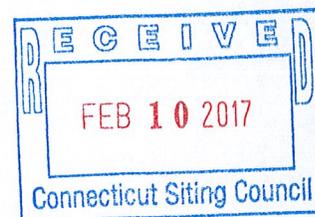




EM-AT&T-135-170210

February 9 , 2017

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



Re: Notice of Exempt Modification
Property Address: 1590 Newfield Street
Stamford, CT. 06905

Applicant: AT&T Mobility, LLC

ORIGINAL

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 152 feet on an existing 155 foot – Monopole Tower, owned by American Tower Corporation and located at 1590 Newfield Street, Stamford, CT. AT&T now intends to REMOVE 3 antennas and replace them with 3 Quintel 96612-2 and 3 RRUs-32.

This facility was approved by the CSC on September 4, 1984.

The following is a list of subsequent decisions:

Springwich Cellular Ltd Partnership Exempt Modification 135-000201

EM-Cing-051-103-135-035-050922

EM_Cing-135-135-135-141-142-070815

EM-Cing-135-110627

EM-AT&T -135-160316

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. § 16-50j-72(b) (2). In accordance with R.C.S.A., a copy of this letter is being sent to David martin, Mayor, City of Stamford, at City Hall 888 Washington Blvd. Stamford CT. A copy has been sent to Ralph Blessing, Bureau Chief: Land Use at City hall, 888 Washington Blvd, Stamford CT. A copy of this letter is also being sent to American Tower Corporation Tower Owner- at 116 Huntington Ave. 11th Fl Boston MA and Land Owner- Bell Atlantic.

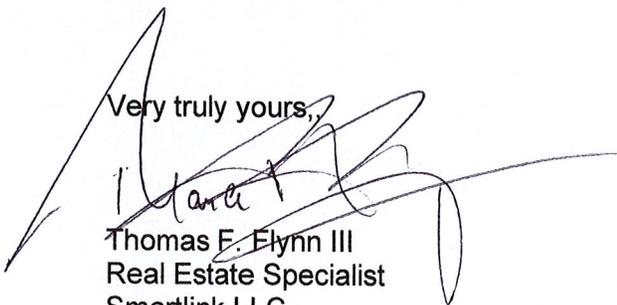


The planned modifications to AT&T's facility fall squarely within those activities explicitly provided for in R.C.S.A. §16-50j-72(b) (2).

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 152-foot level of the 155-foot lattice tower.
2. The proposed modifications will not involve any changes to ground-mounted equipment and, therefore, will not require an 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).

Very truly yours,

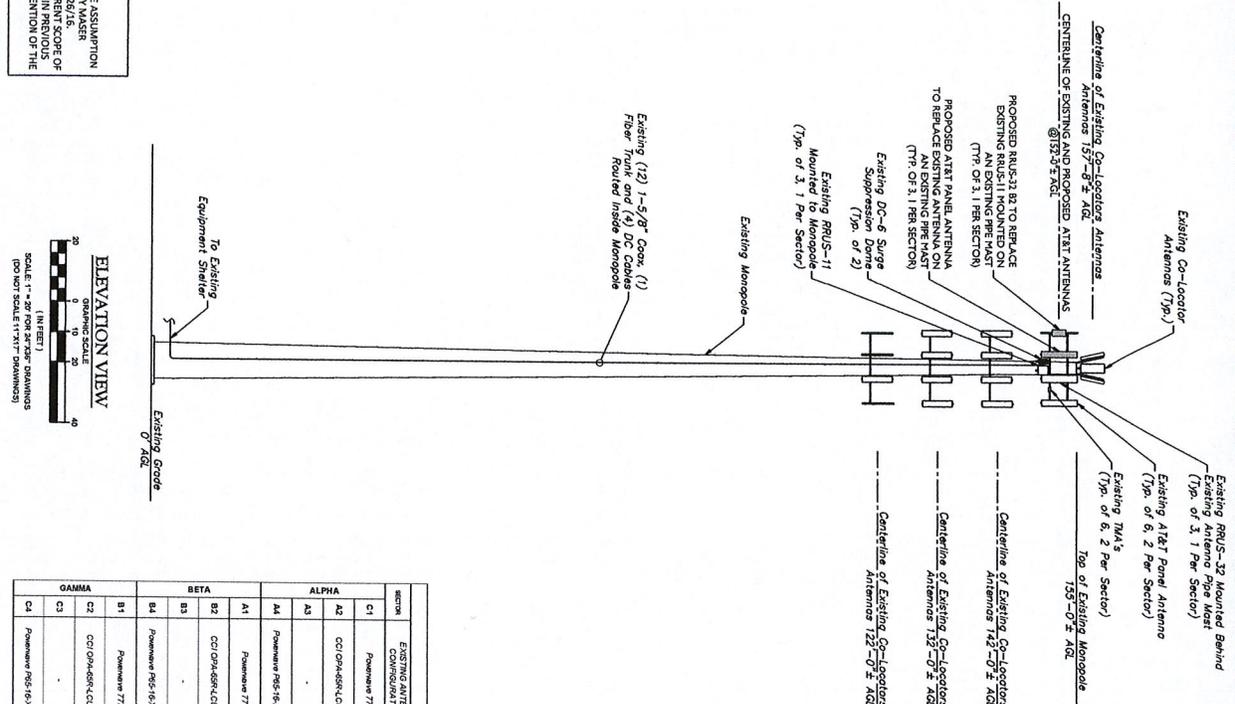


Thomas F. Flynn III
Real Estate Specialist
Smartlink LLC
PO Box 503
Wallingford CT 06492
203-687-9717

Enclosures

CC w/enclosures:

David Martin, Mayor, City of Stamford
Ralph Blessing Director of Land Use City of Stamford
Tower Owner – American Tower
Land Owner-Bell Atlantic



SECTION	EXISTING ANTENNA CONFIGURATION	PROPOSED ANTENNA CONFIGURATION	TECHNOLOGY	PROPOSED ANTENNA STATUS	HEIGHT (ft)	WIDTH (ft)	DEPTH (ft)	WEIGHT (lbs)	ANTENNA ASSEMBLY	ANT. CL. (ft)	RRU CONFIGURATION	STATUS
C1	Powermax 7770	Powermax 7770	UMTS	REMAIN	55.0	11.0	5.0	35.0	23"	152"		
A2	CCI 09A468R-DCU4H8	CCI 09A468R-DCU4H8	LTE MCS250M	REMAIN	72.3	14.4	7.4	73.0	20"	152"	(1) RRU-32	REMAIN
A1	Powermax 7770	Powermax 7770	UMTS	REMAIN	55.0	11.0	5.0	35.0	143"	152"		
A4	Powermax RRS-16-XL4HR	Quinn Q366R12	700/1900 LTE	NEW	72.0	12.0	8.6	114.0	30"	152"	(1) RRU-31 (1) RRU-32 B2	REMAIN NEW
A3												
B2	CCI 09A468R-DCU4H8	CCI 09A468R-DCU4H8	LTE MCS250M	REMAIN	72.3	14.4	7.4	73.0	150"	152"	(1) RRU-32	REMAIN
B3												
B4	Powermax RRS-16-XL4HR	Quinn Q366R12	700/1900 LTE	NEW	72.0	12.0	8.6	114.0	150"	152"	(1) RRU-31 (1) RRU-32 B2	REMAIN NEW
B1	Powermax 7770	Powermax 7770	UMTS	REMAIN	55.0	11.0	5.0	35.0	202"	152"		
C2	CCI 09A468R-DCU4H8	CCI 09A468R-DCU4H8	LTE MCS250M	REMAIN	72.3	14.4	7.4	73.0	202"	152"	(1) RRU-32	REMAIN
C3												
C4	Powermax RRS-16-XL4HR	Quinn Q366R12	700/1900 LTE	NEW	72.0	12.0	8.6	114.0	202"	152"	(1) RRU-31 (1) RRU-32 B2	REMAIN NEW

ANTENNA SCHEDULE

NOTE: THESE PLANS WERE DESIGNED WITH THE ASSUMPTION THAT ALL ANTENNAS WILL BE INSTALLED BY THE CONTRACTOR PRIOR TO THE CURRENT SCOPE OF WORK BEING INSTALLED. ANY CHANGES IN PREVIOUS DESIGN SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.

- STRUCTURAL NOTES:**
- NO CONSTRUCTION OF THE PROPOSED LOADING SHOWN SHALL PROCEED UNTIL ADEQUACY OF THE EXISTING STRUCTURE AND FOUNDATION, INCLUDING THE ADEQUACY OF THE EXISTING ANTENNA MOUNTING CONFIGURATION SHOWN HEREIN, HAS BEEN CONFIRMED.
 - THE STRUCTURE ELEVATION IS SHOWN FOR INFORMATIONAL PURPOSES ONLY AND DOES NOT REFLECT AS-BUILT FIELD CONDITIONS FOR ALL EXISTING INVENTORY ANTENNAS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY STRUCTURAL ANALYSIS FOR EXISTING STRUCTURE LOADING AND THE PROPOSED METHOD OF ATTACHMENT OF THE PROPOSED ANTENNAS/CABLES.
 - THE CONTRACTOR IS RESPONSIBLE TO CONFIRM THAT ANY REINFORCEMENT AND REINFORCEMENTS REQUIRED BY THE STRUCTURAL ANALYSIS CENTERLINE ARE PROPERLY INSTALLED PRIOR TO THE ADDITION OF ANTENNAS, CABLES, SUPPORTS AND APPURTENANCES PROPOSED ON THESE DRAWINGS OR OTHERWISE NOTED IN THE STRUCTURAL ANALYSIS.

MAYER CONSULTING
1100 N. 11TH ST. SUITE 100
FAIRFIELD, CT 06424
TEL: (203) 253-1100

smartlink
85 BANGSWAY ROAD
BUILDING 3, SUITE 102
NORTH BILERICA, VA 01862
TEL: (781) 394-5813

at&t
NEW CINGULAR WIRELESS PCS, LLC
530 COCHRAN LANE
ROCKINGHAM, VA 01801

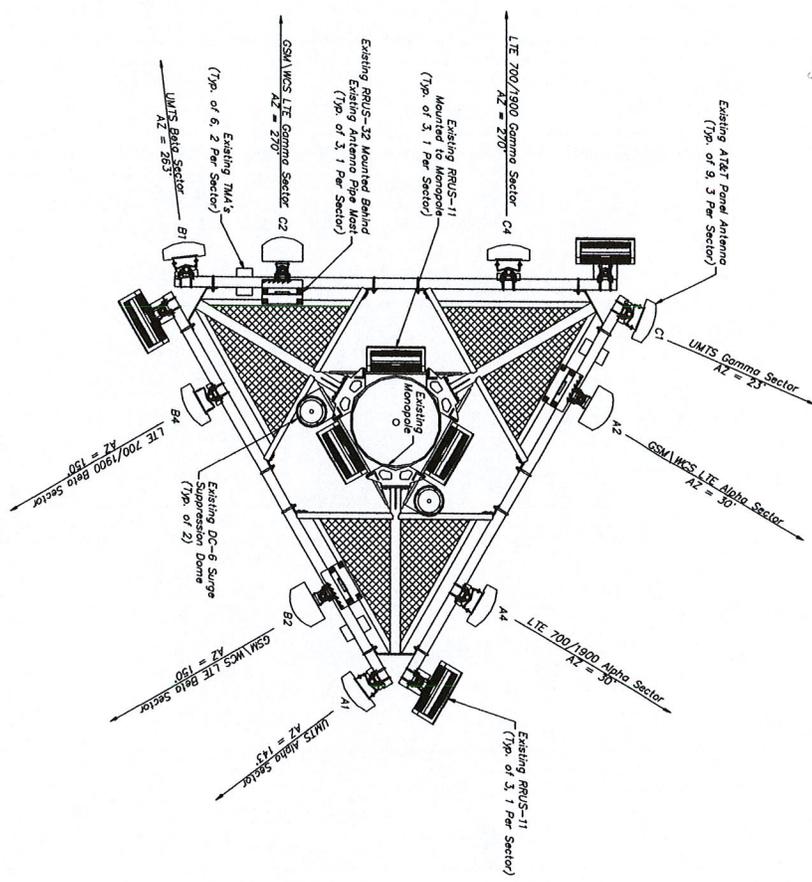
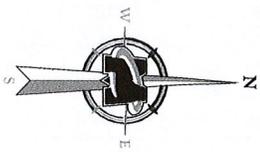
811
CALL BEFORE YOU DIG
FOR ALL UTILITY LOCATIONS
CALL 811 OR VISIT WWW.811VA.COM

STAFFORD NORTH
FA # 10034979
SITE # C7L102109
1590 NEMPHIL AVENUE
STAFFORD, CT 06905
FAIRFIELD COUNTY

CONTRACTOR:
MAYER CONSULTING
1100 N. 11TH ST. SUITE 100
FAIRFIELD, CT 06424
TEL: (203) 253-1100

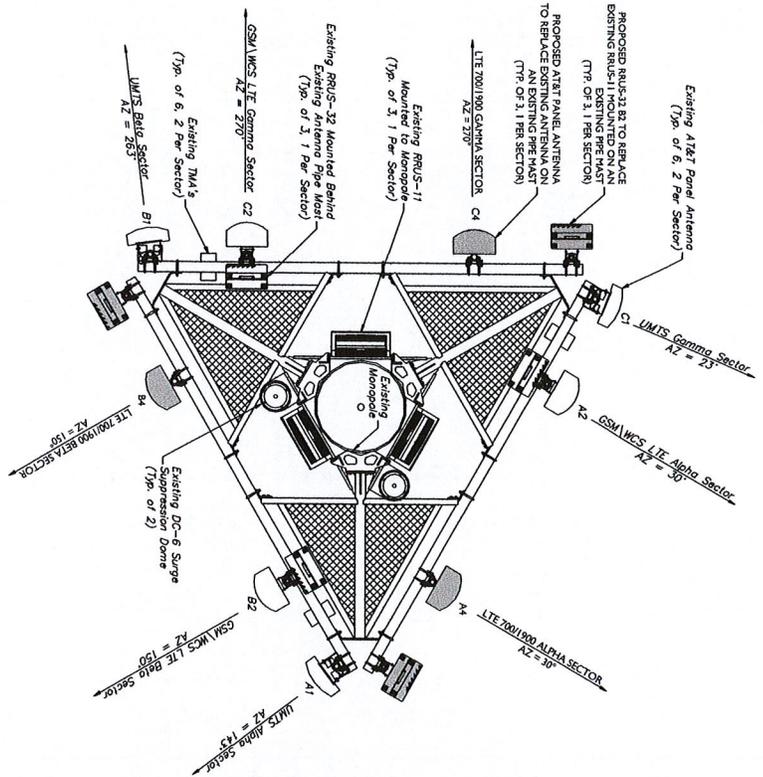
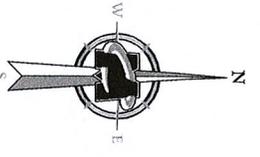
DATE: 10/20/2011
TIME: 10:00 AM
PROJECT: 10034979

SCALE: 1" = 20' FOR 3/4" DRAWINGS
(DO NOT SCALE FROM DRAWINGS)



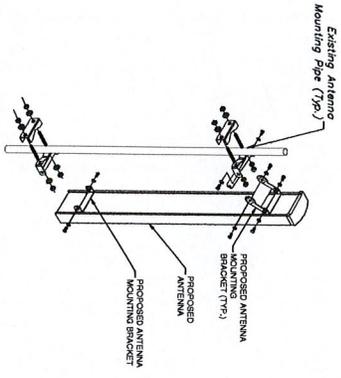
EXISTING - ANTENNA LAYOUT
NOT TO SCALE

NOTE:
THESE PLANS WERE PREPARED WITH THE ASSUMPTION THAT THE PREVIOUS PLANS PREPARED BY MASER CONSULTING CONNECTICUT, DATED 04/26/16, WILL BE COMPLETED PRIOR TO THE CURRENT SCOPE OF WORK BEING INSTALLED. ANY CHANGES IN PREVIOUS WORK SHALL BE THE RESPONSIBILITY OF THE ENGINEER IMMEDIATELY.

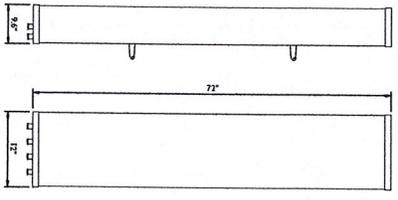


PROPOSED - ANTENNA LAYOUT
NOT TO SCALE

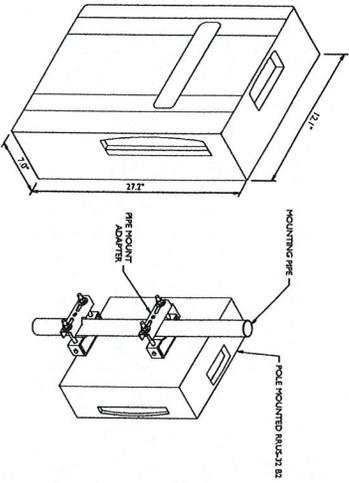
<p>MASER CONSULTING - CONNECTICUT</p> <p>1590 NEWFIELD AVENUE STAFFORD, CT 06460 TEL: (771) 369-5613</p>	<p>smartlink</p> <p>85 RANGEMAN ROAD BUILDING 3, SUITE 102 NORWICH, CT 06250 TEL: (771) 369-5613</p>	<p>at&t</p> <p>NEW CIRCULAR WIRELESS PCS, LLC 1590 NEWFIELD AVENUE STAFFORD, CT 06460</p>	<p>811</p> <p>NEW CIRCULAR WIRELESS PCS, LLC 1590 NEWFIELD AVENUE STAFFORD, CT 06460</p>		<p>SITE NAME: STAFFORD NORTH FA# 10034979 SITE # C1102109 1590 NEWFIELD AVENUE STAFFORD, CT 06460 FAIRFIELD COUNTY</p>	<p>MASER CONSULTING</p> <p>1590 NEWFIELD AVENUE STAFFORD, CT 06460 TEL: (771) 369-5613</p>
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ANTENNA MOUNTING DETAIL
 NOT TO SCALE



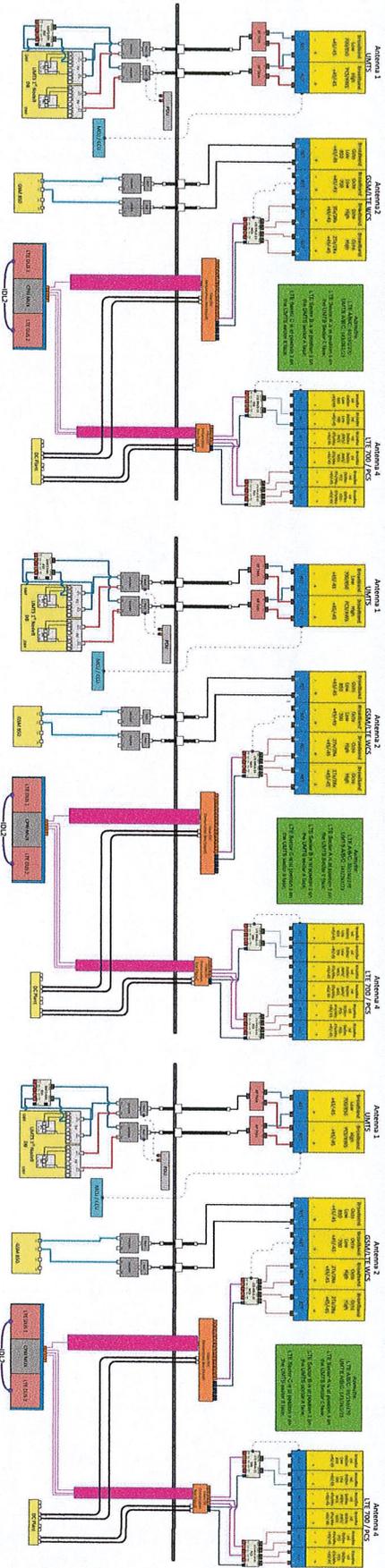
ANTENNA DETAILS
 NOT TO SCALE



RRUS32 B2 DETAIL
 NOT TO SCALE

RRUS32 B2 DIMENSIONS: 27" X 12" X 15.5" (INCLUDES CONCRETE)
 WEIGHT: 31 LBS.

<p>HAER CONSULTING CONNECTICUT 200 WEST MAIN STREET SUITE 200 WATERBURY, CT 06705 TEL: (860) 755-1100</p>	<p>smartlink 85 SANDY HAVEN ROAD BUILDING 3, SUITE 102 NORTH BILLERICA, MA 01862 TEL: (781) 369-5613</p>	<p>at&t NEW CINGULAR WIRELESS PCS, LLC 550 COCHITUATE ROAD RAMPONGHAN, PA 01701</p>	<p>811 PUBLIC WORKS 100 EAST STREET, SUITE 200, NEW HAVEN, CT 06510 TEL: (203) 348-3000</p>	<p>BANK OF AMERICA 100 STATE STREET NEW HAVEN, CT 06510 TEL: (203) 348-3000</p>	<p>STAMFORD NORTH FA # 10034979 SITE # CTL02109 1590 NEWFIELD AVENUE STAMFORD, CT 06905 FAIRFIELD COUNTY</p>	<p>HITCON CONSULTING 377 THOMPSON AVENUE SUITE 200 NEW HAVEN, CT 06511 TEL: (203) 348-3000</p>	<p>DETAILS A-4</p>
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ALPHA SECTOR

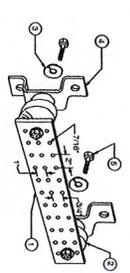
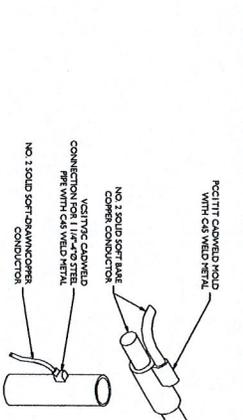
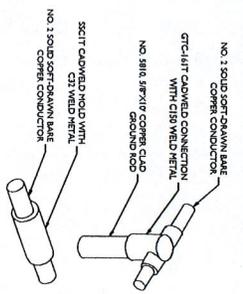
BETA SECTOR

GAMMA SECTOR

BASED ON RF ENGINEERING DESIGN ENTITLED "NEWENGLAND_CONNECTOUT_C712109_20171-LTE-Mk-Carrier_188BU-HRH-Add_gm58a_PTN_10034979_80396_04-05-2016_Preliminary-Approved_V1.DOC"

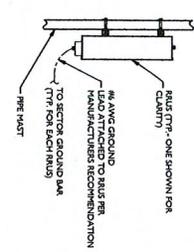
RF PLUMBING DIAGRAMS

<p>MASER CONSULTING CONNECTICUT</p> <p>Customer: smartlink Project: 85 RANGEMAN ROAD Location: STAFFORD NORTH Contract: 1390 NEWFIELD AVENUE Fairfield County</p>	<p>smartlink 85 RANGEMAN ROAD BUILDING 2, SUITE 102 STAFFORD NORTH, CT 06905 TEL: (878) 304-6113</p>	<p>at&t</p>	<p>NEW CINGULAR WIRELESS PCS, LLC 85 RANGEMAN ROAD BUILDING 2, SUITE 102 STAFFORD NORTH, CT 06905 TEL: (878) 304-6113</p>	<p>811 NON-EMERGENCY PUBLIC UTILITIES NOTICE TO DIG FOR STATE STREET, STAFFORD NORTH, CT 06905</p>	<p>STATE OF CONNECTICUT DEPARTMENT OF CONSTRUCTION REGISTERED PROFESSIONAL ENGINEER ALBERT H. HARRINGTON No. 10034979</p>	<p>SITE NAME: STAFFORD NORTH TA # 10034979 SITE # C712109 1390 NEWFIELD AVENUE STAFFORD, CT 06905 FAIRFIELD COUNTY</p>	<p>MASON CONSULTING 707 Main Street, Suite 200 Stamford, CT 06905 Tel: 860.326.1100 Fax: 860.326.1104 www.masonconsulting.com</p>
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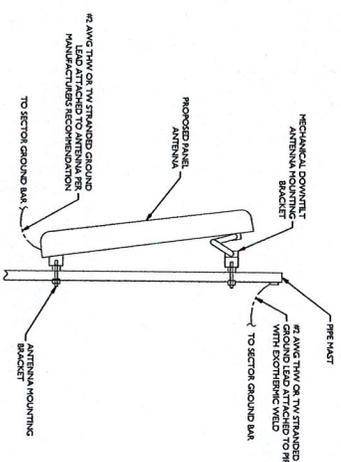


CADWELD DETAILS
NOT TO SCALE

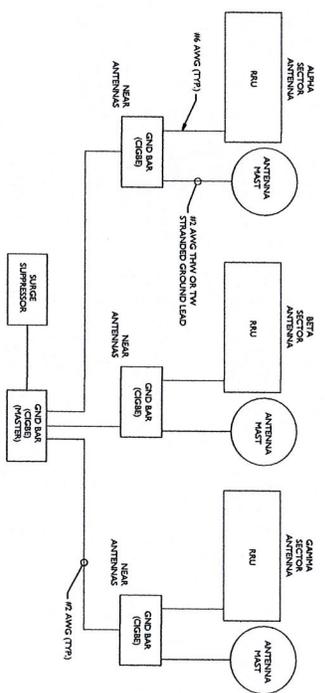
1. TRINAD COPPER GROUND BAR, 1/2" X 1/4" NEWTON INSTRUMENT CO. CAT. NO. 3414 OR EQUAL. HOLE CENTER TO VERTICAL CENTER DOUBLE LUG CONNECTION.
2. INSULATOR, NEWTON INSTRUMENT CO. CAT. NO. 3414-1
3. 3/8" LOCKWASHER, NEWTON INSTRUMENT CO. CAT. NO. 3414-2
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT. NO. 4288
5. 3/4" X 1" 1/4" SCS, NEWTON INSTRUMENT CO. CAT. NO. 3415
6. 1/2" X 1/4" SCS, NEWTON INSTRUMENT CO. CAT. NO. 3415



RRH GROUNDING
NOT TO SCALE



ANTENNA GROUNDING
NOT TO SCALE

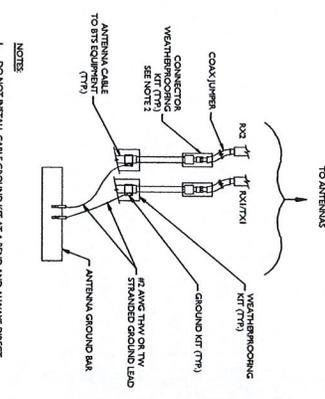
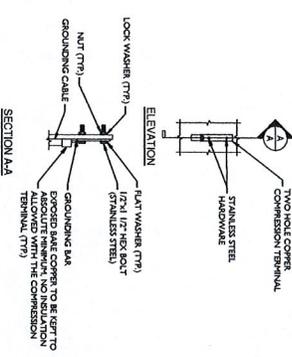


SCHEMATIC DIAGRAM GROUNDING SYSTEM
NOT TO SCALE

MASTER GROUND BAR
NOT TO SCALE

- SECTION 17 - SLUG REDUCERS**
- CABLE ENTRY POINT (ANTENNA #1) (R) (1)
 CABLE ENTRY POINT (ANTENNA #2) (R) (1)
 CABLE ENTRY POINT (ANTENNA #3) (R) (1)
 TIE TO GROUND BAR (COMMON NEUTRAL GROUND BOND) (R) (1)
 2" X 1/4" POWER SUPPLY RETURN BAR (R) (2)
 1/2" X 1/4" POWER SUPPLY RETURN BAR (R) (2)
 1/2" X 1/4" POWER SUPPLY RETURN BAR (R) (2)
- SECTION 14 - SLUG REDUCERS**
- ANTENNA GROUND RING (R) (1)
 ANTENNA GROUND RING (R) (1)
 ANTENNA GROUND RING (R) (1)
 REFLECTIVE COOL WATER PIPE (IF AVAILABLE) (R) (1)
 BUILDING STEEL (IF AVAILABLE) (R) (1)

TYPICAL GROUND BAR CONNECTION DETAIL
NOT TO SCALE



- NOTES**
1. DO NOT RETAIL CABLE GROUND WIRE AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
 2. WETHER WIRE SHALL BE TWO-CORNER TAKE WIRE. COOL SHINK SHALL NOT BE USED.

TYPICAL GROUND WIRE TO GROUNDING BAR
NOT TO SCALE

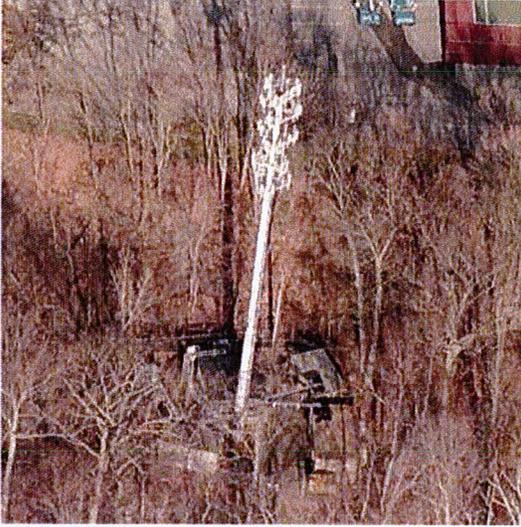
<p>MASER CONSULTING CONSTRUCTION MANAGEMENT 1500 W. 10TH STREET, SUITE 200 DALLAS, TEXAS 75208 TEL: (214) 750-1100 WWW.MASERCONSULTING.COM</p>	<p>smartlink 88 RANGEMAY ROAD BUILDING 3 SUITE 100 NEWTON, MA 02459 TEL: (781) 569-3413</p>	<p>at&t NEW CIRCULAR WIRELESS PCS, LLC FRANKLIN, MA 01700</p>	<p>811 CALL BEFORE YOU DIG NEWTON, MA 02459 WWW.CALLBEFOREYOU.DIG.COM</p>	<p>TOWN OF NEWTON 19940000A</p>	<p>SITE NAME: STAMFORD NORTH P.A.# 10034079 SITE # CT102109 1590 NEWFIELD AVENUE STAMFORD, CT 06905 FAIRFIELD COUNTY</p>	<p>SHEAR & MERMEL 300 WEST WASHINGTON STREET NEWTON, MA 02459 TEL: (781) 569-3413 WWW.SHEARANDMERMEL.COM</p>	<p>GROUNDING DETAILS G-1</p>
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SITE SAFE
RF COMPLIANCE EXPERTS

A BUSINESS OF FDH VELOCITEL

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703.276.1100 • 703.276.1169 fax
info@sitesafe.com • www.sitesafe.com



**SmartLink, LLC on behalf of
AT&T Mobility, LLC
Site FA – 10034979
Site ID – CT2109 (3C)
USID – 60396
Site Name – Stamford North
Site Compliance Report**

**1590 Newfield Avenue
Stamford, CT 06905**

Latitude: N41-6-45.87
Longitude: W73-32-18.10
Structure Type: Monopole

Report generated date: February 11, 2016
Report by: Young Kim
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.**

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Klaus Bender

**Klaus Bender
Registered Professional Engineer (Electrical)
Expires December 31, 2018**



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1 General Site Summary

1.1 Report Summary

AT&T Mobility, LLC	Summary
Access to Antennas Locked?	No
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 Ground Level	<5% of General Public limit
FCC & AT&T Compliant?	Will Be Compliant

Note: Data was unavailable, for all other carriers on site and is therefore not included.

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

RFDS: NEW-ENGLAND_CONNECTICUT_CT2109_2016-LTE-Next-Carrier_LTE-3C_ra9161_PTN_10034979_60396_07-06-2015_Preliminary-Approved_v1.00

CD's: 10034979_AE201_102915_CTL02109.Rev0.CD MJP

RF Configuration Datasheet: CT_33 sites with power density form

2 Map of Site

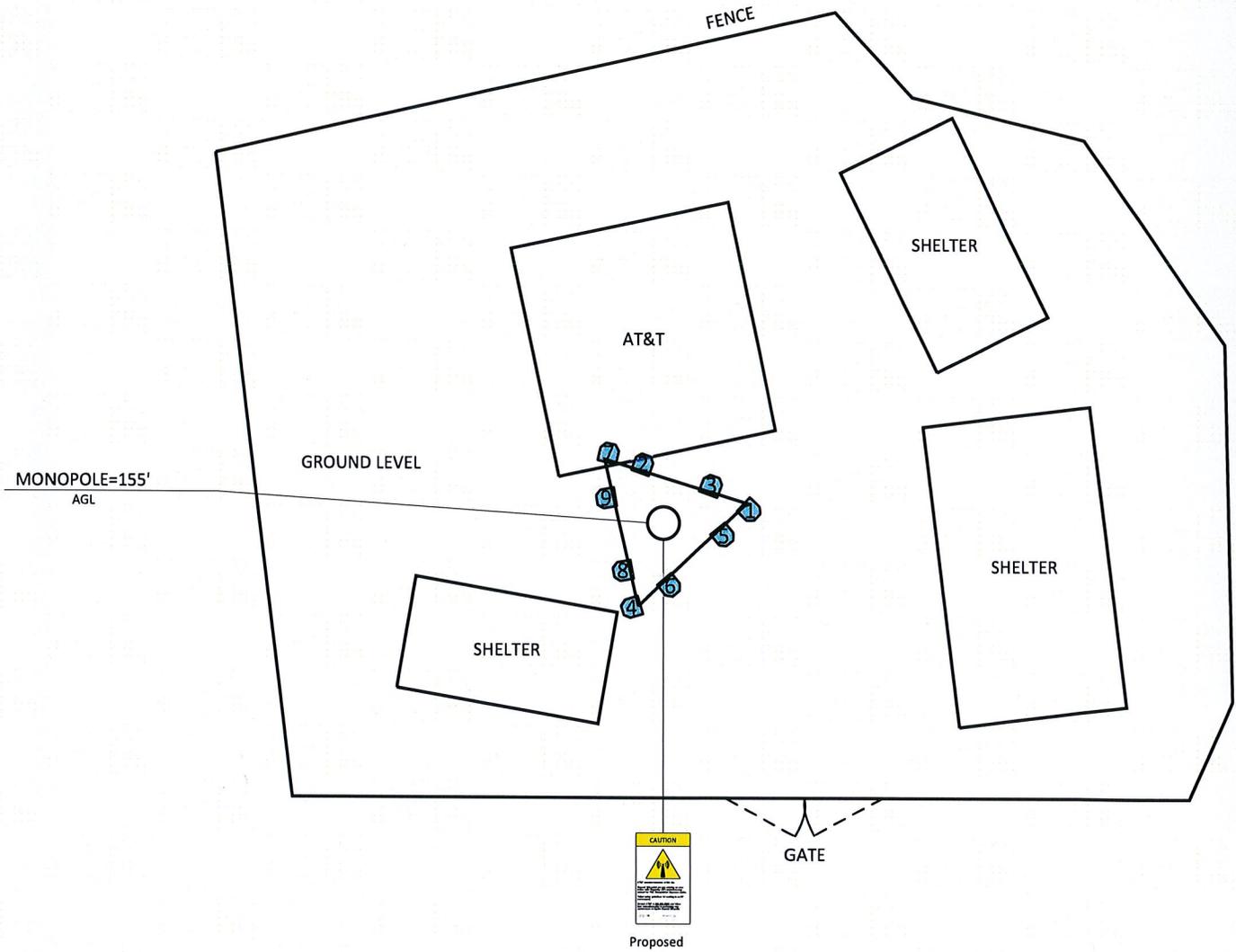
In the RF Emissions Simulations below all heights are reflected with respect to main site level. In most rooftop cases this is the height of the main rooftop and in other cases this can be ground level. Each different height area, rooftop, or platform level is labeled with its height relative to the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

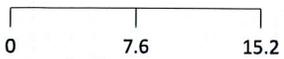
The following diagrams are included:

- Site Map
- RF Emissions Diagram
- Elevation View

Site Map For: Stamford North



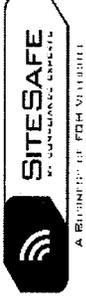
(Feet)



www.sitesafe.com
Site Name: Stamford North

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

Sitesafe Inc. assumes no responsibility for modeling results not verified by Sitesafe personnel. Contact Sitesafe Inc. for modeling assistance at (703) 276-1100
SitesafeTC Version: 1.0.0.0
2/11/2016 1:18:11 PM



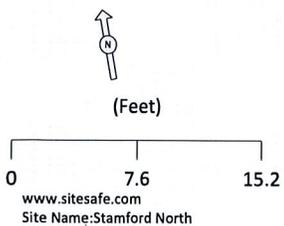
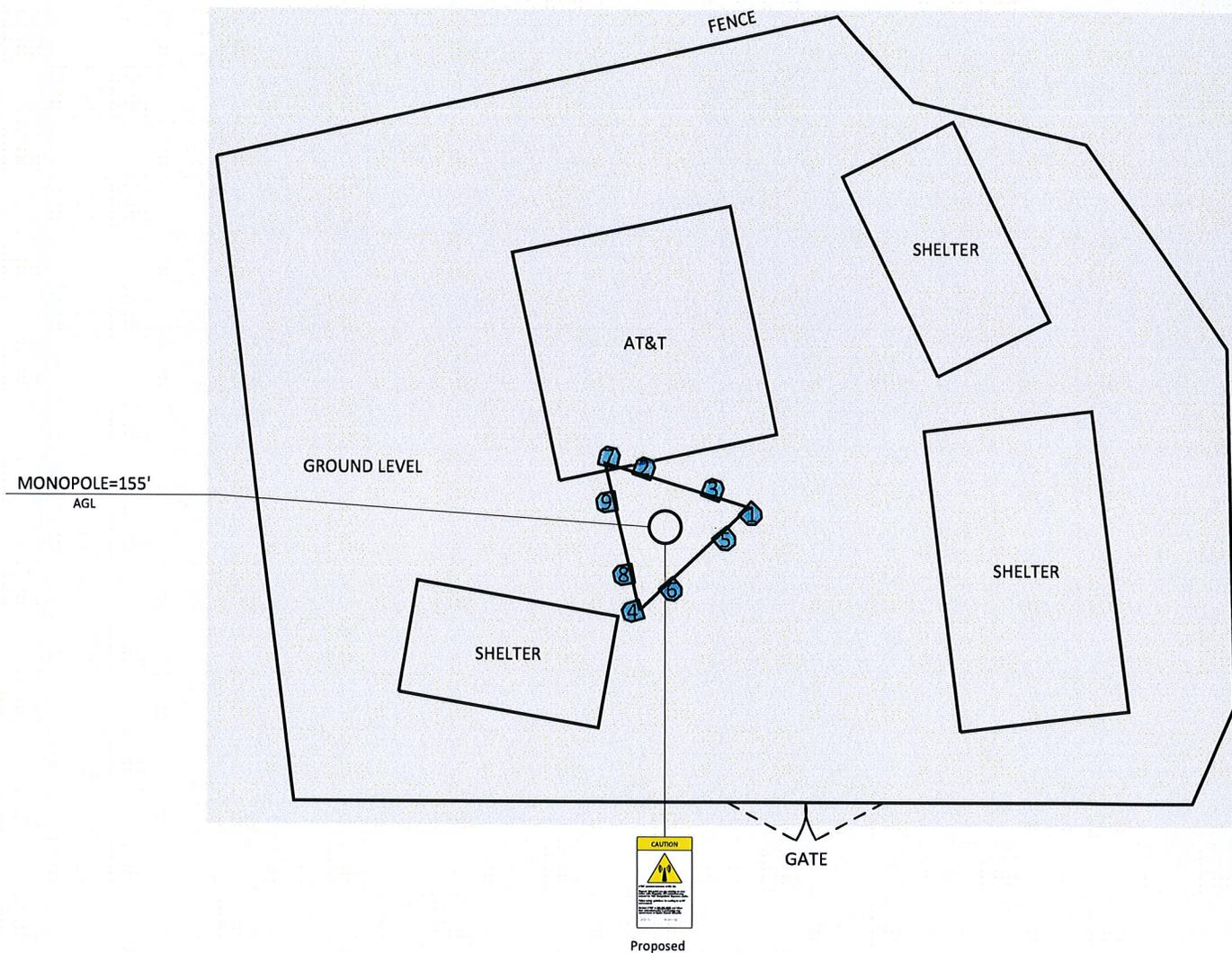
3 Antenna Inventory

The following antenna inventory was obtained by the customer and utilized to create the site model diagrams:

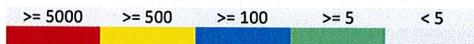
Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Ant Gain (dBd)	2G GSM Radio(s)	3G UMTS Radio(s)	4G Radio(s)	Total ERP (Watts)	X	Y	Z (AGL)
1	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	143	82	4.6	11.51	0	2	0	349.3	72.7'	81.5'	149.7'
1	AT&T MOBILITY LLC	Powerwave 7770	Panel	1900	143	86	4.6	13.41	0	1	0	335.9	72.7'	81.5'	149.7'
2	AT&T MOBILITY LLC (Proposed)	CCI Antennas OPA-65R-LCUU-H6	Panel	2300	30	60	6	15.46	0	0	1	748.4	63.1'	85.6'	149'
2	AT&T MOBILITY LLC (Proposed)	CCI Antennas OPA-65R-LCUU-H6	Panel	850	30	61	6	12.46	1	0	0	88.3	63.1'	85.6'	149'
3	AT&T MOBILITY LLC	Powerwave P65-16-XLH-RR	Panel	737	30	66	6	12.71	0	0	1	899.8	69.2'	83.7'	149'
3	AT&T MOBILITY LLC	Powerwave P65-16-XLH-RR	Panel	1900	30	63	6	15.06	0	0	1	1476.2	69.2'	83.7'	149'
4	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	263	82	4.6	11.51	0	2	0	349.3	62.1'	72.9'	149.7'
4	AT&T MOBILITY LLC	Powerwave 7770	Panel	1900	263	86	4.6	13.41	0	1	0	335.9	62.1'	72.9'	149.7'
5	AT&T MOBILITY LLC (Proposed)	CCI Antennas OPA-65R-LCUU-H6	Panel	2300	150	60	6	15.46	0	0	1	748.4	70.3'	79.2'	149'
5	AT&T MOBILITY LLC (Proposed)	CCI Antennas OPA-65R-LCUU-H6	Panel	850	150	61	6	12.46	1	0	0	88.3	70.3'	79.2'	149'
6	AT&T MOBILITY LLC	Powerwave P65-16-XLH-RR	Panel	737	150	66	6	12.71	0	0	1	899.8	65.6'	74.8'	149'
6	AT&T MOBILITY LLC	Powerwave P65-16-XLH-RR	Panel	1900	150	63	6	15.06	0	0	1	1476.2	65.6'	74.8'	149'
7	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	23	82	4.6	11.51	0	2	0	349.3	60'	86.5'	149.7'
7	AT&T MOBILITY LLC	Powerwave 7770	Panel	1900	23	86	4.6	13.41	0	1	0	335.9	60'	86.5'	149.7'
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas OPA-65R-LCUU-H6	Panel	2300	270	60	6	15.46	0	0	1	748.4	61.3'	76.1'	149'
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas OPA-65R-LCUU-H6	Panel	850	270	61	6	12.46	1	0	0	88.3	61.3'	76.1'	149'
9	AT&T MOBILITY LLC	Powerwave P65-16-XLH-RR	Panel	737	270	66	6	12.71	0	0	1	899.8	59.8'	82.5'	149'
9	AT&T MOBILITY LLC	Powerwave P65-16-XLH-RR	Panel	1900	270	63	6	15.06	0	0	1	1476.2	59.8'	82.5'	149'

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 ground level (AGL)**. 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.

RF Emissions Simulation For: Stamford North



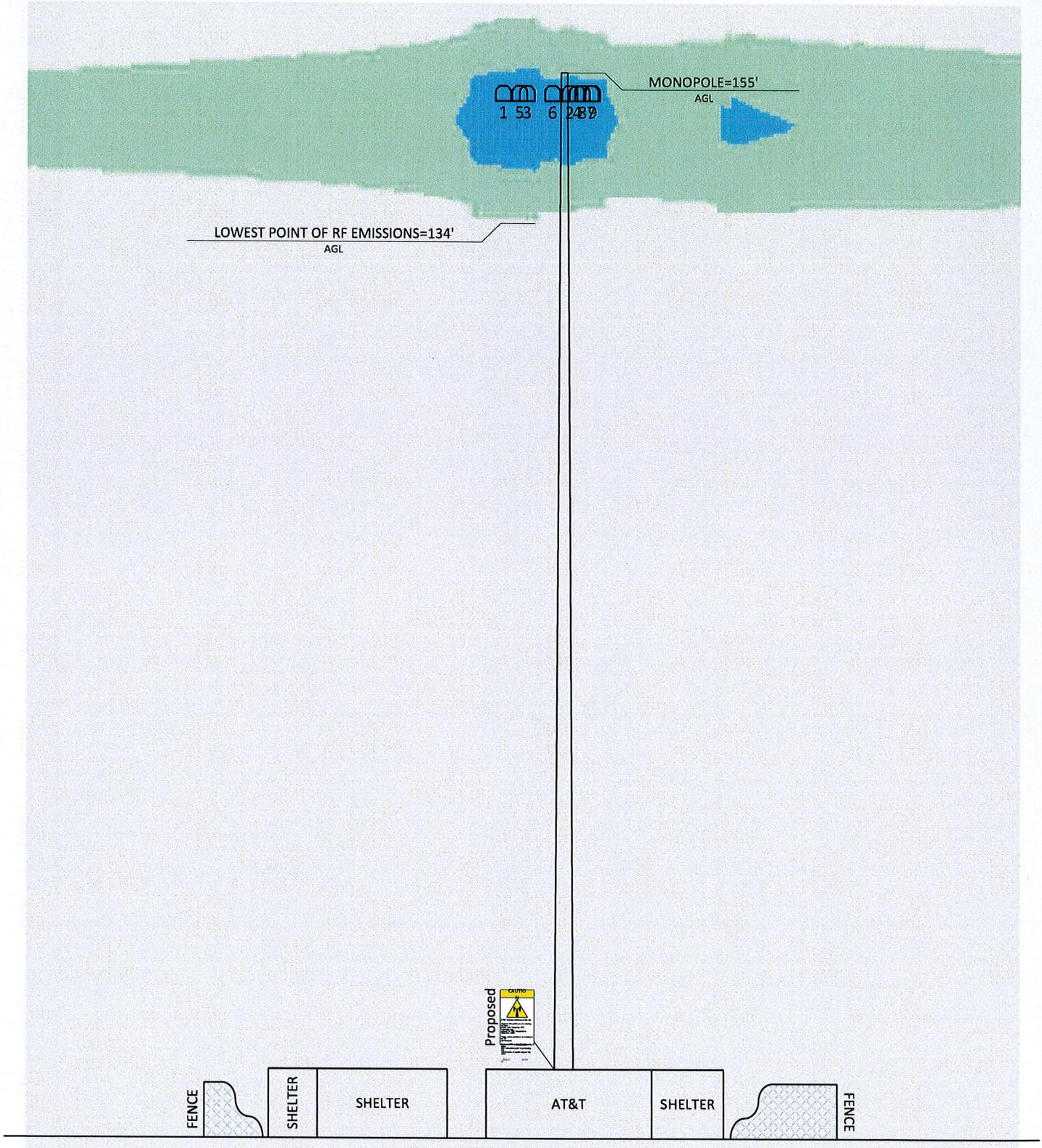
% of FCC Public Exposure Limit
Spatial average 0' - 6'



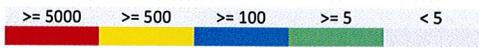
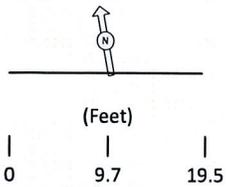
AT&T MOBILITY LLC	VERIZON WIRELESS	T-MOBILE	METROPCS	CRICKET COMMUNICATIONS	CLEARWIRE	SPRINT

Sitesafe Inc. assumes no responsibility for modeling results not verified by Sitesafe personnel. Contact Sitesafe Inc. for modeling assistance at (703) 276-1100. SitesafeTC Version: 1.0.0.0 2/11/2016 1:17:40 PM

RF Emissions Simulation For: Stamford North Elevation View



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



AT&T MOBILITY LLC	VERIZON WIRELESS	T-MOBILE	METROPCS	CRICKET COMMUNICATIONS	CLEARWIRE	SPRINT
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www.sitesafe.com
Site Name: Stamford North

Sitesafe Inc. assumes no responsibility for modeling results not verified by Sitesafe personnel. Contact Sitesafe Inc. for modeling assistance at (703) 276-1100. SitesafeTC Version: 1.0.0.0 2/11/2016 4:35:58 PM

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:

Monopole Base

Yellow Caution 2 sign 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 Young Kim.

February 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.

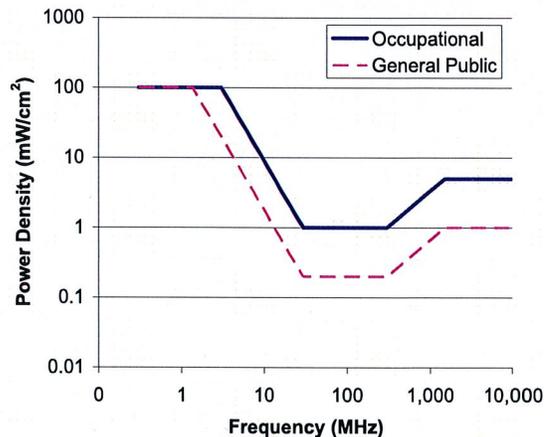
Occupational or Controlled limits apply in situations in which persons are exposed as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

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:

FCC Limits for Maximum Permissible Exposure (MPE)
Plane-wave Equivalent Power Density



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?sitearea=PED

European Commission Scientific Committee on Emerging and Newly Identified Health Risks

http://ec.europa.eu/health/ph_risk/committees/04_scenihp/docs/scenihp_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>

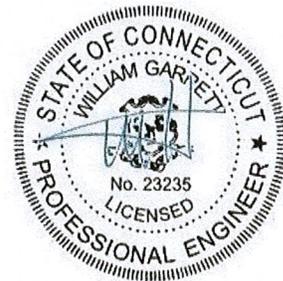


AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 148 ft Monopole
ATC Site Name : SMFR - North, CT
ATC Site Number : 302515
Engineering Number : OAA684041_C3_01
Proposed Carrier : AT&T Mobility
Carrier Site Name : Stamford North
Carrier Site Number : CTL02109 / 10034979
Site Location : 0 Lot 4 Eastover Road
Stamford, CT 06905-1403
41.112750,-73.538353
County : Fairfield
Date : August 30, 2016
Max Usage : 100%
Result : Pass

Reviewed by:
William Garrett, PE
Chief Engineer



Prepared By:
Zachary Polaha
Structural Engineer I

Aug 30 2016 5:00 PM

cosign

COA: PEC.0001553



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Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 148 ft monopole to reflect the change in loading by AT&T Mobility.

Supporting Documents

Tower Drawings	Engineered Endeavors Job #5591, dated November 22, 1999
Foundation Drawing	Engineered Endeavors Job #5591, dated November 17, 1999
Geotechnical Report	Dr. Clarence Welti, dated October 25, 2000
Modifications	ATC Project #43868633, dated September 1, 2009 ATC Project #51772939, dated April 11, 2013

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	105 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2003 IBC w/ 2005 CT Supplement & 2009 CT Amendment
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	$S_s = 0.25, S_1 = 0.07$
Site Class:	D - Stiff Soil

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
161.0	161.0	3	Andrew E15S09P94	Flush	(12) 1 5/8" Coax	T-Mobile
		3	RFS ATMAP1412D-1A20			
		2	Andrew ADFD1820-9090B-R2DM			
		1	Andrew TMZXX-6516-R2M			
152.0	152.0	12	Powerwave LGP21401	Platform w/ Handrails	(12) 1 1/4" Coax (4) 0.78" 8 AWG 6 (2) 0.74" 8 AWG 7 (2) 0.39" Fiber Trunk (1) 3" Conduit	AT&T Mobility
		2	Raycap DC6-48-60-18-8F			
		3	Ericsson RRUS 11 (Band 12) (55 lb)			
		3	Ericsson RRUS 32			
		3	Powerwave 7770.00			
		3	CCI OPA-65R-LCUU-H6			
141.0	141.0	6	RFS FD9R6004	Low Profile Platform	(12) 1 5/8" Coax (2) 1 5/8" Hybriflex	Verizon
		4	Alcatel-Lucent RRH2X60-1900			
		4	Alcatel-Lucent RRH2x60 700			
		4	Alcatel-Lucent RRH4x45-B66 w/o Solar Shield			
		2	RFS DB-T1-6Z-8AB-OZ			
		1	Antel BXA-80063-6BF-EDIN-X			
		2	Antel BXA-70063/6CF __ 2°			
		1	Antel BXA-80080/6CF			
		4	Commscope SBNHH-1D65B			
4	Commscope SBNHH-1D45B					
138.0	138.0	1	DragonWave Horizon Compact	Side Arms	(6) 5/16" (0.31") Coax (1) 2" Conduit (1) 1/2" Coax	Clearwire
		3	NextNet BTS-2500			
		3	Argus LLPX310R			
		1	DragonWave A-ANT-18G-2.5-C			
132.0	132.0	3	KMW KMDAPS2040000 (E-F Band)	Low Profile Platform	(9) 1 1/4" Coax (6) 1 5/8" Coax	Sprint Nextel
		3	KMW AM-X-WM-17-65-00T (48")			
		9	Decibel DB844H90E-XY			
121.0	121.0	3	Alcatel-Lucent 800MHz 2X50W RRH w/ Filter	Low Profile Platform	(4) 1 1/4" Hybriflex	Sprint Nextel
		3	Alcatel-Lucent 4x40W RRH (91 lb)			
		3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
		3	RFS APXVTM14-C-I20			
		3	RFS APXVSP18-C-A20			
110.0	110.0	2	Diamond X50A	Side Arms	(2) 1/2" Coax	Senet
100.0	105.0	1	Antel BCD-87010 __ 4°	Side Arm	(1) 7/8" Coax	Sensus USA
76.0	76.0	1	PCTEL GPS-TMG-HR-26N	Side Arm	(1) 1/2" Coax	Sprint Nextel

Equipment to be Removed

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
152.0	152.0	3	Powerwave P65-16-XLH-RR	-	-	AT&T Mobility
		3	Ericsson RRUS 11 (Band 12) (55 lb)			



Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
152.0	152.0	3	Ericsson RRUS 32 B2	Platform w/ Handrails	-	AT&T Mobility
		3	Quintel QS66512-2			

¹Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	67%	Pass
Shaft	71%	Pass
Base Plate	34%	Pass
Reinforcement	85%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	4,527.7	100%
Axial (Kips)	58.9	6%
Shear (Kips)	40.5	81%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
152.0	Ericsson RRUS 32 B2	AT&T Mobility	1.855	1.350
	Quintel QS66512-2			
138.0	DragonWave A-ANT-18G-2.5-C	Clearwire	1.621	1.320

*Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-G



Standard Conditions

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

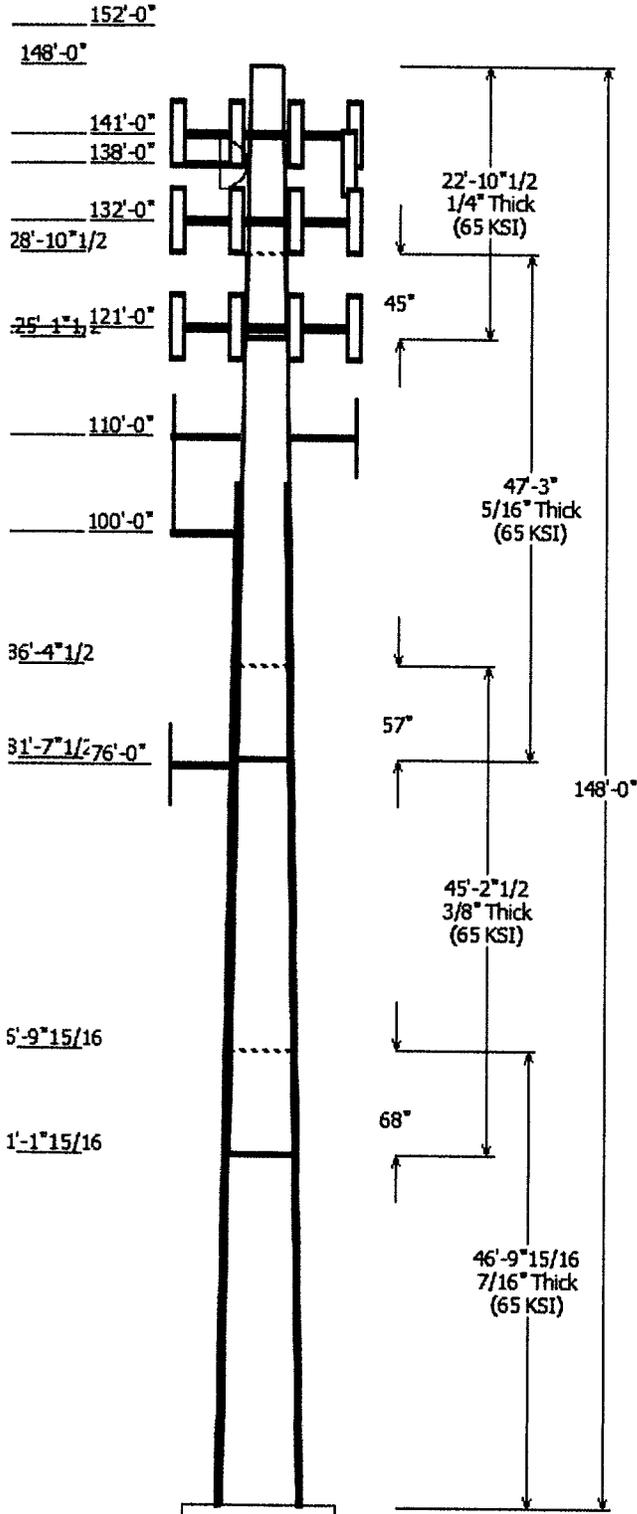
- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

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

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

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

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Job Information	
Pole : 302515	Code: ANSI/TIA-222-G
Description : 148 ft EB Monopole	
Client : AT&T Mobility	Struct Class : II
Location : SMFR - North, CT	
Shape : 18 Sides	Exposure : B
Height : 148.00 (ft)	Topo : 1
Base Elev (ft): 0.00	
Taper: 0.19510 (in/ft)	

Sections Properties							
Shaft Section	Length (ft)	Diameter (in)		Thick Joint (in)	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
		Across Flats Top	Across Flats Bottom				
1	46.830	38.86	48.00	0.438	0.000	0.195100	65
2	45.210	31.89	40.71	0.375 Slip Joint	68.000	0.195100	65
3	47.250	24.23	33.45	0.313 Slip Joint	57.000	0.195100	65
4	22.877	21.00	25.46	0.250 Slip Joint	45.000	0.195100	65

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
161.000	161.000	1	Andrew TMZXXX-6516-R2M
161.000	161.000	2	Andrew ADFD1820-9090B-R2DM
161.000	161.000	3	RFS ATMAP1412D-1A20
161.000	161.000	3	Andrew E15S09P94
152.000	152.000	3	Quintel QS66512-2
152.000	152.000	3	Ericsson RRUS 32 B2
152.000	152.000	1	Flat Platform w/ Handrails
152.000	152.000	3	CCI OPA-65R-LCUU-H6
152.000	152.000	3	Powerwave Allgon 7770.00
152.000	152.000	3	Ericsson RRUS 32
152.000	152.000	3	Ericsson RRUS 11 (Band 12) (55
152.000	152.000	12	Powerwave Allgon LGP21401
152.000	152.000	2	Raycap DC6-48-60-18-8F
148.000	148.000	1	Pipe Mount
141.000	141.000	4	Commscope SBNHH-1D45B
141.000	141.000	4	Commscope SBNHH-1D65B
141.000	141.000	4	Alcatel-Lucent RRH4x45-B66
141.000	141.000	4	Alcatel-Lucent RRH2x60 700
141.000	141.000	4	Alcatel-Lucent RRH2X60-1900
141.000	141.000	2	RFS DB-T1-6Z-8AB-0Z
141.000	141.000	2	Antel BXA-70063/6CF __ 2°
141.000	141.000	1	Flat Low Profile Platform
141.000	141.000	1	Antel BXA-80080/6CF
141.000	141.000	6	RFS FD9R6004
141.000	141.000	1	Antel BXA-80063-6BF-EDIN-X
138.000	138.000	1	Side Arms
138.000	138.000	1	DragonWave A-ANT-18G-2.5-C
138.000	138.000	3	Argus LLPX310R
138.000	138.000	3	NextNet BTS-2500
138.000	138.000	1	DragonWave Horizon Compact
132.000	132.000	1	Flat Low Profile Platform
132.000	132.000	9	Decibel DB844H90E-XY
132.000	132.000	3	KMW AM-X-WM-17-65-00T (48")
132.000	132.000	3	KMW KMDAPS2040000 (E-F
121.000	121.000	1	Flat Low Profile Platform
121.000	121.000	3	RFS APXVSP18-C-A20
121.000	121.000	3	RFS APXVTM14-C-I20
121.000	121.000	3	Alcatel-Lucent TD-RRH8x20-25
121.000	121.000	3	Alcatel-Lucent 4x40W RRH (91 I
121.000	121.000	3	Alcatel-Lucent 800 MHz 2X50W
110.000	110.000	2	Diamond X50A
110.000	110.000	2	Flat Side Arm
100.000	100.000	1	Flat Side Arm
100.000	105.000	1	Antel BCD-87010 __ 4°

76.000	76.000	1	Round Side Arm
76.000	76.000	1	PCTEL GPS-TMG-HR-26N

Linear Appurtenance			
Elev (ft)		Description	Exposed To Wind
From	To		
10.000	121.0	1 1/4" Hybriflex	Yes
10.000	132.0	1 1/4" Coax	No
10.000	132.0	1 5/8" Coax	No
10.000	138.0	1/2" Coax	Yes
10.000	138.0	2" Conduit	Yes
10.000	138.0	5/16" (0.31")	No
10.000	141.0	1 5/8" Coax	No
10.000	141.0	1 5/8" Hybriflex	Yes
10.000	152.0	0.39" (10mm)	No
10.000	152.0	0.74" 8 (18.7mm)	No
10.000	152.0	0.78" 8 (19.7mm)	No
10.000	152.0	1 1/4" Coax	No
10.000	152.0	3" Conduit	No
10.000	161.0	1 5/8" Coax	Yes
10.000	76.000	1/2" Coax	Yes
10.000	100.0	7/8" Coax	Yes
10.000	110.0	1/2" Coax	No
0.000	113.2	DYWIDAG	Yes

Load Cases	
1.2D + 1.6W	105 mph with No Ice
0.9D + 1.6W	105 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	4527.70	40.48	58.86
0.9D + 1.6W	4429.33	39.58	44.12
1.2D + 1.0Di + 1.0Wi	925.27	8.00	94.74
(1.2 + 0.2Sds) * DL + E ELFM	182.42	1.57	55.32
(1.2 + 0.2Sds) * DL + E EMAM	309.96	2.97	55.32
(0.9 - 0.2Sds) * DL + E ELFM	180.09	1.57	37.43
(0.9 - 0.2Sds) * DL + E EMAM	305.80	2.97	37.43
1.0D + 1.0W	911.59	8.10	49.11

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	138.00	19.449	1.320

