

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

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

E-Mail: siting.council@ct.gov

www.ct.gov/csc

July 6, 2011

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

RE: **EM-CING-009-110616** - New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 11 Francis J. Clarke, Bethel, Connecticut.

Dear Mr. Culp:

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

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

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated June 16, 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,

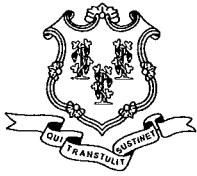
Handwritten signature of Linda Roberts in black ink.

Linda Roberts
Executive Director

LR/CDM/laf

c: The Honorable Matthew S. Knickerbocker, First Selectman, Town of Bethel
Steve Palmer, Planning & Zoning Official, Town of Bethel
SBA





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June 21, 2011

The Honorable Matthew S. Knickerbocker
First Selectman
Town of Bethel
1 School Street
Bethel Municipal Center
Bethel, CT 06801-2105

RE: **EM-CING-009-110616** - New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 11 Francis J. Clarke, Bethel, Connecticut.

Dear First Selectman Knickerbocker:

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

If you have any questions or comments regarding this proposal, please call me or inform the Council by July 6, 2011.

Thank you for your cooperation and consideration.

Very truly yours,

Linda Roberts
Executive Director

LR/jbw

Enclosure: Notice of Intent

c: Steve Palmer, Planning & Zoning Official, Town of Bethel



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

Douglas L. Culp
Real Estate Consultant

HAND DELIVERED

ORIGINAL

June 16, 2011

RECEIVED
JUN 16 2011

CONNECTICUT
SITING COUNCIL

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

Re: New Cingular Wireless PCS, LLC notice of intent to modify an existing tele-communications facility located at 11 Francis J Clarke Bethel, CT (owner SBA).

Dear Ms. Roberts:

In order to accommodate technological changes, implement Uniform Mobile Telecommunications System ("UMTS") and/or Long Term Evolution ("LTE") capabilities, and enhance system performance in the State of Connecticut, New Cingular Wireless PCS, LLC ("AT&T") plans to modify the equipment configurations at many of its existing cell sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and attachments is being sent to the chief elected official of the municipality in which the affected cell site is located.

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

LTE is a new high-performance air interface for cellular mobile communications. It is designed to increase the capacity and speed of mobile telephone networks.

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

The changes to the facility do not constitute modifications as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed or altered. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

1. The height of the overall structure will be unaffected.
2. The proposed changes will not extend the site boundaries. There will be no effect on the site compound other than some enlarged equipment pads as may be noted in the attachments.
3. The proposed changes will not increase the noise level at the existing facility by six decibels or more.
4. Radio frequency power density may increase due to use of one or more GSM channel for UMTS transmissions. Moreover, LTE will utilize additional radio frequencies newly-licensed by the FCC for cellular mobile communications. However, the changes will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site.

For the foregoing reasons, New Cingular Wireless respectfully submits that the proposed changes at the referenced site constitute exempt modifications under R.C.S.A. Section 16-50j-72(b)(2).

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

Sincerely,

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

Douglas L. Culp
Real Estate Consultant

Attachments

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

11 Francis J Clarke Circle Bethel, CT
Site Number CT5513
Exempt Mod

Tower Owner/Manager: SBA

Equipment configuration: Monopole

Current and/or approved: Three PowerWave P7770 antennas @ 127 ft
Six PowerWave TMA's @ 127 ft
Nine runs 1 ¼ inch coax @ 127 ft
Equipment on Concrete Pad

Planned Modifications: Retain existing PowerWave P7770 Antenna's and TMA's @ 127 ft
Retain all Coax Cabling
Install three PowerWave P65-16 antennas or equivalent @ 127 ft
Install six remote radio heads Ericsson RRUS-11 @ 127 ft
Install one Raycap Fiber Power Connector/ Surge Suppressor – DC6-48-60-18-8F @ 127 ft
Install one fiber and two DC power cables @ 127 ft

Power Density:

Worst-case calculations for existing wireless operations at the site, using standard parameters for other carriers, indicate a radio frequency electromagnetic radiation power density, measured at ground level beside the Tower, of approximately 56.4% of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density following proposed modifications would be approximately 58.7% of the standard.

Existing

Other Users							43.54
AT&T UMTS	127	1900 Band	1	500	0.0111	1.0000	1.11
AT&T UMTS	127	800 Band	1	500	0.0111	0.5867	1.90
AT&T GSM	127	800Band	2	296	0.0132	0.5867	2.25
AT&T GSM	127	1900 Band	8	427	0.0762	1.0000	7.62
Total							56.4%

* 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							43.54
AT&T UMTS	127	800 Band	1	500	0.0111	0.5867	1.90
AT&T UMTS	127	1900 Band	1	500	0.0111	1.0000	1.11
AT&T GSM	127	1900 Band	8	427	0.0762	1.0000	7.62
AT&T GSM	127	880 - 894	2	296	0.0132	0.5867	2.25
AT&T LTE	127	740 - 746	1	500	0.0111	0.4933	2.26
Total							58.7%

* Data for other users are from Siting Council records.

Structural information:

The attached structural analysis demonstrates that the monopole and foundation have adequate structural capacity to accommodate the proposed modifications. (FDH Engineering, Inc. dated 6-6-11).

NEW CINGULAR WIRELESS PCS, LLC WIRELESS COMMUNICATIONS FACILITY CT5513 BETHEL

11 FRANCIS J CLARKE CIRCLE
BETHEL, CONNECTICUT

PROJECT SUMMARY

SITE NUMBER: CT5513
SITE NAME: BETHEL
SITE ADDRESS: 11 FRANCIS J CLARKE CIRCLE
 BETHEL, CT 06801
STRUCTURE OWNER: SBA, INC.
APPLICANT: NEW CINGULAR WIRELESS PCS, LLC
 500 ENTERPRISE DRIVE
 ROCKY HILL, CT 06067
CONTACT: MICHAEL D. FOLEY
 (203) 414-1184
COORDINATES: 41° 21' 36.33"N
 73° 25' 30.0"W
HORIZONTAL DATUM: NAD 83
ENGINEER: CHA, INC. DEANE HIGHWAY
 SUITE 212
 ROCKY HILL, CT 06067
CONTACT: PAUL LUSTIANI
 (860) 257-4557

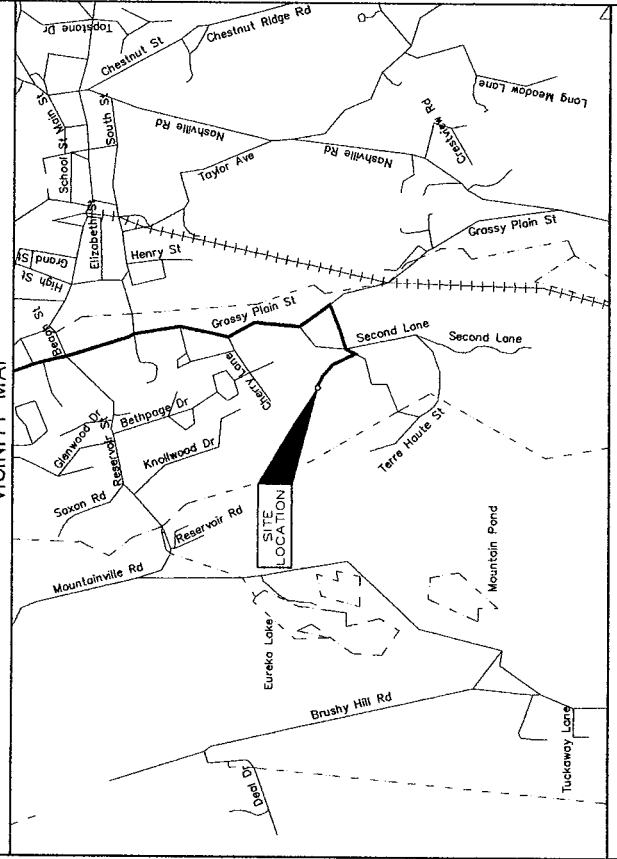
DRIVING DIRECTIONS

FROM HARTFORD:
 1. MERGE ONTO I-84 W
 2. TAKE EXIT B TO MERGE ONTO NEWTOWN RD
 TOWARD BETHEL TRIANGLE ST
 3. TURN LEFT AT LEE MAC AVE
 4. TURN RIGHT AT SHELTER ROCK RD
 5. TURN LEFT AT SOUTH ST
 6. TURN RIGHT ON FRANCIS J CLARKE CIRCLE
 7. DESTINATION WILL BE ON THE RIGHT
 8. IF YOU GO UNDER A TRAIN TRESTLE YOU HAVE
 GONE TOO FAR

PROJECT DESCRIPTION

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

VICINITY MAP

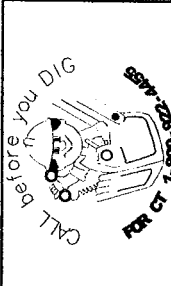


APRIL 21, 2011

SHEET INDEX

SHEET NO.	SHEET TITLE	NO.	DATE
T01	TITLE SHEET	1	04 / 21 / 11
C01	COMPOUND PLAN	1	04 / 21 / 11
C02	EQUIPMENT PLAN	1	04 / 21 / 11
C03	ELEVATION AND ANTENNA PLAN	1	04 / 21 / 11
C04	STRUCTURAL DETAILS	1	04 / 21 / 11
C05	STRUCTURAL DETAILS	1	04 / 21 / 11
E01	GROUNDING DETAILS & PLUMBING DIAGRAM	1	04 / 21 / 11
G01	GENERAL NOTES	1	04 / 21 / 11
G02	GENERAL NOTES	1	04 / 21 / 11

DO NOT SCALE DRAWINGS
 CONTRACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON SITE. IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING. NOTES TO THE WORK OR BE RESPONSIBLE FOR SAME.



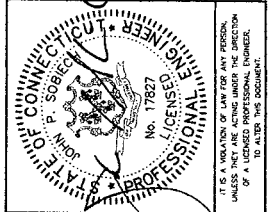
NEW CINGULAR WIRELESS PCS, LLC
 500 ENTERPRISE DRIVE
 ROCKY HILL, CT 06067

CHA
 22702 - 1038 - 43000



CHA PROJECT NO.
 22702 - 1038 - 43000

NO.	DATE	DESCRIPTION
0	03/27/11	ISSUED FOR PERMIT
1	04/14/11	ISSUED FOR CONSTRUCTION
1	04/14/11	ISSUED FOR CONSTRUCTION



SITE ID: CT5513
SITE NAME: BETHEL
SITE ADDRESS: 11 FRANCIS J CLARKE CIRCLE
 BETHEL, CT 06801
 FAIRFIELD COUNTY

SHEET TITLE: TITLE SHEET

SHEET NUMBER: T01

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



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

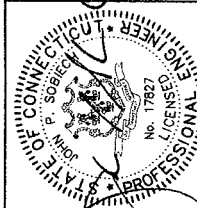
Drawing Copyright © 2011



CHA PROJECT NO.
22702 - 1038 - 40000

218 New Britain Avenue, Suite 212, Rocky Hill, CT 06867-2228
Tel: (860) 261-0000 Fax: (860) 261-0001

NO.	DATE	DESCRIPTION
0	03/27/11	ISSUED FOR REVIEW
1	04/13/11	ISSUED FOR CONSTRUCTION
2	04/13/11	ISSUED FOR CONSTRUCTION
3	04/13/11	ISSUED FOR CONSTRUCTION
4	04/13/11	ISSUED FOR CONSTRUCTION

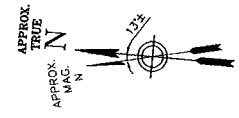
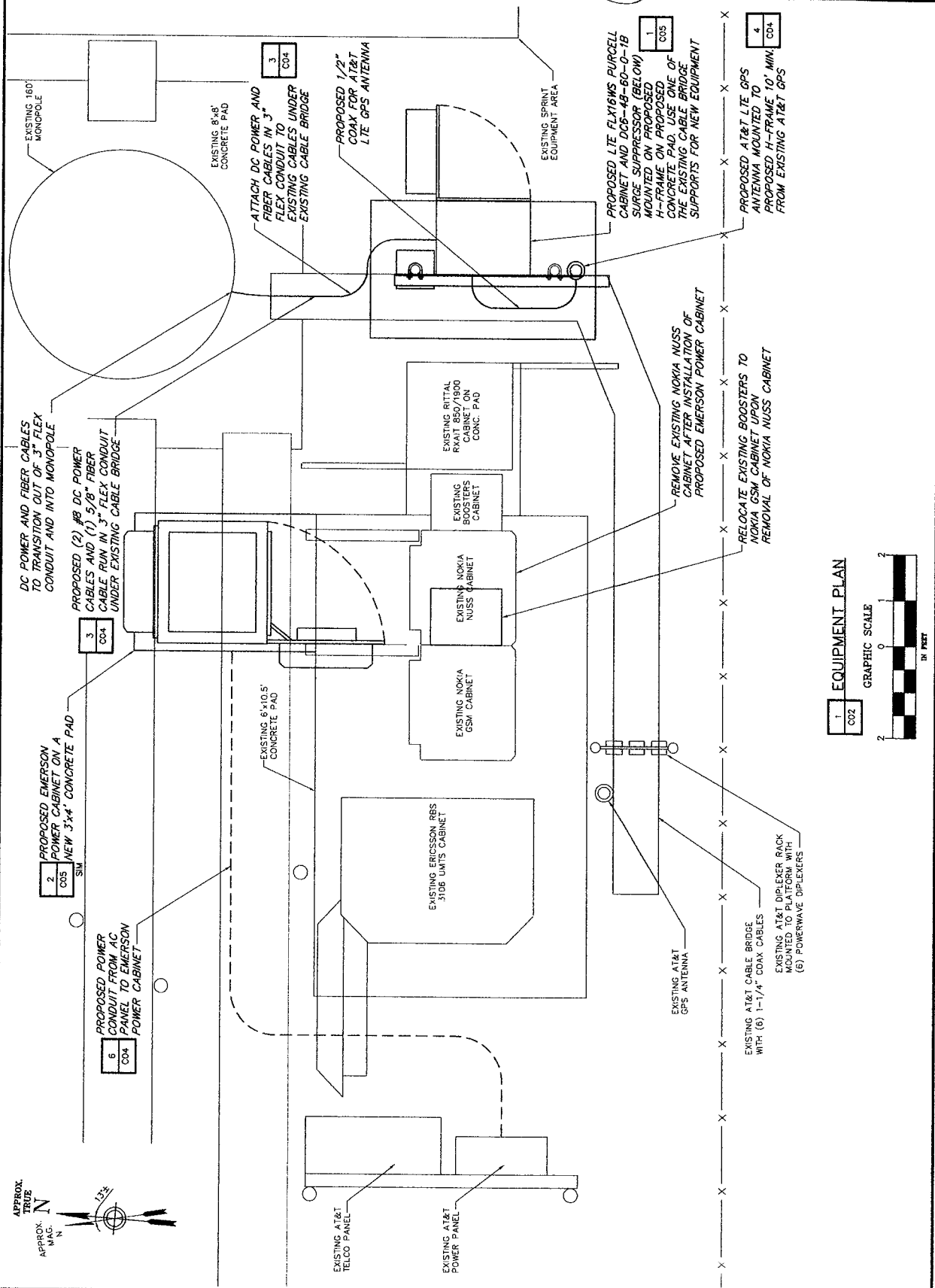


IT IS A VIOLATION OF LAW FOR ANY PERSON UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER TO ALTER THIS DOCUMENT.

SITE ID: C15513
SITE NAME: BETHEL
SITE ADDRESS: 11 FRANCIS J. CLARKE CIRCLE
BETHEL, CT 06801
FAIRFIELD COUNTY

SHEET TITLE: EQUIPMENT PLAN

SHEET NUMBER: C02



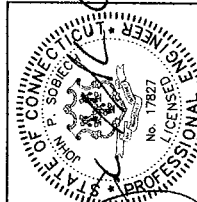


NEW CONGLUS WIRELESS PCS, LLC
500 ENTERPRISE DRIVE
ROCKY HILL, CT 06867



CHA PROJECT NO:
27202 - 1035 - 43000

NO	DATE	DESCRIPTION	BY	CHKD
0	03/23/11	ISSUED FOR PERMITS	W.P.S.	J.P.S.
1	04/23/11	ISSUED FOR CONSTRUCTION	W.P.S.	J.P.S.
2	05/10/11	ISSUED FOR CONSTRUCTION	W.P.S.	J.P.S.

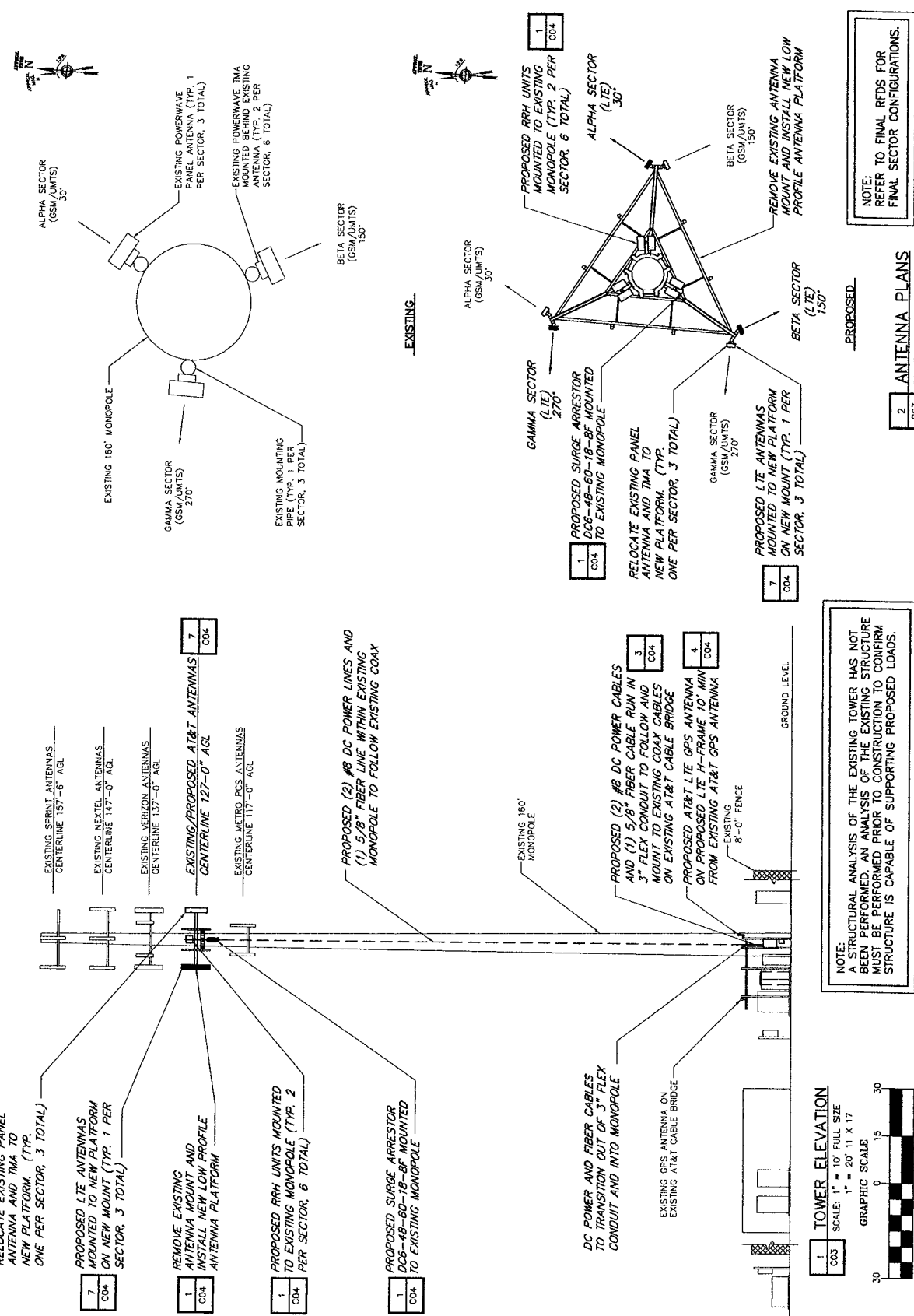


IT IS A VIOLATION OF LAW FOR ANY PERSON UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER TO ALTER THIS DOCUMENT.

SITE ID:
CT5513
SITE NAME:
BETHEL
SITE ADDRESS:
11 FRANCIS J
CLARKE CIRCLE
BETHEL, CT
06801
FAIRFIELD COUNTY

SHEET TITLE
ELEVATION AND
ANTENNA PLAN

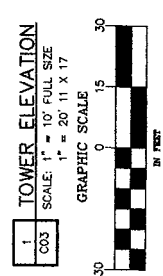
SHEET NUMBER
C03



NOTE:
REFER TO FINAL RFDS FOR
FINAL SECTOR CONFIGURATIONS.

2 ANTENNA PLANS
SCALE: N.T.S.

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



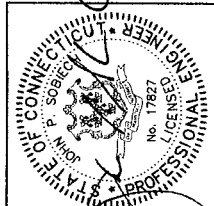


Your world. Delivered.
 NEW CIRCULAR WIRELESS PCS, LLC
 500 ENTERPRISE DRIVE
 ROCKY HILL, CT 06067



CHA PROJECT NO:
 22702 - 1028 - 43000

NO.	SUBMITTAL
0	13/22/11 ISSUED FOR REVIEW
1	18/2/11 CHG. REV. 1 ADD'D. P.P.
1	18/2/11 ISSUED FOR CONSTRUCTION
1	18/2/11 DATE P.L. 1/27/11 P.P.

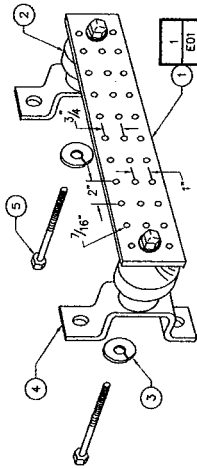


IT IS A VIOLATION OF LAW FOR ANY PERSON UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER TO REPRODUCE THIS DOCUMENT.

SITE ID: CT5513
 SITE NAME: BETHEL
 SITE ADDRESS: 11 FRANCIS J CLARKE CIRCLE, BETHEL, CT 06801
 FAIRFIELD COUNTY

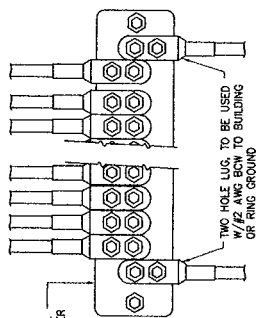
SHEET TITLE
 GROUNDING DETAILS & PLUMBING DIAGRAM

SHEET NUMBER
 E01



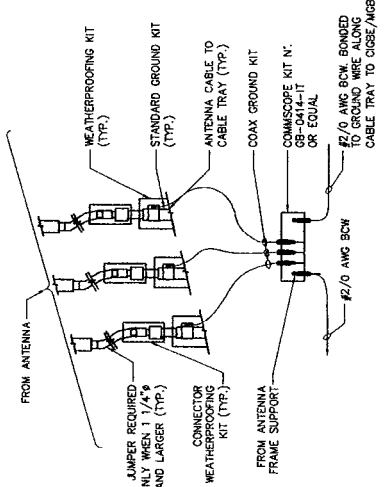
- LEGEND**
- 1 - COPPER GROUND BAR. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
 - 2 - INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4, (NOT TO BE USED ON BARS PHYSICALLY ATTACHED TO TOWER.)
 - 3 - 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-B
 - 4 - WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT. NO. A-8056
 - 5 - 5/8-11 X 1 1/4" C-8 BOLTS, NEWTON INSTRUMENT CO. CAT. NO. 3012-1

2 GROUND BAR
 E01 NO SCALE



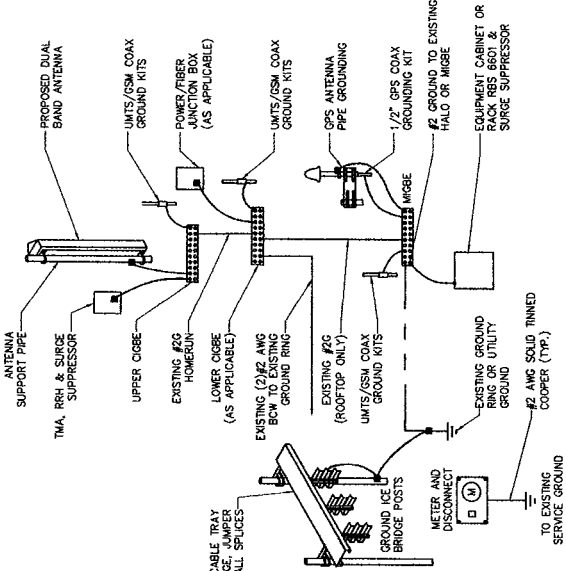
2 GROUND BAR ON WALL OR ON ANTENNA TOWER
 E01 NO SCALE

1 GROUND WIRE INSTALLATION TO GROUND BAR
 E01 NO SCALE

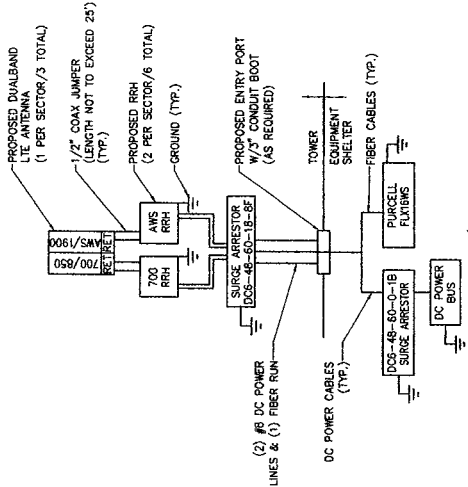


- NOTE.**
- 1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGRE.

3 GROUND WIRE TO GROUND BAR CONNECTION DETAIL
 E01 NO SCALE



4 GROUNDING RISER DIAGRAM
 E01 NO SCALE



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

5 PLUMBING DIAGRAM
 E01 NO SCALE

FOUNDATION AND SOIL PREPARATION NOTES:

- BEAR ALL FOOTINGS ON COMPACTED STRUCTURAL FILL OR NATIVE UNDISTURBED SOIL. ALL EXCAVATIONS SHALL BE PROTECTED FROM WEATHER. PREVIOUSLY EXISTING FOUNDATION WALLS SHALL BE REMOVED AND REWORKED TO SATISFACTION OF OWNER'S REPRESENTATIVE.
- BEAR ALL CONCRETE PADS AND SLABS ON GRADE ON A 6" LAYER OF ASTM #57 STONE. UNDISTURBED SOIL SHALL BE COMPACTED TO 95% OF STANDARD PROCTOR BEARING SURFACES. PREVIOUSLY ACCEPTED BY THE GEOTECHNICAL ENGINEER, SOIL SHALL BE REMOVED AND REWORKED TO SATISFACTION OF OWNER'S REPRESENTATIVE.
- DO NOT PLACE CONCRETE IN WATER OR ON FROZEN GROUND.
- DO NOT ALLOW CONCRETE SUBGRADE TO FREEZE DURING CONCRETE SETTING AND CURING PERIOD OR FOR A MINIMUM OF 14 DAYS AFTER PLACEMENT.
- STRUCTURAL FILL AND BACKFILL: SOUND, DURABLE, SAND, GRAVEL, STONE, OR BLENDS OF THESE MATERIALS, FREE FROM ORGANIC, FROZEN OR OTHER DELETERIOUS MATERIALS, AND MEETING THE FOLLOWING GRADATION REQUIREMENTS:


SIEVE	PERCENT PASSING
4"	100
No. 40	0 - 70
No. 200	0 - 10
- FINES PASSING NO. 200 SHALL BE NON-PLASTIC.
- PARTICLE SIZE ANALYSIS SHALL SHOWN NO GAP GRADING.
- THE SOIL BENEATH STRUCTURES AND PADS AND 5 FEET AROUND THEIR PERIMETER SHALL BE TREATED AS FOLLOWS:
 - STRENGTHEN THE AREA OF ALL VEGETATION AND REMOVE ALL ORGANICS.
 - PROF. ROLL THE SITE WITH TANDEN AXLE LOADED DUMP TRUCK IN TWO DIRECTIONS. ANY AREAS WHICH ARE NOTED TO RUT OR PUMP EXCESSIVELY SHALL BE UNDERGUT BY 12" AND BACKFILLED WITH COMPACTED STRUCTURAL FILL ACCORDING TO THE COMPACTION REQUIREMENTS NOTED BELOW.
 - EITHER IMPROVED STRUCTURAL FILL OR ON SITE MATERIAL MEETING THE REQUIREMENTS OF STRUCTURAL FILL. THE STRUCTURAL FILL SHALL HAVE A PLASTICITY INDEX BETWEEN 4 AND 12 AND A LIQUID LIMIT LESS THAN 40. PLACE ONE (1) 12" OR SELECT FILL IN 8"-NOCH LIFTS AND COMPACT TO AT LEAST 95% OF STANDARD PROCTOR BEARING SURFACES WITHIN 3' OF THE SURFACE AND 43 PERCENTAGE POINTS OF OPTIMUM.
 - EACH LIFT SHALL BE TESTED FOR MOISTURE CONTENT AND IN PLACE DENSITY AT A RATE OF ONE TEST PER 3,000 SQUARE FEET (MIN OF THREE PER LIFT).
 - ALL CONCRETE PADS AND SLABS-ON-GRADE SHALL BEAR ON A BASE COURSE OF CLEAN, COMPACTED ASTM #57 STONE A MINIMUM OF 6" THICK.
- CONTRACTOR SHALL FINISH GRADE SITE LEVEL WITH EXISTING, 5 FEET BEYOND PROPOSED PADS AND STRUCTURES, THEN TAPER TO EXISTING GRADE, IF REQUIRED, AT A MAXIMUM SLOPE OF 3:1.

CAST-IN-PLACE CONCRETE NOTES:

- DESIGN AND CONSTRUCTION OF ALL CONCRETE ELEMENTS SHALL CONFORM TO THE REQUIREMENTS OF THE ACI 308 CODE OF PRACTICE AND THE SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS - ACI 318, BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
- MIX DESIGN SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO PLACING CONCRETE. PREPARE AND SUBMIT MIX DESIGNS IN ACCORDANCE WITH ACI 211, CONCRETE MIXTURES; AND ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE.
- ALL CONCRETE SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI. A MINIMUM OF 854 POUNDS OF ASTM C-150 TYPE I PORTLAND CEMENT PER CUBIC YARD SHALL BE USED. IN THE ADDITION OF ASTM C-150, 10% OF THE TOTAL CEMENT REQUIRED, 6.5% - 7.5% SLUMP PRIOR TO THE ADDITION OF ASTM C-150 SHALL BE REQUIRED. (1) WATER REDUCING AGENT, 20% OF CLASS F FLASH MAY BE USED WITH THE PRIOR APPROVAL OF THE ENGINEER AND THE CONCRETE FINISHER/CONTRACTOR.
- CONCRETE AGGREGATE SHALL MEET ASTM C 33 SPECIFICATIONS AND SHALL HAVE A MAXIMUM SIZE OF 3/4".
- CONCRETE SHALL HAVE A MAXIMUM WATER TO CEMENT RATIO OF 0.45. ADDITION OF WATER AT THE JOB SITE IS PROHIBITED WITHOUT PRIOR APPROVAL OF THE ENGINEER.
- IF THE AIR TEMPERATURE IS GREATER THAN 90 DEGREES WITHIN 24 HOURS AFTER PLACEMENT, HOT WEATHER CONCRETE PROCEDURES PER ACI 308R SHALL BE USED. THESE PROCEDURES MAY INCLUDE THE FOLLOWING:
 - PLACING THE CONCRETE IN THE EARLY MORNING HOURS
 - THE USE OF EVAPORATION REDUCER (SEE BELOW)
 - THE USE OF MISTING AS A CURING METHOD
 - THE USE OF WET BLANKETS AS A CURING METHOD
 - THE USE OF A RETARDING ADMIXTURE (NOT PREFERABLE)


- COLD WEATHER CONCRETING SHALL BE PERFORMED PER ACI 308R REQUIREMENTS.
- FOUR 4X8 CONCRETE CYLINDERS SHALL BE MADE FOR EVERY 75 CUBIC YARDS OR EACH DAY'S POUR. TO BE TESTED AT 7, 28, 56 AND ONE TO HOLD. THE CONCRETE CYLINDERS IS MADE.
- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE AMERICAN CONCRETE INSTITUTE STANDARDS "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" (ACI 318) AND "SPECIFICATIONS FOR STRUCTURAL CONCRETE REINFORCEMENT" (ACI 308). REINFORCEMENT SHALL MEET CLASS B TENSION LAP REQUIREMENTS UNLESS NOTED OTHERWISE.
- COVER FOR ALL REINFORCEMENT SHALL MEET THE COVER REQUIREMENTS AS SHOWN IN THE LATEST ACI 318, AS NOTED BELOW OR AS SHOWN ON THE DETAILS. COVER DIMENSIONS SHOWN ON THE DETAILS CONTROL OVER THE ACI 318 OR THOSE NOTED BELOW:
 - AGAINST FORMED SURFACES: 1 1/2"
 - AGAINST EARTH: 3"
 - BETWEEN REBAR: 1 1/2"
 - TOP OF SLAB ON GRADE: 1 1/2"
- REINFORCING STEEL SHALL BE NEW DOMESTIC DEFORMED BILLET STEEL CONFORMING TO ASTM A-615, GRADE 60. #4 REINFORCING BARS, AND SMALLER SHALL BE COLD BENT BARS. BARS SHALL BE BENT IN THE FIELD WITH HEAT UNLESS NOTED ON THE PLANS OR DIRECTED BY THE ENGINEER OTHERWISE.
- REINFORCING DETAILS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ACI 318.
- REINFORCING SPICES SHALL BE CLASS 'B' AND ALL HOOKS SHALL BE STANDARD, UNCL. DO NOT WELD REINFORCING.
- PROVIDE 3/4" x 3/4" CHAMFER AT ALL EXPOSED CORNERS UNLESS NOTED OTHERWISE.
- NO HOLES OR OPENINGS ARE PERMITTED THROUGH CONCRETE SLABS OR WALLS EXCEPT AS SHOWN AND AS DETAILED ON DRAWINGS.
 - WHERE SHOWN AS DETAILED ON DRAWINGS.
 - MISCELLANEOUS HOLES THROUGH SLABS OR WALLS WHICH DO NOT DISPLACE MORE THAN ONE BAR. THESE DO NOT REQUIRE ADDITIONAL REINFORCEMENT.
- LOCATE ADDITIONAL CONSTRUCTION JOINTS REQUIRED TO FACILITATE CONSTRUCTION AS NOTED ON DRAWINGS. LOCATE ALL CONSTRUCTION JOINTS AT MASONRY CONTROL JOINTS WHERE APPROPRIATE. LOCATE ALL CONSTRUCTION JOINTS CONTINUOUSLY THROUGH JOINT. DETAIL JOINT AND SHOW ON SHOP DRAWINGS.
- CAST CONCRETE ON SLOPED SURFACES BEGINNING AT LOWEST ELEVATION AND CONTINUING MONOTONICALLY TOWARD HIGHER ELEVATIONS UNTIL INTENDED POUR IS COMPLETE.
- PLACE CONCRETE IN A UNIFORM MANNER TO PREVENT THE FORMATION OF COLD JOINTS AND OTHER PLANES OF WEAKNESS. VIBRATE THE CONCRETE TO FULLY EMBED REINFORCING. DO NOT USE VIBRATORS TO TRANSPORT CONCRETE THROUGH CHUTES OR FORMWORK.
- REINFORCING BARS, BAR SUPPORTS, AND SPACERS SHALL BE DETAILED AND PROVIDED IN ACCORDANCE WITH THE LATEST ACI DETAILING MANUAL. USE WIRE-BAR SUPPORTS COMPLYING WITH CRSI SPECIFICATIONS. SUPPORTS SHALL NOT BE PLACED FURTHER UNLESS NOTED OTHERWISE ON DRAWINGS.
 - AT SLABS-ON-GRADE (SLAB THICKNESS UNLESS 1 1/2 INCHES) HIGH, TYPE B21 BASE MATERIAL WILL NOT BE USED.
 - CONCRETE SURFACES WHERE LEGS OF SUPPORTS ARE IN CONTACT WITH THE FORMS, PROVIDE SUPPORTS WITH LEGS THAT ARE PLASTIC PROTECTED (CRSI, CLASS 1) OR STAINLESS STEEL PROTECTED (CRSI, CLASS 2).
- USE ONE OF THE FOLLOWING SEALERS ON ALL INTERIOR EXPOSED CONCRETE SURFACES:
 - ACRYLIC POLYMER EMULSION
 - EPOXY DIAMOND HARD BY EUCLID
- DEGUSSA CONFLAM OR EUCORBAR EVAPORATION REDUCERS SHALL BE USED AFTER EACH FINISHING OPERATION ON THE CAST IN PLACE CONCRETE FLOOR SLAB UNLESS PRIOR APPROVAL FROM THE ENGINEER HAS BEEN OBTAINED TO NOT USE THIS PRODUCT.
- SAWTOOTH IN CONCRETE SLABS SHALL BE MADE AS SOON AS THE CONCRETE IS OF SUFFICIENT STRENGTH TO SAW WITHOUT RAVELING THE AGGREGATE. ANY TIME LAPSE GREATER THAN 8 HOURS AFTER PLACING THE CONCRETE SHALL BE PERMITTED ONLY IF APPROVED BY THE ENGINEER. FILL ALL INTERIOR JOINTS WITH ARDEX MM-80 JOINT COMPOUND. FILL ALL EXTERIOR JOINTS WITH ARDEX ARDISEAL RAPID.

- ADHESIVE ANCHORS WITH REBAR OR THREADED RODS, SHALL BE AS NOTED BELOW. INSTALL ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS, WHICH INCLUDES CLEANING THE HOLE WITH AIR AND USING A MANUFACTURER APPROVED DISPENSING TOOL WITH MIXING NOZZLE.
 - INTO CONCRETE OR GROUTED CMU; HILTI HIT 150 MAX OR SIMPSON SET HIGH.
 - IF INTO CONCRETE OR GROUTED CMU; HILTI HIT 150 RE 59050.
- NO PIPING OR CONDUITS SHALL BE INSTALLED IN ANY CONCRETE WITHOUT THE APPROVAL OF THE ENGINEER. IN GENERAL, IF APPROVED BY THE ENGINEER, ANY PIPING OR CONDUITS MUST BE LOCATED IN THE MIDDLE OF THE SLAB AND NOT BE OVER ONE INCH IN DIAMETER.
- ALL DOVELS, ANCHOR BOLTS, EMBEDDED STEEL, ELECTRICAL CONDUITS, PIPE SLEEVES, PIPING, GROUNDS, AND ALL OTHER EMBEDDED ITEMS AND FORMED DETAILS SHALL BE IN PLACE BEFORE START OF CONCRETE PLACEMENT. VERIFY SIZE AND LOCATION OF ALL OPENINGS.
- ALL PIPING AND DUCT PENETRATIONS THROUGH NEW STRUCTURAL SLABS ARE TO BE SLEEVED OR CHASED. NO CORING OF SLAB IS PERMITTED. ALL PIPING THROUGH EXISTING STRUCTURAL SLABS MAY BE CORED IF APPROVED BY ENGINEER.



at&t
Your world. Delivered.

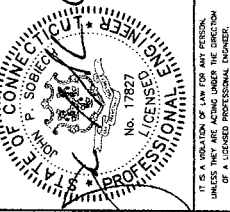
NEW CINGULAR WIRELESS PCS, LLC
500 ENTERPRISE DRIVE
ROCKY HILL, CT 06867



CHA PROJECT NO:
22702 - 1038 - 4000

3108 West Duane Highway, Suite 315, Rocky Hill, CT 06867
Tel: 860.267.2447 • www.cha.com

NO.	DATE	ISSUED FOR REVIEW	DATE	BY
0	03/23/11	ISSUED FOR REVIEW		
0	08/17/10	CHK. PLS.		JAP/JP
1	07/17/10	CHK. PLS.		JAP/JP
1	07/17/10	CHK. PLS.		JAP/JP



STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
No. 17827
P. SOBIECHOWSKI

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

SITE ID:
CT5513
SITE NAME:
BETHEL
SITE ADDRESS:
11 CLARK AVENUE
BETHEL, CT
06801
FAIRFIELD COUNTY

SHEET TITLE:
GENERAL NOTES

SHEET NUMBER:
GN02

**Structural Analysis for
SBA Network Services, Inc.**

155 ft Monopole

**SBA Site Name: North Bethel
SBA Site ID: CT00248-S**

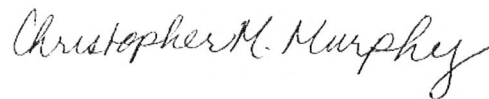
FDH Project Number 11-05206E S1 (R1)

Prepared By:



Sean O'Sullivan, EI
Project Engineer

Reviewed By:



Christopher M. Murphy, PE
President
CT PE License No. 25842

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2730 Rowland Rd.
Raleigh, NC 27615
(919) 755-1012
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June 6, 2011

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 Conclusions
 Recommendations

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EXECUTIVE SUMMARY

At the request of SBA Network Services, Inc., FDH Engineering, Inc. performed a structural analysis of the monopole located in Bethel, CT to determine whether the tower is structurally adequate to support both the existing and proposed loads, pursuant to the *Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, TIA/EIA-222-F*. Information pertaining to the existing/proposed antenna loading, current tower geometry, and member sizes was obtained from:

- Summit Manufacturing LLC. (Job No. 4071) original design drawings dated October 22, 1998
- Paul J. Ford and Company (Job No. 29200-1210) Pad and Pier Foundation design drawings dated August 17, 2000
- Jaworski Geotech, Inc. (Project No. C98342G) Geotechnical Evaluation dated August 6, 1998
- SBA Network Services, Inc.

The *basic design wind speed* per *TIA/EIA-222-F* standards is 85 mph without ice and 38 mph with 3/4" radial ice. Ice is considered to increase in thickness with height.

Conclusions

With the current and proposed antennas from AT&T at 127 ft., the tower meets the requirements of the *TIA/EIA-222-F* standards provided the **Recommendations** below are satisfied. Furthermore, provided the foundation was constructed per the original design drawings (see Summit Job No. 4071), the foundation should have the necessary capacity to support both the proposed and existing loading. For a more detailed description of the analysis of the tower, see the **Results** section of this report.

Our structural analysis has been performed assuming all information provided to FDH Engineering, Inc. is accurate (i.e. the steel data, tower layout, existing antenna loading, and proposed antenna loading) and that the tower has been properly erected and maintained per the original design drawings.

Recommendations

To ensure the requirements of the *TIA/EIA-222-F* standards are met with the existing and proposed loading in place, we have the following recommendations:

1. Proposed coax should be installed inside the monopole's shaft.
 2. Proposed RRHs should be installed behind the proposed antennas.
-

APPURTENANCE LISTING

The proposed and existing antennas with their corresponding cables/coax lines are shown in **Table 1**. *If the actual layout determined in the field deviates from this layout, FDH Engineering, Inc. should be contacted to perform a revised analysis.*

Table 1 – Appurtenance Loading

Existing Loading:

Antenna No.	Antenna Elevation (ft)	Description	Coax and Lines ¹	Carrier	Mount Elevation (ft)	Mount Type
1-9	157 ²	(2) Decibel DB948F85T2E-M (1) Decibel DB980H90E-M (1) Andrew HBX-6516DS-R2M (2) Andrew HBX-9014DS-R2M (3) Argus LLPX310R (2) Dragonwave A-ANT-23G-2-C Dishes (3) Samsung U-RAS Flexible RRHs (1) Powerwave OS-1991-222W TMA	(6) 1-5/8" (6) 5/16" (2) 1/2"	Sprint	157	(1) Low Profile Platform
10-18	147	(9) Decibel DB844H90E-XY	(9) 1-1/4"	Nextel	147	(1) Low Profile Platform
19-30	137	(2) Antel LPA-80080/6CF (2) Antel LPA-80090/4CF (2) Antel LPA-80063/6CF (6) Antel LPA-185090/8CF (1) GPS	(12) 1-5/8" (1) 1/2"	Verizon	137	(1) Low Profile Platform
31-33	127 ³	(3) Powerwave 7770.00 (6) Powerwave LGP21404 TMA's	(9) 1-1/4"	AT&T	127	(3) Standoffs
34-39	117 ⁴	(3) Kathrein 800-10504 (3) Kathrein 742-351 (6) RETs	(12) 1-5/8" (1) 1/2"	Metro PCS	117	(3) T-Arms

¹ The existing coax is inside the pole's shaft, unless otherwise noted.

² Sprint's (6) 1-5/8" existing coax are installed outside the monopole shaft in a single row.

³ The existing loading for AT&T at 127' will be altered. See the proposed loading below.

⁴ Metro PCS's (12) 1-5/8" coax are installed double stacked (6-on-6) outside the monopole shaft.

Proposed Loading:

Antenna No.	Antenna Elevation (ft)	Description	Coax and Lines	Carrier	Mount Elevation (ft)	Mount Type
1-6	127 ¹	(3) Powerwave 7770.00 (3) Powerwave P65-16 (6) Powerwave LGP21401 TMA's (6) Ericsson RRUS-11 RRHs (1) Raycap DC6-48-60-18-8F	(9) 1-1/4" (1) Fiber (2) DC Power cables	AT&T	127	(1) Low Profile Platform

¹ This represents the final configuration for AT&T at 127'. According to information provided by SBA, AT&T will remove the existing standoffs and install (3) Powerwave P65-16 Panels, (6) Ericsson RRUS-11 RRHs, (1) Raycap DC6-48-60-18-8F Surge arrester, (1) Fiber line and (2) DC cables. AT&T reserves the right to (9) 1-1/4" coax at 127'. Analysis performed with full leased loading in place.

RESULTS

Based on information obtained from the original design drawings, the yield strength of steel for individual members was as follows:

Table 2 - Material Strength

Member Type	Yield Strength
Tower Shaft Sections	65 ksi
Base Plate	50 ksi
Anchor Bolts	75 ksi

Table 3 displays the summary of the ratio (as a percentage) of actual force in the member to their allowable capacities. Values greater than 100% indicate locations where the maximum force in the member exceeds its allowable capacity. *Note: Capacities up to 105% are considered acceptable.* **Table 4** displays the maximum foundation reactions.

If the assumptions outlined in this report differ from actual field conditions, FDH Engineering, Inc. should be contacted to perform a revised analysis. Furthermore, as no information pertaining to the allowable twist and sway requirements for the existing or proposed appurtenances was provided, deflection and rotation were not taken into consideration when performing this analysis.

See the **Appendix** for detailed modeling information.

Table 3 – Summary of Working Percentage of Structural Components

Section No.	Elevation ft	Component Type	Size	% Capacity	Pass Fail
L1	155 - 120	Pole	TP26x16.5x0.1875	75.6	Pass
L2	120 - 89.5	Pole	TP33.91x24.7429x0.3125	83.0	Pass
L3	89.5 - 44	Pole	TP45.64x32.1306x0.375	89.0	Pass
L4	44 - 0	Pole	TP56.83x43.3286x0.375	97.2	Pass
		Anchor Bolts	(20) 2.25" Ø w/ BC = 64"	74.0	Pass
		Base Plate	64" SQ. PL x 2.75" thk.	84.0	Pass

*Capacities include 1/3 allowable increase for wind.

Table 4 – Maximum Base Reactions

Base Reactions	Current Analysis* (TIA/EIA-222-F)	Original Design (TIA/EIA-222-F)
Axial	37 k	54 k
Shear	39 k	33 k
Moment	3,897 k-ft	3,938 k-ft

* Foundation determined to be adequate per independent analysis.

GENERAL COMMENTS

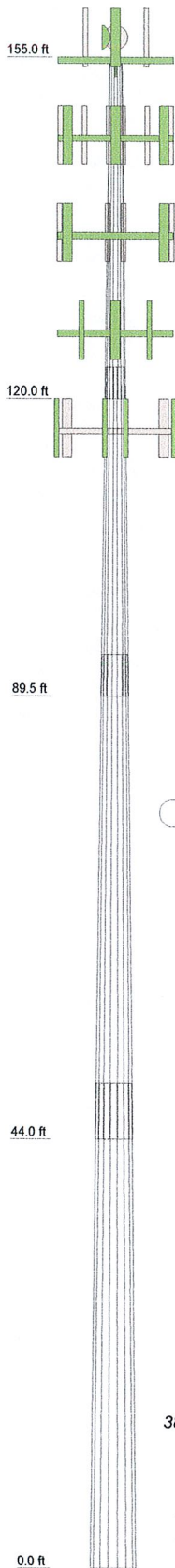
This engineering analysis is based upon the theoretical capacity of the structure. It is not a condition assessment of the tower and its foundation. It is the responsibility of SBA Network Services, Inc. to verify that the tower modeled and analyzed is the correct structure (with accurate antenna loading information) modeled. If there are substantial modifications to be made or the assumptions made in this analysis are not accurate, FDH Engineering, Inc. should be notified immediately to perform a revised analysis.

LIMITATIONS

All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of this report. All opinions and conclusions are subject to revision based upon receipt of new or additional/updated information. All services are provided exercising a level of care and diligence equivalent to the standard and care of our profession. No other warranty or guarantee, expressed or implied, is offered. Our services are confidential in nature and we will not release this report to any other party without the client's consent. The use of this engineering work is limited to the express purpose for which it was commissioned and it may not be reused, copied, or distributed for any other purpose without the written consent of FDH Engineering, Inc.

APPENDIX

Section	1	2	3	4
Length (ft)	35.00	33.75	49.75	49.75
Number of Sides	18	18	18	18
Thickness (in)	0.1875	0.3125	0.3750	0.3750
Socket Length (ft)	3.25	4.25	5.75	43.3286
Top Dia (in)	16.5000	24.7429	32.1306	56.8300
Bot Dia (in)	26.0000	33.9100	45.6400	10.0
Grade			A607-65	
Weight (K)	1.5	3.3	7.8	22.6



DESIGNED APPURTENANCE LOADING

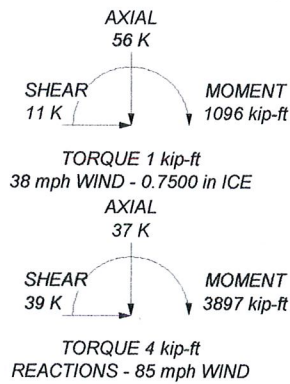
TYPE	ELEVATION	TYPE	ELEVATION
DB948F85T2E-M w/Mount Pipe (Sprint)	155	GPS (Verizon)	137
DB948F85T2E-M w/Mount Pipe (Sprint)	155	(2) LPA-185090/8 w/Mount Pipe (Verizon)	137
Andrew HBX-9014DS-R2M w/ Mount Pipe (Sprint)	155	(2) LPA-185090/8 w/Mount Pipe (Verizon)	137
DB980H90E-M w/Mount Pipe (Sprint)	155	(2) LPA-185090/8 w/Mount Pipe (Verizon)	137
Andrew HBX-6516DS-R2M w/ Mount Pipe (Sprint)	155	Powerwave 7770 w/ Mount Pipe (ATT)	127
Andrew HBX-9014DS-R2M w/ Mount Pipe (Sprint)	155	Powerwave 7770 w/ Mount Pipe (ATT)	127
Argus LLPX310R w/ Mount Pipe (Sprint)	155	(2) TMA - Powerwave LGP21401 (ATT)	127
Argus LLPX310R w/ Mount Pipe (Sprint)	155	(2) TMA - Powerwave LGP21401 (ATT)	127
Argus LLPX310R w/ Mount Pipe (Sprint)	155	Powerwave P65-16 w/ Bracket (ATI)	127
U-RAS Flexible RRH (Sprint)	155	Powerwave P65-16 w/ Bracket (ATI)	127
U-RAS Flexible RRH (Sprint)	155	Powerwave P65-16 w/ Bracket (ATI)	127
U-RAS Flexible RRH (Sprint)	155	(2) Ericsson-RRUS-11 (ATI)	127
U-RAS Flexible RRH (Sprint)	155	(2) Ericsson-RRUS-11 (ATI)	127
TMA - Powerwave OS-1991-222W (Sprint)	155	(2) Ericsson-RRUS-11 (ATI)	127
Low Profile Platform (Sprint)	155	Raycap DC6-48-60-18-8F (ATI)	127
Lighting Rod	155	Low Profile Platform (ATI)	127
Dragonwave A-ANT-23G-2-C (Sprint)	155	(2) TMA - Powerwave LGP21401 (ATI)	127
Dragonwave A-ANT-23G-2-C (Sprint)	155	Powerwave 7770 w/ Mount Pipe (ATT)	127
Low Profile Platform (Nextel)	147	Kathrein 800-10504 w/ Mount Pipe (Metro PCS)	117
(3) DB844H90E-XY w/Mount Pipe (Nextel)	147	Kathrein 742-351 w/ Mount Pipe (Metro PCS)	117
(3) DB844H90E-XY w/Mount Pipe (Nextel)	147	Kathrein 742-351 w/ Mount Pipe (Metro PCS)	117
(3) DB844H90E-XY w/Mount Pipe (Nextel)	147	Kathrein 742-351 w/ Mount Pipe (Metro PCS)	117
Low Profile Platform (Verizon)	137	(2) RET (Metro PCS)	117
(2) Antel LPA-80080/6cf w/ Mount Pipe (Verizon)	137	(2) RET (Metro PCS)	117
(2) LPA-80090/4CF w/Mount Pipe (Verizon)	137	(2) RET (Metro PCS)	117
(2) Antel LPA-80063/6CF w/ Mount Pipe (Verizon)	137	T-Arms (Metro PCS)	117
		Kathrein 800-10504 w/ Mount Pipe (Metro PCS)	117
		Kathrein 800-10504 w/ Mount Pipe (Metro PCS)	117

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A607-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 97.2%



 FDH Engineering, Inc. 2730 Rowland Road, Suite 100 Raleigh, NC 27615 Phone: (919) 755-1012 FAX: (919) 755-1031	Job: North Bethel, CT00248-S Project: 11-05206E S1 (R1)	
	Client: SBA Network Code: TIA/EIA-222-F Path:	Drawn by: Sean O'Sullivan Date: 06/06/11
	App'd: Scale: NTS Dwg No. E-1	
	<small>3/8 - 10/16/2011 Project: 11-05206E S1 (R1) - SA ATT/Drawn/Sean Bethel, CT00248-S</small>	

P65-16-XLH-RR**Dual Broadband Antennas**

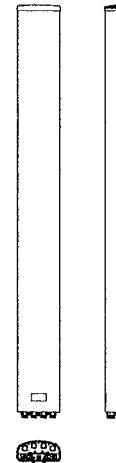
POLARIZATION: Dual linear $\pm 45^\circ$
 FREQUENCY (MHz): 698-894, 1710-2170
 HORIZONTAL BEAM WIDTH ($^\circ$): 65, 65
 GAIN (dBi/dBd): 15.5/13.4 17.5/15.4
 TILT: 1-12, 0-8
 LENGTH: 72"

ELECTRICAL SPECIFICATIONS*

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

MECHANICAL SPECIFICATIONS*

Connector	4 X 7/16 DIN Female, IP67
Connector position	Bottom
Dimensions, HxWxD, mm (ft)	72" x 12" x 6" (1829 x 305 x 152)
Mounting	Pre-mounted Tilt Brackets
Weight, with brackets, kg (lbs)	29 (64)
Weight, without brackets, kg (lbs)	24 (53)
Wind load, frontal/lateral/rear side 42 m/s Cd=1.6 (N)	1380
Maximum operational wind speed, m/s (mph)	100 (45)
Survival wind speed, m/s (mph)	150 (67)
Lightning protection	DC Ground
Operating Temperature	-40C to +60C
Radome material	PVC, IP55
Packet size, HxWxD, mm (ft)	87" x 16" x 10" (2225 x 400 x 225)
Radome colour	Light Grey
Shipping weight, kg (lbs)	34 (75)
RET	iRET AISGv1.1, MET and AISGv2.0
Brackets	7256.00, 7454.00A



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

ANTENNA PATTERNS*

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

RRUS 11 – Dual PA RRU.

Technical Data

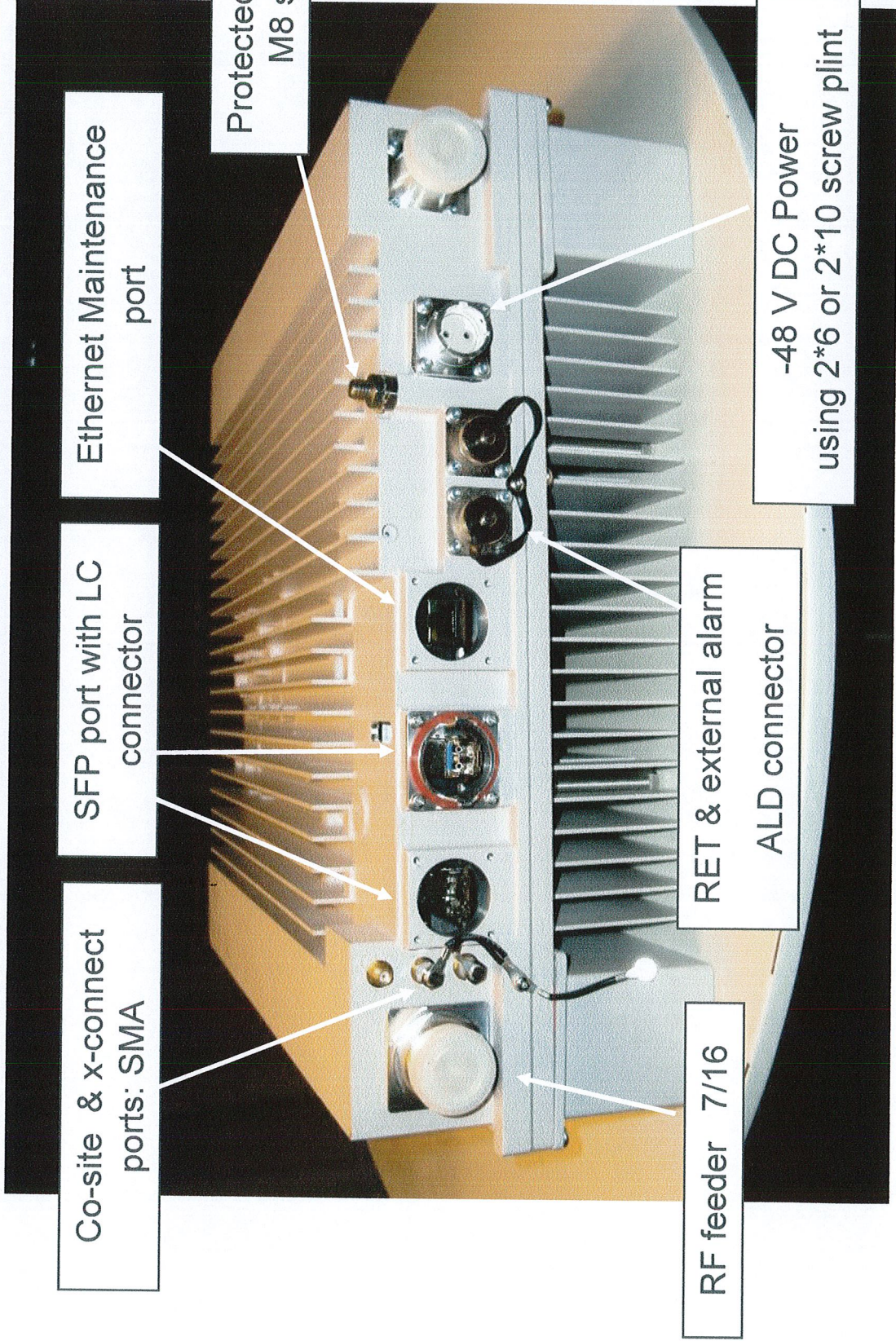
- > Multi standard
- > RF: 2x30 Watts
- > Carrier BW: 1.4 – 20 MHz
- > Alarms: 2
- > Dimensions (with sunshield):
 - Width: 17.0 in
 - Height: 17.8 in
 - Depth: 7.2 in
 - Weight: 55 lbs (Band 12)
 - Weight: 50 lbs (Band 4)
- > Temperature: -40 to +131 F
- > Cooling: Self convection
- > Power: -48 VDC
- > Rec. fuse size 20 Amp
 - Rec. DC cable:
 - > 6 mm² up to 60 meters
 - > 10 mm² over 60 meters
 - > Shielded
- > Power Cons: 200 Watts typ.



RRUS-11 I/F



RBS6000



POWER

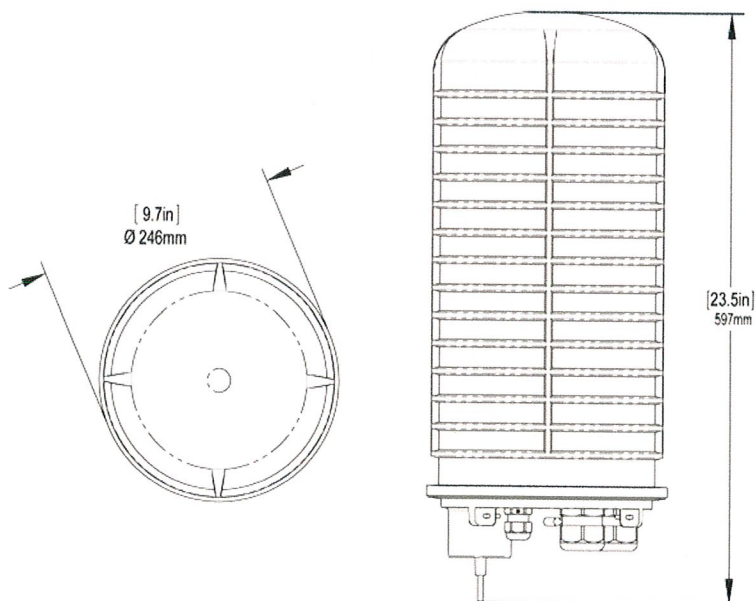
DC6-48-60-18-8F

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

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Douglas L. Culp
Real Estate Consultant

June 16, 2011

Honorable Matt Knickerbocker
First Selectman Bethel
Bethel Town Hall
1 School Street
Bethel, CT 06801

Re: Telecommunications Facility – 11 Francis J Clarke Circle Bethel, CT

Dear First Selectman Knickerbocker:

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