



STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051  
Phone: (860) 827-2935 Fax: (860) 827-2950  
E-Mail: [siting.council@ct.gov](mailto:siting.council@ct.gov)  
[www.ct.gov/csc](http://www.ct.gov/csc)

July 1, 2011

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

RE: **EM-CING-057-110614** - New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 363 Riversville 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 June 14, 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  
Executive Director

LR/CDM/laf

c: The Honorable Peter J. Tesei, First Selectman, Town of Greenwich  
Diane Fox, Planning & Zoning Director, Town of Greenwich  
Christopher B. Fisher, Esq., Cuddy & Feder LLP





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

June 17, 2011

The Honorable Peter J. Tesei  
First Selectman  
Town of Greenwich  
Town Hall  
101 Field Point Road  
P. O. Box 2540  
Greenwich, CT 06836-2540

RE: **EM-CING-057-110614** - New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 363 Riversville Road, Greenwich, Connecticut.

Dear First Selectman Tesei:

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 July 1, 2011.

Thank you for your cooperation and consideration.

Very truly yours,

Linda Roberts  
Executive Director

LR/jbw

Enclosure: Notice of Intent

c: Diane Fox, Planning & Zoning Director, Town of Greenwich

EM-CING-057-110614

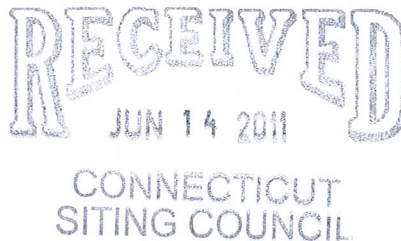


New Cingular Wireless PCS, LLC  
500 Enterprise Drive  
Rocky Hill, Connecticut 06067-3900  
Phone: (860) 463-5511  
Fax: (860) 513-7190

**Douglas L. Culp**  
Real Estate Consultant

HAND DELIVERED

June 14, 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 tele-communications facility located at 363 Riversville Road Greenwich, CT (owner AT&T Towers).

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.

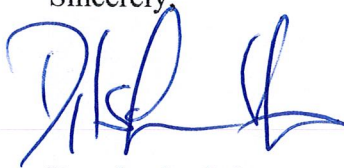
The changes to the facility do not constitute modifications as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed or altered. Rather, the planned changes to the facility fall squarely within 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,

A handwritten signature in blue ink, appearing to read 'D. L. Culp', with a stylized flourish at the end.

Douglas L. Culp  
Real Estate Consultant

Attachments



**NEW CINGULAR WIRELESS PCS, LLC  
Equipment Modification**

363 Riversville Road Greenwich, CT  
Site Number CT2130  
Exempt Mod

**Tower Owner/Manager:** AT&T Towers

**Equipment configuration:** Monopole

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

**Planned Modifications:** Retain existing PowerWave Antenna's, 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 32.1% 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 33.7 % of the standard.

**Existing**

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Other Users							20.98
AT&T UMTS	150	1900 Band	1	500	0.0080	1.0000	0.80
AT&T UMTS	150	800 Band	1	500	0.0080	0.5867	1.36
AT&T GSM	150	800Band	6	296	0.0284	0.5867	4.84
AT&T UMTS	150	1900 Band	6	427	0.0409	1.0000	4.09
<b>Total</b>							<b>32.1%</b>

\* 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 <sup>2</sup> )	Standard Limits (mW/cm <sup>2</sup> )	Percent of Limit
Other Users							20.98
AT&T UMTS	150	800 Band	1	500	0.0080	0.5867	1.36
AT&T UMTS	150	1900 Band	1	500	0.0080	1.0000	0.80
AT&T GSM	150	880 - 894	6	296	0.0284	0.5867	4.84
AT&T GSM	150	1900 Band	6	427	0.0409	1.0000	4.09
AT&T LTE	150	740 - 746	1	500	0.0080	0.4933	1.62
<b>Total</b>							<b>33.7%</b>

\* Data for other users are from Siting Council records

### Structural information:

The attached structural analysis demonstrates that the monopole and foundation have adequate structural capacity to accommodate the proposed modifications. (GPD Group dated 5-19-11).

**PROJECT INFORMATION**

SCOPE OF WORK: UNMANNED TELECOMMUNICATIONS FACILITY MODIFICATIONS  
 SITE ADDRESS: 363 RIVERSVILLE ROAD GREENWICH, CT 06831  
 LATITUDE: 41° 3' 59.59" N  
 LONGITUDE: -73° 40' 17.1" W  
 JURISDICTION: NATIONAL, STATE & LOCAL CODES OR ORDINANCES  
 CURRENT USE: TELECOMMUNICATIONS FACILITY  
 PROPOSED USE: TELECOMMUNICATIONS FACILITY  
 NOC#: 866-915-5600



**SITE NUMBER: CT2130**  
**SITE NAME: N. GREENWICH**

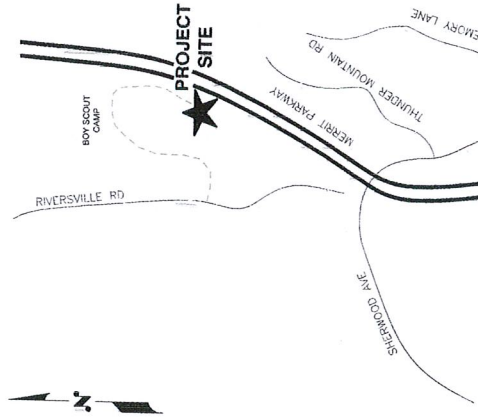
**DRAWING INDEX**

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**VICINITY MAP**

DIRECTIONS TO SITE:  
 START DUTI COUS, NORTHEAST ON ENTERPRISE DR TOWARD CAPITOL BLVD. 0.4 MI, TURN LEFT ONTO CAPITOL BLVD. 0.3 MI, TURN LEFT ONTO WEST RIVERSVILLE RD. 0.1 MI, TURN LEFT ONTO ROUND HILL ROAD. EXIT, EXIT 28 0.1 MI, TURN RIGHT ONTO ROUND HILL RD. 0.0 MI, TURN SLIGHT LEFT ONTO RIVERSVILLE RD. 1.2 MI, TURN SLIGHT LEFT ONTO RIVERSVILLE RD. 0.8 MI, 363 RIVERSVILLE RD IS ON THE LEFT.



**GENERAL NOTES**

- THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. THE USER SHALL BE FULLY RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THE WORK. THE USER SHALL BE FULLY RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM ALL APPLICABLE GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THE WORK.
- THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSIBLE 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 BE RESPONSIBLE FOR NOTIFYING THE AT&T REPRESENTATIVE IN WRITING OF ANY 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

*David P. Hayman*



500 ENTERPRISE DRIVE, SUITE 3A  
 ROCKY HILL, CT 06867



22 KEERWAYDN DRIVE  
 SALEM, NH 03079

**Hudson Design Group, Inc.**  
 1400 GAZCOCK STREET  
 SALEM, NH 03079  
 TEL: 603.882.5500  
 FAX: 603.882.5501

**SITE NUMBER: CT2130**  
**SITE NAME: N. GREENWICH**

363 RIVERSVILLE ROAD  
 GREENWICH, CT 06831  
 FAIRFIELD COUNTY

500 ENTERPRISE DRIVE, SUITE 3A  
 ROCKY HILL, CT 06867

NO.	DATE	REVISIONS	DESIGNED BY: DC	DRAWN BY: HC
0	03/27/11	ISSUED FOR CONSTRUCTION		
1	03/28/11	ISSUED FOR REVIEW		
BY	CHK	APPD		

TITLE SHEET  
 (LIE)

JOB NUMBER	2130.01
DRAWING NUMBER	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, LPL, OR NFPA) LIGHTNING PROTECTION CODE, AND GENERAL COMPLIANCE WITH THE TELECOMMUNICATIONS AND 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 GESS'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 WIRE WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BITS EQUIPMENT.
5. EACH BITS 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 BITS 2 AWG STRANDED COPPER FOR OUTDOOR BITS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTI-OXIDANT COMINGS (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 DIAMETER SHALL 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 - SA  
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 VERIFY THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL NECESSARY PERMITS AND OBTAIN ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK SHALL BE IN STRICT COMPLIANCE WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY REGULATIONS 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 TELECOMMUNICATION CABLES AS SHOWN ON THE POWER, GROUNDING AND TELLER DRAWINGS. THE SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PART PAVEMENTS, CURBS, LANDSCAPING, SIGNAGE, AND UTILITIES. ANY DAMAGE 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 WASTE TO BE REMOVED FROM 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-ENHANCED AND SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERRECTED 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 ERRECTED 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. DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR 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 OPERATION OF THE CELL SITE. ALL WORK SHALL BE COORDINATED WITH CONTRACTOR AND 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 PROTECTIVE EQUIPMENT SHOULD 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 BUILDING CODES. THE CONTRACTOR SHALL ADOPTED JURISDICTION (A.A.J.) FOR THE LOCATION OF THE PROJECT. ALL ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.  
ELECTRICAL CODE: REFER TO ELECTRICAL DRAWINGS  
LIGHTNING CODE: REFER TO ELECTRICAL DRAWINGS  
BUILDING CODE: 2003 IBC WITH 2005 CT SUPPLEMENT & 2009 CT SUPPLEMENT  
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	TBD	TO BE DETERMINED
BCW	BARE COPPER WIRE	MIN	MINIMUM	TBR	TO BE REMOVED
BTS	BASE TRANSCIVER STATION	PROPOSED	NEW	TERR	TO BE REMOVED AND REPLACED
EG	EQUIPMENT GROUND	N.T.S.	NOT TO SCALE	TYP	TYPICAL
ER	EQUIPMENT GROUND RING	REF.	REFERENCE		
		REQ.	REQUIRED		

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

**SIAD**  
communications

**Hudson**  
Design Group, LLC  
100 SACCONI DRIVE  
SALISBURY, MA 01968  
TEL: 978-55-5533  
FAX: 978-255-5554

**GENERAL NOTES**  
(LIE)  
GENERAL NOTES  
DRAWING NUMBER: GN-1  
DATE: 2/13/01  
DESIGNED BY: DC  
DRAWN BY: HC

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

**SIAD**  
communications

**Hudson**  
Design Group, LLC  
100 SACCONI DRIVE  
SALISBURY, MA 01968  
TEL: 978-55-5533  
FAX: 978-255-5554

**GENERAL NOTES**  
(LIE)  
GENERAL NOTES  
DRAWING NUMBER: GN-1  
DATE: 2/13/01  
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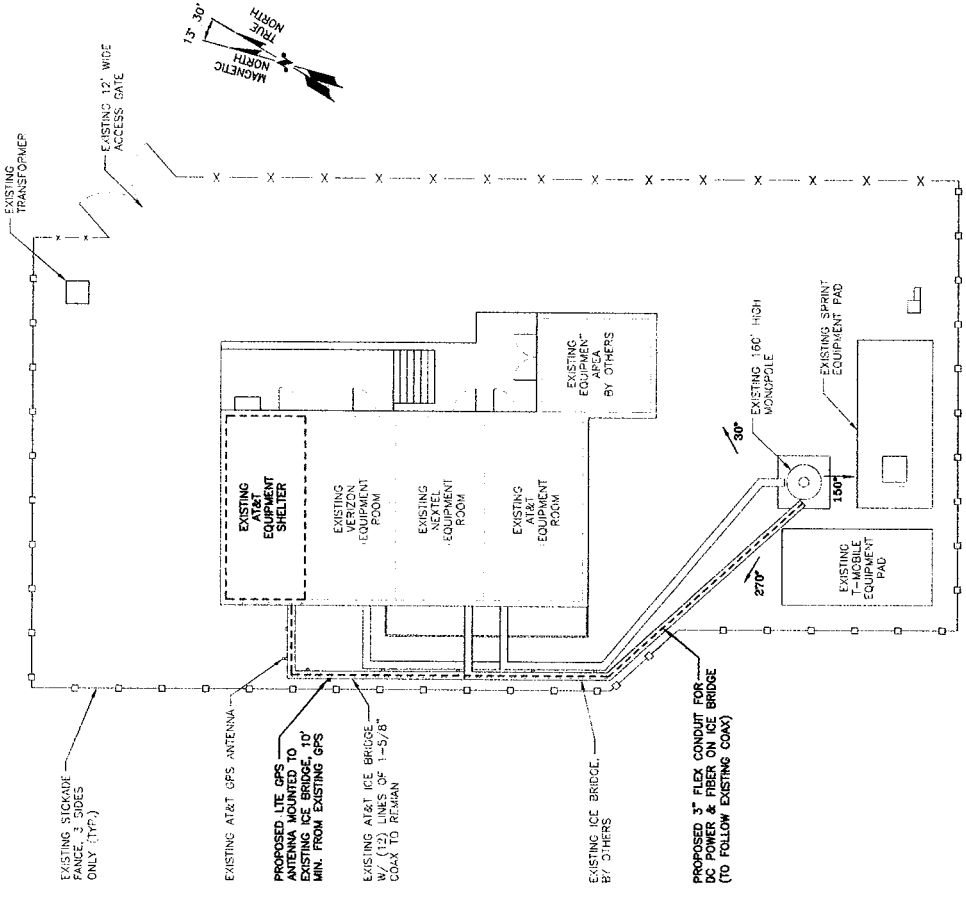
**Site Information:**  
SITE NUMBER: CT2130  
SITE NAME: N. GREENWICH  
363 RIVERSVILLE ROAD  
GREENWICH, CT 06851  
FAIRFIELD COUNTY

**Contractor Information:**  
22 KEEWAYTON DRIVE  
SALEM, NH 03079



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

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



**COMPOUND PLAN**  
SCALE: 1/8"=1'-0"

**Hudson Design Group**  
1400 COLCLOUSE ST.  
SALISBURY, VERMONT 05475  
TEL: 802-253-8833  
FAX: 802-253-8888

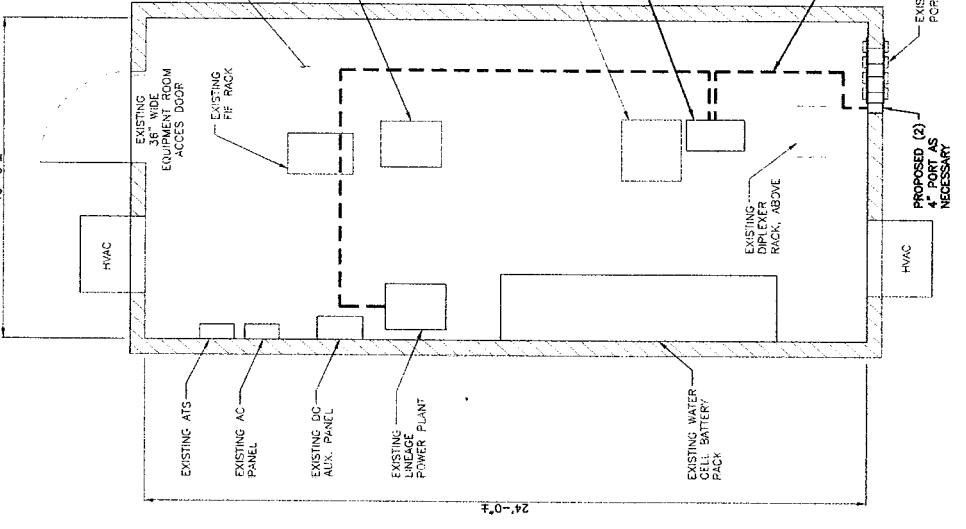
**SAI communications**

22 KEENWYDIN DRIVE  
SALEM, NH 03079

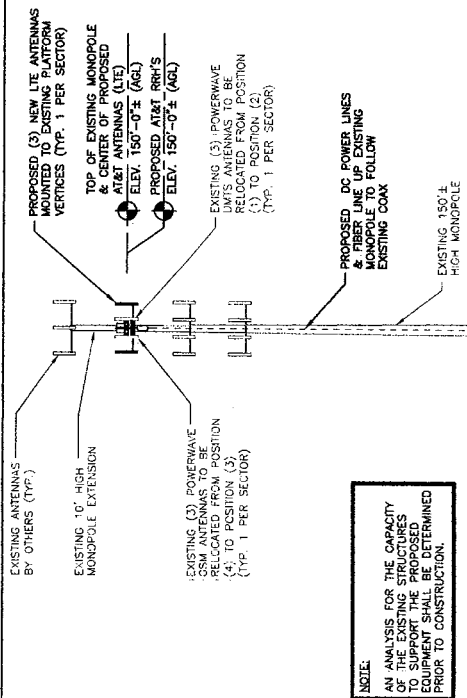
**SITE NUMBER: CT2130**  
**SITE NAME: N. GREENWICH**  
363 RIVERSVILLE ROAD  
GREENWICH, CT 06831  
FAIRFIELD COUNTY

500 ENTERPRISE DRIVE, SUITE 3A  
ROCKY HILL, CT 06867

NO.	DATE	BY	CHKD BY	SCALE	AS SHOWN	DESIGNED BY:	DC	ISSUED BY:	HC
0	03/21/11	ISSUED FOR CONSTRUCTION	NC	DC	DPK				
1	03/28/11	ISSUED FOR REVIEW	NC	DC	DPK				
						FOR ISSUES	2,130.01	A-1	
						CHANGING NUMBER			
						COMPOUND & EQUIPMENT PLAN (LTE)			
						AT&T			

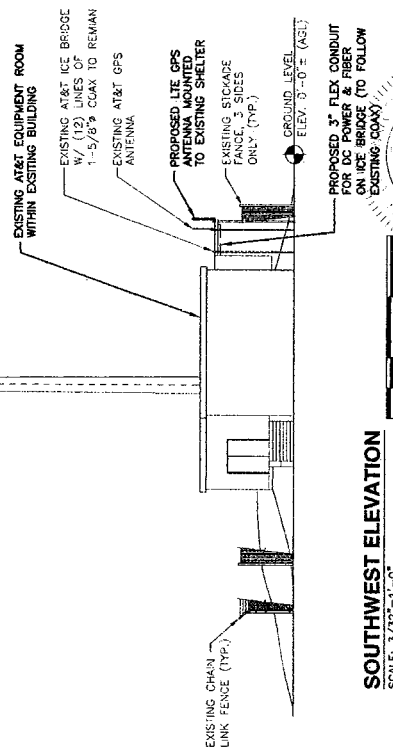


**EQUIPMENT PLAN**  
SCALE: 1/2"=1'-0"

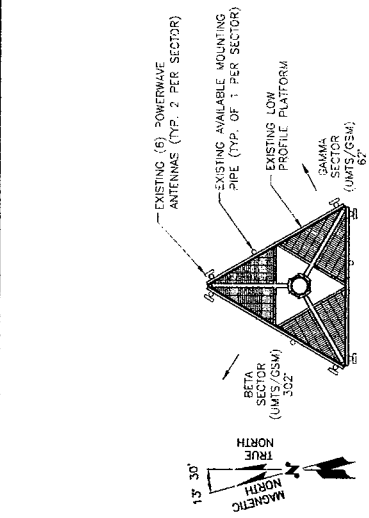


**NOTE:**  
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

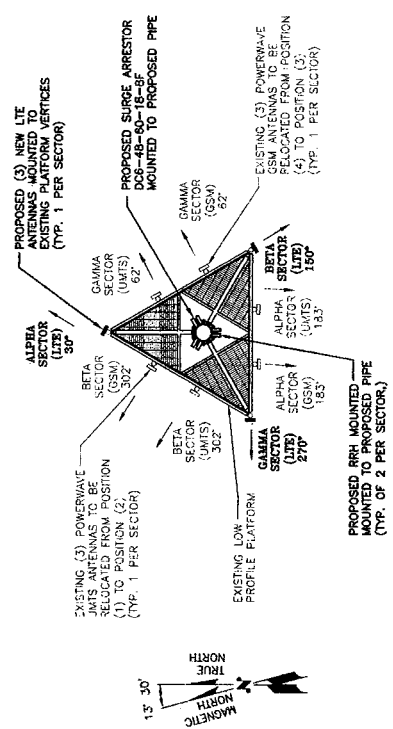
**NOTE:**  
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.



**SOUTHWEST ELEVATION**  
SCALE: 3/32"=1'-0"



**EXISTING GSM/UMTS ANTENNA PLAN**  
SCALE: N.T.S.



**PROPOSED LTE ANTENNA PLAN**  
SCALE: N.T.S.

500 ENTERPRISE DRIVE, SUITE 3A  
ROCKY HILL, CT 06867

SITE NUMBER: CT2130  
SITE NAME: N. GREENWICH  
363 RIVERSVILLE ROAD  
GREENWICH, CT 06831  
FAIRFIELD COUNTY

22 KEEWAYDIN DRIVE  
SALEM, NH 03079

180 CLOVERDINE  
SALEM, NH 03079  
TEL: 603-885-5233  
FAX: 603-885-5256

COMMUNICATIONS

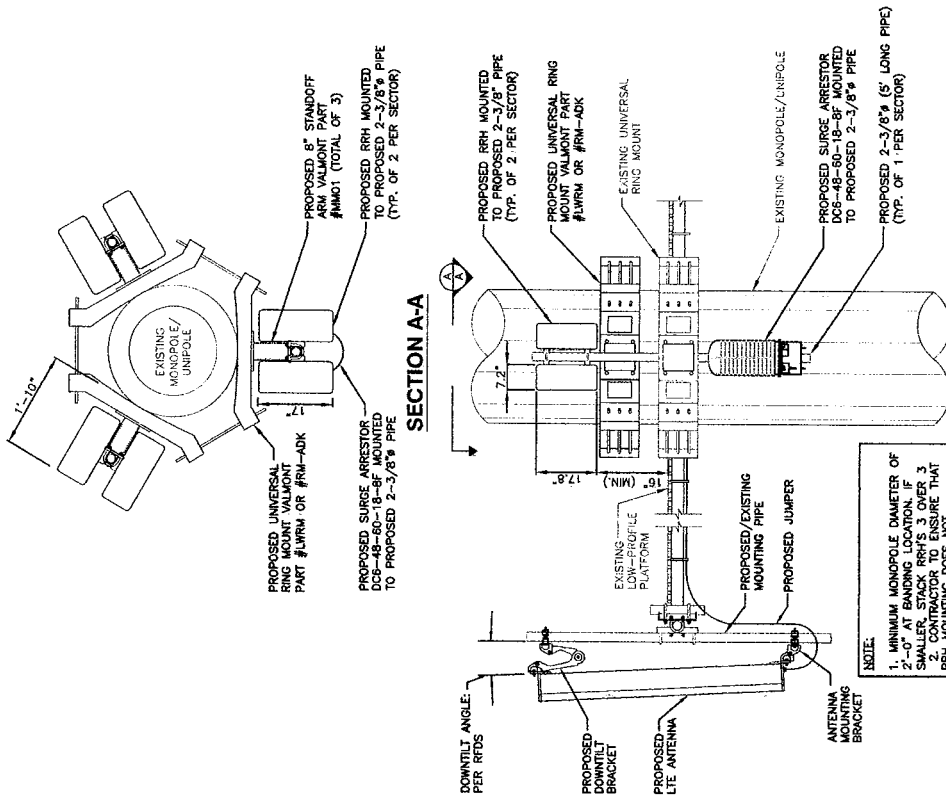
AT&T

ANTENNA LAYOUT AND ELEVATION (L/E)

NO.	DATE	REVISIONS	BY	CHK APP'D
0	03/29/11	ISSUED FOR CONSTRUCTION	HC	DC (DPS)
0	03/29/11	ISSUED FOR REVIEW	HC	DC (DPS)

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

JOB NUMBER: 2130.01    DRAWING NUMBER: A-2



**NOTE:**

1. MINIMUM MONOPOLE DIAMETER OF 2'-0" AT RADIUS LOCATION.
2. CONTRACTOR TO ENSURE THAT RRH MOUNTING DOES NOT INTERFERE WITH CLIMBING LADDER.

PART #	QTY	DESCRIPTION
LWRM	1	UNIVERSAL RING MOUNT VALMONT PART #LWRM OR #RM-ADK
DCS-48-60-18-8F	1	DCS-48-60-18-8F SURGE ARRESTOR
ADAPTER KIT	1	ADAPTER KIT FOR 2-3/8\"/>

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

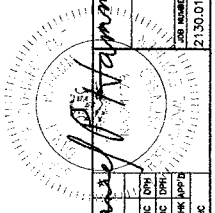


22 KEEWAYDIN DRIVE  
SALEM, NH 03079

**SITE NUMBER: CT2130**  
**SITE NAME: N. GREENWICH**  
363 RIVERSVILLE ROAD  
GREENWICH, CT 06831  
FAIRFIELD COUNTY



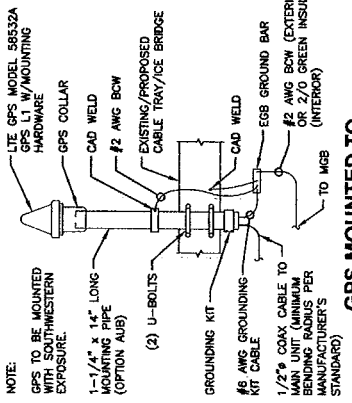
500 ENTERPRISE DRIVE, SUITE 3A  
ROCKY HILL, CT 06867



*David P. Chapman*  
DATE: 03/31/11  
SCALE: AS SHOWN  
DESIGNED BY: DC  
DRAWN BY: DC

AT&T  
DETAILS (LITE)  
JOB NUMBER: 2130.01  
DRAWING NUMBER: A-3

REV	DATE	DESCRIPTION
1		

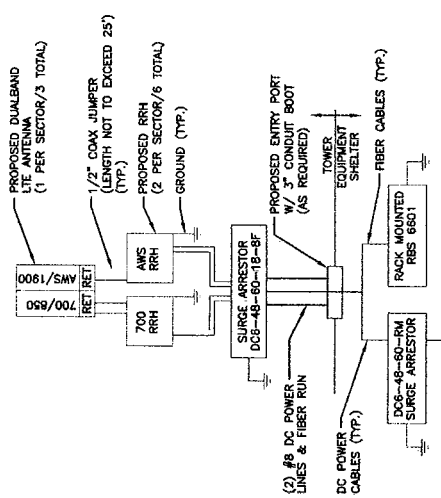


**GPS MOUNTED TO CABLE TRAY/ICE BRIDGE**  
SCALE: N.T.S.

**NOTE:**  
GPS TO BE MOUNTED WITH SOUTHWESTERN EXPOSURE.  
1-1/4\"/>

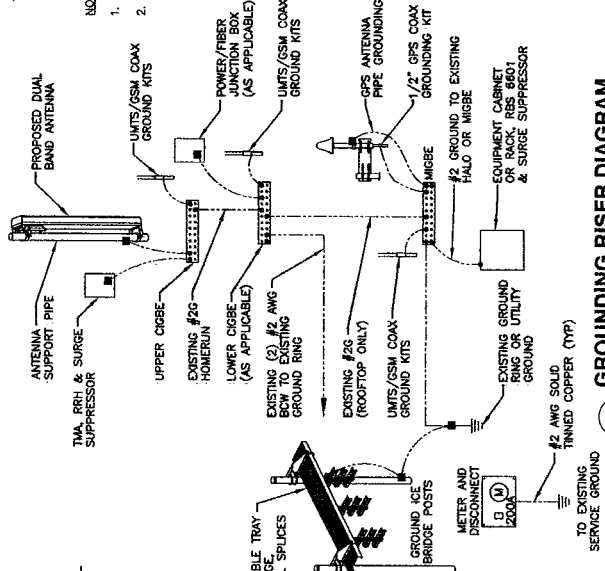


480 COCONA DRIVE  
SALEM, NH 03079, SUITE 2-11  
TEL: 978-65-8653  
FAX: 978-658-8888

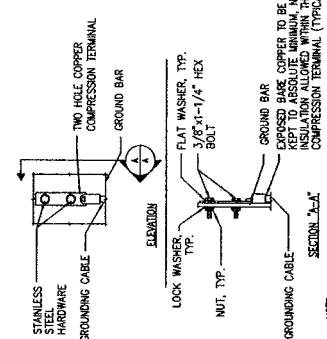


NOTES:  
 1. CONTRACTOR TO CONFIRM ALL PARTS.  
 2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS.

**PLUMBING DIAGRAM**  
 3 N.T.S.

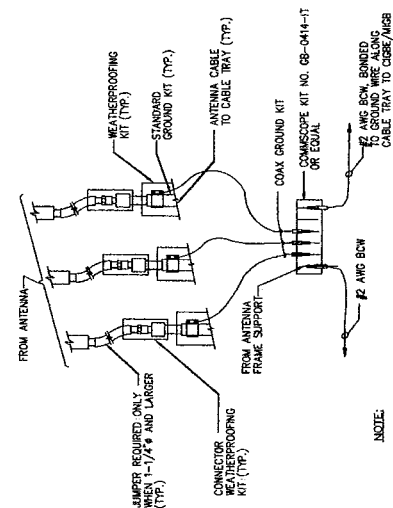


**GROUNDING RISER DIAGRAM**  
 5 N.T.S.



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

**TYPICAL GROUND BAR CONNECTION DETAIL**  
 2 N.T.S.

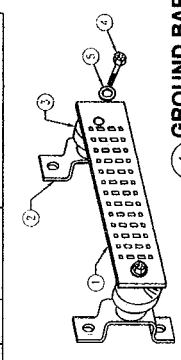


NOTE:  
 1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO COBSE.

**GROUND WIRE TO GROUND BAR CONNECTION DETAIL**  
 1 N.T.S.

NO.	REQ.	PART NO.	DESCRIPTION
1	1	HLB-0400-S	SOLID BND. BAR (20"x4"x1/4")
2	2	WALL MTC. BRKT.	WALL MTC. BRKT.
3	2	INSULATORS	INSULATORS
4	4	5/8"-11"x1" H.H.C.S.	5/8"-11"x1" H.H.C.S.
5	4	5/8" LOCKWASHER	5/8" LOCKWASHER

WIRELESS SOLUTIONS INC.  
 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)  
 FIELD GROUND BAR (COMMON NEUTRAL/GROUND BOND) (#2)  
 120V POWER SUPPLY RETURN BAR (#2)  
 48V POWER SUPPLY RETURN BAR (#2)  
 RECITFER 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)



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

1400 DODGSON STREET  
 20 LINDSEY DRIVE, SUITE 210  
 FAIRFIELD, CT 06424

**SITE NUMBER: CT2130**  
**SITE NAME: N. GREENWICH**

163 RIVERSVILLE ROAD  
 GREENWICH, CT 06831  
 FAIRFIELD COUNTY

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

DATE: *David Hagan*

PLUMBING DIAGRAM & DETAILS (L.T.E.)

AT&T

NO.	DATE	ISSUED FOR	ISSUED BY	DESIGNED BY	DC
1	03/27/11	ISSUED FOR CONSTRUCTION	DC	DC	DC
2	03/28/11	ISSUED FOR REVIEW	DC	DC	DC
3	03/28/11	ISSUED FOR REVIEW	DC	DC	DC

DRAWN BY: DC  
 CHECKED BY: DC  
 DATE: 2/13/01  
 DRAWING NUMBER: G-1





Karen Couture  
 SAI Communications  
 500 Enterprise Dr., Suite 3-A  
 Rocky Hill, CT 06067  
 (860) 389-4924



Kevin Clements  
 12600 Deerfield Pkwy; Suite 2039  
 Alpharetta, GA 30004  
 (678) 762-3305  
[kclements@gpdgroup.com](mailto:kclements@gpdgroup.com)

GPD# 2011007.28  
 May 19, 2011

**STRUCTURAL ANALYSIS REPORT**

**AT&T DESIGNATION:**                 **Site USID:                 26225**  
   **Site FA:                  10034990**  
   **Site Name:               GREENWICH NORTH**  
   **AT&T Project:           MOD LTE 4-22-11**

**SAI DESIGNATION:**                 **Site Number:             CT2130**

**ANALYSIS CRITERIA:**               **TIA/EIA-222-F & 2003 IBC**  
   **85-mph with 0" ice**  
   **74-mph with 1/2" ice**

**SITE DATA:**                           **363 Riversville Road, Greenwich, CT 06831, Fairfield County**  
   **Latitude 41° 3' 59.572" N, Longitude 73° 40' 17.097" W**  
   **160' EEI Monopole**

Ms. Couture,

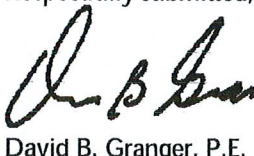
GPD is pleased to submit this Structural Analysis Report to determine the structural integrity of the aforementioned tower. The purpose of the analysis is to determine the suitability of the tower with the addition of the following proposed loading configuration:

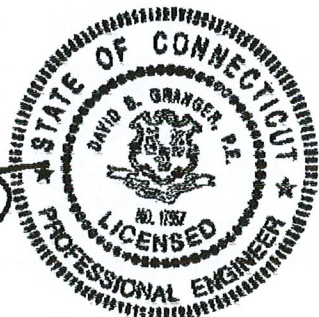
- Elev. 150'           (3) Powerwave P65-16-XLH-RR Antennas w/ Internal RETs on the existing 12' LP Platform, w/ (2) 7/8" internal DC cables & (1) 1/2" internal fiber cable
- Elev. 148'           (6) RRU-11 RRHs on the same mount
- (1) Raycap DC6-48-60-18-8F DC/Fiber Box on the same mount

Based on our analysis we have determined the design of the tower and its foundation are sufficient for the proposed, existing, and reserved loadings as referenced in Appendix A.

We at GPD appreciate the opportunity of providing our continuing professional services to you and SAI Communications. If you have any questions please do not hesitate to call.

Respectfully submitted,

  
 David B. Granger, P.E.  
 Connecticut #: 17557



## SUMMARY & RESULTS

The purpose of this analysis was to verify whether the design for the existing structure is capable of carrying the proposed loading configuration as specified by AT&T to SAI Communications. This report was commissioned by Ms. Karen Couture of SAI Communications.

### TOWER SUMMARY AND RESULTS

Member	Capacity	Results
Monopole	71.0%	Pass
Base Plate	74.2%	Pass
Anchor Rods	58.7%	Pass
Flange Plate @ 152'	8.6%	Pass
Flange Bolts @ 152'	9.5%	Pass
Foundation	52.4%	Pass

## ANALYSIS METHOD

RISA Tower (Version 5.4.2.0), a commercially available software program, was used to create a three-dimensional model of the tower and calculate primary member stresses for various dead, live, wind, and ice load cases. Selected output from the analysis is included in Appendix B. The following table details the information provided to complete this structural analysis. This analysis is solely based on this information.

### DOCUMENTS PROVIDED

Document	Remarks	Source
Preliminary Tower Summary	AT&T Internal Modification Document	Siterra
Tower Mapping	GPD & MTSI Northeast, dated 2/18/09	Siterra
Previous Analysis	GPD Group Project #: 2010263.01, 2/21/10	Siterra
Original Tower Drawings	EI Project #: 5590, dated 4/10/03	Siterra
Geotechnical Report	WEI Project #: 2009-895, dated 9/4/09	Siterra
Foundation Investigation	WEI Project #: 2009-895, dated 9/4/09	Siterra

## ASSUMPTIONS

This structural analysis is based on the theoretical capacity of the members and is not a condition assessment of the monopole. This analysis is from information supplied, and therefore, its results are based on and are as accurate as that supplied data. GPD has made no independent determination, nor is it required to, of its accuracy. The following assumptions were made for this structural analysis.

1. The monopole shaft sizes and shape are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated in the materials section.
2. The antenna configuration is as supplied and/or as modeled in the analysis. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements
3. Some assumptions are made regarding antennas and mount sizes and their projected areas based on best interpretation of data supplied and of best knowledge of antenna type and industry practice.
4. All mounts, if applicable, are considered adequate to support the loading. No actual analysis of the mount(s) is performed. This analysis is limited to analyzing the tower only.
5. The soil parameters are as per data supplied or as assumed and stated in the calculations. If no data is available, the foundation system is not verified. In the case of absent foundation data, it is the tower owner's responsibility to insure that the foundation system is adequate to support the structure with its new reactions.
6. The tower and structures have been properly maintained in accordance with TIA Standards and/or with manufacturer's specifications.
7. All welds and connections are assumed to develop at least the member capacity, unless determined otherwise and explicitly stated in this report.
8. Tower Mounted Amplifiers are assumed to be installed behind antennas.
9. All existing loading was obtained from a previous analysis by GPD Group Project #: 2010263.01, 2/21/10, the provided Equipment Modification Form, tower photos, and a tower mapping done by GPD Group & MTSI Northeast dated, 2/18/09 and is assumed to be accurate.
10. All proposed coax is assumed to be internal to the monopole.
11. The existing foundation is bearing on rock at 9.5' below grade per a discussion with the geotechnical engineer.

If any of these assumptions are not valid or have been made in error, this analysis may be affected, and GPD Group should be allowed to review any new information to determine its effect on the structural integrity of the tower.

## DISCLAIMER OF WARRANTIES

GPD GROUP has not performed a site visit to the tower to verify the member sizes and/or antenna/coax loading. If the existing conditions are not as represented on the tower elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the tower or foundation. This report does not replace a full tower inspection. The tower and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free and plumb.

The engineering services rendered by GPD GROUP in connection with this Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. All tower components have been assumed to only resist dead loads when no other loads are applied. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

GPD GROUP does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD GROUP provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the feasibility of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation in excess of the code recommended amount, if any, that should be considered in the structural analysis.

The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD GROUP, but are beyond the scope of this report.

Miscellaneous items such as antenna mounts, etc. have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

GPD GROUP makes no warranties, expressed and/or implied in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD GROUP will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD GROUP pursuant to this report will be limited to the total fee received for preparation of this report.



## APPENDIX A

### Tower Analysis Summary Form



## APPENDIX B

### RISA Tower Output File

<b>RISATower</b>  <b>GPD Group</b> 520 S. Main St. Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-3799	<b>Job</b> CT2130 (26225) GREENWICH NORTH	<b>Page</b> 1 of 5
	<b>Project</b> 2011007.28	<b>Date</b> 07:42:33 05/19/11
	<b>Client</b> SAI Communications	<b>Designed by</b> mimiller

**Tower Input Data**

There is a pole section.  
This tower is designed using the TIA/EIA-222-F standard.  
The following design criteria apply:  
Tower is located in Fairfield County, Connecticut.  
Basic wind speed of 85 mph.  
Nominal ice thickness of 0.5000 in.  
Ice density of 56 pcf.  
A wind speed of 74 mph is used in combination with ice.  
Temperature drop of 50 °F.  
Deflections calculated using a wind speed of 50 mph.  
A non-linear (P-delta) analysis was used.  
Pressures are calculated at each section.  
Stress ratio used in pole design is 1.333.  
Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

**Feed Line/Linear Appurtenances - Entered As Area**

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	C <sub>A</sub> A <sub>1</sub>		Weight
						No Ice	1/2" Ice	plf
LDF7-50A (1-5/8 FOAM)	A	No	Inside Pole	160.00 - 4.00	18	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
LDF7-50A (1-5/8 FOAM)	A	No	Inside Pole	154.00 - 8.00	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
1/2" Fiber Cable	C	No	Inside Pole	150.00 - 8.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
LDF5-50A (7/8 FOAM)	C	No	Inside Pole	150.00 - 8.00	2	No Ice	0.00	0.33
						1/2" Ice	0.00	0.33
LDF7-50A (1-5/8 FOAM)	B	No	Inside Pole	141.50 - 4.00	18	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
LDF6-50A (1-1/4 FOAM)	A	No	Inside Pole	131.00 - 12.00	12	No Ice	0.00	0.66
						1/2" Ice	0.00	0.66
LDF4P-50A (1/2 FOAM)	A	No	Inside Pole	131.00 - 12.00	3	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
LDF7-50A (1-5/8 FOAM)	C	No	Inside Pole	122.00 - 4.00	6	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
LDF4P-50A (1/2 FOAM)	C	No	Inside Pole	72.00 - 4.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15
Climbing Pegs	C	No	CaAa (Out Of Face)	160.00 - 0.00	1	No Ice	0.01	0.31
						1/2" Ice	0.12	0.71
Safety Line 3/8	C	No	CaAa (Out Of Face)	160.00 - 0.00	1	No Ice	0.04	0.22
						1/2" Ice	0.14	0.75
Climbing Pegs	C	No	CaAa (Out Of Face)	160.00 - 0.00	1	No Ice	0.00	0.31
						1/2" Ice	0.00	0.71

**Discrete Tower Loads**



<b>RISATower</b>  <b>GPD Group</b> 520 S. Main St. Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-3799	<b>Job</b> CT2130 (26225) GREENWICH NORTH	<b>Page</b> 2 of 5
	<b>Project</b> 2011007.28	<b>Date</b> 07:42:33 05/19/11
	<b>Client</b> SAI Communications	<b>Designed by</b> mimiller

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>A</sub> A <sub>1</sub> Front	C <sub>A</sub> A <sub>1</sub> Side	Weight	
			Horz	Lateral						Vert
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K	
Valmont 12' Hatched LP Platform	C	None			0.0000	160.00	No Ice 1/2" Ice	24.53 29.94	24.53 29.94	1.34 1.65
(2) RR90-17-02DP w/ Mount Pipe	A	From Centroid-Fa ce	4.00 0.00 4.00		10.0000	160.00	No Ice 1/2" Ice	4.59 5.09	3.32 4.09	0.03 0.07
(2) RR90-17-02DP w/ Mount Pipe	B	From Centroid-Fa ce	4.00 0.00 4.00		-20.0000	160.00	No Ice 1/2" Ice	4.59 5.09	3.32 4.09	0.03 0.07
(2) RR90-17-02DP w/ Mount Pipe	C	From Centroid-Fa ce	4.00 0.00 4.00		5.0000	160.00	No Ice 1/2" Ice	4.59 5.09	3.32 4.09	0.03 0.07
(2) DTMA-1819-DD-12	A	From Centroid-Fa ce	4.00 0.00 4.00		10.0000	160.00	No Ice 1/2" Ice	0.00 0.00	0.41 0.52	0.01 0.02
(2) DTMA-1819-DD-12	B	From Centroid-Fa ce	4.00 0.00 4.00		-20.0000	160.00	No Ice 1/2" Ice	0.00 0.00	0.41 0.52	0.01 0.02
(2) DTMA-1819-DD-12	C	From Centroid-Fa ce	4.00 0.00 4.00		5.0000	160.00	No Ice 1/2" Ice	0.00 0.00	0.41 0.52	0.01 0.02
APX16DWV-16DWVS-E-A 20w/ Mount Pipe	A	From Centroid-Fa ce	4.00 0.00 3.00		10.0000	160.00	No Ice 1/2" Ice	7.30 7.83	3.50 4.27	0.07 0.11
APX16DWV-16DWVS-E-A 20w/ Mount Pipe	B	From Centroid-Fa ce	4.00 0.00 3.00		-20.0000	160.00	No Ice 1/2" Ice	7.30 7.83	3.50 4.27	0.07 0.11
APX16DWV-16DWVS-E-A 20w/ Mount Pipe	C	From Centroid-Fa ce	4.00 0.00 3.00		5.0000	160.00	No Ice 1/2" Ice	7.30 7.83	3.50 4.27	0.07 0.11
ATMAA1412D-1A20	A	From Centroid-Fa ce	4.00 0.00 3.00		10.0000	160.00	No Ice 1/2" Ice	0.00 0.00	0.47 0.57	0.01 0.02
ATMAA1412D-1A20	B	From Centroid-Fa ce	4.00 0.00 3.00		-20.0000	160.00	No Ice 1/2" Ice	0.00 0.00	0.47 0.57	0.01 0.02
ATMAA1412D-1A20	C	From Centroid-Fa ce	4.00 0.00 3.00		5.0000	160.00	No Ice 1/2" Ice	0.00 0.00	0.47 0.57	0.01 0.02
2" x 4' Mount Pipe	A	From Centroid-Fa ce	4.00 0.00 3.00		10.0000	160.00	No Ice 1/2" Ice	0.79 1.03	0.79 1.03	0.02 0.03
2" x 4' Mount Pipe	B	From Centroid-Fa ce	4.00 0.00 3.00		-20.0000	160.00	No Ice 1/2" Ice	0.79 1.03	0.79 1.03	0.02 0.03
2" x 4' Mount Pipe	C	From Centroid-Fa ce	4.00 0.00 3.00		5.0000	160.00	No Ice 1/2" Ice	0.79 1.03	0.79 1.03	0.02 0.03
Valmont 12' Hatched LP Platform	C	None			0.0000	148.00	No Ice 1/2" Ice	24.53 29.94	24.53 29.94	1.34 1.65
(2) 7770.00 w/Mount Pipe	A	From Centroid-Le g	3.46 2.00 6.00		-58.0000	148.00	No Ice 1/2" Ice	6.58 7.21	4.94 5.86	0.08 0.13
(2) 7770.00 w/Mount Pipe	B	From Centroid-Le g	3.46 2.00 6.00		30.0000	148.00	No Ice 1/2" Ice	6.58 7.21	4.94 5.86	0.08 0.13
(2) 7770.00 w/Mount Pipe	C	From Centroid-Le	3.46 2.00		-57.0000	148.00	No Ice 1/2" Ice	6.58 7.21	4.94 5.86	0.08 0.13

# RISATower

**GPD Group**  
520 S. Main St.  
Akron, OH 44311  
Phone: (330) 572-2100  
FAX: (330) 572-3799

<b>Job</b>	CT2130 (26225) GREENWICH NORTH	<b>Page</b>	3 of 5
<b>Project</b>	2011007.28	<b>Date</b>	07:42:33 05/19/11
<b>Client</b>	SAI Communications	<b>Designed by</b>	mimiller

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>A</sub> A <sub>1</sub>		Weight	
			Horz	Lateral			Front	Side		
			Vert		°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K	
			ft	ft						
(4) LGP21401	A	g	6.00							
		From	3.46		-58.0000	148.00	No Ice	1.29	0.23	0.01
		Centroid-Le	2.00				1/2" Ice	1.45	0.31	0.02
(4) LGP21401	B	g	6.00							
		From	3.46		30.0000	148.00	No Ice	1.29	0.23	0.01
		Centroid-Le	2.00				1/2" Ice	1.45	0.31	0.02
(4) LGP21401	C	g	6.00							
		From	3.46		-57.0000	148.00	No Ice	1.29	0.23	0.01
		Centroid-Le	2.00				1/2" Ice	1.45	0.31	0.02
P65-16-XLH-RR w/ Mount Pipe	A	g	6.00							
		From	3.46		-58.0000	148.00	No Ice	8.64	6.36	0.09
		Centroid-Le	2.00				1/2" Ice	9.29	7.54	0.15
P65-16-XLH-RR w/ Mount Pipe	B	g	6.00							
		From	3.46		30.0000	148.00	No Ice	8.64	6.36	0.09
		Centroid-Le	2.00				1/2" Ice	9.29	7.54	0.15
P65-16-XLH-RR w/ Mount Pipe	C	g	6.00							
		From	3.46		-57.0000	148.00	No Ice	8.64	6.36	0.09
		Centroid-Le	2.00				1/2" Ice	9.29	7.54	0.15
(2) RRU-11	A	g	2.00							
		From	3.46		-58.0000	148.00	No Ice	2.90	1.96	0.05
		Centroid-Le	2.00				1/2" Ice	3.14	2.17	0.07
(2) RRU-11	B	g	0.00							
		From	3.46		30.0000	148.00	No Ice	2.90	1.96	0.05
		Centroid-Le	2.00				1/2" Ice	3.14	2.17	0.07
(2) RRU-11	C	g	0.00							
		From	3.46		-57.0000	148.00	No Ice	2.90	1.96	0.05
		Centroid-Le	2.00				1/2" Ice	3.14	2.17	0.07
DC6-48-60-18-8F	A	g	0.00							
		From	3.46		-58.0000	148.00	No Ice	1.27	1.27	0.02
		Centroid-Le	2.00				1/2" Ice	1.46	1.46	0.04
Valmont 12' Hatched LP Platform	C	g	0.00							
		None			0.0000	141.50	No Ice	24.53	24.53	1.34
							1/2" Ice	29.94	29.94	1.65
(2) DB844H80E-XY w/ Mount Pipe	A	From	3.28		40.0000	141.50	No Ice	3.58	5.63	0.04
		Centroid-Le	2.29				1/2" Ice	4.20	6.73	0.08
		g	0.00							
(2) DB844H80E-XY w/ Mount Pipe	B	From	3.28		35.0000	141.50	No Ice	3.58	5.63	0.04
		Centroid-Le	2.29				1/2" Ice	4.20	6.73	0.08
		g	0.00							
(2) DB844H80E-XY w/ Mount Pipe	C	From	3.28		35.0000	141.50	No Ice	3.58	5.63	0.04
		Centroid-Le	2.29				1/2" Ice	4.20	6.73	0.08
		g	0.00							
P6516XL-2 w/ Mount Pipe	A	From	3.28		40.0000	141.50	No Ice	8.74	6.52	0.09
		Centroid-Le	2.29				1/2" Ice	9.35	7.39	0.16
		g	0.00							
MG D3-800TO w/ Mount Pipe	A	From	3.28		35.0000	141.50	No Ice	3.59	3.74	0.06
		Centroid-Le	2.29				1/2" Ice	3.98	4.38	0.10
		g	0.00							
P6516XL-2 w/ Mount Pipe	B	From	3.28		35.0000	141.50	No Ice	8.74	6.52	0.09
		Centroid-Le	2.29				1/2" Ice	9.35	7.39	0.16
		g	0.00							
MG D3-800TO w/ Mount Pipe	B	From	3.28		40.0000	141.50	No Ice	3.59	3.74	0.06
		Centroid-Le	2.29				1/2" Ice	3.98	4.38	0.10
		g	0.00							
P6516XL-2 w/ Mount Pipe	C	From	3.28		35.0000	141.50	No Ice	8.74	6.52	0.09
		Centroid-Le	2.29				1/2" Ice	9.35	7.39	0.16
		g	0.00							



<b>RISATower</b>  <b>GPD Group</b> 520 S. Main St. Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-3799	<b>Job</b> CT2130 (26225) GREENWICH NORTH	<b>Page</b> 4 of 5
	<b>Project</b> 2011007.28	<b>Date</b> 07:42:33 05/19/11
	<b>Client</b> SAI Communications	<b>Designed by</b> mimiller

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	CMA Front ft <sup>2</sup>	CMA Side ft <sup>2</sup>	Weight K	
MG D3-800TO w/ Mount Pipe	C	From Centroid-Le g	3.28 2.29 0.00	35.0000	141.50	No Ice 1/2" Ice	3.59 3.98	3.74 4.38	0.06 0.10
Valmont 12' Hatched LP Platform	C	None		0.0000	131.00	No Ice 1/2" Ice	24.53 29.94	24.53 29.94	1.34 1.65
(4) 4' x 6" Panel w/ Mount Pipe	A	From Centroid-Le g	3.76 1.37 0.00	20.0000	131.00	No Ice 1/2" Ice	2.87 3.18	1.53 2.24	0.03 0.05
(4) 4' x 6" Panel w/ Mount Pipe	B	From Centroid-Le g	3.76 1.37 0.00	20.0000	131.00	No Ice 1/2" Ice	2.87 3.18	1.53 2.24	0.03 0.05
(4) 4' x 6" Panel w/ Mount Pipe	C	From Centroid-Le g	3.76 1.37 0.00	20.0000	131.00	No Ice 1/2" Ice	2.87 3.18	1.53 2.24	0.03 0.05
Valmont 12' Hatched LP Platform	C	None		0.0000	122.00	No Ice 1/2" Ice	24.53 29.94	24.53 29.94	1.34 1.65
(2) DB980F90E-M w/Mount Pipe	A	From Centroid-Le g	4.00 0.00 0.00	0.0000	122.00	No Ice 1/2" Ice	4.37 4.96	3.95 5.04	0.03 0.07
(2) DB980F90E-M w/Mount Pipe	B	From Centroid-Le g	4.00 0.00 0.00	0.0000	122.00	No Ice 1/2" Ice	4.37 4.96	3.95 5.04	0.03 0.07
(2) DB980F90E-M w/Mount Pipe	C	From Centroid-Le g	4.00 0.00 0.00	0.0000	122.00	No Ice 1/2" Ice	4.37 4.96	3.95 5.04	0.03 0.07
(2) 2" x 6' Mount Pipe	A	From Centroid-Le g	4.00 0.00 0.00	0.0000	122.00	No Ice 1/2" Ice	1.20 1.80	1.20 1.80	0.03 0.04
(2) 2" x 6' Mount Pipe	B	From Centroid-Le g	4.00 0.00 0.00	0.0000	122.00	No Ice 1/2" Ice	1.20 1.80	1.20 1.80	0.03 0.04
(2) 2" x 6' Mount Pipe	C	From Centroid-Le g	4.00 0.00 0.00	0.0000	122.00	No Ice 1/2" Ice	1.20 1.80	1.20 1.80	0.03 0.04
4' Standoff	B	From Face	1.29 1.53 0.00	50.0000	72.00	No Ice 1/2" Ice	3.41 4.47	3.41 4.47	0.08 0.10
GPS	B	From Face	2.57 3.06 1.00	50.0000	72.00	No Ice 1/2" Ice	0.17 0.24	0.17 0.24	0.00 0.00

### Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
160.00	Valmont 12' Hatched LP Platform	32	25.900	1.3920	0.0034	50320
148.00	Valmont 12' Hatched LP Platform	32	22.420	1.3727	0.0036	20680
141.50	Valmont 12' Hatched LP Platform	32	20.564	1.3469	0.0034	13239
131.00	Valmont 12' Hatched LP Platform	32	17.652	1.2832	0.0027	8357
122.00	Valmont 12' Hatched LP Platform	32	15.281	1.2100	0.0020	6350
72.00	4' Standoff	32	5.171	0.6712	0.0006	5301

<b>RISATower</b>  <b>GPD Group</b> 520 S. Main St. Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-3799	<b>Job</b> CT2130 (26225) GREENWICH NORTH	<b>Page</b> 5 of 5
	<b>Project</b> 2011007.28	<b>Date</b> 07:42:33 05/19/11
	<b>Client</b> SAI Communications	<b>Designed by</b> mimiller

### Section Capacity Table

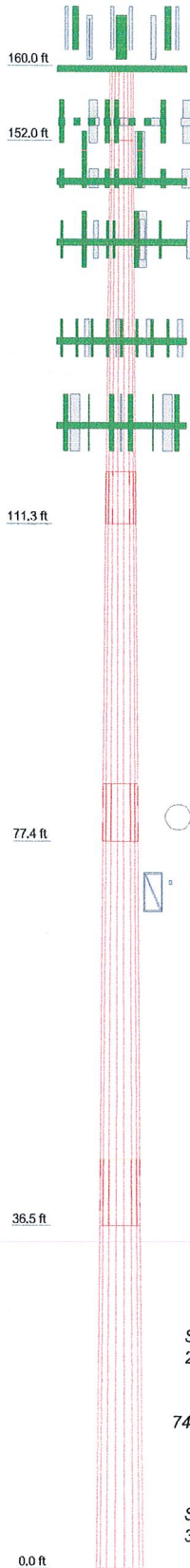
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P <sub>allow</sub> K	% Capacity	Pass Fail
L1	160 - 152	Pole	TP30.62x29x0.1875	1	-2.21	908.48	7.3	Pass
L2	152 - 111.29	Pole	TP38.86x30.62x0.25	2	-13.86	1547.47	51.3	Pass
L3	111.29 - 77.42	Pole	TP45.09x37.263x0.3125	3	-20.93	2245.56	71.0	Pass
L4	77.42 - 36.46	Pole	TP52.62x43.2359x0.4375	4	-33.39	3665.31	67.1	Pass
L5	36.46 - 0	Pole	TP59x50.3353x0.5	5	-50.49	4826.45	68.5	Pass
Summary								
Pole (L3)							71.0	Pass
<b>RATING =</b>							<b>71.0</b>	<b>Pass</b>

## APPENDIX C

### Tower Elevation Drawing



Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	8.00	18	0.1875	29.0000	30.6200	30.6200	A572-65	0.5
2	40.71	18	0.2500	5.42	30.6200	38.8600	A572-65	3.8
3	39.23	18	0.3125	6.17	37.2630	45.0900	A572-65	5.4
4	47.13	18	0.4375	7.08	43.2359	52.6200	A572-65	10.6
5	43.54	18	0.5000	50.3353	59.0000	59.0000	A572-65	12.7



### DESIGNED APPURTENANCE LOADING

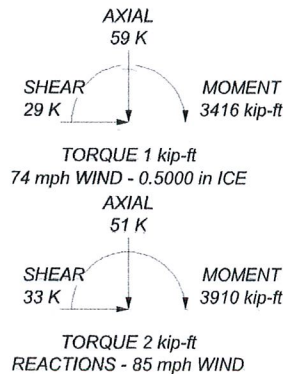
TYPE	ELEVATION	TYPE	ELEVATION
Valmont 12' Hatched LP Platform	160	P65-16-XLH-RR w/ Mount Pipe	148
(2) RR90-17-02DP w/ Mount Pipe	160	(2) RRU-11	148
(2) RR90-17-02DP w/ Mount Pipe	160	(2) RRU-11	148
(2) RR90-17-02DP w/ Mount Pipe	160	(2) RRU-11	148
(2) DTMA-1819-DD-12	160	DC6-48-60-18-8F	148
(2) DTMA-1819-DD-12	160	Valmont 12' Hatched LP Platform	141.5
(2) DTMA-1819-DD-12	160	(2) DB844H80E-XY w/ Mount Pipe	141.5
APX16DWV-16DWVS-E-A20w/ Mount Pipe	160	(2) DB844H80E-XY w/ Mount Pipe	141.5
APX16DWV-16DWVS-E-A20w/ Mount Pipe	160	(2) DB844H80E-XY w/ Mount Pipe	141.5
APX16DWV-16DWVS-E-A20w/ Mount Pipe	160	P6516XL-2 w/ Mount Pipe	141.5
APX16DWV-16DWVS-E-A20w/ Mount Pipe	160	MG D3-800TO w/ Mount Pipe	141.5
ATMAA1412D-1A20	160	P6516XL-2 w/ Mount Pipe	141.5
ATMAA1412D-1A20	160	MG D3-800TO w/ Mount Pipe	141.5
ATMAA1412D-1A20	160	P6516XL-2 w/ Mount Pipe	141.5
2" x 4' Mount Pipe	160	MG D3-800TO w/ Mount Pipe	141.5
2" x 4' Mount Pipe	160	Valmont 12' Hatched LP Platform	131
2" x 4' Mount Pipe	160	(4) 4' x 6" Panel w/ Mount Pipe	131
2" x 4' Mount Pipe	160	(4) 4' x 6" Panel w/ Mount Pipe	131
Valmont 12' Hatched LP Platform	148	(4) 4' x 6" Panel w/ Mount Pipe	131
(2) 7770.00 w/ Mount Pipe	148	Valmont 12' Hatched LP Platform	122
(2) 7770.00 w/ Mount Pipe	148	(2) DB980F90E-M w/ Mount Pipe	122
(2) 7770.00 w/ Mount Pipe	148	(2) DB980F90E-M w/ Mount Pipe	122
(4) LGP21401	148	(2) DB980F90E-M w/ Mount Pipe	122
(4) LGP21401	148	(2) 2" x 6" Mount Pipe	122
(4) LGP21401	148	(2) 2" x 6" Mount Pipe	122
P65-16-XLH-RR w/ Mount Pipe	148	(2) 2" x 6" Mount Pipe	122
P65-16-XLH-RR w/ Mount Pipe	148	4' Standoff	72
		GPS	72

### MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

### TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 74 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 71%



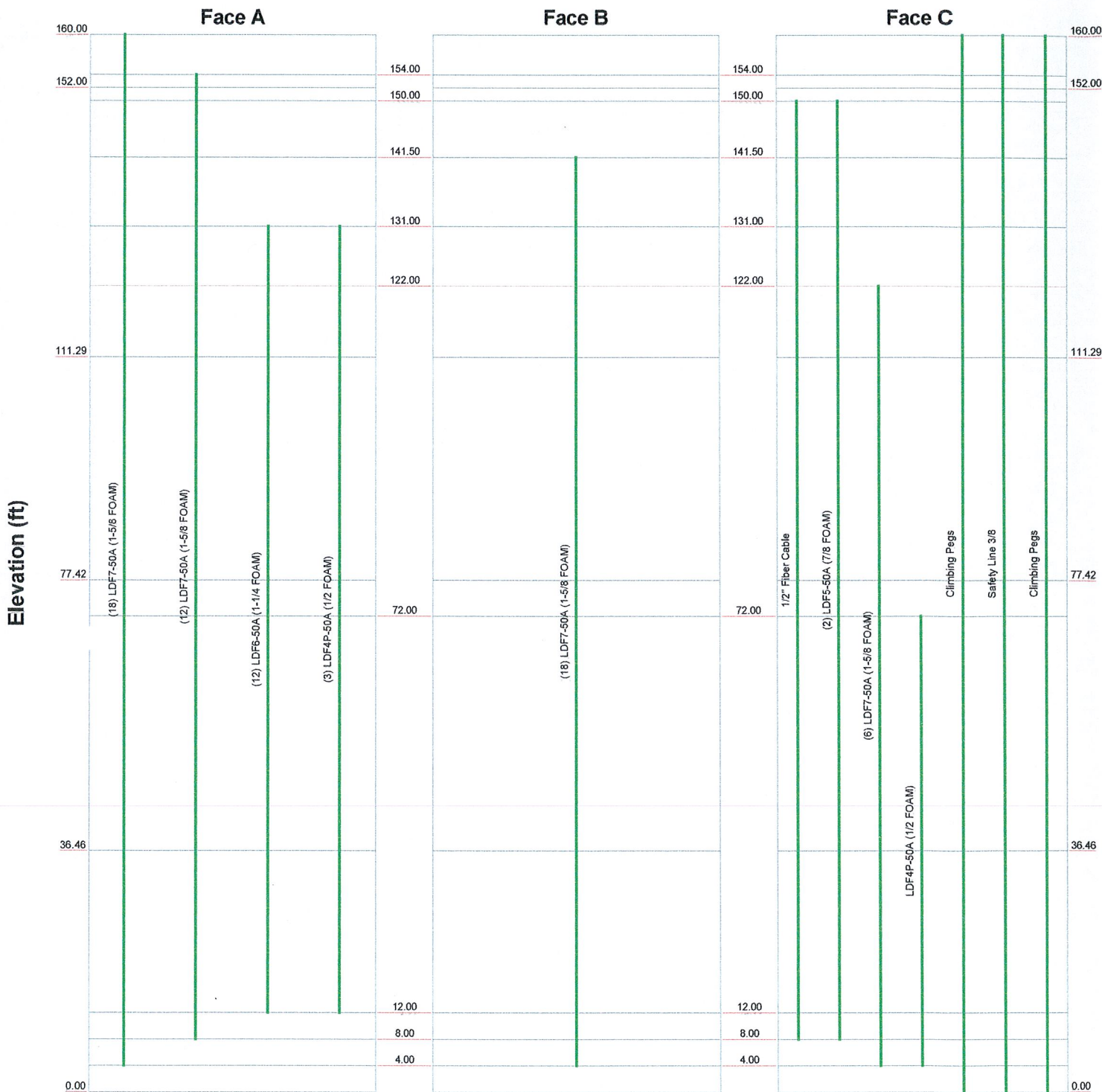
<b>GPD Group</b> 520 S. Main St. Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-3799	Job: <b>CT2130 (26225) GREENWICH NORTH</b> Project: <b>2011007.28</b>
	Client: SAI Communications Code: TIA/EIA-222-F Path: N:\2011\201100728\10034990 (26225) Greenwich North\BISA\26225 Greenwich North.dwg



# Feedline Distribution Chart

## 0' - 160'

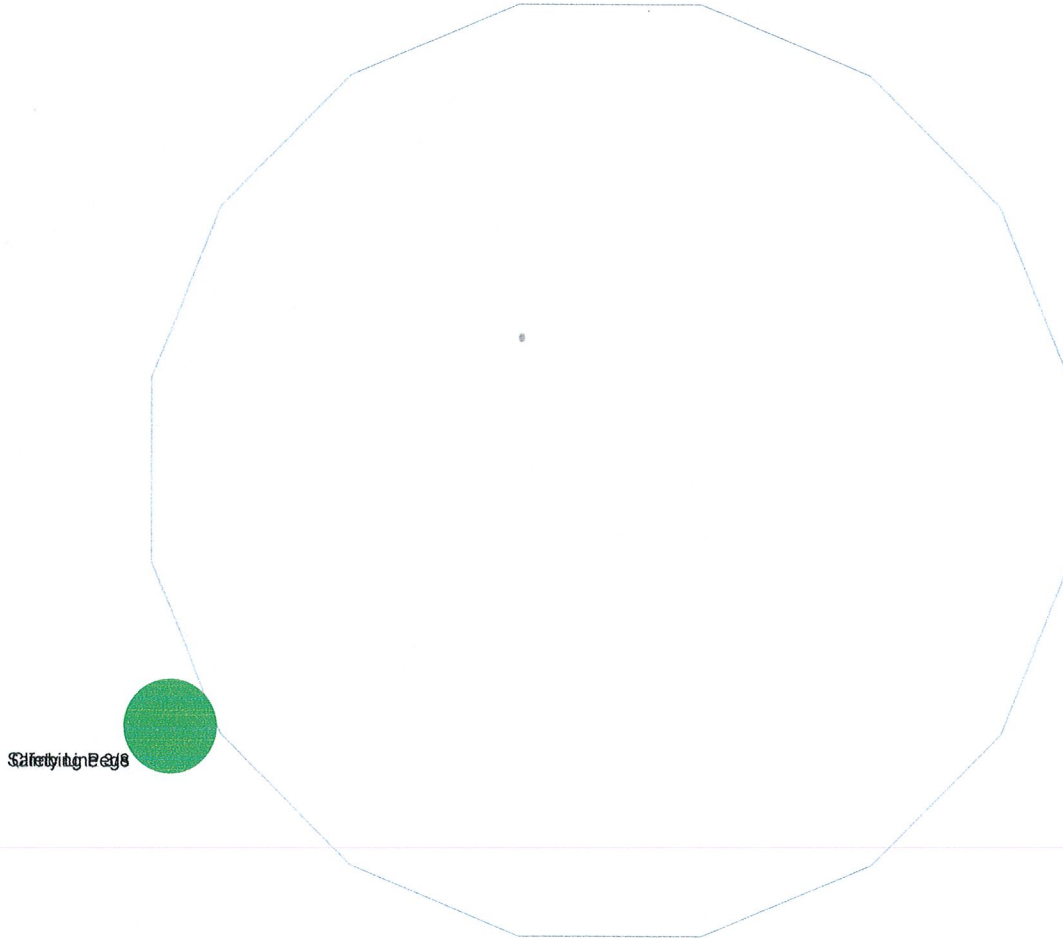
— Round   
 — Flat   
 — App In Face   
 — App Out Face   
 — Truss Leg



 <b>GPD Group</b> 520 S. Main St. Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-3799	<b>Job: CT2130 (26225) GREENWICH NORTH</b>		
	Project: 2011007.28		
	Client: SAI Communications	Drawn by: mimiller	App'd:
	Code: TIA/EIA-222-F	Date: 05/19/11	Scale: NTS
	Path:	Dwg No. E-7	

# Feedline Plan

Round \_\_\_\_\_ Flat \_\_\_\_\_ App In Face \_\_\_\_\_ App Out Face \_\_\_\_\_



 <b>GPD Group</b> 520 S. Main St. Akron, OH 44311 Phone: (330) 572-2100 FAX: (330) 572-3799	<b>Job: CT2130 (26225) GREENWICH NORTH</b>		
	Project: 2011007.28		
	Client: SAI Communications	Drawn by: mimiller	App'd:
	Code: TIA/EIA-222-F	Date: 05/19/11	Scale: NTS
	Path: N:\2011\201100728\10034690_26225\Greenwich North\RSA\26225 Greenwich North.dwg	Dwg No. E-7	

## APPENDIX D

### Base Plate & Anchor Rod Analysis



**Anchor Rod and Base Plate Stresses**  
**CT2130 (26225) GREENWICH NORTH**  
**GPD Project Number: 2011007.28**

Overturing Moment =	3910.00	k*ft
Axial Force =	51.00	k
Shear Force =	33.00	k

Acceptable Stress	
Ratio =	100.0%

Anchor Rods		
Number of Rods =	24	
Type =	Upset Rod	
Rod Yield Strength (Fy) =	75	ksi
ASIF =	1.333	
Rod Circle =	67	in
Rod Diameter =	2.25	in
Net Tensile Area =	3.25	in <sup>2</sup>
Max Tension on Rod =	114.53	kips
Max Compression on Rod =	118.78	kips
Allow. Rod Force =	195.00	kips
<b>Anchor Rod Capacity =</b>	<b>58.7%</b>	<b>OK</b>

Base Plate		
Location =	External	
Plate Strength (Fy) =	60	ksi
Outside Diameter =	73	in
Plate Thickness =	2.25	in
wcalc =	31.75	in
wmax =	48.14	in
w =	31.75	in
S =	26.79	in <sup>3</sup>
fb =	44.55	ksi
Fb =	60	ksi
<b>BP Capacity =</b>	<b>74.2%</b>	<b>OK</b>

Stiffeners		
Configuration =	None	

Pole		
Pole Diameter =	59	in
Number of Sides =	18	
Thickness =	0.5	in
Pole Yield Strength =	65	ksi

## APPENDIX E

### Flange Analysis



**Existing Flange Connection @ 152'**  
**CT2130 (26225) GREENWICH NORTH**  
 GPD Project Number: 2011007.28

O.T. Moment =	40	k <sup>2</sup> ft
Axial =	2.21	kips
Shear =	4.32	kips

Acceptable Stress Ratio =	100.0%
---------------------------	--------

Flange Bolts	
# Bolts =	12
Bolt Type =	A325
F <sub>t</sub> =	44 ksi
ASIF =	1.333
Bolt Circle =	35 in
Bolt Diameter =	1 in
<i>Tension &amp; Shear (ASD, Section J3.5)</i>	
F <sub>v</sub> =	21 ksi
Nominal Area =	0.79 in <sup>2</sup>
f <sub>v</sub> =	0.46 ksi
Applied Shear =	0.36 kips
Allowable Shear =	21.99 kips
F <sub>t</sub> <sup>2</sup> - 4.39(f <sub>v</sub> <sup>2</sup> ) <sup>1/2</sup> =	43.99 ksi
Allowable Bolt Stress =	58.65269 ksi
B =	46.07 kips
<i>Prying Action Check</i>	
N/A, top flange thickness > t <sub>c</sub>	
Max Comp. on Bolt =	4.75 kips
Max Tension on Bolt =	4.39 kips
Shear Capacity =	1.6%
Tensile Capacity =	9.5%
<b>Bolt Capacity =</b>	<b>9.5% OK</b>

Upper Flange Plate	
Location =	External
Plate Strength (F <sub>y</sub> ) =	60 ksi
Plate Thickness =	1 in
Outer Diameter =	38 in
w <sub>calc</sub> =	16.95 in
w <sub>max</sub> =	19.06 in
w =	16.95 in
S =	2.83 in <sup>3</sup>
f <sub>b</sub> =	5.19 ksi
F <sub>b</sub> =	60 ksi
<b>UP Capacity =</b>	<b>8.6% OK</b>

Upper Stiffeners	
Configuration =	None

Pole Information	
Shaft Diam. (Upper) =	30.62 in
Thickness (Upper) =	0.1875 in
# of Sides (Upper) =	18
F <sub>y</sub> (Upper) =	65 ksi
Shaft Diam. (Lower) =	30.62 in
Thickness (Lower) =	0.25 in
# of Sides (Lower) =	18
F <sub>y</sub> (Lower) =	65 ksi

Lower Flange Plate	
Location =	External
Plate Strength (F <sub>y</sub> ) =	60 ksi
Plate Thickness =	1 in
Outer Diameter =	38 in
w <sub>calc</sub> =	16.95 in
w <sub>max</sub> =	19.06 in
w =	16.95 in
S =	2.83 in <sup>3</sup>
f <sub>b</sub> =	5.19 ksi
F <sub>b</sub> =	60 ksi
<b>LP Capacity =</b>	<b>8.6% OK</b>

Lower Stiffeners	
Configuration =	None



## APPENDIX F

### Foundation Calculations



**Mat Foundation Analysis**  
**CT2130 (26225) GREENWICH NORTH**  
**GPD Project Number: 2011007.28**

General Info	
Code	TIA/EIA-222-F (ASD)
Bearing On	Rock
Foundation Type	Mono Pad
Pier Type	Square
Reinforcing Known	Yes
Max Capacity	1

Tower Reactions	
Moment, M	3910 k-ft
Axial, P	51 k
Shear, V	33 k

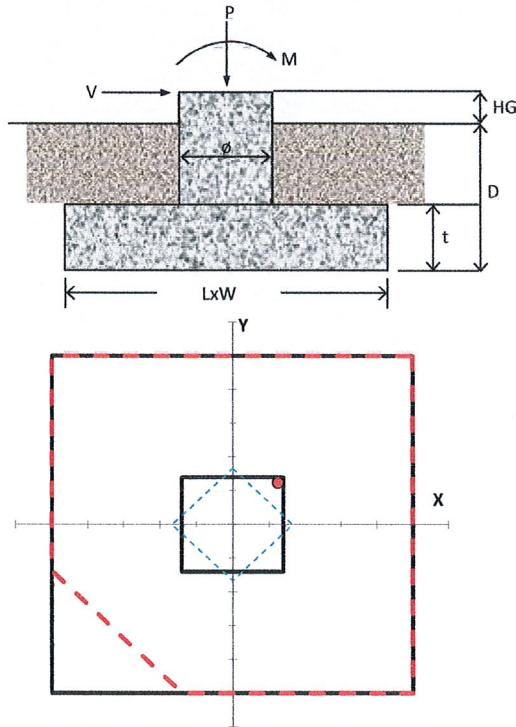
Pad & Pier Geometry	
Pier Width, $\phi$	7 ft
Pad Length, L	25 ft
Pad Width, W	25 ft
Pad Thickness, t	4.5 ft
Depth, D	9.5 ft
Height Above Grade, HG	0.5 ft

Pad & Pier Reinforcing	
Rebar Fy	60 ksi
Concrete Fc'	4 ksi
Clear Cover	3 in
Reinforced Top & Bottom?	Yes
Pad Reinforcing Size	# 9
Pad Quantity Per Layer	44
Pier Rebar Size	# 11
Pier Quantity of Rebar	21

Soil Properties	
Soil Type	Granular
Soil Unit Weight	120 pcf
Angle of Friction, $\phi$	34 °
Bearing Type	Net
Ultimate Bearing	30 ksf
Water Table Depth	10 ft
Frost Depth	3.33 ft

Bearing Summary			Load Case
Qxmax	2.81	ksf	1D+1W
Qymax	2.81	ksf	1D+1W
Qmax @ 45°	3.49	ksf	1D+1W
Q <sub>(all) Gross</sub>	15.57	ksf	
<b>Controlling Capacity</b>	<b>22.4%</b>	<b>Pass</b>	

Overturning Summary (Required FS=1.5)			Load Case
FS(ot)x	2.87	≥1.5	1D+1W
FS(ot)y	2.87	≥1.5	1D+1W
<b>Controlling Capacity</b>	<b>52.4%</b>	<b>Pass</b>	



## P65-16-XLH-RR

## Dual Broadband Antennas

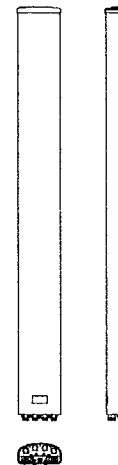
POLARIZATION: Dual linear  $\pm 45^\circ$   
 FREQUENCY (MHz): 698-894, 1710-2170  
 HORIZONTAL BEAM WIDTH ( $^\circ$ ): 65, 65  
 GAIN (dBi/dBd): 15.5/13.4 17.5/15.4  
 TILT: 1-12, 0-8  
 LENGTH: 72"

## ELECTRICAL SPECIFICATIONS\*

	698-894		1710-1880	1710-2170	
	698-806	806-894		1850-1990	1900-2170
Frequency range (MHz)					
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 ( $\Omega$ )	50		50		
VSWR	< 1.5:1		< 1.5:1		
Horizontal beam width, -3 dB ( $^\circ$ )	66	65	60	63	63
Vertical beam width, -3 dB ( $^\circ$ )	14.7	12.5	6.8	6.4	5.7
Electrical down tilt ( $^\circ$ )	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 $\pm 60^\circ$ (dB)	< 2		< 2	< 2	< 2
First null fill (dB)			> -20	> -20	> -20
Vertical beam squint ( $^\circ$ )	< 0.8	< 0.8	< 0.5	< 0.5	< 0.5
Front to back ratio (dB) $180^\circ \pm 30^\circ$ copolar	> 24	> 24	> 30	> 30	> 28
Front to back ratio (dB) $180^\circ \pm 30^\circ$ total power					
Cross polar discrimination (XPD) $0^\circ$ (dB)	> 15	> 15	> 15	> 15	> 15
Cross polar discrimination (XPD) $\pm 60^\circ$ (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	7256.00, 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

RBSS6000



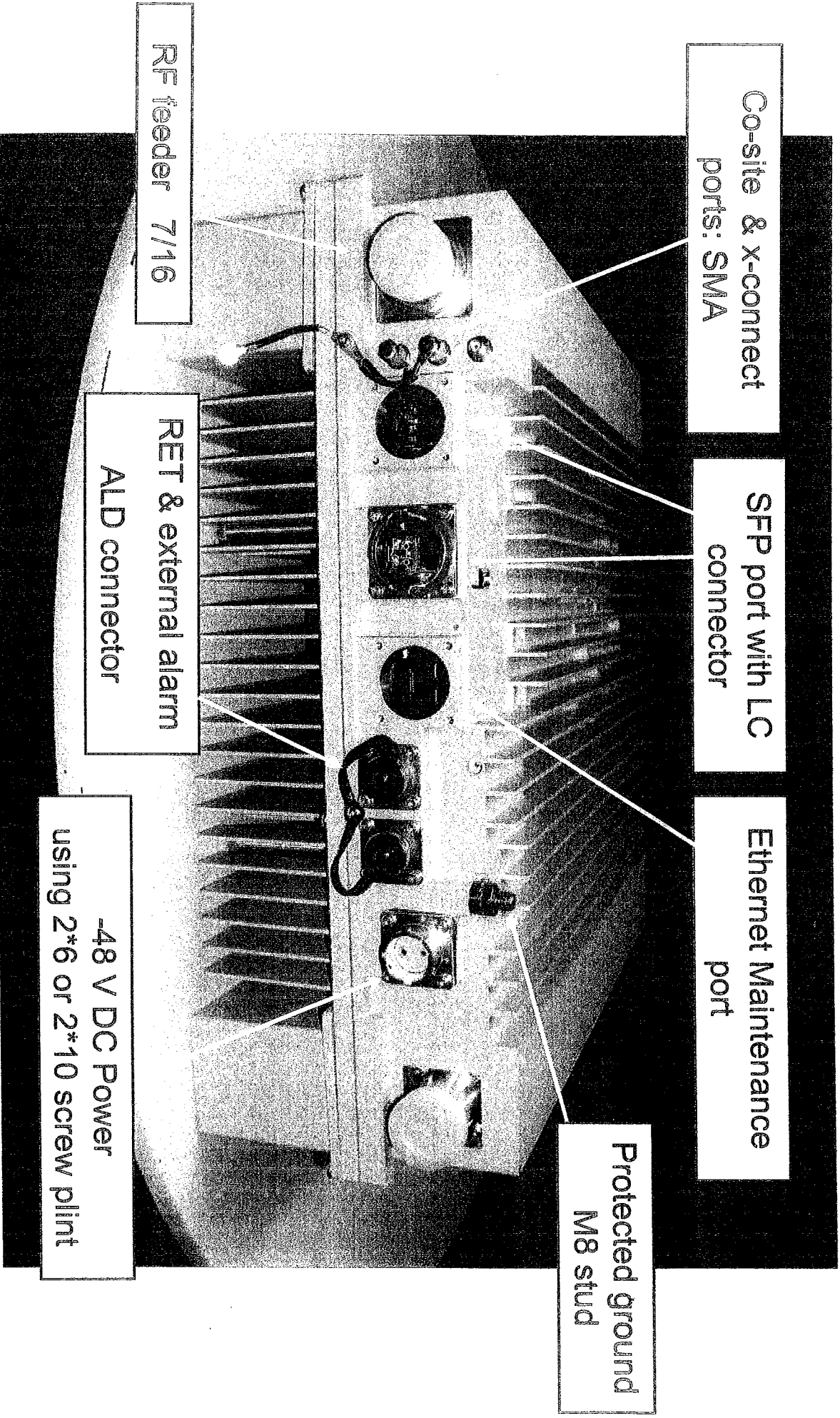
- > Multi standard
- > RF: 2x30 Watts
- > Carrier BW: 1.4 – 20 MHz
- > Alarms: 2
- > Dimensions (with sunshield):
  - Width: 17.0 in
  - Height: 17.8 in
  - Depth: 7.2 in
  - Weight: 55 lbs (Band 12)  
50 lbs (Band 4)
- > Temperature: -40 to +131 F
- > Cooling: Self convection
- > Power: -48 VDC
- >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



# RRUS-11 I/F



RBS6000



Co-site & x-connect ports: SMA

SFP port with LC connector

Ethernet Maintenance port

Protected ground M8 stud

-48 V DC Power using 2\*6 or 2\*10 screw plint

RET & external alarm ALD connector

RF feeder 7/16



# POWER

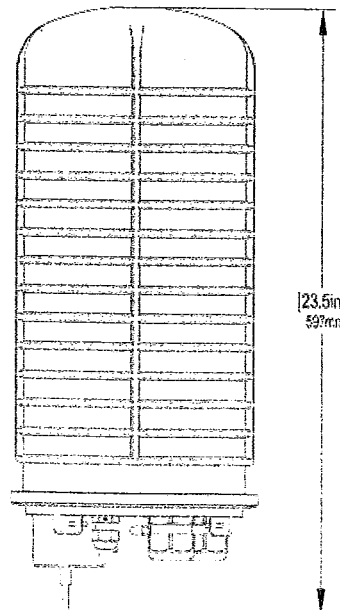
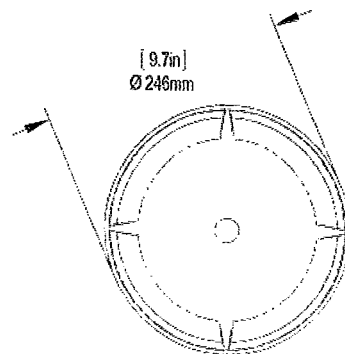
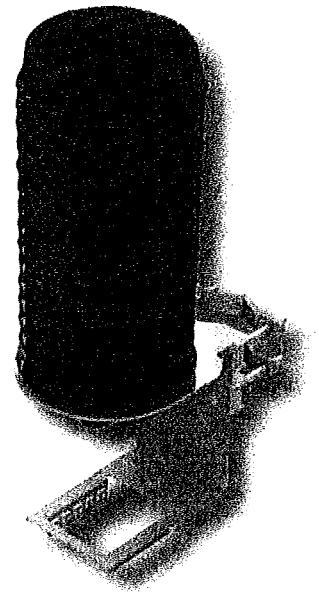
## DC6-48-60-18-8F

### DC Surge Suppression Solution

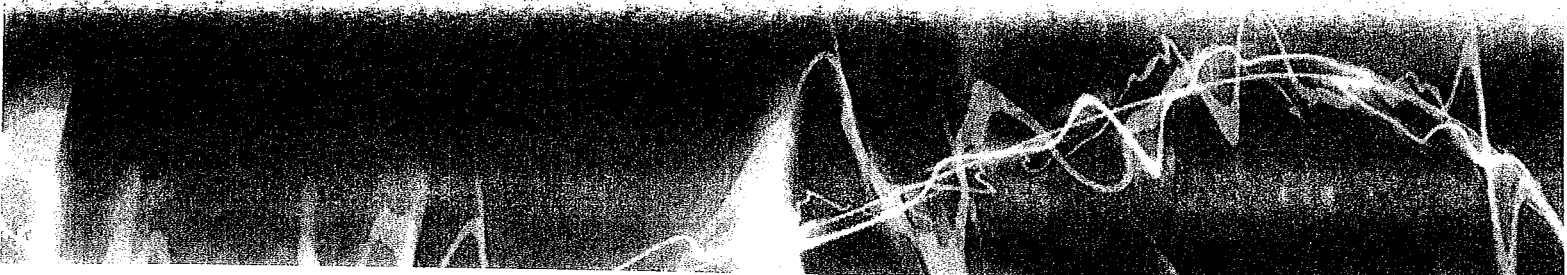
The DC6-48-60-18 is a dual chambered, DC surge suppression system for use in multi-circuit, Distributed Antenna Systems. The system will protect up to 6 Remote Radio Heads from voltage surges and lightning, and connect up to 18 fiber pairs. The system is enclosed in a NEMA 4 rated, waterproof enclosure.

#### 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.







# 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 $\mu$ s
Maximum Discharge Current ( $I_{max}$ ) per NEMA LS-1	60 kA 8/20 $\mu$ s
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)



G02-00-068 REV 050610



GS-07F-0435V



Certified to  
ISO 9001:2000



TÜV Rheinland  
of North America



**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

June 14, 2011

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

Re: Telecommunications Facility – 363 Riersville 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