July 31st, 2018

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

Re:	**Notice of Exempt Modification – Antenna and RRU Add**
Property Address:	**21 Acorn Rd. Branford, CT 06405**
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 105-feet on an existing 147-foot monopole, owned by Crown Castle at 3 Corporate Park Drive, Suite 101, Clifton Park, NY 12065. AT&T now intends to remove three (3) 4' Kathrein 7770 Panel Antennas, each currently installed in position [3], and swap these for three (3) 4' CCI TPA-65R-BU4AA-K Panel Antennas, each to be installed in position [3], all sectors. In addition, AT&T intends to add one (1) RRUS-32 and (1) RRUs 4426 B66 in position [3], all sectors, for a total of six (6) new RRUs. AT&T is also proposing to add (1) Raycap Squid, as well as one (1) fiber line and (2) DC Power Cables to their equipment configuration. All of the changes will take place on the existing antenna mount.

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

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 Harry Smith – Town Planner, Town of Branford, CT at 1019 Main St. Branford, CT 06405 and James B. Cosgrove – First Selectman, Town of Branford, CT at 1019 Main St. Branford, CT 06405. A copy of this letter is being sent to the property owner, Altrio Investment Group LLC at P.O. Box 622, Branford, CT 06405 and to the tower company, Crown Castle at 3 Corporate Park Drive, Suite 101, Clifton Park, NY 12065.

The following is a list of subsequent decisions by the Connecticut Siting Council:

- **EM-AT&T-014-021031 -** AT&T Wireless PCS, LLC d/b/a AT&T Wireless notice of intent to modify an existing telecommunications facility located at 21 Acorn Road, **Branford**, Connecticut.
- **EM-CING-014-084-060602** - New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunications facilities located at 21 Acorn Road, **Branford**; and 10 Bona Road, Milford, Connecticut.
- **EM-CING-148-081-014-060-060816** - New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunications facilities located at 945 East Center Street, Wallingford; 1021 Straits Turnpike, Middlebury; 150 North Main Street, **Branford**; 1919 Boston Post Road, Guilford; and 21 Acorn Road, **Branford**, Connecticut.
- **EM-CING-014-110225** - New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 21 Acorn Street, **Branford**, Connecticut.
- **EM-AT&T-014-160916 -** AT&T notice of intent to modify an existing telecommunications facility located at 21 Acorn Street, **Branford**, Connecticut.

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 105-foot level of the 147-foot self-support tower.
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,

Romina Kirchmaier

CC w/enclosures:
Harry Smith – Town Planner, Town of Branford, CT
James B. Cosgrove – First Selectman, Town of Branford, CT
Altrio Investment Group LLC – Property Owners
Crown Castle – Tower Company

SITESAFE
RF COMPLIANCE EXPERTS

8618 Westwood Center Drive, Suite 315, Vienna, VA 22182
703.276.1100 ● 703.276.1169 fax
info@sitesafe.com ● www.sitesafe.com

Smartlink on behalf of AT&T Mobility, LLC Site FA – 10035270 Site ID – CT2014 (MRCTB026985 USID – 27039 Site Name – Branford - Leetes Island

21 Acorn Road
Branford, CT 06405

Latitude: N41-17-34.97
Longitude: W72-45-46.40
Structure Type: Monopole

Report generated date: July 16, 2018
Report by: Scott Broyles
Customer Contact: Romina Kirchmaier

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

Table of Contents

1 General Site Summary

1.1 Report Summary

AT&T Mobility, LLC	Summary
Access to Antennas Locked?	No
Max Cumulative Simulated RFE Level on the Ground	<1% General Public Limit
FCC & AT&T Compliant?	Will Be Compliant
Optional AT&T Mitigation Items?	No

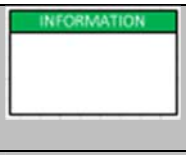
The following documents were provided by the client and were utilized to create this report:

RFDS: NEW-ENGLAND_CONNECTICUT_CTU2014_2018-LTE-Next-Carrier_LTE_sp656b_2051A0EFW4_10035270_27039_10-26-2017_Preliminary-Approved_v1.00

CD's: 10035270_AE201_180221_CTL02014_REV0.JMRL

RF Powers Used: RFDS Above

1.2 Signage Summary

AT&T Signage Locations	 Information 1	 Information 2	 Notice	 Notice 2	 Caution	 Caution 2	 Warning	 Warning 2	 Barriers
Access Point(s)	☐[#]	☐[#]	☐[#]	☐[#]	☐[#]	☐[#]	☐[#]	☐[#]	☐
Alpha	☐[#]	☐[#]	☐[#]	☐[#]	☐[#]	☐[#]	☐[#]	☐[#]	☐
Beta	☐[#]	☐[#]	☐[#]	☐[#]	☐[#]	☐[#]	☐[#]	☐[#]	☐
Gamma	☐[#]	☐[#]	☐[#]	☐[#]	☐[#]	☐[#]	☐[#]	☐[#]	☐

1.3 Fall Arrest Anchor Point Summary

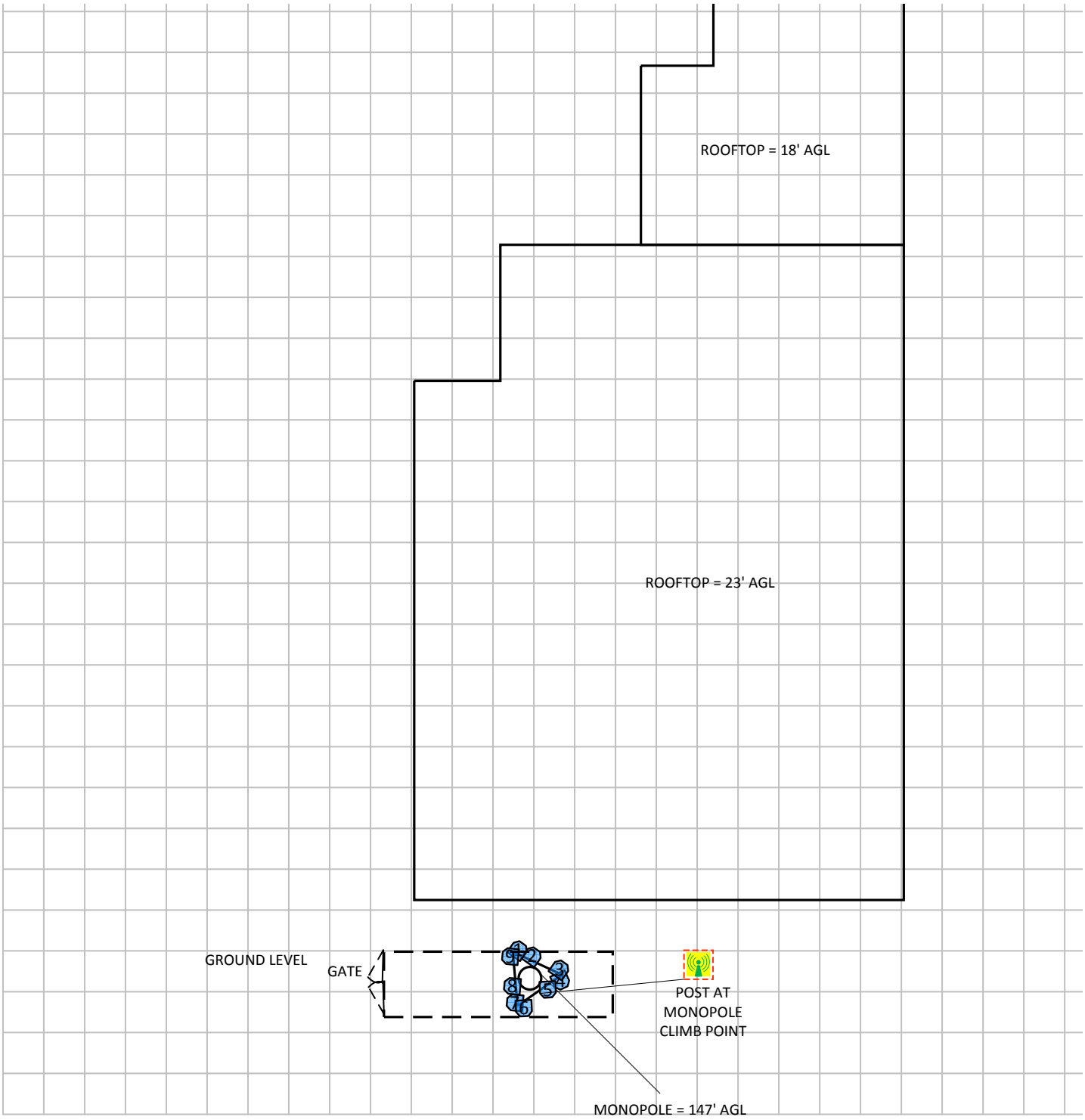
Fall Arrest Anchor & Parapet Info	Parapet Available (Y/N)	Parapet Height (inches)	Fall Arrest Anchor Available (Y/N)
Roof Safety Info	N	N/A	N

2 Scale Maps of Site

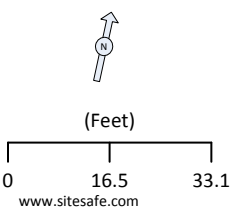
The following diagrams are included:

- Site Scale Map
- RF Exposure Diagram
- RF Exposure Diagram – Detailed View
- RF Exposure Diagram – Elevation View

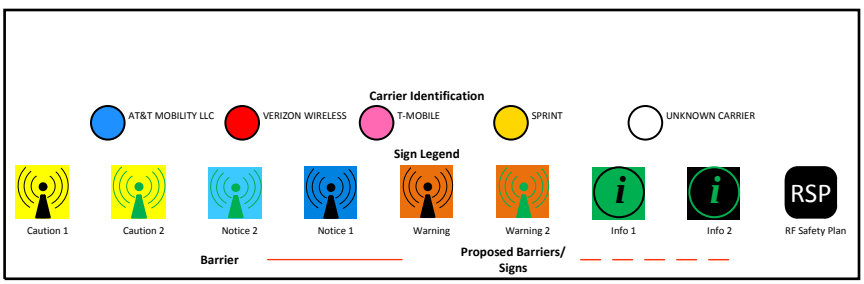
Site Scale Map For: Branford - Leetes Island



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



www.sitesafe.com
Site Name:Branford - Leetes Island
7/16/2018 5:18:22 PM



3 Antenna Inventory

The following antenna inventory was obtained by the customer and was 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)	3G UMTS Radio(s)	4G Radio(s)	Total ERP (Watts)	X	Y	Z AGL
1	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	23	82	4.6	11.51	1	0	287.1	107.7'	71.4'	102.7'
2	AT&T MOBILITY LLC	Andrew SBNHH-1D65A	Panel	737	23	66	4.6	11.29	0	1	629.5	110.7'	70'	102.7'
2	AT&T MOBILITY LLC	Andrew SBNHH-1D65A	Panel	1900	23	65	4.6	14.65	0	1	2133	110.7'	70'	102.7'
3	AT&T MOBILITY LLC (Proposed)	CCI Antennas TPA65R-BU4A	Panel	2100	23	57	4	13.36	0	1	3837.1	116.6'	67.3'	103'
3	AT&T MOBILITY LLC (Proposed)	CCI Antennas TPA65R-BU4A	Panel	2300	23	59	4	13.06	0	1	1285.3	116.6'	67.3'	103'
4	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	143	82	4.6	11.51	1	0	287.1	116.9'	64.8'	102.7'
5	AT&T MOBILITY LLC	Andrew SBNHH-1D65A	Panel	737	165	66	4.6	11.29	0	1	629.5	114.1'	62.9'	102.7'
5	AT&T MOBILITY LLC	Andrew SBNHH-1D65A	Panel	1900	165	65	4.6	14.65	0	1	2133	114.1'	62.9'	102.7'
6	AT&T MOBILITY LLC (Proposed)	CCI Antennas TPA65R-BU4A	Panel	2100	165	57	4	13.36	0	1	3837.1	109'	58.9'	103'
6	AT&T MOBILITY LLC (Proposed)	CCI Antennas TPA65R-BU4A	Panel	2300	165	59	4	13.06	0	1	1285.3	109'	58.9'	103'
7	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	263	82	4.6	11.51	1	0	287.1	107.1'	60.1'	102.7'
8	AT&T MOBILITY LLC	Andrew SBNHH-1D65A	Panel	737	263	66	4.6	11.29	0	1	629.5	106.5'	63.6'	102.7'
8	AT&T MOBILITY LLC	Andrew SBNHH-1D65A	Panel	1900	263	65	4.6	14.65	0	1	2133	106.5'	63.6'	102.7'
9	AT&T MOBILITY LLC (Proposed)	CCI Antennas TPA65R-BU4A	Panel	2100	263	57	4	13.36	0	1	3837.1	106.1'	70'	103'
9	AT&T MOBILITY LLC (Proposed)	CCI Antennas TPA65R-BU4A	Panel	2300	263	59	4	13.06	0	1	1285.3	106.1'	70'	103'
9	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	23	82	4.6	11.51	0	0	94.8	116.8'	67'	102.7'

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.

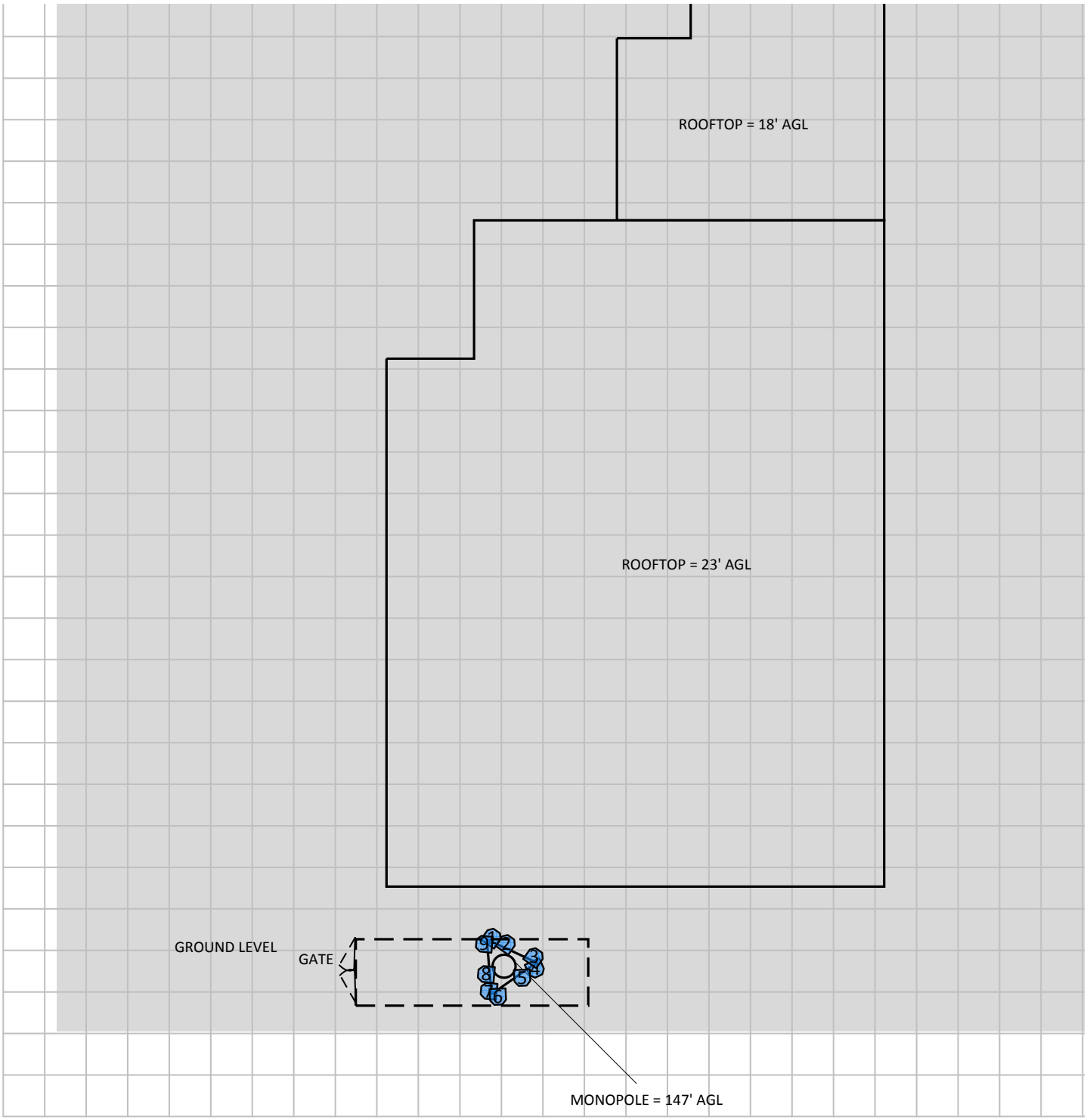
4 Emission Predictions

In the RF Exposure 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 total analyzed elevations in the below RF Exposure Simulations are listed below.

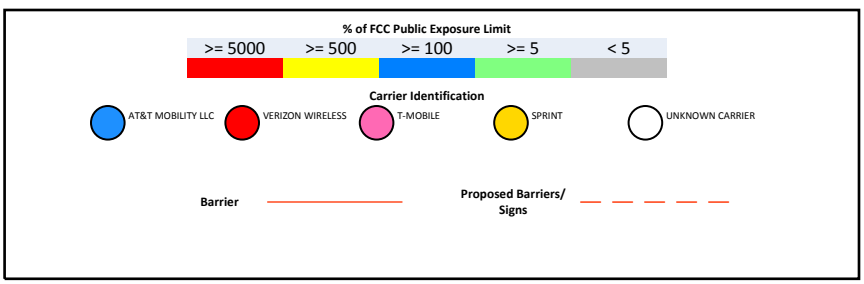
- Ground = 0'
- Building = 23' AGL
- Building = 18' AGL

The Antenna Inventory heights are referenced to the same level.

RF Exposure Simulation For: Branford - Leetes Island
Composite View



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



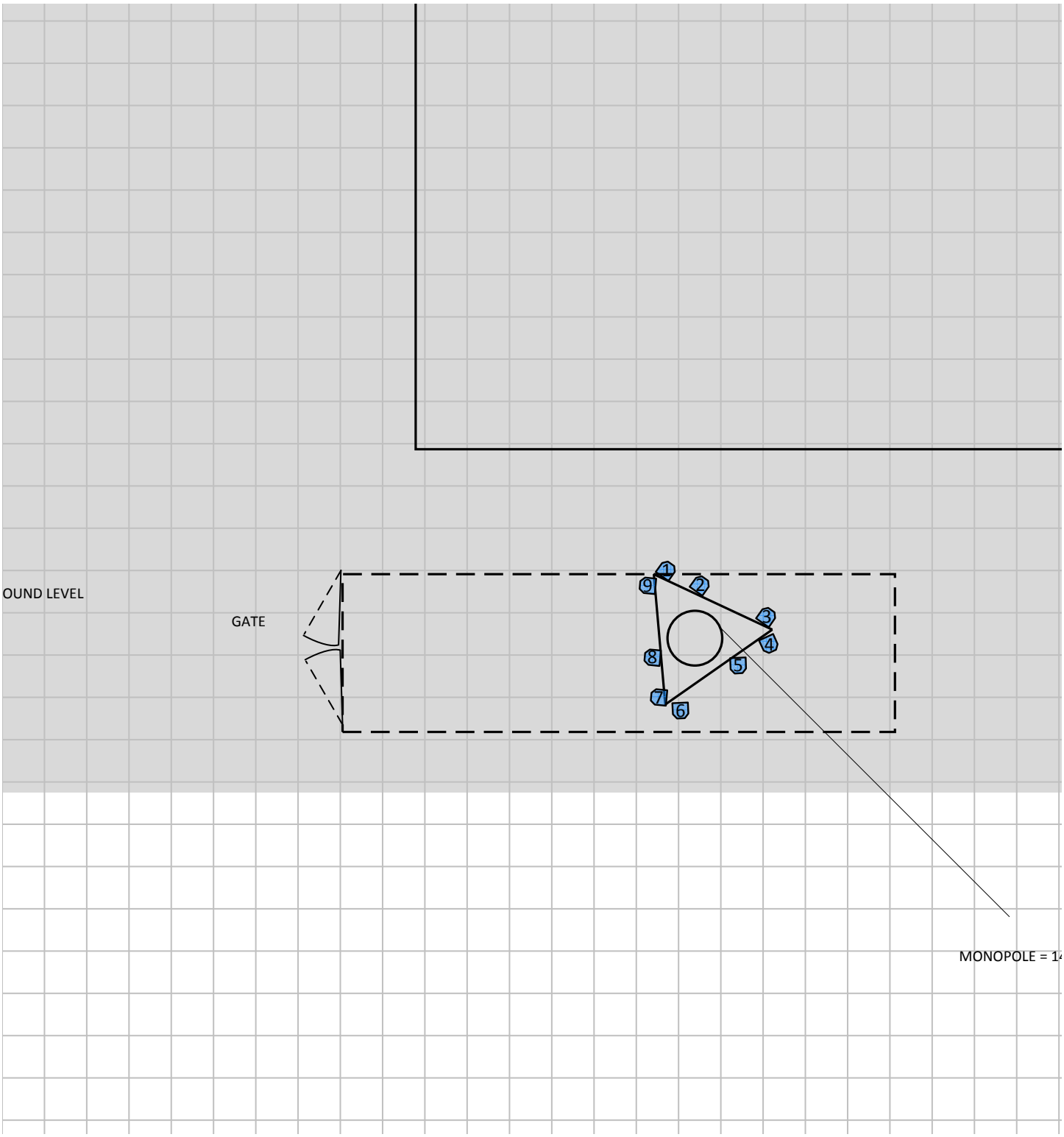
(Feet)

0 16.2 32.5

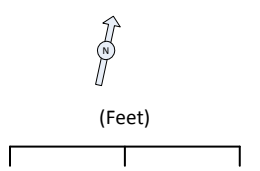
www.sitesafe.com
Site Name:Branford - Leetes Island
7/16/2018 5:02:50 PM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

RF Exposure Simulation For: Branford - Leetes Island
Detailed View



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



www.sitesafe.com
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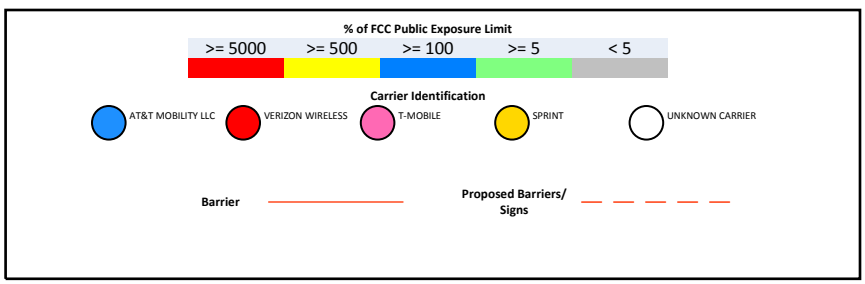
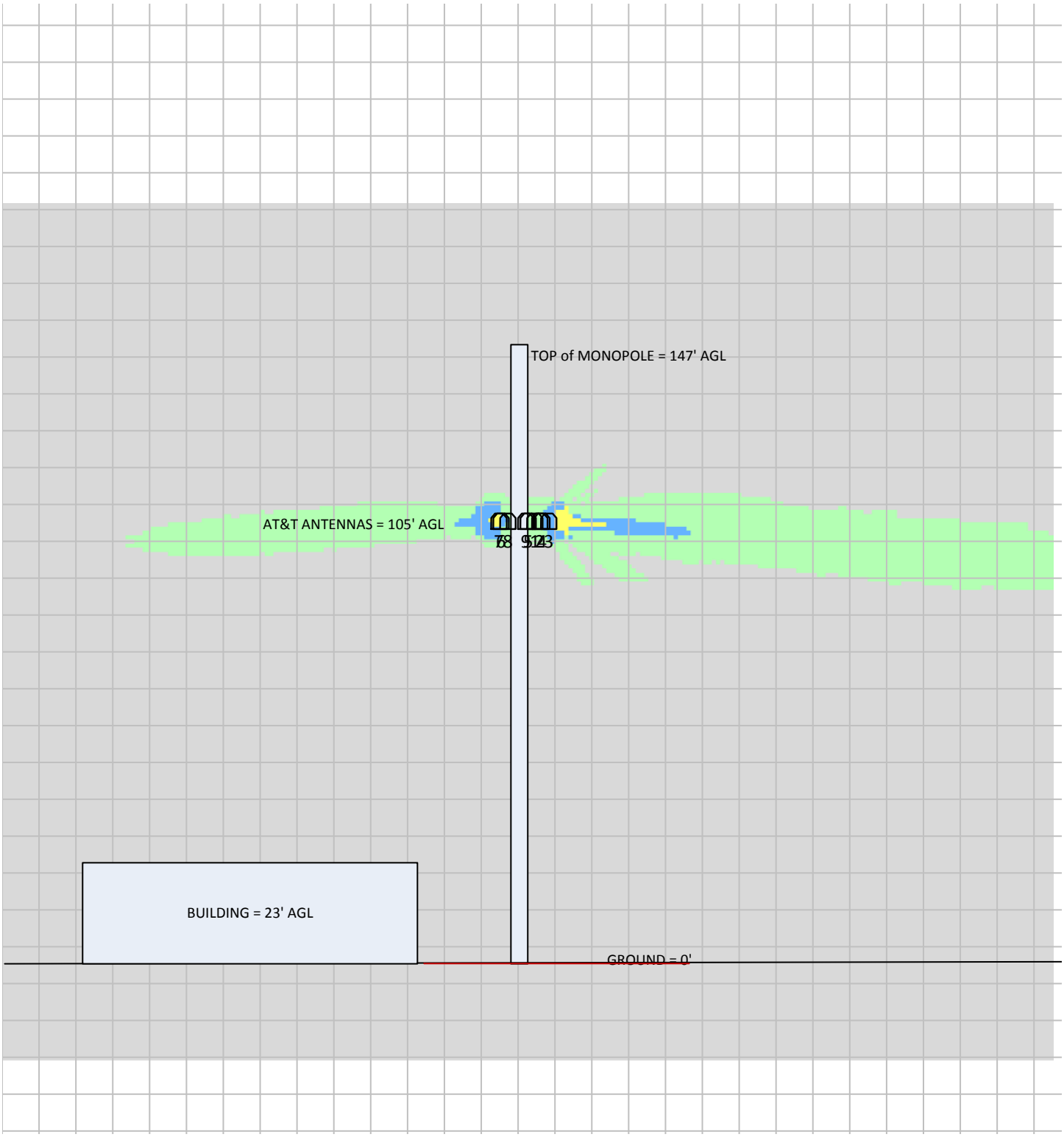
7/16/2018 5:03:58 PM

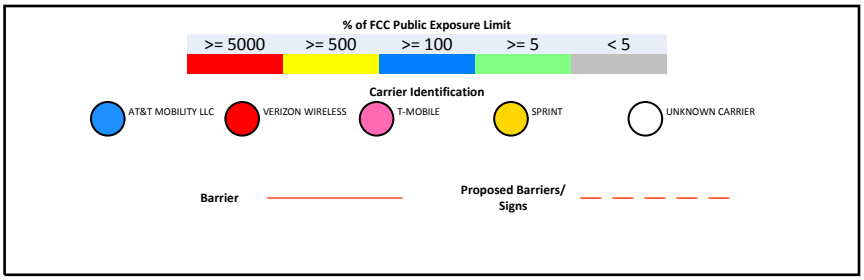


Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

RF Exposure Simulation For: Branford - Leetes Island
Elevation View



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



(Feet)

0 16.8 33.5

www.sitesafe.com
Site Name:Branford - Leetes Island
7/16/2018 5:15:49 PM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Single Level (0)

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.

AT&T Mobility, LLC will be made compliant if the following changes are implemented:

Monopole Access Location

(1) Yellow Caution 2 sign(s) required at monopole climb point.

Notes:

- Signage may already be in place. Sitesafe does not have record of any existing signage because there were no previous visits or data supplied regarding them. All remediation is based on a worst-case scenario.

6 Reviewer Certification

The reviewer whose signature appears below hereby certifies and affirms:

That I am an employee of Sitesafe, LLC., in Vienna, 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 Scott Broyles.

July 16, 2018

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 Communications 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.

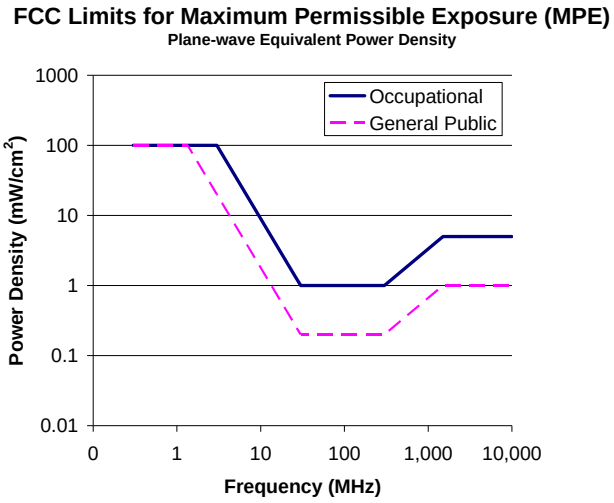
FCC regulations define two separate tiers of exposure limits: Occupational or "Controlled environment" and General Public or "Uncontrolled environment". The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* 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 modeling is based on recommendations from the FCC's OET-65 bulletin with the following variances per AT&T guidance. Reflection has not been considered in the modeling, i.e. the reflection factor is 1.0. The near / far field boundary has been set to 1.5 times the aperture height of the antenna and modeling beyond that point is the lesser of the near field cylindrical model and the far field model taking into account the gain of the antenna.

The site has been modeled with these assumptions to show the maximum RF energy density. Areas modeled with exposure greater than 100% of the General Public MPE level may not actually occur, but are shown as a prediction that could be realized. Sitesafe believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor).

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, LLC.
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	Calc Power	Mfg	Model	(ft) X	(ft) Y	(ft) Z	Type	(ft) Aper	dBd Gain	BWdth Pt Dir	Uptime Profile	ON flag
1	AT&T MOE	850	20.27696	1	0			20.27696		Powerwav	7770	107.74	71.36	102.7085	Panel	4.583	11.51	82;23	100%	ON•
2	AT&T MOE	737	46.7735	1	0			46.7735		Andrew	SBNHH-1D	110.74	70.04	102.7085	Panel	4.583	11.29	66;23	100%	ON•
2	AT&T MOE	1900	73.11391	1	0			73.11391		Andrew	SBNHH-1D	110.74	70.04	102.7085	Panel	4.583	14.65	65;23	100%	ON•
3	AT&T MOE	2100	177.0109	1	0			177.0109		CCI Antenr	TPA65R-BL	116.64	67.25	103	Panel	4	13.36	57;23	100%	ON•
3	AT&T MOE	2300	63.53311	1	0			63.53311		CCI Antenr	TPA65R-BL	116.64	67.25	103	Panel	4	13.06	59;23	100%	ON•
4	AT&T MOE	850	20.27696	1	0			20.27696		Powerwav	7770	116.85	64.78	102.7085	Panel	4.583	11.51	82;143	100%	ON•
5	AT&T MOE	737	46.7735	1	0			46.7735		Andrew	SBNHH-1D	114.1	62.89	102.7085	Panel	4.583	11.29	66;165	100%	ON•
5	AT&T MOE	1900	73.11391	1	0			73.11391		Andrew	SBNHH-1D	114.1	62.89	102.7085	Panel	4.583	14.65	65;165	100%	ON•
6	AT&T MOE	2100	177.0109	1	0			177.0109		CCI Antenr	TPA65R-BL	108.97	58.89	103	Panel	4	13.36	57;165	100%	ON•
6	AT&T MOE	2300	63.53311	1	0			63.53311		CCI Antenr	TPA65R-BL	108.97	58.89	103	Panel	4	13.06	59;165	100%	ON•
7	AT&T MOE	850	20.27696	1	0			20.27696		Powerwav	7770	107.06	60.08	102.7085	Panel	4.583	11.51	82;263	100%	ON•
8	AT&T MOE	737	46.7735	1	0			46.7735		Andrew	SBNHH-1D	106.49	63.6	102.7085	Panel	4.583	11.29	66;263	100%	ON•
8	AT&T MOE	1900	73.11391	1	0			73.11391		Andrew	SBNHH-1D	106.49	63.6	102.7085	Panel	4.583	14.65	65;263	100%	ON•
9	AT&T MOE	2100	177.0109	1	0			177.0109		CCI Antenr	TPA65R-BL	106.07	69.98	103	Panel	4	13.36	57;263	100%	ON•
9	AT&T MOE	2300	63.53311	1	0			63.53311		CCI Antenr	TPA65R-BL	106.07	69.98	103	Panel	4	13.06	59;263	100%	ON•

StartSymbolData

21 ACORN RD

Location	21 ACORN RD	**Mblu**	H05/000 003/ 00010/ /
Acct#	008133	**Owner**	ALTRIO INVESTMENT GROUP LLC
Assessment	$634,200	**Appraisal**	$905,900
PID	1176	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2014	$477,600	$428,300	$905,900
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2014	$334,300	$299,900	$634,200

Owner of Record

Owner	ALTRIO INVESTMENT GROUP LLC	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	P O BOX 622 BRANFORD, CT 06405	**Book & Page**	0568/0731
		Sale Date	04/08/1994

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
ALTRIO INVESTMENT GROUP LLC	$0		0568/0731	04/08/1994

Building Information

Building 1 : Section 1

Year Built:	2001
Living Area:	10,911
Replacement Cost:	$647,741
Building Percent Good:	67
Replacement Cost Less Depreciation:	$434,000

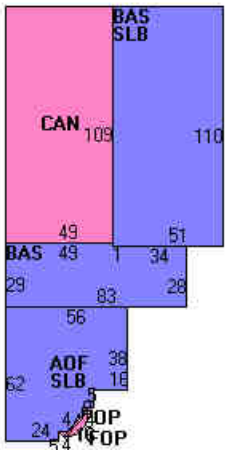
Building Attributes	
Field	**Description**

STYLE	Warehouse
MODEL	Ind/Comm
Grade	B
Stories:	1
Occupancy	1
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	T&G/Rubber
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	None
Bldg Use	COMM WHS MDL96
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	3160
Heat/AC	HEAT/AC SPLIT
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	NONE
Rooms/Prtns	AVERAGE
Wall Height	17
% Comn Wall	0

Building Photo

(http://images.vgsi.com/photos/BranfordCTPhotos//\00\01\93/16

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	7,983	7,983
AOF	Office	2,928	2,928
CAN	Canopy	5,341	0
FOP	Porch, Open	80	0
SLB	Slab	8,538	0
		24,870	10,911

Extra Features

Extra Features				Legend
Code	**Description**	**Size**	**Value**	**Bldg #**
SPR1	SPRINKLERS-WET	13324 S.F.	$8,900	1
SPR2	WET/CONCEALED	2928 S.F.	$2,600	1
A/C	AIR CONDITION	2928 S.F.	$4,300	1

Land

Land Use

Use Code	3160
Description	COMM WHS MDL96
Zone	IG-2
Neighborhood	350
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	1.56
Frontage	
Depth	
Assessed Value	$299,900
Appraised Value	$428,300

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
PAV1	PAVING-ASPHALT			21000 S.F.	$24,300	1
FN3	FENCE-6' CHAIN			500 L.F.	$3,500	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$477,600	$428,300	$905,900
2016	$477,600	$428,300	$905,900
2015	$477,600	$428,300	$905,900

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$334,300	$299,900	$634,200
2016	$334,300	$299,900	$634,200
2015	$334,300	$299,900	$634,200

PJF PAUL J. FORD & COMPANY

Date: **May 04, 2018**

Timothy Howell
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277

Paul J. Ford and Company
250 East Broad st., Suite 600
Columbus, OH 43215
(614) 221-6679

Subject:	**Structural Analysis Report**	
Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Carrier Site Number:	CTL02014
	Carrier Site Name:	BRANFORD - LEETES ISLAND
Crown Castle Designation:	**Crown Castle BU Number:**	876316
	Crown Castle Site Name:	SECONDINO PROPERTY
	Crown Castle JDE Job Number:	481409
	Crown Castle Work Order Number:	1559287
	Crown Castle Order Number:	423348 Rev. 1
Engineering Firm Designation:	**Paul J. Ford and Company Project Number:**	37518-0474.003.7700
Site Data:	**21 Acorn Road, BRANFORD, New Haven County, CT** **Latitude *41° 17' 35.06"*, Longitude *-72° 45' 46.4"*** **147 Foot - Monopole**	

Dear Mr. Howell,

Paul J. Ford and Company is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above-mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 1175503, in accordance with order 423348, revision 1.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Existing + Reserved + Proposed Equipment **Sufficient Capacity**
Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

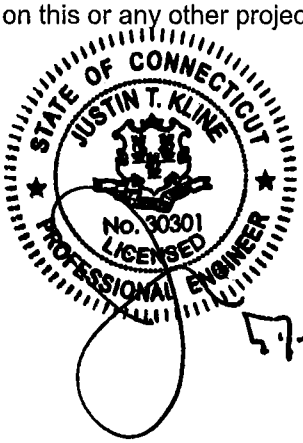
This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 130 mph converted to a nominal 3-second gust wind speed of 101 mph per Section 1609.3 and Appendix N as required for use in the ANSI/TIA-222-G-2005 Standard, "Structural Standard for Antenna Supporting Structures and Antennas", with ANSI/TIA-222-G-1-2007 and ANSI/TIA-222-G-2-2009 Addenda per Exception #5 of Section 1609.1.1. Risk Category II, Exposure Category C and Topographic Category 1 were used in this analysis.

We at *Paul J. Ford and Company* appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:

Shardul Kadam
Project Engineer

tnxTower Report - version 7.0.5.1



5-7-18

PAUL J. FORD & COMPANY

Date: **May 04, 2018**

Timothy Howell
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277

Paul J. Ford and Company
250 East Broad st., Suite 600
Columbus, OH 43215
(614) 221-6679

Subject:	**Structural Analysis Report**	
Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Carrier Site Number:	CTL02014
	Carrier Site Name:	BRANFORD - LEETES ISLAND
Crown Castle Designation:	**Crown Castle BU Number:**	876316
	Crown Castle Site Name:	SECONDINO PROPERTY
	Crown Castle JDE Job Number:	481409
	Crown Castle Work Order Number:	1559287
	Crown Castle Order Number:	423348 Rev. 1
Engineering Firm Designation:	**Paul J. Ford and Company Project Number:**	37518-0474.003.7700
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Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 130 mph converted to a nominal 3-second gust wind speed of 101 mph per Section 1609.3 and Appendix N as required for use in the ANSI/TIA-222-G-2005 Standard, "Structural Standard for Antenna Supporting Structures and Antennas", with ANSI/TIA-222-G-1-2007 and ANSI/TIA-222-G-2-2009 Addenda per Exception #5 of Section 1609.1.1. Risk Category II, Exposure Category C and Topographic Category 1 were used in this analysis.

We at *Paul J. Ford and Company* appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:

Shardul Kadam
Project Engineer I

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 147 ft. Monopole tower designed by SUMMIT in September of 1997. The tower was originally designed for a wind speed of 90 mph per TIA/EIA-222-F.

2) ANALYSIS CRITERIA

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 130 mph converted to a nominal 3-second gust wind speed of 101 mph per Section 1609.3 and Appendix N as required for use in the ANSI/TIA-222-G-2005 Standard, “Structural Standard for Antenna Supporting Structures and Antennas”, with ANSI/TIA-222-G-1-2007 and ANSI/TIA-222-G-2-2009 Addenda per Exception #5 of Section 1609.1.1. Risk Category II, Exposure Category C and Topographic Category 1 were used in this analysis.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
106.0	106.0	3	cci antennas	TPA-65R-BU4AA-K w/ Mount Pipe	1 2	17/64 7/8	-
		3	ericsson	RADIO 4426			
		3	ericsson	RRUS 32			
		3	kaelus	DBC0061F1V51-2			
		6	powerwave technologies	7020.00			
		1	raycap	DC6-48-60-18-8F			

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
147.0	147.0	3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe	3 1	1-1/4 5/8	1
		3	rfs celwave	APXVTM14-C-120 w/ Mount Pipe			
		1	tower mounts	Platform Mount [LP 1201-1]			
	146.0	3	alcatel lucent	1900MHZ RRH (65MHZ)			
		3	alcatel lucent	800 EXTERNAL NOTCH FILTER			
		3	alcatel lucent	800MHZ RRH			
		3	alcatel lucent	TD-RRH8X20-25			
		9	rfs celwave	ACU-A20-N			
	143.0	1	tower mounts	Miscellaneous [NA 507-1]			
135.0	137.0	3	andrew	ATM200-A20	1 6	1-3/16 1-5/8	1
		3	commscope	ATSBT-TOP-MF-4G			
		3	commscope	LNX-6515DS-A1M w/ Mount Pipe			
	135.0	3	ericsson	ERICSSON AIR 21 B2A B4P w/ Mount Pipe			
		3	ericsson	ERICSSON AIR 21 B4A B2P w/ Mount Pipe			
		1	tower mounts	T-Arm Mount [TA 602-3]			
116.0	116.0	2	antel	LPA-80063/6CF w/ Mount Pipe	7	1-5/8	1
		2	antel	LPA-80080/4CF w/ Mount Pipe			
		2	rfs celwave	APL868013 w/ Mount Pipe			
		2	adc	CLEARGAIN DUAL BAND 800/1900 MHZ			
		1	rfs celwave	DB-T1-6Z-8AB-0Z			
		3	alcatel lucent	RRH2X60-700	1	1-5/8	2
		3	alcatel lucent	RRH2X60-PCS			
		3	alcatel lucent	RRH4X45-AWS4 B66			
		3	commscope	HBXX-6517DS-A2M w/ Mount Pipe			
		6	commscope	SBNHH-1D65B w/ Mount Pipe			
		1	rfs celwave	DB-T1-6Z-8AB-0Z			
		1	EEI	Low profile antenna platform “H” [LP 1201-1]			
106.0	106.0	3	ericsson	RRUS 11	-	-	3
		3	powerwave technologies	7770.00 w/ Mount Pipe			
		3	powerwave	LGP21401			

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
			technologies				
		3	andrew	SBNHH-1D65A w/ Mount Pipe	12 2 1 1	1-1/4 7/8 3/8 17/64	1
		3	ericsson	RRUS 11			
		3	ericsson	RRUS 12			
		3	ericsson	RRUS A2			
		3	powerwave technologies	7770.00 w/ Mount Pipe			
		9	powerwave technologies	LGP21401			
		1	raycap	DC6-48-60-18-8F			
		1	tower mounts	Miscellaneous [NA 507-2]			
		1	tower mounts	Side Arm Mount [SO 102-3]			
		1	tower mounts	Platform Mount [LP 1201-1] w/ kickers			
76.0	77.0	1	kathrein	OG-860/1920/GPS-A	-	-	1
		1	lucent	KS24019-L112A			
	76.0	1	tower mounts	Side Arm Mount [SO 701-3]			

Notes:
1) Existing Equipment
2) Reserved Equipment
3) Equipment To Be Removed

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
-	-	-	-	-	-	-

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
GEOTECHNICAL REPORTS	TEP, 25581.34391, 07/30/2015	1529736	CCISITES
POST-MODIFICATION INSPECTION	JTec Enterprises, 3017636, 10/10/2005	2031904	CCISITES
POST-MODIFICATION INSPECTION	PJF, 41708-0180, 03/15/2009	2417887	CCISITES
POST-MODIFICATION INSPECTION	ETS, 171664, 10/23/2017	7151513	CCISITES
TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Summit, 2737, 09/29/1997	1632435	CCISITES
TOWER MANUFACTURER DRAWINGS	Summit, 2737-97, 09/291997	1632399	CCISITES

3.1) Analysis Method

tnxTower (version 7.0.5.1), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) For existing modifications: monopole was modified in conformance with the referenced modification drawings.

This analysis may be affected if any assumptions are not valid or have been made in error. Paul J. Ford and Company should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
147 - 142	Pole	TP22.85x22x0.25	Pole	5.4%	Pass
142 - 137	Pole	TP23.7x22.85x0.25	Pole	10.4%	Pass
137 - 132	Pole	TP24.55x23.7x0.25	Pole	17.5%	Pass
132 - 127	Pole	TP25.4x24.55x0.25	Pole	24.7%	Pass
127 - 122	Pole	TP26.251x25.4x0.25	Pole	31.3%	Pass
122 - 117	Pole	TP27.101x26.251x0.25	Pole	37.6%	Pass
117 - 112	Pole	TP27.951x27.101x0.25	Pole	47.7%	Pass
112 - 108.75	Pole	TP29.141x27.951x0.25	Pole	54.2%	Pass
108.75 - 103.75	Pole	TP28.854x28.003x0.3125	Pole	53.1%	Pass
103.75 - 98.75	Pole	TP29.704x28.854x0.3125	Pole	62.5%	Pass
98.75 - 93.75	Pole	TP30.554x29.704x0.3125	Pole	70.9%	Pass
93.75 - 89.83	Pole	TP31.221x30.554x0.3125	Pole	76.9%	Pass
89.83 - 89.58	Pole + Reinf.	TP31.263x31.221x0.3188	Pole	78.1%	Pass
89.58 - 88.25	Pole + Reinf.	TP31.489x31.263x0.3188	Pole	80.0%	Pass
88.25 - 88	Pole + Reinf.	TP31.532x31.489x0.5125	Reinf. 2 Tension Rupture	67.4%	Pass
88 - 86	Pole + Reinf.	TP31.872x31.532x0.5125	Reinf. 2 Tension Rupture	70.0%	Pass
86 - 85.75	Pole + Reinf.	TP31.914x31.872x0.5125	Reinf. 2 Tension Rupture	71.0%	Pass
85.75 - 84.33	Pole + Reinf.	TP32.156x31.914x0.5125	Reinf. 2 Tension Rupture	72.9%	Pass
84.33 - 84.08	Pole + Reinf.	TP32.198x32.156x0.475	Reinf. 2 Tension Rupture	74.6%	Pass
84.08 - 79.08	Pole + Reinf.	TP33.049x32.198x0.4625	Reinf. 2 Tension Rupture	80.9%	Pass
79.08 - 78	Pole + Reinf.	TP33.955x33.049x0.4625	Reinf. 2 Tension Rupture	82.3%	Pass
78 - 72.75	Pole + Reinf.	TP33.5x32.607x0.5625	Reinf. 2 Tension Rupture	79.0%	Pass
72.75 - 67.75	Pole + Reinf.	TP34.35x33.5x0.5625	Reinf. 2 Tension Rupture	83.9%	Pass
67.75 - 63.08	Pole + Reinf.	TP35.144x34.35x0.55	Reinf. 2 Tension Rupture	88.1%	Pass
63.08 - 62.83	Pole + Reinf.	TP35.187x35.144x0.7125	Reinf. 7 Tension Rupture	72.8%	Pass
62.83 - 57.83	Pole + Reinf.	TP36.037x35.187x0.7	Reinf. 7 Tension Rupture	76.6%	Pass
57.83 - 52.83	Pole + Reinf.	TP36.887x36.037x0.6875	Reinf. 7 Tension Rupture	80.3%	Pass
52.83 - 47.83	Pole + Reinf.	TP37.737x36.887x0.6875	Reinf. 7 Tension Rupture	83.8%	Pass
47.83 - 47.5	Pole + Reinf.	TP38.601x37.737x0.675	Reinf. 7 Tension Rupture	84.1%	Pass
47.5 - 42.5	Pole + Reinf.	TP37.894x37.043x0.75	Reinf. 7 Tension Rupture	82.8%	Pass
42.5 - 37.5	Pole + Reinf.	TP38.744x37.894x0.7375	Reinf. 7 Tension Rupture	85.7%	Pass
37.5 - 32.75	Pole + Reinf.	TP39.551x38.744x0.7375	Reinf. 7 Tension Rupture	88.3%	Pass
32.75 - 32.5	Pole + Reinf.	TP39.594x39.551x0.7875	Reinf. 6 Tension Rupture	81.3%	Pass

32.5 - 27.5	Pole + Reinf.	TP40.444x39.594x0.775	Reinf. 6 Tension Rupture	83.8%	Pass
27.5 - 22.5	Pole + Reinf.	TP41.294x40.444x0.7625	Reinf. 6 Tension Rupture	86.1%	Pass
22.5 - 17.5	Pole + Reinf.	TP42.144x41.294x0.7625	Reinf. 6 Tension Rupture	88.4%	Pass
17.5 - 12.5	Pole + Reinf.	TP42.995x42.144x0.75	Reinf. 6 Tension Rupture	90.5%	Pass
12.5 - 8.25	Pole + Reinf.	TP43.717x42.995x0.7375	Reinf. 6 Tension Rupture	92.2%	Pass
8.25 - 8	Pole + Reinf.	TP43.76x43.717x0.8	Reinf. 2 Tension Rupture	89.3%	Pass
8 - 6.25	Pole + Reinf.	TP44.057x43.76x0.7875	Reinf. 2 Tension Rupture	90.0%	Pass
6.25 - 6	Pole + Reinf.	TP44.1x44.057x0.775	Reinf. 2 Tension Rupture	90.3%	Pass
6 - 3.25	Pole + Reinf.	TP44.567x44.1x0.7625	Reinf. 2 Tension Rupture	91.3%	Pass
3.25 - 3	Pole + Reinf.	TP44.61x44.567x0.7625	Reinf. 1 Tension Rupture	90.3%	Pass
3 - 0	Pole + Reinf.	TP45.12x44.61x0.75	Reinf. 1 Tension Rupture	91.4%	Pass
				Summary	
			Pole	80.0%	Pass
			Reinforcement	92.2%	Pass
			Overall	92.2%	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	99.9	Pass
1	Base Plate	0	84.6	Pass
1	Base Foundation Structural Steel	0	60.6	Pass
1	Base Foundation Soil Interaction	0	63.6	Pass

Structure Rating (max from all components) =	99.9%

Notes:
1) See additional documentation in “Appendix C – Additional Calculations” for calculations supporting the % capacity consumed.

4.1) Recommendations

The monopole and its foundation have sufficient capacity to carry the proposed loading configuration. No modifications are required at this time.