STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

February 14, 2013

Jennifer Young Gaudet
HPC Wireless Services
46 Mill Plain Road, Floor 2
Danbury, CT 06811

RE: **EM-SPRINT-057-130122** – Sprint Spectrum L.P. notice of intent to modify an existing telecommunications facility located at 363 Riversville Road, Greenwich, Connecticut.

Dear Ms. Gaudet:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- The proposed coax shall be installed in accordance with the recommendation made in the Structural Analysis Report prepared by GPD Group dated July 31, 2012 and stamped by David Granger; and
- Within 45 days following completion of the antenna installation, Sprint shall provide documentation certified by a professional engineer that its installation complied with the recommendation of the structural analysis.
- Any deviation from the proposed modification as specified in this notice and supporting materials with Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration;

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated January 18, 2013. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels,

and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Very truly yours,

Linda Roberts LMB

Linda Roberts
Executive Director

LR/CDM/laf

c: The Honorable Peter J. Tesei, First Selectman, Town of Greenwich
Diane Fox, Planning & Zoning Director, Town of Greenwich
Christopher B. Fisher, Esq., Cuddy & Feder LLP o/b/o AT&T

STATE OF CONNECTICUT
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Ten Franklin Square, New Britain, CT 06051
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www.ct.gov/csc

January 25, 2013

The Honorable Peter J. Tesei
First Selectman
Town of Greenwich
Town Hall
101 Field Point Road
P. O. Box 2540
Greenwich, CT 06836-2540

RE: **EM-SPRINT-057-130122** – Sprint Spectrum L.P. notice of intent to modify an existing telecommunications facility located at 363 Riversville Road, Greenwich, Connecticut.

Dear First Selectman Tesei:

The Connecticut Siting Council (Council) received a request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72, a copy of which has already been provided to you.

If you have any questions or comments regarding the proposal, please call me or inform the Council by February 8, 2013.

Thank you for your cooperation and consideration.

Very truly yours,

LRoberts

Linda Roberts
Executive Director

LR/jb

c: Diane Fox, Planning & Zoning Director, Town of Greenwich

EM-SPRINT-057-130122

HPC Wireless Services
46 Mill Plain Rd.
Floor 2
Danbury, CT, 06811
P.: 203.797.1112

HPC WIRELESS SERVICES

January 18, 2013

ORIGINAL

VIA OVERNIGHT COURIER

RECEIVED
JAN 22 2013
CONNECTICUT
SITING COUNCIL

Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051
Attn: Ms. Linda Roberts, Executive Director

Re: Sprint Spectrum, L.P. – exempt modification
363 Riversville Road, Greenwich, Connecticut

Dear Ms. Roberts:

This letter and attachments are submitted on behalf of Sprint Spectrum, L.P. ("Sprint"). Sprint is undertaking modifications to certain existing sites in its Connecticut system in order to implement updated technology. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction that constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and attachments is being sent to the First Selectman of the Town of Greenwich.

Sprint plans to modify the existing wireless communications facility owned by AT&T and located at 363 Riversville Road in the Town of Greenwich (coordinates 41°-03'-59.25", 73°-40'-18.64"). Attached are a compound plan and elevation depicting the planned changes, and documentation of the structural sufficiency of the structure to accommodate the revised antenna configuration. Also included is a power density report reflecting the modification to Sprint's operations at the site.

The changes to the facility do not constitute a modification as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

1. Sprint will replace six (6) existing CDMA antennas with three (3) dual-band panel

antennas and three (3) dual-pole CDMA antennas on the existing platform with a center line of approximately 122'. Six (6) RRHs (remote radio heads) will be mounted around the pole below the antennas. During an interim period of up to one year, the three (3) CDMA antennas will remain. Sprint will also install three (3) hybriflex cables along the existing coaxial cable run, and will remove the coaxial cable at the end of the interim period. The proposed modifications will not extend the height of the approximately 160' structure.

2. The proposed changes will not extend the site boundaries. Sprint will replace two (2) existing cabinets and will add one (1) cabinet and a fiber distribution box on an H-frame, all on its existing concrete pad. These changes will have no effect on the site boundaries.

3. The proposed changes will not increase the noise level at the existing facility by six decibels or more. The incremental effect of the proposed changes will be negligible.

4. The changes to the facility will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site. As indicated on the attached report prepared by EBI Consulting, Sprint's operations at the site will result in a power density of approximately 16.629%; the combined site operations will result in a total power density of approximately 47.719%.

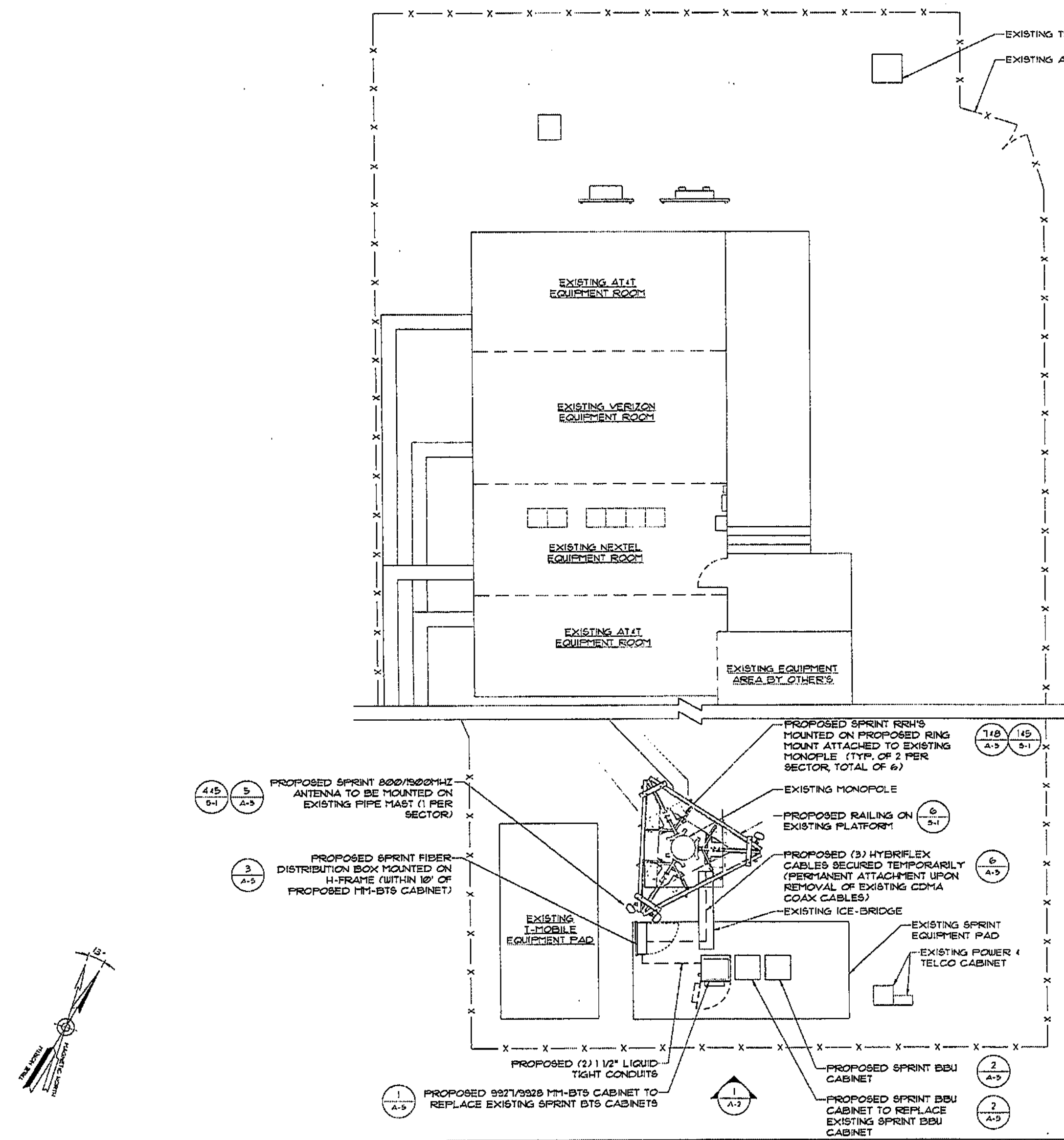
Please feel free to contact me by phone at (860) 798-7454 or by e-mail at jgaudet@hpcwireless.com with questions concerning this matter. Thank you for your consideration.

Respectfully yours,

Jennifer Young Gaudet

Jennifer Young Gaudet

cc: Honorable Peter E. Tesei , First Selectman, Town of Greenwich
Greenwich Council, Boy Scouts of America (underlying property owner)



ANTENNA CONFIGURATION NOTE

ALL EXISTING CDMA ANTENNAS TO BE REMOVED / REPLACED WITH NETWORK VISION ANTENNAS FOR FINAL CONFIGURATION.

ANTENNA SEPARATION TO BE FIELD VERIFIED BY THE GENERAL CONTRACTOR.

STRUCTURAL VERIFICATION BY GENERAL CONTRACTOR

GENERAL CONTRACTOR TO REFER TO THE STRUCTURAL ANALYSIS REPORTS PREPARED BY GPD GROUP ENTITLED "RIGOROUS STRUCTURAL ANALYSIS REPORT" DATED 7/31/12, GPD GROUP PROJECT: 2012856.54 (FOR THE TOWER), AND BY EBI CONSULTING ENTITLED "STRUCTURAL ASSESSMENT LETTER" DATED 8/24/2012 EBI CONSULTING'S PROJECT NUMBER: 61121604 (FOR THE MOUNTS).

1. EXISTING ANTENNA MOUNT ASSEMBLY MEMBER SIZES AND CONNECTIONS ARE ASSUMED TO BE AS SHOWN ON THE ORIGINAL CONSTRUCTION DOCUMENTS. GENERAL CONTRACTOR TO VERIFY THE ABOVE IN THE FIELD AND REPORT ANY VARIANCES TO THE ENGINEER OF RECORD PRIOR TO ANY INSTALLATION WORK BEING PERFORMED.
2. IT IS THE GENERAL CONTRACTOR'S/INSTALLER'S RESPONSIBILITY PRIOR TO INSTALLATION OF THE EQUIPMENT TO INSPECT AND VERIFY THAT THE EXISTING ANTENNA MOUNT ASSEMBLY IS IN GOOD CONDITION, IN GOOD WORKING ORDER AND INSTALLED ACCORDING TO THE MANUFACTURER'S ASSEMBLY DRAWINGS AND SPECIFICATIONS. IF ANY COMPONENTS ARE FOUND TO BE DEFECTIVE, INCLUDING MISSING OR LOOSE BOLTS/ANCHORS, REPORT SUCH DEFECTS IMMEDIATELY PRIOR TO INSTALLATION.

1 COMPOUND PLAN

SCALE = 3/16"=1'-0"

Sprint VISION
1 INTERNATIONAL BLVD, SUITE 800
MAHWAH, NJ 07495
P: 800-357-7641

Alcatel·Lucent
1 ROBBINS ROAD
WESTFORD, MA 01886
P: (978) 952-1600

Sa Salient ARCHITECTS, LLC
New Jersey Office:
8 East Palisade Avenue
Englewood, NJ 07631
P: 201-567-0002 F: 201-567-9556

STATE OF CONNECTICUT
CHARLES J. WHELAN
NO. 10239
LICENSED ARCHITECT

SUBMITTALS

NO	DATE	DESCRIPTION	BY
1	5/30/12	PRELIMINARY	PJP
2	6/11/12	PER CLIENTS COMMENTS	KS
3	07/18/12	REVISED PER COMMENTS	NAS
4	11/21/12	ISSUED AS FINAL	AD

SITE NUMBER: CT03XC342

SITE NAME: BOY SCOUTS/SNET

SITE ADDRESS: 363 RIVERSVILLE ROAD GREENWICH, CT 06830

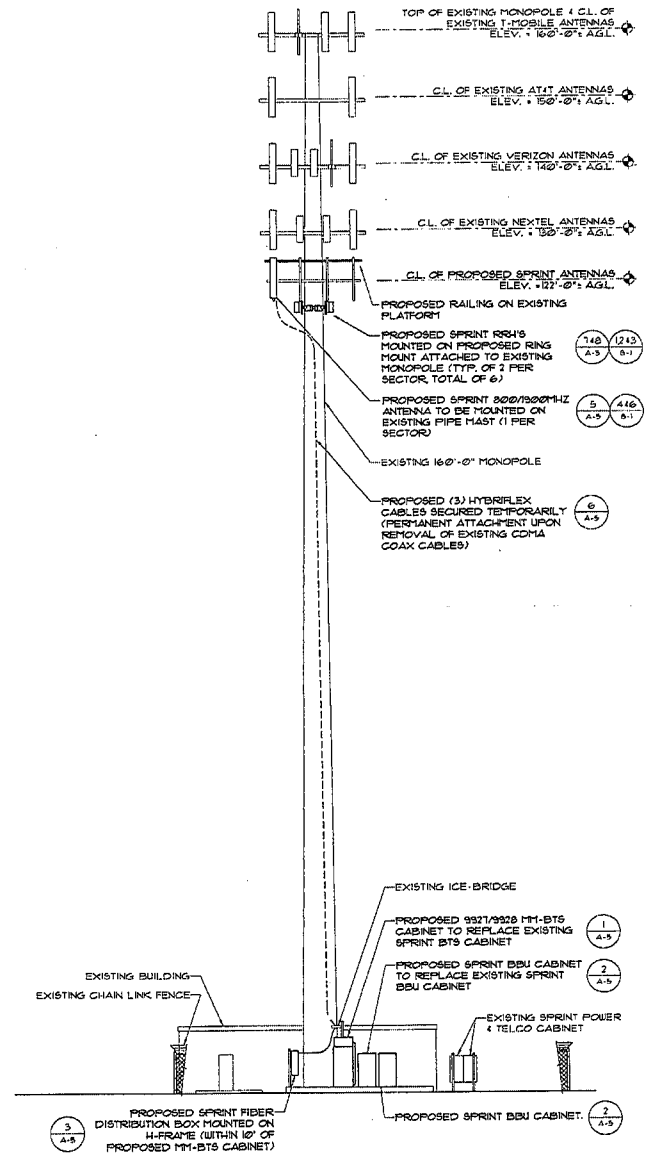
SHEET TITLE: COMPOUND PLAN

SALIENT PROJ. NO: CT03XC342

DATE:

CHECKED BY: JHP

SHEET NO: A-1



1 ELEVATION

SCALE = 1/8" = 1'-0"

ANTENNA CONFIGURATION NOTE

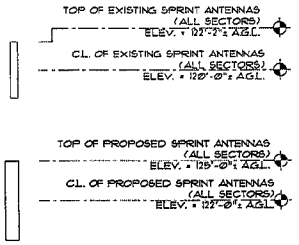
ALL EXISTING CDMA ANTENNAS TO BE REMOVED / REPLACED WITH NETWORK VISION ANTENNAS FOR FINAL CONFIGURATION.

ANTENNA SEPARATION TO BE FIELD VERIFIED BY THE GENERAL CONTRACTOR.

STRUCTURAL VERIFICATION BY GENERAL CONTRACTOR

GENERAL CONTRACTOR TO REFER TO THE STRUCTURAL ANALYSIS REPORTS PREPARED BY GPD GROUP ENTITLED "RIGOROUS STRUCTURAL ANALYSIS REPORT" DATED 7/31/12, GPD GROUP PROJECT: 20128656.54 (FOR THE TOWER) AND BY EBI CONSULTING ENTITLED "STRUCTURAL ASSESSMENT LETTER" DATED 8/24/2012 EBI CONSULTING'S PROJECT NUMBER: 811216.04 (FOR THE MOUNTS).

1. EXISTING ANTENNA MOUNT ASSEMBLY MEMBER SIZES AND CONNECTIONS ARE ASSUMED TO BE AS SHOWN ON THE ORIGINAL CONSTRUCTION DOCUMENTS. GENERAL CONTRACTOR TO VERIFY THE ABOVE IN THE FIELD AND REPORT ANY VARIANCES TO THE ENGINEER OF RECORD PRIOR TO ANY INSTALLATION WORK BEING PERFORMED.
2. IT IS THE GENERAL CONTRACTOR'S/INSTALLER'S RESPONSIBILITY PRIOR TO INSTALLATION OF THE EQUIPMENT TO INSPECT AND VERIFY THAT THE EXISTING ANTENNA MOUNT ASSEMBLY IS IN GOOD CONDITION, IN GOOD WORKING ORDER AND INSTALLED ACCORDING TO THE MANUFACTURER'S ASSEMBLY DRAWINGS AND SPECIFICATIONS. IF ANY COMPONENTS ARE FOUND TO BE DEFECTIVE, INCLUDING MISSING OR LOOSE BOLTS/ANCHORS, REPORT SUCH DEFECTS IMMEDIATELY PRIOR TO INSTALLATION.



2 HEIGHT COMPARISON

SCALE = 1/4"=1'-0"

Sprint VISION
1 INTERNATIONAL BLVD, SUITE 800
MAHWAH, NJ 07495
P: 800-357-7641

Alcatel·Lucent
1 ROBBINS ROAD
WESTFORD, MA 01886
P: (978) 952-1600

Salient ARCHITECTS, LLC
New Jersey Office:
8 East Palisade Avenue
Englewood, NJ 07631
P: 201-567-0032 - F: 201-567-0558

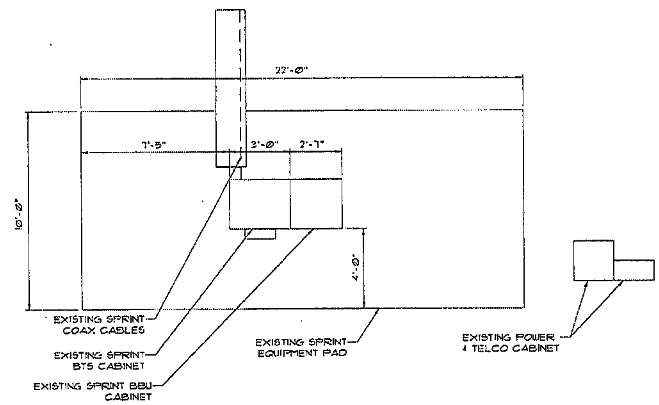
SUBMITTALS

NO	DATE	DESCRIPTION	BY
1	5/30/12	PRELIMINARY	PJP
2	6/4/12	PER CLIENTS COMMENTS	KS
3	07/26/12	REVISED PER COMMENTS	NAS
4	8/07/12	ISSUED AS FINAL	AD

SITE NUMBER:
CT03XC342
SITE NAME:
BOY SCOUTS/SNET
SITE ADDRESS:
363 RIVERSVILLE ROAD
GREENWICH, CT 06830

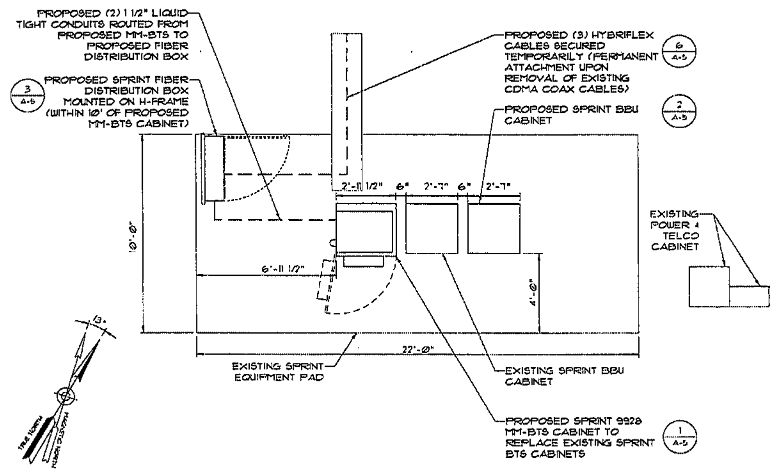
SHEET TITLE:
ELEVATION

SALIENT PROJ. NO: CT03XC342
DATE:
CHECKED BY: JHP
SHEET NO: A-2



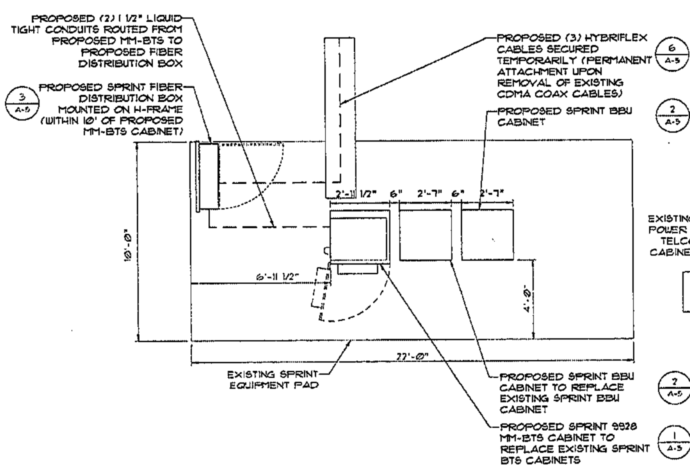
1 ENLARGED EXISTING EQUIPMENT CABINET LAYOUT

SCALE = 3/8" = 1'-0"



2 ENLARGED INTERIM EQUIPMENT CABINET LAYOUT

SCALE = 3/8" = 1'-0"



3 ENLARGED FINAL EQUIPMENT CABINET LAYOUT

SCALE = 3/8" = 1'-0"

STRUCTURAL VERIFICATION BY GENERAL CONTRACTOR

GENERAL CONTRACTOR TO REFER TO THE STRUCTURAL ANALYSIS REPORTS PREPARED BY GPD GROUP ENTITLED "RIGOROUS STRUCTURAL ANALYSIS REPORT" DATED 7/31/12. GPD GROUP PROJECT: 2012856.54 (FOR THE TOWER), AND BY EBI CONSULTING ENTITLED "STRUCTURAL ASSESSMENT LETTER" DATED 8/24/2012 EBI CONSULTING'S PROJECT NUMBER: 8121604 (FOR THE MOUNTS).

1. EXISTING ANTENNA MOUNT ASSEMBLY MEMBER SIZES AND CONNECTIONS ARE ASSUMED TO BE AS SHOWN ON THE ORIGINAL CONSTRUCTION DOCUMENTS. GENERAL CONTRACTOR TO VERIFY THE ABOVE IN THE FIELD AND REPORT ANY VARIANCES TO THE ENGINEER OF RECORD PRIOR TO ANY INSTALLATION WORK BEING PERFORMED.
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EQUIPMENT CABINET CONFIGURATION

EXISTING LAYOUT: 2 CABINETS
PROPOSED LAYOUT: 3 CABINETS

Sprint VISION
1 INTERNATIONAL BLVD, SUITE 800
MAHWAH, NJ 07495
P: 800-357-7641

Alcatel·Lucent
1 ROBBINS ROAD
WESTFORD, MA 01886
P: (978) 952-1600

Sa Salient ARCHITECTS, LLC
New Jersey Office:
5 East [illegible] Avenue
Englewood, NJ 07631
P: 201-[illegible]-0022 F: 201-[illegible]-9556

STATE OF CONNECTICUT CHARLES J. WALSH No. 10239 LICENSED ARCHITECT
Charles J. Walsh A.I.A. CT # 10239

SUBMITTALS

NO	DATE	DESCRIPTION	BY
1	5/30/12	PRELIMINARY	PJP
2	6/7/12	PER CLIENTS COMMENTS	KS
3	07/18/12	REVISED PER COMMENTS	NAS
4	9/07/12	ISSUED AS FINAL	AD

SITE NUMBER: CT03XC342

SITE NAME: BOY SCOUTS/SNET

SITE ADDRESS: 363 RIVERSVILLE ROAD GREENWICH, CT 06830

SHEET TITLE: ENLARGED EQUIPMENT CABINET LAYOUT

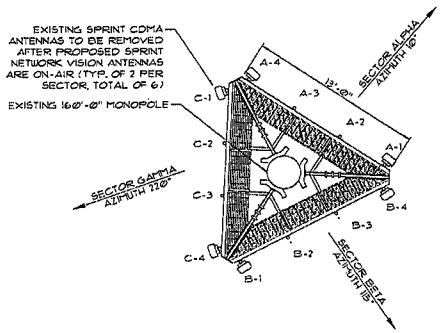
SALIENT PROJ. NO: CT03XC342

SHEET NO: A-3

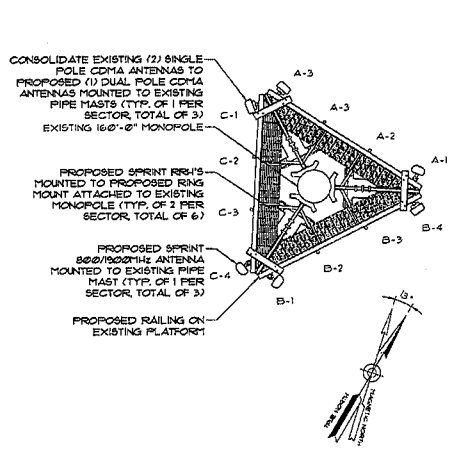
DATE:

CHECKED BY: JHP

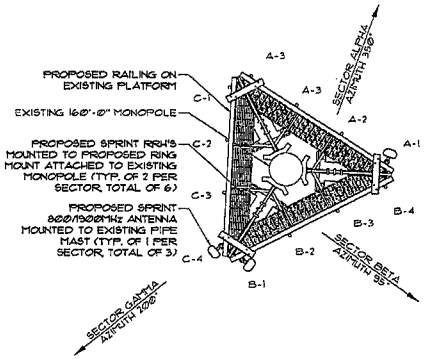
EXISTING ANTENNA PLAN



INTERIM ANTENNA PLAN



FINAL ANTENNA PLAN



1 ANTENNA SCENARIO

SCALE = N.T.S.

	POSITION	ANTENNA STATUS	FREQUENCY (MHZ)	ANTENNA MAKE	ANTENNA MODEL	AZIMUTHS EXISTING (FOR REFERENCE)	AZIMUTHS PROPOSED	MECHANICAL DOWN TILT	ELECTRICAL DOWN TILT	RAD CENTER (A.G.L.)	*HYBRIFLEX CABLE LENGTH (FT.)	RRH MODEL	TOP COAX JUMPER SIZE (IN.)	*TOP COAX JUMPER LENGTH (FT.)	TOP COAX JUMPER MAKE	TOP COAX JUMPER MODEL	COMBINER	*COMBINER JUMPER LENGTH (FT.)	ANTENNA COLOR CODING
ALPHA	A-1	PROPOSED	800/1900	RFS	APXV9PP18-C-A20	10°	350°	0°	0°	122'-0"	110	(1) 800MHz	1/2	10	RFS	(2) LCF12-50J	--	--	TBD
								0°	-1°			(1) 1900MHz	1/2	10	RFS	(4) LCF12-50J	--	--	
BETA	B-1	PROPOSED	800/1900	RFS	APXV9PP18-C-A20	115°	95°	0°	-3°	122'-0"	110	(1) 800MHz	1/2	10	RFS	(2) LCF12-50J	--	--	TBD
								0°	0°			(1) 1900MHz	1/2	10	RFS	(4) LCF12-50J	--	--	
GAMMA	C-4	PROPOSED	800/1900	RFS	APXV9PP18-C-A20	220°	200°	0°	-1°	122'-0"	110	(1) 800MHz	1/2	10	RFS	(2) LCF12-50J	--	--	TBD
								0°	0°			(1) 1900MHz	1/2	10	RFS	(4) LCF12-50J	--	--	

* CONTRACTOR TO FIELD VERIFY ALL CABLE/JUMPER LENGTHS AGAINST CURRENT B.O.M.

2 RF SYSTEM SCHEDULE

SCALE = N.T.S.

Sprint VISION
1 INTERNATIONAL BLVD, SUITE 800
MAHWAH, NJ 07495
P: 800-357-7641

Alcatel•Lucent
1 ROBBINS ROAD
WESTFORD, MA 01886
P: (978) 952-1600

Sa Salient ARCHITECTS, LLC
New Jersey Office:
6 Eastmans Road
Parsippany, NJ 07054
P: 201-587-9556

STATE OF CONNECTICUT
CHARLES J. WHELAN
NO. 10239
LICENSED ARCHITECT
Charles J. Whelan A.I.A.
CT # 10239

SUBMITTALS

NO	DATE	DESCRIPTION	BY
1	5/28/10	PRELIMINARY	PJP
2	6/11/10	PER CLIENTS COMMENTS	KB
3	07/16/10	REVISED PER COMMENTS	NAS
4	11/01/10	ISSUED AS FINAL	AD

SITE NUMBER: CT03XC342
SITE NAME: BOY SCOUTS/SNET
SITE ADDRESS: 363 RIVERSVILLE ROAD GREENWICH, CT 06830

SHEET TITLE: ANTENNA SCENARIO AND RF SYSTEM SCHEDULE

SALIENT PROJ. NO: CT03XC342
DATE:
CHECKED BY: JHP
SHEET NO: A-4

AT&T Towers
5405 Windward Pkwy
Alpharetta, GA 30004
(770) 708-6100

GPD GROUP
Glaus, Pyle, Schomer, Burns & DeHaven, Inc.
Kevin Clements
1117 Perimeter Center West, Suite W303
Atlanta, GA 30338
(678) 781-5061
kclements@gpdgroup.com

GPD# 2012856.54
July 31, 2012

STRUCTURAL ANALYSIS REPORT

AT&T DESIGNATION:	**Site USID:**	**26225**
	Site FA:	**10034990**
	Site Name:	**GREENWICH NORTH**
	AT&T Project:	**Sprint Vision Modification 5-30-2012**
ANALYSIS CRITERIA:	**Codes:**	**TIA/EIA-222-F, 2003 IBC, ASCE 7-05 & 2005 CTBC** **85-mph with 0" ice** **37-mph with 3/4" ice**
SITE DATA:		**363 Riversville Road, Greenwich, CT. 06831, Fairfield County** **Latitude 41° 03' 59.527" N, Longitude 73° 40' 17.097" W** **Market: New England** **160' EEI Monopole**

Ms. Charlotte Malone,

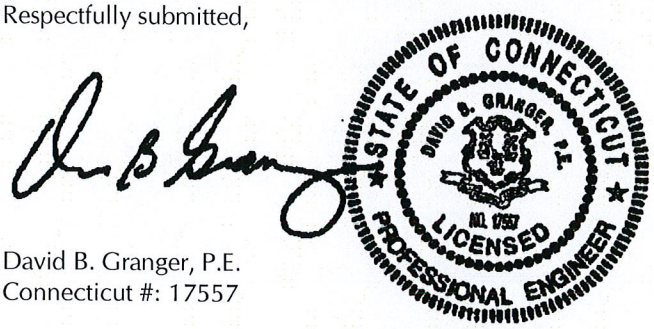
GPD is pleased to submit this Structural Analysis Report to determine the structural integrity of the aforementioned tower. The purpose of the analysis is to determine the suitability of the tower with the existing and proposed loading configuration detailed in the analysis report.

Analysis Results

Tower Stress Level with Proposed Equipment:	78.5%	Pass
Foundation Ratio with Proposed Equipment:	62.7%	Pass

We at GPD appreciate the opportunity of providing our continuing professional services to you and AT&T Mobility. If you have any questions or need further assistance on this or any other projects please do not hesitate to call.

Respectfully submitted,



David B. Granger, P.E.
Connecticut #: 17557

SUMMARY & RESULTS

The purpose of this analysis was to verify whether the existing structure is capable of carrying the proposed loading configuration as specified by Sprint to AT&T. This report was commissioned by Ms. Charlotte Malone of AT&T.

The proposed coax shall be run internal to the monopole with the existing coax in order for the analysis to be valid.

TOWER SUMMARY AND RESULTS

Member	Capacity	Results
Monopole	74.2%	Pass
Anchor Rods	62.2%	Pass
Base Plate	78.5%	Pass
Flange Plate @152'	9.4%	Pass
Flange Bolts @152'	10.3%	Pass
Foundation	62.7%	Pass

ANALYSIS METHOD

tnxTower (Version 6.0.4.0), a commercially available software program, was used to create a three-dimensional model of the tower and calculate primary member stresses for various dead, live, wind, and ice load cases. Selected output from the analysis is included in Appendix B. The following table details the information provided to complete this structural analysis. This analysis is solely based on this information and is being completed without the benefit of a recent detailed site visit.

DOCUMENTS PROVIDED

Document	Remarks	Source
Preliminary Tower Summary	Sprint Co-location document, uploaded 06/25/2012	Siterra
Site Lease Application	Sprint Application, dated 05/23/2012	Siterra
Tower Design	Not provided	N/A
Foundation Design	Not Provided	N/A
Foundation Investigation	WEI Project #: 2009-895, dated 9/4/09	Siterra
Geotechnical Report	WEI Project #: 2009-895, dated 9/4/09	Siterra
Previous Structural Analysis	GPD Group Project #: 2012768.11 Rev 1, 7/09/12	Siterra
Tower Mapping	GPD & MTSI Northeast, dated 2/18/09	Siterra

ASSUMPTIONS

This structural analysis is based on the theoretical capacity of the members and is not a condition assessment of the tower. This analysis is from information supplied, and therefore, its results are based on and are as accurate as that supplied data. GPD has made no independent determination, nor is it required to, of its accuracy. The following assumptions were made for this structural analysis.

1. The tower shaft sizes and shapes are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated in the materials section.
2. The antenna configuration is as supplied and/or as modeled in the analysis. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements.
3. Some assumptions are made regarding antennas and mount sizes and their projected areas based on best interpretation of data supplied and of best knowledge of antenna type and industry practice.
4. All mounts, if applicable, are considered adequate to support the loading. No actual analysis of the mount(s) is performed. This analysis is limited to analyzing the tower only.
5. The soil parameters are as per data supplied or as assumed and stated in the calculations.
6. Foundations are properly designed and constructed to resist the original design loads indicated in the documents provided.
7. The tower and structures have been properly maintained in accordance with TIA Standards and/or with manufacturer's specifications.
8. All welds and connections are assumed to develop at least the member capacity unless determined otherwise and explicitly stated in this report.
9. All prior structural modifications are assumed to be as per data supplied/available and to have been properly installed.
10. Loading interpreted from photos is accurate to $\pm 5'$ AGL, antenna size accurate to ± 3.3 sf, and coax equal to the number of existing antennas without reserve.
11. All existing loading was obtained from the previous structural analysis performed by GPD (Job #: 2012768.11 Rev 1 dated 7/09/2012), site photos, and the provided notice of the co-location form and is assumed to be accurate.
12. The existing AT&T loading has been modeled based on the final loading configuration of the internal modification project (MOD LTE 4-22-11) located on siterra.
13. The proposed coax shall be run internal to the monopole with the existing coax in order for the analysis to be valid.
14. The future AT&T loading has been modeled based on the generic future AT&T loading scenario.

If any of these assumptions are not valid or have been made in error, this analysis may be affected, and GPD Group should be allowed to review any new information to determine its effect on the structural integrity of the tower.

DISCLAIMER OF WARRANTIES

GPD GROUP has not performed a recent site visit to the tower to verify the member sizes or antenna/coax loading. If the existing conditions are not as represented on the tower elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the tower or foundation. This report does not replace a full tower inspection. The tower and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free, and plumb.

The engineering services rendered by GPD GROUP in connection with this Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. All tower components have been assumed to only resist dead loads when no other loads are applied. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

GPD GROUP does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD GROUP provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the feasibility of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation in excess of the specified code recommended amount, if any, that should be considered in the structural analysis.

The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD GROUP, but are beyond the scope of this report.

Miscellaneous items such as antenna mounts, etc., have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

GPD GROUP makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD GROUP will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD GROUP pursuant to this report will be limited to the total fee received for preparation of this report.

APPENDIX A

Tower Analysis Summary Form

Tower Analysis Summary Form

General Info

Site Name	GREENWICH NORTH
Site Number	26225
FA Number	10034990
Date of Analysis	7/24/2012
Company Performing Analysis	GPD

The information contained in this summary report is not to be used independently from the PE stamped tower analysis.

Tower Info	Description	Date
Tower Type (G, SST, MP)	MP	
Tower Height (top of steel AGL)	160'	
Tower Manufacturer	EEI	
Tower Model	n/a	
Tower Design	EEI Project #: 5590	4/10/2003
Foundation Design	n/a	
Geotech Report	WEI Project #: 2009-895	9/4/2009
Tower Mapping	GPD Group & MTSI Northeast	2/18/2009
Previous Structural Analysis	GPD Project #: 2012768.11 Rev 1	7/9/2012
Foundation Mapping	WEI Project #: 2009-895	9/4/2009

Design Parameters

Design Code Used	TIA/EIA-222-F, 2003 IBC ASCE 7-05 & 2005 CTBC
Location of Tower (County, State)	Fairfield, Conecticut
Basic Wind Speed (mph)	85-fastest
Ice Thickness (in)	0.75
Structure Classification (I, II, III)	
Exposure Category (B, C, D)	
Topographic Category (1 to 5)	

Analysis Results (% Maximum Usage)

Existing/Reserved + Future + Proposed Condition	
Tower (%)	74.2%
Base Plate (%)	78.5%
Foundation (%)	62.7%
Foundation Adequate?	Yes

Steel Yield Strength (ksi)

Pole	65
Flange Bolts	A325
Flange Plates	60
Anchor Rods	75
Base Plate	60

Existing / Reserved Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External
T-Mobile	160	163	3	Panel	Ericsson	AIR21 B2A/B4P	40,185,310	1	Unknown	12' LP Platform	12	Unknown	1-5/8"	Internal
T-Mobile	160	163	3	Panel	Ericsson	AIR21 B4A/B4P	40,185,310			on same mount	9	Hybrid Cable	40mm	Internal
T-Mobile	160	163	3	Panel	Ericsson	AIR33 B4A/B4P	40,185,310			on same mount				
T-Mobile	160	163	3	TMA	RFS	ATMAA1412D-1A20				behind the antennas				
AT&T Mobility	148	150	6	Panel	Powerwave	7770	62,183,302	1	Unknown	12' LP Platform	12	Unknown	1-5/8"	Internal
AT&T Mobility	148	150	12	TMA	Powerwave	LGP 21401				behind the antennas				
AT&T Mobility	148	150	3	Panel	Powerwave	P65-16-XLH-RR	30,150,270			on same mount	2	DC Power	7/8"	Internal
AT&T Mobility	148	150	6	RRH	Ericsson	RRU-11				on same mount	1	Fiber	1/2"	Internal
AT&T Mobility	148	150	1	DC Unit	Raycap	DC6-48-60-18-8F				on same mount	1	Unknown	RET cable	Internal
Verizon	141.5	141.5	6	Panel	Andrew	APL868013-42TO	40,155,275	1	Unknown	12' LP Platform	18	Unknown	1-5/8"	Internal
Verizon	141.5	141.5	3	Panel	Powerwave	P6516XL-2	40,155,275			on same mount				
Verizon	141.5	141.5	3	Panel	Rymsa	MG D3-800TO	40,155,275			on same mount				
Nextel	131	131	12	Panel	Decibel	DB4H9E	20,140,260	1	Unknown	12' LP Platform	12	Unknown	1-1/4"	Internal
Nextel	131	131									3	Unknown	1/2"	Internal
Sprint	122	122	6	Panel	Decibel	DB980F90E-M	95,200,350	1	Unknown	12' LP Platform	6	Unknown	1-5/8"	Internal
Sprint	72	73	1	GPS	Unknown	GPS	110	1	Unknown	4' Standoff	1	Unknown	1/2"	Internal

Proposed Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External
Sprint	122	122	6	Panel	RFS	APXVSPP18-C-A20	95,200,350			on existing mount	3	Hybriflex	1 1/4"	Internal
Sprint	122	122	3	RRH	Alcatel	1900 MHz RRH				on existing mount				
Sprint	122	122	3	RRH	Alcatel	800 MHz RRH				on existing mount				

Note: The proposed loading shall be in addition to the existing loading at the same elevation.

Note: The proposed coax shall be run internal to the monopole with the existing coax in order for the analysis to be valid.

Future Loading

Antenna								Mount			Transmission Line			
Antenna Owner	Mount Height (ft)	Antenna CL (ft)	Quantity	Type	Manufacturer	Model	Azimuth	Quantity	Manufacturer	Type	Quantity	Model	Size	Attachment Internal/External
AT&T Mobility	148	150	3	Panel	Powerwave	P65-16-XLH-RR	30,150,270			on existing mount	6	LDF7-50A	1 5/8"	Internal

Note: The future loading shall be in addition to the existing loading at the same elevation.

APPENDIX B

tnxTower Output File

Tower Input Data

There is a pole section.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in Fairfield County, Connecticut.
Basic wind speed of 85 mph.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 37 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 50 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.333.
Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

Feed Line/Linear Appurtenances - Entered As Area

Description	*Face or Leg*	*Allow Shield*	*Component Type*	*Placement*	*Total Number*		C_AA_A	*Weight*
				ft			*ft²/ft*	*plf*
LDF7-50A(1-5/8")	A	No	Inside Pole	160.00 - 8.00	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
						2" Ice	0.00	0.82
						4" Ice	0.00	0.82
LDF6-50A (40mm Hybrid)	A	No	Inside Pole	160.00 - 8.00	9	No Ice	0.00	0.66
						1/2" Ice	0.00	0.66
						1" Ice	0.00	0.66
						2" Ice	0.00	0.66
						4" Ice	0.00	0.66
LDF7-50A(1-5/8")	B	No	Inside Pole	148.00 - 8.00	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
						2" Ice	0.00	0.82
						4" Ice	0.00	0.82
7/8" DC Power Cable	B	No	Inside Pole	148.00 - 8.00	2	No Ice	0.00	0.60
						1/2" Ice	0.00	0.60
						1" Ice	0.00	0.60
						2" Ice	0.00	0.60
						4" Ice	0.00	0.60
1/2" Fiber Cable	B	No	Inside Pole	148.00 - 8.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
						2" Ice	0.00	0.15
						4" Ice	0.00	0.15
RET Cable	B	No	Inside Pole	148.00 - 8.00	1	No Ice	0.00	0.08
						1/2" Ice	0.00	0.08
						1" Ice	0.00	0.08
						2" Ice	0.00	0.08
						4" Ice	0.00	0.08

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
LDF7-50A(1-5/8")	C	No	Inside Pole	141.50 - 8.00	18	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
						2" Ice	0.00	0.82
						4" Ice	0.00	0.82
LDF6-50A(1-1/4")	A	No	Inside Pole	131.00 - 8.00	12	No Ice	0.00	0.66
						1/2" Ice	0.00	0.66
						1" Ice	0.00	0.66
						2" Ice	0.00	0.66
						4" Ice	0.00	0.66
LDF4-50A(1/2")	A	No	Inside Pole	131.00 - 8.00	3	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
						2" Ice	0.00	0.15
						4" Ice	0.00	0.15
LDF7-50A(1-5/8")	B	No	Inside Pole	122.00 - 8.00	6	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
						2" Ice	0.00	0.82
						4" Ice	0.00	0.82
LDF4-50A(1/2")	B	No	Inside Pole	73.00 - 8.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
						1" Ice	0.00	0.15
						2" Ice	0.00	0.15
						4" Ice	0.00	0.15
Hybriflex (1-1/4")	B	No	Inside Pole	122.00 - 8.00	3	No Ice	0.00	1.00
						1/2" Ice	0.00	1.00
						1" Ice	0.00	1.00
						2" Ice	0.00	1.00
						4" Ice	0.00	1.00
LDF7-50A(1-5/8")	B	No	Inside Pole	148.00 - 8.00	6	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
						2" Ice	0.00	0.82
						4" Ice	0.00	0.82
Climbing Pegs	C	No	CaAa (Out Of Face)	160.00 - 8.00	1	No Ice	0.01	0.31
						1/2" Ice	0.12	0.71
						1" Ice	0.22	1.71
						2" Ice	0.41	5.56
						4" Ice	0.82	20.59
Safety Line 3/8	C	No	CaAa (Out Of Face)	160.00 - 8.00	1	No Ice	0.04	0.22
						1/2" Ice	0.14	0.75
						1" Ice	0.24	1.28
						2" Ice	0.44	2.34
						4" Ice	0.84	4.46

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
12' LP Platform - Flat (GPD)	C	None		0.0000	160.00	No Ice	20.01	20.01	1200.00
						1/2" Ice	24.78	24.78	1560.00
						1" Ice	29.55	29.55	1920.00
						2" Ice	39.09	39.09	2640.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
							4" Ice	58.17	58.17	4080.00
AIR21 B2A/B4P w/ mount pipe	A	From Centroid-Face	3.98	0.35	10.0000	160.00	No Ice	6.72	5.56	105.08
							1/2" Ice	7.23	6.36	158.82
				3.00			1" Ice	7.73	7.13	222.40
							2" Ice	8.77	8.71	372.04
							4" Ice	10.97	12.10	790.26
AIR21 B2A/B4P w/ mount pipe	B	From Centroid-Face	3.98	0.35	-20.0000	160.00	No Ice	6.72	5.56	105.08
							1/2" Ice	7.23	6.36	158.82
				3.00			1" Ice	7.73	7.13	222.40
							2" Ice	8.77	8.71	372.04
							4" Ice	10.97	12.10	790.26
AIR21 B2A/B4P w/ mount pipe	C	From Centroid-Face	3.98	0.35	5.0000	160.00	No Ice	6.72	5.56	105.08
							1/2" Ice	7.23	6.36	158.82
				3.00			1" Ice	7.73	7.13	222.40
							2" Ice	8.77	8.71	372.04
							4" Ice	10.97	12.10	790.26
AIR21 B4A/B2P w/ mount pipe	A	From Centroid-Face	3.98	0.35	10.0000	160.00	No Ice	6.52	4.26	85.00
							1/2" Ice	6.97	4.66	126.39
				3.00			1" Ice	7.42	5.08	172.88
							2" Ice	8.35	5.96	281.94
							4" Ice	10.32	7.82	569.82
AIR21 B4A/B2P w/ mount pipe	B	From Centroid-Face	3.98	0.35	-20.0000	160.00	No Ice	6.52	4.26	85.00
							1/2" Ice	6.97	4.66	126.39
				3.00			1" Ice	7.42	5.08	172.88
							2" Ice	8.35	5.96	281.94
							4" Ice	10.32	7.82	569.82
AIR21 B4A/B2P w/ mount pipe	C	From Centroid-Face	3.98	0.35	5.0000	160.00	No Ice	6.52	4.26	85.00
							1/2" Ice	6.97	4.66	126.39
				3.00			1" Ice	7.42	5.08	172.88
							2" Ice	8.35	5.96	281.94
							4" Ice	10.32	7.82	569.82
AIR33 B4A/B4A w/ mount pipe	A	From Centroid-Face	3.98	0.35	10.0000	160.00	No Ice	6.74	5.58	125.38
							1/2" Ice	7.25	6.40	179.31
				3.00			1" Ice	7.76	7.17	243.14
							2" Ice	8.82	8.76	393.34
							4" Ice	11.04	12.17	813.27
AIR33 B4A/B4A w/ mount pipe	B	From Centroid-Face	3.98	0.35	-20.0000	160.00	No Ice	6.74	5.58	125.38
							1/2" Ice	7.25	6.40	179.31
				3.00			1" Ice	7.76	7.17	243.14
							2" Ice	8.82	8.76	393.34
							4" Ice	11.04	12.17	813.27
AIR33 B4A/B4A w/ mount pipe	C	From Centroid-Face	3.98	0.35	5.0000	160.00	No Ice	6.74	5.58	125.38
							1/2" Ice	7.25	6.40	179.31
				3.00			1" Ice	7.76	7.17	243.14
							2" Ice	8.82	8.76	393.34
							4" Ice	11.04	12.17	813.27
ATMAA1412D-1A20	A	From Centroid-Face	3.98	0.35	10.0000	160.00	No Ice	1.17	0.47	13.00
							1/2" Ice	1.31	0.57	20.62
				3.00			1" Ice	1.47	0.69	30.11
							2" Ice	1.81	0.95	55.52
							4" Ice	2.58	1.57	137.44
ATMAA1412D-1A20	B	From Centroid-Face	3.98	0.35	-20.0000	160.00	No Ice	1.17	0.47	13.00
							1/2" Ice	1.31	0.57	20.62
				3.00			1" Ice	1.47	0.69	30.11
							2" Ice	1.81	0.95	55.52
							4" Ice	2.58	1.57	137.44
ATMAA1412D-1A20	C	From	3.98		5.0000	160.00	No Ice	1.17	0.47	13.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
		Centroid-Face	0.35 3.00			1/2" Ice	1.31	0.57	20.62
						1" Ice	1.47	0.69	30.11
						2" Ice	1.81	0.95	55.52
						4" Ice	2.58	1.57	137.44
12' LP Platform - Flat (GPD)	C	None		0.0000	148.00	No Ice	20.01	20.01	1200.00
						1/2" Ice	24.78	24.78	1560.00
						1" Ice	29.55	29.55	1920.00
						2" Ice	39.09	39.09	2640.00
						4" Ice	58.17	58.17	4080.00
(2) 7770.00 w/Mount Pipe	A	From Centroid-Face	4.00 0.14 2.00	2.0000	148.00	No Ice	5.88	4.10	61.54
						1/2" Ice	6.31	4.73	107.08
						1" Ice	6.75	5.37	160.39
						2" Ice	7.66	6.70	289.46
						4" Ice	9.58	9.87	654.29
(2) 7770.00 w/Mount Pipe	B	From Centroid-Face	4.00 0.14 2.00	2.0000	148.00	No Ice	5.88	4.10	61.54
						1/2" Ice	6.31	4.73	107.08
						1" Ice	6.75	5.37	160.39
						2" Ice	7.66	6.70	289.46
						4" Ice	9.58	9.87	654.29
(2) 7770.00 w/Mount Pipe	C	From Centroid-Face	4.00 0.14 2.00	3.0000	148.00	No Ice	5.88	4.10	61.54
						1/2" Ice	6.31	4.73	107.08
						1" Ice	6.75	5.37	160.39
						2" Ice	7.66	6.70	289.46
						4" Ice	9.58	9.87	654.29
(4) LGP21401	A	From Centroid-Face	4.00 0.14 2.00	2.0000	148.00	No Ice	0.00	0.23	14.10
						1/2" Ice	0.00	0.31	21.26
						1" Ice	0.00	0.40	30.32
						2" Ice	0.00	0.61	54.89
						4" Ice	0.00	1.12	135.29
(4) LGP21401	B	From Centroid-Face	4.00 0.14 2.00	2.0000	148.00	No Ice	0.00	0.23	14.10
						1/2" Ice	0.00	0.31	21.26
						1" Ice	0.00	0.40	30.32
						2" Ice	0.00	0.61	54.89
						4" Ice	0.00	1.12	135.29
(4) LGP21401	C	From Centroid-Face	4.00 0.14 2.00	3.0000	148.00	No Ice	0.00	0.23	14.10
						1/2" Ice	0.00	0.31	21.26
						1" Ice	0.00	0.40	30.32
						2" Ice	0.00	0.61	54.89
						4" Ice	0.00	1.12	135.29
P65-16-XLH-RR w/ Mount Pipe	A	From Centroid-Face	4.00 0.14 2.00	-30.0000	148.00	No Ice	8.64	6.36	89.55
						1/2" Ice	9.29	7.54	152.50
						1" Ice	9.91	8.43	227.37
						2" Ice	11.18	10.24	403.63
						4" Ice	13.83	14.10	896.51
P65-16-XLH-RR w/ Mount Pipe	B	From Centroid-Face	4.00 0.14 2.00	-30.0000	148.00	No Ice	8.64	6.36	89.55
						1/2" Ice	9.29	7.54	152.50
						1" Ice	9.91	8.43	227.37
						2" Ice	11.18	10.24	403.63
						4" Ice	13.83	14.10	896.51
P65-16-XLH-RR w/ Mount Pipe	C	From Centroid-Face	4.00 0.14 2.00	-30.0000	148.00	No Ice	8.64	6.36	89.55
						1/2" Ice	9.29	7.54	152.50
						1" Ice	9.91	8.43	227.37
						2" Ice	11.18	10.24	403.63
						4" Ice	13.83	14.10	896.51
(2) RRU-11	A	From Centroid-Face	4.00 0.14 2.00	-30.0000	148.00	No Ice	1.91	1.47	44.00
						1/2" Ice	2.10	1.65	59.71
						1" Ice	2.30	1.83	78.03

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
						2" Ice	2.72	2.22	123.32
						4" Ice	3.68	3.10	253.87
(2) RRU-11	B	From Centroid-Face	4.00 0.14 2.00	-30.0000	148.00	No Ice	1.91	1.47	44.00
						1/2" Ice	2.10	1.65	59.71
						1" Ice	2.30	1.83	78.03
						2" Ice	2.72	2.22	123.32
						4" Ice	3.68	3.10	253.87
(2) RRU-11	C	From Centroid-Face	4.00 0.14 2.00	-30.0000	148.00	No Ice	1.91	1.47	44.00
						1/2" Ice	2.10	1.65	59.71
						1" Ice	2.30	1.83	78.03
						2" Ice	2.72	2.22	123.32
						4" Ice	3.68	3.10	253.87
DC6-48-60-18-8F	A	From Centroid-Face	4.00 0.14 2.00	-30.0000	148.00	No Ice	2.22	2.22	20.00
						1/2" Ice	2.44	2.44	39.25
						1" Ice	2.66	2.66	61.47
						2" Ice	3.15	3.15	115.61
						4" Ice	4.21	4.21	268.16
12' LP Platform - Flat (GPD)	C	None		0.0000	141.50	No Ice	20.01	20.01	1200.00
						1/2" Ice	24.78	24.78	1560.00
						1" Ice	29.55	29.55	1920.00
						2" Ice	39.09	39.09	2640.00
						4" Ice	58.17	58.17	4080.00
(2) APL868013-42T0 w/ Mount Pipe	A	From Centroid-Face	3.63 -1.69 0.00	-25.0000	141.50	No Ice	3.58	5.40	31.87
						1/2" Ice	4.20	6.49	72.91
						1" Ice	4.73	7.30	124.06
						2" Ice	5.86	8.96	247.43
						4" Ice	8.27	12.49	612.75
(2) APL868013-42T0 w/ Mount Pipe	B	From Centroid-Face	3.63 -1.69 0.00	-20.0000	141.50	No Ice	3.58	5.40	31.87
						1/2" Ice	4.20	6.49	72.91
						1" Ice	4.73	7.30	124.06
						2" Ice	5.86	8.96	247.43
						4" Ice	8.27	12.49	612.75
(2) APL868013-42T0 w/ Mount Pipe	C	From Centroid-Face	3.63 -1.69 0.00	-25.0000	141.50	No Ice	3.58	5.40	31.87
						1/2" Ice	4.20	6.49	72.91
						1" Ice	4.73	7.30	124.06
						2" Ice	5.86	8.96	247.43
						4" Ice	8.27	12.49	612.75
P6516XL-2 w/ Mount Pipe	A	From Centroid-Face	3.63 -1.69 0.00	-25.0000	141.50	No Ice	8.74	6.52	86.06
						1/2" Ice	9.35	7.39	157.31
						1" Ice	9.97	8.27	234.46
						2" Ice	11.24	10.08	420.45
						4" Ice	13.90	13.90	923.55
P6516XL-2 w/ Mount Pipe	B	From Centroid-Face	3.63 -1.69 0.00	-20.0000	141.50	No Ice	8.74	6.52	86.06
						1/2" Ice	9.35	7.39	157.31
						1" Ice	9.97	8.27	234.46
						2" Ice	11.24	10.08	420.45
						4" Ice	13.90	13.90	923.55
P6516XL-2 w/ Mount Pipe	C	From Centroid-Face	3.63 -1.69 0.00	-25.0000	141.50	No Ice	8.74	6.52	86.06
						1/2" Ice	9.35	7.39	157.31
						1" Ice	9.97	8.27	234.46
						2" Ice	11.24	10.08	420.45
						4" Ice	13.90	13.90	923.55
MG D3-800TO w/ Mount Pipe	A	From Centroid-Face	3.63 -1.69 0.00	-25.0000	141.50	No Ice	3.59	3.74	58.03
						1/2" Ice	3.98	4.38	97.75
						1" Ice	4.39	5.04	141.76
						2" Ice	5.33	6.42	253.65
						4" Ice	7.35	9.52	578.22

tnxTower	Job: 26225 GREENWICH NORTH	Page: 6 of 8
GPD Group 520 South Main Street, Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	Project: 2012865.54	Date: 10:26:13 07/31/12
	Client: AT&T MOBILITY	Designed by: twillman

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
MG D3-800TO w/ Mount Pipe	B	From Centroid-Face	3.63 -1.69 0.00	-20.0000	141.50	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.59 3.98 4.39 5.33 7.35	3.74 4.38 5.04 6.42 9.52	58.03 97.75 141.76 253.65 578.22
MG D3-800TO w/ Mount Pipe	C	From Centroid-Face	3.63 -1.69 0.00	-25.0000	141.50	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.59 3.98 4.39 5.33 7.35	3.74 4.38 5.04 6.42 9.52	58.03 97.75 141.76 253.65 578.22
12' LP Platform - Flat (GPD)	C	None		0.0000	131.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	20.01 24.78 29.55 39.09 58.17	20.01 24.78 29.55 39.09 58.17	1200.00 1560.00 1920.00 2640.00 4080.00
(4) DB4H9E w/ Mount Pipe	A	From Centroid-Leg	3.76 1.37 0.00	20.0000	131.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.87 3.18 3.49 4.11 5.35	1.53 2.24 2.95 4.37 7.21	30.00 54.55 79.10 128.20 226.40
(4) DB4H9E w/ Mount Pipe	B	From Centroid-Leg	3.76 1.37 0.00	20.0000	131.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.87 3.18 3.49 4.11 5.35	1.53 2.24 2.95 4.37 7.21	30.00 54.55 79.10 128.20 226.40
(4) DB4H9E w/ Mount Pipe	C	From Centroid-Leg	3.76 1.37 0.00	20.0000	131.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.87 3.18 3.49 4.11 5.35	1.53 2.24 2.95 4.37 7.21	30.00 54.55 79.10 128.20 226.40
12' LP Platform - Flat (GPD)	C	None		0.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	20.01 24.78 29.55 39.09 58.17	20.01 24.78 29.55 39.09 58.17	1200.00 1560.00 1920.00 2640.00 4080.00
(2) DB980F90E-M w/Mount Pipe	A	From Centroid-Face	3.28 2.29 0.00	50.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.37 4.96 5.47 6.52 8.98	3.95 5.04 5.85 7.49 10.98	34.05 70.69 117.91 234.84 592.97
(2) DB980F90E-M w/Mount Pipe	B	From Centroid-Face	3.28 2.29 0.00	35.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.37 4.96 5.47 6.52 8.98	3.95 5.04 5.85 7.49 10.98	34.05 70.69 117.91 234.84 592.97
(2) DB980F90E-M w/Mount Pipe	C	From Centroid-Face	3.28 2.29 0.00	20.0000	122.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.37 4.96 5.47 6.52 8.98	3.95 5.04 5.85 7.49 10.98	34.05 70.69 117.91 234.84 592.97
4' Standoff - Flat (GPD)	B	From Leg	1.97 -0.35 0.00	-10.0000	72.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.96 3.08 4.20 6.44 10.92	6.13 8.58 11.03 15.93 25.73	74.61 106.30 137.99 201.37 328.13
GPS	B	From Leg	3.94 -0.70	-10.0000	72.00	No Ice 1/2" Ice	0.05 0.09	0.05 0.09	0.87 1.52

tnxTower	Job: 26225 GREENWICH NORTH	Page: 7 of 8
GPD Group 520 South Main Street, Suite 2531 Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-2101	Project: 2012865.54	Date: 10:26:13 07/31/12
	Client: AT&T MOBILITY	Designed by: twillman

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			1.00			1" Ice	0.13	0.13	2.78
						2" Ice	0.25	0.25	7.90
						4" Ice	0.58	0.58	34.05
(2) APXVSPP18-C-A20 w/ Mount Pipe	A	From Centroid-Face	3.28 2.29 0.00	50.0000	122.00	No Ice	8.26	6.71	78.90
						1/2" Ice	8.81	7.66	141.88
						1" Ice	9.36	8.49	216.06
						2" Ice	10.50	10.20	390.25
						4" Ice	12.88	13.98	872.75
(2) APXVSPP18-C-A20 w/ Mount Pipe	B	From Centroid-Face	3.28 2.29 0.00	35.0000	122.00	No Ice	8.26	6.71	78.90
						1/2" Ice	8.81	7.66	141.88
						1" Ice	9.36	8.49	216.06
						2" Ice	10.50	10.20	390.25
						4" Ice	12.88	13.98	872.75
(2) APXVSPP18-C-A20 w/ Mount Pipe	C	From Centroid-Face	3.28 2.29 0.00	20.0000	122.00	No Ice	8.26	6.71	78.90
						1/2" Ice	8.81	7.66	141.88
						1" Ice	9.36	8.49	216.06
						2" Ice	10.50	10.20	390.25
						4" Ice	12.88	13.98	872.75
1900MHz RRH	A	From Centroid-Face	3.28 2.29 0.00	50.0000	122.00	No Ice	2.91	3.80	44.00
						1/2" Ice	3.14	4.06	75.27
						1" Ice	3.39	4.34	110.18
						2" Ice	3.91	4.91	191.65
						4" Ice	5.05	6.15	406.70
1900MHz RRH	B	From Centroid-Face	3.28 2.29 0.00	35.0000	122.00	No Ice	2.91	3.80	44.00
						1/2" Ice	3.14	4.06	75.27
						1" Ice	3.39	4.34	110.18
						2" Ice	3.91	4.91	191.65
						4" Ice	5.05	6.15	406.70
1900MHz RRH	C	From Centroid-Face	3.28 2.29 0.00	20.0000	122.00	No Ice	2.91	3.80	44.00
						1/2" Ice	3.14	4.06	75.27
						1" Ice	3.39	4.34	110.18
						2" Ice	3.91	4.91	191.65
						4" Ice	5.05	6.15	406.70
800MHZ RRH	A	From Centroid-Face	3.28 2.29 0.00	50.0000	122.00	No Ice	2.49	2.07	53.00
						1/2" Ice	2.71	2.27	74.19
						1" Ice	2.93	2.48	98.39
						2" Ice	3.41	2.93	156.61
						4" Ice	4.46	3.93	317.77
800MHZ RRH	B	From Centroid-Face	3.28 2.29 0.00	35.0000	122.00	No Ice	2.49	2.07	53.00
						1/2" Ice	2.71	2.27	74.19
						1" Ice	2.93	2.48	98.39
						2" Ice	3.41	2.93	156.61
						4" Ice	4.46	3.93	317.77
800MHZ RRH	C	From Centroid-Face	3.28 2.29 0.00	20.0000	122.00	No Ice	2.49	2.07	53.00
						1/2" Ice	2.71	2.27	74.19
						1" Ice	2.93	2.48	98.39
						2" Ice	3.41	2.93	156.61
						4" Ice	4.46	3.93	317.77
P65-16-XLH-RR w/ Mount Pipe	A	From Centroid-Face	4.00 0.14 2.00	-30.0000	148.00	No Ice	8.64	6.36	89.55
						1/2" Ice	9.29	7.54	152.50
						1" Ice	9.91	8.43	227.37
						2" Ice	11.18	10.24	403.63
						4" Ice	13.83	14.10	896.51
P65-16-XLH-RR w/ Mount Pipe	B	From Centroid-Face	4.00 0.14 2.00	-30.0000	148.00	No Ice	8.64	6.36	89.55
						1/2" Ice	9.29	7.54	152.50
						1" Ice	9.91	8.43	227.37
						2" Ice	11.18	10.24	403.63

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
P65-16-XLH-RR w/ Mount Pipe	C	From Centroid-Face	4.00 0.14 2.00	-30.0000	148.00	4" Ice No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	13.83 8.64 9.29 9.91 11.18 13.83	14.10 6.36 7.54 8.43 10.24 14.10	896.51 89.55 152.50 227.37 403.63 896.51

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
160.00	12' LP Platform - Flat (GPD)	33	27.150	1.4459	0.0006	50937
148.00	12' LP Platform - Flat (GPD)	33	23.534	1.4257	0.0004	20773
141.50	12' LP Platform - Flat (GPD)	33	21.605	1.4004	0.0004	13270
131.00	12' LP Platform - Flat (GPD)	33	18.575	1.3382	0.0003	8380
122.00	12' LP Platform - Flat (GPD)	33	16.102	1.2660	0.0003	6368
72.00	4' Standoff - Flat (GPD)	33	5.468	0.7092	0.0002	5036

Section Capacity Table

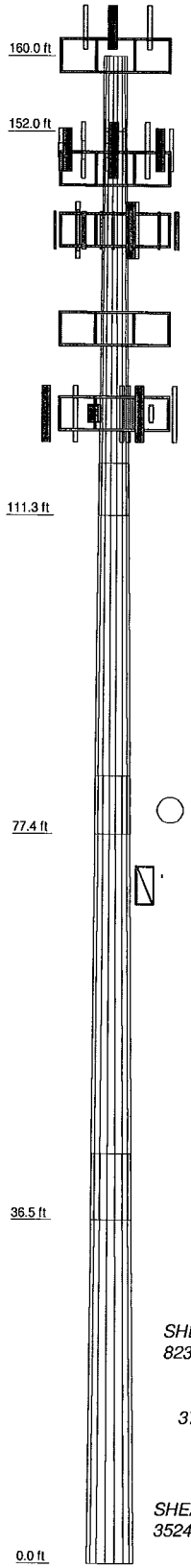
Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
L1	160 - 152	Pole	TP30.62x29x0.1875	1	-2463.12	908478.12	7.9	Pass
L2	152 - 111.29	Pole	TP38.86x30.62x0.25	2	-14339.10	1547466.31	51.4	Pass
L3	111.29 - 77.42	Pole	TP45.09x37.263x0.3125	3	-21738.80	2245558.38	74.2	Pass
L4	77.42 - 36.46	Pole	TP52.62x43.2359x0.4375	4	-34630.00	3665309.96	70.9	Pass
L5	36.46 - 0	Pole	TP59x50.3353x0.5	5	-52016.10	4826446.22	72.4	Pass
							Summary	
						Pole (L3)	74.2	Pass
						RATING =	**74.2**	**Pass**

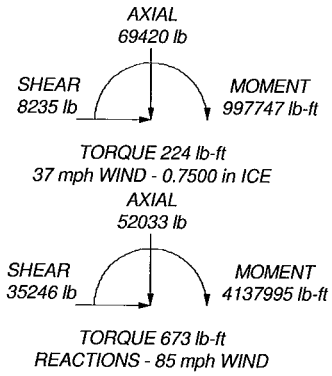
APPENDIX C

Tower Elevation Drawing

Section	1	2	3	4	5
Length (ft)	8.00	40.71	39.29	47.13	43.54
Number of Sides	18	18	18	18	18
Thickness (in)	0.1875	0.2500	0.3125	0.4375	0.5000
Socket Length (ft)		5.42	6.17	7.08	
Top Dia (in)	29.0000	30.6200	37.2630	43.2359	50.3353
Bot Dia (in)	30.6200	38.8600	45.0900	52.6200	59.0000
Grade			A572-65		
Weight (lb)	479.9	3791.2	5418.9	10576.1	12736.2

33002.3





DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
12' LP Platform - Flat (GPD)	160	(2) APL868013-42T0 w/ Mount Pipe	141.5
AIR21 B2A/B4P w/ mount pipe	160	P6516XL-2 w/ Mount Pipe	141.5
AIR21 B2A/B4P w/ mount pipe	160	P6516XL-2 w/ Mount Pipe	141.5
AIR21 B2A/B4P w/ mount pipe	160	P6516XL-2 w/ Mount Pipe	141.5
AIR21 B4A/B2P w/ mount pipe	160	MG D3-800TO w/ Mount Pipe	141.5
AIR21 B4A/B2P w/ mount pipe	160	MG D3-800TO w/ Mount Pipe	141.5
AIR21 B4A/B2P w/ mount pipe	160	MG D3-800TO w/ Mount Pipe	141.5
AIR33 B4A/B4A w/ mount pipe	160	12' LP Platform - Flat (GPD)	141.5
AIR33 B4A/B4A w/ mount pipe	160	(2) APL868013-42T0 w/ Mount Pipe	141.5
AIR33 B4A/B4A w/ mount pipe	160	(2) APL868013-42T0 w/ Mount Pipe	141.5
ATMAA1412D-1A20	160	(4) DB4H9E w/ Mount Pipe	131
ATMAA1412D-1A20	160	12' LP Platform - Flat (GPD)	131
ATMAA1412D-1A20	160	(4) DB4H9E w/ Mount Pipe	131
12' LP Platform - Flat (GPD)	148	(4) DB4H9E w/ Mount Pipe	131
(2) 7770.00 w/Mount Pipe	148	(2) DB980F90E-M w/Mount Pipe	122
(2) 7770.00 w/Mount Pipe	148	(2) APXVSPP18-C-A20 w/ Mount Pipe	122
(2) 7770.00 w/Mount Pipe	148	(2) APXVSPP18-C-A20 w/ Mount Pipe	122
(4) LGP21401	148	(2) APXVSPP18-C-A20 w/ Mount Pipe	122
(4) LGP21401	148	1900MHz RRH	122
(4) LGP21401	148	1900MHz RRH	122
P65-16-XLH-RR w/ Mount Pipe	148	1900MHz RRH	122
P65-16-XLH-RR w/ Mount Pipe	148	800MHZ RRH	122
P65-16-XLH-RR w/ Mount Pipe	148	800MHZ RRH	122
(2) RRU-11	148	800MHZ RRH	122
(2) RRU-11	148	12' LP Platform - Flat (GPD)	122
(2) RRU-11	148	(2) DB980F90E-M w/Mount Pipe	122
DC6-48-60-18-8F	148	(2) DB980F90E-M w/Mount Pipe	122
P65-16-XLH-RR w/ Mount Pipe	148	4' Standoff - Flat (GPD)	72
P65-16-XLH-RR w/ Mount Pipe	148	GPS	72
P65-16-XLH-RR w/ Mount Pipe	148		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 37 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 74.2%

GPD GROUP
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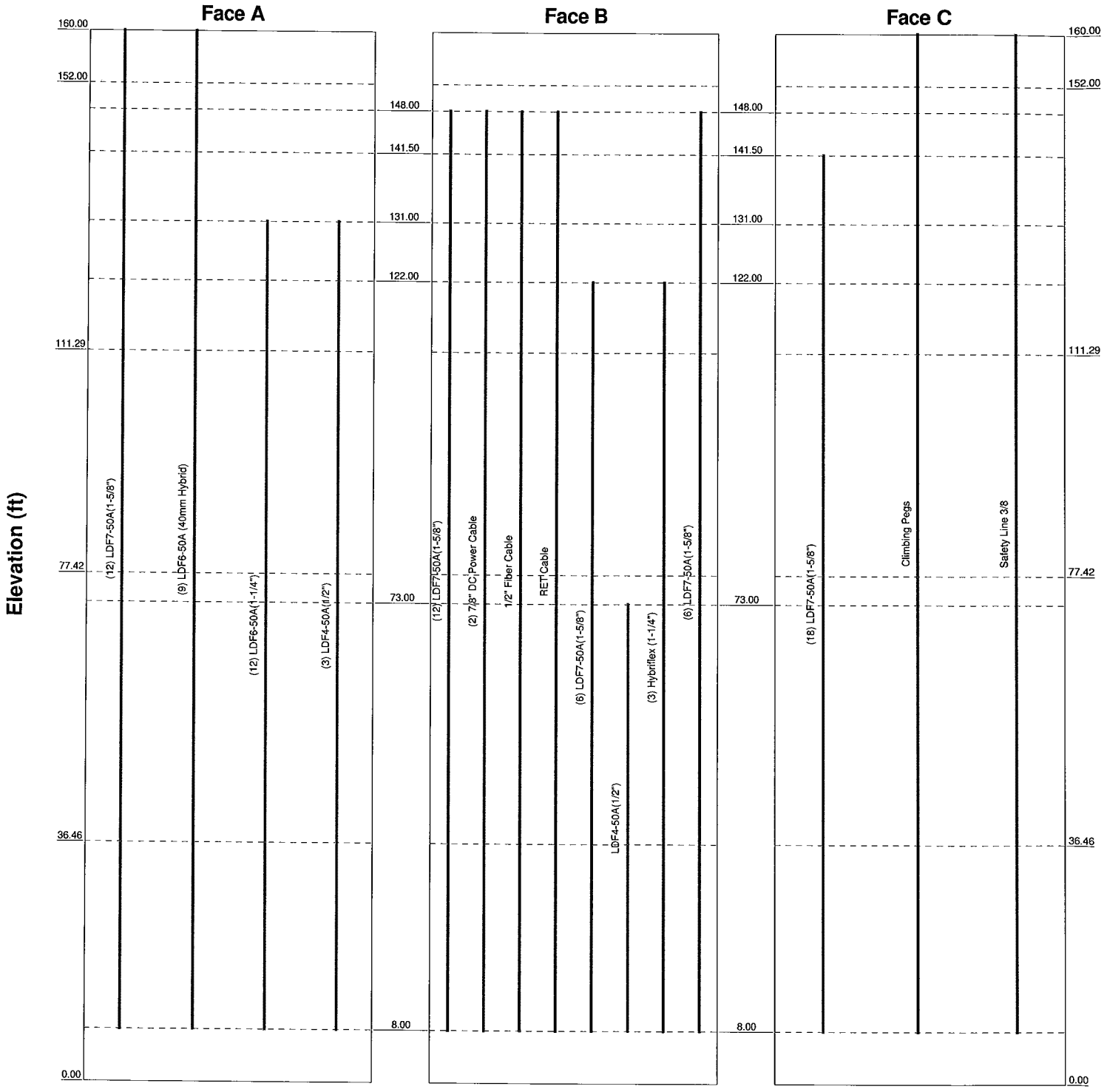
Job: *26225 GREENWICH NORTH*			
Project: *2012865.54*			
Client: AT&T MOBILITY	Drawn by: twillman		App'd:
Code: TIA/EIA-222-F	Date: 07/31/12		Scale: NTS
Path: O:\2012\2012856\54\TNX\26225 GREENWICH NORTH.eri			Dwg No. E-1

Feedline Distribution Chart
0' - 160'

Round Flat App In Face App Out Face Truss Leg



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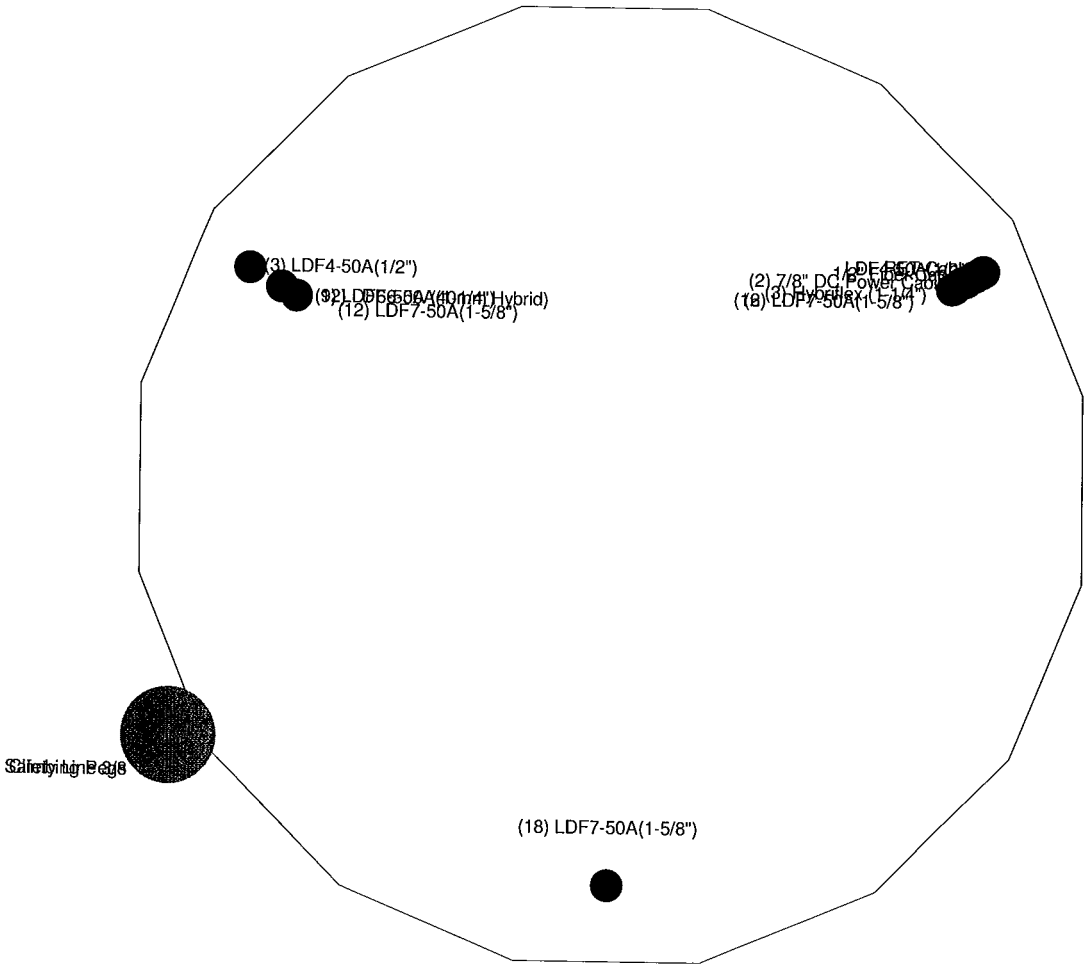
Path: O:\2012\2012856\54\TNX\26225 GREENWICH NORTH.eri			Dwg No. E-7

Feedline Plan

Round Flat App In Face App Out Face



GPD GROUP

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Job: *26225 GREENWICH NORTH*			
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Client: AT&T MOBILITY	Drawn by: twillman	App'd:	
Code: TIA/EIA-222-F	Date: 07/31/12	Scale: NTS	
Path: O:\2012\2012856\54\TNX\26225 GREENWICH NORTH.er		Dwg No. E-7	

APPENDIX D

Anchor Rod & Base Plate Analysis

GPD GROUP

Anchor Rod and Base Plate Stresses
26225 GREENWICH NORTH
2012856.54

Overturning Moment =	4137.99	k*ft
Axial Force =	52.03	k
Shear Force =	35.25	k

Acceptable Stress Ratio =	105.0%

Anchor Rods		
Number of Rods =	24	
Type =	Upset Rod	
Rod Yield Strength (Fy) =	75	ksi
ASIF =	1.333	
Rod Circle =	67	in
Rod Diameter =	2.25	in
Net Tensile Area =	3.25	in^2
Max Tension on Rod =	121.28	kips
Max Compression on Rod =	125.62	kips
Allow. Rod Force =	195.00	kips
Anchor Rod Capacity =	**62.2%**	**OK**

Base Plate		
Location =	External	
Plate Strength (F_y) =	60	ksi
Outside Diameter =	73	in
Plate Thickness =	2.25	in
wcalc =	31.75	in
wmax =	48.14	in
w =	31.75	in
S =	26.79	in^3
fb =	47.12	ksi
Fb =	60	ksi
BP Capacity =	**78.5%**	**OK**

Stiffeners		
Configuration =	None	

Pole		
Pole Diameter =	59	in
Number of Sides =	18	
Thickness =	0.5	in
Pole Yield Strength =	65	ksi

APPENDIX E

Flange Bolt & Flange Plate Analysis

GPD GROUP

Existing Flange Connection @ 152'
26225 GREENWICH NORTH
GPD Project Number: 2012856.54

O.T. Moment =	43.34	k*ft
Axial =	2.46	kips
Shear =	4.70	kips

Acceptable Stress Ratio =	105.0%

Flange Bolts		
# Bolts =	12	
Bolt Type =	A325	
F_t =	44	ksi
ASIF =	1.333	
Bolt Circle =	35	in
Bolt Diameter =	1	in
Tension & Shear (ASD, Section J3.5)		
F_v =	21	ksi
Nominal Area =	0.79	in^2
f_v =	0.50	ksi
Applied Shear =	0.39	kips
Allowable Shear =	21.99	kips
Ft^2 - 4.39(fv^2))^1/2 =	43.99	ksi
Allowable Bolt Stress =	58.65012	ksi
B =	46.06	kips
Prying Action Check		
N/A, top flange thickness > tc		
Max Comp. on Bolt =	5.16	kips
Max Tension on Bolt =	4.75	kips
Shear Capacity =	1.8%	
Tensile Capacity =	10.3%	
Bolt Capacity =	**10.3% OK**	

Pole Information		
Shaft Diam. (Upper) =	30.62	in
Thickness (Upper)=	0.1875	in
# of Sides (Upper) =	18	
F_y (Upper) =	65	ksi
Shaft Diam. (Lower) =	30.62	in
Thickness (Lower)=	0.25	in
# of Sides (Lower) =	18	
F_y (Lower) =	65	ksi

Upper Flange Plate		
Location =	External	
Plate Strength (F_y) =	60	ksi
Plate Thickness =	1	in
Outer Diameter =	38	in
wcalc =	16.95	in
wmax =	19.06	in
w =	16.95	in
S =	2.83	in^3
f_b =	5.63	ksi
F_b =	60	ksi
UP Capacity =	**9.4% OK**	

Lower Flange Plate		
Location =	External	
Plate Strength (F_y) =	60	ksi
Plate Thickness =	1	in
Outer Diameter =	38	in
wcalc =	16.95	in
wmax =	19.06	in
w =	16.95	in
S =	2.83	in^3
f_b =	5.63	ksi
F_b =	60	ksi
LP Capacity =	**9.4% OK**	

UpperStiffeners	
Configuration =	None

Lower Stiffeners	
Configuration =	None

APPENDIX F

Foundation Analysis

GPD GROUP

Mat Foundation Analysis
26225 GREENWICH NORTH
2012856.54

General Info	
Code	TIA/EIA-222-F (ASD)
Bearing On	Rock
Foundation Type	Mono Pad
Pier Type	Square
Reinforcing Known	No
Max Capacity	1.05

Tower Reactions	
Moment, M	4137.995 k-ft
Axial, P	52.03 k
Shear, V	35.25 k

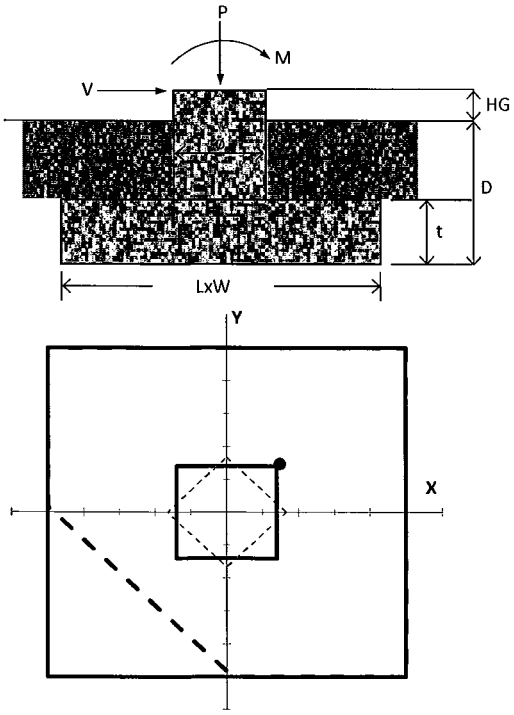
Pad & Pier Geometry		
Pier Width, ø	7	ft
Pad Length, L	25	ft
Pad Width, W	25	ft
Pad Thickness, t	4.5	ft
Depth, D	9.5	ft
Height Above Grade, HG	0.5	ft

Pad & Pier Reinforcing	
Rebar Fy	ksi
Concrete Fc'	ksi
Clear Cover	in
Reinforced Top & Bottom?	
Pad Reinforcing Size	
Pad Quantity Per Layer	
Pier Rebar Size	
Pier Quantity of Rebar	

Soil Properties	
Soil Type	Granular
Soil Unit Weight	120 pcf
Angle of Friction, ø	34 °
Bearing Type	Net
Ultimate Bearing	30 ksf
Water Table Depth	999 ft
Frost Depth	5 ft

Bearing Summary			Load Case
Qxmax	3.15	ksf	1D+1W
Qymax	3.15	ksf	1D+1W
Qmax @ 45°	4.03	ksf	1D+1W
$Q_{(all)\ Gross}$	15.57	ksf	
Controlling Capacity	**25.9%**	**Pass**	

Overturning Summary (Required FS=1.5)			Load Case
FS(ot)x	2.39	≥1.5	1D+1W
FS(ot)y	2.39	≥1.5	1D+1W
Controlling Capacity	**62.7%**	**Pass**	



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RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

Sprint Existing Facility

Site ID: CT03XC342

Boy Scouts SNET
363 Riversville Road
Greenwich, CT 06830

October 10, 2012

21 B Street · Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

EBI Consulting
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October 10, 2012

Sprint
Attn: RF Engineering Manager
1 International Boulevard, Suite 800
Mahwah, NJ 07495

Re: Emissions Values for Site **CT03XC342 – Boy Scouts SNET**

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 363 Riversville Road, Greenwich, CT, for the purpose of determining whether the emissions from the proposed Sprint equipment upgrades on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of μW/cm2 calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limit for the cellular band is approximately 567 $\mu W/cm^2$, and the general population exposure limit for the PCS band is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed upgrades to the existing Sprint Wireless antenna facility located at 363 Riversville Road, Greenwich, CT, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario. Actual values seen from this site will be dramatically less than those shown in this report. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

For all calculations, all emissions were calculated using the following assumptions:

1) 2 CDMA Carriers (1900 MHz) were considered for each sector of the proposed installation.
2) 1 CDMA Carrier (850 MHz) was considered for each sector of the proposed installation
3) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
4) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The actual gain in this direction was used per the manufactures supplied specifications.
5) The antenna used in this modeling is the RFS APXVSPP18-C-A20. This is based on feedback from the carrier with regards to anticipated antenna selection. This antenna has a 15.9 dBd gain value at its main lobe at 1900 MHz and 13.4 dBd at its main lobe for 850 MHz. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario.

6) The antenna mounting height centerline of the proposed antennas is **122 feet** above ground level (AGL)
7) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

All calculation were done with respect to uncontrolled / general public threshold limits

Site ID	CT03XC342 - Boy Scouts SNET
Site Addresss	363 Riversville Road, Greenwich, CT 06830
Site Type	Monopole

Sector 1

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	2	40	15.9	122	116	1/2 "	0.5	0	1386.9474	37.05527	3.70553%
1a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	122	116	1/2 "	0.5	0	389.96892	10.41886	1.83754%
														Sector total Power Density Value:		5.543%	

Sector 2

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
2a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	2	40	15.9	122	116	1/2 "	0.5	0	1386.9474	37.05527	3.70553%
2a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	122	116	1/2 "	0.5	0	389.96892	10.41886	1.83754%
														Sector total Power Density Value:		5.543%	

Sector 3

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
3a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	2	40	15.9	122	116	1/2 "	0.5	0	1386.9474	37.05527	3.70553%
3a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	122	116	1/2 "	0.5	0	389.96892	10.41886	1.83754%
														Sector total Power Density Value:		5.543%	

Site Composite MPE %	
Carrier	MPE %
Sprint	16.629%
AT&T	12.710%
T-Mobile	3.080%
Verizon Wireless	11.920%
Nextel	3.380%
Total Site MPE %	**47.719%**

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Summary

All calculations performed for this analysis yielded results that were well within the allowable limits for general public exposure to RF Emissions.

The anticipated Maximum Composite contributions from the Sprint facility are **16.629% (5.543% from each sector)** of the allowable FCC established general public limit considering all three sectors simultaneously sampled at the ground level.

The anticipated composite MPE value for this site assuming all carriers present is **47.719%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government

Scott Heffernan
RF Engineering Director

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21 B Street
Burlington, MA 01803