Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
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-027-121126** –Sprint Spectrum notice of intent to modify an existing telecommunications facility located at 46 Meadow Road, Clinton, 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 9, 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 19, 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

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,

LRoberts

Linda Roberts
Executive Director

LR/CDM/cm

c: The Honorable William W. Fritz, Jr., First Selectman, Town of Clinton
Thomas Lane, Zoning Enforcement Officer, Town of Clinton

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

November 27, 2012

The Honorable William W. Fritz, Jr.
First Selectman
Town of Clinton
54 East Main Street
Clinton, CT 06413

RE: **EM-SPRINT-027-121126** –Sprint Spectrum notice of intent to modify an existing telecommunications facility located at 46 Meadow Road, Clinton, Connecticut.

Dear First Selectman Fritz:

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

Linda Roberts
Executive Director

LR/cm

c: Thomas Lane, Zoning Enforcement Officer, Town of Clinton

EM-SPRINT-027-121126

November 20, 2012

ORIGINAL

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

RECEIVED
NOV 26 2012
CONNECTICUT
SITING COUNCIL

RECEIVED
NOV 26 2012
CONNECTICUT
SITING COUNCIL

RE: Notice of Exempt Modification
46 Meadow Rd
Clinton, CT 006413
N 41 ° 16' 30.74"
W 72 ° 29' 51.76"

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 46 Meadow Rd Clinton, CT.

The 46 Meadow Rd facility consists of a 195' 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 cal 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@sbasite.com

Sprint Spectrum
Equipment Modification

46 Meadow Rd Clinton, CT
Site number CT54XC764

Tower Owner: SBA Communications Corporation

Equipment Configuration: SELF SUPPORT Tower

Current and/or approved:
Twelve (12) CDMA Antennas @ 182'
Twelve (12) lines of 1-5/8" coax
Two (2) equipment cabinets

Planned Modifications:
Remove Twelve (12) CDMA antennas & Twelve (12) lines of 1-5/8"
Install Three (3) Network Vision antennas & Six (6) RRHs @ 182'
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 9.861% of the allowable FCC established general public limit. The anticipated composite MPE value for this site assuming all carriers present is 34.161% of the allowable FCC established general public limit sampled at the ground level.

Site Composite MPE %	
Carrier	MPE %
Sprint	9.861%
Verizon Wireless	2.060%
T-Mobile	16.280%
AT&T	5.960%
Total Site MPE %	34.161%

November 20, 2012

Honorable William Fritz
First Selectman
Town of Clinton
54 East Main St.
Clinton, CT 06413

RE: Telecommunications Facility-46 Meadow Rd Clinton, CT 006413

Dear Mr. Fritz,

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@sbasite.com

EBI Consulting
environmental | engineering | due diligence

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

Sprint Existing Facility

Site ID: CT54XC764

Clinton 4 CT
46 Meadow Street
Clinton, CT 06413

November 12, 2012

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

EBI Consulting
environmental | engineering | due diligence

November 12, 2012

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

Re: Emissions Values for Site: **CT54XC764 – Clinton 4 CT**

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 46 Meadow Street, Clinton, CT, for the purpose of determining whether the emissions from the proposed Sprint equipment upgrades on this property are within specified federal limits.

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed upgrades to the existing Sprint Wireless antenna facility located at 46 Meadow Street, Clinton, CT, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario. Actual values seen from this site will be dramatically less than those shown in this report. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

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

1) 3 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.

6) The antenna mounting height centerline of the proposed antennas is **180 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	CT54XC764 - Clinton 4 CT
Site Addresss	46 Meadow Street, Clinton, CT, 06413
Site Type	Self Support Tower

Sector 1

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	15.9	180	174	1/2 "	0.5	0	2080.4211	24.70351	2.47035%
1a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	180	174	1/2 "	0.5	0	389.96892	4.630602	0.81668%
														Sector total Power Density Value:			3.287%

Sector 2

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
2a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	15.9	180	174	1/2 "	0.5	0	2080.4211	24.70351	2.47035%
2a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	180	174	1/2 "	0.5	0	389.96892	4.630602	0.81668%
														Sector total Power Density Value:			3.287%

Sector 3

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
3a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	15.9	180	174	1/2 "	0.5	0	2080.4211	24.70351	2.47035%
3a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	180	174	1/2 "	0.5	0	389.96892	4.630602	0.81668%
														Sector total Power Density Value:			3.287%

Site Composite MPE %	
Carrier	MPE %
Sprint	9.861%
Verizon Wireless	2.060%
T-Mobile	16.280%
AT&T	5.960%
Total Site MPE %	**34.161%**

Summary

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

The anticipated Maximum Composite contributions from the Sprint facility are **9.861% (3.287% from each sector)** of the allowable FCC established general public limit considering all three sectors simultaneously sampled at the ground level.

The anticipated composite MPE value for this site assuming all carriers present is **34.161%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions

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

Scott Heffernan
RF Engineering Director

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.

195' Self-Support Tower

SBA Site Name: Clinton 4
SBA Site ID: CT01879-S
Sprint Site ID: CT54XC764
Sprint Site Name: Clinton

FDH Project Number 12-09538E S1

Analysis Results

Tower Components	98.9%	Sufficient
Foundation	90.0%	Sufficient

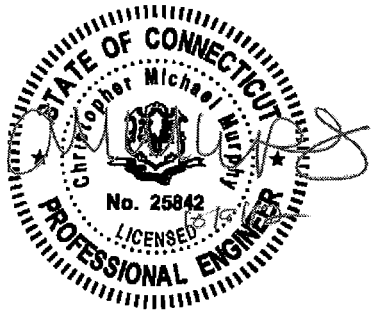
Prepared By:

Logan Poe, 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 9, 2012

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

TABLE OF CONTENTS

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 Clinton, 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 State Building Code (CSBC)*. Information pertaining to the existing/proposed antenna loading, current tower geometry, soil parameters, the member sizes, and foundation dimensions was obtained from:

- Sabre Communications Corporation (Job No. 00-10101) Structural Design Report dated November 19, 1999
- Jaworski Geotech, Inc. (Job No. 99500G) Field Soil Screening dated December 13, 1999
- SBA Network Services, Inc.

The *basic design wind speed* per the *TIA/EIA-222-F* standards and the 2005 CSBC 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 182 ft, the tower meets the requirements of the *TIA/EIA-222-F* standards and the 2005 CSBC provided the **Recommendations** listed below are satisfied. Furthermore, provided the foundations were designed and constructed to support the original design reactions (see Sabre Job No. 00-10101), the foundations should have the necessary capacity to support both the proposed and existing 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 the 2005 CSBC are met with the existing and proposed loading in place, we have the following recommendations:

1. Coax lines 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
192.5	(9) EMS RR90-17-02DP w/ Mount Pipe (3) RFS APX16DWV-16DWV-S w/ Mount Pipe (3) Twin PCS TMAs (3) Twin AWS TMAs	(12) 1-5/8	T-Mobile	192	(3) T-Frames
191.8	(1) Celwave PD1151 Omni	(1) 7/8"	Town of Clinton	184	(1) Standoff
182	(12) Decibel DB980G90 w/ Mount Pipe	(12) 1-5/8"	Sprint	182	(3) T-Frames
162	(2) Antel BXA-70063/4CF_2I w/ Mount Pipe (1) Antel BXA-70063/6CF_2 w/ Mount Pipe (4) Antel LPA-80063/4CF w/ Mount Pipe (1) Antel BXA-171063/12BF w/ Mount Pipe (2) Antel BXA-171063/8BF w/ Mount Pipe (2) Antel LPA-80063/6CF w/ Mount Pipe (6) RFS FD9R6004/2C-3L Diplexers	(12) 1-5/8"	Verizon	162	(3) T-Frames
152	(9) KMW AM-X-CD-14-65-00T w/ Mount Pipe (3) Powerwave 7770 w/ Mount Pipe (6) Powerwave TT19-08BP111-001 TMAs (3) Powerwave LGP13519 Diplexers (3) CSS DBC-750 Combiners (6) Ericsson RRUS-11 RRHs (1) Raycap DC6-48-60-18-8F Surge Arrestor	(12) 1-5/8" (1) 3" Rigid Conduit	AT&T	152	(3) T-Frames
143.5	(3) Sinclair SD312HL Dipoles	(3) 7/8"	Town of Clinton	140	(3) Standoffs
100	(1) Radiowaves RDH4518A Dish	(2) CAT 5e		100	(1) Pipe Mount

Proposed Loading:

Antenna Elevation (ft)	Description	Coax and Lines	Carrier	Mount Elevation (ft)	Mount Type
182	(3) RFS APXVSPP18-C-A20 w/ Mount Pipe (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	Sprint	182	(3) T-Frames

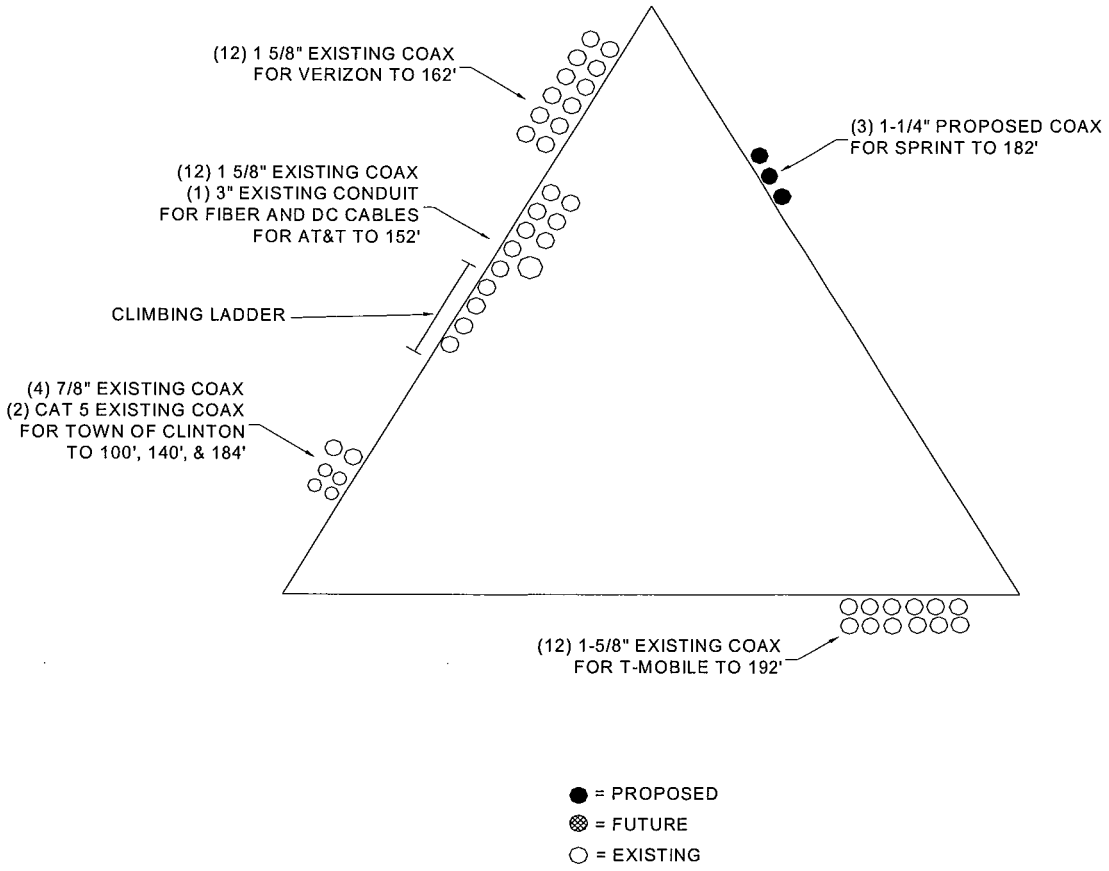


Figure 1 – Coax Layout

RESULTS

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

Table 2 - Material Strength

Member Type	Yield Strength
Legs	50 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 100% are considered acceptable.* **Table 4** displays the maximum foundation reactions. **Table 5** displays the maximum antenna rotations at service wind speeds.

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	195 - 180	Leg	P2x.154	38.3	Pass
		Diagonal	L1 3/4x1 3/4x3/16	27.7 46.1 (b)	Pass
		Top Girt	L1 3/4x1 3/4x3/16	4.1 4.9 (b)	Pass
T2	180 - 160	Leg	P3x.216	51.7	Pass
		Diagonal	L1 3/4x1 3/4x3/16	51.5 60.9 (b)	Pass
		Top Girt	L1 3/4x1 3/4x3/16	6.6 6.7 (b)	Pass
T3	160 - 140	Leg	P3x.3	73.3	Pass
		Diagonal	L2x2x3/16	75.1 82.1 (b)	Pass
T4	140 - 120	Leg	P4x.337	72.9	Pass
		Diagonal	L2 1/2x2 1/2x3/16	68.5 80.8 (b)	Pass
T5	120 - 100	Leg	P5x.375	63.8	Pass
		Diagonal	L2 1/2x2 1/2x3/16	93.1	Pass
T6	100 - 80	Leg	P6x.28	81.6	Pass
		Diagonal	L3x3x3/16	73.1 78.8 (b)	Pass
T7	80 - 60	Leg	P6x.432	70.6	Pass
		Diagonal	L3x3x1/4	97.2	Pass
T8	60 - 40	Leg	P8x.322	74.4	Pass
		Diagonal	L3x3 1/2x1/4	98.9	Pass
T9	40 - 20	Leg	P8x.322	83.9	Pass
		Diagonal	L3 1/2x3 1/2x1/4	94.9	Pass
T10	20 - 0	Leg	P8x.5	61.5	Pass

Section No.	Elevation ft	Component Type	Size	% Capacity*	Pass Fail
		Diagonal	L3 1/2x4x1/4	98.1	Pass

*Capacities include 1/3 allowable stress increase for wind per TIA/EIA-222-F standards.

Table 4 - Maximum Base Reactions

Load Type	Direction	Current Analysis *(TIA/EIA-222-F)*	Original Design *(TIA/EIA-222-F)*
Individual Foundation	Horizontal	29 k	29 k
	Uplift	237 k	258 k
	Compression	274 k	306 k
Overturning Moment	---	5,186 k-ft	5,764 k-ft

Table 5 – Maximum Antenna Rotations at Service Wind Speed

Antenna	Centerline Elevation (ft)	Tilt (deg)*	Twist (deg)*
(1) Radiowaves RDH4518A Dish	100	0.1536	0.0132

**Allowable tilt and twist values to be reviewed by the carrier.*

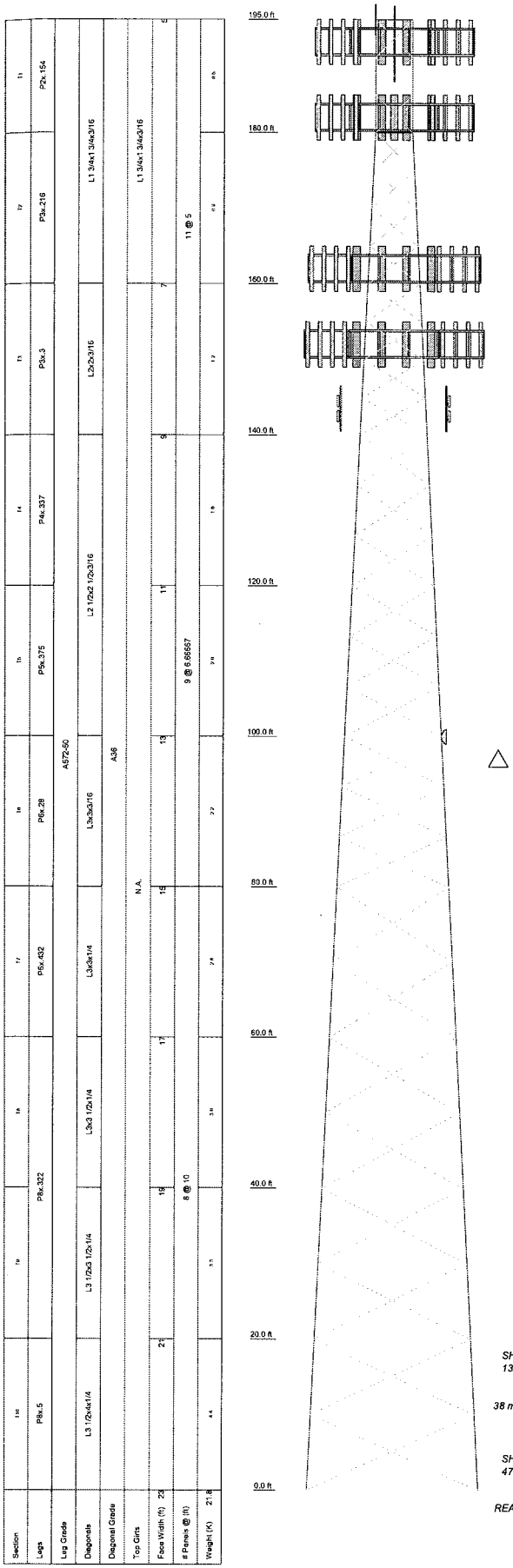
GENERAL COMMENTS

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



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod	195	LPA-80063/4CF w/ Mount Pipe	162
(3) RR90-17-02DP w/Mount Pipe	192	Antel BXA-171063/12BF w/ Mount Pipe	162
RFS APX16DWV-16DWV-S w/ Mount Pipe	192	BXA-171063/8BF W/ Mount Pipe	162
(3) RR90-17-02DP w/Mount Pipe	192	BXA-171063/8BF W/ Mount Pipe	162
RFS APX16DWV-16DWV-S w/ Mount Pipe	192	Antel LPA-80063/6CF w/ Mount Pipe	162
(3) RR90-17-02DP w/Mount Pipe	192	Antel LPA-80063/6CF w/ Mount Pipe	162
RFS APX16DWV-16DWV-S w/ Mount Pipe	192	(2) RFS FD9R6004/2C-3L Diplexer	162
Twin PCS TMA	192	(2) RFS FD9R6004/2C-3L Diplexer	162
Twin AWS TMA	192	(2) RFS FD9R6004/2C-3L Diplexer	162
Twin PCS TMA	192	(3) T-Frames	162
Twin AWS TMA	192	(2) RRUS-11	152
Twin PCS TMA	192	Raycap DC6-48-60-18-8F	152
Twin AWS TMA	192	(3) T-Frames	152
(3) T-Frames	192	(3) KMW AM-X-CD-14-65-00T w/ Mount Pipe	152
PD1151	184	(3) KMW AM-X-CD-14-65-00T w/ Mount Pipe	152
Standoff	184	(3) KMW AM-X-CD-14-65-00T w/ Mount Pipe	152
APXVSPP18-C-A20 w/Mount Pipe	182	Powerwave 7770 w/ Mount Pipe	152
RRU-ALU 1900MHZ	182	Powerwave 7770 w/ Mount Pipe	152
RRU-ALU 1900MHZ	182	Powerwave 7770 w/ Mount Pipe	152
RRU-ALU 1900MHZ	182	(2) TMA - Powerwave TT19-08BP111-001	152
RRU-ALU 800MHZ	182	(2) TMA - Powerwave TT19-08BP111-001	152
RRU-ALU 800MHZ	182	(2) TMA - Powerwave TT19-08BP111-001	152
RRU-ALU 800MHZ	182	TMA - LGP13519	152
Filter- ALU 800MHZ	182	TMA - LGP13519	152
Filter- ALU 800MHZ	182	TMA - LGP13519	152
Filter- ALU 800MHZ	182	Combiner - CSS OBC-750	152
(2) ACU-A20-N RET	182	Combiner - CSS OBC-750	152
ACU-A20-N RET	182	Combiner - CSS OBC-750	152
ACU-A20-N RET	182	(2) RRUS-11	152
(3) T-Frames	182	(2) RRUS-11	152
APXVSPP18-C-A20 w/Mount Pipe	182	Sinclair SD312HL	140
APXVSPP18-C-A20 w/Mount Pipe	182	Sinclair SD312HL	140
Antel BXA-70063/4CF_2/ W/ Mount Pipe	162	Sinclair SD312HL	140
Antel BXA-70063/4CF_2/ W/ Mount Pipe	162	(3) Standoffs	140
Antel BXA-70063/6CF_2 W/ Mount Pipe	162	Pipe Mount	100
(2) LPA-80063/4CF w/ Mount Pipe	162	RDH4518A	100
LPA-80063/4CF w/ Mount Pipe	162		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

1. Tower is located in Middlesex 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.
5. TOWER RATING: 98.9%

MAX. CORNER REACTIONS AT BASE:
DOWN: 274 K
SHEAR: 29 K

UPLIFT: -237 K
SHEAR: 26 K

AXIAL
83 K
SHEAR 13 K *MOMENT 1553 kip-ft*

TORQUE 8 kip-ft
38 mph WIND - 0.7500 in ICE
AXIAL
42 K
SHEAR 47 K *MOMENT 5186 kip-ft*

TORQUE 26 kip-ft
REACTIONS - 85 mph WIND

FDH Engineering
6521 Meridian Drive
Raleigh, NC 27616
Phone: (919)-755-1012
FAX: (919)-755-1031
Tower Analysis

Job:	Clinton 4 CT01879-S
Project:	12-09538ES1
Client: SBA	Drawn by: Logan Poe / App'd:
Code: TIA/EIA-222-F	Date: 10/09/12 / Scale: NTS
Path:	Dwg No: E-1

STRUCTURAL DESIGNS AND DETAILS FOR ANTENNA MOUNTS AND RRH MOUNTS COMPLETED BY COM-EX CONSULTANTS ON BEHALF OF ALCATEL-LUCENT ARE INCLUSIVE OF THE ENTIRE ANTENNA STRUCTURE, INCLUDING TOWERS (ANALYZED BY OTHERS), TOWER PLATFORMS, ARMS AND ALL OTHER ASPECTS OF THE STRUCTURE THAT WILL SUPPORT THE SPRINT NETWORK VISIONS EQUIPMENT DEPLOYMENT FOR THE INTERIM AND FINAL EQUIPMENT SCENARIOS.

Sprint® VISION

SITE NUMBER:

CT54XC764

SITE NAME:

CLINTON 4 CT

SITE ADDRESS:

46 MEADOW ROAD
CLINTON, CT 06413

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SBA SITE NAME: CLINTON 4 CT

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PHONE: 862.209.4300
FAX: 862.209.4301

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STATE OF CONNECTICUT — NICHOLAS D. BARILE — No. 29643 — LICENSED PROFESSIONAL ENGINEER

NICHOLAS D. BARILE
PROFESSIONAL ENGINEER. CT LIC. No. 29643

SITE INFORMATION

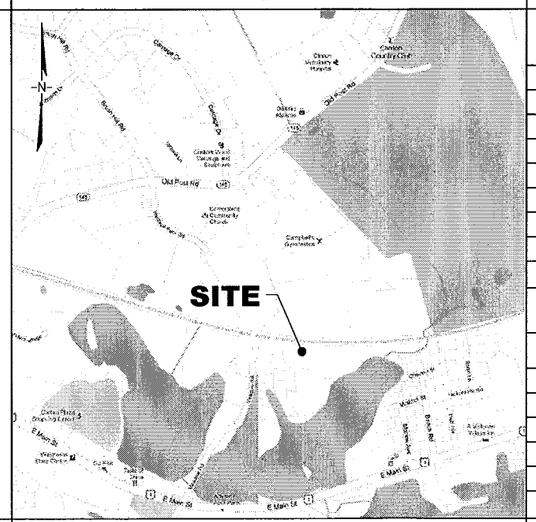
SITE ID NUMBER:	CT54XC764
SITE NAME:	CLINTON 4 CT
SITE ADDRESS:	46 MEADOW ROAD CLINTON, CT 06413
COUNTY:	MIDDLESEX COUNTY
COORDINATES: (*)	N 41° 16' 30.74" W 72° 29' 51.76"
GROUND ELEVATION: (*)	6' AMSL
STRUCTURE TYPE:	LATTICE TOWER
STRUCTURE HEIGHT:	±195' AGL
ANTENNA HEIGHT (**) (RAD CENTER):	SECTOR 1: ±182.0' SECTOR 2: ±182.0' SECTOR 3: ±182.0'

(*) - COORDINATES DETERMINED FROM SPRINT SITERRA DATABASE AND CONFIRMED BY ALCATEL-LUCENT USING GOOGLE EARTH

(**) - 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

PROPERTY OWNER:	FREDERICK L BAKER 3RD T 46 MEADOW RD. GREENWICH CT, 06832
STRUCTURE OWNER:	SBA TOWER, LLC. 5900 BROKEN SOUND PARKWAY BOCA RATON, FL 33487
LOCAL POWER COMPANY:	CONNECTICUT LIGHT & POWER CO.
LOCAL TELEPHONE COMPANY:	COX
APPLICANT:	SPRINT 1 INTERNATIONAL BLVD - SUITE 800 MAHWAH, NJ 07495 PHONE: (201) 684-4000
APPLICANT REPRESENTATIVE:	ALCATEL-LUCENT 1 ROBBINS ROAD WESTFORD, MA 01886 PHONE: (978) 952-1600
SITE ACQUISITION REPRESENTATIVE:	SBA COMMUNICATIONS CORPORATION 33 BOSTON POST ROAD WEST, SUITE 320 MARLBOROUGH, MA 01752 508.251.1807
ARCHITECT/ENGINEER:	COM-EX CONSULTANTS 4 SECOND AVENUE DENVILLE, NJ 07834 PHONE (862) 209-4300

VICINITY MAP (NOT TO SCALE)



CONSTRUCTION DRAWING SHEET INDEX

SHEET NUMBER:	SHEET DESCRIPTION
T-1	TITLE SHEET
GN-1	GENERAL NOTES
A-1	COMPOUND PLAN, EQUIPMENT PLANS & ELEVATION
A-2	ANTENNA SCENARIOS
A-3	CONSTRUCTION DETAILS
A-4	RF DATA SHEET & ANTENNA SECTOR INSTALLATION DETAIL
A-5	CABINET AND ANTENNA WIRING DIAGRAM
E-1	ELECTRIC , TELCO , GROUNDING PLANS AND DETAILS
E-2	TYPICAL POWER AND GROUNDING ONE-LINE DIAGRAM

AAV DRAWING SHEET INDEX

SHEET NUMBER:	SHEET DESCRIPTION
T-1	TITLE SHEET
C-1	SITE SURVEY PHOTOS 1
C-2	SITE SURVEY PHOTOS 2
C-3	SITE PLAN
C-4	SPECIFICATIONS & DETAILS

GENERAL NOTES

1. THIS IS AN UNMANNED TELECOMMUNICATIONS FACILITY AND NOT FOR HUMAN HABITATION:
   - HANDICAP ACCESS REQUIREMENTS ARE NOT REQUIRED
   - FACILITY HAS NO PLUMBING OR REFRIGERANTS
   - THIS FACILITY SHALL MEET OR EXCEED ALL FAA AND FCC REGULATOR REQUIREMENTS
2. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE PROJECT OWNER'S REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
3. DEVELOPMENT AND USE OF THE SITE WILL CONFORM TO ALL APPLICABLE CODES AND ORDINACES.
   BUILDING CODE: 2003 IBC; 2003 IRC (STATE BUILDING CODE, 2005 CT SUPPLEMENT)
   ELECTRICAL CODE: 2005 NEC (NFPA-70)

SCOPE OF WORK

SPRINT PROPOSES TO MODIFY THIS EXISTING WIRELESS COMMUNICATIONS FACILITY AS FOLLOWS:

1. ONE (1) EXISTING CDMA OUTDOOR EQUIPMENT CABINET TO BE REPLACED WITH ONE (1) MULTIMODAL EQUIPMENT CABINET WITHIN THE EXISTING SPRINT LEASE AREA.
2. ONE (1) EXISTING POWERHOUSE CABINET TO BE REPLACED WITH ONE (1) BATTERY CABINETS.
3. ONE (1) PROPOSED FIBER DISTRIBUTION BOX (J-BOX) INSTALLED ON PROPOSED H-FRAME WITHIN EXISTING SPRINT LEASE AREA.
4. SIX (6) EXISTING ANTENNAS TO BE REPLACED WITH THREE (3) PROPOSED ANTENNAS AND SIX (6) RRH'S INSTALLED ON EXISTING SPRINT ANTENNA FRAME ON EXISTING ANTENNA SUPPORT STRUCTURE.
5. SIX (6) EXISTING COAXIAL CABLES TO BE REPLACED WITH THREE (3) PROPOSED HYBRIFLEX CABLES
6. ONE (1) GPS ANTENNA TO REPLACE EXISTING GPS ANTENNA
7. EXISTING LOCAL EXCHANGE CARRIER LANDLINE BACKHAUL FACILITIES TO BE REPLACED WITH PROPOSED ALTERNATIVE ACCESS VENDOR (AAV) FIBER OPTIC FACILITIES INCLUDING PROPOSED OVERHEAD/UNDERGROUND CONDUITS AND NETWORK INTERFACE DEVICE.

APPROVALS

THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND MAY IMPOSE CHANGES OR MODIFICATIONS.

CONSTRUCTION:	DATE
LEASING/ SITE ACQUISITION	DATE
R.F. ENGINEER	DATE
LANDLORD/ PROPERTY OWNER	DATE

SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
9		
8		
7		
6		
5		
4		
3		
2	11/02/12	REVISED PER CLIENT COMMENTS
1	10/02/12	CONSTRUCTION REVIEW

DRAWN BY:	GSB
CHECKED BY:	NB
SCALE:	AS NOTED
JOB NO:	12048-SBA

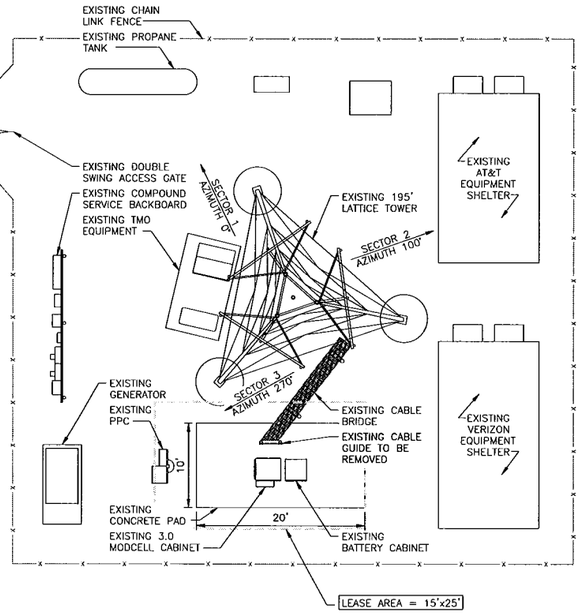
CT54XC764
CLINTON 4 CT
46 MEADOW ROAD
CLINTON, CT 06413
MIDDLESEX COUNTY

DRAWING TITLE:

TITLE SHEET

DRAWING SHEET: 1 OF 9

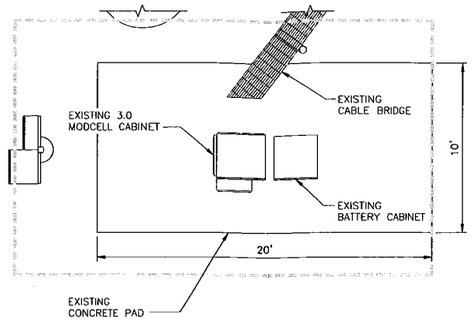
T-1



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

GRAPHIC SCALE

(IN FEET)
1/8 Inch = 1 Foot
(24"x36" SHEET SIZE)

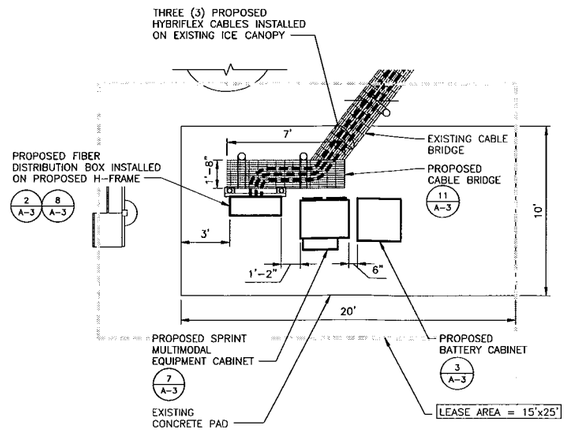


LEASE AREA = 15'x25'

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

GRAPHIC SCALE

(IN FEET)
1/4 Inch = 1 Foot
(24"x36" SHEET SIZE)

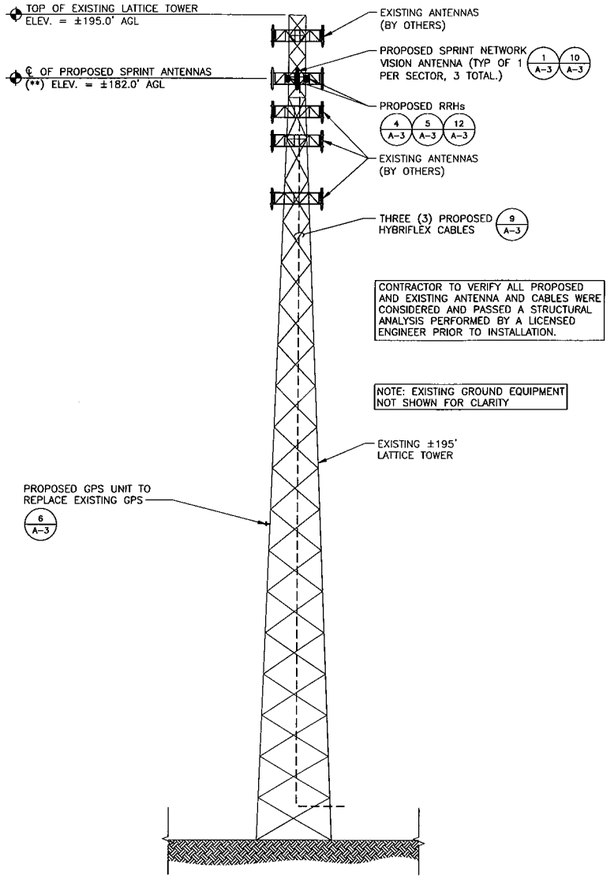


3 / A-1 FINAL EQUIPMENT PLAN
SCALE: 1/4"=1'

GRAPHIC SCALE

(IN FEET)
1/4 Inch = 1 Foot
(24"x36" SHEET SIZE)

(**) - 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 / A-1 FINAL LATTICE TOWER ELEVATION
SCALE: 1/16"=1'

GRAPHIC SCALE

(IN FEET)
1/16 Inch = 1 Foot
(24"x36" SHEET SIZE)

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STATE OF CONNECTICUT · NICHOLAS D. BARILE · No. 28643 · LICENSED PROFESSIONAL ENGINEER

NICHOLAS D. BARILE
PROFESSIONAL ENGINEER CT LIC. No 28643

SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
9		
8		
7		
6		
5		
4		
3		
2	11/02/12	REVISED PER CLIENT COMMENTS
1	10/02/12	CONSTRUCTION REVIEW

DRAWN BY:	GSB
CHECKED BY:	NB
SCALE:	AS NOTED
JOB NO:	12048-SBA

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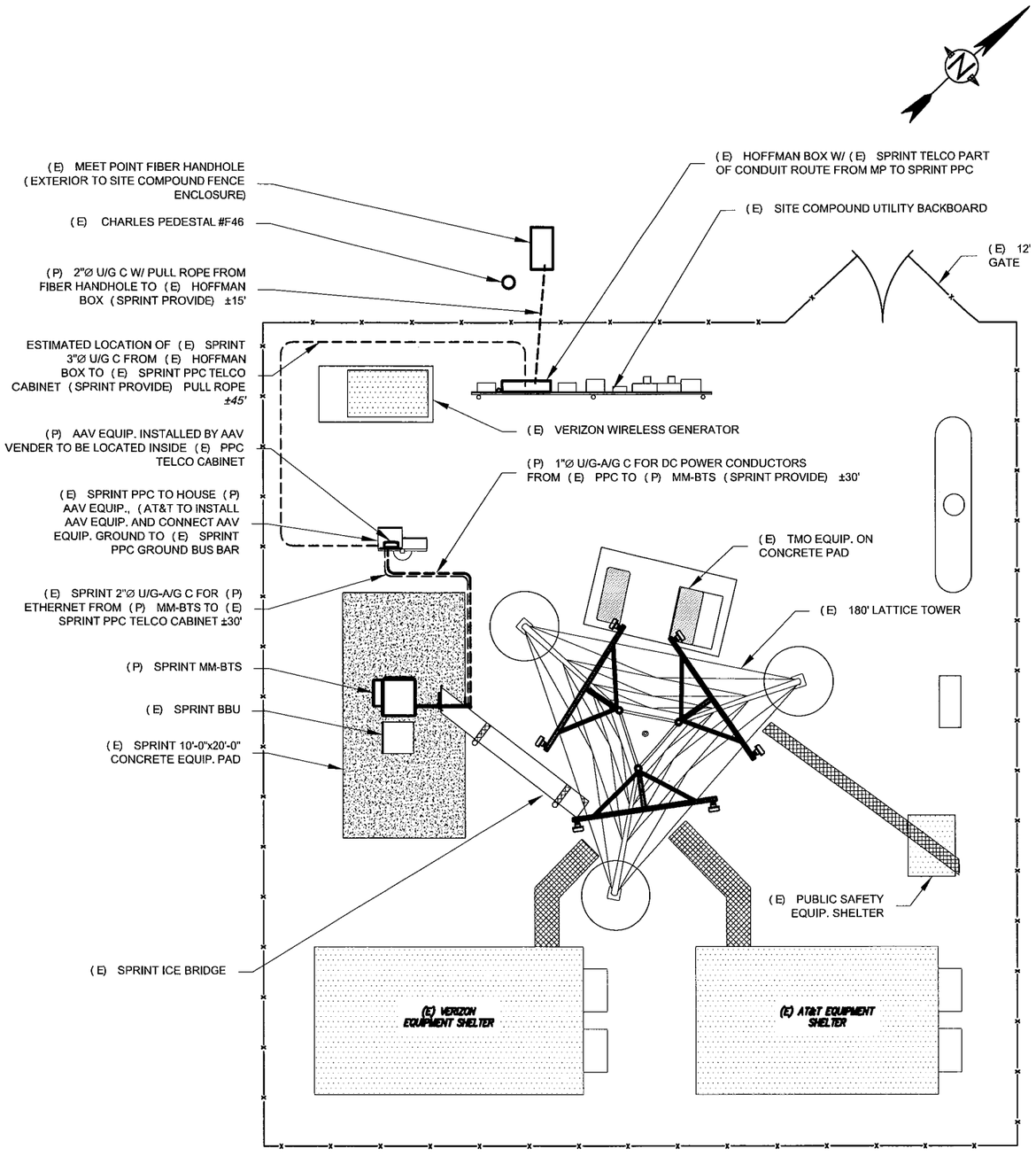
CLINTON, CT 06413
MIDDLESEX COUNTY

DRAWING TITLE:

COMPOUND PLAN, EQUIPMENT PLANS & ELEVATION

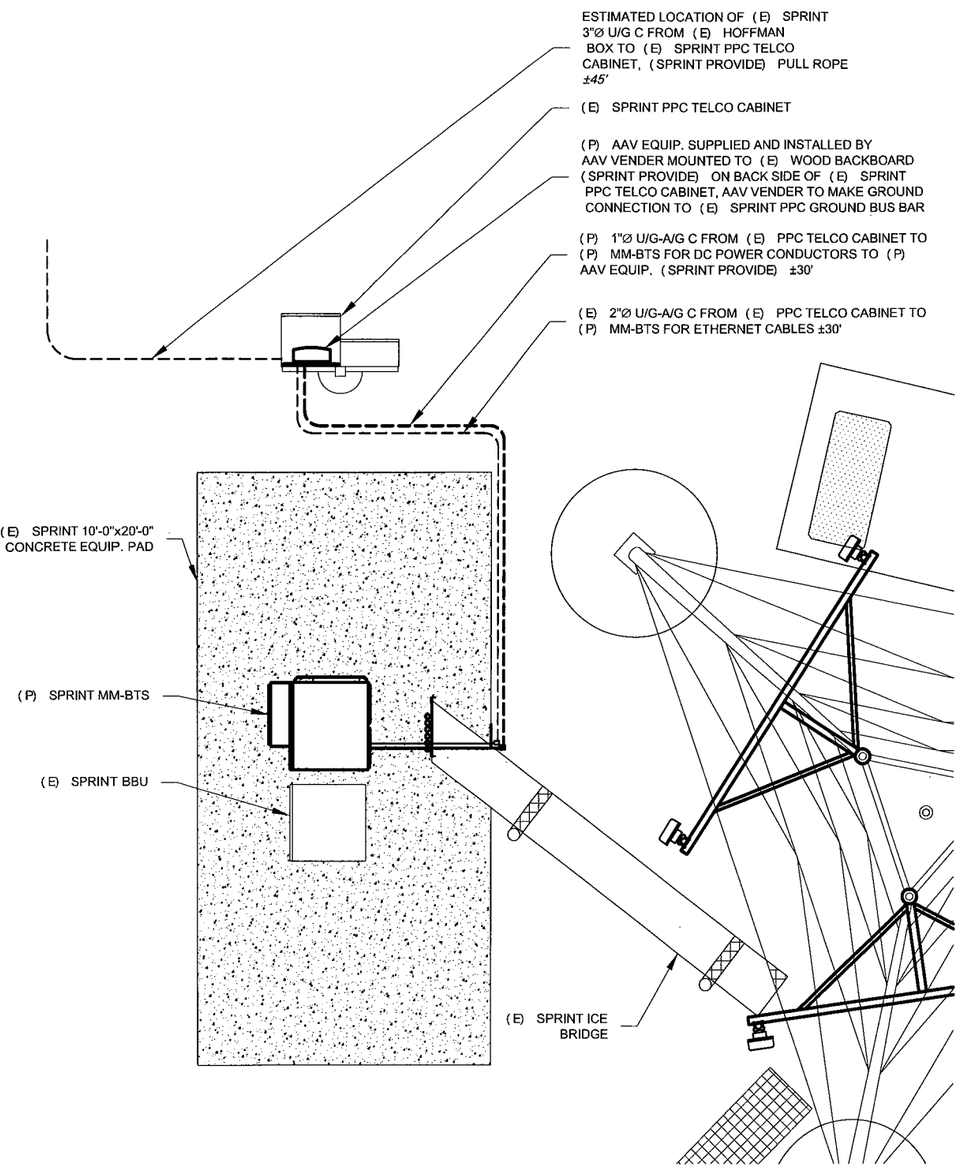
DRAWING SHEET: 3 OF 9

A-1



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

4 0 4 8 12 FT
SCALE 3/32"=1'-0"



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

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FAX: 862.208.4301
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SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
5		
4		
3		
2		
1		
0	09/04/12	INITIAL SUBMISSION

DRAWN BY:	ELP
CHECKED BY:	JCP
SCALE:	AS NOTED
JOB NO:	12048-SBA

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DRAWING TITLE:

SITE PLAN

DRAWING SHEET: 1 OF 4

C-3