Centek Engineering, Inc.
3-2 North Branford Road
Branford, Connecticut 06405
Phone: (203) 488-0580
Fax: (203) 488-8587

Steven L. Levine
Real Estate Consultant

HAND DELIVERED

March 11, 2014

Attorney Melanie Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Re: New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 530 Bushy Hill Road, Simsbury (owner, Sprint)

Dear Ms. Bachman:

In order to accommodate technological changes, implement Uniform Mobile Telecommunications System ("UMTS") and/or 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. Please accept this letter and attachments as notification, 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 and attachments is being sent to the chief elected official of the municipality in which the affected cell site is located.

UMTS technology offers services to mobile computer and phone users anywhere in the world. Based on the Global System for Mobile ("GSM") communication standard, UMTS is the planned worldwide standard for mobile users. UMTS, fully implemented, gives computer and phone users high-speed access to the Internet as they travel. They have the same capabilities even when they roam, through both terrestrial wireless and satellite transmissions.

LTE is a high-performance air interface for cellular mobile communications. It is designed to increase the capacity and speed of mobile telephone networks.

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.

The changes to the facility do not constitute modifications 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).

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

2. The proposed changes will not extend the site boundaries. There will be no effect on the site compound other than some enlarged equipment pads as may be noted in the attachments.

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

4. Radio frequency power density may increase due to use of one or more GSM channel for UMTS transmissions. Moreover, 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, AT&T respectfully submits that the proposed changes at the referenced site constitute exempt modifications under R.C.S.A. Section 16-50j-72(b)(2).

Please feel free to call me at (860) 830-0380 with questions concerning this matter. Thank you for your consideration.

Sincerely,

Steven L. Levine
Real Estate Consultant

cc: Mary A. Glassman, 1st Selectman, Town of Simsbury

Attachments

NEW CINGULAR WIRELESS PCS, LLC
Equipment Modification

530 Bushy Hill Road, Simsbury
CSC Approvals: Docket 279; EM 6/04, 6/05, 9/13
AT&T Site CT1171

Tower Owner/Manager: Sprint

Lease Area: Excerpts from the D&M Plan for Docket 279, attached, show the approved boundaries for this site to be a 21 ft x 63 ft portion of the Simsbury Commons Mall parking lot. Comparison of this lease area with Sheet A-1 of the attached construction drawings reveals that AT&T's existing equipment shelter sits squarely within the existing approved area. Since all proposed modifications will take place either on the tower or within the AT&T shelter, the proposed changes will not extend the site boundaries.

Equipment Configuration: Flagpole

Current and/or Approved:
Three Andrews SBNH-1D6565B antennas @ 104 ft
Six TMA's at 94 ft
Six lines 1 5/8 inch coax
30-inch diameter radomes at tower height interval 88 - 108

Planned Modifications:
Remove existing radomes at 88 to 118 ft, antennas, TMA's, and AT&T coax.
Remove internal support post from 88 to 118 ft.
Install stronger internal support post for 88 to 118 ft, anchor bolts, and stiffener plates as recommended in the attached structural analysis. (See construction drawings, Sheet S-2.)
Re-install Sprint antennas and equipment at 114 ft c.l.
Install three CCI OPA-65R-LCUU-H6 antennas @ 104 ft c.l.
Install six TMA's at 94 ft.
Install twelve lines 1 ¼ inch coax.
Install 36-inch diameter radomes at tower height interval 88 - 118 ft to accommodate larger antennas & associated equipment. (The 30-inch radome atop the flagpole is also being replaced with the consent of Sprint. The flag will not fly or drape properly if the top radome is smaller than those immediately below it.)

Power Density:

Calculations for AT&T's current operations at the site indicate a radio frequency electromagnetic radiation power density, measured at the flagpole base, of approximately 23.8 % of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density for AT&T's planned operations would be approximately 25.2 % of the standard.

Existing

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm^2)	Standard Limits (mW/cm^2)	Percent of Limit
Other Users *							10.96
AT&T GSM	104	1900 Band	3	427	0.0426	1.0000	4.26
AT&T UMTS	104	1900 Band	1	500	0.0166	1.0000	1.66
AT&T UMTS	94	880 - 894	2	500	0.0407	0.5867	6.94
Total							23.8%

* Per CSC records.

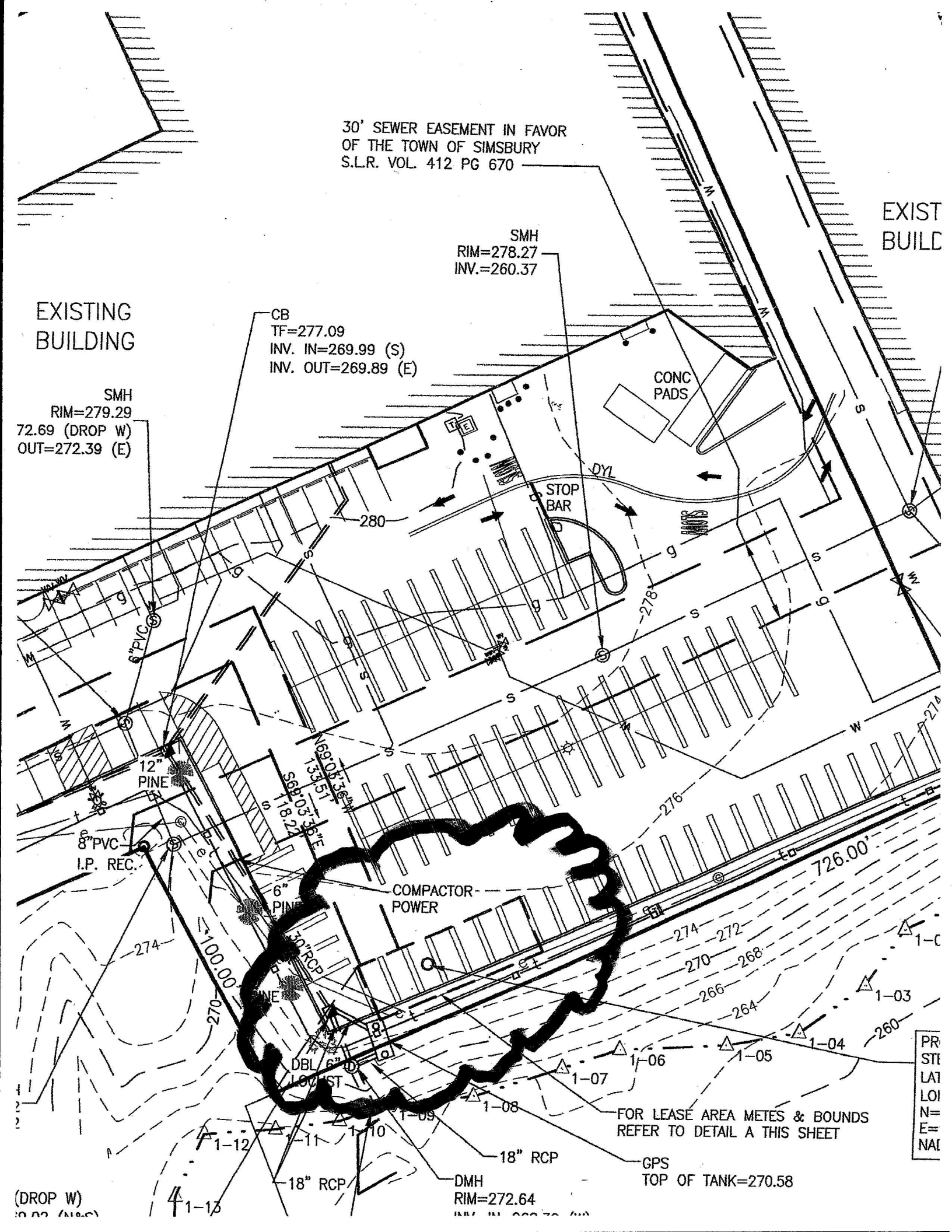
Proposed

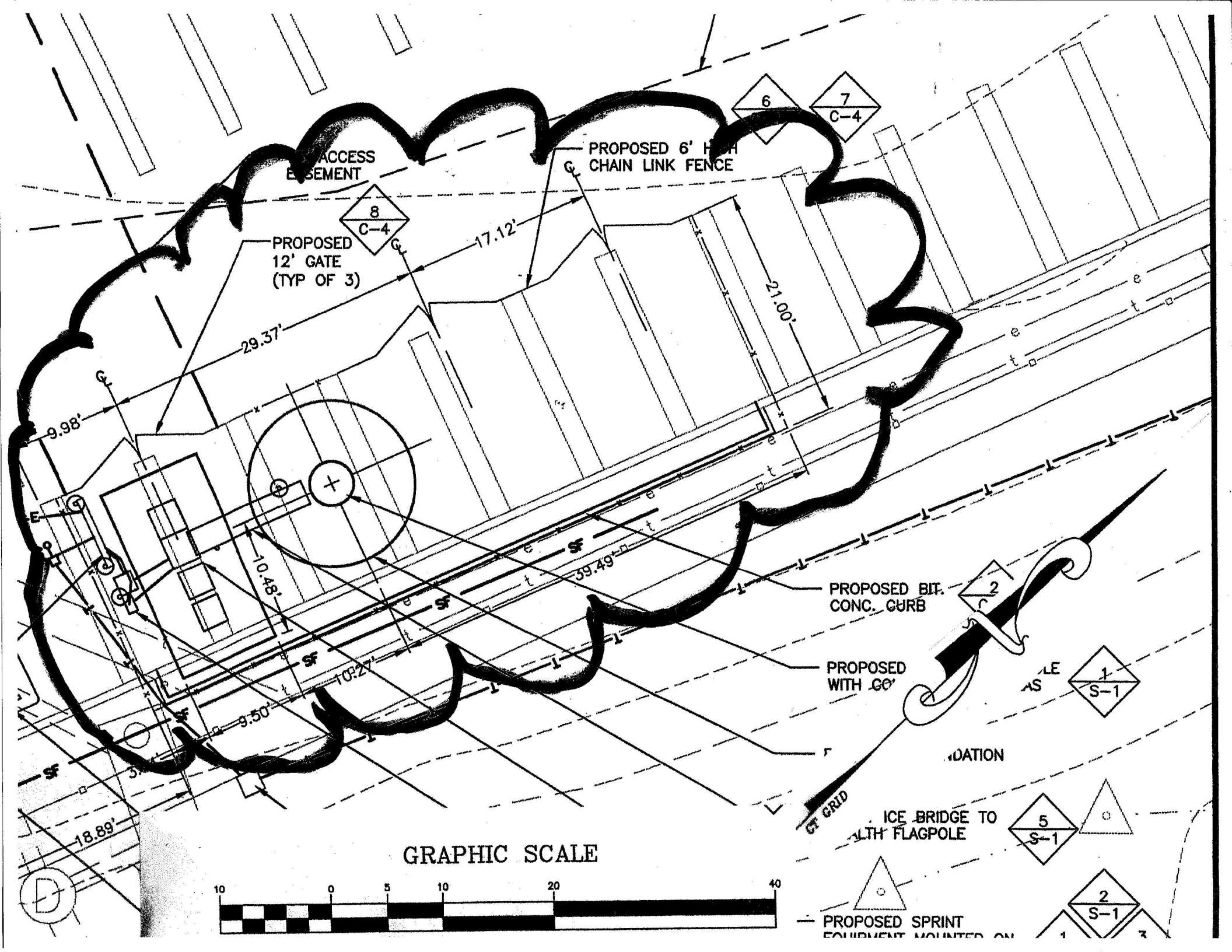
Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm^2)	Standard Limits (mW/cm^2)	Percent of Limit
Other Users *							10.96
AT&T LTE	104	700 Band	1	500	0.0166	0.4667	3.56
AT&T LTE	104	1900 Band	1	500	0.0166	1.0000	1.66
AT&T LTE	104	2300 Band	1	500	0.0166	1.0000	1.66
AT&T UMTS	104	880 - 894	2	500	0.0332	0.5867	5.67
AT&T UMTS	104	1900 Band	1	500	0.0166	1.0000	1.66
Total							25.2%

* Per CSC records.

Structural information:

The attached structural analysis demonstrates that the tower and foundation will have adequate structural capacity to accommodate the proposed equipment modifications upon completion of the recommended structural modifications described in the attachments hereto. (Hudson Design Group, 2-11-14)


30' SEWER EASEMENT IN FAVOR
OF THE TOWN OF SIMSBURY
S.L.R. VOL. 412 PG 670
EXIST
BUILD
SMH
RIM=278.27
INV.=260.37
EXISTING
BUILDING
CB
TF=277.09
INV. IN=269.99 (S)
INV. OUT=269.89 (E)
SMH
RIM=279.29
72.69 (DROP W)
OUT=272.39 (E)
CONC
PADS
DYL
STOP
BAR
280
278
276
6"PVC
12"
PINE
8"PVC
I.P. REC.
N69°03'36"W
133.51'
S68°03'36"E
118.22'
6"
PINE
30"RCP
PINE
COMPACTOR
POWER
726.00'
100.00'
274
272
270
268
266
264
260
DBL 6"
LOCUST
1-03
1-04
1-05
1-06
1-07
1-08
1-09
1-10
1-11
1-12
1-13
FOR LEASE AREA METES & BOUNDS
REFER TO DETAIL A THIS SHEET
18" RCP
18" RCP
DMH
RIM=272.64
GPS
TOP OF TANK=270.58
(DROP W)


ACCESS
EASEMENT
PROPOSED 6' HIGH
CHAIN LINK FENCE
PROPOSED
12' GATE
(TYP OF 3)
17.12'
21.00'
29.37'
9.98'
10.48'
39.49'
10.27'
9.50'
18.89'
PROPOSED BIT.
CONC. CURB
PROPOSED
WITH GO
ICE BRIDGE TO
LTH FLAGPOLE
PROPOSED SPRINT
GRAPHIC SCALE
10 0 5 10 20 40

PROJECT INFORMATION

SCOPE OF WORK:	UNMANNED TELECOMMUNICATIONS FACILITY MODIFICATIONS
SITE ADDRESS:	530 BUSHY HILL ROAD SIMSBURY, CT 06070
LATITUDE:	41.818108 N 41° 49' 05.19" N
LONGITUDE:	-72.863039 W -72° 51' 46.94" W
JURISDICTION:	NATIONAL, STATE & LOCAL CODES OR ORDINANCES
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY
NOC#	866-915-5600

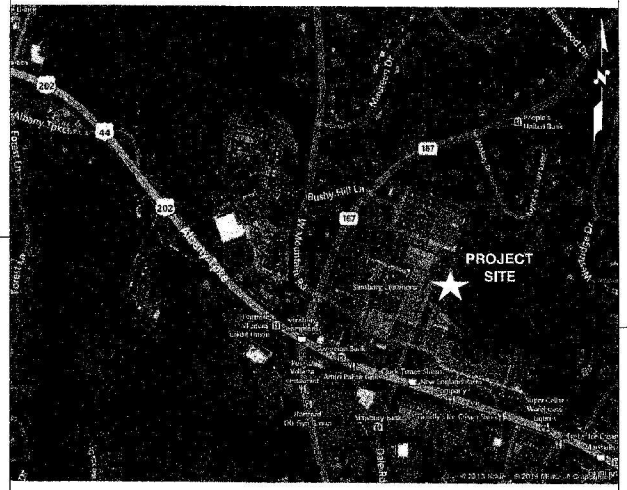
at&t

SITE NUMBER: CT1171
SITE NAME: SIMSBURY - BUSHY HILL ROAD

DRAWING INDEX

VICINITY MAP

DIRECTIONS TO SITE:
START OUT GOING NORTHEAST ON ENTERPRISE DR TOWARD CAPITOL BLVD. TURN LEFT ONTO CAPITOL BLVD. TURN LEFT ONTO WEST ST. MERGE ONTO I-91 N VIA THE RAMP ON THE LEFT TOWARD HARTFORD. TAKE THE I-84 W EXIT, EXIT 32A-32B, ON THE LEFT TOWARD TRUMBULL ST/WATERBURY. TAKE THE I-91 N EXIT TOWARD SPRINGFIELD. TAKE THE TRUMBULL STREET EXIT, EXIT 32B, ON THE LEFT. STAY STRAIGHT TO GO ONTO TRUMBULL ST. TURN RIGHT ONTO US-44/MAIN ST. CONTINUE TO FOLLOW US-44. TURN RIGHT ONTO CT-167/BUSHY HILL RD. DESTINATION IS ON THE RIGHT.



GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
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.

3 WORKING DAYS

BEFORE YOU DIG

CALL TOLL FREE 888-DIG-SAFE

UNDERGROUND SERVICE ALERT

Hudson Design Group LLC
1400 OSGOOD STREET
BUILDING 20 NORTH, SUITE 2-101
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

SAI
27 NORTHWESTERN DR.
SALEM, NH 03079

SITE NUMBER: CT1171
SITE NAME: SIMSBURY
BUSHY HILL ROAD
530 BUSHY HILL ROAD
SIMSBURY, CT 06070
HARTFORD COUNTY

at&t
500 ENTERPRISE DRIVE
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	02/24/14	ISSUED FOR CONSTRUCTION	SB	AT	DPH
A	11/21/13	ISSUED FOR REVIEW	AL	AT	DPH

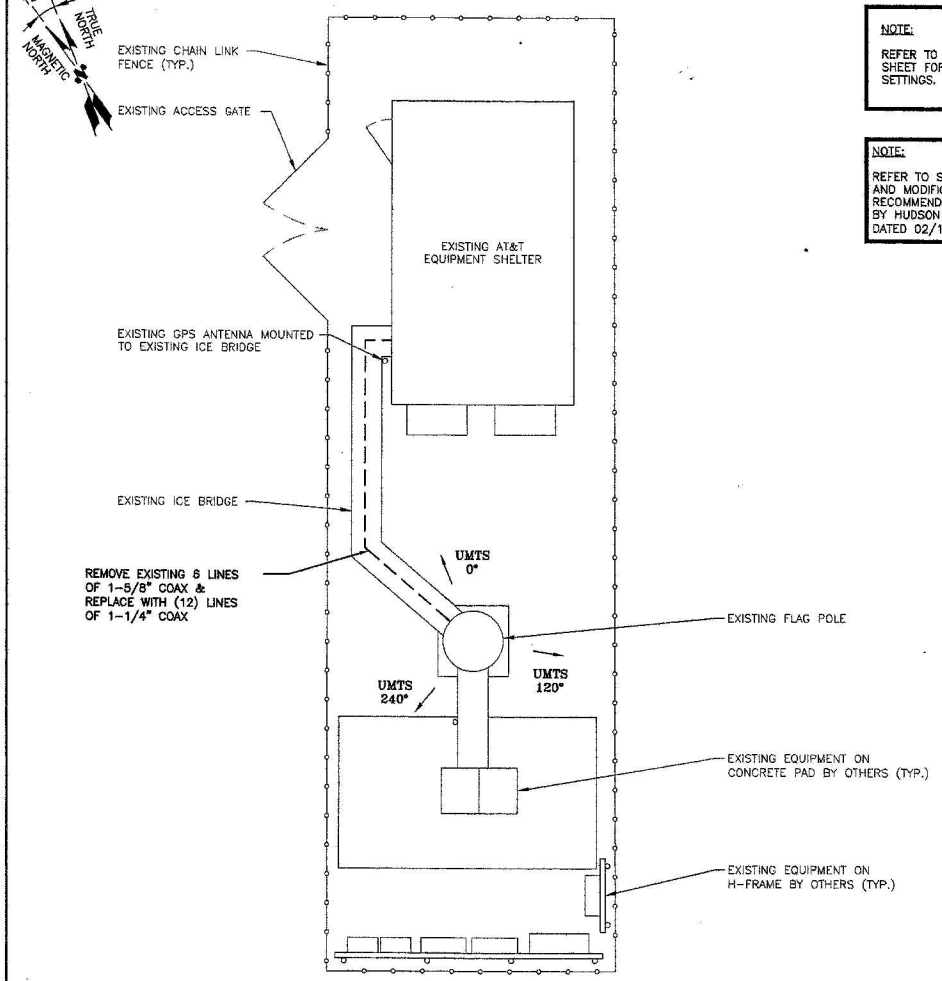
SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: AL

Daniel P. Hamm

AT&T

TITLE SHEET
(LTE)

JOB NUMBER	DRAWING NUMBER	REV
1171.01	T-1	1



COMPOUND PLAN

SCALE: 1/4"=1'-0"

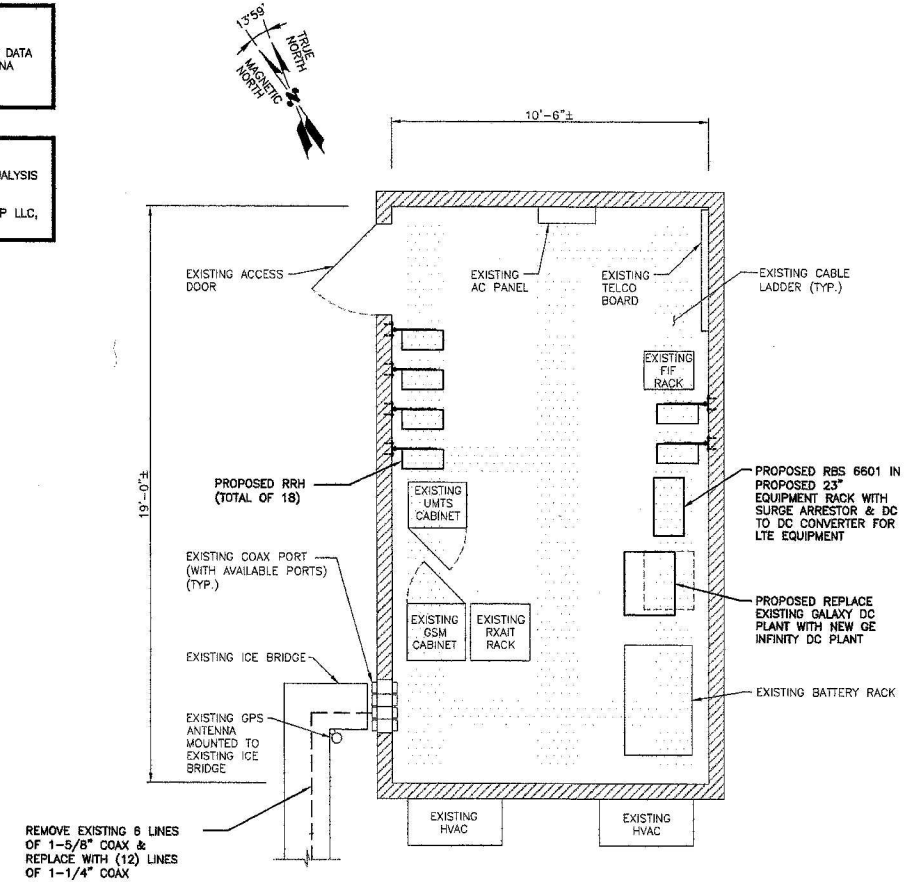
0 2'-0" 4'-0" 8'-0" 12'-0"

NOTE:

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

NOTE:

REFER TO STRUCTURAL ANALYSIS AND MODIFICATION RECOMMENDATIONS BY HUDSON DESIGN GROUP LLC, DATED 02/11/14.



EQUIPMENT PLAN

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

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

Hudson Design Group LLC
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 2-101
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

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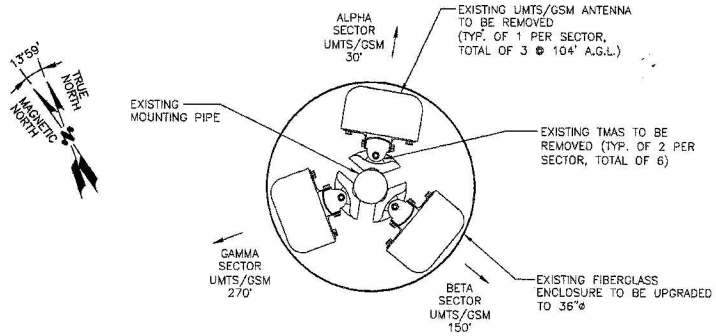
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: AL

STATE OF CONNECTICUT — DANIEL P. HAMM — No. 24175 — LICENSED PROFESSIONAL ENGINEER

AT&T

COMPOUND & EQUIPMENT PLAN (LTE)

JOB NUMBER	DRAWING NUMBER	REV
1171.01	A--1	1



EXISTING UMTS/GSM ANTENNA LAYOUT

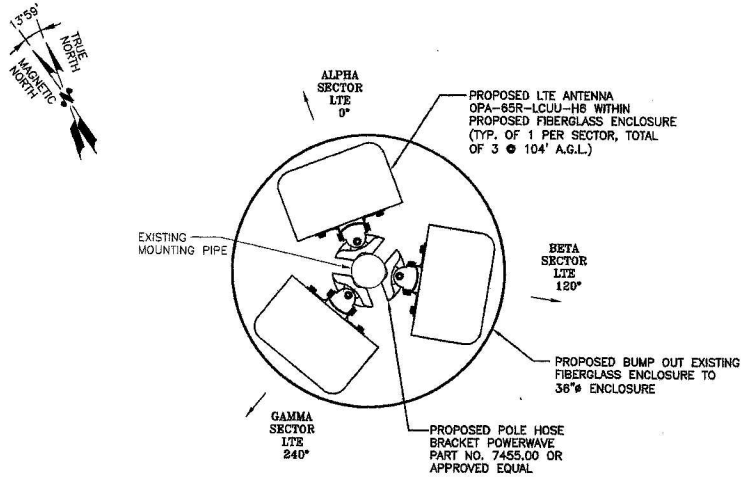
SCALE: N.T.S.

NOTE:

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

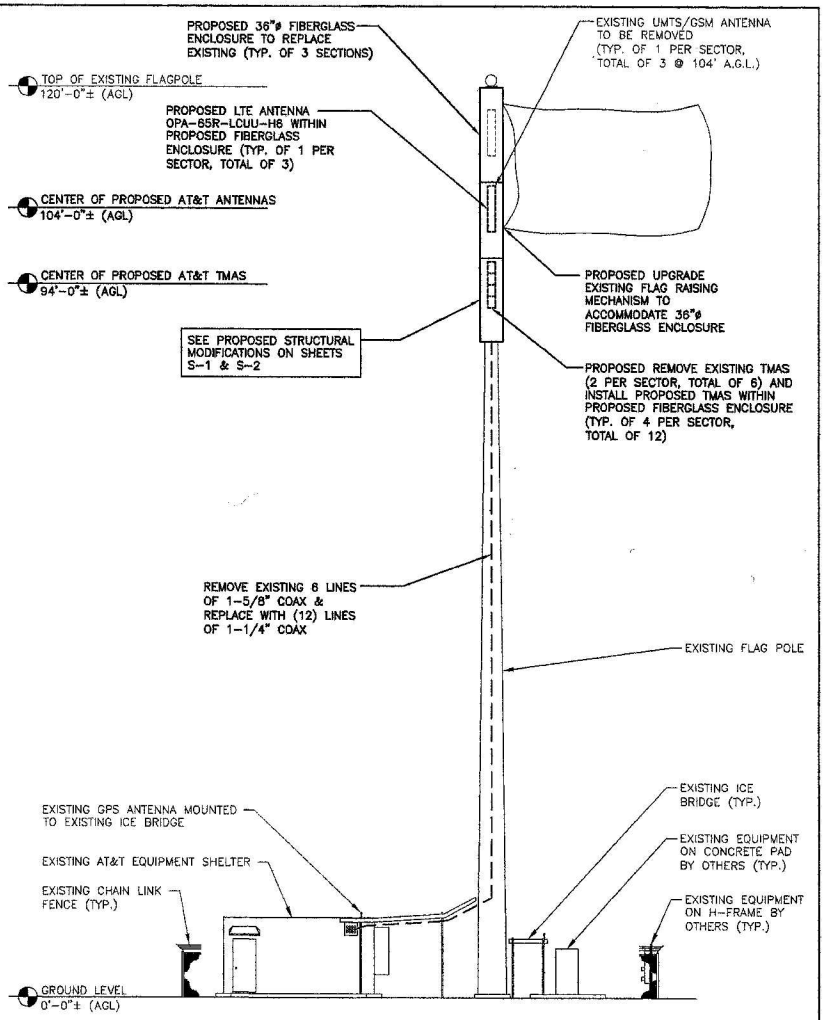
NOTE:

REFER TO STRUCTURAL ANALYSIS AND MODIFICATION RECOMMENDATIONS BY HUDSON DESIGN GROUP LLC, DATED 02/11/14.



PROPOSED LTE ANTENNA LAYOUT

SCALE: N.T.S.



WEST ELEVATION

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

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

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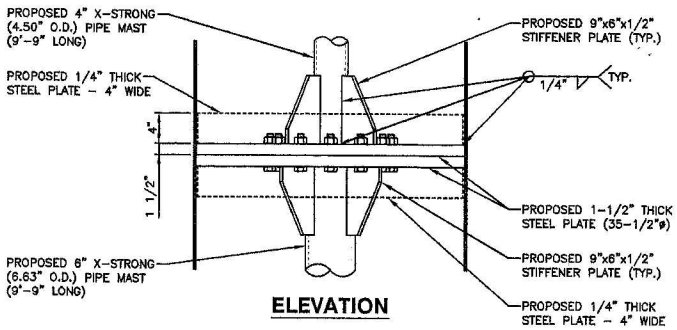
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: AL

STATE OF CONNECTICUT DANIEL P. HAMM No. 24175 LICENSED PROFESSIONAL ENGINEER

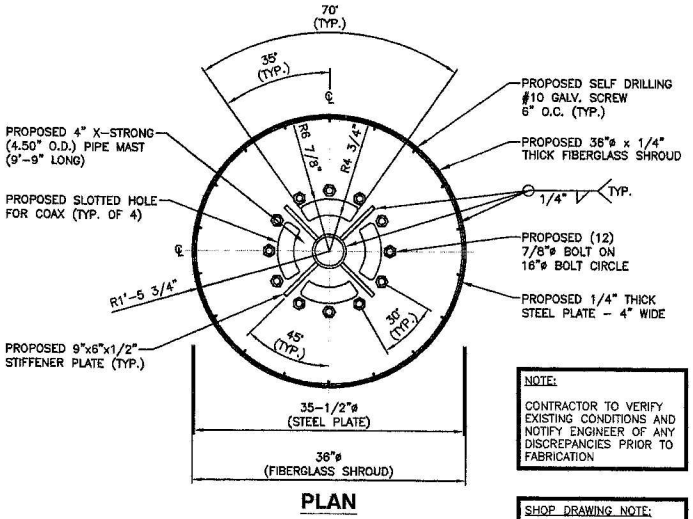
AT&T

ANTENNA LAYOUT AND ELEVATION (LTE)

JOB NUMBER	DRAWING NUMBER	REV
1171.01	A-2	1



ELEVATION



PLAN

PLATE & BAND DETAIL (TOP SECTION)

SCALE: 1 1/2"=1'-0" (1 / S-2)

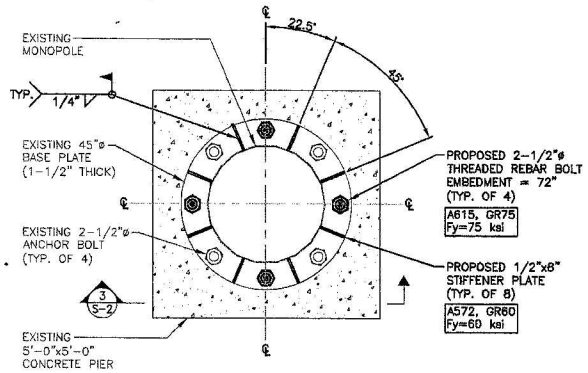
0 0'-4" 0'-8" 1'-4" 2'-0"

NOTE:

CONTRACTOR TO VERIFY EXISTING CONDITIONS AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO FABRICATION

SHOP DRAWING NOTE:

PROVIDE ENGINEER REVIEWED SHOP DRAWINGS PRIOR TO ANY STEEL/FRP FABRICATION

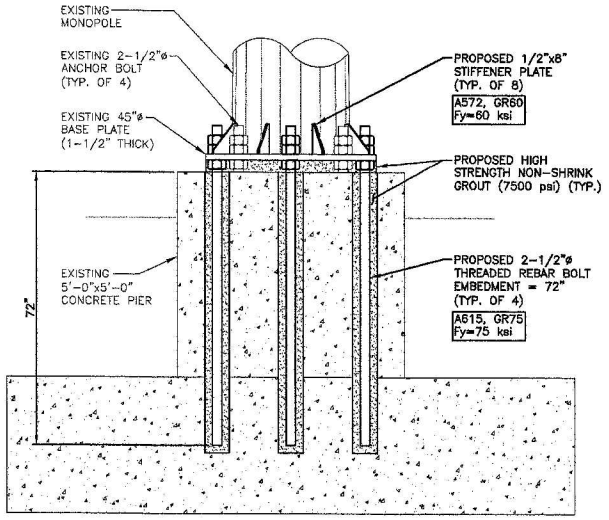


BASE PLATE MODIFICATION PLAN

(2 / S-2)

SCALE: 3/4"=1'-0"

0 0'-8" 1'-4" 2'-8" 4'-0"



BASE PLATE MODIFICATION SECTION

(3 / S-2)

SCALE: 3/4"=1'-0"

0 0'-8" 1'-4" 2'-8" 4'-0"

GENERAL NOTES:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES AND ORDINANCES. IT IS THE CONTRACTORS RESPONSIBILITY TO OBTAIN ALL PERMITS NECESSARY TO COMPLETE THE PROJECT AND ABIDE BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS, ELEVATIONS, AND EXISTING CONDITIONS AT THE SITE BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK. NO EXTRA CHARGE OR COMPENSATION SHALL BE ALLOWED DUE TO DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND DIMENSIONS INDICATED ON THE CONSTRUCTION DRAWINGS. ANY SUCH DISCREPANCY IN DIMENSION WHICH MAY BE FOUND SHALL BE SUBMITTED TO HUDSON DESIGN GROUP FOR CONSIDERATION BEFORE THE CONTRACTOR PROCEEDS WITH THE WORK IN THE AFFECTED AREA.
3. INCORRECTLY FABRICATED, DAMAGED, OTHERWISE MISFITTING, OR NON-CONFORMING MATERIALS AND CONDITIONS SHALL BE REPORTED TO HUDSON DESIGN GROUP PRIOR TO ANY REMEDIAL OR CORRECTIVE ACTION. ALL ACTIONS SHALL REQUIRE HUDSON DESIGN GROUP, LLC APPROVAL.
4. IT IS THE CONTRACTORS SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO INSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION AND/OR FIELD MODIFICATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF TEMPORARY BRACING, GUYS OR TIE DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AFTER COMPLETION OF THE PROJECT.
5. CONTRACTOR SHALL PROMPTLY REMOVE ANY AND ALL DEBRIS FROM SITE AND RESTORE AS BEST AS POSSIBLE TO PRE-CONSTRUCTION CONDITION.

STEEL:

1. ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST AISC CODE AND ASTM SPECIFICATIONS.
2. ALL CONNECTIONS OF STRUCTURAL STEEL MEMBERS SHALL BE MADE USING SPECIFIED WELDS WITH WELDING ELECTRODES E-70XX OR SPECIFIED HIGH STRENGTH BOLTS TO BE ASTM A325N, THREAD INCLUDED WITH SHEAR PLANE UNLESS OTHERWISE NOTED.
3. ALL BOLTED CONNECTIONS TO BE INSTALLED TO A SNUG-TIGHTENED CONDITION IN ACCORDANCE WITH AISC 13 PART 16.2, "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS", SECTION 8.1, UNLESS OTHERWISE NOTED.
4. ALL STEEL (EXCEPT A490 BOLTS), AFTER FABRICATION, SHALL BE HOT DIPPED GALVANIZED PER ASTM A-123. ALL DAMAGED SURFACES, WELDED AREAS AND AUTHORIZED NON-GALVANIZED MEMBERS OR PARTS (EXISTING OR NEW) SHALL BE PAINTED WITH 2 COATS OF ZRC COLD GALVANIZING COMPOUND.
5. ALL SHOP AND FIELD WELDING SHALL BE DONE BY WELDERS QUALIFIED AS DESCRIBED IN THE "AMERICAN WELDING SOCIETY'S STANDARD QUALIFICATION PROCEDURE" TO PERFORM THE TYPE OF WORK REQUIRED.
6. STRUCTURAL STEEL MAY NOT BE TORCH CUT FOR FABRICATION. ALL STEEL FABRICATION MUST FOLLOW AISC STANDARDS.
7. NEW STEEL MEMBERS AND CONNECTIONS SHALL BE PAINTED TO MATCH EXISTING TOWER.

MISC. NOTES:

1. ALL MODIFICATIONS ARE ASSUMED TO BE MADE ON AN EMPTY TOWER. CONTRACTOR IS RESPONSIBLE TO MAKE PROVISIONS TO SUPPORT OR WORK AROUND EXISTING ANTENNAS AND TRANSMISSION LINES. MODIFICATIONS MUST BE CONTINUOUS THROUGH ALL AREAS SHOWN.
2. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.

FABRICATION NOTES:

1. ALL DIMENSIONS ARE PRELIMINARY UNTIL FIELD VERIFIED BY CONTRACTOR. ANY CHANGES MUST BE APPROVED BY ENGINEER OF RECORD IN WRITING PRIOR TO FABRICATION AND INSTALLATION.
2. NEW STEEL MEMBERS MUST HAVE SINGLE DRILLED HOLES. SLOTTED AND DOUBLE DRILLED HOLES ARE NOT ACCEPTABLE MEANS OF FABRICATION.

CONTRACTOR QUALIFICATION NOTES:

1. ALL REPAIRS SHALL BE PERFORMED BY A TOWER CONTRACTOR WITH A MINIMUM OF 5 YEARS EXPERIENCE IN TOWER ERECTION AND RETROFIT AND WITH WORKING KNOWLEDGE OF THE ANSI/TIA-222-G "STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS".
2. CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION MEANS AND METHODS. SHOULD THE CONTRACTOR REQUIRE DIRECT CONSULTATION, HUDSON DESIGN GROUP, LLC IS WILLING TO OFFER SERVICES BASED UPON AN AGREED FEE FOR THE WORK REQUIRED.
3. ALL SUBMITTAL INFORMATION MUST BE SENT TO HUDSON DESIGN GROUP, LLC 1600 OSGOOD ST. BUILDING 20N, SUITE 3090, NORTH ANDOVER, MA 01845 TEL: (978)557-5553, FAX: (978)336-5586. ANY VARIATION OF THESE SPECIFICATIONS OR DRAWINGS WITHOUT CONSENT FROM HUDSON DESIGN GROUP WILL VOID ANY RESPONSIBILITY OR LIABILITY FOR DAMAGE (MATERIAL OR PHYSICAL) TOWARDS HUDSON DESIGN GROUP, LLC.

JOB SITE SAFETY AND NOTES:

NEITHER THE PROFESSIONAL ACTIVITIES OF HUDSON DESIGN GROUP, LLC NOR THE PRESENCE OF HUDSON DESIGN GROUP, LLC OR EMPLOYEES AND SUB-CONSULTANTS AT THE CONSTRUCTION SITE, SHALL RELIEVE THE GENERAL CONTRACTOR AND/OR SUBCONTRACTORS AND ANY OTHER ENTITY OF THEIR OBLIGATIONS, DUTIES AND RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES, OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING OR COORDINATING ALL PORTIONS OF THE WORK OF CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ANY HEALTH OR SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES. THE GENERAL CONTRACTOR AND/OR SUBCONTRACTOR IS SOLELY RESPONSIBLE FOR JOB SAFETY, AND WARRANTS THAT THIS INTENT IS EVIDENT BY ACCEPTING THIS WORK.

SUBSTITUTES AND/OR EQUALS:

IF CONTRACTOR WISHES TO FURNISH OR USE A SUBSTITUTE ITEM OF MATERIAL OR EQUIPMENT, CONTRACTOR SHALL MAKE WRITTEN APPLICATION TO ENGINEER FOR ACCEPTANCE THEREOF, CERTIFYING THAT THE PROPOSED SUBSTITUTE WILL ADEQUATELY PERFORM THE FUNCTIONS AND ACHIEVE THE RESULTS CALLED FOR BY THE GENERAL DESIGN, BE SIMILAR IN SUBSTANCE TO THAT SPECIFIED, AND SUITED TO THE SAME USE AS THAT SPECIFIED. ALL VARIATIONS OF THE PROPOSED SUBSTITUTE FROM THAT SPECIFIED WILL BE IDENTIFIED IN THE APPLICATION AND AVAILABLE MAINTENANCE, REPAIR, AND REPLACEMENT SERVICE WILL BE INDICATED. THE APPLICATION WILL ALSO CONTAIN AN ITEMIZED ESTIMATE OF ALL COSTS OR CREDITS THAT WILL RESULT DIRECTLY OR INDIRECTLY FROM ACCEPTANCE OF SUCH SUBSTITUTE INCLUDING COSTS OF REDESIGN AND CLAIMS OF OTHER CONTRACTORS AFFECTED BY THE RESULTING CHANGE, ALL OF WHICH WILL BE CONSIDERED BY ENGINEER IN EVALUATION OF THE PROPOSED SUBSTITUTE. ENGINEER MAY REQUIRE CONTRACTOR TO FURNISH ADDITIONAL DATA ABOUT THE PROPOSED SUBSTITUTE.

Hudson Design Group LLC
1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 2-101
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

SAI
27 NORTHWESTERN DR.
SALEM, NH 03079

SITE NUMBER: CT1171
SITE NAME: SIMSBURY
BUSHY HILL ROAD
530 BUSHY HILL ROAD
SIMSBURY, CT 06070
HARTFORD COUNTY

at&t
500 ENTERPRISE DRIVE
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	02/24/14	ISSUED FOR CONSTRUCTION	SB	AT	DPH
A	11/21/13	ISSUED FOR REVIEW	AL	AT	DPH

SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: AL

Daniel P. Hamm No. 21175 LICENSED PROFESSIONAL ENGINEER

AT&T

STRUCTURAL MODIFICATION DETAILS (LTE)

JOB NUMBER	DRAWING NUMBER	REV
1171.01	S-2	1

(Revised)
STRUCTURAL ANALYSIS REPORT

For

CT1171

SIMSBURY – BUSHY HILL ROAD

530 Bushy Hill Road
Simsbury, CT 06070

Antennas Enclosed within Fiberglass Shroud Secured to the Existing Flag Pole

Prepared for:

SAI

at&t

500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

Dated: February 11, 2014

Prepared by:

Hudson Design Group LLC

1600 Osgood Street Bldg. 20N Suite 3090
North Andover, MA 01845
(P) 978.557.5553 (F) 978.336.5586
www.hudsondesigngroupllc.com

STATE OF CONNECTICUT
GI KAI WANG
No. 28220
LICENSED PROFESSIONAL ENGINEER

2/11/2014

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 120' flagpole supporting the proposed AT&T antennas located at elevation 88'-98' and at elevation 98'-108' above the ground level.

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

Record drawings of the existing flagpole and foundation prepared by Engineered Endeavors Inc., dated August 12, 2004, were available for our use. Geotechnical study prepared by Dr. Clarence Welti, PE, P.C., dated July 18, 2003, was also available and obtained for our use.

The previous structural analysis report prepared by this office, dated November 26, 2013, was available for our use.

CONCLUSION SUMMARY:

HDG performed structural analysis of the existing flagpole with the following proposed modifications:

1. Replace existing support pipes with new pipes from El.88' to El.118'.
2. Add (4) anchor bolts.
3. Add (8) steel stiffener plates to the base plate of the flagpole.

Based on our evaluation, we have determined that the existing flagpole with proposed modifications and foundation **are in conformance** with the ANSI/TIA-222-F Standard for the loading considered under the criteria listed in this report. The flagpole structure is rated at **86.3%** - (Pole section from EL.1.5' to EL.48.7' Controlling).

Hudson Design Group LLC

APPURTENANCES CONFIGURATION:

Tenant	Appurtenances	Elev.	Mount
	Flag	118'	
Sprint	36" dia. x 10.0' Fiberglass Shroud	108'-118'	
AT&T	***36" dia. x 10.0' Fiberglass Shroud***	98'-108'	
AT&T	***36" dia. x 10.0' Fiberglass Shroud***	88'-98'	

****Proposed AT&T Appurtenances shown in Bold.***

AT&T EXISTING/PROPOSED COAX CABLES:

Tenant	Coax Cables	Elev.	Mount
AT&T	(6) 1 5/8" Cables	113'	Inside Flagpole
AT&T	***(6) 1 5/8" Cables***	103'	Inside Flagpole

****Proposed AT&T Coax Cables shown in Bold.***

ANALYSIS RESULTS SUMMARY:

Component	Max. Stress Ratio	Elev. of Component (ft)	Pass/Fail	Comments
Pole Section-L1	73.6 %	108.0 – 118.0	PASS	
Pole Section-L2	82.5 %	98.0 – 108.0	PASS	
Pole Section-L3	83.4 %	88.0 – 98.0	PASS	
Pole Section-L4	54.6 %	48.7 – 88.0	PASS	
Pole Section-L5	**86.3 %**	1.5 – 48.7	PASS	**Controlling**
Base Plate	74.7 %	1.5	PASS	

Hudson Design Group LLC

DESIGN CRITERIA:

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

   County: Hartford
   Wind Load: 80 mph (fastest mile)
   100 mph (3 second gust)
   Nominal Ice Thickness: 1/2 inch

2. Approximate height above grade to proposed antennas: 88'-98' & 98'-108'

***Calculations and referenced documents are attached.**

ASSUMPTIONS:

1. HDG did not perform any mapping of the flag pole or the spinal pipes within the flag pole shroud. Pipe size and material strength within the flag pole shroud are assumed and should be field verified.

2. The appurtenances configuration is as stated in this report. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer requirements.

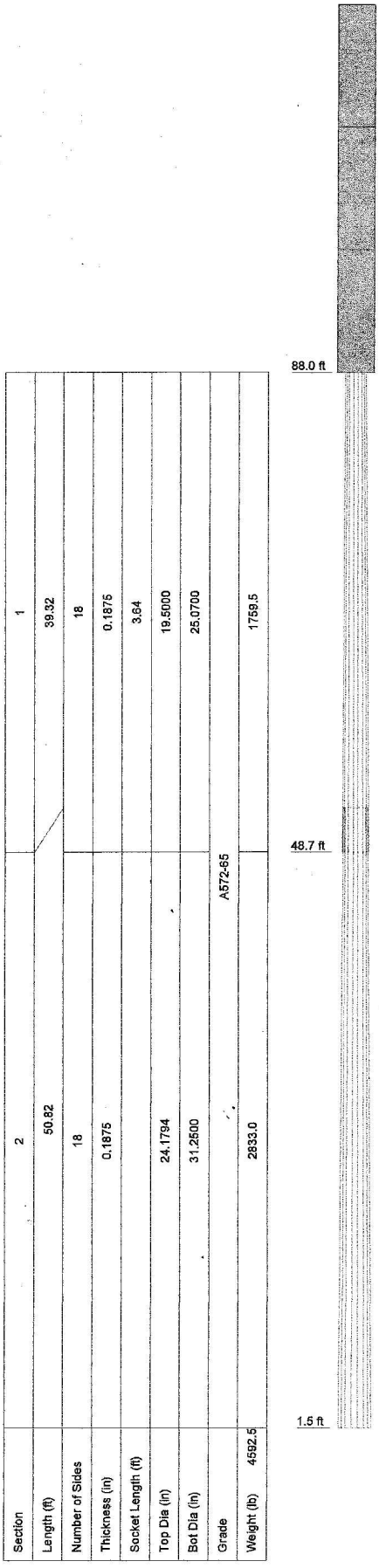
3. The flagpole and foundation are properly constructed and maintained. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.

4. The support mounts and platforms are not analyzed and are considered adequate to support the loading. The analysis is limited to the primary support structure itself.

5. All prior structural modification, if any, are assumed to be as per the data supplied (if available), and installed properly.

SUPPORT RECOMMENDATIONS:

HDG recommends that the proposed antennas be mounted on the inside of the fiberglass shroud supported by the flagpole.



Section	1	2
Length (ft)	39.32	50.82
Number of Sides	18	18
Thickness (in)	0.1875	0.1875
Socket Length (ft)	3.64	
Top Dia (in)	19.5000	24.1794
Bot Dia (in)	25.0700	31.2500
Grade	A572-65	
Weight (lb)	1759.5	2833.0

4592.5

DESIGNED APPURTENANCE LOADING

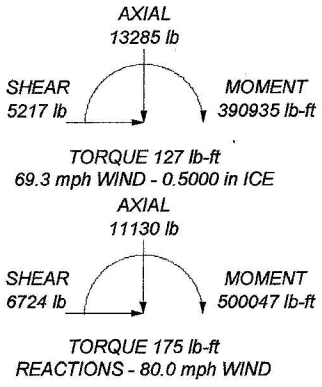
TYPE	ELEVATION	TYPE	ELEVATION
Flag	118	36"x10' Shroud II (CT 1171) (ATI - proposed)	93
36"x10' Shroud I (CT 1171)	113		
36"x10' Shroud II (CT 1171) (ATI - proposed)	103		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for a 80.0 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 69.3 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50.0 mph wind.
5. TOWER RATING: 86.3%



Hudson Design Group, LLC
1600 Osgood Street, Building 20 North, Suite 3090
North Andover, MA 01845
Phone: (978) 557-5553
FAX: (978) 226-5586

Job: *CT 1171 Modifications Simsbury, CT*		
Project: *120 ft Flagpole*		
Client: AT&T	Drawn by: kw	App'd:
Code: TIA/EIA-222-F	Date: 02/11/14	Scale: NTS
Path: C:\Users\Kwood\Documents\HUDSON DESIGN GROUP\AA\CT 1171 LTE Mod - FP (AT&T)\CT 1171 LTE Mod\CT 1171 LTE Mod.eri		Dwg No. E-1

Centek Engineering, Inc.
3-2 North Branford Road
Branford, Connecticut 06405
Phone: (203) 488-0580
Fax: (203) 488-8587

Steven L. Levine
Real Estate Consultant

March 11, 2014

Honorable Mary A. Glassman
1st Selectman
Town of Simsbury
933 Hopmeadow Street
Simsbury, CT 06070

Re: New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 530 Bushy Hill Road, Simsbury

Dear Ms. Glassman:

In order to accommodate technological changes, implement Uniform Mobile Telecommunications System ("UMTS") and Long Term Evolution ("LTE") capabilities, and enhance system performance in the State of Connecticut, New Cingular Wireless PCS, LLC ("AT&T") will be changing its equipment configuration at certain cell sites.

As required by Regulations of Connecticut State Agencies ("R.C.S.A.") Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review AT&T's proposal. Please accept this letter as notification 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 enclosed Notice 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 the undersigned at 860-830-0380 or Ms. Melanie Bachman, Acting Executive Director, Connecticut Siting Council at (860) 827-2935.

Sincerely,

Steven L. Levine
Real Estate Consultant

Enclosure

(Revised)
STRUCTURAL ANALYSIS REPORT

For

CT1171
SIMSBURY – BUSHY HILL ROAD

530 Bushy Hill Road
Simsbury, CT 06070

Antennas Enclosed within Fiberglass Shroud Secured to the Existing Flag Pole

Prepared for:

SAI

at&t

500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

Dated: February 11, 2014

Prepared by:

Hudson Design Group LLC

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STATE OF CONNECTICUT
GI KAI WANG
No. 28220
LICENSED PROFESSIONAL ENGINEER

Gi Kai Wang 2/11/2014

SCOPE OF WORK:

Hudson Design Group LLC (HDG) has been authorized by AT&T to conduct a structural evaluation of the 120' flagpole supporting the proposed AT&T antennas located at elevation 88'-98' and at elevation 98'-108' above the ground level.

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

Record drawings of the existing flagpole and foundation prepared by Engineered Endeavors Inc., dated August 12, 2004, were available for our use. Geotechnical study prepared by Dr. Clarence Welti, PE, P.C., dated July 18, 2003, was also available and obtained for our use.

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CONCLUSION SUMMARY:

HDG performed structural analysis of the existing flagpole with the following proposed modifications:

1. Replace existing support pipes with new pipes from El.88' to El.118'.
2. Add (4) anchor bolts.
3. Add (8) steel stiffener plates to the base plate of the flagpole.

Based on our evaluation, we have determined that the existing flagpole with proposed modifications and foundation **are in conformance** with the ANSI/TIA-222-F Standard for the loading considered under the criteria listed in this report. The flagpole structure is rated at **86.3%** - (Pole section from EL.1.5' to EL.48.7' Controlling).

APPURTENANCES CONFIGURATION:

Tenant	Appurtenances	Elev.	Mount
	Flag	118'	
Sprint	36" dia. x 10.0' Fiberglass Shroud	108'-118'	
AT&T	***36" dia. x 10.0' Fiberglass Shroud***	98'-108'	
AT&T	***36" dia. x 10.0' Fiberglass Shroud***	88'-98'	

****Proposed AT&T Appurtenances shown in Bold.***

AT&T EXISTING/PROPOSED COAX CABLES:

Tenant	Coax Cables	Elev.	Mount
AT&T	(6) 1 5/8" Cables	113'	Inside Flagpole
AT&T	***(6) 1 5/8" Cables***	103'	Inside Flagpole

****Proposed AT&T Coax Cables shown in Bold.***

ANALYSIS RESULTS SUMMARY:

Component	Max. Stress Ratio	Elev. of Component (ft)	Pass/Fail	Comments
Pole Section-L1	73.6 %	108.0 – 118.0	PASS	
Pole Section-L2	82.5 %	98.0 – 108.0	PASS	
Pole Section-L3	83.4 %	88.0 – 98.0	PASS	
Pole Section-L4	54.6 %	48.7 – 88.0	PASS	
Pole Section-L5	**86.3 %**	1.5 – 48.7	PASS	**Controlling**
Base Plate	74.7 %	1.5	PASS	

DESIGN CRITERIA:

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

   County: Hartford
   Wind Load: 80 mph (fastest mile)
   100 mph (3 second gust)
   Nominal Ice Thickness: 1/2 inch

2. Approximate height above grade to proposed antennas: 88'-98' & 98'-108'

***Calculations and referenced documents are attached.**

ASSUMPTIONS:

1. HDG did not perform any mapping of the flag pole or the spinal pipes within the flag pole shroud. Pipe size and material strength within the flag pole shroud are assumed and should be field verified.

2. The appurtenances configuration is as stated in this report. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer requirements.

3. The flagpole and foundation are properly constructed and maintained. 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. The support mounts and platforms are not analyzed and are considered adequate to support the loading. The analysis is limited to the primary support structure itself.

5. All prior structural modification, if any, are assumed to be as per the data supplied (if available), and installed properly.

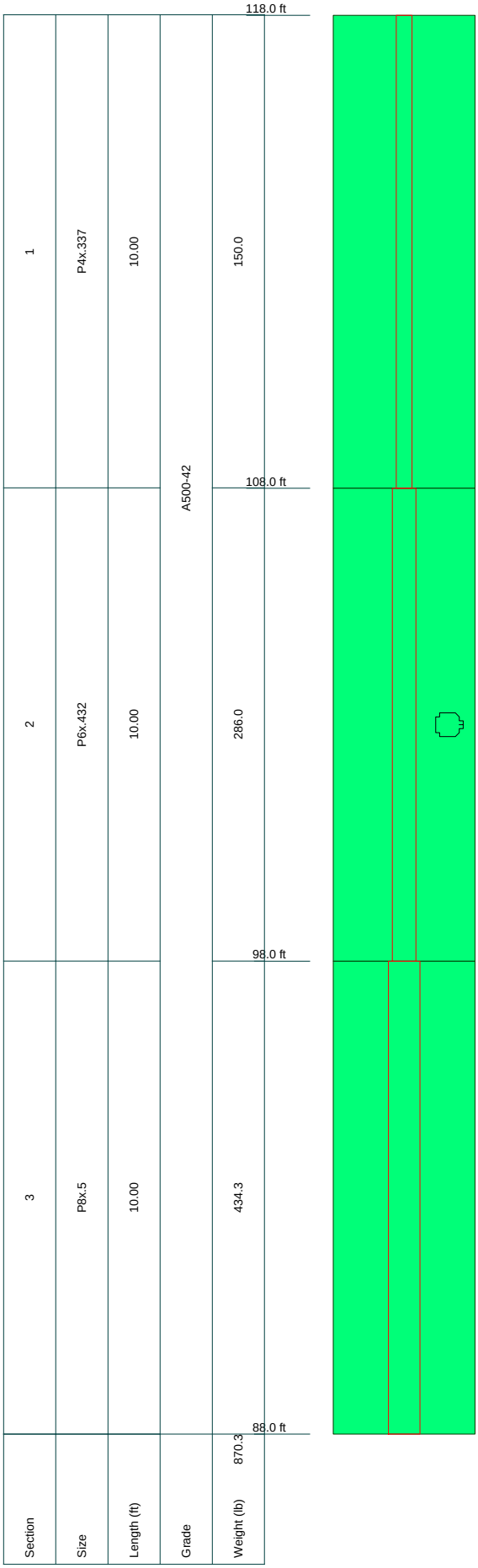
SUPPORT RECOMMENDATIONS:

HDG recommends that the proposed antennas be mounted on the inside of the fiberglass shroud supported by the flagpole.

Photo 1: Photo illustrating the Flagpole with Appurtenances shown.

Hudson Design Group LLC

CALCULATIONS



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Flag	118	36"x10' Shroud II (CT 1171) (ATI - proposed)	93
36"x10' Shroud I (CT 1171)	113		
36"x10' Shroud II (CT 1171) (ATI - proposed)	103		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A500-42	42 ksi	58 ksi			

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for a 80.0 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 69.3 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50.0 mph wind.

Hudson Design Group, LLC
1600 Osgood Street, Building 20 North, Suite 3090
North Andover, MA 01845
Phone: (978) 557-5553
FAX: (978) 226-5586

Job: ***CT 1171 LTE - Top Modifications Simsbury, CT***			
Project: ***120 ft Flagpole***			
Client: AT&T	Drawn by: kw		App'd:
Code: TIA/EIA-222-F	Date: 02/11/14		Scale: NTS
Path: C:\Users\kwang\Documents\HUDSON DESIGN GROUP\AAA\CT 1171 LTE Mod - FP (AT&T)\CT 1171 LTE Mod - Top\CT 1171 LTE Mod - Top.eri			Dwg No. E-1

Tower Input Data

There is a pole section.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in Hartford County, Connecticut.
Basic wind speed of 80.0 mph.
Nominal ice thickness of 0.5000 in.
Ice density of 56.0 pcf.
A wind speed of 69.3 mph is used in combination with ice.
Temperature drop of 50.0 °F.
Deflections calculated using a wind speed of 50.0 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.333.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Pole Section Geometry

Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L1	118.00-108.00	10.00	P4x.337	A500-42 (42 ksi)	
L2	108.00-98.00	10.00	P6x.432	A500-42 (42 ksi)	
L3	98.00-88.00	10.00	P8x.5	A500-42 (42 ksi)	

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
1 5/8	A	No	Inside Pole	113.00 - 88.00	6	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
1 5/8 (AT&T - existing)	A	No	Inside Pole	103.00 - 88.00	6	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
1 5/8 (AT&T - existing)	A	No	Inside Pole	93.00 - 88.00	6	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04

User Defined Loads

Description	Elevation	Offset From Centroid	Azimuth Angle		Weight	F_x	F_z	Wind Force	C_AA_C
	ft	ft	°		lb	lb	lb	lb	ft^2
Flag	118.00	0.00	0.0000	No Ice	40.00	0.00	0.00	350.00	**8.78**
				Ice	40.00	0.00	0.00	253.00	**8.47**
				Service	40.00	0.00	0.00	126.00	**8.09**

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
36"x10' Shroud I (CT 1171)	A	None		0.0000	113.00	No Ice	24.00	24.00	1400.00
						1/2" Ice	24.87	24.87	1657.81
36"x10' Shroud II (CT 1171) (AT&T - proposed)	A	None		0.0000	103.00	No Ice	24.00	24.00	1800.00
						1/2" Ice	24.87	24.87	2057.81
36"x10' Shroud II (CT 1171) (AT&T - proposed)	A	None		0.0000	93.00	No Ice	24.00	24.00	1800.00
						1/2" Ice	24.87	24.87	2057.81

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice+Temp
15	Dead+Wind 0 deg+Ice+Temp
16	Dead+Wind 30 deg+Ice+Temp
17	Dead+Wind 60 deg+Ice+Temp
18	Dead+Wind 90 deg+Ice+Temp
19	Dead+Wind 120 deg+Ice+Temp
20	Dead+Wind 150 deg+Ice+Temp
21	Dead+Wind 180 deg+Ice+Temp
22	Dead+Wind 210 deg+Ice+Temp
23	Dead+Wind 240 deg+Ice+Temp
24	Dead+Wind 270 deg+Ice+Temp
25	Dead+Wind 300 deg+Ice+Temp
26	Dead+Wind 330 deg+Ice+Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service

Comb. No.	Description
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Pole	Max. Vert	15	7094.31	0.00	2876.79
	Max. H_x	11	6191.07	3604.82	0.00
	Max. H_z	2	6191.07	0.00	3604.82
	Max. M_x	2	61858.49	0.00	3604.82
	Max. M_z	5	61858.49	-3604.82	0.00
	Max. Torsion	4	0.00	-3121.86	1802.41
	Min. Vert	1	6191.07	0.00	0.00
	Min. H_x	5	6191.07	-3604.82	0.00
	Min. H_z	8	6191.07	0.00	-3604.82
	Min. M_x	8	-61858.49	0.00	-3604.82
	Min. M_z	11	-61858.49	3604.82	0.00
	Min. Torsion	6	-0.00	-3121.86	-1802.41

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Dead Only	6191.07	0.00	0.00	0.00	0.00	0.00
Dead+Wind 0 deg - No Ice	6191.07	0.00	-3604.82	-61858.49	0.00	0.00
Dead+Wind 30 deg - No Ice	6191.07	1802.41	-3121.86	-53571.03	-30929.25	0.00
Dead+Wind 60 deg - No Ice	6191.07	3121.86	-1802.41	-30929.25	-53571.03	-0.00
Dead+Wind 90 deg - No Ice	6191.07	3604.82	0.00	0.00	-61858.49	0.00
Dead+Wind 120 deg - No Ice	6191.07	3121.86	1802.41	30929.25	-53571.03	0.00
Dead+Wind 150 deg - No Ice	6191.07	1802.41	3121.86	53571.03	-30929.25	-0.00
Dead+Wind 180 deg - No Ice	6191.07	0.00	3604.82	61858.49	0.00	0.00
Dead+Wind 210 deg - No Ice	6191.07	-1802.41	3121.86	53571.03	30929.25	0.00
Dead+Wind 240 deg - No Ice	6191.07	-3121.86	1802.41	30929.25	53571.03	-0.00
Dead+Wind 270 deg - No Ice	6191.07	-3604.82	0.00	0.00	61858.49	0.00
Dead+Wind 300 deg - No Ice	6191.07	-3121.86	-1802.41	-30929.25	53571.03	0.00
Dead+Wind 330 deg - No Ice	6191.07	-1802.41	-3121.86	-53571.03	30929.25	-0.00
Dead+Ice+Temp	7094.31	0.00	0.00	0.00	0.00	0.00
Dead+Wind 0 deg+Ice+Temp	7094.31	0.00	-2876.79	-49171.35	0.00	0.00
Dead+Wind 30 deg+Ice+Temp	7094.31	1438.40	-2491.38	-42583.64	-24585.68	0.00
Dead+Wind 60 deg+Ice+Temp	7094.31	2491.38	-1438.40	-24585.68	-42583.64	-0.00
Dead+Wind 90 deg+Ice+Temp	7094.31	2876.79	0.00	0.00	-49171.35	0.00
Dead+Wind 120 deg+Ice+Temp	7094.31	2491.38	1438.40	24585.68	-42583.64	0.00
Dead+Wind 150 deg+Ice+Temp	7094.31	1438.40	2491.38	42583.64	-24585.68	-0.00

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Dead+Wind 180 deg+Ice+Temp	7094.31	0.00	2876.79	49171.35	0.00	0.00
Dead+Wind 210 deg+Ice+Temp	7094.31	-1438.40	2491.38	42583.64	24585.68	0.00
Dead+Wind 240 deg+Ice+Temp	7094.31	-2491.38	1438.40	24585.68	42583.64	-0.00
Dead+Wind 270 deg+Ice+Temp	7094.31	-2876.79	0.00	0.00	49171.35	0.00
Dead+Wind 300 deg+Ice+Temp	7094.31	-2491.38	-1438.40	-24585.68	42583.64	0.00
Dead+Wind 330 deg+Ice+Temp	7094.31	-1438.40	-2491.38	-42583.64	24585.68	-0.00
Dead+Wind 0 deg - Service	6191.07	0.00	-1478.23	-24617.88	0.00	0.00
Dead+Wind 30 deg - Service	6191.07	739.12	-1280.18	-21319.71	-12308.94	0.00
Dead+Wind 60 deg - Service	6191.07	1280.18	-739.12	-12308.94	-21319.71	-0.00
Dead+Wind 90 deg - Service	6191.07	1478.23	0.00	0.00	-24617.88	0.00
Dead+Wind 120 deg - Service	6191.07	1280.18	739.12	12308.94	-21319.71	0.00
Dead+Wind 150 deg - Service	6191.07	739.12	1280.18	21319.71	-12308.94	-0.00
Dead+Wind 180 deg - Service	6191.07	0.00	1478.23	24617.88	0.00	0.00
Dead+Wind 210 deg - Service	6191.07	-739.12	1280.18	21319.71	12308.94	0.00
Dead+Wind 240 deg - Service	6191.07	-1280.18	739.12	12308.94	21319.71	-0.00
Dead+Wind 270 deg - Service	6191.07	-1478.23	0.00	0.00	24617.88	0.00
Dead+Wind 300 deg - Service	6191.07	-1280.18	-739.12	-12308.94	21319.71	0.00
Dead+Wind 330 deg - Service	6191.07	-739.12	-1280.18	-21319.71	12308.94	-0.00

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	118 - 108	4.8326	27	1.3565	0.0000
L2	108 - 98	2.1936	27	0.9849	0.0000
L3	98 - 88	0.5602	27	0.4779	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
118.00	Flag	27	4.8326	1.3565	0.0000	2036
113.00	36"x10' Shroud I (CT 1171)	27	3.4394	1.1849	0.0000	2036
103.00	36"x10' Shroud II (CT 1171)	27	1.2210	0.7393	0.0000	962
93.00	36"x10' Shroud II (CT 1171)	27	0.1979	0.2326	0.0000	1825

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
L1	118 - 108	Pole	P4x.337	1	-1551.14	148052.30	73.6	Pass
L2	108 - 98	Pole	P6x.432	2	-3741.16	282336.05	82.5	Pass
L3	98 - 88	Pole	P8x.5	3	-6185.93	428720.78	83.4	Pass
							Summary	
						Pole (L3)	83.4	Pass
						RATING =	**83.4**	**Pass**

DESIGNED APPURTENANCE LOADING

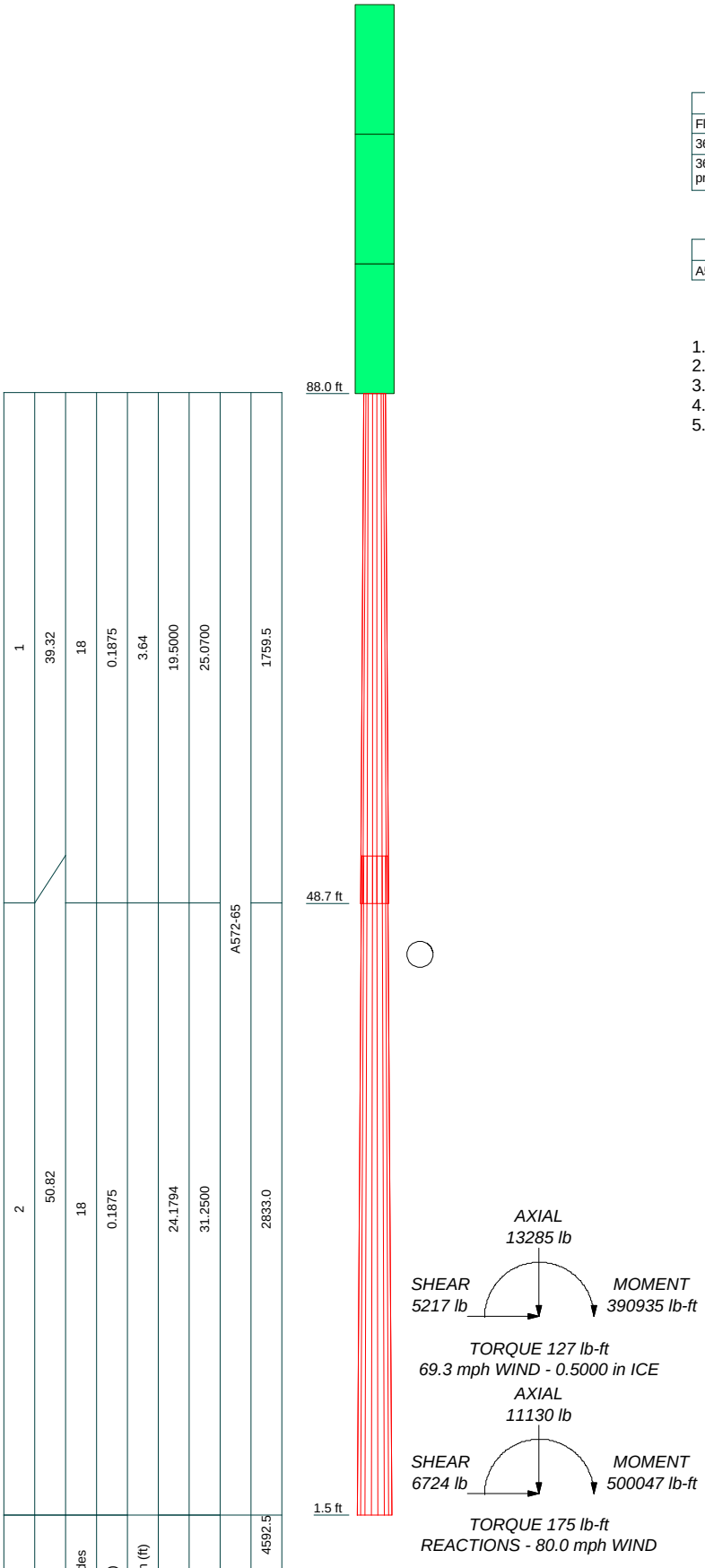
TYPE	ELEVATION	TYPE	ELEVATION
Flag	118	36"x10' Shroud II (CT 1171) (ATI - proposed)	93
36"x10' Shroud I (CT 1171)	113		
36"x10' Shroud II (CT 1171) (ATI - proposed)	103		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for a 80.0 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 69.3 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50.0 mph wind.
5. TOWER RATING: 86.3%



Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (lb)
1	39.32	18	0.1875	3.64	19.5000	25.0700	A572-65	1759.5
2	50.82	18	0.1875		24.1794	31.2500		2833.0
								4592.5

Hudson Design Group, LLC
1600 Osgood Street, Building 20 North, Suite 3090
North Andover, MA 01845
Phone: (978) 557-5553
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Job:	***CT 1171 Modifications Simsbury, CT***		
Project:	***120 ft Flagpole***		
Client: AT&T	Drawn by: kw	App'd:	
Code: TIA/EIA-222-F	Date: 02/11/14	Scale: NTS	
Path: C:\Users\kwang\Documents\HUDSON DESIGN GROUP\AAA\CT 1171 LTE Mod - FP (AT&T)\CT 1171 LTE Mod\CT 1171 LTE Mod.eri		Dwg No. E-1	

Tower Input Data

There is a pole section.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in Hartford County, Connecticut.
Basic wind speed of 80.0 mph.
Nominal ice thickness of 0.5000 in.
Ice density of 56.0 pcf.
A wind speed of 69.3 mph is used in combination with ice.
Temperature drop of 50.0 °F.
Deflections calculated using a wind speed of 50.0 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.333.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Tapered Pole Section Geometry

Section	*Elevation* *ft*	*Section Length* *ft*	*Splice Length* *ft*	*Number of Sides*	*Top Diameter* *in*	*Bottom Diameter* *in*	*Wall Thickness* *in*	*Bend Radius* *in*	*Pole Grade*
L1	88.00-48.68	39.32	3.64	18	19.5000	25.0700	0.1875	0.7500	A572-65 (65 ksi)
L2	48.68-1.50	50.82		18	24.1794	31.2500	0.1875	0.7500	A572-65 (65 ksi)

Monopole Base Plate Data

Base Plate Data	
Base plate is square	
Base plate is grouted	√
Anchor bolt grade	A615-75
Anchor bolt size	2.2500 in
Number of bolts	8
Embedment length	72.0000 in
f'_c	4.0 ksi
Grout space	3.2500 in
Base plate grade	A572-60
Base plate thickness	1.5000 in
Bolt circle diameter	39.0000 in
Outer diameter	45.0000 in
Inner diameter	21.2500 in
Base plate type	Stiffened Plate
Bolts per stiffener	1
Stiffener thickness	0.5000 in
Stiffener height	8.0000 in

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
1 5/8	A	No	Inside Pole	88.00 - 8.00	6	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
1 5/8 (AT&T - existing)	A	No	Inside Pole	88.00 - 8.00	6	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
1 5/8 (AT&T - proposed)	A	No	Inside Pole	88.00 - 8.00	6	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04

User Defined Loads

Description	Elevation ft	Offset From Centroid ft	Azimuth Angle °		Weight lb	F_x lb	F_z lb	Wind Force lb	C_AA_C ft^2
Flag	118.00	0.50	0.0000	No Ice	40.00	0.00	0.00	350.00	**8.78**
				Ice	40.00	0.00	0.00	253.00	**8.47**
				Service	40.00	0.00	0.00	126.00	**8.09**

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
36"x10' Shroud I (CT 1171)	A	None		0.0000	113.00	No Ice	24.00	24.00	1400.00
						1/2" Ice	24.87	24.87	1657.81
36"x10' Shroud II (CT 1171) (AT&T - proposed)	A	None		0.0000	103.00	No Ice	24.00	24.00	1800.00
						1/2" Ice	24.87	24.87	2057.81
36"x10' Shroud II (CT 1171) (AT&T - proposed)	A	None		0.0000	93.00	No Ice	24.00	24.00	1800.00
						1/2" Ice	24.87	24.87	2057.81

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice

Comb. No.	Description
12	Dead+Wind 300 deg - No Ice
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice+Temp
15	Dead+Wind 0 deg+Ice+Temp
16	Dead+Wind 30 deg+Ice+Temp
17	Dead+Wind 60 deg+Ice+Temp
18	Dead+Wind 90 deg+Ice+Temp
19	Dead+Wind 120 deg+Ice+Temp
20	Dead+Wind 150 deg+Ice+Temp
21	Dead+Wind 180 deg+Ice+Temp
22	Dead+Wind 210 deg+Ice+Temp
23	Dead+Wind 240 deg+Ice+Temp
24	Dead+Wind 270 deg+Ice+Temp
25	Dead+Wind 300 deg+Ice+Temp
26	Dead+Wind 330 deg+Ice+Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Pole	Max. Vert	15	13285.38	0.00	5216.94
	Max. H_x	11	11130.10	6724.36	0.00
	Max. H_z	2	11130.10	0.00	6724.37
	Max. M_x	2	500043.28	0.00	6724.37
	Max. M_z	5	500027.39	-6724.36	0.00
	Max. Torsion	5	175.14	-6724.36	0.00
	Min. Vert	1	11130.10	0.00	0.00
	Min. H_x	5	11130.10	-6724.36	0.00
	Min. H_z	8	11130.10	0.00	-6724.37
	Min. M_x	8	-499999.70	0.00	-6724.37
	Min. M_z	11	-500027.39	6724.36	0.00
	Min. Torsion	11	-175.14	6724.36	0.00

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Dead Only	11130.10	0.00	0.00	-20.00	0.00	0.00
Dead+Wind 0 deg - No Ice	11130.10	0.00	-6724.37	-500043.28	0.00	0.00
Dead+Wind 30 deg - No Ice	11130.10	3362.18	-5823.47	-433058.14	-250014.56	-87.57

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
Dead+Wind 60 deg - No Ice	11130.10	5823.47	-3362.18	-250034.49	-433037.42	-151.67
Dead+Wind 90 deg - No Ice	11130.10	6724.36	-0.00	-20.23	-500027.39	-175.14
Dead+Wind 120 deg - No Ice	11130.10	5823.47	3362.18	249993.26	-433036.06	-151.67
Dead+Wind 150 deg - No Ice	11130.10	3362.18	5823.47	433015.34	-250013.20	-87.57
Dead+Wind 180 deg - No Ice	11130.10	0.00	6724.37	499999.70	0.00	0.00
Dead+Wind 210 deg - No Ice	11130.10	-3362.18	5823.47	433015.34	250013.20	87.57
Dead+Wind 240 deg - No Ice	11130.10	-5823.47	3362.18	249993.26	433036.06	151.67
Dead+Wind 270 deg - No Ice	11130.10	-6724.36	-0.00	-20.23	500027.39	175.14
Dead+Wind 300 deg - No Ice	11130.10	-5823.47	-3362.18	-250034.49	433037.42	151.67
Dead+Wind 330 deg - No Ice	11130.10	-3362.18	-5823.47	-433058.14	250014.56	87.57
Dead+Ice+Temp	13285.38	0.00	0.00	-20.00	0.00	0.00
Dead+Wind 0 deg+Ice+Temp	13285.38	0.00	-5216.94	-390935.50	0.00	0.00
Dead+Wind 30 deg+Ice+Temp	13285.38	2608.47	-4518.00	-338562.79	-195457.15	-63.47
Dead+Wind 60 deg+Ice+Temp	13285.38	4517.99	-2608.46	-195478.37	-338541.90	-109.94
Dead+Wind 90 deg+Ice+Temp	13285.38	5216.94	-0.00	-21.11	-390913.34	-126.95
Dead+Wind 120 deg+Ice+Temp	13285.38	4518.00	2608.47	195435.32	-338540.44	-109.94
Dead+Wind 150 deg+Ice+Temp	13285.38	2608.46	4517.99	338519.55	-195456.54	-63.48
Dead+Wind 180 deg+Ice+Temp	13285.38	0.00	5216.94	390891.18	0.00	0.00
Dead+Wind 210 deg+Ice+Temp	13285.38	-2608.46	4517.99	338519.55	195456.54	63.48
Dead+Wind 240 deg+Ice+Temp	13285.38	-4518.00	2608.47	195435.32	338540.44	109.94
Dead+Wind 270 deg+Ice+Temp	13285.38	-5216.94	-0.00	-21.11	390913.34	126.95
Dead+Wind 300 deg+Ice+Temp	13285.38	-4517.99	-2608.46	-195478.37	338541.90	109.94
Dead+Wind 330 deg+Ice+Temp	13285.38	-2608.47	-4518.00	-338562.79	195457.15	63.47
Dead+Wind 0 deg - Service	11130.10	0.00	-2615.99	-194169.33	0.00	0.00
Dead+Wind 30 deg - Service	11130.10	1307.99	-2265.51	-168160.62	-97075.09	-31.70
Dead+Wind 60 deg - Service	11130.10	2265.51	-1307.99	-97096.69	-168138.92	-54.90
Dead+Wind 90 deg - Service	11130.10	2615.99	-0.00	-21.63	-194147.47	-63.39
Dead+Wind 120 deg - Service	11130.10	2265.51	1307.99	97053.31	-168138.73	-54.90
Dead+Wind 150 deg - Service	11130.10	1307.99	2265.51	168117.03	-97074.90	-31.70
Dead+Wind 180 deg - Service	11130.10	0.00	2615.99	194125.62	0.00	0.00
Dead+Wind 210 deg - Service	11130.10	-1307.99	2265.51	168117.03	97074.90	31.70
Dead+Wind 240 deg - Service	11130.10	-2265.51	1307.99	97053.31	168138.73	54.90
Dead+Wind 270 deg - Service	11130.10	-2615.99	-0.00	-21.63	194147.47	63.39
Dead+Wind 300 deg - Service	11130.10	-2265.51	-1307.99	-97096.69	168138.92	54.90
Dead+Wind 330 deg - Service	11130.10	-1307.99	-2265.51	-168160.62	97075.09	31.70

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	% Error
1	0.00	-11130.10	0.00	0.00	11130.10	0.00	0.000%
2	0.00	-11130.10	-6724.36	0.00	11130.10	6724.37	0.000%
3	3362.18	-11130.10	-5823.47	-3362.18	11130.10	5823.47	0.000%
4	5823.47	-11130.10	-3362.18	-5823.47	11130.10	3362.18	0.000%
5	6724.36	-11130.10	0.00	-6724.36	11130.10	0.00	0.000%
6	5823.47	-11130.10	3362.18	-5823.47	11130.10	-3362.18	0.000%
7	3362.18	-11130.10	5823.47	-3362.18	11130.10	-5823.47	0.000%
8	0.00	-11130.10	6724.36	0.00	11130.10	-6724.37	0.000%
9	-3362.18	-11130.10	5823.47	3362.18	11130.10	-5823.47	0.000%
10	-5823.47	-11130.10	3362.18	5823.47	11130.10	-3362.18	0.000%
11	-6724.36	-11130.10	0.00	6724.36	11130.10	0.00	0.000%
12	-5823.47	-11130.10	-3362.18	5823.47	11130.10	3362.18	0.000%
13	-3362.18	-11130.10	-5823.47	3362.18	11130.10	5823.47	0.000%
14	0.00	-13285.38	0.00	0.00	13285.38	0.00	0.000%
15	0.00	-13285.38	-5216.93	0.00	13285.38	5216.94	0.000%
16	2608.46	-13285.38	-4517.99	-2608.47	13285.38	4518.00	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	% Error
17	4517.99	-13285.38	-2608.46	-4517.99	13285.38	2608.46	0.000%
18	5216.93	-13285.38	0.00	-5216.94	13285.38	0.00	0.000%
19	4517.99	-13285.38	2608.46	-4518.00	13285.38	-2608.47	0.000%
20	2608.46	-13285.38	4517.99	-2608.46	13285.38	-4517.99	0.000%
21	0.00	-13285.38	5216.93	0.00	13285.38	-5216.94	0.000%
22	-2608.46	-13285.38	4517.99	2608.46	13285.38	-4517.99	0.000%
23	-4517.99	-13285.38	2608.46	4518.00	13285.38	-2608.47	0.000%
24	-5216.93	-13285.38	0.00	5216.94	13285.38	0.00	0.000%
25	-4517.99	-13285.38	-2608.46	4517.99	13285.38	2608.46	0.000%
26	-2608.46	-13285.38	-4517.99	2608.47	13285.38	4518.00	0.000%
27	0.00	-11130.10	-2615.99	0.00	11130.10	2615.99	0.000%
28	1307.99	-11130.10	-2265.51	-1307.99	11130.10	2265.51	0.000%
29	2265.51	-11130.10	-1307.99	-2265.51	11130.10	1307.99	0.000%
30	2615.99	-11130.10	0.00	-2615.99	11130.10	0.00	0.000%
31	2265.51	-11130.10	1307.99	-2265.51	11130.10	-1307.99	0.000%
32	1307.99	-11130.10	2265.51	-1307.99	11130.10	-2265.51	0.000%
33	0.00	-11130.10	2615.99	0.00	11130.10	-2615.99	0.000%
34	-1307.99	-11130.10	2265.51	1307.99	11130.10	-2265.51	0.000%
35	-2265.51	-11130.10	1307.99	2265.51	11130.10	-1307.99	0.000%
36	-2615.99	-11130.10	0.00	2615.99	11130.10	0.00	0.000%
37	-2265.51	-11130.10	-1307.99	2265.51	11130.10	1307.99	0.000%
38	-1307.99	-11130.10	-2265.51	1307.99	11130.10	2265.51	0.000%

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	88 - 48.68	17.6067	27	1.7517	0.0018
L2	52.32 - 1.5	6.5075	27	1.1612	0.0007

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
118.00	Flag	27	17.6067	1.7517	0.0018	13507
113.00	36"x10' Shroud I (CT 1171)	27	17.6067	1.7517	0.0018	13507
103.00	36"x10' Shroud II (CT 1171)	27	17.6067	1.7517	0.0018	13507
93.00	36"x10' Shroud II (CT 1171)	27	17.6067	1.7517	0.0018	13507

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P_{allow} lb	% Capacity	Pass Fail
L1	88 - 48.68	Pole	TP25.07x19.5x0.1875	1	-7033.69	753880.78	54.6	Pass
L2	48.68 - 1.5	Pole	TP31.25x24.1794x0.1875	2	-11120.80	918015.73	86.3	Pass
							Summary	
						Pole (L2)	86.3	Pass

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Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
						Base Plate	74.7	Pass
						RATING =	**86.3**	**Pass**

DATE: 2/11/2014
Project Name: CT1171
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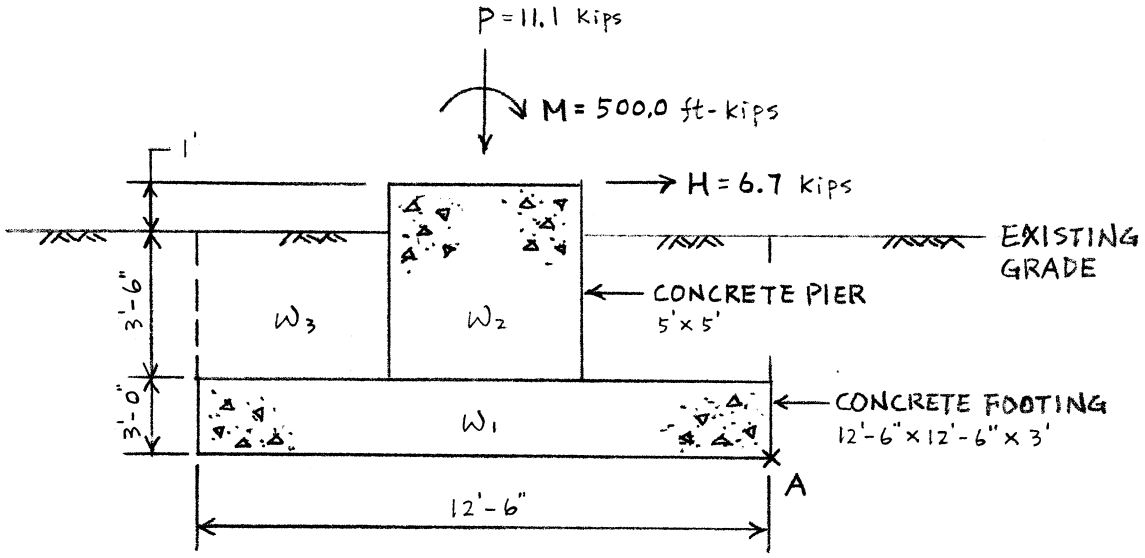
FOUNDATION ANALYSIS



- FOUNDATION INFORMATION BASED ON "DESIGN CALCULATIONS FOR A SPREAD FOOTER FOUNDATION" BY EEI, DATED 8/16/2004.

  SOIL INFORMATION BASED ON GEOTECHNICAL STUDY BY DR. CLARENCE WELTI, DATED 7/18/2003.

  $\gamma_{CONC.} = 150$ pcf

  $\gamma_{SOIL} = 125$ pcf

  ALLOWABLE BEARING CAPACITY = 4 ksf

  SLIDING COEFFICIENT = 0.6

  GROUND WATER LEVEL IS BELOW BOTTOM OF FOOTING

MAXIMUM BASE REACTIONS

P = 11.1 kips

H = 6.7 kips

M = 500.0 ft-k

157132

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$W_1 = 0.15 \times 12.5 \times 12.5 \times 3 = 70.3$ kips

$W_2 = 0.15 \times 5 \times 5 \times 4.5 = 16.9$ kips

$W_3 = 0.125 \times (12.5^2 - 5^2) \times 3.5 = 57.4$ kips

$P = 11.1$ kips

$\Sigma W = 155.7$ kips

$M_R (@A) = 155.7 \times 6.25 = 973.1$ ft-k

$M_{OT} (@A) = 500.0 + 6.7 \times 7.5 = 550.3$ ft-k

$$F.S.\ (\text{OVERTURNING}) = \frac{973.1}{550.3} = 1.8 \quad \text{OK}$$

$$F.S.\ (\text{SLIDING}) = \frac{0.6 \times 155.7}{6.7} = 13.9 \quad \text{OK}$$

BEARING PRESSURE

$$a = \frac{973.1 - 550.3}{155.7} = 2.72$$

$e = 6.25 - 2.72 = 3.53 > 12.5/6 = 2.08$

$$q_{max} = \frac{2 \times 155.7}{3 \times 2.72 \times 12.5} = 3.1 \text{ ksf} < 4.0 \text{ ksf} \quad \text{OK}$$

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