place a spacer (item 28) between each insert and adjustment spacer (Detail A). repeat this procedure for all 4 quadrants.
- C) Secure the quadrant to the frame with 1/2" hardware (Detail A). Note that there are 3 different 1/2" bolt lengths:  
 Location A = (items 24, 26, 27)  
 Location B = (items 23, 26, 27)  
 Location C = (items 25, 26, 27)  
 These locations are consistent with all 4 quadrants. Snug hardware only.



Detail A



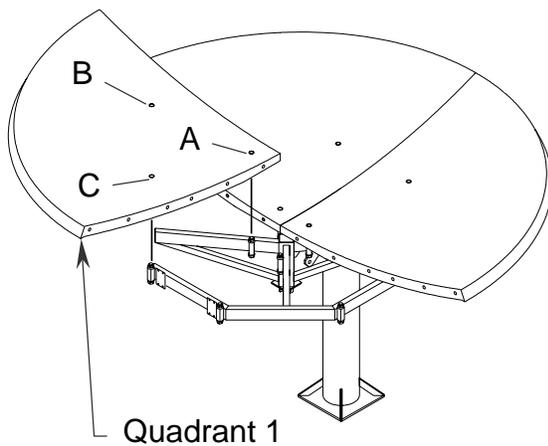
Detail B



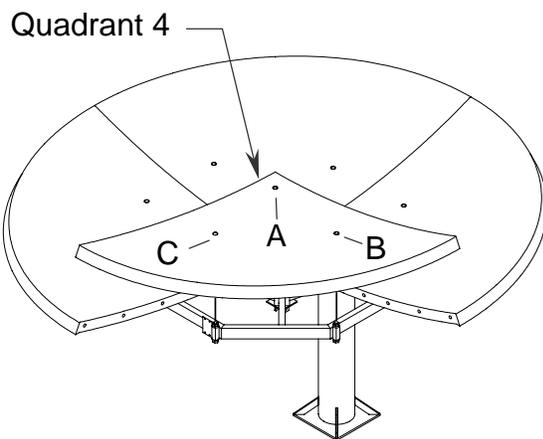
**STEP 6:**

- A) Position quadrant 3 (quadrant 1 for inverted) to the bottom right side of the frame as shown.
- B) Place spacers as in step 5 and Detail A.
- C) Secure the quadrant to the frame with 1/2" hardware (Detail A). Note that there are 3 different 1/2" bolt lengths:  
 Location A = (items 24, 26, 27)  
 Location B = (items 23, 26, 27)  
 Location C = (items 25, 26, 27)
- D) Secure Quad 2 and 3 together with 3/8" hardware (items 29, 30, 31, 32) See Detail B.

**STEP 7:**



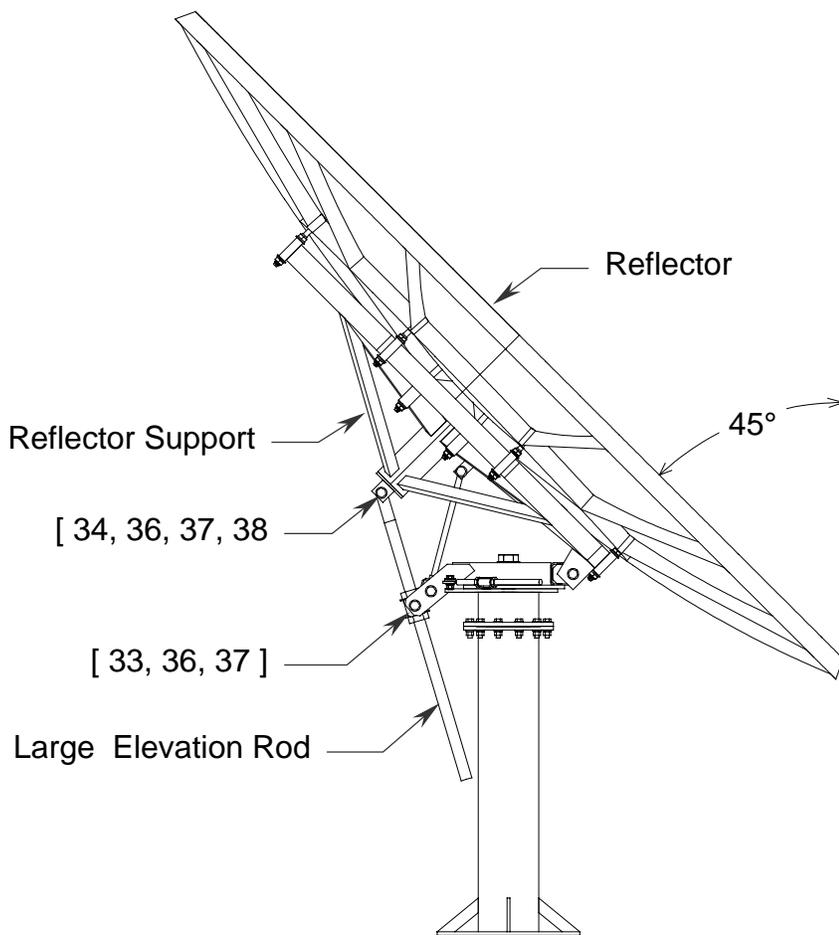
- A) Position quadrant 1 (quadrant 2 for inverted) to the top left side of the frame as shown.
- B) Place spacers as in step 5 and Detail A.
- C) Secure the quadrant to the frame with 1/2" hardware (Detail A). Note that there are 3 different 1/2" bolt lengths:  
Location A = (items 24, 26, 27)  
Location B = (items 23, 26, 27)  
Location C = (items 25, 26, 27)
- D) Secure Quad 1 and 2 together with 3/8" hardware (items 29, 30, 31, 32) See Detail B.

**STEP 8:**

- A) Position quadrant 4 (quadrant 3 for inverted) to the top right side of the frame as shown.
- B) Place spacers as in step 5 and Detail A.
- C) Secure the quadrant to the frame with 1/2" hardware (Detail A). Note that there are 3 different 1/2" bolt lengths:  
Location A = (items 24, 26, 27)  
Location B = (items 23, 26, 27)  
Location C = (items 25, 26, 27)
- D) Secure Quad 4 to Quads 1 and 3 with 3/8" hardware (items 29, 30, 31, 32) See Detail B.
- E) At this time tighten all the 1/2", 3/8" and insert hardware alternating from one side of a quadrant to another in a circular pattern starting at the center and working outward. Check the face of the reflector while tightening to insure all mating edges are flush.

**STEP 9:**

- A) Raise the reflector to approximately 45°.
- B) Attach the large elevation rod to the outer tabs on the back of the reflector support with 1" hardware (items 34, 36, 37, 38).
- C) Position the elevation block between the

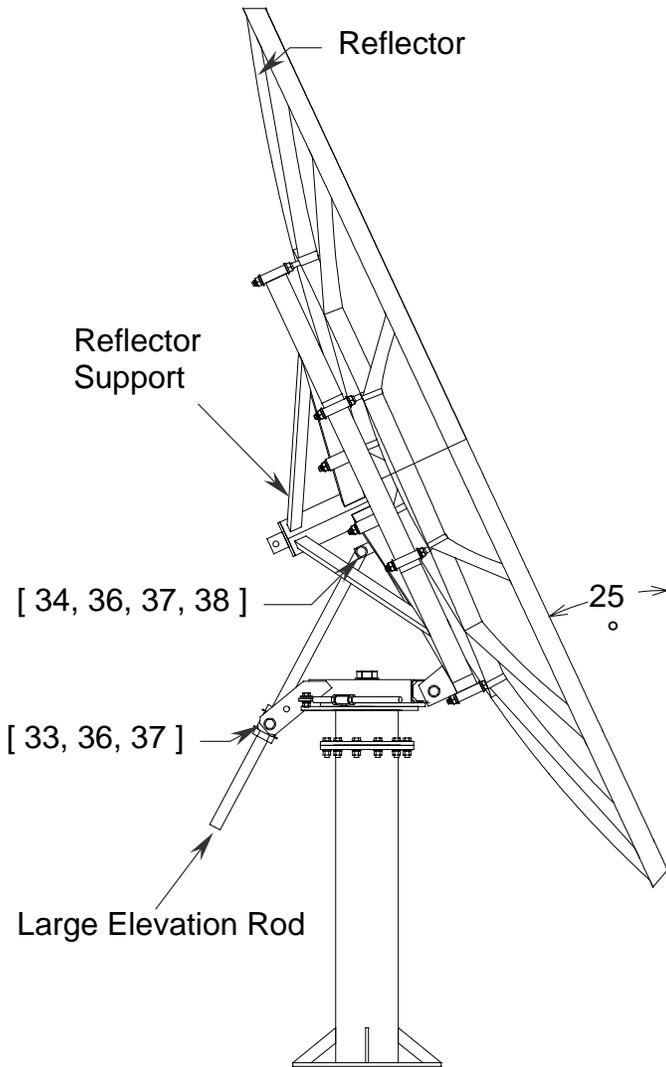


**NOTE:** For elevation look angles greater than 70°:

Raise the reflector support frame to about a 25° angle to find its natural balance point.

Attach suitable bracing (against wind from both directions) to the reflector support frame, not the reflector petals, to safely enable the complete removal of the small elevation rod assembly.

Remove the small elevation rod assembly and lock down and attach the large elevation rod assembly.



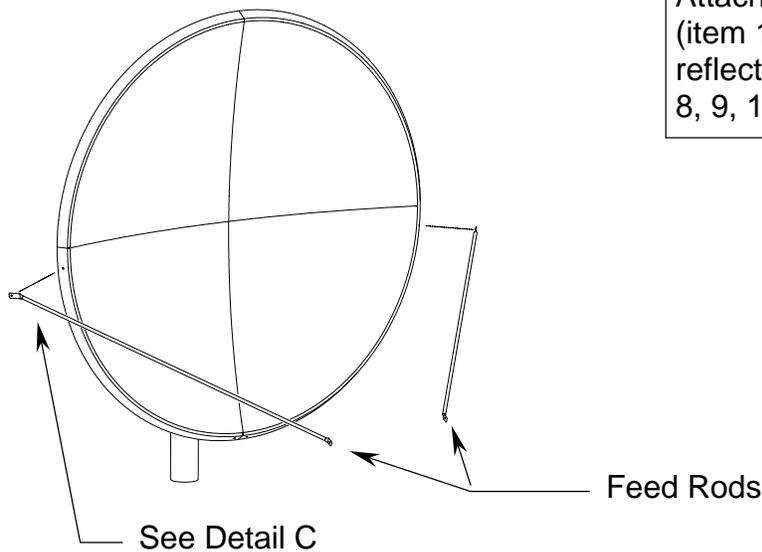
**SECTION IV      FEED SUPPORT ASSEMBLY**

<b>FEED SUPPORT PART LIST – TABLE 4.0</b>			
<b>ITEM #</b>	<b>PART #</b>	<b>DESCRIPTION</b>	<b>QTY</b>
1	0176-257	FEED ROD	2
2	0490-584	FEED SUPPORT TUBE	1
3	8033-026	BOLT, 1/2-13 x 3.25"	1
4	8032-012	BOLT, 3/8-16 x 1.50"	4
5	8201-030	FLATWASHER, 1/2"	2
6	8201-030	LOCKWASHER, 1/2"	2
7	8104-007	NUT, HEX, 1/2-13	1
8	8201-042	FLATWASHER, 3/8"	8
9	8202-042	LOCKWASHER 3/8"	4
10	8102-007	NUT HEX 3/8-16	4

**4.1      FEED SUPPORT INSTALLATION**

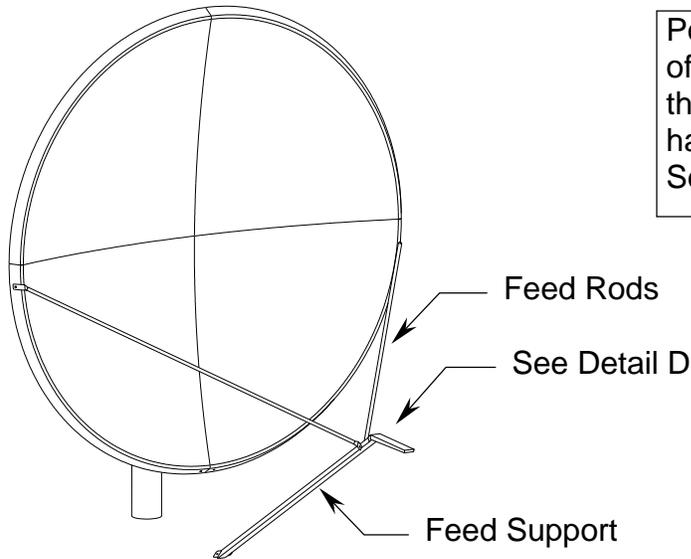
**STEP 1:**

Attach the long end of each feed rod (item 1) loosely to the sides of the reflector with 3/8" hardware (items 4, 8, 9, 10). See detail C



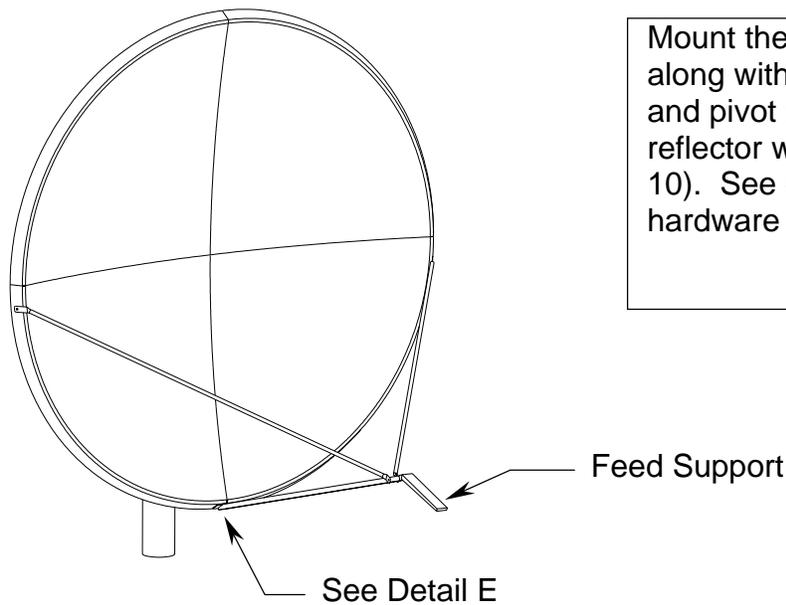
**STEP 2:**

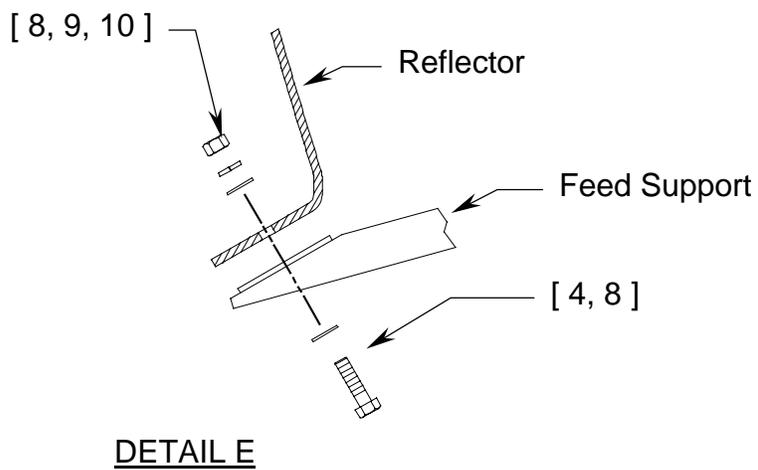
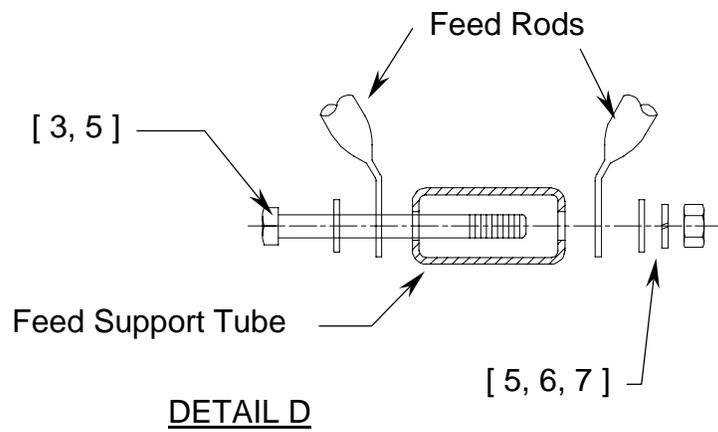
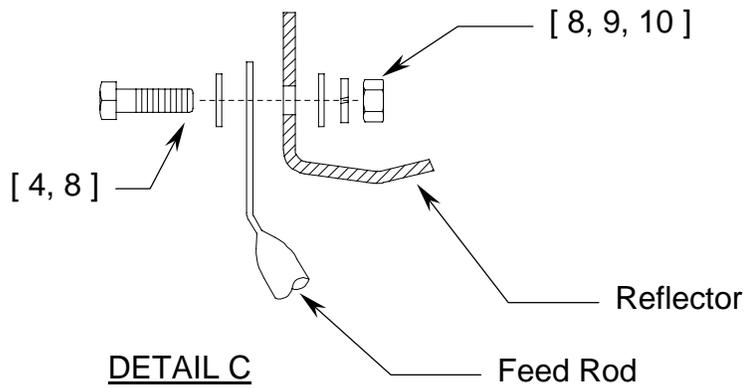
Position the feed support (item 2) in front of the reflector as shown and attach to the to ends of the feed rods with 1/2" hardware (items 3, 5, 6, 7). See Detail D.



**STEP 3:**

Mount the other end of the feed support along with the feed stabilization brackets and pivot assembly to the bottom of the reflector with 3/8" hardware (items 4, 8, 9, 10). See detail E. Tighten all feed support hardware at this time.





#### 4.2 C-BAND CROSS-POL AND CO-POL FEEDS

**Prodelin 3.8m Rx/Tx antenna system is available in Cross-pol, or Co-pol feed assemblies with type "N" or "WR137" connectors. Refer to figure 6, the parts list for this section and follow the instructions in the listed sequence.**

3.6 C-BAND CROSS-POL & CO-POL FEED PARTS LIST			
ITEM #	PART #	DESCRIPTION	QTY
1	0183-352	FEED ASSEMBLY, CO-POL, TYPE N	1
	0183-344	FEED ASSEMBLY, CO-POL, TYPE WR137	
	0183-353	FEED ASSEMBLY, CROSS-POL, TYPE N	
	0183-345	FEED ASSEMBLY, CROSS-POL, TYPE WR137	
2	0211-420	FEED MOUNTING BRACKET, BOTTOM	1
3	0211-419	FEED MOUNTING BRACKET, TOP	1
4	8032-010	BOLT, 3/8-16 x 1.25"	4
5	8202-042	LOCKWASHER, 3/8"	4
6	8102-007	NUT, HEX, 3/8-16	4
7	8031-008	BOLT, 5/16-18 x 1.00"	2
8	8202-041	LOCKWASHER, 5/16"	2
9	8101-009	NUT, HEX, 5/16-18	2

1. Attach the bottom feed mounting bracket (item 2) to the feed support tube with four [4] 3/8-16 x 1.25" bolts, four [4] 3/8" lockwashers, and four [4] 3/8-16 hex nuts (items 4,5,6) as shown. Tighten securely.
2. Place the neck of the feed horn into the cradle of the bottom mounting bracket and secure in place by placing the top mounting bracket (item 3) over the neck of the feed horn and fastening with two [2] 5/16-18 x 1.00" bolts, two [2] 5/16" lockwashers and two [2] 5/16-18 hex nuts (items 7,8,9) Tighten securely.

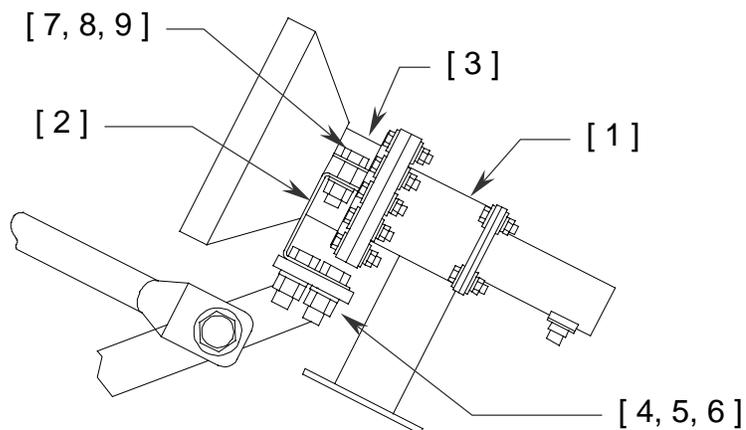


Figure 6

#### 4.3 C-BAND CIRCULAR POLARIZATION

**Prodelin 3.8m Rx/Tx antenna system is available in Left Hand or Right Hand Circular Polarized feed assemblies with type "N" or "WR137" connectors.**

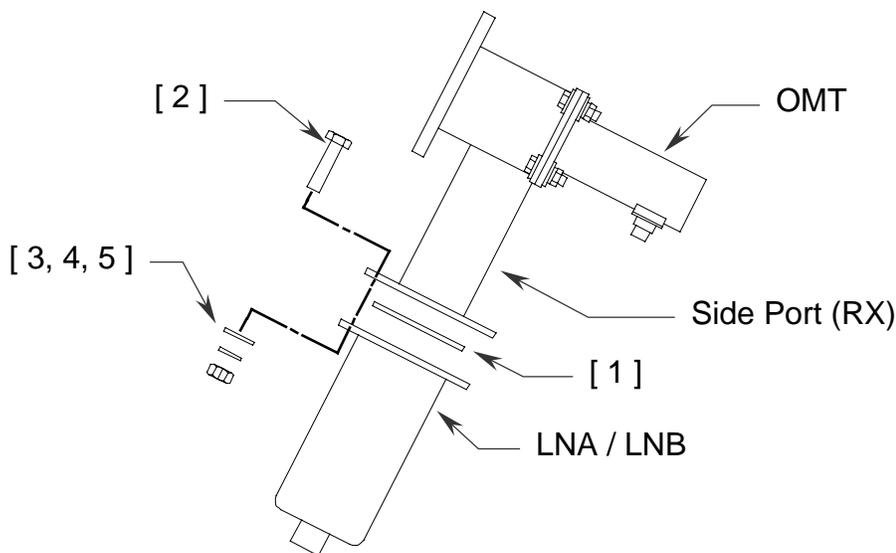
*Note that the sense of polarization is relative to the transmit band of the feed assembly and not the antenna system. For instance, a left hand circular polarized feed assembly will transmit a left hand polarized signal which will strike the reflector and be reversed to a right hand uplink to the satellite. The feed is factory assembled for testing purposes but can be switched from left hand to right hand or vice versa in the field if necessary. To switch, remove the eight screws holding the OMT to the polarizer, rotate the OMT 90° so that the arrow on the OMT flange aligns with the correct marking on the polarizer flange (LHCP or RHCP), and replace the eight screws. Tighten securely.*

Refer to the separate instructions supplied with the antenna system for installation of a circular polarized feed assembly.

**4.4 C-BAND LNB/LNA ATTACHMENT**

1. Apply silicone grease to gasket (item#1) and place gasket in groove in flange of LNA/LNB (customer supplied), as shown below in figure 7.
2. Attach LNA/LNB to side port (Rx) flange of OMT with (10) 1/4-20 x 1.00" bolts, (10) 1/4" flatwashers, (10) 1/4" lockwashers, and (10) 1/4-20 hex nuts (items 2,3,4,5).
3. Tighten 1/4" hardware securely.

PARTS LIST - C-BAND LNB/LNA ATTACHMENT			
ITEM #	PART #	DESCRIPTION	QTY
1	0171-073	GASKET, CPR WR2296 FLANGE HALF-THICK	1
2	8023-008	BOLT, 1/4-20 X 1.00" TYPE 304 S.S. STD.	10
3	8201--036	FLATWASHER, 1/4" S.S. STD.	10
4	8202-031	LOCKWASHER, 1/4" S.S. STD.	10
5	8100-005	NUT, HEX, 1/4-20 S.S. STD.	10



**Figure 7**

**SECTION V            ANTENNA POINTING****5.0    ALIGNMENT TO SATELLITE**

Prodelin's 3.8 meter Az/EI mount requires that the antenna be positioned to the satellite orbital arc by a trained installer.

**5.1    INITIAL ALIGNMENT**

The 3.8 meter offset reflector contains a 22.62° elevation offset look angle. Therefore, when the reflector aperture is perpendicular to the ground, the antenna is actually looking 22.62° in elevation.

1. Raise the antenna by turning the 2" nuts on the elevation rod assembly.
2. After the correct elevation angle is set, rotate the antenna in azimuth by loosening the 2" nut on top of the positioner and removing the 1" hardware (4 places) in the positioner plate, refer to figure 8.
3. At this time rotate the antenna in azimuth by turning the 1" nuts located at the azimuth adjustment tube. Rotate azimuth until a signal is reached.
4. Peak the antenna by fine adjustments made in both the elevation and the azimuth.
5. Adjust polarization by rotating the feed assembly in its mounting bracket.
6. Re-install the 1" hardware in the Az/EI positioner (form step# 2) and tighten all adjustment hardware securely.

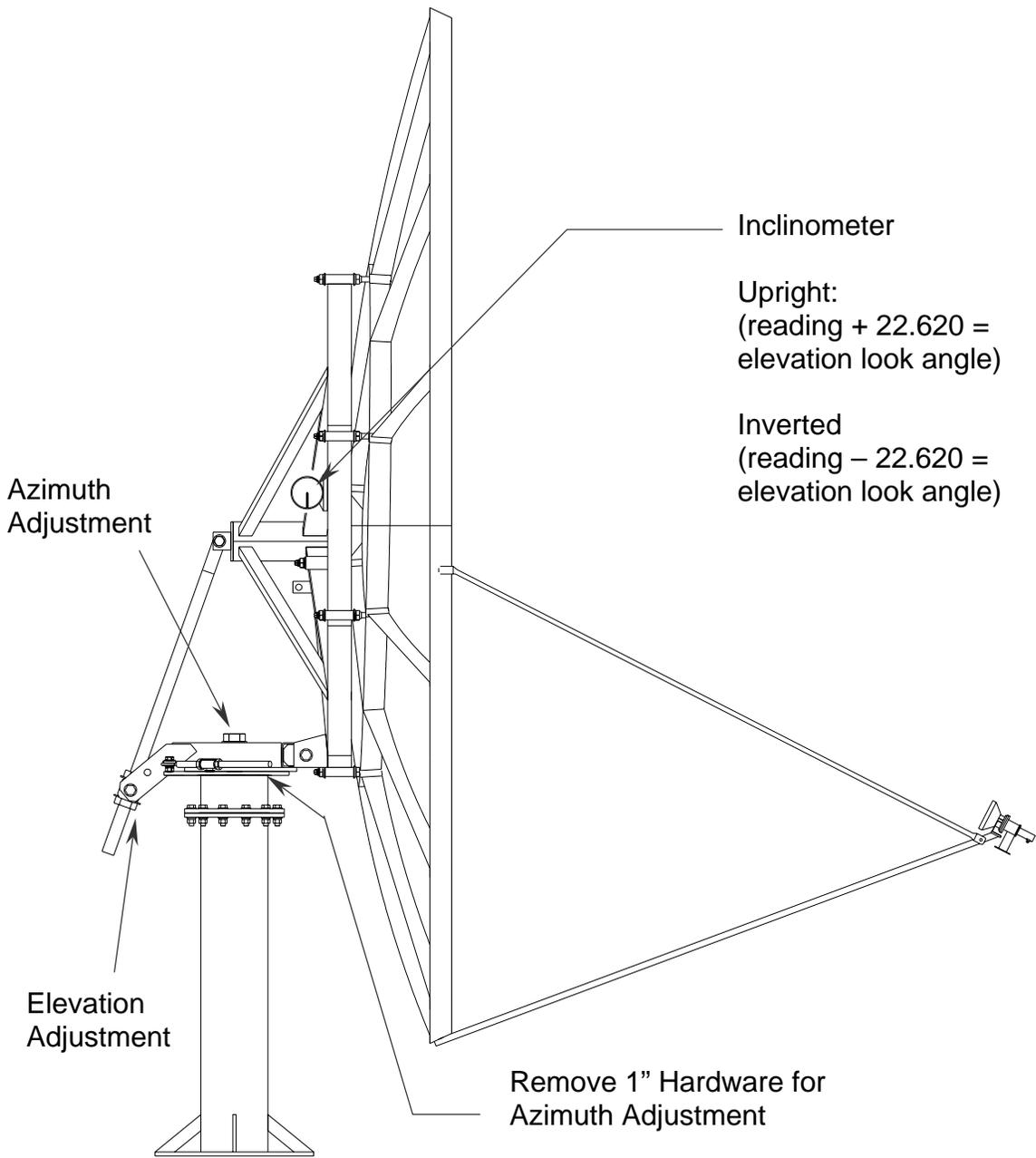


Figure 8

## SECTION VI      MAINTENANCE

### 6.0      MAINTENANCE OVERVIEW

After installation, the antenna requires only periodic inspection. It is anticipated that maintenance, if required will be minimal and easily handled by a local or in house maintenance staff. The materials used in the construction of this Earth Station Antenna virtually eliminate any maintenance repairs.

### 6.1      PERIODIC INSPECTION

It is suggested that a periodic inspection be performed at least every six months.

**NOTE:**      **After any very severe weather condition, inspection of the antenna should be performed to determine if foreign objects have caused damage or if survival specification have been exceeded.**

This inspection should include the following:

- 1:      Check all bolting locations - all bolts should be tight.
- 2:      Check all structural members - repair or replace if damaged.
- 3:      Check the foundation anchor bolts - they must be secure and have no failure signs in the foundation.
- 4:      Check for corrosion - on the reflector structure and the mount.

### 6.2      REFLECTOR

Prodelin's reflector does not require any maintenance. The composite construction of the reflector is virtually impervious to any damages that could be caused by weather or other atmospheric conditions.

It is only necessary to inspect for any physical damage done by vandalism or very severe weather conditions.

Should any damage be detected to a portion of the reflector, contact the Customer Service Department at Prodelin for recommendation involving reflector repair.

### **6.3 MOUNT AND REFLECTOR SUPPORT STRUCTURE**

The mount and reflector support structure supplied with this antenna is of steel construction and has a galvanized finish with zinc w/ultraguard finish for hardware.

If inspection shows any sign of structural failure, the mount members that are damaged should be repaired or replaced.

Corrosion: Any corrosion on steel members may be repaired with a cold and zinc rich galvanizing paint.

### **6.4 FEED AND FEED SUPPORT**

The feed support tube and feed rods should be inspected to insure that all hardware is secure. The feed and radio mounting bolts should be tight.

The feed horn window should be inspected to insure that it is intact so that no moisture can collect inside the feed horn. Replace if damaged.