



September 4th, 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:	47 Main St. Vernon, CT 06066
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 119-feet on an existing 137-foot water tank, owned by Crown Castle at 3 Corporate Park Drive, Suite 101, Clifton Park, NY 12065. AT&T now intends to add one (1) 8' KMW EPBQ-654L8H8-L2 and (2) 6' KMW EPBQ-654L8H6-L2 Panel Antennas, each to be installed in position [3] all sectors. AT&T will also be relocating the existing position [1] antennas, three (3) in total, to new pipe mounts. In addition, AT&T intends to swap one (1) RRUS-12 A2 in position [2] with one (1) RRUS-12, in each sector, for a total of three (3) RRUs to be swapped. Furthermore, AT&T will be adding one (1) RRUs-32 and one (1) RRU B14 4478 in position [3] all sectors, for a total of six (6) new RRUs to be added. AT&T is also proposing to add (3) Raycap Squid, as well as one (3) fiber line and (6) DC Power Cables to their equipment configuration. All of the changes will take place on new proposed pipe mounts, and as outlined in the attached construction drawings.

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 structure 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 Mariana Rodriguez – Town Planner, Town of Vernon, 55 West Main St. 2nd Floor, Vernon, CT 06066 and Daniel A. Champagne – Mayor, Town of Vernon, Third Floor, 14 Park Place, Vernon CT 06066.. A copy of this letter is being sent to the property owner, Historic Talcott Mill LLC, 56 Arbor St. Hartford, CT 06106 and to the tower company, Crown Castle at 2000 Corporate Drive, Canonsburg, PA 15317.

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

- **EM-AT&T-146-140203** - American Telephone & Telegraph (AT&T) notice of intent to modify an existing telecommunications facility located at 47 Main Street, **Vernon**, 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 structure. AT&T's replacement antennas will be installed at the 119-foot level of the 137-foot water tank.
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 structure 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:
Mariana Rodriguez – Zoning Enforcement Officer, Town of Somers, CT
Daniel A. Champagne. – First Selectman, Town of Somers, CT
Historic Talcott Mill LLC – Property Owners
Crown Castle – Tower Company



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**Smartlink on behalf of
AT&T Mobility, LLC
Site FA – 10035090
Site ID – CT1093
(MRCTB025383)
USID – 59373
Site Name – Talcottville**

**47 Main Street
Talcottville, CT 06066**

Latitude: N41-49-14.07
Longitude: W72-30-02.00
Structure Type: Water Tank

Report generated date: July 18, 2018
Report by: Scott Broyles
Customer Contact: Romina Kirchmaier

**AT&T Mobility, LLC is compliant based on FCC
Rules and Regulations.**

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1 General Site Summary

1.1 Report Summary

AT&T Mobility, LLC	Summary
Access to Antennas Locked?	Yes
Max Cumulative Simulated RFE Level on the Water Tank	4,287.0% General Public Limit 1" beside of AT&T Mobility, LLC's Gamma Sector Antenna 11
Max Cumulative Simulated RFE Level on the Ground	<1% General Public Limit
FCC & AT&T Compliant?	Yes
Optional AT&T Mitigation Items?	Yes









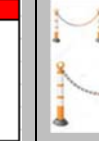
The following documents were provided by the client and were utilized to create this report:

RFDS: NEW-ENGLAND_CONNECTICUT_CT1093_2018-LTE-Next-Carrier_LTE_rx855w_2051A0CZQS_10035090_59373_06-13-2017_Final-RF-Approval_v1.00

CD's: 10035090_AE201_180102_CTL01093_REV 1

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
WT Access Point	<input checked="" type="checkbox"/> [1]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input checked="" type="checkbox"/> [1]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/>
Alpha	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/>
Beta	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/>
Gamma	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/> [#]	<input type="checkbox"/>

Note: All existing signage was documented during a previous site visit 6-5-2016.

1.3 Fall Arrest Anchor Point Summary

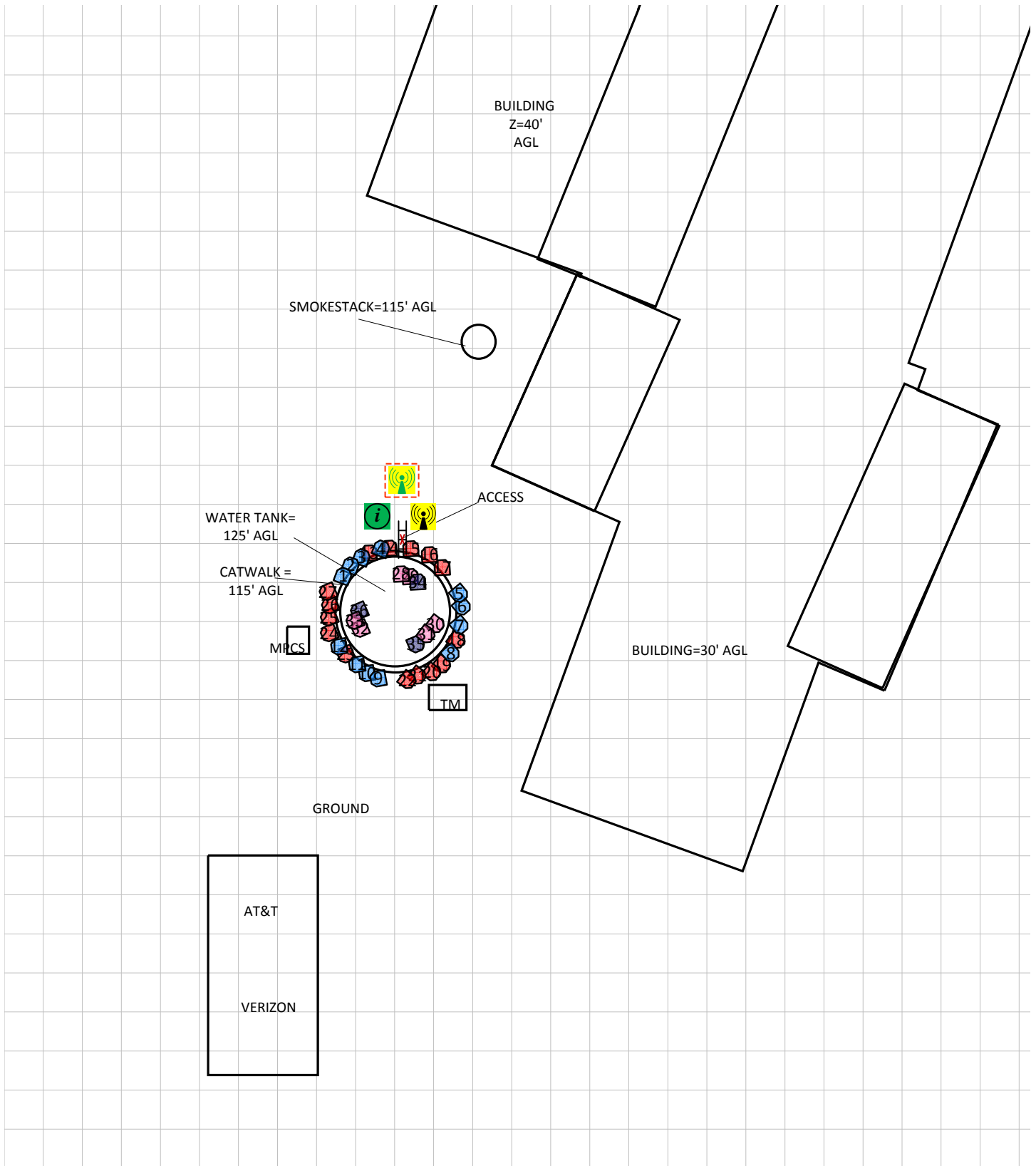
Fall Arrest Anchor & Parapet Info	Parapet Available (Y/N)	Parapet Height (inches)	Fall Arrest Anchor Available (Y/N)
Roof Safety Info	N	N/A	N

2 Scale Maps of Site

The following diagrams are included:

- Site Scale Map
- RF Exposure Diagram
- RF Exposure Diagram –Detailed View
- AT&T Mobility, LLC Contribution

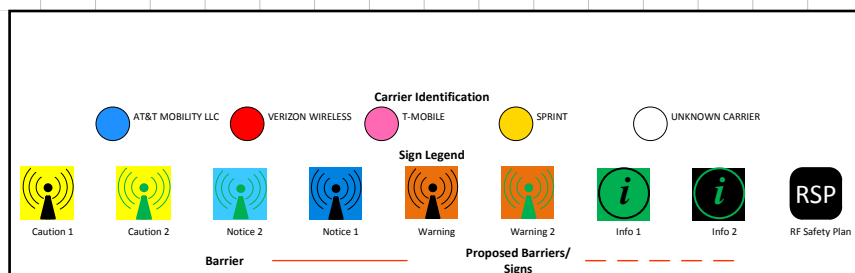
Site Scale Map For: Talcottville



(Feet)

0 15.3 30.7

www.sitesafe.com
Site Name:Talcottville
7/17/2018 11:58:17 AM



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)	KMW EPBQ-654L8H8	Panel	763	43	68	7.6	13.46	0	1	2951.4	93.6'	170.5'	115.2'
1	AT&T MOBILITY LLC (Proposed)	KMW EPBQ-654L8H8	Panel	2300	43	59	7.6	15.56	0	1	1285.3	93.6'	170.5'	115.2'
2	AT&T MOBILITY LLC	Kathrein-Scala 800-10121	Panel	850	43	87.6	4.5	11.35	1	0	272.3	95.3'	172.8'	116.7'
2	AT&T MOBILITY LLC	Kathrein-Scala 800-10121	Panel	1900	43	85.7	4.5	14.32	1	0	845.3	95.3'	172.8'	116.7'
3	AT&T MOBILITY LLC	CCI Antennas HPA-65R-BUU-H8	Panel	737	43	64.9	7.7	13.26	0	1	1475.7	97.7'	174.6'	115.2'
3	AT&T MOBILITY LLC	CCI Antennas HPA-65R-BUU-H8	Panel	1900	43	63.1	7.7	14.76	0	1	7328.8	97.7'	174.6'	115.2'
4	AT&T MOBILITY LLC (Discontinued)	KMW AM-X-CD-16-65-00T	Panel	850	43	63	6	13.86	0	0	0	102.1'	176.6'	116'
5	AT&T MOBILITY LLC (Proposed)	KMW EPBQ-654L8H8	Panel	763	163	68	7.6	13.46	0	1	2951.4	119.6'	166.4'	115.2'
5	AT&T MOBILITY LLC (Proposed)	KMW EPBQ-654L8H8	Panel	2300	163	59	7.6	15.56	0	1	1285.3	119.6'	166.4'	115.2'
6	AT&T MOBILITY LLC	Kathrein-Scala 800-10121	Panel	850	163	87.6	4.5	11.35	1	0	272.3	120.2'	163.6'	116.7'
6	AT&T MOBILITY LLC	Kathrein-Scala 800-10121	Panel	1900	163	85.7	4.5	14.32	1	0	845.3	120.2'	163.6'	116.7'
7	AT&T MOBILITY LLC	CCI Antennas HPA-65R-BUU-H6	Panel	737	163	66.2	6	11.68	0	1	1475.7	119.7'	159.4'	116'
7	AT&T MOBILITY LLC	CCI Antennas HPA-65R-BUU-H6	Panel	1900	163	61.1	6	14.53	0	1	7328.8	119.7'	159.4'	116'
8	AT&T MOBILITY LLC (Discontinued)	KMW AM-X-CD-16-65-00T	Panel	850	163	63	6	13.86	0	0	0	117.7'	153.1'	116'
9	AT&T MOBILITY LLC (Proposed)	KMW EPBQ-654L8H8	Panel	763	283	68	7.6	13.46	0	1	2951.4	101.4'	147.4'	115.2'
9	AT&T MOBILITY LLC (Proposed)	KMW EPBQ-654L8H8	Panel	2300	283	59	7.6	15.56	0	1	1285.3	101.4'	147.4'	115.2'
10	AT&T MOBILITY LLC	Kathrein-Scala 800-10121	Panel	850	283	87.6	4.5	11.35	1	0	271.6	98.9'	148.6'	116.7'
10	AT&T MOBILITY LLC	Kathrein-Scala 800-10121	Panel	1900	283	85.7	4.5	14.32	1	0	826	98.9'	148.6'	116.7'
11	AT&T MOBILITY LLC	CCI Antennas HPA-65R-BUU-H6	Panel	737	283	66.2	6	11.68	0	1	1475.7	96.7'	150.6'	116'
11	AT&T MOBILITY LLC	CCI Antennas HPA-65R-BUU-H6	Panel	1900	283	61.1	6	14.53	0	1	7328.8	96.7'	150.6'	116'
12	AT&T MOBILITY LLC (Discontinued)	Andrew SBNH-1D6565C	Panel	850	283	67	8	13.868	0	0	0	92.7'	154.6'	115'
13	VERIZON WIRELESS	Generic	Panel	751	20	65	4.6	12.14	-	-	1309.5	99.4'	175.6'	115.7'
14	VERIZON WIRELESS	Generic	Panel	850	20	65	4.6	12.77	-	-	3027.7	103.9'	176.7'	115.7'
15	VERIZON WIRELESS	Generic	Panel	1900	20	65	4.6	15.43	-	-	1675.9	108.7'	176.5'	115.7'
16	VERIZON WIRELESS	Generic	Panel	1900	20	65	4.6	15.43	-	-	4189.7	112.9'	175.2'	115.7'

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
17	VERIZON WIRELESS	Generic	Panel	2100	20	65	4.6	15.23	-	-	4001.1	115.8'	172.3'	115.7'
18	VERIZON WIRELESS	Generic	Panel	751	150	65	4.6	12.14	-	-	1309.5	119'	156.1'	115.7'
19	VERIZON WIRELESS	Generic	Panel	850	150	65	4.6	12.77	-	-	3027.7	115.8'	150.6'	115.7'
20	VERIZON WIRELESS	Generic	Panel	1900	150	65	4.6	15.43	-	-	1675.9	113.5'	148.8'	115.7'
21	VERIZON WIRELESS	Generic	Panel	1900	150	65	4.6	15.43	-	-	4189.7	110.3'	148.1'	115.7'
22	VERIZON WIRELESS	Generic	Panel	2100	150	65	4.6	15.23	-	-	4001.1	108'	147.1'	115.7'
23	VERIZON WIRELESS	Generic	Panel	751	270	65	4.6	12.14	-	-	1309.5	94.2'	152.8'	115.7'
24	VERIZON WIRELESS	Generic	Panel	850	270	65	4.6	12.77	-	-	3027.7	90.4'	157.6'	115.7'
25	VERIZON WIRELESS	Generic	Panel	1900	270	65	4.6	15.43	-	-	1675.9	90.4'	161.1'	115.7'
26	VERIZON WIRELESS	Generic	Panel	1900	270	65	4.6	15.43	-	-	4189.7	90.7'	163.8'	115.7'
27	VERIZON WIRELESS	Generic	Panel	2100	270	65	4.6	15.23	-	-	4001.1	90.2'	166.8'	115.7'
28	T-MOBILE	Generic	Panel	1900	20	65	4.6	15.43	-	-	2094.8	106.6'	170.9'	125.7'
29	T-MOBILE	Generic	Panel	2100	20	65	4.6	15.23	-	-	2000.6	108.6'	170.3'	125.7'
30	T-MOBILE	Generic	Panel	1900	150	65	4.6	15.43	-	-	2094.8	114.3'	159.6'	125.7'
31	T-MOBILE	Generic	Panel	2100	150	65	4.6	15.23	-	-	2000.6	112.3'	157.3'	125.7'
32	T-MOBILE	Generic	Panel	1900	270	65	4.6	15.43	-	-	2094.8	97.4'	158.6'	125.7'
33	T-MOBILE	Generic	Panel	2100	270	65	4.6	15.23	-	-	2000.6	96.2'	160.3'	125.7'
34	METROPCS (Discontinued)	Generic	Panel	1900	20	65	4.6	15.43	-	-	0	110.3'	169.1'	122.7'
35	METROPCS (Discontinued)	Generic	Panel	1900	180	65	4.6	15.43	-	-	0	109.9'	155.2'	122.7'
36	METROPCS (Discontinued)	Generic	Panel	1900	270	65	4.6	15.43	-	-	0	97.2'	162.6'	122.7'
34	METROPCS (Discontinued)	Generic	Panel	1900	20	65	4.6	15.43	-	-	0	110.3'	169.1'	122.7'
35	METROPCS (Discontinued)	Generic	Panel	1900	180	65	4.6	15.43	-	-	0	109.9'	155.2'	122.7'
36	METROPCS (Discontinued)	Generic	Panel	1900	270	65	4.6	15.43	-	-	0	97.2'	162.6'	122.7'

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.

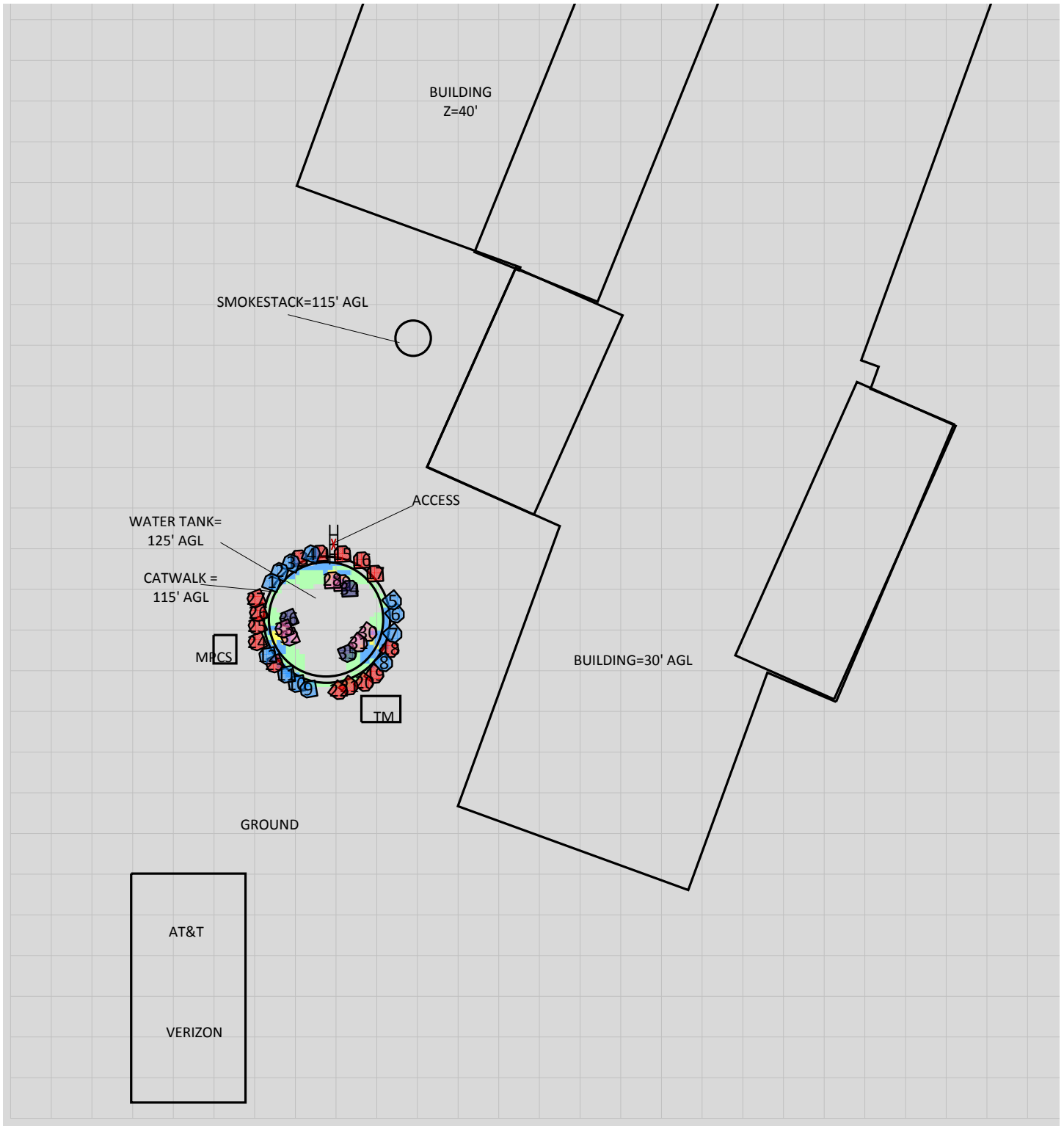
4 Emission Predictions

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.

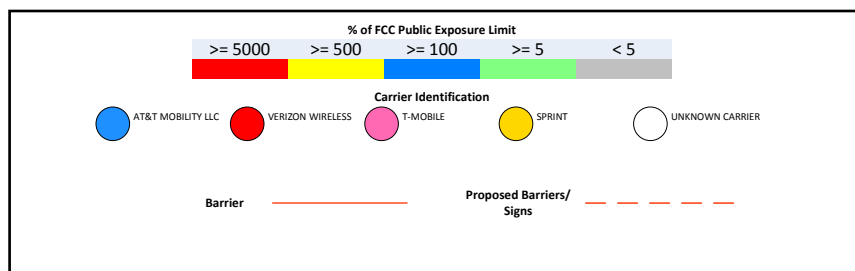
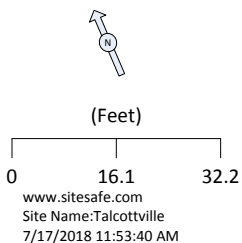
- Ground = 0'
- Catwalk – 115' AGL
- Water Tank top = 125' AGL
- Adjacent Building = 30' AGL

The Antenna Inventory heights are referenced to the same level.

RF Exposure Simulation For: Talcottville Composite View

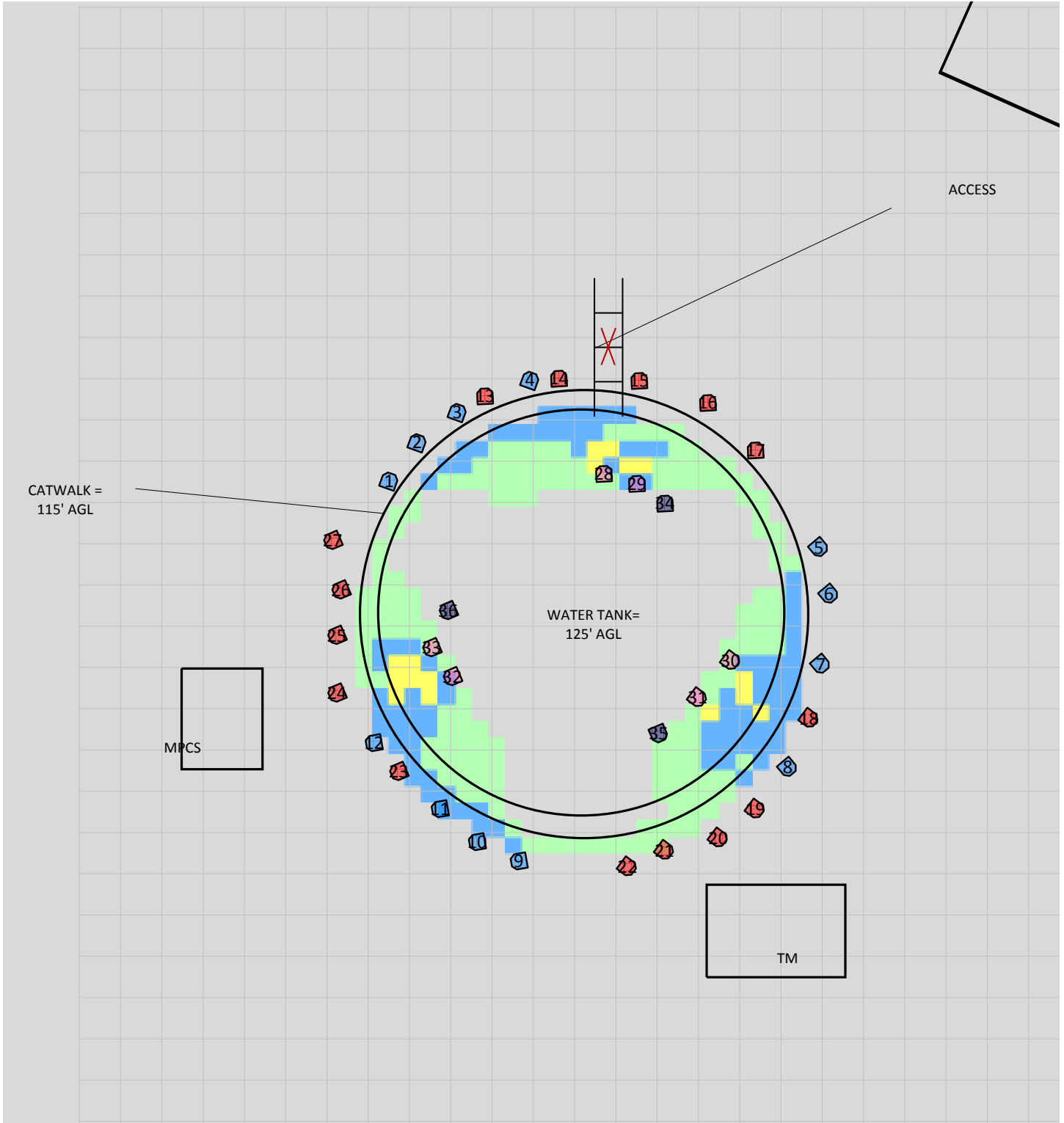


% of FCC Public Exposure Limit
Spatial average 0' - 6'

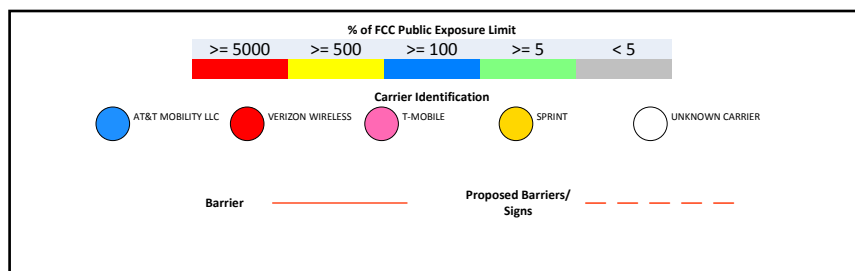
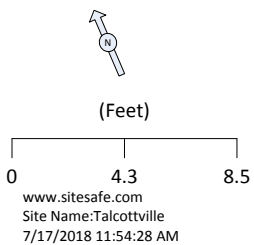


Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

RF Exposure Simulation For: Talcottville Detailed View

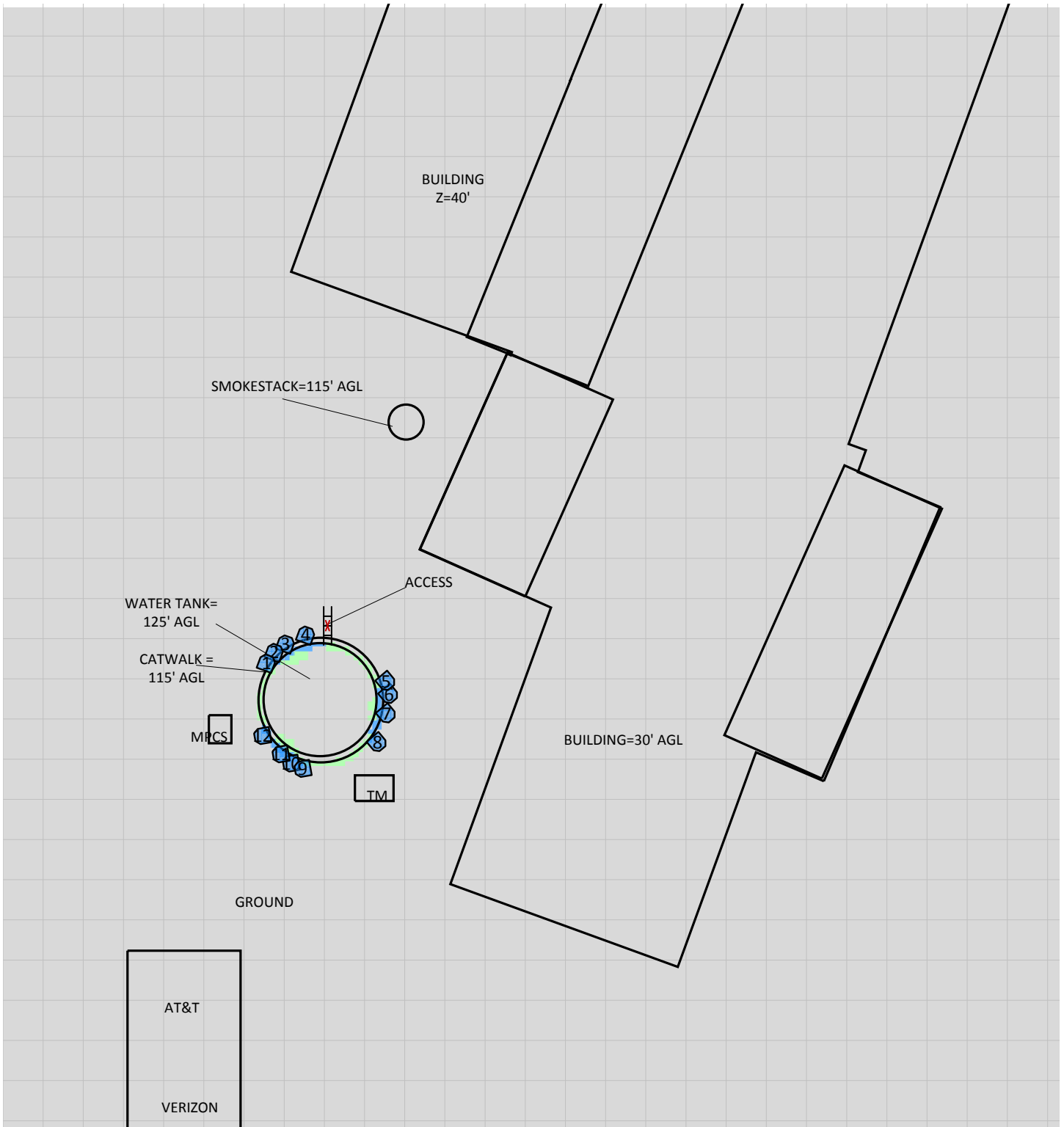


% of FCC Public Exposure Limit
Spatial average 0' - 6'

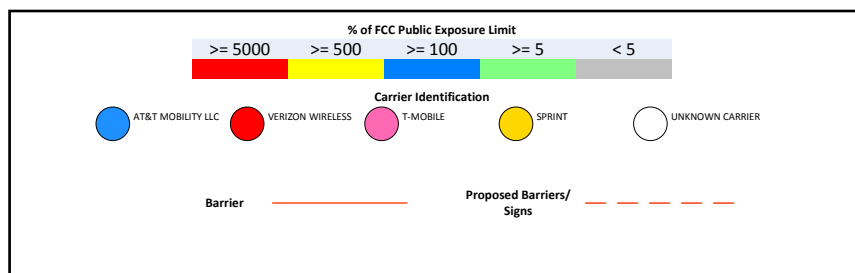
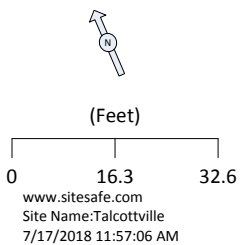


Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

RF Exposure Simulation For: Talcottville AT&T Mobility, LLC Contribution



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



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

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 is compliant with the FCC rules and regulations, as described in OET Bulletin 65.

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 is compliant with the FCC rules and regulations.

Optional Mitigation Items:

Water Tank Access Location

Replace the Caution 1 and Information 1 with a Caution 2 sign.

Notes:

- Ensure all existing signage documented in this report still exist at the site, unless otherwise indicated.

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 18, 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.

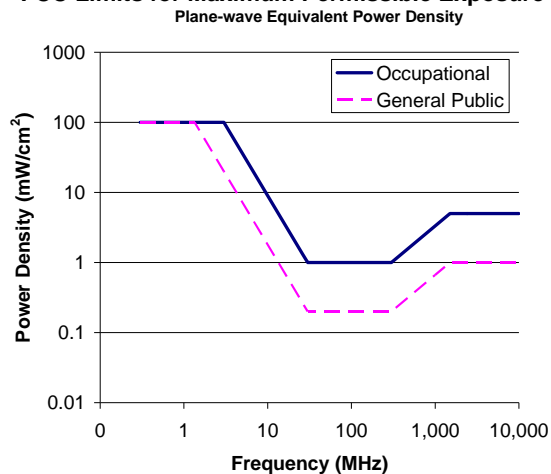
Occupational or Controlled limits apply in situations in which persons are exposed as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

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)



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?sitearea=PED

European Commission Scientific Committee on Emerging and Newly Identified Health Risks

http://ec.europa.eu/health/ph_risk/committees/04_scenihp/docs/scenihp_o_022.pdf

Fairfax County, Virginia Public School Survey

<http://www.fcps.edu/fts/safety-security/RFEESurvey/>

UK Health Protection Agency Advisory Group on Non-ionising Radiation

http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317133826368

Norwegian Institute of Public Health

<http://www.fhi.no/dokumenter/545eea7147.pdf>

ID	Antenna	naData										It is advisable to provide an ID (ant 1) for all antennas										Type	Aper	dBd	BWDth	Uptime	ON
		Name	Freq	Trans Power	Trans Count	Coax Len	Coax Type	Other Losses	Input Power	Calc Power	Mfg	Model	(ft) X	(ft) Y	(ft) Z	Profile	flag										
1	AT&T MOE	763	133.0546		1	0		133.0546		KMW	EPBQ-654I	93.56	170.46	115.179	Panel	7.642	13.46	68;43	100%	ON●							
1	AT&T MOE	2300	35.72729		1	0		35.72729		KMW	EPBQ-654I	93.56	170.46	115.179	Panel	7.642	15.56	59;43	100%	ON●							
2	AT&T MOE	850	19.95261		1	0		19.95261		Kathrein-S	800-10121	95.27	172.79	116.729	Panel	4.542	11.35	87.6;43	100%	ON●							
2	AT&T MOE	1900	31.26084		1	0		31.26084		Kathrein-S	800-10121	95.27	172.79	116.729	Panel	4.542	14.32	85.7;43	100%	ON●							
3	AT&T MOE	737	69.66267		1	0		69.66267		CCI Antenr	HPA-65R-E	97.7	174.62	115.15	Panel	7.7	13.26	64.9;43	100%	ON●							
3	AT&T MOE	1900	244.9232		1	0		244.9232		CCI Antenr	HPA-65R-E	97.7	174.62	115.15	Panel	7.7	14.76	63.1;43	100%	ON●							
4	AT&T MOE	850	0		1	0		0		KMW	AM-X-CD-1	102.09	176.56	116	Panel	6	13.86	63;43	100%	ON●							
5	AT&T MOE	763	133.0546		1	0		133.0546		KMW	EPBQ-654I	119.59	166.42	115.179	Panel	7.642	13.46	68;163	100%	ON●							
5	AT&T MOE	2300	35.72729		1	0		35.72729		KMW	EPBQ-654I	119.59	166.42	115.179	Panel	7.642	15.56	59;163	100%	ON●							
6	AT&T MOE	850	19.95261		1	0		19.95261		Kathrein-S	800-10121	120.21	163.6	116.729	Panel	4.542	11.35	87.6;163	100%	ON●							
6	AT&T MOE	1900	31.26084		1	0		31.26084		Kathrein-S	800-10121	120.21	163.6	116.729	Panel	4.542	14.32	85.7;163	100%	ON●							
7	AT&T MOE	737	100.2306		1	0		100.2306		CCI Antenr	HPA-65R-E	119.71	159.35	116	Panel	6	11.68	66.2;163	100%	ON●							
7	AT&T MOE	1900	258.2438		1	0		258.2438		CCI Antenr	HPA-65R-E	119.71	159.35	116	Panel	6	14.53	61.1;163	100%	ON●							
8	AT&T MOE	850	0		1	0		0		KMW	AM-X-CD-1	117.71	153.1	116	Panel	6	13.86	63;163	100%	ON●							
9	AT&T MOE	763	133.0546		1	0		133.0546		KMW	EPBQ-654I	101.43	147.42	115.179	Panel	7.642	13.46	68;283	100%	ON●							
9	AT&T MOE	2300	35.72729		1	0		35.72729		KMW	EPBQ-654I	101.43	147.42	115.179	Panel	7.642	15.56	59;283	100%	ON●							
10	AT&T MOE	850	19.90645		1	0		19.90645		Kathrein-S	800-10121	98.9	148.58	116.729	Panel	4.542	11.35	87.6;283	100%	ON●							
10	AT&T MOE	1900	30.54929		1	0		30.54929		Kathrein-S	800-10121	98.9	148.58	116.729	Panel	4.542	14.32	85.7;283	100%	ON●							
11	AT&T MOE	737	100.2306		1	0		100.2306		CCI Antenr	HPA-65R-E	96.65	150.58	116	Panel	6	11.68	66.2;283	100%	ON●							
11	AT&T MOE	1900	258.2438		1	0		258.2438		CCI Antenr	HPA-65R-E	96.65	150.58	116	Panel	6	14.53	61.1;283	100%	ON●							
12	AT&T MOE	850	0		1	0		0		Andrew	SBNH-1D6	92.65	154.58	114.9835	Panel	8.033	13.868	67;283	100%	ON●							
13	VERIZON V	751	80		1	0		80		Generic	4 Ft./65 Dc	99.37	175.59	115.7	Panel	4.6	12.14	65;20	100%	ON●							
14	VERIZON V	850	160		1	0		160		Generic	4 Ft./65 Dc	103.85	176.66	115.7	Panel	4.6	12.77	65;20	100%	ON●							
15	VERIZON V	1900	48		1	0		48		Generic	4 Ft./65 Dc	108.71	176.53	115.7	Panel	4.6	15.43	65;20	100%	ON●							
16	VERIZON V	1900	120		1	0		120		Generic	4 Ft./65 Dc	112.87	175.19	115.7	Panel	4.6	15.43	65;20	100%	ON●							
17	VERIZON V	2100	120		1	0		120		Generic	4 Ft./65 Dc	115.76	172.32	115.7	Panel	4.6	15.23	65;20	100%	ON●							
18	VERIZON V	751	80		1	0		80		Generic	4 Ft./65 Dc	119	156.07	115.7	Panel	4.6	12.14	65;150	100%	ON●							
19	VERIZON V	850	160		1	0		160		Generic	4 Ft./65 Dc	115.75	150.57	115.7	Panel	4.6	12.77	65;150	100%	ON●							
20	VERIZON V	1900	48		1	0		48		Generic	4 Ft./65 Dc	113.5	148.82	115.7	Panel	4.6	15.43	65;150	100%	ON●							
21	VERIZON V	1900	120		1	0		120		Generic	4 Ft./65 Dc	110.25	148.07	115.7	Panel	4.6	15.43	65;150	100%	ON●							
22	VERIZON V	2100	120		1	0		120		Generic	4 Ft./65 Dc	108	147.07	115.7	Panel	4.6	15.23	65;150	100%	ON●							
23	VERIZON V	751	80		1	0		80		Generic	4 Ft./65 Dc	94.15	152.84	115.7	Panel	4.6	12.14	65;270	100%	ON●							
24	VERIZON V	850	160		1	0		160		Generic	4 Ft./65 Dc	90.4	157.59	115.7	Panel	4.6	12.77	65;270	100%	ON●							
25	VERIZON V	1900	48		1	0		48		Generic	4 Ft./65 Dc	90.4	161.09	115.7	Panel	4.6	15.43	65;270	100%	ON●							
26	VERIZON V	1900	120		1	0		120		Generic	4 Ft./65 Dc	90.65	163.84	115.7	Panel	4.6	15.43	65;270	100%	ON●							
27	VERIZON V	2100	120		1	0		120		Generic	4 Ft./65 Dc	90.15	166.84	115.7	Panel	4.6	15.23	65;270	100%	ON●							
28	T-MOBILE	1900	60		1	0		60		Generic	4 Ft./65 Dc	106.57	170.89	125.7	Panel	4.6	15.43	65;20	100%	ON●							
29	T-MOBILE	2100	60		1	0		60		Generic	4 Ft./65 Dc	108.57	170.29	125.7	Panel	4.6	15.23	65;20	100%	ON●							
30	T-MOBILE	1900	60		1	0		60		Generic	4 Ft./65 Dc	114.25	159.57	125.7	Panel	4.6	15.43	65;150	100%	ON●							
31	T-MOBILE	2100	60		1	0		60		Generic	4 Ft./65 Dc	112.25	157.32	125.7	Panel	4.6	15.23	65;150	100%	ON●							
32	T-MOBILE	1900	60		1	0		60		Generic	4 Ft./65 Dc	97.4	158.59	125.7	Panel	4.6	15.43	65;270	100%	ON●							
33	T-MOBILE	2100	60		1	0		60		Generic	4 Ft./65 Dc	96.15	160.34	125.7	Panel	4.6	15.23	65;270	100%	ON●							
34	METROPCS	1900	0		1	0		0		Generic	4 Ft./65 Dc	110.27	169.09	122.7	Panel	4.6	15.43	65;20	100%	ON●							
35	METROPCS	1900	0		1	0		0		Generic	4 Ft./65 Dc	109.89	155.15	122.7	Panel	4.6	15.43	65;180	100%	ON●							
36	METROPCS	1900	0		1	0		0		Generic	4 Ft./65 Dc	97.15	162.59	122.7	Panel	4.6	15.43	65;270	100%	ON●							
Start	SymbolData																										

HISTORIC TALCOTT MILL LLC

56 ARBOR ST

HARTFORD, CT 06106

CENSUS TRACT: 530500 / pc-2012-14

approved for 84

residential units in September 2012

Neighborhood Number

12100

Neighborhood Name

General Commercial

TAXING DISTRICT INFORMATION

Jurisdiction Name

Town of Vernon

Area

146

Routing Number

3028

Tax ID 02-158A-00003

Printed 03/04/2017

Card No. 1 of 3

Transfer of Ownership

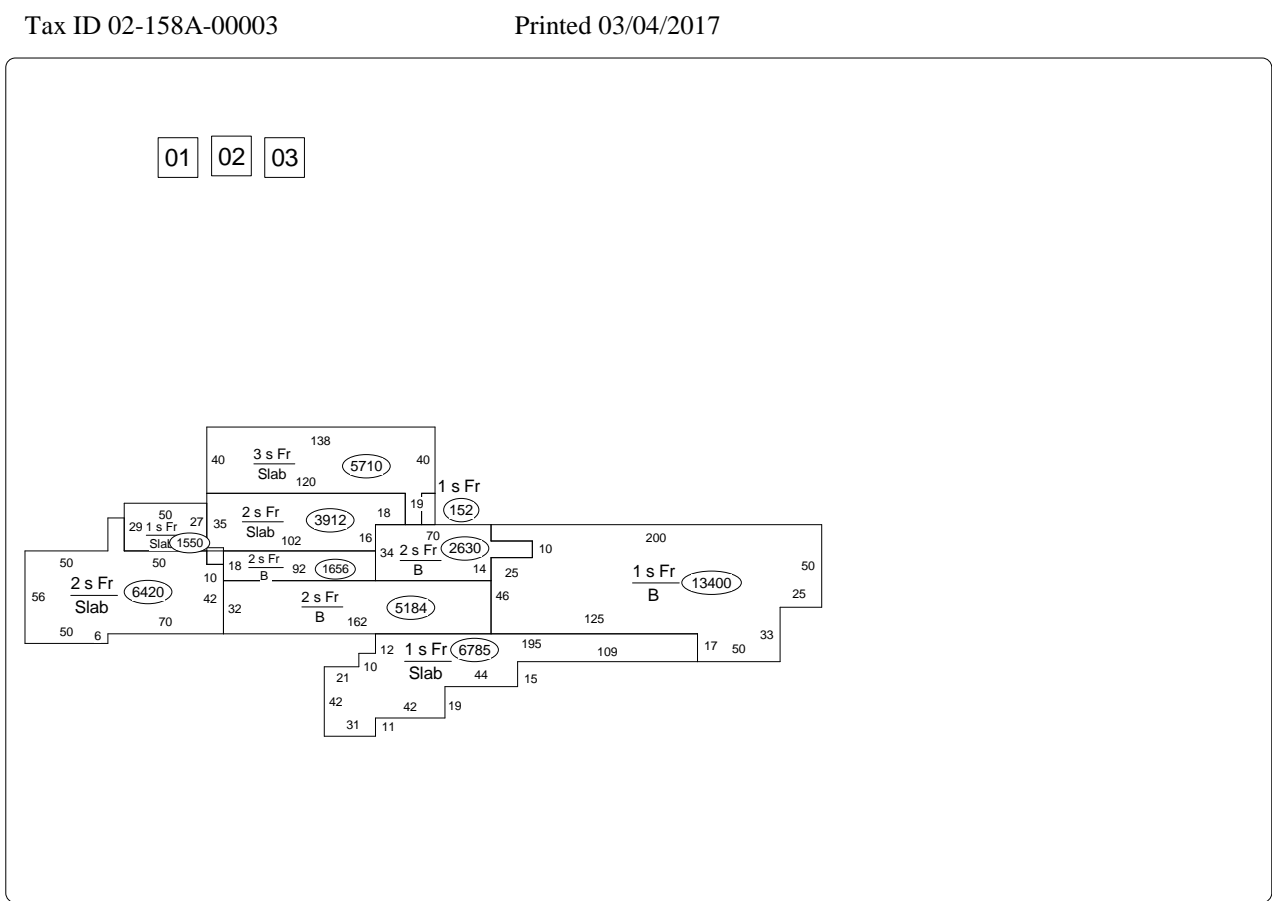
Owner	Consideration	Transfer Date	Deed Book/Page	Deed Type
TALCOTT MILL LANDLORD LLC	0	11/25/2015	2426 231	Q
TALCOTT MILL LANDLORD LLC	1400000	11/25/2015	2426 225	W
VERN LLC	0	09/03/2013	2308 250	W
CUNO INCORPORATED	149000	12/29/1995	1044 214	W
NA	604966	10/27/1986	595 51	

Site Description Topography Public Utilities Water, Sewer, Gas, Electric Street or Road Paved Neighborhood Zoning: Industrial Legal Acres: 7.6000	Valuation Record							
	Assessment Year	2011	2013	2016				
Reason for Change		2011 REVAL	2013 ASSMT	2016 Reval				
Market	L	364500	444500	485000				
	I	195190	195190	807750				
	T	559690	639690	1292750				
	L	255150	311150	339500				
	I	136630	136630	565430				
	T	391780	447780	904930				
70% Assessed/Use								



Land Size				
Land Type	Rating, Soil ID - or - Actual Frontage	Acreage - or - Effective Frontage	Square Feet - or - Effective Depth	Influence Factor

Physical Characteristics				
ROOFING				
Built-up				
WALLS				
Frame	B	1	2	U
Guard	Yes	Yes	Yes	Yes
FRAMING				
Wd Jst	B	1	2	U
	22870	47399	25512	5710
FINISH				
B	UF	SF	FO	FD
1	22870	0	0	0
2	47399	0	0	0
U	25512	0	0	0
Total	5710	0	0	0
	101491	0	0	0
HEATING AND AIR CONDITIONING				
Heat	B	1	2	U
Sprink	22870	47399	25512	5710



	Special Features		Summary of Improvements								
	Description		ID	USE	Story Height	Const Type	Grade	Year Cons	Eff Year	Cond	Size or Area
			C	LMFG	0.00		Avg	1840	1985	AV	47399
			01	FENCECL	4.00	51C	Avg	1970	1970	AV	750
			02	PAVING	0.00	85	Avg	1970	1970	AV	6000
			03	UTLSHED	0.00	1	Avg	1970	1970	AV	200

Physical Characteristics

ROOFING

Built-up

WALLS

	B	1	2	U
Frame		Yes		
Guard	Yes	Yes	Yes	Yes

FRAMING

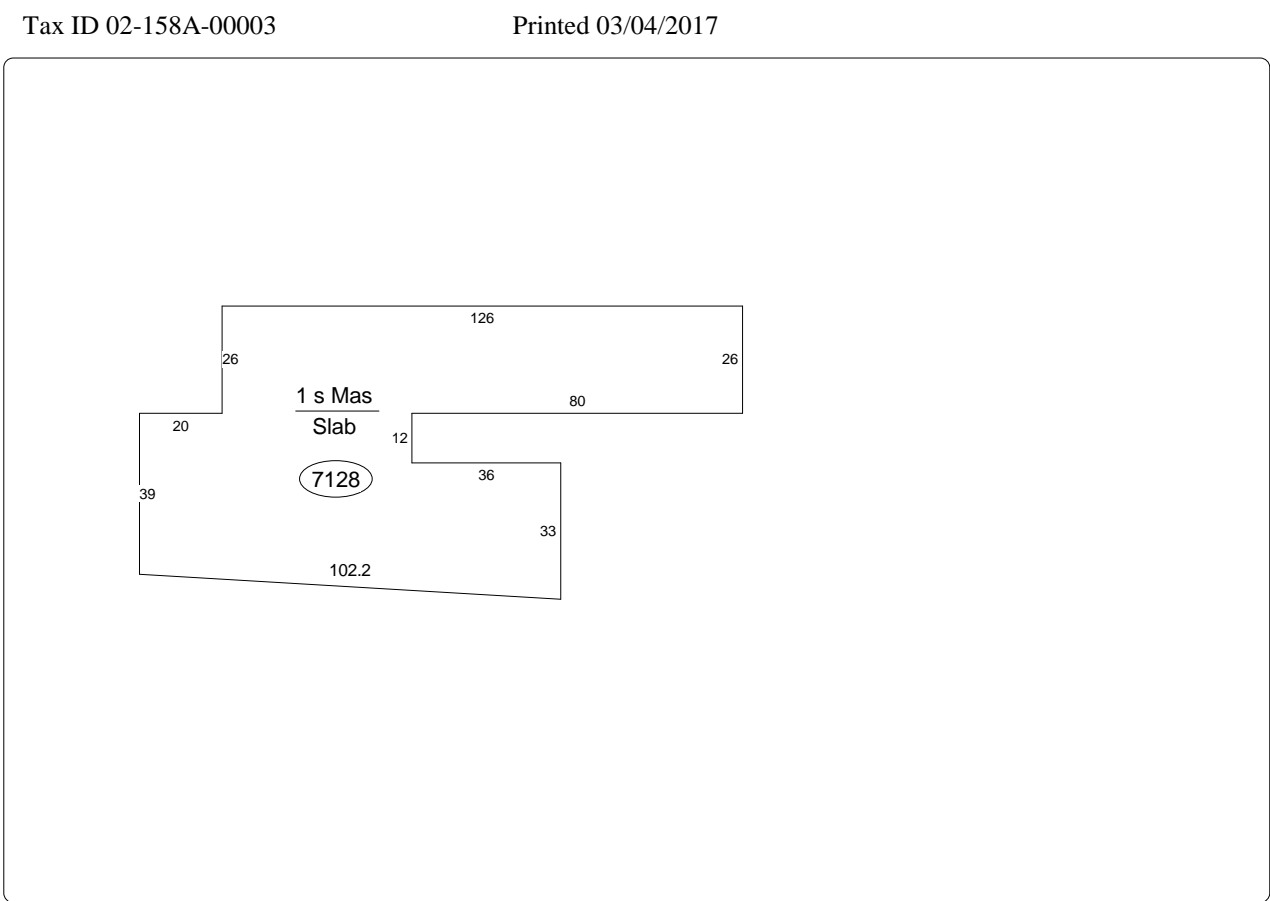
	B	1	2	U
Wd Jst	0	7128	0	0

FINISH

	UF	SF	FO	FD
1	7128	0	0	0
Total	7128	0	0	0

HEATING AND AIR CONDITIONING

	B	1	2	U
Heat	0	7128	0	0
Sprink	0	7128	0	0



Special Features
Description

Summary of Improvements								
ID	USE	Story Height	Const Type	Grade	Year Cons	Eff Year	Cond	Size or Area
C	WHSESTOR	0.00		Avg	1960	1980	AV	7128



MASER CONSULTING
— CONNECTICUT —

Handrail Analysis

FOR

CTL01093

10035090 – Talcottville
47 Main Street
Vernon, CT 06066
Tolland County

Mount Utilization: 80.9%

August 31, 2018

Prepared For

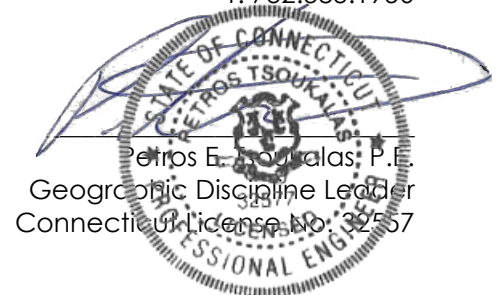
AT&T

550 Cochituate Road
Framingham, MA 01701

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T: 732.383.1950



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Geographic Discipline Leader
Connecticut License No. 32557

MC Project No. 17946061A



Objective:

The objective of this report is to determine the capacity of the existing antenna support mounts and handrail at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards.

Introduction:

Maser Consulting Connecticut has performed limited field observations on September 21, 2017 to verify the existing condition of the structure and to locate and quantify the existing wireless appurtenances where possible. This structural analysis is valid for the appurtenances on the site at the time of the field visit. Additionally, Maser Consulting Connecticut has reviewed the following documents in completing this report:

- RFDS 1811300 Version 3.00, provided by Smartlink LLC, dated January 16, 2018
- Construction Drawings, prepared by Com Ex Consultants, dated May 27, 2016
- Structural Analysis, prepared by Destek Engineering LLC, dated June 1, 2016
- Mount Mapping, provided by Tower Engineering Professionals, dated May 5, 2018

The existing **AT&T** equipment is supported on the water tank handrail constructed of structural steel angles, pipes, and plates at a centerline of approximately 119' above ground level. This report is based upon this information, as well as the information obtained in the field.

Discrete and Linear Appurtenances:

Maser Consulting Connecticut understands the existing & proposed **AT&T** loading to be as follows:

- (3) 800-10121 Antennas (Existing)
- (3) AM-X-CD-16-65-00T-RET Antennas (Existing)
- (1) HPA-65R-BUU-H8 Antenna (Existing)
- (2) HPA-65R-BUU-H6 Antennas (Existing)
- (1) EPBQ-654L8H8-L2 Antenna (Proposed)
- (2) EPBQ-654L8H6-L2 Antennas (Proposed)
- (6) TMAs (Existing)
- (3) RRUS 11 (Existing)
- (3) RRUS 12 (Proposed)
- (3) RRUS 32 (Proposed)
- (3) RRUS B14 4478 (Proposed)
- (3) DC2 (Existing)
- (1) FC12 (Existing)
- (3) DC6 (Proposed)
- (3) 6-Pair Fiber Trunks (Proposed)
- (3) 6/C DC Power Cables (Proposed)

Codes, Standards and Loading:

Maser Consulting Connecticut utilized the following codes and standards:

- 2016 Connecticut State Building Code, Incorporating the 2012 IBC
- Structural Standards for Antenna Supporting Structures and Antennas ANSI/TIA-222-G
 - Basic Wind Speed – 105 mph (3 Second Gust)
 - Exposure Category – B
 - Structural Class – III
- Specification for Structural Steel Buildings ANSI/AISC 360-05, American Institute of Steel Construction (AISC)

Loading used in this analysis is found in Appendix A of this report.

Analysis Approach & Assumptions:

The analysis approach used in this structural analysis is based on the premise that if the existing antenna support mounts and handrail are structurally adequate to support the proposed equipment per the aforementioned codes and standards, or if the increase in the forces in the structure is deemed to be negligible or acceptable, then the proposed equipment can be installed as intended.

The existing mounts and handrail have been modeled in RISA-3D, a comprehensive structural analysis program. The program performs design checks of structures under user specified loads. The user specified loads have been calculated separately based on the requirements of the above referenced codes. The program performs an analysis based on the steel code to determine the adequacy of the members, and produces the reactions at the connection points of the mounts to the existing structure. Additional calculations were then prepared to analyze the mount connection points with the proposed loading conditions.

General Site Design Assumption:

- All engineering services are performed on the basis that the information used is current and correct.
- It is assumed that the telecommunication equipment supports, antenna supports, and existing structure have been designed by a registered licensed professional engineer for the existing loads acting on the structure, as required by all applicable codes, prior to the proposed modifications listed within this report, if any.
- It is assumed that information provided by the client regarding the structure itself, the antenna models, feed lines, and other relevant information is current and correct.
- It is the responsibility of the client to ensure that the information provided to Maser Consulting Connecticut and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that the original design, material production, fabrication, and erection of the existing structure was performed in accordance with accepted industry design standards and in accordance with all applicable codes. Further, it is assumed that the existing structure and appurtenances have been properly maintained in accordance with all applicable codes and manufacturer's specifications and no structural defects and/or deterioration to the structural members has occurred.
- It is assumed all other existing appurtenances, antennas, cables, etc. belonging to others have been installed and supported per code and per specifications so as not to damage any existing structural support members, and that any contributing loads from adjacent equipment has been taken into consideration for their design.
- All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Maser Consulting Connecticut is not responsible for the conclusion, opinions, and recommendations made by others based on the information we supply.



Site Specific Design Parameters:

The following design assumptions and parameters have been utilized in this report:

- *Structural Steel Angles and Plates are constructed of A36 Steel*
- *Structural Steel Pipes are constructed of A53 Grade B Steel*
- *The members sizes in the referenced structural analysis are still valid and the same members are on the water tank.*
- *The existing pipes in positions 1 and 3 of all sectors are to be replaced with 12'-0" long 2.0 STD pipes with the top of the pipe 4'-6" above the top handrail*
- *An 8'-0" long 2.0 STD antenna mounting pipe is to be mounted to the proposed pipes via pipe-to-pipe connections with the top of the pipes flush and connected 1'-0" from the top and bottom in positions 1 and 3 of all sectors*
- *The proposed antennas are to be mounted to the proposed antenna mounting pipes*
- *The proposed RRUS-32 and RRUS-4478 B14 are to be mounted to the bottom of the proposed pipe in position 3 of all sectors*
- *The proposed RRUS-12 and existing RRUS-11 are to be mounted to the bottom of the proposed pipe in position 1 of all sectors*

Calculations:

The calculations are found in Appendix A of this report.

Conclusion:

Maser Consulting Connecticut has determined the existing antenna support mounts and handrail have **ADEQUATE** structural capacity to support the proposed loading. The existing mounts and handrail have been determined to be stressed to a maximum of **80.9%** of its structural capacity with the maximum usage occurring at the antenna support pipes. Therefore, the proposed **AT&T** installation **CAN** be installed as intended.

The conclusions reached by Maser Consulting Connecticut in this evaluation are only applicable for the proposed structural members supporting the proposed **AT&T** telecommunications installation described herein. Further, no structural qualifications are made or implied by this document for the existing structure.

Maser Consulting Connecticut reserves the right to amend this report if additional information about the existing members is provided. The conclusions reached by Maser Consulting Connecticut in this report are only valid for the appurtenances listed in this report. Any change to the installation will require a revision to this structural analysis.

We appreciate the opportunity to be of service on this project. If you should have any questions or require any additional information, please do not hesitate to call our office.

Sincerely,
Maser Consulting Connecticut

Petros E. Tsoukalas, P.E.
Geographic Discipline Leader

Vincent DiGirolamo
Engineer



SITE NAME: TALCOTTVILLE
FA NUMBER: 10035090
SITE NUMBER: CTL01093

3C - MRCTB025242
4C - MRCTB025333
RETRO - MRCTB025138
47 MAIN STREET
VERNON, CT 06066
TOLLAND COUNTY

PROJECT TEAM

CLIENT REPRESENTATIVE

COMPANY: SMARTLINK, LLC
ADDRESS: 85 RANGWAY 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

SITE ACQUISITION

COMPANY: SMARTLINK, LLC
ADDRESS: 85 RANGWAY 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

ENGINEER

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
E-MAIL: PTSOUKALAS@MASERCONSULTING.COM

CONSTRUCTION MANAGER

COMPANY: SMARTLINK, LLC
ADDRESS: 85 RANGWAY 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

APPLICANT/LESSEE



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

PROPERTY/TOWER OWNER:

NAME: T.B.D.
ADDRESS:
CITY, STATE, ZIP:
SITE ID#:

LATITUDE: 41.8205750° N

LONGITUDE: 72.5005550° W

LAT./LONG. TYPE: NAD 83

AREA OF CONSTRUCTION: EXISTING EQUIPMENT SHELTER AND WATERTANK

ZONING/JURISDICTION: CITY OF VERNON

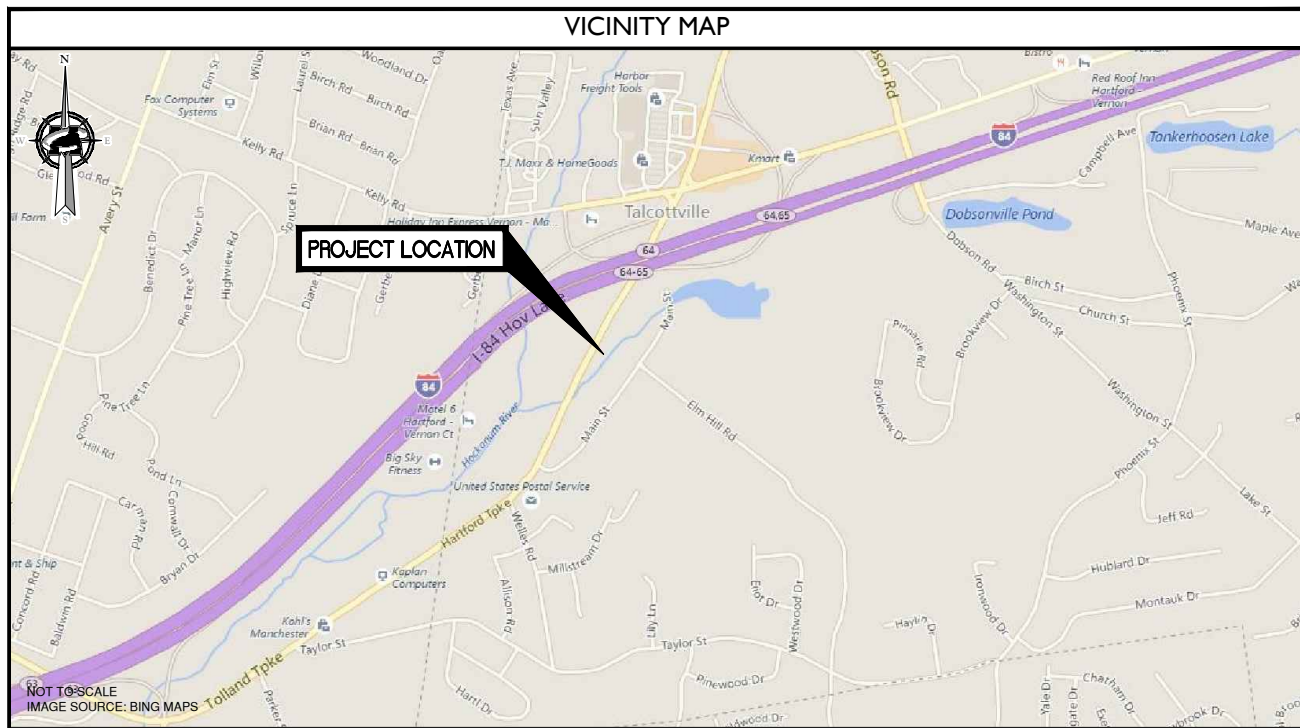
CURRENT USE/PROPOSED USE: UNMANNED TELECOMMUNICATIONS FACILITY

HANDICAP REQUIREMENTS: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS NOT REQUIRED.

CONSTRUCTION TYPE: IIB

USE GROUP: U

VICINITY MAP



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. EIA/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

DO NOT SCALE DRAWINGS

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

GENERAL NOTES

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

SHEET	DESCRIPTION
T-1	TITLE SHEET
GN-1	GENERAL NOTES
A-1	COMPOUND AND EQUIPMENT LAYOUT
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:

- RELOCATE (3) PANEL ANTENNAS TO NEW MOUNTS, (1) PER SECTOR
- INSTALL (3) NEW PANEL ANTENNAS ON PROPOSED PIPE MASTS, (1) PER SECTOR
- INSTALL (6) NEW RRUS, (2) PER SECTOR
- REPLACE (3) RRUS-12+A2 WITH (3) RRUS-12, (1) PER SECTOR
- UPGRADE DUS TO 5216 AND RE-USE (1) EXISTING XMU
- INSTALL (3) NEW DC-6 SURGE SUPPRESSION DOMES
- INSTALL (3) NEW 6/C DC POWER CABLES
- INSTALL (3) NEW 6-PAIR FIBER TRUNK
- INSTALL (2) RACK-MOUNTED DC-12's AND (1) DC CONVERTER RACK

PROPOSED PROJECT SCOPE BASED ON RFDS ID# 1811300 VERSION 3.0, LAST UPDATED 01/16/2018.



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



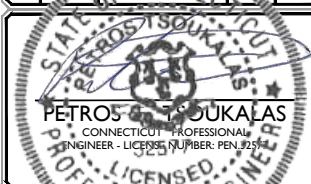
85 RANGWAY ROAD
BUILDING 3, SUITE 102
NORTH BILLERICA, MA 01862-2105
TEL: (774) 369-3613



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SCALE: AS SHOWN JOB NUMBER: 17946061A

5	09/04/18	REVISED PER COMMENTS	AJC	RA
4	08/06/18	REVISED PER COMMENTS	AJC	RA
3	07/03/18	REVISED PER COMMENTS	AJC	RA
2	02/19/18	REVISED PER COMMENTS	AJC	RA
1	01/11/18	FOR CONSTRUCTION	AJC	PET
0	11/21/17	MSG	PET	PET
REV	DATE	DESCRIPTION	CHECKED BY	



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

SITE NAME:

TALCOTTVILLE
FA# 10035090
SITE # CTL01093
47 MAIN STREET
VERNON, CT 06066
TOLLAND 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

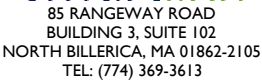
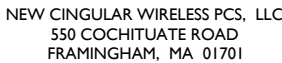
1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. 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 GE'S'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 50 HMS OR LESS.
4. THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
5. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
6. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
7. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE EQUIPMENT GROUND RING WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
8. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
9. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING, SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
10. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
11. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED. ALL BENDS SHALL BE MADE WITH 12" RADIUS OR LARGER.
12. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
13. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS EXCEPT FOR GROUND BAR CONNECTION FROM MGB TO OUTSIDE EXTERIOR GROUND SHALL ALL BE CADWELD CONNECTIONS.
14. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
15. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED TO THE TOWER GROUND BAR.
16. APPROVED ANTIOXIDANT COATINGS (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
17. ALL EXTERIOR AND INTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
18. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
19. BOND ALL METALLIC OBJECTS WITHIN 6 FT OF MAIN GROUND WIRES WITH 1-#2 AWG TIN-PLATED COPPER GROUND CONDUCTOR.
20. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G. NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
21. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/4" IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50.
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.

- 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 ($F_y = 36$ ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E ($F_y = 36$ 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 SHUT DOWN 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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5	09/04/18	REVISED PER COMMENTS	AJC	RA			
4	08/06/18	REVISED PER COMMENTS	AJC	RA			
3	07/03/18	REVISED PER COMMENTS	AJC	RA			
2	02/19/18	REVISED PER COMMENTS	AJC	RA			
1	01/11/18	FOR CONSTRUCTION	AJC	PET			
0	11/21/17	FOR REVIEW	MSG	PET			
REV	DATE	DESCRIPTION	APPROVED BY	CHECKED BY			



47 MAIN STREET
VERNON, CT 06066
TOLLAND COUNTY



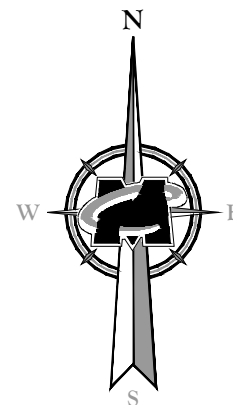
email: solutions@maserconsulting.com

SHEET TITLE :

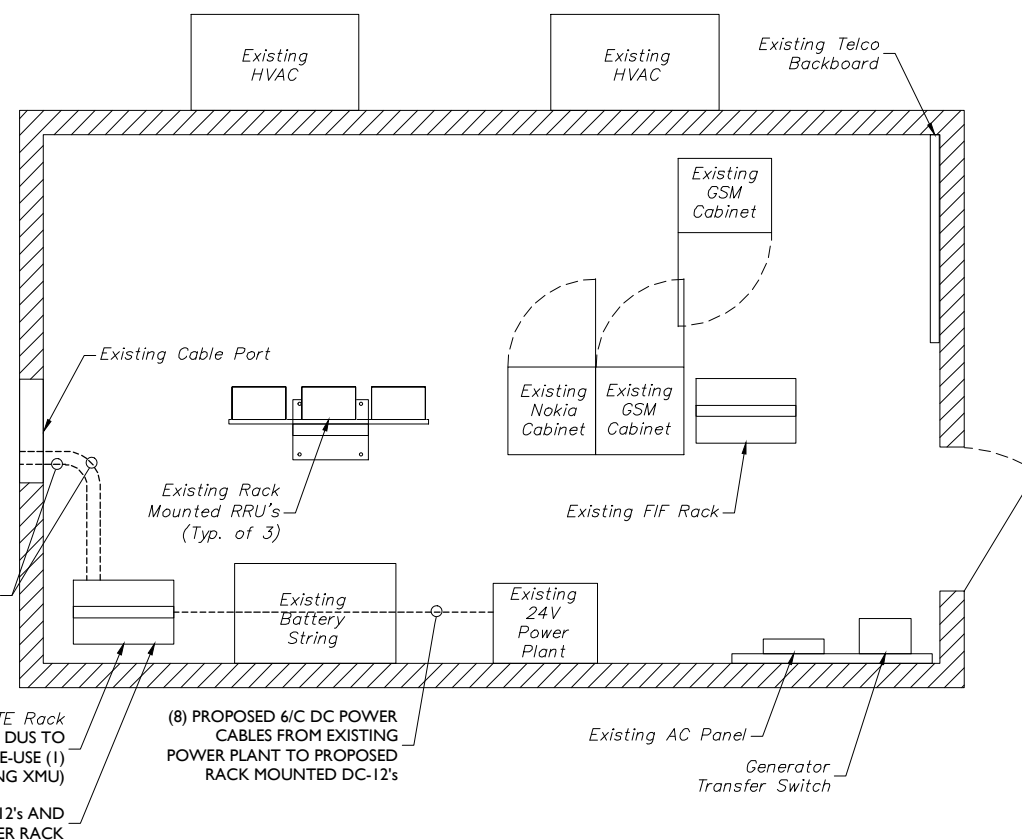
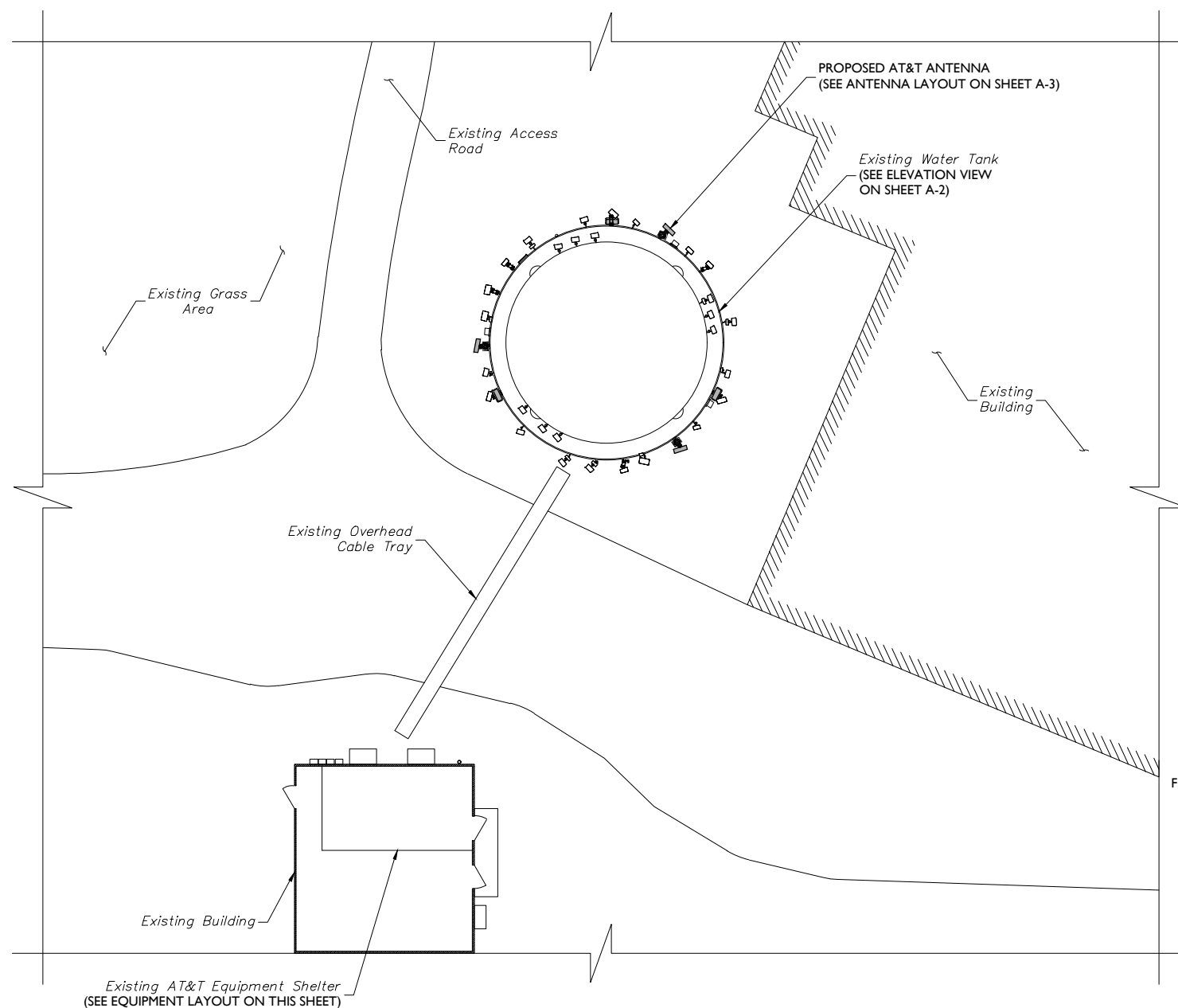
GENERAL NOTES

SHEET NUMBER.

GN-I

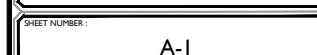


- A. PLAN ENTITLED "TALCOTTVILLE" PREPARED BY COM-EX CONSULTANTS, LAST REVISED 05/27/16.
- B. MOUNT MAPPING PREPARE BY TOWER ENGINEERING PROFESSIONALS, FIELD VISIT ON 02/21/2018.
- C. LIMITED FIELD OBSERVATION BY MASER CONSULTING P.A. ON 09/20/17.

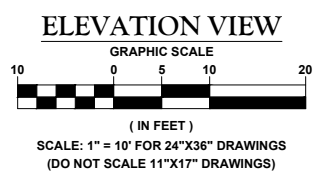
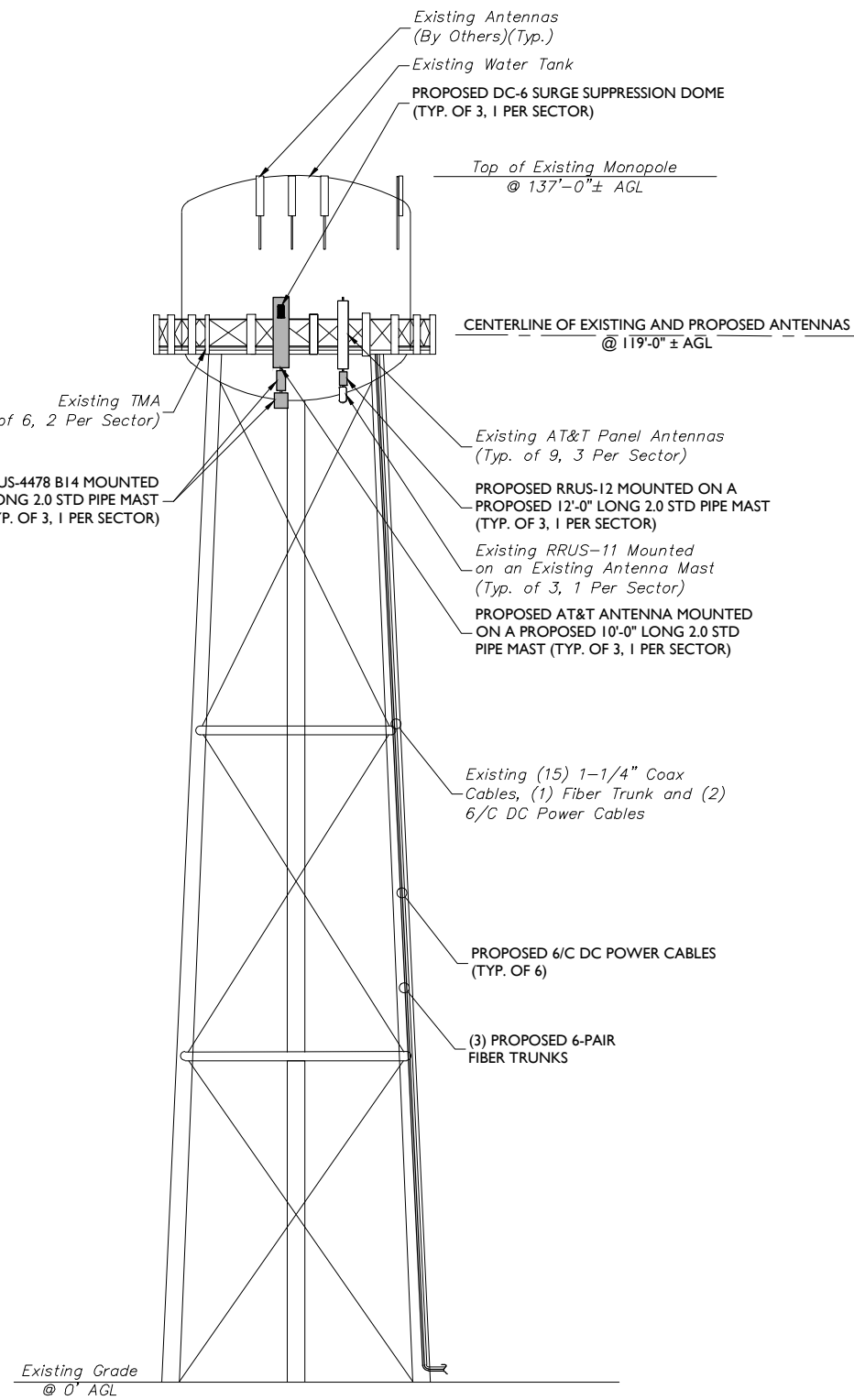


(IN FEET)
SCALE: 1" = 10' FOR 24"X36" DRAWINGS
(DO NOT SCALE 11"X17" DRAWINGS)

(IN FEET)
SCALE: 1" = 2' FOR 24"X36" DRAWINGS
(DO NOT SCALE 11"X17" DRAWINGS)



3 FEET MINIMUM SEPARATION BETWEEN LTE ANTENNAS
6 FEET MINIMUM SEPARATION BETWEEN 700BC & 700 DE



PROPOSED ANTENNA AND RRUS CONFIGURATION															
SECTOR	EXISTING ANTENNA CONFIGURATION	PROPOSED ANTENNA CONFIGURATION	TECHNOLOGY	ANTENNA STATUS	HEIGHT (in)	WIDTH (in)	DEPTH (in)	WEIGHT (lbs)	ANTENNA AZIMUTH	ANT. CL. ELEV (ft.)	RRUS/TMA CONFIGURATION	STATUS	FEEDER COUNT	FEEDER TYPE	STATUS
ALPHA	A1	CCI HPA-65R-BUU-H8	LTE	RELOCATED	92.40	14.80	7.40	68.00	43°	119'	(2) RRUS-12 (1) RRUS-11	NEW REMAIN			REMAIN
	A2	Kathrein 80010121	UMTS	REMAIN	54.50	10.30	5.90	44.10	163°	119'	(1) DTMABP7819VG12A (1) LGP 12104 TMA	REMAIN REMAIN	2	1-1/4" COAX	REMAIN
	A3	CCI HPA-65R-BUU-H8	LTE	NEW	96.00	21.00	6.30	86.00	43°	119'	(1) RRUS-B14 4478 (1) RRUS-32	NEW NEW	1 1 2/1	FIBER DC DC/FIBER	REMAIN REMAIN NEW
	A4	KMW AM-X-CD-16-65-00T-RET	-	REMAIN	72.00	11.80	5.90	48.50	163°	119'	(1) DTMABP7819VG12A	REMAIN	2	1-1/4" COAX	
BETA	B1	CCI HPA-65R-BUU-H6	LTE	RELOCATED	72.00	14.80	9.00	50.70	163°	119'	(2) RRUS-12 (1) RRUS-11	NEW REMAIN			REMAIN
	B2	Kathrein 80010121	UMTS	REMAIN	54.50	10.30	5.90	44.10	283°	119'	(1) DTMABP7819VG12A (1) LGP 12104 TMA	REMAIN REMAIN	2	1-1/4" COAX	
	B3	CCI HPA-65R-BUU-H6	LTE	REMAIN	73.00	21.00	6.30	72.80	163°	119'	(1) RRUS-B14 4478 (1) RRUS-32	NEW NEW	1 1 2/1	FIBER DC DC/FIBER	REMAIN REMAIN NEW
	B4	KMW AM-X-CD-16-65-00T-RET	-	REMAIN	72.00	11.80	5.90	48.50	283°	119'	(1) DTMABP7819VG12A	REMAIN	2	1-1/4" COAX	
GAMMA	C1	CCI HPA-65R-BUU-H6	LTE	RELOCATED	72.00	14.80	9.00	50.70	283°	119'	(2) RRUS-12 (1) RRUS-11	NEW REMAIN		1-1/4" COAX	REMAIN
	C2	Kathrein 80010121	UMTS	REMAIN	54.50	10.30	5.90	44.10	43°	119'	(1) DTMABP7819VG12A (1) LGP 12104 TMA	REMAIN REMAIN	2	FIBER	
	C3	CCI HPA-65R-BUU-H8	LTE	REMAIN	73.00	21.00	6.30	72.80	283°	119'	(1) RRUS-B14 4478 (1) RRUS-32	NEW NEW	1 1 2/1	FIBER DC DC/FIBER	REMAIN REMAIN NEW
	C4	Andrew SBNH-1D6565C	-	REMAIN	72.00	11.80	5.90	48.50	43°	119'	(1) DTMABP7819VG12A	REMAIN	2	1-1/4" COAX	

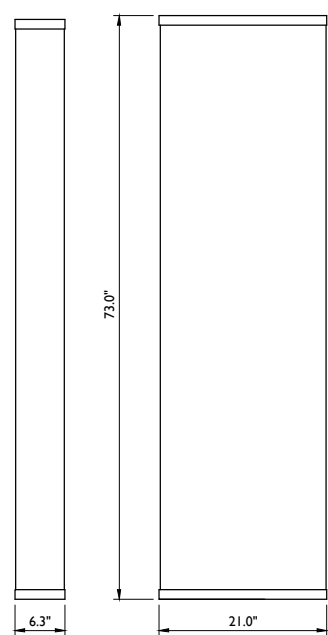
ANTENNA SCHEDULE

NOTE:

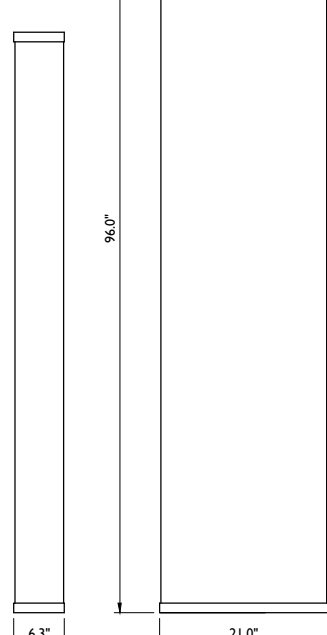
I. ALL PIPE MOUNTED RRUS MUST BE A MINIMUM OF 8" FROM BACK OF PANEL ANTENNAS

NOTE:

FOR PIPE CONNECTION TO HANDRAIL AND KICK PLATE, SEE LINDAPTOR DETAILS ON SHEET A-4

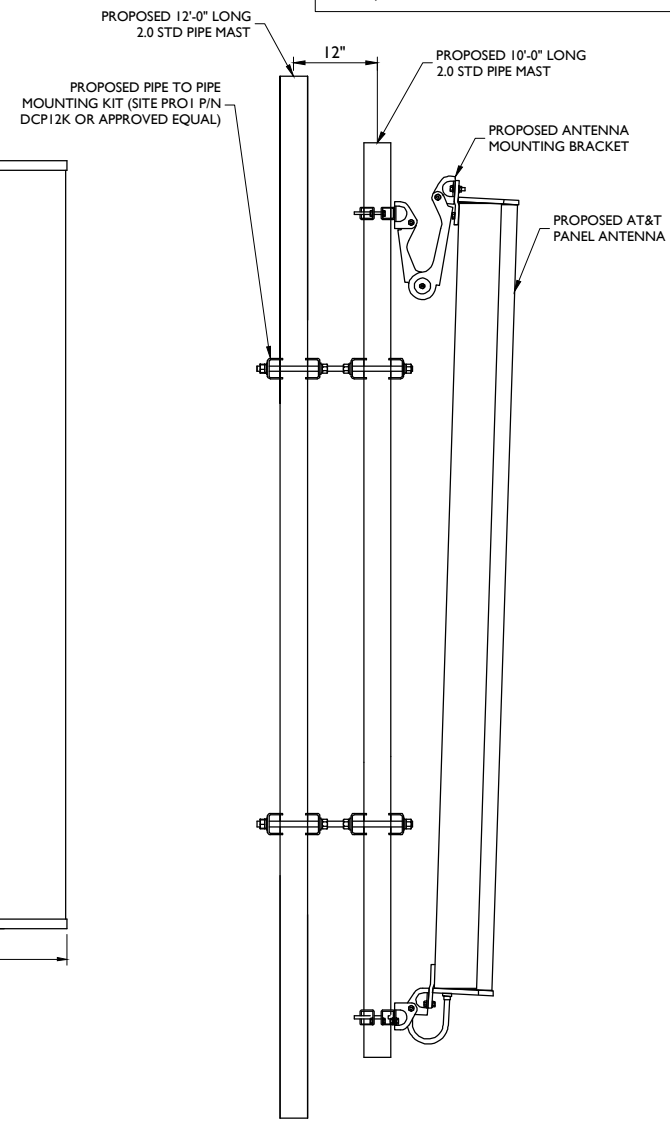


WEIGHT = 72.8 LBS
EPBQ-654L8H6-L2



WEIGHT = 86 LBS
EPBQ-654L8H8-L2

ANTENNA DETAILS
NOT TO SCALE



NEW ANTENNA MOUNT DETAIL
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550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

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

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SCALE:	AS SHOWN	JOB NUMBER:	17946061A
REV	DATE	DESCRIPTION	BY
5	09/04/18	REVISED PER COMMENTS	AJC RA
4	08/06/18	REVISED PER COMMENTS	AJC RA
3	07/03/18	REVISED PER COMMENTS	AJC RA
2	02/19/18	REVISED PER COMMENTS	AJC RA
1	01/11/18	FOR CONSTRUCTION	AJC PET
0	11/21/17	MSG	PET

PETROS TSOUKALAS
CONNECTICUT PROFESSIONAL
ENGINEER - LICENSE NUMBER: PEN 9257

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SITE NAME:

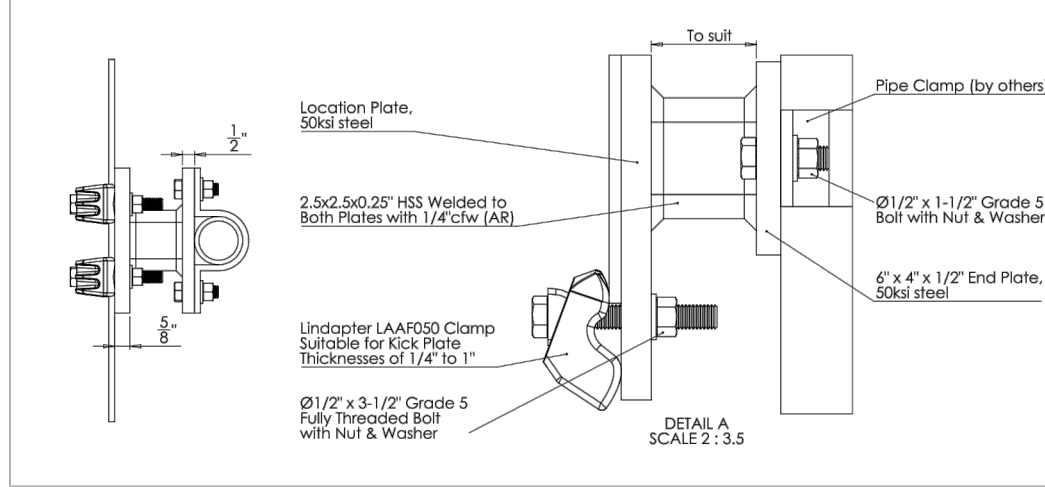
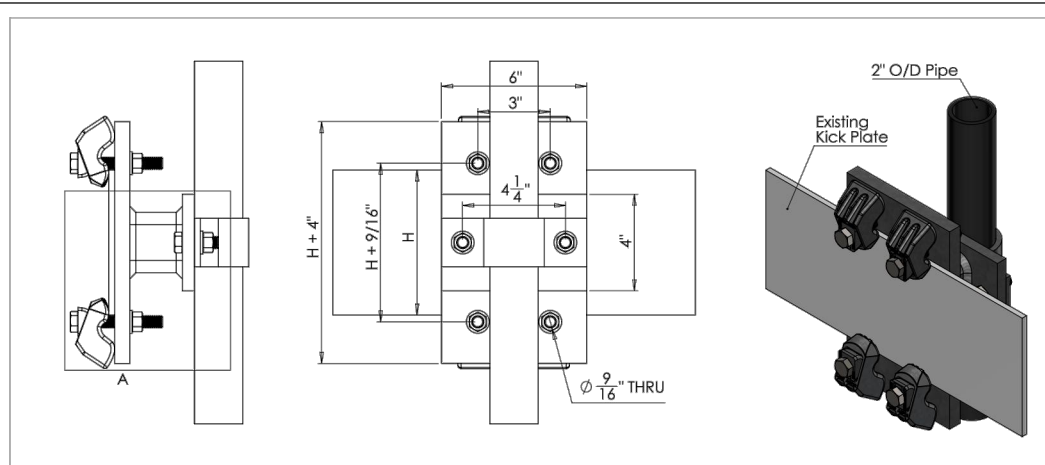
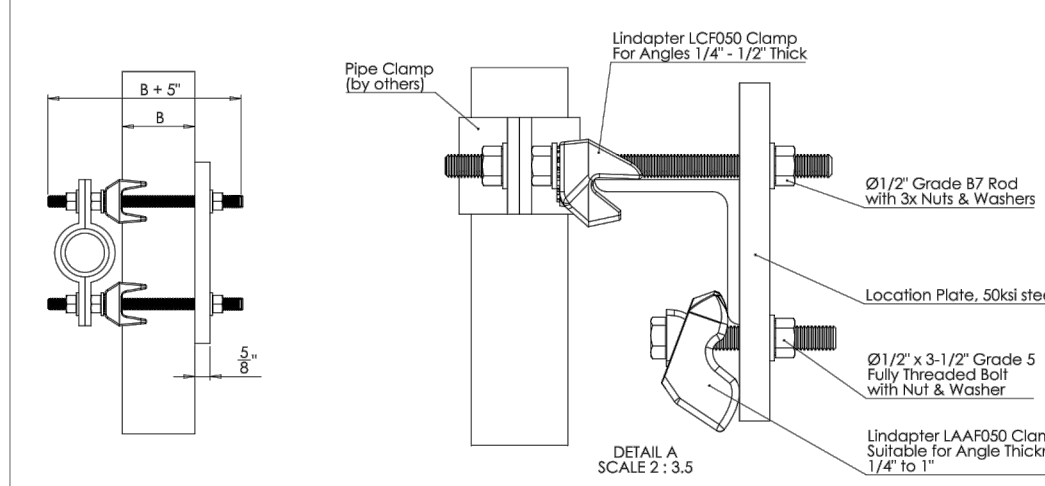
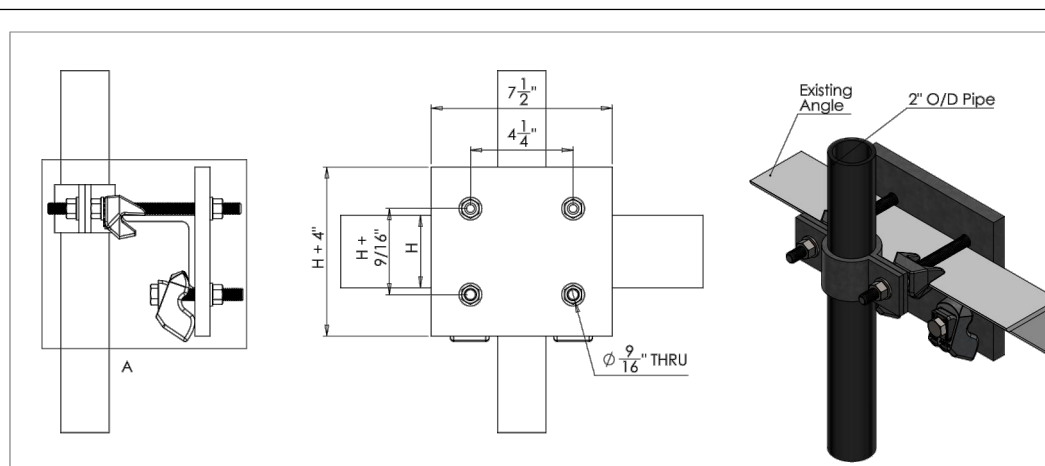
TALCOTTVILLE
FA# 10035090
SITE # CTL01093
47 MAIN STREET
VERNON, CT 06066
TOLLAND COUNTY

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

W:\Projects\03171794600A1794601\03171794600A1794601.ctb CT010093 REV 2.dwg 11/21/17 By: RANDREVS



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DIMENSIONS ARE IN INCHES
TOLERANCES:
ANGULAR: ± 0.5°
MATERIAL COATINGS TO BE SPECIFIED BY THE ENGINEER

Assembly Data:

Static Tensile SWL =	7644 lbs	Factor of Safety:	4.5 : 1
Static Slip Resistance SWL =	1528 lbs	Factor of Safety:	2 : 1
Lindapter Fastener Tightening Torque =	66 ft-lb		

For combined loadings the current relevant national standard should be taken into consideration

UCC STEELWORK CONNECTIONS INC.
www.ucci.ca info@ucci.ca
800-308-1043

lindapter
ACCEPT NO SUBSTITUTE
www.lindapterusa.com

DATE: 19-MAY-2017
SCALE: NOT TO SCALE
SW11247-AR

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DIMENSIONS ARE IN INCHES
TOLERANCES:
ANGULAR: ± 0.5°
MATERIAL COATINGS TO BE SPECIFIED BY THE ENGINEER

Assembly Data:

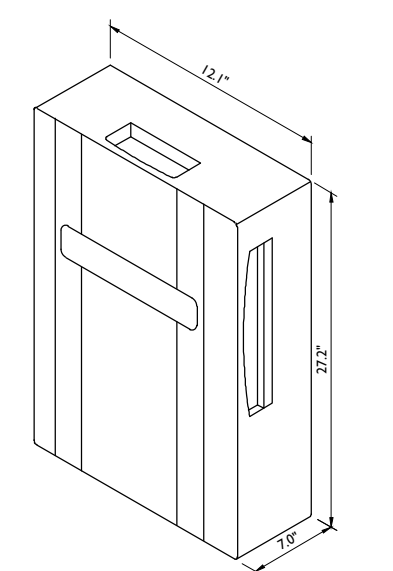
Static Tensile SWL =	7644 lbs	Factor of Safety:	4.5 : 1
Static Slip Resistance SWL =	1528 lbs	Factor of Safety:	2 : 1
Lindapter Fastener Tightening Torque =	66 ft-lb		

For combined loadings the current relevant national standard should be taken into consideration

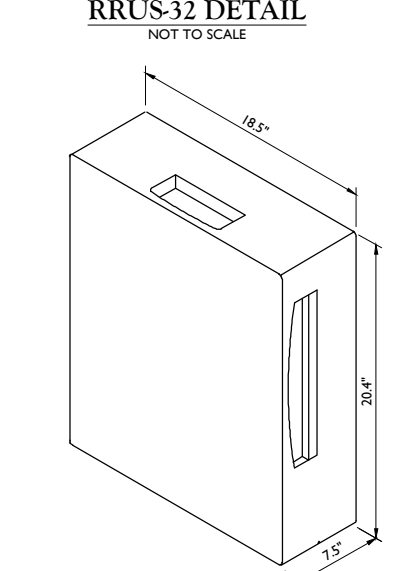
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www.ucci.ca info@ucci.ca
800-308-1043

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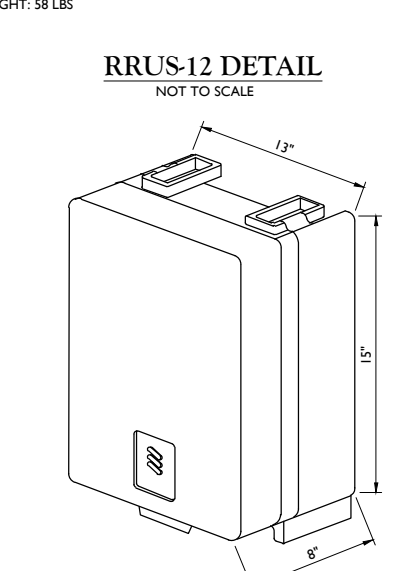
DATE: 11-MAY-2017
SCALE: NOT TO SCALE
SW11248-AR



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

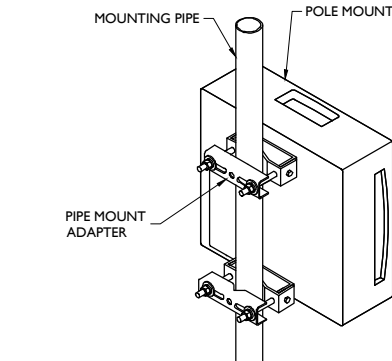


RRUS-12 DIMENSIONS (H X W X D): 20.4" X 18.5" X 7.5" (INCLUDES SUNSHIELD)
WEIGHT: 58 LBS

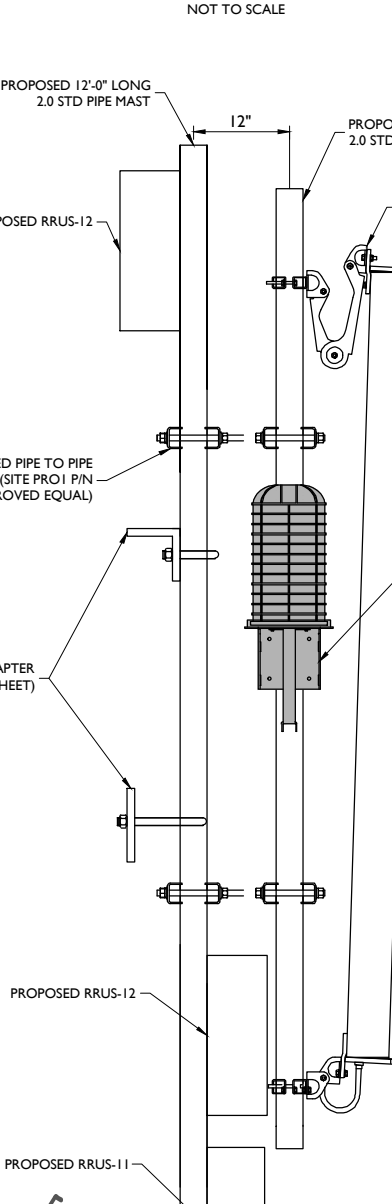


RRUS-12 DETAIL
NOT TO SCALE

RRU-4478-B14 DETAIL
NOT TO SCALE



RRU MOUNTING DETAIL
NOT TO SCALE



NEW ANTENNA MOUNT DETAIL
NOT TO SCALE

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at&t

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

smartlink

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

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4	08/06/18	REVISED PER COMMENTS	AJC	RA
3	07/03/18	REVISED PER COMMENTS	AJC	RA
2	02/19/18	REVISED PER COMMENTS	AJC	RA
1	01/11/18	FOR CONSTRUCTION	AJC	PET
0	11/21/17		MSG	PET
REV	DATE	DESCRIPTION	BY	CHECKED BY

PETROS T. SOUKALAS
CONNECTICUT PROFESSIONAL ENGINEER - LICENSE NUMBER: PEN-9257

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SITE NAME:

TALCOTTVILLE
FA# 10035090
SITE # CTL01093
47 MAIN STREET
VERNON, CT 06066
TOLLAND 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

DETAILS

A-4

By: RANDREWS



RAYCAP VIA AT&T SUPPLIES THE DC6 OVER VOLTAGE PROTECTOR AND PIPE MOUNTING BRACKETS. SUBCONTRACTOR SHALL SUPPLY THE PIPE.

NOT TO SCALE

NOTE:

REMOVE CABLE SEALING GLAND AND INSTALL M32x1.5 METRIC-TO-1" NPT ADAPTER (COOPER CROUSE-HINES P/N CAP 740 994 OR EQUIVALENT MFR) WHEN CONNECTING CONDUIT TO OVP.

SHEET TITLE :	DETAILS
SHEET NUMBER :	A-5



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550 COCHITUATE ROAD
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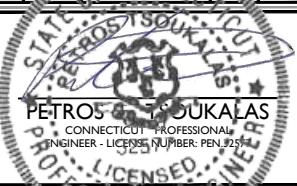


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SCALE:		JOB NUMBER:		
AS SHOWN		17946061A		
5	09/04/18	REVISED PER COMMENTS	AJC	RA
4	08/06/18	REVISED PER COMMENTS	AJC	RA
3	07/03/18	REVISED PER COMMENTS	AJC	RA
2	02/19/18	REVISED PER COMMENTS	AJC	RA
1	01/11/18	FOR CONSTRUCTION	AJC	PET
0	11/21/17	MSG	MSG	PET
REV	DATE	DESCRIPTION	APPROVED BY	CHECKED BY



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SITE NAME:

TALCOTTVILLE
FA# 10035090
SITE # CTL01093
47 MAIN STREET
VERNON, CT 06066
TOLLAND COUNTY

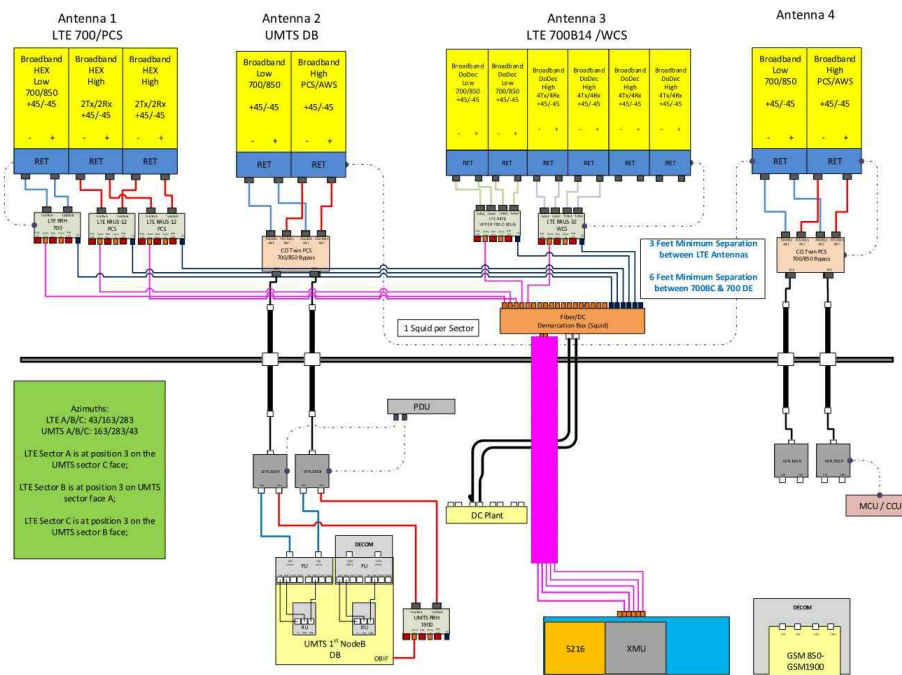


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Phone: 732.383.1950
Fax: 732.383.1984
email: solutions@maserconsulting.com

SHEET TITLE:
RF PLUMBING DIAGRAMS

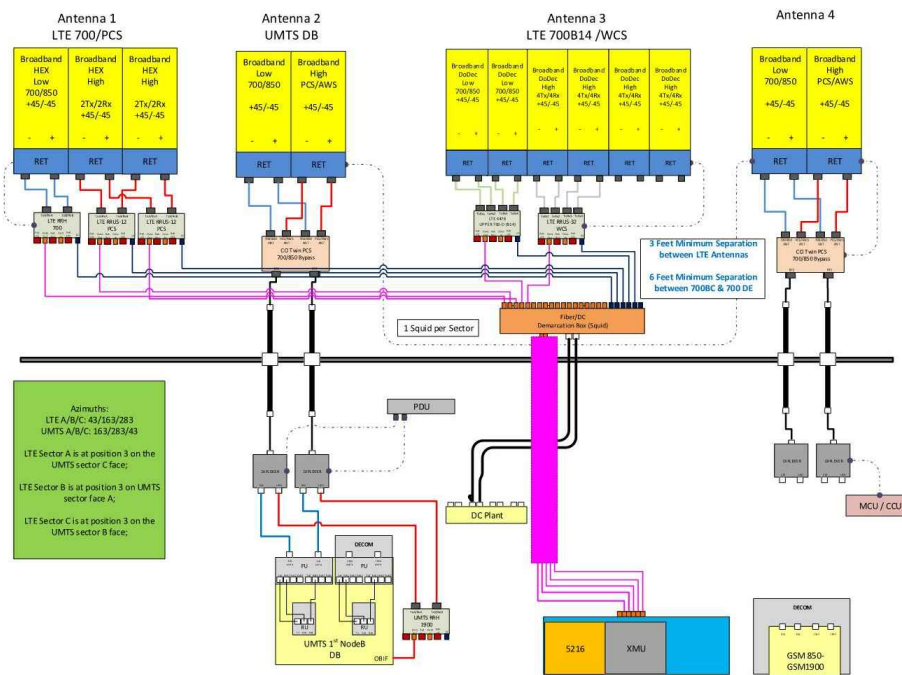
SHEET NUMBER:
A-6

Diagram - Sector A
Atoll Site Name - CTL01093
Location Name - TALCOTTVILLE
Market - CONNECTICUT
Market Cluster - NEW ENGLAND
Comments: "Important Note: For detailed radio to antenna wiring refer to the latest 4T4R Antenna/ radio Port connections Field Notice (RF-HW-2016-265) UMTS ALPHA 163 MOUNTED WITH LTE BETA 163UMTS BETA 283 MOUNTED WITH LTE GAMMA 283UMTS GAMMA 43 MOUNTED WITH"



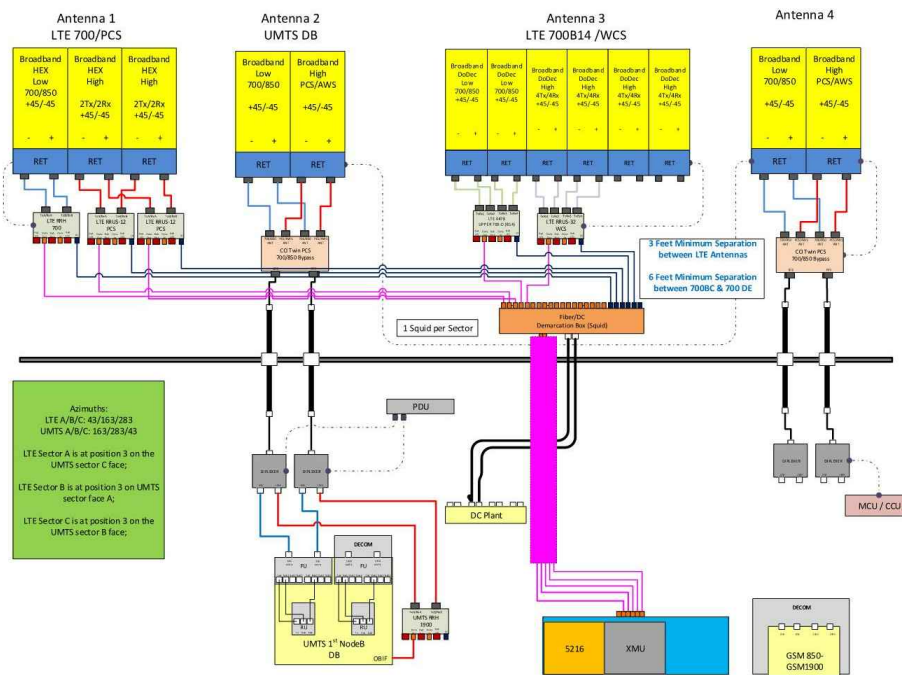
ALPHA SECTOR

Diagram - Sector B
Atoll Site Name - CTL01093
Location Name - TALCOTTVILLE
Market - CONNECTICUT
Market Cluster - NEW ENGLAND
Comments: "Important Note: For detailed radio to antenna wiring refer to the latest 4T4R Antenna/ radio Port connections Field Notice (RF-HW-2016-265) UMTS ALPHA 163 MOUNTED WITH LTE BETA 163UMTS BETA 283 MOUNTED WITH LTE GAMMA 283UMTS GAMMA 43 MOUNTED WITH"



BETA SECTOR

Diagram - Sector C
Atoll Site Name - CTL01093
Location Name - TALCOTTVILLE
Market - CONNECTICUT
Market Cluster - NEW ENGLAND
Comments: "Important Note: For detailed radio to antenna wiring refer to the latest 4T4R Antenna/ radio Port connections Field Notice (RF-HW-2016-265) UMTS ALPHA 163 MOUNTED WITH LTE BETA 163UMTS BETA 283 MOUNTED WITH LTE GAMMA 283UMTS GAMMA 43 MOUNTED WITH"



GAMMA SECTOR

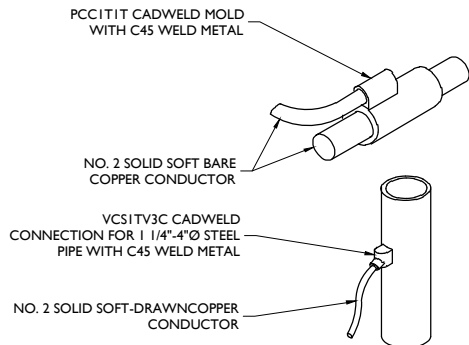
BASED ON: RF ENGINEERING DESIGN ENTITLED "NEW-ENGLAND_CONNECTICUT_CTL01093_2018-LTE-Next-Carrier_LTE_rx855w_2051A0CZQS_10035090_59373_06-13-2017_Final-Approved_v3.00", LAST UPDATED 01/16/2018.

RF PLUMBING DIAGRAMS

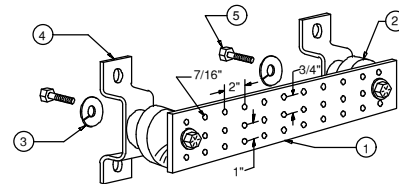
By: RANDREWS

W:\Projects\2017\17946061A\17946061A_Connecticut.ctb; CT01093_REV_2.dwg; 4

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LEGEND

- 1- TINNED COPPER GROUND BAR, 1/4"x4"x20", NEWTON INSTRUMENT CO. CAT. NO. 8-6142 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.

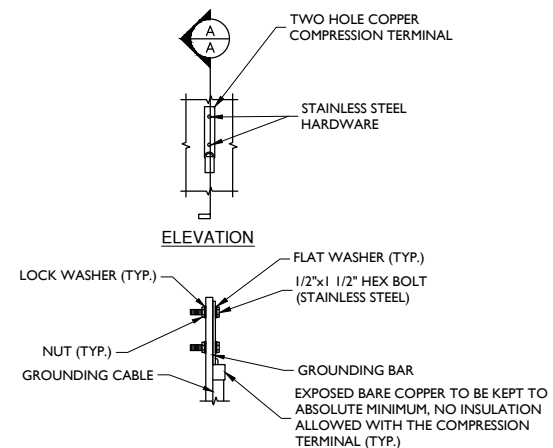
SECTION "P" - SURGE PRODUCERS

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)

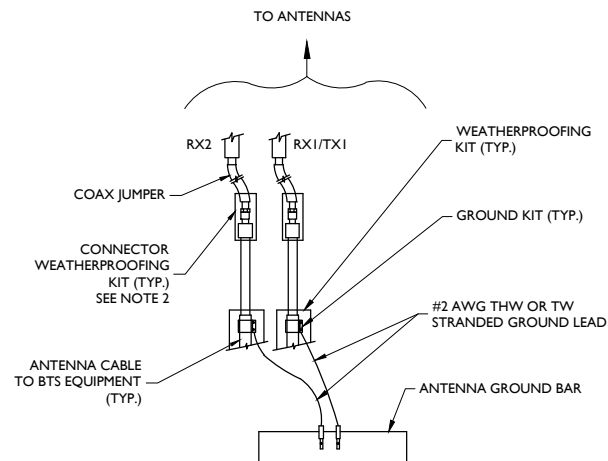
NOT TO SCALE



SECTION A-A

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