# NOVALYNX CORPORATION

## INSTRUCTION MANUAL FOR MODELS

**110-WS14TM 5 FT TRIPOD & THREADED MAST**
**110-WS16TM 5 FT TRIPOD & SWEDGED MAST**
**190-510 5 FT TRIPOD TOWER**
**190-520 10 FT TRIPOD TOWER**


REVISION DATE:09/99

## Receiving and Unpacking

Carefully unpack all components and compare to the Packing List. Notify NovaLynx Corporation immediately concerning any discrepancy. Inspect equipment to detect any damage that may have occurred during shipment. In the event of damage, any claim for loss must be filed immediately with the carrier by the consignee. Damages to equipment sent via Parcel Post or UPS require the consignee to contact NovaLynx Corporation for instructions.

## Returns

If equipment is to be returned to the factory for any reason, call NovaLynx between 8:00 A.M. and 4:00 P.M. Pacific Time and request a Return Authorization Number (RA#). Include with the returned equipment a description of the problem, and the name, address, and daytime phone number of the sender. Carefully pack the equipment to prevent damage or additional damage in the return shipment. Call NovaLynx for packing instructions in the case of delicate or sensitive items. If packing facilities are not available take the equipment to the nearest Parcel Post, UPS, or freight service and obtain assistance with the packaging. Write the RA# on the outside of the box.

## Warranty

NovaLynx Corporation warrants that its products are free from defects in material and workmanship under normal use and service for a period of one year from the date of shipment from the factory. NovaLynx Corporation's obligations under this warranty are limited to, at NovaLynx's option: (i) replacing; or (ii) repairing; any product determined to be defective. In no case shall NovaLynx Corporation's liability exceed product's original purchase price. This warranty does not apply to any equipment that has been repaired or altered, except by NovaLynx Corporation, or that has been subjected to misuse, negligence, or accident. It is expressly agreed that this warranty will be in lieu of all warranties of fitness and in lieu of the warranty of merchantability.

## Address

**NovaLynx Corporation**
**4055 Grass Valley Highway, Suite 102**
**Auburn, CA 95602**
**Phone: (530) 823-7185**
**Fax:(530) 823-8997**
**E-Mail: nova@novalynx.com**
**Website: WWW.NOVALYNX.COM**

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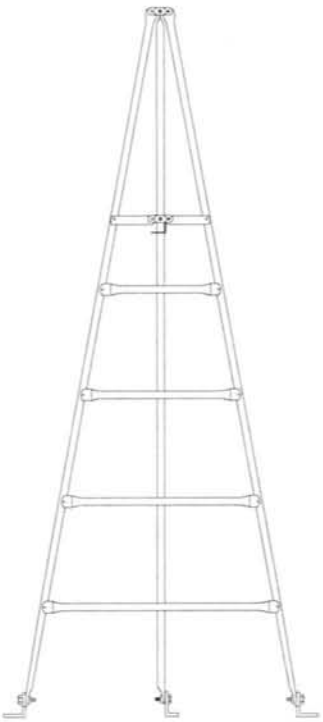
# 5 FOOT TRIPOD TOWER
# MODEL 190-510

NovaLynx Corporation provides a five foot high tripod for mounting meteorological instruments at outdoor locations. The tripod is normally used with a pipe extension to give a total height of about 8 feet. The design of the tripod includes a pipe collar and lower support allowing adjustment of the mast for various heights. The various meteorological instruments normally include mounting hardware. Whenever possible, NovaLynx provides special mounting hardware for customized applications. In areas where high velocity winds are expected, NovaLynx recommends using a guy wire kit and earth or roof anchors to tie down the tripod. Mounting bases are normally the responsibility of the customer. Some assistance from NovaLynx is available in determining the proper method of installing the tripod for each customer. For assistance in the actual installation of the tripod, NovaLynx recommends contacting a local tower or antenna installation company.

The 5 foot tripod tower is similar in construction and use as the ten foot tripod, Model 190-520. The manual for the ten foot tripod is included here for general information along with drawings of typical five foot tripod elevations.

# EQUIPMENT CONFIGURATION DRAWING



10 FT TRIPOD TOWER

**Model 190-520**

# 10 Ft Tripod Tower
# Model 190-520

## 1.0 Introduction

1.1 NovaLynx provides a ten foot high tripod tower for use as a low cost and portable instrument tower. The tower is primarily for mounting wind sensors at low levels or on roof tops but it can also support other instruments as well. A removable and adjustable mast is inserted into the top of the tower and is fastened into place using the two mounting collars. For telemetry applications the tower may be used to mount a radio antenna.

1.2 The tripod tower features a ladder on one side to facilitate climbing of the tower for installation and service of the tower mount equipment. The ladder pieces and the cross braces are bolted onto the tower legs prior to installation of the tower. For portable applications, the cross braces can be removed and the tower legs can be folded inward allowing easy transporting of the tower. The tower has one hinged set of cross braces and the top mounting collar is the second hinge point.

1.3 NovaLynx tripod towers are constructed of steel tubing for durability and strength. For additional strength and stability, a guy kit is recommended for especially in locations with high winds and for masts that extend above the tower by ten feet. Locations that are exposed to lightning require a grounding kit. Commonly used accessories are listed below. Special accessories may be ordered separately.

## 2.0 Specifications

| | |
|---|---|
| Height: | 10' |
| Materials: | Galvanized Steel Tubing |
| Crossbracing: | Horizontal bars, 3 sets<br>2 removable, 1 hinged |
| Mast Mounting: | Fixed Collar Clamps<br>1 at top of tripod and<br>1 at first horizontal bar |
| Base Mounting: | Angled Foot Brackets with<br>3 Bolt Holes at 1 3/8" Centers |
| Base Diameter: | 58 1/2" |
| Guying: | Required With 10' Mast |
| Weight/Shipping: | 30 lbs/30 lbs (14 kg/14 kg) |

### 2.1 Special Accessories

| | |
|---|---|
| Model 190-310 | 5' Mast 1" Aluminum Pipe (1.34" O.D.) |
| Model 190-320 | 10' Mast 1" Aluminum Pipe (1.34" O.D.) |

TRIPOD GUY KITS WITHOUT ANCHORS

| | |
|---|---|
| Model 190-210 | 20' Height, Maximum |

EARTH ANCHORS

| | |
|---|---|
| Model 190-211 | 15" Auger Style, Set of 3 |
| Model 190-213 | 48" Heavy Duty Style, 1 pc |

ROOF ANCHORS

| | |
|---|---|
| Model 190-212 | 5/8"x 14" Eye-bolt and Plates<br>Set of 3 |

TRIPOD GROUNDING KIT

| | |
|---|---|
| Model 190-110 | 5' Copper Cable, 1 Ground Rod(8'), & Clamps<br>Attached to each Tripod Leg |

## 3.0 Installation

3.1 Installation of the tripod tower involves opening the tower legs to their maximum separation, attaching the cross braces, bolting the tower feet onto the mounting base, and installing any accessories.

3.2 Upon receipt and initial inspection of the tower, remove the tower and the cross braces from the shipping container. Check to ensure that all of the pieces need are present. There should be six cross braces and two ladder pieces. Also included are the bolts and nuts for mounting the braces onto the tower legs. The mount feet are permanently attached to the tower legs. The two mast collars should have three fastening bolts on each collar.

3.3 The supporting base or foundation should be prepared prior to the installation of the tripod tower. For roof mounted towers, a raised wooden platform is often used to bolt the tripod tower to the roof. The wooden platform must be attached to the roof with the type of hardware that is suited to the roof construction. Ground mounted tripods may be bolted onto concrete foundations or onto wooden platforms. Wooden platforms that are ground mounted must securely anchored to prevent the tripod from tipping over in high, gusty wind conditions. Concrete foundations may be constructed with anchor bolts place into the concrete. Using the tripod tower as a pattern, attach the anchor bolts onto the tripod feet and then place the tripod onto the wet cement. For orientation of wind direction sensors, it is recommended that two of the tower feet be set to be in line with North. Check the vertical level of the

tripod and make adjustments while the cement is still wet. For permanent installations the lower portions of the tower legs and feet may be placed directly into the cement.

3.3.1 If there is space available and local conditions will allow it, make the concrete foundation large enough to provide room to walk around the tower. This will ease the servicing of tower mounted data loggers and junction box mounted equipment.

3.4 Prior to the installation of the tripod tower, check to ensure that all hazardous conditions have been removed from the area, especially overhead hazards. If necessary relocate the tripod tower to avoid power lines and similar hazards.

**WARNING:** Do not attempt to climb the tripod tower until it has been firmly bolted onto the foundation.

3.5 After the tripod tower has been bolted onto the foundation, install the sensors and accessories. If the required height of the wind sensor is known, the wind sensor's mast may be placed into the mounting collars and set to its height before setting the tower onto the base. This can save having to carry the mast up the side of the tower.

3.6 Guy wires and grounding kits should be installed prior to the installation of any equipment. Do not work on a tower that is not properly grounded and halt all work at the first indication of an approaching storm.

3.7 The second mounting collar is located a distance of three feet below the top mounting collar. For best results and greatest stability, the wind sensor mast should be set into both mounting collars. Selection of the proper mast should allow for this three foot length that will be below the top of the tower.

3.8 Junction box mount equipment should be placed onto the tower in the most convenient location. Usually, the junction box is located on the North side of the tower away from the intense sunlight. When placing the tower onto the foundation be sure to keep in mind where the ladder braces are in relation to the junction box location. Avoid placing the junction box over the ladder braces to prevent the service technician from having to climb over the junction box to reach the wind sensors.

3.9 Since the tripod tower legs are slanted, instruments that must be mounted level must use mounting fixtures that can be adjusted to compensate for the slant of the legs. The tower legs have a slope of about 80 degrees.

3.10 During the tripod installation, do not drill any holes into the legs at any place for any reason. Modification of the tower structure may cause an unsafe installation. Please contact NovaLynx before making any structural changes to the tripod. When the junction box mounting brackets and the sensor mounting hardware are being attached onto the tripod, avoid over-tightening the bolts. Do not deform the tripod legs by tightening the bolts too much. For locations with high or constant winds use double nuts or jam nuts to secure the mounting hardware. For instruments that are mounted at the top of the tower or on a tall mast, place the mounting bolts into each hole from the ground side. Should the bolt become loose it will fall out leaving a hole that should be noticeable during visual inspections.

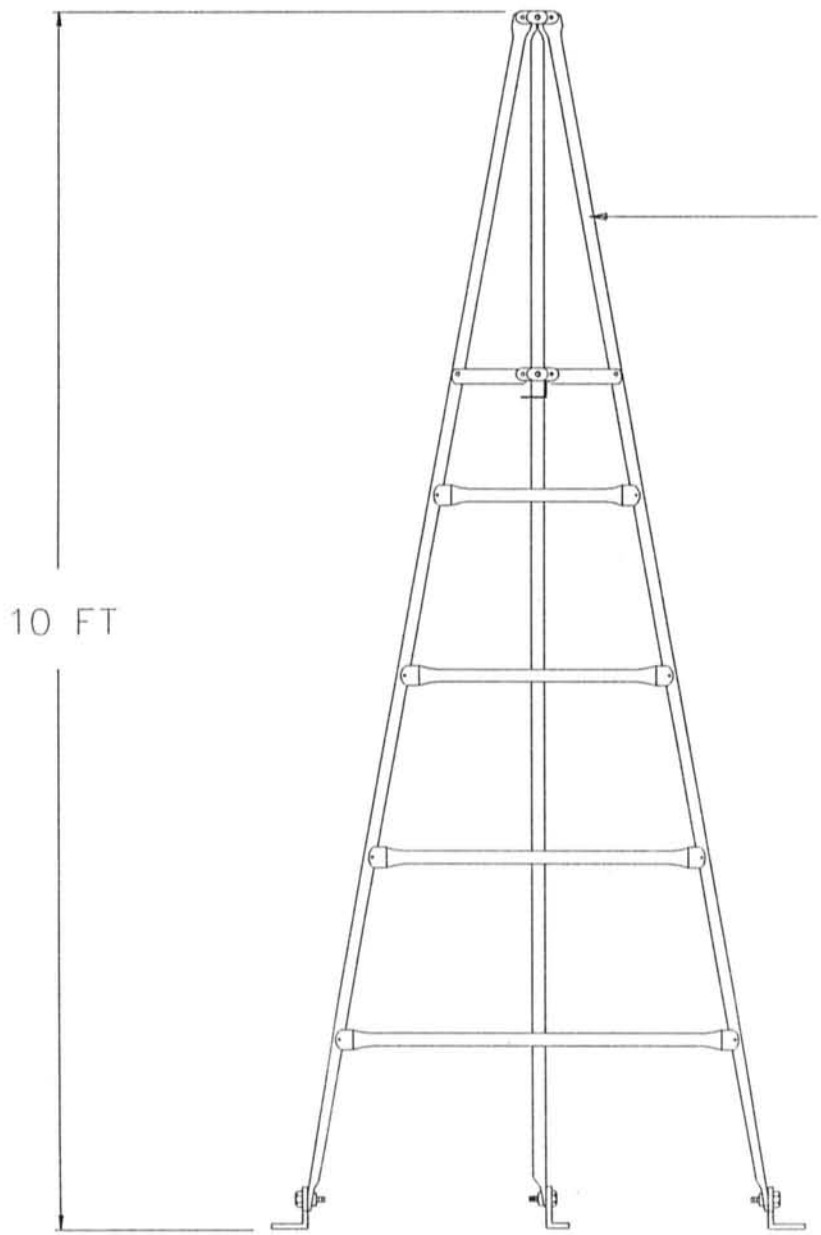
3.11 Upon completion of the sensors' installation, route the cables down one of the tripod legs. Fasten the signal cables to the leg using ultra-violet resistant or stainless steel cable ties. Cable ties should be placed at two foot intervals. Any AC voltage power cables used on the tower should be routed down a tower leg separate from the sensor signal cables. Some installations may require that power cables be housed in rigid conduit. Refer to local codes to determine whether or not conduit is needed on the tower.

## 4.0 Grounding Kit

4.1 NovaLynx provides the latest technology in tower grounding kits for lightning protection. The standard grounding kit for tripod towers provided by NovaLynx features a five foot copper copper cable, an eight foot long ground rod, and clamps for both ends of the cable. The ground rod is placed as close as possible to the tripod foundation and adjacent to the leg that is to be grounded. The ground rod is driven into the soil with only about two to three inches of the end exposed above the ground's surface. A clamp is used to fasten the cable to the tower leg. A second clamp attaches the other end of the copper cable to the exposed end of the ground rod. Both ends of the copper cable must be bare if the wire is insulated. Whenever the tripod tower is surrounded by taller structures, such as trees, the tower is used as the down lead to the grounding system. If the tripod is the tallest structure in the area a lightning rod may need to be installed near the tripod tower location. Whenever possible the lightning rod should be located away from the tripod tower and installed on a separate mast. Regions that experience severe lightning may need to install a more sophisticated type of grounding kit. Please contact NovaLynx for additional information regarding a superior tower grounding kit.

## 5.0 Drawings

5.1 The following pages include dimension drawings and typical installation elevation drawings for the tripod tower. Refer to these drawings for assistance in the installation of the tripod and its associated hardware.




NOVA LINX CORPORATION

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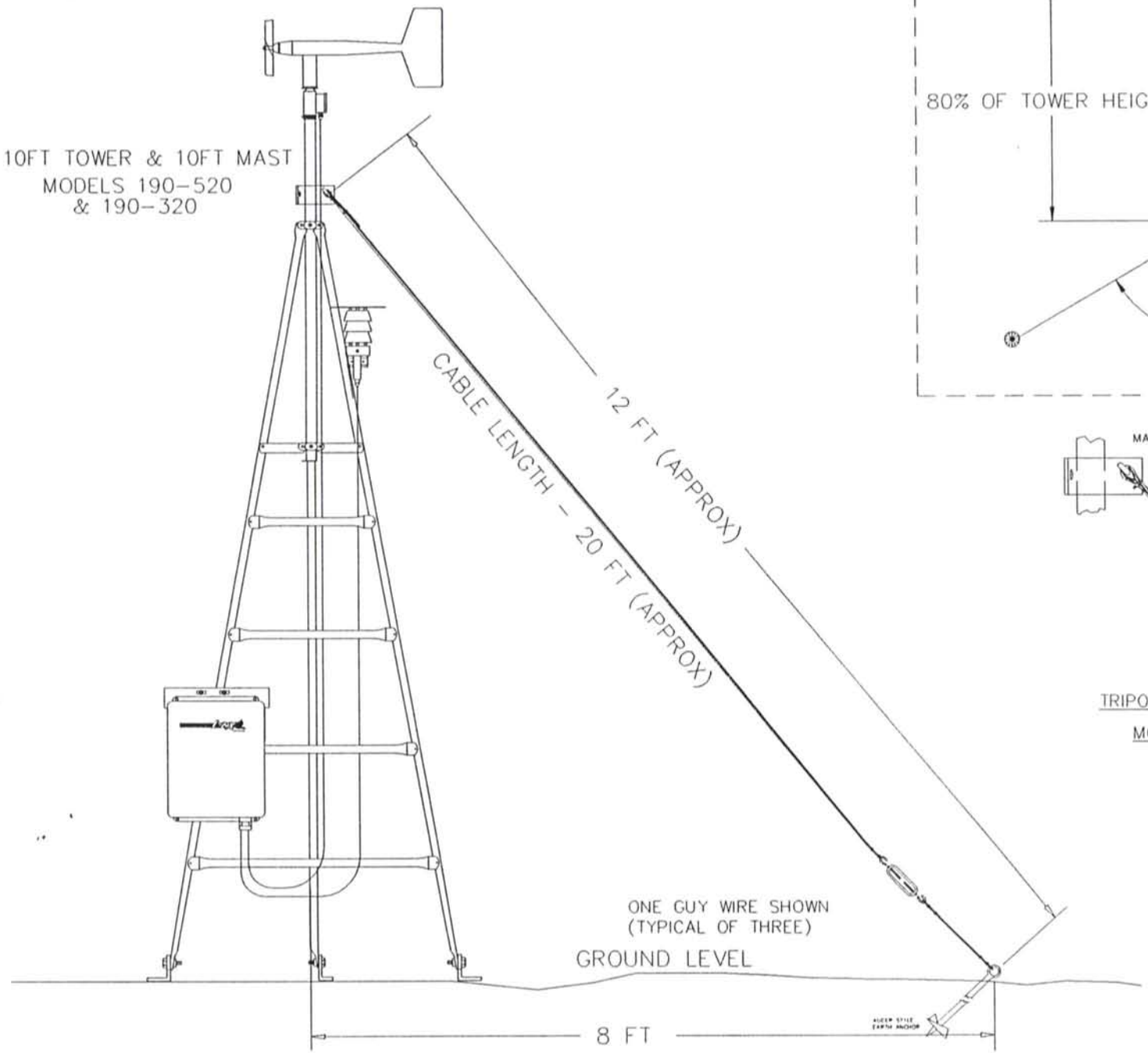
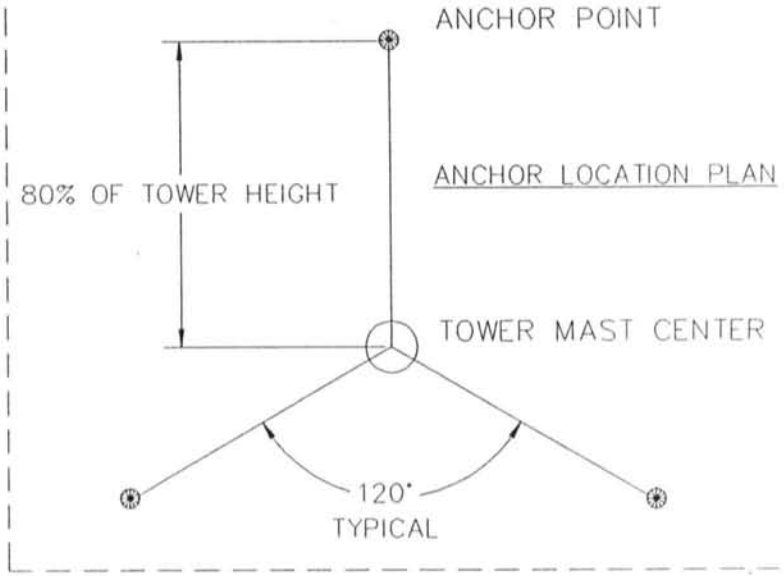
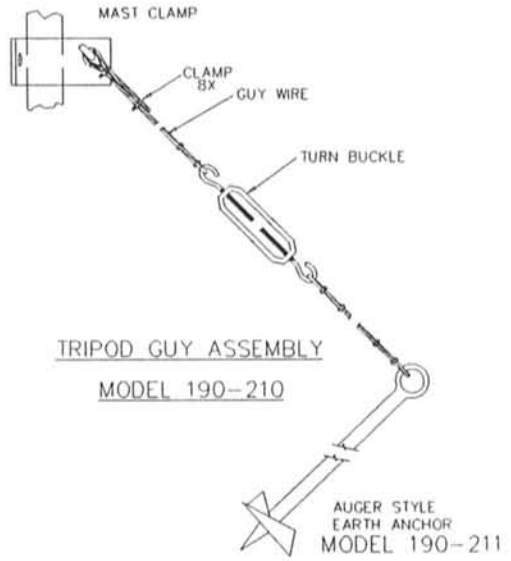
TITLE
OUTLINE, 10 FT TRIPOD
TOWER MODEL 190-520

| | | | |
|---|---|---|---|
| MODEL USAGE 190-520 | | | SHEET 1 OF 1 |
| BY RGN | SCALE 1:1 | DWG NO. | 960703 |
| DATE 7-18-96 | | | |




ANCHOR LOCATION PLAN




TRIPOD GUY ASSEMBLY

MODEL 190-210

DRAWING NOT TO SCALE.

VOLTRONX CORPORATION

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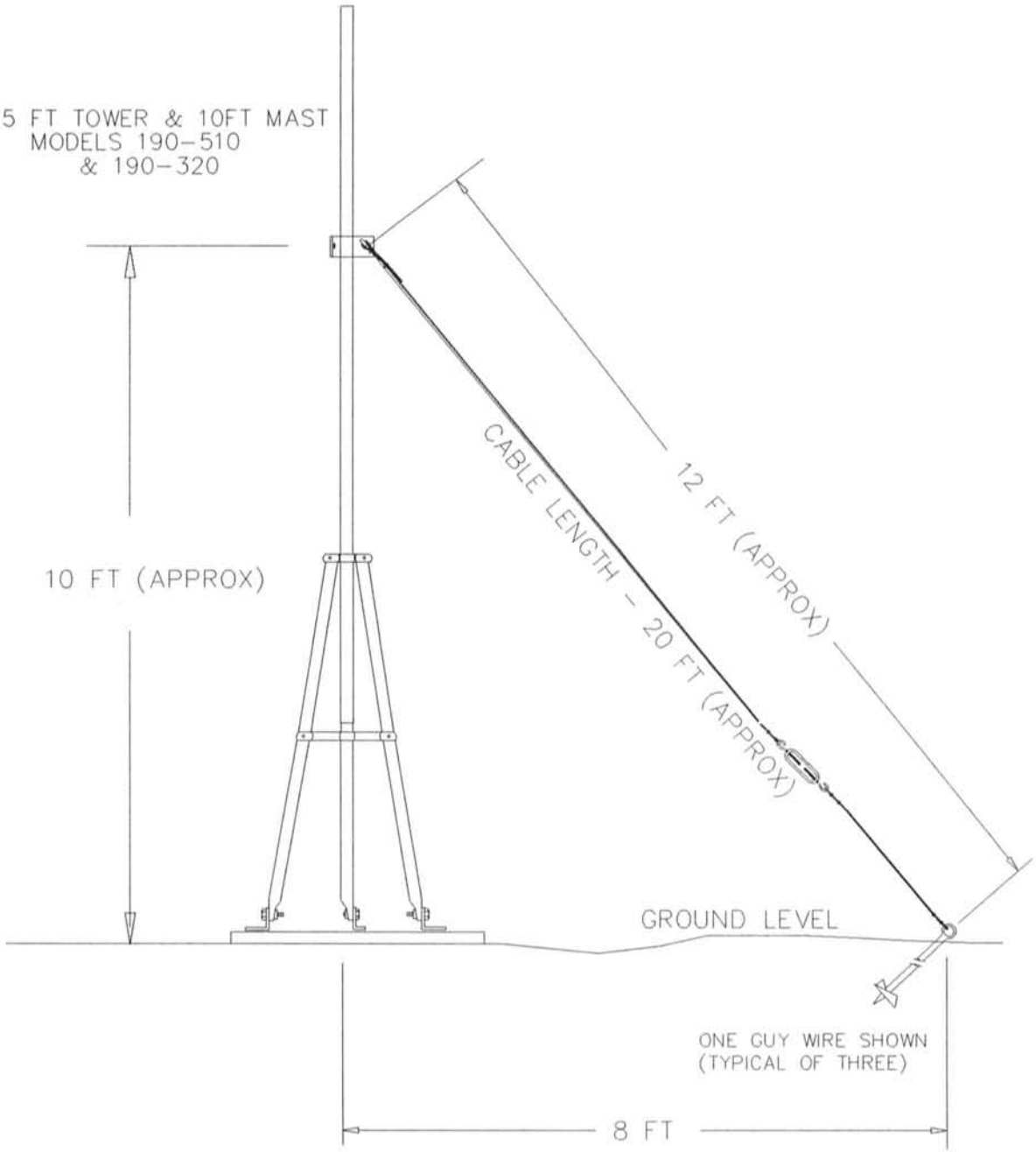
TITLE ASSEMBLY, 10FT TRIPOD
TOWER WITH GUY KIT

| | | | |
|---|---|---|---|
| MODEL USAGE 190-520 | | | SHEET 1 OF 1 |
| BY RGN | SCALE NONE | DWG NO. | 940913 |
| DATE 9-17-97 | | | |

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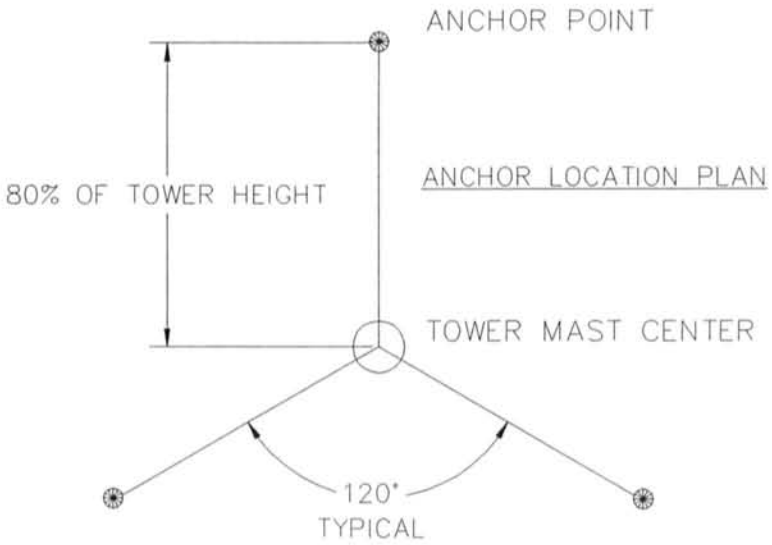
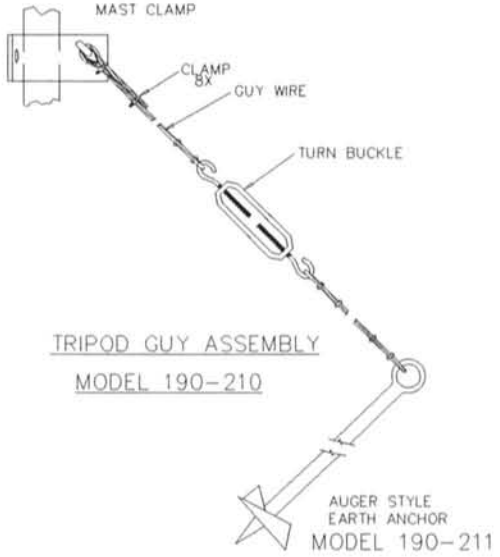



ANCHOR LOCATION PLAN




TRIPOD GUY ASSEMBLY
MODEL 190-210

NOVA LINK CORPORATION

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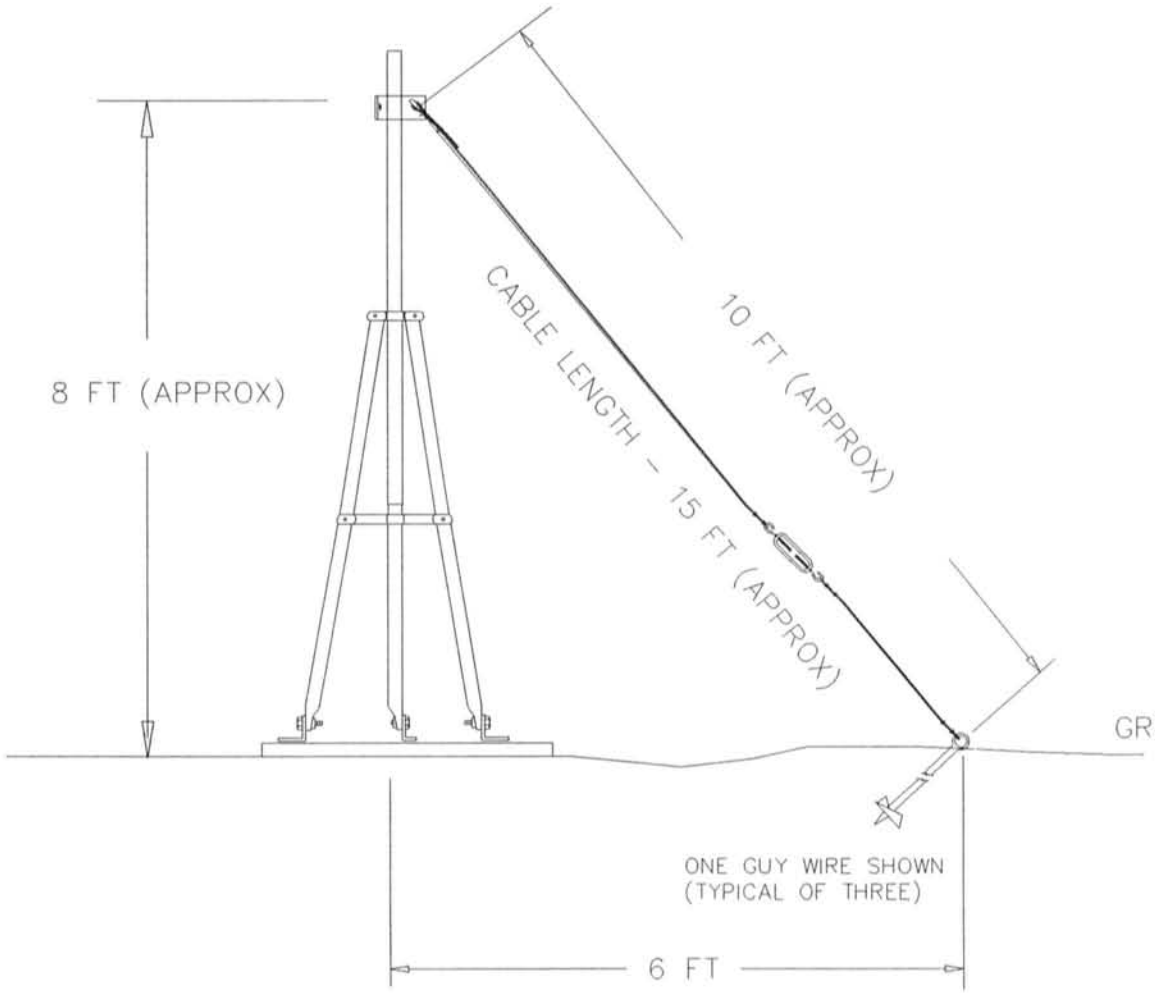
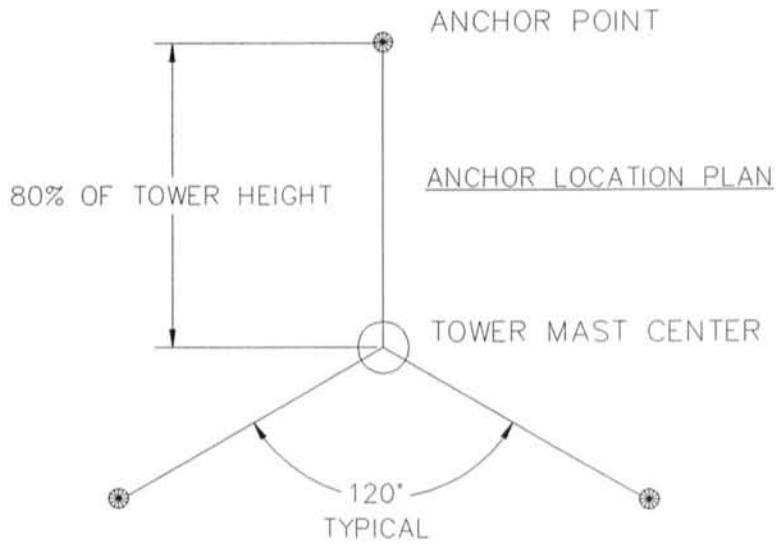
TITLE
ASSEMBLY, 5FT TRIPOD
TOWER WITH GUY KIT

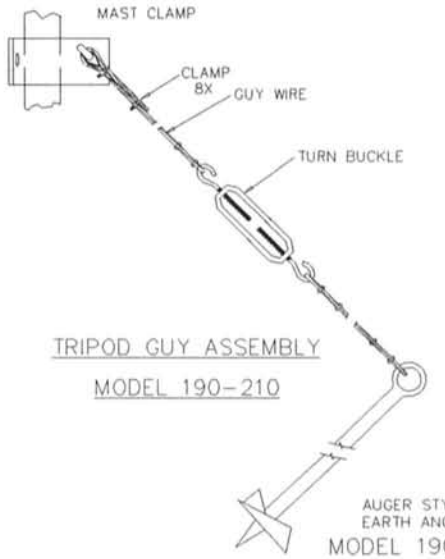
| | | | |
|---|---|---|---|
| MODEL USAGE 190-510 | | | SHEET 1 OF 1 |
| BY RGN | SCALE | DWG. NO. | 940914 |
| DATE 9-17-97 | NONE | | |

5 FT TOWER & 5FT MAST
MODELS 190-510
& 190-310




ANCHOR LOCATION PLAN




TRIPOD GUY ASSEMBLY
MODEL 190-210

DRAWING NOT TO SCALE.

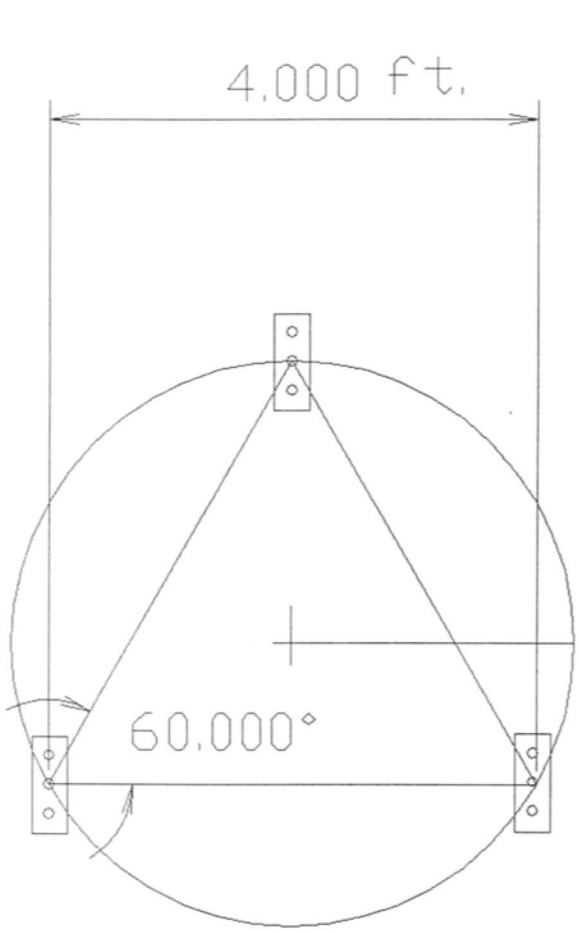
NOVA LYNX SYSTEMS INC

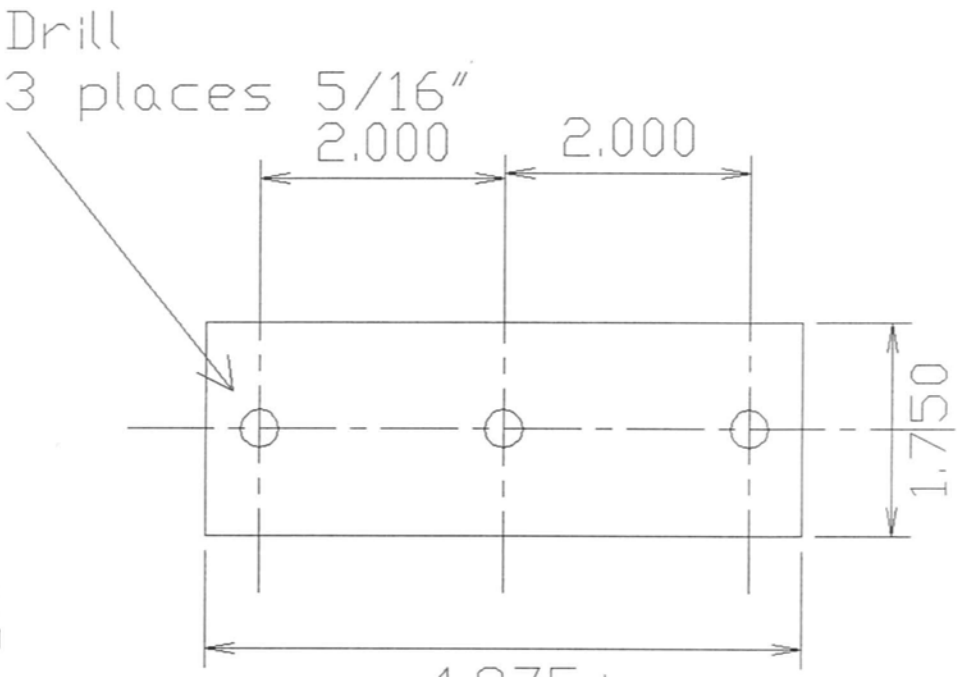
C

TITLE ASSEMBLY, 5FT TRIPOD
TOWER WITH GUY KIT

| | | | |
|---|---|---|---|
| MODEL USAGE 190-510 | | | SHEET 1 OF 1 |
| BY RGN | SCALE | DWG NO. | 940915 |
| DATE 9-17-97 | NONE | | |

# FIVE FOOT TRIPOD FOOT PRINT

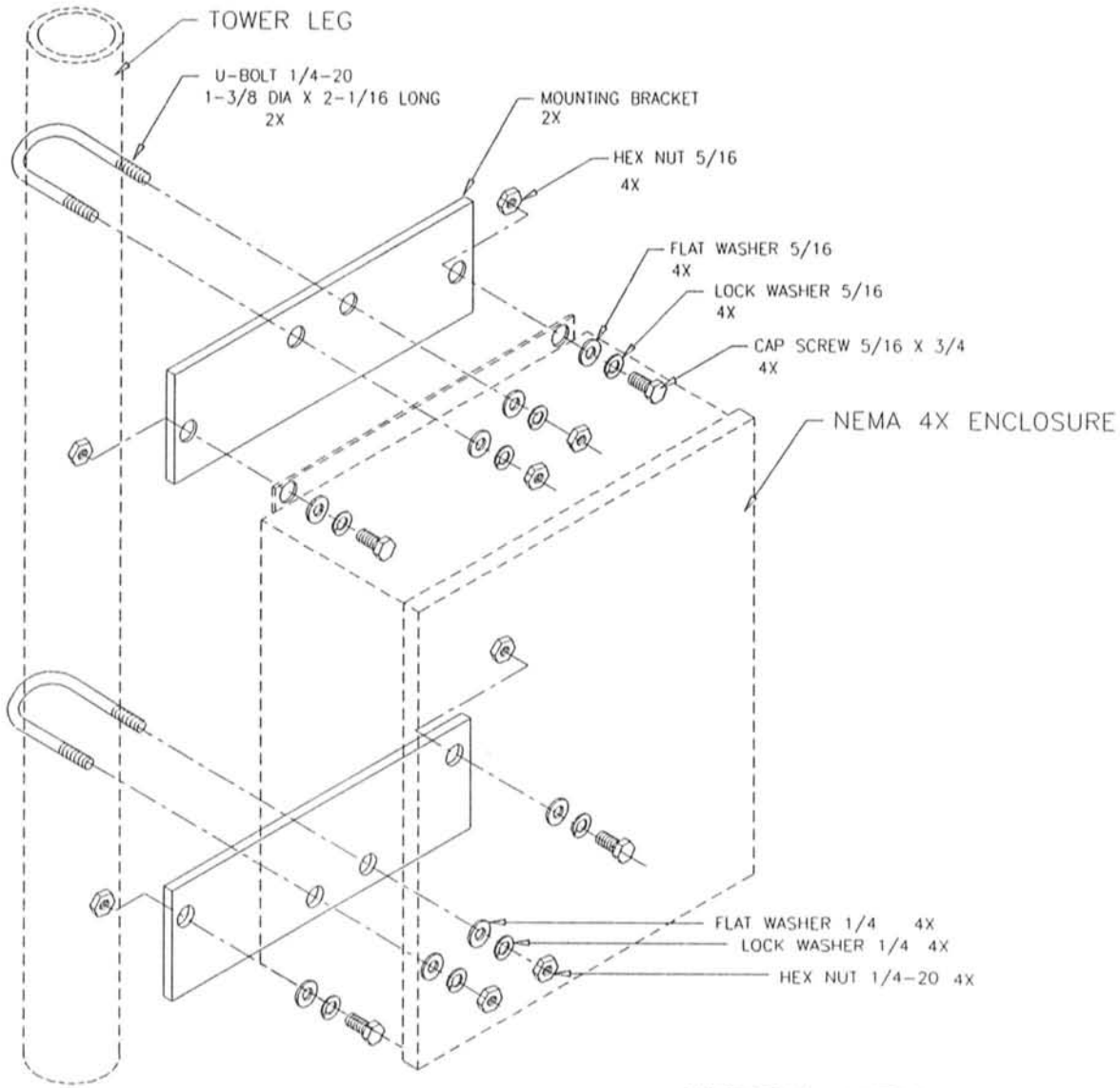



Bracket Foot Print

Radius= 2.309 ft.=2ft. 3-11/16in.

| | |
|---|---|
| NovaLynx Corporation<br>P.O. Box 240<br>Grass Valley, CA 95945 | |
| 06 Jan 2005 | |
| by cna | PN 190-510 |




TYPICAL VIEW

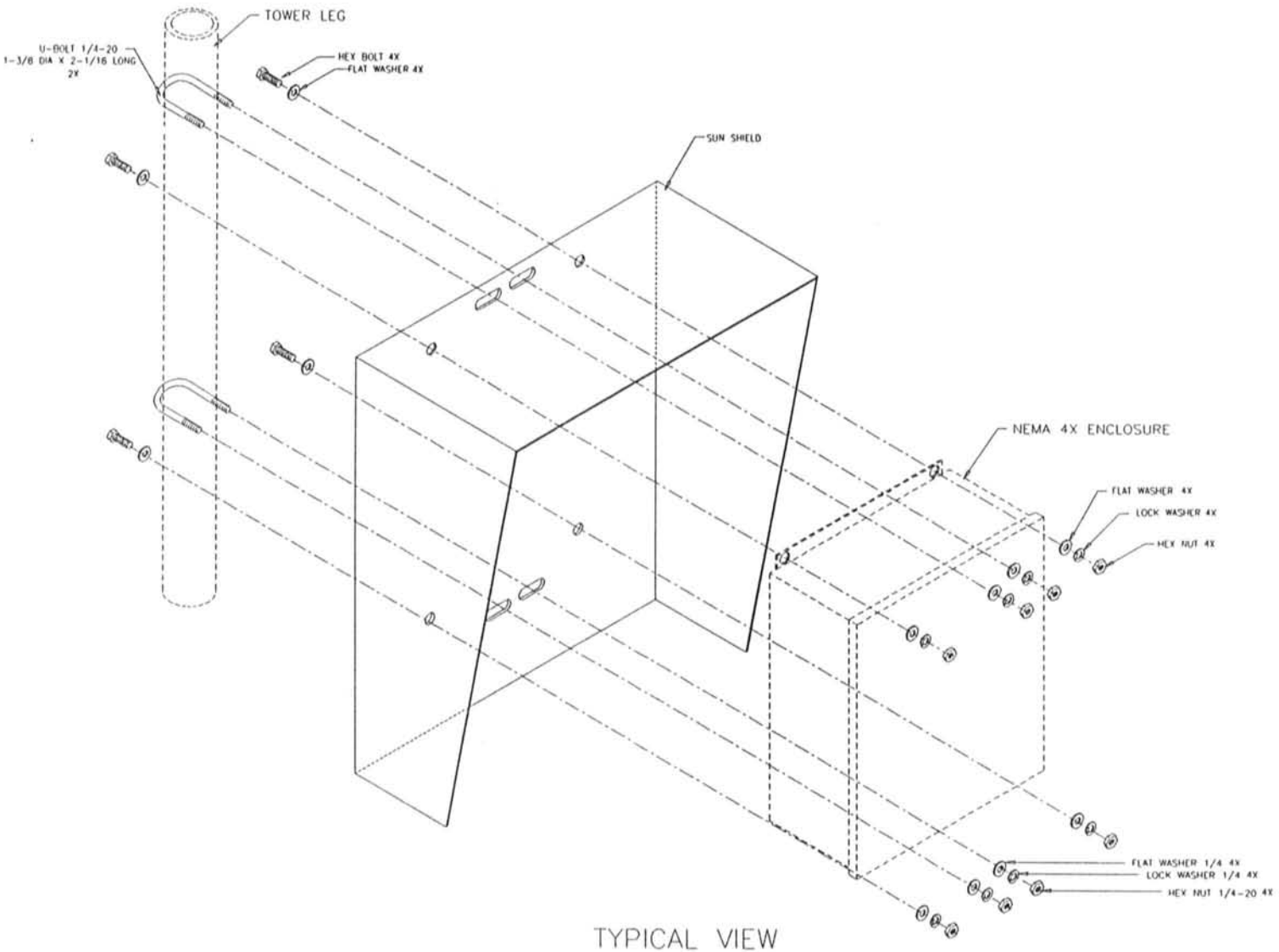
NOTE – 1. BOTTOM BRACKET IS INVERTED COMPARED TO TOP BRACKET.
2. ROTATE BOX ON TOWER LEG SO THAT BACK OF BOX IS PARALLEL TO THE TWO OPPOSITE TOWER LEGS.

VOLT-TAMX CORPORATION

C

TITLE ASSEMBLY, INSTALLATION ENCLOSURE, MODEL 395 SERIES

| | |
|---|---|
| MODEL USAGE | SHEET 1 OF 1 |
| BY RN | DWG NO. 930306 |
| DATE 3-04-93 | |




TYPICAL VIEW

NOTES: 1. ROTATE BOX TO CENTER ON TOWER LEG.
2. BACK OF SUN SHIELD SHOULD SOUTH.
3. JBOX HARDWARE IS SIZED TO FIT BOX.

| | |
|---|---|
| VOLT LYNX CORPORATION | C |
| TITLE: ASSEMBLY, INSTALLATION, NEMA 4X ENCLOSURE WITH SUN SHIELD | |
| MODEL USAGE | SHEET 1 OF 1 |
| BY RN | DWG NO 970302 |
| DATE 3-05-97 | |