



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

August 10, 2012

Peter LaMontagne
New Cingular Wireless PCS, LLC
95 Ryan Drive, Suite #1
Raynham, MA 02767

RE: **EM-CING-011-120720B** – New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 1021 Blue Hills Avenue, Bloomfield, Connecticut.

Dear Mr. LaMontagne:

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

- The proposed coax and auxiliary equipment be installed in accordance with the recommendations made in the Structural Analysis Report prepared by FDH Engineering dated July 12, 2012 and stamped by Christopher Murphy; and
- Following the installation of the proposed equipment, AT&T shall provide documentation certifying that the installation complied with the engineer's recommendation.
- AT&T shall submit to the Council a Radio Frequency Exposure Report with field measurements taken in the vicinity of this facility within three months after the installation described in this notice of exempt modification has been completed.
- 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 less 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 July 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
Louie Chapman, Jr., Town Manager, Town of Bloomfield
Thomas B. Hooper, Director of Planning, Town of Bloomfield



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

July 23, 2012

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

RE: **EM-CING-011-120720B** – New Cingular Wireless PCS, LLC 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 this request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72.

If you have any questions or comments regarding this proposal, please call me or inform the Council by August 6, 2012.

Thank you for your cooperation and consideration.

Very truly yours,

Linda Roberts
Executive Director

LR/cm

Enclosure: Notice of Intent

c: Louie Chapman, Jr., Town Manager, Town of Bloomfield
Thomas B. Hooper, Director of Planning, Town of Bloomfield



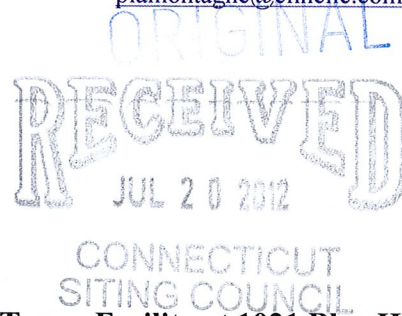
EM-CING-011-120720B

**New Cingular Wireless
PCS, LLC**
500 Enterprise Drive
Rocky Hill, Connecticut 06067

Peter LaMontagne
Real Estate Consultant
95 Ryan Drive, Suite #1
Raynham, MA 02767
Phone: (508)341-7854
plamontagne@clinellc.com

July 20, 2012

Honorable Robert Stein, Chairman,
and Members of the Connecticut Siting Council
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051



Re: Notice of Exempt Modification – Existing AT&T Tower Facility at 1021 Blue Hills Avenue, Bloomfield, CT 06002

Dear Chairman Stein and Members of the Council:

New Cingular Wireless PCS, LLC (“AT&T”) intends to modify the existing telecommunications antennas and associated equipment at an existing multicarrier telecommunications tower at 1021 Blue Hills Avenue in Bloomfield, Connecticut. AT&T operates under licenses issued by the Federal Communications Commission (“FCC”) to provide cellular and PCS mobile telephone service in Hartford County, which includes the area to be served by AT&T’s proposed installation.

In order to accommodate technological changes, implement Long Term Evolution (“LTE”) capabilities, and enhance system performance in the State of Connecticut, New Cingular Wireless PCS, LLC (“AT&T”) plans to modify the equipment configurations at many of its existing cell sites. LTE is a new high-performance air interface for cellular mobile communications. It is designed to increase the capacity and speed of mobile telephone networks.

Please accept this letter as notification to the Council, 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 is being sent to the Louie Chapman, Town Manager for the Town of Bloomfield.

Attached is a summary of the planned modifications, including power density calculations, reflecting the change in AT&T’s operations at the facility. Also included is documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration.

Existing Facility

The Bloomfield facility is located at 1021 Blue Hills Avenue on the west side of Route 187. Site coordinates (NAD83) are N41° 49' 12.36" and W72° 41' 47.4".

The facility is owned by SBA Properties, Inc of 5900 Broken Sound Parkway, N.W, Boca Raton, Florida 33487-2797.

The existing facility consists of a one hundred and twenty five foot (125') lattice tower, located within a fenced in compound surrounded by a chain link fence. AT&T currently operates wireless communications equipment at the facility.

Statutory Considerations

The changes to the Bloomfield tower facility do not constitute a modification as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed 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) because they will not result in any substantial adverse environmental effect.

1. The height of the overall structure will be unaffected.
2. The proposed changes will not affect the property boundaries. All new construction will take place inside the existing fenced compound.
3. The proposed additions will not increase the noise level at the existing facility by six decibels or more.
4. LTE will utilize additional radio frequencies newly licensed by the FCC for cellular mobile communications. However, the changes 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, New Cingular Wireless respectfully submits that the proposed changes at the referenced site constitute exempt modifications under R.C.S.A Section §16-50j-72(b)(2).

Respectfully yours,



Peter LaMontagne
Real Estate Consultant

Enclosures:
Louie Chapman, Town Manager for Town of Bloomfield



**New Cingular Wireless
PCS, LLC**
500 Enterprise Drive
Rocky Hill, Connecticut 06067

Peter LaMontagne
Real Estate Consultant
95 Ryan Drive, Suite #1
Raynham, MA 02767
Phone: (508)341-7854
plamontagne@clinellc.com

July , 2012

Louie Chapman, Jr
Town Manager, Bloomfield, CT
800 Bloomfield Avenue
Bloomfield, CT 06002

Re: Notice of Exempt Modification – Existing Telecommunications Facility at 1021 Blue Hills Avenue, Bloomfield, CT 06002

Dear Louie Chapman, Bloomfield Town Manager,

New Cingular Wireless PCS, LLC (“AT&T”) intends to replace telecommunications antennas and associated equipment at an existing telecommunications tower, owned by SBA Properties, Inc and situated at 1021 Blue Hills Avenue in Bloomfield, Connecticut.

A Notice of Exempt Modification has been filed with the Connecticut Siting Council as required by Regulations of Connecticut State Agencies (“R.C.S.A.”) Section 16-50j-73. Please accept this letter as notification to the Town of Bloomfield 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 attached letter fully sets forth the AT&T proposal. However, if you have any questions or require any further information on the plans for the site or the Siting Council’s procedures, please contact Peter LaMontagne at (508) 341-7854 or Linda Roberts, Executive Director of the Connecticut Siting Council, at (860) 827-2935.

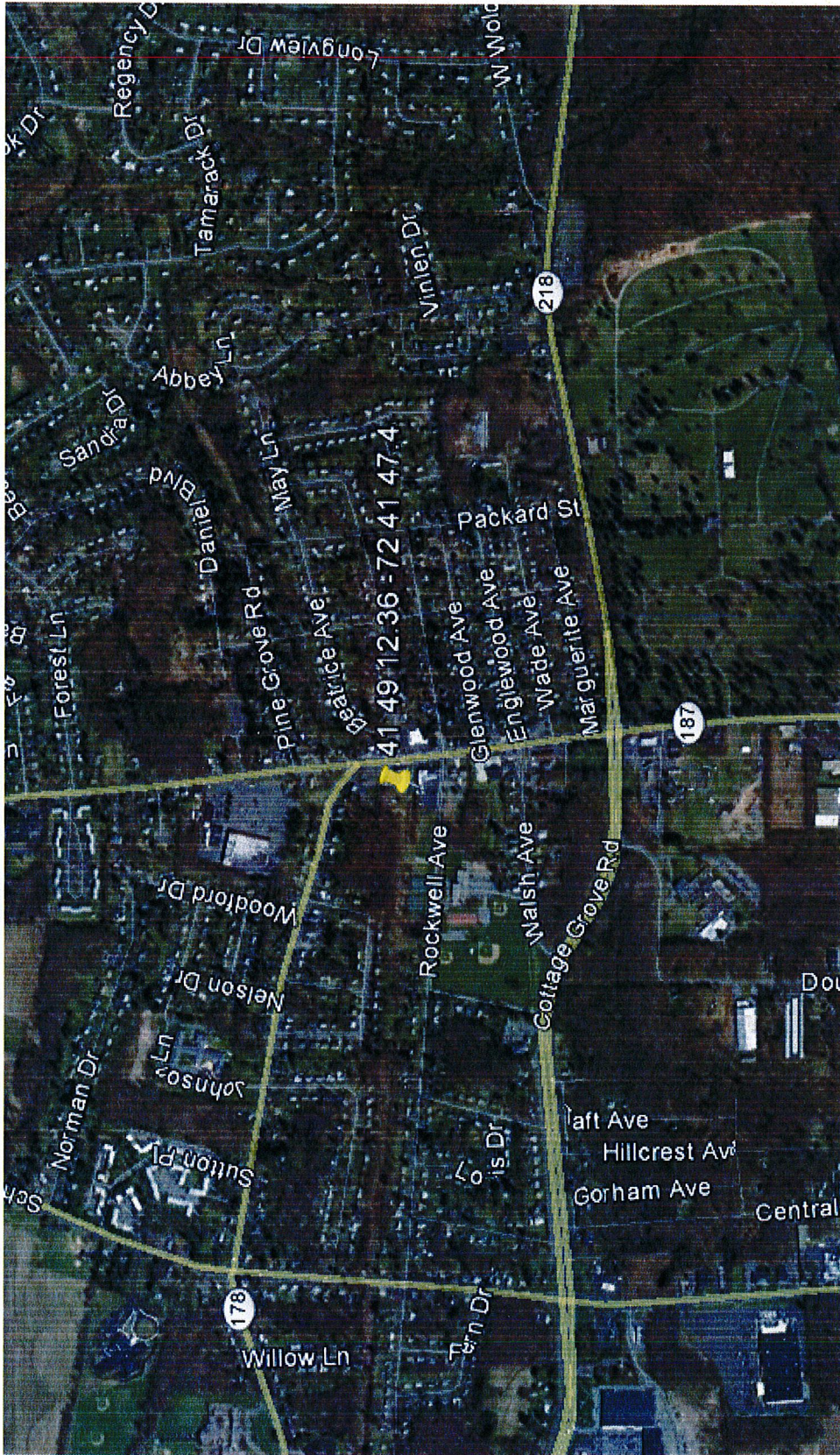
Sincerely,

Peter LaMontagne
Real Estate Consultant

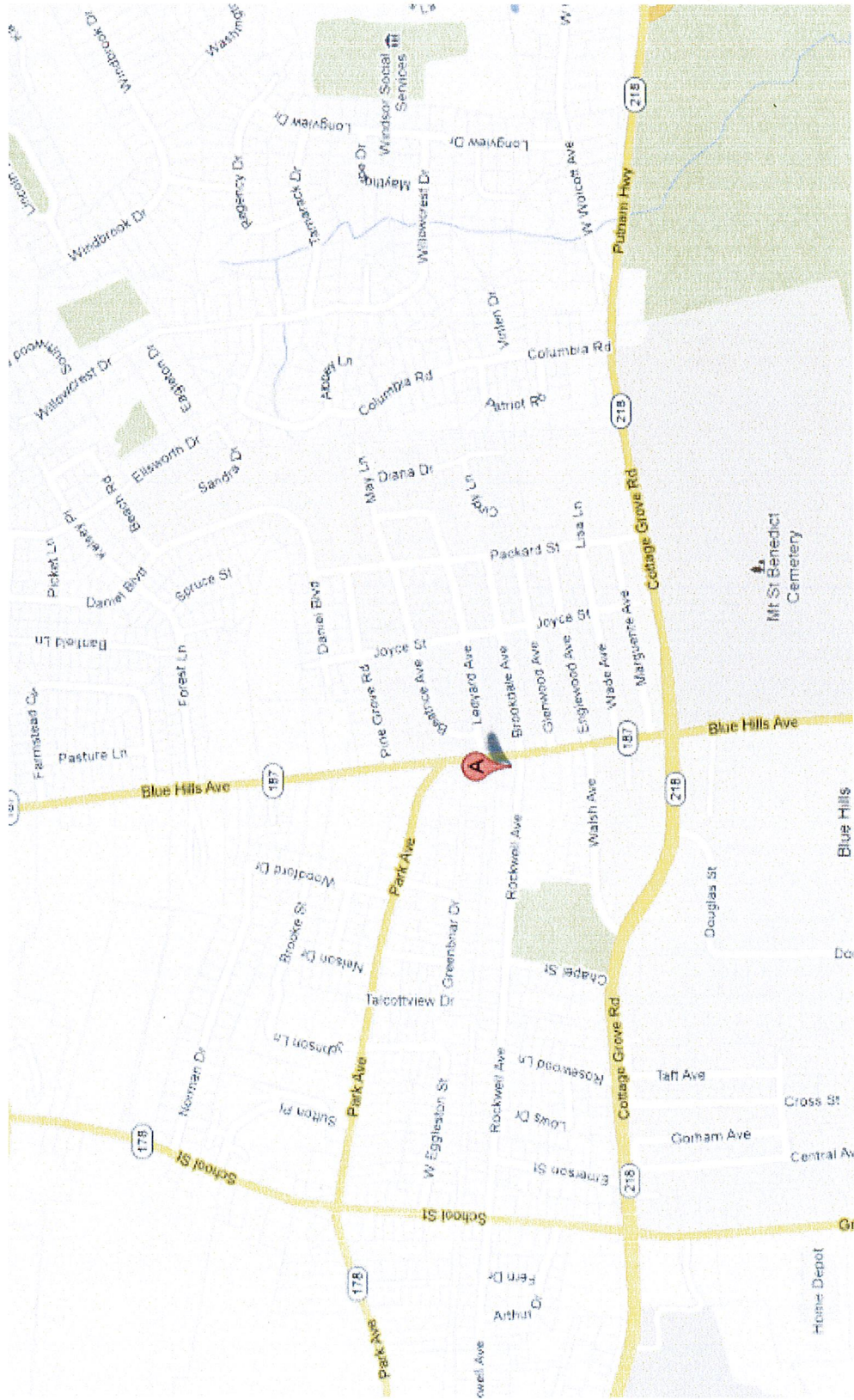
Enclosure
Honorable Robert Stein, Chairmen of the Connecticut Siting Council

CT1148 – 1021 Blue Hills Avenue, Bloomfield, CT

Aerial Location Map



Street Location Map





C Squared Systems, LLC
65 Dartmouth Drive, Unit A3
Auburn, NH 03032
(603) 644-2800
support@csquaredsystems.com

Calculated Radio Frequency Emissions



CT1148 - Bloomfield East

1021 Blue Hills Ave, Bloomfield, CT 06002

March 21, 2012

Table of Contents

1. Introduction.....	1
2. FCC Guidelines for Evaluating RF Radiation Exposure Limits.....	1
3. RF Exposure Prediction Methods.....	2
4. Calculation Results.....	3
5. Conclusion.....	4
6. Statement of Certification.....	4
Attachment A: References.....	5
Attachment B: FCC Limits for Maximum Permissible Exposure (MPE).....	6
Attachment C: AT&T Antenna Data Sheets and Electrical Patterns.....	8

List of Tables

Table 1: Carrier Information.....	3
Table 2: FCC Limits for Maximum Permissible Exposure (MPE).....	6

List of Figures

Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE).....	7
---	---

1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed modifications to the existing AT&T antenna arrays mounted on the lattice tower located at 1021 Blue Hills Ave in Bloomfield, CT. The coordinates of the tower are 41-49-12.36 N, 72-41-47.51 W.

AT&T is proposing the following modifications:

- 1) Install three 700 MHz LTE antennas (one per sector);
- 2) Install three 700 MHz LTE Remote Radio Units (RRUs).

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm^2). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment B of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment B contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

3. RF Exposure Prediction Methods

The emission field calculation results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{Power Density} = \left(\frac{1.6^2 \times \text{EIRP}}{4\pi \times R^2} \right) \times \text{Off Beam Loss}$$

Where:

EIRP = Effective Isotropic Radiated Power

R = Radial Distance = $\sqrt{(H^2 + V^2)}$

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Ground reflection factor of 1.6

Off Beam Loss is determined by the selected antenna pattern

These calculations assume that the antennas are operating at 100 percent capacity and power, and that all channels are transmitting simultaneously. Obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. The calculations assume even terrain in the area of study and do not take into account actual terrain elevations which could attenuate the signal. As a result, the predicted signal levels reported below are much higher than the actual signal levels will be from the finished modifications.

4. Calculation Results

Table 1 below outlines the power density information for the site. Because the proposed AT&T antennas are directional in nature, the majority of the RF power is focused out towards the horizon. As a result, there will be less RF power directed below the antennas relative to the horizon, and consequently lower power density levels around the base of the tower. Please refer to Attachment C for the vertical pattern of the proposed AT&T antennas. The calculated results for AT&T in Table 1 include a nominal 10 dB off-beam pattern loss to account for the lower relative gain below the antennas.

Carrier	Antenna Height (Feet)	Operating Frequency (MHz)	Number of Trans.	ERP Per Transmitter (Watts)	Power Density (mw/cm ²)	Limit	%MPE
<i>Cingular UMTS</i>	97	880	1	500	0.0191	0.5867	3.26%
<i>Cingular GSM</i>	97	880	4	296	0.0452	0.5867	7.71%
<i>Cingular GSM</i>	97	1900	2	427	0.0326	1.0000	3.26%
Verizon	110	1970	3	358	0.0319	1.0000	3.19%
Verizon	110	875	9	269	0.0719	0.5833	12.33%
T-Mobile GSM	125	1945	8	126	0.0232	1.0000	2.32%
T-Mobile UMTS	125	2100	2	711	0.0327	1.0000	3.27%
Pocket	75	2130	3	631	0.1210	1.0000	12.10%
Clearwire	120	2496	2	153	0.0076	1.0000	0.76%
Clearwire	115	11000	1	211	0.0057	1.0000	0.57%
Sprint	87	1900	11	568	0.2969	1.0000	29.69%
Nextel	120	851	9	100	0.0225	0.5673	3.96%
XM Sat Radio	125	2340	2	322	0.0148	1.0000	1.48%
Page Net	110	900	1	150	0.0045	0.6000	0.74%
Blue Hills FD	140	452	1	75	0.0014	0.3013	0.46%
Blue Hills FD	110	452	1	75	0.0022	0.3013	0.74%
Blue Hills FD	60	33	1	250	0.0250	0.2000	12.48%
Blue Hills FD	40	173	1	5	0.0011	0.2000	0.56%
AT&T UMTS	98	880	2	565	0.0423	0.5867	0.72%
AT&T UMTS	98	1900	2	875	0.0655	1.0000	0.66%
AT&T LTE	98	734	1	1375	0.0515	0.4893	1.05%
AT&T GSM	98	880	1	283	0.0106	0.5867	0.18%
AT&T GSM	98	1900	4	525	0.0786	1.0000	0.79%
Total							88.07%

Table 1: Carrier Information¹²

¹ The existing CSC filing for Cingular should be removed and replaced with the updated AT&T technologies and values provided in Table 1. The power density information for carriers other than AT&T was taken directly from CSC database dated 1/10/2012.

² In the case where antenna models are not uniform across all 3 sectors for the same frequency band, the antenna model with the highest gain was used for the calculations.

5. Conclusion

The above analysis verifies that emissions from the existing site will be below the maximum power density levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Even when using conservative methods, the cumulative power density from the proposed transmit antennas at the existing facility is below the limits for the general public. The highest expected percent of Maximum Permissible Exposure at ground level is **88.07% of the FCC limit**.

As noted previously, obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. As a result, the predicted signal levels are more conservative (higher) than the actual signal levels will be from the finished modifications.

6. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in ANSI/IEEE Std. C95.3, ANSI/IEEE Std. C95.1 and FCC OET Bulletin 65 Edition 97-01.



Daniel L. Goulet
C Squared Systems, LLC

March 21, 2012

Date

Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

ANSI C95.1-1982, American National Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz. IEEE-SA Standards Board

IEEE Std C95.3-1991 (Reaff 1997), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave. IEEE-SA Standards Board

Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure³

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	f/300	6
1500-100,000	-	-	5	6

(B) Limits for General Population/Uncontrolled Exposure⁴

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

f = frequency in MHz * Plane-wave equivalent power density

Table 2: FCC Limits for Maximum Permissible Exposure (MPE)

³ Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure

⁴ General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure

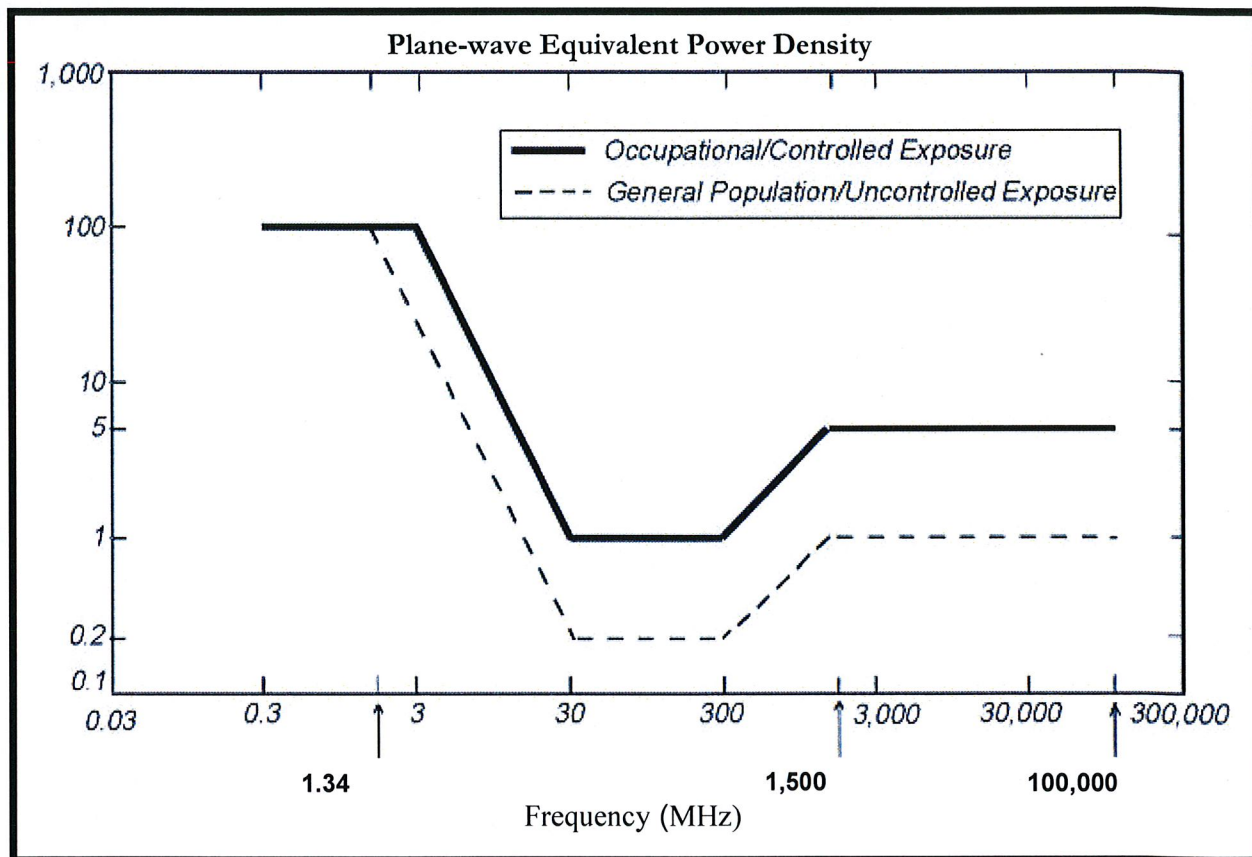
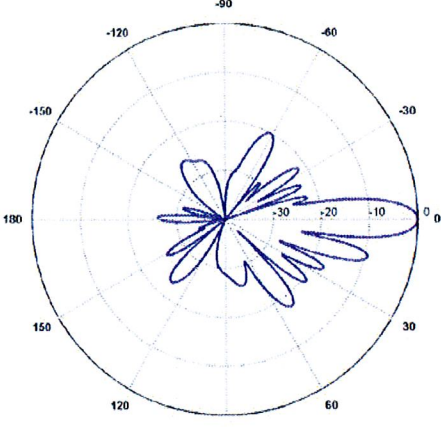
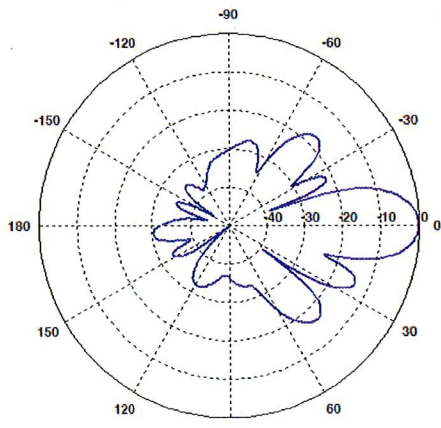
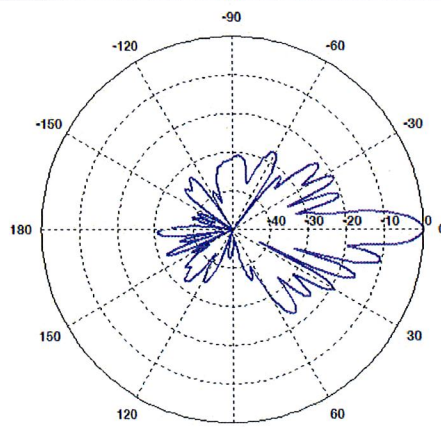


Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

Attachment C: AT&T Antenna Data Sheets and Electrical Patterns

<p>700 MHz</p> <p>Manufacturer: Commscope Model #: SBNH-1D6565C Frequency Band: 698-806 MHz Gain: 13.6 dBd Vertical Beamwidth: 8.6° Horizontal Beamwidth: 71° Polarization: ± 45° Size L x W x D: 96.4" x 11.9" x 7.1"</p>	
<p>850 MHz</p> <p>Manufacturer: Powerwave Model #: 7770.00 Frequency Band: 824-896 MHz Gain: 11.4 dBd Vertical Beamwidth: 15° Horizontal Beamwidth: 85° Polarization: Dual Linear ±45° Size L x W x D: 55.4" x 11.0" x 5.0"</p>	
<p>1900 MHz</p> <p>Manufacturer: Powerwave Model #: 7770.00 Frequency Band: 1850-1990 MHz Gain: 13.4 dBd Vertical Beamwidth: 7° Horizontal Beamwidth: 90° Polarization: Dual Linear ±45° Size L x W x D: 55.4" x 11.0" x 5.0"</p>	



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
AT&T Site Name: Bloomfield East
AT&T Site ID: CT1148**

FDH Project Number 12-06690E S1

Analysis Results

Tower Components	96.5%	Sufficient
Foundations	84.1%	Sufficient

Prepared By:

Brandon T. Compton, 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



July 12, 2012

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

TABLE OF CONTENTS

EXECUTIVE SUMMARY 3

 Conclusions..... 3

 Recommendations 3

APPURTENANCE LISTING 4

RESULTS..... 6

GENERAL COMMENTS 7

LIMITATIONS..... 7

APPENDIX 8

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, and foundation dimensions was obtained from:

- Fred A. Nudd Corporation (Project No. 5566A) original design drawings dated March 11, 1998
- 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 AT&T in place at 98' and 96', the tower meets the requirements of the *TIA/EIA-222-F* standards and *2005 CSBC* provided the **Recommendations** listed below are satisfied. Furthermore, provided the foundations were constructed per the original design drawings (see Fred A. Nudd Project No. 5566A) and assuming normal soil parameters per *TIA/EIA-222-F* standards, 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. The existing TMAs should be installed directly behind the existing and proposed panel antennas.
3. 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/ Cleanwire	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"			
107	(6) Antel LPA-80063/4CF (6) Antel LPA-185063/8CF (2) GPS	(12) 1-5/8" (2) 1/2"	Verizon	107	(3) T-Frames
98	(6) Powerwave 7770 (6) Powerwave LGP21401 TMAs (6) Powerwave LGP21903 Diplexers	(12) 7/8"	AT&T	98	(3) T-Frames
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
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			96	Direct Mount

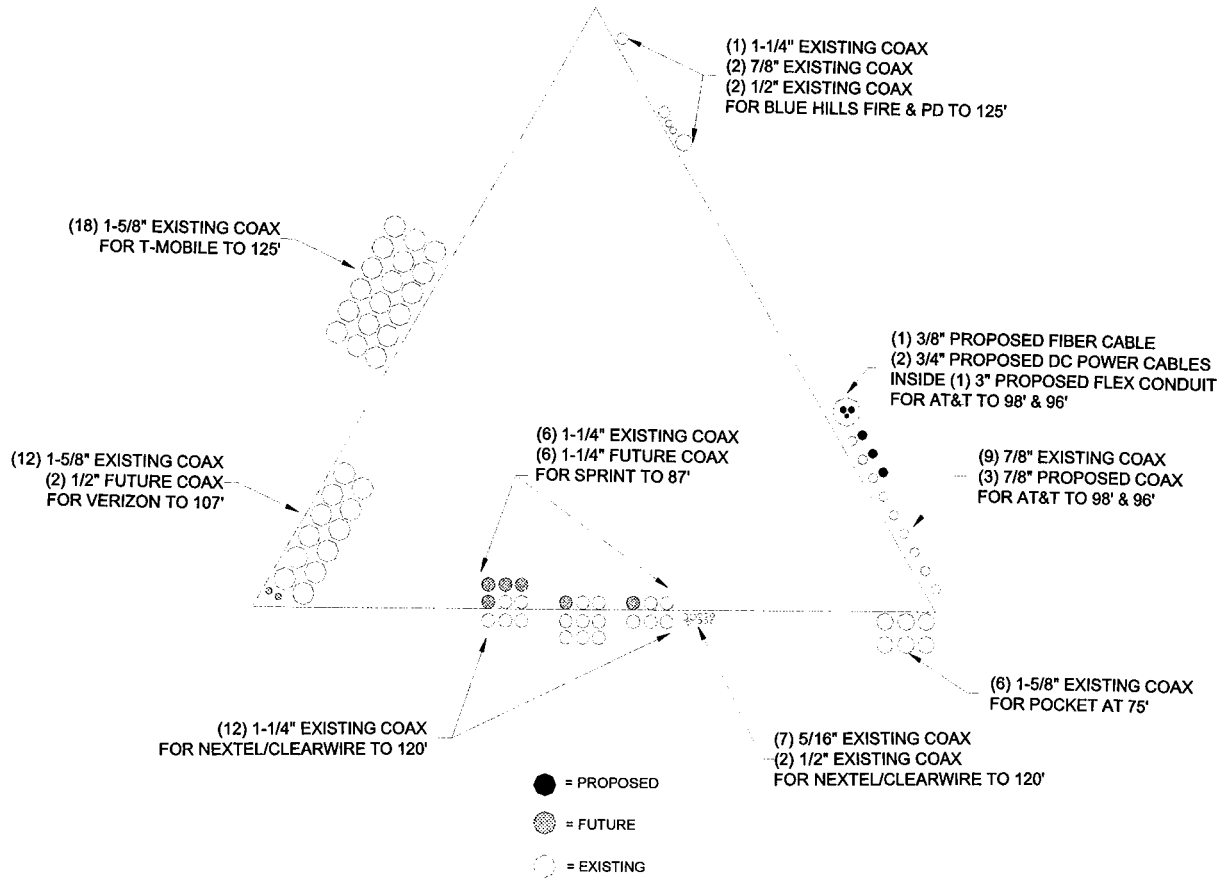


Figure 1 – Coax Layout

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	44.1	Pass
		Horizontal	L1 1/2x1 1/2x3/16	2.1	Pass
				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)	65.4	Pass
				Diagonal	L1 1/2x1 1/2x3/16
T3	100 - 80	Top Girt	L1 1/2x1 1/2x3/16	4.3 7.0 (b)	Pass
		Leg	P3.5x.226 (4.00 OD)	81.3	Pass
				Diagonal	L2x2x3/16
T4	80 - 60	Leg	P5x.258 (5.563 OD)	75.2	Pass
		Diagonal	L2 1/2x2 1/2x3/16	43.4 88.8 (b)	Pass
T5	60 - 40	Leg	P6x.28 (6.625 OD)	73.0	Pass
		Diagonal	L2 1/2x2 1/2x3/16	50.2 65.2 (b)	Pass
T6	40 - 30	Leg	P6x.28 (6.625 OD)	88.6	Pass
		Diagonal	L3x3x3/16	52.9 75.5 (b)	Pass
T7	30 - 20	Leg	P6x.28 (6.625 OD)	96.5	Pass
		Diagonal	L3x3x3/16	57.6 74.7 (b)	Pass
T8	20 - 0	Leg	P8x.322 (8.625 OD)	67.6	Pass
		Diagonal	L3 1/2x3 1/2x1/4	34.0 57.4 (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	194 k	168 k
	Compression	220 k	178 k
Overturning Moment	---	2,264 k-ft	---

*Foundations determined adequate per independent analysis.

GENERAL COMMENTS

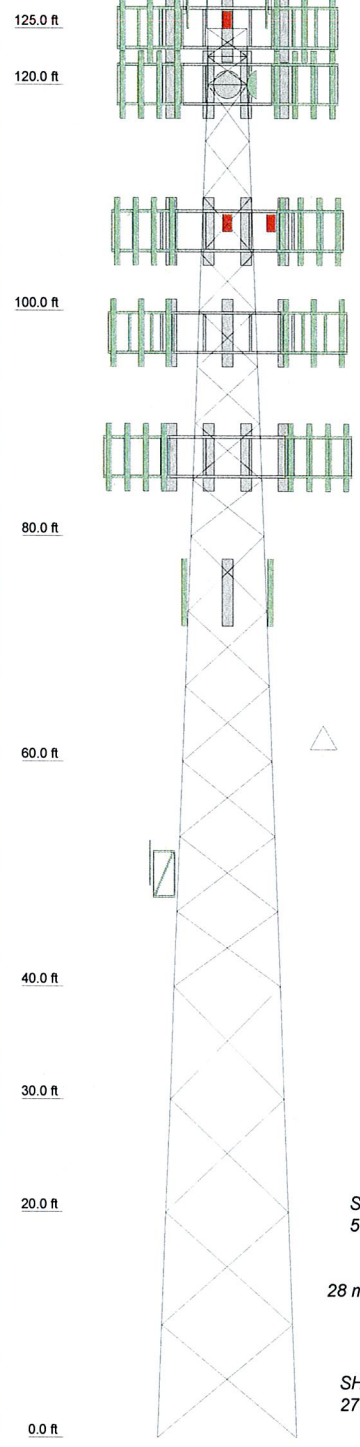
This engineering analysis is based upon the theoretical capacity of the structure. It is not a condition assessment of the tower and its foundation. It is the responsibility of SBA Network Services, Inc. to verify that the tower modeled and analyzed is the correct structure (with accurate antenna loading 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	P2.5x.203 (2.88 OD)		P3.5x.226 (4.00 OD)	P5x.258 (5.563 OD)	P5x.28 (6.625 OD)	P6x.322 (6.625 OD)			
Leg Grade		L1 1/2x1 1/2x3/16	L2x2x3/16	A572-55	L2 1/2x2 1/2x3/16	L3x3x3/16	L3 1/2x3 1/2x1/4		
Diagonals									
Diagonal Grade		L1 1/2x1 1/2x3/16							
Top Girts					N.A.				
Horizontals	A								
Face Width (ft)	3.5		5	6.5	8	10.25	11	12.5	
# Panels @ (ft)	2 @ 2.5		8 @ 5		6 @ 6.6667		4 @ 10		2.8
Weight (K)	0.2	0.7	1.0	1.4	1.7	0.9	0.9	0.9	9.6



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod	125	GPS	107
Flash Beacon Lighting	125	(3) T-Frames MNT	107
PD455 Dipole	125	(2) LPA-80063/4CF w/ Mount Pipe	107
PD455 Dipole	125	(2) LPA-80063/4CF w/ Mount Pipe	107
PD455 Dipole	125	(2) 7770 w/Mount Pipe	98
20' Omni	125	(2) 7770 w/Mount Pipe	98
20' Omni	125	AM-X-CD-16-65-00T-RET w/ Mount Pipe	98
(2) RV90-17-00 w/Mount Pipe	125		
(2) RV90-17-00 w/Mount Pipe	125	SBNH-1D6565C w/Mount Pipe	98
(2) RV90-17-00 w/Mount Pipe	125	SBNH-1D6565C w/Mount Pipe	98
APX16PV-16PVL-C W/Mount Pipe	125	(2) LGP21401 TMA	98
APX16PV-16PVL-C W/Mount Pipe	125	(2) LGP21401 TMA	98
APX16PV-16PVL-C W/Mount Pipe	125	(2) LGP21401 TMA	98
APX16PV-16PVL-C W/Mount Pipe	125	(2) LGP21401 TMA	98
(3) OneBase Twin TMA	125	(2) RRUS-11	98
(3) OneBase Twin TMA	125	(2) RRUS-11	98
(3) OneBase Twin TMA	125	(2) RRUS-11	98
(1) Platform w/ Handrails MNT	125	(2) LGP21903 Diplexer	98
(3) DB844H90E-XY	120	(2) LGP21903 Diplexer	98
(3) DB844H90E-XY	120	(2) LGP21903 Diplexer	98
(3) DB844H90E-XY	120	Empty Mount Pipe	98
840 10054	120	Empty Mount Pipe	98
840 10054	120	Empty Mount Pipe	98
840 10054	120	(3) T-Frames MNT	98
Horizon DUO Radio	120	(3) T-Frames MNT	98
Horizon DUO Radio	120	(2) 7770 w/Mount Pipe	98
U-RAS Flexible Radio	120	DC6-48-60-18-8F Surge Arrestor	96
U-RAS Flexible Radio	120	(4) DB980F65T2E-M w/Mount Pipe	87
U-RAS Flexible Radio	120	(3) T-Frames MNT	87
(3) T-Frames MNT	120	(4) DB980F65T2E-M w/Mount Pipe	87
VHLP2.5 Dish	120	(4) DB980F65T2E-M w/Mount Pipe	87
VHLP2.5 Dish	120	APXV18-206517S-C w/Mount Pipe	75
(2) LPA-80063/4CF w/ Mount Pipe	107	APXV18-206517S-C w/Mount Pipe	75
(2) LPA-185063/8CF w/ Mount Pipe	107	APXV18-206517S-C w/Mount Pipe	75
(2) LPA-185063/8CF w/ Mount Pipe	107	2' Omni	50
(2) LPA-185063/8CF w/ Mount Pipe	107	(1) Standoff MNT	50
GPS	107		

SYMBOL LIST

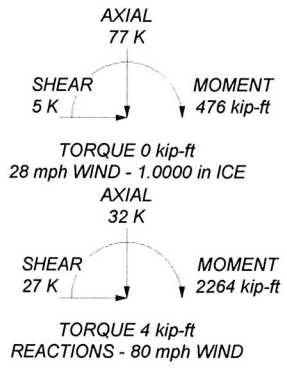
MARK	SIZE	MARK	SIZE
A	L1 1/2x1 1/2x3/16		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-55	55 ksi	70 ksi	A36	36 ksi	58 ksi

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 $DC_{v,i}$ in thickness with height.
 4. Deflections are based upon a 50 mph wind.
 5. TOWER RATING: 96.5%
- UP LIFT: -134 K
SHEAR: 16 K



<p>FDH Engineering, Inc. 6521 Meridian Drive Raleigh, NC 27616 Phone: (919) 755-1012 FAX: (919) 755-1031</p>	<p>Job: Bloomfield, CT01725-A</p>
	<p>Project: 12-06690E S1</p>
<p>Client: SBA Network Services, Inc.</p>	<p>Drawn by: Brandon Compton</p>
<p>Code: TIA/EIA-222-F</p>	<p>Date: 07/12/12</p>
<p>Path: \\FDH-SRV-02\shared\2012\Drawings - June12-2012\06690E\Bloomfield_CTR1-BA_ATT\Wksp\Final\Bloomfield_CT01725-A.dwg</p>	<p>App'd: _____ Scale: NTS Dwg No. E-1</p>

PROJECT INFORMATION

SCOPE OF WORK: UNMANNED TELECOMMUNICATIONS FACILITY MODIFICATIONS
 SITE ADDRESS: 1021 BLUE HILLS AVENUE
 BLOOMFIELD, CT 06002
 LATITUDE: 41.8201 N 41° 49' 12.36" N
 LONGITUDE: -72.6965 W -72° 41' 47.4" W
 JURISDICTION: NATIONAL, STATE & LOCAL CODES OR ORDINANCES
 CURRENT USE: TELECOMMUNICATIONS FACILITY
 PROPOSED USE: TELECOMMUNICATIONS FACILITY



SITE NUMBER: CT1148
SITE NAME: BLOOMFIELD EAST

DRAWING INDEX

REV

VICINITY MAP

GENERAL NOTES

- T-1 TITLE SHEET
- GN-1 GENERAL NOTES
- A-1 COMPOUND & EQUIPMENT PLAN
- A-2 ELEVATION & ANTENNA PLAN
- A-3 DETAILS
- G-1 PLUMBING DIAGRAM & GROUNDING DETAILS

- 1
- 1
- 1
- 1
- 1
- 1

DIRECTION TO SITE:
 START AT 500 ENTERPRISE DR, ROCKY HILL GOING TOWARD CAPITOL BLVD - TURN LEFT ON CAPITOL BLVD - TURN LEFT ON WEST ST - TURN LEFT TO TAKE RAMP ONTO I-91 N TOWARD HARTFORD - TAKE EXIT #35A-35B/WINDSOR/BLOOMFIELD/MANCHESTER TOWARD #35B/CT-218/WINDSOR/BLOOMFIELD - TURN LEFT ON CT-218 - TURN RIGHT ON BLUE HILLS AVE(CT-187) - ARRIVE AT 1021 BLUE HILLS AVE, BLOOMFIELD, ON THE LEFT.



THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

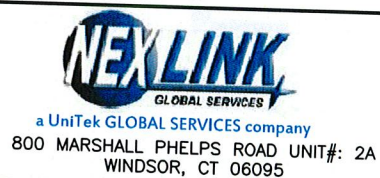
THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

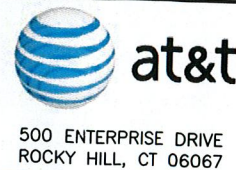
SBA SITE ID: CT01725
SITE NAME: BLOOMFIELD

CALL BEFORE YOU DIG
 CALL TOLL FREE 800-922-4455

UNDERGROUND SERVICE ALERT



SITE NUMBER: CT1148
SITE NAME: BLOOMFIELD EAST
 1021 BLUE HILLS AVENUE
 BLOOMFIELD, CT 06002
 HARTFORD COUNTY



1 04/06/12 ISSUED FOR CONSTRUCTION		PN	DC	DPH	AT&T
0 03/07/12 ISSUED FOR REVIEW		SF	NOC	DPH	
NO.	DATE	REVISIONS			DRAWING NUMBER
		BY	CHK	APP	
SCALE: AS SHOWN		DESIGNED BY: DC		DRAWN BY: SF	REV
					1

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTNING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWS COPPER

ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
 CONTRACTOR - NEXLINK
 SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)
 OWNER - AT&T MOBILITY
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
 16. CONSTRUCTION SHALL COMPLY WITH UMS SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."
 17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
 18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
 19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
 20. APPLICABLE BUILDING CODES:
 SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
 BUILDING CODE: 2003 IBC WITH 2005 CT SUPPLEMENT & 2009 CT AMENDMENTS
 ELECTRICAL CODE: REFER TO ELECTRICAL DRAWINGS
 LIGHTENING CODE: REFER TO ELECTRICAL DRAWINGS
- SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:
- AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;
 - AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION;
 - TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-F, STRUCTURAL STANDARDS FOR STEEL
 - ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	G.C.	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
AWG	AMERICAN WIRE GAUGE	MGB	MASTER GROUND BUS		
BCW	BARE COPPER WIRE	MIN	MINIMUM	TBD	TO BE DETERMINED
BTS	BASE TRANSCIEVER STATION	PROPOSED	NEW	TBR	TO BE REMOVED
EXISTING	EXISTING	N.T.S.	NOT TO SCALE	TBRR	TO BE REMOVED AND REPLACED
EG	EQUIPMENT GROUND	REF	REFERENCE	TYP	TYPICAL
EGR	EQUIPMENT GROUND RING	REQ. P.	REQUIRED		

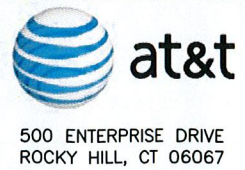


Hudson Design Group
 1600 OSGOOD STREET
 BUILDING 20 NORTH, SUITE 2-101
 N. ANDOVER, MA 01845
 TEL: (978) 557-5553
 FAX: (978) 336-5586



NEXLINK GLOBAL SERVICES
 a UniTek GLOBAL SERVICES company
 800 MARSHALL PHELPS ROAD UNIT#: 2A
 WINDSOR, CT 06095

SITE NUMBER: CT1148
SITE NAME: BLOOMFIELD EAST
 1021 BLUE HILLS AVENUE
 BLOOMFIELD, CT 06002
 HARTFORD COUNTY



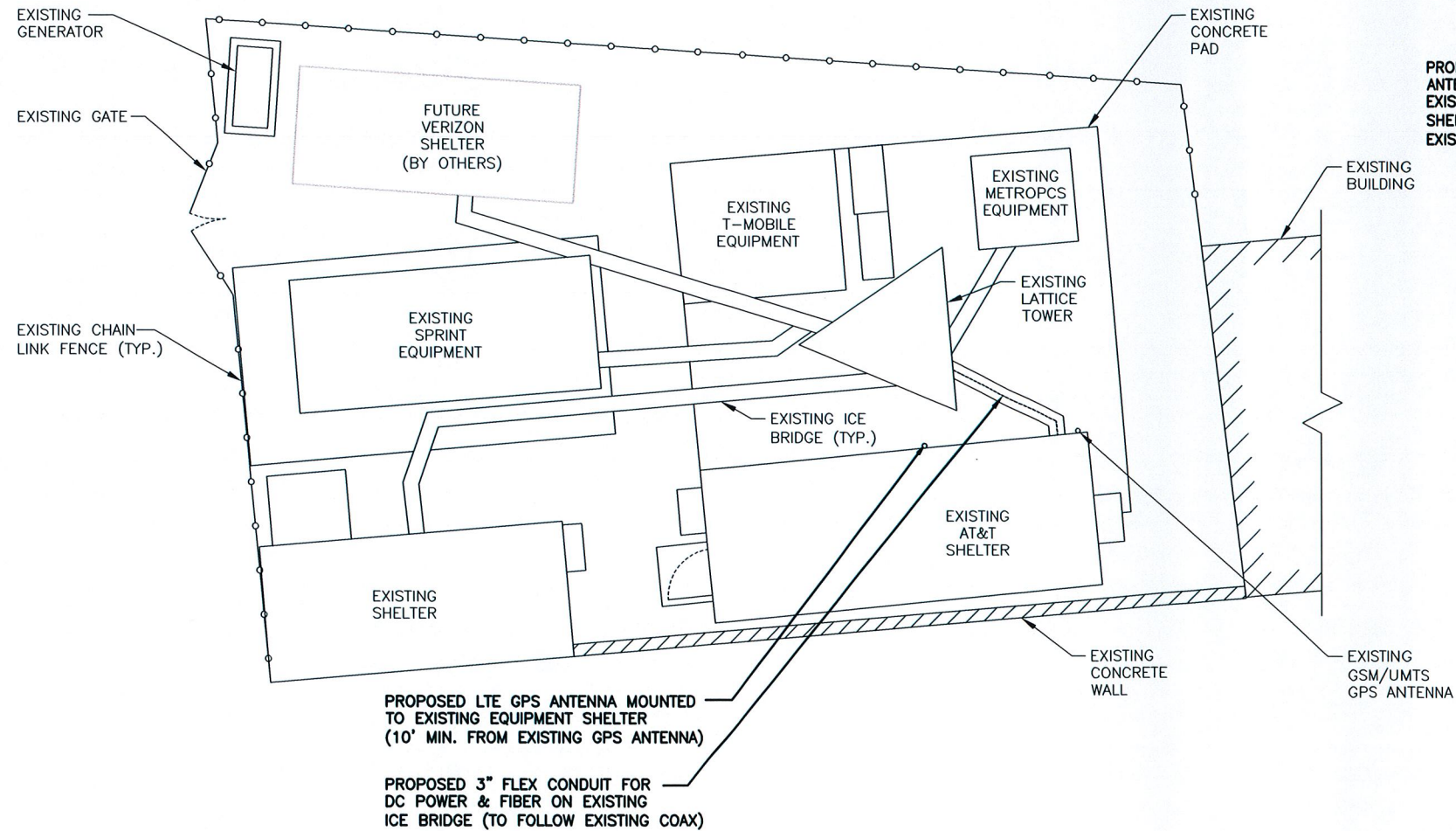
500 ENTERPRISE DRIVE
 ROCKY HILL, CT 06067

										AT&T	
										GENERAL NOTES (LTE)	
1	04/06/12	ISSUED FOR CONSTRUCTION	PN	DC	DPH						
0	03/07/12	ISSUED FOR REVIEW	SF	DC	DPH						
NO.	DATE	REVISIONS	BY	CHK	APP						
SCALE: AS SHOWN		DESIGNED BY: DC	DRAWN BY: SF						JOB NUMBER: 1148.01	DRAWING NUMBER: GN-1	REV: 1

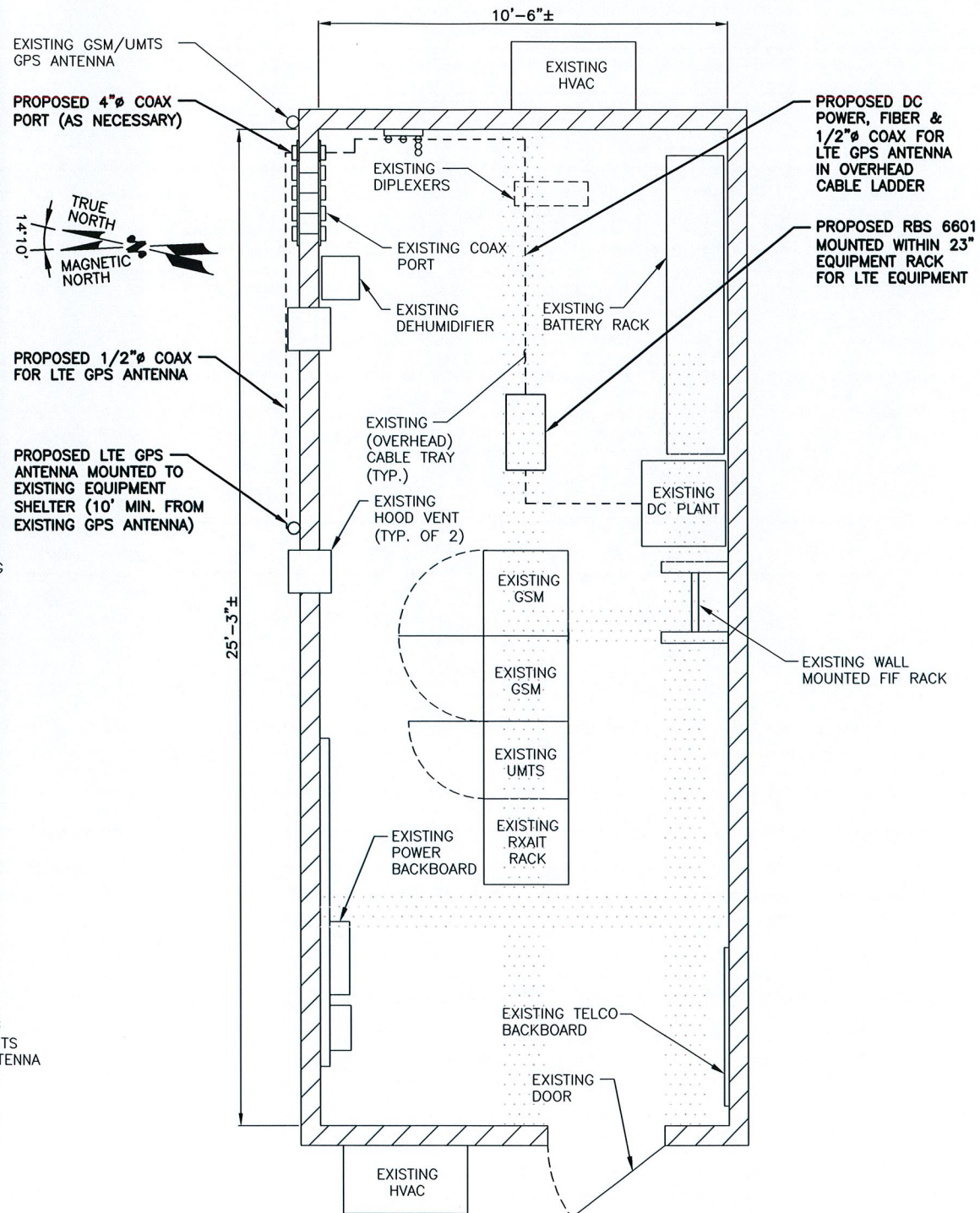


NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.



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



EQUIPMENT PLAN
SCALE: 1/2"=1'-0"



Hudson Design Group, LLC
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 2-101
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

NEXLINK GLOBAL SERVICES
a UniTek GLOBAL SERVICES company
800 MARSHALL PHELPS ROAD UNIT#: 2A
WINDSOR, CT 06095

SITE NUMBER: CT1148
SITE NAME: BLOOMFIELD EAST
1021 BLUE HILLS AVENUE
BLOOMFIELD, CT 06002
HARTFORD COUNTY

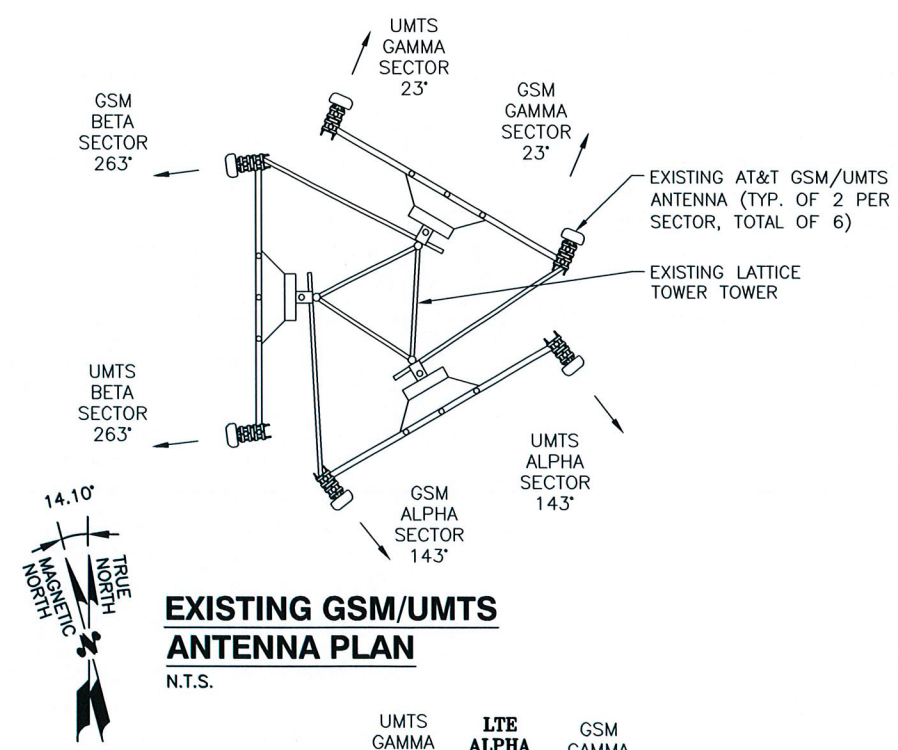
at&t
500 ENTERPRISE DRIVE
ROCKY HILL, CT 06067

										AT&T	
										COMPOUND & EQUIPMENT PLAN (LTE)	
NO.	DATE	REVISIONS	BY	CHK	APP	DESIGNED BY:	DC	DRAWN BY:	SF	JOB NUMBER	148.01
1	04/06/12	ISSUED FOR CONSTRUCTION	PN	DC	DPN	DESIGNED BY:	DC	DRAWN BY:	SF	DRAWING NUMBER	A-1
0	03/07/12	ISSUED FOR REVIEW	SF	DC	DPN	DESIGNED BY:	DC	DRAWN BY:	SF	REV	1

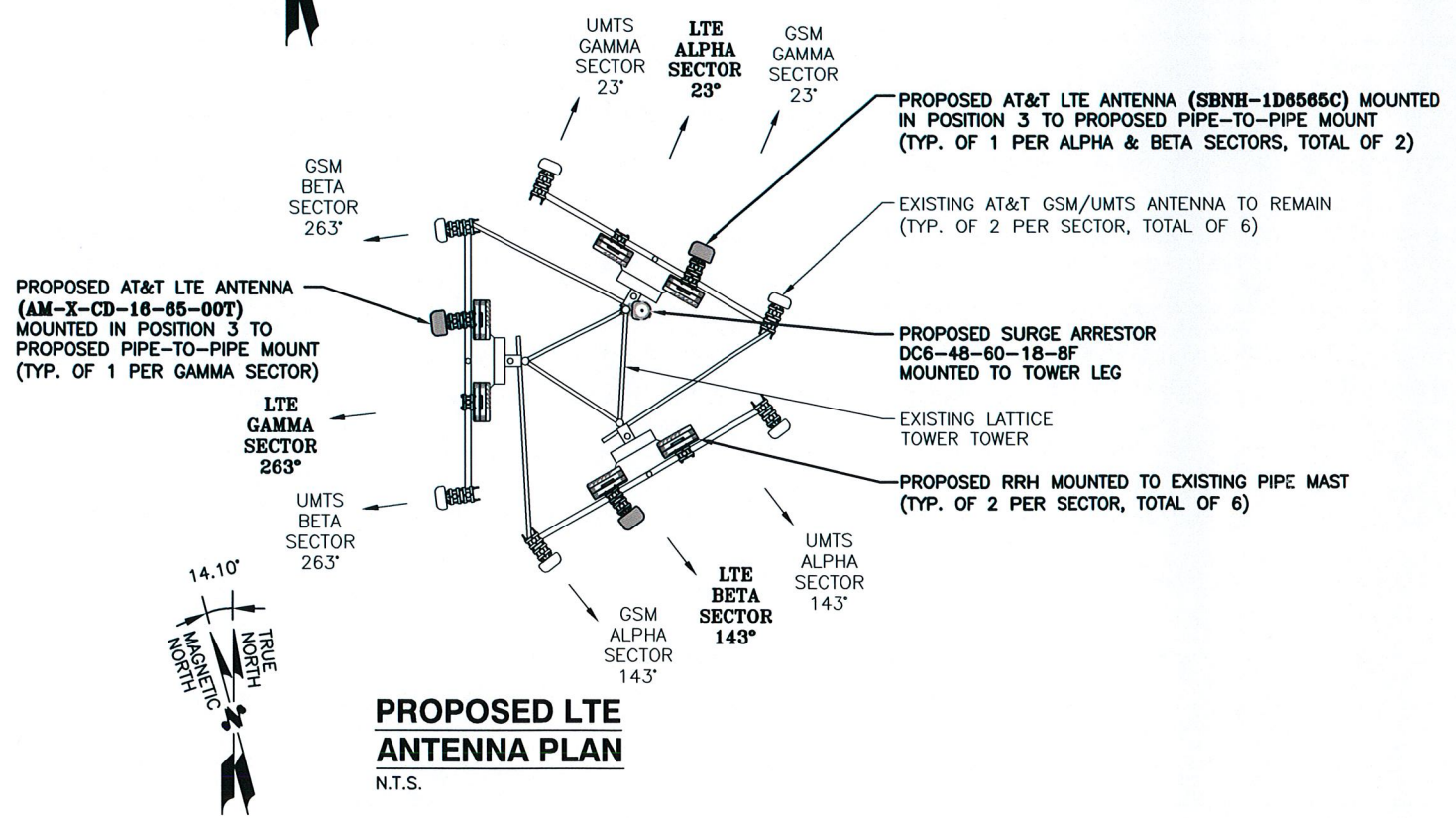


NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

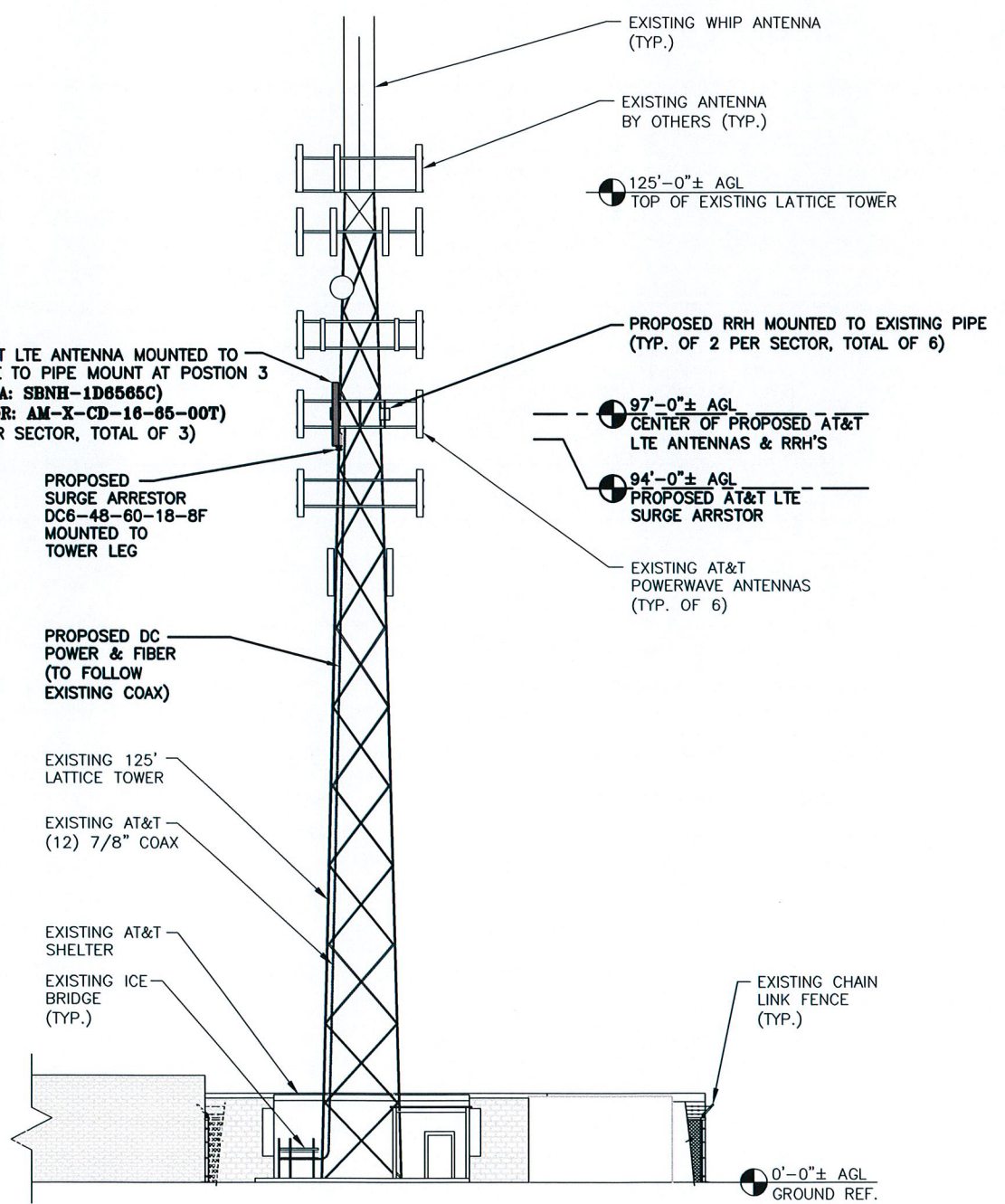


EXISTING GSM/UMTS ANTENNA PLAN
N.T.S.



PROPOSED LTE ANTENNA PLAN
N.T.S.

PROPOSED AT&T LTE ANTENNA MOUNTED TO PROPOSED PIPE TO PIPE MOUNT AT POSTION 3 (ALPHA & BETA: SBNH-1D6565C) (GAMMA SECTOR: AM-X-CD-16-65-00T) (TYP. OF 1 PER SECTOR, TOTAL OF 3)



PARTIAL NORTH ELEVATION
SCALE: 3/32"=1'-0"

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

Hudson Design Group, LLC
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 2-101
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

NEXLINK
GLOBAL SERVICES
a UniTek GLOBAL SERVICES company
800 MARSHALL PHELPS ROAD UNIT#: 2A
WINDSOR, CT 06095

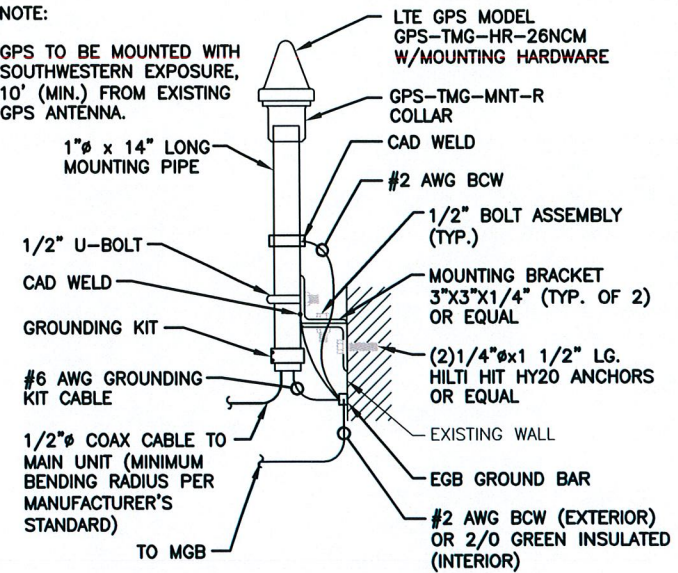
SITE NUMBER: CT1148
SITE NAME: BLOOMFIELD EAST
1021 BLUE HILLS AVENUE
BLOOMFIELD, CT 06002
HARTFORD COUNTY

at&t
500 ENTERPRISE DRIVE
ROCKY HILL, CT 06067

1 04/06/12 ISSUED FOR CONSTRUCTION		FN	DC	DPH	AT&T	
0 03/07/12 ISSUED FOR REVIEW		SF	DC	DEB	ELEVATION & ANTENNA PLAN (LTE)	
NO.	DATE	REVISIONS			BY	CHK
SCALE:	AS SHOWN	DESIGNED BY:	DC	DRAWN BY:	SF	REV
					88.01	1

NOTE:

GPS TO BE MOUNTED WITH SOUTHWESTERN EXPOSURE, 10' (MIN.) FROM EXISTING GPS ANTENNA.



GPS MOUNTING DETAIL

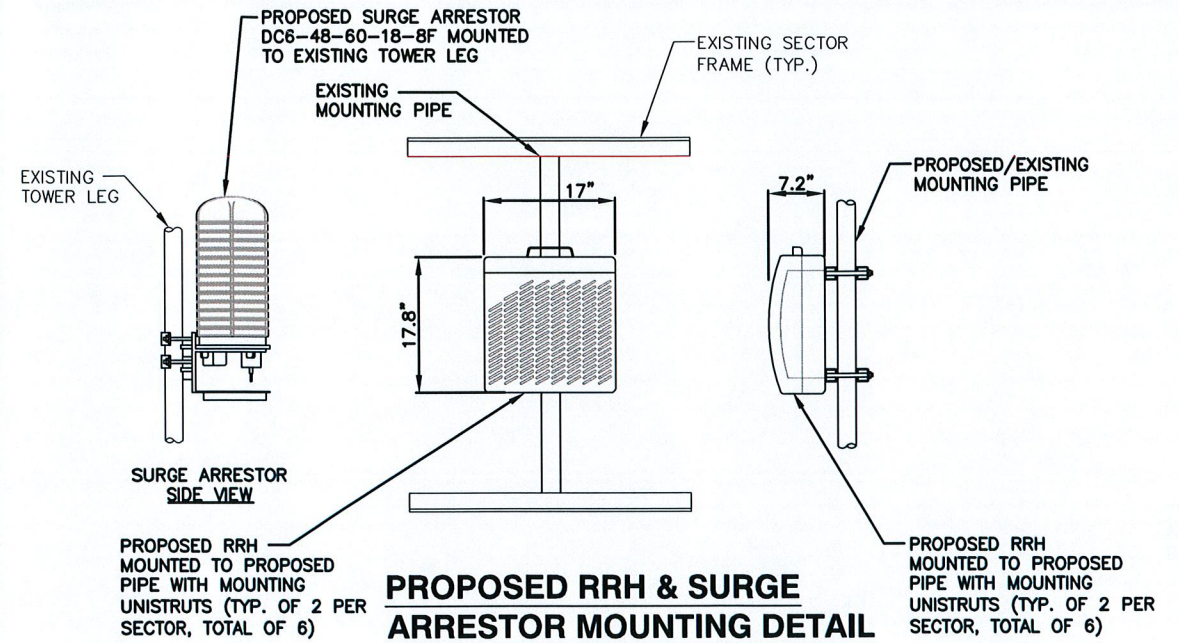
SCALE: N.T.S.

NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

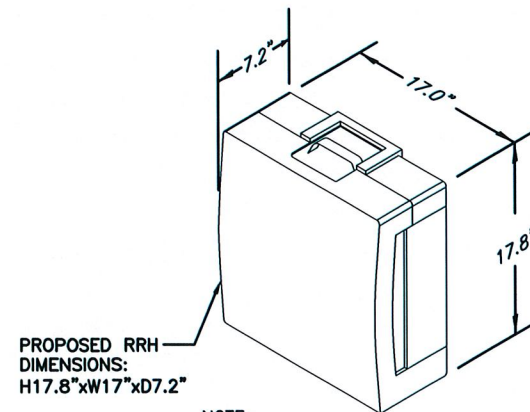
NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.



PROPOSED RRH & SURGE ARRESTOR MOUNTING DETAIL

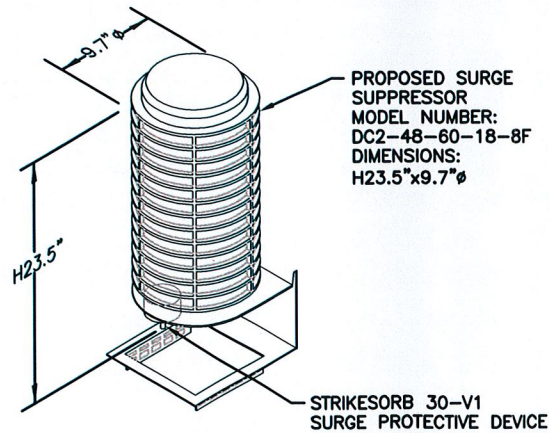
SCALE: N.T.S.



NOTE: MOUNT PER MANUFACTURER'S SPECIFICATIONS.

RRH DETAIL

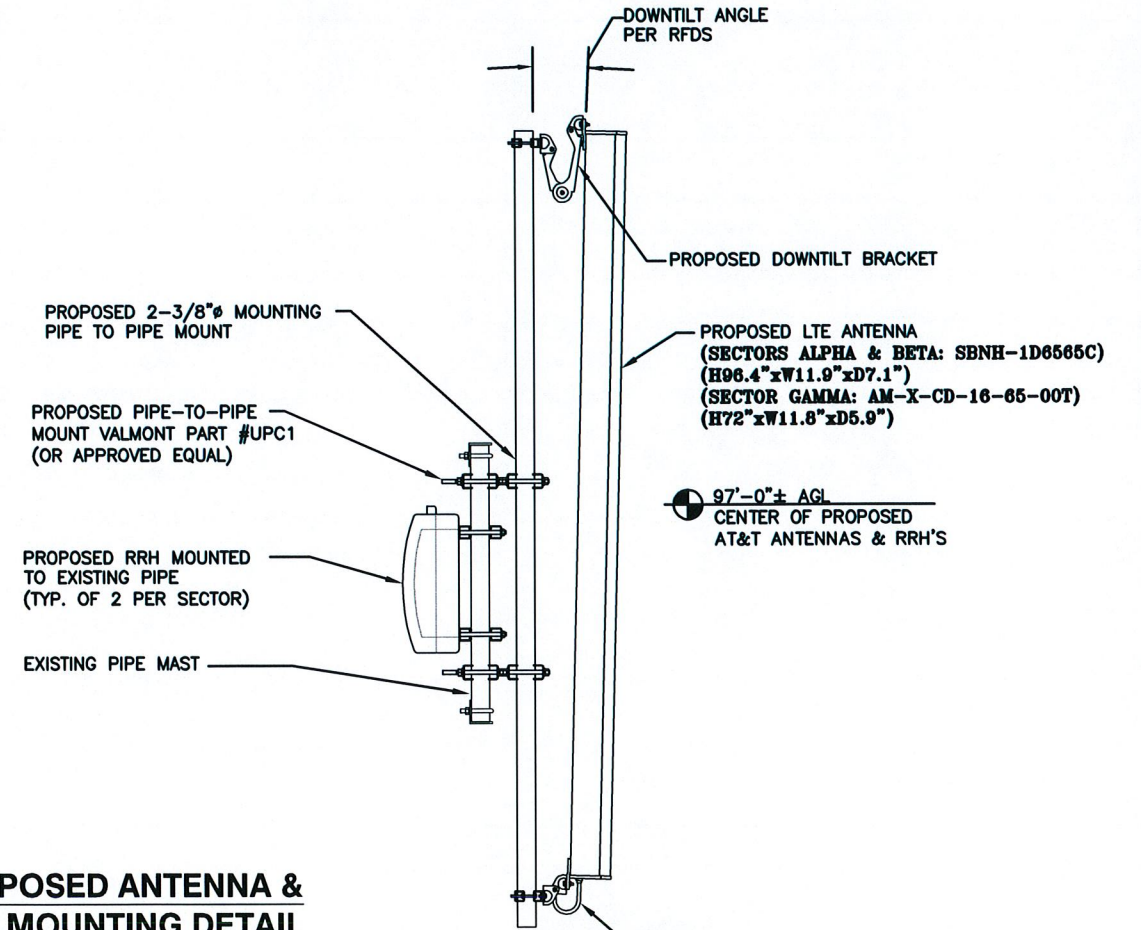
SCALE: N.T.S.



NOTE: MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE SUPPRESSOR DETAIL

SCALE: N.T.S.



PROPOSED ANTENNA & RRH MOUNTING DETAIL

SCALE: N.T.S.

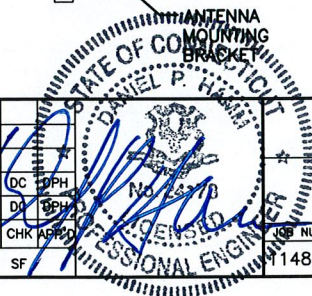
Hudson Design Group
 1400 OSGOOD STREET
 BUILDING 20 NORTH, SUITE 2-101
 N. ANDOVER, MA 01845
 TEL: (978) 557-5553
 FAX: (978) 336-5586

NEXLINK GLOBAL SERVICES
 a UniTek GLOBAL SERVICES company
 800 MARSHALL PHELPS ROAD UNIT#: 2A
 WINDSOR, CT 06095

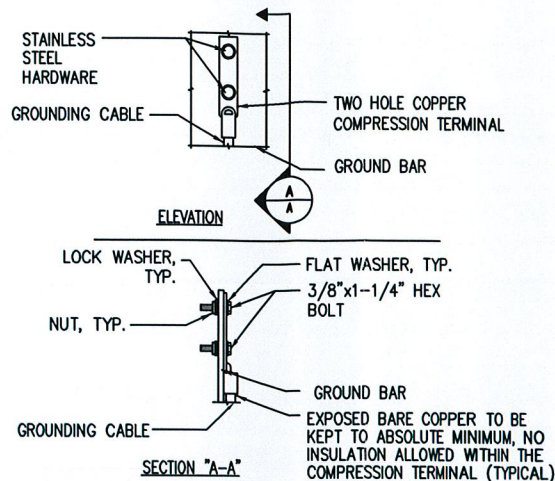
SITE NUMBER: CT1148
SITE NAME: BLOOMFIELD EAST
 1021 BLUE HILLS AVENUE
 BLOOMFIELD, CT 06002
 HARTFORD COUNTY

at&t
 500 ENTERPRISE DRIVE
 ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D	JOB NUMBER	DRAWING NUMBER	REV
1	04/06/12	ISSUED FOR CONSTRUCTION	PN	DC	DPH			
0	03/07/12	ISSUED FOR REVIEW	SF	DA	9P			
SCALE: AS SHOWN						DESIGNED BY: DC	DRAWN BY: SF	
						148.01	A-3	1



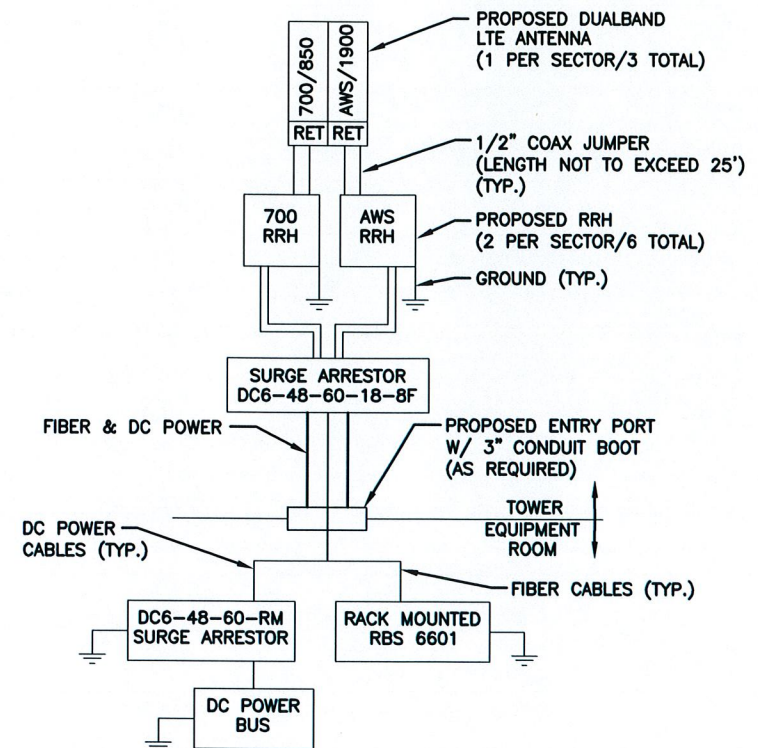
AT&T
 DETAILS
 (LTE)



NOTE:
 1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
 2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
 3. GADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB.

TYPICAL GROUND BAR CONNECTION DETAIL

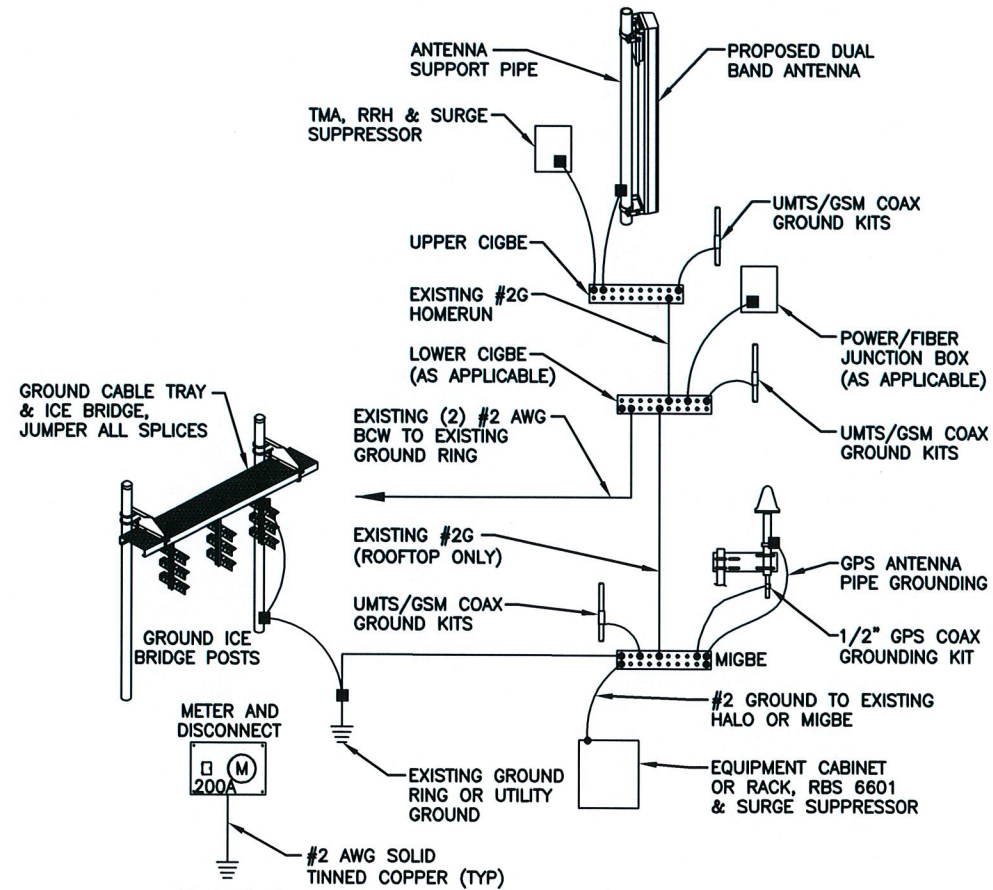
1
 - N.T.S.



NOTES:

- CONTRACTOR TO CONFIRM ALL PARTS.
- INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS.

2
 - **PLUMBING DIAGRAM**
 - N.T.S.



GROUNDING RISER DIAGRAM

3
 - N.T.S.

EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" - SURGE PRODUCERS

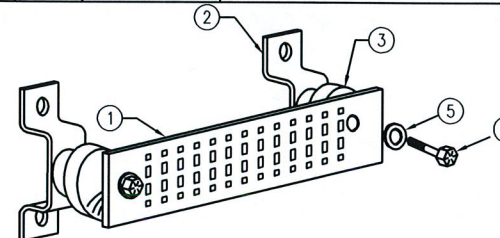
- CABLE ENTRY PORTS (HATCH PLATES) (#2)
- GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
- TELCO GROUND BAR
- COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
- +24V POWER SUPPLY RETURN BAR (#2)
- 48V POWER SUPPLY RETURN BAR (#2)
- RECTIFIER FRAMES.

SECTION "A" - SURGE ABSORBERS

- INTERIOR GROUND RING (#2)
- EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
- METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
- BUILDING STEEL (IF AVAILABLE) (#2)

4
 - **GROUND BAR - DETAIL**
 - N.T.S.

WIRELESS SOLUTIONS INC.			
NO.	REQ.	PART NO.	DESCRIPTION
1	1	HLGB-0420-IS	SOLID GND. BAR (20"x4"x1/4")
2	2		WALL MTG. BRKT.
3	2		INSULATORS
4	4		5/8"-11x1" H.H.C.S.
5	4		5/8 LOCKWASHER



Hudson Design Group LLC
 1600 OSGOOD STREET
 BUILDING 20 NORTH, SUITE 2-101
 N. ANDOVER, MA 01845
 TEL: (978) 557-5553
 FAX: (978) 336-5586

NEXLINK GLOBAL SERVICES
 a UniTek GLOBAL SERVICES company
 800 MARSHALL PHELPS ROAD UNIT#: 2A
 WINDSOR, CT 06095

SITE NUMBER: CT1148
SITE NAME: BLOOMFIELD EAST
 1021 BLUE HILLS AVENUE
 BLOOMFIELD, CT 06002
 HARTFORD COUNTY

at&t
 500 ENTERPRISE DRIVE
 ROCKY HILL, CT 06067

1 04/06/12 ISSUED FOR CONSTRUCTION		FN	DC	DPH	NO. 24170
0 03/07/12 ISSUED FOR REVIEW		SP	DC	DPH	
NO.	DATE	REVISIONS		BY	CHKD
SCALE: AS SHOWN		DESIGNED BY: DC	DRAWN BY: SP		

STATE OF CONNECTICUT
 REGISTERED PROFESSIONAL ENGINEER
 DANIEL P. HANSEN
 No. 24170

AT&T
 PLUMBING DIAGRAM & GROUNDING DETAILS (LTE)
 JOB NUMBER: 1148.01
 DRAWING NUMBER: G-1
 REV: 1