

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

www.ct.gov/csc

April 25, 2011

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

RE: **EM-CING-152-110406** - New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 15 Minor Lane, Waterford, Connecticut.

Dear Mr. Culp:

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

- Any deviation from the proposed modification as specified in this notice and supporting materials with Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Not less than 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration;

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated April 6, 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 Daniel M. Steward, First Selectman, Town of Waterford
Thomas V. Wagner, Planning Director, Town of Waterford
American Tower Corporation





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April 11, 2011

The Honorable Daniel M. Steward
First Selectman
Town of Waterford
Town Hall
15 Rope Ferry Road
Waterford, CT 06385

RE: **EM-CING-152-110406** - New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 15 Manor Lane, Waterford, Connecticut.

Dear First Selectman Steward:

The Connecticut Siting Council (Council) received this request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72.

If you have any questions or comments regarding this proposal, please call me or inform the Council by April 25, 2011.

Thank you for your cooperation and consideration.

Very truly yours,

A handwritten signature in black ink that reads "Linda Roberts" followed by the initials "LRB" in a larger, stylized font.

Linda Roberts
Executive Director

LR/jbw

Enclosure: Notice of Intent

c: Thomas V. Wagner, Planning Director, Town of Waterford

EM-CING-152-110406



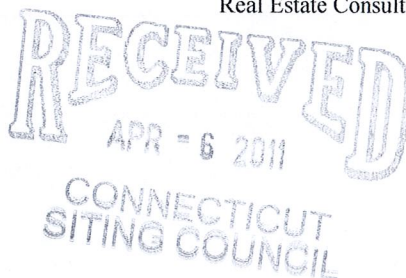
Cingular Wireless PCS, LLC
500 Enterprise Drive
Rocky Hill, Connecticut 06067-3900
Phone: (860) 463-5511
Fax: (860) 513-7190

Douglas L. Culp
Real Estate Consultant

HAND DELIVERED

April 6, 2011

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



ORIGINAL

Re: New Cingular Wireless PCS, LLC notice of intent to modify an existing tele-communications facility located at 15 Minor Lane Waterford, CT (owner American Tower)

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, 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.

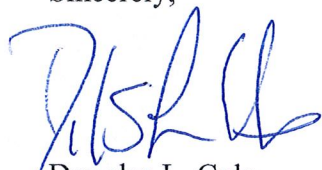
The changes to the facility do not constitute modifications as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed or altered. Rather, the planned changes to the facility fall squarely within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

15 Minor Lane
Site Number 2023
Exempt Mod

Tower Owner/Manager: American Tower

Equipment configuration: Monopole

Current and/or approved: Six PowerWave 7770 @ 153 ft
Six PowerWave TMA's @153 ft
Twelve runs 1 5/8 inch coax to 153 ft
Existing Equipment Room in Building

Planned Modifications: Retain existing PowerWave 7770 antenna's and TMA's @ 153 ft
Install three KMW14-65 antennas or equivalent @ 153 ft
Install six remote radio heads and one surge arrestors @ 153 ft
Install one fiber and two DC power cables to @ 153 ft
Retain all Coax Cabling

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 18.6% 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 29.9 % of the standard.

Existing

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm ²)	Standard Limits (mW/cm ²)	Percent of Limit
Other Users							12.89
AT&T UMTS	153	800 Band	1	500	0.0077	0.5867	1.31
AT&T GSM	153	800Band	4	296	0.0182	0.5867	3.10
AT&T GSM	153	1900 Band	2	427	0.0131	1.0000	1.31
Total							18.6%

* Data for other users are from Siting Council records.

Proposed

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm ²)	Standard Limits (mW/cm ²)	Percent of Limit
Other Users							12.89
AT&T UMTS	153	800 Band	1	500	0.0077	0.5867	1.31
AT&T UMTS	153	1900 Band	2	500	0.0154	1.0000	1.54
AT&T GSM	153	1900 Band	11	427	0.0721	1.0000	7.21
AT&T GSM	153	880 - 894	7	296	0.0318	0.5867	5.42
AT&T LTE	153	740 - 746	1	500	0.0077	0.4933	1.56
Total							29.9%

* 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 (American Tower. dated 3-2-11)

PROJECT INFORMATION

UNMANNED TELECOMMUNICATIONS FACILITY MODIFICATIONS
 15 MINER LANE
 WATERFORD, CT 06385
 41° 19' 44.81" N
 -72° 7' 28.61" W
 NATIONAL, STATE & LOCAL CODES OR ORDINANCES
 TELECOMMUNICATIONS FACILITY
 TELECOMMUNICATIONS FACILITY
 866-915-5600
 NOC#

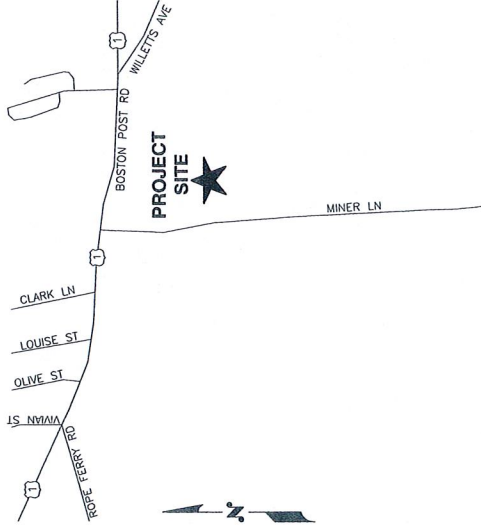
DRAWING INDEX

REV

T-1	TITLE SHEET	1
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A-2	ANTENNA LAYOUT AND ELEVATION	1
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VICINITY MAP

DIRECTIONS TO SITE:
 START OUT GOING NORTHEAST ON ENTERPRISE DR TOWARD CAPITOL BLVD. 0.4 MI. TURN LEFT ONTO CAPITOL BLVD. 0.3 MI. TURN LEFT ONTO WEST ST. 0.3 MI. MERGE ONTO I-91 S VIA THE RAMP ON THE LEFT TOWARD NEW HAVEN. 1.4 MI. MERGE ONTO CT-9 S VIA EXIT 225 ON THE LEFT TOWARD WATERFORD. 3.3 MI. MERGE ONTO CT-9 S VIA EXIT 109 ON THE LEFT TOWARD WILLETTS AVE. 0.2 MI. TAKE THE LEFT TURN TOWARD WILLETTS AVE / PROVIDENCE. 10.2 MI. TAKE THE US-1 EXIT. 75.5 MI. TOWARD WATERFORD. 0.2 MI. TURN SLIGHT RIGHT ONTO BOSTON POST RD / US-1. 4.5 MI. TURN RIGHT ONTO MINER LN. 0.2 MI. 15 MINER LN IS ON THE RIGHT.



GENERAL NOTES

- THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE CONSTRUCTION SPECIFICATIONS FOR THE TELEPHONE SYSTEMS. THE FACILITY IS SPECIFICALLY DESIGNED AND ENGINEERED FOR THE PURPOSES AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
- THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY TO BE ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT TO BE OPERATED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
- CONTRACTORS SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T REPRESENTATIVE IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

72 HOURS



BEFORE YOU DIG

CALL TOLL FREE 800-922-4455

UNDERGROUND SERVICE ALERT

1	07/24/11	ISSUED FOR CONSTRUCTION	AP	10.2.417%	2023.01	1-1
0	11/02/10	ISSUED FOR REVIEW	BT	10.2.417%	2023.01	1
NO.	DATE	REVISIONS	BY	SCALE	DESIGNED BY:	DC
SCALE:	AS SHOWN	DESIGNED BY:	DC	DRAWN BY:	RM	1

at&t
 500 ENTERPRISE DRIVE, SUITE 3A
 ROCKY HILL, CT 06867

SITE NUMBER: CT2023
 SITE NAME: WATERFORD
 15 MINER LANE
 WATERFORD, CT 06385
 NEW LONDON COUNTY

22 KEEMONDIN DRIVE
 SALEM, NH 03079

Hudson Design Group
 1600 ZENOBIA DRIVE, SUITE 3-101
 N. ANDOVER, MA 01854
 TEL: 978.485.1533
 FAX: 978.338.5555

SAI communications

AT&T
 TITLE SHEET (L-TE)
 DRAWING NUMBER
 JOB NUMBER
 2023.01
 1-1
 1

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AIA), THE SITE-SPECIFIC (UL LP, OR NFPA) LIGHTNING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELECOM AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GRES) SHALL BE BONDED TOGETHER AT OR BELOW GRADE BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BITS EQUIPMENT.
5. EACH BITS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES. 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BITS 2 AWG STRANDED COPPER FOR OUTDOOR BITS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

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

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

ABBREVIATIONS

ABL	ABOVE GRADE LEVEL	G.C.	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
AWG	AMERICAN WIRE GAUGE <td>MGB</td> <td>MASTER GROUND BUS <td>TBD</td> <td>TO BE DETERMINED </td></td>	MGB	MASTER GROUND BUS <td>TBD</td> <td>TO BE DETERMINED </td>	TBD	TO BE DETERMINED
BOW	BARE COPPER WIRE <td>MIN</td> <td>MINIMUM <td>TBR</td> <td>TO BE REMOVED </td></td>	MIN	MINIMUM <td>TBR</td> <td>TO BE REMOVED </td>	TBR	TO BE REMOVED
BTS	BASE TRANSMITTER STATION <td>PROPOSED</td> <td>NEW <td>TBR</td> <td>TO BE REMOVED </td></td>	PROPOSED	NEW <td>TBR</td> <td>TO BE REMOVED </td>	TBR	TO BE REMOVED
EG	EQUIPMENT GROUND <td>N.T.S.</td> <td>NOT TO SCALE <td>TBR</td> <td>TO BE REMOVED </td></td>	N.T.S.	NOT TO SCALE <td>TBR</td> <td>TO BE REMOVED </td>	TBR	TO BE REMOVED
ESR	EQUIPMENT GROUND RING <td>REF</td> <td>REFERENCE <td>REF</td> <td>AND REPLACED </td></td>	REF	REFERENCE <td>REF</td> <td>AND REPLACED </td>	REF	AND REPLACED
		CON	CONCRETE	REF	TYPICAL

AT&T	
GENERAL NOTES	
NO.	DATE
1	01/24/11
2	01/24/11
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at&t

15 MINER LANE
WATERFORD, CT 06385
NEW LONDON COUNTY

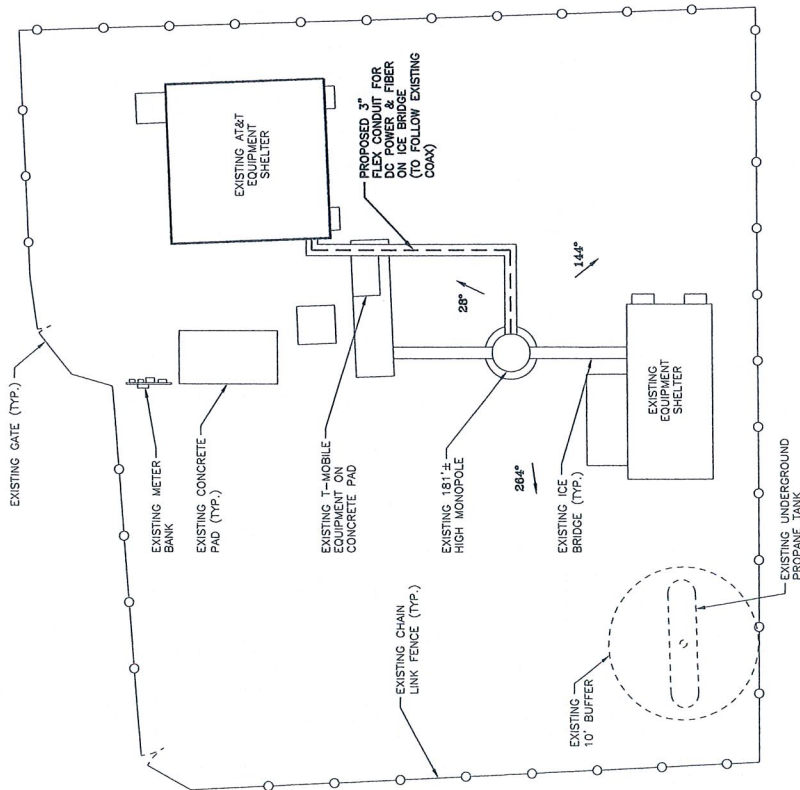
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

Site NUMBER: CT2023
Site NAME: WATERFORD

22. KEENAWDIN DRIVE
SALEM, NH 03079

Hudson
Design Group
1200 GOSWOLD STREET
MADISONVILLE, TN 37055
TEL: (615) 552-5555
FAX: (615) 552-5555

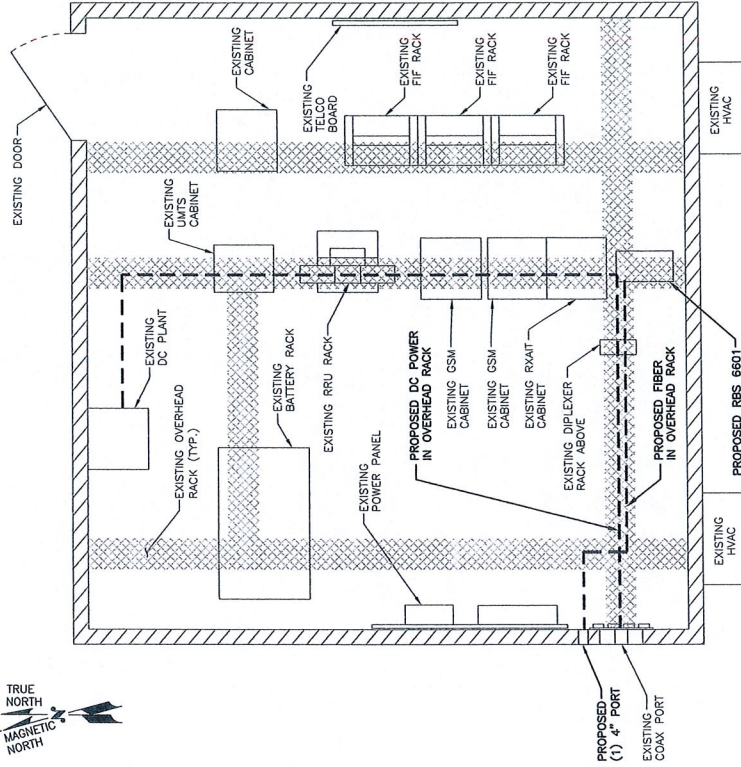
SAI communications
1200 GOSWOLD STREET
MADISONVILLE, TN 37055
TEL: (615) 552-5555
FAX: (615) 552-5555



COMPOUND PLAN

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

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



EQUIPMENT PLAN

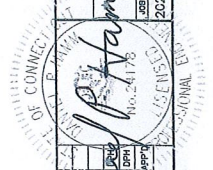
SCALE: 1/2"=1'-0"

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

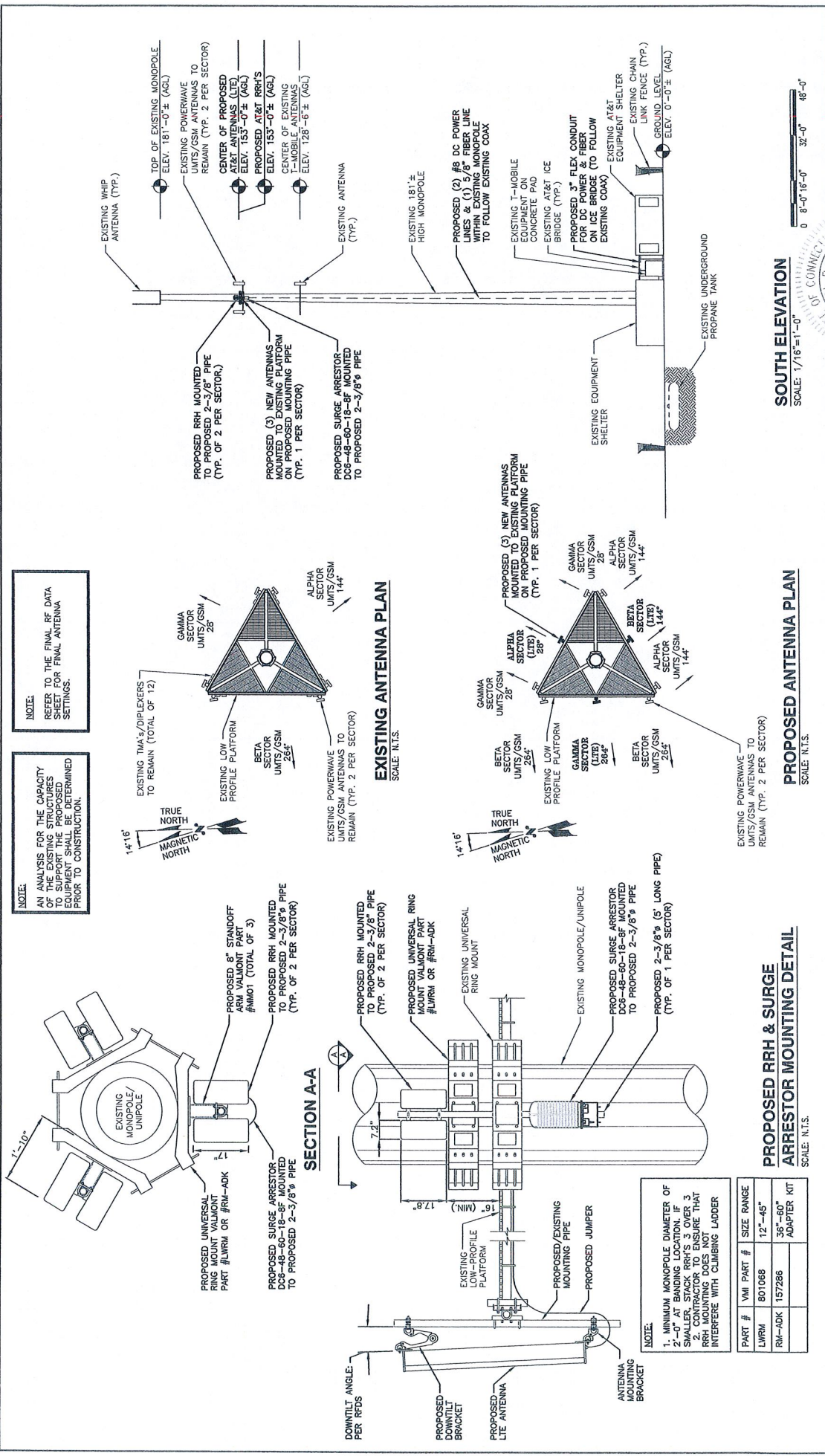


22 KEWAYDIN DRIVE
SHELTON, NH 03079

SITE NUMBER: CT2023
SITE NAME: WATERFORD
15 MINER LANE
WATERFORD, CT 06385
NEW LONDON COUNTY



NO.	DATE	REVISIONS	DESIGNED BY:	DC	SCALE:	AS SHOWN
1	07/29/11	ISSUED FOR CONSTRUCTION	BY:	DC	BY:	DC
0	11/02/10	ISSUED FOR REVIEW	BY:	DC	BY:	DC
AT&T WATERFORD COMPOUND & EQUIPMENT PLAN (LTE)						
DESIGN NUMBER	A-1					
DRAWING NUMBER	2023.01					
DATE	2023.01					
BY	A-1					



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

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

NOTE:
1. MINIMUM MONOPOLE DIAMETER OF 2'-0" AT BANDING LOCATION. IF SMALLER, STACK RRH'S 3 OVER 3 TO ENSURE THAT RRH MOUNTING DOES NOT INTERFERE WITH CLIMBING LADDER

PART #	VMI PART #	SIZE RANGE
LWRM	801068	12"-45"
RM-ADK	157286	36"-60" ADAPTER KIT

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

EXISTING ANTENNA PLAN
SCALE: N.T.S.

PROPOSED ANTENNA PLAN
SCALE: N.T.S.

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



22 KEENEYON DRIVE
SALEM, NH 03079

SITE NUMBER: CT2023
SITE NAME: WATERFORD
15 MINER LANE
WATERFORD, CT 06385
NEW LONDON COUNTY



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

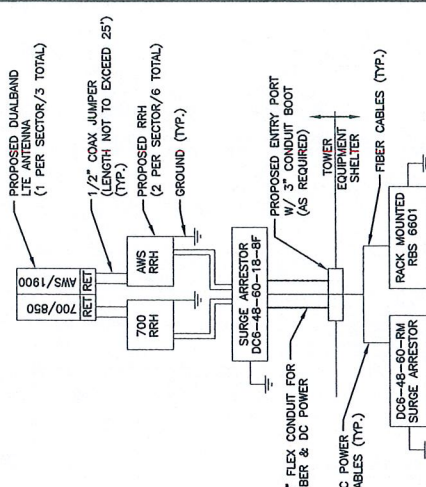
NO.	DATE	REVISIONS	DESIGNED BY:	SCALE	AS SHOWN
1	10/29/11	ISSUED FOR CONSTRUCTION	DC		
0	11/22/10	ISSUED FOR REVIEW	DC		

DESIGNED BY: DC
SCALE: AS SHOWN

DATE: 10-29-11
BY: DC
CHECKED BY: DC

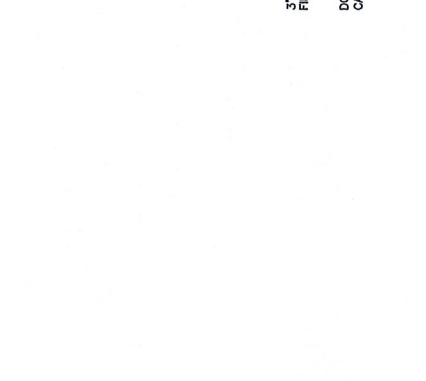
PROJECT: WATERFORD ANTENNA LAYOUT AND ELEVATION (LITE)
JOB NUMBER: 2025.01
DRAWING NUMBER: A-2

AT&T

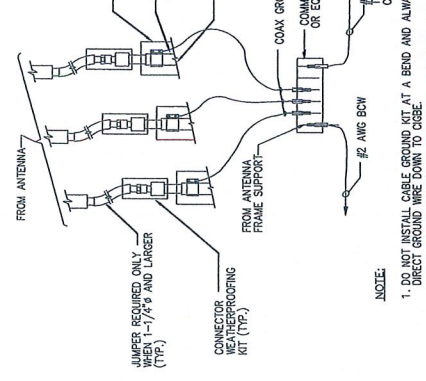
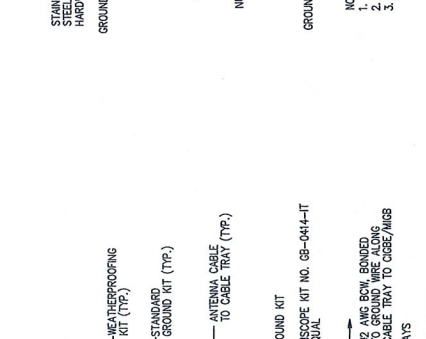
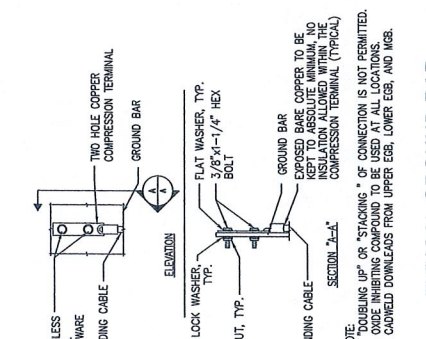


PLUMBING DIAGRAM
N.T.S.

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



GROUNDING RISER DIAGRAM
N.T.S.



NO.	REQ.	PART NO.	DESCRIPTION
1		HLGB-020-S	SOLID END BAR (20\"/>

WIRELESS SOLUTIONS INC.

SECTION "A" - SURGE ABSORBERS
INTERNAL GROUND RING (#2)
EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
BUILDING STEEL (IF AVAILABLE) (#2)

SECTION "B" - SURGE PRODUCERS
CABLE ENTRY PORTS (HATCH PLATES) (#2)
GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
TELECO GROUND BAR
COMMON NEUTRAL/GROUND BOND (#2)
COMMERCIAL SUPPLY RETURN BAR (#2)
-48V POWER SUPPLY RETURN BAR (#2)
RECTIFIER FRAMES.

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

SECTION "C" - SURGE PRODUCERS
CABLE ENTRY PORTS (HATCH PLATES) (#2)
GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
TELECO GROUND BAR
COMMON NEUTRAL/GROUND BOND (#2)
COMMERCIAL SUPPLY RETURN BAR (#2)
-48V POWER SUPPLY RETURN BAR (#2)
RECTIFIER FRAMES.

AT&T

PLUMBING DIAGRAM & DETAILS (1/E)

DATE: 01/24/11
ISSUED FOR CONSTRUCTION

DATE: 01/17/02/10
ISSUED FOR REVIEW

DESIGNED BY: DC
DRAWN BY: RH

SCALE: AS SHOWN

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

at&t

SITE NUMBER: CT2023
SITE NAME: WATERFORD

15 MINER LANE
WATERFORD, CT 06385
NEW LONDON COUNTY

22 KEEMAYDN DRIVE
SALEM, NH 03079

Hudson Design Group

100 ASHCROFT STREET
MIDDLETOWN, NH 03079
TEL: (603) 857-6533
FAX: (603) 850-8225

SAI communications

AT&T

PLUMBING DIAGRAM & DETAILS (1/E)

DATE: 01/24/11
ISSUED FOR CONSTRUCTION

DATE: 01/17/02/10
ISSUED FOR REVIEW

DESIGNED BY: DC
DRAWN BY: RH

SCALE: AS SHOWN

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



PASSED

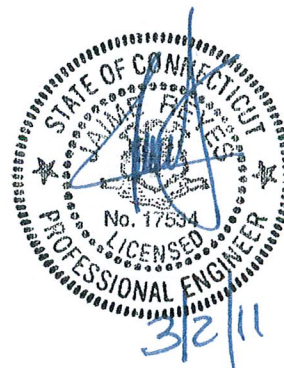
AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 180 ft FWT Inc Monopole
ATC Site Name : Waterford Rebuild CT, CT
ATC Site Number : 310972
Proposed Carrier : AT&T Mobility
Carrier Site Name : Waterford
Carrier Site Number : 10039487/CT2023
County : New London
Eng. Number : 46671821
Date : March 2, 2011
Usage : 88% Pole Shaft, 90% Anchor Bolt, 61%
Base Plate (approx.)

Submitted by:
Jyoti Ojha
Design Engineer

American Tower Engineering Services
8505 Freeport Parkway
Suite 135
Irving, TX 75063
Phone: 972-999-8900



Introduction

The purpose of this report is to summarize results of the structural analysis performed on the 180 ft FWT Inc Monopole located at Waterford Rebuild CT, CT, New London County (ATC site # 310972). The tower was originally designed and manufactured by FWT Inc (Drawing # 23766000 dated July 18, 2001). The tower has been extended to 180 ft. per ATC modification Job# 442108F2 dated 11/9/09.

Analysis

The existing tower was analyzed using Semaan Engineering Solutions, Inc., Software.

Basic Wind Speed: 100 mph (Fastest Mile)
 Radial Ice: 86.6 mph (Fastest Mile) w/ 1/2" ice Concurrent
 Standard/Code: TIA/EIA-222-F / 2003 IBC Section 1609.1.1, Exception (4) and Section 3108.4 / 2005 & 2008 CT Supplement

Antenna Loads

The following antenna loads were used in the tower analysis.

Existing Antennas

Elev. (ft)	Qty	Antennas	Mount	Coax (I/O)	Carrier
180.0	1	dbSpectra ATS8TMA10	Low Profile Platform	(2) 1 5/8 (I)	Town of Waterford
	2	Sinclair SC488-SF1SNF(D04)			
170.0	3	KMW HB-X-WM-17-65-00T-TTLNA (w/BKT)	Flush Mounts	(6) 1 5/8(I)	Clearwire Corporatio
	3	KMW HB-X-WM-17-65-00T			
160.0	6	Antel LPA -80063/4CF	Low Profile Platform	(12) 1 5/8 (I)	Verizon Wireless
	6	RFS FD9R6004/1C-3L			
	3	Ryma MG D3-800			
	3	Antel BXA -70063/6CF			
150.0	1	12' Omni	Low Profile Platform	(1) 1 5/8 (I)	USA Mobility
128.0	6	RFS ATMAA1412D-1A20	T-Arm	(18) 1 5/8 (I)	T-Mobile
	6	EMS DR85-17-02DPL2Q			
	3	RFS APX16DWV-16DWV-S-E-ACU			

Proposed Antennas

Elev. (ft)	Qty	Antennas	Mount	Coax (I/O)	Carrier
150.0	1	Raycap DC6-48-60-18-8F	Low Profile Platform	(12) 1 ¼ (I) (2) 8AWG 7 (I) (1) RG6 (I)	AT&T Mobility
	3	KMW AM-X-CD-14-65-00T-RET			
	6	Ericsson RRUS 11 (Band 12)			
	6	Powerwave LGP21903			
	6	Powerwave LGP21401			
	6	Allgon 7770.00			

Note: (O) – Coax installed outside the pole shaft. (I) – Coax installed inside the pole shaft.

The existing and the proposed transmission lines were considered running inside or outside the pole shaft as indicated above.

Results

The existing 180 ft FWT Inc Monopole with the existing and the proposed antennas is structurally acceptable per TIA/EIA-222 Rev F standards. The maximum structure usage is: 88 %, pole shaft, 90% Anchor Bolts, 61% Base Plate (approx.)

Additional exit and/or entry ports may be required to accommodate the running of the proposed lines to the proposed antennas. These additional ports may not be installed without installation drawings providing the location, size and welding requirements of each port. To ensure compliance with all conditions of this structural analysis, port installation drawings shall be provided by American Tower's Engineering Department under a subsequent project.

Pole Reactions	Original Design Reactions	Current Analysis Reactions	% Of Design
Moment (ft-kips)	5,552.05	4,967.55	89.9
Shear (kips)	45.65	41.41	90.7

The structure base reactions resulting from the current analysis do not exceed the ones shown on the original structural drawings or calculations. Therefore, assuming the original foundation was designed correctly, the existing foundation should be adequate to support the new reactions. Therefore, no modification to the existing foundation will be required.

Conclusion

The existing monopole and its foundation were found to be adequate to support the existing and proposed antennas with the transmission lines distribution as described above while meeting the requirements of the code or standard as specified in this report. If you have any questions or require additional information, please call (972) 999-8900.

Standard Conditions

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

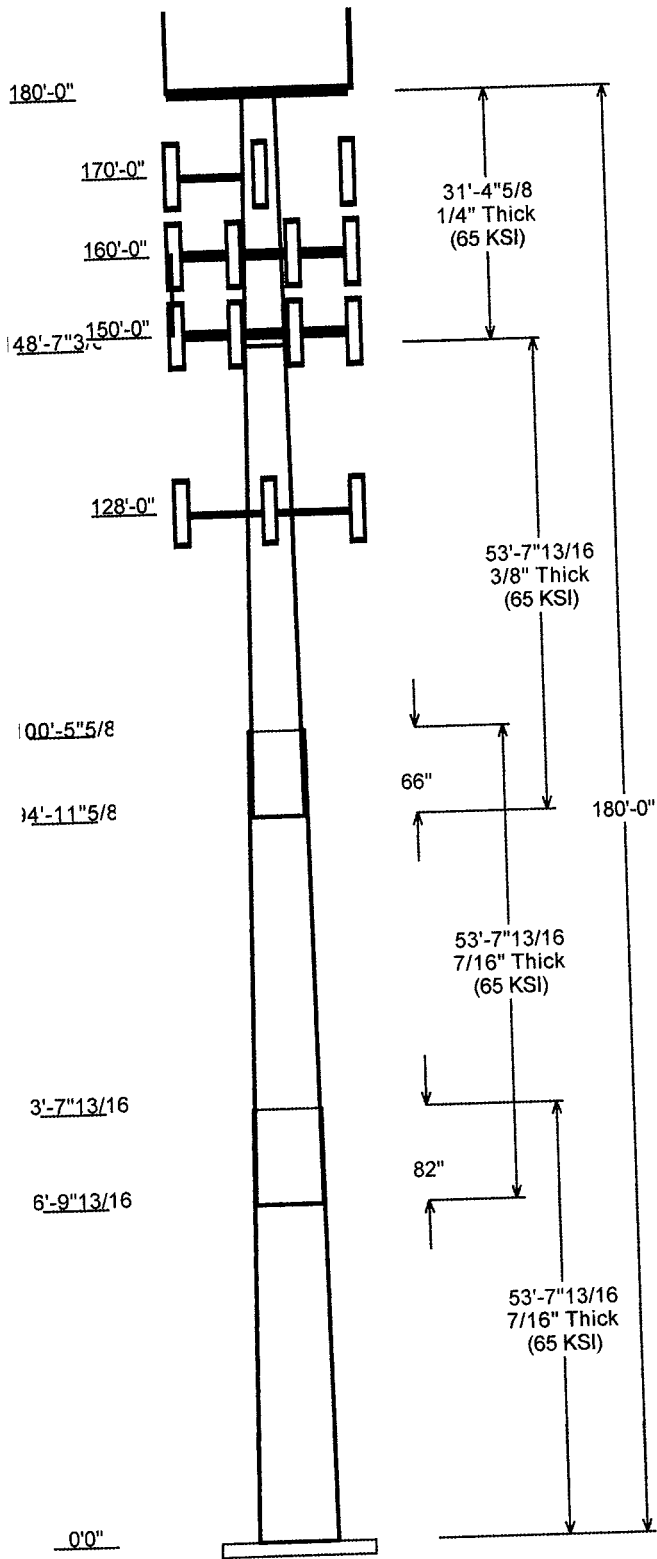
- Information supplied by the client regarding the structure itself, the antenna and feed line loading on the structure and its components, or other relevant information.

- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to ATC Engineering Services and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/EIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. ATC Engineering Services is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.



Job Information			
Pole :	310972	Code:	TIA/EIA-222 Rev F
Description :	180' FWT monopole		
Client :	AT&T Mobility		
Location :	Waterford Rebuild CT, CT		
Shape :	18 Sides	Base Elev (ft):	0.00
Height :	180.00 (ft)	Taper:	0.228740(in/ft)

Sections Properties								
Shaft Section	Length (ft)	Diameter (in)		Thick Joint (in)	Type	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
		Across Top	Flats Bottom					
1	53.650	50.17	62.45	0.438		0.000	0.228740	65
2	53.650	40.34	52.61	0.438	Slip Joint	82.000	0.228740	65
3	53.650	30.08	42.35	0.375	Slip Joint	66.000	0.228740	65
4	31.384	22.90	30.08	0.250	Butt Joint	0.000	0.228740	65

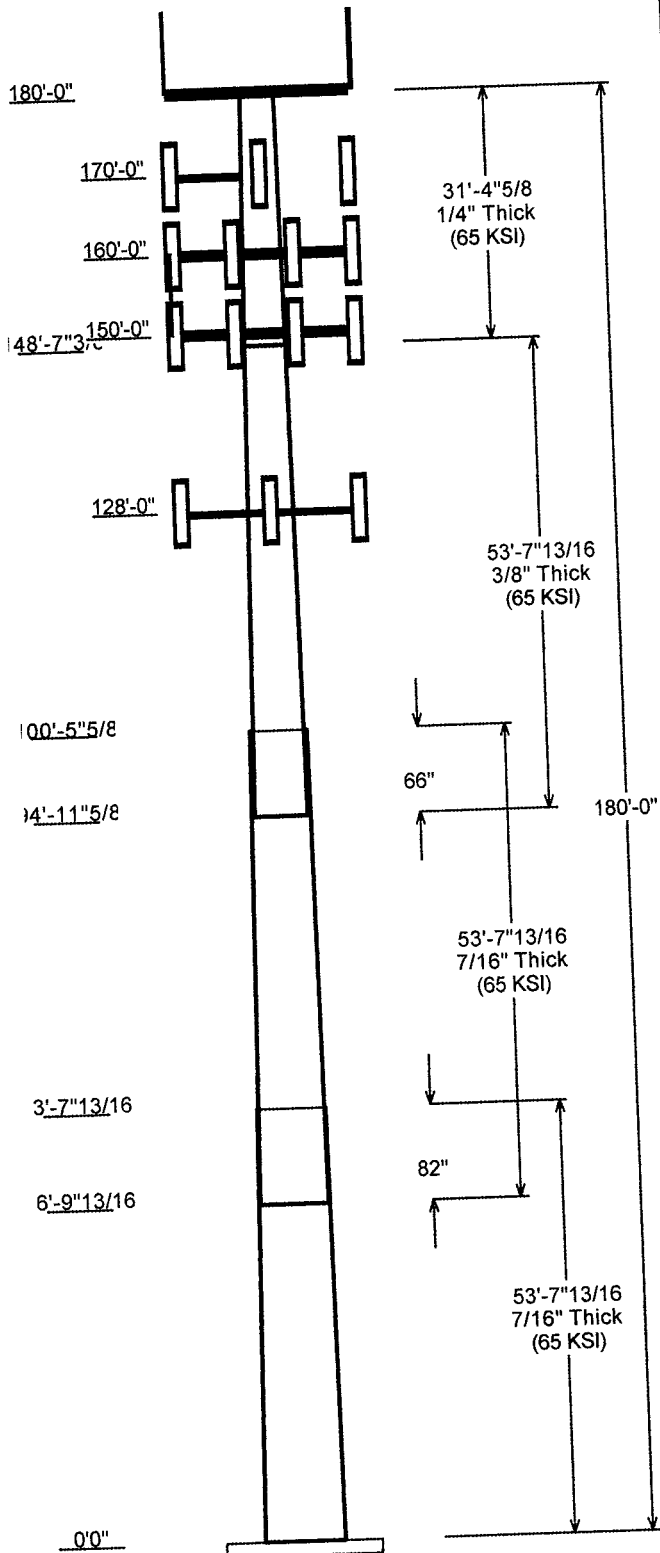
Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
180.000	180.000	1	dbSpectra ATS8TMA10
180.000	180.000	1	Round Low Profile Platform
180.000	187.625	2	Sinclair SC488-SF1SNF(D04)
170.000	170.000	1	Flush Mounts
170.000	170.000	3	KMW HB-X-WM-17-65-00T-
170.000	170.000	3	KMW HB-X-WM-17-65-00T
160.000	160.000	6	Antel LPA-80063/4CF
160.000	160.000	1	Round Low Profile Platform
160.000	160.000	6	RFS FD9R6004/1C-3L
160.000	160.000	3	Rymsa MG D3-800
160.000	160.000	3	Antel BXA-70063/6CF
150.000	150.000	1	Ravcap DC6-48-60-18-8F
150.000	150.000	3	KMW AM-X-CD-14-65-00T-RET
150.000	150.000	6	Ericsson RRUS 11 (Band 12)
150.000	150.000	6	Powerwave LGP21903
150.000	150.000	6	Powerwave LGP21401
150.000	150.000	6	Allgon 7770.00
150.000	150.000	1	Round Low Profile Platform
150.000	156.000	1	12' Omni
128.000	128.000	6	RFS ATMAA1412D-1A20
128.000	128.000	6	EMS DR85-17-02DPL2Q
128.000	128.000	3	RFS APX16DWV-16DWV-S-E-
128.000	128.000	3	Round T-Arm

Linear Appurtenance			
Elev (ft)			
From	To	Description	Exposed To Wind
0.000	128.0	1 5/8" Coax	No
0.000	128.0	LMR-400	No
0.000	150.0	1 1/4" Coax	No
0.000	150.0	1 5/8" Coax	No
0.000	150.0	8 AWG 7	No
0.000	150.0	RG6	No
0.000	160.0	1 5/8" Coax	No
0.000	170.0	1 5/8" Coax	No
0.000	180.0	1 5/8" Coax	No

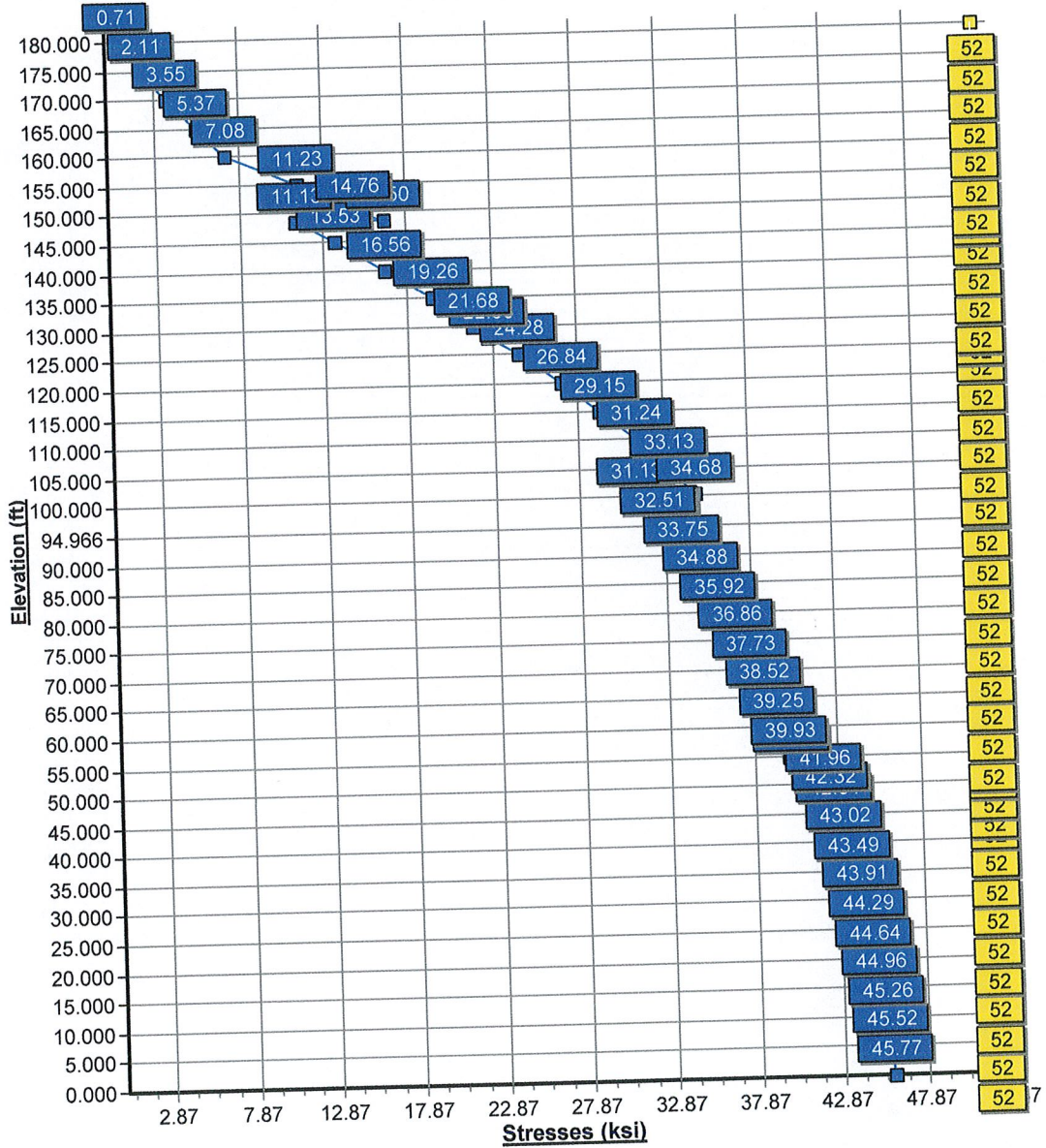
Load Cases	
No Ice	100.00 mph Wind with No Ice
Ice	86.60 mph Wind with Ice
Twist/Sway	50.00 mph Wind with No Ice

Reactions			
Load Case	Moment (Kip-ft)	Shear (Kips)	Axial (Kips)
No Ice	4967.55	41.41	48.22
Ice	4173.55	33.83	55.32
Twist/Sway	1243.32	10.35	48.27

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
Twist/Sway	0.00	0.000	0.000

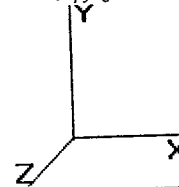


Load Case : No Ice
Max Stress 88.1% at 0.0ft



Pole : 310972
 Location : Waterford Rebuild CT, CT
 Height : 180.0 (ft)
 Shape : 18 Sides
 Base Dia : 62.45 (in)
 Top Dia : 22.90 (in)
 Taper : 0.228740 (in/ft)

Base Elev : 0.000 (ft)



Shaft Section Properties

Sect Num	Length (ft)	Thick (in)	Fv (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom				Top				Taper (in/ft)				
							Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)		Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio
1	53.650	0.4375	65		0.00	14,165	62.45	0.000	86.11	41837.0	23.76	142.7	50.17	53.65	69.07	21590.2	18.81	114.69	0.22874
2	53.650	0.4375	65	Slip Joint	82.00	11,672	52.61	46.81	72.45	24923.1	19.80	120.2	40.34	100.4	55.41	11149.7	14.85	92.22	0.22874
3	53.650	0.3750	65	Slip Joint	66.00	7,788	42.35	94.96	49.96	11123.0	18.50	112.9	30.08	148.6	35.36	3941.7	12.73	80.21	0.22874
4	31.384	0.2500	65	Butt Joint	0.00	2,224	30.08	148.6	23.67	2661.1	19.81	120.3	22.90	180.0	17.97	1165.2	14.74	91.61	0.22874
Shaft Weight						35,847													

Discrete Appurtenance Properties

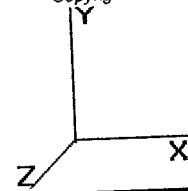
Attach Elev (ft)	Description	Qty	Weight (lb)	No Ice CaAa (sf)	CaAa Factor	Weight (lb)	Ice CaAa (sf)	CaAa Factor	Distance From Face (ft)	Vert Ecc (ft)
180.0	dbSpectra ATS8TMA10	1	25.00	1.560	1.00	41.20	1.760	1.00	0.000	0.000
180.0	Round Low Profile Platform	1	1500.00	21.700	1.00	1700.00	27.200	1.00	0.000	7.625
180.0	Sinclair SC488-SF1SNF(D04)	2	30.00	3.810	1.00	58.26	5.370	1.00	0.000	0.000
170.0	Flush Mounts	1	200.00	3.500	1.00	300.00	4.500	1.00	0.000	0.000
170.0	KMW HB-X-WM-17-65-00T-	3	15.90	1.140	0.67	23.30	1.370	0.67	0.000	0.000
170.0	KMW HB-X-WM-17-65-00T	3	30.00	1.950	1.00	50.90	2.260	1.00	0.000	0.000
160.0	Antel LPA-80063/4CF	6	20.00	7.000	0.93	72.60	7.620	0.93	0.000	0.000
160.0	Round Low Profile Platform	1	1500.00	21.700	1.00	1700.00	27.200	1.00	0.000	0.000
160.0	RFS FD9R6004/1C-3L	6	3.10	0.370	0.70	5.40	0.500	0.70	0.000	0.000
160.0	Rvmsa MG D3-800	3	15.40	3.450	0.94	37.10	3.840	0.94	0.000	0.000
160.0	Antel BXA-70063/6CF	3	17.00	7.730	0.74	58.00	8.540	0.74	0.000	0.000
150.0	Ravcap DC6-48-60-18-8F	1	31.80	1.470	1.00	49.50	1.670	1.00	0.000	0.000
150.0	KMW AM-X-CD-14-65-00T-RET	3	36.40	5.500	1.00	68.30	6.100	1.00	0.000	0.000
150.0	Ericsson RRUS 11 (Band 12)	6	50.00	2.990	0.50	69.90	3.340	0.50	0.000	0.000
150.0	Powerwave LGP21903	6	5.50	0.270	0.74	7.90	0.380	0.74	0.000	0.000
150.0	Powerwave LGP21401	6	14.10	1.290	0.67	21.26	1.530	0.67	0.000	0.000
150.0	Allqon 7770.00	6	35.00	5.880	0.73	68.00	6.430	0.73	0.000	0.000
150.0	Round Low Profile Platform	1	1500.00	21.700	1.00	1700.00	27.200	1.00	0.000	6.000
150.0	12' Omni	1	40.00	3.600	1.00	66.06	4.830	1.00	0.000	0.000
128.0	RFS ATMAA1412D-1A20	6	13.00	1.170	0.67	20.60	1.390	0.67	0.000	0.000
128.0	EMS DR85-17-02DPL2Q	6	24.00	6.300	0.67	42.00	6.850	0.67	0.000	0.000
128.0	RFS APX16DWV-16DWV-S-E-	3	39.60	6.700	0.62	69.38	7.350	0.62	0.000	0.000
128.0	Round T-Arm	3	250.00	9.700	0.67	314.00	12.100	0.67	0.000	0.000
Totals		78	7057.90			9382.18			Number of Loadings : 23	

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	No Ice Weight (lb/ft)	No Ice CaAa (sf/ft)	Ice Weight (lb/ft)	Ice CaAa (sf/ft)	Exposed To Wind
0.00	180.00	(2) 1 5/8" Coax	1.64	0.00	0.00	0.00	N
0.00	170.00	(6) 1 5/8" Coax	4.92	0.00	0.00	0.00	N
0.00	160.00	(12) 1 5/8" Coax	9.84	0.00	0.00	0.00	N
0.00	150.00	(12) 1 1/4" Coax	0.63	0.00	0.00	0.00	N
0.00	150.00	(1) 1 5/8" Coax	0.82	0.00	0.00	0.00	N
0.00	150.00	(2) 8 AWG 7	3.65	0.00	0.00	0.00	N
0.00	150.00	(1) RG6	0.03	0.00	0.00	0.00	N
0.00	128.00	(18) 1 5/8" Coax	14.76	0.00	0.00	0.00	N
0.00	128.00	(1) LMR-400	0.07	0.00	0.00	0.00	N
Total Weight			5,373.29 (lb)		0.00 (lb)		

Pole : 310972
 Location : Waterford Rebuild CT, CT
 Height : 180.0 (ft)
 Shape : 18 Sides
 Base Dia : 62.45 (in)
 Top Dia : 22.90 (in)
 Taper : 0.228740 (in/ft)

Base Elev : 0.000 (ft)



24 Iterations

Load Case: No Ice 100.00 mph Wind with No Ice

Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

Shaft Segment Forces

Seg Top Elev (ft)	Description	Kz	az (psf)	azGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00	25.600	43.26	520.41	0.650	0.00	0.00	0.000	0.00	0.0	0.0
5.00		0.00	1.00	25.600	43.26	510.88	0.650	0.00	5.00	25.783	16.76	725.0	1,451.5
10.00		0.00	1.00	25.600	43.26	501.35	0.650	0.00	5.00	25.306	16.45	711.6	1,424.5
15.00		0.00	1.00	25.600	43.26	491.82	0.650	0.00	5.00	24.829	16.14	698.2	1,397.5
20.00		0.00	1.00	25.600	43.26	482.29	0.650	0.00	5.00	24.353	15.83	684.8	1,370.5
25.00		0.00	1.00	25.600	43.26	472.76	0.650	0.00	5.00	23.876	15.52	671.4	1,343.5
30.00		0.00	1.00	25.600	43.26	463.23	0.650	0.00	5.00	23.400	15.21	658.0	1,316.4
35.00		0.00	1.01	26.034	43.99	457.53	0.650	0.00	5.00	22.923	14.90	655.6	1,289.4
40.00		0.00	1.05	27.046	45.70	456.54	0.650	0.00	5.00	22.447	14.59	666.9	1,262.4
45.00		0.00	1.09	27.972	47.27	454.33	0.650	0.00	5.00	21.970	14.28	675.1	1,235.4
46.82	Bot - Section 2	0.00	1.10	28.290	47.81	453.26	0.650	0.00	1.82	7.864	5.11	244.4	442.1
50.00		0.00	1.12	28.827	48.71	451.10	0.650	0.00	3.18	13.862	9.01	439.0	1,545.6
53.65	Top - Section 1	0.00	1.14	29.413	49.70	448.21	0.650	0.00	3.65	15.655	10.18	505.8	1,745.1
55.00		0.00	1.15	29.623	50.06	454.88	0.650	0.00	1.35	5.727	3.72	186.3	321.9
60.00		0.00	1.18	30.368	51.32	450.19	0.650	0.00	5.00	20.905	13.59	697.4	1,175.0
65.00		0.00	1.21	31.071	52.51	444.86	0.650	0.00	5.00	20.429	13.28	697.3	1,148.0
70.00		0.00	1.24	31.736	53.63	438.99	0.650	0.00	5.00	19.952	12.97	695.6	1,121.0
75.00		0.00	1.26	32.368	54.70	432.62	0.650	0.00	5.00	19.476	12.66	692.5	1,093.9
80.00		0.00	1.28	32.970	55.71	425.81	0.650	0.00	5.00	18.999	12.35	688.1	1,066.9
85.00		0.00	1.31	33.546	56.69	418.60	0.650	0.00	5.00	18.522	12.04	682.6	1,039.9
90.00		0.00	1.33	34.098	57.62	411.04	0.650	0.00	5.00	18.046	11.73	675.9	1,012.9
94.97	Bot - Section 3	0.00	1.35	34.626	58.51	403.19	0.650	0.00	4.97	17.453	11.34	663.9	979.3
95.00		0.00	1.35	34.629	58.52	403.14	0.650	0.00	0.03	0.118	0.08	4.5	12.2
100.0		0.00	1.37	35.140	59.38	394.94	0.650	0.00	5.00	17.405	11.31	671.9	1,797.1
100.4	Top - Section 2	0.00	1.37	35.187	59.46	394.16	0.650	0.00	0.47	1.599	1.04	61.8	165.1
105.0		0.00	1.39	35.634	60.22	393.83	0.650	0.00	4.53	15.329	9.96	600.0	738.1
110.0		0.00	1.41	36.111	61.02	385.13	0.650	0.00	5.00	16.452	10.69	652.6	792.0
115.0		0.00	1.42	36.572	61.80	376.20	0.650	0.00	5.00	15.976	10.38	641.8	768.8
120.0		0.00	1.44	37.020	62.56	367.03	0.650	0.00	5.00	15.499	10.07	630.3	745.7
125.0		0.00	1.46	37.454	63.29	357.65	0.650	0.00	5.00	15.023	9.76	618.1	722.5
128.0	Appertunance(s)	0.00	1.47	37.708	63.72	351.92	0.650	0.00	3.00	8.785	5.71	363.9	422.4
130.0		0.00	1.48	37.876	64.01	348.06	0.650	0.00	2.00	5.761	3.74	239.7	277.0
135.0		0.00	1.49	38.286	64.70	338.29	0.650	0.00	5.00	14.070	9.15	591.7	676.2
140.0		0.00	1.51	38.686	65.38	328.34	0.650	0.00	5.00	13.593	8.84	577.7	653.0
145.0		0.00	1.52	39.076	66.03	318.21	0.650	0.00	5.00	13.116	8.53	563.0	629.9
148.6	Top - Section 3	0.00	1.53	39.352	66.50	310.79	0.650	0.00	3.62	9.190	5.97	397.3	441.1
150.0	Appertunance(s)	0.00	1.54	39.457	66.68	307.92	0.650	0.00	1.38	3.450	2.24	149.5	110.9
155.0		0.00	1.55	39.828	67.30	297.48	0.650	0.00	5.00	12.163	7.91	532.2	390.7
160.0	Appertunance(s)	0.00	1.57	40.191	67.92	286.89	0.650	0.00	5.00	11.687	7.60	516.0	375.3
165.0		0.00	1.58	40.546	68.52	276.16	0.650	0.00	5.00	11.210	7.29	499.3	359.8
170.0	Appertunance(s)	0.00	1.59	40.893	69.10	265.30	0.650	0.00	5.00	10.734	6.98	482.2	344.4
175.0		0.00	1.61	41.233	69.68	254.30	0.650	0.00	5.00	10.257	6.67	464.6	329.0
180.0	Appertunance(s)	0.00	1.62	41.566	70.24	243.18	0.650	0.00	5.00	9.781	6.36	446.6	313.5
							Totals:	180.00			22,720.2	0.0	35,847.5

Pole : 310972
 Location : Waterford Rebuild CT, CT
 Height : 180.0 (ft)
 Shape : 18 Sides
 Base Dia : 62.45 (in)
 Top Dia : 22.90 (in)
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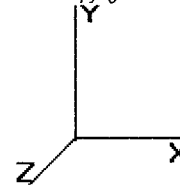
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Base Elev : 0.000 (ft)



Load Case: No Ice 100.00 mph Wind with No Ice 24 Iterations

Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

Discrete Appurtenance Segment Forces

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
128.0	RFS ATMAA1412D-	6	37.708	63.727	0.67	4.70	0.000	0.000	299.73	0.00	0.00	78.00
128.0	EMS DR85-17-	6	37.708	63.727	0.67	25.33	0.000	0.000	1,613.96	0.00	0.00	144.00
128.0	RFS APX16DWV-	3	37.708	63.727	0.62	12.46	0.000	0.000	794.17	0.00	0.00	118.80
128.0	Round T-Arm	3	37.708	63.727	0.67	19.50	0.000	0.000	1,242.48	0.00	0.00	750.00
150.0	Raycap DC6-48-60-18-	1	39.457	66.682	1.00	1.47	0.000	0.000	98.02	0.00	0.00	31.80
150.0	KMW AM-X-CD-14-65-	3	39.457	66.682	1.00	16.50	0.000	0.000	1,100.25	0.00	0.00	109.20
150.0	Ericsson RRUS 11 (Ba	6	39.457	66.682	0.50	8.97	0.000	0.000	598.13	0.00	0.00	300.00
150.0	Powerwave LGP21903	6	39.457	66.682	0.74	1.20	0.000	0.000	79.94	0.00	0.00	33.00
150.0	Powerwave LGP21401	6	39.457	66.682	0.67	5.19	0.000	0.000	345.80	0.00	0.00	84.60
150.0	Allgon 7770.00	6	39.457	66.682	0.73	25.75	0.000	0.000	1,717.34	0.00	0.00	210.00
150.0	Round Low Profile PI	1	39.457	66.682	1.00	21.70	0.000	0.000	1,446.98	0.00	0.00	1,500.00
150.0	12' Omni	1	39.901	67.433	1.00	3.60	0.000	6.000	242.76	0.00	1,456.55	40.00
160.0	Antel LPA-80063/4CF	6	40.191	67.923	0.93	39.06	0.000	0.000	2,653.06	0.00	0.00	120.00
160.0	Round Low Profile PI	1	40.191	67.923	1.00	21.70	0.000	0.000	1,473.91	0.00	0.00	1,500.00
160.0	RFS FD9R6004/1C-3L	6	40.191	67.923	0.70	1.55	0.000	0.000	105.55	0.00	0.00	18.60
160.0	Rvmsa MG D3-800	3	40.191	67.923	0.94	9.73	0.000	0.000	660.82	0.00	0.00	46.20
160.0	Antel BXA-70063/6CF	3	40.191	67.923	0.74	17.16	0.000	0.000	1,165.59	0.00	0.00	51.00
170.0	Flush Mounts	1	40.893	69.109	1.00	3.50	0.000	0.000	241.88	0.00	0.00	200.00
170.0	KMW HB-X-WM-17-65-	3	40.893	69.109	0.67	2.29	0.000	0.000	158.36	0.00	0.00	47.70
170.0	KMW HB-X-WM-17-65-	3	40.893	69.109	1.00	5.85	0.000	0.000	404.29	0.00	0.00	90.00
180.0	dbSpectra	1	41.566	70.247	1.00	1.56	0.000	0.000	109.59	0.00	0.00	25.00
180.0	Round Low Profile PI	1	41.566	70.247	1.00	21.70	0.000	0.000	1,524.36	0.00	0.00	1,500.00
180.0	Sinclair SC488-SF1SN	2	42.062	71.085	1.00	7.62	0.000	7.625	541.67	0.00	4,130.21	60.00
									18,618.63			7,057.90

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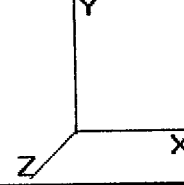
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Base Elev : 0.000 (ft)



Load Case: No Ice 100.00 mph Wind with No Ice 24 Iterations

Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	725.05	1,633.32	0.00	0.00
10.00	711.65	1,606.30	0.00	0.00
15.00	698.24	1,579.28	0.00	0.00
20.00	684.84	1,552.26	0.00	0.00
25.00	671.44	1,525.24	0.00	0.00
30.00	658.04	1,498.22	0.00	0.00
35.00	655.57	1,471.20	0.00	0.00
40.00	666.91	1,444.18	0.00	0.00
45.00	675.09	1,417.16	0.00	0.00
46.82	244.39	508.18	0.00	0.00
50.00	438.95	1,661.35	0.00	0.00
53.65	505.82	1,877.82	0.00	0.00
55.00	186.34	370.99	0.00	0.00
60.00	697.39	1,356.77	0.00	0.00
65.00	697.26	1,329.75	0.00	0.00
70.00	695.57	1,302.73	0.00	0.00
75.00	692.47	1,275.71	0.00	0.00
80.00	688.10	1,248.69	0.00	0.00
85.00	682.56	1,221.67	0.00	0.00
90.00	675.95	1,194.65	0.00	0.00
94.97	663.85	1,159.89	0.00	0.00
95.00	4.50	13.44	0.00	0.00
100.0	671.88	1,978.92	0.00	0.00
100.4	61.83	182.06	0.00	0.00
105.0	600.05	902.95	0.00	0.00
110.0	652.62	973.77	0.00	0.00
115.0	641.82	950.61	0.00	0.00
120.0	630.29	927.45	0.00	0.00
125.0	618.08	904.29	0.00	0.00
128.0	4,314.23	1,622.26	0.00	0.00
130.0	239.71	320.02	0.00	0.00
135.0	591.73	783.83	0.00	0.00
140.0	577.66	760.67	0.00	0.00
145.0	563.03	737.51	0.00	0.00
148.6	397.26	518.99	0.00	0.00
150.0	5,778.76	2,449.24	0.00	1,456.55
155.0	532.16	472.72	0.00	0.00
160.0	6,574.90	2,193.08	0.00	0.00
165.0	499.30	392.64	0.00	0.00
170.0	1,286.70	714.90	0.00	0.00
175.0	464.60	337.16	0.00	0.00
180.0	2,622.20	1,906.72	0.00	4,130.21
Totals:	41,338.78	48,278.66	0.00	5,586.76

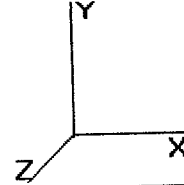
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Base Elev : 0.000 (ft)



Load Case: No Ice 100.00 mph Wind with No Ice

24 Iterations

Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

Calculated Shaft Forces and Deflections

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-41.410	-48.217	0.000	0.000	0.000	-4,967.550	0.000	0.000	0.000	0.000
5.00	-40.818	-46.466	0.000	0.000	0.000	-4,760.504	-0.089	0.000	0.089	-0.165
10.00	-40.231	-44.745	0.000	0.000	0.000	-4,556.420	-0.353	0.000	0.353	-0.333
15.00	-39.649	-43.053	0.000	0.000	0.000	-4,355.269	-0.793	0.000	0.793	-0.502
20.00	-39.074	-41.390	0.000	0.000	0.000	-4,157.026	-1.412	0.000	1.412	-0.674
25.00	-38.503	-39.757	0.000	0.000	0.000	-3,961.662	-2.211	0.000	2.211	-0.848
30.00	-37.939	-38.153	0.000	0.000	0.000	-3,769.149	-3.194	0.000	3.194	-1.024
35.00	-37.369	-36.578	0.000	0.000	0.000	-3,579.459	-4.361	0.000	4.361	-1.201
40.00	-36.780	-35.034	0.000	0.000	0.000	-3,392.619	-5.716	0.000	5.716	-1.381
45.00	-36.141	-33.557	0.000	0.000	0.000	-3,208.723	-7.259	0.000	7.259	-1.562
46.82	-35.936	-32.997	0.000	0.000	0.000	-3,143.071	-7.867	0.000	7.867	-1.629
50.00	-35.518	-31.271	0.000	0.000	0.000	-3,028.673	-8.994	0.000	8.994	-1.747
53.65	-35.000	-29.353	0.000	0.000	0.000	-2,899.038	-10.383	0.000	10.383	-1.883
55.00	-34.860	-28.919	0.000	0.000	0.000	-2,851.785	-10.923	0.000	10.923	-1.934
60.00	-34.200	-27.483	0.000	0.000	0.000	-2,677.489	-13.043	0.000	13.043	-2.110
65.00	-33.533	-26.077	0.000	0.000	0.000	-2,506.494	-15.348	0.000	15.348	-2.287
70.00	-32.860	-24.703	0.000	0.000	0.000	-2,338.834	-17.839	0.000	17.839	-2.464
75.00	-32.184	-23.360	0.000	0.000	0.000	-2,174.535	-20.515	0.000	20.515	-2.642
80.00	-31.506	-22.048	0.000	0.000	0.000	-2,013.617	-23.377	0.000	23.377	-2.820
85.00	-30.826	-20.767	0.000	0.000	0.000	-1,856.090	-26.424	0.000	26.424	-2.997
90.00	-30.146	-19.519	0.000	0.000	0.000	-1,701.962	-29.656	0.000	29.656	-3.173
94.97	-29.445	-18.355	0.000	0.000	0.000	-1,552.243	-33.048	0.000	33.048	-3.346
95.00	-29.468	-18.296	0.000	0.000	0.000	-1,551.255	-33.071	0.000	33.071	-3.347
100.0	-28.705	-16.315	0.000	0.000	0.000	-1,403.917	-36.667	0.000	36.667	-3.519
100.4	-28.656	-16.094	0.000	0.000	0.000	-1,390.527	-37.012	0.000	37.012	-3.535
105.0	-28.045	-15.149	0.000	0.000	0.000	-1,260.613	-40.442	0.000	40.442	-3.689
110.0	-27.374	-14.135	0.000	0.000	0.000	-1,120.389	-44.401	0.000	44.401	-3.869
115.0	-26.707	-13.152	0.000	0.000	0.000	-983.523	-48.544	0.000	48.544	-4.043
120.0	-26.046	-12.200	0.000	0.000	0.000	-849.991	-52.865	0.000	52.865	-4.208
125.0	-25.386	-11.290	0.000	0.000	0.000	-719.763	-57.354	0.000	57.354	-4.364
128.0	-20.972	-9.978	0.000	0.000	0.000	-643.607	-60.124	0.000	60.124	-4.454
130.0	-20.725	-9.643	0.000	0.000	0.000	-601.663	-62.001	0.000	62.001	-4.512
135.0	-20.092	-8.864	0.000	0.000	0.000	-498.041	-66.794	0.000	66.794	-4.644
140.0	-19.469	-8.116	0.000	0.000	0.000	-397.584	-71.719	0.000	71.719	-4.764
145.0	-18.857	-7.401	0.000	0.000	0.000	-300.237	-76.761	0.000	76.761	-4.868
148.6	-18.422	-6.904	0.000	0.000	0.000	-232.043	-80.470	0.000	80.470	-4.932
150.0	-12.459	-4.949	0.000	0.000	0.000	-205.097	-81.902	0.000	81.902	-4.954
155.0	-11.894	-4.507	0.000	0.000	0.000	-142.802	-87.138	0.000	87.138	-5.050
160.0	-5.154	-2.901	0.000	0.000	0.000	-83.331	-92.461	0.000	92.461	-5.120
165.0	-4.623	-2.551	0.000	0.000	0.000	-57.562	-97.844	0.000	97.844	-5.170
170.0	-3.278	-1.954	0.000	0.000	0.000	-34.447	-103.272	0.000	103.272	-5.206
175.0	-2.785	-1.659	0.000	0.000	0.000	-18.057	-108.731	0.000	108.731	-5.230
180.0	-2.622	0.000	0.000	0.000	0.000	-4.130	-114.209	0.000	114.209	-5.242

Pole : 310972
 Location : Waterford Rebuild CT, CT
 Height : 180.0 (ft)
 Shape : 18 Sides
 Base Dia : 62.45 (in)
 Top Dia : 22.90 (in)
 Taper : 0.228740 (in/ft)

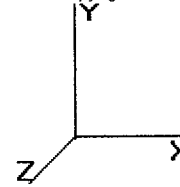
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Base Elev : 0.000 (ft)



Load Case: No Ice 100.00 mph Wind with No Ice 24 Iterations

Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

Calculated Stresses

Seg Elev (ft)	Applied Stresses							Allowable Stress (Fb) (ksi)	Stress Ratio	
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)			
0.00	0.56	0.97	0.00	0.00	0.00	45.18	45.77	52.0	0.0	0.881
5.00	0.55	0.97	0.00	0.00	0.00	44.94	45.52	52.0	0.0	0.876
10.00	0.54	0.98	0.00	0.00	0.00	44.68	45.26	52.0	0.0	0.871
15.00	0.53	0.98	0.00	0.00	0.00	44.40	44.96	52.0	0.0	0.865
20.00	0.52	0.99	0.00	0.00	0.00	44.09	44.64	52.0	0.0	0.859
25.00	0.51	0.99	0.00	0.00	0.00	43.75	44.29	52.0	0.0	0.852
30.00	0.50	1.00	0.00	0.00	0.00	43.38	43.91	52.0	0.0	0.845
35.00	0.49	1.00	0.00	0.00	0.00	42.96	43.49	52.0	0.0	0.837
40.00	0.48	1.01	0.00	0.00	0.00	42.51	43.02	52.0	0.0	0.828
45.00	0.47	1.01	0.00	0.00	0.00	42.01	42.51	52.0	0.0	0.818
46.82	0.46	1.02	0.00	0.00	0.00	41.82	42.32	52.0	0.0	0.814
50.00	0.45	1.02	0.00	0.00	0.00	41.48	41.96	52.0	0.0	0.807
53.65	0.42	1.00	0.00	0.00	0.00	39.64	40.09	52.0	0.0	0.771
55.00	0.41	1.01	0.00	0.00	0.00	39.47	39.93	52.0	0.0	0.768
60.00	0.40	1.01	0.00	0.00	0.00	38.81	39.25	52.0	0.0	0.755
65.00	0.39	1.01	0.00	0.00	0.00	38.09	38.52	52.0	0.0	0.741
70.00	0.38	1.02	0.00	0.00	0.00	37.31	37.73	52.0	0.0	0.726
75.00	0.37	1.02	0.00	0.00	0.00	36.45	36.86	52.0	0.0	0.709
80.00	0.36	1.03	0.00	0.00	0.00	35.52	35.92	52.0	0.0	0.691
85.00	0.34	1.03	0.00	0.00	0.00	34.50	34.88	52.0	0.0	0.671
90.00	0.33	1.03	0.00	0.00	0.00	33.37	33.75	52.0	0.0	0.649
94.97	0.32	1.04	0.00	0.00	0.00	32.15	32.52	52.0	0.0	0.626
95.00	0.32	1.04	0.00	0.00	0.00	32.14	32.51	52.0	0.0	0.625
100.00	0.29	1.04	0.00	0.00	0.00	30.78	31.13	52.0	0.0	0.599
100.47	0.33	1.19	0.00	0.00	0.00	34.29	34.68	52.0	0.0	0.667
105.00	0.32	1.20	0.00	0.00	0.00	32.74	33.13	52.0	0.0	0.637
110.00	0.31	1.20	0.00	0.00	0.00	30.86	31.24	52.0	0.0	0.601
115.00	0.30	1.21	0.00	0.00	0.00	28.78	29.15	52.0	0.0	0.561
120.00	0.28	1.22	0.00	0.00	0.00	26.48	26.84	52.0	0.0	0.516
125.00	0.27	1.22	0.00	0.00	0.00	23.91	24.28	52.0	0.0	0.467
128.00	0.24	1.03	0.00	0.00	0.00	22.25	22.56	52.0	0.0	0.434
130.00	0.24	1.03	0.00	0.00	0.00	21.37	21.68	52.0	0.0	0.417
135.00	0.23	1.04	0.00	0.00	0.00	18.95	19.26	52.0	0.0	0.371
140.00	0.22	1.04	0.00	0.00	0.00	16.24	16.56	52.0	0.0	0.319
145.00	0.20	1.05	0.00	0.00	0.00	13.21	13.53	52.0	0.0	0.260
148.62	0.20	1.05	0.00	0.00	0.00	10.79	11.13	52.0	0.0	0.214
148.62	0.29	1.57	0.00	0.00	0.00	15.98	16.50	52.0	0.0	0.317
150.00	0.21	1.07	0.00	0.00	0.00	14.43	14.76	52.0	0.0	0.284
155.00	0.20	1.06	0.00	0.00	0.00	10.88	11.23	52.0	0.0	0.216
160.00	0.13	0.48	0.00	0.00	0.00	6.89	7.08	52.0	0.0	0.136
165.00	0.12	0.45	0.00	0.00	0.00	5.19	5.37	52.0	0.0	0.103
170.00	0.10	0.33	0.00	0.00	0.00	3.40	3.55	52.0	0.0	0.068
175.00	0.09	0.30	0.00	0.00	0.00	1.96	2.11	52.0	0.0	0.041
180.00	0.00	0.29	0.00	0.00	0.00	0.49	0.71	52.0	0.0	0.014

Pole : 310972
 Location : Waterford Rebuild CT, CT
 Height : 180.0 (ft)
 Shape : 18 Sides
 Base Dia : 62.45 (in)
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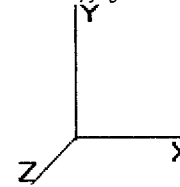
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Base Elev : 0.000 (ft)



Load Case: Ice	86.60 mph Wind with Ice	24 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

Shaft Segment Forces

Seg Top Elev (ft)	Description	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)	
0.00		0.00	1.00	19.199	32.44	450.68	0.650	0.50	0.00	0.000	0.00	0.0	0.0	
5.00		0.00	1.00	19.199	32.44	442.42	0.650	0.50	5.00	26.199	17.03	552.5	190.7	1,642.3
10.00		0.00	1.00	19.199	32.44	434.17	0.650	0.50	5.00	25.723	16.72	542.5	187.2	1,611.7
15.00		0.00	1.00	19.199	32.44	425.91	0.650	0.50	5.00	25.246	16.41	532.4	183.7	1,581.2
20.00		0.00	1.00	19.199	32.44	417.66	0.650	0.50	5.00	24.770	16.10	522.4	180.1	1,550.6
25.00		0.00	1.00	19.199	32.44	409.41	0.650	0.50	5.00	24.293	15.79	512.3	176.6	1,520.1
30.00		0.00	1.00	19.199	32.44	401.15	0.650	0.50	5.00	23.817	15.48	502.3	173.1	1,489.5
35.00		0.00	1.01	19.524	32.99	396.22	0.650	0.50	5.00	23.340	15.17	500.6	169.5	1,459.0
40.00		0.00	1.05	20.284	34.27	395.36	0.650	0.50	5.00	22.863	14.86	509.4	166.0	1,428.4
45.00		0.00	1.09	20.978	35.45	393.44	0.650	0.50	5.00	22.387	14.55	515.9	162.5	1,397.9
46.82	Bot - Section 2	0.00	1.10	21.216	35.85	392.52	0.650	0.50	1.82	8.015	5.21	186.8	58.6	500.7
50.00		0.00	1.12	21.619	36.53	390.65	0.650	0.50	3.18	14.127	9.18	335.5	102.9	1,648.5
53.65	Top - Section 1	0.00	1.14	22.059	37.27	388.15	0.650	0.50	3.65	15.959	10.37	386.7	116.1	1,861.2
55.00		0.00	1.15	22.216	37.54	393.92	0.650	0.50	1.35	5.839	3.80	142.5	42.7	364.6
60.00		0.00	1.18	22.775	38.49	389.86	0.650	0.50	5.00	21.322	13.86	533.4	154.6	1,329.6
65.00		0.00	1.21	23.302	39.38	385.25	0.650	0.50	5.00	20.845	13.55	533.6	151.1	1,299.0
70.00		0.00	1.24	23.800	40.22	380.16	0.650	0.50	5.00	20.369	13.24	532.5	147.5	1,268.5
75.00		0.00	1.26	24.274	41.02	374.65	0.650	0.50	5.00	19.892	12.93	530.4	144.0	1,237.9
80.00		0.00	1.28	24.726	41.78	368.75	0.650	0.50	5.00	19.416	12.62	527.4	140.5	1,207.4
85.00		0.00	1.31	25.158	42.51	362.51	0.650	0.50	5.00	18.939	12.31	523.4	137.0	1,176.8
90.00		0.00	1.33	25.572	43.21	355.96	0.650	0.50	5.00	18.463	12.00	518.6	133.4	1,146.3
94.97	Bot - Section 3	0.00	1.35	25.968	43.88	349.16	0.650	0.50	4.97	17.867	11.61	509.7	129.0	1,108.4
95.00		0.00	1.35	25.970	43.89	349.12	0.650	0.50	0.03	0.121	0.08	3.5	0.9	13.1
100.00		0.00	1.37	26.354	44.53	342.01	0.650	0.50	5.00	17.822	11.58	515.9	128.7	1,925.8
100.4	Top - Section 2	0.00	1.37	26.389	44.59	341.34	0.650	0.50	0.47	1.638	1.06	47.5	12.0	177.1
105.00		0.00	1.39	26.724	45.16	341.05	0.650	0.50	4.53	15.707	10.21	461.1	113.5	851.6
110.00		0.00	1.41	27.081	45.76	333.53	0.650	0.50	5.00	16.869	10.96	501.8	121.6	913.6
115.00		0.00	1.42	27.427	46.35	325.78	0.650	0.50	5.00	16.392	10.66	493.9	118.1	886.9
120.00		0.00	1.44	27.763	46.91	317.85	0.650	0.50	5.00	15.916	10.35	485.4	114.6	860.2
125.00		0.00	1.46	28.089	47.47	309.72	0.650	0.50	5.00	15.439	10.04	476.4	111.0	833.5
128.0	Appertunance(s)	0.00	1.47	28.280	47.79	304.76	0.650	0.50	3.00	9.035	5.87	280.7	65.3	487.7
130.00		0.00	1.48	28.405	48.00	301.42	0.650	0.50	2.00	5.928	3.85	185.0	43.0	320.0
135.00		0.00	1.49	28.713	48.52	292.96	0.650	0.50	5.00	14.486	9.42	456.9	104.0	780.2
140.00		0.00	1.51	29.013	49.03	284.34	0.650	0.50	5.00	14.010	9.11	446.5	100.4	753.5
145.00		0.00	1.52	29.305	49.52	275.57	0.650	0.50	5.00	13.533	8.80	435.7	96.9	726.8
148.6	Top - Section 3	0.00	1.53	29.512	49.87	269.14	0.650	0.50	3.62	9.491	6.17	307.7	68.3	509.4
150.0	Appertunance(s)	0.00	1.54	29.591	50.00	266.66	0.650	0.50	1.38	3.565	2.32	115.9	25.8	136.7
155.00		0.00	1.55	29.869	50.47	257.62	0.650	0.50	5.00	12.580	8.18	412.8	89.9	480.6
160.00	Appertunance(s)	0.00	1.57	30.141	50.93	248.45	0.650	0.50	5.00	12.104	7.87	400.8	86.3	461.6
165.00		0.00	1.58	30.407	51.38	239.16	0.650	0.50	5.00	11.627	7.56	388.4	82.8	442.6
170.00	Appertunance(s)	0.00	1.59	30.668	51.82	229.75	0.650	0.50	5.00	11.150	7.25	375.6	79.3	423.7
175.00		0.00	1.61	30.923	52.26	220.22	0.650	0.50	5.00	10.674	6.94	362.6	75.7	404.7
180.00	Appertunance(s)	0.00	1.62	31.173	52.68	210.59	0.650	0.50	5.00	10.197	6.63	349.2	72.2	385.7
							Totals:	180.00			17,454.0	4,757.1	40,604.6	

Pole : 310972
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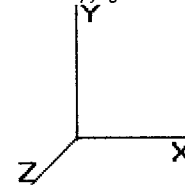
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Base Elev : 0.000 (ft)



Load Case: Ice

86.60 mph Wind with Ice

24 Iterations

Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

Discrete Appurtenance Segment Forces

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
128.0	RFS ATMAA1412D-	6	28.280	47.793	0.67	5.59	0.000	0.000	267.06	0.00	0.00	123.60
128.0	EMS DR85-17-	6	28.280	47.793	0.67	27.54	0.000	0.000	1,316.06	0.00	0.00	252.00
128.0	RFS APX16DWW-	3	28.280	47.793	0.62	13.67	0.000	0.000	653.37	0.00	0.00	208.14
128.0	Round T-Arm	3	28.280	47.793	0.67	24.32	0.000	0.000	1,162.36	0.00	0.00	942.00
150.0	Ravcap DC6-48-60-18-	1	29.591	50.008	1.00	1.67	0.000	0.000	83.51	0.00	0.00	49.50
150.0	KMW AM-X-CD-14-65-	3	29.591	50.008	1.00	18.30	0.000	0.000	915.15	0.00	0.00	204.90
150.0	Ericsson RRUS 11 (Ba	6	29.591	50.008	0.50	10.02	0.000	0.000	501.08	0.00	0.00	419.40
150.0	Powerwave LGP21903	6	29.591	50.008	0.74	1.69	0.000	0.000	84.37	0.00	0.00	47.40
150.0	Powerwave LGP21401	6	29.591	50.008	0.67	6.15	0.000	0.000	307.58	0.00	0.00	127.56
150.0	Allgon 7770.00	6	29.591	50.008	0.73	28.16	0.000	0.000	1,408.40	0.00	0.00	408.00
150.0	Round Low Profile PI	1	29.591	50.008	1.00	27.20	0.000	0.000	1,360.21	0.00	0.00	1,700.00
150.0	12' Omni	1	29.924	50.572	1.00	4.83	0.000	6.000	244.26	0.00	1,465.57	66.06
160.0	Antel LPA-80063/4CF	6	30.141	50.939	0.93	42.52	0.000	0.000	2,165.90	0.00	0.00	435.60
160.0	Round Low Profile PI	1	30.141	50.939	1.00	27.20	0.000	0.000	1,385.53	0.00	0.00	1,700.00
160.0	RFS FD9R6004/1C-3L	6	30.141	50.939	0.70	2.10	0.000	0.000	106.97	0.00	0.00	32.40
160.0	Rvmsa MG D3-800	3	30.141	50.939	0.94	10.83	0.000	0.000	551.61	0.00	0.00	111.30
160.0	Antel BXA-70063/6CF	3	30.141	50.939	0.74	18.96	0.000	0.000	965.72	0.00	0.00	174.00
170.0	Flush Mounts	1	30.668	51.829	1.00	4.50	0.000	0.000	233.23	0.00	0.00	300.00
170.0	KMW HB-X-WM-17-65-	3	30.668	51.829	0.67	2.75	0.000	0.000	142.72	0.00	0.00	69.90
170.0	KMW HB-X-WM-17-65-	3	30.668	51.829	1.00	6.78	0.000	0.000	351.40	0.00	0.00	152.70
180.0	dbSpectra	1	31.173	52.682	1.00	1.76	0.000	0.000	92.72	0.00	0.00	41.20
180.0	Round Low Profile PI	1	31.173	52.682	1.00	27.20	0.000	0.000	1,432.95	0.00	0.00	1,700.00
180.0	Sinclair SC488-SF1SN	2	31.545	53.310	1.00	10.74	0.000	7.625	572.55	0.00	4,365.72	116.52
									16,304.72			9,382.18

Pole : 310972
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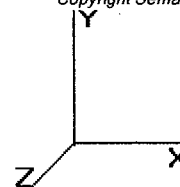
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Base Elev : 0.000 (ft)



Load Case: Ice

86.60 mph Wind with Ice

24 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	552.54	1,824.04	0.00	0.00
10.00	542.49	1,793.49	0.00	0.00
15.00	532.44	1,762.94	0.00	0.00
20.00	522.39	1,732.39	0.00	0.00
25.00	512.34	1,701.84	0.00	0.00
30.00	502.29	1,671.29	0.00	0.00
35.00	500.58	1,640.74	0.00	0.00
40.00	509.43	1,610.20	0.00	0.00
45.00	515.89	1,579.65	0.00	0.00
46.82	186.81	566.75	0.00	0.00
50.00	335.49	1,764.27	0.00	0.00
53.65	386.72	1,993.95	0.00	0.00
55.00	142.50	413.69	0.00	0.00
60.00	533.44	1,511.37	0.00	0.00
65.00	533.58	1,480.82	0.00	0.00
70.00	532.54	1,450.27	0.00	0.00
75.00	530.43	1,419.72	0.00	0.00
80.00	527.36	1,389.17	0.00	0.00
85.00	523.40	1,358.63	0.00	0.00
90.00	518.63	1,328.08	0.00	0.00
94.97	509.67	1,288.94	0.00	0.00
95.00	3.46	14.33	0.00	0.00
100.0	515.94	2,107.60	0.00	0.00
100.4	47.49	194.03	0.00	0.00
105.0	461.10	1,016.42	0.00	0.00
110.0	501.83	1,095.39	0.00	0.00
115.0	493.89	1,068.70	0.00	0.00
120.0	485.40	1,042.01	0.00	0.00
125.0	476.39	1,015.32	0.00	0.00
128.0	3,679.52	2,122.55	0.00	0.00
130.0	184.97	363.02	0.00	0.00
135.0	456.92	887.81	0.00	0.00
140.0	446.50	861.12	0.00	0.00
145.0	435.66	834.43	0.00	0.00
148.6	307.70	587.24	0.00	0.00
150.0	5,020.47	3,189.30	0.00	1,465.57
155.0	412.77	562.58	0.00	0.00
160.0	5,576.47	2,996.91	0.00	0.00
165.0	388.37	475.44	0.00	0.00
170.0	1,102.99	979.07	0.00	0.00
175.0	362.58	412.90	0.00	0.00
180.0	2,447.42	2,251.65	0.00	4,365.72
Totals:	33,758.76	55,360.06	0.00	5,831.29

Pole : 310972
 Location : Waterford Rebuild CT, CT
 Height : 180.0 (ft)
 Shape : 18 Sides
 Base Dia : 62.45 (in)
 Top Dia : 22.90 (in)
 Taper : 0.228740 (in/ft)

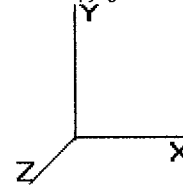
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Base Elev : 0.000 (ft)



Load Case: Ice

86.60 mph Wind with Ice

24 Iterations

Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

Calculated Shaft Forces and Deflections

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-33.827	-55.318	0.000	0.000	0.000	-4,173.554	0.000	0.000	0.000	0.000
5.00	-33.403	-53.413	0.000	0.000	0.000	-4,004.421	-0.075	0.000	0.075	-0.139
10.00	-32.982	-51.540	0.000	0.000	0.000	-3,837.408	-0.296	0.000	0.296	-0.280
15.00	-32.564	-49.699	0.000	0.000	0.000	-3,672.502	-0.667	0.000	0.667	-0.423
20.00	-32.148	-47.889	0.000	0.000	0.000	-3,509.687	-1.188	0.000	1.188	-0.568
25.00	-31.736	-46.112	0.000	0.000	0.000	-3,348.950	-1.861	0.000	1.861	-0.714
30.00	-31.326	-44.366	0.000	0.000	0.000	-3,190.275	-2.690	0.000	2.690	-0.863
35.00	-30.912	-42.652	0.000	0.000	0.000	-3,033.646	-3.674	0.000	3.674	-1.014
40.00	-30.481	-40.971	0.000	0.000	0.000	-2,879.091	-4.818	0.000	4.818	-1.166
45.00	-30.003	-39.348	0.000	0.000	0.000	-2,726.688	-6.121	0.000	6.121	-1.320
46.82	-29.857	-38.744	0.000	0.000	0.000	-2,672.186	-6.635	0.000	6.635	-1.377
50.00	-29.547	-36.933	0.000	0.000	0.000	-2,577.141	-7.588	0.000	7.588	-1.477
53.65	-29.155	-34.910	0.000	0.000	0.000	-2,469.300	-8.763	0.000	8.763	-1.593
55.00	-29.060	-34.451	0.000	0.000	0.000	-2,429.938	-9.220	0.000	9.220	-1.636
60.00	-28.568	-32.881	0.000	0.000	0.000	-2,284.641	-11.014	0.000	11.014	-1.787
65.00	-28.069	-31.345	0.000	0.000	0.000	-2,141.804	-12.966	0.000	12.966	-1.938
70.00	-27.565	-29.841	0.000	0.000	0.000	-2,001.459	-15.077	0.000	15.077	-2.089
75.00	-27.057	-28.371	0.000	0.000	0.000	-1,863.634	-17.347	0.000	17.347	-2.241
80.00	-26.546	-26.933	0.000	0.000	0.000	-1,728.351	-19.776	0.000	19.776	-2.394
85.00	-26.032	-25.530	0.000	0.000	0.000	-1,595.624	-22.364	0.000	22.364	-2.546
90.00	-25.516	-24.160	0.000	0.000	0.000	-1,465.467	-25.111	0.000	25.111	-2.697
94.97	-24.975	-22.865	0.000	0.000	0.000	-1,338.742	-27.995	0.000	27.995	-2.846
95.00	-25.001	-22.818	0.000	0.000	0.000	-1,337.905	-28.015	0.000	28.015	-2.847
100.0	-24.407	-20.705	0.000	0.000	0.000	-1,212.903	-31.076	0.000	31.076	-2.996
100.4	-24.376	-20.482	0.000	0.000	0.000	-1,201.519	-31.370	0.000	31.370	-3.010
105.0	-23.910	-19.432	0.000	0.000	0.000	-1,091.011	-34.292	0.000	34.292	-3.142
110.0	-23.397	-18.303	0.000	0.000	0.000	-971.462	-37.666	0.000	37.666	-3.299
115.0	-22.885	-17.207	0.000	0.000	0.000	-854.480	-41.201	0.000	41.201	-3.449
120.0	-22.376	-16.142	0.000	0.000	0.000	-740.056	-44.891	0.000	44.891	-3.594
125.0	-21.864	-15.119	0.000	0.000	0.000	-628.177	-48.726	0.000	48.726	-3.730
128.0	-18.067	-13.223	0.000	0.000	0.000	-562.587	-51.094	0.000	51.094	-3.808
130.0	-17.878	-12.846	0.000	0.000	0.000	-526.452	-52.699	0.000	52.699	-3.858
135.0	-17.384	-11.958	0.000	0.000	0.000	-437.065	-56.801	0.000	56.801	-3.974
140.0	-16.897	-11.102	0.000	0.000	0.000	-350.145	-61.019	0.000	61.019	-4.080
145.0	-16.416	-10.280	0.000	0.000	0.000	-265.659	-65.339	0.000	65.339	-4.171
148.6	-16.072	-9.706	0.000	0.000	0.000	-206.293	-68.519	0.000	68.519	-4.228
150.0	-10.837	-6.886	0.000	0.000	0.000	-182.589	-69.747	0.000	69.747	-4.248
155.0	-10.391	-6.343	0.000	0.000	0.000	-128.407	-74.240	0.000	74.240	-4.333
160.0	-4.606	-3.775	0.000	0.000	0.000	-76.451	-78.812	0.000	78.812	-4.397
165.0	-4.185	-3.328	0.000	0.000	0.000	-53.421	-83.438	0.000	83.438	-4.443
170.0	-3.010	-2.436	0.000	0.000	0.000	-32.499	-88.106	0.000	88.106	-4.477
175.0	-2.617	-2.052	0.000	0.000	0.000	-17.450	-92.803	0.000	92.803	-4.500
180.0	-2.447	0.000	0.000	0.000	0.000	-4.366	-97.519	0.000	97.519	-4.511

Pole : 310972
 Location : Waterford Rebuild CT, CT
 Height : 180.0 (ft)
 Shape : 18 Sides
 Base Dia : 62.45 (in)
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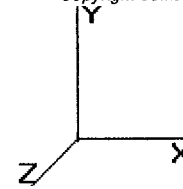
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Base Elev : 0.000 (ft)



Load Case: Ice

86.60 mph Wind with Ice

24 Iterations

Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

Calculated Stresses

Seg Elev (ft)	Applied Stresses							Allowable Stress (Fb) (ksi)	Stress Ratio	
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)			
0.00	0.64	0.79	0.00	0.00	0.00	37.96	38.62	52.0	0.0	0.743
5.00	0.63	0.80	0.00	0.00	0.00	37.80	38.46	52.0	0.0	0.740
10.00	0.62	0.80	0.00	0.00	0.00	37.63	38.28	52.0	0.0	0.736
15.00	0.61	0.81	0.00	0.00	0.00	37.44	38.08	52.0	0.0	0.733
20.00	0.60	0.81	0.00	0.00	0.00	37.23	37.85	52.0	0.0	0.728
25.00	0.59	0.82	0.00	0.00	0.00	36.98	37.60	52.0	0.0	0.723
30.00	0.58	0.82	0.00	0.00	0.00	36.71	37.32	52.0	0.0	0.718
35.00	0.57	0.83	0.00	0.00	0.00	36.41	37.01	52.0	0.0	0.712
40.00	0.56	0.84	0.00	0.00	0.00	36.08	36.66	52.0	0.0	0.705
45.00	0.55	0.84	0.00	0.00	0.00	35.70	36.28	52.0	0.0	0.698
46.82	0.54	0.84	0.00	0.00	0.00	35.56	36.13	52.0	0.0	0.695
50.00	0.53	0.85	0.00	0.00	0.00	35.29	35.85	52.0	0.0	0.690
53.65	0.50	0.84	0.00	0.00	0.00	33.76	34.29	52.0	0.0	0.660
55.00	0.49	0.84	0.00	0.00	0.00	33.63	34.16	52.0	0.0	0.657
60.00	0.48	0.84	0.00	0.00	0.00	33.12	33.63	52.0	0.0	0.647
65.00	0.47	0.85	0.00	0.00	0.00	32.55	33.05	52.0	0.0	0.636
70.00	0.46	0.85	0.00	0.00	0.00	31.93	32.42	52.0	0.0	0.624
75.00	0.45	0.86	0.00	0.00	0.00	31.24	31.72	52.0	0.0	0.610
80.00	0.44	0.86	0.00	0.00	0.00	30.49	30.96	52.0	0.0	0.596
85.00	0.42	0.87	0.00	0.00	0.00	29.65	30.12	52.0	0.0	0.579
90.00	0.41	0.88	0.00	0.00	0.00	28.74	29.19	52.0	0.0	0.562
94.97	0.40	0.88	0.00	0.00	0.00	27.73	28.17	52.0	0.0	0.542
95.00	0.40	0.88	0.00	0.00	0.00	27.72	28.16	52.0	0.0	0.542
100.00	0.37	0.89	0.00	0.00	0.00	26.60	27.01	52.0	0.0	0.520
100.47	0.42	1.01	0.00	0.00	0.00	29.63	30.10	52.0	0.0	0.579
105.00	0.41	1.02	0.00	0.00	0.00	28.34	28.80	52.0	0.0	0.554
110.00	0.40	1.03	0.00	0.00	0.00	26.76	27.22	52.0	0.0	0.524
115.00	0.39	1.04	0.00	0.00	0.00	25.01	25.46	52.0	0.0	0.490
120.00	0.37	1.05	0.00	0.00	0.00	23.05	23.50	52.0	0.0	0.452
125.00	0.36	1.05	0.00	0.00	0.00	20.87	21.31	52.0	0.0	0.410
128.00	0.32	0.89	0.00	0.00	0.00	19.45	19.83	52.0	0.0	0.382
130.00	0.32	0.89	0.00	0.00	0.00	18.69	19.08	52.0	0.0	0.367
135.00	0.31	0.90	0.00	0.00	0.00	16.63	17.00	52.0	0.0	0.327
140.00	0.29	0.90	0.00	0.00	0.00	14.31	14.68	52.0	0.0	0.283
145.00	0.28	0.91	0.00	0.00	0.00	11.69	12.07	52.0	0.0	0.232
148.62	0.27	0.92	0.00	0.00	0.00	9.59	9.99	52.0	0.0	0.192
148.62	0.41	1.37	0.00	0.00	0.00	14.21	14.81	52.0	0.0	0.285
150.00	0.29	0.93	0.00	0.00	0.00	12.85	13.24	52.0	0.0	0.255
155.00	0.28	0.93	0.00	0.00	0.00	9.78	10.19	52.0	0.0	0.196
160.00	0.17	0.43	0.00	0.00	0.00	6.33	6.54	52.0	0.0	0.126
165.00	0.16	0.41	0.00	0.00	0.00	4.82	5.03	52.0	0.0	0.097
170.00	0.12	0.31	0.00	0.00	0.00	3.21	3.37	52.0	0.0	0.065
175.00	0.11	0.28	0.00	0.00	0.00	1.89	2.06	52.0	0.0	0.040
180.00	0.00	0.27	0.00	0.00	0.00	0.52	0.71	52.0	0.0	0.014

Pole : 310972
 Location : Waterford Rebuild CT, CT
 Height : 180.0 (ft)
 Shape : 18 Sides
 Base Dia : 62.45 (in)
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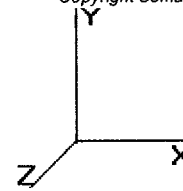
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Base Elev : 0.000 (ft)



Load Case: Twist/Sway 50.00 mph Wind with No Ice 23 Iterations

Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

Shaft Segment Forces

Seg Top Elev (ft)	Description	Kz	az (psf)	azGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)	
0.00		0.00	1.00	6.400	10.81	260.20	0.650	0.00	0.00	0.000	0.00	0.0	0.0	
5.00		0.00	1.00	6.400	10.81	255.44	0.650	0.00	5.00	25.783	16.76	181.3	0.0	1,451.5
10.00		0.00	1.00	6.400	10.81	250.67	0.650	0.00	5.00	25.306	16.45	177.9	0.0	1,424.5
15.00		0.00	1.00	6.400	10.81	245.91	0.650	0.00	5.00	24.829	16.14	174.6	0.0	1,397.5
20.00		0.00	1.00	6.400	10.81	241.14	0.650	0.00	5.00	24.353	15.83	171.2	0.0	1,370.5
25.00		0.00	1.00	6.400	10.81	236.38	0.650	0.00	5.00	23.876	15.52	167.9	0.0	1,343.5
30.00		0.00	1.00	6.400	10.81	231.61	0.650	0.00	5.00	23.400	15.21	164.5	0.0	1,316.4
35.00		0.00	1.01	6.509	10.99	228.76	0.650	0.00	5.00	22.923	14.90	163.9	0.0	1,289.4
40.00		0.00	1.05	6.762	11.42	228.27	0.650	0.00	5.00	22.447	14.59	166.7	0.0	1,262.4
45.00		0.00	1.09	6.993	11.81	227.16	0.650	0.00	5.00	21.970	14.28	168.8	0.0	1,235.4
46.82	Bot - Section 2	0.00	1.10	7.073	11.95	226.63	0.650	0.00	1.82	7.864	5.11	61.1	0.0	442.1
50.00		0.00	1.12	7.207	12.17	225.55	0.650	0.00	3.18	13.862	9.01	109.7	0.0	1,545.6
53.65	Top - Section 1	0.00	1.14	7.353	12.42	224.10	0.650	0.00	3.65	15.655	10.18	126.5	0.0	1,745.1
55.00		0.00	1.15	7.406	12.51	227.44	0.650	0.00	1.35	5.727	3.72	46.6	0.0	321.9
60.00		0.00	1.18	7.592	12.83	225.09	0.650	0.00	5.00	20.905	13.59	174.3	0.0	1,175.0
65.00		0.00	1.21	7.768	13.12	222.43	0.650	0.00	5.00	20.429	13.28	174.3	0.0	1,148.0
70.00		0.00	1.24	7.934	13.40	219.49	0.650	0.00	5.00	19.952	12.97	173.9	0.0	1,121.0
75.00		0.00	1.26	8.092	13.67	216.31	0.650	0.00	5.00	19.476	12.66	173.1	0.0	1,093.9
80.00		0.00	1.28	8.242	13.93	212.90	0.650	0.00	5.00	18.999	12.35	172.0	0.0	1,066.9
85.00		0.00	1.31	8.387	14.17	209.30	0.650	0.00	5.00	18.522	12.04	170.6	0.0	1,039.9
90.00		0.00	1.33	8.525	14.40	205.52	0.650	0.00	5.00	18.046	11.73	169.0	0.0	1,012.9
94.97	Bot - Section 3	0.00	1.35	8.656	14.62	201.59	0.650	0.00	4.97	17.453	11.34	166.0	0.0	979.3
95.00		0.00	1.35	8.657	14.63	201.57	0.650	0.00	0.03	0.118	0.08	1.1	0.0	12.2
100.0		0.00	1.37	8.785	14.84	197.47	0.650	0.00	5.00	17.405	11.31	168.0	0.0	1,797.1
100.4	Top - Section 2	0.00	1.37	8.797	14.86	197.08	0.650	0.00	0.47	1.599	1.04	15.5	0.0	165.1
105.0		0.00	1.39	8.908	15.05	196.91	0.650	0.00	4.53	15.329	9.96	150.0	0.0	738.1
110.0		0.00	1.41	9.028	15.25	192.56	0.650	0.00	5.00	16.452	10.69	163.2	0.0	792.0
115.0		0.00	1.42	9.143	15.45	188.10	0.650	0.00	5.00	15.976	10.38	160.5	0.0	768.8
120.0		0.00	1.44	9.255	15.64	183.51	0.650	0.00	5.00	15.499	10.07	157.6	0.0	745.7
125.0		0.00	1.46	9.363	15.82	178.82	0.650	0.00	5.00	15.023	9.76	154.5	0.0	722.5
128.0	Appertunance(s)	0.00	1.47	9.427	15.93	175.96	0.650	0.00	3.00	8.785	5.71	91.0	0.0	422.4
130.0		0.00	1.48	9.469	16.00	174.03	0.650	0.00	2.00	5.761	3.74	59.9	0.0	277.0
135.0		0.00	1.49	9.572	16.17	169.14	0.650	0.00	5.00	14.070	9.15	147.9	0.0	676.2
140.0		0.00	1.51	9.672	16.34	164.17	0.650	0.00	5.00	13.593	8.84	144.4	0.0	653.0
145.0		0.00	1.52	9.769	16.51	159.10	0.650	0.00	5.00	13.116	8.53	140.8	0.0	629.9
148.6	Top - Section 3	0.00	1.53	9.838	16.62	155.39	0.650	0.00	3.62	9.190	5.97	99.3	0.0	441.1
150.0	Appertunance(s)	0.00	1.54	9.864	16.67	153.96	0.650	0.00	1.38	3.450	2.24	37.4	0.0	110.9
155.0		0.00	1.55	9.957	16.82	148.74	0.650	0.00	5.00	12.163	7.91	133.0	0.0	390.7
160.0	Appertunance(s)	0.00	1.57	10.048	16.98	143.44	0.650	0.00	5.00	11.687	7.60	129.0	0.0	375.3
165.0		0.00	1.58	10.136	17.13	138.08	0.650	0.00	5.00	11.210	7.29	124.8	0.0	359.8
170.0	Appertunance(s)	0.00	1.59	10.223	17.27	132.65	0.650	0.00	5.00	10.734	6.98	120.5	0.0	344.4
175.0		0.00	1.61	10.308	17.42	127.15	0.650	0.00	5.00	10.257	6.67	116.1	0.0	329.0
180.0	Appertunance(s)	0.00	1.62	10.392	17.56	121.59	0.650	0.00	5.00	9.781	6.36	111.6	0.0	313.5
Totals:								180.00				5,680.0		35,847.5

Pole : 310972
 Location : Waterford Rebuild CT, CT
 Height : 180.0 (ft)
 Shape : 18 Sides
 Base Dia : 62.45 (in)
 Top Dia : 22.90 (in)
 Taper : 0.228740 (in/ft)

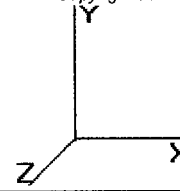
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Base Elev : 0.000 (ft)



Load Case: Twist/Sway 50.00 mph Wind with No Ice 23 Iterations

Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

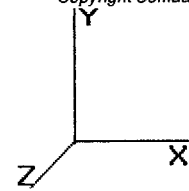
Discrete Appurtenance Segment Forces

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
128.0	RFS ATMAA1412D-	6	9.427	15.932	0.67	4.70	0.000	0.000	74.93	0.00	0.00	78.00
128.0	EMS DR85-17-	6	9.427	15.932	0.67	25.33	0.000	0.000	403.49	0.00	0.00	144.00
128.0	RFS APX16DWV-	3	9.427	15.932	0.62	12.46	0.000	0.000	198.54	0.00	0.00	118.80
128.0	Round T-Arm	3	9.427	15.932	0.67	19.50	0.000	0.000	310.62	0.00	0.00	750.00
150.0	Raycap DC6-48-60-18-	1	9.864	16.670	1.00	1.47	0.000	0.000	24.51	0.00	0.00	31.80
150.0	KMW AM-X-CD-14-65-	3	9.864	16.670	1.00	16.50	0.000	0.000	275.06	0.00	0.00	109.20
150.0	Ericsson RRUS 11 (Ba	6	9.864	16.670	0.50	8.97	0.000	0.000	149.53	0.00	0.00	300.00
150.0	Powerwave LGP21903	6	9.864	16.670	0.74	1.20	0.000	0.000	19.98	0.00	0.00	33.00
150.0	Powerwave LGP21401	6	9.864	16.670	0.67	5.19	0.000	0.000	86.45	0.00	0.00	84.60
150.0	Allgon 7770.00	6	9.864	16.670	0.73	25.75	0.000	0.000	429.34	0.00	0.00	210.00
150.0	Round Low Profile PI	1	9.864	16.670	1.00	21.70	0.000	0.000	361.74	0.00	0.00	1,500.00
150.0	12' Omni	1	9.975	16.858	1.00	3.60	0.000	6.000	60.69	0.00	364.14	40.00
160.0	Antel LPA-80063/4CF	6	10.048	16.981	0.93	39.06	0.000	0.000	663.26	0.00	0.00	120.00
160.0	Round Low Profile PI	1	10.048	16.981	1.00	21.70	0.000	0.000	368.48	0.00	0.00	1,500.00
160.0	RFS FD9R6004/1C-3L	6	10.048	16.981	0.70	1.55	0.000	0.000	26.39	0.00	0.00	18.60
160.0	Rvmsa MG D3-800	3	10.048	16.981	0.94	9.73	0.000	0.000	165.20	0.00	0.00	46.20
160.0	Antel BXA-70063/6CF	3	10.048	16.981	0.74	17.16	0.000	0.000	291.40	0.00	0.00	51.00
170.0	Flush Mounts	1	10.223	17.277	1.00	3.50	0.000	0.000	60.47	0.00	0.00	200.00
170.0	KMW HB-X-WM-17-65-	3	10.223	17.277	0.67	2.29	0.000	0.000	39.59	0.00	0.00	47.70
170.0	KMW HB-X-WM-17-65-	3	10.223	17.277	1.00	5.85	0.000	0.000	101.07	0.00	0.00	90.00
180.0	dbSpectra	1	10.392	17.562	1.00	1.56	0.000	0.000	27.40	0.00	0.00	25.00
180.0	Round Low Profile PI	1	10.392	17.562	1.00	21.70	0.000	0.000	381.09	0.00	0.00	1,500.00
180.0	Sinclair SC488-SF1SN	2	10.516	17.771	1.00	7.62	0.000	7.625	135.42	0.00	1,032.55	60.00
									4,654.66			7,057.90

Pole : 310972
 Location : Waterford Rebuild CT, CT
 Height : 180.0 (ft)
 Shape : 18 Sides
 Base Dia : 62.45 (in)
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 Taper : 0.228740 (in/ft)

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Base Elev : 0.000 (ft)

Load Case: Twist/Sway 50.00 mph Wind with No Ice 23 Iterations

Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	181.26	1,633.32	0.00	0.00
10.00	177.91	1,606.30	0.00	0.00
15.00	174.56	1,579.28	0.00	0.00
20.00	171.21	1,552.26	0.00	0.00
25.00	167.86	1,525.24	0.00	0.00
30.00	164.51	1,498.22	0.00	0.00
35.00	163.89	1,471.20	0.00	0.00
40.00	166.73	1,444.18	0.00	0.00
45.00	168.77	1,417.16	0.00	0.00
46.82	61.10	508.18	0.00	0.00
50.00	109.74	1,661.35	0.00	0.00
53.65	126.46	1,877.82	0.00	0.00
55.00	46.59	370.99	0.00	0.00
60.00	174.35	1,356.77	0.00	0.00
65.00	174.31	1,329.75	0.00	0.00
70.00	173.89	1,302.73	0.00	0.00
75.00	173.12	1,275.71	0.00	0.00
80.00	172.02	1,248.69	0.00	0.00
85.00	170.64	1,221.67	0.00	0.00
90.00	168.99	1,194.65	0.00	0.00
94.97	165.96	1,159.89	0.00	0.00
95.00	1.13	13.44	0.00	0.00
100.0	167.97	1,978.92	0.00	0.00
100.4	15.46	182.06	0.00	0.00
105.0	150.01	902.95	0.00	0.00
110.0	163.15	973.77	0.00	0.00
115.0	160.45	950.61	0.00	0.00
120.0	157.57	927.45	0.00	0.00
125.0	154.52	904.29	0.00	0.00
128.0	1,078.56	1,622.26	0.00	0.00
130.0	59.93	320.02	0.00	0.00
135.0	147.93	783.83	0.00	0.00
140.0	144.42	760.67	0.00	0.00
145.0	140.76	737.51	0.00	0.00
148.6	99.32	518.99	0.00	0.00
150.0	1,444.69	2,449.24	0.00	364.14
155.0	133.04	472.72	0.00	0.00
160.0	1,643.73	2,193.08	0.00	0.00
165.0	124.83	392.64	0.00	0.00
170.0	321.68	714.90	0.00	0.00
175.0	116.15	337.16	0.00	0.00
180.0	655.55	1,906.72	0.00	1,032.55
Totals:	10,334.70	48,278.66	0.00	1,396.69

Pole : 310972
 Location : Waterford Rebuild CT, CT
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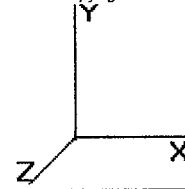
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Base Elev : 0.000 (ft)



Load Case: Twist/Sway

50.00 mph Wind with No Ice

23 Iterations

Gust Response Factor : 1.69
 Dead Load Factor : 1.00
 Wind Load Factor : 1.00

Calculated Shaft Forces and Deflections

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-10.352	-48.275	0.000	0.000	0.000	-1,243.317	0.000	0.000	0.000	0.000
5.00	-10.204	-46.634	0.000	0.000	0.000	-1,191.557	-0.022	0.000	0.022	-0.041
10.00	-10.058	-45.021	0.000	0.000	0.000	-1,140.537	-0.088	0.000	0.088	-0.083
15.00	-9.913	-43.434	0.000	0.000	0.000	-1,090.249	-0.198	0.000	0.198	-0.126
20.00	-9.769	-41.875	0.000	0.000	0.000	-1,040.687	-0.353	0.000	0.353	-0.169
25.00	-9.627	-40.343	0.000	0.000	0.000	-991.842	-0.553	0.000	0.553	-0.212
30.00	-9.486	-38.838	0.000	0.000	0.000	-943.709	-0.799	0.000	0.799	-0.256
35.00	-9.344	-37.361	0.000	0.000	0.000	-896.279	-1.092	0.000	1.092	-0.301
40.00	-9.198	-35.910	0.000	0.000	0.000	-849.558	-1.431	0.000	1.431	-0.346
45.00	-9.039	-34.489	0.000	0.000	0.000	-803.570	-1.817	0.000	1.817	-0.391
46.82	-8.988	-33.978	0.000	0.000	0.000	-787.151	-1.969	0.000	1.969	-0.408
50.00	-8.884	-32.312	0.000	0.000	0.000	-758.540	-2.252	0.000	2.252	-0.437
53.65	-8.755	-30.432	0.000	0.000	0.000	-726.116	-2.600	0.000	2.600	-0.471
55.00	-8.720	-30.057	0.000	0.000	0.000	-714.297	-2.735	0.000	2.735	-0.484
60.00	-8.556	-28.695	0.000	0.000	0.000	-670.697	-3.266	0.000	3.266	-0.528
65.00	-8.390	-27.361	0.000	0.000	0.000	-627.919	-3.843	0.000	3.843	-0.573
70.00	-8.223	-26.054	0.000	0.000	0.000	-585.970	-4.467	0.000	4.467	-0.617
75.00	-8.055	-24.774	0.000	0.000	0.000	-544.857	-5.137	0.000	5.137	-0.662
80.00	-7.886	-23.521	0.000	0.000	0.000	-504.585	-5.854	0.000	5.854	-0.706
85.00	-7.717	-22.296	0.000	0.000	0.000	-465.156	-6.617	0.000	6.617	-0.750
90.00	-7.548	-21.098	0.000	0.000	0.000	-426.572	-7.427	0.000	7.427	-0.795
94.97	-7.373	-19.937	0.000	0.000	0.000	-389.085	-8.277	0.000	8.277	-0.838
95.00	-7.379	-19.921	0.000	0.000	0.000	-388.838	-8.283	0.000	8.283	-0.838
100.0	-7.189	-17.942	0.000	0.000	0.000	-351.942	-9.184	0.000	9.184	-0.881
100.4	-7.177	-17.758	0.000	0.000	0.000	-348.588	-9.271	0.000	9.271	-0.885
105.0	-7.026	-16.852	0.000	0.000	0.000	-316.050	-10.130	0.000	10.130	-0.924
110.0	-6.859	-15.876	0.000	0.000	0.000	-280.923	-11.122	0.000	11.122	-0.969
115.0	-6.693	-14.923	0.000	0.000	0.000	-246.630	-12.161	0.000	12.161	-1.013
120.0	-6.528	-13.994	0.000	0.000	0.000	-213.166	-13.244	0.000	13.244	-1.054
125.0	-6.364	-13.089	0.000	0.000	0.000	-180.524	-14.370	0.000	14.370	-1.093
128.0	-5.258	-11.487	0.000	0.000	0.000	-161.433	-15.065	0.000	15.065	-1.116
130.0	-5.197	-11.166	0.000	0.000	0.000	-150.917	-15.535	0.000	15.535	-1.130
135.0	-5.039	-10.382	0.000	0.000	0.000	-124.934	-16.737	0.000	16.737	-1.164
140.0	-4.883	-9.622	0.000	0.000	0.000	-99.741	-17.972	0.000	17.972	-1.194
145.0	-4.730	-8.886	0.000	0.000	0.000	-75.324	-19.237	0.000	19.237	-1.220
148.6	-4.622	-8.368	0.000	0.000	0.000	-58.218	-20.168	0.000	20.168	-1.236
150.0	-3.126	-5.950	0.000	0.000	0.000	-51.459	-20.527	0.000	20.527	-1.241
155.0	-2.984	-5.479	0.000	0.000	0.000	-35.830	-21.840	0.000	21.840	-1.265
160.0	-1.293	-3.323	0.000	0.000	0.000	-20.908	-23.176	0.000	23.176	-1.283
165.0	-1.160	-2.933	0.000	0.000	0.000	-14.442	-24.526	0.000	24.526	-1.295
170.0	-0.823	-2.226	0.000	0.000	0.000	-8.641	-25.888	0.000	25.888	-1.305
175.0	-0.699	-1.891	0.000	0.000	0.000	-4.528	-27.258	0.000	27.258	-1.311
180.0	-0.656	0.000	0.000	0.000	0.000	-1.033	-28.632	0.000	28.632	-1.314

Pole : 310972
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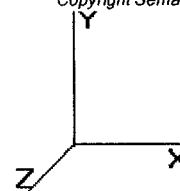
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Base Elev : 0.000 (ft)



Load Case: Twist/Sway

50.00 mph Wind with No Ice

23 Iterations

Gust Response Factor : 1.69

Dead Load Factor : 1.00

Wind Load Factor : 1.00

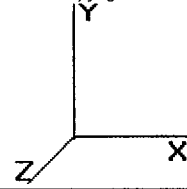
Calculated Stresses

Seg Elev (ft)	Applied Stresses							Allowable Stress (Fb) (ksi)	Stress Ratio	
	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)			
0.00	0.56	0.24	0.00	0.00	0.00	11.31	11.88	52.0	0.0	0.228
5.00	0.55	0.24	0.00	0.00	0.00	11.25	11.81	52.0	0.0	0.227
10.00	0.54	0.24	0.00	0.00	0.00	11.19	11.74	52.0	0.0	0.226
15.00	0.53	0.25	0.00	0.00	0.00	11.12	11.66	52.0	0.0	0.224
20.00	0.53	0.25	0.00	0.00	0.00	11.04	11.57	52.0	0.0	0.223
25.00	0.52	0.25	0.00	0.00	0.00	10.95	11.48	52.0	0.0	0.221
30.00	0.51	0.25	0.00	0.00	0.00	10.86	11.38	52.0	0.0	0.219
35.00	0.50	0.25	0.00	0.00	0.00	10.76	11.26	52.0	0.0	0.217
40.00	0.49	0.25	0.00	0.00	0.00	10.65	11.14	52.0	0.0	0.214
45.00	0.48	0.25	0.00	0.00	0.00	10.52	11.01	52.0	0.0	0.212
46.82	0.48	0.25	0.00	0.00	0.00	10.47	10.96	52.0	0.0	0.211
50.00	0.46	0.25	0.00	0.00	0.00	10.39	10.86	52.0	0.0	0.209
53.65	0.43	0.25	0.00	0.00	0.00	9.93	10.37	52.0	0.0	0.200
55.00	0.43	0.25	0.00	0.00	0.00	9.89	10.33	52.0	0.0	0.199
60.00	0.42	0.25	0.00	0.00	0.00	9.72	10.15	52.0	0.0	0.195
65.00	0.41	0.25	0.00	0.00	0.00	9.54	9.96	52.0	0.0	0.192
70.00	0.40	0.25	0.00	0.00	0.00	9.35	9.76	52.0	0.0	0.188
75.00	0.39	0.26	0.00	0.00	0.00	9.13	9.53	52.0	0.0	0.183
80.00	0.38	0.26	0.00	0.00	0.00	8.90	9.29	52.0	0.0	0.179
85.00	0.37	0.26	0.00	0.00	0.00	8.64	9.03	52.0	0.0	0.174
90.00	0.36	0.26	0.00	0.00	0.00	8.36	8.74	52.0	0.0	0.168
94.97	0.35	0.26	0.00	0.00	0.00	8.06	8.42	52.0	0.0	0.162
95.00	0.35	0.26	0.00	0.00	0.00	8.06	8.42	52.0	0.0	0.162
100.00	0.32	0.26	0.00	0.00	0.00	7.72	8.05	52.0	0.0	0.155
100.47	0.37	0.30	0.00	0.00	0.00	8.60	8.98	52.0	0.0	0.173
105.00	0.36	0.30	0.00	0.00	0.00	8.21	8.58	52.0	0.0	0.165
110.00	0.35	0.30	0.00	0.00	0.00	7.74	8.10	52.0	0.0	0.156
115.00	0.34	0.30	0.00	0.00	0.00	7.22	7.57	52.0	0.0	0.146
120.00	0.32	0.30	0.00	0.00	0.00	6.64	6.98	52.0	0.0	0.134
125.00	0.31	0.31	0.00	0.00	0.00	6.00	6.33	52.0	0.0	0.122
128.00	0.28	0.26	0.00	0.00	0.00	5.58	5.88	52.0	0.0	0.113
130.00	0.28	0.26	0.00	0.00	0.00	5.36	5.65	52.0	0.0	0.109
135.00	0.27	0.26	0.00	0.00	0.00	4.75	5.04	52.0	0.0	0.097
140.00	0.26	0.26	0.00	0.00	0.00	4.08	4.35	52.0	0.0	0.084
145.00	0.24	0.26	0.00	0.00	0.00	3.31	3.59	52.0	0.0	0.069
148.62	0.24	0.26	0.00	0.00	0.00	2.71	2.98	52.0	0.0	0.057
148.62	0.35	0.39	0.00	0.00	0.00	4.01	4.42	52.0	0.0	0.085
150.00	0.25	0.27	0.00	0.00	0.00	3.62	3.90	52.0	0.0	0.075
155.00	0.24	0.27	0.00	0.00	0.00	2.73	3.01	52.0	0.0	0.058
160.00	0.15	0.12	0.00	0.00	0.00	1.73	1.90	52.0	0.0	0.036
165.00	0.14	0.11	0.00	0.00	0.00	1.30	1.46	52.0	0.0	0.028
170.00	0.11	0.08	0.00	0.00	0.00	0.85	0.98	52.0	0.0	0.019
175.00	0.10	0.07	0.00	0.00	0.00	0.49	0.61	52.0	0.0	0.012
180.00	0.00	0.07	0.00	0.00	0.00	0.12	0.18	52.0	0.0	0.003

Pole : 310972
 Location : Waterford Rebuild CT, CT
 Height : 180.0 (ft)
 Shape : 18 Sides
 Base Dia : 62.45 (in)
 Top Dia : 22.90 (in)
 Taper : 0.228740 (in/ft)

Code: TIA/EIA-222 Rev F

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 3/2/2011 3:17:13 PM
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Base Elev : 0.000 (ft)

Analysis Summary

Load Case	Reactions						Max Stresses			
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Combined Stress (ksi)	Allowable Stress (ksi)	Elev (ft)	Stress Ratio
No Ice	41.4	0.00	48.22	0.00	0.00	4967.55	45.77	52.0	0.00	0.881
Ice	33.8	0.00	55.32	0.00	0.00	4173.55	38.62	52.0	0.00	0.743
Twist/Sway	10.4	0.00	48.27	0.00	0.00	1243.32	11.88	52.0	0.00	0.228

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

Dual Band Electrical DownTilt Antenna

698 ~ 894MHz, X-pol., H65° / V17.0°

1710 ~ 2170MHz, X-pol., H65° / V8.5°

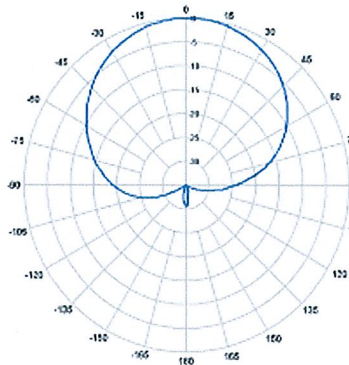
Electrical Specification

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	

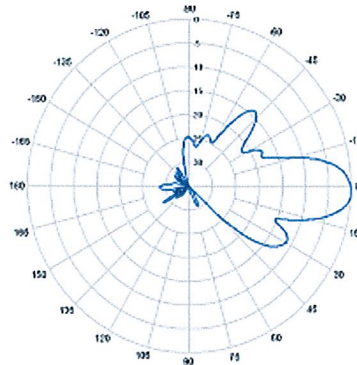
Mechanical Specification

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)

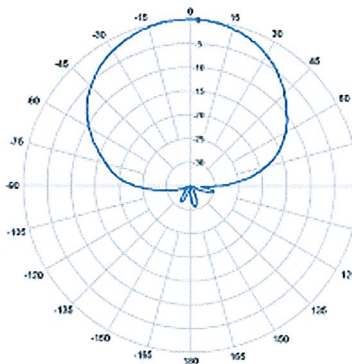


Horizontal Pattern

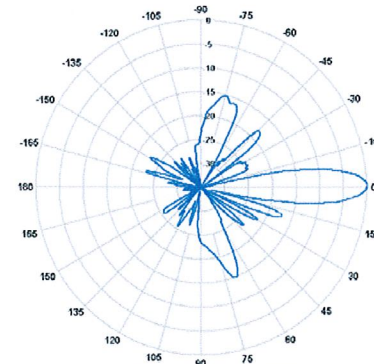


Vertical Pattern (Downtilt 2°)

700MHz band Pattern

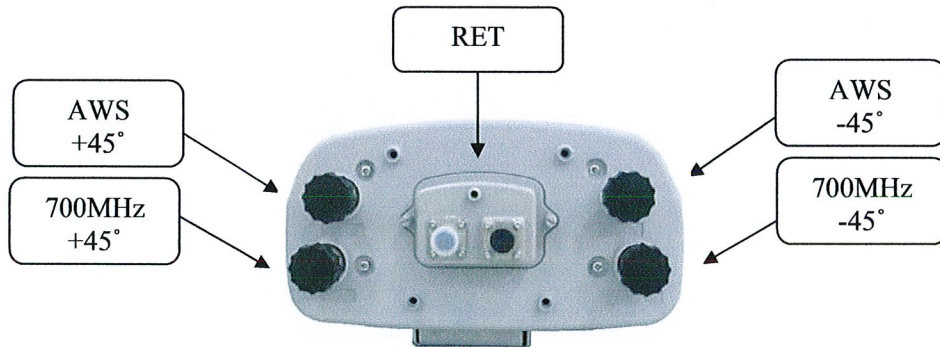


Horizontal Pattern



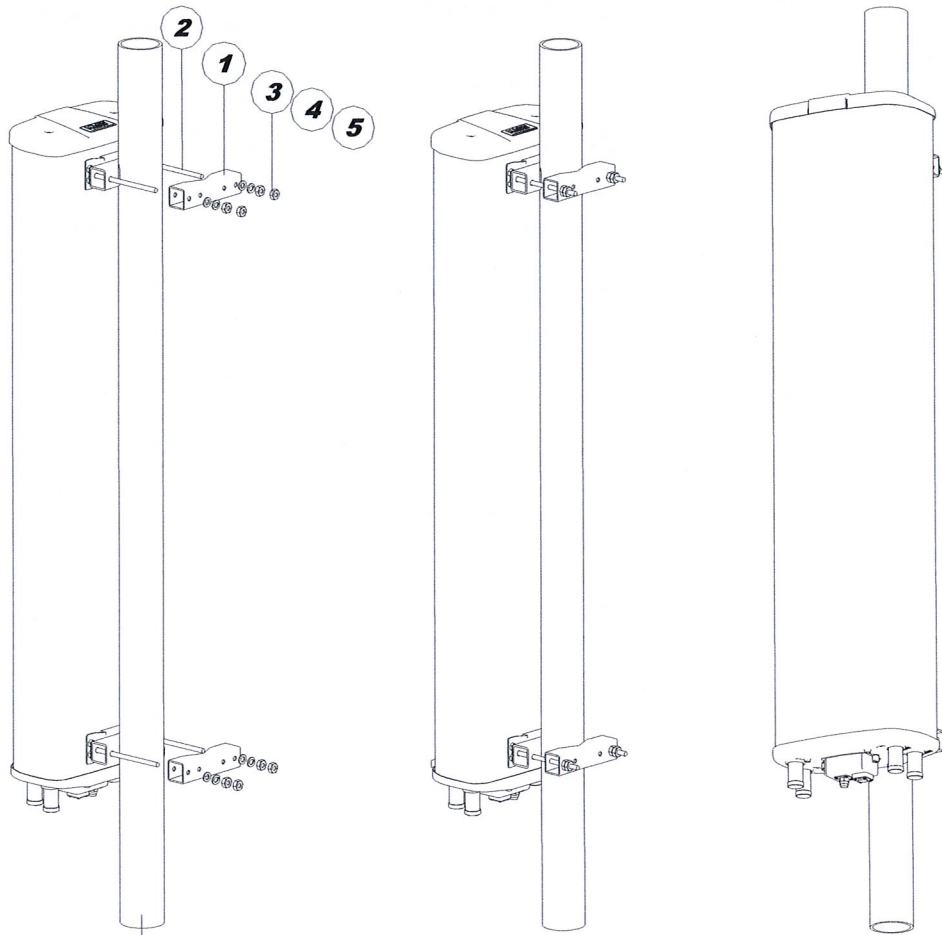
Vertical Pattern (Downtilt 0°)

AWS band Pattern



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

Antenna Drawings and Installation Diagram



MOUNT POLE
 $\varnothing 1.97 \sim 3.15$ inch OD.
 (50 ~ 80mm OD.)

STANDARD MOUNTING KITS

No.	PART NAME	Q'TY	Recommending Torque
1	FIXED CLAMP	4	
2	Hex. Cap Bolt, M10	4	17mm Spanner
3	Plain Washer, M10	4	208lbf.inch
4	Spring Washer, M10	4	240kgf.cm
5	Hex. Nut, M10	8	

POWER

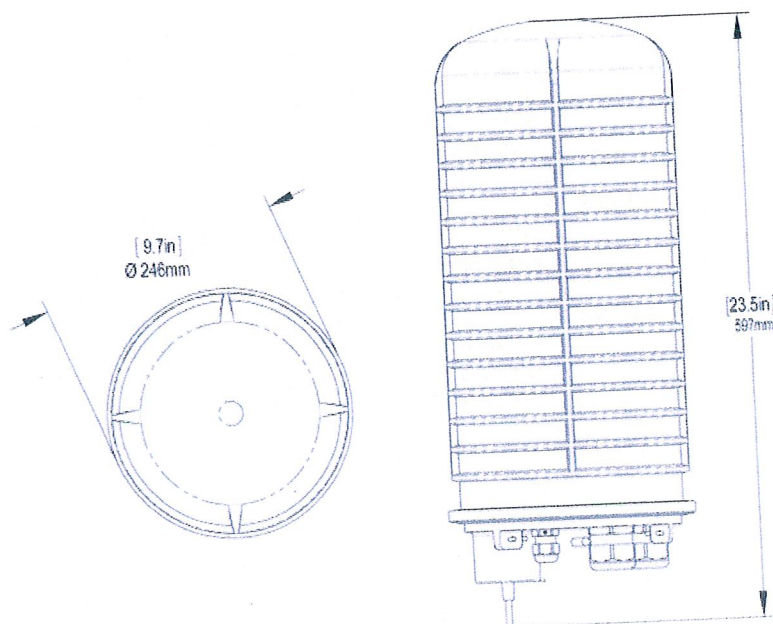
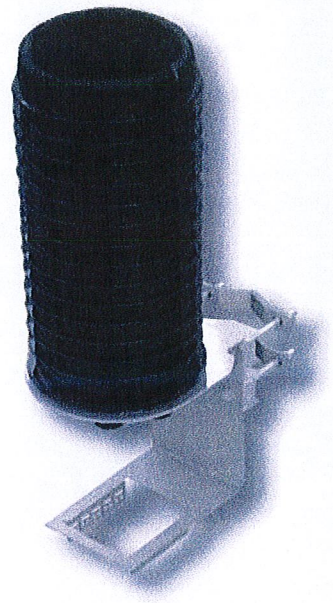
DC6-48-60-18-8F

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

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

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

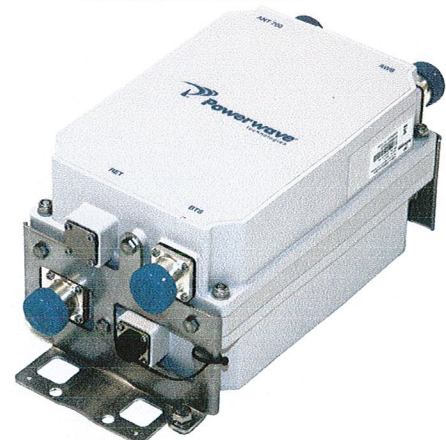
Dimension HxWxD mm(ft)	250x169x137 mm (9.9"x6.7"x5.4")
Weight(lbs)	<16
Colors	Off white (NCS 1502-R)
RF Connectors	DIN 7/16 female, long neck
Mounting Kit	Mounting kit for pole and wall is included

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.



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

April 6, 2011

Honorable Dan Steward
1st Selectman, Town of Waterford
Waterford Town Hall
15 Rope Ferry Road
Waterford, CT 06385

Re: Telecommunications Facility – 15 Minor Lane

Dear Mr. Steward:

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