



QC Development

PO Box 916

Storrs, CT 06268

860-670-9068

Mark.Roberts@QCDevelopment.net

May 29, 2020

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

**Notice of Exempt Modification – New Cingular Wireless PCS, LLC (AT&T) – CT1001
St. Andrews Road (8 Hoskins Rd), Bloomfield, CT 06002
N 41.89284027
W 72.76550555**

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 160-foot level of the existing 185-foot Self-Support Tower at St. Andrews Road (8 Hoskins Rd), Bloomfield, CT. The structure and the property are owned by the Eversource Energy (CT Light & Power). AT&T now intends to remove three (3) CCI antennas and install four (4) Kathrein 800-10966 and two (2) Kathrein 800-10965 antennas. AT&T will also remove nine (9) Ericsson Remote Radio Units (RRU) and three (3) A-2 Modules. These RRUs will be replaced with three (3) Ericsson 8843-B2/B66A, three (3) 4478-B14 and three (3) 4449-B5/B12 RRUs. The new antennas and RRUs will also be installed at the 160-foot level of the tower.

This facility was approved by the Siting Council in Petition # 1112 on July 28th, 2014. This approval included no condition(s) that could feasibly be violated by this modification, including total facility height or mounting restrictions. This modification therefore complies with the aforementioned approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-

72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the Honorable Suzette DeBeatham-Brown, Mayor of the Town of Bloomfield, the Bloomfield Planning and Zoning Department, and the property and tower owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above-referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Please feel free to call me at (860) 670-9068 with any questions regarding this matter.

Thank you for your consideration.

Sincerely,



Mark Roberts
QC Development
Consultant for AT&T

Attachments

cc: Mayor Suzette DeBeatham-Brown - Elected Official
Jose Giner – Director of Planning & Zoning
Eversource Energy – Property & Tower Owner

Power Density

Existing Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm ²)	Freq. Band (MHz ^{**})	Limit S (mW/cm ²)	%MPE
Other Carriers*							4.39%
AT&T UMTS	1	500	155	0.0081	880	0.5667	0.14%
AT&T GSM	1	296	155	0.0048	880	0.5667	0.08%
AT&T GSM	1	427	155	0.0069	1900	1.0000	0.07%
Site Total							4.68%

*Per CSC Records (available upon request, includes calculation formulas)

** If a range of frequencies are used, such as 880-894, enter the lowest value, i.e. 880

Proposed Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm ²)	Freq. Band (MHz ^{**})	Limit S (mW/cm ²)	%MPE
Other Carriers*							4.39%
AT&T UMTS	1	280	160	0.0042	850	0.5667	0.07%
AT&T LTE	2	1476	160	0.0224	700	0.4667	0.48%
AT&T LTE	1	2951	160	0.0447	700	0.4667	0.96%
AT&T LTE	1	1000	160	0.0152	850	0.5667	0.27%
AT&T 5G	1	1000	160	0.0152	850	0.5667	0.27%
AT&T LTE	2	3664	160	0.1111	1900	1.0000	1.11%
AT&T LTE	1	3837	160	0.0582	2100	1.0000	0.58%
AT&T LTE	1	1285	160	0.0195	2300	1.0000	0.19%
Site Total							8.33%

*Per CSC Records (available upon request, includes calculation formulas)

** If a range of frequencies are used, such as 880-894, enter the lowest value, i.e. 880

Note: Proposed Loading may also include corrections to certain Existing Loading values

PROJECT INFORMATION

SCOPE OF WORK: ITEMS TO BE MOUNTED ON THE EXISTING TOWER:

- NEW AT&T ANTENNAS: (800-10966) MOUNTED @ POSITION 3 & 4 (TYP. OF 2 PER ALPHA & GAMMA SECTOR, TOTAL OF 4)
- NEW AT&T ANTENNAS: (800-10965) MOUNTED @ POSITION 3 & 4 (TOTAL OF 2 BETA SECTOR)
- NEW AT&T RRUS: 4449 B5/B12 (850/700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS: 8843 B2/B66 (PCS/AWS) (TOTAL OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS: B14 4478 (700) (TOTAL OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T SURGE ARRESTOR (DC6-48-60-0-8C-EV) (TOTAL OF 3) WITH (6) DC TRUNKS CABLES.

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:

- SWAP (2) DUS WITH (2) 5216
- REPLACE IDL2 WITH (1) IDLE
- ADD (1) 6630.
- ADD (1) DC12

ITEMS TO REMAIN:

- (6) ANTENNAS, (3) TMAS, (6) RRUS, (3) SURGE ARRESTOR, (6) COAX CABLES, (6) DC POWER & (3) FIBER.

SITE ADDRESS: 8 HOSKINS RD.
BLOOMFIELD, CT 06002

LATITUDE: 41.8928250° N 41° 53' 34.17" N
LONGITUDE: 72.7654989° W 72° 45' 55.79" W
TYPE OF SITE: LATTICE TOWER/INDOOR EQUIPMENT
TOWER HEIGHT: 185'-0"±
RAD CENTER: 160'-0"±
CURRENT USE: TELECOMMUNICATIONS FACILITY
PROPOSED USE: TELECOMMUNICATIONS FACILITY



SITE NUMBER: CT1001

SITE NAME: BLOOMFIELD-8 HOSKINS RD.

FA CODE: 10035025

PACE ID: MRCT033743, MRCTB033694, MRCTB033639,
MRCTB033649, MRCTB033866

PROJECT: LTE 6C/7C/5G NR 2019 UPGRADE

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	0
GN-1	GENERAL NOTES	0
A-1	COMPOUND PLAN AND EQUIPMENT PLAN	0
A-2	ANTENNA LAYOUTS & ELEVATION	0
A-3	DETAILS	0
A-4	DETAILS	0
G-1	GROUNDING DETAILS	0
RF-1	RF PLUMBING DIAGRAM	0

VICINITY MAP

DIRECTIONS TO SITE:

HEAD EAST TOWARD MA-106 E. TURN RIGHT ONTO MA-106 E. MERGE ONTO MA-24 S VIA THE RAMP TO FALL RIVER. MERGE ONTO MA-24 S. TAKE EXIT 14B TO MERGE ONTO I-495 N TOWARD WORCESTER. TAKE EXIT 22 FOR I-90 TOWARD MASS-PIKE/BOSTON/ALBANY NY. KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR I-90 W/SPRINGFIELD/ALBANY AND MERGE ONTO I-90 W. TAKE EXIT 9 FOR I-84 TOWARD US-20/HARTFORD/NEW YORK CITY. CONTINUE ONTO I-84. TAKE EXIT 61 FOR I-291 W TOWARD WINDSOR. CONTINUE ONTO I-291 W. TAKE EXIT 37 FOR CT-305/BLOOMFIELD AVE TOWARD WINDSOR CENTER. TURN LEFT ONTO CT-305 W/BLOOMFIELD AVE. TURN RIGHT ONTO CT-187 N. TAKE THE TARRIFFVILLE EXIT TOWARD EXIT TOWARD TUNXIS AVE. TURN LEFT ONTO TARRIFFVILLE RD. SLIGHT LEFT ONTO HOSKINS RD.

GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T MOBILITY REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
4. CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OR RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN.

72 HOURS



CALL BEFORE YOU DIG



CALL TOLL FREE 1-800-922-4455
OR CALL 811

UNDERGROUND SERVICE ALERT

45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1001
SITE NAME:
BLOOMFIELD-8 HOSKINS RD.
8 HOSKINS ROAD
BLOOMFIELD, CT 06002
HARTFORD COUNTY

550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.		DATE	REVISIONS	BY	CHK	APP'D	SITE NUMBER		DRAWING NUMBER	REV
0	03/17/20		ISSUED FOR CONSTRUCTION	GA	HC	DPH	10035025	T-1	0	
A	03/18/19		ISSUED FOR REVIEW	MR	HC	DPH				
SCALE: AS SHOWN							DESIGNED BY: HC		DRAWN BY: MR	

AT&T
TITLE SHEET
(LTE 6C/7C/5G NR)

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTNING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS #2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
 CONTRACTOR – SAI
 SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
 OWNER – AT&T MOBILITY
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
 15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
 16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."
 17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
 18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
 19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
- 20. APPLICABLE BUILDING CODES:**
 SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

**BUILDING CODE: IBC 2015 WITH 2018 CT STATE BUILDING CODE AMENDMENTS
 ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE (NFPA 70-2017)**

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

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

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;

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

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

ABBREVIATIONS					
AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	GC	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BBU	BATTERY BACKUP UNIT	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
BTCW	BARE TINNED SOLID COPPER WIRE	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BGR	BURIED GROUND RING	MIN	MINIMUM	TBRR	TO BE REMOVED AND REPLACED
BTS	BASE TRANSCEIVER STATION	P	PROPOSED	TYP	TYPICAL
E	EXISTING	NTS	NOT TO SCALE	UG	UNDER GROUND
EGB	EQUIPMENT GROUND BAR	RAD	RADIATION CENTER LINE (ANTENNA)	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		

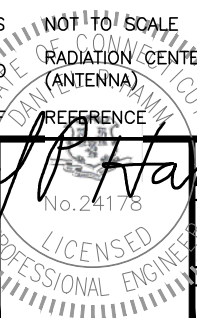
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1001
 SITE NAME:
 BLOOMFIELD-8 HOSKINS RD.
 8 HOSKINS ROAD
 BLOOMFIELD, CT 06002
 HARTFORD COUNTY

550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

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NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: HC	DRAWN BY: MR		



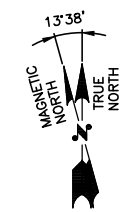
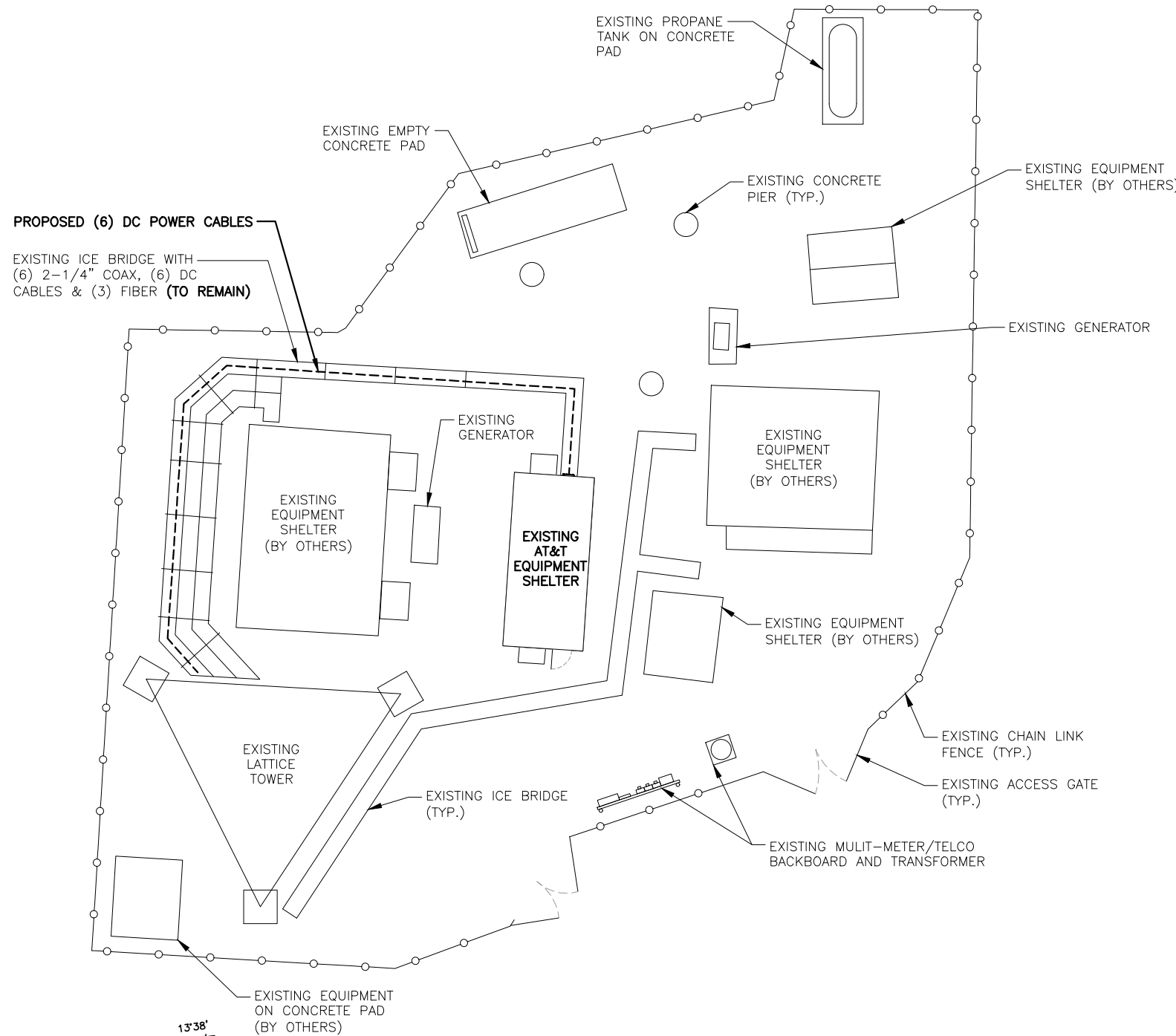
AT&T
 GENERAL NOTES
 (LTE 6C/7C/5G NR)

SITE NUMBER	DRAWING NUMBER	REV
10035025	GN-1	0

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

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: ALL-POINTS TECHNOLOGY CORPORATION, DATED: FEBRUARY 21, 2020 FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT

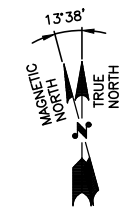
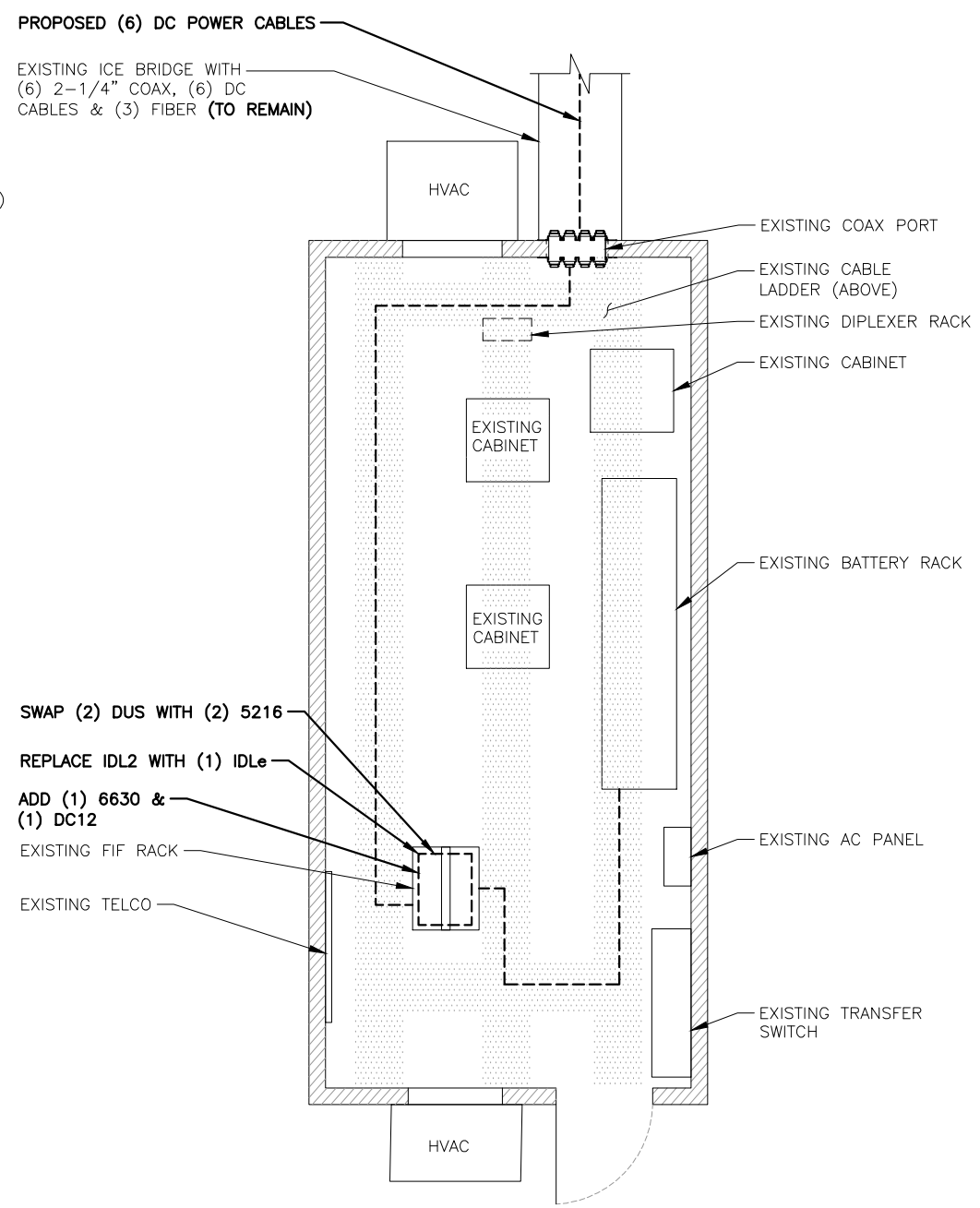
NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: JANUARY 22, 2020



COMPOUND PLAN
22x34 SCALE: 3/32"=1'-0"
11x17 SCALE: 3/64"=1'-0"

1
A-1

0 5'-4" 10'-8" 21'-4" 32'-0"



EQUIPMENT PLAN
22x34 SCALE: 3/8"=1'-0"
11x17 SCALE: 3/16"=1'-0"

2
A-1

0 1'-4" 2'-8" 5'-4" 8'-0"

HGD HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1001
SITE NAME:
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8 HOSKINS ROAD
BLOOMFIELD, CT 06002
HARTFORD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

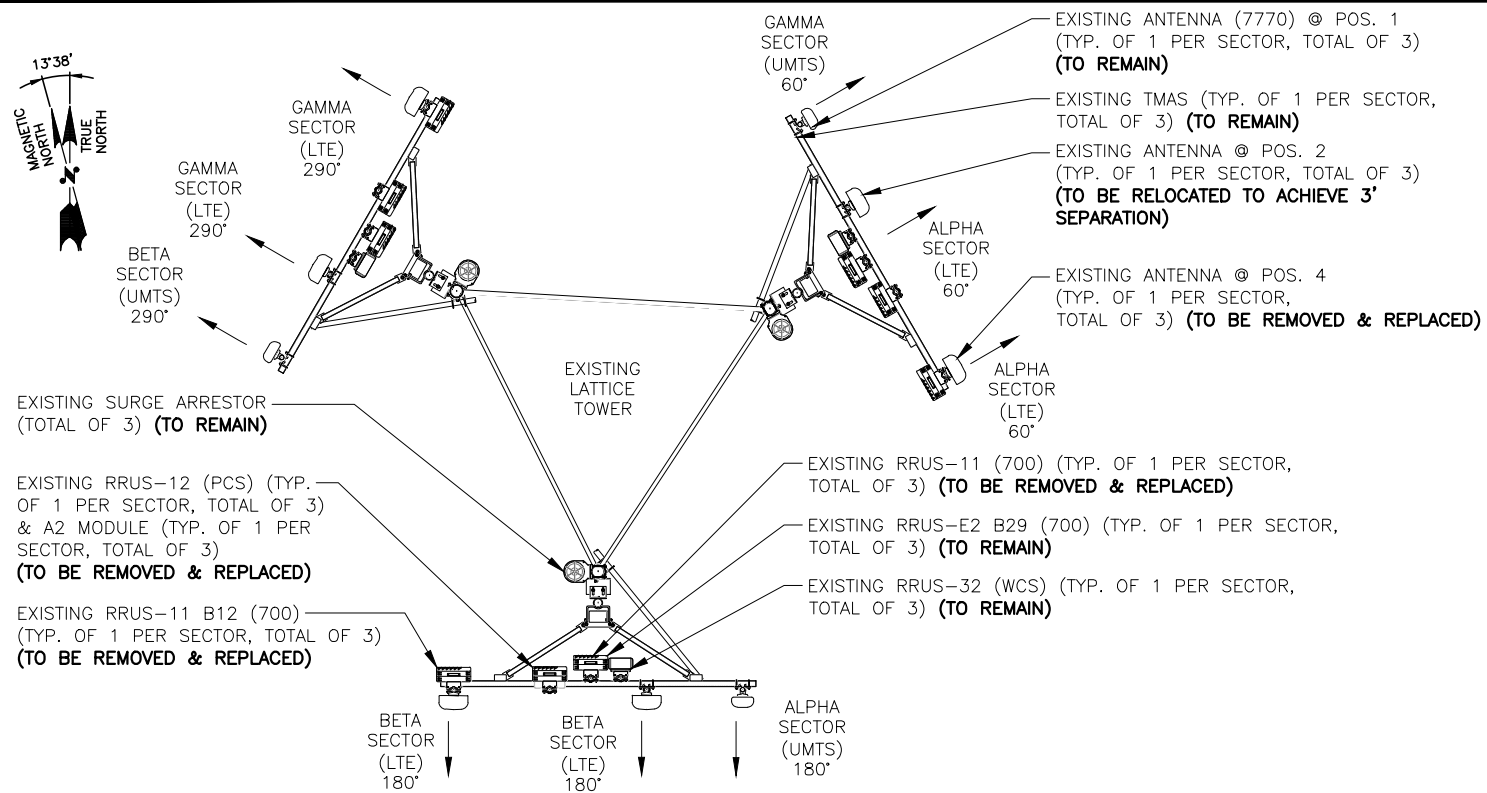
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NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: HC	DRAWN BY: MR		

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

AT&T

COMPOUND & EQUIPMENT PLAN
(LTE 6C/7C/5G NR)

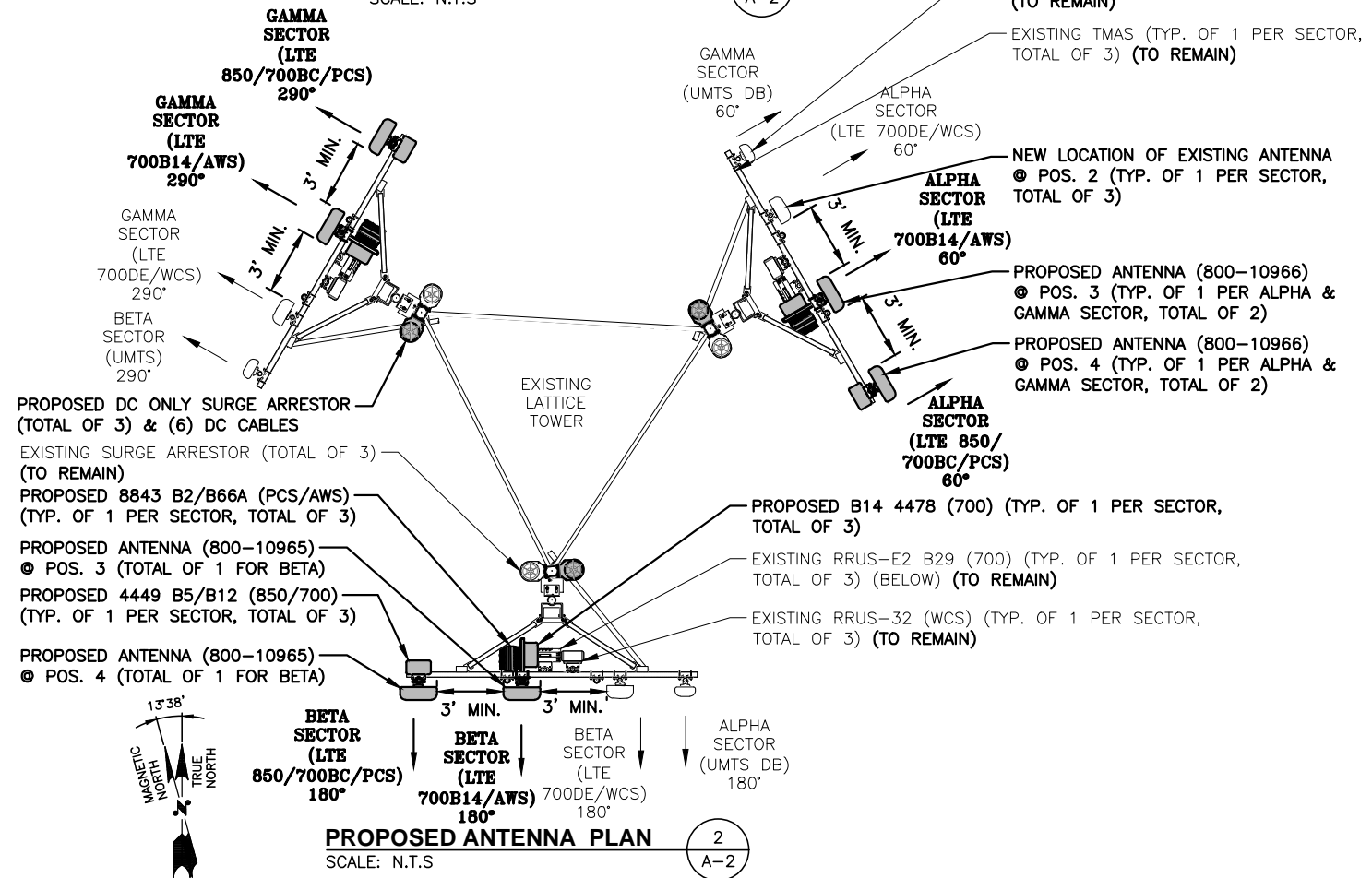
SITE NUMBER	DRAWING NUMBER	REV
10035025	A-1	0



EXISTING ANTENNA PLAN

SCALE: N.T.S.

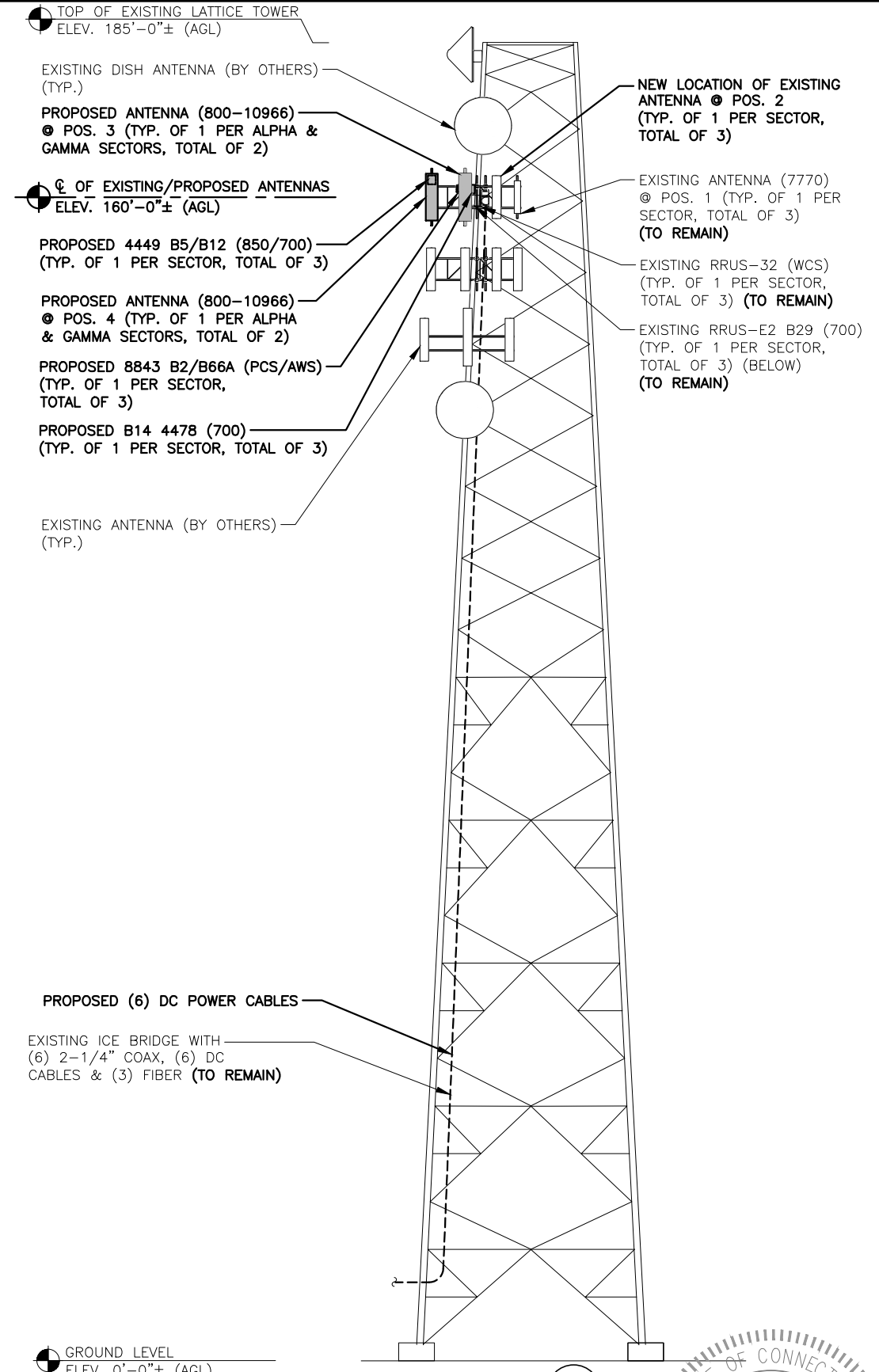
1
A-2



PROPOSED ANTENNA PLAN

SCALE: N.T.S.

2
A-2



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

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: ALL-POINTS TECHNOLOGY CORPORATION, DATED: FEBRUARY 21, 2020 FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: JANUARY 22, 2020

HGD HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
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SITE NUMBER: CT1001
SITE NAME:
BLOOMFIELD-8 HOSKINS RD.
8 HOSKINS ROAD
BLOOMFIELD, CT 06002
HARTFORD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

0	03/17/20	ISSUED FOR CONSTRUCTION	GA	HC	DPH
A	03/18/19	ISSUED FOR REVIEW	MR	HC	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: HC	DRAWN BY: MR		

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

AT&T

ANTENNA PLANS & ELEVATION
(LTE 6C/7C/5G NR)

SITE NUMBER	DRAWING NUMBER	REV
10035025	A-2	0

ANTENNA SCHEDULE

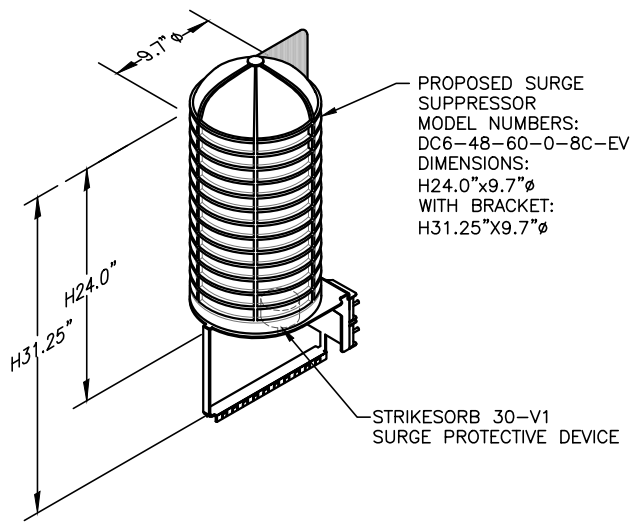
SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA CL HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	EXISTING	UMTS DB	7770	55X11X5	±160'	180°	(E)(1) TT08-19DB111-001 (E)(2)(G) LGP13519	-	-	(2) 2-1/4 COAX	--
A2	EXISTING	LTE 700DE/WCS	OPA-65R-LCUU-H8	92.7X14.4X7	±160'	60°	-	(E) RRUS-E2 B29 (700) (E) RRUS-32 (WCS)	-	-	(E)(1) RAYCAP DC6-48-60-18-8F (P)(1) RAYCAP DC6-48-60-0-8C-EV
A3	PROPOSED	LTE 700B14/AWS	800-10966	96X20X6.9	±160'	60°	-	(P) B14 4478 (700) (P) 8843 B2/B66A (PCS/AWS)	18.1X13.4X8.3 14.9X13.2X10.9	(E)(2) DC POWER & (1) FIBER	
A4	PROPOSED	LTE 850/700BC/PCS	800-10966	96X20X6.9	±160'	60°	-	(P) 4449 B5/B12 (850/700)	14.9X13.2X10.4	(P)(2) DC POWER	
B1	EXISTING	UMTS DB	7770	55X11X5	±160'	290°	(E)(1) TT08-19DB111-001 (E)(2)(G) LGP13519	-	-	(2) 2-1/4 COAX	
B2	EXISTING	LTE 700DE/WCS	OPA-65R-LCUU-H6	72X14.8X7.4	±160'	180°	-	(E) RRUS-E2 B29 (700) (E) RRUS-32 (WCS)	-	-	(E)(1) RAYCAP DC6-48-60-18-8F (P)(1) RAYCAP DC6-48-60-0-8C-EV
B3	PROPOSED	LTE 700B14/AWS	800-10965	78.7X20X6.9	±160'	180°	-	(P) B14 4478 (700) (P) 8843 B2/B66A (PCS/AWS)	18.1X13.4X8.3 14.9X13.2X10.9	(E)(2) DC POWER & (1) FIBER	
B4	PROPOSED	LTE 850/700BC/PCS	800-10965	78.7X20X6.9	±160'	180°	-	(P) 4449 B5/B12 (850/700)	14.9X13.2X10.4	(P)(2) DC POWER	
C1	EXISTING	UMTS DB	7770	55X11X5	±160'	60°	(E)(1) TT08-19DB111-001 (E)(2)(G) LGP13519	-	-	(2) 2-1/4 COAX	
C2	EXISTING	LTE 700DE/WCS	OPA-65R-LCUU-H8	92.7X14.4X7	±160'	290°	-	(E) RRUS-E2 B29 (700) (E) RRUS-32 (WCS)	-	-	(E)(1) RAYCAP DC6-48-60-18-8F (P)(1) RAYCAP DC6-48-60-0-8C-EV
C3	PROPOSED	LTE 700B14/AWS	800-10966	96X20X6.9	±160'	290°	-	(P) B14 4478 (700) (P) 8843 B2/B66A (PCS/AWS)	18.1X13.4X8.3 14.9X13.2X10.9	(E)(2) DC POWER & (1) FIBER	
C4	PROPOSED	LTE 850/700BC/PCS	800-10966	96X20X6.9	±160'	290°	-	(P) 4449 B5/B12 (850/700)	14.9X13.2X10.4	(P)(2) DC POWER	

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

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: ALL-POINTS TECHNOLOGY CORPORATION, DATED: FEBRUARY 21, 2020 FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT

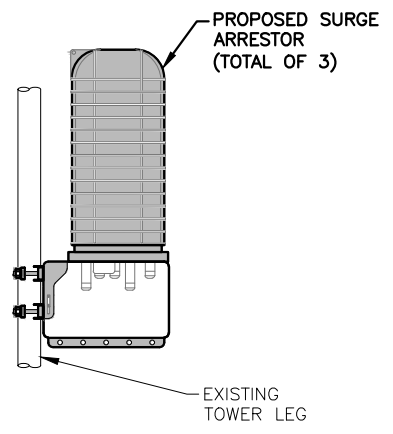
NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: JANUARY 22, 2020

FINAL ANTENNA CONFIGURATION TABLE 1
A-3



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE SUPPRESSOR DETAIL 2
A-3
SCALE: N.T.S

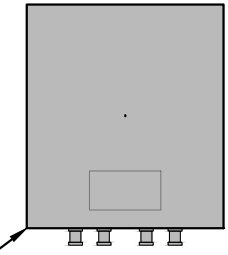


SURGE SUPPRESSOR MOUNTING DETAIL 3
A-3
SCALE: N.T.S

QUANTITY	MODEL	L	W	D
3(E)	RRUS-E2	20.4"	18.5"	7.5"
3(E)	RRUS-32	27.2"	12.1"	7.0"
3(P)	B14 4478	18.1"	13.4"	8.3"
3(P)	4449 B5/B12	14.9"	13.2"	10.4"
3(P)	8843 B2/B66A	14.9"	13.2"	10.9"

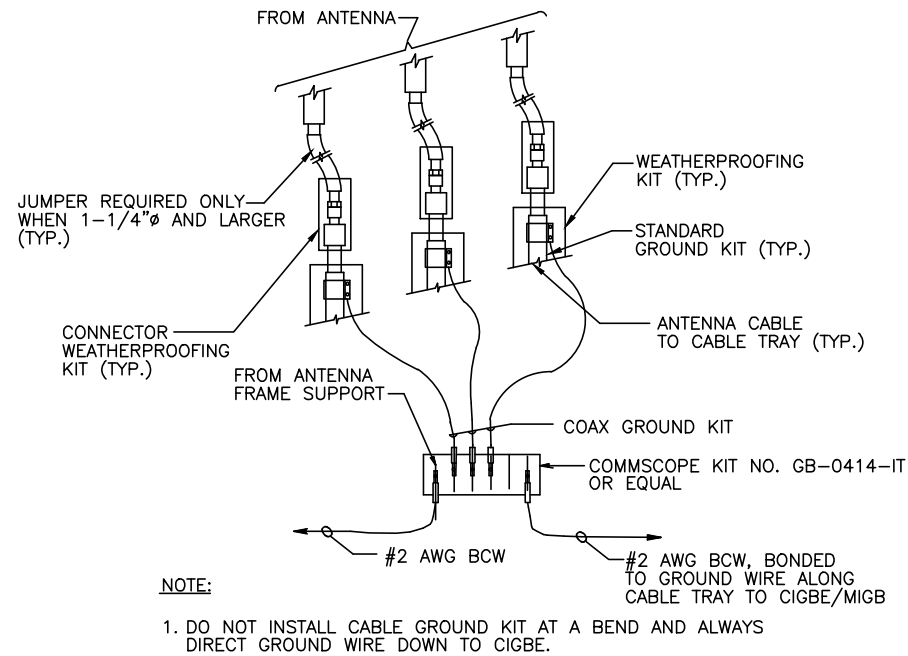
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

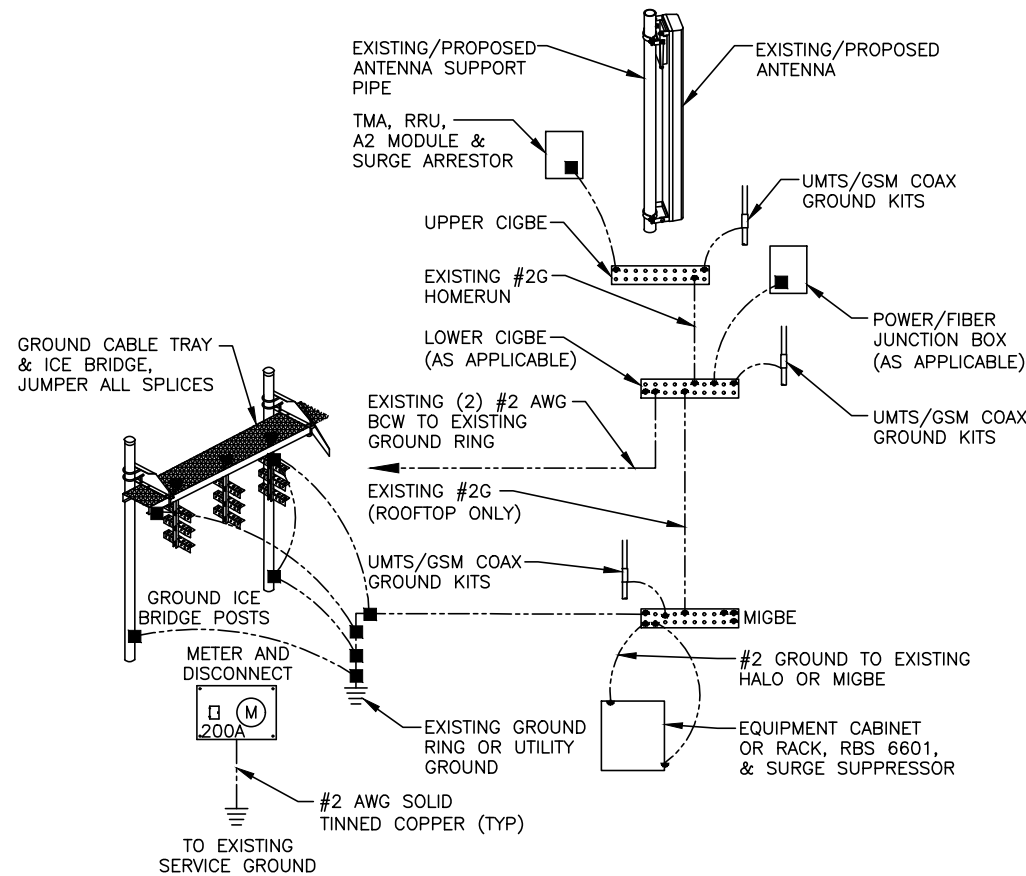


NOTE:
SEE RFDS FOR RRU FREQUENCY AND MODEL NUMBER

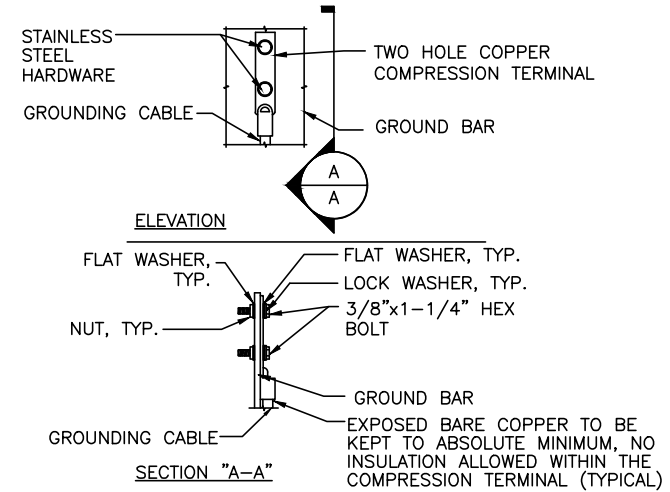
RRU DETAIL 4
A-3
SCALE: N.T.S



GROUND WIRE TO GROUND BAR CONNECTION DETAIL 1
SCALE: N.T.S. G-1



GROUNDING RISER DIAGRAM 2
SCALE: N.T.S. G-1



- NOTES:
- "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
 - OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATION.
 - CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB

TYPICAL GROUND BAR CONNECTION DETAIL 3
SCALE: N.T.S. G-1

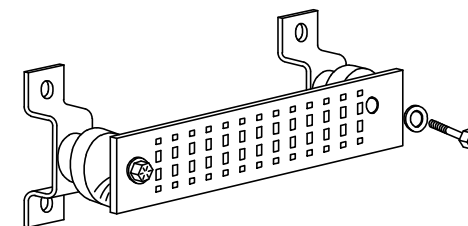
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" - SURGE PRODUCERS

- CABLE ENTRY PORTS (HATCH PLATES) (#2 AWG)
- GENERATOR FRAMEWORK (IF AVAILABLE) (#2 AWG)
- TELCO GROUND BAR
- COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2 AWG)
- +24V POWER SUPPLY RETURN BAR (#2 AWG)
- 48V POWER SUPPLY RETURN BAR (#2 AWG)
- RECTIFIER FRAMES.

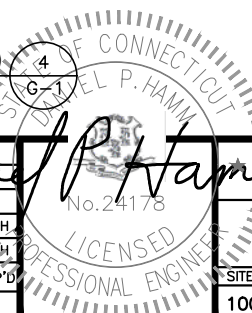
SECTION "A" - SURGE ABSORBERS

- INTERIOR GROUND RING (#2 AWG)
- EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2 AWG)
- METALLIC COLD WATER PIPE (IF AVAILABLE) (#2 AWG)
- BUILDING STEEL (IF AVAILABLE) (#2 AWG)

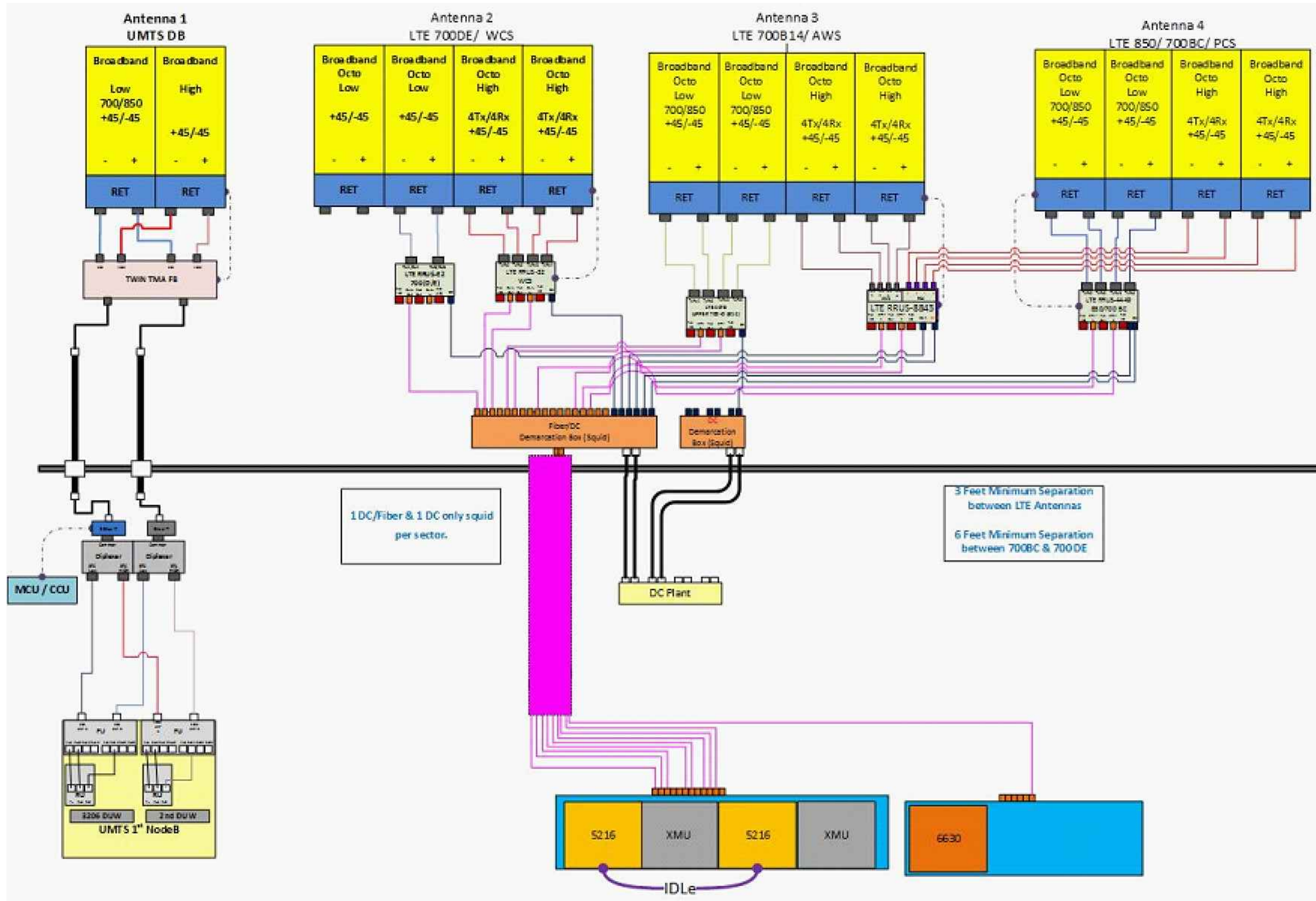


GROUND BAR - DETAIL (AS REQUIRED) 4
SCALE: N.T.S. G-1

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	03/17/20	ISSUED FOR CONSTRUCTION	GA	HC	DPH
A	03/18/19	ISSUED FOR REVIEW	MR	HC	DPH



AT&T		
GROUNDING DETAILS (LTE 6C/7C/5G NR)		
SITE NUMBER	DRAWING NUMBER	REV
10035025	G-1	0



RF PLUMBING DIAGRAM 1
SCALE: N.T.S. RF-1

NOTE:
1. CONTRACTOR TO CONFIRM ALL PARTS.
2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS

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

0	03/17/20	ISSUED FOR CONSTRUCTION	GA	HC	DPH
A	03/18/19	ISSUED FOR REVIEW	MR	HC	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: HC	DRAWN BY: MR		

AT&T		
RF PLUMBING DIAGRAM (LTE 6C/7C/5G NR)		
SITE NUMBER	DRAWING NUMBER	REV
10035025	RF-1	0



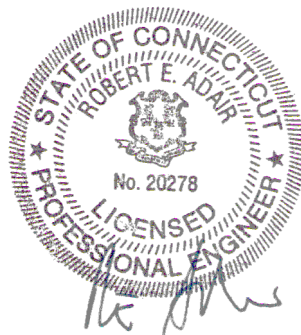
**STRUCTURAL ANALYSIS REPORT
185' SELF-SUPPORTING TOWER
BLOOMFIELD, CONNECTICUT**

Prepared for
SAI Communications Inc.

AT&T Site #CTV1001

February 21, 2020

Legs	69%
Bracing	82%
Foundation	46%



APT Project #CT1931600

**STRUCTURAL ANALYSIS REPORT
185' SELF-SUPPORTING TOWER
BLOOMFIELD, CONNECTICUT
prepared for
SAI Communications**

EXECUTIVE SUMMARY:

All-Points Technology Corporation, P.C. (APT) performed a structural analysis of Northeast Utilities' (Eversource Energy) 185-foot self-supporting tower. The analysis was performed for AT&T's proposed installation of six additional panel antennas, nine additional remote radio heads (RRHs) and three additional "squid" power-fiber distribution boxes (D-boxes) fed by six 2-1/4" feed lines, three fiber and twelve power lines as detailed below.

APT's analysis indicates the tower meets the requirements of the Connecticut State Building Code and TIA-222-G with AT&T's proposed equipment changes. The tower base foundation was also evaluated and found to be adequately sized. Deflection values were found to be within Northeast Utilities Substation Standards requirements. Usage values are as follows:

Legs	69%
Bracing	82%
Foundation	46%

INTRODUCTION:

A structural analysis was performed on the above-mentioned communications tower by APT for SAI Communications. The tower is located at 8 Hoskins Road in Bloomfield, Connecticut. The structure is a 185-foot galvanized steel self-supporting tower manufactured by Sabre Communications Corporation. The tower features pipe legs with angle steel bracing members.

APT did not perform a site visit for this analysis. The analysis relied solely on the following documents:

Document	Remarks	Date	Source
Geotechnical Testing Report	Design Earth Technology #2014.15	10/14/2014	Eversource
Structural Design Report	Sabre Communications #127272	8/19/2015	Eversource
Final Erection Drawings	Sabre Communications #127272	9/26/2015	Eversource
Feedline Plan	Centek Engineering	12/7/2016	T-Mobile
Construction Drawings	APT Filing no. CT409140	12/9/2016	APT
RFDS/antenna rec	T-Mobile site no. CTHA142A	2/14/2017	T-Mobile

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Waterford, CT 06385
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Structural Analysis Report	APT Filing no. CT1071511	2/27/2017	APT
RFDS/antenna rec	AT&T site no. CTV1001	6/29/2018	AT&T
Existing equipment inventory	Compiled by Eversource Energy	3/12/2019	Eversource
Mount analysis	Hudson Design Group, LLC	1/22/2020	SAI Comm.

The analysis was performed in accordance with TIA-222-G using the following antenna inventory (AT&T's equipment shown in **bold** text; reserved equipment shown in *italic* text):

Carrier	Elev.	Antenna	Mount	Feed Line
-	185'	LED beacon	Leg	3/8"
Eversource	185'	20' omnidirectional whip (DS9A09F36D-N) with TTA, 14' omnidirectional whip (Kreco CO-41HD)	Pipes on legs	(2) 1-5/8", 1/2", 7/8"
Bloomfield PD/FD	185'	BA8080-67 16-bay dipole	Pipe on leg	(2) 7/8"
	183'	24' omnidirectional whip (DS2C03F36D)	12' sector mount	(2) 7/8"
CSP	183'	(3) 14' omnidirectional whip (DB Spectra-DS7C09P36U-D; two are inverted)	Above sector mount	(3) 1-5/8", 1/2"
Eversource	183'	(2) 8' dishes with radomes (PADX8-59A)	(2) Pipes on legs	(4) EW-63
Simsbury PD	181'	10', 4-bay dipole (DB 411; inverted)	Pipe on leg	7/8"
Eversource	177'	4' dish with radome (PA4-57A)	Pipe on leg	EW-90
Eversource	172'	8' dish with radome (PADX8-59A)	Pipe on leg	(2) EW-63
Eversource	171'	8' dish with radome (PADX8-59A)	Pipe on leg	(2) EW-63
Simsbury PD	165'	PR-900 Paraflector	Pipe on leg	7/8"
Eversource	165'	ANT150F6 omnidirectional whip	3' sidearm	7/8"
AT&T	160'	(3) 7770.00, (2) OPA-65R-LCUU-H8, (1) OPA-65R-LCUU-H6, (4) 800-10966 , (2) 800-10965 panels , (3) RRUS-32 RRHs, (3) RRUS-E2 RRHs, (3) B14 4478 RRHs , (3) B2/B66A 8843 RRHs , (3) 4449 B5 RRHs , (3) TT08-19DB111-001 TMAs, (3) 'Squid' D-boxes, (3) DC6-48-60-18-8C-EV D-boxes ¹	(3) 12' sector mounts	(6) 2-1/4", (3) fiber, (12) power
Verizon	150'	(3) BXA-70063/6, (6) BXA-171063/12, (6) LPA-80080/4 panels, (3) RRH2x40-700 RRHs, (3) RRH2x40-AWS RRHs, (1) DB-T1-6Z-8AB-0Z D-box	(3) 12' sector mounts	(6) 1-5/8", (2) 1-5/8" hybrid
T-Mobile	140'	(3) APXV18-206516, (3) LNX-6515DS & (3) APXV18-206517 panels, (6) RRUS-11 RRHs, (1) cylindrical 'squid' D-box, (1) IBR1300 Radio	(3) 12' sector mounts	(3) 1-1/4", 6x12 hybrid
<i>Eversource</i>	<i>135'</i>	<i>(2) 6' dishes with radomes</i>	<i>(2) Pipes on legs</i>	<i>(4) EW-63</i>

All-Points Technology Corporation

Eversource	125'	8' dish with radome (PADX8-59A)	Pipe on leg	EW-63
Eversource	125'	ANT150F6 omnidirectional whip, 12' single dipole (Comprod 531-70HD)	(2) 6' sidearms	(2) 7/8"
Eversource	109'	12' single dipole (Comprod 531-70HD)	6' sidearm	7/8"
Eversource	108'	14' omnidirectional whip (Kreco CO-41HD)	6' sidearm	7/8"
-	103'	(3) Obstruction lights	Legs	3/8"
Eversource	100'	8' dish with radome (PADX8-59A)	Pipe on leg	EW-63
Bloomfield PD/FD	98'	3' high-performance dish (SC3- W100XGT1C)	3' sidearm	3/8" LMR
Bloomfield PD/FD	91'	3' high-performance dish (SC3- W100XGT1C)	3' sidearm	3/8" LMR
Eversource	87'	5' omnidirectional whip (ANT150F2)	3' sidearm	7/8"
Eversource	85'	12' single dipole (Comprod 531-70HD)	6' sidearm	7/8"
Bloomfield PD/FD	66'	18" square panel (Motorola WB2619)	3' sidearm	Cat5e

¹ Currently installed – three 7770.00, two OPA-65R-LCUU-H8 & one OPA-65R-LCUU-H6 panel antennas, three RRUS-32 RRHs, three RRUS-E2 RRHs, three TT08-19DB111-001 TMAs and three ‘Squid’ D-boxes fed by six 1-1/4" feed lines, six power and three fiber lines.

RIGOROUS STRUCTURAL ANALYSIS:

Methodology:

The structural analysis was done in accordance with the Connecticut State Building Code and TIA-222, Revision G (TIA), Structural Standard for Antenna Supporting Structures and Antennas.

The analysis was conducted using a 3-second gust wind speed of 130 miles per hour (Ultimate) with no ice and 50-mph with 1" radial ice in accordance with Appendix N of the Connecticut State Building Code. The following additional design criteria were used:

- Structure Class: III
- Topographic Category: 2
- Exposure Category: B
- Crest Height: 200'

Analysis Results:

Analysis of the tower was conducted in accordance with the criteria outlined herein with antenna changes as previously described. The following table summarizes the results of the analysis based on stresses of individual leg and bracing members:

Elevation	Leg Capacity	Bracing Capacity
180'-185'	4%	19%
160'-180'	10%	58%
140'-160'	28%	48%
120'-140'	53%	70%
100'-120'	51%	76%
80'-100'	58%	56%
60'-80'	52%	62%
40'-60'	69%	72%
20'-40'	62%	82%
0'-20'	62%	75%

Bracing, Splice and Anchor Bolts:

Bracing, splice and anchor bolts were evaluated under the proposed loading. All evaluated bolts were found to be adequately sized to support the proposed loads.

Base Foundation:

Evaluation of the existing base foundation was performed from original Sabre foundation drawings. The base foundation was found to be adequately sized to support the proposed equipment. Factored base reactions imposed with the additional antennas were calculated as follows:

Reaction	Original Design	Calculated
Compression	775 k	577.3 k
Uplift	656 k	-477.4 k
Shear	132 k	101.1 k
OTM	23,690 ft-k	17,369 ft-k

Deflection:

Combined twist and sway was evaluated per Northeast Utilities Substation Standard SUB 090, Section 7 under service wind as well as design wind speeds. The tower was found to be within the allowable 0.5 degree total maximum. Results are summarized as follows:

Load Case	Tilt	Twist	Combined Max.
Service Wind – 60-mph	0.0801°	0.0041°	0.0802°
Design Wind – 105-mph	0.3622°	0.0204°	0.3628°

All-Points Technology Corporation

CONCLUSIONS AND RECOMMENDATIONS:

APT's structural analysis indicates that the 185-foot self-supporting tower located at 8 Hoskins Road in Bloomfield, Connecticut meets the requirements of the Connecticut State Building Code and TIA-222-G with AT&T's proposed equipment changes.

The tower base foundation was also evaluated and determined to be adequately sized. Additionally, deflection values were found to be within Northeast Utilities Substation Standards requirements.

LIMITATIONS:

This report is based on the following:

1. Tower is properly installed and maintained.
2. All members are in an undeteriorated condition.
3. All required members are in place.
4. All bolts are in place and are properly tightened.
5. Tower is in plumb condition.
6. All tower members were properly designed, detailed, fabricated, and installed and have been properly maintained since erection.

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

1. Replacing or strengthening bracing members.
2. Reinforcing vertical members in any manner.
3. Adding or relocating torque arms or guys.
4. Installing antenna mounting gates or side arms.

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

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01/06/2020		Eversource Energy, 5-7 St. Andrews Street, Bloomfield, CT. 06002 (Hartford County)					Sabre Industries Project # 15-5551-RAM-R2, dated 01/05/2015				
		185'-0" S.S. Tower. Datum NAD83 – Lat: 41°-53'-33.5" N Long: -072°-45'-56.5" W			ASR# 1295813		Leg Apex- Leg A-60deg, Leg B-180deg, Leg C-300deg.				
Antenna Type Make/Model	Top of Mount Elev.	Antenna Center Elev.	Antenna Mount Type	Azimuth	Coaxial Cable Type	License	Frequency - MHz	Leg	ERP	Color Code & Line #	Comments
(1)-DB DS9A09F36D-N, 20' Omni W/ TTA	185'-0"	195'-0"	Pipe to pipe mount off leg		(2)-1-5/8, (1) 1/2" coax	ES	900	B		(1)-white-RX, (2)-white-TX, (1)-white test cable	DSCADA w/TTA
(1)-Kreco CO-41HD, 14' Omni	185'-0"	189'-0"	Pipe to pipe mount off leg		(1)-7/8" coax	ES	48.20	B-C		(4)-white	Hartford Repeater
(1)-BA8080-67, 16'6", 16 bay Dipole	185	193'-0"	Pipe to pipe mount off leg	284.5	(2)-7/8" coax	Bloomfield PD/ FD	350-520 TX 460.2125-5125 RX	B-C		(1)-yellow RX, (2)-yellow TX	Bloomfield PD/FD
(1)-DB Spectra-DS2C03F36D 24'-3" Omni, Upright	183'-0"	195'-6"	(1)-12' Antenna sector frame mount	300	(2)-7/8" coax	ES	220MHz	C			ES Voice Radio
(1)-DB Spectra-DS7C09P36U-D 8.8 Upright TX, 14'-0" Omni	183'-0"	190'-0"	Shared antenna sector frame with above	300	(3)-1-5/8" coax (1)-1/2" coax	CSP	700MHz	C			CSP Troop H
(2)- DB Spectra-DS7C09P36U-D 8.8 Inverted RX, 14'-0" Omni	183'-0"	176'-0"									
(1)-DB 411, 4-bay 10' dipole (inverted)	181'-0"	191	Pipe to pipe mount off leg	270	(1)-7/8" coax	Simsbury PD	460 MHz	C		(3)-yellow	Primary Radio Simsbury PD
(1)-ITL Dual LED Flash Head	185'-0"	185'-0"	Top of Leg		(1)-3/8" power cable	ES		C			
(1)-RFS PADX8-59A- Dish w/Radome	183'-0"	183'-0"	Pipe Mount w/6" offset and tie back	128.1	(2)-EW-63 elliptical	ES	6256.54 Tx-H 6004.50 Rx-H	A		(1)-orange	Manchester Sub [WQWB585]
(1) -RFS-PA4-57A Dish w/Radome	177'-0"	177'-0"	Pipe Mount w/6" offset and tie back	125.8	(1)-EW-90 elliptical	ES	11235.00 Tx-V 10745.00 Rx-V	A		(1)-green	Windsor [WQWB585]
(1)-RFS PADX8-59A- Dish w/Radome	183'-0"	183'-0"	Pipe Mount w/6" offset and tie back	209.2	(2)-EW-63 elliptical	ES	6286.19 Tx 6034.15 Rx 6226.89 Tx 5974.85 Rx	B		(3)-orange	South Mountain 2 Radios 1 Dish Horizontal Polarity [WQWB585]
(1)-RFS PADX8-59A- Dish w/Radome	172'-0"	172'-0"	Pipe Mount w/6" offset and tie back	173.0	(2)-EW-63 elliptical	ES	6315.84 TX-V 6063.80 RX-V	B		(4)-orange	Berlin [WQWB585]
(1)-RFS-PADX8 -59A Dish w/Radome	171'-0"	171'-0"	Pipe Mount w/6" offset and tie back	285	(2)-WE-63 elliptical	ES		C			Future Microwave Dish
(1)-Kathrein Scala PR-900 paraflector	165'-0"	165'-0"	Pipe Mount w/6" offset and tie back	270	(1)-7/8" coax	Simsbury PD	890-960 MHz	C		(4)-yellow	Primary Microwave Simsbury PD
(1)-Telewave ANT150F-6, 20' Omni	165'-0"	175'-0"	3'-0" Side Arm		(1)-7/8" coax	ES	154.46375 MHz	A		(1)-white, (1)-orange	Load Management
(4)-CCI OPA-65R-LCUU-HB (2)-OPA-65-LCUU-H6 (3)-PowerWave 7770 (6)-Andrew TMA's (12)-Ericsson RRUs (3)-Ericsson A2 Modules (3)-Raycap Surge Arrestors (6)-Kaeluls Diplexers.	160'-0"	160'-0"	(3) 12'-0" Antenna sector frame mounts	0-120-240	(6) 2-1/4" coax (6) DC cables (3) Fiber cables	AT&T	850 and 700MHz 1900MHz	A-B-C			AT&T – Site # CT1001
(3)-BXA 70063/6CF, (6)-BXA-1711063-12CF, (6)-LPA-80080-4CF (3)-ALU RRH 2x40-700 (3)-ALU RRH 2x40-AWS (1)-RFS DB-T1-6Z-8AB-OZ	150'-0"	150'-0"	(3) 12'-0" Antenna sector frame mounts	20-180-270	(6) 1-5/8" coax (2) 1-5/8" hybrid	Verizon	Tx 869-880, 890-892 Rx 824-834,845-847MHz Tx 1970-1975 Rx 1890-1895MHz Tx 746-757 Rx 776-787MHz Tx 2145-2155 Rx 1745-1755	A-B-C			Verizon – Site name, Tariffville
(3)-APXV18-206516 (3)-LNX-6515DS (3)-APXV18-206517 (6)-RRUS-11 RRHs (1)-Cylindrical "Squid" D-Box, (1)-IBR1300 radio	140'-6"	140'-6"	(3) 12'-0" Antenna sector frame mounts	20-130-280	(3) 1-1/4" coax, (1) 6x12 Hybrid	T-Mobile		A-B-C			T-Mobile – Site # CTHA142A
(1)-RFS-PADX6-59A Dish w/Radome	135'-0"	135'-0"	Pipe Mount w/6" offset and tie back	265.2	(2)-EW63 elliptical	ES		C			Future Microwave Dish
(1)-RFS-PADX6-59A Dish w/Radome	135'-0"	135'-0"	Pipe Mount w/6" offset and tie back		(2)-EW63 elliptical	ES		B			Future Microwave Dish
(1)-RFS-PADX8 -59A Dish w/Radome	125'-0"	125'-0"	Pipe Mount w/6" offset and tie back	161.6	(1)-EW-63 elliptical	ES	6152.75 – Rx H 6404.79 – Tx H	B		(2)-green	Goose Hill, Main, 32.7 miles (Horizontal) [WQWB585]
Vertical Section of Dual Polarity Feed					(1)-EW-63 elliptical	ES	6555 Tx V 6725 Rx V			(2)-orange	Goose Hill Main Alt Polarity (Vertical) [WQWB585] Same Dish as above additional waveguide
(1)-Telewave ANT150F-6, 20' Omni	125'-0"	135'-0"	6'-0" Side Arm		(1)-7/8" coax	ES	153.695	C		(1)-White (2)-orange	Alarm Dialer
(1)-Comprod 531-70HD, 12' Dipole	125'-0"	125'-0"	6'-0" Side Arm	90	(1)- 7/8" coax	ES	47.84	A		(1)-White, (3)-orange	Windsor / Tolland
(1)-Comprod 531-70HD, 12' Dipole	109'-0"	111'-0"	6'-0" Side Arm		(1)-7/8" coax	ES	37.60	A		(1)-white, (1)-green	CCN

(1)-Kreco CO-41HD 14' Omni	108'-0"	114'-6"	6'-0" Side Arm	180	(1) -7/8" coax	ES	49.20	B		(1)-white, (2)-green	Hartford
(3) IT L-810, LED sidelights	103'-0"	103'-0"	(1) sidelight per leg	0-120-240	(1)- 3/8" power cable	ES		A-B-C		Sidelight Cable	ITL LED Sidelights
(1) RFS-PADX8 -59A Dish w/Radome	100'-0"	100'-0"	Pipe Mount w/6" offset and tie back	161.6	(1)- EW-63 elliptical	ES	6152.75 – Rx H	B		(3)-green	Goose Hill Diversity 32.7 miles
Vertical Section of Dual Polarity Feed					(1)- EW-63 elliptical	ES	6725.00 – Rx V			(5) Orange	Goose Hill Diversity Alt Polarity (Vertical) Same Dish as above additional waveguide
(1)-RFS-SC3-W100XGT1C, 3' Dish	98'-0"	98'-0"	3'-Side Arm	159.76	(1)-3/8" LMR	BFD	11GHz	A			Bloomfield Fire Dept.
(1)-RFS-SC3-W100XGT1C, 3' Dish	91'-0"	91'-0"	3'-Side Arm	144.48	(1)-3/8" LMR	BFD	11GHz	A			Bloomfield Fire Dept.
(1)-Telewave ANT150F-2, 5' Omni	87'-0"	90'-6"	3' Side Arm	120	(1)-7/8" coax	ES	173.250	B		(1)-white, (3)-green	Yankee Gas - Windsor
(1)-Comprod 531-70HD, Dipole	85'-0"	87'-0"	6'-0" Side Arm	90	(1)-7/8" coax	ES	37.74	A		(1)-orange, (1)-green	Tolland Meter & Service
(1)-Motorola WB2619, 18" x 18" Flat Panel	66'-0"	66'-0"	3'-0" Side Arm	120	(1)-CAT5 ¼" cable	Bloom/ Simsbury		B		(1)-red	Backup microwave Bloomfield PD/FD

Eversource- Green/ Orange/ White. Bloomfield, Simsbury – Red/ Yellow. FCC FRN# 0003583721

Appendix A

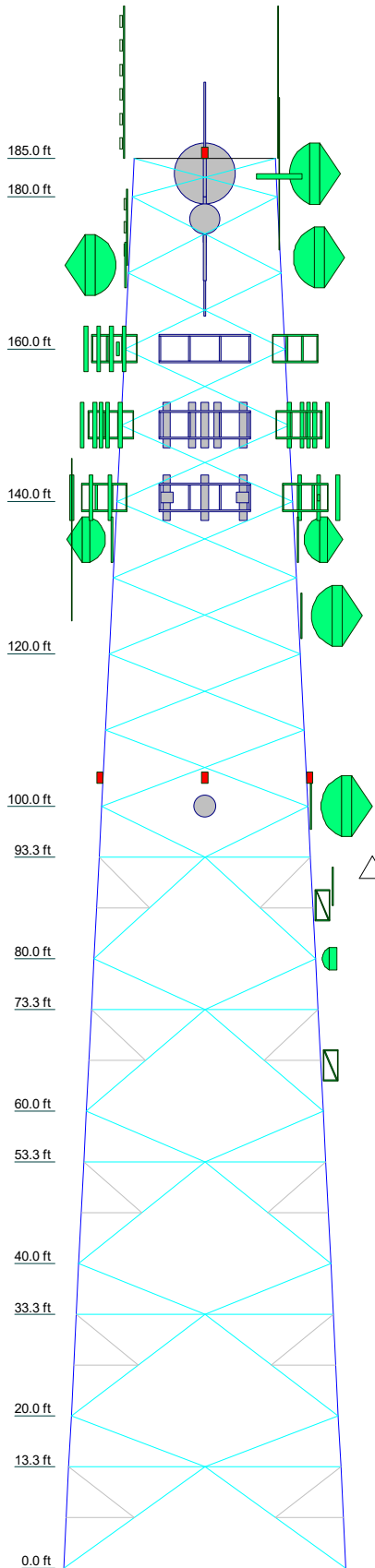
Tower Schematic

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
LED beacon (NU)	185	OPA-65R-LCUU-H8 (ATI existing)	160
20' x 3" omni whip (NU)	185	OPA-65R-LCUU-H6 (ATI existing)	160
Tower Top Amplifier (NU)	185	7770.00 (ATI existing)	160
14' x 3" Dia Omni (NU)	185	(2) BXA-171063/12 (Verizon)	150
BA8080-67 16' 16 Bay Dipole (Bloomfield PD)	185	(2) LPA-80080/4 (Verizon)	150
		(2) LPA-80080/4 (Verizon)	150
6'x4 1/2" Pipe Mount (NU)	183	(2) LPA-80080/4 (Verizon)	150
24' x 2" omni whip	183	ALU RRH2x40-700U (Verizon)	150
12' T-frame sector mnt	183	ALU RRH2x40-700U (Verizon)	150
14' x 2" omni whip (NU)	183	ALU RRH2x40-700U (Verizon)	150
14' x 2" omni whip (NU)	183	ALU RRH2x40-AWS (Verizon)	150
14' x 2" omni whip (NU)	183	ALU RRH2x40-AWS (Verizon)	150
8' dish with radome (NU)	183	ALU RRH2x40-AWS (Verizon)	150
8' dish with radome (NU)	183	RFS DB-T1-6Z-8AB-0Z D-box (Verizon)	150
6'x4 1/2" Pipe Mount (NU)	181		
10' 4-bay dipole (NU)	181 - 171	Rohn 6' x 12' Boom Gate (1) (Verizon)	150
6'x4 1/2" Pipe Mount (NU)	177	Rohn 6' x 12' Boom Gate (1) (Verizon)	150
4' dish with radome (NU)	177	Rohn 6' x 12' Boom Gate (1) (Verizon)	150
6'x4 1/2" Pipe Mount (NU)	172	BXA-70063/6 (Verizon)	150
8' dish with radome (NU)	172	BXA-70063/6 (Verizon)	150
6'x4 1/2" Pipe Mount (NU)	171	BXA-70063/6 (Verizon)	150
8' dish with radome (NU)	171	(2) BXA-171063/12 (Verizon)	150
ROHN 3-ft Side Arm (NU)	165	(2) BXA-171063/12 (Verizon)	150
6'x3" Pipe Mount (Simsbury PD)	165	APXV18-206517 (T-Mobile)	140.5
PR-900 (Simsbury PD)	165	LNx-6515DS-T4M (T-Mobile)	140.5
Telewave ANT 150F6 (NU)	165	LNx-6515DS-T4M (T-Mobile)	140.5
OPA-65R-LCUU-H8 (ATI existing)	160	LNx-6515DS-T4M (T-Mobile)	140.5
(2) 800-10966 (ATI)	160	(2) Ericsson RRUS-11 (T-Mobile)	140.5
(2) 800-10965 (ATI)	160	(2) Ericsson RRUS-11 (T-Mobile)	140.5
(2) 800-10966 (ATI)	160	(2) Ericsson RRUS-11 (T-Mobile)	140.5
RRUS-32 (ATI existing)	160	T-Mobile Mini-Squid (T-Mobile)	140.5
RRUS-32 (ATI existing)	160	Fastback IBR 1300 (T-Mobile)	140.5
RRUS-32 (ATI existing)	160	4x2 7/8" Pipe Mount (T-Mobile)	140.5
RRUS-E2 (ATI existing)	160	12' T-frame sector mnt	140.5
RRUS-E2 (ATI existing)	160	12' T-frame sector mnt	140.5
RRUS-E2 (ATI existing)	160	12' T-frame sector mnt	140.5
Ericsson RRUS B14 4478 (ATI)	160	APXV18-206516 (T-Mobile)	140.5
Ericsson RRUS B14 4478 (ATI)	160	APXV18-206516 (T-Mobile)	140.5
Ericsson RRUS B14 4478 (ATI)	160	APXV18-206516 (T-Mobile)	140.5
Ericsson RRUS 8843 (ATI)	160	APXV18-206517 (T-Mobile)	140.5
Ericsson RRUS 8843 (ATI)	160	APXV18-206517 (T-Mobile)	140.5
Ericsson RRUS 8843 (ATI)	160	APXV18-206517 (T-Mobile)	140.5
Ericsson RRUS B5 4449 (ATI)	160	6'x4 1/2" Pipe Mount (NU)	135
Ericsson RRUS B5 4449 (ATI)	160	6'x4 1/2" Pipe Mount (NU)	135
Ericsson RRUS B5 4449 (ATI)	160	6' dish with radome (NU)	135
Ericsson RRUS B5 4449 (ATI)	160	6' dish with radome (NU)	135
TT08-19DB111 TMA (ATI existing)	160	12' single dipole (NU)	125
TT08-19DB111 TMA (ATI existing)	160	Rohn 6' Side-Arm(1) (NU)	125
TT08-19DB111 TMA (ATI existing)	160	6'x4 1/2" Pipe Mount (NU)	125
Raycap DC6-48-60-18-8F surge suppressor (ATI existing)	160	Telewave ANT150F6 (NU)	125
Raycap DC6-48-60-18-8F surge suppressor (ATI existing)	160	Rohn 6' Side-Arm(1) (NU)	125
Raycap DC6-48-60-18-8F surge suppressor (ATI existing)	160	8' dish with radome (NU)	125
Raycap DC6-48-60-18-8F surge suppressor (ATI existing)	160	12' Dipole (NU)	109
Raycap DC6-48-60-18-8F surge suppressor (ATI existing)	160	Rohn 6' Side-Arm(1) (NU)	109
Raycap DC6-48-60-18-8F surge suppressor (ATI existing)	160	14' x 3" Dia Omni (NU)	108
Raycap DC6-48-60-18-8C-EV (ATI existing)	160	Rohn 6' Side-Arm(1) (NU)	108
Raycap DC6-48-60-18-8C-EV (ATI existing)	160	Obstruction light (NU)	103
Raycap DC6-48-60-18-8C-EV (ATI existing)	160	Obstruction light (NU)	103
Raycap DC6-48-60-18-8C-EV (ATI existing)	160	Obstruction light (NU)	103
SitePro VFA12-HD (ATI existing)	160	6'x4 1/2" Pipe Mount (NU)	100
SitePro VFA12-HD (ATI existing)	160	8' dish with radome (NU)	100
SitePro VFA12-HD (ATI existing)	160	3' HP dish (Bloomfield PD/FD)	100
(2) 5x2-3/8" Pipe Mount (ATI new)	160	Telewave ANT150F2 (NU)	87
(2) 5x2-3/8" Pipe Mount (ATI new)	160	3' sidearm (NU)	87
(2) 5x2-3/8" Pipe Mount (ATI new)	160	12' Dipole (NU)	85
7770.00 (ATI existing)	160	Rohn 6' Side-Arm(1) (NU)	85
7770.00 (ATI existing)	160	3' HP dish (Bloomfield PD/FD)	80
		3' sidearm (NU)	66
		18" square panel (NU)	66

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L3 1/2x3 1/2x1/4	C	L5x5x5/16
B	L6x6x3/8	D	1 @ 6.66667



Section	T15	T14	T13	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	P12.75x.5	P10.75x.5	P10.75x.5	P10.75x.5	P10.75x.385	P8.625x.5	P8.625x.5	P8.625x.322	P6.625x.280						
Leg Grade	L6x6x1/2	L6x6x3/8	L6x6x3/8	L5x5x3/8	L5x5x3/8	L5x5x3/8	L5x5x3/8	L5x5x3/8	L5x5x3/8	L5x5x3/8	L5x5x3/8	L5x5x3/8	L5x5x3/8	L5x5x3/8	L5x5x3/8
Diagonals	L6x6x1/2	L6x6x3/8	L6x6x3/8	L6x6x3/8	L6x6x3/8	L6x6x3/8	L6x6x3/8	L6x6x3/8	L6x6x3/8	L6x6x3/8	L6x6x3/8	L6x6x3/8	L6x6x3/8	L6x6x3/8	L6x6x3/8
Top Girts	L6x6x1/2	L6x6x3/8	L6x6x3/8	L6x6x3/8	L6x6x3/8	L6x6x3/8	L6x6x3/8	L6x6x3/8	L6x6x3/8	L6x6x3/8	L6x6x3/8	L6x6x3/8	L6x6x3/8	L6x6x3/8	L6x6x3/8
Horizontals	L5x5x5/16	L5x5x5/16	L5x5x5/16	L5x5x5/16	L5x5x5/16	L5x5x5/16	L5x5x5/16	L5x5x5/16	L5x5x5/16	L5x5x5/16	L5x5x5/16	L5x5x5/16	L5x5x5/16	L5x5x5/16	L5x5x5/16
Red. Horizontals	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16
Red. Diagonals	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16
Red. Hips	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4
Face Width (ft)	35.66667	33.66667	33.66667	33.66667	31.66667	29.66667	29.66667	27.66667	27.66667	25.66667	23.66667	23.66667	21.66667	21.66667	19.66667
# Panels @ (ft)	1 @ 13.33333	1 @ 13.33333	1 @ 13.33333	1 @ 13.33333	1 @ 13.33333	1 @ 13.33333	1 @ 13.33333	1 @ 13.33333	1 @ 13.33333	1 @ 13.33333	1 @ 13.33333	1 @ 13.33333	1 @ 13.33333	1 @ 13.33333	1 @ 13.33333
Weight (lb)	7427.4	3488.3	6612.9	2620.1	5254.3	2252.8	4877.9	2237.1	4302.4	1886.4	5788.4	4335.3	4106.6	2895.6	1022.9

All-Points Technology Corp., P.C.
 116 Grandview Road
 Conway, NH 03818
 Phone: (603) 496-5853
 FAX: 603) 447-2124

Job: 185' Self-Supporting Tower
 Project: CT1931600 Bloomfield
 Client: SAI; AT&T Site #CT1001
 Code: TIA-222-G
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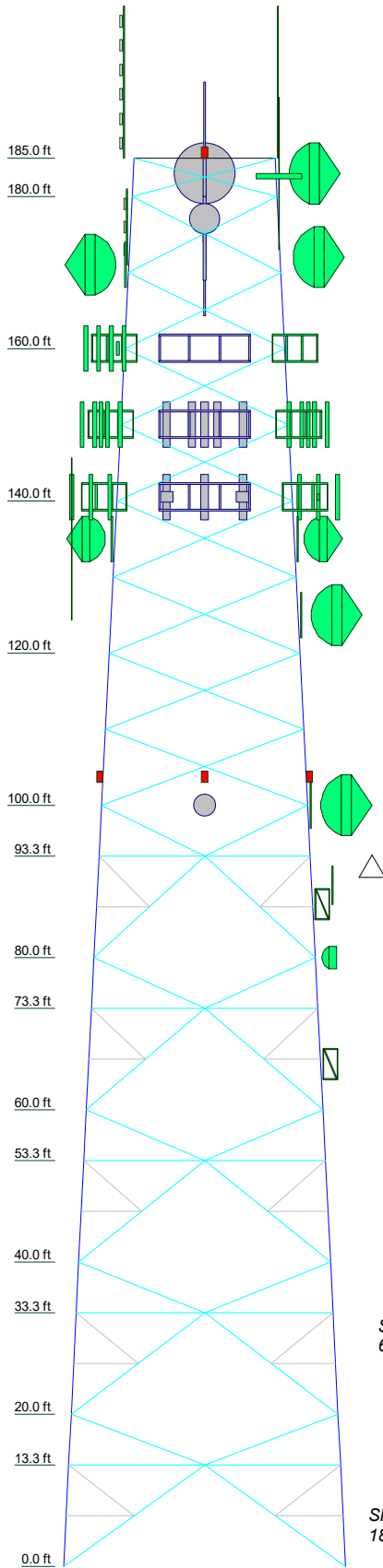
Drawn by: Rob Adair
 Date: 02/21/20
 Scale: NTS
 App'd:
 Dwg No. E-1

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L3 1/2x3 1/2x1/4	C	L5x5x5/16
B	L6x6x3/8	D	1 @ 6.6667

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi



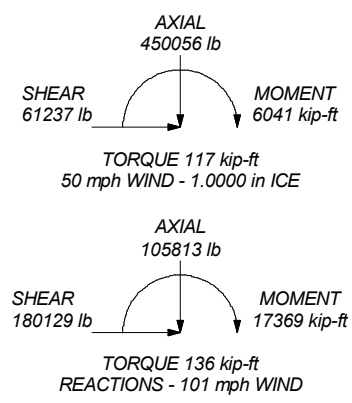
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Legs	P12.75x.5	P10.75x.5	P10.75x.385	P10.75x.385	P8.625x.5	P8.625x.5	P8.625x.322	P8.625x.322	P8.625x.280				
Leg Grade	L6x6x1/2	L6x6x3/8	L6x6x3/8	L6x6x3/8	L4x6x1/2	L4x6x1/2	L5x5x3/8	L5x5x3/8	L5x5x5/16	L5x5x5/16	L4x4x1/4		
Diagonals	L5x5x5/16	L5x5x5/16	L5x5x5/16	L5x5x5/16	L5x5x5/16	L5x5x5/16	L5x5x5/16	L5x5x5/16	L5x5x5/16	L5x5x5/16	L5x5x5/16		
Top Girts	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.		
Horizontals	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16		
Red. Horizontals	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16	L3 1/2x4x5/16		
Red. Diagonals	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4		
Red. Hips	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4	L3 1/2x3 1/2x1/4		
Face Width (ft)	35.6667	33.6667	31.6667	29.6667	27.6667	25.6667	23.6667	21.6667	19.6667	18.5			
# Panels @ (ft)	1 @ 13.3333	1 @ 13.3333	1 @ 13.3333	1 @ 13.3333	1 @ 13.3333	1 @ 13.3333	1 @ 13.3333	1 @ 13.3333	1 @ 13.3333	1 @ 13.3333	1 @ 13.3333	1 @ 13.3333	1 @ 13.3333
Weight (lb)	59558.4	4727.4	3481.3	2620.1	5254.3	2252.8	4877.9	2237.1	4302.4	1886.4	5788.4	4335.3	4106.6
													2895.6
													1022.9

ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:

DOWN: 577321 lb
SHEAR: 101126 lb

UPLIFT: -477437 lb
SHEAR: 87893 lb



All-Points Technology Corp., P.C.		Job: 185' Self-Supporting Tower	
116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: 603) 447-2124		Project: CT1931600 Bloomfield	
Client: SAI; AT&T Site #CT1001	Code: TIA-222-G	Drawn by: Rob Adair	App'd:
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		Dwg No. E-1	

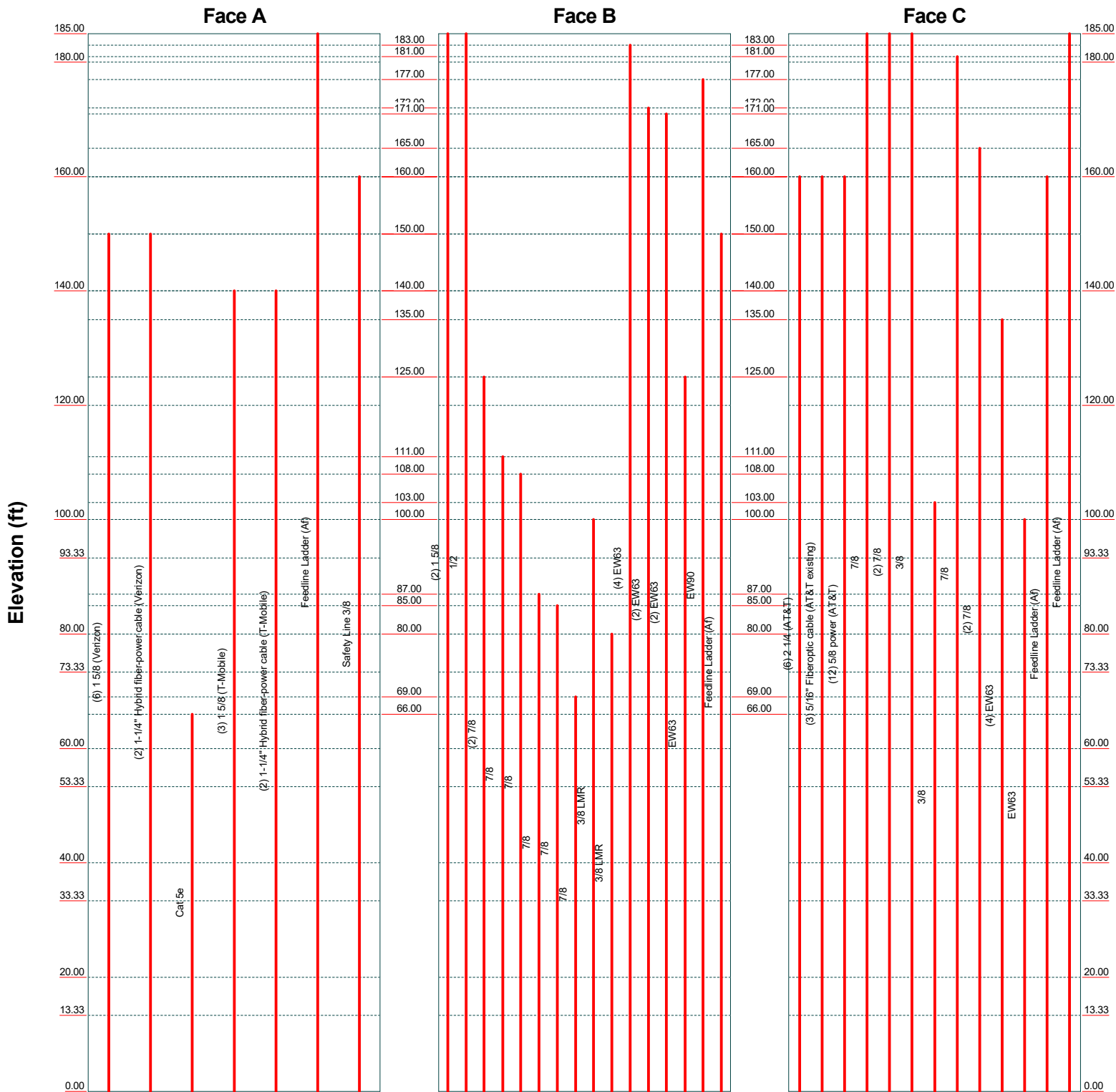
Appendix B

Calculations

Feed Line Distribution Chart

0' - 185'

— Round
 — Flat
 — App In Face
 — App Out Face
 — Truss Leg

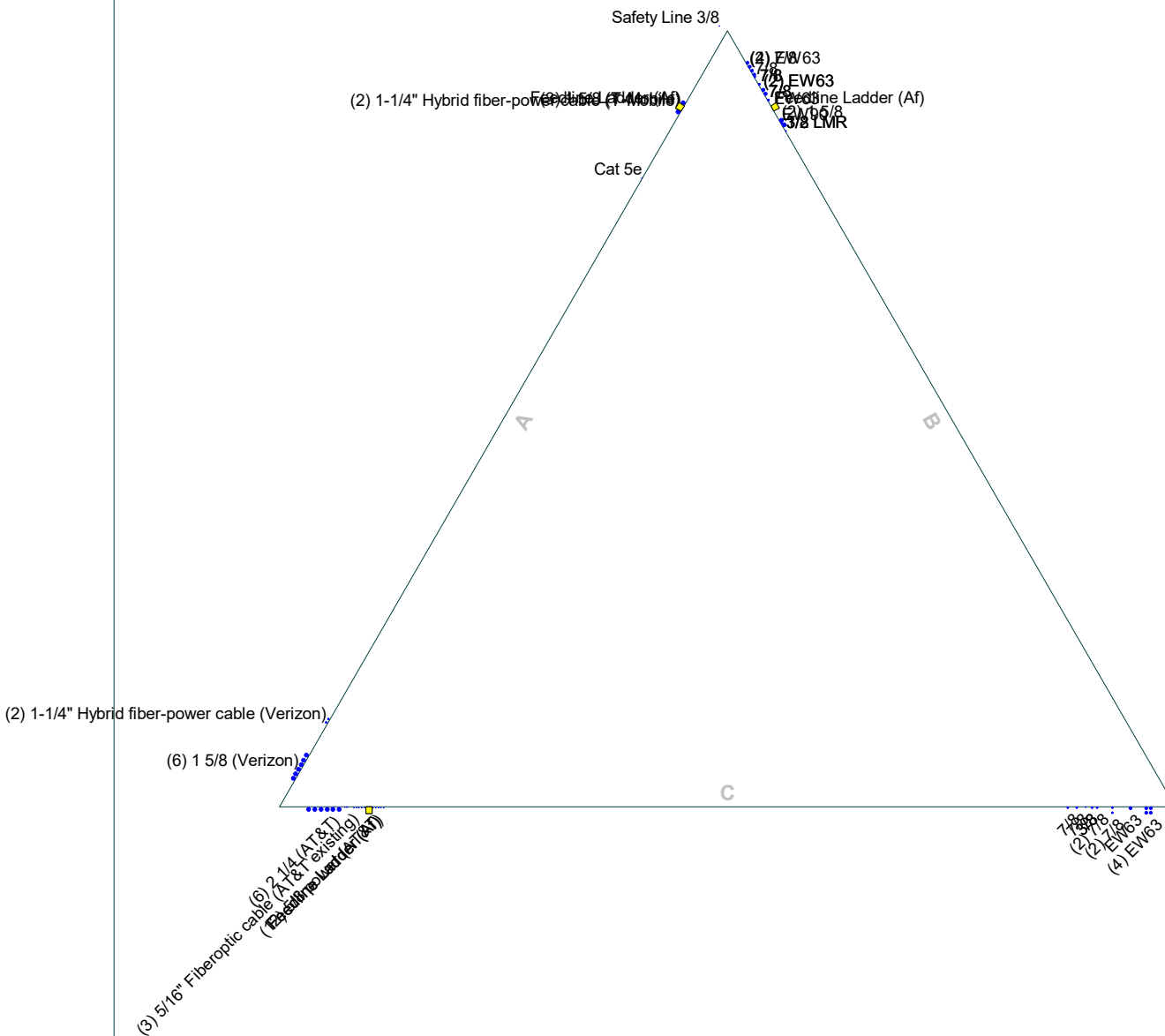


All-Points Technology Corp., P.C.			Job: 185' Self-Supporting Tower		
116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: 603) 447-2124			Project: CT1931600 Bloomfield		
Client: SAI; AT&T Site #CT1001		Drawn by: Rob Adair		App'd:	
Code: TIA-222-G		Date: 02/21/20		Scale: NTS	
Path: Z:\Shared\NH Office\Jobs\3_AT&T\CT1931600 Bloomfield CT1001\CT1931600 Bloomfield.er			Dwg No. E-7		

Feed Line Plan 20'

— Round
 — Flat
 — App In Face
 — App Out Face

Section @ 20'



All-Points Technology Corp., P.C.
 116 Grandview Road
 Conway, NH 03818
 Phone: (603) 496-5853
 FAX: 603) 447-2124

Job: 185' Self-Supporting Tower		
Project: CT1931600 Bloomfield		
Client: SA; AT&T Site #CT1001	Drawn by: Rob Adair	App'd:
Code: TIA-222-G	Date: 02/21/20	Scale: NTS
Path: Z:\Shared\NH Office\Jobs\3 AT&T\CT1931600 Bloomfield CT1001\CT1931600 Bloomfield.dwg		Dwg No. E-7

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Tower Input Data

The main tower is a 3x free standing tower with an overall height of 185.00 ft above the ground line.

The base of the tower is set at an elevation of 0.00 ft above the ground line.

The face width of the tower is 18.50 ft at the top and 37.00 ft at the base.

This tower is designed using the TIA-222-G standard.

The following design criteria apply:

ASCE 7-10 Wind Data is used (wind speeds converted to nominal values).

Ultimate wind speed of 130 mph.

Basic wind speed of 101 mph.

Structure Class III.

Exposure Category C.

Topographic Category 2.

Crest Height 200.00 ft.

Nominal ice thickness of 1.0000 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 50 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

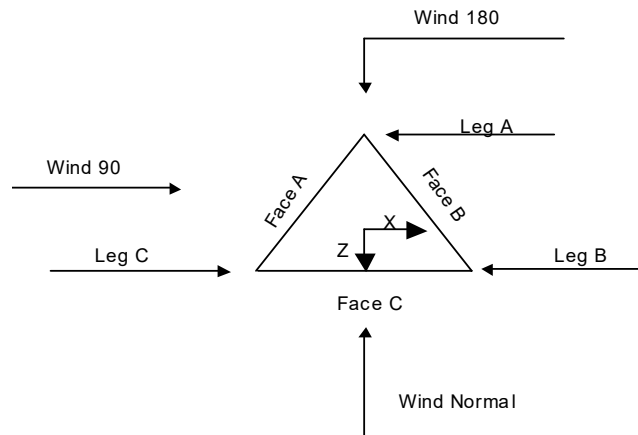
Stress ratio used in tower member design is 1.

Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

- | | | |
|--|---|---|
| <ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification √ Use Code Stress Ratios √ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile √ Include Bolts In Member Capacity Leg Bolts Are At Top Of Section √ Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric | <ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Pinned √ Assume Rigid Index Plate √ Use Clear Spans For Wind Area √ Use Clear Spans For KL/r Retension Guys To Initial Tension Bypass Mast Stability Checks Use Azimuth Dish Coefficients √ Project Wind Area of Appurt. Autocalc Torque Arm Areas Add IBC .6D+W Combination Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs | <ul style="list-style-type: none"> Use ASCE 10 X-Brace Ly Rules √ Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression √ All Leg Panels Have Same Allowable Offset Girt At Foundation √ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-G Bracing Resist. Exemption Use TIA-222-G Tension Splice Exemption <li style="text-align: center;">Poles Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known |
|--|---|---|

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Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	<i>ft</i>			<i>ft</i>		<i>ft</i>
T1	185.00-180.00			18.50	1	5.00
T2	180.00-160.00			19.00	1	20.00
T3	160.00-140.00			21.00	1	20.00
T4	140.00-120.00			23.00	1	20.00
T5	120.00-100.00			25.00	1	20.00
T6	100.00-93.33			27.00	1	6.67
T7	93.33-80.00			27.67	1	13.33
T8	80.00-73.33			29.00	1	6.67
T9	73.33-60.00			29.67	1	13.33
T10	60.00-53.33			31.00	1	6.67
T11	53.33-40.00			31.67	1	13.33
T12	40.00-33.33			33.00	1	6.67
T13	33.33-20.00			33.67	1	13.33
T14	20.00-13.33			35.00	1	6.67
T15	13.33-0.00			35.67	1	13.33

Tower Section Geometry (cont'd)

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	<i>ft</i>	<i>ft</i>				<i>in</i>	<i>in</i>
T1	185.00-180.00	5.00	X Brace	No	No	0.0000	0.0000
T2	180.00-160.00	10.00	X Brace	No	No	0.0000	0.0000
T3	160.00-140.00	10.00	X Brace	No	No	0.0000	0.0000
T4	140.00-120.00	10.00	X Brace	No	No	0.0000	0.0000
T5	120.00-100.00	10.00	X Brace	No	No	0.0000	0.0000

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Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T6	100.00-93.33	6.67	Diamond	No	Yes	0.0000	0.0000
T7	93.33-80.00	13.33	K1 Down	No	Yes	0.0000	0.0000
T8	80.00-73.33	6.67	Diamond	No	Yes	0.0000	0.0000
T9	73.33-60.00	13.33	K1 Down	No	Yes	0.0000	0.0000
T10	60.00-53.33	6.67	Diamond	No	Yes	0.0000	0.0000
T11	53.33-40.00	13.33	K1 Down	No	Yes	0.0000	0.0000
T12	40.00-33.33	6.67	Diamond	No	Yes	0.0000	0.0000
T13	33.33-20.00	13.33	K1 Down	No	Yes	0.0000	0.0000
T14	20.00-13.33	6.67	Diamond	No	Yes	0.0000	0.0000
T15	13.33-0.00	13.33	K1 Down	No	Yes	0.0000	0.0000

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 185.00-180.00	Pipe	P6.625x.280	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A36 (36 ksi)
T2 180.00-160.00	Pipe	P6.625x.280	A572-50 (50 ksi)	Equal Angle	L4x4x1/4	A36 (36 ksi)
T3 160.00-140.00	Pipe	P6.625x.280	A572-50 (50 ksi)	Equal Angle	L5x5x5/16	A36 (36 ksi)
T4 140.00-120.00	Pipe	P6.625x.280	A572-50 (50 ksi)	Equal Angle	L5x5x5/16	A36 (36 ksi)
T5 120.00-100.00	Pipe	P8.625x.322	A572-50 (50 ksi)	Equal Angle	L5x5x3/8	A36 (36 ksi)
T6 100.00-93.33	Pipe	P8.625x.322	A572-50 (50 ksi)	Equal Angle	L6x6x3/8	A36 (36 ksi)
T7 93.33-80.00	Pipe	P8.625x.322	A572-50 (50 ksi)	Single Angle	L4x6x1/2	A36 (36 ksi)
T8 80.00-73.33	Pipe	P8.625x.5	A572-50 (50 ksi)	Equal Angle	L6x6x3/8	A36 (36 ksi)
T9 73.33-60.00	Pipe	P8.625x.5	A572-50 (50 ksi)	Equal Angle	L6x6x3/8	A36 (36 ksi)
T10 60.00-53.33	Pipe	P10.75x.365	A572-50 (50 ksi)	Equal Angle	L6x6x3/8	A36 (36 ksi)
T11 53.33-40.00	Pipe	P10.75x.365	A572-50 (50 ksi)	Equal Angle	L6x6x3/8	A36 (36 ksi)
T12 40.00-33.33	Pipe	P10.75x.5	A572-50 (50 ksi)	Equal Angle	L6x6x3/8	A36 (36 ksi)
T13 33.33-20.00	Pipe	P10.75x.5	A572-50 (50 ksi)	Equal Angle	L6x6x1/2	A36 (36 ksi)
T14 20.00-13.33	Pipe	P12.75x.5	A572-50 (50 ksi)	Equal Angle	L6x6x1/2	A36 (36 ksi)
T15 13.33-0.00	Pipe	P12.75x.5	A572-50 (50 ksi)	Equal Angle	L6x6x1/2	A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 185.00-180.00	Equal Angle	L5x5x5/16	A36 (36 ksi)	Single Angle		A36 (36 ksi)

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Tower Section Geometry (cont'd)

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T6 100.00-93.33	None	Single Angle		A36 (36 ksi)	Solid Round	None	A36 (36 ksi)
T7 93.33-80.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L4x4x5/16	A36 (36 ksi)
T8 80.00-73.33	None	Single Angle		A36 (36 ksi)	Solid Round	None	A36 (36 ksi)
T9 73.33-60.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L4x4x5/16	A36 (36 ksi)
T10 60.00-53.33	None	Single Angle		A36 (36 ksi)	Solid Round	None	A36 (36 ksi)
T11 53.33-40.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L5x5x5/16	A36 (36 ksi)
T12 40.00-33.33	None	Single Angle		A36 (36 ksi)	Solid Round	None	A36 (36 ksi)
T13 33.33-20.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L5x5x5/16	A36 (36 ksi)
T14 20.00-13.33	None	Single Angle		A36 (36 ksi)	Solid Round	None	A36 (36 ksi)
T15 13.33-0.00	None	Single Angle		A36 (36 ksi)	Equal Angle	L5x5x5/16	A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Redundant Bracing Grade	Redundant Type	Redundant Size	K Factor
T7 93.33-80.00	A36 (36 ksi)	Horizontal (1) Diagonal (1) Hip (1)	Equal Angle Equal Angle Equal Angle	1 1 1
T9 73.33-60.00	A36 (36 ksi)	Horizontal (1) Diagonal (1) Hip (1)	Equal Angle Equal Angle Equal Angle	1 1 1
T11 53.33-40.00	A36 (36 ksi)	Horizontal (1) Diagonal (1) Hip (1)	Equal Angle Equal Angle Equal Angle	1 1 1
T13 33.33-20.00	A36 (36 ksi)	Horizontal (1) Diagonal (1) Hip (1)	Equal Angle Equal Angle Equal Angle	1 1 1
T15 13.33-0.00	A36 (36 ksi)	Horizontal (1) Diagonal (1) Hip (1)	Single Angle Single Angle Equal Angle	1 1 1

Tower Section Geometry (cont'd)

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000

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Tower Section Geometry (cont'd)

Tower Elevation	Connection Offsets							
	Diagonal				K-Bracing			
	Vert. Top	Horiz. Top	Vert. Bot.	Horiz. Bot.	Vert. Top	Horiz. Top	Vert. Bot.	Horiz. Bot.
ft	in	in	in	in	in	in	in	in
T1	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
185.00-180.00								
T2	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
180.00-160.00								
T3	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
160.00-140.00								
T4	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
140.00-120.00								
T5	3.0000	0.0000	3.0000	0.0000	0.0000	0.0000	0.0000	0.0000
120.00-100.00								
T6	3.0000	0.0000	3.0000	4.0000	0.0000	4.0000	0.0000	0.0000
100.00-93.33								
T7 93.33-80.00	0.0000	0.0000	0.0000	0.0000	0.0000	2.0000	0.0000	0.0000
T8 80.00-73.33	0.0000	0.0000	0.0000	8.0000	0.0000	8.0000	0.0000	0.0000
T9 73.33-60.00	0.0000	0.0000	0.0000	0.0000	0.0000	4.0000	0.0000	0.0000
T10	0.0000	0.0000	0.0000	9.0000	0.0000	9.0000	0.0000	0.0000
60.00-53.33								
T11	0.0000	0.0000	0.0000	0.0000	0.0000	5.0000	0.0000	0.0000
53.33-40.00								
T12	0.0000	0.0000	0.0000	9.0000	0.0000	9.0000	0.0000	0.0000
40.00-33.33								
T13	0.0000	0.0000	0.0000	0.0000	0.0000	5.0000	0.0000	0.0000
33.33-20.00								
T14	0.0000	0.0000	0.0000	9.0000	0.0000	9.0000	0.0000	0.0000
20.00-13.33								
T15 13.33-0.00	0.0000	0.0000	0.0000	0.0000	0.0000	5.0000	0.0000	0.0000

Tower Section Geometry (cont'd)

Tower Elevation	Leg Connection Type	Leg Bolt Size	Leg No.	Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
				Bolt Size	No.	Bolt Size	No.	Bolt Size	No.	Bolt Size	No.	Bolt Size	No.	Bolt Size	No.
ft		in		in		in		in		in		in		in	
T1	Flange	1.2500	6	0.7500	1	0.7500	1	0.6250	0	0.6250	0	0.5000	0	0.6250	0
185.00-180.00		A325N		A325X		A325X		A325N		A325N		A325N		A325N	
T2	Flange	1.2500	6	0.7500	1	0.6250	0	0.6250	0	0.6250	0	0.5000	0	0.6250	0
180.00-160.00		A325N		A325X		A325N		A325N		A325N		A325N		A325N	
T3	Flange	1.2500	6	0.7500	1	0.6250	0	0.6250	0	0.6250	0	0.5000	0	0.6250	0
160.00-140.00		A325N		A325X		A325N		A325N		A325N		A325N		A325N	
T4	Flange	1.2500	8	0.6250	2	0.6250	0	0.6250	0	0.6250	0	0.5000	0	0.6250	0
140.00-120.00		A325N		A325X		A325N		A325N		A325N		A325N		A325N	
T5	Flange	1.5000	8	0.7500	2	0.6250	0	0.6250	0	0.6250	0	0.5000	0	0.6250	0
120.00-100.00		A325N		A325X		A325N		A325N		A325N		A325N		A325N	
T6	Flange	0.0000	0	1.0000	2	0.6250	0	0.6250	0	0.6250	0	0.5000	0	0.6250	0
100.00-93.33		A325N		A325X		A325N		A325N		A325N		A325N		A325N	
T7 93.33-80.00	Flange	1.5000	8	1.0000	2	0.6250	0	0.6250	0	0.6250	0	1.0000	2	0.6250	0
		A325N		A325X		A325N		A325N		A325N		A325N		A325N	
T8 80.00-73.33	Flange	0.0000	0	0.8750	2	0.6250	0	0.6250	0	0.6250	0	0.5000	0	0.6250	0
		A325N		A325X		A325N		A325N		A325N		A325N		A325N	
T9 73.33-60.00	Flange	1.5000	8	0.8750	2	0.6250	0	0.6250	0	0.6250	0	0.8750	2	0.6250	0
		A325N		A325X		A325N		A325N		A325N		A325X		A325N	

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Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T10 60.00-53.33	Flange	0.0000	0	0.8750	2	0.6250	0	0.6250	0	0.6250	0	0.5000	0	0.6250	0
		A325N		A325X		A325N		A325N		A325N		A325X		A325N	
T11 53.33-40.00	Flange	1.5000	8	0.8750	2	0.6250	0	0.6250	0	0.6250	0	0.8750	2	0.6250	0
		A325N		A325X		A325N		A325N		A325N		A325X		A325N	
T12 40.00-33.33	Flange	0.0000	0	1.0000	2	0.6250	0	0.6250	0	0.6250	0	0.0000	0	0.6250	0
		A325N		A325X		A325N		A325N		A325N		A325X		A325N	
T13 33.33-20.00	Flange	1.5000	8	1.0000	2	0.6250	0	0.6250	0	0.6250	0	1.0000	2	0.6250	0
		A325N		A325X		A325N		A325N		A325N		A325X		A325N	
T14 20.00-13.33	Flange	0.0000	0	1.0000	2	0.6250	0	0.6250	0	0.6250	0	0.0000	0	0.6250	0
		A325N		A325X		A325N		A325N		A325N		A325X		A325N	
T15 13.33-0.00	Flange	1.7500	6	1.0000	2	0.6250	0	0.6250	0	0.6250	0	1.0000	2	0.6250	0
		F1554-105		A325X		A325N		A325N		A325N		A325X		A325N	

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
2 1/4 (AT&T)	C	No	No	Ar (CaAa)	160.00 - 0.00	0.0000	0.45	6	6	0.5000	2.3800		1.16
5/16" Fiberoptic cable (AT&T existing)	C	No	No	Ar (CaAa)	160.00 - 0.00	0.0000	0.425	3	3	0.3125	0.3125		0.25
5/8 power (AT&T)	C	No	No	Ar (CaAa)	160.00 - 0.00	0.0000	0.4	12	12	0.6450	0.6450		0.40
1 5/8 (Verizon)	A	No	No	Ar (CaAa)	150.00 - 0.00	0.0000	-0.45	6	6	0.5000	1.9800		1.04
1-1/4" Hybrid fiber-power cable (Verizon)	A	No	No	Ar (CaAa)	150.00 - 0.00	0.0000	-0.39	2	2	0.5000	1.2500		1.30
1 5/8	B	No	No	Ar (CaAa)	185.00 - 0.00	0.0000	-0.38	2	2	0.5000	1.9800		1.04
7/8	C	No	No	Ar (CaAa)	185.00 - 0.00	0.0000	-0.39	1	1	1.1100	1.1100		0.54
7/8	C	No	No	Ar (CaAa)	185.00 - 0.00	0.0000	-0.41	2	2	1.1100	1.1100		0.54
3/8	C	No	No	Ar (CaAa)	185.00 - 0.00	0.0000	-0.4	1	1	0.4400	0.4400		0.08
3/8	C	No	No	Ar (CaAa)	103.00 - 0.00	0.0000	-0.4	1	1	0.4400	0.4400		0.08
1/2	B	No	No	Ar (CaAa)	185.00 - 0.00	0.0000	-0.37	1	1	0.5800	0.5800		0.25
7/8	C	No	No	Ar (CaAa)	181.00 - 0.00	0.0000	-0.38	1	1	1.1100	1.1100		0.54
7/8	C	No	No	Ar (CaAa)	165.00 - 0.00	0.0000	-0.43	2	1	1.1100	1.1100		0.54
7/8	B	No	No	Ar (CaAa)	125.00 - 0.00	0.0000	-0.45	2	2	1.1100	1.1100		0.54
7/8	B	No	No	Ar (CaAa)	111.00 - 0.00	0.0000	-0.41	1	1	1.1100	1.1100		0.54
7/8	B	No	No	Ar (CaAa)	108.00 - 0.00	0.0000	-0.41	1	1	1.1100	1.1100		0.54
7/8	B	No	No	Ar (CaAa)	87.00 - 0.00	0.0000	-0.43	1	1	1.1100	1.1100		0.54

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	Client	SAI; AT&T Site #CT1001	Designed by	Rob Adair

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
7/8	B	No	No	Ar (CaAa)	85.00 - 0.00	0.0000	-0.43	1	1	1.1100	1.1100		0.54
7/8	B	No	No	Ar (CaAa)	69.00 - 0.00	0.0000	-0.44	1	1	1.1100	1.1100		0.54
Cat 5e	A	No	No	Ar (CaAa)	66.00 - 0.00	0.0000	0.31	1	1	0.3125	0.3125		0.02
3/8 LMR	B	No	No	Ar (CaAa)	100.00 - 0.00	0.0000	-0.37	1	1	0.4400	0.4400		0.08
3/8 LMR	B	No	No	Ar (CaAa)	80.00 - 0.00	0.0000	-0.37	1	1	0.4400	0.4400		0.08
EW63	B	No	No	Ar (CaAa)	183.00 - 0.00	0.0000	-0.45	4	4	0.5000	1.5742		0.51
EW63	B	No	No	Ar (CaAa)	172.00 - 0.00	0.0000	-0.42	2	2	0.5000	1.5742		0.51
EW63	B	No	No	Ar (CaAa)	171.00 - 0.00	0.0000	-0.42	2	2	0.5000	1.5742		0.51
EW63	B	No	No	Ar (CaAa)	125.00 - 0.00	0.0000	-0.4	1	1	0.5000	1.5742		0.51
EW90	B	No	No	Ar (CaAa)	177.00 - 0.00	0.0000	-0.38	1	1	0.5000	0.9869		0.32
EW63	C	No	No	Ar (CaAa)	135.00 - 0.00	0.0000	-0.47	4	2	0.5000	1.5742		0.51
EW63	C	No	No	Ar (CaAa)	100.00 - 0.00	0.0000	-0.45	1	1	0.5000	1.5742		0.51
1 5/8 (T-Mobile)	A	No	No	Ar (CaAa)	140.00 - 0.00	0.0000	0.4	3	3	0.5000	1.9800		1.04
1-1/4" Hybrid fiber-power cable (T-Mobile)	A	No	No	Ar (CaAa)	140.00 - 0.00	0.0000	0.4	2	2	0.5000	1.2500		1.30
Feedline Ladder (Af)	C	No	No	Af (CaAa)	160.00 - 0.00	0.0000	0.4	1	1	0.0000	3.0000		8.40
Feedline Ladder (Af)	B	No	No	Af (CaAa)	150.00 - 0.00	0.0000	-0.4	1	1	0.0000	3.0000		8.40
Feedline Ladder (Af)	A	No	No	Af (CaAa)	185.00 - 0.00	0.0000	0.4	1	1	0.0000	3.0000		8.40
Feedline Ladder (Af)	C	No	No	Af (CaAa)	185.00 - 0.00	0.0000	0.4	1	1	0.0000	3.0000		8.40
Safety Line 3/8	A	No	No	Ar (CaAa)	160.00 - 0.00	4.0000	0.5	1	1	0.3750	0.3750		0.22

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight lb
T1	185.00-180.00	A	0.000	0.000	2.500	0.000	42.00
		B	0.000	0.000	4.159	0.000	17.77
		C	0.000	0.000	4.496	0.000	51.04
T2	180.00-160.00	A	0.000	0.000	10.000	0.000	168.00
		B	0.000	0.000	30.593	0.000	116.30
		C	0.000	0.000	20.870	0.000	218.20
T3	160.00-140.00	A	0.000	0.000	25.130	0.000	260.80
		B	0.000	0.000	41.241	0.000	218.60
		C	0.000	0.000	80.115	0.000	652.60
T4	140.00-120.00	A	0.000	0.000	56.390	0.000	463.60
		B	0.000	0.000	48.138	0.000	310.55
		C	0.000	0.000	89.560	0.000	683.20
T5	120.00-100.00	A	0.000	0.000	56.390	0.000	463.60
		B	0.000	0.000	55.939	0.000	344.66
		C	0.000	0.000	92.841	0.000	693.64
T6	100.00-93.33	A	0.000	0.000	18.797	0.000	154.53

<p style="text-align: center;">tnxTower</p> <p style="text-align: center;">All-Points Technology Corp., P.C.</p> <p style="text-align: center;">116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: 603) 447-2124</p>	Job	185' Self-Supporting Tower	Page	10 of 39
	Project	CT1931600 Bloomfield	Date	08:43:01 02/21/20
	Client	SAI; AT&T Site #CT1001	Designed by	Rob Adair

Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight lb
T7	93.33-80.00	B	0.000	0.000	19.717	0.000	119.20
		C	0.000	0.000	32.246	0.000	235.07
		A	0.000	0.000	37.593	0.000	309.07
T8	80.00-73.33	B	0.000	0.000	40.765	0.000	244.88
		C	0.000	0.000	64.491	0.000	470.13
		A	0.000	0.000	18.797	0.000	154.53
T9	73.33-60.00	B	0.000	0.000	21.490	0.000	126.93
		C	0.000	0.000	32.246	0.000	235.07
		A	0.000	0.000	37.781	0.000	309.20
T10	60.00-53.33	B	0.000	0.000	43.979	0.000	258.73
		C	0.000	0.000	64.491	0.000	470.13
		A	0.000	0.000	19.005	0.000	154.68
T11	53.33-40.00	B	0.000	0.000	22.230	0.000	130.53
		C	0.000	0.000	32.246	0.000	235.07
		A	0.000	0.000	38.010	0.000	309.36
T12	40.00-33.33	B	0.000	0.000	44.460	0.000	261.07
		C	0.000	0.000	64.491	0.000	470.13
		A	0.000	0.000	19.005	0.000	154.68
T13	33.33-20.00	B	0.000	0.000	22.230	0.000	130.53
		C	0.000	0.000	32.246	0.000	235.07
		A	0.000	0.000	38.010	0.000	309.36
T14	20.00-13.33	B	0.000	0.000	44.460	0.000	261.07
		C	0.000	0.000	64.491	0.000	470.13
		A	0.000	0.000	19.005	0.000	154.68
T15	13.33-0.00	B	0.000	0.000	22.230	0.000	130.53
		C	0.000	0.000	32.246	0.000	235.07
		A	0.000	0.000	38.010	0.000	309.36
		B	0.000	0.000	44.460	0.000	261.07
		C	0.000	0.000	64.491	0.000	470.13

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight lb
T1	185.00-180.00	A	3.246	0.000	0.000	5.746	0.000	195.30
		B		0.000	0.000	18.344	0.000	341.24
		C		0.000	0.000	21.536	0.000	498.40
T2	180.00-160.00	A	3.245	0.000	0.000	22.981	0.000	780.97
		B		0.000	0.000	139.726	0.000	2557.48
		C		0.000	0.000	106.051	0.000	2455.88
T3	160.00-140.00	A	3.243	0.000	0.000	80.149	0.000	1941.38
		B		0.000	0.000	180.921	0.000	3436.46
		C		0.000	0.000	297.053	0.000	6698.05
T4	140.00-120.00	A	3.240	0.000	0.000	193.773	0.000	4065.02
		B		0.000	0.000	204.058	0.000	4041.59
		C		0.000	0.000	323.736	0.000	7191.61
T5	120.00-100.00	A	3.234	0.000	0.000	193.552	0.000	4055.25
		B		0.000	0.000	253.478	0.000	5025.84
		C		0.000	0.000	334.381	0.000	7384.29
T6	100.00-93.33	A	3.227	0.000	0.000	64.434	0.000	1348.06
		B		0.000	0.000	94.254	0.000	1890.41
		C		0.000	0.000	120.574	0.000	2666.32
T7	93.33-80.00	A	3.219	0.000	0.000	128.686	0.000	2688.13
		B		0.000	0.000	197.245	0.000	3978.41
		C		0.000	0.000	240.795	0.000	5315.56
T8	80.00-73.33	A	3.209	0.000	0.000	64.218	0.000	1338.58
		B		0.000	0.000	108.480	0.000	2203.55
		C		0.000	0.000	120.155	0.000	2646.07

tnxTower All-Points Technology Corp., P.C. 116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: (603) 447-2124	Job	185' Self-Supporting Tower	Page	11 of 39
	Project	CT1931600 Bloomfield	Date	08:43:01 02/21/20
	Client	SAI; AT&T Site #CT1001	Designed by	Rob Adair

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight lb
T9	73.33-60.00	A	3.194	0.000	0.000	132.113	0.000	2744.30
		B		0.000	0.000	222.982	0.000	4533.01
		C		0.000	0.000	239.641	0.000	5259.93
T10	60.00-53.33	A	3.174	0.000	0.000	68.247	0.000	1410.86
		B		0.000	0.000	112.584	0.000	2282.00
		C		0.000	0.000	119.356	0.000	2607.67
T11	53.33-40.00	A	3.145	0.000	0.000	135.744	0.000	2789.29
		B		0.000	0.000	223.668	0.000	4502.10
		C		0.000	0.000	237.402	0.000	5152.76
T12	40.00-33.33	A	3.104	0.000	0.000	67.329	0.000	1371.33
		B		0.000	0.000	110.748	0.000	2206.60
		C		0.000	0.000	117.752	0.000	2531.40
T13	33.33-20.00	A	3.041	0.000	0.000	133.006	0.000	2672.57
		B		0.000	0.000	218.194	0.000	4279.84
		C		0.000	0.000	232.622	0.000	4927.61
T14	20.00-13.33	A	2.936	0.000	0.000	65.127	0.000	1278.84
		B		0.000	0.000	106.344	0.000	2030.99
		C		0.000	0.000	113.908	0.000	2353.10
T15	13.33-0.00	A	2.713	0.000	0.000	124.389	0.000	2321.30
		B		0.000	0.000	200.949	0.000	3616.69
		C		0.000	0.000	217.574	0.000	4251.21

Feed Line Center of Pressure

Section	Elevation ft	CP _X in	CP _Z in	CP _X Ice in	CP _Z Ice in
T1	185.00-180.00	-0.4218	-5.5764	3.1697	-4.1694
T2	180.00-160.00	0.7197	-16.0919	10.5296	-18.1855
T3	160.00-140.00	-18.8782	-9.4987	-14.4089	-11.8804
T4	140.00-120.00	-18.7445	-13.7202	-14.6225	-18.3412
T5	120.00-100.00	-17.7222	-16.1764	-12.9528	-24.3770
T6	100.00-93.33	-17.2040	-17.2594	-9.1125	-26.6599
T7	93.33-80.00	-17.5912	-18.5729	-8.7567	-28.0758
T8	80.00-73.33	-17.6776	-20.1808	-8.6961	-34.1318
T9	73.33-60.00	-16.5221	-19.6936	-8.3259	-34.6061
T10	60.00-53.33	-17.8572	-21.5543	-9.1531	-38.9002
T11	53.33-40.00	-16.3459	-19.8659	-8.7479	-36.8819
T12	40.00-33.33	-18.4607	-22.3213	-9.7384	-40.5307
T13	33.33-20.00	-16.8691	-20.5333	-9.3542	-38.2005
T14	20.00-13.33	-18.6719	-22.5465	-10.4791	-41.3543
T15	13.33-0.00	-16.8525	-20.5005	-10.4105	-38.2438

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T1	9	1 5/8	180.00 - 185.00	0.6000	0.3928
T1	10	7/8	180.00 - 185.00	0.6000	0.3928
T1	11	7/8	180.00 - 185.00	0.6000	0.3928
T1	12	3/8	180.00 - 185.00	0.6000	0.3928
T1	14	1/2	180.00 - 185.00	0.6000	0.3928

<p style="text-align: center;"><i>tnxTower</i></p> <p style="text-align: center;">All-Points Technology Corp., P.C.</p> <p style="text-align: center;">116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: 603) 447-2124</p>	<p>Job</p> <p style="text-align: center;">185' Self-Supporting Tower</p>	<p>Page</p> <p style="text-align: center;">12 of 39</p>
	<p>Project</p> <p style="text-align: center;">CT1931600 Bloomfield</p>	<p>Date</p> <p style="text-align: center;">08:43:01 02/21/20</p>
	<p>Client</p> <p style="text-align: center;">SAI; AT&T Site #CT1001</p>	<p>Designed by</p> <p style="text-align: center;">Rob Adair</p>

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	15	7/8	180.00 - 181.00	0.6000	0.3928
T1	26	EW63	180.00 - 183.00	0.6000	0.3928
T1	38	Feedline Ladder (Af)	180.00 - 185.00	0.6000	0.3928
T1	39	Feedline Ladder (Af)	180.00 - 185.00	0.6000	0.3928
T2	9	1 5/8	160.00 - 180.00	0.6000	0.6000
T2	10	7/8	160.00 - 180.00	0.6000	0.6000
T2	11	7/8	160.00 - 180.00	0.6000	0.6000
T2	12	3/8	160.00 - 180.00	0.6000	0.6000
T2	14	1/2	160.00 - 180.00	0.6000	0.6000
T2	15	7/8	160.00 - 180.00	0.6000	0.6000
T2	16	7/8	160.00 - 165.00	0.6000	0.6000
T2	26	EW63	160.00 - 180.00	0.6000	0.6000
T2	27	EW63	160.00 - 172.00	0.6000	0.6000
T2	28	EW63	160.00 - 171.00	0.6000	0.6000
T2	30	EW90	160.00 - 177.00	0.6000	0.6000
T2	38	Feedline Ladder (Af)	160.00 - 180.00	0.6000	0.6000
T2	39	Feedline Ladder (Af)	160.00 - 180.00	0.6000	0.6000
T3	2	2 1/4	140.00 - 160.00	0.6000	0.6000
T3	3	5/16" Fiberoptic cable	140.00 - 160.00	0.6000	0.6000
T3	5	5/8 power	140.00 - 160.00	0.6000	0.6000
T3	7	1 5/8	140.00 - 150.00	0.6000	0.6000
T3	8	1-1/4" Hybrid fiber-power cable	140.00 - 150.00	0.6000	0.6000
T3	9	1 5/8	140.00 - 160.00	0.6000	0.6000
T3	10	7/8	140.00 - 160.00	0.6000	0.6000
T3	11	7/8	140.00 - 160.00	0.6000	0.6000
T3	12	3/8	140.00 - 160.00	0.6000	0.6000
T3	14	1/2	140.00 - 160.00	0.6000	0.6000
T3	15	7/8	140.00 - 160.00	0.6000	0.6000
T3	16	7/8	140.00 - 160.00	0.6000	0.6000
T3	26	EW63	140.00 - 160.00	0.6000	0.6000
T3	27	EW63	140.00 - 160.00	0.6000	0.6000

<i>tnxTower</i> All-Points Technology Corp., P.C. 116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: 603) 447-2124	Job	185' Self-Supporting Tower	Page	13 of 39
	Project	CT1931600 Bloomfield	Date	08:43:01 02/21/20
	Client	SAI; AT&T Site #CT1001	Designed by	Rob Adair

<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T3	28	EW63	140.00 - 160.00	0.6000	0.6000
T3	30	EW90	140.00 - 160.00	0.6000	0.6000
T3	36	Feedline Ladder (Af)	140.00 - 160.00	0.6000	0.6000
T3	37	Feedline Ladder (Af)	140.00 - 150.00	0.6000	0.6000
T3	38	Feedline Ladder (Af)	140.00 - 160.00	0.6000	0.6000
T3	39	Feedline Ladder (Af)	140.00 - 160.00	0.6000	0.6000
T3	40	Safety Line 3/8	140.00 - 160.00	1.0000	1.0000
T4	2	2 1/4	120.00 - 140.00	0.6000	0.6000
T4	3	5/16" Fiberoptic cable	120.00 - 140.00	0.6000	0.6000
T4	5	5/8 power	120.00 - 140.00	0.6000	0.6000
T4	7	1 5/8	120.00 - 140.00	0.6000	0.6000
T4	8	1-1/4" Hybrid fiber-power cable	120.00 - 140.00	0.6000	0.6000
T4	9	1 5/8	120.00 - 140.00	0.6000	0.6000
T4	10	7/8	120.00 - 140.00	0.6000	0.6000
T4	11	7/8	120.00 - 140.00	0.6000	0.6000
T4	12	3/8	120.00 - 140.00	0.6000	0.6000
T4	14	1/2	120.00 - 140.00	0.6000	0.6000
T4	15	7/8	120.00 - 140.00	0.6000	0.6000
T4	16	7/8	120.00 - 140.00	0.6000	0.6000
T4	17	7/8	120.00 - 125.00	0.6000	0.6000
T4	26	EW63	120.00 - 140.00	0.6000	0.6000
T4	27	EW63	120.00 - 140.00	0.6000	0.6000
T4	28	EW63	120.00 - 140.00	0.6000	0.6000
T4	29	EW63	120.00 - 125.00	0.6000	0.6000
T4	30	EW90	120.00 - 140.00	0.6000	0.6000
T4	31	EW63	120.00 - 135.00	0.6000	0.6000
T4	33	1 5/8	120.00 - 140.00	0.6000	0.6000
T4	34	1-1/4" Hybrid fiber-power cable	120.00 - 140.00	0.6000	0.6000
T4	36	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T4	37	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T4	38	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000

<i>tnxTower</i> All-Points Technology Corp., P.C. 116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: 603) 447-2124	Job	185' Self-Supporting Tower	Page	14 of 39
	Project	CT1931600 Bloomfield	Date	08:43:01 02/21/20
	Client	SAI; AT&T Site #CT1001	Designed by	Rob Adair

<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T4	39	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T4	40	Safety Line 3/8	120.00 - 140.00	1.0000	1.0000
T5	2	2 1/4	100.00 - 120.00	0.6000	0.6000
T5	3	5/16" Fiberoptic cable	100.00 - 120.00	0.6000	0.6000
T5	5	5/8 power	100.00 - 120.00	0.6000	0.6000
T5	7	1 5/8	100.00 - 120.00	0.6000	0.6000
T5	8	1-1/4" Hybrid fiber-power cable	100.00 - 120.00	0.6000	0.6000
T5	9	1 5/8	100.00 - 120.00	0.6000	0.6000
T5	10	7/8	100.00 - 120.00	0.6000	0.6000
T5	11	7/8	100.00 - 120.00	0.6000	0.6000
T5	12	3/8	100.00 - 120.00	0.6000	0.6000
T5	13	3/8	100.00 - 103.00	0.6000	0.6000
T5	14	1/2	100.00 - 120.00	0.6000	0.6000
T5	15	7/8	100.00 - 120.00	0.6000	0.6000
T5	16	7/8	100.00 - 120.00	0.6000	0.6000
T5	17	7/8	100.00 - 120.00	0.6000	0.6000
T5	18	7/8	100.00 - 111.00	0.6000	0.6000
T5	19	7/8	100.00 - 108.00	0.6000	0.6000
T5	26	EW63	100.00 - 120.00	0.6000	0.6000
T5	27	EW63	100.00 - 120.00	0.6000	0.6000
T5	28	EW63	100.00 - 120.00	0.6000	0.6000
T5	29	EW63	100.00 - 120.00	0.6000	0.6000
T5	30	EW90	100.00 - 120.00	0.6000	0.6000
T5	31	EW63	100.00 - 120.00	0.6000	0.6000
T5	33	1 5/8	100.00 - 120.00	0.6000	0.6000
T5	34	1-1/4" Hybrid fiber-power cable	100.00 - 120.00	0.6000	0.6000
T5	36	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	37	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	38	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	39	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	40	Safety Line 3/8	100.00 - 120.00	1.0000	1.0000

tnxTower All-Points Technology Corp., P.C. 116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: 603) 447-2124	Job 185' Self-Supporting Tower	Page 15 of 39
	Project CT1931600 Bloomfield	Date 08:43:01 02/21/20
	Client SAI; AT&T Site #CT1001	Designed by Rob Adair

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T6	2	2 1/4	93.33 - 100.00	0.6000	0.6000
T6	3	5/16" Fiberoptic cable	93.33 - 100.00	0.6000	0.6000
T6	5	5/8 power	93.33 - 100.00	0.6000	0.6000
T6	7	1 5/8	93.33 - 100.00	0.6000	0.6000
T6	8	1-1/4" Hybrid fiber-power cable	93.33 - 100.00	0.6000	0.6000
T6	9	1 5/8	93.33 - 100.00	0.6000	0.6000
T6	10	7/8	93.33 - 100.00	0.6000	0.6000
T6	11	7/8	93.33 - 100.00	0.6000	0.6000
T6	12	3/8	93.33 - 100.00	0.6000	0.6000
T6	13	3/8	93.33 - 100.00	0.6000	0.6000
T6	14	1/2	93.33 - 100.00	0.6000	0.6000
T6	15	7/8	93.33 - 100.00	0.6000	0.6000
T6	16	7/8	93.33 - 100.00	0.6000	0.6000
T6	17	7/8	93.33 - 100.00	0.6000	0.6000
T6	18	7/8	93.33 - 100.00	0.6000	0.6000
T6	19	7/8	93.33 - 100.00	0.6000	0.6000
T6	24	3/8 LMR	93.33 - 100.00	0.6000	0.6000
T6	26	EW63	93.33 - 100.00	0.6000	0.6000
T6	27	EW63	93.33 - 100.00	0.6000	0.6000
T6	28	EW63	93.33 - 100.00	0.6000	0.6000
T6	29	EW63	93.33 - 100.00	0.6000	0.6000
T6	30	EW90	93.33 - 100.00	0.6000	0.6000
T6	31	EW63	93.33 - 100.00	0.6000	0.6000
T6	32	EW63	93.33 - 100.00	0.6000	0.6000
T6	33	1 5/8	93.33 - 100.00	0.6000	0.6000
T6	34	1-1/4" Hybrid fiber-power cable	93.33 - 100.00	0.6000	0.6000
T6	36	Feedline Ladder (Af)	93.33 - 100.00	0.6000	0.6000
T6	37	Feedline Ladder (Af)	93.33 - 100.00	0.6000	0.6000
T6	38	Feedline Ladder (Af)	93.33 - 100.00	0.6000	0.6000
T6	39	Feedline Ladder (Af)	93.33 - 100.00	0.6000	0.6000
T6	40	Safety Line 3/8	93.33 - 100.00	1.0000	1.0000
T7	2	2 1/4	80.00 - 93.33	0.6000	0.6000
T7	3	5/16" Fiberoptic cable	80.00 - 93.33	0.6000	0.6000
T7	5	5/8 power	80.00 - 93.33	0.6000	0.6000
T7	7	1 5/8	80.00 - 93.33	0.6000	0.6000
T7	8	1-1/4" Hybrid fiber-power cable	80.00 - 93.33	0.6000	0.6000
T7	9	1 5/8	80.00 - 93.33	0.6000	0.6000
T7	10	7/8	80.00 - 93.33	0.6000	0.6000
T7	11	7/8	80.00 - 93.33	0.6000	0.6000
T7	12	3/8	80.00 - 93.33	0.6000	0.6000
T7	13	3/8	80.00 - 93.33	0.6000	0.6000
T7	14	1/2	80.00 - 93.33	0.6000	0.6000
T7	15	7/8	80.00 - 93.33	0.6000	0.6000
T7	16	7/8	80.00 - 93.33	0.6000	0.6000
T7	17	7/8	80.00 - 93.33	0.6000	0.6000
T7	18	7/8	80.00 - 93.33	0.6000	0.6000
T7	19	7/8	80.00 - 93.33	0.6000	0.6000
T7	20	7/8	80.00 - 87.00	0.6000	0.6000
T7	21	7/8	80.00 - 85.00	0.6000	0.6000
T7	24	3/8 LMR	80.00 - 93.33	0.6000	0.6000
T7	26	EW63	80.00 - 93.33	0.6000	0.6000
T7	27	EW63	80.00 - 93.33	0.6000	0.6000
T7	28	EW63	80.00 - 93.33	0.6000	0.6000
T7	29	EW63	80.00 - 93.33	0.6000	0.6000
T7	30	EW90	80.00 - 93.33	0.6000	0.6000
T7	31	EW63	80.00 - 93.33	0.6000	0.6000
T7	32	EW63	80.00 - 93.33	0.6000	0.6000
T7	33	1 5/8	80.00 - 93.33	0.6000	0.6000
T7	34	1-1/4" Hybrid fiber-power	80.00 - 93.33	0.6000	0.6000

<p>tnxTower</p> <p><i>All-Points Technology Corp., P.C.</i></p> <p>116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: 603) 447-2124</p>	<p>Job</p> <p>185' Self-Supporting Tower</p>	<p>Page</p> <p>16 of 39</p>
	<p>Project</p> <p>CT1931600 Bloomfield</p>	<p>Date</p> <p>08:43:01 02/21/20</p>
	<p>Client</p> <p>SAI; AT&T Site #CT1001</p>	<p>Designed by</p> <p>Rob Adair</p>

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
		cable			
T7	36	Feedline Ladder (Af)	80.00 - 93.33	0.6000	0.6000
T7	37	Feedline Ladder (Af)	80.00 - 93.33	0.6000	0.6000
T7	38	Feedline Ladder (Af)	80.00 - 93.33	0.6000	0.6000
T7	39	Feedline Ladder (Af)	80.00 - 93.33	0.6000	0.6000
T7	40	Safety Line 3/8	80.00 - 93.33	1.0000	1.0000
T8	2	2 1/4	73.33 - 80.00	0.6000	0.6000
T8	3	5/16" Fiberoptic cable	73.33 - 80.00	0.6000	0.6000
T8	5	5/8 power	73.33 - 80.00	0.6000	0.6000
T8	7	1 5/8	73.33 - 80.00	0.6000	0.6000
T8	8	1-1/4" Hybrid fiber-power	73.33 - 80.00	0.6000	0.6000
		cable			
T8	9	1 5/8	73.33 - 80.00	0.6000	0.6000
T8	10	7/8	73.33 - 80.00	0.6000	0.6000
T8	11	7/8	73.33 - 80.00	0.6000	0.6000
T8	12	3/8	73.33 - 80.00	0.6000	0.6000
T8	13	3/8	73.33 - 80.00	0.6000	0.6000
T8	14	1/2	73.33 - 80.00	0.6000	0.6000
T8	15	7/8	73.33 - 80.00	0.6000	0.6000
T8	16	7/8	73.33 - 80.00	0.6000	0.6000
T8	17	7/8	73.33 - 80.00	0.6000	0.6000
T8	18	7/8	73.33 - 80.00	0.6000	0.6000
T8	19	7/8	73.33 - 80.00	0.6000	0.6000
T8	20	7/8	73.33 - 80.00	0.6000	0.6000
T8	21	7/8	73.33 - 80.00	0.6000	0.6000
T8	24	3/8 LMR	73.33 - 80.00	0.6000	0.6000
T8	25	3/8 LMR	73.33 - 80.00	0.6000	0.6000
T8	26	EW63	73.33 - 80.00	0.6000	0.6000
T8	27	EW63	73.33 - 80.00	0.6000	0.6000
T8	28	EW63	73.33 - 80.00	0.6000	0.6000
T8	29	EW63	73.33 - 80.00	0.6000	0.6000
T8	30	EW90	73.33 - 80.00	0.6000	0.6000
T8	31	EW63	73.33 - 80.00	0.6000	0.6000
T8	32	EW63	73.33 - 80.00	0.6000	0.6000
T8	33	1 5/8	73.33 - 80.00	0.6000	0.6000
T8	34	1-1/4" Hybrid fiber-power	73.33 - 80.00	0.6000	0.6000
		cable			
T8	36	Feedline Ladder (Af)	73.33 - 80.00	0.6000	0.6000
T8	37	Feedline Ladder (Af)	73.33 - 80.00	0.6000	0.6000
T8	38	Feedline Ladder (Af)	73.33 - 80.00	0.6000	0.6000
T8	39	Feedline Ladder (Af)	73.33 - 80.00	0.6000	0.6000
T8	40	Safety Line 3/8	73.33 - 80.00	1.0000	1.0000
T9	2	2 1/4	60.00 - 73.33	0.6000	0.6000
T9	3	5/16" Fiberoptic cable	60.00 - 73.33	0.6000	0.6000
T9	5	5/8 power	60.00 - 73.33	0.6000	0.6000
T9	7	1 5/8	60.00 - 73.33	0.6000	0.6000
T9	8	1-1/4" Hybrid fiber-power	60.00 - 73.33	0.6000	0.6000
		cable			
T9	9	1 5/8	60.00 - 73.33	0.6000	0.6000
T9	10	7/8	60.00 - 73.33	0.6000	0.6000
T9	11	7/8	60.00 - 73.33	0.6000	0.6000
T9	12	3/8	60.00 - 73.33	0.6000	0.6000
T9	13	3/8	60.00 - 73.33	0.6000	0.6000
T9	14	1/2	60.00 - 73.33	0.6000	0.6000
T9	15	7/8	60.00 - 73.33	0.6000	0.6000
T9	16	7/8	60.00 - 73.33	0.6000	0.6000
T9	17	7/8	60.00 - 73.33	0.6000	0.6000
T9	18	7/8	60.00 - 73.33	0.6000	0.6000
T9	19	7/8	60.00 - 73.33	0.6000	0.6000
T9	20	7/8	60.00 - 73.33	0.6000	0.6000
T9	21	7/8	60.00 - 73.33	0.6000	0.6000
T9	22	7/8	60.00 - 69.00	0.6000	0.6000

<p style="text-align: center;"><i>tnxTower</i></p> <p style="text-align: center;">All-Points Technology Corp., P.C.</p> <p style="text-align: center;">116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: 603) 447-2124</p>	<p>Job</p> <p style="text-align: center;">185' Self-Supporting Tower</p>	<p>Page</p> <p style="text-align: center;">17 of 39</p>
	<p>Project</p> <p style="text-align: center;">CT1931600 Bloomfield</p>	<p>Date</p> <p style="text-align: center;">08:43:01 02/21/20</p>
	<p>Client</p> <p style="text-align: center;">SAI; AT&T Site #CT1001</p>	<p>Designed by</p> <p style="text-align: center;">Rob Adair</p>

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T9	23	Cat 5e	60.00 - 66.00	0.6000	0.6000
T9	24	3/8 LMR	60.00 - 73.33	0.6000	0.6000
T9	25	3/8 LMR	60.00 - 73.33	0.6000	0.6000
T9	26	EW63	60.00 - 73.33	0.6000	0.6000
T9	27	EW63	60.00 - 73.33	0.6000	0.6000
T9	28	EW63	60.00 - 73.33	0.6000	0.6000
T9	29	EW63	60.00 - 73.33	0.6000	0.6000
T9	30	EW90	60.00 - 73.33	0.6000	0.6000
T9	31	EW63	60.00 - 73.33	0.6000	0.6000
T9	32	EW63	60.00 - 73.33	0.6000	0.6000
T9	33	1 5/8	60.00 - 73.33	0.6000	0.6000
T9	34	1-1/4" Hybrid fiber-power cable	60.00 - 73.33	0.6000	0.6000
T9	36	Feedline Ladder (Af)	60.00 - 73.33	0.6000	0.6000
T9	37	Feedline Ladder (Af)	60.00 - 73.33	0.6000	0.6000
T9	38	Feedline Ladder (Af)	60.00 - 73.33	0.6000	0.6000
T9	39	Feedline Ladder (Af)	60.00 - 73.33	0.6000	0.6000
T9	40	Safety Line 3/8	60.00 - 73.33	1.0000	1.0000
T10	2	2 1/4	53.33 - 60.00	0.6000	0.6000
T10	3	5/16" Fiberoptic cable	53.33 - 60.00	0.6000	0.6000
T10	5	5/8 power	53.33 - 60.00	0.6000	0.6000
T10	7	1 5/8	53.33 - 60.00	0.6000	0.6000
T10	8	1-1/4" Hybrid fiber-power cable	53.33 - 60.00	0.6000	0.6000
T10	9	1 5/8	53.33 - 60.00	0.6000	0.6000
T10	10	7/8	53.33 - 60.00	0.6000	0.6000
T10	11	7/8	53.33 - 60.00	0.6000	0.6000
T10	12	3/8	53.33 - 60.00	0.6000	0.6000
T10	13	3/8	53.33 - 60.00	0.6000	0.6000
T10	14	1/2	53.33 - 60.00	0.6000	0.6000
T10	15	7/8	53.33 - 60.00	0.6000	0.6000
T10	16	7/8	53.33 - 60.00	0.6000	0.6000
T10	17	7/8	53.33 - 60.00	0.6000	0.6000
T10	18	7/8	53.33 - 60.00	0.6000	0.6000
T10	19	7/8	53.33 - 60.00	0.6000	0.6000
T10	20	7/8	53.33 - 60.00	0.6000	0.6000
T10	21	7/8	53.33 - 60.00	0.6000	0.6000
T10	22	7/8	53.33 - 60.00	0.6000	0.6000
T10	23	Cat 5e	53.33 - 60.00	0.6000	0.6000
T10	24	3/8 LMR	53.33 - 60.00	0.6000	0.6000
T10	25	3/8 LMR	53.33 - 60.00	0.6000	0.6000
T10	26	EW63	53.33 - 60.00	0.6000	0.6000
T10	27	EW63	53.33 - 60.00	0.6000	0.6000
T10	28	EW63	53.33 - 60.00	0.6000	0.6000
T10	29	EW63	53.33 - 60.00	0.6000	0.6000
T10	30	EW90	53.33 - 60.00	0.6000	0.6000
T10	31	EW63	53.33 - 60.00	0.6000	0.6000
T10	32	EW63	53.33 - 60.00	0.6000	0.6000
T10	33	1 5/8	53.33 - 60.00	0.6000	0.6000
T10	34	1-1/4" Hybrid fiber-power cable	53.33 - 60.00	0.6000	0.6000
T10	36	Feedline Ladder (Af)	53.33 - 60.00	0.6000	0.6000
T10	37	Feedline Ladder (Af)	53.33 - 60.00	0.6000	0.6000
T10	38	Feedline Ladder (Af)	53.33 - 60.00	0.6000	0.6000
T10	39	Feedline Ladder (Af)	53.33 - 60.00	0.6000	0.6000
T10	40	Safety Line 3/8	53.33 - 60.00	1.0000	1.0000
T11	2	2 1/4	40.00 - 53.33	0.6000	0.6000
T11	3	5/16" Fiberoptic cable	40.00 - 53.33	0.6000	0.6000
T11	5	5/8 power	40.00 - 53.33	0.6000	0.6000
T11	7	1 5/8	40.00 - 53.33	0.6000	0.6000
T11	8	1-1/4" Hybrid fiber-power cable	40.00 - 53.33	0.6000	0.6000

<p style="text-align: center;">tnxTower</p> <p style="text-align: center;">All-Points Technology Corp., P.C.</p> <p style="text-align: center;">116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: (603) 447-2124</p>	<p>Job</p> <p style="text-align: center;">185' Self-Supporting Tower</p>	<p>Page</p> <p style="text-align: center;">18 of 39</p>
	<p>Project</p> <p style="text-align: center;">CT1931600 Bloomfield</p>	<p>Date</p> <p style="text-align: center;">08:43:01 02/21/20</p>
	<p>Client</p> <p style="text-align: center;">SAI; AT&T Site #CT1001</p>	<p>Designed by</p> <p style="text-align: center;">Rob Adair</p>

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T11	9	1 5/8	40.00 - 53.33	0.6000	0.6000
T11	10	7/8	40.00 - 53.33	0.6000	0.6000
T11	11	7/8	40.00 - 53.33	0.6000	0.6000
T11	12	3/8	40.00 - 53.33	0.6000	0.6000
T11	13	3/8	40.00 - 53.33	0.6000	0.6000
T11	14	1/2	40.00 - 53.33	0.6000	0.6000
T11	15	7/8	40.00 - 53.33	0.6000	0.6000
T11	16	7/8	40.00 - 53.33	0.6000	0.6000
T11	17	7/8	40.00 - 53.33	0.6000	0.6000
T11	18	7/8	40.00 - 53.33	0.6000	0.6000
T11	19	7/8	40.00 - 53.33	0.6000	0.6000
T11	20	7/8	40.00 - 53.33	0.6000	0.6000
T11	21	7/8	40.00 - 53.33	0.6000	0.6000
T11	22	7/8	40.00 - 53.33	0.6000	0.6000
T11	23	Cat 5e	40.00 - 53.33	0.6000	0.6000
T11	24	3/8 LMR	40.00 - 53.33	0.6000	0.6000
T11	25	3/8 LMR	40.00 - 53.33	0.6000	0.6000
T11	26	EW63	40.00 - 53.33	0.6000	0.6000
T11	27	EW63	40.00 - 53.33	0.6000	0.6000
T11	28	EW63	40.00 - 53.33	0.6000	0.6000
T11	29	EW63	40.00 - 53.33	0.6000	0.6000
T11	30	EW90	40.00 - 53.33	0.6000	0.6000
T11	31	EW63	40.00 - 53.33	0.6000	0.6000
T11	32	EW63	40.00 - 53.33	0.6000	0.6000
T11	33	1 5/8	40.00 - 53.33	0.6000	0.6000
T11	34	1-1/4" Hybrid fiber-power cable	40.00 - 53.33	0.6000	0.6000
T11	36	Feedline Ladder (Af)	40.00 - 53.33	0.6000	0.6000
T11	37	Feedline Ladder (Af)	40.00 - 53.33	0.6000	0.6000
T11	38	Feedline Ladder (Af)	40.00 - 53.33	0.6000	0.6000
T11	39	Feedline Ladder (Af)	40.00 - 53.33	0.6000	0.6000
T11	40	Safety Line 3/8	40.00 - 53.33	1.0000	1.0000
T12	2	2 1/4	33.33 - 40.00	0.6000	0.6000
T12	3	5/16" Fiberoptic cable	33.33 - 40.00	0.6000	0.6000
T12	5	5/8 power	33.33 - 40.00	0.6000	0.6000
T12	7	1 5/8	33.33 - 40.00	0.6000	0.6000
T12	8	1-1/4" Hybrid fiber-power cable	33.33 - 40.00	0.6000	0.6000
T12	9	1 5/8	33.33 - 40.00	0.6000	0.6000
T12	10	7/8	33.33 - 40.00	0.6000	0.6000
T12	11	7/8	33.33 - 40.00	0.6000	0.6000
T12	12	3/8	33.33 - 40.00	0.6000	0.6000
T12	13	3/8	33.33 - 40.00	0.6000	0.6000
T12	14	1/2	33.33 - 40.00	0.6000	0.6000
T12	15	7/8	33.33 - 40.00	0.6000	0.6000
T12	16	7/8	33.33 - 40.00	0.6000	0.6000
T12	17	7/8	33.33 - 40.00	0.6000	0.6000
T12	18	7/8	33.33 - 40.00	0.6000	0.6000
T12	19	7/8	33.33 - 40.00	0.6000	0.6000
T12	20	7/8	33.33 - 40.00	0.6000	0.6000
T12	21	7/8	33.33 - 40.00	0.6000	0.6000
T12	22	7/8	33.33 - 40.00	0.6000	0.6000
T12	23	Cat 5e	33.33 - 40.00	0.6000	0.6000
T12	24	3/8 LMR	33.33 - 40.00	0.6000	0.6000
T12	25	3/8 LMR	33.33 - 40.00	0.6000	0.6000
T12	26	EW63	33.33 - 40.00	0.6000	0.6000
T12	27	EW63	33.33 - 40.00	0.6000	0.6000
T12	28	EW63	33.33 - 40.00	0.6000	0.6000
T12	29	EW63	33.33 - 40.00	0.6000	0.6000
T12	30	EW90	33.33 - 40.00	0.6000	0.6000
T12	31	EW63	33.33 - 40.00	0.6000	0.6000
T12	32	EW63	33.33 - 40.00	0.6000	0.6000

tnxTower All-Points Technology Corp., P.C. 116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: 603) 447-2124	Job	185' Self-Supporting Tower	Page	19 of 39
	Project	CT1931600 Bloomfield	Date	08:43:01 02/21/20
	Client	SAI; AT&T Site #CT1001	Designed by	Rob Adair

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T12	33	1 5/8	33.33 - 40.00	0.6000	0.6000
T12	34	1-1/4" Hybrid fiber-power cable	33.33 - 40.00	0.6000	0.6000
T12	36	Feedline Ladder (Af)	33.33 - 40.00	0.6000	0.6000
T12	37	Feedline Ladder (Af)	33.33 - 40.00	0.6000	0.6000
T12	38	Feedline Ladder (Af)	33.33 - 40.00	0.6000	0.6000
T12	39	Feedline Ladder (Af)	33.33 - 40.00	0.6000	0.6000
T12	40	Safety Line 3/8	33.33 - 40.00	1.0000	1.0000
T13	2	2 1/4	20.00 - 33.33	0.6000	0.6000
T13	3	5/16" Fiberoptic cable	20.00 - 33.33	0.6000	0.6000
T13	5	5/8 power	20.00 - 33.33	0.6000	0.6000
T13	7	1 5/8	20.00 - 33.33	0.6000	0.6000
T13	8	1-1/4" Hybrid fiber-power cable	20.00 - 33.33	0.6000	0.6000
T13	9	1 5/8	20.00 - 33.33	0.6000	0.6000
T13	10	7/8	20.00 - 33.33	0.6000	0.6000
T13	11	7/8	20.00 - 33.33	0.6000	0.6000
T13	12	3/8	20.00 - 33.33	0.6000	0.6000
T13	13	3/8	20.00 - 33.33	0.6000	0.6000
T13	14	1/2	20.00 - 33.33	0.6000	0.6000
T13	15	7/8	20.00 - 33.33	0.6000	0.6000
T13	16	7/8	20.00 - 33.33	0.6000	0.6000
T13	17	7/8	20.00 - 33.33	0.6000	0.6000
T13	18	7/8	20.00 - 33.33	0.6000	0.6000
T13	19	7/8	20.00 - 33.33	0.6000	0.6000
T13	20	7/8	20.00 - 33.33	0.6000	0.6000
T13	21	7/8	20.00 - 33.33	0.6000	0.6000
T13	22	7/8	20.00 - 33.33	0.6000	0.6000
T13	23	Cat 5e	20.00 - 33.33	0.6000	0.6000
T13	24	3/8 LMR	20.00 - 33.33	0.6000	0.6000
T13	25	3/8 LMR	20.00 - 33.33	0.6000	0.6000
T13	26	EW63	20.00 - 33.33	0.6000	0.6000
T13	27	EW63	20.00 - 33.33	0.6000	0.6000
T13	28	EW63	20.00 - 33.33	0.6000	0.6000
T13	29	EW63	20.00 - 33.33	0.6000	0.6000
T13	30	EW90	20.00 - 33.33	0.6000	0.6000
T13	31	EW63	20.00 - 33.33	0.6000	0.6000
T13	32	EW63	20.00 - 33.33	0.6000	0.6000
T13	33	1 5/8	20.00 - 33.33	0.6000	0.6000
T13	34	1-1/4" Hybrid fiber-power cable	20.00 - 33.33	0.6000	0.6000
T13	36	Feedline Ladder (Af)	20.00 - 33.33	0.6000	0.6000
T13	37	Feedline Ladder (Af)	20.00 - 33.33	0.6000	0.6000
T13	38	Feedline Ladder (Af)	20.00 - 33.33	0.6000	0.6000
T13	39	Feedline Ladder (Af)	20.00 - 33.33	0.6000	0.6000
T13	40	Safety Line 3/8	20.00 - 33.33	1.0000	1.0000
T14	2	2 1/4	13.33 - 20.00	0.6000	0.6000
T14	3	5/16" Fiberoptic cable	13.33 - 20.00	0.6000	0.6000
T14	5	5/8 power	13.33 - 20.00	0.6000	0.6000
T14	7	1 5/8	13.33 - 20.00	0.6000	0.6000
T14	8	1-1/4" Hybrid fiber-power cable	13.33 - 20.00	0.6000	0.6000
T14	9	1 5/8	13.33 - 20.00	0.6000	0.6000
T14	10	7/8	13.33 - 20.00	0.6000	0.6000
T14	11	7/8	13.33 - 20.00	0.6000	0.6000
T14	12	3/8	13.33 - 20.00	0.6000	0.6000
T14	13	3/8	13.33 - 20.00	0.6000	0.6000
T14	14	1/2	13.33 - 20.00	0.6000	0.6000
T14	15	7/8	13.33 - 20.00	0.6000	0.6000
T14	16	7/8	13.33 - 20.00	0.6000	0.6000
T14	17	7/8	13.33 - 20.00	0.6000	0.6000
T14	18	7/8	13.33 - 20.00	0.6000	0.6000

tnxTower All-Points Technology Corp., P.C. 116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: (603) 447-2124	Job	185' Self-Supporting Tower	Page	20 of 39
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	Client	SAI; AT&T Site #CT1001	Designed by	Rob Adair

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T14	19	7/8	13.33 - 20.00	0.6000	0.6000
T14	20	7/8	13.33 - 20.00	0.6000	0.6000
T14	21	7/8	13.33 - 20.00	0.6000	0.6000
T14	22	7/8	13.33 - 20.00	0.6000	0.6000
T14	23	Cat 5e	13.33 - 20.00	0.6000	0.6000
T14	24	3/8 LMR	13.33 - 20.00	0.6000	0.6000
T14	25	3/8 LMR	13.33 - 20.00	0.6000	0.6000
T14	26	EW63	13.33 - 20.00	0.6000	0.6000
T14	27	EW63	13.33 - 20.00	0.6000	0.6000
T14	28	EW63	13.33 - 20.00	0.6000	0.6000
T14	29	EW63	13.33 - 20.00	0.6000	0.6000
T14	30	EW90	13.33 - 20.00	0.6000	0.6000
T14	31	EW63	13.33 - 20.00	0.6000	0.6000
T14	32	EW63	13.33 - 20.00	0.6000	0.6000
T14	33	1 5/8	13.33 - 20.00	0.6000	0.6000
T14	34	1-1/4" Hybrid fiber-power cable	13.33 - 20.00	0.6000	0.6000
T14	36	Feedline Ladder (Af)	13.33 - 20.00	0.6000	0.6000
T14	37	Feedline Ladder (Af)	13.33 - 20.00	0.6000	0.6000
T14	38	Feedline Ladder (Af)	13.33 - 20.00	0.6000	0.6000
T14	39	Feedline Ladder (Af)	13.33 - 20.00	0.6000	0.6000
T14	40	Safety Line 3/8	13.33 - 20.00	1.0000	1.0000
T15	2	2 1/4	0.00 - 13.33	0.6000	0.6000
T15	3	5/16" Fiberoptic cable	0.00 - 13.33	0.6000	0.6000
T15	5	5/8 power	0.00 - 13.33	0.6000	0.6000
T15	7	1 5/8	0.00 - 13.33	0.6000	0.6000
T15	8	1-1/4" Hybrid fiber-power cable	0.00 - 13.33	0.6000	0.6000
T15	9	1 5/8	0.00 - 13.33	0.6000	0.6000
T15	10	7/8	0.00 - 13.33	0.6000	0.6000
T15	11	7/8	0.00 - 13.33	0.6000	0.6000
T15	12	3/8	0.00 - 13.33	0.6000	0.6000
T15	13	3/8	0.00 - 13.33	0.6000	0.6000
T15	14	1/2	0.00 - 13.33	0.6000	0.6000
T15	15	7/8	0.00 - 13.33	0.6000	0.6000
T15	16	7/8	0.00 - 13.33	0.6000	0.6000
T15	17	7/8	0.00 - 13.33	0.6000	0.6000
T15	18	7/8	0.00 - 13.33	0.6000	0.6000
T15	19	7/8	0.00 - 13.33	0.6000	0.6000
T15	20	7/8	0.00 - 13.33	0.6000	0.6000
T15	21	7/8	0.00 - 13.33	0.6000	0.6000
T15	22	7/8	0.00 - 13.33	0.6000	0.6000
T15	23	Cat 5e	0.00 - 13.33	0.6000	0.6000
T15	24	3/8 LMR	0.00 - 13.33	0.6000	0.6000
T15	25	3/8 LMR	0.00 - 13.33	0.6000	0.6000
T15	26	EW63	0.00 - 13.33	0.6000	0.6000
T15	27	EW63	0.00 - 13.33	0.6000	0.6000
T15	28	EW63	0.00 - 13.33	0.6000	0.6000
T15	29	EW63	0.00 - 13.33	0.6000	0.6000
T15	30	EW90	0.00 - 13.33	0.6000	0.6000
T15	31	EW63	0.00 - 13.33	0.6000	0.6000
T15	32	EW63	0.00 - 13.33	0.6000	0.6000
T15	33	1 5/8	0.00 - 13.33	0.6000	0.6000
T15	34	1-1/4" Hybrid fiber-power cable	0.00 - 13.33	0.6000	0.6000
T15	36	Feedline Ladder (Af)	0.00 - 13.33	0.6000	0.6000
T15	37	Feedline Ladder (Af)	0.00 - 13.33	0.6000	0.6000
T15	38	Feedline Ladder (Af)	0.00 - 13.33	0.6000	0.6000
T15	39	Feedline Ladder (Af)	0.00 - 13.33	0.6000	0.6000
T15	40	Safety Line 3/8	0.00 - 13.33	1.0000	1.0000

tnxTower All-Points Technology Corp., P.C. 116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: 603) 447-2124	Job	185' Self-Supporting Tower	Page	21 of 39
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Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _A A _A Front	C _A A _A Side	Weight	
			Horz	Vert						
			ft	ft	°	ft	ft ²	ft ²	lb	
LED beacon (NU)	C	None			0.0000	185.00	No Ice	0.40	0.40	30.00
							1/2" Ice	0.68	0.68	43.19
							1" Ice	0.80	0.80	58.50
20' x 3" omni whip (NU)	B	From Leg	1.00		0.0000	185.00	No Ice	5.60	5.60	50.00
			1.00				1/2" Ice	8.03	8.03	93.17
			10.00				1" Ice	10.08	10.08	149.01
Tower Top Amplifier (NU)	B	From Leg	1.00		0.0000	185.00	No Ice	3.11	1.17	40.00
			1.00				1/2" Ice	3.35	1.34	58.76
			0.00				1" Ice	3.60	1.52	80.44
14' x 3" Dia Omni (NU)	C	From Leg	1.00		0.0000	185.00	No Ice	4.20	4.20	40.00
			-1.00				1/2" Ice	5.63	5.63	70.34
			7.00				1" Ice	7.08	7.08	109.69
BA8080-67 16' 16 Bay Dipole (Bloomfield PD)	C	From Leg	1.00		0.0000	185.00	No Ice	4.00	4.00	55.00
			1.00				1/2" Ice	6.00	6.00	100.00
			10.00				1" Ice	8.00	8.00	145.00
6'x4 1/2" Pipe Mount (NU)	A	From Leg	0.50		0.0000	183.00	No Ice	1.58	1.58	64.70
			0.00				1/2" Ice	2.62	2.62	83.80
			0.00				1" Ice	3.00	3.00	107.17
24' x 2" omni whip	B	From Leg	0.50		0.0000	183.00	No Ice	10.20	5.10	465.00
			0.00				1/2" Ice	13.80	6.90	600.00
			0.00				1" Ice	17.40	8.70	735.00
12' T-frame sector mnt	B	From Leg	0.50		0.0000	183.00	No Ice	10.20	5.10	465.00
			0.00				1/2" Ice	13.80	6.90	600.00
			0.00				1" Ice	17.40	8.70	735.00
14' x 2" omni whip (NU)	A	From Leg	0.50		0.0000	183.00	No Ice	2.80	2.80	75.00
			0.00				1/2" Ice	4.22	4.22	96.61
			-7.00				1" Ice	5.67	5.67	127.13
14' x 2" omni whip (NU)	A	From Leg	0.50		0.0000	183.00	No Ice	2.80	2.80	75.00
			0.00				1/2" Ice	4.22	4.22	96.61
			-7.00				1" Ice	5.67	5.67	127.13
14' x 2" omni whip (NU)	A	From Leg	0.50		0.0000	183.00	No Ice	2.80	2.80	75.00
			0.00				1/2" Ice	4.22	4.22	96.61
			7.00				1" Ice	5.67	5.67	127.13
6'x4 1/2" Pipe Mount (NU)	A	From Leg	0.50		0.0000	177.00	No Ice	1.58	1.58	64.70
			0.00				1/2" Ice	2.62	2.62	83.80
			0.00				1" Ice	3.00	3.00	107.17
10' 4-bay dipole (NU)	C	From Leg	0.50		0.0000	171.00 - 181.00	No Ice	2.50	2.50	75.00
			0.00				1/2" Ice	3.53	3.53	93.64
			0.00				1" Ice	4.58	4.58	118.79
6'x4 1/2" Pipe Mount (NU)	C	From Leg	0.50		0.0000	181.00	No Ice	1.58	1.58	64.70
			0.00				1/2" Ice	2.62	2.62	83.80
			0.00				1" Ice	3.00	3.00	107.17
6'x4 1/2" Pipe Mount (NU)	A	From Leg	0.50		0.0000	172.00	No Ice	1.58	1.58	64.70
			0.00				1/2" Ice	2.62	2.62	83.80
			0.00				1" Ice	3.00	3.00	107.17
6'x4 1/2" Pipe Mount (NU)	C	From Leg	0.50		0.0000	171.00	No Ice	1.58	1.58	64.70
			0.00				1/2" Ice	2.62	2.62	83.80
			0.00				1" Ice	3.00	3.00	107.17
PR-900 (Simsbury PD)	C	From Leg	0.50		0.0000	165.00	No Ice	6.35	6.35	38.00
			0.00				1/2" Ice	11.43	11.43	49.40
			0.00				1" Ice	16.51	16.51	60.80
6'x3" Pipe Mount (Simsbury PD)	C	From Leg	0.50		0.0000	165.00	No Ice	1.77	1.77	30.00
			0.00				1/2" Ice	2.13	2.13	47.98
			0.00				1" Ice	2.50	2.50	65.33

tnxTower All-Points Technology Corp., P.C. 116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: 603) 447-2124	Job		185' Self-Supporting Tower					Page		22 of 39
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	Client		SAI; AT&T Site #CT1001					Designed by		Rob Adair

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	lb
Telewave ANT150F6 (NU)	A	From Leg	3.00	0.0000	165.00	No Ice	5.87	5.87	35.00
			0.00			1/2" Ice	8.03	8.03	77.71
			10.00			1" Ice	10.21	10.21	133.89
ROHN 3-ft Side Arm (NU)	A	From Leg	1.50	0.0000	165.00	No Ice	3.10	3.10	70.00
			0.00			1/2" Ice	5.00	5.00	100.00
			0.00			1" Ice	6.90	6.90	130.00
7770.00 (AT&T existing)	A	From Leg	3.00	0.0000	160.00	No Ice	5.51	2.93	35.00
			0.00			1/2" Ice	5.87	3.27	67.63
			0.00			1" Ice	6.23	3.63	105.06
7770.00 (AT&T existing)	B	From Leg	3.00	0.0000	160.00	No Ice	5.51	2.93	35.00
			0.00			1/2" Ice	5.87	3.27	67.63
			0.00			1" Ice	6.23	3.63	105.06
7770.00 (AT&T existing)	C	From Leg	3.00	0.0000	160.00	No Ice	5.51	2.93	35.00
			0.00			1/2" Ice	5.87	3.27	67.63
			0.00			1" Ice	6.23	3.63	105.06
OPA-65R-LCUU-H8 (AT&T existing)	A	From Leg	3.00	0.0000	160.00	No Ice	12.75	7.25	90.00
			0.00			1/2" Ice	13.33	7.82	161.29
			0.00			1" Ice	13.92	8.40	240.16
OPA-65R-LCUU-H6 (AT&T existing)	B	From Leg	3.00	0.0000	160.00	No Ice	9.66	5.52	75.00
			0.00			1/2" Ice	10.13	5.97	133.43
			0.00			1" Ice	10.61	6.43	198.17
OPA-65R-LCUU-H8 (AT&T existing)	C	From Leg	3.00	0.0000	160.00	No Ice	12.75	7.25	90.00
			0.00			1/2" Ice	13.33	7.82	161.29
			0.00			1" Ice	13.92	8.40	240.16
(2) 800-10966 (AT&T)	A	From Leg	3.00	0.0000	160.00	No Ice	17.36	7.50	125.00
			0.00			1/2" Ice	17.99	8.09	217.18
			0.00			1" Ice	18.63	8.69	317.51
(2) 800-10965 (AT&T)	B	From Leg	3.00	0.0000	160.00	No Ice	13.81	5.83	45.00
			0.00			1/2" Ice	14.35	6.32	121.53
			0.00			1" Ice	14.89	6.82	205.11
(2) 800-10966 (AT&T)	C	From Leg	3.00	0.0000	160.00	No Ice	17.36	7.50	125.00
			0.00			1/2" Ice	17.99	8.09	217.18
			0.00			1" Ice	18.63	8.69	317.51
RRUS-32 (AT&T existing)	A	From Leg	3.00	0.0000	160.00	No Ice	3.87	2.76	80.00
			0.00			1/2" Ice	4.15	3.02	104.93
			0.00			1" Ice	4.44	3.29	136.47
RRUS-32 (AT&T existing)	B	From Leg	3.00	0.0000	160.00	No Ice	3.87	2.76	80.00
			0.00			1/2" Ice	4.15	3.02	104.93
			0.00			1" Ice	4.44	3.29	136.47
RRUS-32 (AT&T existing)	C	From Leg	3.00	0.0000	160.00	No Ice	3.87	2.76	80.00
			0.00			1/2" Ice	4.15	3.02	104.93
			0.00			1" Ice	4.44	3.29	136.47
RRUS-E2 (AT&T existing)	A	From Leg	3.00	0.0000	160.00	No Ice	3.67	1.49	60.00
			0.00			1/2" Ice	3.93	1.67	81.22
			0.00			1" Ice	4.19	1.87	107.65
RRUS-E2 (AT&T existing)	B	From Leg	3.00	0.0000	160.00	No Ice	3.67	1.49	60.00
			0.00			1/2" Ice	3.93	1.67	81.22
			0.00			1" Ice	4.19	1.87	107.65
RRUS-E2 (AT&T existing)	C	From Leg	3.00	0.0000	160.00	No Ice	3.67	1.49	60.00
			0.00			1/2" Ice	3.93	1.67	81.22
			0.00			1" Ice	4.19	1.87	107.65
Ericsson RRUS B14 4478 (AT&T)	A	From Leg	3.00	0.0000	160.00	No Ice	1.84	1.06	65.00
			0.00			1/2" Ice	2.01	1.20	80.88
			0.00			1" Ice	2.19	1.34	99.39
Ericsson RRUS B14 4478 (AT&T)	B	From Leg	3.00	0.0000	160.00	No Ice	1.84	1.06	65.00
			0.00			1/2" Ice	2.01	1.20	80.88
			0.00			1" Ice	2.19	1.34	99.39

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA}		Weight
			Horz Lateral	Vert			Front	Side	
			ft	ft	°	ft	ft ²	ft ²	lb
Ericsson RRUS B14 4478 (AT&T)	C	From Leg	3.00	0.0000	160.00	No Ice	1.84	1.06	65.00
			0.00			1/2" Ice	2.01	1.20	80.88
			0.00			1" Ice	2.19	1.34	99.39
Ericsson RRUS 8843 (AT&T)	A	From Leg	3.00	0.0000	160.00	No Ice	1.64	1.35	72.00
			0.00			1/2" Ice	1.80	1.50	89.60
			0.00			1" Ice	1.97	1.65	109.91
Ericsson RRUS 8843 (AT&T)	B	From Leg	3.00	0.0000	160.00	No Ice	1.64	1.35	72.00
			0.00			1/2" Ice	1.80	1.50	89.60
			0.00			1" Ice	1.97	1.65	109.91
Ericsson RRUS 8843 (AT&T)	C	From Leg	3.00	0.0000	160.00	No Ice	1.64	1.35	72.00
			0.00			1/2" Ice	1.80	1.50	89.60
			0.00			1" Ice	1.97	1.65	109.91
Ericsson RRUS B5 4449 (AT&T)	A	From Leg	3.00	0.0000	160.00	No Ice	1.64	1.30	73.00
			0.00			1/2" Ice	1.80	1.45	90.19
			0.00			1" Ice	1.97	1.60	110.08
Ericsson RRUS B5 4449 (AT&T)	B	From Leg	3.00	0.0000	160.00	No Ice	1.64	1.30	73.00
			0.00			1/2" Ice	1.80	1.45	90.19
			0.00			1" Ice	1.97	1.60	110.08
Ericsson RRUS B5 4449 (AT&T)	C	From Leg	3.00	0.0000	160.00	No Ice	1.64	1.30	73.00
			0.00			1/2" Ice	1.80	1.45	90.19
			0.00			1" Ice	1.97	1.60	110.08
TT08-19DB111 TMA (AT&T existing)	A	From Leg	3.00	0.0000	160.00	No Ice	0.79	0.64	20.00
			0.00			1/2" Ice	0.91	0.75	27.63
			0.00			1" Ice	1.04	0.87	37.15
TT08-19DB111 TMA (AT&T existing)	B	From Leg	3.00	0.0000	160.00	No Ice	0.79	0.64	20.00
			0.00			1/2" Ice	0.91	0.75	27.63
			0.00			1" Ice	1.04	0.87	37.15
TT08-19DB111 TMA (AT&T existing)	C	From Leg	3.00	0.0000	160.00	No Ice	0.79	0.64	20.00
			0.00			1/2" Ice	0.91	0.75	27.63
			0.00			1" Ice	1.04	0.87	37.15
Raycap DC6-48-60-18-8F surge suppressor (AT&T existing)	A	From Leg	1.00	0.0000	160.00	No Ice	0.74	0.74	30.00
			0.00			1/2" Ice	1.20	1.20	44.34
			0.00			1" Ice	1.37	1.37	60.93
Raycap DC6-48-60-18-8F surge suppressor (AT&T existing)	B	From Leg	1.00	0.0000	160.00	No Ice	0.74	0.74	30.00
			0.00			1/2" Ice	1.20	1.20	44.34
			0.00			1" Ice	1.37	1.37	60.93
Raycap DC6-48-60-18-8F surge suppressor (AT&T existing)	C	From Leg	1.00	0.0000	160.00	No Ice	0.74	0.74	30.00
			0.00			1/2" Ice	1.20	1.20	44.34
			0.00			1" Ice	1.37	1.37	60.93
Raycap DC6-48-60-18-8C-EV (AT&T existing)	A	From Leg	1.00	0.0000	160.00	No Ice	0.74	0.74	30.00
			0.00			1/2" Ice	1.20	1.20	44.34
			0.00			1" Ice	1.37	1.37	60.93
Raycap DC6-48-60-18-8C-EV (AT&T existing)	B	From Leg	1.00	0.0000	160.00	No Ice	0.74	0.74	30.00
			0.00			1/2" Ice	1.20	1.20	44.34
			0.00			1" Ice	1.37	1.37	60.93
Raycap DC6-48-60-18-8C-EV (AT&T existing)	C	From Leg	1.00	0.0000	160.00	No Ice	0.74	0.74	30.00
			0.00			1/2" Ice	1.20	1.20	44.34
			0.00			1" Ice	1.37	1.37	60.93
SitePro VFA12-HD (AT&T existing)	A	From Leg	1.50	0.0000	160.00	No Ice	13.20	9.20	650.00
			0.00			1/2" Ice	19.50	14.60	800.00
			0.00			1" Ice	25.80	19.50	950.00
SitePro VFA12-HD (AT&T existing)	B	From Leg	1.50	0.0000	160.00	No Ice	13.20	9.20	650.00
			0.00			1/2" Ice	19.50	14.60	800.00
			0.00			1" Ice	25.80	19.50	950.00
SitePro VFA12-HD (AT&T existing)	C	From Leg	1.50	0.0000	160.00	No Ice	13.20	9.20	650.00
			0.00			1/2" Ice	19.50	14.60	800.00
			0.00			1" Ice	25.80	19.50	950.00

tnxTower All-Points Technology Corp., P.C. 116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: 603) 447-2124	Job	185' Self-Supporting Tower	Page	24 of 39
	Project	CT1931600 Bloomfield	Date	08:43:01 02/21/20
	Client	SAI; AT&T Site #CT1001	Designed by	Rob Adair

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	lb
(2) 5'x2-3/8" Pipe Mount (AT&T new)	A	From Leg	1.50	0.0000	160.00	No Ice	1.19	1.19	20.00
			0.00			1/2" Ice	1.50	1.50	29.07
			0.00			1" Ice	1.81	1.81	41.59
(2) 5'x2-3/8" Pipe Mount (AT&T new)	B	From Leg	1.50	0.0000	160.00	No Ice	1.19	1.19	20.00
			0.00			1/2" Ice	1.50	1.50	29.07
			0.00			1" Ice	1.81	1.81	41.59
(2) 5'x2-3/8" Pipe Mount (AT&T new)	C	From Leg	1.50	0.0000	160.00	No Ice	1.19	1.19	20.00
			0.00			1/2" Ice	1.50	1.50	29.07
			0.00			1" Ice	1.81	1.81	41.59
BXA-70063/6 (Verizon)	A	From Leg	3.00	0.0000	150.00	No Ice	7.57	3.76	25.00
			0.00			1/2" Ice	8.02	4.19	65.60
			0.00			1" Ice	8.47	4.63	112.01
BXA-70063/6 (Verizon)	B	From Leg	3.00	0.0000	150.00	No Ice	7.57	3.76	25.00
			0.00			1/2" Ice	8.02	4.19	65.60
			0.00			1" Ice	8.47	4.63	112.01
BXA-70063/6 (Verizon)	C	From Leg	3.00	0.0000	150.00	No Ice	7.57	3.76	25.00
			0.00			1/2" Ice	8.02	4.19	65.60
			0.00			1" Ice	8.47	4.63	112.01
(2) BXA-171063/12 (Verizon)	A	From Leg	3.00	0.0000	150.00	No Ice	4.79	3.62	25.00
			0.00			1/2" Ice	5.24	4.06	52.45
			0.00			1" Ice	5.70	4.50	85.45
(2) BXA-171063/12 (Verizon)	B	From Leg	3.00	0.0000	150.00	No Ice	4.79	3.62	25.00
			0.00			1/2" Ice	5.24	4.06	52.45
			0.00			1" Ice	5.70	4.50	85.45
(2) BXA-171063/12 (Verizon)	C	From Leg	3.00	0.0000	150.00	No Ice	4.79	3.62	25.00
			0.00			1/2" Ice	5.24	4.06	52.45
			0.00			1" Ice	5.70	4.50	85.45
(2) LPA-80080/4 (Verizon)	A	From Leg	3.00	0.0000	150.00	No Ice	2.62	5.40	20.00
			0.00			1/2" Ice	2.92	5.73	53.12
			0.00			1" Ice	3.23	6.06	90.72
(2) LPA-80080/4 (Verizon)	B	From Leg	3.00	0.0000	150.00	No Ice	2.62	5.40	20.00
			0.00			1/2" Ice	2.92	5.73	53.12
			0.00			1" Ice	3.23	6.06	90.72
(2) LPA-80080/4 (Verizon)	C	From Leg	3.00	0.0000	150.00	No Ice	2.62	5.40	20.00
			0.00			1/2" Ice	2.92	5.73	53.12
			0.00			1" Ice	3.23	6.06	90.72
ALU RRH2x40-700U (Verizon)	A	From Leg	3.00	0.0000	150.00	No Ice	2.83	1.67	51.00
			0.00			1/2" Ice	3.04	1.84	75.56
			0.00			1" Ice	3.26	2.01	103.37
ALU RRH2x40-700U (Verizon)	B	From Leg	3.00	0.0000	150.00	No Ice	2.83	1.67	51.00
			0.00			1/2" Ice	3.04	1.84	75.56
			0.00			1" Ice	3.26	2.01	103.37
ALU RRH2x40-700U (Verizon)	C	From Leg	3.00	0.0000	150.00	No Ice	2.83	1.67	51.00
			0.00			1/2" Ice	3.04	1.84	75.56
			0.00			1" Ice	3.26	2.01	103.37
ALU RRH2x40-AWS (Verizon)	A	From Leg	3.00	0.0000	150.00	No Ice	2.85	1.42	131.00
			0.00			1/2" Ice	3.06	1.59	151.90
			0.00			1" Ice	3.29	1.77	175.92
ALU RRH2x40-AWS (Verizon)	B	From Leg	3.00	0.0000	150.00	No Ice	2.85	1.42	131.00
			0.00			1/2" Ice	3.06	1.59	151.90
			0.00			1" Ice	3.29	1.77	175.92
ALU RRH2x40-AWS (Verizon)	C	From Leg	3.00	0.0000	150.00	No Ice	2.85	1.42	131.00
			0.00			1/2" Ice	3.06	1.59	151.90
			0.00			1" Ice	3.29	1.77	175.92
RFS DB-T1-6Z-8AB-OZ D-box (Verizon)	A	From Leg	3.00	0.0000	150.00	No Ice	4.80	2.00	45.00
			0.00			1/2" Ice	5.07	2.19	81.13
			0.00			1" Ice	5.35	2.39	121.22

tnxTower All-Points Technology Corp., P.C. 116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: 603) 447-2124	Job	185' Self-Supporting Tower	Page	25 of 39
	Project	CT1931600 Bloomfield	Date	08:43:01 02/21/20
	Client	SAI; AT&T Site #CT1001	Designed by	Rob Adair

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	lb
Rohn 6' x 12' Boom Gate (1) (Verizon)	A	From Leg	1.50	0.0000		150.00	No Ice 16.60	16.60	560.00
			0.00				1/2" Ice 19.80	19.80	700.00
			0.00				1" Ice 23.00	23.00	840.00
Rohn 6' x 12' Boom Gate (1) (Verizon)	B	From Leg	1.50	0.0000		150.00	No Ice 16.60	16.60	560.00
			0.00				1/2" Ice 19.80	19.80	700.00
			0.00				1" Ice 23.00	23.00	840.00
Rohn 6' x 12' Boom Gate (1) (Verizon)	C	From Leg	1.50	0.0000		150.00	No Ice 16.60	16.60	560.00
			0.00				1/2" Ice 19.80	19.80	700.00
			0.00				1" Ice 23.00	23.00	840.00
APXV18-206516 (T-Mobile)	A	From Leg	4.00	0.0000		140.50	No Ice 3.57	2.00	15.00
			0.00				1/2" Ice 3.91	2.33	34.86
			0.00				1" Ice 4.25	2.66	58.99
APXV18-206516 (T-Mobile)	B	From Leg	4.00	0.0000		140.50	No Ice 3.57	2.00	15.00
			0.00				1/2" Ice 3.91	2.33	34.86
			0.00				1" Ice 4.25	2.66	58.99
APXV18-206516 (T-Mobile)	C	From Leg	4.00	0.0000		140.50	No Ice 3.57	2.00	15.00
			0.00				1/2" Ice 3.91	2.33	34.86
			0.00				1" Ice 4.25	2.66	58.99
APXV18-206517 (T-Mobile)	A	From Leg	4.00	0.0000		140.50	No Ice 5.17	3.04	30.00
			0.00				1/2" Ice 5.62	3.47	56.60
			0.00				1" Ice 6.08	3.91	88.70
APXV18-206517 (T-Mobile)	B	From Leg	4.00	0.0000		140.50	No Ice 5.17	3.04	30.00
			0.00				1/2" Ice 5.62	3.47	56.60
			0.00				1" Ice 6.08	3.91	88.70
APXV18-206517 (T-Mobile)	C	From Leg	4.00	0.0000		140.50	No Ice 5.17	3.04	30.00
			0.00				1/2" Ice 5.62	3.47	56.60
			0.00				1" Ice 6.08	3.91	88.70
LNX-6515DS-T4M (T-Mobile)	A	From Leg	4.00	0.0000		140.50	No Ice 11.39	7.66	50.00
			0.00				1/2" Ice 12.01	8.25	115.61
			0.00				1" Ice 12.63	8.84	188.87
LNX-6515DS-T4M (T-Mobile)	B	From Leg	4.00	0.0000		140.50	No Ice 11.39	7.66	50.00
			0.00				1/2" Ice 12.01	8.25	115.61
			0.00				1" Ice 12.63	8.84	188.87
LNX-6515DS-T4M (T-Mobile)	C	From Leg	4.00	0.0000		140.50	No Ice 11.39	7.66	50.00
			0.00				1/2" Ice 12.01	8.25	115.61
			0.00				1" Ice 12.63	8.84	188.87
(2) Ericsson RRUS-11 (T-Mobile)	A	From Leg	3.50	0.0000		140.50	No Ice 2.79	1.02	55.00
			0.00				1/2" Ice 3.00	1.16	75.86
			0.00				1" Ice 3.21	1.30	99.77
(2) Ericsson RRUS-11 (T-Mobile)	B	From Leg	3.50	0.0000		140.50	No Ice 2.79	1.02	55.00
			0.00				1/2" Ice 3.00	1.16	75.86
			0.00				1" Ice 3.21	1.30	99.77
(2) Ericsson RRUS-11 (T-Mobile)	C	From Leg	3.50	0.0000		140.50	No Ice 2.79	1.02	55.00
			0.00				1/2" Ice 3.00	1.16	75.86
			0.00				1" Ice 3.21	1.30	99.77
T-Mobile Mini-Squid (T-Mobile)	C	None		0.0000		140.50	No Ice 0.13	0.13	4.00
							1/2" Ice 0.24	0.24	6.69
							1" Ice 0.31	0.31	10.38
Fastback IBR 1300 (T-Mobile)	B	From Leg	4.00	0.0000		140.50	No Ice 0.67	0.31	10.00
			0.00				1/2" Ice 0.78	0.38	15.42
			0.00				1" Ice 0.89	0.47	22.44
4x2 7/8" Pipe Mount (T-Mobile)	B	From Leg	4.00	0.0000		140.50	No Ice 0.95	0.95	23.20
			0.00				1/2" Ice 1.22	1.22	31.83
			0.00				1" Ice 1.48	1.48	43.35
12' T-frame sector mnt	A	From Leg	2.00	0.0000		140.50	No Ice 10.20	5.10	600.00
			0.00				1/2" Ice 13.80	6.90	750.00
			0.00				1" Ice 17.40	8.70	900.00

tnxTower All-Points Technology Corp., P.C. 116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: 603) 447-2124	Job	185' Self-Supporting Tower	Page	26 of 39
	Project	CT1931600 Bloomfield	Date	08:43:01 02/21/20
	Client	SAI; AT&T Site #CT1001	Designed by	Rob Adair

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	lb
12' T-frame sector mnt	B	From Leg	2.00	0.0000	140.50	No Ice	10.20	5.10	600.00
			0.00			1/2" Ice	13.80	6.90	750.00
			0.00			1" Ice	17.40	8.70	900.00
12' T-frame sector mnt	C	From Leg	2.00	0.0000	140.50	No Ice	10.20	5.10	600.00
			0.00			1/2" Ice	13.80	6.90	750.00
			0.00			1" Ice	17.40	8.70	900.00
6'x4 1/2" Pipe Mount (NU)	B	From Leg	0.50	0.0000	135.00	No Ice	1.57	1.57	64.70
			0.00			1/2" Ice	2.62	2.62	83.80
			0.00			1" Ice	3.00	3.00	107.17
6'x4 1/2" Pipe Mount (NU)	C	From Leg	0.50	0.0000	135.00	No Ice	1.57	1.57	64.70
			0.00			1/2" Ice	2.62	2.62	83.80
			0.00			1" Ice	3.00	3.00	107.17
6'x4 1/2" Pipe Mount (NU)	B	From Leg	0.50	0.0000	125.00	No Ice	1.57	1.57	64.70
			0.00			1/2" Ice	2.62	2.62	83.80
			0.00			1" Ice	3.00	3.00	107.17
Telewave ANT150F6 (NU)	C	From Leg	6.00	0.0000	125.00	No Ice	5.87	5.87	35.00
			0.00			1/2" Ice	8.03	8.03	77.71
			10.00			1" Ice	10.21	10.21	133.89
Rohn 6' Side-Arm(1) (NU)	C	From Leg	3.00	0.0000	125.00	No Ice	10.60	10.60	140.00
			0.00			1/2" Ice	15.40	15.40	212.00
			0.00			1" Ice	20.20	20.20	284.00
12' single dipole (NU)	A	From Leg	6.00	0.0000	125.00	No Ice	2.25	2.25	30.00
			0.00			1/2" Ice	4.83	4.83	51.65
			0.00			1" Ice	7.43	7.43	89.22
Rohn 6' Side-Arm(1) (NU)	A	From Leg	3.00	0.0000	125.00	No Ice	10.60	10.60	140.00
			0.00			1/2" Ice	15.40	15.40	212.00
			0.00			1" Ice	20.20	20.20	284.00
12' Dipole (NU)	A	From Leg	6.00	0.0000	109.00	No Ice	6.00	6.00	70.00
			0.00			1/2" Ice	8.00	8.00	90.00
			0.00			1" Ice	10.00	10.00	110.00
Rohn 6' Side-Arm(1) (NU)	A	From Leg	3.00	0.0000	109.00	No Ice	10.60	10.60	140.00
			0.00			1/2" Ice	15.40	15.40	212.00
			0.00			1" Ice	20.20	20.20	284.00
14' x 3" Dia Omni (NU)	B	From Leg	6.00	0.0000	108.00	No Ice	4.20	4.20	40.00
			0.00			1/2" Ice	5.63	5.63	70.34
			7.00			1" Ice	7.08	7.08	109.69
Rohn 6' Side-Arm(1) (NU)	B	From Leg	3.00	0.0000	108.00	No Ice	10.60	10.60	140.00
			0.00			1/2" Ice	15.40	15.40	212.00
			0.00			1" Ice	20.20	20.20	284.00
Obstruction light (NU)	A	From Leg	0.50	0.0000	103.00	No Ice	0.13	0.13	8.00
			0.00			1/2" Ice	0.22	0.22	10.47
			0.00			1" Ice	0.29	0.29	13.91
Obstruction light (NU)	B	From Leg	0.50	0.0000	103.00	No Ice	0.13	0.13	8.00
			0.00			1/2" Ice	0.22	0.22	10.47
			0.00			1" Ice	0.29	0.29	13.91
Obstruction light (NU)	C	From Leg	0.50	0.0000	103.00	No Ice	0.13	0.13	8.00
			0.00			1/2" Ice	0.22	0.22	10.47
			0.00			1" Ice	0.29	0.29	13.91
6'x4 1/2" Pipe Mount (NU)	B	From Leg	0.50	0.0000	100.00	No Ice	1.56	1.56	64.70
			0.00			1/2" Ice	2.62	2.62	83.80
			0.00			1" Ice	3.00	3.00	107.17
Telewave ANT150F2 (NU)	B	From Leg	3.00	0.0000	87.00	No Ice	1.29	1.29	15.00
			0.00			1/2" Ice	1.60	1.60	25.28
			2.50			1" Ice	1.91	1.91	39.06
3' sidearm (NU)	B	From Leg	1.50	0.0000	87.00	No Ice	1.43	0.72	30.00
			0.00			1/2" Ice	2.18	1.09	65.00
			0.00			1" Ice	2.93	1.47	105.00

tnxTower All-Points Technology Corp., P.C. 116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: 603) 447-2124	Job	185' Self-Supporting Tower	Page	27 of 39
	Project	CT1931600 Bloomfield	Date	08:43:01 02/21/20
	Client	SAI; AT&T Site #CT1001	Designed by	Rob Adair

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral					
			ft	ft	°	ft	ft ²	ft ²	lb
12' Dipole (NU)	A	From Leg	6.00	0.0000	85.00	No Ice	6.00	6.00	70.00
			0.00			1/2" Ice	8.00	8.00	90.00
			0.00			1" Ice	10.00	10.00	110.00
Rohn 6' Side-Arm(1) (NU)	A	From Leg	3.00	0.0000	85.00	No Ice	10.60	10.60	140.00
			0.00			1/2" Ice	15.40	15.40	212.00
			0.00			1" Ice	20.20	20.20	284.00
18" square panel (NU)	B	From Leg	3.00	0.0000	66.00	No Ice	2.70	0.51	22.00
			0.00			1/2" Ice	2.90	0.63	37.30
			0.00			1" Ice	3.11	0.75	55.31
3' sidearm (NU)	B	From Leg	1.50	0.0000	66.00	No Ice	1.43	0.72	30.00
			0.00			1/2" Ice	2.18	1.09	65.00
			0.00			1" Ice	2.93	1.47	105.00

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets:		Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight
				Horz	Lateral						
			ft	ft	°	°	ft	ft	ft ²	lb	
8' dish with radome (NU)	A	Paraboloid w/Radome	From Leg	2.00	Worst	183.00	8.00	No Ice	50.27	450.00	
				0.00			1/2" Ice	51.32	713.43		
				0.00			1" Ice	52.37	976.86		
8' dish with radome (NU)	B	Paraboloid w/Radome	From Leg	2.00	Worst	183.00	8.00	No Ice	50.27	450.00	
				0.00			1/2" Ice	51.32	713.43		
				0.00			1" Ice	52.37	976.86		
4' dish with radome (NU)	A	Paraboloid w/Radome	From Leg	1.00	Worst	177.00	4.00	No Ice	12.57	150.00	
				0.00			1/2" Ice	13.10	217.22		
				0.00			1" Ice	13.62	284.44		
8' dish with radome (NU)	B	Paraboloid w/Radome	From Leg	2.00	Worst	172.00	8.00	No Ice	50.27	450.00	
				0.00			1/2" Ice	51.32	713.43		
				0.00			1" Ice	52.37	976.86		
8' dish with radome (NU)	C	Paraboloid w/Radome	From Leg	2.00	Worst	171.00	8.00	No Ice	50.27	450.00	
				0.00			1/2" Ice	51.32	713.43		
				0.00			1" Ice	52.37	976.86		
6' dish with radome (NU)	B	Paraboloid w/Radome	From Leg	1.50	Worst	135.00	6.00	No Ice	28.27	250.00	
				0.00			1/2" Ice	29.07	400.00		
				0.00			1" Ice	29.86	550.00		
6' dish with radome (NU)	C	Paraboloid w/Radome	From Leg	1.50	Worst	135.00	6.00	No Ice	28.27	250.00	
				0.00			1/2" Ice	29.07	400.00		
				0.00			1" Ice	29.86	550.00		
8' dish with radome (NU)	B	Paraboloid w/Radome	From Leg	2.00	Worst	125.00	8.00	No Ice	50.27	450.00	
				0.00			1/2" Ice	51.32	713.43		
				0.00			1" Ice	52.37	976.86		
8' dish with radome (NU)	B	Paraboloid w/Radome	From Leg	2.00	Worst	100.00	8.00	No Ice	50.27	450.00	
				0.00			1/2" Ice	51.32	713.43		
				0.00			1" Ice	52.37	976.86		
3' HP dish (Bloomfield PD/FD)	A	Paraboloid w/Shroud (HP)	From Leg	1.00	Worst	100.00	3.00	No Ice	7.07	75.00	
				0.00			1/2" Ice	7.47	113.33		
				0.00			1" Ice	7.86	153.33		
3' HP dish (Bloomfield PD/FD)	B	Paraboloid w/Shroud (HP)	From Leg	1.00	Worst	80.00	3.00	No Ice	7.07	75.00	
				0.00			1/2" Ice	7.47	113.33		
				0.00			1" Ice	7.86	153.33		

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Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

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Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	185 - 180	2.044	39	0.0801	0.0041
T2	180 - 160	1.968	39	0.0798	0.0038
T3	160 - 140	1.639	39	0.0782	0.0037
T4	140 - 120	1.314	39	0.0738	0.0040
T5	120 - 100	1.002	39	0.0648	0.0034
T6	100 - 93.3333	0.721	39	0.0555	0.0029
T7	93.3333 - 80	0.635	39	0.0516	0.0029
T8	80 - 73.3333	0.490	39	0.0436	0.0027
T9	73.3333 - 60	0.418	39	0.0403	0.0026
T10	60 - 53.3333	0.294	39	0.0337	0.0022
T11	53.3333 - 40	0.236	39	0.0295	0.0021
T12	40 - 33.3333	0.146	39	0.0211	0.0015
T13	33.3333 - 20	0.104	39	0.0175	0.0013
T14	20 - 13.3333	0.048	39	0.0102	0.0008
T15	13.3333 - 0	0.025	43	0.0068	0.0006

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
185.00	LED beacon	39	2.044	0.0801	0.0041	97932
183.00	8' dish with radome	39	2.014	0.0800	0.0040	97932
181.00	10' 4-bay dipole	39	1.983	0.0799	0.0039	97932
177.00	4' dish with radome	39	1.920	0.0796	0.0037	96821
176.00	10' 4-bay dipole	39	1.904	0.0796	0.0036	103929
172.00	8' dish with radome	39	1.839	0.0793	0.0035	162135
171.00	8' dish with radome	39	1.822	0.0792	0.0035	188739
165.00	PR-900	39	1.722	0.0787	0.0033	Inf
160.00	7770.00	39	1.639	0.0782	0.0037	262873
150.00	BXA-70063/6	39	1.475	0.0766	0.0040	372274
140.50	APXV18-206516	39	1.322	0.0740	0.0040	837543
135.00	6' dish with radome	39	1.234	0.0718	0.0039	350987
125.00	8' dish with radome	39	1.077	0.0671	0.0036	138976
109.00	12' Dipole	39	0.844	0.0599	0.0029	172610
108.00	14' x 3" Dia Omni	39	0.830	0.0594	0.0028	182869
103.00	Obstruction light	39	0.762	0.0571	0.0029	243514
100.00	8' dish with radome	39	0.721	0.0555	0.0029	155379
87.00	Telewave ANT150F2	39	0.564	0.0476	0.0029	101938
85.00	12' Dipole	39	0.542	0.0464	0.0028	263087
80.00	3' HP dish	39	0.490	0.0436	0.0027	207905
66.00	18" square panel	39	0.347	0.0369	0.0024	135091

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	185 - 180	9.270	2	0.3622	0.0204
T2	180 - 160	8.922	2	0.3612	0.0202
T3	160 - 140	7.428	2	0.3550	0.0190
T4	140 - 120	5.953	2	0.3344	0.0181
T5	120 - 100	4.537	2	0.2937	0.0164

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T6	100 - 93.3333	3.267	2	0.2515	0.0144
T7	93.3333 - 80	2.876	2	0.2336	0.0141
T8	80 - 73.3333	2.218	2	0.1974	0.0125
T9	73.3333 - 60	1.893	2	0.1826	0.0120
T10	60 - 53.3333	1.330	2	0.1528	0.0101
T11	53.3333 - 40	1.067	2	0.1337	0.0094
T12	40 - 33.3333	0.661	2	0.0954	0.0070
T13	33.3333 - 20	0.470	2	0.0792	0.0059
T14	20 - 13.3333	0.216	2	0.0461	0.0036
T15	13.3333 - 0	0.115	3	0.0308	0.0027

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
185.00	LED beacon	2	9.270	0.3622	0.0204	22098
183.00	8' dish with radome	2	9.132	0.3618	0.0203	22098
181.00	10' 4-bay dipole	2	8.992	0.3614	0.0202	22098
177.00	4' dish with radome	2	8.706	0.3606	0.0200	21895
176.00	10' 4-bay dipole	2	8.633	0.3604	0.0200	23530
172.00	8' dish with radome	2	8.336	0.3595	0.0197	37036
171.00	8' dish with radome	2	8.261	0.3592	0.0197	43289
165.00	PR-900	2	7.807	0.3573	0.0193	517179
160.00	7770.00	2	7.428	0.3550	0.0190	59956
150.00	BXA-70063/6	2	6.684	0.3474	0.0184	84386
140.50	APXV18-206516	2	5.990	0.3352	0.0181	188713
135.00	6' dish with radome	2	5.591	0.3254	0.0176	77458
125.00	8' dish with radome	2	4.879	0.3043	0.0169	30802
109.00	12' Dipole	2	3.823	0.2715	0.0152	38338
108.00	14' x 3" Dia Omni	2	3.760	0.2695	0.0151	40627
103.00	Obstruction light	2	3.450	0.2586	0.0146	54656
100.00	8' dish with radome	2	3.267	0.2515	0.0144	34617
87.00	Telewave ANT150F2	2	2.552	0.2158	0.0134	22486
85.00	12' Dipole	2	2.456	0.2103	0.0131	58503
80.00	3' HP dish	2	2.218	0.1974	0.0125	45387
66.00	18" square panel	2	1.573	0.1671	0.0110	30031

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load per Bolt lb	Ratio Load Allowable	Allowable Ratio	Criteria
T1	185	Leg	A325N	1.2500	6	462.91	82835.00	0.006	✓	1 Bolt Tension
		Diagonal	A325X	0.7500	1	2639.30	17835.00	0.148	✓	1 Member Bearing
		Top Girt	A325X	0.7500	1	1263.34	21868.40	0.058	✓	1 Bolt Shear
T2	180	Leg	A325N	1.2500	6	1965.27	82835.00	0.024	✓	1 Bolt Tension
		Diagonal	A325X	0.7500	1	8432.26	17835.00	0.473	✓	1 Member Bearing
T3	160	Leg	A325N	1.2500	6	6544.98	82835.00	0.079	✓	1 Bolt Tension
		Diagonal	A325X	0.7500	1	14971.60	21868.40	0.685	✓	1 Bolt Shear
T4	140	Leg	A325N	1.2500	8	10371.00	82835.00	0.125	✓	1 Bolt Tension

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Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load per Bolt lb	Ratio Load Allowable	Allowable Ratio	Criteria
T5	120	Diagonal	A325X	0.6250	2	10677.50	15186.40	0.703 ✓	1	Bolt Shear
		Leg	A325N	1.5000	8	17148.90	119282.00	0.144 ✓	1	Bolt Tension
T6	100	Diagonal	A325X	0.7500	2	12596.90	21868.40	0.576 ✓	1	Bolt Shear
T7	93.3333	Diagonal	A325X	1.0000	2	14082.80	33603.80	0.419 ✓	1	Member Bearing
		Leg	A325N	1.5000	8	20985.00	119282.00	0.176 ✓	1	Bolt Tension
		Diagonal	A325X	1.0000	2	18010.50	38877.20	0.463 ✓	1	Bolt Shear
T8	80	Horizontal	A325N	1.0000	2	1811.64	28003.10	0.065 ✓	1	Member Bearing
		Diagonal	A325X	0.8750	2	15250.50	29765.40	0.512 ✓	1	Bolt Shear
T9	73.3333	Leg	A325N	1.5000	8	28698.20	119282.00	0.241 ✓	1	Bolt Tension
		Diagonal	A325X	0.8750	2	19478.50	29765.40	0.654 ✓	1	Bolt Shear
		Horizontal	A325X	0.8750	2	2447.39	24468.80	0.100 ✓	1	Member Bearing
T10	60	Diagonal	A325X	0.8750	2	16718.70	29765.40	0.562 ✓	1	Bolt Shear
T11	53.3333	Leg	A325N	1.5000	8	36480.40	119282.00	0.306 ✓	1	Bolt Tension
		Diagonal	A325X	0.8750	2	21854.50	29765.40	0.734 ✓	1	Bolt Shear
		Horizontal	A325X	0.8750	2	3090.46	24468.80	0.126 ✓	1	Member Bearing
T12	40	Diagonal	A325X	1.0000	2	18510.10	33603.80	0.551 ✓	1	Member Bearing
T13	33.3333	Leg	A325N	1.5000	8	44830.60	119282.00	0.376 ✓	1	Bolt Tension
		Diagonal	A325X	1.0000	2	23870.40	38877.20	0.614 ✓	1	Bolt Shear
		Horizontal	A325X	1.0000	2	3784.46	28003.10	0.135 ✓	1	Member Bearing
T14	20	Diagonal	A325X	1.0000	2	20138.40	38877.20	0.518 ✓	1	Bolt Shear
T15	13.3333	Leg	F1554-10 5	1.7500	6	71208.20	169121.00	0.421 ✓	1	Bolt Tension
		Diagonal	A325X	1.0000	2	26089.50	38877.20	0.671 ✓	1	Bolt Shear
		Horizontal	A325X	1.0000	2	4501.60	28003.10	0.161 ✓	1	Member Bearing

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	185 - 180	P6.625x.280	5.01	5.01	26.8 K=1.00	5.5813	-8332.34	238344.00	0.035 ¹ ✓
T2	180 - 160	P6.625x.280	20.03	10.02	53.5 K=1.00	5.5813	-19808.30	203686.00	0.097 ¹ ✓
T3	160 - 140	P6.625x.280	20.03	10.02	53.5 K=1.00	5.5813	-56737.10	203686.00	0.279 ¹ ✓
T4	140 - 120	P6.625x.280	20.03	10.02	53.5 K=1.00	5.5813	-108817.00	203686.00	0.534 ¹ ✓
T5	120 - 100	P8.625x.322	20.03	10.02	40.9 K=1.00	8.3993	-171654.00	334421.00	0.513 ¹ ✓
T6	100 - 93.3333	P8.625x.322	6.68	6.68	27.3	8.3993	-208847.00	357954.00	0.583 ¹ ✓

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T7	93.3333 - 80	P8.625x.322	13.36	6.68	K=1.00 27.3	8.3993	-208929.00	357954.00	0.584 ¹
T8	80 - 73.3333	P8.625x.5	6.68	6.68	K=1.00 27.8	12.7627	-282248.00	542674.00	0.520 ¹
T9	73.3333 - 60	P8.625x.5	13.36	6.68	K=1.00 27.8	12.7627	-282112.00	542674.00	0.520 ¹
T10	60 - 53.3333	P10.75x.365	6.68	6.68	K=1.00 21.8	11.9083	-356411.00	517553.00	0.689 ¹
T11	53.3333 - 40	P10.75x.365	13.36	6.68	K=1.00 21.8	11.9083	-355345.00	517553.00	0.687 ¹
T12	40 - 33.3333	P10.75x.5	6.68	6.68	K=1.00 22.1	16.1007	-436447.00	699144.00	0.624 ¹
T13	33.3333 - 20	P10.75x.5	13.36	6.68	K=1.00 22.1	16.1007	-435345.00	699144.00	0.623 ¹
T14	20 - 13.3333	P12.75x.5	6.68	6.68	K=1.00 18.5	19.2423	-519152.00	844532.00	0.615 ¹
T15	13.3333 - 0	P12.75x.5	13.36	6.68	K=1.00 18.5	19.2423	-518851.00	844532.00	0.614 ¹

¹ P_u / φP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	185 - 180	L3 1/2x3 1/2x1/4	19.28	9.60	166.1 K=1.00	1.6900	-2655.46	13846.40	0.192 ¹
T2	180 - 160	L4x4x1/4	22.60	11.41	172.2 K=1.00	1.9400	-8585.90	14783.50	0.581 ¹
T3	160 - 140	L5x5x5/16	24.43	12.32	148.7 K=1.00	3.0300	-14908.30	30957.70	0.482 ¹
T4	140 - 120	L5x5x5/16	26.28	13.16	149.7 K=0.94	3.0300	-21233.20	30550.20	0.695 ¹
T5	120 - 100	L5x5x3/8	28.15	14.08	158.7 K=0.93	3.6100	-24673.00	32396.50	0.762 ¹
T6	100 - 93.3333	L6x6x3/8	14.76	14.18	134.1 K=0.94	4.3600	-29042.90	54670.60	0.531 ¹
T7	93.3333 - 80	L4x6x1/2	19.58	9.50	128.4 K=0.98	4.7500	-36021.00	64584.40	0.558 ¹
T8	80 - 73.3333	L6x6x3/8	15.36	14.81	138.0 K=0.92	4.3600	-29864.00	51708.80	0.578 ¹
T9	73.3333 - 60	L6x6x3/8	20.20	19.65	123.3 K=0.98	4.3600	-38957.10	62971.70	0.619 ¹
T10	60 - 53.3333	L6x6x3/8	16.19	15.64	143.2 K=0.91	4.3600	-33369.00	48054.80	0.694 ¹
T11	53.3333 - 40	L6x6x3/8	20.90	20.34	126.1 K=0.97	4.3600	-43709.00	60823.50	0.719 ¹
T12	40 - 33.3333	L6x6x3/8	17.10	16.52	148.7 K=0.89	4.3600	-36596.50	44572.30	0.821 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T13	33.3333 - 20	L6x6x1/2	21.67	21.09	129.9 K=0.95	5.7500	-47740.80	76651.80	0.623 ¹ ✓
T14	20 - 13.3333	L6x6x1/2	18.03	17.45	155.3 K=0.88	5.7500	-40203.50	53853.40	0.747 ¹ ✓
T15	13.3333 - 0	L6x6x1/2	22.47	21.89	133.0 K=0.94	5.7500	-52178.90	73370.50	0.711 ¹ ✓

¹ P_u / φP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T7	93.3333 - 80	L4x4x5/16	27.67	13.18	181.0 K=0.91	2.4000	-3623.28	16552.00	0.219 ¹ ✓
T9	73.3333 - 60	L4x4x5/16	29.67	14.21	192.9 K=0.89	2.4000	-4894.77	14569.50	0.336 ¹ ✓
T11	53.3333 - 40	L5x5x5/16	31.67	15.13	167.7 K=0.92	3.0300	-6180.93	24328.80	0.254 ¹ ✓
T13	33.3333 - 20	L5x5x5/16	33.67	16.09	176.6 K=0.91	3.0300	-7568.91	21936.00	0.345 ¹ ✓
T15	13.3333 - 0	L5x5x5/16	35.67	17.01	185.1 K=0.90	3.0300	-9003.20	19982.70	0.451 ¹ ✓

¹ P_u / φP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	185 - 180	L5x5x5/16	18.50	17.68	213.4 K=1.00	3.0300	-1263.34	15030.40	0.084 ¹ ✓

KL/R > 200 (C) - 5

¹ P_u / φP_n controls

Redundant Horizontal (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T7	93.3333 - 80	L3x3x1/4	6.92	6.56	132.9 K=1.00	1.4400	-3623.28	18406.80	0.197 ¹ ✓
T9	73.3333 - 60	L3x3x1/4	7.42	7.06	143.1	1.4400	-4892.42	15896.70	0.308 ¹ ✓

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T11	53.3333 - 40	L3x3x5/16	7.92	7.47	K=1.00 152.2	1.7800	-6162.45	17367.30	0.355 ¹ ✓
T13	33.3333 - 20	L3x3x5/16	8.42	7.97	K=1.00 162.4	1.7800	-7549.81	15256.20	0.495 ¹ ✓
T15	13.3333 - 0	L3 1/2x4x5/16	8.92	8.39	K=1.00 137.8	2.2500	-8997.98	26752.00	0.336 ¹ ✓

¹ P_u / φP_n controls

Redundant Diagonal (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T7	93.3333 - 80	L3x3x1/4	9.37	8.86	K=1.00 179.6	1.4400	-2454.57	10086.00	0.243 ¹ ✓
T9	73.3333 - 60	L3x3x1/4	9.73	9.24	K=1.00 187.2	1.4400	-3210.45	9282.13	0.346 ¹ ✓
T11	53.3333 - 40	L3x3x5/16	10.10	9.50	K=1.00 193.6	1.7800	-3942.36	10728.60	0.367 ¹ ✓
T13	33.3333 - 20	L3x3x5/16	10.48	9.90	K=1.00 201.7	1.7800	-4712.02	9886.45	0.477 ¹ ✓
T15	13.3333 - 0	L3 1/2x4x5/16	10.87	10.20	K=1.00 167.6	2.2500	-5487.70	18089.80	0.303 ¹ ✓

¹ P_u / φP_n controls

Redundant Hip (1) Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T7	93.3333 - 80	L3x3x1/4	6.92	6.92	K=1.00 140.2	1.4400	-109.03	16549.70	0.007 ¹ ✓
T9	73.3333 - 60	L3x3x1/4	7.42	7.42	K=1.00 150.3	1.4400	-114.97	14393.50	0.008 ¹ ✓
T11	53.3333 - 40	L3 1/2x3 1/2x1/4	7.92	7.92	K=1.00 136.9	1.6900	-116.83	20375.00	0.006 ¹ ✓
T13	33.3333 - 20	L3 1/2x3 1/2x1/4	8.42	8.42	K=1.00 145.5	1.6900	-127.01	18026.10	0.007 ¹ ✓
T15	13.3333 - 0	L3 1/2x3 1/2x1/4	8.92	8.92	K=1.00 154.2	1.6900	-122.37	16061.20	0.008 ¹ ✓

¹ P_u / φP_n controls

tnxTower All-Points Technology Corp., P.C. 116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: (603) 447-2124	Job	185' Self-Supporting Tower	Page	35 of 39
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	Client	SAI; AT&T Site #CT1001	Designed by	Rob Adair

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	185 - 180	P6.625x.280	5.01	5.01	26.8	5.5813	488.39	251161.00	0.002 ¹
T2	180 - 160	P6.625x.280	20.03	10.02	53.5	5.5813	11791.60	251161.00	0.047 ¹
T3	160 - 140	P6.625x.280	20.03	10.02	53.5	5.5813	39269.90	251161.00	0.156 ¹
T4	140 - 120	P6.625x.280	20.03	10.02	53.5	5.5813	82967.90	251161.00	0.330 ¹
T5	120 - 100	P8.625x.322	20.03	10.02	40.9	8.3993	137191.00	377967.00	0.363 ¹
T6	100 - 93.3333	P8.625x.322	6.68	6.68	27.3	8.3993	169874.00	377967.00	0.449 ¹
T7	93.3333 - 80	P8.625x.322	13.36	6.68	27.3	8.3993	168139.00	377967.00	0.445 ¹
T8	80 - 73.3333	P8.625x.5	6.68	6.68	27.8	12.7627	231801.00	574322.00	0.404 ¹
T9	73.3333 - 60	P8.625x.5	13.36	6.68	27.8	12.7627	229887.00	574322.00	0.400 ¹
T10	60 - 53.3333	P10.75x.365	6.68	6.68	21.8	11.9083	295041.00	535873.00	0.551 ¹
T11	53.3333 - 40	P10.75x.365	13.36	6.68	21.8	11.9083	292202.00	535873.00	0.545 ¹
T12	40 - 33.3333	P10.75x.5	6.68	6.68	22.1	16.1007	362315.00	724530.00	0.500 ¹
T13	33.3333 - 20	P10.75x.5	13.36	6.68	22.1	16.1007	359118.00	724530.00	0.496 ¹
T14	20 - 13.3333	P12.75x.5	6.68	6.68	18.5	19.2423	430830.00	865902.00	0.498 ¹
T15	13.3333 - 0	P12.75x.5	13.36	6.68	18.5	19.2423	427690.00	865902.00	0.494 ¹

¹ P_u / φP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	185 - 180	L3 1/2x3 1/2x1/4	19.28	9.60	107.6	1.6900	2639.30	54756.00	0.048 ¹
T2	180 - 160	L4x4x1/4	22.60	11.41	111.1	1.9400	8432.26	62856.00	0.134 ¹
T3	160 - 140	L5x5x5/16	24.43	12.32	95.4	3.0300	14971.60	98172.00	0.153 ¹
T4	140 - 120	L5x5x5/16	26.28	13.16	102.5	3.0300	21354.90	98172.00	0.218 ¹

tnxTower All-Points Technology Corp., P.C. 116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: 603) 447-2124	Job	185' Self-Supporting Tower	Page	36 of 39
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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T5	120 - 100	L5x5x3/8	28.15	14.08	110.3	3.6100	25193.70	116964.00	0.215 ¹ ✓
T6	100 - 93.3333	L6x6x3/8	14.76	14.18	94.2	4.3600	28165.70	141264.00	0.199 ¹ ✓
T7	93.3333 - 80	L4x6x1/2	19.58	9.50	123.0	4.7500	34799.80	153900.00	0.226 ¹ ✓
T8	80 - 73.3333	L6x6x3/8	15.36	14.81	98.0	4.3600	30501.00	141264.00	0.216 ¹ ✓
T9	73.3333 - 60	L6x6x3/8	20.20	19.65	128.9	4.3600	38454.10	141264.00	0.272 ¹ ✓
T10	60 - 53.3333	L6x6x3/8	16.19	15.64	103.3	4.3600	33437.30	141264.00	0.237 ¹ ✓
T11	53.3333 - 40	L6x6x3/8	20.90	20.34	133.4	4.3600	42694.70	141264.00	0.302 ¹ ✓
T12	40 - 33.3333	L6x6x3/8	17.10	16.52	109.2	4.3600	37020.30	141264.00	0.262 ¹ ✓
T13	33.3333 - 20	L6x6x1/2	21.67	21.09	139.8	5.7500	46784.00	186300.00	0.251 ¹ ✓
T14	20 - 13.3333	L6x6x1/2	18.03	17.45	116.3	5.7500	40276.70	186300.00	0.216 ¹ ✓
T15	13.3333 - 0	L6x6x1/2	22.47	21.89	145.0	5.7500	50643.90	186300.00	0.272 ¹ ✓

¹ P_u / φP_n controls


Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T7	93.3333 - 80	L4x4x5/16	27.67	13.18	195.6	2.4000	3623.28	77760.00	0.047 ¹ ✓
T9	73.3333 - 60	L4x4x5/16	29.67	14.21	210.1	2.4000	4894.77	77760.00	0.063 ¹ ✓
T11	53.3333 - 40	L5x5x5/16	31.67	15.13	176.4	3.0300	6180.93	98172.00	0.063 ¹ ✓
T13	33.3333 - 20	L5x5x5/16	33.67	16.09	187.9	3.0300	7568.91	98172.00	0.077 ¹ ✓
T15	13.3333 - 0	L5x5x5/16	35.67	17.01	198.4	3.0300	9003.20	98172.00	0.092 ¹ ✓

¹ P_u / φP_n controls






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Top Girt Design Data (Tension)

Section No.	Elevation <i>ft</i>	Size	<i>L</i> <i>ft</i>	<i>L_u</i> <i>ft</i>	<i>Kl/r</i>	<i>A</i> <i>in²</i>	<i>P_u</i> <i>lb</i>	ϕP_n <i>lb</i>	Ratio $\frac{P_u}{\phi P_n}$
T1	185 - 180	L5x5x5/16	18.50	17.68	137.2	3.0300	279.35	98172.00	0.003 ¹ 






¹ $P_u / \phi P_n$ controls

Redundant Horizontal (1) Design Data (Tension)

Section No.	Elevation <i>ft</i>	Size	<i>L</i> <i>ft</i>	<i>L_u</i> <i>ft</i>	<i>Kl/r</i>	<i>A</i> <i>in²</i>	<i>P_u</i> <i>lb</i>	ϕP_n <i>lb</i>	Ratio $\frac{P_u}{\phi P_n}$
T7	93.3333 - 80	L3x3x1/4	6.92	6.56	84.6	1.4400	3623.28	46656.00	0.078 ¹ 
T9	73.3333 - 60	L3x3x1/4	7.42	7.06	91.1	1.4400	4892.42	46656.00	0.105 ¹ 
T11	53.3333 - 40	L3x3x5/16	7.92	7.47	97.2	1.7800	6162.45	57672.00	0.107 ¹ 
T13	33.3333 - 20	L3x3x5/16	8.42	7.97	103.7	1.7800	7549.81	57672.00	0.131 ¹ 
T15	13.3333 - 0	L3 1/2x4x5/16	8.92	8.39	94.0	2.2500	8997.98	72900.00	0.123 ¹ 

¹ $P_u / \phi P_n$ controls

Redundant Diagonal (1) Design Data (Tension)

Section No.	Elevation <i>ft</i>	Size	<i>L</i> <i>ft</i>	<i>L_u</i> <i>ft</i>	<i>Kl/r</i>	<i>A</i> <i>in²</i>	<i>P_u</i> <i>lb</i>	ϕP_n <i>lb</i>	Ratio $\frac{P_u}{\phi P_n}$
T7	93.3333 - 80	L3x3x1/4	9.37	8.86	114.3	1.4400	2454.57	46656.00	0.053 ¹ 
T9	73.3333 - 60	L3x3x1/4	9.73	9.24	119.2	1.4400	3210.45	46656.00	0.069 ¹ 
T11	53.3333 - 40	L3x3x5/16	10.10	9.50	123.7	1.7800	3942.36	57672.00	0.068 ¹ 
T13	33.3333 - 20	L3x3x5/16	10.48	9.90	128.8	1.7800	4712.02	57672.00	0.082 ¹ 
T15	13.3333 - 0	L3 1/2x4x5/16	10.87	10.20	114.4	2.2500	5487.70	72900.00	0.075 ¹ 

¹ $P_u / \phi P_n$ controls

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Redundant Hip (1) Design Data (Tension)

Section No.	Elevation <i>ft</i>	Size	<i>L</i>	<i>L_u</i>	<i>Kl/r</i>	<i>A</i> <i>in²</i>	<i>P_u</i> <i>lb</i>	ϕP_n <i>lb</i>	Ratio $\frac{P_u}{\phi P_n}$
T7	93.3333 - 80	L3x3x1/4	6.92	6.92	89.2	1.4400	1.16	46656.00	0.000 ¹

¹ $P_u / \phi P_n$ controls

Section Capacity Table

Section No.	Elevation <i>ft</i>	Component Type	Size	Critical Element	<i>P</i> <i>lb</i>	ϕP_{allow} <i>lb</i>	% Capacity	Pass Fail	
T1	185 - 180	Leg	P6.625x.280	2	-8332.34	238344.00	3.5	Pass	
		Diagonal	L3 1/2x3 1/2x1/4	10	-2655.46	13846.40	19.2	Pass	
		Top Girt	L5x5x5/16	5	-1263.34	15030.40	8.4	Pass	
T2	180 - 160	Leg	P6.625x.280	14	-19808.30	203686.00	9.7	Pass	
		Diagonal	L4x4x1/4	19	-8585.90	14783.50	58.1	Pass	
T3	160 - 140	Leg	P6.625x.280	29	-56737.10	203686.00	27.9	Pass	
		Diagonal	L5x5x5/16	34	-14908.30	30957.70	48.2	Pass	
T4	140 - 120	Leg	P6.625x.280	43	-108817.00	203686.00	53.4	Pass	
		Diagonal	L5x5x5/16	47	-21233.20	30550.20	69.5	Pass	
T5	120 - 100	Leg	P8.625x.322	60	-171654.00	334421.00	51.3	Pass	
		Diagonal	L5x5x3/8	65	-24673.00	32396.50	76.2	Pass	
T6	100 - 93.3333	Leg	P8.625x.322	74	-208847.00	357954.00	58.3	Pass	
		Diagonal	L6x6x3/8	80	-29042.90	54670.60	53.1	Pass	
T7	93.3333 - 80	Leg	P8.625x.322	87	-208929.00	357954.00	58.4	Pass	
		Diagonal	L4x6x1/2	94	-36021.00	64584.40	55.8	Pass	
		Horizontal	L4x4x5/16	82	-3623.28	16552.00	21.9	Pass	
		Redund Horz 1	L3x3x1/4	98	-3623.28	18406.80	19.7	Pass	
		Bracing						68.5 (b)	
		Redund Diag 1	L3x3x1/4	99	-2454.57	10086.00	24.3	Pass	
		Bracing						70.3 (b)	
T8	80 - 73.3333	Leg	P8.625x.5	111	-282248.00	542674.00	52.0	Pass	
		Diagonal	L6x6x3/8	117	-29864.00	51708.80	57.8	Pass	
T9	73.3333 - 80	Leg	P8.625x.5	123	-282112.00	542674.00	52.0	Pass	
		Diagonal	L6x6x3/8	137	-38957.10	62971.70	61.9	Pass	
		Horizontal	L4x4x5/16	118	-4894.77	14569.50	33.6	Pass	
		Redund Horz 1	L3x3x1/4	138	-4892.42	15896.70	30.8	Pass	
		Bracing						65.4 (b)	
		Redund Diag 1	L3x3x1/4	139	-3210.45	9282.13	34.6	Pass	
		Bracing						73.4 (b)	
T10	60 - 53.3333	Leg	P10.75x.365	147	-356411.00	517553.00	68.9	Pass	
		Diagonal	L6x6x3/8	156	-33369.00	48054.80	69.4	Pass	
T11	53.3333 - 40	Leg	P10.75x.365	159	-355345.00	517553.00	68.7	Pass	
		Diagonal	L6x6x3/8	173	-43709.00	60823.50	71.9	Pass	
		Horizontal	L5x5x5/16	151	-6180.93	24328.80	25.4	Pass	
		Redund Horz 1	L3x3x5/16	170	-6162.45	17367.30	35.5	Pass	
	Bracing						36.7	Pass	
	Redund Diag 1	L3x3x5/16	171	-3942.36	10728.60	36.7	Pass		

tnxTower All-Points Technology Corp., P.C. 116 Grandview Road Conway, NH 03818 Phone: (603) 496-5853 FAX: 603) 447-2124	Job	185' Self-Supporting Tower	Page	39 of 39
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	Client	SAI; AT&T Site #CT1001	Designed by	Rob Adair

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
		Bracing						
		Redund Hip 1	L3 1/2x3 1/2x1/4	172	-116.83	20375.00	0.9	Pass
T12	40 - 33.3333	Bracing						
		Leg	P10.75x.5	183	-436447.00	699144.00	62.4	Pass
T13	33.3333 - 20	Diagonal	L6x6x3/8	192	-36596.50	44572.30	82.1	Pass
		Leg	P10.75x.5	195	-435345.00	699144.00	62.3	Pass
		Diagonal	L6x6x1/2	209	-47740.80	76651.80	62.3	Pass
		Horizontal	L5x5x5/16	187	-7568.91	21936.00	34.5	Pass
		Redund Horz 1	L3x3x5/16	210	-7549.81	15256.20	49.5	Pass
		Bracing						
		Redund Diag 1	L3x3x5/16	207	-4712.02	9886.45	47.7	Pass
		Bracing						
		Redund Hip 1	L3 1/2x3 1/2x1/4	215	-126.06	18026.10	0.9	Pass
T14	20 - 13.3333	Bracing						
		Leg	P12.75x.5	219	-519152.00	844532.00	61.5	Pass
		Diagonal	L6x6x1/2	228	-40203.50	53853.40	74.7	Pass
T15	13.3333 - 0	Leg	P12.75x.5	231	-518851.00	844532.00	61.4	Pass
		Diagonal	L6x6x1/2	245	-52178.90	73370.50	71.1	Pass
		Horizontal	L5x5x5/16	223	-9003.20	19982.70	45.1	Pass
		Redund Horz 1	L3 1/2x4x5/16	242	-8997.98	26752.00	33.6	Pass
		Bracing						
		Redund Diag 1	L3 1/2x4x5/16	243	-5487.70	18089.80	30.3	Pass
		Bracing						
		Redund Hip 1	L3 1/2x3 1/2x1/4	252	-122.37	16061.20	0.8	Pass
		Bracing						
						Summary		
						Leg (T10)	68.9	Pass
						Diagonal (T12)	82.1	Pass
						Horizontal (T15)	45.1	Pass
						Top Girt (T1)	8.4	Pass
						Redund Horz 1	49.5	Pass
						Bracing (T13)		
						Redund Diag 1	47.7	Pass
						Bracing (T13)		
						Redund Hip 1	0.9	Pass
						1 Bracing (T13)		
						Bolt Checks	73.4	Pass
						RATING =	82.1	Pass

All-Points Technology Corp., P.C.

116 Grandview Road
Conway, NH 03818
(603) 496-5853

Client: **SAI Communications**
Job: **Bloomfield**
Calculated By: **R. Adair**

Site No.: **CTV1001**
Job No.: **CT1931600**
Date: **21-Feb-20**

Mat Foundation Analysis

Program assumes:

Mat is square in plan view.
Water table is below bottom of mat.
Unit weight of concrete = 150 pcf
Unit weight of soil = 100 pcf
Self-supporting tower with 3 piers

Information to be provided:

Pier is round or square in plan dimension ("R" or "S")	Shape =	R
OTM = Overturning Moment to be resisted	OTM =	17369 ft-kips
H = Height from ground surface to top of mat (if buried)	H =	5.0 ft.
P _M = Projection of pier above mat	P _M =	5.5 ft.
y = Thickness of mat	y =	1.50 ft.
x = Width of mat	x =	45.50 ft.
d = Diameter of round pier	d =	6.0 ft.
S = Size of tension bars	S =	7

Mass of tower and appurtenances (below)

Results:

<u>Component</u>	<u>Mass</u>	<u>Moment Arm</u>	<u>Moment Resist.</u>
Pier	23.3 kips	22.75 ft.	530.7 ft-kips
Overburden	1160.6 kips	22.75 ft.	26403.2 ft-kips
Mat	465.8 kips	22.75 ft.	10597.1 ft-kips

Overturning Moment Resistance : 37530.93 ft-kips
Factor of Safety = 2.16
Concrete Quantity = 132.3 c.y.

SATISFACTORY

January 22, 2020



SAI Communications
12 Industrial Way
Salem NH, 03079

RE: Site Number: CT1001 (LTE 6C/7C)
 FA Number: 10035025
 PACE Number: MRCTB033694
 PT Number: 2051A0JD56
 Site Name: BLOOMFIELD-8 HOSKINS RD
 Site Address: 8 Hoskins Rd.
 Bloomfield, CT 06002

To Whom It May Concern:

Hudson Design Group LLC (HDG) has been authorized by SAI Communications to perform a mount analysis on the existing AT&T antenna/RRH mounts to determine their capability of supporting the following additional loading:

- (3) 7770 Antennas (55.0"x11.0"x5.0" - Wt. = 35 lbs. /each)
- (2) OPA-65R-LCUU-H8 Antennas (92.7"x14.4"x7.0" – Wt. = 88 lbs. /each)
- (1) OPA-65R-LCUU-H6 Antennas (72.0"x14.8"x7.4" – Wt. = 73 lbs. /each)
- (3) RRUS-E2 B29 RRH's (20.4"x18.5"x7.5" – Wt. = 53 lbs. /each)
- (3) RRUS-32 B30 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (3) TT08-19DB111-001 TMA's (14.2"x6.7"x5.4" - Wt. = 22 lbs. /each)
- (3) Squid Surge Arrestor (24.0"x9.7" Φ – Wt. = 33 lbs. /each) (Tower Mount)
- **(4) 800-10966 Antennas (96.0"x20.0"x6.9"– Wt. = 115 lbs. /each)**
- **(2) 800-10965 Antennas (78.7"x20.0"x6.9"– Wt. = 109 lbs. /each)**
- **(3) B14 4478 RRH's (18.1"x13.4"x8.3" – Wt. = 60 lbs. /each)**
- **(3) B2/B66A 8843 RRH's (14.9"x13.2"x10.9" – Wt. = 72 lbs. /each)**
- **(3) 4449 B5 RRH's (18.0"x13.2"x9.5" – Wt. = 71 lbs. /each)**
- **(3) Squid Surge Arrestor (24.0"x9.7" Φ – Wt. = 33 lbs. /each) (Tower Mount)**

**Proposed equipment shown in bold*

No original structural design documents or fabrication drawings were available for the existing mounts. HDG's subconsultant, ProVertic LLC, conducted a survey climb and mapping of the existing AT&T antenna mounts on January 19, 2019.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-H, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2015 with 2018 Connecticut State Building Code, and AT&T Mount Technical Directive – R13.
- HDG considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-H and Appendix N of the Connecticut State Building Code, the max basic wind speed for this site is equal to 125 mph with a max basic wind speed with ice of 50 mph and a max ice thickness of 1.5 in. An escalated ice thickness of 1.91 in was used for this analysis.
- HDG considers this site to be exposure category B; tower is located in an urban/suburban or wooded area with numerous closely spaced obstructions.
- HDG considers this site to be topographic category 3; tower is located at the upper half of a hill.
- The mount has been analyzed with load combinations consisting of 250 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 3.
- The mount has been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.
- The existing mount is secured to the existing tower with U-bolts. The connection is considered OK by visual inspection.

Based on our evaluation, we have determined that the existing mounts **ARE CAPABLE** of supporting the proposed installation.

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing (LTE 6C/7C) Mount Rating	28	LC1	95%	PASS

Reference Documents:

- Mount mapping report prepared by ProVertic LLC.

This determination was based on the following limitations and assumptions:

1. HDG is not responsible for any modifications completed prior to and hereafter which HDG was not directly involved.
2. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.
3. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.
4. The existing mount has been adequately secured to the tower structure per the mount manufacturer's specifications.
5. All components pertaining to AT&T's mounts must be tightened and re-plumbed prior to the installation of new appurtenances.
6. HDG performed a localized analysis on the mount itself and not on the supporting tower structure.

Please feel free to contact our office should you have any questions.

Respectfully Submitted,
Hudson Design Group LLC



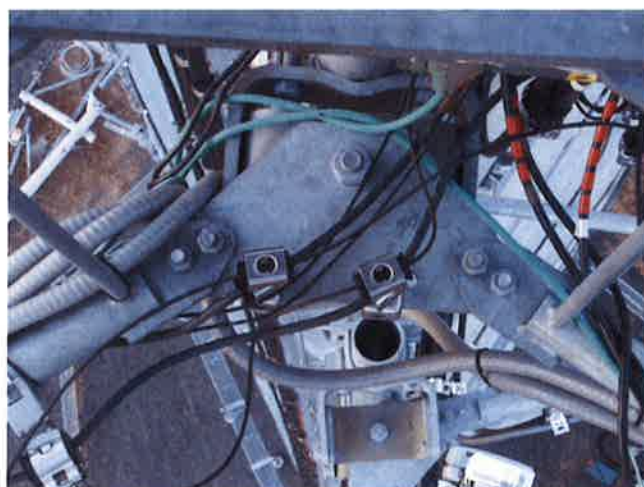
Michael Cabral
Vice President



Daniel P. Hamm, PE
Principal

FIELD PHOTOS:







HUDSON
Design Group LLC

**Wind & Ice
Calculations**

Date: 1/22/2020
 Project Name: BLOOMFIELD-8 HOSKINS RD
 Project No.: CT1001
 Designed By: ISD Checked By: MSC



2.6.5.2 Velocity Pressure Coeff:

$$K_z = 2.01 (z/z_g)^{2/\alpha}$$

z = 155 (ft)
 z_g = 1200 (ft)
 α = 7.0

K_z = 1.120

K_{zmin} ≤ K_z ≤ 2.01

Table 2-4

Exposure	Z _g	α	K _{zmin}	K _c
B	1200 ft	7.0	0.70	0.9
C	900 ft	9.5	0.85	1.0
D	700 ft	11.5	1.03	1.1

2.6.6.2 Topographic Factor:

Table 2-5

Topo. Category	K _t	f
2	0.43	1.25
3	0.53	2.0
4	0.72	1.5

$$K_{zt} = [1 + (K_c K_t / K_h)]^2$$

$$K_h = e^{(f \cdot z / H)}$$

K_{zt} = 1.279354421

K_h = 3.6388462

(If Category 1 then K_{zt} = 1.0)

K_c = 0.9 (from Table 2-4)

K_t = 0.53 (from Table 2-5)

f = 2 (from Table 2-5)

z = 155

z_s = 420 (Mean elevation of base of structure above sea level)

H = 240 (Ht. of the crest above surrounding terrain)

K_{zt} = 1.28 (from 2.6.6.2.1)

K_e = 0.98 (from 2.6.8)

Category = 3

2.6.10 Design Ice Thickness

Max Ice Thickness =

t_i = 1.50 in

Importance Factor =

I = 1.0 (from Table 2-3)

K_{iz} = 1.17 (from Sec. 2.6.10)

$$t_{iz} = t_i * I * K_{iz} * (K_{zt})^{0.35}$$

t_{iz} = 1.91 in

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2.6.9 Gust Effect Factor

2.6.9.1 Self Supporting Lattice Structures

$G_h = 1.0$ Latticed Structures > 600 ft

$G_h = 0.85$ Latticed Structures 450 ft or less

$G_h = 0.85 + 0.15 [h/150 - 3.0]$ $h =$ ht. of structure

$h = 185$ $G_h = 0.85$

2.6.9.2 Guyed Masts

$G_h = 0.85$

2.6.9.3 Pole Structures

$G_h = 1.1$

2.6.9 Appurtenances

$G_h = 1.0$

2.6.9.4 Structures Supported on Other Structures

(Cantilevered tubular or latticed spines, pole, structures on buildings (ht. : width ratio > 5))

$G_h = 1.35$ $G_h = 1.00$

2.6.11.2 Design Wind Force on Appurtenances

$F = q_z * G_h * (EPA)_A$

$q_z = 0.00256 * K_z * K_{zt} * K_s * K_e * K_d * V_{max}^2$

- $K_z = 1.120$ (from 2.6.5.2)
- $K_{zt} = 1.3$ (from 2.6.6.2.1)
- $K_s = 1.0$ (from 2.6.7)
- $K_e = 0.98$ (from 2.6.8)
- $K_d = 0.85$ (from Table 2-2)
- $V_{max} = 125$ mph (Ultimate Wind Speed)
- $V_{max(ice)} = 50$ mph
- $V_{30} = 30$ mph

$q_z = 47.99$

$q_z(ice) = 7.68$

$q_z(30) = 2.76$

Table 2-2

Structure Type	Wind Direction Probability Factor, K_d
Latticed structures with triangular, square or rectangular cross sections	0.85
Tubular pole structures, latticed structures with other cross sections, appurtenances	0.95
Tubular pole structures supporting antennas enclosed within a cylindrical shroud	1.00

Determine Ca:

Table 2-9

Force Coefficients (Ca) for Appurtenances				
Member Type		Aspect Ratio ≤ 2.5	Aspect Ratio = 7	Aspect Ratio ≥ 25
		Ca	Ca	Ca
Flat		1.2	1.4	2.0
Square/Rectangular HSS		1.2 - 2.8(r _s) ≥ 0.85	1.4 - 4.0(r _s) ≥ 0.90	2.0 - 6.0(r _s) ≥ 1.25
Round	C < 39 (Subcritical)	0.7	0.8	1.2
	39 ≤ C ≤ 78 (Transitional)	4.14/(C ^{0.485})	3.66/(C ^{0.415})	46.8/(C ^{1.0})
	C > 78 (Supercritical)	0.5	0.6	0.6

Aspect Ratio is the overall length/width ratio in the plane normal to the wind direction.
 (Aspect ratio is independent of the spacing between support points of a linear appurtenance,
 Note: Linear interpolation may be used for aspect ratios other than those shown.

Ice Thickness = **1.91 in** Angle = **0 (deg)** Equivalent Angle = **180 (deg)**

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)	Force (lbs) (30 mph)
7770 Antenna	55.0	11.0	5.0	4.20	5.00	1.31	264	61	15
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	6.44	1.38	612	129	35
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	4.86	1.31	463	98	27
800-10966 Antenna	96.0	20.0	6.9	13.33	4.80	1.30	833	165	48
800-10965 Antenna	78.7	20.0	6.9	10.93	3.94	1.26	663	132	38
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	2.25	1.20	132	32	8
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.10	1.20	151	35	9
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.20	65	18	4
B2/B66A 8843 RRH (Shielded)	14.9	5.5	13.2	0.56	2.73	1.21	33	11	2
B14 4478 RRH	18.1	8.3	13.4	1.04	2.18	1.20	60	17	3
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	4.36	1.28	32	12	2
4449 B5 RRH	14.9	13.2	10.4	1.37	1.13	1.20	79	20	5
4449 B5 RRH (Shielded)	14.9	0.0	10.4	0.00	0.00	1.20	0	5	0
TT08-19DB111-001 TMA	14.2	5.4	6.7	0.53	2.63	1.21	31	11	2
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	54	14	3
2" Pipe	2.4	12.0		0.20	0.20	1.20	11	6	1
3/4" Round Bar	0.8	12.0		0.06	0.06	2.00	6	8	0

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WIND LOADS

Angle = 30 (deg)

Ice Thickness = 1.91 in.

Equivalent Angle = 210 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	264	141	239
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	612	348	546
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	463	265	414
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	833	360	715
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	663	280	567
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	132	80	119
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	151	62	129
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	65	79	68
B2/B66A 8843 RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	33	79	44
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	60	97	69
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	32	97	48
4449 B5 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	79	62	74
4449 B5 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	39	62	45
TT08-19DB111-001 TMA	14.2	5.4	6.7	0.53	0.66	2.63	2.12	1.21	1.20	31	38	33

WIND LOADS WITH ICE:

7770 Antenna	58.8	14.8	8.8	6.05	3.60	3.97	6.67	1.27	1.39	59	38	54
OPA-65R-LCUU-H8 Antenna	96.5	18.2	10.8	12.21	7.25	5.30	8.92	1.32	1.46	124	81	113
OPA-65R-LCUU-H6 Antenna	75.8	18.6	11.2	9.80	5.91	4.07	6.76	1.27	1.39	96	63	87
800-10966 Antenna	99.8	23.8	10.7	16.51	7.43	4.19	9.31	1.28	1.48	162	84	142
800-10965 Antenna	82.5	23.8	10.7	13.65	6.14	3.46	7.70	1.24	1.42	130	67	114
RRUS-32 B30 RRH	31.0	15.9	10.8	3.43	2.33	1.95	2.87	1.20	1.22	32	22	29
RRUS-E2 B29 RRH	24.2	22.3	11.3	3.75	1.90	1.09	2.14	1.20	1.20	35	18	30
B2/B66A 8843 RRH	18.7	14.7	17.0	1.91	2.21	1.27	1.10	1.20	1.20	18	20	18
B2/B66A 8843 RRH (Shielded)	18.7	7.4	17.0	0.96	2.21	2.54	1.10	1.20	1.20	9	20	12
B14 4478 RRH	21.9	12.1	17.2	1.84	2.62	1.81	1.27	1.20	1.20	17	24	19
B14 4478 RRH (Shielded)	21.9	6.1	17.2	0.92	2.62	3.62	1.27	1.25	1.20	9	24	13
4449 B5 RRH	18.7	17.0	14.2	2.21	1.85	1.10	1.32	1.20	1.20	20	17	20
4449 B5 RRH (Shielded)	18.7	8.5	14.2	1.11	1.85	2.20	1.32	1.20	1.20	10	17	12
TT08-19DB111-001 TMA	18.0	9.2	10.5	1.15	1.32	1.95	1.71	1.20	1.20	11	12	11

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	15	8	13
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	35	20	31
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	27	15	24
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	48	21	41
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	38	16	33
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	8	5	7
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	9	4	7
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	4	5	4
B2/B66A 8843 RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	2	5	3
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	6	4
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	2	6	3
4449 B5 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	5	4	4
4449 B5 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	2	4	3
TT08-19DB111-001 TMA	14.2	5.4	6.7	0.53	0.66	2.63	2.12	1.21	1.20	2	2	2

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WIND LOADS

Angle = 60 (deg)

Ice Thickness = 1.91 in.

Equivalent Angle = 240 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	264	141	171
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	612	348	414
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	463	265	314
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	833	360	478
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	663	280	376
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	132	80	93
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	151	62	84
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	65	79	75
B2/B66A 8843 RRH (Shielded)	14.9	8.2	13.2	0.85	1.37	1.82	1.13	1.20	1.20	49	79	71
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	60	97	88
B14 4478 RRH (Shielded)	18.1	6.2	13.4	0.78	1.68	2.91	1.35	1.22	1.20	46	97	84
4449 B5 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	79	62	66
4449 B5 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	59	62	61
TT08-19DB111-001 TMA	14.2	5.4	6.7	0.53	0.66	2.63	2.12	1.21	1.20	31	38	36

WIND LOADS WITH ICE:

7770 Antenna	58.8	14.8	8.8	6.05	3.60	3.97	6.67	1.27	1.39	59	38	43
OPA-65R-LCUU-H8 Antenna	96.5	18.2	10.8	12.21	7.25	5.30	8.92	1.32	1.46	124	81	92
OPA-65R-LCUU-H6 Antenna	75.8	18.6	11.2	9.80	5.91	4.07	6.76	1.27	1.39	96	63	71
800-10966 Antenna	99.8	23.8	10.7	16.51	7.43	4.19	9.31	1.28	1.48	162	84	104
800-10965 Antenna	82.5	23.8	10.7	13.65	6.14	3.46	7.70	1.24	1.42	130	67	83
RRUS-32 B30 RRH	31.0	15.9	10.8	3.43	2.33	1.95	2.87	1.20	1.22	32	22	24
RRUS-E2 B29 RRH	24.2	22.3	11.3	3.75	1.90	1.09	2.14	1.20	1.20	35	18	22
B2/B66A 8843 RRH	18.7	14.7	17.0	1.91	2.21	1.27	1.10	1.20	1.20	18	20	20
B2/B66A 8843 RRH (Shielded)	18.7	11.0	17.0	1.43	2.21	1.70	1.10	1.20	1.20	13	20	19
B14 4478 RRH	21.9	12.1	17.2	1.84	2.62	1.81	1.27	1.20	1.20	17	24	22
B14 4478 RRH (Shielded)	21.9	9.1	17.2	1.38	2.62	2.41	1.27	1.20	1.20	13	24	21
4449 B5 RRH	18.7	17.0	14.2	2.21	1.85	1.10	1.32	1.20	1.20	20	17	18
4449 B5 RRH (Shielded)	18.7	12.8	14.2	1.66	1.85	1.47	1.32	1.20	1.20	15	17	17
TT08-19DB111-001 TMA	18.0	9.2	10.5	1.15	1.32	1.95	1.71	1.20	1.20	11	12	12

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	15	8	10
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	35	20	24
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	27	15	18
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	48	21	28
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	38	16	22
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	8	5	5
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	9	4	5
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	4	5	4
B2/B66A 8843 RRH (Shielded)	14.9	8.2	13.2	0.85	1.37	1.82	1.13	1.20	1.20	3	5	4
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	6	5
B14 4478 RRH (Shielded)	18.1	6.2	13.4	0.78	1.68	2.91	1.35	1.22	1.20	3	6	5
4449 B5 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	5	4	4
4449 B5 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	9	4	4
TT08-19DB111-001 TMA	14.2	5.4	6.7	0.53	0.66	2.63	2.12	1.21	1.20	2	2	2

Date: 1/22/2020
 Project Name: BLOOMFIELD-8 HOSKINS RD
 Project No.: CT1001
 Designed By: ISD Checked By: MSC



WIND LOADS

Angle = 90 (deg) Ice Thickness = 1.91 in. Equivalent Angle = 270 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	264	141	141
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	612	348	348
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	463	265	265
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	833	360	360
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	663	280	280
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	132	80	80
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	151	62	62
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	65	79	79
B2/B66A 8843 RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	33	79	79
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	60	97	97
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	32	97	97
4449 B5 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	79	62	62
4449 B5 RRH (Shielded)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	62	79	79
TT08-19DB111-001 TMA	14.2	5.4	6.7	0.53	0.66	2.63	2.12	1.21	1.20	31	38	38

WIND LOADS WITH ICE:

7770 Antenna	58.8	14.8	8.8	6.05	3.60	3.97	6.67	1.27	1.39	59	38	38
OPA-65R-LCUU-H8 Antenna	96.5	18.2	10.8	12.21	7.25	5.30	8.92	1.32	1.46	124	81	81
OPA-65R-LCUU-H6 Antenna	75.8	18.6	11.2	9.80	5.91	4.07	6.76	1.27	1.39	96	63	63
800-10966 Antenna	99.8	23.8	10.7	16.51	7.43	4.19	9.31	1.28	1.48	162	84	84
800-10965 Antenna	82.5	23.8	10.7	13.65	6.14	3.46	7.70	1.24	1.42	130	67	67
RRUS-32 B30 RRH	31.0	15.9	10.8	3.43	2.33	1.95	2.87	1.20	1.22	32	22	22
RRUS-E2 B29 RRH	24.2	22.3	11.3	3.75	1.90	1.09	2.14	1.20	1.20	35	18	18
B2/B66A 8843 RRH	18.7	14.7	17.0	1.91	2.21	1.27	1.10	1.20	1.20	18	20	20
B2/B66A 8843 RRH (Shielded)	18.7	9.3	17.0	1.20	2.21	2.02	1.10	1.20	1.20	11	20	20
B14 4478 RRH	21.9	12.1	17.2	1.84	2.62	1.81	1.27	1.20	1.20	17	24	24
B14 4478 RRH (Shielded)	21.9	8.0	17.2	1.21	2.62	2.75	1.27	1.21	1.20	11	24	24
4449 B5 RRH	18.7	17.0	14.2	2.21	1.85	1.10	1.32	1.20	1.20	20	17	17
4449 B5 RRH (Shielded)	18.7	14.2	17.0	1.85	2.21	1.32	1.10	1.20	1.20	17	20	20
TT08-19DB111-001 TMA	18.0	9.2	10.5	1.15	1.32	1.95	1.71	1.20	1.20	11	12	12

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	15	8	8
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	35	20	20
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	27	15	15
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	48	21	21
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	38	16	16
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	8	5	5
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	9	4	4
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	4	5	5
B2/B66A 8843 RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	2	5	5
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	6	6
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	2	6	6
4449 B5 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	5	4	4
4449 B5 RRH (Shielded)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	4	5	5
TT08-19DB111-001 TMA	14.2	5.4	6.7	0.53	0.66	2.63	2.12	1.21	1.20	2	2	2

Date: 1/22/2020
 Project Name: BLOOMFIELD-8 HOSKINS RD
 Project No.: CT1001
 Designed By: ISD Checked By: MSC



WIND LOADS

Angle = 120 (deg)

Ice Thickness = 1.91 in.

Equivalent Angle = 300 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	264	141	171
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	612	348	414
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	463	265	314
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	833	360	478
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	663	280	376
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	132	80	93
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	151	62	84
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	65	79	75
B2/B66A 8843 RRH (Shielded)	14.9	8.2	13.2	0.85	1.37	1.82	1.13	1.20	1.20	49	79	71
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	60	97	88
B14 4478 RRH (Shielded)	18.1	6.2	13.4	0.78	1.68	2.91	1.35	1.22	1.20	46	97	84
4449 B5 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	79	62	66
4449 B5 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	59	62	61
TT08-19DB111-001 TMA	14.2	5.4	6.7	0.53	0.66	2.63	2.12	1.21	1.20	31	38	36

WIND LOADS WITH ICE:

7770 Antenna	58.8	14.8	8.8	6.05	3.60	3.97	6.67	1.27	1.39	59	38	43
OPA-65R-LCUU-H8 Antenna	96.5	18.2	10.8	12.21	7.25	5.30	8.92	1.32	1.46	124	81	92
OPA-65R-LCUU-H6 Antenna	75.8	18.6	11.2	9.80	5.91	4.07	6.76	1.27	1.39	96	63	71
800-10966 Antenna	99.8	23.8	10.7	16.51	7.43	4.19	9.31	1.28	1.48	162	84	104
800-10965 Antenna	82.5	23.8	10.7	13.65	6.14	3.46	7.70	1.24	1.42	130	67	83
RRUS-32 B30 RRH	31.0	15.9	10.8	3.43	2.33	1.95	2.87	1.20	1.22	32	22	24
RRUS-E2 B29 RRH	24.2	22.3	11.3	3.75	1.90	1.09	2.14	1.20	1.20	35	18	22
B2/B66A 8843 RRH	18.7	14.7	17.0	1.91	2.21	1.27	1.10	1.20	1.20	18	20	20
B2/B66A 8843 RRH (Shielded)	18.7	11.0	17.0	1.43	2.21	1.70	1.10	1.20	1.20	13	20	19
B14 4478 RRH	21.9	12.1	17.2	1.84	2.62	1.81	1.27	1.20	1.20	17	24	22
B14 4478 RRH (Shielded)	21.9	9.1	17.2	1.38	2.62	2.41	1.27	1.20	1.20	13	24	21
4449 B5 RRH	18.7	17.0	14.2	2.21	1.85	1.10	1.32	1.20	1.20	20	17	18
4449 B5 RRH (Shielded)	18.7	12.8	14.2	1.66	1.85	1.47	1.32	1.20	1.20	15	17	17
TT08-19DB111-001 TMA	18.0	9.2	10.5	1.15	1.32	1.95	1.71	1.20	1.20	11	12	12

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	15	8	10
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	35	20	24
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	27	15	18
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	48	21	28
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	38	16	22
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	8	5	5
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	9	4	5
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	4	5	4
B2/B66A 8843 RRH (Shielded)	14.9	8.2	13.2	0.85	1.37	1.82	1.13	1.20	1.20	3	5	4
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	6	5
B14 4478 RRH (Shielded)	18.1	6.2	13.4	0.78	1.68	2.91	1.35	1.22	1.20	3	6	5
4449 B5 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	5	4	4
4449 B5 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	3	4	4
TT08-19DB111-001 TMA	14.2	5.4	6.7	0.53	0.66	2.63	2.12	1.21	1.20	2	2	2

Date: 1/22/2020
 Project Name: BLOOMFIELD-8 HOSKINS RD
 Project No.: CT1001
 Designed By: ISD Checked By: MSC



WIND LOADS

Angle = 150 (deg)

Ice Thickness = 1.91 in.

Equivalent Angle = 330 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	264	141	233
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	612	348	546
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	463	265	414
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	833	360	715
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	663	280	567
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	132	80	119
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	151	62	129
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	65	79	68
B2/B66A 8843 RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	33	79	44
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	60	97	69
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	32	97	48
4449 B5 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	79	62	74
4449 B5 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	39	62	45
TT08-19DB111-001 TMA	14.2	5.4	6.7	0.53	0.66	2.63	2.12	1.21	1.20	31	38	33

WIND LOADS WITH ICE:

7770 Antenna	58.8	14.8	8.8	6.05	3.60	3.97	6.67	1.27	1.39	59	38	54
OPA-65R-LCUU-H8 Antenna	96.5	18.2	10.8	12.21	7.25	5.30	8.92	1.32	1.46	124	81	113
OPA-65R-LCUU-H6 Antenna	75.8	18.6	11.2	9.80	5.91	4.07	6.76	1.27	1.39	96	63	87
800-10966 Antenna	99.8	23.8	10.7	16.51	7.43	4.19	9.31	1.28	1.48	162	84	142
800-10965 Antenna	82.5	23.8	10.7	13.65	6.14	3.46	7.70	1.24	1.42	130	67	114
RRUS-32 B30 RRH	31.0	15.9	10.8	3.43	2.33	1.95	2.87	1.20	1.22	32	22	29
RRUS-E2 B29 RRH	24.2	22.3	11.3	3.75	1.90	1.09	2.14	1.20	1.20	35	18	30
B2/B66A 8843 RRH	18.7	14.7	17.0	1.91	2.21	1.27	1.10	1.20	1.20	18	20	18
B2/B66A 8843 RRH (Shielded)	18.7	7.4	17.0	0.96	2.21	2.54	1.10	1.20	1.20	9	20	12
B14 4478 RRH	21.9	12.1	17.2	1.84	2.62	1.81	1.27	1.20	1.20	17	24	19
B14 4478 RRH (Shielded)	21.9	6.1	17.2	0.92	2.62	3.62	1.27	1.25	1.20	9	24	13
4449 B5 RRH	18.7	17.0	14.2	2.21	1.85	1.10	1.32	1.20	1.20	20	17	20
4449 B5 RRH (Shielded)	18.7	8.5	14.2	1.11	1.85	2.20	1.32	1.20	1.20	10	17	12
TT08-19DB111-001 TMA	18.0	9.2	10.5	1.15	1.32	1.95	1.71	1.20	1.20	11	12	11

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	15	8	13
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	35	20	31
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	27	15	24
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	48	21	41
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	38	16	33
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	8	5	7
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	9	4	7
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	4	5	4
B2/B66A 8843 RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	2	5	3
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	6	4
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	2	6	3
4449 B5 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	5	4	4
4449 B5 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	2	4	3
TT08-19DB111-001 TMA	14.2	5.4	6.7	0.53	0.66	2.63	2.12	1.21	1.20	2	2	2

Date: 1/22/2020

Project Name: BLOOMFIELD-8 HOSKINS RD

Project No.: CT1001

Designed By: ISD Checked By: MSC



HUDSON
Design Group LLC

ICE WEIGHT CALCULATIONS

Thickness of ice: 1.91 in.
Density of ice: 56 pcf

7770 Antenna

Weight of ice based on total radial SF area:
Height (in): 55.0
Width (in): 11.0
Depth (in): 5.0
Total weight of ice on object: 150 lbs
Weight of object: 35.0 lbs
Combined weight of ice and object: 185 lbs

OPA-65R-LCUU-H8 Antenna

Weight of ice based on total radial SF area:
Height (in): 92.7
Width (in): 14.4
Depth (in): 7.0
Total weight of ice on object: 323 lbs
Weight of object: 88.0 lbs
Combined weight of ice and object: 411 lbs

OPA-65R-LCUU-H6 Antenna

Weight of ice based on total radial SF area:
Height (in): 72.0
Width (in): 14.8
Depth (in): 7.4
Total weight of ice on object: 258 lbs
Weight of object: 73.0 lbs
Combined weight of ice and object: 331 lbs

800-10966 Antenna

Weight of ice based on total radial SF area:
Height (in): 96.0
Width (in): 20.0
Depth (in): 6.9
Total weight of ice on object: 431 lbs
Weight of object: 115.0 lbs
Combined weight of ice and object: 546 lbs

800-10965 Antenna

Weight of ice based on total radial SF area:
Height (in): 78.7
Width (in): 20.0
Depth (in): 6.9
Total weight of ice on object: 353 lbs
Weight of object: 109.0 lbs
Combined weight of ice and object: 462 lbs

RRUS-32 B30 RRH

Weight of ice based on total radial SF area:
Height (in): 27.2
Width (in): 12.1
Depth (in): 7.0
Total weight of ice on object: 84 lbs
Weight of object: 60.0 lbs
Combined weight of ice and object: 144 lbs

RRUS-E2 B29 RRH

Weight of ice based on total radial SF area:
Height (in): 20.4
Width (in): 18.5
Depth (in): 7.5
Total weight of ice on object: 87 lbs
Weight of object: 53.0 lbs
Combined weight of ice and object: 140 lbs

B2/B66A 8843 RRH

Weight of ice based on total radial SF area:
Height (in): 14.9
Width (in): 13.2
Depth (in): 10.9
Total weight of ice on object: 55 lbs
Weight of object: 72.0 lbs
Combined weight of ice and object: 127 lbs

B14 4478 RRH

Weight of ice based on total radial SF area:
Height (in): 18.1
Width (in): 13.4
Depth (in): 8.3
Total weight of ice on object: 62 lbs
Weight of object: 60.0 lbs
Combined weight of ice and object: 122 lbs

4449 B5 RRH

Weight of ice based on total radial SF area:
Height (in): 14.9
Width (in): 13.2
Depth (in): 10.4
Total weight of ice on object: 54 lbs
Weight of object: 73.0 lbs
Combined weight of ice and object: 127 lbs

TT08-19DB111-001 TMA

Weight of ice based on total radial SF area:
Height (in): 14.2
Width (in): 5.4
Depth (in): 6.7
Total weight of ice on object: 29 lbs
Weight of object: 22.0 lbs
Combined weight of ice and object: 51 lbs

Squid Surge Arrestor

Weight of ice based on total radial SF area:
Depth (in): 24.0
Diameter(in): 9.7
Total weight of ice on object: 54 lbs
Weight of object: 33 lbs
Combined weight of ice and object: 87 lbs

2" pipe

Per foot weight of ice:
diameter (in): 2.38
Per foot weight of ice on object: 10 plf

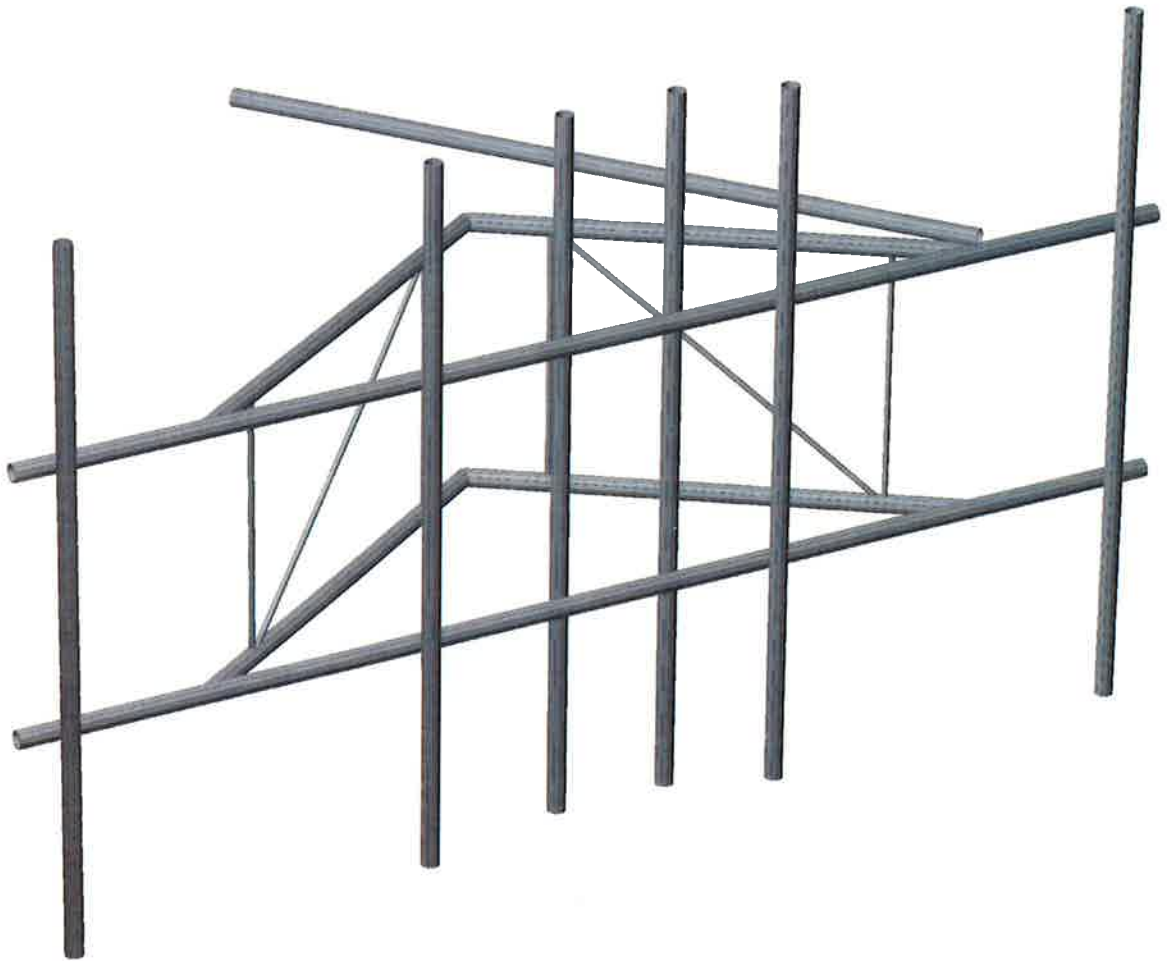
3/4" Round Bar

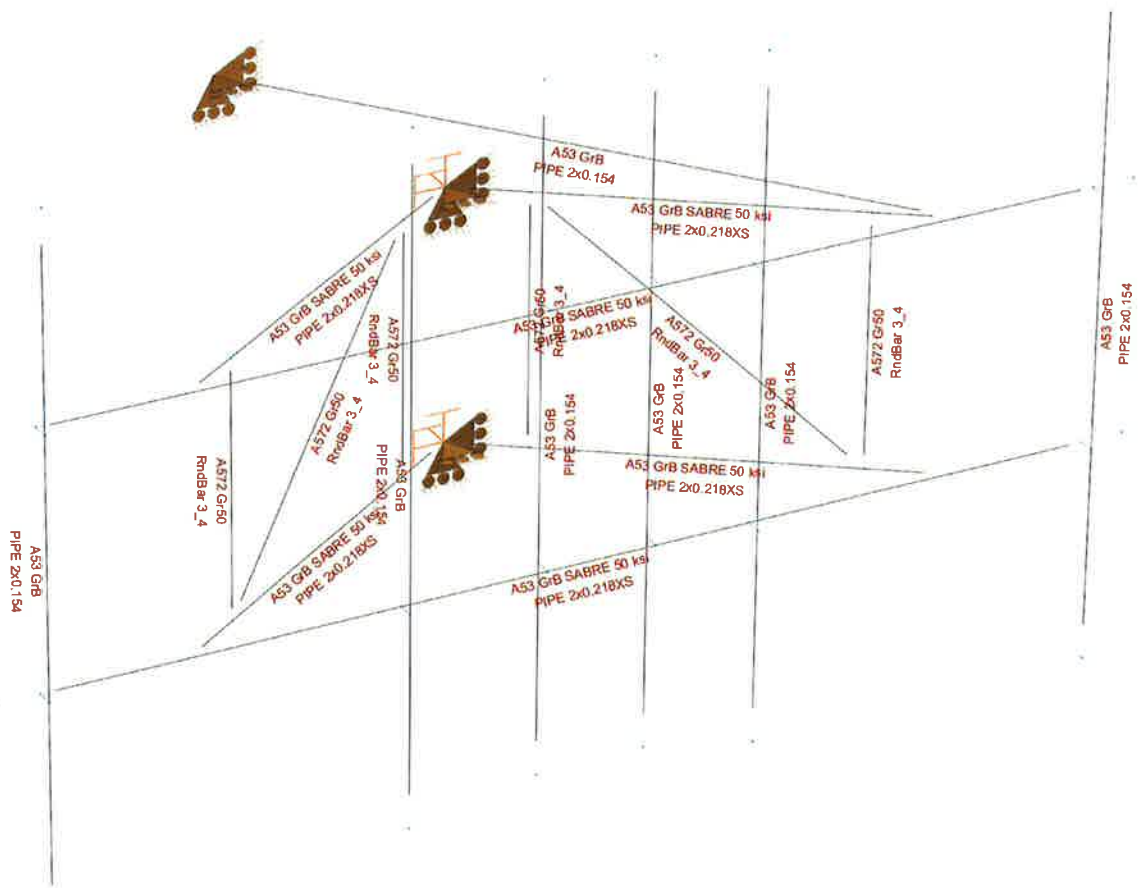
Per foot weight of ice:
diameter (in): 0.75
Per foot weight of ice on object: 6 plf



HUDSON
Design Group LLC

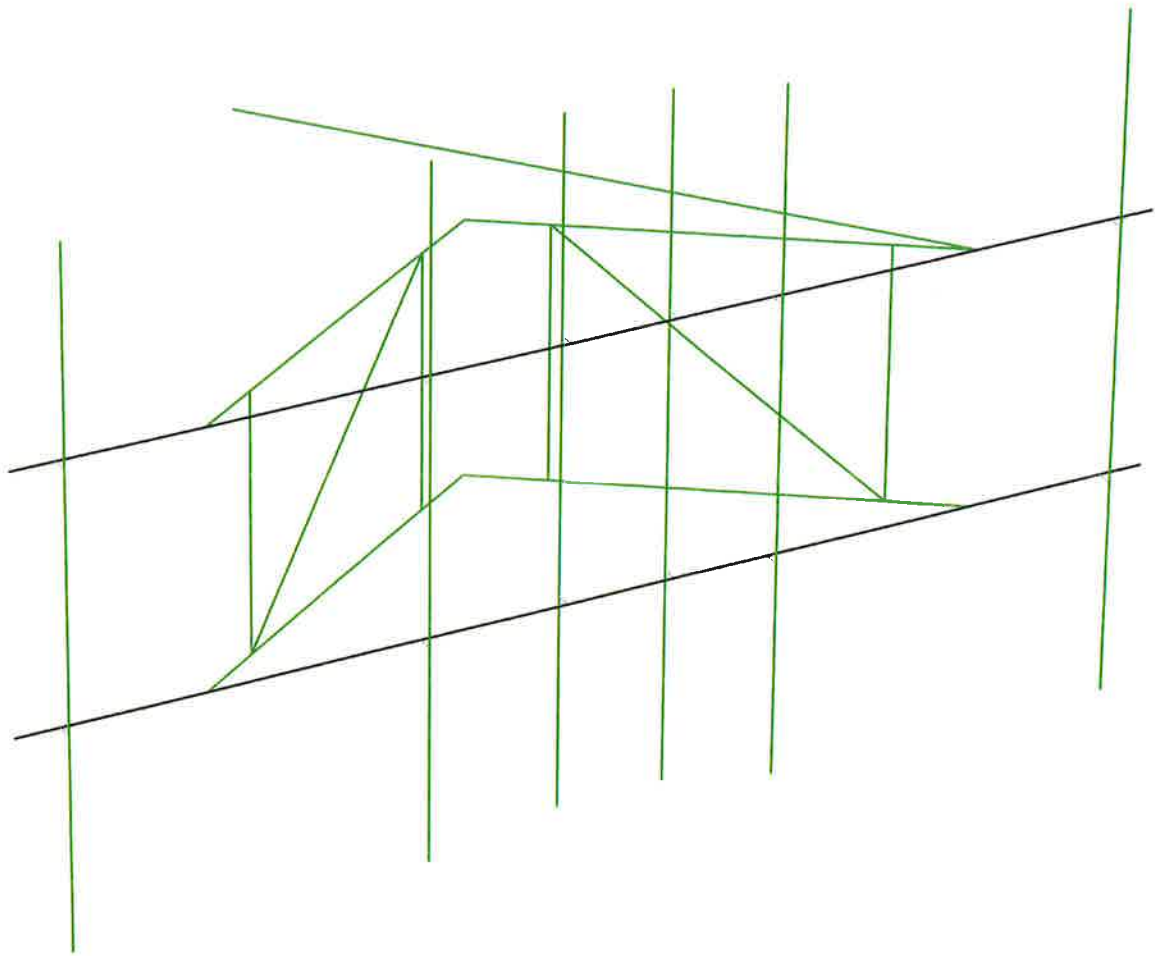
**Mount Calculations
(Existing Conditions)**

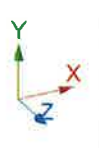
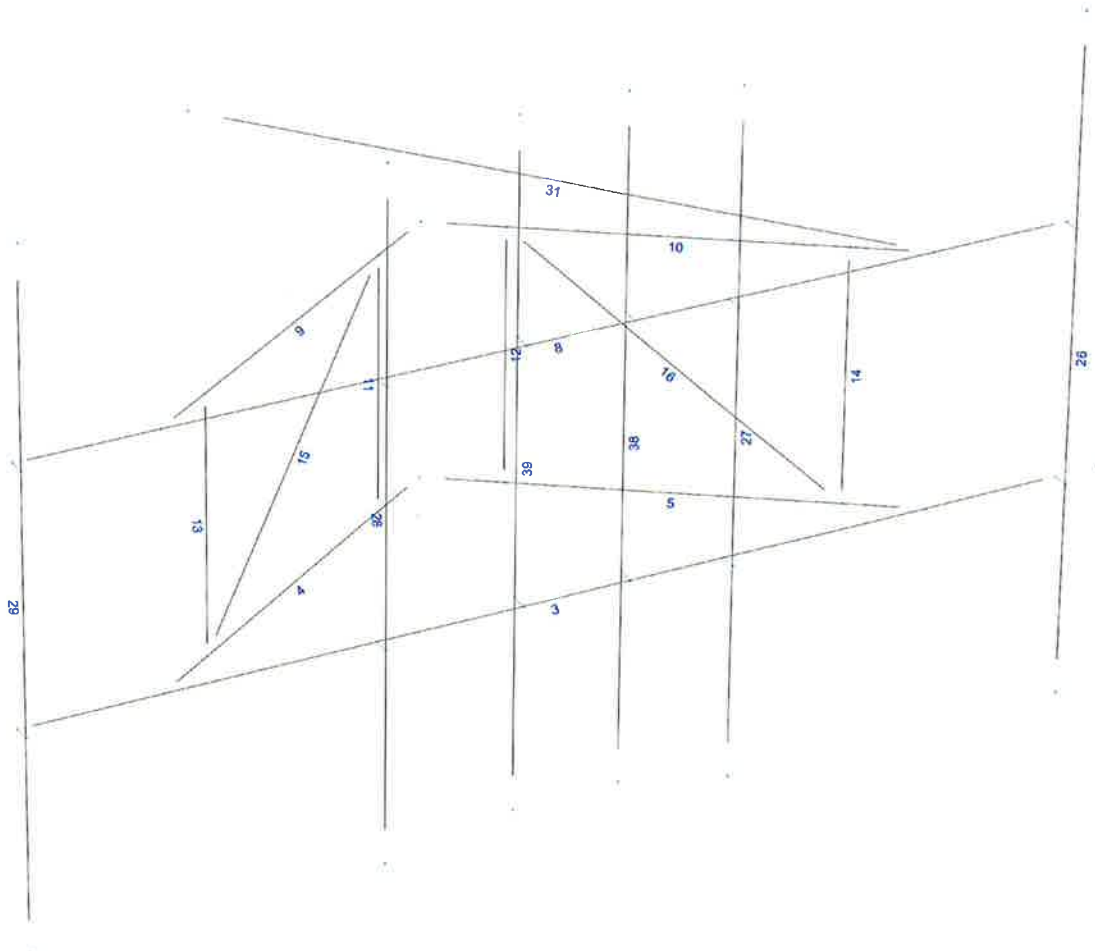




Design status

-  Not designed
-  Error on design
-  Design O.K.
-  With warnings





Current Date: 1/22/2020 4:07 PM

Units system: English

File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1001\2020\LTE 6C-7C\CT1001 (LTE 6C-7C) (2020).retx

Load data

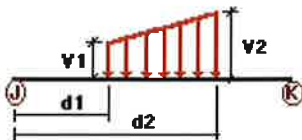
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
D	Dead Load	No	DL
Wo	Wind Load (NO ICE)	No	WIND
W30	WL 30deg	No	WIND
W60	WL 60deg	No	WIND
W90	WL 90deg	No	WIND
W120	WL 120deg	No	WIND
W150	WL 150deg	No <td WIND	
Di	Ice Load	No	LL
WI0	WL ICE 0deg	No	WIND
WI30	WL ICE 30deg	No	WIND
WI60	WL ICE 60deg	No	WIND
WI90	WL ICE 90deg	No	WIND
WI120	WL ICE 120deg	No	WIND
WI150	WL ICE 150deg	No	WIND
WL0	WL 30 mph 0deg	No	WIND
WL30	WL 30 mph 30deg	No	WIND
WL60	WL 30 mph 60deg	No	WIND
WL90	WL 30 mph 90deg	No	WIND
WL120	WL 30 mph 120deg	No	WIND
WL150	WL 30 mph 150deg	No	WIND
LL1	250 lb Live Load Center of Mount	No	LL
LL2	250 lb Live Load Right End of Mount	No	LL
LL3	250 lb Live Load Left End of Mount	No	LL
LLa1	250 lb Live Load Antenna 1	No	LL
LLa2	250 lb Live Load Antenna 2	No	LL
LLa3	250 lb Live Load Antenna 3	No	LL
LLa4	250 lb Live Load Antenna 4	No	LL

Distributed force on members

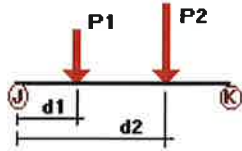


Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
Wo	3	z	-0.011	0.00	0.00	No	0.00	No
	4	z	-0.011	0.00	0.00	No	0.00	No
	5	z	-0.011	0.00	0.00	No	0.00	No
	8	z	-0.011	0.00	0.00	No	0.00	No
	9	z	-0.011	0.00	0.00	No	0.00	No
	10	z	-0.011	0.00	0.00	No	0.00	No
	11	z	-0.006	0.00	0.00	No	0.00	No
	12	z	-0.006	0.00	0.00	No	0.00	No
	13	z	-0.006	0.00	0.00	No	0.00	No
	14	z	-0.006	0.00	0.00	No	0.00	No
	15	z	-0.006	0.00	0.00	No	0.00	No
	16	z	-0.006	0.00	0.00	No	0.00	No
	31	z	-0.011	0.00	0.00	No	0.00	No
	38	z	-0.011	0.00	0.00	No	0.00	No
	39	z	-0.011	0.00	0.00	No	0.00	No
	W30	3	z	-0.011	0.00	0.00	No	0.00
4		z	-0.011	0.00	0.00	No	0.00	No
5		z	-0.011	0.00	0.00	No	0.00	No
8		z	-0.011	0.00	0.00	No	0.00	No
9		z	-0.011	0.00	0.00	No	0.00	No
10		z	-0.011	0.00	0.00	No	0.00	No
11		z	-0.006	0.00	0.00	No	0.00	No
12		z	-0.006	0.00	0.00	No	0.00	No
13		z	-0.006	0.00	0.00	No	0.00	No
14		z	-0.006	0.00	0.00	No	0.00	No
15		z	-0.006	0.00	0.00	No	0.00	No
16		z	-0.006	0.00	0.00	No	0.00	No
27		z	-0.011	0.00	0.00	No	0.00	No
26		z	-0.011	0.00	0.00	No	0.00	No
29		z	-0.011	0.00	0.00	No	0.00	No
28		z	-0.011	0.00	0.00	No	0.00	No
31	z	-0.011	0.00	0.00	No	0.00	No	
38	z	-0.011	0.00	0.00	No	0.00	No	
39	z	-0.011	0.00	0.00	No	0.00	No	
W60	3	x	-0.011	0.00	0.00	No	0.00	No
	4	x	-0.011	0.00	0.00	No	0.00	No
	5	x	-0.011	0.00	0.00	No	0.00	No
	8	x	-0.011	0.00	0.00	No	0.00	No
	9	x	-0.011	0.00	0.00	No	0.00	No
	10	x	-0.011	0.00	0.00	No	0.00	No
	11	x	-0.006	0.00	0.00	No	0.00	No
	12	x	-0.006	0.00	0.00	No	0.00	No
	13	x	-0.006	0.00	0.00	No	0.00	No
	14	x	-0.006	0.00	0.00	No	0.00	No
	15	x	-0.006	0.00	0.00	No	0.00	No
	16	x	-0.006	0.00	0.00	No	0.00	No
	27	x	-0.011	0.00	0.00	No	0.00	No
	26	x	-0.011	0.00	0.00	No	0.00	No
	29	x	-0.011	0.00	0.00	No	0.00	No
	28	x	-0.011	0.00	0.00	No	0.00	No
31	x	-0.011	0.00	0.00	No	0.00	No	
38	x	-0.011	0.00	0.00	No	0.00	No	
39	x	-0.011	0.00	0.00	No	0.00	No	
W90	4	x	-0.011	0.00	0.00	No	0.00	No
	5	x	-0.011	0.00	0.00	No	0.00	No
	9	x	-0.011	0.00	0.00	No	0.00	No
	10	x	-0.011	0.00	0.00	No	0.00	No
	11	x	-0.006	0.00	0.00	No	0.00	No
	12	x	-0.006	0.00	0.00	No	0.00	No
13	x	-0.006	0.00	0.00	No	0.00	No	

	14	x	-0.006	0.00	0.00	No	0.00	No
	15	x	-0.006	0.00	0.00	No	0.00	No
	16	x	-0.006	0.00	0.00	No	0.00	No
	27	x	-0.011	0.00	0.00	No	0.00	No
	26	x	-0.011	0.00	0.00	No	0.00	No
	29	x	-0.011	0.00	0.00	No	0.00	No
	28	x	-0.011	0.00	0.00	No	0.00	No
	31	x	-0.011	0.00	0.00	No	0.00	No
	38	x	-0.011	0.00	0.00	No	0.00	No
	39	x	-0.011	0.00	0.00	No	0.00	No
W120	3	x	-0.011	0.00	0.00	No	0.00	No
	4	x	-0.011	0.00	0.00	No	0.00	No
	5	x	-0.011	0.00	0.00	No	0.00	No
	8	x	-0.011	0.00	0.00	No	0.00	No
	9	x	-0.011	0.00	0.00	No	0.00	No
	10	x	-0.011	0.00	0.00	No	0.00	No
	11	x	-0.006	0.00	0.00	No	0.00	No
	12	x	-0.006	0.00	0.00	No	0.00	No
	13	x	-0.006	0.00	0.00	No	0.00	No
	14	x	-0.006	0.00	0.00	No	0.00	No
	15	x	-0.006	0.00	0.00	No	0.00	No
	16	x	-0.006	0.00	0.00	No	0.00	No
	27	x	-0.011	0.00	0.00	No	0.00	No
	26	x	-0.011	0.00	0.00	No	0.00	No
	29	x	-0.011	0.00	0.00	No	0.00	No
	28	x	-0.011	0.00	0.00	No	0.00	No
	31	x	-0.011	0.00	0.00	No	0.00	No
	38	x	-0.011	0.00	0.00	No	0.00	No
	39	x	-0.011	0.00	0.00	No	0.00	No
W150	3	z	0.011	0.00	0.00	No	0.00	No
	4	z	0.011	0.00	0.00	No	0.00	No
	5	z	0.011	0.00	0.00	No	0.00	No
	8	z	0.011	0.00	0.00	No	0.00	No
	9	z	0.011	0.00	0.00	No	0.00	No
	10	z	0.011	0.00	0.00	No	0.00	No
	11	z	0.006	0.00	0.00	No	0.00	No
	12	z	0.006	0.00	0.00	No	0.00	No
	13	z	0.006	0.00	0.00	No	0.00	No
	14	z	0.006	0.00	0.00	No	0.00	No
	15	z	0.006	0.00	0.00	No	0.00	No
	16	z	0.006	0.00	0.00	No	0.00	No
	27	z	0.011	0.00	0.00	No	0.00	No
	26	z	0.011	0.00	0.00	No	0.00	No
	29	z	0.011	0.00	0.00	No	0.00	No
	28	z	0.011	0.00	0.00	No	0.00	No
	31	z	0.011	0.00	0.00	No	0.00	No
	38	z	0.011	0.00	0.00	No	0.00	No
	39	z	0.011	0.00	0.00	No	0.00	No
Di	3	y	-0.01	0.00	0.00	No	0.00	No
	4	y	-0.01	0.00	0.00	No	0.00	No
	5	y	-0.01	0.00	0.00	No	0.00	No
	8	y	-0.01	0.00	0.00	No	0.00	No
	9	y	-0.01	0.00	0.00	No	0.00	No
	10	y	-0.01	0.00	0.00	No	0.00	No
	11	y	-0.006	0.00	0.00	No	0.00	No
	12	y	-0.006	0.00	0.00	No	0.00	No
	13	y	-0.006	0.00	0.00	No	0.00	No
	14	y	-0.006	0.00	0.00	No	0.00	No
	15	y	-0.006	0.00	0.00	No	0.00	No
	16	y	-0.006	0.00	0.00	No	0.00	No

27	y	-0.01	0.00	0.00	No	0.00	No
26	y	-0.01	0.00	0.00	No	0.00	No
29	y	-0.01	0.00	0.00	No	0.00	No
28	y	-0.01	0.00	0.00	No	0.00	No
31	y	-0.01	0.00	0.00	No	0.00	No
38	y	-0.01	0.00	0.00	No	0.00	No
39	y	-0.01	0.00	0.00	No	0.00	No

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%	
D	27	y	-0.044	0.50	No	
		y	-0.044	7.50	No	
	26	y	-0.018	0.50	No	
		y	-0.018	5.00	No	
		y	-0.022	50.00	Yes	
	29	y	-0.058	0.50	No	
		y	-0.058	7.50	No	
		y	-0.073	1.50	No	
	28	y	-0.058	0.50	No	
		y	-0.058	7.50	No	
		y	-0.072	1.50	No	
		y	-0.06	1.50	No	
	38	y	-0.06	3.00	No	
		y	-0.053	4.00	No	
	Wo	27	z	-0.306	0.50	No
z			-0.306	7.50	No	
26		z	-0.133	0.50	No	
		z	-0.133	5.00	No	
29		z	-0.417	0.50	No	
		z	-0.417	7.50	No	
28		z	-0.417	0.50	No	
		z	-0.417	7.50	No	
		z	-0.033	1.50	No	
		z	-0.032	1.50	No	
38		z	-0.132	3.00	No	
		z	-0.151	4.00	No	
W30		27	3	-0.273	0.50	No
			3	-0.273	7.50	No
		26	3	-0.117	0.50	No
	3		-0.117	5.00	No	
	29	3	-0.033	50.00	Yes	
		3	-0.358	0.50	No	
		3	-0.358	7.50	No	
	28	3	-0.045	1.50	No	
		3	-0.358	0.50	No	
		3	-0.358	7.50	No	
3		-0.044	1.50	No		
	3	-0.048	1.50	No		

	38	3	-0.119	3.00	No
	39	3	-0.129	4.00	No
W60	27	3	-0.207	0.50	No
		3	-0.207	7.50	No
	26	3	-0.086	0.50	No
		3	-0.086	5.00	No
		3	-0.036	50.00	Yes
	29	3	-0.24	0.50	No
		3	-0.24	7.50	No
		3	-0.061	1.50	No
	28	3	-0.24	0.50	No
		3	-0.24	7.50	No
		3	-0.084	1.50	No
	38	3	-0.093	3.00	No
	39	3	-0.084	4.00	No
W90	27	x	-0.174	0.50	No
		x	-0.174	7.50	No
	26	x	-0.071	0.50	No
		x	-0.071	5.00	No
		x	-0.038	50.00	Yes
	29	x	-0.18	0.50	No
		x	-0.18	7.50	No
		x	-0.079	1.50	No
	28	x	-0.18	0.50	No
		x	-0.18	7.50	No
		x	-0.097	1.50	No
	38	x	-0.08	3.00	No
	39	x	-0.062	4.00	No
W120	27	2	-0.207	0.50	No
		2	-0.207	7.50	No
	26	2	-0.086	0.50	No
		2	-0.086	5.00	No
		2	-0.036	50.00	Yes
	29	2	-0.24	0.50	No
		2	-0.24	7.50	No
		2	-0.061	1.50	No
	28	2	-0.24	0.50	No
		2	-0.24	7.50	No
		2	-0.071	1.50	No
		2	-0.084	1.50	No
	38	2	-0.093	3.00	No
	39	2	-0.084	4.00	No
W150	27	2	-0.273	0.50	No
		2	-0.273	7.50	No
	26	2	-0.117	0.50	No
		2	-0.117	5.00	No
		2	-0.033	50.00	Yes
	29	2	-0.358	0.50	No
		2	-0.358	7.50	No
		2	-0.045	1.50	No
	28	2	-0.358	0.50	No
		2	-0.358	7.50	No
		2	-0.044	1.50	No
		2	-0.048	1.50	No
	38	2	-0.119	3.00	No
	39	2	-0.129	4.00	No
Di	27	y	-0.162	0.50	No
		y	-0.162	7.50	No
	26	y	-0.075	0.50	No
		y	-0.075	5.00	No

		y	-0.029	50.00	Yes
	29	y	-0.216	0.50	No
		y	-0.216	7.50	No
		y	-0.054	1.50	No
	28	y	-0.216	0.50	No
		y	-0.216	7.50	No
		y	-0.055	1.50	No
		Y	-0.062	1.50	No
	38	y	-0.084	3.00	No
	39	y	-0.087	4.00	No
WI0	27	z	-0.065	0.50	No
		z	-0.065	7.50	No
	26	z	-0.031	0.50	No
		z	-0.031	5.00	No
	29	z	-0.083	0.50	No
		z	-0.083	7.50	No
	28	z	-0.083	0.50	No
		z	-0.083	7.50	No
		z	-0.011	1.50	No
		z	-0.012	1.50	No
	38	z	-0.032	3.00	No
	39	z	-0.035	4.00	No
WI30	27	3	-0.057	0.50	No
		3	-0.057	7.50	No
	26	3	-0.027	0.50	No
		3	-0.027	5.00	No
		3	-0.011	50.00	Yes
	29	3	-0.072	0.50	No
		3	-0.072	7.50	No
		3	-0.012	1.50	No
	28	3	-0.072	0.50	No
		3	-0.072	7.50	No
		3	-0.012	1.50	No
		3	-0.013	1.50	No
	38	3	-0.029	3.00	No
	39	3	-0.03	4.00	No
WI60	27	3	-0.047	0.50	No
		3	-0.047	7.50	No
	26	3	-0.022	0.50	No
		3	-0.022	5.00	No
		3	-0.012	50.00	Yes
	29	3	-0.052	0.50	No
		3	-0.052	7.50	No
		3	-0.017	1.50	No
	28	3	-0.052	0.50	No
		3	-0.052	7.50	No
		3	-0.021	1.50	No
	38	3	-0.024	3.00	No
	39	3	-0.022	4.00	No
WI90	27	x	-0.041	0.50	No
		x	-0.041	7.50	No
	26	x	-0.02	0.50	No
		x	-0.02	5.00	No
		x	-0.012	50.00	Yes
	29	x	-0.043	0.50	No
		x	-0.043	7.50	No
		x	-0.02	1.50	No
	28	x	-0.043	0.50	No
		x	-0.043	7.50	No
		x	-0.024	1.50	No

	38	x	-0.022	3.00	No
	39	x	-0.018	4.00	No
WI120	27	2	-0.047	0.50	No
		2	-0.047	7.50	No
	26	2	-0.022	0.50	No
		2	-0.022	5.00	No
		2	-0.012	50.00	Yes
	29	2	-0.052	0.50	No
		2	-0.052	7.50	No
		2	-0.017	1.50	No
	28	2	-0.052	0.50	No
		2	-0.052	7.50	No
		2	-0.019	1.50	No
		2	-0.021	1.50	No
	38	2	-0.024	3.00	No
	39	2	-0.022	4.00	No
WI150	27	2	-0.057	0.50	No
		2	-0.057	7.50	No
	26	2	-0.027	0.50	No
		2	-0.027	5.00	No
		2	-0.011	50.00	Yes
	29	2	-0.072	0.50	No
		2	-0.072	7.50	No
		2	-0.012	1.50	No
	28	2	-0.072	0.50	No
		2	-0.072	7.50	No
		2	-0.012	1.50	No
		2	-0.013	1.50	No
	38	2	-0.029	3.00	No
	39	2	-0.03	4.00	No
WLO	27	z	-0.018	0.50	No
		z	-0.018	7.50	No
	26	z	-0.008	0.50	No
		z	-0.008	5.00	No
	29	z	-0.024	0.50	No
		z	-0.024	7.50	No
	28	z	-0.024	0.50	No
		z	-0.024	7.50	No
		z	-0.002	1.50	No
		z	-0.002	1.50	No
	38	z	-0.008	3.00	No
	39	z	-0.009	4.00	No
WL30	27	3	-0.016	0.50	No
		3	-0.016	7.50	No
	26	3	-0.007	0.50	No
		3	-0.007	5.00	No
		3	-0.002	50.00	Yes
	29	3	-0.021	0.50	No
		3	-0.021	7.50	No
		3	-0.003	1.50	No
	28	3	-0.021	0.50	No
		3	-0.021	7.50	No
		3	-0.003	1.50	No
		3	-0.003	1.50	No
	38	3	-0.007	3.00	No
	39	3	-0.007	4.00	No
WL60	27	3	-0.012	0.50	No
		3	-0.012	7.50	No
	26	3	-0.005	0.50	No
		3	-0.005	5.00	No

		3	-0.002	50.00	Yes
	29	3	-0.014	0.50	No
		3	-0.014	7.50	No
		3	-0.004	1.50	No
	28	3	-0.014	0.50	No
		3	-0.014	7.50	No
		3	-0.005	1.50	No
	38	3	-0.005	3.00	No
	39	3	-0.005	4.00	No
WL90	27	x	-0.011	0.50	No
		x	-0.011	7.50	No
	26	x	-0.005	0.50	No
		x	-0.005	5.00	No
		x	-0.002	50.00	Yes
	29	x	-0.011	0.50	No
		x	-0.011	7.50	No
		x	-0.005	1.50	No
	28	x	-0.011	0.50	No
		x	-0.011	7.50	No
		x	-0.006	1.50	No
	38	x	-0.005	3.00	No
	39	x	-0.004	4.00	No
WL120	27	2	-0.012	0.50	No
		2	-0.012	7.50	No
	26	2	-0.005	0.50	No
		2	-0.005	5.00	No
		2	-0.002	50.00	Yes
	29	2	-0.014	0.50	No
		2	-0.014	7.50	No
		2	-0.004	1.50	No
	28	2	-0.014	0.50	No
		2	-0.014	7.50	No
		2	-0.004	1.50	No
		2	-0.005	1.50	No
	38	2	-0.005	3.00	No
	39	2	-0.005	4.00	No
WL150	27	2	-0.016	0.50	No
		2	-0.016	7.50	No
	26	2	-0.007	0.50	No
		2	-0.007	5.00	No
		2	-0.002	50.00	Yes
	29	2	-0.021	0.50	No
		2	-0.021	7.50	No
		2	-0.003	1.50	No
	28	2	-0.021	0.50	No
		2	-0.021	7.50	No
		2	-0.003	1.50	No
		2	-0.003	1.50	No
	38	2	-0.007	3.00	No
	39	2	-0.007	4.00	No
LL1	8	y	-0.25	50.00	Yes
LL2	8	y	-0.25	0.00	Yes
LL3	8	y	-0.25	100.00	Yes
LLa1	26	y	-0.25	4.00	No
LLa2	27	Y	-0.25	4.00	No
LLa3	28	y	-0.25	4.00	No
LLa4	29	y	-0.25	4.00	No

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
D	Dead Load	No	0.00	-1.00	0.00
Wo	Wind Load (NO ICE)	No	0.00	0.00	0.00
W30	WL 30deg	No	0.00	0.00	0.00
W60	WL 60deg	No	0.00	0.00	0.00
W90	WL 90deg	No	0.00	0.00	0.00
W120	WL 120deg	No	0.00	0.00	0.00
W150	WL 150deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
WI0	WL ICE 0deg	No	0.00	0.00	0.00
WI30	WL ICE 30deg	No	0.00	0.00	0.00
WI60	WL ICE 60deg	No	0.00	0.00	0.00
WI90	WL ICE 90deg	No	0.00	0.00	0.00
WI120	WL ICE 120deg	No	0.00	0.00	0.00
WI150	WL ICE 150deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30deg	No	0.00	0.00	0.00
WL60	WL 30 mph 60deg	No	0.00	0.00	0.00
WL90	WL 30 mph 90deg	No	0.00	0.00	0.00
WL120	WL 30 mph 120deg	No	0.00	0.00	0.00
WL150	WL 30 mph 150deg	No	0.00	0.00	0.00
LL1	250 lb Live Load Center of Mount	No	0.00	0.00	0.00
LL2	250 lb Live Load Right End of Mount	No	0.00	0.00	0.00
LL3	250 lb Live Load Left End of Mount	No	0.00	0.00	0.00
LLa1	250 lb Live Load Antenna 1	No	0.00	0.00	0.00
LLa2	250 lb Live Load Antenna 2	No	0.00	0.00	0.00
LLa3	250 lb Live Load Antenna 3	No	0.00	0.00	0.00
LLa4	250 lb Live Load Antenna 4	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
D	0.00	0.00	0.00
Wo	0.00	0.00	0.00
W30	0.00	0.00	0.00
W60	0.00	0.00	0.00
W90	0.00	0.00	0.00
W120	0.00	0.00	0.00
W150	0.00	0.00	0.00
Di	0.00	0.00	0.00
WI0	0.00	0.00	0.00
WI30	0.00	0.00	0.00
WI60	0.00	0.00	0.00
WI90	0.00	0.00	0.00
WI120	0.00	0.00	0.00
WI150	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
WL60	0.00	0.00	0.00
WL90	0.00	0.00	0.00
WL120	0.00	0.00	0.00
WL150	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LL3	0.00	0.00	0.00

LLa1	0.00	0.00	0.00
LLa2	0.00	0.00	0.00
LLa3	0.00	0.00	0.00
LLa4	0.00	0.00	0.00

Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2D+W_o
LC2=1.2D+W₃₀
LC3=1.2D+W₆₀
LC4=1.2D+W₉₀
LC5=1.2D+W₁₂₀
LC6=1.2D+W₁₅₀
LC7=1.2D-W_o
LC8=1.2D-W₃₀
LC9=1.2D-W₆₀
LC10=1.2D-W₉₀
LC11=1.2D-W₁₂₀
LC12=1.2D-W₁₅₀
LC13=0.9D+W_o
LC14=0.9D+W₃₀
LC15=0.9D+W₆₀
LC16=0.9D+W₉₀
LC17=0.9D+W₁₂₀
LC18=0.9D+W₁₅₀
LC19=0.9D-W_o
LC20=0.9D-W₃₀
LC21=0.9D-W₆₀
LC22=0.9D-W₉₀
LC23=0.9D-W₁₂₀
LC24=0.9D-W₁₅₀
LC25=1.2D+D_i+W_{I0}
LC26=1.2D+D_i+W_{I30}
LC27=1.2D+D_i+W_{I60}
LC28=1.2D+D_i+W_{I90}
LC29=1.2D+D_i+W_{I120}
LC30=1.2D+D_i+W_{I150}
LC31=1.2D+D_i-W_{I0}
LC32=1.2D+D_i-W_{I30}
LC33=1.2D+D_i-W_{I60}
LC34=1.2D+D_i-W_{I90}
LC35=1.2D+D_i-W_{I120}
LC36=1.2D+D_i-W_{I150}
LC38=1.2D+1.5LL₁
LC39=1.2D+1.5LL₂
LC40=1.2D+1.5LL₃
LC41=1.2D+W_{L0}+1.5LLa₁
LC42=1.2D+W_{L30}+1.5LLa₁
LC43=1.2D+W_{L60}+1.5LLa₁
LC44=1.2D+W_{L90}+1.5LLa₁
LC45=1.2D+W_{L120}+1.5LLa₁
LC46=1.2D+W_{L150}+1.5LLa₁
LC47=1.2D-W_{L0}+1.5LLa₁
LC48=1.2D-W_{L30}+1.5LLa₁
LC49=1.2D-W_{L60}+1.5LLa₁
LC50=1.2D-W_{L90}+1.5LLa₁
LC51=1.2D-W_{L120}+1.5LLa₁
LC52=1.2D-W_{L150}+1.5LLa₁
LC53=1.2D+W_{L0}+1.5LLa₂

LC54=1.2D+WL30+1.5LLa2
 LC55=1.2D+WL60+1.5LLa2
 LC56=1.2D+WL90+1.5LLa2
 LC57=1.2D+WL120+1.5LLa2
 LC58=1.2D+WL150+1.5LLa2
 LC59=1.2D-WL0+1.5LLa2
 LC60=1.2D-WL30+1.5LLa2
 LC61=1.2D-WL60+1.5LLa2
 LC62=1.2D-WL90+1.5LLa2
 LC63=1.2D-WL120+1.5LLa2
 LC64=1.2D-WL150+1.5LLa2
 LC65=1.2D+WL0+1.5LLa3
 LC66=1.2D+WL30+1.5LLa3
 LC67=1.2D+WL60+1.5LLa3
 LC68=1.2D+WL90+1.5LLa3
 LC69=1.2D+WL120+1.5LLa3
 LC70=1.2D+WL150+1.5LLa3
 LC71=1.2D-WL0+1.5LLa3
 LC72=1.2D-WL30+1.5LLa3
 LC73=1.2D-WL60+1.5LLa3
 LC74=1.2D-WL90+1.5LLa3
 LC75=1.2D-WL120+1.5LLa3
 LC76=1.2D-WL150+1.5LLa3
 LC77=1.2D+WL0+1.5LLa4
 LC78=1.2D+WL30+1.5LLa4
 LC79=1.2D+WL60+1.5LLa4
 LC80=1.2D+WL90+1.5LLa4
 LC81=1.2D+WL120+1.5LLa4
 LC82=1.2D+WL150+1.5LLa4
 LC83=1.2D-WL0+1.5LLa4
 LC84=1.2D-WL30+1.5LLa4
 LC85=1.2D-WL60+1.5LLa4
 LC86=1.2D-WL90+1.5LLa4
 LC87=1.2D-WL120+1.5LLa4
 LC88=1.2D-WL150+1.5LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	PIPE 2x0.154	27	LC7 at 68.75%	0.70	OK	Eq. H1-1b
		26	LC40 at 31.25%	0.29	OK	Eq. H1-1b
		29	LC7 at 68.75%	0.95	OK	Eq. H1-1b
		28	LC1 at 68.75%	0.95	OK	Eq. H1-1b
		31	LC20 at 100.00%	0.95	OK	Eq. H1-1a
		38	LC2 at 66.67%	0.27	OK	Eq. H1-1b
		39	LC8 at 31.25%	0.24	OK	Eq. H1-1b
	PIPE 2x0.218XS	3	LC7 at 16.67%	0.79	With warnings	Eq. H1-1b
		4	LC8 at 100.00%	0.45	OK	Eq. H1-1b
		5	LC3 at 100.00%	0.38	OK	Eq. H1-1b
		8	LC8 at 16.67%	0.77	With warnings	Eq. H1-1a
		9	LC8 at 100.00%	0.43	OK	Eq. H1-1b
		10	LC2 at 0.00%	0.64	OK	Eq. H1-1a
	RndBar 3_4	11	LC31 at 100.00%	0.67	OK	Eq. H1-1a
		12	LC26 at 0.00%	0.47	OK	Eq. H1-1a
		13	LC36 at 100.00%	0.83	OK	Eq. H1-1a
		14	LC26 at 0.00%	0.58	OK	Eq. H1-1a
		15	LC32 at 100.00%	0.39	OK	Eq. H1-1a
		16	LC31 at 100.00%	0.19	OK	Eq. H1-1b

Geometry data

GLOSSARY

Cb22, Cb33	: Moment gradient coefficients
Cm22, Cm33	: Coefficients applied to bending term in interaction formula
d0	: Tapered member section depth at J end of member
DJX	: Rigid end offset distance measured from J node in axis X
DJY	: Rigid end offset distance measured from J node in axis Y
DJZ	: Rigid end offset distance measured from J node in axis Z
DKX	: Rigid end offset distance measured from K node in axis X
DKY	: Rigid end offset distance measured from K node in axis Y
DKZ	: Rigid end offset distance measured from K node in axis Z
dL	: Tapered member section depth at K end of member
Ig factor	: Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members
K22	: Effective length factor about axis 2
K33	: Effective length factor about axis 3
L22	: Member length for calculation of axial capacity
L33	: Member length for calculation of axial capacity
LB pos	: Lateral unbraced length of the compression flange in the positive side of local axis 2
LB neg	: Lateral unbraced length of the compression flange in the negative side of local axis 2
RX	: Rotation about X
RY	: Rotation about Y
RZ	: Rotation about Z
TO	: 1 = Tension only member 0 = Normal member
TX	: Translation in X
TY	: Translation in Y
TZ	: Translation in Z

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
2	6.50	0.00	0.00	0
3	-6.50	0.00	0.00	0
4	6.00	0.00	0.00	0
5	-6.00	0.00	0.00	0
6	6.00	0.00	0.20	0
7	-6.00	0.00	0.20	0
8	-4.40	0.00	0.00	0
9	4.40	0.00	0.00	0
10	0.00	0.00	-3.00	0
11	-3.6667	0.00	-0.50	0
12	3.6667	0.00	-0.50	0
13	0.7333	0.00	-2.50	0
14	-0.7333	0.00	-2.50	0
16	6.50	3.00	0.00	0
17	-6.50	3.00	0.00	0
18	6.00	3.00	0.00	0
19	-6.00	3.00	0.00	0
20	6.00	3.00	0.20	0
21	-6.00	3.00	0.20	0
22	-4.40	3.00	0.00	0
23	4.40	3.00	0.00	0

24	0.00	3.00	-3.00	0
25	-3.6667	3.00	-0.50	0
26	3.6667	3.00	-0.50	0
27	0.7333	3.00	-2.50	0
28	-0.7333	3.00	-2.50	0
33	-6.00	5.50	0.20	0
34	6.00	5.50	0.20	0
35	-6.00	-2.50	0.20	0
36	6.00	-2.50	0.20	0
38	2.00	0.00	0.00	0
39	2.00	0.00	0.20	0
40	2.00	3.00	0.00	0
41	2.00	3.00	0.20	0
42	2.00	5.50	0.20	0
43	2.00	-2.50	0.20	0
44	-2.00	0.00	0.00	0
45	-2.00	0.00	0.20	0
46	-2.00	3.00	0.00	0
47	-2.00	3.00	0.20	0
48	-2.00	5.50	0.20	0
49	-2.00	-2.50	0.20	0
51	-1.00	3.00	-6.50	0
64	0.9167	3.00	0.00	0
65	0.9167	0.00	0.00	0
66	-0.3333	3.00	0.00	0
67	-0.3333	0.00	0.00	0
72	0.9167	3.00	-0.20	0
73	-0.3333	3.00	-0.20	0
74	-0.3333	0.00	-0.20	0
75	0.9167	0.00	-0.20	0
76	0.9167	-2.50	-0.20	0
77	0.9167	5.50	-0.20	0
78	-0.3333	-2.50	-0.20	0
79	-0.3333	5.50	-0.20	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
10	1	1	1	1	1	1
24	1	1	1	1	1	1
51	1	1	1	0	0	0

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	Ig factor
3	3	2		PIPE 2x0.218XS	A53 GrB SABRE 50...	0.00	0.00	0.00
4	8	10		PIPE 2x0.218XS	A53 GrB SABRE 50...	0.00	0.00	0.00
5	9	10		PIPE 2x0.218XS	A53 GrB SABRE 50...	0.00	0.00	0.00
8	17	16		PIPE 2x0.218XS	A53 GrB SABRE 50...	0.00	0.00	0.00
9	22	24		PIPE 2x0.218XS	A53 GrB SABRE 50...	0.00	0.00	0.00

10	23	24	PIPE 2x0.218XS	A53 GrB SABRE 50...	0.00	0.00	0.00
11	14	28	RndBar 3_4	A572 Gr50	0.00	0.00	0.00
12	27	13	RndBar 3_4	A572 Gr50	0.00	0.00	0.00
13	25	11	RndBar 3_4	A572 Gr50	0.00	0.00	0.00
14	12	26	RndBar 3_4	A572 Gr50	0.00	0.00	0.00
15	28	11	RndBar 3_4	A572 Gr50	0.00	0.00	0.00
16	27	12	RndBar 3_4	A572 Gr50	0.00	0.00	0.00
27	42	43	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
26	34	36	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
29	33	35	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
28	48	49	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
31	23	51	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
38	77	76	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
39	79	78	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
27	315.00	0	0.00	0.00	0.00
26	315.00	0	0.00	0.00	0.00
29	315.00	0	0.00	0.00	0.00
28	315.00	0	0.00	0.00	0.00
38	315.00	0	0.00	0.00	0.00
39	315.00	0	0.00	0.00	0.00

Rigid end offsets

Member	DJX [in]	DJY [in]	DJZ [in]	DKX [in]	DKY [in]	DKZ [in]
31	0.00	2.00	0.00	0.00	2.00	0.00

Hinges

Member	Node-J				Node-K				TOR	AXL	Axial rigidity
	M33	M22	V3	V2	M33	M22	V3	V2			
15	0	0	0	0	0	0	0	0	0	0	Tension only
16	0	0	0	0	0	0	0	0	0	0	Tension only



Town of Bloomfield, CT

Property Listing Report

Map Block Lot

637-1117

Building # 1

PID

8110

Account

R93240

Property Information

Property Location	7 HOSKINS RD
Owner	CONN LIGHT & POWER CO
Co-Owner	ATTN: PROPERTY TAX DEPT
Mailing Address	P O BOX 270 HARTFORD CT 06141
Land Use	201 Comm Land
Land Class	C
Zoning Code	R-80
Census Tract	0000

Site Index	4
Acreage	38.33
Utilities	
Lot Setting/Desc	
Fire District	C
Book / Page	

Primary Construction Details

Year Built	1962
Building Desc.	Vacant with OutBldg
Building Style	UNKNOWN
Building Grade	
Stories	
Occupancy	
Exterior Walls	
Exterior Walls 2	NA
Roof Style	
Roof Cover	
Interior Walls	
Interior Walls 2	NA
Interior Floors 1	
Interior Floors 2	

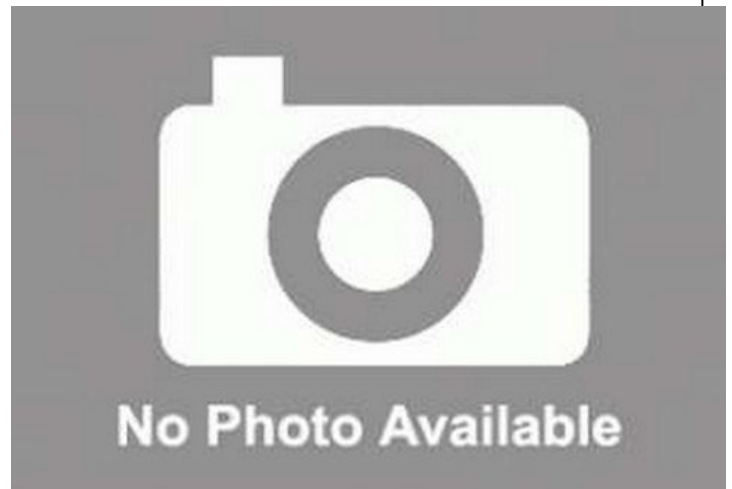
Heating Fuel	
Heating Type	
AC Type	
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	0
Bath Style	NA
Kitchen Style	NA
Bsmt Fin Area	0
Rec Rm Area	0
Bsmt Gar	0
Fireplaces	0

(*Industrial / Commercial Details)	
Building Use	Vacant
Building Condition	A
Sprinkler %	NA
Heat / AC	NA
Frame Type	NA
Baths / Plumbing	NA
Ceiling / Wall	NA
Rooms / Prtns	NA
Wall Height	NA
First Floor Use	NA
Foundation	POURED CONC.

Photo



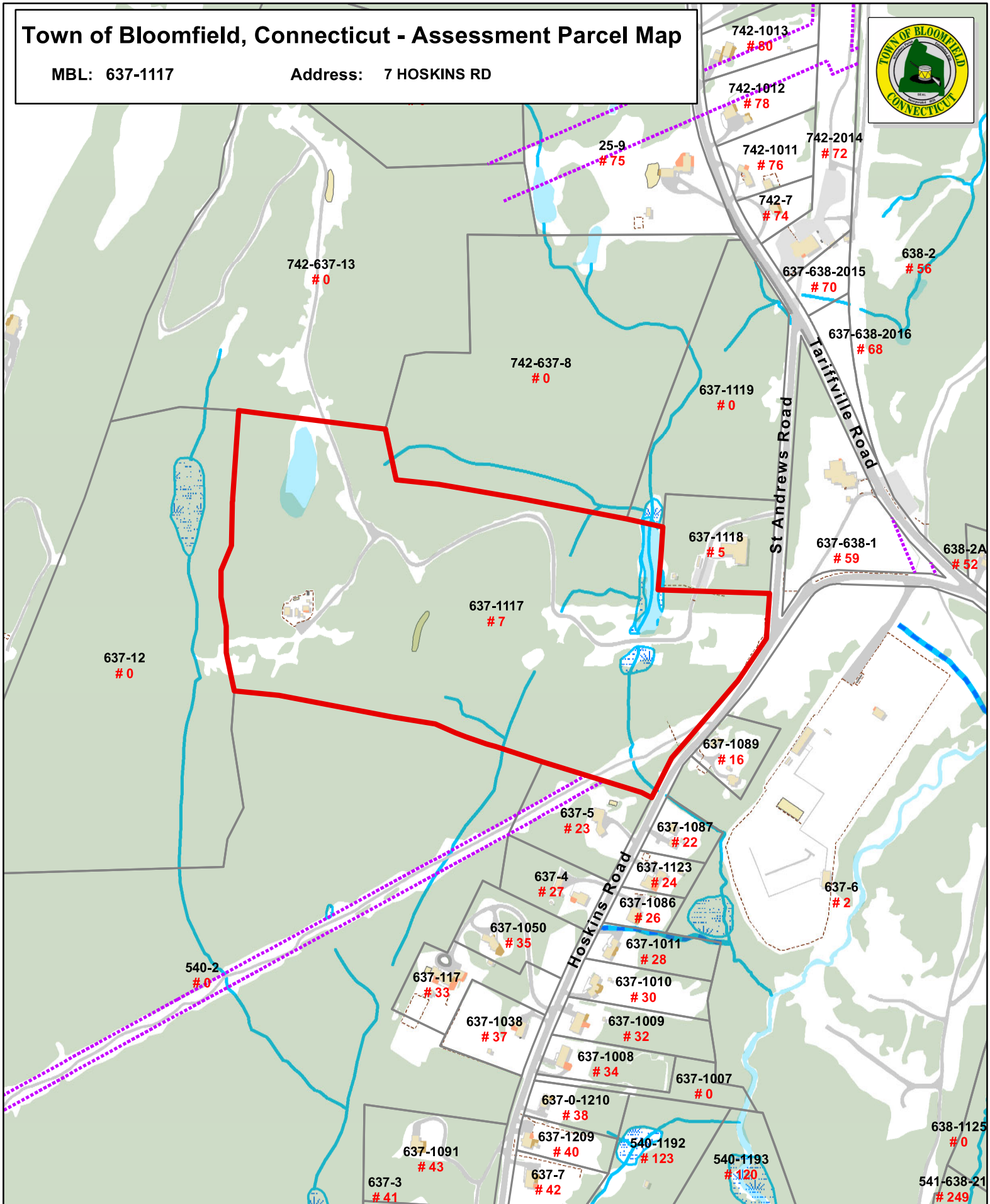
Sketch



Town of Bloomfield, Connecticut - Assessment Parcel Map

MBL: 637-1117

Address: 7 HOSKINS RD



Approximate Scale:
1 inch = 450 feet

Disclaimer:
This map is for informational purposes only.
All information is subject to verification by any user.
The Town of Bloomfield and its mapping contractors
assume no legal responsibility for the information contained herein.

Map Produced October 2019
Parcels labeled by Unique ID

Petition No. 1112
Cellco Partnership d/b/a Verizon Wireless
Bloomfield, Connecticut
Staff Report
August 28, 2014

On July 28, 2014, the Connecticut Siting Council (Council) received a petition from Cellco Partnership d/b/a Verizon Wireless (Cellco) for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the replacement and extension of an existing telecommunications facility owned by The Connecticut Light and Power Company (CL&P) located west of St. Andrews Road in Bloomfield. Cellco sent notice to abutting property owners and the Towns of Bloomfield and Simsbury on July 28, 2014. No written comments were received from either Town or any of the abutters.

A field review of the proposed project was conducted on August 18, 2014. The following people attended the field review: Council member Daniel Lynch, Jr., Council staff member Robert Mercier, Cellco representative Attorney Kenneth Baldwin, CL&P representatives John Morissette and Steve Florio, and Simsbury Police Lieutenant Fred Sifodaskalakis.

The site is located on a 40-acre parcel owned by CL&P and is accessed from a separate parcel at 5-7 St. Andrews Road. The existing tower was approved in 1993 in Docket 158. A paved access drive ascends west to the site, generally along an existing CL&P transmission corridor, to a ridge top at 412 feet above mean sea level. The existing tower and fenced compound is adjacent to the east side of the transmission corridor.

Existing tower users include CL&P with multiple whip antennas and dish antennas, AT&T with an antenna array at 158 feet, Cellco with an antenna array at 150 feet and the Towns of Simsbury and Bloomfield both of which utilize the tower for emergency communications. Cellco seeks to upgrade their antennas to support LTE services but the current tower is at structural capacity and cannot be economically reinforced to accommodate the new equipment. Cellco would be responsible for construction of the new tower, transferring equipment to the new tower, and the removal of the existing tower. CL&P would own the new tower.

Cellco proposes to replace the existing 180-foot self-supporting lattice tower with a 185-foot self-supporting lattice tower. The proposed tower would be five feet higher to compensate for a five foot elevation loss between the proposed tower site and the existing tower site. Antennas for all carriers/users, including Cellco, would be mounted approximately five feet higher on the new tower to maintain the existing antenna height above ground level.

The new tower would be constructed adjacent to Cellco's existing equipment shelter, approximately 75 feet southwest of the existing tower and partially within the existing compound. The existing compound would be expanded by 2,150 square feet to the south and west to accommodate the new tower and associated ice bridge. A level spreader would be installed on the west side of the compound to control any runoff coming from the compound area.

Approximately 17 trees with a diameter of 6 inches or greater would be removed to expand the compound. Some tree trimming may be necessary along the access drive to facilitate heavy equipment required to deliver materials to the site. The nearest wetland is 140 feet north of the construction area. A vernal pool is located approximately 260 feet north of the new compound fence. Cellco would implement best management practices from March 1 to September 15 to reduce impacts to vernal pool obligate species.

The new tower would maintain the existing aircraft hazard lighting elevations and pattern as the tower is approximately 4.5 miles south from Runway 6 at Bradley International Airport. The site is in a remote area surrounded by extensive woodland with no nearby structures. The proposed tower would have no effect on existing views.

Staff recommends approval with the following conditions:

- Unless otherwise approved by the Council, the existing tower shall be removed within 180 days of the installation and operation of the new lattice tower;
- The Council shall be notified in writing when the existing tower is removed and the new tower is operational;
- Submit a final structural report depicting final tower loading; and
- Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by the Petitioner shall be removed within 60 days of the date the antenna ceased to function.



Existing tower from CL&P right-of-way, view west.



South side of compound - proposed tower location by white dome. Compound would be expanded to the left (west).



Northwest corner of compound. Compound would be expanded towards rocks in photo.

May 18, 2020

Mr. Tim Burks
SAI Communications (Agent for AT&T Wireless).
500 Enterprise Drive
Rocky Hill, Connecticut. 06067

RE: Letter of Authorization

Project: AT&T Project: LTE 6C/7C/5G NR 2019 Upgrade
AT&T Site # CTV1001
5 Saint Andrews Road
Bloomfield, CT. 06002

Owner: Eversource Energy

Dear Mr. Burks,

Eversource Energy, owner of the tower facility located at the address identified above, do hereby authorize, AT&T Wireless, and/ or it's agent, to use this authorization letter for the sole purpose of filing and consummating any land-use or building permit application(s) as may be required by the applicable permitting authorities for the Licensee's telecommunication's installation.

Sincerely, *Steven J Florio*

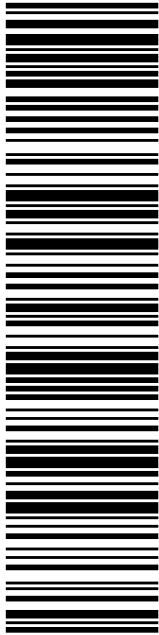
Steven J. Florio
Eversource Energy

REF: AT&T Site # CTV1001
Project Drawing # LTE 6C/7C/5G NR 2019 Upgrade
Dated: 03/17/2020

REF: All-Points Technology Corporation
Structural Analysis Project # 1931600.
Rev. Date 02/21/2020

SHIP TO: MR. CHRISTOPHER GELINAS
EVERSOURCE ENERGY
PO BOX 270
REAL ESTATE DEPARTMENT
HARTFORD CT 06141-0270

USPS TRACKING #



9405 5036 9930 0399 2086 11

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PO BOX 270
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TOWN OF BLOOMFIELD
800 BLOOMFIELD AVE
CC: MR JOSE GINER, DIR PLANNING & Z
BLOOMFIELD CT 06002-2460

QC DEVELOPMENT Expected Delivery Date: 06/02/20
PO BOX 916
STORRS CT 06268-0916

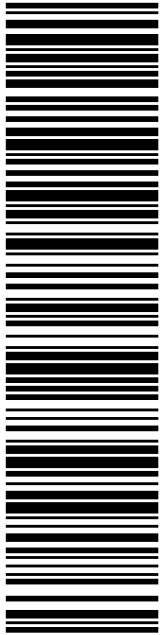
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TOWN OF BLOOMFIELD
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CC: MR JOSE GINER, DIR PLANNING & Z
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