



# 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](mailto:siting.council@ct.gov)

[www.ct.gov/csc](http://www.ct.gov/csc)

December 14, 2012

Rick Woods  
SBA Communications Corporation  
33 Boston Post Road West Suite 320  
Marlborough, MA 01752

RE: **EM-SPRINT-011-121126** –Sprint Spectrum notice of intent to modify an existing telecommunications facility located at 1021 Blue Hills Avenue, Bloomfield, Connecticut.

Dear Mr. Woods:

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 coax lines and accessory equipment shall be installed in accordance with the recommendations made in the Structural Analysis Report prepared by FDH Engineering dated October 11, 2012 and stamped by Christopher Murphy; and
- Not more than 45 days following completion of the antenna installation, Sprint shall provide documentation certifying that its installation complied with the engineer's recommendation.
- 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;
- Not more than 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 November 20, 2012. 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  
Executive Director

LR/CDM/cm

c: The Honorable Sydney Schulman, Mayor, Town of Bloomfield  
Thomas B. Hooper, Director of Planning, Town of Bloomfield

SBA



EM-SPRINT-011-121126

November 20, 2012

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

RE: Notice of Exempt Modification  
1021 BLUE HILLS AVE.  
Bloomfield, CT 06002  
N 41 ° 49' 12.43"  
W 72 ° 41' 47.45"

ORIGINAL  
RECEIVED  
NOV 26 2012

CONNECTICUT  
SITING COUNCIL

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 1021 BLUE HILLS AVE. Bloomfield, CT.

The 1021 BLUE HILLS AVE. facility consists of a 125' SELF SUPPORT Tower owned and operated by SBA Communications. 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 antennas and associated 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. Also included is documentation of the structural sufficiency of the tower to accommodate the revised antenna and equipment configuration 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) 614-0389 with any questions you may have concerning this matter.

Thank you,

Rick Woods  
SBA Communications Corporation  
33 Boston Post Road West Suite 320  
Marlborough, MA 01752  
508-251-1691 x 319 + T  
508-251-1755 + F  
508-614-0389 + C  
[rwoods@sbsite.com](mailto:rwoods@sbsite.com)



### Sprint Spectrum Equipment Modification

1021 BLUE HILLS AVE. Bloomfield, CT  
Site number CT43XC848

**Tower Owner:** SBA Communications Corporation

**Equipment Configuration:** SELF SUPPORT Tower

**Current and/or approved:** Twelve (12) CDMA Antennas @ 87'  
Twelve (12) lines of 1-1/4" coax  
Two (2) equipment cabinets

**Planned Modifications:** Remove Twelve (12) CDMA antennas & Twelve (12) lines of 1-1/4"  
Install Three (3) Network Vision antennas & Six (6) RRHs @ 87'  
Install Three (3) Hybriflex fiber cables  
Install Three (3) Filters  
Install Four (4) RETs  
Install One (1) Fiber Distribution Box  
Replacing Two (2) equipment cabinets with Two (2) new equipment cabinets

#### 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 56.904% of the allowable FCC established general public limit. The anticipated composite MPE value for this site assuming all carriers present is 126.104% of the allowable FCC established general public limit sampled at the ground level. This is equal to 25.221% of the allowable FCC established occupational limit sampled at the ground level.

Site Composite MPE %	
Carrier	MPE %
Sprint	56.904%
AT&T	14.230%
Verizon Wireless	15.520%
T-Mobile	5.590%
Pocket	12.100%
Clearwire	1.340%
Nextel	3.960%
XM	1.480%
PageNet	0.740%
Blue Hills FD	14.240%
<b>Total Site MPE %</b>	<b>126.104%</b>



November 20, 2012

Louie Chapman, Jr.  
Town Manager  
Town of Bloomfield  
800 Bloomfield Ave  
Bloomfield, CT 06002

RE: Telecommunications Facility-1021 BLUE HILLS AVE. Bloomfield, CT 06002

Dear Mr. Chapman,

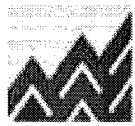
In order to accommodate technological changes and enhance system performance in the State of Connecticut, Sprint Spectrum will be changing its equipment configuration at certain cell sites.

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) 614-0389.

Thank you,

Rick Woods  
SBA Communications Company  
33 Boston Post Road West Suite 320  
Marlborough, MA 01752  
508-251-1691 x 319 + T  
508-251-1755 + F  
508-614-0389 + C  
[rwoods@sbsite.com](mailto:rwoods@sbsite.com)



# EBI Consulting

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

Sprint Existing Facility

Site ID: CT43XC848

Cottage Grove  
1021 Blue Hills Avenue  
Bloomfield, Connecticut 06002

**November 7, 2012**

November 7, 2012

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

Re: Emissions Values for Site: **CT43XC848 – Cottage Grove**

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 1021 Blue Hills Avenue, Bloomfield, Connecticut, 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ). The number of  $\mu\text{W}/\text{cm}^2$  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 ( $\mu\text{W}/\text{cm}^2$ ). The general population exposure limit for the cellular band is approximately 567  $\mu\text{W}/\text{cm}^2$ , and the general population exposure limit for the PCS band is 1000  $\mu\text{W}/\text{cm}^2$ . 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.

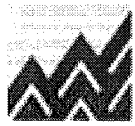
Additional details can be found in FCC OET 65.

## CALCULATIONS

Calculations were done for the proposed upgrades to the existing Sprint Wireless antenna facility located at 1021 Blue Hills Avenue, Bloomfield, Connecticut, 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) 4 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 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.



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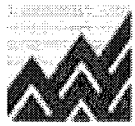
- 6) The antenna mounting height centerline of the proposed antennas is **87 feet** above ground level (AGL)
- 7) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

Site ID: C13XC648 - Cottage Grove  
 Site Address: 1021 Blue Hills Avenue, Bloomfield, Connecticut, 06002  
 Site Type: Self Support Tower

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 (dBi)	Antenna Height (ft)	Antenna analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	RFS	APXSP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	4	80	15.9	87	81	1/2"	0.5	0	2773.8948	151.9938	15.19938%
1b	RFS	APXSP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	87	81	1/2"	0.5	0	389.96892	21.3681	3.76862%
Sector 1 Total Power Density Value: 18.968%																	
2a	RFS	APXSP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	4	80	15.9	87	81	1/2"	0.5	0	2773.8948	151.9938	15.19938%
2b	RFS	APXSP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	87	81	1/2"	0.5	0	389.96892	21.3681	3.76862%
Sector 2 Total Power Density Value: 18.968%																	
3a	RFS	APXSP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	4	80	15.9	87	81	1/2"	0.5	0	2773.8948	151.9938	15.19938%
3b	RFS	APXSP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	87	81	1/2"	0.5	0	389.96892	21.3681	3.76862%
Sector 3 Total Power Density Value: 18.968%																	

Carrier	MPE %
Sprint	56.904%
AT&T	14.230%
Verizon Wireless	15.570%
T-Mobile	5.590%
Pocket	12.100%
Clearwire	1.940%
Nexel	3.960%
XM	1.480%
PageNet	0.740%
Blue Hills FD	14.240%
<b>Total Site MPE %</b>	<b>126.104%</b>



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## Summary

All calculations performed for this analysis yielded results that were above the allowable limits for general public exposure to RF Emissions. However, the area surrounding the tower is a controlled fenced compound, occupational threshold limits would apply to this area.

The anticipated Maximum Composite contributions from the Sprint facility are **56.904%** (**18.968% from each sector**) of the allowable FCC established general public limit considering all three sectors simultaneously sampled at the ground level. This is equal to **11.381%** (**3.794% from each sector**) of the allowable FCC established occupational limit considering all three sectors simultaneously sampled at the ground level

The anticipated composite MPE value for this site assuming all carriers present is **126.104%** of the allowable FCC established general public limit sampled at the ground level. This is equal to **25.221%** of the allowable FCC established occupational 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. Although values could potentially exceed the FCC established general public limit at the base of the tower, this area is well within the FCC established occupational limit for this same area and should be considered in compliance since it is a controlled area.

**Scott Heffernan**  
RF Engineering Director

**EBI Consulting**  
21 B Street  
Burlington, MA 01803



FDH Engineering, Inc., 6521 Meridien Drive Raleigh, NC 27616, Ph. 919.755.1012

**Structural Analysis for  
SBA Network Services, Inc.**

**125' Self-Support Tower**

**SBA Site Name: Bloomfield  
SBA Site ID: CT01725-A  
Sprint Site Name: Cottage Grove  
Sprint Site ID: CT43XC848**

FDH Project Number 12-06690E S3

**Analysis Results**

Tower Components	96.2 %	Sufficient
Foundations	84.1 %	Sufficient

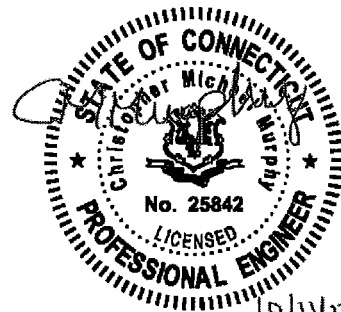
Prepared By:

Jonathan C. Holmes, EI  
Project Engineer

Reviewed By:

Christopher M. Murphy, PE  
President  
CT PE License No. 25842

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



October 11, 2012

*Prepared pursuant to TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures and 2005 Connecticut State 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 existing self-supported tower located in Bloomfield, 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 *2005 Connecticut State Building Code (2005 CSBC)*. Information pertaining to the existing/proposed antenna loading, current tower geometry, the member sizes, geotechnical data, and foundation dimensions was obtained from:

- Fred A. Nudd Corporation (Project No. 5566A) original design drawings dated March 11, 1998
- FDH Engineering, Inc. (Project No. 12-06690E G1) Geotechnical Evaluation of Subsurface Conditions dated August 10, 2012
- SBA Network Services, Inc.

The *basic design wind speed* per the *TIA/EIA-222-F* standards and *2005 CSBC* is 80 mph without ice and 28 mph with 1" radial ice. Ice is considered to increase in thickness with height.

## Conclusions

With the existing and proposed antennas from Sprint in place at 87 ft, the tower meets the requirements of the *TIA/EIA-222-F* standards and *2005 CSBC* provided the **Recommendations** listed below is satisfied. Furthermore, provided the foundations were constructed per the original design drawings (see Fred A. Nudd Project No. 5566A) and utilizing the existing soil parameters (see FDH Engineering, Inc. Project No. 12-06690E G1), the foundations 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 CSBC* are met with the existing and proposed loading in place, we have the following recommendations:

1. Coax must be installed as shown in **Figure 1**.
2. RRU/RRH Stipulation: The equipment may be installed in any arrangement as determined by the client.

## 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	Coax and Lines	Carrier	Mount Elevation (ft)	Mount Type
135	(3) Celwave PD455 Dipoles (2) 20' Omnis	(1) 1-1/4" (2) 7/8" (2) 1/2"	Blue Hills Fire & PD	125	(1) Platform w/ Handrails
125	(6) EMS RV90-17-00 (3) RFS APX16PV-16PVL-C (9) Andrew OneBase Twin TMAs	(18) 1-5/8"	T-Mobile		
120	(9) Decibel DB844H90E-XY (3) Kathrein 840 10054	(12) 1-1/4"	Nextel/ Clearwire	120	(3) T-Frames
	(2) Dragonwave Horizon DUO Radios (3) Samsung U-RAS Flexible Radios (2) Andrew VHLP2.5 Dishes	(7) 5/16" (2) 1/2"			
110	(6) Antel LPA-80063/4CF (3) Antel LAP-171063-8BF (2) Swedcom SLCP 2X6014F (1) Antel BXA-70080/4CF (2) GPS	(18) 1-5/8" (2) 1/2"	Verizon	107	(3) T-Frames
98	(6) Powerwave 7770 (1) KMW AM-X-CD-16-65-00T-RET (2) Andrew SBNH-1D6565C (6) Powerwave LGP21401 TMAs (6) Ericsson RRUS-11 RRUs (6) Powerwave LGP21903 Diplexers	(12) 7/8" (1) 3" Flex Conduit (1) 3/8" Fiber (2) 3/4" DC Power	AT&T	98	(3) T-Frames
	96	(1) Raycap DC6-48-60-18-8F Surge Arrestor			
87	(12) Decibel DB980F65T2E-M	(12) 1-1/4"	Sprint	87	(3) T-Frames
75	(3) RFS APXV18-206517S-C	(6) 1-5/8"	Pocket	75	(3) Pipe Mounts
51	(1) 2' Omni (assumed)	---	---	50	(1) Standoff

### Proposed Loading:

Antenna Elevation (ft)	Description	Coax and Lines	Carrier	Mount Elevation (ft)	Mount Type
87	(3) RFS APXVSP18-C-A20 (3) ALU 1900 MHz RRUs (3) ALU 800 MHz RRUs (3) ALU 800 MHz Filters (4) RFS ACU-A20-N RETs	(3) 1-1/4" Fiber Lines (7) LCF12-50J Jumper Cables	Sprint	87	(3) T-Frames



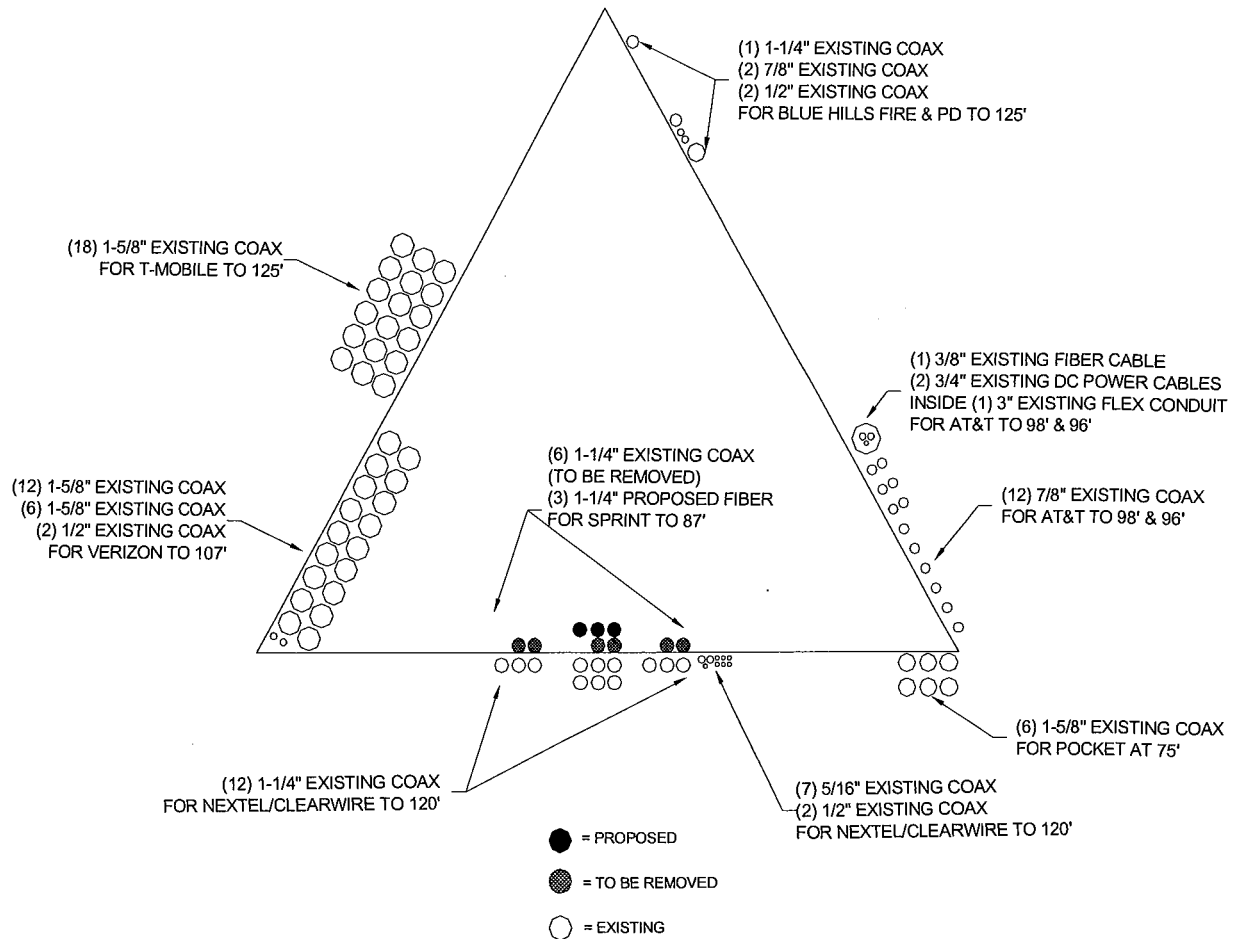


Figure 1 – Coax Layout

## RESULTS

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

**Table 2 - Material Strength**

Member Type	Yield Strength
Legs	55 ksi
Bracing	36 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. *Note: Capacities up to 105% are considered acceptable.* **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
T1	125 - 120	Leg	P2.5x.203 (2.88 OD)	9.5	Pass
		Diagonal	5/8	44.2	Pass
		Horizontal	L1 1/2x1 1/2x3/16	2.1 5.1 (b)	Pass
T2	120 - 100	Top Girt	L1 1/2x1 1/2x3/16	5.9 9.6 (b)	Pass
		Leg	P2.5x.203 (2.88 OD)	67.1	Pass
		Diagonal	L1 1/2x1 1/2x3/16	61.8 74.6 (b)	Pass
T3	100 - 80	Top Girt	L1 1/2x1 1/2x3/16	3.8 6.3 (b)	Pass
		Leg	P3.5x.226 (4.00 OD)	81.1	Pass
		Diagonal	L2x2x3/16	50.5 80.6 (b)	Pass
T4	80 - 60	Leg	P5x.258 (5.563 OD)	74.6	Pass
		Diagonal	L2 1/2x2 1/2x3/16	44.1 89.2 (b)	Pass
T5	60 - 40	Leg	P6x.28 (6.625 OD)	72.6	Pass
		Diagonal	L2 1/2x2 1/2x3/16	51.8 67.1 (b)	Pass
T6	40 - 30	Leg	P6x.28 (6.625 OD)	88.2	Pass
		Diagonal	L3x3x3/16	55.0 78.5 (b)	Pass
T7	30 - 20	Leg	P6x.28 (6.625 OD)	96.2	Pass
		Diagonal	L3x3x3/16	60.1	Pass

Section No.	Elevation ft	Component Type	Size	% Capacity	Pass Fail
				78.0 (b)	
T8	20 - 0	Leg	P8x.322 (8.625 OD)	67.7	Pass
		Diagonal	L3 1/2x3 1/2x1/4	35.5 60.2 (b)	Pass

**Table 4 - Maximum Base Reactions**

Load Type	Direction	Current Analysis* (TIA/EIA-222-F)	Original Design (EIA/TIA-222-E)
Individual Foundation	Horizontal	18 k	---
	Uplift	195 k	168 k
	Compression	220 k	178 k
Overturning Moment	---	2,270 k-ft	---

\*Foundations determined adequate per independent analysis.

## GENERAL COMMENTS

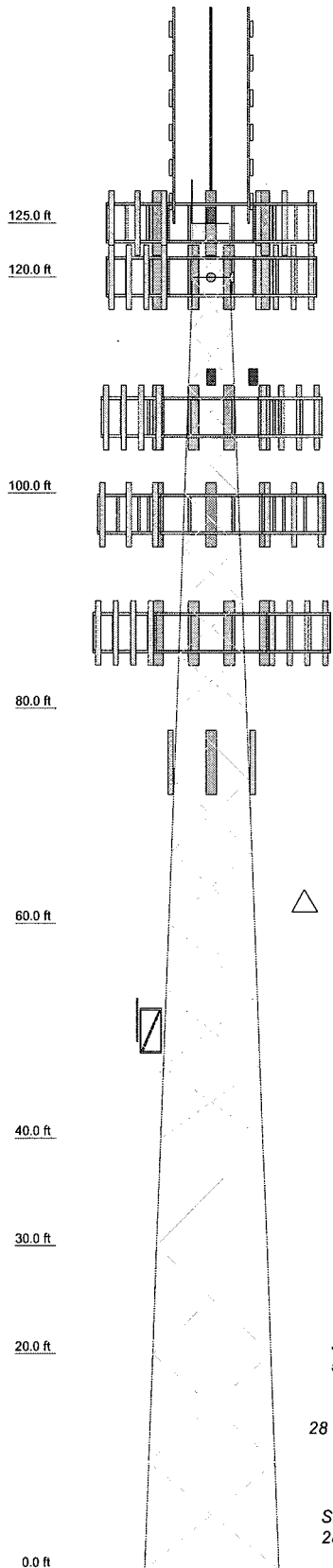
This engineering analysis is based upon the theoretical capacity of the structure. It is not a condition assessment of the tower and its foundation. It is the responsibility of SBA Network Services, Inc. to verify that the tower modeled and analyzed is the correct structure (with accurate antenna loading 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**

Section	T1	T2	T3	T4	T5	T6	T7	T8
Legs	P2.5x2.03 (2.85 OD)	P2.5x2.03 (2.85 OD)	P3.5x2.26 (4.00 OD)	F5x.258 (5.563 OD)	F6x.28 (6.625 OD)	F6x.28 (6.625 OD)	F8x.322 (8.625 OD)	F8x.322 (8.625 OD)
Leg Grade				A572-55				
Diagonals	L1 1/2x1 1/2x3/16	L1 1/2x1 1/2x3/16	L2x2x3/16	L2 1/2x2 1/2x3/16	L3x3x3/16	L3x3x3/16	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4
Diagonal Grade				A36				
Top Girts	L1 1/2x1 1/2x3/16							
Horizontals	A			N.A.	N.A.			
Face Width (ft)	3.5		5	6.5	8	9.5	10.25	11
# Panels @ (ft)	2 @ 2.5		8 @ 5		6 @ 6.66667		4 @ 10	
Weight (K)	0.2	0.7	1.0	1.4	1.7	0.9	2.8	9.6



**DESIGNED APPURTENANCE LOADING**

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod	125	(2) 7770 w/Mount Pipe	98
Flash Beacon Lighting	125	AM-X-CD-16-65-00T-RET w/ Mount Pipe	98
PD455 Dipole	125	SBNH-1D6565C w/Mount Pipe	98
PD455 Dipole	125	SBNH-1D6565C w/Mount Pipe	98
20' Omni	125	(2) LGP21401 TMA	98
20' Omni	125	(2) LGP21401 TMA	98
(2) RV90-17-00 w/Mount Pipe	125	(2) LGP21401 TMA	98
(2) RV90-17-00 w/Mount Pipe	125	(2) RRUS-11	98
(2) RV90-17-00 w/Mount Pipe	125	(2) RRUS-11	98
APX16PV-16PVL-C W/Mount Pipe	125	(2) RRUS-11	98
APX16PV-16PVL-C W/Mount Pipe	125	(2) LGP21903 Diplexer	98
APX16PV-16PVL-C W/Mount Pipe	125	(2) LGP21903 Diplexer	98
(3) OneBase Twin TMA	125	(2) LGP21903 Diplexer	98
(3) OneBase Twin TMA	125	Empty Mount Pipe	98
(3) OneBase Twin TMA	125	Empty Mount Pipe	98
(1) Platform w/ Handrails MNT	125	Empty Mount Pipe	98
(3) DB844H90E-XY	120	(3) T-Frames MNT	98
(3) DB844H90E-XY	120	(2) 7770 w/Mount Pipe	98
(3) DB844H90E-XY	120	(2) 7770 w/Mount Pipe	98
840 10054	120	DC6-48-60-18-8F Surge Arrestor	96
840 10054	120	APXVSP18-C-A20 w/Mount Pipe	87
840 10054	120	1900 MHz RRH	87
Horizon DUO Radio	120	1900 MHz RRH	87
Horizon DUO Radio	120	1900 MHz RRH	87
U-RAS Flexible Radio	120	800 MHz RRH	87
U-RAS Flexible Radio	120	800 MHz RRH	87
U-RAS Flexible Radio	120	800 MHz RRH	87
U-RAS Flexible Radio	120	800 MHz RRH	87
(3) T-Frames MNT	120	800 MHz Filter	87
VHLP2.5 Dish	120	800 MHz Filter	87
VHLP2.5 Dish	120	800 MHz Filter	87
(2) LPA-80063/4CF w/ Mount Pipe	107	ACU-A20-N RET	87
LPA-171063-8BF w/Mount Pipe	107	(2) ACU-A20-N RET	87
LPA-171063-8BF w/Mount Pipe	107	ACU-A20-N RET	87
LPA-171063-8BF w/Mount Pipe	107	(3) T-Frames MNT	87
BXA-70080/4CF w/ Mount Pipe	107	APXVSP18-C-A20 w/Mount Pipe	87
SLCP 2x6014F w/ Mount Pipe	107	APXVSP18-C-A20 w/Mount Pipe	87
SLCP 2x6014F w/ Mount Pipe	107	APXV18-206517S-C w/Mount Pipe	75
GPS	107	APXV18-206517S-C w/Mount Pipe	75
GPS	107	APXV18-206517S-C w/Mount Pipe	75
(3) T-Frames MNT	107	2' Omni	50
(2) LPA-80063/4CF w/ Mount Pipe	107	(1) Standoff MNT	50
(2) LPA-80063/4CF w/ Mount Pipe	107		

**SYMBOL LIST**

MARK	SIZE	MARK	SIZE
A	L1 1/2x1 1/2x3/16		

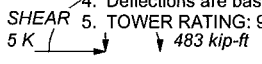
**MATERIAL STRENGTH**

MAX. DC SH	GRADE	Fy	Fu	GRADE	Fy	Fu
A572-55	55 ksi	70 ksi	A36	36 ksi	58 ksi	

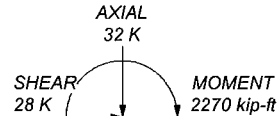
UPLIFT: -195 K  
SHFAR: 16 K

**TOWER DESIGN NOTES**

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for a 80 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 28 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 96.2%



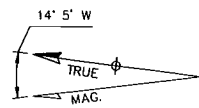
TORQUE 1 kip-ft  
28 mph WIND - 1.0000 in ICE



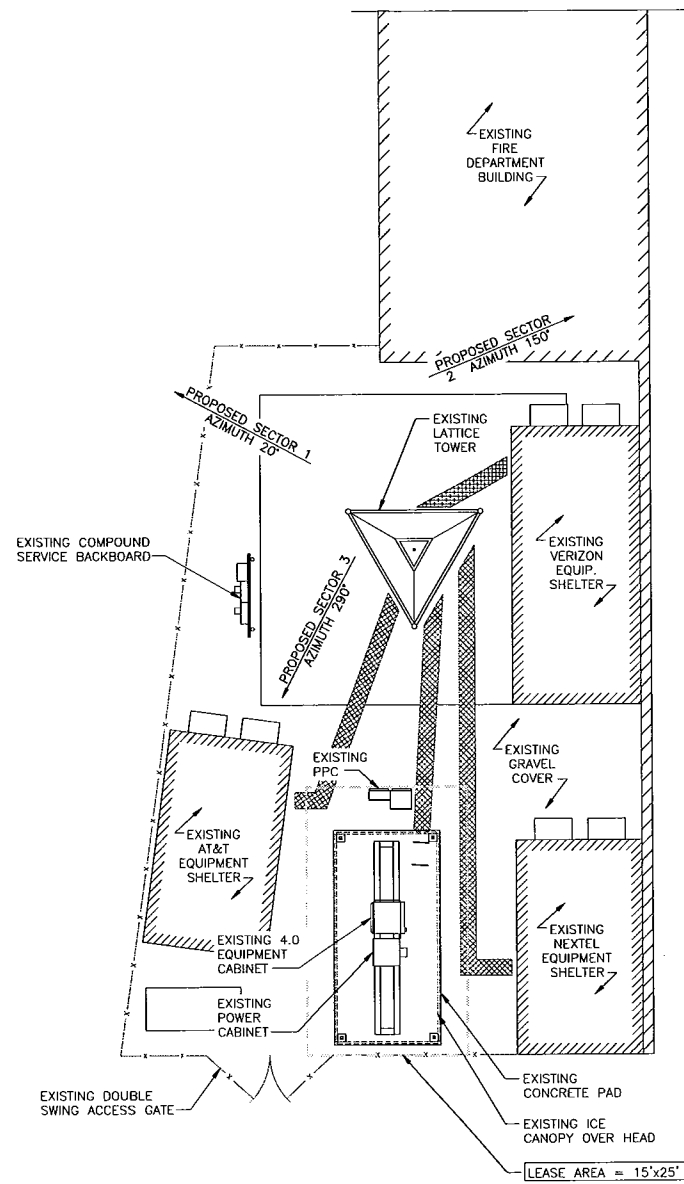
TORQUE 7 kip-ft  
REACTIONS - 80 mph WIND

<p><b>FDH Engineering, Inc.</b> 6521 Meridien Drive Raleigh, NC 27616 Phone: (919)-755-1012 FAX: (919)-755-1031</p>	Job: <b>Bloomfield, CT01725-A</b>
	Project: <b>12-06690E S3</b>
	Client: <b>SBA Network Services, Inc.</b> Drawn by: <b>Jonathan Holmes</b> App'd:
	Code: <b>TIA/EIA-222-F</b> Date: <b>10/11/12</b> Scale: <b>NTS</b>
	Path: <b>\\fdh\proj\Drawn\2012\Drawn\12-06690E\Drawn\12-06690E-S3-SBA-Network-Services-12-01-12.dwg</b> Dwg No. <b>E-1</b>

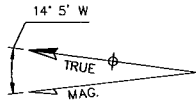
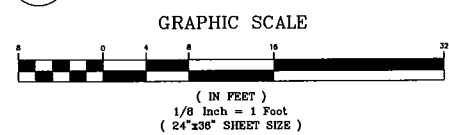




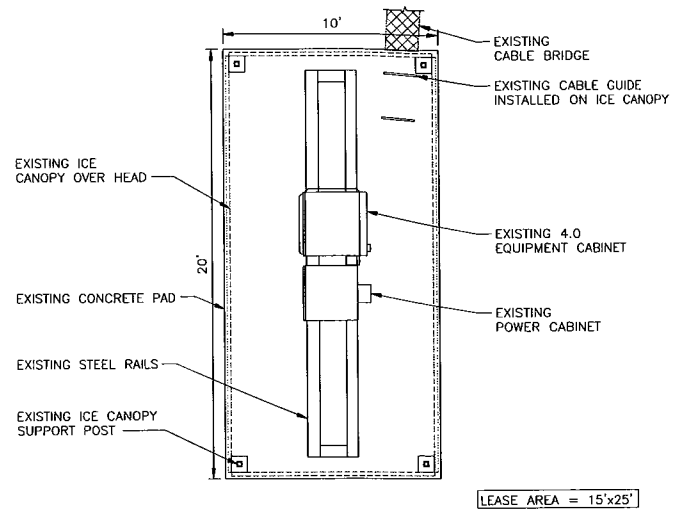
NORTH



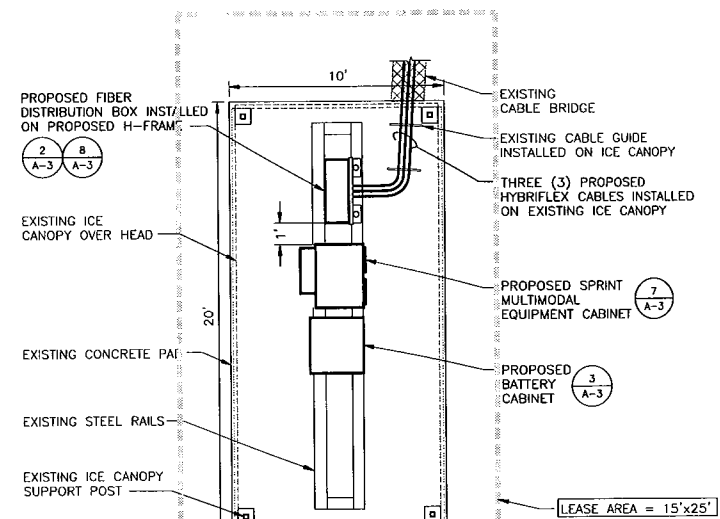
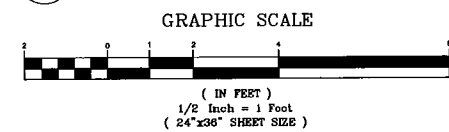
1 EXISTING COMPOUND PLAN  
A-1 SCALE: 1/8"=1'



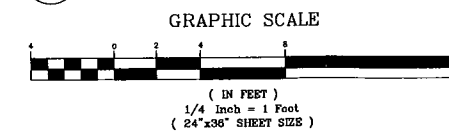
NORTH



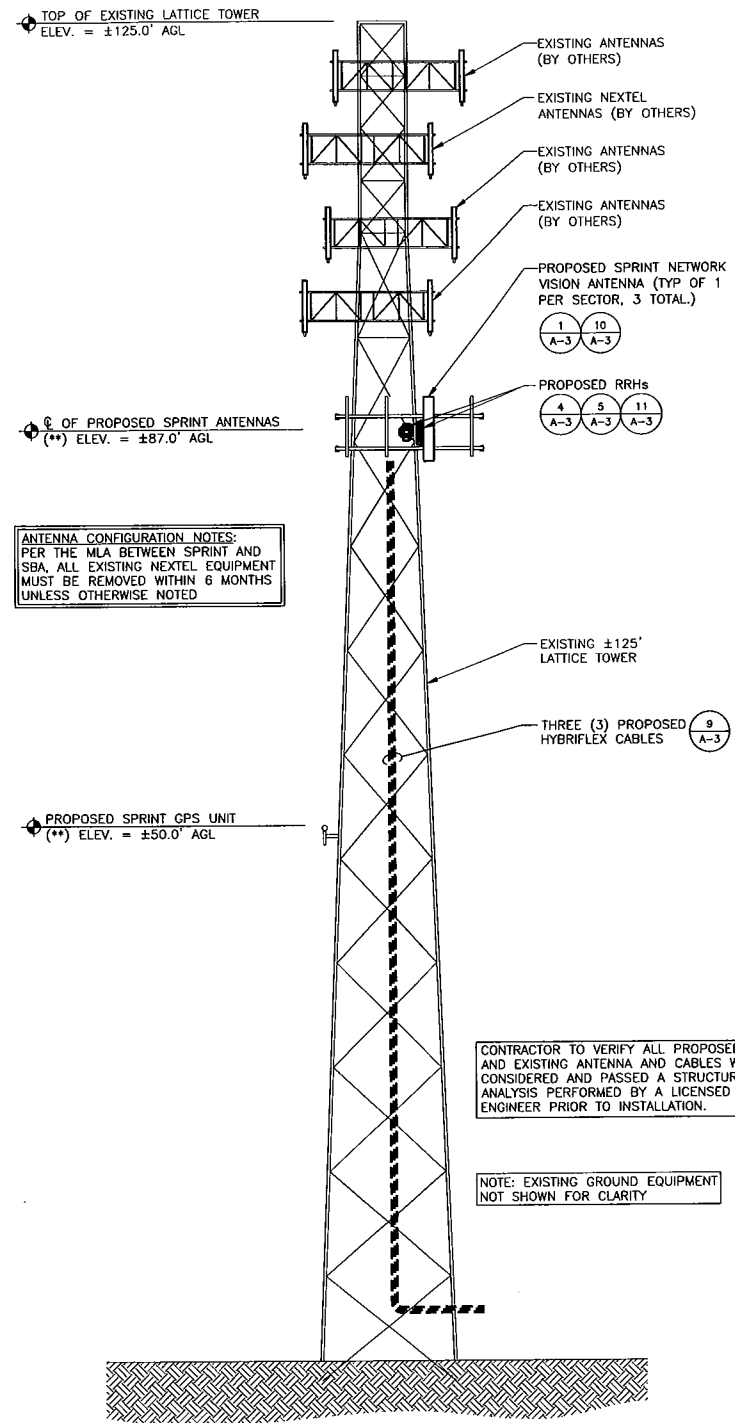
2 EXISTING EQUIPMENT PLAN  
A-1 SCALE: 1/4"=1'



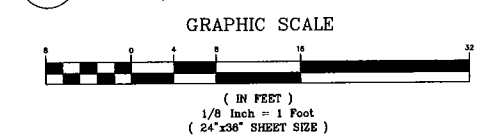
3 FINAL EQUIPMENT PLAN  
A-1 SCALE: 1/4"=1'



(\*\*) - NOTE: NETWORK VISION ANTENNA RADIATION CENTERLINE AGL (FEET) BASED ON SBA EQUIPMENT DATABASE AND SBA TOWER STRUCTURAL ANALYSIS AND WILL SUPERSEDE ANY CONFLICTING INFORMATION DERIVED FROM THE ALU/SPRINT DATABASE



4 FINAL LATTICE TOWER ELEVATION  
A-1 SCALE: 1/8"=1'



**Sprint**  
VISION  
1 INTERNATIONAL BLVD, SUITE 800  
MAHWAH, NJ 07495  
PHONE: (201) 684-4000 FAX (201) 684-4223

**Alcatel-Lucent**  
1 ROBBINS ROAD  
WESTFORD, MA 01886  
OFFICE: (978) 692-1153

**SBA**  
SBA COMMUNICATION CORP.  
5900 BROKEN SOUND PARKWAY  
BOCA RATON, FL 33487  
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Consultants  
4 SECOND AVENUE  
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FAX: 862.209.4301

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**NICHOLAS D. BARILE**  
PROFESSIONAL ENGINEER CT LIC. No. 28643

SCHEDULE OF REVISIONS		
REV. NO.	DATE	DESCRIPTION OF CHANGES
3	11/02/12	REVISED PER CLIENT COMMENTS
1	10/02/12	CONSTRUCTION REVIEW
DRAWN BY: DPB		
CHECKED BY: NB		
SCALE: AS NOTED		
JOB NO: 12045-SBA		

**CT43XC848**  
**COTTAGE GROVE**  
**1021 BLUE HILLS AVENUE**  
**BLOOMFIELD, CT 06002**  
**HARTFORD COUNTY**

DRAWING TITLE:  
**COMPOUND PLAN,  
EQUIPMENT  
PLANS  
&  
ELEVATION**

DRAWING SHEET: 3 OF 9

**A-1**

**SCHEDULE OF REVISIONS**

REV. NO.	DATE	DESCRIPTION OF CHANGES
5		
4		
3		
2		
1		
0	09/05/12	INITIAL SUBMISSION

**DRAWN BY:** ELP  
**CHECKED BY:** JCP  
**SCALE:** AS NOTED  
**JOB NO:** 12045-SBA

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**CT43XC848**  
**1021 BLUE HILLS AVE**  
**BLOOMFIELD, CT 06002**

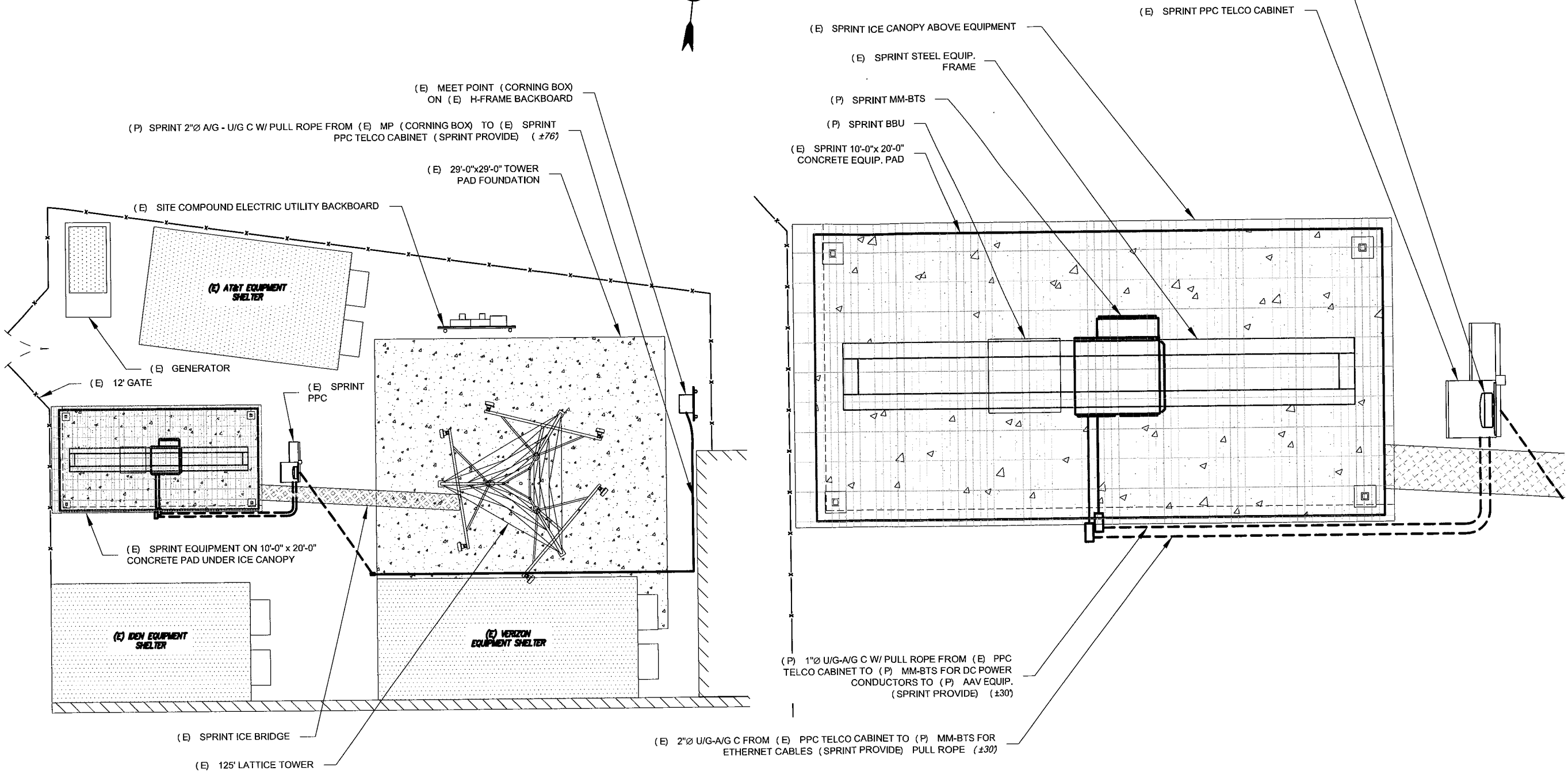
**DRAWING TITLE:**  
**SITE PLAN**

**DRAWING SHEET: 1 OF 4**

**C-3**

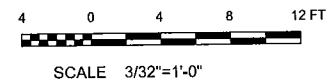


(P) AAV EQUIP. SUPPLIED AND INSTALLED BY AAV VENDER MOUNTED TO (E) WOOD BACKBOARD INSIDE (E) SPRINT PPC TELCO CABINET, AAV VENDER TO MAKE GROUND CONNECTION TO (E) SPRINT PPC GROUND BUS BAR

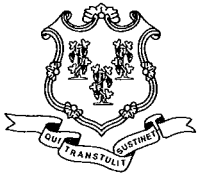


**2** FIBER SERVICE PLAN-EQUIPMENT SPACE  
C-3 SCALE: N.T.S.

**1** FIBER SERVICE PLAN  
C-3 SCALE: 3/32"=1'-0"







# 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](mailto:siting.council@ct.gov)

[www.ct.gov/csc](http://www.ct.gov/csc)

November 27, 2012

The Honorable Sydney Schulman  
Mayor  
Town of Bloomfield  
P. O. Box 337  
Bloomfield, CT 06002-0337

RE: **EM-SPRINT-011-121126** –Sprint Spectrum notice of intent to modify an existing telecommunications facility located at 1021 Blue Hills Avenue, Bloomfield, Connecticut.

Dear Mayor Schulman:

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 December 11, 2012.

Thank you for your cooperation and consideration.

Very truly yours,

Linda Roberts  
Executive Director

LR/cm

c: Thomas B. Hooper, Director of Planning, Town of Bloomfield