January 16, 2016

Melanie A. Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re:	**Notice of Exempt Modification – Antenna Swap**
Property Address:	**324 Montevideo Rd Avon, CT 06001 (the "Property")**
Applicant:	**AT&T Mobility, LLC**

Dear Ms. Bachman:

On behalf of AT&T, please accept this application as notification pursuant to R.C.S.A. §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16-50j-72(b) (2).

AT&T currently maintains a wireless telecommunications facility consisting of nine (9) wireless telecommunication antennas at an antenna center line height of 70-feet on an existing 59 - foot monopole tower, owned by the Talcott Mountain Science Center for Student Involvement Inc. at 324 Montevideo Rd Avon, CT 06001 and the tower is located on the Bloomfield, CT town line. AT&T now intends to replace (3) SBNH-1D6565C panel antennas with three (3) OPA 65R-LCUU-H8 panel antennas on the existing mounts. The other six (6) will remain as is (for a total of (9) panel antennas), at the 60-foot level. AT&T also intends to install 3 RRU-32's on the existing antenna masts mounted on unistrut.

This facility was approved by the Connecticut Siting Council in Docket# 107 on July 6, 1989 for a certificate of Environmental Compatibility and Public Need for the construction, maintenance, And operation of telecommunications antennas, associated equipment, and building to provide Domestic Public Cellular radio Telecommunication service in the Hartford, Connecticut New England Metropolitan area. This approval included the following original conditions, including the total facility height or mounting restrictions. This modification complies with the aforementioned conditions.

1. The cellular antennas shall be located on the existing tower no higher than necessary to provide the proposed service, and in no event shall they be higher than the 59-foot level.
2. The facility shall be constructed in accordance with the State of Connecticut Basic Building Code.

3. The certificate holder shall prepare a Development and Management Plan (D &M) for this site in compliance with Sections 16-50j-75 of the Regulations of State Agencies. The D&M plan shall include detailed plans for evocation of the proposed building within the leased portion of the parcel to reduce the amount of existing vegetation to be removed, erosion and sediment control, and landscaping at the proposed site. The eastern red cedars shall not be removed without consultation with the Talcott Mountain Science Center for Student Involvement, Inc.
4. The certificate holder shall erect a fence, if requested to do so, by the Talcott Mountain Science Center for Student Involvement, Inc. and construct a crushed stone access way to the building.
5. The certificate holder shall comply with any future radio frequency (RF) standard, promulgated by state or federal regulatory agencies. Upon the establishment of any new governmental RF standards, the facility granted in this Decision and Order shall be brought into compliance with such standards.
6. Unless otherwise approved by the Council, this decision and Order shall b void if all construction authorized herein is not completed within three years of the issuance of this decision and Order, or within three years after this Decision and Order, or within three years after the completion of any appeal to this Decision and Order.

The following is a list of subsequent decisions: **TS-CING-004-130627, EM-VER -004-150708**

Please accept this letter pursuant to Regulation of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-5I0j-72(b)(2). In accordance with R.C.S.A., a copy of this letter is being sent to Brandon Johnson, Town Manager of Avon, Town of Avon, 60 West Main St, Avon, CT 06001. A copy of this letter is also being sent to Talcott Mountain Science Center for Student Involvement Inc. at 324 Montevideo Rd Avon, CT 06001.

The planned modifications to AT&T's facility fall squarely within those activities explicitly provided for in R.C.S.A. §16-50j-72(b) (2).

1. The proposed modifications will not result in an increase in the height of the existing tower. AT&T's replacement antennas will be installed at the 70-foot level of the 59-foot monopole.
2. The proposed modifications will not involve any changes to ground-mounted equipment and, therefore, will not require and extension of the site boundary.
3. The proposed modifications will not increase the noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative worst-case RF emissions calculation for AT&T's modified facility is provided in the RF Emissions Compliance Report, included in Tab 2.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The tower and its foundation can support AT&T's proposed modifications. (See Structural Analysis Report included in Tab 3).

For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above referenced telecommunications facility constitutes an exempt modification under R.C.S.A. §16-50j-72(b) (2).

Sincerely,

David Barbagallo

Enclosures
CC w/enclosures:
Brandon Johnson, Town Manager Town of Avon
Tower & Property Owner -Talcott Mountain Science Center for Student Involvement Inc.


smartlink

An application of Metro Mobile CTS of Hartford, Inc., for a Certificate of Environmental Compatibility and Public Need for cellular telephone antennas and associated equipment in the Town of Bloomfield, Connecticut.	:	Docket No. 107 Connecticut Siting Council 6 July 1989

DECISION AND ORDER

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council finds that the effects associated with the construction, operation, and maintenance of a cellular telephone facility at the proposed Bloomfield site, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not significant either alone or cumulatively with other effects, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by Section 16-50k of the General Statutes of Connecticut (CGS), be issued to Metro Mobile CTS Hartford, Inc., for the construction, operation, and maintenance of a cellular telephone site and associated equipment at the proposed Bloomfield site in Bloomfield, Connecticut.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The cellular antennas shall be located on the existing tower no higher than necessary to provide the proposed service, and in no event shall they be attached higher than the 59-foot level of the tower.

2. The facility shall be constructed in accordance with the State of Connecticut Basic Building Code.

3. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of State Agencies. The D&M plan shall include detailed plans for relocation of the proposed building within the leased portion of the parcel to reduce the amount of existing vegetation to be removed, erosion and sediment control, and landscaping at the proposed site. The eastern red cedars shall not be removed without consultation with the Talcott Mountain Science Center for Student Involvement, Inc.

4. The Certificate Holder shall erect a fence, if requested to do so by the Talcott Mountain Science Center for Student Involvement, Inc., and construct a crushed stone accessway to the building.

5. The Certificate Holder shall comply with any future radio frequency (RF) standard, promulgated by State or federal regulatory agencies. Upon the establishment of any new governmental RF standards, the facility granted in this Decision and Order shall be brought into compliance with such standards.

6. Unless otherwise approved by the Council, this Decision and Order shall be void if all construction authorized herein is not completed within three years of the issuance of this Decision and Order, or within three years after the completion of any appeal to this Decision and Order.

Pursuant to Section 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below. A notice of issuance shall be published in the Hartford Courant.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with section 16-50j-17 of the Regulations of State Agencies.

CERTIFICATION

The undersigned members of the Connecticut Siting Council hereby certify that they have heard this case in Docket No. 107 or read the record thereof, and that we voted as follows:

Dated at New Britain, Connecticut the 6th day of July, 1989.

Council Members	Vote Cast
Gloria Dibble Pond Chairperson	Absent
Commissioner Peter Boucher Designee: Robert A. Pulito	Yes
Commissioner Leslie Carothers Designee: Brian Emerick	Yes
Mortimer A. Gelston	Yes
Harry E. Covey	Yes
Daniel P. Lynch, Jr.	Yes
Paulann H. Sheets	Yes
William H. Smith	Absent
Colin C. Tait	Yes

SVC Check Request Form

Customer:	AT&T

Please fill out all fields

Request Information

Requested By: Dave Barbagallo
Today's Date: 1/12/2016
Date Needed: ASAP
Payee: Connecticut Siting Council
Address: 33 Boston Post Rd West, Marlborough, Ma 01752
Deliver to: 33 Boston Post Rd, Marlborough, Ma 01752

SML Project Information

SAP Project Number: 102231
SAP Project Name: AT&T LTE 2016
Project Manager: Sharon Keefe

AT&T Customer Identifiers

PACE Job Number: MRCTB015764
Oracle PTN: 2051A02J0T
Fixed Asset (FA) Location: 10141394
Site Name/ID: CTL01330

Check Description: Connecticut Siting Council Fee

Reimbursable? Yes
Blank Check? No

Mark-Up (If Applicable): 3.00%
Billable Amount: $643.75

Check Amount
$625.00

Authorized Approval Limits & Signers:

Level	Project Member	Check Amount	Approval Signature
1	Project Manager	< $2,000	Sharon R. Keefe 1/12/16
2	Program Manager	$2,001 - $5,000	
3	Director	$5,001 - $15,000	
4	Vice President	$15,001 - $25,000	

1. Regardless of amount, all approvals must commence with appropriate Level 1 approver and proceed through approval chain as depicted.
2. Submit all Services Check Requests with any available documentation on cost to the Office/Project Coordinator.
3. A receipt should be requested and delivered to the Office Coordinator within 7 days of issuance.
4. The Office/Project Coordinator will issue all Services Checks.

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@po.state.ct.us
Web Site: www.ct.gov/csc

Modification of Existing Telecommunications Facilities

April 2013

I. Existing Telecommunications Towers

The Regulations of Connecticut State Agencies — RCSA § 16-50j-72(b) — describe conditions under which modifications to an existing telecommunications facility do not constitute a substantial adverse environmental effect and, therefore, do not need a Certificate of Environmental Compatibility and Public Need to be issued by the Siting Council. In such cases, a company must notify the Council of its intent to make exempt modifications in accordance with RCSA § 16-50j-73. A company must also send a copy of its notice to the chief elected official of the municipality in which the facility is located and the property owner of record, if the property owner of record is different from the owner or operator of the tower and associated equipment.

A notice of intent to make exempt modifications should consist of the following components:

- A narrative that: 1) describes the existing facility including location (with latitude and longitude coordinates), height of tower, and size of the existing equipment compound; 2) describes the nature and extent of the proposed modifications including number of antennas to be installed, type of mounting, centerline height of antennas, and ground equipment to be installed; and 3) describes how the proposed modifications comply with the conditions identified in RCSA § 16-50j-72(b).
- Engineering drawings that depict the existing facility and show the modifications to be made. Drawings should include plan and elevation views.
- An engineering analysis describing the existing tower's structural capability to accommodate the proposed modifications. This analysis should identify any structural changes and/or reinforcements that may be needed to accommodate the proposed modifications. The analysis must be stamped by a Professional Engineer.
- A calculation, based on an approved methodology prescribed by the FCC Office of Engineering and Technology Bulletin No. 65E, Edition 97-01 (August 1997), of the power density of the radio frequency emissions to be generated by the antennas to be installed.
- All documents, including but not limited to maps, shall be dated (ie: effective dates, revision dates, or dates of adoption). If the document date is unavailable, the date the document was obtained shall be provided. Maps must include a key table(s) and a matching source list/table, appropriately organized.

The applicant must submit an original and 2 copies of its notice of exempt modification with a $625 filing fee (Conn. Gen. Stat. §4-189j; Regs., Conn. State Agencies § 16-50v-1a).

II. Replacement of Damaged Towers

1. A community antenna television tower or telecommunications tower and associated equipment installed adjacent to a damaged or inoperable existing tower and associated equipment in order to maintain continuity of community antenna television service or telecommunications shall not constitute a facility provided that:

   (A) such tower and associated equipment shall be removed at the earliest practicable time but in no event later than one year after installation, unless otherwise approved by the Council or unless exempt under subsection (b) of this section in which event the existing damaged or inoperable tower and associated equipment shall be removed no later than one year after installation of the new tower and associated equipment;

   (B) the owner or operator of such tower and associated equipment shall give the Council, the property owner of record, if the property owner of record is different from the owner or operator of such tower and associated equipment, and the chief elected official of the municipality in which the tower and associated equipment is located, written notice of the installation or proposed installation of such tower and associated equipment. The owner or operator of such tower and associated equipment shall provide the Council with proof of service of the written notice to the property owner of record, if the property owner of record is different from the owner or operator of such tower and associated equipment, and the municipality in which the tower or associated equipment is located. Notice to all parties shall include the following:
   - the location of such tower and associated equipment;
   - the reason for its installation; and
   - the estimated time such tower and associated equipment shall remain in place.
   - the notice shall be given at the earliest practicable time but not later than 48 hours after the installation of such tower and associated equipment; and
   - the owner or operator of such tower or associated equipment shall restore the site to its original condition as nearly as practical, subject to such other conditions as ordered by the Council, or its designee.

III. Modification of Existing Towers Under Council Jurisdiction

None of the following shall constitute a modification to an existing community antenna television or telecommunications tower that may have a substantial adverse environmental effect:

(1) Routine general maintenance and one-for-one replacement of facility components that is necessary for reliable operation;

(2) Changes on an existing site that do not:

(A) increase the tower height;

(B) extend the boundaries of the site by any dimension;

(C) increase noise levels at the site boundary by 6 decibels or more, or to levels that exceed state and local criteria;

(D) add radio frequency sending or receiving capability which increases the total radio frequency electromagnetic radiation power density measured at the site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the

Telecommunications Act of 1996, as amended, and the State Department of Energy and Environmental Protection, pursuant to Section 22a-162 of the Connecticut General Statutes;

(E) cause a significant adverse change or alteration in the physical or environmental characteristics of the site; and

(F) impair the structural integrity of the facility, as determined in a certification provided by a professional engineer licensed in Connecticut, or

(3) Replacement of an existing CATV tower or telecommunications tower and associated equipment with a tower that is no taller than the tower to be replaced and that does not support public service company or state antennas, or antennas to be used for public cellular radio communications emitting total radio frequency electromagnetic radiation power density measured at the site boundary to or above the standard adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996, as amended, and the State Department of Energy and Environmental Protection pursuant to Section 22a-162 of the Connecticut General Statutes.

IV. Modification of Existing Towers Not Under Council Jurisdiction

Placement of community antenna television towers and head-end structures, telecommunications towers, and associated telecommunications equipment, owned or operated by the state or a public service company, as defined in Section 16-1 of the Connecticut General Statutes, or used in a cellular system, as defined in the code of Federal Regulations Title 47, Part 22, as amended, on any existing non-facility tower, shall not constitute a substantial adverse environmental effect when the changes on the existing non-facility tower:

(1) Have received an acknowledgment from the Council that such a facility would not cause a significant change or alteration in the physical and environmental characteristics of the site;

(2) Do not extend the boundaries of the site by any dimension;

(3) Do not increase noise levels at the site boundary by 6 decibels or more, or to levels that exceed state and local criteria;

(4) Do not increase the total radio frequency electromagnetic radiation power density measured at the site boundary to or above the standard adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996, as amended, and the State Department of Energy and Environmental Protection pursuant to Section 22a-162 of the Connecticut General Statutes; and

(5) Have received all municipal zoning approvals and building permits, where applicable.

V. Temporary Use of Cellular Equipment

The temporary use of telecommunications equipment shall not constitute a facility provided that:

(1) The temporary use is necessary to provide emergency or essential telecommunications service to areas of local disaster or events of statewide significance.

(2) Any provider of temporary telecommunications service for an event of statewide significance shall provide to the Council for its approval 30 day advance written notice of the development of such temporary service. The provider shall also provide the property owner of record, if the property owner of record is different from the provider, and the chief elected official of the municipality in which the

temporary facility is to be located, advance written notice not less than 30 days prior to the installation. Such notice shall include:

(A) The location of the temporary telecommunications equipment;

(B) A letter from the property owner of record, if the property owner of record is different from the provider, authorizing use of the property for the temporary telecommunications service;

(C) The height and power density of the temporary telecommunications equipment;

(D) The noise levels of the temporary telecommunications equipment measured at the property lines;

(E) The estimated time the temporary telecommunications equipment shall be in use, including the approximate start and end dates; and

(F) The specific reasons for the installation, including, but not limited to, the nature of the event.

(3) Any provider of temporary telecommunications service at an area of a local disaster shall provide to the Council written notice not later than 48 hours after the deployment including:

(A) The location of the temporary telecommunications equipment;

(B) A letter from the property owner of record, if the property owner of record is different from the provider, authorizing use of the property for the temporary telecommunications service;

(C) The height and power density of the temporary telecommunications equipment;

(D) The noise levels of the temporary telecommunications equipment measured at the property lines;

(E) The estimated time the temporary telecommunications equipment shall be in use, including, but not limited to, the hours of operation of the temporary telecommunications equipment and conditions that would render the use of the temporary telecommunications equipment no longer necessary; and

(F) The nature of the emergency.

(4) In no event shall temporary use of telecommunications equipment exceed 30 days unless the Council and the property owner of record, if the property owner of record is different from the provider, grant approval for an extension.

VI. Notice of Intent to Modify

The owner or operator of any tower and associated equipment claiming such tower and associated equipment is exempt pursuant to Section 16-50j-72 of the Regulations of Connecticut State Agencies shall give the Council the chief elected official of the municipality of the site and the property owner of record, if the property owner of record is different from the owner or operator of the tower and associated equipment, notice in writing prior to construction of its intent to construct such tower and associated equipment, detailing its reasons for claiming exemption. (Regs., Conn. State Agencies § 16-50j-73)

This overview is designed to answer general questions and provide basic information. Reference should be made to the appropriate statutes and regulations for specific regulatory language. Asserting a person's rights and privileges is his or her responsibility. Although it is not obligatory, it is a person's prerogative to obtain legal counsel.

at&t

SITE NAME: AVON - MONTEVIDEO ROAD
FA NUMBER: 10141394
SITE NUMBER: CTL01330

324 MONTEVIDEO ROAD
AVON, CT 06001
COUNTY: HARTFORD

PROJECT TEAM

CLIENT REPRESENTATIVE

COMPANY:	SMARTLINK, LLC
ADDRESS:	1362 MELLON ROAD, SUITE 140
CITY, STATE, ZIP:	HANOVER, MD 21076
CONTACT:	RICH WAGNER
E-MAIL:	RWAGNER@SMARTLINKLLC.COM

SITE ACQUISITION

COMPANY:	SMARTLINK, LLC
ADDRESS:	33 BOSTON POST ROAD WEST, SUITE 210
CITY, STATE, ZIP:	MARLBOROUGH, MA 01752
CONTACT:	TODD OLIVER
PHONE:	(774) 369-3618
E-MAIL:	TODD.OLIVER@SMARTLINKLLC.COM

ENGINEER

COMPANY:	MASER CONSULTING P.A.
ADDRESS:	331 NEWMAN SPRINGS RD, SUITE 203
CITY, STATE, ZIP:	RED BANK, NJ 07701-5699
CONTACT:	FRANK PAZDEN
PHONE:	(973) 398-3110 x4505
E-MAIL:	FPAZDEN@MASERCONSULTING.COM

RF ENGINEER

COMPANY:	NEW CINGULAR WIRELESS PCS, LLC
ADDRESS:	550 COCHITUATE RD
CITY, STATE, ZIP:	FRAMINGHAM, MA 01701
CONTACT:	CAMERON SYME
E-MAIL:	CS6970@ATT.COM

CONSTRUCTION MANAGER

COMPANY:	SMARTLINK, LLC.
ADDRESS:	33 BOSTON POST ROAD WEST, SUITE 210
CITY, STATE, ZIP:	MARLBOROUGH, MA 01752
CONTACT:	MARK DONNELLY
PHONE:	(617) 515-2080
E-MAIL:	MARK.DONNELLY@SMARTLINKLLC.COM

SITE INFORMATION

APPLICANT/LESSEE

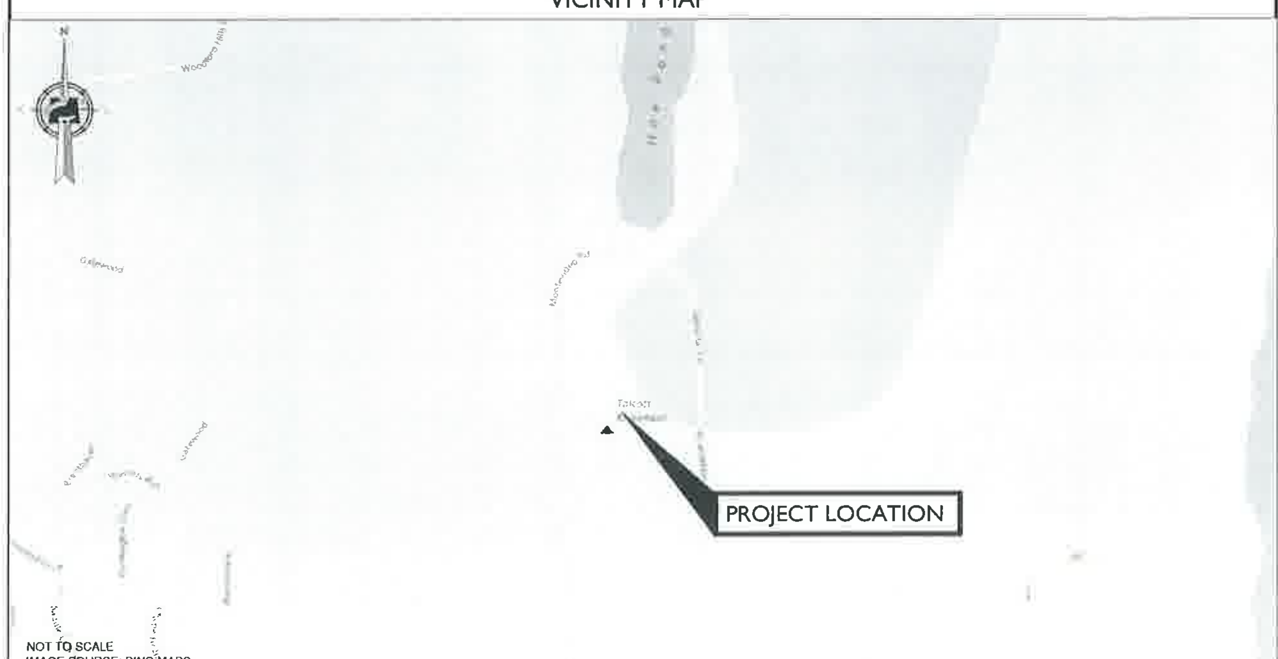
at&t

NEW CINGULAR WIRELESS PCS, LLC
550 COCHITUATE RD.
FRAMINGHAM, MA 01701

PROPERTY/TOWER OWNER:

NAME:	THE TALCOTT MOUNTAIN SCIENCE CENTER FOR STUDENT INVOLVEMENT, INC.
ADDRESS:	324 MONTEVIDEO ROAD
CITY, STATE, ZIP:	AVON, CT 06001
LATITUDE:	41.811797° N
LONGITUDE:	72.798767° W
LAT./LONG. TYPE:	NAD 83
AREA OF CONSTRUCTION:	EXISTING EQUIPMENT SHELTER AND LATTICE TOWER WITH DOPPLER RADAR DOME
ZONING/JURISDICTION:	TOWN OF AVON
CURRENT USE/PROPOSED USE:	UNMANNED TELECOMMUNICATIONS FACILITY
HANDICAP REQUIREMENTS:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS NOT REQUIRED.
CONSTRUCTION TYPE:	IIB
USE GROUP:	U

VICINITY MAP



NOT TO SCALE
IMAGE SOURCE: BING MAPS

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING CODES.

1. CONNECTICUT STATE BUILDING CODE (2005) & ALL SUBSEQUENT AMENDMENTS
2. NATIONAL ELECTRIC CODE 2011
3. NATIONAL FIRE PROTECTION ASSOCIATION 70 - 2011
4. LIGHTNING PROTECTION CODE 201
5. AMERICAN CONCRETE INSTITUTE 318
6. AMERICAN INSTITUTE OF STEEL CONSTRICTION 14 ED.
7. EIA/TIA-222 REVISION F
8. TIA 607 FOR GROUNDING
9. INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS 81
10. IEEE C2 LATEST EDITION
11. TELCORDIA GR-1275 12 ANSI T1.311

GENERAL CONTRACTOR NOTES

DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE; NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

SHEET	DESCRIPTION
T-1	TITLE SHEET
GN-1	GENERAL NOTES
A-1	COMPOUND PLAN AND EQUIPMENT PLAN
A-2	ELEVATION VIEW AND ANTENNA SCHEDULE
A-3	ANTENNA LAYOUTS
A-4	DETAILS
A-5	RF PLUMBING DIAGRAMS
G-1	GROUNDING DETAILS

PROJECT DESCRIPTION/SCOPE OF WORK

LTE WCS WILL BE 3C AT THE SITE WITH BRONZE STANDARD CONFIGURATION.

PROPOSED PROJECT SCOPE HEREIN BASED ON RFDS ID# 741080, VERSION 1.00 LAST UPDATED 06/23/15.

THIS PROJECT WILL BE COMPRISED OF:

- REPLACE THE DUMMY ANTENNA WITH AN OCTOPORT AND INSTALL AT POSITION 2
- ADD RRUS-32 FOR LTE WCS ANTENNA
- ADD XMU R503

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HANOVER, MD 21076
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at&t

NEW CINGULAR WIRELESS PCS, LLC
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

811 Know what's below. Call before you dig.

PROTECT YOURSELF
ALL STATES REQUIRE NOTIFICATION OF EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN ANY STATE
FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

SCALE:	JOB NUMBER:
AS SHOWN	15946012A

REV	DATE	DESCRIPTION		
1	12/?/15	REVISED PER SMARTLINK'S COMMENTS	RAP/SMG	FEP
0	10/29/15	[illegible]		FEP

IT IS A VIOLATION [illegible] UNLESS THEY ARE ACTING UNDER THE DIRECTION OF THE RESPONSIBLE LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SITE NAME:

AVON - MONTEVIDEO ROAD
FA# 10141394
SITE # CTL01330
324 MONTEVIDEO ROAD
AVON, CT 06001
COUNTY OF HARTFORD

RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank, NJ 07701-5699
Phone: 732.383.1950
Fax: 732.383.1984

SHEET TITLE: TITLE SHEET

SHEET NUMBER: T-1

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 50 HMS OR LESS.

4. THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.

5. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

6. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

7. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE EQUIPMENT GROUND RING WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; 2 AWG STRANDED COPPER FOR OUTDOOR BTS.

8. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.

9. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING, SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.

10. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

11. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED. ALL BENDS SHALL BE MADE WITH 12" RADIUS OR LARGER.

12. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

13. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS EXCEPT FOR GROUND BAR CONNECTION FROM MGB TO OUTSIDE EXTERIOR GROUND SHALL ALL BE CADWELD CONNECTIONS.

14. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.

15. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED TO THE TOWER GROUND BAR.

16. APPROVED ANTIOXIDANT COATINGS (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

17. ALL EXTERIOR AND INTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.

18. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

19. BOND ALL METALLIC OBJECTS WITHIN 6 FT OF MAIN GROUND WIRES WITH 1-#2 AWG TIN-PLATED COPPER GROUND CONDUCTOR.

20. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G. NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.

21. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/4" IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

CONTRACTOR – SMARTLINK
SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
OWNER – AT&T (NEW CINGULAR WIRELESS PCS, LLC)

2. ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.

3. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

4. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.

5. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.

9. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

10. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.

11. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE RESPONSIBLE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & EXCAVATION.

12. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE RESPONSIBLE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.

13. THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION.

14. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

15. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

16. THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.

17. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.

18. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

19. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE.

20. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

21. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR.

22. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILITIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.

23. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

24. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS.

25. ALL STRUCTUAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

26. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."

27. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DESCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

28. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

29. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN ALERT OF DANGEROUS EXOPOSURE LEVELS.

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0	[illegible]	ISSUED [illegible]	[illegible]	FEP

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SITE # CTL01330

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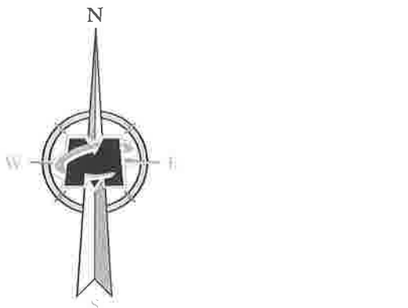
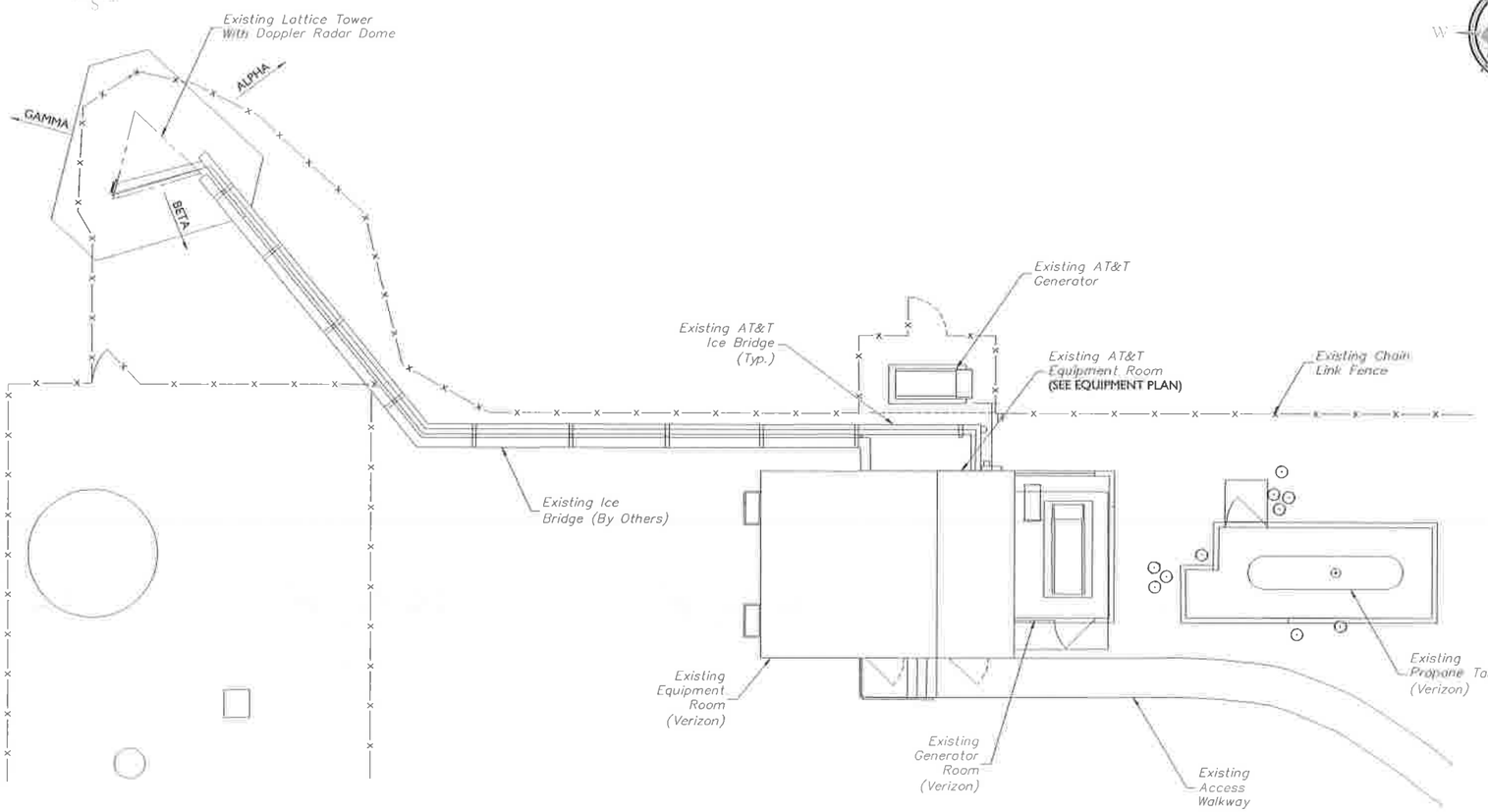
AVON, CT 06001
COUNTY OF HARTFORD

RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank, NJ 07701-5699
Phone: 732.383.1950
Fax: 732.383.1984
email: solutions@maserconsulting.com

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-1





COMPOUND PLAN

GRAPHIC SCALE

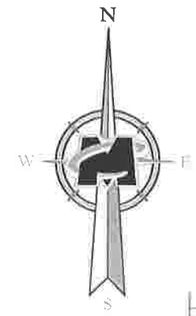
1 0 .5 1 2

(IN FEET)

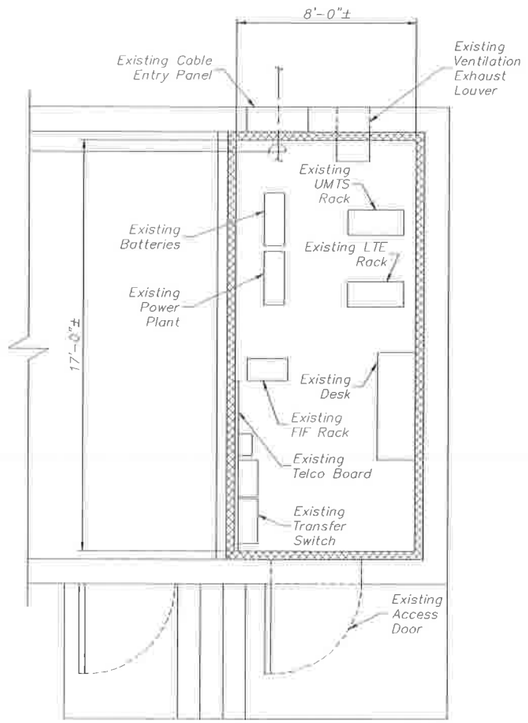
SCALE: 1" = 1' FOR 24"X36" DRAWINGS
(DO NOT SCALE 11"X17" DRAWINGS)

NOTES:

1. THE CONDUIT ROUTING IS DIAGRAMMATICALLY SHOWN ON THE PLANS AND ARE ONLY APPROXIMATIONS. THE EXACT LOCATION AND ROUTING SHALL BE FIELD VERIFIED.
2. ALL DISCONNECTS AND CONTROLLING DEVICES SHALL BE PROVIDED WITH ENGRAVED LAMICOID NAMEPLATES, INDICATING THE CIRCUITS ORIGINATION AND ALL EQUIPMENT TERMINATIONS.
3. SUBCONTRACTOR SHALL PROVIDE ALL CONDUITS AND CIRCUITS AS REQUIRED FOR A COMPLETED SYSTEM AND SHALL BE IN COMPLIANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
4. ALL NEW CABLING TO BE ROUTED ON EXISTING CABLE RACKS.
5. ALL INSTALLED GROUND LUGS MUST BE INSPECTION HOLE LUGS.
6. INSTALLED GROUND LEADS MUST TERMINATE AT MGB, NOT HALO.
7. NO OVERLAPPING GROUND HARDWARE.



ADD R503-XMU03 HARDWARE TO EXISTING CABINET WITH LTE6601



EQUIPMENT PLAN

GRAPHIC SCALE

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(IN FEET)

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(DO NOT SCALE 11"X17" DRAWINGS)

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REV	DATE	DESCRIPTION	BY	CHECKED BY

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FRANK E. PAZDERA
LICENSED PROFESSIONAL ENGINEER
FRANK E. PAZDERA
REGISTERED PROFESSIONAL ENGINEER
LICENSE NUMBER PEN.20188

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SITE # CTL01330

324 MONTEVIDEO ROAD
AVON, CT 06001
COUNTY OF HARTFORD

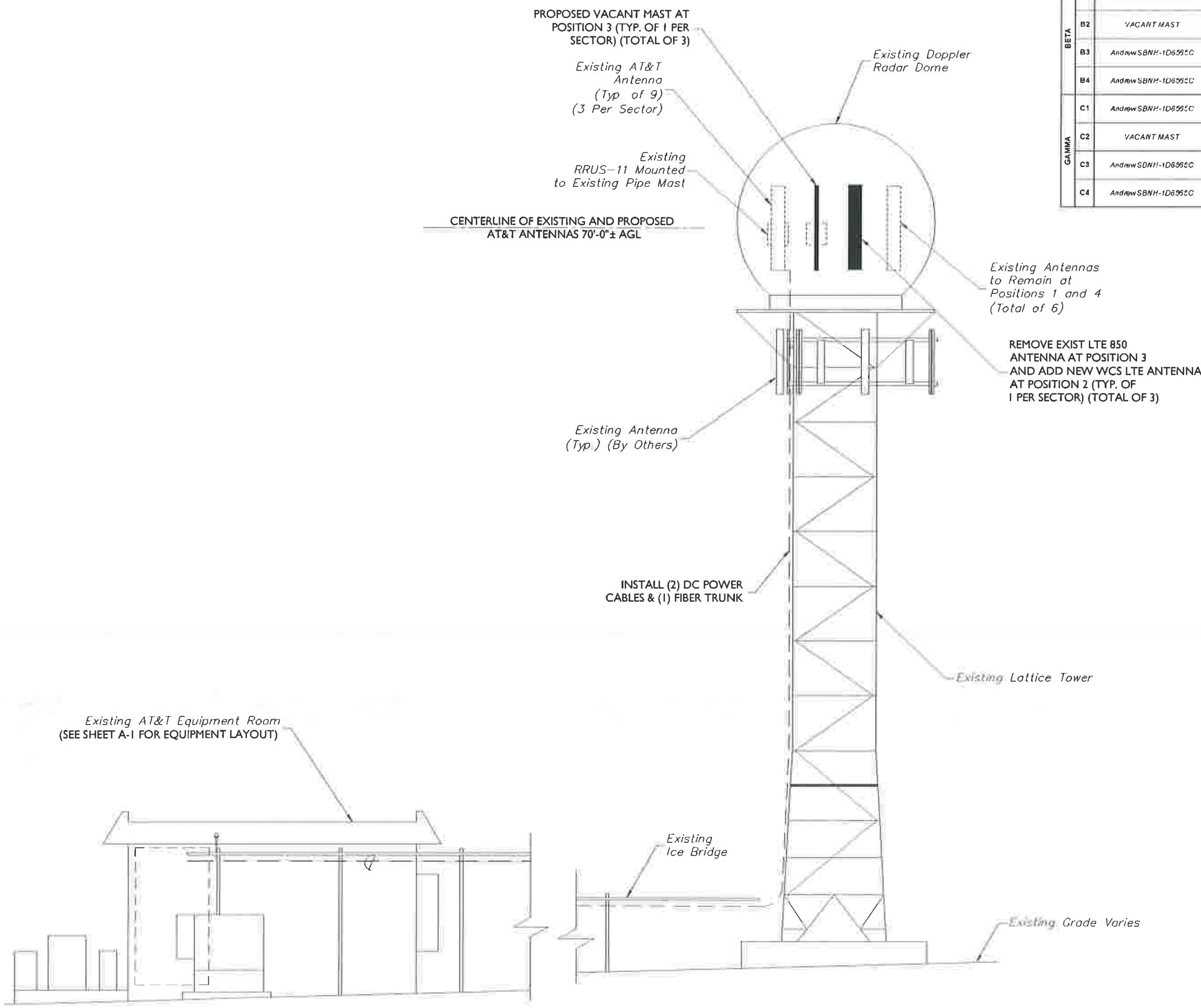
RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank, NJ 07701-5699
Phone: 732 383 1950
Fax: 732 383 1984
e-mail: solutions@maserconsulting.com

SHEET TITLE:
COMPOUND PLAN AND EQUIPMENT PLAN

SHEET NUMBER:
A-1

SECTOR		EXISTING ANTENNA CONFIGURATION	PROPOSED ANTENNA CONFIGURATION	TECHNOLOGY	ANTENNA STATUS	HEIGHT (in)	WIDTH (in)	DEPTH (in)	WEIGHT (lbs)	ANTENNA AZIMUTH	ANT CL ELEV (ft)	RRUS CONFIGURATION	STATUS
PROPOSED ANTENNA AND RRUS CONFIGURATION													
ALPHA	A1	Andrew SBNH-1D6565C	Andrew SBNH-1D6565C	UMTS	REMAIN	96 40	11 30	7 10	60 80	90°	70	(2) RRUS 11	REMAIN
ALPHA	A2	VACANT MAST	CCI OPA-65R-LCUU-H8	WCS LTE	NEW	92.70	14 40	7.00	88.00	90°	70'	RRUS 32	NEW
ALPHA	A3	Andrew SBNH-1D6565C	VACANT MAST	-	REMOVE							-	
ALPHA	A4	Andrew SBNH-1D6565C	Andrew SBNH-1D6565C	LTE	REMAIN	96 40	11 30	7 10	60 00	50°	70'	-	
BETA	B1	Andrew SBNH-1D6565C	Andrew SBNH-1D6565C	UMTS	REMAIN	96 40	11 30	7 10	60 80	210°	70'	-	
BETA	B2	VACANT MAST	CCI OPA-65R-LCUU-H8	WCS LTE	NEW	92 70	14 40	7 00	88.00	210°	70'	RRUS 32	NEW
BETA	B3	Andrew SBNH-1D6565C	VACANT MAST	-	REMOVE	-	-			-	-	RRUS 11	REMAIN
BETA	B4	Andrew SBNH-1D6565C	Andrew SBNH-1D6565C	LTE	REMAIN	96 40	11 30	7 10	60 80	210°	70'	-	-
GAMMA	C1	Andrew SBNH-1D6565C	Andrew SBNH-1D6565C	UMTS	REMAIN	96 40	11 30	7 10	60 80	330°	70'	-	-
GAMMA	C2	VACANT MAST	CCI OPA-65R-LCUU-H8	WCS LTE	NEW	92 70	14 40	7.00	88 00	330°	70'	RRUS 32	NEW
GAMMA	C3	Andrew SBNH-1D6565C	VACANT MAST	-	REMOVE	-	-	-	-	-	-	RRUS 11	REMAIN
GAMMA	C4	Andrew SBNH-1D6565C	Andrew SBNH-1D6565C	LTE	REMAIN	96 40	11 30	7 10	60 80	330°	70'	-	-

ANTENNA SCHEDULE



ELEVATION VIEW

GRAPHIC SCALE

1 0 .5 1 2

(IN FEET)
SCALE: 1" = 1' FOR 24"X36" DRAWINGS
(DO NOT SCALE 11"X17" DRAWINGS)

STRUCTURAL NOTES:

1. NO CONSTRUCTION OF THE PROPOSED LOADING SHOWN SHALL PROCEED UNTIL ADEQUACY OF THE EXISTING STRUCTURE AND FOUNDATION, INCLUDING THE PROPOSED AT&T ANTENNA MOUNTING CONFIGURATION SHOWN HEREIN, HAS BEEN COMPLETED.
2. THE STRUCTURE ELEVATION IS SHOWN FOR INFORMATIONAL PURPOSES ONLY AND MAY NOT REFLECT AS-BUILT FIELD CONDITIONS FOR ALL EXISTING INVENTORY LOADING/ANTENNAS/APPURTANENCES ON STRUCTURE. REFER TO THE LATEST STRUCTURAL ANALYSIS FOR EXISTING STRUCTURE LOADING AND THE PROPOSED METHOD OF ATTACHMENT OF THE PROPOSED ANTENNAS/CABLES.
3. THE CONTRACTOR IS RESPONSIBLE TO CONFIRM THAT ANY IMPROVEMENTS AND REINFORCEMENTS REQUIRED BY THE STRUCTURAL ANALYSIS CERTIFICATION ARE PROPERLY INSTALLED PRIOR TO THE ADDITION OF ANTENNAS, CABLES, SUPPORTS AND APPURTENANCES PROPOSED ON THESE DRAWINGS OR OTHERWISE NOTED IN THE STRUCTURAL ANALYSIS.

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SCALE: AS SHOWN
JOB NUMBER: 15946012A

NO.	DATE	COMMENTS	DRAWN BY	CHECKED BY
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0			DTS	FEP

STATE OF CONNECTICUT
FRANK E. PAZDEN
LICENSED PROFESSIONAL ENGINEER
FRANK E. PAZDEN
CONNECTICUT PROFESSIONAL ENGINEER LICENSE NUMBER

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SITE NAME:

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SITE # CTL01330

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Suite 203
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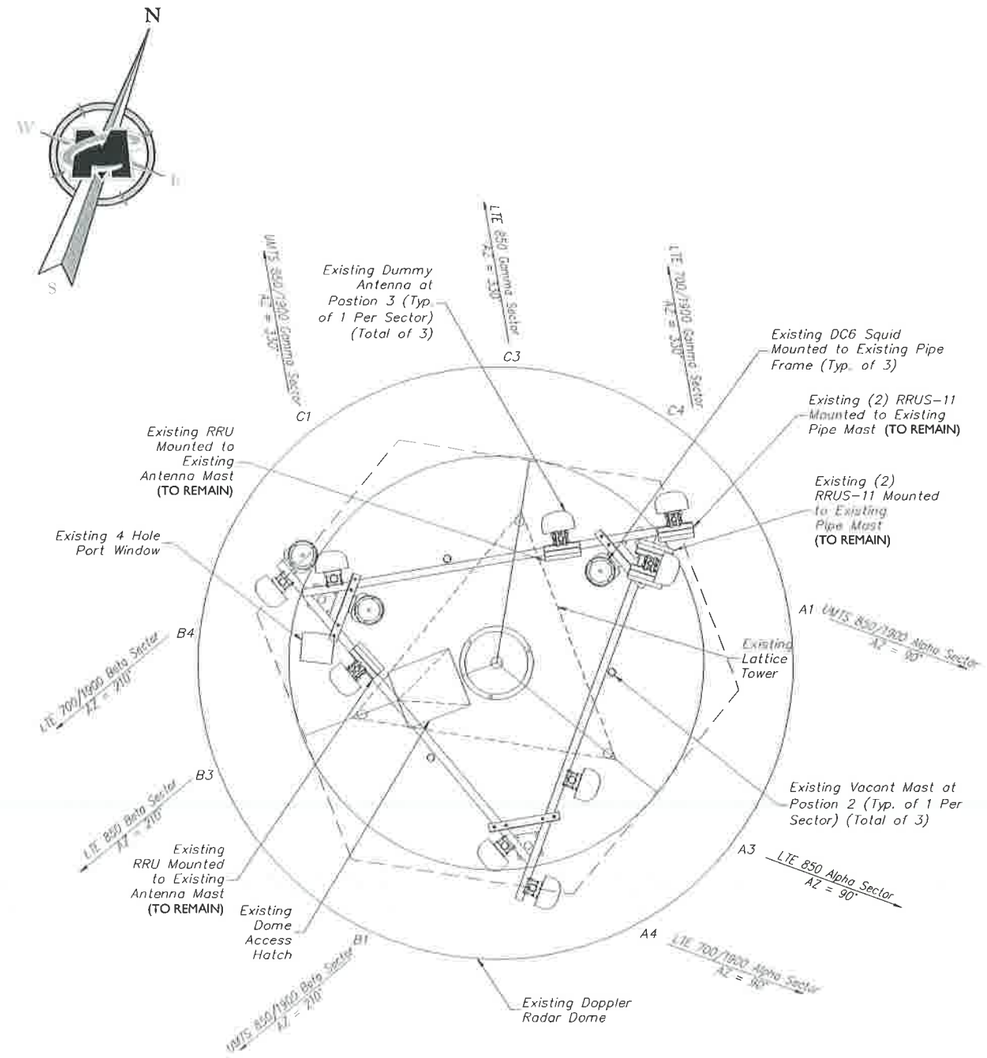
Fax: 732.383.1984

SHEET TITLE: ELEVATION VIEW AND ANTENNA SCHEDULE

SHEET NUMBER: A-2

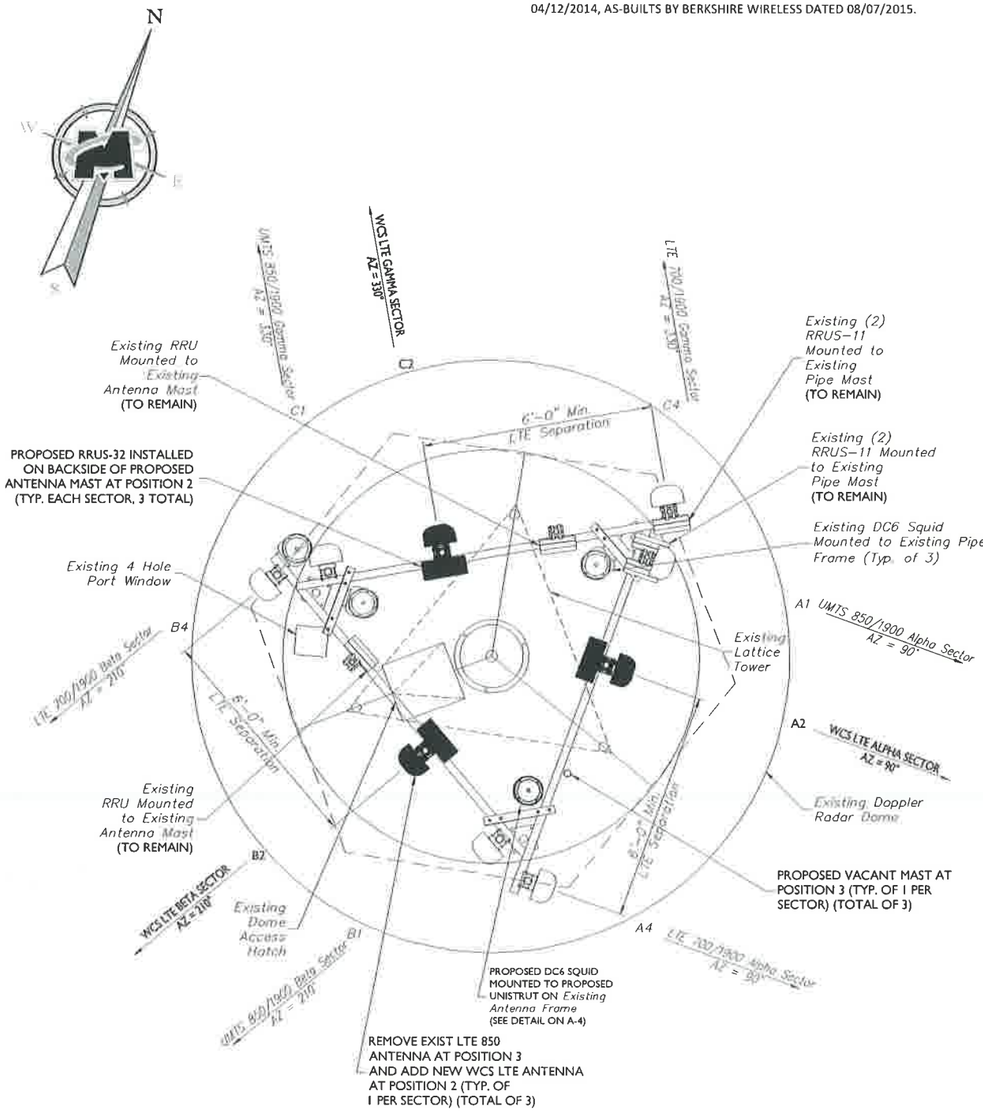


EXISTING - ANTENNA LAYOUT

NOT TO SCALE

NOTES:

EXISTING ANTENNA LAYOUT WITHIN EXISTING RF TRANSPARENT DOME STRUCTURE BASED ON EXISTING REV. 0 CONSTRUCTION DRAWINGS ENTITLED AVON-MONTEVIDEO ROAD BY CENTEK ENGINEERING. AS-BUILTS BY EASTERN COMMUNICATIONS DATED 04/12/2014, AS-BUILTS BY BERKSHIRE WIRELESS DATED 08/07/2015.



PROPOSED - ANTENNA LAYOUT

NOT TO SCALE

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AS SHOWN	15946012A

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0	10/29/15	ISSUED FOR CONSTRUCTION	DTS	PEP

STATE OF CONNECTICUT
FRANK E. PAZDERA
FRANK E. PAZDERA
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NO. 20,188
LICENSED PROFESSIONAL ENGINEER

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RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank, NJ 07701-5699
Phone: 732.383.1950
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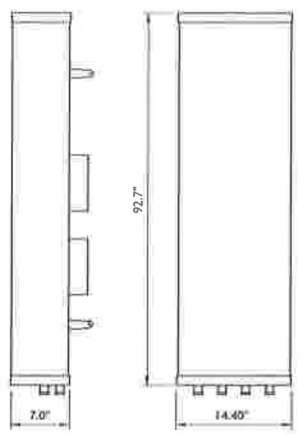
SHEET TITLE:
ANTENNA LAYOUTS

SHEET NUMBER:
A-3

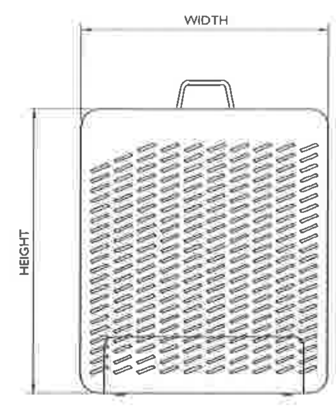


WEIGHT = 88 LBS

CCI OPA-65R-LCUU-H8

ANTENNA DETAIL

NOT TO SCALE



RRUS FRONT VIEW

SIZE AND WEIGHT TABLE

RRUS	WIDTH	DEPTH	HEIGHT	WEIGHT W/O BRACKET
RRUS-32 4X40-1900 (WITH SOLAR SHIELD)	-	-	-	-
RRUS-32 4X40-1900 (WITHOUT SOLAR SHIELD)	17"	7 2"	19 7"	50 7

MINIMUM CLEARANCE TABLE

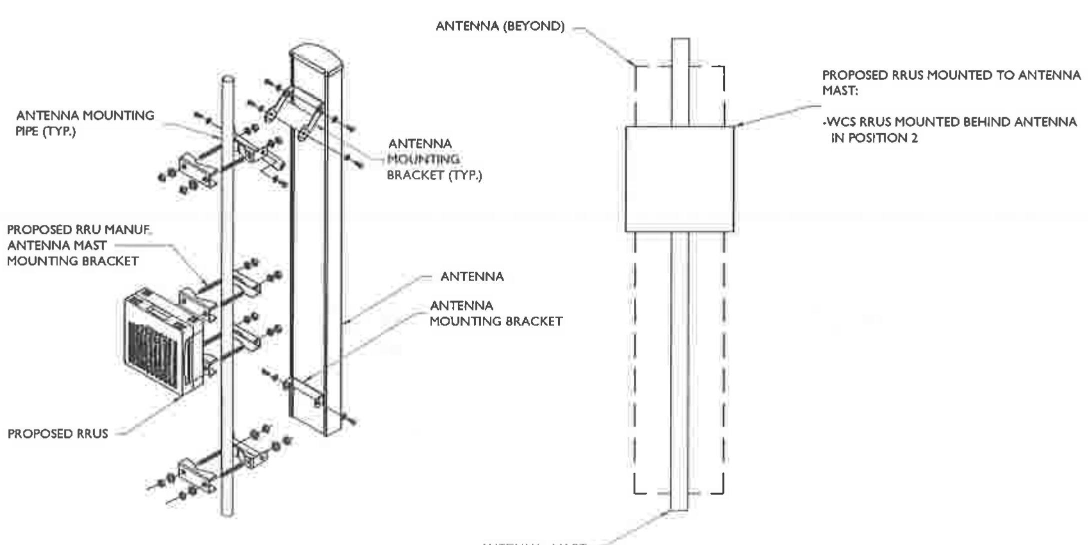
RRUS CABINET	CLEARANCES (INCHES)	COMMENTS
FRONT	-	INSTALLATION ACCESS
REAR	-	ZERO REAR CLEARANCE IS ALLOWED USING SUPPLIED MOUNTING BRACKETS
RIGHT	-	AIR FLOW
LEFT	-	AIR FLOW
TOP	-	AIR FLOW
BOTTOM	-	CONDUIT ROUTING

NOTE:

USE 1/2" COAXIAL CABLE W/7/16 DIN MALE CONNECTORS ON BOTH ENDS

RRUS DETAIL

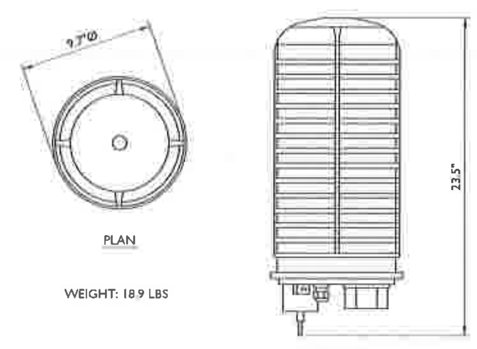
NOT TO SCALE



MOUNTING ASSEMBLY REPEATED ONCE AT EACH SECTOR

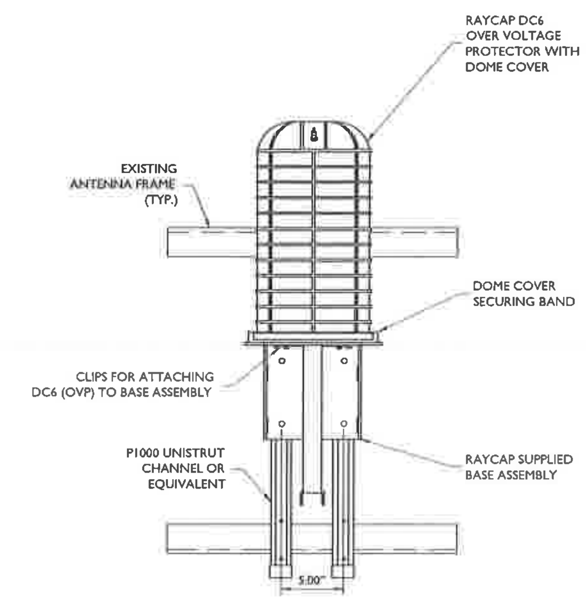
ANTENNA AND RRUS MOUNTING DETAILS

NOT TO SCALE



RAYCAP DC6-48-60-18-8F SURGE SUPPRESSOR

NOT TO SCALE



NOTES:

1. RAYCAP VIA AT&T SUPPLIES THE DC-6. SUBCONTRACTOR SHALL SUPPLY ALL OTHER MATERIALS AND INSTALL ALL MOUNTING HARDWARE. ALU INSTALLS RRH AND MAKES CABLE TERMINATIONS.
2. INSTALL HORIZONTAL/VERTICAL UNISTRUT CHANNELS AS REQUIRED TO ALIGN FRAME WITH EQUIPMENT MOUNTING HOLES. FASTEN UNISTRUT CHANNELS TOGETHER WITH 3/8" UNISTRUT BOLTING HARDWARE AND SPRING NUTS.
3. EACH UNISTRUT TO BE MOUNTED ON EXISTING VERTICAL PIPE MASTS USING 3/8" Ø U-BOLTS, MINIMUM ONE AT EACH END OF UNISTRUT.
4. MOUNT DC-6 TO UNISTRUT WITH 3/8"Ø UNISTRUT BOLTING HARDWARE AND SPRING NUTS THROUGH EQUIPMENT MOUNTING HOLES. SUBCONTRACTOR SHALL SUPPLY.
5. PAINTING OF THE DC-6 SHALL BE IN STRICT CONFORMANCE WITH MANUFACTURER'S WRITTEN SPECIFICATIONS.

DC6-48-60-18-8F SURGE SUPPRESSOR MOUNT

NOT TO SCALE

MASER CONSULTING
—CONNECTICUT—

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HANOVER, MD 21076
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at&t
NEW CINGULAR WIRELESS PCS, LLC
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

AS SHOWN | 15946012A

STATE OF CONNECTICUT · FRANK E. PAZDEN · No. 26108 · LICENSED PROFESSIONAL ENGINEER

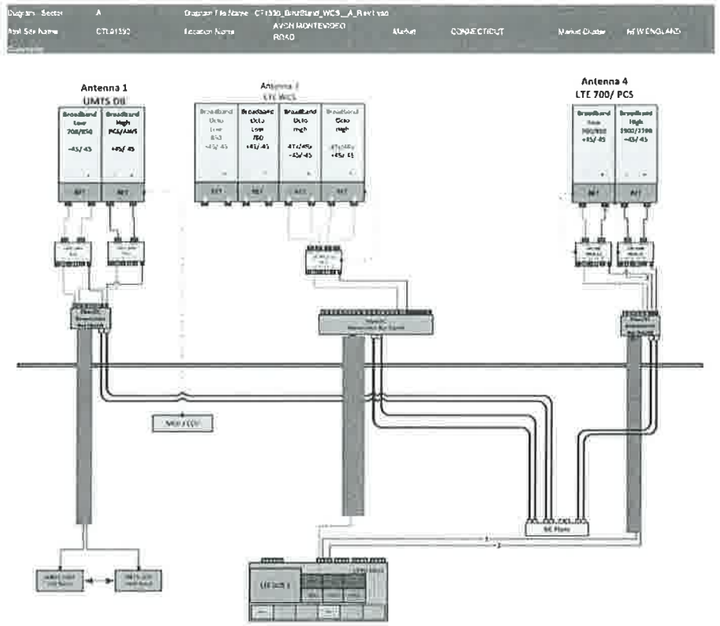
SITE NAME:

AVON - MONTEVIDEO ROAD
FA# 10141394
SITE # CTL01330
324 MONTEVIDEO ROAD
AVON, CT 06001
COUNTY OF HARTFORD

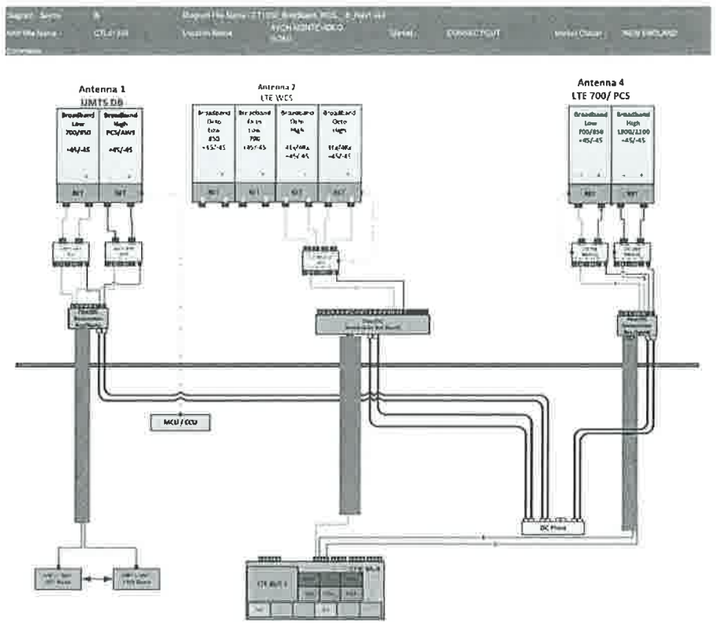
RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank, NJ 07701-5699

DETAILS

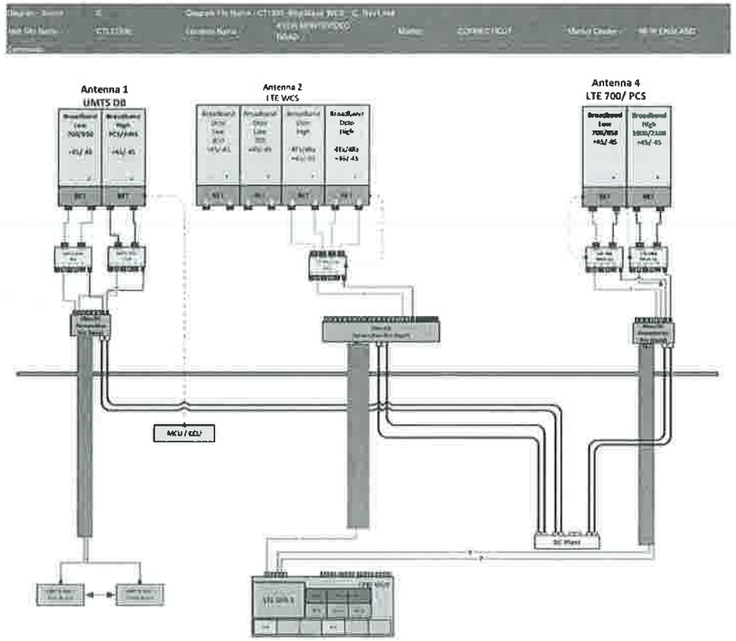
A-4



ALPHA SECTOR



BETA SECTOR



GAMMA SECTOR

BASED ON RF ENGINEERING DESIGN ENTITLED "NEW-ENGLAND_CONNECTICUT_CTL01330_2016-LTE-Next-Carrier_LTE-3C_mm093q_2051A02J0T_10141394_139386_06-22-2015_Preliminary-Approved_v1.00"

RF PLUMBING DIAGRAMS

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FOR STATE SPECIFIC DIRECT PHONE NUMBERS VISIT: WWW.CALL811.COM

SCALE	JOB NUMBER
AS SHOWN	15946012A

REV	DATE	DESCRIPTION	DRAWN BY	CHECKED BY
1	12/15/15	REVISED PER SMARTLINK'S COMMENTS	RAP/SMG	REP
0	10/09/15	ISSUED FOR REVIEW	DTS	REP

STATE OF CONNECTICUT
FRANK E. PAZDEN
CONNECTICUT
No. 28188
LICENSED PROFESSIONAL ENGINEER

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SITE NAME:

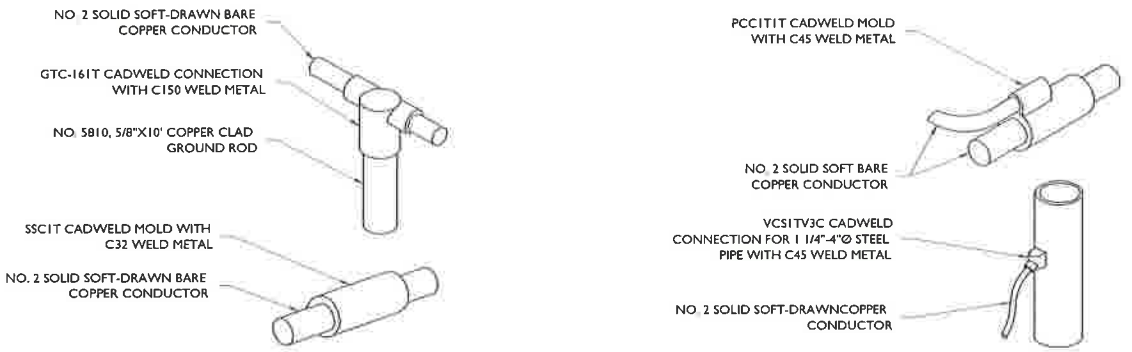
AVON - MONTEVIDEO ROAD
FA# 10141394
SITE # CTL01330

324 MONTEVIDEO ROAD
AVON, CT 06001
COUNTY OF HARTFORD

RED BANK OFFICE
331 Newman Springs Road
Suite 203
Red Bank, NJ 07701-5699
Phone: 732 383 1950
Fax: 732 383 1984
www.maserconsulting.com

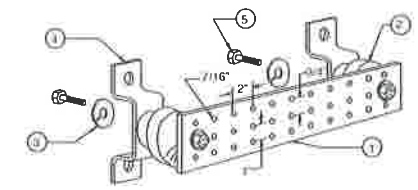
SHEET TITLE
RF PLUMBING DIAGRAMS

SHEET NUMBER
A-5



CADWELD DETAILS

NOT TO SCALE



LEGEND

1- TINNED COPPER GROUND BAR, 1/4"x4"x20", NEWTON INSTRUMENT CO. CAT. NO. B-6142 OR EQUAL. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.

2- INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4

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" HHCS BOLTS, NEWTON INSTRUMENT CO. CAT NO. 3012-1

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

SECTION "P" - SURGE PRODUCERS

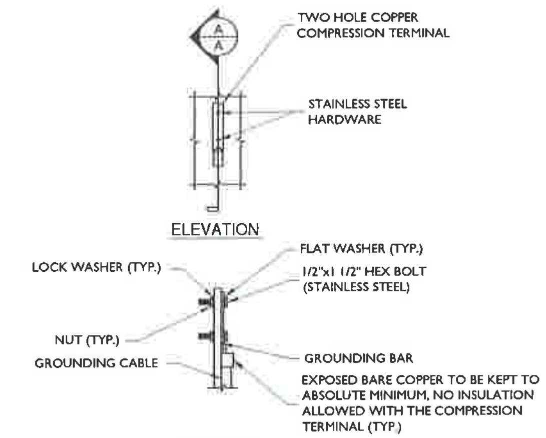
CABLE ENTRY PORTS (HATCH PLATES) (#2)
GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
TELCO GROUND BAR
COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
+24V POWER SUPPLY RETURN BAR (#2)
-48V POWER SUPPLT RETURN BAR (#2)
RECTIFIER FRAMES

SECTION "A" - SURGE ABSORBERS

INTERIOR GROUND RING (#2)
EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
BUILDING STEEL (IF AVAILABLE) (#2)

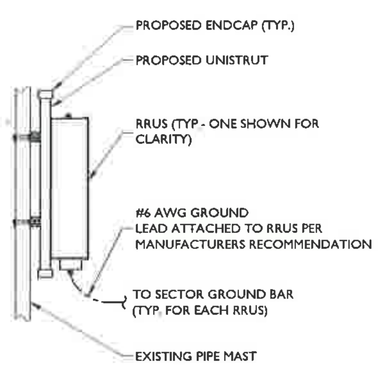
MASTER GROUND BAR

NOT TO SCALE



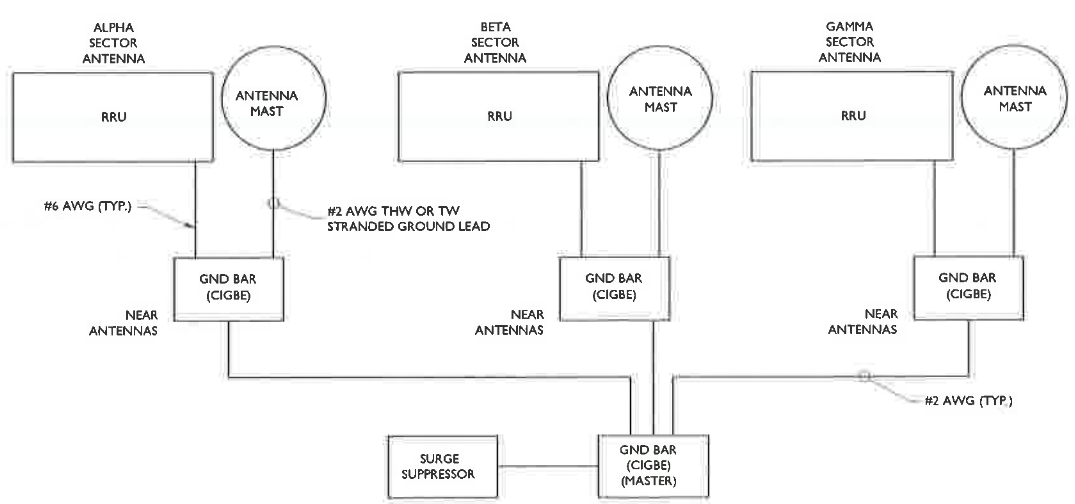
TYPICAL GROUND BAR CONNECTION DETAIL

NOT TO SCALE



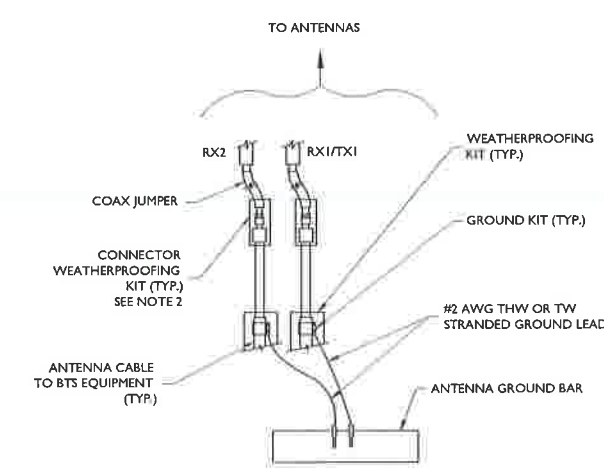
RRH GROUNDING

NOT TO SCALE



SCHEMATIC DIAGRAM GROUNDING SYSTEM

NOT TO SCALE



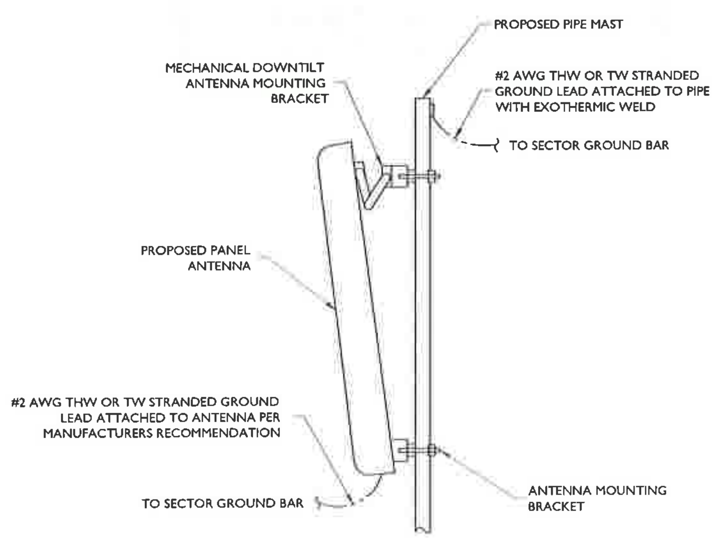
NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.

2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.

TYPICAL GROUND WIRE TO GROUNDING BAR

NOT TO SCALE



ANTENNA GROUNDING

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SCALE:	JOB NUMBER:
AS SHOWN	15946012A

1	12/15/15		RAP/SMG	PEP
0				PEP
REV				CHECKED BY

STATE OF CONNECTICUT — FRANK E. PAZDEN — No. 28182 — LICENSED PROFESSIONAL ENGINEER

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SITE NAME:

AVON - MONTEVIDEO ROAD
FA# 10141394
SITE # CTL01330

324 MONTEVIDEO ROAD
AVON, CT 06001
COUNTY OF HARTFORD

RED BANK OFFICE
331 Newman Springs Road
Suite 203

GROUNDING DETAILS

G-1

MASER CONSULTING
— CONNECTICUT—

331 Newman Springs Road, Suite 203
Red Bank, NJ 07701
T: 732.383.1950
www.maserconsulting.com

December 11, 2015

Rich Wagner
Smartlink LLC
1362 Mellon Road, Suite 140
Hanover, MD 21076

Re: Structural Evaluation
AT&T: Site CTL01330
FA #10141394
324 Montevideo Road
Avon, Connecticut 06001
Maser Consulting Project #: 15946012A

Dear Mr. Wagner,

As per your request, Maser Consulting Connecticut has performed a limited structural evaluation of the above referenced AT&T telecommunication facility with regard to its ability to adequately support the proposed upgrade equipment.

The following references were utilized in completing this evaluation:

- As-Built Construction drawings prepared by Centek Engineering, dated August 7, 2015.
- Structural Analysis prepared by Centek Engineering, dated June 2, 2015
- RFDS ID 741080, provided by Smartlink, dated 6/23/2015, LTE 3C scope of work
- Limited Visual Site Visit performed by Maser Consulting Connecticut on September 30, 2015

The existing AT&T Telecommunications facility will be upgraded with the following proposed equipment:

- At each sector replace existing SBNH-1D6565C Antenna (96.4"x11.9"x7.1") with proposed OPA-65R-LCUU-H8 Antenna (92.7"x14.4"x7") on existing mount (3 total).
- Install (1) proposed RRUS-32 radio head on unistrut frame mounted to the existing antenna mast behind each antenna at each sector (3 Total).

The location and mounting of the equipment will be on mounts in kind to those existing and in locations depicted on the Maser Consulting Connecticut Construction drawings completed for the scope of work indicated in the above referenced RFDS.

The existing structure consists of a SST with an existing 18' diameter Doppler Radar Dome at the top. The existing AT&T antenna array is installed inside the existing Radar dome. Based on a review of the existing documents referenced above the previous upgrade loading was accounted for in the existing structural analysis. The proposed antennas are similar in weight and size as the existing antennas, and are located entirely inside the existing radar dome. There will be no additional wind or ice loads as a result of the proposed upgrades.

Based on this comparison the existing SST has adequate capacity to support the proposed configuration as described herein.

MASER CONSULTING
— CONNECTICUT—

This evaluation was based on the following limitations and assumptions:

1. It is assumed that the telecommunication equipment supports, antenna supports, and existing structure have been designed by a registered licensed professional engineer for the existing loads acting on the structure, as required by all applicable codes, prior to the proposed modifications listed within this report.

2. It is assumed that information provided by the client regarding the structure itself, the antenna models, feed lines, and other relevant information is current and correct.

3. It is assumed all other existing appurtenances, antennas, cables, etc. belonging to others have been installed and supported per code and per specifications so as not to damage any existing structural support members, and that any contributing loads from adjacent equipment has been taken into consideration for their design.

4. Proposed equipment and locations should not deviate from the proposed locations noted herein and shown on the associated Maser Consulting Connecticut final Construction Drawings.

The proposed changes to the equipment loading, described in this report, are based solely on the information contained within the above referenced documents and described herein. Any changes to the proposed equipment will invalidate these recommendations and will require further review. Should you have any questions please contact me at 973-398-3110.

Sincerely,
Maser Consulting Connecticut

STATE OF CONNECTICUT
FRANK E. PAZDEN
No. 26188
LICENSED
PROFESSIONAL ENGINEER

Frank E. Pazden, P.E.
CT PE #PEN.26188
Geographic Practice Leader

\\MTCAD01\Projects\2015\15946000A\15946012A\Structural\10141394_DE113_121115_CTL01330.Struct Letter.docx

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info@sitesafe.com • www.sitesafe.com

SmartLink, LLC on behalf of AT&T Mobility, LLC
Site FA – 10141394
Site ID – CTL01330 (3C)
USID – 139386
Site Name – Avon-Montevideo Road
Site Compliance Report

324 Montevideo Road
Avon, CT 06001

Latitude: N41-48-42.47
Longitude: W72-47-55.56
Structure Type: Tower

Report generated date: January 11, 2016
Report by: Sam Cosgrove
Customer Contact: Kristen Smith

AT&T Mobility, LLC will be compliant when the remediation recommended in section 5.2 or other appropriate remediation is implemented.

STATE OF CONNECTICUT
DAVID C. COTTON, JR.
NO. 27481
LICENSED
PROFESSIONAL ENGINEER

David C. Cotton, Jr.
Licensed Professional Engineer (Electrical)
State of Connecticut, PEN.0027481
Date: 2016-January-12

Table of Contents

1 General Site Summary

1.1 Report Summary

AT&T Mobility, LLC	Summary
Access to Antennas Locked?	Yes
RF Sign(s) @ access point(s)	None
RF Sign(s) @ antennas	None
Barrier(s) @ sectors	None
Max cumulative simulated Radio Frequency Exposure (RFE) level on the Doppler Radar Dome	36.0% of General Public limit
FCC & AT&T Compliant?	Will Be Compliant

The following documents were provided by the client and were utilized to create this report:

CD's: 10141394_AE201_121515_CTL01330.Rev1.CD.s&s

RF Configuration Datasheet: CT_33 sites with power density form

2 Map of Site

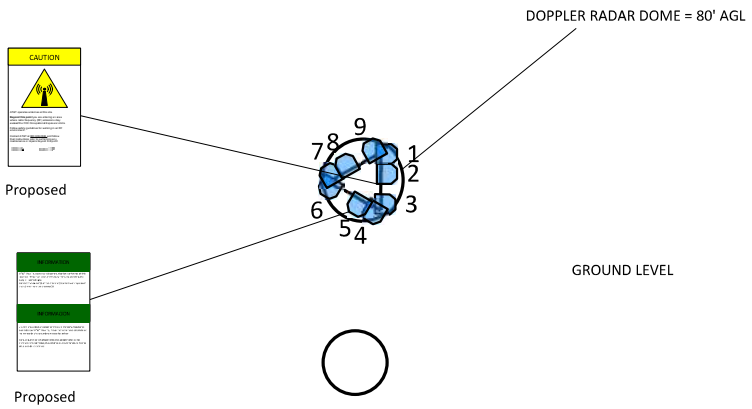
In the RF Emissions Simulations below all heights are reflected with respect to main site level. In most rooftop cases this is the height of the main rooftop and in other cases this can be ground level. Each different height area, rooftop, or platform level is labeled with its height relative to the main site level. Emissions are calculated appropriately based on the relative height and location of that area to all antennas.

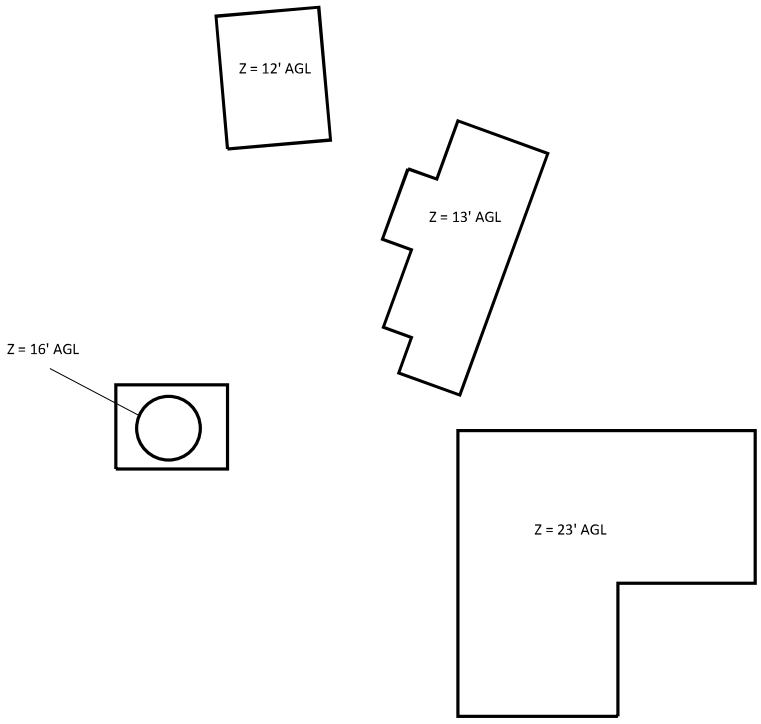
The Antenna Inventory heights are referenced to the same level.

The following diagrams are included:

- Site Map
- RF Emissions Diagram
- Detail View
- Elevation View

Site Map For: Avon-Montevideo Road





% of FCC Public Exposure Limit
Spatial average 0' - 6'

(Feet)

0 21.1 42.1

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Site Name:Avon-Montevideo Road

AT&T MOBILITY LLC	VERIZON WIRELESS	T-MOBILE	METROPCS	CRICKET COMMUNICATIONS	CLEARWIRE	SPRINT

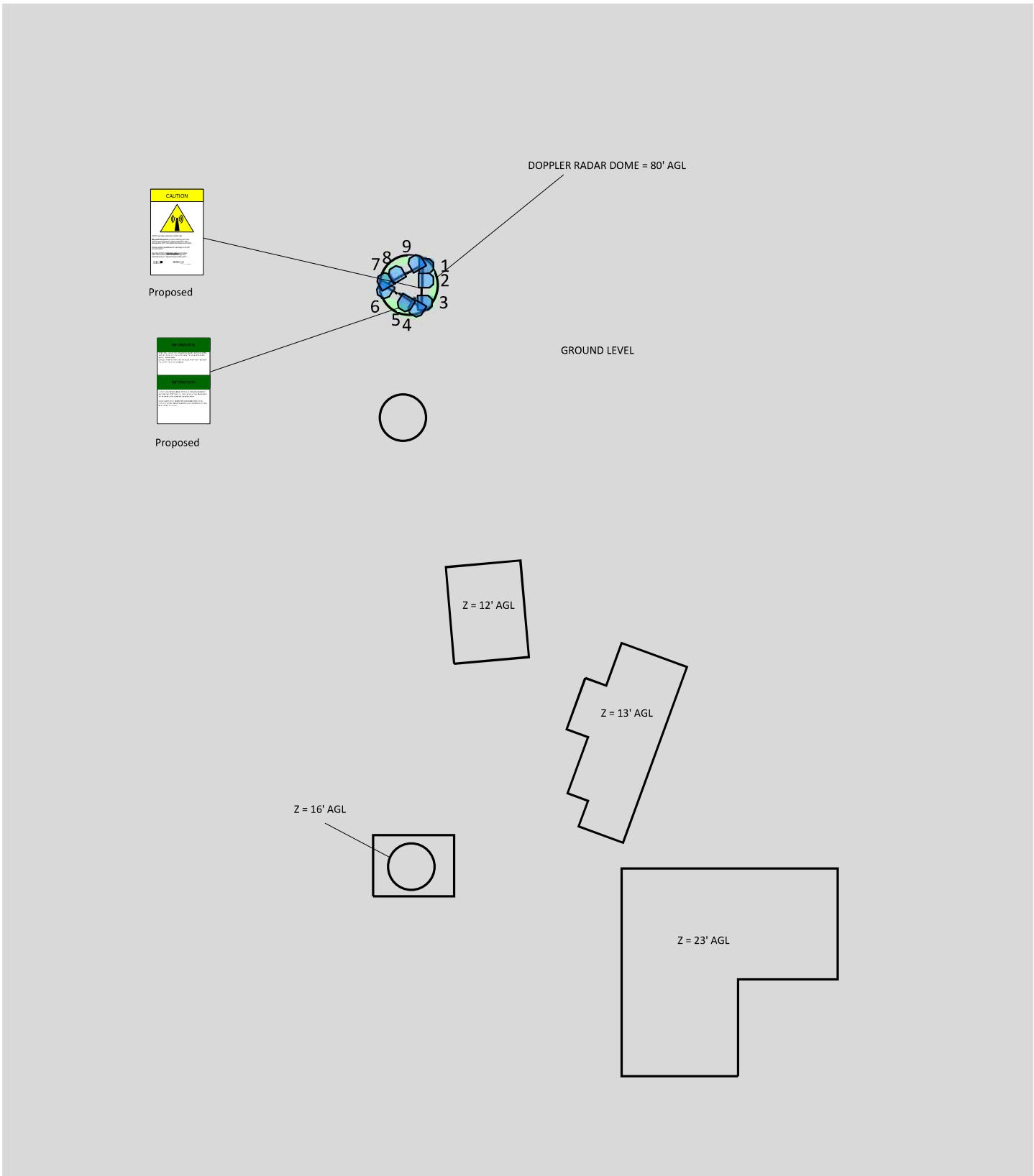
3 Antenna Inventory

The following antenna inventory on this and the following page, were obtained by the customer and were utilized to create the site model diagrams:

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Ant Gain (dBd)	2G GSM Radio(s)	3G UMTS Radio(s)	4G Radio(s)	Total ERP (Watts)	X	Y	Z
1	AT&T MOBILITY LLC	Andrew SBNH-1D6565C	Panel	1900	90	57	8	15.504	0	1	0	304.9	208.5'	370.7'	70'
1	AT&T MOBILITY LLC	Andrew SBNH-1D6565C	Panel	850	90	67	8	13.868	0	2	0	312	208.5'	370.7'	70'
2	AT&T MOBILITY LLC (PROPOSED)	CCI Antennas OPA-65R-LCUU-H8	Panel	2300	90	63.7	7.7	14.66	0	0	1	698.5	208.5'	366.4'	70.1'
3	AT&T MOBILITY LLC	Andrew SBNH-1D6565C	Panel	737	90	71	8	13.733	0	0	1	899.8	208.1'	359.7'	70'
3	AT&T MOBILITY LLC	Andrew SBNH-1D6565C	Panel	1900	90	57	8	15.504	0	0	1	1476.2	208.1'	359.7'	70'
4	AT&T MOBILITY LLC	Andrew SBNH-1D6565C	Panel	850	210	67	8	13.868	0	2	0	312	205.6'	357.8'	70'
4	AT&T MOBILITY LLC	Andrew SBNH-1D6565C	Panel	1900	210	57	8	15.504	0	1	0	304.9	205.6'	357.8'	70'
5	AT&T MOBILITY LLC (PROPOSED)	CCI Antennas OPA-65R-LCUU-H8	Panel	2300	210	63.7	7.7	14.66	0	0	1	698.5	202.3'	359.4'	70.1'
6	AT&T MOBILITY LLC	Andrew SBNH-1D6565C	Panel	737	210	71	8	13.733	0	0	1	899.8	196'	363.4'	70'
6	AT&T MOBILITY LLC	Andrew SBNH-1D6565C	Panel	1900	210	57	8	15.504	0	0	1	1476.2	196'	363.4'	70'
7	AT&T MOBILITY LLC	Andrew SBNH-1D6565C	Panel	850	330	67	8	13.868	0	2	0	312	196.1'	366.3'	70'
7	AT&T MOBILITY LLC	Andrew SBNH-1D6565C	Panel	1900	330	57	8	15.504	0	1	0	304.9	196.1'	366.3'	70'
8	AT&T MOBILITY LLC (PROPOSED)	CCI Antennas OPA-65R-LCUU-H8	Panel	2300	330	63.7	7.7	14.66	0	0	1	698.5	199.6'	368.3'	70.1'
9	AT&T MOBILITY LLC	Andrew SBNH-1D6565C	Panel	737	330	71	8	13.733	0	0	1	899.8	205.5'	371.7'	70'
9	AT&T MOBILITY LLC	Andrew SBNH-1D6565C	Panel	1900	330	57	8	15.504	0	0	1	1476.2	205.5'	371.7'	70'

NOTE: X, Y and Z indicate relative position of the bottom of the antenna to the origin location on the site, displayed in the model results diagram. Specifically, the Z reference indicates the bottom of the antenna height above the main site level unless otherwise indicated. The distance to the bottom of the antenna is calculated by subtracting half of the length of the antenna from the antenna centerline. Effective Radiated Power (ERP) is provided by the operator or based on Sitesafe experience. The values used in the modeling may be greater than are currently deployed. For other operators at this site the use of "Generic" as an antenna model or "Unknown" for a wireless operator means the information with regard to operator, their FCC license and/or antenna information was not available nor could it be secured while on site. Other operator's equipment, antenna models and powers used for modeling are based on obtained information or Sitesafe experience.

RF Emissions Simulation For: Avon-Montevideo Road



% of FCC Public Exposure Limit
Spatial average 0' - 6'

>= 5000	>= 500	>= 100	>= 5	< 5

(Feet)

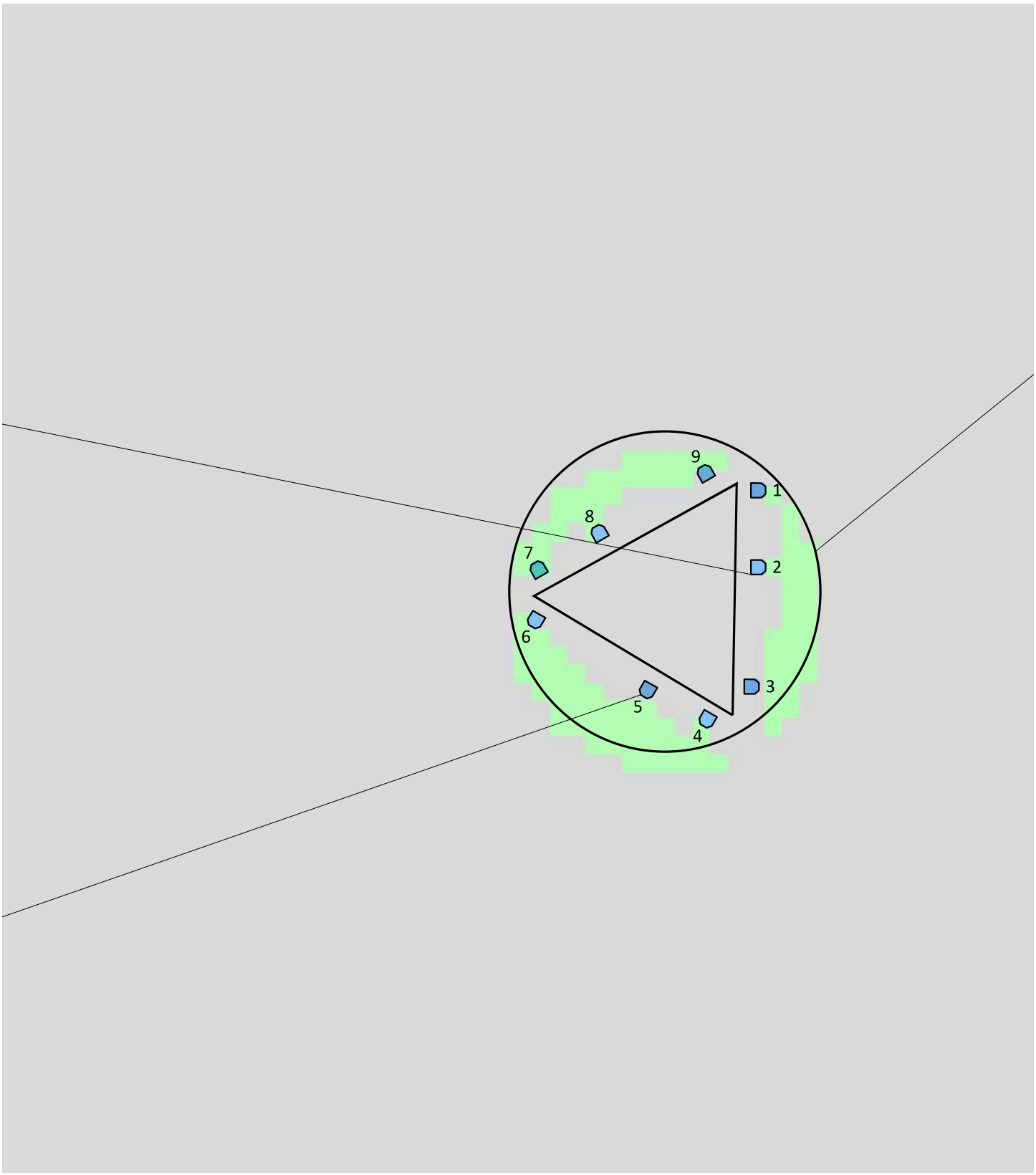
0 20.8 41.6

www.sitesafe.com

Site Name:Avon-Montevideo Road

AT&T MOBILITY LLC	VERIZON WIRELESS	T-MOBILE	METROPCS	CRICKET COMMUNICATIONS	CLEARWIRE	SPRINT

RF Emissions Simulation For: Avon-Montevideo Road
Detail View



% of FCC Public Exposure Limit
Spatial average 0' - 6'

>= 5000	>= 500	>= 100	>= 5	< 5

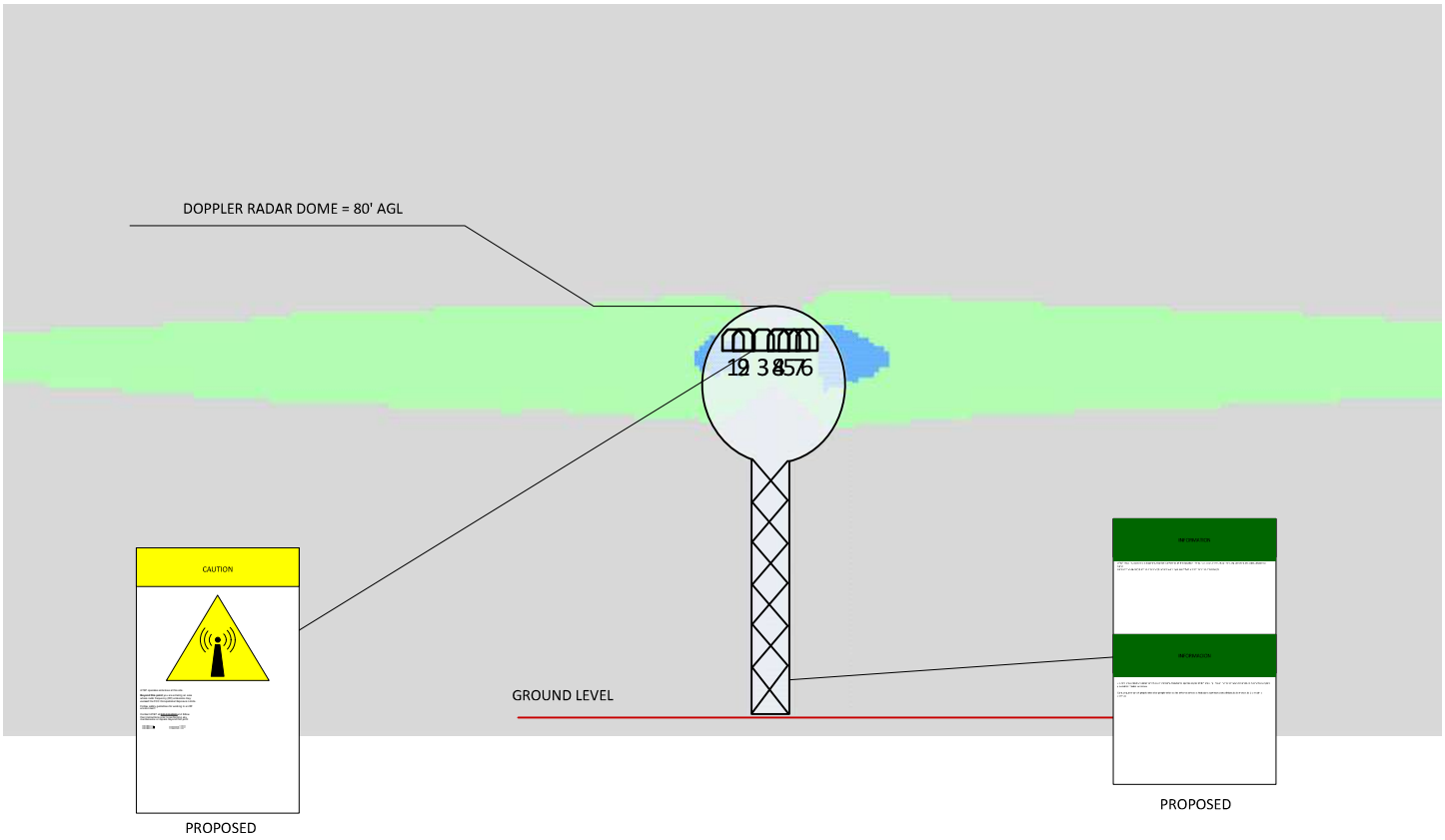
(Feet)

0 3.9 7.7

www.sitesafe.com
Site Name:Avon-Montevideo Road

AT&T MOBILITY LLC	VERIZON WIRELESS	T-MOBILE	METROPCS	CRICKET COMMUNICATIONS	CLEARWIRE	SPRINT

RF Emissions Simulation For: Avon-Montevideo Road
Elevation View



% of FCC Public Exposure Limit
Spatial average 0' - 6'

>= 5000	>= 500	>= 100	>= 5	< 5

AT&T MOBILITY LLC	VERIZON WIRELESS	T-MOBILE	METROPCS	CRICKET COMMUNICATIONS	CLEARWIRE	SPRINT

(Feet)

0 18.8 37.6

www.sitesafe.com
Site Name:Avon-Montevideo Road

5 Site Compliance

5.1 Site Compliance Statement

Upon evaluation of the cumulative RF emission levels from all operators at this site, RF hazard signage and antenna locations, Sitesafe has determined that:

AT&T Mobility, LLC will be compliant when the remediation recommended in section 5.2 or other appropriate remediation is implemented.

The compliance determination is based on General Public RFE levels derived from theoretical modeling, RF signage placement, proposed antenna inventory and the level of restricted access to the antennas at the site. Any deviation from the AT&T Mobility, LLC's proposed deployment plan could result in the site being rendered non-compliant.

Modeling is used for determining compliance and the percentage of MPE contribution.

5.2 Actions for Site Compliance

Based on FCC regulations, common industry practice, and our understanding of AT&T Mobility, LLC RF Safety Policy requirements, this section provides a statement of recommendations for site compliance. Recommendations have been proposed based on our understanding of existing access restrictions, signage, and an analysis of predicted RFE levels.

The site will be made compliant if the following changes are implemented:

Site Access Location

Information Sign 1 required at the base of the tower.
Yellow caution 2 sign required near the antenna area.

Note: The base of the tower is in a public area. RF signage should be installed near the antennas.

AT&T Mobility, LLC Proposed Alpha Sector Location

No action required.

AT&T Mobility, LLC Proposed Beta Sector Location

No action required.

AT&T Mobility, LLC Proposed Gamma Sector Location

No action required.

6 Engineer Certification

The professional engineer whose seal appears on the cover of this document hereby certifies and affirms that:

I am registered as a Professional Engineer in the jurisdiction indicated in the professional engineering stamp on the cover of this document; and

That I am an employee of Sitesafe, Inc., in Arlington, Virginia, at which place the staff and I provide RF compliance services to clients in the wireless communications industry; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission (FCC) as well as the regulations of the Occupational Safety and Health Administration (OSHA), both in general and specifically as they apply to the FCC Guidelines for Human Exposure to Radio-frequency Radiation; and

That I have thoroughly reviewed this Site Compliance Report and believe it to be true and accurate to the best of my knowledge as assembled by and attested to by Sam Cosgrove.

January 11, 2016

Appendix A – Statement of Limiting Conditions

Sitesafe has provided computer generated model(s) in this Site Compliance Report to show approximate dimensions of the site, and the model is included to assist the reader of the compliance report to visualize the site area, and to provide supporting documentation for Sitesafe's recommendations.

Sitesafe may note in the Site Compliance Report any adverse physical conditions, such as needed repairs, that Sitesafe became aware of during the normal research involved in creating this report. Sitesafe will not be responsible for any such conditions that do exist or for any engineering or testing that might be required to discover whether such conditions exist. Because Sitesafe is not an expert in the field of mechanical engineering or building maintenance, the Site Compliance Report must not be considered a structural or physical engineering report.

Sitesafe obtained information used in this Site Compliance Report from sources that Sitesafe considers reliable and believes them to be true and correct. Sitesafe does not assume any responsibility for the accuracy of such items that were furnished by other parties. When conflicts in information occur between data collected by Sitesafe provided by a second party and data collected by Sitesafe, the data will be used.

Appendix B – Regulatory Background Information

FCC Rules and Regulations

In 1996, the Federal Communication Commission (FCC) adopted regulations for the evaluating of the effects of RF emissions in 47 CFR § 1.1307 and 1.1310. The guideline from the FCC Office of Engineering and Technology is Bulletin 65 ("OET Bulletin 65"), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996 the FCC periodically reviews these rules and regulations as per their congressional mandate.

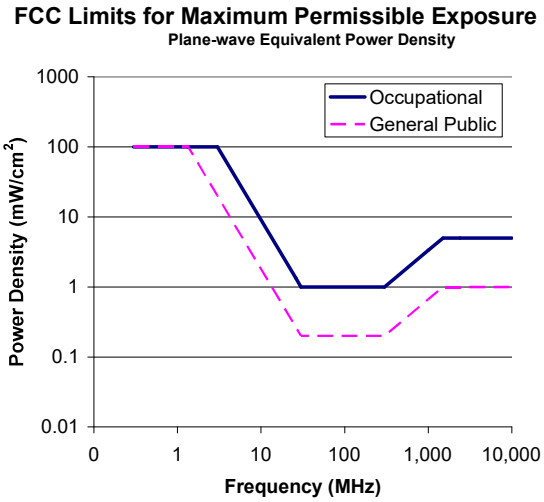
FCC regulations define two separate tiers of exposure limits: Occupational or "Controlled environment" and General Public or "Uncontrolled environment". The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* areas where workers or the general public may be exposed to Radio Frequency (RF) electromagnetic fields.

Occupational or Controlled limits apply in situations in which persons are exposed as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

An area is considered a Controlled environment when access is limited to these aware personnel. Typical criteria are restricted access (i.e. locked or alarmed doors, barriers, etc.) to the areas where antennas are located coupled with proper RF warning signage. A site with Controlled environments is evaluated with Occupational limits.

All other areas are considered Uncontrolled environments. If a site has no access controls or no RF warning signage it is evaluated with General Public limits.

The theoretical modeling of the RF electromagnetic fields has been performed in accordance with OET Bulletin 65. The Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following diagram:



Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz *Plane-wave equivalent power density

OSHA Statement

The General Duty clause of the OSHA Act (Section 5) outlines the occupational safety and health responsibilities of the employer and employee. The General Duty clause in Section 5 states:

(a) Each employer –

(1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;

(2) shall comply with occupational safety and health standards promulgated under this Act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA has defined Radiofrequency and Microwave Radiation safety standards for workers who may enter hazardous RF areas. Regulation Standards 29 CFR § 1910.147 identify a generic Lock Out Tag Out procedure aimed to control the unexpected energization or start up of machines when maintenance or service is being performed.

Appendix C – Safety Plan and Procedures

The following items are general safety recommendations that should be administered on a site by site basis as needed by the carrier.

General Maintenance Work: Any maintenance personnel required to work immediately in front of antennas and / or in areas indicated as above 100% of the Occupational MPE limits should coordinate with the wireless operators to disable transmitters during their work activities.

Training and Qualification Verification: All personnel accessing areas indicated as exceeding the General Population MPE limits should have a basic understanding of EME awareness and RF Safety procedures when working around transmitting antennas. Awareness training increases a workers understanding to potential RF exposure scenarios. Awareness can be achieved in a number of ways (e.g. videos, formal classroom lecture or internet based courses).

Physical Access Control: Access restrictions to transmitting antennas locations is the primary element in a site safety plan. Examples of access restrictions are as follows:

- Locked door or gate
- Alarmed door
- Locked ladder access
- Restrictive Barrier at antenna (e.g. Chain link with posted RF Sign)

RF Signage: Everyone should obey all posted signs at all times. RF signs play an important role in properly warning a worker prior to entering into a potential RF Exposure area.

Assume all antennas are active: Due to the nature of telecommunications transmissions, an antenna transmits intermittently. Always assume an antenna is transmitting. Never stop in front of an antenna. If you have to pass by an antenna, move through as quickly and safely as possible thereby reducing any exposure to a minimum.

Maintain a 3 foot clearance from all antennas: There is a direct correlation between the strength of an EME field and the distance from the transmitting antenna. The further away from an antenna, the lower the corresponding EME field is.

Site RF Emissions Diagram: Section 4 of this report contains an RF Diagram that outlines various theoretical Maximum Permissible Exposure (MPE) areas at the site. The modeling is a worst case scenario assuming a duty cycle of 100% for each transmitting antenna at full power. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.

Appendix D – RF Emissions

The RF Emissions Simulation(s) in this report display theoretical spatially averaged percentage of the Maximum Permissible Exposure for all systems at the site unless otherwise noted. These diagrams use modeling as prescribed in OET Bulletin 65 and assumptions detailed in Appendix E.

The key at the bottom of each RF Emissions Simulation indicates percentages displayed referenced to FCC General Public Maximum Permissible Exposure (MPE) limits. Color coding on the diagram is as follows:

- Areas indicated as Gray are predicted to be below 5% of the MPE limits. **Gray represents areas more than 20 times below the most conservative exposure limit**.
- Green represents areas are predicted to be between 5% and 100% of the MPE limits. **Green areas are accessible to anyone**.
- Blue represents areas predicted to exceed the General Public MPE limits but are less than Occupational limits. **Blue areas should be accessible only to RF trained workers**.
- Yellow represents areas predicted to exceed Occupational MPE limits. **Yellow areas should be accessible only to RF trained workers able to assess current exposure levels**.
- Red represents areas predicted to have exposure more than 10 times the Occupational MPE limits. **Red indicates that the RF levels must be reduced prior to access.** An RF Safety Plan is required which outlines how to reduce the RF energy in these areas prior to access.

Appendix E – Assumptions and Definitions

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at **full power at all times**. Software modeling was performed for all transmitting antennas located on the site. Sitesafe has further assumed a 100% duty cycle and maximum radiated power.

The site has been modeled with these assumptions to show the maximum RF energy density. Sitesafe believes this to be a *worst-case* analysis, based on best available data. Areas modeled to predict emissions greater than 100% of the applicable MPE level may not actually occur, but are shown as a *worst-case* prediction that could be realized real time. Sitesafe believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor).

Thus, at any time, if power density measurements were made, we believe the real-time measurements would indicate levels below those depicted in the RF emission diagram(s) in this report. By modeling in this way, Sitesafe has conservatively shown exclusion areas – areas that should not be entered without the use of a personal monitor, carriers reducing power, or performing real-time measurements to indicate real-time exposure levels.

Use of Generic Antennas

For the purposes of this report, the use of "Generic" as an antenna model, or "Unknown" for an operator means the information about a carrier, their FCC license and/or antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. If more specific information can be obtained for the unknown measurement criteria, Sitesafe recommends remodeling of the site utilizing the more complete and accurate data. Information about similar facilities is used when the service is identified and associated with a particular antenna. If no information is available regarding the transmitting service associated with an unidentified antenna, using the antenna manufacturer's published data regarding the antenna's physical characteristics makes more conservative assumptions.

Where the frequency is unknown, Sitesafe uses the closest frequency in the antenna's range that corresponds to the highest Maximum Permissible Exposure (MPE), resulting in a conservative analysis.

Definitions

5% Rule – The rules adopted by the FCC specify that, in general, at multiple transmitter sites actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitters produce field strengths or power density levels at the area in question in excess of 5% of the exposure limits. In other words, any wireless operator that contributes 5% or greater of the MPE limit in an area that is identified to be greater than 100% of the MPE limit is responsible taking corrective actions to bring the site into compliance.

Compliance – The determination of whether a site is safe or not with regards to Human Exposure to Radio Frequency Radiation from transmitting antennas.

Decibel (dB) – A unit for measuring power or strength of a signal.

Duty Cycle – The percent of pulse duration to the pulse period of a periodic pulse train. Also, may be a measure of the temporal transmission characteristic of an intermittently transmitting RF source such as a paging antenna by dividing average transmission duration by the average period for transmission. A duty cycle of 100% corresponds to continuous operation.

Effective (or Equivalent) Isotropic Radiated Power (EIRP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna.

Effective Radiated Power (ERP) – In a given direction, the relative gain of a transmitting antenna with respect to the maximum directivity of a half wave dipole multiplied by the net power accepted by the antenna from the connecting transmitter.

Gain (of an antenna) – The ratio of the maximum intensity in a given direction to the maximum radiation in the same direction from an isotropic radiator. Gain is a measure of the relative efficiency of a directional antennas as compared to an omni directional antenna.

General Population/Uncontrolled Environment – Defined by the FCC, as an area where exposure to RF energy may occur to persons who are **unaware** of the potential for exposure and who have no control of their exposure. General Population is also referenced as General Public.

Generic Antenna – For the purposes of this report, the use of "Generic" as an antenna model means the antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of antenna models to select a worst case scenario antenna to model the site.

Isotropic Antenna – An antenna that is completely non-directional. In other words, an antenna that radiates energy equally in all directions.

Maximum Measurement – This measurement represents the single largest measurement recorded when performing a spatial average measurement.

Maximum Permissible Exposure (MPE) – The maximum levels of RF exposure a person may be exposed to without harmful effect and with acceptable safety factor.

Occupational/Controlled Environment – Defined by the FCC, as an area where Radio Frequency Radiation (RFR) exposure may occur to persons who are **aware** of the

potential for exposure as a condition of employment or specific activity and can exercise control over their exposure.

OET Bulletin 65 – Technical guideline developed by the FCC's Office of Engineering and Technology to determine the impact of Radio Frequency radiation on Humans. The guideline was published in August 1997.

OSHA (Occupational Safety and Health Administration) – Under the Occupational Safety and Health Act of 1970, employers are responsible for providing a safe and healthy workplace for their employees. OSHA's role is to promote the safety and health of America's working men and women by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and encouraging continual process improvement in workplace safety and health. For more information, visit www.osha.gov.

Radio Frequency (RF) – The frequencies of electromagnetic waves which are used for radio communications. Approximately 3 kHz to 300 GHz.

Radio Frequency Exposure (RFE) – The amount of RF power density that a person is or might be exposed to.

Spatial Average Measurement – A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average power density an average sized human will be exposed to at a location.

Transmitter Power Output (TPO) – The radio frequency output power of a transmitter's final radio frequency stage as measured at the output terminal while connected to a load.

Appendix F – References

The following references can be followed for further information about RF Health and Safety.

Sitesafe, Inc.
http://www.sitesafe.com
FCC Radio Frequency Safety
http://www.fcc.gov/encyclopedia/radio-frequency-safety
National Council on Radiation Protection and Measurements (NCRP)
http://www.ncrponline.org
Institute of Electrical and Electronics Engineers, Inc., (IEEE)
http://www.ieee.org
American National Standards Institute (ANSI)
http://www.ansi.org
Environmental Protection Agency (EPA)
http://www.epa.gov/radtown/wireless-tech.html
National Institutes of Health (NIH)
http://www.niehs.nih.gov/health/topics/agents/emf/
Occupational Safety and Health Agency (OSHA)
http://www.osha.gov/SLTC/radiofrequencyradiation/
International Commission on Non-Ionizing Radiation Protection (ICNIRP)
http://www.icnirp.org
World Health Organization (WHO)
http://www.who.int/peh-emf/en/
National Cancer Institute
http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones
American Cancer Society (ACS)
http://www.cancer.org/docroot/PED/content/PED_1_3X_Cellular_Phone_Towers.asp?siteareа=PED
European Commission Scientific Committee on Emerging and Newly Identified Health Risks
http://ec.europa.eu/health/ph_risk/committees/04_scenihr/docs/scenihr_o_022.pdf
Fairfax County, Virginia Public School Survey
http://www.fcps.edu/fts/safety-security/RFEESurvey/
UK Health Protection Agency Advisory Group on Non-ionising Radiation
http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317133826368
Norwegian Institute of Public Health
http://www.fhi.no/dokumenter/545eea7147.pdf

StartAntennaData It is advisable to provide an ID (ant 1) for all antennas

ID	Name	(MHz) Freq	Trans Power	Trans Count	Coax Len	Coax Type	Other Losses	Input Power
1	AT&T MOB	850	6.415085	2	0			12.83017
1	AT&T MOB	1900	8.601417	1	0			8.601417
2	AT&T MOB	2300	23.9331	1	0			23.9331
3	AT&T MOB	737	38.16814	1	0			38.16814
3	AT&T MOB	1900	41.64858	1	0			41.64858
4	AT&T MOB	850	6.415085	2	0			12.83017
4	AT&T MOB	1900	8.601417	1	0			8.601417
5	AT&T MOB	2300	23.9331	1	0			23.9331
6	AT&T MOB	737	38.16814	1	0			38.16814
6	AT&T MOB	1900	41.64858	1	0			41.64858
7	AT&T MOB	850	6.415085	2	0			12.83017
7	AT&T MOB	1900	8.601417	1	0			8.601417
8	AT&T MOB	2300	23.9331	1	0			23.9331
9	AT&T MOB	737	38.16814	1	0			38.16814
9	AT&T MOB	1900	41.64858	1	0			41.64858

StartSymbolData

Calc Power	Mfg	Model	(ft) X	(ft) Y	(ft) Z	Type	(ft) Aper	dBd Gain
	Andrew	SBNH-1D65	208.5091	370.6891	69.9835	Panel	8.033	13.868
	Andrew	SBNH-1D65	208.5091	370.6891	69.9835	Panel	8.033	15.504
	CCI Antenn	OPA-65R-L(	208.5091	366.3662	70.1375	Panel	7.725	14.66
	Andrew	SBNH-1D65	208.1338	359.6519	69.9835	Panel	8.033	13.733
	Andrew	SBNH-1D65	208.1338	359.6519	69.9835	Panel	8.033	15.504
	Andrew	SBNH-1D65	205.6311	357.7947	69.9835	Panel	8.033	13.868
	Andrew	SBNH-1D65	205.6311	357.7947	69.9835	Panel	8.033	15.504
	CCI Antenn	OPA-65R-L(	202.2739	359.4376	70.1375	Panel	7.725	14.66
	Andrew	SBNH-1D65	195.9882	363.3662	69.9835	Panel	8.033	13.733
	Andrew	SBNH-1D65	195.9882	363.3662	69.9835	Panel	8.033	15.504
	Andrew	SBNH-1D65	196.1311	366.2456	69.9835	Panel	8.033	13.868
	Andrew	SBNH-1D65	196.1311	366.2456	69.9835	Panel	8.033	15.504
	CCI Antenn	OPA-65R-L(	199.5597	368.2947	70.1375	Panel	7.725	14.66
	Andrew	SBNH-1D65	205.53	371.6614	69.9835	Panel	8.033	13.733
	Andrew	SBNH-1D65	205.53	371.6614	69.9835	Panel	8.033	15.504

BWdth Pt Dir	Uptime Profile	ON flag
67;90	100%	ON•
57;90	100%	ON•
63.7;90	100%	ON•
71;90	100%	ON•
57;90	100%	ON•
67;210	100%	ON•
57;210	100%	ON•
63.7;210	100%	ON•
71;210	100%	ON•
57;210	100%	ON•
67;330	100%	ON•
57;330	100%	ON•
63.7;330	100%	ON•
71;330	100%	ON•
57;330	100%	ON•