CUDDY +FEDER LLP

445 Hamilton Avenue, 14th Floor
White Plains, New York 10601
T 914 761 1300
F 914 761 5372
cuddyfeder.com

Christopher B. Fisher
cfisher@cuddyfeder.com

January 5, 2018

VIA EMAIL & FIRST-CLASS MAIL
Melanie Bachman, Esq.
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: As-Built Filing
Pursuant to Prior Notice of Deployment of Temporary Tower – 16-50j-72(a)
Restoration and Maintenance of Service at the Site of a Destroyed Facility
Tiffany Farm's Silo – 156 Sterling City Road, Lyme, Connecticut

Dear Executive Director Bachman:

On behalf of our client, New Cingular Wireless PCS, LLC ("AT&T") and in furtherance of your January 2, 2018 correspondence, enclosed please find as-built and additional information in furtherance of AT&T's notice filed pursuant to Section 16-50j-72(a) of the Council's regulations on November 10, 2017. We have also enclosed a check in the amount of $625.00 made payable to the Siting Council as a regulatory exemption filing fee. To the extent AT&T and Verizon Wireless failed to fully coordinate related to the Council's expectations on the timing and content of the various regulatory filings related to the temporary tower installed at the site, we extend our apologies on their behalf.

We are also writing to provide the Council with an update on the likely duration of the need for the temporary tower to remain in place and any details that might be shared regarding plans for a permanent replacement facility now. It is anticipated that the temporary tower will need to remain in place for several more months if not longer given that the silo collapse was complete and the facility destroyed. As such, we have calendared August 10, 2018 as the nine-month time frame for AT&T's reliance on the regulatory exemption set forth in Section 16-50j-72(a) of the Council's regulations and have asked our client to plan to make any request for an extension and/or other filing that may be needed at least 30 days in advance thereof. For the permanent replacement facility, the parties continue to develop plans, but have nothing formal to report to the Council regarding same at this time.

Thank you for your understanding and please do not hesitate to contact me should the Council seek additional information related to AT&T's notice and the enclosed package of materials.

Very truly yours,

Christopher B. Fisher
Enclosures
cc: First Selectman Steven Mattson, Town of Lyme, Connecticut
Jessica Rincon, AT&T; Ken Baldwin, Esq.; Tiffany Farms

CONNECTICUT SITING COUNCIL

January 5, 2018

AS-BUILT INFORMATION
EXEMPT TEMPORARY TOWER DEPLOYED PURSUANT TO SECTION 16-50j-72(a) OF STATE REGULATIONS FOR RESTORATION AND MAINTENANCE OF SERVICE AT THE SITE OF A DESTROYED FACILITY
TIFFANY FARM'S SILO – 156 STERLING CITY ROAD, LYME, CONNECTICUT

I. AT&T Regulatory Notice on November 10, 2017

On November 10, 2017, New Cingular Wireless PCS, LLC ("AT&T") through counsel notified the Connecticut Siting Council ("Council") pursuant to Section 16-50j-72(a) of the Regulations of Connecticut State Agencies ("RCSA") that it was in the process of installing a temporary tower facility next to a damaged existing facility. The existing facility was located at a farm and silo listed as entry 818 in the Council's database of non-certificated tower facilities. As noted in AT&T's filing, the silo owned by the property owner collapsed and repairs and replacement not feasible to maintain continuity of services to the public. In its notice, AT&T also referenced for the Council specifications (by way of administrative notice) for the temporary tower which had been deployed in another proceeding under factually and legally different circumstances. AT&T also notified the Council that the location of the temporary tower facility would be adjacent to the existing and collapsed silos at Tiffany's Farm in Lyme, Connecticut ("Tiffany's Farm Site"). AT&T's notice met the legal requirements set forth specifically in Section 16-50j-72(a) of the RCSA.

II. Coordination Post Notice of AT&T's Deployment of the Exempt Temporary Tower

In follow up communications with representatives of the Siting Council, AT&T was requested to provide as-built information for the temporary tower once available and generally follow the submission guidelines for temporary towers that are not exempt under the RCSA. Additionally, Verizon Wireless requested from AT&T the ability to utilize the AT&T temporary tower deployed at the Tiffany's Farm Site in lieu of a cell on wheels it has immediately deployed on notice to the Council shortly after the silo collapse. To meet both objectives, AT&T requested Verizon Wireless to prepare joint plans showing the location of the temporary tower on the Tiffany's Farm Site and provide other details for the facility and coordinate a filling with the Siting Council.

III. December 20, 2017 Verizon Wireless EM Filing

On December 20, 2017, Verizon Wireless filed a notice of exempt modification related to the AT&T Temporary Tower which was deployed pursuant to AT&T's November 10, 2017 regulatory notice pursuant to 16-50j-72(a). Verizon's filing included plans and other materials showing the AT&T temporary tower facility at the Tiffany's Farm Site. The filing itself was nonetheless stylized as Verizon Wireless' own filing and despite AT&T's expectations that a filing that met both Verizon Wireless and AT&T's needs would be made in one submission to the Siting Council.

IV. AT&T As-Built Filing Incorporating Verizon Wireless

Verizon Wireless' filing did not fully meet the Siting Council's requests directly to AT&T and AT&T is making this filing to incorporate same and directly address the Siting Council's requests in furtherance of AT&T's November 10, 2017 notice. In addition to administrative notice of Verizon Wireless' December 20, 2017 filing with the Siting Council, enclosed are the following:

A. Exhibit A - AT&T as-built and joint plans which incorporate Verizon Wireless' installation as prepared by All-Points Technology Corporation, last revised January 2, 2018 and signed and sealed January 5, 2018;
B. Exhibit B - A structural analysis report jointly prepared for AT&T and Verizon Wireless, dated December 13, 2017, and signed and sealed by a Connecticut Licensed Professional Engineer;
C. Exhibit C - A cumulative MPE report prepared for AT&T and dated December 22, 2017 demonstrating compliance with standards adopted by the Connecticut Department of Environmental Protection as set forth in Section 22a-162 of the Connecticut General Statutes and the MPE limits established by the FCC.

Respectfully Submitted,

Christopher B. Fisher, Esq.
On behalf of AT&T
Cuddy & Feder LLP
445 Hamilton Avenue, 14th Floor
White Plains, NY 10601

CERTIFICATE OF SERVICE

I hereby certify that on this day, fifteen copies of the foregoing were sent by electronic and first class mail to the Connecticut Siting Council:

Dated: January 5, 2018

Christopher B. Fisher

Exhibit A

verizon

AT&T MOBILITY
NEW ENGLAND

WIRELESS COMMUNICATIONS FACILITY

LYME CT / LYME CENTRAL
156 STERLING CITY ROAD
LYME, CT 06371

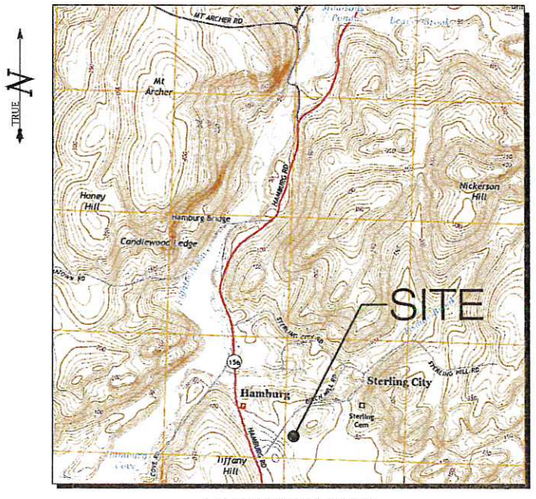
DRAWING INDEX

SITE DIRECTIONS

START: 99 EAST RIVER DRIVE
EAST HARTFORD, CONNECTICUT 06108

END: 156 STERLING CITY ROAD
LYME, CT 06371

1.	HEAD NORTHEAST ON E RIVER DRIVE	335 FT
2.	TURN LEFT ONTO CT-2 E RAMP	0.2 MI
3.	MERGE ONTO I-84 E	374 FT
4.	TAKE EXIT 55 FOR CT-2 E / I-84 E	0.4 MI
5.	CONTINUE ONTO CT-2 E	23.4 MI
6.	KEEP RIGHT AT FORK TO CONTINUE ON CT-11 S	7.4 MI
7.	CONTINUE ONTO EXIT 4 (CT-82 / SALEM / HADLYME)	0.2 MI
8.	TURN RIGHT ONTO CT-82 W	3.8 MI
9.	TURN RIGHT ONTO CT-156 E	0.8 MI
10.	TURN LEFT ONTO STERLING CITY ROAD DESTINATION WILL BE ON RIGHT	0.1 MI



LOCATION MAP
SCALE : 1" = 2000'-0"

SITE INFORMATION

VZ SITE REF: LYME CT / LYME CENTRAL
VZ PROJECT CODE: N/A
VZ LOCATION CODE: 467845
LOCATION: 156 STERLING CITY ROAD
LYME, CT 06371

AT&T SITE REF: LYME CENTRAL
AT&T SITE F.A.: 10071096
AT&T SITE I.D.: CT5735; USID: 27049

PROJECT SCOPE: PROPOSED INSTALLATION CONSISTS OF TWO (2) PANEL ANTENNAS MOUNTED TO EXIST. TEMPORARY MONOPOLE IN ADDITION TO ONE (1) MDB & TWO (2) RRHs MOUNTED TO PROP. BALLAST FRAME AT BASE OF EXIST. TEMPORARY MONOPOLE.

MAP/LOT: 26 / 57 AND 26 / 55

ZONING DISTRICT: RU-80: "RURAL DISTRICT"

LATITUDE: 41° 22' 38.6784" N (41.3774107° N)

LONGITUDE: 72° 20' 45.3356" W (72.3459266° W)

GROUND ELEVATION: 93.8'± AMSL

COORDINATES & GROUND ELEVATION INDICATED HEREIN WERE ESTABLISHED FROM AN FAA 1-A SURVEY CERTIFICATION, AS PREPARED BY MARTIN SURVEYING ASSOCIATES, LLC., DATED DECEMBER 6, 2017.

PROPERTY OWNER: JOHN J. TIFFANY II
156 STERLING CITY ROAD
LYME, CT 06371

APPLICANT: CELLCO PARTNERSHIP
d/b/a VERIZON WIRELESS
99 EAST RIVER DRIVE
EAST HARTFORD, CT 06108

LEGAL/REGULATORY COUNSEL: ROBINSON & COLE, LLP
KENNETH C. BALDWIN, ESQ.
280 TRUMBULL STREET
HARTFORD, CT 06103

ENGINEER CONTACT: ALL-POINTS TECHNOLOGY CORP.
3 SADDLEBROOK DRIVE
KILLINGWORTH, CT 06419
(860) 663-1697

STATE OF CONNECTICUT
SCOTT M. CHASSE
No. 18728
LICENSED
PROFESSIONAL ENGINEER

Cellco Partnership d/b/a
verizon
99 EAST RIVER DRIVE
EAST HARTFORD, CT 06108

ALL-POINTS TECHNOLOGY CORPORATION
3 SADDLEBROOK DRIVE PHONE: (860)-663-1697
KILLINGWORTH, CT 06419 FAX: (860)-663-0935
WWW.ALLPOINTSTECH.COM

AT&T MOBILITY
NEW ENGLAND
550 COCHITUATE ROAD
SUITE 13 AND 14
FRAMINGHAM, MA 01701

PERMITTING DOCUMENTS

NO	DATE	REVISION
0	12/13/17	FOR REVIEW: JRM
1	01/02/18	FOR FILING: JRM
2		
3		
4		
5		
6		

DESIGN PROFESSIONALS OF RECORD

PROF: SCOTT M. CHASSE P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

OWNER: JOHN J. TIFFANY II
ADDRESS: 156 STERLING CITY ROAD LYME, CT 06371

LYME CT / LYME CENTRAL

SITE ADDRESS: 156 STERLING CITY ROAD LYME, CT 06371

APT FILING NUMBER: CT141NB10240

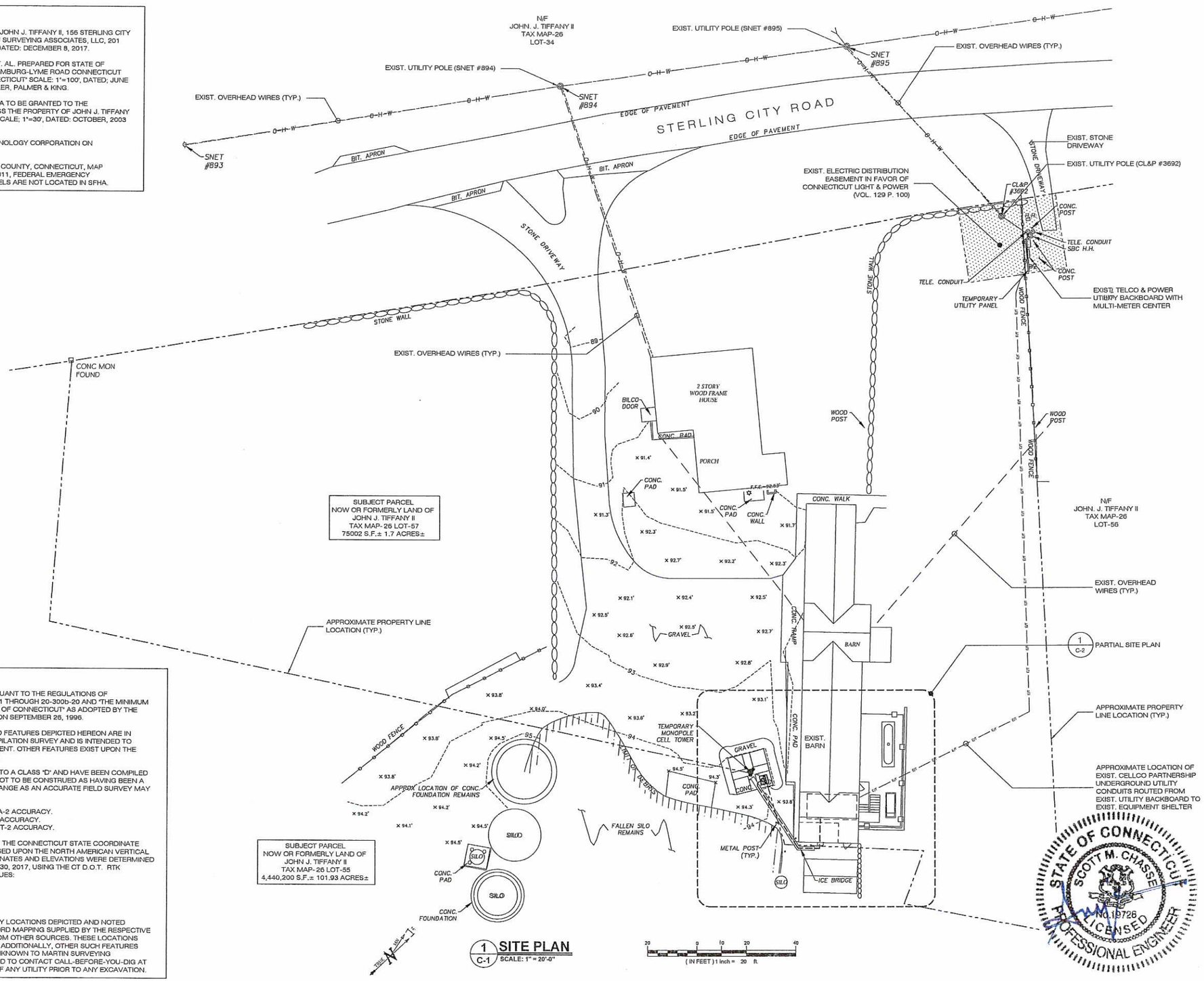
DRAWN BY: THK
DATE: 12/13/17
CHECKED BY: JRM

SHEET TITLE:
TITLE SHEET & INDEX

SHEET NUMBER:
T-1

SITE PLAN REFERENCE:

1. "COMPILATION PLAN, LAND NOW OR FORMERLY OF JOHN J. TIFFANY II, 156 STERLING CITY ROAD, LYME, CONNECTICUT," PREPARED BY MARTIN SURVEYING ASSOCIATES, LLC, 201 CHRISTIAN LANE, BERLIN, CT 06037, SCALE: 1"=20', DATED: DECEMBER 8, 2017.
2. "SURVEY MAP PROPERTIES OF JOHN J. TIFFANY II. ET. AL. PREPARED FOR STATE OF CONNECTICUT DEPARTMENTS OF AGRICULTURE, HAMBURG-LYME ROAD CONNECTICUT ROUTE 156 AND STERLING CITY ROAD LYME, CONNECTICUT" SCALE: 1"=100', DATED; JUNE 27, 1988, REVISED: SEPTEMBER 6, 1988, BY: CHANDLER, PALMER & KING.
3. "COMPILATION PLAN MAP SHOWING EASEMENT AREA TO BE GRANTED TO THE CONNECTICUT LIGHT AND POWER COMPANY ACROSS THE PROPERTY OF JOHN J. TIFFANY II, 156 STERLING CITY ROAD, LYME, CONNECTICUT" SCALE; 1"=30', DATED: OCTOBER, 2003 BY: URS CORPORATION AES.
4. FIELD MEASUREMENTS TAKEN BY ALL-POINTS TECHNOLOGY CORPORATION ON NOVEMBER 30, 2017
5. "FIRM FLOOR INSURANCE RATE MAP," NEW LONDON COUNTY, CONNECTICUT, MAP NUMBER 09011C0313G, EFFECTIVE DATE JULY 18, 2011, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA). THE SUBJECT PARCELS ARE NOT LOCATED IN SFHA.



MAP NOTES:

1. THIS MAP AND SURVEY HAVE BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20 AND "THE MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS ON SEPTEMBER 26, 1996.
2. THE TYPE OF SURVEY PERFORMED AND THE MAPPED FEATURES DEPICTED HEREON ARE IN ACCORDANCE WITH THE REQUIREMENTS OF A COMPILATION SURVEY AND IS INTENDED TO DEPICT CERTAIN FEATURES AS DIRECTED BY THE CLIENT. OTHER FEATURES EXIST UPON THE SUBJECT PARCEL THAT ARE NOT DEPICTED HEREON.
3. THE PROPERTY LINES DEPICTED HEREON CONFORM TO A CLASS "D" AND HAVE BEEN COMPILED FROM OTHER MAPS AND RECORD RESEARCH. IT IS NOT TO BE CONSTRUED AS HAVING BEEN A RESULT OF A FIELD SURVEY, AND IS SUBJECT TO CHANGE AS AN ACCURATE FIELD SURVEY MAY DISCLOSE.
4. THE HORIZONTAL BASELINE CONFORMS TO A CLASS A-2 ACCURACY.
   THE VERTICAL BASELINE CONFORMS TO A CLASS V-2 ACCURACY.
   THE TOPOGRAPHIC FEATURES CONFORM TO A CLASS T-2 ACCURACY.
5. THE NORTH ARROW AND BEARINGS ARE BASED UPON THE CONNECTICUT STATE COORDINATE SYSTEM N.A.D. 1983 (2011). THE ELEVATIONS ARE BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) USING GEOID 12B. COORDINATES AND ELEVATIONS WERE DETERMINED FROM RTK GPS OBSERVATIONS MADE ON NOVEMBER 30, 2017, USING THE CT D.O.T. RTK NETWORK (CTGR BASE), HAVING THE FOLLOWING VALUES:

   LATITUDE = N 41° 20' 07.03551"
   LONGITUDE= W 72° 02' 59.99930"
   ELLIPSOID HEIGHT = -18.343M
6. UNDERGROUND UTILITIES, STRUCTURES AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED, IN PART FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE COMPANIES OR GOVERNMENTAL AGENCIES AND FROM OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE WHICH IS UNKNOWN TO MARTIN SURVEYING ASSOCIATES, LLC.. ALL CONTRACTORS ARE REQUIRED TO CONTACT CALL-BEFORE-YOU-DIG AT 1-800-922-4455 FOR LOCATION AND OR STAKEOUT OF ANY UTILITY PRIOR TO ANY EXCAVATION.

Cellco Partnership d/b/a
verizon
99 EAST RIVER DRIVE
EAST HARTFORD, CT 06108

ALL-POINTS TECHNOLOGY CORPORATION
3 SADDLEBROOK DRIVE PHONE: (860)-663-1697
KILLINGWORTH, CT 06419 FAX: (860)-663-0935
WWW.ALLPOINTSTECH.COM

AT&T MOBILITY NEW ENGLAND
550 COCHITUATE ROAD
SUITE 13 AND 14
FRAMINGHAM, MA 01701

PERMITTING DOCUMENTS

NO	DATE	REVISION
0	12/13/17	FOR REVIEW: JRM
1	01/02/18	FOR FILING: JRM
2		
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DESIGN PROFESSIONALS OF RECORD

PROF: SCOTT M. CHASSE P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

OWNER: JOHN J. TIFFANY II
ADDRESS: 156 STERLING CITY ROAD LYME, CT 06371

LYME CT / LYME CENTRAL

SITE ADDRESS: 156 STERLING CITY ROAD LYME, CT 06371

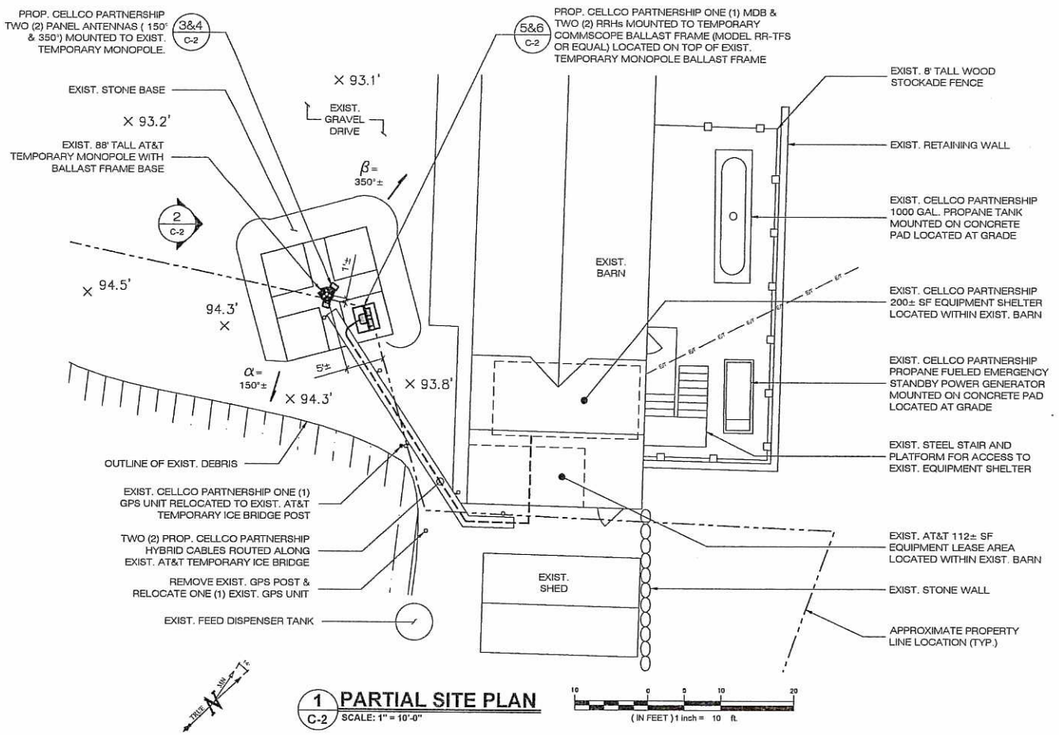
APT FILING NUMBER: CT141NB10240

DRAWN BY: THK
DATE: 12/13/17 CHECKED BY: JRM

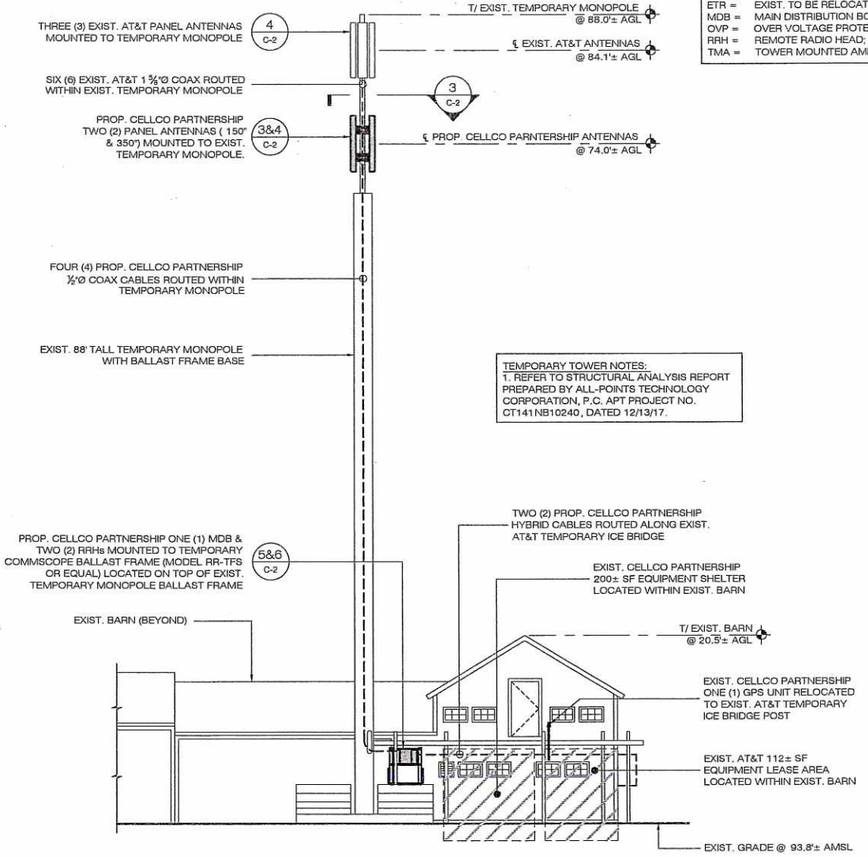
SHEET TITLE: SITE PLAN

SHEET NUMBER: C-1

STATE OF CONNECTICUT
SCOTT M. CHASSE
NO. 19726
LICENSED
PROFESSIONAL ENGINEER



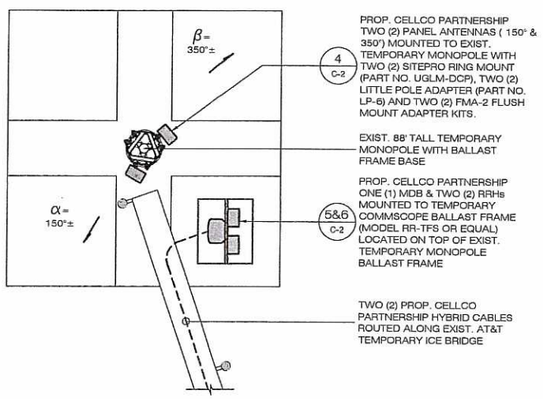
1 C-2 PARTIAL SITE PLAN
SCALE: 1" = 10'-0"



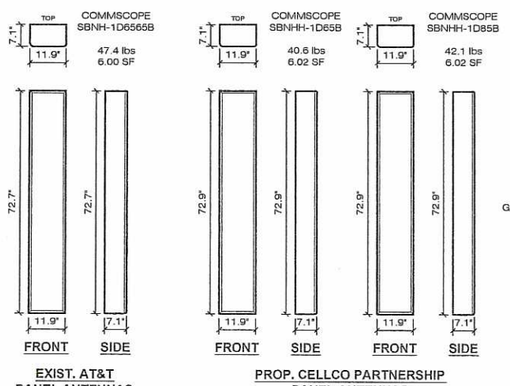
2 C-2 WEST ELEVATION
SCALE: 1/4" = 1'-0"

ABBREVIATION LIST:
- AGL = ABOVE GROUND LEVEL;
- AMSL = ABOVE MEAN SEA LEVEL,
- ARL = ABOVE ROOF LEVEL;
- AWS = ADVANCED WIRELESS SERVICE;
- ETR = EXIST. TO BE RELOCATED
- MDB = MAIN DISTRIBUTION BOX;
- OVP = OVER VOLTAGE PROTECTION;
- RRH = REMOTE RADIO HEAD;
- TMA = TOWER MOUNTED AMPLIFIER

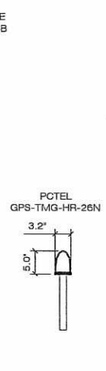
TEMPORARY TOWER NOTES:
1. REFER TO STRUCTURAL ANALYSIS REPORT PREPARED BY ALL-POINTS TECHNOLOGY CORPORATION, P.C. APT PROJECT NO. CT141NB10240, DATED 12/13/17.

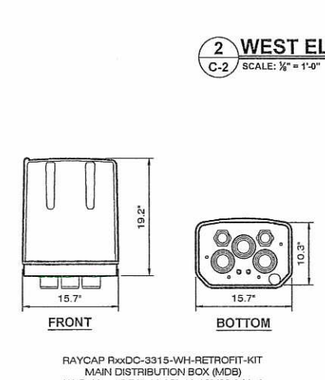


3 C-2 TEMPORARY MONOPOLE PLAN
SCALE : 1/4" = 1'-0"

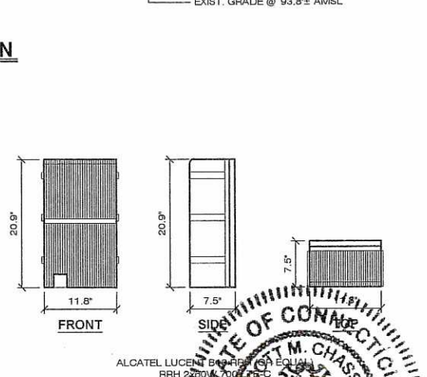


4 C-2 ANTENNA DETAILS
SCALE : 1/2" = 1'-0"





5 C-2 MAIN DISTRIBUTION BOX
SCALE : 1" = 1'-0"



6 C-2 RRH EQUIPMENT
SCALE : 1" = 1'-0"

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EAST HARTFORD, CT 06108

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LYME CT / LYME CENTRAL

SITE ADDRESS: 156 STERLING CITY ROAD LYME, CT 06371

APT FILING NUMBER: CT141NB10240

DRAWN BY: THK
DATE: 12/13/17 CHECKED BY: JRM

SHEET TITLE:
PARTIAL SITE PLAN, WEST ELEVATION, TEMPORARY MONOPOLE PLAN & DETAILS

SHEET NUMBER:
C-2

STATE OF CONNECTICUT
SCOTT M. CHASSE
26726
LICENSED
PROFESSIONAL ENGINEER

Exhibit B

ALL-POINTS
TECHNOLOGY CORPORATION

Structural Analysis Report
For a Proposed Antenna & Appurtenance Installation on an Existing AT&T Mobility 85-ft Temporary Uni-Pole Tower,
Lyme, Connecticut

Prepared for
Verizon Wireless & AT&T Mobility

Verizon Wireless Site Ref:
Lyme, CT

AT&T Site Ref: Lyme Central
AT&T Site F.A.: 10071096
AT&T Site I.D.:CT5735, USID: 27049

December 13, 2017

APT Project #CT141NB10241

☒ 3 SADDLEBROOK DRIVE · KILLINGWORTH, CT 06419 · PHONE 860-663-1697 · FAX 860-663-0935
☐ 116 GRANDVIEW ROAD · CONWAY, NH 03818 · PHONE 603-496-5853 · FAX 603-447-2124

STRUCTURAL ANALYSIS REPORT
85' TEMPORARY MONOPOLE TOWER
LYME, CT
prepared for
Verizon Wireless

EXECUTIVE SUMMARY:

All-Points Technology Corporation, P.C. (APT) a professional engineering corporation licensed in the State of Connecticut, has been retained by Verizon Wireless to assess the structural adequacy of an existing 85-ft AT&T Mobility temporary uni-pole tower structure with ballast base frame to support a proposed antenna and appurtenance installation.

The proposed Verizon Wireless equipment installation consists of two (2) pipe mounted panel antennas. Additionally, the installation includes four (4) ½" dia. coaxial cables located within the interior of the temporary pole structure.

Our analysis indicates that the subject AT&T Mobility temporary uni-pole tower structure, located at 156 Sterling City Road, Lyme, Connecticut, meets the requirements of the 2012 International Building Code, as amended by the 2016 Connecticut State Building Code and the TIA-222-G standard.

INTRODUCTION:

A structural analysis of the subject temporary communications tower was performed by APT for Verizon Wireless. The temporary AT&T Mobility uni-pole tower is located at 156 Sterling City Road, Lyme, Connecticut.

The temporary uni-pole construction consists of three (3) steel pipe sections together with stiffened base plate assembly and a ballasted base frame. The manufacturer of the uni-pole is unknown at the time of preparing this report, therefore minimum material strengths were assumed where necessary, for the purpose of this analysis.

The following information was utilized in the preparation of this analysis:

- Field mapping of the uni-pole structure conducted from grade, by APT during November 2017.
- FAA-1A elevation mapping of the uni-pole structure conducted from grade, by APT during November 2017.
- Structural analysis report of AT&T temporary uni-pole structure prepared by Centek Engineering for AT&T Mobility and Verizon Wireless, dated April 29, 2014, marked Rev 1.
- Existing AT&T antenna and equipment inventory provided by AT&T Mobility.
- Proposed Verizon equipment, as noted within an RFDS provided by Verizon Wireless, dated November 08, 2017.

AT&T Site Ref: Lyme Central
AT&T Site F.A.: 10071096
AT&T Site I.D.:CT5735, USID: 27049

The analysis was conducted using the following antenna inventory (proposed equipment shown in **bold** text):

Carrier	Antenna and Appurtenance Make/Model	Elevation	Status	Mount Type	Coax/Feed-Line
AT&T Mobility	Three (3) Commscope SBNH-1D6565B panel antennas	84.1'	E	Three (3) Pipe Mounts	(6) Commscope AVA-7RK-50 1-5/8" dia. Coaxial Cables (Interior)
Verizon Wireless	**One (1) Commscope SBNHH-1D65B and one (1) Commscope SBNHH-1D85B panel antenna**	**74'**	**P**	**Three (3) Pipe Mounts attached to Two (2) SitePRO1 UGLM Mini Ring Mount Assemblies with two (2) LP-6 Pole Adapter Plate Assemblies & Two (2) FMA-2 Flush Mount Adapter Kits**	**(4) 1/2" Dia. Coaxial Cables (Interior)**

Notes:

1) E = Existing; P = Proposed.
2) Analysis excludes future equipment design loading, designated as carriers #4 and #5 within tower loading form provided by Bay Communications, dated April 21, 2015, and marked Rev 1.

STRUCTURAL ANALYSIS:

Analysis Criteria:

This structural analysis has been prepared in accordance with the ANSI TIA-222-G standard entitled "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures," the American Institute of Steel Construction (AISC) Manual of Steel Construction and the 2012 International Building Code, as amended by the 2016 Connecticut State Building Code.

Antenna and appurtenance loads were evaluated utilizing the ANSI TIA-222-G standard.

- Load Case 1: 120mph (3-second gust), 0" ice (Survival Wind)[1]
- Load Case 2: 120mph (3-second gust), 0.9 x Dead Load
- Load Case 3: 50mph (3-second gust) w/ 0.75in ice thickness
- Load Case 4: 60mph (3-second gust) (Service Load)
- Structure Class II,
- Exposure Category C
- Topographic Category 1.

Notes:

1. Per Appendix 'N' of the 2016 Connecticut State Building Code.

AT&T Site Ref: Lyme Central
AT&T Site F.A.: 10071096
AT&T Site I.D.:CT5735, USID: 27049

Analysis Results:

The following table summarizes the capacity of the monopole based on the effects of combined axial and bending:

Elevation	Capacity
68'-88''	13%
38'-68'	11%
3'-38'	39%
Anchor Bolts	35%
Base plate	37%

Base Foundation:

The exiting base foundation system consists of a 15-ft square steel base frame assembly with concrete ballast placed at each of the four corners. The evaluation of the existing ballast frame was limited to a global stability analysis utilizing the following tower base reactions:

Base Reactions	Calculated Base Reactions TIA-222-G	Pass/Fail
Axial	7.2 k	Pass[2]
Shear	5.3 k	Pass[2]
Overturning Moment	205 kip-ft	Pass[2][3]

Notes:
2. Ballast requirements based on 0.9D +1.6W Load Combination.
3. Based on a minimum Factor of Safety (F.O.S.) of 1.5 to resist overturning.

Conclusions and Recommendations:

The results of this analysis indicate that the existing AT&T Mobility 85' temporary uni-pole tower located at 156 Sterling City Road, Lyme, Connecticut **meets** the requirements of the 2012 International Building Code, as amended by the 2016 Connecticut State Building Code and the TIA-222-G standard with the proposed Verizon Wireless equipment installation.

Sincerely,

All-Points Technology Corp., P.C.

Robert E. Adair, P.E.
Principal

STATE OF CONNECTICUT
ROBERT E. ADAIR
No. 20278
LICENSED PROFESSIONAL ENGINEER

Prepared By:
All-Points Technology Corp., P.C.

Jason R. Mead
Project Manager/
Structural Engineer

AT&T Site Ref: Lyme Central
AT&T Site F.A.: 10071096
AT&T Site I.D.:CT5735, USID: 27049

Limitations:

This report is based on the following:

1. Tower is properly installed and maintained.
2. All members are in an un-deteriorated condition.
3. All bolts are in place and are properly tightened.
4. Tower is in plumb condition.

All-Points Technology Corporation, P.C. (APT) is not responsible for any modifications completed prior to or hereafter which APT is not or was not directly involved. Modifications include but are not limited to:

1. Adding or relocating antennas.
2. Installing antenna mounts or waveguide cables.
3. Extending tower.

APT hereby states that this document represents the entire report and that it assumes no liability for any factual changes that may occur after the date of this report. All representations, recommendations, and conclusions are based upon the information contained and set forth herein. If you are aware of any information which conflicts with that which is contained herein, or you are aware of any defects arising from original design, material, fabrication, or erection deficiencies, you should disregard this report and immediately contact APT. APT disclaims all liability for any representation, recommendation, or conclusion not expressly stated herein.

Appendix A

Photographs

VERIZON
85-ft AT&T temporary uni-pole tower
Verizon Site Ref: Lyme, CT

AT&T Site Ref: Lyme Central
AT&T Site F.A.: 10071096
AT&T Site I.D.:CT5735, USID: 27049

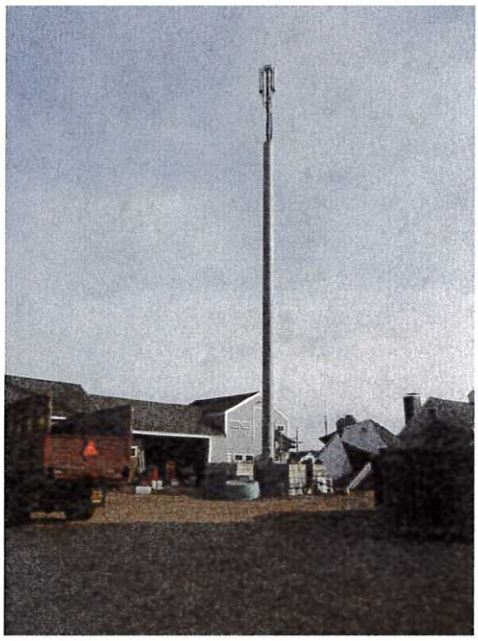
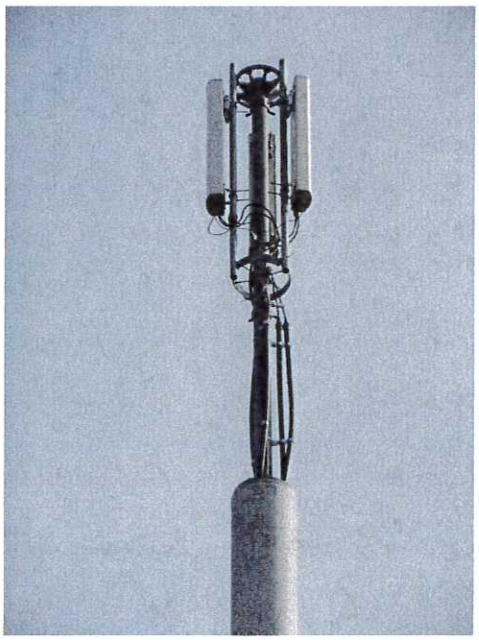


Image of existing ±85-ft tall AT&T temporary uni-pole tower with ballast base frame.



Close up image of existing ±85-ft tall AT&T temporary uni-pole tower and AT&T antenna array.

Photos taken by APT during November 2017.

VERIZON
85-ft AT&T temporary uni-pole tower
Verizon Site Ref: Lyme, CT

AT&T Site Ref: Lyme Central
AT&T Site F.A.: 10071096
AT&T Site I.D.:CT5735, USID: 27049

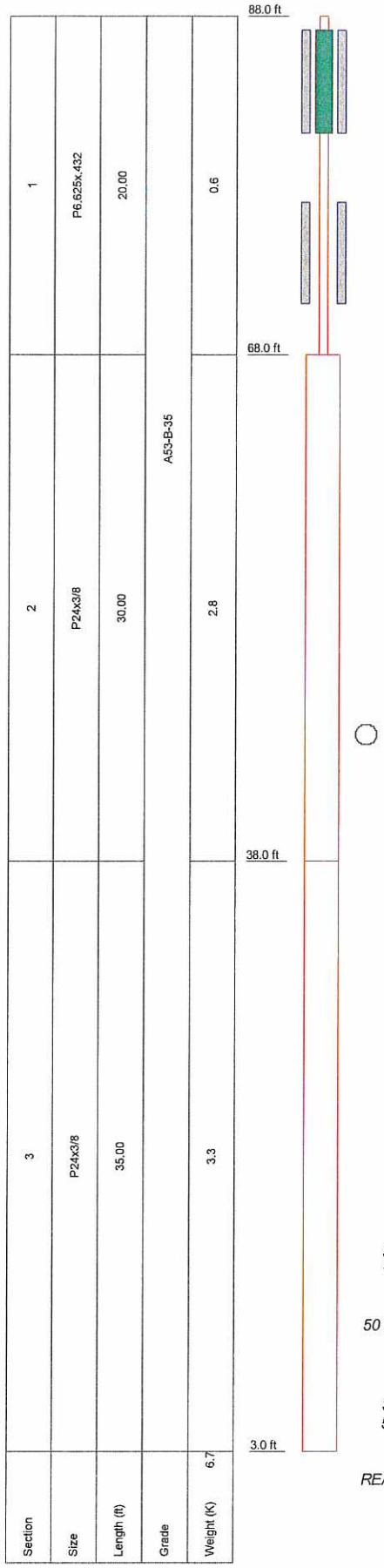
Image of existing ±85-ft tall AT&T temporary uni-pole tower ballast base frame and base plate assembly.

Image of existing ±85-ft tall AT&T temporary uni-pole tower ballast base frame and base plate assembly.

Photos taken by APT during November 2017.

Appendix B

Calculations



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
6'x2" Antenna Mount Pipe (ATI)	84.1	SBNHH-1D85B (Verizon)	74
6'x2" Antenna Mount Pipe (ATI)	84.1	6'x2" Antenna Mount Pipe (Verizon)	74
6'x2" Antenna Mount Pipe (ATI)	84.1	6'x2" Antenna Mount Pipe (Verizon)	74
SBNH-1D6565B (ATI)	84.1	SBNHH-1D65B (Verizon)	74
SBNH-1D6565B (ATI)	84.1	SitePRO1 UGLM - LP6 _FMA Mount (Verizon)	72.5
SBNH-1D6565B (ATI)	84.1		
SitePRO1 UGLM - LP6 _FMA Mount (Verizon)	75.5		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-35	35 ksi	63 ksi			

TOWER DESIGN NOTES

1. Tower is located in New London County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 120 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 39.3%

ALL REACTIONS ARE FACTORED

AXIAL 15 K

SHEAR 1 K — *MOMENT 54 kip-ft*

TORQUE 0 kip-ft

50 mph WIND - 0.7500 in ICE

AXIAL 10 K

SHEAR 5 K — *MOMENT 206 kip-ft*

TORQUE 0 kip-ft

REACTIONS - 120 mph WIND

All-Points Engineering
3 Saddlebrook Drive
Killingworth, CT 06419
Phone: (860) 663-1697
FAX: (860) 663-0935

Job: ***85' Temporary Monopole - Lyme, CT***		
Project: ***Lyme, CT Loc. Code: 467845***		
Client: Verizon	Drawn by: JRM	App'd:
Code: TIA-222-G	Date: 12/13/17	Scale: NTS
Path: C:\APT Work\VZ CT\Lyme CT\Engineering\Structural\Tower Analysis\tnxTower\CT14110240 Lyme CT.eri		Dwg No. E-1

Tower Input Data

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

Tower is located in New London County, Connecticut.
Basic wind speed of 120 mph.
Structure Class II.
Exposure Category C.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

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 (AT&T)	C	No	Inside Pole	84.10 - 9.00	6	No Ice	0.00	1.04
						1/2" Ice	0.00	1.04
						1" Ice	0.00	1.04
1/2 (Verizon)	C	No	Inside Pole	74.00 - 9.00	4	No Ice	0.00	0.25
						1/2" Ice	0.00	0.25
						1" Ice	0.00	0.25

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
6'x2" Antenna Mount Pipe (AT&T)	A	From Face	1.00 0.00 0.00	0.0000	84.10	No Ice 1/2" Ice 1" Ice	1.43 2.05 2.68	1.43 2.05 2.68	0.02 0.03 0.05
6'x2" Antenna Mount Pipe (AT&T)	B	From Face	1.00 0.00 0.00	0.0000	84.10	No Ice 1/2" Ice 1" Ice	1.43 2.05 2.68	1.43 2.05 2.68	0.02 0.03 0.05
6'x2" Antenna Mount Pipe	C	From Face	1.00	0.0000	84.10	No Ice	1.43	1.43	0.02

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 K
(AT&T)			0.00			1/2" Ice	2.05	2.05	0.03
			0.00			1" Ice	2.68	2.68	0.05
SBNH-1D6565B	A	From Face	1.00	0.0000	84.10	No Ice	8.41	5.41	0.05
(AT&T)			0.00			1/2" Ice	8.96	5.86	0.10
			0.00			1" Ice	9.52	6.33	0.15
SBNH-1D6565B	B	From Face	1.00	0.0000	84.10	No Ice	8.41	5.41	0.05
(AT&T)			0.00			1/2" Ice	8.96	5.86	0.10
			0.00			1" Ice	9.52	6.33	0.15
SBNH-1D6565B	C	From Face	1.00	0.0000	84.10	No Ice	8.41	5.41	0.05
(AT&T)			0.00			1/2" Ice	8.96	5.86	0.10
			0.00			1" Ice	9.52	6.33	0.15
SBNHH-1D65B	A	From Face	1.00	0.0000	74.00	No Ice	8.43	5.42	0.04
(Verizon)			0.00			1/2" Ice	8.99	5.88	0.09
			0.00			1" Ice	9.55	6.35	0.15
SBNHH-1D85B	B	From Face	1.00	0.0000	74.00	No Ice	8.43	5.42	0.04
(Verizon)			0.00			1/2" Ice	8.99	5.88	0.09
			0.00			1" Ice	9.55	6.35	0.15
6'x2" Antenna Mount Pipe	A	From Face	1.00	0.0000	74.00	No Ice	1.43	1.43	0.02
(Verizon)			0.00			1/2" Ice	2.05	2.05	0.03
			0.00			1" Ice	2.68	2.68	0.05
6'x2" Antenna Mount Pipe	B	From Face	1.00	0.0000	74.00	No Ice	1.43	1.43	0.02
(Verizon)			0.00			1/2" Ice	2.05	2.05	0.03
			0.00			1" Ice	2.68	2.68	0.05
SitePRO1 UGLM - LP6 & FMA Mount	C	None		0.0000	72.50	No Ice	1.30	1.30	0.18
						1/2" Ice	1.52	1.52	0.25
(Verizon)						1" Ice	1.74	1.74	0.32
SitePRO1 UGLM - LP6 & FMA Mount	C	None		0.0000	75.50	No Ice	1.30	1.30	0.18
						1/2" Ice	1.52	1.52	0.25
(Verizon)						1" Ice	1.74	1.74	0.32

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	88 - 68	1.936	39	0.1889	0.0000
L2	68 - 38	1.208	39	0.1271	0.0000
L3	38 - 3	0.457	39	0.1055	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
84.10	6'x2" Antenna Mount Pipe	39	1.787	0.1745	0.0000	86752
75.50	SitePRO1 UGLM - LP6 & FMA Mount	39	1.467	0.1455	0.0000	34701
74.00	SBNHH-1D65B	39	1.414	0.1412	0.0000	30983
72.50	SitePRO1 UGLM - LP6 & FMA Mount	39	1.361	0.1372	0.0000	27986

tnxTower	Job	Page
	85' Temporary Monopole - Lyme, CT	3 of 3
All-Points Engineering 3 Saddlebrook Drive Killingworth, CT 06419 Phone: (860) 663-1697 FAX: (860) 663-0935	**Project** Lyme, CT Loc. Code: 467845	**Date** 13:06:55 12/13/17
	Client Verizon	**Designed by** JRM

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	88 - 68	11.247	2	0.9986	0.0001
L2	68 - 38	7.320	2	0.7534	0.0000
L3	38 - 3	2.815	2	0.6417	0.0000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
84.10	6'x2" Antenna Mount Pipe	2	10.457	0.9412	0.0001	24697
75.50	SitePRO1 UGLM - LP6 & FMA Mount	2	8.743	0.8259	0.0000	9879
74.00	SBNHH-1D65B	2	8.452	0.8087	0.0000	8820
72.50	SitePRO1 UGLM - LP6 & FMA Mount	2	8.163	0.7928	0.0000	7967

Base Plate Design Data

Plate Thickness in	Number of Anchor Bolts	Anchor Bolt Size in	Actual Allowable Ratio Bolt Tension K	Actual Allowable Ratio Bolt Compression K	Actual Allowable Ratio Plate Stress ksi	Actual Allowable Ratio Stiffener Stress ksi	Controlling Condition	Ratio
1.2500	20	1.0000	17.85	18.76	16.611	9.675	Plate	0.37
			53.01	88.00	45.000	45.000		✔
			0.35	0.23	0.37	0.22		

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	88 - 68	Pole	P6.625x.432	1	-1.65	264.76	12.7	Pass
L2	68 - 38	Pole	P24x3/8	2	-5.29	876.73	11.4	Pass
L3	38 - 3	Pole	P24x3/8	3	-9.55	876.73	39.3	Pass
							Summary	
						Pole (L3)	39.3	Pass
						Base Plate	36.9	Pass
						RATING =	**39.3**	**Pass**

All-Points Technology Corporation
Consulting Engineers
3 Saddlebrook Drive,
Killingworth, CT 06419
Ph. 860-663-1697
Fax. 860-663-0935

Subject: Ballast Frame Stability Analysis

Project: Verizon - Lyme, CT

Date: 12.13.17 Revised:

Prepared: JRM APT Job No. CT141NB10240

Ballast Frame Stability Analysis

Foundation Data		
Base Plate Distance Above Grade:	1.50	ft
Ballast Type No. 1 Length/Width:	6.00	ft
Ballast Type No. 1 Length/Width:	6.00	ft
Ballast Type 1 Thickness:	0.67	ft
Ballast Type 2 Thickness:	0.96	ft
Ballast Type 1 Area:	36.00	ft^2
Ballast Type 2 Area:	36.00	ft^2
No. of Type 1 Ballast Units:	8.00	
No. of Type 2 Ballast Units:	8.00	
Ballast Frame Length/Width:	15.00	ft

Material Properties		
Concrete Density:	145.00	pcf
Soil Unit Weight, g:	110.00	pcf
Ultimate Bearing Capacity, qn:	6.00	psf
Strength Reduction Factor, F:	0.75	
Angle of Internal Friction, øs:	30.00	degrees
Allowable Soil Bearing, Fqn:	4.50	psf
Coefficient of Friction (Concrete & Soil), m:	0.45	
Passive Soil Pressure Coefficient, Kp:	3.00	

Vol. of Ballast Type No. 1:	192.96	cu.ft
Vol. of Ballast Type No. 2:	275.90	cu.ft
Total Vol of Ballast:	468.86	cu.ft
Weight of Concrete Ballast Type 1:	27.98	kips
Weight of Concrete Ballast Type 2:	40.01	kips
Weight of Concrete Ballast:	67.99	kips
Weight of Steel Base Frame (calculated):	4.80	kips
Total (Unfactored) Weight of Ballast & Ballast Frame:	72.79	kips
Total Vertical Load Including Axial Force (x0.9):	72.71	kips

Check Stability (Proposed Loading, 0.9DL+1.6WL)		
Total Overturning Moment, ft-kips:	212.95	ft-kips
Total Resisting Moment, ft-kips:	436.24	ft-kips
Overturning Factor Of Safety (Mr/Mot*Wind Load Factor/Dead Load Factor)	**3.64**	>1.5 OK

Base Reactions: (0.9D+1.6W)		
Axial Force, Pu:	7.20	kips
Shear Force, Vu:	5.30	kips
Overturning Moment, Mu:	205.00	kip-ft

Ballast Eccentricity From Toe, eL:	12.00	ft

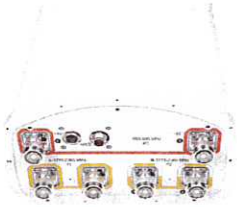
Comments:

Appendix C

Reference Materials

Product Specifications

COMMSCOPE®



SBNHH-1D65B

6-port sector antenna, 2x 698–896 and 4x 1695–2360 MHz, 65° HPBW, 2x RET. Both high bands share the same electrical tilt.

- Interleaved dipole technology providing for attractive, low wind load mechanical package

Electrical Specifications

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain, dBi	14.9	14.7	17.7	18.2	18.6	18.6
Beamwidth, Horizontal, degrees	68	66	69	66	63	58
Beamwidth, Vertical, degrees	12.1	10.7	5.6	5.2	5.0	4.5
Beam Tilt, degrees	0–14	0–14	0–7	0–7	0–7	0–7
USLS (First Lobe), dB	14	13	15	15	15	13
Front-to-Back Ratio at 180°, dB	27	29	28	28	28	27
Isolation, dB	25	25	25	25	25	25
Isolation, Intersystem, dB	30	30	30	30	30	30
VSWR | Return Loss, dB	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153
Input Power per Port, maximum, watts	350	350	350	350	350	300
Polarization	±45°	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm

Electrical Specifications, BASTA*

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain by all Beam Tilts, average, dBi	14.5	14.3	17.4	17.9	18.2	18.3
Gain by all Beam Tilts Tolerance, dB	±0.5	±0.8	±0.4	±0.3	±0.5	±0.3
Gain by Beam Tilt, average, dBi	0 ° | 14.6	0 ° | 14.5	0 ° | 17.4	0 ° | 17.8	0 ° | 18.1	0 ° | 18.2
	7 ° | 14.6	7 ° | 14.4	3 ° | 17.5	3 ° | 17.9	3 ° | 18.3	3 ° | 18.4
	14 ° | 14.2	14 ° | 13.6	7 ° | 17.4	7 ° | 17.9	7 ° | 18.2	7 ° | 18.4
Beamwidth, Horizontal Tolerance, degrees	±2.2	±3.4	±2	±4.6	±5.7	±4.3
Beamwidth, Vertical Tolerance, degrees	±0.8	±1	±0.3	±0.2	±0.3	±0.2
USLS, beampeak to 20° above beampeak, dB	16	14	16	16	16	15
Front-to-Back Total Power at 180° ± 30°, dB	25	26	27	26	26	26
CPR at Boresight, dB	22	23	21	20	20	22
CPR at Sector, dB	13	11	16	12	11	4

* CommScope® supports NGMN recommendations on Base Station Antenna Standards (BASTA). To learn more about the benefits of BASTA, download the whitepaper Time to Raise the Bar on BSAs.

Array Layout

Product Specifications

SBNHH-1D65B

Color	Light gray
Grounding Type	RF connector inner conductor and body grounded to reflector and mounting bracket
Radiator Material	Aluminum | Low loss circuit board
Radome Material	Fiberglass, UV resistant
Reflector Material	Aluminum
RF Connector Location	Bottom
Wind Loading, frontal	618.0 N @ 150 km/h 138.9 lbf @ 150 km/h
Wind Loading, lateral	197.0 N @ 150 km/h 44.3 lbf @ 150 km/h
Wind Loading, rear	728.0 N @ 150 km/h 163.7 lbf @ 150 km/h
Wind Speed, maximum	241 km/h | 150 mph

Dimensions

Length	1851.0 mm | 72.9 in
Width	301.0 mm | 11.9 in
Depth	180.0 mm | 7.1 in
Net Weight, without mounting kit	18.4 kg | 40.6 lb

Remote Electrical Tilt (RET) Information

Input Voltage	10–30 Vdc
Internal RET	High band (1) | Low band (1)
Power Consumption, idle state, maximum	2.0 W
Power Consumption, normal conditions, maximum	13.0 W
Protocol	3GPP/AISG 2.0 (Multi-RET)
RET Interface	8-pin DIN Female | 8-pin DIN Male
RET Interface, quantity	1 female | 1 male

Packed Dimensions

Length	2025.0 mm | 79.7 in
Width	390.0 mm | 15.4 in
Depth	296.0 mm | 11.7 in
Shipping Weight	31.0 kg | 68.3 lb

Regulatory Compliance/Certifications

Agency	Classification
RoHS 2011/65/EU	Compliant by Exemption
China RoHS SJ/T 11364-2006	Above Maximum Concentration Value (MCV)
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system

Product Specifications

COMMSCOPE®

SBNHH-1D85B

6-port sector antenna, 2x 698–896 and 4x 1695–2360 MHz, 85° HPBW, 3x RET

- Interleaved dipole technology providing for attractive, low wind load mechanical package
- Three internal RETs for independent tilt on all three bands

Electrical Specifications

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain, dBi	14.5	14.4	17.0	17.6	17.9	17.9
Beamwidth, Horizontal, degrees	83	86	81	79	79	79
Beamwidth, Vertical, degrees	12.3	11.1	5.7	5.3	5.0	4.6
Beam Tilt, degrees	0–12	0–12	0–8	0–8	0–8	0–8
USLS (First Lobe), dB	19	18	15	16	17	18
Isolation, dB	25	25	25	25	25	25
Isolation, Intersystem, dB	30	30	25	25	25	25
VSWR | Return Loss, dB	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153
Input Power per Port, maximum, watts	350	350	350	350	350	300
Polarization	±45°	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm

Electrical Specifications, BASTA*

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2200	2300–2360
Gain by all Beam Tilts, average, dBi	14.3	14.2	16.8	17.4	17.7	17.8
Gain by all Beam Tilts Tolerance, dB	±0.3	±0.5	±0.5	±0.3	±0.4	±0.3
Gain by Beam Tilt, average, dBi	0 ° | 14.2	0 ° | 14.1	0 ° | 16.8	0 ° | 17.5	0 ° | 17.7	0 ° | 17.6
	6 ° | 14.3	6 ° | 14.3	4 ° | 16.8	4 ° | 17.5	4 ° | 17.8	4 ° | 18.0
	12 ° | 14.1	12 ° | 13.9	8 ° | 16.7	8 ° | 17.2	8 ° | 17.5	8 ° | 17.6
Beamwidth, Horizontal Tolerance, degrees	±2.4	±1.7	±4.8	±3.2	±3.8	±1.9
Beamwidth, Vertical Tolerance, degrees	±0.6	±0.9	±0.2	±0.2	±0.3	±0.2
USLS, beampeak to 20° above beampeak, dB	16	14	15	16	17	18
Front-to-Back Total Power at 180° ± 30°, dB	23	23	27	26	25	27
CPR at Boresight, dB	20	20	23	22	18	22
CPR at Sector, dB	15	16	12	13	10	6

* CommScope® supports NGMN recommendations on Base Station Antenna Standards (BASTA). To learn more about the benefits of BASTA, download the whitepaper Time to Raise the Bar on BSAs.

Array Layout

Product Specifications

SBNHH-1D85B

Color	Light gray
Grounding Type	RF connector inner conductor and body grounded to reflector and mounting bracket
Radiator Material	Aluminum | Low loss circuit board
Radome Material	Fiberglass, UV resistant
Reflector Material	Aluminum
RF Connector Location	Bottom
Wind Loading, frontal	618.0 N @ 150 km/h 138.9 lbf @ 150 km/h
Wind Loading, lateral	197.0 N @ 150 km/h 44.3 lbf @ 150 km/h
Wind Loading, rear	728.0 N @ 150 km/h 163.7 lbf @ 150 km/h
Wind Speed, maximum	241 km/h | 150 mph

Dimensions

Length	1851.0 mm | 72.9 in
Width	301.0 mm | 11.9 in
Depth	180.0 mm | 7.1 in
Net Weight, without mounting kit	19.1 kg | 42.1 lb

Remote Electrical Tilt (RET) Information

Input Voltage	10–30 Vdc
Internal RET	High band (2) | Low band (1)
Power Consumption, idle state, maximum	2.0 W
Power Consumption, normal conditions, maximum	13.0 W
Protocol	3GPP/AISG 2.0 (Multi-RET)
RET Interface	8-pin DIN Female | 8-pin DIN Male
RET Interface, quantity	1 female | 1 male

Packed Dimensions

Length	1970.0 mm | 77.6 in
Width	409.0 mm | 16.1 in
Depth	299.0 mm | 11.8 in
Shipping Weight	31.2 kg | 68.8 lb

Regulatory Compliance/Certifications

Agency	Classification
RoHS 2011/65/EU	Compliant by Exemption
China RoHS SJ/T 11364-2006	Above Maximum Concentration Value (MCV)
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system

Product Specifications

COMMSCOPE®

POWERED BY ANDREW.

SBNH-1D6565B

Andrew® Dual Band Antenna, 698–896 MHz and 1710–2180 MHz, 65° horizontal beamwidth, internal RET

- Interleaved dipole technology providing for attractive, low wind load mechanical package
- Internal next generation actuator eliminates field installation and defines new standards for reliability
- The values presented on this datasheet have been calculated based on N-P-BASTA White Paper version 9.6 by the NGMN Alliance

This product will be discontinued on: December 31, 2014

Replaced By

DBXNH-6565B-VTM	Andrew® Dual Band Teletilt® Antenna, 698–896 MHz and 1710–2180 MHz, 65° horizontal beamwidth, RET compatible
SBNHH-1D65B	Andrew® Tri-band Antenna, 698–896 and 2 x 1710–2360 MHz, 65° horizontal beamwidth, internal RET. Both high bands share the same electrical tilt.
SBNH-1D65B	Andrew® Dualband Antenna, 698–896 MHz and 1710–2360 MHz, 65° horizontal beamwidth, internal RET.

Electrical Specifications

Frequency Band, MHz	**698–806**	**806–896**	**1710–1880**	**1850–1990**	**1920–2180**
Gain by all Beam Tilts, average, dBi	14.9	15.2	18.3	18.2	17.9
Gain by all Beam Tilts Tolerance, dB	±0.5	±0.4	±0.4	±0.3	±0.7
	0 ° | 15.1	0 ° | 15.2	0 ° | 18.5	0 ° | 18.3	0 ° | 18.2
Gain by Beam Tilt, average, dBi	5 ° | 15.1	5 ° | 15.3	3 ° | 18.4	3 ° | 18.3	3 ° | 18.0
	10 ° | 14.6	10 ° | 15.1	6 ° | 18.1	6 ° | 18.0	6 ° | 17.5
Beamwidth, Horizontal, degrees	71	67	59	57	63
Beamwidth, Horizontal Tolerance, degrees	±2.2	±2.3	±2.6	±1.4	±10.2
Beamwidth, Vertical, degrees	12.3	10.9	5.5	5.1	4.8
Beamwidth, Vertical Tolerance, degrees	±0.9	±0.5	±0.3	±0.2	±0.4
Beam Tilt, degrees	0–10	0–10	0–6	0–6	0–6
USLS, dB	16	17	16	17	15
Front-to-Back Total Power at 180° ± 30°, dB	21	20	29	29	27
CPR at Boresight, dB	26	22	25	26	24
CPR at Sector, dB	11	7	10	10	8
Isolation, dB	30	30	30	30	30
Isolation, Intersystem, dB	30	30	30	30	30
VSWR | Return Loss, dB	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153
Input Power per Port, maximum, watts	400	400	300	300	300
Polarization	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm

General Specifications

Antenna Brand	Andrew®
Antenna Type	DualPol® multiband with internal RET
Band	Multiband

Product Specifications

COMMSCOPE®

SBNH-1D6565B

POWERED BY ANDREW

Brand	DualPol® | Teletilt®
Operating Frequency Band	1710 – 2180 MHz | 698 – 896 MHz

Mechanical Specifications

Color	Light gray
Lightning Protection	dc Ground
Radiator Material	Aluminum
Radome Material	Fiberglass, UV resistant
RF Connector Interface	7-16 DIN Female
RF Connector Location	Bottom
RF Connector Quantity, total	4
Wind Loading, maximum	618.0 N @ 150 km/h 138.9 lbf @ 150 km/h
Wind Speed, maximum	241.0 km/h | 149.8 mph

Dimensions

Depth	181.0 mm | 7.1 in
Length	1847.0 mm | 72.7 in
Width	301.0 mm | 11.9 in
Net Weight	21.5 kg | 47.4 lb

Remote Electrical Tilt (RET) Information

Input Voltage	10–30 Vdc
Power Consumption, idle state, maximum	2.0 W
Power Consumption, normal conditions, maximum	11.0 W
Protocol	3GPP/AISG 2.0 Multi-RET
RET Interface	8-pin DIN Female | 8-pin DIN Male
RET Interface, quantity	1 female | 1 male
RET System	Teletilt®

Regulatory Compliance/Certifications

Agency	Classification
RoHS 2011/65/EU	Compliant by Exemption
China RoHS SJ/T 11364-2006	Above Maximum Concentration Value (MCV)
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system

Included Products

DB380 — Pipe Mounting Kit for 2.4"-4.5" (60-115mm) OD round members on wide panel antennas. Includes 2 clamp sets and double nuts.

DB5083 — Downtilt Mounting Kit for 2.4"-4.5" (60 - 115 mm) OD round members. Includes a heavy-duty, galvanized steel

Exhibit C

Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT5375

Lyme Central
156 Sterling Road
Old Lyme, CT 6371

December 22, 2017

Centerline Communications Project Number: 950012-014

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**14.07 %**

December 22, 2017

AT&T Mobility – New England
Attn: John Benedetto, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 06040

Emissions Analysis for Site: **CT5375 – Lyme Central**

Centerline Communications, LLC ("Centerline") was directed to analyze the proposed AT&T facility located at **156 Sterling Road, Old Lyme, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications facility that exposes persons in a nearby residential area.

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 700 and 850 MHz Bands are approximately 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed AT&T Wireless antenna facility located at **156 Sterling Road, Old Lyme, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the facility. For this report the sample point is the top of a 6-foot person standing at the base of the facility.

Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
UMTS	850 MHz	2	30
LTE	700 MHz	2	60

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 700 MHz and 850 MHz frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Commscope SBNHH-1D6565B	84.1
B	1	Commscope SBNHH-1D6565B	84.1
C	1	Commscope SBNHH-1D6565B	84.1

Table 2: Antenna Data

All calculations were done with respect to uncontrolled / general population threshold limits.

RESULTS

Per the calculations completed for the proposed AT&T configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	Commscope SBNHH-1D6565B	850 MHz / 700 MHz	13.05 / 12.75	4	180	3,471.40	4.11
						Sector A Composite MPE%	**4.11**
Antenna B1	Commscope SBNHH-1D6565B	850 MHz / 700 MHz	13.05 / 12.75	4	180	3,471.40	4.11
						Sector B Composite MPE%	**4.11**
Antenna C1	Commscope SBNHH-1D6565B	850 MHz / 700 MHz	13.05 / 12.75	4	180	3,471.40	4.11
						Sector C Composite MPE%	**4.11**

Table 3: AT&T Emissions Levels

The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum AT&T MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each AT&T Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max Sector Value	**4.11 %**
Verizon Wireless	9.96 %
Site Total MPE %:	**14.07 %**

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	4.11 %
AT&T Sector B Total:	4.11 %
AT&T Sector C Total:	4.11 %
Site Total:	14.07 %

Table 5: Site MPE Summary

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated AT&T sector(s). or this site, all three sectors have the same configuration yielding the same results on all three sectors.

AT&T _ Frequency Band / Technology (All Sectors)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
AT&T 850 MHz UMTS	2	605.51	84.1	7.14	850 MHz	567	1.26%
AT&T 700 MHz LTE	2	1,130.19	84.1	13.32	700 MHz	467	2.85%
						Total:	**4.11%**

Table 6: AT&T Maximum Sector MPE Power Values

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the AT&T facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector A:	4.11 %
Sector B:	4.11 %
Sector C:	4.11 %
AT&T Maximum Total (per sector):	4.11 %
Site Total:	14.07 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **14.07 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

Scott Heffernan
RF Engineering Director
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767