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

HPC
WIRELESS SERVICES

December 2, 2014

VIA EMAIL AND OVERNIGHT DELIVERY

Ms. Melanie A. Bachman
Acting Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Sprint Spectrum, L.P. – Notice of Exempt Modification
302 Ball Pond Road, New Fairfield, CT

Dear Ms. Bachman:

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 network in order to implement updated technology. In order to do so, Sprint will modify antenna and equipment configurations at a number of existing sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which 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 New Fairfield.

Sprint plans to modify the existing facility at 302 Ball Pond Road owned by the Town of New Fairfield (coordinates 41°27'53.2"N, -73°29'49"W). Attached are drawings depicting the planned changes, and documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration. Also included is a power density calculation 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. The height of the overall structure will be unaffected. Sprint proposes to replace three (3) existing CDMA antennas with three (3) new NV antennas, add three (3) new 2.5 GHz antennas and nine (9) new remote radio heads, all at a centerline height of approximately 70' above the tower base. Additionally, Sprint will remove all existing CDMA coax cables and install three (3) hybriflex cables and one (1) fiber cable.

2. The proposed changes will not extend the site boundaries. Sprint will replace existing CDMA cabinets with two (2) BBU cabinets, and install one (1) new BTS cabinet and one (1) new fiber distribution box inside the existing equipment shelter. Thus, there will be no effect on the site compound or Sprint's leased area.

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 in the attached power density calculations, Sprint's operations at the site will result in a power density of 2.53%; the combined site operations will result in a total power density of 56.92%.

Please feel free to call me with any questions or concerns regarding this matter. Thank you for your consideration.

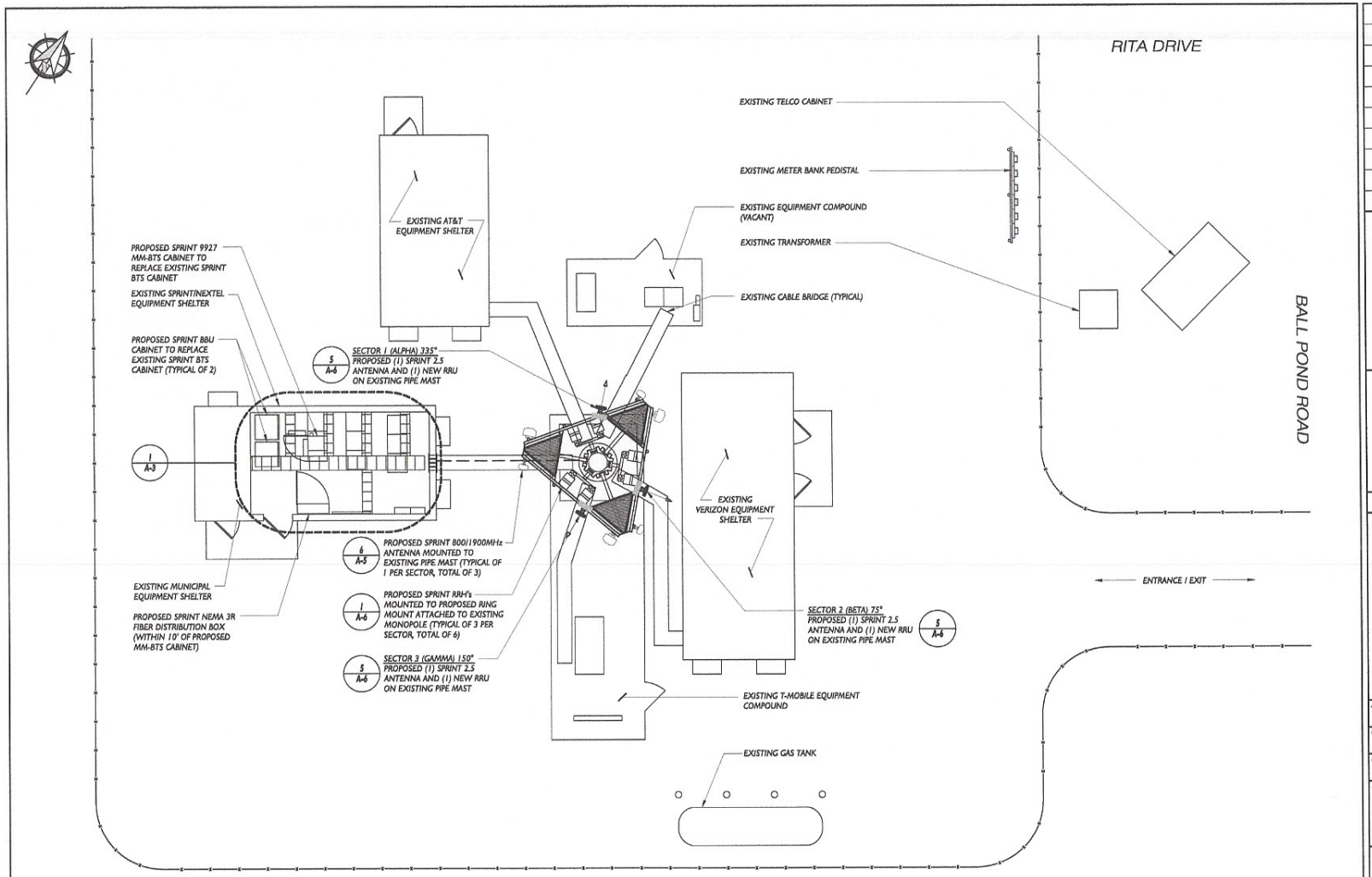
Respectfully submitted,

By: _____

Eric Dahl, Consultant
edahl@comcast.net
860-227-1975

Attachments

cc: Susan Chapman, First Selectman, Town of New Fairfield



REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY
01	11-26-14	REVISED PER CLIENT COMMENTS	AR	KLR
00	06-30-14	INITIAL SUBMISSION	AR	KLR

Sprint
6580 SPRINT PARKWAY
OVERLAND PARK, KANSAS 66251
(517) 436-7466

A SAXON DESIGN GROUP
244 RIVERS EDGE LANE
TOMS RIVER, NJ 08755
(732) 878-0155

ENGINEER'S LICENSE

MICHAEL L. BOHLINGER

SIGNATURE:

PROFESSIONAL ENGINEER
CONNECTICUT LICENSE No. 20405

ASDG PROJECT No: ASDGSP50

CLIENT ID No: CT72XC045

DESIGN TYPE: 2.5 GHz

SITE INFORMATION:
302 BALL POND ROAD
NEW FAIRFIELD, CT 06812

DRAWING TITLE
SITE PLAN

MICHAEL L. BOHLINGER
CT LICENSE No. 20405

DATE: 06-30-14
PROJECT No: ASDGSP50
DRAWING BY: AR
CHK BY:
DWG No:

24"x36" SHEETS - SIGN & SEAL AREA

1 PROPOSED SPRINT EQUIPMENT PLAN

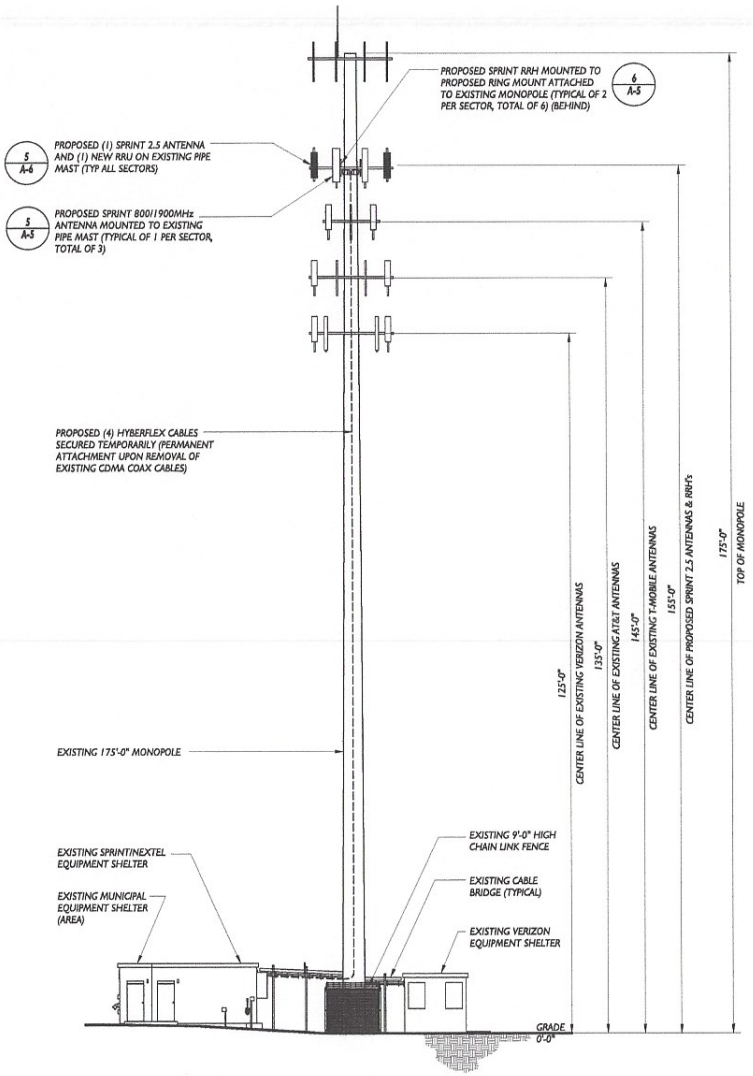
SCALE: 11"x17" : 1" = 10'-0"
24"x36" : 1" = 5'-0"

ANTENNA CONFIGURATION NOTE:

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

ANTENNA SEPARATION TO BE FIELD VERIFIED BY THE GENERAL CONTRACTOR

NOTE:
SITE INFORMATION AND PLANS ARE BASED UPON 2.5 AUDIT DOCUMENTATION PROVIDED BY THE SPRINT.



ELEVATION

SCALE: 11"x17" : 1" = 20'-0"; 24"x36" : 1" = 10'-0"

1

REV.	DATE	REVISION DESCRIPTION	DRAWN BY	CHKD. BY
01	11-26-14	REVISED PER CLIENT COMMENTS	AR	KLR
00	06-30-14	INITIAL SUBMISSION	AR	KLR

Sprint

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SIGNATURE:

PROFESSIONAL ENGINEER
CONNECTICUT LICENSE No. 20405

ASDG PROJECT No: ASDGSP50

CLIENT ID No: CT72XC045

DESIGN TYPE: 2.5 GHz

SITE INFORMATION:

302 BALL POND ROAD
NEW FAIRFIELD, CT 06812

DRAWING TITLE: ELEVATION

MICHAEL L. BOHLINGER
CT LICENSE No. 20405

DATE: 06-30-14
PROJECT No: ASDGSP50
DRAWING BY: AR
CHK BY:
DWG No:

24"x36" SHEETS - SIGN & SEAL AREA

EBI Consulting
environmental | engineering | due diligence

RADIO FREQUENCY FCC REGULATORY COMPLIANCE MAXIMUM PERMISSIBLE EXPOSURE (MPE) ASSESSMENT

Sprint Existing Facility

Site ID: CT72XC045

Ball Pond Road

302 Ball Pond Road
New Fairfield, CT 06812

August 12, 2014

EBI Project Number: 62144194

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

EBI Consulting
environmental | engineering | due diligence

August 12, 2014

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

Re: Radio Frequency Maximum Permissible Exposure (MPE) Assessment for Site:
CT72XC045 - Ball Pond Road

Site Total: 56.92% - MPE% in full compliance

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 302 Ball Pond Road, New Fairfield, CT, for the purpose of determining whether the radio frequency (RF) exposure levels 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 (850 MHz Band) is approximately 567 $\mu W/cm^2$, and the general population exposure limit for the 1900 MHz and 2500 MHz bands 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 302 Ball Pond Road, New Fairfield, CT, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. All calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. 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) 3 channels in the 1900 MHz Band were considered for each sector of the proposed installation.
2) 1 channel in the 800 MHz Band was considered for each sector of the proposed installation
3) 2 channels in the 2500 MHz Band were considered for each sector of the proposed installation.
4) 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.
5) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

6) The antennas used in this modeling are the RFS APXVSPP18-C-A20, The POWERWAVE P40-16-XLPP-RR-A and the RFS APXVTM14-C-I20. This is based on feedback from the carrier with regards to anticipated antenna selection. The RFS APXVSPP18-C-A20 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. The POWERWAVE P40-16-XLPP-RR-A 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 . The RFS APXVTM14-C-I20 has a 15.9 dBd gain value at its main lobe at 2500 MHz. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
7) The antenna mounting height centerline for the proposed antennas is **155 feet** above ground level (AGL).
8) 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	CT72XC045 - Ball Pond Road
Site Addresss	302 Ball Pond Road, New Fairfield, CT, 06812
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 (10 db reduction)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss (dB)	ERP	Power Density Percentage
1a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	5.9	155	149	1/2 "	0.5	0	208.04	0.34%
1a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	3.4	155	149	1/2 "	0.5	0	39.00	0.11%
1B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	5.9	155	149	1/2 "	0.5	0	138.69	0.40%
														Sector total Power Density Value:		0.84%

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 (10 db reduction)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss (dB)	ERP	Power Density Percentage
2a	Powerwave	P40-16-XLPP-RR-A	RRH	1900 MHz	CDMA / LTE	20	3	60	5.9	155	149	1/2 "	0.5	0	208.04	0.34%
2a	Powerwave	P40-16-XLPP-RR-A	RRH	850 MHz	CDMA / LTE	20	1	20	3.4	155	149	1/2 "	0.5	0	39.00	0.11%
2B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	5.9	155	149	1/2 "	0.5	0	138.69	0.40%
														Sector total Power Density Value:		0.84%

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 (10 db reduction)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss (dB)	ERP	Power Density Percentage
3a	Powerwave	P40-16-XLPP-RR-A	RRH	1900 MHz	CDMA / LTE	20	3	60	5.9	155	149	1/2 "	0.5	0	208.04	0.34%
3a	Powerwave	P40-16-XLPP-RR-A	RRH	850 MHz	CDMA / LTE	20	1	20	3.4	155	149	1/2 "	0.5	0	39.00	0.11%
3B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	5.9	155	149	1/2 "	0.5	0	138.69	0.40%
														Sector total Power Density Value:		0.84%

Site Composite MPE %	
Carrier	MPE %
Sprint	2.53%
Town	2.16%
Town PD	1.37%
Town FD	2.10%
Nextel	3.17%
Clearwire	1.08%
AT&T	18.14%
T-Mobile	0.16%
Verizon Wireless	26.21%
Total Site MPE %	**56.92%**

EBI Consulting
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Summary

All calculations performed for this analysis yielded results that were well within the allowable limits for general public Maximum Permissible Exposure (MPE) to radio frequency energy.

The anticipated Maximum Composite contributions from the Sprint facility are **2.53% (0.84% from sector 1, 0.84% from sector 2 and 0.84% from sector 3)** 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 **56.92%** of the allowable FCC established general public limit sampled at 6 feet above ground level. This total composite site value is based upon MPE 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

EBI Consulting
21 B Street
Burlington, MA 01803

STRUCTURAL ANALYSIS REPORT
175' MONOPOLE TOWER
NEW FAIRFIELD, CONNECTICUT

Prepared for
HPC Wireless Services

Sprint Site #CT72XC045

July 30, 2014

APT Project #CT255852

3 SADDLEBROOK DRIVE · KILLINGWORTH, CT 06419 · PHONE 860-663-1697 · FAX 860-663-0935
⊗ 116 GRANDVIEW ROAD · CONWAY, NH 03818 · PHONE 603-496-5853 · FAX 603-447-2124

STRUCTURAL ANALYSIS REPORT
175' MONOPOLE TOWER
NEW FAIRFIELD, CONNECTICUT
prepared for
HPC Wireless Services

EXECUTIVE SUMMARY:

All-Points Technology Corporation, P.C. (APT) performed a structural analysis of this 175-foot monopole tower located in New Fairfield, Connecticut. The analysis was performed for Sprint's proposed removal of nine existing DB844H90 panel antennas and addition of six panel antennas and nine remote radio heads (RRHs) on the existing mounts at 155', fed by four 1-1/4" hybrid fiber/power cables.

Our analysis indicates the tower meets the requirements of the Connecticut State Building Code and EIA/TIA-222 with the proposed equipment changes.

INTRODUCTION:

A structural analysis of this communications tower was performed by APT for HPC Wireless Services. The tower is located at 302 Ball Pond Road in New Fairfield, Connecticut. This analysis relied on information provided by others, which included a tower mapping by WesTower Communications dated July 18, 2014, equipment changes proposed by Sprint, Fred A. Nudd Corporation tower drawings, and base plate reinforcement drawings prepared by Vertical Structures, Inc.

The analysis was conducted with the following antenna inventory (proposed equipment shown in **bold** text):

Carrier	Antenna	Elev.	Mount	Coax.
Town	(4) PD-220 omnidirectional whips, 1' square panel, 2.5' dish with radome	175'	13' low-profile platform	(4) 1-5/8", (2) 1/2"
Sprint	(2) RR65-18-02DTR, (1) RR45-19-02DPL, **(1) APXVSPP18-C-A20, (2) P40-16-XLPP-RR, (3) APXVTM14-G120** panels, (9) RRHs [1]	155'	13' low-profile platform	**(4) 1-1/4" hybrid**
T-Mobile	(6) AIR21 B2A-B4P panels, (3) TMAs [2]	145'	(3) 10' T-arms	(18) 1-5/8", (1) hybrid
AT&T	(6) 7770.00, (3) P65-17-XLH-RR, (6) TMAs, (6) Diplexers, (6) RCU, (6) RRHs, (1) surge suppressor	135'	(3) 10' T-arms	(12) 1-5/8", fiber & (2) power in conduit
Verizon	(6) BXA-171085/12, (6) LPA-80080/6, (3) BXA-70063/6, (3) RRHs, (1) surge suppressor [3]	125'	13' low-profile platform	(18) 1-5/8", (1) hybrid
Unknown	PD-220 omnidirectional whip	100'	4' standoff	1-5/8"
Unknown	GPS antenna	85'	(3) 2' standoffs	(3) 1/2"

[1] Two RR65-18-02DTR, one RR45-19-02DPL, and nine DB844H90 panels currently installed, fed by nine 7/8" and six 1-5/8" lines.
[2] Three APX16DWV-16DWV panels, three RR65-18-02DPL panels, and nine TMAs currently installed. Larger AIR21 B2A-B4P panels used for analysis.
[3] Six LPA-80080/6 panels, three BXA-171085/12 panels, three BXA-70063/6 panels, three RRHs, and one surge suppressor currently installed, fed by twelve 1-5/8" lines.

STRUCTURAL ANALYSIS:

Methodology:

The structural analysis was done in accordance with the Connecticut State Building Code and TIA/EIA-222, Revision F (TIA), Structural Standards for Steel Antenna Towers and Antenna Supporting Structures.

The analysis was conducted using a fastest mile wind speed of 85 mph (equivalent to 100 mph 3-second gust) and one-half inch of radial ice over the structure and associated appurtenances. The TIA Standard requires a basic wind speed of 85 miles per hour for Fairfield County, Connecticut.

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

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

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

Analysis Results:

The following table summarizes the usage capacity of the pole:

Elevation	Capacity
130'-175'	32%
85'-130'	65%
41'-85'	70%
0'-41'	82%

The existing base plate was evaluated from Vertical Structures, Inc. base plate reinforcement drawings. Base plate reinforcement was conducted in 2005 for an overturning moment

reaction of 4370 ft-kips; calculated overturning moment with the proposed equipment changes is only 3920 ft-kips. The existing base plate is adequate to support the proposed loads.

The existing reinforced concrete mat and pier foundation was evaluated from Fred A. Nudd Corporation design drawings. We found the existing foundation is adequately sized to support the proposed equipment changes. Base reactions imposed with the proposed changes were calculated to be as follows:

Compression:	48.0 kips
Total Shear:	33.7 kips
Overturning Moment:	3920 ft-kips

CONCLUSIONS AND SUGGESTIONS:

As detailed above, our analysis indicates that the existing 175' Nudd monopole tower and foundation in New Fairfield, Connecticut meet the requirements of the Connecticut State Building Code and EIA/TIA-222 with the equipment changes proposed by Sprint.

LIMITATIONS:

This report is based on the following:

1. Tower is properly installed and maintained.
2. All members are in an undeteriorated condition.
3. All bolts are in place and are properly tightened.
4. Tower is in plumb condition.
5. All tower members were properly designed, detailed, fabricated, and installed and have been properly maintained since erection.
6. Record drawings accurately reflect tower dimensions and height.

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

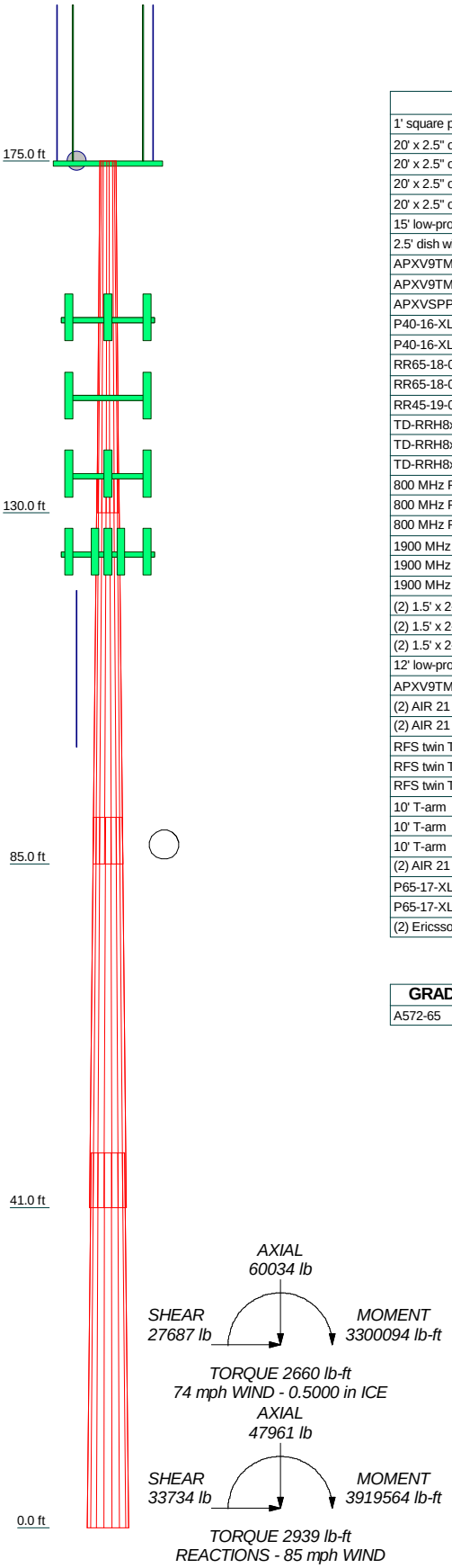
1. Adding or relocating antennas.
2. Installing antenna mounting gates or side arms.
3. Extending tower.

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

Appendix A

Tower Schematic

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (lb)
1	45.00	18	0.2500	5.00	24.0000	34.9000		3548.0
2	50.00	18	0.3125	6.00	33.1889	45.3000		6570.0
3	50.00	18	0.3750	7.00	43.2217	55.3328		9903.1
4	48.00	18	0.3750		52.8872	64.5139		11339.0
							A572-65	31360.1



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
1' square panel	175	(2) Ericsson RRUS-11	135
20' x 2.5" omni whip	175	(2) Ericsson RRUS-11	135
20' x 2.5" omni whip	175	Raycap DC6-48 surge suppressor	135
20' x 2.5" omni whip	175	(2) 7770.00	135
20' x 2.5" omni whip	175	(2) 7770.00	135
15' low-profile platform	175	(2) 7770.00	135
2.5' dish with radome	175	(2) LGP2140X TMA	135
APXV9TM14-ALU-120	155	(2) LGP2140X TMA	135
APXV9TM14-ALU-120	155	(2) LGP2140X TMA	135
APXVSPP18-C-A20	155	Dual band TMA	135
P40-16-XLPP-RR-A	155	Dual band TMA	135
P40-16-XLPP-RR-A	155	Dual band TMA	135
RR65-18-02DP	155	(2) 7020.00 RET-RCU	135
RR65-18-02DP	155	(2) 7020.00 RET-RCU	135
RR45-19-02DPL4	155	(2) 7020.00 RET-RCU	135
TD-RRH8x20-25	155	10' T-arm	135
TD-RRH8x20-25	155	10' T-arm	135
TD-RRH8x20-25	155	10' T-arm	135
800 MHz RRH	155	P65-17-XLH-RR panel	135
800 MHz RRH	155	(2) LPA-80080/6	125
800 MHz RRH	155	(2) LPA-80080/6	125
1900 MHz RRH	155	(2) BXA-171085/12	125
1900 MHz RRH	155	(2) BXA-171085/12	125
1900 MHz RRH	155	(2) BXA-171085/12	125
(2) 1.5' x 2-3/8" standoff	155	BXA-70063/6	125
(2) 1.5' x 2-3/8" standoff	155	BXA-70063/6	125
(2) 1.5' x 2-3/8" standoff	155	BXA-70063/6	125
12' low-profile platform	155	ALU RRH2x40-AWS	125
APXV9TM14-ALU-120	155	ALU RRH2x40-AWS	125
(2) AIR 21 B2A B4P panel	145	ALU RRH2x40-AWS	125
(2) AIR 21 B2A B4P panel	145	(2) RFS FD9R6004_2C-3L diplexer	125
RFS twin TMA	145	(2) RFS FD9R6004_2C-3L diplexer	125
RFS twin TMA	145	(2) RFS FD9R6004_2C-3L diplexer	125
RFS twin TMA	145	Raycap RDC-4276-PF-48 J-box	125
10' T-arm	145	13' low-profile platform	125
10' T-arm	145	(2) LPA-80080/6	125
10' T-arm	145	20' x 2.5" omni whip	120 - 100
(2) AIR 21 B2A B4P panel	145	3' x 4" standoff	100
P65-17-XLH-RR panel	135	GPS on 2' standoff	85
P65-17-XLH-RR panel	135	GPS on 2' standoff	85
(2) Ericsson RRUS-11	135	GPS on 2' standoff	85

MATERIAL STRENGTH

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

All-Points Technology Corporation
116 Grandview Road
Conway, NH 03818
Phone: (603) 496-5853
FAX: (603) 447-2124

Job:	***175' Monopole Tower***		
Project:	***CT255802 New Fairfield***		
Client: HPC; Sprint Site #CT72XC045	Drawn by: Rob Adair	App'd:	
Code: TIA/EIA-222-F	Date: 07/30/14	Scale: NTS	
Path: C:\Users\Rob Adair\Documents\Jobs\5 Sprint\CT255801 New Fairfield CT72XC049\CT255802 New Fairfield.eri		Dwg No. E-1	

Appendix B

Photographs

HPC WIRELESS SERVICES
175' MONOPOLE TOWER
NEW FAIRFIELD, CONNECTICUT
SPRINT SITE: CT72XC045

Overview photo of 175' monopole tower.

Photos taken by WesTower Communications on July 18, 2014.

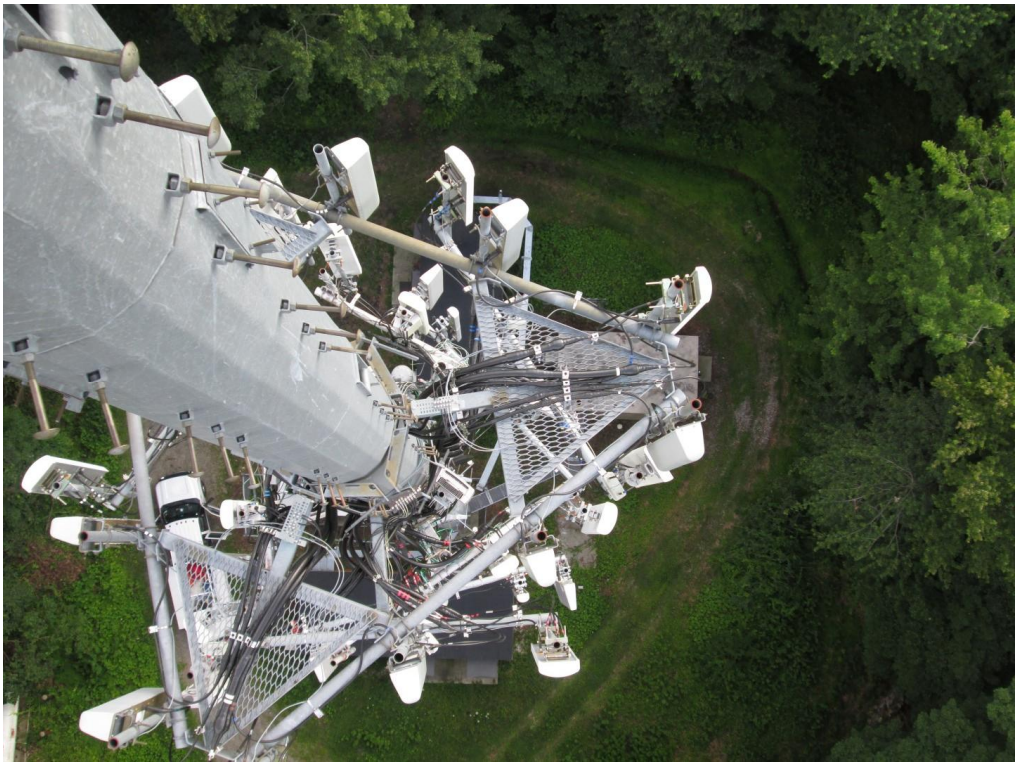
HPC WIRELESS SERVICES
175' MONOPOLE TOWER
NEW FAIRFIELD, CONNECTICUT
SPRINT SITE: CT72XC045

Photo showing existing antennas on upper tower.

Photos taken by WesTower Communications on July 18, 2014.

HPC WIRELESS SERVICES
175' MONOPOLE TOWER
NEW FAIRFIELD, CONNECTICUT
SPRINT SITE: CT72XC045

Photos of existing Sprint platform & antennas from above.



Photos taken by WesTower Communications on July 18, 2014.

HPC WIRELESS SERVICES
175' MONOPOLE TOWER
NEW FAIRFIELD, CONNECTICUT
SPRINT SITE: CT72XC045

Photos of existing Sprint antennas on platform at 155'.

Photos taken by WesTower Communications on July 18, 2014.

Appendix C

Calculations

Tower Input Data

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 0.5000 in.
Ice density of 56 pcf.
A wind speed of 74 mph is used in combination with ice.
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, feed line supports, and appurtenance mounts are not considered.

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	175.00-130.00	45.00	5.00	18	24.0000	34.9000	0.2500	1.0000	A572-65 (65 ksi)
L2	130.00-85.00	50.00	6.00	18	33.1889	45.3000	0.3125	1.2500	A572-65 (65 ksi)
L3	85.00-41.00	50.00	7.00	18	43.2217	55.3328	0.3750	1.5000	A572-65 (65 ksi)
L4	41.00-0.00	48.00		18	52.8872	64.5139	0.3750	1.5000	A572-65 (65 ksi)

Feed Line/Linear Appurtenances

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
1 5/8	C	No	Inside Pole	175.00 - 6.00	4	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
1/2	C	No	Inside Pole	175.00 - 6.00	2	No Ice	0.00	0.25
						1/2" Ice	0.00	0.25
1 5/8	C	No	Inside Pole	145.00 - 6.00	18	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
1.57" Hybrid fiber-power cable	C	No	Inside Pole	145.00 - 6.00	1	No Ice	0.00	0.66
						1/2" Ice	0.00	0.66
1 5/8	C	No	Inside Pole	135.00 - 6.00	12	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
1.34" fiber cable	C	No	Inside Pole	135.00 - 6.00	1	No Ice	0.00	0.66
						1/2" Ice	0.00	0.66
5/8 power	C	No	Inside Pole	135.00 - 6.00	2	No Ice	0.00	0.40
						1/2" Ice	0.00	0.40
1 5/8	C	No	Inside Pole	125.00 - 6.00	12	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
1 5/8	C	No	Inside Pole	125.00 - 8.00	6	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
1.57" Hybrid fiber-power cable	C	No	Inside Pole	125.00 - 6.00	1	No Ice	0.00	0.66
						1/2" Ice	0.00	0.66
Safety Line 3/8	C	No	CaAa (Out Of Face)	175.00 - 0.00	1	No Ice	0.04	0.22
						1/2" Ice	0.14	0.75
1/2	C	No	Inside Pole	85.00 - 6.00	3	No Ice	0.00	0.25

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Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
						1/2" Ice	0.00	0.25
1 5/8	C	No	Inside Pole	100.00 - 6.00	1	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
1-1/4" Hybrid fiber-power cable	C	No	Inside Pole	155.00 - 6.00	4	No Ice	0.00	0.66
						1/2" Ice	0.00	0.66

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
1' square panel	A	From Face	4.00 0.00 0.00	0.0000	175.00	No Ice 1/2" Ice	1.40 1.56	0.35 0.45	15.00 22.91
20' x 2.5" omni whip	A	From Face	4.00 -4.50 10.00	0.0000	175.00	No Ice 1/2" Ice	5.00 7.03	5.00 7.03	50.00 86.96
20' x 2.5" omni whip	B	From Face	4.00 3.00 10.00	0.0000	175.00	No Ice 1/2" Ice	5.00 7.03	5.00 7.03	50.00 86.96
20' x 2.5" omni whip	C	From Face	4.00 -4.50 10.00	0.0000	175.00	No Ice 1/2" Ice	5.00 7.03	5.00 7.03	50.00 86.96
20' x 2.5" omni whip	C	From Face	4.00 4.50 10.00	0.0000	175.00	No Ice 1/2" Ice	5.00 7.03	5.00 7.03	50.00 86.96
15' low-profile platform	A	None		0.0000	175.00	No Ice 1/2" Ice	10.50 11.71	9.10 10.15	1400.00 2386.45
APXV9TM14-ALU-120	A	From Face	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice	6.90 7.35	3.61 3.97	60.00 99.53
APXV9TM14-ALU-120	B	From Face	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice	6.90 7.35	3.61 3.97	60.00 99.53
APXV9TM14-ALU-120	C	From Face	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice	6.90 7.35	3.61 3.97	60.00 99.53
APXVSPP18-C-A20	A	From Face	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice	8.26 8.81	5.28 5.74	107.00 156.52
P40-16-XLPP-RR-A	B	From Face	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice	10.50 10.98	3.52 3.87	48.00 101.23
P40-16-XLPP-RR-A	C	From Face	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice	10.50 10.98	3.52 3.87	48.00 101.23
RR65-18-02DP	A	From Face	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice	4.36 4.77	1.97 2.31	18.00 40.42
RR65-18-02DP	B	From Face	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice	4.36 4.77	1.97 2.31	18.00 40.42
RR45-19-02DPL4	C	From Face	4.00 0.00 0.00	0.0000	155.00	No Ice 1/2" Ice	5.60 5.99	2.09 2.39	23.00 51.55
TD-RRH8x20-25	A	From Face	4.00 0.00	0.0000	155.00	No Ice 1/2" Ice	4.72 5.01	1.70 1.92	75.00 102.14

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
			0.00						
TD-RRH8x20-25	B	From Face	4.00	0.0000	155.00	No Ice	4.72	1.70	75.00
			0.00			1/2" Ice	5.01	1.92	102.14
			0.00						
TD-RRH8x20-25	C	From Face	4.00	0.0000	155.00	No Ice	4.72	1.70	75.00
			0.00			1/2" Ice	5.01	1.92	102.14
			0.00						
800 MHz RRH	A	From Face	4.00	0.0000	155.00	No Ice	2.83	3.45	82.00
			0.00			1/2" Ice	3.06	3.70	112.15
			0.00						
800 MHz RRH	B	From Face	4.00	0.0000	155.00	No Ice	2.83	3.45	82.00
			0.00			1/2" Ice	3.06	3.70	112.15
			0.00						
800 MHz RRH	C	From Face	4.00	0.0000	155.00	No Ice	2.83	3.45	82.00
			0.00			1/2" Ice	3.06	3.70	112.15
			0.00						
1900 MHz RRH	A	From Face	4.00	0.0000	155.00	No Ice	3.80	2.91	144.00
			0.00			1/2" Ice	4.06	3.14	175.27
			0.00						
1900 MHz RRH	C	From Face	4.00	0.0000	155.00	No Ice	3.80	2.91	144.00
			0.00			1/2" Ice	4.06	3.14	175.27
			0.00						
1900 MHz RRH	C	From Face	4.00	0.0000	155.00	No Ice	3.80	2.91	144.00
			0.00			1/2" Ice	4.06	3.14	175.27
			0.00						
(2) 1.5' x 2-3/8" standoff	A	None		0.0000	155.00	No Ice	0.24	0.24	10.00
						1/2" Ice	0.36	0.36	12.92
(2) 1.5' x 2-3/8" standoff	B	None		0.0000	155.00	No Ice	0.24	0.24	10.00
						1/2" Ice	0.36	0.36	12.92
(2) 1.5' x 2-3/8" standoff	C	None		0.0000	155.00	No Ice	0.24	0.24	10.00
						1/2" Ice	0.36	0.36	12.92
12' low-profile platform	C	None		0.0000	155.00	No Ice	8.40	7.27	1000.00
						1/2" Ice	9.38	8.13	1643.12
(2) AIR 21 B2A B4P panel	A	From Face	4.00	0.0000	145.00	No Ice	6.59	4.31	95.00
			0.00			1/2" Ice	7.03	4.72	136.89
			0.00						
(2) AIR 21 B2A B4P panel	B	From Face	4.00	0.0000	145.00	No Ice	6.59	4.31	95.00
			0.00			1/2" Ice	7.03	4.72	136.89
			0.00						
(2) AIR 21 B2A B4P panel	C	From Face	4.00	0.0000	145.00	No Ice	6.59	4.31	95.00
			0.00			1/2" Ice	7.03	4.72	136.89
			0.00						
RFS twin TMA	A	From Face	4.00	0.0000	145.00	No Ice	1.17	0.47	13.00
			0.00			1/2" Ice	1.31	0.57	20.62
			0.00						
RFS twin TMA	B	From Face	4.00	0.0000	145.00	No Ice	1.17	0.47	13.00
			0.00			1/2" Ice	1.31	0.57	20.62
			0.00						
RFS twin TMA	C	From Face	4.00	0.0000	145.00	No Ice	1.17	0.47	13.00
			0.00			1/2" Ice	1.31	0.57	20.62
			0.00						
10' T-arm	A	None		0.0000	145.00	No Ice	2.67	2.67	150.00
						1/2" Ice	3.36	3.36	547.19
10' T-arm	B	None		0.0000	145.00	No Ice	2.67	2.67	150.00
						1/2" Ice	3.36	3.36	547.19
10' T-arm	C	None		0.0000	145.00	No Ice	2.67	2.67	150.00
						1/2" Ice	3.36	3.36	547.19
P65-17-XLH-RR panel	A	From Face	4.00	0.0000	135.00	No Ice	11.47	6.80	60.00
			0.00			1/2" Ice	12.08	7.38	122.06

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Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* *ft*	*Azimuth Adjustment* °	*Placement* *ft*		C_AA_A *Front* ft^2	C_AA_A *Side* ft^2	*Weight* *lb*
			0.00						
P65-17-XLH-RR panel	B	From Face	4.00	0.0000	135.00	No Ice	11.47	6.80	60.00
			0.00			1/2" Ice	12.08	7.38	122.06
			0.00						
P65-17-XLH-RR panel	C	From Face	4.00	0.0000	135.00	No Ice	11.47	6.80	60.00
			0.00			1/2" Ice	12.08	7.38	122.06
			0.00						
(2) Ericsson RRUS-11	A	From Face	4.00	0.0000	135.00	No Ice	2.94	1.19	55.00
			0.00			1/2" Ice	3.17	1.35	74.32
			0.00						
(2) Ericsson RRUS-11	B	From Face	4.00	0.0000	135.00	No Ice	2.94	1.19	55.00
			0.00			1/2" Ice	3.17	1.35	74.32
			0.00						
(2) Ericsson RRUS-11	C	From Face	4.00	0.0000	135.00	No Ice	2.94	1.19	55.00
			0.00			1/2" Ice	3.17	1.35	74.32
			0.00						
Raycap DC6-48 surge suppressor	A	From Face	4.00	0.0000	135.00	No Ice	1.19	1.19	30.00
			0.00			1/2" Ice	1.37	1.37	44.34
			0.00						
(2) 7770.00	A	From Face	4.00	0.0000	135.00	No Ice	5.88	2.93	35.00
			0.00			1/2" Ice	6.31	3.27	67.63
			0.00						
(2) 7770.00	B	From Face	4.00	0.0000	135.00	No Ice	5.88	2.93	35.00
			0.00			1/2" Ice	6.31	3.27	67.63
			0.00						
(2) 7770.00	C	From Face	4.00	0.0000	135.00	No Ice	5.88	2.93	35.00
			0.00			1/2" Ice	6.31	3.27	67.63
			0.00						
(2) LGP2140X TMA	A	From Face	4.00	0.0000	135.00	No Ice	1.26	0.38	20.00
			0.00			1/2" Ice	1.42	0.49	27.13
			0.00						
(2) LGP2140X TMA	B	From Face	4.00	0.0000	135.00	No Ice	1.26	0.38	20.00
			0.00			1/2" Ice	1.42	0.49	27.13
			0.00						
(2) LGP2140X TMA	C	From Face	4.00	0.0000	135.00	No Ice	1.26	0.38	20.00
			0.00			1/2" Ice	1.42	0.49	27.13
			0.00						
Dual band TMA	A	From Face	4.00	0.0000	135.00	No Ice	0.71	0.41	15.00
			0.00			1/2" Ice	0.83	0.52	20.03
			0.00						
Dual band TMA	B	From Face	4.00	0.0000	135.00	No Ice	0.71	0.41	15.00
			0.00			1/2" Ice	0.83	0.52	20.03
			0.00						
Dual band TMA	C	From Face	4.00	0.0000	135.00	No Ice	0.71	0.41	15.00
			0.00			1/2" Ice	0.83	0.52	20.03
			0.00						
(2) 7020.00 RET-RCU	A	From Face	4.00	0.0000	135.00	No Ice	0.40	0.12	5.00
			0.00			1/2" Ice	0.49	0.17	7.94
			0.00						
(2) 7020.00 RET-RCU	B	From Face	4.00	0.0000	135.00	No Ice	0.40	0.12	5.00
			0.00			1/2" Ice	0.49	0.17	7.94
			0.00						
(2) 7020.00 RET-RCU	C	From Face	4.00	0.0000	135.00	No Ice	0.40	0.12	5.00
			0.00			1/2" Ice	0.49	0.17	7.94
			0.00						
10' T-arm	A	None		0.0000	135.00	No Ice	2.67	2.67	150.00
						1/2" Ice	3.36	3.36	547.19
10' T-arm	B	None		0.0000	135.00	No Ice	2.67	2.67	150.00
						1/2" Ice	3.36	3.36	547.19

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
10' T-arm	C	None		0.0000	135.00	No Ice	2.67	2.67	150.00
						1/2" Ice	3.36	3.36	547.19
(2) LPA-80080/6	A	From Face	4.00	0.0000	125.00	No Ice	4.32	9.10	25.00
			0.00			1/2" Ice	4.76	9.65	73.26
			0.00						
(2) LPA-80080/6	B	From Face	4.00	0.0000	125.00	No Ice	4.32	9.10	25.00
			0.00			1/2" Ice	4.76	9.65	73.26
			0.00						
(2) LPA-80080/6	C	From Face	4.00	0.0000	125.00	No Ice	4.32	9.10	25.00
			0.00			1/2" Ice	4.76	9.65	73.26
			0.00						
(2) BXA-171085/12	A	From Face	4.00	0.0000	125.00	No Ice	4.79	3.62	25.00
			0.00			1/2" Ice	5.24	4.06	52.45
			0.00						
(2) BXA-171085/12	B	From Face	4.00	0.0000	125.00	No Ice	4.79	3.62	25.00
			0.00			1/2" Ice	5.24	4.06	52.45
			0.00						
(2) BXA-171085/12	C	From Face	4.00	0.0000	125.00	No Ice	4.79	3.62	25.00
			0.00			1/2" Ice	5.24	4.06	52.45
			0.00						
BXA-70063/6	A	From Face	4.00	0.0000	125.00	No Ice	7.73	3.76	25.00
			0.00			1/2" Ice	8.27	4.19	65.60
			0.00						
BXA-70063/6	B	From Face	4.00	0.0000	125.00	No Ice	7.73	3.76	25.00
			0.00			1/2" Ice	8.27	4.19	65.60
			0.00						
BXA-70063/6	C	From Face	4.00	0.0000	125.00	No Ice	7.73	3.76	25.00
			0.00			1/2" Ice	8.27	4.19	65.60
			0.00						
ALU RRH2x40-AWS	A	From Face	4.00	0.0000	125.00	No Ice	2.52	1.59	45.00
			0.00			1/2" Ice	2.75	1.80	62.40
			0.00						
ALU RRH2x40-AWS	B	From Face	4.00	0.0000	125.00	No Ice	2.52	1.59	45.00
			0.00			1/2" Ice	2.75	1.80	62.40
			0.00						
ALU RRH2x40-AWS	C	From Face	4.00	0.0000	125.00	No Ice	2.52	1.59	45.00
			0.00			1/2" Ice	2.75	1.80	62.40
			0.00						
(2) RFS FD9R6004_2C-3L diplexer	A	From Face	4.00	0.0000	125.00	No Ice	0.37	0.08	5.00
			0.00			1/2" Ice	0.45	0.14	7.30
			0.00						
(2) RFS FD9R6004_2C-3L diplexer	B	From Face	4.00	0.0000	125.00	No Ice	0.37	0.08	5.00
			0.00			1/2" Ice	0.45	0.14	7.30
			0.00						
(2) RFS FD9R6004_2C-3L diplexer	C	From Face	4.00	0.0000	125.00	No Ice	0.37	0.08	5.00
			0.00			1/2" Ice	0.45	0.14	7.30
			0.00						
Raycap RDC-4276-PF-48 J-box	C	None		0.0000	125.00	No Ice	6.69	2.70	35.00
						1/2" Ice	7.03	2.95	76.97
13' low-profile platform	C	None		0.0000	125.00	No Ice	9.10	7.88	1100.00
						1/2" Ice	10.15	8.79	1848.74
20' x 2.5" omni whip	A	From Face	3.00	0.0000	120.00 - 100.00	No Ice	5.00	5.00	50.00
			0.00			1/2" Ice	7.03	7.03	86.96
			0.00						
3' x 4" standoff	A	None		0.0000	100.00	No Ice	1.40	0.16	40.00
						1/2" Ice	1.66	0.21	51.31
GPS on 2' standoff	A	From Leg	2.00	0.0000	85.00	No Ice	0.60	0.60	50.00
			0.00			1/2" Ice	0.79	0.79	55.81
			0.00						

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
GPS on 2' standoff	B	From Leg	2.00 0.00 0.00	0.0000	85.00	No Ice 1/2" Ice	0.60 0.79	0.60 0.79	50.00 55.81
GPS on 2' standoff	C	From Leg	2.00 0.00 0.00	0.0000	85.00	No Ice 1/2" Ice	0.60 0.79	0.60 0.79	50.00 55.81

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight lb
2.5' dish with radome	A	Paraboloid w/Radome	From Face	5.00 2.30 0.00	0.0000		175.00	2.50	No Ice 1/2" Ice	4.91 5.24	50.00 26.91

Solution Summary

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	175 - 130	30.167	11	1.4103	0.0081
L2	135 - 85	18.745	11	1.2755	0.0033
L3	91 - 41	8.558	11	0.8790	0.0015
L4	48 - 0	2.421	11	0.4577	0.0006

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
175.00	2.5' dish with radome	11	30.167	1.4103	0.0081	69407
155.00	APXV9TM14-ALU-120	11	24.318	1.3637	0.0052	17351
145.00	(2) AIR 21 B2A B4P panel	11	21.480	1.3274	0.0040	11567
135.00	P65-17-XLH-RR panel	11	18.745	1.2755	0.0033	8774
125.00	(2) LPA-80080/6	11	16.146	1.2045	0.0028	7782
120.00	20' x 2.5" omni whip	11	14.903	1.1629	0.0025	7402
115.00	20' x 2.5" omni whip	11	13.701	1.1181	0.0023	7057
110.00	20' x 2.5" omni whip	11	12.542	1.0707	0.0021	6742
105.00	20' x 2.5" omni whip	11	11.426	1.0214	0.0019	6455
100.00	20' x 2.5" omni whip	11	10.358	0.9709	0.0017	6190
85.00	GPS on 2' standoff	11	7.451	0.8184	0.0013	5590

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Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
L1	175 - 130	Pole	TP34.9x24x0.25	1	-12854.80	168772.46	32.1	Pass
L2	130 - 85	Pole	TP45.3x33.1889x0.3125	2	-19322.00	465528.90	64.7	Pass
L3	85 - 41	Pole	TP55.3328x43.2217x0.375	3	-31806.30	1023046.80	69.5	Pass
L4	41 - 0	Pole	TP64.5139x52.8872x0.375	4	-47943.20	1784513.69	82.2	Pass
							Summary	
						Pole (L4)	82.2	Pass
						RATING =	**82.2**	**Pass**