June 03, 2014

David Martin and
Members of the Siting Council
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Notice of Exempt Modification
60 Rice Lane
Beacon Falls, CT 06403
Sprint Site #: NV2.5_CT33XC524
N 41° 27' 20.44"
W -73° 02' 23.09"

Dear Mr. Martin and Members of the Siting Council:

On behalf of Sprint Spectrum, SBA Communications is submitting an exempt modification application to the Connecticut Siting council for modification of existing equipment at a tower facility located at 60 Rice Lane, Beacon Falls, CT.

The 60 Rice Lane facility consists of a 160' MONOPOLE Tower owned and operated by SBA Properties, LLC. In order to accommodate technological changes and enhance system performance in the State of Connecticut, Sprint Spectrum plans to modify the equipment configurations at many of its existing cell 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 chief elected official of the municipality in which the affected cell site is located.

As part of Sprint's Network Vision modification project, Sprint desires to upgrade their equipment to meet the new standards of 4G technology. The new equipment will allow customers to download files and browse the internet at a high rate of speed while also allowing their phones to be compatible with the latest 4G technology.

Attached is a summary of the planned modifications, including power density calculations reflecting the change in Sprint's operations at the site along with the required fee of $625.

The changes to the facility do not constitute modifications 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 or altered. 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 overall height of the structure will be unaffected.

2. The proposed changes will not extend the site boundaries. There will be no effect on the site compound other than the new equipment cabinets.

3. The proposed changes will not increase the noise level at the existing facility by six decibels or more.

4. The changes in radio frequency power density 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.

For the foregoing reasons, SBA Communications on behalf of Sprint Spectrum, respectfully submits that he proposed changes at the referenced site constitute exempt modifications under R.C.S.A. Section 16-50j-72(b)(2).

Please feel free to call me at (508) 251-0720 x 3804 with any questions you may have concerning this matter.

Thank you,

Kri Pelletier
SBA Communications Corporation
33 Boston Post Road West Suite 320
Marlborough, MA 01752
508-251-0720 x 3804 + T
508-251-1755 + F
203-446-7700 + C
kpelletier@sbasite.com

Sprint Spectrum
Equipment Modification

60 Rice Lane, Beacon Falls, CT
Site number CT33XC524

Tower Owner: SBA Properties, LLC

Equipment Configuration: MONOPOLE Tower

Current and/or approved:

- (3) RFS APXVSPP18-C-A20
- (3) ALU 1900 MHz
- (3) ALU 800 MHz
- (3) ALU 800 MHz
- (4) RFS ACU-A20-N
- (3) 1-1/4" Hybrid Lines

Planned Modifications:

- (3) RFS APXVSPP18-C-A20
- (3) ALU 1900 MHz
- (3) ALU 800 MHz
- (3) ALU 800 MHz
- (4) RFS ACU-A20-N
- (3) RFS APXVTM14-C-I20
- (3) Alcatel Lucent TD-RRH8x20-25
- (4) 1-1/4" Hybrid Lines

Structural Information:

The attached structural analysis demonstrates that the tower and foundation will have adequate structural capacity to accommodate the proposed modifications.

Power Density:

The anticipated Maximum Composite contributions from the Sprint facility are 0.61% of the allowable FCC established general public limit. The anticipated composite MPE value for this site assuming all carriers present is 34.96% of the allowable FCC established general public limit sampled at the ground level.

Site Composite MPE %	
Carrier	MPE %
Sprint	0.61%
T-Mobile	0.17%
AT&T	20.39%
Verizon Wireless	10.80%
Clearwire	0.77%
Beacon Hose Co.	2.22%
Total Site MPE %	34.96%

June 03, 2014

Christopher J. Bielik
First Selectman
Town of Beacon Falls
Town Hall
10 Maple Avenue
Beacon Falls, CT 06403

RE: Telecommunications Facility @ 60 Rice Lane, Beacon Falls CT

Dear Mr. Bielik,

In order to accommodate technological changes and enhance system performance in the State of Connecticut, Sprint Spectrum will be changing its equipment configuration at certain cell sites.

As required by Regulations of Connecticut State Agencies (R.C.S.A.) Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review Sprint's proposal. Please accept this letter as notification under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

The accompanying letter to the Siting Council fully describes Sprint's proposal for the referenced cell site. However, if you have any questions or require any further information on our plans or the Siting Council's procedures, please call me at (508) 251-0720 x 3804.

Thank you,

Kri Pelletier
SBA Communications Company
33 Boston Post Road West, Suite 320
Marlborough, MA 01752
508-251-0720 x 3804 + T
508-251-1755 + F
203-446-7700 + C
kpelletier@sbasite.com

June 03, 2014

Charles Edwards
P.O. BOX 81
Beacon Falls CT 06403-0081

RE: Telecommunications Facility @ 60 Rice Lane, Beacon Falls CT

Dear Mr. Edwards,

In order to accommodate technological changes and enhance system performance in the State of Connecticut, Sprint Spectrum will be changing its equipment configuration at certain cell sites.

As required by Regulations of Connecticut State Agencies (R.C.S.A.) Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review Sprint's proposal. Please accept this letter as notification under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

The accompanying letter to the Siting Council fully describes Sprint's proposal for the referenced cell site. However, if you have any questions or require any further information on our plans or the Siting Council's procedures, please call me at (508) 251-0720 x 3804.

Thank you,

Kri Pelletier
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203-446-7700 + C
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EBI Consulting
environmental | engineering | due diligence

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

Sprint Existing Facility

Site ID: CT33XC524

E. Beacon Falls / Edwards Property

60 Rice Lane
Beacon Falls, CT 06403

May 28, 2014

EBI Project Number: 52143100

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

EBI Consulting
environmental | engineering | due diligence

May 28, 2014

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

Re: Radio Frequency Maximum Permissible Exposure (MPE) Assessment for Site:
CT33XC524 - E. Beacon Falls / Edwards Property

Site Total: 34.96% - MPE% in full compliance

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 60 Rice Lane, Beacon Falls, 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 60 Rice Lane, Beacon Falls, 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) 4 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 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 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 existing 1900 MHz / 850 MHz antennas is **152 feet** above ground level (AGL). The antenna mounting height centerline for the Proposed 2500 MHz antennas is **150 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	CT33XC524 - E. Beacon Falls / Edwards Property
Site Addresss	60 Rice Lane, Beacon Falls, CT, 06403
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	4	80	1.59	152	146	1/2 "	0.5	3	51.53	0.09%
1a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	1.34	152	146	1/2 "	0.5	3	12.16	0.04%
1B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	1.59	150	144	1/2 "	0.5	3	25.77	0.08%
														Sector total Power Density Value:		0.20%

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	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	4	80	1.59	152	146	1/2 "	0.5	3	51.53	0.09%
2a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	1.34	152	146	1/2 "	0.5	3	12.16	0.04%
2B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	1.59	150	144	1/2 "	0.5	3	25.77	0.08%
														Sector total Power Density Value:		0.20%

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	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	4	80	1.59	152	146	1/2 "	0.5	3	51.53	0.09%
3a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	1.34	152	146	1/2 "	0.5	3	12.16	0.04%
3B	RFS	APXVTMM14-C-120	RRH	2500 MHz	CDMA / LTE	20	2	40	1.59	150	144	1/2 "	0.5	3	25.77	0.08%
														Sector total Power Density Value:		0.20%

Site Composite MPE %

Carrier	MPE %
Sprint	0.61%
T-Mobile	0.17%
AT&T	20.39%
Verizon Wireless	10.80%
Clearwire	0.77%
Beacon Hose Co.	2.22%
Total Site MPE %	**34.96%**

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 **0.61% (0.20% from sector 1, 0.20% from sector 2 and 0.20% 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 **34.96%** 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 for SBA Network Services, Inc.

160' Monopole Tower

SBA Site Name: Beacon Falls
SBA Site ID: CT02049-S-01
Sprint Site ID: CT33XC524

FDH Project Number 1466AK1400

Analysis Results

Tower Components	99.9%	Sufficient
Foundation	74.2%	Sufficient

Prepared By:

Diana Tang, EIT
Project Engineer

Reviewed By:

J. Darrin Holt, PhD, PE
Principal
CT PE License No. 22988

FDH Engineering, Inc.
6521 Meridien Drive
Raleigh, NC 27616
(919) 755-1012
info@fdh-inc.com

May 29, 2014

Prepared pursuant to TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures and 2005 Connecticut Building Code

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EXECUTIVE SUMMARY

At the request of SBA Network Services, Inc., FDH Engineering, Inc. performed a structural analysis of the monopole located in Beacon Falls, CT to determine whether the tower is structurally adequate to support both the existing and proposed loads pursuant to the *Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, TIA/EIA-222-F* and the *2005 Connecticut Building Code (CBC)*. Information pertaining to the existing/proposed antenna loading, current tower geometry, soil parameters, foundation dimensions, and member sizes was obtained from:

- Fred A. Nudd Corp. (Project No. 7342) original design drawings dated January 14, 2000
- SEA Consultants, Inc. (Ref. No. 99339.02-A) Geotechnical Investigation Report dated August 2, 1999
- O2 Wireless Solutions (Job No. 2230-022) Monopole Tower Rework Construction Drawings dated May 23, 2002
- FDH, Inc. (Job No. 09-04127T T1) Steel Data Monopole Tower Report dated May 5, 2009
- FDH Engineering, Inc. (Project No. 09-04232E S2) Extension & Modification As-Built Drawings for a 150' Monopole dated November 3, 2009
- FDH Engineering, Inc. (Project No. 09-04232E S2) Post-Construction Inspection Report dated December 28, 2009
- FDH, Inc. (Job No. 09-04127T T2) TIA Inspection Report dated December 29, 2009
- FDH Engineering, Inc. (Project No. 12-04772E S3) Modification Drawings for a 160' Monopole dated August 21, 2012
- Centek Engineering (Job No. 13014.014) Final Report of Special Inspections dated October 30, 2013
- SBA Network Services, Inc.

The *basic design wind speed* per the *TIA/EIA-222-F* standards and *2005 CBC* is 85 mph without ice and 38 mph with 3/4" radial ice. Ice is considered to increase in thickness with height.

Conclusions

With the existing and proposed antennas from Sprint in place at 150 ft, the tower meets the requirements of the *TIA/EIA-222-F* standards and *2005 CBC* provided the Recommendations listed below are satisfied. Furthermore, provided the foundation was constructed per the original design drawings (see Fred A. Nudd Project No. 7342) and utilizing the soil parameters provided (see SEA Ref. No. 99339.02-A), the foundation should have the necessary capacity to support the existing and proposed loading. For a more detailed description of the analysis of the tower, see the **Results** section of this report.

Our structural analysis has been performed assuming all information provided to FDH Engineering, Inc. is accurate (i.e., the steel data, tower layout, existing antenna loading, and proposed antenna loading) and that the tower has been properly erected and maintained per the original design drawings.

Recommendations

To ensure the requirements of the *TIA/EIA-222-F* standards and *2005 CBC* are met with the existing and proposed loading in place, we have the following recommendations:

1. The proposed feed lines should be installed inside the pole's shaft.
2. RRU/RRH Stipulation: The equipment must be installed behind the antennas in order for the tower to be structurally sufficient.

APPURTENANCE LISTING

The proposed and existing antennas with their corresponding cables/coax lines are shown in **Table 1**. *If the actual layout determined in the field deviates from the layout, FDH Engineering, Inc. should be contacted to perform a revised analysis.*

Table 1 - Appurtenance Loading

Existing Loading:

Antenna Elevation (ft)	Description	Feed Lines[1]	Carrier	Mount Elevation (ft)	Mount Type
165	(1) Andrew DB222	(1) 7/8"	BFFD	160	(1) Pipe Mount
162.2	(6) Decibel DB846F65ZAXY (6) Antel LPA-185063/8CF (3) Antel BXA-70063/4CF	(18) 1-5/8"	Verizon		(1) 14' Low Profile Platform
152	(3) RFS APXVSPP18-C-A20 (3) ALU 1900 MHz (3) ALU 800 MHz (3) ALU 800 MHz (4) RFS ACU-A20-N	(3) 1-1/4"	Sprint	148.3	(1) 14' Low Profile Platform
143.8	(6) Powerwave LGP13907	(12) 1-5/8" (1) 1-5/8"	T-Mobile	142.2	(1) 15' Low Profile Platform
142.9[2]	(3) Ericsson AIR 21 B2A/B4P (3) Ericsson AIR 21 B4A/B4P (3) Ericsson KRY 112 144				
135	(6) Ericsson RRUS-11 (1) Raycap DC6-48-60-18-8F	(6) 1-5/8" (6) 1-1/4" (2) WR-VG122ST-BRDA	AT&T	135	(1) Collar Mount (Valmont P/N 801068/527286)
132.5[3]	(3) Kathrein 800-10121 (2) KMW AM-X-CD-16-6500T (1) Andrew SBNH-1D6565C (6) Powerwave LGP21901 (6) Powerwave LGP21401			132.5	(3) T-Arms (Andrew P/N MC-K12M-B)
115	(1) Andrew DB222	(1) 7/8"	BFFD	110	(1) Standoff (Assumed CaAa = 0.98 ft²)
40	(1) GPS	(1) 1/2"	Sprint	39.5	(1) 4' Standoff

1. Feed lines located inside pole's shaft unless otherwise noted.
2. T-Mobile currently has (1) 1-5/8" coax located outside of the pole's shaft as shown in **Figure 1** (see **Appendix**).
3. The DC cables are installed inside a 3" flex conduit inside of the poles shaft.

Proposed Loading:

Antenna Elevation (ft)	Description	Feed Lines	Carrier	Mount Elevation (ft)	Mount Type
152	(3) RFS APXVSPP18-C-A20 (3) ALU 1900 MHz (3) ALU 800 MHz (3) ALU 800 MHz (4) RFS ACU-A20-N	(3) 1-1/4"	Sprint	148.3	(1) 14' Low Profile Platform
150	(3) RFS APXVTM14-C-I20 (3) Alcatel Lucent TD-RRH8x20-25	(1) 1-1/4"			

RESULTS

The following yield strength of steel for individual members was used for analysis:

Table 2 - Material Strength

Member Type	Yield Strength
Tower Extension Section	50 ksi
Tower Shaft Sections	45 ksi & 65 ksi
Flange Plates	50 ksi
Flange Bolts	F_u = 120 ksi
Base Plate	50 ksi
Anchor Bolts	F_u = 125 ksi

Table 3 displays the summary of the ratio (as a percentage) of force in the member to their capacities. Values greater than 100% indicate locations where the maximum force in the member exceeds its capacity. **Table 4** displays the maximum foundation reactions.

If the assumptions outlined in this report differ from actual field conditions, FDH Engineering, Inc. should be contacted to perform a revised analysis. Furthermore, as no information pertaining to the allowable twist and sway requirements for the existing or proposed appurtenances was provided, deflection and rotation were not taken into consideration when performing this analysis.

See the **Appendix** for detailed modeling information

Table 3 - Summary of Working Percentage of Structural Components

Section No.	Elevation (ft)	Component Type	Size	% Capacity*	Pass Fail
L1	160 - 150	Pole	TP16x16x0.25	37.1	Pass
---	150	Flange Bolts	(20) 0.5"Ø w/ BC = 21"	58.0	Pass
---	150	Flange Plate	24"Ø PL x 0.75" Thick	49.6	Pass
L3	150 - 145	Pole	TP24.375x24.375x0.25	23.1	Pass
---	145	Flange Bolts	(18) 0.5"Ø. w/ BC = 27"	94.3	Pass
---	145	Flange Plate	30"Ø PL x 0.5" Thick	63.3	Pass
L4	145 - 115	Pole	TP30.138x24.375x0.25	82.2	Pass
L5	115 - 95	Pole	TP33.980x30.138x0.3125	83.5	Pass
L6	95 - 80	Modified Pole	TP36.083x32.395x0.3125 w/ Flat Plate	83.1	Pass
L7	80 - 50	Modified Pole	TP41.616x36.083x0.375 w/ Flat Plate	89.6	Pass
L8	50 - 16	Modified Pole	TP47.384x39.759x0.375 w/ Flat Plate and Channel Reinforcement	99.9	Pass
L9	16 - 0	Modified Pole	TP50.375x45.491x0.375 w/ Flat Plate and Channel Reinforcement	86.3	Pass
		Anchor Bolts	(18) 2"Ø w/ BC = 58" w/ (3) 1.75"Ø w/ BC = 72"	81.0	Pass
		Base Plate	63"Ø PL x 1.5" Thick	30.2	Pass

*Capacities include a 1/3 allowable stress increase for wind.

Table 4 - Maximum Base Reactions

Base Reactions	Current Analysis *(TIA/EIA-222-F)**	Original Design *(TIA/EIA-222-F)*
Axial	46 k	---
Shear	36 k	25 k
Moment	3,886 k-ft	2,374 k-ft

*Foundation determined adequate per independent analysis.

GENERAL COMMENTS

This engineering analysis is based upon the theoretical capacity of the structure. It is not a condition assessment of the tower and its foundation. It is the responsibility of SBA Network Services, Inc. to verify that the tower modeled and analyzed is the correct structure (with accurate antenna loading information) modeled. If there are substantial modifications to be made or the assumptions made in this analysis are not accurate, FDH Engineering, Inc. should be notified immediately to perform a revised analysis.

LIMITATIONS

All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of this report. All opinions and conclusions are subject to revision based upon receipt of new or additional/updated information. All services are provided exercising a level of care and diligence equivalent to the standard and care of our profession. No other warranty or guarantee, expressed or implied, is offered. Our services are confidential in nature and we will not release this report to any other party without the client's consent. The use of this engineering work is limited to the express purpose for which it was commissioned and it may not be reused, copied, or distributed for any other purpose without the written consent of FDH Engineering, Inc.

APPENDIX

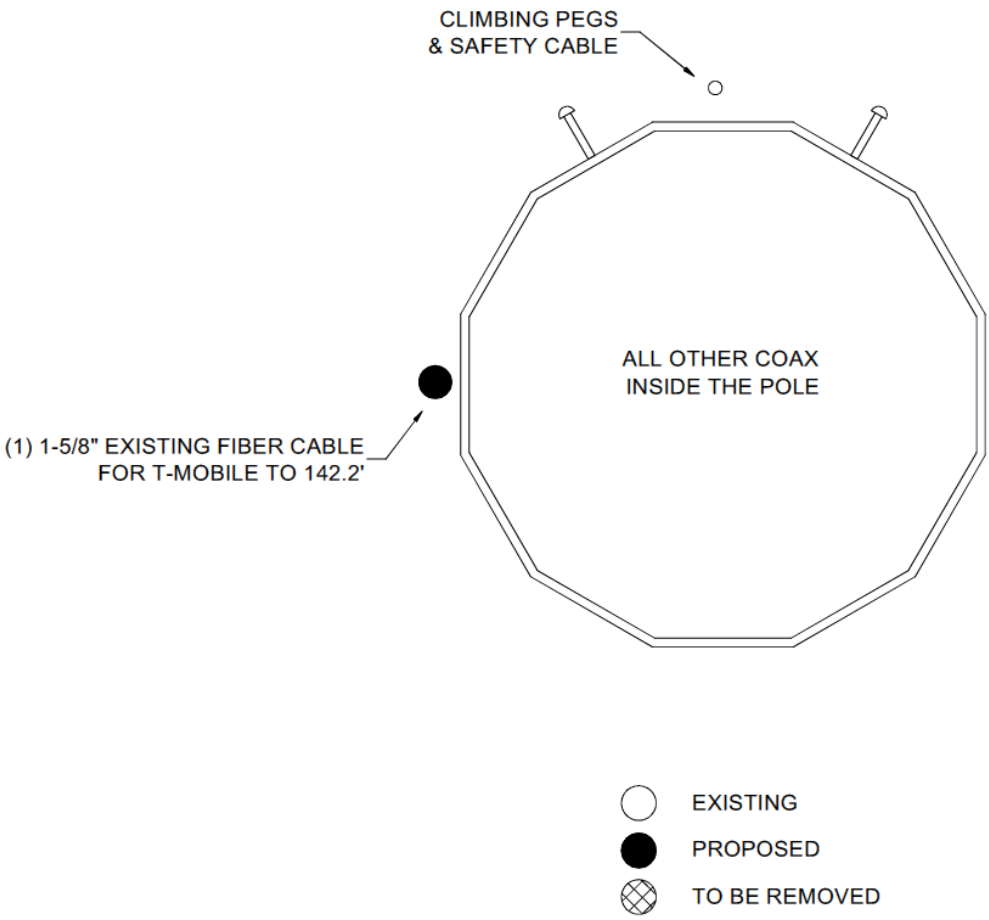
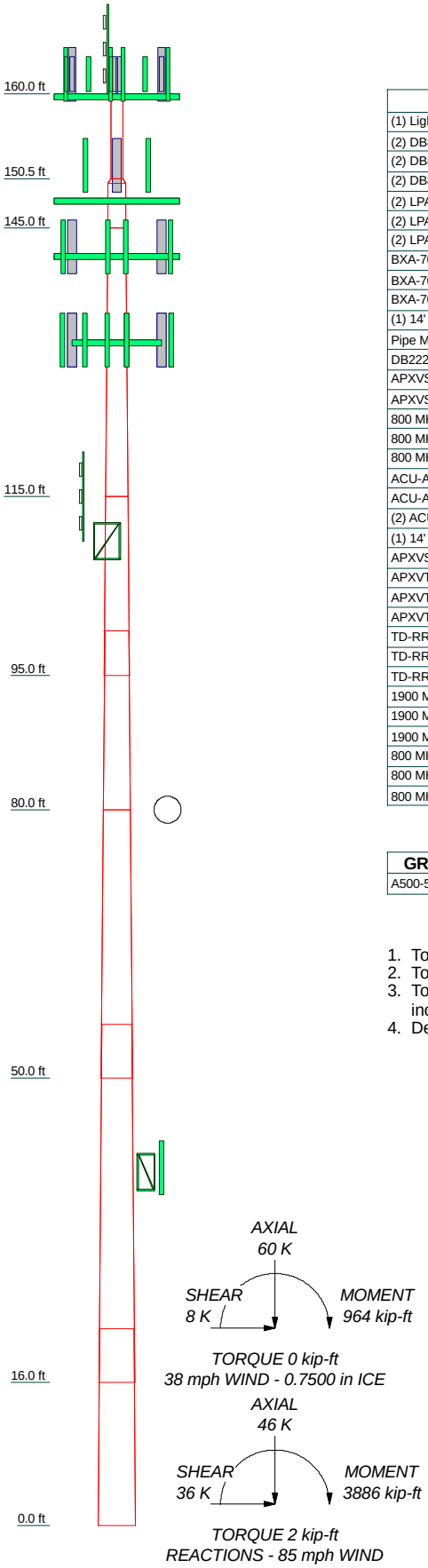


Figure 1 – Assumed Feed Line Layout

Section	1	2	3	4	5	6	7	8	9
Length (ft)	9.50	5.00	5.00	30.00	20.00	20.00	30.00	40.00	22.00
Number of Sides	1	12	12	12	12	12	12	12	12
Thickness (in)	0.2500	0.2500	0.2500	0.2500	0.3125	0.3125	0.3750	0.3750	0.3750
Socket Length (ft)					5.00		6.00	6.00	
Top Dia (in)	16.0000	16.0000	24.3750	24.3750	30.1382	32.3947	36.0831	39.7592	45.4906
Bot Dia (in)	16.0000	16.0000	24.3750	30.1382	33.9803	36.0831	41.6158	47.3844	50.3750
Grade	A500-50				A572-65				
Weight (K)	0.4	0.0	0.3	2.2	2.2	2.3	4.7	7.1	4.3



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(1) Lightning Rod	160	AIR 21 B2A/B4P w/Mount Pipe	142.2
(2) DB846F65ZAXY w/ Mount Pipe	160	AIR 21 B2A/B4P w/Mount Pipe	142.2
(2) DB846F65ZAXY w/ Mount Pipe	160	AIR 21 B2A/B4P w/Mount Pipe	142.2
(2) DB846F65ZAXY w/ Mount Pipe	160	AIR 21 B4A/B2P w/Mount Pipe	142.2
(2) LPA-185063/8CF w/ Mount Pipe	160	AIR 21 B4A/B2P w/Mount Pipe	142.2
(2) LPA-185063/8CF w/ Mount Pipe	160	AIR 21 B4A/B2P w/Mount Pipe	142.2
(2) LPA-185063/8CF w/ Mount Pipe	160	KRY 112 144	142.2
BXA-70063/4CF	160	KRY 112 144	142.2
BXA-70063/4CF	160	KRY 112 144	142.2
BXA-70063/4CF	160	(1) 15' Low Profile Platform MNT	142.2
(1) 14' Low Profile Platform MNT	160	(1) Collar Mount MNT	135
Pipe Mount	160	(2) RRUS-11	135
DB222	160	(2) RRUS-11	135
APXVSPP18-C-A20 w/Mount Pipe	148.3	(2) RRUS-11	135
APXVSPP18-C-A20 w/Mount Pipe	148.3	DC6-48-60-18-8F Surge Arrestor	135
800 MHz Filter	148.3	AM-X-CD-16-65-00T-RET w/ Mount Pipe	132.5
800 MHz Filter	148.3		
800 MHz Filter	148.3	SBNH-1D6565C w/ Mount Pipe	132.5
ACU-A20-N RET	148.3	(2) LGP21901 Diplexer	132.5
ACU-A20-N RET	148.3	(3) T-Arms (Andrew MC-K12M-B)	132.5
(2) ACU-A20-N RET	148.3	(2) LGP21901 Diplexer	132.5
(1) 14' Low Profile Platform MNT	148.3	(2) LGP21401 TMA	132.5
APXVSPP18-C-A20 w/Mount Pipe	148.3	(2) LGP21401 TMA	132.5
APXVTM14-C-I20 w/ Mount Pipe	148.3	(2) LGP21401 TMA	132.5
APXVTM14-C-I20 w/ Mount Pipe	148.3	(2) LGP21901 Diplexer	132.5
APXVTM14-C-I20 w/ Mount Pipe	148.3	800 10121 w/ Mount Pipe	132.5
TD-RRH8x20-25	148.3	800 10121 w/ Mount Pipe	132.5
TD-RRH8x20-25	148.3	800 10121 w/ Mount Pipe	132.5
TD-RRH8x20-25	148.3	AM-X-CD-16-65-00T-RET w/ Mount Pipe	132.5
1900 MHz RRU	148.3		
1900 MHz RRU	148.3	DB222	110
1900 MHz RRU	148.3	(1) Standoff MNT	110
800 MHz RRU	148.3	(1) 4' Standoff MNT	39.5
800 MHz RRU	148.3	GPS	39.5
800 MHz RRU	148.3		

MATERIAL STRENGTH

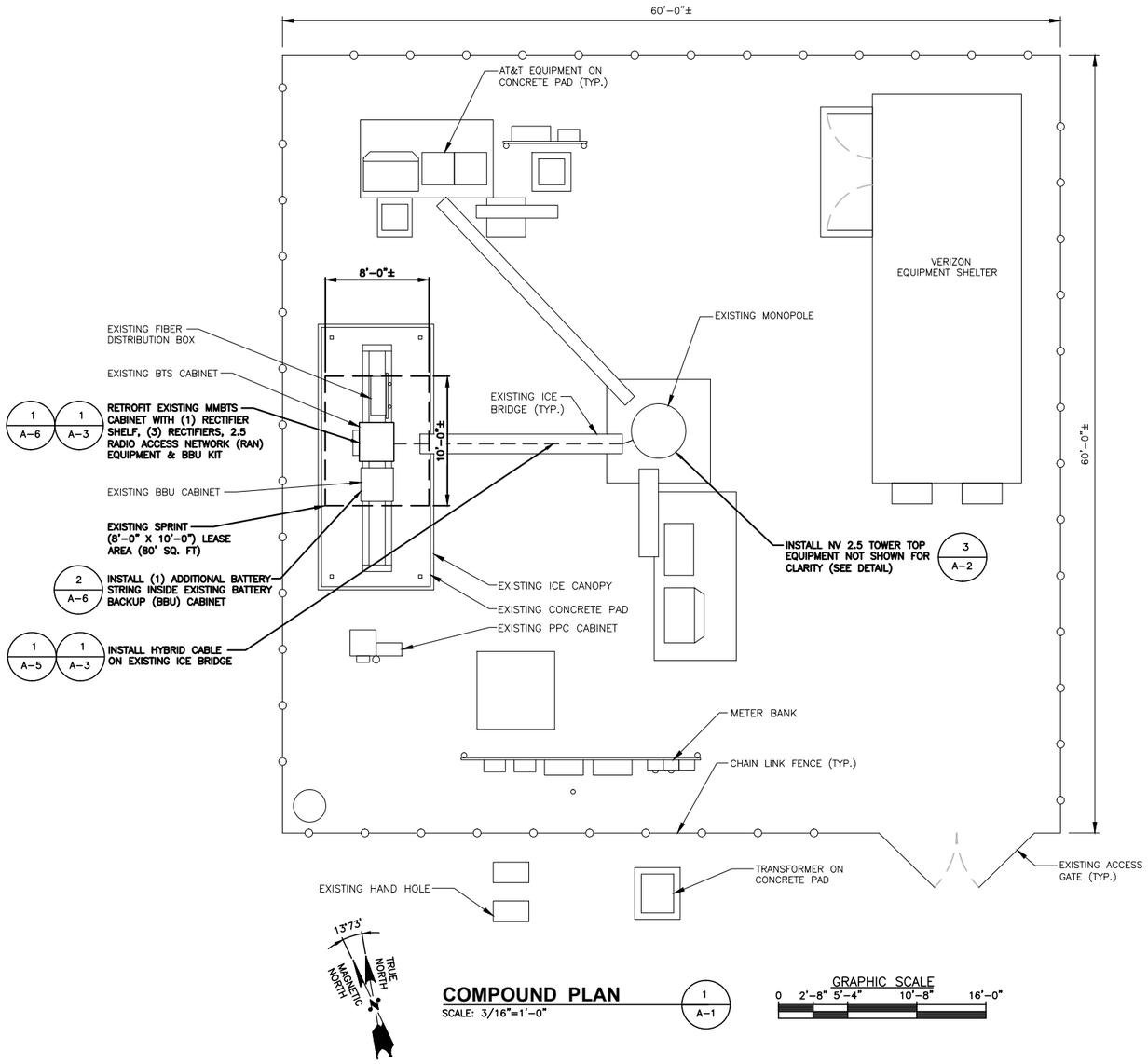
GRADE	Fy	Fu	GRADE	Fy	Fu
A500-50	50 ksi	62 ksi	A572-65	65 ksi	80 ksi

TOWER DESIGN NOTES

1. Tower is located in New Haven 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 38 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.

FDH Engineering, Inc.
6521 Meridien Drive
Raleigh, North Carolina 27616
Phone: (919) 755-1012
FAX: (919) 755-1031
Tower Analysis

Job: Beacon Falls, CT02049-S-01			
Project: 1466AK1400			
Client: SBA Network Services, Inc.	Drawn by: DTang	App'd:	
Code: TIA/EIA-222-F	Date: 05/29/14	Scale: NTS	
Path:		Dwg No. E-1	



COMPOUND PLAN
SCALE: 3/16"=1'-0" (1 / A-1)

SOURCE: HDG 03-05-14

RAN EQUIPMENT PHOTO DETAIL
SCALE: N.T.S. (2 / A-1)

Sprint
1 INTERNATIONAL BLVD. SUITE 800
MAHWAH, NJ 07495
TEL: (800) 357-7641

SBA COMMUNICATIONS CORP.
33 BOSTON POST ROAD WEST, SUITE 320
MARLBOROUGH, MA 01752 TEL: (508) 251-0720

Hudson Design Group LLC
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 3090 TEL: (978) 557-5553
N. ANDOVER, MA 01845 FAX: (978) 336-5586

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

Daniel P. Hamm

CHECKED BY: KB

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
2	05/21/14	ISSUED FOR CONSTRUCTION	JA
1	05/08/14	ISSUED FOR CONSTRUCTION	JA
0	05/07/14	ISSUED FOR CONSTRUCTION	JA

SITE NUMBER:
CT33XC524-B

SITE NAME:
E.BEACON FALLS/ EDWARDS PROPERTY

SITE ADDRESS:
60 RICE LANE
BEACON FALLS, CT 06403

SHEET TITLE
COMPOUND PLAN

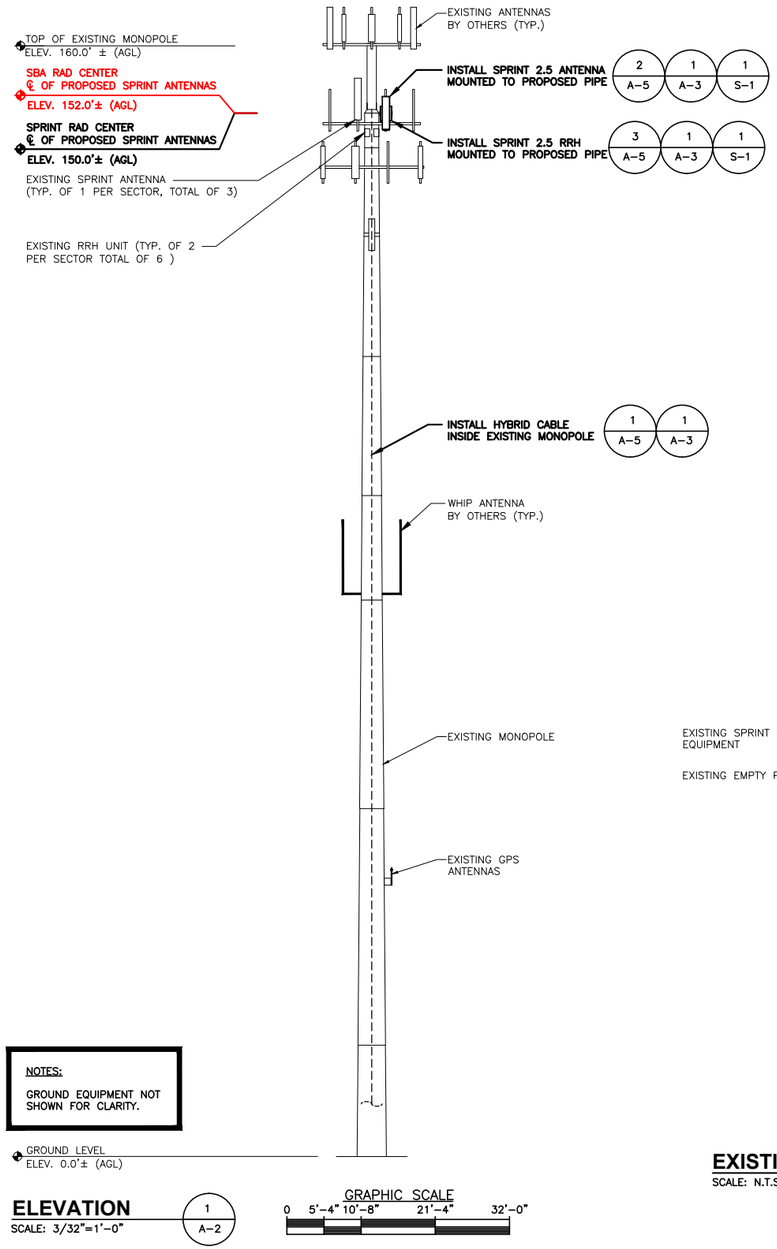
SHEET NUMBER
A-1

SPECIAL CONSTRUCTION NOTE:
SPRINT TOWER TOP WORK IS CONTINGENT ON THE FOLLOWING:
* COMPLETION OF A GLOBAL STRUCTURAL STABILITY ANALYSIS (PROVIDED BY TOWER OWNER).
* COMPLETION OF AN ANTENNA/RRH MOUNT STRUCTURAL ASSESSMENT (PROVIDED BY A&E VENDOR).
* GC SHALL FURNISH, INSTALL AND COMPLETE ALL REQUIRED STRUCTURAL MODIFICATIONS AS INDICATED IN BEFORE-MENTIONED ANALYSIS AND ASSESSMENT.
* SBA COMMUNICATIONS CORPORATION SHALL PROVIDE WRITTEN ACCEPTANCE/APPROVAL FOR THE COMPLETION OF ALL TOWER/FOUNDATION STRUCTURAL MODIFICATIONS INCLUDING (AS NECESSARY) CONTROLLED CONSTRUCTION INSPECTIONS, SHOP-DRAWING APPROVALS, MATERIALS TEST RESULTS, AND FINAL ENGINEER'S AFFIDAVIT.

NOTE:
EXISTING AZIMUTHS FROM SPRINT SITE AUDIT DATED 03/05/14

NOTE:
SPRINT RAD CENTER SHOWN IN RED TEXT BASED ON SBA-PROVIDED COLLOCATION APPLICATION, EQUIPMENT DATABASE, AND STRUCTURAL ANALYSIS. THE SBA-PROVIDED ANTENNA RAD CENTER SHALL SUPERSEDE ANY CONFLICTING INFORMATION DERIVED FROM THE SPRINT NV 2.5 RFDS.

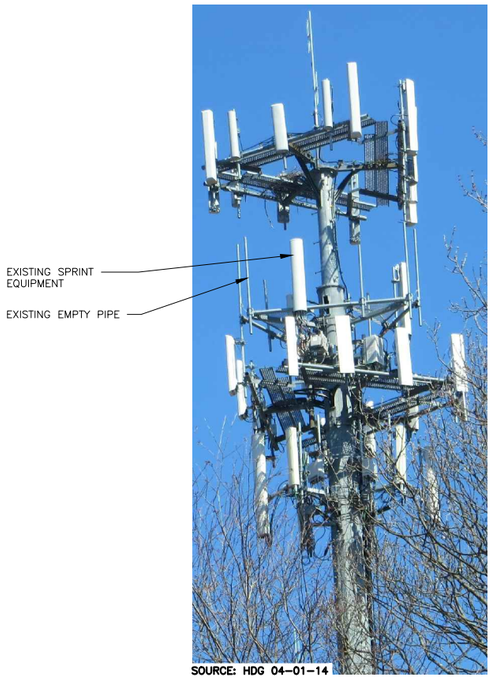
SPECIAL CONSTRUCTION NOTE:
THE SPRING NETWORK VISION 2.5 GHZ TOWER TOP WORK IS CONTINGENT UPON COMPLETION OF ALL REQUIRED STRUCTURAL MODIFICATIONS, ENGINEERING CONSTRUCTION CONTROL INSPECTIONS, FINAL ENGINEERING AFFIDAVIT, AND ACCEPTANCE/APPROVAL BY SBA COMMUNICATIONS CORP.



NOTES:
GROUND EQUIPMENT NOT SHOWN FOR CLARITY.

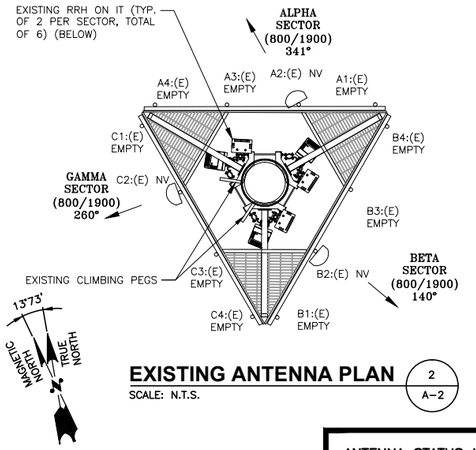
ELEVATION 1 A-2
SCALE: 3/32"=1'-0"

GRAPHIC SCALE
0 5'-4" 10'-8" 21'-4" 32'-0"



SOURCE: HDG 04-01-14

EXISTING PARTIAL ELEVATION PHOTO DETAIL
SCALE: N.T.S.



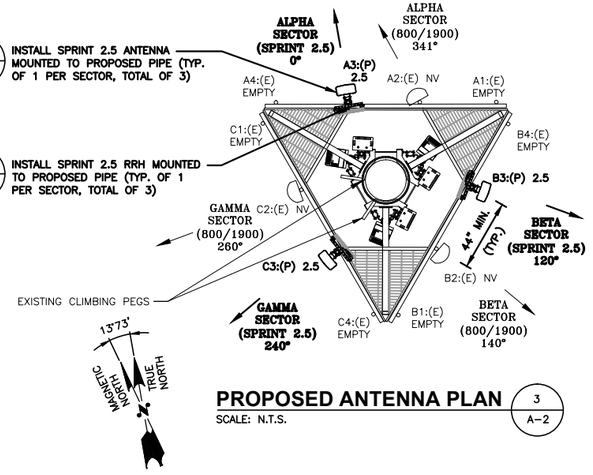
EXISTING ANTENNA PLAN 2 A-2
SCALE: N.T.S.

SPECIAL WORK NOTE:
JUMPERS FROM 2.5 RRH TO 2.5 ANTENNA CAN NOT EXCEED 15'. NOTIFY SPRINT CONSTRUCTION MANAGER OF ANY DISCREPANCY.

NOTE:
VERIFY PROPOSED AZIMUTHS WITH RF ENGINEER PRIOR TO INSTALLATION

ANTENNA STATUS LEGEND:
EMPTY - EMPTY PIPE
(E) - EXISTING
(P) - INSTALL
NV - SPRINT ANTENNA MODEL (APXVSPP18-C-A20)
2.5 - SPRINT ANTENNA

1 A-3 2 A-5 1 S-1 INSTALL SPRINT 2.5 ANTENNA MOUNTED TO PROPOSED PIPE (TYP. OF 1 PER SECTOR, TOTAL OF 3)
1 A-3 3 A-5 1 S-1 INSTALL SPRINT 2.5 RRH MOUNTED TO PROPOSED PIPE (TYP. OF 1 PER SECTOR, TOTAL OF 3)



PROPOSED ANTENNA PLAN 3 A-2
SCALE: N.T.S.

Sprint
1 INTERNATIONAL BLVD. SUITE 800
MAHWAH, NJ 07495
TEL: (800) 357-7641

SBA
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SITE NUMBER:
CT33XC524-B

SITE NAME:
E.BEACON FALLS/
EDWARDS PROPERTY
SITE ADDRESS:
60 RICE LANE
BEACON FALLS, CT 06403

SHEET TITLE
ELEVATION AND
ANTENNA PLANS

SHEET NUMBER
A-2