

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK
CITY OF PORTLAND

Please Read
 Application And
 Notes, If Any,
 Attached

BUILDING INSPECTION

PERMIT

Permit Number: 101456

PERMIT ISSUED

This is to certify that American Tower Corp./Westover Communications Inc
 has permission to Add antennas to existing tower and installation of radio cabinet

AT 220 Riverside Ind Pkwy CBL 330 H005003

provided that the person or persons, firm or corporation accepting this permit shall comply with all of the provisions of the Statutes of Maine and of the Ordinances of the City of Portland regulating the construction, maintenance and use of buildings and structures, and of the application on file in this department.

Apply to Public Works for street line and grade if nature of work requires such information.

Notification of inspection must be given and written permission procured before this building or part thereof is lathed or otherwise closed-in. 24 HOUR NOTICE IS REQUIRED.

A certificate of occupancy must be procured by owner before this building or part thereof is occupied.

OTHER REQUIRED APPROVALS

Fire Dept. _____

Health Dept. _____

Appeal Board _____

Other _____

Department Name

[Signature]
 Director - Building & Inspection Services

PENALTY FOR REMOVING THIS CARD

City of Portland, Maine - Building or Use Permit Application

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

Permit No: 10-1456	Issue Date:	CBL: 330 H005003
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Location of Construction: 220 Riverside Ind Pkwy	Owner Name: American Tower Corp.	Owner Address: 4707 Sheperds Mill Dr	Phone:
Business Name: American Tower Corp.	Contractor Name: Westower Communications Inc	Contractor Address: 9961 Sidney Hayes Road Orlando	Phone: 3154328967
Lessee/Buyer's Name	Phone:	Permit Type: <i>Radio telecom equipment</i> Alterations - Commercial	Zone: <i>I-M</i>

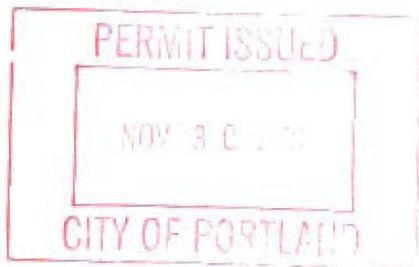
Past Use: Commercial / Telecommunications	Proposed Use: Commercial / Telecommunications; Add antennas to existing tower and installation of radio cabinet.	Permit Fee: \$170.00	Cost of Work: \$15,000.00	CEO District: 5
Proposed Project Description: Add antennas to existing tower and installation of radio cabinet.		FIRE DEPT: <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied	INSPECTION: Use Group: <i>N/A</i> Type:	
		Signature: <i>JMB</i>	Signature: <i>JMB 11/30/10</i>	

PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.)		
Action:	<input type="checkbox"/> Approved	<input type="checkbox"/> Approved w/Conditions
Signature:	Date:	

Permit Taken By: <i>gg</i>	Date Applied For: 11/18/2010	Zoning Approval		
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- 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..

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 Admin. Other. <i>#10-1990033</i> Maj <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/> <i>Ok w/ conditions</i> Date: <i>11/23/10 ABN</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 <i>ABN</i> 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

BUILDING PERMIT INSPECTION PROCEDURES

Please call 874-8703 or 874-8693 (ONLY)
or email: buildinginspections@portlandmaine.gov

With the issuance of this permit, the owner, builder or their designee is required to provide adequate notice to the City of Portland Inspection Services for the following inspections. Appointments must be requested 48 to 72 hours in advance of the required inspection. The inspection date will need to be confirmed by this office.

- Please read the conditions of approval that is attached to this permit!! Contact this office if you have any questions.
- Permits expire in 6 months, if the project is not started or ceases for 6 months.
- If the inspection requirements are not followed as stated below additional fees may be incurred due to the issuance of a "Stop Work Order" and subsequent release to continue with construction.

Underground electrical inspection prior to pouring concrete or covering trench.

Final inspection required at completion of work.

The project cannot move to the next phase prior to the required inspection and approval to continue, REGARDLESS OF THE NOTICE OR CIRCUMSTANCES.

IF THE PERMIT REQUIRES A CERTIFICATE OF OCCUPANCY, IT MUST BE PAID FOR AND ISSUED TO THE OWNER OR DESIGNEE BEFORE THE SPACE MAY BE OCCUPIED.



City of Portland, Maine - Building or Use Permit

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

Permit No: 10-1456	Date Applied For: 11/18/2010	CBI: 330 H005003
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Location of Construction: 220 Riverside Ind Pkwy	Owner Name: American Tower Corp.	Owner Address: 4707 Sheperds Mill Dr	Phone:
Business Name: American Tower Corp.	Contractor Name: Westower Communications Inc	Contractor Address: 9961 Sidney Hayes Road Orlando	Phone: (315) 432-8967
Lessee/Buyer's Name	Phone:	Permit Type: Alterations - Commercial	

Proposed Use: Commercial / Telecommunications; Add antennas to existing tower and installation of radio cabinet.	Proposed Project Description: Add antennas to existing tower and installation of radio cabinet.
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Dept: Zoning	Status: Approved with Conditions	Reviewer: Ann Machado	Approval Date: 11/23/2010
Note: Tower is existing and permitted.			Ok to Issue: <input checked="" type="checkbox"/>
1) This permit is being approved on the basis of plans submitted. Any deviations shall require a separate approval before starting that work.			
Dept: Building	Status: Approved with Conditions	Reviewer: Jeanine Bourke	Approval Date: 11/29/2010
Note:			Ok to Issue: <input checked="" type="checkbox"/>
1) Approved based on the engineers analysis for acceptable structural load and mounting specifications.			
2) Separate permits are required for any electrical installations			
3) Application approval based upon information provided by applicant. Any deviation from approved plans requires separate review and approval prior to work.			
Dept: Fire	Status: Approved	Reviewer: Jeanine Bourke	Approval Date: 11/29/2010
Note:			Ok to Issue: <input checked="" type="checkbox"/>

Comments: 11/23/2010-gg: received permit by mail. /gg
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CITY OF PORTLAND, MAINE

Department of Building Inspections

Original Receipt

Nov. 23 2010

Received from ATC Tower

Location of Work 200 Riverside

Cost of Construction \$ _____ Building Fee: _____

Permit Fee \$ _____ Site Fee: _____

Certificate of Occupancy Fee: _____

Total: _____

Building (IL) Plumbing (IS) _____ Electrical (I2) _____ Site Plan (U2) _____

Other _____

CBL: 330 H 001

Check #: 279041 Total Collected \$ 150.00

**No work is to be started until permit issued.
Please keep original receipt for your records.**

Taken by: [Signature]

WHITE - Applicant's Copy

YELLOW - Office Copy

PINK - Permit Copy



General 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: 220 Riverside Industrial Parlay		
Total Square Footage of Proposed Structure/Area		Square Footage of Lot
Tax Assessor's Chart, Block & Lot Chart# 330 Block# H Lot# 1	Applicant must be owner, Lessee or Buyer Name American Tower Corp Address 4707 Shepherds Mill Dr City, State & Zip Chesterfield, VA 23832	Telephone: 804-334-0054
Lessee/DBA (If Applicable) NOV 18 2010 Dept. of Building Inspections City of Portland, Maine	Owner (if different from Applicant) Name Address City, State & Zip	Cost Of Work: \$15,000 C of O Fee: \$ Total Fee: \$ 170
Current legal use (ie. single family) <u>Telecommunications</u> If vacant, what was the previous use? _____ Proposed Specific use: <u>Telecommunications</u> Is property part of a subdivision? <u>No</u> If yes, please name _____ Project description: <u>Addition of antennas to existing tower and installation of radio cabinet within existing compound.</u>		
Contractor's name: <u>Westover Communications Inc</u> Address: <u>9961 Sidney Hayes Rd</u> City, State & Zip <u>Orlando, FL 32824</u> Telephone: <u>315-432-8967</u> Who should we contact when the permit is ready: <u>Chris Gillis</u> Telephone: <u>804-334-0054</u> Mailing address: <u>4707 Shepherds Mill Dr, Chesterfield, VA 23832</u>		

Received 34 Mar 1

Call them mail

Please submit all of the information outlined on the applicable Checklist. Failure to do so will result in the automatic denial of your permit.

In order to be sure the City fully understands the full scope of the project, the Planning and Development Department may request additional information prior to the issuance of a permit. For further information or to download copies of this form and other applications visit the Inspections Division on-line at www.portlandmaine.gov, or stop by the Inspections Division office, room 315 City Hall or call 874-8703.

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: Chris Gillis Date: 11/15/10

This is not a permit; you may not commence ANY work until the permit is issue

LETTER OF AUTHORIZATION

SITE NO: 10047

SITE NAME: Portland, ME

ADDRESS: 225 Riverside Industrial Parkway
Portland, ME

APN:

I, Ronald T. Dorler owner of the property located at the address identified above, do hereby authorize American Tower, Clearwire Corporation, its successors and assigns, ("Clear") and/or its agent, to act as my non-exclusive agent for the sole purpose of filing and consummating any land-use or building permit application(s) necessary to obtain approval of the applicable jurisdiction for Clear's installation of its antennas and related telecommunications equipment on the existing tower and property identified above. This installation shall not affect adjoining lands and will occur only within the area leased by American Tower.

I understand that this application may be denied, modified or approved with conditions. The above authorization is limited to the acceptance by Clear only of conditions related to Clear's installation, provided that any such conditions of approval or modifications will be the sole responsibility of Clear.

The above authorization does not permit Clear to modify or alter any existing permit(s) and/or zoning or land-use conditions or impose any additional conditions unrelated to Clear's installation of telecommunications equipment without the prior written approval of the property owner.

Signature: [Handwritten Signature]
Print Name: Ronald T. Dorler

NOTARY BLOCK

State of Maine
County of Cumberland

This instrument was acknowledged before me by Ronald S. Dorler (Landowner), personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same.

WITNESS my hand and official seal, this 20th day of August, 2010.

NOTARY SEAL

Notary Public [Handwritten Signature]
My Commission Expires: _____



Application for Administrative Authorization

Portland, Maine

Planning and Urban Development Department, Planning Division

#10-6590039

PROJECT NAME: Clearwire ME-PTLS001

PROJECT ADDRESS: 220 Riverside Industrial Parkway CHART/BLOCK/LOT: Map 330, Block H, Lot 1

PROJECT DESCRIPTION: (Please Attach Sketch/Plan of Proposal/Development)
33, A 001003
Adding three antennas and radio cabinets to existing telecommunications site

CONTACT INFORMATION:

OWNER/APPLICANT

Name: American Tower
Address: 4707 Shepherds Mill Dr
Chesterfield, VA
Zip Code: 23832
Work #: 804-334-0054
Cell #: _____
Fax #: _____
Home #: _____
E-mail: christopher.gillies@americantower.com

CONSULTANT/AGENT

Name: _____
Address: _____
Zip Code: _____
Work #: _____
Cell #: _____
Fax #: _____
Home #: _____
E-mail: _____

RECEIVED

NOV 12 2010

Dept. of Building Inspections
City of Portland Maine

Criteria for an Administrative Authorizations: (See Section 14-523 (4) on page 2 of this application)

	Applicant's Assessment Y(yes), N(no), N/A	Planning Division Use Only
a) Is the proposal within existing structures?	<u>Yes</u>	_____
b) Are there any new buildings, additions, or demolitions?	<u>No</u>	_____
c) Is the footprint increase less than 500 sq. ft?	<u>Yes</u>	_____
d) Are there any new curb cuts, driveways or parking areas?	<u>No</u>	_____
e) Are the curbs and sidewalks in sound condition?	<u>No</u>	_____
f) Do the curbs and sidewalks comply with ADA?	<u>NO</u>	_____
g) Is there any additional parking?	<u>No</u>	_____
h) Is there an increase in traffic?	<u>No</u>	_____
i) Are there any known stormwater problems?	<u>No</u>	_____
j) Does sufficient property screening exist?	<u>Yes</u>	_____
k) Are there adequate utilities?	<u>Yes</u>	_____
l) Are there any zoning violations?	<u>No</u>	_____
m) Is an emergency generator located to minimize noise?	<u>No</u>	_____
n) Are there any noise, vibration, glare, fumes or other impacts?	<u>No</u>	_____

IMPORTANT NOTICE TO APPLICANT: The granting of an Administrative Authorization to exempt a development from site plan review does not exempt this proposal from other approvals or permits, nor is it an authorization for construction. You should first check with the Building Inspections Office, Room 315, City Hall (207) 874-8703, to determine what other City permits, such as a building permit, will be required.

Signature of Applicant: Chris Gillies Date: 10/8/10

Submitted 10/28/10

Planning Division Use Only

Authorization Granted Partial Exemption Exemption Denied

Standard Condition of Approval: The applicant shall obtain all required City Permits, including building permits from the Inspection Division (Room 315, City Hall (874-8703)) prior to the start of any construction.

Planner's Signature Barbara Barhydt Date Nov 3, 2010

**PROVISION OF PORTLAND CITY CODE
14-523 (SITE PLAN ORDINANCE)
RE: Administrative Authorization**

Sec. 14-523 (b). Applicability

No person shall undertake any development identified in Section 14-523 without obtaining a site plan improvement permit under this article.

(c) **Administrative Authorization.** Administrative Authorization means the Planning Authority may grant administrative authorization to exempt a development proposal from complete or partial site plan review the meet the standards below, as demonstrated by the applicant.

1. The proposed development will be located within existing structures, and there will be no new buildings, demolitions, or building additions other than those permitted by subsection b of this section;
2. Any building addition shall have a new building footprint expansion of less than five hundred (500) square feet;
3. The proposed site plan does not add any new curb cuts, driveways, or parking areas; the existing site has no more than one (1) curb cut and will not disrupt the circulation flows and parking on-site; and there will be no drive-through services provided;
4. The curbs and sidewalks adjacent to the lot are complete and in sound condition, as determined by the public works authority, with granite curb with at least four (4) inch reveal, and sidewalks are in good repair with uniform material and level surface and meet accessibility requirements of the Americans with Disabilities Act;
5. The use does not require additional or reduce existing parking, either on or off the site, and the project does not significantly increase traffic generation;
6. There are no known stormwater impacts from the proposed use or any existing deficient conditions of stormwater management on the site;
7. There are no evident deficiencies in existing screening from adjoining properties; and
8. Existing utility connections are adequate to serve the proposed development and there will be no disturbance to or improvements within the public right-of-way.
9. There are no current zoning violations;
10. Any emergency generators are to be located to minimize noise impacts to adjoining properties and documentation that routine testing of the generators occur on weekdays between the hours of 9 a.m. to 5 p.m. Documentation pertaining to the noise impacts of the emergency generator shall be submitted; and
11. There is no anticipated noise, vibration, glare, fumes or other foreseeable impacts associated with the project.

- a. **Filing the Application.** An applicant seeking an administrative authorization under this subsection shall submit an administrative authorization application for review, detailing the site plan with dimensions of proposed improvements and distances from all property lines, and stating that the proposal meets all of the provisions in standards 1-11 of Section 14-523 (b)1.
- b. **Review.** Upon receipt of such a complete application, the Planning Authority will process it and render a written decision of approval, approval with conditions or denial, with all associated findings.
- c. **Decision.** If a full administrative authorization is granted, the application shall be approved without further review under this article, and no performance guarantee shall be required. In the event that the Planning Authority determines that standards a and b of Section 14-523 (b) (1) and at least four (4) of the remaining standards have been met, the Planning Authority shall review the site plan according to all applicable review standards of Section 14-526 that are affected by the standards in this subsection that have not been met. If an exemption or partial exemption from site plan review is not granted, the applicant must submit a site plan application that will undergo a full review by the Planning Board or Planning Authority according to the standards of Section 14-526.



AMERICAN TOWER®
CORPORATION

October 21, 2010

RE: Check for Zoning Filing for Cell Tower Co-Location at 220 Riverside Industrial Parkway

Attached is check 248266 in the amount of \$50.00 for the Building Permit for the site listed above.

Should you have any questions or require any additional information please contact me.

Thank you,

Chris Gillis

(804)-334-0054

Christopher.gillis@americantower.com



PASSED

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 275 ft. Pirod Guyed Tower
ATC Site Name : Portland ME, ME
ATC Site Number : 10047
Proposed Carrier : Clearwire Corporation
Carrier Site Name : Portland
Carrier Site Number : ME-PTLS001
County : Cumberland
Eng. Number : 45172123
Date : June 25, 2010
Usage : 83% Legs, 84% Diagonals,
69% Horizontals, and 77% Guys

Submitted by:
Adam Ponder
Project Engineer

American Tower Engineering Services
8505 Freeport Parkway
Suite 135
Irving, TX 75063
Phone: 972-999-8900





AMERICAN TOWER®
CORPORATION

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Submitted by:
Adam Ponder
Project Engineer

American Tower Engineering Services
8505 Freepoint Parkway
Suite 135
Irving, TX 75063
Phone: 972-999-8800

Introduction

The purpose of this report is to summarize results of the structural analysis performed on the 275 ft. guyed tower located at Portland ME, ME, Cumberland County (ATC site #10047). The tower was originally designed and manufactured by Pirod (Drawing #87-07-131 dated July 18, 1987).

Analysis

The existing tower was analyzed using Semaan Engineering Solutions, Inc., Software. The analysis assumes that the tower is in good, undamaged, and non-corroded condition. A 5% overstress is allowed in the existing structural members to account for program variances.

Basic wind speed: 80 mph (Fastest Mile)
 Radial Ice: 69 mph (Fastest Mile) with 1/2" radial ice concurrent
 Standard/Code: ANSI/TIA-222-F / 2003 IBC Section 1609.1.1, Exception (5) and Section 3108.4

Antenna Loads

The following antenna loads were used in the tower analysis.

Existing Antennas

Elev. (ft)	Qty	Antennas	Mount	Coax	Carrier
271.0	6	Antel LPA-185080/8CF	(3) Sector Frames	(12) 1-5/8"	Verizon Wireless
	6	Antel WPA-80080/4CF			
260.0	1	Radio Waves G3-24	(3) Sector Frames	(12) 1-5/8" (1) 1/2"	T-Mobile
	6	RFS APX16DWV-16DWV-S-E-ACU			
	3	Ericsson KRY 112 144/1			
	3	RFS ATMAA1412D-1A20			
255.0	1	8' HP MW Dish	Dish Mount	(2) EW52	Verizon Wireless
241.0	1	8' HP MW Dish	Dish Mount	(3) 1/2"	
220.0	1	8' HP MW Dish	Dish Mount	(2) EW52	
190.0	1	10' Omni	Standoff Mount	(1) 1-1/4"	City of Portland
180.0	6	Antel BSA-185065/10CF	(3) Sector Frames	(6) 1-5/8"	US Cellular
	1	10' Omni	Standoff Mount	(1) 7/8"	City of Portland
170.0	1	TTA		(1) 1/2"	
155.0	1	4' HP MW Dish	Dish Mount	(2) EW90	Verizon Wireless
120.0	2	2' Omni	(2) Standoff Mounts	(1) 7/8" (1) 1/2"	City of Portland
96.0	1	10' Omni	Standoff Mount	(1) 1-5/8"	Ron Dorier
36.0	1	GPS	Standoff Mount	(1) 1/2"	(landlord)

Antenna Loads (Continued)**Proposed Antennas**

Elev. (ft)	Qty	Antennas	Mount	Coax	Carrier
193.0	3	KMW HB-X-WM-17-65-00T	Clearwire Mount (Side Arms)	(6) 1-9/8"	Clearwire Corporation
	3	KMW HB-X-WM-17-65-00T- TYLNA			

The proposed Clearwire Corporation coax must be stacked in two rows (3-on-3), and must be installed on the same tower face as the existing Verizon Wireless elliptical waveguide to the 255' and 220' elevations.

Results

The existing 275 ft. Pirod guyed tower with the existing and the proposed antennas is structurally acceptable per TIA/EIA-222-F and the 2003 IBC. The maximum structure usage is: 83% legs, 84% diagonals, 69% horizontals, and 77% guys.

Foundation (Location)	Reactions (kips)	Original Design Reaction (kips)	Current Analysis Reactions (kips)	% Of Original Design
Tower Base	Compression	256.4	249.2	97.2
	Horizontal	4.8	0.6	12.5
Inner Anchor (115 ft. Radius)	Uplift	122.7	104.2	84.9
	Horizontal	83.3	68.9	82.7

The structure foundation reactions resulting from the current analysis do not exceed the ones shown on the original structural drawings or calculations. Therefore, assuming the original foundations were designed correctly, the existing foundations are adequate to support the current analysis reactions. No modification to the existing foundations will be required.

Conclusion

The existing tower and its foundations were found to be adequate to support the existing and proposed antennas with the transmission lines distributed as described above while meeting the requirements of the code or standard as specified in this report.

If you have any questions or require additional information, please call (972) 999-8900.

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, the antenna and feed line loading on the structure and its components, or other relevant information.
- Information from 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 ATC 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. ATC Engineering Services is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

275.02

285.00

Sect 15

245.00

Sect 14

225.00

235.00

Sect 12

200.00

Sect 11

180.00

Sect 10

160.00

Sect 9

140.00

Sect 8

120.00

Sect 7

100.00

Sect 6

80.00

Sect 5

60.00

Sect 4

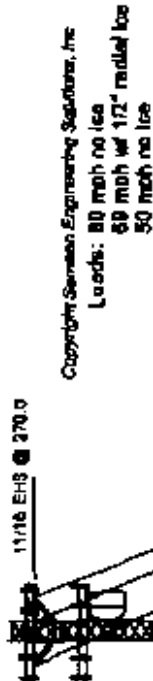
40.00

Sect 3

20.00

Sect 2

5.00

Vert 240.22 k
Hori 0.82 k

11/16 EHS @ 270.0

5/8 EHS @ 214.7

11/16 EHS @ 165.3

5/8 EHS @ 110.0

8/16 EAS @ 54.7

R 115.00

UpGR 104.19 k

Hori 0.85 k

Job Information

Tower : 10067

Location : Portland ME, ME

Code : TIAEIA-223 Rev F

Shape : Triangle

Base Width : 3.80 ft

Client : Chewwire Corporation

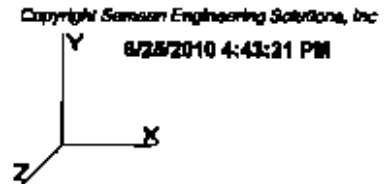
Sections Properties

Section	Leg Members	Diagonal Members	Horizontal Members
1 - 16	SOL 50mil 2 1/4" SOLID	SOL 50mil 3/4" SOLID	SOL 50mil 2 1/4" SOLID
11 - 13	SOL 50mil 2" SOLID	SOL 50mil 3/4" SOLID	SOL 50mil 2 1/4" SOLID
14 - 16	SOL 50mil 1 3/4" SOLID	SOL 50mil 3/4" SOLID	SOL 50mil 2 1/4" SOLID

Discrete Appearance

Elev (ft)	Type	Qty	Description
274.00	Panel	6	ANAL WPA-9916L-4CF
274.00	Panel	6	ANAL LPA-9916M-4CF
271.00	Mounting Frame	3	Flat Light Sector Frame
268.00	Panel	3	RFS ATNMA1412D-1A29
266.00	Panel	3	Seascan KRY 112 14471
264.00	Dish	3	RFS APX-NDWN-1101WV-9-E-ACU
263.00	Mounting Frame	3	Round Sector Frame
262.00	Other	1	Ice Shield
261.00	Dish	1	8" HP WH Dish
260.00	Other	1	Ice Shield
259.00	Dish	1	8" HP WH Dish
258.00	Other	1	Ice Shield
257.00	Dish	1	8" HP WH Dish
256.00	Panel	1	Standoff Mount
255.00	Mounting Frame	3	Round Sector Frame
254.00	Other	1	Ice Shield
253.00	Other	1	Ice Shield
252.00	Other	1	Ice Shield
251.00	Other	1	Ice Shield
250.00	Other	1	Ice Shield
249.00	Other	1	Ice Shield
248.00	Other	1	Ice Shield
247.00	Other	1	Ice Shield
246.00	Other	1	Ice Shield
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28.00	Other	1	Ice Shield
27.00	Other	1	

Site Number: 10047
 Location: Portland ME, ME
 Code: TIA/EIA-222 Rev F



Gh: 1.09

Section Forces

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		Total Flat	Total Round	Ice Round	Sol Ratio	Cf	Df	Dr	Rr	EF 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 Face			
	Height (ft)	qz	Area (sqft)	Area (sqft)	Area (sqft)																	
16	270.0	29.87	0.00	11.13	0.00	0.32	2.26	1.00	1.00	0.62	6.92	0.00	0.00	484.7	0.0	608.24	0.00	608.24	3			
15	255.0	29.39	0.00	30.29	0.00	0.43	2.00	1.00	1.00	0.87	20.15	0.00	0.00	1,237.5	0.0	1,296.50	0.00	1,296.50	3			
14	238.0	28.71	0.00	30.29	0.00	0.43	2.00	1.00	1.00	0.87	20.15	0.00	0.00	1,306.5	0.0	1,266.69	0.00	1,266.69	3			
13	222.5	28.29	0.00	6.00	0.00	0.46	1.95	1.00	1.00	0.66	6.49	0.00	0.00	386.7	0.0	331.36	0.00	331.36	3			
12	210.0	27.00	0.00	31.11	0.00	0.44	1.98	1.00	1.00	0.87	30.67	0.00	0.00	1,482.2	0.0	1,267.41	0.00	1,267.41	3			
11	190.0	27.02	0.00	34.83	0.00	0.50	1.90	1.00	1.00	0.70	24.27	1.29	0.00	1,882.7	0.0	1,383.78	48.70	1,409.94	1			
10	170.0	25.17	0.00	39.36	0.00	0.56	1.83	1.00	1.00	0.73	28.73	17.32	0.00	1,909.5	0.0	1,808.91	891.10	2,100.01	1			
9	150.0	25.28	0.00	39.14	0.00	0.56	1.83	1.00	1.00	0.73	28.86	21.94	0.00	1,908.3	0.0	1,448.68	727.13	2,173.89	1			
8	130.0	24.24	0.00	39.14	0.00	0.56	1.83	1.00	1.00	0.73	28.86	23.08	0.00	1,911.4	0.0	1,368.51	732.90	2,121.00	1			
7	110.0	23.11	0.00	39.36	0.00	0.50	1.83	1.00	1.00	0.73	28.76	28.92	0.00	1,939.7	0.0	1,332.44	758.73	2,118.16	1			
6	90.00	21.83	0.00	39.14	0.00	0.50	1.83	1.00	1.00	0.73	28.86	28.92	0.00	1,934.1	0.0	1,280.03	741.94	1,991.87	1			
5	70.00	20.31	0.00	39.14	0.00	0.56	1.83	1.00	1.00	0.73	29.00	28.92	0.00	1,937.4	0.0	1,183.43	690.83	1,882.98	1			
4	50.00	18.45	0.00	39.36	0.00	0.56	1.83	1.00	1.00	0.73	29.79	28.92	0.00	1,953.1	0.0	1,083.68	637.26	1,660.82	1			
3	30.00	18.38	0.00	39.14	0.00	0.56	1.83	1.00	1.00	0.73	29.86	28.92	0.00	1,939.8	0.0	938.46	587.93	1,498.91	1			
2	12.00	18.38	0.00	22.74	0.00	0.43	2.00	1.00	1.00	0.87	18.14	19.87	0.00	1,289.0	0.0	642.95	293.91	638.78	1			
1	2.00	18.38	0.00	3.19	0.00	0.38	2.14	1.00	1.00	0.64	2.83	0.73	0.00	305.3	0.0	77.66	15.40	83.26	1			
														23,454.8	0.0			22,548.27				

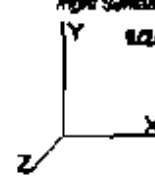
LoadCase 90 deg No Ice

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		Total Flat	Total Round	Ice Round	Sol Ratio	Cf	Df	Dr	Rr	EF 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 Face			
	Height (ft)	qz	Area (sqft)	Area (sqft)	Area (sqft)																	
16	270.0	29.87	0.00	11.13	0.00	0.32	2.26	0.00	1.00	0.63	9.02	0.00	0.00	484.7	0.0	608.24	0.00	608.24	3			
15	255.0	29.39	0.00	30.29	0.00	0.43	2.00	0.00	1.00	0.67	29.19	0.00	0.00	1,237.5	0.0	1,296.50	0.00	1,296.50	3			
14	238.0	28.71	0.00	30.39	0.00	0.43	2.00	0.00	1.00	0.67	29.16	0.00	0.00	1,308.9	0.0	1,298.50	0.00	1,298.50	3			
13	222.5	28.29	0.00	6.00	0.00	0.46	1.95	0.00	1.00	0.60	6.49	0.00	0.00	386.7	0.0	331.36	0.00	331.36	3			
12	210.0	27.00	0.00	31.11	0.00	0.44	1.90	0.00	1.00	0.87	30.67	0.00	0.00	1,482.2	0.0	1,237.41	0.00	1,237.41	3			
11	190.0	27.02	0.00	34.83	0.00	0.50	1.90	0.00	1.00	0.70	24.27	1.29	0.00	1,882.7	0.0	1,383.78	48.70	1,409.94	1			
10	170.0	25.17	0.00	39.36	0.00	0.56	1.83	0.59	1.00	0.73	28.73	17.32	0.00	1,909.5	0.0	1,808.91	891.10	2,100.01	1			
9	150.0	25.28	0.00	39.14	0.00	0.56	1.83	0.00	1.00	0.73	28.86	21.94	0.00	1,908.3	0.0	1,448.68	727.13	2,173.89	1			
8	130.0	24.24	0.00	39.14	0.00	0.56	1.83	0.00	1.00	0.73	28.86	23.08	0.00	1,911.4	0.0	1,368.51	732.90	2,121.00	1			
7	110.0	23.11	0.00	39.36	0.00	0.50	1.83	0.00	1.00	0.73	28.76	28.92	0.00	1,939.7	0.0	1,332.44	758.73	2,118.16	1			
6	90.00	21.83	0.00	39.14	0.00	0.56	1.83	0.00	1.00	0.73	29.00	28.92	0.00	1,934.1	0.0	1,280.03	741.94	1,991.87	1			
5	70.00	20.31	0.00	39.14	0.00	0.56	1.83	0.00	1.00	0.73	29.00	28.92	0.00	1,937.4	0.0	1,183.43	690.83	1,882.98	1			
4	50.00	18.45	0.56	39.36	0.00	0.56	1.83	0.00	1.00	0.73	29.79	28.92	0.00	1,953.1	0.0	1,083.68	637.26	1,660.83	1			
3	30.00	18.38	0.56	39.14	0.00	0.56	1.83	0.00	1.00	0.73	29.86	28.92	0.00	1,939.8	0.0	938.46	587.93	1,498.91	1			
2	12.00	18.38	0.00	22.74	0.00	0.43	2.00	0.00	1.00	0.87	18.14	19.87	0.00	1,289.0	0.0	642.95	293.91	638.78	1			
1	2.00	18.38	0.00	3.19	0.00	0.38	2.14	0.00	1.00	0.64	2.83	0.73	0.00	305.3	0.0	77.66	15.40	83.26	1			
														33,454.8	0.0			22,548.27				

Code: TAMEA-222 Rev F



Gn : 1.00

Section Forces

LoadCase 80 deg No Ice

80.00 mph Wind at 90 deg From Face with No Ice

Allow Stress Inc: 1.583
 Dead LF: 1.000
 Wind LF: 1.000

Sect Seq	Wind Height (ft)	qz	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Rr	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	Eff Face	
											EN Area (sqft)	Linear Area (sqft)							
16	270.0	29.87	0.00	11.13	0.00	0.32	2.25	0.85	1.00	0.82	6.82	0.00	0.00	484.7	0.0	808.24	0.00	808.24	3
15	255.0	29.39	0.06	36.28	0.00	0.43	2.00	0.85	1.00	0.87	26.16	0.00	0.00	1,237.6	0.0	1,296.60	0.00	1,296.60	3
14	238.0	28.71	0.00	36.28	0.00	0.43	2.00	0.85	1.00	0.87	26.16	0.00	0.00	1,306.6	0.0	1,266.88	0.00	1,266.88	3
13	222.5	28.28	0.00	6.38	0.00	0.46	1.95	0.85	1.00	0.88	6.49	0.00	0.00	386.7	0.0	331.33	0.00	331.33	3
12	210.0	27.39	0.00	31.11	0.00	0.44	1.95	0.85	1.00	0.87	26.87	0.00	0.00	1,482.2	0.0	1,257.41	0.00	1,257.41	3
11	190.0	27.02	0.00	34.86	0.00	0.30	1.80	0.85	1.00	0.70	24.27	1.29	0.00	1,362.7	0.0	1,363.78	46.78	1,409.54	1
10	178.0	26.17	0.00	39.80	0.00	0.38	1.83	0.85	1.00	0.73	26.78	17.23	0.00	1,909.0	0.0	1,808.91	891.10	2,100.91	1
9	180.0	25.26	0.00	38.14	0.00	0.38	1.83	0.85	1.00	0.73	26.88	21.00	0.00	1,909.2	0.0	1,446.46	727.13	2,173.60	1
8	130.0	24.24	0.00	38.14	0.00	0.38	1.83	0.85	1.00	0.73	26.88	23.08	0.00	1,911.4	0.0	1,388.51	732.85	2,121.50	1
7	110.0	23.11	0.00	38.28	0.00	0.38	1.83	0.85	1.00	0.73	26.78	24.83	0.00	1,836.7	0.0	1,332.44	746.72	2,116.16	1
6	90.00	21.82	0.00	38.14	0.00	0.38	1.83	0.85	1.00	0.73	26.88	23.53	0.00	1,834.1	0.0	1,280.83	741.94	1,991.87	1
5	70.00	20.31	0.00	38.14	0.00	0.38	1.83	0.85	1.00	0.73	26.68	25.82	0.00	1,837.4	0.0	1,163.43	690.63	1,853.66	1
4	60.00	19.44	0.00	38.28	0.00	0.38	1.83	0.85	1.00	0.73	26.78	25.82	0.00	1,863.1	0.0	1,063.88	627.24	1,690.92	1
3	30.00	18.28	0.00	38.14	0.00	0.38	1.83	0.85	1.00	0.73	26.68	26.92	0.00	1,939.8	0.0	928.40	697.83	1,496.81	1
2	12.50	10.86	0.00	22.74	0.00	0.43	2.08	0.85	1.00	0.87	16.14	13.87	0.00	1,268.0	0.0	642.85	293.81	636.78	1
1	2.50	16.29	0.00	3.19	0.00	0.38	2.14	0.88	1.00	0.84	2.63	8.72	0.00	368.3	0.0	77.00	16.40	93.28	1
													23,464.6	0.0			22,948.27		

LoadCase Normal Ice

69.28 mph Wind Normal To Face with Ice

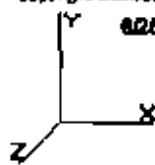
Allow Stress Inc: 1.583
 Dead LF: 1.000
 Wind LF: 1.000

Sect Seq	Wind Height (ft)	qz	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Rr	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	Eff Face	
											EN Area (sqft)	Linear Area (sqft)							
16	270.0	22.46	0.00	16.84	7.79	0.54	1.86	1.00	1.00	0.72	13.52	0.00	0.00	718.6	233.8	614.24	0.00	614.24	3
15	255.0	22.04	0.00	48.80	19.83	0.71	1.78	1.00	1.00	0.83	41.24	0.00	0.00	1,842.2	704.7	1,765.92	0.00	1,765.92	3
14	238.0	21.63	0.00	84.18	28.09	0.77	1.80	1.00	1.00	0.88	47.49	0.00	0.00	2,088.2	788.7	2,006.78	0.00	2,006.78	2
13	222.5	21.20	0.00	14.48	8.82	0.83	1.84	1.00	1.00	0.92	13.26	0.00	0.00	696.7	213.8	565.40	0.00	565.40	2
12	210.0	20.00	0.00	54.00	26.00	0.78	1.81	1.00	1.00	0.88	44.66	0.00	0.00	2,388.8	574.3	2,002.41	0.00	2,002.41	2
11	190.0	20.28	0.00	47.82	22.78	0.82	1.83	1.00	1.00	0.83	52.78	1.29	0.83	2,557.7	1,006.8	1,444.28	58.46	2,293.78	1
10	178.0	19.83	0.00	44.16	24.89	0.83	1.86	1.00	1.00	1.00	64.10	17.29	10.00	3,206.3	1,286.7	2,690.49	700.78	3,003.69	1
9	180.0	18.94	0.00	63.87	24.82	0.91	1.84	1.00	1.00	0.98	62.16	31.00	14.17	3,248.9	1,388.7	2,332.83	897.27	2,868.88	1
8	130.0	18.18	0.00	63.87	24.83	0.91	1.84	1.00	1.00	0.98	62.16	28.86	10.00	3,281.3	1,348.4	2,432.40	907.43	2,733.25	1
7	110.0	17.83	0.00	64.18	24.82	0.82	1.88	1.00	1.00	1.00	64.10	24.82	16.33	3,277.0	1,791.1	2,387.00	1,888.1	2,893.57	1
6	90.00	16.37	0.00	63.87	24.83	0.91	1.84	1.00	1.00	0.98	62.16	24.82	16.33	3,341.4	1,807.3	2,188.01	950.84	2,804.77	1
5	70.00	15.23	0.00	43.87	24.83	0.91	1.84	1.00	1.00	0.98	62.16	25.82	16.33	3,350.7	1,413.2	2,036.00	854.21	2,331.22	1
4	60.00	13.84	0.00	64.18	24.82	0.82	1.88	1.00	1.00	1.00	64.10	25.82	16.33	3,274.5	1,421.4	1,690.87	803.17	2,117.84	1
3	30.00	12.28	0.00	63.87	24.82	0.91	1.84	1.00	1.00	0.98	62.16	25.82	16.33	3,344.1	1,434.4	1,644.84	713.29	1,898.80	1
2	12.50	12.28	0.00	37.50	14.82	0.73	1.78	1.00	1.00	0.82	31.22	13.87	10.00	2,083.4	794.8	743.44	381.61	1,127.08	1
1	2.38	12.28	0.00	5.84	2.45	0.84	1.78	1.00	1.00	0.78	4.41	8.72	0.83	363.4	78.2	105.88	24.88	130.88	1
													38,190.3	16,736.7			30,584.14		

-- = 2DzGhAg Controls

Site Number: 10047
 Location: Portland ME, ME
 Code: TIA/EIA-222 Rev F

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 6/25/2010 4:43:21 PM



Gh : 1.00

Section Forces

LoadCase 60 deg Ice

69.26 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)	qx	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Bol Ratio	Cl	Df	Dr	Rr	EF Area (sqft)	Linear Area (sqft)	Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	EF Face		
																				16	14
16	270.0	22.40	0.00	18.84	7.70	0.64	1.86	0.80	1.00	0.72	13.62	0.00	0.00	718.5	233.8	614.24	0.00	614.24	3		
16	255.0	22.04	0.00	49.90	19.53	0.71	1.78	0.80	1.00	0.83	41.24	0.00	0.00	1,842.2	704.7	1,785.92	0.00	1,785.92	3		
14	235.0	21.83	0.00	64.16	26.00	0.77	1.80	0.80	1.00	0.88	47.40	0.00	0.00	2,096.2	789.7	2,008.70	0.00	2,008.70	2		
13	222.8	21.20	0.00	14.48	6.83	0.83	1.84	0.80	1.00	0.92	13.28	0.00	0.00	698.7	213.8	665.40	0.00	665.40	2		
12	210.0	20.85	0.00	64.99	26.09	0.79	1.81	0.80	1.00	0.89	48.85	0.00	0.00	2,368.5	874.3	2,002.41	0.00	2,002.41	2		
11	190.0	20.28	0.00	67.82	22.78	0.82	1.83	0.80	1.00	0.82	52.78	1.28	0.82	2,857.7	1,006.0	2,144.28	88.48	2,200.76	1		
10	170.0	19.83	0.00	64.18	24.82	0.82	1.95	0.80	1.00	1.00	64.10	17.22	10.00	3,208.3	1,298.7	2,688.49	700.78	3,003.89	1		
8	180.0	18.84	0.00	63.87	24.53	0.81	1.84	0.80	1.00	0.80	63.18	21.88	14.17	3,248.8	1,338.7	2,633.82	697.27	2,898.36	1		
8	130.0	18.18	0.00	63.87	24.53	0.81	1.84	0.80	1.00	0.80	63.18	23.08	10.00	3,281.3	1,348.0	2,432.48	807.43	2,782.25	1		
7	110.0	17.33	0.00	64.18	24.82	0.83	1.88	0.80	1.00	1.00	64.10	28.83	18.33	3,327.8	1,381.1	2,387.80	1,008.1	2,682.87	1		
8	90.00	18.37	0.00	63.87	24.53	0.81	1.88	0.80	1.00	0.89	62.16	28.82	18.33	3,341.4	1,407.3	2,189.81	880.04	2,504.77	1		
5	70.00	16.23	0.89	63.87	24.53	0.81	1.84	0.80	1.00	0.89	63.18	24.82	18.33	3,380.7	1,413.3	2,038.00	894.21	2,331.22	1		
4	80.00	13.84	0.00	64.18	24.82	0.82	1.88	0.80	1.00	1.00	64.10	28.82	18.33	3,374.8	1,431.4	1,889.87	893.17	2,117.54	1		
3	30.85	12.29	0.00	63.87	24.53	0.81	1.84	0.80	1.00	0.80	63.18	26.82	18.33	3,384.1	1,424.4	1,644.84	713.28	1,889.89	1		
2	12.80	12.29	0.00	37.00	14.82	0.72	1.78	0.80	1.00	0.83	31.22	13.87	10.00	2,863.4	784.8	745.44	801.81	1,127.06	1		
1	2.00	12.29	0.00	6.84	2.46	0.84	1.78	0.80	1.00	0.78	4.41	0.72	0.83	383.8	78.2	108.88	24.88	130.88	1		
														39,160.3	18,738.7			30,684.14			

** = 2QzGhAg Controls

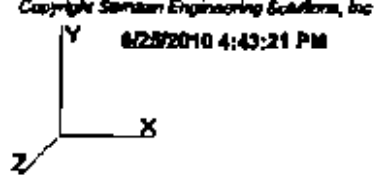
LoadCase 90 deg Ice

69.26 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)	qx	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Bol Ratio	Cl	Df	Dr	Rr	EF Area (sqft)	Linear Area (sqft)	Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	EF Face		
																				16	14
16	270.0	22.40	0.00	18.84	7.70	0.64	1.86	0.85	1.00	0.72	13.62	0.00	0.00	718.5	233.8	614.24	0.00	614.24	3		
16	255.0	22.84	0.00	49.90	19.53	0.71	1.78	0.85	1.00	0.83	41.24	0.00	0.00	1,842.2	704.7	1,785.92	0.00	1,785.92	3		
14	235.0	21.83	0.00	64.16	26.09	0.77	1.80	0.85	1.00	0.88	47.40	0.00	0.00	2,096.2	789.7	2,008.70	0.00	2,008.70	2		
13	222.8	21.20	0.00	14.48	6.83	0.82	1.84	0.85	1.00	0.93	13.28	0.00	0.00	698.7	213.8	665.40	0.00	665.40	2		
12	210.0	20.85	0.00	64.99	26.00	0.79	1.81	0.85	1.00	0.89	48.85	0.00	0.00	2,368.5	874.3	2,002.41	0.00	2,002.41	2		
11	190.0	20.28	0.00	67.82	22.78	0.82	1.83	0.85	1.00	0.82	52.78	1.28	0.82	2,857.7	1,006.0	2,144.28	88.48	2,200.76	1		
10	170.0	19.83	0.00	64.18	24.82	0.82	1.98	0.85	1.00	1.00	64.10	17.22	10.00	3,208.3	1,298.7	2,688.49	700.78	3,003.89	1		
8	180.0	18.84	0.00	63.87	24.53	0.81	1.84	0.80	1.00	0.80	63.18	21.88	14.17	3,248.8	1,388.7	2,633.82	697.27	2,898.36	1		
8	130.0	18.18	0.00	63.87	24.53	0.81	1.84	0.80	1.00	0.80	63.18	23.08	10.00	3,281.3	1,348.0	2,432.48	807.43	2,782.25	1		
7	110.0	17.33	0.00	64.18	24.82	0.83	1.88	0.88	1.00	1.00	64.10	28.82	18.33	3,327.8	1,381.1	2,387.80	1,008.1	2,682.87	1		
8	90.00	18.37	0.86	63.87	24.53	0.81	1.84	0.80	1.00	0.89	62.16	28.82	18.33	3,341.4	1,407.3	2,189.81	880.04	2,504.77	1		
5	70.00	16.23	0.00	63.87	24.82	0.81	1.84	0.80	1.00	0.89	63.18	24.82	18.33	3,349.7	1,413.3	2,038.00	894.21	2,331.22	1		
4	80.00	13.84	0.00	64.18	24.82	0.82	1.88	0.85	1.00	1.00	64.10	28.82	18.33	3,374.8	1,431.4	1,889.87	893.17	2,117.54	1		
3	30.85	12.29	0.00	63.87	24.53	0.81	1.84	0.85	1.00	0.80	63.18	26.82	18.33	3,384.1	1,424.4	1,644.84	713.28	1,889.89	1		
2	12.80	12.29	0.00	37.00	14.82	0.72	1.78	0.85	1.00	0.83	31.22	13.87	10.00	2,863.4	784.8	745.44	801.81	1,127.06	1		
1	2.00	12.29	0.00	6.84	2.46	0.84	1.78	0.85	1.00	0.78	4.41	0.72	0.83	383.8	78.2	108.88	24.88	130.88	1		
														39,160.3	18,738.7			30,684.14			

** = 2QzGhAg Controls



Gh: 1.00

Section Forces

LoadCase Normal

50.00 mph Wind Normal To Face with No Ice

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

Beq	Wind Hgt (ft)	qz	Total Flat Area (sqft)	Total Round 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)	Eff Face
16	270.0	11.87	0.00	11.13	0.00	0.32	2.28	1.00	1.00	0.82	6.92	0.00	0.00	484.7	0.0	198.53	0.00	198.53	3
16	255.0	11.40	0.00	30.28	0.00	0.43	2.00	1.00	1.00	0.87	20.16	0.00	0.00	1,237.5	0.0	506.44	0.00	506.44	3
14	235.0	11.21	0.00	30.28	0.00	0.43	2.00	1.00	1.00	0.87	20.16	0.00	0.00	1,308.5	0.0	494.76	0.00	494.76	3
13	222.8	11.04	0.00	8.06	0.00	0.46	1.96	1.00	1.00	0.88	5.49	0.00	0.00	388.7	0.0	129.43	0.00	129.43	3
12	210.0	10.86	0.00	31.11	0.00	0.44	1.96	1.00	1.00	0.87	20.87	0.00	0.00	1,482.2	0.0	491.17	0.00	491.17	3
11	190.0	10.66	0.00	34.86	0.00	0.50	1.96	1.00	1.00	0.70	24.27	0.00	1.29	1,562.7	0.0	532.72	17.00	550.00	1
10	170.0	10.22	0.00	39.36	0.00	0.58	1.83	1.00	1.00	0.73	28.78	17.22	0.00	1,909.5	0.0	688.42	230.88	820.32	1
9	150.0	9.80	0.00	38.14	0.00	0.58	1.83	1.00	1.00	0.73	28.88	21.86	0.00	1,908.2	0.0	685.02	284.04	848.96	1
8	130.0	9.47	0.00	38.14	0.00	0.58	1.83	1.00	1.00	0.73	28.88	23.08	0.00	1,911.4	0.0	642.28	288.32	828.71	1
7	110.0	8.93	0.00	39.34	0.00	0.58	1.83	1.00	1.00	0.73	28.78	25.82	0.00	1,936.7	0.0	620.48	308.88	827.41	1
6	90.00	8.62	0.00	39.14	0.00	0.58	1.83	1.00	1.00	0.73	28.88	25.82	0.00	1,934.1	0.0	468.28	289.83	778.11	1
5	70.00	7.93	0.00	38.14	0.00	0.58	1.83	1.00	1.00	0.73	28.88	25.82	0.00	1,937.4	0.0	484.46	388.74	724.28	1
4	50.00	7.21	0.00	38.36	0.00	0.60	1.83	1.00	1.00	0.73	28.78	25.82	0.00	1,863.1	0.0	418.80	344.02	688.82	1
3	30.00	6.40	0.00	38.14	0.00	0.58	1.83	1.00	1.00	0.73	28.88	25.82	0.00	1,938.8	0.0	388.80	217.88	594.18	1
2	12.60	6.40	0.00	22.74	0.00	0.43	2.00	1.00	1.00	0.87	18.14	13.87	0.00	1,288.8	0.0	212.88	114.81	328.88	1
1	3.88	6.40	0.00	3.19	0.00	0.58	2.14	1.00	1.00	0.84	2.83	6.72	0.00	388.3	0.0	38.41	8.02	38.43	1
														23,454.8	0.0			8,888.74	

** = 2DzGhAg Controls

LoadCase 90 deg

50.00 mph Wind at 90 deg From Face with No Ice

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

Beq	Wind Hgt (ft)	qz	Total Flat Area (sqft)	Total Round 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)	Eff Face
16	270.0	11.87	0.00	11.13	0.00	0.32	2.28	0.80	1.00	0.82	6.92	0.00	0.00	484.7	0.0	198.53	0.00	198.53	3
16	255.0	11.48	0.00	30.30	0.00	0.43	2.00	0.80	1.00	0.87	20.16	0.00	0.00	1,237.5	0.0	506.44	0.00	506.44	3
14	235.0	11.21	0.00	30.28	0.00	0.43	2.00	0.80	1.00	0.87	20.16	0.00	0.00	1,309.5	0.0	494.76	0.00	494.76	3
13	222.8	11.04	0.00	0.00	0.00	0.46	1.96	0.80	1.00	0.88	5.49	0.00	0.00	388.7	0.0	129.43	0.00	129.43	3
12	210.0	10.86	0.00	31.11	0.00	0.44	1.96	0.80	1.00	0.87	20.87	0.00	0.00	1,482.2	0.0	491.17	0.00	491.17	3
11	190.0	10.66	0.00	34.86	0.00	0.50	1.96	0.80	1.00	0.70	24.27	0.00	1.29	1,562.7	0.0	532.72	17.00	908.00	1
10	170.0	10.22	0.00	39.36	0.00	0.58	1.83	0.80	1.00	0.73	28.78	17.22	0.00	1,909.5	0.0	688.42	180.88	820.32	1
9	150.0	9.80	0.00	38.14	0.00	0.58	1.83	0.80	1.00	0.73	28.88	21.86	0.00	1,908.2	0.0	685.02	284.04	848.96	1
8	130.0	9.47	0.00	38.14	0.00	0.58	1.83	0.80	1.00	0.73	28.88	23.08	0.00	1,911.4	0.0	642.28	288.32	828.71	1
7	110.0	8.93	0.00	39.34	0.00	0.58	1.83	0.80	1.00	0.73	28.78	25.82	0.00	1,936.7	0.0	620.48	308.88	827.41	1
6	90.00	8.62	0.00	39.14	0.00	0.58	1.83	0.80	1.00	0.73	28.88	25.82	0.00	1,934.1	0.0	468.28	289.83	778.11	1
5	70.00	7.93	0.00	38.14	0.00	0.58	1.83	0.80	1.00	0.73	28.88	25.82	0.00	1,937.4	0.0	484.46	388.74	724.28	1
4	50.00	7.21	0.00	38.36	0.00	0.60	1.83	0.80	1.00	0.73	28.78	25.82	0.00	1,863.1	0.0	418.80	344.02	688.82	1
3	30.00	6.40	0.00	38.14	0.00	0.58	1.83	0.80	1.00	0.73	28.88	25.82	0.00	1,938.8	0.0	388.80	217.88	594.18	1
2	12.50	6.40	0.00	22.74	0.00	0.43	2.00	0.80	1.00	0.87	18.14	13.87	0.00	1,288.8	0.0	212.88	114.81	328.88	1
1	3.88	6.40	0.00	3.19	0.00	0.58	2.14	0.80	1.00	0.84	2.83	6.72	0.00	388.3	0.0	38.41	8.02	38.43	1
														23,484.8	0.0			8,888.74	

** = 2DzGhAg Controls

Code: TIA/EIA-222 Rev F

Gh : 1.00

Section Forces

LoadCase 90 deg

60.00 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	Total		Ice		EF				Ice		Total Weight (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	Eff Face		
			Flat Area (sqft)	Round Area (sqft)	Round Area (sqft)	Sol Ratio	Ct	Dr	Dr	Rr	Area (sqft)	Linear Area (sqft)						Linear Area (sqft)	Weight Ice (lb)
16	170.0	11.87	0.00	11.13	0.00	0.32	2.28	0.85	1.00	0.82	8.92	0.00	0.00	484.7	0.0	198.63	0.00	198.63	3
18	166.0	11.48	0.00	30.29	0.00	0.43	2.00	0.85	1.00	0.87	20.15	0.00	0.00	1,237.6	0.0	808.44	0.00	608.44	3
14	238.0	11.21	0.00	30.28	0.00	0.43	2.00	0.85	1.00	0.87	20.15	0.00	0.00	1,308.6	0.0	494.78	0.00	494.78	3
13	222.5	11.04	0.00	8.68	0.00	0.46	1.96	0.85	1.00	0.88	6.49	0.00	0.00	388.7	0.0	129.43	0.00	129.43	3
12	210.0	10.88	0.00	31.11	0.00	0.44	1.98	0.85	1.00	0.87	20.87	0.00	0.00	1,482.2	0.0	491.17	0.00	491.17	3
11	186.0	10.68	0.00	34.84	0.00	0.00	1.90	0.85	1.00	0.70	24.27	1.29	0.00	1,862.7	0.0	632.72	17.99	590.60	1
10	170.0	10.22	0.00	38.36	0.00	0.58	1.83	0.88	1.00	0.73	28.78	17.22	0.00	1,808.6	0.0	889.42	230.00	839.32	1
9	160.0	9.86	0.00	38.14	0.00	0.58	1.83	0.85	1.00	0.73	28.58	21.08	0.00	1,808.2	0.0	889.82	264.04	849.06	1
8	130.0	9.47	0.86	38.14	0.00	0.58	1.83	0.85	1.00	0.73	28.58	23.94	0.00	1,811.4	0.0	842.00	286.23	828.71	1
7	110.0	9.03	0.00	38.00	0.00	0.58	1.82	0.85	1.00	0.73	28.78	28.82	0.00	1,838.7	0.0	820.46	308.02	827.41	1
6	90.00	8.52	0.00	38.14	0.00	0.58	1.83	0.85	1.00	0.73	28.68	28.82	0.00	1,834.1	0.0	688.38	288.82	778.11	1
5	70.00	7.93	0.00	38.14	0.00	0.58	1.83	0.85	1.00	0.73	28.58	28.82	0.00	1,837.4	0.0	484.88	288.74	724.20	1
4	60.00	7.21	0.00	38.34	0.00	0.58	1.83	0.88	1.86	0.73	28.78	28.82	0.00	1,853.1	0.0	418.00	248.02	688.52	1
3	38.00	6.40	0.00	38.14	0.00	0.58	1.83	0.88	1.86	0.78	28.88	28.82	0.06	1,898.6	0.8	388.88	217.88	684.18	1
2	12.00	6.48	0.88	22.74	0.00	0.43	2.00	0.88	1.00	0.87	18.14	13.47	0.00	1,288.3	0.0	212.98	114.81	388.00	1
1	2.69	6.48	0.00	3.18	0.00	0.38	2.14	0.85	1.00	0.84	2.03	0.72	0.85	306.3	0.0	30.41	6.02	38.43	1
													23,464.8	0.0			8,808.74		

== 20zGhAg Controls

Code: TIA/EIA-222 Rev F

Tower Loading

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Weight (lb)	No Ice CaAs (sf)	CaAs Factor	Weight (lb)	Ice CaAs (sf)	CaAs Factor	Distance From Face (ft)	X Angle (deg)	Vert Ecc (ft)
271.0	Anten WPA-800804CF	8	10.00	5.160	0.71	28.00	5.570	0.71	0.000	0.00	0.000
271.0	Anten LPA-1850808CF	8	7.80	2.790	1.00	28.00	3.250	1.00	0.000	0.00	0.000
271.0	Flat Light Sector Frame	3	400.00	17.000	0.75	610.00	22.200	0.75	0.000	0.00	0.000
280.0	RFS ATMAA1412D-1A20	3	13.00	1.170	0.87	20.00	1.390	0.87	0.000	0.00	0.000
280.0	Ericsson KRY 112 144M	3	11.00	0.410	0.87	14.10	0.350	0.87	0.000	0.00	0.000
280.0	RFS APX16DWW-16DWW-S-E-	6	39.00	6.700	0.87	89.38	7.350	0.87	0.000	0.00	0.000
280.0	Radio Waves G3-2A	1	40.00	4.200	1.00	80.00	11.700	1.00	0.000	0.00	0.000
280.0	Round Sector Frame	3	300.00	14.400	0.75	415.00	19.200	0.75	0.000	0.00	0.000
280.0	Ice Shield	1	150.00	6.000	1.00	300.00	7.500	1.00	0.000	0.00	0.000
258.0	8' HP MW Dish	1	470.00	63.420	1.00	1010.00	64.750	1.00	0.000	0.00	0.000
244.0	Ice Shield	1	150.00	6.000	1.00	300.00	7.500	1.00	0.000	0.00	0.000
241.0	8' HP MW Dish	1	470.00	63.420	1.00	1010.00	64.750	1.00	0.000	0.00	0.000
228.0	Ice Shield	1	100.00	6.000	1.00	350.00	7.000	1.00	0.000	0.00	0.000
220.0	8' HP MW Dish	1	470.00	63.420	1.00	1010.00	64.750	1.00	0.000	0.00	0.000
193.0	KMW HB-X-WM-17-85-00T-	3	15.90	1.140	0.76	23.30	1.370	0.76	0.000	0.00	0.000
193.0	KMW HB-X-WM-17-85-00T	3	30.00	1.850	1.00	50.50	2.290	1.00	0.000	0.00	0.000
193.0	Clearwire Mount	1	350.00	0.500	1.00	450.00	10.500	1.00	0.000	0.00	0.000
190.0	10' Omni	1	25.00	3.000	1.00	48.00	4.000	1.00	0.000	0.00	5.000
190.0	Standoff Mount	1	150.00	4.000	1.00	280.00	8.000	1.00	0.000	0.00	0.000
180.0	Anten BSA-185086/10CF	6	9.10	3.910	0.87	27.95	4.490	0.87	0.000	0.00	0.000
100.0	Round Sector Frame	3	300.00	14.400	0.75	415.00	19.200	0.75	0.000	0.00	0.000
170.0	TTA	1	10.00	1.400	1.00	20.34	1.840	1.00	0.000	0.00	0.000
170.0	10' Omni	1	20.00	3.000	1.00	40.00	4.000	1.00	0.000	0.00	5.000
170.0	Standoff Mount	1	100.00	4.000	1.00	200.00	6.000	1.00	0.000	0.00	0.000
165.0	4' HP MW Dish	1	170.00	13.880	1.00	200.00	16.520	1.00	0.000	0.00	0.000
120.0	2' Omni	2	10.00	0.888	1.00	19.00	0.940	1.00	0.000	0.00	1.000
120.0	Standoff Mount	2	100.00	4.000	1.00	250.00	6.000	1.00	0.000	0.00	0.000
00.00	10' Omni	1	20.00	3.000	1.00	40.00	4.000	1.00	0.000	0.00	5.000
06.00	Standoff Mount	1	150.00	4.000	1.00	250.00	8.000	1.00	0.000	0.00	0.000
36.00	GPS	1	10.00	1.000	1.00	10.24	1.210	1.00	0.000	0.00	0.500
36.00	Standoff Mount	1	150.00	4.000	1.00	250.00	8.000	1.00	0.000	0.00	0.000
Totals		67	7038.00			11817.28			Number of Appurtenances : 31		

Linear Appurtenance Properties

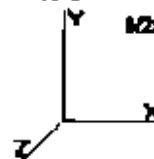
Elev From (ft)	Elev To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Wind	Spread On Face	Bundling Arrangement
10.00	271.0	1 5/8" Coax	10	1.98	1.04	80.00	3	Separate
10.00	271.0	1 5/8" Coax	2	1.98	1.04	100.00	2	Separate
10.00	280.0	1 5/8" Coax	12	1.98	0.82	88.60	2	Bundled
10.00	280.0	1/2" Coax	1	0.95	0.16	100.00	3	Separate
10.00	200.0	EWS2	2	2.25	0.59	100.00	1	Separate
10.00	241.0	1/2" Coax	3	0.83	0.15	68.00	1	Separate
10.00	220.0	EWS2	2	2.25	0.50	100.00	1	Separate
10.00	193.0	1 5/8" Coax	6	1.98	0.82	80.00	1	Separate
10.00	190.0	1 1/4" Coax	1	1.56	0.95	100.00	Lin App	Separate
10.00	180.0	1 5/8" Coax	6	1.98	1.04	68.00	Lin App	Separate

Site Number: 10047

Location: Portland ME, ME

Code: TIA/EIA-222 Rev F

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Tower Loading

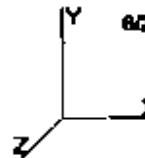
0.00	170.0	7/8" COBK	1	1.00	0.33	100.00	Lin App	Separate
10.00	170.0	1/2" COBK	1	0.63	0.15	100.00	Lin App	Separate
10.00	195.0	EW90	2	1.32	0.32	100.00	Lin App	Separate
0.00	120.0	1/2" COBK	1	0.63	0.15	100.00	Lin App	Separate
10.00	120.0	7/8" COBK	1	1.00	0.33	100.00	Lin App	Separate
10.00	95.00	1 3/8" COBK	1	1.90	0.82	100.00	3	Separate
10.00	35.00	1/2" COBK	1	0.63	0.15	100.00	3	Separate

Site Number: 10047
 Location: Portland ME, ME

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Code: TIA/EIA-222 Rev F



Force/Stress Summary

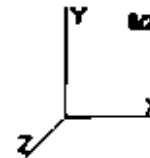
Section: 1		PIRO042B		Bot Elev (ft): 0.00		Height (ft): 8.000		Member				Shear Bear		Use		
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			Fa (ksi)	Cap (kip)	Num Bolts	Num Holes	Cap (kip)	Cap (kip)	%	Controls	
LEG	SOL - 2 1/4" SOLID	-91.81	Normal Ice	1.00	100	100	100	28.2	34.7	128.16	0	0	0.00	0.00	88	Member X
	HORIZ	0.00		0.000	0	0	0	0.0	0.00	0	0	0.00	0.00	0		
	DIAG SOL - 3/4" SOLID	-4.01	Normal Ice	2.440	80	80	80	78.1	26.8	11.42	0	0	0.00	0.00	36	Member X
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	12.28	Normal Ice	80	17.87	0	0	0.00	0.00	88	Member					
	DIAG SOL - 3/4" SOLID	1.88	Normal Ice	80	17.87	0	1	0.00	0.00	11	Member					
Section: 2		PIRO042		Bot Elev (ft): 8.00		Height (ft): 16.000		Member				Shear Bear		Use		
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			Fa (ksi)	Cap (kip)	Num Bolts	Num Holes	Cap (kip)	Cap (kip)	%	Controls	
LEG	SOL - 2 1/4" SOLID	-83.78	Normal Ice	2.30	100	100	100	81.0	32.3	128.20	0	0	0.00	0.00	46	Member X
	HORIZ	0.00		0.000	0	0	0	0.0	0.00	0	0	0.00	0.00	0		
	DIAG SOL - 3/4" SOLID	-0.78	90 deg Ice	4.238	80	80	80	138.6	10.8	4.78	0	0	0.00	0.00	16	Member X
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	6.41	Normal Ice	80	17.87	0	0	0.00	0.00	30	Member					
	DIAG SOL - 3/4" SOLID	0.00	80 deg Ice	88	17.87	0	0	0.00	0.00	3	Member					
Section: 3		1		Bot Elev (ft): 20.00		Height (ft): 20.000		Member				Shear Bear		Use		
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			Fa (ksi)	Cap (kip)	Num Bolts	Num Holes	Cap (kip)	Cap (kip)	%	Controls	
LEG	SOL - 2 1/4" SOLID	-88.11	Normal Ice	2.33	100	100	100	49.8	32.8	128.27	0	0	0.00	0.00	68	Member X
	HORIZ SOL - 3/4" SOLID	-0.18	Normal Ice	3.000	100	100	100	224.0	4.0	1.78	0	0	0.00	0.00	10	Member X
	DIAG SOL - 3/4" SOLID	-1.88	Normal Ice	4.208	80	80	80	134.6	11.8	4.06	0	0	0.00	0.00	34	Member X
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	0.81	90 deg Ice	80	17.87	0	0	0.00	0.00	4	Member					
	DIAG SOL - 3/4" SOLID	0.94	80 deg Ice	88	17.87	0	0	0.00	0.00	6	Member					

Site Number: 10047
 Location: Portland ME, ME

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Code: TIA/EIA-222 Rev F



Force/Stress Summary

Section: 4		1		Bot Elev (ft): 40.00				Height (ft): 20.000							
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			F _a (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 2 1/4" SOLID	-103.97	Normal Ice	2.33	100	100	100	49.8	32.8	129.27	0	0	0.00	0.00	80	Member X
HORIZ SOL - 3/4" SOLID	-0.28	60 deg Ice	3.800	100	100	100	234.0	4.0	1.78	0	0	0.00	0.00	14	Member X
DIAG SOL - 3/4" SOLID	-2.17	90 deg Ice	4.208	80	80	80	134.8	11.0	4.84	0	0	0.00	0.00	44	Member X
Max Tension Member		Force (kip)	Load Case	F _y (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls				
LEG	0.00		0	0.00	0	0	0	0.00	0.00	0					
HORIZ SOL - 3/4" SOLID	1.10	Normal Ice	80	17.87	0	0	0	0.00	0.00	8	Member				
DIAG SOL - 3/4" SOLID	1.48	90 deg Ice	80	17.87	0	0	0	0.00	0.00	8	Member				
Section: 5		1		Bot Elev (ft): 60.60				Height (ft): 20.000							
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			F _a (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 2 1/4" SOLID	-87.30	Normal Ice	2.33	100	100	100	49.8	32.8	129.27	0	0	0.00	0.00	75	Member X
HORIZ SOL - 3/4" SOLID	-0.28	Normal Ice	3.800	100	100	100	234.0	4.0	1.78	0	0	0.00	0.00	14	Member X
DIAG SOL - 3/4" SOLID	-1.20	60 deg Ice	4.208	80	80	80	134.8	11.0	4.84	0	0	0.00	0.00	38	Member X
Max Tension Member		Force (kip)	Load Case	F _y (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls				
LEG	0.00		0	0.00	0	0	0	0.00	0.00	0					
HORIZ SOL - 3/4" SOLID	0.00	60 deg Ice	80	17.87	0	0	0	0.00	0.00	8	Member				
DIAG SOL - 3/4" SOLID	1.00	90 deg Ice	80	17.87	0	0	0	0.00	0.00	8	Member				
Section: 8		1		Bot Elev (ft): 80.00				Height (ft): 20.000							
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			F _a (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 2 1/4" SOLID	-87.14	Normal Ice	2.33	100	100	100	49.8	32.8	129.27	0	0	0.00	0.00	97	Member X
HORIZ SOL - 3/4" SOLID	-0.00	Normal No Ice	3.800	100	100	100	234.0	4.0	1.78	0	0	0.00	0.00	4	Member X
DIAG SOL - 3/4" SOLID	-1.24	60 deg Ice	4.208	80	80	80	134.8	11.0	4.84	0	0	0.00	0.00	28	Member X
Max Tension Member		Force (kip)	Load Case	F _y (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls				
LEG	0.00		0	0.00	0	0	0	0.00	0.00	0					
HORIZ SOL - 3/4" SOLID	0.88	60 deg Ice	80	17.87	0	0	0	0.00	0.00	8	Member				
DIAG SOL - 3/4" SOLID	0.78	60 deg No Ice	80	17.87	0	0	0	0.00	0.00	4	Member				



PASSED

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 275 ft Pirod Guyed Tower
ATC Site Name : Portland ME, ME
ATC Site Number : 10047
Proposed Carrier : Clearwire Corporation
Carrier Site Name : Portland
Carrier Site Number : ME-PTLS001
County : Cumberland
Eng. Number : 45172123
Date : June 25, 2010
Usage : 83% Legs, 84% Diagonals,
69% Horizontals, and 77% Guys

Submitted by:
Adam Ponder
Project Engineer

American Tower Engineering Services
8505 Freeport Parkway
Suite 135
Irving, TX 75063
Phone: 972-999-8900





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Irving, TX 75063
Phone: 972-999-8900

Introduction

The purpose of this report is to summarize results of the structural analysis performed on the 275 ft. guyed tower located at Portland ME, ME, Cumberland County (ATC site #10047). The tower was originally designed and manufactured by Pirod (Drawing #87-07-131 dated July 18, 1987).

Analysis

The existing tower was analyzed using Semaan Engineering Solutions, Inc., Software. The analysis assumes that the tower is in good, undamaged, and non-corroded condition. A 5% overstress is allowed in the existing structural members to account for program variances.

Basic wind speed: 80 mph (Fastest Mile)
 Radial Ice: 69 mph (Fastest Mile) with 1/2" radial ice concurrent
 Standard/Code: ANSI/ITA-222-F / 2003 IBC Section 1609.1.1, Exception (5) and Section 3108.4

Antenna Loads

The following antenna loads were used in the tower analysis.

Existing Antennas

Elev. (ft)	Qty	Antennas	Mount	Coax	Carrier
271.0	6	Antel LPA-185080/8CF	(3) Sector Frames	(12) 1-5/8"	Verizon Wireless
	6	Antel WPA-80080/4CF			
260.0	1	Radio Waves G3-2.4	(3) Sector Frames	(12) 1-5/8" (1) 1/2"	T-Mobile
	6	RFS APX16DWV-16DWV-S-E-ACU			
	3	Encason KRY 112 144/1			
	3	RFS ATMAA1412D-1A20			
255.0	1	8' HP MW Dish	Dish Mount	(2) EW52	Verizon Wireless
241.0	1	8' HP MW Dish	Dish Mount	(3) 1/2"	
220.0	1	8' HP MW Dish	Dish Mount	(2) EW52	
190.0	1	10' Omni	Standoff Mount	(1) 1-1/4"	City of Portland
180.0	6	Antel BSA-185065/10CF	(3) Sector Frames	(6) 1-5/8"	US Cellular
170.0	1	10' Omni	Standoff Mount	(1) 7/8"	City of Portland
	1	TTA		(1) 1/2"	
155.0	1	4' HP MW Dish	Dish Mount	(2) EW90	Verizon Wireless
120.0	2	2' Omni	(2) Standoff Mounts	(1) 7/8" (1) 1/2"	City of Portland
96.0	1	10' Omni	Standoff Mount	(1) 1-5/8"	Ron Dorler
36.0	1	GPS	Standoff Mount	(1) 1/2"	(landlord)

Antenna Loads (Continued)**Proposed Antennas**

Elev. (ft)	Qty	Antennas	Mount	Coax	Carrier
193.0	3	KMW HB-X-WM-17-64-00T	Clearwire Mount (Side Arms)	(6) 1-5/8"	Clearwire Corporation
	3	KMW HB-X-WM-17-65-00T- TTLNA			

The proposed Clearwire Corporation coax must be stacked in two rows (3-on-3), and must be installed on the same tower face as the existing Verizon Wireless elliptical waveguide to the 255° and 220° elevations.

Results

The existing 275 ft. Pirod guyed tower with the existing and the proposed antennas is structurally acceptable per TIA/EIA-222-F and the 2003 IBC. The maximum structure usage is: 83% legs, 84% diagonals, 69% horizontals, and 77% guys.

Foundation (Location)	Reactions (kips)	Original Design Reaction (kips)	Current Analysis Reactions (kips)	% Of Original Design
Tower Base	Compression	256.4	249.2	97.2
	Horizontal	4.8	0.6	12.5
Inner Anchor (115 ft. Radius)	Uplift	122.7	104.2	84.9
	Horizontal	83.3	68.9	82.7

The structure foundation reactions resulting from the current analysis do not exceed the ones shown on the original structural drawings or calculations. Therefore, assuming the original foundations were designed correctly, the existing foundations are adequate to support the current analysis reactions. No modification to the existing foundations will be required.

Conclusion

The existing tower and its foundations were found to be adequate to support the existing and proposed antennas with the transmission lines distributed as described above while meeting the requirements of the code or standard as specified in this report.

If you have any questions or require additional information, please call (972) 999-8900.

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:

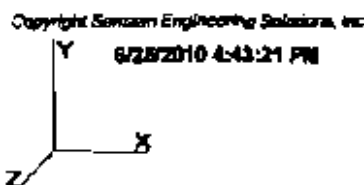
- Information supplied by the client regarding the structure itself, the antenna and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of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

It is the responsibility of the client to ensure that the information provided to ATC 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 ANSIEIA-222.

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

Site Number: 10047
 Location: Portland ME, ME
 Code: TIA/EIA-922 Rev F



Gh : 1.00

Section Forces

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 (ft)	qz	Total		Ice		Sol				EF Area (sqft)	Linear Area (sqft)	Ice		Struct Force (lb)	Linear Force (lb)	Total Force (lb)	EF Face					
			Flat Area (sqft)	Round Area (sqft)	Round Area (sqft)	Ratio	Cf	Df	Dr	Rr			Total Weight (lb)	Weight Ice (lb)									
16	270.0	29.87	0.00	11.13	0.00	0.32	2.25	1.00	1.00	0.62	6.92	0.00	0.00	484.7	0.0	808.24	0.00	808.24	3				
15	265.0	29.39	0.00	30.28	0.00	0.43	2.00	1.00	1.00	0.67	20.15	0.00	0.00	1,237.8	0.0	1,298.00	0.00	1,298.00	3				
14	235.0	28.71	0.00	30.28	0.00	0.43	2.00	1.00	1.00	0.67	20.15	0.00	0.00	1,306.8	0.0	1,298.00	0.00	1,298.00	3				
13	222.5	28.25	0.00	0.00	0.00	0.49	1.00	1.00	1.00	0.68	8.49	0.00	0.00	386.7	0.0	331.36	0.00	331.36	3				
12	210.0	27.80	0.00	31.11	0.00	0.44	1.00	1.00	1.00	0.67	20.67	0.00	0.00	1,482.2	0.0	1,267.41	0.00	1,267.41	3				
11	190.0	27.02	0.00	34.85	0.00	0.00	1.00	1.00	1.00	0.70	24.27	1.29	0.00	1,662.7	0.0	1,363.78	48.78	1,409.54	1				
10	170.0	26.17	0.00	28.28	0.00	0.00	1.03	1.00	1.00	0.73	28.78	17.21	0.00	1,909.5	0.0	1,808.91	891.10	2,100.01	1				
9	150.0	25.26	0.00	39.14	0.00	0.00	1.03	1.00	1.00	0.73	28.80	21.06	0.00	1,908.2	0.0	1,448.48	727.13	2,173.89	1				
8	130.0	24.34	0.00	39.14	0.00	0.00	1.03	1.00	1.00	0.73	28.88	23.08	0.00	1,911.4	0.0	1,308.81	732.88	2,121.80	1				
7	110.0	23.11	0.00	39.38	0.00	0.00	1.03	1.00	1.00	0.73	28.78	25.92	0.00	1,936.7	0.0	1,232.44	785.72	2,118.16	1				
6	90.00	21.82	0.00	39.14	0.00	0.00	1.03	1.00	1.00	0.73	28.88	25.92	0.00	1,934.1	0.0	1,280.03	741.84	1,991.07	1				
5	70.00	20.31	0.00	39.14	0.00	0.00	1.03	1.00	1.00	0.73	28.88	25.92	0.00	1,937.4	0.0	1,163.42	890.63	1,863.89	1				
4	60.00	18.48	0.00	39.38	0.00	0.00	1.03	1.00	1.00	0.73	28.78	25.92	0.00	1,953.1	0.0	1,063.69	827.34	1,890.92	1				
3	30.00	16.38	0.00	39.14	0.00	0.00	1.03	1.00	1.00	0.73	28.80	25.92	0.00	1,939.8	0.0	838.48	847.02	1,498.51	1				
2	12.50	16.38	0.00	22.74	0.00	0.43	2.00	1.00	1.00	0.67	16.14	13.87	0.00	1,298.9	0.0	642.88	283.91	838.78	1				
1	2.00	16.38	0.00	3.19	0.00	0.38	2.14	1.00	1.00	0.64	2.03	0.73	0.00	306.3	0.0	77.00	16.49	93.28	1				
															23,454.0	0.0			22,648.37				

LoadCase 60 deg No Ice

60.00 mph Wind at 60 deg From Face with No Ice

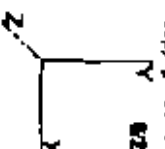
Allow Stress Inc: 1.333
 Dead LF: 1.000
 Wind LF: 1.000

Sect Seq	Wind Height (ft)	qz	Total		Ice		Sol				EF Area (sqft)	Linear Area (sqft)	Ice		Struct Force (lb)	Linear Force (lb)	Total Force (lb)	EF Face					
			Flat Area (sqft)	Round Area (sqft)	Round Area (sqft)	Ratio	Cf	Df	Dr	Rr			Total Weight (lb)	Weight Ice (lb)									
16	270.0	29.87	0.00	11.13	0.00	0.32	2.25	0.80	1.00	0.62	6.92	0.00	0.00	484.7	0.0	808.24	0.00	808.24	3				
15	265.0	29.39	0.00	30.28	0.00	0.43	2.00	0.80	1.00	0.67	20.18	0.00	0.00	1,237.8	0.0	1,298.00	0.00	1,298.00	3				
14	235.0	28.71	0.00	30.28	0.00	0.43	2.00	0.80	1.00	0.67	20.18	0.00	0.00	1,306.8	0.0	1,268.88	0.00	1,268.88	3				
13	222.5	28.25	0.00	0.00	0.00	0.49	1.00	0.80	1.00	0.68	8.49	0.00	0.00	386.7	0.0	331.36	0.00	331.36	3				
12	210.0	27.80	0.00	31.11	0.00	0.44	1.00	0.80	1.00	0.67	20.67	0.00	0.00	1,482.2	0.0	1,267.41	0.00	1,267.41	3				
11	190.0	27.02	0.00	34.00	0.00	0.00	1.00	0.80	1.00	0.70	24.27	1.29	0.00	1,662.7	0.0	1,363.78	48.78	1,409.54	1				
10	170.0	26.17	0.00	39.80	0.00	0.00	1.03	0.80	1.00	0.73	28.78	17.21	0.00	1,909.5	0.0	1,808.91	891.10	2,100.01	1				
9	150.0	25.26	0.00	39.14	0.00	0.00	1.03	0.80	1.00	0.73	28.80	21.00	0.00	1,908.2	0.0	1,448.48	727.13	2,173.89	1				
8	130.0	24.34	0.00	39.14	0.00	0.00	1.03	0.80	1.00	0.73	28.88	23.08	0.00	1,911.4	0.0	1,308.81	732.00	2,121.80	1				
7	110.0	23.11	0.00	39.28	0.00	0.00	1.03	0.80	1.00	0.73	28.78	25.92	0.00	1,936.7	0.0	1,333.44	785.72	2,118.16	1				
6	90.00	21.82	0.00	39.14	0.00	0.00	1.03	0.80	1.00	0.73	28.88	25.92	0.00	1,934.1	0.0	1,280.03	741.84	1,991.07	1				
5	70.00	20.31	0.00	39.14	0.00	0.00	1.03	0.80	1.00	0.73	28.88	25.92	0.00	1,937.4	0.0	1,163.42	890.63	1,863.89	1				
4	60.00	18.48	0.00	39.38	0.00	0.00	1.03	0.80	1.00	0.73	28.78	25.92	0.00	1,953.1	0.0	1,063.69	827.34	1,890.92	1				
3	30.00	16.38	0.00	39.14	0.00	0.00	1.03	0.80	1.00	0.73	28.80	25.92	0.00	1,939.8	0.0	838.48	847.02	1,498.51	1				
2	12.50	16.38	0.00	22.74	0.00	0.43	2.00	0.80	1.00	0.67	16.14	13.87	0.00	1,298.9	0.0	642.88	283.91	838.78	1				
1	2.00	16.38	0.00	3.19	0.00	0.38	2.14	0.80	1.00	0.64	2.03	0.73	0.00	306.3	0.0	77.00	16.40	93.30	1				
															23,454.0	0.0			22,648.37				

Site Number: 10047
 Location: Portland ME, ME

Code: TWAIA-222 Rev F

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 6/28/2010 4:43:21 PM



Gh : 1.00

Section Forces

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

Wind Sect Height Seq (ft)	qz (sqft)	Total			Ratio	Cr	Dr	Dr	Fr	kca			Total Weight (lb)	Weight kca (lb)	Struct			ET Face
		Flat Area (sqft)	Round Area (sqft)	Ice Area (sqft)						Area ET (sqft)	Linear Area (sqft)	Linear Area (sqft)			Total Weight (lb)	Force (lb)	Linear Force (lb)	
16	270.0	29.97	0.00	11.13	0.26	3.32	2.25	0.85	1.00	0.82	6.92	0.00	484.7	0.0	808.24	0.00	608.24	3
18	265.0	29.29	0.00	30.25	0.00	0.43	2.00	0.55	1.00	0.67	20.15	0.00	1,257.5	0.0	1,296.50	0.00	1,296.50	3
14	235.0	28.71	0.00	30.25	0.00	0.43	2.00	0.58	1.00	0.67	20.15	0.00	1,296.5	0.0	1,298.89	0.00	1,298.89	3
13	222.5	29.25	0.00	0.00	0.00	0.44	1.88	0.58	1.00	0.69	6.49	0.00	396.7	0.0	331.35	0.00	331.35	3
12	210.0	27.00	0.00	31.11	0.00	0.44	1.90	0.58	1.00	0.67	20.87	0.00	1,482.2	0.0	1,287.41	0.60	1,287.41	3
11	195.0	27.82	0.00	34.00	0.00	0.60	1.83	0.55	1.00	0.70	24.27	1.24	1,832.7	0.0	1,383.78	49.78	1,408.54	1
10	170.0	29.17	0.00	28.39	0.00	0.68	1.83	0.55	1.00	0.73	20.70	17.22	1,908.5	0.0	1,308.61	871.10	2,100.01	1
9	150.0	28.28	0.00	28.14	0.00	0.68	1.83	0.55	1.00	0.73	20.60	21.94	1,808.2	0.0	1,444.44	737.13	2,173.59	1
8	130.0	24.24	0.00	28.14	0.00	0.68	1.83	0.55	1.00	0.73	20.60	23.05	1,911.4	0.0	1,288.61	732.00	2,121.60	1
7	110.0	32.11	0.00	38.90	0.00	0.60	1.83	0.56	1.00	0.73	25.78	25.02	1,828.7	0.0	1,332.44	785.72	2,118.16	1
6	90.00	21.82	0.00	38.14	0.00	0.68	1.83	0.55	1.00	0.73	25.68	25.02	1,824.1	0.0	1,280.03	741.84	1,997.87	1
5	70.00	20.31	0.00	38.14	0.00	0.60	1.83	0.55	1.00	0.73	25.68	25.02	1,837.4	0.0	1,163.43	690.03	1,853.85	1
4	50.00	18.45	0.00	38.24	0.00	0.68	1.83	0.55	1.00	0.73	25.70	25.02	1,863.1	0.0	1,053.86	637.24	1,688.02	1
3	30.00	18.38	0.00	38.14	0.00	0.60	1.83	0.50	1.00	0.73	29.00	25.02	1,858.8	0.0	938.48	607.02	1,498.51	1
2	13.00	18.38	0.00	23.74	0.00	0.43	2.00	0.50	1.00	0.67	18.14	19.87	1,294.9	0.0	842.83	283.87	638.79	1
1	2.00	18.38	0.00	3.19	0.00	0.28	2.14	0.00	1.00	0.64	2.83	8.73	386.3	0.0	77.38	18.40	82.38	1
													23,454.6	0.0			22,845.7	

LoadCase Normal Ice

89.25 mph Wind Normal To Face with Ice

Allow Stress Inc: 1.333

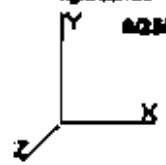
Dead LF: 1.000

Wind LF: 1.000

Wind Sect Height Seq (ft)	qz (sqft)	Total			Ratio	Cr	Dr	Dr	Fr	kca			Total Weight (lb)	Weight kca (lb)	Struct			ET Face
		Flat Area (sqft)	Round Area (sqft)	Ice Area (sqft)						Area ET (sqft)	Linear Area (sqft)	Linear Area (sqft)			Total Weight (lb)	Force (lb)	Linear Force (lb)	
16	270.0	22.49	0.00	18.84	0.84	1.56	1.00	1.00	0.72	13.82	0.00	0.00	718.5	233.5	614.24	0.00	814.24	3
18	265.0	22.04	0.00	48.80	0.71	1.78	1.00	1.00	0.83	41.24	0.00	0.00	1,843.2	704.7	1,796.82	0.00	1,796.82	3
14	235.0	21.83	0.00	64.16	0.77	1.80	1.00	1.00	0.84	47.48	0.00	0.00	2,098.2	789.7	2,096.70	0.00	2,096.70	2
13	222.5	21.20	0.00	14.46	0.83	1.84	1.00	1.00	0.82	13.25	0.00	0.00	598.7	213.0	585.40	0.00	585.40	2
12	210.0	20.88	0.00	94.00	0.78	1.81	1.00	1.00	0.88	48.88	0.00	0.00	3,188.0	874.3	2,002.41	0.00	2,002.41	2
11	195.0	20.25	0.00	57.82	0.82	1.83	1.00	1.00	0.83	48.78	1.25	0.00	3,188.0	874.3	2,002.41	0.00	2,002.41	2
10	170.0	19.84	0.00	64.16	0.87	1.95	1.00	1.00	0.84	64.10	17.22	10.00	3,268.2	1,298.0	2,680.48	780.78	3,202.88	1
9	150.0	18.18	0.00	63.87	0.84	1.84	1.00	1.00	0.89	62.18	21.94	14.17	3,348.8	1,298.2	2,653.92	687.27	2,688.38	1
8	130.0	17.33	0.00	64.18	0.82	1.84	1.00	1.00	0.89	64.10	23.05	18.00	3,357.3	1,349.8	2,432.40	687.43	2,782.89	1
7	110.0	17.33	0.00	64.18	0.82	1.84	1.00	1.00	0.89	64.10	23.05	18.00	3,357.3	1,349.8	2,432.40	687.43	2,782.89	1
6	90.00	18.27	0.00	63.87	0.81	1.84	1.00	1.00	0.89	64.18	23.82	18.33	3,341.4	1,407.3	2,387.80	1,008.41	3,062.87	1
5	70.00	18.27	0.00	63.87	0.81	1.84	1.00	1.00	0.89	64.18	23.82	18.33	3,341.4	1,407.3	2,387.80	1,008.41	3,062.87	1
4	50.00	13.84	0.00	64.18	0.82	1.86	1.00	1.00	1.00	64.10	23.83	18.33	3,374.8	1,437.4	1,889.87	802.17	2,117.84	1
3	30.00	12.29	0.00	63.87	0.81	1.84	1.00	1.00	0.89	63.18	23.82	18.33	3,384.1	1,424.4	1,644.04	713.38	1,680.00	1
2	12.00	12.29	0.00	37.88	0.72	1.78	1.00	1.00	0.83	31.22	19.87	10.00	2,083.4	794.5	746.44	341.81	1,127.05	1
1	2.00	12.29	0.00	8.84	0.64	1.78	1.00	1.00	0.78	4.41	0.72	0.00	383.8	70.2	168.88	24.38	130.28	1
													39,190.3	16,724.7			30,894.14	

-- = 2000Ag Centrif

Code: TIA/EIA-222 Rev F



Section Forces

Gh : 1.00

LoadCase 80 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	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Rr	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	Eff Face	
											EF Area (sqft)	Linear Area (sqft)							
18	270.0	22.40	0.00	18.84	7.70	0.54	1.86	0.80	1.00	0.72	13.52	0.00	0.00	718.5	233.8	614.24	0.00	614.24	3
16	255.0	22.04	0.00	49.80	19.83	0.71	1.78	0.80	1.00	0.83	41.24	0.00	0.00	1,942.2	704.7	1,765.92	0.00	1,765.92	3
14	235.0	21.83	0.00	54.16	26.09	0.77	1.80	0.80	1.00	0.88	47.40	0.00	0.00	2,096.2	789.7	2,006.70	0.00	2,006.70	2
13	222.5	21.29	0.00	14.48	6.93	0.63	1.84	0.80	1.00	0.92	13.28	0.00	0.00	899.7	213.0	865.40	0.00	865.40	2
12	210.0	20.88	0.00	64.99	26.00	0.79	1.81	0.80	1.00	0.80	48.80	0.00	0.00	2,388.8	874.3	2,002.41	0.00	2,002.41	2
11	190.0	20.28	0.00	67.82	22.78	0.82	1.82	0.80	1.00	0.82	52.79	1.29	0.83	2,887.7	1,005.0	2,144.28	88.48	2,200.76	1
10	179.0	19.83	0.00	84.16	24.82	0.82	1.85	0.80	1.00	1.00	64.10	17.22	10.00	3,284.3	1,288.7	2,680.48	700.78	3,003.88	1
9	150.0	18.84	0.00	83.87	24.82	0.81	1.84	0.80	1.00	0.80	63.18	21.84	14.17	3,246.9	1,288.7	2,633.82	897.27	2,888.36	1
8	130.0	18.18	0.00	83.87	24.83	0.81	1.84	0.80	1.00	0.80	63.18	23.08	15.00	3,281.2	1,349.8	2,432.40	897.43	2,782.25	1
7	110.0	17.63	0.00	84.10	24.82	0.82	1.85	0.80	1.00	1.00	64.10	24.82	16.33	3,327.8	1,391.1	2,367.00	1,008.1	2,482.87	1
6	90.00	16.37	0.00	83.87	24.83	0.81	1.84	0.80	1.00	0.80	63.18	25.82	16.33	3,341.4	1,407.3	2,188.81	880.84	2,484.77	1
5	78.85	15.23	0.00	83.87	24.83	0.81	1.84	0.80	1.00	0.88	63.18	25.82	16.33	3,380.7	1,413.3	2,038.09	884.21	2,331.23	1
4	60.00	13.84	0.88	84.10	24.82	0.82	1.85	0.80	1.00	1.00	64.10	25.82	16.33	3,374.8	1,421.4	1,889.87	883.17	2,117.84	1
3	30.00	12.29	0.00	83.87	24.83	0.81	1.84	0.80	1.00	0.88	63.18	25.82	16.33	3,384.1	1,424.4	1,644.04	713.28	1,880.88	1
2	13.00	12.29	0.00	37.80	14.82	0.72	1.78	0.80	1.00	0.83	31.22	13.87	10.00	2,083.4	784.8	745.44	381.51	1,137.85	1
1	2.80	12.29	0.00	8.84	2.48	0.84	1.78	0.88	1.00	0.78	4.41	5.72	0.83	383.8	78.2	105.88	24.88	130.80	1
														38,180.3	15,735.7			30,884.14	

** = 2QzGhAg Controls

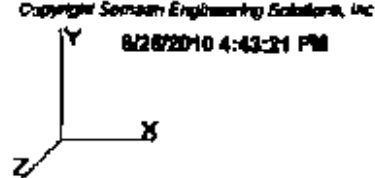
LoadCase 80 deg Ice

69.28 mph Wind at 80 deg From Face with Ice

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

Sect Seq	Wind Height (ft)	qz	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Rr	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	Eff Face	
											EF Area (sqft)	Linear Area (sqft)							
18	270.0	22.40	0.00	18.84	7.70	0.54	1.86	0.88	1.00	0.72	13.52	0.00	0.00	718.5	233.8	614.24	0.00	614.24	3
16	255.0	22.04	0.00	49.80	19.83	0.71	1.78	0.88	1.00	0.83	41.24	0.00	0.00	1,942.2	704.7	1,765.92	0.00	1,765.92	3
14	235.0	21.83	0.00	54.16	26.09	0.77	1.80	0.80	1.00	0.88	47.40	0.00	0.00	2,096.2	789.7	2,006.70	0.00	2,006.70	2
13	222.5	21.20	0.00	14.48	6.92	0.82	1.84	0.88	1.00	0.92	13.28	0.00	0.00	899.7	213.0	865.40	0.00	865.40	2
12	210.0	20.88	0.00	64.99	26.00	0.79	1.81	0.88	1.00	0.80	48.88	0.00	0.00	2,388.8	874.3	2,002.41	0.00	2,002.41	2
11	190.0	20.28	0.00	67.82	22.78	0.82	1.82	0.88	1.00	0.82	52.79	1.29	0.83	2,887.7	1,005.0	2,144.28	88.48	2,200.76	1
10	170.0	19.83	0.00	84.16	24.82	0.82	1.85	0.88	1.00	1.00	64.10	17.22	10.00	3,284.3	1,288.7	2,680.48	700.78	3,003.88	1
9	150.0	18.84	0.00	83.87	24.83	0.81	1.84	0.88	1.00	0.80	63.18	21.84	14.17	3,246.9	1,288.7	2,633.82	897.27	2,888.36	1
8	130.0	18.18	0.00	83.87	24.83	0.81	1.84	0.80	1.00	0.80	63.18	23.08	15.00	3,281.2	1,349.8	2,432.40	897.43	2,782.25	1
7	110.0	17.63	0.00	84.10	24.82	0.82	1.85	0.80	1.00	1.00	64.10	24.82	16.33	3,327.8	1,391.1	2,367.00	1,008.1	2,482.87	1
6	90.00	16.37	0.00	83.87	24.83	0.81	1.84	0.80	1.00	0.80	63.18	25.82	16.33	3,341.4	1,407.3	2,188.81	880.84	2,484.77	1
5	78.85	15.23	0.00	83.87	24.83	0.81	1.84	0.83	1.00	0.88	63.18	25.82	16.33	3,380.7	1,413.3	2,038.09	884.21	2,331.23	1
4	60.00	13.84	0.88	84.10	24.82	0.82	1.85	0.83	1.00	1.00	64.10	25.82	16.33	3,374.8	1,421.4	1,889.87	883.17	2,117.84	1
3	30.00	12.29	0.88	83.87	24.83	0.81	1.84	0.80	1.00	0.88	63.18	25.82	16.33	3,384.1	1,424.4	1,644.04	713.28	1,880.88	1
2	12.80	12.29	0.00	37.80	14.82	0.72	1.78	0.88	1.00	0.83	31.22	13.87	10.00	2,083.4	784.8	748.44	381.51	1,127.85	1
1	2.80	12.29	0.88	8.84	2.48	0.84	1.78	0.88	1.00	0.78	4.41	5.72	0.83	383.8	78.2	108.88	24.88	130.80	1
														38,180.3	15,735.7			30,884.14	

** = 2QzGhAg Controls



Gh : 1.00

Section Forces

LoadCase Normal

50.00 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 (ft)	qz	Total		Ice		Sol				EW Area (sqft)	Linear Area (sqft)	Ice		Struct Force (lb)	Linear Force (lb)	Total Force (lb)	Eff Face	
			Flat Area (sqft)	Round Area (sqft)	Round Area (sqft)	Sol Ratio	Ct	Df	Dr	Rr			Linear Area (sqft)	Total Weight (lb)					Weight Ice (lb)
16	270.0	11.87	0.00	11.13	0.00	0.32	2.25	1.00	1.00	0.62	1.92	0.00	0.00	484.7	0.0	198.83	0.00	198.83	3
15	266.0	11.46	0.00	30.26	0.00	0.43	2.00	1.00	1.00	0.67	20.15	0.00	0.00	1,237.5	0.0	806.44	0.00	806.44	3
14	236.0	11.21	0.00	30.26	0.00	0.43	2.00	1.00	1.00	0.67	20.15	0.00	0.00	1,306.5	0.0	494.76	0.00	494.76	3
13	222.6	11.04	0.00	8.00	0.00	0.46	1.96	1.00	1.00	0.66	8.49	0.00	0.00	388.7	0.0	129.43	0.00	129.43	3
12	210.0	10.88	0.00	31.11	0.00	0.44	1.98	1.00	1.00	0.67	20.67	0.00	0.00	1,482.2	0.0	491.17	0.00	491.17	3
11	190.0	10.68	0.00	34.85	0.00	0.49	1.98	1.00	1.00	0.70	24.27	1.39	0.00	1,652.7	0.0	532.72	17.68	550.40	1
10	170.0	10.22	0.00	38.36	0.00	0.49	1.83	1.00	1.00	0.73	28.78	17.32	0.00	1,909.8	0.0	639.42	230.90	870.32	1
9	150.0	9.90	0.00	38.14	0.00	0.49	1.83	1.00	1.00	0.73	28.88	21.95	0.00	1,909.2	0.0	643.02	294.04	937.06	1
8	130.0	9.47	0.00	38.14	0.00	0.68	1.83	1.00	1.00	0.73	28.88	23.05	0.00	1,911.4	0.0	642.38	294.32	936.71	1
7	110.0	8.83	0.00	38.36	0.00	0.68	1.83	1.00	1.00	0.73	28.78	25.92	0.00	1,836.7	0.0	528.48	304.82	833.31	1
6	90.00	8.52	0.00	38.14	0.00	0.68	1.83	1.00	1.00	0.73	28.88	25.92	0.00	1,834.1	0.0	488.29	304.82	793.11	1
5	70.00	7.83	0.00	38.14	0.00	0.68	1.83	1.00	1.00	0.73	28.88	25.92	0.00	1,837.4	0.0	484.48	289.74	774.22	1
4	50.00	7.21	0.00	38.36	0.00	0.68	1.83	1.00	1.00	0.73	28.78	25.92	0.00	1,863.1	0.0	418.00	248.02	666.02	1
3	30.00	6.48	0.00	38.14	0.00	0.68	1.82	1.00	1.00	0.73	28.88	25.92	0.00	1,938.8	0.0	368.00	217.80	585.80	1
2	12.88	6.40	0.00	22.74	0.00	0.43	2.00	1.00	1.00	0.67	18.14	13.87	0.00	1,268.9	0.0	212.85	114.81	327.66	1
1	2.00	6.40	0.00	3.19	0.00	0.38	2.14	1.00	1.00	0.64	2.03	0.72	0.00	305.3	0.0	30.41	8.02	38.43	1
														23,464.8	0.0			0,909.74	

** = 2QzGhAg Controls

LoadCase 60_deg

50.00 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 (ft)	qz	Total		Ice		Sol				EW Area (sqft)	Linear Area (sqft)	Ice		Struct Force (lb)	Linear Force (lb)	Total Force (lb)	Eff Face	
			Flat Area (sqft)	Round Area (sqft)	Round Area (sqft)	Sol Ratio	Ct	Df	Dr	Rr			Linear Area (sqft)	Total Weight (lb)					Weight Ice (lb)
16	270.0	11.87	0.00	11.13	0.00	0.32	2.25	0.80	1.00	0.62	0.62	0.00	0.00	484.7	0.0	198.83	0.00	198.83	3
15	266.0	11.46	0.00	30.26	0.00	0.43	2.00	0.80	1.00	0.67	20.15	0.00	0.00	1,237.5	0.0	806.44	0.00	806.44	3
14	236.0	11.21	0.00	30.26	0.00	0.43	2.00	0.80	1.00	0.67	20.15	0.00	0.00	1,306.5	0.0	494.76	0.00	494.76	3
13	222.6	11.04	0.00	8.00	0.00	0.00	1.96	0.80	1.00	0.60	8.49	0.00	0.00	388.7	0.0	129.43	0.00	129.43	3
12	210.0	10.88	0.00	31.11	0.00	0.44	1.90	0.80	1.00	0.67	20.67	0.00	0.00	1,482.2	0.0	491.17	0.00	491.17	3
11	190.0	10.68	0.00	34.00	0.00	0.00	1.80	0.80	1.00	0.70	24.27	1.39	0.00	1,652.7	0.0	532.72	17.00	550.00	1
10	170.0	10.22	0.00	38.88	0.00	0.46	1.83	0.80	1.00	0.73	28.78	17.32	0.00	1,909.4	0.0	639.42	230.90	870.32	1
9	150.0	9.90	0.00	38.14	0.00	0.46	1.83	0.80	1.00	0.73	28.88	21.95	0.00	1,882.2	0.0	643.02	294.04	937.06	1
8	130.0	9.47	0.00	38.14	0.00	0.80	1.32	0.80	1.00	0.73	28.88	23.05	0.00	1,911.4	0.0	642.38	294.32	936.71	1
7	110.0	8.83	0.00	38.36	0.00	0.80	1.83	0.80	1.00	0.73	28.78	25.92	0.00	1,836.7	0.0	528.48	304.82	833.31	1
6	90.00	8.52	0.00	38.14	0.00	0.68	1.83	0.80	1.00	0.73	28.88	25.92	0.00	1,834.1	0.0	488.29	304.82	793.11	1
5	70.00	7.83	0.00	28.14	0.00	0.46	1.83	0.80	1.00	0.73	28.88	25.92	0.00	1,837.4	0.0	484.48	289.74	774.22	1
4	50.00	7.21	0.00	38.36	0.00	0.38	1.83	0.80	1.00	0.73	28.78	25.92	0.00	1,863.1	0.0	418.00	248.02	666.02	1
3	30.00	6.48	0.00	38.14	0.00	0.46	1.82	0.80	1.00	0.73	28.88	25.92	0.00	1,938.8	0.0	368.00	217.80	585.80	1
2	12.88	6.48	0.00	22.74	0.00	0.43	2.00	0.80	1.00	0.67	18.14	13.87	0.00	1,268.9	0.0	212.85	114.81	327.66	1
1	2.00	6.48	0.00	3.19	0.00	0.38	2.14	0.80	1.00	0.64	2.03	0.72	0.00	305.3	0.0	30.41	8.02	38.43	1
														23,464.8	0.0			0,909.74	

** = 2QzGhAg Controls

Code: TIA/EIA-222 Rev F



Gh: 1.00

Section ForcesLoadCase 90 deg

50.00 mph Wind at 90 deg From Face with No Ice

Allow Stress Inc: 1.333

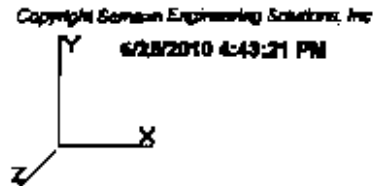
Dead LF: 1.000

Wind LF: 1.000

Sect Seq	Wind Height (ft)	qz	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	EF				Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)	EF Face		
							Cf	Df	Or	Rf										
16	270.0	11.67	0.00	11.13	0.00	0.32	2.25	0.85	1.00	0.62	6.92	0.00	0.00	484.7	0.0	196.63	0.00	196.63	3	
15	265.0	11.48	0.00	30.28	0.00	0.43	2.00	0.85	1.00	0.67	20.16	0.00	0.00	1,237.5	0.0	606.44	0.00	606.44	3	
14	236.0	11.21	0.00	30.28	0.00	0.43	2.00	0.85	1.00	0.67	20.16	0.00	0.00	1,306.6	0.0	484.76	0.00	484.76	3	
13	222.6	11.04	0.00	6.08	0.00	0.46	1.96	0.85	1.00	0.66	6.48	0.00	0.00	286.7	0.0	128.43	0.00	128.43	3	
12	210.0	10.80	0.00	31.11	0.00	0.44	1.98	0.85	1.00	0.67	20.67	0.00	0.00	1,482.2	0.0	481.17	0.00	481.17	3	
11	190.0	10.85	0.00	34.86	0.00	0.00	1.90	0.85	1.00	0.70	24.27	1.20	0.00	1,662.7	0.0	632.72	17.00	649.72	1	
10	170.0	10.22	0.00	38.38	0.00	0.00	1.83	0.85	1.00	0.73	28.78	17.32	0.00	1,909.5	0.0	689.43	230.00	919.43	1	
9	150.0	9.86	0.00	39.14	0.00	0.00	1.83	0.85	1.00	0.73	28.98	21.95	0.00	1,908.2	0.0	666.02	284.04	950.06	1	
8	130.0	9.47	0.00	39.14	0.00	0.00	1.83	0.85	1.00	0.73	28.98	23.08	0.00	1,911.4	0.0	648.28	288.32	936.60	1	
7	110.0	8.03	0.00	39.38	0.00	0.00	1.83	0.85	1.00	0.73	28.78	26.92	0.00	1,836.7	0.0	620.48	308.92	929.40	1	
6	90.00	6.82	0.00	39.14	0.00	0.00	1.83	0.85	1.00	0.73	28.98	26.92	0.00	1,934.1	0.0	489.28	489.82	979.10	1	
5	70.00	7.90	0.00	39.14	0.00	0.00	1.83	0.85	1.00	0.73	28.98	26.92	0.00	1,837.4	0.0	484.48	288.74	773.22	1	
4	50.00	7.21	0.00	39.38	0.00	0.00	1.83	0.85	1.00	0.73	28.78	26.92	0.00	1,893.1	0.0	410.58	248.82	659.40	1	
3	30.00	6.40	0.00	39.14	0.00	0.00	1.83	0.85	1.00	0.73	28.98	26.92	0.00	1,839.0	0.0	388.80	217.80	606.60	1	
2	12.80	6.40	0.00	22.74	0.00	0.43	2.00	0.85	1.00	0.67	18.14	13.67	0.00	1,288.9	0.0	212.06	114.81	326.87	1	
1	2.40	6.40	0.00	2.18	0.00	0.38	2.14	0.05	1.00	0.64	2.03	0.73	0.00	396.3	0.0	30.41	6.02	36.43	1	
													23,454.8	0.0			6,506.74			

** = 2DzQhAg Controls

Site Number: 10047
 Location: Portland ME, ME
 Code: TIA/EIA-222 Rev F



Tower Loading

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Weight (lb)	No Ice Ca/Aa (sf)	Ca/Aa Factor	Weight (lb)	Ice Ca/Aa (sf)	Ca/Aa Factor	Distance From Face (ft)	X Angle (deg)	Vert Ecc (ft)
271.0	Antel WPA-800804CF	8	10.00	5.160	0.71	25.00	5.370	0.71	0.000	0.00	0.000
271.0	Antel LPA-1850808CF	8	7.00	2.790	1.00	25.00	3.280	1.00	0.000	0.00	0.000
271.0	Flat Light Sector Frame	3	400.00	17.900	0.75	510.00	22.200	0.75	0.000	0.00	0.000
280.0	RFB ATMAA1412D-1A20	3	13.00	1.170	0.87	20.60	1.300	0.87	0.000	0.00	0.000
280.0	Ericsson KRY 112 144/1	3	11.00	0.410	0.87	14.10	0.880	0.87	0.000	0.00	0.000
280.0	RFB APX180WV-160WV-8-E-	6	39.00	6.700	0.87	69.39	7.300	0.87	0.000	0.00	0.000
280.0	Radio Waves G2-24	1	40.00	4.200	1.00	60.00	11.700	1.00	0.000	0.00	0.000
280.0	Round Sector Frame	3	360.00	14.400	0.75	419.00	19.200	0.75	0.000	0.00	0.000
280.0	Ice Shield	1	100.00	6.000	1.00	390.00	7.500	1.00	0.000	0.00	0.000
285.0	8' HP NW Dish	1	470.00	83.420	1.00	1010.00	84.780	1.00	0.000	0.00	0.000
244.0	Ice Shield	1	100.00	6.000	1.00	390.00	7.500	1.00	0.000	0.00	0.000
241.0	8' HP NW Dish	1	470.00	83.420	1.00	1010.00	84.750	1.00	0.000	0.00	0.000
226.0	Ice Shield	1	150.00	8.000	1.00	380.00	7.500	1.00	0.000	0.00	0.000
220.0	8' HP NW Dish	1	470.00	83.420	1.00	1010.00	84.750	1.00	0.000	0.00	0.000
193.0	KNW HB-X-WM-17-85-00T-	3	15.90	1.140	0.78	23.30	1.370	0.78	0.000	0.00	0.000
193.0	KNW HB-X-WM-17-85-00T	3	30.00	1.950	1.00	80.90	2.280	1.00	0.000	0.00	0.000
183.0	Clearance Mount	1	330.00	8.500	1.00	480.00	10.500	1.00	0.000	0.00	0.000
100.0	10' Omni	1	25.00	3.000	1.00	40.00	4.000	1.00	0.000	0.00	5.000
180.0	Standoff Mount	1	150.00	4.000	1.00	250.00	8.000	1.00	0.000	0.00	0.000
180.0	Antel BSA-18508510CF	8	9.10	3.810	0.87	27.96	4.480	0.87	0.000	0.00	0.000
180.0	Round Sector Frame	3	300.00	14.400	0.75	419.00	19.200	0.75	0.000	0.00	0.000
170.0	TTA	1	10.00	1.480	1.00	20.34	1.840	1.00	0.000	0.00	0.000
170.0	10' Omni	1	25.00	3.000	1.00	40.00	4.000	1.00	0.000	0.00	5.000
170.0	Standoff Mount	1	150.00	4.000	1.00	280.00	8.000	1.00	0.000	0.00	0.000
155.0	4' HP NW Dish	1	170.00	15.880	1.00	280.00	18.520	1.00	0.000	0.00	0.000
120.0	Z Omni	2	10.00	0.660	1.00	18.00	0.840	1.00	0.000	0.00	1.500
120.0	Standoff Mount	2	150.00	4.000	1.00	280.00	8.000	1.00	0.000	0.00	0.000
98.00	10' Omni	1	25.00	3.000	1.00	40.00	4.000	1.00	0.000	0.00	5.000
98.00	Standoff Mount	1	150.00	4.000	1.00	250.00	8.000	1.00	0.000	0.00	0.000
88.00	GPS	1	10.00	1.000	1.00	18.24	1.210	1.00	0.000	0.00	0.500
88.00	Standoff Mount	1	150.00	4.000	1.00	250.00	8.000	1.00	0.000	0.00	0.000
Totals		87	7038.90			11817.26			Number of Appurtenances : 31		

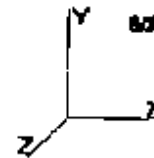
Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Wind	Spread On Faces	Bundling Arrangement
10.00	271.0	1 5/8" Coax	10	1.98	1.04	60.00	3	Separate
10.00	271.0	1 5/8" Coax	2	1.98	1.04	100.00	2	Separate
10.00	280.0	1 3/8" Coax	12	1.98	0.82	66.60	2	Bundled
10.00	280.0	1/2" Coax	1	0.65	0.18	100.00	2	Separate
10.00	285.0	EWS2	2	2.25	0.59	100.00	1	Separate
10.00	241.0	1/2" Coax	3	0.65	0.15	66.60	1	Separate
10.00	220.0	EWS2	2	2.28	0.99	100.00	1	Separate
10.00	183.0	1 3/8" Coax	8	1.98	0.82	00.00	1	Separate
10.00	180.0	1 1/4" Coax	1	1.55	0.66	100.00	Lin App	Separate
10.00	180.0	1 5/8" Coax	8	1.98	1.04	00.00	Lin App	Separate

Blot Number: 10047
 Location: Portland ME, ME
 Code: TIA/EIA-222 Rev F

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Tower Loading

Discrete Appurtenance Properties

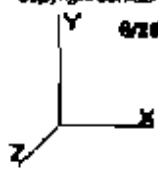
Attach Elev (ft)	Description	Qty	Weight (lb)	No Ice Ca/Aa (sf)	Ca/Aa Factor	Weight (lb)	Ice Ca/Aa (sf)	Ca/Aa Factor	Distance From Face (ft)	X Angle (deg)	Vert Ecc (ft)
271.0	Antel WPA-800604CF	8	10.00	5.160	0.71	38.00	5.570	0.71	0.000	0.00	0.000
271.0	Antel LPA-185080scf	8	7.00	2.700	1.00	28.00	3.250	1.00	0.000	0.00	0.000
271.0	Flat Light Sector Frame	3	400.00	17.000	0.75	310.00	22.200	0.75	0.000	0.00	0.000
260.0	RFS ATMAA1412D-1A20	3	13.00	1.170	0.87	20.00	1.380	0.87	0.000	0.00	0.000
260.0	Ericsson KRY 112144/1	3	11.00	0.410	0.67	14.10	0.550	0.67	0.000	0.00	0.000
260.0	RFS APX18DWW-18DWW-S-E	8	39.80	0.700	0.67	88.38	7.350	0.67	0.000	0.00	0.000
260.0	Radio Waves G2-24	1	40.00	4.200	1.00	80.00	11.700	1.00	0.000	0.00	0.000
260.0	Round Sector Frame	3	260.00	14.400	0.75	415.00	19.200	0.75	0.000	0.00	0.000
280.0	Ice Shield	1	150.00	6.000	1.00	350.00	7.500	1.00	0.000	0.00	0.000
285.0	8' HP MW Dish	1	470.00	63.420	1.00	1010.00	64.700	1.00	0.000	0.00	0.000
244.0	Ice Shield	1	100.00	6.000	1.00	300.00	7.000	1.00	0.000	0.00	0.000
241.0	8' HP MW Dish	1	470.00	63.420	1.00	1010.00	64.700	1.00	0.000	0.00	0.000
225.0	Ice Shield	1	150.00	6.000	1.00	350.00	7.500	1.00	0.000	0.00	0.000
220.0	8' HP MW Dish	1	470.00	63.420	1.00	1010.00	64.700	1.00	0.000	0.00	0.000
193.0	KNW HE-X-WM-17-65-00T-	3	15.00	1.140	0.76	23.30	1.370	0.76	0.000	0.00	0.000
193.0	KNW HE-X-WM-17-65-00T	3	30.00	1.850	1.00	50.00	2.260	1.00	0.000	0.00	0.000
193.0	Clearwire Mount	1	350.00	8.500	1.00	450.00	10.500	1.00	0.000	0.00	0.000
100.0	10' Omni	1	25.00	3.000	1.00	40.00	4.000	1.00	0.000	0.00	8.050
180.0	Standoff Mount	1	150.00	4.000	1.00	250.00	6.000	1.00	4.000	0.00	0.000
100.0	Antel BSA-185080scf	8	9.10	3.910	0.67	27.00	4.490	0.67	0.000	0.00	0.000
100.0	Round Sector Frame	3	350.00	14.400	0.75	415.00	19.200	0.75	0.000	0.00	0.500
170.0	TTA	1	10.00	1.400	1.00	20.34	1.540	1.00	0.000	0.00	0.500
170.0	10' Omni	1	25.00	3.000	1.00	40.00	4.000	1.00	0.000	0.00	5.000
170.0	Standoff Mount	1	100.00	4.000	1.00	200.00	6.000	1.00	0.000	0.00	0.000
165.0	4' HP MW Dish	1	170.00	18.880	1.00	230.00	18.528	1.00	0.000	0.00	0.850
120.0	2' Omni	2	10.00	0.880	1.00	18.00	0.940	1.00	0.000	0.00	1.500
120.0	Standoff Mount	2	100.00	4.000	1.00	200.00	6.000	1.00	0.000	0.00	0.000
00.00	10' Omni	1	25.00	3.000	1.00	40.00	4.000	1.00	0.000	0.00	8.000
08.00	Standoff Mount	1	150.00	4.000	1.00	250.00	6.000	1.00	0.000	0.00	0.000
38.00	GPS	1	10.00	1.000	1.00	18.24	1.210	1.00	0.000	0.00	8.500
38.00	Standoff Mount	1	150.00	4.000	1.00	250.00	6.000	1.00	0.000	0.00	0.000
Totals		87	7038.00			11617.26			Number of Appurtenances : 31		

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Wind	Spread On Faces	Bundling Arrangement
10.00	271.0	1 8/8" Coax	10	1.98	1.04	80.00	3	Separate
10.00	271.0	1 5/8" Coax	2	1.98	1.04	100.00	2	Separate
10.00	280.0	1 5/8" Coax	12	1.98	0.82	88.50	2	Bundled
10.00	260.0	1/2" Coax	1	0.63	0.15	100.00	2	Separate
10.00	259.0	EW52	2	2.25	0.54	100.00	1	Separate
10.00	241.0	1/2" Coax	3	0.63	0.18	88.50	1	Separate
10.00	220.0	EW52	2	2.25	0.59	100.00	1	Separate
10.00	193.0	1 8/8" Coax	8	1.98	0.82	80.00	1	Separate
10.00	190.0	1 1/4" Coax	1	1.58	0.86	100.00	Lin App	Separate
10.00	180.0	1 5/8" Coax	8	1.98	1.04	88.88	Lin App	Separate

Site Number: 10047
 Location: Portland ME, ME
 Code: TIA/EIA-222 Rev F

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Tower Loading

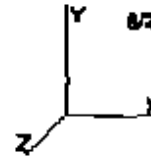
0.00	170.0	7/8" Coax	1	1.09	0.33	100.00	Lin App	Separate
10.09	170.0	1/2" Coax	1	0.83	0.18	100.00	Lin App	Separate
10.00	155.0	EW90	2	1.32	0.32	100.00	Lin App	Separate
0.00	120.0	1/2" Coax	1	0.83	0.15	100.00	Lin App	Separate
10.00	120.0	7/8" Coax	1	1.09	0.33	100.00	Lin App	Separate
10.00	00.00	1 5/8" Coax	1	1.98	0.82	100.00	3	Separate
10.00	36.00	1/2" Coax	1	0.83	0.15	100.00	3	Separate

Site Number: 10047
 Location: Portland ME, ME

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Code: TWEIA-221 Rev F



Force/Stress Summary

Section: 1		PROD42B		Bot Elev (ft): 0.00		Height (ft): 5.000									
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 2 1/4" SOLID		-91.51	Normal Ice	1.00	100	100	100	38.3	34.7	128.18	0	0	0.00	0.00	86 Member X
HORIZ		0.00		0.000	0	0	0	0.0	0.00	0	0	0.00	0.00	0	
DIAG SOL - 3/4" SOLID		-4.81	Normal Ice	2.440	80	80	80	78.1	28.9	11.62	0	0	0.00	0.00	36 Member X
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		12.29	Normal Ice	85	17.87	0	0	0.00	0.00	86	Member				
DIAG SOL - 3/4" SOLID		1.00	Normal Ice	80	17.87	0	0	0.00	0.00	11	Member				
Section: 2		PROD42		Bot Elev (ft): 5.00		Height (ft): 15.000									
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 2 1/4" SOLID		-33.76	Normal Ice	2.38	100	100	100	41.0	32.8	128.28	0	0	0.00	0.00	86 Member X
HORIZ		0.00		0.000	0	0	0	0.0	0.00	0	0	0.00	0.00	0	
DIAG SOL - 3/4" SOLID		-0.76	60 deg Ice	4.238	80	80	80	135.6	10.8	4.78	0	0	0.00	0.00	18 Member X
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		6.41	Normal Ice	80	17.87	0	0	0.00	0.00	38	Member				
DIAG SOL - 3/4" SOLID		0.58	60 deg Ice	80	17.87	0	0	0.00	0.00	3	Member				
Section: 3		1		Bot Elev (ft): 20.00		Height (ft): 20.000									
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			Fa (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 2 1/4" SOLID		-84.11	Normal Ice	2.33	100	100	100	49.9	32.0	129.27	0	0	0.00	0.00	88 Member X
HORIZ SOL - 3/4" SOLID		-4.18	Normal Ice	3.800	100	100	100	224.0	4.0	1.76	0	0	0.00	0.00	19 Member X
DIAG SOL - 3/4" SOLID		-1.00	Normal Ice	4.208	80	80	80	134.6	11.9	4.88	0	0	0.00	0.00	34 Member X
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		0.81	60 deg Ice	80	17.87	0	0	0.00	0.00	4	Member				
DIAG SOL - 3/4" SOLID		0.94	60 deg Ice	80	17.87	0	0	0.00	0.00	8	Member				

Site Number: 10047
 Location: Portland ME, ME

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Code: TIA/EIA-222 Rev F



Force/Stress Summary

Section: 4		1		Bot Elev (ft): 40.00				Height (ft): 20.000							
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			F _a (ksi)	Member Cap Num		Shear Bear		Use %	Controls	
					X	Y	Z	KL/R	Boles	Holes	Cap (kip)	Cap (kip)			
LEG SOL - 2 1/4" SOLID		-103.97	Normal ice	2.33	100	100	100	49.8	32.8	129.27	0	0	0.00	0.00	00 Member X
HORIZ SOL - 3/4" SOLID		-0.28	90 deg ice	3.808	100	100	100	224.8	4.8	1.78	0	0	0.00	0.00	14 Member X
DIAG SOL - 3/4" SOLID		-2.17	90 deg ice	4.208	80	80	80	134.8	11.0	4.88	1	0	0.00	0.00	44 Member X
Max Tension Member		Force (kip)	Load Case	F _y (ksi)	Cap (kip)	Num Boles	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		1.70	Normal ice	80	17.87	0	0	0.00	0.00	8	Member				
DIAG SOL - 3/4" SOLID		1.48	90 deg ice	80	17.87	0	0	0.00	0.00	8	Member				

Section: 5		1		Bot Elev (ft): 60.00				Height (ft): 20.000							
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			F _a (ksi)	Member Cap Num		Shear Bear		Use %	Controls	
					X	Y	Z	KL/R	Boles	Holes	Cap (kip)	Cap (kip)			
LEG SOL - 2 1/4" SOLID		-67.38	Normal ice	2.33	100	100	100	49.8	32.8	129.27	0	0	0.00	0.00	75 Member X
HORIZ SOL - 3/4" SOLID		-0.24	Normal ice	3.808	100	100	100	224.8	4.8	1.78	0	0	0.00	0.00	14 Member X
DIAG SOL - 3/4" SOLID		-1.08	90 deg ice	4.208	80	80	80	134.8	11.0	4.88	0	0	0.00	0.00	39 Member X
Max Tension Member		Force (kip)	Load Case	F _y (ksi)	Cap (kip)	Num Boles	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		0.00	90 deg ice	80	17.87	0	0	0.00	0.00	6	Member				
DIAG SOL - 3/4" SOLID		1.06	90 deg ice	80	17.87	0	0	0.00	0.00	6	Member				

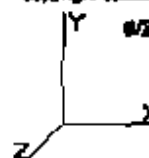
Section: 8		1		Bot Elev (ft): 80.00				Height (ft): 20.000							
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			F _a (ksi)	Member Cap Num		Shear Bear		Use %	Controls	
					X	Y	Z	KL/R	Boles	Holes	Cap (kip)	Cap (kip)			
LEG SOL - 2 1/4" SOLID		-67.14	Normal ice	2.33	100	100	100	49.8	32.8	129.27	0	0	0.00	0.00	67 Member X
HORIZ SOL - 3/4" SOLID		-0.00	Normal No ice	3.808	100	100	100	224.8	4.8	1.78	0	0	0.00	0.00	4 Member X
DIAG SOL - 3/4" SOLID		-1.28	90 deg ice	4.208	80	80	80	134.8	11.0	4.88	0	0	0.00	0.00	28 Member X
Max Tension Member		Force (kip)	Load Case	F _y (ksi)	Cap (kip)	Num Boles	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		0.88	90 deg ice	80	17.87	0	0	0.00	0.00	5	Member				
DIAG SOL - 3/4" SOLID		0.78	90 deg No ice	80	17.87	0	0	0.00	0.00	4	Member				

Site Number: 10047
 Location: Portland ME, ME

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Code: TIAEIA-228 Rev F



Force/Stress Summary

Section: 7		1		Bot Elev (ft): 100.0				Height (ft): 20.000							
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			Fa (ksi)	Member Cap Num		Shear Cap Num		Bear Cap Num	Use %	Controls
LEG SOL - 2 1/4" SOLID	-88.81	Normal ice	2.23	100	100	100	49.9	32.5	128.27	0	0	0.00	0.00	73	Member X
HORIZ SOL - 3/4" SOLID	-8.83	90 deg ice	3.208	100	100	100	224.0	4.0	1.78	7	0	0.00	0.00	98	Member X
DIAG SOL - 3/4" SOLID	-3.08	90 deg ice	4.208	80	80	80	134.6	11.0	4.88	4	0	0.00	0.00	63	Member X
Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap 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	1.42	Normal ice	80	17.87	0	0	0.00	0.00	8	Member					
DIAG SOL - 3/4" SOLID	2.21	90 deg ice	80	17.87	0	0	0.00	0.00	13	Member					
Section: 8		1		Bot Elev (ft): 120.0				Height (ft): 20.000							
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			Fa (ksi)	Member Cap Num		Shear Cap Num		Bear Cap Num	Use %	Controls
LEG SOL - 2 1/4" SOLID	-73.08	Normal ice	2.23	100	100	100	49.9	32.5	128.27	0	0	0.00	0.00	67	Member X
HORIZ SOL - 3/4" SOLID	-0.08	Normal ice	3.208	100	100	100	224.0	4.0	1.78	0	0	0.00	0.00	37	Member X
DIAG SOL - 3/4" SOLID	-2.74	90 deg ice	4.208	80	80	80	134.6	11.0	4.88	0	0	0.00	0.00	68	Member X
Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap 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	1.13	90 deg ice	80	17.87	0	0	0.00	0.00	8	Member					
DIAG SOL - 3/4" SOLID	2.04	90 deg ice	80	17.87	0	0	0.00	0.00	11	Member					
Section: 9		1		Bot Elev (ft): 140.0				Height (ft): 20.000							
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			Fa (ksi)	Member Cap Num		Shear Cap Num		Bear Cap Num	Use %	Controls
LEG SOL - 2 1/4" SOLID	-72.71	Normal ice	2.23	100	100	100	49.9	32.5	128.27	0	0	0.00	0.00	68	Member X
HORIZ SOL - 3/4" SOLID	-0.83	Normal No ice	3.208	100	100	100	224.0	4.0	1.78	0	0	0.00	0.00	1	Member X
DIAG SOL - 3/4" SOLID	-1.00	90 deg ice	4.208	80	80	80	134.6	11.0	4.88	0	0	0.00	0.00	34	Member X
Max Tension Member		Force (kip)	Load Case	Fy (ksi)	Cap 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	0.73	90 deg ice	80	17.87	0	0	0.00	0.00	4	Member					
DIAG SOL - 3/4" SOLID	1.00	90 deg ice	80	17.87	0	0	0.00	0.00	6	Member					

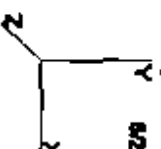
Site Number: 10047

Location: Portland ME, ME

Code: TWAEA-ZZ Raw F

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Forces/Stress Summary

Section: 10		1		Bot Elev (ft): 100.0		Height (ft): 20.000				Member		Shear		Bearing		Use	
		Force		Len		Bracing %		Fa		Cap Mem Num		Holes		Cap (kip)		Controls	
		(kip)		(ft)		(%)		(ksi)		(kip)		(holes)		(kip)		%	
Max Compression Member																	
LEB	60L - 2 1/4" SOLID	-60.00	Normal Ice	3.33	100	100	100	49.4	32.6	120.27	0	0	0	0.00	0.00	0.00	63 Member X
WORZ	60L - 3/4" SOLID	-0.47	60 deg Ice	3.200	100	100	100	229.0	6.0	1.78	0	0	0	0.00	0.00	0.00	26 Member X
DRAG	60L - 3/4" SOLID	-2.31	90 deg Ice	4.200	60	60	60	124.0	11.0	4.88	0	0	0	0.00	0.00	0.00	47 Member X
Max Tension Member																	
		Force		Py		Cap Mem Num		Shear		Bearing		Use					
		(kip)		(kip)		(holes)		Cap (kip)		Cap (kip)		%					
LEB	60L	6.00		0	6.00	0	0	0	0.00	0.00	0.00	0	0	0.00	0.00	0	Member
WORZ	60L - 3/4" SOLID	1.01	Normal Ice	80	17.67	0	0	0	0.26	0.00	0.00	6	Member				
DRAG	60L - 3/4" SOLID	2.18	90 deg Ice	60	17.67	0	0	0	0.00	0.00	0.00	12	Member				
Section: 11		2		Bot Elev (ft): 100.0		Height (ft): 20.000				Member		Shear		Bearing		Use	
		Force		Len <td colspan="2">Bracing % <td colspan="2">Fa <td colspan="2">Cap Mem Num <td colspan="2">Holes <td colspan="2">Cap (kip) <td colspan="2">Controls</td> </td></td></td></td></td>		Bracing % <td colspan="2">Fa <td colspan="2">Cap Mem Num <td colspan="2">Holes <td colspan="2">Cap (kip) <td colspan="2">Controls</td> </td></td></td></td>		Fa <td colspan="2">Cap Mem Num <td colspan="2">Holes <td colspan="2">Cap (kip) <td colspan="2">Controls</td> </td></td></td>		Cap Mem Num <td colspan="2">Holes <td colspan="2">Cap (kip) <td colspan="2">Controls</td> </td></td>		Holes <td colspan="2">Cap (kip) <td colspan="2">Controls</td> </td>		Cap (kip) <td colspan="2">Controls</td>		Controls	
		(kip)		(ft) <td colspan="2">(%) <td colspan="2">(ksi) <td colspan="2">(kip) <td colspan="2">(holes) <td colspan="2">(kip) <td colspan="2">% </td></td></td></td></td></td>		(%) <td colspan="2">(ksi) <td colspan="2">(kip) <td colspan="2">(holes) <td colspan="2">(kip) <td colspan="2">% </td></td></td></td></td>		(ksi) <td colspan="2">(kip) <td colspan="2">(holes) <td colspan="2">(kip) <td colspan="2">% </td></td></td></td>		(kip) <td colspan="2">(holes) <td colspan="2">(kip) <td colspan="2">% </td></td></td>		(holes) <td colspan="2">(kip) <td colspan="2">% </td></td>		(kip) <td colspan="2">% </td>		%	
Max Compression Member																	
LEB	60L - 2" SOLID	-63.48	Normal Ice	2.33	100	100	100	68.0	21.3	97.26	0	0	0	0.00	0.00	0.00	64 Member X
WORZ	60L - 3/4" SOLID	-0.17	Normal Ice	3.000	80	80	80	179.2	6.2	2.74	0	0	0	0.00	0.00	0.00	8 Member X
DRAG	60L - 3/4" SOLID	-1.68	90 deg Ice	4.200	47	47	47	126.5	12.4	6.68	0	0	0	0.00	0.00	0.00	25 Member X
Max Tension Member																	
		Force		Py		Cap Mem Num		Shear		Bearing		Use					
		(kip)		(kip)		(holes)		Cap (kip)		Cap (kip)		%					
LEB	60L	0.00		0	0.00	0	0	0	0.00	0.00	0.00	8	Member				
WORZ	60L - 3/4" SOLID	0.09	90 deg Ice	60	17.67	0	0	0	0.00	0.00	0.00	5	Member				
DRAG	60L - 3/4" SOLID	0.68	90 deg Ice	60	17.67	0	0	0	0.00	0.00	0.00	6	Member				
Section: 12		2		Bot Elev (ft): 200.0		Height (ft): 20.000				Member		Shear		Bearing		Use	
		Force		Len <td colspan="2">Bracing % <td colspan="2">Fa <td colspan="2">Cap Mem Num <td colspan="2">Holes <td colspan="2">Cap (kip) <td colspan="2">Controls</td> </td></td></td></td></td>		Bracing % <td colspan="2">Fa <td colspan="2">Cap Mem Num <td colspan="2">Holes <td colspan="2">Cap (kip) <td colspan="2">Controls</td> </td></td></td></td>		Fa <td colspan="2">Cap Mem Num <td colspan="2">Holes <td colspan="2">Cap (kip) <td colspan="2">Controls</td> </td></td></td>		Cap Mem Num <td colspan="2">Holes <td colspan="2">Cap (kip) <td colspan="2">Controls</td> </td></td>		Holes <td colspan="2">Cap (kip) <td colspan="2">Controls</td> </td>		Cap (kip) <td colspan="2">Controls</td>		Controls	
		(kip)		(ft) <td colspan="2">(%) <td colspan="2">(ksi) <td colspan="2">(kip) <td colspan="2">(holes) <td colspan="2">(kip) <td colspan="2">% </td></td></td></td></td></td>		(%) <td colspan="2">(ksi) <td colspan="2">(kip) <td colspan="2">(holes) <td colspan="2">(kip) <td colspan="2">% </td></td></td></td></td>		(ksi) <td colspan="2">(kip) <td colspan="2">(holes) <td colspan="2">(kip) <td colspan="2">% </td></td></td></td>		(kip) <td colspan="2">(holes) <td colspan="2">(kip) <td colspan="2">% </td></td></td>		(holes) <td colspan="2">(kip) <td colspan="2">% </td></td>		(kip) <td colspan="2">% </td>		%	
Max Compression Member																	
LEB	60L - 2" SOLID	-69.67	Normal Ice	2.33	100	100	100	68.0	31.2	97.26	0	0	0	0.00	0.00	0.00	60 Member X
WORZ	60L - 3/4" SOLID	-1.63	90 deg Ice	3.200	80	80	80	179.2	6.2	2.74	0	0	0	0.00	0.00	0.00	68 Member X
DRAG	60L - 3/4" SOLID	-4.85	90 deg Ice	4.200	47	47	47	126.5	12.4	6.68	0	0	0	0.00	0.00	0.00	64 Member X
Max Tension Member																	
		Force		Py		Cap Mem Num		Shear		Bearing		Use					
		(kip)		(kip)		(holes)		Cap (kip)		Cap (kip)		%					
LEB	60L - 2" SOLID	6.73	90 deg No Ice	60	126.65	0	0	0	0.00	0.00	0.00	8	Member				
WORZ	60L - 3/4" SOLID	1.08	Normal No Ice	60	17.67	0	0	0	0.00	0.00	0.00	9	Member				
DRAG	60L - 3/4" SOLID	4.89	90 deg No Ice	60	17.67	0	0	0	0.00	0.00	0.00	15	Member				

Site Number: 18047
 Location: Portland ME, ME
 Code: TIA/EIA-223 Rev F

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Force/Stress Summary

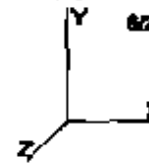
Section: 13		2 - 5		Bot Elev (ft): 220.0				Height (ft): 8.000							
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			F _c (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 2" SOLID	-37.48	Normal Ice	2.17	100	100	100	62.0	22.0	100.67	0	0	0.00	0.00	37	Member X
HORIZ SOL - 3/4" SOLID	-1.08	Normal Ice	3.690	80	80	80	179.2	6.2	2.74	0	0	0.00	0.00	38	Member X
DIAG SOL - 3/4" SOLID	-3.77	60 deg Ice	4.117	80	80	80	171.7	11.6	4.07	0	0	0.00	0.00	74	Member X
Max Tension Member		Force (kip)	Load Case	F _y (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	1.08	Normal Ice	80	17.67	0	0	9.20	0.00	6		Member				
DIAG SOL - 3/4" SOLID	3.65	60 deg No Ice	80	17.67	0	0	0.00	0.00	20		Member				
Section: 14		3		Bot Elev (ft): 226.0				Height (ft): 20.000							
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			F _c (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 1 3/4" SOLID	-42.29	60 deg Ice	2.23	100	100	100	64.0	29.4	70.62	0	0	0.00	0.00	74	Member X
HORIZ SOL - 3/4" SOLID	-1.18	Normal Ice	3.690	80	80	80	179.2	6.2	2.74	0	0	0.00	0.00	42	Member X
DIAG SOL - 3/4" SOLID	-3.21	60 deg Ice	4.206	80	80	80	134.8	11.8	4.88	0	0	0.00	0.00	88	Member X
Max Tension Member		Force (kip)	Load Case	F _y (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls				
LEG SOL - 1 3/4" SOLID	7.29	Normal No Ice	80	98.25	0	0	0.00	0.00	7		Member				
HORIZ SOL - 3/4" SOLID	1.48	60 deg Ice	80	17.67	0	0	0.00	0.00	8		Member				
DIAG SOL - 3/4" SOLID	2.16	60 deg No Ice	80	17.67	0	0	0.00	0.00	17		Member				
Section: 15		3		Bot Elev (ft): 248.0				Height (ft): 20.000							
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			F _c (ksi)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 1 3/4" SOLID	-89.17	60 deg Ice	2.23	100	100	100	64.0	29.4	70.62	0	0	0.00	0.00	83	Member X
HORIZ SOL - 3/4" SOLID	-0.73	Normal No Ice	3.690	80	80	80	179.2	6.2	2.74	0	0	0.00	0.00	28	Member X
DIAG SOL - 3/4" SOLID	-2.60	60 deg No Ice	4.206	80	80	80	134.8	11.8	4.88	0	0	0.00	0.00	57	Member X
Max Tension Member		Force (kip)	Load Case	F _y (ksi)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls				
LEG SOL - 1 3/4" SOLID	12.00	Normal No Ice	80	98.25	0	0	0.00	0.00	12		Member				
HORIZ SOL - 3/4" SOLID	0.00	60 deg No Ice	80	17.67	0	0	0.00	0.00	6		Member				
DIAG SOL - 3/4" SOLID	2.29	60 deg No Ice	80	17.67	0	0	0.00	0.00	13		Member				

Site Number: 10047
 Location: Portland ME, ME

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Force/Stress Summary

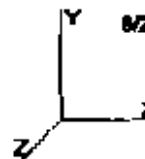
Section: 10 Top		Bot Elev (ft): 265.0		Height (ft): 10.000											
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			F _x (kip)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
Max Tension Member		Force (kip)	Load Case	F _y (kip)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls				
LEG SOL - 1 3/4" SOLID		-51.88	60 deg Ice	0.87	100	100	100	16.3	36.0	91.32	0	0	0.00	0.00	88 Member X
HORIZ		0.00		0.000	0	0	0	0.0	0.0	0.00	0	0	0.00	0.00	8
DIAG SOL - 3/4" SOLID		-5.49	60 deg Ice	4.116	50	50	50	131.7	11.6	5.07	0	0	0.00	0.00	68 Member X
LEG SOL - 1 3/4" SOLID		8.20	Normal No Ice	50	96.20	0	0	0.00	0.00	8	Member				
HORIZ SOL - 3/4" SOLID		0.00	Normal No Ice	50	17.87	0	0	0.00	0.00	0	Member				
DIAG SOL - 3/4" SOLID		3.00	Normal Ice	50	17.87	0	0	0.00	0.00	17	Member				

Site Number: 10047
 Location: Portland ME, ME

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Force/Stress Summary

Section: 16 Top		Bot Elev (ft): 285.0		Height (ft): 10.000											
Max Compression Member		Force (kip)	Load Case	Len (ft)	Bracing %			Fa (ks)	Member Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls
LEG SOL - 1 3/4" SOLID	-81.83	80 deg Ice	0.87	100	100	100	18.3	38.0	81.32	0	0	0.00	0.00	58	Member X
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	-3.49	80 deg Ice	4.118	00	00	80	131.7	11.8	6.07	0	0	0.00	0.00	68	Member X
Max Tension Member		Force (kip)	Load Case	Fy (ks)	Cap (kip)	Num Bolts	Num Holes	Shear Cap (kip)	Bear Cap (kip)	Use %	Controls				
LEG SOL - 1 3/4" SOLID	5.20	Normal No Ice	80	96.20	0	0	0.00	0.00	5	Member					
HORIZ SOL - 3/4" SOLID	0.04	Normal No Ice	80	17.87	0	0	0.04	0.00	0	Member					
DIAG SOL - 3/4" SOLID	3.08	Normal Ice	80	17.87	0	0	0.00	0.00	17	Member					

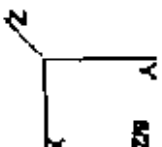
Site Number: 10042

Location: Portland ME, ME

Code: TWESA-ZZ2 Row F

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Support Forces Summary

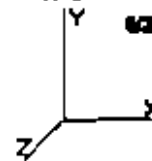
Load Case	Node	FX (kip)	FY (kip)	FZ (kip)	(+) = Uplift (-) = Down
80 deg	A1b	6.05	-11.28	-9.43	
	A1a	-22.78	-29.51	-12.82	
	A1	-9.89	-29.81	16.05	
1		112.28	0.00		
80 deg	A1b	0.51	-17.87	4.12	
	A1a	-23.89	-42.28	-12.87	
	A1	-9.87	-17.83	14.80	
1		112.28	-0.18		
Normal	A1b	18.87	-33.04	-11.28	
	A1a	-16.00	-33.04	-11.28	
	A1	0.00	-9.80	6.82	
1		140.69	-0.22		
80 deg Ice	A1b	4.44	-14.70	-4.23	
	A1a	-40.32	-63.87	-32.88	
	A1	-8.89	-29.14	37.45	
1		239.69	-0.87		
80 deg Ice	A1b	11.46	-27.31	-4.79	
	A1a	-26.80	-104.18	-24.69	
	A1	-2.77	-27.33	14.88	
1		218.00	-0.24		
Normal Ice	A1b	48.47	-88.28	-31.74	
	A1a	-48.47	-88.28	-31.74	
	A1	0.00	-11.81	8.89	
1		288.22	0.81		
80 deg No Ice	A1b	3.81	-9.12	-2.80	
	A1a	-48.37	-42.32	-25.84	
	A1	-1.81	-48.87	29.00	
1		-0.14	172.78	-0.23	
80 deg No Ice	A1b	8.18	-18.04	-4.37	
	A1a	-48.00	-91.82	-28.28	
	A1	-1.43	-18.00	10.34	
1		-0.47	164.78	-8.29	
Normal No Ice	A1b	37.86	-70.11	-23.81	
	A1a	-37.86	-70.11	-23.81	
	A1	0.00	-9.86	2.49	
1		182.87	0.00		
Max Reactions (kip)					
Vertical		248.22	-104.18		
Horizontal		0.82	69.86		

Site Number: 10047
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Cable Forces Summary

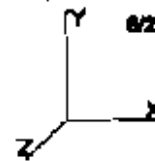
Load Case	Elevation (ft)	Cable	Node 1	Node 2	Allow Tension (kip)	Applied Tension (kip)	Use %		
Normal No Ice	84.87	976 E-9	A1	29	17.80	0.34	1		
		976 E-9	A1b	29a	17.80	0.67	37		
		976 E-9	A1a	29b	17.80	0.67	37		
	110.00	98 E-9	A1	67	21.20	0.10	0		
		98 E-9	A1b	67a	21.20	0.68	48		
		98 E-9	A1a	67b	21.20	0.68	48		
	166.33	1176 E-9	A1	88	25.00	0.54	2		
		1176 E-9	A1b	88a	25.00	12.46	49		
		1176 E-9	A1a	88b	25.00	12.46	49		
	214.67	98 E-9	A1	108	21.20	0.38	4		
			A1b	108a	21.20	0.74	45		
			A1a	108b	21.20	0.74	45		
		98 E-9	A1	T6		21.20	0.68	4	
			A1a	T6a		21.20	0.72	48	
			A1b	T6b		21.20	0.68	48	
		98 E-9	A1b	T6		21.20	0.78	45	
			A1a	T6a		21.20	0.74	45	
			A1	T6b		21.20	1.38	4	
		270.00	1176 E-9	A1	139	25.00	1.77	7	
				A1b	139a	25.00	10.68	42	
				A1a	139b	25.00	10.67	42	
	98 E-9		A1	T7		21.20	1.66	7	
			A1a	T7a		21.20	8.38	44	
			A1b	T7b		21.20	8.44	39	
	98 E-9		A1b	T7		21.20	8.38	43	
			A1a	T7a		21.20	8.33	39	
			A1	T7b		21.20	1.64	7	
	08 deg No Ice		84.87	976 E-9	A1	29	17.80	1.66	9
				976 E-9	A1b	29a	17.80	1.63	9
				976 E-9	A1a	29b	17.80	7.68	42
110.00		98 E-9	A1	67	21.20	1.65	7		
		98 E-9	A1b	67a	21.20	1.68	7		
		98 E-9	A1a	67b	21.20	11.43	53		
166.33		1176 E-9	A1	88	25.00	2.20	8		
		1176 E-9	A1b	88a	25.00	2.13	8		
		1176 E-9	A1a	88b	25.00	14.81	59		
214.67		98 E-9	A1	108	21.20	2.53	11		
			A1b	108a	21.20	2.52	11		
			A1a	108b	21.20	11.45	44		
		98 E-9	A1	T6		21.20	2.70	12	
			A1a	T6a		21.20	11.93	56	
			A1b	T6a		21.20	2.80	12	
		98 E-9	A1b	T6		21.20	2.44	11	
			A1a	T6a		21.20	10.84	51	
			A1	T6b		21.20	2.38	11	
		270.00	1176 E-9	A1	139	25.00	3.68	14	
				A1b	139a	25.00	3.74	14	
				A1a	139b	25.00	12.43	49	
98 E-9			A1	T7		21.20	3.57	16	
			A1a	T7b		21.20	10.88	49	
			A1b	T7a		21.20	3.20	15	

Site Number: 16047
 Location: Portland ME, ME

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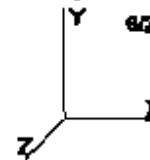
		05 E15	A1b	T7	21.20	3.42	16
		05 E15	A1a	T7a	21.20	9.96	47
		05 E15	A1	T7b	21.20	9.03	14
90 deg No Ice	54.87	0715 E15	A1	Z5	17.00	4.36	24
		0715 E15	A1b	Z5a	17.00	0.47	2
		0715 E15	A1a	Z5b	17.00	7.96	43
	110.00	05 E15	A1	67	21.20	6.20	29
		05 E15	A1b	67a	21.20	0.46	2
		05 E15	A1a	67b	21.20	11.79	58
	165.33	1170 E15	A1	85	25.00	7.87	30
		1170 E15	A1b	85a	25.00	0.58	3
		1170 E15	A1a	85b	25.00	14.77	69
	214.67	05 E15	A1	105	21.20	8.20	29
		05 E15	A1b	105a	21.20	1.20	5
		05 E15	A1a	105b	21.20	11.48	54
		05 E15	A1	T5	21.20	4.75	31
		05 E15	A1a	T5b	21.20	11.62	65
		05 E15	A1b	T5a	21.20	1.20	5
		05 E15	A1b	T5	21.20	1.27	5
05 E15		A1a	T5a	21.20	10.96	51	
05 E15		A1	T5b	21.20	5.79	27	
270.00		1170 E15	A1	130	25.00	7.17	29
	1170 E15	A1b	130a	25.00	2.14	5	
	1170 E15	A1a	130b	25.00	12.31	49	
	05 E15	A1	T7	21.20	8.03	32	
	05 E15	A1a	T7b	21.20	10.15	47	
	05 E15	A1b	T7a	21.20	1.95	9	
	05 E15	A1b	T7	21.20	2.99	9	
	05 E15	A1a	T7a	21.20	10.21	46	
	05 E15	A1	T7b	21.20	8.63	28	
	Normal Ice	54.87	0715 E15	A1	Z5	17.00	0.57
0715 E15			A1b	Z5a	17.00	0.59	40
0715 E15			A1a	Z5b	17.00	9.89	40
110.00		05 E15	A1	27	21.20	0.21	0
		05 E15	A1b	67a	21.20	13.13	61
		05 E15	A1a	67b	21.20	13.12	61
165.33		1170 E15	A1	85	25.00	0.00	4
		1170 E15	A1b	85a	25.00	16.28	56
		1170 E15	A1a	85b	25.00	16.28	55
214.67		05 E15	A1	105	21.20	1.67	7
		05 E15	A1b	105a	21.20	12.39	58
		05 E15	A1a	105b	21.20	12.41	58
		05 E15	A1	T5	21.20	1.69	7
		05 E15	A1a	T5b	21.20	12.85	69
		05 E15	A1b	T5a	21.20	12.12	67
		05 E15	A1b	T5	21.20	12.69	66
	05 E15	A1a	T5a	21.20	12.18	67	
	05 E15	A1	T5b	21.20	1.60	7	
	270.00	1170 E15	A1	130	25.00	2.94	11
1170 E15		A1b	130a	25.00	13.12	63	
1170 E15		A1a	130b	25.00	13.11	62	
05 E15		A1	T7	21.20	3.79	13	
05 E15		A1a	T7b	21.20	11.81	54	
05 E15		A1b	T7a	21.20	16.69	36	
05 E15		A1b	T7	21.20	11.75	58	
05 E15		A1a	T7a	21.20	10.68	40	
05 E15		A1	T7b	21.20	2.71	13	

Site Number: 10047
 Location: Portland ME, ME

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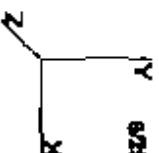
60 deg ice	64.87	0716 EHS	A1	29	17.88	2.43	13
		0716 EHS	A1b	29a	17.88	3.34	13
	110.00	0716 EHS	A1a	29b	17.88	8.89	68
		08 EHS	A1	87	21.20	2.37	11
	188.33	08 EHS	A1b	87a	21.20	2.29	10
		08 EHS	A1a	87b	21.20	18.16	71
	214.67	1176 EHS	A1	88	25.00	3.12	12
		1176 EHS	A1b	88a	25.00	3.04	12
	270.00	1176 EHS	A1a	88b	25.00	19.21	76
		09 EHS	A1	108	21.20	3.41	17
		09 EHS	A1b	108a	21.20	3.31	17
		09 EHS	A1a	108b	21.20	14.79	69
		09 EHS	A1	T5	21.20	4.80	16
		09 EHS	A1a	T5b	21.20	16.65	71
		09 EHS	A1b	T5a	21.20	3.41	17
		09 EHS	A1a	T5	21.20	3.80	17
		09 EHS	A1a	T5a	21.20	14.28	67
		09 EHS	A1	T5b	21.20	3.33	17
		09 EHS	A1	138	25.00	5.30	21
		09 EHS	A1b	138a	25.00	5.40	21
09 EHS	A1a	138b	25.00	16.88	62		
60 deg ice	64.87	0716 EHS	A1	39	17.88	3.83	23
		0716 EHS	A1b	39a	17.88	0.77	4
	110.00	0716 EHS	A1a	39b	17.88	8.98	57
		08 EHS	A1	87	21.20	5.29	38
	188.33	08 EHS	A1b	87a	21.20	0.73	3
		08 EHS	A1a	87b	21.20	16.57	73
	214.67	1176 EHS	A1	88	25.00	10.88	60
		1176 EHS	A1b	88a	25.00	1.32	9
	270.00	1176 EHS	A1a	88b	25.00	19.59	77
		09 EHS	A1	109	21.20	6.24	36
09 EHS		A1b	109a	21.20	2.86	9	
09 EHS		A1a	109b	21.20	14.68	68	
09 EHS		A1	T5	21.20	8.78	41	
09 EHS		A1a	T5b	21.20	14.79	69	
09 EHS		A1b	T5a	21.20	2.07	9	
09 EHS		A1b	T5	21.20	3.11	9	
09 EHS		A1a	T5a	21.20	14.28	67	
09 EHS		A1	T5b	21.20	7.87	38	
09 EHS		A1	139	25.00	9.29	34	
09 EHS		A1b	139a	25.00	3.37	13	
09 EHS	A1a	139b	25.00	15.22	60		
Normal	64.87	0716 EHS	A1	29	17.88	1.73	9
		0716 EHS	A1b	29a	17.88	4.84	20

Site Number: 18047

Location: Portland ME, ME

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Code: TWAJA-222 Row F

110.00	076 E18	A1a	20b	17.60	4.01	23
	08 E18	A1	57	21.20	1.13	8
	09 E18	A1b	57a	21.20	4.03	22
160.33	09 E18	A1a	57b	21.20	4.03	22
	1116 E18	A1	05	26.00	0.79	3
	1116 E18	A1b	06a	20.00	3.44	21
214.67	1178 E18	A1a	002	18.00	8.44	21
	00 E18	A1	109	21.20	0.00	4
	00 E18	A1b	109a	21.20	4.49	21
	00 E18	A1a	109b	21.20	4.60	21
	00 E18	A1	78	21.20	1.01	4
	00 E18	A1a	78a	21.20	4.81	21
	00 E18	A1b	78a	21.20	4.42	20
	00 E18	A1b	78	21.20	4.42	21
	00 E18	A1a	78a	14.20	4.44	20
	00 E18	A1	78b	14.20	1.03	4
270.00	00 E18	A1	139	20.00	1.87	7
	1176 E18	A1b	139a	26.00	6.29	21
	1176 E18	A1a	139b	26.00	6.28	21
	00 E18	A1	77	21.20	1.01	9
	00 E18	A1a	77b	21.20	4.08	21
	00 E18	A1b	77a	21.20	4.28	20
	00 E18	A1b	77	21.20	4.83	21
	00 E18	A1a	77a	21.20	4.22	20
	00 E18	A1	77b	21.20	1.78	9

60 deg	08.67	076 E18	A1	29	17.20	2.80	14
		076 E18	A1b	20a	17.20	2.46	14
		076 E18	20b	17.60	4.77	27	
110.00	08 E18	A1	57	21.20	2.28	19	
	08 E18	A1b	57a	21.20	2.27	10	
	08 E18	A1a	57b	21.20	6.13	28	
185.39	1176 E18	A1	04	26.00	2.48	9	
	1178 E18	A1b	04a	26.00	2.46	9	
	1178 E18	A1a	04b	26.00	7.24	29	
214.67	08 E18	A1	109	21.20	2.27	11	
	08 E18	A1a	109a	21.20	2.37	11	
	08 E18	A1b	109b	21.20	6.83	27	
	08 E18	A1	78	21.20	2.01	11	
	08 E18	A1a	78a	21.20	0.94	20	
	08 E18	A1b	78a	21.20	2.41	11	
	08 E18	A1b	78	21.20	2.32	10	
	08 E18	A1a	78a	21.20	0.87	28	
	08 E18	A1	78b	21.20	2.22	10	
270.00	1176 E18	A1	139	20.00	3.14	12	
	1178 E18	A1b	139a	26.00	3.18	12	
	1176 E18	A1a	139b	26.00	8.08	28	
	08 E18	A1	77	21.20	2.09	14	
	08 E18	A1a	77b	21.20	0.81	20	
	08 E18	A1b	77a	21.20	3.71	12	
	08 E18	A1b	77	21.20	2.05	13	
	08 E18	A1a	77a	21.20	0.43	28	
	08 E18	A1	77b	21.20	2.86	12	

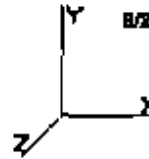
60 deg	04.67	076 E18	A1	29	17.20	3.28	18
		076 E18	A1b	20a	17.20	1.02	10
		076 E18	20b	17.60	4.09	29	
110.00	08 E18	A1	57	21.20	2.09	19	
	08 E18	A1b	57a	21.20	1.26	8	

Site Number: 10047
 Location: Portland ME, ME

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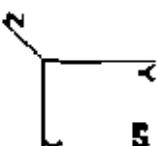
166.31	50 E10	A1a	87b	25.26	6.00	27
	11710 E10	A1	88	25.00	4.02	18
	11710 E10	A1b	88a	25.00	1.29	8
214.87	11710 E10	A1a	86b	25.00	6.78	27
	50 E10	A1	100	21.29	3.47	10
	50 E10	A1b	100a	21.29	1.44	6
279.00	50 E10	A1a	109b	21.20	8.47	28
	50 E10	A1	T8	21.20	3.00	17
	50 E10	A1a	T8b	21.20	8.61	28
	50 E10	A1b	T8a	21.20	1.61	7
	50 E10	A1b	T8	21.20	1.40	6
	50 E10	A1a	T8a	21.20	8.30	28
	50 E10	A1	T8b	21.20	3.28	18
	11710 E10	A1	130	28.00	6.21	10
	11710 E10	A1b	130a	28.00	2.20	9
	11710 E10	A1a	130b	28.00	8.23	24
50 E10	50 E10	A1	T7	21.20	3.00	18
	50 E10	A1a	T7b	21.20	8.23	24
	50 E10	A1b	T7a	21.20	2.06	6
	50 E10	A1b	T7	21.20	2.11	9
	50 E10	A1a	T7a	21.20	8.24	24
	50 E10	A1	T7b	21.20	3.38	18

Site Number: 10047
 Location: Portland ME, ME

Code: TWAIA-222 Pop F

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Deflections and Rotations

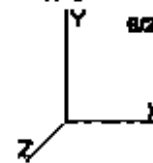
Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Bow (deg)
60.00 mph Wind Normal To Face with No Ice	37.00	0.0343	-0.0022	0.0478
	87.00	0.0677	-0.0001	0.0949
	120.00	0.1009	0.0000	0.1301
	164.67	0.1430	0.0000	0.0399
	170.00	0.1826	0.0000	0.0691
	166.00	0.1611	0.0000	0.0788
	166.00	0.1679	0.0000	0.0691
	162.33	0.1004	0.0000	0.0734
	220.00	0.1079	-0.0001	0.2339
	226.00	0.1969	0.0000	0.2473
	242.00	0.2194	-0.0001	0.0321
	244.33	0.2711	-0.0001	0.1287
	268.00	0.2291	-0.0001	0.0094
	269.67	0.2276	0.0001	0.0430
	270.00	0.2126	0.0001	0.0789
60.00 mph Wind at 45 deg From Face with No Ice	37.00	0.0460	-0.0008	0.0468
	87.00	0.0946	0.0079	0.0949
	120.00	0.1187	0.0009	0.1327
	164.67	0.1646	0.0011	0.0908
	170.00	0.1787	0.0016	0.0742
	166.00	0.1820	0.0014	0.1246
	166.00	0.2032	0.0014	0.0976
	162.33	0.2089	0.0013	0.0904
	220.00	0.2302	0.0003	0.2932
	226.00	0.2469	0.0001	0.3009
	242.00	0.2779	-0.0001	0.0672
	244.33	0.2902	-0.0002	0.1200
	268.00	0.2990	0.0002	0.0094
	269.67	0.2963	0.0002	0.0316
	270.00	0.2740	0.0004	0.0949
60.00 mph Wind at 90 deg From Face with No Ice	37.00	0.0447	0.2869	0.0474
	87.00	0.1004	0.1770	0.0464
	120.00	0.1264	0.1464	0.1312
	164.67	0.1678	0.1129	0.0644
	170.00	0.1809	0.1014	0.0962
	166.00	0.1817	0.2809	0.1183
	166.00	0.2009	0.2634	0.0296
	162.33	0.2029	0.0608	0.0619
	220.00	0.2270	0.0408	0.2942
	226.00	0.2379	0.0380	0.2937
	242.00	0.2664	0.0419	0.0414
	244.33	0.2871	0.0403	0.0882
	268.00	0.2727	0.0294	0.0189
	269.67	0.2709	0.0247	0.0494
	270.00	0.2640	0.0329	0.0782
60.00 mph Wind Normal To Face with Ice	37.00	0.1789	-0.0098	0.2037
	87.00	0.2869	-0.0031	0.4448
	120.00	0.4200	-0.0016	0.8389

60.00 mph Wind Normal To Face with Ice

60.00 mph Wind at 45 deg From Face with No Ice

60.00 mph Wind at 90 deg From Face with No Ice

Site Number: 10047
 Location: Portland ME, ME
 Code: TIA/EIA-222 Rev F



69.28 mph Wind at 80 deg From Face with Ice

164.67	1.1881	-0.0008	0.5377
170.00	1.3234	-0.0001	0.5678
180.00	1.4189	-0.0001	0.6000
180.00	1.4978	-0.0008	0.4687
192.33	1.8187	0.0002	0.4199
220.00	1.6980	-0.0004	0.9347
228.00	1.7374	-0.0003	0.9162
242.00	1.6800	-0.0000	0.2814
244.33	1.8721	-0.0008	0.9167
265.00	1.9232	-0.0008	0.1834
269.67	1.9308	0.0015	0.0345
270.00	1.9138	0.0002	0.8743
37.00	0.1414	0.6829	0.1878
67.00	0.3640	0.7810	0.2791
120.00	0.8101	0.7808	0.8138
164.67	0.7318	0.8070	0.3199
170.00	0.8138	0.8191	0.3638
180.00	0.8738	0.8203	0.5294
180.00	0.8282	0.8222	0.2678
192.33	0.8408	0.8203	0.2880
220.00	1.0088	0.8022	0.9181
228.00	1.1068	0.7808	0.9337
242.00	1.3198	0.7807	0.2263
244.33	1.2267	0.7887	0.4746
265.00	1.2707	0.7858	0.1078
269.67	1.2780	0.7841	0.0821
270.00	1.2507	0.7824	0.1133

69.28 mph Wind at 90 deg From Face with Ice

37.00	0.1636	0.7078	0.2678
67.00	0.5583	0.8414	0.4286
120.00	0.7824	0.8219	0.6829
164.67	1.0714	0.8963	0.4896
170.00	1.1678	0.8978	0.4825
180.00	1.2848	0.8942	0.8224
189.60	1.3350	0.8729	0.3040
192.33	1.3482	0.0001	0.3580
220.00	1.4972	0.8783	0.8395
228.00	1.5388	0.8983	0.8367
242.00	1.8448	0.5489	0.2334
244.33	1.6640	0.5491	0.3877
265.00	1.6678	0.6624	0.8821
269.67	1.6901	0.6871	0.0537
270.00	1.6687	0.6881	0.1267

80.00 mph Wind Normal To Face with No Ice

37.00	0.1339	-0.0134	0.2215
67.00	0.4318	-0.0038	0.3874
120.00	0.8846	-0.0021	0.8480
164.67	0.8481	-0.0008	0.3874
170.00	0.9804	-0.0002	0.4480
180.00	1.0238	-0.0001	0.8178
180.00	1.0807	-0.0008	0.4231
192.33	1.1061	0.0001	0.2813
220.00	1.2788	-0.0004	0.8828
228.00	1.3173	-0.0003	0.8687
242.00	1.4413	-0.0008	0.2814
244.33	1.4538	-0.0005	0.5188
265.00	1.6081	-0.0007	0.1644

Site Number: 10047
 Location: Portland ME, ME

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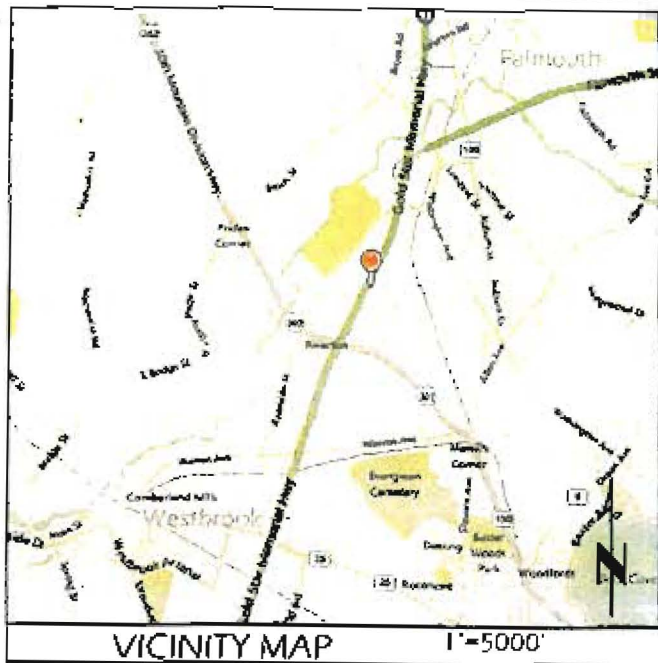
Code: TIA/EIA-222 Rev F



80.00 mph Wind at 90 deg From Face with No Ice

266.67	1.5193	0.0011	0.0728
270.00	1.8100	0.0008	0.0234
37.00	0.1133	0.7668	0.1348
67.00	0.2838	0.8148	0.1672
120.00	0.3693	0.8287	0.4212
164.67	0.5240	0.8420	0.2257
170.00	0.5822	0.8493	0.2844
180.00	0.6372	0.8493	0.4088
190.00	0.6684	0.8493	0.2078
192.33	0.6788	0.8478	0.2228
220.00	0.7019	0.8284	0.6821
225.00	0.8277	0.8288	0.6714
242.00	0.9308	0.8163	0.2143
244.33	0.9384	0.8181	0.4030
266.00	0.8758	0.8107	0.0014
266.67	0.8790	0.0000	0.0480
270.00	0.9828	0.8087	0.1100
37.00	0.1444	0.7902	0.1919
67.00	0.4062	0.7022	0.2869
120.00	0.5367	0.6841	0.6478
164.67	0.7663	0.6882	0.3363
170.00	0.5827	0.7478	0.2869
180.00	0.9139	0.7447	0.4986
190.00	0.8703	0.6388	0.2491
192.33	0.9824	0.7288	0.2108
220.00	1.1263	0.7283	0.9108
225.00	1.1600	0.8177	0.8087
242.00	1.2773	0.8108	0.2838
244.33	1.2672	0.0000	0.3488
266.00	1.3262	0.7147	0.1204
266.67	1.3308	0.7180	0.0626
270.00	1.3063	0.7171	0.0788
	0.0000	0.0000	0.0000

80.00 mph Wind at 90 deg From Face with No Ice



VICINITY MAP 1"=5000'

clearwire®

CUSTOMER SITE IDENTIFICATION:

SITE NUMBER: ME-PTLS001

225 RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, ME 04103

ATC SITE IDENTIFICATION:

SITE NUMBER: 10047
SITE NAME: PORTLAND ME

THIS IS A CLEARWIRE COLLOCATION SITE



LOCAL MAP 1"=1000'



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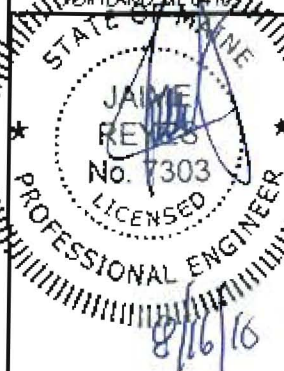
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10047
SITE NAME:
PORTLAND ME

SITE ADDRESS:
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PORTLAND, ME 04103



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CHECKED BY: SAE
DATE DRAWN: 8-9-2010
JOB NO.: 45122104

SHEET TITLE

TITLE SHEET,
VICINITY MAP
AND GENERAL
INFORMATION

SHEET NUMBER: T-1
REV. #: 0

PROJECT TEAM	PROJECT SUMMARY	PROJECT DESCRIPTION	SHEET INDEX				
ARCHITECT: AMERICAN TOWER CORPORATION 1898 LELAND DRIVE SUITE A MARIETTA, GA 30067 TEL: (678) 265-6705 FAX: (678) 265-6781 CONTACT: JAMES JUSTICE A & E MANAGER CUSTOMER: CLEARWIRE SUBSTANTIAL SERVICES 4400 CARILLON POINT KIRKLAND, WA 98033 CONTACT: KEN OWEN ZONING AND BUILDING PERMIT: ZONING JURISDICTION: CITY OF PORTLAND CLASSIFICATION: MODERATE INDUSTRIAL PARCEL ID: MAP 330 BLOCK H LOT 1 LANDLORD: AMERICAN TOWER CORPORATION 10 PRESIDENTIAL WAY WOBURN, MA 01801 TEL: (781) 926-4500 FAX: (781) 926-4555 UTILITIES: POWER COMPANY: CENTRAL MAINE POWER TEL: 800-565-3181 TELEPHONE COMPANY: VERIZON TEL: 800-483-4000	ATC SITE ADDRESS: 225 RIVERSIDE INDUSTRIAL PARKWAY PORTLAND, ME 04103 COUNTY: CUMBERLAND USE: TELECOMMUNICATION FACILITY GEOGRAPHIC COORDINATES: LATITUDE: 43.70602 N LONGITUDE: -70.31072 W GROUND ELEVATION: 68 FT WATER SUPPLY: NONE WASTE WATER: NONE	THE PROPOSED PROJECT INCLUDES PLACING NEW EQUIPMENT (CABINET) IN AN EXISTING COMPOUND AND NEW ANTENNAS AND LINES ON AN EXISTING TOWER. PROJECT NOTES 1. THE FACILITY IS UNMANNED 2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE 3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE. 4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED. 5. HANDICAP ACCESS IS NOT REQUIRED.	SHT NO.	DESCRIPTION	REV.	DATE	BY:
	BUILDING CODE & STANDARDS 2003 (IBC) INTERNATIONAL BUILDING CODE 2005 (NEC) NATIONAL ELECTRIC CODE	PROJECT LOCATION DIRECTIONS DIRECTIONS START FROM: TAKE MAINE TURNPIKE TO EXIT 8, IMMEDIATE RIGHT ON RIVERSIDE STREET AND GO STRAIGHT TO 3RD TRAFFIC LIGHT FOR 1.5 MILES. MAKE A RIGHT ON ROUTE 302 EAST, (FOREST AVENUE) AND GO (0.3) MILES UNDER THE OVERPASS AND MAKE A LEFT ON RIVERSIDE INDUSTRIAL PARKWAY SITE WILL BE ON RIGHT	T-1	TITLE SHEET, VICINITY MAP AND GENERAL INFORMATION	0	8-9-2010	CHLE
			S-1	SURVEY PLAN	0	8-9-2010	JL
			A-1	SITE PLAN	0	8-9-2010	JL
			A-2	TOWER ELEVATION	0	8-9-2010	JL
			A-3	MOUNT DETAILS	0	8-9-2010	JL
			A-4	FOUNDATION DETAILS	0	8-9-2010	JL
			A-5	CABINET & RRU SPECIFICATIONS	0	8-9-2010	JL
			E-1	ELECTRICAL SITE PLAN	0	8-9-2010	JL
			E-2	TELCO, METER RACK DETAILS AND LOAD SCHEDULE	0	8-9-2010	CHLE
			EG-1	GROUNDING PLAN	0	8-9-2010	JL
			EG-2	GROUNDING SCHEMATIC DIAGRAM	0	8-9-2010	JL
			GN-1	GENERAL NOTES	0	8-9-2010	JL
			GN-2	GENERAL NOTES & ABBREVIATIONS	0	8-9-2010	JL



COMPOUND VIEW

CIVIL LEGEND:

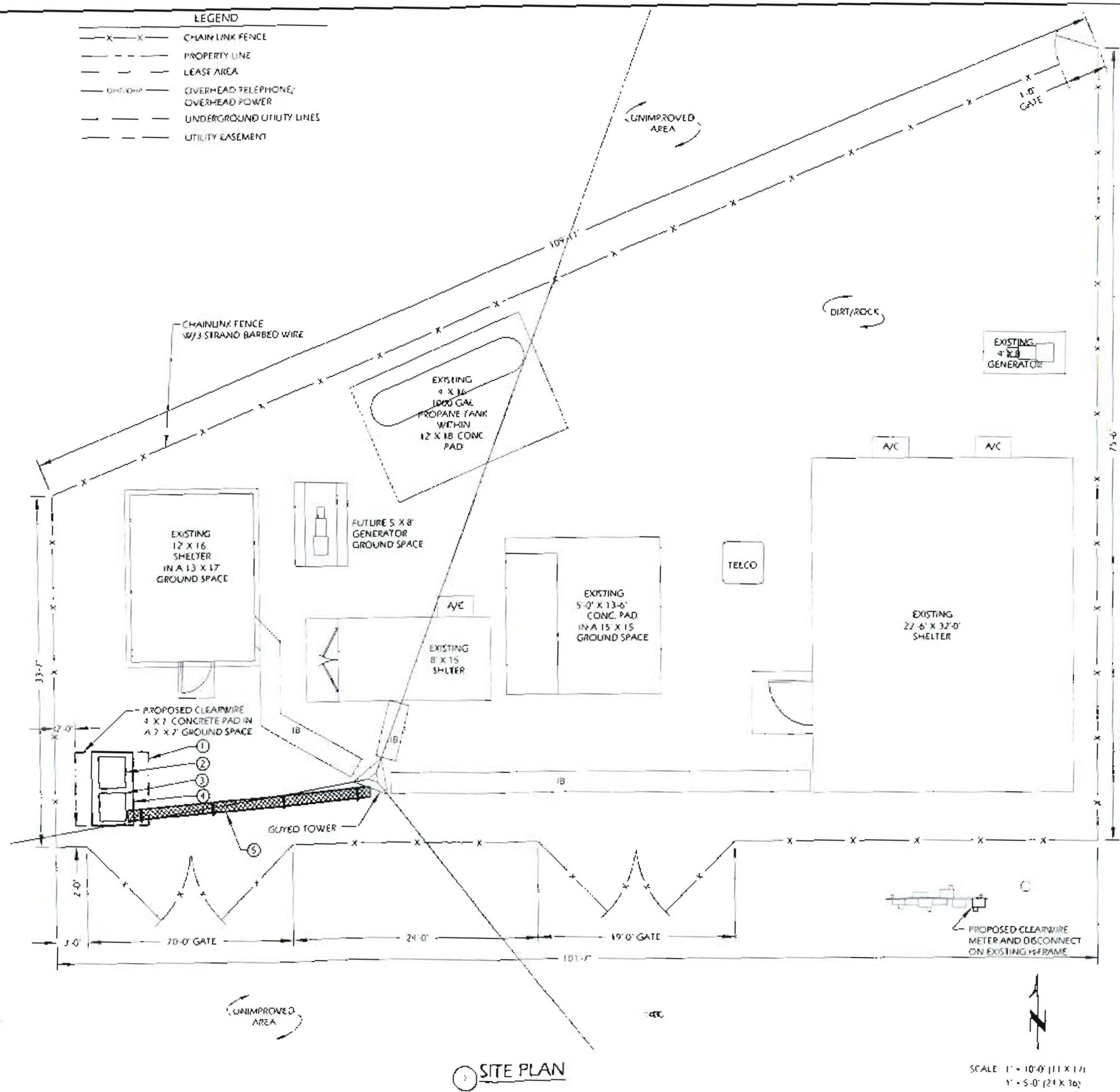
- ① PROPOSED CLEARWIRE GROUND SPACE
- ② PROPOSED 32" 8BU POWER CABINET
- ③ PROPOSED 36" RASI CABINET
- ④ PROPOSED 4 X 7' CONCRETE PAD WITH CABINET AND 8BU CENTERED
- ⑤ PROPOSED ICE BRIDGE (24'-0" LENGTH)

GENERAL NOTES

- HEIGHT: EXCLUDING THE TOWER, NO EXISTING OR PROPOSED STRUCTURE (INCLUDING GROUND EQUIPMENT) WILL EXCEED THE HEIGHT LIMITATIONS OF THE DISTRICT
- LIGHTING: THE PROPOSED INSTALLATION AND EXISTING FACILITY WILL MEET OR EXCEED ALL FAA AND FCC REGULATORY REQUIREMENTS.
- GRADE: EXISTING GRADE WILL BE MAINTAINED FOR PROPOSED CONSTRUCTION
- PARKING: ONE PARKING SPACE IS REQUIRED, ONE EXISTING
- SIGNAGE: EXTERIOR SIGNS ARE NOT PROPOSED EXCEPT AS REQUIRED BY THE FCC
- STORM WATER CONTROL: THE PROPOSED FACILITY WILL RESULT IN AN INSIGNIFICANT INCREASE IN STORM WATER RUNOFF. CONSEQUENTLY NO WATER QUALITY CONTROL DEVICES ARE PROPOSED
- UTILITIES: SANITARY SEWER SERVICE AND POTABLE WATER ARE NOT APPLICABLE PER THE USE. IF APPLICABLE, SUBCONTRACTOR SHALL LOCATE ALL UTILITIES PRIOR TO EXCAVATING
- DRIVEWAY: A DRIVEWAY PERMIT IS NOT REQUIRED FOR THIS PROJECT. THE PROJECT WILL NOT REQUIRE RIGHT-OF-WAY OR PROPERTY TO BE DEDICATED FOR PUBLIC USE
- MISC: NO NOISE, SMOKE, DUST, VAPORS OR ODOR WILL RESULT FROM THIS PROJECT

LEGEND

	CHAIN LINK FENCE
	PROPERTY LINE
	LEASE AREA
	OVERHEAD TELEPHONE; OVERHEAD POWER
	UNDERGROUND UTILITY LINES
	UTILITY EASEMENT



① SITE PLAN

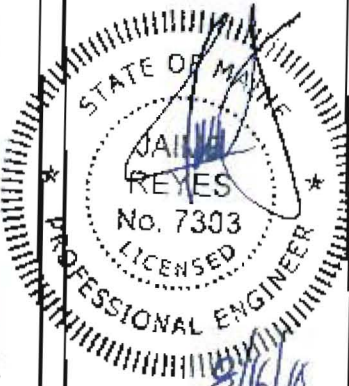
SCALE: 1" = 10'-0" (11 X 17)
1" = 5'-0" (24 X 36)

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AMERICAN TOWER
STRUCTURAL ENGINEERING
 8505 FREEMONT PARKWAY
 SUITE 135
 IRVING, TX 75063
 (972) 999-8900 Tel
 (972) 999-8940 Fax

SITE NUMBER
10047
 SITE NAME:
PORTLAND ME
 SITE ADDRESS:
 225 RIVERSIDE INDUSTRIAL
 PARKWAY
 PORTLAND, ME 04103



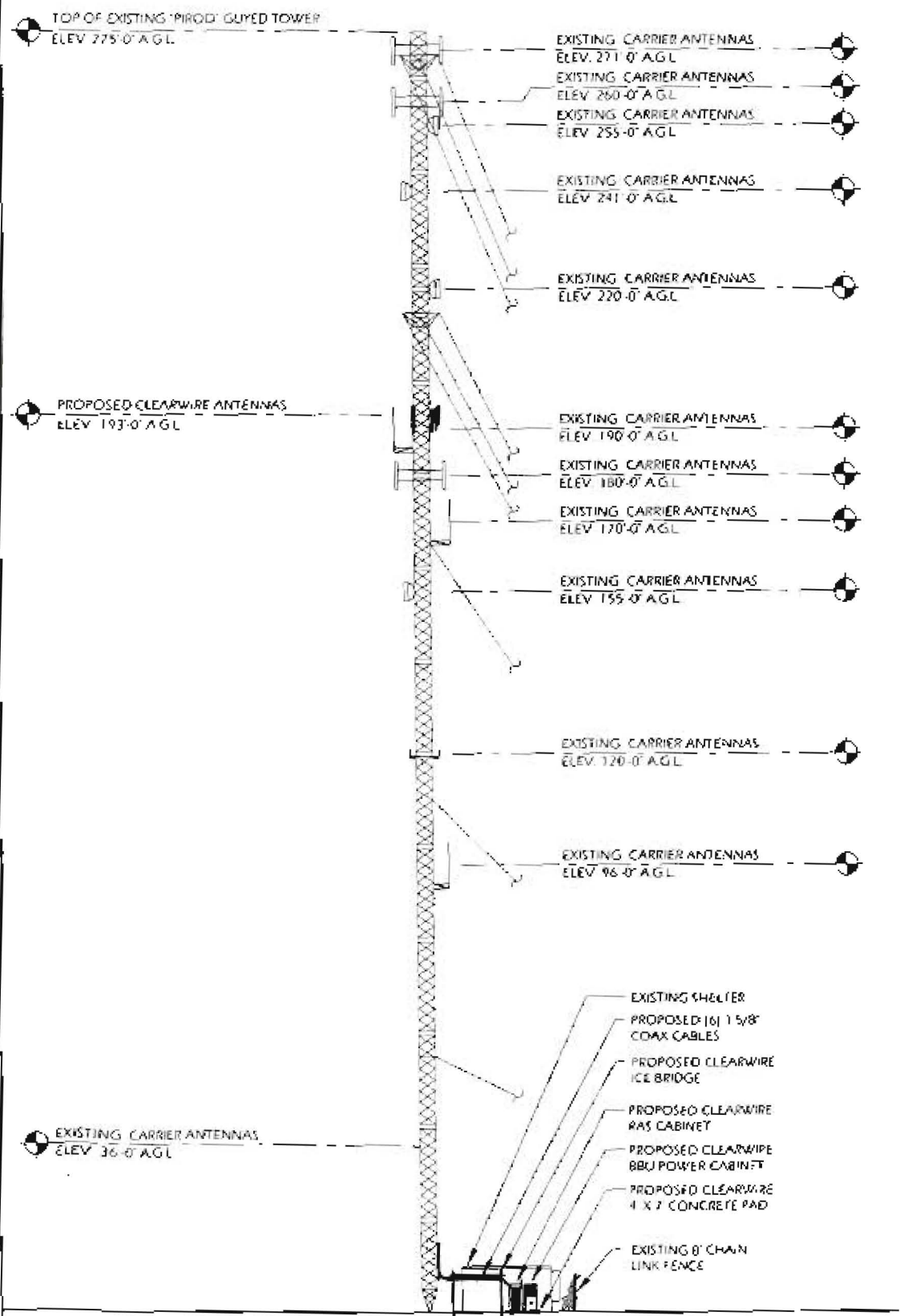
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DRAWN BY:	JL
CHECKED BY:	WAE
DATE DRAWN:	05-2019
LOG NO.:	45117114

SHEET TITLE:
SITE PLAN

SHEET NUMBER	REV #
A-1	0

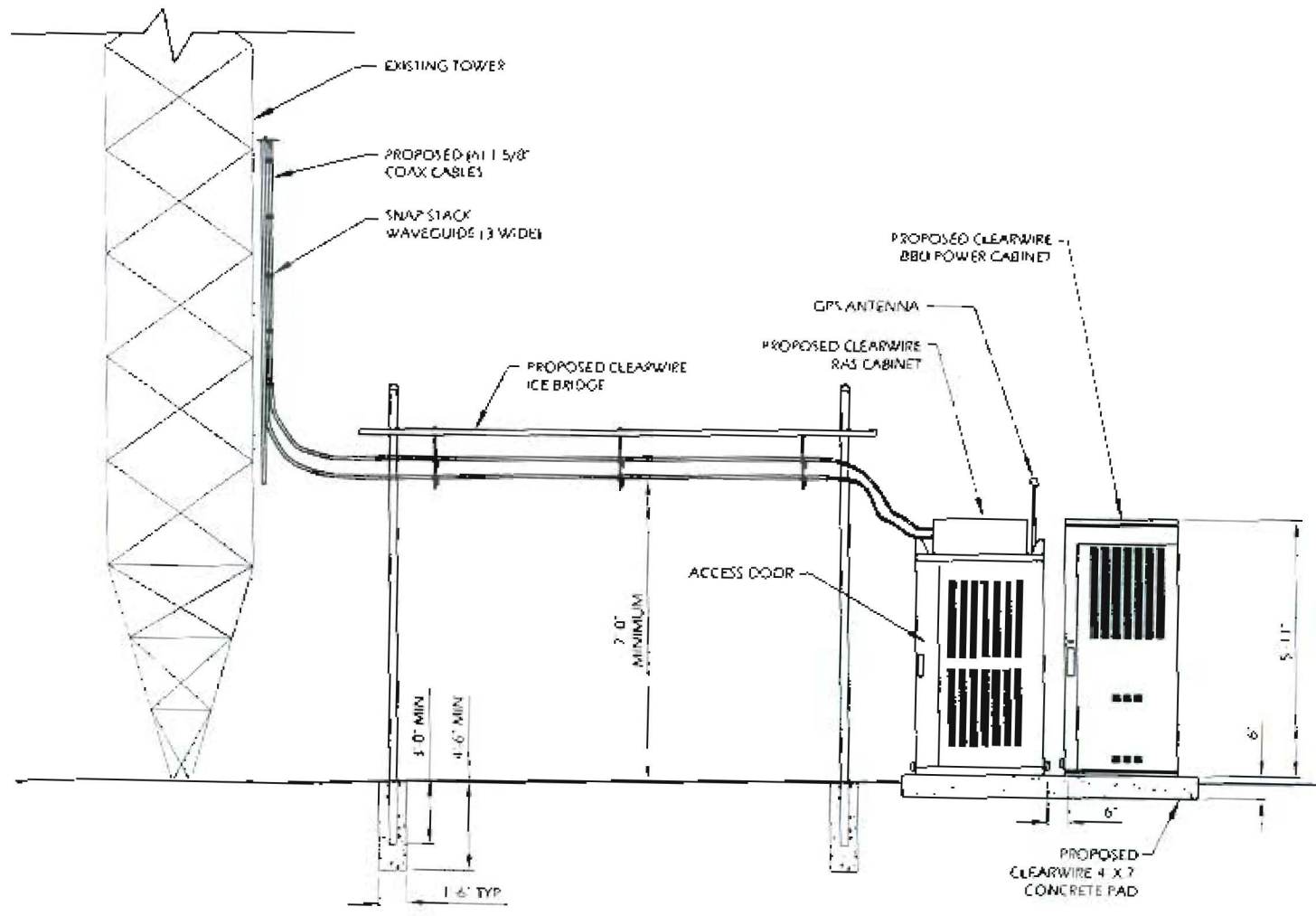
NOTE
 • IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH AMERICAN TOWER PROJECT MANAGER (LISTED ON THE T-1 PAGE) THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK.
 • ALL COAX, ANTENNAS AND MOUNTS TO BE INSTALLED PER THE LATEST INFORMATION ON FILE WITH THE AMERICAN TOWER ENGINEERING DEPARTMENT



1 TOWER ELEVATION
NOT TO SCALE

RF CONFIGURATION			
	SECTOR 1	SECTOR 2	SECTOR 3
AZIMUTH	0	120	240
ANTENNA HI (ft)	193	193	193
# OF ANTENNAS	1	1	1
ANTENNA MODEL	KMW COMM HB-X-17-65-001	KMW COMM HB-X-17-65-001	KMW COMM HB-X-17-65-001
TMA MODEL (QUANTITY)	-	-	-
ELECTRICAL DOWN-TILT	0	0	0
MECHANICAL DOWN-TILT	0	0	0
CABLE QUANTITY & LENGTH (ft)	(2) 242	(2) 242	(2) 242
CABLE TYPE (inches)	EUPEN 1 5/8" COAX	EUPEN 1 5/8" COAX	EUPEN 1 5/8" COAX
BTS	SAMSUNG	SAMSUNG	SAMSUNG

NOTE:
 COAX TO RUN UP THE TOWER PER THE STRUCTURAL ANALYSIS



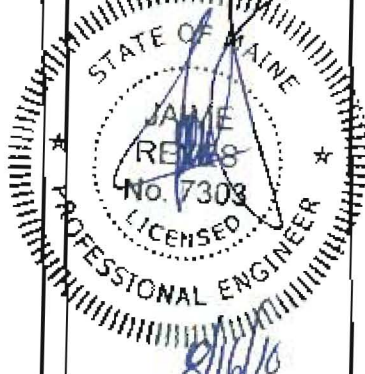
2 ENLARGED ELEVATION
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SITE NUMBER
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 SITE NAME:
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 SITE ADDRESS
 725 RIVERSIDE INDUSTRIAL
 PARKWAY
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STAMP HERE:
 DRAWN BY: JL
 CHECKED BY: SJS
 DATE DRAWN: 8-9-2010
 JOB NO: 451771-1
 1-SHEET 11/12

TOWER ELEVATION
 SHEET NUMBER: **A-2** REV: **0**

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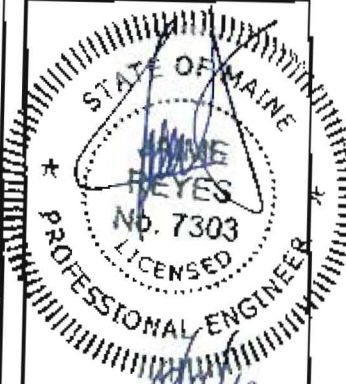
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SITE ADDRESS

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PARKWAY
PORTLAND, ME 04103



STAMP #278

DRAWN BY

CHECKED BY

DATE DRAWN

JOB NO.

SHEET TITLE

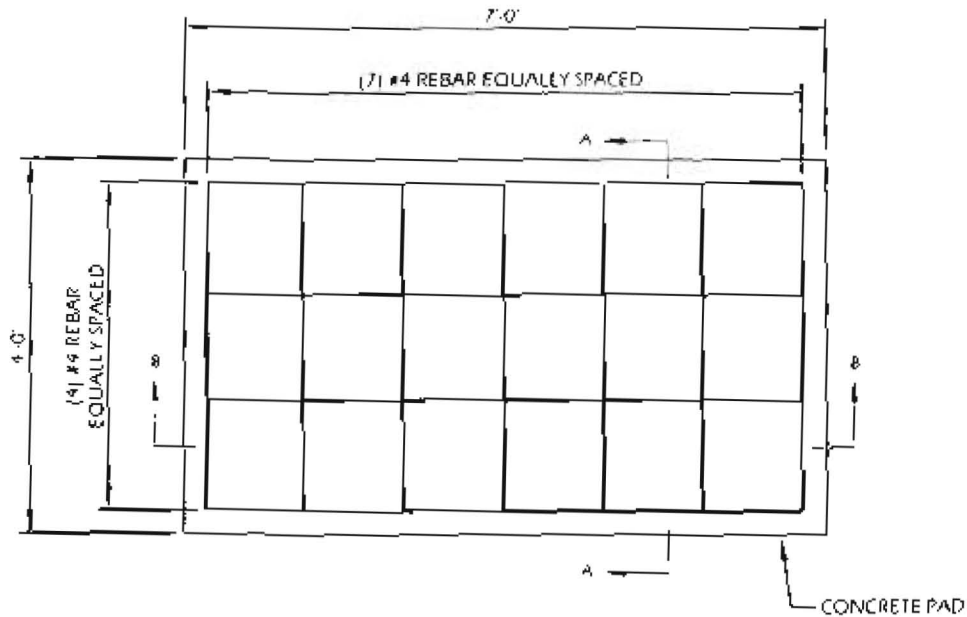
FOUNDATION
DETAILS

SHEET NUMBER

REV 1

A-4

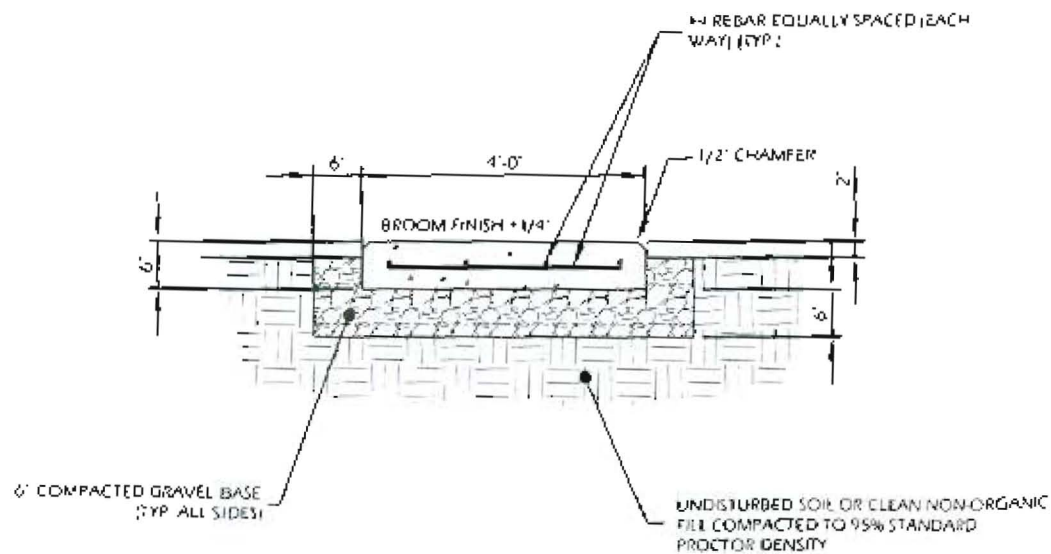
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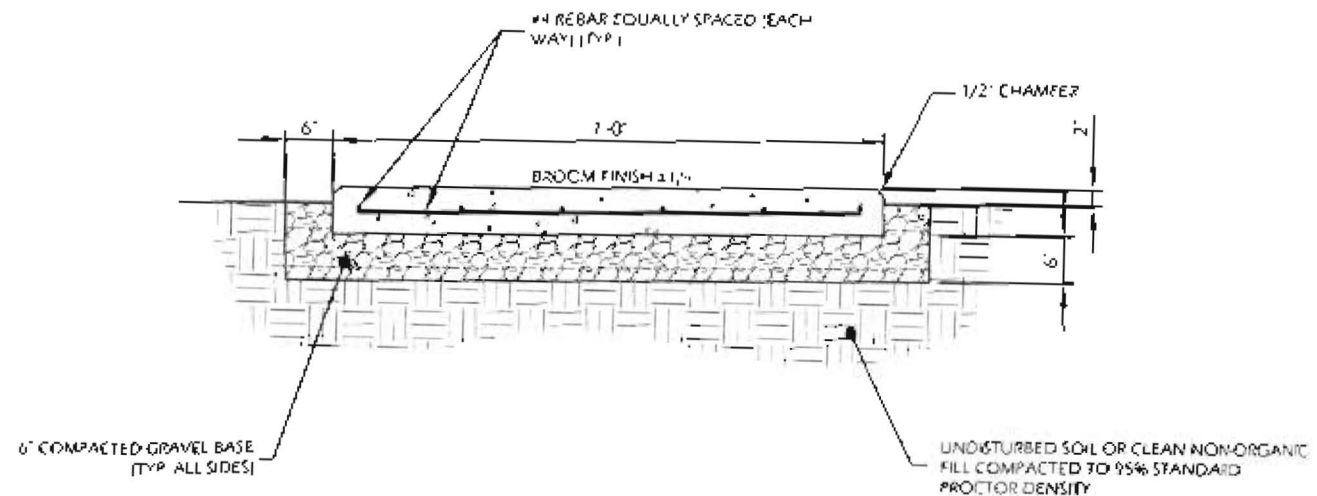
1 FOUNDATION PLAN
NOT TO SCALE

CONCRETE NOTES:

1. CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI IN 28 DAYS. CONTINUOUS INSPECTION IS NOT REQUIRED. PORTLAND CEMENT TYPE I OR II (REFER TO GEOTECHNICAL REPORT). SLUMP 7" MIN/4" MAX. AIR ENTRAINMENT, 2-3% BY VOLUME.
2. MAXIMUM COARSE AGGREGATE SIZE SHALL BE 3/4". REINFORCEMENT SHALL BE NEW BILLET STEEL DEFORMED BARS CONFORMING TO ASTM SPECIFICATION A615 GRADE 60. MINIMUM REBAR SPLICES SHALL BE 30 DIAMETERS.
3. REINFORCEMENT SHALL HAVE A MINIMUM CLEAR DIMENSION ON ALL SIDES OF 3" UNLESS NOTED OTHERWISE.
4. ALL EMBEDDED ITEMS SHALL BE SECURELY HELD IN POSITION PRIOR TO PLACEMENT OF CONCRETE. ALL CONCRETE SHALL BE READY-MIXED IN ACCORDANCE WITH ASTM C94.
5. MAINTAIN TEMPERATURE OF CAST-IN-PLACE CONCRETE BETWEEN 50 DEGREES AND 90 DEGREES F.
6. DO NOT USE RETEMPERED CONCRETE, OR ADD WATER TO READY-MIX CONCRETE AT THE JOB SITE.
7. TOP OF SLAB TO HAVE 1/2" CHAMFER ON ALL SIDES.
8. ATTACH EQUIPMENT TO CONCRETE PER MANUFACTURER'S SPECIFICATIONS.
9. FOUNDATION DESIGN BASED ON 2000 PSF MIN. SOIL BEARING CAPACITY. CONTRACTOR TO FIELD VERIFY AND NOTIFY ENGINEER IF SOILS OF LESSER BEARING CAPACITY ARE ENCOUNTERED.
10. NO SPLICES OF REINFORCEMENT PERMITTED EXCEPT AS DETAILED OR AUTHORIZED. MAKE BARS CONTINUOUS AROUND CORNERS. WHERE PERMITTED, SPLICES MADE BY CONTACT LAPS SHALL BE CLASS 'B' TENSION LAPS UNLESS NOTED OTHERWISE.
11. DETAIL BARS IN ACCORDANCE WITH 'ACI DETAILING MANUAL, 1985' PUBLICATION SP-17 AND 'BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE' ACI 318-05.
12. PROVIDE ACCESSORIES NECESSARY TO PROPERLY SUPPORT REINFORCING AT POSITIONS SHOWN ON PLAN.



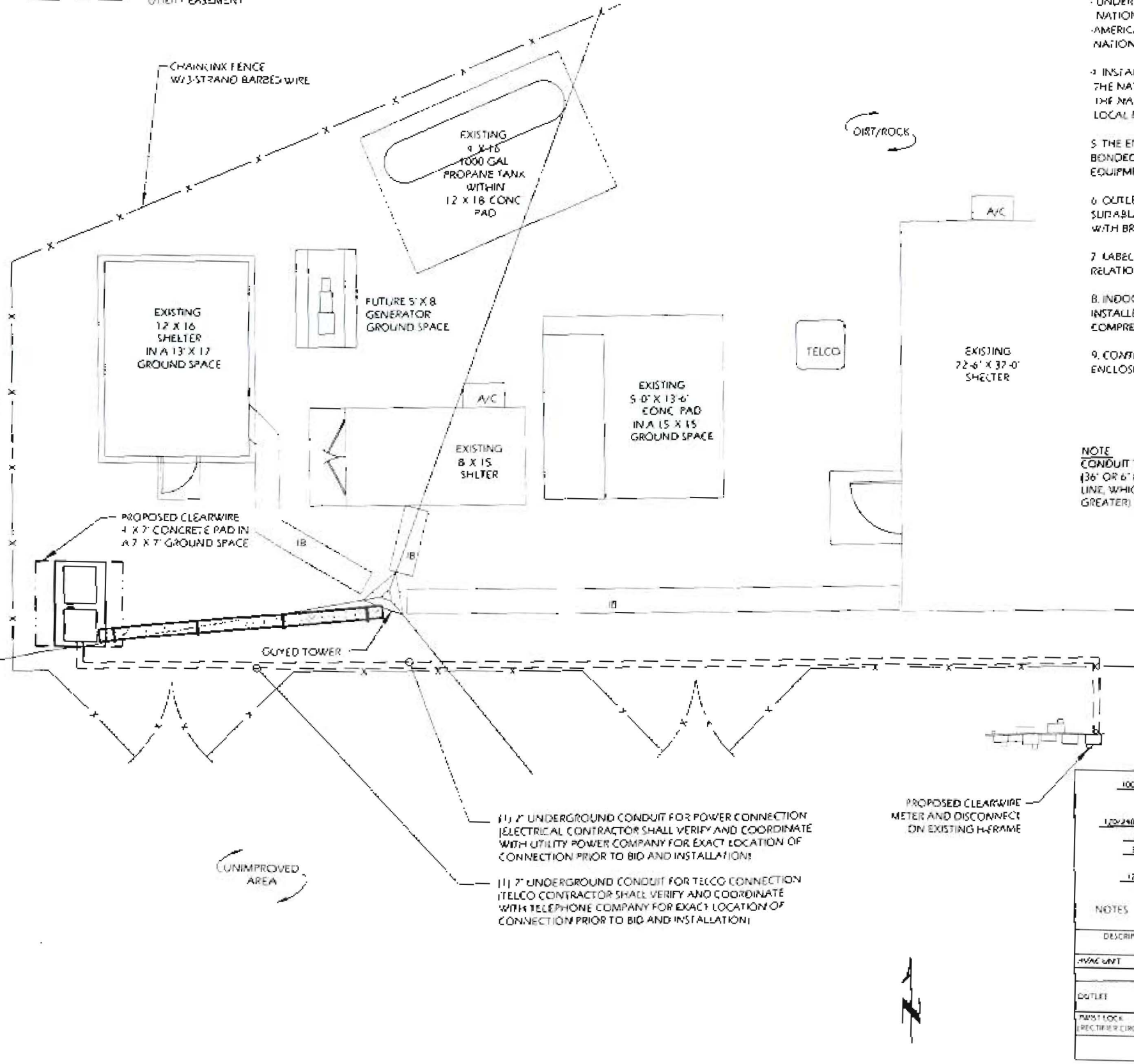
2 SECTION A-A
NOT TO SCALE



3 SECTION B-B
NOT TO SCALE

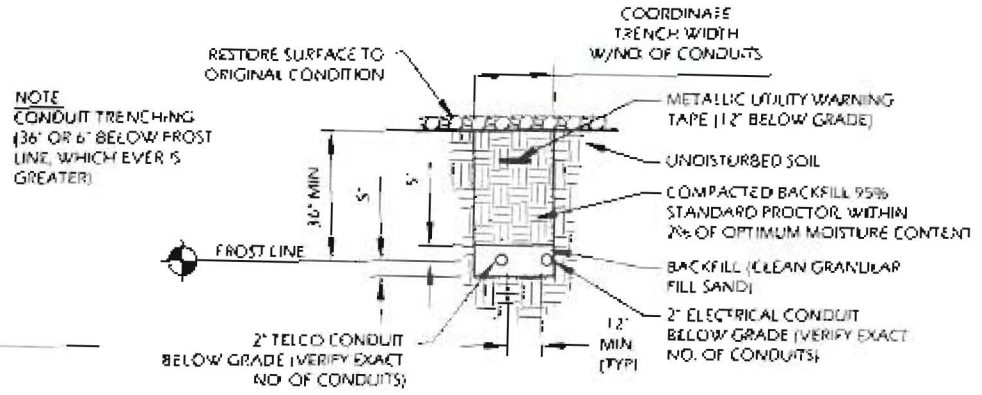
LEGEND

---X---X---	CHAIN LINK FENCE
-----	PROPERTY LINE
- - - - -	LEASE AREA
---O---O---	OVERHEAD TELEPHONE
---P---P---	OVERHEAD POWER
---U---U---	UNDERGROUND UTILITY LINES
---	UTILITY EASEMENT



GENERAL NOTES:

1. WIRING SHALL BE AWG STRANDED COPPER WITH THHN OR EQUIVALENT INSULATION #12 MINIMUM INSTALLED IN 1/2" MINIMUM CONDUIT. SIGNAL WIRING SHALL BE INSULATED #22 AWG. NO BX OR ROMEX CABLE IS PERMITTED. CONDUITS SHALL BE SURFACE MOUNTED.
2. WIRING DEVICES AND EQUIPMENT SHALL BE UL LISTED SPECIFICATIONS GRADE.
3. MATERIALS SHALL BE NEW AND CONFORM TO THE APPLICABLE STANDARDS ESTABLISHED FOR EACH ITEM BY THE ORGANIZATIONS LISTED BELOW:
 - AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM)
 - UNDERWRITERS LABORATORY (UL)
 - NATIONAL ELECTRICAL MANUFACTURING ASSOCIATION (NEMA)
 - AMERICAN STANDARDS ASSOCIATION (ASA)
 - NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
4. INSTALLATION OF MATERIALS SHALL COMPLY WITH REGULATIONS OF THE NATIONAL ELECTRIC CODE (NFPA 70), THE NATIONAL ELECTRICAL SAFETY CODE (ANSI C-2), LOCAL BUILDING CODES.
5. THE ENTIRE SYSTEM SHALL BE SOLIDLY GROUNDING USING LOCKOUTS AND BONDING NUTS ON CONDUITS AND PROPERLY BONDED GROUND CONDUCTOR. RECEPTACLES AND EQUIPMENT BRANCH CIRCUITS SHALL BE GROUNDING WITH A FULL-SIZED EQUIPMENT GROUNDING CONDUCTOR RUN IN THE CIRCUITS CONDUITS.
6. OUTLET AND JUNCTION BOXES SHALL BE ZINC-COATED OR CADMIUM PLATED STEEL NOT LESS THAN 4" SQUARE AND DURABLE FOR THE TYPE SERVICE AND OUTLET. OUTLET AND JUNCTION BOXES SHALL BE SURFACE MOUNTED FOR LABELED WITH BRANCH CIRCUIT BREAKER NUMBER.
7. LABEL ALL EQUIPMENT SERVED FROM CLEARWIRE TECHNOLOGIES, INC. PANELBOARD WITH PHENOLIC LABELS SIZED IN RELATION TO USAGE.
8. INDOOR CONDUCTORS SHALL BE INSTALLED IN EMT UNLESS NOTED OTHERWISE. OUTDOOR CONDUCTORS SHALL BE INSTALLED IN RIGID GALVANIZED STEEL UNLESS NOTED OTHERWISE. WHERE EMT IS USED, IT SHALL BE WITH ONLY LISTED COMPRESSION FITTINGS. NO SET SCREW FITTINGS SHALL BE ALLOWED.
9. CONTRACTOR TO PROVIDE AND INSTALL ENGRAVED LABEL ON THE CLEARWIRE TECHNOLOGIES, INC. METER SOCKET ENCLOSURE.



JOINT TRENCH DETAIL
NOT TO SCALE

100 AMP	MAIN BREAKER	100 AMP	INSTALLATION: NEMA 3E
120/240 VOLTS	1UGS	100 AMP	LOCATION: MOUNTED TO EQUIPMENT CABINET
1 PHASE	GRD BAR		PANEL FEEDER: EXISTING PANEL
3 WIRE			CONNECTED: 3.50 KVA
POLE	RMS		DEMAND: 3.62 KVA
12 SPACES	SYMMETRICAL	AMPS: 100% ALL	

DESCRIPTION	WIRE	CON	CB AMP	LOAD VA	Ø"	DEM VA	Ø"	Ø"	Ø"	DEM VA	LOAD VA	Ø"	Ø"	Ø"	DESCRIPTION
HVAC UNIT	4-10		70-2	7.58	1.0	4.68	1	2			100-2	3-8			MAIN BREAKER
OUTLET	3-12		20-1	0.12	1.0	0.12	5	6			30-2	3-10			GENERATOR RECEPTACLE MECHANICAL INTERLOCK WITH 100 AMP MAIN
PHASE LOCK (RECTIFIER CIRCUIT)	4-12		20-2	2.10	1.0	2.40	3	5							PHASE LOCK (RECTIFIER CIRCUIT)
					1.0		1	10		2.40	2.40	20-2	4-12		PHASE LOCK (RECTIFIER CIRCUIT)

PROPOSED BREAKER PANEL SCHEDULE
NOT TO SCALE

ELECTRICAL SITE PLAN

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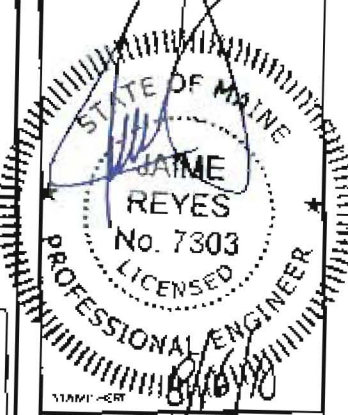
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IRVING, TX 75063
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www.american-tower.com

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SITE NAME:
PORTLAND ME

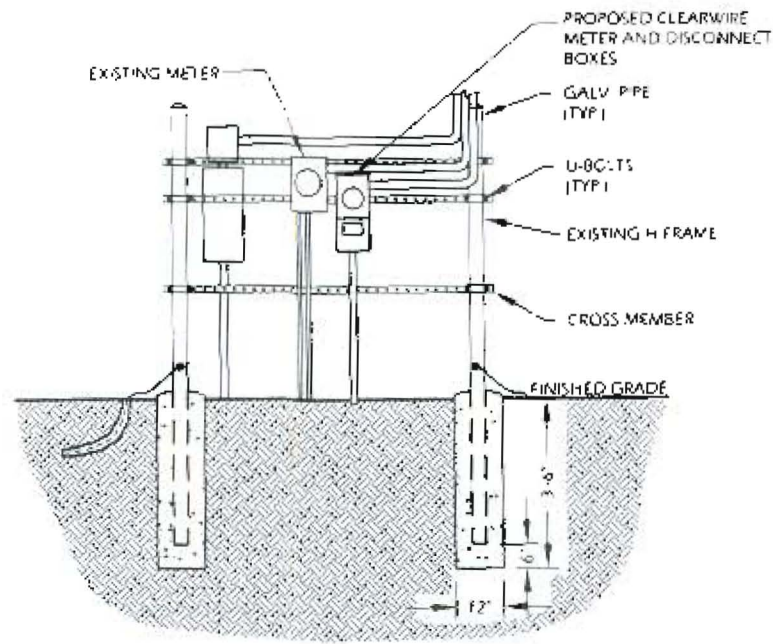
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725 RIVERSIDE INDUSTRIAL PARKWAY
PORTLAND, ME 04101



DRAWN BY: JL
CHECKED BY: VAE
DATE DRAWN: 8-9-2014
JOB NO: 45122-001

SHEET TITLE:
ELECTRICAL SITE PLAN

SHEET NUMBER: **E-1**
REV: **0**

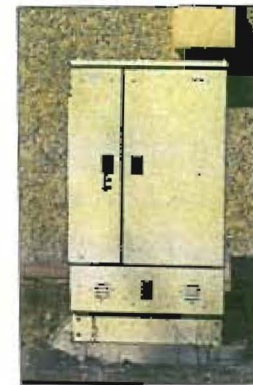


METER RACK DETAILS

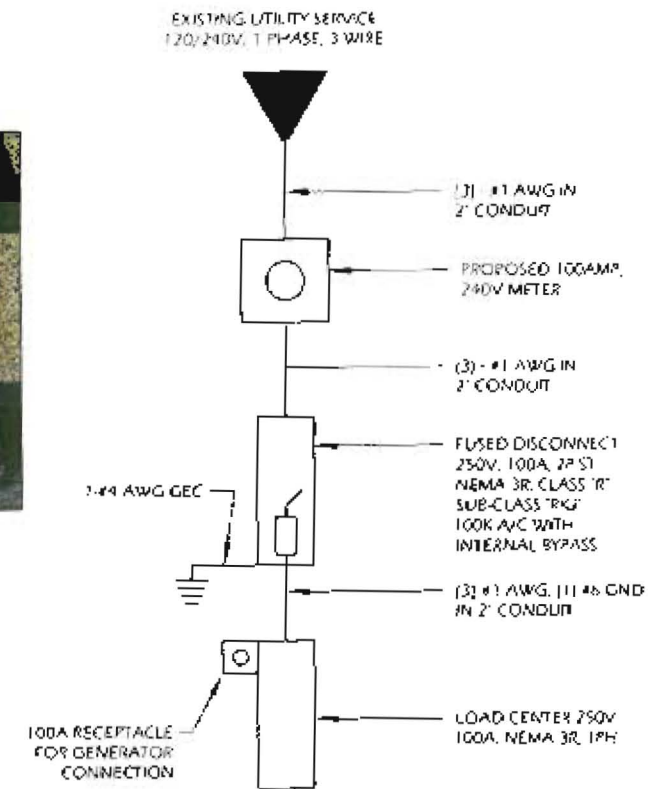
1 POWER AND TELCO DETAILS
NOT TO SCALE



POWER PHOTO



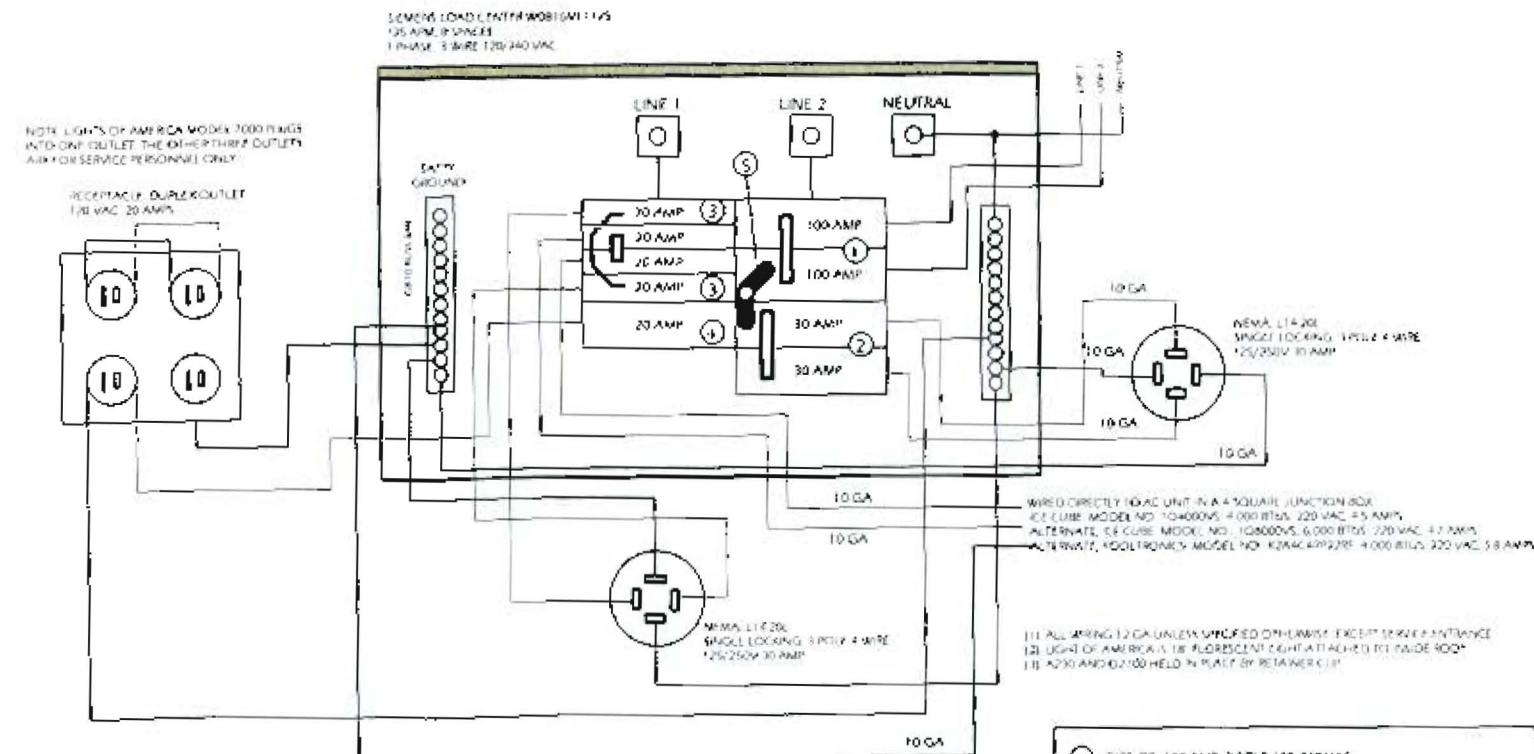
TELCO PHOTO



2 ONE-LINE DIAGRAM
NOT TO SCALE

GENERAL NOTES:

- OBTAIN PERMIT AND PAY FEES RELATED TO ELECTRICAL WORK PERFORMED ON THIS PROJECT. DELIVER COPIES OF ALL PERMITS TO CLEARWIRE TECHNOLOGIES, INC.
- SCHEDULE AND ATTEND INSPECTION RELATED TO ELECTRICAL WORK REQUIRED BY JURISDICTION HAVING AUTHORITY. CORRECT AND PAY FOR ANY WORK REQUIRED TO PASS ANY FAILED INSPECTION.
- REQUIRED AS-BUILTS ARE TO BE DELIVERED TO CLEARWIRE TECHNOLOGIES, INC REPRESENTATIVE.
- PROVIDE TWO COPIES OF OPERATION AND MAINTENANCE MANUALS IN THREE-RING BINDER.
- FURNISH AND INSTALL THE COMPLETE ELECTRICAL SYSTEM, TELCO SYSTEM, AND THE GROUNDING SYSTEM AS SHOWN ON THESE DRAWINGS.
- ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ALL APPLICABLE BUILDING CODES AND LOCAL ORDINANCES, INSTALLED IN A NEAT MANNER AND SHALL BE SUBJECT TO APPROVAL BY CLEARWIRE TECHNOLOGIES, INC REPRESENTATIVE.
- CONDUCT A PRE-CONSTRUCTION SITE VISIT AND VERIFY EXISTING SITE CONDITIONS AFFECTING THIS WORK. REPORT ANY OMISSIONS OR DISCREPANCIES FOR CLARIFICATION PRIOR TO THE START OF CONSTRUCTION.
- PROTECT ADJACENT STRUCTURES AND FINISHED FROM DAMAGE. REPAIR TO ORIGINAL CONDITION ANY DAMAGED AREA.
- REMOVE DEBRIS ON A DAILY BASIS. DEBRIS NOT REMOVED IN A TIMELY FASHION WILL BE REMOVED BY OTHERS AND THE RESPONSIBLE SUBCONTRACTOR SHALL BE CHARGED ACCORDINGLY. REMOVAL OF DEBRIS SHALL BE COORDINATED WITH THE SITE OWNERS REPRESENTATIVE. DEBRIS SHALL BE REMOVED FROM THE PROPERTY AND DISPOSED OF LEGALLY. USE OF THE PROPERTY'S DUMPSTER IS PROHIBITED.
- CONTRACTOR TO CONFIRM AVAILABLE CAPACITY AT EXISTING UTILITY PEDESTAL AND ADVISE ENGINEER OF SERVICE SIZE AND FAULT CURRENT LEVEL.
- IF PEDESTAL DOES NOT HAVE ADEQUATE CAPACITY, CONTRACTOR TO SUBMIT COST QUOTATION TO UPGRADE. UPON APPROVAL OF SUBMITTED COST QUOTATION THE CONTRACTOR SHALL PROVIDE NEW SERVICE AND/OR UPGRADE SERVICE. FEEDERS AND EQUIPMENT/ELECTRODE GROUNDING CONDUCTORS SIZED ACCORDINGLY.
- CONTRACTOR SHALL VERIFY SEPARATION DIMENSION BETWEEN POWER COMPANY ELECTRICAL CONDUITS AND LP GAS PIPES AS PER UTILITY COMPANY, LOCAL CODES, NEC, NFPA, AND GAS TANK MANUFACTURERS SPECIFICATION.
- CONTRACTOR SHALL VERIFY THAT THE TOTAL NUMBER OF SERVICE ENTRANCE DISCONNECTS IN THE EXISTING UTILITY COMPANY PEDESTAL MUST NOT EXCEED SIX IF THE NEW SERVICE ADDED EXCEEDS THIS VALUE. CONTRACTOR MUST COORDINATE WITH THE UTILITY COMPANY AND AUTHORITY HAVING JURISDICTION: THE RUNNING OF AN ADDITIONAL EXCLUSIVE AND DEDICATED SERVICE LATERAL SET FOR THE NEW LOAD ADDED TO THE COMPOUND AS PER NEC ARTICLE 230-2(B).
- THE EQUIPMENT/PROTECTIONS MUST BE RATED FOR STANDARD AIC RATE HIGHER THAN INCOMING EQUIPMENT AND/OR UTILITY COMPANY AIC RATE.



MANUFACTURE	PART NUMBER	DESCRIPTION	APPROVALS
SIEMENS ELECTRICAL DISTRIBUTION	4001AW1112	LOAD CENTER NEMA 3W	LL-111-110791
SIEMENS ELECTRICAL DISTRIBUTION	Q120 Q2100 Q210 125/100	CIRCUIT BREAKER	LL-111-110715
SIEMENS ELECTRICAL DISTRIBUTION	QNA 17	MECHANICAL LOCK OUT BAR	LL-142-110701
FACE SHROUD	LL-1224	3POLE 30 AMP TWIN LOCK	LL-111-110718
SIEMENS ELECTRICAL DISTRIBUTION	N/A	BACK FEED MAIN BREAK BUS	LL-111-110704
TELEPHONE INCORPORATED	2715 1 AMP INLET	4 PRONG 250V 30 AMP CONNECTIVE	LL-111-110705

3 LOAD SCHEDULE
NOT TO SCALE

- 1 TYPE OF 100 AMP 2 POLE 120/240 VAC
- 2 TYPE OF 30 AMP 2 POLE 120/240 VAC
- 3 TYPE OF 30 AMP TWIN POLE 120/240 VAC
- 4 TYPE OF 30 AMP 1 POLE 120/240 VAC
- 5 MECHANICAL INTERLOCK, SIEMENS PART NO. QNA 17 USED TO LOCK 1 FOR BACK FEEDING ELECTRICAL SERVICE

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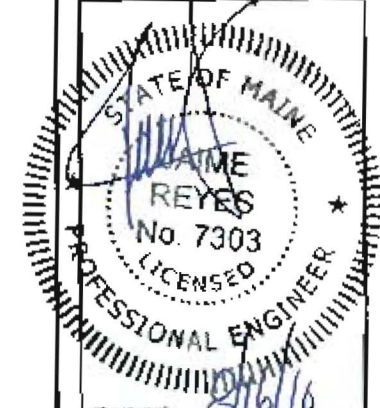
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SITE NAME:

PORTLAND ME

SITE ADDRESS:

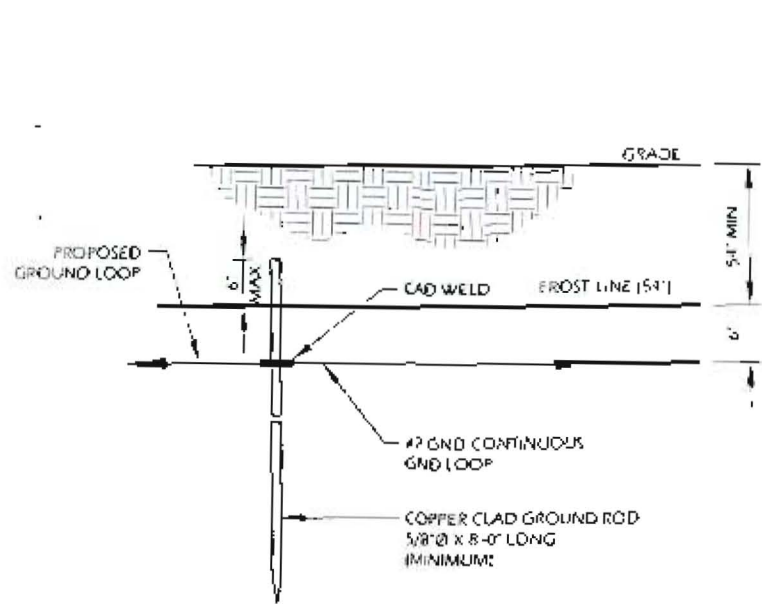
275 RIVERSIDE INDUSTRIAL
PARKWAY
PORTLAND, ME 04103



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CHECKED BY: SAE
DATE DRAWN: 8-9-2010
JOB NO: 15172113

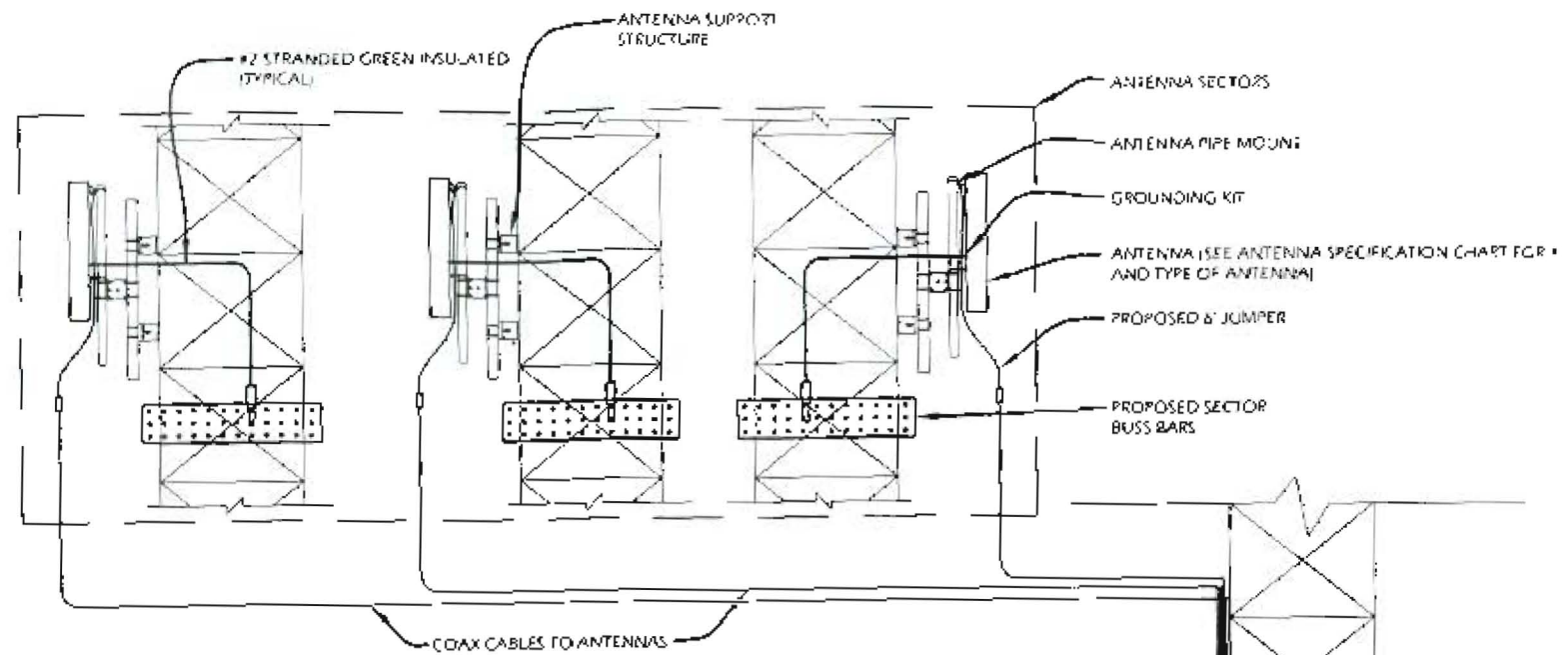
Telco, Meter Rack Details and Load Schedule

SHEET NUMBER: E-2
REV #: 0

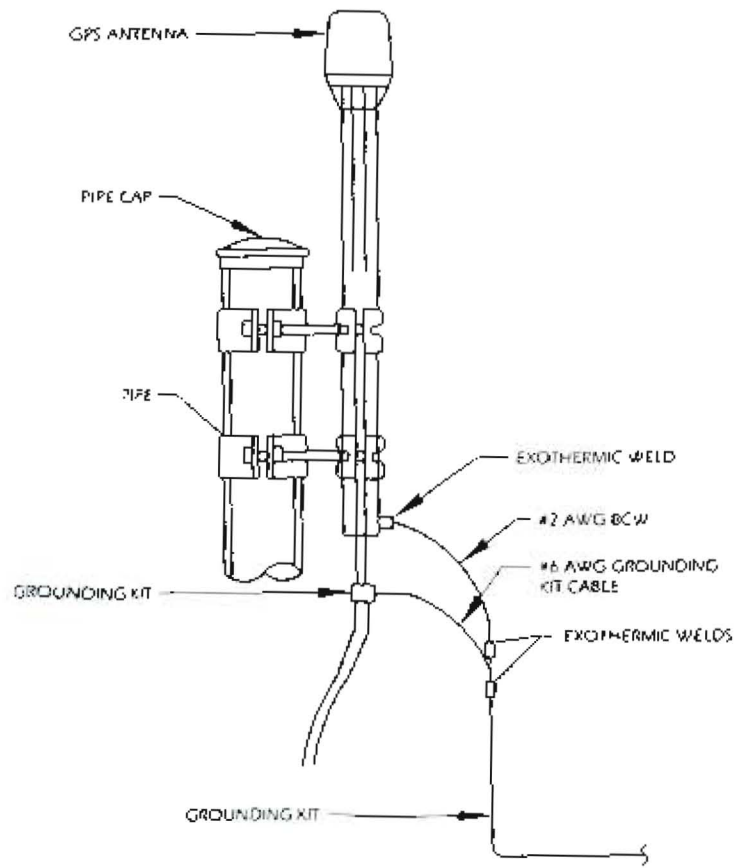


3 TYPICAL GROUND ROD DETAIL
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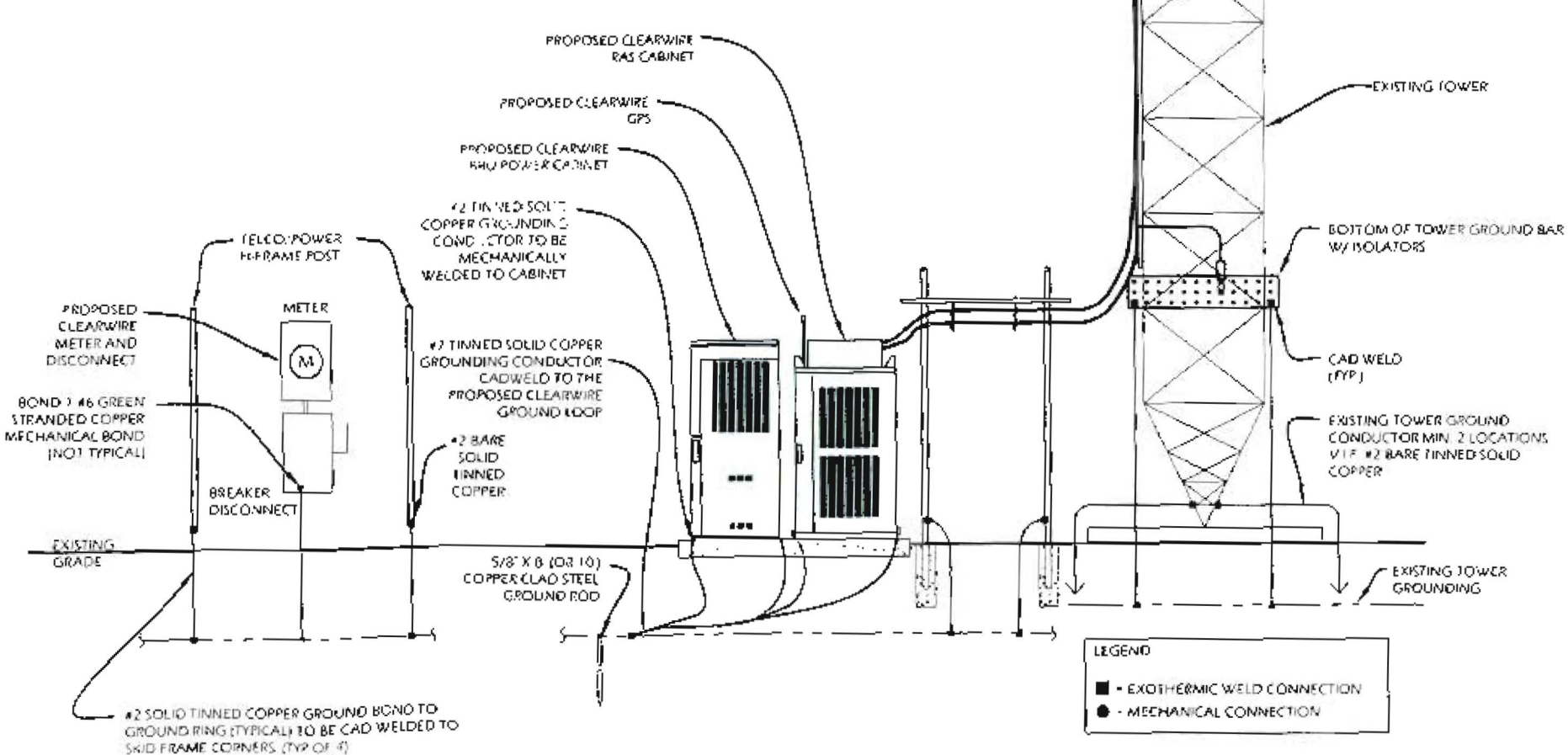
NOTE
THIS DETAIL IS FOR GROUNDING REPRESENTATION ONLY. THE NUMBER OF ANTENNAS, DISHES, TTAS AND COAX SHOULD BE DETERMINED BY REFERENCING THE RF CONFIGURATION CHART ON PAGE A-2.



NOTE
HAND DIG AS REQUIRED TO PROTECT ALL EXISTING UNDERGROUND (V.I.F.)



1 GPS ANTENNA GROUNDING
NOT TO SCALE



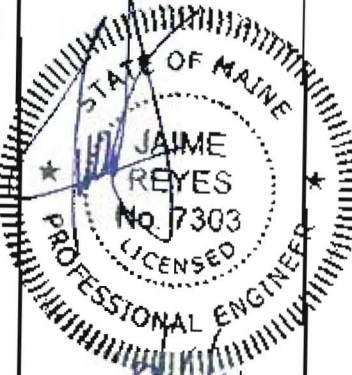
2 GROUNDING SCHEMATIC DIAGRAM
NOT TO SCALE

LEGEND
 ■ - EXOTHERMIC WELD CONNECTION
 ● - MECHANICAL CONNECTION

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SHEET TITLE
GROUNDING SCHEMATIC DIAGRAM

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1.0 GENERAL REQUIREMENTS (AS REQUIRED)

1.1 GENERAL SPECIFICATIONS

- a) ALL REFERENCES TO THE OWNER IN THESE DOCUMENTS SHALL BE CONSIDERED CLEARWIRE OR ITS DESIGNATED REPRESENTATIVE
- b) WORK SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, AND REGULATIONS. ALL NECESSARY LICENSES, CERTIFICATES, PERMITS, ETC., REQUIRED BY AUTHORITY HAVING JURISDICTION SHALL BE PROCURED AND PAID FOR BY THE CONTRACTOR
- c) ALL WORK PRESENTED ON THESE DRAWINGS MUST BE COMPLETED BY THE CONTRACTOR UNLESS NOTED OTHERWISE. THE CONTRACTOR MUST HAVE CONSIDERABLE EXPERIENCE IN PERFORMANCE OF WORK SIMILAR TO THAT DESCRIBED HEREIN. BY ACCEPTANCE OF THIS AGREEMENT, THE CONTRACTOR ATTESTS THAT HE DOES HAVE SUFFICIENT EXPERIENCE AND ABILITY TO COMPLETE THE WORK, THAT HE IS KNOWLEDGEABLE OF THE WORK TO BE PERFORMED AND THAT HE IS PROPERLY LICENSED AND PROPERLY REGISTERED TO DO THIS WORK.
- d) THE GENERAL CONTRACTOR AND EACH SUBCONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING DIMENSIONS AND CONDITIONS AT THE JOB SITE WHICH COULD AFFECT THE WORK UNDER THIS CONTRACT. ALL MANUFACTURES RECOMMENDED SPECIFICATIONS, EXCEPT THOSE SPECIFICATIONS HEREIN, WHERE MOST STRINGENT SHALL BE COMPLIED WITH.
- e) DO NOT SCALE THE DRAWINGS. DIMENSIONS ARE EITHER TO THE FACE OF FINISHED ELEMENTS OR TO THE CENTER LINE OF ELEMENTS. UNLESS NOTED OTHERWISE CRITICAL DIMENSIONS SHALL BE CONFIRMED WITH SITE MEASUREMENTS. VERIFY WITH ATC AS APPLICABLE.
- f) WHERE ONE DETAIL IS SHOWN FOR ONE CONDITION, UNLESS NOTED OTHERWISE, IT SHALL APPLY FOR ALL LIKE OR SIMILAR CONDITIONS, EVEN THOUGH NOT SPECIFICALLY MARKED ON THE DRAWINGS
- g) DRAWINGS FORMING THIS SET ARE COMPLIMENTARY AND MUST BE READ AS ONE TOTAL DOCUMENT. DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF ATC. THESE DRAWINGS WERE PREPARED TO BE SUBMITTED TO GOVERNMENTAL BUILDING AUTHORITIES FOR REVIEW FOR COMPLIANCE WITH APPLICABLE CODES. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO EXECUTE CONSTRUCTION INDICATED HEREIN ACCORDING TO THE APPLICABLE BUILDING CODES.
- h) THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT DESCRIBED HEREIN.
- i) THE CONTRACTOR SHALL OBTAIN AUTHORIZATION FROM ATC TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS

2) MATERIALS

- a) WHERE PAVING, CONCRETE SIDEWALKS OR PATHS MEET EXISTING CONSTRUCTION, THE CONTRACTOR SHALL MATCH THE EXISTING PITCH, GRADE, AND ELEVATION SO THE ENTIRE STRUCTURE SHALL HAVE A SMOOTH TRANSITION.
- b) THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT AND MAINTAIN EXISTING CONDITIONS, EASEMENTS, PAVEMENTS, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGES THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY
- c) ALL MATERIALS FURNISHED SHALL BE NEW AND OF GOOD QUALITY, FREE FROM DEFECTS AND FAULTS AND IN CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS. ANY AND ALL SUBSTITUTIONS MUST BE PROPERLY APPROVED AND AUTHORIZED IN WRITING BY THE OWNER AND ENGINEER PRIOR TO INSTALLATION
- d) THE CONTRACTOR SHALL FURNISH SATISFACTORY EVIDENCE AS TO THE KIND AND QUANTITY OF THE MATERIALS AND EQUIPMENT BEING SUBSTITUTED AND SHALL ONLY INSTALL SAID SUBSTITUTIONS AFTER APPROVAL BY THE OWNER OR THE OWNER'S ENGINEER
- e) ALL MATERIAL FURNISHED UNDER THIS CONTRACT SHALL BE NEW UNLESS NOTED OTHERWISE. ALL WORK SHALL BE GUARANTEED AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF (1) YEAR FOLLOWING SUBSEQUENT COMPLETION OF PROJECT OR AS SPECIFIED. THE CONTRACTOR SHALL REPAIR OR REPLACE AT HIS EXPENSE ALL WORK THAT MAY DEVELOP DEFECTS IN MATERIAL OR WORKMANSHIP WITHIN THE WARRANTY PERIOD

- iii) THE GENERAL CONTRACTOR AND EACH SUBCONTRACTOR ARE TO BE RESPONSIBLE FOR VERIFYING EXISTING SITE CONDITIONS AND DIMENSIONS AND THE LOCATION OF BURIED UTILITIES AT THE JOB SITE PRIOR TO THE COMMENCEMENT OF WORK.
- iv) CONFLICTS AND OMISSIONS WHICH COULD HAVE BEEN DISCOVERED BY FILED VERIFICATION AND INSPECTION, WHETHER INDICATED ON THE CONTRACT DOCUMENT OR NOT, WILL NOT BE ENTERTAINED OR PAID.
- v) MINIMUM BEND RADIUS OF ANTENNAS CABLES SHALL BE IN ACCORDANCE WITH CABLE MANUFACTURER RECOMMENDATIONS
- vi) CABLE ROUTING SHOWN IS DIAGRAMMATIC. ACTUAL ROUTE OF ANTENNA CABLES SHALL BE DETERMINED IN THE FIELD.

3) VERIFICATION

- a) THE CONTRACTOR SHALL VERIFY THAT NO CONFLICTS EXIST BETWEEN THE LOCATIONS OF ANY AND ALL MECHANICAL, ELECTRICAL, PLUMBING, OR STRUCTURAL ELEMENTS, AND THAT ALL REQUIRED CLEARANCES FOR INSTALLATION AND MAINTENANCE ARE MET. NOTIFY THE ATC OF ANY CONFLICTS, THE ATC HAS THE RIGHT TO MAKE MINOR MODIFICATIONS IN THE DESIGN OF THE CONTRACT WITHOUT THE CONTRACTOR GETTING ADDITIONAL COMPENSATION.
- b) THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE EXPRESSED APPROVAL OF THE ENGINEER.
- c) THE GENERAL CONTRACTOR SHALL COORDINATE WITH THE LOCAL POWER AND TELEPHONE UTILITIES AND THE CONSTRUCTION MANAGER TO CONFIRM THE SOURCE OF SERVICE PRIOR TO CONDUIT INSTALLATION. THE GENERAL CONTRACTOR SHALL OBTAIN WRITTEN CONFIRMATION OF EXPECTED DATE OF COMPLETION OF THE POWER CONNECTION FROM THE POWER COMPANY.
- d) ACCESS TO PROPOSED WORK SITE MAY BE RESTRICTED. THE CONTRACTOR SHALL COORDINATE INTENDED CONSTRUCTION ACTIVITY, INCLUDING WORK SCHEDULE AND MATERIALS ACCESS, WITH THE RESIDENT LEASING AGENT FOR APPROVAL.
- e) THE ENGINEER HAS NOT CONDUCTED, NOR DOES IT INTEND TO CONDUCT ANY INVESTIGATION TO DETERMINE THE PRESENCE OF ANY HAZARDOUS MATERIAL INCLUDING BUT NOT LIMITED TO ASBESTOS, LEAD PAINT, AND PCB'S WITHIN THE CONFINES OF THE PROJECT. THE ENGINEER WILL NOT ACCEPT ANY RESPONSIBILITY FOR THE ABATEMENT OR RESULTING CLAIMS FOR DAMAGES OR LOSSES AS RESULT OF THE PRESENCE OF HAZARDOUS MATERIALS. IF EVIDENCE OF HAZARDOUS MATERIAL IS DISCOVERED, SUSPEND WORK AS REQUIRED BY GOVERNING STATUTES, AND NOTIFY ATC (AMERICAN TOWER CORPORATION). DO NOT PROCEED WITH WORK UNTIL INSTRUCTED BY ATC

4) CLEAN-UP

- a) THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY CLEAN UP OF ALL TRADES AND REMOVE ALL DEBRIS FROM THE CONSTRUCTION SITE. AT THE COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL THOROUGHLY CLEAN THE BUILDING, SITE, AND ANY OTHER SURROUNDING AREAS TO A BETTER THAN NEW CONDITION WHILE MEETING THE APPROVAL OF ATC AND THE LANDLORD

5) SAFETY

- a) THE CONTRACTOR IS RESPONSIBLE FOR ADEQUATELY BRACING AND PROTECTING ALL WORK DURING CONSTRUCTION AGAINST DAMAGE, BREAKAGE, COLLAPSE, ETC. ACCORDING TO APPLICABLE CODES, STANDARDS, AND PRACTICES. THIS INCLUDES, BUT IS NOT LIMITED TO THE ADDITION OF TEMPORARY BRACING, GUYS, OR TIE DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AND SHALL REMAIN THE PROPERTY OF THE CONTRACTOR AFTER COMPLETION OF THE PROJECT
- b) THE CONTRACTOR SHALL BE RESPONSIBLE FOR INITIATING, MAINTAINING, AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK.
- c) THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT THE PROJECT AND RELATED WORK COMPLIES WITH ALL APPLICABLE OSHA, LOCAL, STATE, AND FEDERAL SAFETY CODES AND REGULATIONS GOVERNING THIS WORK.

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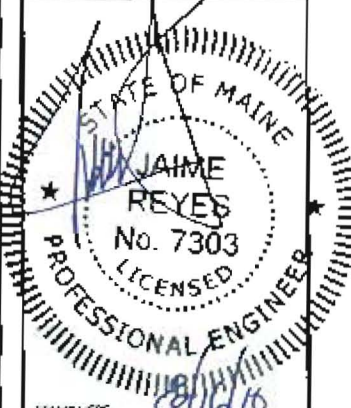
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d) THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR DAMAGES TO THE EXISTING FACILITY AND INSTALLATION RESULTING FROM CONSTRUCTION AND GENERAL NEGLIGENCE. REPAIR ALL DAMAGES AND RESTORE FACILITY AND INSTALLATIONS TO THE SATISFACTION OF ATC AND THE LANDLORD AT NO EXTRA CHARGE. NOTIFY ATC OF ANY SUCH DAMAGES PROMPTLY AND REPAIR TO 100% SATISFACTION IMMEDIATELY.

e) CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE WORK AREA, ADJACENT AREAS AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER CONTRACT. WORK SHALL CONFORM TO ALL OSHA REQUIREMENTS.

STRUCTURAL STEEL NOTES

6) STRUCTURAL STEEL SPECIFICATIONS

c) THE FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE LATEST AISC SPECIFICATIONS

d) UNLESS NOTED OTHERWISE, ALL STRUCTURAL STEEL SHALL MEET THE REQUIREMENTS OF ASTM A36. ALL BOLTS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A325 HIGH STRENGTH BOLTS.

e) ALL WELDING SHALL BE IN ACCORDANCE WITH THE LATEST AWS STRUCTURAL WELDING CODE. ALL WELDERS SHALL PROVIDE PROPER CERTIFICATION OF QUALIFICATION TO THE LANDLORD OR ATC PRIOR TO COMMENCING WORK AT THE SITE.

f) ALL CONNECTIONS NOT FULLY DETAILED ON THESE PLANS SHALL BE DETAILED BY THE STEEL FABRICATOR IN ACCORDANCE WITH AISC SPECIFICATIONS.

g) HOLES SHALL NOT BE FLAME CUT THROUGH STEEL UNLESS APPROVED BY THE ENGINEER.

h) WELDS SHALL BE MADE WITH E-70XX ELECTRODES UNLESS NOTED OTHERWISE.

i) HOT-DIP GALVANIZE ALL ITEMS AFTER FABRICATION WHERE PRACTICABLE. GALVANIZING SHALL BE DONE IN ACCORDANCE WITH ASTM A123, A153A, A153M, A653A, A653M AND ASTM G90, AS APPLICABLE.

j) REPAIR DAMAGED SURFACES WITH GALVANIZING REPAIR METHOD AND PAINT CONFORMING TO ASTM A780 OR BY APPLICATION OF STICK OR THICK PASTE MATERIAL SPECIFICALLY DESIGNED FOR REPAIR OF GALVANIZING. CLEAN AREAS TO BE REPAIRED AND REMOVE SLAG FROM WELDS. HEAT SURFACES TO A TEMPERATURE SUFFICIENT TO MELT THE METALLIC IN STICK OR PASTE. SPREAD MOLTEN MATERIAL UNIFORMLY OVER SURFACES TO BE COATED AND WIPE OFF ANY EXCESS MATERIAL.

k) A NUT LOCKING DEVICE SHALL BE INSTALLED ON ALL PROPOSED AND/OR REPLACED BOLTS.

l) ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH TO EXCLUDE THE THREADS FROM THE SHEAR PLANE.

m) ALL PROPOSED AND/OR REPLACED BOLTS SHALL BE OF SUFFICIENT LENGTH SUCH THAT THE END OF THE BOLT BE AT LEAST FLUSH WITH THE FACE OF THE NUT. A BOLT THAT ENDS BELOW THE FACE OF THE NUT AFTER TIGHTENING WILL NOT BE PERMITTED.

RF NOTES

7) RF SPECIFICATIONS

a) ACTUAL LENGTHS SHALL BE DETERMINED PER SITE CONDITION BY SUBCONTRACTOR.

b) THE DESIGN IS BASED ON RF DATA SHEETS, SIGNED AND APPROVED.

c) RADIO SIGNAL CABLE AND RACEWAY SHALL COMPLY WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC, NFPA 70) CHAPTER 8.

d) ALL SPECIFIED MATERIAL FOR EACH LOCATION (I.E. OUTDOORS, INDOORS, RISER, SHAFTS, ETC.) SHALL BE APPROVED, LISTED OR LABELED AS REQUIRED BY THE NEC.

e) RADIO SIGNAL CABLE SHOULD BE SUPPORTED AT MINIMUM OF EVERY THREE (3) FEET EXCEPT INSIDE MONOPOLES OR LATTICE TOWERS WHERE CABLE AND CONNECTOR MANUFACTURERS SUPPORT RECOMMENDATIONS SHALL BE FOLLOWED. MANUFACTURERS RECOMMEND CABLE SUPPORT ACCESSORIES SHALL BE USED.

f) DRIP LOOPS SHALL BE REQUIRED ON ALL OUTSIDE CABLES. CABLES SHALL BE SLOPED AWAY FROM THE BUILDING OR OUTDOOR BTS CABINETS TO PREVENT WATER FROM ENTERING THROUGH THE COAXIAL CABLE PORT.

g) ALL FEEDER LINE AND JUMPER CONNECTORS SHALL BE 7/16 DIN CABLE CONNECTORS (OR APPROVED EQUIVALENT) THAT MEETS J168 STANDARDS.

h) SUBCONTRACTOR SHALL PAINT ANTENNAS WHEN REQUIRED BY THE LANDLORD, ATC, OR LOCAL JURISDICTION WITH APPLICABLE AUTHORITY IN ACCORDANCE WITH ANTENNA MANUFACTURERS SURFACE PREPARATION AND PAINTING REQUIREMENTS.

i) CABLE SHIELDS, AND TOWER CONDUITS SHALL BE GROUNDED AT THE TOP OF THE TOWER, WITHIN (10) FEET OF THEIR CONNECTORS, AND AT THE BOTTOM OF THE TOWER ABOUT (6) INCHES BEFORE THEY TURN TOWARD THE FACILITY. THEY SHALL BE GROUNDED AT THE MIDPOINT OF TOWER THAT ARE BETWEEN (100) FEET AND (200) FEET HIGH, AND AT INTERVALS OF (100) FEET OR LESS ON TOWERS THAT ARE HIGHER THAN (200) FEET.

8) ABBREVIATIONS

A/C	AIR CONDITIONING	L	LENGTH, LATER
AC	ALTERNATING CURRENT	LAT	LATITUDE
ACI	AMERICAN CONCRETE INSTITUTE	LC	LIGHTING CONTROL
ADA	AMERICAN WITH DISABILITIES ACT	LF	LINEAR FEET (FOOT)
AFF	ABOVE FINISHED FLOOR	LG	LONG
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION	LONG	LONGITUDINAL
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS	M	METER
ASPH	ASPHALT	MAX	MAXIMUM
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	MECH	MECHANICAL
ATS	AUTOMATIC TRANSFER SWITCH	MFG	MANUFACTURE
ALX	AUXILIARY	MFR	MANUFACTURER
AVG	AVERAGE	MIN	MINIMUM
AWG	AMERICAN WIRE GAUGE	MISC	MISCELLANEOUS
AWS	AMERICAN WELDING SOCIETY	MPP	MAIN POWER PANEL
B	BUILDING	MTD	MOUNTED
BAF	BATTERY	N	NORTH (FOR COORDINATES)
BEG	BEGIN	NA	NOT APPLICABLE
BLDG	BUILDING	NEC	NATIONAL ELECTRIC CODE
BM	BENCH MARK	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
BOS	BOTTOM OF STRUCTURE	NTS	NOT TO SCALE
BRKR	BREAKER	OHE	OVERHEAD ELECTRIC
C	CABINET	OHTEL	OVERHEAD TELEPHONE
C/C	CENTER TO CENTER	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
C/L	CENTER LINE, CLASS	P/N	PART NUMBER
CONC	CONCRETE, CONCENTRIC	PB	PULL BOX
CSC	FIBER OPTIC CABINET	PERP	PERPENDICULAR
CONST	CONSTRUCTION	PH	PHASE
CONT	CONTINUOUS	PL	PROPERTY LINE
CONTR	CONTRACTOR	PHL	PANEL
CTR	CENTER	PP	POWER POLE
Cu	COPPER	PRELIM	PRELIMINARY
dB	DECIBEL	PSF	POUNDS PER SQUARE FOOT
DC	DIRECT CIRCUIT	PSI	POUNDS PER SQUARE INCH
DEG	DEGREE	PVC	POLYVINYL CHLORIDE PIPE
DET	DETAIL	QTY	QUANTITY
DIA	DIAMETER	RAD	CENTER OF RADIATION
DIM	DIMENSION	RF	RADIO FREQUENCY
DISC	DISCONNECT	REF	REFERENCE
DOT	DEPARTMENT OF TRANSPORTATION	REINF	REINFORCING, REINFORCEMENT
DWG	DRAWING	REQ	REQUIRE
E	EAST (# OR COORDINATES)	REQD	REQUIRED
EC	ELECTRICAL CONTRACTOR	RET	RETAINING
ELEC	ELECTRIC	RND	ROUND
EOP	EDGE OF PAVEMENT	ROW	RIGHT OF WAY
EQUIP	EQUIPMENT	S	SOUTH
EXH	EXHAUST	SCH	SCHEDULE
EXT	EXTERNAL	SECT	SECTION
F/F	FACE TO FACE OR FLAT TO FLAT	SF	SQUARE FEET
FAA	FEDERAL AVIATION ADMINISTRATION	SPEC	SPECIFICATION
FCC	FEDERAL COMMUNICATIONS COMMISSION	SO	SQUARE
FF	FINISHED FLOOR	STR	STRUCTURAL
FG	FINISHED GRADE	SURF	SURFACE
FLEX	FLEXIBLE	T	TELEPHONE
FLR	FLOOR	TBD	TO BE DETERMINED
FND	FOUNDATION	TD	TELCO DEMARK
FTG	FOOTING	THK	THICKNESS
GAS	GAS (NATURAL), GALVANIZED IRON	TOS	TOP OF STEEL
GAL	GALLON	TRN	TRANSFORMER
GALV	GALVANIZED	TX/RX	TRANSMIT & RECEIVE
GEN	GENERATOR	TYP	TYPICAL
GI	GROUND FAULT	UG	UNDERGROUND
GPS	GLOBAL POSITIONING SYSTEM	UGP	UNDERGROUND ELECTRIC
GND	GROUND	UGT	UNDERGROUND TELEPHONE
GR	GRADE	V	VOLT
GR BM	GRADE BEAM	VAR	VARIES
H	HEIGHT	VERT	VERTICAL
HORIZ	HORIZONTAL		
HT	HEIGHT		
HTR	HEATER		
HVAC	HEATING, VENTILATING AND AIR CONDITIONING		
HYD	HYDRANT		
JB	JUNCTION BOX		
IB	ICE BRIDGE		
IBC	INTERNATIONAL BUILDING CODE		
ID	INSIDE DIAMETER, INTERNAL DIAMETER		
IEEE	INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS		
IN	INCH		
INSUL	INSULATION		
INT	INTERIOR		
K	KIPS (1000 LBS)		
KSI	KIPS PER SQUARE INCH		
KV	KILOVOLT		
KVA	KILOVOLT-AMPS		
KW	KILOWATT		
KWH	KILOWATT HOUR		

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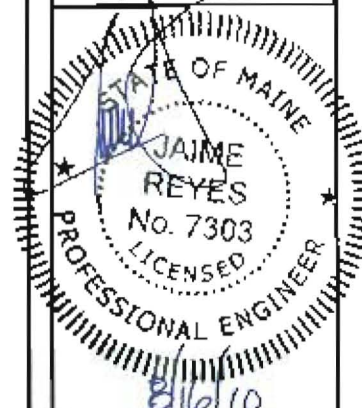


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