

DISPLAY THIS CARD ON PRINCIPAL FRONTAGE OF WORK CITY OF PORTLAND

Please Read Application And Notes, If Any, Attached

BUILDING DEPARTMENT

PERMIT

Permit Number: **050764**

This is to certify that Ne Tel & Tel Co State & No has permission to Add a 30' Extension to Existing 63' Tower Add 6 Microwave Dishes and 3 Panel Antennas AT 45 Forest Ave 037 A001001

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 when permission procured before this building or part thereof is occupied or closed-in. **HEAR 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] 7/9/03
Director - Building & Inspection Services

PENALTY FOR REMOVING THIS CARD

PERMIT

City of Portland, Maine - Building or Use Permit Application

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

| | | |
|-----------------------|-------------------------|---------------------|
| Permit No: 03-0764 | Issue Date: JUN 2003 | CBL: 037 A001001 |
|-----------------------|-------------------------|---------------------|

| | | | |
|--|--|--|----------------------|
| Location of Construction: 45 Forest Ave | Owner Name: Ne Tel & Tel Co State & | Owner Address: Po Box 152206 CITY OF PORTLAND | Phone: |
| Business Name: | Contractor Name: Nortech | Contractor Address: 35 Norton Road Taunton | Phone: 5038803663 |
| Lessee/Buyer's Name | Phone: | Permit Type: Additions - Commercial | Zone: B3/ B3C |

| | | | | |
|---|---|---|--|--------------------|
| Past Use: Communication Tower/Commercial | Proposed Use: Communication Tower/Commercial | Permit Fee: \$779.00 | Cost of Work: \$108,000.00 | CEO District: 2 |
| Proposed Project Description: Add a 30' Extension to Existing 63' Tower. Add 6 Microwave Dishes and 3 Panel Antennas | | FIRE DEPT: <input type="checkbox"/> Approved <input type="checkbox"/> Denied | INSPECTION: Use Group: U- Type: 2C 7/9/03 Signature: <i>Ally...</i> | |
| | | PEDESTRIAN ACTIVITIES DISTRICT (P.A.D.) Action: <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Signature: _____ Date: _____ | | |

| | | | | |
|---|---|---|---|--|
| Permit Taken By: gad | Date Applied For: 06/27/2003 | Zoning Approval | | |
| <ol style="list-style-type: none"> 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 Maj <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/> Date: <i>OK 7/11/03</i> | Zoning Appeal <input type="checkbox"/> Variance <input type="checkbox"/> Miscellaneous <input type="checkbox"/> Conditional Use <input type="checkbox"/> Interpretation <input type="checkbox"/> Approved <input type="checkbox"/> Denied Date: _____ | Historic Preservation <input checked="" type="checkbox"/> Not in District or Landmark <input type="checkbox"/> Does Not Require Review <input type="checkbox"/> Requires Review <input type="checkbox"/> Approved <input type="checkbox"/> Approved w/Conditions <input type="checkbox"/> Denied Date: <i>9</i> | |
| | <i>ok of per Section 14-430</i> | | | |

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 |

City of Portland, Maine - Building or Use Permit

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

| | | |
|------------------------------|--|----------------------------|
| Permit No: 03-0764 | Date Applied For: 06/27/2003 | CBL: 037 A001001 |
|------------------------------|--|----------------------------|

| | | | |
|---|---|--|--------------------------------|
| Location of Construction: 45 Forest Ave | Owner Name: Ne Tel & Tel Co State & | Owner Address: Po Box 152206 | Phone: |
| Business Name: | Contractor Name: Nortech | Contractor Address: 35 Norton Road Taunton | Phone (503) 880-3663 |
| Lessee/Buyer's Name | Phone: | Permit Type: Additions - Commercial | |

| | |
|--|--|
| Proposed Use: Communication Tower/Commercial | Proposed Project Description: Add a 30' Extension to Existing 63' Tower. Add 6 Microwave Dishes and 3 Panel Antennas |
|--|--|

Dept: Zoning **Status:** Approved **Reviewer:** Marge Schmuckal **Approval Date:** 07/01/2003
Note: ok under section 14-430 **Ok to Issue:**

Dept: Building **Status:** Approved **Reviewer:** Mike Nugent **Approval Date:** 07/09/2003
Note: **Ok to Issue:**



Commercial Building Permit Application

03-0764

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: 45-55 Forest Avenue, Portland Maine | | |
| Total Square Footage of Proposed Structure | Square Footage of Lot | |
| Tax Assessor's Chart, Block & Lot Chart# 037 Block# A Lot# 001 | Owner: Verizon New England 125 High Street Boston MA | Telephone: |
| Lessee/Buyer's Name (If Applicable) | Applicant name, address & telephone: Celco Partnership d/b/a Verizon Wireless 400 Friberg Parkway (508) Westborough MA 01581 338 3343 | Cost Of Work: \$ 108,000 Fee: \$ 779. |
| Current Specific use: Communication tower | | |
| Proposed Specific use: Same | | |
| Project description: Addition of a 30' extension to an existing 63' stub roof top tower. In addition, six (6) microwave dishes as well as three (3) panel antennas (microwave) will be added. Five existing horn antennas will be removed. | | |
| Contractor's name, address & telephone: Peter Downey - Nortech, 35 Norton Rd, Taunton MA 508-880-3603 | | |
| Who should we contact when the permit is ready: Amy Mower | | |
| Mailing address: Wellman Associates 70 Broadway Street Westford MA 01886 | | Phone: 978 589 9870 |

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

At the discretion of the Planning and Development Department, additional information may be required prior to permit approval. For further information stop by the Building Inspections 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 of applicant: | Date: |
|-------------------------|-------|

Permit Fee: \$30.00 for the first \$1000.00 Construction Cost, \$7.00 per additional \$1000.00 cost

This is not a Permit; you may not commence any work until the Permit is issued.

BUILDING PERMIT INSPECTION PROCEDURES

Please call 874-8703 or 874-8693 to schedule your inspections as agreed upon

Permits expire in 6 months, if the project is not started or ceases for 6 months.

The Owner or their designee is required to notify the inspections office for the following inspections and provide adequate notice. Notice must be called in 48-72 hours in advance in order to schedule an inspection:

By initializing at each inspection time, you are agreeing that you understand the inspection procedure and additional fees from a "Stop Work Order" and "Stop Work Order Release" will be incurred if the procedure is not followed as stated below.

Pre-construction Meeting: Must be scheduled with your inspection team upon receipt of this permit. Jay Reynolds, Development Review Coordinator at 874-8632 must also be contacted at this time, before any site work begins on any project other than single family additions or alterations.

Footing/Building Location Inspection: Prior to pouring concrete

Re-Bar Schedule Inspection: Prior to pouring concrete

Foundation Inspection: Prior to placing ANY backfill

Framing/Rough Plumbing/Electrical: Prior to any insulating or drywalling

Final/Certificate of Occupancy: Prior to any occupancy of the structure or use. NOTE: There is a \$75.00 fee per inspection at this point.

Certificate of Occupancy is not required for certain projects. Your inspector can advise you if your project requires a Certificate of Occupancy. All projects DO require a final inspection

If any of the inspections do not occur, the project cannot go on to the next phase, REGARDLESS OF THE NOTICE OR CIRCUMSTANCES.

CERTIFICATE OF OCCUPANCIES MUST BE ISSUED AND PAID FOR, BEFORE THE SPACE MAY BE OCCUPIED

[Signature]
Signature of applicant/designee

7/14/03
Date

[Signature]
Signature of Inspections Official

7/14/03
Date

CBL: 037-A-001 Building Permit #: 03-0764

David S. Ho
Manager - Transactions



Verizon Communications
125 High Street, Oliver 02339
Boston, MA 02110

June 26, 2003

City of Portland
City Hall
389 Congress Street
Portland, ME 04101

RE: Verizon Wireless Microwave Installation, 45-55 Forest Avenue, Portland, ME

Dear Sir/Madam:

Please be advised that Verizon Communications is the owner of the property located at 45-55 Forest Avenue, Portland, Maine. It is Verizon Wireless' intention to co-locate antennas at the property. Verizon Wireless is required to obtain all state, local and town approval prior to the installation of the additional equipment.

As owner of the property, permission is hereby granted to Verizon Wireless for the purpose of consummating any applications necessary to gain the required approvals or permits on the tower from the City of Portland.

Verizon Communications

Authorized Agent:

A handwritten signature in black ink, appearing to be "D. S. Ho", written over a horizontal line.

(A copy of this letter shall have the same effect as the original)

HARRIMAN ASSOCIATES

1000 Corporate Business Park
Portland, Maine 04101

207 784 3000 telephone

207 782 3017 fax

Building Communities

Since 1970

April 15, 2003

Mr. Robert Hogan (Faxed Copy Sent to 508-330-3405)
Structures Consulting Group, Inc.
43 White Street, Suite 4
Belmont, MA 02478

Re: Verizon Wireless Building
Structural Evaluation
45-55 Congress Street
Portland, Maine 04101
Project No. 02180

Dear Mr. Hogan:

Harriman Associates has completed its review and evaluation of the existing building columns supporting the rooftop antenna tower at 45-55 Congress Street in Portland, Maine. Our evaluation was completed to confirm that additional base loads resulting from an antenna tower extension could be supported by the existing building columns. The evaluation concluded that the existing building columns are capable of withstanding the increased base loads caused by the addition of a 30 ft. extension to the existing antenna tower. The analysis was based primarily on information provided by All-Points Technology Corporation's Structural Analysis Report of the Antenna Tower as well as original construction drawings and calculations of the building. Evaluation of the tower and the grillage has been completed by All-Points Technology and is not a part of our scope.

The existing steel columns are built-up sections comprised of plates and angles riveted together. The size of the columns were determined from review of the original drawings as the columns are concrete encased and could not be inspected on site. Each existing column was extended above the roof line approximately 1'-6" and capped. The tower grillage has been attached to these column extensions for transfer of the tower loads into the building. The configuration of the columns considered in this study, as well as their locations, are outlined in Attachment 1.

From the tower evaluation report, maximum gravity (downward) load, maximum uplift load, and maximum shear load at the base of the tower was provided. The loads provided were 77.9 kip, 64.9 kip, and 10.4 kip, respectively. Also, original calculations documented a floor dead load of 116 pounds per square foot (psf), and design live loads between 150 psf and 175 psf. A site investigation was conducted to verify the existing information. This investigation found that the 1st to 5th floors were mainly abandoned and the 6th floor had electrical data equipment on it. At this time, it did not appear that the actual floor loads are exceeding the design values.

HARRIMAN ASSOCIATES

Mr. Robert Hogan
Page 2
April 15, 2003

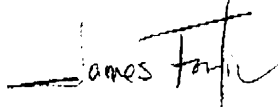
A complete analysis was performed on the existing columns based on the above loads. As stated, the analysis determined that the building columns could withstand the increased base loads of the tower plus extension. In order to restrain the anticipated shear loads, the additional 1" thick stiffener plates installed as part of the grillage framing were required to be used in the calculations. These plates "stiffen" the column section above the roof level and are necessary to keep the columns within design stresses. Since these plates are installed and modifications to the grillage are not planned, no additional work is required.

As a side note, we discovered a couple items during our research into the existing structure that we believe you would be interested in.

1. The building was originally designed for 9 stories with only 7 built
2. In 1953, the existing building was analyzed for the addition of a 100 ft tall tower (the current tower is approximately 65 ft.) The building was found adequate to support this tower with its particular configuration of antennas. (Note: Any differences or modifications to the antenna configuration would change the resultant loads at the tower base and would require re-evaluation of the tower, tower support framing, and building columns).

We thank you for the opportunity to assist with this project. If we can be of further assistance, please do not hesitate to contact us.

Sincerely,
Harriman Associates



James Fortin, P.E.

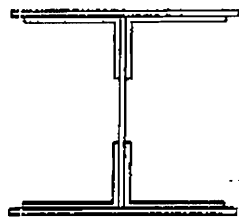
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cc: Jim Seymour - Sebago Technics w/encs. (Faxed Copy Sent to 856 2206)

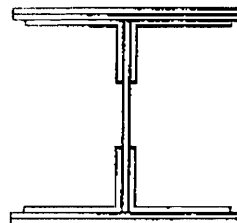
**VERIZON WIRELESS BUILDING
45-55 CONGRESS STREET, PORTLAND MAINE
ATTACHMENT 1: COLUMN CONFIGURATION TABLE**

| | Column #56 Column #55 | Column #54 Column #63 | Column #61 Column #62 |
|----------------|--|--|--|
| 6th Floor | 12" x 3/8" thick web plate 14" x 3/8" thick flange plates 4- 6x4x3/8" angles Type A | 12" x 3/8" thick web plate 4- 6x4x3/8" angles Type D | 12" x 3/8" thick web plate 14" x 3/8" thick flange plates 4- 6x4x3/8" angles Type A |
| 5th Floor | 12" x 3/8" thick web plate 14" x 3/8" thick flange plates 4- 6x4x3/8" angles Type A | 12" x 3/8" thick web plate 4- 6x4x3/8" angles Type D | 12" x 3/8" thick web plate 14" x 3/8" thick flange plates 4- 6x4x3/8" angles Type A |
| 4th Floor | 12" x 3/8" thick web plate 14" x 3/8" thick flange plates 4- 6x4x1/2" thick angles Type A | 12" x 3/8" thick web plate 14" x 3/8" thick flange plates 4- 6x4x3/8" angles Type A | 12" x 3/8" thick web plate 14" x 3/8" thick flange plates 4- 6x4x1/2" angles Type A |
| 3rd Floor | 12" x 3/8" thick web plate 14" x 3/8" thick flange plates 4- 6x4x1/2" thick angles Type A | 12" x 3/8" thick web plate 14" x 3/8" thick flange plates 4- 6x4x3/8" angles Type A | 12" x 3/8" thick web plate 14" x 3/8" thick flange plates 4- 6x4x1/2" angles Type A |
| 2nd Floor | 12" x 3/8" thick web plate 14" x 1/2" thick flange plates 4- 6x4x1/2" thick angles Type A | 12" x 3/8" thick web plate 14" x 3/8" thick flange plates 4- 6x4x1/2" angles Type A | 12" x 5/8" thick web plate 14" x 1/2" thick flange plates 4- 6x4x1/2" angles Type A |
| 1st Floor | 12" x 3/8" thick web plate 14" x 1/2" thick flange plates 14" x 3/8" thick flange plates 4- 6x4x1/2" thick angles Type B | 12" x 3/8" thick web plate 14" x 3/8" thick flange plates 14" x 3/8" thick flange plates 4- 6x4x1/2" angles Type B | 12" x 5/8" thick web plate 14" x 1/2" thick flange plates 14" x 3/8" thick flange plates 4- 6x4x1/2" angles Type B |
| Basement Level | 12" x 5/8" thick web plate 14" x 1/2" thick flange plates 14" x 3/8" thick flange plates 14" x 3/8" thick flange plates 4- 6x4x1/2" thick angles Type C | 12" x 5/8" thick web plate 14" x 3/8" thick flange plates 14" x 3/8" thick flange plates 4- 6x4x1/2" angles Type B | 12" x 5/8" thick web plate 14" x 1/2" thick flange plates 14" x 3/8" thick flange plates 14" x 3/8" thick flange plates 4- 6x4x1/2" angles Type C |

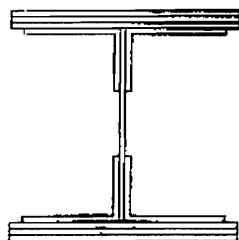
Note: Type A to Type D are schematic representations of the column configuration and are not to scale



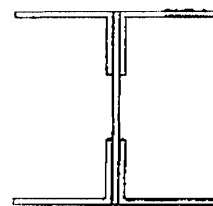
Type A



Type B



Type D



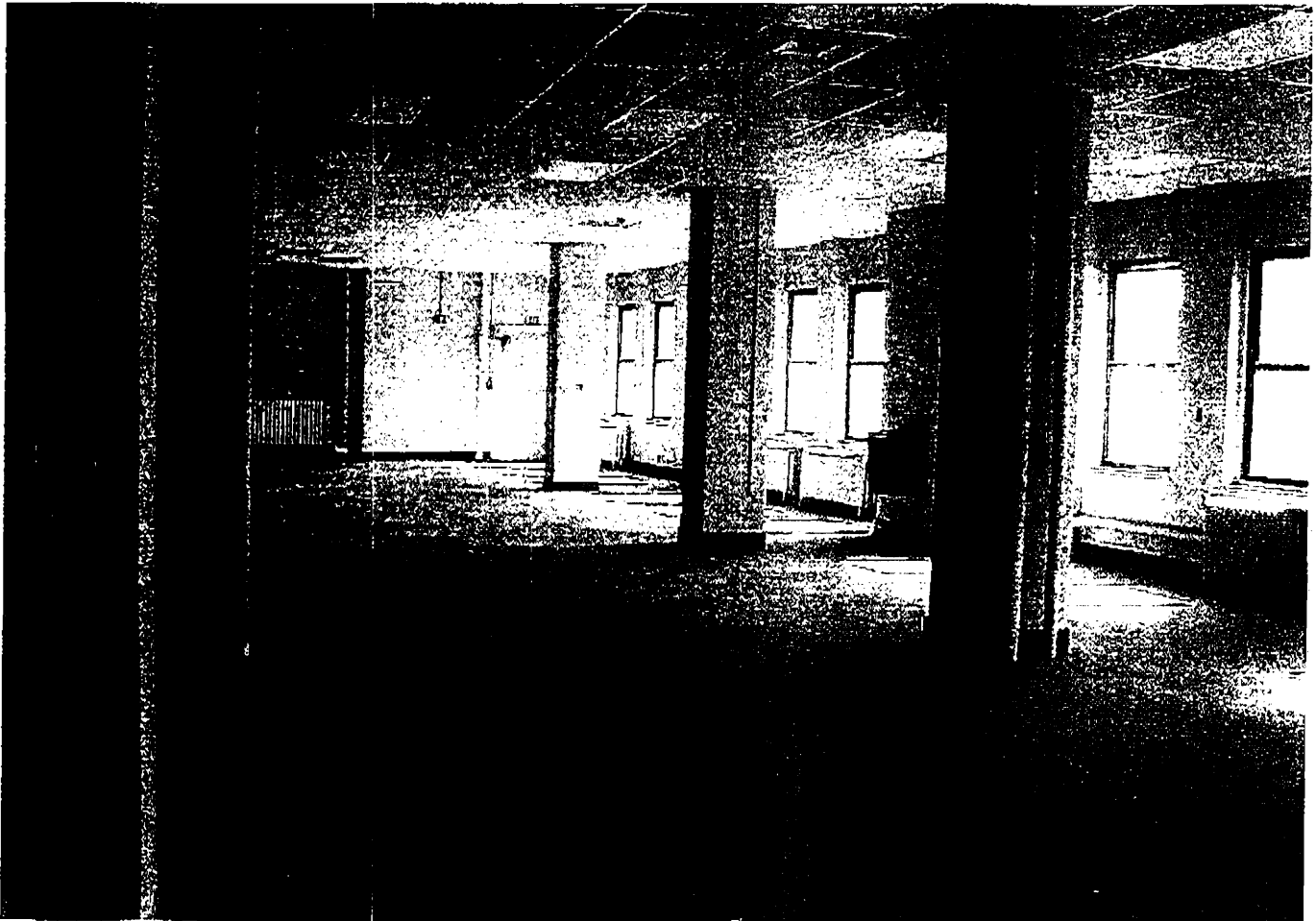
Type C



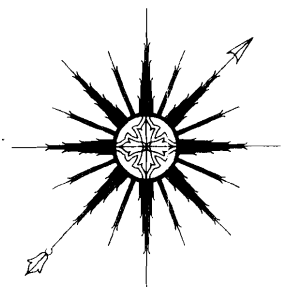
Picture 1: View of antenna and building from Forest Avenue.



Picture 2: 6th floor area.



Picture 3: Typical floor in area being evaluated.

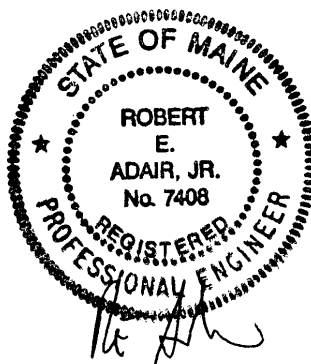


ALL-POINTS TECHNOLOGY CORPORATION, P.C.

STRUCTURAL ANALYSIS REPORT 63' SELF-SUPPORTING TOWER PORTLAND, MAINE

Prepared for
Structure Consulting Group, Inc.

September 5, 2002



APT Project #ME147110

STRUCTURAL ANALYSIS REPORT
of
63' SELF-SUPPORTING TOWER
PORTLAND, MAINE
prepared for
Structure Consulting Group

EXECUTIVE SUMMARY:

All-Points Technology Corp., P.C. (APT) performed an inspection and structural analysis of this 63-foot self-supporting roof-top tower. The analysis was performed with the addition of a 30-foot extension, six microwave dishes, and three square panel antennas. Five existing inactive conical horn antennas were assumed to be removed from the tower. Feed lines, support members, and appurtenances associated with the horns were also assumed to be removed. Existing platforms were assumed to remain in place.

Our analysis indicates the tower is capable of supporting the proposed extension and antennas. Evaluation of the building structure to support tower reactions is pending receipt of building drawings.

INTRODUCTION:

An inspection and structural analysis was performed on the above-mentioned communications tower by All-Points Technology Corporation, P.C. (APT) for Structure Consulting Group. The tower is located on the roof of the building at 45-55 Forest Avenue in Portland, Maine.

Robert E. Adair, P.E. inspected the tower on August 13, 2002 to record information regarding physical and dimensional properties of the structure and its appurtenances. Mr. Adair climbed the structure in its entirety to compile data necessary to perform the structural analysis.

The structure is a 63-foot painted galvanized steel, self-supporting tower of unknown manufacturer (possibly Andrew or LeBlanc). The analysis was performed with a 30-foot tower extension and the following antenna inventory:

All-Points Technology Corporation, P.C.

150 Old Westside Road
North Conway, NH 03860
(603) 356-5214

711 North Mountain Road
Newington, CT 06111
(860) 953-4444

| Antenna | Elev. | Mount | Coax. |
|---------------------------------|-------------|---------------------------|---------------|
| 6' high performance dish | 180' | Pipe | EW-52 |
| 1' square panel | 180' | Pipe | 1-5/8" |
| 6' dish, no radome | 175' | Pipe | EW-63 |
| 6' high performance dish | 170' | Pipe | EW-90 |
| 7' omnidirectional whip | 170' | Wide flange extension | 7/8" |
| 2' square panel | 165' | Pipe | 1-5/8" |
| (2) omnidirectional antennas | 162' | On platform face | (2) 1/2" |
| 8' omnidirectional whip | 161' | Pipe extension | 7/8" |
| Super Stationmaster whip | 160' | Pipe extension | 7/8" |
| 6' high performance dish | 160' | Pipe | EW-52 |
| 2' square panel | 160' | Pipe | 1-5/8" |
| 2' high performance dish | 158' | 5' x 6' frame on platform | (2) 3/8" |
| 1' square panel | 158' | On above frame | 3/8" |
| 12' high performance dish | 157' | 6' x 3' frame on platform | 2-1/2" solid |
| 7' omnidirectional whip | 156' | Pipe extension | 1/2" |
| Quad yagi | 156' | Pipe on platform | 7/8" |
| Dual yagi | 152' | Platform | 1/2" |
| 6' dish with radome | 150' | Pipe | 1-5/8" |
| Dual yagi | 149' | Platform | 7/8" |
| Dual yagi | 144' | Pipe on platform | 7/8" |
| 12' high performance dish | 144' | Platform | 2-1/2" solid |
| 4' dish with radome | 127' | Pipe | EW-90 |
| 12' high performance dish | 111' | Platform | EW-52 |

Elevations listed are above ground level and assumes tower base is 87' AGL.
 Proposed antennas are depicted in **bold** text.

FIELD INSPECTION:

- **General Condition:** The tower, a galvanized steel structure, appeared to be in very good condition. No signs of movement or overstress of the tower were observed.
- **Bolted Connections of Lattice Bracing:** Connections were visually inspected to the maximum extent practicable. All connections that were observed appeared to be sound, with no loose or missing bolts noted.

All-Points Technology Corporation, P.C.

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- **Antenna Connections:** Antenna mounting hardware was in generally good condition, with corrosion-resistant hardware and galvanized members prevalent.
- **Splice Connections:** Observed splice connections were in good condition. One missing splice bolt was observed at the 100' elevation (13' elev. on tower) on the climbing leg. The remaining splice bolts at this elevation are within allowable loads.

STRUCTURAL ANALYSIS:

Methodology:

The structural analysis was done in accordance with EIA/TIA-222-F, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures; and the American Institute of Steel Construction (AISC), Manual of Steel Construction, Allowable Stress Design, Ninth Edition.

The analysis was conducted using a wind speed of 80 miles per hour and one-half inch of radial ice over the entire structure and all appurtenances. The EIA/TIA Standard requires a minimum wind speed of 80 miles per hour for Cumberland County, Maine. The tower was analyzed by calculating the resultant wind loading and associated maximum bending moments, shear forces, and axial loads. The moments and forces were used to calculate stresses in leg and bracing members, which were compared to allowable stresses according to AISC.

Two loading conditions were evaluated in accordance with EIA/TIA-222-F to determine the tower's capacity. The more demanding of the two cases is used to calculate the tower capacity:

- Case 1 = Wind Load (without ice) + Tower Dead Load
- Case 2 = 0.75 Wind Load (with ice) + Ice Load + Tower Dead Load

In addition, the TIA/EIA standard permits a one-third increase in allowable stresses for towers less than 700-feet tall. Allowable stresses of tower members were increased by one-third when computing the load capacity values shown below.

All-Points Technology Corporation, P.C.

150 Old Westside Road
North Conway, NH 03860
(603) 356-5214

711 North Mountain Road
Newington, CT 06111
(860) 953-4444

Analysis:

Analysis of the tower was conducted in accordance with the criteria outlined herein with proposed antennae as previously described.

Our analysis determined the existing tower is capable of supporting the extension and additional proposed antennas. The following table summarizes the results of the analysis based on compressive stresses of individual leg members:

Tower Capacity

| Elevation | Capacity |
|------------------|-----------------|
| 0-13' | 49% |
| 13'-25' | 41% |
| 25'-38' | 32% |
| 38'-50' | 31% |
| 50'-63' | 19% |
| 63'-78' | 18% |
| 78'-93' | 6% |

Bracing Members:

Bracing is generally installed in a X-brace configuration, with each compression member paired with a corresponding tension member. Diagonal bracing was evaluated by calculating bracing members' allowable compression and tension forces and assessing each tower section's ability to resist calculated shear forces.

Bracing members were determined to be adequate to support the proposed loads.

Base Support:

Evaluation of the existing base support frame, comprised of MC18 x 58 channels and W16 x 31 steel beams, was also performed. Our calculations indicate the base frame easily supports reactions generated by the tower with the proposed extension and antennas.

Base reactions imposed with the additional antennas were calculated as follows:

All-Points Technology Corporation, P.C.

150 Old Westside Road
North Conway, NH 03860
(603) 356-5214

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Newington, CT 06111
(860) 953-4444

| | |
|--------------|-----------|
| Tension: | 64.9 kips |
| Compression: | 77.9 kips |
| Total Shear: | 41.6 kips |

CONCLUSIONS AND RECOMMENDATIONS:

Our structural analysis indicates the 63-foot self-supporting roof-top tower located at 45-55 Forest Avenue in Portland, Maine is capable of supporting the 30-foot tower extension and antenna loading proposed by Verizon Wireless.

LIMITATIONS:

This analysis is based on the tower being properly installed, members in new condition, required members in place, and required bolts in place. The tower inspection conducted on August 13, 2002 confirmed these conditions.

All-Points Technology Corporation, P.C. (APT) is not responsible for any modifications completed prior to or hereafter which APT is not or was not directly involved. Modifications include but are not limited to:

1. Replacing or strengthening bracing members.
2. Reinforcing vertical members in any manner.
3. Adding or relocating stabilizers.
4. Installing antenna mounting gates or side arms.
5. Extending tower.

APT hereby states that this document represents the entire report and that it assumes no liability for any factual changes that may occur after the date of this report. All representations, recommendations, and conclusions are based upon the information contained and set forth herein. If you are aware of any information which is contrary to that which is contained herein, or you are aware of any defects arising from the original design, material, fabrication and erection deficiencies, you should disregard this report and immediately contact APT. APT disclaims all liability for any representation, recommendation, or conclusion not expressly stated herein.

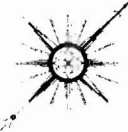
All-Points Technology Corporation, P.C.

150 Old Westside Road
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(603) 356-5214

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Newington, CT 06111
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Appendix A

Tower Drawings



EXISTING TOWER

SHEET: 1 OF 1

SCALE: 1" = 10'

DRAWN BY: REA

DATE: 21 AUG 02

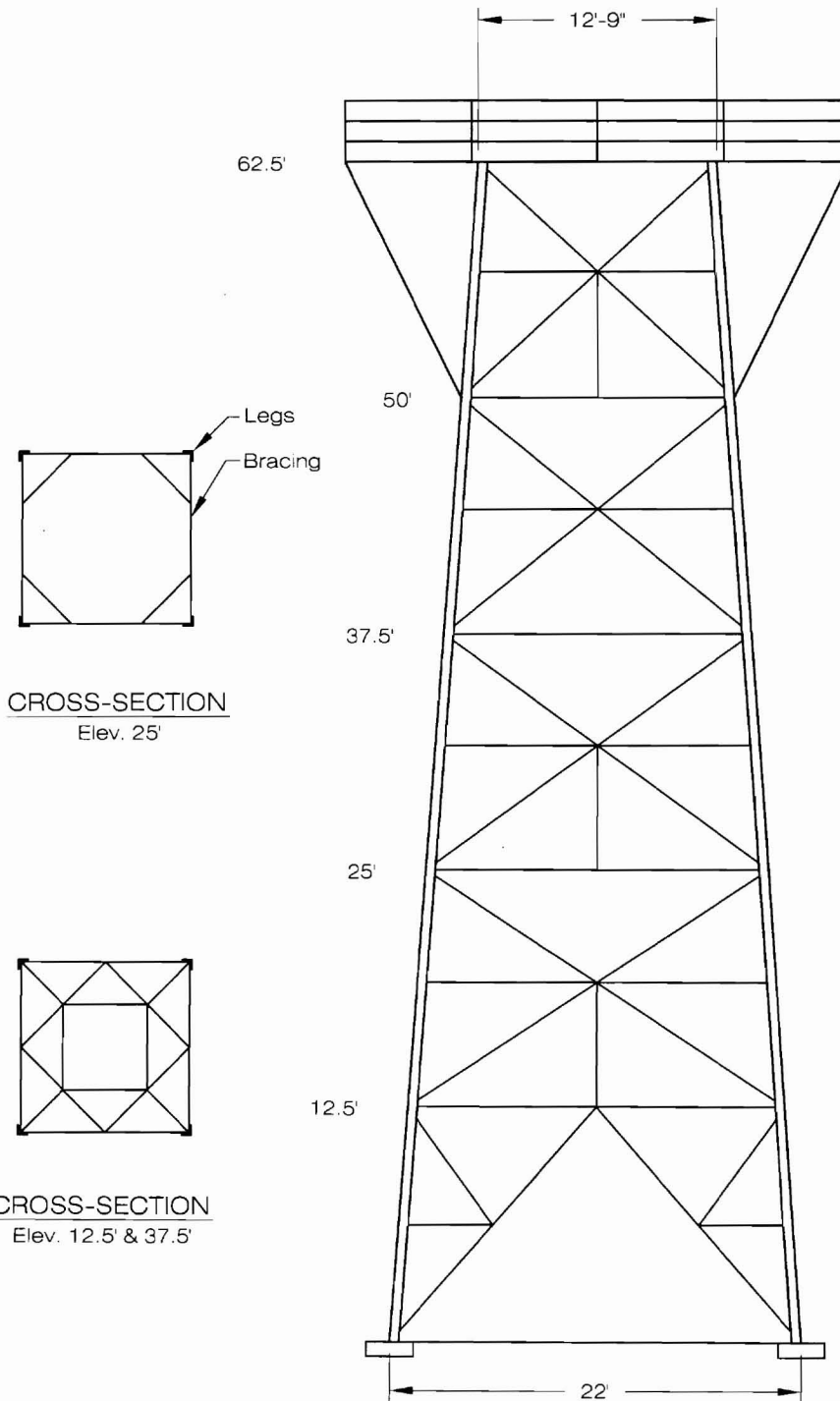
APT JOB #ME147110



Structure Consulting Group
 43 White Street, Suite 4
 Belmont, MA 02478

VERIZON PROJECT #

63' SELF-SUPPORTING TOWER
 45-55 FOREST AVENUE
 PORTLAND, MAINE

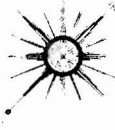


CROSS-SECTION
 Elev. 25'

CROSS-SECTION
 Elev. 12.5' & 37.5'

TOWER ELEVATION
 Scale: 1" = 10'

| | | |
|--------------|------------------|------------------|
| Legs | L6 x 6 x 5/8 | L6 x 6 x 1/2 |
| Diagonals | 2L3 x 2.5 x 1/4 | L3.5 x 3.5 x 1/4 |
| Top Horiz. | 2L3 x 2.5 x 1/4 | L4 x 6 x 1/2 |
| Sub- Diag. | L2.5 x 2.5 x 1/4 | Not applicable |
| Mid Horiz. | L2 x 2 x 3/16 | C6 x 10.5 |
| Splice Bolts | (14) 3/4"Ø | (14) 3/4"Ø |



TOWER EXTENSION

SHEET: 1 OF 1

SCALE: 1" = 15'

DRAWN BY: REA

DATE: 21 AUG 02

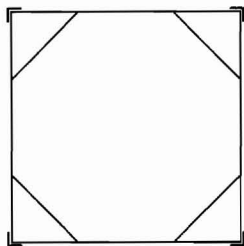
APT JOB #ME147110



Structure Consulting Group
 43 White Street, Suite 4
 Belmont, MA 02478

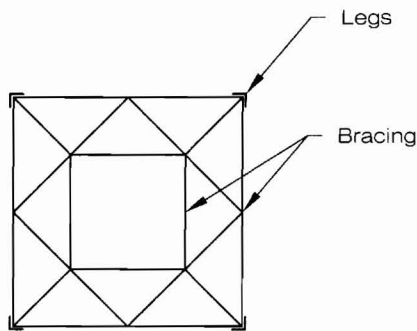
VERIZON PROJECT #

93' SELF-SUPPORTING TOWER
 45-55 FOREST AVENUE
 PORTLAND, MAINE



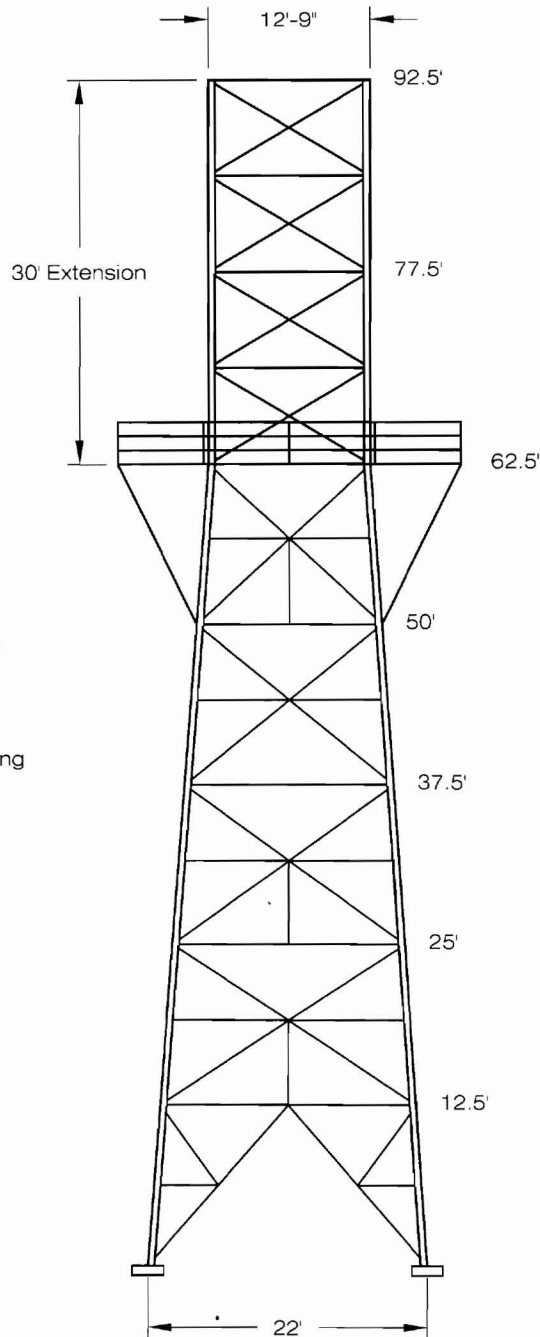
CROSS-SECTION

Elev. 25', 77.5', 92.5'



CROSS-SECTION

Elev. 12.5' & 37.5'



TOWER ELEVATION

Scale: 1" = 15'

| | | | | |
|--------------|-----------------|----------------|---------------|----------------------|
| Legs | L6 x 6 x 5/8 | L6 x 6 x 1/2 | L6 x 6 x 5/16 | L5 x 5 x 5/16 |
| Diagonals | 2L3.5 x 1/4 | L3.5 x 3 x 1/4 | L3 x 3 x 1/4 | L3 x 3 x 1/4 |
| Top Horiz. | 2L3 x 2.5 x 1/4 | 2L3.5x3x5/16 | L4 x 6 x 1/2 | L3 x 3 x 1/4 |
| Sub- Diag. | L2.5 x 1/4 | Not applicable | | |
| Mid Horiz. | L2 x 2.5 x 3/16 | C6 x 10.5 | L2.5 x2x 1/4 | |
| Splice Bolts | (14) 3/4"Ø | (14) 3/4"Ø | (14) 3/4"Ø | (24) 3/4"Ø (8) 3/4"Ø |

Appendix B

Photographs

VERIZON WIRELESS
63' SELF-SUPPORTING TOWER
PORTLAND, MAINE

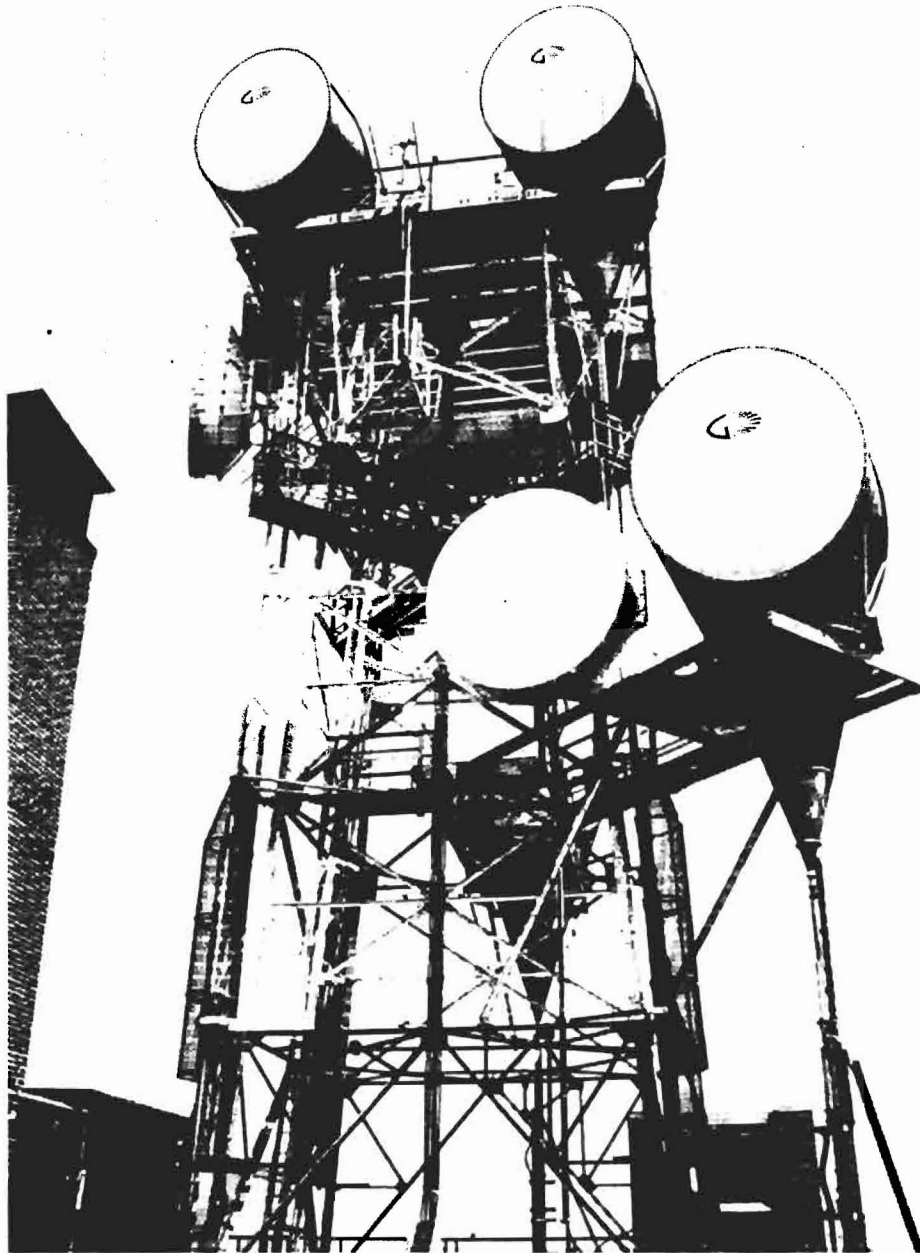


Photo showing overview of 63' rooftop
self-supporting tower.

Photos taken August 13, 2002 by All-Points Technology Corp., P.C.

VERIZON WIRELESS
63' SELF-SUPPORTING TOWER
PORTLAND, MAINE

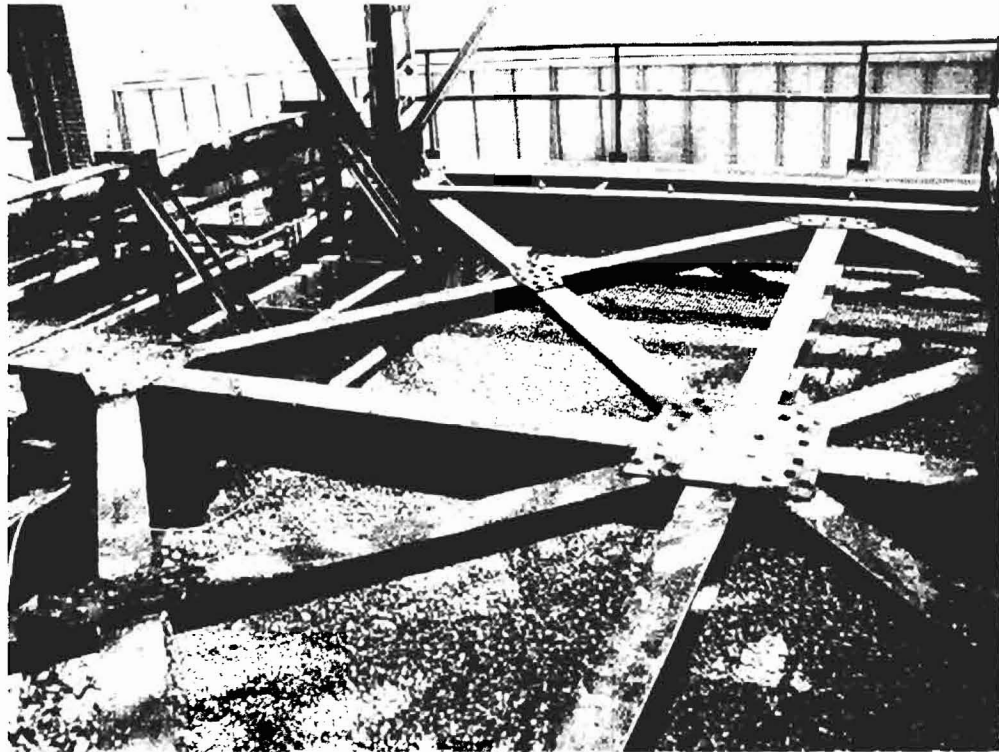


Photo of tower base and support frame.

Photos taken August 13, 2002 by All-Points Technology Corp., P.C.

Appendix C

Calculations

All-Points Technology Corp., P.C.

150 Old Westside Road
 North Conway, NH 03860
 (603) 356-5214

Client: **Structure Consulting Group**
 Job: **Portland, ME**
 Calculated By: **R. Adair**

Job No.: **ME147110**
 Date: **19-Aug-02**

General Information

Tower Manufacturer Andrew?
 Tower Type Self-supporting Tower
 Total Height of Tower 180 ft.
 Wind Speed EIA-TIA: Cumberland County 80 mph.
 Radial Ice 0.5 in.
 25% Reduction for ice yes (yes or no)
 1/3 increase for allowable loads yes (yes or no)
 Number of faces 4 faces

Antenna Force Calculations based on EIA/TIA-222-F, using the following formulas:

Force on discrete appurtenance: $F = Qz * Gh * Ca * A$

Force on microwave antennae: $F = Cr * A * Gh * Kz * V^2$, where $Cr = ((Ca^2) + (Cs^2))^{(1/2)}$

$Gh = .65 + .60 / (h/33)^{(1/7)} =$

$Gh = 1.12$

V as specified EIA-222-F

Fy 36 ksi
 E (Modulus of Elasticity) 29000 ksi
 Fb 0.6
 K 1
 Tower taper 0.15 ft/ft

| Section No. | Section Length | Leg Spread @ Base of section | Leg Size (Description) | Width of Leg to Wind | Leg Properties | | |
|-------------|----------------|------------------------------|------------------------|----------------------|----------------|-------|------------------|
| | | | | | Area | r_z | Unbraced Lengths |
| Bldg | 87.0 | 50.00 | | | | | |
| 1 | 12.5 | 22.00 | 6x6x5/8 | 6.00 | 7.11 | 1.180 | 78 |
| 2 | 12.5 | 20.15 | 6x6x5/8 | 6.00 | 7.11 | 1.180 | 78 |
| 3 | 12.5 | 18.30 | 6x6x5/8 | 6.00 | 7.11 | 1.180 | 78 |
| 4 | 12.5 | 16.45 | 6x6x1/2 | 6.00 | 5.75 | 1.180 | 81 |
| 5 | 12.5 | 14.60 | 6x6x1/2 | 6.00 | 5.75 | 1.180 | 65 |
| 6 | 15.0 | 12.75 | 6x6x5/16 | 6.00 | 3.65 | 1.200 | 90 |
| 7 | 15.0 | 12.75 | 5x5x5/16 | 5.00 | 3.03 | 0.994 | 90 |
| Top | | 12.75 | | | | | |
| | 180 | | | | | | |

All-Points Technology Corp., P.C.

150 Old Westside Road
 North Conway, NH 03860
 (603) 356-5214

Client: **Structure Consulting Group**
 Job: **Portland, ME**
 Calculated By: **R. Adair**

Job No.: **ME147110**
 Date: **19-Aug-02**

Tower Summary

| Section | 1 | type | | | | | | |
|----------------------|-------------------|--------------|-------------|-----------|-------------|-------------|------------------|----------------|
| | Ag = 270 | sf | | z = 93.25 | ft | | | |
| | Quantity Per Face | Length (ft.) | Width (in.) | Area (sf) | Area w/ ice | Wt. Per ft. | Wt. (lbs.) Tower | Wt. (lbs.) Ice |
| <u>Round Members</u> | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | | 0.0 | 0.0 | | 0.0 | 0.0 |
| <u>Flat Members</u> | | | | | | | | |
| Leg | 2 | 12.5 | 6.0 | 12.5 | 14.6 | 24.2 | 1209.7 | 252.8 |
| Diagonal | 2 | 16.3 | 3.5 | 9.5 | 12.2 | 11.6 | 1514.9 | 812.6 |
| Horizontal | 1 | 19.7 | 3.0 | 4.9 | 6.6 | 9.0 | 707.4 | 427.9 |
| Sub-Diagonal | 2 | 6.9 | 2.5 | 2.9 | 4.0 | 4.1 | 227.0 | 258.3 |
| Sub-Horizontal | 2 | 4.5 | 2.0 | 1.5 | 2.3 | 2.4 | 88.0 | 140.3 |

| Section | 2 | type | | | | | | |
|----------------------|-------------------|--------------|-------------|------------|-------------|-------------|------------------|----------------|
| | Ag = 247 | sf | | z = 105.75 | ft | | | |
| | Quantity Per Face | Length (ft.) | Width (in.) | Area (sf) | Area w/ ice | Wt. Per ft. | Wt. (lbs.) Tower | Wt. (lbs.) Ice |
| <u>Round Members</u> | 3 | | | | | | | |
| | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | | 0.0 | 0.0 | | 0.0 | 0.0 |
| <u>Flat Members</u> | | | | | | | | |
| Leg | 2 | 12.5 | 6.0 | 12.5 | 14.6 | 24.2 | 1209.7 | 252.8 |
| Diagonal | 2 | 22.4 | 3.0 | 11.2 | 15.0 | 9.0 | 1615.1 | 977.0 |
| Horizontal | 1 | 17.8 | 3.0 | 4.5 | 5.9 | 9.0 | 640.8 | 387.6 |
| Horizontal | 1 | 18.7 | 2.0 | 3.1 | 4.7 | 3.2 | 238.9 | 291.3 |
| Vertical | 1 | 6.5 | 2.5 | 1.4 | 1.9 | 4.1 | 106.6 | 121.3 |

| Section | 3 | type | | | | | | |
|----------------------|-------------------|--------------|-------------|-----------|-------------|-------------|------------------|----------------|
| | Ag = 223 | sf | | z = 118 | ft | | | |
| | Quantity Per Face | Length (ft.) | Width (in.) | Area (sf) | Area w/ ice | Wt. Per ft. | Wt. (lbs.) Tower | Wt. (lbs.) Ice |
| <u>Round Members</u> | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | | 0.0 | 0.0 | | 0.0 | 0.0 |
| <u>Flat Members</u> | | | | | | | | |
| Leg | 2 | 12.5 | 6.0 | 12.5 | 14.6 | 24.2 | 1209.7 | 252.8 |
| Diagonal | 2 | 20.9 | 3.0 | 10.5 | 13.9 | 9.0 | 1505.1 | 910.5 |
| Horizontal | 1 | 17.8 | 3.0 | 4.5 | 5.9 | 9.0 | 640.8 | 387.6 |
| Horizontal | 1 | 16.9 | 2.0 | 2.8 | 4.2 | 3.2 | 215.3 | 262.5 |
| Vertical | 1 | 6.5 | 2.5 | 1.4 | 1.9 | 4.1 | 106.6 | 121.3 |

All-Points Technology Corp., P.C.

150 Old Westside Road
 North Conway, NH 03860
 (603) 356-5214

Client: **Structure Consulting Group**
 Job: **Portland, ME**
 Calculated By: **R. Adair**

Job No.: **ME147110**
 Date: **19-Aug-02**

| Section | 4 | | | | type | | | | |
|----------------------|----------|--------------|--------------|-------------|-------------|-------------|-------------|------------|----------------|
| | Ag = | 200 | sf | | z = | 131 | ft | | |
| | | Quantity Per | | | | | | Wt. (lbs.) | |
| | | Face | Length (ft.) | Width (in.) | Area (sf) | Area w/ ice | Wt. Per ft. | Tower | Wt. (lbs.) Ice |
| <u>Round Members</u> | | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| <u>Flat Members</u> | | | | | | | | | |
| Leg | | 2 | 12.5 | 6.0 | 12.5 | 14.6 | 19.6 | 978.3 | 252.8 |
| Diagonal | | 2 | 19.4 | 3.5 | 11.3 | 14.6 | 5.4 | 839.5 | 967.3 |
| Horizontal | | 1 | 16.0 | 3.0 | 4.0 | 5.3 | 9.0 | 574.2 | 347.4 |
| Horizontal | | 1 | 15.0 | 2.0 | 2.5 | 3.8 | 3.2 | 191.7 | 233.7 |
| Vertical | | 1 | 6.5 | 2.5 | 1.4 | 1.9 | 4.1 | 106.6 | 121.3 |

| Section | 5 | | | | type | | | | |
|----------------------|----------|--------------|--------------|-------------|-------------|-------------|-------------|------------|----------------|
| | Ag = | 177 | sf | | z = | 143.25 | ft | | |
| | | Quantity Per | | | | | | Wt. (lbs.) | |
| | | Face | Length (ft.) | Width (in.) | Area (sf) | Area w/ ice | Wt. Per ft. | Tower | Wt. (lbs.) Ice |
| <u>Round Members</u> | | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| <u>Flat Members</u> | | | | | | | | | |
| Leg | | 2 | 12.5 | 6.0 | 12.5 | 14.6 | 19.6 | 978.3 | 252.8 |
| Diagonal | | 2 | 18.0 | 3.5 | 10.5 | 13.5 | 5.8 | 836.5 | 897.4 |
| Horizontal | | 1 | 12.3 | 20.0 | 20.4 | 21.4 | 53.7 | 2629.7 | 1562.6 |
| Horizontal | | 1 | 13.2 | 2.5 | 2.7 | 3.8 | 3.6 | 190.8 | 123.0 |
| Vertical | | 1 | 6.5 | 2.5 | 1.4 | 1.9 | 4.1 | 106.6 | 60.7 |

| Section | 6 | | | | type | | | | |
|----------------------|----------|--------------|--------------|-------------|-------------|-------------|-------------|------------|----------------|
| | Ag = | 199 | sf | | z = | 157 | ft | | |
| | | Quantity Per | | | | | | Wt. (lbs.) | |
| | | Face | Length (ft.) | Width (in.) | Area (sf) | Area w/ ice | Wt. Per ft. | Tower | Wt. (lbs.) Ice |
| <u>Round Members</u> | | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| <u>Flat Members</u> | | | | | | | | | |
| Leg | | 2 | 15.0 | 6.0 | 15.0 | 17.5 | 12.4 | 745.2 | 303.3 |
| Diagonal | | 4 | 13.6 | 3.0 | 13.6 | 18.2 | 4.9 | 1068.2 | 1186.9 |
| Horizontal | | 2 | 11.8 | 3.0 | 5.9 | 7.8 | 4.9 | 460.6 | 255.9 |

| Section | 7 | | | | type | | | | |
|----------------------|----------|--------------|--------------|-------------|-------------|-------------|-------------|------------|----------------|
| | Ag = | 198 | sf | | z = | 172 | ft | | |
| | | Quantity Per | | | | | | Wt. (lbs.) | |
| | | Face | Length (ft.) | Width (in.) | Area (sf) | Area w/ ice | Wt. Per ft. | Tower | Wt. (lbs.) Ice |
| <u>Round Members</u> | | 0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| <u>Flat Members</u> | | | | | | | | | |
| Leg | | 2 | 15.0 | 5.0 | 12.5 | 15.0 | 10.3 | 618.6 | 256.7 |
| Diagonal | | 4 | 13.6 | 3.0 | 13.6 | 18.2 | 4.9 | 1068.2 | 1186.9 |
| Horizontal | | 2 | 11.8 | 3.0 | 5.9 | 7.8 | 4.9 | 460.6 | 255.9 |
| | | | | | 0.0 | 0.0 | | 0.0 | 0.0 |

All-Points Technology Corp., P.C.

150 Old Westside Road
 North Conway, NH 03860
 (603) 356-5214

Client: **Structure Consulting Group**
 Job: **Portland, ME**
 Calculated By: **R. Adair**

Job No.: **ME147110**
 Date: **19-Aug-02**

Antennas

| Type | Elev. (z) | Coeff. | | | Area (no | Area | Force (no | Force | Weight | Weight |
|-----------------|-----------|--------|------|-------|----------|-------|-----------|-------|----------|----------|
| | | (C) | Kz | Qz | ice) | (ice) | ice) | (ice) | (no ice) | (w/ ice) |
| 7' whip | 170 | 1.2 | 1.60 | 26.17 | 2.9 | 4.0 | 103 | 142 | 75 | 125 |
| (2) Omnis | 162 | 1.2 | 1.58 | 25.81 | 0.5 | 0.8 | 17 | 29 | 60 | 100 |
| 8' whip | 161 | 1.2 | 1.57 | 25.77 | 2.9 | 4.0 | 99 | 139 | 75 | 125 |
| SS whip | 160 | 1.2 | 1.57 | 25.72 | 5.1 | 7.4 | 178 | 256 | 100 | 150 |
| 7' whip | 156 | 1.2 | 1.56 | 25.54 | 2.3 | 3.3 | 77 | 112 | 75 | 125 |
| 1' square panel | 158 | 1.2 | 1.56 | 25.63 | 1.0 | 1.2 | 34 | 40 | 50 | 75 |
| Quad yagi | 156 | 1.2 | 1.56 | 25.54 | 2.7 | 6.0 | 92 | 206 | 60 | 100 |
| Dual yagi | 152 | 1.2 | 1.55 | 25.35 | 2.9 | 5.6 | 99 | 190 | 60 | 100 |
| Dual yagi | 149 | 1.2 | 1.54 | 25.20 | 2.9 | 5.6 | 99 | 189 | 60 | 100 |
| Dual yagi | 144 | 1.2 | 1.52 | 24.96 | 1.3 | 3.3 | 45 | 112 | 40 | 60 |
| | | | 1.00 | 16.38 | | | 0 | 0 | | |
| Platform | 150 | 1.2 | 1.54 | 25.25 | 26.8 | 37.0 | 909 | 1257 | 2200 | 3000 |
| Platform | 137 | 1.2 | 1.50 | 24.61 | 15.0 | 21.7 | 496 | 717 | 900 | 1500 |
| Platform | 131 | 1.2 | 1.48 | 24.29 | 43.7 | 57.0 | 1427 | 1863 | 1600 | 2400 |
| Platform | 112 | 1.2 | 1.42 | 23.23 | 35.0 | 45.0 | 1094 | 1406 | 1500 | 2200 |
| | | | 1.00 | 16.38 | | | 0 | 0 | | |
| | | | 1.00 | 16.38 | | | 0 | 0 | | |
| | | | 1.00 | 16.38 | | | 0 | 0 | | |
| | | | 1.00 | 16.38 | | | 0 | 0 | | |

Dishes

| | | | | | | | | | | | Azimuth | Ca | Cs |
|-------------|-----|---------|------|--------|-------|-------|------|------|-----|------|---------|--------|--------|
| 12' HP dish | 157 | 0.00323 | 1.56 | 0.0032 | 120.3 | 121.9 | 4353 | 4410 | 900 | 1600 | | 0.0032 | 0.0000 |
| 2' HP dish | 158 | 0.00194 | 1.56 | 0.0019 | 4.1 | 4.4 | 89 | 96 | 50 | 80 | | 0.0014 | 0.0014 |
| 12' HP dish | 144 | 0.00323 | 1.52 | 0.0032 | 120.3 | 121.9 | 4246 | 4303 | 900 | 1600 | | 0.0032 | 0.0000 |
| 12' HP dish | 111 | 0.00289 | 1.41 | 0.0029 | 120.3 | 121.9 | 3524 | 3571 | 900 | 1600 | | 0.0028 | 0.0008 |
| | | 0.00000 | 1.00 | 0.0000 | | | 0 | 0 | | | | | |
| | | 0.00000 | 1.00 | 0.0000 | | | 0 | 0 | | | | | |
| | | 0.00000 | 1.00 | 0.0000 | | | 0 | 0 | | | | | |

Proposed Antennas

| | | | | | | | | | | | | | |
|------------------|-----|---------|------|-------|------|------|------|------|-----|-----|-----|--------|--------|
| 6' HP dish | 180 | 0.00324 | 1.62 | 26.60 | 28.3 | 29.5 | 1068 | 1113 | 250 | 500 | 228 | 0.0032 | 0.0003 |
| 6' HP dish | 160 | 0.00324 | 1.57 | 25.72 | 28.3 | 29.5 | 1033 | 1076 | 250 | 500 | 228 | 0.0032 | 0.0003 |
| 4' dish w/radome | 127 | 0.00097 | 1.47 | 24.08 | 14.2 | 14.8 | 146 | 152 | 150 | 250 | 330 | 0.0003 | 0.0009 |
| 6' HP dish | 170 | 0.00324 | 1.60 | 26.17 | 28.3 | 29.5 | 1052 | 1096 | 250 | 500 | 230 | 0.0032 | 0.0003 |
| 6' dish w/radome | 150 | 0.00145 | 1.54 | 25.25 | 28.3 | 29.5 | 452 | 471 | 250 | 500 | 287 | 0.0008 | 0.0012 |
| 2' square panel | 165 | 1.4 | 1.58 | 25.95 | 4.0 | 4.3 | 163 | 177 | 50 | 100 | | | |
| 2' square panel | 160 | 1.4 | 1.57 | 25.72 | 4.0 | 4.3 | 161 | 175 | 50 | 100 | | | |
| 1' square panel | 180 | 1.4 | 1.62 | 26.60 | 1.0 | 1.2 | 42 | 49 | 25 | 50 | | | |
| 6' dish | 175 | 0.00228 | 1.61 | 26.39 | 28.3 | 29.5 | 745 | 776 | 250 | 500 | 13 | 0.0021 | 0.0009 |

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Client: **Structure Consulting Group**
 Job: **Portland, ME**
 Calculated By: **R. Adair**

Job No.: **ME147110**
 Date: **19-Aug-02**

Existing Wind Load Without Ice

| Section | Midpoint Height | Areas | | | | | Factors | | | Rr | Kz | Qz | Gh | e | Cf | Wind Load | Section Length | Uniform Load |
|---------|-----------------|-------|-------|--------|------|-------|---------|----|-----|------|------|-------|------|------|------|-----------|----------------|--------------|
| | | Gross | Flats | Rounds | Ae | Aa | Df | Dr | Ca | | | | | | | | | |
| 1 | 93.25 | 269.7 | 31.3 | 0.0 | 31.3 | 17.68 | 1 | 1 | 1.2 | 0.58 | 1.35 | 22.05 | 1.12 | 0.12 | 2.90 | 2769 lbs. | 12.5 | 222 lbs/ft. |
| 2 | 105.75 | 246.6 | 32.6 | 0.0 | 32.6 | 17.59 | 1 | 1 | 1.2 | 0.58 | 1.39 | 22.85 | 1.12 | 0.13 | 2.84 | 2913 lbs. | 12.5 | 233 lbs/ft. |
| 3 | 118.25 | 223.4 | 31.6 | 0.0 | 31.6 | 16.51 | 1 | 1 | 1.2 | 0.58 | 1.44 | 23.59 | 1.12 | 0.14 | 2.80 | 2865 lbs. | 12.5 | 229 lbs/ft. |
| 4 | 130.75 | 200.3 | 31.7 | 0.0 | 31.7 | 16.51 | 1 | 1 | 1.2 | 0.58 | 1.48 | 24.28 | 1.12 | 0.16 | 2.74 | 2903 lbs. | 12.5 | 232 lbs/ft. |
| 5 | 143.25 | 177.2 | 47.5 | 0.0 | 47.5 | 15.38 | 1 | 1 | 1.2 | 0.61 | 1.52 | 24.92 | 1.12 | 0.27 | 2.38 | 3681 lbs. | 12.5 | 294 lbs/ft. |
| 6 | 157 | 198.8 | 34.5 | 0.0 | 34.5 | 11.82 | 1 | 1 | 1.2 | 0.59 | 1.56 | 25.58 | 1.12 | 0.17 | 2.69 | 3064 lbs. | 15.0 | 204 lbs/ft. |
| 7 | 172 | 197.5 | 32.0 | 0.0 | 32.0 | 5.51 | 1 | 1 | 1.2 | 0.58 | 1.60 | 26.26 | 1.12 | 0.16 | 2.73 | 2764 lbs. | 15.0 | 184 lbs/ft. |

Existing Wind Load With Ice

| Section | Midpoint Height | Areas | | | | | Factors | | | Rr | Kz | Qz | Gh | e | Cf | Wind Load | Section Length | Uniform Load |
|---------|-----------------|-------|-------|--------|------|-------|---------|----|-----|------|------|-------|------|------|------|-----------|----------------|--------------|
| | | Gross | Flats | Rounds | Ae | Ai | Df | Dr | Ca | | | | | | | | | |
| 1 | 93.25 | 269.7 | 39.7 | 0.0 | 39.7 | 30.70 | 1 | 1 | 1.2 | 0.58 | 1.35 | 22.05 | 1.12 | 0.15 | 2.78 | 3638 lbs. | 12.5 | 291 lbs/ft. |
| 2 | 105.75 | 246.6 | 42.0 | 0.0 | 42.0 | 30.57 | 1 | 1 | 1.2 | 0.58 | 1.39 | 22.85 | 1.12 | 0.17 | 2.70 | 3845 lbs. | 12.5 | 308 lbs/ft. |
| 3 | 118.25 | 223.4 | 40.6 | 0.0 | 40.6 | 29.01 | 1 | 1 | 1.2 | 0.59 | 1.44 | 23.59 | 1.12 | 0.18 | 2.66 | 3773 lbs. | 12.5 | 302 lbs/ft. |
| 4 | 130.75 | 200.3 | 40.1 | 0.0 | 40.1 | 29.01 | 1 | 1 | 1.2 | 0.59 | 1.48 | 24.28 | 1.12 | 0.20 | 2.59 | 3781 lbs. | 12.5 | 302 lbs/ft. |
| 5 | 143.25 | 177.2 | 55.3 | 0.0 | 55.3 | 27.15 | 1 | 1 | 1.2 | 0.62 | 1.52 | 24.92 | 1.12 | 0.31 | 2.26 | 4407 lbs. | 12.5 | 353 lbs/ft. |
| 6 | 157 | 198.8 | 43.5 | 0.0 | 43.5 | 20.13 | 1 | 1 | 1.2 | 0.59 | 1.56 | 25.58 | 1.12 | 0.22 | 2.53 | 3854 lbs. | 15.0 | 257 lbs/ft. |
| 7 | 172 | 197.5 | 41.0 | 0.0 | 41.0 | 7.22 | 1 | 1 | 1.2 | 0.59 | 1.60 | 26.26 | 1.12 | 0.21 | 2.57 | 3357 lbs. | 15.0 | 224 lbs/ft. |

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Job No.: **ME147110**
 Date: **19-Aug-02**

Proposed Wind Load Without Ice

| Section | Midpoint Height | Areas | | | | | Factors | | | Rr | Kz | Qz | Gh | e | Cf | Wind Load | Section Length | Uniform Load |
|---------|-----------------|-------|-------|--------|------|-------|---------|----|-----|------|------|-------|------|------|------|-----------|----------------|--------------|
| | | Gross | Flats | Rounds | Ae | Aa | Df | Dr | Ca | | | | | | | | | |
| 1 | 93.25 | 269.7 | 31.3 | 0.0 | 31.3 | 26.57 | 1 | 1 | 1.2 | 0.58 | 1.35 | 22.05 | 1.12 | 0.12 | 2.90 | 3032 lbs. | 12.5 | 243 lbs/ft. |
| 2 | 105.75 | 246.6 | 32.6 | 0.0 | 32.6 | 26.48 | 1 | 1 | 1.2 | 0.58 | 1.39 | 22.85 | 1.12 | 0.13 | 2.84 | 3186 lbs. | 12.5 | 255 lbs/ft. |
| 3 | 118.25 | 223.4 | 31.6 | 0.0 | 31.6 | 25.40 | 1 | 1 | 1.2 | 0.58 | 1.44 | 23.59 | 1.12 | 0.14 | 2.80 | 3147 lbs. | 12.5 | 252 lbs/ft. |
| 4 | 130.75 | 200.3 | 31.7 | 0.0 | 31.7 | 24.85 | 1 | 1 | 1.2 | 0.58 | 1.48 | 24.28 | 1.12 | 0.16 | 2.74 | 3176 lbs. | 12.5 | 254 lbs/ft. |
| 5 | 143.25 | 177.2 | 47.5 | 0.0 | 47.5 | 23.59 | 1 | 1 | 1.2 | 0.61 | 1.52 | 24.92 | 1.12 | 0.27 | 2.38 | 3956 lbs. | 12.5 | 316 lbs/ft. |
| 6 | 157 | 198.8 | 34.5 | 0.0 | 34.5 | 19.67 | 1 | 1 | 1.2 | 0.59 | 1.56 | 25.58 | 1.12 | 0.17 | 2.69 | 3335 lbs. | 15.0 | 222 lbs/ft. |
| 7 | 172 | 197.5 | 32.0 | 0.0 | 32.0 | 9.38 | 1 | 1 | 1.2 | 0.58 | 1.60 | 26.26 | 1.12 | 0.16 | 2.73 | 2900 lbs. | 15.0 | 193 lbs/ft. |

Proposed Wind Load With Ice

| Section | Midpoint Height | Areas | | | | | Factors | | | Rr | Kz | Qz | Gh | e | Cf | Wind Load | Section Length | Uniform Load |
|---------|-----------------|-------|-------|--------|------|-------|---------|----|-----|------|------|-------|------|------|------|-----------|----------------|--------------|
| | | Gross | Flats | Rounds | Ae | Ai | Df | Dr | Ca | | | | | | | | | |
| 1 | 93.25 | 269.7 | 39.7 | 0.0 | 39.7 | 44.28 | 1 | 1 | 1.2 | 0.58 | 1.35 | 22.05 | 1.12 | 0.15 | 2.78 | 4040 lbs. | 12.5 | 323 lbs/ft. |
| 2 | 105.75 | 246.6 | 42.0 | 0.0 | 42.0 | 44.15 | 1 | 1 | 1.2 | 0.58 | 1.39 | 22.85 | 1.12 | 0.17 | 2.70 | 4262 lbs. | 12.5 | 341 lbs/ft. |
| 3 | 118.25 | 223.4 | 40.6 | 0.0 | 40.6 | 42.59 | 1 | 1 | 1.2 | 0.59 | 1.44 | 23.59 | 1.12 | 0.18 | 2.66 | 4204 lbs. | 12.5 | 336 lbs/ft. |
| 4 | 130.75 | 200.3 | 40.1 | 0.0 | 40.1 | 41.62 | 1 | 1 | 1.2 | 0.59 | 1.48 | 24.28 | 1.12 | 0.20 | 2.59 | 4193 lbs. | 12.5 | 335 lbs/ft. |
| 5 | 143.25 | 177.2 | 55.3 | 0.0 | 55.3 | 39.52 | 1 | 1 | 1.2 | 0.62 | 1.52 | 24.92 | 1.12 | 0.31 | 2.26 | 4822 lbs. | 12.5 | 386 lbs/ft. |
| 6 | 157 | 198.8 | 43.5 | 0.0 | 43.5 | 32.00 | 1 | 1 | 1.2 | 0.59 | 1.56 | 25.58 | 1.12 | 0.22 | 2.53 | 4262 lbs. | 15.0 | 284 lbs/ft. |
| 7 | 172 | 197.5 | 41.0 | 0.0 | 41.0 | 13.02 | 1 | 1 | 1.2 | 0.59 | 1.60 | 26.26 | 1.12 | 0.21 | 2.57 | 3562 lbs. | 15.0 | 237 lbs/ft. |

All-Points Technology Corp., P.C.

150 Old Westside Road
 North Conway, NH 03860
 (603) 356-5214

Client: **Structure Consulting Group**
 Job: **Portland, ME**
 Calculated By: **R. Adair**

Job No.: **ME147110**
 Date: **19-Aug-02**

Uplift Due to Moment Minus 1/4 Dead & Ice Loads

| Elev. | Existing | | | Proposed | | |
|-------|--------------------|-------------------------|----------------------|--------------------|-------------------------|----------------------|
| | W _o -DL | .75W _i -DL-I | W _i -DL-I | W _o -DL | .75W _i -DL-I | W _i -DL-I |
| 87 | 49.9 | 38.5 | 55.8 | 64.9 | 51.0 | 72.6 |
| 100 | 40.2 | 30.3 | 44.4 | 53.7 | 41.5 | 59.4 |
| 112 | 30.5 | 22.7 | 33.4 | 42.3 | 32.4 | 46.4 |
| 125 | 21.4 | 15.1 | 22.9 | 31.3 | 23.3 | 33.7 |
| 137 | 12.4 | 8.2 | 12.9 | 20.2 | 14.5 | 21.3 |
| 150 | 4.9 | 2.8 | 4.9 | 10.2 | 7.0 | 10.5 |
| 165 | 0.6 | 0.1 | 0.4 | 2.4 | 1.5 | 2.3 |

Tension in Anchor Bolts - Shear in Splice Bolts

| Elev. | # of Bolts | Existing | | | Proposed | | |
|-------|------------|--------------------|-------------------------|----------------------|--------------------|-------------------------|----------------------|
| | | W _o -DL | .75W _i -DL-I | W _i -DL-I | W _o -DL | .75W _i -DL-I | W _i -DL-I |
| 87 | 14 | 3.57 | 2.75 | 3.99 | 4.63 | 3.64 | 5.18 |
| 100 | 14 | 2.87 | 2.17 | 3.17 | 3.83 | 2.97 | 4.24 |
| 112 | 14 | 2.18 | 1.62 | 2.39 | 3.02 | 2.31 | 3.31 |
| 125 | 14 | 1.53 | 1.08 | 1.63 | 2.24 | 1.66 | 2.41 |
| 137 | 14 | 0.89 | 0.58 | 0.92 | 1.44 | 1.04 | 1.52 |
| 150 | 24 | 0.21 | 0.12 | 0.20 | 0.43 | 0.29 | 0.44 |
| 165 | 8 | 0.08 | 0.01 | 0.05 | 0.30 | 0.19 | 0.29 |

Shear in Anchor Bolts - Tension in Splice Bolts

| Elev. | Bolt Size (dia.) | Existing | | | Proposed | | |
|-------|------------------|-----------------|-------------------|----------------|-----------------|-------------------|----------------|
| | | W _o | .75W _i | W _i | W _o | .75W _i | W _i |
| 87 | 3/4 | 0.68 | 0.61 | 0.82 | 0.74 | 0.67 | 0.90 |
| 100 | 3/4 | 0.63 | 0.56 | 0.75 | 0.69 | 0.62 | 0.83 |
| 112 | 3/4 | 0.49 | 0.45 | 0.59 | 0.55 | 0.50 | 0.66 |
| 125 | 3/4 | 0.44 | 0.39 | 0.53 | 0.49 | 0.44 | 0.59 |
| 137 | 3/4 | 0.36 | 0.31 | 0.41 | 0.45 | 0.39 | 0.52 |
| 150 | 3/4 | 0.12 | 0.11 | 0.15 | 0.18 | 0.15 | 0.20 |
| 165 | 3/4 | 0.09 | 0.08 | 0.11 | 0.19 | 0.16 | 0.22 |

All-Points Technology Corp., P.C.

150 Old Westside Road
North Conway, NH 03860
(603) 356-5214

Client: **Structure Consulting Group**
Job: **Portland, ME**
Calculated By: **R. Adair**

Job No.: **ME147110**
Date: **19-Aug-02**

Evaluation of Bracing Members

Center Bolted? Yes
Yield Strength (F_y): 36 ksi $C_c =$ 126.1

| Section | Member | K Value | Length (ft.) | Area (in. ²) | r_x (in.) | r_z (in.) | kL/r_x | kL/r_z |
|---------|-------------------|---------|--------------|--------------------------|-------------|-------------|----------|----------|
| 1 | 2L3.5 x 3.5 x 1/4 | 1.0 | 16.32 | 3.380 | 1.090 | 0.694 | 134.8 | 141.1 |
| 2 | 2L3 x 2.5 x 1/4 | 1.0 | 22.43 | 2.620 | 0.945 | 0.528 | 213.6 | 254.9 |
| 3 | 2L3 x 2.5 x 1/4 | 1.0 | 20.90 | 2.620 | 0.945 | 0.528 | 199.1 | 237.5 |
| 4 | L3.5 x 3 x 1/4 | 1.0 | 19.43 | 1.560 | 1.110 | 0.631 | 157.6 | 184.8 |
| 5 | L3.5 x 3.5 x 1/4 | 1.0 | 18.03 | 1.690 | 1.090 | 0.694 | 148.8 | 155.9 |
| 6 | L3 x 3 x 1/4 | 1.0 | 13.63 | 1.440 | 0.930 | 0.592 | 131.9 | 138.1 |
| 7 | L3 x 3 x 1/4 | 1.0 | 13.63 | 1.440 | 0.930 | 0.592 | 131.9 | 138.1 |

| Section | All. Tens. (k) | F_a (ksi) | All. Comp. (k) | Brace Angle | All. Shear (k) | Act. Shear (k) | Stress Ratio |
|---------|----------------|-------------|----------------|-------------|----------------|----------------|--------------|
| 1 | 73.01 | 7.50 | 25.34 | 0.55 | 167.41 | 40.89 | 24% |
| 2 | 56.59 | 2.30 | 6.02 | 0.33 | 118.63 | 40.89 | 34% |
| 3 | 56.59 | 2.65 | 6.93 | 0.36 | 119.00 | 35.18 | 30% |
| 4 | 33.70 | 4.37 | 6.82 | 0.41 | 74.32 | 35.18 | 47% |
| 5 | 36.50 | 6.15 | 10.39 | 0.38 | 87.20 | 27.65 | 32% |
| 6 | 31.10 | 7.83 | 11.28 | 0.53 | 33.83 | 24.79 | 73% |
| 7 | 31.10 | 7.83 | 11.28 | 0.53 | 33.83 | 19.96 | 59% |

All-Points Technology Corp., P.C.

150 Old Westside Road
 North Conway, NH 03860
 (603) 356-5214

Client: **Structure Consulting Group**
 Job: **Portland, ME**
 Calculated By: **R. Adair**

Job No.: **ME147110**
 Date: **19-Aug-02**

Evaluation of Leg Members

| Section | Size | Kl/r | Cc | Fa allow | 133% Allow | <i>Existing</i> | | <i>Proposed</i> | |
|---------|----------|-------|--------|----------|------------|------------------|-----------|------------------|-----------|
| | | | | | | D+W _o | D+.75Wl+l | D+W _o | D+.75Wl+l |
| 1 | 6x6x5/8 | 66.10 | 126.04 | 16.83 | 22.43 | 8.78 | 8.26 | 10.95 | 10.18 |
| 2 | 6x6x5/8 | 66.10 | 126.04 | 16.83 | 22.43 | 7.24 | 6.84 | 9.20 | 8.56 |
| 3 | 6x6x5/8 | 66.10 | 126.04 | 16.83 | 22.43 | 5.52 | 5.21 | 7.25 | 6.72 |
| 4 | 6x6x1/2 | 68.64 | 126.04 | 16.57 | 22.09 | 5.04 | 4.80 | 6.84 | 6.37 |
| 5 | 6x6x1/2 | 55.08 | 126.04 | 17.89 | 23.85 | 3.09 | 2.96 | 4.51 | 4.21 |
| 6 | 6x6x5/16 | 75.00 | 126.04 | 15.90 | 21.20 | 2.26 | 2.25 | 3.81 | 3.62 |
| 7 | 5x5x5/16 | 90.54 | 126.04 | 14.13 | 18.85 | 0.45 | 0.46 | 1.11 | 1.07 |

Percent Capacity

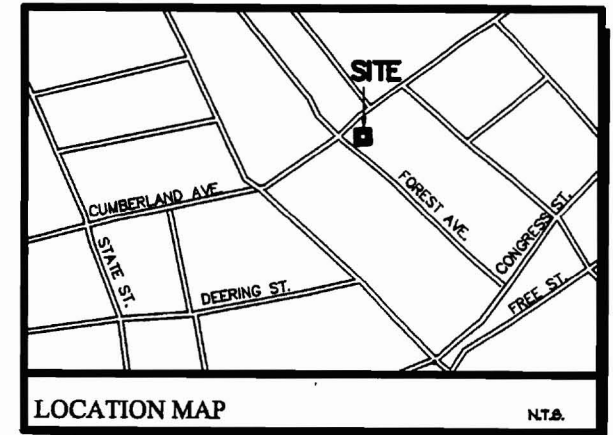
| Section | Base Elev. | <i>Existing</i> | | | <i>Proposed</i> | | | <i>Maximum</i> | |
|---------|------------|------------------|-----------|-----------|------------------|-----------|-----------|----------------|------------|
| | | D+W _o | D+.75Wl+l | Secondary | D+W _o | D+.75Wl+l | Secondary | Existing | Proposed |
| 1 | 87 | 39% | 37% | 0% | 49% | 45% | 0% | 39% | 49% |
| 2 | 100 | 32% | 30% | 0% | 41% | 38% | 0% | 32% | 41% |
| 3 | 112 | 25% | 23% | 0% | 32% | 30% | 0% | 25% | 32% |
| 4 | 125 | 23% | 22% | 0% | 31% | 29% | 0% | 23% | 31% |
| 5 | 137 | 13% | 12% | 0% | 19% | 18% | 0% | 13% | 19% |
| 6 | 150 | 11% | 11% | 0% | 18% | 17% | 0% | 11% | 18% |
| 7 | 165 | 2% | 2% | 0% | 6% | 6% | 0% | 2% | 6% |

Maximum Reactions:

Uplift: 64.9 kips
Compression: 77.9 kips
Shear: 41.6 kips

VERIZON WIRELESS (TENANT)

400 FRIBERG PARKWAY
WESTBOROUGH, MA 01581
(508) 330-3343



45-55 FOREST AVENUE TOWER SITE

FOR THE:

INSTALLATION OF 9 NEW MICROWAVE ANTENNA
TO BE MOUNTED ON THE MODIFIED 93' SHELF
SUPPORT VERIZON NEW ENGLAND MICRO-WAVE
TOWER.

SITE DIRECTIONS:
FROM EXIT 1 OF THE MAINE TURNPIKE, TAKE INTERSTATE 89 NORTH
EASTERLY TO EXIT 6A. TAKE INTERSTATE 289 NORTHEASTERLY TO
PORTLAND EXIT 6. FOREST AVENUE EAST EXIT. TAKE A RIGHT ONTO
FOREST AVENUE AND PROCEED SOUTHEASTERLY FOR 1/2 MILE TO THE
SITE AT THE INTERSECTION OF FOREST AVENUE AND CUMBERLAND
STREET.

PROJECT SUMMARY

SITE ADDRESS: 45-55 FOREST AVENUE
PORTLAND, MAINE 04101

OWNER/LESSOR: VERIZON NEW ENGLAND, INC.
5 DAVIS FARM ROAD
PORTLAND, MAINE 04103

LESSEE: VERIZON WIRELESS
400 FRIBERG PARKWAY
WESTBOROUGH, MA 01581

ASSESSORS MAP: TAX MAP 37, LOT 1

CURRENT ZONING: DOWN TOWN BUSINESS B3 & B3C

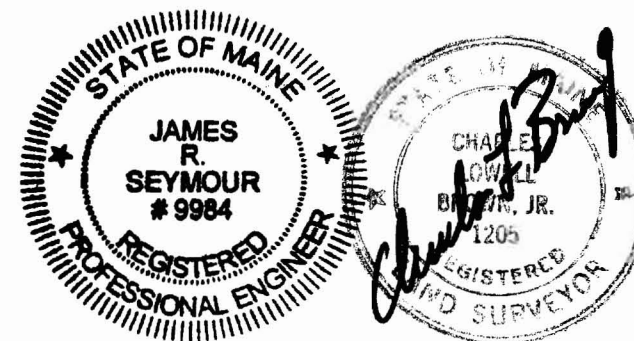
LATITUDE: N 43°-39'-21.0"

LONGITUDE: W 70°-15'-50.0"

TOWER BASE ELEVATION: ASSUMED 87'

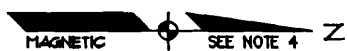
PER STRUCTURAL REPORT

| SHEET INDEX | |
|-------------|-------------------------------|
| 1 of 4 | COVER SHEET |
| 2 of 4 | SITE PLAN |
| 3 of 4 | FLOOR PLAN |
| 4 of 4 | TOWER PROFILE /WITH EXTENSION |

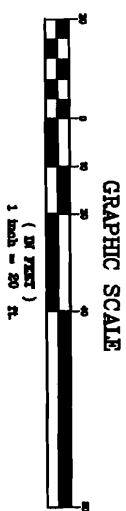
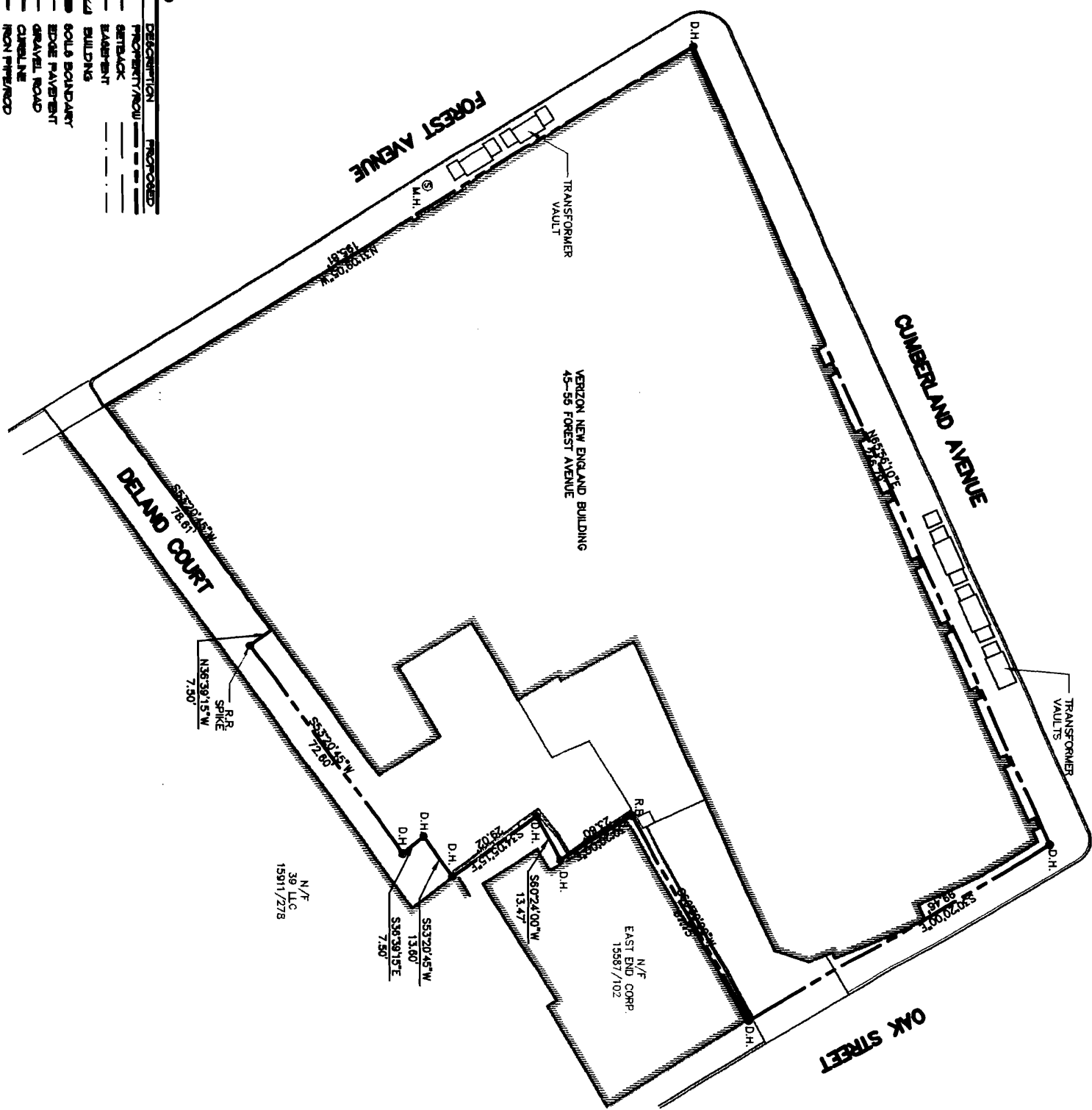


Sebago Technics
Engineering & Planning for the Future
1 CHABOT STREET
WESTBOROUGH, ME 04098-1339
TEL (207) 656-0277

1 of 4 COVER SHEET
PROJECT TITLE: PORTLAND TOWER SITE
ISSUE DATE: APRIL 17, 2003
PROJECT NO.: 02342



| EXISTING | DESCRIPTION | PROPOSED |
|----------|----------------|----------|
| --- | PROPERTY ROW | --- |
| --- | SETBACK | --- |
| --- | BUILDING | --- |
| --- | SOILS BOUNDARY | --- |
| --- | EDGE PAVEMENT | --- |
| --- | GRAVEL ROAD | --- |
| --- | CURBLINE | --- |
| --- | IRON PIPE/POD | --- |
| --- | DRILLHOLE | --- |



GENERAL NOTES:

1. RECORD OWNER OF PROJECT IS VERIZON NEW ENGLAND, INC BY NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY DEED.
2. THIS PROJECT IS SHOWN AS LOT 1 IN BLOCK A OF THE CITY OF PORTLAND MUNICIPAL TAX MAP NO. 51.
3. THIS LOT IS LOCATED IN 2 DOWN TOWN BUSINESS ZONING DISTRICTS B-3 AND B-3C.
4. THE BOUNDARIES AND BUILDING LOCATION AS SHOWN HEREIN ARE BASED SOLELY ON PLAN OF RECORD SUBJECT OF THIS CLAIM AND CURRENT RECORDS OF DEEDS IN PLAN BOOK TOWN AND COUNTY OF PORTLAND, MAINE. THIS PLAN HAS BEEN PREPARED BY H.L. JENKINSON SURVEYORS AND IS DATED DECEMBER 2002.

SHEET 2 OF 4

SITE PLAN
OF:
PORTLAND TOWER SITE
45-55 FOREST AVENUE
PORTLAND, MAINE 04103
FOR:
VERIZON WIRELESS
400 FRIBERG PARKWAY
WESTBOROUGH, MA 01581

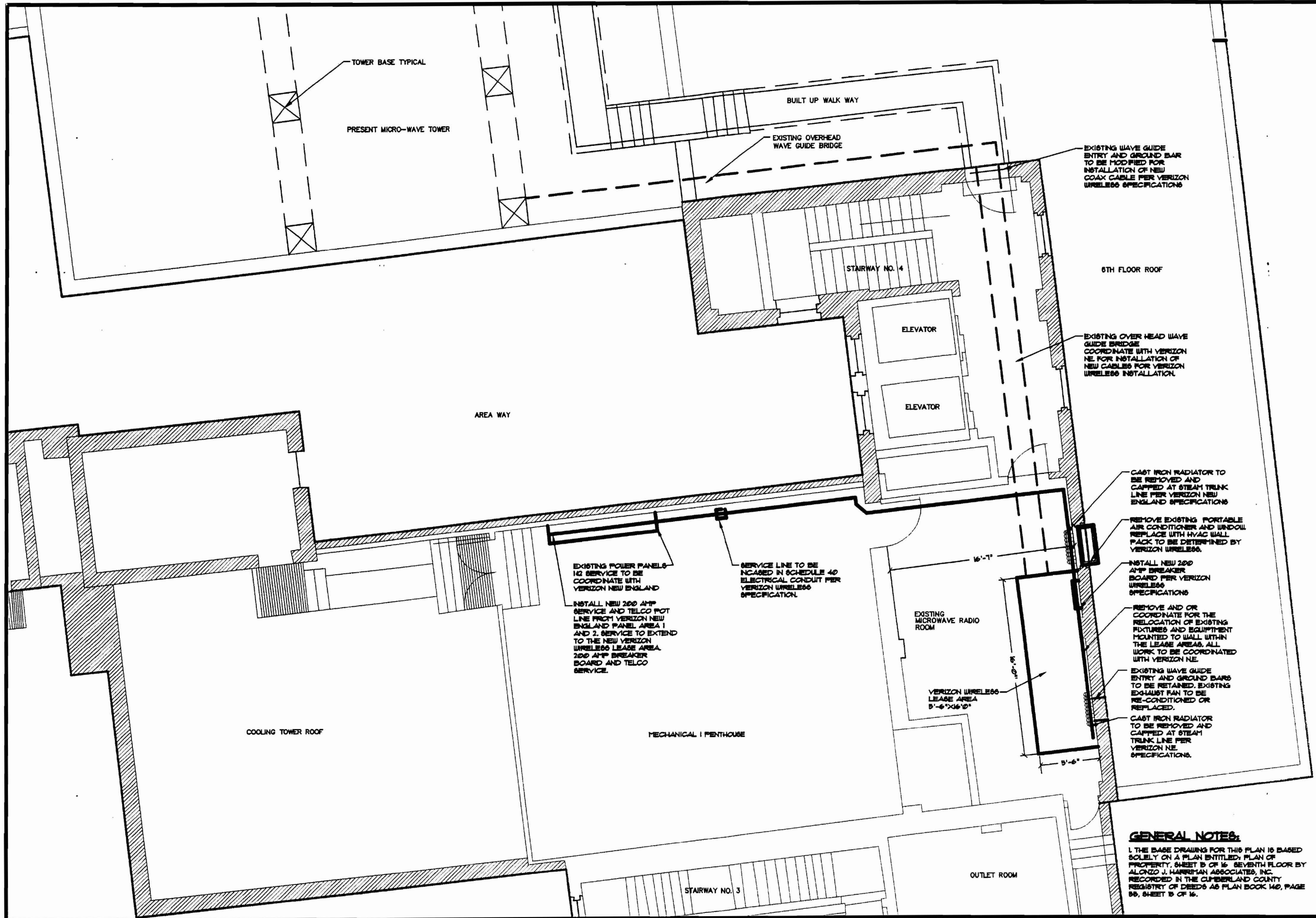
RECORD OWNER:
VERIZON NEW ENGLAND
5 DAVIS FARM RD.
PORTLAND, MAINE 04103

Sebago Technics
Engineering Expertise You Can Build On
One Chebot Street
Westbrook, Me 04090-1339
Tel (207) 898-0277

| PROJECT NO. | FIELD BOOK | DESIGN | CHKD | DRAWN |
|-------------|------------|--------|------|-------|
| 02342 | N/A | N/A | CLB | JNB |

| REV. | BY: | DATE: | STATUS: |
|------|-----|---------|--------------------------|
| A | CLB | 4/17/03 | ISSUED FOR CLIENT REVIEW |

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.



GENERAL NOTES:
 1. THE BASE DRAWING FOR THIS PLAN IS BASED SOLELY ON A PLAN ENTITLED: PLAN OF PROPERTY, SHEET B OF 16, SEVENTH FLOOR BY ALONZO J. HARRISMAN ASSOCIATES, INC. RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS AS PLAN BOOK 140, PAGE 88, SHEET B OF 16.

| | | | |
|------|-----|---------|---------------------------------------|
| REV: | BY: | DATE: | STATUS: |
| B | CLB | 4/22/03 | REVISED PER SITE VISIT W/VERIZON N.E. |
| A | CLB | 4/17/03 | ISSUED FOR CLIENT REVIEW |

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR UNAUTHORIZED, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

Sebago Technics
 Engineering. Experience. You Can Rely On.
 100 South Main Street
 Portland, ME 04101
 Tel: (207) 899-0277

| | | | | |
|-------------|------------|--------|------|-------|
| PROJECT NO. | FIELD BOOK | DESIGN | CHKD | DRAWN |
| 02342 | N/A | N/A | CLB | JNB |

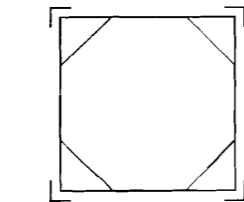
7TH FLOOR PLAN
 OF: **45-55 FOREST AVENUE**
 PORTLAND, MAINE 04101

FOR: **VERIZON WIRELESS**
 400 FREEBERG PARKWAY
 WESTBOROUGH, MA

RECORD OWNER:
 VERIZON NEW ENGLAND
 5 DAVIS FARM RD
 PORTLAND, MAINE 04103

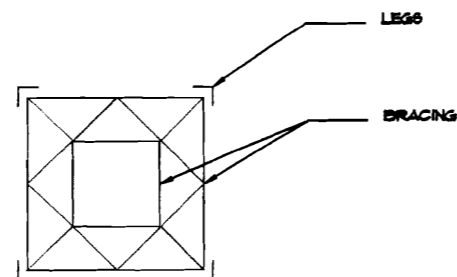
DATE: 4/17/03
 SCALE: 1"=48"

SHEET 3 OF 4



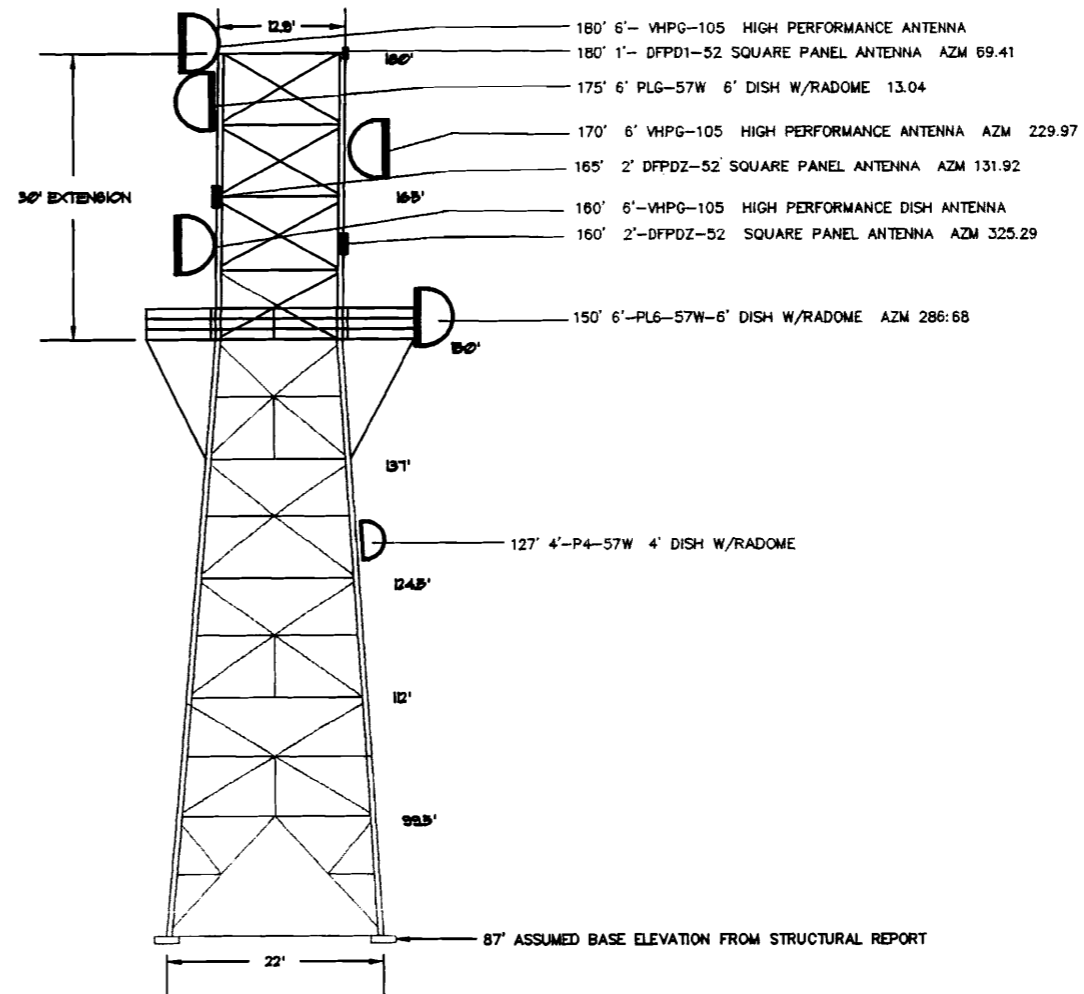
CROSS-SECTION

ELEV. 29' T.S. 92.5'



CROSS-SECTION

ELEV. 2.5' 4 51.5'



TOWER ELEVATION

SCALE: 1"=10'

NOTE:

ONLY PROPOSED DISH INSTALLATIONS ARE SHOWN. THE HEIGHT OF EACH ANTENNA IS BASED ON THE STRUCTURAL ANALYSIS REPORT BY ALL POINTS TECHNOLOGY CORPORATION, P.C. DATED SEPTEMBER 5, 2002. FOR LOCATION OF EXISTING ANTENNAS AND CURRENT 63' HIGH SELF SUPPORT TOWER, SEE STRUCTURAL REPORT.

| | | | | | | |
|---------|---|-----|-----|-------|---------|--------------------------|
| REV: | A | CLB | BY: | DATE: | 4/17/03 | ISSUED FOR CLIENT REVIEW |
| STATUS: | THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC. | | | | | |

Sebago Technics
 Engineering Expertise You Can Build On
 One Chestnut Street
 Westbrook, Me 04090-1309
 Tel (207) 866-2277

| | | | | | | | | | |
|-------------|-------|------------|-----|--------|-----|------|-----|-------|-----|
| PROJECT NO. | 02342 | FIELD BOOK | N/A | DESIGN | N/A | CHKD | CLB | DRAWN | JNB |
|-------------|-------|------------|-----|--------|-----|------|-----|-------|-----|

TOWER PROFILE / WITH EXTENSION
 OF: **PORTLAND TOWER**
 45-55 FOREST AVENUE
 PORTLAND, MAINE 04101
 FOR: **VERIZON WIRELESS**
 400 FRIBERG PARKWAY
 WESTBOROUGH, MA 01581

| | |
|---------|--------|
| DATE | SCALE |
| 4/14/03 | 1"=10' |

SHEET 4 OF 4



CITY OF PORTLAND, MAINE

Department of Building Inspections

6/27 2013

Received from Wesley M. Jones

Location of Work 400 Commercial Ave.

Cost of Construction \$ 208,500

Permit Fee \$ 775.00

Building (IL) Plumbing (I5) Electrical (I2) Site Plan (U2)

Other _____

CBL: 37A 001

Check #: 2722

Total Collected \$ 775.00

THIS IS NOT A PERMIT

No work is to be started until PERMIT CARD is actually posted upon the premises. Acceptance of fee is no guarantee that permit will be granted. PRESERVE THIS RECEIPT. In case permit cannot be granted the amount of the fee will be refunded upon return of the receipt less \$10.00 or 10% whichever is greater.

WHITE - Applicant's Copy
YELLOW - Office Copy
PINK - Permit Copy