August 20, 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 373 Chamberlain Hill Road, Higganum, CT 06441**

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 373 Chamberlain Hill Road, Higganum, CT 06441(the "Property"). The existing 365-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 Town of Haddam and American Tower Corporation.

Background

The existing ATC facility consists of a 365-foot self-support tower located within an approximate 10,000 square foot compound positioned +/- 1700-feet south of Chamberlain Hill Road. 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 373 Chamberlain Hill Road, Higganum, CT 06441 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 315-feet above ground level. They propose to add one (1) equipment cabinet within the adjacent shelter. There is no back-up plan for the SIGFOX equipment, therefore, no batteries or generators will be a part of this project. The SIGFOX microwave unit is set to receive only.

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 315-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 373 Chamberlain Hill Road, Higganum, CT 06441 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,

Digitally signed by Craig Russo
DN: c=US, st=Pennsylvania, l=Hermitage, o=T-Squared Site Services, ou=T-Squared Site Services, cn=Craig Russo, email=craig.r@t-sqrd.com
Date: 2019.08.20 10:57:17 -04'00'

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 Local Municipality Chief Elected Official
Exhibit-6: Proof of Mailing to Tower Owner/Property Owner
Exhibit-7: Additional Information

Copies to:

Ms. Lizz Milardo, First Selectman
Town of Haddam
Town Office Building
30 Field Park Drive
Haddam, CT 06438

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

One network A billion dreams

SITE NUMBER: CT9184

373 CHAMBERLAIN HILL RD
HIGGANUM, CT 06441
MIDDLESEX COUNTY

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

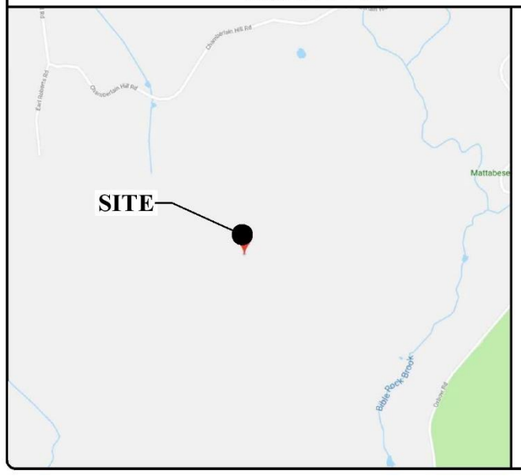
SITE INFORMATION

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:	CT9184
911 SITE ADDRESS	373 CHAMBERLAIN HILL RD HIGGANUM, CT 06441
TOWER OWNER: ADDRESS:	AMERICAN TOWER CORP. 116 HUNTINGTON AVE. 11TH FLOOR BOSTON, MA 02116
OWNER SITE NUMBER:	88010
LATITUDE (NAD 83): LONGITUDE (NAD 83):	41.49611° -72.61813°
JURISDICTION:	MIDDLESEX COUNTY
PARCEL OWNER: ADDRESS:	AMERICAN TOWER CORP. 116 HUNTINGTON AVE. 11TH FLOOR BOSTON, MA 02116
GROUND ELEVATION:	590' AMSL
STRUCTURE TYPE:	SELF SUPPORT
STRUCTURE HEIGHT:	366' (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
- 2018 CONNECTICUT 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: 2019.07.03 14:43:18 -04'00'

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	☐	☐	☐

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	7.3.19	KE	B
PRELIMINARY	7.2.19	KE	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.

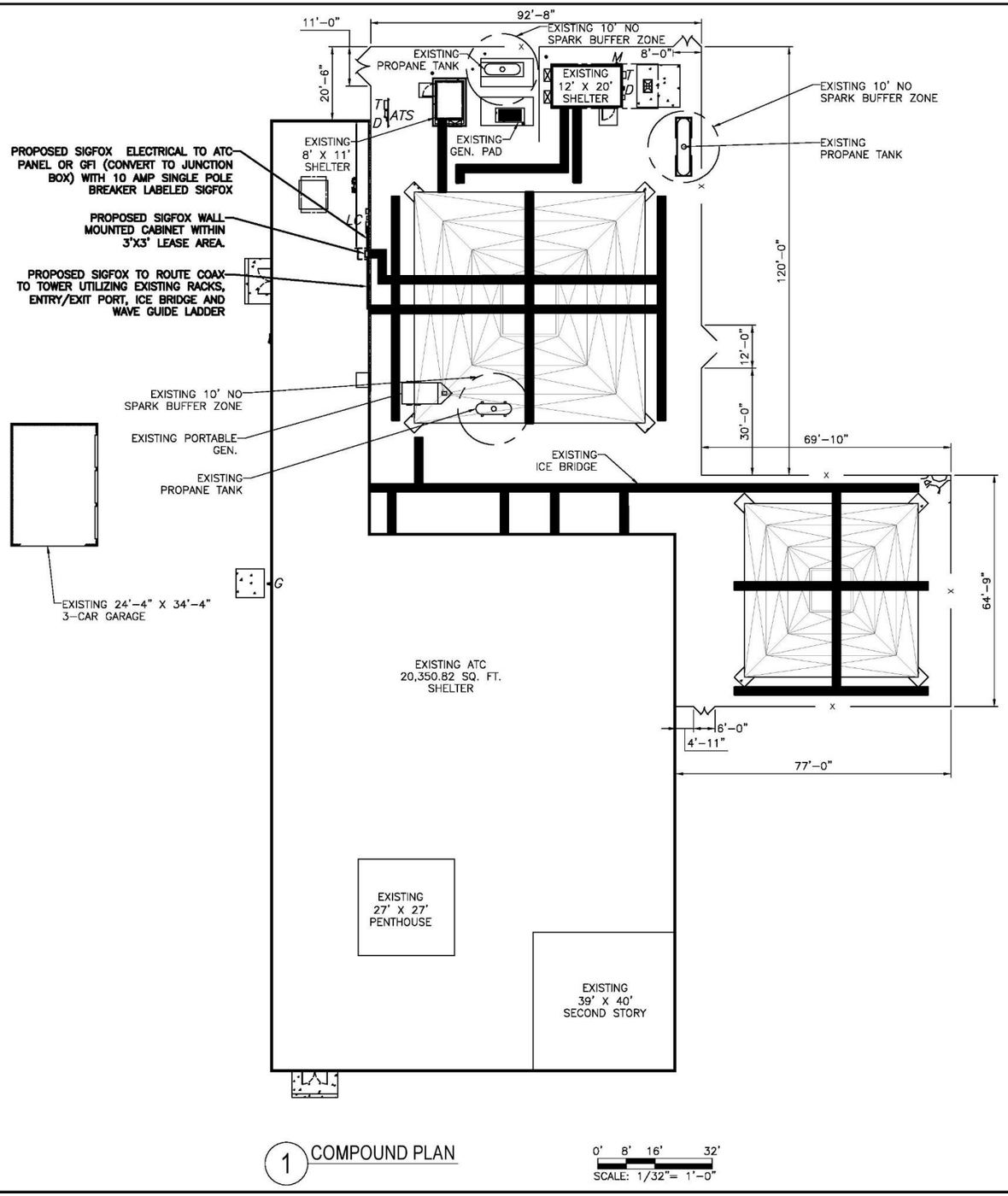
SITE INFORMATION

CT9184
373 CHAMBERLAIN HILL RD
HIGGANUM, CT 06441
MIDDLESEX COUNTY

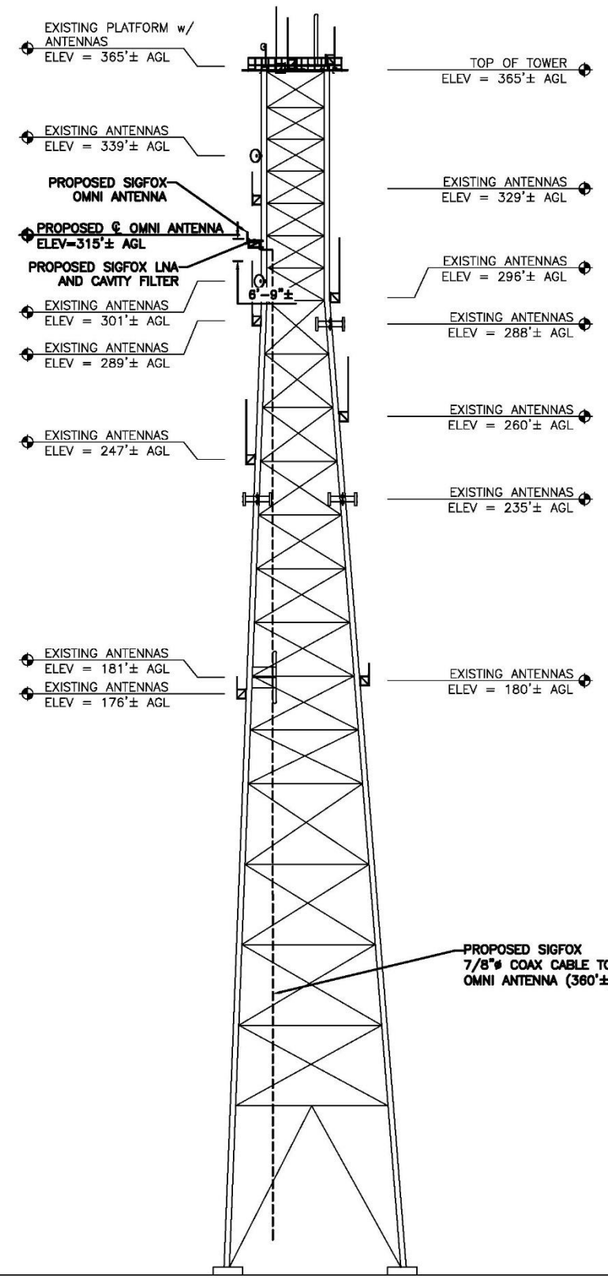
SHEET TITLE

TITLE SHEET

SHEET NUMBER	
T-1	SCALE: AS NOTED
	DRAWN BY: JW
	CHECKED BY: KE
	DATE: 7/3/19



1 COMPOUND PLAN



2 ELEVATION

NOT TO SCALE

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

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

REVISIONS

DESCRIPTION	DATE	BY	REV
FINAL CD	7.3.19	KE	B
PRELIMINARY	7.2.19	KE	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.

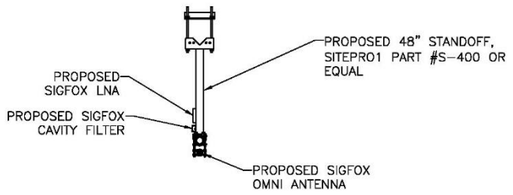
SITE INFORMATION

CT9184
373 CHAMBERLAIN HILL RD
HIGGANUM, CT 06441
MIDDLESEX COUNTY

SHEET TITLE

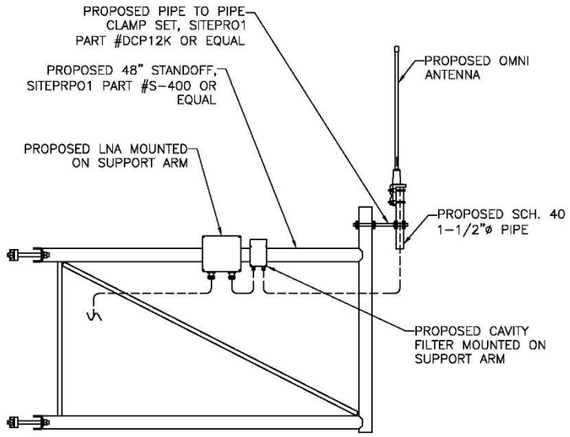
COMPOUND PLAN & ELEVATION

SHEET NUMBER	SCALE: AS NOTED
C-1	DRAWN BY: JW
	CHECKED BY: KE
	DATE: 7/3/19

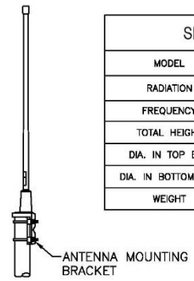


1 PROPOSED ANTENNA PLAN
N.T.S.

APPROX TRUE NORTH

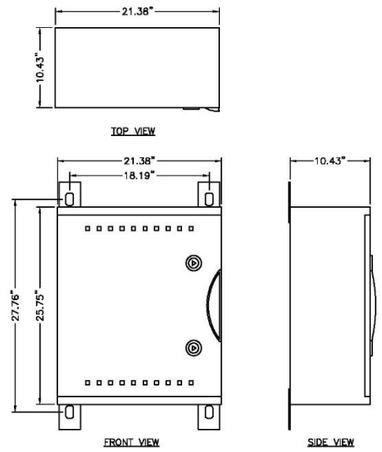


2 ANTENNA MOUNTING DETAIL
N.T.S.

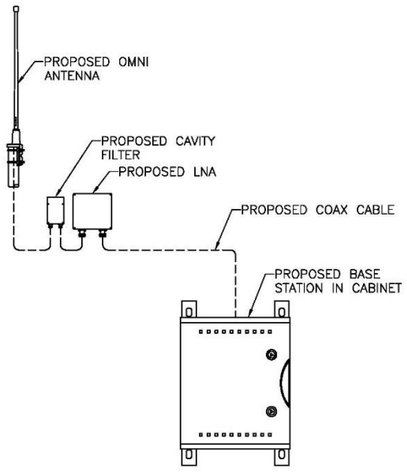


SPECIFICATIONS	
MODEL	CXL 900-3LW/...
RADIATION	OMNIDIRECTIONAL
FREQUENCY	WITHIN 824-960 MHz
TOTAL HEIGHT	700 MM (27.5")
DIA. IN TOP END	12 MM (0.47")
DIA. IN BOTTOM END	16 MM (0.63"
WEIGHT	660 G (1.5 LBS)

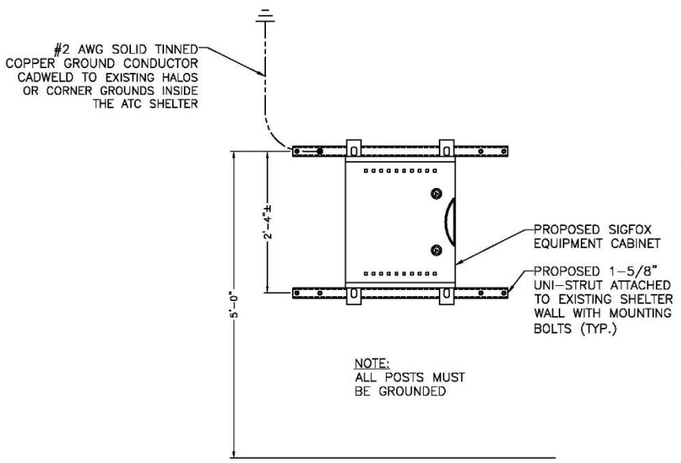
3 OMNI ANTENNA DETAIL
N.T.S.



4 SIGFOX EQUIPMENT CABINET
N.T.S.



6 EQUIPMENT SCHEMATIC
N.T.S.



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

5 NOT USED
N.T.S.

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

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

REVISIONS

DESCRIPTION	DATE	BY	REV
FINAL CD	7.3.19	KE	B
PRELIMINARY	7.2.19	KE	A

PROFESSIONAL SEAL

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

SITE INFORMATION

CT9184
373 CHAMBERLAIN HILL RD
HIGGANUM, CT 06441
MIDDLESEX COUNTY

SHEET TITLE

ANTENNA PLAN AND DETAILS

SHEET NUMBER **A-1**

SCALE: AS NOTED
DRAWN BY: JW
CHECKED BY: KE
DATE: 7/3/19

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

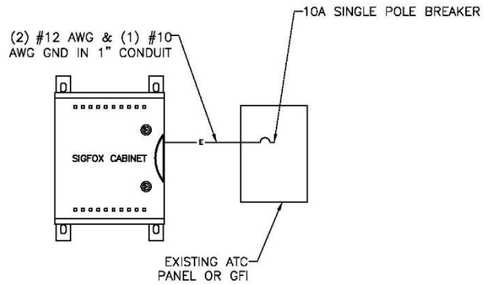
TOTAL CONNECTED LOAD (VA): 1,440
MAXIMUM LOAD CURRENT (A): 6
PANEL CAPACITY (A): 100
SPARE CAPACITY (A): 96

1 PANEL SCHEDULE
N.T.S.

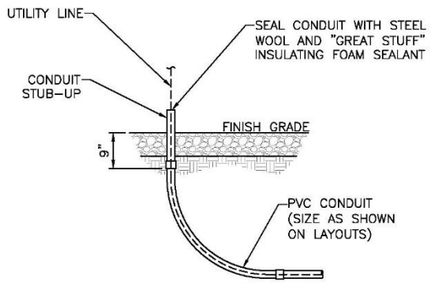
ELECTRICAL NOTES

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.

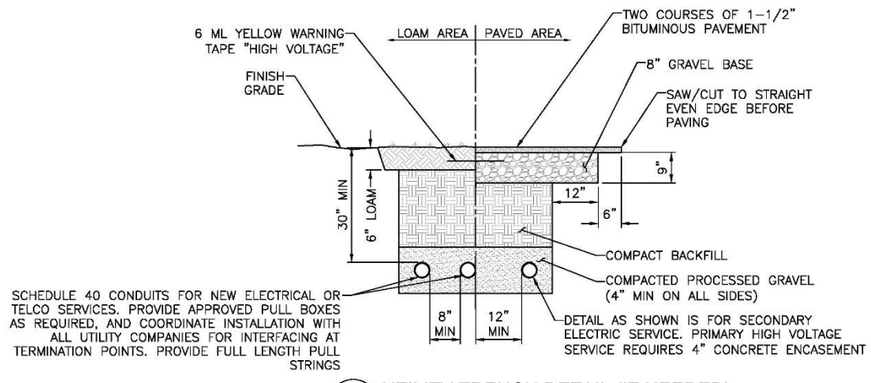


2 ELECTRICAL ONE-LINE DIAGRAM
N.T.S.



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.

GENERAL NOTES:

1. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITIES COMPANY OR OTHER PUBLIC AUTHORITIES.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY, OR MUNICIPAL AUTHORITIES.
3. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK. MINOR OMISSIONS OR ERRORS IN THE BID DOCUMENTS SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR THE OVERALL INTENT OF THESE DRAWINGS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED AS A RESULT OF CONSTRUCTION OF THIS FACILITY.
5. THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
6. THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING A BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
7. CONTRACTOR SHALL VERIFY ANTENNA ELEVATIONS AND AZIMUTHS WITH RF ENGINEERING PRIOR TO INSTALLATION.
8. TRANSMITTER EQUIPMENT AND ANTENNAS ARE DESIGNED TO MEET ANSI/EIA/TIA 222-G (NJ EDITION) REQUIREMENTS.
9. ALL STRUCTURAL ELEMENTS SHALL NOT BE DIPPED GALVANIZED STEEL.
10. CONTRACTOR SHALL MAKE A UTILITY "ONE CALL" TO LOCATE ALL UTILITIES PRIOR TO EXCAVATING.
11. IF ANY UNDERGROUND UTILITIES OR STRUCTURES EXIST BENEATH THE PROJECT AREA, CONTRACTOR MUST LOCATE IT AND CONTACT THE APPLICANT & THE OWNER'S REPRESENTATIVE.
12. OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION BY TECHNICIANS APPROXIMATELY 2 TIMES PER MONTH.
13. THIS PLAN IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
14. THE PROPOSED FACILITY WILL CAUSE ONLY A "DE MINIMIS" INCREASE IN STORMWATER RUNOFF. THEREFORE, NO DRAINAGE STRUCTURES ARE PROPOSED.
15. NO SIGNIFICANT NOISE, SMOKE, DUST, OR ODOR WILL RESULT FROM THIS FACILITY.
16. THE FACILITY IS UNMANNED AND NOT INTENDED FOR HUMAN HABITATION (NO HANDICAP ACCESS REQUIRED).
17. THE FACILITY IS UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SANITARY SEWER SERVICE.

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

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

REVISIONS

DESCRIPTION	DATE	BY	REV
FINAL CD	7.3.19	KE	B
PRELIMINARY	7.2.19	KE	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

CT9184
373 CHAMBERLAIN HILL RD
HIGGANUM, CT 06441
MIDDLESEX COUNTY

SHEET TITLE

ELECTRICAL DETAILS

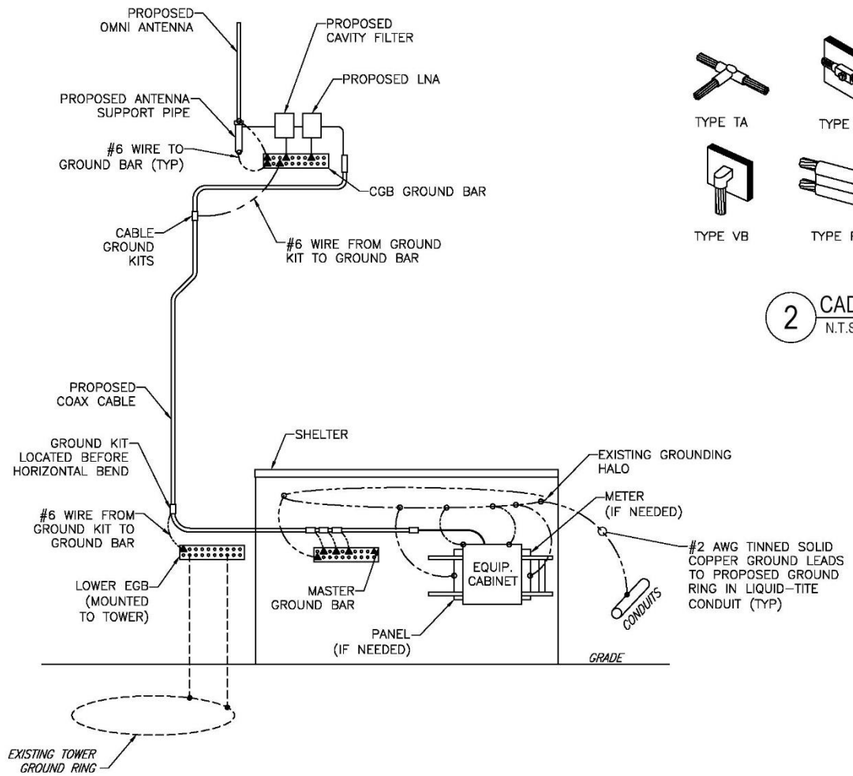
SHEET NUMBER	SCALE: AS NOTED
E-1	DRAWN BY: JW
	CHECKED BY: KE
	DATE: 7/3/19

GROUNDING NOTES

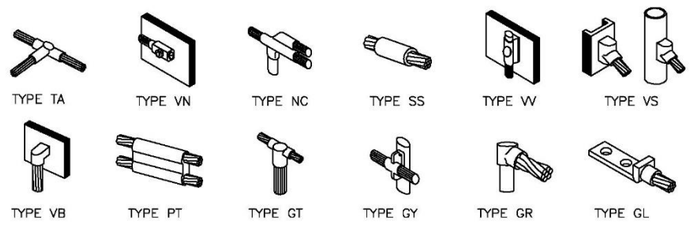
1. GROUNDING SHALL COMPLY WITH BED ART. 250. ADDITIONALLY, GROUNDING, BONDING AND LIGHTING PROTECTION SHALL BE DONE IN ACCORDANCE WITH METRO MOD CELL SITE GROUNDING STANDARDS.
2. GROUND CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
3. USE #6 COPPER 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

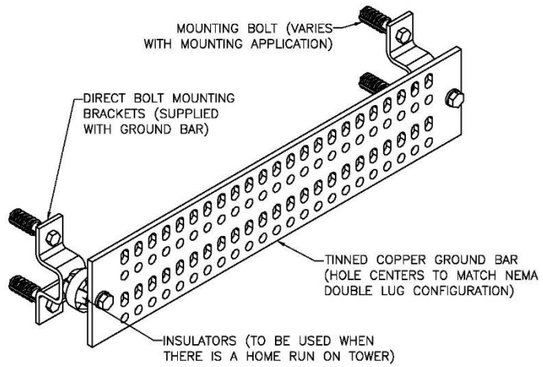
▲	COMPRESSION FITTING CONNECTION
•	EXOTHERMIC WELD CONNECTION
— — — —	PROPOSED GROUND WIRING
- - - - - - -	EXISTING GROUND WIRING



1 GROUNDING RISER DIAGRAM
N.T.S.



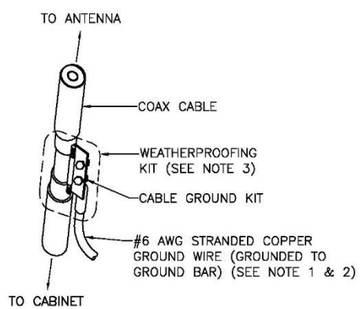
2 CADWELD GROUNDING CONNECTION DETAILS
N.T.S.



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.



4 NOT USED
N.T.S.

5 NOT USED
N.T.S.

6 COAXIAL CABLE GROUNDING
N.T.S.

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

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

REVISIONS

DESCRIPTION	DATE	BY	REV
FINAL CD	7.3.19	KE	B
PRELIMINARY	7.2.19	KE	A

PROFESSIONAL SEAL

SITE INFORMATION

CT9184
373 CHAMBERLAIN HILL RD
HIGGANUM, CT 06441
MIDDLESEX 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	:	**365 ft Self Supported Tower**
ATC Site Name	:	**Durham CT, CT**
ATC Site Number	:	**88010**
Engineering Number	:	**OAA744811_C3_02**
Proposed Carrier	:	**Sigfox S.A.**
Carrier Site Name	:	**CT9184_ATC_88010**
Carrier Site Number	:	**CT9184**
Site Location	:	**373 Chamberlain Hill Rd** **Higganum, CT 06441-4062** **41.495900,-72.617800**
County	:	**Middlesex**
Date	:	**January 30, 2019**
Max Usage	:	**103%**
Result	:	**Pass**

Prepared By:
Robert D. Barrett, E.I.
Structural Engineer II

Robert D. Barrett

Reviewed By:

STATE OF CONNECTICUT
ESHA KAUSHAL MODI
32599
LICENSED
PROFESSIONAL ENGINEER

Authorized by "EOR"
Jan 31 2019 5:18 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 365 ft self supported tower to reflect the change in loading by Sigfox S.A.

Supporting Documents

Tower Drawings	CSEI Analysis: ATC Eng. #41405921, dated January 22, 2008
Foundation Drawing	Rose, Chulkoff & Rose Job #55101, dated October 21, 1955 CSEI Analysis: ATC Eng. #41405921, dated January 22, 2008
Modifications	CSEI Project #06175, dated June 26, 2006 ATC Project #59445536, dated November 6, 2014

Analysis

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

Basic Wind Speed:	101 mph (3-Second Gust, V_{asd}) / 130 mph (3-Second Gust, V_{ult})
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

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
365.0	376.0	1	Kreco CO-41A	Platform w/ Handrails	(1) 7/8" Coax	Eversource Energy
	374.0	1	20' Dipole		-	Other
	373.0	1	dbSpectra DS9A09F36D-N		(5) 1 1/4" Coax	Eversource Energy
		3	TX RX Systems 101-68-10-X-03N		(2) 1 5/8" Coax	Marcus Comm.
	372.0	1	Rohde & Schwarz ADD090		(2) 7/8" Coax	US Dept Of Homeland Security
	366.0	1	Bird 429-83H-01-T		(1) 1/2" Coax	Eversource Energy
339.0	339.0	2	4' Dish w/ Radome	Stand-Off	(2) 1/2" Coax	Marcus Comm.
329.0	329.0	1	10' Omni	Side Arm	(1) 7/8" Coax	
301.0	301.0	1	RFS SBX4-W60AC	Stand-Off	(2) E60	Eversource Energy
296.0	296.0	1	20' FM	Leg	-	Other
289.0	289.0	1	Sinclair SC281-L	Side Arm	(1) 7/8" Coax	US Dept Of Homeland Security
288.0	288.0	2	Andrew DB844H90E-XY	Sector Frame	(2) 1 5/8" Coax	Sprint Nextel
260.0	260.0	1	Sinclair SC281-L	Side Arm	(1) 7/8" Coax	US Dept Of Homeland Security
247.0	247.0	1	Sinclair SC281-L	Side Arm	(1) 7/8" Coax	
235.0	235.0	2	Decibel DB844H90E-XY	Sector Frames	(4) 1 5/8" Coax	Sprint Nextel
		2	Andrew 844G65VTZASX			
181.0	181.0	1	Comprod 531-70HD	Leg	(1) 7/8" Coax	Eversource Energy
180.0	180.0	1	Telewave ANT450F6	Side Arm	(1) 7/8" Coax	
176.0	176.0	1	Kreco CO-41A	Side Arm	(1) 7/8" Coax	

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
No loading considered as to be removed						

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
315.0	315.0	1	Procom CXL 900-3LW	Side Arm	(1) 7/8" Coax	Sigfox S.A.
		1	5" x 3" x 2" Cavity Filter			
		1	Low Noise Amplifier			

[1]Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Install proposed coax anywhere on tower.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Legs	77%	Pass
Diagonals	96%	Pass
Truss Diagonals	90%	Pass
Horizontals	103%	Pass
Truss Horizontals	43%	Pass
Anchor Bolts	57%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Uplift (Kips)	356.2	99%
Axial (Kips)	536.1	10%

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.

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

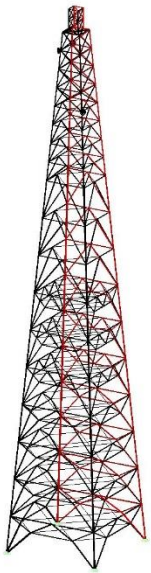
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

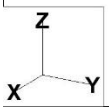
All assets of American Tower Corporation, its affiliates and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with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

American Tower Corp., Project: "2019.01.30 - Sigfox S.A. - OAA744811_C3_02"
Tower Version 15.30, 5:56:54 PM Wednesday, January 30, 2019
Undeformed geometry displayed





Project Name : 88010 - Durham CT, CT
Project Notes: OAA744811_C3_02 - Sigfox S.A.
Project File : N:\L2 - ATC\88010\2019.01.30 - Sigfox S.A. - OAA744811_C3_02\2019.01.30 - Sigfox S.A. - OAA744811_C3_02.TCW
Date run : 5:34:15 PM Wednesday, January 30, 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\88010\2019.01.30 - Sigfox S.A. - OAA744811_C3_02\2019.01.30 - Sigfox S.A. - OAA744811_C3_02.eia

*** Analysis Results:

Maximum element usage is 103.09% for Angle "H 11P" in load case "W -90" NG

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	392.69	68.73	3.88	0.00
W 0	OX	383.61	67.09	3.71	0.00
W 0	OXY	-204.06	43.54	4.69	0.00
W 0	OY	-206.55	44.81	4.82	0.00
W 180	OP	-205.96	44.99	4.88	0.00
W 180	OX	-199.60	43.31	4.74	0.00
W 180	OXY	382.33	67.21	3.75	0.00
W 180	OY	388.92	68.54	3.92	0.00
W 45	OP	536.12	89.82	2.54	0.00
W 45	OX	92.90	30.06	4.95	0.00
W 45	OXY	-356.23	68.54	5.03	0.00
W 45	OY	92.90	29.86	4.92	0.00
W -45	OP	96.02	31.25	5.10	0.00
W -45	OX	531.93	89.40	2.56	0.00
W -45	OXY	93.54	29.28	4.82	0.00
W -45	OY	-355.81	68.78	5.06	0.00
W 90	OP	393.16	68.85	3.91	0.00
W 90	OX	-206.89	44.96	4.84	0.00
W 90	OXY	-203.72	43.44	4.68	0.00
W 90	OY	383.15	67.00	3.69	0.00
W -90	OP	-205.26	44.99	4.88	0.00
W -90	OX	390.06	68.72	3.94	0.00
W -90	OXY	380.89	66.98	3.73	0.00
W -90	OY	-199.99	43.25	4.72	0.00
W 0 Ice	OP	223.73	33.00	2.96	0.00
W 0 Ice	OX	218.66	32.41	2.91	0.00
W 0 Ice	OXY	76.36	7.26	4.17	0.00
W 0 Ice	OY	78.49	7.25	4.21	0.00
W 180 Ice	OP	81.82	7.55	4.25	0.00
W 180 Ice	OX	80.73	7.66	4.22	0.00
W 180 Ice	OXY	214.86	32.22	2.88	0.00
W 180 Ice	OY	219.84	32.76	2.93	0.00
W 45 Ice	OP	259.71	39.37	2.53	0.00
W 45 Ice	OX	150.02	20.30	3.65	0.00
W 45 Ice	OXY	37.86	0.98	4.45	0.00
W 45 Ice	OY	149.65	20.26	3.64	0.00
W -45 Ice	OP	153.35	20.65	3.70	0.00
W -45 Ice	OX	256.19	39.11	2.52	0.00
W -45 Ice	OXY	146.49	20.12	3.61	0.00
W -45 Ice	OY	41.22	0.79	4.49	0.00
W 90 Ice	OP	223.82	33.02	2.96	0.00
W 90 Ice	OX	78.79	7.28	4.22	0.00
W 90 Ice	OXY	76.43	7.26	4.17	0.00
W 90 Ice	OY	218.20	32.38	2.91	0.00
W -90 Ice	OP	81.93	7.57	4.25	0.00
W -90 Ice	OX	220.42	32.82	2.94	0.00
W -90 Ice	OXY	214.59	32.17	2.88	0.00
W -90 Ice	OY	80.31	7.61	4.21	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	-60.80	-32.05	-392.69	68.73	-1.57	-3.55	3.88	-4.64	0.00
W 0	OX	-58.85	32.20	-383.61	67.09	1.42	-3.42	3.71	4.60	0.00
W 0	OXY	-40.13	-16.90	204.06	43.54	0.51	-4.66	4.69	4.05	0.00
W 0	OY	-41.61	16.63	206.55	44.81	-0.45	-4.80	4.82	-4.05	0.00
W 180	OP	41.82	16.61	205.96	44.99	-0.45	4.84	4.88	4.06	0.00
W 180	OX	40.06	-16.45	199.60	43.31	0.51	4.71	4.74	-4.06	0.00
W 180	OXY	59.02	32.14	-382.33	67.21	1.42	3.47	3.75	-4.62	0.00
W 180	OY	60.76	31.72	-388.92	68.54	-1.57	3.60	3.92	4.65	0.00
W 45	OP	-63.43	-63.60	-536.12	89.82	1.80	-1.78	2.54	0.00	0.00
W 45	OX	-28.08	-10.73	-92.90	30.06	4.22	-2.58	4.95	6.31	0.00
W 45	OXY	-48.54	48.38	356.23	68.54	3.54	-3.56	5.03	-0.00	0.00
W 45	OY	-10.55	-27.93	-92.90	29.86	2.57	-4.20	4.92	-6.31	0.00
W -45	OP	-29.12	11.34	-96.02	31.25	-4.34	-2.67	5.10	-6.33	0.00
W -45	OX	-62.29	64.13	-531.93	89.40	-1.93	-1.69	2.56	-0.03	0.00
W -45	OXY	-9.67	27.64	-93.54	29.28	-2.53	-4.10	4.82	6.31	0.00
W -45	OY	-49.26	48.00	-355.81	68.78	-3.51	-3.65	5.06	0.01	0.00
W 90	OP	-31.84	-60.99	-393.16	68.85	3.57	1.59	3.91	4.64	0.00
W 90	OX	16.55	-41.80	206.89	44.96	4.82	0.44	4.84	4.05	0.00
W 90	OXY	-16.98	-39.98	203.72	43.44	4.65	-0.52	4.68	-4.05	0.00
W 90	OY	32.31	-58.70	-383.15	67.00	3.41	-1.40	3.69	-4.60	0.00
W -90	OP	18.42	41.89	205.26	44.99	-4.86	0.44	4.88	-4.06	0.00
W -90	OX	-31.69	60.97	-390.06	68.72	-3.61	1.59	3.94	4.65	0.00
W -90	OXY	32.15	58.76	-380.89	66.98	-3.45	-1.39	3.73	4.61	0.00
W -90	OY	-18.61	39.94	199.99	43.25	-4.69	-0.52	4.72	4.06	0.00
W 0 Ice	OP	-26.03	-20.28	-223.73	33.00	-2.56	1.48	2.96	-1.03	0.00
W 0 Ice	OX	-25.29	20.27	-218.66	32.41	2.49	1.51	2.91	1.01	0.00
W 0 Ice	OXY	1.68	7.06	-76.36	7.26	2.40	-3.41	4.17	0.99	0.00
W 0 Ice	OY	1.62	-7.07	-78.49	7.25	-2.43	-3.44	4.21	-0.98	0.00
W 180 Ice	OP	-1.57	-7.39	-81.82	7.55	-2.43	3.49	4.25	0.99	0.00
W 180 Ice	OX	-1.71	7.47	-80.73	7.66	2.40	3.47	4.22	-1.00	0.00
W 180 Ice	OXY	25.32	19.92	-214.86	32.22	2.49	-1.45	2.88	-1.03	0.00
W 180 Ice	OY	26.03	-19.90	-219.84	32.76	-2.56	-1.43	2.93	1.04	0.00
W 45 Ice	OP	-27.81	-27.86	-259.71	39.37	-1.79	1.80	2.53	0.00	0.00
W 45 Ice	OX	-17.84	9.68	-150.02	20.30	3.22	1.70	3.65	1.49	0.00
W 45 Ice	OXY	-2.70	-0.69	-37.86	0.98	3.15	-3.15	4.45	-0.00	0.00
W 45 Ice	OY	9.69	-17.79	-149.65	20.26	-1.71	-3.22	3.64	-1.49	0.00
W -45 Ice	OP	-18.32	-9.53	-153.35	20.65	-3.29	1.68	3.70	-1.51	0.00
W -45 Ice	OX	-27.31	27.99	-256.19	39.11	1.72	1.82	2.52	-0.01	0.00
W -45 Ice	OXY	9.56	17.70	-146.49	20.12	1.67	-3.20	3.61	1.50	0.00
W -45 Ice	OY	-0.54	0.58	-41.22	0.79	-3.18	-3.17	4.49	0.01	0.00
W 90 Ice	OP	-20.24	-26.09	-223.82	33.02	-1.48	2.57	2.98	1.03	0.00
W 90 Ice	OX	-7.10	1.60	-78.79	7.28	3.44	2.43	4.22	0.98	0.00
W 90 Ice	OXY	7.06	1.69	-76.43	7.26	3.41	-2.40	4.17	-0.99	0.00
W 90 Ice	OY	20.27	-25.24	-218.20	32.38	-1.51	-2.48	2.91	-1.01	0.00
W -90 Ice	OP	-7.40	-1.57	-81.93	7.57	-3.49	2.43	4.25	-0.99	0.00
W -90 Ice	OX	-19.91	26.09	-220.42	32.82	1.43	2.57	2.94	-1.04	0.00
W -90 Ice	OXY	19.94	25.25	-214.59	32.17	1.46	-2.48	2.88	1.02	0.00
W -90 Ice	OY	7.42	-1.71	-80.31	7.61	-3.46	-2.40	4.21	1.00	0.00

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

Load Case	Support Joint	Origin Joint	Member	Leg Force In Leg Dir. (kips)	Residual Shear Perpendicular To Leg (kips)	Residual Shear 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	397.423	31.383	31.485	31.376	2.621	-60.80	-32.05	-392.69
W 0	OX	1X	L 1X	388.260	30.202	30.305	30.107	-3.460	-58.85	32.20	-383.61
W 0	OXY	1XY	L 1XY	-207.177	24.814	24.892	24.841	1.606	-40.13	-16.90	204.06
W 0	OY	1Y	L 1Y	-209.738	26.082	26.181	26.138	-1.157	-41.61	16.63	206.55
W 180	OP	1P	L 1P	-209.170	26.329	26.409	-26.383	-1.182	41.82	16.61	205.96
W 180	OX	1X	L 1X	-202.702	25.073	25.151	-25.107	1.490	40.06	-16.45	199.60
W 180	OXY	1XY	L 1XY	386.998	30.469	30.573	-30.372	-3.497	59.02	32.14	-382.33
W 180	OY	1Y	L 1Y	393.648	31.622	31.725	-31.619	2.583	60.76	-31.72	-388.92
W 45	OP	1P	L 1P	542.600	32.831	33.014	23.256	23.433	-63.43	-63.60	-536.12
W 45	OX	1X	L 1X	93.678	27.545	27.546	21.118	17.687	-28.08	-10.73	-92.90
W 45	OXY	1XY	L 1XY	-361.472	30.620	30.791	21.845	21.700	-48.54	-48.39	356.23
W 45	OY	1Y	L 1Y	93.680	27.320	27.321	17.509	20.973	-10.55	-27.93	-92.90
W -45	OP	1P	L 1P	96.813	28.708	28.709	21.926	-18.532	-29.12	11.34	-96.02
W -45	OX	1X	L 1X	538.391	32.868	33.052	22.435	-24.272	-62.29	64.13	-531.93
W -45	OXY	1XY	L 1XY	94.360	26.528	26.529	16.677	-20.632	-9.67	27.64	-93.54
W -45	OY	1Y	L 1Y	-361.073	30.909	31.082	22.599	-21.340	-49.26	48.00	355.81
W 90	OP	1P	L 1P	397.892	31.531	31.633	2.481	31.535	-31.94	-60.99	-393.16
W 90	OX	1X	L 1X	-210.089	26.240	26.319	-1.050	26.298	16.55	-41.80	206.89
W 90	OXY	1XY	L 1XY	-206.833	24.700	24.778	1.712	24.719	-16.98	-39.98	203.72
W 90	OY	1Y	L 1Y	387.798	30.099	30.203	-3.601	29.987	32.31	-58.70	-383.15
W -90	OP	1P	L 1P	-208.464	26.453	26.532	-1.039	-26.512	16.42	41.89	205.26
W -90	OX	1X	L 1X	394.790	31.741	31.843	2.464	-31.747	-31.69	60.97	-390.06

W -90	0XY	1XY	L 1XY	385.540	30.330	30.435	-3.615	-30.219	32.15	58.76	-380.89	
W -90	0Y	1Y	L 1Y	-203.091	24.926	25.005	1.627	-24.952	-16.61	39.94	199.99	
W 0 Ice	0P	1P	L 1P	225.935	9.867	9.913	9.269	3.516	-26.03	-20.28	-223.73	
W 0 Ice	0X	1X	L 1X	220.835	9.671	9.718	8.907	-3.887	-25.29	20.27	-218.66	
W 0 Ice	0XY	1XY	L 1XY	76.589	4.251	4.255	4.040	-1.336	1.68	7.06	-76.36	
W 0 Ice	0Y	1Y	L 1Y	78.703	4.417	4.423	4.261	1.186	1.62	-7.07	-78.49	
W 180 Ice	0P	1P	L 1P	82.028	4.722	4.728	-4.558	1.256	-1.57	-7.39	-81.82	
W 180 Ice	0X	1X	L 1X	80.963	4.565	4.570	-4.344	-1.419	-1.71	7.47	-80.73	
W 180 Ice	0XY	1XY	L 1XY	217.035	9.934	9.981	-9.220	-3.824	25.32	19.92	-214.86	
W 180 Ice	0Y	1Y	L 1Y	222.036	10.104	10.151	-9.555	3.427	26.03	-19.90	-219.84	
W 45 Ice	0P	1P	L 1P	262.411	11.779	11.845	8.349	8.402	-27.81	-27.86	-259.71	
W 45 Ice	0X	1X	L 1X	151.235	6.774	6.784	6.601	1.564	-17.84	9.68	-150.02	
W 45 Ice	0XY	1XY	L 1XY	37.547	4.964	4.992	3.536	3.523	-0.70	-0.69	-37.86	
W 45 Ice	0Y	1Y	L 1Y	150.868	6.744	6.755	1.519	6.582	9.69	-17.79	-149.65	
W -45 Ice	0P	1P	L 1P	154.571	7.096	7.105	6.829	-1.962	-18.92	-9.53	-153.35	
W -45 Ice	0X	1X	L 1X	258.883	11.900	11.967	8.114	-8.796	-27.31	27.99	-256.19	
W -45 Ice	0XY	1XY	L 1XY	147.703	6.865	6.876	1.416	-6.729	9.56	17.70	-146.49	
W -45 Ice	0Y	1Y	L 1Y	40.904	5.132	5.160	3.630	-3.667	-0.54	0.58	-41.22	
W 90 Ice	0P	1P	L 1P	226.023	9.897	9.943	3.471	9.317	-20.24	-26.09	-223.82	
W 90 Ice	0X	1X	L 1X	79.004	4.460	4.466	1.198	4.302	-7.10	1.80	-78.79	
W 90 Ice	0XY	1XY	L 1XY	76.654	4.243	4.248	-1.332	4.034	7.06	1.69	-76.43	
W 90 Ice	0Y	1Y	L 1Y	220.381	9.673	9.721	-3.925	8.893	20.27	-25.24	-218.20	
W -90 Ice	0P	1P	L 1P	82.140	4.730	4.736	1.266	-4.564	-7.40	-1.57	-81.93	
W -90 Ice	0X	1X	L 1X	222.622	10.111	10.157	3.093	-9.574	-19.91	26.09	-220.42	
W -90 Ice	0XY	1XY	L 1XY	216.760	9.902	9.950	-3.864	-9.169	19.94	25.25	-214.59	
W -90 Ice	0Y	1Y	L 1Y	80.540	4.523	4.528	-1.403	-4.306	7.42	-1.71	-80.31	

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	214.212	-38545.039	125.083	38545.634	0.104	201.393	365.690
W 180	7.413	38217.296	-121.620	38217.297	-0.589	-201.659	365.690
W 45	28979.128	-28979.174	-20.988	40982.708	150.655	150.592	365.690
W -45	-28748.777	28909.905	202.836	40771.004	-151.107	150.340	365.690
W 90	38545.318	-222.046	-159.441	38545.957	201.474	0.053	365.690
W -90	-38196.959	-126.648	156.795	38197.169	-201.561	-0.270	365.690
W 0 Ice	233.893	-9337.617	26.077	9340.546	0.019	48.022	597.243
W 180 Ice	196.964	8838.193	-25.440	8840.388	-0.105	-48.069	597.243
W 45 Ice	7192.801	-7216.447	-4.223	10188.750	36.667	36.655	597.243
W -45 Ice	-6758.319	-7204.078	41.941	9877.936	-36.747	36.611	597.243
W 90 Ice	9313.813	-259.148	-32.883	9317.417	48.036	0.010	597.243
W -90 Ice	-8858.390	-242.095	32.391	8861.698	-48.051	-0.048	597.243

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 Adjust Factor	Face Ar Adjust Factor	Dead Load Factor
358.0-365.0	365.000	358.000	8	20	7.00	7.00	49.00	1.0000	1.0000	1.200
351.0-358.0	358.000	351.000	8	16	7.00	7.00	49.00	1.0000	1.0000	1.200
350.0-351.0	351.000	350.000	8	16	7.00	12.50	9.75	1.2540	1.2540	1.505
337.5-350.0	350.000	337.500	8	16	12.50	14.37	167.96	1.1140	1.1140	1.337
325.0-337.5	337.500	325.000	8	16	14.37	16.25	191.37	1.1820	1.1820	1.418
312.5-325.0	325.000	312.500	8	16	16.25	18.12	214.79	1.2060	1.2060	1.447
300.0-312.5	312.500	300.000	12	24	18.12	19.99	238.20	1.2130	1.2130	1.456
287.5-300.0	300.000	287.500	16	24	19.99	21.87	261.62	1.2170	1.2170	1.460
275.0-287.5	287.500	275.000	16	24	21.87	23.74	285.03	1.2310	1.2310	1.477
262.5-275.0	275.000	262.500	16	24	23.74	25.61	308.45	1.2380	1.2380	1.485
250.0-262.5	262.500	250.000	16	24	25.61	27.49	331.86	1.2440	1.2440	1.493
225.0-250.0	250.000	225.000	16	24	27.49	31.23	733.97	1.2640	1.2640	1.517
200.0-225.0	225.000	200.000	16	24	31.23	34.98	827.63	1.2800	1.2800	1.536
175.0-200.0	200.000	175.000	20	32	34.98	38.73	921.29	1.2880	1.2880	1.546
150.0-175.0	175.000	150.000	36	76	38.73	42.47	1014.96	1.2960	1.2960	1.555
125.0-150.0	150.000	125.000	36	76	42.47	46.22	1108.62	1.2140	1.2140	1.457
100.0-125.0	125.000	100.000	32	68	46.22	49.96	1202.28	1.3670	1.3670	1.640
75.00-100.0	100.000	75.000	24	52	49.96	53.71	1295.94	1.2280	1.2280	1.473
50.00-75.00	75.000	50.000	24	52	53.71	57.46	1389.60	1.2300	1.2300	1.476
25.00-50.00	50.000	25.000	24	52	57.46	61.20	1483.26	1.2260	1.2260	1.471
0.000-25.00	25.000	0.000	20	40	61.20	64.95	1576.92	1.2060	1.2060	1.447

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 Length Comp. Member (ft)	Curve No.	No. Of Bolts Comp.	
Leg S1	L 8" x 8" x 1.125"	SAE	8X8X1.13	33.0	63.69	Tens	63.58	L 1P	-488.435	W 45	768.230	0.000	0.000	0.333	0.333	0.333	64.47	64.47 25.140	1	0	
Leg S2	L 8" x 8" x 1.125"	SAE	8X8X1.13	33.0	74.47	Comp	74.47	L 2P	-446.066	W 45	598.960	0.000	0.000	0.333	0.333	0.333	64.47	64.47 25.140	1	0	
Leg S3	L 8" x 8" x 1.125"	SAE	8X8X1.13	33.0	72.62	Comp	72.62	L 3P	-454.773	W 45	557.370	0.000	0.000	0.333	0.333	0.333	64.47	64.47 25.140	1	0	
Leg S4	L 8" x 8" x 1.125"	SAE	8X8X1.13	33.0	76.62	Comp	76.62	L 4P	-364.018	W 45	475.110	0.000	0.000	0.333	0.333	0.333	64.47	64.47 25.140	1	0	
Leg S5	L 8" x 8" x 1.125"	SAE	8X8X1.13	33.0	72.68	Comp	72.68	L 5P	-350.317	W 45	454.485	0.000	0.000	0.222	0.222	0.222	42.99	42.99 25.140	1	0	
Leg S6	L 8" x 8" x 1.125"	SAE	8X8X1.13	33.0	71.01	Comp	71.01	L 6P	-288.761	W 45	406.864	0.000	0.000	0.333	0.333	0.333	64.44	64.44 25.140	1	0	
Leg S7	L 8" x 8" x 1.125"	SAE	8X8X1.13	33.0	61.17	Comp	61.17	L 7P	-248.745	W 45	406.864	0.000	0.000	0.333	0.333	0.333	64.44	64.44 25.140	1	0	
Leg S8	L 8" x 8" x 1"	SAE	8X8X1	33.0	58.46	Comp	58.46	L 8P	-213.140	W 45	364.598	0.000	0.000	0.333	0.333	0.333	64.46	64.46 25.140	1	0	
Leg S9	L 8" x 8" x 0.875"	SAE	8X8X0.88	33.0	54.74	Comp	54.74	L 9P	-176.466	W 45	322.369	0.000	0.000	0.333	0.333	0.333	64.04	64.04 25.140	1	0	
Leg S10	L 8" x 8" x 0.75"	SAE	8X8X0.75	33.0	50.54	Comp	50.54	L 10P	-141.246	W 45	279.450	0.000	0.000	0.333	0.333	0.333	63.64	63.64 25.140	1	0	
Leg S11	L 6" x 6" x 0.875"	SAE	6X6X0.88	33.0	51.42	Comp	51.42	L 11P	-121.597	W 45	236.474	0.000	0.000	0.500	0.500	0.500	64.46	64.46 12.570	1	0	
Leg S12	L 6" x 6" x 0.875"	SAE	6X6X0.88	33.0	44.03	Comp	44.03	L 12P	-104.117	W 45	236.474	0.000	0.000	0.500	0.500	0.500	64.46	64.46 12.570	1	0	
Leg S13	L 6" x 6" x 0.75"	SAE	6X6X0.75	33.0	42.48	Comp	42.48	L 13P	-87.137	W 45	205.122	0.000	0.000	0.500	0.500	0.500	64.46	64.46 12.570	1	0	
Leg S14	L 6" x 6" x 0.75"	SAE	6X6X0.75	33.0	34.00	Comp	34.00	L 14P	-69.737	W 45	205.122	0.000	0.000	0.500	0.500	0.500	64.46	64.46 12.570	1	0	
Leg S15	L 6" x 6" x 0.625"	SAE	6X6X0.63	33.0	39.74	Comp	39.74	L 15P	-68.905	W 45	173.384	0.000	0.000	0.500	0.500	0.500	63.92	63.92 12.570	1	0	
Leg S16	L 6" x 6" x 0.625"	SAE	6X6X0.63	33.0	31.35	Comp	31.35	L 16P	-54.348	W 45	173.384	0.000	0.000	0.500	0.500	0.500	63.92	63.92 12.570	1	0	
Leg S17	L 6" x 6" x 0.5"	SAE	6X6X0.5	33.0	26.65	Comp	26.65	L 17P	-37.373	W 45	140.219	0.000	0.000	0.500	0.500	0.500	63.92	63.92 12.570	1	0	
Leg S18	L 6" x 6" x 0.5"	SAE	6X6X0.5	33.0	17.84	Comp	17.84	L 18P	-25.013	W 45	140.219	0.000	0.000	0.500	0.500	0.500	63.92	63.92 12.570	1	0	
Leg S19	**L 6" x 6" x 0.5"**	**SAE**	**6X6X0.5**	**33.0**	**28.11**	**Comp**	**28.11**	**L 19P**	**-47.053**	**W 45**	**167.373**	**0.000**	**0.000**	**0.500**	**0.500**	**0.500**	**20.42**	**20.42 4.016**	**1**	**0**	
Leg S20	**L 6" x 6" x 0.5"**	**SAE**	**6X6X0.5**	**33.0**	**11.72**	**Comp**	**11.72**	**L 20P**	**-15.673**	**W 45**	**133.727**	**0.000**	**0.000**	**1.000**	**1.000**	**1.000**	**71.19**	**71.19 7.000**	**1**	**0**	
Leg S21	L 6" x 6" x 0.5"	SAE	6X6X0.5	33.0	7.26	Comp	7.26	L 21P	-9.703	W 45	133.727	0.000	0.000	1.000	1.000	1.000	71.19	71.19 7.000	1	0	
Diag S1	B/B L3.5"x5"x0.4375"	DAS	5X3.5X0.44	33.0	53.46	Comp	53.46	D 2X	-47.210	W -90	88.301	0.000	0.000	0.500	1.000	0.500	142.38	133.76 23.967	6	0	
Diag S2	B/B L3"x3"x0.3125"	DAS	4X3X0.31	33.0	87.37	Comp	87.37	D 4X	-45.921	W -90	52.462	0.000	0.000	0.450	0.900	0.450	141.88	133.45 23.305	6	0	
Diag S3	B/B L3"x3.5"x0.3125"	DAS	3.5X3X0.31	33.0	95.80	Comp	95.80	D 6X	-44.587	W -90	46.540	0.000	0.000	0.450	0.900	0.450	147.44	136.88 22.662	6	0	
Diag S4	B/B L3"x3.5"x0.3125"	DAS	3.5X3X0.31	33.0	88.60	Comp	88.60	D 8X	-43.687	W -90	49.308	0.000	0.000	0.450	0.880	0.450	140.21	132.43 22.040	6	0	
Diag S5	B/B L4"x3"x0.375"	DAE	4X3X0.38	36.0	49.33	Comp	49.33	D 10X	-33.540	W -90	67.990	0.000	0.000	0.333	0.667	0.333	115.20	115.20 20.303	1	0	
Diag S6	B/B L3"x3"x0.25"	DAE	3X3X0.25	33.0	68.81	Comp	68.81	D 12X	-31.363	W -90	45.583	0.000	0.000	0.333	0.667	0.333	114.20	114.20 19.842	1	0	
Diag S7	B/B L3"x3"x0.25"	DAE	3X3X0.25	33.0	88.80	Comp	88.60	D 14X	-30.688	W -90	34.837	0.000	0.000	0.300	0.880	0.300	147.43	136.87 19.408	6	0	
Diag S8	B/B L3"x3.5"x0.25"	DAS	3.5X3X0.25	33.0	83.35	Comp	83.35	D 15X	-29.796	W -90	35.740	0.000	0.000	0.333	0.667	0.333	153.59	140.88 21.677	6	0	
Diag S9	B/B L3"x3.5"x0.25"	DAS	3.5X3X0.25	33.0	77.66	Comp	77.66	D 17X	-29.049	W -90	37.404	0.000	0.000	0.333	0.667	0.333	148.21	137.35 30.568	6	0	
Diag S10	B/B L3"x3.5"x0.25"	DAS	3.5X3X0.25	33.0	68.99	Comp	68.99	D 19X	-26.868	W -90	38.943	0.000	0.000	0.333	0.667	0.333	143.21	134.28 29.538	6	0	
Diag S11	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	33.0	54.84	Comp	54.84	D 21X	-15.420	W -90	28.940	0.000	0.000	0.500	1.000	0.500	153.94	140.87 18.601	6	0	
Diag S12	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	33.0	49.90	Comp	49.90	D 23X	-15.673	W -90	31.406	0.000	0.000	0.500	1.000	0.500	148.30	137.41 17.920	6	0	
Diag S13	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	33.0	47.36	Comp	47.36	D 25X	-15.539	W -90	32.812	0.000	0.000	0.500	1.000	0.500	142.87	134.06 17.263	6	0	
Diag S14	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	59.75	Comp	59.75	D 27X	-14.402	W -90	24.024	0.000	0.000	0.500	1.000	0.500	167.73	149.35 16.633	6	0	
Diag S15	L 3" x 4" x 0.25"	SAU	4X3X0.25	33.0	32.19	Tens	0.00	D 30Y	0.000		0.000	0.000	100.000	100.000	100.000	100.000	42044.94	32066.85 22.809	5	0	
Diag S16	L 3" x 4" x 0.25"	SAU	4X3X0.25	33.0	30.10	Tens	0.00	D 32Y	0.000		0.000	0.000	100.000	100.000	100.000	100.000	39206.12	29903.66 21.269	5	0	
Diag S17	L 3.5" x 3" x 0.25"	SAU	3.5X3X0.25	33.0	25.88	Tens	0.00	D 34Y	0.000		0.000	0.000	100.000	100.000	100.000	100.000	37629.43	28702.23 19.787	5	0	
Diag S18	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	33.0	19.58	Tens	0.00	D 36Y	0.000		0.000	0.000	100.000	100.000	100.000	100.000	31773.70	24240.16 18.376	5	0	
Diag S19	B/B L3.5"x3.5"x0.25"	DAE	3.5X3.5X0.25	33.0	14.14	Comp	14.14	D 38X	-12.046	W 90	85.211	0.000	0.000	0.520	0.520	0.520	58.28	58.28 10.180	1	0	
Diag S20	L 3" x 2" x 0.25"	SAU	3X2X0.25	33.0	16.36	Tens	0.00	D 40Y	0.000		0.000	0.000	100.000	100.000	100.000	100.000	27308.95	20838.02 9.899	5	0	
Diag S21	L 3" x 2" x 0.25"	SAU	3X2X0.25	33.0	17.50	Tens	0.00	D 42Y	0.000		0.000	0.000	100.000	100.000	100.000	100.000	27308.95	20838.02 9.899	5	0	
Horiz 1	B/B L5"x3.5"x0.375"	DAL	5X3.5X0.38	33.0	45.47	Comp	45.47	H 1P	-39.374	W -90	86.598	0.000	0.000	0.500	0.500	0.500	125.78	123.54 30.802	6	0	
Horiz 2	B/B L4"x3"x0.3125"	DAL	4X3X0.31	33.0	68.48	Comp	68.48	H 3P	-37.763	W -90	55.148	0.000	0.000	0.500	0.500	0.500	135.73	129.67 28.729	6	0	
Horiz 3	B/B L3.5"x3"x0.3125"	DAL	3.5X3X0.31	33.0	76.23	Comp	76.23	H 5P	-35.755	W -90	46.902	0.000	0.000	0.500	0.500	0.500	146.48	136.29 26.855	6	0	
Horiz 4	B/B L3.5"x3"x0.3125"	DAL	3.5X3X0.31	33.0	81.86	Comp	81.86	H 7P	-41.622	W -90	50.848	0.000	0.000	0.500	0.500	0.500	136.27	130.00 24.982	6	0	
Horiz 5	**B/B L3.5"x3"x0.3125"**	**DAL**	**3.5X3X0.31**	**33.0**	**102.52**	**Comp**	**102.52**	**H 9P**	**-58.604**	**W -90**	**57.161**	**0.000**	**0.000**	**1.000**	**1.000**	**1.000**	**120.51**	**120.31 15.406**	**6**	**0**	**NG**
Horiz 6	**B/B L3.5"x3"x0.3125"**	**DAL**	**3.5X3X0.31**	**33.0**	**103.09**	**Comp**	**103.09**	**H 11P**	**-52.562**	**W -90**	**50.986**	**0.000**	**0.000**	**0.880**	**0.880**	**0.880**	**135.91**	**129.78 14.157**	**6**	**0**	**NG**
Horiz 7	B/B L3"x3"x0.3125"	DAE	3X3X0.31	33.0	71.88	Comp	71.88	H 13P	-41.981	W -90	58.401	0.000	0.000	0.500	1.000	0.500	110.64	110.64 12.908	1	0	
Horiz 8	B/B L3.5"x3.5"x0.3125"	DAL	3.5X3.5X0.31	33.0	53.52	Comp	53.52	H 15P	-16.049	W -90	29.987	0.000	0.000	1.000	1.000	1.000	190.79	163.54 17.489	6	0	
Horiz 9	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	53.30	Comp	53.30	H 17P	-14.422	W -90	27.056	0.000	0.000	0.500	1.000	0.500	165.83	148.19 15.616	6	0	
Horiz 10	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	51.37	Comp	51.37	H 19P	-12.948	W -90	25.208	0.000	0.000	1.000	1.000	1.000	174.51	153.53 13.743	6	0	
Horiz 11	B/B L2.5"x2.5"x0.25"	DAL	2.5X2.5X0.25	33.0	33.59	Comp	33.59	H 21P	-11.086	W -90	33.007	0.000	0.000	1.000	1.000	1.000	129.14	125.62 12.806	6	0	
Horiz 12	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	47.59	Comp	47.59	H 23P	-9.980	W -90	20.974	0.000	0.000	1.000	1.000	1.000	185.22	160.11 11.870	6	0	
Horiz 13	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	44.40	Comp	44.40	H 25P	-10.453	W -90	23.543	0.000	0.000	1.000	1.000	1.000	170.61	151.12 10.933	6	0	
Horiz 14	B/B L3"x3"x0.25"	DAL	3X3X0.25	33.0	43.62	Comp	43.62	H 27P	-16.173	W -90	37.074	0.000	0.000	1.000	1.000	1.000	126.94	124.27 9.996	6	0	
Horiz 15	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	67.64	Comp	67.64	H 29P	-13.088	W -90	19.351	0.000	0.000	0.500	1.000	0.500	192.42	175.22 18.120	5	0	
Horiz 16	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	25.92	Comp	25.92	H 32X	-11.102	W 180	42.835	0.000	0.000	0.500	0.500	0.500	103.15	111.58 16.246	3	0	
Horiz 17	B/B L3.5"x3"x0.3125"	DAL	3.5X3X0.31	33.0	15.35	Comp	15.35	H 34X	-8.203	W 0	53.454	0.000	0.000	1.000	1.000	1.000	127.76	125.95 14.353	5	0	
Horiz 18	L 6" x 3.5" x 0.5"	SAU	6X3.5X0.5	33.0	18.98	Tens	0.00	H 36X	0.000		31.660	0.000	0.000	1.000	1.000	1.000	197.63	179.19 12.500	5	0	
Horiz 19	B/B L3.5"x3.5"x0.3125"	DAE	3.5X3.5X0.31	33.0	26.13	Comp	26.13	H 37P	-24.222	W 0	92.715	0.000	0.000	1.000	1.000	1.000	77.78	77.78 7.000	1	0	
Horiz 20	B/B L2.5"x2.5"x0.25"	DAL	2.5X2X0.25	33.0	13.57	Comp	13.57	H 39P	-4.607	W -90	33.948	0.000	0.000	1.000	1.000	1.000	107.14	113.57 7.000	3	0	
Horiz 21	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	33.0	8.79	Comp	8.79	H 41P	-2.983	W -90	33.948	0.000	0.000	1.000	1.000	1.000	107.14	113.57 7.000	3	0	
LD 1	B/B L3.5"x3"x0.25"	DAL	3.5X3X0.25	33.0	51.25	Comp	51.25	LD 1X	-13.791	W -90	26.909	0.000	0.000	1.000	1.000	1.000	188.48	162.10 17.433	6	0	
LD 2	B/B L5"x3.5"x0.4375"	DAL	5X3.5X0.44	33.0	52.06	Comp	52.06	LD 3X	-51.307	W -90	98.549	0.000	0.000	1.000	0.900	0.900	128.08	124.97 17.433	5	0	
LD 4	B/B L3.5"x3"x0.25"	DAL	3.5X3X0.25	33.0	46.21	Comp	46.21	LD 7X	-13.311	W -90	28.805	0.000	0.000	1.000	1.000	1.000	179.64	156.68 16.817	6	0	
LD 5	B/B L4"x3"x0.375"	DAL	4X3X0.38	33.0	90.22	Comp	90.22	LD 9X	-49.176	W -90	54.505	0.000	0.000	1.000	1.000	1.000	158.25	143.53 16.617	6	0	
LD 7	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	33.0	46.33	LD 11X	46.33	LD 11X	-12.830	W -90	27.696	0.000	0.000	1.000	1.000	1.000	174.10	153.27 15.814	6	0	
LD 8	B/B L4"x3"x0.3125"	DAL	4X3X0.31	33.0	84.55	LD 13X	84.55	LD 15X	-47.077	W -90	55.678	0.000	0.000	1.000	1.000	1.000	134.48	128.91 15.814	6	0	
LD 10	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	33.0	35.78	Comp	35.78	LD 19X	-12.246	W -90	34.227	0.000	0.000	0.900	0.900	0.900	148.89	137.77 15.027	6	0	
LD 11	B/B L4"x3"x0.3125"	DAL	4X3X0.31	33.0	86.13	Comp	86.13	LD 21X	-45.234	W -90	52.517	0.000	0.000	1.000	1.000	1.000	141.99	133.52 15.027	6	0	
LD 13	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	33.0	60.81	Tens	1.41	LD 25X	-0.372	W -90	26.306	0.000	0.000	0.460	0.880	0.460	144.14	134.84 12.762	6	0	
LD 14	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	33.0	68.62	Comp	68.62	LD 27X	-32.147	W -90	46.849	0.000	0.000	1.000	1.000	1.000	111.69	111.69 10.145	1	0	
LD 15	B/B L3.5"x3"x0.3125"	DAL	3.5X3X0.31	33.0	57.68	LD 29P	57.68	LD 29P	-32.160	W -90	55.758	0.000	0.000	1.000	1.000	1.000	123.96	122.43 11.363	6	0	

LD 16	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	33.0	56.07	Tens	2.00	LD 31XY	-0.453	W -90	22.680	0.000	0.000	0.870	0.870	0.870	161.72	145.66	12.145	6	0
LD 17	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	80.90	Comp	80.90	LD 33X	-30.224	W -90	37.357	0.000	0.000	1.000	1.000	1.000	125.91	123.63	9.915	6	0
LD 18	B/B L3"x3"x0.3125"	DAL	3X3X0.31	33.0	68.38	Comp	68.38	LD 35P	-30.375	W -90	44.418	0.000	0.000	1.000	1.000	1.000	142.51	133.84	10.949	6	0
LD 19	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	33.0	53.08	Tens	2.47	LD 37XY	-0.547	W -90	22.182	0.000	0.000	0.930	0.930	0.930	164.48	147.35	11.555	6	0
LD 20	B/B L3"x2"x0.25"	DAL	3X2X0.25	33.0	90.34	Comp	90.34	LD 39X	-29.492	W -90	32.648	0.000	0.000	1.000	1.000	1.000	130.60	126.52	9.697	6	0
LD 21	B/B L3"x3"x0.25"	DAL	3X3X0.25	33.0	76.33	Comp	76.33	LD 41P	-28.893	W -90	37.855	0.000	0.000	1.000	1.000	1.000	136.21	129.97	10.558	6	0
LH 1	B/B L3"x4"x0.3125"	DAS	4X3X0.31	33.0	9.76	Tens	0.00	LH 2X	0.000		0.001	0.000	0.000	100.000	100.000	100.000	41400.39	25507.44	30.602	6	0
LH 2	B/B L3"x4"x0.3125"	DAS	4X3X0.31	33.0	6.02	Tens	0.00	LH 4X	0.000		0.002	0.000	0.000	100.000	100.000	100.000	38866.16	23948.89	28.729	6	0
LH 3	B/B L3"x4"x0.3125"	DAS	4X3X0.31	33.0	5.69	Tens	0.00	LH 6X	0.000		0.002	0.000	0.000	100.000	100.000	100.000	38331.94	22390.34	26.855	6	0
LH 4	B/B L3"x4"x0.3125"	DAS	4X3X0.31	33.0	5.74	Tens	0.00	LH 8X	0.000		0.002	0.000	0.000	100.000	100.000	100.000	33797.71	20831.79	24.982	6	0
LH 5	B/B L3"x4"x0.3125"	DAS	4X3X0.31	33.0	36.46	Tens	0.00	LH 10Y	0.000		0.007	0.000	0.000	100.000	100.000	100.000	18210.23	11245.49	13.460	6	0
LH 6	B/B L3"x3.5"x0.3125"	DAS	3.5X3X0.31	33.0	35.26	Tens	0.00	LH 12Y	0.000		0.008	0.000	0.000	100.000	100.000	100.000	16468.36	10174.24	12.420	6	0
LH 7	B/B L3"x3"x0.25"	DAE	3X3X0.25	33.0	42.83	Tens	0.00	LH 14Y	0.000		0.008	0.000	0.000	100.000	100.000	100.000	14883.07	9076.29	11.379	6	0
DUM 1	Dummy Bracing Member	DUM	0.1X0.1X1	36.0	0.00		0.00	BR 17XY	-1.247	W 45	0.324	0.000	0.000	1.000	1.000	1.000	2.65	2.65	22.084	1	0

Group Summary (Tension Portion):

Group Label	Group Desc.	Angle Type	Angle Size	Steel Strength (ksi)	Max Usage %	Usage Cont-rol	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 Tens.	No. Of Holes	Hole Diameter (in)	
Leg S1	L 8" x 8" x 1.125"	SAE	8X8X1.13	33.0	63.69	Tens	63.69	L 1XY	316.461	W 45	496.880	0.000	0.000	0.000	25.140	0	0.000	0	
Leg S2	L 8" x 8" x 1.125"	SAE	8X8X1.13	33.0	74.47	Comp	59.14	L 2XY	293.851	W 45	496.880	0.000	0.000	0.000	25.140	0	0.000	0	
Leg S3	L 8" x 8" x 1.125"	SAE	8X8X1.13	33.0	72.62	Comp	53.77	L 3XY	267.175	W 45	496.880	0.000	0.000	0.000	25.140	0	0.000	0	
Leg S4	L 8" x 8" x 1.125"	SAE	8X8X1.13	33.0	76.62	Comp	48.42	L 4XY	240.573	W 45	496.880	0.000	0.000	0.000	25.140	0	0.000	0	
Leg S5	L 8" x 8" x 1.125"	SAE	8X8X1.13	33.0	72.68	Comp	38.40	L 5XY	190.805	W 45	496.880	0.000	0.000	0.000	25.140	0	0.000	0	
Leg S6	L 8" x 8" x 1.125"	SAE	8X8X1.13	33.0	71.01	Comp	33.19	L 6XY	164.905	W 45	496.880	0.000	0.000	0.000	25.140	0	0.000	0	
Leg S7	L 8" x 8" x 1.125"	SAE	8X8X1.13	33.0	61.17	Comp	28.08	L 7XY	139.504	W 45	496.880	0.000	0.000	0.000	25.140	0	0.000	0	
Leg S8	L 8" x 8" x 1"	SAE	8X8X1	33.0	58.46	Comp	32.99	L 8XY	146.954	W 45	445.499	0.000	0.000	0.000	25.140	0	0.000	0	
Leg S9	L 8" x 8" x 0.875"	SAE	8X8X0.88	33.0	54.74	Comp	30.55	L 9XY	120.031	W 45	392.930	0.000	0.000	0.000	25.140	0	0.000	0	
Leg S10	L 8" x 8" x 0.75"	SAE	8X8X0.75	33.0	50.54	Comp	27.43	L 10XY	93.187	W 45	339.787	0.000	0.000	0.000	25.140	0	0.000	0	
Leg S11	L 6" x 6" x 0.875"	SAE	6X6X0.88	33.0	51.42	Comp	27.95	L 11XY	80.772	W 45	288.981	0.000	0.000	0.000	12.570	0	0.000	0	
Leg S12	L 6" x 6" x 0.875"	SAE	6X6X0.88	33.0	44.03	Comp	23.52	L 12XY	67.956	W 45	288.981	0.000	0.000	0.000	12.570	0	0.000	0	
Leg S13	L 6" x 6" x 0.75"	SAE	6X6X0.75	33.0	42.48	Comp	22.00	L 13XY	55.150	W 45	250.668	0.000	0.000	0.000	12.570	0	0.000	0	
Leg S14	L 6" x 6" x 0.75"	SAE	6X6X0.75	33.0	34.00	Comp	16.88	L 14XY	42.310	W 45	250.668	0.000	0.000	0.000	12.570	0	0.000	0	
Leg S15	L 6" x 6" x 0.625"	SAE	6X6X0.63	33.0	39.74	Comp	14.02	L 15XY	29.599	W 45	211.167	0.000	0.000	0.000	12.570	0	0.000	0	
Leg S16	L 6" x 6" x 0.625"	SAE	6X6X0.63	33.0	31.35	Comp	7.96	L 16XY	15.818	W 45	211.167	0.000	0.000	0.000	12.570	0	0.000	0	
Leg S17	L 6" x 6" x 0.5"	SAE	6X6X0.5	33.0	26.65	Comp	4.95	L 17XY	8.453	W 45	170.775	0.000	0.000	0.000	12.570	0	0.000	0	
Leg S18	L 6" x 6" x 0.5"	SAE	6X6X0.5	33.0	19.84	Comp	0.00	L 18Y	0.000		170.775	0.000	0.000	0.000	12.570	0	0.000	0	
Leg S19	**L 6" x 6" x 0.5"**	**SAE**	**6X6X0.5**	**33.0**	**28.11**	**Comp**	**2.13**	**L 19Y**	**3.633**	**W -45**	**170.775**	**0.000**	**0.000**	**0.000**	**4.016**	**0**	**0.000**	**0**	
Leg S20	**L 6" x 6" x 0.5"**	**SAE**	**6X6X0.5**	**33.0**	**11.72**	**Comp**	**0.99**	**L 20Y**	**1.698**	**W -45**	**170.775**	**0.000**	**0.000**	**0.000**	**7.000**	**0**	**0.000**	**0**	
Leg S21	L 6" x 6" x 0.5"	SAE	6X6X0.5	33.0	7.26	Comp	0.00	L 21Y	0.000		170.775	0.000	0.000	0.000	7.000	0	0.000	0	
Diag S1	B/B L3.5"x5"x0.4375"	DAS	5X3.5X0.44	33.0	53.46	Comp	18.19	D 2P	38.077	W -90	209.385	0.000	0.000	0.000	23.967	0	0.000	0	
Diag S2	B/B L3"x4"x0.3125"	DAS	4X3X0.31	33.0	87.37	Comp	30.84	D 4P	38.287	W -90	124.146	0.000	0.000	0.000	23.305	0	0.000	0	
Diag S3	B/B L3"x3.5"x0.3125"	DAS	3.5X3X0.31	33.0	95.80	Comp	33.30	D 6P	38.276	W -90	114.939	0.000	0.000	0.000	22.662	0	0.000	0	
Diag S4	B/B L3"x3.5"x0.3125"	DAS	3.5X3X0.31	33.0	88.60	Comp	33.15	D 8P	38.101	W -90	114.939	0.000	0.000	0.000	22.040	0	0.000	0	
Diag S5	B/B L3"x3"x0.375"	DAE	3X3X0.38	36.0	49.53	Comp	41.26	D 10P	56.420	W -90	136.728	0.000	0.000	0.000	20.303	0	0.000	0	
Diag S6	B/B L3"x3"x0.25"	DAE	3X3X0.25	33.0	68.81	Comp	63.44	D 12P	54.262	W -90	85.536	0.000	0.000	0.000	19.842	0	0.000	0	
Diag S7	B/B L3"x3"x0.25"	DAE	3X3X0.25	33.0	88.60	Comp	61.08	D 14P	52.245	W -90	85.536	0.000	0.000	0.000	19.406	0	0.000	0	
Diag S8	B/B L3"x3.5"x0.25"	DAS	3.5X3X0.25	33.0	83.35	Comp	29.26	D 15P	27.201	W -90	92.961	0.000	0.000	0.000	31.677	0	0.000	0	
Diag S9	B/B L3"x3.5"x0.25"	DAS	3.5X3X0.25	33.0	77.66	Comp	28.62	D 17P	26.607	W -90	92.961	0.000	0.000	0.000	30.568	0	0.000	0	
Diag S10	B/B L3"x3.5"x0.25"	DAS	3.5X3X0.25	33.0	68.99	Comp	27.13	D 19P	25.224	W -90	92.961	0.000	0.000	0.000	29.536	0	0.000	0	
Diag S11	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	33.0	54.84	Comp	19.26	D 21P	15.048	W -90	78.111	0.000	0.000	0.000	18.601	0	0.000	0	
Diag S12	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	33.0	49.90	Comp	18.49	D 23P	14.442	W -90	78.111	0.000	0.000	0.000	17.920	0	0.000	0	
Diag S13	B/B L2.5"x3"x0.25"	DAS	3X2.5X0.25	33.0	47.38	Comp	18.49	D 25P	14.443	W -90	78.111	0.000	0.000	0.000	17.263	0	0.000	0	
Diag S14	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	59.75	Comp	18.76	D 27P	13.263	W -90	70.686	0.000	0.000	0.000	16.633	0	0.000	0	
Diag S15	L 3" x 4" x 0.25"	SAU	4X3X0.25	33.0	32.19	Tens	32.19	D 30P	16.157	W -90	50.193	0.000	0.000	0.000	22.809	0	0.000	0	
Diag S16	L 3" x 4" x 0.25"	SAU	4X3X0.25	33.0	30.10	Tens	30.10	D 31X	15.106	W 180	50.193	0.000	0.000	0.000	21.269	0	0.000	0	
Diag S17	L 3.5" x 3" x 0.25"	SAU	3.5X3X0.25	33.0	25.88	Tens	25.88	D 33X	11.992	W 180	46.332	0.000	0.000	0.000	19.787	0	0.000	0	
Diag S18	L 3.5" x 3.5" x 0.25"	SAE	3.5X3.5X0.25	33.0	19.58	Tens	19.58	D 36XY	9.828	W 90	50.193	0.000	0.000	0.000	18.376	0	0.000	0	
Diag S19	B/B L3.5"x3.5"x0.25"	DAE	3.5X3.5X0.25	33.0	14.14	Comp	6.74	D 38P	6.763	W 90	100.386	0.000	0.000	0.000	10.180	0	0.000	0	
Diag S20	L 3" x 2" x 0.25"	SAU	3X2X0.25	33.0	16.36	Tens	16.36	D 40P	5.782	W -90	35.343	0.000	0.000	0.000	9.899	0	0.000	0	
Diag S21	L 3" x 2" x 0.25"	SAU	3X2X0.25	33.0	17.50	Tens	17.50	D 42P	6.183	W -90	35.343	0.000	0.000	0.000	9.899	0	0.000	0	
Horiz 1	B/B L5"x3.5"x0.375"	DAL	5X3.5X0.38	33.0	45.47	Comp	23.66	H 1X	42.801	W -90	180.873	0.000	0.000	0.000	30.602	0	0.000	0	
Horiz 2	B/B L4"x3"x0.3125"	DAL	4X3X0.31	33.0	68.48	Comp	32.64	H 3X	40.520	W -90	124.146	0.000	0.000	0.000	28.729	0	0.000	0	
Horiz 3	B/B L3.5"x3"x0.3125"	DAL	3.5X3X0.31	33.0	76.23	Comp	33.33	H 5X	38.312	W -90	114.939	0.000	0.000	0.000	26.855	0	0.000	0	
Horiz 4	B/B L3.5"x3"x0.3125"	DAL	3.5X3X0.31	33.0	81.86	Comp	24.91	H 7P	28.631	W 90	114.939	0.000	0.000	0.000	24.982	0	0.000	0	
Horiz 5	**B/B L3.5"x3"x0.3125"**	**DAL**	**3.5X3X0.31**	**33.0**	**102.52**	**Comp**	**14.12**	**H 9X**	**16.229**	**W -90**	**114.939**	**0.000**	**0.000**	**0.000**	**15.406**	**0**	**0.000**	**0**	**NG**
Horiz 6	**B/B L3.5"x3"x0.3125"**	**DAL**	**3.5X3X0.31**	**33.0**	**103.09**	**Comp**	**13.12**	**H 11P**	**15.075**	**W 90**	**114.939**	**0.000**	**0.000**	**0.000**	**14.157**	**0**	**0.000**	**0**	**NG**
Horiz 7	B/B L3"x3"x0.3125"	DAE	3X3X0.31	33.0	71.88	Comp	17.46	H 13P	18.413	W 90	105.435	0.000	0.000	0.000	12.908	0	0.000	0	
Horiz 8	B/B L3.5"x2.5"x0.3125"	DAL	3.5X2.5X0.31	33.0	53.52	Comp	15.71	H 15P	14.561	W 90	109.435	0.000	0.000	0.000	13.489	0	0.000	0	
Horiz 9	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	53.30	Comp	18.88	H 17X	14.749	W -90	78.111	0.000	0.000	0.000	15.616	0	0.000	0	
Horiz 10	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	51.37	Comp	16.66	H 19P	13.017	W 90	78.111	0.000	0.000	0.000	13.743	0	0.000	0	
Horiz 11	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	47.59	Comp	16.08	H 21P	11.387	W 90	70.686	0.000	0.000	0.000	12.806	0	0.000	0	
Horiz 12	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	47.59	Comp	14.89	H 23X	10.523	W -90	70.686	0.000	0.000	0.000	11.870	0	0.000	0	
Horiz 13	B/B L2.5"x2.5"x0.25"	DAE	2.5X2.5X0.25	33.0	44.40	Comp	14.90	H 25P	10.532	W 90	70.686	0.000	0.000	0.000	10.933	0	0.000	0	
Horiz 14	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	43.62	Comp	3.45	H 27P	2.696	W 90	78.111	0.000	0.000	0.000	9.996	0	0.000	0	
Horiz 15	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	67.64	Comp	0.00	H 30X	0.000		78.111	0.000	0.000	0.000	18.120	0	0.000	0	
Horiz 16	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	25.92	Comp	0.00	H 32X	0.000		78.111	0.000	0.000	0.000	16.246	0	0.000	0	
Horiz 17	B/B L3.5"x3"x0.3125"	DAL	3.5X3X0.31	33.0	15.35	Comp	0.00	H 34X	0.000		114.939	0.000	0.000	0.000	14.373	0	0.000	0	
Horiz 18	L 6" x 3.5" x 0.5"	SAU	6X3.5X0.5	33.0	18.98	Tens	18.98	H 35P	25.371	W 0	133.650	0.000	0.000	0.000	12.500	0	0.000	0	
Horiz 19	B/B L3.5"x3.5"x0.3125"	DAE	3.5X3.5X0.31	33.0	26.13	Comp	0.00	H 38X	0.000		124.146	0.000	0.000	0.000	7.000	0	0.000	0	
Horiz 20	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	33.0	13.57	Comp	0.00	H 40X	0.000		63.261	0.000	0.000	0.000	7.000	0	0.000	0	
Horiz 21	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	33.0	8.79	Comp	0.17	H 42X	0.110	W -90 1c	63.261	0.000	0.000	0.000	7.000	0	0.000	0	
LD 1	B/B L3.5"x3"x0.25"	DAL	3.5X3X0.25	33.0	51.25	Comp	18.80	LD 2Y	17.479	W -45	92.961	0.000	0.000	0.000	17.433	0	0.000	0	
LD 2	B/B L5"x3.5"x0.4375"	DAL	5X3.5X0.44	33.0	52.06	Comp	21.21	LD 3P	44.405	W -90	209.385	0.000	0.000	0.000	24.133	0	0.000	0	
LD 4	B/B L3.5"x3"x0.25"	DAL	3.5X3X0.25	33.0	46.21	Comp	15.54	LD 8Y	14.450	W -45	92.961	0.000	0.000	0.000	16.617	0	0.000	0	
LD 5	B/B L4"x3"x0.375"	DAL	4X3X0.38	33.0	90.22	Comp	29.51	LD 9P	43.556	W -90	147.609	0.000	0.000	0.000	16.617	0	0.000	0	
LD 7	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	33.0	46.33	Comp	16.27	LD 14Y	13.921	W -45	85.536	0.000	0.000	0.000	15.814	0	0.000	0	
LD 8	B/B L4"x3"x0.3125"	DAL	4X3X0.31	33.0	84.55	Comp	34.15	LD 15P	42.399	W -90	124.146	0.000	0.000	0.000	15.814	0	0.000	0	
LD 10	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	33.0	35.78	Comp	14.69	LD 19P	12.566	W -90	85.536	0.000	0.000	0.000	15.027	0	0.000	0	
LD 11	B/B L4"x3"x0.3125"	DAL	4X3X0.31	33.0	86.13	Comp	33.24	LD 21P	41.266	W -90	124.146	0.000	0.000	0.000	15.027	0	0.000	0	
LD 13	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	33.0	60.81	Tens	60.81	LD 25P	38.469	W -90	63.261	0.000	0.000	0.000	12.762	0	0.000	0	
LD 14	B/B L3.5"x2.5"x0.25"	DAL	3.5X2.5X0.25	33.0	68.62	Comp	21.22	LD 27P	26.702	W -90	85.536	0.000	0.000	0.000	10.145	0	0.000	0	
LD 15	B/B L3.5"x3"x0.3125"	DAL	3.5X3X0.31	33.0	57.68	Comp	29.08	LD 29X	33.421	W -90	114.939	0.000	0.000	0.000	11.363	0	0.000	0	
LD 16	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	33.0	56.07	Tens	56.07	LD 31P	35.472	W -90	63.261	0.000	0.000	0.000	12.145	0	0.000	0	
LD 17	B/B L3"x2.5"x0.25"	DAL	3X2.5X0.25	33.0	80.90	Comp	33.14	LD 33P	25.884	W -90	78.111	0.000	0.000	0.000	9.915	0	0.000	0	
LD 18	B/B L3"x3"x0.3125"	DAE	3X3X0.31	33.0	68.38	Comp	29.66	LD 35X	31.270	W -90	105.435	0.000	0.000	0.000	10.949	0	0.000	0	
LD 19	B/B L2.5"x2"x0.25"	DAL	2.5X2X0.25	33.0	53.06	Tens	53.06	LD 37P	33.566	W -90	63.261	0.000	0.000	0.000	11.555	0	0.000	0	
LD 20	B/B L3"x2"x0.25"	DAL	3X2X0.25	33.0	90.34	Comp	34.89	LD 39P	24.665	W -90	70.686	0.000	0.000	0.000	9.697	0	0.000	0	
LD 21	B/B L3"x3"x0.25"	DAE	3X3X0.25	33.0	76.33	Comp	34.80	LD 41X	29.763	W -90	85.536	0.000	0.000	0.000	10.556	0	0.000	0	
LH 1	B/B L3"x4"x0.3125"	DAS	4X3X0.31	33.0	9.76	Tens	9.76	LH 1Y	12.114	W 0	124.146	0.000	0.000	0.000	30.602	0	0.000	0	
LH 2	B/B L3"x4"x0.3125"	DAS	4X3X0.31	33.0	6.02	Tens	6.02	LH 3Y	7.477	W 0	124.146	0.000	0.000	0.000	28.729	0	0.000	0	
LH 3	B/B L3"x4"x0.3125"	DAS	4X3X0.31	33.0	5.69	Tens	5.69	LH 5Y	7.066	W 0	124.146	0.000	0.000	0.000	26.855	0	0.000	0	
LH 4	B/B L3"x4"x0.3125"	DAS	4X3X0.31	33.0	5.74	Tens	5.74	LH 7Y	7.130	W 0	124.146	0.000	0.000	0.000	24.982	0	0.000	0	
LH 5	B/B L3"x4"x0.3125"	DAS	4X3X0.31	33.0	36.46	Tens	36.46	LH 9P	45.264	W -90	124.146	0.000	0.000	0.000	13.460	0	0.000	0	
LH 6	B/B L3"x3.5"x0.3125"	DAS	3.5X3X0.31	33.0	35.26	Tens	35.26	LH 11P	40.525	W -90	114.939	0.000	0.000	0.000	12.420	0	0.000	0	
LH 7	B/B L3"x3"x0.25"	DAE	3X3X0.25	33.0	42.83	Tens	42.83	LH 13P	38.639	W -90	85.538	0.000	0.000	0.000	11.379	0	0.000	0	
DUM 1	Dummy Bracing Member	DUM	0.1X0.1X1	36.0	0.00		0.00	BR 17X	0.914	W -45	0.324	0.000	0.000	0.000	22.084	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	**100.36**	**H 10Y**	**Angle**	**NG**
W 180	**101.96**	**H 12P**	**Angle**	**NG**
W 45	76.62	L 4P	Angle	
W -45	77.93	H 10Y	Angle	
W 90	**101.41**	**H 9X**	**Angle**	**NG**
W -90	**103.09**	**H 11P**	**Angle**	**NG**
W 0 Ice	32.41	L 4P	Angle	
W 180 Ice	33.63	D 13Y	Angle	
W 45 Ice	37.56	L 4P	Angle	
W -45 Ice	36.61	L 4X	Angle	
W 90 Ice	32.50	D 14P	Angle	
W -90 Ice	33.75	D 14X	Angle	

*** Weight of structure (lbs):

Weight of Angles*Section DLF:	245241.2
Weight of Equipment:	492.0
Total:	245733.2

*** End of Report

Site #: 88010				Engineer:	RDB	Windspeed:	No Ice: 101 mph	Ice: 50 mph				Taper:	-0.149857		Taper Change:	350 ft					
Name: Durham CT, CT				Date:	01/30/19	Carrier:	Sigfox S.A.					FW @ Base:	64.95 ft		FW @ Top:	12.5 ft					
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	Spreadsheet Version Last Updated:	11/12/2014
0	XY-Symmetry	32.475	32.475	0	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed		2	8.330	25	1	1	0	64.95	2		
1	XY-Symmetry	30.60178571	30.60178571	25	Free	Free	Free	Free	Free	Free		2	8.330	25	1	2	25	61.20357143	2		
2	XY-Symmetry	28.72857143	28.72857143	50	Free	Free	Free	Free	Free	Free		2	8.330	25	1	3	50	57.45714286	2		
3	XY-Symmetry	26.85535714	26.85535714	75	Free	Free	Free	Free	Free	Free		2	8.330	25	1	4	75	53.71071429	2		
4	XY-Symmetry	24.98214286	24.98214286	100	Free	Free	Free	Free	Free	Free	Y	3	8.330	25	2	5	100	49.96428571	4		
5	XY-Symmetry	23.10892857	23.10892857	125	Free	Free	Free	Free	Free	Free			8.33	25	2	6	125	46.21785714	3		
6	XY-Symmetry	21.23571429	21.23571429	150	Free	Free	Free	Free	Free	Free		3	8.33	25	2	7	150	42.47142857	3		
7	XY-Symmetry	19.3625	19.3625	175	Free	Free	Free	Free	Free	Free				25	A	8	175	38.725	2		
8	XY-Symmetry	17.48928571	17.48928571	200	Free	Free	Free	Free	Free	Free				25	A	9	200	34.97857143	2		
9	XY-Symmetry	15.61607143	15.61607143	225	Free	Free	Free	Free	Free	Free				25	A	10	225	31.23214286	2		
10	XY-Symmetry	13.74285714	13.74285714	250	Free	Free	Free	Free	Free	Free				12.5	A	11	250	27.48571429	1		
11	XY-Symmetry	12.80625	12.80625	262.5	Free	Free	Free	Free	Free	Free				12.5	A	12	262.5	25.6125	1		
12	XY-Symmetry	11.86964286	11.86964286	275	Free	Free	Free	Free	Free	Free				12.5	A	13	275	23.73928571	1		
13	XY-Symmetry	10.93303571	10.93303571	287.5	Free	Free	Free	Free	Free	Free				12.5	A	14	287.5	21.86607143	1		
14	XY-Symmetry	9.996428571	9.996428571	300	Free	Free	Free	Free	Free	Free		1		12.5	X	15	300	19.99285714	1		
15	XY-Symmetry	9.059821429	9.059821429	312.5	Free	Free	Free	Free	Free	Free		1		12.5	X	16	312.5	18.11964286	1		
16	XY-Symmetry	8.123214286	8.123214286	325	Free	Free	Free	Free	Free	Free		1		12.5	X	17	325	16.24642857	1		
17	XY-Symmetry	7.186607143	7.186607143	337.5	Free	Free	Free	Free	Free	Free				12.5	X	18	337.5	14.37321429	1		
18	XY-Symmetry	6.25	6.25	350	Free	Free	Free	Free	Free	Free				1	X	19	350	12.5	1		
19	XY-Symmetry	3.5	3.5	351	Free	Free	Free	Free	Free	Free				7	X	20	351	7			
20	XY-Symmetry	3.5	3.5	358	Free	Free	Free	Free	Free	Free				7	X	21	358	7			
21	XY-Symmetry	3.5	3.5	365	Free	Free	Free	Free	Free	Free						22	365	7			
A1	Y-Symmetry	30.60178571	0	25	Free	Free	Free	Free	Free	Free											
A2	X-Symmetry	0	30.60178571	25	Free	Free	Free	Free	Free	Free											
A3	Y-Symmetry	28.72857143	0	50	Free	Free	Free	Free	Free	Free											
A4	X-Symmetry	0	28.72857143	50	Free	Free	Free	Free	Free	Free											
A5	Y-Symmetry	26.85535714	0	75	Free	Free	Free	Free	Free	Free											
A6	X-Symmetry	0	26.85535714	75	Free	Free	Free	Free	Free	Free											
A7	Y-Symmetry	24.98214286	0	100	Free	Free	Free	Free	Free	Free											
A8	X-Symmetry	0	24.98214286	100	Free	Free	Free	Free	Free	Free											
A9	XY-Symmetry	23.10892857	7.70297619	125	Free	Free	Free	Free	Free	Free											
A10	XY-Symmetry	7.70297619	23.10892857	125	Free	Free	Free	Free	Free	Free											
A11	XY-Symmetry	21.23571429	7.078571429	150	Free	Free	Free	Free	Free	Free											
A12	XY-Symmetry	7.078571429	21.23571429	150	Free	Free	Free	Free	Free	Free											
A13	XY-Symmetry	19.3625	6.454166667	175	Free	Free	Free	Free	Free	Free											
A14	XY-Symmetry	6.454166667	19.3625	175	Free	Free	Free	Free	Free	Free											
A15	Y-Symmetry	17.48928571	0	200	Free	Free	Free	Free	Free	Free											
A16	X-Symmetry	0	17.48928571	200	Free	Free	Free	Free	Free	Free											
A17	Y-Symmetry	15.61607143	0	225	Free	Free	Free	Free	Free	Free											
A18	X-Symmetry	0	15.61607143	225	Free	Free	Free	Free	Free	Free											
A19	Y-Symmetry	13.74285714	0	250	Free	Free	Free	Free	Free	Free											
A20	X-Symmetry	0	13.74285714	250	Free	Free	Free	Free	Free	Free											
A21	Y-Symmetry	12.80625	0	262.5	Free	Free	Free	Free	Free	Free											
A22	X-Symmetry	0	12.80625	262.5	Free	Free	Free	Free	Free	Free											
A23	Y-Symmetry	11.86964286	0	275	Free	Free	Free	Free	Free	Free											
A24	X-Symmetry	0	11.86964286	275	Free	Free	Free	Free	Free	Free											
A25	Y-Symmetry	10.93303571	0	287.5	Free	Free	Free	Free	Free	Free											
A26	X-Symmetry	0	10.93303571	287.5	Free	Free	Free	Free	Free	Free											
A27	Y-Symmetry	9.996428571	0	300	Free	Free	Free	Free	Free	Free											
A28	X-Symmetry	0	9.996428571	300	Free	Free	Free	Free	Free	Free											
H1	XY-Symmetry	31.22594071	15.30089286	16.67	Free	Free	Free	Free	Free	Free											
H2	XY-Symmetry	15.30089286	31.22594071	16.67	Free	Free	Free	Free	Free	Free											
H5	XY-Symmetry	29.35272643	14.36428571	41.67	Free	Free	Free	Free	Free	Free											
H6	XY-Symmetry	14.36428571	29.35272643	41.67	Free	Free	Free	Free	Free	Free											
H9	XY-Symmetry	27.47951214	13.42767857	66.67	Free	Free	Free	Free	Free	Free											
H10	XY-Symmetry	13.42767857	27.47951214	66.67	Free	Free	Free	Free	Free	Free											
H13	XY-Symmetry	25.60629786	12.49107143	91.67	Free	Free	Free	Free	Free	Free											
H14	XY-Symmetry	12.49107143	25.60629786	91.67	Free	Free	Free	Free	Free	Free											
H17	XY-Symmetry	23.73308357	13.46039452	116.67	Free	Free	Free	Free	Free	Free											
H18	XY-Symmetry	13.46039452	23.73308357	116.67	Free	Free	Free	Free	Free	Free											
H19	Y-Symmetry	23.73308357	0	116.67	Free	Free	Free	Free	Free	Free											
H20	X-Symmetry	0	23.73308357	116.67	Free	Free	Free	Free	Free	Free											
H21	XY-Symmetry	21.85986929	12.41988643	141.67	Free	Free	Free	Free	Free	Free											
H22	XY-Symmetry	12.41988643	21.85986929	141.67	Free	Free	Free	Free	Free	Free											
H23	Y-Symmetry	21.85986929	0	141.67	Free	Free	Free	Free	Free	Free											
H24	X-Symmetry	0	21.85986929	141.67	Free	Free	Free	Free	Free	Free											
H25	XY-Symmetry	19.986655	11.37937833	166.67	Free	Free	Free	Free	Free	Free											
H26	XY-Symmetry	11.37937833	19.986655	166.67	Free	Free	Free	Free	Free	Free											
H27	Y-Symmetry	19.986655	0	166.67	Free	Free	Free	Free	Free	Free											
H28	X-Symmetry	0	19.986655	166.67	Free	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

Drops: Use only for types 1 & 2

Sections: 21

Legs

Site No.:	88010
Engineer:	RDB
Date:	01/30/2019
Carrier:	Sigfox S.A.

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	1.125	33
3	50.00-75.00	L	8	1.125	33
4	75.00-100.0	L	8	1.125	33
5	100.0-125.0	L	8	1.125	33
6	125.0-150.0	L	8	1.125	33
7	150.0-175.0	L	8	1.125	33
8	175.0-200.0	L	8	1	33
9	200.0-225.0	L	8	0.875	33
10	225.0-250.0	L	8	0.75	33
11	250.0-262.5	L	6	0.875	33
12	262.5-275.0	L	6	0.875	33
13	275.0-287.5	L	6	0.75	33
14	287.5-300.0	L	6	0.75	33
15	300.0-312.5	L	6	0.625	33
16	312.5-325.0	L	6	0.625	33
17	325.0-337.5	L	6	0.5	33
18	337.5-350.0	L	6	0.5	33
19	350.0-351.0	L	6	0.5	33
20	351.0-358.0	L	6	0.5	33
21	358.0-365.0	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.:	88010
Engineer:	RDB
Date:	01/30/2019
Carrier:	Sigfox S.A.

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		3.5	5	0.4375	33	
2	25.00-50.00	2L		3	4	0.3125	33	
3	50.00-75.00	2L		3	3.5	0.3125	33	
4	75.00-100.0	2L		3	3.5	0.3125	33	
5	100.0-125.0	2L		3	3	0.375	36	
6	125.0-150.0	2L		3	3	0.25	33	
7	150.0-175.0	2L		3	3	0.25	33	
8	175.0-200.0	2L		3	3.5	0.25	33	
9	200.0-225.0	2L		3	3.5	0.25	33	
10	225.0-250.0	2L		3	3.5	0.25	33	
11	250.0-262.5	2L		2.5	3	0.25	33	
12	262.5-275.0	2L		2.5	3	0.25	33	
13	275.0-287.5	2L		2.5	3	0.25	33	
14	287.5-300.0	2L		2.5	2.5	0.25	33	
15	300.0-312.5	L		3	4	0.25	33	Y
16	312.5-325.0	L		3	4	0.25	33	Y
17	325.0-337.5	L		3.5	3	0.25	33	Y
18	337.5-350.0	L		3.5	3.5	0.25	33	Y
19	350.0-351.0	2L		3.5	3.5	0.25	33	
20	351.0-358.0	L		3	2	0.25	33	Y
21	358.0-365.0	L		3	2	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.:	88010
Engineer:	RDB
Date:	01/30/2019
Carrier:	Sigfox S.A.

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		5	3.5	0.375	33	
2	25.00-50.00	2L		4	3	0.3125	33	
3	50.00-75.00	2L		3.5	3	0.3125	33	
4	75.00-100.0	2L		3.5	3	0.3125	33	
5	100.0-125.0	2L		3.5	3	0.3125	33	
6	125.0-150.0	2L		3.5	3	0.3125	33	
7	150.0-175.0	2L		3	3	0.3125	33	
8	175.0-200.0	2L		3.5	2.5	0.3125	33	
9	200.0-225.0	2L		3	2.5	0.25	33	
10	225.0-250.0	2L		3	2.5	0.25	33	
11	250.0-262.5	2L		2.5	2.5	0.25	33	
12	262.5-275.0	2L		2.5	2.5	0.25	33	
13	275.0-287.5	2L		2.5	2.5	0.25	33	
14	287.5-300.0	2L		3	2.5	0.25	33	
15	300.0-312.5	2L		3	2.5	0.25	33	
16	312.5-325.0	2L		3	2.5	0.25	33	
17	325.0-337.5	2L		3.5	3	0.3125	33	
18	337.5-350.0	L		6	3.5	0.5	33	
19	350.0-351.0	2L		3.5	3.5	0.3125	33	
20	351.0-358.0	2L		2.5	2	0.25	33	
21	358.0-365.0	2L		2.5	2	0.25	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.:	88010
Engineer:	RDB
Date:	01/30/2019
Carrier:	Sigfox S.A.

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		3.5	3	0.25	33
2	0.000-25.00	2L		5	3.5	0.4375	33
3	25.00-50.00	2L		3.5	3	0.25	33
4	25.00-50.00	2L		4	3	0.375	33
5	50.00-75.00	2L		3.5	2.5	0.25	33
6	50.00-75.00	2L		4	3	0.3125	33
7	75.00-100.0	2L		3.5	2.5	0.25	33
8	75.00-100.0	2L		4	3	0.3125	33
9	100.0-125.0	2L		2.5	2	0.25	33
10	100.0-125.0	2L		3.5	2.5	0.25	33
11	100.0-125.0	2L		3.5	3	0.3125	33
12	125.0-150.0	2L		2.5	2	0.25	33
13	125.0-150.0	2L		3	2.5	0.25	33
14	125.0-150.0	2L		3	3	0.3125	33
15	150.0-175.0	2L		2.5	2	0.25	33
16	150.0-175.0	2L		3	2	0.25	33
17	150.0-175.0	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.:	88010
Engineer:	RDB
Date:	01/30/2019
Carrier:	Sigfox S.A.

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		3	4	0.3125	33	Y
2	25.00-50.00	2L		3	4	0.3125	33	Y
3	50.00-75.00	2L		3	4	0.3125	33	Y
4	75.00-100.0	2L		3	4	0.3125	33	Y
5	100.0-125.0	2L		3	4	0.3125	33	Y
6	125.0-150.0	2L		3	3.5	0.3125	33	Y
7	150.0-175.0	2L		3	3	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.:	88010
Engineer:	RDB
Date:	01/30/19
Carrier:	Sigfox S.A.

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	365	1	Flat	1.5	6.0	6	Yes	Yes
2 Coax Cage	8.33	33.33	3	Round	12	37.7	25	Yes	Yes
3 Coax Cage	8.33	33.33	3	Round	12	37.7	25	Yes	Yes
4 Coax Cage	8.33	33.33	1	Round	12	37.7	25	Yes	Yes
5 Coax Cage	8.33	33.33	1	Round	12	37.7	25	Yes	Yes
7 WG	5	365	2	Flat	1.5	6.0	6	Yes	Yes
8 Eversource Energy	5	365	1	Round	1.09	3.4	0.33	Yes	Yes
9 Eversource Energy	5	365	2	Round	1.98	6.2	0.82	Yes	Yes
10 Marcus Communications LLC	5	365	5	Round	1.55	4.9	0.63	Yes	Yes
11 US Dept Of Homeland Security	5	365	2	Round	1.09	3.4	0.33	Yes	Yes
12 Eversource Energy	5	365	1	Round	0.63	2.0	0.15	No	No
13 Marcus Communications LLC	5	339	1	Round	0.945	3.2	0.3	No	No
14 Marcus Communications LLC	5	329	1	Round	1.09	3.4	0.33	Yes	Yes
15 Sigfox S.A.	5	315	1	Round	1.09	3.4	0.33	Yes	Yes
16 Eversource Energy	5	301	2	Round	2.2	6.9	0.68	Yes	Yes
17 US Dept Of Homeland Security	5	289	1	Round	1.09	3.4	0.33	Yes	Yes
18 Sprint Nextel	5	288	2	Round	1.98	6.2	0.82	Yes	Yes
19 US Dept Of Homeland Security	5	260	1	Round	1.09	3.4	0.33	Yes	Yes
20 US Dept Of Homeland Security	5	247	1	Round	1.09	3.4	0.33	Yes	Yes
21 Sprint Nextel	5	235	4	Round	1.98	6.2	0.82	Yes	Yes
22 Eversource Energy	5	181	1	Round	1.09	3.4	0.33	Yes	Yes
23 Eversource Energy	5	180	1	Round	1.09	3.4	0.33	Yes	Yes
24 Eversource Energy	5	176	1	Round	1.09	3.4	0.33	Yes	Yes

Coax (p. 2 of 2)

Site No.:	88010
Engineer:	RDB
Date:	01/30/19
Carrier:	Sigfox S.A.

	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	365	1	B	1.50	**Flat**	100	1	**Flat**	**1**	**1**	**6.0**	**6**	Yes	Yes
Coax Cage	8.33	33.33	3	1	12.00	**Ind**	100	1	**Round**	**3**	**1**	**37.7**	**25**	Yes	Yes
Coax Cage	8.33	33.33	3	3	12.00	**Ind**	100	1	**Round**	**3**	**1**	**37.7**	**25**	Yes	Yes
Coax Cage	8.33	33.33	1	2	12.00	**Ind**	100	1	**Round**	**1**	**1**	**37.7**	**25**	Yes	Yes
Coax Cage	8.33	33.33	1	4	12.00	**Ind**	100	1	**Round**	**1**	**1**	**37.7**	**25**	Yes	Yes
								1						No	No
WG	5	365	2	3	1.50	**Flat**	100	1	**Flat**	**2**	**1**	**6.0**	**6**	Yes	Yes
Eversource Energy	5	365	1	4	1.09	**Ind**	100	1	**Round**	**1**	**1**	**3.4**	**0.33**	Yes	Yes
Eversource Energy	5	365	2	4	1.98	**Ind**	100	1	**Round**	**2**	**1**	**6.2**	**0.82**	Yes	Yes
Marcus Communications LLC	5	365	5	3	1.55	**Ind**	100	1	**Round**	**5**	**1**	**4.9**	**0.63**	Yes	Yes
US Dept Of Homeland Security	5	365	2	4	1.09	**Ind**	100	1	**Round**	**2**	**1**	**3.4**	**0.33**	Yes	Yes
Eversource Energy	5	365	1	4	0.63	**Ind**	0	1	**Round**	**1**	**1**	**2.0**	**0.15**	No	No
Marcus Communications LLC	5	339	2	3	0.63	**Ind**	0	1	**Round**	**1**	**2**	**3.2**	**0.3**	No	No
Marcus Communications LLC	5	329	1	3	1.09	**Ind**	100	1	**Round**	**1**	**1**	**3.4**	**0.33**	Yes	Yes
Sigfox S.A.	5	315	1	4	1.09	**Ind**	100	1	**Round**	**1**	**1**	**3.4**	**0.33**	Yes	Yes
Eversource Energy	5	301	2	4	2.20	**Ind**	100	1	**Round**	**2**	**1**	**6.9**	**0.68**	Yes	Yes
US Dept Of Homeland Security	5	289	1	4	1.09	**Ind**	100	1	**Round**	**1**	**1**	**3.4**	**0.33**	Yes	Yes
Sprint Nextel	5	288	2	2	1.98	**Ind**	100	1	**Round**	**2**	**1**	**6.2**	**0.82**	Yes	Yes
US Dept Of Homeland Security	5	260	1	4	1.09	**Ind**	100	1	**Round**	**1**	**1**	**3.4**	**0.33**	Yes	Yes
US Dept Of Homeland Security	5	247	1	4	1.09	**Ind**	100	1	**Round**	**1**	**1**	**3.4**	**0.33**	Yes	Yes
Sprint Nextel	5	235	4	2	1.98	**Ind**	100	1	**Round**	**4**	**1**	**6.2**	**0.82**	Yes	Yes
Eversource Energy	5	181	1	4	1.09	**Ind**	100	1	**Round**	**1**	**1**	**3.4**	**0.33**	Yes	Yes
Eversource Energy	5	180	1	4	1.09	**Ind**	100	1	**Round**	**1**	**1**	**3.4**	**0.33**	Yes	Yes
Eversource Energy	5	176	1	4	1.09	**Ind**	100	1	**Round**	**1**	**1**	**3.4**	**0.33**	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
								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
								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
								1						No	No
								1						No	No
								1						No	No
								1						No	No
								1						No	No
								1						No	No
								1						No	No

Dishes

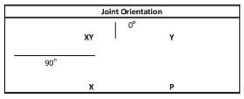
Site No.:	88010
Engineer:	RDB
Date:	01/30/19
Carrier:	Sigfox S.A.

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	339	4	0	R	XY	
2	339	4	135	R	X	
3	301	4	245	S	P	
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						
33						
34						
35						
36						
37						
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						

Equipment Label	Attach Label	Equipment Property Set	EIA Antenna Orientation Angle *(deg)*
4' RAD 1 @ 339'	17XY	4 ft RAD Dish	0
4' RAD 2 @ 339'	17X	4 ft RAD Dish	135
4' STD 3 @ 301'	14P	4 ft STD Dish	245

Joint Orientation



Site #:	88010
Name:	Sigfox S.A.

Engineer:	RDB
Date:	01/30/19

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
L 1	Leg S1		XY-Symmetry	0P	1P	1	4	0.3334	0.3334	0.3334
L 2	Leg S2		XY-Symmetry	1P	2P	1	4	0.3334	0.3334	0.3334
L 3	Leg S3		XY-Symmetry	2P	3P	1	4	0.3334	0.3334	0.3334
L 4	Leg S4		XY-Symmetry	3P	4P	1	4	0.3334	0.3334	0.3334
L 5	Leg S5		XY-Symmetry	4P	5P	1	4	0.222266667	0.222266667	0.222266667
L 6	Leg S6		XY-Symmetry	5P	6P	1	4	0.3332	0.3332	0.3332
L 7	Leg S7		XY-Symmetry	6P	7P	1	4	0.3332	0.3332	0.3332
L 8	Leg S8		XY-Symmetry	7P	8P	1	4	0.333333333	0.333333333	0.333333333
L 9	Leg S9		XY-Symmetry	8P	9P	1	4	0.333333333	0.333333333	0.333333333
L 10	Leg S10		XY-Symmetry	9P	10P	1	4	0.333333333	0.333333333	0.333333333
L 11	Leg S11		XY-Symmetry	10P	11P	1	4	0.5	0.5	0.5
L 12	Leg S12		XY-Symmetry	11P	12P	1	4	0.5	0.5	0.5
L 13	Leg S13		XY-Symmetry	12P	13P	1	4	0.5	0.5	0.5
L 14	Leg S14		XY-Symmetry	13P	14P	1	4	0.5	0.5	0.5
L 15	Leg S15		XY-Symmetry	14P	15P	1	4	0.5	0.5	0.5
L 16	Leg S16		XY-Symmetry	15P	16P	1	4	0.5	0.5	0.5
L 17	Leg S17		XY-Symmetry	16P	17P	1	4	0.5	0.5	0.5
L 18	Leg S18		XY-Symmetry	17P	18P	1	4	0.5	0.5	0.5
L 19	Leg S19		XY-Symmetry	18P	19P	1	4	0.5	0.5	0.5
L 20	Leg S20		XY-Symmetry	19P	20P	1	4	1	1	1
L 21	Leg S21		XY-Symmetry	20P	21P	1	4	1	1	1
D 1	Diag S1		XY-Symmetry	0P	H2P	1	6	0.5	1	0.5
D 2	Diag S1		XY-Symmetry	0P	H1P	1	6	0.5	1	0.5
D 3	Diag S2		XY-Symmetry	1P	H6P	1	6	0.45	0.9	0.45
D 4	Diag S2		XY-Symmetry	1P	H5P	1	6	0.45	0.9	0.45
D 5	Diag S3		XY-Symmetry	2P	H10P	1	6	0.45	0.9	0.45
D 6	Diag S3		XY-Symmetry	2P	H9P	1	6	0.45	0.9	0.45
D 7	Diag S4		XY-Symmetry	3P	H14P	1	6	0.45	0.88	0.45
D 8	Diag S4		XY-Symmetry	3P	H13P	1	6	0.45	0.88	0.45
D 9	Diag S5		XY-Symmetry	4P	H18P	1	6	0.333333333	0.666666667	0.333333333
D 10	Diag S5		XY-Symmetry	4P	H17P	1	6	0.333333333	0.666666667	0.333333333
D 11	Diag S6		XY-Symmetry	5P	H22P	1	6	0.333333333	0.666666667	0.333333333
D 12	Diag S6		XY-Symmetry	5P	H21P	1	6	0.333333333	0.666666667	0.333333333
D 13	Diag S7		XY-Symmetry	6P	H26P	1	6	0.3	0.88	0.3
D 14	Diag S7		XY-Symmetry	6P	H25P	1	6	0.3	0.88	0.3
D 15	Diag S8		XY-Symmetry	7P	A15P	1	6	0.333333333	0.666666667	0.333333333
D 16	Diag S8		XY-Symmetry	7P	A16P	1	6	0.333333333	0.666666667	0.333333333
D 17	Diag S9		XY-Symmetry	8P	A17P	1	6	0.333333333	0.666666667	0.333333333
D 18	Diag S9		XY-Symmetry	8P	A18P	1	6	0.333333333	0.666666667	0.333333333
D 19	Diag S10		XY-Symmetry	9P	A19P	1	6	0.333333333	0.666666667	0.333333333
D 20	Diag S10		XY-Symmetry	9P	A20P	1	6	0.333333333	0.666666667	0.333333333
D 21	Diag S11		XY-Symmetry	10P	A21P	1	6	0.5	1	0.5
D 22	Diag S11		XY-Symmetry	10P	A22P	1	6	0.5	1	0.5
D 23	Diag S12		XY-Symmetry	11P	A23P	1	6	0.5	1	0.5
D 24	Diag S12		XY-Symmetry	11P	A24P	1	6	0.5	1	0.5
D 25	Diag S13		XY-Symmetry	12P	A25P	1	6	0.5	1	0.5
D 26	Diag S13		XY-Symmetry	12P	A26P	1	6	0.5	1	0.5
D 27	Diag S14		XY-Symmetry	13P	A27P	1	6	0.5	1	0.5
D 28	Diag S14		XY-Symmetry	13P	A28P	1	6	0.5	1	0.5
D 29	Diag S15		XY-Symmetry	14P	15Y	2	5	100	100	100
D 30	Diag S15		XY-Symmetry	14P	15X	2	5	100	100	100
D 31	Diag S16		XY-Symmetry	15P	16Y	2	5	100	100	100
D 32	Diag S16		XY-Symmetry	15P	16X	2	5	100	100	100
D 33	Diag S17		XY-Symmetry	16P	17Y	2	5	100	100	100
D 34	Diag S17		XY-Symmetry	16P	17X	2	5	100	100	100
D 35	Diag S18		XY-Symmetry	17P	18Y	2	5	100	100	100
D 36	Diag S18		XY-Symmetry	17P	18X	2	5	100	100	100
D 37	Diag S19		XY-Symmetry	18P	19Y	1	6	0.52	0.52	0.52
D 38	Diag S19		XY-Symmetry	18P	19X	1	6	0.52	0.52	0.52
D 39	Diag S20		XY-Symmetry	19P	20Y	2	5	100	100	100
D 40	Diag S20		XY-Symmetry	19P	20X	2	5	100	100	100
D 41	Diag S21		XY-Symmetry	20P	21Y	2	5	100	100	100
D 42	Diag S21		XY-Symmetry	20P	21X	2	5	100	100	100

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
H 1	Horiz 1		XY-Symmetry	1P	A1P	1	6	0.5	0.5	0.5
H 2	Horiz 1		XY-Symmetry	1P	A2P	1	6	0.5	0.5	0.5
H 3	Horiz 2		XY-Symmetry	2P	A3P	1	6	0.5	0.5	0.5
H 4	Horiz 2		XY-Symmetry	2P	A4P	1	6	0.5	0.5	0.5
H 5	Horiz 3		XY-Symmetry	3P	A5P	1	6	0.5	0.5	0.5
H 6	Horiz 3		XY-Symmetry	3P	A6P	1	6	0.5	0.5	0.5
H 7	Horiz 4		XY-Symmetry	4P	A7P	1	6	0.5	0.5	0.5
H 8	Horiz 4		XY-Symmetry	4P	A8P	1	6	0.5	0.5	0.5
H 9	Horiz 5		XY-Symmetry	5P	A9P	1	6	0.45	0.88	0.45
H 10	Horiz 5		XY-Symmetry	5P	A10P	1	6	0.45	0.88	0.45
H 11	Horiz 6		XY-Symmetry	6P	A11P	1	6	0.88	0.88	0.88
H 12	Horiz 6		XY-Symmetry	6P	A12P	1	6	0.88	0.88	0.88
H 13	Horiz 7		XY-Symmetry	7P	A13P	1	6	0.5	1	0.5
H 14	Horiz 7		XY-Symmetry	7P	A14P	1	6	0.5	1	0.5
H 15	Horiz 8		XY-Symmetry	8P	A15P	1	6	1	1	1
H 16	Horiz 8		XY-Symmetry	8P	A16P	1	6	1	1	1
H 17	Horiz 9		XY-Symmetry	9P	A17P	1	6	0.5	1	0.5
H 18	Horiz 9		XY-Symmetry	9P	A18P	1	6	0.5	1	0.5
H 19	Horiz 10		XY-Symmetry	10P	A19P	1	6	1	1	1
H 20	Horiz 10		XY-Symmetry	10P	A20P	1	6	1	1	1
H 21	Horiz 11		XY-Symmetry	11P	A21P	1	6	0.5	1	0.5
H 22	Horiz 11		XY-Symmetry	11P	A22P	1	6	0.5	1	0.5
H 23	Horiz 12		XY-Symmetry	12P	A23P	1	6	1	1	1
H 24	Horiz 12		XY-Symmetry	12P	A24P	1	6	1	1	1
H 25	Horiz 13		XY-Symmetry	13P	A25P	1	6	1	1	1
H 26	Horiz 13		XY-Symmetry	13P	A26P	1	6	1	1	1
H 27	Horiz 14		XY-Symmetry	14P	A27P	1	6	1	1	1
H 28	Horiz 14		XY-Symmetry	14P	A28P	1	6	1	1	1
H 29	Horiz 15		Y-Symmetry	15P	15X	3	5	0.5	1	0.5
H 30	Horiz 15		X-Symmetry	15P	15Y	3	5	0.5	1	0.5
H 31	Horiz 16		Y-Symmetry	16P	16X	3	5	0.5	0.5	0.5
H 32	Horiz 16		X-Symmetry	16P	16Y	3	5	0.5	0.5	0.5
H 33	Horiz 17		Y-Symmetry	17P	17X	3	5	0.5	1	0.5
H 34	Horiz 17		X-Symmetry	17P	17Y	3	5	0.5	1	0.5
H 35	Horiz 18		Y-Symmetry	18P	18X	3	5	1	1	1
H 36	Horiz 18		X-Symmetry	18P	18Y	3	5	1	1	1
H 37	Horiz 19		Y-Symmetry	19P	19X	1	6	1	1	1
H 38	Horiz 19		X-Symmetry	19P	19Y	1	6	1	1	1
H 39	Horiz 20		Y-Symmetry	20P	20X	3	5	1	1	1
H 40	Horiz 20		X-Symmetry	20P	20Y	3	5	1	1	1
H 41	Horiz 21		Y-Symmetry	21P	21X	3	5	1	1	1
H 42	Horiz 21		X-Symmetry	21P	21Y	3	5	1	1	1
H 51	Horiz 5		Y-Symmetry	A9P	A9X	1	6	0.5	1	0.5
H 52	Horiz 5		X-Symmetry	A10P	A10Y	1	6	0.5	1	0.5
H 53	Horiz 6		Y-Symmetry	A11P	A11X	1	6	1	1	1
H 54	Horiz 6		X-Symmetry	A12P	A12Y	1	6	1	1	1
H 55	Horiz 7		Y-Symmetry	A13P	A13X	1	6	0.5	1	0.5
H 56	Horiz 7		X-Symmetry	A14P	A14Y	1	6	0.5	1	0.5
LH 1	LH 1		Y-Symmetry	H1P	H1X	1	6	100	100	100
LH 2	LH 1		X-Symmetry	H2P	H2Y	1	6	100	100	100
LH 3	LH 2		Y-Symmetry	H5P	H5X	1	6	100	100	100
LH 4	LH 2		X-Symmetry	H6P	H6Y	1	6	100	100	100
LH 5	LH 3		Y-Symmetry	H9P	H9X	1	6	100	100	100
LH 6	LH 3		X-Symmetry	H10P	H10Y	1	6	100	100	100
LH 7	LH 4		Y-Symmetry	H13P	H13X	1	6	100	100	100
LH 8	LH 4		X-Symmetry	H14P	H14Y	1	6	100	100	100
LH 9	LH 5		XY-Symmetry	H17P	H19P	1	6	100	100	100
LH 10	LH 5		XY-Symmetry	H18P	H20P	1	6	100	100	100
LH 11	LH 6		XY-Symmetry	H21P	H23P	1	6	100	100	100
LH 12	LH 6		XY-Symmetry	H22P	H24P	1	6	100	100	100
LH 13	LH 7		XY-Symmetry	H25P	H27P	1	6	100	100	100
LH 14	LH 7		XY-Symmetry	H26P	H28P	1	6	100	100	100
LD 1	LD 1		XY-Symmetry	H1P	1P	1	6	1	1	1

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
LD 2	LD 1		XY-Symmetry	H2P	1P	1	6	1	1	1
LD 3	LD 2		XY-Symmetry	H1P	A1P	1	6	0.9	0.9	0.9
LD 4	LD 2		XY-Symmetry	H2P	A2P	1	6	0.9	0.9	0.9
LD 7	LD 4		XY-Symmetry	H5P	2P	1	6	1	1	1
LD 8	LD 4		XY-Symmetry	H6P	2P	1	6	1	1	1
LD 9	LD 5		XY-Symmetry	H5P	A3P	1	6	1	1	1
LD 10	LD 5		XY-Symmetry	H6P	A4P	1	6	1	1	1
LD 13	LD 7		XY-Symmetry	H9P	3P	1	6	1	1	1
LD 14	LD 7		XY-Symmetry	H10P	3P	1	6	1	1	1
LD 15	LD 8		XY-Symmetry	H9P	A5P	1	6	0.9	0.9	0.9
LD 16	LD 8		XY-Symmetry	H10P	A6P	1	6	0.9	0.9	0.9
LD 19	LD 10		XY-Symmetry	H13P	4P	1	6	0.9	0.9	0.9
LD 20	LD 10		XY-Symmetry	H14P	4P	1	6	0.9	0.9	0.9
LD 21	LD 11		XY-Symmetry	H13P	A7P	1	6	1	1	1
LD 22	LD 11		XY-Symmetry	H14P	A8P	1	6	1	1	1
LD 25	LD 13		XY-Symmetry	H17P	5P	1	6	0.46	0.88	0.46
LD 26	LD 13		XY-Symmetry	H18P	5P	1	6	0.46	0.88	0.46
LD 27	LD 14		XY-Symmetry	H17P	A9P	1	6	1	1	1
LD 28	LD 14		XY-Symmetry	H18P	A10P	1	6	1	1	1
LD 29	LD 15		XY-Symmetry	A9P	H19P	1	6	1	1	1
LD 30	LD 15		XY-Symmetry	A10P	H20P	1	6	1	1	1
LD 31	LD 16		XY-Symmetry	H21P	6P	1	6	0.87	0.87	0.87
LD 32	LD 16		XY-Symmetry	H22P	6P	1	6	0.87	0.87	0.87
LD 33	LD 17		XY-Symmetry	H21P	A11P	1	6	1	1	1
LD 34	LD 17		XY-Symmetry	H22P	A12P	1	6	1	1	1
LD 35	LD 18		XY-Symmetry	A11P	H23P	1	6	1	1	1
LD 36	LD 18		XY-Symmetry	A12P	H24P	1	6	1	1	1
LD 37	LD 19		XY-Symmetry	H25P	7P	1	6	0.93	0.93	0.93
LD 38	LD 19		XY-Symmetry	H26P	7P	1	6	0.93	0.93	0.93
LD 39	LD 20		XY-Symmetry	H25P	A13P	1	6	1	1	1
LD 40	LD 20		XY-Symmetry	H26P	A14P	1	6	1	1	1
LD 41	LD 21		XY-Symmetry	A13P	H27P	1	6	1	1	1
LD 42	LD 21		XY-Symmetry	A14P	H28P	1	6	1	1	1
BR 1	DUM 1		XY-Symmetry	A1P	A2P	1	4	1	1	1
BR 3	DUM 1		XY-Symmetry	A3P	A4P	1	4	1	1	1
BR 5	DUM 1		XY-Symmetry	A5P	A6P	1	4	1	1	1
BR 7	DUM 1		XY-Symmetry	A7P	A8P	1	4	1	1	1
BR 9	DUM 1		XY-Symmetry	A9P	A10P	1	4	1	1	1
BR 10	DUM 1		XY-Symmetry	A9P	A10XY	1	4	1	1	1
BR 11	DUM 1		XY-Symmetry	A11P	A12P	1	4	1	1	1
BR 12	DUM 1		XY-Symmetry	A11P	A12XY	1	4	1	1	1
BR 13	DUM 1		XY-Symmetry	A13P	A14P	1	4	1	1	1
BR 14	DUM 1		XY-Symmetry	A13P	A14XY	1	4	1	1	1
BR 15	DUM 1		XY-Symmetry	A15P	A16P	1	4	1	1	1
BR 17	DUM 1		XY-Symmetry	A17P	A18P	1	4	1	1	1
BR 19	DUM 1		XY-Symmetry	A19P	A20P	1	4	1	1	1
BR 21	DUM 1		XY-Symmetry	A21P	A22P	1	4	1	1	1
BR 23	DUM 1		XY-Symmetry	A23P	A24P	1	4	1	1	1
BR 25	DUM 1		XY-Symmetry	A25P	A26P	1	4	1	1	1

Member Label	Group Label	Section Label	Symmetry Code	Origin Joint	End Joint	Ecc. Code	Rest. Code	Ratio RLX	Ratio RLY	Ratio RLZ
BR 27	DUM 1		XY-Symmetry	A27P	A28P	1	4	1	1	1
BR 61	DUM 1		XY-Symmetry	H1P	H2P	1	4	1	1	1
BR 62	DUM 1		XY-Symmetry	H1P	H2XY	1	4	1	1	1
BR 64	DUM 1		XY-Symmetry	H5P	H6P	1	4	1	1	1
BR 65	DUM 1		XY-Symmetry	H5P	H6XY	1	4	1	1	1
BR 67	DUM 1		XY-Symmetry	H9P	H10P	1	4	1	1	1
BR 68	DUM 1		XY-Symmetry	H9P	H10XY	1	4	1	1	1
BR 70	DUM 1		XY-Symmetry	H13P	H14P	1	4	1	1	1
BR 71	DUM 1		XY-Symmetry	H13P	H14XY	1	4	1	1	1
BR 73	DUM 1		XY-Symmetry	H17P	H18P	1	4	1	1	1
BR 74	DUM 1		XY-Symmetry	H17P	H18XY	1	4	1	1	1
BR 75	DUM 1		XY-Symmetry	H19P	H20P	1	4	1	1	1
BR 76	DUM 1		XY-Symmetry	H21P	H22P	1	4	1	1	1
BR 77	DUM 1		XY-Symmetry	H21P	H22XY	1	4	1	1	1
BR 78	DUM 1		XY-Symmetry	H23P	H24P	1	4	1	1	1
BR 79	DUM 1		XY-Symmetry	H25P	H26P	1	4	1	1	1
BR 80	DUM 1		XY-Symmetry	H25P	H26XY	1	4	1	1	1
BR 81	DUM 1		XY-Symmetry	H27P	H28P	1	4	1	1	1

Task:	Determine Point Loads	
Tower Height:	365	ft
Gh:	0.85	
Wind Speed:	101	mph, Vasd
Ice Wind Speed:	50	
Ice Density:	56	
Tower Type:	5	

Ice Thick:	0.75	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.:	88010
Engineer:	RDB
Date:	01/30/2019
Carrier:	Sigfox S.A.

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 (k)	Ka
1		365	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
		365	1	4		Platform w/ HR						1.000	75.00	8.50	1
2		350	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
		350	1	4		Platform w/ HR						1.000	80.00	9.00	1
3		325	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
		325	1	4		Catwalk						1.000	70.00	8.00	1
4		315	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
		315	1	1		Horn Mount						1.000	10.00	0.50	1
5		300	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
		300	1	1		Rest Platform						1.000	15.00	0.50	1
6		250	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
		250	1	3		Access Platform						1.000	35.00	4.00	1
7		200	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
		200	1	1		Rest Platform						1.000	15.00	0.50	1
8		150	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
		150	1	1		Rest Platform						1.000	15.00	0.50	1
9		125	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
		125	1	3		Access Platform						1.000	45.00	5.00	1
10		100	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
		100	1	1		Rest Platform						1.000	15.00	0.50	1
11															1
															1
12	Eversource Energy	376	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Eversource Energy	376	1	1	Kreco	CO-41A						1.000	4.20	0.01	1
13	Other	374	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Other	374	1	1		20' Dipole						1.000	7.52	0.06	1
14	Eversource Energy	373	1	1	dbSpectra	DS9A09F36D-N	230.4	3.2	3.2	47	R	1.000			1
	Marcus Communications LLC	373	3	3	TX RX Systems	101-68-10-X-03N						1.000	5.53	0.07	1
15	US Dept Of Homeland Security	372	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	US Dept Of Homeland Security	372	1	1	Rohde & Schwarz	ADD090						1.000	20.76	0.09	1
16	Eversource Energy	366	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Eversource Energy	366	1	1	Bird	429-83H-01-T						1.000	0.92	0.02	1
17	Marcus Communications LLC	329	1	1		10' Omni	120	3	3	25	R	1.000			1
	Marcus Communications LLC	329	1	1		Round Side Arm						1.000	5.20	0.15	1
18	Sigfox S.A.	315	1	1	Procom	CXL 900-3LW	27.6	0.6	0.6	1.5	R	1.000			1
	Sigfox S.A.	315	1	1		5" x 3" x 2" Cavity Filter						1.000	0.17	0.00	1
19	Sigfox S.A.	315	1	1		Low Noise Amplifier	5	4	2	2	F	1.000			1
	Sigfox S.A.	315	1	1		Flat Side Arm						1.000	6.30	0.15	1
20	Other	296	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Other	296	1	1		20' FM						1.000	21.12	0.60	1
21	US Dept Of Homeland Security	289	1	1	Sinclair	SC281-L	251	5	5	79	R	1.000			1
	US Dept Of Homeland Security	289	1	1		Round Side Arm						1.000	5.20	0.15	1
22	Sprint Nextel	288	2	1	Andrew	DB844H90E-XY	48	6.5	8	14	F	1.000			0.9
	Sprint Nextel	288	1	1		Flat Sector Frame						1.000	17.90	0.40	1
23	US Dept Of Homeland Security	260	1	1	Sinclair	SC281-L	251	5	5	79	R	1.000			1
	US Dept Of Homeland Security	260	1	1		Round Side Arm						1.000	5.20	0.15	1
24	US Dept Of Homeland Security	247	1	1	Sinclair	SC281-L	251	5	5	79	R	1.000			1
	US Dept Of Homeland Security	247	1	1		Round Side Arm						1.000	5.20	0.15	1
25	Sprint Nextel	235	2	2	Decibel	DB844H90E-XY	48	6.5	8	14	F	0.610			0.9
	Sprint Nextel	235	2	2	Andrew	844G65V7ZASX						1.000	5.31	0.02	0.9
26	Sprint Nextel	235	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Sprint Nextel	235	2	2		Flat Sector Frame						0.900	17.90	0.40	0.9
27	Eversource Energy	181	1	1		-	0.0001	0.0001	0.0001	0.0001	F	0.000			1
	Eversource Energy	181	1	1	Comprod	531-70HD						1.000	5.98	0.04	1
28	Eversource Energy	180	1	1	Telewave	ANT450F6	94	2.3	2.3	21	R	1.000			1
	Eversource Energy	180	1	1		Round Side Arm						1.000	5.20	0.15	1
29	Eversource Energy	176	1	1	Kreco	CO-41A	168	3	3	14	R	1.000			1
	Eversource Energy	176	1	1		Round Side Arm						1.000	5.20	0.15	1
30															1
															1
31															1
															1
32															1
															1
33															1
															1
34															1
															1
35															1
															1
36															1
															1
37															1
															1
38															1
															1
39															1
															1
40															1
															1
41															1
															1
42															1
															1
43															1
															1
44															1
															1
45															1
															1
46															1
															1
47															1
															1
48															1
															1
49															1
															1
50															1
															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	365	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00			
	365	75.00	101.25	3239.034	669.771	10200	13260	1.00	1781.47	368.37	1.5027397	3239.033748	
2	350	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5027407		
	350	80.00	108.00	3413.792	705.908	10800	14040	1.00	1877.59	388.25	1.5028571	3413.792384	
3	325	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5028581		
	325	70.00	94.50	2924.486	604.729	9600	12480	1.00	1608.47	332.60	1.5030769	2924.485917	
4	315	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5030779		
	315	10.00	13.50	414.070	85.622	600	780	1.00	227.74	47.09	1.5031746	414.0697932	
5	300	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5031756		
	300	15.00	20.25	612.507	126.655	600	780	1.00	336.88	69.66	1.5033333	612.5065299	
6	250	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5033343		
	250	35.00	47.25	1356.639	280.527	4800	6240	1.00	746.15	154.29	1.5040000	1356.638992	
7	200	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5040010		
	200	15.00	20.25	545.505	112.800	600	780	1.00	300.03	62.04	1.5050000	545.5052501	
8	150	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5050010		
	150	15.00	20.25	502.461	103.899	600	780	1.00	276.35	57.14	1.5066667	502.4607623	
9	125	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5066677		
	125	45.00	60.75	1430.870	295.877	6000	7800	1.00	786.98	162.73	1.5080000	1430.870053	
10	100	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5080010		
	100	15.00	20.25	447.497	92.534	600	780	1.00	246.12	50.89	1.5100000	447.4972436	
11								1.00			1.5100010		
								1.00					
12	376	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00			
	376	4.20	5.67	182.931	37.827	17	22	1.00	100.61	20.80	1.5026596	182.9311987	
13	374	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5026606		
	374	7.52	10.15	327.035	67.625	72	94	1.00	179.87	37.19	1.5026738	327.0352353	
14	373	6.14	9.08	266.990	60.456	56	414	1.00	146.84	33.25	1.5026748		
	373	16.59	22.40	720.926	149.074	252	328	1.00	396.51	81.99	1.5026810	987.9167336	
15	372	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5026820		
	372	20.76	28.03	901.444	186.402	106	138	1.00	495.79	102.52	1.5026882	901.4439394	
16	366	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5026892		
	366	0.92	1.24	39.763	8.222	24	31	1.00	21.87	4.52	1.5027322	39.76321841	
17	329	3.00	4.56	125.774	29.259	30	206	1.00	69.18	16.09	1.5027332		
	329	5.20	7.02	218.008	45.080	180	234	1.00	119.90	24.79	1.5030395	343.7820638	
18	315	0.14	0.40	5.714	2.563	2	19	1.00	3.14	1.41	1.5030405		
	315	0.17	0.23	7.039	1.456	2	2	1.00	3.87	0.80	1.5031746	12.75334963	
19	315	0.17	0.35	6.901	2.204	2	10	1.00	3.80	1.21	1.5031756		
	315	6.30	8.51	260.864	53.942	180	234	1.00	143.48	29.67	1.5031746	280.5184826	
20	296	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5031756		
	296	21.12	28.51	859.108	177.647	720	936	1.00	472.51	97.71	1.5033784	859.1080609	
21	289	10.46	13.68	422.519	84.636	95	624	1.00	232.39	46.55	1.5033794		
	289	5.20	7.02	210.081	43.441	180	234	1.00	115.54	23.89	1.5034602	632.600801	
22	288	6.72	8.23	271.221	50.874	34	173	1.00	149.17	27.98	1.5034612		
	288	17.90	24.17	722.449	149.389	480	624	1.00	397.35	82.16	1.5034722	993.6699369	
23	260	10.46	13.68	409.945	82.117	95	618	1.00	225.47	45.16	1.5034732		
	260	5.20	7.02	203.829	42.148	180	234	1.00	112.11	23.18	1.5038462	613.7739518	
24	247	10.46	13.68	403.981	80.922	95	615	1.00	222.19	44.51	1.5038472		
	247	5.20	7.02	200.864	41.535	180	234	1.00	110.48	22.84	1.5040486	604.8445463	
25	235	4.10	5.02	156.105	29.281	34	170	1.00	85.86	16.10	1.5040496		
	235	10.62	14.34	363.987	75.266	38	50	1.00	200.19	41.40	1.5042553	520.0919887	
26	235	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5042563		
	235	32.22	43.50	1104.299	228.348	960	1248	1.00	607.36	125.59	1.5042553	1624.390636	
27	181	0.00	0.00	0.000	0.000	0	0	1.00	0.00	0.00	1.5042563		
	181	5.98	8.07	211.360	43.705	52	67	1.00	116.25	24.04	1.5055249	211.3599704	
28	180	1.80	3.02	63.578	16.346	25	133	1.00	34.97	8.99	1.5055259		
	180	5.20	7.02	183.501	37.944	180	234	1.00	100.93	20.87	1.5055556	247.0788311	
29	176	4.20	6.36	147.263	34.137	17	239	1.00	80.99	18.78	1.5055566		
	176	5.20	7.02	182.326	37.702	180	234	1.00	100.28	20.74	1.5056818	329.5895516	
30					#VALUE!			1.00	#VALUE!	#VALUE!	1.5056828		
								1.00	#VALUE!	#VALUE!	#DIV/0!	#VALUE!	
31					#VALUE!			1.00	#VALUE!	#VALUE!	#DIV/0!		
								1.00	#VALUE!	#VALUE!	#DIV/0!	#VALUE!	
32					#VALUE!			1.00	#VALUE!	#VALUE!	#DIV/0!		
								1.00	#VALUE!	#VALUE!	#DIV/0!	#VALUE!	
33					#VALUE!			1.00	#VALUE!	#VALUE!	#DIV/0!		
								1.00	#VALUE!	#VALUE!	#DIV/0!	#VALUE!	
34					#VALUE!			1.00	#VALUE!	#VALUE!	#DIV/0!		
								1.00	#VALUE!	#VALUE!	#DIV/0!	#VALUE!	
35					#VALUE!			1.00	#VALUE!	#VALUE!	#DIV/0!		
								1.00	#VALUE!	#VALUE!	#DIV/0!	#VALUE!	
36					#VALUE!			1.00	#VALUE!	#VALUE!	#DIV/0!		
								1.00	#VALUE!	#VALUE!	#DIV/0!	#VALUE!	
37					#VALUE!			1.00	#VALUE!	#VALUE!	#DIV/0!		
								1.00	#VALUE!	#VALUE!	#DIV/0!	#VALUE!	
38					#VALUE!			1.00	#VALUE!	#VALUE!	#DIV/0!		
								1.00	#VALUE!	#VALUE!	#DIV/0!	#VALUE!	
39					#VALUE!			1.00	#VALUE!	#VALUE!	#DIV/0!		
								1.00	#VALUE!	#VALUE!	#DIV/0!	#VALUE!	
40					#VALUE!			1.00	#VALUE!	#VALUE!	#DIV/0!		
								1.00	#VALUE!	#VALUE!	#DIV/0!	#VALUE!	
41					#VALUE!			1.00	#VALUE!	#VALUE!	#DIV/0!		
								1.00	#VALUE!	#VALUE!	#DIV/0!	#VALUE!	
42					#VALUE!			1.00	#VALUE!	#VALUE!	#DIV/0!		
								1.00	#VALUE!	#VALUE!	#DIV/0!	#VALUE!	
43					#VALUE!			1.00	#VALUE!	#VALUE!	#DIV/0!		
								1.00	#VALUE!	#VALUE!	#DIV/0!	#VALUE!	
44					#VALUE!			1.00	#VALUE!	#VALUE!	#DIV/0!		
								1.00	#VALUE!	#VALUE!	#DIV/0!	#VALUE!	
45					#VALUE!			1.00	#VALUE!	#VALUE!	#DIV/0!		
								1.00	#VALUE!	#VALUE!	#DIV/0!	#VALUE!	
46					#VALUE!			1.00	#VALUE!	#VALUE!	#DIV/0!		
								1.00	#VALUE!	#VALUE!	#DIV/0!	#VALUE!	
47					#VALUE!			1.00	#VALUE!	#VALUE!	#DIV/0!		
								1.00	#VALUE!	#VALUE!	#DIV/0!	#VALUE!	
48					#VALUE!			1.00	#VALUE!	#VALUE!	#DIV/0!		
								1.00	#VALUE!	#VALUE!	#DIV/0!	#VALUE!	
49					#VALUE!			1.00	#VALUE!	#VALUE!	#DIV/0!		
								1.00	#VALUE!	#VALUE!	#DIV/0!	#VALUE!	
50					#VALUE!			1.00	#VALUE!	#VALUE!	#DIV/0!		
								1.00	#VALUE!	#VALUE!	#DIV/0!	#VALUE!	

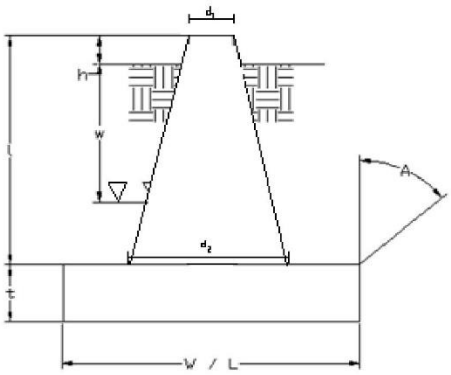
Foundation

Site No.:	88010
Engineer:	RDB
Date:	01/30/19
Carrier:	Sigfox S.A.

Design Loads (Factored)

Compression/Leg:	536.12	k
Uplift/Leg:	356.23	k
Shear/Leg	89.82	k

Face Width @ Top of Pier (d_1):	4.00	ft
Face Width @ Bottom of Pier (d_2):	8.00	ft
Total Length of Pier (l):	8.50	ft
Height of Pedestal Above Ground (h):	0.50	ft
Width of Pad (W):	18.50	ft
Length of Pad (L):	18.50	ft
Thickness of Pad (t):	4.08	ft
Water Table Depth (w):	3.50	ft
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Soil (Above Water Table):	100.0	pcf
Unit Weight of Soil (Below Water Table):	37.6	pcf
Friction Angle of Uplift (A):	30	°
Ultimate Compressive Bearing Pressure:	20000	psf
Ultimate Skin Friction:	155	psf



Volume Pier (Total):	317.33	ft^3
Volume Pad (Total):	1396.38	ft^3
Volume Soil (Total):	3975.03	ft^3
Volume Pier (Buoyant):	218.49	ft^3
Volume Pad (Buoyant):	1396.38	ft^3
Volume Soil (Buoyant):	1786.02	ft^3
Weight Pier:	33.97	k
Weight Pad:	122.32	k
Weight Soil:	286.06	k
Uplift Skin Friction:	35.10	k

Uplift Check

ϕs Uplift Resistance (k)	Ratio	Result
358.08	0.99	**OK**

Axial Check

ϕs Axial Resistance (k)	Ratio	Result
5133.75	0.10	**OK**

Anchor Bolt Check

Bolt Diameter (in)	2.25
# of Bolts	6
Steel Grade	A36
Steel Fy	36
Steel Fu	58
Detail Type	C

Usage Ratio	Result
0.57	**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

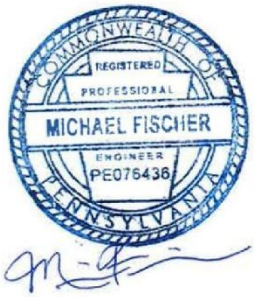
RF EMISSIONS COMPLIANCE REPORT

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

Site Name: Durham CT
Sixfox S.A. Site ID: CT9184
373 Chamberlain Hill Road
Higganum, CT
7/2/2019

Report Status:

Sigfox S.A. Is Compliant



Michael Fischer, P.E.
Registered Professional Engineer (Electrical)
Pennsylvania License Number PE076436
Expires September 30, 2019

Signed 02 July 2019

Prepared By:

Site safe, 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
Higganum, CT

My signature on the cover of this document indicates:

That I am registered as a Professional Engineer in the jurisdiction indicated; and

That I have extensive professional experience in the wireless communications engineering industry; and

That I am an employee of Site Safe, LLC in Vienna, Virginia; 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 Radio Frequency 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 installation involves communications equipment, antennas and associated technical equipment at a location referred to as "Durham CT" ("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 has 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 and oriented at angles at or just below the horizontal and the energy present at ground level is typically so low as to be considered insignificant and has not been included in this analysis (a list of microwave antennas is included); 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 energy 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," defined as 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 limits set forth in the FCC rules for licensees of Sigfox S.A.'s operating frequencies 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 0% of the maximum permissible exposure (MPE) limits in any accessible area on the ground; and

That it is understood per FCC Guidelines and OET 65 Appendix A that regardless of the existent radio frequency environment, only those licensees whose contributions exceed 5% 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 2.501% 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(s) and frequency range(s) 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; and

In summary, it is stated here that the proposed operation at the site will 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(b), 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 this 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
Durham CT
Site Summary

Carrier	Area Maximum Percentage MPE
Eversource Energy	0.13 %
Eversource Energy	0.026 %
Eversource Energy	0.058 %
Eversource Energy	0.027 %
Marcus Communications	0.024 %
Marcus Communications	0.002 %
Sigfox S.A. (Proposed)	0 %
Sprint (Decommissioned)	0 %
US Department of Homeland Security	0.04 %
US Department of Homeland Security	0.034 %
Unknown Carrier	2.142 %
Unknown Carrier	0.019 %
Composite Site MPE:	2.501 %

Eversource Energy
Durham CT
Carrier Summary

Frequency:	49.3	MHz
Maximum Permissible Exposure (MPE):	200	µW/cm^2
Maximum power density at ground level:	0.25921	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.12961	%

					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**
Kreco	CO41-A	176	0	100	0.259211	0.129606	0.259211	0.129606

Eversource Energy
Durham CT
Carrier Summary

Frequency:	450	MHz
Maximum Permissible Exposure (MPE):	300	µW/cm^2
Maximum power density at ground level:	0.07824	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.02608	%

					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**
TELEWAVE	ANT450F6	180	0	100	0.072554	0.024185	0.078239	0.02608

Eversource Energy
Durham CT
Carrier Summary

Frequency:	30	MHz
Maximum Permissible Exposure (MPE):	200	µW/cm^2
Maximum power density at ground level:	0.11624	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.05812	%

					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**
Comprod	531-70HD	181	0	100	0.116242	0.058121	0.116242	0.058121

Eversource Energy
Durham CT
Carrier Summary

Frequency:	47.9	MHz
Maximum Permissible Exposure (MPE):	200	µW/cm^2
Maximum power density at ground level:	0.05476	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.02738	%

					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**
Kreco	CO41-A	376	0	100	0.054756	0.027378	0.054756	0.027378

Marcus Communications
Durham CT
Carrier Summary

Frequency:	450	MHz
Maximum Permissible Exposure (MPE):	300	µW/cm^2
Maximum power density at ground level:	0.07148	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.02383	%

					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**
TX RX	101-68-10-6-03N	373	0	100	0.013875	0.004625	0.013875	0.004625
TX RX	101-68-10-6-03N	373	0	100	0.013875	0.004625	0.013875	0.004625
TX RX	101-68-10-6-03N	373	0	100	0.013875	0.004625	0.013875	0.004625
Generic	10' Omni	329	0	100	0.063363	0.021121	0.063363	0.021121

Marcus Communications
Durham CT
Carrier Summary

Frequency:	900	MHz
Maximum Permissible Exposure (MPE):	600	µW/cm^2
Maximum power density at ground level:	0.01071	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.00179	%

					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**
dBSpectra	DS9A09F36D-N	373	0	100	0.010714	0.001786	0.010714	0.001786

Sigfox S.A. (Proposed)
Durham CT
Carrier Summary

Frequency:	905.2	MHz
Maximum Permissible Exposure (MPE):	603.33	µW/cm^2
Maximum power density at ground level:	0.00053	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.00009	%

					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	315	0	1.22	0.000532	0.000088	0.000532	0.000088

Sprint (Decommissioned)
Durham CT
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	288	0	0	0	0	0	0
ANDREW	DB844H90E-XY	235	120	0	0	0	0	0
ANDREW	844G65VTZASX	235	240	0	0	0	0	0

US Department of Homeland Security
Durham CT
Carrier Summary

Frequency:	138	MHz
Maximum Permissible Exposure (MPE):	200	µW/cm^2
Maximum power density at ground level:	0.07923	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.03962	%

					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	SC281-L	289	0	100	0.02175	0.010875	0.022098	0.011049
SINCLAIR	SC281-L	260	0	100	0.026932	0.013466	0.02737	0.013685
SINCLAIR	SC281-L	247	0	100	0.030063	0.015032	0.030547	0.015273

US Department of Homeland Security
Durham CT
Carrier Summary

Frequency:	160	MHz
Maximum Permissible Exposure (MPE):	200	µW/cm^2
Maximum power density at ground level:	0.0671	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.03355	%

					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**
Rohde & Schwarz	ADD090	372	0	100	0.067096	0.033548	0.067096	0.033548

Unknown Carrier
Durham CT
Carrier Summary

Frequency:	90	MHz
Maximum Permissible Exposure (MPE):	200	µW/cm^2
Maximum power density at ground level:	4.28432	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	2.14216	%

					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	20' FM	296	0	1000	4.284321	2.14216	4.284321	2.14216

Unknown Carrier
Durham CT
Carrier Summary

Frequency:	150	MHz
Maximum Permissible Exposure (MPE):	200	µW/cm^2
Maximum power density at ground level:	0.03718	µW/cm^2
Highest percentage of Maximum Permissible Exposure:	0.01859	%

					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	20' Omni	374	0	100	0.037175	0.018588	0.037175	0.018588

Durham CT
Composite Microwave Antenna Summary

Carrier	Antenna Make/Model	Height (feet)
Marcus Communications	Generic 4' Dish	339
Eversource Energy	RFS SB4-W60AC	301

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 Local Municipality 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:**
Ms. Lizz Milardo, First Selectman	T-Squared Site Services, LLC
Town of Haddam	
Town Office Building	2500 Highland Rd
30 Field Park Drive	Suite 201
HADDAM, CT	Hermitage, PA
06438	16148
US	US
(860) 345-8531	7243087855

Shipment Information:
Tracking no.: 776026110133
Ship date: 08/20/2019
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
7819267485	7243087855

Shipment Information:
Tracking no.: 776026130168
Ship date: 08/20/2019
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 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)