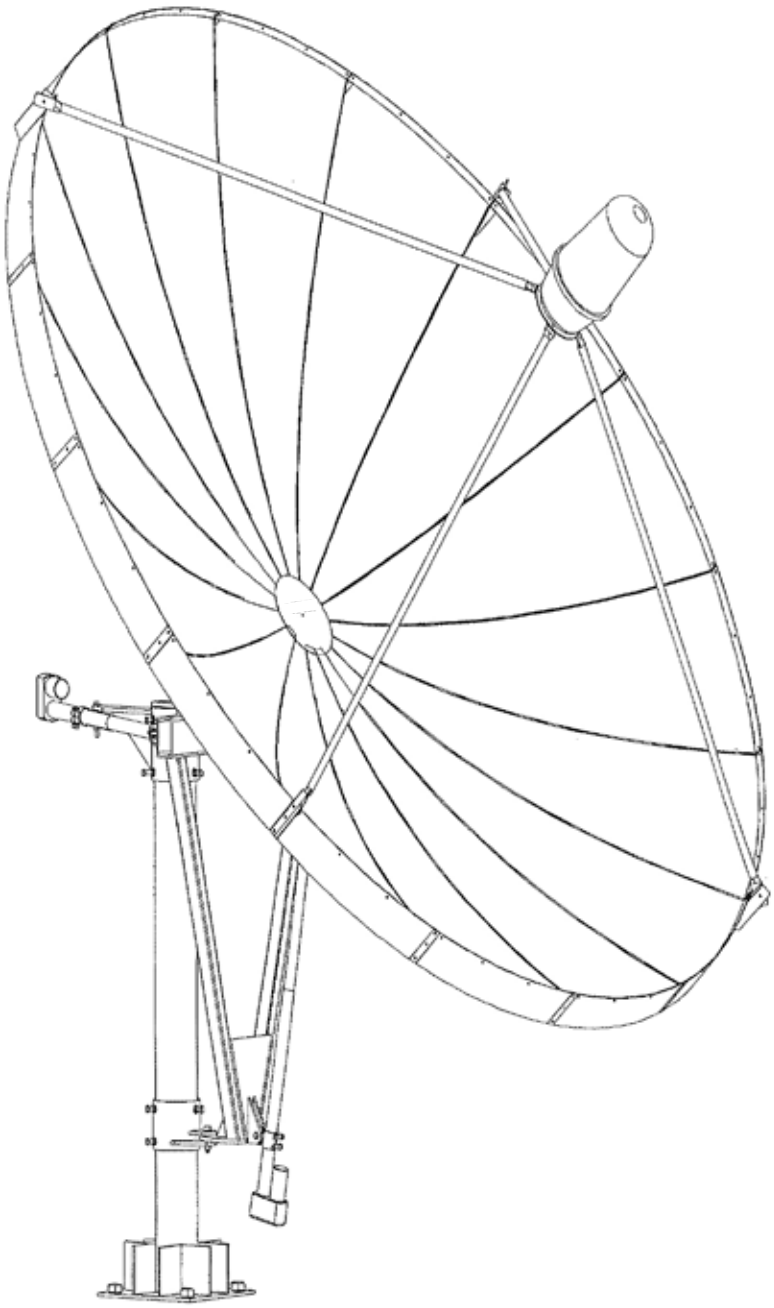
3.8m Prime Focus Antenna System
Dual Axis Motorized Mount Assembly Manual



www.ChallengerCommunications.com

LIMITED TWELVE (12) MONTH WARRANTY

This CHALLENGER COMMUNICATIONS, LLC ("CHALLENGER") equipment is warranted to be free from defects in material and workmanship under normal use and service. CHALLENGER shall repair or replace defective equipment, at no charge, or at its option, refund the purchase price, if the equipment is returned to CHALLENGER not more than twelve (12) months after shipment. Removal or reinstallation of equipment and its transportation shall not be at cost of CHALLENGER except CHALLENGER shall return repaired or replaced equipment freight prepaid.

This Warranty shall not apply to equipment which has been repaired or altered in any way so as to affect its stability or durability, or which has been subject to misuse, negligence or accident. This Warranty does not cover equipment which has been impaired by severe weather conditions such as excessive wind, ice, storms, lightning, or other natural occurrences over which CHALLENGER has no control, and this Warranty shall not apply to equipment which has been operated or installed other than in accordance with the instructions furnished by CHALLENGER.

Claimants under this Warranty shall present their claims along with the defective equipment to CHALLENGER immediately upon failure. Noncompliance with any part of this claim procedure may invalidate this warranty in whole or in part.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER AGREEMENTS AND WARRANTIES, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE IS LIMITED IN DURATION TO THE DURATION OF THIS WARRANTY. CHALLENGER DOES NOT AUTHORIZE ANY PERSON TO ASSUME FOR IT THE OBLIGATIONS CONTAINED IN THIS WARRANTY AND CHALLENGER COMMUNICATIONS NEITHER ASSUMES NOR AUTHORIZES ANY REPRESENTATIVE OR OTHER PERSON TO ASSUME FOR IT ANY OTHER LIABILITY IN CONNECTION WITH THE EQUIPMENT DELIVERED OR PROVIDED.

IN NO EVENT SHALL CHALLENGER BE LIABLE FOR ANY LOSS OF PROFITS, LOSS OF USE, INTERRUPTION OF BUSINESS, OR INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES OF ANY KIND.

In no event shall CHALLENGER be liable for damages in an amount greater than the purchase price of the equipment.

Some states do not allow limitations on how long an implied warranty lasts, or allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.

CHALLENGER has the right to void the warranty when the antenna is installed by someone other then a certified installer.

Product Serial Number: _____

Date Purchased: _____

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info@challengercommunications.com
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IMPORTANT!!!

INSTALLATION OF THIS PRODUCT SHOULD BE PERFORMED ONLY BY A PROFESSIONAL INSTALLER AND IS NOT RECOMMENDED FOR CONSUMER D.I.Y. (DO-IT-YOURSELF) INSTALLATIONS.

WATCH FOR WIRES!

Installation of this product near power lines is dangerous. For your own safety, follow these important safety rules.

1. Perform as many functions as possible on the ground.

2. Watch out for overhead power lines. Check the distance to the power lines before starting installation. We recommend you stay a minimum of 6 meters (20 feet) from all power lines.

3. Do not use metal ladders.

4. Do not install antenna or mast assembly on a windy day.

5. If you start to drop antenna or mast assembly, get away from it and let if fall.

6. If any part of the antenna or mast assembly comes in contact with a power line, call your local power company. DO NOT TRY TO REMOVE IT YOURSELF! They will remove it safely.

7. Make sure that the mast assembly is properly grounded.

WARNING

Assembling dish antennas on windy days can be dangerous. Because of the antenna surface, even slight winds create strong forces. For example, a 1.0m antenna facing a wind of 32 km/h (20 mph) can undergo forces of 269 N (60 lbs.). Be prepared to safely handle these forces at unexpected moments. Do not attempt to assemble, move or mount dish on windy days or serious, even fatal accidents may occur. CHALLENGER is not responsible or liable for damage or injury resulting from antenna installations.

Antennas improperly installed or installed to an inadequate structure are very susceptible to wind damage. This damage can be very serious or even life threatening. The owner and installer assumes full responsibility that the installation is structurally sound to support all loads (weight, wind, and ice) and properly sealed against leaks. CHALLENGER will not accept liability for any damage caused by a satellite antenna system due to the many unknown variable applications.

RECOMMENDATION

CHALLENGER COMMUNICATIONS highly recommends the application of anti-seize wax on all antenna and mount hardware upon installation.

Introduction

Thank you for purchasing your Challenger Communications product. We trust that you will find this to be a well designed product that will proved many years of reliable service. Please read this manual thoroughly before beginning assembly. For best results in the assembly process, perform each step in the same sequence as listed in this manual. Record the serial number of the unit on to page two for future referance and read the warranty information. The serial number plate can be found on the hub.

Unpacking and Inspection

Shipping cartons should be unpacked and contents checked for damaged or missing parts. Should there be any parts that are damaged or missing, please contact technical support for replacement.

Site Selection

The main objective of conducting a site survey utilizing a compass and inclinometer is to choose a mounting location on the ground that will give you the greatest amount of swing for azimuth and elevation for present as well as future use. A thorough pre-installation site survey is strongly recommended because it can alert you to any “look angle,” soil, wind or other problems.

The first and most important consideration when choosing a prospective antenna site is whether or not the area can provide an acceptable “look angle” to the satellite. A site with a clear, unobstructed view facing south, southeast is required. Your antenna site must be selected in advance so that you will be able to receive the strongest signal available. Also consider obstructions that may occur in the future such as the growth of trees.

It is important to conduct an on-site survey with a portable antenna or with a compass and clinometer to avoid interference, obstructions, etc.

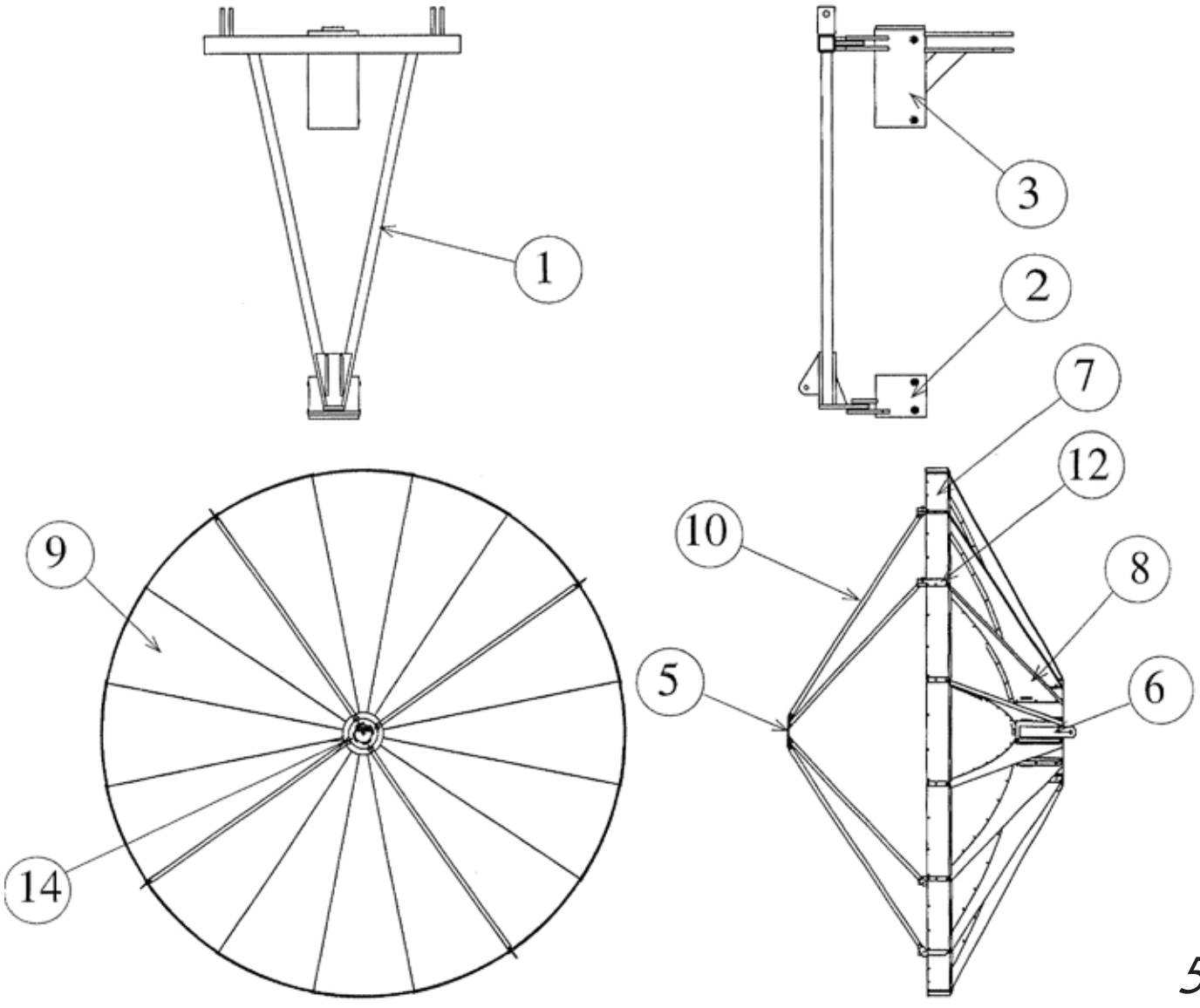
When selecting “look angle,” be sure to observe and take readings approximately 10 deg to the left and right, above and below your selected “look angle.”

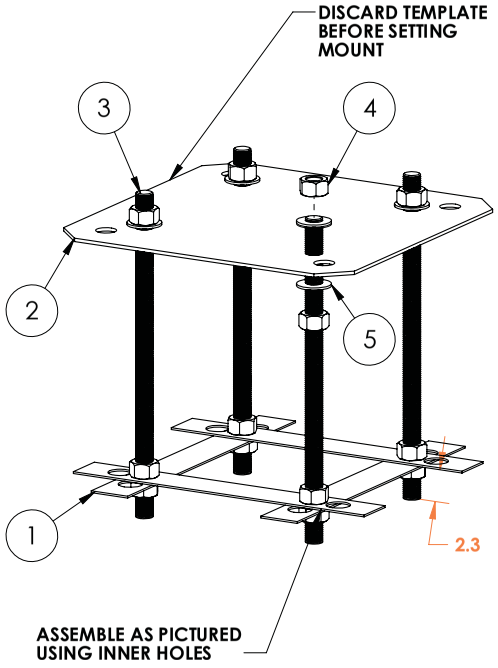
Before Ground Pole Installation, the soil type should be checked because soil conditions vary widely in composition and load bearing capacity. A soil check will help you to determine the type
and size of foundation required to provide a stable base for the antenna.

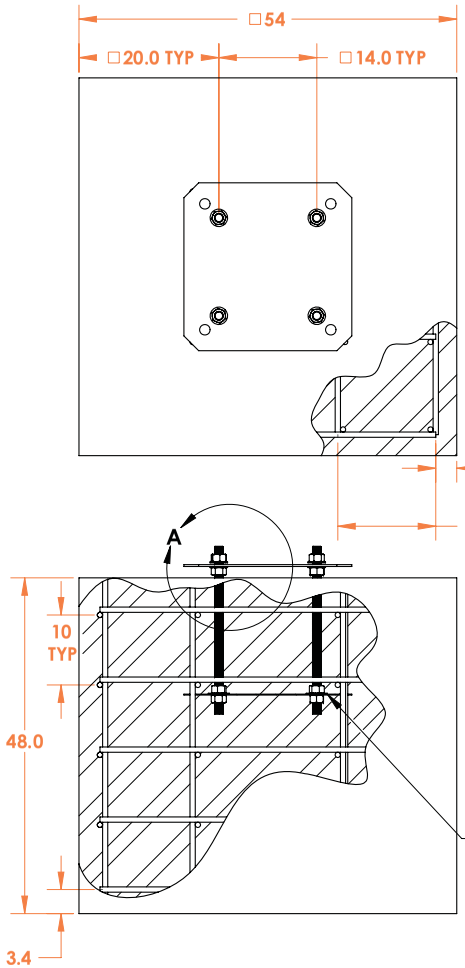
Before digging is done, information regarding the possibility of underground telephone lines, power lines, storm drains, etc., in the excavation area should be obtained from the appropriate agency.

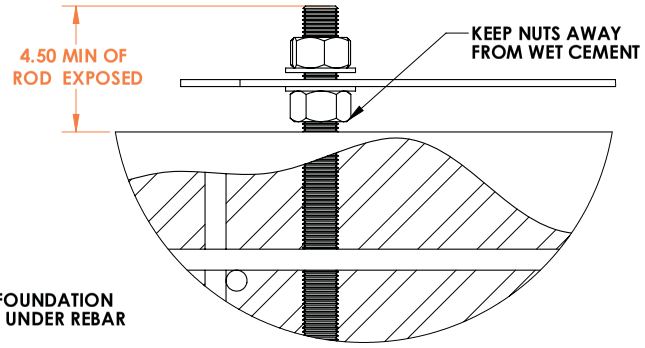
As with any other type of construction, a local building permit may be required before installing an antenna. It is the property owner’s responsibility to obtain any and all permits. Ground mounts are certified for 125 mph wind survival.

ITEM #	PART#	DESCRIPTION	QTY
1	DAXM-Y	ASSEM, 3.8M DAXM YOKE GALV	1
2	DAXM-BC	ASSEM, 3.8M DAXM BTM COUPLING GALV	1
3	DAXM-TC	ASSEM, 3.8M DAXM TOP COUPLER GALV	1
	3HP38016	PREBAG, FOR PRT-DAXM380	1
5	450-0001	3.8/4.5M FEED PLATE	1
6	38P-H	3.8M PF, HUB ASSEMBLY	1
7	38P-0004	3.8M PF, OUTBOARD SKIRT	16
8	38P-0005	3.8M PF, RADIAL BEAM	16
9	38P-0003	3.8M PF, PETAL	16
10	38P-0001	3.8M PF, FEED STRUT	4
PG 12	38P-0007	3.8/4.5M, CENTER PLATE SUPP.	1
12	38P-0002	3.8M PF, FEED STRUT ANGLE	4
PG 8	38P-H006	3.8M PF, HUB ANGLE	16
PG 10	TS-CLMP	ACTUATOR, CLAMP KIT FOR THOMSON	2
14	38P-0006	3.8/4.5M, CENTER PLATE	1
	3HP38010	PREBAG, 3.8 PRIME HARDWARE	1



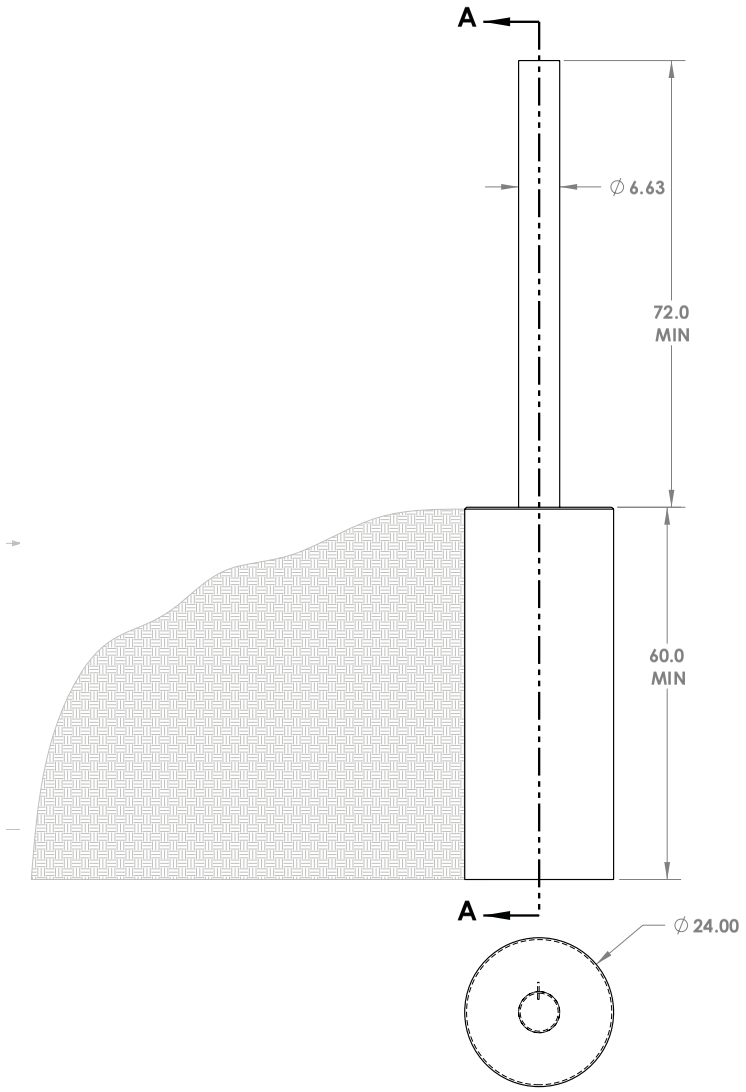






NOTES:

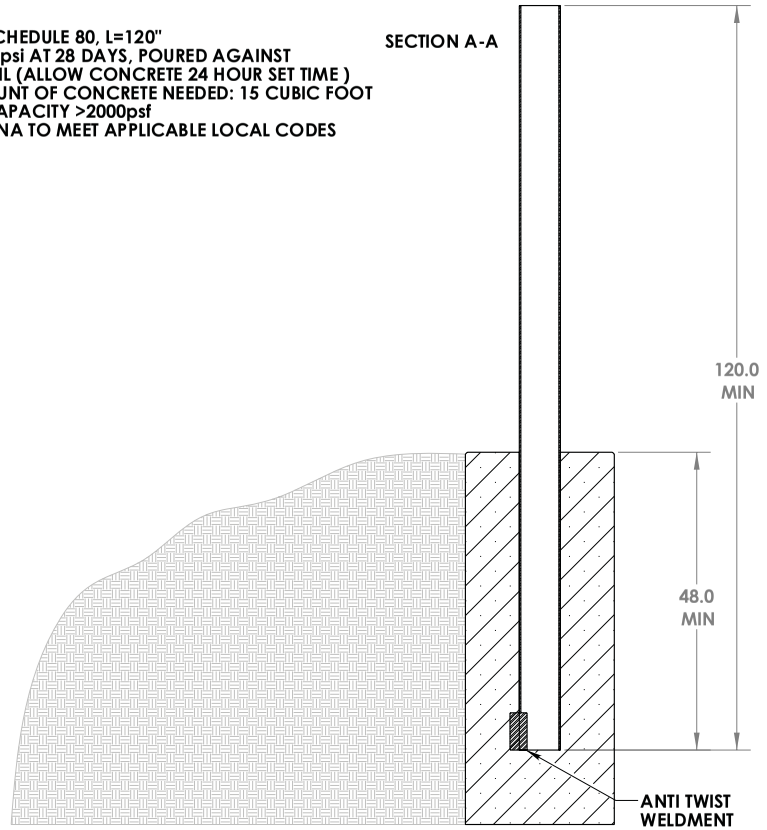
1. SOIL BEARING CAPACITY = 2000 PSF
2. CONCRETE, 3000 PSI AT 28 DAYS,
   POURED & VIBRATED AGAINST UNDISTURBED SOIL.
   ALLOW (24) HOURS FOR CONCRETE TO SET BEFORE INSTALLATION
   OF ANTENNA. ESTIMATED CONCRETE USAGE = 3.0 YARDS
3. USE #4 (Ø1/2) RE-BAR IN CONCRETE PAD. ESTIMATED USAGE = 160 FT.
4. ANCHOR RODS, WASHERS, AND NUTS SHALL BE
   GRADE 5 OR BETTER, GALVANIZED.
   (HDWE. & TEMPLATE KIT IS AVAILABLE)
5. WHEN THE FROST LINE IS BELOW (10) INCHES THE BASE SLAB/SOIL
   REQUIRES SPECIAL DESIGN CONSIDERATIONS TO PREVENT HEAVING;
   CONSULT A LOCAL LICENSED CIVIL ENGINEER.
6. LIGHTNING AND GROUNDING PROVISIONS PER LOCAL REGULATIONS.



NOTES:

1) STEEL MAST: 6" SCHEDULE 80, L=120"
2) CONCRETE: 3000psi AT 28 DAYS, POURED AGAINST UNDISTURBED SOIL (ALLOW CONCRETE 24 HOUR SET TIME)
3) ESTIMATED AMOUNT OF CONCRETE NEEDED: 15 CUBIC FOOT
4) SOIL BEARING CAPACITY >2000psf
5) GROUND ANTENNA TO MEET APPLICABLE LOCAL CODES

SECTION A-A



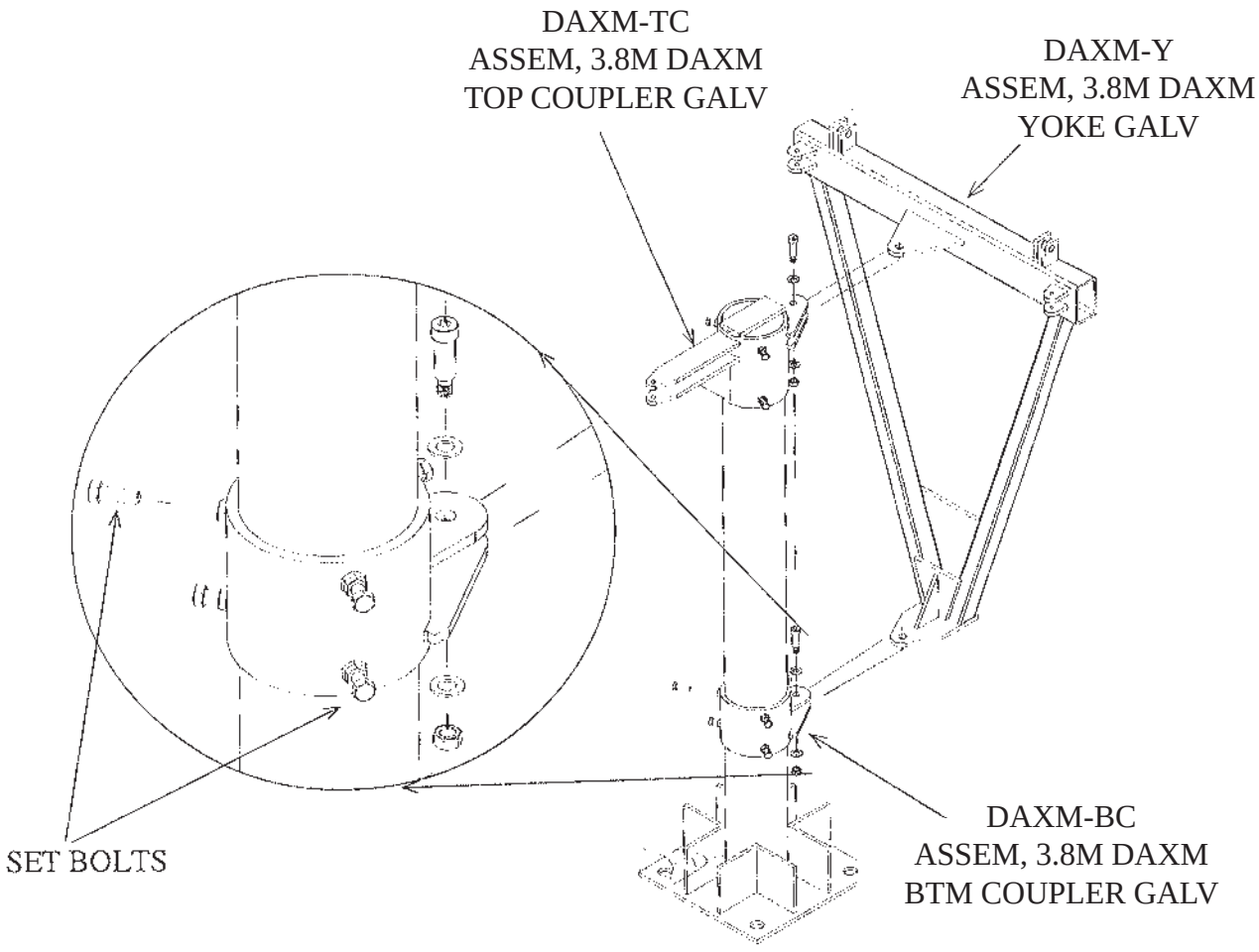
Mount Assembly

1. Slide DAXM-BC (ASSEM, 3.8M DAXM BTM COUPLING GALV) then DAXM-TC (ASSEM, 3.8M DAXM TOP COUPLER GALV) assemblies over the mast pipe as shown. **Do not tighten bolts at this time**.

2. Attach DAXM-Y (ASSEM, 3.8M DAXM YOKE GALV) to the upper and lower Az-El collars using 3/4 shoulder bolts and 5/8 nuts.

3. Carefully align the lower Az-El collar with the upper Az-El collar by means of "squaring" them with the A-frame and then tighten the set bolts on the collars.

NOTE: The A-frame (when pointing directly away and perpendicular to the collars) and collars should be initially aligned due south.

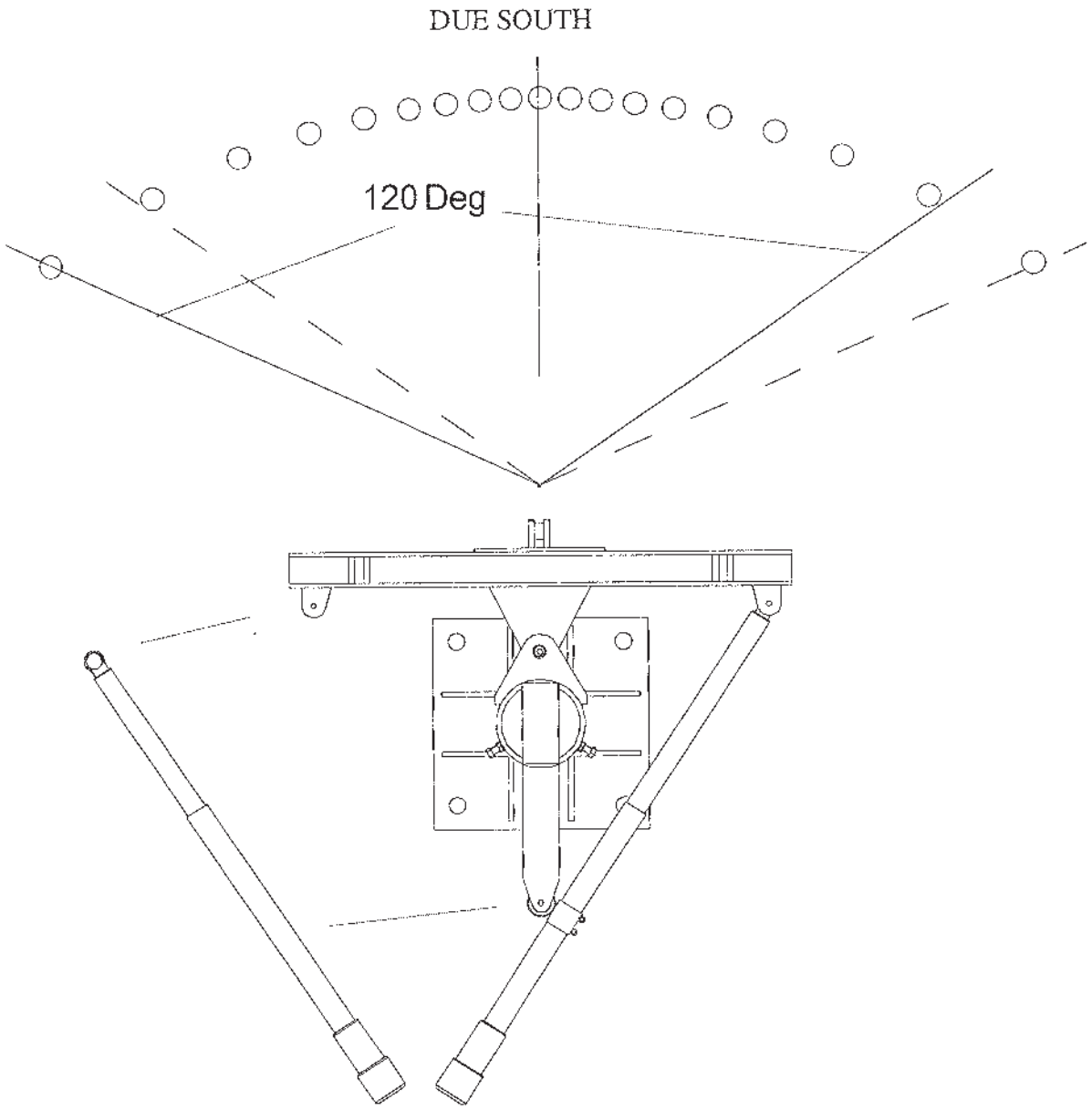


Mount Assembly (Cont.)

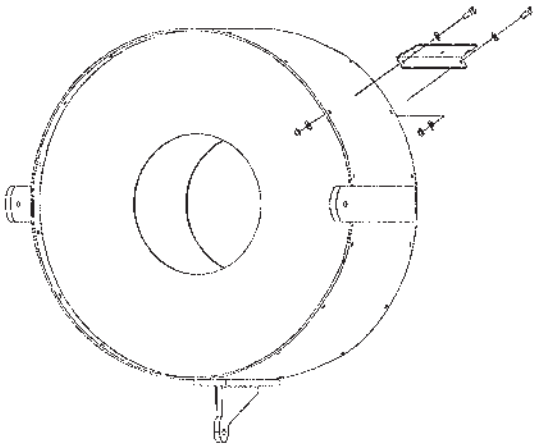
Align the mount for range of tracking.

IMPORTANT: INITIAL ALIGNMENT PROCEDURE. It is important that the drive system components be so aligned (with reference to east and west) to allow the antenna to be driven by the controller to the lowest satellite above horizon in either the east or the west as viewed from your location. Place the actuator arm on the side of the mount. You may have to adjust off from due south while siting in later in the installation.

4. Install the azimuth actuator as shown.



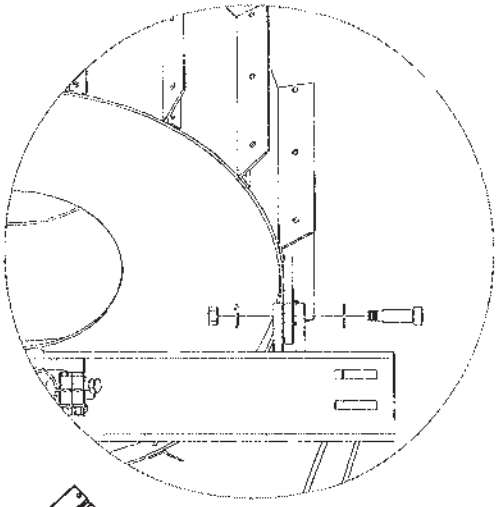
1. Attach 38P-H006 (3.8M PF, HUB ANGLE) to the Hub assembly as shown using 2 bolts, nuts, and washers per angle, 16 angles in total.



NOTE: Make certain that cut corner of angle is toward BOTTOM of hub as pictured.

2. Attach 38P-H (3.8 PF, HUB ASSEMBLY) to DAXM-Y (ASSEM, 3.8M DAXM YOKE GALV) as pictured.

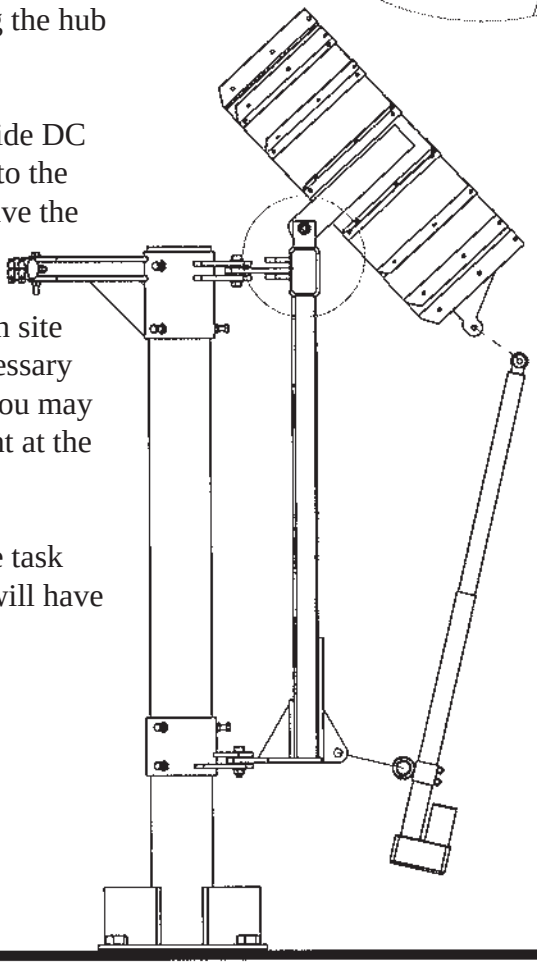
3. Attach the elevation actuator. Install the actuator clamp as near to the motor as possible.



NOTE: It is easier to work on the overall system now if the hub assembly is drive to the maximum "up" capability (also know as the "bird bath" position.)

To do this, apply DC power to the elevation actuator and drive it to the longest position, thus moving the hub assembly to the "bird bath" position.

You may wish to use the controller unit to provide DC power. Simply unpack the controller and refer to the controller manual for information on how to drive the antenna with the controller in "manual mode."



It is useful to have a controller at the installation site so that it can be used to drive either axis as necessary during the balance of the installation process. You may also preset the azimuth and elevation limits right at the antenna site.

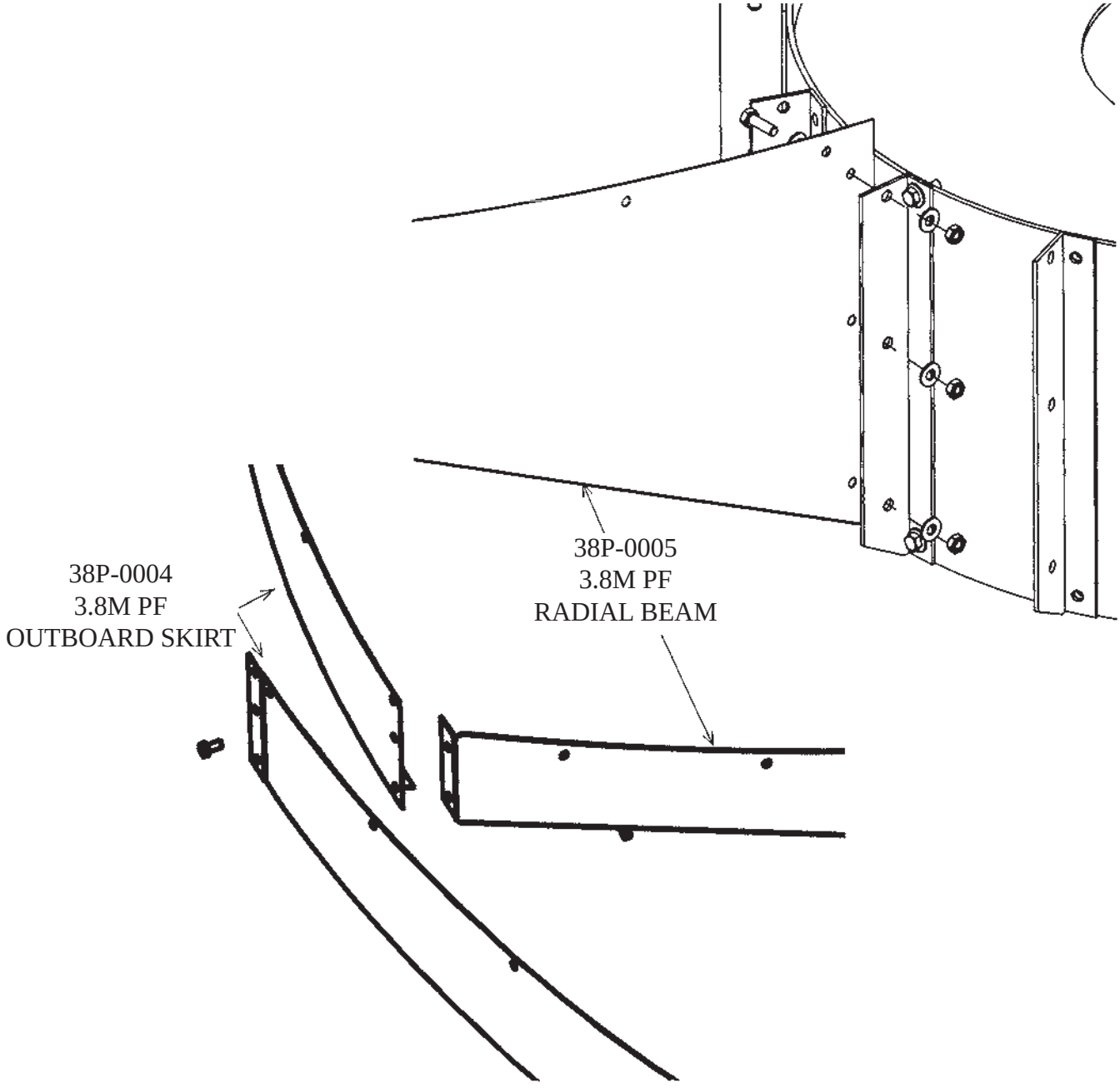
Later, when you install the controller inside, the task of setting these (azimuth and elevation) limits will have already been accomplished.

5. Install the radial beams to the hub angles using hardware labeled “Radial Beam Hub.” Use 3 bolts, 6 washers, and 3 nuts per. Tighten this hardware as it is installed.

NOTE: Be sure to place the radial beam on the outside of the hub angle as shown.

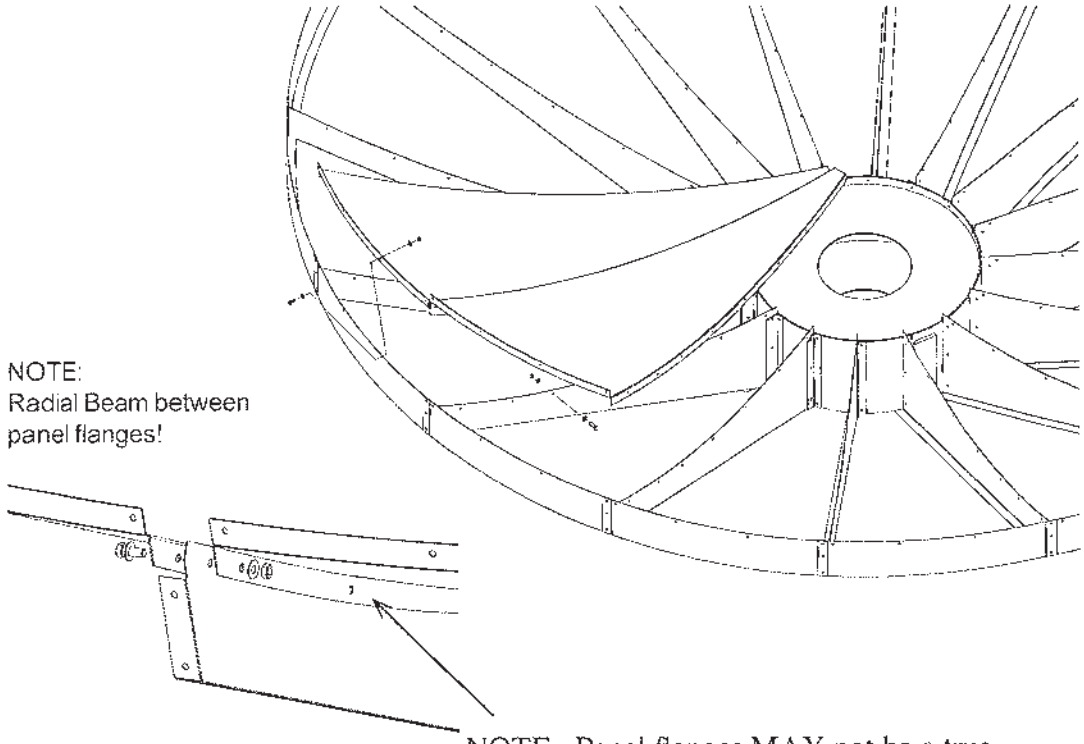
6. Now install all of the outboard skirts on the end of the radial beams (bent edge down) using hardware labled outboard skirt. Leave this hardware loose.

NOTE: One end has a formed “overlap.” Place this end on the outside.



1. Start by installing antenna panels noting overlay of joining edges. Join two panels to one radial beam using Allen head bolts. Work out from the hub {note edge overlay should be even} tighten the hardware. Install the remaining panels noting overlay of panel edges, tighten the hardware as you go. Place last panel in its location installing all bolts that can be reached at this time.

2. Install all 1/4 inch Allen bolts and flange nuts to panel edge and outboard skirts tightening as you go.



NOTE: Panel flanges MAY not be a true 90 degree, in this case it is ok to bend flanges (IF need) for easier fit.

Tightening Procedure- Important!

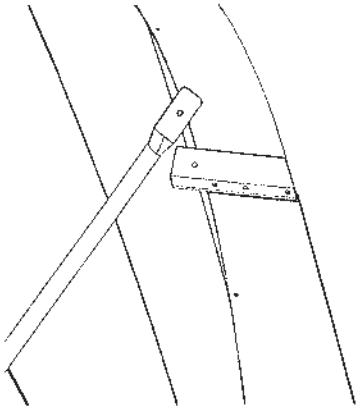
3. Starting at the Hub tighten all hardware by working outward 1 circular row at a time.

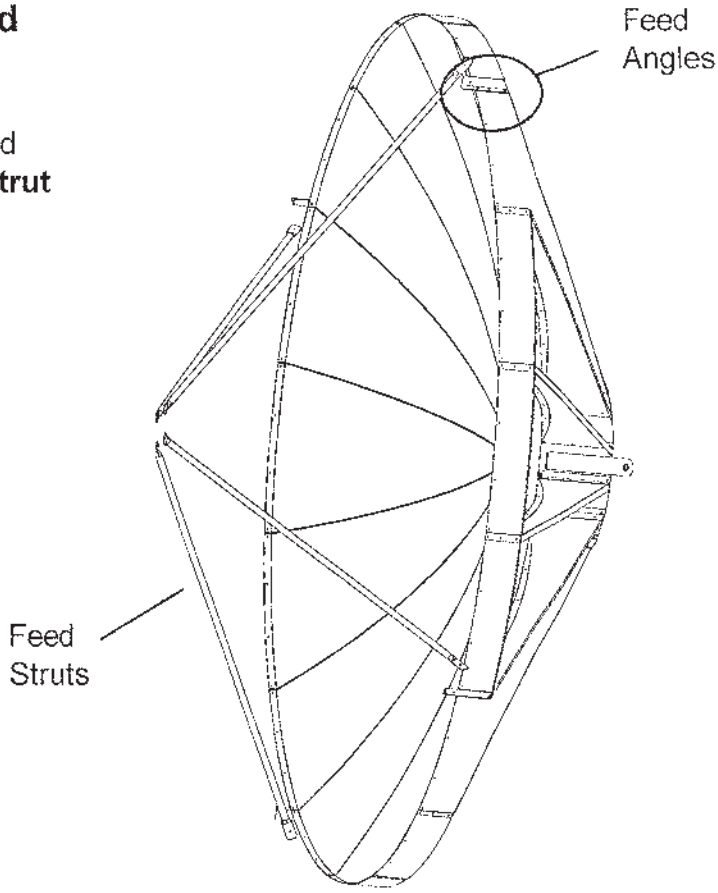
4. When all petals are tight put in the remaining hardware from the Outboard Skirt pack. At every 4th Radial Beam/Outboard Skirt junction include an Outboard Feed Angle as you assemble using hardware kit labeled- Feed Strut Bottom. Tighten hardware as you intall it.

NOTE: The 3 holes in Outboard Feed Angle should be aligned with the 3 holes in Outboard Skirt. See next page.

Feed Support Assembly- Standard

1. Place the Feed Struts in place with the straight end assembled to the Outboard Feed Angles at the edge of the dish. Use **Feed Strut Top** pack hardware.

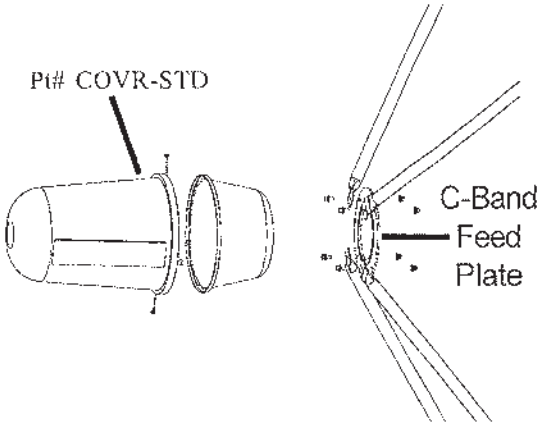




2. Assemble the C-Band Feed Plate to the inside of the Feed Struts as shown using the 1/4" hardware also from the Feed Strut Top pack. Then assemble the feed scalar to the dish side of the plate using the 4 slotted holes with the feed cover bottom half to the opposite side of the plate.

3. Check Focal Distance- 1.57m (61.95")

NOTE: The 4 slotted holes provide skew adjustmer



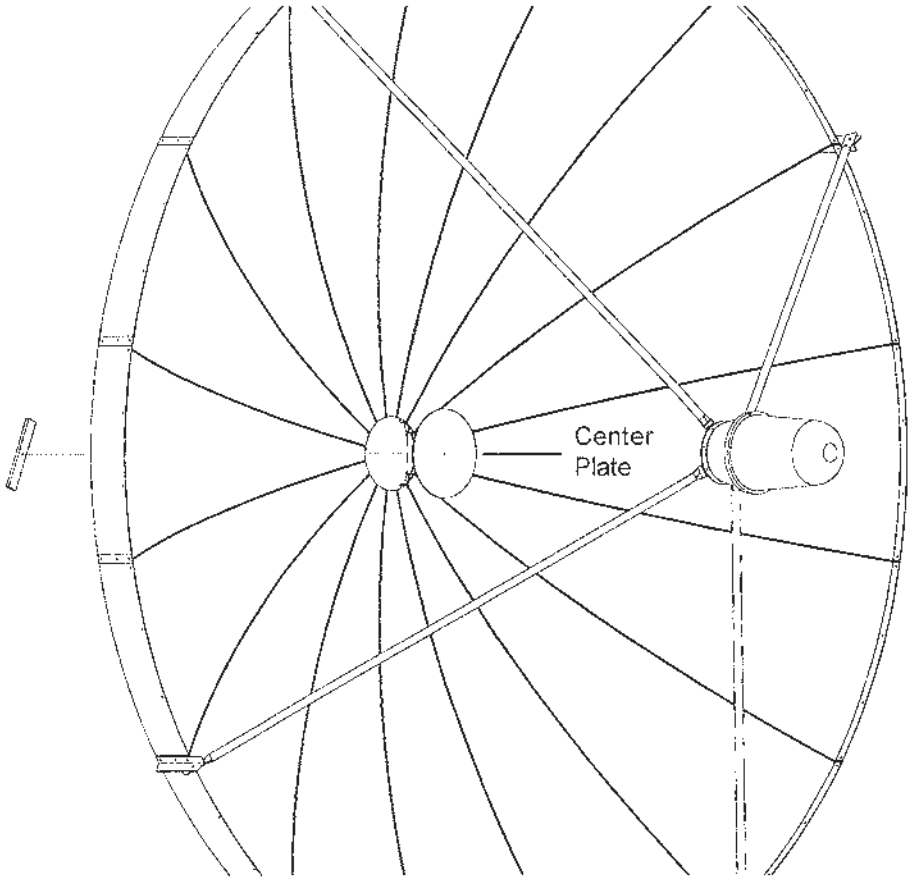
OPTIONAL
PT# COVR STD FOR:

ADL-RP1LPF200
ADL-RP1CP300
ADL-RP-3-CKU
ADL-RP3CKUIWC
ADL-KU-901
ADL-KU-850
ADL-RP2CP300

OPTIONAL
PT# COVR-SVY FOR:

ADL-RP3AZOP-122
ALL SEAVEY C-BAND FEEDS

With a helper place the center plate in place in the center of the opening of the panels using hardware from **Center Plate** pack. From behind place the back brace through the hub center across the hub opening. Tighten the nut on the bolt being careful not to overtighten which could crush the petals.
NOTE: If you need to climb into the dish be sure to place your feet along the Radial Beams and not into the center areas of a panel!



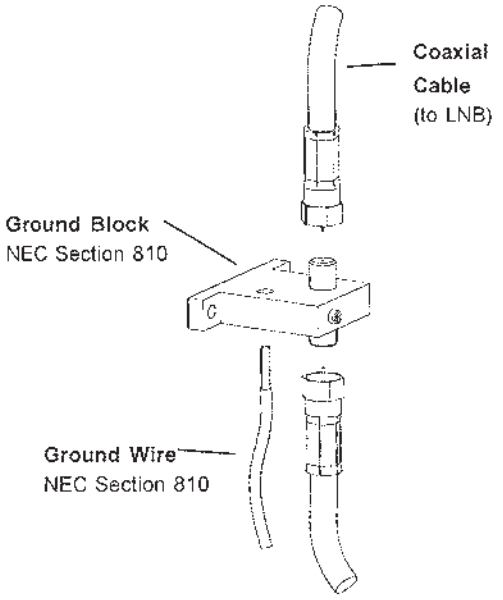
The antenna assembly is now complete. Now lower the antenna out of the "bird bath" position. To adjust the antenna toward the selected satellite you must first know its elevation angle above horizon. This will be the reference angle for the face of the antenna. Using an inclinometer on the face of the antenna pre-adjust the desired angle Tighten the Az-El pipe head bolts only enough to allow rotation of the mount on the ground pipe. Knowing the azimuth angle of the satellite from due south roughly aim the antenna in that direction. With the LNB connected to the proper sight-in equipment the antenna can be accurately adjusted to the satellite signal. Tighten all hardware.

Installation is complete.

Grounding

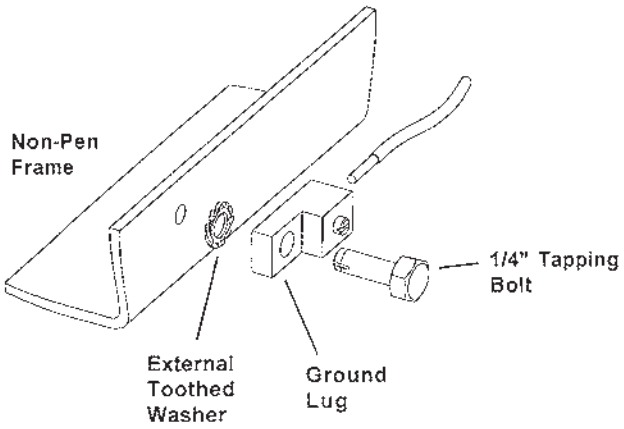
Grounding Antenna Feed Cables

1. Ground antenna feed cables in accordance with current National Electric code and local electric codes. The illustration shows a typical grounding method.
Clamps that provide a solid connection between ground wire and a ground source should be used.



Grounding Non-Penetrating Mount Frame (if applicable)

1. Ground the Non-Penetrating mount frame. The illustration shows a typical grounding method.
Refer to the NEC Section 810 and local electric codes for specific instructions on grounding the remaining end of the ground wire.



Antenna Pointing

1) Begin by obtaining the correct Az/El pointing data for the satellite of interest based for your site location.

2) Using an inclinometer or position readout form controller placed on the enclosure drum surface, position the antenna to the specified elevation angle.

3) Manually scan the antenna (back-and-forth in the azimuth around the direction of the specified azimuth angle) to achieve the maximum transponder signal.

4) Next repeat the procedure for elevation.

5) Repeat this procedure alternating between the azimuth and elevation until maximum transponder signal is achieved.

The antenna assembly is now complete. To begin tracking the satellite arc you must first know its elevation angle above horizon for your western(or eastern) - most satellite. This will be the reference angle for the face of the antenna. Using an inclinometer on the face of the antenna pre-adjust the desired angle using the elevation motor controller. With the elevation setting adjusted then using the azimuth motor controller move the antenna in the azimuth position until the desired satellite can be received using the necessary site-in electronics. Consult the drive controller instructions for saving this initial satellite and siting and saving the remaining satellites desired.

Installation is complete.

Windload Information
Windload Imposed at 125 mph

Force on Front of Dish - 6,250 lbs.
Force on Back of Dish- 3,400 lbs.
Torque at Base of Mount- 42,000 ft. lbs.
Overturning moment- 44,000 ft. lbs.

Stress of 6" schedule 40 pipe- 49,233 psi
Stress of 6" schedule 80 pipe- 34,302 psi

Note: For windloads of 100 mph or more, we recommend using schedule 80 pipe filled with concrete.