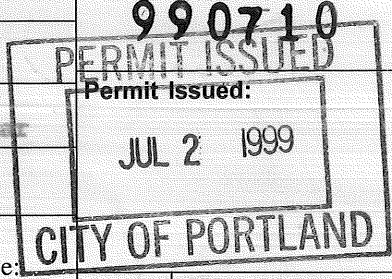


**City of Portland, Maine – Building or Use Permit Application**

389 Congress Street, 04101, Tel: (207) 874-8703, FAX: 874-8716

Location of Construction: 220 Riverside Industrial Parkway		Owner: Ronald Dorley Sr. Lessor American Tower Corp.		Phone: 783-772-3456		Permit No: 990710	
Owner Address: 321 Columbus Ave. Boston, MA 02116		Lessee/Buyer's Name: applicant: Portland Cellular Partnership D/B/A Maine Cellular		Phone:		Business Name: Cellular	
Contractor Name: Atlantic Telcom		Address: 40 Biske Road, Standish, ME 04084		Phone: 783-7536 for any questions @ ME Cellular		Permit Issued: JUL 2 1999	
Past Use: Antennae Tower		Proposed Use: Same		COST OF WORK: \$ 15,000		PERMIT FEE: \$ 95.00	
				FIRE DEPT. <input type="checkbox"/> Approved <input type="checkbox"/> Denied		INSPECTION: Use Group: Type:	
Proposed Project Description: Maximize Increase Antennae Tower from existing 6 to 12. *Increase 6 antennae to 12 antennae with no structural or footage changes.				Signature:		Signature:	
				PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)		Zoning Approval: Special Zone or Reviews: <input type="checkbox"/> Shoreland <input type="checkbox"/> Wetland <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input type="checkbox"/> Site Plan maj <input type="checkbox"/> minor <input type="checkbox"/> mm <input type="checkbox"/>	
Action: Approved <input type="checkbox"/> Approved with Conditions: <input type="checkbox"/> Denied <input type="checkbox"/>				Signature:		Date:	
Permit Taken By: UB		Date Applied For: June 24, 1999					



- This permit application does not preclude the Applicant(s) from meeting applicable State and Federal rules.
- Building permits do not include plumbing, septic or electrical work.
- Building permits are void if work is not started within six (6) months of the date of issuance. False information may invalidate a building permit and stop all work..

\*\*\*\*\*Mail to: Portland Cellular Partnership  
150 Riverside Street  
Portland, ME 04103  
c/o Maine Cellular

**PERMIT ISSUED WITH REQUIREMENTS**

**CERTIFICATION**

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in the application is issued, I certify that the code official's authorized representative shall have the authority to enter all areas covered by such permit at any reasonable hour to enforce the provisions of the code(s) applicable to such permit

June 24, 1999

SIGNATURE OF APPLICANT	ADDRESS:	DATE:	PHONE:
RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE			PHONE:

**Zoning Appeal**

Variance  
 Miscellaneous  
 Conditional Use  
 Interpretation  
 Approved  
 Denied

**Historic Preservation**

Not in District or Landmark  
 Does Not Require Review  
 Requires Review

Action:

Approved  
 Approved with Conditions  
 Denied

Date: \_\_\_\_\_

**CEO DISTRICT**

ub

9/16/99 Work is in progress. OK

12/23/99 Work Completed (OK)

**Inspection Record**

Type	Inspection Record	Date
Foundation:		
Framing:		
Plumbing:		
Final:	OK	12/23/99
Other:		

330 -H-1 -~~003~~

**THIS IS NOT A PERMIT/CONSTRUCTION CANNOT COMMENCE UNTIL THE PERMIT IS ISSUED**

**Building or Use Permit Pre-Application  
Attached Single Family Dwellings/Two-Family Dwelling  
Multi-Family or Commercial Structures and Additions Thereto**

In the interest of processing your application in the quickest possible manner, please complete the Information below for a Building or Use Permit.

**NOTE\*\*If you or the property owner owes real estate or personal property taxes or user charges on ANY PROPERTY within the City, payment arrangements must be made before permits of any kind are accepted.**

Location/Address of Construction (include Portion of Building): <u>220 Riverside Street, 04103</u> <i>Industrial Parkway</i>			
Total Square Footage of Proposed Structure		Square Footage of Lot	
Tax Assessor's Chart, Block & Lot Number Chart# <u>330</u> Block# <u>H</u> Lot# <u>601</u>	Owner: <u>lessor/owner RONALD DORIER</u> <u>American Tower Corp. ST.</u>	Telephone#: <u>207-772-3456</u>	
Owner's Address: <u>321 Columbus Ave.</u> <u>Boston, MA 02116</u>	Lessee/Buyer's Name (If Applicable) (Applicant): <u>Portland Cellular Partnership</u> <u>DBA/ME cellular</u>	Cost Of Work: <u>\$15,000.00</u>	Fee <u>95</u> <u>773456</u>
Proposed Project Description: (Please be as specific as possible) <u>Portland Cellular Partnership, 150 Riverside St. Portland, ME 04103</u> <u>desires to increase Ants. from existing 6 to 12.</u> <u>Antennae</u>			
Contractor's Name, Address & Telephone: <u>Atlantic Telcom - 40 Blake Rd Standish ME 04084</u> Rec'd By <u>LB</u>			
Current Use: <u>Ant. Tower.</u> <u>Antennae tower</u>		Proposed Use: <u>Ant. Tower.</u>	

Separate permits are required for Internal & External Plumbing, HVAC and Electrical installation.

- All construction must be conducted in compliance with the 1996 B.O.C.A. Building Code as amended by Section 6-Art II.
- All plumbing must be conducted in compliance with the State of Maine Plumbing Code.
- All Electrical Installation must comply with the 1996 National Electrical Code as amended by Section 6-Art III.
- Heating, Ventilation and Air Conditioning installation must comply with the 1993 BOCA Mechanical Code.

You must include the following with you application:

- 1) A Copy of Your Deed or Purchase and Sale Agreement
- 2) A Copy of your Construction Contract, if available
- 3) A Plot Plan/Site Plan
- 4) Building Plans

Minor or Major site plan review will be required for the above proposed projects. The attached checklist outlines the minimum standards for a site plan.

DAVID LIBBEY  
797 7536  
for QUESTIONS

MAIL TO  
ME CELLULAR

Unless exempted by State Law, construction documents must be designed by a registered design professional.

A complete set of construction drawings showing all of the following elements of construction:

- Cross Sections w/Framing details (including porches, decks w/ railings, and accessory structures)
- Floor Plans & Elevations
- Window and door schedules
- Foundation plans with required drainage and dampproofing
- Electrical and plumbing layout. Mechanical drawings for any specialized equipment such as furnaces, chimneys, gas equipment, HVAC equipment (air handling) or other types of work that may require special review must be included.

**Certification**

I hereby certify that I am the Owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the Code Official's authorized representative shall have the authority to enter all areas covered by this permit at any reasonable hour to enforce the provisions of the codes applicable to this permit.

Signature of applicant: <u>David H Libbey, Jr.</u>	Date: <u>6.24.99</u>
--	----------------------

Building Permit Fee: \$25.00 for the 1st \$1000.cost plus \$5.00 per \$1,000.00 construction cost thereafter.

Additional Site review and related fees are attached on a separate addendum

Inspection Services  
Michael J. Nugent  
Manager



Department of Urban Development  
Joseph E. Gray, Jr.  
Director

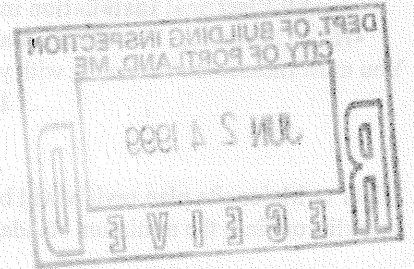
**CITY OF PORTLAND**

*Congratulations!!!!!!*

**Building or Use Permit Application  
Attached Single Family Dwellings/Two-Family Dwelling  
Multi-Family or Commercial Structures and Additions Thereto**

As an applicant for a building permit, you are about to enter into a relationship with our Office. We welcome any questions, comments or suggestions that will make the process more efficient. Attached you will find an application and some samples of the submissions you will provide at application time. Please read **ALL** of the information and if you need any further assistance please call 874-8703 or 874-8693.

**Minor or Major site plan review will be required for the most of the above proposed projects.**



**BUILDING PERMIT REPORT**

DATE: 26/June/99 ADDRESS: 220 Riverside ST CBL: 330-H-001

REASON FOR PERMIT: Antennae Tower

BUILDING OWNER: Ronald Dorler SA

PERMIT APPLICANT: Contractor Atlantic Telcom

USE GROUP U1 BOCA 1996 CONSTRUCTION TYPE \_\_\_\_\_

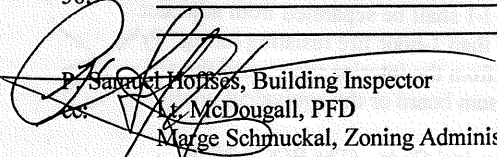
CONDITION(S) OF APPROVAL

This permit is being issued with the understanding that the following conditions are met:

Approved with the following conditions: \*1 \*27 \*34 #35

1. This permit does not excuse the applicant from meeting applicable State and Federal rules and laws.
2. Before concrete for foundation is placed, approvals from the Development Review Coordinator and Inspection Services must be obtained. (A 24 hour notice is required prior to inspection)
3. Foundation drain shall be placed around the perimeter of a foundation that consists of gravel or crushed stone containing not more than 10 percent material that passes through a No. 4 sieve. The drain shall extend a minimum of 12 inches beyond the outside edge of the footing. The thickness shall be such that the bottom of the drain is not higher than the bottom of the base under the floor, and that the top of the drain is not less than 6 inches above the top of the footing. The top of the drain shall be covered with an approved filter membrane material. Where a drain tile or perforated pipe is used, the invert of the pipe or tile shall not be higher than the floor elevation. The top of joints or top of perforations shall be protected with an approved filter membrane material. The pipe or tile shall be placed on not less than 2" of gravel or crushed stone, and shall be covered with not less than 6" of the same material. Section 1813.5.2
4. Foundations anchors shall be a minimum of 1/2" in diameter, 7" into the foundation wall, minimum of 12" from corners of foundation and a maximum 6' o.c. between bolts. (Section 2305.17)
5. Waterproofing and damp proofing shall be done in accordance with Section 1813.0 of the building code.
6. Precaution must be taken to protect concrete from freezing. Section 1908.0
7. It is strongly recommended that a registered land surveyor check all foundation forms before concrete is placed. This is done to verify that the proper setbacks are maintained.
8. Private garages located beneath habitable rooms in occupancies in Use Group R-1, R-2, R-3 or I-1 shall be separated from adjacent interior spaces by fire partitions and floor/ceiling assembly which are constructed with not less than 1-hour fire resisting rating. Pr garages attached side-by-side to rooms in the above occupancies shall be completely separated from the interior spaces and the att by means of 1/2 inch gypsum board or the equivalent applied to the garage means of 1/2 inch gypsum board or the equivalent appli garage side. (Chapter 4, Section 407.0 of the BOCA/1996)
9. All chimneys and vents shall be installed and maintained as per Chapter 12 of the City's Mechanical Code. (The BOCA National Mechanical Code/1993). Chapter 12 & NFPA 211
10. Sound transmission control in residential building shall be done in accordance with Chapter 12, Section 1214.0 of the City's Code.
11. Guardrails & Handrails: A guardrail system is a system of building components located near the open sides of elevated wa for the purpose of minimizing the possibility of an accidental fall from the walking surface to the lower level. Minimum Groups 42", except Use Group R which is 36". In occupancies in Use Group A, B, H-4, I-1, I-2, M and R and public gar parking structures, open guards shall have balusters or be of solid material such that a sphere with a diameter of 4" can any opening. Guards shall not have an ornamental pattern that would provide a ladder effect. (Handrails shall be a r not more than 38". Use Group R-3 shall not be less than 30", but not more than 38".) Handrail grip size shall have a with an outside diameter of at least 1 1/4" and not greater than 2". (Sections 1021 & 1022.0) - Handrails shall be on stairway. (Section 1014.7)
12. Headroom in habitable space is a minimum of 7'6". (Section 1204.0)
13. Stair construction in Use Group R-3 & R-4 is a minimum of 10" tread and 7 1/4" maximum rise. All other U tread, 7" maximum rise. (Section 1014.0)
14. The minimum headroom in all parts of a stairway shall not be less than 80 inches. (6'8") 1014.4
15. Every sleeping room below the fourth story in buildings of Use Groups R and I-1 shall have at least one oper approved for emergency egress or rescue. The units must be operable from the inside without the use of spe tools. Where windows are provided as means of egress or rescue they shall have a sill height not more tha the floor. All egress or rescue windows from sleeping rooms shall have a minimum net clear opening heig (610mm). The minimum net clear opening width dimension shall be 20 inches (508mm), and a minimur (Section 1018.6)
16. Each apartment shall have access to two (2) separate, remote and approved means of egress. A single directly from the apartment to the building exterior with no communications to other apartment units.
17. All vertical openings shall be enclosed with construction having a fire rating of at least one (1) hour, closer's. (Over 3 stories in height requirements for fire rating is two (2) hours.) (Section 710.0)

18. The boiler shall be protected by enclosing with (1)hour fire rated construction including fire doors and ceiling, or by providing automatic extinguishment. (Table 302.1.1)
19. All single and multiple station smoke detectors shall be of an approved type and shall be installed in accordance with the provisions of the City's Building Code Chapter 9, Section 920.3.2 (BOCA National Building Code/1996), and NFPA 101 Chapter 18 & 19. (Smoke detectors shall be installed and maintained at the following locations):
  - In the immediate vicinity of bedrooms
  - In all bedrooms
  - In each story within a dwelling unit, including basements
 In addition to the required AC primary power source, required smoke detectors in occupancies in Use Groups R-2, R-3 and I-1 shall receive power from a battery when the AC primary power source is interrupted. (Interconnection is required) Section 920.3.2.
20. A portable fire extinguisher shall be located as per NFPA #10. They shall bear the label of an approved agency and be of an approved type. (Section 921.0)
21. The Fire Alarm System shall maintained to NFPA #72 Standard.
22. The Sprinkler System shall maintained to NFPA #13 Standard.
23. All exit signs, lights and means of egress lighting shall be done in accordance with Chapter 10 Section & Subsections 1023.0 & 1024.0 of the City's Building Code. (The BOCA National Building Code/1996)
24. Section 25-135 of the Municipal Code for the City of Portland states, "No person or utility shall be granted a permit to excavate or open any street or sidewalk from the time of November 15 of each year to April 15 of the following year".
25. The builder of a facility to which Section 4594-C of the Maine State Human Rights Act Title 5 MRSA refers, shall obtain a certification from a design professional that the plans commencing construction of the facility, the builder shall submit the certification the Division of Inspection Services.
26. Ventilation shall meet the requirements of Chapter 12 Sections 1210.0 of the City's Building Code. (Crawl spaces & attics).
27. All electrical, plumbing and HVAC permits must be obtained by a Master Licensed holders of their trade. **No closing in of walls until all electrical (min. 72 hours notice) and plumbing inspections have been done.**
28. All requirements must be met before a final Certificate of Occupancy is issued.
29. All building elements shall meet the fastening schedule as per Table 2305.2 of the City's Building Code (the BOCA National Building Code/1996).
30. Ventilation of spaces within a building shall be done in accordance with the City's Mechanical Code (The BOCA National Mechanical Code/1993). (Chapter M-16)
31. Please read and implement the attached Land Use Zoning report requirements.
32. Boring, cutting and notching shall be done in accordance with Sections 2305.4.4, 2305.5.1 and 2305.5.3 of the City's Building Code.
33. Glass and glazing shall meet the requirements of Chapter 24 of the building code.
34. *Radia and Television antennas shall meet the requirements of section 3109.0 of the bldg. Code (The BOCA National Building Code 1996)*
35. *Approval based on NOT increasing the existing height, instead the number of attached antennas is increasing from 6 to 12 in number.*
- 36.


 P. Samuel Hoffes, Building Inspector  
 cc. M. McDougall, PFD  
 Marge Schmuckal, Zoning Administrator

**\*\*On the basis of plans submitted and conditions placed on these plans any deviations shall require a separate approval.**

RECEIVED MAR 15 1999

February 18, 1999

**STRUCTURAL ANALYSIS REPORT**  
*New Antenna Installation*

**#42 x 275' Tower**  
**Atlantic Telcom**  
**Portland, ME**

**Proposal #PR-1999-02-008-A**  
**#A-106064**

275 1?

\*\*\*\*\*

**Provided to:**  
**Atlantic Telcom at the request of Doug Wright**  
**40 Blake Road**  
**Standish, ME 04084**

**Authorization Provided By:**  
**William Esrich**  
**American Tower Corporation**  
**321 Columbus Avenue**  
**Boston, MA 02116**

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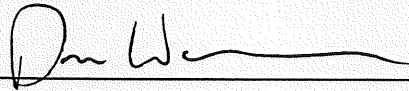
See PAGE 4.

February 18, 1999

**TOWER ANALYSIS REPORT**

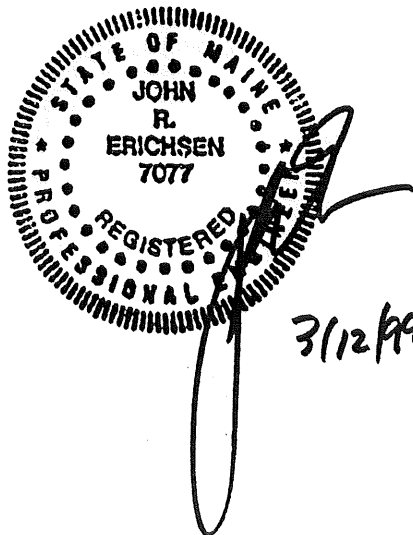
*New Antenna Installation*  
#42 x 225' Tower IN AIR  
Portland, ME  
A-106064

**Contact Person:**



**Don Wisniewski**  
Reanalysis Manager Ext. #288

**Completed under the Supervision and Approval by:**  
**John R. Erichsen, P.E.**  
Vice President of Engineering, Ext. #221





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PiRod, Inc.

• Portland, ME • Eng. File #A-106064 • Model #42 x 275'

## 1.0 EXECUTIVE SUMMARY

This reanalysis was performed by PiRod to determine if the structure is capable of accommodating additional antenna loading. This engineering report details the tower history and the impact of the wind speed, ice load, and antennas on the structure. PiRod's engineering study concludes that the tower complies without modifications. See section 6.0 for details.

## 2.0 ASSUMPTIONS

**This engineering study is based on the theoretical capacity of the structure. It is not a condition assessment of the tower.** This report is being provided by PiRod without the benefit of an inspection by PiRod personnel and is based on information supplied by the customer to PiRod. PiRod has made no independent determination, nor is required to, of the accuracy of the information provided. Therefore, unless specifically informed to the contrary by the customer in writing, PiRod assumes the following:

1. The subsoil characteristics have been determined to support the load of the structure as enhanced by components;
2. The tower was erected and maintained in accordance with the manufacturer's plans and specifications and is plumb;
3. There has been no damage, natural or manmade, to the structure, either gradual or sudden;
4. All connections and guy cables have been properly installed;
5. The information concerning the components, existing and proposed, is accurate; and
6. There have been no modifications to the tower itself, except as may be disclosed elsewhere in this report.

PiRod recommends that a condition assessment be performed by qualified personnel, preferably a structural engineer. Following is a list of the general areas that PiRod recommends to be inspected. Contact PiRod for a complete checklist.

### Tower Structure

Tower Sections	Welded Connections	Corrosion	Galvanization	Paint
Bolted Connections	Plumb	Linearity		

### Guyed Towers

Guy Cables	Preforms	Thimbles	Ice Clips	Shackles
Turnbuckles	Guy Lugs	Torque Arms	Tensions	Anchor Rods
				Insulators

### Foundations

Cracking	Spalling	Settling	Grout	Erosion
Drainage	Anchor Bolts	Grounding	Subsoil Characteristics	

### Appurtenances

Antennas	Mounts	Transmission Lines	Line Brackets	Cable Hangers	Lighting
----------	--------	--------------------	---------------	---------------	----------

**PiRod, Inc.**

### 3.0 TOWER HISTORY

Date of Origination: July of 1987  
 PiRod Model: #42 x 225' Tower  
 Sold to: Main Microwave Associates

Latest Structural Upgrade: September of 1987  
 PiROD Model: #42 x 50' Extension – New Overall Height 275'  
 Sold to: Main Microwave Associates

Wind Load Requirement: 50 psf per EIA RS-222-C  
 Ice Load Design: No ice and ½" radial ice

The upgrade performed in September of 1987 was based on the following antenna loading:

HEIGHT (FT)	ANTENNAS		ASSUMED CAAC (SQ.FT.)	MOUNTS		TWIST/ SWAY (°)	LINES	
	QTY.	MODEL		QTY.	MODEL		QTY.	SIZE
275'	1	300mm Beacon					1	1"
275'	4	6' Solid w/Radomes					4	7/8"
275'	3	Two Way Antennas					3	7/8"
270'	1	Torque Arm						
255'	3	6' Solid w/Radomes					3	7/8"
235'	3	4' Solid Dishes					3	7/8"
225'	1	4' Solid Dish					1	7/8"
215'	1	Torque Arm						
180'	5	Two Way Antennas					5	7/8"

### 4.0 CURRENT WIND LOAD REQUIREMENT

Since this tower's origination, the EIA standard has been upgraded to version "F". At this time, Cumberland, ME County is designated as a 80 mph basic wind speed zone. We have taken the opportunity to reanalyze this structure utilizing the following wind load and ice load condition.

Wind Load	Ice Load	EIA Standard
80 mph	No Ice	EIA/TIA-222-F
80 mph	½" Ice with 25% load reduction	EIA/TIA-222-F

PiRod, Inc.

• Portland, ME • Eng. File #A-106064 • Model #42 x 275'

## 5.0 ANTENNA LOADING

PiRod has reanalyzed the tower based on the following antenna loading supplied on 02/04/99:

HEIGHT (FT)	ANTENNAS		ASSUMED CAAC (SQ.FT.)	MOUNTS		TWIST/ SWAY (°)	LINES	
	QTY.	MODEL		QTY.	MODEL		QTY.	SIZE
275'	1	300mm Beacon					1	1"
270'	1	Torque Arm						
255'	1	6' Solid Dish					1	1-5/8"
240'	1	8' HP Dish					1	7/8"
230'	1	6' Solid Dish						
215'	1	Torque Arm						
191'	1	8' Omni Antenna *	6.30	1	6' Universal Sidearm		1	1-1/4"
170'	1	8' Omni Antenna *	6.30	1	6' Universal Sidearm		1	7/8"
123'	2	12' Omni Antennas *	6.30 each	2	4' Hinged Sidearms		2	1/2"
73'	1	Tellink 30lm Antenna *	6.30		Leg Mounted		1	1/4"
38'	1	GPS Antenna *	1.0		Leg Mounted		1	1/4"
Proposed Addition To The Above:								
270' Tip	12	Hazeltine 806-105-11-0		3	801511 Universal T-Frames		12	1-5/8"

**These antennas, mounts, and lines represent PiRod's understanding of the antenna loading required. Please contact PiRod if any discrepancies are evident. If different antennas, mounts, or lines are installed on this structure, this analysis is invalid. In the event it becomes necessary for the customer to supplement the information previously provided to PiRod for this analysis, the information must be supplied in writing.**

\*Items marked with an asterisk were not supplied to PiRod with specific projected areas ( $A_C$ ). Based on the information provided, PiRod has utilized the enumerated projected areas with corresponding force coefficients ( $C_A$ ). It must be confirmed that these items, as they exist on the tower, are equal to or less than the  $C_{AAC}$  as stated above. If it is determined that the  $C_{AAC}$  is greater than that stated for any of the above items, PiRod must be informed immediately and this reanalysis is invalid. Additional reanalysis charges may also be incurred.

PiRod, Inc.

## **6.0 RESULTS**

---

With the above antennas and indicated EIA code, the following modifications are required:

### **6.1 Tower Modifications**

→ The tower complies without modifications. This analysis is based on seven runs of proposed 1-5/8" line being installed on existing welded-in transmission line brackets.

### **6.2 Foundation Modifications**

The steel reinforcement in the column at the base of the tower does not meet section 10.9 of the American Concrete Institute Building Code Requirements for Reinforced Concrete 318-89, revised 1992 (ACI). The section requires that a minimum reinforcement equal to 1% of the gross area of the column must be placed in the column.

At the time of the design and construction of this tower, the tower industry in general was not complying with ACI section 10.9 because it did not seem to apply to tower construction. Due to the evolution of various codes, standards, and engineering practice, section 10.9 is now generally considered to apply to tower construction.

The minimum reinforcement is required to prevent cracking and spalling of the concrete column due to shrinkage and temperature change during curing as well as cracking caused by continuous creep over the life of the structure. Since the minimum reinforcement was not placed in the column at the time of construction, routine monitoring of the column should be incorporated into the maintenance schedule of the tower. The monitoring should include the visual inspection of the exposed portion of the column for cracking and spalling. If cracking and spalling is apparent, PiRod, Inc. should be contacted so that repairs can be prescribed.

PiRod recommends that all foundation modifications be installed prior to any tower modifications or antenna and line installation. These modifications outline the scope of work only and are not intended to imply sequence of work or construction procedures. Once the above modifications have been installed, the structure will comply with the indicated EIA code.

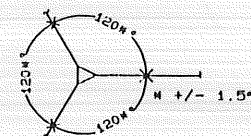
## **7.0 LIST OF APPENDICES**

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Main Tower Drawing per original design to confirm existing structure	110412-B
Self-Supporting Ice Bridge	111054-B
Universal T-Frame Assembly Drawing	129013-B

PiRod, Inc.

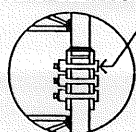
FOOTPAD DATA		
HT.	PART#	BOLT
225'	100051	1-1/2" X 6"



SECTION DATA					LEG BOLTS		
SPAN HEIGHT	SEC#	LEGS	BRACES	PART#	DIAM	LENGTH	#
265' - 275'	42	1- 3/4"	3/4"	104504	5/8"	4"	4
225' - 285'	42	1- 3/4"	3/4"	104504	5/8"	4"	4
220' - 225'	42	2"	3/4"	104507	5/8"	4-1/2"	5
180' - 220'	42	2"	3/4"	104507	5/8"	4-1/2"	5
20' - 180'	42	2- 1/4"	3/4"	104510	3/4"	5"	5
1' - 20'	42	2- 1/4"	3/4"	104510	3/4"	5"	5

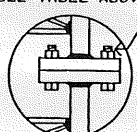
New Sections

A-325 BOLTS  
SEE TABLE ABOVE

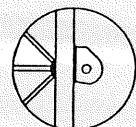


VIEW A  
TYPICAL LEG  
CONNECTION

A-325 BOLTS  
SEE TABLE ABOVE



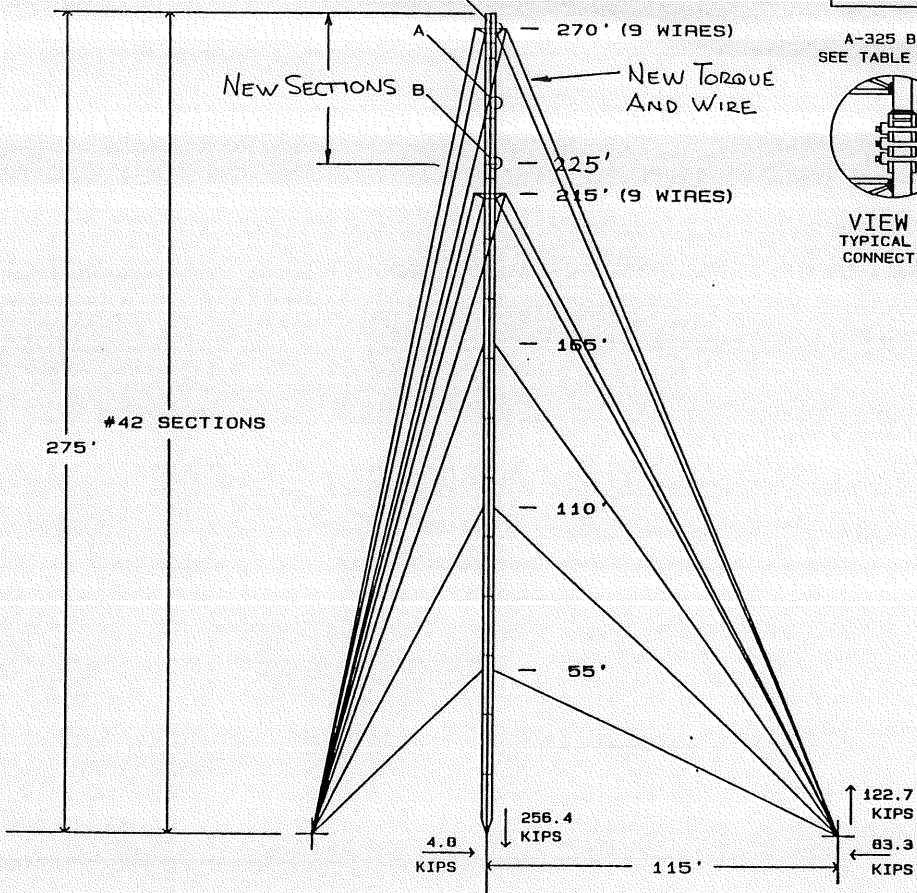
VIEW B  
FOOTPAD TYPE  
CONNECTION



VIEW C  
TYPICAL GUY  
CONNECTION LUG

GUY DATA			
HT.	SIZE	THEO. LENGTH	LUG PART#
*270'	5/8" EHS.	293'	
*269'	11/16" EHS.	292'	105062
215'	5/8" EHS.	243'	
214'	5/8" EHS.	242'	105062
165'	11/16" EHS.	201'	105062
110'	5/8" EHS.	159'	105062
55'	9/16" EHS.	127'	105062

\* NEW WIRES



TOWER ELEVATION

GENERAL NOTES

- TOWER DESIGN CONFORMS TO EIA STANDARD RS-222-C FOR 50 PSF WINDLOAD WITH 0.50" RADIAL ICE.
- MATERIAL: (A) TOWER MEMBERS 3/4" AND LARGER: FY=50,000 PSI. (B) TOWER MEMBERS LESS THAN 3/4" FY=36,000 PSI.
- FINISH: HOT DIPPED GALVANIZED AFTER FABRICATION. FAA CODE PAINTED PRIOR TO SHIPMENT.
- ANTENNAS: FOUR 6' SOLID DISHES WITH RADOMES AT 275' W/ 7/8" LINE THREE 6' SOLID DISHES WITH RADOMES AT 180' WITH 7/8" LINE TWO-TWO MAYS AT TOP WITH 7/8" LINES THREE 4' SOLID DISHES AT 225' WITH 7/8" LINES
- MIN. WELDS 1/4" UNLESS OTHERWISE SPECIFIED. ALL WELDING TO CONFORM TO AWS SPECS.
- EIA GROUNDING FOR TOWER.
- 

MAINE MICROWAVE ASSOCIATION PART NO. 106064  
RIVERSIDE, MAINE

NAME: \_\_\_\_\_  
#42 X 275' (50' EXT.)  
GUYED TOWER

PI-ROD, INC.  
PLYMOUTH, INDIANA 48563

CHG. DESCRIPTION DATE	APPROVED BY	DR. BY	DATE
REVISIONS	REG. ENGINEER	JHE	29-SEP-87
	SCALE	AS NOTED	

DWG. NO. (09972) 110412-B PAGE 1 OF 3

GUY HARDWARE DETAIL											
HT.	GUY SIZE	TORQ. SIZE	LUG PART#	SHCKL SIZE	THMBLE SIZE	TURN-BCKLE	PREFORM	INITIAL TENSION #			
								@ 0° F	@ 30° F	@ 60° F	@ 90° F
270'	5/8 " EHS.	12'		3/4"	3/4 "	1"	BG-2111	4537#	4396#	4240#	4086#
269'	11/16" EHS.		105062	7/8 "	3/4 "	1"	BG-MS-1035	5350#	5185#	5000#	4818#
215'	5/8 " EHS.	12'		3/4"	3/4 "	1"	BG-2111	4665#	4462#	4240#	4021#
214'	5/8 " EHS.		105062	3/4 "	3/4 "	1"	BG-2111	4669#	4463#	4240#	4019#
165'	11/16" EHS.		105062	7/8 "	3/4 "	1"	BG-MS-1035	5731#	5377#	5000#	4626#
110'	5/8 " EHS.		105062	3/4 "	3/4 "	1"	BG-2111	5169#	4688#	4240#	3800#
55'	9/16" EHS.		105062	3/4 "	5/8 "	7/8"	BG-2116	4761#	4110#	3500#	2905#

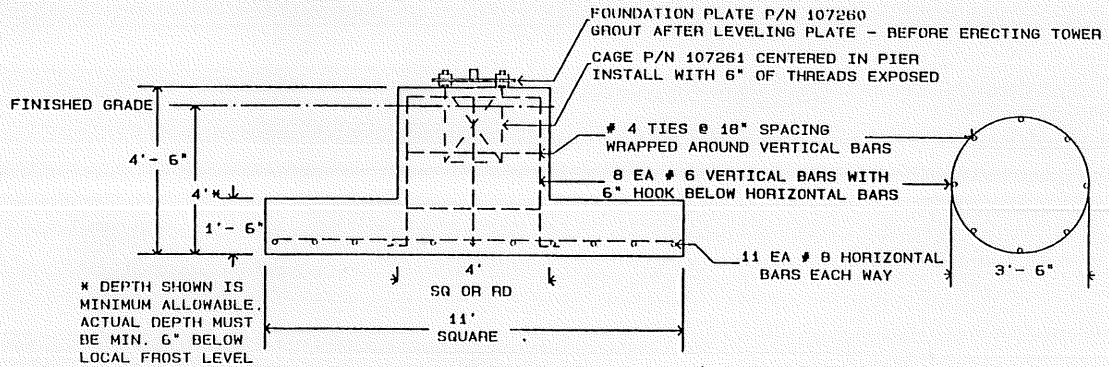
\* INTERPOLATION IS PERMITTED FOR OTHER TEMPERATURES. TOLERANCE IS +/- 10% OF INITIAL TENSION SHOWN.

CHG	DESCRIPTION	DATE
LET		
REVISIONS		

NAME #42 X 275' (50' EXT.)  
 APPROVED BY GUYED TOWER  
 REG. ENGINEER JRE 28-SEP-87  
 REG. NO. AS NOTED  
 DATE PLYMOUTH, INDIANA 46553  
 DWG. NO. 110412-B PASE 2 OF 3

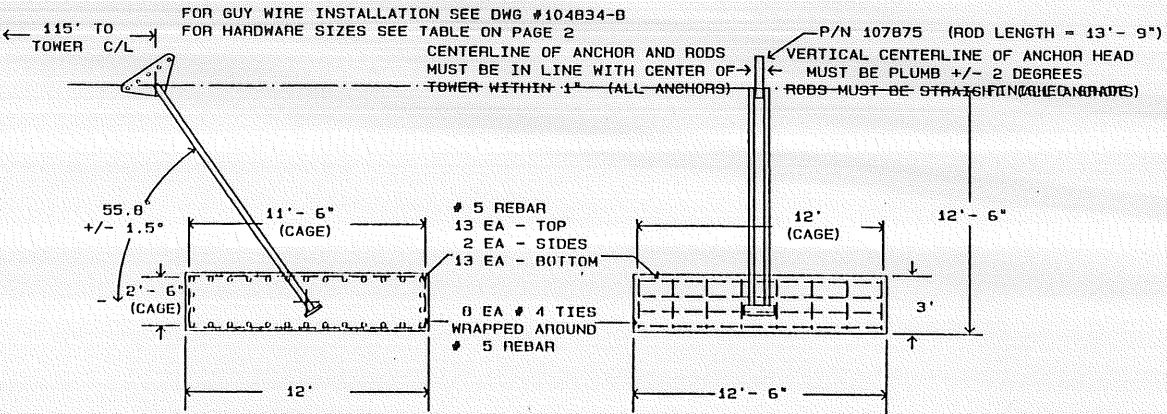
MAINE MICROWAVE ASSOCIATION  
 RIVERSIDE, MAINE  
 PART NO. 106064

PI-ROD, INC.



TOWER FOUNDATION  
 8.5 CU. YDS. CONCRETE REQUIRED

NOTE: ALL REBAR IS EQUALLY SPACED AND REQUIRES MIN. 3" CONCRETE COVER.



GUY ANCHOR AT 115 FEET  
3 REQUIRED - 16.0 CU. YDS. CONCRETE REQUIRED EACH

FOUNDATION NOTES

1. ALLOWABLE SOIL BEARING PRESSURE ASSUMED TO BE 4000 PSF. (NORMAL SOIL PER EIA RS-222-C.)
2. CONCRETE TO BE 3,000 PSI @ 28 DAYS. REINFORCING BAR TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. CONCRETE INSTALLATION TO CONFORM TO ACI-318 BUILDING REQUIREMENTS FOR REINFORCED CONCRETE. ALL CONCRETE TO BE PLACED AGAINST UNDISTURBED EARTH FREE OF WATER AND ALL FOREIGN OBJECTS AND MATERIALS.

MAINE MICROWAVE ASSOCIATION  
RIVERSIDE, MAINE

PART NO. 106064

CHG LET	DESCRIPTION	DATE	REVISIONS
NAME		#42 X 275' (50' EXT.)	
REG. ENGINEER		FOUNDATIONS	
APPROVED BY	DR BY	DATE	
	JRE	22-OCT-97	
SCALE	AS NOTED		
DWG. NO.	PLYMOUTH, INDIANA 46563		
05972.110412-B	PI-ROD, INC.		
PAGE	3 OF 3		

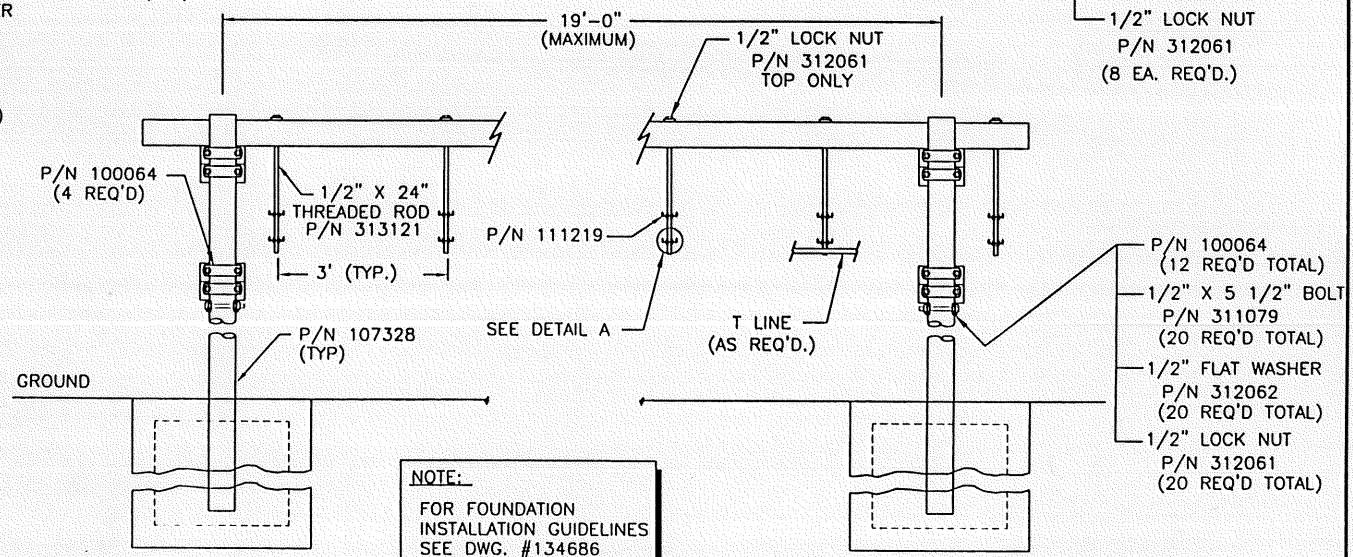
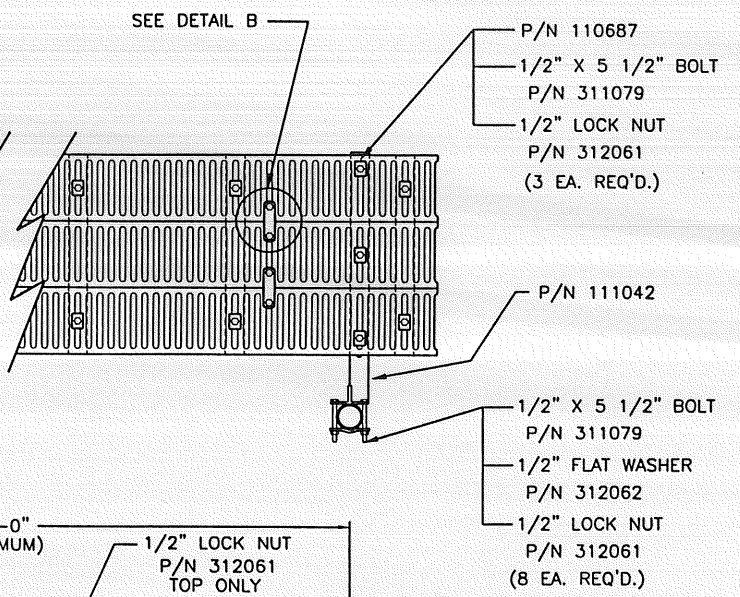
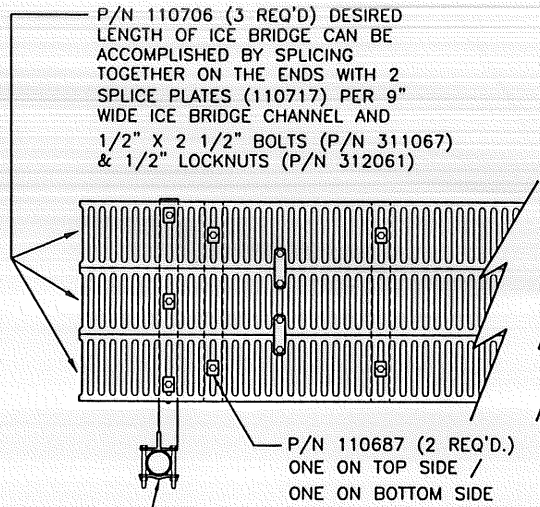
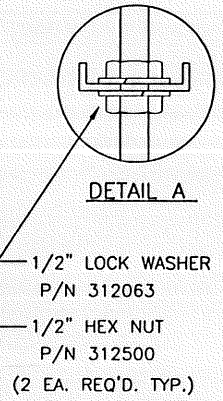
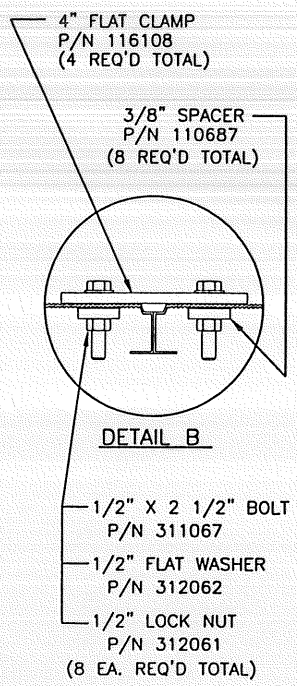


REV	DESCRIPTION OF REVISIONS	BY	DATE	APPROVED/ ENG.	DR BY	DATE	DWG. NO.	PAGE
B	ADDED 3RD 100064 CLAMP FOR SUPPORT	RFC	6/25/98	WRB	08/03/98	MBG	01/22/88	111054-B
A	REDRAWN IN CAD	CJD	06/22/95	APPROVED/ BRDG.	SCALE	3/4" = 12"		1 OF 1

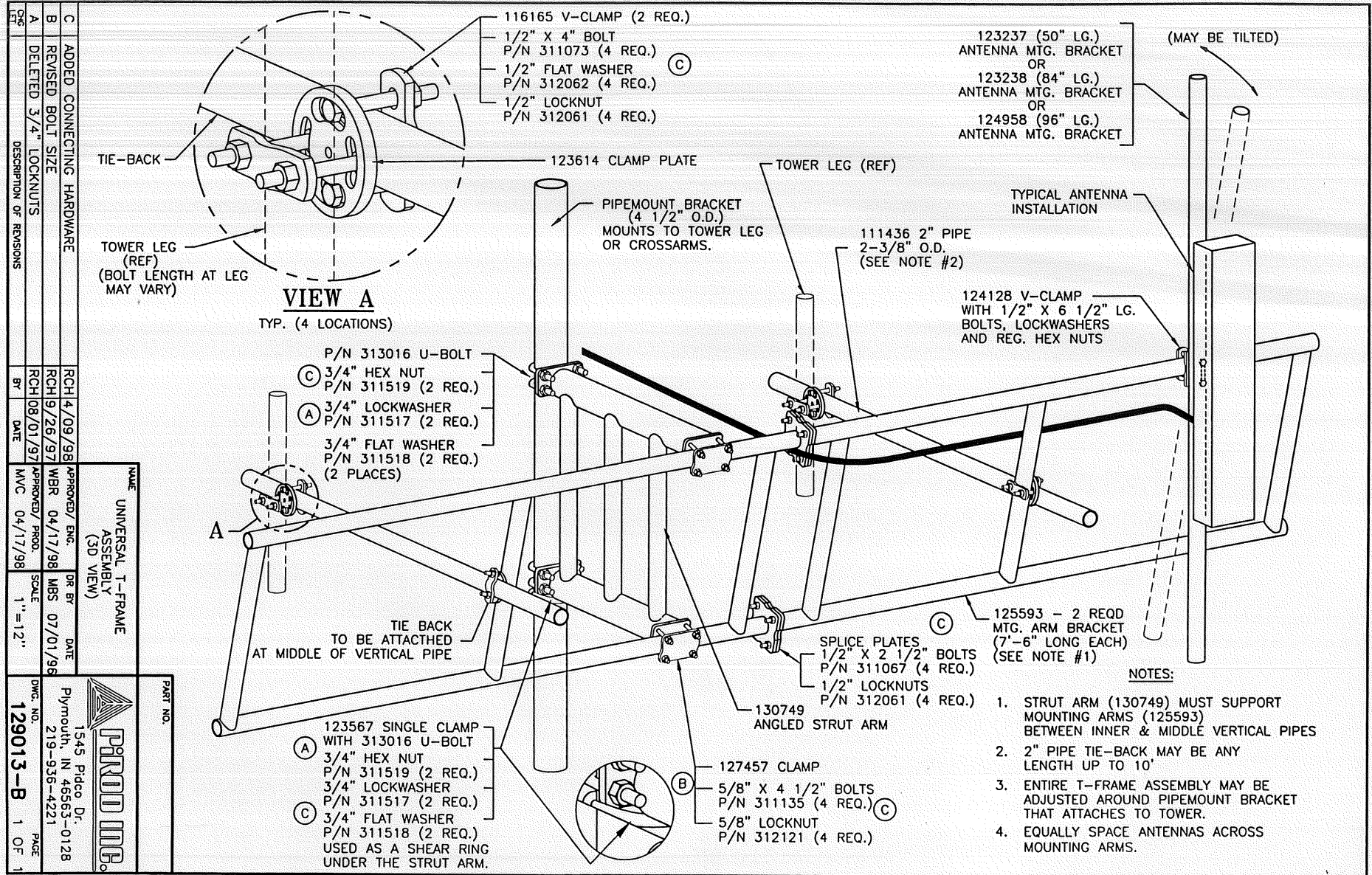
NAME: HORIZONTAL TYPE ICE BRIDGE INSTALLATION

1545 Pldco. Dr.  
Plymouth, IN 46563-0128  
219-936-4221

PART NO. 111054-B



**NOTE:**  
FOR FOUNDATION INSTALLATION GUIDELINES SEE DWG. #134686



REV	DESCRIPTION OF REVISIONS	DATE	BY	APPROVED/ENG.	DR BY	DATE
C	ADDED CONNECTING HARDWARE	RCH 04/09/98		RCH		
B	REVISED BOLT SIZE	RCH 9/26/97		WBR		
A	DELETED 3/4" LOCKNUTS	RCH 08/01/97		APPROVED/PROD.	MBS	07/01/96
1		NVC		APPROVED/PROD.	SCALE	1"=12"

NAME: UNIVERSAL T-FRAME ASSEMBLY (3D VIEW)

1545 Pido Dr.  
Plymouth, IN 46563-0128  
219-936-4221



PART NO. 129013-B 1 OF 1