

**PERMIT ISSUED**

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

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

Permit No: 02-007EB	Issue Date: 5 2002	CBL: 415 B006001
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Location of Construction: Presumpscot St 503-505	Owner Name: Merrill Industries Inc	Owner Address: 601 Danforth St	Phone:
Business Name: n/a	Contractor Name: ATC Realty	Contractor Address: 44 Exchange Street Suite 301 Portland	Phone: 2077730242
Lessee/Buyer's Name: n/a	Phone: n/a	Permit Type: Alterations - Commercial	Zone: LM

Past Use: Commercial	Proposed Use: Commercial / Tower Site; Pour 6' x 6' concrete pad, place cabinet & equipment on pad, run lines up tower & place antennas	Permit Fee: \$303.00	Cost of Work: \$40,000.00	CEO District: 2
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Proposed Project Description:  
Pour 6' x 6' concrete slab for Equipment

*exemption 2002-0021 granted 1/23/02*

FIRE DEPT: <input checked="" type="checkbox"/> Approved <input type="checkbox"/> Denied	INSPECTION: Use Group: <i>U</i> Type: <i>A</i>
Signature: <i>[Signature]</i>	Signature: <i>[Signature]</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: gg	Date Applied For: 01/24/2002	<b>Zoning Approval</b>
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<ol style="list-style-type: none"> <li>This permit application does not preclude the Applicant(s) from meeting applicable State and Federal Rules.</li> <li>Building permits do not include plumbing, septic or electrical work.</li> <li>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..</li> </ol>	<b>Special Zone or Reviews</b> <input type="checkbox"/> Shoreland <input type="checkbox"/> Wetland <input type="checkbox"/> Flood Zone <input type="checkbox"/> Subdivision <input checked="" type="checkbox"/> Site Plan <i>needs site plan or exemption</i> Maj <input type="checkbox"/> Minor <input type="checkbox"/> MM <input type="checkbox"/> Date: <i>[Signature]</i> 1/29/02	<b>Zoning Appeal</b> <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:	<b>Historic Preservation</b> <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>[Signature]</i>
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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

**APPLICATION FOR EXEMPTION FROM SITE PLAN REVIEW**

Nextel Communications, Inc.  
 Applicant  
 40 Hartwell Ave., Lexington, MA 02421  
 Applicant's Mailing Address  
 George T. Chianis (617) 839-6761  
 Consultant/Agent/Phone Number

12/15/01  
 Application Date  
 Portland, ME 1505A  
 Project Name/Description  
 503-525 Presumpscot St.  
 Address of Proposed Site

Description of Proposed Development:  
Placing 9 panel antennas on existing 180 ft. monopole with a 11.5' x 20'  
(230 s.f.) prefab equipment shelter with additional fence around shelter  
35' x 10'

Please Attach Sketch/Plan of Proposal/Development	Applicant's Assessment (Yes, No, N/A)	Planning Office Use Only
Criteria for Exemptions: See Section 14-523 (4)		
a) Within Existing Structures; No New Buildings, Demolitions or Additions	No 11.5' x 20' shelter	✓
b) Footprint Increase Less Than 500 Sq. Ft.	Yes	✓
c) No New Curb Cuts, Driveways, Parking Areas	Yes	✓
d) Curbs and Sidewalks in Sound Condition/ Comply with ADA	N/A	✓
e) No Additional Parking / No Traffic Increase	Yes	✓
f) No Stormwater Problems	Yes	✓
g) Sufficient Property Screening	Yes	✓
h) Adequate Utilities	Yes	✓

**Planning Office Use Only:**

Exemption Granted  Partial Exemption \_\_\_\_\_ Exemption Denied \_\_\_\_\_

Planner's Signature [Signature] Date 1/23/02

# All Purpose Building Permit Application

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

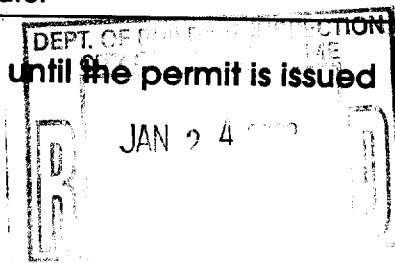
Location/Address of Construction: <u>50B Presumpscott Road, Portland, ME</u>		
Total Square Footage of Proposed Structure <u>6' x 6' concrete pad</u>	Square Footage of Lot <u>See PLANS</u>	
Tax Assessor's Chart, Block & Lot Chart# <u>415</u> Block# <u>4E B</u> Lot# <u>311 DE 206</u>	Owner: <u>Paul D. Merrill</u> <u>601 Danforth St</u> <u>Portland</u>	Telephone:
Lessee/Buyer's Name (If Applicable) <u>SPRINT PCS</u>	Applicant name, address & telephone: <u>Northeast / ATC Realty</u> <u>44 Exchange St</u> <u>STE 301</u> <u>Portland 773-0242</u>	Cost Of Work: \$ <u>410,000<sup>00</sup></u> Fee: \$ <u>303.00</u>
Current use: <u>Tower site</u>		
If the location is currently vacant, what was prior use: _____		
Approximately how long has it been vacant: _____		
Proposed use: <u>cell location on existing tower</u>		
Project description: <u>pour 6' x 6' concrete pad</u> <u>Place cabinet equipment on pad</u> <u>run lines up tower &amp; place antennas</u>		
Contractor's name, address & telephone: <u>ATC Realty</u>		
Who should we contact when the permit is ready: <u>ATC Realty : Chris Palmer</u>		
Mailing address: <u>44 Exchange St</u> <u>Suite 301</u> <u>Portland</u>		
Phone: <u>773-0242 x 261</u>		

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

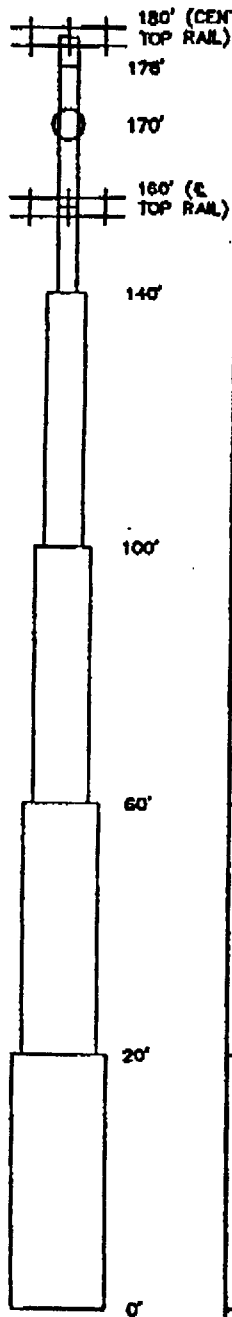
I hereby certify that I am the Owner of record of the named property, or that the owner of record authorizes the proposed work and that I have been authorized by the owner to make this application as his/her authorized agent. I agree to conform to all applicable laws of this jurisdiction. In addition,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

Signature of applicant: <u>Christopher Palmer</u>	Date: _____
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**This is not a permit, you may not commence ANY work until the permit is issued**



*Wesman H 51*



**BASE REACTIONS**

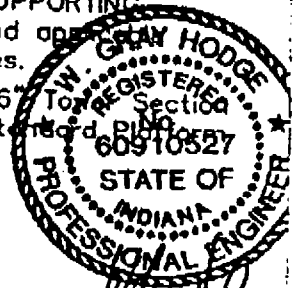
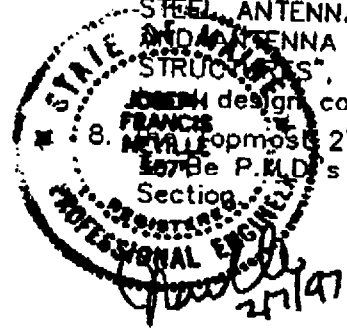
AXIAL (k): 58  
 SHEAR (k): 23  
 MOMENT (ft-k): 2542

PIPE SIZE	LENGTH (ft.)	WEIGHT (lb.)	OUTSIDE DIAMETER	BOLT & DIAMETER	INSIDE DIAMETER	R THICKNESS	NUMBER	SIZE (DIAMETER)	GRADE (ASTM)	DEGREE SEPARATION
24" O.D. x 0.500"	38	4773	34.75	3/4"	28	3/4	8	3/4"	A325	45
36" O.D. x 0.500"	40	7590	46.50	3/4"	24	2 1/2	52	3/4"	A325	15
48" O.D. x 0.625"	40	12662	52.50	3/4"	20	2 3/4	56	3/4"	A325	6.92
54" O.D. x 0.625"	40	14285	58.50	3/4"	16	3 1/8	60	3/4"	A325	6
60" O.D. x 0.625"	20	7934	58.50	3/4"	16	3 1/8	60	3/4"	A325	6

SCHEDULE NOTES: 1. ALL DIMENSIONS ARE INCHES UNLESS NOTED OTHERWISE. 2. SEE PAGE 2 FOR ANCHOR BOLT INFORMATION. 3. N.R. DENOTES "NONE REQUIRED"

**NOTES:**

- All Steel Plate Material shall conform to ASTM A36
- All Structural Steel Pipe Fabrication shall conform to ASTM A139, ASTM A252, and API Spec. 2B
- All Structural Steel Pipe shall conform to ASTM A53, Grade B or ASTM A135, Grade B or ASTM A139, Grade B or ASTM A501
- All Structural Steel (including all connectors) to be hot dip galvanized in accordance with ASTM A123.
- All Welding shall conform to AWS D1.1
- All Bolted Connections shall use ASTM A325 Bolts unless noted otherwise on plan
- Structure Is Designed In Accordance With The Provisions Of TIA/EIA-222-F (June 1996) "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES", and applicable design codes.



**DESIGN PARAMETERS:**

Location  
 City: Portland  
 State: Maine  
 County: Cumberland  
 Basic Wind Speed (mph): 85  
 Ice Loading: 1/2" radial  
 (10% wind reduction considered)  
 Seismic Loading: ZONE 2A

ANTENNA INFORMATION	
ELEVATION	ANTENNA TYPE
180'	(12) @ 4 SQ. FT. W/ PLATFORM
170'	(2) 6' DISHES
160'	(12) @ 4 SQ. FT. W/ PLATFORM

**PITTSBURG MONOPOLE DIVISION**

POST OFFICE BOX 107 - POOLE, KENTUCKY 42444 (502)533-1478

**180' MONOPOLE DESIGN**

CLIENT	BECHTEL	PROJECT NO.	96088-117
NO. OF TOWERS	203-M138	DESIGNED BY	WGH
FILE NO.	NM03XC068	DATE	NONE
DATE	12-18-96		

REVISIONS		
DESCRIPTION	DATE	BY
STE NO.	1-10-97	RC
FOUNDATION	1-30-97	RC

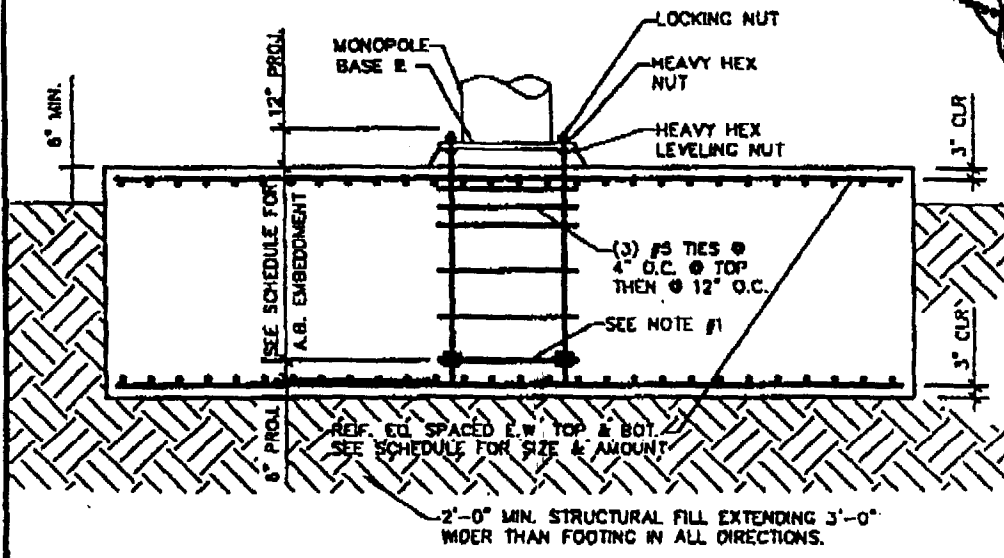
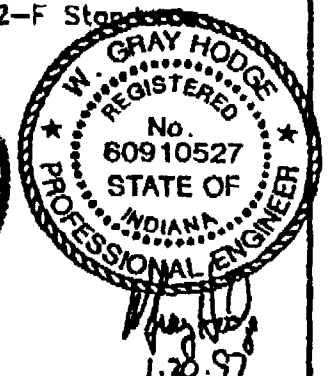
*Revised 11/55*

**NOTES:**

1. 3/4" Thick Bearing Plate To Match Base Flange Plate (Base Plate) Size and Layout.
2. Top 2' of Anchor Bolts including top nuts and leveling nuts to be hot dip galvanized in accordance with ASTM A123.
3. Concrete Shall Be Normal Strength Concrete With A 28-Day Compressive Strength  $\geq$  4000 psf. Concrete Shall Have Air Entrainment  $\geq 4 \frac{1}{2}\% \pm 1\%$ .
4. All Reinforcing Steel Shall Comply With The ASTM A615 Specification For Grade 60 Reinforcing Steel.
5. Grout Shall Be Non-Metallic, Non-Shrink Grout With A Minimum Compressive Strength 8000 psf. Grout Thickness Shall Be 3" Minimum And Shall Provide A Minimum Of 1/2" Grout Between The Leveling Nuts And The Top Of The Footing.
6. Non-Chloride, Non-Corrosive Accelerating And Water Reducing Admixtures Shall Conform To The ASTM C494 Specification.
7. Slope The Top Of The Footing To Provide Water Drainage Away From The Monopole Base. Chamfer All Exposed Edges 1".
8. All Structural Fill To Be Compacted To 95% In Conformance With ASTM D698.
9. The Spread Footing Foundation Is Designed In Accordance With TIA/EIA-222-F Standard And The Geotechnical Report.

REPORT TITLE—Geotechnical Engineering Report  
Site No. NH/M 068-F

Report Author—Gemini Geotechnical Associates, Inc.  
Author's Reference Number—96211ME  
Date Of Report—September 30, 1996



ANCHOR BOLT INFORMATION	
NUMBER	32
SIZE (DIAMETER, in.)	2
GRADE (ASTM)	A36
EMBEDMENT LENGTH (in.)	48

SPREAD FOOTING INFORMATION	
FOOTING PLAN SIZE	23' X 23'
FOOTING THICKNESS	5'-0" MIN.
DEPTH BELOW GRADE	4'-6" MIN.
HORIZONTAL REINF.	(22) #10's E.W. TOP & BOT.

<b>PITTSBURG MONOPOLE DIVISION</b> POST OFFICE BOX 107 - POOLE, KENTUCKY 42444 (502)633-1478	<b>FOUNDATION DESIGN</b>		<b>REVISIONS</b>		
	CLIENT	FOA PROJECT NO.	DESCRIPTION	DATE	BY
	BECHTEL	96088-117	FOUNDATION	1-10-97	RLC
	PROJ. NO.	DESIGNED/CHECKED BY:	FOUNDATION	7-30-97	RLC
	203-M138	WCH			
SITE NO.	SCALE:				
NM03XC068	NONE				
CLIENT PROJ. NO.	DATE				
	12-18-96				
		PAGE 2 OF 2			

1047 N. 204<sup>th</sup> Avenue  
Elkhorn, NE 68022  
402-289-1888  
Fax-333-8577

**SEMAAN ENGINEERING SOLUTIONS**

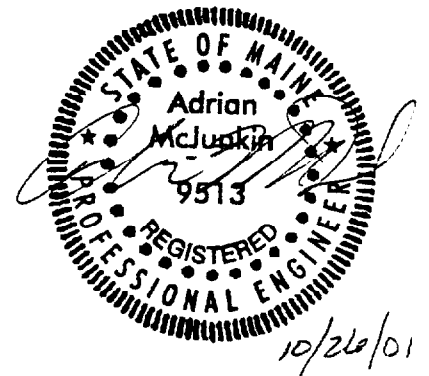
178 ft Pittsburg Monopole  
Structural Analysis

**APPROVED**

Prepared for:  
Sprint Sites USA  
535 E. Crescent Ave.  
Ramsey, NJ 07446

*Brian Robinson*  
10/30/01

Site: NM03XC068  
503 Presumpscott St.  
Portland, ME



October 23, 2001

Ms. Heather Graham  
Sprint Sites USA  
535 E. Crescent Ave.  
Ramsey, NJ 07446

**Re: Site Number NM03XC068 – 503 Presumpscott St, Portland, ME.**

Dear Ms. Graham:

We have completed the structural analysis for the existing monopole, located at the above referenced site. The purpose of this analysis is to determine that the existing monopole design is in conformance with the EIA/TIA-222-F standard and local building codes for the proposed antennae loads installation. Refer to the Review and Recommendations section at the end of this report for the analysis results.

**Description of Structure:**

The structure is a 178 ft Pittsburg Monopole.

Refer to Pittsburg job # 96088-117 dated December 18, 1996 for a detailed description of the structure.

**Method of analysis:**

The tower was analyzed using Semaan Engineering Solutions' software suite for communication structures. The structural analysis is performed using the SAPS finite element engine. The method is 3D, non-linear, which accounts for the second order geometric effects due to the displacements. The analysis was performed in conformance with **EIA/TIA-222-F and local building codes for 80 mph with 1/2" radial ice**. Wind is applied to the structure, accessories and antennas.

**Structure loading:**

Per the loading sheet supplied, the analysis was performed using the following loading: (Proposed loading in bold)

<b>Elev. (ft)</b>	<b>Qty.</b>	<b>Antennas and Mounts</b>	<b>Coax</b>	<b>Owner</b>
180	9	DB978H65 Mounted On a Low Profile platform	(9) 1-5/8	Sprint
170.0	9	RV65-19-00XY Mounted On a Low Profile platform	(18) 1-5/8	VoiceStream
160.0	12	DB844H90 Mounted On a Low Profile platform	(12) 1-5/8	AT&T
150.0	12	DB844H80 Mounted On a Low Profile platform	(12) 1-5/8	Verizon
135.0	3	FR90-11 flush mounted	(3) 7/8	Nextel
135.0	6	DV90-08 Mounted On (3) Standoff	(6) 7/8	Nextel
<b>115.0</b>	<b>6</b>	<b>DAPA 58010 Mounted On a Low Profile platform</b>	<b>(6) 1-5/8</b>	<b>Northcoast</b>

All new access holes shall be reinforced with welded rims that are compatible with the pole and to be sized and supplied by pole manufacturer.  
All transmission lines are assumed running inside of pole shaft with the exception of those for the existing Nextel loading. The Nextel lines were assumed to be strapped tightly to the outer face of the pole shaft.

**Results of Analysis:**

Refer to the attached Computer Summary sheets for detailed analysis results.

**Structure:**

The existing monopole is structurally capable of supporting the existing and proposed antennas. The maximum structure usage is: 91.9%.

**Foundation:**

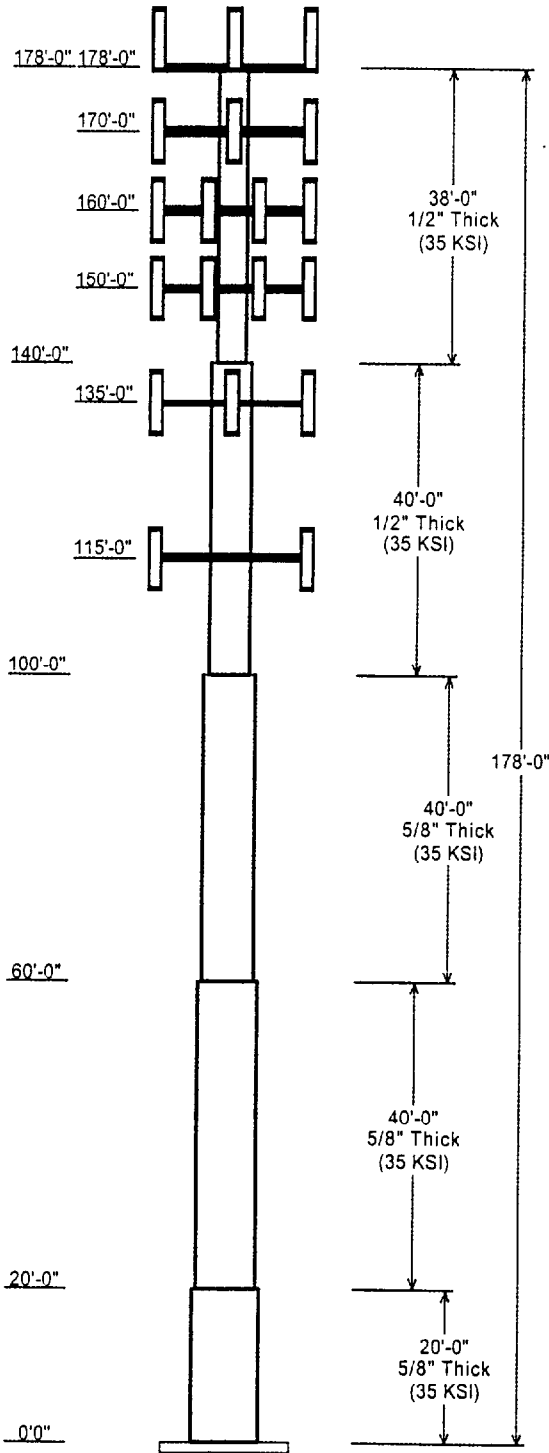
<b>Pole Reactions</b>	<b>Original Design Reactions</b>	<b>Current Analysis Reactions</b>	<b>% Of Design</b>
Moment (ft-kips)	2,542.00	3469.35	136.5
Shear (kips)	23.00	28.46	123.7

The reactions calculated from the analysis slightly exceed the ones indicated on the original structural design. However, upon reviewing the foundation documents, they were found to be adequate.

**Review and Recommendations:**

Based on the analysis results, the existing structure meets the requirements per the EIA/TIA-222-F standards for a basic wind speed of 80 mph with 1/2" radial ice.





Job Information	
Pole :	NM03XC068
Description :	
Client :	Sprint Sites USA - NJ
Location :	503 Presumpscott St, Portland, ME
Type :	Round Stepped Pole
Height (ft)	178.000
Taper:	0.0000 (in/ft)

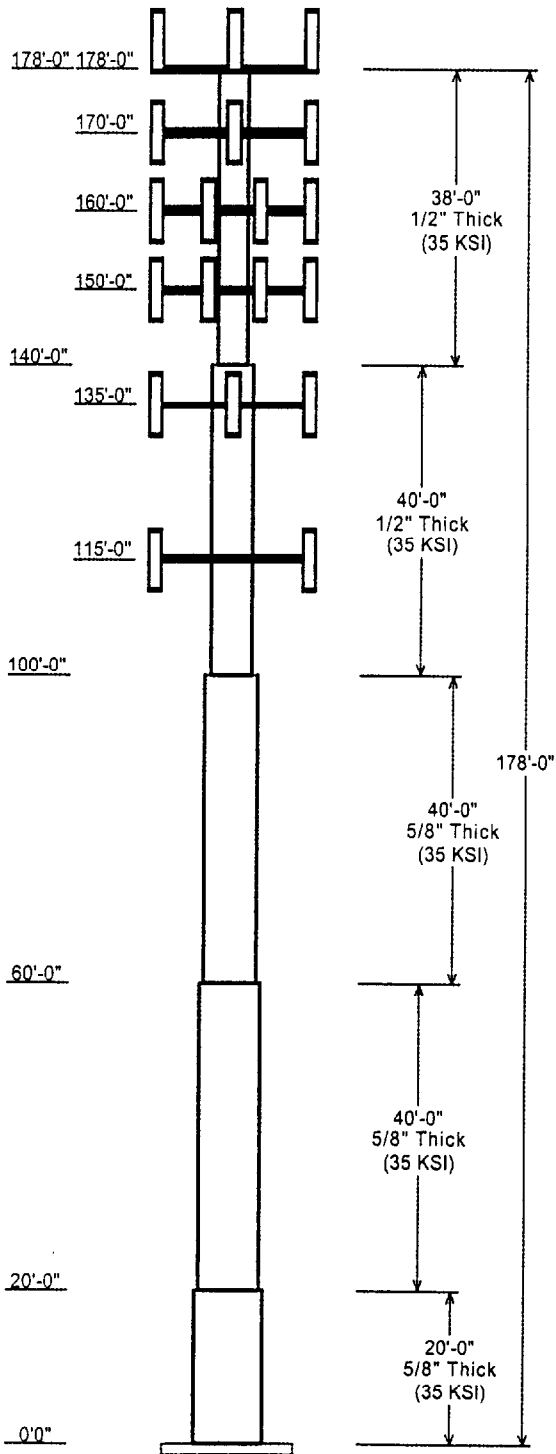
Sections Properties							
Section	Length (ft)	Diameter (in)		Thick (in)	Joint Type	Overlap Length (in)	Steel Grade (ksi)
		Across Top	Flats Bottom				
1	20.000	60.00	60.00	0.625		0.000	35
2	40.000	54.00	54.00	0.625	Butt Joint	0.000	35
3	40.000	48.00	48.00	0.625	Butt Joint	0.000	35
4	40.000	36.00	36.00	0.500	Butt Joint	0.000	35
5	38.000	24.00	24.00	0.500	Butt Joint	0.000	35

Discrete Appurtenance				
Attach Elev (ft)	Force Elev (ft)	Type	Qty	Description
178.000	178.000	Platform	1	Low Profile platform
178.000	180.000	Panel	9	DB978H65
170.000	170.000	Platform	1	Low Profile platform
170.000	170.000	Panel	9	RV65-19-00XY
160.000	160.000	Platform	1	Low Profile platform
160.000	160.000	Panel	12	DB844H90
150.000	150.000	Platform	1	Low Profile platform
150.000	150.000	Panel	12	DB844H80
135.000	135.000	Panel	3	FR90-11 flush mounted
135.000	135.000	Straight	3	Standoff
135.000	135.000	Panel	6	DV90-08
115.000	115.000	Panel	6	DAPA 58010
115.000	115.000	Platform	1	Low Profile platform

Linear Appurtenance			
Elev (ft)	From	To	Exposed To Wind
0.000	135.0	(9) 7/8" Coax	Yes

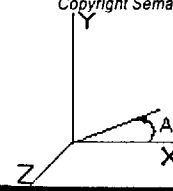
Load Cases / Deflections			
Load Case	Attach Elev (ft)	Translation (in)	Rotation (deg)
<b>No Ice</b> <u>No Ice Wind Speed = 80.00 mph w/ No Ice</u>			
	178.000	55.69	-2.697
	170.000	51.18	-2.688
	160.000	45.60	-2.635
	150.000	40.20	-2.498
	135.000	32.74	-2.290
	115.000	23.78	-1.950
<b>Ice</b> <u>Ice Wind Speed = 69.28 mph w/ Ice 0.50 in Thick</u>			
	178.000	46.93	-2.274
	170.000	43.13	-2.266
	160.000	38.42	-2.222
	150.000	33.87	-2.106
	135.000	27.58	-1.931
	115.000	20.02	-1.644

Reactions			
Load Case	Moment (Kip-ft)	Shear (Kips)	Axial (Kips)
No Ice	3,469.353	28.458	-55.297



Pole : NM03XC068; Sprint Sites USA - NJ  
 Location: 503 Presumpscott St, Portland, ME  
 Height : 178.0 (ft) Base Elev : 0.000 (ft)  
 Shape : Round  
 Base Dia : 60.00 (in) Top Dia : 24.00 (in)  
 Taper : 0.000 (in/ft)

Copyright Semaan Engineering Solutions, Inc  
 10/25/2001 3:30:25 PM  
 Page: 1



**Shaft Section Properties**

Sect Num	Length (ft)	Thick (in)	Fv (ksi)	Joint Type	Slip		Bottom				Top				Taper (in/ft)		
					Joint Len (in)	Weight (lb)	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)		Area (sqin)	Ix (in^4)
1	20.000	0.6250	35		0.00	7,934	60.00	0.000	116.51414.2	0.00	96.00	60.00	20.00	116.51414.2	0.00	96.00	0.000
2	40.000	0.6250	35	Butt Joint	0.00	14,265	54.00	20.00	104.37349.6	0.00	86.40	54.00	60.00	104.37349.6	0.00	86.40	0.000
3	40.000	0.6250	35	Butt Joint	0.00	12,661	48.00	60.00	93.0226116.8	0.00	76.80	48.00	100.00	93.0226116.8	0.00	76.80	0.000
4	40.000	0.5000	35	Butt Joint	0.00	7,590	36.00	100.00	55.768791.2	0.00	72.00	36.00	140.00	55.768791.2	0.00	72.00	0.000
5	38.000	0.5000	35	Butt Joint	0.00	4,773	24.00	140.00	36.912550.2	0.00	48.00	24.00	178.00	36.912550.2	0.00	48.00	0.000
Shaft Weight						47,223											

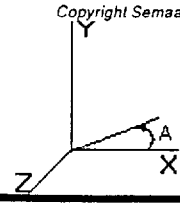
**Discrete Appurtenance Properties**

Attach Elev (ft)	Description	Qty	No Ice Weight (lb)	CaAa (sf)	CaAa Factor	Ice Weight (lb)	CaAa (sf)	CaAa Factor	Distance From Face (ft)	X Angle (deg)	Vert Ecc (ft)
178.0	Low Profile platform	1	1300.00	25.550	1.00	2100.00	27.320	1.00	0.000	0.00	0.000
178.0	DB978H65	9	7.00	2.650	0.67	23.00	3.130	0.67	0.000	0.00	2.000
170.0	Low Profile platform	1	1300.00	25.550	1.00	2100.00	27.320	1.00	0.000	0.00	0.000
170.0	RV65-19-00XY	9	23.00	6.000	0.67	52.00	6.850	0.67	0.000	0.00	0.000
160.0	Low Profile platform	1	1300.00	25.550	1.00	2100.00	27.320	1.00	0.000	0.00	0.000
160.0	DB844H90	12	10.00	3.960	1.00	35.00	4.520	1.00	0.000	0.00	0.000
150.0	Low Profile platform	1	1300.00	25.550	1.00	2100.00	27.320	1.00	0.000	0.00	0.000
150.0	DB844H80	12	10.00	2.900	1.00	37.00	3.400	1.00	0.000	0.00	0.000
135.0	FR90-11 flush mounted	3	18.00	6.300	0.67	48.00	6.800	0.67	0.000	0.00	0.000
135.0	Standoff	3	70.00	5.150	1.00	100.00	7.100	1.00	0.000	0.00	0.000
135.0	DV90-08	6	21.00	5.600	1.00	55.48	6.193	1.00	0.000	0.00	0.000
115.0	DAPA 58010	6	11.00	3.190	0.67	29.00	3.680	0.67	0.000	0.00	0.000
115.0	Low Profile platform	1	1300.00	25.550	1.00	2100.00	27.320	1.00	0.000	0.00	0.000
Totals		65	7466.00			12989.88			Number of Loadings : 13		

**Linear Appurtenance Properties**

Elev From (ft)	Elev To (ft)	Description	No Ice Weight (lb/ft)	CaAa (sf/ft)	Ice Weight (lb/ft)	CaAa (sf/ft)	Exposed To Wind
0.00	135.00	(9) 7/8" Coax	4.68	0.22	13.59	0.42	Y
Total Weight			631.80		1,834.65		

Pole : NM03XC068: Sprint Sites USA - NJ  
 Location: 503 Presumpscott St, Portland, ME  
 Height : 178.0 (ft) Base Elev : 0.000 (ft)  
 Shape : Round  
 Base Dia : 60.00 (in) Top Dia : 24.00 (in)  
 Taper : 0.000 (in/ft)

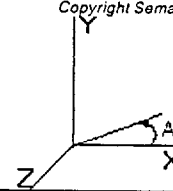


**Segment Properties** (Max Len : 5 ft)

Seq Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Fa (ksi)	Weight (lb)
0.00		0.6250	60.000	116.583	51,414.2	0.00	96.00	35	28	28	0.0
5.00		0.6250	60.000	116.583	51,414.2	0.00	96.00	35	28	28	1,983.5
10.00		0.6250	60.000	116.583	51,414.2	0.00	96.00	35	28	28	1,983.5
15.00		0.6250	60.000	116.583	51,414.2	0.00	96.00	35	28	28	1,983.5
20.00	Top - Section 1	0.6250	60.000	116.583	51,414.2	0.00	96.00	35	28	28	1,983.5
25.00	Top - Section 1	0.6250	54.000	104.802	37,349.6	0.00	86.40	35	28	28	1,783.1
30.00		0.6250	54.000	104.802	37,349.6	0.00	86.40	35	28	28	1,783.1
35.00		0.6250	54.000	104.802	37,349.6	0.00	86.40	35	28	28	1,783.1
40.00		0.6250	54.000	104.802	37,349.6	0.00	86.40	35	28	28	1,783.1
45.00		0.6250	54.000	104.802	37,349.6	0.00	86.40	35	28	28	1,783.1
50.00		0.6250	54.000	104.802	37,349.6	0.00	86.40	35	28	28	1,783.1
55.00		0.6250	54.000	104.802	37,349.6	0.00	86.40	35	28	28	1,783.1
60.00	Top - Section 2	0.6250	54.000	104.802	37,349.6	0.00	86.40	35	28	28	1,783.1
65.00	Top - Section 2	0.6250	48.000	93.021	26,116.8	0.00	76.80	35	28	28	1,582.6
70.00		0.6250	48.000	93.021	26,116.8	0.00	76.80	35	28	28	1,582.6
75.00		0.6250	48.000	93.021	26,116.8	0.00	76.80	35	28	28	1,582.6
80.00		0.6250	48.000	93.021	26,116.8	0.00	76.80	35	28	28	1,582.6
85.00		0.6250	48.000	93.021	26,116.8	0.00	76.80	35	28	28	1,582.6
90.00		0.6250	48.000	93.021	26,116.8	0.00	76.80	35	28	28	1,582.6
95.00		0.6250	48.000	93.021	26,116.8	0.00	76.80	35	28	28	1,582.6
100.00	Top - Section 3	0.6250	48.000	93.021	26,116.8	0.00	76.80	35	28	28	1,582.6
105.00	Top - Section 3	0.5000	36.000	55.763	8,791.2	0.00	72.00	35	28	28	948.8
110.00		0.5000	36.000	55.763	8,791.2	0.00	72.00	35	28	28	948.8
115.00		0.5000	36.000	55.763	8,791.2	0.00	72.00	35	28	28	948.8
120.00		0.5000	36.000	55.763	8,791.2	0.00	72.00	35	28	28	948.8
125.00		0.5000	36.000	55.763	8,791.2	0.00	72.00	35	28	28	948.8
130.00		0.5000	36.000	55.763	8,791.2	0.00	72.00	35	28	28	948.8
135.00		0.5000	36.000	55.763	8,791.2	0.00	72.00	35	28	28	948.8
140.00	Top - Section 4	0.5000	36.000	55.763	8,791.2	0.00	72.00	35	28	28	948.8
145.00	Top - Section 4	0.5000	24.000	36.914	2,550.2	0.00	48.00	35	28	28	628.0
150.00		0.5000	24.000	36.914	2,550.2	0.00	48.00	35	28	28	628.0
155.00		0.5000	24.000	36.914	2,550.2	0.00	48.00	35	28	28	628.0
160.00		0.5000	24.000	36.914	2,550.2	0.00	48.00	35	28	28	628.0
165.00		0.5000	24.000	36.914	2,550.2	0.00	48.00	35	28	28	628.0
170.00		0.5000	24.000	36.914	2,550.2	0.00	48.00	35	28	28	628.0
175.00		0.5000	24.000	36.914	2,550.2	0.00	48.00	35	28	28	628.0
178.00		0.5000	24.000	36.914	2,550.2	0.00	48.00	35	28	28	376.8
											47,223.0

Pole : NM03XC06g  
 Location : 503 Presumpscott St, Portland, ME  
 Height : 178.0 (ft)  
 Shape : Round  
 Base Dia : 60.00 (in)  
 Taper : 0.000 (in/ft)

Sprint Sites USA - NJ  
 Base Elev : 0.000 (ft)  
 Top Dia : 24.00 (in)



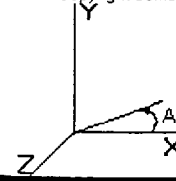
<b>Load Case:</b> No Ice	80 mph - No Ice	21 Iterations
Gust Response Factor : 1.69	Effective Wind Speed : 80.00 (mph)	
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Shaft Forces**

Seg Top Elev (ft)	Description	Kz	az (psf)	azGh (psf)	C (mph-ft)	Cf	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Wind Force Z (lb)	Weight (lb)
0.00		1.00	16.38	27.68	400.00	0.590	0.00	0.000	0.000	0.00	0.00	0.0
5.00		1.00	16.38	27.68	400.00	0.590	5.00	25.000	14.750	408.41	0.00	1,983.5
10.00		1.00	16.38	27.68	400.00	0.590	5.00	25.000	14.750	408.41	0.00	1,983.5
15.00		1.00	16.38	27.68	400.00	0.590	5.00	25.000	14.750	408.41	0.00	1,983.5
20.00	Top - Section 1	1.00	16.38	27.68	400.00	0.590	5.00	25.000	14.750	408.41	0.00	1,983.5
25.00		1.00	16.38	27.68	360.00	0.590	5.00	22.500	13.275	367.57	0.00	1,783.1
30.00		1.00	16.38	27.68	360.00	0.590	5.00	22.500	13.275	367.57	0.00	1,783.1
35.00		1.01	16.66	28.15	363.04	0.590	5.00	22.500	13.275	373.80	0.00	1,783.1
40.00		1.05	17.31	29.25	370.03	0.590	5.00	22.500	13.275	388.34	0.00	1,783.1
45.00		1.09	17.90	30.25	376.31	0.590	5.00	22.500	13.275	401.63	0.00	1,783.1
50.00		1.12	18.44	31.17	382.02	0.590	5.00	22.500	13.275	413.90	0.00	1,783.1
55.00		1.15	18.95	32.04	387.25	0.590	5.00	22.500	13.275	425.33	0.00	1,783.1
60.00	Top - Section 2	1.18	19.43	32.84	392.10	0.590	5.00	22.500	13.275	436.04	0.00	1,783.1
65.00		1.21	19.88	33.60	395.54	0.590	5.00	20.000	11.800	396.55	0.00	1,582.6
70.00		1.24	20.31	34.32	398.29	0.590	5.00	20.000	11.800	405.04	0.00	1,582.6
75.00		1.26	20.71	35.00	399.82	0.590	5.00	20.000	11.800	413.10	0.00	1,582.6
80.00		1.28	21.10	35.66	401.15	0.590	5.00	20.000	11.800	420.79	0.00	1,582.6
85.00		1.31	21.46	36.28	402.31	0.590	5.00	20.000	11.800	428.14	0.00	1,582.6
90.00		1.33	21.82	36.88	403.31	0.590	5.00	20.000	11.800	435.19	0.00	1,582.6
95.00		1.35	22.16	37.45	404.18	0.590	5.00	20.000	11.800	441.97	0.00	1,582.6
100.00	Top - Section 3	1.37	22.49	38.00	404.92	0.590	5.00	20.000	11.800	448.49	0.00	1,582.6
105.00		1.39	22.80	38.54	405.54	0.590	5.00	15.000	8.850	341.09	0.00	948.8
110.00		1.41	23.11	39.05	406.04	0.590	5.00	15.000	8.850	345.66	0.00	948.8
115.00	Appertunance(s)	1.42	23.40	39.55	406.46	0.590	5.00	15.000	8.850	350.07	0.00	948.8
120.00		1.44	23.69	40.04	406.81	0.590	5.00	15.000	8.850	354.36	0.00	948.8
125.00		1.46	23.97	40.51	407.09	0.590	5.00	15.000	8.850	358.51	0.00	948.8
130.00		1.48	24.24	40.96	407.33	0.590	5.00	15.000	8.850	362.55	0.00	948.8
135.00	Appertunance(s)	1.49	24.50	41.41	407.50	0.590	5.00	15.000	8.850	366.48	0.00	948.8
140.00	Top - Section 4	1.51	24.75	41.84	407.60	0.590	5.00	15.000	8.850	370.31	0.00	948.8
145.00		1.52	25.00	42.26	407.68	0.590	5.00	10.000	5.900	249.36	0.00	628.0
150.00	Appertunance(s)	1.54	25.25	42.67	407.74	0.590	5.00	10.000	5.900	251.79	0.00	628.0
155.00		1.55	25.49	43.07	407.79	0.590	5.00	10.000	5.900	254.16	0.00	628.0
160.00	Appertunance(s)	1.57	25.72	43.47	407.82	0.590	5.00	10.000	5.900	256.48	0.00	628.0
165.00		1.58	25.94	43.85	407.84	0.590	5.00	10.000	5.900	258.74	0.00	628.0
170.00	Appertunance(s)	1.59	26.17	44.23	407.85	0.590	5.00	10.000	5.900	260.96	0.00	628.0
175.00		1.61	26.38	44.59	407.86	0.590	5.00	10.000	5.900	263.13	0.00	628.0
178.00	Appertunance(s)	1.61	26.51	44.81	407.86	0.590	3.00	6.000	3.540	158.64	0.00	376.8
<b>Totals:</b>							178.00			12,999.42	0.00	47,223.0

Pole : NM03XC068 Sprint Sites USA - NJ  
 Location: 503 Presumpscott St, Portland, ME  
 Height : 178.0 (ft) Base Elev : 0.000 (ft)  
 Shape : Round Top Dia : 24.00 (in)  
 Base Dia : 60.00 (in)  
 Taper : 0.000 (in/ft)

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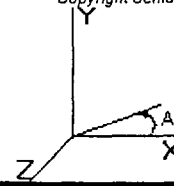
**Load Case:** No Ice      80 mph - No Ice      21 Iterations  
**Gust Response Factor :** 1.69      **Effective Wind Speed :** 80.00 (mph)  
**Dead Load Factor :** 1.00  
**Wind Load Factor :** 1.00

**Discrete Appurtenance Forces**

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Total CaAa (sf)	CaAa Factor	Horiz Ecc (ft)	Vert Ecc (ft)	X Angle (deg)	Wind Force X (lb)	Wind Force Z (lb)	Mom X (lb-ft)	Mom Y (lb-ft)	Mom Z (lb-ft)	Weight (lb)
115.00	DAPA 58010	6	23.40	39.55	12.766	0.667	0.000	0.0	0.0	504.99	0.00	0.00	0.00	0.00	66.0
115.00	Low Profile platform	1	23.40	39.55	25.550	1.000	0.000	0.0	0.0	1010.67	0.00	0.00	0.00	0.00	1300.0
135.00	FR90-11 flush mounted	3	24.50	41.41	12.606	0.667	0.000	0.0	0.0	522.04	0.00	0.00	0.00	0.00	54.0
135.00	Standoff	3	24.50	41.41	15.450	1.000	0.000	0.0	0.0	639.79	0.00	0.00	0.00	0.00	210.0
135.00	DV90-08	6	24.50	41.41	33.600	1.000	0.000	0.0	0.0	1391.40	0.00	0.00	0.00	0.00	126.0
150.00	Low Profile platform	1	25.25	42.67	25.550	1.000	0.000	0.0	0.0	1090.37	0.00	0.00	0.00	0.00	1300.0
150.00	DB844H80	12	25.25	42.67	34.800	1.000	0.000	0.0	0.0	1485.13	0.00	0.00	0.00	0.00	120.0
160.00	Low Profile platform	1	25.72	43.47	25.550	1.000	0.000	0.0	0.0	1110.67	0.00	0.00	0.00	0.00	1300.0
160.00	DB844H90	12	25.72	43.47	47.520	1.000	0.000	0.0	0.0	2065.72	0.00	0.00	0.00	0.00	120.0
170.00	Low Profile platform	1	26.17	44.23	25.550	1.000	0.000	0.0	0.0	1130.07	0.00	0.00	0.00	0.00	1300.0
170.00	RV65-19-00XY	9	26.17	44.23	36.018	0.667	0.000	0.0	0.0	1593.08	0.00	0.00	0.00	0.00	207.0
178.00	Low Profile platform	1	26.51	44.81	25.550	1.000	0.000	0.0	0.0	1145.02	0.00	0.00	0.00	0.00	1300.0
178.00	DB978H65	9	26.60	44.95	15.908	0.667	0.000	2.0	0.0	715.19	0.00	0.00	0.00	1430.39	63.0
										14,404.1	0.00				7,466.0

Pole : NM03XC068 Sprint Sites USA - NJ  
 Location: 503 Presumpscott St, Portland, ME  
 Height: 178.0 (ft) Base Elev : 0.000 (ft)  
 Shape : Round  
 Base Dia : 60.00 (in) Top Dia : 24.00 (in)  
 Taper : 0.000 (in/ft)

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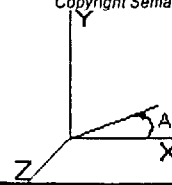
**Load Case:** No Ice      80 mph - No Ice      21 Iterations  
 Gust Response Factor : 1.69      Effective Wind Speed : 80.00 (mph)  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Linear Appurtenance Forces**

Seg Elev (ft)	Description	Exposed To Wind	Applied Length (ft)	Weight (lb/ft)	CaAa (sf/ft)	qz (psf)	Wind Force X (lb)	Wind Force Z (lb)	Weight (lb)
5.00	(9) 7/8" Coax	Yes	5.00	4.68	0.22	16.384	30.46	0.00	23.40
10.00	(9) 7/8" Coax	Yes	5.00	4.68	0.22	16.384	30.46	0.00	23.40
15.00	(9) 7/8" Coax	Yes	5.00	4.68	0.22	16.384	30.46	0.00	23.40
20.00	(9) 7/8" Coax	Yes	5.00	4.68	0.22	16.384	30.46	0.00	23.40
25.00	(9) 7/8" Coax	Yes	5.00	4.68	0.22	16.384	30.46	0.00	23.40
30.00	(9) 7/8" Coax	Yes	5.00	4.68	0.22	16.384	30.46	0.00	23.40
35.00	(9) 7/8" Coax	Yes	5.00	4.68	0.22	16.662	30.97	0.00	23.40
40.00	(9) 7/8" Coax	Yes	5.00	4.68	0.22	17.310	32.18	0.00	23.40
45.00	(9) 7/8" Coax	Yes	5.00	4.68	0.22	17.902	33.28	0.00	23.40
50.00	(9) 7/8" Coax	Yes	5.00	4.68	0.22	18.449	34.30	0.00	23.40
55.00	(9) 7/8" Coax	Yes	5.00	4.68	0.22	18.959	35.24	0.00	23.40
60.00	(9) 7/8" Coax	Yes	5.00	4.68	0.22	19.436	36.13	0.00	23.40
65.00	(9) 7/8" Coax	Yes	5.00	4.68	0.22	19.885	36.97	0.00	23.40
70.00	(9) 7/8" Coax	Yes	5.00	4.68	0.22	20.311	37.76	0.00	23.40
75.00	(9) 7/8" Coax	Yes	5.00	4.68	0.22	20.715	38.51	0.00	23.40
80.00	(9) 7/8" Coax	Yes	5.00	4.68	0.22	21.101	39.23	0.00	23.40
85.00	(9) 7/8" Coax	Yes	5.00	4.68	0.22	21.469	39.91	0.00	23.40
90.00	(9) 7/8" Coax	Yes	5.00	4.68	0.22	21.823	40.57	0.00	23.40
95.00	(9) 7/8" Coax	Yes	5.00	4.68	0.22	22.163	41.20	0.00	23.40
100.0	(9) 7/8" Coax	Yes	5.00	4.68	0.22	22.490	41.81	0.00	23.40
105.0	(9) 7/8" Coax	Yes	5.00	4.68	0.22	22.806	42.40	0.00	23.40
110.0	(9) 7/8" Coax	Yes	5.00	4.68	0.22	23.111	42.96	0.00	23.40
115.0	(9) 7/8" Coax	Yes	5.00	4.68	0.22	23.406	43.51	0.00	23.40
120.0	(9) 7/8" Coax	Yes	5.00	4.68	0.22	23.692	44.04	0.00	23.40
125.0	(9) 7/8" Coax	Yes	5.00	4.68	0.22	23.970	44.56	0.00	23.40
130.0	(9) 7/8" Coax	Yes	5.00	4.68	0.22	24.241	45.06	0.00	23.40
135.0	(9) 7/8" Coax	Yes	5.00	4.68	0.22	24.503	45.55	0.00	23.40
<b>Totals:</b>							<b>1,008.89</b>	<b>0.00</b>	<b>631.8</b>

Pole : NM03XC06&  
 Location: 503 Presumpscott St, Portland, ME  
 Height : 178.0 (ft)  
 Shape : Round  
 Base Dia : 60.00 (in)  
 Taper : 0.000 (in/ft)

Sprint Sites USA - NJ  
 Base Elev : 0.000 (ft)  
 Top Dia : 24.00 (in)



<b>Load Case:</b> No Ice	80 mph - No Ice	21 Iterations
Gust Response Factor : 1.69	Effective Wind Speed : 80.00 (mph)	
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Applied Forces Summary**

Seg Elev (ft)	X Coord (ft)	Z Coord (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Lateral FZ (lb)	Moment MX (lb-ft)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	0.00	0.00	438.87	2,006.92	0.00	0.00	0.00	0.00
10.00	0.00	0.00	438.87	2,006.92	0.00	0.00	0.00	0.00
15.00	0.00	0.00	438.87	2,006.92	0.00	0.00	0.00	0.00
20.00	0.00	0.00	438.87	2,006.92	0.00	0.00	0.00	0.00
25.00	0.00	0.00	398.03	1,806.48	0.00	0.00	0.00	0.00
30.00	0.00	0.00	398.03	1,806.48	0.00	0.00	0.00	0.00
35.00	0.00	0.00	404.78	1,806.48	0.00	0.00	0.00	0.00
40.00	0.00	0.00	420.52	1,806.48	0.00	0.00	0.00	0.00
45.00	0.00	0.00	434.91	1,806.48	0.00	0.00	0.00	0.00
50.00	0.00	0.00	448.20	1,806.48	0.00	0.00	0.00	0.00
55.00	0.00	0.00	460.57	1,806.48	0.00	0.00	0.00	0.00
60.00	0.00	0.00	472.17	1,806.48	0.00	0.00	0.00	0.00
65.00	0.00	0.00	433.52	1,606.04	0.00	0.00	0.00	0.00
70.00	0.00	0.00	442.80	1,606.04	0.00	0.00	0.00	0.00
75.00	0.00	0.00	451.61	1,606.04	0.00	0.00	0.00	0.00
80.00	0.00	0.00	460.02	1,606.04	0.00	0.00	0.00	0.00
85.00	0.00	0.00	468.06	1,606.04	0.00	0.00	0.00	0.00
90.00	0.00	0.00	475.76	1,606.04	0.00	0.00	0.00	0.00
95.00	0.00	0.00	483.17	1,606.04	0.00	0.00	0.00	0.00
100.00	0.00	0.00	490.30	1,606.04	0.00	0.00	0.00	0.00
105.00	0.00	0.00	383.49	972.15	0.00	0.00	0.00	0.00
110.00	0.00	0.00	388.62	972.15	0.00	0.00	0.00	0.00
115.00	0.00	0.00	1,909.24	2,338.15	0.00	0.00	0.00	0.00
120.00	0.00	0.00	398.40	972.15	0.00	0.00	0.00	0.00
125.00	0.00	0.00	403.07	972.15	0.00	0.00	0.00	0.00
130.00	0.00	0.00	407.62	972.15	0.00	0.00	0.00	0.00
135.00	0.00	0.00	2,965.27	1,362.15	0.00	0.00	0.00	0.00
140.00	0.00	0.00	370.31	948.75	0.00	0.00	0.00	0.00
145.00	0.00	0.00	249.36	628.05	0.00	0.00	0.00	0.00
150.00	0.00	0.00	2,827.30	2,048.05	0.00	0.00	0.00	0.00
155.00	0.00	0.00	254.16	628.05	0.00	0.00	0.00	0.00
160.00	0.00	0.00	3,432.86	2,048.05	0.00	0.00	0.00	0.00
165.00	0.00	0.00	258.74	628.05	0.00	0.00	0.00	0.00
170.00	0.00	0.00	2,984.10	2,135.05	0.00	0.00	0.00	0.00
175.00	0.00	0.00	263.13	628.05	0.00	0.00	0.00	0.00
178.00	0.00	0.00	2,018.86	1,739.83	0.00	0.00	0.00	1,430.39
<b>Totals:</b>			<b>28,412.45</b>	<b>55,320.83</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1,430.39</b>

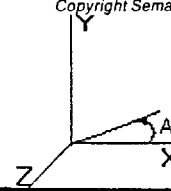


Pole : NM03XC068;  
 Location : 503 Presumpscott St, Portland, ME  
 Height : 178.0 (ft)  
 Shape : Round  
 Base Dia : 60.00 (in)  
 Taper : 0.000 (in/ft)

Sprint Sites USA - NJ  
 Base Elev : 0.000 (ft)  
 Top Dia : 24.00 (in)

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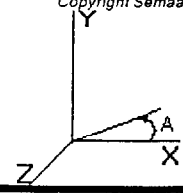
<b>Load Case:</b> No Ice	80 mph - No Ice	21 Iterations
Gust Response Factor : 1.69	Effective Wind Speed : 80.00 (mph)	
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Calculated Forces and Deflections**

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	28.458	55.297	0.000	0.000	0.000	3,469.353	0.000	0.000	0.000	0.000
5.00	28.103	53.245	0.000	0.000	0.000	3,327.065	-0.051	0.000	0.051	-0.094
10.00	27.738	51.197	0.000	0.000	0.000	3,186.551	-0.198	0.000	0.198	-0.184
15.00	27.364	49.151	0.000	0.000	0.000	3,047.862	-0.437	0.000	0.437	-0.270
20.00	26.980	47.109	0.000	0.000	0.000	2,911.046	-0.764	0.000	0.764	-0.353
25.00	26.642	45.263	0.000	0.000	0.000	2,776.147	-1.176	0.000	1.176	-0.431
30.00	26.305	43.414	0.000	0.000	0.000	2,642.940	-1.684	0.000	1.684	-0.535
35.00	25.951	41.568	0.000	0.000	0.000	2,511.419	-2.297	0.000	2.297	-0.633
40.00	25.572	39.726	0.000	0.000	0.000	2,381.666	-3.009	0.000	3.009	-0.726
45.00	25.170	37.888	0.000	0.000	0.000	2,253.807	-3.817	0.000	3.817	-0.814
50.00	24.745	36.054	0.000	0.000	0.000	2,127.961	-4.715	0.000	4.715	-0.898
55.00	24.301	34.223	0.000	0.000	0.000	2,004.236	-5.698	0.000	5.698	-0.976
60.00	23.837	32.395	0.000	0.000	0.000	1,882.733	-6.760	0.000	6.760	-1.050
65.00	23.417	30.764	0.000	0.000	0.000	1,763.547	-7.898	0.000	7.898	-1.120
70.00	22.987	29.132	0.000	0.000	0.000	1,646.462	-9.121	0.000	9.121	-1.213
75.00	22.541	27.503	0.000	0.000	0.000	1,531.526	-10.438	0.000	10.438	-1.299
80.00	22.078	25.879	0.000	0.000	0.000	1,418.823	-11.842	0.000	11.842	-1.380
85.00	21.601	24.258	0.000	0.000	0.000	1,308.433	-13.327	0.000	13.327	-1.454
90.00	21.109	22.641	0.000	0.000	0.000	1,200.430	-14.886	0.000	14.886	-1.522
95.00	20.605	21.027	0.000	0.000	0.000	1,094.884	-16.514	0.000	16.514	-1.585
100.00	20.088	19.416	0.000	0.000	0.000	991.862	-18.205	0.000	18.205	-1.642
105.00	19.707	18.423	0.000	0.000	0.000	891.424	-19.952	0.000	19.952	-1.693
110.00	19.327	17.420	0.000	0.000	0.000	792.892	-21.799	0.000	21.799	-1.829
115.00	17.372	15.112	0.000	0.000	0.000	696.256	-23.779	0.000	23.779	-1.950
120.00	16.964	14.125	0.000	0.000	0.000	609.398	-25.879	0.000	25.879	-2.055
125.00	16.545	13.144	0.000	0.000	0.000	524.579	-28.081	0.000	28.081	-2.147
130.00	16.116	12.168	0.000	0.000	0.000	441.854	-30.372	0.000	30.372	-2.225
135.00	13.110	10.910	0.000	0.000	0.000	361.275	-32.738	0.000	32.738	-2.290
140.00	12.710	9.967	0.000	0.000	0.000	295.724	-35.165	0.000	35.165	-2.343
145.00	12.448	9.332	0.000	0.000	0.000	232.172	-37.643	0.000	37.643	-2.386
150.00	9.549	7.391	0.000	0.000	0.000	169.931	-40.204	0.000	40.204	-2.498
155.00	9.275	6.764	0.000	0.000	0.000	122.188	-42.865	0.000	42.865	-2.580
160.00	5.756	4.870	0.000	0.000	0.000	75.813	-45.597	0.000	45.597	-2.635
165.00	5.471	4.252	0.000	0.000	0.000	47.032	-48.376	0.000	48.376	-2.669
170.00	2.391	2.258	0.000	0.000	0.000	19.678	-51.181	0.000	51.181	-2.688
175.00	2.098	1.643	0.000	0.000	0.000	7.726	-54.000	0.000	54.000	-2.695
178.00	2.019	0.000	0.000	0.000	0.000	1.430	-55.694	0.000	55.694	-2.697

Pole : NM03XC06&  
 Location: 503 Presumpscott St, Portland, ME  
 Height : 178.0 (ft)  
 Shape : Round  
 Base Dia : 60.00 (in)  
 Taper : 0.000 (in/ft)

Sprint Sites USA - NJ  
 Base Elev : 0.000 (ft)  
 Top Dia : 24.00 (in)



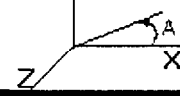
**Load Case:** No Ice      80 mph - No Ice      21 Iterations  
 Gust Response Factor : 1.69      Effective Wind Speed : 80.00 (mph)  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Calculated Stresses**

Seg Elev (ft)	Applied Stresses							Combined (ksi)	Allowable Stress (Fb) (ksi)	Allowable Stress (Fa) (ksi)	Stress Ratio
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)					
0.00	0.474	0.488	0.000	0.000	0.000	24.292	24.781	28.0	28.0	0.885	
5.00	0.457	0.482	0.000	0.000	0.000	23.296	23.767	28.0	28.0	0.849	
10.00	0.439	0.476	0.000	0.000	0.000	22.312	22.766	28.0	28.0	0.813	
15.00	0.422	0.470	0.000	0.000	0.000	21.341	21.778	28.0	28.0	0.778	
20.00	0.404	0.463	0.000	0.000	0.000	20.383	20.803	28.0	28.0	0.743	
20.00	0.450	0.515	0.000	0.000	0.000	25.253	25.718	28.0	28.0	0.919	
25.00	0.432	0.509	0.000	0.000	0.000	24.082	24.530	28.0	28.0	0.876	
30.00	0.414	0.502	0.000	0.000	0.000	22.927	23.357	28.0	28.0	0.834	
35.00	0.397	0.496	0.000	0.000	0.000	21.786	22.199	28.0	28.0	0.793	
40.00	0.379	0.488	0.000	0.000	0.000	20.660	21.056	28.0	28.0	0.752	
45.00	0.362	0.481	0.000	0.000	0.000	19.551	19.930	28.0	28.0	0.712	
50.00	0.344	0.473	0.000	0.000	0.000	18.460	18.821	28.0	28.0	0.672	
55.00	0.327	0.464	0.000	0.000	0.000	17.386	17.731	28.0	28.0	0.633	
60.00	0.309	0.455	0.000	0.000	0.000	16.332	16.660	28.0	28.0	0.595	
60.00	0.348	0.513	0.000	0.000	0.000	20.762	21.129	28.0	28.0	0.755	
65.00	0.331	0.504	0.000	0.000	0.000	19.447	19.797	28.0	28.0	0.707	
70.00	0.313	0.495	0.000	0.000	0.000	18.156	18.489	28.0	28.0	0.660	
75.00	0.296	0.485	0.000	0.000	0.000	16.889	17.205	28.0	28.0	0.615	
80.00	0.278	0.475	0.000	0.000	0.000	15.646	15.945	28.0	28.0	0.570	
85.00	0.261	0.465	0.000	0.000	0.000	14.429	14.711	28.0	28.0	0.525	
90.00	0.243	0.454	0.000	0.000	0.000	13.238	13.504	28.0	28.0	0.482	
95.00	0.226	0.443	0.000	0.000	0.000	12.074	12.324	28.0	28.0	0.440	
100.00	0.209	0.432	0.000	0.000	0.000	10.938	11.171	28.0	28.0	0.399	
100.00	0.348	0.721	0.000	0.000	0.000	24.370	24.750	28.0	28.0	0.884	
105.00	0.330	0.707	0.000	0.000	0.000	21.902	22.266	28.0	28.0	0.795	
110.00	0.312	0.694	0.000	0.000	0.000	19.481	19.830	28.0	28.0	0.708	
115.00	0.271	0.623	0.000	0.000	0.000	17.107	17.412	28.0	28.0	0.622	
120.00	0.253	0.609	0.000	0.000	0.000	14.973	15.263	28.0	28.0	0.545	
125.00	0.236	0.594	0.000	0.000	0.000	12.889	13.165	28.0	28.0	0.470	
130.00	0.218	0.578	0.000	0.000	0.000	10.856	11.120	28.0	28.0	0.397	
135.00	0.196	0.470	0.000	0.000	0.000	8.877	9.109	28.0	28.0	0.325	
140.00	0.179	0.456	0.000	0.000	0.000	7.266	7.486	28.0	28.0	0.267	
140.00	0.270	0.689	0.000	0.000	0.000	16.699	17.011	28.0	28.0	0.608	
145.00	0.253	0.675	0.000	0.000	0.000	13.110	13.414	28.0	28.0	0.479	
150.00	0.200	0.518	0.000	0.000	0.000	9.596	9.837	28.0	28.0	0.351	
155.00	0.183	0.503	0.000	0.000	0.000	6.900	7.136	28.0	28.0	0.255	
160.00	0.132	0.312	0.000	0.000	0.000	4.281	4.446	28.0	28.0	0.159	
165.00	0.115	0.297	0.000	0.000	0.000	2.656	2.818	28.0	28.0	0.101	
170.00	0.061	0.130	0.000	0.000	0.000	1.111	1.194	28.0	28.0	0.043	
175.00	0.045	0.114	0.000	0.000	0.000	0.436	0.520	28.0	28.0	0.019	
178.00	0.000	0.109	0.000	0.000	0.000	0.081	0.206	28.0	28.0	0.007	

Pole : NM03XC068 Sprint Sites USA - NJ  
 Location: 503 Presumpscott St, Portland, ME  
 Height : 178.0 (ft) Base Elev : 0.000 (ft)  
 Shape : Round  
 Base Dia : 60.00 (in) Top Dia : 24.00 (in)  
 Taper : 0.000 (in/ft)

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<b>Load Case:</b> Ice	80 mph - With Ice - Ice Thickness = 0.5 in	21 Iterations
Gust Response Factor : 1.69	Effective Wind Speed : 69.28 (mph)	
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

**Shaft Forces**

Seg Top Elev (ft)	Description	Kz	az (psf)	azGh (psf)	C (mph-ft)	Cf	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Wind Force Z (lb)	Weight (lb)
0.00		1.00	12.28	20.76	346.40	0.590	0.00	0.000	0.000	0.00	0.00	0.0
5.00		1.00	12.28	20.76	346.40	0.590	5.00	25.417	14.996	311.40	0.00	2,168.2
10.00		1.00	12.28	20.76	346.40	0.590	5.00	25.417	14.996	311.40	0.00	2,168.2
15.00		1.00	12.28	20.76	346.40	0.590	5.00	25.417	14.996	311.40	0.00	2,168.2
20.00	Top - Section 1	1.00	12.28	20.76	346.40	0.590	5.00	25.417	14.996	311.40	0.00	2,168.2
25.00		1.00	12.28	20.76	311.76	0.590	5.00	22.917	13.521	280.77	0.00	1,949.5
30.00		1.00	12.28	20.76	311.76	0.590	5.00	22.917	13.521	280.77	0.00	1,949.5
35.00		1.01	12.49	21.11	314.39	0.590	5.00	22.917	13.521	285.53	0.00	1,949.5
40.00		1.05	12.98	21.93	320.45	0.590	5.00	22.917	13.521	296.63	0.00	1,949.5
45.00		1.09	13.42	22.69	325.88	0.590	5.00	22.917	13.521	306.78	0.00	1,949.5
50.00		1.12	13.83	23.38	330.83	0.590	5.00	22.917	13.521	316.16	0.00	1,949.5
55.00		1.15	14.21	24.02	335.36	0.590	5.00	22.917	13.521	324.89	0.00	1,949.5
60.00	Top - Section 2	1.18	14.57	24.63	339.56	0.590	5.00	22.917	13.521	333.06	0.00	1,949.5
65.00		1.21	14.91	25.20	305.30	0.590	5.00	20.417	12.046	303.59	0.00	1,730.7
70.00		1.24	15.23	25.74	308.55	0.590	5.00	20.417	12.046	310.09	0.00	1,730.7
75.00		1.26	15.53	26.25	311.60	0.590	5.00	20.417	12.046	316.26	0.00	1,730.7
80.00		1.28	15.82	26.74	314.49	0.590	5.00	20.417	12.046	322.15	0.00	1,730.7
85.00		1.31	16.10	27.21	317.23	0.590	5.00	20.417	12.046	327.78	0.00	1,730.7
90.00		1.33	16.36	27.65	319.83	0.590	5.00	20.417	12.046	333.18	0.00	1,730.7
95.00		1.35	16.62	28.09	322.31	0.590	5.00	20.417	12.046	338.36	0.00	1,730.7
100.00	Top - Section 3	1.37	16.86	28.50	324.68	0.590	5.00	20.417	12.046	343.36	0.00	1,730.7
105.00		1.39	17.10	28.90	245.21	0.590	5.00	15.417	9.096	262.91	0.00	1,060.2
110.00		1.41	17.33	29.29	246.85	0.590	5.00	15.417	9.096	266.43	0.00	1,060.2
115.00	Appertunance(s)	1.42	17.55	29.66	248.42	0.590	5.00	15.417	9.096	269.83	0.00	1,060.2
120.00		1.44	17.76	30.02	249.93	0.590	5.00	15.417	9.096	273.13	0.00	1,060.2
125.00		1.46	17.97	30.38	251.40	0.590	5.00	15.417	9.096	276.34	0.00	1,060.2
130.00		1.48	18.17	30.72	252.81	0.590	5.00	15.417	9.096	279.45	0.00	1,060.2
135.00	Appertunance(s)	1.49	18.37	31.05	254.17	0.590	5.00	15.417	9.096	282.48	0.00	1,060.2
140.00	Top - Section 4	1.51	18.56	31.38	255.50	0.590	5.00	15.417	9.096	285.43	0.00	1,060.2
145.00		1.52	18.75	31.69	171.19	0.590	5.00	10.417	6.146	194.80	0.00	702.8
150.00	Appertunance(s)	1.54	18.93	32.00	172.02	0.590	5.00	10.417	6.146	196.70	0.00	702.8
155.00		1.55	19.11	32.30	172.83	0.590	5.00	10.417	6.146	198.55	0.00	702.8
160.00	Appertunance(s)	1.57	19.29	32.60	173.61	0.590	5.00	10.417	6.146	200.36	0.00	702.8
165.00		1.58	19.46	32.88	174.38	0.590	5.00	10.417	6.146	202.13	0.00	702.8
170.00	Appertunance(s)	1.59	19.62	33.17	175.12	0.590	5.00	10.417	6.146	203.86	0.00	702.8
175.00		1.61	19.79	33.44	175.85	0.590	5.00	10.417	6.146	205.56	0.00	702.8
178.00	Appertunance(s)	1.61	19.88	33.60	176.28	0.590	3.00	6.250	3.687	123.93	0.00	421.7
<b>Totals:</b>							178.00			9,986.84	0.00	51,937.1

Pole : NM03XC068 Sprint Sites USA - NJ  
 Location: 503 Presumpscott St, Portland, ME  
 Height: 178.0 (ft) Base Elev : 0.000 (ft)  
 Shape : Round  
 Base Dia : 60.00 (in) Top Dia : 24.00 (in)  
 Taper : 0.000 (in/ft)

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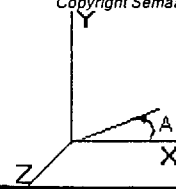
**Load Case:** Ice 80 mph - With Ice - Ice Thickness = 0.5 in 21 Iterations  
 Gust Response Factor : 1.69 Effective Wind Speed : 69.28 (mph)  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Discrete Appurtenance Forces**

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Total CaAa (sf)	CaAa Factor	Horiz Ecc (ft)	Vert Ecc (ft)	X Angle (deg)	Wind Force X (lb)	Wind Force Z (lb)	Mom X (lb-ft)	Mom Y (lb-ft)	Mom Z (lb-ft)	Weight (lb)
115.00	DAPA 58010	6	17.55	29.66	14.727	0.667	0.000	0.0	0.0	436.89	0.00	0.00	0.00	0.00	174.0
115.00	Low Profile platform	1	17.55	29.66	27.320	1.000	0.000	0.0	0.0	810.46	0.00	0.00	0.00	0.00	2100.0
135.00	FR90-11 flush mounted	3	18.37	31.05	13.607	0.667	0.000	0.0	0.0	422.58	0.00	0.00	0.00	0.00	144.0
135.00	Standoff	3	18.37	31.05	21.300	1.000	0.000	0.0	0.0	661.50	0.00	0.00	0.00	0.00	300.0
135.00	DV90-08	6	18.37	31.05	37.158	1.000	0.000	0.0	0.0	1153.99	0.00	0.00	0.00	0.00	332.9
150.00	Low Profile platform	1	18.93	32.00	27.320	1.000	0.000	0.0	0.0	874.38	0.00	0.00	0.00	0.00	2100.0
150.00	DB844H80	12	18.93	32.00	40.800	1.000	0.000	0.0	0.0	1305.82	0.00	0.00	0.00	0.00	444.0
160.00	Low Profile platform	1	19.29	32.60	27.320	1.000	0.000	0.0	0.0	890.65	0.00	0.00	0.00	0.00	2100.0
160.00	DB844H90	12	19.29	32.60	54.240	1.000	0.000	0.0	0.0	1768.27	0.00	0.00	0.00	0.00	420.0
170.00	Low Profile platform	1	19.62	33.17	27.320	1.000	0.000	0.0	0.0	906.22	0.00	0.00	0.00	0.00	2100.0
170.00	RV65-19-00XY	9	19.62	33.17	41.121	0.667	0.000	0.0	0.0	1363.99	0.00	0.00	0.00	0.00	468.0
178.00	Low Profile platform	1	19.88	33.60	27.320	1.000	0.000	0.0	0.0	918.20	0.00	0.00	0.00	0.00	2100.0
178.00	DB978H65	9	19.95	33.71	18.789	0.667	0.000	2.0	0.0	633.52	0.00	0.00	0.00	1267.03	207.0
										12,146.4	0.00				12,989.9

Pole : NM03XC068  
 Location: 503 Presumpscott St, Portland, ME  
 Height : 178.0 (ft)  
 Shape : Round  
 Base Dia : 60.00 (in)  
 Taper : 0.000 (in/ft)

Sprint Sites USA - NJ  
 Base Elev : 0.000 (ft)  
 Top Dia : 24.00 (in)



**Load Case:** Ice                      80 mph - With Ice - Ice Thickness = 0.5 in                      21 Iterations

Gust Response Factor : 1.69                      Effective Wind Speed : 69.28 (mph)

Dead Load Factor : 1.00

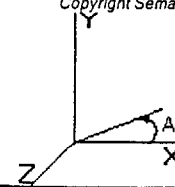
Wind Load Factor : 1.00

**Linear Appurtenance Forces**

Seg Elev (ft)	Description	Exposed To Wind	Applied Length (ft)	Weight (lb/ft)	CaAa (sf/ft)	qz (psf)	Wind Force X (lb)	Wind Force Z (lb)	Weight (lb)
5.00	(9) 7/8" Coax	Yes	5.00	13.59	0.42	12.287	43.61	0.00	67.95
10.00	(9) 7/8" Coax	Yes	5.00	13.59	0.42	12.287	43.61	0.00	67.95
15.00	(9) 7/8" Coax	Yes	5.00	13.59	0.42	12.287	43.61	0.00	67.95
20.00	(9) 7/8" Coax	Yes	5.00	13.59	0.42	12.287	43.61	0.00	67.95
25.00	(9) 7/8" Coax	Yes	5.00	13.59	0.42	12.287	43.61	0.00	67.95
30.00	(9) 7/8" Coax	Yes	5.00	13.59	0.42	12.287	43.61	0.00	67.95
35.00	(9) 7/8" Coax	Yes	5.00	13.59	0.42	12.496	44.35	0.00	67.95
40.00	(9) 7/8" Coax	Yes	5.00	13.59	0.42	12.982	46.07	0.00	67.95
45.00	(9) 7/8" Coax	Yes	5.00	13.59	0.42	13.426	47.65	0.00	67.95
50.00	(9) 7/8" Coax	Yes	5.00	13.59	0.42	13.836	49.10	0.00	67.95
55.00	(9) 7/8" Coax	Yes	5.00	13.59	0.42	14.218	50.46	0.00	67.95
60.00	(9) 7/8" Coax	Yes	5.00	13.59	0.42	14.576	51.73	0.00	67.95
65.00	(9) 7/8" Coax	Yes	5.00	13.59	0.42	14.913	52.93	0.00	67.95
70.00	(9) 7/8" Coax	Yes	5.00	13.59	0.42	15.232	54.06	0.00	67.95
75.00	(9) 7/8" Coax	Yes	5.00	13.59	0.42	15.536	55.14	0.00	67.95
80.00	(9) 7/8" Coax	Yes	5.00	13.59	0.42	15.825	56.16	0.00	67.95
85.00	(9) 7/8" Coax	Yes	5.00	13.59	0.42	16.101	57.14	0.00	67.95
90.00	(9) 7/8" Coax	Yes	5.00	13.59	0.42	16.366	58.08	0.00	67.95
95.00	(9) 7/8" Coax	Yes	5.00	13.59	0.42	16.621	58.99	0.00	67.95
100.0	(9) 7/8" Coax	Yes	5.00	13.59	0.42	16.866	59.86	0.00	67.95
105.0	(9) 7/8" Coax	Yes	5.00	13.59	0.42	17.103	60.70	0.00	67.95
110.0	(9) 7/8" Coax	Yes	5.00	13.59	0.42	17.332	61.51	0.00	67.95
115.0	(9) 7/8" Coax	Yes	5.00	13.59	0.42	17.554	62.30	0.00	67.95
120.0	(9) 7/8" Coax	Yes	5.00	13.59	0.42	17.768	63.06	0.00	67.95
125.0	(9) 7/8" Coax	Yes	5.00	13.59	0.42	17.977	63.80	0.00	67.95
130.0	(9) 7/8" Coax	Yes	5.00	13.59	0.42	18.179	64.52	0.00	67.95
135.0	(9) 7/8" Coax	Yes	5.00	13.59	0.42	18.376	65.22	0.00	67.95
<b>Totals:</b>							<b>1,444.47</b>	<b>0.00</b>	<b>1,834.6</b>

Pole : NM03XC068; Sprint Sites USA - NJ  
 Location: 503 Presumpscott St, Portland, ME  
 Height : 178.0 (ft) Base Elev : 0.000 (ft)  
 Shape : Round Top Dia : 24.00 (in)  
 Base Dia : 60.00 (in) Taper : 0.000 (in/ft)

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**Load Case:** Ice 80 mph - With Ice - Ice Thickness = 0.5 in 21 Iterations  
 Gust Response Factor : 1.69 Effective Wind Speed : 69.28 (mph)  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Applied Forces Summary**

Seg Elev (ft)	X Coord (ft)	Z Coord (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Lateral FZ (lb)	Moment MX (lb-ft)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5.00	0.00	0.00	355.00	2,236.17	0.00	0.00	0.00	0.00
10.00	0.00	0.00	355.00	2,236.17	0.00	0.00	0.00	0.00
15.00	0.00	0.00	355.00	2,236.17	0.00	0.00	0.00	0.00
20.00	0.00	0.00	355.00	2,236.17	0.00	0.00	0.00	0.00
25.00	0.00	0.00	324.37	2,017.41	0.00	0.00	0.00	0.00
30.00	0.00	0.00	324.37	2,017.41	0.00	0.00	0.00	0.00
35.00	0.00	0.00	329.87	2,017.41	0.00	0.00	0.00	0.00
40.00	0.00	0.00	342.70	2,017.41	0.00	0.00	0.00	0.00
45.00	0.00	0.00	354.43	2,017.41	0.00	0.00	0.00	0.00
50.00	0.00	0.00	365.26	2,017.41	0.00	0.00	0.00	0.00
55.00	0.00	0.00	375.35	2,017.41	0.00	0.00	0.00	0.00
60.00	0.00	0.00	384.79	2,017.41	0.00	0.00	0.00	0.00
65.00	0.00	0.00	356.52	1,798.65	0.00	0.00	0.00	0.00
70.00	0.00	0.00	364.15	1,798.65	0.00	0.00	0.00	0.00
75.00	0.00	0.00	371.40	1,798.65	0.00	0.00	0.00	0.00
80.00	0.00	0.00	378.31	1,798.65	0.00	0.00	0.00	0.00
85.00	0.00	0.00	384.92	1,798.65	0.00	0.00	0.00	0.00
90.00	0.00	0.00	391.26	1,798.65	0.00	0.00	0.00	0.00
95.00	0.00	0.00	397.35	1,798.65	0.00	0.00	0.00	0.00
100.00	0.00	0.00	403.22	1,798.65	0.00	0.00	0.00	0.00
105.00	0.00	0.00	323.61	1,128.13	0.00	0.00	0.00	0.00
110.00	0.00	0.00	327.94	1,128.13	0.00	0.00	0.00	0.00
115.00	0.00	0.00	1,579.49	3,402.13	0.00	0.00	0.00	0.00
120.00	0.00	0.00	336.19	1,128.13	0.00	0.00	0.00	0.00
125.00	0.00	0.00	340.14	1,128.13	0.00	0.00	0.00	0.00
130.00	0.00	0.00	343.97	1,128.13	0.00	0.00	0.00	0.00
135.00	0.00	0.00	2,585.76	1,905.01	0.00	0.00	0.00	0.00
140.00	0.00	0.00	285.43	1,060.18	0.00	0.00	0.00	0.00
145.00	0.00	0.00	194.80	702.84	0.00	0.00	0.00	0.00
150.00	0.00	0.00	2,376.90	3,246.84	0.00	0.00	0.00	0.00
155.00	0.00	0.00	198.55	702.84	0.00	0.00	0.00	0.00
160.00	0.00	0.00	2,859.29	3,222.84	0.00	0.00	0.00	0.00
165.00	0.00	0.00	202.13	702.84	0.00	0.00	0.00	0.00
170.00	0.00	0.00	2,474.07	3,270.84	0.00	0.00	0.00	0.00
175.00	0.00	0.00	205.56	702.84	0.00	0.00	0.00	0.00
178.00	0.00	0.00	1,675.65	2,728.70	0.00	0.00	0.00	1,267.03
<b>Totals:</b>			<b>23,577.77</b>	<b>66,761.66</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>1,267.03</b>

Pole : NM03XC068  
 Location: 503 Presumpscott St, Portland, ME  
 Height : 178.0 (ft)  
 Shape : Round  
 Base Dia : 60.00 (in)  
 Taper : 0.000 (ln/ft)

Sprint Sites USA - NJ

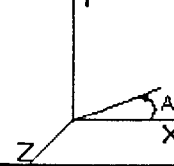
Base Elev : 0.000 (ft)

Top Dia : 24.00 (in)

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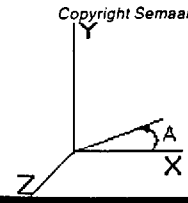
**Load Case:** Ice                      80 mph - With Ice - Ice Thickness = 0.5 in                      21 Iterations  
**Gust Response Factor :** 1.69                      **Effective Wind Speed :** 69.28 (mph)  
**Dead Load Factor :** 1.00  
**Wind Load Factor :** 1.00

**Calculated Forces and Deflections**

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	23.624	66.745	0.000	0.000	0.000	2,912.444	0.000	0.000	0.000	0.000
5.00	23.355	64.478	0.000	0.000	0.000	2,794.326	-0.042	0.000	0.042	-0.079
10.00	23.075	62.212	0.000	0.000	0.000	2,677.555	-0.166	0.000	0.166	-0.155
15.00	22.787	59.949	0.000	0.000	0.000	2,562.180	-0.367	0.000	0.367	-0.227
20.00	22.490	57.688	0.000	0.000	0.000	2,448.246	-0.642	0.000	0.642	-0.296
25.00	22.229	55.643	0.000	0.000	0.000	2,335.797	-0.988	0.000	0.988	-0.363
30.00	21.969	53.596	0.000	0.000	0.000	2,224.656	-1.415	0.000	1.415	-0.449
35.00	21.695	51.551	0.000	0.000	0.000	2,114.812	-1.930	0.000	1.930	-0.532
40.00	21.398	49.508	0.000	0.000	0.000	2,006.342	-2.529	0.000	2.529	-0.611
45.00	21.080	47.468	0.000	0.000	0.000	1,899.355	-3.209	0.000	3.209	-0.685
50.00	20.744	45.431	0.000	0.000	0.000	1,793.955	-3.964	0.000	3.964	-0.755
55.00	20.390	43.396	0.000	0.000	0.000	1,690.236	-4.791	0.000	4.791	-0.822
60.00	20.019	41.364	0.000	0.000	0.000	1,588.290	-5.685	0.000	5.685	-0.884
65.00	19.681	39.547	0.000	0.000	0.000	1,488.198	-6.643	0.000	6.643	-0.943
70.00	19.336	37.730	0.000	0.000	0.000	1,389.796	-7.672	0.000	7.672	-1.021
75.00	18.975	35.915	0.000	0.000	0.000	1,293.119	-8.781	0.000	8.781	-1.094
80.00	18.601	34.103	0.000	0.000	0.000	1,198.244	-9.963	0.000	9.963	-1.162
85.00	18.212	32.293	0.000	0.000	0.000	1,105.243	-11.214	0.000	11.214	-1.225
90.00	17.811	30.487	0.000	0.000	0.000	1,014.183	-12.528	0.000	12.528	-1.282
95.00	17.398	28.682	0.000	0.000	0.000	925.130	-13.900	0.000	13.900	-1.335
100.00	16.974	26.880	0.000	0.000	0.000	838.141	-15.324	0.000	15.324	-1.383
105.00	16.658	25.737	0.000	0.000	0.000	753.275	-16.796	0.000	16.796	-1.427
110.00	16.348	24.587	0.000	0.000	0.000	669.984	-18.353	0.000	18.353	-1.542
115.00	14.710	21.206	0.000	0.000	0.000	588.245	-20.023	0.000	20.023	-1.644
120.00	14.370	20.067	0.000	0.000	0.000	514.698	-21.792	0.000	21.792	-1.733
125.00	14.018	18.932	0.000	0.000	0.000	442.851	-23.649	0.000	23.649	-1.810
130.00	13.657	17.802	0.000	0.000	0.000	372.759	-25.581	0.000	25.581	-1.876
135.00	11.023	15.974	0.000	0.000	0.000	304.474	-27.576	0.000	27.576	-1.931
140.00	10.712	14.917	0.000	0.000	0.000	249.359	-29.623	0.000	29.623	-1.976
145.00	10.510	14.209	0.000	0.000	0.000	195.797	-31.712	0.000	31.712	-2.012
150.00	8.033	11.038	0.000	0.000	0.000	143.248	-33.872	0.000	33.872	-2.106
155.00	7.819	10.335	0.000	0.000	0.000	103.082	-36.116	0.000	36.116	-2.175
160.00	4.843	7.222	0.000	0.000	0.000	63.986	-38.420	0.000	38.420	-2.222
165.00	4.616	6.525	0.000	0.000	0.000	39.772	-40.763	0.000	40.763	-2.251
170.00	2.016	3.354	0.000	0.000	0.000	16.692	-43.129	0.000	43.129	-2.266
175.00	1.783	2.660	0.000	0.000	0.000	6.615	-45.506	0.000	45.506	-2.273
178.00	1.676	0.000	0.000	0.000	0.000	1.267	-46.934	0.000	46.934	-2.274

Pole : NM03XC068  
 Location: 503 Presumpscott St, Portland, ME  
 Height : 178.0 (ft)  
 Shape : Round  
 Base Dia : 60.00 (in)  
 Taper : 0.000 (in/ft)

Sprint Sites USA - NJ  
 Base Elev : 0.000 (ft)  
 Top Dia : 24.00 (in)



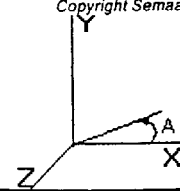
**Load Case:** Ice      80 mph - With Ice - Ice Thickness = 0.5 in      21 Iterations  
 Gust Response Factor : 1.69      Effective Wind Speed : 69.28 (mph)  
 Dead Load Factor : 1.00  
 Wind Load Factor : 1.00

**Calculated Stresses**

Seg Elev (ft)	Applied Stresses							Allowable Stress (Fb) (ksi)	Allowable Stress (Fa) (ksi)	Stress Ratio
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)			
0.00	0.573	0.406	0.000	0.000	0.000	20.393	20.977	28.0	28.0	0.749
5.00	0.553	0.401	0.000	0.000	0.000	19.566	20.131	28.0	28.0	0.719
10.00	0.534	0.396	0.000	0.000	0.000	18.748	19.294	28.0	28.0	0.689
15.00	0.514	0.391	0.000	0.000	0.000	17.940	18.467	28.0	28.0	0.660
20.00	0.495	0.386	0.000	0.000	0.000	17.142	17.650	28.0	28.0	0.630
25.00	0.550	0.429	0.000	0.000	0.000	21.238	21.801	28.0	28.0	0.779
30.00	0.531	0.424	0.000	0.000	0.000	20.263	20.806	28.0	28.0	0.743
35.00	0.511	0.420	0.000	0.000	0.000	19.298	19.823	28.0	28.0	0.708
40.00	0.492	0.414	0.000	0.000	0.000	18.346	18.851	28.0	28.0	0.673
45.00	0.472	0.409	0.000	0.000	0.000	17.405	17.891	28.0	28.0	0.639
50.00	0.453	0.403	0.000	0.000	0.000	16.476	16.944	28.0	28.0	0.605
55.00	0.433	0.396	0.000	0.000	0.000	15.562	16.010	28.0	28.0	0.572
60.00	0.414	0.389	0.000	0.000	0.000	14.662	15.092	28.0	28.0	0.539
65.00	0.395	0.382	0.000	0.000	0.000	13.778	14.188	28.0	28.0	0.507
70.00	0.445	0.431	0.000	0.000	0.000	17.515	17.975	28.0	28.0	0.642
75.00	0.425	0.423	0.000	0.000	0.000	16.411	16.852	28.0	28.0	0.602
80.00	0.406	0.416	0.000	0.000	0.000	15.326	15.748	28.0	28.0	0.562
85.00	0.386	0.408	0.000	0.000	0.000	14.260	14.663	28.0	28.0	0.524
90.00	0.367	0.400	0.000	0.000	0.000	13.213	13.598	28.0	28.0	0.486
95.00	0.347	0.392	0.000	0.000	0.000	12.188	12.553	28.0	28.0	0.448
100.00	0.328	0.383	0.000	0.000	0.000	11.184	11.531	28.0	28.0	0.412
105.00	0.308	0.374	0.000	0.000	0.000	10.202	10.530	28.0	28.0	0.376
110.00	0.289	0.365	0.000	0.000	0.000	9.242	9.552	28.0	28.0	0.341
115.00	0.482	0.609	0.000	0.000	0.000	20.593	21.102	28.0	28.0	0.754
120.00	0.462	0.598	0.000	0.000	0.000	18.508	18.998	28.0	28.0	0.679
125.00	0.441	0.587	0.000	0.000	0.000	16.462	16.933	28.0	28.0	0.605
130.00	0.380	0.528	0.000	0.000	0.000	14.453	14.862	28.0	28.0	0.531
135.00	0.360	0.516	0.000	0.000	0.000	12.646	13.037	28.0	28.0	0.466
140.00	0.340	0.503	0.000	0.000	0.000	10.881	11.254	28.0	28.0	0.402
145.00	0.319	0.490	0.000	0.000	0.000	9.159	9.516	28.0	28.0	0.340
150.00	0.286	0.396	0.000	0.000	0.000	7.481	7.798	28.0	28.0	0.279
155.00	0.267	0.384	0.000	0.000	0.000	6.127	6.429	28.0	28.0	0.230
160.00	0.404	0.581	0.000	0.000	0.000	14.081	14.520	28.0	28.0	0.519
165.00	0.385	0.570	0.000	0.000	0.000	11.056	11.484	28.0	28.0	0.410
170.00	0.299	0.436	0.000	0.000	0.000	8.089	8.422	28.0	28.0	0.301
175.00	0.280	0.424	0.000	0.000	0.000	5.821	6.145	28.0	28.0	0.219
180.00	0.196	0.263	0.000	0.000	0.000	3.613	3.836	28.0	28.0	0.137
185.00	0.177	0.250	0.000	0.000	0.000	2.246	2.461	28.0	28.0	0.088
190.00	0.091	0.109	0.000	0.000	0.000	0.943	1.051	28.0	28.0	0.038
195.00	0.072	0.097	0.000	0.000	0.000	0.374	0.476	28.0	28.0	0.017
200.00	0.000	0.091	0.000	0.000	0.000	0.072	0.173	28.0	28.0	0.006



**Pole :** NM03XC068 **Sprint Sites USA - NJ**  
**Location:** 503 Presumpscott St, Portland, ME  
**Height :** 178.0 (ft) **Base Elev :** 0.000 (ft)  
**Shape :** Round  
**Base Dia :** 60.00 (in) **Top Dia :** 24.00 (in)  
**Taper :** 0.000 (in/ft)



**Analysis Summary**

Load Case	Reactions						Max Stresses			
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Combined Stress (ksi)	Allowable Stress (ksi)	Elev (ft)	Stress Ratio
No Ice	28.458	0.000	55.297	0.000	0.000	3,469.353	25.718	28.0	20.000	0.919
Ice	23.624	0.000	66.745	0.000	0.000	2,912.444	21.801	28.0	20.000	0.779

# Boston PCS, LLC

SITE NAME:

## SPRINT N. PORTLAND

500 PRESUMPCOT ST.  
PORTLAND, ME  
04101

SITE NUMBER:

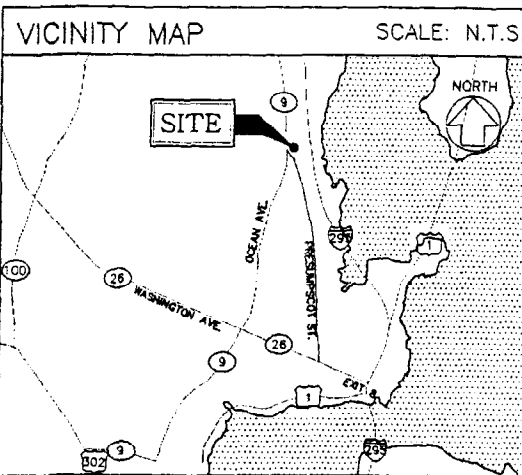
### 357.008.01

# FINAL PLANS

**Boston PCS, LLC**

125 SHAWMUT RD  
CANTON, MA 02021

**OEST Associates, Inc.**  
243 Gorton Road - South Portland, ME 04106  
TEL: (207) 761-1770  
FAX: (207) 774-1246



### DRIVING DIRECTIONS

TRAVELING ON INTERSTATE 295 TAKE EXIT 8 (WASHINGTON AVE.). CONTINUE ON WASHINGTON AVE. FOR APPROX. 1/4 MI. TO PRESUMPCOT ST. TURN RIGHT ONTO PRESUMPCOT ST. CONTINUE ON PRESUMPCOT ST. UNTIL THE INTERSECTION OF OCEAN AVE. TOWER ACCESS ROAD WILL BE ON THE RIGHT APPROX. 20 FEET AFTER STOP SIGN.

### GENERAL NOTES

- SCOPE OF WORK FOR THE CELL SITE CONSISTS OF SITE GRADING, EXCAVATION FOR AND CONSTRUCTION OF A CONCRETE FOUNDATION FOR EQUIPMENT PLACEMENT, PLACEMENT OF THE EQUIPMENT ON THE NEW FOUNDATION, EXTERNAL BURIED GROUND RING AND GROUNDING SYSTEM, AND NEW ELECTRICAL AND TELEPHONE SERVICE TO THE EQUIPMENT.
- CONTRACTOR SHALL VISIT SITES TO FAMILIARIZE HIMSELF WITH EXISTING SITE CONDITIONS AS THEY RELATE TO SITEMARKS, FOUNDATION CONSTRUCTION, ACCESS, ELECTRICAL SERVICE, AND OVERALL COORDINATION.
- ALL ELECTRICAL SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE NATIONAL, LOCAL AND STATE CODES, ORDINANCES AND REGULATIONS, AND LOCAL UTILITY COMPANY SPECIFICATIONS. THE WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY FOR INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO MANUFACTURER'S RECOMMENDATIONS UNLESS DIRECTED OTHERWISE OR WHERE APPLICABLE CODES OR REGULATIONS TAKE PRECEDENCE.
- DIMENSIONS SHOWN ARE TO FINISHED SURFACES UNLESS NOTED OTHERWISE. CONTRACTOR SHALL FIELD VERIFY DIMENSIONS. IF THERE ARE ANY QUESTIONS OR DISCREPANCIES CONCERNING CONTRACT DOCUMENTS AND EXISTING CONDITIONS, THE CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING CLARIFICATION FROM THE OWNER'S REPRESENTATIVE BEFORE PROCEEDING WITH WORK IN QUESTION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DIRECTING AND SUPERVISING THE WORK. HE SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION METHODS AND PROCEDURES, AND FOR COORDINATING ALL ASPECTS OF THE WORK.
- THE RADIO SWITCHING EQUIPMENT IS SUPPLIED UNDER SEPARATE CONTRACT. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE WORK OF OTHERS PERTAINING TO RADIO SWITCHING EQUIPMENT, OR ANY OTHER RELATED WORK.
- THE CONTRACTOR SHALL MAINTAIN AT THE PROJECT SITE A FULL SET OF CONSTRUCTION DOCUMENTS WITH THE LATEST REDLINED REVISIONS FOR THE USE OF ALL.
- EVERY EFFORT HAS BEEN MADE TO DEFINE THE SCOPE OF WORK IN THE CONTRACT DOCUMENTS. THE CONTRACTOR IS CAUTIONED THAT MINOR OMISSIONS AND DISCREPANCIES IN THESE CONTRACT DOCUMENTS DOES NOT EXCUSE HIM FROM PROVIDING SITE IMPROVEMENTS AND A COMPLETED EQUIPMENT PAD ACCORDING TO THE INTENTIONS OF THESE DOCUMENTS.
- UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE ACCURACY OR COMPLETENESS THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.
- CONTRACTORS WILL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES.

### SHEET INDEX

SHT. NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	0
C-1	SITE PLAN / ELEVATIONS	0
A-1	DETAILS	0
A-2	COAX SCHEDULE	0
S-1	STRUCTURAL DETAILS	0
E-1	POWER / TELCO RISER DIAGRAM LEGEND AND NOTES	0
E-2	GROUNDING RISER DIAGRAM	0
E-3	GROUNDING DETAILS	0

### DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME

### LEGEND

-----	GROUND WIRE
-----	ELECTRIC
-----	TELEPHONE
(E)	EXISTING
(P)	PROPOSED
	DETAIL REFERENCE

### PROJECT SUMMARY

SITE NUMBER: 357.008.01  
 SITE NAME: SPRINT N. PORTLAND  
 SITE ADDRESS: 500 PRESUMPCOT ST.  
 PORTLAND, ME 04101  
 CUMBERLAND, COUNTY  
 PARCEL MAP / LOT: 415 / BLK D6  
 DEED BOOK / PAGE: 6284 / 72  
 CURRENT ZONING:  
 GOVERNING CODE: BOCA 1996  
 JURISDICTION: PORTLAND  
 CONSTRUCTION TYPE:  
 PROPERTY OWNER: PAUL D. MERRILL  
 601 DANFORTH ST.  
 PORTLAND, ME 04102  
 USE GROUP: ANTENNA ARRAY - U  
 APPLICANT: BOSTON PCS, L.L.C.  
 80 BAYLIS ROAD  
 SUITE 201  
 MELVILLE, NY 11747  
 CONSTRUCTION MANAGER: ATC REALTY  
 PAT HEELAN  
 44 EXCHANGE STREET, SUITE 301  
 PORTLAND, MAINE 04103  
 PHONE: (207) 773-0242  
 FAX: (207) 871-5797

**DIG SAFE**  
**3 WORKING DAYS**  
**BEFORE YOU DIG**  
 CALL TOLL FREE 888-DIG-SAFE  
**UNDERGROUND SERVICE ALERT**

PROJECT NO: 357.008.01

DRAWN BY: BJB

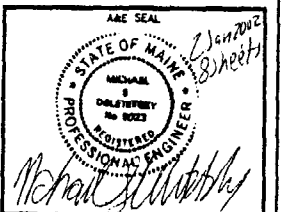
CHECKED BY: MSD

OEST PROJ. NO: 345.16.01

### SUBMITTALS

NO.	DATE	ISSUED FOR REVIEW
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SITE  
 357.008.01  
 SPRINT  
 N. PORTLAND  
 500 PRESUMPCOT ST.  
 PORTLAND, ME 04101  
 CUMBERLAND COUNTY

SHEET TITLE  
 TITLE SHEET

SHEET NUMBER  
 T-1

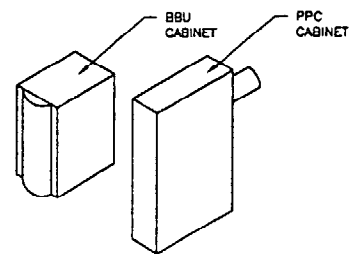




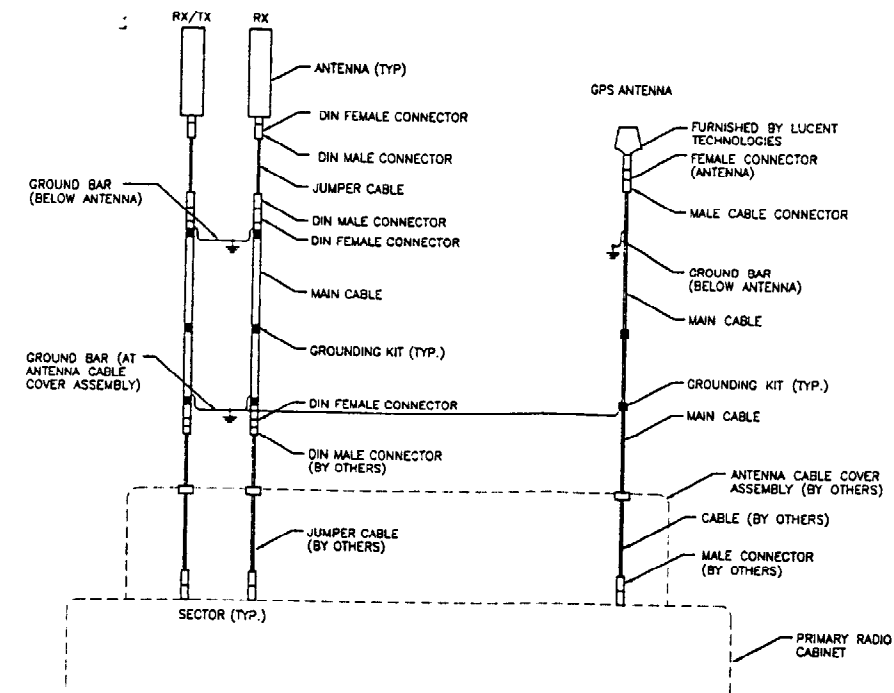
THIRD PARTY BILL OF MATERIALS (B.O.M.)

ITEM#	DESCRIPTION	PART NO.	QUANTITY (EACH)	LENGTH (FEET EACH)	TOTAL LENGTH (FEET ORDER)
SITE NAME: SPRINT N. PORTLAND SITE NO. 357.008.01					
1	ANTENNAS: GPS: (LUCENT) SECTOR: ALPHA - (DAPA) SECTOR: BETA - (DAPA) SECTOR: GAMMA - (DAPA) SECTOR ANTENNAS TO HAVE DOWN TILT BRACKETS AND HEAVY DUTY CLAMPS	580105	1	N/A	N/A
		580105	2	N/A	N/A
		580105	2	N/A	N/A
		580105	2	N/A	N/A
2	JUMPER CABLES: JUMPER(TOP) JUMPER(BOTTOM)(SUPPLIED BY BOSTON PCS)	LDF-4	6	6'	N/A
		PDMD-6	6	6'	N/A
3	MAIN CABLES: 1/2" DIA. COAXIAL (ANDREW) 1 5/8" DIA. COAXIAL (ANDREW)	LDF-4-50A	1	CUT TO LENGTH	90'± LF
		VXL-7-50A	6	IN THE FIELD	1050'± LF
4	STANDARD CABLE GROUNDING KIT WITH FIELD ATTACHED 2-HOLE LUG 1/2", 60" LONG (ANDREW) 1 5/8", 60" LONG, (ANDREW)	241088-6	1	N/A	N/A
		241088-9	18	N/A	N/A
5	CONNECTORS, UNATTACHED FOR GPS & MAIN CABLES: MALE "N" (ANDREW) FEMALE "DIN" 1 5/8" (ANDREW)	L4-PNM	2	N/A	N/A
		L7-PDF-RPC	12	N/A	N/A
6	1 5/8" HOIST GRIP	24312 A	6	N/A	N/A
7	UNIVERSAL WEATHERPROOFING KIT	221213	7	N/A	N/A
8	(1) ANKXTER NO. CMP-00822T1-3 OR EQUAL (1) TELCO DEMARK TO PPC (2) PPC TO FLEXNET CABINET (LUCENT)		1	FIELD CUT TO LENGTH	FIELD CUT TO LENGTH
* 9	GPS MOUNT	SUMMIT	1	N/A	
* 10	ANTENNA MOUNTS (PLATFORM OF SECTOR MOUNTS)		**1/3		
11	(PPC SUPPLIED BY BOSTON P.C.S.)				
12	HARGER SURGE PROTECTOR (SUPPLIED BY BOSTON PCS)		N/A		
* 13	HARGER 20" G.B	GBH-14420-G	1		
* 14	HARGER 12" G.B	GBH-14412-G	7		

\* = TO BE SUPPLIED BY CONTRACTOR  
MANUFACTURERS NAMES AND MODEL NUMBERS ARE LISTED TO SET QUALITY OF MATERIAL. CONTRACTOR MAY PROPOSE SUBSTITUTIONS, BUT MUST BE ACCEPTED BY CLIENT.  
\*\* (1) MONOPOLE, (3) LATTICE



1 EQUIPMENT ISOMETRIC  
A-2 SCALE: N.T.S.



TYPICAL ANTENNA / CABLE CONFIGURATION

	AZIMUTH 0°		DOWNTILT=0°		AZIMUTH 120°		DOWNTILT=2°		AZIMUTH 240°		DOWNTILT=0°		GPS ANTENNA	
	COAX CABLE TYPE/SIZE	LENGTH (FT)*	RX/TX	RX	COAX CABLE TYPE/SIZE	LENGTH (FT)*	RX/TX	RX	COAX CABLE TYPE/SIZE	LENGTH (FT)*	RX/TX	RX	COAX CABLE TYPE/SIZE	LENGTH (FT)
ANTENNA TO JUMPER CABLE ASSEMBLY	ANDREW LDF-4	6	6		ANDREW LDF-4	6	6		ANDREW LDF-4	6	6			N/A
JUMPER CABLE TO ANTENNA CABLE COVER ASSEMBLY	ANDREW VXL-7-50A	165	165		ANDREW VXL-7-50A	165	165		ANDREW VXL-7-50A	165	165		1/2"	40'
ANTENNA TYPE			DAPA 580105	DAPA 580105			DAPA 580105	DAPA 580105			DAPA 580105	DAPA 580105		
ANTENNA CABLE COVER ASSEMBLY TO PRIMARY RADIO CABINET (BY LUCENT)	ANDREW LDF-4	6	6		ANDREW LDF-4	6	6		ANDREW LDF-4	6	6		N/A	N/A
COLOR CODING	FIRST RING	YELLOW	YELLOW		BLUE	BLUE			RED	RED				
	SECOND RING	BROWN	WHITE		BROWN	WHITE			BROWN	WHITE				
	THIRD RING	GREEN	GREEN		GREEN	GREEN			GREEN	GREEN				

\* ESTIMATED LENGTHS FROM AVAILABLE INFORMATION

- NOTES:
1. TYPES AND SIZES OF THE ANTENNA CABLES ARE BASED ON THE ESTIMATED LENGTH OF THE CABLES. CONTRACTOR TO VERIFY ACTUAL LENGTHS IN THE FIELD BEFORE INSTALLATION AND NOTIFY THE FIELD ENGINEER FOR VERIFICATION OF SIZES OF THE CABLES.
  2. FIELD ENGINEER TO UPDATE THE LENGTH OF CABLES.
  3. ALL ANTENNA COAXIAL CABLES AND JUMPERS SHALL BE INSTALLED WITHOUT LOOPS AND/OR PIGTAILS.
  4. COAXIAL CABLE GROUND KITS SHALL NOT BE INSTALLED ON THE JUMPER BETWEEN THE ANTENNA AND MAIN LINE CABLE.
  5. ANTENNA COAXIAL CABLE GROUND KITS SHALL BE INSTALLED AS CLOSE TO THE CONNECTOR AS POSSIBLE AT EACH ANTENNA. IF THIS IS NOT FEASIBLE THE GROUND KIT SHALL BE INSTALLED IMMEDIATELY AFTER THE BEND ON THE FIRST STRAIGHT RUN OF CABLE.
  6. ANTENNA COAXIAL SHALL BE INSTALLED TO COMPLY WITH THE MANUFACTURER'S MINIMUM BEND RADIUS SPECIFIED BELOW. THE CONTRACTOR SHALL INSTALL RACEWAY FOR COAXIAL CABLE USING THE PROPER FITTINGS NECESSARY TO ENSURE THAT THE MINIMUM BEND RADIUS REQUIREMENTS ARE MET.

MANUFACTURER	CABLE TYPE	CABLE SIZE (")	MINIMUM BEND RADIUS
ANDREW	LDF-4	1/2"	5"
ANDREW	VXL-7-50A	1 5/8"	20"

7. THE GPS ANTENNA COAXIAL CABLE SHALL BE A CONTINUOUS CABLE RUN, FROM THE CONNECTOR AT THE ANTENNA HEAD TO THE CONNECTOR AT THE BTS CABINET, WITHOUT JUMPERS.
8. ALL ANTENNA COAXIAL CABLES SHALL BE MARKED AND TAGGED IN ACCORDANCE WITH THE ABOVE COLOR CODING.

**Boston PCS, LLC**

125 SHAWMUT RD  
CANTON, MA 02021

**OEST Associates, Inc.**

343 Canton Road - South Portland, ME 04106  
engineers - drafters - surveyors - construction managers  
TEL: (207) 781-1770  
FAX: (207) 774-1248

PROJECT NO: 357.008.01

DRAWN BY: BJB

CHECKED BY: MSD

OEST PROJ. NO: 345.16.01

SUBMITTALS

0 12/17/01 ISSUED FOR REVIEW

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AMB SEAL

SITE  
357.008.01

SPRINT  
N. PORTLAND  
500 PRESUMPCOT ST.  
PORTLAND, ME 04101  
CUMBERLAND COUNTY

SHEET TITLE

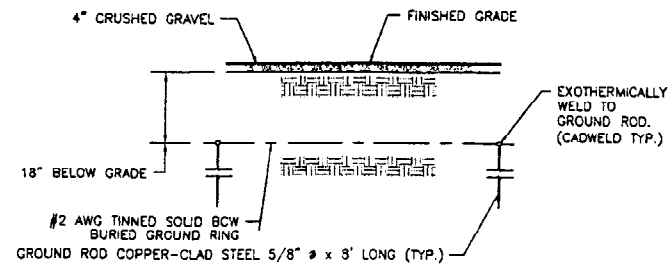
COAX SCHEDULE

SHEET NUMBER

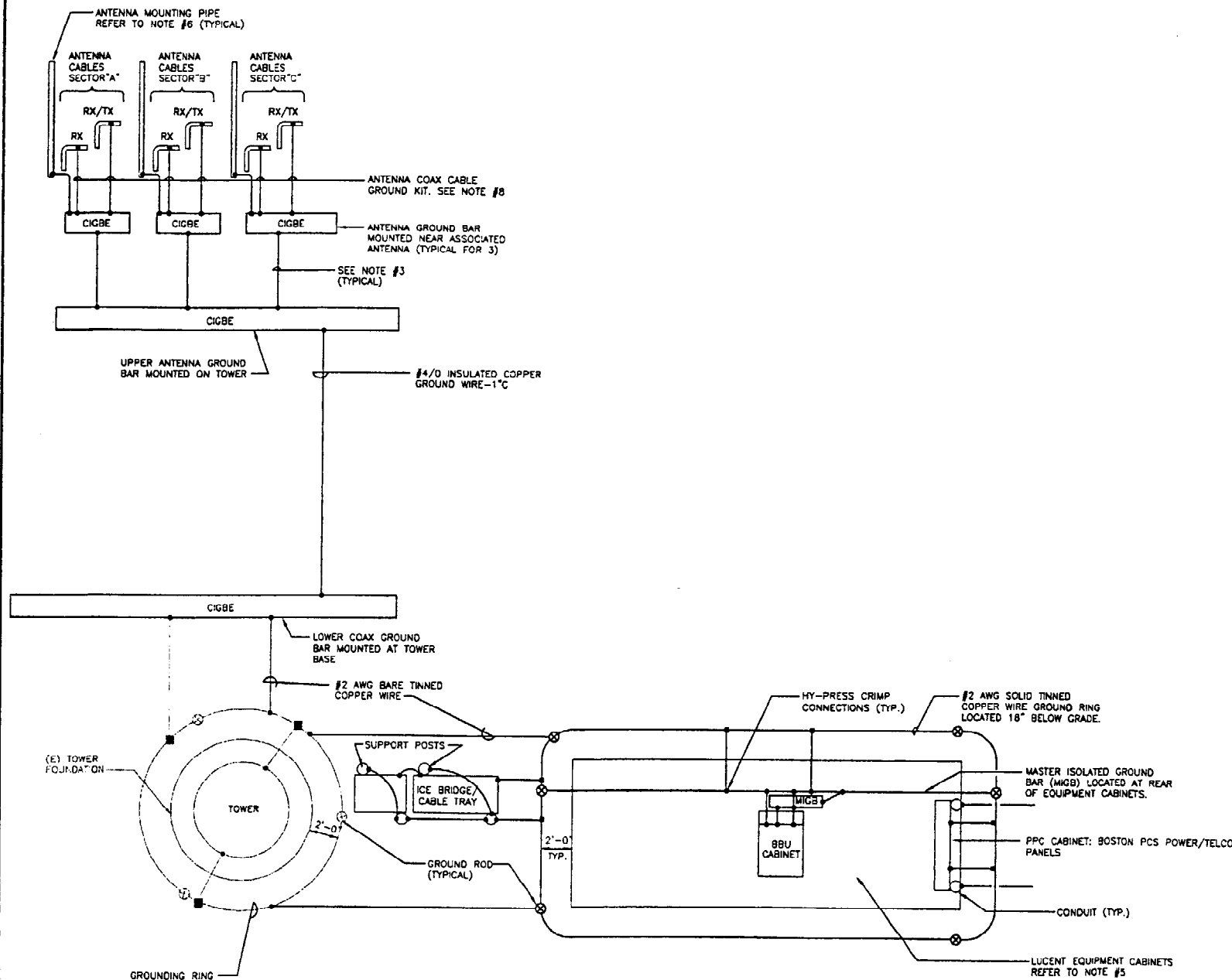
A-2







**2** EQUIPMENT GROUNDING RING DETAIL  
SCALE: N.T.S.



**1** GROUNDING RISER DIAGRAM  
SCALE: N.T.S.

## ELECTRICAL SPECIFICATIONS

### SECTION 16450 - GROUNDING

- A ALL ELECTRICAL AND GROUNDING AT THE CELL SITE SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE (NEC), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 780 (1995 EDITION), AND MANUFACTURER.
- B IF THE AC PANEL IN THE POWER CABINET IS WIRED AS SERVICE ENTRANCE, THE AC SERVICE GROUND CONDUCTOR SHALL BE CONNECTED TO GROUND ELECTRODE SYSTEM. WHEN THE AC PANEL IN THE POWER CABINET IS CONSIDERED A SUB-PANEL, THE GROUND WIRE SHALL BE INSTALLED IN THE AC POWER CONDUIT. THE INSTALLATION SHALL BE PER LOCAL AND NATIONAL ELECTRIC CODE (NFPA-70).
- C EXOTHERMIC WELDING IS RECOMMENDED FOR GROUNDING CONNECTION WHERE PRACTICAL. OTHERWISE, THE CONNECTION SHALL BE MADE USING COMPRESSION TYPE-2 HOLES, LONG BARREL LUGS OR DOUBLE CRIMP "C" CLAMP. THE COPPER CABLES SHALL BE COATED WITH ANTI-OXIDANT (COPPER SHIELD) BEFORE MAKING THE CRIMP CONNECTIONS. THE MANUFACTURER'S TORQUING RECOMMENDATIONS ON THE BOLT ASSEMBLY TO SECURE CONNECTIONS ARE TO BE FOLLOWED.
- D THE ANTENNA CABLES SHALL BE GROUNDING AT THE TOP AND BOTTOM OF THE VERTICAL RUN FOR LIGHTNING PROTECTION. THE ANTENNA CABLE SHIELD SHALL BE BONDED TO A COPPER GROUND BUS AT THE LOWERMOST POINT OF A VERTICAL RUN JUST BEFORE IT BEGINS TO BEND TOWARD THE HORIZONTAL PLANE. WIRE RUNS TO GROUND SHALL BE KEPT AS STRAIGHT AND SHORT AS POSSIBLE. THE ANTENNA CABLE SHIELD SHALL BE GROUNDING JUST BEFORE ENTERING THE MINICELL. ANY ANTENNA CABLES OVER 200 FEET IN LENGTH SHALL ALSO BE EQUIPPED WITH ADDITIONAL GROUNDING AT MID-POINT.
- E THE MASTER GROUND BUS (MGB) SHALL BE MADE OF BARE 1/4"x4" COPPER (FOR OUTDOOR APPLICATIONS IT SHALL BE TINNED COPPER) AND LARGE ENOUGH TO ACCOMMODATE THE REQUIRED NUMBER OF GROUND CONNECTIONS. THE HARDWARE SECURING THE MGB SHALL ELECTRICALLY INSULATE THE MGB FROM ANY STRUCTURE TO WHICH IT IS FASTENED.
- F GROUND CONNECTIONS: CLEAN SURFACES THOROUGHLY BEFORE APPLYING GROUND LUGS OR CLAMPS. IF SURFACE IS COATED, THE COATING MUST BE REMOVED DOWN TO THE BARE METAL. AFTER THE COATING HAS BEEN REMOVED, APPLY A NON-CORROSIVE APPROVED COMPOUND TO CLEANED SURFACE AND INSTALL LUGS OR CLAMPS. WHERE GALVANIZING IS REMOVED FROM METAL, IT SHALL BE PAINTED OR TOUCHED UP WITH "GALVANOX", OR EQUAL.

### PROTECTIVE GROUNDING SYSTEM GENERAL NOTES

1. AT ALL TERMINATIONS AT EQUIPMENT ENCLOSURES, PANELS, AND FRAMES OF EQUIPMENT, AND WHERE EXPOSED FOR GROUNDING, CONDUCTOR TERMINATION SHALL BE PERFORMED UTILIZING TWO HOLE BOLTED TONGUE COMPRESSION TYPE WITH STAINLESS STEEL SELF-TAPPING SCREWS.
2. ALL CLAMPS AND SUPPORTS USED TO SUPPORT THE GROUNDING SYSTEM CONDUCTORS AND PVC CONDUITS SHALL BE PVC TYPE (NON CONDUCTIVE). DO NOT USE METAL BRACKETS OR SUPPORTS WHICH WOULD FORM A COMPLETE RING AROUND ANY GROUNDING CONDUCTOR.
3. ALL GROUNDING CONNECTIONS SHALL BE COATED WITH A COPPER SHIELD ANTI-CORROSIVE AGENT SUCH AS T&B KOPR SHIELD. VERIFY PRODUCT WITH BOSTON PCS PROJECT MANAGER.
4. ALL BOLTS, WASHERS, AND NUTS USED ON GROUNDING CONNECTIONS SHALL BE STAINLESS STEEL.
5. INSTALL GROUND BUSHINGS ON ALL METALLIC CONDUITS AND BOND TO THE EQUIPMENT GROUND BUS IN THE PANELBOARD.
6. GROUND ANTENNA BASES, FRAMES, CABLE RACKS, AND OTHER METALLIC COMPONENTS WITH #2 GROUNDING CONDUCTORS AND CONNECT TO INSULATED SURFACE MOUNTED GROUND BARS. CONNECTION DETAILS SHALL FOLLOW MANUFACTURER'S SPECIFICATIONS FOR GROUNDING.
7. GROUND COAXIAL SHIELD AT BOTH ENDS USING MANUFACTURER'S GUIDELINES.

### GROUNDING NOTES:

1. SEE DRAWING #E-1 FOR LEGEND AND ABBREVIATIONS.
2. ALL DETAILS ARE SHOWN IN DIAGRAMATICALLY. ACTUAL GROUNDING INSTALLATION AND CONSTRUCTION MAY VARY DUE TO SITE SPECIFIC CONDITIONS.
3. ALL GROUND WIRE SHALL BE BARE TINNED COPPER #2 AWG UNLESS OTHERWISE NOTED.
4. ALL GROUND WIRES SHALL PROVIDE A STRAIGHT, DOWNWARD PATH TO GROUND WITH GRADUAL BENDS AS REQUIRED. GROUND WIRES SHALL NOT BE LOOPED OR SHARPLY BENT.
5. ELECTRICAL CONTRACTOR SHALL COORDINATE CONNECTIONS TO EXISTING GROUND RINGS WITH SITE CONSTRUCTION MANAGER.
6. EACH LUCENT EQUIPMENT CABINET SHALL BE CONNECTED TO THE MASTER ISOLATION GROUND BAR (MIGB) WITH #2 AWG INSULATED STRANDED COPPER WIRE. EQUIPMENT CABINETS SHALL EACH HAVE (2) CONNECTIONS UNLESS NOTED OTHERWISE. GROUNDING INSTALLATION SHALL BE ACCORDANCE WITH THE LUCENT EQUIPMENT SITE SPECIFICATIONS GUIDELINES.
7. PROVIDE DEDICATED #2 AWG COPPER GROUND WIRE FROM EACH ANTENNA MOUNTING PIPE TO ASSOCIATED CIGBE (TYPICAL FOR TWO MOUNTING PIPES PER SECTOR).
8. ANTENNA GROUND KITS SHALL BE FURNISHED BY BOSTON PCS, L.L.C. AND INSTALLED BY ELECTRICAL CONTRACTOR.
9. REFER TO DRAWING E-3 FOR FURTHER GROUNDING REQUIREMENTS.
10. GROUND SYSTEM SHALL BE TESTED AND SHALL HAVE A RESISTANCE OF 5 OHMS OR LESS.

**Boston PCS,  
LLC**

125 SHAWMUT RD  
CANTON, MA 02021

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A&E SEAL

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CUMBERLAND COUNTY

SHEET TITLE  
GROUNDING RISER  
DIAGRAM

SHEET NUMBER

E-2



