

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 11, 2011

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

RE: **EM-CING-085-110624B** - New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 1428 Monroe Turnpike, Monroe, 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:

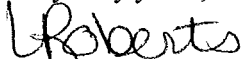
- The proposed coax and remote radio heads be installed in accordance with recommendations made in the Structural Analysis prepared by FDH Engineering dated June 16, 2011 and stamped by Christopher Murphy; and
- Following the installation of the proposed equipment, a signed letter from a Professional Engineer duly licensed in the State of Connecticut shall be submitted to the Council to certify that the installation complied with the engineer's recommendations.
- Any deviation from the proposed modification as specified in this notice and supporting materials with Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Not less than 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration;

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated June 23, 2011. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-

162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Very truly yours,



Linda Roberts

Executive Director

LR/CDM/laf

c: The Honorable Stephen Vavrek, First Selectman, Town of Monroe
SBA, Inc.



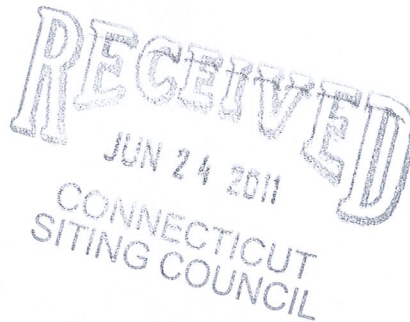
New Cingular Wireless PCS, LLC
500 Enterprise Drive
Rocky Hill, Connecticut 06067-3900
Phone: (860) 463-5511
Fax: (860) 513-7190

Douglas L. Culp
Real Estate Consultant

HAND DELIVERED

June 23, 2011

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



Re: New Cingular Wireless PCS, LLC notice of intent to modify an existing tele-communications facility located at 1428 Monroe Turnpike Monroe, 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,



Douglas L. Culp
Real Estate Consultant

Attachments

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

1428 Monroe Turnpike Monroe, CT
Site Number CT5266
Exempt Mod

Tower Owner/Manager: SBA

Equipment configuration: Monopole

Current and/or approved: Three PowerWave P7770 antennas @ 160 ft
Six PowerWave TMA's @ 160 ft
Six runs 1 5/8 inch coax to 160 ft
Equipment on Concrete Pad

Planned Modifications: Retain existing PowerWave P7770 Antenna's, TMA's @ 160 ft
Retain all Coax Cabling
Install three PowerWave P65-16 antennas or equivalent @ 160 ft
Install six remote radio heads Ericsson RRUS-11 @ 160 ft
Install one Raycap Fiber Power Connector/ Surge Suppressor – DC6-48-60-18-8F @ 160 ft
Install one fiber and two DC power cables @ 160 ft
Add additional 4 x 4 concrete pad and Emerson Cabinet within existing compound area

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 27.9 % 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 29.3 % 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							21.96
AT&T UMTS	160	1900 Band	1	500	0.0070	1.0000	0.70
AT&T UMTS	160	800 Band	1	500	0.0070	0.5867	1.20
AT&T GSM	160	800Band	4	296	0.0166	0.5867	2.83
AT&T GSM	160	1900 Band	2	427	0.0120	1.0000	1.20
Total							27.9%

* 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							21.96
AT&T UMTS	160	800 Band	1	500	0.0070	0.5867	1.20
AT&T UMTS	160	1900 Band	1	500	0.0070	1.0000	0.70
AT&T GSM	160	1900 Band	2	427	0.0120	1.0000	1.20
AT&T GSM	160	880 - 894	4	296	0.0166	0.5867	2.83
AT&T LTE	160	740 - 746	1	500	0.0070	0.4933	1.42
Total							29.3%

* 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 dated 6-16-11).

NEW CINGULAR WIRELESS PCS, LLC WIRELESS COMMUNICATIONS FACILITY CT5266 MONROE-NORTHEAST

1428 MONROE TURNPIKE MONROE, CONNECTICUT

PROJECT SUMMARY

SITE NUMBER: CT5266
SITE NAME: MONROE-NORTHEAST
SITE ADDRESS: 1428 MONROE TURNPIKE
 MONROE, CT 06488
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° 22' 30.01" N
 73° 11' 11.04" W
HORIZONTAL DATUM: NAD 83
ENGINEER: CHA, INC.
 2176 SUAS DEANE HIGHWAY
 SUITE 212
 ROCKY HILL, CT 06067
CONTACT: PAUL LUSTIANI
 (860) 257-4557

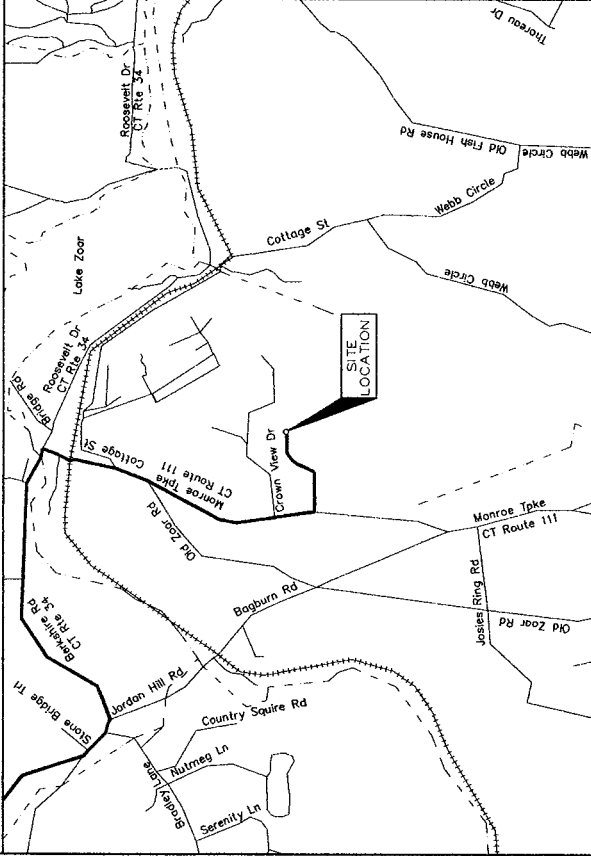
DRIVING DIRECTIONS

- FROM HARTFORD:
1. TAKE I-84W.
 2. TAKE EXIT 11 FOR CT-34/DERBY/NEW HAVEN
 3. TURN RIGHT ONTO MASSERVILLE/SQUIRE RD.
 4. TURN RIGHT ONTO CT-1115/ANDROE TURNPIKE
 5. TURN LEFT INTO DRIVEWAY AT 1428 MONROE TURNPIKE (SHORTLEY AFTER CROWN VIEW DRIVE, ALSO ON LEFT)
 6. FOLLOW DRIVE AROUND BUILDING TO TOWER SITE.

PROJECT DESCRIPTION

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

VICINITY MAP



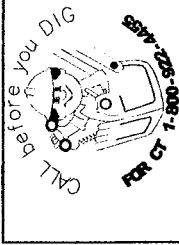
MAY 16, 2011

SHEET INDEX

SHEET NO.	SHEET TITLE	REVISION HISTORY	
		NO.	DATE
T01	TITLE SHEET	1	05 / 18 / 11
C01	COMPOUND PLAN	1	05 / 18 / 11
C02	EQUIPMENT PLAN	1	05 / 18 / 11
C03	ELEVATION AND ANTENNA PLAN	1	05 / 18 / 11
C04	STRUCTURAL DETAILS	1	05 / 18 / 11
E01	GROUNDING DETAILS & PLUMBING DIAGRAM	1	05 / 18 / 11
GN01	GENERAL NOTES	1	05 / 18 / 11
GN02	GENERAL NOTES	1	05 / 18 / 11

DO NOT SCALE DRAWINGS

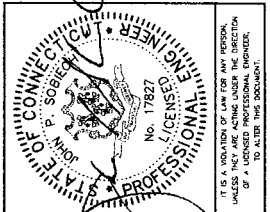
CONTRACTOR SHALL VERIFY DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.



NEW CINGULAR WIRELESS PCS, LLC
 1428 MONROE TURNPIKE
 ROCKY HILL, CT 06067

CHA
 CIVIL PROJECT NO. 22702 - 1033 - 10000
 2176 SUAS DEANE HIGHWAY, SUITE 212, ROCKY HILL, CT 06067-2209
 (860) 257-4557

NO.	DATE	DESCRIPTION
1	05/18/11	ISSUED FOR REVIEW
2	05/18/11	ISSUED FOR CONSTRUCTION
3	05/18/11	ISSUED FOR CONSTRUCTION



SITE ID: CT5266
SITE NAME: MONROE NORTHEAST
SITE ADDRESS: 1428 MONROE TPK
 MONROE, CT 06488
FAIRFIELD COUNTY

SHEET TITLE: TITLE SHEET
SHEET NUMBER: T01



NEW CINGULAR WIRELESS APES, LLC
1000 ROCKY HILL, CT 06067

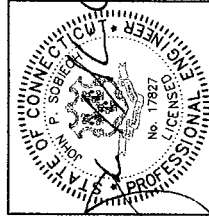


Design Company 0211

2128 Elm Street, New Britain, CT 06110
Tel: 860.234.1234

CHA PROJECT NO.
22702-1033-03000

NO.	DATE	DESCRIPTION
0	02/25/11	ISSUED FOR REVIEW
1	05/13/11	ISSUED FOR CONSTRUCTION
1	05/13/11	FOR PERMITS

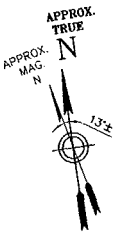
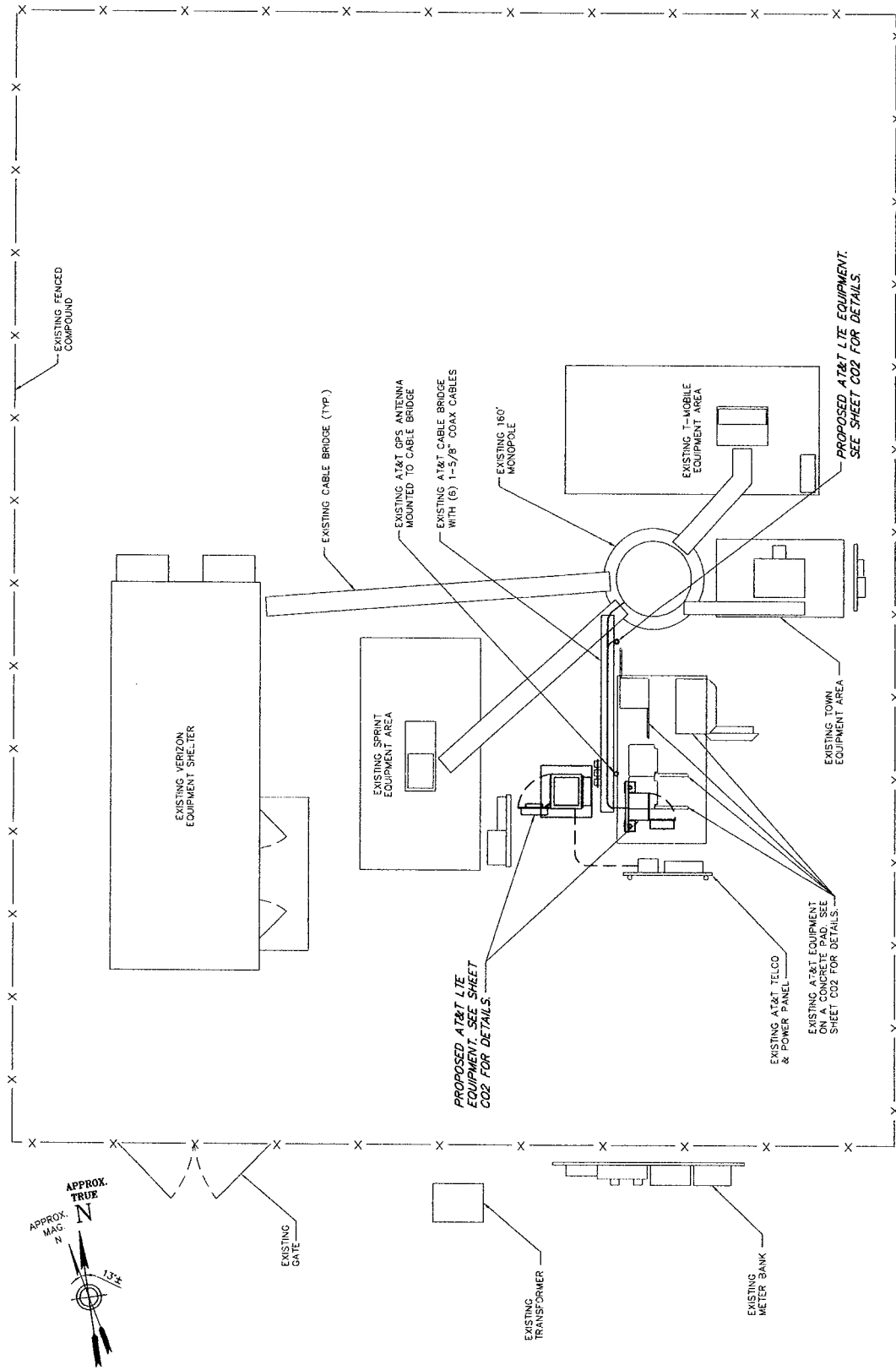


IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS HE OR SHE IS A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SITE ID: CT15266
SITE NAME: MONROE NORTHEAST
SITE ADDRESS: 1428 MONROE TPK
MONROE, CT 06468
FAIRFIELD COUNTY

SHEET TITLE
COMPOUND PLAN

SHEET NUMBER
C01



NOTE:
1. PLANS BASED ON A SITE VISIT BY CHA ON MARCH 08, 2011.
AND DRAWINGS PREPARED BY HUDSON DESIGN GROUP, LLC.,
LAST DATED 05/28/08.

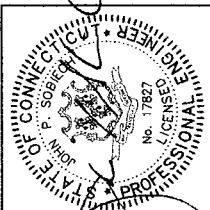


Your world. Delivered.
 NEW SINCLAIR WIRELESS, INC.: LLC
 2100 Main Street
 ROCKY HILL, CT 06867



2100 Main Street
 ROCKY HILL, CT 06867
 202.702.1033 - 4300

NO.	DATE	DESCRIPTION
1	05/19/11	ISSUE FOR CONSTRUCTION
2	05/19/11	ISSUE FOR CONSTRUCTION
3	05/19/11	ISSUE FOR CONSTRUCTION
4	05/19/11	ISSUE FOR CONSTRUCTION

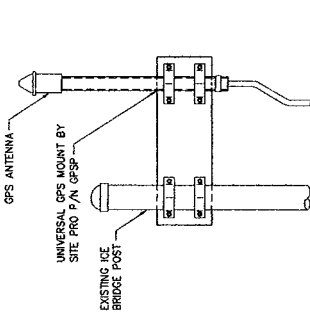


IT IS A VIOLATION OF LAW FOR ANY PERSON, OTHER THAN THE LICENSEE, TO REPRODUCE OR TO ALTER THIS DOCUMENT.

SITE ID: CTS266
 SITE NAME: MONROE NORTHEAST
 SITE ADDRESS: 1428 MONROE TPK
 MONROE, CT 06468
 FAIRFIELD COUNTY

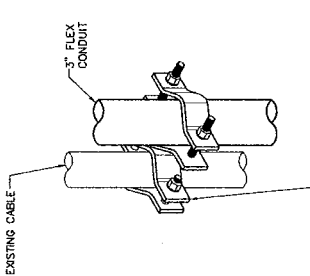
SHEET TITLE: STRUCTURAL DETAILS

SHEET NUMBER: C04



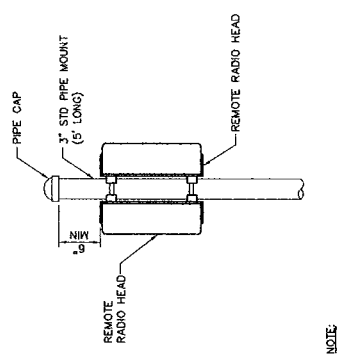
NOTE:
 1. THE WEIGHT OF THE ANTENNA MOUNT IS 6.5 LBS.

4 GPS MOUNTING DETAIL
 C04 SCALE: NTS



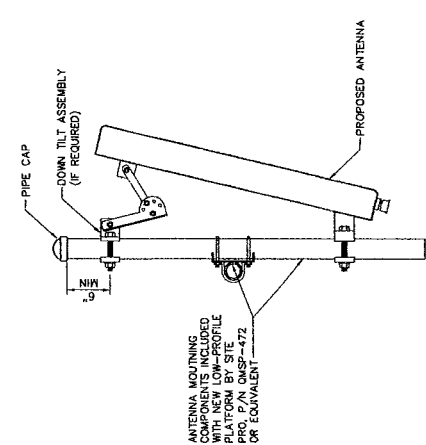
NOTE:
 ATTACH FLEX CONDUIT TO EXISTING CABLE WITH SINCLAIR CLAMP 005

3 FLEX CONDUIT DETAIL
 C04 SCALE: NTS



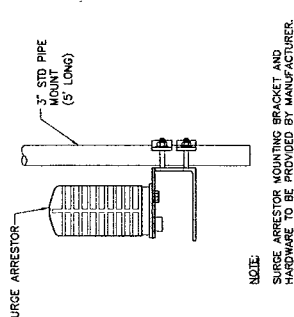
NOTE:
 REMOTE RADIO HEAD MOUNTING BRACKET AND HARDWARE TO BE PROVIDED BY MANUFACTURER.

2 RRH MOUNTING DETAIL
 C04 SCALE: NTS



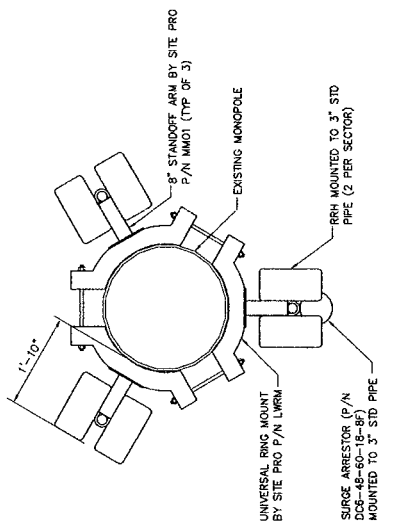
NOTE:
 1. MOUNT ANTENNA IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDED PROCEDURE.

6 TYPICAL ANTENNA MOUNTING DETAIL
 C04 SCALE: NTS

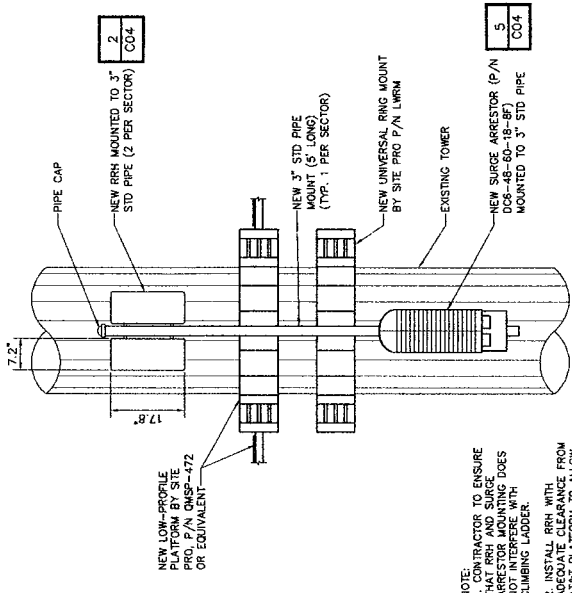


NOTE:
 SURGE ARRESTOR MOUNTING BRACKET AND HARDWARE TO BE PROVIDED BY MANUFACTURER.

5 SURGE ARRESTOR MOUNTING DETAIL
 C04 SCALE: NTS



1 RRH/SURGE ARRESTOR MOUNTING DETAIL
 C04 SCALE: NTS



5 ELEVATION
 C04 SCALE: NTS

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



Your world. Delivered.

NEW CONJUGIAL WIRELESS PCS, LLC
1000 ROCKY HILL, CT 06867

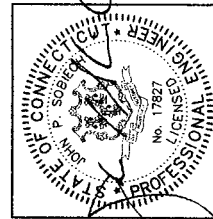
Drawn: 04/18/01



2428 Main Street, Newton, MA 02459-1001
Tel: 781.552.4477 Fax: 781.552.4478

CHA PROJECT NO.
22742 - 1033 - 0000

NO.	REVISION	DATE	BY	CHKD.	APP'D.
0	ISSUED FOR REVIEW	03/27/01			
1	ISSUED FOR CONSTRUCTION	03/27/01			
1	REV. FOR	04/18/01			

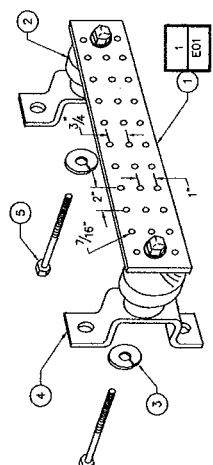


IT IS A VIOLATION OF LAW FOR ANY PERSON
UNLESS SPECIFICALLY AUTHORIZED BY THE BOARD
TO ALTER THIS DOCUMENT.

SITE ID:
CTS5266
SITE NAME:
MONROE NORTHEAST
SITE ADDRESS:
1428 MONROE TPK
MONROE, CT
06468
FAIRFIELD COUNTY

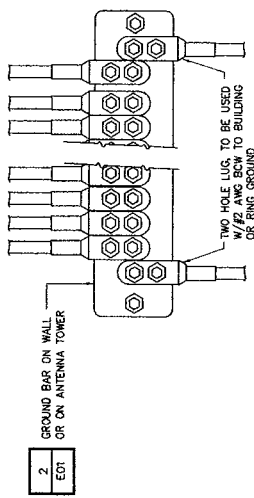
SHEET TITLE
GROUNDING DETAILS &
PLUMBING DIAGRAM

SHEET NUMBER
E01

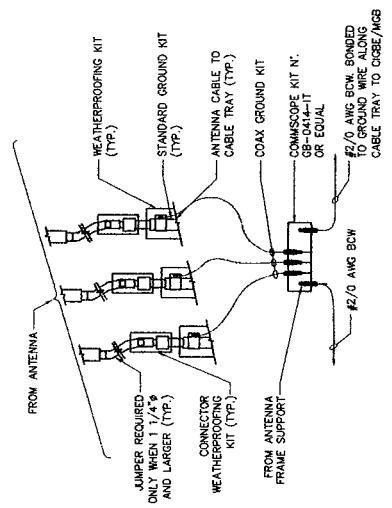


- LEGEND**
- 1 - COPPER GROUND BAR. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
 - 2 - INSULATORS. NEWTON INSTRUMENT CAT. NO. 3061-4. (NOT TO BE USED ON BARS PHYSICALLY ATTACHED TO TOWER.)
 - 3 - 5/8" LOCKWASHERS. NEWTON INSTRUMENT CO. CAT. NO. 3015-8
 - 4 - WALL MOUNTING BRACKET. NEWTON INSTRUMENT CO. CAT. NO. A-5056
 - 5 - 5/8"-11 X 1" H.H.C.S. BOLTS. NEWTON INSTRUMENT CO. CAT. NO. 3012-1

2 GROUND BAR
E01 NO SCALE

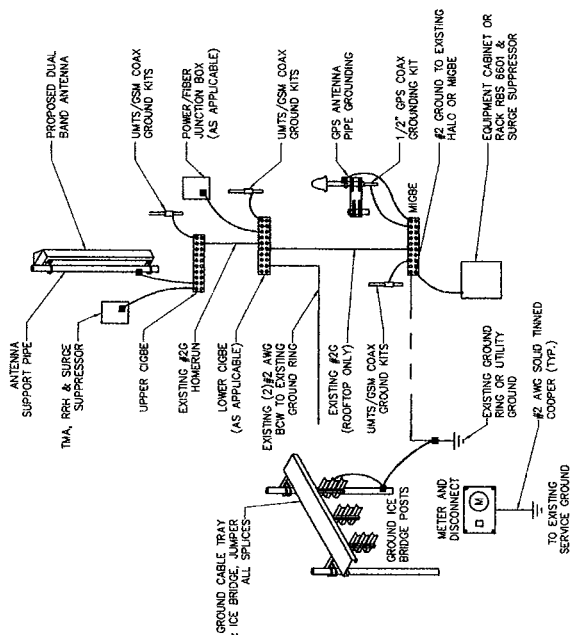


1 GROUND WIRE INSTALLATION TO GROUND BAR
E01 NO SCALE

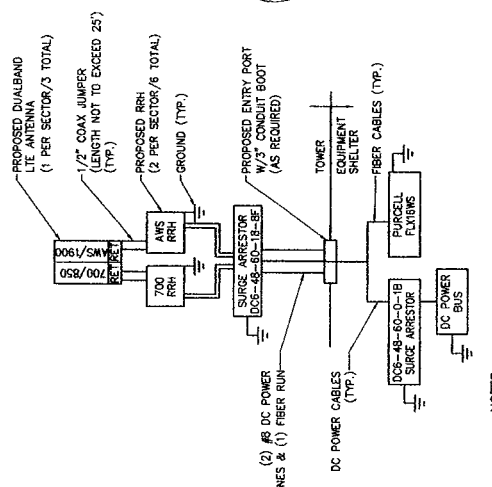


- NOTE:**
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND.

3 GROUND WIRE TO GROUND BAR CONNECTION DETAIL
E01 NO SCALE



4 GROUNDING RISER DIAGRAM
E01 NO SCALE

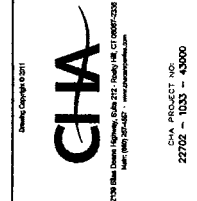


- NOTES:**
1. CONTRACTOR TO CONFIRM ALL PARTS.
 2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS.

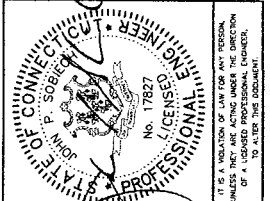
5 PLUMBING DIAGRAM
E01 NO SCALE



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



NO.	DATE	DESCRIPTION
1	03/24/11	ISSUED FOR REVIEW
2	04/14/11	ISSUED FOR PERMITS
3	05/10/11	ISSUED FOR CONSTRUCTION



STATE OF CONNECTICUT
No. 17827
PROFESSIONAL ENGINEER
JOHN P. SOBCHAK

SITE ID:
CTS256
SITE NAME:
MONROE NORTHEAST
SITE ADDRESS:
1428 MONROE TPK
MONROE, CT
06468
FAIRFIELD COUNTY

SHEET TITLE
GENERAL
NOTES
SHEET NUMBER
GN01

STEEL NOTES:

- STRUCTURAL STEEL FABRICATION AND ERECTION SHALL CONFORM TO THE LATEST EDITION OF THE AISC STEEL CONSTRUCTION MANUAL.
- STRUCTURAL STEEL SHALL CONFORM TO THE FOLLOWING:
 - WIDE FLANGE AND CHANNEL SHAPES - A992 GR 50 (50 KSI) UNLESS OTHERWISE NOTED
 - ANGLES AND PLATES - ASTM A36 (36 KSI)
 - STEEL PIPE - ASTM A53, GRADE B 4500 GRADE B (35 KSI)
- ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM SPECIFICATION A123 UNLESS OTHERWISE NOTED. GALVANIZING SHALL BE PERFORMED AFTER SHOP FABRICATION TO THE GREATEST EXTENT POSSIBLE. REPAIRS TO GALVANIZING SHALL BE MADE IN THE GALVANIZED AREAS SHALL BE PERFORMED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. GALVANIZING SHALL BE PERFORMED IN THE PRESENCE OF THE MANUFACTURER'S REPRESENTATIVE. GALVANIZING SHALL BE PERFORMED IN THE PRESENCE OF THE MANUFACTURER'S REPRESENTATIVE. GALVANIZING SHALL BE PERFORMED IN THE PRESENCE OF THE MANUFACTURER'S REPRESENTATIVE.
- CONNECTIONS:
 - ALL BOLTS, NUTS AND WASHERS USED IN EXTERIOR APPLICATIONS SHALL BE GALVANIZED.

DESIGN LOADS:

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

ICE LOAD: 3/4" RADIAL ON ALL COMPONENTS AND CABLE

WIND DESIGN DATA:
BASIC WIND SPEED (3 SECOND GUST): 110 MPH
WIND IMPORTANCE FACTOR = 1.0
WIND EXPOSURE CATEGORY: B

EARTHQUAKE DESIGN DATA:
SEISMIC IMPORTANCE FACTOR, I: 1.0
MAPPED SPECTRAL RESPONSE ACCELERATIONS: SS=0.269 SI=0.084
SITE CLASS: D
SEISMIC DESIGN CATEGORY: B

GROUNDING SYSTEM NOTES:

- CONDUCTOR USED FOR CELLULAR GROUNDING SYSTEM SHALL BE #2 AWG ANNEALED SOLID TINNED BARE COPPER.
 - LINE - #2 AWG ANNEALED SOLID TINNED BARE COPPER
 - EXTERNAL BOND CONNECTIONS TO EGR - #2 AWG ANNEALED SOLID TINNED BARE COPPER
 - TOWER BOND CONNECTION TO EGR - #2 AWG SOLID COPPER.
- MINIMUM BONDING RADIUS SHALL BE AS STRAIGHT AS POSSIBLE WITH MINIMUM 8" RADIUS.
 - CELLULAR GROUNDING CONDUCTOR SHALL BE AS STRAIGHT AS POSSIBLE WITH MINIMUM 8" RADIUS.
- CONNECTIONS (MECHANICAL)
 - COMPRESSION LUG CONNECTOR - 15 TON COMPRESSION, 2 HOLE, LONG BARREL, ELECTRO TINNED PLATED, HIGH CONDUCTIVITY COPPER, 600V RATED, USE 1/4" DIA. BOLT, 3/4" SPACING LUGS TO BOND OBJECTS FROM IJR.
 - CONNECTOR SHALL BE BURNDY "HYLUG SERIES" OR EQUAL.
- EXOTHERMIC WELD LUG CONNECTOR - 2 HOLE OFFSET, ELECTRO TINNED PLATED, HIGH CONDUCTIVITY COPPER, 500V USE 1/4" DIA. BOLT, 3/4" SPACING LUGS TO BOND OBJECTS FROM IJR.
- CONNECTOR SHALL BE CADWELD CONNECTION STYLE (CABLE TO SURFACE) TYPE "JA", EXOTHERMIC WELD TO LUG AS REQUIRED.
- "C" TAP COMPRESSION CONNECTOR - HIGH CONDUCTIVITY COPPER FOR MAIN-BRANCH TAPPING. CONNECTOR SHALL BE BURNDY "HYTAP" SERIES OR EQUAL. USE MATCHING MANUFACTURER TOOL AND DIE FOR COMPRESSION CONNECTION. APPLY ANTI-OXIDANT CONDUCTIVITY ENHANCER COMPOUND ON SURFACES THAT ARE COMPRESSED. SURFACES INTENDED TO BE CONNECTED WITH MECHANICAL CONNECTIONS SHALL BE PREPARED TO BARE METAL. PRIME AND PAINT OVER BONDING AREA TO PREVENT CORROSION.
- CONNECTIONS - BELOW GRADE (EXOTHERMIC) PROVIDE CADWELD CONNECTIONS - STYLE AND TYPE AS REQUIRED.
- WHEN BONDING #2 TO #2 EXTERIOR OF SHELTER - USE EXOTHERMIC WELD CONNECTION.
- WHEN BONDING #2 TO FENCE POST SURFACE - TEST WELD FOR POSSIBLE BURN THROUGH. PATCH WELDED AREA WITH GALVANIZED COATING AS REQUIRED FOR PROPER WELDED PERMANENT BOND. REFER TO MANUFACTURER'S REQUIREMENTS FOR DETAILS.

GENERAL NOTES:

- ALL DIMENSIONS TO, OF, AND IN EXISTING STRUCTURES SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
- DO NOT CHANGE THE SIZE NOR SPACING OF STRUCTURAL ELEMENTS WITHOUT THE APPROVAL OF THE ENGINEER.
- DETAILS SHOWN ARE TYPICAL. APPLY TO SIMILAR CONDITIONS UNLESS NOTED OTHERWISE.
- THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.
- BRACE STRUCTURES AS REQUIRED FOR CONSTRUCTION AND WIND LOADS UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: (LATERAL BRACING MEMBERS, ANCHOR BOLTS, ETC.)
- THE DESIGN IS BASED ON THE 2005 CONNECTICUT STATE BUILDING CODE (IBC 2003), 2005 CONNECTICUT SUPPLEMENT AND THE 2009 AMENDMENT TO THE 2005 CONNECTICUT SUPPLEMENT AND TIA/FA-222-G.
- CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE UNDERGROUND UTILITIES.
- INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER'S APPROVAL.
- EACH CONTRACTOR SHALL COOPERATE WITH THE OWNER'S REPRESENTATIVE AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
- VERIFY SIZE AND LOCATION OF OPENINGS PRIOR TO BEGINNING WORK. FOR DIMENSIONS NOT SHOWN, SEE CIVIL DRAWINGS.
- VERIFY SIZE AND LOCATION OF EQUIPMENT PADS WITH MECHANICAL AND/OR ELECTRICAL CONTRACTOR AND EQUIPMENT MANUFACTURER.
- CONTRACTOR TO FOLLOW ALL STATE, LOCAL AND NATIONAL CODES AS APPLICABLE.

APPURTENANCE SUPPORT BRACKET NOTES:

- DESIGN RESPONSIBILITY OF APPURTENANCE MOUNTING BRACKETS AND POLES AND ALL COMPONENTS THERE OF AND ATTACHMENT THERE TO SHALL BE THE RESPONSIBILITY OF THE MANUFACTURER. MANUFACTURER SHALL PROVIDE TO THE CONTRACTOR ALL NECESSARY DRAWINGS AND COMPONENTS FOR PERMIT ASSEMBLY, INCLUDING CONNECTIONS, DESIGN LOADS, AND MATERIALS CERTIFICATION DATA. ALL SUBMISSIONS SHALL BEAR THE STAMP AND SIGNATURE OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF CONNECTICUT.
- BRACKETS SHALL BE DESIGNED TO SUPPORT CURRENT AND FUTURE PANEL ANTENNAS, REMOTE RADIO HEADS, SURGE ARRESTORS, AND COAXIAL CABLES AS SHOWN.

GROUNDING SYSTEM NOTES:

- CONDUCTOR USED FOR CELLULAR GROUNDING SYSTEM SHALL BE #2 AWG ANNEALED SOLID TINNED BARE COPPER.
 - LINE - #2 AWG ANNEALED SOLID TINNED BARE COPPER
 - EXTERNAL BOND CONNECTIONS TO EGR - #2 AWG ANNEALED SOLID TINNED BARE COPPER
 - TOWER BOND CONNECTION TO EGR - #2 AWG SOLID COPPER.
- MINIMUM BONDING RADIUS SHALL BE AS STRAIGHT AS POSSIBLE WITH MINIMUM 8" RADIUS.
 - CELLULAR GROUNDING CONDUCTOR SHALL BE AS STRAIGHT AS POSSIBLE WITH MINIMUM 8" RADIUS.
- CONNECTIONS (MECHANICAL)
 - COMPRESSION LUG CONNECTOR - 15 TON COMPRESSION, 2 HOLE, LONG BARREL, ELECTRO TINNED PLATED, HIGH CONDUCTIVITY COPPER, 600V RATED, USE 1/4" DIA. BOLT, 3/4" SPACING LUGS TO BOND OBJECTS FROM IJR.
 - CONNECTOR SHALL BE BURNDY "HYLUG SERIES" OR EQUAL.
- EXOTHERMIC WELD LUG CONNECTOR - 2 HOLE OFFSET, ELECTRO TINNED PLATED, HIGH CONDUCTIVITY COPPER, 500V USE 1/4" DIA. BOLT, 3/4" SPACING LUGS TO BOND OBJECTS FROM IJR.
- CONNECTOR SHALL BE CADWELD CONNECTION STYLE (CABLE TO SURFACE) TYPE "JA", EXOTHERMIC WELD TO LUG AS REQUIRED.
- "C" TAP COMPRESSION CONNECTOR - HIGH CONDUCTIVITY COPPER FOR MAIN-BRANCH TAPPING. CONNECTOR SHALL BE BURNDY "HYTAP" SERIES OR EQUAL. USE MATCHING MANUFACTURER TOOL AND DIE FOR COMPRESSION CONNECTION. APPLY ANTI-OXIDANT CONDUCTIVITY ENHANCER COMPOUND ON SURFACES THAT ARE COMPRESSED. SURFACES INTENDED TO BE CONNECTED WITH MECHANICAL CONNECTIONS SHALL BE PREPARED TO BARE METAL. PRIME AND PAINT OVER BONDING AREA TO PREVENT CORROSION.
- CONNECTIONS - BELOW GRADE (EXOTHERMIC) PROVIDE CADWELD CONNECTIONS - STYLE AND TYPE AS REQUIRED.
- WHEN BONDING #2 TO #2 EXTERIOR OF SHELTER - USE EXOTHERMIC WELD CONNECTION.
- WHEN BONDING #2 TO FENCE POST SURFACE - TEST WELD FOR POSSIBLE BURN THROUGH. PATCH WELDED AREA WITH GALVANIZED COATING AS REQUIRED FOR PROPER WELDED PERMANENT BOND. REFER TO MANUFACTURER'S REQUIREMENTS FOR DETAILS.

SECTION 16050 GROUNDING

- ALL NON-CURRENT CARRYING PARTS OF THE ELECTRICAL SYSTEM AND TELEPHONE CONDUIT SYSTEMS SHALL BE MECHANICALLY AND ELECTRICALLY CONNECTED TO PROVIDE AN INDEPENDENT RETURN PATH TO THE EQUIPMENT GROUNDING SOURCES.
- GROUNDING SYSTEM WILL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND LOCAL INSPECTOR HAVING JURISDICTION.
- ELECTRICAL AC SERVICE GROUNDING SYSTEM - GROUNDING AT MAIN SERVICE OVERCURRENT PROTECTION DEVICE.
 - THE GROUNDING CONDUCTOR (NEUTRAL) OF THE INCOMING SERVICE FEEDERS (LINE SIDE OF THE METER SOCKET) SHALL TERMINATE INTO THE MAIN OVERCURRENT DEVICE ENCLOSURE SOLID NEUTRAL BAR WHICH IS INSULATED FROM THE ENCLOSURE.
 - THE GROUNDING ELECTRODE CONDUCTOR SHALL EXTEND CONTINUOUSLY WITHOUT SPLICES OR JOINTS FROM THE MAIN OVERCURRENT DEVICES SOLID NEUTRAL BAR TO THE MAIN SWITCHBOARD GROUND TERMINAL.
 - TELEPHONE GROUND OVERCURRENT PROTECTION DEVICE ENCLOSURES SHALL BE GROUNDING TO THE MAIN SWITCHBOARD GROUND TERMINAL. PROVIDE BONDING SURFACES BETWEEN THEM BARE METAL TO BARE METAL. PROVIDE BONDING JUMPER BETWEEN EQUIPMENT GROUND BAR AND SOLID NEUTRAL BONDING JUMPER CONDUCTOR SIZE SHALL BE THE SAME AS THE GROUNDING ELECTRODE CONDUCTOR. PROVIDE BONDING SURFACES BETWEEN EQUIPMENT GROUND BAR AND SOLID NEUTRAL BONDING JUMPER CONDUCTOR WITH #10 AWG BARE COPPER WHICH IN TURN IS TERMINATED INTO THE EQUIPMENT GROUND BAR KIT.

SECTION 16050 GROUNDING

- CELLULAR GROUNDING SYSTEM:
 - PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS, INCLUDING BUT NOT LIMITED TO:
 - GROUNDING RING
 - EXTERIOR GROUNDING RING
 - ANTENNA GROUND CONNECTIONS AND PLATES
- CONTRACTOR, AFTER COMPLETION OF THE COMPLETE GROUNDING SYSTEM BUT PRIOR TO CONCEALMENT/BURIAL OF SAME, SHALL NOTIFY THE AT&T REPRESENTATIVE AND LOCAL AUTHORITY HAVING JURISDICTION OF THE WORK AND MAKE TESTS OF THE GROUNDING SYSTEMS.



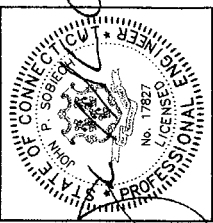
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500 ENTERPRISE DRIVE
ROCKY HILL, CT 06867



CHA PROJECT NO.
22702 - 1033 - 43000

NO.	DATE	DESCRIPTION
1	05/19/17	ISSUE FOR CONSTRUCTION
2	07/10/17	ISSUE FOR CONSTRUCTION
3	07/10/17	ISSUE FOR CONSTRUCTION
4	07/10/17	ISSUE FOR CONSTRUCTION
5	07/10/17	ISSUE FOR CONSTRUCTION
6	07/10/17	ISSUE FOR CONSTRUCTION
7	07/10/17	ISSUE FOR CONSTRUCTION
8	07/10/17	ISSUE FOR CONSTRUCTION
9	07/10/17	ISSUE FOR CONSTRUCTION
10	07/10/17	ISSUE FOR CONSTRUCTION



IT IS A VIOLATION OF LAW FOR ANY PERSON UNLESS HE OR SHE IS THE LICENSEE TO SIGN OR TO ALTER THIS DOCUMENT.

SITE ID: CT5266
SITE NAME: MONROE NORTHEAST
SITE ADDRESS: 1428 MONROE TPK
MONROE, CT 06468
FAIRFIELD COUNTY

SHEET TITLE: GENERAL NOTES

SHEET NUMBER: GNO2

- BEAR ALL FOOTINGS ON UNCOMPACTED STRUCTURAL FILL OR NATIVE UNDISTURBED SOIL AS APPROVED BY THE GEOTECHNICAL ENGINEER. SOIL BEARING SURFACES, PREVIOUSLY ACCEPTED BY OWNER'S REPRESENTATIVE, WHICH ARE ALLOWED TO BECOME SATURATED, FROZEN OR DISTURBED SHALL BE REWORKED TO SATISFACTION OF OWNER'S REPRESENTATIVE.
 - BEAR ALL CONCRETE PADS AND SLABS ON GRADE ON A 6" LAYER OF ASTM #57 STONE SUBGRADE BELOW STONE LAYER SHALL BE COMPACTED STRUCTURAL FILL OR NATIVE UNDISTURBED SOIL AS APPROVED BY THE GEOTECHNICAL ENGINEER. SOIL BEARING SURFACES, PREVIOUSLY ACCEPTED BY OWNER'S REPRESENTATIVE, WHICH ARE ALLOWED TO BECOME SATURATED, FROZEN OR DISTURBED SHALL BE REWORKED TO SATISFACTION OF OWNER'S REPRESENTATIVE.
 - DO NOT PLACE CONCRETE IN WATER OR ON FROZEN GROUND.
 - CURING PERIOD OR FOR A MINIMUM OF 14 DAYS AFTER PLACEMENT.
 - STRUCTURAL FILL AND BACKFILL: SOUND, DURABLE, SAND, GRAVEL, STONE OR BLEND OF THESE MATERIALS FREE FROM ORGANIC FROZEN OR OTHER DILLETERIOUS MATERIALS, AND MEETING THE FOLLOWING GRADATION REQUIREMENTS:

SEIVE	PERCENT PASSING
4"	100%
3"	100%
No. 200	0 - 10
 - FINES PASSING NO. 200 SHALL BE NON-PLASTIC.
 - PARTICLE SIZE ANALYSIS SHALL SHOW NO GAP GRADING.
 - THE SOIL BEARING STRUCTURES AND PADS AND 5 FEET AROUND THEIR PERIMETER SHALL BE TIED TO EXISTING FOUNDATION WITH 4" DIA. BARS.
 - PERFORM ANY CUT OPERATIONS.
 - PROOF ROLL THE SITE WITH A TANDEN AXLE LOADED DUMP TRUCK IN TWO DIRECTIONS. ANY AREAS WHICH ARE NOTED TO RUT OR PUMP EXCESSIVELY SHALL BE REWORKED TO THE COMPACTED REQUIREMENTS NOTED BELOW FOR CULTURAL FILL.
 - THE FILL REQUIRED TO RAISE THE SUBGRADE BENEATH THE FLOOR SLAB SHALL BE EITHER IMPORTED STRUCTURAL FILL OR ON SITE MATERIAL MEETING THE REQUIREMENTS OF STRUCTURAL FILL. THE STRUCTURAL FILL SHALL HAVE A MINIMUM OF 10% MOISTURE CONTENT AND 95% OF THE STANDARD PROCTOR DENSITY. AT A MOISTURE CONTENT WITHIN ±3% AND ±3 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).
 - CLEAN, COMPACTED #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 LATEST EDITIONS OF THE FOLLOWING APPLICABLE CODES: ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS; ACI 318, BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
 - MIN. DESIGN SHALL BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO PLACING CONCRETE. PREPARE AND SUBMIT TO THE OWNER'S REPRESENTATIVE FOR APPROVAL: PROPORTIONING CONCRETE MIXTURES; AND ACI 301, SPECIFICATIONS FOR STRUCTURAL CONCRETE.
 - ALL CONCRETE SHALL HAVE A 28 DAY DESIGN COMPRESSIVE STRENGTH OF 4,000 PSI. CONCRETE SHALL BE PLACED ON A 2" LAYER OF COMPACTED #57 STONE SUBGRADE. REQUIRED 6" ± 2" SLUMP PRIOR TO THE ADDITION OF ASTM C-494 (TYPE F OR G) WATER REDUCING AGENT. 20% OF CLASS F FLYASH 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, THE ENGINEER SHALL APPROVE THE USE OF WET BLANKETS. THESE PROCEDURES MAY INCLUDE THE FOLLOWING:
 - PLACING THE CONCRETE IN THE EARLY MORNING HOURS
 - THE USE OF EVAPORATION REDUCER (SEE BELOW)
 - THE USE OF WET BLANKETS AS A CURING METHOD
 - THE USE OF A RETARDING ADMIXTURE (NOT PREFERABLE)
7. COLD WEATHER CONCRETING SHALL BE PERFORMED PER ACI 308R REQUIREMENTS.
 - FOUR 4x8 CONCRETE CHIMBERS SHALL BE MADE FOR EVERY 75 CUBIC YARDS OR MORE OF CONCRETE TO BE PLACED. CHIMBERS SHALL BE MEASURED EVERY TIME A SET OF FOUR CHIMBERS IS MADE.
 - ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE STRUCTURAL CONCRETE (ACI 318) AND SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 301). SPICES IN REINFORCEMENT SHALL MEET CLASS B TENSION LAP REQUIREMENTS UNLESS NOTED OTHERWISE.
 - COVER FOR ALL REINFORCEMENT SHALL MEET THE COVER REQUIREMENTS AS SHOWN ON DRAWINGS. COVER SHALL BE MEASURED FROM THE DETAIL'S CONTROL SURFACE TO THE CENTER OF THE REINFORCEMENT BAR UNLESS OTHERWISE NOTED.
 - 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 A618. REINFORCEMENT SHALL BE PLACED AS SHOWN ON DRAWINGS. REINFORCEMENT BAR MAY 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, UNO. 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 FOLLOWS:
 - WHERE SHOWN AND 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 ACCEPTABLE TO ENGINEER. LOCATE WALL CONSTRUCTION JOINTS AT MASONRY CONTROL JOINTS WHERE POSSIBLE. PLACE REINFORCEMENT 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 COMPLETED.
 - PLACE CONCRETE IN A UNIFORM MANNER TO PREVENT THE FORMATION OF COLD SEGREGATION OR OTHER DEFECTS. 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 AS SHOWN ON DRAWINGS. ALL REINFORCING SHALL BE PROVIDED WITH BAR SUPPORTS COMPLYING WITH THE SPECIFICATIONS OF THE MANUFACTURER. BAR SUPPORTS SHALL BE PLACED AT LEAST 4 FEET APART. DAYTON/RICHMOND PRODUCTS (800-745-3703) OR EQUAL UNLESS NOTED OTHERWISE IN THE SPECIFICATIONS.
 - AT SLABS-ON-GRADE: (SLAB THICKNESS MINUS 1 1/2 INCHES) HIGH, TYPE R21, OR TYPE BPP USE SUPPORTS WITH SAND PLATES OR HORIZONTAL RUNNERS WHERE MASONRY IS NOT USED.
 - FOR EXPOSED TO VIEW CONCRETE SURFACES WHERE LEGS OF SUPPORTS ARE IN CONTACT WITH THE FORMS, PROVIDE SUPPORTS WITH LEGS THAT ARE PLASTIC PROTECTED (GRS, CLASS 1) OR STAINLESS STEEL PROTECTED (CRSI, CLASS 2).
 - USE ONE OF THE FOLLOWING SEALERS ON ALL INTERIOR EXPOSED CONCRETE SURFACES:
 - SEAL HARD BY LEM
 - EUCO DIAMOND HARD BY EUCO
 - DELUSSA CONFORM OR EUCORAR EVAPORATION REDUCERS SHALL BE USED AFTER EACH POUR. THE CONTRACTOR SHALL OBTAIN THE PRODUCT FROM THE MANUFACTURER. PRIOR APPROVAL FROM THE ENGINEER HAS BEEN OBTAINED TO NOT USE THIS PRODUCT.
 - SAWCUTS IN CONCRETE SLABS SHALL BE MADE AS SOON AS THE CONCRETE IS OF SUFFICIENT STRENGTH TO SAW WITHOUT RAVELING THE AGGREGATE. ANY TIME LAPSE BETWEEN SAWING OPERATIONS SHALL BE PERMITTED ONLY IF APPROVED BY THE ENGINEER. FILL ALL EXTERIOR JOINTS WITH ARDEX ARDEXAL RAPID COMPOUND. FILL ALL EXTERIOR JOINTS WITH ARDEX ARDEXAL RAPID COMPOUND.



FDH Engineering, Inc., 2730 Rowland Rd. Raleigh, NC 27615, Ph. 919.755.1012, Fax 919.755.1031

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

159 ft Monopole

**SBA Site Name: Monroe Turnpike
SBA Site ID: CT13055-A
AT&T Site Name: 5266 Monroe
AT&T Site ID: Monroe Turnpike (CT)**

FDH Project Number 11-06184E S1

Prepared By:

Randy C. Williams

Randy C. Williams, EI
Project Engineer

Reviewed By:

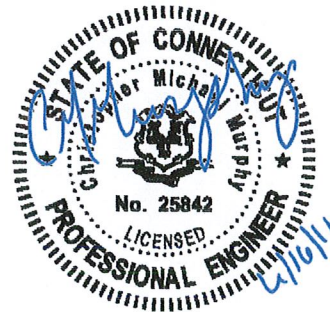
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June 16, 2011



Prepared pursuant to TIA/EIA-222-F June 1996 Structural Standards for Steel Antenna Towers and Antenna Supporting Structures

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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 Monroe, 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, soil parameters, foundation dimensions, current tower geometry, and member sizes was obtained from:

- Sabre Communications Corporation (Job No. 04-05018) Stamped Permit Drawings dated August 18, 2003
- JWB Tower Services, LLC (Project No. 2008-CSB0015-1428 Monroe Turnpike, Monroe, CT) Structural Analysis Report dated January 14, 2009
- Dr. Clarence Welti, P.E., P.C. (Tower CT-54XC771) Geotechnical Study dated April 25, 2003
- FDH, Inc. (Job No. 08-07120T) TIA Inspection Report dated August 22, 2008
- 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 antennas and the proposed antennas from AT&T at 162 ft., the tower meets the requirements of the *TIA/EIA-222-F* standards provided the **Recommendations** below are satisfied. Furthermore, provided the foundation was designed and constructed to support the original design reactions (see Sabre Job No. 04-05018), the foundation should have the necessary capacity to support the existing and proposed 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	Carrier	Mount Elevation (ft)	Mount Type
1-9	162 ^{2,3}	(3) Powerwave 7770.00 (3) Allgon 7205.03 (6) Powerwave LGP21401 TMAs	(6) 1-5/8"	AT&T	159	(1) 12.5' Low-Profile Platform
10	162	(1) Decibel DB404-B	(1) 7/8"	Town		
11-19	151 ⁴	(9) Decibel DB948F85E-M	(6) 1-5/8"	Sprint	149	(1) 12.5' Low-Profile Platform
20-31	142.5 ⁵	(12) EMS FR65-17-04DP (6) Remec S20057A1 TMAs	(12) 1-1/4"	T-Mobile	140	(1) 14' Low-Profile Platform
32-43	131	(6) Antel LPA-80080/4CF (6) LPA-185080/8CFx2	(12) 1-5/8"	Verizon	130	(1) 12.5' Low-Profile Platform
44	131	(1) Sinclair SCL329-HL Whip	(1) 7/8"	Town	131	(1) 4' Standoff
45	80	(1) Sinclair SCL329-HL Whip	(1) 7/8"		80	(1) 4' Standoff
46	50	(1) Decibel 26DB GPS	(1) 1/2"	Sprint	50	(1) 4' Standoff

- Coax installed inside the pole's shaft unless otherwise noted.
- Currently, AT&T has (3) Powerwave 7770.00 antennas, (6) Powerwave LGP21401 TMAs, and (6) 1-5/8" coax installed at 162 ft. According to information provided by SBA, AT&T may add (3) Allgon 7205.03 antennas to their existing loading at 162 ft.
- The loading for AT&T at 162 ft will be altered. See the proposed loading below.
- Currently, Sprint has (4) Andrew DB948F85T2E-M antennas, (2) Andrew DB950F65T2ZE-M antennas, and (6) 1-5/8" coax installed at 151 ft. According to information provided by SBA, Sprint may install up to (9) Decibel DB948F85E-M antennas at 151 ft. Analysis performed with full leased loading in place.
- Currently, T-Mobile has (6) EMS FR65-17-04DP antennas, (6) Remec S20057A1 TMAs, and (12) 1-1/4" coax installed at 142.5 ft. According to information provided by SBA, T-Mobile may install up to (12) EMS FR65-17-04DP antennas at 142.5 ft. Analysis performed with full leased loading in place.

Proposed Loading:

Antenna No.	Antenna Elevation (ft)	Description	Coax and Lines	Carrier	Mount Elevation (ft)	Mount Type
1-9	162 ¹	(3) Powerwave 7770.00 (3) Powerwave P65-16-XLH-RR (6) Powerwave LGP21401 TMAs (6) Ericsson RRUS-11 RRHs (1) Raycap DC6-48-60-18-8F Surge Suppressor	(6) 1-5/8" (1) 0.393" Fiber (2) 0.645" Power	AT&T	159	(1) 12.5' Low-Profile Platform

- This represents the final configuration for AT&T at 162 ft. According to information provided by SBA, New Cingular will remove the (3) Allgon 7205.03 antennas and add (3) Powerwave P65-16-XLH-RR antennas, (6) Ericsson RRUS-11 RRHs, (1) Raycap DC6-48-60-18-8F surge suppressor, (1) 0.393" fiber cable, and (2) 0.645" power cable at 162 ft.

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	60 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. **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	159 - 149	Pole	TP14.93x12x0.1875	38.7	Pass
L2	149 - 97.5	Pole	TP29.64x13.969x0.3125	92.1	Pass
L3	97.5 - 47.75	Pole	TP43.6x27.9166x0.375	81.9	Pass
L4	47.75 - 0	Pole	TP56.84x41.2377x0.375	81.6	Pass
		Anchor Bolts	(14) 2.25" Ø w/ BC = 64"	81.1	Pass
		Base Plate	70" Ø. PL x 2.25" thk.	59.3	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	34 k	42 k
Shear	26 k	31 k
Moment	2,998 k-ft	3,665 k-ft

GENERAL COMMENTS

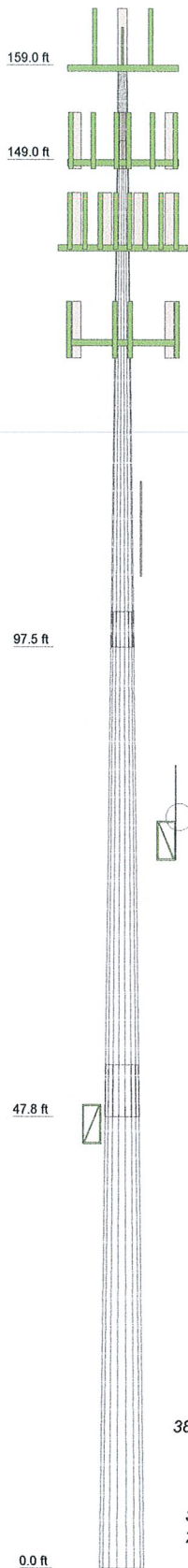
This engineering analysis is based upon the theoretical capacity of the structure. It is not a condition assessment of the tower and its foundation. It is the responsibility of SBA Network Services, Inc. to verify that the tower modeled and analyzed is the correct structure (with accurate antenna loading 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

1	10.00	18	0.1875	2.00	12.0000	14.9300	0.3
2	53.50	18	0.3125	3.75	13.9690	29.6400	3.9
3	53.50	18	0.3750	5.50	27.9166	43.6000	7.7
4	53.25	18	0.3750	41.2377	56.8400		10.5
Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade
							A572-65
							Weight (K)
							22.3



DESIGNED APPURTENANCE LOADING

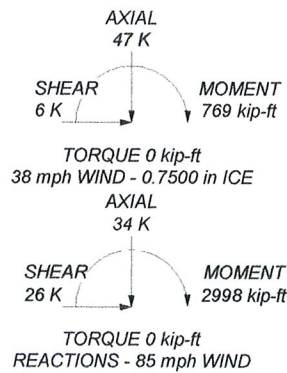
TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod	159	(4) FR65-17-04DP w/Mount Pipe (T-Mobile)	140
Powerwave 7770 w/ Mount Pipe (ATT)	159	(4) FR65-17-04DP w/Mount Pipe (T-Mobile)	140
Powerwave 7770 w/ Mount Pipe (ATT)	159	(2) TMA - Remec S20057A1 (T-Mobile)	140
Powerwave P65-16-XLH-RR w/ Mount Pipe (ATT)	159	(2) TMA - Remec S20057A1 (T-Mobile)	140
Powerwave P65-16-XLH-RR w/ Mount Pipe (ATT)	159	(2) TMA - Remec S20057A1 (T-Mobile)	140
Powerwave P65-16-XLH-RR w/ Mount Pipe (ATT)	159	(2) TMA - Remec S20057A1 (T-Mobile)	140
(2) TMA - Powerwave LGP21401 (ATT)	159	14' Low Profile Platform (T-Mobile)	140
(2) TMA - Powerwave LGP21401 (ATT)	159	(2) Antel LPA-80080/4CF w/ Mount Pipe (Verizon)	130
(2) TMA - Powerwave LGP21401 (ATT)	159	(2) Antel LPA-80080/4CF w/ Mount Pipe (Verizon)	130
(2) TMA - Powerwave LGP21401 (ATT)	159	(2) Antel LPA-80080/4CF w/ Mount Pipe (Verizon)	130
(2) RRH - Ericsson RRUS-11 (ATT)	159	(2) LPA-185080/8CFx2 w/Mount Pipe (Verizon)	130
(2) RRH - Ericsson RRUS-11 (ATT)	159	(2) LPA-185080/8CFx2 w/Mount Pipe (Verizon)	130
(2) RRH - Ericsson RRUS-11 (ATT)	159	(2) LPA-185080/8CFx2 w/Mount Pipe (Verizon)	130
Raycap DC6-48-60-18-8F (ATT)	159	(2) LPA-185080/8CFx2 w/Mount Pipe (Verizon)	130
12.5' Low Profile Platform (ATT)	159	(2) LPA-185080/8CFx2 w/Mount Pipe (Verizon)	130
DB404-B (Town)	159	12.5' Low Profile Platform (Verizon)	130
(3) DB948F85E-M w/Mount Pipe (Sprint)	149	Whip - Sinclair SCL329-HL (Town)	110
(3) DB948F85E-M w/Mount Pipe (Sprint)	149	4' Standoff (Town)	110
(3) DB948F85E-M w/Mount Pipe (Sprint)	149	Whip - Sinclair SCL329-HL (Town)	80
(3) DB948F85E-M w/Mount Pipe (Sprint)	149	4' Standoff (Town)	80
12.5' Low Profile Platform (Sprint)	149	Decibel 26DB GPS (Sprint)	47
(4) FR65-17-04DP w/Mount Pipe (T-Mobile)	140	4' Standoff (Sprint)	47

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 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: 92.1%



	FDH Engineering, Inc. 2730 Rowland Road, Suite 100 Raleigh, North Carolina Phone: (919) 755-1012 FAX: (919) 755-1031		Job: Monroe Turnpike, CT13055-A Project: 11-06184E S1	
	Tower Analysis	Client: SBA Code: TIA/EIA-222-F Path:	Drawn by: Randy Williams Date: 06/16/11	App'd: Scale: NTS Dwg No. E-1

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)	698-894			1710-2170	
Frequency band (MHz)	698-806	806-894	1710-1880	1850-1990	1900-2170
Gain (dBi/dBd)	14.8/12.7	15.5/13.4	16.9/14.8	17.2/15.1	17.5/15.4
Polarization	Dual Linear +/- 45			Dual Linear +/- 45	
Nominal Impedance (Ω)	50			50	
VSWR	< 1.5:1			< 1.5:1	
Horizontal beam width, -3 dB ($^\circ$)	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.



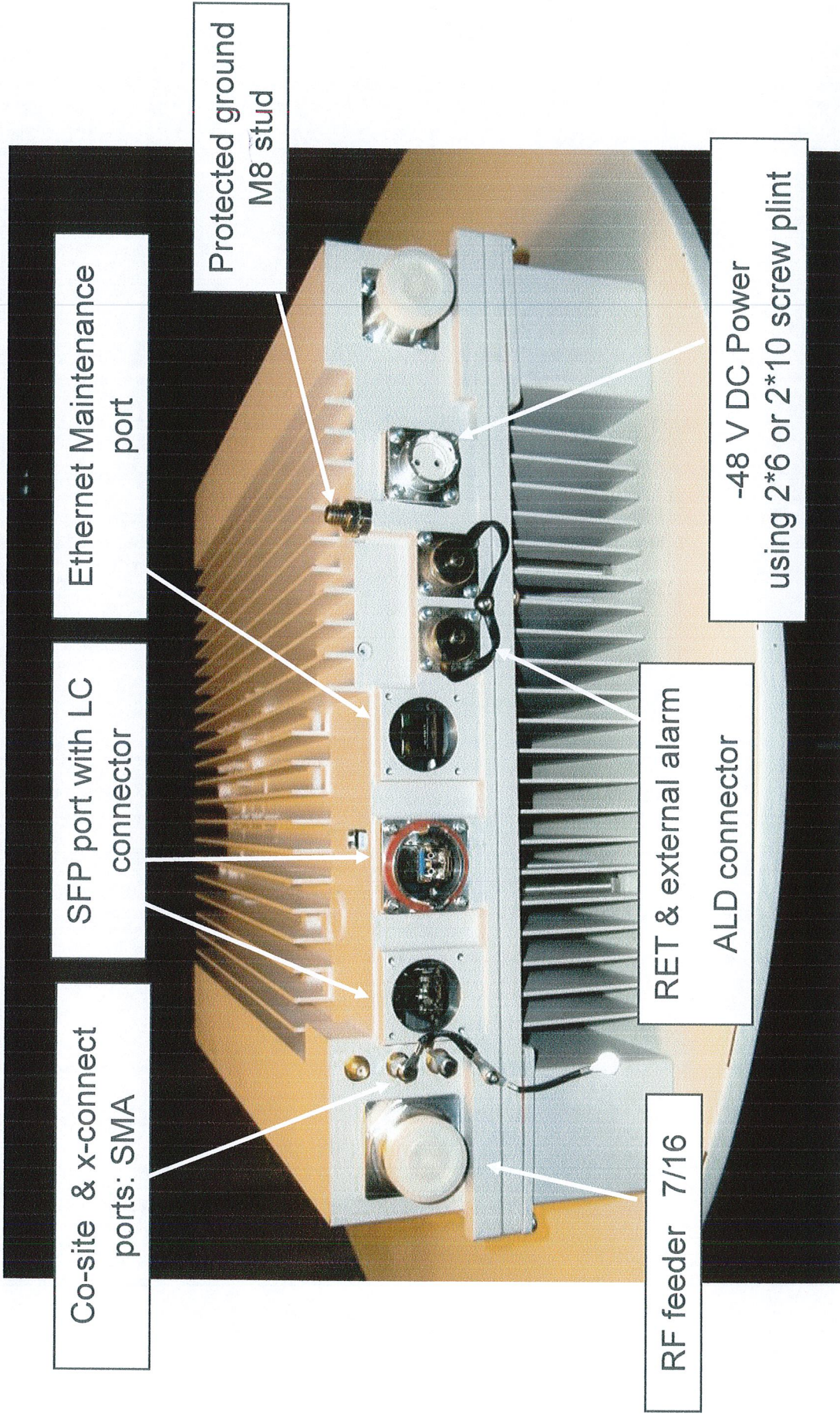
RBS6000



RRUS-11 I/F



RBS6000



POWER

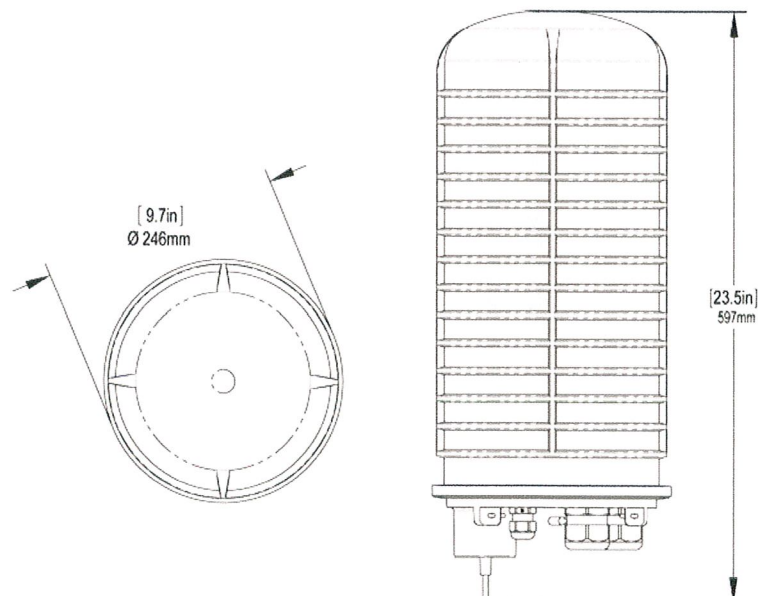
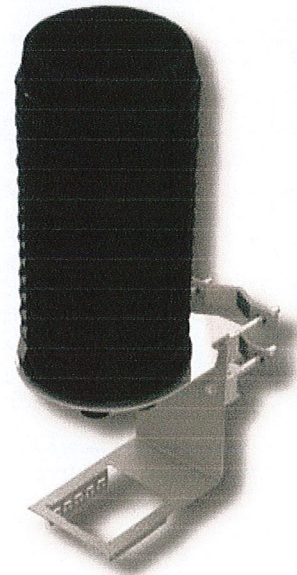
DC6-48-60-18-8F

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



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

Douglas L. Culp
Real Estate Consultant

June 23, 2011

Honorable Steve Vavrek
1st Selectman, Monroe
Monroe Town Hall
7 Fan Hill Road
Monroe, CT 06468

Re: Telecommunications Facility – 1428 Monroe Turnpike Monroe, CT

Dear First Selectman Vavrek:

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