

City of Portland, Maine - Building or Use Permit Application
 389 Congress Street, 04101 Tel: (207) 874-8703, Fax: (207) 874-8716

PERMIT ISSUED

Permit No: 01-12260-C-1 Issue Date: 1 5 2001 CBL: S 330 H00/001

Location of Construction: 220 Riverside Ind Pkwy	Owner Name: Dorler Ronald J Sr	Owner Address: 210 Blackstrap St	Phone: 617-585-7600
Business Name:	Contractor Name: American Tower	Contractor Address: 73 Princeton Street N. Chelmsford	Phone: 9792510792
Lessee/Buyer's Name	Phone:	Permit Type: Additions - Commercial	Zone: E-M

Past Use: telecommunications facility	Proposed Use: telecommunications facility	Permit Fee:	Cost of Work: \$19,500.00	CEO District: 1
		FIRE DEPT: <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied	INSPECTION: Use Group: B/U Type: B/A	

Proposed Project Description:
co-location of antenna on existing tower

Signature: *[Handwritten Signature]* Signature: *[Handwritten Signature]*

PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)

Action: Approved Approved w/Conditions Denied

Signature: _____ Date: _____

Permit Taken By: jodinea	Date Applied For: 10/04/2001	Zoning Approval	
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1. This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules. 2. Building permits do not include plumbing, septic or electrical work. 3. 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..	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 <i>existing tower</i> Maj <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/> Date: <i>10/4/01</i>	Zoning Appeal <input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation <input type="checkbox"/> Approved <input type="checkbox"/> Denied Date: _____	Historic Preservation <input checked="" type="checkbox"/> Not in District or Landmark <input type="checkbox"/> Does Not Require Review <input type="checkbox"/> Requires Review <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Date: _____
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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 provision of the code(s) applicable to such permit.

 SIGNATURE OF APPLICANT ADDRESS DATE PHONE

 RESPONSIBLE PERSON IN CHARGE OF WORK, TITLE DATE PHONE

01-1226

All Purpose Building Permit Application

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: 335 Riverside Industrial Parkway

Total Square Footage of Proposed Structure	Square Footage of Lot
--	-----------------------

Tax Assessor's Chart, Block & Lot Chart# <u>330</u> Block# <u>H</u> Lot# <u>5</u>	Owner: <u>American Tower</u>	Telephone: <u>(617) 585 7600</u>
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Lessee/Buyer's Name (If Applicable)	Applicant name, address & telephone: <u>Huntington Ave</u> <u>(617) 585 7600</u> <u>Boston MA 02116</u>	Cost Of Work: \$ <u>19,500</u> Fee: \$ <u>144.00</u>
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Current use: Telecommunications Facility

If the location is currently vacant, what was prior use: _____

Approximately how long has it been vacant: _____

Proposed use: Installation of antennas on existing telecommunications facility

Project description:
Please see attached

Contractor's name, address & telephone: AIC Specialty Worcester MA 888 833 5108

Who should we contact when the permit is ready: Kathy Dowan American Tower Office

Mailing address: 73 Princeton St Suite 307 (617) 251 0790
N. Chelmsford MA 01863 x109
Phone: 508 633 0561 mobile

IF THE REQUIRED INFORMATION IS NOT INCLUDED IN THE SUBMISSIONS THE PERMIT WILL BE AUTOMATICALLY DENIED AT THE DISCRETION OF THE BUILDING/PLANNING DEPARTMENT, WE MAY REQUIRE ADDITIONAL INFORMATION IN ORDER TO APPROVE THIS PERMIT.

I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work 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: Mitch Dawman Date: 9/25/01

This is not a permit, you may not commence ANY work until the permit is issued

OCT 3 2001

01/3/01
Gangb

DUPLICATE

GENERAL RECEIPT

CITY OF PORTLAND, MAINE

DEPARTMENT Inspections DATE 10/30/01
RECEIVED FROM Brian Haeber
ADDRESS 225 Riverside Jct.

UNIT	ITEM	REVENUE CODE	DOLLAR AMOUNT
	Communications permits		144.00
	Check # 117		
	CBL: 330 # 001		
<input type="checkbox"/> CASH	<input checked="" type="checkbox"/> CHECK	<input type="checkbox"/> OTHER	TOTAL 144.00

RECEIVED BY [Signature]



September 24, 2001

Building Inspector
City of Portland

Dear Sir/Madam:

American Towers, L.P. ("American Tower") and Nextwave respectfully submit this statement in support of its building permit application to the Town of Paxton to co-locate additional antennas for Nextwave on its multiple user wireless communications facility. The location is 225 Riverside Industrial Parkway, Map 330, Block H, Lot 1.

Introduction

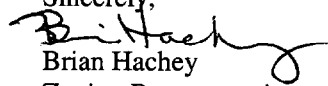
American Tower is the nation's leading independent full-service infrastructure company operating more than 14,000 towers nationwide and in Mexico, giving effect to pending transactions. Based in Boston, the company has a national footprint with regional hubs in Boston, Atlanta, Houston, San Francisco, and Chicago. A publicly traded company on the New York Stock Exchange, American Tower develops, acquires, manages and leases tower sites to the broadcast and wireless communications industries. We have established relationships with virtually every wireless provider in the country, allowing us to aggressively market collocation space on these facilities. Nextwave intends to co-locate their antennas on this facility to assist in expanding their wireless network.

Proposal

The facility is unmanned and visited on an average of once a month for routine maintenance, so it will not cause an increase in traffic volumes. It emits no noise, glare or odor, and does not interfere with either television or radio reception, nor does it have any signage other than those required for identification. The facility complies with the strict guidelines of the FCC and FAA, which are designed to protect public safety. Each site must be precisely located relative to other sites. The design must reflect the contours and topography of the area, and the radius of the antenna's reliable transmission.

Every day, over 50,000 emergency 911 calls are made from wireless phones. The proposed American Tower site enhances the general welfare of the community by providing vital means of communication during times of emergency when traditional land lines are not available or in cases of power failure.

American Tower respectfully requests the issuance of a building permit. Please feel free to call me anytime at 401/743-0857 to discuss any outstanding issues, questions, or concerns regarding this application. Thank you in advance for your time and consideration of this application.

Sincerely,

Brian Hachey
Zoning Representative



AMERICAN TOWER

Structural Analysis Report

Structure : Existing 275' Guyed Tower
Site Name : Portland, ME
ATC Site Number : 10047
Proposed Carrier : Nextwave
County : Cumberland
Project Number : 73112298
Date : September 5, 2001

ATC ENGINEERING
SERVICES™
11312 South Pipeline Road
Eules, Texas 76040
Phone: (817) 355-4100
Fax: (817) 858-0398

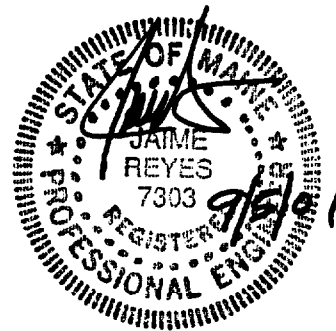


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CALCULATIONS.....	ATTACHED

INTRODUCTION

The purpose of this report is to summarize results of the structural analysis performed on the existing 275' guyed tower located at Portland, Cumberland County, ME (ATC# 10047). The tower was originally designed and manufactured by PiROD, Inc. (PiROD File No. A-106064, dated July 1987).

ANALYSIS

The existing tower was analyzed by using Semaan Engineering Solutions, Inc., software. The analysis assumes that the tower is in good, undamaged, and non-corroded condition. An overstress of 5% is allowed in the analysis to account for variance in the program.

Basic wind speed: 80 mph
Radial Ice: 0.5" w/ reduced wind
Code: ANSI/TIA/EIA-222-F

ANTENNA LOADS

The following antenna loads were used in the tower analysis.

EXISTING ANTENNAS

Quantity	Antenna	Elevation	Mount	Azimuth	TX line
15	Hazeltine 806-105-11-0 (48"x8.5"x6")	271'	Sector Mount	N/A	(12) 2 1/4"
3	Metawave High Gain (3' x 6' x 3")	271'		N/A	(4) 7/8" (1) 1/2"
9	Allgon 7182.15	260'	Sector Mount	N/A	(9) 1 5/8"
1	3' Grid Dish	260'	Leg Mount	N/A	(1) 1/2"
1	D8E-22 Dish	245'	Leg Mount	N/A	(1) 7/8"
1	Andrews DOC-22	231'	Leg Mount	N/A	(1) 1 5/8"
1	8' Generic Omni	192'	6' Side Arms	N/A	(1) 1 1/4"
2	8' Generic Omni	168'	6' Side Arms	N/A	(2) 7/8"
2	12' Generic Omni	125'	4' Side Arms	N/A	(2) 1/2"
1	Cushcraft 58063B	100'	Leg mount	N/A	(1) 1 1/2"

PROPOSED ANTENNAS

3	EMS RR65-18-XXDP	220'	(3) + ft. stand-offs	N/A	(3) 1/2"
3	RFU (30")	220'		N/A	(3) 3/4"

Important: The existing and proposed TX lines shall be distributed on all three faces of the tower or be bundled inside the tower on PiROD waveguide support brackets.

RESULTS

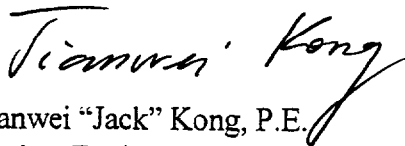
The existing 275' guyed tower is structurally acceptable per EIA-222-F standards to carry the existing and the proposed antennas.

The existing tower base foundation is structurally acceptable for the new base reaction, which is only 7% higher than the original design base reaction. The existing anchors are structurally acceptable for the new reactions, which are less than the original design anchor reactions.

CONCLUSION

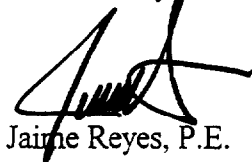
The existing tower can support the proposed antennas as described in this report. If you have any questions or require additional information, please call at (817) 355-4100.

Submitted by:

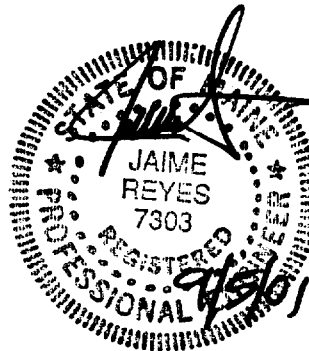


Jianwei "Jack" Kong, P.E.
Project Engineer

Reviewed by:



Jaime Reyes, P.E.
Director, A/E Services



STANDARD CONDITIONS

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

- Information supplied by the client regarding the structure itself, its foundations, the soil conditions, the antenna and feed line loading on the structure and its components, or other relevant information.
- Information from fields and/or drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to Specialty Engineering Services and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated; and we, therefore, assume that their capacity has not significantly changed from the "as new" condition.

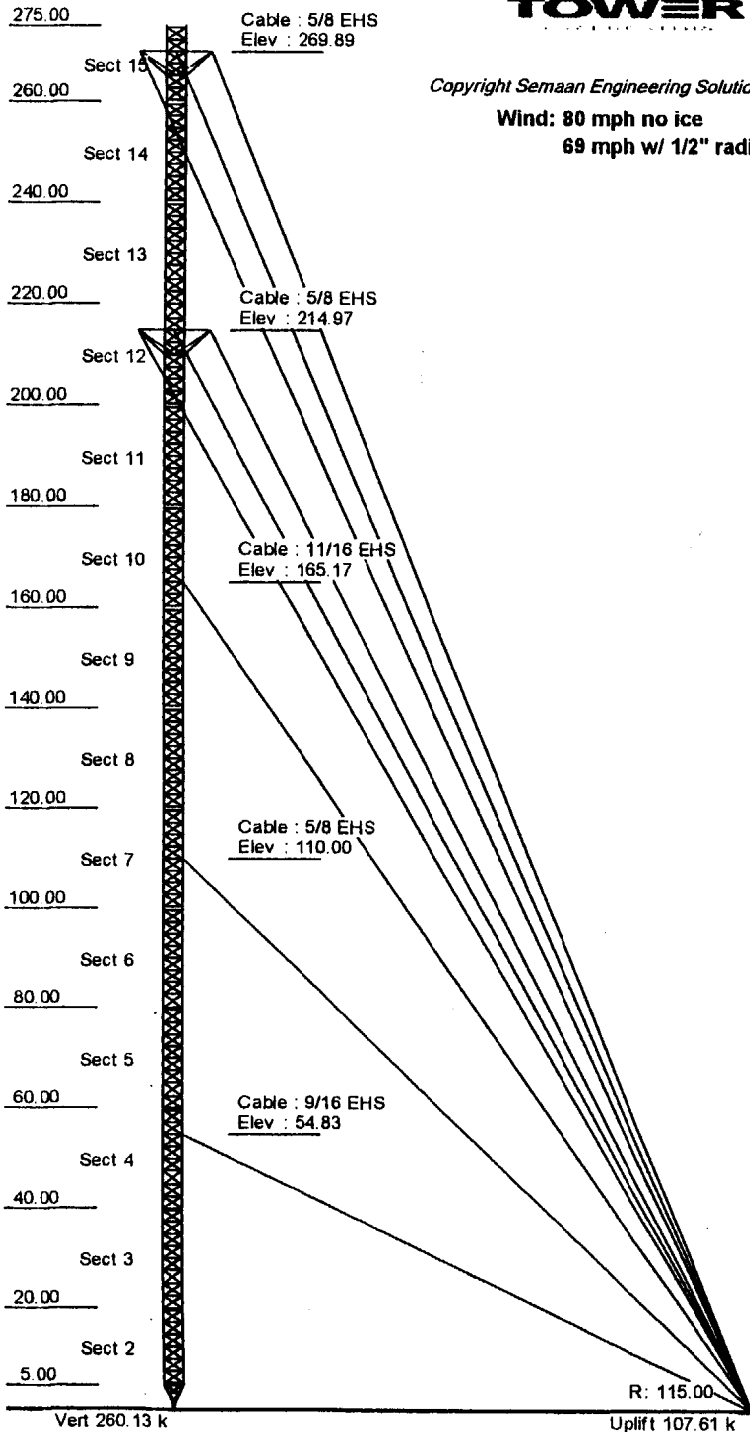
All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/EIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Specialty Engineering Service is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.



Copyright Semaan Engineering Solutions, Inc

Wind: 80 mph no ice
69 mph w/ 1/2" radial ice



Job Information			
Tower :	73112298 Portland	Location :	
Manufact:	PIROD	Shape :	Triangle
Client :	American Tower	Base Width :	3.50 ft

Sections Properties				
Section	Leg Members		Diagonal Members	Horizontal Members
1 - 10	SOL 50ksi	2 1/4" SOLID	SOL 50ksi 3/4" SOLID	SOL 50ksi 3/4" SOLID
11 - 12	SOL 50ksi	2" SOLID	SOL 50ksi 3/4" SOLID	SOL 50ksi 3/4" SOLID
13 - 15	SOL 50ksi	1 3/4" SOLID	SOL 50ksi 3/4" SOLID	SOL 50ksi 3/4" SOLID

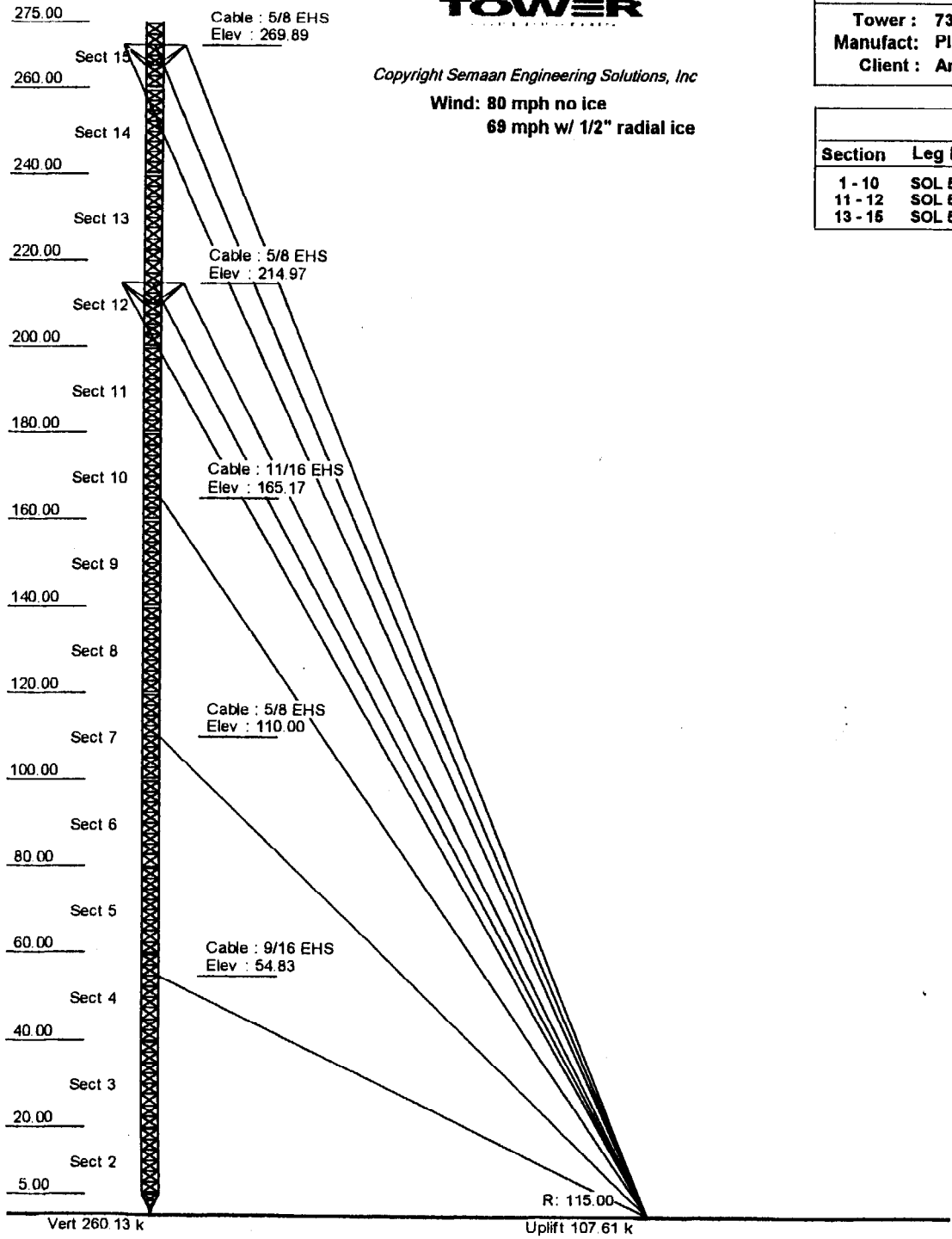
Discrete Appurtenance					
Elev (ft)	Type	Qty	Description	Disp (ft)	Rot (deg)
271.00	Panel	3	Metawave High Gain		
271.00	Platform	1	Sector mount		
271.00	Panel	12	806-105-11-0		
260.00	Dish	1	Grid MW Dish, 3' Dia.		
260.00	Platform	1	Sector mount		
260.00	Panel	9	Allgon 7182.14		
245.00	Dish	1	HP MW Dish, 8' Dia.		
231.00	Dish	1	Std. MW Dish w/o Radome, 6' D		
220.00	Panel	3	RFU		
220.00	Panel	3	RR65-18-00NP		
220.00	Straight Arm	3	4' stand-off		
192.00	Straight Arm	1	6' Side arm		
192.00	Whip	1	DB589		
168.00	Straight Arm	1	6' Side arm		
168.00	Whip	2	DB589		
125.00	Straight Arm	1	4' Side arm		
125.00	Whip	2	DB810M		
100.00	Whip	1	DB205		

Linear Appurtenance				
Elev (ft)		Qty	Description	
From	To			
0.000	271.00	5	7/8" Coax	
0.000	271.00	12	2 1/4" Coax	
0.000	260.00	1	1/2" Coax	
0.000	260.00	9	1 5/8" Coax	
0.000	245.00	1	7/8" Coax	
0.000	231.00	1	1 5/8" Coax	
0.000	220.00	3	3/4" Coax	
0.000	220.00	3	1/2" Coax	
0.000	192.00	1	1 1/4" Coax	
0.000	168.00	2	7/8" Coax	
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0.000	100.00	1	1 5/8" Coax	



Copyright Semaan Engineering Solutions, Inc

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69 mph w/ 1/2" radial ice

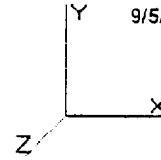


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From	To			
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0.000	125.00	2	1/2" Coax	
0.000	100.00	1	1 5/8" Coax	



LoadCase Normal No Ice

80.00 mph Wind Normal To Face with No Ice

Allow Stress Inc: 1.333
 Dead LF: 1.000
 Wind LF: 1.000

Sect Seq	Wind Height		Flat Area (sqft)	Ice Round Area (sqft)		Sol Ratio	Cf	Df	Dr	Rr	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	Ef
	(ft)	qz		Round Area (sqft)	Round Area (sqft)														
1	2.50	16.38	0.00	15.70	0.00	1.00	2.10	1.00	1.00	1.00	15.70	0.00	0.00	463.76	0.00	590.66	0.00	313.44	1
2	12.50	16.38	0.00	47.88	0.00	0.91	1.94	1.00	1.00	0.99	47.61	0.00	0.00	1,431.16	0.00	1,655.73	0.00	1,655.73	1
3	30.00	16.38	0.00	63.79	0.00	0.91	1.94	1.00	1.00	0.99	63.37	0.00	0.00	1,904.08	0.00	2,202.59	0.00	2,202.59	1
4	50.00	18.45	0.00	63.79	0.00	0.91	1.94	1.00	1.00	0.99	63.37	0.00	0.00	1,904.08	0.00	2,480.23	0.00	2,480.23	1
5	70.00	20.31	0.00	63.79	0.00	0.91	1.94	1.00	1.00	0.99	63.37	0.00	0.00	1,904.08	0.00	2,730.51	0.00	2,730.51	1
6	90.00	21.82	0.00	63.79	0.00	0.91	1.94	1.00	1.00	0.99	63.37	0.00	0.00	1,904.08	0.00	2,933.78	0.00	2,933.78	1
7	110.0	23.11	0.00	60.49	0.00	0.86	1.88	1.00	1.00	0.95	57.51	0.00	0.00	1,883.28	0.00	2,728.04	0.00	2,728.04	1
8	130.0	24.24	0.00	59.68	0.00	0.85	1.86	1.00	1.00	0.94	56.13	0.00	0.00	1,878.49	0.00	2,773.19	0.00	2,773.19	1
9	150.0	25.25	0.00	59.40	0.00	0.85	1.86	1.00	1.00	0.94	55.68	0.00	0.00	1,876.89	0.00	2,859.11	0.00	2,859.11	1
10	170.0	26.17	0.00	58.29	0.00	0.83	1.84	1.00	1.00	0.92	53.85	0.00	0.00	1,864.41	0.00	2,840.81	0.00	2,840.81	1
11	190.0	27.02	0.00	55.69	0.00	0.80	1.81	1.00	1.00	0.89	49.72	0.00	0.00	1,680.41	0.00	2,661.89	0.00	2,661.89	1
12	210.0	27.80	2.33	53.71	0.00	0.80	1.82	1.00	1.00	0.90	50.51	0.00	0.00	1,910.67	0.00	2,788.62	0.00	2,788.62	1
13	230.0	28.53	0.00	51.83	0.00	0.74	1.78	1.00	1.00	0.85	44.04	0.00	0.00	1,472.99	0.00	2,450.64	0.00	2,450.64	1
14	250.0	29.22	0.00	48.62	0.00	0.69	1.78	1.00	1.00	0.82	39.67	0.00	0.00	1,452.81	0.00	2,250.45	0.00	2,250.45	1
15	267.5	29.79	2.33	22.46	0.00	0.47	1.94	1.00	1.00	0.68	17.69	0.00	0.00	1,121.22	0.00	1,116.96	0.00	1,116.96	1
														24,652.41	0.00				

** = 2QzGhAg Controls

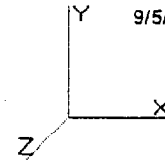
LoadCase 60 deg No Ice

80.00 mph Wind at 60 deg From Face with No Ice

Allow Stress Inc: 1.333
 Dead LF: 1.000
 Wind LF: 1.000

Sect Seq	Wind Height		Flat Area (sqft)	Ice Round Area (sqft)		Sol Ratio	Cf	Df	Dr	Rr	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	Ef
	(ft)	qz		Round Area (sqft)	Round Area (sqft)														
1	2.50	16.38	0.00	15.70	0.00	1.00	2.10	0.80	1.00	1.00	15.70	0.00	0.00	463.76	0.00	590.66	0.00	313.44	1
2	12.50	16.38	0.00	47.88	0.00	0.91	1.94	0.80	1.00	0.99	47.61	0.00	0.00	1,431.16	0.00	1,655.73	0.00	1,655.73	1
3	30.00	16.38	0.00	63.79	0.00	0.91	1.94	0.80	1.00	0.99	63.37	0.00	0.00	1,904.08	0.00	2,202.59	0.00	2,202.59	1
4	50.00	18.45	0.00	63.79	0.00	0.91	1.94	0.80	1.00	0.99	63.37	0.00	0.00	1,904.08	0.00	2,480.23	0.00	2,480.23	1
5	70.00	20.31	0.00	63.79	0.00	0.91	1.94	0.80	1.00	0.99	63.37	0.00	0.00	1,904.08	0.00	2,730.51	0.00	2,730.51	1
6	90.00	21.82	0.00	63.79	0.00	0.91	1.94	0.80	1.00	0.99	63.37	0.00	0.00	1,904.08	0.00	2,933.78	0.00	2,933.78	1
7	110.0	23.11	0.00	60.49	0.00	0.86	1.88	0.80	1.00	0.95	57.51	0.00	0.00	1,883.28	0.00	2,728.04	0.00	2,728.04	1
8	130.0	24.24	0.00	59.68	0.00	0.85	1.86	0.80	1.00	0.94	56.13	0.00	0.00	1,878.49	0.00	2,773.19	0.00	2,773.19	1
9	150.0	25.25	0.00	59.40	0.00	0.85	1.86	0.80	1.00	0.94	55.68	0.00	0.00	1,876.89	0.00	2,859.11	0.00	2,859.11	1
10	170.0	26.17	0.00	58.29	0.00	0.83	1.84	0.80	1.00	0.92	53.85	0.00	0.00	1,864.41	0.00	2,840.81	0.00	2,840.81	1
11	190.0	27.02	0.00	55.69	0.00	0.80	1.81	0.80	1.00	0.89	49.72	0.00	0.00	1,680.41	0.00	2,661.89	0.00	2,661.89	1
12	210.0	27.80	2.33	53.71	0.00	0.80	1.82	0.80	1.00	0.90	50.05	0.00	0.00	1,910.67	0.00	2,762.86	0.00	2,762.86	1
13	230.0	28.53	0.00	51.83	0.00	0.74	1.78	0.80	1.00	0.85	44.04	0.00	0.00	1,472.99	0.00	2,450.64	0.00	2,450.64	1
14	250.0	29.22	0.00	48.62	0.00	0.69	1.78	0.80	1.00	0.82	39.67	0.00	0.00	1,452.81	0.00	2,250.45	0.00	2,250.45	1
15	267.5	29.79	2.33	22.46	0.00	0.47	1.94	0.80	1.00	0.68	17.22	0.00	0.00	1,121.22	0.00	1,087.50	0.00	1,087.50	1
														24,652.41	0.00				

** = 2QzGhAg Controls



LoadCase 90 deg No Ice

80.00 mph Wind at 90 deg From Face with No Ice

Allow Stress Inc: 1.333
Dead LF: 1.000
Wind LF: 1.000

Sect Seq	Wind Height (ft)	qz	Flat Area (sqft)	Ice		Sol Ratio	Cf	Df	Dr	Rr	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	E	F
				Round Area (sqft)	Round Area (sqft)															
1	2.50	16.38	0.00	15.70	0.00	1.00	2.10	0.85	1.00	1.00	15.70	0.00	0.00	463.76	0.00	590.66	0.00	313.44		
2	12.50	16.38	0.00	47.88	0.00	0.91	1.94	0.85	1.00	0.99	47.61	0.00	0.00	1,431.16	0.00	1,655.73	0.00	1,655.73		
3	30.00	16.38	0.00	63.79	0.00	0.91	1.94	0.85	1.00	0.99	63.37	0.00	0.00	1,904.08	0.00	2,202.59	0.00	2,202.59		
4	50.00	18.45	0.00	63.79	0.00	0.91	1.94	0.85	1.00	0.99	63.37	0.00	0.00	1,904.08	0.00	2,480.23	0.00	2,480.23		
5	70.00	20.31	0.00	63.79	0.00	0.91	1.94	0.85	1.00	0.99	63.37	0.00	0.00	1,904.08	0.00	2,730.51	0.00	2,730.51		
6	90.00	21.82	0.00	63.79	0.00	0.91	1.94	0.85	1.00	0.99	63.37	0.00	0.00	1,904.08	0.00	2,933.78	0.00	2,933.78		
7	110.0	23.11	0.00	60.49	0.00	0.86	1.88	0.85	1.00	0.95	57.51	0.00	0.00	1,883.28	0.00	2,728.04	0.00	2,728.04		
8	130.0	24.24	0.00	59.68	0.00	0.85	1.86	0.85	1.00	0.94	56.13	0.00	0.00	1,878.49	0.00	2,773.19	0.00	2,773.19		
9	150.0	25.25	0.00	59.40	0.00	0.85	1.86	0.85	1.00	0.94	55.68	0.00	0.00	1,876.89	0.00	2,859.11	0.00	2,859.11		
10	170.0	26.17	0.00	58.29	0.00	0.83	1.84	0.85	1.00	0.92	53.85	0.00	0.00	1,864.41	0.00	2,840.81	0.00	2,840.81		
11	190.0	27.02	0.00	55.69	0.00	0.80	1.81	0.85	1.00	0.89	49.72	0.00	0.00	1,680.41	0.00	2,661.89	0.00	2,661.89		
12	210.0	27.80	2.33	53.71	0.00	0.80	1.82	0.85	1.00	0.90	50.16	0.00	0.00	1,910.67	0.00	2,769.30	0.00	2,769.30		
13	230.0	28.53	0.00	51.83	0.00	0.74	1.78	0.85	1.00	0.85	44.04	0.00	0.00	1,472.99	0.00	2,450.64	0.00	2,450.64		
14	250.0	29.22	0.00	48.62	0.00	0.69	1.78	0.85	1.00	0.82	39.67	0.00	0.00	1,452.81	0.00	2,250.45	0.00	2,250.45		
15	267.5	29.79	2.33	22.46	0.00	0.47	1.94	0.85	1.00	0.68	17.34	0.00	0.00	1,121.22	0.00	1,094.86	0.00	1,094.86		
														24,652.41	0.00					

** = 2QzGhAg Controls

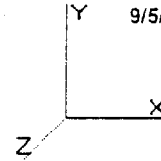
LoadCase Normal Ice

69.28 mph Wind Normal To Face with Ice

Allow Stress Inc: 1.333
Dead LF: 1.000
Wind LF: 1.000

Sect Seq	Wind Height (ft)	qz	Flat Area (sqft)	Ice		Sol Ratio	Cf	Df	Dr	Rr	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	E	F
				Round Area (sqft)	Round Area (sqft)															
1	2.50	12.29	0.00	15.70	10.37	1.00	2.10	1.00	1.00	1.00	26.07	0.00	0.00	803.93	69.86	735.43	0.00	235.07		
2	12.50	12.29	0.00	47.88	32.53	1.00	2.10	1.00	1.00	1.00	80.41	0.00	0.00	2,490.28	248.20	2,268.32	0.00	1,410.40		
3	30.00	12.29	0.00	63.79	43.30	1.00	2.10	1.00	1.00	1.00	107.08	0.00	0.00	3,314.15	328.84	3,020.66	0.00	1,880.53		
4	50.00	13.84	0.00	63.79	43.30	1.00	2.10	1.00	1.00	1.00	107.08	0.00	0.00	3,314.15	328.84	3,401.43	0.00	2,117.58		
5	70.00	15.23	0.00	63.79	43.30	1.00	2.10	1.00	1.00	1.00	107.08	0.00	0.00	3,314.15	328.84	3,744.66	0.00	2,331.26		
6	90.00	16.37	0.00	63.79	43.30	1.00	2.10	1.00	1.00	1.00	107.08	0.00	0.00	3,314.15	328.84	4,023.43	0.00	2,504.81		
7	110.0	17.33	0.00	60.49	41.63	1.00	2.10	1.00	1.00	1.00	102.12	0.00	0.00	3,263.05	328.84	4,063.23	0.00	2,652.62		
8	130.0	18.18	0.00	59.68	40.38	1.00	2.10	1.00	1.00	1.00	100.06	0.00	0.00	3,237.18	328.84	4,175.79	0.00	2,782.30		
9	150.0	18.94	0.00	59.40	39.96	1.00	2.10	1.00	1.00	1.00	99.37	0.00	0.00	3,228.56	328.84	4,320.17	0.00	2,898.41		
10	170.0	19.63	0.00	58.29	38.96	1.00	2.10	1.00	1.00	1.00	97.26	0.00	0.00	3,192.47	328.84	4,382.39	0.00	3,003.94		
11	190.0	20.26	0.00	55.69	37.63	1.00	2.10	1.00	1.00	1.00	93.32	0.00	0.00	2,973.56	319.68	4,340.63	0.00	3,100.93		
12	210.0	20.85	2.33	53.71	36.65	1.00	2.10	1.00	1.00	1.00	92.69	0.00	0.00	3,242.65	373.54	4,436.69	0.00	3,190.88		
13	230.0	21.40	0.00	51.83	35.90	1.00	2.10	1.00	1.00	1.00	87.73	0.00	0.00	2,627.63	310.99	4,309.66	0.00	3,274.91		
14	250.0	21.91	0.00	48.62	33.71	1.00	2.10	1.00	1.00	1.00	82.33	0.00	0.00	2,575.56	310.51	4,141.92	0.00	3,353.86		
15	267.5	22.34	2.33	22.46	17.03	0.80	1.81	1.00	1.00	0.89	37.62	0.00	0.00	1,695.38	287.84	1,666.56	0.00	1,666.56		
														42,586.81	4,551.3					

** = 2QzGhAg Controls



LoadCase 60 deg Ice

69.28 mph Wind at 60 deg From Face with Ice

Allow Stress Inc: 1.333
Dead LF: 1.000
Wind LF: 1.000

Sect Seq	Wind Height (ft)	qz	Flat Area (sqft)	Ice		Sol Ratio	Cf	Df	Dr	Rr	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	Ef Fa	
				Round Area (sqft)	Round Area (sqft)							Linear Area (sqft)	Linear Area (sqft)							
1	2.50	12.29	0.00	15.70	10.37	1.00	2.10	0.80	1.00	1.00	26.07	0.00	0.00	803.93	69.86	735.43	0.00	235.07	1	
2	12.50	12.29	0.00	47.88	32.53	1.00	2.10	0.80	1.00	1.00	80.41	0.00	0.00	2,490.28	248.20	2,268.32	0.00	1,410.40	1	
3	30.00	12.29	0.00	63.79	43.30	1.00	2.10	0.80	1.00	1.00	107.08	0.00	0.00	3,314.15	328.84	3,020.66	0.00	1,880.53	1	
4	50.00	13.84	0.00	63.79	43.30	1.00	2.10	0.80	1.00	1.00	107.08	0.00	0.00	3,314.15	328.84	3,401.43	0.00	2,117.58	1	
5	70.00	15.23	0.00	63.79	43.30	1.00	2.10	0.80	1.00	1.00	107.08	0.00	0.00	3,314.15	328.84	3,744.66	0.00	2,331.26	1	
6	90.00	16.37	0.00	63.79	43.30	1.00	2.10	0.80	1.00	1.00	107.08	0.00	0.00	3,314.15	328.84	4,023.43	0.00	2,504.81	1	
7	110.0	17.33	0.00	60.49	41.63	1.00	2.10	0.80	1.00	1.00	102.12	0.00	0.00	3,263.05	328.84	4,063.23	0.00	2,652.62	1	
8	130.0	18.18	0.00	59.68	40.38	1.00	2.10	0.80	1.00	1.00	100.06	0.00	0.00	3,237.18	328.84	4,175.79	0.00	2,782.30	1	
9	150.0	18.94	0.00	59.40	39.96	1.00	2.10	0.80	1.00	1.00	99.37	0.00	0.00	3,228.56	328.84	4,320.17	0.00	2,898.41	1	
10	170.0	19.63	0.00	58.29	38.96	1.00	2.10	0.80	1.00	1.00	97.26	0.00	0.00	3,192.47	328.84	4,382.39	0.00	3,003.94	1	
11	190.0	20.26	0.00	55.69	37.63	1.00	2.10	0.80	1.00	1.00	93.32	0.00	0.00	2,973.56	319.68	4,340.63	0.00	3,100.93	1	
12	210.0	20.85	2.33	53.71	36.65	1.00	2.10	0.80	1.00	1.00	92.23	0.00	0.00	3,242.65	373.54	4,414.35	0.00	3,190.88	1	
13	230.0	21.40	0.00	51.83	35.90	1.00	2.10	0.80	1.00	1.00	87.73	0.00	0.00	2,627.63	310.99	4,309.66	0.00	3,274.91	1	
14	250.0	21.91	0.00	48.62	33.71	1.00	2.10	0.80	1.00	1.00	82.33	0.00	0.00	2,575.56	310.51	4,141.92	0.00	3,353.86	1	
15	267.5	22.34	2.33	22.46	17.03	0.80	1.81	0.80	1.00	0.89	37.16	0.00	0.00	1,695.38	287.84	1,645.89	0.00	1,645.89	1	
															42,586.81	4,551.3				

** = 2QzGhAg Controls

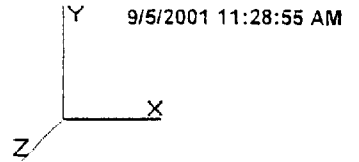
LoadCase 90 deg Ice

69.28 mph Wind at 90 deg From Face with Ice

Allow Stress Inc: 1.333
Dead LF: 1.000
Wind LF: 1.000

Sect Seq	Wind Height (ft)	qz	Flat Area (sqft)	Ice		Sol Ratio	Cf	Df	Dr	Rr	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	Ef Fa	
				Round Area (sqft)	Round Area (sqft)							Linear Area (sqft)	Linear Area (sqft)							
1	2.50	12.29	0.00	15.70	10.37	1.00	2.10	0.85	1.00	1.00	26.07	0.00	0.00	803.93	69.86	735.43	0.00	235.07	1	
2	12.50	12.29	0.00	47.88	32.53	1.00	2.10	0.85	1.00	1.00	80.41	0.00	0.00	2,490.28	248.20	2,268.32	0.00	1,410.40	1	
3	30.00	12.29	0.00	63.79	43.30	1.00	2.10	0.85	1.00	1.00	107.08	0.00	0.00	3,314.15	328.84	3,020.66	0.00	1,880.53	1	
4	50.00	13.84	0.00	63.79	43.30	1.00	2.10	0.85	1.00	1.00	107.08	0.00	0.00	3,314.15	328.84	3,401.43	0.00	2,117.58	1	
5	70.00	15.23	0.00	63.79	43.30	1.00	2.10	0.85	1.00	1.00	107.08	0.00	0.00	3,314.15	328.84	3,744.66	0.00	2,331.26	1	
6	90.00	16.37	0.00	63.79	43.30	1.00	2.10	0.85	1.00	1.00	107.08	0.00	0.00	3,314.15	328.84	4,023.43	0.00	2,504.81	1	
7	110.0	17.33	0.00	60.49	41.63	1.00	2.10	0.85	1.00	1.00	102.12	0.00	0.00	3,263.05	328.84	4,063.23	0.00	2,652.62	1	
8	130.0	18.18	0.00	59.68	40.38	1.00	2.10	0.85	1.00	1.00	100.06	0.00	0.00	3,237.18	328.84	4,175.79	0.00	2,782.30	1	
9	150.0	18.94	0.00	59.40	39.96	1.00	2.10	0.85	1.00	1.00	99.37	0.00	0.00	3,228.56	328.84	4,320.17	0.00	2,898.41	1	
10	170.0	19.63	0.00	58.29	38.96	1.00	2.10	0.85	1.00	1.00	97.26	0.00	0.00	3,192.47	328.84	4,382.39	0.00	3,003.94	1	
11	190.0	20.26	0.00	55.69	37.63	1.00	2.10	0.85	1.00	1.00	93.32	0.00	0.00	2,973.56	319.68	4,340.63	0.00	3,100.93	1	
12	210.0	20.85	2.33	53.71	36.65	1.00	2.10	0.85	1.00	1.00	92.23	0.00	0.00	3,242.65	373.54	4,419.94	0.00	3,190.88	1	
13	230.0	21.40	0.00	51.83	35.90	1.00	2.10	0.85	1.00	1.00	87.73	0.00	0.00	2,627.63	310.99	4,309.66	0.00	3,274.91	1	
14	250.0	21.91	0.00	48.62	33.71	1.00	2.10	0.85	1.00	1.00	82.33	0.00	0.00	2,575.56	310.51	4,141.92	0.00	3,353.86	1	
15	267.5	22.34	2.33	22.46	17.03	0.80	1.81	0.85	1.00	0.89	37.27	0.00	0.00	1,695.38	287.84	1,651.06	0.00	1,651.06	1	
															42,586.81	4,551.3				

** = 2QzGhAg Controls



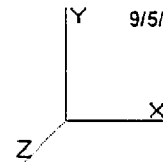
Tower Loading

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Weight (lb)	No Ice CaAa (sf)	CaAa Factor	Weight (lb)	Ice CaAa (sf)	CaAa Factor	Distance From Face (ft)	X Angle (deg)	Ver Ec (ft)
271.0	Metawave High Gain	3	150.00	25.200	0.67	200.00	26.600	0.67	0.000	0.00	0.00
271.0	Sector mount	1	3000.00	30.000	1.00	4000.00	36.000	1.00	0.000	0.00	0.00
271.0	806-105-11-0	12	17.00	3.900	0.67	58.00	4.430	0.67	0.000	0.00	0.00
260.0	Grid MW Dish, 3' Dia.	1	46.00	6.000	1.00	90.00	18.000	1.00	0.000	0.00	0.00
260.0	Sector mount	1	3000.00	30.000	1.00	4000.00	36.000	1.00	0.000	0.00	0.00
260.0	Allgon 7182.14	9	10.00	2.890	0.67	24.00	3.360	0.67	0.000	0.00	0.00
245.0	HP MW Dish, 8' Dia.	1	470.00	63.420	1.00	1010.00	64.750	1.00	0.000	0.00	0.00
231.0	Std. MW Dish w/o Radome,	1	278.00	47.050	1.00	452.00	48.370	1.00	0.000	0.00	0.00
220.0	RFU	3	20.00	5.820	0.67	63.00	6.440	0.67	0.000	0.00	0.00
220.0	RR65-18-00NP	3	12.00	5.230	0.67	35.00	5.800	0.67	0.000	0.00	0.00
220.0	4' stand-off	3	41.00	4.000	0.67	128.00	5.000	0.67	0.000	0.00	0.00
192.0	6' Side arm	1	300.00	6.000	1.00	500.00	8.000	1.00	0.000	0.00	0.00
192.0	DB589	1	12.00	1.300	1.00	20.00	2.200	1.00	0.000	0.00	4.20
168.0	6' Side arm	1	300.00	6.000	1.00	500.00	8.000	1.00	0.000	0.00	0.00
168.0	DB589	2	12.00	1.300	1.00	20.00	2.200	1.00	0.000	0.00	4.20
125.0	4' Side arm	1	200.00	4.000	1.00	400.00	6.000	1.00	0.000	0.00	0.00
125.0	DB810M	2	30.00	2.660	1.00	50.00	3.960	1.00	0.000	0.00	6.40
100.0	DB205	1	38.00	1.950	1.00	55.00	3.770	1.00	0.000	0.00	9.00
Totals		47	7936.00			11605.00			Number of Appurtenances : 18		

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Include In Wind	Spread On Faces	Bundling Arrangement
0.00	271.0	2 1/4" Coax	12	2.38	1.12	Y	1,2,3	Separate
0.00	271.0	7/8" Coax	5	1.11	0.52	Y	1	Separate
0.00	260.0	1 5/8" Coax	9	1.98	1.04	Y	1,2,3	Separate
0.00	260.0	1/2" Coax	1	0.65	0.16	Y	1	Separate
0.00	245.0	7/8" Coax	1	1.11	0.52	Y	1	Separate
0.00	231.0	1 5/8" Coax	1	1.98	1.04	Y	1	Separate
0.00	220.0	1/2" Coax	3	0.65	0.16	Y	3	Separate
0.00	220.0	3/4" Coax	3	1.11	0.52	Y	3	Separate
0.00	192.0	1 1/4" Coax	1	1.55	0.66	Y	1	Separate
0.00	168.0	7/8" Coax	2	1.11	0.52	Y	1,2	Separate
0.00	125.0	1/2" Coax	2	0.65	0.16	Y	1,2	Separate
0.00	100.0	1 5/8" Coax	1	1.98	1.04	Y	1	Separate



Force/Stress Summary

Section: 1		PIROD42B		Bot Elev (ft): 0.00				Height (ft): 5.000								
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing % (X Y Z)			KL/R	Fa (ksi)	Member Cap Num (kip) Bolts		Num Holes	Shear Bear Cap Cap (kip) (kip)		Use %	Control
LEG	SOL - 2 1/4" SOLID	-95.76	Normal Ice	1.80	100	100	100	38.3	34.7	138.16	0	0	0.00	0.00	69	Member
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	SOL - 3/4" SOLID	-4.25	Normal Ice	2.440	50	50	50	78.1	25.9	11.42	0	0	0.00	0.00	37	Member

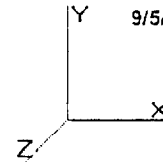
Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG		0.00		0	0.00	0	0	0.00	0.00	0	
HORIZ	SOL - 3/4" SOLID	12.93	Normal Ice	50	17.67	0	0	0.00	0.00	73	Member
DIAG	SOL - 3/4" SOLID	2.02	Normal Ice	50	17.67	0	0	0.00	0.00	11	Member

Section: 2		PIROD42		Bot Elev (ft): 5.00				Height (ft): 15.000								
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing % (X Y Z)			KL/R	Fa (ksi)	Member Cap Num (kip) Bolts		Num Holes	Shear Bear Cap Cap (kip) (kip)		Use %	Control
LEG	SOL - 2 1/4" SOLID	-86.65	Normal Ice	2.39	100	100	100	51.0	32.3	128.29	0	0	0.00	0.00	67	Member
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	SOL - 3/4" SOLID	-1.81	Normal Ice	4.238	50	50	50	135.6	10.8	4.78	0	0	0.00	0.00	37	Member

Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG		0.00		0	0.00	0	0	0.00	0.00	0	
HORIZ	SOL - 3/4" SOLID	5.89	Normal Ice	50	17.67	0	0	0.00	0.00	33	Member
DIAG	SOL - 3/4" SOLID	0.19	Normal No Ice	50	17.67	0	0	0.00	0.00	1	Member

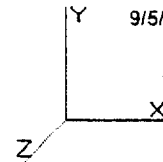
Section: 3		PIROD42		Bot Elev (ft): 20.00				Height (ft): 20.000								
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing % (X Y Z)			KL/R	Fa (ksi)	Member Cap Num (kip) Bolts		Num Holes	Shear Bear Cap Cap (kip) (kip)		Use %	Control
LEG	SOL - 2 1/4" SOLID	-90.15	Normal Ice	2.42	100	100	100	51.6	32.1	127.80	0	0	0.00	0.00	70	Member
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	SOL - 3/4" SOLID	-2.62	Normal Ice	4.253	50	50	50	136.1	10.7	4.75	0	0	0.00	0.00	55	Member

Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG		0.00		0	0.00	0	0	0.00	0.00	0	
HORIZ	SOL - 3/4" SOLID	2.50	Normal Ice	50	17.67	0	0	0.00	0.00	14	Member
DIAG		0.00		0	0.00	0	0	0.00	0.00	0	



Force/Stress Summary

Section: 4		PIROD42		Bot Elev (ft): 40.00				Height (ft): 20.000							
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			KL/R	Fa (ksi)	Member Cap Num		Shear Bear Cap Cap		Use %	Control
					X	Y	Z		(kip)	Boles	Holes	(kip)	(kip)		
LEG	SOL - 2 1/4" SOLID	-105.28	Normal Ice	2.42	100	100	100	51.6	32.1	127.80	0	0	0.00	0.00	82 Member
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	SOL - 3/4" SOLID	-2.98	90 deg No Ice	4.253	50	50	50	136.1	10.7	4.75	0	0	0.00	0.00	62 Member
Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls				
LEG		0.00		0	0.00	0	0	0.00	0.00	0					
HORIZ SOL - 3/4" SOLID		4.81	Normal Ice	50	17.67	0	0	0.00	0.00	27	Member				
DIAG SOL - 3/4" SOLID		0.93	60 deg No Ice	50	17.67	0	0	0.00	0.00	5	Member				
Section: 5		PIROD42		Bot Elev (ft): 60.00				Height (ft): 20.000							
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			KL/R	Fa (ksi)	Member Cap Num		Shear Bear Cap Cap		Use %	Control
					X	Y	Z		(kip)	Boles	Holes	(kip)	(kip)		
LEG	SOL - 2 1/4" SOLID	-99.83	Normal Ice	2.42	100	100	100	51.6	32.1	127.80	0	0	0.00	0.00	78 Member
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	SOL - 3/4" SOLID	-2.64	90 deg Ice	4.253	50	50	50	136.1	10.7	4.75	0	0	0.00	0.00	55 Member
Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls				
LEG		0.00		0	0.00	0	0	0.00	0.00	0					
HORIZ SOL - 3/4" SOLID		2.46	Normal Ice	50	17.67	0	0	0.00	0.00	13	Member				
DIAG SOL - 3/4" SOLID		0.19	60 deg No Ice	50	17.67	0	0	0.00	0.00	1	Member				
Section: 6		PIROD42		Bot Elev (ft): 80.00				Height (ft): 20.000							
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			KL/R	Fa (ksi)	Member Cap Num		Shear Bear Cap Cap		Use %	Control
					X	Y	Z		(kip)	Boles	Holes	(kip)	(kip)		
LEG	SOL - 2 1/4" SOLID	-95.33	Normal Ice	2.42	100	100	100	51.6	32.1	127.80	0	0	0.00	0.00	74 Member
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	SOL - 3/4" SOLID	-2.40	90 deg Ice	4.253	50	50	50	136.1	10.7	4.75	0	0	0.00	0.00	50 Member
Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls				
LEG		0.00		0	0.00	0	0	0.00	0.00	0					
HORIZ SOL - 3/4" SOLID		2.42	Normal Ice	50	17.67	0	0	0.00	0.00	13	Member				
DIAG		0.00		0	0.00	0	0	0.00	0.00	0					

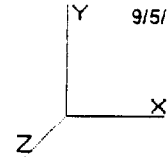


Force/Stress Summary

Section: 7		PIROD42		Bot Elev (ft): 100.0				Height (ft): 20.000								
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG	SOL - 2 1/4" SOLID	-103.77	Normal Ice	2.42	100	100	100	51.6	32.1	127.80	0	0	0.00	0.00	81	Member
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	SOL - 3/4" SOLID	-3.44	90 deg Ice	4.253	50	50	50	136.1	10.7	4.75	0	0	0.00	0.00	72	Member
Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls					
LEG		0.00		0	0.00	0	0	0.00	0.00	0						
HORIZ SOL - 3/4" SOLID		5.22	Normal Ice	50	17.67	0	0	0.00	0.00	29	Member					
DIAG SOL - 3/4" SOLID		1.62	90 deg No Ice	50	17.67	0	0	0.00	0.00	9	Member					

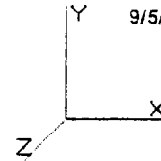
Section: 8		PIROD42		Bot Elev (ft): 120.0				Height (ft): 20.000								
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG	SOL - 2 1/4" SOLID	-86.15	Normal Ice	2.42	100	100	100	51.6	32.1	127.80	0	0	0.00	0.00	67	Member
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	SOL - 3/4" SOLID	-3.12	90 deg Ice	4.253	50	50	50	136.1	10.7	4.75	0	0	0.00	0.00	65	Member
Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls					
LEG		0.00		0	0.00	0	0	0.00	0.00	0						
HORIZ SOL - 3/4" SOLID		2.14	Normal Ice	50	17.67	0	0	0.00	0.00	12	Member					
DIAG SOL - 3/4" SOLID		0.59	90 deg No Ice	50	17.67	0	0	0.00	0.00	3	Member					

Section: 9		PIROD42		Bot Elev (ft): 140.0				Height (ft): 20.000								
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			KL/R	Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG	SOL - 2 1/4" SOLID	-70.70	Normal Ice	2.42	100	100	100	51.6	32.1	127.80	0	0	0.00	0.00	55	Member
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	SOL - 3/4" SOLID	-2.08	90 deg Ice	4.253	50	50	50	136.1	10.7	4.75	0	0	0.00	0.00	43	Member
Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls					
LEG		0.00		0	0.00	0	0	0.00	0.00	0						
HORIZ SOL - 3/4" SOLID		2.12	Normal Ice	50	17.67	0	0	0.00	0.00	12	Member					
DIAG SOL - 3/4" SOLID		0.06	60 deg No Ice	50	17.67	0	0	0.00	0.00	0	Member					



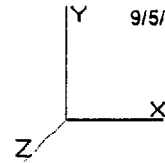
Force/Stress Summary

Section: 10		PIROD42		Bot Elev (ft): 160.0				Height (ft): 20.000								
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			Fa (ksi)	Member Cap (kip)		Num	Num	Shear Cap (kip)	Bear Cap (kip)	Use %	Control
					X	Y	Z	KL/R	(kip)	Bo	Holes					
LEG	SOL - 2 1/4" SOLID	-74.85	Normal Ice	2.42	100	100	100	51.6	32.1	127.80	0	0	0.00	0.00	58 Member	
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	SOL - 3/4" SOLID	-2.80	90 deg Ice	4.253	50	50	50	136.1	10.7	4.75	0	0	0.00	0.00	59 Member	
Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num	Num	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls					
LEG		0.00		0	0.00	0	0	0.00	0.00	0						
HORIZ SOL - 3/4" SOLID		5.33	Normal Ice	50	17.67	0	0	0.00	0.00	30	Member					
DIAG SOL - 3/4" SOLID		1.65	90 deg Ice	50	17.67	0	0	0.00	0.00	9	Member					
Section: 11		PIROD42		Bot Elev (ft): 180.0				Height (ft): 20.000								
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			Fa (ksi)	Member Cap (kip)		Num	Num	Shear Cap (kip)	Bear Cap (kip)	Use %	Control
LEG	SOL - 2" SOLID	-62.21	Normal Ice	2.42	100	100	100	58.0	30.7	96.57	0	0	0.00	0.00	64 Member	
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0	
DIAG	SOL - 3/4" SOLID	-2.46	90 deg Ice	4.253	50	50	50	136.1	10.7	4.75	0	0	0.00	0.00	51 Member	
Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num	Num	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls					
LEG		0.00		0	0.00	0	0	0.00	0.00	0						
HORIZ SOL - 3/4" SOLID		2.44	Normal Ice	50	17.67	0	0	0.00	0.00	13	Member					
DIAG		0.00		0	0.00	0	0	0.00	0.00	0						
Section: 12		PIROD42		Bot Elev (ft): 200.0				Height (ft): 20.000								
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			Fa (ksi)	Member Cap (kip)		Num	Num	Shear Cap (kip)	Bear Cap (kip)	Use %	Control
LEG	SOL - 2" SOLID	-61.68	Normal Ice	2.44	100	100	100	58.6	30.6	96.19	0	0	0.00	0.00	64 Member	
HORIZ SOL - 3/4" SOLID		-0.13	60 deg No Ice	3.500	100	100	100	224.0	4.0	1.75	0	0	0.00	0.00	7 Member	
DIAG	SOL - 3/4" SOLID	-5.21	90 deg Ice	4.266	49	49	49	133.8	11.1	4.91	0	0	0.00	0.00	105 Member	
Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap (kip)	Num	Num	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls					
LEG SOL - 2" SOLID		9.14	60 deg No Ice	50	125.66	0	0	0.00	0.00	7	Member					
HORIZ SOL - 3/4" SOLID		2.58	Normal Ice	50	17.67	0	0	0.00	0.00	14	Member					
DIAG SOL - 3/4" SOLID		3.81	90 deg Ice	50	17.67	0	0	0.00	0.00	21	Member					



Force/Stress Summary

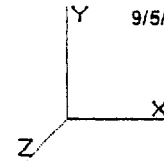
Section: 13		PIROD42		Bot Elev (ft): 220.0				Height (ft): 20.000							
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing % (X Y Z)			Fa (ksi)	Member Cap Num (kip) Bolts		Num Holes	Shear Bear Cap Cap (kip) (kip)		Use %	Controls
LEG	SOL - 1 3/4" SOLID	-49.84	60 deg Ice	2.44	100	100	100	66.9	28.7	68.96	0	0	0.00	0.00	72 Member
HORIZ	SOL - 3/4" SOLID	-0.45	60 deg No Ice	3.500	100	100	100	224.0	4.0	1.75	0	0	0.00	0.00	25 Member
DIAG	SOL - 3/4" SOLID	-4.56	90 deg Ice	4.266	50	50	50	136.5	10.7	4.72	0	0	0.00	0.00	96 Member
Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap Num (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls				
LEG	SOL - 1 3/4" SOLID	1.07	Normal No Ice	50	96.21	0	0	0.00	0.00	1	Member				
HORIZ	SOL - 3/4" SOLID	1.95	Normal Ice	50	17.67	0	0	0.00	0.00	11	Member				
DIAG	SOL - 3/4" SOLID	2.72	90 deg Ice	50	17.67	0	0	0.00	0.00	15	Member				
Section: 14		PIROD42		Bot Elev (ft): 240.0				Height (ft): 20.000							
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing % (X Y Z)			Fa (ksi)	Member Cap Num (kip) Bolts		Num Holes	Shear Bear Cap Cap (kip) (kip)		Use %	Controls
LEG	SOL - 1 3/4" SOLID	-61.11	60 deg Ice	2.42	100	100	100	66.3	28.8	69.32	0	0	0.00	0.00	88 Member
HORIZ	SOL - 3/4" SOLID	0.00	60 deg No Ice	0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	0
DIAG	SOL - 3/4" SOLID	-2.88	60 deg Ice	4.253	50	50	50	136.1	10.7	4.75	0	0	0.00	0.00	60 Member
Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap Num (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls				
LEG	SOL - 1 3/4" SOLID	8.02	Normal No Ice	50	96.21	0	0	0.00	0.00	8	Member				
HORIZ	SOL - 3/4" SOLID	2.47	Normal Ice	50	17.67	0	0	0.00	0.00	13	Member				
DIAG	SOL - 3/4" SOLID	0.91	Normal No Ice	50	17.67	0	0	0.00	0.00	5	Member				
Section: 15		PIROD42		Bot Elev (ft): 260.0				Height (ft): 15.000							
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing % (X Y Z)			Fa (ksi)	Member Cap Num (kip) Bolts		Num Holes	Shear Bear Cap Cap (kip) (kip)		Use %	Controls
LEG	SOL - 1 3/4" SOLID	-57.95	60 deg Ice	2.39	100	100	100	65.5	29.0	69.76	0	0	0.00	0.00	83 Member
HORIZ	SOL - 3/4" SOLID	-0.35	60 deg No Ice	3.500	95	95	95	212.8	4.4	1.94	0	0	0.00	0.00	17 Member
DIAG	SOL - 3/4" SOLID	-3.50	90 deg Ice	4.238	50	50	50	135.6	10.8	4.78	0	0	0.00	0.00	73 Member
Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap Num (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls				
LEG	SOL - 1 3/4" SOLID	8.75	Normal Ice	50	96.21	0	0	0.00	0.00	9	Member				
HORIZ	SOL - 3/4" SOLID	2.39	Normal Ice	50	17.67	0	0	0.00	0.00	13	Member				
DIAG	SOL - 3/4" SOLID	2.91	90 deg Ice	50	17.67	0	0	0.00	0.00	16	Member				



Support Forces Summary

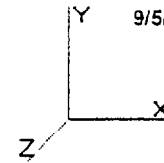
Load Case	Node	FX (kip)	FY (kip)	FZ (kip)	(-) = Uplift (+) = Down
Normal No Ice	1	0.00	200.24	-0.71	
	A1	0.00	-6.14	2.07	
	A1a	-43.71	-77.76	-27.33	
	A1b	43.71	-77.76	-27.33	
60 deg No Ice	1	-1.32	160.76	-0.76	
	A1	-1.39	-17.03	9.15	
	A1a	-50.63	-88.38	-29.23	
	A1b	7.23	-17.04	-5.78	
90 deg No Ice	1	-1.02	186.35	-0.37	
	A1	-1.89	-49.34	31.86	
	A1a	-52.84	-90.53	-29.23	
	A1b	2.48	-8.03	-2.27	
Normal Ice	1	0.00	260.13	0.19	
	A1	0.00	-10.37	3.38	
	A1a	-49.39	-92.06	-32.29	
	A1b	49.39	-92.06	-32.29	
60 deg Ice	1	-0.70	224.25	-0.40	
	A1	-2.70	-25.88	14.21	
	A1a	-60.46	-107.40	-34.91	
	A1b	10.96	-25.90	-9.45	
90 deg Ice	1	-0.16	246.91	-0.53	
	A1	-3.53	-60.59	37.65	
	A1a	-61.40	-107.61	-33.20	
	A1b	4.01	-13.33	-3.93	

Max Uplift: 107.61 (kip)
Max Down: 260.13 (kip)
Max Shear: 69.82 (kip)

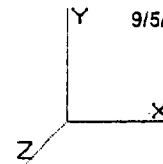


Cable Forces Summary

Load Case	Elevation (ft)	Node 1	Node 2	Allow Tension (kip)	Applied Tension (kip)	Use %
Normal No Ice	54.83	A1	29	16.85	0.24	1
	54.83	A1b	29a	16.85	8.90	52
	54.83	A1a	29b	16.85	8.90	52
	110.00	A1	57	21.20	0.09	0
	110.00	A1b	57a	21.20	12.55	59
	110.00	A1a	57b	21.20	12.55	59
	165.17	A1	85	25.00	0.48	1
	165.17	A1b	85a	25.00	14.37	57
	165.17	A1a	85b	25.00	14.37	57
	214.97	A1	T4	21.20	0.90	4
	214.97	A1a	T4b	21.20	10.91	51
	214.97	A1b	T4a	21.20	10.68	50
	214.97	A1b	T4	21.20	10.91	51
	214.97	A1a	T4a	21.20	10.68	50
	214.97	A1	T4b	21.20	0.90	4
	214.97	A1	109	21.20	0.90	4
	214.97	A1b	109a	21.20	10.82	51
	214.97	A1a	109b	21.20	10.82	51
	269.89	A1	T5	21.20	1.51	7
	269.89	A1a	T5b	21.20	10.03	47
	269.89	A1b	T5a	21.20	9.02	42
	269.89	A1b	T5	21.20	10.03	47
	269.89	A1a	T5a	21.20	9.02	42
	269.89	A1	T5b	21.20	1.51	7
	269.89	A1	137	21.20	1.50	7
	269.89	A1b	137a	21.20	9.61	45
269.89	A1a	137b	21.20	9.61	45	
60 deg No Ice	54.83	A1	29	16.85	1.19	7
	54.83	A1b	29a	16.85	1.18	6
	54.83	A1a	29b	16.85	9.69	57
	110.00	A1	57	21.20	1.37	6
	110.00	A1b	57a	21.20	1.37	6
	110.00	A1a	57b	21.20	13.68	64
	165.17	A1	85	25.00	2.00	7
	165.17	A1b	85a	25.00	2.00	8
	165.17	A1a	85b	25.00	16.09	64
	214.97	A1	T4	21.20	2.43	11
	214.97	A1a	T4b	21.20	12.42	58
	214.97	A1b	T4a	21.20	2.33	10
	214.97	A1b	T4	21.20	2.43	11
	214.97	A1a	T4a	21.20	12.41	58
	214.97	A1	T4b	21.20	2.33	10
	214.97	A1	109	21.20	2.38	11
	214.97	A1b	109a	21.20	2.39	11
	214.97	A1a	109b	21.20	12.44	58
	269.89	A1	T5	21.20	3.33	15
	269.89	A1a	T5b	21.20	10.96	51
	269.89	A1b	T5a	21.20	3.03	14
	269.89	A1b	T5	21.20	3.34	15
	269.89	A1a	T5a	21.20	10.96	51
	269.89	A1	T5b	21.20	3.03	14



	269.89	A1	137	21.20	3.17	14
	269.89	A1b	137a	21.20	3.17	14
	269.89	A1a	137b	21.20	11.09	52
90 deg No Ice	54.83	A1	29	16.85	5.52	32
	54.83	A1b	29a	16.85	0.32	1
	54.83	A1a	29b	16.85	10.36	61
	110.00	A1	57	21.20	7.57	35
	110.00	A1b	57a	21.20	0.38	1
	110.00	A1a	57b	21.20	14.65	69
	165.17	A1	85	25.00	8.63	34
	165.17	A1b	85a	25.00	0.75	3
	165.17	A1a	85b	25.00	16.81	67
	214.97	A1	T4	21.20	6.90	32
	214.97	A1a	T4b	21.20	12.54	59
	214.97	A1b	T4a	21.20	1.12	5
	214.97	A1b	T4	21.20	1.18	5
	214.97	A1a	T4a	21.20	12.71	59
	214.97	A1	T4b	21.20	6.64	31
	214.97	A1	109	21.20	6.79	32
	214.97	A1b	109a	21.20	1.15	5
	214.97	A1a	109b	21.20	12.65	59
	269.89	A1	T5	21.20	6.98	32
	269.89	A1a	T5b	21.20	10.60	49
	269.89	A1b	T5a	21.20	1.76	8
	269.89	A1b	T5	21.20	1.85	8
	269.89	A1a	T5a	21.20	11.31	53
	269.89	A1	T5b	21.20	6.05	28
	269.89	A1	137	21.20	6.53	30
	269.89	A1b	137a	21.20	1.80	8
	269.89	A1a	137b	21.20	11.08	52
Normal Ice	54.83	A1	29	16.85	0.60	3
	54.83	A1b	29a	16.85	8.00	47
	54.83	A1a	29b	16.85	8.00	47
	110.00	A1	57	21.20	0.20	0
	110.00	A1b	57a	21.20	12.37	58
	110.00	A1a	57b	21.20	12.37	58
	165.17	A1	85	25.00	0.86	3
	165.17	A1b	85a	25.00	16.28	65
	165.17	A1a	85b	25.00	16.28	65
	214.97	A1	T4	21.20	1.56	7
	214.97	A1a	T4b	21.20	13.25	62
	214.97	A1b	T4a	21.20	13.50	63
	214.97	A1b	T4	21.20	13.25	62
	214.97	A1a	T4a	21.20	13.50	63
	214.97	A1	T4b	21.20	1.56	7
	214.97	A1	109	21.20	1.55	7
	214.97	A1b	109a	21.20	13.36	63
	214.97	A1a	109b	21.20	13.36	63
	269.89	A1	T5	21.20	2.50	11
	269.89	A1a	T5b	21.20	12.87	60
	269.89	A1b	T5a	21.20	11.98	56
	269.89	A1b	T5	21.20	12.87	60
	269.89	A1a	T5a	21.20	11.98	56
	269.89	A1	T5b	21.20	2.50	11
	269.89	A1	137	21.20	2.49	11
	269.89	A1b	137a	21.20	12.51	58
	269.89	A1a	137b	21.20	12.51	58



60 deg Ice	54.83	A1	29	16.85	2.36	14
	54.83	A1b	29a	16.85	2.35	13
	54.83	A1a	29b	16.85	9.59	56
	110.00	A1	57	21.20	2.36	11
	110.00	A1b	57a	21.20	2.36	11
	110.00	A1a	57b	21.20	14.43	68
	165.17	A1	85	25.00	3.05	12
	165.17	A1b	85a	25.00	3.06	12
	165.17	A1a	85b	25.00	18.91	75
	214.97	A1	T4	21.20	3.70	17
	214.97	A1a	T4b	21.20	15.66	73
	214.97	A1b	T4a	21.20	3.61	17
	214.97	A1b	T4	21.20	3.71	17
	214.97	A1a	T4a	21.20	15.66	73
	214.97	A1	T4b	21.20	3.60	17
	214.97	A1	109	21.20	3.66	17
	214.97	A1b	109a	21.20	3.67	17
	214.97	A1a	109b	21.20	15.64	73
	269.89	A1	T5	21.20	4.93	23
	269.89	A1a	T5b	21.20	14.38	67
	269.89	A1b	T5a	21.20	4.61	21
	269.89	A1b	T5	21.20	4.93	23
	269.89	A1a	T5a	21.20	14.38	67
	269.89	A1	T5b	21.20	4.61	21
269.89	A1	137	21.20	4.76	22	
269.89	A1b	137a	21.20	4.77	22	
269.89	A1a	137b	21.20	14.51	68	
90 deg Ice	54.83	A1	29	16.85	5.39	31
	54.83	A1b	29a	16.85	0.81	4
	54.83	A1a	29b	16.85	9.49	56
	110.00	A1	57	21.20	7.80	36
	110.00	A1b	57a	21.20	0.75	3
	110.00	A1a	57b	21.20	14.70	69
	165.17	A1	85	25.00	10.00	40
	165.17	A1b	85a	25.00	1.29	5
	165.17	A1a	85b	25.00	19.24	76
	214.97	A1	T4	21.20	8.65	40
	214.97	A1a	T4b	21.20	15.79	74
	214.97	A1b	T4a	21.20	1.90	8
	214.97	A1b	T4	21.20	1.99	9
	214.97	A1a	T4a	21.20	15.58	73
	214.97	A1	T4b	21.20	8.69	40
	214.97	A1	109	21.20	8.67	40
	214.97	A1b	109a	21.20	1.94	9
	214.97	A1a	109b	21.20	15.67	73
	269.89	A1	T5	21.20	9.21	43
	269.89	A1a	T5b	21.20	13.96	65
	269.89	A1b	T5a	21.20	2.88	13
	269.89	A1b	T5	21.20	3.00	14
	269.89	A1a	T5a	21.20	14.57	68
	269.89	A1	T5b	21.20	8.36	39
269.89	A1	137	21.20	8.81	41	
269.89	A1b	137a	21.20	2.92	13	
269.89	A1a	137b	21.20	14.38	67	