STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

www.ct.gov/csc

VIA ELECTRONIC MAIL

August 23, 2019

Craig A. Russo, P.E.
Engineer
T-Squared Site Services
2500 Highland Road, Suite 201
Hermitage, PA 16148

RE: **TS-SIGFOX-126-190708** - Sigfox NIP, LLC request for an order to approve tower sharing at an existing telecommunications facility located at 14 Oxford Drive (a/k/a Booth Hill Road), Shelton, Connecticut.

Dear Mr. Russo:

The Connecticut Siting Council (Council) is in receipt of your correspondence of August 20, 2019 submitted in response to the Council's July 15, 2019 notification of an incomplete request for an order to approve tower sharing with regard to the above-referenced matter.

The submission renders the request for an order to approve tower sharing complete and the Council will process the request in accordance with the Federal Communications Commission 60-day timeframe.

Thank you for your attention and cooperation.

Sincerely,

Melanie A. Bachman
Executive Director

MAB/IN/emr

Robidoux, Evan

From: Craig A. Russo, P.E. <craig.r@t-sqrd.com>
Sent: Tuesday, August 20, 2019 8:45 AM
To: Robidoux, Evan
Cc: CSC-DL Siting Council
Subject: RE: Council Incomplete Letter for TS-SIGFOX-126-190708-OxfordDr-aka-BoothHillRd-Shelton
Attachments: CT9081 Siting Council Narrative_08.19.2019.pdf

Good Morning Evan,

I'm sending this email to notify you of our recent resubmission of the above referenced SIGFOX shared use request. I have attached a copy of our submission to this email to serve as your digital copy.

Thank you.

Craig A. Russo, P.E. | Engineer
T-Squared Site Services
724.308.7855 (o) | 724.333.0517 (m)

From: Robidoux, Evan
Sent: Monday, July 15, 2019 4:04 PM
To: 'Craig A. Russo, P.E.'
Cc: CSC-DL Siting Council
Subject: Council Incomplete Letter for TS-SIGFOX-126-190708-OxfordDr-aka-BoothHillRd-Shelton

Please see the attached correspondence.

Evan Robidoux
Clerk Typist
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

August 19, 2019

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

RE: **Request of Sigfox NIP LLC for an Order to Approve the Shared Use of an Existing Tower at 14 Oxford Drive/Booth Hill Road, Shelton, CT 06484**

Dear Ms. Bachman:

Pursuant to Connecticut General Statutes ("C.G.S.") §16-50aa, as amended, Sigfox NIP LLC ("Sigfox") hereby requests an order from the Connecticut Siting Council ("Council") to approve the shared use by Sigfox of an existing telecommunication tower at 14 Oxford Drive/Booth Hill Road, Shelton, CT 06484(the "Property"). The existing 200-foot self-support tower is owned by American Tower Corp. ("ATC"), the underlying property is also owned by ATC. Sigfox requests that the Council find that the proposed shared use of the ATC tower satisfies the criteria of C.G.S. §16-50aa and issue an order approving the proposed shared use. A copy of this filing is being mailed to the City of Shelton and ATC.

Background

The existing ATC facility consists of a 200-foot self-support tower located within an approximate 10,000 square foot compound positioned +/- 220-feet west of the end of Oxford Drive. There are existing carrier antennas located at various elevations throughout the tower (see Sheet C-1 of Exhibit 1 for more information). Equipment associated with these antennas is located at various positions within the tower compound.

Sigfox is licensed by the Federal Communications Commission ("FCC") to provide wireless services throughout the State of Connecticut. Sigfox and ATC have agreed to the proposed shared use of the 14 Oxford Drive/Booth Hill Road, Shelton, CT 06484 tower pursuant to mutually acceptable terms and conditions. Likewise, Sigfox and ATC have agreed to the proposed installation of equipment cabinets within an existing adjacent utility building located south of the tower within the compound. ATC has authorized Sigfox to apply for all necessary permits and approvals that may be required to share the existing tower. (See the attached Letter of Authorization).

Sigfox proposes to add one (1) omni antenna, one (1) line of coaxial cable; one (1) filter, and one (1) TMA on the existing tower at 135-feet above ground level. They propose to add one (1) equipment cabinet within the adjacent utility building.

C.G.S. § 16-50aa(c)(1) provides that, upon written request for approval of a proposed shared use, "if the Council finds that the proposed shared use of the facility is technically, legally, environmentally and economically feasible and meets public safety concerns, the council shall issue an order approving such a shared use." Sigfox respectfully submits that the shared use of the tower satisfies these criteria.

A. Technical Feasibility. The existing ATC tower is structurally capable of supporting Sigfox's proposed improvements. The proposed shared use of this tower is, therefore, technically feasible. A Feasibility Structural Analysis Report ("Structural Report") prepared for this project confirms that this tower can support Sigfox's proposed loading. A copy of the Structural Report has been included in this application.

B. Legal Feasibility. Under C.G.S. § 16-50aa, the Council has been authorized to issue order approving the shared use of an existing tower such as the ATC tower. This authority complements the Council's prior-existing authority under C.G.S. § 16-50p to issue orders approving the construction of new towers that are subject to the Council's jurisdiction. In addition, § 16-50x(a) directs the Council to "give such consideration to the other state laws and municipal regulations as it shall deem appropriate" in ruling on requests for the shared use of existing tower facilities. Under the statutory authority vested in the Council, an order by the Council approving the requested shared use would permit the Applicant to obtain a building permit for the proposed installations.

C. Environmental Feasibility. The proposed shared use of the ATC tower would have a minimal environmental effect for the following reasons:

1. The proposed installation of one (1) omni antenna, one (1) line of coaxial cable; one (1) filter, and one (1) TMA on the existing tower at 135-feet above ground level, would have no visual impact on the area of the tower. Sigfox's cabinet will be installed within the facility compound. Sigfox's shared use of this tower therefore, does not cause any significant change or alteration in the physical or environmental characteristics of the existing site.

2. Operation of Sigfox's antennas at this site would not exceed the RF emissions standard adopted by the Federal Communications Commission ("FCC"). Included in the EME report of this filing are the approximation tables that demonstrate that Sigfox's proposed facility will operate well within the FCC RF emissions safety standards.

3. Under ordinary operating conditions, the proposed installation would not require the use of any water or sanitary facilities and would not generate air emissions or discharges to water bodies or sanitary facilities. After construction is complete the proposed installations would not generate any increased traffic to the ATC facility other

than periodic maintenance. The proposed shared use of the ATC tower, would, therefore, have a minimal environmental effect, and is environmentally feasible.

D. **Economic Feasibility.** As previously mentioned, Sigfox has entered into an agreement with ATC for the shared use of the existing facility subject to mutually agreeable terms. The proposed tower sharing is, therefore, economically feasible. (Please see included authorization.)

E. **Public Safety Concerns.** As discussed above, the tower is structurally capable of supporting Sigfox's full array of one (1) omni antenna, one (1) line of coaxial cable; one (1) filter, and one (1) TMA and all related equipment. Sigfox is not aware of any public safety concerns relative to the proposed sharing of the existing ATC tower.

Conclusion

For the reasons discussed above, the proposed shared use of the existing Crown Castle tower at 14 Oxford Drive/Booth Hill Road, Shelton, CT 06484 satisfies the criteria state in C.G.S. §16-50aa and advances the Council's goal of preventing the unnecessary proliferation of towers in Connecticut. The Applicant, therefore, respectfully requests that the Council issue an order approving the prosed shared use.

Sincerely,

Craig A. Russo, P.E.
Engineer
T-Squared Site Services
2500 Highland Road, Suite 201
Hermitage, PA 16148
724.308.7855
craig.r@t-sqrd.com

Attachments:

Exhibit-1: Compound Plan and Elevation Depicting the Planned Changes
Exhibit-2: Structural Modification Report
Exhibit-3: General Power Density Table report (RF Emissions Analysis Report)
Exhibit-4: Letter of Authorization
Exhibit-5: Proof of Mailing to Chief Elected Official
Exhibit-6: Proof of Mailing to Tower Owner/Property Owner
Exhibit-7: Additional Information

Copies to:

Mr. Rick Schultz
Planning & Zoning Administrator
Shelton City Hall
54 Hill Street – 3rd Floor
Shelton, CT 06484

Mr. Jason Hastie
Account Project Manager, Vertical Markets/Broadcast Repack
American Tower Corporation
10 Presidential Way
Woburn, MA 01801

EXHIBIT 1:

Compound Plan and Elevation Depicting the Planned Changes

T-Squared Site Services
2500 Highland Road | Suite 201
Hermitage, PA 16148 | 724.308.7855
www.t-sqrd.com

SIGFOX

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SITE NUMBER: CT9081

14 OXFORD DRIVE/ BOOTH HILL ROAD
SHELTON, CT 06484
FAIRFIELD COUNTY

811 Know what's below. Call before you dig.

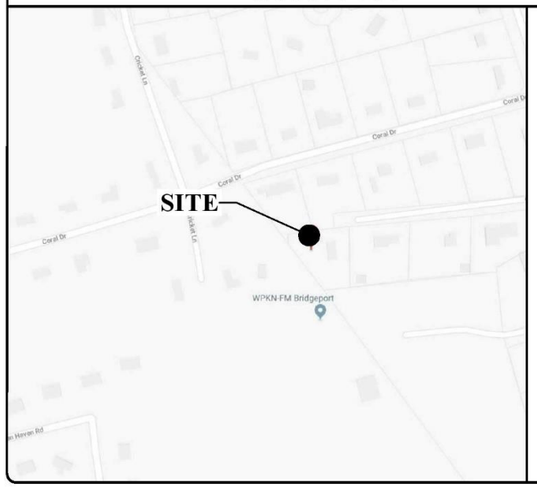
SITE INFORMATION

SCOPE OF WORK:	PROJECT CONSISTS OF INSTALLING THE FOLLOWING: • (1) PROCOM CXL-900-3LW OMNI ANTENNA • (1) LNA • (1) CAVITY FILTER • (1) 1/2" COAX CABLE • (1) RG6 CABLE • (1) EQUIPMENT CABINET FOR BASE STATION
SIGFOX SITE NUMBER:	CT9081
911 SITE ADDRESS	14 OXFORD DRIVE/ BOOTH HILL ROAD SHELTON, CT 06484
TOWER OWNER: ADDRESS:	AMERICAN TOWER CORP. 116 HUNTINGTON AVE. 11TH FLOOR BOSTON, MA 02116
OWNER SITE NUMBER:	88017
LATITUDE (NAD 83): LONGITUDE (NAD 83):	41.280200° -73.185500°
JURISDICTION:	FAIRFIELD COUNTY
PARCEL OWNER: ADDRESS:	AMERICAN TOWER CORP. 116 HUNTINGTON AVE. 11TH FLOOR BOSTON, MA 02116
GROUND ELEVATION:	517' AMSL
STRUCTURE TYPE:	SELF SUPPORT
STRUCTURE HEIGHT:	200' (AGL)

PROJECT TEAM

APPLICANT:	SIGFOX, INC. 545 BOYLSTON STREET, 10TH FLOOR BOSTON, MA. 02116
PROJECT MANAGEMENT FIRM:	T-SQUARED SITE SERVICES, LLC 2500 HIGHLAND ROAD, SUITE 201 HERMITAGE, PA. 16148
ENGINEERING FIRM:	T-SQUARED SITE SERVICES, LLC 2500 HIGHLAND ROAD, SUITE 201 HERMITAGE, PA. 16148

VICINITY MAP



CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUCTED TO PERMIT WORK NOT CONFORMING TO THE LATEST EDITIONS OF THE FOLLOWING CODES.

- 2015 INTERNATIONAL BUILDING CODE
- 2017 NATIONAL ELECTRIC CODE
- 2015 INTERNATIONAL ENERGY CONSERVATION CODE
- 2015 INTERNATIONAL EXISTING BUILDING CODE
- 2015 INTERNATIONAL FIRE CODE
- 2015 INTERNATIONAL MECHANICAL CODE
- 2015 INTERNATIONAL RESIDENTIAL CODE

DRAWING INDEX

Digitally signed by Gary Clower
DN: c=US, st=Pennsylvania, l=Hermitage, o=T-Squared Site Services, cn=Gary Clower, email=gary.c@t-sqrd.com
Date: 2019.01.28 14:10:13 -05'00'

DO NOT SCALE DRAWINGS

THESE DRAWINGS ARE FORMATTED TO BE FULL-SIZE AT 11"X17". CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE DESIGNER / ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR MATERIAL ORDERS OR BE RESPONSIBLE FOR THE SAME. CONTRACTOR SHALL USE BEST MANAGEMENT PRACTICE TO PREVENT STORM WATER POLLUTION DURING CONSTRUCTION.

APPROVAL BLOCK

		APPROVED	APPROVED AS NOTED	DISAPPROVED REVISE
PROPERTY OWNER	DATE	☐	☐	☐
SITE ACQUISITION	DATE	☐	☐	☐
CONSTRUCTION MANAGER	DATE	☐	☐	☐
ZONING	DATE	☐	☐	☐
RF ENGINEER	DATE	☐	☐	☐

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10TH FLOOR
BOSTON, MA. 02116

REVISIONS

DESCRIPTION	DATE	BY	REV
FINAL CD	1.28.19	KE	B
PRELIMINARY	01.24.19	JW	A

PROFESSIONAL SEAL

STATE OF CONNECTICUT · GARY W. CLOWER · No. 27934 · LICENSED PROFESSIONAL ENGINEER

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

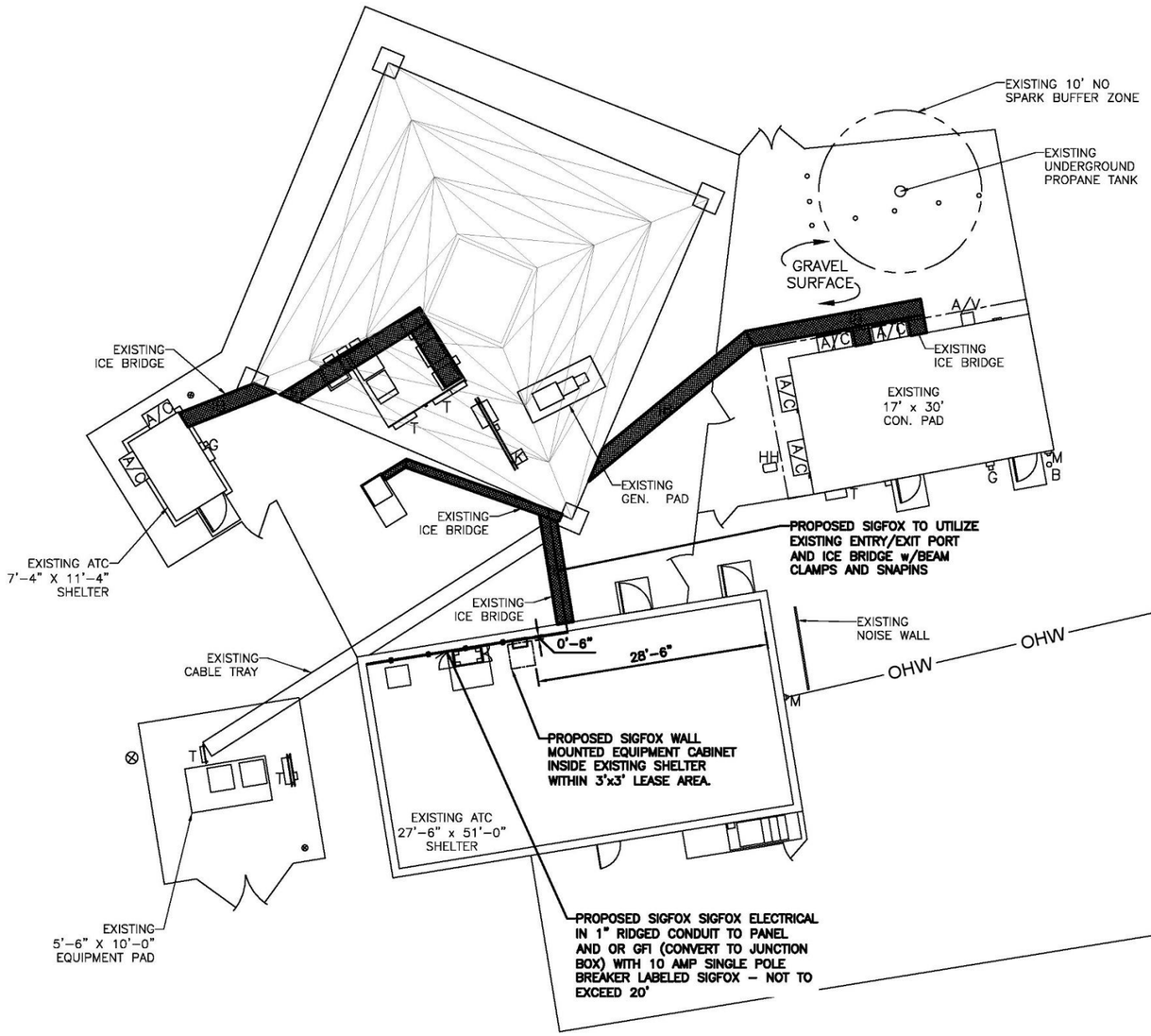
SITE INFORMATION

CT9081
14 OXFORD DRIVE/ BOOTH HILL ROAD
SHELTON, CT 06484
FAIRFIELD COUNTY

SHEET TITLE

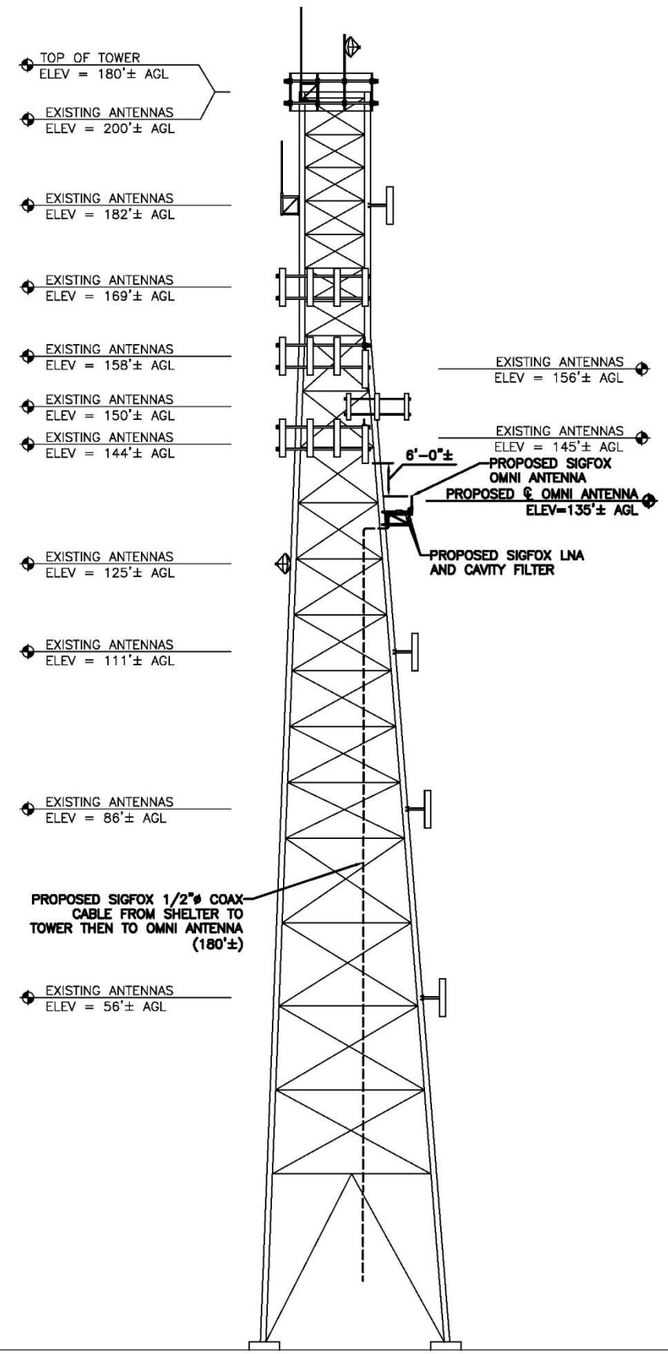
TITLE SHEET

SHEET NUMBER	
T-1	SCALE: AS NOTED
	DRAWN BY: JW
	CHECKED BY: KE
	DATE: 1/25/19



1 COMPOUND PLAN

0 8' 16'
SCALE: 1/16"= 1'-0"



2 ELEVATION

NOT TO SCALE

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SITE INFORMATION

CT9081
14 OXFORD DRIVE/ BOOTH HILL ROAD
SHELTON, CT 06484
FAIRFIELD COUNTY

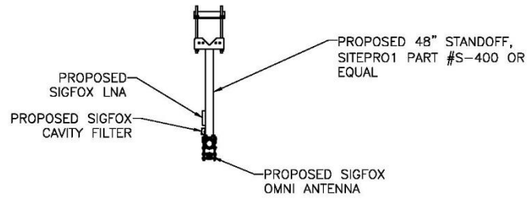
SHEET TITLE

COMPOUND PLAN & ELEVATION

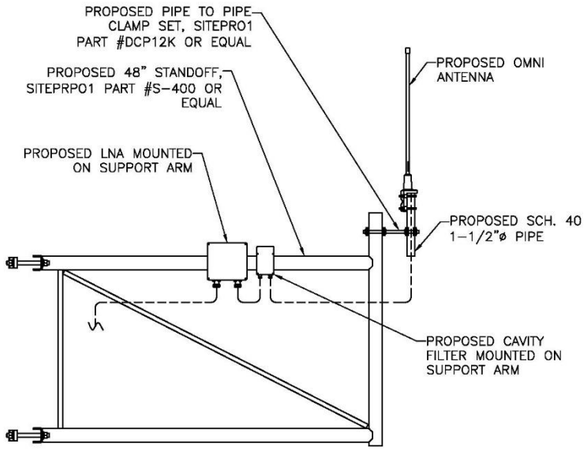
SHEET NUMBER

C-1

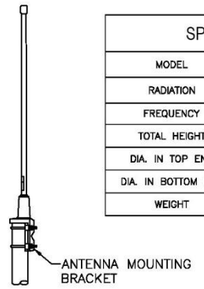
SCALE: AS NOTED
DRAWN BY: JW
CHECKED BY: KE
DATE: 1/25/19



1 PROPOSED ANTENNA PLAN
N.T.S.

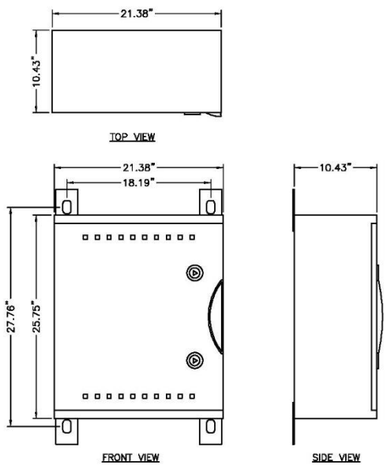


2 ANTENNA MOUNTING DETAIL
N.T.S.

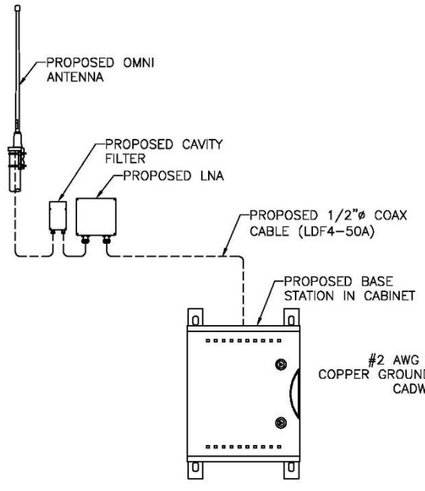


SPECIFICATIONS	
MODEL	CXL 900-3LW/...
RADIATION	OMNIDIRECTIONAL
FREQUENCY	WITHIN 824-960 MHz
TOTAL HEIGHT	700 MM (27.5")
DIA. IN TOP END	12 MM (0.47")
DIA. IN BOTTOM END	16 MM (0.63"
WEIGHT	660 G (1.5 LBS)

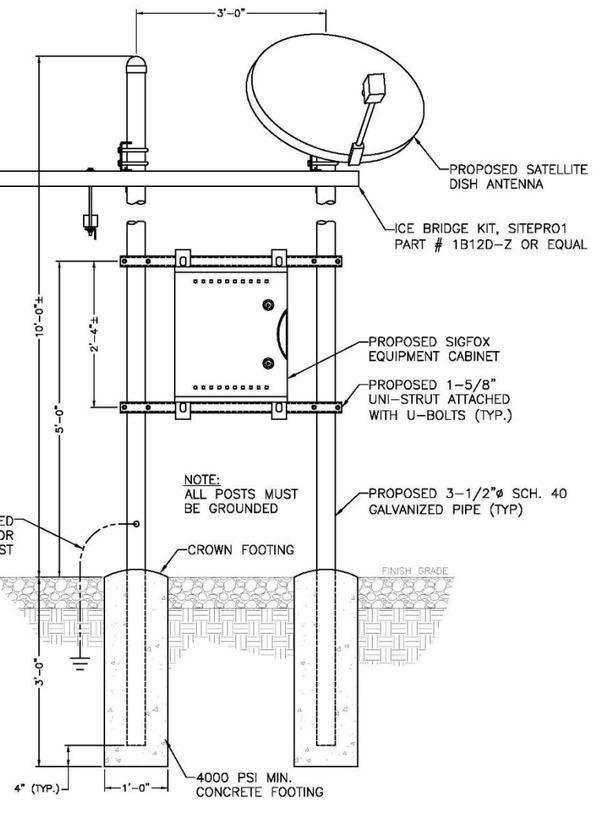
3 OMNI ANTENNA DETAIL
N.T.S.



4 SIGFOX EQUIPMENT CABINET
N.T.S.



6 EQUIPMENT SCHEMATIC
N.T.S.



7 H-FRAME / ICE BRIDGE DETAIL
N.T.S.

5 SATELLITE DISH ANTENNA DETAIL
N.T.S.

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REVISIONS

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FINAL CD	1.28.19	KE	B
PRELIMINARY	01.24.19	JW	A

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SITE INFORMATION

CT9081
14 OXFORD DRIVE/ BOOTH HILL ROAD
SHELTON, CT 06484
FAIRFIELD COUNTY

SHEET TITLE

ANTENNA PLAN AND DETAILS

SHEET NUMBER	
A-1	SCALE: AS NOTED
	DRAWN BY: JW
	CHECKED BY: KE
	DATE: 1/25/19

ELECTRICAL NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRIC CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED SPECIFICATION REQUIREMENTS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
5. ELECTRICAL AND TELCO WIRING AT EXPOSED INDOOR LOCATIONS SHALL BE IN ELECTRICAL METALLIC TUBING OR RIGID NONMETALLIC TUBING (RIGID SCHEDULE 40 PVC OR RIGID SCHEDULE 80 PVC FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) (AS PERMITTED BY CODE).
6. ELECTRICAL AND TELCO WIRING AT CONCEALED INDOOR LOCATIONS SHALL BE IN ELECTRICAL METALLIC TUBING, ELECTRICAL NONMETALLIC TUBING, OR RIGID NONMETALLIC TUBING (RIGID SCHEDULE 40 PVC AS PERMITTED BY CODE).
7. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING, ABOVE GRADE AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS (RGS) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
8. BURIED CONDUIT SHALL BE RIGID NONMETALLIC CONDUIT (RIGID SCHEDULE 40 PVC); DIRECT BURIED IN AREAS OF OCCASIONAL LIGHT TRAFFIC, ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY TRAFFIC.
9. LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT SHALL BE USED INDOORS AND OUTDOORS IN AREAS WHERE VIBRATION OCCURS AND FLEXIBILITY IS NEEDED.
10. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE THHN,THWN–2, OR THIN INSULATION.

ELECTRICAL PANEL

PANEL NAME: N/A | 120/240 VOLTS | 3 WIRE | 1 PHASE | MAIN BREAKER: 100A

CCT NO	LOAD DESCRIPTION	LOAD (VA)	POLE	AMP	AMP	POLE	LOAD (VA)	LOAD DESCRIPTION	CCT NO
1	SIGFOX BASE UNIT	1440	1	10					2
3									4
5									6
7									8
9									10
11									12

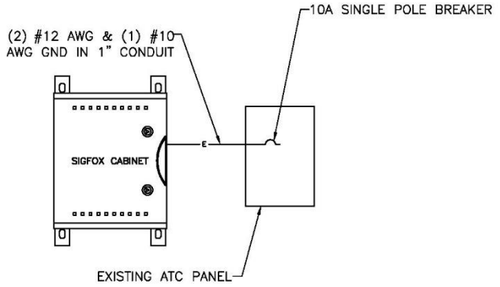
TOTAL CONNECTED LOAD (VA): 1,440
MAXIMUM LOAD CURRENT (A): 6
PANEL CAPACITY (A): 100
SPARE CAPACITY (A): 96

1 PANEL SCHEDULE
N.T.S.

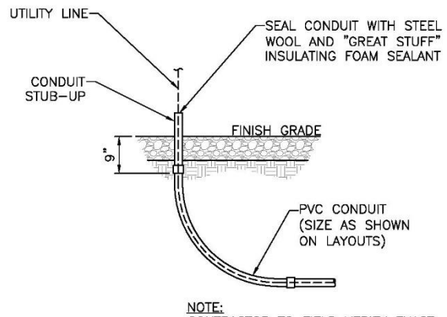
ELECTRICAL NOTES

ISOLATION OF SIGFOX POWER MUST BE MAINTAINED USING A 10 AMP SINGLE POLE BREAKER, LABELED SIGFOX, BETWEEN POWER SOURCE AND SIGFOX EQUIPMENT.

SUPPLY NEW BREAKER IN EXISTING PANELS AND/OR NEW BREAKERS IN DISCONNECT IF NEEDED.

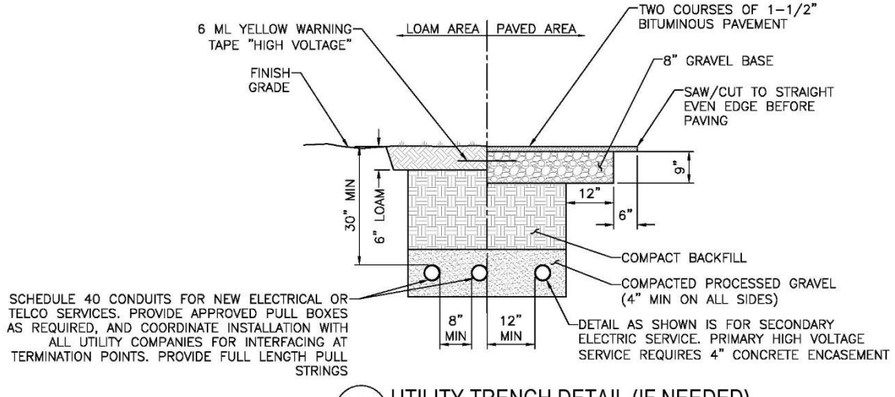


2 ELECTRICAL ONE-LINE DIAGRAM
N.T.S.



NOTE:
CONTRACTOR TO FIELD VERIFY EXACT LOCATION OF CONDUIT STUB–UP

3 CONDUIT STUB-UP DETAIL (IF NEEDED)
N.T.S.



4 UTILITY TRENCH DETAIL (IF NEEDED)
N.T.S.

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REVISIONS

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FINAL CD	1.28.19	KE	B
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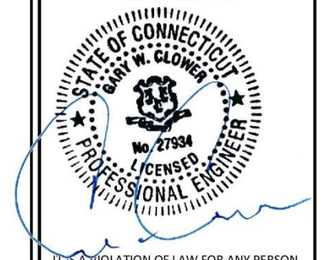
PROFESSIONAL SEAL



SITE INFORMATION

CT9081
14 OXFORD DRIVE/ BOOTH HILL ROAD
SHELTON, CT 06484
FAIRFIELD COUNTY

SHEET TITLE

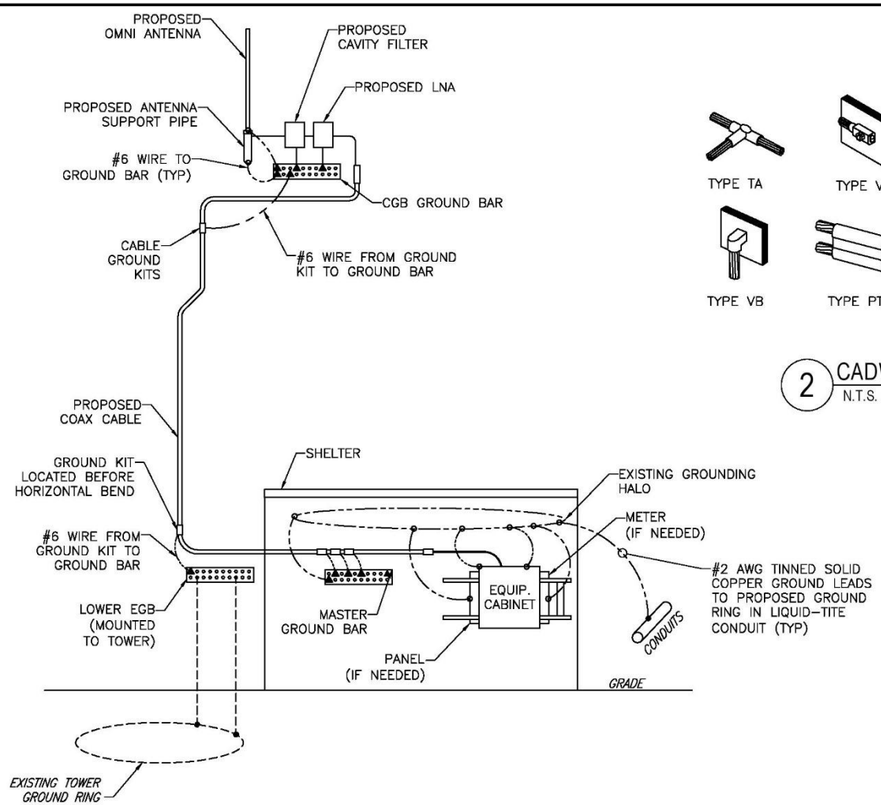
ELECTRICAL DETAILS

SHEET NUMBER	
E-1	SCALE: AS NOTED
	DRAWN BY: JW
	CHECKED BY: KE
	DATE: 1/25/19

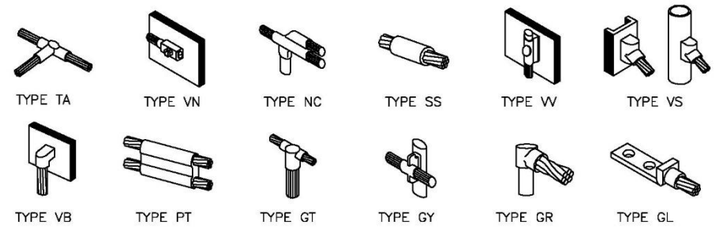
GROUNDING NOTES

1. GROUNDING SHALL COMPLY WITH BED ART. 250. ADDITIONALLY, GROUNDING, BONDING AND LIGHTING PROTECTION SHALL BE DONE IN ACCORDANCE WITH METRO MOD CELL SITE GROUNDING STANDARDS.
2. GROUND CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
3. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING
4. ALL POWER AND GROUND CONNECTIONS TO BE CRIMP–STYLE, COMPRESSION WIRE LUGS AND NUTS BY HARGER (OR APPROVED EQUAL) RATED FOR OPERATION AT NO LESS THAN 75°C OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
5. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
6. CONNECTIONS TO BE GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
7. APPLY OXIDE INHIBITING COMPOUND TO ALL MECHANICAL GROUND CONNECTIONS.
8. CONTRACTOR SHALL PROVIDE AND INSTALL OMNI DIRECTIONAL ELECTRONIC MAKER SYSTEM (EMS) CALLS OVER EACH GROUND ROD AND BONDING POINT BETWEEN EXISTING TOWER/ MONOPOLE GROUNDING RING AND EQUIPMENT GROUNDING RING.
9. CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE–OUT DOCUMENTATION. 5 OHMNS MINIMUM RESISTANCE REQUIRED.
10. CONTRACTOR SHALL CONDUCT ANTENNA, CABLE, AND LNA RETURN–LOSS AND DISTANCE–TO–FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.

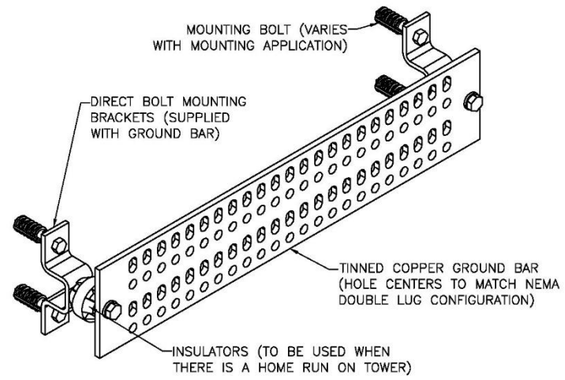
GROUNDING LEGEND	
▲	COMPRESSION FITTING CONNECTION
•	EXOTHERMIC WELD CONNECTION
— — — —	PROPOSED GROUND WIRING
————	EXISTING GROUND WIRING



1 GROUNDING RISER DIAGRAM
N.T.S.



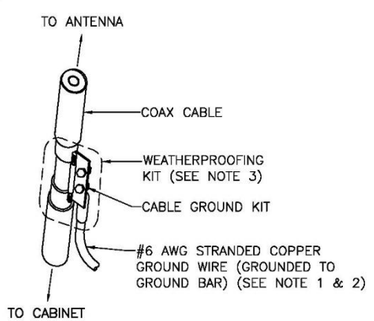
2 CADWELD GROUNDING CONNECTION DETAILS
N.T.S.



GROUND BAR SCHEDULE				
TYPE	QTY	MANUFACTURER	PART NO.	REMARKS
MGB	2	COMMSCOPE	UGBKIT–0120–T	OR EQUAL
CBG	1	COMMSCOPE	UGBKIT–0412	OR EQUAL

3 GROUND BAR DETAIL
N.T.S.

NOTES
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER,
3. WEATHER PROOFING SHALL BE TWO–PART TAPE SUPPLIED WITH KIT. COLD SHRINK SHALL NOT BE USED.



6 COAXIAL CABLE GROUNDING
N.T.S.

4 NOT USED
N.T.S.

5 NOT USED
N.T.S.

T-SQUARED SITE SERVICES
2500 HIGHLAND ROAD, SUITE 201
HERMITAGE, PA 16148
www.t-sqrd.com

SIGFOX
One network A billion dreams
SIGFOX, INC.
545 BOYLSTON STREET
10TH FLOOR
BOSTON, MA. 02116

REVISIONS

DESCRIPTION	DATE	BY	REV
FINAL CD	1.28.19	KE	B
PRELIMINARY	01.24.19	JW	A

PROFESSIONAL SEAL

STATE OF CONNECTICUT · GARY W. GLOWER · No. 27934 · LICENSED PROFESSIONAL ENGINEER

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

SITE INFORMATION

CT9081
14 OXFORD DRIVE/ BOOTH HILL ROAD
SHELTON, CT 06484
FAIRFIELD COUNTY

SHEET TITLE

GROUNDING DETAILS

SHEET NUMBER **G-1**

SCALE: AS NOTED
DRAWN BY: JW
CHECKED BY: KE
DATE: 12/3/18

EXHIBIT 2:

Structural Modification Report

T-Squared Site Services
2500 Highland Road | Suite 201
Hermitage, PA 16148 | 724.308.7855
www.t-sqrd.com

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**200 ft Self Supported Tower**
ATC Site Name	:	**SHELTON-TRUMBULL, CT**
ATC Site Number	:	**88017**
Engineering Number	:	**OAA746949_C3_01**
Proposed Carrier	:	**AT&T MOBILITY**
Carrier Site Name	:	**SHELTON BOOTH HILL**
Carrier Site Number	:	**CT5542**
Site Location	:	**14 OXFORD DRIVE-BOOTH HILL RD** **SHELTON, CT 06484-3455** **41.280200, -73.185500**
County	:	**Fairfield**
Date	:	**March 22, 2019**
Max Usage	:	**94%**
Result	:	**Pass**

Prepared By:
Isaac P. Dodson
Structural Engineer III

Isaac P. Dodson

Reviewed By:

STATE OF CONNECTICUT
SCOTT A. WIRGAU
30575
LICENSED
PROFESSIONAL ENGINEER

Authorized by "EOR"
Mar 26 2019 5:11 PM cosign

COA: PEC.0001553

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 200 ft self supported tower to reflect the change in loading by AT&T MOBILITY.

Supporting Documents

Tower Drawings	TEP Job #070851, dated May 30, 2007
Foundation Drawing	Radio Relay Drawing #MS 10478, dated January 27, 1965
Geotechnical Report	Radio Relay Drawing #MS 10478, dated January 27, 1965
Modifications	ATC Project #40480232, dated July 13, 2007

Analysis

The tower was analyzed using Power Line System's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	97 mph (3-Second Gust, Vasd) / 125 mph (3-Second Gust, Vult)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2015 IBC / 2018 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
211.0	1	Generic 15' Dipole	Platform with Handrails	(2) 1 5/8" Coax (2) EW65	STATE OF CT
210.0	1	Telewave ANT900D6-9			
206.0	1	Andrew DB809K			
	2	RFS PA6-65AC w/ Radome			
191.0	1	Generic 20' Omni	Side Arms	(12) 1 5/8" Coax (5) 0.63" (16mm) LDF4-50A	
190.0	1	Sinclair SC479-HF1LDF			
	1	Sinclair SC442D-HF1LDF(DXX-I30-G9-NUFP)			
189.0	1	Sinclair SC479-HF1LDF			
187.0	1	Sinclair SC479-HF1LDF			
185.0	1	Generic TTA			
	2	Kathrein Scala AP14-850/105			
180.0	2	Generic TTA			
	1	Generic 5' Dipole			
	1	Sinclair SC479-HF1LDF			
177.0	1	TX RX Systems 101-83B-09-0-03			
175.0	2	Sinclair SC479-HF1LDF			
168.0	12	Decibel DB844H90E-A	Sector Frame	(15) 1 1/4" Coax	SPRINT NEXTEL
162.0	4	DragonWave Horizon Compact	Stand-Off	(4) 1/2" Coax	CLEARWIRE CORPORATION
	1	DragonWave A-ANT-11G-2-C			
	1	Andrew Microwaves PX2F-52			
	2	DragonWave A-ANT-11G-3-C			
156.0	3	NextNet BTS-2500		(6) 5/16" Coax	
	3	Argus LLPX310R			
155.0	3	Commscope NNVV-65B-R4	Sector Frame	(3) 1 1/4" Hybriflex Cable (1) 1.7" (43.2mm) Hybrid	SPRINT NEXTEL
	3	Nokia 2.5G MAA - AAHC(64T64R)			
	3	Alcatel-Lucent RRH2x50-08			
	3	Alcatel-Lucent 1900 MHz 4X45 RRH			
148.0	3	Alcatel-Lucent 800 MHz RRH w/ Notch Filter			
144.0	3	Powerwave Allgon 7770.00	Sector Frame	(1) 0.28" RG-6 (1) 0.39" Fiber Trunk (2) 0.74" 8 AWG 7 (2) 0.78" 8 AWG 6 (6) 1 5/8" Coax (1) 3" conduit	AT&T MOBILITY
	3	Quintel QS66512-6			
	3	CCI HPA-65R-BUU-H6			
	3	Ericsson RRUS 32 B66			
	3	Ericsson RRUS 32 (50.8 lbs)			
	3	Ericsson RRUS 11 (Band 12) (55 lb)			
	2	Raycap DC6-48-60-18-8F ("Squid")			
	6	Powerwave Allgon LGP21401			
	6	Powerwave Allgon 7020.00 Dual Band RET			
	3	Ericsson RRUS 32 B2			

Existing and Reserved Equipment cont.

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
135.0	1	Generic 5" x 3" x 2" Cavity Filter	Side Arm	(1) 1/2" Coax	SIGFOX S.A.
	1	Generic Low Noise Amplifier			
	1	Procom CXL 900-3LW			
124.0	1	RFS PA6-65AC w/ Radome	Side Arm	(1) EW65	STATE OF CT
110.0	1	Andrew DB616E-BC	Side Arm	(1) 7/8" Coax	US DEPT OF HOMELAND SECURITY
90.0	1	Kathrein Scala 750 10074	Stand-Off	(1) 1 5/8" Coax	LIGADO NETWORKS LLC
56.0	1	Generic GPS	Side Arm	(1) 1/2" Coax	SPRINT NEXTEL

Equipment to be Removed

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
No equipment considered as to be removed					

Proposed Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
144.0	1	Commscope WCS-IMFQ-AMT	Sector Frame	-	AT&T MOBILITY

[1] Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	63%	Pass
Diagonals	93%	Pass
Truss Diagonals	94%	Pass
Horizontals	87%	Pass
Truss Horizontals	46%	Pass
Anchor Bolts	43%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Uplift (Kips)	185.15	53%
Axial (Kips)	290.49	9%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

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CORPORATION

Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

All assets of American Tower Corporation, its affiliates and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

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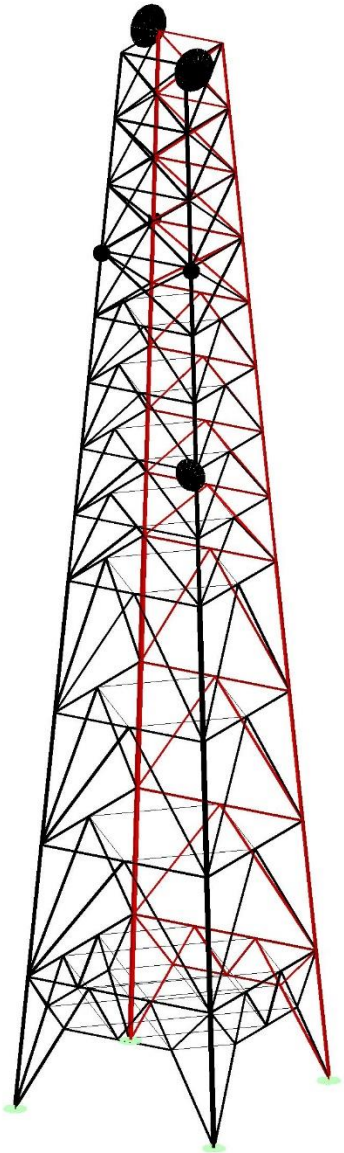
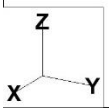
Undeformed geometry displayed





Project Name : 88017 - Shelton/Trumbull
Project Notes:
Project File : N:\L2 - ATC\88017\2019.03.22 - ATT - OAA746949\2019.03.22 - ATT - OAA746949.tow
Date run : 4:24:46 PM Friday, March 22, 2019
by : Tower Version 15.30
Licensed to : American Tower Corp.

Successfully performed nonlinear analysis

Member check option: ANSI/TIA 222-G-1
Connection rupture check: Not Checked
Crossing diagonal check: Fixed
Included angle check: None
Climbing load check: None
Redundant members checked with: Actual Force
Loads from file: N:\L2 - ATC\88017\2019.03.22 - ATT - OAA746949\2019.03.22 - ATT - OAA746949.eia

*** Analysis Results:

Maximum element usage is 93.60% for Angle "LD 3X" in Load case "W -90"

Foundation Design Forces For All Load Cases:

Note: loads are factored.

Load Case	Foundation Description	Axial Force (kips)	Shear Force (kips)	Bending Moment (ft-k)	Foundation Usage %
W 0	OP	213.17	31.60	5.35	0.00
W 0	OX	197.07	29.51	4.64	0.00
W 0	OXY	-109.31	28.13	5.99	0.00
W 0	OY	-114.43	30.63	6.69	0.00
W 180	OP	-113.05	30.73	6.80	0.00
W 180	OX	-103.27	28.22	6.26	0.00
W 180	OXY	192.91	29.45	4.87	0.00
W 180	OY	209.91	31.31	5.46	0.00
W 45	OP	290.49	41.65	5.40	0.00
W 45	OX	41.00	16.63	6.25	0.00
W 45	OXY	-189.15	39.13	6.01	0.00
W 45	OY	40.16	16.47	6.18	0.00
W -45	OP	51.04	17.76	6.76	0.00
W -45	OX	276.13	40.05	5.40	0.00
W -45	OXY	42.55	15.36	5.73	0.00
W -45	OY	-183.21	39.67	6.28	0.00
W 90	OP	215.40	31.77	5.39	0.00
W 90	OX	-117.43	31.00	6.71	0.00
W 90	OXY	-109.24	28.13	5.99	0.00
W 90	OY	197.78	29.62	4.64	0.00
W -90	OP	-115.34	31.00	6.80	0.00
W -90	OX	211.52	31.40	5.49	0.00
W -90	OXY	193.57	29.51	4.64	0.00
W -90	OY	-103.25	28.11	6.22	0.00
W 0 Ice	OP	105.52	14.30	1.32	0.00
W 0 Ice	OX	98.27	13.59	1.06	0.00
W 0 Ice	OXY	27.75	2.62	2.39	0.00
W 0 Ice	OY	31.40	2.64	2.66	0.00
W 180 Ice	OP	36.11	3.21	2.76	0.00
W 180 Ice	OX	33.85	3.11	2.67	0.00
W 180 Ice	OXY	92.49	13.36	0.97	0.00
W 180 Ice	OY	100.49	13.82	1.34	0.00
W 45 Ice	OP	122.81	16.79	0.56	0.00
W 45 Ice	OX	64.78	8.00	2.14	0.00
W 45 Ice	OXY	10.98	1.44	2.54	0.00
W 45 Ice	OY	64.37	7.96	2.12	0.00
W -45 Ice	OP	70.98	8.79	2.30	0.00
W -45 Ice	OX	115.86	16.09	0.58	0.00
W -45 Ice	OXY	60.24	8.11	1.90	0.00
W -45 Ice	OY	15.86	1.41	2.75	0.00
W 90 Ice	OP	105.93	14.32	1.33	0.00
W 90 Ice	OX	31.12	2.64	2.66	0.00
W 90 Ice	OXY	27.79	2.62	2.39	0.00
W 90 Ice	OY	98.10	13.59	1.04	0.00
W -90 Ice	OP	35.66	3.19	2.78	0.00
W -90 Ice	OX	101.05	13.84	1.36	0.00
W -90 Ice	OXY	92.57	13.37	0.96	0.00
W -90 Ice	OY	33.66	3.08	2.68	0.00

Summary of Joint Support Reactions For All Load Cases:

Load Case	Joint Label	Long. Force (kips)	Tran. Force (kips)	Vert. Force (kips)	Shear Force (kips)	Tran. Moment (ft-k)	Long. Moment (ft-k)	Bending Moment (ft-k)	Vert. Moment (ft-k)	Found. Usage %
W 0	OP	-27.35	-15.83	-213.17	31.60	-1.38	-5.17	5.35	-1.52	0.00
W 0	OX	-25.15	15.44	-197.07	29.51	-0.66	-4.61	4.64	1.45	0.00
W 0	OXY	-26.70	-8.85	109.31	28.13	0.38	-5.98	5.99	1.57	0.00
W 0	OY	-29.29	8.94	114.43	30.63	-0.29	-6.68	6.69	-1.49	0.00
W 180	OP	29.48	8.68	113.05	30.73	-0.25	6.79	6.80	1.50	0.00
W 180	OX	26.94	-8.39	103.27	28.22	0.43	6.25	6.26	-1.59	0.00
W 180	OXY	25.19	15.25	-192.91	29.45	-0.51	4.85	4.87	-1.47	0.00
W 180	OY	27.27	-15.39	-209.91	31.31	-1.43	5.27	5.46	1.54	0.00
W 45	OP	-29.42	-29.49	-290.49	41.65	3.84	-3.80	5.40	0.00	0.00
W 45	OX	-12.05	-11.46	-41.00	16.63	5.33	-3.27	6.25	2.25	0.00
W 45	OXY	-27.74	-27.59	185.15	39.13	4.22	-4.27	6.01	-0.00	0.00
W 45	OY	-11.37	-11.91	-40.16	16.47	3.23	-5.27	6.18	-2.25	0.00
W -45	OP	-13.41	11.65	-51.04	17.76	-5.71	-3.62	6.76	-2.25	0.00
W -45	OX	-27.67	28.95	-276.13	40.05	-4.19	-3.41	5.40	-0.00	0.00
W -45	OXY	-9.68	11.92	-42.55	15.36	-3.16	-4.78	5.73	2.27	0.00
W -45	OY	-28.93	27.15	183.21	39.67	-4.15	-4.71	6.28	0.02	0.00
W 90	OP	-15.79	-27.56	-215.40	31.77	5.18	1.46	5.39	1.53	0.00
W 90	OX	9.13	-29.63	117.43	31.00	6.70	0.27	6.71	1.48	0.00
W 90	OXY	-8.92	-26.68	109.24	28.13	5.97	-0.41	5.99	-1.58	0.00
W 90	OY	15.59	-25.19	-197.78	29.62	4.61	0.52	4.64	-1.45	0.00
W -90	OP	8.80	29.73	115.34	31.00	-6.80	0.22	6.80	-1.50	0.00
W -90	OX	-15.31	27.42	-211.52	31.40	-5.28	1.50	5.49	-1.54	0.00
W -90	OXY	15.40	25.17	-193.57	29.51	-4.81	0.58	4.64	1.47	0.00
W -90	OY	-8.48	26.80	103.25	28.11	-6.20	-0.46	6.22	1.59	0.00
W 0 Ice	OP	-11.32	-8.73	-105.52	14.30	-1.31	0.11	1.32	-0.31	0.00
W 0 Ice	OX	-10.52	8.60	-98.27	13.59	1.02	0.29	1.06	0.29	0.00
W 0 Ice	OXY	-0.58	2.55	-27.75	2.62	1.10	-2.12	2.39	0.32	0.00
W 0 Ice	OY	-0.91	-2.48	-31.40	2.64	-1.25	-2.34	2.66	-0.30	0.00
W 180 Ice	OP	0.90	-3.08	-36.11	3.21	-1.20	2.49	2.78	0.32	0.00
W 180 Ice	OX	0.88	2.98	-33.85	3.11	1.16	2.41	2.67	-0.34	0.00
W 180 Ice	OXY	10.48	8.30	-92.49	13.36	0.97	-0.03	0.97	-0.31	0.00
W 180 Ice	OY	11.14	-8.18	-100.49	13.82	-1.34	0.02	1.34	0.33	0.00
W 45 Ice	OP	-11.86	-11.88	-122.81	16.79	-0.39	0.40	0.56	0.00	0.00
W 45 Ice	OX	-7.49	2.81	-64.78	8.00	2.06	0.55	2.14	0.46	0.00
W 45 Ice	OXY	-1.02	-1.01	-10.98	1.44	1.79	-1.80	2.54	-0.00	0.00
W 45 Ice	OY	2.82	-7.44	-64.37	7.96	-0.55	-2.05	2.12	-0.46	0.00
W -45 Ice	OP	-8.33	-2.80	-70.98	8.79	-2.26	0.43	2.30	-0.47	0.00
W -45 Ice	OX	-11.13	11.62	-115.86	16.09	0.21	0.55	0.58	-0.01	0.00
W -45 Ice	OXY	3.01	7.53	-60.24	8.11	0.38	-1.86	1.90	0.47	0.00
W -45 Ice	OY	-0.95	1.04	-15.86	1.41	-1.96	-1.93	2.75	0.02	0.00
W 90 Ice	OP	-8.71	-11.37	-105.93	14.32	-0.11	1.33	1.33	0.31	0.00
W 90 Ice	OX	-2.46	-0.96	-31.12	2.64	2.35	1.25	2.66	0.30	0.00
W 90 Ice	OXY	2.55	-0.58	-27.79	2.62	2.12	-1.10	2.39	-0.32	0.00
W 90 Ice	OY	8.62	-10.51	-98.10	13.59	-0.28	-1.00	1.04	-0.29	0.00
W -90 Ice	OP	-3.05	0.94	-35.66	3.19	-2.48	1.20	2.76	-0.32	0.00
W -90 Ice	OX	-8.16	11.18	-101.05	13.84	-0.02	1.36	1.36	-0.33	0.00
W -90 Ice	OXY	8.33	10.46	-92.57	13.37	0.04	-0.96	0.96	0.31	0.00
W -90 Ice	OY	2.96	0.85	-33.66	3.08	-2.39	-1.16	2.66	0.34	0.00

Summary of Joint Support Reactions For All Load Cases in Direction of Leg:

Load Case	Support Joint	Origin Joint	Leg Member	Force In Leg Dir. (kips)	Residual Shear Perpendicular To Leg (kips)	Residual Shear Horizontal To Leg - Res. (kips)	Residual Shear Horizontal To Leg - Long. (kips)	Residual Shear Horizontal To Leg - Tran. (kips)	Total Long. Force (kips)	Total Tran. Force (kips)	Total Vert. Force (kips)
W 0	OP	1P	L 1P	215.150	12.330	12.365	12.338	0.813	-27.35	-15.83	-213.17
W 0	OX	1X	L 1X	198.945	11.341	11.377	11.269	-1.561	-25.15	15.44	-197.07
W 0	OXY	1XY	L 1XY	-111.263	18.986	19.039	19.004	1.149	-26.70	-8.85	109.31
W 0	OY	1Y	L 1Y	-116.544	21.195	21.251	21.233	-0.880	-29.29	8.94	114.43
W 180	OP	1P	L 1P	-115.164	21.478	21.534	-21.522	-0.720	29.48	8.68	113.05
W 180	OX	1X	L 1X	-105.238	19.644	19.698	-19.667	1.117	26.94	-8.39	103.27
W 180	OXY	1XY	L 1XY	194.797	11.687	11.724	-11.606	-1.664	25.19	15.25	-192.91
W 180	OY	1Y	L 1Y	211.868	12.468	12.502	-12.487	0.609	27.27	-15.39	-209.91
W 45	OP	1P	L 1P	293.191	12.659	12.722	8.959	9.032	-29.42	-29.49	-290.49
W 45	OX	1X	L 1X	40.856	17.016	17.020	9.161	14.344	-12.05	-11.46	-41.00
W 45	OXY	1XY	L 1XY	-188.112	20.584	20.685	14.704	14.550	-27.74	-27.59	185.15
W 45	OY	1Y	L 1Y	40.005	16.851	16.855	14.198	9.084	-11.37	-11.91	-40.16
W -45	OP	1P	L 1P	50.911	18.128	18.132	9.816	-15.245	-13.41	11.65	-51.04
W -45	OX	1X	L 1X	278.737	12.506	12.567	8.226	-9.500	-27.67	28.95	-276.13
W -45	OXY	1XY	L 1XY	42.500	15.504	15.506	12.679	-8.927	-9.68	11.92	-42.55
W -45	OY	1Y	L 1Y	-186.240	21.333	21.440	16.028	-14.243	-28.93	27.15	183.21
W 90	OP	1P	L 1P	217.377	12.376	12.410	0.625	10.394	-15.79	-27.56	-215.40
W 90	OX	1X	L 1X	-119.566	21.319	21.376	-0.856	21.359	9.13	-29.63	117.43
W 90	OXY	1XY	L 1XY	-111.200	18.969	19.021	1.230	18.982	-8.92	-26.68	109.24
W 90	OY	1Y	L 1Y	299.663	11.342	11.378	-1.637	11.257	15.59	-25.19	-197.78
W -90	OP	1P	L 1P	-117.469	21.559	21.615	-0.675	-21.605	8.80	29.73	115.34
W -90	OX	1X	L 1X	213.473	12.497	12.530	0.412	-12.524	-15.31	27.42	-211.52

W -90	0XY	1XY	L 1XY	195.460	11.635	11.672	-1.764	-11.538	15.40	25.17	-193.57			
W -90	0Y	1Y	L 1Y	-105.211	19.515	19.569	1.211	-19.531	-8.48	36.80	103.25			
W 0 Ice	0P	1P	L 1P	106.407	4.088	4.104	3.892	1.300	-11.32	-8.73	-105.52			
W 0 Ice	0X	1X	L 1X	99.121	3.953	3.970	3.595	-1.683	-10.52	8.60	-98.27			
W 0 Ice	0XY	1XY	L 1XY	27.756	2.602	2.606	2.535	-0.600	-0.58	2.55	-27.75			
W 0 Ice	0Y	1Y	L 1Y	31.358	3.123	3.129	3.118	0.268	-0.91	-2.48	-31.40			
W 180 Ice	0P	1P	L 1P	36.083	3.483	3.489	-3.448	0.538	0.90	-3.08	-36.11			
W 180 Ice	0X	1X	L 1X	33.831	3.309	3.314	-3.259	-0.601	0.88	2.98	-33.85			
W 180 Ice	0XY	1XY	L 1XY	93.352	4.328	4.347	-3.965	-1.783	10.48	8.30	-92.49			
W 180 Ice	0Y	1Y	L 1Y	101.352	4.192	4.208	-4.062	1.098	11.14	-9.18	-100.49			
W 45 Ice	0P	1P	L 1P	123.869	4.533	4.555	3.210	3.232	-11.86	-11.88	-122.81			
W 45 Ice	0X	1X	L 1X	65.188	3.413	3.414	2.929	1.754	-7.49	2.81	-64.78			
W 45 Ice	0XY	1XY	L 1XY	10.783	2.522	2.534	1.797	1.787	-1.02	-1.01	-10.98			
W 45 Ice	0Y	1Y	L 1Y	64.770	3.375	3.376	1.711	2.910	2.82	-7.44	-64.37			
W -45 Ice	0P	1P	L 1P	71.413	3.988	3.989	3.329	-2.198	-8.33	-2.80	-70.98			
W -45 Ice	0X	1X	L 1X	116.880	4.535	4.557	2.967	-3.459	-11.13	11.62	-115.86			
W -45 Ice	0XY	1XY	L 1XY	60.682	3.511	3.514	1.237	-3.289	3.01	7.53	-60.24			
W -45 Ice	0Y	1Y	L 1Y	15.646	2.976	2.991	2.068	-2.160	-0.95	1.04	-15.86			
W 90 Ice	0P	1P	L 1P	106.817	4.089	4.105	1.250	3.910	-8.71	-11.37	-105.93			
W 90 Ice	0X	1X	L 1X	31.089	3.158	3.164	0.269	3.153	-2.46	-0.96	-31.12			
W 90 Ice	0XY	1XY	L 1XY	27.793	2.607	2.610	-0.596	2.541	2.55	-0.58	-27.79			
W 90 Ice	0Y	1Y	L 1Y	98.959	3.966	3.984	-1.709	3.598	8.62	-10.51	-98.10			
W -90 Ice	0P	1P	L 1P	35.635	3.487	3.493	0.537	-3.451	-3.05	0.94	-35.66			
W -90 Ice	0X	1X	L 1X	101.910	4.181	4.196	1.047	-4.064	-8.18	11.18	-101.05			
W -90 Ice	0XY	1XY	L 1XY	93.433	4.321	4.340	-1.809	-3.945	8.33	10.46	-92.57			
W -90 Ice	0Y	1Y	L 1Y	33.638	3.268	3.273	-0.587	-3.220	2.96	0.85	-33.66			

Overturning Moment Summary For All Load Cases:

Load Case	Transverse Moment (ft-k)	Longitudinal Moment (ft-k)	Torsional Moment (ft-k)	Resultant Moment (ft-k)	Transverse Force (kips)	Longitudinal Force (kips)	Vertical Force (kips)
W 0	227.917	-13155.146	89.535	13157.120	0.294	108.492	186.508
W 180	149.885	12847.187	-86.908	12848.061	-0.149	-108.884	186.508
W 45	9852.257	-9886.775	-9.362	13957.625	80.448	80.577	186.508
W -45	-9355.215	-9707.419	135.111	13481.619	-79.667	79.694	186.508
W 90	13276.895	-195.747	-102.092	13278.338	109.053	0.007	186.508
W -90	-12941.217	-121.594	102.646	12941.788	-109.119	-0.403	186.508
W 0 Ice	226.227	-3001.058	19.303	3009.573	0.053	23.327	262.942
W 180 Ice	212.906	2552.810	-18.819	2561.673	-0.025	-23.397	262.942
W 45 Ice	2311.797	-2329.128	-1.934	3281.653	17.529	17.552	262.942
W -45 Ice	-1851.934	-2297.730	29.055	2851.140	-17.391	17.400	262.942
W 90 Ice	3011.325	-231.474	-21.897	3020.208	23.423	0.000	262.942
W -90 Ice	-2579.312	-217.597	22.029	2588.474	-23.434	-0.073	262.942

EIA Sections Information:

Section Label	Top Z (ft)	Bottom Z (ft)	Joint Count	Member Count	Top Width (ft)	Bottom Width (ft)	Gross Area (ft^2)	Face Af Adjust Factor	Face Ar Adjust Factor	Dead Load Factor
187.5-200.0	200.000	187.500	8	20	13.33	15.09	177.63	1.1270	1.1270	1.352
175.0-187.5	187.500	175.000	8	16	15.09	16.85	199.64	1.1800	1.1800	1.416
162.5-175.0	175.000	162.500	8	16	16.85	18.61	221.64	1.2080	1.2080	1.449
150.0-162.5	162.500	150.000	12	24	18.61	20.37	243.65	1.2150	1.2150	1.458
137.5-150.0	150.000	137.500	16	24	20.37	22.13	265.66	1.2180	1.2180	1.462
125.0-137.5	137.500	125.000	16	24	22.13	23.89	287.67	1.2240	1.2240	1.469
112.5-125.0	125.000	112.500	16	24	23.89	25.65	309.68	1.2390	1.2390	1.487
100.0-112.5	112.500	100.000	16	24	25.65	27.42	331.68	1.2450	1.2450	1.494
75.00-100.0	100.000	75.000	16	24	27.42	30.94	729.39	1.2770	1.2770	1.532
50.00-75.00	75.000	50.000	16	24	30.94	34.46	817.42	1.2930	1.2930	1.551
25.00-50.00	50.000	25.000	20	32	34.46	37.98	905.45	1.3350	1.3350	1.602
0.000-25.00	25.000	0.000	28	56	37.98	41.50	993.48	1.2150	1.2150	1.458

Printed capacities do not include the strength factor entered for each load case.
The Group Summary reports on the member and load case that resulted in maximum usage which may not necessarily be the same as that which produces maximum force.

Group Summary (Compression Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Usage Control	Max Use In Comp. %	Comp. Control Member	Comp. Force (kips)	Comp. Control Load Case	L/r Capacity (kips)	Comp. Connect. Shear Capacity (kips)	Comp. Connect. Bearing Capacity (kips)	RLX	RLY	RLZ	L/r	KL/r Comp. Member	Length Comp. (ft)	Curve No.	No. Of Bolts Comp.
Leg S1	L 8" x 8" x 1.125"	SAE	8X8X1.13	33.0	62.87	Comp	62.87	L 1P	-255.697	W 45	406.720	0.000	0.000	0.333	0.333	0.333	64.41	64.41	25.124	1	0
Leg S2	L 8" x 8" x 1"	SAE	8X8X1	33.0	60.54	Comp	60.54	L 2P	-220.750	W 45	364.662	0.000	0.000	0.333	0.333	0.333	64.41	64.41	25.124	1	0
Leg S3	L 8" x 8" x 0.875"	SAE	8X8X0.88	33.0	56.85	Comp	56.85	L 3P	-183.305	W 45	322.451	0.000	0.000	0.333	0.333	0.333	64.00	64.00	25.124	1	0
Leg S4	L 8" x 8" x 0.75"	SAE	8X8X0.75	33.0	51.53	Comp	51.53	L 4P	-144.030	W 45	279.520	0.000	0.000	0.333	0.333	0.333	63.60	63.60	25.124	1	0
Leg S5	L 6" x 6" x 0.875"	SAE	6X6X0.88	33.0	52.56	Comp	52.56	L 5P	-124.323	W 45	236.535	0.000	0.000	0.500	0.500	0.500	64.42	64.42	12.562	1	0
Leg S6	L 6" x 6" x 0.875"	SAE	6X6X0.88	33.0	43.56	Comp	43.56	L 6P	-103.046	W 45	236.535	0.000	0.000	0.500	0.500	0.500	64.42	64.42	12.562	1	0
Leg S7	L 6" x 6" x 0.75"	SAE	6X6X0.75	33.0	41.33	Comp	41.33	L 7P	-84.792	W 45	205.175	0.000	0.000	0.500	0.500	0.500	64.42	64.42	12.562	1	0
Leg S8	L 6" x 6" x 0.75"	SAE	6X6X0.75	33.0	32.02	Comp	32.02	L 8P	-65.091	W 45	205.175	0.000	0.000	0.500	0.500	0.500	64.42	64.42	12.562	1	0
Leg S9	L 6" x 6" x 0.75"	SAE	6X6X0.75	33.0	30.88	Comp	30.88	L 9P	-63.363	W 45	205.175	0.000	0.000	0.500	0.500	0.500	64.42	64.42	12.562	1	0
Leg S10	L 6" x 6" x 0.75"	SAE	6X6X0.75	33.0	21.71	Comp	21.71	L 10P	-44.537	W 45	205.175	0.000	0.000	0.500	0.500	0.500	64.42	64.42	12.562	1	0
Leg S11	L 6" x 6" x 0.5"	SAE	6X6X0.5	33.0	18.79	Comp	18.79	L 11P	-26.351	W 45	140.255	0.000	0.000	0.500	0.500	0.500	63.87	63.87	12.562	1	0
Leg S12	L 6" x 6" x 0.5"	SAE	6X6X0.5	33.0	8.12	Comp	8.12	L 12P	-11.392	W 45	140.255	0.000	0.000	0.500	0.500	0.500	63.87	63.87	12.562	1	0
Diag S1	B/A L3"x3"x0.25"	DAE	3X3X0.25	33.0	71.59	Comp	71.59	D 2X	-28.098	W -90	39.249	0.000	0.000	0.310	0.790	0.310	131.47	127.05	19.277	6	0
Diag S2	B/B L2.5"x3"x0.3125"	DAS	3X2.5X0.31	33.0	84.79	Comp	84.79	D 3X	-29.623	W -90	34.937	0.000	0.000	0.310	0.620	0.310	160.23	144.74	31.444	6	0
Diag S3	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	33.0	93.32	Comp	93.32	D 5X	-29.614	W -90	31.734	0.000	0.000	0.310	0.620	0.310	156.05	142.17	30.413	6	0
Diag S4	B/A L2.5"x3"x0.25"	DAS	3X2.5X0.25	33.0	86.46	Comp	86.46	D 7X	-28.522	W -90	32.989	0.000	0.000	0.310	0.620	0.310	151.11	139.14	29.451	6	0
Diag S5	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	88.96	Comp	88.96	D 9X	-18.387	W -90	20.646	0.000	0.000	0.500	1.000	0.500	187.28	161.38	18.572	6	0
Diag S6	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	78.84	Comp	78.84	D 11X	-17.109	W -90	21.700	0.000	0.000	0.500	1.000	0.500	180.83	157.41	17.932	6	0
Diag S7	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	73.62	Comp	73.62	D 13X	-16.784	W -90	22.798	0.000	0.000	0.500	1.000	0.500	174.59	153.57	17.313	6	0
Diag S8	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	71.04	Comp	71.04	D 15X	-17.033	W -90	23.935	0.000	0.000	0.500	1.000	0.500	168.59	149.88	16.718	6	0
Diag S9	L 3" x 4" x 0.25"	SAU	4X3X0.25	33.0	41.38	Tens	0.00	D 18Y	0.000		0.000	0.000	0.000	100.000	100.000	100.000	42714.51	32577.05	23.173	5	0
Diag S10	L 3" x 4" x 0.25"	SAU	4X3X0.25	33.0	34.41	Tens	0.00	D 20Y	0.000		0.000	0.000	0.000	100.000	100.000	100.000	40023.07	30526.18	21.713	5	0
Diag S11	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	33.0	25.77	Tens	0.00	D 22Y	0.000		0.001	0.000	0.000	100.000	100.000	100.000	35101.11	26775.65	20.300	5	0
Diag S12	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	33.0	15.25	Tens	0.00	D 24Y	0.000		0.001	0.000	0.000	100.000	100.000	100.000	32759.87	24991.70	18.946	5	0
Horiz 1	B/B L3"x3"x0.3125"	DAE	3X3X0.31	33.0	87.04	Comp	87.04	H 1P	-37.509	W -90	43.092	0.000	0.000	0.950	0.950	0.950	156.53	142.47	12.660	6	0
Horiz 2 B/B	L3.5"x2.5"x0.3125"	DAL	3.5X2.5X0.31	33.0	51.96	Comp	51.96	H 3P	-15.521	W -90	30.639	0.000	0.000	1.000	1.000	1.000	187.95	161.79	17.229	6	0
Horiz 3	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	69.89	Comp	69.89	H 5P	-14.891	W -90	21.304	0.000	0.000	1.000	1.000	1.000	196.42	167.00	15.468	6	0
Horiz 4	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	53.87	Comp	53.87	H 7P	-13.629	W -90	25.299	0.000	0.000	1.000	1.000	1.000	174.06	153.25	13.708	6	0
Horiz 5	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	66.47	Comp	66.47	H 9P	-12.469	W -90	18.758	0.000	0.000	1.000	1.000	1.000	200.16	169.30	12.827	6	0
Horiz 6	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	53.95	Comp	53.95	H 12P	-11.211	W 180	20.781	0.000	0.000	1.000	1.000	1.000	186.43	160.85	11.947	6	0
Horiz 7	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	31.60	Comp	31.60	H 13P	-10.563	W -90	33.425	0.000	0.000	1.000	1.000	1.000	140.53	132.62	11.067	6	0
Horiz 8	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	51.98	Comp	51.98	H 15P	-18.028	W -90	36.417	0.000	0.000	1.000	1.000	1.000	129.35	125.75	10.186	6	0
Horiz 9	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	75.92	Comp	75.92	H 17P	-18.028	W -90	21.113	0.000	0.000	0.500	1.000	0.500	197.65	167.75	18.612	6	0
Horiz 10	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	28.00	Comp	28.00	H 19P	-12.586	W -90	44.957	0.000	0.000	0.500	0.500	0.500	106.99	106.99	16.851	1	0
Horiz 11	L 4" x 3" x 0.3125"	SAU	4X3X0.31	33.0	34.94	Comp	34.94	H 21P	-8.972	W -90	25.680	0.000	0.000	0.500	0.500	0.500	139.94	135.24	15.091	5	0
Horiz 12	L 4" x 3" x 0.3125"	SAU	4X3X0.31	33.0	45.85	Comp	45.85	H 23P	-4.597	W -90	10.028	0.000	0.000	1.000	0.500	1.000	247.23	216.99	13.330	5	0
LD 1	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	33.0	47.90	Tens	1.07	LD 1X	-0.227	W -90	21.135	0.000	0.000	0.970	0.970	0.970	170.22	150.89	11.465	6	0
LD 2	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	93.60	Comp	93.60	LD 3X	-27.130	W -90	28.994	0.000	0.000	0.970	0.970	0.970	145.88	135.92	9.638	6	0
LD 3	B/B L3"x3"x0.25"	DAE	3X3X0.25	33.0	66.83	Comp	66.83	LD 5P	-26.286	W -90	39.335	0.000	0.000	0.970	0.970	0.970	131.18	126.88	10.481	6	0
LH 1	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	46.40	Tens	0.00	LH 2Y	0.000		0.003	0.000	0.000	100.000	100.000	100.000	17397.90	13270.56	11.136	5	0
DUM 1	Dummy Bracing Member	DUM	0.1X0.1X1	36.0	0.00		0.00	BR 5XY	-1.070	W 45	0.324	0.000	0.000	1.000	1.000	1.000	2.63	2.63	21.875	1	0

Group Summary (Tension Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Usage Control	Max Use In Tens. %	Tension Control Member	Tension Force (kips)	Tension Control Load Case	Net Section Capacity (kips)	Tension Connect. Shear Capacity (kips)	Tension Connect. Bearing Capacity (kips)	Tension Connect. Rupture Capacity (kips)	Length Tens. Member (ft)	No. Of Bolts	No. Of Holes	Hole Diameter (in)
Leg S1	L 8" x 8" x 1.125"	SAE	8X8X1.13	33.0	62.87	Comp	26.54	L 1XY	131.848	W 45	496.880	0.000	0.000	0.000	25.124	0	0.000	0
Leg S2	L 8" x 8" x 1"	SAE	8X8X1	33.0	60.54	Comp	30.57	L 2XY	136.204	W 45	445.499	0.000	0.000	0.000	25.124	0	0.000	0
Leg S3	L 8" x 8" x 0.875"	SAE	8X8X0.88	33.0	56.85	Comp	27.77	L 3XY	109.114	W 45	392.930	0.000	0.000	0.000	25.124	0	0.000	0
Leg S4	L 8" x 8" x 0.75"	SAE	8X8X0.75	33.0	51.53	Comp	23.83	L 4XY	80.955	W 45	339.767	0.000	0.000	0.000	25.124	0	0.000	0
Leg S5	L 6" x 6" x 0.875"	SAE	6X6X0.88	33.0	52.58	Comp	23.34	L 5XY	57.449	W 45	288.981	0.000	0.000	0.000	12.562	0	0.000	0
Leg S6	L 6" x 6" x 0.875"	SAE	6X6X0.88	33.0	43.56	Comp	18.60	L 6XY	53.738	W 45	288.981	0.000	0.000	0.000	12.562	0	0.000	0
Leg S7	L 6" x 6" x 0.75"	SAE	6X6X0.75	33.0	41.33	Comp	16.80	L 7XY	40.106	W 45	250.668	0.000	0.000	0.000	12.562	0	0.000	0
Leg S8	L 6" x 6" x 0.75"	SAE	6X6X0.75	33.0	32.02	Comp	10.70	L 8XY	26.827	W 45	250.668	0.000	0.000	0.000	12.562	0	0.000	0
Leg S9	L 6" x 6" x 0.75"	SAE	6X6X0.75	33.0	30.88	Comp	9.99	L 9XY	15.016	W 45	250.668	0.000	0.000	0.000	12.562	0	0.000	0
Leg S10	L 6" x 6" x 0.75"	SAE	6X6X0.75	33.0	21.71	Comp	2.00	L 10XY	5.022	W 45	250.668	0.000	0.000	0.000	12.562	0	0.000	0
Leg S11	L 6" x 6" x 0.5"	SAE	6X6X0.5	33.0	18.79	Comp	0.00	L 11Y	0.000		170.775	0.000	0.000	0.000	12.562	0	0.000	0
Leg S12	L 6" x 6" x 0.5"	SAE	6X6X0.5	33.0	8.12	Comp	0.00	L 12Y	0.000		170.775	0.000	0.000	0.000	12.562	0	0.000	0
Diag S1	B/B L3"x3"x0.25"	DAE	3X3X0.25	33.0	71.59	Comp	55.02	D 2P	97.062	W -90	85.536	0.000	0.000	0.000	19.277	0	0.000	0
Diag S2	B/B L2.5"x3"x0.3125"	DAS	3X2.5X0.31	33.0	84.79	Comp	27.98	D 3P	26.928	W -90	96.228	0.000	0.000	0.000	31.444	0	0.000	0
Diag S3	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	33.0	93.32	Comp	34.75	D 5P	27.145	W -90	78.111	0.000	0.000	0.000	30.413	0	0.000	0
Diag S4	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	33.0	86.46	Comp	34.36	D 7P	26.840	W -90	78.111	0.000	0.000	0.000	29.451	0	0.000	0
Diag S5	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	88.96	Comp	23.97	D 9P	16.940	W -90	70.686	0.000	0.000	0.000	18.572	0	0.000	0
Diag S6	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	78.84	Comp	22.39	D 11P	15.823	W -90	70.686	0.000	0.000	0.000	17.932	0	0.000	0
Diag S7	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	73.62	Comp	22.08	D 13P	15.609	W -90	70.686	0.000	0.000	0.000	17.313	0	0.000	0
Diag S8	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	71.04	Comp	22.29	D 15P	15.756	W -90	70.686	0.000	0.000	0.000	16.718	0	0.000	0
Diag S9	L 3" x 4" x 0.25"	SAU	4X3X0.25	33.0	41.38	Tens	41.38	D 18P	20.768	W -90	50.193	0.000	0.000	0.000	23.173	0	0.000	0
Diag S10	L 3" x 4" x 0.25"	SAU	4X3X0.25	33.0	34.41	Tens	34.41	D 20P	17.271	W -90	50.193	0.000	0.000	0.000	21.713	0	0.000	0
Diag S11	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	33.0	25.77	Tens	25.77	D 22P	12.936	W -90	50.193	0.000	0.000	0.000	20.300	0	0.000	0
Diag S12	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	33.0	15.25	Tens	15.25	D 24P	7.655	W -90	50.193	0.000	0.000	0.000	18.946	0	0.000	0
Horiz 1	B/B L3"x3"x0.3125"	DAE	3X3X0.31	33.0	87.04	Comp	16.00	H 1X	16.875	W -90	105.435	0.000	0.000	0.000	12.660	0	0.000	0
Horiz 2 B/B	L3.5"x2.5"x0.3125"	DAL	3.5X2.5X0.31	33.0	51.96	Comp	15.59	H 3P	16.433	W 90	105.435	0.000	0.000	0.000	17.229	0	0.000	0
Horiz 3	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	69.89	Comp	19.06	H 5X	14.886	W -90	78.111	0.000	0.000	0.000	15.468	0	0.000	0
Horiz 4	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	53.87	Comp	18.10	H 7P	14.140	W 90	78.111	0.000	0.000	0.000	13.708	0	0.000	0
Horiz 5	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	66.47	Comp	17.78	H 9P	12.570	W 90	70.686	0.000	0.000	0.000	12.827	0	0.000	0
Horiz 6	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	53.95	Comp	16.45	H 11P	11.628	W 90	70.686	0.000	0.000	0.000	11.947	0	0.000	0
Horiz 7	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	31.60	Comp	14.06	H 13P	10.985	W 90	78.111	0.000	0.000	0.000	11.067	0	0.000	0
Horiz 8	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	51.98	Comp	2.47	H 15Y	1.929	W 90	78.111	0.000	0.000	0.000	10.186	0	0.000	0

Horiz 9	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	75.92	Comp	0.00	H 18X	0.000		78.111	0.000	0.000	0.000	18.612	0	0.000	0
Horiz 10	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	28.00	Comp	0.00	H 20X	0.000		78.111	0.000	0.000	0.000	16.851	0	0.000	0
Horiz 11	L 4" x 3" x 0.3125"	SAU	4X3X0.31	33.0	34.94	Comp	0.00	H 22X	0.000		62.073	0.000	0.000	0.000	15.091	0	0.000	0
Horiz 12	L 4" x 3" x 0.3125"	SAU	4X3X0.31	33.0	45.85	Comp	0.00	H 24X	0.000		62.073	0.000	0.000	0.000	13.330	0	0.000	0
LD 1	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	33.0	47.90	Tens	47.90	LD 1P	30.304	W -90	63.261	0.000	0.000	0.000	11.465	0	0.000	0
LD 2	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	93.60	Comp	31.43	LD 3P	22.217	W -90	70.686	0.000	0.000	0.000	9.638	0	0.000	0
LD 3	B/B L3"x3"x0.25"	DAE	3X3X0.25	33.0	66.83	Comp	31.73	LD 5X	27.142	W -90	85.536	0.000	0.000	0.000	10.481	0	0.000	0
LH 1	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	46.40	Tens	46.40	LH 1P	32.796	W -90	70.686	0.000	0.000	0.000	11.136	0	0.000	0
DUM 1	Dummy Bracing Member	DUM	0.1X0.1X1	36.0	0.00		0.00	BR 5X	0.797	W -45	0.324	0.000	0.000	0.000	21.875	0	0.000	0

*** Maximum Stress Summary for Each Load Case

Summary of Maximum Usages by Load Case:

Load Case	Maximum Usage %	Element Label	Element Type
W 0	92.20	LD 4P	Angle
W 180	93.30	LD 4Y	Angle
W 45	67.67	LD 3P	Angle
W -45	71.88	LD 4P	Angle
W 90	92.67	LD 3P	Angle
W -90	93.60	LD 3X	Angle
W 0 Ice	28.47	LD 4P	Angle
W 180 Ice	29.74	LD 4Y	Angle
W 45 Ice	26.94	L 1P	Angle
W -45 Ice	28.23	L 1X	Angle
W 90 Ice	28.60	LD 3P	Angle
W -90 Ice	29.75	LD 3X	Angle

*** Weight of structure (lbs):
Weight of Angles*Section ELF: 91885.3
Weight of Equipment: 1444.0
Total: 93329.3

*** End of Report

Site #:	88017	Engineer:	I. Dodson	Windspeed: No Ice:	97 mph
Name:	Shelton/Trumbull, CT	Date:	03/22/19	Ice:	50 mph
				Carrier:	AT&T Mobility

Taper:	-0.14085	Taper Change:	200 ft
FW @ Base:	41.50 ft	FW @ Top:	13.33 ft

Spreadsheet Version Last Updated: 11/12/2014

Joint Label	Symmetry Code	X Coord. (ft)	Y Coord. (ft)	Z Coord. (ft)	X Disp. Rest.	Y Disp. Rest.	Z Disp. Rest.	X Rot. Rest.	Y Rot. Rest.	Z Rot. Rest.	Drop Sub-Brace (Y or Blank)	# Vert	Drop (ft)	Height (ft)	Type	Count	Z-Elev. (ft)	FW (ft)	# Sub-Brace
0	XY-Symmetry	20.75	20.75	0	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed			8.333	25	2	1	0	41.5	3
1	XY-Symmetry	18.989375	18.989375	25	Free	Free	Free	Free	Free	Free				25	A	2	25	37.97875	2
2	XY-Symmetry	17.22875	17.22875	50	Free	Free	Free	Free	Free	Free				25	A	3	50	34.4575	2
3	XY-Symmetry	15.468125	15.468125	75	Free	Free	Free	Free	Free	Free				25	A	4	75	30.93625	2
4	XY-Symmetry	13.7075	13.7075	100	Free	Free	Free	Free	Free	Free				12.5	A	5	100	27.415	1
5	XY-Symmetry	12.8271875	12.8271875	112.5	Free	Free	Free	Free	Free	Free				12.5	A	6	112.5	25.654375	1
6	XY-Symmetry	11.946875	11.946875	125	Free	Free	Free	Free	Free	Free				12.5	A	7	125	23.89375	1
7	XY-Symmetry	11.0665625	11.0665625	137.5	Free	Free	Free	Free	Free	Free				12.5	A	8	137.5	22.133125	1
8	XY-Symmetry	10.18625	10.18625	150	Free	Free	Free	Free	Free	Free		1		12.5	X	9	150	20.3725	1
9	XY-Symmetry	9.3059375	9.3059375	162.5	Free	Free	Free	Free	Free	Free		1		12.5	X	10	162.5	18.611875	1
10	XY-Symmetry	8.425625	8.425625	175	Free	Free	Free	Free	Free	Free		1		12.5	X	11	175	16.85125	1
11	XY-Symmetry	7.5453125	7.5453125	187.5	Free	Free	Free	Free	Free	Free				12.5	X	12	187.5	15.090625	1
12	XY-Symmetry	6.665	6.665	200	Free	Free	Free	Free	Free	Free						13	200	13.33	
A1	XY-Symmetry	18.989375	6.329791667	25	Free	Free	Free	Free	Free	Free									
A2	XY-Symmetry	6.329791667	18.989375	25	Free	Free	Free	Free	Free	Free									
A3	Y-Symmetry	17.22875	0	50	Free	Free	Free	Free	Free	Free									
A4	X-Symmetry	0	17.22875	50	Free	Free	Free	Free	Free	Free									
A5	Y-Symmetry	15.468125	0	75	Free	Free	Free	Free	Free	Free									
A6	X-Symmetry	0	15.468125	75	Free	Free	Free	Free	Free	Free									
A7	Y-Symmetry	13.7075	0	100	Free	Free	Free	Free	Free	Free									
A8	X-Symmetry	0	13.7075	100	Free	Free	Free	Free	Free	Free									
A9	Y-Symmetry	12.8271875	0	112.5	Free	Free	Free	Free	Free	Free									
A10	X-Symmetry	0	12.8271875	112.5	Free	Free	Free	Free	Free	Free									
A11	Y-Symmetry	11.946875	0	125	Free	Free	Free	Free	Free	Free									
A12	X-Symmetry	0	11.946875	125	Free	Free	Free	Free	Free	Free									
A13	Y-Symmetry	11.0665625	0	137.5	Free	Free	Free	Free	Free	Free									
A14	X-Symmetry	0	11.0665625	137.5	Free	Free	Free	Free	Free	Free									
A15	Y-Symmetry	10.18625	0	150	Free	Free	Free	Free	Free	Free									
A16	X-Symmetry	0	10.18625	150	Free	Free	Free	Free	Free	Free									
H1	XY-Symmetry	19.57622653	11.13633551	16.667	Free		Free	Free	Free	Free									
H2	XY-Symmetry	11.13633551	19.57622653	16.667	Free		Free	Free	Free	Free									
H3	Y-Symmetry	19.57622653	0	16.667	Free		Free	Free	Free	Free									
H4	X-Symmetry	0	19.57622653	16.667	Free		Free	Free	Free	Free									

NOTES

Types:

1: Built up Horizs. w/ A
2: Built up Horizs. w/ M
A: Typical A brace
X: Typical X brace

Drop: Use only for types 1 & 2

Sections: 12

Legs

Site No.:	88017
Engineer:	I. Dodson
Date:	03/22/2019
Carrier:	AT&T Mobility

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations *(ft)*	Type of Shape [1]	Diameter or Length *(in)*	Thickness [2] *(in)*	F_Y *(ksi)*
1	0.000-25.00	L	8	1.125	33
2	25.00-50.00	L	8	1	33
3	50.00-75.00	L	8	0.875	33
4	75.00-100.0	L	8	0.75	33
5	100.0-112.5	L	6	0.875	33
6	112.5-125.0	L	6	0.875	33
7	125.0-137.5	L	6	0.75	33
8	137.5-150.0	L	6	0.75	33
9	150.0-162.5	L	6	0.75	33
10	162.5-175.0	L	6	0.75	33
11	175.0-187.5	L	6	0.5	33
12	187.5-200.0	L	6	0.5	33

Notes:

[1] Type of Leg Shape: **R** = Round or **P** = Bent Plate or **S** = Schifflerized Angle. **L** = Even Leg

[2] For Solid Round Leg Shapes Thickness Equals Zero.

[3] Adjust for Bent Plate Leg Shapes.

Diagonals

Site No.:	88017
Engineer:	I. Dodson
Date:	03/22/2019
Carrier:	AT&T Mobility

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations (ft)	Type of Shape [1]	Diameter [2] (in)	Web Length [3] (in)	Flange Length [3] (in)	Thickness (in)	F_y (ksi)	Is Diag. Tension Only? (Y/N)
1	0.000-25.00	2L		3	3	0.25	33	
2	25.00-50.00	2L		2.5	3	0.3125	33	
3	50.00-75.00	2L		2.5	3	0.25	33	
4	75.00-100.0	2L		2.5	3	0.25	33	
5	100.0-112.5	2L		2.5	2.5	0.25	33	
6	112.5-125.0	2L		2.5	2.5	0.25	33	
7	125.0-137.5	2L		2.5	2.5	0.25	33	
8	137.5-150.0	2L		2.5	2.5	0.25	33	
9	150.0-162.5	L		3	4	0.25	33	Y
10	162.5-175.0	L		3	4	0.25	33	Y
11	175.0-187.5	L		3.5	3.5	0.25	33	Y
12	187.5-200.0	L		3.5	3.5	0.25	33	Y

Notes:

[1] Type of Diagonal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Horizontals

Site No.:	88017
Engineer:	I. Dodson
Date:	03/22/2019
Carrier:	AT&T Mobility

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations *(ft)*	Type of Shape [1]	Diameter [2] *(in)*	Web Length [3] *(in)*	Flange Length [3] *(in)*	Thickness *(in)*	F_y *(ksi)*	
1	0.000-25.00	2L		3	3	0.3125	33	
2	25.00-50.00	2L		3.5	2.5	0.3125	33	
3	50.00-75.00	2L		3	2.5	0.25	33	
4	75.00-100.0	2L		3	2.5	0.25	33	
5	100.0-112.5	2L		2.5	2.5	0.25	33	
6	112.5-125.0	2L		2.5	2.5	0.25	33	
7	125.0-137.5	2L		3	2.5	0.25	33	
8	137.5-150.0	2L		3	2.5	0.25	33	
9	150.0-162.5	2L		3	2.5	0.25	33	
10	162.5-175.0	2L		3	2.5	0.25	33	
11	175.0-187.5	L		4	3	0.3125	33	
12	187.5-200.0	L		4	3	0.3125	33	

Notes:

[1] Type of Horizontal Shape: **R** = Round, **L** = Single-Angle, **2L** = Double-Angle, **C** = Channel, **W** = W Shape

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Built-up Diagonals

Site No.:	88017
Engineer:	I. Dodson
Date:	03/22/2019
Carrier:	AT&T Mobility

When inputting thickness values, include all decimal places.
Input diags. from left to center & from base section upward.

Tower Built-up Diag. #	Section Elevations *(ft)*	Type of Shape [1]	Diameter [2] *(in)*	Web Length [3] *(in)*	Flange Length [3] *(in)*	Thickness *(in)*	F_y *(ksi)*
1	0.000-25.00	2L		2.5	2	0.25	33
2	0.000-25.00	2L		2.5	2.5	0.25	33
3	0.000-25.00	2L		3	3	0.25	33

Notes:

[1] Type of Diagonal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Built-up Horizontals

Site No.:	88017
Engineer:	I. Dodson
Date:	03/22/2019
Carrier:	AT&T Mobility

When inputting thickness values, include all decimal places.

Tower Section #	Section Elevations *(ft)*	Type of Shape [1]	Diameter [2] *(in)*	Web Length [3] *(in)*	Flange Length [3] *(in)*	Thickness *(in)*	F_y *(ksi)*	Is Horiz. Tension Only? *(Y/N)*
1	0.000-25.00	2L		2.5	2.5	0.25	33	Y

Notes:

[1] Type of Horizontal Shape: **R** = Round, **L** = Single-Angle or **2L** = Double-Angle.

[2] Applies to Pipes and Solid Round Shapes only. For Solid Round Shapes Thickness Equals Zero.

[3] Applies to Single-Angle and Double-Angle Shapes only.

[4] Applies to Double-Angle Shapes only.

[5] Applies to Single-Angle Shapes only.

Coax (p. 1 of 2)

Orig by MED, Improved by ABL. Last update 6/25/13 MED

Site No.:	88017
Engineer:	I. Dodson
Date:	03/22/19
Carrier:	AT&T Mobility

Description	From (ft)	To (ft)	Quantity	Shape	Width or Diameter (in)	Perimeter (in)	Unit Weight (lb/ft)	Part of Face Solidity Ratio (Yes/No)	Include in Wind Load (Yes/No)
1 Ladder	0	200	1	Flat	2	8.0	6	Yes	Yes
2 OTHER	10	200	1	Round	0.63	2.0	0.15	Yes	Yes
3 STATE OF CT	10	200	1	Round	1.98	6.2	0.82	Yes	Yes
4 STATE OF CT	10	200	1	Round	1.98	6.2	0.82	Yes	Yes
5 STATE OF CT	10	200	2	Round	2.01	6.3	0.57	Yes	Yes
6 STATE OF CT	10	182	1	Flat	4.8375	25.8	4.1	Yes	Yes
7 STATE OF CT	10	182	1	Flat	2.30625	12.3	0.75	Yes	Yes
8 STATE OF CT	10	182	1	Flat	3.72	19.8	3.28	Yes	Yes
9 SPRINT NEXTEL	10	169	1	Flat	14.55	47.0	9.45	Yes	Yes
10 CLEARWIRE	10	158	1	Round	2.52	5.8	0.6	No	No
11 CLEARWIRE	10	158	1	Round	1.86	4.1	0.3	No	No
12 SPRINT NEXTEL	10	155	3	Round	1.54	4.8	1	Yes	Yes
13 SPRINT NEXTEL	10	155	1	Round	1.7	5.3	1.78	No	No
14 CLEARWIRE	10	150	1	Round	2.38	14.3	7.3	Yes	Yes
15 AT&T MOBILITY	10	145	6	Round	1.98	6.2	0.82	Yes	Yes
16 AT&T MOBILITY	10	145	2	Round	0.78	2.5	0.59	Yes	Yes
18 AT&T MOBILITY	10	145	2	Round	3.5	11.0	7.58	Yes	Yes
20 AT&T MOBILITY	10	145	1	Round	0.39	1.2	0.17	Yes	Yes
21 STATE OF CT	10	127	2	Round	2.01	6.3	0.57	Yes	Yes
22 US DEPT OF HS	10	101	1	Round	1.09	4.4	0.33	Yes	Yes
23 LIGADO	10	82	1	Round	1.98	7.9	0.82	Yes	Yes
24 SPRINT NEXTEL	10	56	1	Round	0.63	2.0	0.15	Yes	Yes
25 SIGFOX	10	135	1	Round	0.63	2.0	0.15	Yes	Yes
35 Waveguide	10	176	1	Flat	2	8.0	6	Yes	Yes
36 Waveguide	10	165	1	Flat	2	8.0	6	Yes	Yes
37 Waveguide	10	155	1	Flat	2	8.0	6	Yes	Yes
38 Waveguide	10	143	1	Flat	2	8.0	6	Yes	Yes

Coax (p. 2 of 2)

Site No.:	88017
Engineer:	I. Dodson
Date:	03/22/19
Carrier:	AT&T Mobility

		Exposure	B	α	7	$k_{z\,max}$ 2.01
Tia Code:	TIA-222-G	Topo Cat:	1	z_g	1200	$k_{z\,min}$ 0.7
f				K_e	0.9	K_t

Description	From (ft)	To (ft)	Quantity	Face # (1-4, A-D)	Coax Width (in)	Coax Shape (Block / Flat / Ind)	% Exposed	Spacing (in)	Shape (Round/Flat)	Block Width (# coax)	Block Depth (# coax)	Perimeter (in)	Unit Weight (lb/ft)	In Face Zone (Yes/No)	Include in Wind Load (Yes/No)
Ladder	0	200	1	A	2.00	Flat	100	1	Flat	1	1	8.0	6	Yes	Yes
OTHER	10	200	1	B	0.63	Ind	100	1	Round	1	1	2.0	0.15	Yes	Yes
STATE OF CT	10	200	1	B	1.98	Ind	100	1	Round	1	1	6.2	0.82	Yes	Yes
STATE OF CT	10	200	1	B	1.98	Ind	100	1	Round	1	1	6.2	0.82	Yes	Yes
STATE OF CT	10	200	2	B	2.01	Ind	100	1	Round	2	1	6.3	0.57	Yes	Yes
STATE OF CT	10	182	5	B	1.98	Block	50	1	Flat	3	2	25.8	4.1	Yes	Yes
STATE OF CT	10	182	5	B	0.63	Block	50	1	Flat	3	2	12.3	0.75	Yes	Yes
STATE OF CT	10	182	4	B	1.98	Block	50	1	Flat	2	2	19.8	3.28	Yes	Yes
SPRINT NEXTEL	10	169	15	3	1.55	Block	50	1	Flat	8	2	47.0	9.45	Yes	Yes
CLEARWIRE	10	158	4	2	0.63	Ind	0	1	Round	1	4	5.8	0.6	No	No
CLEARWIRE	10	158	6	2	0.31	Ind	0	1	Round	1	6	4.1	0.3	No	No
SPRINT NEXTEL	10	155	3	3	1.54	Ind	100	1	Round	3	1	4.8	1	Yes	Yes
SPRINT NEXTEL	10	155	1	3	1.70	Ind	0	1	Round	1	1	5.3	1.78	No	No
CLEARWIRE	10	150	2	2	2.38	Ind	100	1	Round	2	1	7.5	3.65	Yes	Yes
AT&T MOBILITY	10	145	6	C	1.98	Ind	100	1	Round	6	1	6.2	0.82	Yes	Yes
AT&T MOBILITY	10	145	2	C	0.78	Ind	100	1	Round	2	1	2.5	0.59	Yes	Yes
								1						No	No
AT&T MOBILITY	10	145	2	C	3.50	Ind	100	1	Round	2	1	11.0	7.58	Yes	Yes
								1						No	No
AT&T MOBILITY	10	145	1	C	0.39	Ind	100	1	Round	1	1	1.2	0.17	Yes	Yes
STATE OF CT	10	127	2	B	2.01	Ind	100	1	Round	2	1	6.3	0.57	Yes	Yes
US DEPT OF HS	10	101	1	4	1.09	Ind	100	1	Round	1	1	3.4	0.33	Yes	Yes
LIGADO	10	82	1	2	1.98	Ind	100	1	Round	1	1	6.2	0.82	Yes	Yes
SPRINT NEXTEL	10	56	1	3	0.63	Ind	100	1	Round	1	1	2.0	0.15	Yes	Yes
SIGFOX	10	135	1	1	0.63	Ind	100	1	Round	1	1	2.0	0.15	Yes	Yes
								1						No	No
								1						No	No
								1						No	No
								1						No	No
								1						No	No
								1						No	No
								1						No	No
								1						No	No
								1						No	No
Waveguide	10	176	1	A	2.00	Flat	100	1	Flat	1	1	8.0	6	Yes	Yes
Waveguide	10	165	1	2	2.00	Flat	100	1	Flat	1	1	8.0	6	Yes	Yes
Waveguide	10	155	1	2	2.00	Flat	100	1	Flat	1	1	8.0	6	Yes	Yes
Waveguide	10	143	1	D	2.00	Flat	100	1	Flat	1	1	8.0	6	Yes	Yes
								1						No	No
								1						No	No
								1						No	No
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								1						No	No
								1						No	No
								1						No	No
								1						No	No

Dishes

Site No.:	88017
Engineer:	I. Dodson
Date:	03/22/19
Carrier:	AT&T Mobility

Dish Types	
S	Standard
R	Standard w/ Radome
H	High Performance
G	Grid

Dish Number	Dish Elevation (ft)	Dish Dia. (ft)	Dish Angle (deg)	Dish Type	Joint Orientation	Equipment Staus
1	200	8	68	R	XY	
2	200	8	240	R	P	
3	158	2	343.6664	H	XY	
4	158	2	126.6024	S	XY	
5	158	3	212.6351	H	P	
6	158	3	212.6351	H	X	
7	127	6	182	R	P	
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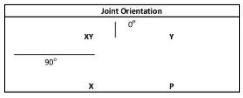
Equipment Label	Attach Label	Equipment Property Set	EIA Antenna Orientation Angle *(deg)*
8' RAD 1 @ 200'	12XY	8 ft RAD Dish	68
8' RAD 2 @ 200'	12P	8 ft RAD Dish	240
2' HP 3 @ 158'	9XY	2 ft HP Dish	343.6664
2' STD 4 @ 158'	9XY	2 ft STD Dish	126.6024
3' HP 5 @ 158'	9P	3 ft HP Dish	212.6351
3' HP 6 @ 158'	9X	3 ft HP Dish	212.6351
6' RAD 7 @ 127'	6P	6 ft RAD Dish	182

Joint Orientation



Task:	Determine Point Loads	
Tower Height:	200	ft
Gh:	0.85	
Wind Speed:	97	mph, Vasd
Ice Wind Speed:	50	
Ice Density:	56	
Tower Type:	S	

Ice Thick:	0.5	in
Topographic Category (1-4):	1	
Exposure Category (B-D):	B	
Structure Class (1-3):	2	
Height of Crest (H) if Topo Cat. >1:	0	ft
Load Factor; Wind:	1.6	
Load Factor; Dead:	1.2	

Site No.:	88017
Engineer:	I. Dodson
Date:	03/22/2019
Carrier:	AT&T Mobility

No.	Carrier	Elevation (ft)	Quantity	# of Azimuths		Manufacturer	Model	Height (in)	Width (in)	Depth (in)	Weight (lbs/ea)	Flat/Round (F/R)	Reduction	C_AA_C (ft^2)	Weight (lb)	Ka
1		200	1	1			-	0.001	0.001	0.001	0.001	F	1.000			1
		200	1	4			Platform w/ HR						1.000	80.00	9.00	1
2		200	1	1			-	0.001	0.001	0.001	0.001	F	1.000			1
		200	4	4			Mounting Frames						1.000	20.00	0.20	1
3		187.5	1	1			-	0.001	0.001	0.001	0.001	F	1.000			1
		187.5	1	4			Access Platform						1.000	45.00	5.00	1
4		175	1	1			-	0.001	0.001	0.001	0.001	F	1.000			1
		175	1	4			Catwalk						1.000	70.00	8.00	1
5		112.5	1	1			-	0.001	0.001	0.001	0.001	F	1.000			1
		112.5	1	3			Catwalk						1.000	70.00	8.00	1
6		100	1	1			-	0.001	0.001	0.001	0.001	F	1.000			1
		100	1	1			Rest Platform						1.000	15.00	0.50	1
7		75	1	1			-	0.001	0.001	0.001	0.001	F	1.000			1
		75	1	3			Catwalk						1.000	70.00	8.00	1
8		50	1	1			-	0.001	0.001	0.001	0.001	F	1.000			1
		50	1	1			Rest Platform						1.000	15.00	0.50	1
9	STATE OF CT	200	1	1		Generic	20' Omni	240	3	3	55	R	1.000			1
	STATE OF CT	200	1	1			-						0.001	0.00	0.00	1
10	OTHER	212	1	1		Generic	-	0.001	0.001	0.001	0.001	F	1.000			1
	OTHER	212	1	1			5' Yagi						1.000	7.29	0.02	1
11	OTHER	210	1	1		Generic	-	0.001	0.001	0.001	0.001	F	1.000			1
	OTHER	210	1	1			5' Yagi						1.000	7.29	0.02	1
12	STATE OF CT	210	1	1		Telewave	-	0.001	0.001	0.001	0.001	F	1.000			1
	STATE OF CT	210	1	1			ANT900D6-9						1.000	0.98	0.01	1
13	STATE OF CT	205	1	1		Sinclair	SC442D-HF1LDF(DXX-I30-G9-NUFP)	251.5	5	5	79	R	1.000			1
	STATE OF CT	205	1	1			-						0.001	0.00	0.00	1
14	STATE OF CT	190	1	1		Sinclair	SC479-HF1LDF	172.5	3.5	3.5	34	R	1.000			1
	STATE OF CT	190	2	2			Side Arm						1.000	6.30	0.15	1
15	STATE OF CT	189	1	1		Sinclair	SC479-HF1LDF	172.5	3.5	3.5	34	R	1.000			1
	STATE OF CT	189	1	1			Flat Sector Frames						1.000	17.90	0.40	1
16	STATE OF CT	187	1	1		Sinclair	SC479-HF1LDF	172.5	3.5	3.5	34	R	1.000			1
	STATE OF CT	187	1	1			-						0.001	0.00	0.00	1
17	STATE OF CT	185	1	1		Generic	TTA	12	12	6	10	F	1.000			1
	STATE OF CT	185	1	1			-						0.001	0.00	0.00	1
18	STATE OF CT	185	2	2		Kathrein Scala	AP14-850/105	101.5	10	4	26.8	F	1.000			1
	STATE OF CT	185	1	1			-						0.001	0.00	0.00	1
19	STATE OF CT	182	2	2		Generic	TTA	12	12	6	10	F	1.000			1
	STATE OF CT	182	1	1			-						0.001	0.00	0.00	1
20	STATE OF CT	180	2	2		Generic	TTA	12	12	6	10	F	1.000			1
	STATE OF CT	180	1	1			-						0.001	0.00	0.00	1
21	STATE OF CT	180	1	1		Generic	-	0.001	0.001	0.001	0.001	R	1.000			1
	STATE OF CT	180	1	1			5' Dipole						1.000	1.75	0.02	1
22	STATE OF CT	180	1	1		Sinclair	SC479-HF1LDF	172.5	3.5	3.5	34	R	1.000			1
	STATE OF CT	180	1	1			-						0.001	0.00	0.00	1
23	STATE OF CT	177	1	1		TX RX Systems	101-838-09-0-03	120	3.6	3.6	45	R	1.000			1
	STATE OF CT	177	1	1			-						0.001	0.00	0.00	1
24	STATE OF CT	175	2	2		Sinclair	SC479-HF1LDF	172.5	3.5	3.5	34	R	1.000			1
	STATE OF CT	175	1	1			-						0.001	0.00	0.00	1
25	SPRINT NEXTEL	169	12	3		Decibel	DB844H90E-A	48	6	8.5	10	F	0.861			0.8
	SPRINT NEXTEL	169	3	3			Flat Sector Frames						0.750	17.90	0.40	0.75
26	CLEARWIRE CORPORATION	158	4	3		DragonWave	Horizon Compact	4.7	9.3	9.3	10.6	F	0.929			0.8
	CLEARWIRE CORPORATION	158	3	3			Flat Sector Frames						0.750	17.90	0.40	0.75
27	CLEARWIRE CORPORATION	156	3	3		NextNet	BTS-2500	19.3	11.3	5.1	35	F	0.763			0.8
	CLEARWIRE CORPORATION	156	1	1			-						0.001	0.00	0.00	1
28	CLEARWIRE CORPORATION	156	3	3		Argus	LLPX310R	42	11.8	4.5	28.6	F	0.726			0.8
	CLEARWIRE CORPORATION	156	1	1			-						0.001	0.00	0.00	1
29	SPRINT NEXTEL	155	3	3	Proposed	Alcatel-Lucent	RRH2x50-08	15.7	13	9.8	52.9	F	0.940			0.8
	SPRINT NEXTEL	155	3	3			Flat Sector Frames						0.750	17.90	0.40	0.75
30	SPRINT NEXTEL	155	3	3		Alcatel-Lucent	1900 MHz 4X45 RRH	25.1	11.1	10.7	60	F	0.945			0.8
	SPRINT NEXTEL	155	1	1			-						0.001	0.00	0.00	1
31	SPRINT NEXTEL	155	3	3		Alcatel-Lucent	800 MHz RRH w/ Notch Filter	19.7	13	15.2	61.8	F	0.867			0.8
	SPRINT NEXTEL	155	1	1			-						0.001	0.00	0.00	1
32	SPRINT NEXTEL	155	3	3	Proposed	Nokia	2.5G MAA - AAHC(64T64R)	25.6	19.7	9.6	103.6	F	0.784			0.8
	SPRINT NEXTEL	155	1	1			-						0.001	0.00	0.00	1
33	SIGFOX S.A.	135	1	1	Proposed	Procom	CXL 900-3LW	27.6	0.6	0.6	1.5	R	1.000			0.001
	SIGFOX S.A.	135	1	1			Side Arm						1.000	6.30	0.15	1
34	SPRINT NEXTEL	155	3	3	Proposed	Commscope	NNVV-65B-R4	72	19.6	7.8	77.4	F	0.734			0.8
	SPRINT NEXTEL	155	1	1			-						0.001	0.00	0.00	1
35	CLEARWIRE CORPORATION	150	1	1		Generic	18" x 12" Junction Box	18	12	8	15	F	1.000			1
	CLEARWIRE CORPORATION	150	1	1			-						0.001	0.00	0.00	1
36	AT&T MOBILITY	144	9	3		Powerwave Allgon	7020.00 Dual Band RET	4.9	8.3	2.4	2.2	F	0.669			0.8
	AT&T MOBILITY	144	3	3			Round Sector Frames						0.750	14.40	0.30	0.75
37	AT&T MOBILITY	144	6	3		Powerwave Allgon	LGP21401	14.4	9.2	2.6	14.1	F	0.665			0.8
	AT&T MOBILITY	144	1	1		Commscope	WCS-IMFQ-AMT						0.500	0.99	0.03	0.8
38	AT&T MOBILITY	144	3	3		Raycap	DC6-48-60-18-8F ("Squid")	24	11	11	31.8	R	0.938			0.8
	AT&T MOBILITY	144	1	1			-						0.001	0.00	0.00	1
39	AT&T MOBILITY	144	3	3		Ericsson	RRUS 11 (Band 12) (55 lb)	17.8	17	7.2	55	F	0.747			0.8
	AT&T MOBILITY	144	1	1			-						0.001	0.00	0.00	1
40	AT&T MOBILITY	144	3	3		Ericsson	RRUS 32 (50.8 lbs)	26.7	12.1	6.7	50.8	F	0.823			0.8
	AT&T MOBILITY	144	1	1			-						0.001	0.00	0.00	1
41	AT&T MOBILITY	144	3	3		Ericsson	RRUS 32 B2	27.2	12.1	7	53	F	0.837			0.8
	AT&T MOBILITY	144	1	1			-						0.001	0.00	0.00	1
42	AT&T MOBILITY	144	3	3		Ericsson	RRUS 32 B66	27.2	12.1	7	53	F	0.837			0.8
	AT&T MOBILITY	144	1	1			-						0.001	0.00	0.00	1
43	AT&T MOBILITY	144	3	3		Powerwave Allgon	7770.00	55	11	5	35	F	0.766			0.8
	AT&T MOBILITY	144	1	1			-						0.001	0.00	0.00	1
44	AT&T MOBILITY	144	3	3		Quintel	QS66512-6	72	12	9.6	111	F	0.918			0.8
	AT&T MOBILITY	144	1	1			-						0.001	0.00	0.00	1
45	AT&T MOBILITY	144	3	3		CCI	HPA-65R-BUU-H6	72	14.8	9	51	F	0.834			0.8
	AT&T MOBILITY	144	1	1			-						0.001	0.00	0.00	1
46	US DEPT OF HOMELAND SECURITY	111	1	1		Andrew	DB616E-BC	231	3.5	3.5	51	R	1.000			1
	US DEPT OF HOMELAND SECURITY	101	1	1			-						0.001	0.00	0.00	1
47	LIGADO NETWORKS LLC	86	1	1		Kathrein Scala	750 10074	104.3	2	2	17.6	R	1.000			1
	LIGADO NETWORKS LLC	82	1	1			Side Arm						1.000	6.30	0.15	1
48	SPRINT NEXTEL	56	1	1	Proposed	Generic	GPS	12	9	6	10	F	1.000			1
	SPRINT NEXTEL	56	1	1			Stand-Off						1.000	2.50	0.08	1
49	SIGFOX S.A.	135	1	1	Proposed	Generic	5" x 3" x 2" Cavity Filter	5.3	3.2	1.9	1.5	F	1.000			1
	SIGFOX S.A.	135	1	1			-						0.001	0.00	0.00	1
50	SIGFOX S.A.	135	1	1	Proposed	Generic	Low Noise Amplifier	5	4	2	2	F	1.000			1
	SIGFOX S.A.	135	1	1			-						0.001	0.00	0.00	1

No.	Elevation	C_AA_C	C_AA_C (Ice)	Force	Force (Ice)	Weight	Weight (Ice)	60 Azi	Force	F (Ice)	Height	Sum of Forces (No I	
	(ft)	(ft^2)	(ft^2)	(lb)	(lb)	(lb)	(lb)	Mult.	mean	mean	Flag	60 Azi.	180 Azi.
1	200	0.00	0.01	0.000	0.054	0	0	1.00	0.00	0.03			
	200	80.00	108.00	2683.480	601.601	10800	14040	1.00	1475.91	330.88	0.0000010	2683.480129	
2	200	0.00	0.01	0.000	0.054	0	0	1.00	0.00	0.03	0.0000020		
	200	80.00	108.00	2683.480	601.601	960	1248	1.00	1475.91	330.88	1.5050000	5366.960258	
3	187.5	0.00	0.01	0.000	0.053	0	0	1.00	0.00	0.03	1.5050010		
	187.5	45.00	60.75	1481.879	332.218	6000	7800	1.00	815.03	182.72	1.5053333	1481.878864	
4	175	0.00	0.01	0.000	0.052	0	0	1.00	0.00	0.03	1.5053343		
	175	70.00	94.50	2260.150	506.696	9600	12480	1.00	1243.08	278.68	1.5057143	2260.150239	
5	112.5	0.00	0.01	0.000	0.046	0	0	1.00	0.00	0.03	1.5057153		
	112.5	70.00	94.50	1992.108	446.605	9600	12480	1.00	1095.66	245.63	1.5088889	1992.10797	
6	100	0.00	0.01	0.000	0.045	0	0	1.00	0.00	0.02	1.5088899		
	100	15.00	20.25	412.754	92.534	600	780	1.00	227.01	50.89	1.5100000	412.7538053	
7	75	0.00	0.01	0.000	0.041	0	0	1.00	0.00	0.02	1.5100010		
	75	70.00	94.50	1774.194	397.751	9600	12480	1.00	975.81	218.76	1.5133333	1774.193912	
8	50	0.00	0.01	0.000	0.037	0	0	1.00	0.00	0.02	1.5133343		
	50	15.00	20.25	338.597	75.909	600	780	1.00	186.23	41.75	1.5200000	338.5965398	
9	200	6.00	8.03	201.261	44.749	66	270	1.00	110.69	24.61	1.5200010		
	200	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5050000	201.2610432	
10	212	0.00	0.01	0.000	0.055	0	0	1.00	0.00	0.03	1.5050010		
	212	7.29	9.84	248.637	55.741	24	31	1.00	136.75	30.66	1.5047170	248.637238	
11	210	0.00	0.01	0.000	0.055	0	0	1.00	0.00	0.03	1.5047180		
	210	7.29	9.84	247.965	55.590	24	31	1.00	136.38	30.57	1.5047180	247.9647865	
12	210	0.00	0.01	0.000	0.055	0	0	1.00	0.00	0.03	1.5047190		
	210	0.98	1.32	33.334	7.473	13	17	1.00	18.33	4.11	1.5047619	281.2088733	
13	205	10.48	12.63	353.997	70.824	95	419	1.00	194.70	38.95	1.5047629		
	205	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5048780	353.9966461	
14	190	5.03	6.51	166.310	35.715	41	203	1.00	91.47	19.64	1.5048790		
	190	12.60	17.01	416.499	93.374	360	468	1.00	229.07	51.36	1.5052632	582.8097599	
15	189	5.03	6.51	166.060	35.661	41	203	1.00	91.33	19.61	1.5052642		
	189	17.90	24.17	590.802	132.450	480	624	1.00	324.94	72.85	1.5052910	756.861898	
16	187	5.03	6.51	165.556	35.553	41	203	1.00	91.06	19.55	1.5052920		
	187	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5053476	165.555968	
17	185	1.20	1.64	39.366	8.951	12	40	1.00	21.65	4.92	1.5053486		
	185	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5054054	39.36554006	
18	185	21.22	23.13	695.993	126.025	64	253	1.00	382.80	69.31	1.5054064		
	185	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5054054	735.3582204	
19	182	2.40	3.29	78.364	17.818	24	54	1.00	43.10	9.80	1.5054064		
	182	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5054945	78.36413787	
20	180	2.40	3.29	78.117	17.762	24	54	1.00	42.96	9.77	1.5054955		
	180	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5055556	78.11712488	
21	180	0.00	0.01	0.000	0.030	0	0	1.00	0.00	0.02	1.5055566		
	180	1.75	2.36	56.960	12.770	18	23	1.00	31.33	7.02	1.5055556	135.0775049	
22	180	5.03	6.51	163.761	35.168	41	202	1.00	90.07	19.34	1.5055566		
	180	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5055556	298.8386294	
23	177	3.60	4.64	116.614	24.951	54	174	1.00	64.14	13.72	1.5055566		
	177	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5056497	116.6143384	
24	175	10.06	13.01	324.897	69.771	82	251	1.00	178.69	38.37	1.5056507		
	175	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5057143	324.8966291	
25	169	32.80	37.42	1048.538	198.664	144	253	1.00	576.70	109.27	1.5057153		
	169	40.28	54.37	965.622	216.480	1440	1872	1.00	531.09	119.06	1.5059172	2014.159901	
26	158	1.26	1.70	39.598	8.832	51	71	1.00	21.78	4.86	1.5059182		
	158	40.28	54.37	947.231	212.357	1440	1872	1.00	520.98	116.80	1.5063291	986.8285523	
27	156	3.33	4.45	104.022	23.073	126	189	1.00	57.21	12.69	1.5063301		
	156	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5064103	104.0219096	
28	156	7.48	9.32	233.647	48.375	103	206	1.00	128.51	26.61	1.5064113		
	156	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5064103	337.6691067	
29	155	3.84	5.13	119.636	26.551	190	268	1.00	65.80	14.60	1.5064113		
	155	40.28	54.37	942.057	211.197	1440	1872	1.00	518.13	116.16	1.5064516	1061.693097	
30	155	5.92	6.96	184.612	36.050	216	319	1.00	101.54	19.83	1.5064526		
	155	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5064516	1246.304829	
31	155	6.05	6.78	188.824	35.116	222	326	1.00	103.85	19.31	1.5064526		
	155	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5064516	1435.12843	
32	155	7.91	10.08	246.705	52.185	373	532	1.00	135.69	28.70	1.5064526		
	155	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5064516	1681.833918	
33	135	0.00	0.00	0.004	0.002	2	10	1.00	0.00	0.00	1.5064526		
	135	6.30	8.51	188.877	42.344	180	234	1.00	103.88	23.29	1.5074074	188.8809283	
34	155	21.63	25.77	674.440	133.442	279	563	1.00	370.94	73.39	1.5074084		
	155	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5064516	674.4397243	
35	150	1.80	2.40	55.614	12.321	18	61	1.00	30.59	6.78	1.5064526		
	150	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5066667	55.61402928	
36	144	1.63	2.57	49.830	13.025	24	35	1.00	27.41	7.16	1.5066677		
	144	32.40	43.74	742.083	166.365	1080	1404	1.00	408.15	91.50	1.5069444	791.9125789	
37	144	3.52	4.87	107.593	24.716	102	144	1.00	59.18	13.59	1.5069454		
	144	0.50	0.67	12.093	2.711	35	46	1.00	6.65	1.49	1.5069444	911.5986689	
38	144	3.30	3.75	100.777	19.018	114	194	1.00	55.43	10.46	1.5069454		
	144	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5069444	1012.375413	
39	144	4.52	5.90	138.070	29.915	198	287	1.00	75.94	16.45	1.5069454		
	144	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5069444	1150.445649	
40	144	5.32	6.97	162.396	35.339	183	276	1.00	89.32	19.44	1.5069454		
	144	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5069444	1312.841247	
41	144	5.51	7.22	168.344	36.609	191	287	1.00	92.59	20.13	1.5069454		
	144	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5069444	1481.185215	
42	144	5.51	7.22	168.344	36.609	191	287	1.00	92.59	20.13	1.5069454		
	144	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5069444	1649.529183	
43	144	10.12	12.01	309.173	60.895	126	254	1.00	170.05	33.49	1.5069454		
	144	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5069444	1958.702218	
44	144	17.92	20.33	547.248	103.092	400	648	1.00	300.99	56.70	1.5069454		
	144	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5069444	2505.950344	
45	144	19.33	22.44	590.287	113.817	184	409	1.00	324.66	62.60	1.5069454		
	144	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5069444	3096.237251	
46	111	6.74	8.70	191.006	40.959	61	267	1.00	105.05	22.53	1.5069454		
	101	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5099010	191.0064751	
47	86	1.74	2.63	45.816	11.522	21	80	1.00	25.20	6.34	1.5099020		
	82	6.30	8.51	163.801	36.722	180	234	1.00	90.09	20.20	1.5121951	209.6168074	
48	56	0.90	1.26	20.984	4.894	12	33	1.00	11.54	2.69	1.5121961		
	56	2.50	3.38	58.290	13.068	90	117	1.00	32.06	7.19	1.5178571	79.27430907	
49	135	0.14	0.26	4.237	1.281	2	6	1.00	2.33	0.70	1.5178581		
	135	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5074074	4.237265927	
50	135	0.17	0.29	4.997	1.452	2	7	1.00	2.75	0.80	1.5074084		
	135	0.00	0.00	0.000	0.000	1	2	1.00	0.00	0.00	1.5074074	9.23403641	

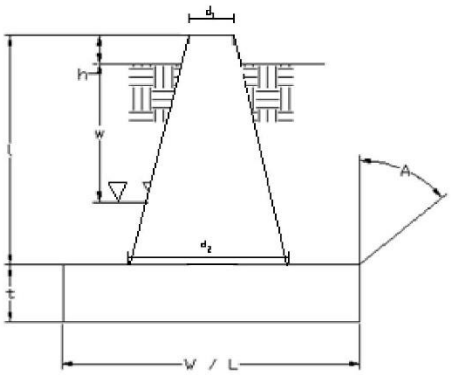
Foundation

Site No.:	88017
Engineer:	I. Dodson
Date:	03/22/19
Carrier:	AT&T Mobility

Design Loads (Factored)

Compression/Leg:	290.49	k
Uplift/Leg:	185.15	k
Shear/Leg	41.65	k

Face Width @ Top of Pier (d_1):	3.50	ft
Face Width @ Bottom of Pier (d_2):	7.00	ft
Total Length of Pier (l):	7.00	ft
Height of Pedestal Above Ground (h):	0.50	ft
Width of Pad (W):	16.00	ft
Length of Pad (L):	16.00	ft
Thickness of Pad (t):	2.50	ft
Water Table Depth (w):	99.00	ft
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Soil (Above Water Table):	120.0	pcf
Unit Weight of Soil (Below Water Table):	57.6	pcf
Friction Angle of Uplift (A):	30	°
Ultimate Compressive Bearing Pressure:	16000	psf
Ultimate Skin Friction:	500	psf



Volume Pier (Total):	200.08	ft^3
Volume Pad (Total):	640.00	ft^3
Volume Soil (Total):	2346.93	ft^3
Volume Pier (Buoyant):	0.00	ft^3
Volume Pad (Buoyant):	0.00	ft^3
Volume Soil (Buoyant):	0.00	ft^3
Weight Pier:	30.01	k
Weight Pad:	96.00	k
Weight Soil:	281.63	k
Uplift Skin Friction:	60.00	k

Uplift Check

ϕs Uplift Resistance (k)	Ratio	Result
350.73	0.53	**OK**

Axial Check

ϕs Axial Resistance (k)	Ratio	Result
3072.00	0.09	**OK**

Anchor Bolt Check

Bolt Diameter (in)	2.25
# of Bolts	4
Steel Grade	A36
Steel Fy	36
Steel Fu	58
Detail Type	C

Usage Ratio	Result
0.43	**OK**

EXHIBIT 3:

General Power Density Table report (RF Emissions Analysis Report)

T-SQUARED SITE SERVICES
2500 Highland Road | Suite 201
Hermitage, PA 16148 | 724.308.7855
www.t-sqrd.com

RF EMISSIONS COMPLIANCE REPORT

T-Squared Site Services on behalf of Sigfox S.A.

ATC Site Name: Shelton-Trumbull
Sigfox S.A. Site Name: CT9081_ATC_88017
Sigfox S.A. Site #: CT9081
14 OXFORD DRIVE/ BOOTH HILL ROAD
SHELTON, CT
2/11/2019

Report Status:

Sigfox S.A. Is Compliant

sealed 12feb2019 mike@h2dc.com
H2DC PLLC CT CoA#: 0001714

Prepared By:

Sitesafe, LLC

8618 Westwood Center Drive,
Suite 315

Vienna, VA 22182

Voice 703-276-1100
Fax 703-276-1169

Engineering Statement in Re:
Electromagnetic Energy Analysis
T-Squared Site Services
SHELTON, CT

My signature on the cover of this document indicates:

That I, Michael A McGuire, am currently and actively licensed to provide (in this state/jurisdiction as indicated within the professional electrical engineering seal on the cover of this document) professional electrical engineering services, as an employee of Hurricane Hill Development Company, PLLC , a duly authorized/registered engineering firm (in this state, as applicable) on behalf of SiteSafe, LLC; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission ("the FCC" and "the FCC Rules") both in general and specifically as they apply to the FCC's Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; and

That the technical information serving as the basis for this report was supplied by T-Squared Site Services (See attached Site Summary and Carrier documents), and that Sigfox S.A.'s installations involve communications equipment, antennas and associated technical equipment at a location referred to as the "Shelton-Trumbull" ("the site"); and

That Sigfox S.A. proposes to operate at the site with transmit antennas listed in the carrier summary and with a maximum effective radiated power as specified by Sigfox S.A. and shown on the worksheet, and that worst-case 100% duty cycle have been assumed; and

That in addition to the emitters specified in the worksheet, there are additional collocated point-to-point microwave facilities on this structure and, the antennas used are highly directional oriented at angles at or just below the horizontal and, that the energy present at ground level is typically so low as to be considered insignificant and have not been included in this analysis; and

That this analysis has been performed with the assumption that the ground immediately surrounding the tower is primarily flat or falling; and

That at this time, the FCC requires that certain licensees address specific levels of radio-frequency energy to which workers or members of the public might possibly be exposed (at §1.1307(b) of the FCC Rules); and

That such consideration of possible exposure of humans to radio-frequency radiation must utilize the standards set by the FCC, which is the Federal Agency having jurisdiction over communications facilities; and

That the FCC rules define two tiers of permissible exposure guidelines: 1) "uncontrolled environments," defined as situations in which persons may not be aware of (the "general public"), or may not be able to control their exposure to a transmission facility; and (2) "controlled environments," which defines situations in which persons are aware of their potential for exposure (industry personnel); and

That this statement specifically addresses the uncontrolled environment (which is more conservative than the controlled environment) and the limit set forth in the FCC rules for licensees of Sigfox S.A.'s operating frequency as shown on the attached antenna worksheet; and

That when applying the uncontrolled environment standards, the predicted Maximum Power Density at two meters above ground level from the proposed Sigfox S.A. operation is no more than 0.001% of the maximum in any accessible area on the ground and

That it is understood per FCC Guidelines and OET65 Appendix A, that regardless of the existent radio-frequency environment, only those licenses whose contributions exceed five percent of the exposure limit pertinent to their operation(s) bear any responsibility for bringing any non-compliant area(s) into compliance; and

That when applying the uncontrolled environment standards, the cumulative predicted energy density from the proposed operation is no more than 2.52% of the maximum in any accessible area up to two meters above the ground per OET-65; and

That the calculations provided in this report are based on data provided by the client and antenna pattern data supplied by the antenna manufacturer, in accordance with FCC guidelines listed in OET-65. Horizontal and vertical antenna patterns are combined for modeling purposes to accurately reflect the energy two meters above ground level where on-axis energy refers to maximum energy two meters above the ground along the azimuth of the antenna and where area energy refers to the maximum energy anywhere two meters above the ground regardless of the antenna azimuth, accounting for cumulative energy from multiple antennas for the carrier and frequency range indicated; and

That the Occupational Safety and Health Administration has policies in place which address worker safety in and around communications sites, thus individual companies will be responsible for their employees' training regarding Radio Frequency Safety.

In summary, it is stated here that the proposed operation at the site would not result in exposure of the Public to excessive levels of radio-frequency energy as defined in the FCC Rules and Regulations, specifically 47 CFR 1.1307 and that Sigfox S.A.'s proposed operation is completely compliant.

Finally, it is stated that access to the tower should be restricted to communication industry professionals, and approved contractor personnel trained in radio-frequency safety; and that the instant analysis addresses exposure levels at two meters above ground level and does not address exposure levels on the tower, or in the immediate proximity of the antennas.

T-Squared Site Services
Shelton-Trumbull
Site Summary

Carrier	Area Maximum Percentage MPE
AT&T Mobility, LLC	0.34 %
AT&T Mobility, LLC	0.33 %
AT&T Mobility, LLC	0.254 %
AT&T Mobility, LLC	0.356 %
AT&T Mobility, LLC	0.424 %
Ligado Networks	0.019 %
Sigfox S.A. (Proposed)	0.001 %
Sprint	0.164 %
Sprint	0.164 %
Sprint	0.061 %
Sprint	0.062 %
Sprint	0.095 %
Sprint (Decommissioned)	0 %
State of Connecticut	0.07 %
State of Connecticut	0.022 %
State of Connecticut	0.007 %
State of Connecticut	0.089 %
US Department of Homeland S	0.062 %
Composite Site MPE:	2.52 %

AT&T Mobility, LLC
Shelton-Trumbull
Carrier Summary

Frequency:	2300	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	3.40255	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.34025	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
CCI Antennas	HPA-65R-BUU-H6	145	0	2831	2.713212	0.271321	3.368889	0.336889
CCI Antennas	HPA-65R-BUU-H6	145	120	2831	2.737939	0.273794	3.368888	0.336889
CCI Antennas	HPA-65R-BUU-H6	145	240	2831	2.713212	0.271321	3.368887	0.336889

AT&T Mobility, LLC
Shelton-Trumbull
Carrier Summary

Frequency:	2100	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	3.30495	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.33049	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Quintel	QS66512-6	145	0	4788	1.874687	0.187469	3.215151	0.321515
Quintel	QS66512-6	145	120	4788	1.874687	0.187469	3.215151	0.321515
Quintel	QS66512-6	145	240	4788	1.900707	0.190071	3.215151	0.321515

AT&T Mobility, LLC
Shelton-Trumbull
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	2.53917	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.25392	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Quintel	QS66512-6	145	0	4170	1.361293	0.136129	2.38829	0.238829
Quintel	QS66512-6	145	120	4170	1.36164	0.136164	2.38829	0.238829
Quintel	QS66512-6	145	240	4170	1.361293	0.136129	2.38829	0.238829

AT&T Mobility, LLC
Shelton-Trumbull
Carrier Summary

Frequency:	737	MHz
Maximum Permissible Exposure (MPE):	491.33	µW/cm^2
Maximum power density at ground level:	1.74726	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.35562	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Quintel	QS66512-6	145	0	2239	1.212824	0.246844	1.732303	0.352572
Quintel	QS66512-6	145	120	2239	1.212825	0.246844	1.732303	0.352572
Quintel	QS66512-6	145	240	2239	1.211916	0.246659	1.732303	0.352572

AT&T Mobility, LLC
Shelton-Trumbull
Carrier Summary

Frequency:	850	MHz
Maximum Permissible Exposure (MPE):	566.67	µW/cm^2
Maximum power density at ground level:	2.40382	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.4242	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Powerwave	7770_00	145	0	1094	0.496121	0.087551	0.774999	0.136765
CCI Antennas	HPA-65R-BUU-H6	145	0	2350	1.093691	0.193004	1.694139	0.298966
Powerwave	7770_00	145	120	1094	0.496754	0.087662	0.774999	0.136765
CCI Antennas	HPA-65R-BUU-H6	145	120	2350	1.09723	0.193629	1.694139	0.298966
Powerwave	7770_00	145	240	1094	0.496121	0.087551	0.774999	0.136765
CCI Antennas	HPA-65R-BUU-H6	145	240	2350	1.098264	0.193811	1.694139	0.298966

Ligado Networks
Shelton-Trumbull
Carrier Summary

Frequency:	1670	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	0.19025	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.01903	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Kathrein-Scala	750_10074	86	0	100	0.190252	0.019025	0.190252	0.019025

Sigfox S.A. (Proposed)
Shelton-Trumbull
Carrier Summary

Frequency:	905.2	MHz
Maximum Permissible Exposure (MPE):	603.47	µW/cm^2
Maximum power density at ground level:	0.00306	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.00051	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Procom	CXL 900-3LW	135	0	1.22	0.003064	0.000508	0.003064	0.000508

Sprint
Shelton-Trumbull
Carrier Summary

Frequency:	1990	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	1.64115	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.16411	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RFS	APXVSPP18-C-A20	150	0	3804	0.818674	0.081867	1.518306	0.151831
RFS	APXVSPP18-C-A20	150	120	3804	0.818674	0.081867	1.518306	0.151831
RFS	APXVSPP18-C-A20	150	240	3804	0.818674	0.081867	1.518306	0.151831

Sprint
Shelton-Trumbull
Carrier Summary

Frequency:	1900	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	1.64115	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.16411	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RFS	APXVSPP18-C-A20	150	0	3804	0.818674	0.081867	1.518306	0.151831
RFS	APXVSPP18-C-A20	150	120	3804	0.818674	0.081867	1.518306	0.151831
RFS	APXVSPP18-C-A20	150	240	3804	0.818674	0.081867	1.518306	0.151831

Sprint
Shelton-Trumbull
Carrier Summary

Frequency:	869	MHz
Maximum Permissible Exposure (MPE):	579.33	µW/cm^2
Maximum power density at ground level:	0.35514	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.0613	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RFS	APXVSPP18-C-A20	150	0	1084	0.343791	0.059343	0.353184	0.060964
RFS	APXVSPP18-C-A20	150	120	1084	0.344919	0.059537	0.353184	0.060964
RFS	APXVSPP18-C-A20	150	240	1084	0.343791	0.059343	0.353184	0.060964

Sprint
Shelton-Trumbull
Carrier Summary

Frequency:	862	MHz
Maximum Permissible Exposure (MPE):	574.67	µW/cm^2
Maximum power density at ground level:	0.35514	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.0618	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
RFS	APXVSPP18-C-A20	150	0	1084	0.343791	0.059824	0.353184	0.061459
RFS	APXVSPP18-C-A20	150	120	1084	0.344919	0.060021	0.353184	0.061459
RFS	APXVSPP18-C-A20	150	240	1084	0.343791	0.059824	0.353184	0.061459

Sprint
Shelton-Trumbull
Carrier Summary

Frequency:	2500	MHz
Maximum Permissible Exposure (MPE):	1000	µW/cm^2
Maximum power density at ground level:	0.95082	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.09508	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
ARGUS	LLPX310R	156	0	1542	0.48895	0.048895	0.894322	0.089432
ARGUS	LLPX310R	156	120	1542	0.48895	0.048895	0.894322	0.089432
ARGUS	LLPX310R	156	240	1542	0.492703	0.04927	0.894322	0.089432

Sprint (Decommissioned)
Shelton-Trumbull
Carrier Summary

Frequency:	862	MHz
Maximum Permissible Exposure (MPE):	574.67	µW/cm^2
Maximum power density at ground level:	0	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
ANDREW	DB844H90E-XY	169	0	0	0	0	0	0
ANDREW	DB844H90E-XY	169	120	0	0	0	0	0
ANDREW	DB844H90E-XY	169	240	0	0	0	0	0

State of Connecticut
Shelton-Trumbull
Carrier Summary

Frequency:	450	MHz
Maximum Permissible Exposure (MPE):	300	µW/cm^2
Maximum power density at ground level:	0.21135	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.07045	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Generic	Omni	186	0	100	0.21135	0.07045	0.21135	0.07045

State of Connecticut
Shelton-Trumbull
Carrier Summary

Frequency:	770	MHz
Maximum Permissible Exposure (MPE):	513.33	µW/cm^2
Maximum power density at ground level:	0.1108	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.02158	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
SINCLAIR	SC442-HF1LDF	190	0	100	0.084559	0.016472	0.084559	0.016472
SINCLAIR	SC479-HF1LDF	189	0	100	0.028996	0.005649	0.028996	0.005649

State of Connecticut
Shelton-Trumbull
Carrier Summary

Frequency:	850	MHz
Maximum Permissible Exposure (MPE):	566.67	µW/cm^2
Maximum power density at ground level:	0.03769	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.00665	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
ANDREW	DB809	206	0	100	0.037689	0.006651	0.037689	0.006651

State of Connecticut
Shelton-Trumbull
Carrier Summary

Frequency:	150	MHz
Maximum Permissible Exposure (MPE):	200	µW/cm^2
Maximum power density at ground level:	0.17738	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.08869	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
Generic	Omni	211	0	100	0.097649	0.048824	0.097649	0.048824
Generic	Omni	191	0	100	0.098139	0.04907	0.098139	0.04907

US Department of Homeland S
Shelton-Trumbull
Carrier Summary

Frequency:	160	MHz
Maximum Permissible Exposure (MPE):	200	µW/cm^2
Maximum power density at ground level:	0.12481	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.06241	%

					On Axis		Area	
Antenna Make	**Model**	**Height (feet)**	**Orientation (degrees true)**	**ERP (Watts)**	**Max Power Density (µW/cm^2)**	**Percent of MPE**	**Max Power Density (µW/cm^2)**	**Percent of MPE**
ANDREW	DB616E-BC	111	0	100	0.124815	0.062407	0.124815	0.062407

EXHIBIT 4:

Letter of Authorization

T-SQUARED SITE SERVICES
2500 Highland Road | Suite 201
Hermitage, PA 16148 | 724.308.7855
www.t-sqrd.com

AMERICAN TOWER®
CORPORATION

LETTER OF AUTHORIZATION

SITE NO: See Site List Below **SITE NAME: See Site List Below**

ADDRESS: See Site List Below

I, Margaret Robinson, Senior Counsel, US Tower Division on behalf of American Tower*, owner of the tower facility located at the address identified below (the "Tower Facilities"), do hereby authorize SIGFOX NIP LLC dba SIGFOX S.A., its successors and assigns, to act as American Tower's non-exclusive agent for the purpose of filing and securing any zoning, land-use, building permit and/or electrical permit application(s) and approvals of the applicable jurisdiction for and to conduct the construction of the installation of antennas and related telecommunications equipment on the Tower Facility located at the above address. This installation shall not affect adjoining lands and will occur only within the area leased by American Tower.

American Tower understands that the application may be denied, modified or approved with conditions. The above authorization is limited to the acceptance by American Tower of conditions related to American Tower's installation. Any such conditions of approval or modifications will not be effective unless approved in writing by American Tower.

The above authorization does not permit SIGFOX NIP LLC dba SIGFOX S.A to modify or alter any existing permit(s) and/or zoning or land-use conditions or impose any additional conditions unrelated to American Tower's installation of telecommunications equipment without the prior written approval of American Tower.

Sites Authorized (continued on the next page):

CT9000	ATC 302469
CT9001	ATC 88018
CT9081	ATC 88017
CT9122	ATC 88008
CT9123	ATC 88011
CT9184	ATC 88010

AMERICAN TOWER®
CORPORATION

Asset Number	Site Name	Site Address	Site City	Site State	Site Zip
302469	Bridgeport CT 2	1069 Connecticut Avenue	Bridgeport	Connecticut	06607-1226
88018	STAMFORD (KATOONA)	168 Catoona Lane	Stamford	Connecticut	06902-4573
88017	SHELTON-TRUMBULL	14 OXFORD DRIVE/BOOTH HILL RD	SHELTON	Connecticut	06484-3455
88008	BETHANY CT	93 Old Amity Road	Bethany	Connecticut	06524-3400
88011	EAST KILLINGLY NORTH	1375 North Road	Killingly	Connecticut	06241-1404
88010	DURHAM CT	373 CHAMBERLAIN HILL RD	Higganum	Connecticut	06441-4062

Signature: _____

Margaret Robinson, Senior Counsel
US Tower Division

NOTARY BLOCK

COMMONWEALTH OF MASSACHUSETTS
County of Middlesex

This instrument was acknowledged before me by Margaret Robinson, Senior Counsel of American Tower (Tower Facility owner), personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same.

WITNESS my hand and official seal, this 18th day of June, 2019.

NOTARY SEAL: MELISSA ANN METZLER
Notary Public
Commonwealth of Massachusetts
My Commission Expires March 14, 2025

Notary Public _____
My Commission Expires: March 14, 2025

* American Tower as used herein is defined as American Tower Corporations and any of its affiliates or subsidiaries.

EXHIBIT 5:

Proof of Mailing to Chief Elected Official

T-SQUARED SITE SERVICES
2500 Highland Road | Suite 201
Hermitage, PA 16148 | 724.308.7855
www.t-sqrd.com

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

T-SQUARED SITE SERVICES
2500 Highland Road | Suite 201
Hermitage, PA 16148 | 724.308.7855
www.t-sqrd.com

FedEx Shipment Receipt

Address Information

Ship to:	**Ship from:**
Mark A. Lauretti, Mayor City of Shelton 54 Hill Street SHELTON, CT 06484 US (203) 924-1555	T-Squared Site Services, LLC 2500 Highland Rd Suite 201 Hermitage, PA 16148 US 7243087855

Shipment Information:
Tracking no.: 776015556378
Ship date: 08/19/2019
Estimated shipping charges: 8.65 USD

Package Information
Pricing option: FedEx One Rate
Service type: FedEx Express Saver
Package type: FedEx Envelope
Number of packages: 1
Total weight:
Declared Value: 0.00 USD
Special Services:
Pickup/Drop-off: Drop off package at FedEx location

Billing Information:
Bill transportation to: My Account - 350-350
Your reference:
P.O. no.:
Invoice no.:
Department no.:

Thank you for shipping online with FedEx ShipManager at fedex.com.

Please Note

T-SQUARED SITE SERVICES
2500 Highland Road | Suite 201
Hermitage, PA 16148 | 724.308.7855
www.t-sqrd.com

EXHIBIT 6:

Proof of Mailing to Tower Owner/Property Owner

T-SQUARED SITE SERVICES
2500 Highland Road | Suite 201
Hermitage, PA 16148 | 724.308.7855
www.t-sqrd.com

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.

Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

T-SQUARED SITE SERVICES
2500 Highland Road | Suite 201
Hermitage, PA 16148 | 724.308.7855
www.t-sqrd.com

FedEx Shipment Receipt

Address Information

Ship to:	**Ship from:**
Mr. Jason Hastie	T-Squared Site Services, LLC
American Tower Corp.	
10 Presidential Way	2500 Highland Rd
	Suite 201
WOBURN, MA	Hermitage, PA
01801	16148
US	US
781-926-7485	7243087855

Shipment Information:
Tracking no.: 775621996459
Ship date: 07/02/2019
Estimated shipping charges: 19.70 USD

Package Information
Pricing option: FedEx One Rate
Service type: FedEx Express Saver
Package type: FedEx Large Box
Number of packages: 1
Total weight:
Declared Value: 0.00 USD
Special Services:
Pickup/Drop-off: Drop off package at FedEx location

Billing Information:
Bill transportation to: My Account - 350-350
Your reference:
P.O. no.:
Invoice no.:
Department no.:

Thank you for shipping online with FedEx ShipManager at fedex.com.

Please Note

T-SQUARED SITE SERVICES
2500 Highland Road | Suite 201
Hermitage, PA 16148 | 724.308.7855
www.t-sqrd.com

EXHIBIT 7:

Additional Information

T-SQUARED SITE SERVICES
2500 Highland Road | Suite 201
Hermitage, PA 16148 | 724.308.7855
www.t-sqrd.com

Craig A. Russo, P.E.

From: Max Houston <max.houston.external@sigfox.com>
Sent: Tuesday, August 13, 2019 8:57 AM
To: Craig A. Russo, P.E.
Cc: mark.t@t-sqrd.com; 'Kevin Exley'; Natalie Kenady
Subject: RE: CT9081

Hi Craig,

SIGFOX does not have a backup power option for any of the sites – no battery back up.

Max Houston
Construction Manager
SIGFOX, Inc.
850-543-8341
max.houston.external@sigfox.com

From: Craig A. Russo, P.E. <craig.r@t-sqrd.com>
Sent: Tuesday, August 13, 2019 7:52 AM
To: Max Houston <max.houston.external@sigfox.com>
Cc: mark.t@t-sqrd.com; 'Kevin Exley' <kevin.e@t-sqrd.com>
Subject: RE: CT9081

Good Morning Max,

One more question about this site. The Siting Council is asking if SIGFOX's equipment cabinet will include a battery back-up and if not, what are the back-up options for the facility?

Thanks, Max!

Craig A. Russo, P.E. | Engineer
T-Squared Site Services
724.308.7855 (o) | 724.333.0517 (m)

From: Max Houston <max.houston.external@sigfox.com>
Sent: Wednesday, August 7, 2019 10:40 AM
To: Craig A. Russo, P.E. <craig.r@t-sqrd.com>
Cc: mark.t@t-sqrd.com; 'Kevin Exley' <kevin.e@t-sqrd.com>
Subject: Re: CT9081

Craig,

Receive only!

Max Houston
Construction Manager
SIGFOX, Inc.
max.houston.external@sigfox.com
850-543-8341

-------- Original message --------
From: "Craig A. Russo, P.E." <craig.r@t-sqrd.com>
Date: 8/7/19 9:28 AM (GMT-06:00)
To: Max Houston <max.houston.external@sigfox.com>
Cc: mark.t@t-sqrd.com, 'Kevin Exley' <kevin.e@t-sqrd.com>
Subject: CT9081

Good Moring Max,

We received review comments back from the Connecticut State Siting Council regarding the above referenced site. One comment states:

- *It is unclear if the proposed satellite dish to be mounted on the H-Frame at grade is a receive only antenna or both transmit and receive. If the antenna transmits signal, the RF Emissions Compliance Report would require updating.*

Can you provide any clarification on this? Is the dish set to receive only or set to receive and transmit?

Thanks!

Craig A. Russo, P.E. | Engineer
T-Squared Site Services
2500 Highland Road, Suite 201
Hermitage, PA 16148
724.308.7855 (o) | 724.333.0517 (m)