ORIGINAL

at&t
Your world. Delivered.

New Cingular Wireless PCS, LLC
500 Enterprise Drive, Suite 3A
Rocky Hill, Connecticut 06067-3900
Phone: (860) 513-7504
Fax: (860) 513-7190

David Osuch
Real Estate Consultant

EM-CING-158-130326 (refile)

HAND DELIVERED

March 26, 2013

RECEIVED
MAR 26 2013
CONNECTICUT
SITING COUNCIL

Ms. Linda Roberts
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Re: New Cingular Wireless PCS, LLC – Refiling of notice of intent to modify an existing telecommunications facility located at 880 Post Road East, Westport, CT (owner, Connecticut State Police)

Dear Ms. Roberts:

On July 6, 2011, Council staff approved AT&T Notice of Exempt Modification EM-CING-057-111123 for 880 Post Road East in Westport. The approval was for an LTE upgrade, and it expired on July 6, 2012 without the upgrade being implemented. Accordingly, we are submitting this Notice of Exempt Modification for re-approval of the LTE upgrade. A new filing fee check in the amount of $625 is submitted herewith.

The original 2011 Notice is attached hereto. All information is current except that it has been noticed that the Passing Structural Analysis was run using a diameter of 1-5/8" for the (12) coax cables even though the actual diameter that will be used will only be 1-1/4" and thus since smaller would not negatively affect the structure.

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 height of the overall 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 some enlarged equipment pads as may be noted in the attachments.

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

4. Radio frequency power density may increase due to use of one or more GSM channel for UMTS transmissions. Moreover, 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, AT&T respectfully submits that the proposed changes at the referenced site constitute exempt modifications under R.C.S.A. Section 16-50j-72(b)(2).

Please feel free to call me at (860) 513-7504 with questions concerning this matter. Thank you for your consideration.

Sincerely,

David Osuch
Real Estate Consultant

Attachments

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

December 16, 2011

Douglas L. Culp, Real Estate Consultant
New Cingular Wireless PCS, LLC
500 Enterprise Drive
Rocky Hill, CT 06067-3900

RE: **EM-CING-057-111123** - New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 1 Butternut Hollow Road, Greenwich, Connecticut.

Dear Mr. Culp:

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:

- 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 November 23, 2011. 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

Linda Roberts
Executive Director

LR/CDM/laf

c: The Honorable Peter J. Tesei, First Selectman, Town of Greenwich
Diane Fox, Planning & Zoning Director, Town of Greenwich
Brian Benito, Bureau of Police Support, Telecommunications Section

New Cingular Wireless PCS, LLC
500 Enterprise Drive
Rocky Hill, Connecticut 06067-3900
Phone: (860) 463-5511
Fax: (860) 513-7190

Douglas L. Culp
Real Estate Consultant

HAND DELIVERED

November 23, 2011

Ms. Linda Roberts
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Re: New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 1 Butternut Hollow Road Greenwich , CT (owner Connecticut State Police).

Dear Ms. Roberts:

In order to accommodate technological changes, implement Uniform Mobile Telecommunications System ("UMTS") and/or 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. 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.

UMTS technology offers services to mobile computer and phone users anywhere in the world. Based on the Global System for Mobile ("GSM") communication standard, UMTS is the planned worldwide standard for mobile users. UMTS, fully implemented, gives computer and phone users high-speed access to the Internet as they travel. They have the same capabilities even when they roam, through both terrestrial wireless and satellite transmissions.

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.

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

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 height of the overall 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 some enlarged equipment pads as may be noted in the attachments.

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

4. Radio frequency power density may increase due to use of one or more GSM channel for UMTS transmissions. Moreover, 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).

Please feel free to call me at (860) 463-5511 with questions concerning this matter. Thank you for your consideration.

Sincerely,

Douglas L. Culp
Real Estate Consultant

Attachments

NEW CINGULAR WIRELESS PCS, LLC
Equipment Modification

1 Butternut Hollow Road Greenwich, CT
Site Number CT2129
Exempt Mod

Tower Owner/Manager: Connecticut State Police

Equipment configuration: Monopole

Current and/or approved: Six PowerWave P7770 antennas @ 150 ft
Twelve TMA's @ 150 ft
Eight runs 1 5/8 inch coax to150 ft
Equipment Shelter

Planned Modifications: Retain existing PowerWave Antenna's and TMA's @ 150 ft
Retain all Coax Cabling
Install three PowerWave P65-16 antennas or equivalent @ 150 ft
Install six remote radio heads and surge arrestor @ 150 ft
Install one fiber and two DC power cables to 150 ft

Power Density:

Worst-case calculations for existing wireless operations at the site, using standard parameters for other carriers, indicate a radio frequency electromagnetic radiation power density, measured at ground level beside the Tower, of approximately 56.0% of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density following proposed modifications would be approximately 57.7% of the standard.

Existing

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm^2)	Standard Limits (mW/cm^2)	Percent of Limit
Other Users							44.64
AT&T UMTS	148	1900 Band	1	500	0.0082	1.0000	0.82
AT&T UMTS	148	800 Band	1	500	0.0082	0.5867	1.40
AT&T GSM	148	800Band	6	296	0.0292	0.5867	4.97
AT&T GSM	148	1900 Band	6	427	0.0421	1.0000	4.21
Total							**56.0%**

* Data for other users are from Siting Council records.

Proposed

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm^2)	Standard Limits (mW/cm^2)	Percent of Limit
Other Users							44.64
AT&T UMTS	148	800 Band	1	500	0.0082	0.5867	1.40
AT&T UMTS	148	1900 Band	1	500	0.0082	1.0000	0.82
AT&T GSM	148	880 - 894	6	296	0.0292	0.5867	4.97
AT&T GSM	148	1900 Band	6	427	0.0421	1.0000	4.21
AT&T LTE	148	740 - 746	1	500	0.0082	0.4933	1.66
Total							**57.7%**

* Data for other users are from Siting Council records

Structural information:

The attached structural analysis demonstrates that the tower and foundation have adequate structural capacity to accommodate the proposed modifications. (URS dated 11-16-11).

DETAILED STRUCTURAL ANALYSIS AND EVALUATION OF 180' SELF SUPPORTING LATTICE TOWER WITH STACK-N-BOLT SYSTEM AND FOUNDATION FOR NEW ANTENNA ARRANGEMENT

Connecticut State Police
Butternut Hollow Road
Greenwich, Connecticut
AT&T Site No.: 2129

prepared for

at&t

AT&T Mobility

500 Enterprise
Drive, Suite 3A
Rocky Hill, CT 06067

prepared by

URS

URS CORPORATION
500 ENTERPRISE DRIVE, SUITE 3B
ROCKY HILL, CT 06067
TEL. 860-529-8882

36924454.00000
SAI-067 (Rev 2)

November 16, 2011

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

This report summarizes the structural analysis and evaluation of the 180' lattice tower located off of Butternut Hollow Road in Greenwich, Connecticut. The analysis was conducted in accordance with the 2005 Connecticut State Building Code and the TIA/EIA-222-F standard for a wind velocity of 90 mph (fastest mile) and 90 mph (fastest mile) concurrent with ½" ice. The antenna loading considered in the analysis consists of all existing and proposed antennas, transmission lines, and ancillary items as outlined in the Introduction of this report. The proposed AT&T modification is listed below:

Proposed Antenna and Mount	Carrier	Antenna Center Elevation
Install **(3) Powerwave P65-16-XLH-RR** **(6) Ericsson RRU** **(1) Raycap Surge Suppressor** **(1) Fiber Optic Cable** **(2) DC Cables**	**AT&T (Proposed)**	**150'**

The results of this analysis indicate that the tower structure, is in compliance with the proposed loading conditions. **The tower and its foundation are considered structurally adequate under the wind load specified above and the existing and proposed antenna loadings.** The twist and sway of the tower is considered within the Connecticut State Police requirements.

This analysis is based on:

1) The tower structure's theoretical capacity not including any assessment of the condition of the tower.
2) Member sizes and tower geometry of the outer tower taken from manufacturers drawings prepared by Rohn Industries, Inc., file number 28325, dated December 28, 1992.
3) Member sizes and tower geometry of the inner tower taken from design calculations and drawings prepared by Towertek Industries Inc., signed and sealed May 9, 2002.
4) Foundation modifications taken from drawings prepared by Walker Engineering Incorporated, Job number 0206-237R2, signed and sealed November 26, 2002.
5) Previous structural analysis performed by URS Corporation, project number VZ5-041 / 36931188, signed and sealed August 2, 2010.
6) Tower Mapping and Inventory by Northeast Towers, Inc., climbed November 10, 2011.
7) Antenna inventory as specified in section 2 and 6 of this report.
8) Coax cable orientation as specified in section 6 of this report.

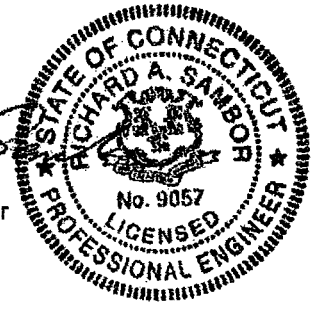
1. **EXECUTIVE SUMMARY** *(continued)*

This report is only valid as per the assumptions and data utilized in this report for antenna inventory, mounts and associated cables. The contractor shall field verify the antenna and mount configuration used, as well as the physical condition of the tower members and connections. The engineer is to be notified in writing immediately if any of the information in the Structural Analysis is found to be other than specified.

If you should have any questions, please call.

Sincerely,

URS Corporation AES



Richard A. Sambor, P.E.
Senior Structural Engineer

RAS/kab

2. INTRODUCTION

The subject tower is located off of Buttemut Hollow Road in Greenwich, Connecticut. The structure is a self-supporting three-legged 180' steel tapered lattice tower manufactured by Rohn Industries with a Stack-N-Bolt system installed inside the original tower, designed by Towertek.

The existing structure supports numerous communication antennas. The inventory is summarized below:

Antenna Mfg.	Carrier	Mount	Elevation	Coax
(1) 20' Dipole	Unknown (existing)	3' Stand-Off	190 / C	(2) 7/8"
(1) 9' Omni (1) TMA	Unknown (existing)	3' Stand-Off	185 / A	(1) 7/8" (2) 1-1/4"
(3) 6' HP Dish	CSP (reserved)	Dish Mount	180 / ABC	N/A
6' HP Dish with Radome	CSP (existing)	Dish Mount	176 / A	(1) EW63
(2) Scala OGT9-806N (1 upright & 1 inverted) (1) TMA	CSP (existing)	3' Stand-Off	176 / B	(1) 1-5/8" (2) 1/2" (2) 3/8"
(2) Scala OGT9-806N (1 upright & 1 inverted)	CSP (existing)	3' Stand-Off	176 / C	(2) 1-5/8"
4' Dipole	Unknown (existing)	*Shared with Above (Omni @ 185)*	170 / A	(1) 7/8"
5' Dish	Greenwich PD (existing)	Dish Mount	170 / B	(1) EW90
(1) 10"x4.6"x4" Panel (1) TMA	Unknown (existing)	3' Arm	169 / A	(2) 1/2" (1) 7/8"
DB-586-Y	Unknown (existing)	Leg Mounted	167 / A	(1) 7/8"
Gabriel GLF6-940	NU (existing)	Dish Mount	163 / A	(1) EW90
(2) 10"x4.6"x4" Panel	Unknown (existing)	(2) 3' Arms	159 / AB	(2) 1-1/4"
(6) Powerwave 7770 (12) TMAs	AT&T (existing)	Side Arm	150 / ABC	(12) 1-5/8"
(3) Powerwave P65-16-XLH-RR (6) Ericsson RRU (1) Raycap Surge Suppressor	**AT&T (Proposed)**	***Shared with Above***	**150 / ABC**	**(1) Fiber Optic Cable (2) DC Cables**
(1) 6' Omni	Unknown (existing)	3' Arm	143 / A	(1) 7/8"
(1) 5' Dipole	Unknown (existing)	Leg Mounted	139 / C	(1) 1-5/8"
(1) 8' Omni	Unknown (existing)	*Shared with Below (Verizon array @ 130)*	137 / B	(1) 7/8"
(3) EMS RR901700DP (6) TMAs	T-Mobile (existing)	Face Mounted	137 / ABC	(6) 1-5/8"
(6) DB 844	Verizon (existing)	Boom Gate	130 / ABC	(12) 1-5/8"
(2) P65-16-XL-2 (1) LNX-6514DS-T4M (3) MG D3-800T0	Verizon (proposed)	Boom Gate *(shared with above)*	130 / ABC	*Shared with above*

Antenna Type	Carrier	Mount	Centerline Elevation / Leg	Cable
(6) DB 980H90E-M	Sprint (existing)	Boom Gate	117 / ABC	(6) 1-5/8"
(1) 12' Omni	Unknown (existing)	3' Arm	115 / A	(1) 7/8"
(1) DB586-Y	Unknown (existing)	3' Arm	105 / A	(1) 7/8"
(1) 6' Omni	Unknown (existing)	3' Arm	85 / A	(1) 7/8"
(1) DB212-C	Unknown (existing)	Leg Mounted	80 / C	(1) 7/8"
GPS	Sprint (existing)	Leg Mounted	62 / B	(1) 1/2"
GPS	Verizon (existing)	Leg Mounted	60 / C	(1) 1/2"
(1) 3' Yagi	Unknown (existing)	Leg Mounted	55 / A	(1) 7/8"

This structural analysis and evaluation of the communications tower was performed by URS Corporation (URS) for AT&T. The purpose of this analysis was to investigate the structural integrity of the existing tower with its existing and proposed antenna loads. The analysis was also conducted to evaluate twist (rotation), sway (deflection), and stress on the tower.

3. ANALYSIS METHODOLOGY AND LOADING CONDITIONS

The structural analysis was done in accordance with the 2005 Connecticut State Building Code, TIA/EIA-222-F---Structural Standard for Steel Antenna Towers and Antenna Supporting Structures, and the American Institute of Steel Construction (AISC) Manual of Steel Construction---Allowable Stress Design (ASD).

The analysis was conducted using PLS-Tower. Two load conditions were evaluated as shown below which were compared to allowable stresses according to AISC and TIA/EIA.

Load Condition 1 = 90 mph (fastest mile) Wind Load + Tower Dead Load
Load Condition 2 = 90 mph (fastest mile) Wind Load (with ice) + Ice Load + Tower Dead Load

The TIA/EIA standard permits one-third increase in allowable stresses for towers and monopoles less than 700 feet tall. For purposes of this analysis, in computing the load capacity the allowable stresses of the tower members were increased by one-third.

4. FINDINGS AND EVALUATION

The stresses on the tower structure were evaluated to compare with the allowable stress in accordance with AISC. The results of the analysis indicate that the tower structure is in compliance with the proposed loading conditions. The anchor bolts and foundation were found to be within allowable limits.

Component	Allowable	Actual
Twist	0.75°	0.10°
Sway		0.75°

Note: During the installation of the Stack-N-Bolt system redundant members were installed which will give additional stiffness to the tower and reduce the twist and sway to a level below the allowable of 0.75 degrees. These members are internal bracing members which connect the new horizontal members.

Location	Component Size	Controlling Component	Ratio	Pass / Fail
Rohn Diagonal	L2x2x3/16	Rohn-DB61	98.21	Pass
Rohn Leg	Pipe6EH	Rohn-LH2P	91.59	Pass
Rohn Horizontal	L1.75x1.75x3/16	RohnH12	13.25	Pass
SNB Diagonal	L5x5x5/8	SNB-DI11	70.14	Pass
SNB Leg	Pipe8XS	SNB-LH2P	92.32	Pass
SNB Horizontal	Pipe4x0.494	SNB-H91	5.76	Pass
Tower Connection	N/A	3/4" Bolt	73.3	Pass
Foundation	36.5' Square	Overturning Moment	50.6	Pass

5. CONCLUSIONS

The results of the analysis indicate that the tower structure is not overstressed with the proposed loading conditions. **The tower and foundation are considered structurally adequate under the TIA/EIA-222-F wind load specified above and the existing and proposed antenna loadings.** The calculated tower sway is 0.75 degrees, and the tower twist is 0.10 degrees. These are above the Connecticut State Police specification of 0.75 degrees for twist and sway, however there are redundant members in the tower not utilized in the analysis which will give additional stiffness and will reduce the twist and sway values below the Connecticut State Police specification.

Limitations/Assumptions:

This report is based on the following:

A. Tower is properly installed and maintained.

B. All members and their geometry are as specified in the original Project File and are in good condition.

C. All required members are in place.

D. All bolts are in place and are properly tightened.

E. Tower is in plumb condition.

F. All member protective coatings are in good condition.

G. All tower members were properly designed, detailed, fabricated, installed, and have been properly maintained since erection.

URS is not responsible for any modifications completed prior to or hereafter in which URS is not or was not directly involved. Modifications include but are not limited to:

A. Adding antennas
B. Removing/replacing antennas
C. Adding coaxial cables

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

Ongoing and Periodic Inspection and Maintenance:

After the Contractor has successfully completed the installation and the work has been accepted, the owner will be responsible for the ongoing and periodic inspection and maintenance of the tower.

The owner shall refer to TIA/EIA-222-F for recommendations for maintenance and inspection. The frequency of the inspection and maintenance intervals is to be determined by the owner based upon actual site and environmental conditions. It is recommended that a complete and thorough inspection of the entire tower structural system be performed at least yearly and more frequently as conditions warrant. According to TIA/EIA-222-F section 14.1, Note 1: It is recommended that the structure be inspected after severe wind and/or ice storms or other extreme loading conditions.

PROJECT INFORMATION

SCOPE OF WORK:	UNMANNED TELECOMMUNICATIONS FACILITY MODIFICATIONS
SITE ADDRESS:	1 BUTTERNUT HOLLOW ROAD GREENWICH, CT 06830
LATITUDE:	41.09697209 N 41° 5' 49.1" N
LONGITUDE:	-73.63585729 W -73° 38' 19.89" W
JURISDICTION:	NATIONAL, STATE & LOCAL CODES OR ORDINANCES
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY
NOC#	866-915-5600

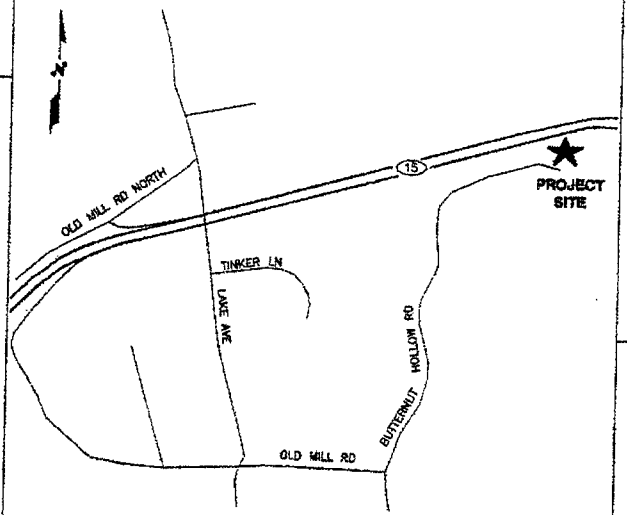
at&t

SITE NUMBER: CT2129
SITE NAME: GREENWICH - EAST

DRAWING INDEX

VICINITY MAP

FROM ROCKY HILL, CT: HEAD NORTHEAST ON ENTERPRISE DR TOWARD CAPITAL BLVD. 0.3 MILES. TURN LEFT AT CAPITAL BLVD. 0.3 MILES. TURN LEFT AT WEST ST. 0.3 MILES. TURN LEFT TO MERGE ONTO I-91 S TOWARD NEW HAVEN. 9.6 MILES. TAKE EXIT 17 FOR CT-15 S/W CROSS PKWY. 0.4 MILES. MERGE ONTO CT-15 S. 59.8 MILES. TAKE EXIT 29 TOWARD LAKE AVE. 348 FT. SHARP RIGHT AT OLD MILL RD N. 0.1 MILES. TURN RIGHT AT LAKE AVE. 0.4 MILES. TAKE THE 2ND LEFT ONTO OLD MILL RD. 0.2 MILES. TURN LEFT AT BUTTERNUT HOLLOW RD. 0.6 MILES.



GENERAL NOTES

1. 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.
2. 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.
3. 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.

72 HOURS

BEFORE YOU DIG

CALL TOLL FREE 800-922-4455

UNDERGROUND SERVICE ALERT

Hudson Design Group LLC
1 BLACKSTONE VALLEY PLACE, SUITE 2-101
LINCOLN, RI 02865
TEL: (978) 557-8553
FAX: (978) 336-5156

SAI Communications
22 KEEWAYDIN DRIVE
SALEM, NH 03079

SITE NUMBER: CT2129
SITE NAME: GREENWICH - EAST

1 BUTTERNUT HOLLOW ROAD
GREENWICH, CT 06830
FAIRFIELD COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK'D
1	04/08/11	ISSUED FOR CONSTRUCTION	JG	DC
0	03/23/11	ISSUED FOR REVIEW	JG	DC

SCALE: AS SHOWN DESIGNED BY: DC DRAWN BY: JG

STATE OF CONNECTICUT — No. 21172 — LICENSED PROFESSIONAL ENGINEER

AT&T

TITLE SHEET (LTE)

JOB NUMBER	DRAWING NUMBER	REV
2129.01	T-1	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) LIGHTING 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 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. 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 – SAI
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 UMTS 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 TRANSCEIVER 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		
EGR	EQUIPMENT GROUND RING	REQ	REQUIRED	TYP	TYPICAL

Hudson Design Group LLC
1600 OSGOOD STREET, BUILDING 20 NORTH, SUITE 3-101, N. ANDOVER, MA 01845
TEL: (978) 557-5553 FAX: (978) 336-5586

SAI Communications
22 KEEWAYDIN DRIVE
SALEM, NH 03079

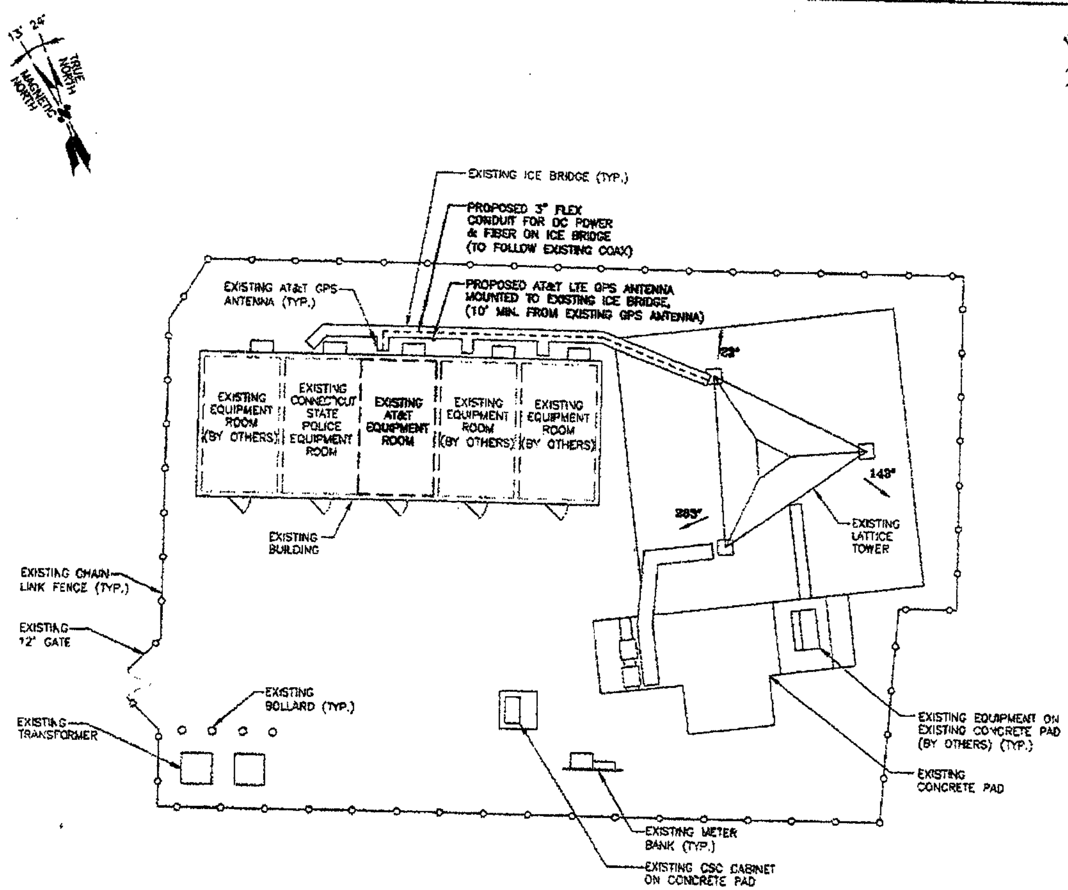
SITE NUMBER: CT2129
SITE NAME: GREENWICH - EAST
1 BUTTERNUT HOLLOW ROAD
GREENWICH, CT 06830
FAIRFIELD COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	04/03/11	ISSUED FOR CONSTRUCTION	JG	DC	DPH
0	03/23/11	ISSUED FOR REVIEW	JG	DC	DPH

SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: JG

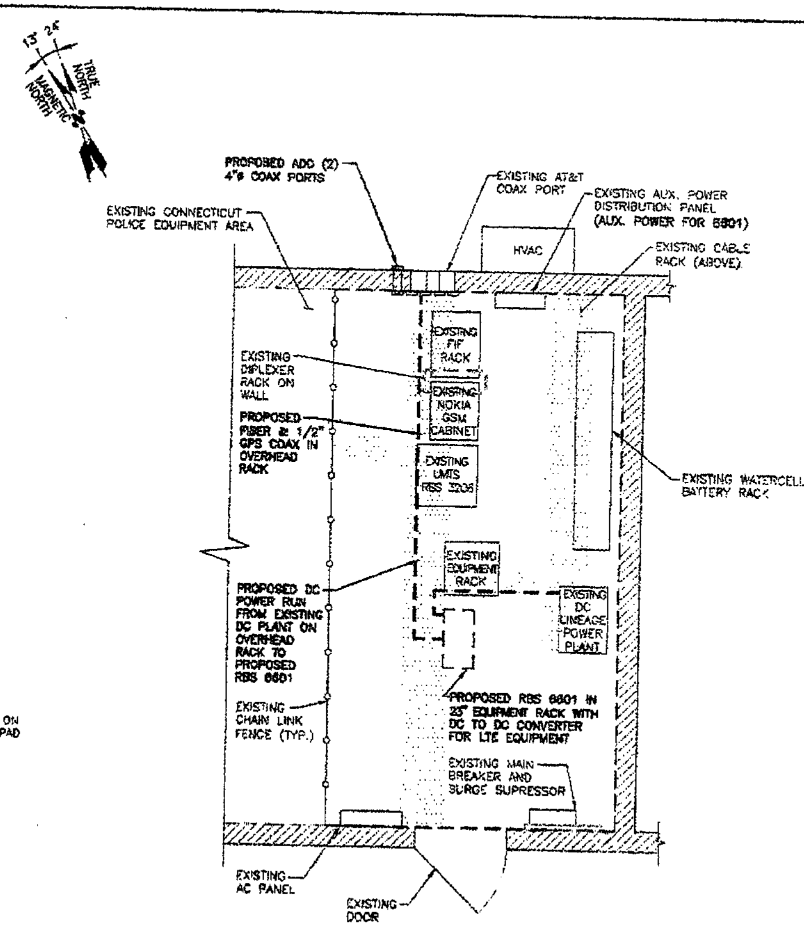
AT&T
GENERAL NOTES (LTE)
JOB NUMBER: 2129.01
DRAWING NUMBER: GN-1
REV: 1


13° 24'
TRUE NORTH
MAGNETIC NORTH
EXISTING ICE BRIDGE (TYP.)
PROPOSED 3" FLEX CONDUIT FOR DC POWER & FIBER ON ICE BRIDGE (TO FOLLOW EXISTING COAX)
EXISTING AT&T GPS ANTENNA (TYP.)
PROPOSED AT&T LTE GPS ANTENNA MOUNTED TO EXISTING ICE BRIDGE, (10' MIN. FROM EXISTING GPS ANTENNA)
23°
EXISTING EQUIPMENT ROOM (BY OTHERS)
EXISTING CONNECTICUT STATE POLICE EQUIPMENT ROOM
EXISTING AT&T EQUIPMENT ROOM
EXISTING EQUIPMENT ROOM (BY OTHERS)
EXISTING EQUIPMENT ROOM (BY OTHERS)
143°
263°
EXISTING LATTICE TOWER
EXISTING BUILDING
EXISTING CHAIN LINK FENCE (TYP.)
EXISTING 12' GATE
EXISTING BOLLARD (TYP.)
EXISTING TRANSFORMER
EXISTING EQUIPMENT ON EXISTING CONCRETE PAD (BY OTHERS) (TYP.)
EXISTING CONCRETE PAD
EXISTING METER BANK (TYP.)
EXISTING CSC CABINET ON CONCRETE PAD

COMPOUND PLAN

SCALE: 1/8"=1'-0"

0 4'-0" 8'-0" 16'-0" 24'-0"


13° 24'
TRUE NORTH
MAGNETIC NORTH
PROPOSED ADC (2) 4"ø COAX PORTS
EXISTING AT&T COAX PORT
EXISTING AUX. POWER DISTRIBUTION PANEL (AUX. POWER FOR 6601)
EXISTING CONNECTICUT POLICE EQUIPMENT AREA
HVAC
EXISTING CABLE RACK (ABOVE)
EXISTING DIPLEXER RACK ON WALL
EXISTING FIF RACK
EXISTING NOKIA GSM CABINET
PROPOSED FIBER & 1/2" GPS COAX IN OVERHEAD RACK
EXISTING UMTS RBS 3206
EXISTING WATERCELL BATTERY RACK
EXISTING EQUIPMENT RACK
PROPOSED DC POWER RUN FROM EXISTING DC PLANT ON OVERHEAD RACK TO PROPOSED RBS 6601
EXISTING DC LINEAGE POWER PLANT
PROPOSED RBS 6601 IN 23" EQUIPMENT RACK WITH DC TO DC CONVERTER FOR LTE EQUIPMENT
EXISTING CHAIN LINK FENCE (TYP.)
EXISTING MAIN BREAKER AND SURGE SUPRESSOR
EXISTING AC PANEL
EXISTING DOOR

EQUIPMENT PLAN

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

0 1'-0" 2'-0" 4'-0" 6'-0"

Hudson Design Group LLC

1600 OSGOOD STREET, BUILDING 20 NORTH, SUITE 3-101, N. ANDOVER, MA 01845 — TEL: (978) 557-5553 FAX: (978) 336-5586

SAI communications

22 KEEWAYDIN DRIVE
SALEM, NH 03079

SITE NUMBER: CT2129
SITE NAME: GREENWICH - EAST

1 BUTTERNUT HOLLOW ROAD
GREENWICH, CT 06830
FAIRFIELD COUNTY

at&t

500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	04/05/11	ISSUED FOR CONSTRUCTION			
0	03/23/11	ISSUED FOR REVIEW	JC	DC	DPH

SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: JO

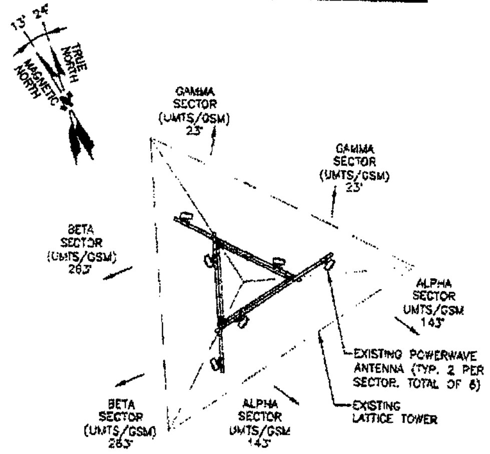
AT&T

COMPOUND PLAN (LTE)

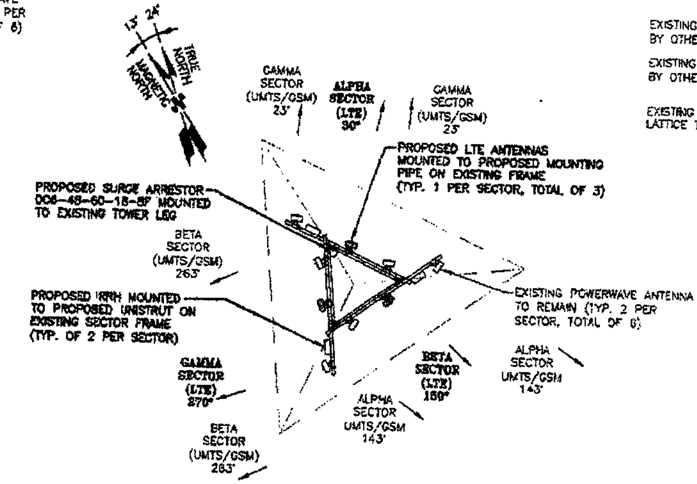
JOB NUMBER: 2129.01 | DRAWING NUMBER: A-1 | REV: 1

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

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

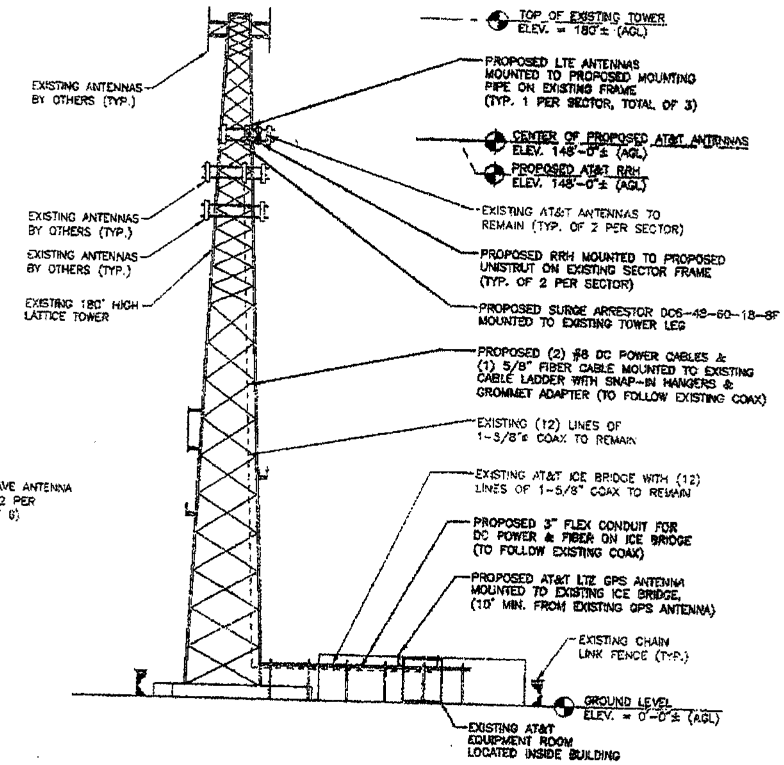


EXISTING ANTENNA PLAN
SCALE: N.T.S.



13° 24'
TRUE NORTH
MAGNETIC NORTH
GAMMA SECTOR (UMTS/GSM) 23°
ALPHA SECTOR (LTE) 30°
PROPOSED LTE ANTENNAS MOUNTED TO PROPOSED MOUNTING PIPE ON EXISTING FRAME (TYP. 1 PER SECTOR, TOTAL OF 3)
PROPOSED SURGE ARRESTOR DC6-48-60-18-8F MOUNTED TO EXISTING TOWER LEG
BETA SECTOR (UMTS/GSM) 263°
PROPOSED RRH MOUNTED TO PROPOSED UNISTRUT ON EXISTING SECTOR FRAME (TYP. OF 2 PER SECTOR)
EXISTING POWERWAVE ANTENNA TO REMAIN (TYP. 2 PER SECTOR, TOTAL OF 6)
GAMMA SECTOR (LTE) 270°
BETA SECTOR (LTE) 150°
ALPHA SECTOR UMTS/GSM 143°

PROPOSED ANTENNA PLAN
SCALE: N.T.S.



TOP OF EXISTING TOWER ELEV. = 180'± (AGL)
EXISTING ANTENNAS BY OTHERS (TYP.)
PROPOSED LTE ANTENNAS MOUNTED TO PROPOSED MOUNTING PIPE ON EXISTING FRAME (TYP. 1 PER SECTOR, TOTAL OF 3)
CENTER OF PROPOSED AT&T ANTENNAS ELEV. 148'-0"± (AGL)
PROPOSED AT&T RRH ELEV. 148'-0"± (AGL)
EXISTING AT&T ANTENNAS TO REMAIN (TYP. OF 2 PER SECTOR)
EXISTING ANTENNAS BY OTHERS (TYP.)
EXISTING ANTENNAS BY OTHERS (TYP.)
PROPOSED RRH MOUNTED TO PROPOSED UNISTRUT ON EXISTING SECTOR FRAME (TYP. OF 2 PER SECTOR)
EXISTING 180' HIGH LATTICE TOWER
PROPOSED SURGE ARRESTOR DC6-48-60-18-8F MOUNTED TO EXISTING TOWER LEG
PROPOSED (2) #8 DC POWER CABLES & (1) 5/8" FIBER CABLE MOUNTED TO EXISTING CABLE LADDER WITH SNAP-IN HANGERS & GROMMET ADAPTER (TO FOLLOW EXISTING COAX)
EXISTING (12) LINES OF 1-5/8"± COAX TO REMAIN
EXISTING AT&T ICE BRIDGE WITH (12) LINES OF 1-5/8" COAX TO REMAIN
PROPOSED 3" FLEX CONDUIT FOR DC POWER & FIBER ON ICE BRIDGE (TO FOLLOW EXISTING COAX)
PROPOSED AT&T LTE GPS ANTENNA MOUNTED TO EXISTING ICE BRIDGE, (10' MIN. FROM EXISTING GPS ANTENNA)
EXISTING CHAIN LINK FENCE (TYP.)
GROUND LEVEL ELEV. = 0'-0"± (AGL)
EXISTING AT&T EQUIPMENT ROOM LOCATED INSIDE BUILDING

NORTH ELEVATION
SCALE: 1/16"=1'-0"
0 8'-0" 16'-0" 32'-0" 48'-0"

Hudson Design Group LLC

SAI communications
22 KEEWAYDIN DRIVE
SALEM, NH 03079

SITE NUMBER: CT2129
SITE NAME: GREENWICH - EAST
1 BUTTERNUT HOLLOW ROAD
GREENWICH, CT 06830
FAIRFIELD COUNTY

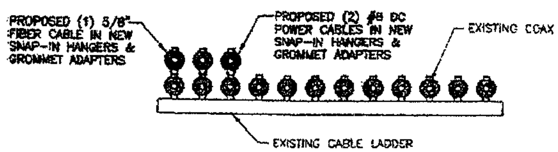
at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	04/03/11	ISSUED FOR CONSTRUCTION			
0	03/23/11	ISSUED FOR REVIEW	JG	DC	DPH

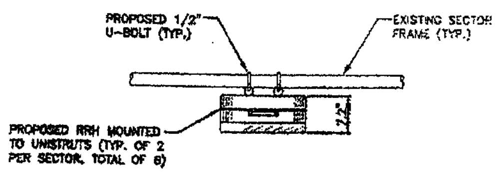
SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: JG

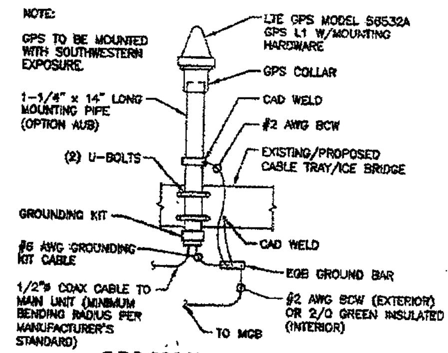
AT&T
ANTENNA LAYOUT AND ELEVATION (LTE)

JOB NUMBER	DRAWING NUMBER	REV
2129.01	A-2	1

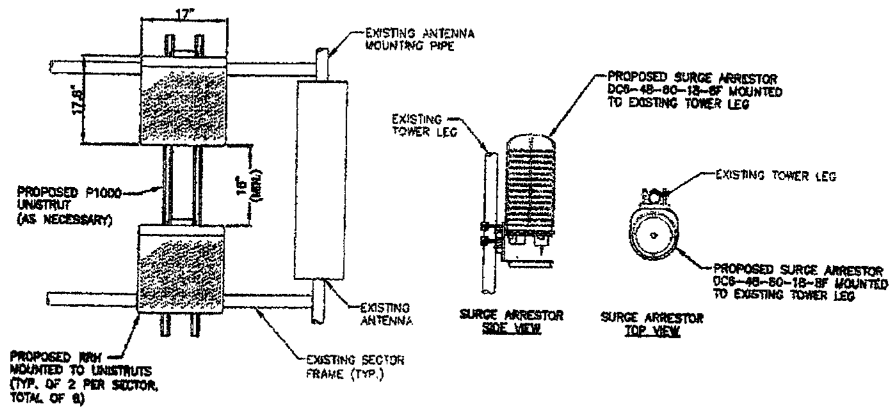


CABLE MOUNTING DETAIL
SCALE: N.T.S.

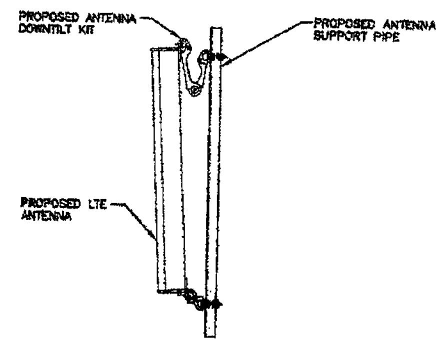



NOTE:
GPS TO BE MOUNTED WITH SOUTHWESTERN EXPOSURE.
LTE GPS MODEL S6532A GPS L1 W/MOUNTING HARDWARE
GPS COLLAR
1-1/4" x 14" LONG MOUNTING PIPE (OPTION AUS)
CAD WELD
#2 AWG BCW
(2) U-BOLTS
EXISTING/PROPOSED CABLE TRAY/ICE BRIDGE
GROUNDING KIT
CAD WELD
#6 AWG GROUNDING KIT CABLE
EGB GROUND BAR
1/2"ø COAX CABLE TO MAIN UNIT (MINIMUM BENDING RADIUS PER MANUFACTURER'S STANDARD)
#2 AWG BCW (EXTERIOR) OR 2/0 GREEN INSULATED (INTERIOR)
TO MGB

GPS MOUNTED TO CABLE TRAY/ICE BRIDGE
SCALE: N.T.S.


17"
17.6"
16" (MIN.)
EXISTING ANTENNA MOUNTING PIPE
PROPOSED P1000 UNISTRUT (AS NECESSARY)
EXISTING ANTENNA
PROPOSED RRH MOUNTED TO UNISTRUTS (TYP. OF 2 PER SECTOR, TOTAL OF 6)
EXISTING SECTOR FRAME (TYP.)
EXISTING TOWER LEG
PROPOSED SURGE ARRESTOR DC6-48-60-18-8F MOUNTED TO EXISTING TOWER LEG
SURGE ARRESTOR SIDE VIEW
EXISTING TOWER LEG
PROPOSED SURGE ARRESTOR DC6-48-60-18-8F MOUNTED TO EXISTING TOWER LEG
SURGE ARRESTOR TOP VIEW

PROPOSED RRH & SURGE ARRESTOR MOUNTING DETAIL
SCALE: N.T.S.



PROPOSED ANTENNA DETAIL
SCALE: 1" = 1'-0"
0 0'-6" 1'-0" 2'-0" 3'-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

SAI communications
22 KEEWAYDIN DRIVE
SALEM, NH 03079

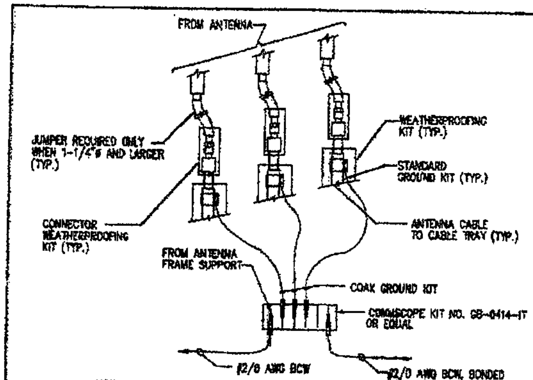
SITE NUMBER: CT2129
SITE NAME: GREENWICH - EAST
1 BUTTERNUT HOLLOW ROAD
GREENWICH, CT 06830
FAIRFIELD COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	04/25/11	ISSUED FOR CONSTRUCTION			
0	03/25/11	ISSUED FOR REVIEW	JG	DC	DPH

SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: JG

AT&T
ANTENNA LAYOUT AND ELEVATION (LTE)
JOB NUMBER: 2129.01
DRAWING NUMBER: A-2
REV: 1



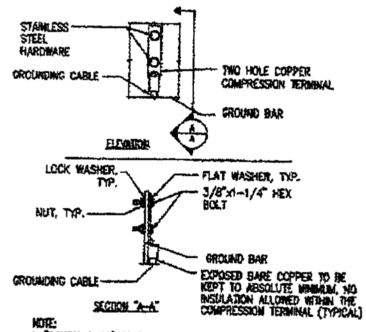
FROM ANTENNA
JUMPER REQUIRED ONLY WHEN 1-1/4"ø AND LARGER (TYP.)
CONNECTOR WEATHERPROOFING KIT (TYP.)
FROM ANTENNA FRAME SUPPORT
WEATHERPROOFING KIT (TYP.)
STANDARD GROUND KIT (TYP.)
ANTENNA CABLE TO CABLE TRAY (TYP.)
COAX GROUND KIT
COMMSCOPE KIT NO. GB-0414-IT OR EQUAL
#2/0 AWG BCW
#2/0 AWG BCW, BONDED TO GROUND WIRE ALONG CABLE TRAY TO CIGBE/MIGB

NOTE:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE.

1 GROUND WIRE TO GROUND BAR CONNECTION DETAIL

N.T.S.



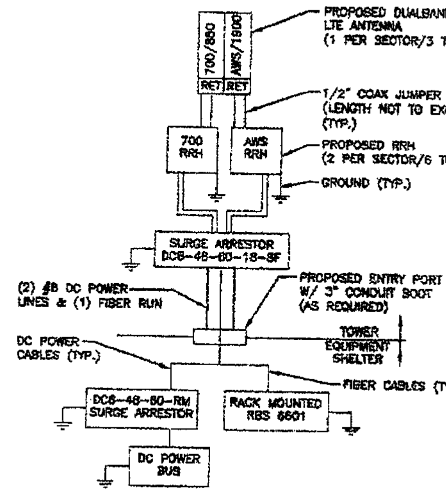
STAINLESS STEEL HARDWARE
GROUNDING CABLE
TWO HOLE COPPER COMPRESSION TERMINAL
GROUND BAR
ELEVATION
LOCK WASHER, TYP.
NUT, TYP.
FLAT WASHER, TYP.
3/8"x1-1/4" HEX BOLT
GROUND BAR
GROUNDING CABLE
EXPOSED BARE COPPER TO BE KEPT TO ABSOLUTE MINIMUM, NO INSULATION ALLOWED WITHIN THE COMPRESSION TERMINAL (TYPICAL)
SECTION "A-A"

NOTE:

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

2 TYPICAL GROUND BAR CONNECTION DETAIL

N.T.S.



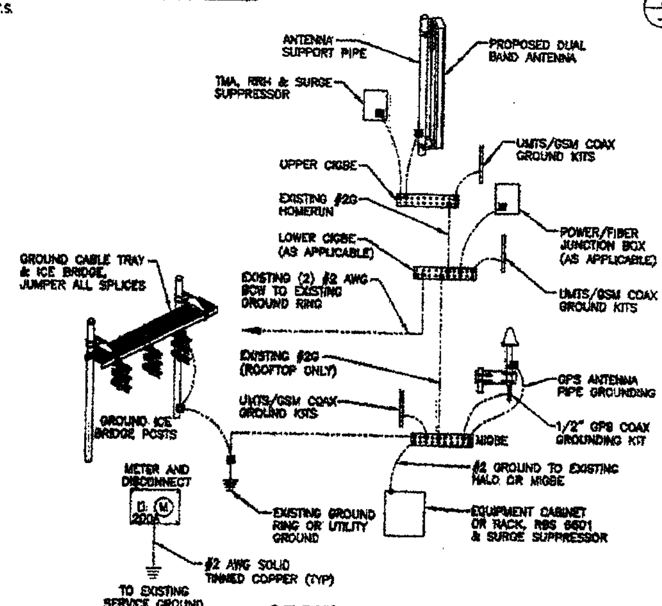
700/850
AWS/1900
RET
RET
PROPOSED DUALBAND LTE ANTENNA (1 PER SECTOR/3 TOTAL)
1/2" COAX JUMPER (LENGTH NOT TO EXCEED 25") (TYP.)
700 RRH
AWS RRH
PROPOSED RRH (2 PER SECTOR/6 TOTAL)
GROUND (TYP.)
SURGE ARRESTOR DC6-48-60-18-8F
(2) #8 DC POWER LINES & (1) FIBER RUN
PROPOSED ENTRY PORT W/ 3" CONDUIT BOOT (AS REQUIRED)
TOWER
EQUIPMENT SHELTER
DC POWER CABLES (TYP.)
FIBER CABLES (TYP.)
DC6-48-60-RM SURGE ARRESTOR
RACK MOUNTED RBS 6601
DC POWER BUS

NOTES:

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

3 PLUMBING DIAGRAM

N.T.S.

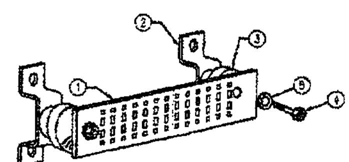


ANTENNA SUPPORT PIPE
PROPOSED DUAL BAND ANTENNA
TMA, RRH & SURGE SUPPRESSOR
UMTS/GSM COAX GROUND KITS
UPPER CIGBE
EXISTING #2G HOMERUN
POWER/FIBER JUNCTION BOX (AS APPLICABLE)
LOWER CIGBE (AS APPLICABLE)
GROUND CABLE TRAY & ICE BRIDGE, JUMPER ALL SPLICES
EXISTING (2) #2 AWG BCW TO EXISTING GROUND RING
UMTS/GSM COAX GROUND KITS
EXISTING #2G (ROOFTOP ONLY)
GPS ANTENNA PIPE GROUNDING
UMTS/GSM COAX GROUND KITS
1/2" GPS COAX GROUNDING KIT
GROUND ICE BRIDGE POSTS
MIGBE
METER AND DISCONNECT
200A
#2 GROUND TO EXISTING HALO OR MIGBE
EXISTING GROUND RING OR UTILITY GROUND
EQUIPMENT CABINET OR RACK, RBS 6601 & SURGE SUPPRESSOR
#2 AWG SOLID TINNED COPPER (TYP)
TO EXISTING SERVICE GROUND

4 GROUNDING RISER DIAGRAM

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



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)

5 GROUND BAR - DETAIL

N.T.S.

Hudson Design Group LLC
1600 OSGOOD STREET, BUILDING 20 NORTH SUITE 3-101, N. ANDOVER, MA 01845
TEL: (978) 557-5553 FAX: (978) 336-5586

SAI Communications
22 KEEWAYDIN DRIVE
SALEM, NH 03079

SITE NUMBER: CT2129
SITE NAME: GREENWICH - EAST

1 BUTTERNUT HOLLOW ROAD
GREENWICH, CT 06830
FAIRFIELD COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	04/05/11	ISSUED FOR CONSTRUCTION			
0	03/23/11	ISSUED FOR REVIEW	JG	DC	DPH

SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: JG

AT&T
PLUMBING DIAGRAM & DETAILS (LTE)
JOB NUMBER: 2129.01
DRAWING NUMBER: G-1
REV: 1

STATE OF CONNECTICUT · No. 24173 · LICENSED PROFESSIONAL ENGINEER

P65-16-XLH-RR | Dual Broadband Antennas

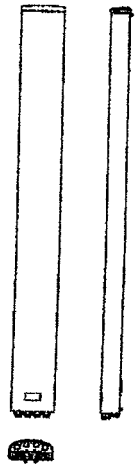
POLARIZATION: Dual linear ±45°
FREQUENCY (MHz): 698-894, 1710-2170
HORIZONTAL BEAM WIDTH (°): 65, 65
GAIN (dBi/dBd): 15.5/13.4 17.5/15.4
TILT: 1-12, 0-8
LENGTH: 72"

ELECTRICAL SPECIFICATIONS*

	698-894		1710-2170		
Frequency range (MHz)	698-806	806-894	1710-1880	1850-1990	1900-2170
Frequency band (MHz)	698-806	806-894	1710-1880	1850-1990	1900-2170
Gain (dBi/dBd)	14.8/12.7	15.5/13.4	16.9/14.8	17.2/15.1	17.5/15.4
Polarization	Dual Linear +/- 45			Dual Linear +/- 45	
Nominal Impedance (Ω)	50			50	
VSWR	< 1.5:1			< 1.5:1	
Horizontal beam width, -3 dB (°)	66	65	60	63	63
Vertical beam width, -3 dB (°)	14.7	12.5	6.8	6.4	5.7
Electrical down tilt (°)	1 to 12			0 to 8	
Side lobe suppression, vertical 1st upper (dB)	> 16	>16	> 16		
	>16	>16			
Isolation between inputs (dB)	> 30	> 30	> 30	> 30	
Inter band isolation (dB)	> 40			> 40	
Tracking, horizontal plane ±60° (dB)	< 2		< 2	< 2	< 2
First null fill (dB)			>-20	>-20	>-20
Vertical beam squint (°)	< 0.8	< 0.8	< 0.5	< 0.5	< 0.5
Front to back ratio (dB) 180°±30° copolar	>24	>24	> 30	>30	>28
Front to back ratio (dB) 180°±30° total power					
Cross polar discrimination (XPD) 0° (dB)	> 15	> 15	> 15	> 15	> 15
Cross polar discrimination (XPD) ±60° (dB)	> 10	> 10	> 10	> 10	> 10
Far field coupling					
IM3, 2xTx@43dBm (dBc)	<-153			<-153	
IM7, 2xTx@43dBm (dBc)					
Power handling, average per input (W)	500			250	
Power handling, average total (W)	1000			500	

MECHANICAL SPECIFICATIONS*

Connector	4 X 7/16 DIN Female, IP67
Connector position	Bottom
Dimensions, HxWxD, mm (ft)	72" x 12" x 6" (1829 x 305 x 152)
Mounting	Pre-mounted Tilt Brackets
Weight, with brackets, kg (lbs)	29 (64)
Weight, without brackets, kg (lbs)	24 (53)
Wind load, frontal/lateral/rear side 42 m/s Cd=1.6 (N)	1380
Maximum operational wind speed, m/s (mph)	100 (45)
Survival wind speed, m/s (mph)	150 (67)
Lightning protection	DC Ground
Operating Temperature	-40C to +60C
Radome material	PVC, IP55
Packet size, HxWxD, mm (ft)	87" x 16" x 10" (2225 x 400 x 225)
Radome colour	Light Grey
Shipping weight, kg (lbs)	34 (75)
RET	iRET AISGv1.1, MET and AISGv2.0
Brackets	7258.00, 7454.00A



*All specifications subject to change without notice. Please contact your Powerwave representative for complete performance data.

ANTENNA PATTERNS*

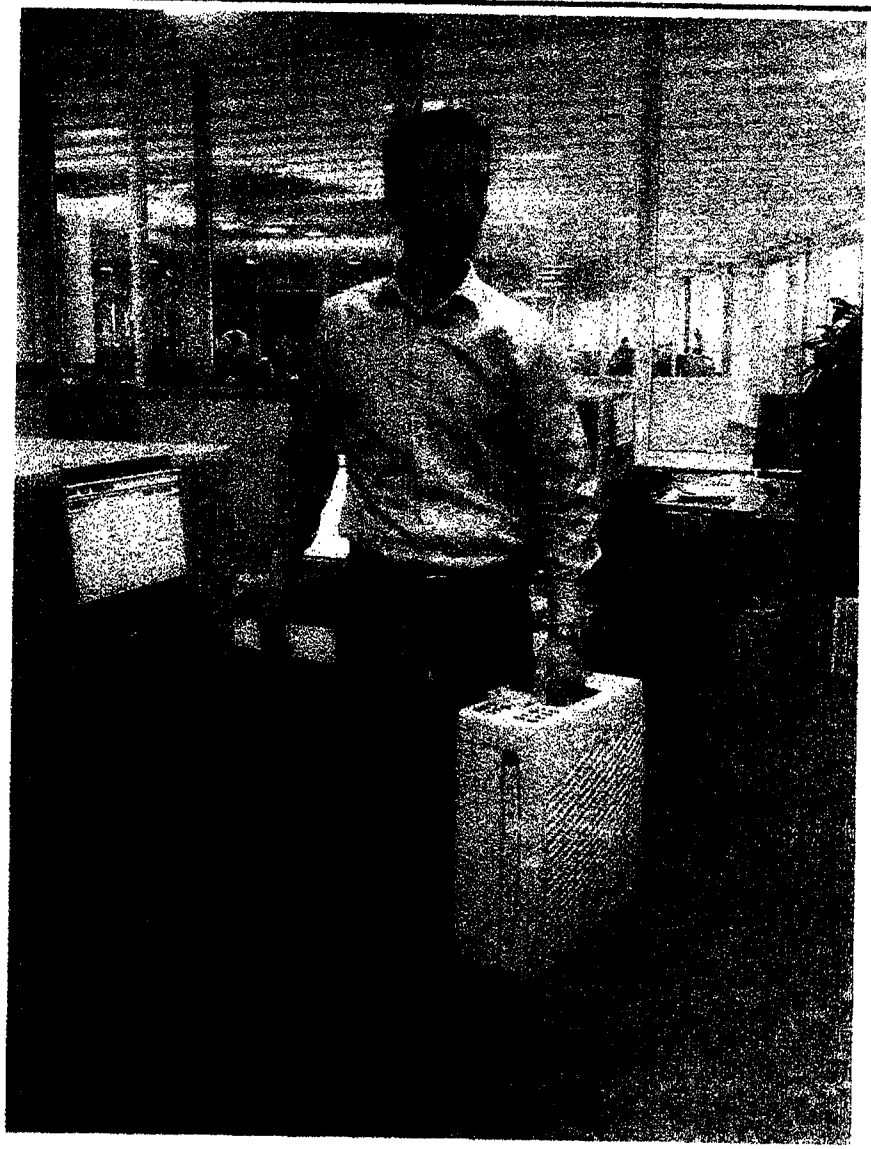
For detailed patterns visit http://www.powerwave.com/rpa/.

RRUS 11 – Dual PA RRU.

Technical Data

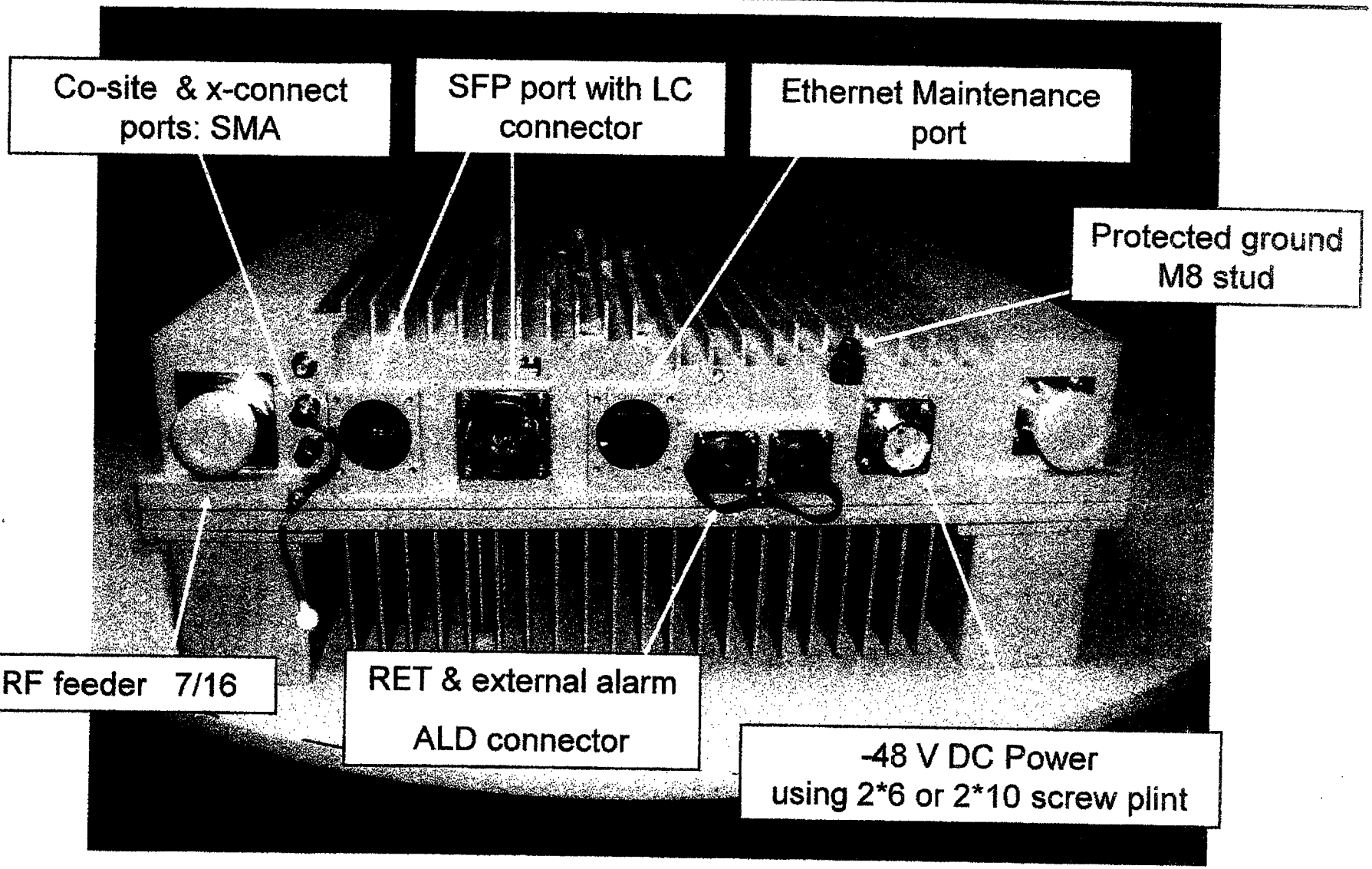
RBS6000

- Multi standard
- RF: 2x30 Watts
- Carrier BW: 1.4 – 20 MHz
- Alarms: 2
- Dimensions (with sunshield):
  - Width: 17.0 in
  - Height: 17.8 in
  - Depth: 7.2 in
  - Weight: 55 lbs (Band 12)
  - Weight: 50 lbs (Band 4)
- Temperature: -40 to +131 F
- Cooling: Self convection
- Power: -48 VDC
- Rec. fuse size 20 Amp
  - Rec. DC cable:
    - 6 mm^2 up to 60 meters
    - 10 mm^2 over 60 meters
    - Shielded
- Power Cons: 200 Watts typ.



RRUS-11 I/F

RBS6000



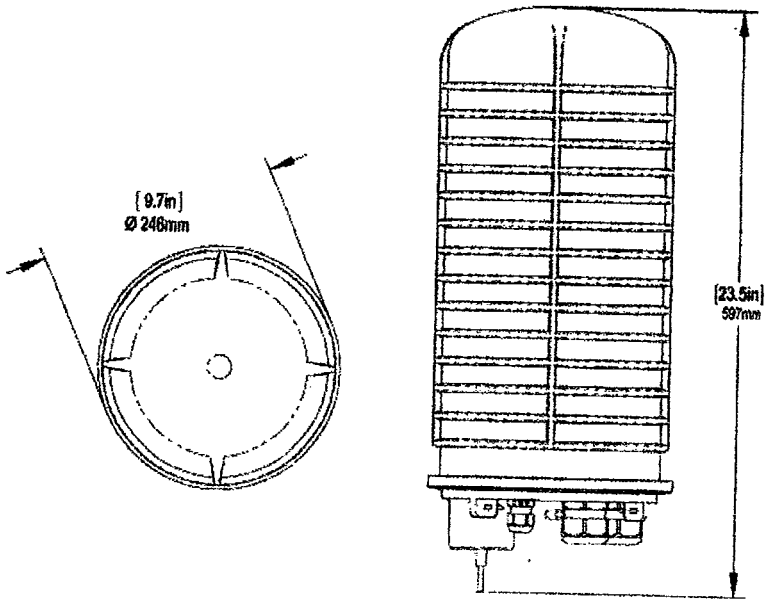
DC6-48-60-18-8F

DC Surge Suppression Solution

The DC6-48-60-18 is a dual chambered, DC surge suppression system for use in multi-circuit, Distributed Antenna Systems. The system will protect up to 6 Remote Radio Heads from voltage surges and lightning, and connect up to 18 fiber pairs. The system is enclosed in a NEMA 4 rated, waterproof enclosure.

FEATURES

- Protects up to 6 Remote Radio Heads, each with its own protection circuit.
- Flexible design allows for installation at the top of a tower for Remote Radio Head protection.
- Includes fiber connections for up to 18 pairs of fiber.
- LED indicators on individual circuits provide visual indication of suppressor status.
- Form 'C' relays allow for remote monitoring of the suppressor status.
- Patented Strikesorb technology provides over 60 kA of surge current capacity per circuit.
- Strikesorb suppression modules are fully recognized to UL 1449-3rd Edition Safety Standard, meeting all intermediate and high current fault requirements to facilitate use in OEM applications.
- Raycap recommends that DC protection system be installed within 2 meters or 6 feet of the radio.
- Dome design is lightweight and aerodynamic providing maximum flexibility for installation on top of towers.



Phone 208.777.1166 Toll Free 800.890.2569 Fax 208.777.4466 www.raycapsurgeprotection.com

DC6-48-60-18-8F

DC Power Surge Protection

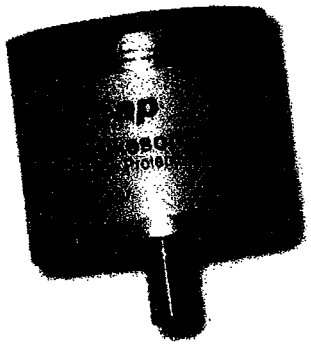
Electrical Specifications	
Model Number	DC6-48-60-18-8F
Nominal Operating Voltage	48 VDC
Nominal Discharge Current (I_n)	20 kA 8/20 µs
Maximum Discharge Current (I_{max}) per NEMA LS-1	60 kA 8/20 µs
Maximum Continuous Operating Voltage (U_c)	75 VDC
Voltage Protection Rating	400 V

Mechanical Specifications	
Suppression Connection Method	Compression lug, #2-#14 AWG Copper, #2-#12 Aluminum
Fiber Connection Method	LC-LC Single mode duplex
Environmental Rating	IP 68, 7m 72hrs
Operating Temperature	-40° C to + 80° C
Storage Temperature	-70° C to + 80° C
Cold Temperature Cycling	IEC 61300-2-22e -30° C to + 60° C 200 hrs @ 5 psi
Resistance to Aggressive Materials	CEI IEC 61073-2 including acids and bases
UV Protection	ISO 4892-2 Method A Xenon-Arc 2160 hrs
Weight	20 lbs without Mounting Bracket

STANDARDS

Strikesorb modules are compliant to the following Surge Protection Device (SPD) Standards:

- ANSI/UL 1449 – 3rd Edition
- IEEE C62.41
- NEMA LS-1, IEC 61643-1:2005 2nd Edition:2005
- IEC 61643-12
- EN 61643-11:2002 (including A11:2007)



GS-07F-0435V

Certified to ISO 9001:2000

TÜV Rheinland of North America

Raycap

G02-00-068 REV 050610

Raycap, Inc. 806 W. Clearwater Loop • Post Falls • Idaho • 83854 • USA
Phone 208.777.1166 • Toll Free 800.890.2569 • Fax 208.777.4466 • www.raycapsurgeprotection.com

New Cingular Wireless PCS, LLC
500 Enterprise Drive
Rocky Hill, Connecticut 06067-3900
Phone: (860) 463-5511
Fax: (860) 513-7190

Douglas L. Culp
Real Estate Consultant

November 23, 2011

Honorable Peter Tesei
1st Selectman, Town of Greenwich
Greenwich Town Hall
101 Field Point Road
Greenwich, CT 06830

Re: Telecommunications Facility – 1 Butternut Hollow Road Greenwich, CT

Dear Selectman Tesei:

In order to accommodate technological changes, implement Uniform Mobile Telecommunications System ("UMTS") and Long Term Evolution ("LTE") capabilities, and enhance system performance in the State of Connecticut, New Cingular Wireless PCS, LLC ("AT&T") 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 AT&T'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 Cingular'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 (860) 463-5511 or Ms. Linda Roberts, Executive Director, Connecticut Siting Council at (860) 827-2935.

Sincerely,

Douglas L. Culp
Real Estate Consultant

Enclosure

DETAILED STRUCTURAL ANALYSIS AND EVALUATION OF 180' SELF SUPPORTING LATTICE TOWER WITH STACK-N-BOLT SYSTEM AND FOUNDATION FOR NEW ANTENNA ARRANGEMENT

Sprint Site No.: CT03XC343
Connecticut State Police #74
Butternut Hollow Road
Greenwich, Connecticut

prepared for

Sprint

1 International Blvd.
Suite 800
Mahwah, NJ. 07495

prepared by

URS

URS CORPORATION
500 ENTERPRISE DRIVE, SUITE 3B
ROCKY HILL, CT 06067
TEL. 860-529-8882

36917365.00000
HPC-051

October 2, 2012

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

This report summarizes the structural analysis and evaluation of the 180' lattice tower located off of Butternut Hollow Road in Greenwich, Connecticut. The analysis was conducted in accordance with the 2005 Connecticut State Building Code, the TIA/EIA-222-F standard and additional requirements of the Connecticut State Police for wind velocity of 90 mph concurrent with ½" ice design wind load. The antenna loading considered in the analysis consists of all existing and proposed antennas, transmission lines, and ancillary items as outlined in the Introduction Section of this report. The proposed Sprint installation is as follows:

Proposed Antenna and Mount	Carrier	Antenna Center Elevation
Remove		
(6) DB 980H90E-M	**Sprint**	
(6) 1-5/8" Coaxial Cables	**(Existing)**	
		117'
Install		
(3) APXVSPP18-C Panel Antennas	**Sprint**	
(6) RRH	**(Proposed)**	
(3) Hybriflex Cables		

The results of this analysis indicate that the existing tower structure has sufficient capacity to support the proposed loading conditions without modification. **The tower and its foundation are considered structurally adequate under the wind load specified above and the existing and proposed antenna loadings.** The twist and sway of the tower is considered within the Connecticut State Police requirements.

This analysis is based on:

1) The tower structure's theoretical capacity not including any assessment of the condition of the tower.
2) Member sizes and tower geometry of the outer tower taken from manufacturers drawings prepared by Rohn Industries, Inc., file number 28325, dated December 28, 1992.
3) Member sizes and tower geometry of the inner tower taken from design calculations and drawings prepared by Towertek Industries Inc., signed and sealed May 9, 2002.
4) Foundation modifications taken from drawings prepared by Walker Engineering Incorporated, Job number 0206-237R2, signed and sealed November 26, 2002.
5) Previous structural analysis performed by URS Corporation, project number VZ5-041 / 36931188, signed and sealed August 2, 2010.
6) Previous structural analysis performed by URS Corporation, project number SAI067 (Rev 3) / 36924454, signed and sealed January 27, 2012.
7) Tower Mapping and Inventory by Northeast Towers, Inc., climbed November 10, 2011.
8) Proposed Sprint inventory from Sprint RFDS dated May 22, 2012 and "Final Antenna Plan", detail 1, drawing A-4 dated June 20, 2012 from Salient Architecs, LLC.
9) Antenna inventory provided by the Connecticut State Police via email on July 31, 2012.
10) Antenna inventory as specified in section 2 and 6 of this report.
11) Coax cable orientation as specified in section 6 of this report.

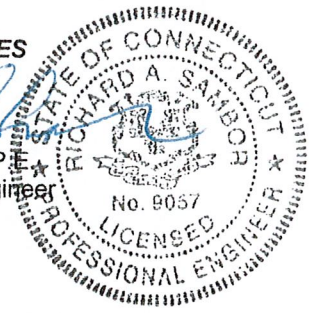
1. **EXECUTIVE SUMMARY** *(continued)*

This report is only valid as per the assumptions and data utilized in this report for antenna inventory, mounts and associated cables. The contractor shall field verify the antenna and mount configuration used, as well as the physical condition of the tower members and connections. The engineer is to be notified in writing immediately if any of the information in the Structural Analysis is found to be other than specified.

If you should have any questions, please call.

Sincerely,

URS Corporation AES



Richard A. Sambor, P.E.
Senior Structural Engineer

RAS/kab

2. INTRODUCTION

The subject tower is located off of Butternut Hollow Road in Greenwich, Connecticut. The structure is a self-supporting three-legged 180' steel tapered lattice tower manufactured by Rohn Industries with a Stack-N-Bolt system installed inside the original tower, designed by Towertek.

The existing structure supports numerous communication antennas. The inventory is summarized below:

Antenna Type	*Carrier*	*Mount*	*Centerline Elevation / Leg*	*Cable*
(3) 6' HP Dish	CSP 74 to 76 (reserved)	Dish Mount	180 / ABC	N/A
(1) PD-420	NEU – 55 (existing)	3' Stand-Off	180 / A	(1) 7/8"
(1) DB-583	TOG – 5 (existing)	*Shared with Above*	180 / A	(1) 1-5/8"
(2) Scala OGT9-806N (1 upright & 1 inverted)	CSP - 1 & 2 (existing)	3' Stand-Off	180 / B	(2) 1-5/8"
(2) Sinclair SC479-HF1LDF (1 upright & 1 inverted) (1) TMA	CSP 3, 4 & 73 (existing)	3' Stand-Off	180 / C	(2) 1-5/8" (1) 1/2"
(1) PD-420	NEU – 20 (existing)	*Shared with Above (Omni @ 180)*	178 / A	(1) 7/8"
4' Dipole	CSP - 8 (existing)	*Shared with Above (Omni @ 180)*	178 / A	(1) 7/8"
6' HP Dish with Radome	TOG – 7 (existing)	Dish Mount	177 / B	(1) Elliptical Cable
(1) ANT900D69 Dipole	CSP – 67 (existing)	Leg Mount	176 / C	(1) 1-5/8"
6' Dish	CSP – 31 (existing)	Dish Mount	176 / A	(1) WEP65
DB-586-Y	TOG - 6 (existing)	Leg Mounted	174 / A	(1) 1-5/8"
(1) AP1185	Stamford 63 (existing)	3' Arm	165 / A	(1) 1-1/4"
(1) AP1185 (1) TMA	Stamford 64 & 65 (existing)	3' Arm	160 / A	(1) 1-1/4" (1) 3/8"
Gabriel GLF6-940	SPD - 9 (existing)	Dish Mount	160 / A	(1) EW90
(3) Sinclair SC-479-HF1LDF (1) TMA	CSP 69 to 72 (existing)	3' Stand-Off	160	(3) 1-5/8" (1) 1/2"
(6) Powerwave 7770 (12) TMAs (3) Powerwave P65-16-XLH-RR (6) Ericsson RRU (1) Raycap Surge Suppressor	AT&T (existing)	Side Arm	150 / ABC	(12) 1-5/8" (1) Fiber Optic Cable (2) DC Cables
(3) EMS RR901700DP (6) TMAs	T-Mobile (existing)	Face Mounted	137 / ABC	(6) 1-5/8"

Antenna Type	Carrier	Mount	Centerline Elevation / Leg	Cable
(1) Celwave PD1142 (1) DB-586Y	NEU – 16 & 19 (existing)	*Shared with Above*	135 / B	(1) 1-5/8" (1) 7/8"
(1) Kreco CO41AN	NEU – 18 (existing)	*Shared with Above*	130 / A	(1) 7/8"
(6) DB 844 (2) P65-16-XL-2 (1) LNX-6514DS-T4M (3) MG D3-800T0	Verizon (existing)	Boom Gate	130 / ABC	(12) 1-5/8"
(3) APXVSPP18-C Panel Antennas (6) RRH	**Sprint (proposed)**	**Boom Gate (existing)**	**117 / ABC**	**(3) Hybriflex Cables**
(1) PD1142	NEU – 16 (existing)	Leg Mounted	110 / A	(1) 1-5/8"
(1) PD1142	CSP – 66 (existing)	Leg Mounted	80 / A	(1) 7/8"
(1) 10' Dipole	DOT – 56 (existing)	3' Arm	80 / B	(1) 7/8"
(1) PD-1142	DEP – 54 (existing)	Leg Mounted	80 / C	(1) 7/8"
GPS	GPS (existing)	Leg Mounted	60 / B	(1) 1/2"
GPS	GPS (existing)	Leg Mounted	60 / C	(1) 1/2"

This structural analysis and evaluation of the communications tower was performed by URS Corporation AES (URS) for Sprint. The purpose of this analysis was to investigate the structural integrity of the existing tower with its existing and proposed antenna loads. The analysis was also conducted to evaluate twist (rotation), sway (deflection), and stress on the tower.

3. ANALYSIS METHODOLOGY AND LOADING CONDITIONS

The structural analysis was done in accordance with the 2005 Connecticut State Building Code, TIA/EIA-222-F—Structural Standard for Steel Antenna Towers and Antenna Supporting Structures, and the American Institute of Steel Construction (AISC) Manual of Steel Construction—Allowable Stress Design (ASD).

The analysis was conducted using PLS-Tower. Two load conditions were evaluated as shown below which were compared to allowable stresses according to AISC and TIA/EIA.

Load Condition 1 = 90 mph (fastest mile) Wind Load + Tower Dead Load
Load Condition 2 = 90 mph (fastest mile) Wind Load (with ice) + Ice Load + Tower Dead Load

The TIA/EIA standard permits one-third increase in allowable stresses for towers and monopoles less than 700 feet tall. For purposes of this analysis, in computing the load capacity the allowable stresses of the tower members were increased by one-third.

4. FINDINGS AND EVALUATION

The stresses on the tower structure were evaluated to compare with the allowable stress in accordance with AISC. The results of the analysis indicate that the tower structure is in compliance with the proposed loading conditions. The anchor bolts and foundation were found to be within allowable limits.

Component	Allowable	Actual
Twist	0.75°	0.09°
Sway		0.78° (see note below)

Note: During the installation of the Stack-N-Bolt system redundant members were installed which will give additional stiffness to the tower and reduce the twist and sway to a level below the allowable of 0.75 degrees. These members are internal bracing members which connect the new horizontal members.

Component	Component Size	Controlling Member	Stress (% Capacity)	Pass/Fail
Rohn Diagonal	L2x2x3/16	Rohn-DB61	97.27	Pass
Rohn Leg	Pipe6EH	Rohn-LH2P	96.90	Pass
Rohn Horizontal	L1.75x1.75x3/16	RohnH12	15.62	Pass
SNB Diagonal	L5x5x5/8	SNB-DI11	71.99	Pass
SNB Leg	Pipe8XS	SNB-LH2P	97.92	Pass
SNB Horizontal	Pipe4x0.494	SNB-H91	5.77	Pass
Tower Connection	N/A	3/4" Bolt	76.4	Pass
Foundation	36.5' Square	Overturning Moment	93.5	Pass

5. CONCLUSIONS

The results of the analysis indicate that the tower structure is not overstressed with the proposed loading conditions. **The tower and foundation are considered structurally adequate under the TIA/EIA-222-F wind load specified above and the existing and proposed antenna loadings.** The calculated tower deflection (sway) is 0.78 degrees, and the tower rotation (twist) is 0.09 degrees. These are above the Connecticut State Police specification of 0.75 degrees for twist and sway, however there are redundant members in the tower not utilized in the analysis which will give additional stiffness and will reduce the deflection and rotation values below the Connecticut State Police specification.

Limitations/Assumptions:

This report is based on the following:

A. Tower is properly installed and maintained.

B. All members and their geometry are as specified in the original Project File and are in good condition.

C. All required members are in place.

D. All bolts are in place and are properly tightened.

E. Tower is in plumb condition.

F. All member protective coatings are in good condition.

G. All tower members were properly designed, detailed, fabricated, installed, and have been properly maintained since erection.

URS is not responsible for any modifications completed prior to or hereafter in which URS is not or was not directly involved. Modifications include but are not limited to:

A. Adding antennas
B. Removing/replacing antennas
C. Adding coaxial cables

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

Ongoing and Periodic Inspection and Maintenance:

After the Contractor has successfully completed the installation and the work has been accepted, the owner will be responsible for the ongoing and periodic inspection and maintenance of the tower.

The owner shall refer to TIA/EIA-222-F for recommendations for maintenance and inspection. The frequency of the inspection and maintenance intervals is to be determined by the owner based upon actual site and environmental conditions. It is recommended that a complete and thorough inspection of the entire tower structural system be performed at least yearly and more frequently as conditions warrant. According to TIA/EIA-222-F section 14.1, Note 1: It is recommended that the structure be inspected after severe wind and/or ice storms or other extreme loading conditions.

New Cingular Wireless PCS, LLC
500 Enterprise Drive, Suite 3A
Rocky Hill, Connecticut 06067-3900
Phone: (860) 513-7504
Fax: (860) 513-7190

David Osuch
Real Estate Consultant

March 26, 2013

Honorable Peter J. Tesei
1st Selectman, Town of Greenwich
Town Hall 101 Field Point Rd.
Greenwich, CT 06836

Re: New Cingular Wireless PCS, LLC – Refiling of notice of intent to modify an existing telecommunications facility located at 1 Butternut Hollow Road, Greenwich (owner, Connecticut State Police)

Dear Mr. Tesei:

In order to accommodate technological changes, implement Uniform Mobile Telecommunications System ("UMTS") and Long Term Evolution ("LTE") capabilities, and enhance system performance in the State of Connecticut, New Cingular Wireless PCS, LLC ("AT&T") 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 AT&T'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 AT&T'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 (860) 513-7504 or Ms. Linda Roberts, Executive Director, Connecticut Siting Council at (860) 827-2935.

Sincerely,

David Osuch
Real Estate Consultant

Enclosure