



March 28<sup>th</sup>, 2018

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

**Re: Notice of Exempt Modification – Antenna and TMA Swap**  
**Property Address: 181 Clapboard Ridge Road, Danbury, CT 06811**  
**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 three (3) wireless telecommunication antennas at an antenna center line height of 62-feet on an existing 85-foot flagpole monopole, owned by Crown Castle at 3 Corporate Park Drive, Suite 101, Clifton Park, NY 12065. AT&T now intends to swap these three (3) 6' Powerwave P65-16-XLH-RR Panel Antennas for three (3) 6' Kathrein 80010798 Panel Antennas, (1) each sector. AT&T is also proposing to swap two (2) CCI DTMABP7819VG12A TMAs for (2) Kaelus TMA2117F00V1-1 TMA in each sector, for a total of (6) TMAs to be swapped. In addition, AT&T is proposing to install (2) new 7/8" coax cables per sector, for a total of six (6) new cables to be added. 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. § 16-50j-72(b) (2). In accordance with R.C.S.A., a copy of this letter is being sent to Sharon B. Calitro, AICP, Director of Planning and Zoning - City of Danbury, 1<sup>st</sup> Floor, 155 Deer Hill Ave. Danbury, CT 06810 and Mark Boughton - Mayor, City of Danbury, CT, 155 Deer Hill Avenue, Danbury, CT 06810. A copy of this letter is being sent to the property owner, Diocese of Newtown for the Melkites in the US of America, Inc. at 181 Clapboard Ridge Rd. Danbury, CT 06811. A copy of this letter is also being sent to the tower company, Crown Castle at 3 Corporate Park Drive, Suite 101, Clifton Park, NY.

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

- **EM-AT&T-034-030421** - AT&T Wireless PCS, LLC d/b/a AT&T Wireless notice of intent to modify an existing telecommunications facility located at 181 Clapboard Ridge Road, **Danbury**, Connecticut.
- **EM-CING-034-080709** – New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 181 Clapboard Ridge Road, **Danbury**, Connecticut.
- **EM-CING-034-080922** - New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 181 Clapboard Ridge Road, **Danbury**, Connecticut.
- **EM-T-MOBILE-034-090803** – Omnipoint Communications, as subsidiary of T-Mobile USA, Inc. notice of intent to modify an existing telecommunications facility located at 181 Clapboard Ridge Road, **Danbury**, Connecticut.
- **EM-CING-034-110808** - New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 181 Clapboard Ridge Road, **Danbury**, 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 62-foot level of the 85-foot flagpole monopole.
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).

Sincerely,

A handwritten signature in black ink that reads 'Romina Kirchmaier'.

Romina Kirchmaier

CC w/enclosures:  
Sharon B. Calitro, AICP - Director of Planning and Zoning, City of Danbury, CT  
Mark Boughton - Mayor, City of Danbury, CT  
Diocese of Newtown for the Melkites in the US of America – Land Owner  
Crown Castle – Tower Company



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**Smartlink on behalf of  
AT&T Mobility, LLC  
Site FA – 10070991  
Site ID – CT5535 (MRCTB025503-  
MRCTB025447)  
USID – 27013  
Site Name – Danbury North**

**179-181 Clapboard Ridge Rd  
Danbury, CT 6811**

Latitude: N41-25-59.85  
Longitude: W73-29-33.00  
Structure Type: Stealth Pole-Internal Array

Report generated date: March 19, 2018  
Report by: Young Kim  
Customer Contact: Romina Kirchmaier

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**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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# 1 General Site Summary

## Report Summary

AT&T Mobility, LLC	Summary
Access to Antennas Locked?	No
Max Cumulative Simulated RFE Level on the Ground Level	<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\_CTV5535\_2018-LTE-Multi-Carrier\_LTE\_sp656b\_2051A0DB6R\_10070991\_27013\_06-26-2017\_Preliminary-Approved\_v1.00

**CD's:** 10070991\_AE201\_180118\_CTL05535\_REV 1\_S&S

**RF Powers Used:** RFDS

## Signage Summary

AT&T Signage Locations							
	Information1	Information 2	Notice	Notice 2	Caution	Caution 2	Barriers
<b>Access Point(s)</b>	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/>
<b>Alpha</b>	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/>
<b>Beta</b>	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/>
<b>Gamma</b>	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/>

## Fall Arrest Anchor Point Summary

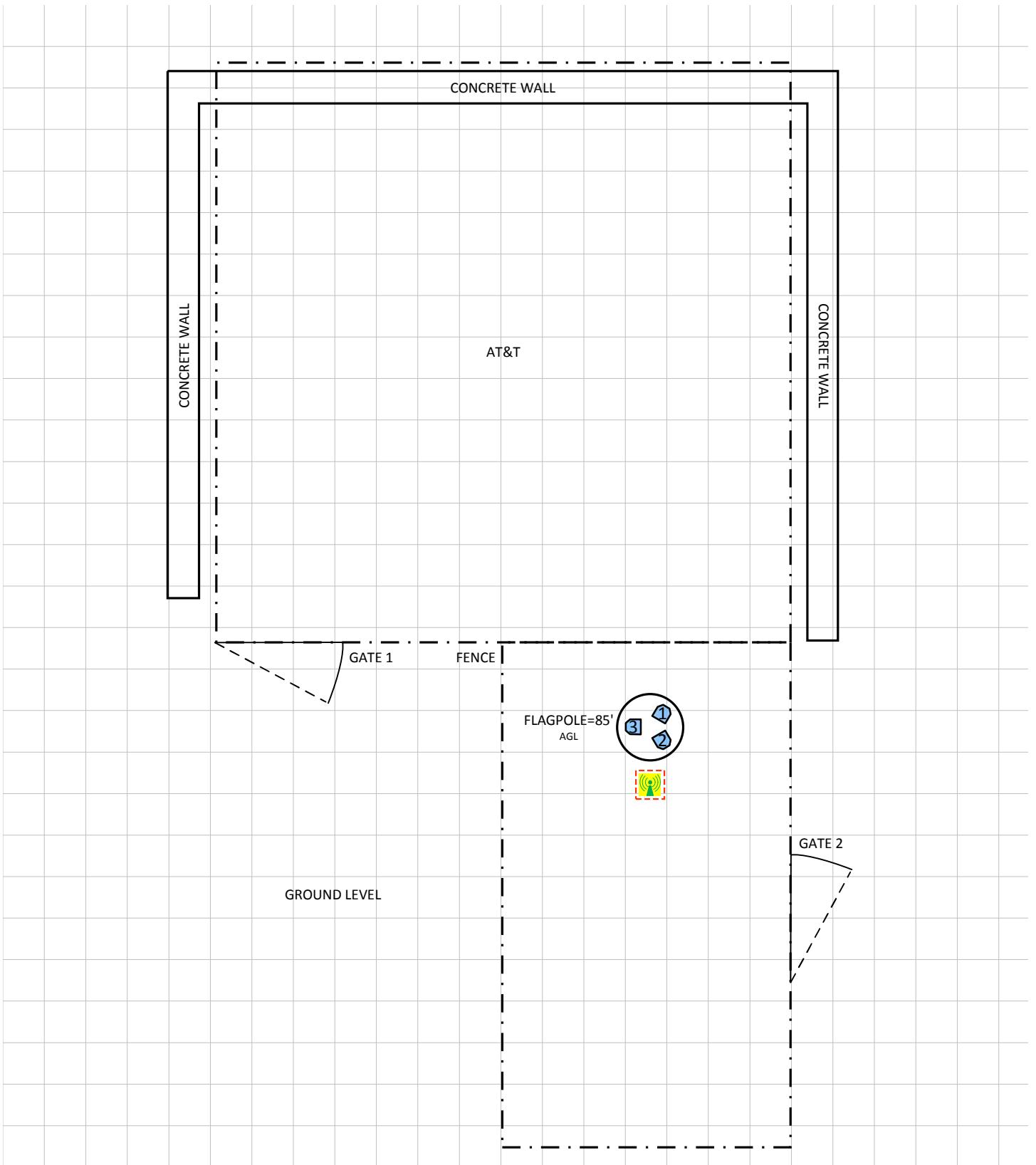
Fall Arrest Anchor & Parapet Info	Parapet Available (Y/N)	Parapet Height (inches)	Fall Arrest Anchor Available (Y/N)
<b>Roof Safety Info</b>	N	N/A	N

## 2 Scale Maps of Site

The following diagrams are included:

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

# Site Scale Map For: Danbury North



(Feet)

0 2.1 4.1

www.sitesafe.com  
Site Name: Danbury North  
3/19/2018 9:11:37 PM

**Carrier Identification**

- AT&T MOBILITY LLC
- VERIZON WIRELESS
- T-MOBILE
- SPRINT
- UNKNOWN CARRIER

**Sign Legend**

- Notice 1
- Notice 2
- Caution 1
- Caution 2
- Warning
- Info 1
- Info 2

**Barrier** ——— **Proposed Barriers/ Signs** - - - - -

### 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 (Proposed)	Kathrein-Scala 800-10798	Panel	850	30	62	6.5	13	1	0	401.5	22.2'	19.2'	58.7'
1	AT&T MOBILITY LLC (Proposed)	Kathrein-Scala 800-10798	Panel	737	30	66	6.5	12.59	0	1	1475.7	22.2'	19.2'	58.7'
1	AT&T MOBILITY LLC (Proposed)	Kathrein-Scala 800-10798	Panel	1900	30	63	6.5	13.7	0	2	4842.1	22.2'	19.2'	58.7'
1	AT&T MOBILITY LLC (Proposed)	Kathrein-Scala 800-10798	Panel	2300	30	64	6.5	13.22	0	1	1285.3	22.2'	19.2'	58.7'
2	AT&T MOBILITY LLC (Proposed)	Kathrein-Scala 800-10798	Panel	850	150	62	6.5	13	1	0	401.5	22.2'	18.4'	58.7'
2	AT&T MOBILITY LLC (Proposed)	Kathrein-Scala 800-10798	Panel	737	150	66	6.5	12.59	0	1	1475.7	22.2'	18.4'	58.7'
2	AT&T MOBILITY LLC (Proposed)	Kathrein-Scala 800-10798	Panel	1900	150	63	6.5	13.7	0	2	4842.1	22.2'	18.4'	58.7'
2	AT&T MOBILITY LLC (Proposed)	Kathrein-Scala 800-10798	Panel	2300	150	64	6.5	13.22	0	1	1285.3	22.2'	18.4'	58.7'
3	AT&T MOBILITY LLC (Proposed)	Kathrein-Scala 800-10798	Panel	850	270	62	6.5	13	1	0	401.5	21.3'	18.8'	58.7'
3	AT&T MOBILITY LLC (Proposed)	Kathrein-Scala 800-10798	Panel	737	270	66	6.5	12.59	0	1	1475.7	21.3'	18.8'	58.7'
3	AT&T MOBILITY LLC (Proposed)	Kathrein-Scala 800-10798	Panel	1900	270	63	6.5	13.7	0	2	4842.1	21.3'	18.8'	58.7'
3	AT&T MOBILITY LLC (Proposed)	Kathrein-Scala 800-10798	Panel	2300	270	64	6.5	13.22	0	1	1285.3	21.3'	18.8'	58.7'

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.



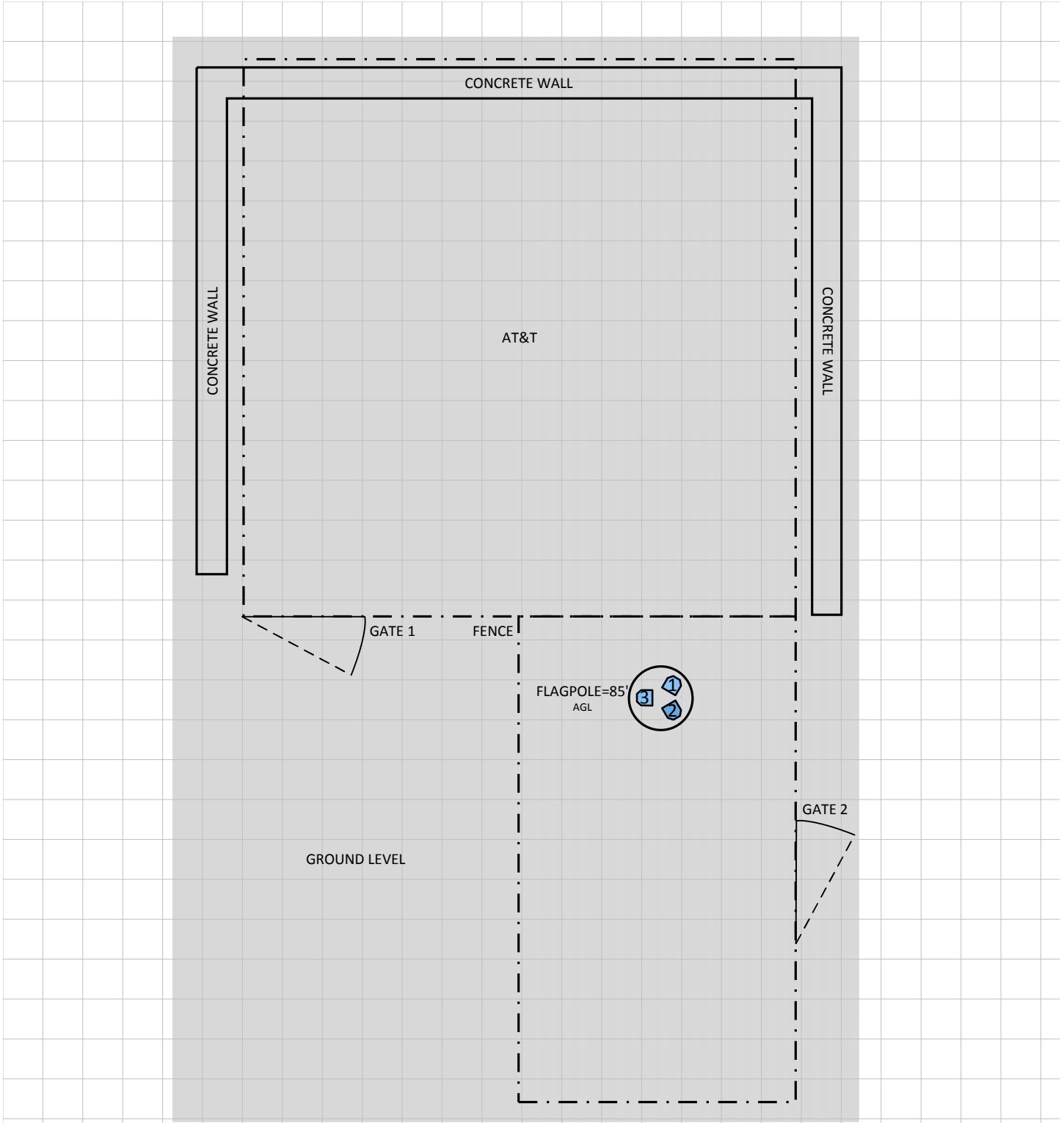
## 4 Emission Predictions

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.

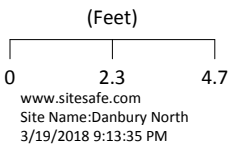
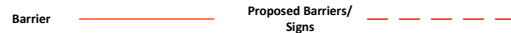
- GROUND LEVEL = 0'

The Antenna Inventory heights are referenced to the same level.

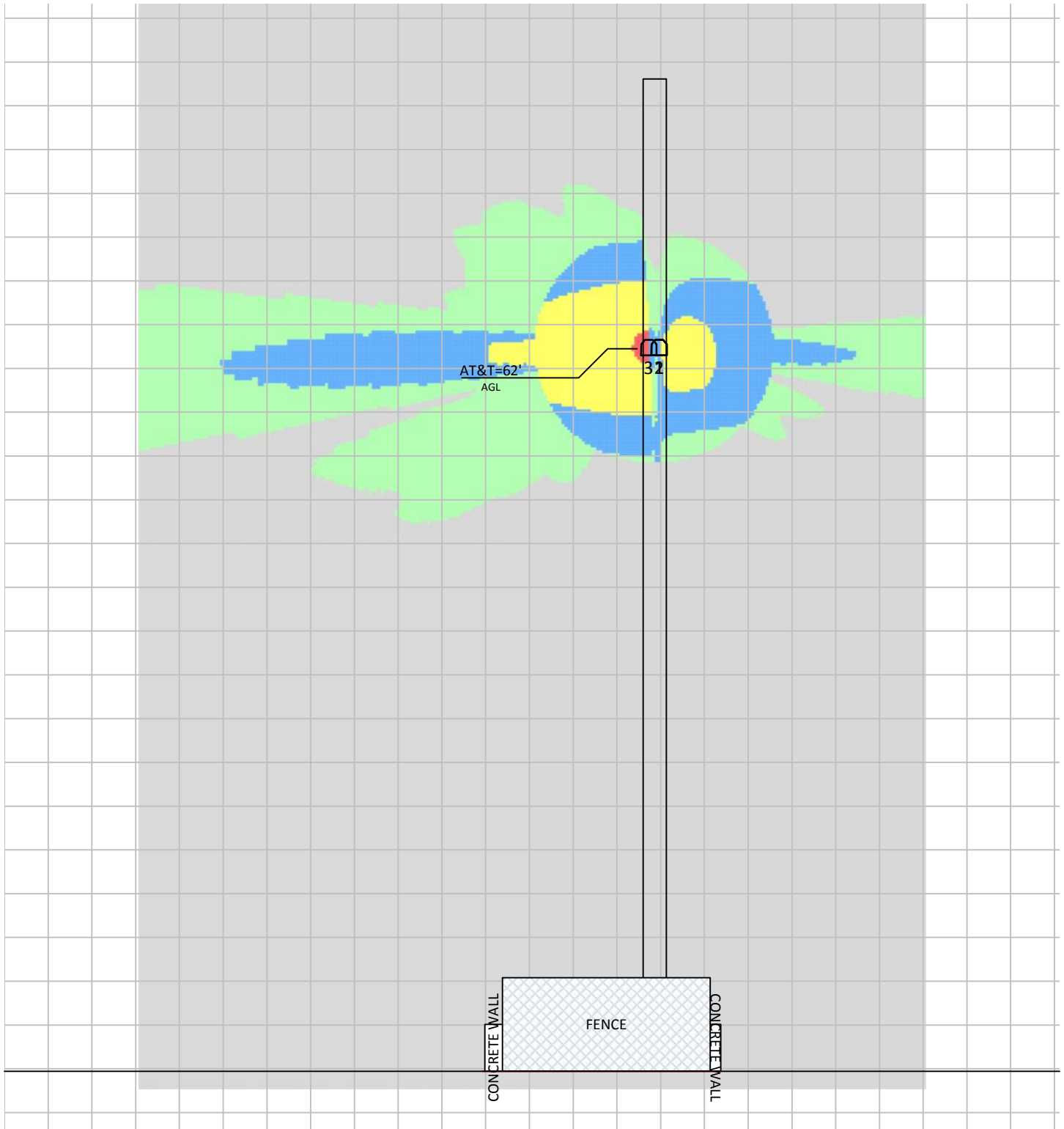
# RF Exposure Simulation For: Danbury North



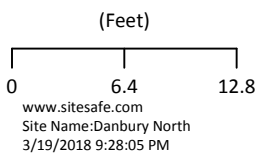
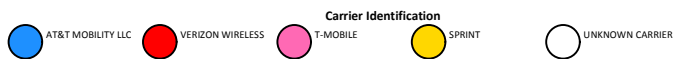
% of FCC Public Exposure Limit  
Spatial average 0' - 6'



# RF Exposure Simulation For: Danbury North Elevation View – South



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



## 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 Base

(1) Yellow Caution 2 sign(s) required.

#### Notes:

- Data concerning all other carriers on site was unavailable and therefore not included in this report.
- Signage may already be in place. Sitesafe does not have record of any existing signage because there were no previous visits or any 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, 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.

March 19, 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.

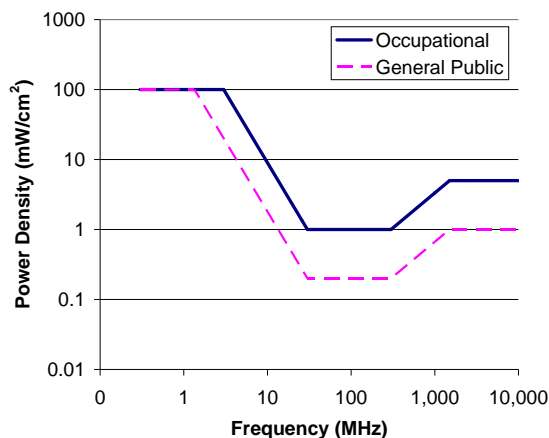
Occupational or Controlled limits apply in situations in which persons are exposed as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

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:

**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 <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f <sup>2</sup> )*	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 <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f <sup>2</sup> )*	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](http://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](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](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](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 MOBILITY LLC (Proposed)	850	20.12216624	1	0			20.12216624		Kathrein-Scala	800-10798	22.18	19.2	58.729	Panel	6.542	13	62;30	100%	ON•
1	AT&T MOBILITY LLC (Proposed)	737	81.28307732	1	0			81.28307732		Kathrein-Scala	800-10798	22.18	19.2	58.729	Panel	6.542	12.59	66;30	100%	ON•
1	AT&T MOBILITY LLC (Proposed)	1900	103.2761386	2	0			206.5522772		Kathrein-Scala	800-10798	22.18	19.2	58.729	Panel	6.542	13.7	63;30	100%	ON•
1	AT&T MOBILITY LLC (Proposed)	2300	61.23505537	1	0			61.23505537		Kathrein-Scala	800-10798	22.18	19.2	58.729	Panel	6.542	13.22	64;30	100%	ON•
2	AT&T MOBILITY LLC (Proposed)	850	20.12216624	1	0			20.12216624		Kathrein-Scala	800-10798	22.18	18.37	58.729	Panel	6.542	13	62;150	100%	ON•
2	AT&T MOBILITY LLC (Proposed)	737	81.28307732	1	0			81.28307732		Kathrein-Scala	800-10798	22.18	18.37	58.729	Panel	6.542	12.59	66;150	100%	ON•
2	AT&T MOBILITY LLC (Proposed)	1900	103.2761386	2	0			206.5522772		Kathrein-Scala	800-10798	22.18	18.37	58.729	Panel	6.542	13.7	63;150	100%	ON•
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3	AT&T MOBILITY LLC (Proposed)	850	20.12216624	1	0			20.12216624		Kathrein-Scala	800-10798	21.3	18.79	58.729	Panel	6.542	13	62;270	100%	ON•
3	AT&T MOBILITY LLC (Proposed)	737	81.28307732	1	0			81.28307732		Kathrein-Scala	800-10798	21.3	18.79	58.729	Panel	6.542	12.59	66;270	100%	ON•
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StartSymbolData

Date: **October 31, 2017**

Andrew Bazinet  
Crown Castle  
3 Corporate Park Drive, Suite 101  
Clifton Park, NY 12065  
585.370.4766

Paul J Ford and Company  
250 E. Broad Street, Suite 600  
Columbus, OH 43215  
614.221.6679  
stschanen@pjfweb.com

**Subject: Structural Analysis Report**

**Carrier Designation:**

**AT&T Mobility Co-Locate**

**Carrier Site Number:**

CTL05535

**Carrier Site Name:**

DANBURY NORTH

**Crown Castle Designation:**

**Crown Castle BU Number:**

823630

**Crown Castle Site Name:**

Danbury North / Rt 37

**Crown Castle JDE Job Number:**

468959

**Crown Castle Work Order Number:**

1481953

**Crown Castle Application Number:**

413944 Rev. 1

**Engineering Firm Designation:**

**Paul J Ford and Company Project Number:** 37517-3670.001.7805

**Site Data:**

**181 Clapboard Ridge Road, Danbury, Fairfield County, CT**

**Latitude 41° 25' 59.467", Longitude -73° 29' 32.761"**

**83.25 Foot - Monopole Tower**

Dear Andrew Bazinet,

*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 1100560, in accordance with application 413944, 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:

LC5: Existing + Proposed Equipment

**Sufficient Capacity**

Note: See Table I and Table II for the proposed and existing 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 120 mph converted to a nominal 3-second gust wind speed of 93 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 B 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:

Seth Tschanen, E.I.  
Structural Designer



# 179-183 CLAPBOARD RIDGE RD

**Location** 179-183 CLAPBOARD RIDGE RD

**Mblu** E07/ / 93/ /

**Acct#**

**Owner** DIOCESE OF NEWTON FOR THE

**Assessment** \$1,861,500

**Appraisal** \$2,659,200

**PID** 24209

**Building Count** 1

## Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2017	\$1,709,200	\$950,000	\$2,659,200

Assessment			
Valuation Year	Improvements	Land	Total
2017	\$1,196,500	\$665,000	\$1,861,500

## Owner of Record

**Owner** DIOCESE OF NEWTON FOR THE  
**Co-Owner** MELKITES IN THE US OF AMER INC  
**Address** 181 CLAPBOARD RIDGE RD  
DANBURY, CT 06811

**Sale Price** \$0  
**Book & Page** 0992/0615  
**Sale Date** 10/28/1991

## Ownership History

Ownership History			
Owner	Sale Price	Book & Page	Sale Date
DIOCESE OF NEWTON FOR THE	\$0	0992/0615	10/28/1991

## Building Information

### Building 1 : Section 1

**Year Built:** 1991  
**Living Area:** 9,413  
**Replacement Cost:** \$2,061,961  
**Building Percent Good:** 81  
**Replacement Cost Less Depreciation:** \$1,670,200

**Building Attributes**

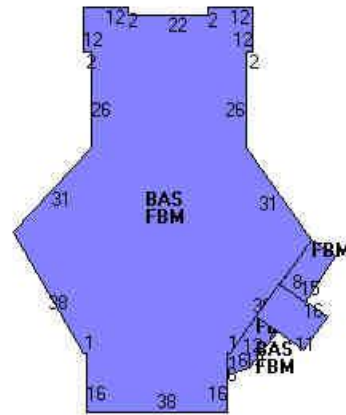
Field	Description
STYLE	Churches
MODEL	Ind/Comm
Grade	Excellent
Stories:	1
Occupancy	1
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	
Roof Structure	Wood Truss
Roof Cover	Asphalt Shngl.
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Ceram Clay Til
Interior Floor 2	Carpet
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Bldg Use	Commercial MDL-96
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	200I
Heat/AC	HEAT/AC PKGS
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	24
% Comn Wall	0

### Building Photo



(<http://images.vgsi.com/photos2/DanburyCTPhotos/\00\02\66/>)

### Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	5,799	5,799
FBM	Basement Finished	6,024	3,614
		11,823	9,413

### Extra Features

Extra Features	Legend
No Data for Extra Features	

### Land

#### Land Use

<b>Use Code</b>	918
<b>Description</b>	Church
<b>Zone</b>	

#### Land Line Valuation

<b>Size (Acres)</b>	2.47
<b>Frontage</b>	0
<b>Depth</b>	0

Neighborhood 5000  
Alt Land Appr No  
Category

Assessed Value \$665,000  
Appraised Value \$950,000

### Outbuildings

Outbuildings						<u>Legend</u>
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
PAV1	Paving-Asphalt			30000 S.F.	\$37,800	1
SHD1	Shed-Avg			96 S.F.	\$800	1
LT2	Light 2			2 UNITS	\$400	1

### Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2016	\$1,762,400	\$904,700	\$2,667,100
2015	\$1,762,400	\$904,700	\$2,667,100
2014	\$1,762,400	\$904,700	\$2,667,100

Assessment			
Valuation Year	Improvements	Land	Total
2016	\$1,233,700	\$633,300	\$1,867,000
2015	\$1,233,700	\$633,300	\$1,867,000
2014	\$1,233,700	\$633,300	\$1,867,000

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Date: October 31, 2017

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585.370.4766

Paul J Ford and Company  
250 E. Broad Street, Suite 600  
Columbus, OH 43215  
614.221.6679  
stschanen@pjfweb.com

**Subject: Structural Analysis Report**

**Carrier Designation:** AT&T Mobility Co-Locate  
**Carrier Site Number:** CTL05535  
**Carrier Site Name:** DANBURY NORTH

**Crown Castle Designation:** Crown Castle BU Number: 823630  
**Crown Castle Site Name:** Danbury North / Rt 37  
**Crown Castle JDE Job Number:** 468959  
**Crown Castle Work Order Number:** 1481953  
**Crown Castle Application Number:** 413944 Rev. 1

**Engineering Firm Designation:** Paul J Ford and Company Project Number: 37517-3670.001.7805

**Site Data:** 181 Clapboard Ridge Road, Danbury, Fairfield County, CT  
Latitude 41° 25' 59.467", Longitude -73° 29' 32.761"  
83.25 Foot - Monopole Tower

Dear Andrew Bazinet,

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 1100560, in accordance with application 413944, 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:

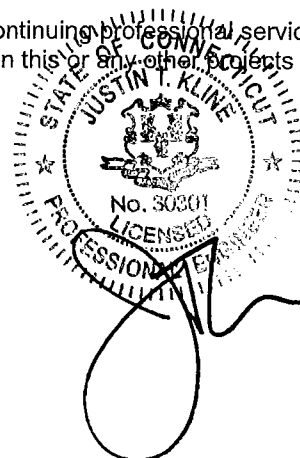
LC5: Existing + Proposed Equipment **Sufficient Capacity**  
Note: See Table I and Table II for the proposed and existing loading, respectively.

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 120 mph converted to a nominal 3-second gust wind speed of 93 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 B 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:

Seth Tschanen, E.I.  
Structural Designer



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**1) INTRODUCTION**

This tower is a 83.25 ft Monopole tower designed by STEALTH NETWORK TECHNOLOGIES INC. in December of 2002. The tower was originally designed for a wind speed of 85 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 120 mph converted to a nominal 3-second gust wind speed of 93 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 B 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
58.0	59.0	3	kathrein	80010798	6	7/8	--
	56.0	3	cci antennas	DTMABP7819VG12A			
	55.0	3	cci antennas	DTMABP7819VG12A			

**Table 2 – Existing 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
78.0	79.0	3	ericsson	KRY 112 144/1	12	1 5/8	1
		3	rfs celwave	APX16DWV-16DWVS-E-A20			
	78.4	1	misc	31.25"ø x 9'-9" Concealment			
68.0	68.6	1	misc	32.125"ø x 9'-9" Concealment	--	--	1
58.0	59.0	1	misc	33"ø x 9'-9" Concealment	6	7/8	1
		3	communication components inc.	DTMABP7819VG12A	--	--	2
		3	powerwave technologies	P65-16-XLH-RR			

Notes:

- 1) Existing Equipment
- 2) 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
4-GEOTECHNICAL REPORTS	JGI, 00736G, 12/21/00	3501507	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Stealth, VOIC-20499W-02, 11/13/02	3501506	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Stealth, VOIC-20499W-02, 12/05/02	3771879	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	Stealth, ATTW-80662W-02R2, 9/10/08	6523932	CCISITES
4-STRUCTURAL ANALYSIS	PJF, 31908-0086, 6/19/08	3501502	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) Monopole was modified in conformance with the referenced modification drawings.
- 5) At the time of analysis, information regarding the base plate was not available. We have assumed the base plate dimensions in accordance with the referenced structural analysis (CCI Doc #3501502).

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)**

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	83.25 - 53.75	Pole	TP6x6x0.75	1	-3.13	779.31	34.8	Pass
L2	53.75 - 0	Pole	TP33.075x26.625x0.25	2	-10.03	1783.55	17.9	Pass
							Summary	
						Pole (L1)	34.8	Pass
						Rating =	34.8	Pass

**Table 6 - Tower Component Stresses vs. Capacity – LC5**

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	25.8	Pass
1	Base Plate	0	29.1	Pass
1	Base Foundation Steel	0	27.0	Pass
1	Base Foundation Soil Interaction	0	37.5	Pass
1,2	Flange Connection	53.75	Acceptable	Pass

<b>Structure Rating (max from all components) =</b>	<b>37.5%</b>
---	--------------

Notes:

- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
- 2) See FEA flange connection analysis in Appendix C.

#### 4.1) Recommendations

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



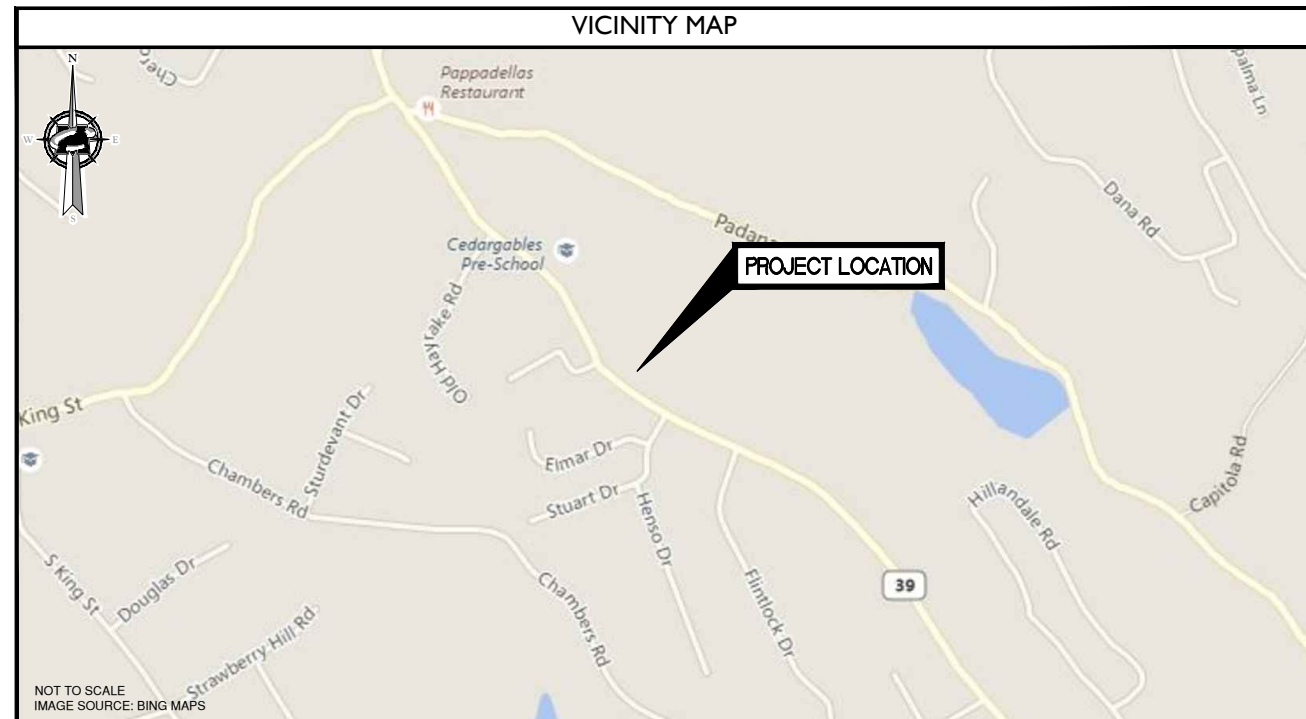


**SITE NAME: DANBURY NORTH  
 FA NUMBER: 10070991  
 SITE NUMBER: CTL05535  
 CROWN BU #: 823630**

**179-181 CLAPBOARD RIDGE ROAD  
 DANBURY, CT 06811  
 FAIRFIELD COUNTY**

PROJECT TEAM	
<b>CLIENT REPRESENTATIVE</b>	
COMPANY:	SMARTLINK, LLC
ADDRESS:	85 RANGEWAY ROAD, BUILDING 3, SUITE 102
CITY, STATE, ZIP:	NORTH BILLERICA, MA 01862-2105
CONTACT:	TODD OLIVER
PHONE:	(774) 369-3613
E-MAIL:	TODD.OLIVER@SMARTLINKLLC.COM
<b>SITE ACQUISITION</b>	
COMPANY:	SMARTLINK, LLC
ADDRESS:	85 RANGEWAY ROAD, BUILDING 3, SUITE 102
CITY, STATE, ZIP:	NORTH BILLERICA, MA 01862-2105
CONTACT:	SHARON KEEFE
PHONE:	(978) 930-3918
E-MAIL:	SHARON.KEEFE@SMARTLINKLLC.COM
<b>ENGINEER</b>	
COMPANY:	MASER CONSULTING CONNECTICUT
ADDRESS:	331 NEWMAN SPRINGS ROAD, SUITE 203
CITY, STATE, ZIP:	RED BANK, NJ 07701-5699
CONTACT:	PETROS TSOUKALAS
PHONE:	(856) 797-0412 x4102
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<b>CONSTRUCTION MANAGER</b>	
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ADDRESS:	85 RANGEWAY ROAD, BUILDING 3, SUITE 102
CITY, STATE, ZIP:	NORTH BILLERICA, MA 01862-2105
CONTACT:	MARK DONNELLY
PHONE:	(617) 515-2080
E-MAIL:	MARK.DONNELLY@SMARTLINKLLC.COM

SITE INFORMATION	
<b>APPLICANT/LESSEE</b>	
NEW CINGULAR WIRELESS PCS, LLC 550 COCHITUATE RD. FRAMINGHAM, MA 01701	
<b>TOWER OWNER:</b>	
NAME:	CROWN CASTLE INTERNATIONAL
ADDRESS:	12 GILL STREET, SUITE 5800
CITY, STATE, ZIP:	WOBURN, MA 01801
SITE ID#:	823630
LATITUDE:	41.4332919° N
LONGITUDE:	73.4924989° W
LAT./LONG. TYPE:	NAD 83
AREA OF CONSTRUCTION:	EXISTING OUTDOOR EQUIPMENT AND FLAGPOLE
ZONING/JURISDICTION:	CITY OF DANBURY
CURRENT USE/PROPOSED USE:	UNMANNED TELECOMMUNICATIONS FACILITY
HANDICAP REQUIREMENTS:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS NOT REQUIRED.
CONSTRUCTION TYPE:	IIB
USE GROUP:	U



CODE COMPLIANCE	
ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING CODES.	
1. 2016 CONNECTICUT STATE BUILDING CODE INCORPORATING THE 2012 IBC	7. I/A/TIA-222 REVISION G
2. 2014 NATIONAL ELECTRICAL CODE - NFPA 70	8. TIA 607 FOR GROUNDING
3. 2012 NFPA 101	9. INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS 81
4. LIGHTNING PROTECTION CODE 2011	10. IEEE C2 LATEST EDITION
5. AMERICAN CONCRETE INSTITUTE 318	11. TELCORDIA GR-1275
6. AMERICAN INSTITUTE OF STEEL CONSTRUCTION 360-10.	12. ANSI T1.311

GENERAL CONTRACTOR NOTES	
<b>DO NOT SCALE DRAWINGS</b>	
CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.	

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

SHEET	DESCRIPTION
T-1	TITLE SHEET
GN-1	GENERAL NOTES
A-1	COMPOUND AND EQUIPMENT LAYOUTS
A-2	ELEVATION VIEW, DETAILS AND ANTENNA SCHEDULE
A-3	ANTENNA LAYOUTS
A-4	DETAILS
A-5	DETAILS
A-6	RF PLUMBING DIAGRAMS
G-1	GROUNDING DETAILS

PROJECT DESCRIPTION/SCOPE OF WORK	
THIS PROJECT WILL BE COMPRISED OF:	
<ul style="list-style-type: none"> <li>(3) NEW ANTENNAS TO REPLACE (3) EXISTING ANTENNAS, (1) PER SECTOR</li> <li>INSTALL (3) RRUS-32 B2, AT GRADE</li> <li>INSTALL (3) RRUS-32, AT GRADE</li> <li>REMOVE RXAIT CABINET</li> <li>INSTALL (4) QUADPLEXERS, AT GRADE</li> <li>INSTALL (2) TMA's</li> <li>INSTALL (6) NEW 7/8" COAX CABLES, (2) PER SECTOR</li> <li>SWAP DUL WITH 5216 AND ADD (1) XMU</li> </ul>	
PROPOSED PROJECT SCOPE BASED ON RFDS ID# 1839925 VERSION 1.0, LAST UPDATED 10/04/2017.	

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

85 RANGEWAY ROAD  
 BUILDING 3, SUITE 102  
 NORTH BILLERICA, MA 01862-2105  
 TEL: (774) 369-3613

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SCALE:	JOB NUMBER:
A5 SHOWN	17946081A

**PETROS TSOUKALAS**  
 CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: PEN 357

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

**SITE NAME:**  
 DANBURY NORTH  
 FA# 10070991  
 SITE # CTL05535  
 179-181 CLAPBOARD RIDGE ROAD  
 DANBURY, CT 06811  
 FAIRFIELD COUNTY

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

SHEET TITLE:	TITLE SHEET
SHEET NUMBER:	T-1

**GENERAL NOTES:**

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 50 HMS OR LESS.
4. THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
5. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
6. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
7. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE EQUIPMENT GROUND RING WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
8. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
9. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING, SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
10. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
11. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED. ALL BENDS SHALL BE MADE WITH 12" RADIUS OR LARGER.
12. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
13. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS EXCEPT FOR GROUND BAR CONNECTION FROM MGB TO OUTSIDE EXTERIOR GROUND SHALL ALL BE CADWELDED CONNECTIONS.
14. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
15. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED TO THE TOWER GROUND BAR.
16. APPROVED ANTIOXIDANT COATINGS (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
17. ALL EXTERIOR AND INTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
18. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
19. BOND ALL METALLIC OBJECTS WITHIN 6 FT OF MAIN GROUND WIRES WITH 1-#2 AWG TIN-PLATED COPPER GROUND CONDUCTOR.
20. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G. NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
21. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/4" IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50.
22. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:  
 CONTRACTOR - SMARTLINK  
 SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)  
 OWNER - AT&T (NEW CINGULAR WIRELESS PCS, LLC)
23. ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
24. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
25. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
26. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
27. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
28. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
29. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
30. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
31. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
32. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE RESPONSIBLE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & EXCAVATION.
33. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE RESPONSIBLE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.
34. THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION.
35. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
36. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
37. THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
38. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
39. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
40. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE.
41. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
42. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR.
43. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
44. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
45. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS.
46. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
47. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."
48. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
49. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION, ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
50. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN ALERT OF DANGEROUS EXPOSURE LEVELS.



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SCALE:	JOB NUMBER:
AS SHOWN	17946081A

1	01/18/18	FOR CONSTRUCTION	AJC	PET
0	11/08/17		AJC	PET
REV	DATE	DESCRIPTION	CHECKED BY	



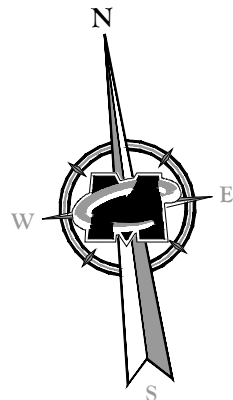
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**SITE NAME:**  
DANBURY NORTH  
FA# 10070991  
SITE # CTL05535  
179-181 CLAPBOARD RIDGE ROAD  
DANBURY, CT 06811  
FAIRFIELD COUNTY



SHEET TITLE:  
**GENERAL NOTES**

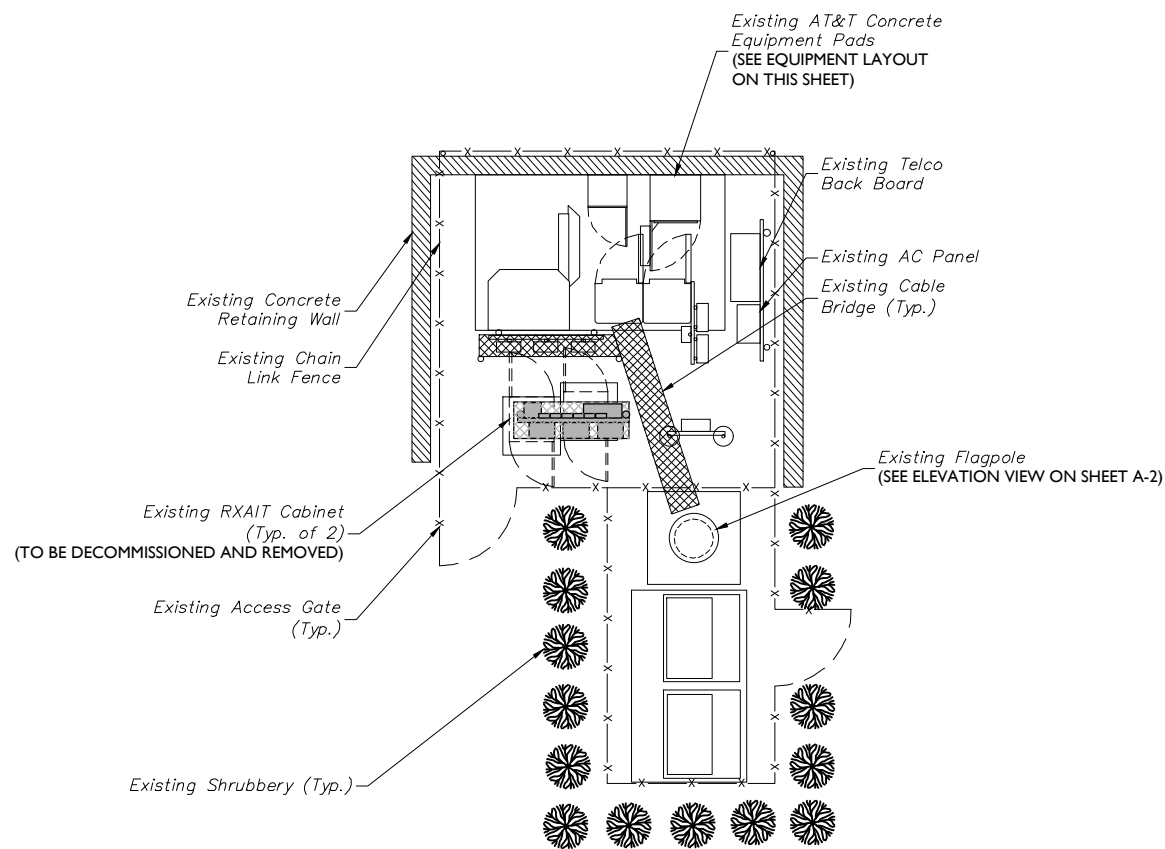
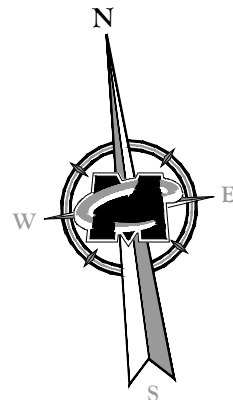
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**GN-1**



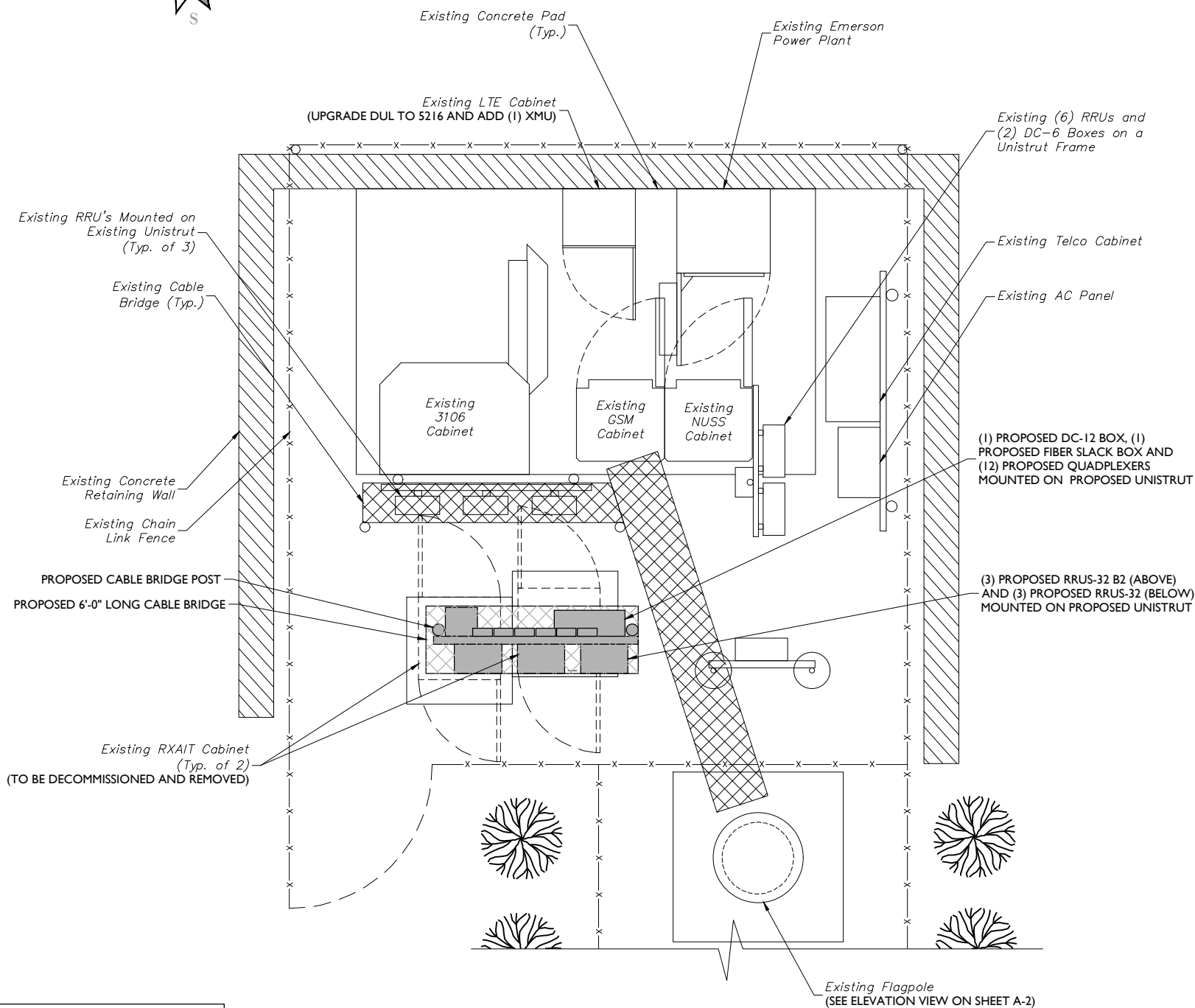
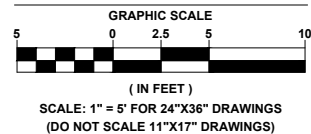
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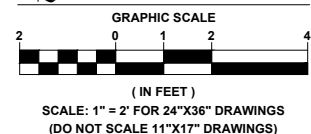
- A. PLAN ENTITLED "DANBURY NORTH" PREPARED BY CHA, INC., LAST REVISED 04/14/11.
- B. LIMITED FIELD OBSERVATION BY MASER CONSULTING P.A. ON 09/21/17.



**COMPOUND LAYOUT**



**EQUIPMENT LAYOUT**



**NOTE:**

THESE PLANS WERE DESIGNED WITH THE ASSUMPTION THAT THE PREVIOUS PLANS PREPARED BY CHA, INC. DATED 04/14/11 WILL BE COMPLETED PRIOR TO THE CURRENT SCOPE OF WORK BEING INSTALLED. ANY CHANGES IN PREVIOUS DESIGN SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.



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BUILDING 3, SUITE 102  
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TEL: (774) 369-3613



SCALE:	AS SHOWN	JOB NUMBER:	17946081A
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1	01/18/18	FOR CONSTRUCTION	AJC	PET
0	11/08/17		AJC	PET
REV	D	DISCREPANCY	CHECKED BY	



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**SITE NAME:**  
DANBURY NORTH  
FA# 10070991  
SITE # CTL05535  
179-181 CLAPBOARD RIDGE ROAD  
DANBURY, CT 06811  
FAIRFIELD COUNTY



SHEET TITLE:  
**COMPOUND AND EQUIPMENT LAYOUTS**

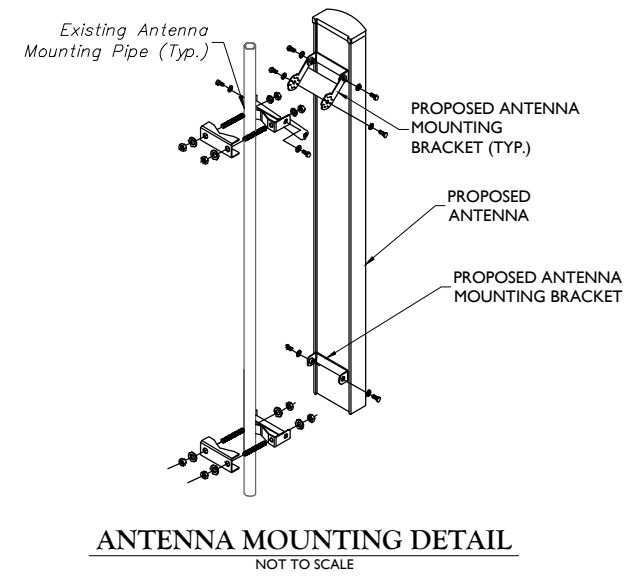
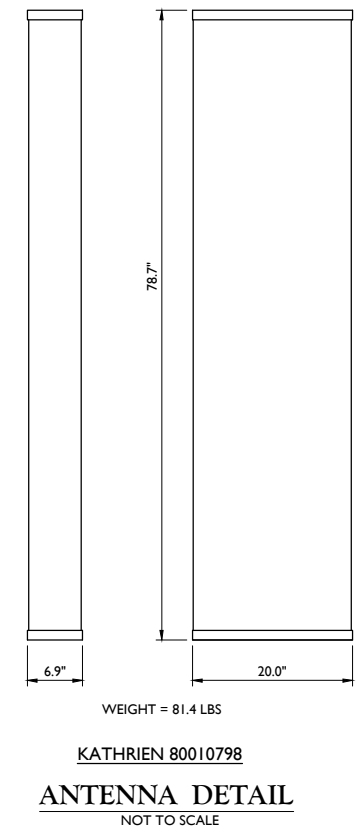
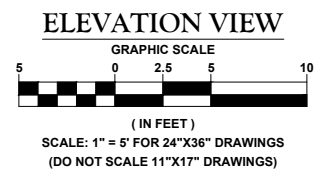
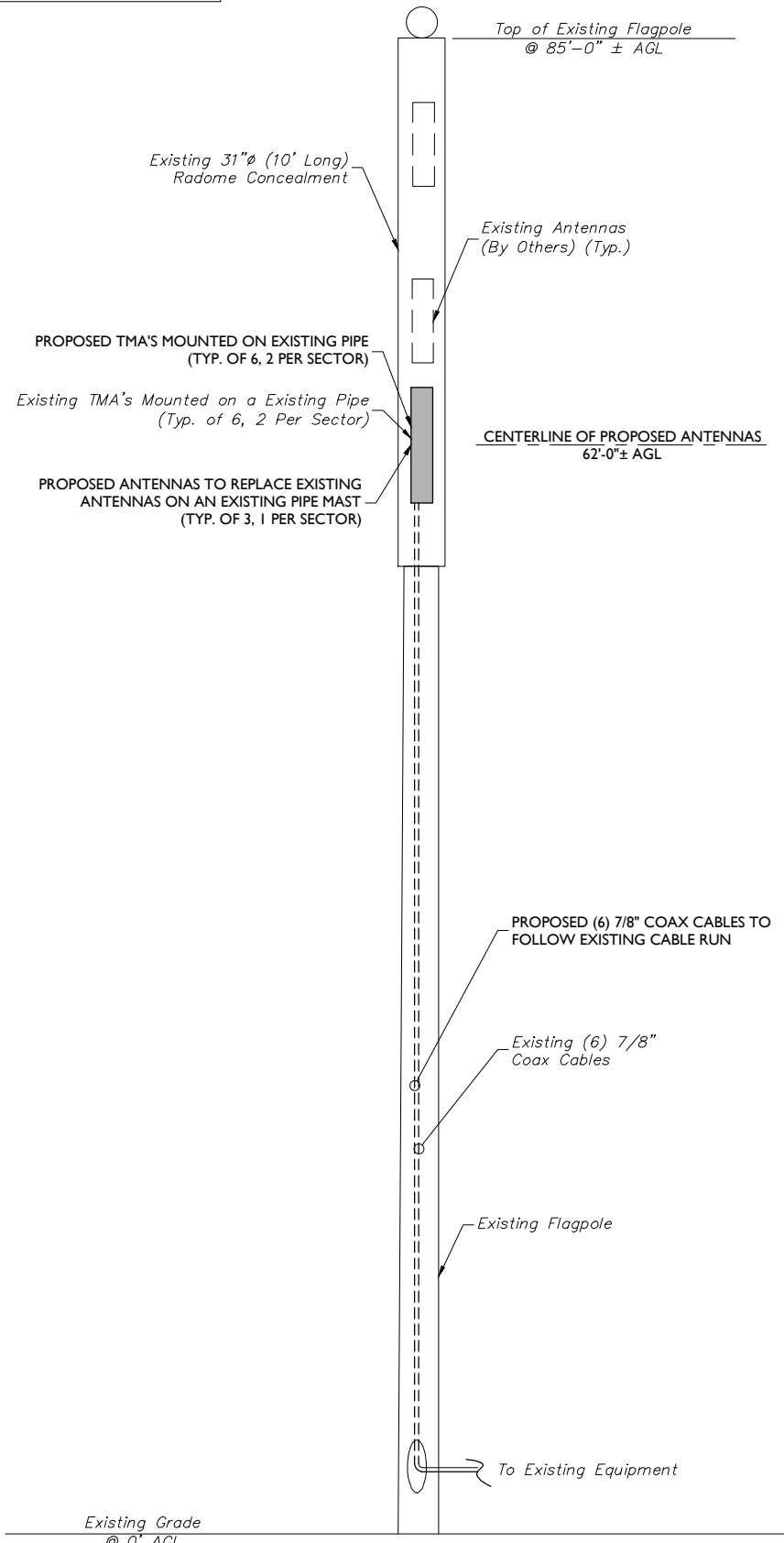
SHEET NUMBER:  
**A-1**

ALL EQUIPMENT (ANTENNAS, LINES, ETC.) TO BE INSTALLED IN ACCORDANCE WITH PASSING STRUCTURAL ANALYSIS PROVIDED BY CROWN CASTLE

**NOTE:**  
 SITE INFORMATION OBTAINED FROM THE FOLLOWING:  
 A. PLAN ENTITLED "DANBURY NORTH" PREPARED BY CHA, INC., LAST REVISED 04/14/11.  
 B. LIMITED FIELD OBSERVATION BY MASER CONSULTING P.A. ON 09/21/17.

PROPOSED ANTENNA AND RRUS CONFIGURATION													
SECTOR	EXISTING ANTENNA CONFIGURATION	PROPOSED ANTENNA CONFIGURATION	TECHNOLOGY	ANTENNA STATUS	HEIGHT (in)	WIDTH (in)	DEPTH (in)	WEIGHT (lbs)	ANTENNA AZMUTH	ANT. CL. ELEV. (ft.)	RRUS CONFIGURATION	STATUS	
ALPHA	A1	Roverhone P65-16-XLH-RR	Kathrein 80010798	LTE	NEW	78.50	14.80	6.70	81.40	30°	62'	(1) RRUS-11 (AT GRADE) (1) RRUS-32(AT GRADE) (1) RRUS-32 B2 (AT GRADE)	REMAIN NEW NEW
	-	-	-	-	-	-	-	-	-	-	-	-	
BETA	B1	Roverhone P65-16-XLH-RR	Kathrein 80010798	LTE	NEW	78.50	14.80	6.70	81.40	150°	62'	(1) RRUS-11 (AT GRADE) (1) RRUS-32(AT GRADE) (1) RRUS-32 B2 (AT GRADE)	REMAIN NEW NEW
	-	-	-	-	-	-	-	-	-	-	-	-	
GAMMA	C1	Roverhone P65-16-XLH-RR	Kathrein 80010798	LTE	NEW	78.50	14.80	6.70	81.40	270°	62'	(1) RRUS-11 (AT GRADE) (1) RRUS-32(AT GRADE) (1) RRUS-32 B2 (AT GRADE)	REMAIN NEW NEW
	-	-	-	-	-	-	-	-	-	-	-	-	

**ANTENNA SCHEDULE**



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**at&t**  
 NEW CINGULAR WIRELESS PCS, LLC  
 550 COCHITUATE ROAD  
 FRAMINGHAM, MA 01701

**smartlink**  
 85 RANGEWAY ROAD  
 BUILDING 3, SUITE 102  
 NORTH BILLERICA, MA 01862-2105  
 TEL: (774) 369-3613

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SCALE:	AS SHOWN	JOB NUMBER:	17946081A
REV	DATE	DESCRIPTION	CHECKED BY
1	01/18/18	FOR CONSTRUCTION	AJC PET
0	11/08/17		AJC PET

**PETROS TSOUKALAS**  
 CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: PEN 3857  
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 FAIRFIELD COUNTY

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

SHEET TITLE:  
**ELEVATION VIEW, DETAILS AND ANTENNA SCHEDULE**

SHEET NUMBER:  
**A-2**



**at&t**

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

**smartlink**

85 RANGEWAY ROAD  
 BUILDING 3, SUITE 102  
 NORTH BILLERICA, MA 01862-2105  
 TEL: (774) 369-3613

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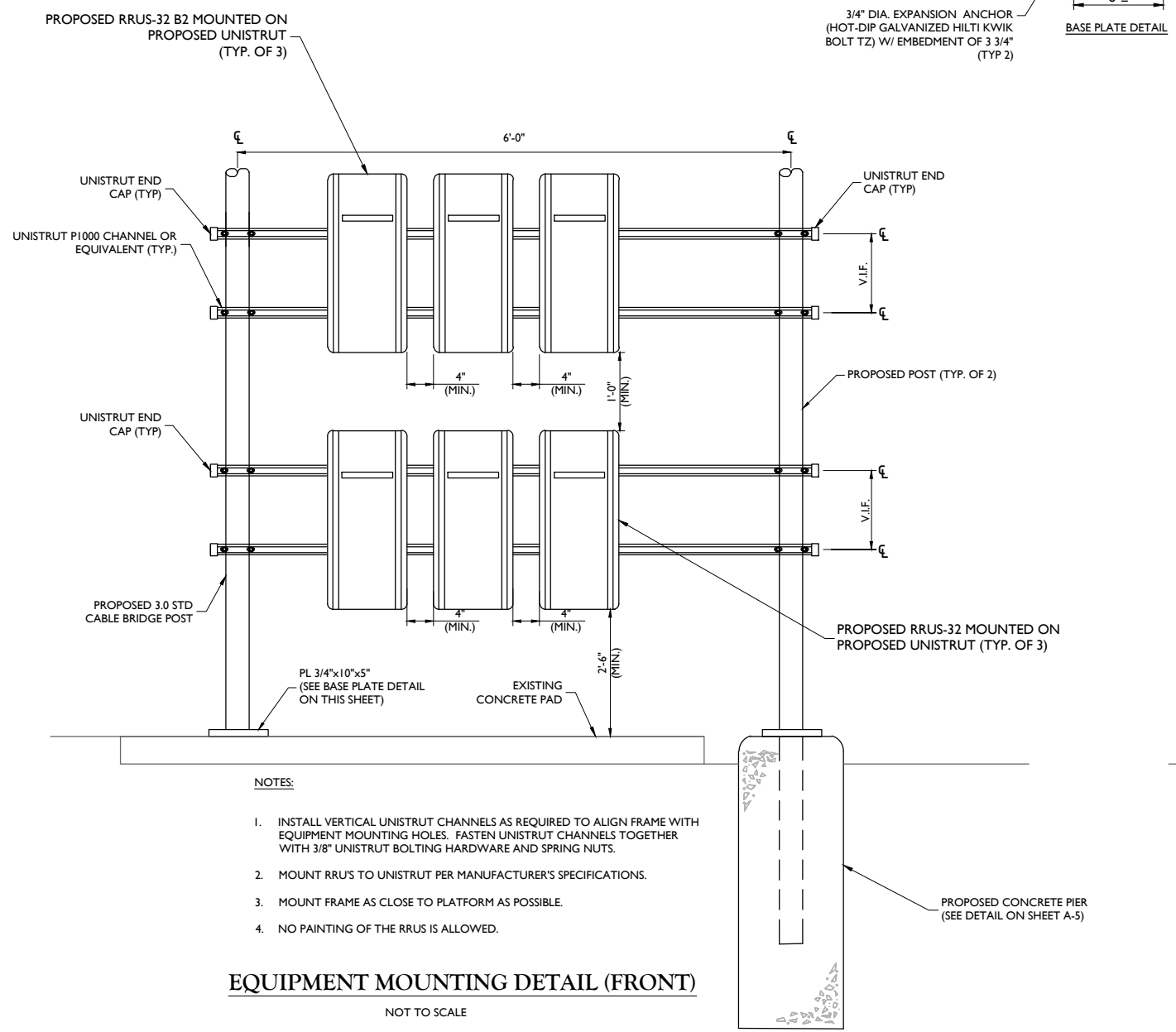
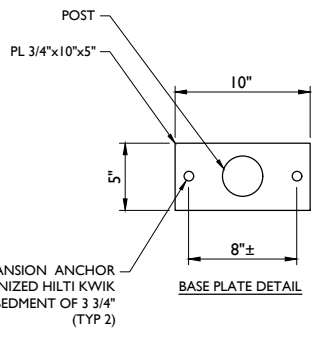
SCALE:	AS SHOWN	JOB NUMBER:	17946081A
REV	DATE	DESCRIPTION	CHECKED BY
1	01/18/18	FOR CONSTRUCTION	AJC PET
0	11/08/17		AJC PET

**PETROS TSOUKALAS**  
 CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: PEN-3857

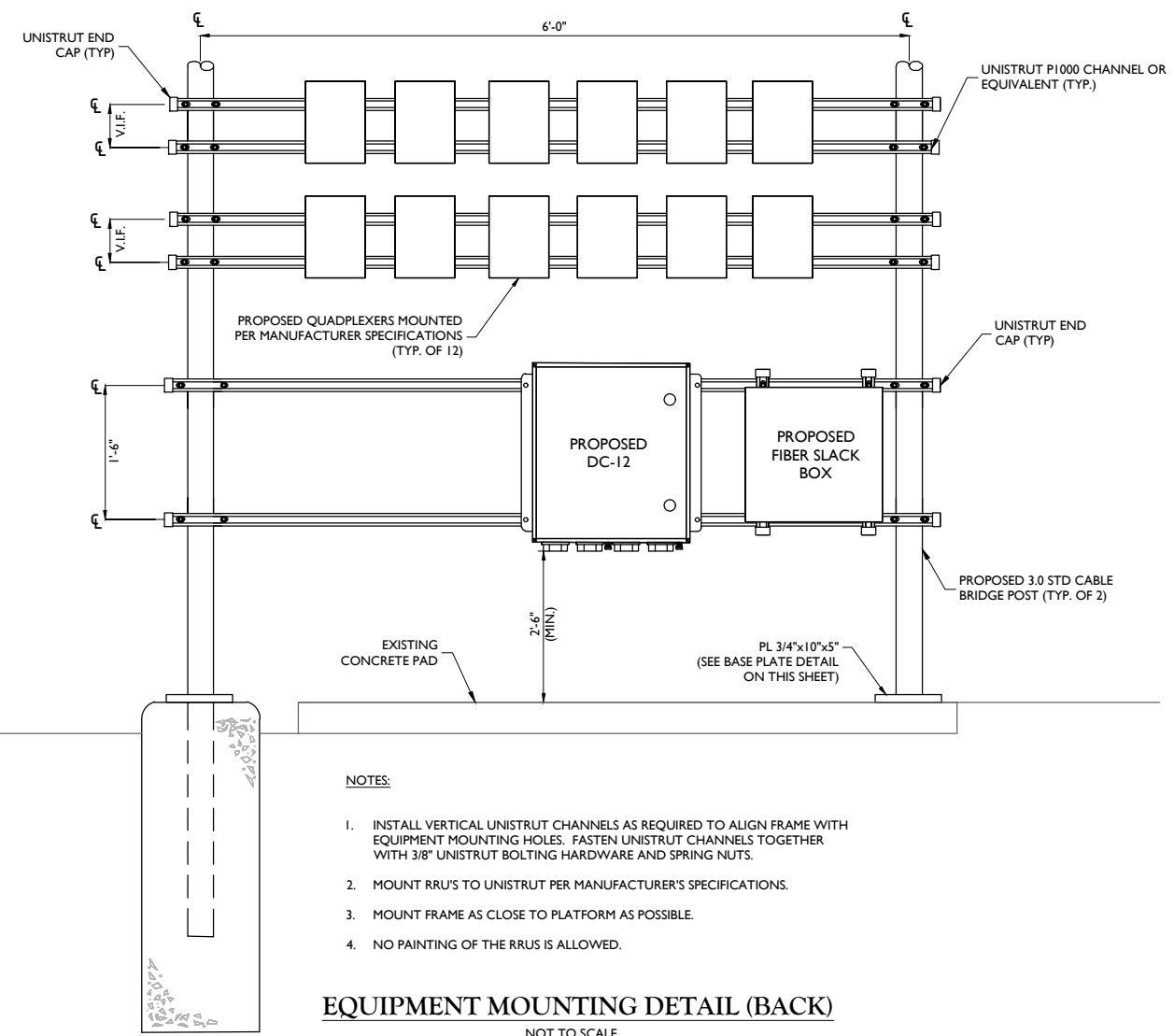
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**SITE NAME:**  
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 FA# 10070991  
 SITE # CTL05535  
 179-181 CLAPBOARD RIDGE ROAD  
 DANBURY, CT 06811  
 FAIRFIELD COUNTY

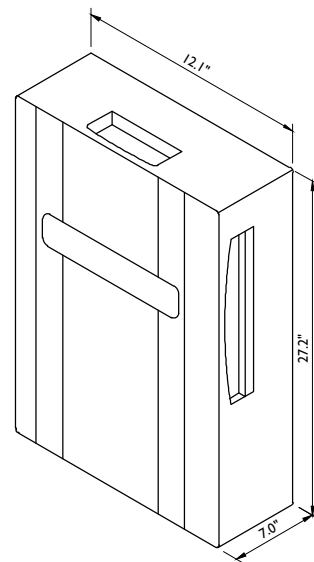
**RED BANK OFFICE**  
 331 Newman Springs Road  
 Suite 203  
 Red Bank, NJ 07701  
 Phone: 732.383.1950  
 Fax: 732.383.1964  
 email: solutions@maserconsulting.com



- NOTES:**
1. INSTALL VERTICAL UNISTRUT CHANNELS AS REQUIRED TO ALIGN FRAME WITH EQUIPMENT MOUNTING HOLES. FASTEN UNISTRUT CHANNELS TOGETHER WITH 3/8" UNISTRUT BOLTING HARDWARE AND SPRING NUTS.
  2. MOUNT RRU'S TO UNISTRUT PER MANUFACTURER'S SPECIFICATIONS.
  3. MOUNT FRAME AS CLOSE TO PLATFORM AS POSSIBLE.
  4. NO PAINTING OF THE RRU'S IS ALLOWED.
- EQUIPMENT MOUNTING DETAIL (FRONT)**  
 NOT TO SCALE

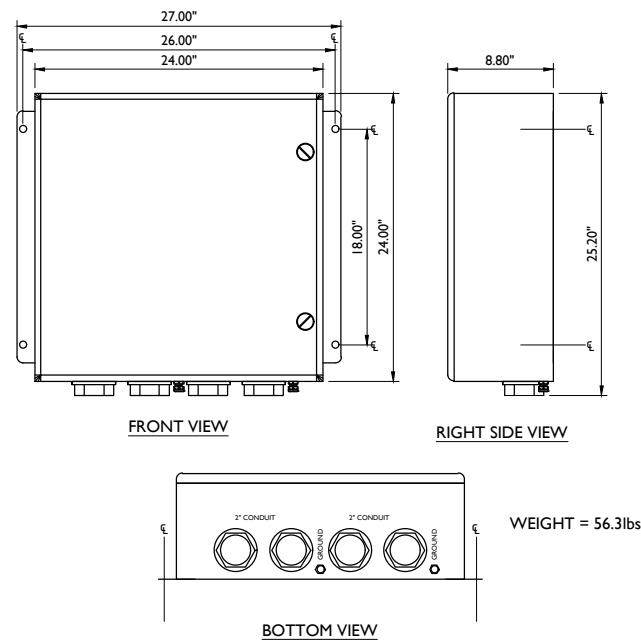


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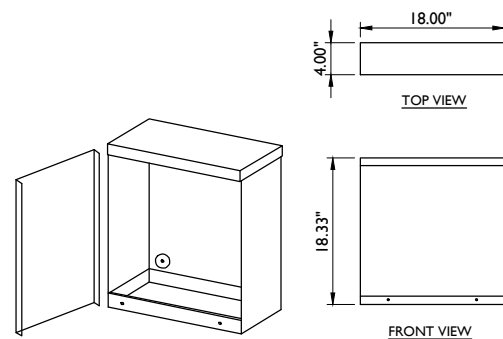
RRUS-32 DIMENSIONS (H X W X D): 27.2" X 12.1" X 7.0" (INCLUDES SUNSHIELD)  
WEIGHT: 53 LBS

**RRUS-32 DETAIL**  
NOT TO SCALE



**DC12-48-60-25E OVERVOLTAGE PROTECTION & POWER  
MANAGEMENT JUNCTION BOX**  
NOT TO SCALE

WEIGHT = 56.3lbs

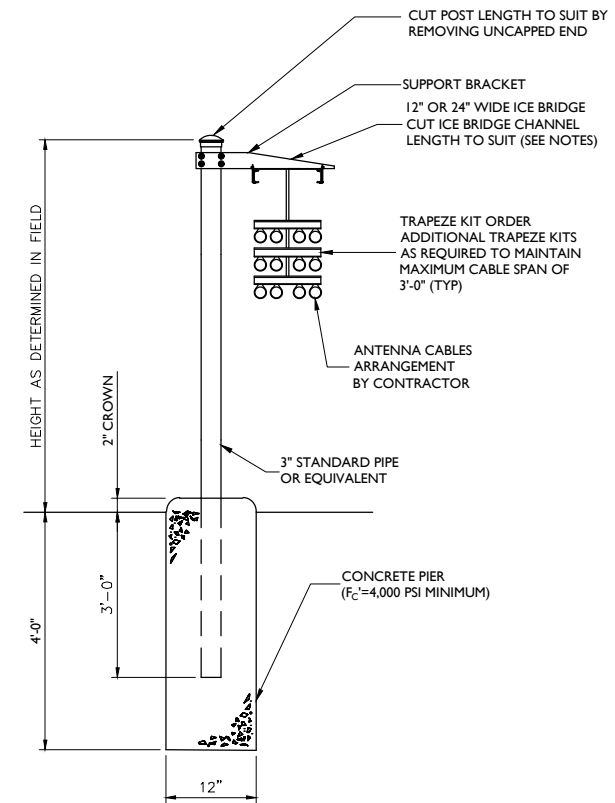


**NOTES:**

1. ANDREW PART NUMBER FE-18184
2. WEIGHT = 9.8 LBS.
3. REFER TO MANUFACTURER'S SPECIFICATIONS FOR CONNECTION TO POST.

**FIBER STORAGE BOX DETAIL**  
NOT TO SCALE

\* INSTALL DRIP LOOP ON ANTENNA  
CABLES AT BOTTOM OF  
TOWER/MONOPOLE. BENDING RADIUS  
PER MANUFACTURER'S STANDARDS



**NOTES:**

1. WHEN USING COMPONENTS AS SHOWN IN STANDARD DETAILS, MAXIMUM ALLOWABLE SPAN BETWEEN SUPPORTS ON A CONTINUOUS SINGLE SECTION OF BRIDGE CHANNEL SHALL BE 6 FEET.
2. WHEN USING COMPONENTS FOR SPLICING BRIDGE CHANNEL SECTIONS, THE SPLICE SHOULD BE PROVIDED AT THE SUPPORT, IF POSSIBLE, OR AT A MAXIMUM OF 2 FEET FROM THE SUPPORT.
3. WHEN USING COMPONENTS, SUPPORT SHOULD BE PROVIDED AS CLOSE AS POSSIBLE TO THE ENDS OF ICE BRIDGES, WITH A MAXIMUM CANTILEVER DISTANCE OF 2 FEET FROM THE SUPPORT TO THE FREE END OF THE ICE BRIDGE.
4. CUT BRIDGE CHANNEL SECTIONS SHALL HAVE RAW EDGES TREATED WITH A MATERIAL TO RESTORE THESE EDGES TO THE ORIGINAL CHANNEL, OR EQUIVALENT, FINISH.
5. ICE BRIDGES MAY BE CONSTRUCTED WITH COMPONENTS FROM OTHER MANUFACTURERS, PROVIDED THE MANUFACTURER'S INSTALLATION GUIDELINES ARE FOLLOWED.
6. DEVIATIONS FROM STANDARDS FOR COMPONENT INSTALLATIONS ARE PERMITTED WITH THE RESPECTIVE MANUFACTURER'S APPROVAL.
7. DEVIATIONS FROM ICE BRIDGE FOUNDATIONS REQUIRE ENGINEERING APPROVAL.
8. THIS DESIGN IS BASED ON 24" WIDE ICE BRIDGE, 3" STD PIPE, AND (12) 1 5/8" DIA. COAX CABLES IN 3 ROWS OF 4 AND POST SUPPORT SPACING OF 7'-0".
9. HEIGHT OF POST SHALL BE 10'-6" MAX. ABOVE GROUND LEVEL.

**CABLE BRIDGE DETAIL**  
NOT TO SCALE

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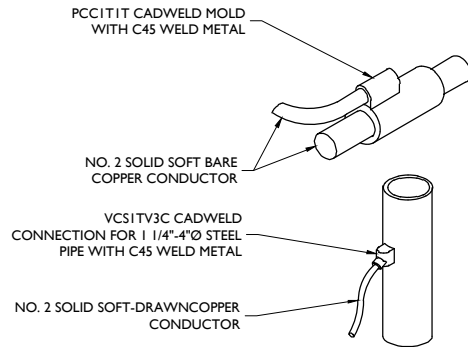
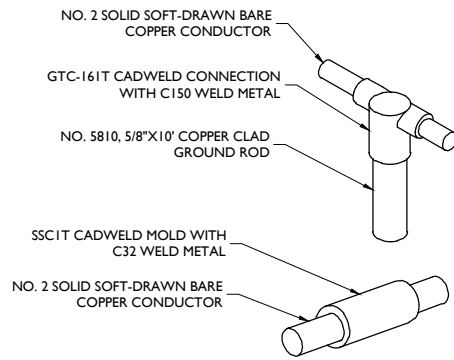
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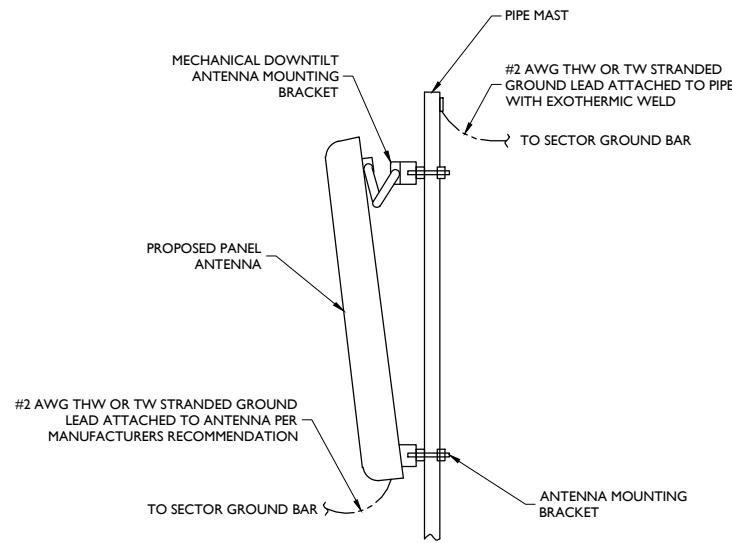
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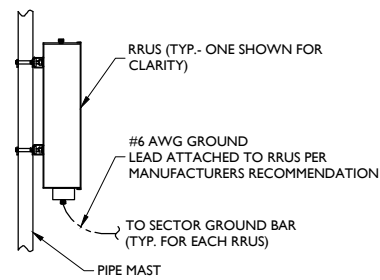




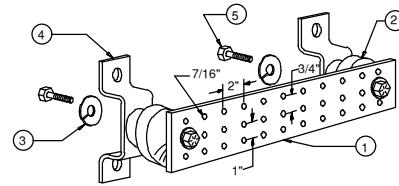
**CADWELD DETAILS**  
NOT TO SCALE



**ANTENNA GROUNDING**  
NOT TO SCALE



**RRH GROUNDING**  
NOT TO SCALE



**LEGEND**

- 1- TINNED COPPER GROUND BAR, 1/4"x4"x20", NEWTON INSTRUMENT CO. CAT. NO. B-6142 OR EQUAL. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
- 2- INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4
- 3- 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8
- 4- WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT. NO. A-5056
- 5- 5/8-11 X 1" HHCS BOLTS, NEWTON INSTRUMENT CO. CAT. NO. 3012-1
- 6- EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

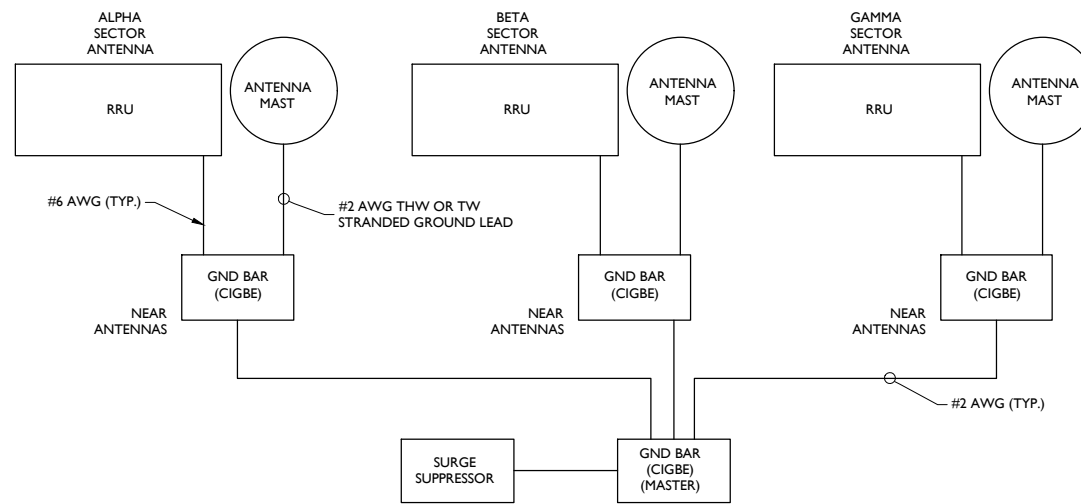
**SECTION "P" - SURGE PRODUCERS**

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

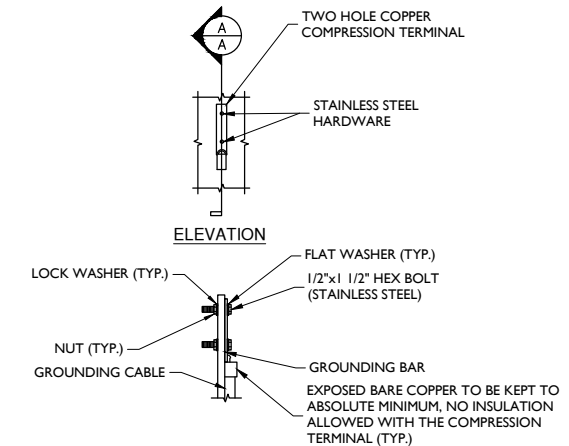
**SECTION "A" - SURGE ABSORBERS**

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

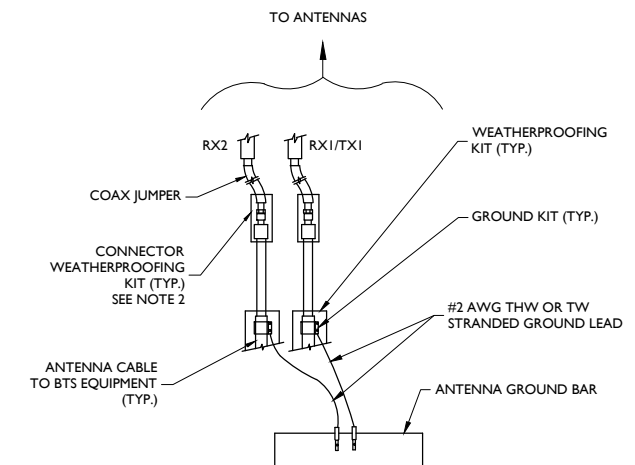
**MASTER GROUND BAR**  
NOT TO SCALE



**SCHEMATIC DIAGRAM GROUNDING SYSTEM**



**TYPICAL GROUND BAR CONNECTION DETAIL**  
NOT TO SCALE



**NOTES:**

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.

**TYPICAL GROUND WIRE TO GROUNDING BAR**  
NOT TO SCALE



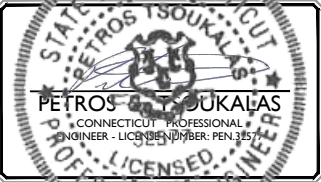
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SHEET TITLE:  
**GROUNDING DETAILS**

SHEET NUMBER:  
**G-1**