



# 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)

September 16, 2011

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

RE: **EM-CING-034-110830** - New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 48 Newtown Road, Danbury, 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:

- AT&T shall reconfigure coaxial cables in accordance with recommendations made in the Structural Retrofit Analysis prepared by CHA dated August 1, 2011 and stamped by Thomas O'Brien; and
- Following the installation of the proposed equipment, AT&T shall provide documentation certifying that the installation complied with the engineer's recommendations.
- 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 August 30, 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 Mark D. Boughton, Mayor, City of Danbury  
Dennis Elpern, City Planner, City of Danbury  
Wireless Capital Partners

EM-CING-034-110830



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

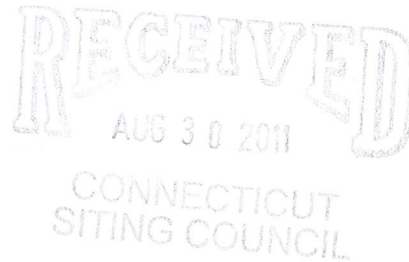
ORIGINAL

Douglas L. Culp  
Real Estate Consultant

HAND DELIVERED

August 30, 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 48 Newtown Road Danbury, CT (owner Wireless Capital Partners/Bert Bertram)

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 the last step toward the 4th generation (4G) of radio technologies, 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.

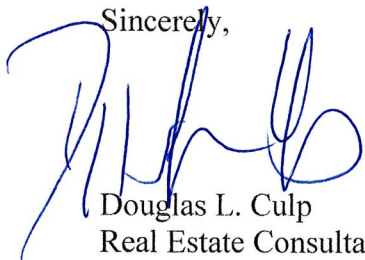
The changes to the facility do not constitute modifications as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed or altered. Rather, the planned changes to the facility fall squarely within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

48 Newtown Road Danbury, CT  
Site Number CT2157  
Exempt Mod

**Tower Owner/Manager:** Wireless Capital Partners/Bert Bertram

**Equipment configuration:** Monopole

**Current and/or approved:** Six PowerWave 7770 antennas @ 100 ft  
Six PowerWave TMA's and Six Diplexers @ 100 ft  
Twelve runs 1 5/8 inch coax to 100 ft  
Equipment Room in Existing Building

**Planned Modifications:** Retain existing PowerWave Antenna's and TMA's at 100 ft  
Retain all Coax Cabling  
Install one KMW 16-65 and two KMW 14-65 antennas or equivalent @ 100 ft  
Install six remote radio heads (Ericsson RRUS-11) and surge arrester/fiber connector (RayCap DC6-48-60-18-8F) @ 100 ft  
Install one fiber and two DC power cables to 100 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 75.4 % 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 79.1% 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							59.95
AT&T UMTS	100	800 Band	1	500	0.0180	0.5867	3.06
AT&T GSM	100	800 Band	6	296	0.0639	0.5867	10.88
AT&T GSM	100	1900 Band	1	427	0.0154	1.0000	1.54
<b>Total</b>							<b>75.4%</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							59.95
AT&T UMTS	100	800 Band	1	500	0.0180	0.5867	3.06
AT&T GSM	100	800 Band	6	296	0.0639	0.5867	10.88
AT&T GSM	100	1900 Band	1	427	0.0154	1.0000	1.54
AT&T LTE	100	740 - 746	1	500	0.0180	0.4933	3.64
<b>Total</b>							<b>79.1%</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 with the coax cable repositioning. (Clough Harbor Assoc. Group dated 8-1-11).

# NEW CINGULAR WIRELESS PCS, LLC WIRELESS COMMUNICATIONS FACILITY CT2157 DANBURY - EAST

## 48 NEWTOWN ROAD DANBURY, CONNECTICUT

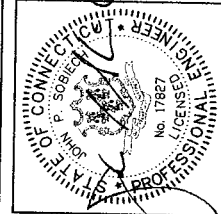


Your world. Delivered.  
NEW CINGULAR WIRELESS PCS, LLC  
500 ENTERPRISE DRIVE  
ROCKY HILL, CT 06867



CHIA PROJECT NO:  
22702 - 1013 - 43000

NO.	DATE	DESCRIPTION	BY	CHKD BY
1	08/29/11	ISSUED FOR REVIEW	PTD	PTD
2	08/29/11	ISSUED FOR REVIEW	PTD	PTD
3	08/29/11	ISSUED FOR REVIEW	PTD	PTD
4	08/29/11	ISSUED FOR REVIEW	PTD	PTD
5	08/29/11	ISSUED FOR REVIEW	PTD	PTD



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO SEAL THIS DOCUMENT.

SITE NO:  
CT2157  
SITE NAME:  
DANBURY - EAST  
SITE ADDRESS:  
48 NEWTOWN ROAD  
DANBURY, CT  
06810  
FAIRFIELD COUNTY

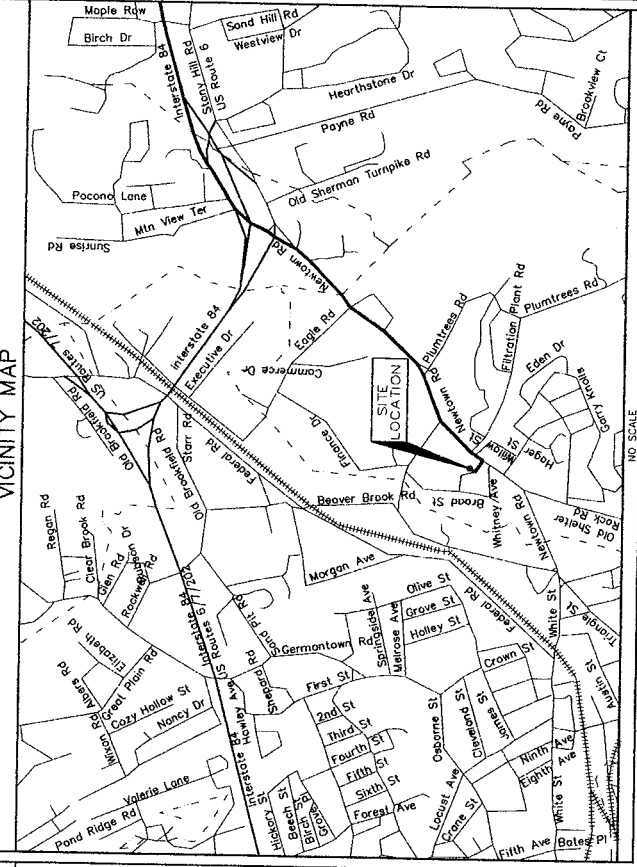
SHEET TITLE  
TITLE SHEET

SHEET NUMBER  
T01

SHEET NO.	SHEET TITLE	REVISION HISTORY	
		NO.	DATE
T01	TITLE SHEET	2	08 / 29 / 11
C01	COMPOUND PLAN	2	08 / 29 / 11
C02	SHELTER PLAN	2	08 / 29 / 11
C03	ELEVATION AND ANTENNA PLAN	2	08 / 29 / 11
C04	STRUCTURAL DETAILS	2	08 / 29 / 11
E01	GROUND DETAILS & PLUMBING DIAGRAM	2	08 / 29 / 11
G01	GENERAL NOTES	2	08 / 29 / 11

**DO NOT SCALE DRAWINGS**

CONTRACTOR SHALL VERIFY DIMENSIONS AND EXISTING ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.



NO SCALE

AUGUST 29, 2011

**PROJECT SUMMARY**

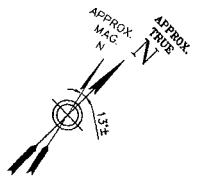
SITE NUMBER: CT2157  
 SITE NAME: DANBURY - EAST  
 SITE ADDRESS: 48 NEWTOWN ROAD DANBURY, CT 06810  
 STRUCTURE OWNER: WIRELESS CAPITAL PARTNERS  
 APPLICANT: NEW CINGULAR WIRELESS PCS, LLC  
 CONTACT: MICHAEL D. FOLEY (203) 414-1104  
 COORDINATES: 41° 24' 12.27"N 73° 25' 27.99"W  
 HORIZONTAL DATUM: NAD 83  
 ENGINEER: CHA, INC. 2138 SUAS DEANE HIGHWAY SUITE 212 ROCKY HILL, CT 06867  
 CONTACT: PAUL LUSTMAN (860) 267-4557

**DRIVING DIRECTIONS**

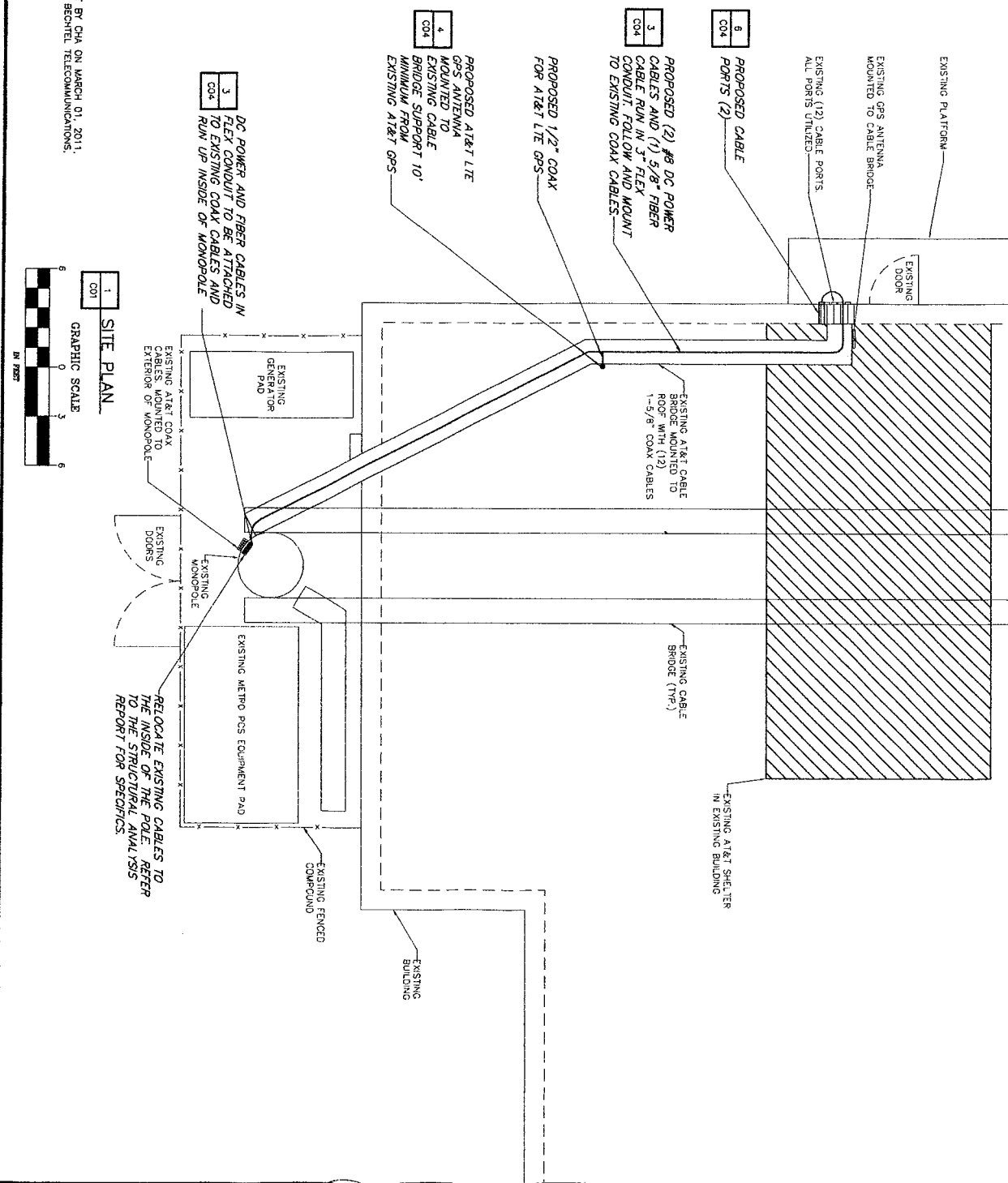
FROM HARTFORD:  
 1. TAKE I-84W AND MERGE ONTO NEWTOWN ROAD  
 2. TOWARDS BETHEL  
 3. CONTINUE ABOUT 1.5 MILES TO 48 NEWTOWN ROAD. SITE WILL BE ON RIGHT, AND THE TOWER CAN BE ACCESSED OFF OF GALLAGHER LANE.

**PROJECT DESCRIPTION**

THIS PROJECT ADDS THREE ANTENNAS, SIX RRH SURGE ARRESTORS, AND A RADIO CABINET TO AN EXISTING TELECOMMUNICATIONS SITE.

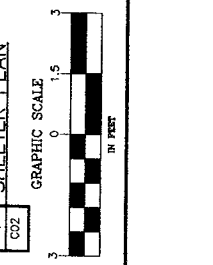
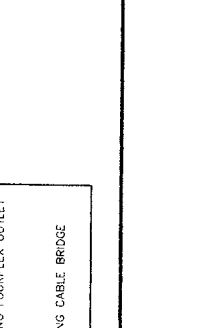
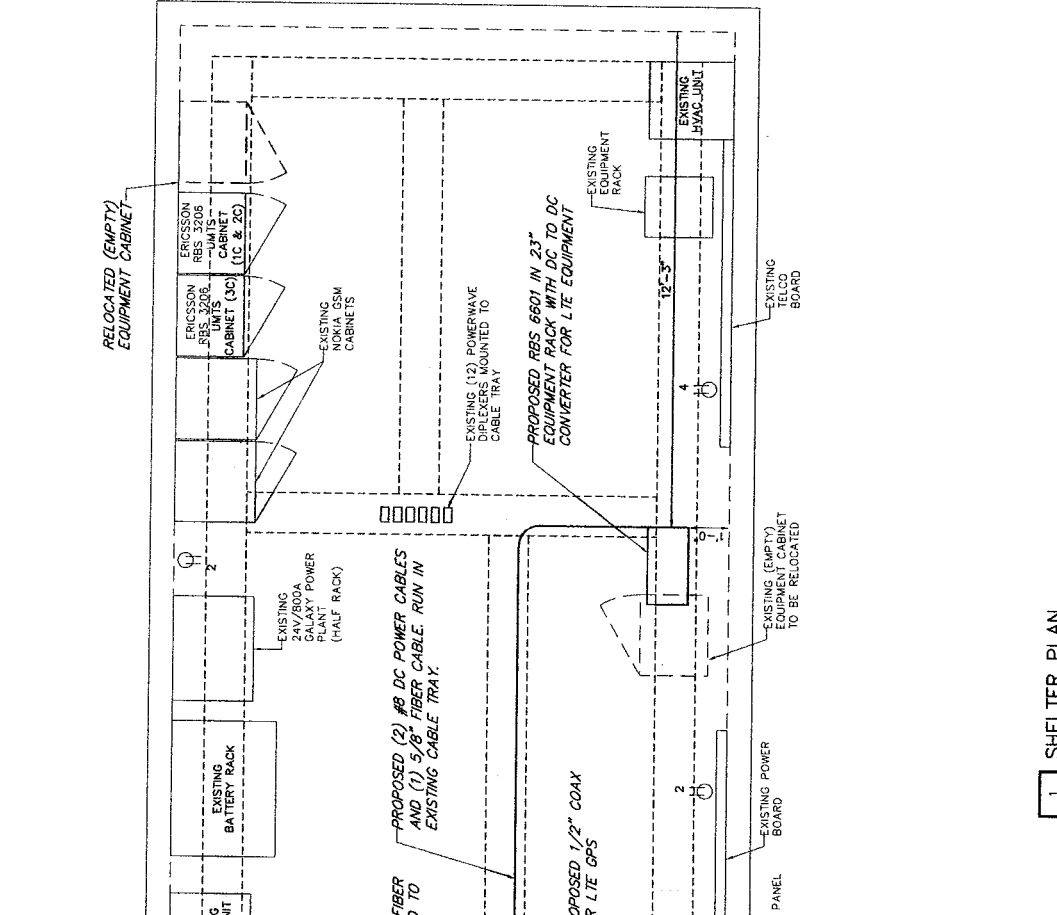
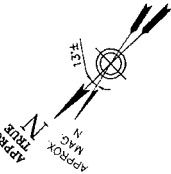


NOTE:  
 1. PLANS BASED ON A SITE VISIT BY CHA ON MARCH 01, 2011.  
 2. AND DRAWINGS PREPARED BY BECHTEL TELECOMMUNICATIONS.  
 3. LAST DATED 10/03/02.



<p>NEW SINGULAR WIRELESS PCS, LLC        500 ENTERPRISE DRIVE        ROCKY HILL, CT 08897</p>		<p>228 New Britain Avenue, Suite 200, Rocky Hill, CT 08897        860.270.2447 • www.cha.com</p>		<p>DATE: 03/10/11        BY: CHA        CHECKED: CHA        DATE: 03/10/11        BY: CHA        CHECKED: CHA</p>	<p>PROJECT NO: 22702 - 1013 - 43000</p>
<p>SHEET NUMBER: C01</p>		<p>SHEET TITLE: COMPOUND PLAN</p>		<p>SITE ID: CT12157        SITE NAME: DANBURY - EAST        SITE ADDRESS: 48 NEWTOWN ROAD DANBURY, CT 06810        COUNTY: FAIRFIELD COUNTY</p>	
<p>STATE OF CONNECTICUT PROFESSIONAL ENGINEER LICENSE NO. 17827</p>					





**at&t**  
Your world. Delivered.

NEW CIRCULAR WIRELESS PCS, LLC  
800 ENTERPRISE DRIVE  
ROCKY HILL, CT 06867

CHA PROJECT NO:  
22702 - 1013 - 43000

CHA  
1500 Main Street, Wallingford, CT 06495  
Phone: 203.261.4400 Fax: 203.261.4401  
www.cha.com

NO.	DATE	DESCRIPTION	BY	CHKD.	APP'D.
1	03/15/11	ISSUED FOR REVIEW	JM	JM	JM
2	03/15/11	ISSUED FOR REVIEW	JM	JM	JM
3	03/15/11	ISSUED FOR REVIEW	JM	JM	JM
4	03/15/11	ISSUED FOR REVIEW	JM	JM	JM
5	03/15/11	ISSUED FOR REVIEW	JM	JM	JM
6	03/15/11	ISSUED FOR REVIEW	JM	JM	JM

STATE OF CONNECTICUT  
JOHN P. SOBEL  
No. 17887  
LICENSED PROFESSIONAL ENGINEER

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SITE ID:  
CT2157

SITE NAME:  
DANBURY - EAST

SITE ADDRESS:  
48 NEWTOWN ROAD  
DANBURY, CT  
06810  
FAIRFIELD COUNTY

SHEET TITLE:  
SHELTER PLAN

SHEET NUMBER:  
C02

LEGEND

2. Existing Duplex Outlet

4. Existing Fourplex Outlet

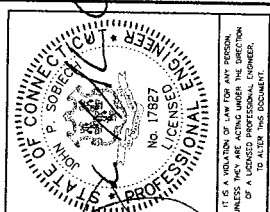
Existing Cable Bridge



NEW CINGULAR WIRELESS PCS, LLC  
500 ENTERPRISE DRIVE  
ROCKY HILL, CT 06867

**CHA**  
2108 Main Street, New Britain, CT 06105  
Tel: (860) 234-1100 Fax: (860) 234-1101  
www.cha.com

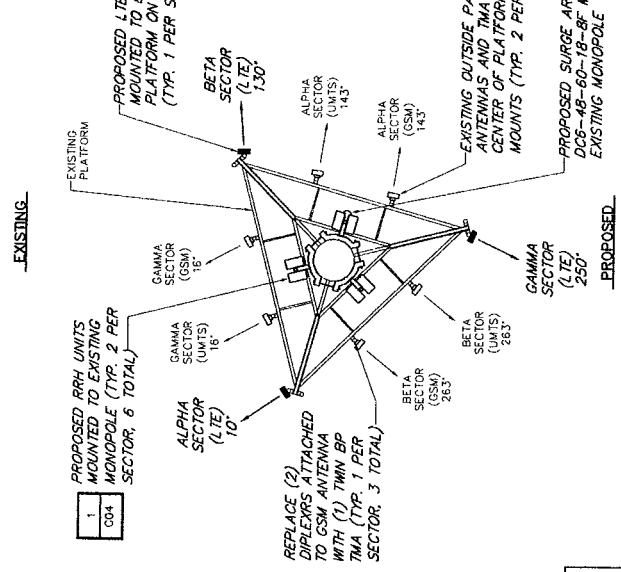
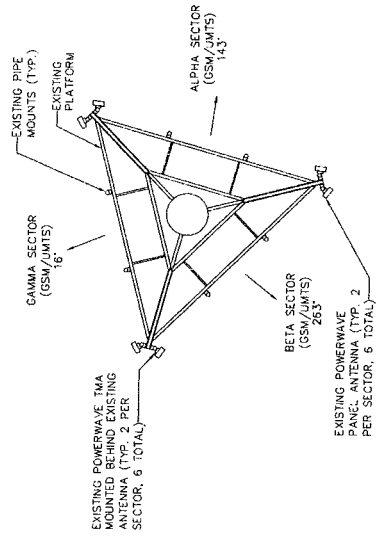
NO.	QUANTITY	DESCRIPTION	UNIT
0	0	EXISTING PIPE MOUNTS (TYP.)	PER SECTOR
1	1	EXISTING POWERWAVE TMA MOUNTED BEHIND EXISTING MONOPOLE (TYP. 2 PER SECTOR, 6 TOTAL)	PER SECTOR
2	2	EXISTING POWERWAVE TMA MOUNTED BEHIND EXISTING MONOPOLE (TYP. 2 PER SECTOR, 6 TOTAL)	PER SECTOR



U.S.A. MEMBER OF THE NATIONAL ASSOCIATION OF PROFESSIONAL ENGINEERS  
UNLESS INDICATED OTHERWISE, ALL DIMENSIONS ARE TO CENTER UNLESS NOTED OTHERWISE.

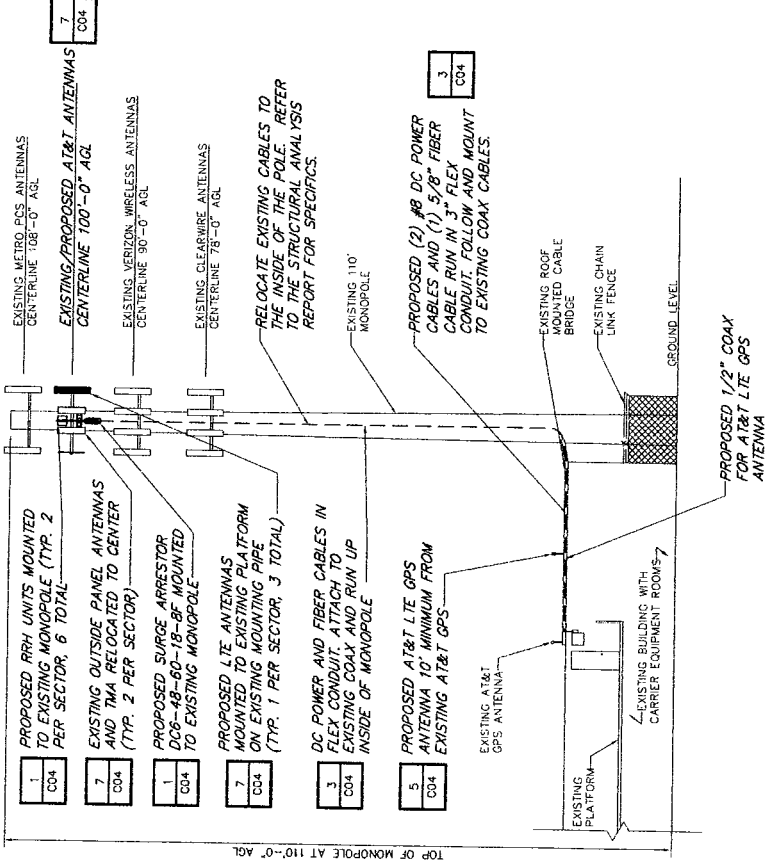
SITE ID: CT12157  
SITE NAME: DANBURY - EAST  
SITE ADDRESS: 48 NEWTOWN ROAD, DANBURY, CT 06810  
FAIRFIELD COUNTY

SHEET TITLE: ELEVATION AND ANTENNA PLAN  
SHEET NUMBER: C03



NOTE: REFER TO FINAL BIDS FOR FINAL SECTOR CONFIGURATIONS.

2 ANTENNA PLANS  
C03 SCALE: N.T.S.



NOTE: A STRUCTURAL ANALYSIS OF THE EXISTING TOWER HAS NOT BEEN PERFORMED. AN ANALYSIS OF THE EXISTING STRUCTURE MUST BE PERFORMED PRIOR TO CONSTRUCTION TO CONFIRM STRUCTURE IS CAPABLE OF SUPPORTING PROPOSED LOADS.



- 1 C04 PROPOSED RRH UNITS MOUNTED TO EXISTING MONOPOLE (TYP. 2 PER SECTOR, 6 TOTAL)
- 7 C04 EXISTING OUTSIDE PANEL ANTENNAS AND TMA RELOCATED TO CENTER (TYP. 2 PER SECTOR)
- 1 C04 PROPOSED SURGE ARRESTOR DC6-48-60-18-BF MOUNTED TO EXISTING MONOPOLE
- 7 C04 PROPOSED LIE ANTENNAS MOUNTED TO EXISTING PIPE ON EXISTING MOUNTING PIPE (TYP. 1 PER SECTOR, 3 TOTAL)
- 3 C04 DC POWER AND FIBER CABLES IN FLEX CONDUIT. ATTACH TO EXISTING COAX AND RUN UP INSIDE OF MONOPOLE
- 5 C04 PROPOSED AT&T LIE GPS ANTENNA TO MINIMUM FROM EXISTING AT&T GPS

- 1 C04 PROPOSED RRH UNITS MOUNTED TO EXISTING MONOPOLE (TYP. 2 PER SECTOR, 6 TOTAL)
- 3 C04 REPLACE (2) ATTACHED DIPLEXERS TO GSM ANTENNA WITH (1) TWIN BP TMA (TYP. 1 PER SECTOR, 3 TOTAL)
- 7 C04 PROPOSED LIE ANTENNAS MOUNTED TO EXISTING MOUNTING PLATFORM ON EXISTING MOUNT (TYP. 1 PER SECTOR, 3 TOTAL)

PROPOSED 1/2" COAX FOR AT&T LIE GPS ANTENNA

TOP OF MONOPOLE AT 110'-0" AGL

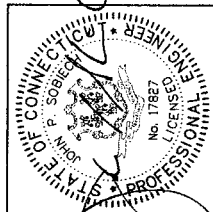


NEW CINCINNATI WIRELESS PCS, LLC  
1000 ROCKY HILL, CT 06067



CHA PROJECT NO:  
22702 - 1013 - 53000

NO.	DATE	DESCRIPTION
0	02/19/11	ISSUED FOR REVIEW
1	04/25/11	REVISED FOR COMMENTS
2	06/15/11	REVISED FOR COMMENTS
3	08/15/11	REVISED FOR COMMENTS
4	09/15/11	REVISED FOR COMMENTS

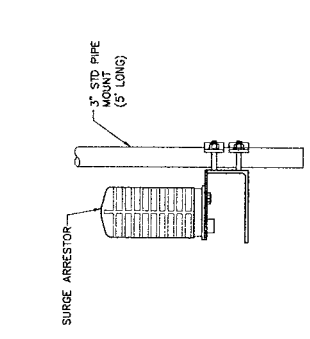


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SITE ID: C12157  
SITE NAME: DANBURY - EAST  
SITE ADDRESS: 48 NEWTOWN ROAD DANBURY, CT 06810  
FAIRFIELD COUNTY

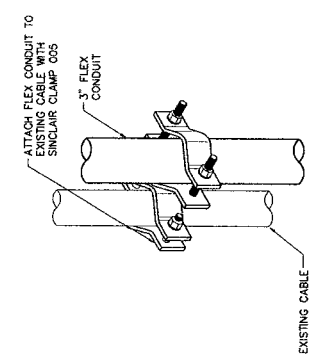
SHEET TITLE: STRUCTURAL DETAILS

SHEET NUMBER: C04



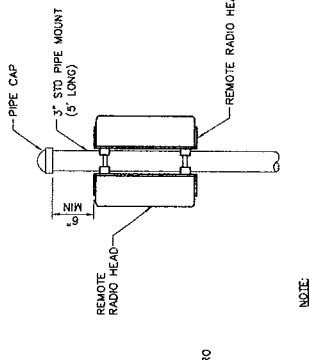
NOTE:  
SURGE ARRESTOR MOUNTING BRACKET AND HARDWARE TO BE PROVIDED BY MANUFACTURER.

1 RRH/SURGE ARRESTOR MOUNTING DETAIL  
SCALE: NTS



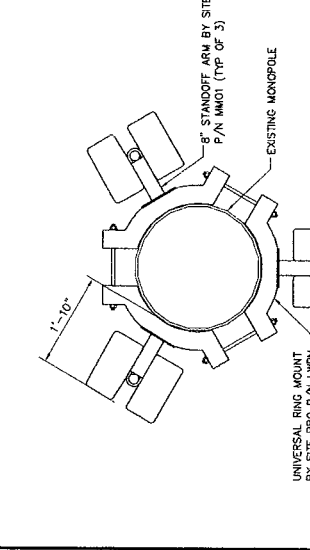
NOTE:  
REMOTE RADIO HEAD MOUNTING BRACKET AND HARDWARE TO BE PROVIDED BY MANUFACTURER.

2 RRH MOUNTING DETAIL  
SCALE: NTS



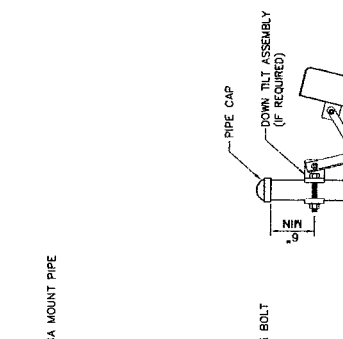
NOTE:  
SURGE ARRESTOR MOUNTING BRACKET AND HARDWARE TO BE PROVIDED BY MANUFACTURER.

3 FLEX CONDUIT DETAIL  
SCALE: NTS



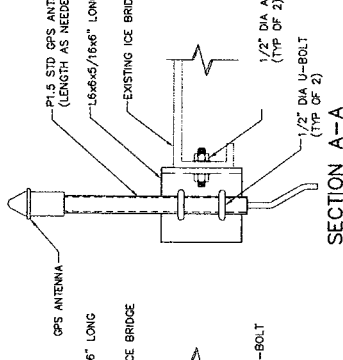
NOTE:  
THE HEIGHT OF THE ANTENNA MOUNT IS 6.5 LBS.

4 GPS MOUNTING DETAIL  
SCALE: NTS



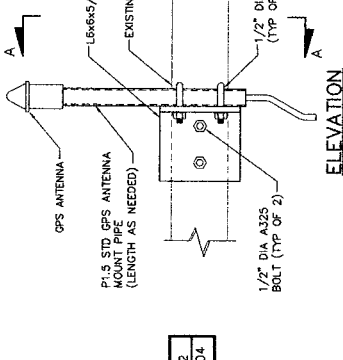
NOTE:  
THE HEIGHT OF THE ANTENNA MOUNT IS 6.5 LBS.

5 GPS MOUNTING DETAIL  
SCALE: NTS



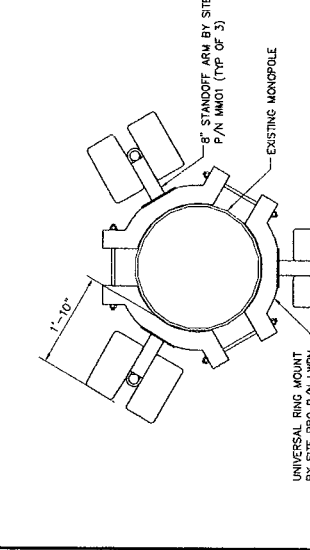
NOTE:  
THE HEIGHT OF THE ANTENNA MOUNT IS 6.5 LBS.

6 PORT PANEL DETAIL  
SCALE: NTS



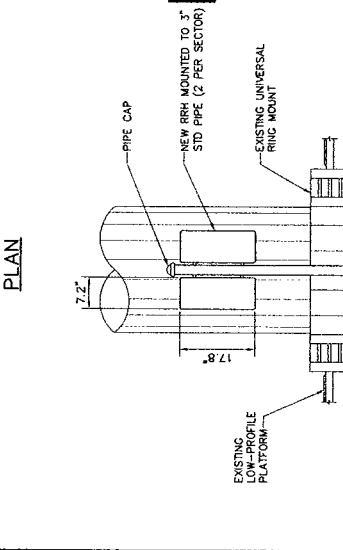
NOTE:  
MOUNT ANTENNA IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDED PROCEDURE.  
2. USE EXISTING PIPE MOUNT IF AVAILABLE.

7 TYPICAL ANTENNA MOUNTING DETAIL  
SCALE: NTS



NOTE:  
CONTRACTOR TO ENSURE THAT RRH AND SURGE ARRESTOR DOES NOT INTERFERE WITH CLIMBING LADDER.  
2. INSTALL RRH WITH ADEQUATE CLEARANCE FROM AT&T PLATFORM TO ALLOW ROOM FOR ACCESS.

8 PLAN  
SCALE: NTS



NOTE:  
CONTRACTOR TO ENSURE THAT RRH AND SURGE ARRESTOR DOES NOT INTERFERE WITH CLIMBING LADDER.  
2. INSTALL RRH WITH ADEQUATE CLEARANCE FROM AT&T PLATFORM TO ALLOW ROOM FOR ACCESS.

9 ELEVATION  
SCALE: NTS

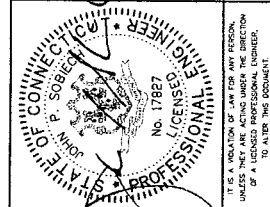


NEW CIRCULAR WIRELESS PCS, LLC  
500 ENTERPRISE DRIVE  
ROCKY HILL, CT 06867



CHA PROJECT NO.  
22702 - 1013 - 43000

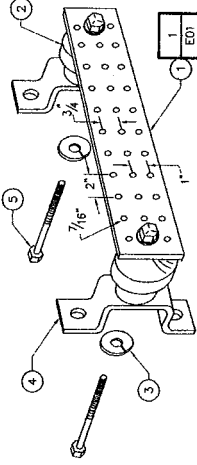
NO.	DATE	ISSUED FOR REVIEW	BY	DATE	APPROVED
1	03/10/11	DESIGN	...	...	...
2	03/29/11	REVISION	...	...	...



SITE ID:  
CT2157  
SITE NAME:  
DANBURY - EAST  
SITE ADDRESS:  
48 NEWTOWN ROAD  
DANBURY, CT  
06810  
FAIRFIELD COUNTY

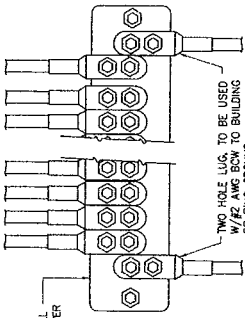
SHEET TITLE  
GROUNDING DETAILS &  
PLUMBING DIAGRAM

SHEET NUMBER  
E01



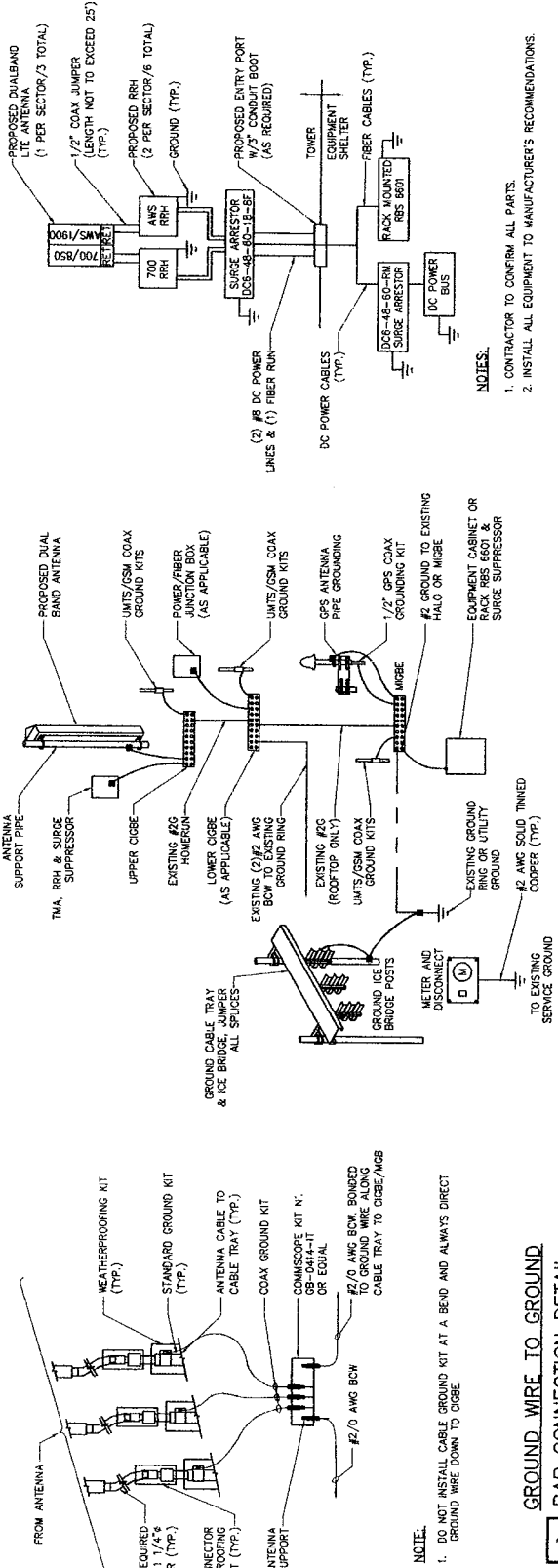
- LEGEND**
- 1 - COPPER GROUND BAR. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
  - 2 - INSULATORS, NEWTON INSTRUMENT CAT. NO. 30611-4. (NOT TO BE USED ON ATTACHED TO OTHER TO OTHER).
  - 3 - 5/16" LOCK WASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-B
  - 4 - WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT. NO. 4-5066
  - 5 - 5/8"-11 X 1" H.A.C.S. BOLTS, NEWTON INSTRUMENT CO. CAT. NO. 3012-1

2 GROUND BAR  
E01 NO SCALE



2 GROUND BAR ON WALL OR ON ANTENNA TOWER  
E01 NO SCALE

1 GROUND WIRE INSTALLATION TO GROUND BAR  
E01 NO SCALE



- NOTES:**
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT TO GROUND WIRE DOWN TO CGBE.

3 GROUND WIRE TO GROUND BAR CONNECTION DETAIL  
E01 NO SCALE

4 GROUNDING RISER DIAGRAM  
E01 NO SCALE

5 PLUMBING DIAGRAM  
E01 NO SCALE

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

**GROUNDING SYSTEM NOTES:**

- CONDUCTOR USED FOR CELLULAR GROUNDING SYSTEM  
 EGR - #2 AWG ANNEALED SOLID TINNED BARE COPPER.  
 INTER-BUS EXTENSION (FROM IGR TO EGR) - #2 AWG ANNEALED SOLID TINNED BARE COPPER.  
 EXTERNAL BOND CONNECTIONS TO EGR - #2 AWG ANNEALED SOLID TINNED BARE COPPER.  
 TOWER BOND CONNECTION TO EGR - #2 AWG SOLID COPPER.
  - MINIMUM BENDING RADIUS  
 EGR #2, 2'-0" MINIMUM  
 CELLULAR GROUNDING CONDUCTOR SHALL BE AS STRAIGHT AS POSSIBLE WITH MINIMUM 8" RADIUS.
  - CONNECTIONS (MECHANICAL)  
 COMPRESSION LUG CONNECTOR - 15 TON COMPRESSION, 2 HOLE, LONG BARREL, POLY-ETHYLENE TEREPHTHALATE (PET) HIGH CONDUCTIVITY COPPER, BODY RATED. USE 1/4" DIA. BOLT WITH 1/4" DIA. NUTS TO HOLD OBJECTS FROM IGR IGR.  
 CONNECTOR SHALL BE BURNDY "HYTAP" SERIES OR EQUAL.  
 EXOTHERMIC WELD LUG CONNECTOR - 2 HOLE OFFSET, ELECTRO TINNED PLATED, HIGH CONDUCTIVITY COPPER. BODY USE 3/4" DIA. BOLT, 1-3/4" SPACING LUGS.  
 CONNECTOR SHALL BE CADWELD CONNECTION STYLE (CABLE TO SURFACE) TYPE "A". EXOTHERMIC WELD TO LUG AS REQUIRED.
  - CONNECTIONS - BE ON GRADE (EXOTHERMIC)  
 PROVIDE CADWELD CONNECTIONS - STYLE AND TYPE AS REQUIRED.
  - WHEN BONDING #2 TO #2  
 ELECTRO WELD OF SHELFER - USE EXOTHERMIC WELD CONNECTION.
  - USE EXOTHERMIC WELD "CADWELD" TYPE "A" CONNECTION TO FENCE POST STEEL SURFACE. TEST WELD FOR POSSIBLE BURR THROUGH. PATCH WELDED AREA WITH GALVANIZED COATING AS REQUIRED FOR PROPER WELDED PERMANENT BOND. REFER TO MANUFACTURER'S REQUIREMENTS FOR DETAILS.
- SECTION 16050 GROUNDING
- 1.01 ALL NON-CURRENT CARRYING PARTS OF THE ELECTRICAL SYSTEM AND TELEPHONE CONDUIT SYSTEMS SHALL BE MECHANICALLY AND ELECTRICALLY CONNECTED TO PROVIDE AN INDEPENDENT RETURN PATH TO THE ELECTRICAL GROUNDING SYSTEMS.
  - 1.02 GROUNDING SYSTEM WILL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND LOCAL INSPECTOR HAVING JURISDICTION.
  - 1.03 ELECTRICAL AC SERVICE GROUNDING SYSTEM - GROUNDING AT MAIN SERVICE OVERCURRENT PROTECTION DEVICE
    - THE GROUNDING CONDUCTOR (NEUTRAL) OF THE INCOMING SERVICE FEEDERS (USE SIZE OF THE METER SOCKET) SHALL TERMINATE INTO THE MAIN ENCLOSURE OF THE SERVICE ENCLOSURE SOLID NEUTRAL BAR WHICH IS INSULATED FROM THE ENCLOSURE.
    - THE GROUNDING ELECTRODE CONDUCTOR SHALL EXTEND CONTINUOUSLY WITHOUT SPICES OR JOINTS TO MAIN SWITCHBOARD GROUND TERMINAL NEUTRAL BAR TO THE MAIN SWITCHBOARD GROUND TERMINAL.
    - THE MAIN SERVICE OVERCURRENT PROTECTION DEVICE ENCLOSES, EQUIPMENT GROUND BAR KIT SHALL BE LUGGED TO THE ENCLOSURE WITH THE JUMPER BETWEEN THEM BARE METAL TO BARE METAL. PROVIDE BONDING MEMBER BETWEEN EQUIPMENT GROUND BAR AND SOLID NEUTRAL BONDING CONDUCTOR CONDUITS TERMINATING INTO SHEATH AS THE GROUNDING ELECTRODE ENCLOSURE SHALL HAVE GROUNDING TYPE BUSHINGS. THE BUSHINGS SHALL BE BONDED TOGETHER WITH #10 AWG BARE COPPER WHICH IN TURN IS TERMINATED INTO THE EQUIPMENT GROUND BAR KIT.
- 1.04 CELLULAR GROUNDING SYSTEM:  
 PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS. INCLUDING BUT NOT LIMITED TO:  
 -GROUND BARS  
 -EXTERIOR GROUNDING RING  
 -ANTENNA GROUND CONNECTIONS AND PLATES
- 1.05 CONTRACTOR, AFTER COMPLETION OF THE COMPLETE GROUNDING SYSTEM BUT PRIOR TO CONSTRUCTION OF THE BUILDING, SHALL NOTIFY THE CITY OF CONSTRUCTION REPRESENTATIVE AND LOCAL AUTHORITY HAVING JURISDICTION WHO WILL MAKE A VISUAL INSPECTION OF THE GROUNDING GRID, RODS AND CONNECTIONS OF THE EXTERIOR GROUNDING SYSTEMS.

**SECTION 16120 CONDUCTORS**

- 1.01 ALL CONDUCTORS SHALL BE THE TYPE THIN (INTERIOR) AND XHW (EXTERIOR), 75 DEGREE C, 600 VOLT INSULATION, SOFT ANNEALED STRANDED PRESSURE CONDUCTORS AND SMALLER SHALL BE SPLICED USING SOLDERLESS PRESSURE CONNECTIONS. ALL CONDUCTORS SHALL BE MINIMUM SIZE CONDUCTOR FOR LINE VOLTAGE BRANCH CIRCUITS. REFER TO DRAWING FOR BRANCH CIRCUIT CONDUCTOR SIZES. CONDUCTORS SHALL BE COLOR CODED FOR CONSISTENT PHASE IDENTIFICATION:  
 120 / 240 VAC - 1 PHASE, 3 WIRE SYSTEM  
 PHASE: COLOR:  
 A BLACK  
 B RED  
 C CONTINUOUS GREEN  
 N CONTINUOUS WHITE  
 G CONTINUOUS GREEN
  - 1.02 MINIMUM BENDING RADIUS FOR CONDUCTORS SHALL BE 12 TIMES THE LARGEST DIAMETER OF BRANCH CIRCUIT CONDUCTOR.
- SECTION 16130 RACEWAY
- 1.01 CONDUIT MATERIAL SHALL BE AS FOLLOWS:  
 (1) GALVANIZED RIGID CONDUIT (RGC) - FEEDERS EXPOSED TO EXTERIOR & UNDERGROUND CONDUIT SHEEPS.  
 (2) PVC CONDUIT - SERVICE CONDUITS AND WHERE SHOWN ON GROUNDING DETAILS.
- GENERAL NOTES:**
1. ALL DIMENSIONS TO, OF, AND IN EXISTING STRUCTURES SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
  2. DO NOT CHANGE THE SIZE NOR SPACING OF STRUCTURAL ELEMENTS WITHOUT THE APPROVAL OF THE ENGINEER.
  3. DETAILS SHOWN ARE TYPICAL AND APPLY TO SIMILAR CONDITIONS UNLESS NOTED OTHERWISE.
  4. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION AND PRESERVE UNDERGROUND UTILITIES.
  5. BRACE STRUCTURES AS REQUIRED FOR CONSTRUCTION AND WIND LOADS UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: (LATERAL BRACING MEMBERS, ANCHOR BOLTS, ETC.)
  6. THE DESIGN IS BASED ON THE 2005 CONNECTICUT STATE BUILDING CODE (IBC 2003), 2005 CONNECTICUT SUPPLEMENT AND THE 2009 AMENDMENT TO THE 2005 CONNECTICUT SUPPLEMENT AND TIA/IEA-222-F.
  7. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE UNDERGROUND UTILITIES.
  8. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER'S APPROVAL.
  9. EACH CONTRACTOR SHALL COOPERATE WITH THE OWNER'S REPRESENTATIVE AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
  10. VERIFY SIZE AND LOCATION OF OPENINGS PRIOR TO BEGINNING WORK. FOR DIMENSIONS NOT SHOWN, SEE CIVIL DRAWINGS.
  11. VERIFY SIZE AND LOCATION OF EQUIPMENT PADS WITH MECHANICAL AND/OR ELECTRICAL CONTRACTOR AND EQUIPMENT MANUFACTURER.
  12. CONTRACTOR TO FOLLOW ALL STATE, LOCAL AND NATIONAL CODES AS APPLICABLE.
- APPURTENANCE SUPPORT BRACKET NOTES:**
- DESIGN RESPONSIBILITY OF APPURTENANCE MOUNTING BRACKETS AND POLES AND ALL COMPONENTS THERE OF AND ATTACHMENT THERE TO SHALL BE THE RESPONSIBILITY OF THE MANUFACTURER. MANUFACTURER SHALL PROVIDE THE ASSEMBLY, INCLUDING CONDUITS, BRACKETS, AND ALL OTHER PERTINENT DATA. ALL SUBMISSIONS SHALL BEAR THE STAMP AND SIGNATURE OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF CONNECTICUT.
  - BRACKETS SHALL BE DESIGNED TO SUPPORT CURRENT AND FUTURE PANEL WITHIN RAYS, REMOTE RADIO HEADS, SURGE ARRESTORS, AND COAXIAL CABLES AS SHOWN.

**STEEL NOTES:**

1. STRUCTURAL STEEL FABRICATION AND ERECTION SHALL CONFORM TO THE LATEST EDITION OF THE AISC STEEL CONSTRUCTION MANUAL.
2. STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING:  
 A. WIDE FLANGE AND CHANNEL SHAPES - A992 GR 50 (50 KSI) UNLESS OTHERWISE NOTED.  
 B. ANGLES - ASTM A36, GRADE B (36 KSI)  
 C. STEEL PIPE - ASTM A53, GRADE B 4500 GRADE B (35 KSI)
3. ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM SPECIFICATION A123 UNLESS OTHERWISE NOTED. GALVANIZING SHALL BE PERFORMED AFTER SHOP FABRICATION TO THE GREATEST EXTENT POSSIBLE. GALVANIZING SHALL BE MARKED WITH "G" AND "GALV" IN THE GALVANIZED AREAS SHALL BE REPAIRED BY FIELD TOUCH UP TO COMPLETION OF THE WORK USING ZRC COLD GALVANIZING COMPOUND OR APPROVED EQUAL.
4. CONNECTIONS:  
 A. ALL BOLTS, NUTS AND WASHERS USED IN EXTERIOR APPLICATIONS SHALL BE GALVANIZED.

**DESIGN LOADS:**

THE FOLLOWING DESIGN LOADS WERE USED FOR THIS BUILDING BASED ON THE 2005 CONNECTICUT STATE BUILDING CODE (IBC 2003), 2005 CONNECTICUT SUPPLEMENT AND THE 2009 AMENDMENT TO THE 2005 CONNECTICUT SUPPLEMENT AND TIA/IEA-222-F:

ICE LOAD:  
 7/8" RADIAL ON ALL COMPONENTS AND CABLE

WIND DESIGN DATA:  
 BASIC WIND SPEED (3 SECOND GUST): 85 MPH  
 WIND IMPORTANCE FACTOR = 1.0  
 WIND EXPOSURE CATEGORY: B

**EARTHQUAKE DESIGN DATA:**

SEISMIC IMPORTANCE FACTOR, I: 1.0  
 MAPPED SPECTRAL RESPONSE ACCELERATIONS: SS=0.286 S1=0.066  
 SITE CLASS: D  
 SEISMIC DESIGN CATEGORY: B

NEW CIRCULAR WIRELESS PDS, LLC  
 500 ENTERPRISE DRIVE  
 ROCKY HILL, CT 06867

2100 Main Street, Rocky Hill, CT 06867  
 860-261-1111  
 www.cha.com

NO.	DATE	DESCRIPTION
1	07/25/11	ISSUED FOR CONSTRUCTION
2	08/17/11	ISSUED FOR CONSTRUCTION
3	08/17/11	ISSUED FOR CONSTRUCTION
4	08/17/11	ISSUED FOR CONSTRUCTION
5	08/17/11	ISSUED FOR CONSTRUCTION

STATE OF CONNECTICUT  
 PROFESSIONAL ENGINEER  
 No. 17827  
 LICENSE EXPIRES 12/31/2011

SITE ID: CT157  
 SITE NAME: DANBURY - EAST  
 SITE ADDRESS: 48 NEWTOWN ROAD DANBURY, CT FAIRFIELD COUNTY 06810

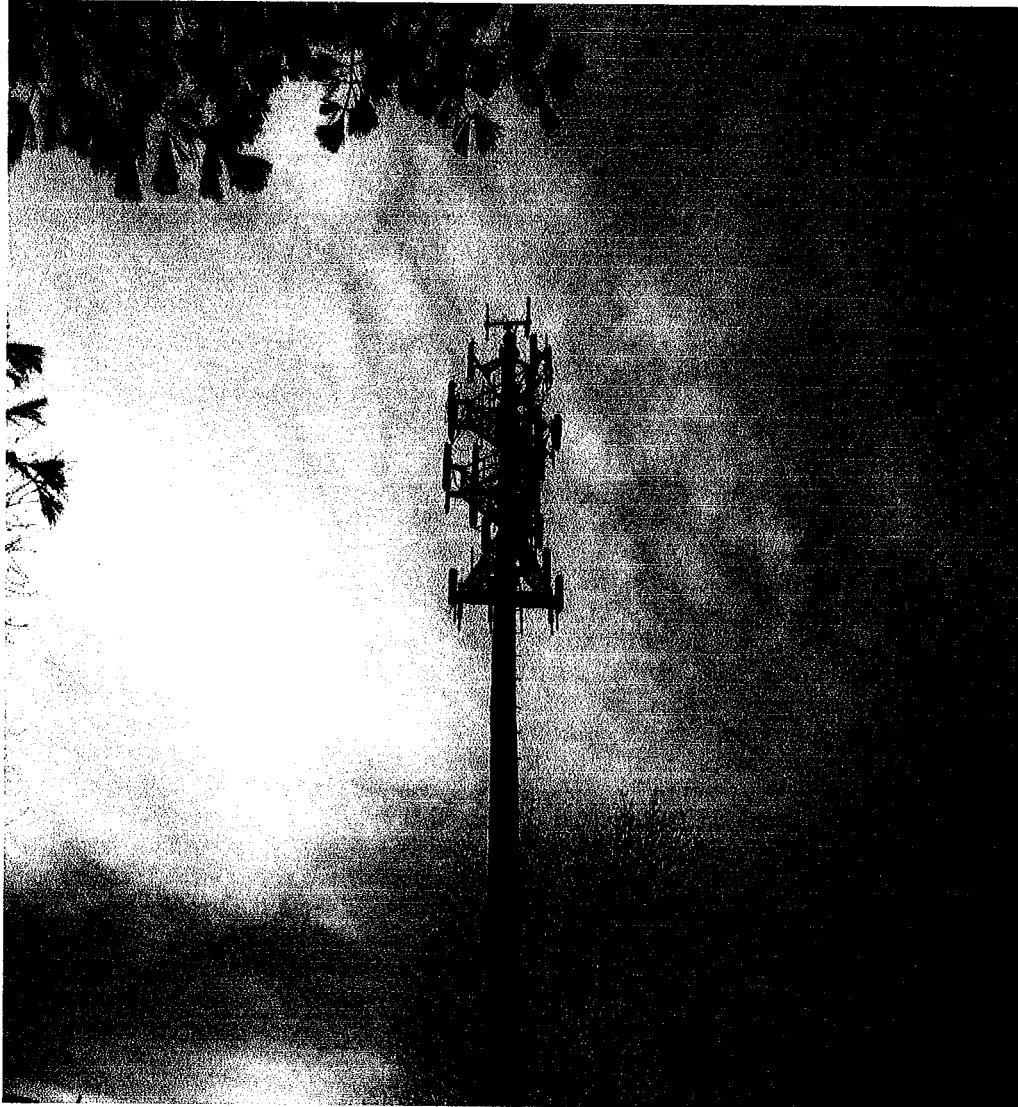
SHEET TITLE: GENERAL NOTES

SHEET NUMBER: GNO1

# Danbury-East Monopole

CT2157

Fairfield County, Connecticut



Prepared for:  
New Cingular Wireless PCS, LLC  
500 Enterprise Drive  
Rocky Hill, CT 06067  
August 1, 2011

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## **CHA**

2139 Silas Deane Highway  
Suite 212  
Rocky Hill, CT 06067-2336  
Tel: (860) 257-4557  
CHA Project No. 22702.1013.28000 R2



**August 1, 2011**

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

**RE: Structural Retrofit Analysis of the Danbury-East Monopole  
CT2157  
Located in Fairfield County, CT  
CHA Project No. 22702.1013.28000 R2**

To Whom It May Concern:

CHA has performed a structural retrofit analysis under the provisions of TIA-EIA-222-F of the referenced monopole for the purpose of evaluating its ability to support the existing equipment loads in addition to the new equipment proposed by New Cingular Wireless PCS, LLC. In summary, our analysis indicates that the tower is structurally capable of supporting the existing and proposed equipment upon completion of the monopole retrofit. The retrofit consists of reconfiguring the coaxial cable as shown within this report.

Our analysis and design is based on the following information:

- Monopole member sizes and configuration, as well as foundation information obtained from a previous structural analysis report by Centek Engineering, prepared for Verizon Wireless, dated October 25, 2010.
- Monopole retrofit information obtained from a previous structural analysis report by Structural Components, LLC, dated March 4, 2010.
- Proposed equipment information, including antenna models and elevations, provided by New Cingular Wireless PCS, LLC.
- A previous structural analysis report by CHA, dated June 27, 2011.

Our analysis includes data for the following proposed antennas and cables:

New Cingular Wireless:

- (2) KMW AM-X-CD-14-65-00T-RET and (1) AM-X-CD-16-65-00T-RET panel antennas mounted on existing mount pipes, supported on the existing platform at an antenna centerline elevation of 100' with (2) #8 DC power cables and (1) 5/8" fiber cable within a 3" innerduct.

- (6) Remote Radio Units mounted to a proposed 3" Std. steel pipe, supported by a SitePro LWRM universal ring mount, at an antenna centerline elevation of 100' AGL.
- (1) Raycap DC6-48-60-18-8F surge arrester mounted to a proposed 3" Std. steel pipe, supported by a SitePro LWRM universal ring mount, at an antenna centerline elevation of 100' AGL.
- (3) Powerwave TT19-08BP111-001 TMA's attached to existing GSM antenna, to replace (6) existing Powerwave LGP21901 diplexers, at an antenna centerline elevation of 100' AGL.

The existing and proposed antenna elevations and coaxial cable sizes have been listed in the attached Executive Summary.

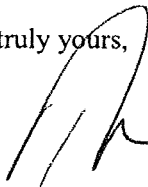
With this information, TIA/EIA-222-F, *Structural Standards for Steel Antenna Towers and Antenna Supporting Structures*, and the Connecticut State Building Code the analysis was performed to determine the structural integrity of the tower. Based on the data provided, section properties, member strengths, and projected areas, applicable loads were calculated. Knowing the projected area of the tower and all of its appurtenances, 85 mph wind loads were calculated with and without radial ice loads of 1/2". These wind and ice loads were then reduced to member forces in the tower components through RISA Tower structural analysis software. The member forces were then compared to the maximum allowable stress for each member type.

The analysis indicates that the existing tower is capable of supporting the existing and proposed loads under TIA/EIA-222-F, upon completion of the proposed retrofit. The retrofit consists of reconfiguring the coaxial cable as shown within this report.

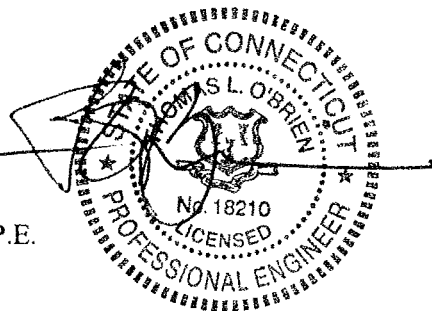
Reactions at the base of the monopole due to the existing and proposed loads are less than the original design reactions. The foundation information is based on a foundation analysis by Structural Components, LLC dated March 4, 2010. Based on this information, it can be concluded that the tower foundation is adequate for supporting the existing and proposed loads provided that the foundation was built per the design documents and applicable codes.

As requested, we have included a copy of the governing structural analysis calculations referenced above for your review and use. If you have any questions, or if we can be of further assistance, please do not hesitate to call.

Very truly yours,



Thomas L. O'Brien, P.E.  
Partner

The logo for CHA, consisting of the letters "CHA" in a bold, sans-serif font, with a stylized horizontal line passing through the "A".



# EXECUTIVE SUMMARY

Danbury-East Monopole  
CT2157

August 1, 2011

## Tower Information:

Tower Owner: Unknown  
Tower Manufacturer: Engineering Endeavors, Inc.  
Tower Height: 110 feet  
Tower Type: Monopole

## Proposed Antenna Data:

### New Cingular Wireless:

- (2) KMW AM-X-CD-14-65-00T-RET and (1) AM-X-CD-16-65-00T-RET panel antennas mounted on existing mount pipes, supported on the existing platform at an antenna centerline elevation of 100' AGL with (2) #8 DC power cables and (1) 5/8" fiber cable.
- (6) Remote Radio Units mounted to a proposed 3" Std. steel pipe, supported by a SitePro LWRM universal ring mount, at an antenna centerline elevation of 100' AGL.
- (1) Raycap DC6-48-60-18-8F surge arrester mounted to a proposed 3" Std. steel pipe, supported by a SitePro LWRM universal ring mount, at an antenna centerline elevation of 100' AGL.
- (3) Powerwave TT19-08BP111-001 TMA's attached to existing GSM antenna, to replace (6) existing Powerwave LGP21901 diplexers, at an antenna centerline elevation of 100' AGL.

## Existing Antenna and Appurtenance Data:

### AT&T:

- (6) Six Powerwave 7770.00A panel antennas, (6) Powerwave LGP21401 TMA's and (6) Powerwave LGP21901 diplexers mounted on an EEI platform at a centerline elevation of 100' AGL, with (12) twelve 1-5/8" coaxial cables running on the outside of the monopole stacked in a 2x6 configuration.

**Notes:** 1. Diplexers will be removed prior to installation of proposed TMA's.  
2. The existing coaxial cables are to be re-run inside of the monopole shaft per the coaxial cable layout within this report.

### Nextel:

- (12) Twelve 4 ft panel antennas mounted on an EEI standard platform at an antenna centerline elevation of 78' AGL, with (6) six 1-5/8" coaxial cables running inside of the monopole and (6) six 1-5/8" coaxial cables running on the outside of the monopole in a 1x6 configuration.

**Note:** The existing coaxial cables that are running up the outside are to be re-run inside of the monopole shaft.

Verizon:

- (2) Two Powerwave P65-16-XL-2, (1) one Antel BXA-70063-4CF, (3) three RYMSA MG D3-800T0, (4) four Decibel DB846H80E-SX and (2) two Decibel DB844G65ZAXY panel antennas mounted on an existing EEI standard platform at an antenna centerline elevation of 90' AGL with (12) twelve 1-5/8" coaxial cables running inside the monopole.
- (6) Six RFS FD9R6004/2C-3L diplexers mounted on an existing EEI standard platform at a centerline elevation of 90' AGL.

**Future Antenna and Appurtenance Data:**

Metro PCS:

- (3) Three Kathrein 800-10504 and (3) three Kathrein 742-351 panel antennas mounted on (3) three T-Arms at an antenna centerline elevation of 108' AGL, with (12) twelve 1-5/8" coaxial cables running on the outside of the monopole in a 3x4 configuration.

**Code Data:**

Applicable Code: - TIA/EIA-222-F, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures  
- Connecticut State Building Code

Load Cases:

- (1) Weight of Tower, Antennas, and Appurtenances plus Wind Load without radial ice at a wind speed of 85 mph.
- (2) Weight of Tower, Antennas, and Appurtenances plus Wind Load on iced tower plus weight of 1/2" radial ice in conjunction with a wind speed of 74 mph.

**Monopole Shaft Members: (A572 Gr. 65 ksi steel & A36 Steel top section)**

Tower Section	Length	Base Diameter	Top Diameter	Wall Thickness	Splice Length
1	20'	37.00"	33.39"	0.3890"	0'
2	30'	33.39"	26.64"	0.3125"	4'
3	50'	27.98"	17.50"	0.2500"	0'
4	14'	17.50"	14.50"	0.3750"	0'

**Foundation Reactions: (Existing and Proposed Equipment)**

Base Reactions	Original Design	Current Analysis	Stress Ratio (%)
Vertical (Axial) (k)	31.5	26.7	84.8
Shear (k)	28.7	18.1	63.1
Overturing Moment (k-ft)	2281.0	1407.5	61.7

**Anchor bolts and base plate: (Existing and Proposed Equipment)**

Tower Component	Design Limit	Stress Ratio (%)	Result
Anchor Bolts (ASTM-A615)	Compression	75.0	Pass
Anchor Bolts (ASTM-A193)	Compression	56.4	Pass
Base Plate	Bending	42.6	Pass

**Tower Superstructure:**

The tower sections are stressed at the following governing capacities for the load cases 1, & 2:

	Stress Ratio (%)
Section 1 (96'-110')	23.0
*Section 2 (46'-96')	99.8
Section 3 (20'-46')	94.5
Section 4 (0'-20')	82.1

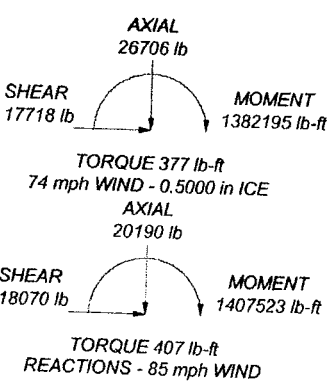
\*The governing tower member is stressed at 99.8%.

**Conclusion:**

The analysis indicates that the existing tower is structurally capable of supporting the existing and proposed loads upon completion of the proposed retrofit per our Coaxial Cable Layout Diagram within this report.

# **TOWER ELEVATION**

Section	1	2	3	4
Length (ft)	14.00	50.00	30.00	20.00
Number of Sides	18	18	18	18
Thickness (in)	0.3750	0.2500	0.3125	0.3890
Socket Length (ft)		4.00	26.6416	33.3920
Top Dia (in)	14.5000	17.5000	33.3920	37.0000
Bot Dia (in)	17.5000	27.9800	3007.7	2924.7
Grade		A36	A572-65	
Weight (lb)	886.0	3036.3	3007.7	9854.7
	110.0 ft	96.0 ft	46.0 ft	20.0 ft
				0.0 ft



### DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
800 10504 (Metro PCS)	108	TT19-08BP111-001 (SAI)	100
800 10504 (Metro PCS)	108	(2) LGP21401 (ATI)	100
800 10504 (Metro PCS)	108	MGD3-800T0 (VERIZON)	90
742-351 (Metro PCS)	108	MGD3-800T0 (VERIZON)	90
742-351 (Metro PCS)	108	(2) FD9R6004/2C-3L (VERIZON)	90
742-351 (Metro PCS)	108	(2) FD9R6004/2C-3L (VERIZON)	90
2' Standoff T-Arm (10' face width) (Metro PCS)	108	(2) FD9R6004/2C-3L (VERIZON)	90
2' Standoff T-Arm (10' face width) (Metro PCS)	108	PIROD 13' Platform w/handrails (Monopole) (VERIZON)	90
2' Standoff T-Arm (10' face width) (Metro PCS)	108	P65-16-XL-2 (VERIZON)	90
(2) 7770.00 (ATI)	100	P65-16-XL-2 (VERIZON)	90
(2) 7770.00 (ATI)	100	BXA-700634CF (VERIZON)	90
(2) 7770.00 (ATI)	100	(2) DB846H80E-SX w/Mount Pipe (VERIZON)	90
PIROD 13' Low Profile Platform (Monopole) (ATI)	100	(2) DB846H80E-SX w/Mount Pipe (VERIZON)	90
(2) LGP21401 (ATI)	100	(2) DB844G65ZAXY w/Mount Pipe (VERIZON)	90
(2) LGP21401 (ATI)	100	MGD3-800T0 (VERIZON)	90
AM-X-CD-14-65-00T-RET (SAI)	100	PIROD 13' Low Profile Platform (Monopole) (NEXTEL)	78
AM-X-CD-14-65-00T-RET (SAI)	100	(4) 4' x 6' Panel w/ Mounting Pipe (NEXTEL)	78
AM-X-CD-16-65-00T-RET (SAI)	100	(2) Remote Radio Heads (SAI)	100
(2) Remote Radio Heads (SAI)	100	(2) Remote Radio Heads (SAI)	100
(2) Remote Radio Heads (SAI)	100	(2) Remote Radio Heads (SAI)	100
DC6-48-60-18 (SAI)	100	(4) 4' x 6' Panel w/ Mounting Pipe (NEXTEL)	78
TT19-08BP111-001 (SAI)	100	(4) 4' x 6' Panel w/ Mounting Pipe (NEXTEL)	78
TT19-08BP111-001 (SAI)	100		

### MATERIAL STRENGTH

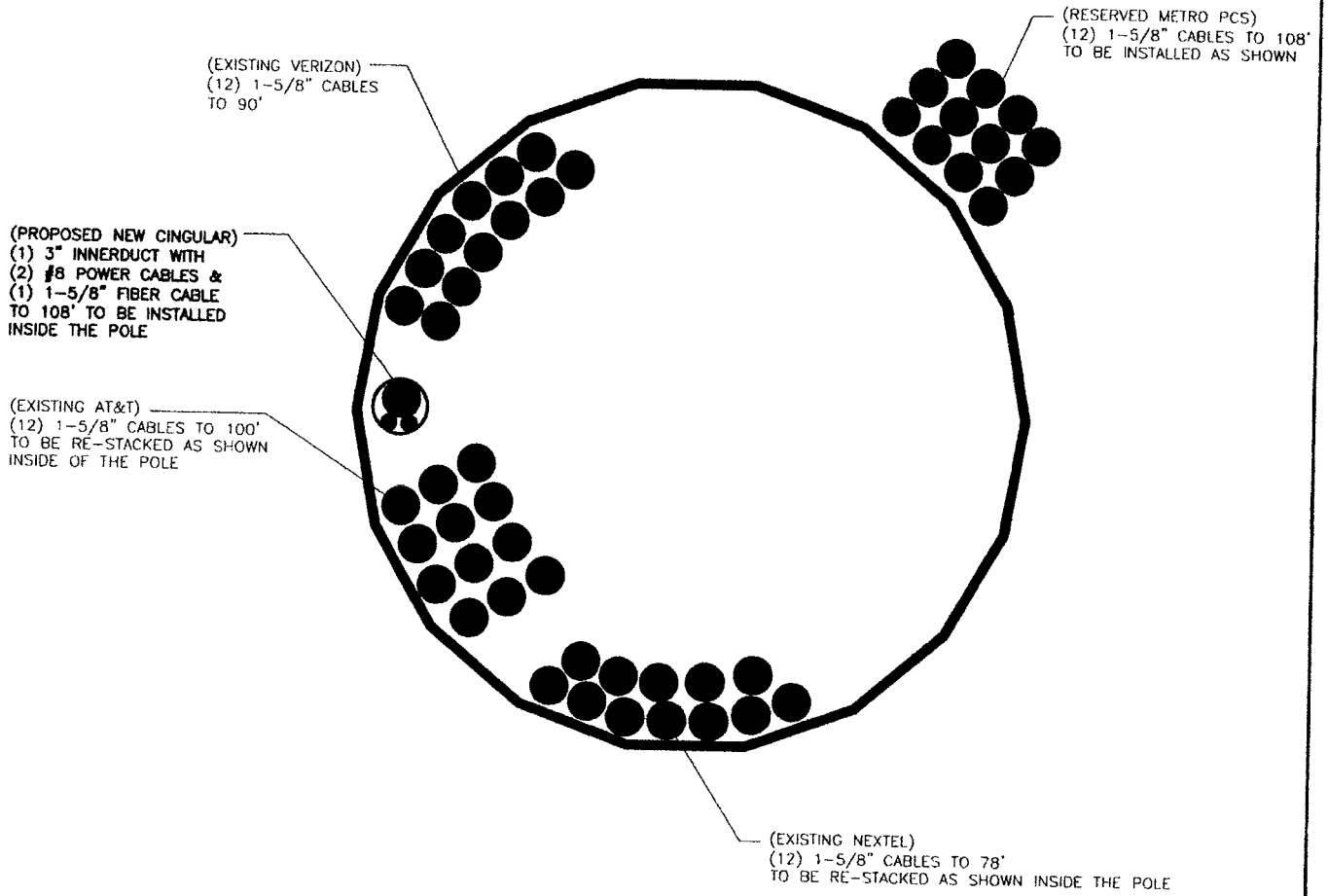
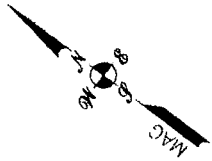
GRADE	Fy	Fu	GRADE	Fy	Fu
A36	36 ksi	58 ksi	A572-65	65 ksi	80 ksi

### 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 60 mph wind.
5. Weld together tower sections have flange connections.
6. Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications.
7. Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
8. Welds are fabricated with ER-70S-6 electrodes.

<b>CHA Consulting, Inc.</b>		Job: <b>CT2157-Danbury East</b>	
2139 Silas Deane Highway, Suite 212		Project: <b>22702-1013-28000-R2</b>	
Rocky Hill, CT 06067		Client: SAI	Drawn by: Tony Marruso
Phone: (860) 257-4557		Code: TIA/EIA-222-F	Date: 07/28/11
FAX:		Path:	Scale: NTS
		Dwg No. E-1	

# **COAXIAL CABLE CONFIGURATION**



2139 Silas Deane Highway, Suite 212 · Rocky Hill, CT 06067-2336  
 Main: (800) 257-4557 · www.chacompanies.com

CHA Project No. 22702-1013-28000 R2

DANBURY-EAST MONOPOLE

REVISED COAXIAL CABLE LAYOUT

DATE: 07/29/11	BY: AM	CHK: JJS	SKETCH: 1	REV: 2
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**ANALYSIS SUMMARY  
PER TIA/EIA-222-F  
(Existing and Proposed Equipment)**



<b>RISATower</b>  <b>CHA Consulting, Inc.</b> 2139 Silas Deane Highway, Suite 212 Rocky Hill, CT 06067-2336 Phone: (860) 257-4557 FAX:	Job	CT2157-Danbury East	Page	1 of 22
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## 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 60 mph.
- Weld together tower sections have flange connections..
- Connections use galvanized A325 bolts, nuts and locking devices. Installation per TIA/EIA-222 and AISC Specifications..
- Tower members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards..
- Welds are fabricated with ER-70S-6 electrodes..
- 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.

## Options

- |  |  |   |
|--|--|---|
| <ul style="list-style-type: none"> <li>Consider Moments - Legs</li> <li>Consider Moments - Horizontals</li> <li>Consider Moments - Diagonals</li> <li>Use Moment Magnification</li> <li>✓ Use Code Stress Ratios</li> <li>✓ Use Code Safety Factors - Guys</li> <li>Escalate Ice</li> <li>Always Use Max Kz</li> <li>Use Special Wind Profile</li> <li>✓ Include Bolts In Member Capacity</li> <li>✓ Leg Bolts Are At Top Of Section</li> <li>✓ Secondary Horizontal Braces Leg</li> <li>✓ Use Diamond Inner Bracing (4 Sided)</li> <li>Add IBC .6D+W Combination</li> </ul> | <ul style="list-style-type: none"> <li>Distribute Leg Loads As Uniform</li> <li>Assume Legs Pinned</li> <li>✓ Assume Rigid Index Plate</li> <li>✓ Use Clear Spans For Wind Area</li> <li>✓ Use Clear Spans For KL/r</li> <li>✓ Retension Guys To Initial Tension</li> <li>Bypass Mast Stability Checks</li> <li>Use Azimuth Dish Coefficients</li> <li>✓ Project Wind Area of Appurt.</li> <li>✓ Autocalc Torque Arm Areas</li> <li>✓ SR Members Have Cut Ends</li> <li>Sort Capacity Reports By Component</li> <li>✓ Triangulate Diamond Inner Bracing</li> </ul> | <ul style="list-style-type: none"> <li>✓ Treat Feedline Bundles As Cylinder</li> <li>✓ Use ASCE 10 X-Brace Ly Rules</li> <li>✓ Calculate Redundant Bracing Forces</li> <li>✓ Ignore Redundant Members in FEA</li> <li>SR Leg Bolts Resist Compression</li> <li>✓ All Leg Panels Have Same Allowable</li> <li>Offset Girt At Foundation</li> <li>✓ Consider Feedline Torque</li> <li>✓ Include Angle Block Shear Check</li> <li style="text-align: center;">Poles</li> <li>Include Shear-Torsion Interaction</li> <li>Always Use Sub-Critical Flow</li> <li>Use Top Mounted Sockets</li> </ul> |
|--|--|---|

## Tapered Pole Section Geometry

Section	Elevation	Section Length	Splice Length	Number of Sides	Top Diameter	Bottom Diameter	Wall Thickness	Bend Radius	Pole Grade
	ft	ft	ft		in	in	in	in	
L1	110.00-96.00	14.00	0.00	18	14.5000	17.5000	0.3750	1.5000	A36 (36 ksi)
L2	96.00-46.00	50.00	4.00	18	17.5000	27.9800	0.2500	1.0000	A572-65 (65 ksi)
L3	46.00-20.00	30.00	0.00	18	26.6416	33.3920	0.3125	1.2500	A572-65

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Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L4	20.00-0.00	20.00		18	33.3920	37.0000	0.3890	1.5560	(65 ksi) A572-65 (65 ksi)

### Tapered Pole Properties

Section	Tip Dia. in	Area in <sup>2</sup>	I in <sup>4</sup>	r in	C in	I/C in <sup>3</sup>	J in <sup>4</sup>	I/Q in <sup>3</sup>	w in	w/t
L1	14.7237	16.8123	423.7805	5.0144	7.3660	57.5320	848.1187	8.4077	1.8920	5.045
L2	17.7700	20.3830	755.2094	6.0794	8.8900	84.9504	1511.4125	10.1935	2.4200	6.453
	28.4116	22.0038	2137.6372	9.8442	14.2138	150.3912	4278.0871	11.0040	4.4845	17.938
L3	27.9665	26.1152	2287.1910	9.3468	13.5339	168.9968	4577.3916	13.0601	4.1389	13.245
	33.9071	32.8107	4535.9808	11.7432	16.9631	267.4023	9077.9301	16.4085	5.3270	17.046
L4	33.9071	40.7483	5607.3057	11.7161	16.9631	330.5583	11221.9896	20.3780	5.1924	13.348
	37.5708	45.2031	7654.7101	12.9969	18.7960	407.2521	15319.4925	22.6058	5.8274	14.98

Tower Elevation ft	Gusset Area (per face) ft <sup>2</sup>	Gusset Thickness in	Gusset Grade	Adjust. Factor A <sub>f</sub>	Adjust. Factor A <sub>r</sub>	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
L1 110.00-96.00				1	1	1		
L2 96.00-46.00				1	1	1		
L3 46.00-20.00				1	1	1		
L4 20.00-0.00				1	1	1		

### Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
LDF7-50A (1-5/8 FOAM) (Metro PCS)	C	Surface Ar (CaAa)	108.00 - 8.00	12	4	0.000 0.000	1.9800		0.82

### 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>A</sub> ft <sup>2</sup> /ft	Weight plf
LDF7-50A (1-5/8 FOAM) (AT&T)	B	No	Inside Pole	100.00 - 8.00	12	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
LDF7-50A (1-5/8 FOAM) (NEXTEL)	C	No	Inside Pole	78.00 - 8.00	6	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
LDF7-50A (1-5/8 FOAM)	B	No	Inside Pole	78.00 - 8.00	6	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82

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Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C <sub>A</sub> A <sub>A</sub> ft <sup>2</sup> /ft	Weight plf
(NEXTEL) LDF7-50A (1-5/8 FOAM) (VERIZON) ***SAI***	C	No	Inside Pole	90.00 - 8.00	12	No Ice 1/2" Ice	0.00 0.00	0.82 0.82
3" Rigid Conduit (SAI)	C	No	Inside Pole	100.00 - 8.00	1	No Ice 1/2" Ice	0.00 0.00	3.50 3.50

### Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>	Weight lb
L1	110.00-96.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	39.36
		C	0.000	0.000	9.504	0.000	132.08
L2	96.00-46.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	649.44
		C	0.000	0.000	39.600	0.000	1257.40
L3	46.00-20.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	383.76
		C	0.000	0.000	20.592	0.000	730.60
L4	20.00-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	177.12
		C	0.000	0.000	9.504	0.000	337.20

### Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>	Weight lb
L1	110.00-96.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	39.36
		C		0.000	0.000	21.416	0.000	305.11
L2	96.00-46.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	649.44
		C		0.000	0.000	89.233	0.000	1978.37
L3	46.00-20.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	383.76
		C		0.000	0.000	46.401	0.000	1105.51
L4	20.00-0.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	177.12
		C		0.000	0.000	21.416	0.000	510.23

### Feed Line Center of Pressure

Section	Elevation ft	CP <sub>x</sub> in	CP <sub>z</sub> in	CP <sub>x</sub> Ice in	CP <sub>z</sub> Ice in
L1	110.00-96.00	0.0000	1.1013	0.0000	1.4118
L2	96.00-46.00	0.0000	1.2026	0.0000	1.6119

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Section	Elevation	CP <sub>x</sub>	CP <sub>z</sub>	CP <sub>x</sub>	CP <sub>z</sub>
	<i>ft</i>	<i>in</i>	<i>in</i>	<i>Ice</i>	<i>Ice</i>
				<i>in</i>	<i>in</i>
L3	46.00-20.00	0.0000	1.1998	0.0000	1.7022
L4	20.00-0.00	0.0000	0.7734	0.0000	1.2106

### Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	Placement	C <sub>A</sub> A <sub>1</sub> Front	C <sub>A</sub> A <sub>1</sub> Side	Weight	
			<i>ft</i> <i>ft</i> <i>ft</i>	<i>°</i>	<i>ft</i>	<i>ft<sup>2</sup></i>	<i>ft<sup>2</sup></i>	<i>lb</i>	
800 10504 (Metro PCS)	A	From Face	2.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	3.35 3.70	1.87 2.20	17.64 35.71
800 10504 (Metro PCS)	B	From Face	2.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	3.35 3.70	1.87 2.20	17.64 35.71
800 10504 (Metro PCS)	C	From Face	2.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	3.35 3.70	1.87 2.20	17.64 35.71
742-351 (Metro PCS)	A	From Face	2.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	5.89 6.30	1.73 2.04	29.80 57.10
742-351 (Metro PCS)	B	From Face	2.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	5.89 6.30	1.73 2.04	29.80 57.10
742-351 (Metro PCS)	C	From Face	2.00 0.00 0.00	0.0000	108.00	No Ice 1/2" Ice	5.89 6.30	1.73 2.04	29.80 57.10
2' Standoff T-Arm (10' face width) (Metro PCS)	A	None		0.0000	108.00	No Ice 1/2" Ice	5.30 6.65	5.30 6.65	129.00 170.00
2' Standoff T-Arm (10' face width) (Metro PCS)	B	None		0.0000	108.00	No Ice 1/2" Ice	5.30 6.65	5.30 6.65	129.00 170.00
2' Standoff T-Arm (10' face width) (Metro PCS)	C	None		0.0000	108.00	No Ice 1/2" Ice	5.30 6.65	5.30 6.65	129.00 170.00
****AT&T****									
(2) 7770.00 (AT&T)	A	From Face	4.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice	5.88 6.31	3.98 4.60	51.73 94.70
(2) 7770.00 (AT&T)	B	From Face	4.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice	5.88 6.31	3.98 4.60	51.73 94.70
(2) 7770.00 (AT&T)	C	From Face	4.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice	5.88 6.31	3.98 4.60	51.73 94.70
PiROD 13' Low Profile Platform (Monopole) (AT&T)	C	None		0.0000	100.00	No Ice 1/2" Ice	10.70 15.10	10.70 15.10	1300.00 1765.00
(2) LGP21401 (AT&T)	A	From Face	0.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice	0.00 0.00	0.00 0.00	0.00 26.16
(2) LGP21401	B	From Face	0.00	0.0000	100.00	No Ice	0.00	0.00	0.00

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C <sub>A</sub> A <sub>A</sub> Front ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Side ft <sup>2</sup>	Weight lb	
(AT&T)			0.00 0.00		1/2" Ice	0.00	0.00	26.16	
***NEXTEL***									
(4) 4' x 6" Panel w/ Mounting Pipe (NEXTEL)	A	From Face	4.00 0.00 0.00	0.0000	78.00	No Ice 1/2" Ice	2.87 3.18	3.06 3.61	43.16 72.70
(4) 4' x 6" Panel w/ Mounting Pipe (NEXTEL)	B	From Face	4.00 0.00 0.00	0.0000	78.00	No Ice 1/2" Ice	2.87 3.18	3.06 3.61	43.16 72.70
(4) 4' x 6" Panel w/ Mounting Pipe (NEXTEL)	C	From Face	4.00 0.00 0.00	0.0000	78.00	No Ice 1/2" Ice	2.87 3.18	3.06 3.61	43.16 72.70
PiROD 13' Low Profile Platform (Monopole) (NEXTEL)	A	None		0.0000	78.00	No Ice 1/2" Ice	10.70 15.10	10.70 15.10	1300.00 1765.00
**VERIZON**									
P65-16-XL-2 (VERIZON)	A	From Face	4.00 0.00 0.00	0.0000	90.00	No Ice 1/2" Ice	8.40 8.95	4.12 4.56	44.00 88.53
P65-16-XL-2 (VERIZON)	B	From Face	4.00 0.00 0.00	0.0000	90.00	No Ice 1/2" Ice	8.40 8.95	4.12 4.56	44.00 88.53
BXA-70063/4CF (VERIZON)	C	From Face	4.00 0.00 0.00	0.0000	90.00	No Ice 1/2" Ice	5.16 5.55	2.44 2.74	9.00 37.79
(2) DB846H80E-SX w/Mount Pipe (VERIZON)	A	From Face	4.00 0.00 0.00	0.0000	90.00	No Ice 1/2" Ice	5.32 5.87	7.73 8.92	40.55 95.74
(2) DB846H80E-SX w/Mount Pipe (VERIZON)	B	From Face	4.00 0.00 0.00	0.0000	90.00	No Ice 1/2" Ice	5.32 5.87	7.73 8.92	40.55 95.74
(2) DB844G65ZAXY w/Mount Pipe (VERIZON)	C	From Face	4.00 0.00 0.00	0.0000	90.00	No Ice 1/2" Ice	5.38 6.07	5.40 6.49	41.55 89.98
MGD3-800T0 (VERIZON)	A	From Face	4.00 0.00 0.00	0.0000	90.00	No Ice 1/2" Ice	3.66 4.00	2.37 2.70	17.00 38.91
MGD3-800T0 (VERIZON)	B	From Face	4.00 0.00 0.00	0.0000	90.00	No Ice 1/2" Ice	3.66 4.00	2.37 2.70	17.00 38.91
MGD3-800T0 (VERIZON)	C	From Face	4.00 0.00 0.00	0.0000	90.00	No Ice 1/2" Ice	3.66 4.00	2.37 2.70	17.00 38.91
(2) FD9R6004/2C-3L (VERIZON)	A	From Face	4.00 0.00 0.00	0.0000	90.00	No Ice 1/2" Ice	0.00 0.00	0.00 0.00	3.10 5.38
(2) FD9R6004/2C-3L (VERIZON)	B	From Face	4.00 0.00 0.00	0.0000	90.00	No Ice 1/2" Ice	0.00 0.00	0.00 0.00	3.10 5.38
(2) FD9R6004/2C-3L (VERIZON)	C	From Face	4.00 0.00 0.00	0.0000	90.00	No Ice 1/2" Ice	0.00 0.00	0.00 0.00	3.10 5.38
PiROD 13' Platform w/handrails (Monopole) (VERIZON)	C	None		0.0000	90.00	No Ice 1/2" Ice	31.30 40.20	31.30 40.20	1822.00 2452.00
***SAI***									
AM-X-CD-14-65-00T-RET	A	From Leg	4.00	0.0000	100.00	No Ice	5.51	2.83	36.40

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	$C_A A_A$ Front	$C_A A_A$ Side	Weight
			Horz	Lateral					
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	lb
(SAI)			0.00			1/2" Ice	5.90	3.14	68.35
AM-X-CD-14-65-00T-RET (SAI)	B	From Leg	4.00	0.0000	100.00	No Ice	5.51	2.83	36.40
			0.00			1/2" Ice	5.90	3.14	68.35
AM-X-CD-16-65-00T-RET (SAI)	C	From Leg	4.00	0.0000	100.00	No Ice	6.62	4.13	33.00
			0.00			1/2" Ice	7.05	4.54	74.48
(2) Remote Radio Heads (SAI)	A	From Leg	0.00	0.0000	100.00	No Ice	0.00	0.00	33.00
			0.00			1/2" Ice	0.00	0.00	44.97
(2) Remote Radio Heads (SAI)	B	From Leg	0.00	0.0000	100.00	No Ice	0.00	0.00	33.00
			0.00			1/2" Ice	0.00	0.00	44.97
(2) Remote Radio Heads (SAI)	C	From Leg	0.00	0.0000	100.00	No Ice	0.00	0.00	33.00
			0.00			1/2" Ice	0.00	0.00	44.97
DC6-48-60-18 (SAI)	C	From Leg	0.00	0.0000	100.00	No Ice	2.59	1.08	20.00
			0.00			1/2" Ice	2.81	1.24	36.69
TT19-08BP111-001 (SAI)	A	From Leg	0.00	0.0000	100.00	No Ice	0.00	0.52	25.00
			0.00			1/2" Ice	0.00	0.62	30.80
TT19-08BP111-001 (SAI)	B	From Leg	0.00	0.0000	100.00	No Ice	0.00	0.52	25.00
			0.00			1/2" Ice	0.00	0.62	30.80
TT19-08BP111-001 (SAI)	C	From Leg	0.00	0.0000	100.00	No Ice	0.00	0.52	25.00
			0.00			1/2" Ice	0.00	0.62	30.80
***exist***			0.00						
(2) LGP21401 (AT&T)	C	From Face	0.00	0.0000	100.00	No Ice	0.00	0.00	19.00
			0.00			1/2" Ice	0.00	0.00	26.16

### Tower Pressures - No Ice

$$G_H = 1.690$$

Section Elevation	z	$K_z$	$q_z$	$A_G$	F a c e	$A_F$	$A_R$	$A_{lex}$	Leg %	$C_A A_A$ In Face	$C_A A_A$ Out Face
ft	ft		psf	ft <sup>2</sup>	e	ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>		ft <sup>2</sup>	ft <sup>2</sup>
L1 110.00-96.00	102.78	1.383	26	18.667	A	0.000	18.667	18.667	100.00	0.000	0.000
					B	0.000	18.667		100.00	0.000	0.000
					C	0.000	18.667		100.00	9.504	0.000
L2 96.00-46.00	69.71	1.238	23	94.750	A	0.000	94.750	94.750	100.00	0.000	0.000
					B	0.000	94.750		100.00	0.000	0.000
					C	0.000	94.750		100.00	0.000	0.000
L3 46.00-20.00	32.58	1	18	66.011	A	0.000	66.011	66.011	100.00	39.600	0.000
					B	0.000	66.011		100.00	0.000	0.000
									100.00	0.000	0.000

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Section Elevation	z	K <sub>Z</sub>	q <sub>z</sub>	A <sub>G</sub>	F a c e	A <sub>F</sub>	A <sub>R</sub>	A <sub>leg</sub>	Leg %	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>
ft	ft		psf	ft <sup>2</sup>		ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>			
L4 20.00-0.00	9.83	1	18	58.660	C	0.000	66.011	58.660	100.00	20.592	0.000
					A	0.000	58.660		100.00		
					B	0.000	58.660		100.00		
					C	0.000	58.660		100.00		

### Tower Pressure - With Ice

$G_H = 1.690$

Section Elevation	z	K <sub>Z</sub>	q <sub>z</sub>	t <sub>z</sub>	A <sub>G</sub>	F a c e	A <sub>F</sub>	A <sub>R</sub>	A <sub>leg</sub>	Leg %	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>
ft	ft		psf	in	ft <sup>2</sup>		ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>			
L1 110.00-96.00	102.78	1.383	19	0.5000	19.833	A	0.000	19.833	19.833	100.00	0.000	0.000
						B	0.000	19.833		100.00		
						C	0.000	19.833		100.00		
L2 96.00-46.00	69.71	1.238	17	0.5000	98.917	A	0.000	98.917	98.917	100.00	21.416	0.000
						B	0.000	98.917		100.00		
						C	0.000	98.917		100.00		
L3 46.00-20.00	32.58	1	14	0.5000	68.178	A	0.000	68.178	68.178	100.00	89.233	0.000
						B	0.000	68.178		100.00		
						C	0.000	68.178		100.00		
L4 20.00-0.00	9.83	1	14	0.5000	60.327	A	0.000	60.327	60.327	100.00	46.401	0.000
						B	0.000	60.327		100.00		
						C	0.000	60.327		100.00		
						C	0.000	60.327		100.00		

### Tower Pressure - Service

$G_H = 1.690$

Section Elevation	z	K <sub>Z</sub>	q <sub>z</sub>	A <sub>G</sub>	F a c e	A <sub>F</sub>	A <sub>R</sub>	A <sub>leg</sub>	Leg %	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>
ft	ft		psf	ft <sup>2</sup>		ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>			
L1 110.00-96.00	102.78	1.383	13	18.667	A	0.000	18.667	18.667	100.00	0.000	0.000
					B	0.000	18.667		100.00		
					C	0.000	18.667		100.00		
L2 96.00-46.00	69.71	1.238	11	94.750	A	0.000	94.750	94.750	100.00	9.504	0.000
					B	0.000	94.750		100.00		
					C	0.000	94.750		100.00		
L3 46.00-20.00	32.58	1	9	66.011	A	0.000	66.011	66.011	100.00	39.600	0.000
					B	0.000	66.011		100.00		
					C	0.000	66.011		100.00		
L4 20.00-0.00	9.83	1	9	58.660	A	0.000	58.660	58.660	100.00	20.592	0.000
					B	0.000	58.660		100.00		
					C	0.000	58.660		100.00		
					C	0.000	58.660		100.00		

### Tower Forces - No Ice - Wind Normal To Face

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Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	R <sub>R</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	lb	lb							ft <sup>2</sup>	lb	plf	
L1 110.00-96.00	171.44	885.97	A	1	0.65	1	1	1	18.667	935.71	66.84	C
			B	1	0.65	1	1	18.667				
			C	1	0.65	1	1	18.667				
L2 96.00-46.00	1906.84	3036.28	A	1	0.65	1	1	1	94.750	3893.62	77.87	C
			B	1	0.65	1	1	94.750				
			C	1	0.65	1	1	94.750				
L3 46.00-20.00	1114.36	3007.69	A	1	0.65	1	1	1	66.011	1984.88	76.34	C
			B	1	0.65	1	1	66.011				
			C	1	0.65	1	1	66.011				
L4 20.00-0.00	514.32	2924.75	A	1	0.65	1	1	1	58.660	1488.92	74.45	C
			B	1	0.65	1	1	58.660				
			C	1	0.65	1	1	58.660				
Sum Weight:	3706.96	9854.69						OTM	446901.89 lb-ft	8303.13		

**Tower Forces - No Ice - Wind 60 To Face**

Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	R <sub>R</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	lb	lb							ft <sup>2</sup>	lb	plf	
L1 110.00-96.00	171.44	885.97	A	1	0.65	1	1	1	18.667	935.71	66.84	C
			B	1	0.65	1	1	18.667				
			C	1	0.65	1	1	18.667				
L2 96.00-46.00	1906.84	3036.28	A	1	0.65	1	1	1	94.750	3893.62	77.87	C
			B	1	0.65	1	1	94.750				
			C	1	0.65	1	1	94.750				
L3 46.00-20.00	1114.36	3007.69	A	1	0.65	1	1	1	66.011	1984.88	76.34	C
			B	1	0.65	1	1	66.011				
			C	1	0.65	1	1	66.011				
L4 20.00-0.00	514.32	2924.75	A	1	0.65	1	1	1	58.660	1488.92	74.45	C
			B	1	0.65	1	1	58.660				
			C	1	0.65	1	1	58.660				
Sum Weight:	3706.96	9854.69						OTM	446901.89 lb-ft	8303.13		

**Tower Forces - No Ice - Wind 90 To Face**

Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	R <sub>R</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	lb	lb							ft <sup>2</sup>	lb	plf	
L1 110.00-96.00	171.44	885.97	A	1	0.65	1	1	1	18.667	935.71	66.84	C
			B	1	0.65	1	1	18.667				
			C	1	0.65	1	1	18.667				
L2 96.00-46.00	1906.84	3036.28	A	1	0.65	1	1	1	94.750	3893.62	77.87	C
			B	1	0.65	1	1	94.750				
			C	1	0.65	1	1	94.750				
L3 46.00-20.00	1114.36	3007.69	A	1	0.65	1	1	1	66.011	1984.88	76.34	C
			B	1	0.65	1	1	66.011				
			C	1	0.65	1	1	66.011				



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Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	R <sub>R</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	lb	lb							ft <sup>2</sup>	lb	plf	
L4 20.00-0.00	514.32	2924.75	A	1	0.65	1	1	1	58.660	1488.92	74.45	C
			B	1	0.65	1	1	1	58.660			
			C	1	0.65	1	1	1	58.660			
Sum Weight:	3706.96	9854.69						OTM	446901.89 lb-ft	8303.13		

**Tower Forces - With Ice - Wind Normal To Face**

Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	R <sub>R</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	lb	lb							ft <sup>2</sup>	lb	plf	
L1 110.00-96.00	344.47	1028.54	A	1	0.65	1	1	1	19.833	1112.73	79.48	C
			B	1	0.65	1	1	1	19.833			
			C	1	0.65	1	1	1	19.833			
L2 96.00-46.00	2627.81	3753.43	A	1	0.65	1	1	1	98.917	4430.77	88.62	C
			B	1	0.65	1	1	1	98.917			
			C	1	0.65	1	1	1	98.917			
L3 46.00-20.00	1489.27	3504.59	A	1	0.65	1	1	1	68.178	2126.75	81.80	C
			B	1	0.65	1	1	1	68.178			
			C	1	0.65	1	1	1	68.178			
L4 20.00-0.00	687.35	3365.36	A	1	0.65	1	1	1	60.327	1421.35	71.07	C
			B	1	0.65	1	1	1	60.327			
			C	1	0.65	1	1	1	60.327			
Sum Weight:	5148.91	11651.91						OTM	506498.72 lb-ft	9091.60		

**Tower Forces - With Ice - Wind 60 To Face**

Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	R <sub>R</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	lb	lb							ft <sup>2</sup>	lb	plf	
L1 110.00-96.00	344.47	1028.54	A	1	0.65	1	1	1	19.833	1112.73	79.48	C
			B	1	0.65	1	1	1	19.833			
			C	1	0.65	1	1	1	19.833			
L2 96.00-46.00	2627.81	3753.43	A	1	0.65	1	1	1	98.917	4430.77	88.62	C
			B	1	0.65	1	1	1	98.917			
			C	1	0.65	1	1	1	98.917			
L3 46.00-20.00	1489.27	3504.59	A	1	0.65	1	1	1	68.178	2126.75	81.80	C
			B	1	0.65	1	1	1	68.178			
			C	1	0.65	1	1	1	68.178			
L4 20.00-0.00	687.35	3365.36	A	1	0.65	1	1	1	60.327	1421.35	71.07	C
			B	1	0.65	1	1	1	60.327			
			C	1	0.65	1	1	1	60.327			
Sum Weight:	5148.91	11651.91						OTM	506498.72 lb-ft	9091.60		

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**Tower Forces - With Ice - Wind 90 To Face**

Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	R <sub>R</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	lb	lb							ft <sup>2</sup>	lb	plf	
L1 110.00-96.00	344.47	1028.54	A	1	0.65	1	1	1	19.833	1112.73	79.48	C
			B	1	0.65	1	1	1	19.833			
			C	1	0.65	1	1	1	19.833			
L2 96.00-46.00	2627.81	3753.43	A	1	0.65	1	1	1	98.917	4430.77	88.62	C
			B	1	0.65	1	1	1	98.917			
			C	1	0.65	1	1	1	98.917			
L3 46.00-20.00	1489.27	3504.59	A	1	0.65	1	1	1	68.178	2126.75	81.80	C
			B	1	0.65	1	1	1	68.178			
			C	1	0.65	1	1	1	68.178			
L4 20.00-0.00	687.35	3365.36	A	1	0.65	1	1	1	60.327	1421.35	71.07	C
			B	1	0.65	1	1	1	60.327			
			C	1	0.65	1	1	1	60.327			
Sum Weight:	5148.91	11651.91						OTM	506498.72 lb-ft	9091.60		

**Tower Forces - Service - Wind Normal To Face**

Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	R <sub>R</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	lb	lb							ft <sup>2</sup>	lb	plf	
L1 110.00-96.00	171.44	885.97	A	1	0.65	1	1	1	18.667	466.23	33.30	C
			B	1	0.65	1	1	1	18.667			
			C	1	0.65	1	1	1	18.667			
L2 96.00-46.00	1906.84	3036.28	A	1	0.65	1	1	1	94.750	1940.07	38.80	C
			B	1	0.65	1	1	1	94.750			
			C	1	0.65	1	1	1	94.750			
L3 46.00-20.00	1114.36	3007.69	A	1	0.65	1	1	1	66.011	989.01	38.04	C
			B	1	0.65	1	1	1	66.011			
			C	1	0.65	1	1	1	66.011			
L4 20.00-0.00	514.32	2924.75	A	1	0.65	1	1	1	58.660	741.89	37.09	C
			B	1	0.65	1	1	1	58.660			
			C	1	0.65	1	1	1	58.660			
Sum Weight:	3706.96	9854.69						OTM	222677.76 lb-ft	4137.20		

**Tower Forces - Service - Wind 60 To Face**

Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	R <sub>R</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	lb	lb							ft <sup>2</sup>	lb	plf	
L1 110.00-96.00	171.44	885.97	A	1	0.65	1	1	1	18.667	466.23	33.30	C
			B	1	0.65	1	1	1	18.667			
			C	1	0.65	1	1	1	18.667			
L2 96.00-46.00	1906.84	3036.28	A	1	0.65	1	1	1	94.750	1940.07	38.80	C
			B	1	0.65	1	1	1	94.750			
			C	1	0.65	1	1	1	94.750			

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Section Elevation	Add Weight	Self Weight	Face	e	C <sub>F</sub>	R <sub>R</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	lb	lb							ft <sup>2</sup>	lb	plf	
L3 46.00-20.00	1114.36	3007.69	A	1	0.65	1	1	1	66.011	989.01	38.04	C
			B	1	0.65	1	1	1	66.011			
			C	1	0.65	1	1	1	66.011			
L4 20.00-0.00	514.32	2924.75	A	1	0.65	1	1	1	58.660	741.89	37.09	C
			B	1	0.65	1	1	1	58.660			
			C	1	0.65	1	1	1	58.660			
Sum Weight:	3706.96	9854.69						OTM	222677.76 lb-ft	4137.20		

### Tower Forces - Service - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	Face	e	C <sub>F</sub>	R <sub>R</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	lb	lb							ft <sup>2</sup>	lb	plf	
L1 110.00-96.00	171.44	885.97	A	1	0.65	1	1	1	18.667	466.23	33.30	C
			B	1	0.65	1	1	1	18.667			
			C	1	0.65	1	1	1	18.667			
L2 96.00-46.00	1906.84	3036.28	A	1	0.65	1	1	1	94.750	1940.07	38.80	C
			B	1	0.65	1	1	1	94.750			
			C	1	0.65	1	1	1	94.750			
L3 46.00-20.00	1114.36	3007.69	A	1	0.65	1	1	1	66.011	989.01	38.04	C
			B	1	0.65	1	1	1	66.011			
			C	1	0.65	1	1	1	66.011			
L4 20.00-0.00	514.32	2924.75	A	1	0.65	1	1	1	58.660	741.89	37.09	C
			B	1	0.65	1	1	1	58.660			
			C	1	0.65	1	1	1	58.660			
Sum Weight:	3706.96	9854.69						OTM	222677.76 lb-ft	4137.20		

### Discrete Appurtenance Pressures - No Ice $G_H = 1.690$

Description	Aiming Azimuth	Weight	Offset <sub>x</sub>	Offset <sub>y</sub>	z	K <sub>z</sub>	q <sub>z</sub>	C <sub>sAc</sub> Front	C <sub>sAc</sub> Side
	°	lb	ft	ft	ft		psf	ft <sup>2</sup>	ft <sup>2</sup>
800 10504	300.0000	17.64	-2.27	-1.31	108.00	1.403	26	3.35	1.87
800 10504	60.0000	17.64	2.27	-1.31	108.00	1.403	26	3.35	1.87
800 10504	180.0000	17.64	0.00	2.62	108.00	1.403	26	3.35	1.87
742-351	300.0000	29.80	-2.27	-1.31	108.00	1.403	26	5.89	1.73
742-351	60.0000	29.80	2.27	-1.31	108.00	1.403	26	5.89	1.73
742-351	180.0000	29.80	0.00	2.62	108.00	1.403	26	5.89	1.73
2' Standoff T-Arm (10' face width)	0.0000	129.00	0.00	0.00	108.00	1.403	26	5.30	5.30
2' Standoff T-Arm (10' face width)	0.0000	129.00	0.00	0.00	108.00	1.403	26	5.30	5.30
2' Standoff T-Arm (10' face width)	0.0000	129.00	0.00	0.00	108.00	1.403	26	5.30	5.30
7770.00	300.0000	103.46	-4.06	-2.35	100.00	1.373	25	11.76	7.96
7770.00	60.0000	103.46	4.06	-2.35	100.00	1.373	25	11.76	7.96
7770.00	180.0000	103.46	0.00	4.69	100.00	1.373	25	11.76	7.96
PIROD 13' Low Profile	0.0000	1300.00	0.00	0.00	100.00	1.373	25	10.70	10.70

<b>RISATower</b>  <b>CHA Consulting, Inc.</b> 2139 Silas Deane Highway, Suite 212 Rocky Hill, CT 06067-2336 Phone: (860) 257-4557 FAX:	Job	CT2157-Danbury East	Page	12 of 22
	Project	22702-1013-28000-R2	Date	12:28:46 08/01/11
	Client	SAI	Designed by	1948

Description	Aiming Azimuth °	Weight lb	Offset <sub>x</sub> ft	Offset <sub>y</sub> ft	z ft	K <sub>z</sub>	q <sub>z</sub> psf	C <sub>A</sub> Ac Front ft <sup>2</sup>	C <sub>A</sub> Ac Side ft <sup>2</sup>
Platform (Monopole)									
LGP21401	300.0000	0.00	-0.60	-0.35	100.00	1.373	25	0.00	0.00
LGP21401	60.0000	0.00	0.60	-0.35	100.00	1.373	25	0.00	0.00
4' x 6" Panel w/ Mounting Pipe	300.0000	172.64	-4.23	-2.44	78.00	1.279	24	11.47	12.25
4' x 6" Panel w/ Mounting Pipe	60.0000	172.64	4.23	-2.44	78.00	1.279	24	11.47	12.25
4' x 6" Panel w/ Mounting Pipe	180.0000	172.64	0.00	4.89	78.00	1.279	24	11.47	12.25
PiROD 13' Low Profile Platform (Monopole)	0.0000	1300.00	0.00	0.00	78.00	1.279	24	10.70	10.70
P65-16-XL-2	300.0000	44.00	-4.14	-2.39	90.00	1.332	25	8.40	4.12
P65-16-XL-2	60.0000	44.00	4.14	-2.39	90.00	1.332	25	8.40	4.12
BXA-70063/4CF	180.0000	9.00	0.00	4.78	90.00	1.332	25	5.16	2.44
DB846H80E-SX w/Mount Pipe	300.0000	81.10	-4.14	-2.39	90.00	1.332	25	10.64	15.45
DB846H80E-SX w/Mount Pipe	60.0000	81.10	4.14	-2.39	90.00	1.332	25	10.64	15.45
DB844G65ZAXY w/Mount Pipe	180.0000	83.10	0.00	4.78	90.00	1.332	25	10.76	10.79
MGD3-800T0	300.0000	17.00	-4.14	-2.39	90.00	1.332	25	3.66	2.37
MGD3-800T0	60.0000	17.00	4.14	-2.39	90.00	1.332	25	3.66	2.37
MGD3-800T0	180.0000	17.00	0.00	4.78	90.00	1.332	25	3.66	2.37
FD9R6004/2C-3L	300.0000	6.20	-4.14	-2.39	90.00	1.332	25	0.00	0.00
FD9R6004/2C-3L	60.0000	6.20	4.14	-2.39	90.00	1.332	25	0.00	0.00
FD9R6004/2C-3L	180.0000	6.20	0.00	4.78	90.00	1.332	25	0.00	0.00
PiROD 13' Platform w/handrails (Monopole)	0.0000	1822.00	0.00	0.00	90.00	1.332	25	31.30	31.30
AM-X-CD-14-65-00T-R ET	0.0000	36.40	0.00	-4.69	100.00	1.373	25	5.51	2.83
AM-X-CD-14-65-00T-R ET	120.0000	36.40	4.06	2.35	100.00	1.373	25	5.51	2.83
AM-X-CD-16-65-00T-R ET	240.0000	33.00	-4.06	2.35	100.00	1.373	25	6.62	4.13
Remote Radio Heads	0.0000	66.00	0.00	-0.69	100.00	1.373	25	0.00	0.00
Remote Radio Heads	120.0000	66.00	0.60	0.35	100.00	1.373	25	0.00	0.00
Remote Radio Heads	240.0000	66.00	-0.60	0.35	100.00	1.373	25	0.00	0.00
DC6-48-60-18	240.0000	20.00	-0.60	0.35	100.00	1.373	25	2.59	1.08
TT19-08BP111-001	0.0000	25.00	0.00	-0.69	100.00	1.373	25	0.00	0.52
TT19-08BP111-001	120.0000	25.00	0.60	0.35	100.00	1.373	25	0.00	0.52
TT19-08BP111-001	240.0000	25.00	-0.60	0.35	100.00	1.373	25	0.00	0.52
LGP21401	180.0000	38.00	0.00	0.69	100.00	1.373	25	0.00	0.00
Sum Weight:		6628.32							

### Discrete Appurtenance Pressures - With Ice

$G_H = 1.690$

Description	Aiming Azimuth °	Weight lb	Offset <sub>x</sub> ft	Offset <sub>y</sub> ft	z ft	K <sub>z</sub>	q <sub>z</sub> psf	C <sub>A</sub> Ac Front ft <sup>2</sup>	C <sub>A</sub> Ac Side ft <sup>2</sup>	t <sub>z</sub> in
800 10504	300.0000	35.71	-2.27	-1.31	108.00	1.403	19	3.70	2.20	0.5000
800 10504	60.0000	35.71	2.27	-1.31	108.00	1.403	19	3.70	2.20	0.5000
800 10504	180.0000	35.71	0.00	2.62	108.00	1.403	19	3.70	2.20	0.5000
742-351	300.0000	57.10	-2.27	-1.31	108.00	1.403	19	6.30	2.04	0.5000
742-351	60.0000	57.10	2.27	-1.31	108.00	1.403	19	6.30	2.04	0.5000
742-351	180.0000	57.10	0.00	2.62	108.00	1.403	19	6.30	2.04	0.5000
2' Standoff T-Arm (10' face width)	0.0000	170.00	0.00	0.00	108.00	1.403	19	6.65	6.65	0.5000

<b>RISATower</b>  <b>CHA Consulting, Inc.</b> 2139 Silas Deane Highway, Suite 212 Rocky Hill, CT 06067-2336 Phone: (860) 257-4557 FAX:	<b>Job</b> CT2157-Danbury East	<b>Page</b> 13 of 22
	<b>Project</b> 22702-1013-28000-R2	<b>Date</b> 12:28:46 08/01/11
	<b>Client</b> SAI	<b>Designed by</b> 1948

Description	Aiming Azimuth °	Weight lb	Offset <sub>x</sub> ft	Offset <sub>z</sub> ft	z ft	K <sub>z</sub>	q <sub>z</sub> psf	C <sub>MAc</sub> Front ft <sup>2</sup>	C <sub>MAc</sub> Side ft <sup>2</sup>	t <sub>c</sub> in
2' Standoff T-Arm (10' face width)	0.0000	170.00	0.00	0.00	108.00	1.403	19	6.65	6.65	0.5000
2' Standoff T-Arm (10' face width)	0.0000	170.00	0.00	0.00	108.00	1.403	19	6.65	6.65	0.5000
7770.00	300.0000	189.40	-4.06	-2.35	100.00	1.373	19	12.63	9.21	0.5000
7770.00	60.0000	189.40	4.06	-2.35	100.00	1.373	19	12.63	9.21	0.5000
7770.00	180.0000	189.40	0.00	4.69	100.00	1.373	19	12.63	9.21	0.5000
PiROD 13' Low Profile Platform (Monopole)	0.0000	1765.00	0.00	0.00	100.00	1.373	19	15.10	15.10	0.5000
LGP21401	300.0000	52.33	-0.60	-0.35	100.00	1.373	19	0.00	0.00	0.5000
LGP21401	60.0000	52.33	0.60	-0.35	100.00	1.373	19	0.00	0.00	0.5000
4' x 6" Panel w/ Mounting Pipe	300.0000	290.82	-4.23	-2.44	78.00	1.279	18	12.71	14.43	0.5000
4' x 6" Panel w/ Mounting Pipe	60.0000	290.82	4.23	-2.44	78.00	1.279	18	12.71	14.43	0.5000
4' x 6" Panel w/ Mounting Pipe	180.0000	290.82	0.00	4.89	78.00	1.279	18	12.71	14.43	0.5000
PiROD 13' Low Profile Platform (Monopole)	0.0000	1765.00	0.00	0.00	78.00	1.279	18	15.10	15.10	0.5000
P65-16-XL-2	300.0000	88.53	-4.14	-2.39	90.00	1.332	18	8.95	4.56	0.5000
P65-16-XL-2	60.0000	88.53	4.14	-2.39	90.00	1.332	18	8.95	4.56	0.5000
BXA-70063/4CF	180.0000	37.79	0.00	4.78	90.00	1.332	18	5.55	2.74	0.5000
DB846H80E-SX w/Mount Pipe	300.0000	191.47	-4.14	-2.39	90.00	1.332	18	11.75	17.83	0.5000
DB846H80E-SX w/Mount Pipe	60.0000	191.47	4.14	-2.39	90.00	1.332	18	11.75	17.83	0.5000
DB844G65ZAXY w/Mount Pipe	180.0000	179.96	0.00	4.78	90.00	1.332	18	12.14	12.98	0.5000
MGD3-800T0	300.0000	38.91	-4.14	-2.39	90.00	1.332	18	4.00	2.70	0.5000
MGD3-800T0	60.0000	38.91	4.14	-2.39	90.00	1.332	18	4.00	2.70	0.5000
MGD3-800T0	180.0000	38.91	0.00	4.78	90.00	1.332	18	4.00	2.70	0.5000
FD9R6004/2C-3L	300.0000	10.76	-4.14	-2.39	90.00	1.332	18	0.00	0.00	0.5000
FD9R6004/2C-3L	60.0000	10.76	4.14	-2.39	90.00	1.332	18	0.00	0.00	0.5000
FD9R6004/2C-3L	180.0000	10.76	0.00	4.78	90.00	1.332	18	0.00	0.00	0.5000
PiROD 13' Platform w/handrails (Monopole)	0.0000	2452.00	0.00	0.00	90.00	1.332	18	40.20	40.20	0.5000
AM-X-CD-14-65-00T-R ET	0.0000	68.35	0.00	-4.69	100.00	1.373	19	5.90	3.14	0.5000
AM-X-CD-14-65-00T-R ET	120.0000	68.35	4.06	2.35	100.00	1.373	19	5.90	3.14	0.5000
AM-X-CD-16-65-00T-R ET	240.0000	74.48	-4.06	2.35	100.00	1.373	19	7.05	4.54	0.5000
Remote Radio Heads	0.0000	89.93	0.00	-0.69	100.00	1.373	19	0.00	0.00	0.5000
Remote Radio Heads	120.0000	89.93	0.60	0.35	100.00	1.373	19	0.00	0.00	0.5000
Remote Radio Heads	240.0000	89.93	-0.60	0.35	100.00	1.373	19	0.00	0.00	0.5000
DC6-48-60-18	240.0000	36.69	-0.60	0.35	100.00	1.373	19	2.81	1.24	0.5000
TT19-08BP111-001	0.0000	30.80	0.00	-0.69	100.00	1.373	19	0.00	0.62	0.5000
TT19-08BP111-001	120.0000	30.80	0.60	0.35	100.00	1.373	19	0.00	0.62	0.5000
TT19-08BP111-001	240.0000	30.80	-0.60	0.35	100.00	1.373	19	0.00	0.62	0.5000
LGP21401	180.0000	52.33	0.00	0.69	100.00	1.373	19	0.00	0.00	0.5000
Sum		9904.89								
Weight:										

**Discrete Appurtenance Pressures - Service**  $G_H = 1.690$

Description	Aiming Azimuth °	Weight lb	Offset <sub>x</sub> ft	Offset <sub>z</sub> ft	z ft	K <sub>z</sub>	q <sub>z</sub> psf	C <sub>MAc</sub> Front ft <sup>2</sup>	C <sub>MAc</sub> Side ft <sup>2</sup>
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<b>RISATower</b>  <b>CHA Consulting, Inc.</b> 2139 Silas Deane Highway, Suite 212 Rocky Hill, CT 06067-2336 Phone: (860) 257-4557 FAX:	Job	CT2157-Danbury East	Page	14 of 22
	Project	22702-1013-28000-R2	Date	12:28:46 08/01/11
	Client	SAI	Designed by	1948

Description	Aiming Azimuth °	Weight lb	Offset <sub>x</sub> ft	Offset <sub>y</sub> ft	z ft	K <sub>z</sub>	q <sub>z</sub> psf	C <sub>Ac</sub> Front ft <sup>2</sup>	C <sub>Ac</sub> Side ft <sup>2</sup>
800 10504	300.0000	17.64	-2.27	-1.31	108.00	1.403	13	3.35	1.87
800 10504	60.0000	17.64	2.27	-1.31	108.00	1.403	13	3.35	1.87
800 10504	180.0000	17.64	0.00	2.62	108.00	1.403	13	3.35	1.87
742-351	300.0000	29.80	-2.27	-1.31	108.00	1.403	13	5.89	1.73
742-351	60.0000	29.80	2.27	-1.31	108.00	1.403	13	5.89	1.73
742-351	180.0000	29.80	0.00	2.62	108.00	1.403	13	5.89	1.73
2' Standoff T-Arm (10' face width)	0.0000	129.00	0.00	0.00	108.00	1.403	13	5.30	5.30
2' Standoff T-Arm (10' face width)	0.0000	129.00	0.00	0.00	108.00	1.403	13	5.30	5.30
2' Standoff T-Arm (10' face width)	0.0000	129.00	0.00	0.00	108.00	1.403	13	5.30	5.30
7770.00	300.0000	103.46	-4.06	-2.35	100.00	1.373	13	11.76	7.96
7770.00	60.0000	103.46	4.06	-2.35	100.00	1.373	13	11.76	7.96
7770.00	180.0000	103.46	0.00	4.69	100.00	1.373	13	11.76	7.96
PiROD 13' Low Profile Platform (Monopole)	0.0000	1300.00	0.00	0.00	100.00	1.373	13	10.70	10.70
LGP21401	300.0000	0.00	-0.60	-0.35	100.00	1.373	13	0.00	0.00
LGP21401	60.0000	0.00	0.60	-0.35	100.00	1.373	13	0.00	0.00
4' x 6" Panel w/ Mounting Pipe	300.0000	172.64	-4.23	-2.44	78.00	1.279	12	11.47	12.25
4' x 6" Panel w/ Mounting Pipe	60.0000	172.64	4.23	-2.44	78.00	1.279	12	11.47	12.25
4' x 6" Panel w/ Mounting Pipe	180.0000	172.64	0.00	4.89	78.00	1.279	12	11.47	12.25
PiROD 13' Low Profile Platform (Monopole)	0.0000	1300.00	0.00	0.00	78.00	1.279	12	10.70	10.70
P65-16-XL-2	300.0000	44.00	-4.14	-2.39	90.00	1.332	12	8.40	4.12
P65-16-XL-2	60.0000	44.00	4.14	-2.39	90.00	1.332	12	8.40	4.12
BXA-70063/4CF	180.0000	9.00	0.00	4.78	90.00	1.332	12	5.16	2.44
DB846H80E-SX w/Mount Pipe	300.0000	81.10	-4.14	-2.39	90.00	1.332	12	10.64	15.45
DB846H80E-SX w/Mount Pipe	60.0000	81.10	4.14	-2.39	90.00	1.332	12	10.64	15.45
DB844G65ZAXY w/Mount Pipe	180.0000	83.10	0.00	4.78	90.00	1.332	12	10.76	10.79
MGD3-800T0	300.0000	17.00	-4.14	-2.39	90.00	1.332	12	3.66	2.37
MGD3-800T0	60.0000	17.00	4.14	-2.39	90.00	1.332	12	3.66	2.37
MGD3-800T0	180.0000	17.00	0.00	4.78	90.00	1.332	12	3.66	2.37
FD9R6004/2C-3L	300.0000	6.20	-4.14	-2.39	90.00	1.332	12	0.00	0.00
FD9R6004/2C-3L	60.0000	6.20	4.14	-2.39	90.00	1.332	12	0.00	0.00
FD9R6004/2C-3L	180.0000	6.20	0.00	4.78	90.00	1.332	12	0.00	0.00
PiROD 13' Platform w/handrails (Monopole)	0.0000	1822.00	0.00	0.00	90.00	1.332	12	31.30	31.30
AM-X-CD-14-65-00T-R ET	0.0000	36.40	0.00	-4.69	100.00	1.373	13	5.51	2.83
AM-X-CD-14-65-00T-R ET	120.0000	36.40	4.06	2.35	100.00	1.373	13	5.51	2.83
AM-X-CD-16-65-00T-R ET	240.0000	33.00	-4.06	2.35	100.00	1.373	13	6.62	4.13
Remote Radio Heads	0.0000	66.00	0.00	-0.69	100.00	1.373	13	0.00	0.00
Remote Radio Heads	120.0000	66.00	0.60	0.35	100.00	1.373	13	0.00	0.00
Remote Radio Heads	240.0000	66.00	-0.60	0.35	100.00	1.373	13	0.00	0.00
DC6-48-60-18	240.0000	20.00	-0.60	0.35	100.00	1.373	13	2.59	1.08
TT19-08BP111-001	0.0000	25.00	0.00	-0.69	100.00	1.373	13	0.00	0.52
TT19-08BP111-001	120.0000	25.00	0.60	0.35	100.00	1.373	13	0.00	0.52
TT19-08BP111-001	240.0000	25.00	-0.60	0.35	100.00	1.373	13	0.00	0.52
LGP21401	180.0000	38.00	0.00	0.69	100.00	1.373	13	0.00	0.00
Sum Weight:		6628.32							

<b>RISATower</b>  <b>CHA Consulting, Inc.</b> 2139 Silas Deane Highway, Suite 212 Rocky Hill, CT 06067-2336 Phone: (860) 257-4557 FAX:	Job	CT2157-Danbury East	Page	15 of 22
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	Client	SAI	Designed by	1948

### Force Totals

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Overturning Moments, M <sub>x</sub> lb-ft	Sum of Overturning Moments, M <sub>y</sub> lb-ft	Sum of Torques lb-ft
Leg Weight	9854.69					
Bracing Weight	0.00					
Total Member Self-Weight	9854.69			1313.75	-1.81	
Total Weight	20189.97			1313.75	-1.81	
Wind 0 deg - No Ice		24.34	-18069.99	-1354317.83	-2435.88	-255.34
Wind 30 deg - No Ice		9003.25	-15661.24	-1173914.67	-675311.82	-392.78
Wind 60 deg - No Ice		15569.74	-9056.07	-678610.01	-1167238.99	-424.96
Wind 90 deg - No Ice		17964.34	-24.34	-1120.32	-1346405.90	-343.28
Wind 120 deg - No Ice		15545.40	9013.92	677021.57	-1164804.92	-169.62
Wind 150 deg - No Ice		8961.09	15636.90	1174108.10	-671095.88	49.49
Wind 180 deg - No Ice		-24.34	18069.99	1356945.33	2432.26	255.34
Wind 210 deg - No Ice		-9003.25	15661.24	1176542.17	675308.21	392.78
Wind 240 deg - No Ice		-15569.74	9056.07	681237.51	1167235.37	424.96
Wind 270 deg - No Ice		-17964.34	24.34	3747.82	1346402.28	343.28
Wind 300 deg - No Ice		-15545.40	-9013.92	-674394.07	1164801.30	169.62
Wind 330 deg - No Ice		-8961.09	-15636.90	-1171480.60	671092.27	-49.49
Member Ice	1797.22					
Total Weight Ice	26705.71			3295.02	46.95	
Wind 0 deg - Ice		18.34	-17718.14	-1304989.88	-1786.62	-207.10
Wind 30 deg - Ice		8828.44	-15353.52	-1130629.72	-651603.38	-31.60
Wind 60 deg - Ice		15272.97	-8874.95	-652435.35	-1126810.96	152.36
Wind 90 deg - Ice		17625.12	-18.34	1461.45	-1300077.87	295.49
Wind 120 deg - Ice		15254.63	8843.19	655849.55	-1124977.38	359.45
Wind 150 deg - Ice		8796.68	15335.19	1135386.20	-648427.54	327.10
Wind 180 deg - Ice		-18.34	17718.14	1311579.92	1880.52	207.10
Wind 210 deg - Ice		-8828.44	15353.52	1137219.77	651697.28	31.60
Wind 240 deg - Ice		-15272.97	8874.95	659025.39	1126904.86	-152.36
Wind 270 deg - Ice		-17625.12	18.34	5128.60	1300171.77	-295.49
Wind 300 deg - Ice		-15254.63	-8843.19	-649259.51	1125071.29	-359.45
Wind 330 deg - Ice		-8796.68	-15335.19	-1128796.15	648521.44	-327.10
Total Weight	20189.97			1313.75	-1.81	
Wind 0 deg - Service		12.13	-9003.73	-675602.89	-1214.63	-127.23
Wind 30 deg - Service		4486.05	-7803.52	-585713.43	-336488.46	-195.71
Wind 60 deg - Service		7757.93	-4512.37	-338918.03	-581600.96	-211.75
Wind 90 deg - Service		8951.09	-12.13	-1345.31	-670874.44	-171.05
Wind 120 deg - Service		7745.81	4491.36	336552.38	-580388.13	-84.52
Wind 150 deg - Service		4465.04	7791.40	584235.63	-334387.78	24.66
Wind 180 deg - Service		-12.13	9003.73	675337.92	1211.02	127.23
Wind 210 deg - Service		-4486.05	7803.52	585448.46	336484.84	195.71
Wind 240 deg - Service		-7757.93	4512.37	338653.06	581597.34	211.75
Wind 270 deg - Service		-8951.09	12.13	1080.34	670870.82	171.05
Wind 300 deg - Service		-7745.81	-4491.36	-336817.35	580384.52	84.52
Wind 330 deg - Service		-4465.04	-7791.40	-584500.60	334384.17	-24.66

### Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice

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Comb. No.	Description
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice+Temp
15	Dead+Wind 0 deg+Ice+Temp
16	Dead+Wind 30 deg+Ice+Temp
17	Dead+Wind 60 deg+Ice+Temp
18	Dead+Wind 90 deg+Ice+Temp
19	Dead+Wind 120 deg+Ice+Temp
20	Dead+Wind 150 deg+Ice+Temp
21	Dead+Wind 180 deg+Ice+Temp
22	Dead+Wind 210 deg+Ice+Temp
23	Dead+Wind 240 deg+Ice+Temp
24	Dead+Wind 270 deg+Ice+Temp
25	Dead+Wind 300 deg+Ice+Temp
26	Dead+Wind 330 deg+Ice+Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

### Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
L1	110 - 96	Pole	Max Tension	2	0.04	-0.52	-0.00
			Max. Compression	14	-5261.69	47.43	-354.29
			Max. Mx	5	-3114.12	-36665.97	-22.84
			Max. My	8	-3112.98	77.34	-36719.33
			Max. Vy	11	-5265.07	36662.49	-226.91
			Max. Vx	8	5239.48	77.34	-36719.33
			Max. Torque	13			337.12
L2	96 - 46	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-17084.68	51.28	-1705.83
			Max. Mx	5	-11397.48	-575188.34	619.42
			Max. My	8	-11385.16	1279.16	-579970.14
			Max. Vy	5	14773.98	-575188.34	619.42
			Max. Vx	8	14884.52	1279.16	-579970.14
			Max. Torque	5			963.62
L3	46 - 20	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-22653.00	51.95	-2933.17
			Max. Mx	5	-16431.73	-1049214.1	891.11



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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
L4	20 - 0	Pole	Max. My	8	-16427.11	2041.31	-1057765.9
			Max. Vy	5	16793.76	-1049214.1	891.11
			Max. Vx	8	16901.91	2041.31	-1057765.9
			Max. Torque	10			-662.76
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-26705.71	51.95	-3471.40
			Max. Mx	5	-20181.80	-1396612.1	1162.24
			Max. My	8	-20181.69	2533.57	-1407520.8
			Max. Vy	5	17973.51	-1396612.1	1162.24
			Max. Vx	8	18079.23	2533.57	-1407520.8
			Max. Torque	10			-489.81

### Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Pole	Max. Vert	21	26705.71	18.34	-17718.18
	Max. H <sub>x</sub>	11	20189.97	17964.34	-24.34
	Max. H <sub>z</sub>	2	20189.97	-24.34	18070.00
	Max. M <sub>x</sub>	2	1404787.41	-24.34	18070.00
	Max. M <sub>z</sub>	5	1396612.15	-17964.34	24.34
	Max. Torsion	4	406.43	-15569.74	9056.07
	Min. Vert	1	20189.97	-11.16	-0.00
	Min. H <sub>x</sub>	5	20189.97	-17964.34	24.34
	Min. H <sub>z</sub>	8	20189.97	24.34	-18069.99
	Min. M <sub>x</sub>	8	-1407520.82	24.34	-18069.99
	Min. M <sub>z</sub>	11	-1396608.22	17964.34	-24.34
	Min. Torsion	10	-406.54	15569.74	-9056.07

### Tower Mast Reaction Summary

Load Combination	Vertical lb	Shear <sub>1</sub> lb	Shear <sub>2</sub> lb	Overturning Moment, M <sub>1</sub> lb-ft	Overturning Moment, M <sub>2</sub> lb-ft	Torque lb-ft
Dead Only	20189.97	11.16	0.00	1327.07	-7.44	-0.00
Dead+Wind 0 deg - No Ice	20189.97	24.34	-18070.00	-1404787.41	-2542.89	-251.47
Dead+Wind 30 deg - No Ice	20189.97	9003.25	-15661.24	-1217667.73	-700496.26	-379.72
Dead+Wind 60 deg - No Ice	20189.97	15569.74	-9056.07	-703910.01	-1210762.63	-406.43
Dead+Wind 90 deg - No Ice	20189.97	17964.34	-24.34	-1162.20	-1396612.15	-324.30
Dead+Wind 120 deg - No Ice	20189.97	15545.40	9013.92	702268.56	-1208229.06	-155.12
Dead+Wind 150 deg - No Ice	20189.97	8961.09	15636.90	1217878.94	-696098.26	55.76
Dead+Wind 180 deg - No Ice	20189.97	-24.34	18069.99	1407520.82	2533.53	251.68
Dead+Wind 210 deg - No Ice	20189.97	-9003.25	15661.24	1220404.40	700477.93	380.06
Dead+Wind 240 deg - No Ice	20189.97	-15569.74	9056.07	706658.58	1210747.02	406.54

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Load Combination	Vertical lb	Shear <sub>x</sub> lb	Shear <sub>y</sub> lb	Overturning Moment, M <sub>x</sub> lb-ft	Overturning Moment, M <sub>y</sub> lb-ft	Torque lb-ft
Dead+Wind 270 deg - No Ice	20189.97	-17964.34	24.34	3914.39	1396608.22	324.06
Dead+Wind 300 deg - No Ice	20189.97	-15545.40	-9013.92	-699524.64	1208234.07	154.77
Dead+Wind 330 deg - No Ice	20189.97	-8961.09	-15636.90	-1215146.94	696100.55	-55.88
Dead+Ice+Temp	26705.71	-0.00	0.00	3471.40	51.95	0.01
Dead+Wind 0 deg+Ice+Temp	26705.71	18.34	-17718.18	-1375217.34	-1899.31	-208.93
Dead+Wind 30 deg+Ice+Temp	26705.71	8828.44	-15353.53	-1191476.81	-686690.49	-23.43
Dead+Wind 60 deg+Ice+Temp	26705.71	15272.97	-8874.95	-687547.30	-1187476.48	168.22
Dead+Wind 90 deg+Ice+Temp	26705.71	17625.16	-18.34	1555.02	-1370065.99	314.79
Dead+Wind 120 deg+Ice+Temp	26705.71	15254.63	8843.19	691178.09	-1185525.39	377.09
Dead+Wind 150 deg+Ice+Temp	26705.71	8796.68	15335.19	1196523.10	-683308.24	338.41
Dead+Wind 180 deg+Ice+Temp	26705.71	-18.34	17718.18	1382193.20	1997.93	209.10
Dead+Wind 210 deg+Ice+Temp	26705.71	-8828.44	15353.53	1198462.91	686776.97	23.70
Dead+Wind 240 deg+Ice+Temp	26705.71	-15272.97	8874.95	694549.17	1187565.77	-168.13
Dead+Wind 270 deg+Ice+Temp	26705.71	-17625.16	18.34	5452.37	1370170.23	-314.93
Dead+Wind 300 deg+Ice+Temp	26705.71	-15254.63	-8843.19	-684180.92	1185641.78	-377.31
Dead+Wind 330 deg+Ice+Temp	26705.71	-8796.68	-15335.19	-1189541.71	683421.81	-338.51
Dead+Wind 0 deg - Service	20189.97	12.13	-9003.74	-700156.33	-1269.35	-126.66
Dead+Wind 30 deg - Service	20189.97	4486.05	-7803.52	-606804.68	-349476.12	-192.05
Dead+Wind 60 deg - Service	20189.97	7757.94	-4512.37	-350490.33	-604042.30	-206.01
Dead+Wind 90 deg - Service	20189.97	8951.09	-12.13	106.01	-696753.51	-164.79
Dead+Wind 120 deg - Service	20189.97	7745.81	4491.36	351041.40	-602774.87	-79.38
Dead+Wind 150 deg - Service	20189.97	4465.04	7791.40	608280.87	-347280.60	27.31
Dead+Wind 180 deg - Service	20189.97	-12.13	9003.74	702895.85	1264.07	126.70
Dead+Wind 210 deg - Service	20189.97	-4486.05	7803.52	609546.29	349468.59	192.12
Dead+Wind 240 deg - Service	20189.97	-7757.94	4512.37	353234.93	604035.45	206.04
Dead+Wind 270 deg - Service	20189.97	-8951.09	12.13	2639.46	696749.59	164.75
Dead+Wind 300 deg - Service	20189.97	-7745.81	-4491.36	-348297.97	602773.19	79.32
Dead+Wind 330 deg - Service	20189.97	-4465.04	-7791.40	-605540.43	347278.24	-27.35

## Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
1	0.00	-20189.97	0.00	-11.16	20189.97	-0.00	0.055%
2	24.34	-20189.97	-18069.99	-24.34	20189.97	18070.00	0.000%
3	9003.25	-20189.97	-15661.24	-9003.25	20189.97	15661.24	0.000%
4	15569.74	-20189.97	-9056.07	-15569.74	20189.97	9056.07	0.000%
5	17964.34	-20189.97	-24.34	-17964.34	20189.97	24.34	0.000%
6	15545.40	-20189.97	9013.92	-15545.40	20189.97	-9013.92	0.000%
7	8961.09	-20189.97	15636.90	-8961.09	20189.97	-15636.90	0.000%
8	-24.34	-20189.97	18069.99	24.34	20189.97	-18069.99	0.000%
9	-9003.25	-20189.97	15661.24	9003.25	20189.97	-15661.24	0.000%
10	-15569.74	-20189.97	9056.07	15569.74	20189.97	-9056.07	0.000%
11	-17964.34	-20189.97	24.34	17964.34	20189.97	-24.34	0.000%
12	-15545.40	-20189.97	-9013.92	15545.40	20189.97	9013.92	0.000%
13	-8961.09	-20189.97	-15636.90	8961.09	20189.97	15636.90	0.000%
14	0.00	-26705.71	0.00	0.00	26705.71	-0.00	0.000%
15	18.34	-26705.71	-17718.14	-18.34	26705.71	17718.18	0.000%
16	8828.44	-26705.71	-15353.52	-8828.44	26705.71	15353.53	0.000%
17	15272.97	-26705.71	-8874.95	-15272.97	26705.71	8874.95	0.000%
18	17625.12	-26705.71	-18.34	-17625.16	26705.71	18.34	0.000%
19	15254.63	-26705.71	8843.19	-15254.63	26705.71	-8843.19	0.000%
20	8796.68	-26705.71	15335.19	-8796.68	26705.71	-15335.19	0.000%
21	-18.34	-26705.71	17718.14	18.34	26705.71	-17718.18	0.000%
22	-8828.44	-26705.71	15353.52	8828.44	26705.71	-15353.53	0.000%
23	-15272.97	-26705.71	8874.95	15272.97	26705.71	-8874.95	0.000%
24	-17625.12	-26705.71	18.34	17625.16	26705.71	-18.34	0.000%

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Load Comb.	Sum of Applied Forces				Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb		
25	-15254.63	-26705.71	-8843.19	15254.63	26705.71	8843.19	0.000%	
26	-8796.68	-26705.71	-15335.19	8796.68	26705.71	15335.19	0.000%	
27	12.13	-20189.97	-9003.73	-12.13	20189.97	9003.74	0.000%	
28	4486.05	-20189.97	-7803.52	-4486.05	20189.97	7803.52	0.000%	
29	7757.93	-20189.97	-4512.37	-7757.94	20189.97	4512.37	0.000%	
30	8951.09	-20189.97	-12.13	-8951.09	20189.97	12.13	0.000%	
31	7745.81	-20189.97	4491.36	-7745.81	20189.97	-4491.36	0.000%	
32	4465.04	-20189.97	7791.40	-4465.04	20189.97	-7791.40	0.000%	
33	-12.13	-20189.97	9003.73	12.13	20189.97	-9003.74	0.000%	
34	-4486.05	-20189.97	7803.52	4486.05	20189.97	-7803.52	0.000%	
35	-7757.93	-20189.97	4512.37	7757.94	20189.97	-4512.37	0.000%	
36	-8951.09	-20189.97	12.13	8951.09	20189.97	-12.13	0.000%	
37	-7745.81	-20189.97	-4491.36	7745.81	20189.97	4491.36	0.000%	
38	-4465.04	-20189.97	-7791.40	4465.04	20189.97	7791.40	0.000%	

### Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00019765
2	Yes	4	0.00000001	0.00080959
3	Yes	6	0.00000001	0.00006770
4	Yes	6	0.00000001	0.00007248
5	Yes	5	0.00000001	0.00008562
6	Yes	6	0.00000001	0.00006811
7	Yes	6	0.00000001	0.00006976
8	Yes	5	0.00000001	0.00004834
9	Yes	6	0.00000001	0.00007228
10	Yes	6	0.00000001	0.00006756
11	Yes	5	0.00000001	0.00006864
12	Yes	6	0.00000001	0.00007082
13	Yes	6	0.00000001	0.00006910
14	Yes	4	0.00000001	0.00003429
15	Yes	5	0.00000001	0.00052076
16	Yes	6	0.00000001	0.00027153
17	Yes	6	0.00000001	0.00027880
18	Yes	5	0.00000001	0.00052039
19	Yes	6	0.00000001	0.00027519
20	Yes	6	0.00000001	0.00027479
21	Yes	5	0.00000001	0.00052782
22	Yes	6	0.00000001	0.00028203
23	Yes	6	0.00000001	0.00027452
24	Yes	5	0.00000001	0.00051794
25	Yes	6	0.00000001	0.00027402
26	Yes	6	0.00000001	0.00027463
27	Yes	4	0.00000001	0.00033020
28	Yes	5	0.00000001	0.00031564
29	Yes	5	0.00000001	0.00034765
30	Yes	4	0.00000001	0.00063746
31	Yes	5	0.00000001	0.00031853
32	Yes	5	0.00000001	0.00032971
33	Yes	4	0.00000001	0.00038437
34	Yes	5	0.00000001	0.00034840
35	Yes	5	0.00000001	0.00031616
36	Yes	4	0.00000001	0.00057808
37	Yes	5	0.00000001	0.00033493

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38                      Yes                      5                      0.00000001                      0.00032391

**Maximum Tower Deflections - Service Wind**

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	110 - 96	39.048	33	2.9780	0.0067
L2	96 - 46	30.351	33	2.9410	0.0068
L3	50 - 20	7.661	33	1.5135	0.0012
L4	20 - 0	1.107	33	0.5307	0.0003

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

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
108.00	800 10504	33	37.791	2.9798	0.0068	10681
100.00	(2) 7770.00	33	32.800	2.9693	0.0070	5342
90.00	P65-16-XL-2	33	26.773	2.8551	0.0065	3128
78.00	(4) 4' x 6" Panel w/ Mounting Pipe	33	20.057	2.5513	0.0051	2301

**Maximum Tower Deflections - Design Wind**

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	110 - 96	78.036	8	5.9549	0.0133
L2	96 - 46	60.671	8	5.8813	0.0136
L3	50 - 20	15.331	8	3.0286	0.0024
L4	20 - 0	2.216	8	1.0624	0.0005

**Critical Deflections and Radius of Curvature - Design Wind**

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
108.00	800 10504	8	75.527	5.9585	0.0137	5454
100.00	(2) 7770.00	8	65.561	5.9378	0.0139	2727
90.00	P65-16-XL-2	8	53.525	5.7099	0.0131	1592
78.00	(4) 4' x 6" Panel w/ Mounting Pipe	8	40.110	5.1031	0.0103	1165

**Compression Checks**

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### Pole Design Data

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	F <sub>a</sub> ksi	A in <sup>2</sup>	Actual P lb	Allow. P <sub>a</sub> lb	Ratio $\frac{P}{P_a}$
L1	110 - 96 (1)	TP17.5x14.5x0.375	14.00	110.00	217.1	3.168	20.3830	-4776.39	64563.90	0.074
L2	96 - 46 (2)	TP27.98x17.5x0.25	50.00	110.00	138.3	7.811	21.3385	-11385.20	166670.00	0.068
L3	46 - 20 (3)	TP33.392x26.6416x0.3125	30.00	110.00	112.4	11.819	32.8107	-16427.10	387787.00	0.042
L4	20 - 0 (4)	TP37x33.392x0.389	20.00	110.00	101.6	14.477	45.2031	-20181.70	654412.00	0.031

### Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M <sub>x</sub> lb-ft	Actual f <sub>bx</sub> ksi	Allow. F <sub>bx</sub> ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M <sub>y</sub> lb-ft	Actual f <sub>by</sub> ksi	Allow. F <sub>by</sub> ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	110 - 96 (1)	TP17.5x14.5x0.375	35635.5	-5.034	21.600	0.233	0.00	0.000	21.600	0.000
L2	96 - 46 (2)	TP27.98x17.5x0.25	579971.8	-49.221	39.000	1.262	0.00	0.000	39.000	0.000
L3	46 - 20 (3)	TP33.392x26.6416x0.3125	1057766.67	-47.469	39.000	1.217	0.00	0.000	39.000	0.000
L4	20 - 0 (4)	TP37x33.392x0.389	1407525.00	-41.474	39.000	1.063	0.00	0.000	39.000	0.000

### Pole Interaction Design Data

Section No.	Elevation ft	Size	Ratio P $\frac{P}{P_a}$	Ratio f <sub>bx</sub> $\frac{f_{bx}}{F_{bx}}$	Ratio f <sub>by</sub> $\frac{f_{by}}{F_{by}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	110 - 96 (1)	TP17.5x14.5x0.375	0.074	0.233	0.000	0.307	1.333	H1-3 ✓
L2	96 - 46 (2)	TP27.98x17.5x0.25	0.068	1.262	0.000	1.330	1.333	H1-3 ✓
L3	46 - 20 (3)	TP33.392x26.6416x0.3125	0.042	1.217	0.000	1.260	1.333	H1-3 ✓
L4	20 - 0 (4)	TP37x33.392x0.389	0.031	1.063	0.000	1.094	1.333	H1-3 ✓

### Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P <sub>allow</sub> lb	% Capacity	Pass Fail
L1	110 - 96	Pole	TP17.5x14.5x0.375	1	-4776.39	86063.67	23.0	Pass
L2	96 - 46	Pole	TP27.98x17.5x0.25	2	-11385.20	222171.10	99.8	Pass
L3	46 - 20	Pole	TP33.392x26.6416x0.3125	3	-16427.10	516920.05	94.5	Pass
L4	20 - 0	Pole	TP37x33.392x0.389	4	-20181.70	872331.16	82.1	Pass

Summary

<b>RISATower</b>  <b>CHA Consulting, Inc.</b> 2139 Silas Deane Highway, Suite 212 Rocky Hill, CT 06067-2336 Phone: (860) 257-4557 FAX:	<b>Job</b> CT2157-Danbury East	<b>Page</b> 22 of 22
	<b>Project</b> 22702-1013-28000-R2	<b>Date</b> 12:28:46 08/01/11
	<b>Client</b> SAI	<b>Designed by</b> 1948

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P <sub>allow</sub> lb	% Capacity	Pass Fail
						Pole (L2)	99.8	Pass
						<b>RATING =</b>	<b>99.8</b>	<b>Pass</b>

Program Version 5.4.2.0 - 6/17/2010 File:W:/SAI Cingular/22702/Sites/1013\_2157/Struct/Retrofit-R2/Model/Model-R2.eri

## AM-X-CD-14-65-00T-RET (4' 65° Dual Broadband Antenna)

Dual Band Electrical Down Tilt Antenna

698 ~ 894MHz, X-pol., H65° / V17.0°

1710 ~ 2170MHz, X-pol., H65° / V8.5°

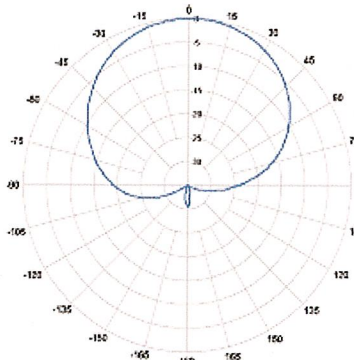
### Electrical Specification

Frequency Range	698~894MHz	1710~2170MHz
Impedance	50Ω	
Polarization	Dual, Slant ±45°	
Gain	14.0dBi / 11.85dBd @ 698-806MHz 14.8dBi / 12.65dBd @ 824-894MHz	16.1dBi / 13.95dBd @ 1710-1755MHz 16.3dBi / 14.15dBd @ 1850-1900MHz 16.0dBi / 13.85dBd @ 2110-2155MHz
Beamwidth	Horizontal	60° @ 1710-1755MHz 61° @ 1850-1900MHz 64° @ 2110-2155MHz
	Vertical	8.8° @ 1710-1755MHz 8.5° @ 1850-1900MHz 8.0° @ 2110-2155MHz
VSWR	≤1.5:1	
Front-to-Back Ratio	≥28 dB	
Electrical Downtilt Range	2° ~ 16°	0° ~ 10°
Isolation Between Ports	≥30 dB	
Isolation Between Ports of Different Frequency Elements	≥35 dB	
Cross Pole Discrimination	10.0 dB @ ±60° 15.0 dBi @ 0°	
First Upper Side Lobe Suppression	16dB	
Side Lobe Suppression	> 16dB @ 0-6° Tilt > 18dB @ 7-12° Tilt (Up to 15° from Boresight)	> 16dB @ 0-6° Tilt > 18dB @ 7-10° Tilt (Up to 15° from Boresight)
Passive Intermodulation	≤ -150 dBc @ 2x20w	
Input Maximum CW Power	500 W	300 W
Environmental Compliance	IP65 for Radome IP67 for Connectors	
RET Motor Configuration	Field Replaceable RET Electronic Control Module / RET Motor is internal to antenna & not field replaceable	
Compliant with AISG 1.1 and 2.0	AISG 1.1 and 2.0	

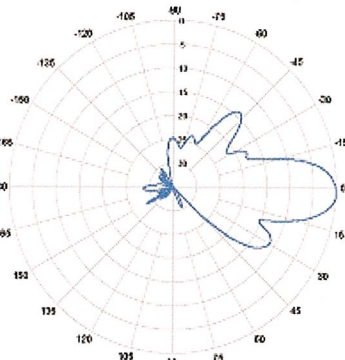
### Mechanical Specification

Dimension (W×D×H)	11.8×5.9×48 inches (300×150×1219mm)
Weight (Without clamp)	16.5 kg (36.4 lbs)
Connector	4 x 7/16 DIN(F), Long Neck
Max Wind Speed	150mph
Wind Load (@150 mph)	1260 N

# AM-X-CD-14-65-00T-RET (4' 65° Dual Broadband Antenna)

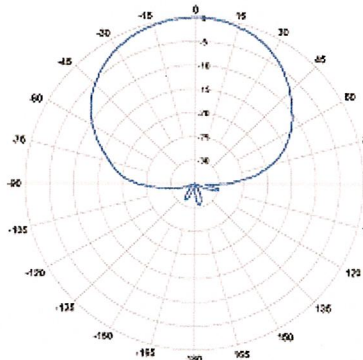


Horizontal Pattern

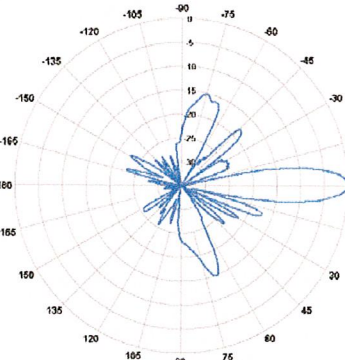


Vertical Pattern (Downtilt 2°)

700MHz band Pattern

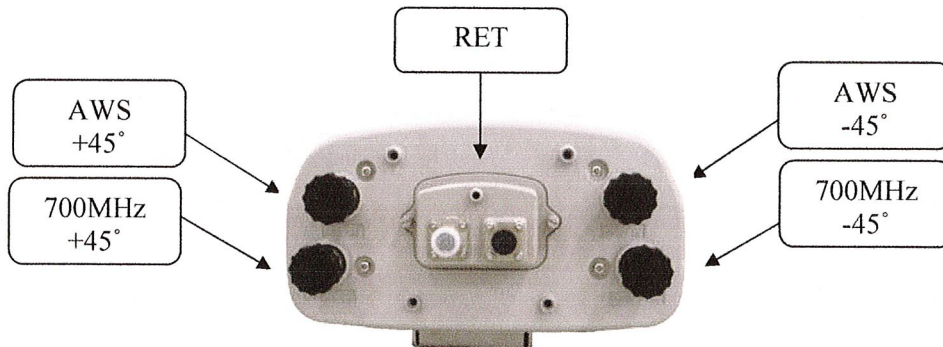
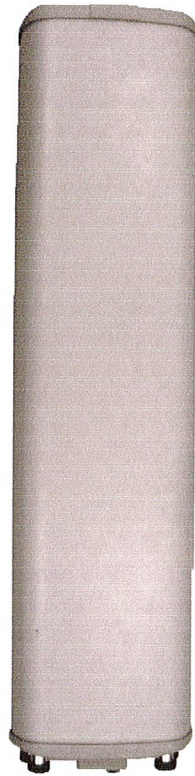


Horizontal Pattern



Vertical Pattern (Downtilt 0°)

AWS band Pattern





# AM-X-CD-16-65-00T-RET (54")

## Dual Band Electrical DownTilt Antenna

698 ~ 894MHz, X-pol., H65° / V15°  
1710 ~ 2170MHz, X-pol., H65° / V7.5°

### Electrical Specification

Frequency Range		698 ~ 894 MHz	1710 ~ 2170 MHz
Gain		14.0 dBi	16.5.0 dBi
Beamwidth	Horizontal	65°	65°
	Vertical	15°	7.5°
Impedance		50Ω	50Ω
VSWR		≤1.5:1	≤1.5:1
Polarization		Dual, Slant ±45°	Dual, Slant ±45°
Front-to-Back Ratio		≥30 dB	≥30 dB
Electrical Downtilt Range		0° ~ 8°	0° ~ 8°
Passive Intermediation		≤ -150 dBc	≤ -150 dBc
Input Maximum CW Power		500W	250W

Specifications are subject to change.

### Mechanical Specification

Dimension (W×D×H)	12.6×7.87×54 inches
Weight (Without clamp)	15.0 kg (33.0 lb)
Connector	4 x 7/16 DIN(F),Bottom
Max Wind Speed	60 m/s



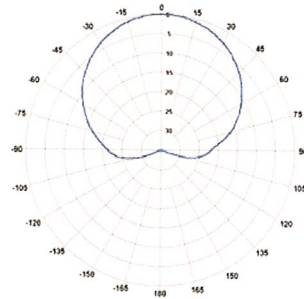
# AM-X-CD-16-65-00T-RET (54")

Simply  
Intelligent

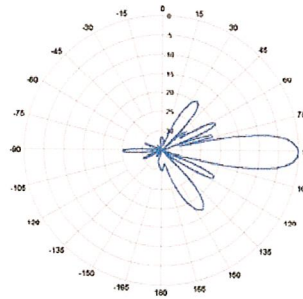
KMW Communications  
Base Station Antennas  
For Mobile Communications

## Dual Band Electrical Down Tilt Antenna

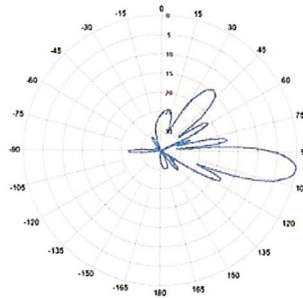
### [700MHz\_Band Pattern]



Horizontal Pattern

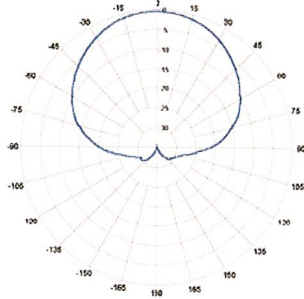


Vertical Pattern(Downtilt 0°)

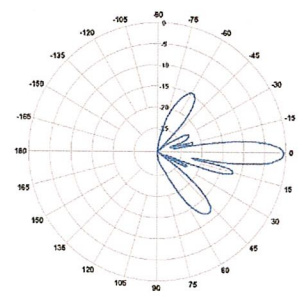


Vertical Pattern(Downtilt 8°)

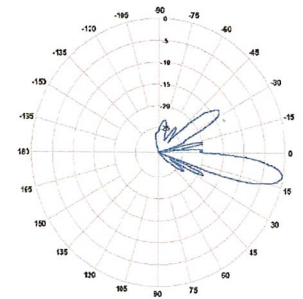
### [AWS\_Band Pattern]



Horizontal Pattern



Vertical Pattern(Downtilt 0°)



Vertical Pattern(Downtilt 8°)

# RRUS 11 – Dual PA RRU.

## Technical Data

- > Multi standard 2x30 Watts
- > RF: 1.4 – 20 MHz
- > Carrier BW: 2
- > 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<sup>2</sup> up to 60 meters
    - > 10 mm<sup>2</sup> over 60 meters
    - > Shielded
- > Power Cons: 200 Watts typ.



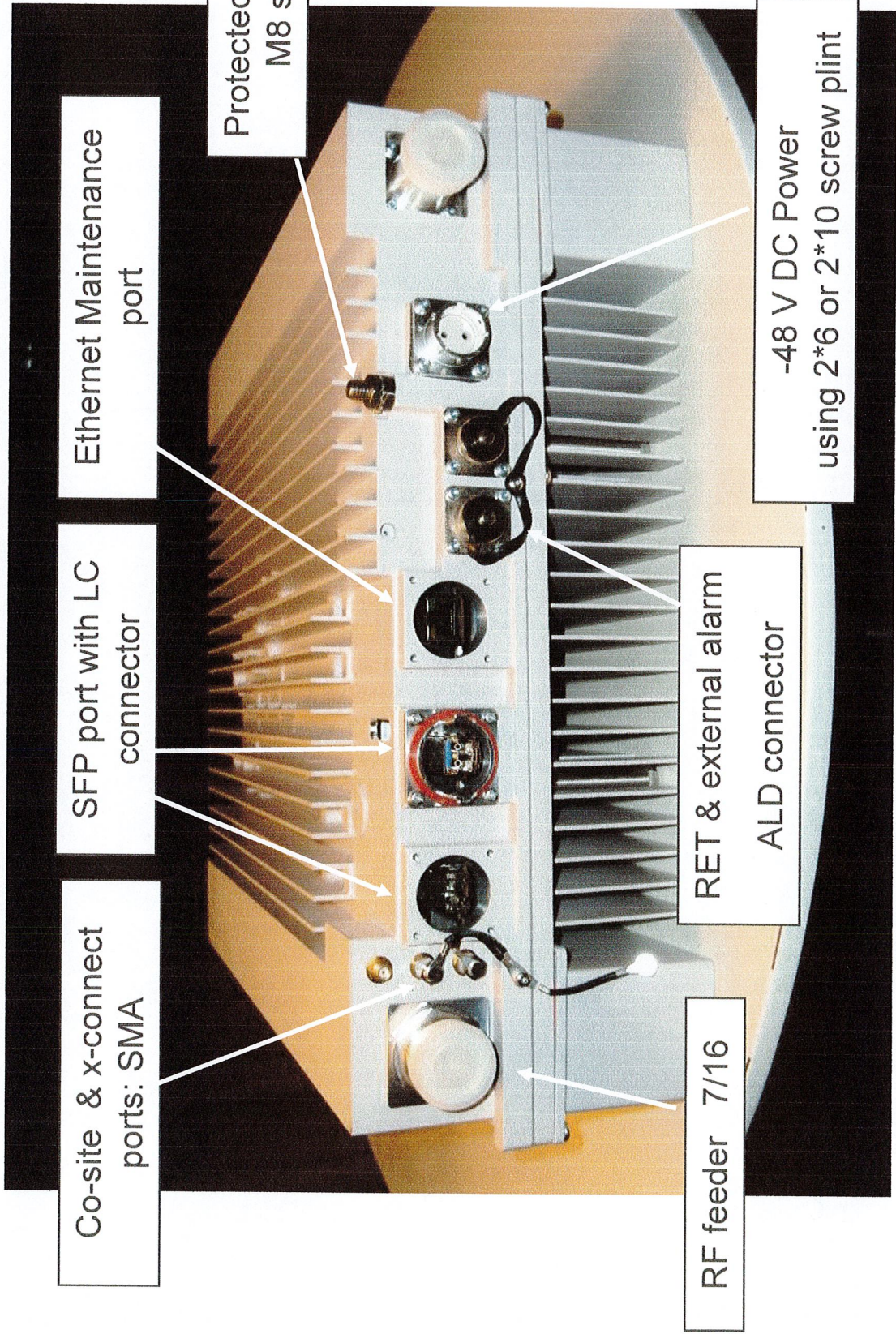
RBS6000



# RRUS-11 I/F



RBS6000



TT19-08BP111-001

TMA Twin 1900 with 850 Bypass 12 dB AISG 1.1

**ELECTRICAL SPECIFICATIONS**

UL Frequency Range (MHz)	1850-1910 with 824-894 bypass
UL Rejection	>77 dB
UL Gain(dB)	12
UL Return Loss	>18
UL Noise Figure	<1.7 dB, Typical
UL Output 3rd Order Intercept Point(dBm)	>+23
UL Bypass Loss(dB)	2.5, Typical
UL Max Input Power (dBm)	+14 dBm
DL Frequency Range (MHz)	1930-1990 with 824-894 bypass
DL Return Loss	>18
DL Insertion Loss (dB)	850 MHz, <0.3; 1900 MHz, <0.5
Intermodulation	@ 2 x +43 dBm TX carriers, in receive band, <160 dBc, referred to antenna port
Input Voltage (V)	AISG Mode: 10-30; Current alarm mode: 8 -17
Alarm Functionality	AISG compatible or in case of no AISG command received, current alarm mode 170-190 mA
Power Consumption	<1.1W @12V
Power Handling, RMS	850: >57 dBm; 1900: >55 dBm
AISG Compatibility	AISG 1.1 fully upgradable to AISG 2.0 (AISG version only dependent on loaded SW version) TT19-08BP112-001 has AISG 2.0 loaded from factory

**MECHANICAL SPECIFICATIONS**

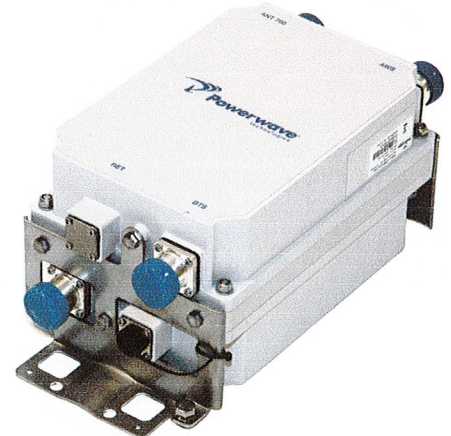
Dimension HxWxD mm(ft)	250x169x137 mm (9.9"x6.7"x5.4")
Weight(lbs)	<16
Colors	Off white (NCS 1502-R)
RF Connectors	DIN 7/16 female, long neck
Mounting Kit	Mounting kit for pole and wall is included

**ENVIRONMENTAL SPECIFICATIONS**

Temperature Range	-40° C to +65° C (-40° F to +149° F)
Operational	ETS 300 019-1-4
Transportation	ETS 300 019-1-2
Storage	ETS 300 019-1-1
Lightning Protection	3 kA 10/350 µs; 20 kA (Shield)
Housing	Aluminum
MTBF	>1 million hours per TMA
Ingress Protection	IP65 and IP68

**APPROVAL AND TESTS**

Safety	EN60950
EMC	3GPP: TS 25.113



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

# POWER

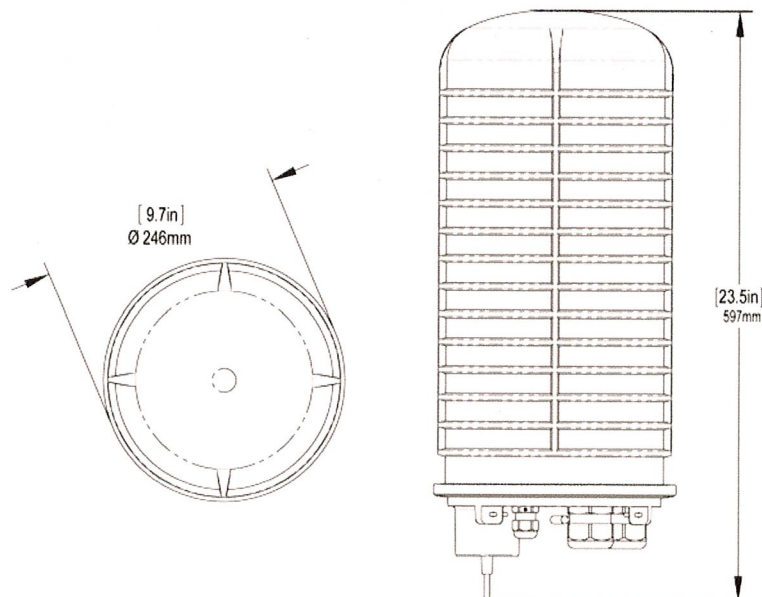
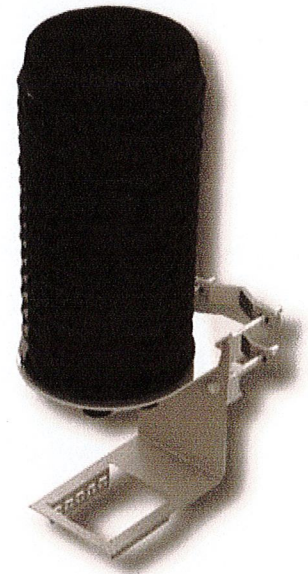
## DC6-48-60-18-8F

### DC Surge Suppression Solution

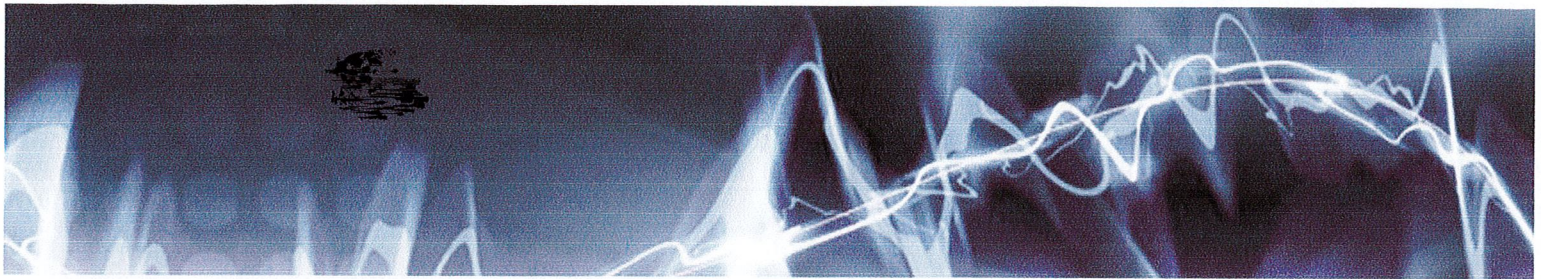
The DC6-48-60-18 is a dual chambered, DC surge suppression system for use in multi-circuit, Distributed Antenna Systems. The system will protect up to 6 Remote Radio Heads from voltage surges and lightning, and connect up to 18 fiber pairs. The system is enclosed in a NEMA 4 rated, waterproof enclosure.

#### 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.



**Raycap**



# 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)



**Raycap**

G02-00-068 REV 050610



GS-07F-0435V



Certified to  
ISO 9001:2000



TUV 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

August 30, 2011

Mayor Mark D. Boughton  
Mayor, City of Danbury  
Danbury City Hall  
155 Deer Hill Ave  
Danbury, CT 06810

Re: Telecommunications Facility – 48 Newtown Road Danbury, CT

Dear Mayor Boughton:

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