EM-CING-019-121025

New Cingular Wireless PCS, LLC
500 Enterprise Drive
Rocky Hill, Connecticut 06067

John Lawrence
Real Estate Consultant
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Phone: (781) 715-5532
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ORIGINAL

October 23, 2012

RECEIVED
OCT 25 2012
CONNECTICUT
SITING COUNCIL

Honorable Robert Stein, Chairman,
and Members of the Connecticut Siting Council
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Re: Notice of Exempt Modification – Existing Telecommunications Facility at 50 Tiffany Street, Brooklyn, CT 06239

Dear Chairman Stein and Members of the Council:

New Cingular Wireless PCS, LLC ("AT&T") intends to modify the existing telecommunications antennas and associated equipment at an existing multicarrier telecommunications tower at 50 Tiffany Street, Brooklyn CT. AT&T operates under licenses issued by the Federal Communications Commission ("FCC") to provide cellular and PCS mobile telephone service in Windham County, which includes the area to be served by AT&T's proposed installation.

In order to accommodate technological changes, implement Long Term Evolution ("LTE") capabilities, and enhance system performance in the State of Connecticut, New Cingular Wireless PCS, LLC ("AT&T") plans to modify the equipment configurations at many of its existing cell sites. LTE is a new high-performance air interface for cellular mobile communications. It is designed to increase the capacity and speed of mobile telephone networks.

Please accept this letter as notification to the Council, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter is being sent to Austin Tanner, First Selectman

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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.

Existing Facility

The Brooklyn facility is located at 50 Tiffany Street, Brooklyn CT 06239

The facility is owned by Mark Yellin.

The existing facility consists of a 130 foot water tank with an existing chain link fence around the tower compound fenced in compound. AT&T currently operates wireless communications equipment at the facility and has six (6) antennas mounted at the tower centerline height of 130'.

Statutory Considerations

The changes to the Brooklyn tower facility do not constitute a modification as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed or altered. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2) because they will not result in any substantial adverse environmental effect.

1. The height of the overall structure will be unaffected.

2. The proposed changes will not affect the property boundaries. All new construction will take place inside the existing fenced compound.

3. The proposed additions will not increase the noise level at the existing facility by six decibels or more.

4. LTE will utilize additional radio frequencies newly licensed by the FCC for cellular mobile communications. However, the changes will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site.

For the foregoing reasons, New Cingular Wireless respectfully submits that the proposed changes at the referenced site constitute exempt modifications under R.C.S.A Section §16-50j-72(b)(2).

Respectfully yours,

John Lawrence
Real Estate Consultant
Enclosures:
Austin Tanner, First Selectman, Town of Brooklyn

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October 23, 2012

Austin Tanner, First Selectman
Town of Brooklyn
4 Wolf Den Road
Brooklyn, CT 06234

Re: Notice of Exempt Modification – Existing Telecommunications Facility at 50 Tiffany Street, Brooklyn, CT 06239

Dear Mr. Tanner,

New Cingular Wireless PCS, LLC ("AT&T") intends to replace telecommunications antennas and associated equipment at an existing telecommunications tower, owned and operated by Mark Yellin.

A Notice of Exempt Modification has been filed with the Connecticut Siting Council as required by Regulations of Connecticut State Agencies ("R.C.S.A.") Section 16-50j-73. Please accept this letter as notification to the Town of Brooklyn under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

The attached letter fully sets forth the AT&T proposal. However, if you have any questions or require any further information on the plans for the site or the Siting Council's procedures, please contact John Lawrence at (781) 715-5532 or Linda Roberts, Executive Director of the Connecticut Siting Council, at (860) 827-2935.

Sincerely,

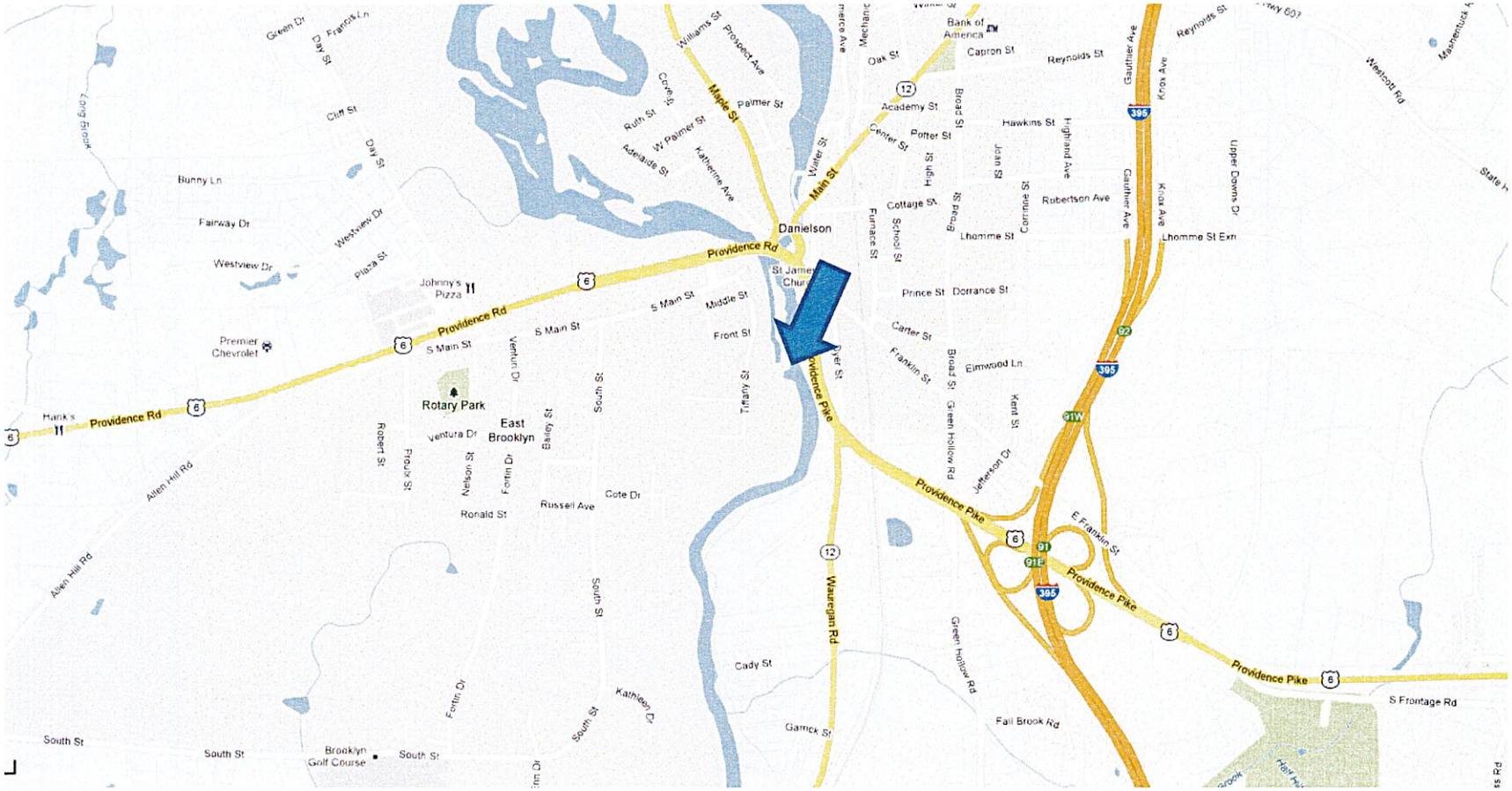
John Lawrence
Real Estate Consultant

Enclosure
CC: Honorable Robert Stein, Chairmen of the Connecticut Siting Council

CT2139

Aerial Location Map

Street Location Map



C Squared Systems, LLC
65 Dartmouth Drive, Unit A3
Auburn, NH 03032
(603) 644-2800
support@csquaredsystems.com

Calculated Radio Frequency Emissions

CT2139

(Brooklyn Water Tank)

50 Tiffany Street, Brooklyn, CT 06234

September 25, 2012

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List of Figures

1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed modifications to the existing AT&T antenna arrays mounted on the water tank located at 50 Tiffany Street in Brooklyn, CT. The coordinates of the tank are 41° 47' 50.7" N, 71° 53' 11.8" W.

AT&T is proposing the following modifications:

1) Install three multi-band (700/850/1900/2100 MHz) antennas for their LTE network (one per sector).

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm^2). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment B of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment B contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

3. RF Exposure Prediction Methods

The emission field calculation results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{Power Density} = \left(\frac{1.6^2 \times EIRP}{4\pi \times R^2} \right) \text{x Off Beam Loss}$$

Where:

EIRP = Effective Isotropic Radiated Power

R = Radial Distance = $\sqrt{(H^2 + V^2)}$

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Ground reflection factor of 1.6

Off Beam Loss is determined by the selected antenna pattern

These calculations assume that the antennas are operating at 100 percent capacity and power, and that all channels are transmitting simultaneously. Obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. The calculations assume even terrain in the area of study and do not take into account actual terrain elevations which could attenuate the signal. As a result, the predicted signal levels reported below are much higher than the actual signal levels will be from the finished modifications.

4. Calculation Results

Table 1 below outlines the power density information for the site. Because the proposed AT&T antennas are directional in nature, the majority of the RF power is focused out towards the horizon. As a result, there will be less RF power directed below the antennas relative to the horizon, and consequently lower power density levels around the base of the tank. Please refer to Attachment C for the vertical patterns of the proposed AT&T antennas. The calculated results for AT&T in Table 1 include a nominal 10 dB off-beam pattern loss to account for the lower relative gain below the antennas.

Carrier	Antenna Height (Feet)	Operating Frequency (MHz)	Number of Trans.	ERP Per Transmitter (Watts)	Power Density (mw/cm^2)	Limit	%MPE
Cingular UMTS	131	880	1	506	0.0105	0.5867	1.79%
Cingular GSM	131	880	4	296	0.0248	0.5867	4.23%
Cingular GSM	131	1900	2	427	0.0179	1.0000	1.79%
Sprint iDEN	125	851	12	100	0.0276	0.5673	4.87%
T-Mobile	130	1935	8	120	0.0204	1.0000	2.04%
AT&T UMTS	135	880	2	565	0.0022	0.5867	0.38%
AT&T UMTS	135	1900	2	875	0.0035	1.0000	0.35%
AT&T LTE	135	734	1	1771	0.0035	0.4893	0.71%
AT&T GSM	135	880	1	283	0.0006	0.5867	0.10%
AT&T GSM	135	1900	4	525	0.0041	1.0000	0.41%
						Total	8.86%

Table 1: Carrier Information[1] [2] [3]

[1] The existing CSC filing for Cingular should be removed and replaced with the updated AT&T technologies and values provided in Table 1. The power density information for carriers other than AT&T was taken directly from the CSC database dated 7/26/2012. Please note that %MPE values listed are rounded to two decimal points. The total %MPE listed is a summation of each unrounded contribution. Therefore, summing each rounded value may not reflect the total value listed in the table.

[2] In the case where antenna models are not uniform across all 3 sectors for the same frequency band, the antenna model with the highest gain was used for the calculations to present a worse-case scenario.

[3] Antenna height listed for AT&T is in reference to the Hudson Design Group Structural Analysis dated August 22, 2012.

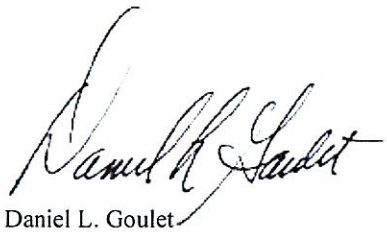
5. Conclusion

The above analysis verifies that emissions from the existing site will be below the maximum power density levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Even when using conservative methods, the cumulative power density from the proposed transmit antennas at the existing facility is well below the limits for the general public. The highest expected percent of Maximum Permissible Exposure at ground level is **8.86% of the FCC limit**.

As noted previously, obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. As a result, the predicted signal levels are more conservative (higher) than the actual signal levels will be from the finished modifications.

6. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in ANSI/IEEE Std. C95.3, ANSI/IEEE Std. C95.1 and FCC OET Bulletin 65 Edition 97-01.



Daniel L. Goulet
C Squared Systems, LLC

September 25, 2012
Date

Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

ANSI C95.1-1982, American National Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz. IEEE-SA Standards Board

IEEE Std C95.3-1991 (Reaff 1997), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave. IEEE-SA Standards Board

Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure[4]

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (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

(B) Limits for General Population/Uncontrolled Exposure[5]

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (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

Table 2: FCC Limits for Maximum Permissible Exposure (MPE)

[4] Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

[5] General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

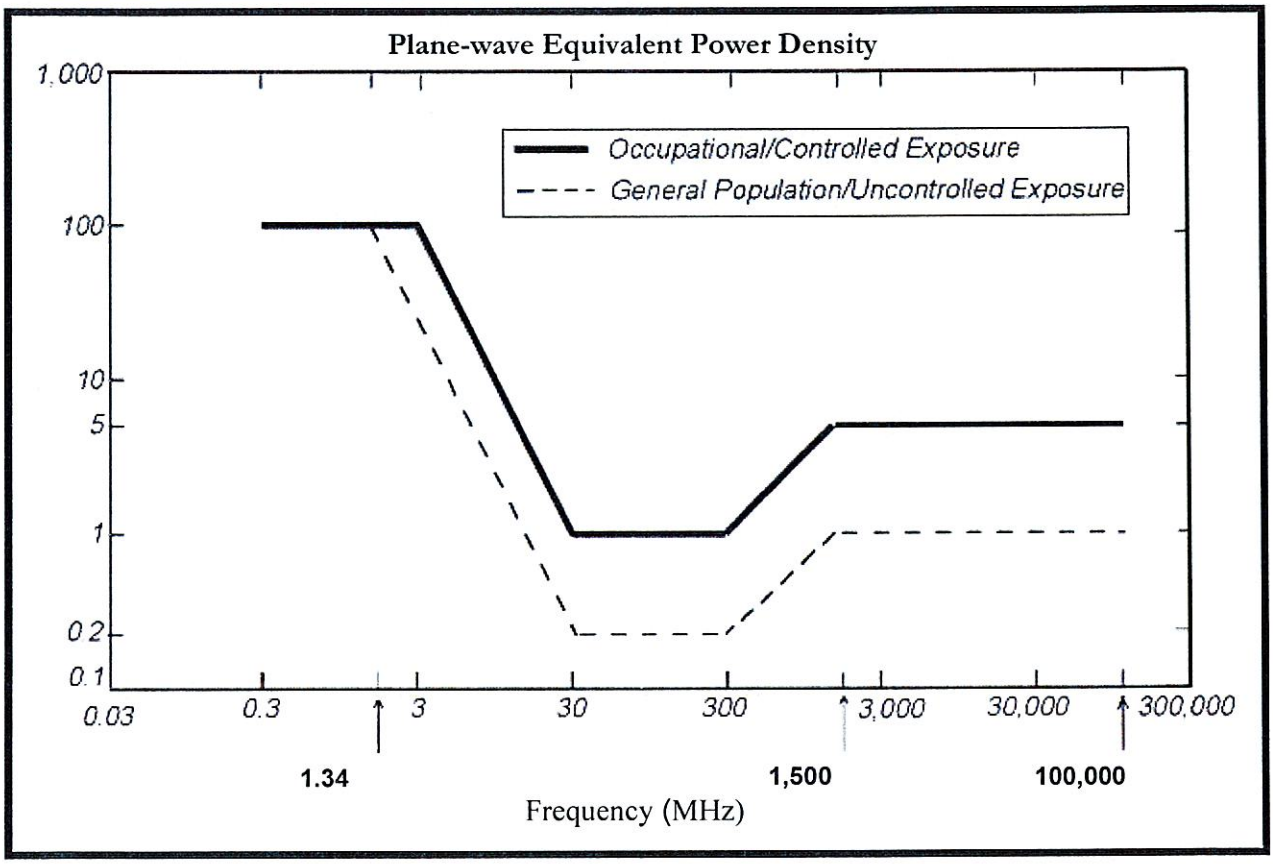
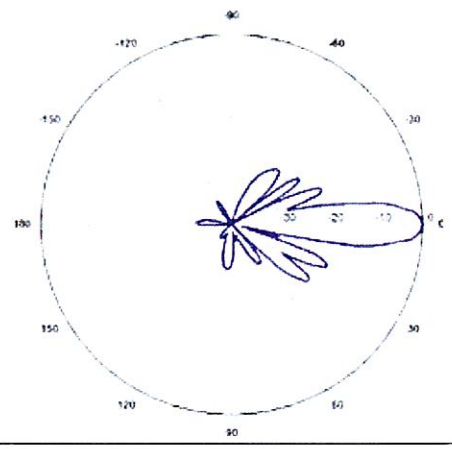
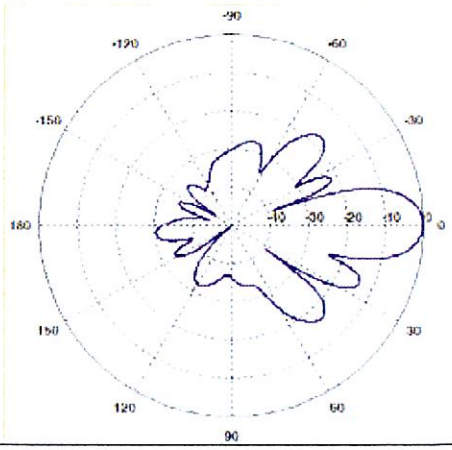
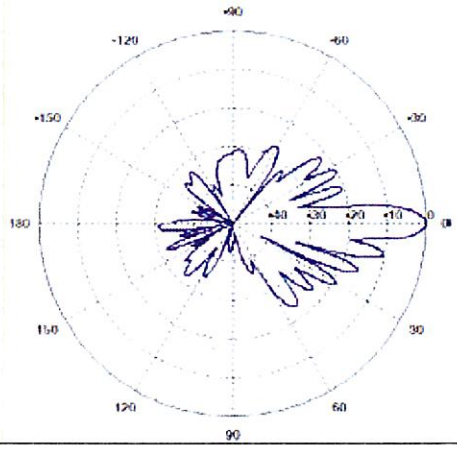


Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

Attachment C: AT&T Antenna Data Sheets and Electrical Patterns

700 MHz Manufacturer: KMW Model #: AM-X-CD-17-65-00T-RET Frequency Band: 698-806 MHz Gain: 14.7 dBd Vertical Beamwidth: 10° Horizontal Beamwidth: 66° Polarization: Dual Slant ± 45° Size L x W x D: 96.0" x 11.8" x 6.0"	
850 MHz Manufacturer: Powerwave Model #: 7770.00 Frequency Band: 824-896 MHz Gain: 11.5 dBd Vertical Beamwidth: 15° Horizontal Beamwidth: 82° Polarization: Dual Linear ± 45° Size L x W x D: 55.0" x 11.0" x 5.0"	
1900 MHz Manufacturer: Powerwave Model #: 7770.00 Frequency Band: 1850-1990 MHz Gain: 13.4 dBd Vertical Beamwidth: 7° Horizontal Beamwidth: 86° Polarization: Dual Linear ± 45° Size L x W x D: 55.0" x 11.0" x 5.0"	

STRUCTURAL ANALYSIS REPORT

For

CT 2139 (LTE)
BROOKLIN WATER TANK
50 Tiffany Street
Brooklyn, Connecticut 06239

Antennas Mounted on Top of the Existing Water Tank: Equipment Shelter at Ground Level

Prepared for:

NEXLINK GLOBAL SERVICES
a UniTek GLOBAL SERVICES company
800 MARSHALL PHELPS ROAD UNIT#: 2A
WINDSOR, CT 06095

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

Dated: August 22, 2012

Prepared by:

Hudson Design Group LLC
1600 Osgood Street Building 20 North, Suite 2-101
North Andover, MA 01845
Phone: (978) 557-5553
www.hudsondesigngroupllc.com

Hudson Design Group LLC

SCOPE OF WORK:

Hudson Design Group LLC (HDG) has been authorized by AT&T to conduct a structural evaluation of the existing 130'-0"± high water tank supporting the proposed AT&T antennas located at the elevation of 135'-0"± above the ground level.

This report represents this office's findings, conclusions and recommendations' pertaining to the support of AT&T's proposed Equipment.

This office conducted an on-site visual survey of the above areas on May 30, 2012. Attendees included Rob Harris (HDG-Field Technician).

CONCLUSION SUMMARY:

Water tank plans were not available and could not be obtained for our use. A previous structural analysis prepared by HDG dated April 7, 2009 was used for our reference. A limited visual survey of the structure was completed in or near the areas of the Proposed Work.

Based on our evaluation, we have determined that, in general, structural designs to support the proposed AT&T Equipment within or near the Proposed Location can be completed and components installed with **NO STRUCTURAL UPGRADES REQUIRED** to the existing water tank.

A summary of the proposed support types and attachment locations are as follows:

(3) LTE Antennas (AM-X-CD-17-65-00T-RET) (96"x11.8"x56" – Wt. 59.5 lbs. /each) (One per Sector)...Supported by new steel pipes.

(3) Surge Arrestor DC2-48-60-0-9E (1 per sector)...Supported by new steel pipes.

(6) RRH (2 per sector) (Wt. = 50 lbs. /each)...Supported by new/existing steel pipes.

(1) Fiber-Power Connector FC12-PC6-10E...Mounted on the water tank using stud welds.

(1) RBS 6601 Indoor 23" Rack (Wt. 100 lbs.)...Mounted inside the existing equipment shelter.

Referenced documents are attached.

Hudson Design Group LLC

DESIGN CRITERIA:

1. International Building Code with 2005 Connecticut Supplement with 2009 Amendments

   Wind Analysis:

   Approximate water tank height above grade: 130'-0"+/-
   Basic Wind Speed: 105 MPH (includes 3-second gust)
   Exposure: C

   Roof:

   Ground Snow, Pg: 35 psf
   Importance Factor, I: 1.0 (Category II)
   Exposure Factor, Ce: 0.9 (Exposure B- Fully Exposed)
   Thermal Factor, Ct: 1.0
   Calculated Flat Roof Snow Load: 30 psf (Pf=0.7*Ce*Ct*I*Pg)

2. EIA/TIA -222- F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures

   County: Windham
   Wind Load: 85 mph

3. Approximate height above grade to antennas:

   135'-0"+/-

Hudson Design Group LLC

Existing Construction:

The existing structure is a 126'+/- painted steel, four legged water tower with 1 5/8" diameter steel rod bracing on all four sides. The bracing is stacked three panels high with approximately 37'+/- between each panel point. There are horizontal steel channel struts spanning between the four legs on all sides (8 horizontal struts total). The existing water tower appeared to be in fair condition. The tank exhibited a significant amount of surface rust and peeled paint. The bracing connections appeared to be sound with no defects or missing components, however the connections exhibited surface rust as well.

The base foundations (concrete piers) appeared to be in fair to poor condition. One of the four concrete piers had an excessive amount of loose and spauling concrete, where the remaining three piers had minimal spauling at the corners.

HDG recommends that the loose and spauling concrete be removed and repaired with non-shrink structural concrete by FIVE STAR PRODUCTS, INC. or equal. The use of a bonding agent between the old and new concrete is recommended.

HDG recommends that rust removal be performed on the existing tank as well as new paint to maintain its structural integrity.

Antenna / RRH's / Surge Arrestor SUPPORT RECOMMENDATIONS:

The new LTE antennas and Surge Arrestors are proposed to be mounted on new pipe masts, supported by the existing steel tripod mounts welded to the existing structure.

Reference the latest HDG drawings for all the equipment locations and details.

RRH's SUPPORT RECOMMENDATIONS:

The new RRH's are proposed to be mounted on the existing/new pipe masts, supported by the existing steel tripod mounts welded to the existing structure.

EQUIPMENT SUPPORT RECOMMENDATIONS:

HDG recommends that the proposed equipment rack be mounted inside the existing AT&T equipment shelter.

Hudson Design Group LLC

Limitations and assumptions:

1. Reference the latest HDG construction drawings for all the equipment locations details.

2. Mount all equipment per manufacturer's specifications.

3. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.

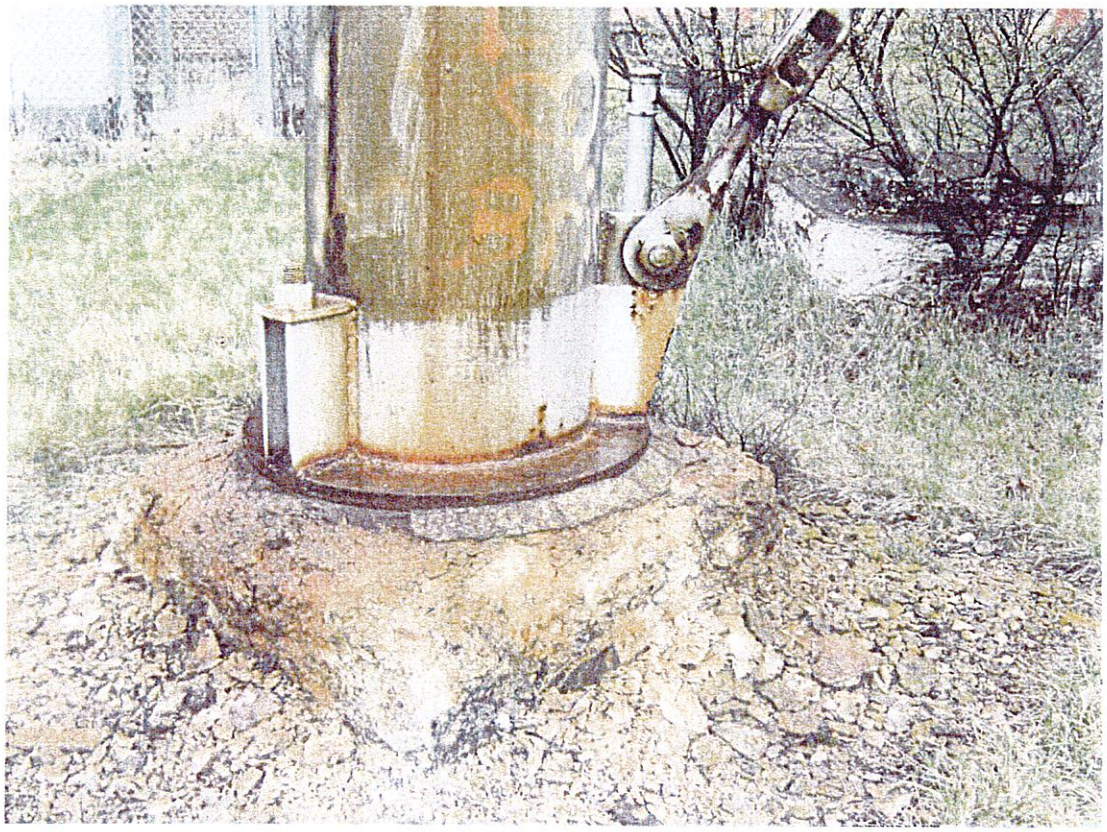
4. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer requirements.

5. HDG is not responsible for any modifications completed prior to and hereafter which HDG was not directly involved.

6. If field conditions differ from what is assumed in this report, then the engineer of record is to be notified as soon as possible.

Hudson Design Group LLC

EXISTING CONDITIONS:



Sample photo of the existing concrete footing illustrating loose and spaling concrete. Reference HDG's recommendations to repair the footing and foundation.

Hudson Design Group LLC

EXISTING EQUIPMENT:

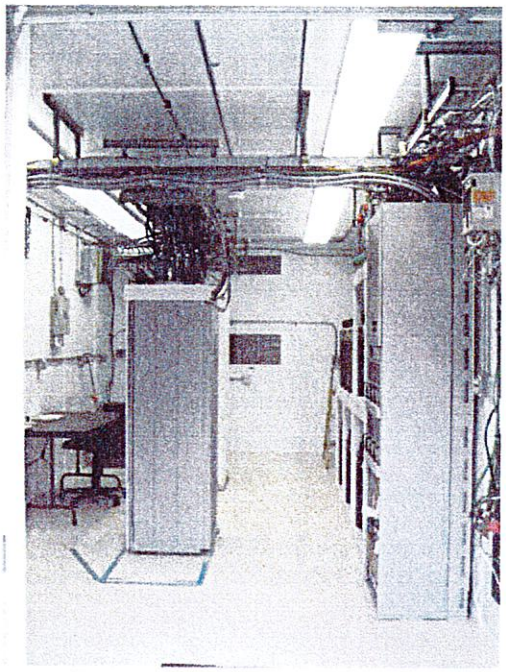


Photo 1: Sample photo illustrating the existing equipment.

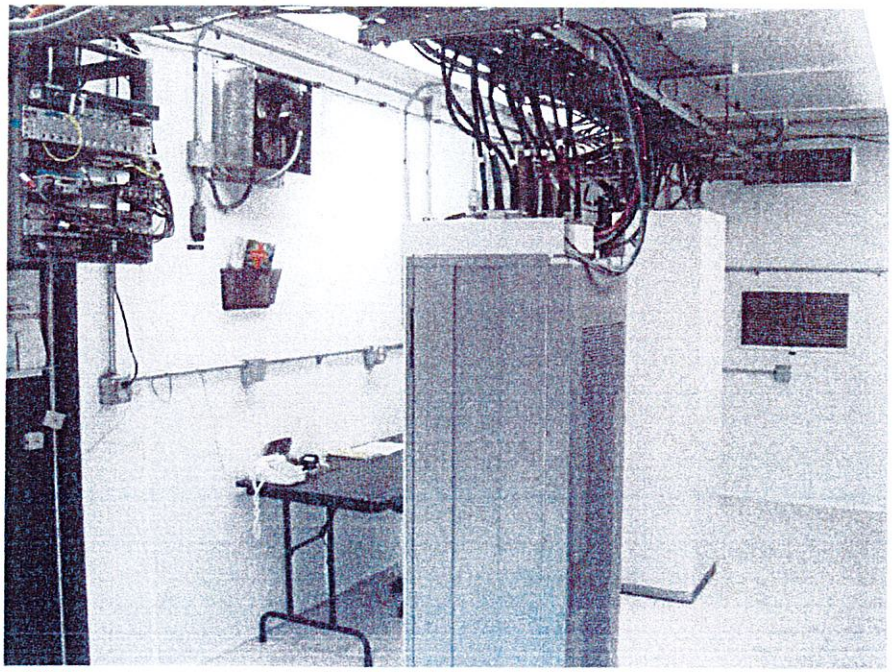


Photo 2: Sample photo illustrating the existing equipment.

Hudson Design Group LLC

EXISTING ANTENNAS:

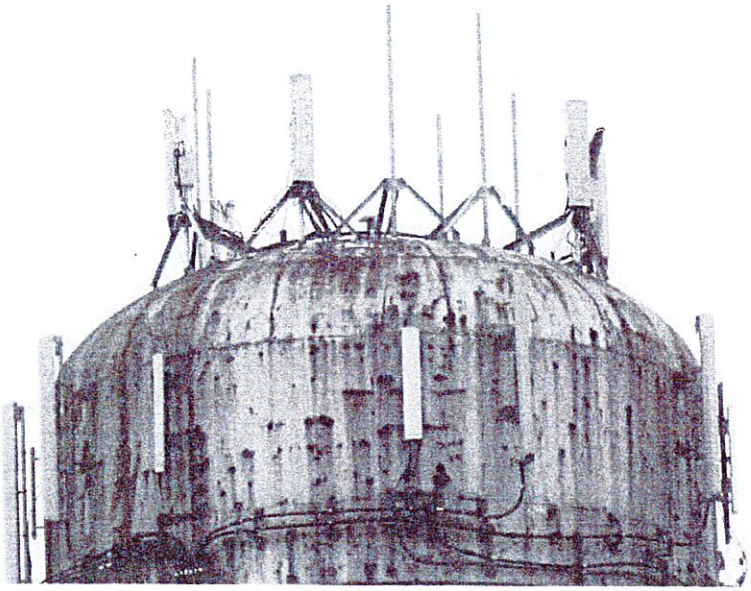


Photo 3: Sample photo illustrating the existing antennas.

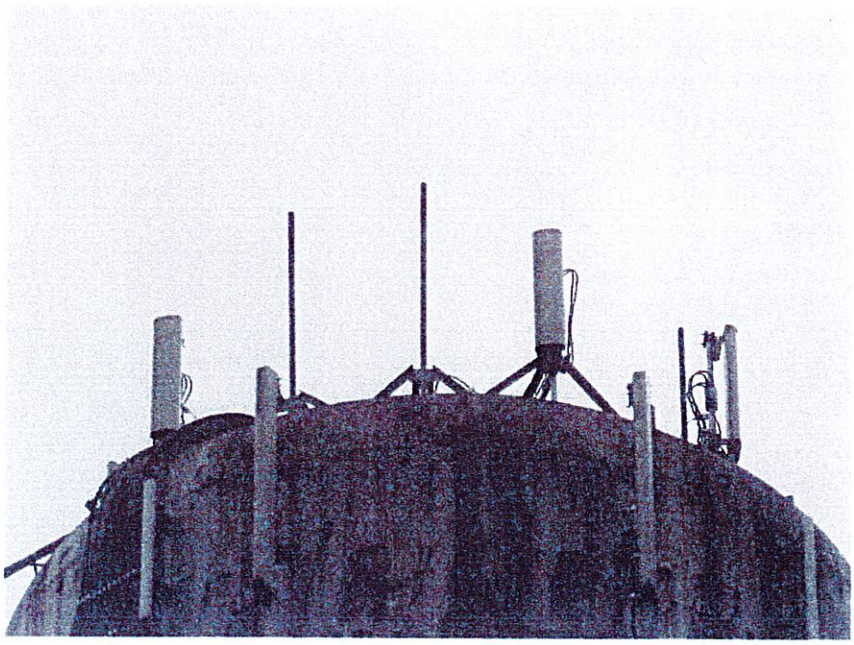


Photo 4: Sample photo illustrating the existing antennas.

Hudson Design Group LLC

Calculations

Site Name:	BROOKLYN WATER TANK		
Site No.	CT2139		
Done by:	AA	Checked by:	MSC
Date:	8/21/2012		

Hudson Design Group LLC

References:

* Structural Standards for Steel Antenna Towers and Antenna Supporting Structures (TIA/EIA-222-F).

Material Reference Notes:

2.3.1 Wind and Ice Loads

The total design wind load shall include the sum of he horizontal forces applied to the structure in the direction of the wind and the design wind load on guys and discrete appurtenances.

Ice loading, depending on tower height, elevation, and exposure, may be a significant load on the structure in most parts of the United States. If the structure is to be located where ice accumulation is expected, consideration shall be given to an ice load when specifying the requirements for the structure.

2.3.2 Horizontal Force Applied to each Section of the Structure

$$F=q_z*G_H\,[C_F*A_E+\sum(C_A*A_A)]$$ (Not to exceed $2*q_z*G_H*A_G$)

where A_G = Gross area of one tower face (ft^2)

2.3.3 Velocity Pressure (q_z) and Exposure Coefficient (K_Z)

$q_z=.00256*K_Z*V^2$ V=Basic Wind Speed for the Structure Location (mph)

$K_Z=(z/33)^{2/7}$ z=Ht. above avg. ground level to midpoint of section (ft.)

$1.00 \le K_Z \le 2.58$ A_E=effective projected area of structural components in one face

2.3.4 Gust Response Factors (G_H)

2.3.4.1 For latticed structures , gust response factor (G_H) shall be calculated from the equation:

$G_H=0.65+0.60/(h/33)^{1/7}$ (h in (ft.)) $1.0 < G_H < 1.25$

2.3.4.2 For Tubular pole structures, the gust response factor (G_H) shall be 1.69

2.3.4.3 One gust response factor shall apply for the entire structure.

2.3.4.4 When Cantilevered tubular or latticed pole structures are mounted on latticed structures, the gust response factor the pole and the latticed structure shall be based on the height of the latticed structure without the pole. The stresses calculated for the pole structures and their connections to latticed structures shall be multiplied by 1.25 to compensate for the greater gust response for the mounted pole structures.

2.3.5 Structure Force Coefficients (Reference Table 1)

Site Name	BROOKLYN WATER TANK
Site No.	CT2139
Done by:	AA Checked by: MSC
Date:	8/21/2012

=Input Values

V= **85** (mph)
z= **135** (ft)

K_z= **1.50**

Velocity Pressure: **qz= 27.66 psf** [2.3.3]

Is member analyzing a tube pole structure? If yes, then: Gh= 1.69

If no, then use value below:
Gh= 1.14 [2.3.4.1]

Gh= 1.69

Determine Cf:

If lattice structure see manual...

If cantilevered tube pole, then: Use Correct Value form Table 1 Below:

TABLE 1
Coefficients (Cf) for Cantilevered Tubular Pole Structures

C (mph ft)	Round	16 Sided r<0.26	16 Sided r≥0.26	12 Sides	8 Sided
<32	1.2	1.2	1.2	1.2	1.2
32 to 64	$130/C^{1.3}$	1.78+1.40r-C/91.5-Cr/22.9	.72+(64-C)/44.8	$12.5/C^{.6}$	1.2
>64	0.59	1.08-1.40r	0.72	1.03	1.2

Derivation of Structure Coefficient (Cf):

Dp = Avg. Diam. or Avg. Least width of Tubular Pole Structure: 0.2 feet

Site Name	BROOKLYN WATER TANK		
Site No.	CT2139		
Done by:	AA	Checked by:	MSC
Date:	8/21/2012		

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$C = (K_z)^{1/2} * V * Dp$ (for Dp in ft [m] C= **20.79**

C (mph ft)	Round Only Member
<32	1.2
32 < 64	2.52
> 64	0.59

(Max Cf= 1.2)
(Min Cf= 0.59)

Cf= 1.2

Determine Ae: **[2.3.6]**

If tube structure, then use projected area including ice:
If not a tube structure, then see manual.

Ae= 0.00 sf

Determine Ca: **[2.3.7]**

2.3.7 The force coefficient (C_A) applied to the projected area (ft^2) [m^2] of a linear appurtenance (A_A) not considered as a structural component shall be determined from Table 3. The force coefficient for cylindrical members may be applied to the additional projected area of radial ice when specified. (Refer to Figure 1.)

TABLE 3

Appurtenance Force Coefficients

Member Type	Aspect Ratio ≤ 7	Aspect Ratio ≥ 25
	C_A	C_A
Flat	1.4	2
Cylindrical	0.8	1.2

Aspect Ratio=Overall length/width ratio in plane normal to wind direction.
(Aspect ratio is not a function of the spacing between support points of a linear appurtenance, nor the section length considered to have a uniformly distributed force.)

Note: Linear interpolation may be used to aspect ratios other than shown

2.3.8 Regardless of location, linear appurtenances not considered as structural components in accordance with 2.3.6.3 shall be included in the term $\Sigma C_A A_A$.

2.3.9 The horizontal force (F) applied to a section of the structure may be assumed to be uniformly distributed based on the wind pressure at the mid-height of the section.

Site Name	BROOKLYN WATER TANK
Site No.	CT2139
Done by:	AA Checked by: MSC
Date:	8/21/2012

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	Item #1	Item #2	Item #3	Item #4	Item #5
Member Length (Inches):	96	6	6	17.8	0
Member Width (Inches):	11.8	17	17	17	0
Calculated Aspect Ratio:	8	0	0	1	#DIV/0!

From Table 3 Above:

Ca=	1.4	1.4	1.4	1.4	0

Determine Aa: (sf)

		Item #1	Item #2	Item #3	Item #4	Item #5
From above:	Aa=	7.87	0.71	0.71	2.10	0.00
Calculated Ca*Aa:		11.01	0.99	0.99	2.94	0.00

Calculated Sums of Ca*Aa: 15.94 sf

Item 1 calculated force F:	**Antenna**	514.859785
Item 2 calculated force F:	**RRH**	46.3591967
Item 3 calculated force F:	**RRH**	46.3591967
Item 4 calculated force F:	**RRH**	137.532284
Item 5 calculated force F:		0

Wind Force F= qz*Gh [Cf*Ae+∑(Ca*Aa)] F= 745.11 Pounds

Project: CT2139

Location: Existing RRH Support Pipe
Multi-Loaded Multi-Span Beam
[2009 International Building Code(AISC 13th Ed ASD)]
Pipe 2 Std. x 10.0 FT (7.5 + 2.5) / ASTM A53-GR.B
Section Adequate By: 38.9%
Controlling Factor: Deflection

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DEFLECTIONS	Left		Center	
Live Load	0.34	IN 2L/524	-0.01	IN L/2853
Dead Load	0.20	in	0.00	in
Total Load	0.54	IN 2L/334	-0.01	IN L/2103

Live Load Deflection Criteria: L/240 Total Load Deflection Criteria: L/240

REACTIONS	A	B
Live Load	248 lb	0 lb
Dead Load	73 lb	-37 lb
Total Load	322 lb	-37 lb
Uplift (1.5 F.S)	0 lb	**-147 lb**
Bearing Length	0.29 in	0.00 in

BEAM DATA	Left	Center
Span Length	7.5 ft	2.5 ft
Unbraced Length-Top	0 ft	0 ft
Unbraced Length-Bottom	7.5 ft	2.5 ft

STEEL PROPERTIES
Pipe 2 Std. - A53-GR.B

Properties:

Steel Yield Strength:	Fy =	42	ksi
Modulus of Elasticity:	E =	29000	ksi
Tube Steel Section (X Axis):	dx =	2.38	in
Tube Steel Section (Y Axis):	dy =	2.38	in
Tube Steel Wall Thickness:	t =	0.143	in
Area:	A =	1	in2
Moment of Inertia (X Axis):	Ix =	0.63	in4
Section Modulus (X Axis):	Sx =	0.53	in3
Plastic Section Modulus:	Z =	0.71	in3

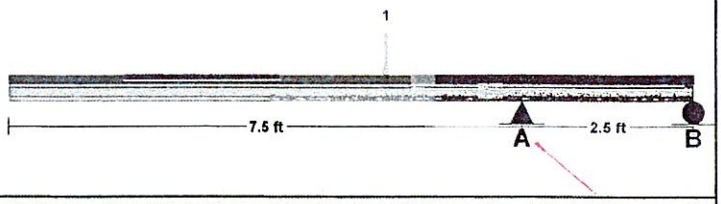
Design Properties per AISC 13th Edition Steel Manual:

Flange Buckling Ratio:	FBR =	16.61	
Allowable Flange Buckling Ratio:	AFBR =	48.33	
Allowable Flange Buckling Ratio non-compact:	AFBR_NC =	214.05	
Nominal Flexural Strength w/ Safety Factor:	Mn =	1494	ft-lb
Controlling Equation:	F8-1		
Shear Buckling Stress Coefficient Eqn. G6-2b:	Fcr =	25	ksi
Nominal Shear Strength w/ Safety Factor:	Vn =	7545	lb

Controlling Moment: -379 ft-lb
Over right support of span 1 (Left Span)
Created by combining all dead loads and live loads on span(s) 1, 2
Controlling Shear: -165 lb
8.0 Ft from left support of span 1 (Left Span)
Created by combining all dead loads and live loads on span(s

Comparisons with required sections:	Req'd	Provided
Moment of Inertia (deflection):	0.45 in4	0.63 in4
Moment:	-379 ft-lb	1494 ft-lb
Shear:	-165 lb	7545 lb

LOADING DIAGRAM



UNIFORM LOADS	Left	Center
Uniform Live Load	0 plf	0 plf
Uniform Dead Load	0 plf	0 plf
Beam Self Weight	4 plf	4 plf
Total Uniform Load	4 plf	4 plf

(E) ANGLE → BRACING

POINT LOADS - LEFT SPAN

Load Number	One
Live Load	138 lb
Dead Load	0 lb
Location	5.5 ft

NOTES

Project: CT2139

Location: Existing Antenna Support Pipes
Multi-Loaded Multi-Span Beam
[2009 International Building Code(AISC 13th Ed ASD)]
Pipe 2 Std. x 10.5 FT (7.5 + 3) / ASTM A53-GR.B
Section Inadequate By: 52.5%
Controlling Factor: Deflection

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DEFLECTIONS	Left		Center	
Live Load	0.94	IN 2L/192	-0.04	IN L/849
Dead Load	0.21	in	-0.01	in
Total Load	1.14	IN 2L/158	-0.05	IN L/755

Live Load Deflection Criteria: L/240 Total Load Deflection Criteria: L/240

REACTIONS	A	B
Live Load	773 lb	0 lb
Dead Load	67 lb	-29 lb
Total Load	840 lb	-29 lb
Uplift (1.5 F.S)	0 lb	-286 lb
Bearing Length	0.29 in	0.00 in

BEAM DATA	Left	Center
Span Length	7.5 ft	3 ft
Unbraced Length-Top	0 ft	0 ft
Unbraced Length-Bottom	7.5 ft	3 ft

STEEL PROPERTIES
Pipe 2 Std. - A53-GR.B

Properties:

Steel Yield Strength:	Fy =	35	ksi
Modulus of Elasticity:	E =	29000	ksi
Tube Steel Section (X Axis):	dx =	2.38	in
Tube Steel Section (Y Axis)	dy =	2.38	in
Tube Steel Wall Thickness:	t =	0.143	in
Area:	A =	1	in2
Moment of Inertia (X Axis):	Ix =	0.63	in4
Section Modulus (X Axis):	Sx =	0.53	in3
Plastic Section Modulus:	Z =	0.71	in3

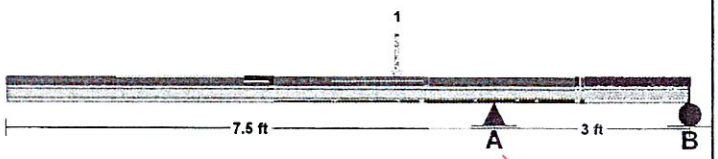
Design Properties per AISC 13th Edition Steel Manual:

Flange Buckling Ratio:	FBR =	16.61	
Allowable Flange Buckling Ratio:	AFBR =	58	
Allowable Flange Buckling Ratio non-compact:	AFBR_NC =	256.86	
Nominal Flexural Strength w/ Safety Factor:	Mn =	1245	ft-lb
Controlling Equation:	F8-1		
Shear Buckling Stress Coefficient Eqn. G6-2b:	Fcr =	21	ksi
Nominal Shear Strength w/ Safety Factor:	Vn =	6287	lb

Controlling Moment: -875 ft-lb
Over right support of span 1 (Left Span)
Created by combining all dead loads and live loads on span(s) 1, 2
Controlling Shear: -542 lb
8.0 Ft from left support of span 1 (Left Span)
Created by combining all dead loads and live loads on span(s

Comparisons with required sections:	Req'd	Provided
Moment of Inertia (deflection):	0.96 in4	0.63 in4
Moment:	-875 ft-lb	1245 ft-lb
Shear:	-542 lb	6287 lb

LOADING DIAGRAM



UNIFORM LOADS	Left	Center
Uniform Live Load	0 plf	0 plf
Uniform Dead Load	0 plf	0 plf
Beam Self Weight	4 plf	4 plf
Total Uniform Load	4 plf	4 plf

(E) ANGLE BRACING

POINT LOADS - LEFT SPAN

Load Number	One
Live Load	515 lb
Dead Load	0 lb
Location	6 ft

NOTES

Project: CT2139

Location: Proposed Antenna Support Pipe
Multi-Loaded Multi-Span Beam
[2009 International Building Code(AISC 13th Ed ASD)]
Pipe 2 xx-Strong x 10.5 FT (7.5 + 3) / ASTM A53-GR.B
Section Adequate By: 4.2%
Controlling Factor: Deflection

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page of

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DEFLECTIONS	Left		Center	
Live Load	0.46	IN 2L/390	-0.02	IN L/1720
Dead Load	0.26	in	-0.01	in
Total Load	0.72	IN 2L/250	-0.03	IN L/1310

Live Load Deflection Criteria: L/240 Total Load Deflection Criteria: L/240

REACTIONS	A		B	
Live Load	773	lb	-258	lb
Dead Load	169	lb	-72	lb
Total Load	941	lb	-72	lb
Uplift (1.5 F.S)	0	**lb**	**-330**	**lb**
Bearing Length	0.81	in	0.00	in

BEAM DATA	Left		Center	
Span Length	7.5	ft	3	ft
Unbraced Length-Top	0	ft	0	ft
Unbraced Length-Bottom	7.5	ft	3	ft

STEEL PROPERTIES
Pipe 2 xx-Strong - A53-GR.B

Properties:

Steel Yield Strength:	Fy =	35	ksi
Modulus of Elasticity:	E =	29000	ksi
Tube Steel Section (X Axis):	dx =	2.38	in
Tube Steel Section (Y Axis):	dy =	2.38	in
Tube Steel Wall Thickness:	t =	0.406	in
Area:	A =	2.51	in2
Moment of Inertia (X Axis):	Ix =	1.27	in4
Section Modulus (X Axis):	Sx =	1.07	in3
Plastic Section Modulus:	Z =	1.6	in3

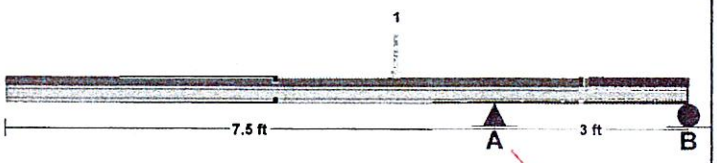
Design Properties per AISC 13th Edition Steel Manual:

Flange Buckling Ratio:	FBR =	5.85	
Allowable Flange Buckling Ratio:	AFBR =	58	
Allowable Flange Buckling Ratio non-compact:	AFBR_NC =	256.86	
Nominal Flexural Strength w/ Safety Factor:	Mn =	2794	ft-lb
Controlling Equation:	F8-1		
Shear Buckling Stress Coefficient Eqn. G6-2b:	Fcr =	21	ksi
Nominal Shear Strength w/ Safety Factor:	Vn =	15781	lb

Controlling Moment: -1031 ft-lb
Over right support of span 1 (Left Span)
Created by combining all dead loads and live loads on span(s) 1, 2
Controlling Shear: -584 lb
8.0 Ft from left support of span 1 (Left Span)
Created by combining all dead loads and live loads on span(s

Comparisons with required sections:	Req'd	Provided
Moment of Inertia (deflection):	1.22 in4	1.27 in4
Moment:	-1031 ft-lb	2794 ft-lb
Shear:	-584 lb	15781 lb

LOADING DIAGRAM



UNIFORM LOADS	Left		Center	
Uniform Live Load	0	plf	0	plf
Uniform Dead Load	0	plf	0	plf
Beam Self Weight	9	plf	9	plf
Total Uniform Load	9	plf	9	plf

(E) ANGLE BRACING

POINT LOADS - LEFT SPAN

Load Number	One
Live Load	515 lb
Dead Load	0 lb
Location	6 ft

NOTES

DATE: 08-21-12
Project Name: BROOKLYN WATER TANK
Project No.: CT2139
Design By: AA Chk'd By: MSC Page ____ of ____

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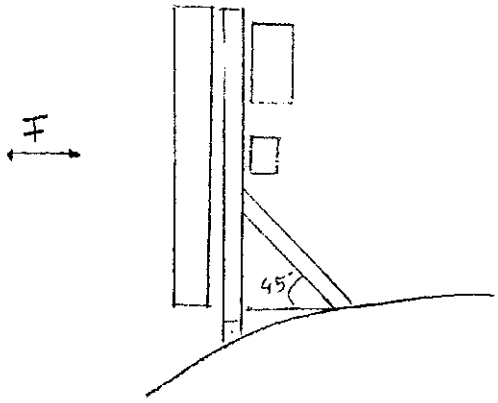
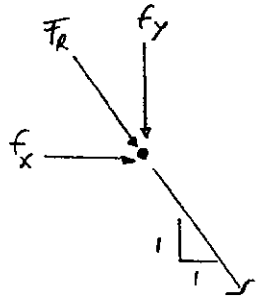
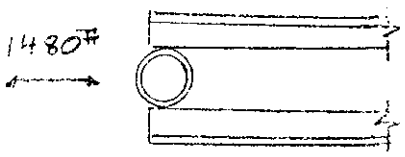
- CHECK TRIPOD MOUNT ANGLE BRACING * WORSE CASE *

- ASSUME (2) ∠ 3X3X1/4" STEEL ANGLES AT 45°





$f_y = 840^{\#} \times \sin 45° = 593.96^{\#}$



$f_x = 840^{\#} \times \cos 45 = 593.96^{\#}$

$F_R = \sqrt{f_x^2 + f_y^2} = 840^{\#}$

- CHECK AVAILABLE STRENGTH IN AXIAL COMPRESSION FOR

∠ 3X3X1/4 → 4.5 FT LONG (ASSUMED) $F_y = 36$ KSI

$\frac{P_n}{\Omega_c}(3.5\text{FT}) = \frac{49.6\text{K} + 53.7\text{K}}{2} = 51.65\text{K} > 0.840\text{K} \therefore$ O.K!

157132

PROJECT INFORMATION

SCOPE OF WORK:	UNMANNED TELECOMMUNICATIONS FACILITY MODIFICATIONS 1. INSTALL (3) NEW LTE ANTENNAS, (6) RRH'S, (1) SURGE ARRESTOR, (1) FIBER LINE (2) DC POWER LINES & (1) GPS ANTENNA 2. INSTALL LTE 6601 CABINET	
SITE ADDRESS:	50 TIFFANY STREET BROOKLYN, CT 06239	
LATITUDE:	41.79741 N	41° 47' 50.7" N
LONGITUDE:	71.88669 W	71° 53' 12.1" W
CURRENT USE:	TELECOMMUNICATIONS FACILITY	
PROPOSED USE:	TELECOMMUNICATIONS FACILITY	

at&t

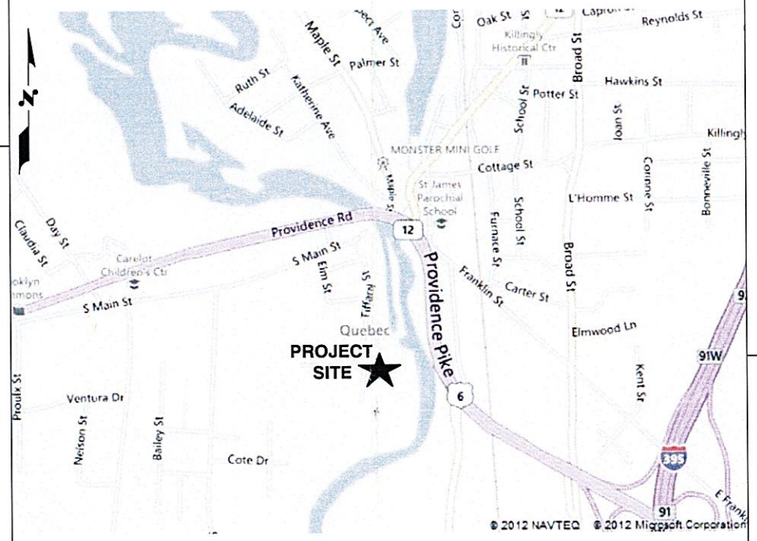
SITE NUMBER: CT2139
SITE NAME: BROOKLYN WATER TANK

DRAWING INDEX

VICINITY MAP

DIRECTION TO SITE:

START AT 500 ENTERPRISE DR, ROCKY HILL GOING TOWARD CAPITOL BLVD – TURN LEFT ON CAPITOL BLVD – TURN LEFT ON WEST ST – TURN LEFT TO TAKE RAMP ONTO I-91 N TOWARD HARTFORD – TAKE EXIT #25-26/GLASTONBURY/OLD WETHERSFIELD ONTO CT-3 N TOWARD #25/GLASTONBURY – TAKE THE NORWICH EXIT ONTO CT-2 E – TAKE EXIT #28N/PROVIDENCE ONTO I-395 N – TAKE EXIT #91/DANIELSON/HARTFORD ONTO PROVIDENCE PIKE (US-6 W) – CONTINUE TO FOLLOW US-6 W. TURN LEFT ON A LOCAL ROAD. TURN LEFT ON S MAIN ST. TURN RIGHT ON TIFFANY ST – ARRIVE AT 50 TIFFANY ST, BROOKLYN, ON THE LEFT.



GENERAL NOTES

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2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

CALL

BEFORE YOU DIG

CALL TOLL FREE 800-922-4455 OR DIAL 811

UNDERGROUND SERVICE ALERT

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FAX: (978) 336-5586

NEXLINK GLOBAL SERVICES
a UniTek GLOBAL SERVICES company
800 MARSHALL PHELPS ROAD UNIT#: 2A
WINDSOR, CT 06095

SITE NUMBER: CT2139
SITE NAME: BROOKLYN WATER TANK
50 TIFFANY STREET
BROOKLYN, CT 06239
WINDHAM COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	10/04/12	ISSUED FOR CONSTRUCTION	CM	DC	DPH
0	07/18/12	ISSUED FOR REVIEW	CG	DC	DPH

SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: CG

Daniel P. Hamm
No. 21178
LICENSED PROFESSIONAL ENGINEER

AT&T

TITLE SHEET (LTE)

JOB NUMBER	DRAWING NUMBER	REV
2139.01	T-1	1

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION 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 NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

4. 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.

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

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

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

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.

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

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

11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 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

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR – NEXLINK
SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
OWNER – AT&T MOBILITY

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

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

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

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

6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.

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

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

9. 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.

10. 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.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

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

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

15. 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.

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

17. 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.

18. 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.

19. 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 TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

20. APPLICABLE BUILDING CODES:
SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
BUILDING CODE: 2003 IBC WITH 2005 CT SUPPLEMENT & 2009 CT AMENDMENTS
ELECTRICAL CODE: REFER TO ELECTRICAL DRAWINGS
LIGHTENING CODE: REFER TO ELECTRICAL DRAWINGS

SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION;

TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-F, STRUCTURAL STANDARDS FOR STEEL

ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	G.C.	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
AWG	AMERICAN WIRE GAUGE	MGB	MASTER GROUND BUS		
BCW	BARE COPPER WIRE	MIN	MINIMUM	TBD	TO BE DETERMINED
BTS	BASE TRANSCEIVER STATION	PROPOSED	NEW	TBR	TO BE REMOVED
EXISTING	EXISTING	N.T.S.	NOT TO SCALE	TBRR	TO BE REMOVED AND REPLACED
EG	EQUIPMENT GROUND	REF	REFERENCE	TYP	TYPICAL
EGR	EQUIPMENT GROUND RING	REQ	REQUIRED		

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a UniTek GLOBAL SERVICES company
800 MARSHALL PHELPS ROAD UNIT#: 2A
WINDSOR, CT 06095

SITE NUMBER: CT2139
SITE NAME: BROOKLYN WATER TANK
50 TIFFANY STREET
BROOKLYN, CT 06239
WINDHAM COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	10/04/12	ISSUED FOR CONSTRUCTION	CM	DC	DPH
0	07/18/12	ISSUED FOR REVIEW	CG	DC	DPH

SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: CG

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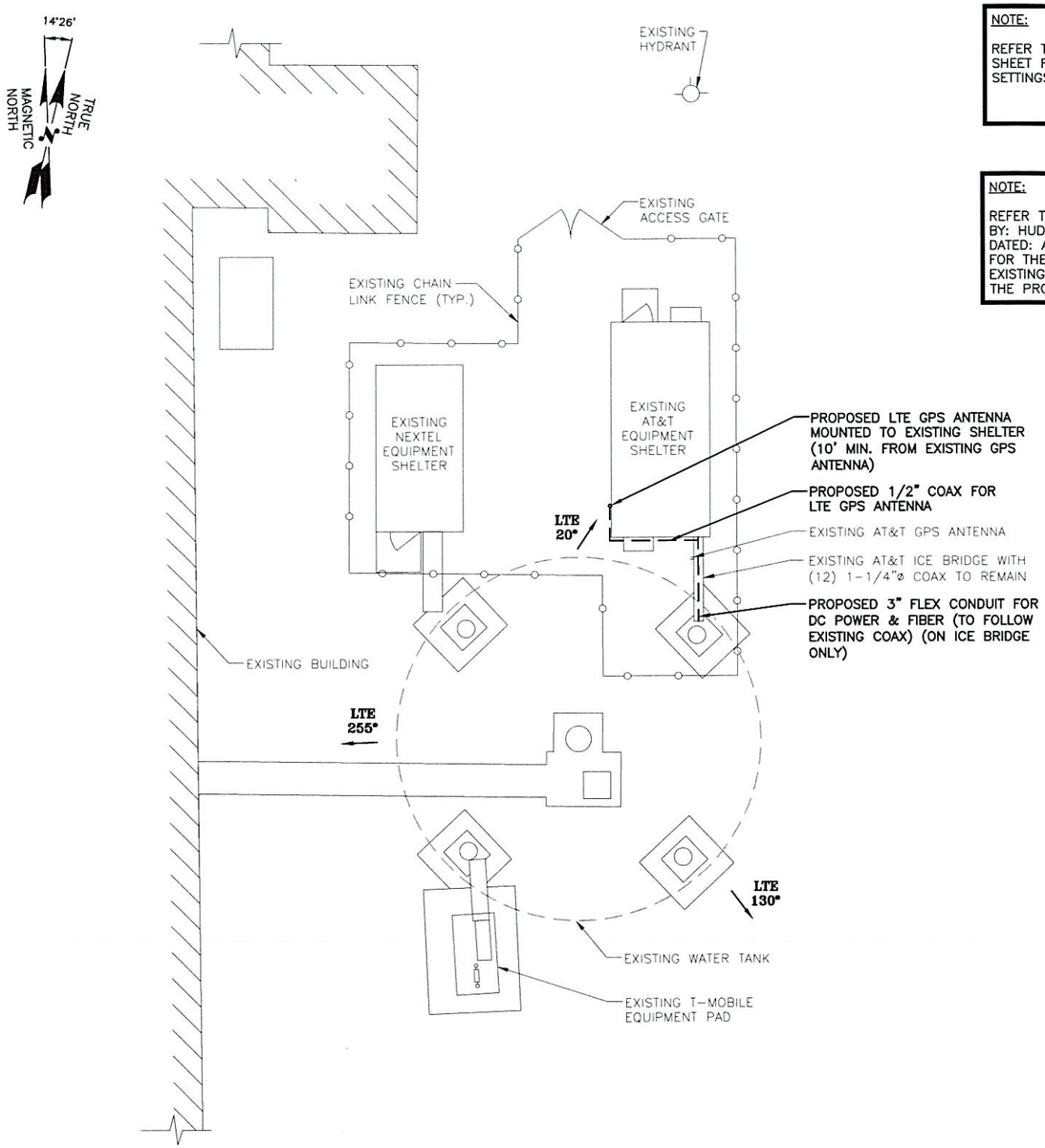
GENERAL NOTES
(LTE)

JOB NUMBER	DRAWING NUMBER	REV
2139.01	GN-1	1



NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

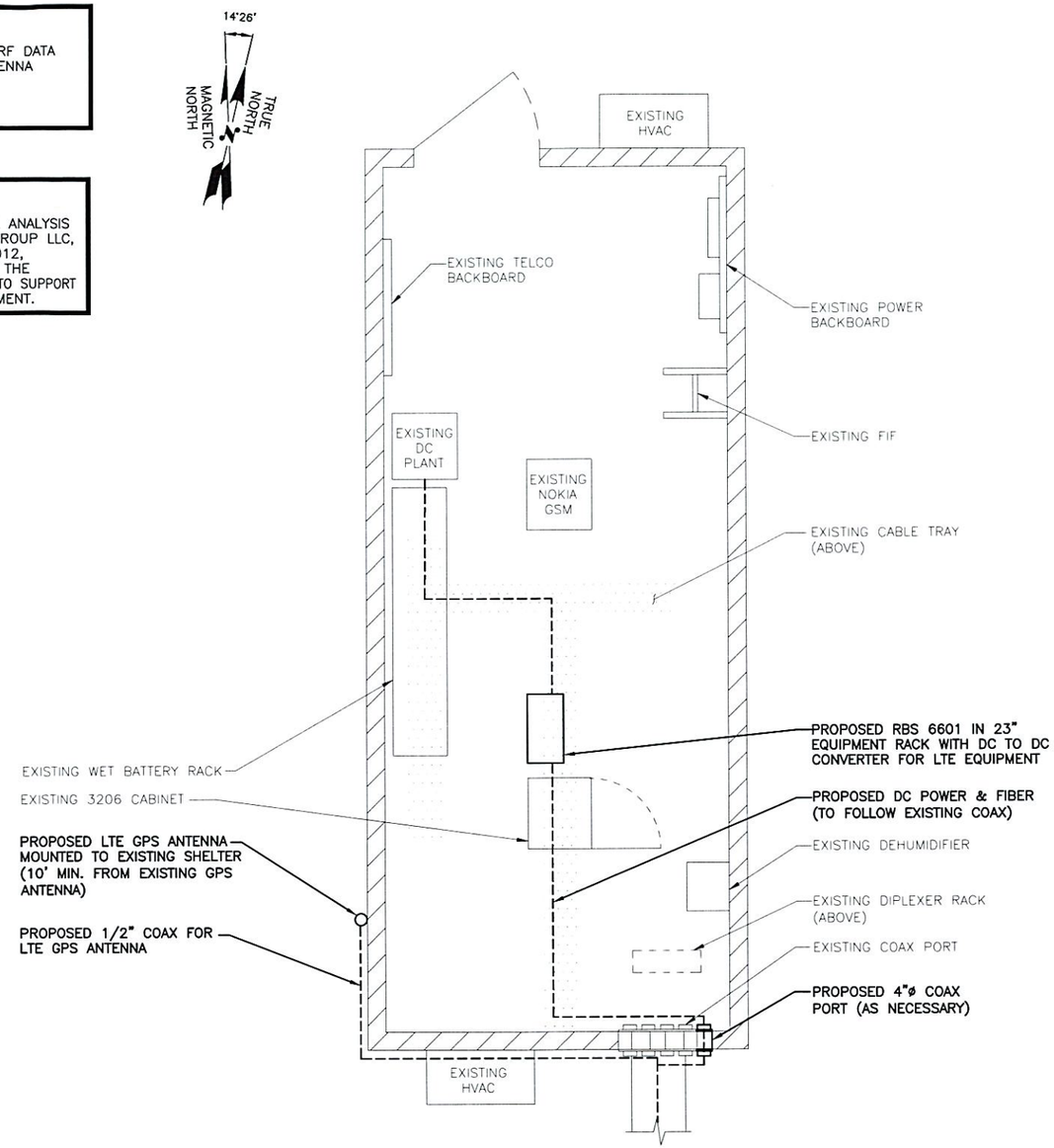
NOTE:

REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP LLC, DATED: AUGUST 22, 2012, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

COMPOUND PLAN

SCALE: 1/8"=1'-0"

0 4'-0" 8'-0" 16'-0" 24'-0"



EQUIPMENT PLAN

SCALE: 1/2"=1'-0"

0 1'-0" 2'-0" 4'-0" 6'-0"

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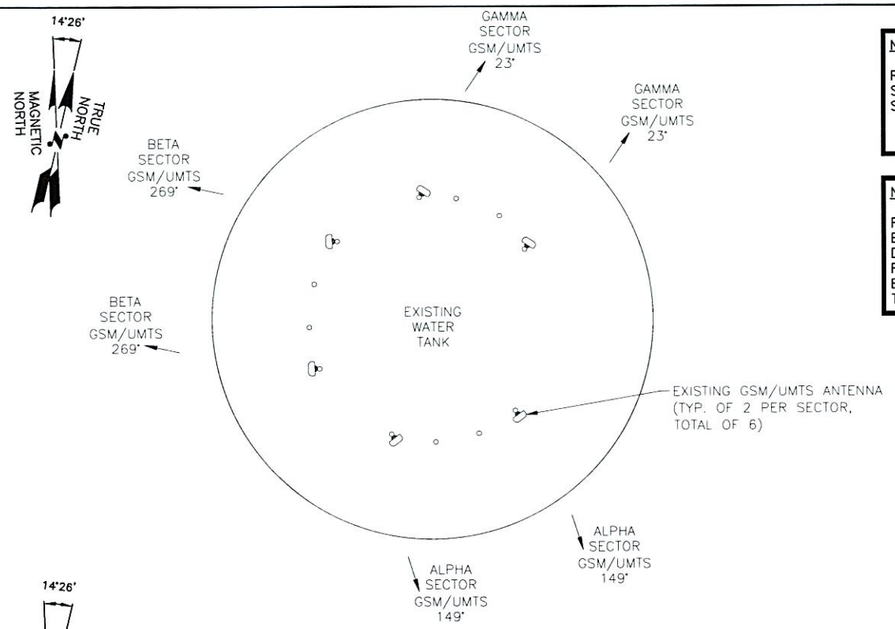
SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: CG

STATE OF CONNECTICUT — DANIEL P. HAMM — No. 24178 — LICENSED PROFESSIONAL ENGINEER

AT&T

COMPOUND PLAN & EQUIPMENT PLAN (LTE)

JOB NUMBER	DRAWING NUMBER	REV
2139.01	A-1	1



EXISTING GSM/UMTS ANTENNA PLAN

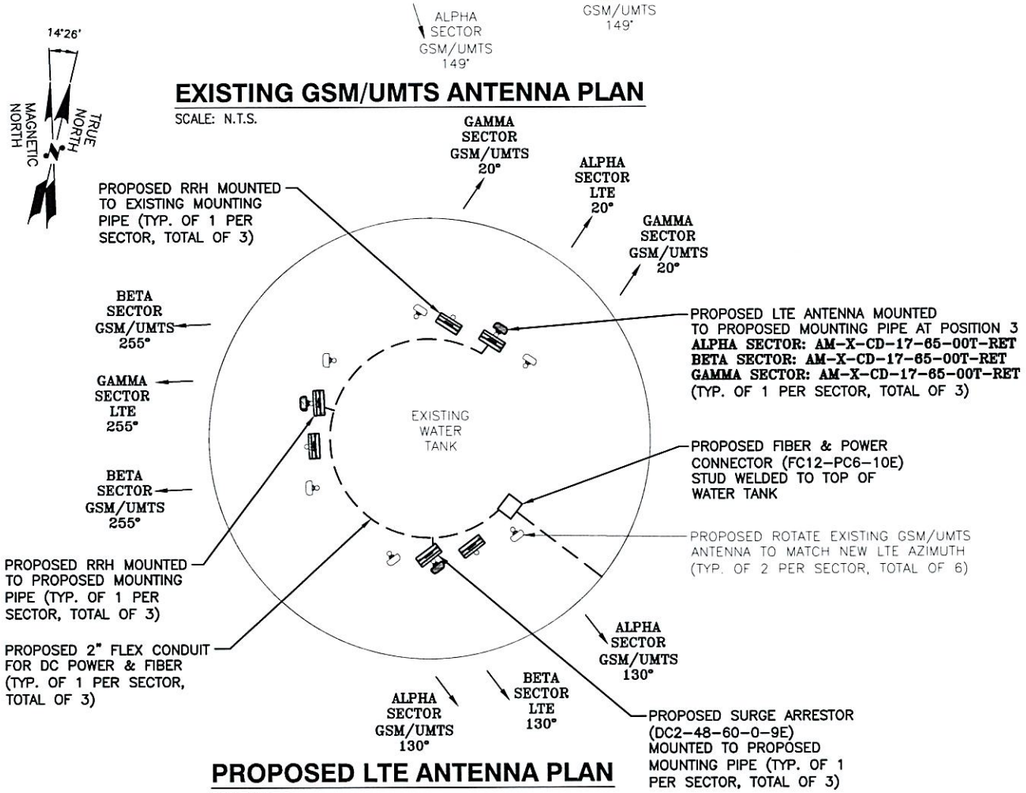
SCALE: N.T.S.

NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

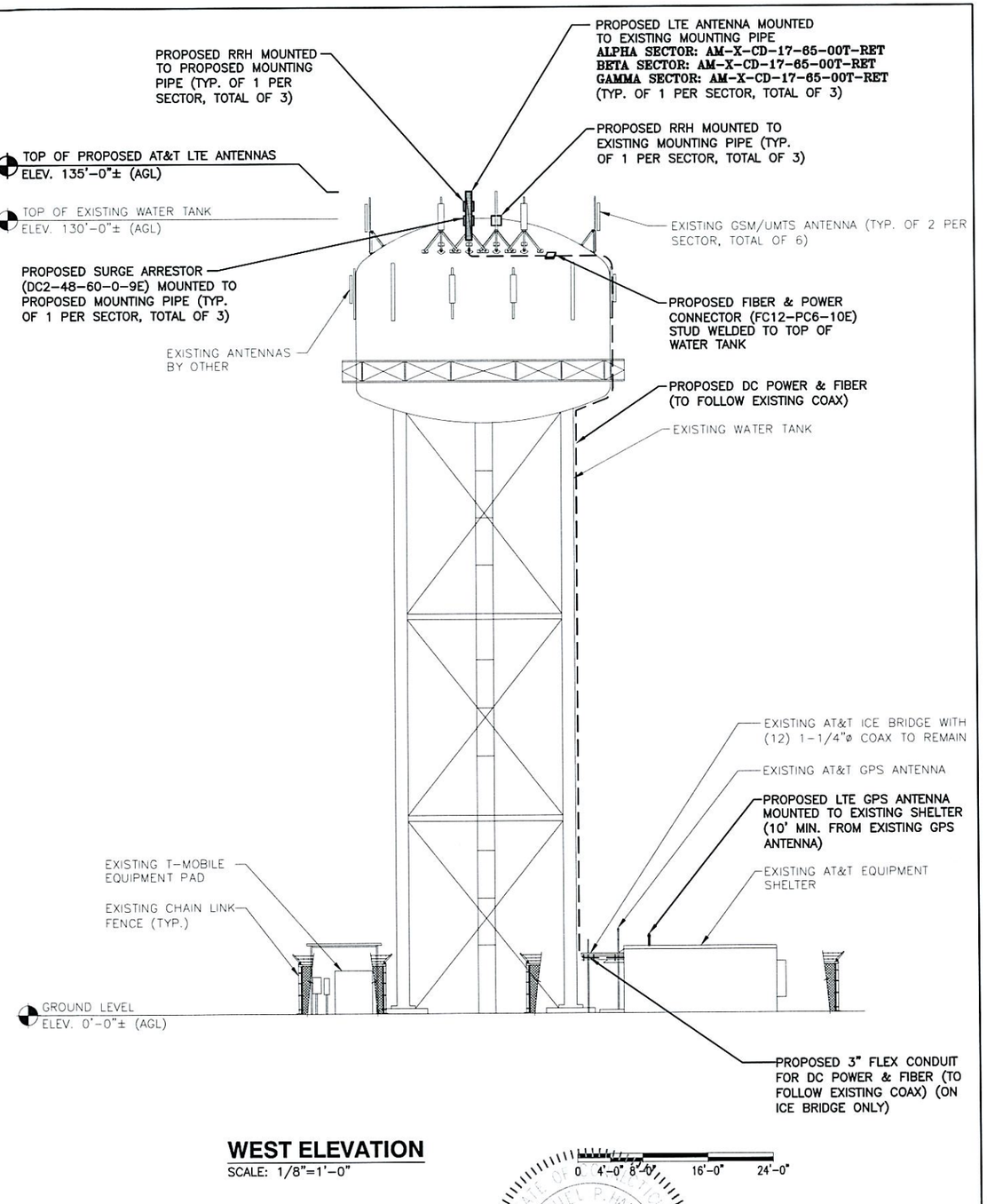
NOTE:

REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP LLC, DATED: AUGUST 22, 2012, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.



PROPOSED LTE ANTENNA PLAN

SCALE: N.T.S.



WEST ELEVATION

SCALE: 1/8"=1'-0"

0 4'-0" 8'-0" 16'-0" 24'-0"

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SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: CG

Daniel P. Hamm
LICENSED PROFESSIONAL ENGINEER

AT&T

ANTENNA PLAN & ELEVATION (LTE)

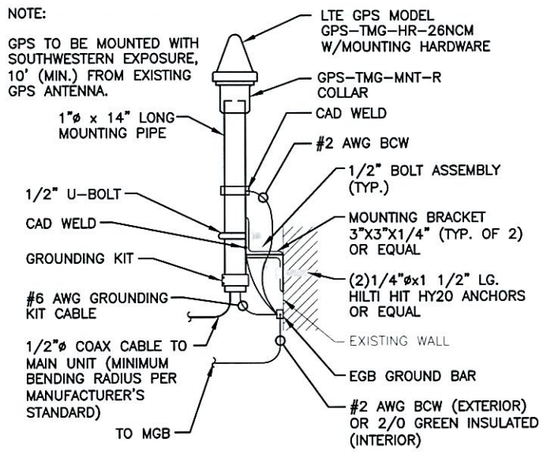
JOB NUMBER	DRAWING NUMBER	REV
2139.01	A-2	1

NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

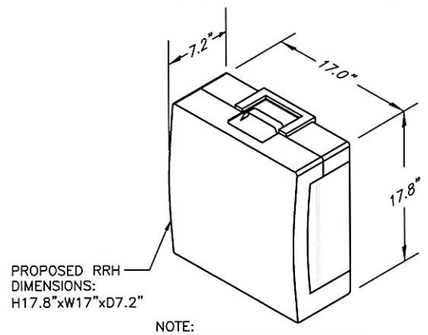
NOTE:

REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP LLC, DATED: AUGUST 22, 2012, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.



GPS MOUNTING DETAIL

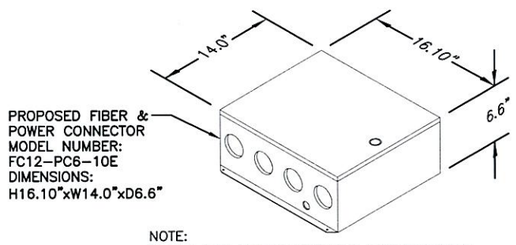
SCALE: N.T.S.



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

RRH DETAIL

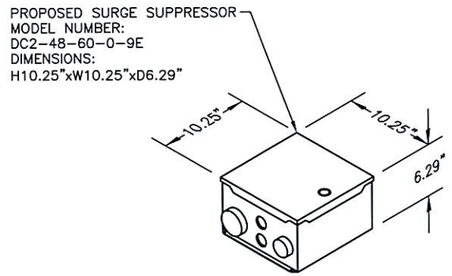
SCALE: N.T.S.



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

FIBER & POWER CONNECTOR DETAIL

SCALE: N.T.S.



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE SUPPRESSOR DETAIL

SCALE: N.T.S.

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SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: CG

STATE OF CONNECTICUT · DANIEL P. HAMM · No. 21178 · LICENSED PROFESSIONAL ENGINEER

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DETAILS
(LTE)

JOB NUMBER	DRAWING NUMBER	REV
2139.01	A-3	1

STRUCTURAL NOTES:

1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, ASCE 7-05, EIA/TIA-222-F STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.

2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.

3. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".

4. STRUCTURAL STEEL SHALL CONFORM TO ASTM A572 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.

5. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.

6. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.

7. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.

8. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.

9. FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.

10. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND DI.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". 9TH EDITION.

11. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.

12. UNISTRUTS SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.

13. EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-20 AND OR HY-150 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.

14. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

15. LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.

16. WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.

17. ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.

18. NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.

19. SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

STUD WELDING NOTES (WATER TANK):

GENERAL:

1. WELDING STUDS SHALL BE FLANGED THREADED STAINLESS STEEL CONFORMING TO ASTM A-276 OR A-493 SPECIFICATIONS. ALL STUDS SHALL BE 3/8" DIAMETER BY 1-3/4" LONG, UNLESS OTHERWISE NOTED ON THE CONSTRUCTION DRAWINGS.
2. STUDS MUST BE WELDED BY THE CAPACITOR DISCHARGE METHOD, NELSON NCD 100 SYSTEM, AS MANUFACTURED AND MARKETED BY NELSON STUD WELDING, ELYRIA OHIO, (800) 635-9353 OR (440) 329-0400, OR APPROVED EQUAL. FILLET WELDS ARE NOT ACCEPTABLE.
3. CONTRACTOR SHALL RECEIVE IN WRITING THE OWNERS REQUIREMENTS FOR TANK INSPECTIONS PRIOR TO COMMENCING WITH THE WORK ON THE TANK. UPON THE COMPLETION OF CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A WRITTEN RELEASE FROM THE OWNER STATING THAT ALL WORK WAS PERFORMED IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND THE OWNERS WRITTEN REQUIREMENTS AND RELEASES ALL LIABILITY TO THE CONTRACTOR, THE ENGINEER, THE APPLICANT, AND THE STUD MANUFACTURER.
4. CONTRACTOR SHALL COMPLY WITH AWS D1.1 AND AWS C5.4 FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". CONTRACTOR SHALL ADHERE TO AWS RECOMMENDED "SAFE PRACTICES FOR WELDING".
5. WELDING PARAMETERS, MACHINE POWER AND DWELL TIME SHALL BE QUALIFIED FOR THE WELDING POSITION, MATERIAL THICKNESS AND STUD SIZE TO BE USED. IF CHANCES IN THE SET-UP OCCUR AS DEFINED IN AWS D1.1, THE PROCEDURE MUST BE REQUALIFIED. CONTRACTOR SHALL SUBMIT CERTIFICATION OF WELDERS FOR STUD WELDING TO THE ENGINEER PRIOR TO COMMENCEMENT OF THE WORK.

SURFACE PREPARATION

1. CLEANING PROCEDURES SHALL BE VERIFIED AS MEETING THE MINIMUM REQUIREMENTS PER THE AWS WELDING HANDBOOK, VOLUME 2, "QUALITY CONTROL AND INSPECTION" FOR STUD WELDING, IF THE EXISTING COATING SYSTEM CONTAINS LEAD OR OTHER POTENTIALLY HAZARDOUS MATERIALS, SPECIAL PROCEDURES FOR REMOVAL AND DISPOSAL WILL BE REQUIRED.
2. PREPARE SURFACE TO BE WELDED BY SPOT REMOVING PAINT TO BARE METAL USING POWER BRUSHING IN ACCORDANCE WITH SSPC-SP11, (STEEL STRUCTURES PAINTING COUNCIL, SSPC-VIS 1-671). USE A 3M STRIP-N-CLEAN FLEXIBLE WHEEL OR APPROVED EQUAL. A WIRE WHEEL IS NOT ACCEPTABLE. THERE IS LEAD BASED PAINT PRESENT ON A PORTION OF THIS TANK.
3. FOLLOW POWER TOOL CLEANING WITH A NON-FLAMMABLE SOLVENT CLEANING TO REMOVE ANY OILS, CONTAMINANTS, RUST OR DIRT PRIOR TO STUD WELDING. (SSPC-SP1 BY STEEL STRUCTURES PAINTING COUNCIL, SSPC-VIS 1-67T)

STUD QUALIFICATION TESTING AND SAMPLING

1. THE QUALIFICATION OF STUD APPLICATION AND PRE-PRODUCTION TESTING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 7 "STUD WELDING" OF AWS D1.1 INITIAL QUALIFICATION TESTING SHALL BE PERFORMED UNDER INSPECTION BY THE ENGINEER.
2. STUD APPLICATION SHALL BE QUALIFIED BY STUD WELDING TEN (10) SPECIMENS CONSECUTIVELY TO ASTM A-36 STEEL BASE MATERIALS USING RECOMMENDED PROCEDURES AND SETTINGS FOR EACH DIAMETER, POSITION, AND SURFACE GEOMETRY. THE TEN SPECIMENS SHALL BE TORQUE TESTED TO FAILURE. STUD APPLICATION SHALL BE CONSIDERED QUALIFICATION IF ALL TEST SPECIMENS ARE TORQUED TO DESTRUCTION WITHOUT FAILURE IN THE WELD. IN ADDITION, PRIOR TO PRODUCTION, CONTRACTOR SHALL PREPARE SIX (6) STUD WELDED SAMPLES USING A-36 STEEL PLATES AT THICKNESS EQUAL TO EACH OF THE PLATE THICKNESS OF THE WATER TANK TO BE WELDED TO. THE SIDE OPPOSITE THE STUD WELD SHALL HAVE A SIMILAR COATING (MINIMUM DFT-6MIL) TO THE EXISTING INTERIOR COATING OF THE WATER TANK. SAMPLES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
3. BEFORE PRODUCTION, AT THE START OF EVERY SHIFT AND FOR EACH PARTICULAR SETUP, TESTING SHALL BE PERFORMED ON THE FIRST TWO STUDS THAT ARE WELDED. IN PLACE OF THE ACTUAL PRODUCTION STUD, TESTING MAY BE PERFORMED ON A MATERIAL SIMILAR TO THE PRODUCTION MEMBER IN THICKNESS AND PROPERTIES. TESTING SHALL INCLUDE A VISUAL EXAMINATION OF THE STUD WELD FOR A FULL 360 DEGREE FLASH. IN ADDITION, THE TEST SHALL INCLUDE TORQUE TESTING THE STUDS IN ACCORDANCE WITH THE FOLLOWING CRITERIA.

STUD DIAMETER (IN.)	TESTING TORQUE (FT. LB)
3/8 - 16 UNC	8.8

4. IF FAILURE OCCURS, THE PROCEDURE SHALL BE CORRECTED AND TWO MORE STUDS SHALL BE WELDED AND TESTED.
5. PRIOR TO PRODUCTION, CONTRACTOR SHALL PERFORM THREE (3) TEST WELDS ON THE WATER TANK IN A LOCATION SPECIFIED BY THE TANK OWNER TO VERIFY THAT NO DAMAGE WILL OCCUR TO THE COATING SYSTEM ON THE INTERIOR OF THE TANK. ANY AND ALL DAMAGE TO THE INTERIOR COATING SHALL BE REPAIRED TO THE OWNER'S SATISFACTION. IF DAMAGE DOES OCCUR, THE PROCEDURE SHALL BE REEVALUATED BY THE ENGINEER, CONSTRUCTION AUTHORIZED REPRESENTATIVE, AND OWNER BEFORE COMMENCING WITH THE WORK.

REPAINTING

1. ALL PAINTING SURFACES AFFECTED BY WELDING OPERATIONS SHALL BE REPAINTED TO MATCH ADJACENT EXISTING SURFACES. PAINTING SHALL INCLUDE COATING OF THE STUDS.
2. PRIOR TO REPAINTING, SURFACES SHALL BE SOLVENT CLEANED TO REMOVE ANY OILS, CONTAMINANTS, RUST OR DIRT PRIOR TO REPAINTING (SSPC-SP1 BY STEEL STRUCTURES PAINTING COUNCIL, SSPC-VIS 1-67T)
3. PAINT USED TO REPAIR INTERIOR COATING SHALL MATCH THE EXISTING COATING SYSTEM OF THE TANK OR SHALL BE A SIMILAR SYSTEM COMPATIBLE WITH THE EXISTING SYSTEM AND ACCEPTABLE TO THE OWNER. VERIFY EXISTING COATING SYSTEM WITH THE TANK OWNER.
4. EXTERIOR STEEL SHALL BE PAINTED WITH 1 COAT EPOXY PRIMER (DFT-5-7 IL) AND 2 COATS POLYURETHANE FINISH (DFT-4-5 MIL) WITH COLOR TO MATCH EXISTING SURFACE. PAINT SHALL BE AS MANUFACTURED BY SHERWIN WILLIAMS, CLEVELAND, OHIO 1-800-321-8194 OR EQUAL COATING TO MATCH EXISTING. CONTRACTOR SHALL VERIFY OWNER'S PAINT REQUIREMENTS PRIOR TO COMMENCEMENT OF THE WORK.
5. CONTRACTOR TO VERIFY COATING SYSTEMS ARE COMPATIBLE WITH THE EXISTING SYSTEMS BY ADHESION TESTING PER ASTM D3359 "MEASURING ADHESION BY TAPE TEST".
6. CONTRACTOR TO VERIFY THAT CANS OF THE PRODUCT ARE NOT BEYOND MANUFACTURER RECOMMENDED SHELF LIFE. ASSURE THROUGH MIXING OF PREMEASURED TWO COMPONENT COATING SYSTEMS.
7. SURFACE CLEANING SHALL BE FOLLOWED WITH PRIMER COAT ON THE SAME DAY.
8. PAINT MUST BE APPLIED AT SURFACE AND AMBIENT TEMPERATURES BETWEEN 50 DEGREES TO 120 DEGREES FAHRENHEIT. NO PAINTING SHALL BE DONE ABOVE 80% RELATIVE HUMIDITY. THE AMBIENT TEMPERATURE BEFORE THE START OF COATING APPLICATION MUST AT BE LEAST 5 DEGREES FAHRENHEIT ABOVE THE DEW POINT AS DETERMINED BY CONVENTIONAL ACCEPTED STANDARDS. TWO COATS OF PRIMER ARE REQUIRED, TOP FINISH COATS TO BE SEMI-FLAT.
9. PAINT SHALL BE APPLIED USING A NATURAL BRISTLE BRUSH FOR A SMOOTH BRUSH FINISH.
10. PAINT SHALL BE FEATHERED OUT AT TIE-IN AREAS OF EXISTING COATING. PAINT SHALL BE WORKED IN AND AROUND IRREGULARITIES IN THE SURFACE.

NOTES:
1. IF EXISTING CONDITIONS DIFFER FROM THAT SHOWN ON THE DRAWING. THE STRUCTURAL ENGINEER SHALL BE NOTIFIED PRIOR TO PROCEEDING WITH CONSTRUCTION.

NOTE:

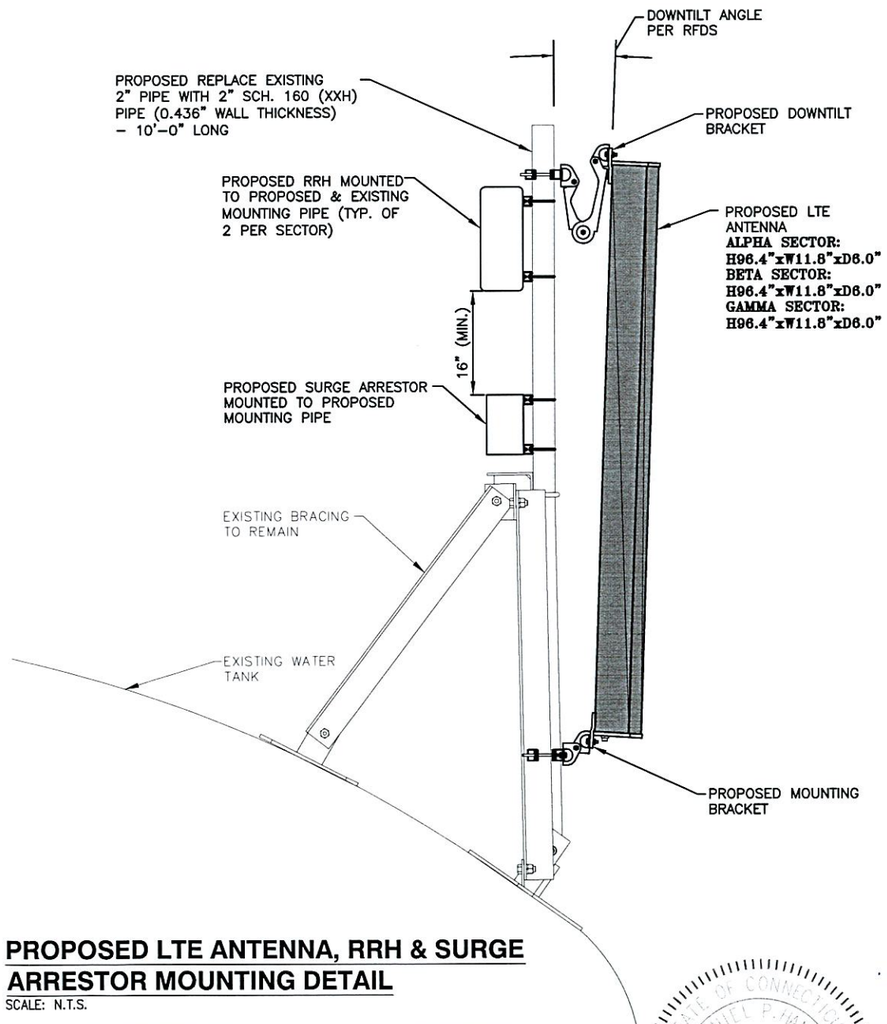
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION. REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP LLC, DATED: AUGUST 22, 2012.

NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

PAINT ALL VISIBLE PROPOSED EQUIPMENT TO MATCH EXISTING WATER TANK



PROPOSED LTE ANTENNA, RRH & SURGE ARRESTOR MOUNTING DETAIL

SCALE: N.T.S.

Hudson Design Group LLC
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 3090
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

NEXLINK GLOBAL SERVICES
a UniTek GLOBAL SERVICES company
800 MARSHALL PHELPS ROAD UNIT#: 2A
WINDSOR, CT 06095

SITE NUMBER: CT2139
SITE NAME: BROOKLYN WATER TANK
50 TIFFANY STREET
BROOKLYN, CT 06239
WINDHAM COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	10/04/12	ISSUED FOR CONSTRUCTION	CM	DC	DPH
0	07/18/12	ISSUED FOR REVIEW	CG	DC	DPH

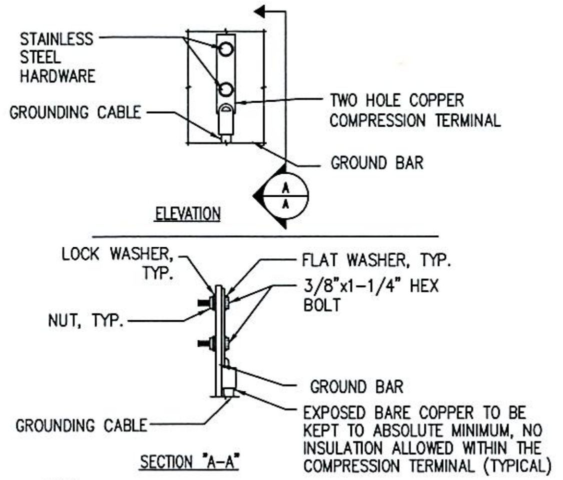
SCALE: AS SHOWN | DESIGNED BY: DC | DRAWN BY: CG

STATE OF CONNECTICUT · DANIEL P. HAMM · No. 21748 · LICENSED PROFESSIONAL ENGINEER

AT&T

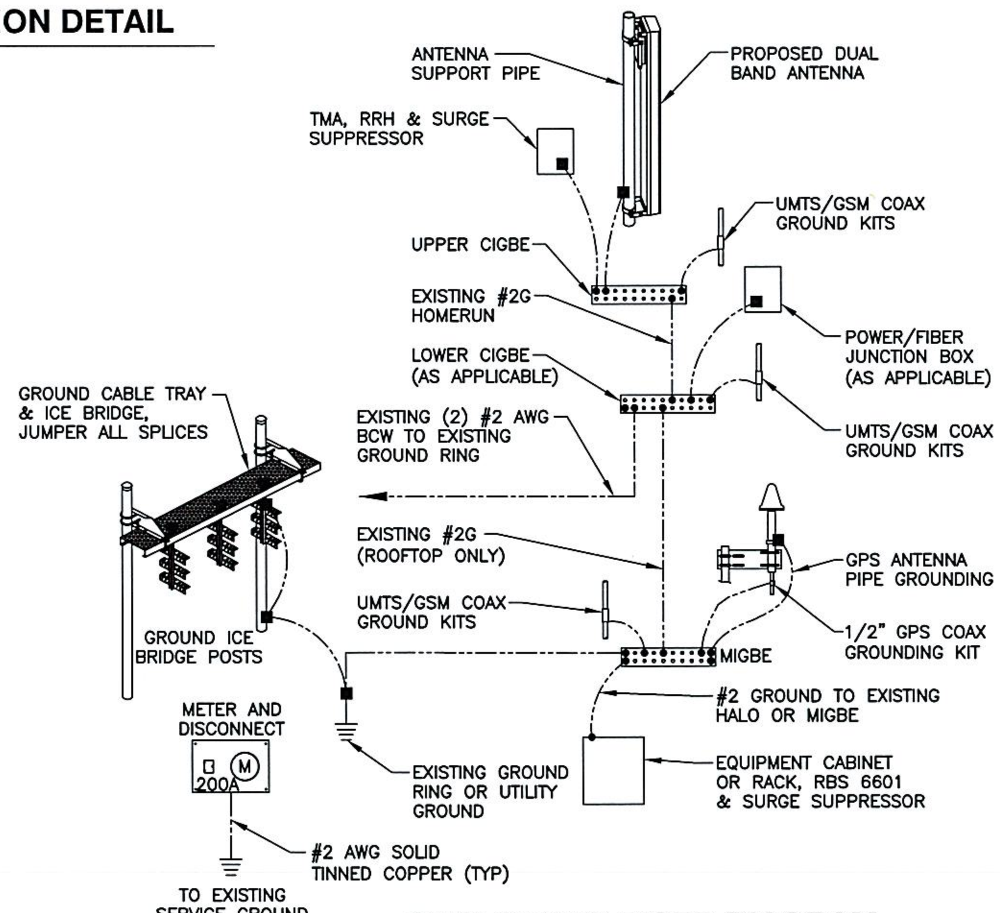
STRUCTURAL DETAILS (LTE)

JOB NUMBER	DRAWING NUMBER	REV
2139.01	S-1	1

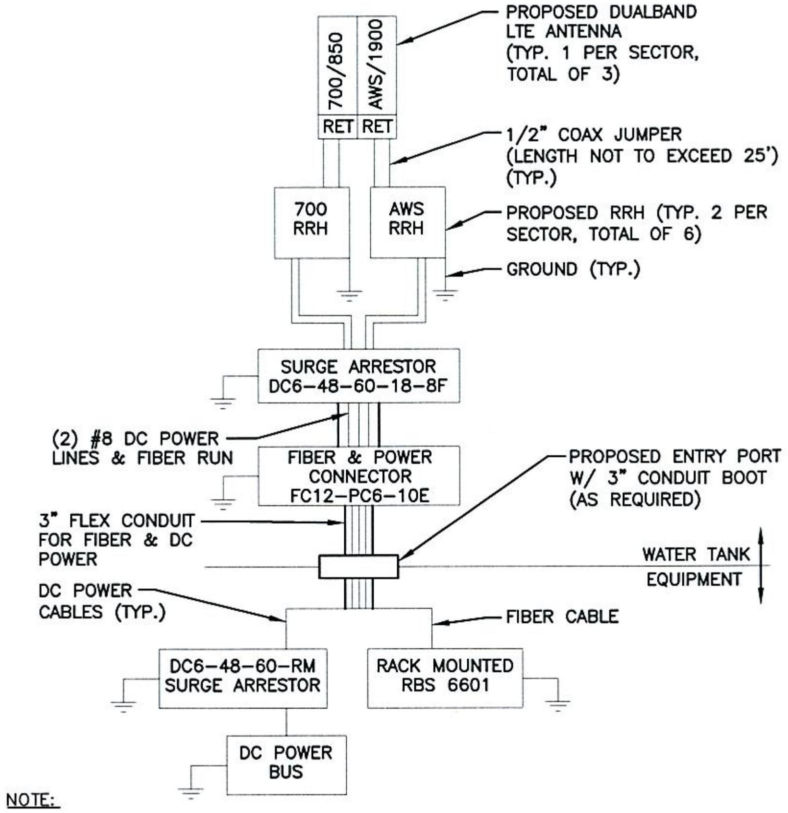


NOTE:
1. "DOUBLING UP" OR "STACKING " OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB.

1 TYPICAL GROUND BAR CONNECTION DETAIL
N.T.S.



3 GROUNDING RISER DIAGRAM
N.T.S.

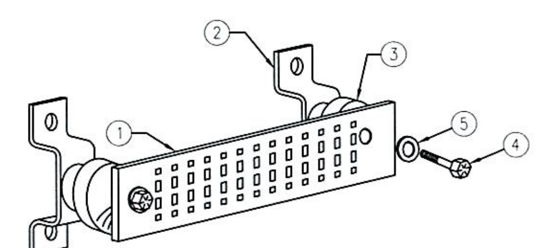


NOTE:

CONTRACTOR TO CONFIRM ALL PARTS & INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS.

2 LTE PLUMBING DIAGRAM
N.T.S.

WIRELESS SOLUTIONS INC.			
NO.	REQ.	PART NO.	DESCRIPTION
1	1	HLGB-0420-IS	SOLID GND. BAR (20"x4"x1/4")
2	2	———	WALL MTG. BRKT.
3	2	———	INSULATORS
4	4	———	5/8"-11x1" H.H.C.S.
5	4	———	5/8 LOCKWASHER



4 GROUND BAR DETAIL
N.T.S.

EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL 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)

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AT&T
PLUMBING DIAGRAM & GROUNDING DETAILS (LTE)

JOB NUMBER	DRAWING NUMBER	REV
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