



**QC Development**

PO Box 916

Storrs, CT 06268

860-670-9068

Mark.Roberts@QCDevelopment.net

September 16, 2019

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) – CT1048**  
**107 Stickney Hill Road, Union, CT 06076**  
**N 41.98538889**  
**W 72.19216667**

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 113-foot level of the existing 110-foot Self-Support Tower at 107 Stickney Hill Road, Union, CT. The structure is owned by InSite Towers and the property is owned by Margaret M. Harrison. AT&T now intends to remove one (1) Andrew and five (5) Powerwave antennas and replace them with six (6) Kathrein 800-10966 antennas. AT&T will also remove three (3) Ericsson RRUS-11 Remote Radio Units (RRU) and install three (3) Ericsson 8843-B2/B66A and three (3) 4449-B5/B12 RRUs. The new antennas and RRUs will also be installed at the 113-foot level of the tower.

This facility was approved by the Siting Council on February 24th, 1984. This approval included a condition that the tower height not exceed 110 feet plus the height of antennas. No change to the existing tower height is proposed, therefore this modification 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 David D. Eaton, First Selectman of the Town of Union, the Union Building Office, as well as the property

and tower owners.

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: David D. Eaton - Elected Official  
Joe Pajak – Building Officer  
Margaret M. Harrison – Property Owner  
InSite Towers - Tower Owner (via e-mail)

## Power Density

### Existing Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm <sup>2</sup> )	Freq. Band (MHz <sup>**</sup> )	Limit S (mW/cm <sup>2</sup> )	%MPE
Other Carriers*							0%
AT&T GSM	2	565	119	0.0352	880	0.5867	0.54%
AT&T GSM	4	934	111	0.0558	1900	1.0000	1.22%
AT&T UMTS	1	647	111	0.0352	880	0.5867	0.36%
AT&T LTE	1	1375	117	0.1053	734	0.4893	0.82%
AT&T LTE	2	1077	119	0.1594	1900	1.0000	0.61%
Site Total							3.55%

\*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 <sup>2</sup> )	Freq. Band (MHz <sup>**</sup> )	Limit S (mW/cm <sup>2</sup> )	%MPE
Other Carriers*							0.0%
AT&T UMTS	1	647	111	0.0211	850	0.5667	0.37%
AT&T LTE	1	1476	113	0.0464	700	0.4667	0.99%
AT&T LTE	1	1000	113	0.0314	850	0.5667	0.55%
AT&T 5G	1	1000	113	0.0314	850	0.5667	0.55%
AT&T LTE	2	3664	113	0.2302	1900	1.0000	2.30%
AT&T LTE	1	3837	113	0.1205	2100	1.0000	1.21%
Site Total							5.98%

\*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 Antenna Centerline Heights include corrections to existing heights per current tower owner mapping data.

**PROJECT INFORMATION**

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

- NEW AT&T ANTENNAS: (800-10966) (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- NEW AT&T RRUS: B5/B12 4449 (700/850) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS: B2/B66A 8843 (PCS/AWS) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW SURGE ARRESTOR (DC6-48-60-18-8C) (TOTAL OF 1) WITH (2) DC POWER & (1) FIBER LINE.

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:

- SWAP BASEBAND WITH 5216.
- ADD XMU.
- ADD RBS 6630.
- ADD FIBER TRAY.
- ADD NETSURE 7100 POWERPLANT & BATTERIES.
- BASEBAND CONFIGURATIONS AS PER PD / SECTION 7

ITEMS TO BE REMOVED:

- RRUS-11 B12 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- ANTENNA (P65-17-XLH-RR) @ POS. 2 (TYP. OF 1 PER BETA AND GAMMA SECTORS, TOTAL OF 2).
- ANTENNA (SBNHH-1D6565C) @ POS. 3 (TOTAL OF 1 FOR ALPHA SECTOR).
- ANTENNA (P65-17-XLH-RR) @ POS. 4 (TYP. OF 1 PER SECTOR, TOTAL OF 3).

ITEMS TO BE RELOCATED:

- ANTENNA (800-10121) @ POS. 1 (TYP. OF 1 PER SECTOR, TOTAL OF 3) (TO BE RELOCATED @ POS. 4).
- TMA'S @ POS. 1 (TYP. OF 1 PER SECTOR, TOTAL OF 3) (TO BE RELOCATED @ POS. 4)

SITE ADDRESS: 107 STICKNEY HILL ROAD  
UNION, CT 06076

LATITUDE: 41.985381° N, 41° 59' 07.37" N  
LONGITUDE: 72.192166° W, 72° 11' 31.79" W  
TYPE OF SITE: LATTICE TOWER / INDOOR EQUIPMENT  
STRUCTURE HEIGHT: 110'-0"± TOWER / 115'-0"± TOP OF ANTENNA SUPPORT SYSTEM  
RAD CENTER: 113'-0"±  
CURRENT USE: TELECOMMUNICATIONS FACILITY  
PROPOSED USE: TELECOMMUNICATIONS FACILITY



**SITE NUMBER: CT1048**  
**SITE NAME: UNION-STICKNEY HILL**  
**FA CODE: 10035011**

**PACE ID: MRCTB033603, MRCTB0033558, MRCTB033587**

**PROJECT: LTE 2C 3C 4C 2019 UPGRADE**

**DRAWING INDEX**

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	2
GN-1	GENERAL NOTES	2
A-1	COMPOUND & EQUIPMENT PLANS	2
A-2	ANTENNA LAYOUTS & ELEVATION	2
A-3	DETAILS	2
SN-1	STRUCTURAL NOTES	2
S-1	STRUCTURAL DETAILS	2
G-1	GROUNDING DETAILS	2
RF-1	RF PLUMBING DIAGRAM	2

**VICINITY MAP**

DIRECTIONS TO SITE:  
FROM ROCKY HILL, CT, MERGE ONTO I-91 N VIA THE RAMP TO HARTFORD 5.2 MI. TAKE EXIT 29 TO MERGE ONTO CT-15 N/US-5 N TOWARD I-84/E HARTFORD/BOSTON CONTINUE TO FOLLOW CT-15 N 2.1 MI. MERGE ONTO I-84 E 28.2 MI. TAKE EXIT 73 FOR CT-190 TOWARD UNION 0.4 MI. TURN LEFT AT BUCKLEY HWY/CT-190 0.5 MI. TURN RIGHT AT WEBSTER RD 59 FT. SLIGHT RIGHT AT STICKNEY HILL RD 0.9 MI. END AT 107 STICKNEY HILL ROAD, UNION, CT 06076.



**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 OF 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: CT1048**  
**SITE NAME: UNION-STICKNEY HILL**  
  
107 STICKNEY HILL ROAD  
UNION, CT 06076  
TOLLAND COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	09/11/19	ISSUED FOR CONSTRUCTION	SF	AT	DPH
1	07/02/19	ISSUED FOR CONSTRUCTION	SG	AT	DJC
A	04/24/19	ISSUED FOR REVIEW	GP	AT	DJC

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

AT&T		
TITLE SHEET (LTE 2C 3C 4C)		
SITE NUMBER	DRAWING NUMBER	REV
CT1048	T-1	2

**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) LIGHTING 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 STANDARDS) 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 AND #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-G, 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

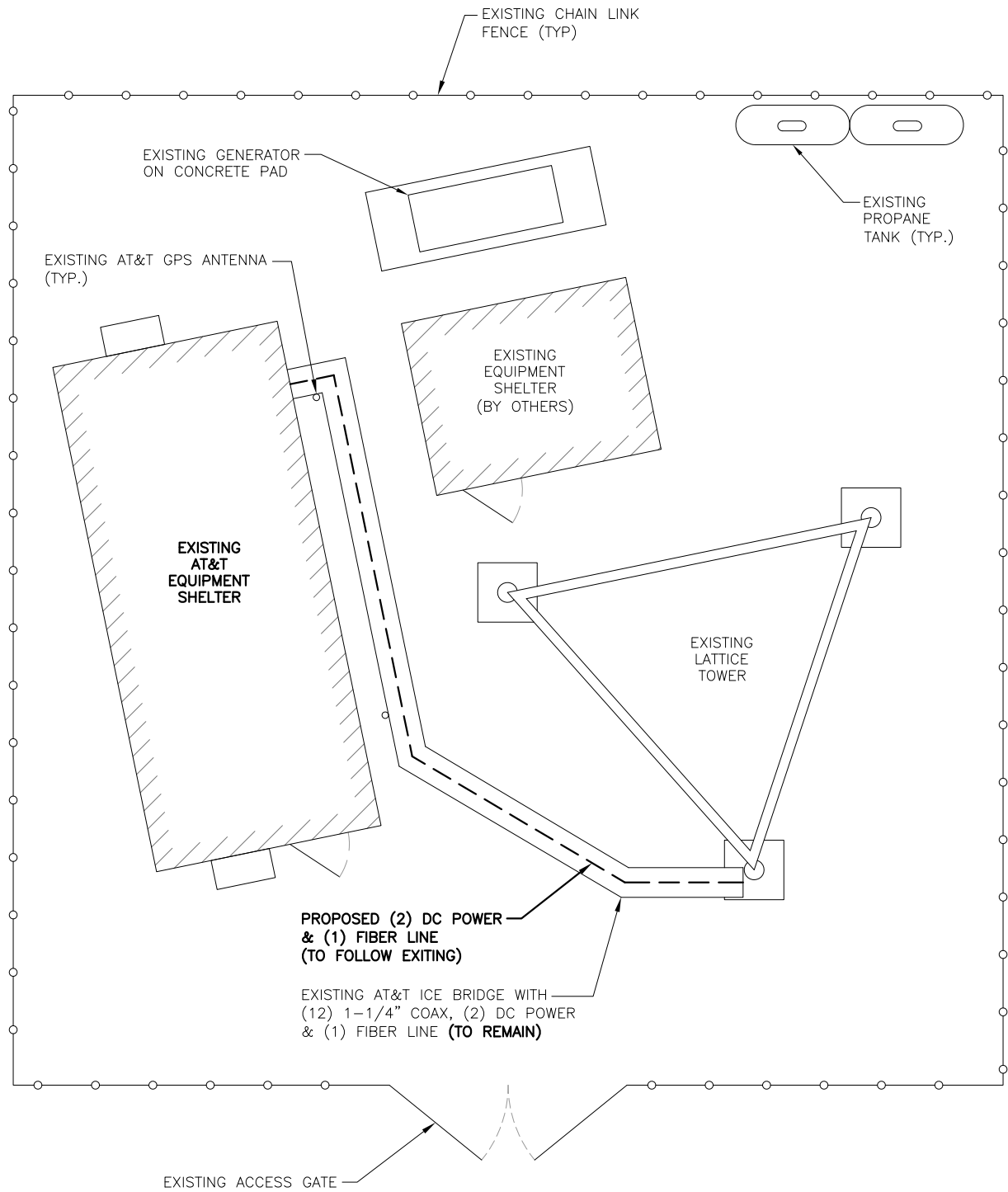
**SITE NUMBER: CT1048  
 SITE NAME: UNION-STICKNEY HILL**

107 STICKNEY HILL ROAD  
UNION, CT 06076  
TOLLAND COUNTY

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

2	09/11/19	ISSUED FOR CONSTRUCTION	SF	AT	DPH
1	07/02/19	ISSUED FOR CONSTRUCTION	SG	AT	DJC
A	04/24/19	ISSUED FOR REVIEW	GP	AT	DJC
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: GP		

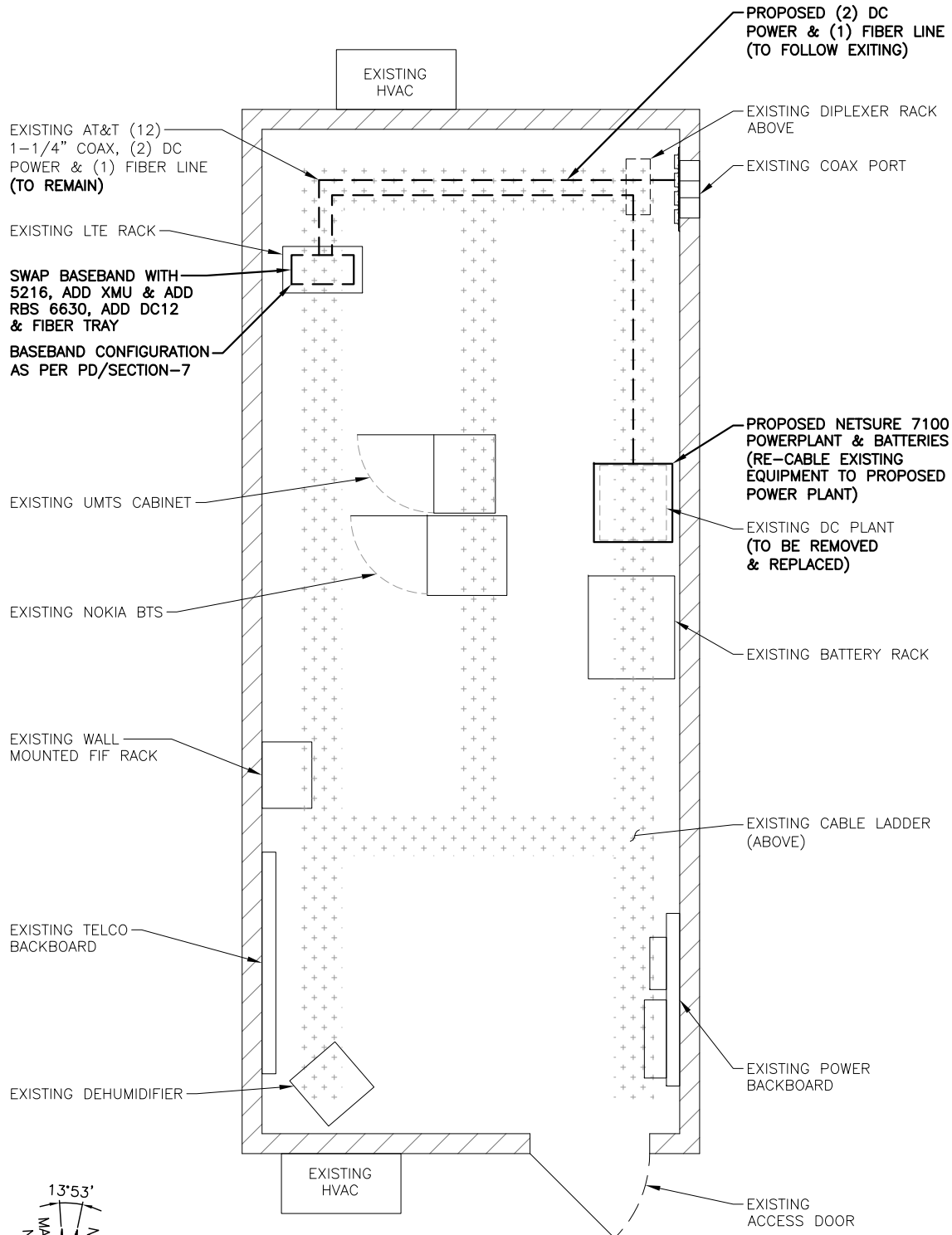
AT&T		
GENERAL NOTES (LTE 2C 3C 4C)		
SITE NUMBER	DRAWING NUMBER	REV
CT1048	GN-1	2



**COMPOUND PLAN**

22x34 SCALE: 1/4"=1'-0"  
11x17 SCALE: 1/8"=1'-0"

1  
A-1



**EQUIPMENT PLAN**

22x34 SCALE: 1/2"=1'-0"  
11x17 SCALE: 1/4"=1'-0"

2  
A-1



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

**NOTE:**  
REFER TO **STRUCTURAL ANALYSIS** BY: BENNETT & PLESS, INC, DATED: JUNE 26, 2019, (REV. 1) 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: MAY 21, 2019 (REV. 1)

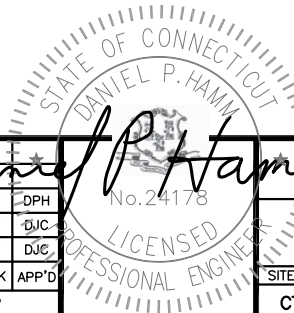
**HDG HUDSON Design Group LLC**  
45 BEECHWOOD DRIVE NORTH ANDOVER, MA 01845  
TEL: (978) 557-5553 FAX: (978) 336-5586

**SAI**  
12 INDUSTRIAL WAY SALEM, NH 03079

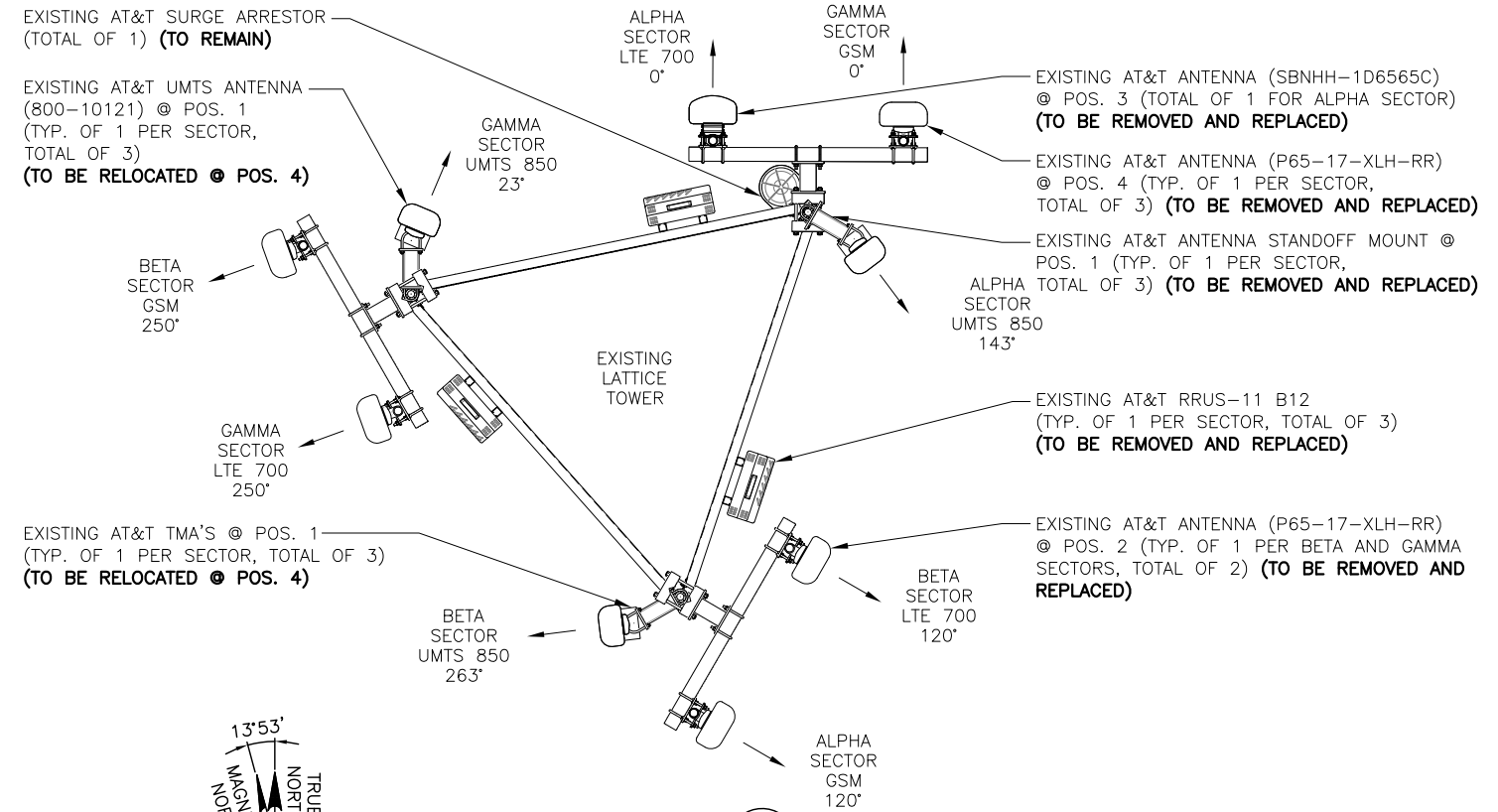
**SITE NUMBER: CT1048**  
**SITE NAME: UNION-STICKNEY HILL**  
  
107 STICKNEY HILL ROAD UNION, CT 06076 TOLLAND COUNTY

**at&t**  
500 ENTERPRISE DRIVE, SUITE 3A ROCKY HILL, CT 06067

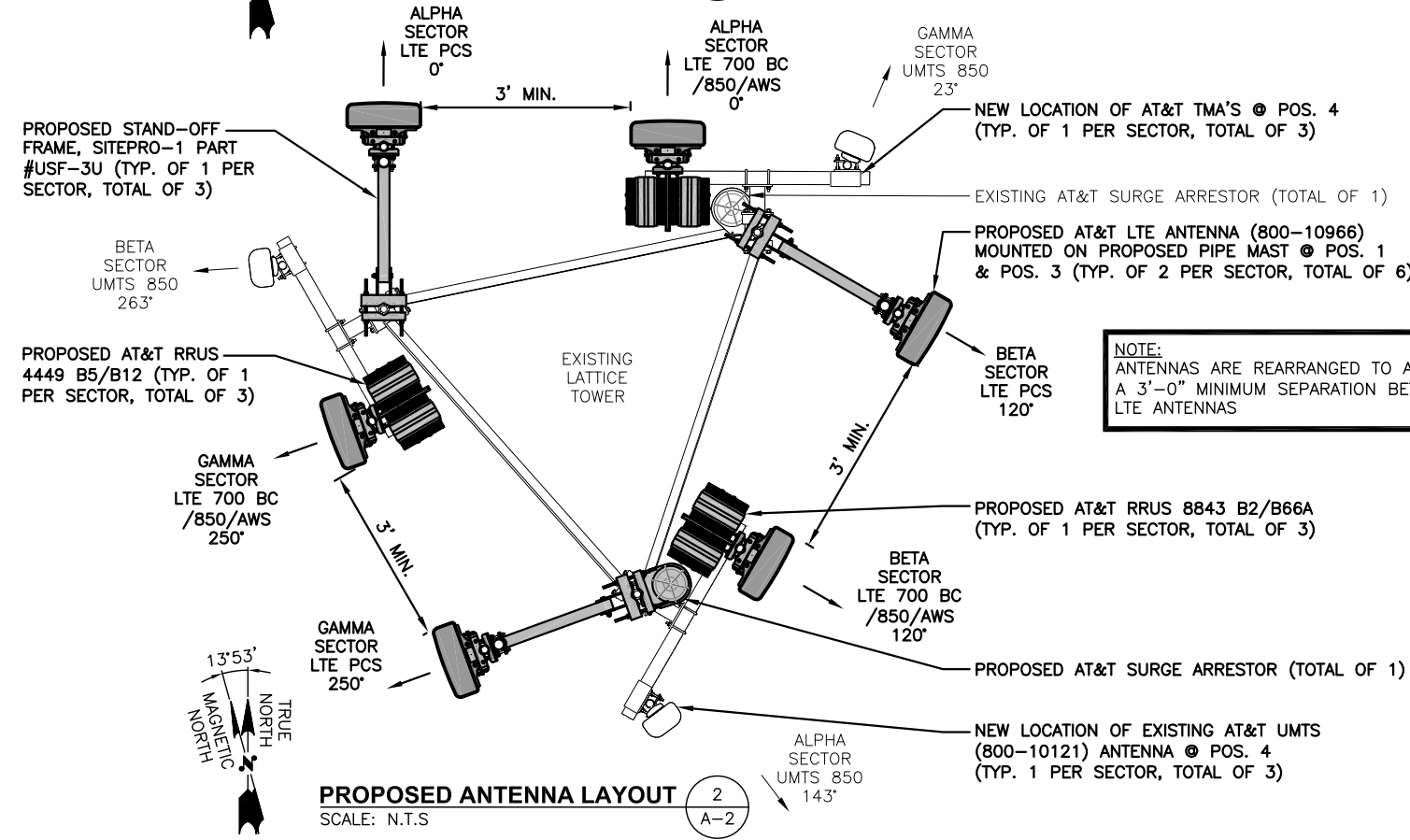
2	09/11/19	ISSUED FOR CONSTRUCTION	SF	AT	DPH
1	07/02/19	ISSUED FOR CONSTRUCTION	SG	AT	DJC
A	04/24/19	ISSUED FOR REVIEW	GP	AT	DJC
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN			DESIGNED BY: AT	DRAWN BY: GP	



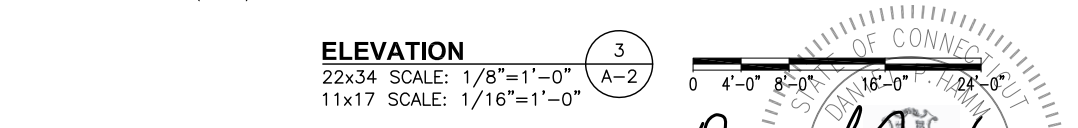
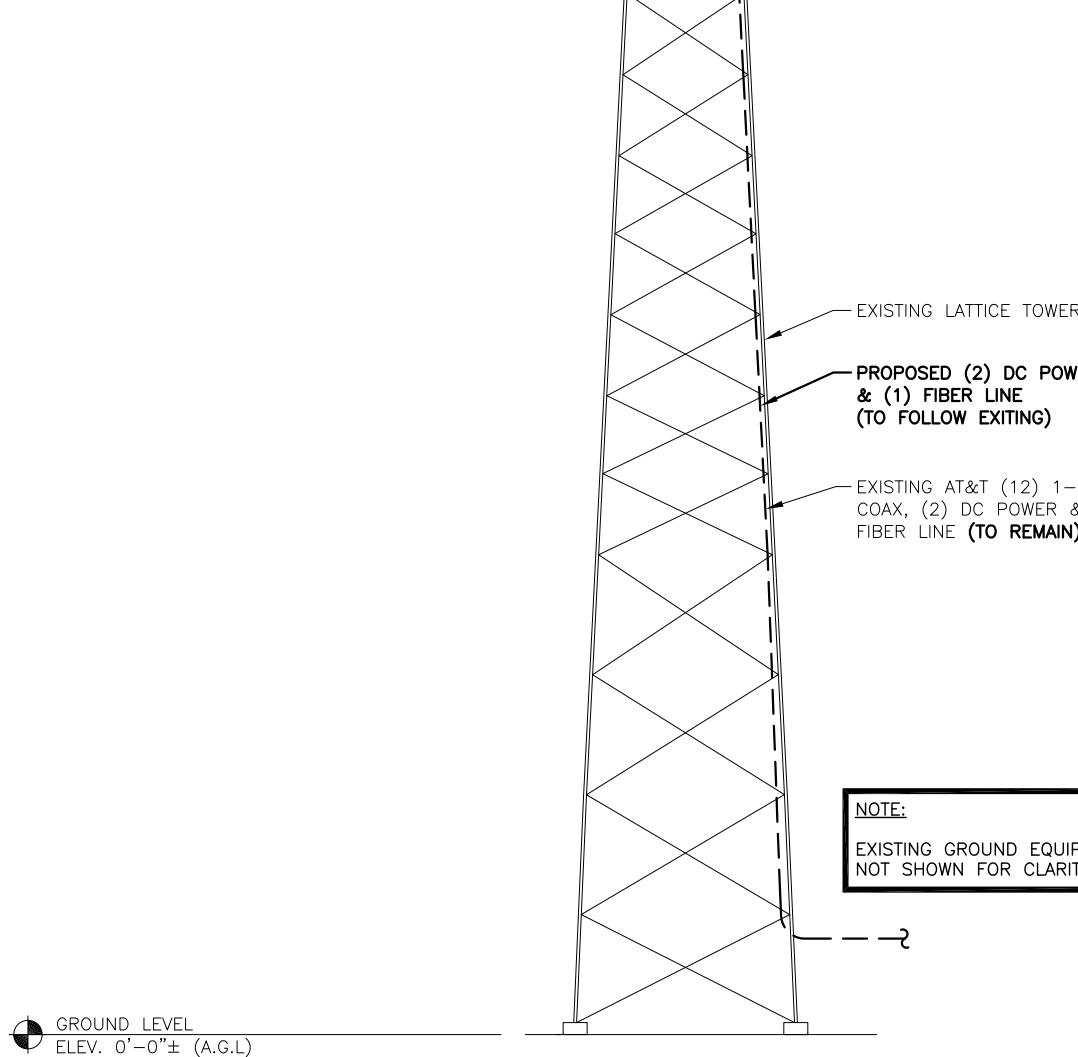
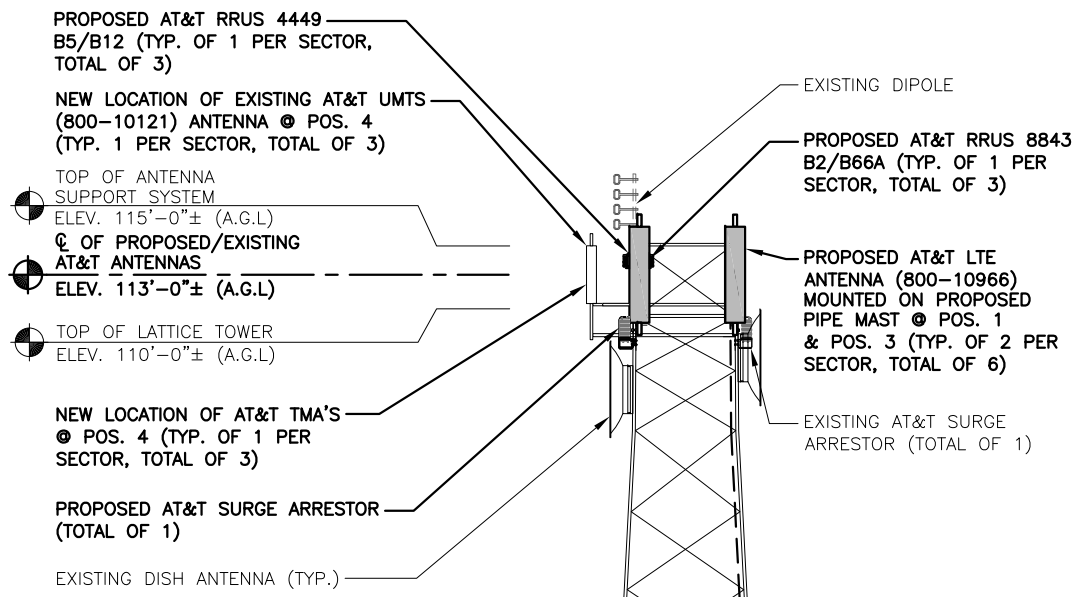
<b>AT&amp;T</b>		
<b>COMPOUND &amp; EQUIPMENT PLANS</b> (LTE 2C 3C 4C)		
SITE NUMBER	DRAWING NUMBER	REV
CT1048	A-1	2



**EXISTING ANTENNA LAYOUT**  
SCALE: N.T.S.



**PROPOSED ANTENNA LAYOUT**  
SCALE: N.T.S.



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

**NOTE:**  
REFER TO **STRUCTURAL ANALYSIS** BY: BENNETT & PLESS, INC, DATED: JUNE 26, 2019, (REV. 1) 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: MAY 21, 2019 (REV. 1)

**HDG 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: CT1048**  
**SITE NAME: UNION-STICKNEY HILL**  
107 STICKNEY HILL ROAD UNION, CT 06076 TOLLAND COUNTY

**at&t**  
500 ENTERPRISE DRIVE, SUITE 3A ROCKY HILL, CT 06067

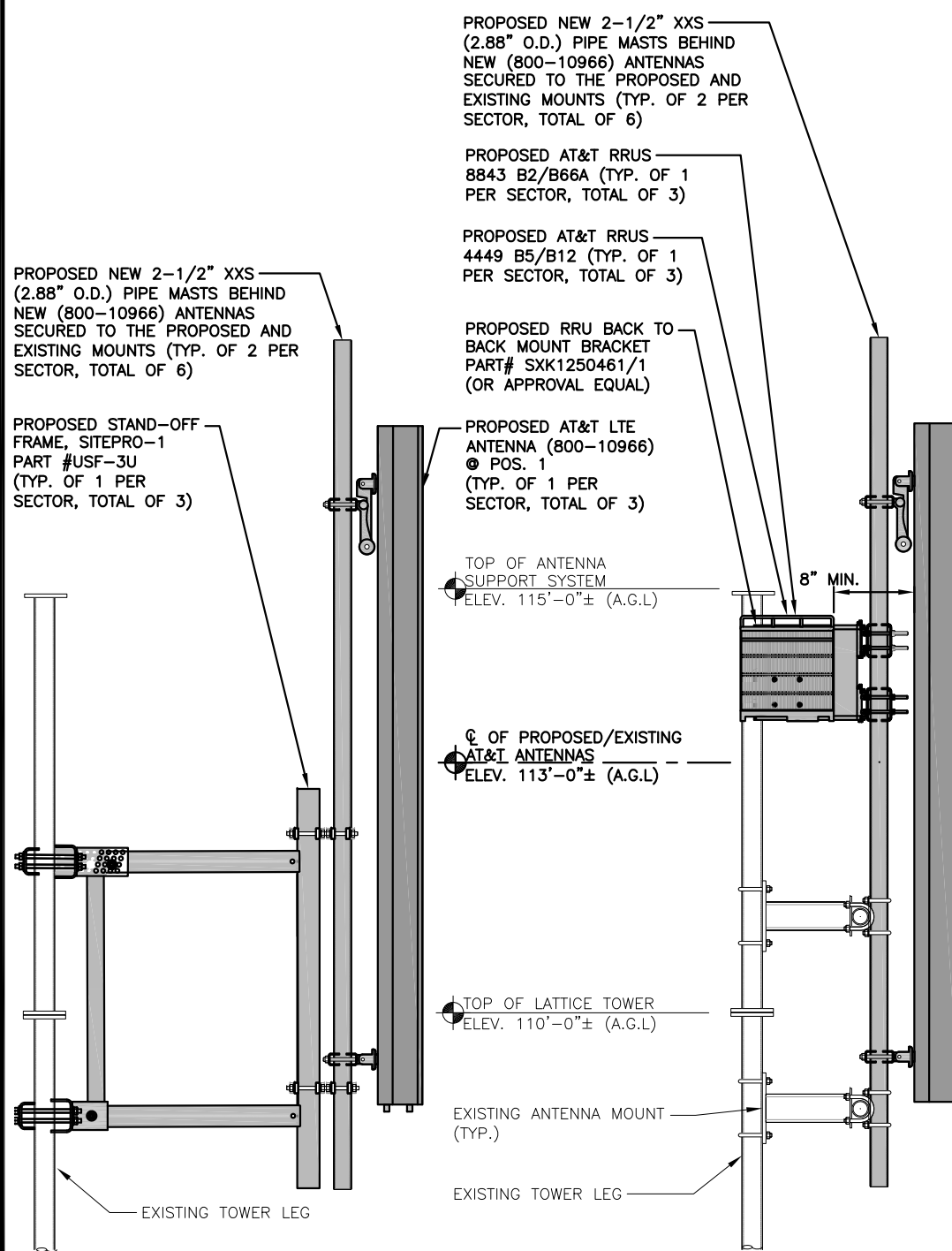
NO.	DATE	REVISIONS	BY	CHK	APP'D
2	09/11/19	ISSUED FOR CONSTRUCTION	SF	AT	DPH
1	07/02/19	ISSUED FOR CONSTRUCTION	SG	AT	DJC
A	04/24/19	ISSUED FOR REVIEW	GP	AT	DJC

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

**Daniel P. Hamm**  
No. 24178  
LICENSED PROFESSIONAL ENGINEER

AT&T		
ANTENNA LAYOUTS & ELEVATION (LTE 2C 3C 4C)		
SITE NUMBER	DRAWING NUMBER	REV
CT1048	A-2	2

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	PROPOSED	LTE PCS	800-10966	96X20X6.9	±113'	0°	-	-	-	-	(E) (1) RAYCAP DC6-48-60-18-8C
-	-	-	-	-	-	-	-	-	-	(2) 1-1/4" COAX (±185' LENGTH)	
A3	PROPOSED	LTE 700 BC/850/AWS	800-10966	96X20X6.9	±113'	0°	-	(P)(1) 4449 B5/B12 (700/850) (P)(1) 8843 B2/B66A (PCS/AWS)	14.9x13.2x10.4 14.9x13.2x10.9	-	(E) (1) RAYCAP DC6-48-60-18-8C
C4	RELOCATED	UMTS 850	800-10121	54.5X10.3X5.9	±113'	23°	(E)(1) POWERWAVE / TT19-08BP111-001	-	-	(2) 1-1/4" COAX (±185' LENGTH)	
B1	PROPOSED	LTE PCS	800-10966	96X20X6.9	±113'	120°	-	-	-	-	(P) (1) RAYCAP DC6-48-60-18-8C
-	-	-	-	-	-	-	-	-	-	(2) 1-1/4" COAX (±185' LENGTH)	
B3	PROPOSED	LTE 700 BC/850/AWS	800-10966	96X20X6.9	±113'	120°	-	(P)(1) 4449 B5/B12 (700/850) (P)(1) 8843 B2/B66A (PCS/AWS)	14.9x13.2x10.4 14.9x13.2x10.9	-	(P) (1) RAYCAP DC6-48-60-18-8C
A4	RELOCATED	UMTS 850	800-10121	54.5X10.3X5.9	±113'	143°	(E)(1) POWERWAVE / TT19-08BP111-001	-	-	(2) 1-1/4" COAX (±185' LENGTH)	
C1	PROPOSED	LTE PCS	800-10966	96X20X6.9	±113'	250°	-	-	-	-	SHARED
-	-	-	-	-	-	-	-	-	-	(2) 1-1/4" COAX (±185' LENGTH)	
C3	PROPOSED	LTE 700 BC/850/AWS	800-10966	96X20X6.9	±113'	250°	-	(P)(1) 4449 B5/B12 (700/850) (P)(1) 8843 B2/B66A (PCS/AWS)	14.9x13.2x10.4 14.9x13.2x10.9	-	SHARED
B4	RELOCATED	UMTS 850	800-10121	54.5X10.3X5.9	±113'	263°	(E)(1) POWERWAVE / TT19-08BP111-001	-	-	(2) 1-1/4" COAX (±185' LENGTH)	



RRU CHART				
QUANTITY	MODEL	L	W	D
3(P)	B2/B66A 8843	14.9"	13.2"	10.9"
3(P)	B5/B12 4449	14.9"	13.2"	10.4"

NOTE: MOUNT PER MANUFACTURER'S SPECIFICATIONS

NOTE: SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

PROPOSED RRUS REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS

NOTE: MOUNT PER MANUFACTURER'S SPECIFICATIONS.

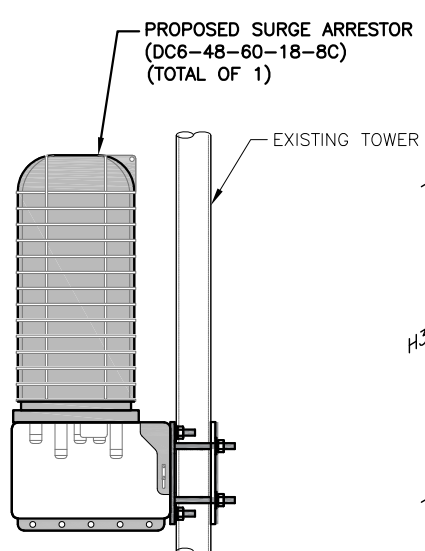
PROPOSED RRUS DETAIL 3 SCALE: N.T.S.

FINAL ANTENNA SCHEDULE 1 SCALE: N.T.S.

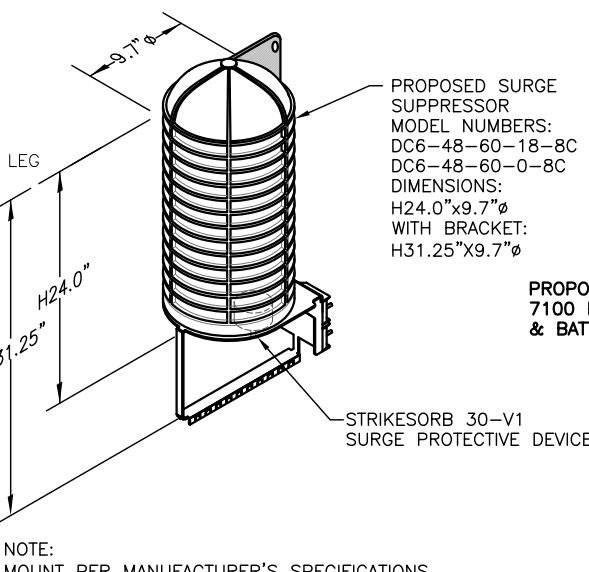
NOTE: REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE: REFER TO STRUCTURAL ANALYSIS BY: BENNETT & PLESS, INC. DATED: JUNE 26, 2019, (REV. 1) FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

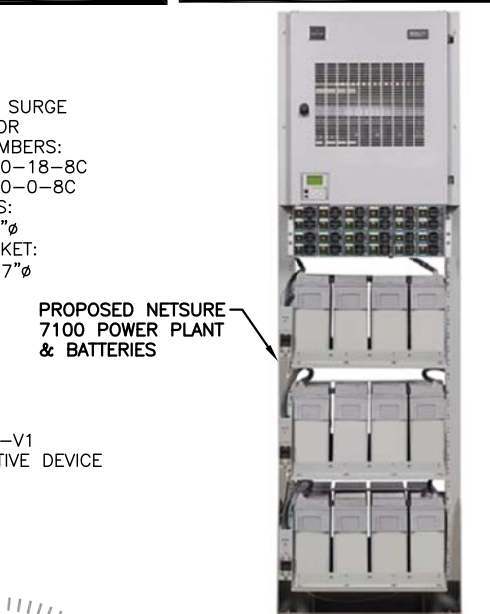
NOTE: AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: MAY 21, 2019 (REV. 1)



PROPOSED SURGE ARRESTOR MOUNTING DETAIL 4 SCALE: N.T.S.



DC SURGE SUPPRESSOR DETAIL 5 SCALE: N.T.S.



NETSURE DC POWER PLANT 6 SCALE: N.T.S.



**STRUCTURAL NOTES:**

- DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-G STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
- DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
- STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
- STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
- STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UN.
- ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
- ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
- FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
- CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND D.I.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL". 14TH EDITION.
- INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
- UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
- EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-270 AND OR HY-200 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
- EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
- WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
- ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
- NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
- SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

**SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):**

**GENERAL:** WHERE APPLICATION IS MADE FOR CONSTRUCTION, THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE INSPECTION CHECKLIST ABOVE.

THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS THE SPECIAL INSPECTOR FOR THE WORK DESIGNED BY THEM, PROVIDED THOSE PERSONNEL MEET THE QUALIFICATION REQUIREMENTS.

STATEMENT OF SPECIAL INSPECTIONS: THE APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 107.1 AS A CONDITION FOR ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH SECTION 1705.

REPORT REQUIREMENT: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS SHALL BE SUBMITTED.

**NOTES:**

- REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
- PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
- PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
- HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
- ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH HAS BEEN BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO DRY HOLES DRILLED USING A CARBIDE BIT INTO CRACKED CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS REQUIRING CERTIFIED INSTALLATIONS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-11 D.9.2.2. INSTALLATIONS REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11 D.8.2.4.
- AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.

**NOTES:**

- ALL CONNECTIONS TO BE SHOP WELDED & FIELD BOLTED USING 3/4"Ø A325-X BOLTS, UNLESS OTHERWISE NOTIFIED.
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED BEFORE ORDERING MATERIAL.
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED PRIOR TO STEEL FABRICATION.
- VERIFICATION OF EXISTING ROOF CONSTRUCTION IS REQUIRED PRIOR TO THE INSTALLATION OF THE ROOF PLATFORM. ENGINEER OF RECORD IS TO APPROVE EXISTING CONDITIONS IN ORDER TO MOVE FORWARD.
- CENTERLINE OF PROPOSED STEEL PLATFORM SUPPORT COLUMNS TO BE CENTRALLY LOCATED OVER THE EXISTING BUILDING COLUMNS.
- EXISTING BRICK MASONRY COLUMNS/BEARING TO BE REPAIRED/REPLACED AT ALL PROPOSED PLATFORM SUPPORT POINTS. ENGINEER OF RECORD TO REVIEW AND APPROVE.

**SPECIAL INSPECTION CHECKLIST**

**BEFORE CONSTRUCTION**

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
N/A	ENGINEER OF RECORD APPROVED SHOP DRAWINGS <sup>1</sup>
N/A	MATERIAL SPECIFICATIONS REPORT <sup>2</sup>
N/A	FABRICATOR NDE INSPECTION
N/A	PACKING SLIPS <sup>3</sup>

ADDITIONAL TESTING AND INSPECTIONS:

**DURING CONSTRUCTION**

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
<b>REQUIRED</b>	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS <sup>4</sup>
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION <sup>5</sup>
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT

ADDITIONAL TESTING AND INSPECTIONS:

**AFTER CONSTRUCTION**

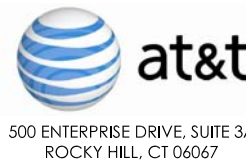
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
<b>REQUIRED</b>	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS <sup>6</sup>
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
<b>REQUIRED</b>	PHOTOGRAPHS

ADDITIONAL TESTING AND INSPECTIONS:

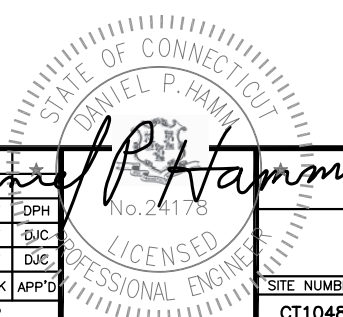


**SITE NUMBER: CT1048**  
**SITE NAME: UNION-STICKNEY HILL**

107 STICKNEY HILL ROAD  
UNION, CT 06076  
TOLLAND COUNTY



NO.	DATE	REVISIONS	BY	CHK	APP'D
2	09/11/19	ISSUED FOR CONSTRUCTION	SF	AT	DPH
1	07/02/19	ISSUED FOR CONSTRUCTION	SG	AT	DJC
A	04/24/19	ISSUED FOR REVIEW	GP	AT	DJC



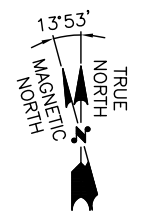
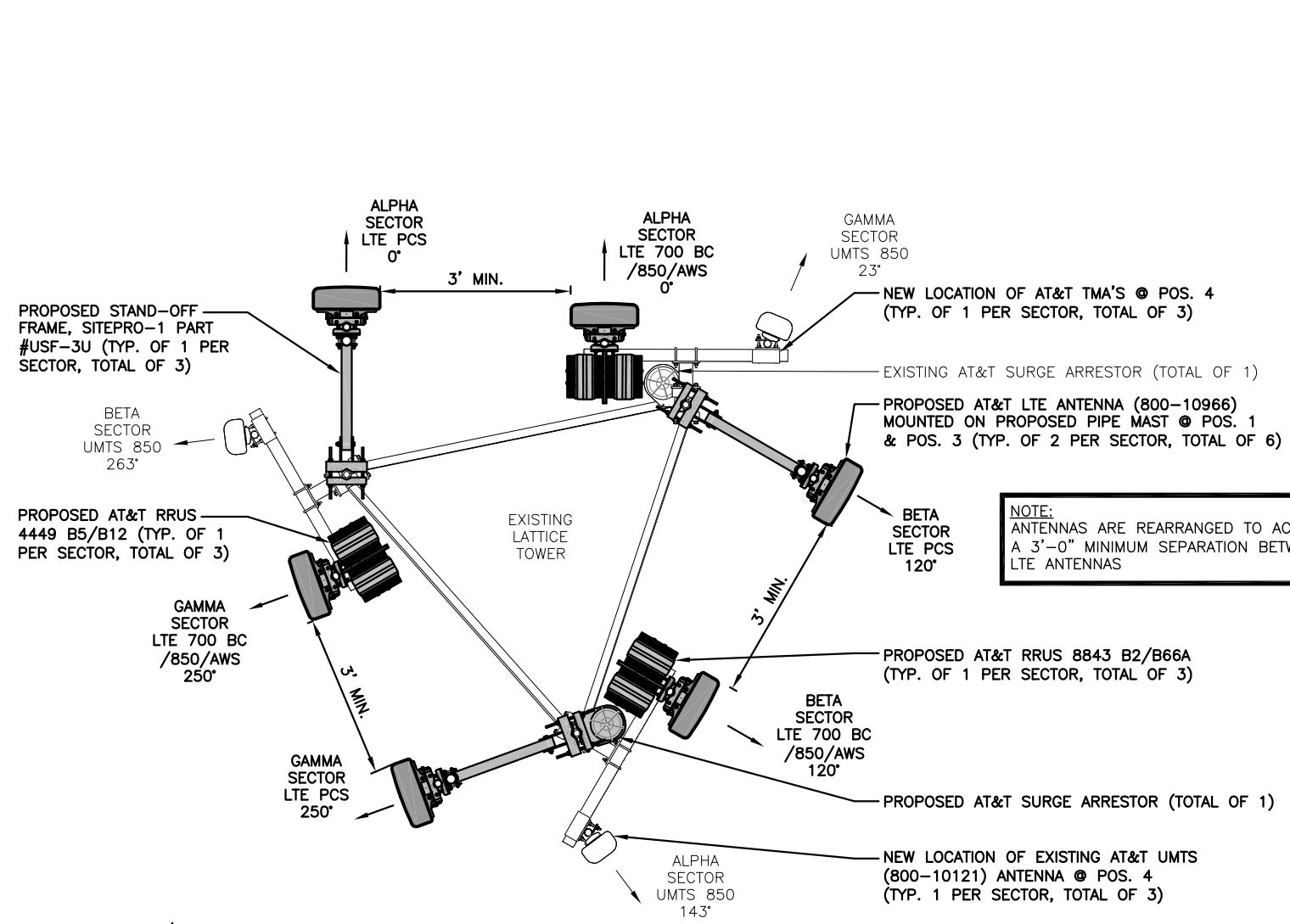
AT&T		
<b>STRUCTURAL DETAILS</b> (LTE 2C 3C 4C)		
SITE NUMBER	DRAWING NUMBER	REV
CT1048	S-1	2

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

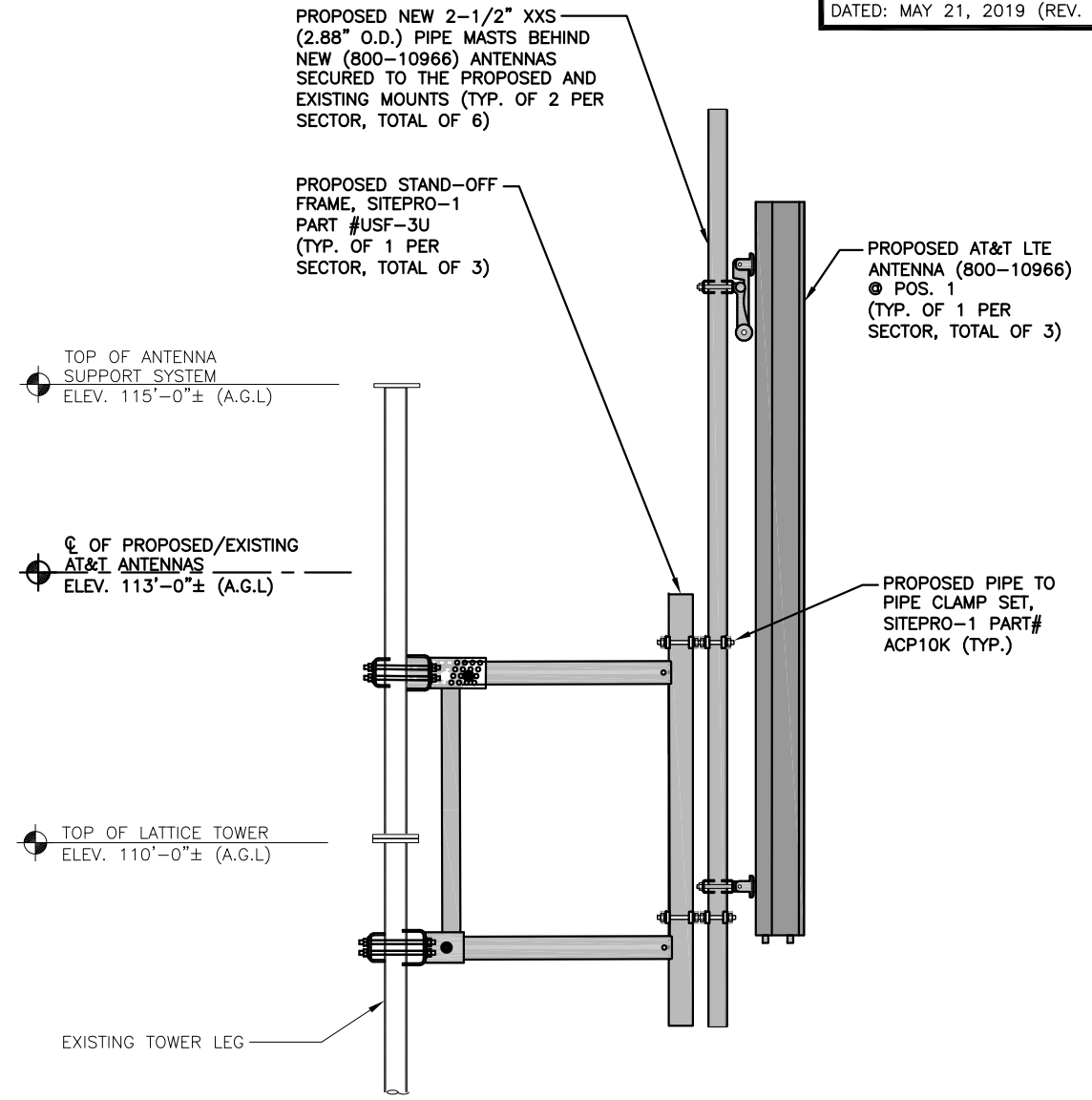
**NOTE:**  
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

**NOTE:**  
REFER TO **STRUCTURAL ANALYSIS** BY: BENNETT & PLESS, INC, DATED: JUNE 26, 2019, (REV. 1) 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: MAY 21, 2019 (REV. 1)



**PROPOSED MOUNT PLAN**  
22x34 SCALE: 1/2"=1'-0"  
11x17 SCALE: 1/4"=1'-0"



**PROPOSED MOUNT ELEVATION**  
22x34 SCALE: 1"=1'-0"  
11x17 SCALE: 1/2"=1'-0"

**HDG 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: CT1048**  
**SITE NAME: UNION-STICKNEY HILL**  
107 STICKNEY HILL ROAD UNION, CT 06076 TOLLAND COUNTY

**at&t**  
500 ENTERPRISE DRIVE, SUITE 3A ROCKY HILL, CT 06067

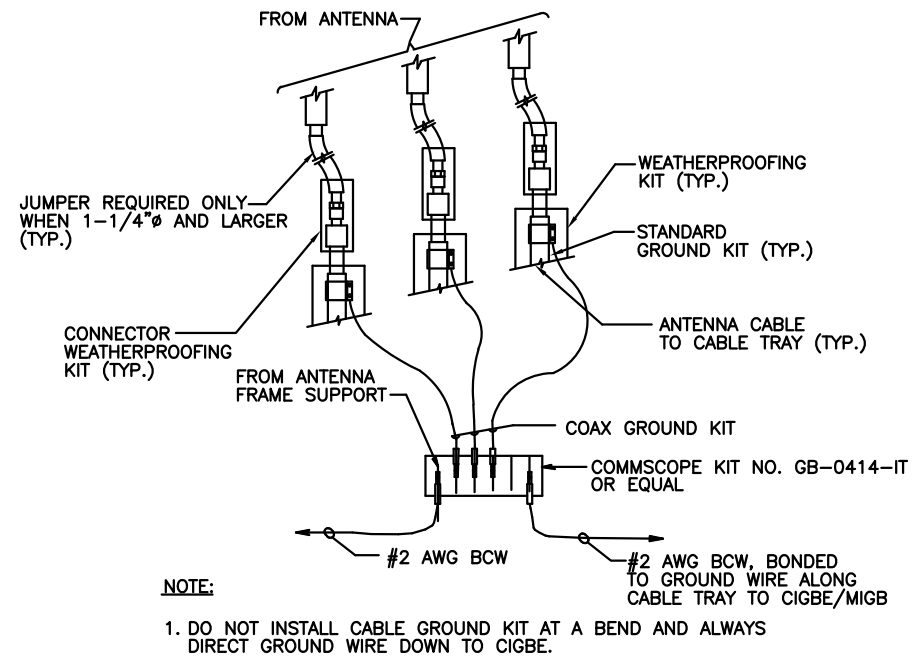
2	09/11/19	ISSUED FOR CONSTRUCTION	SF	AT	DPH
1	07/02/19	ISSUED FOR CONSTRUCTION	SG	AT	DJC
A	04/24/19	ISSUED FOR REVIEW	GP	AT	DJC
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: GP		

*Daniel P. Hamm*  
STATE OF CONNECTICUT  
No. 24178  
LICENSED PROFESSIONAL ENGINEER

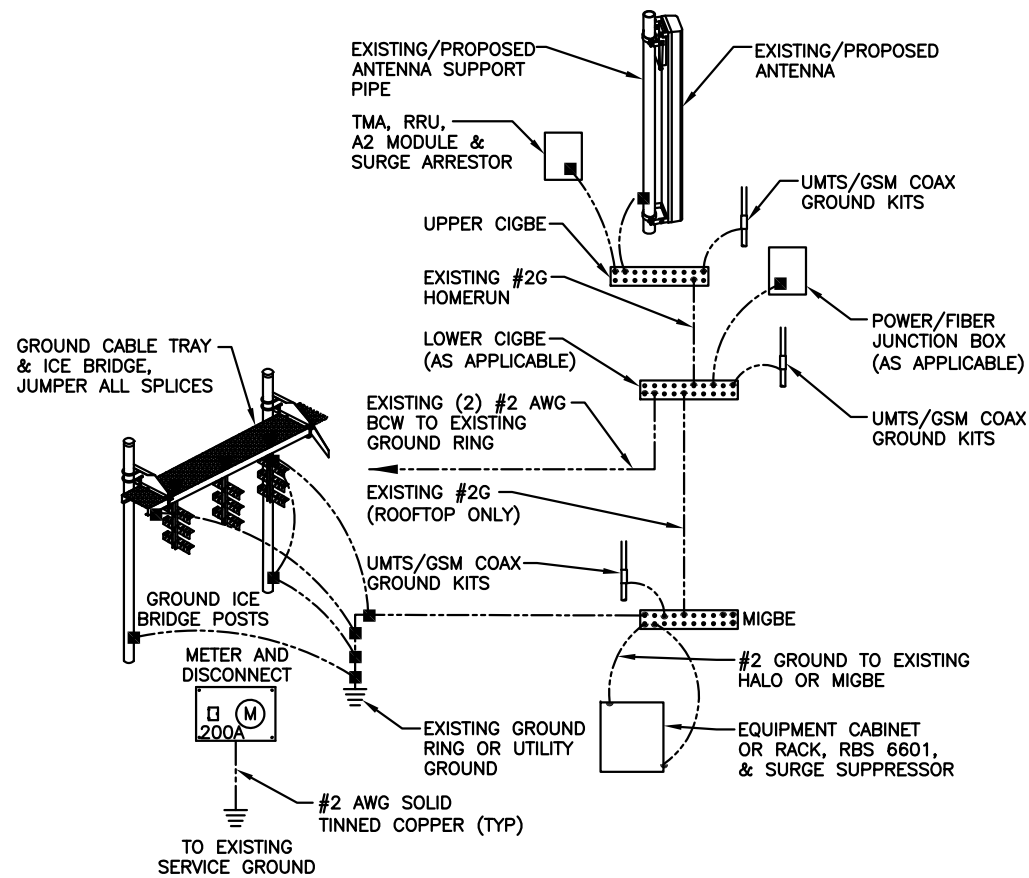
AT&T

**STRUCTURAL DETAILS (LTE 2C 3C 4C)**

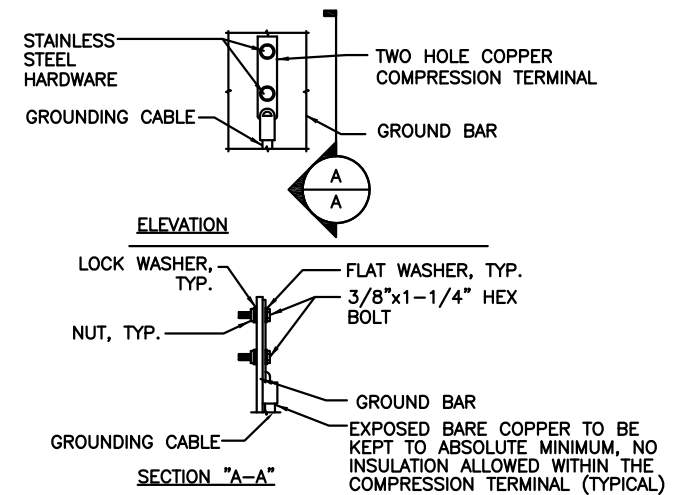
SITE NUMBER	DRAWING NUMBER	REV
CT1048	S-1	2



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

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

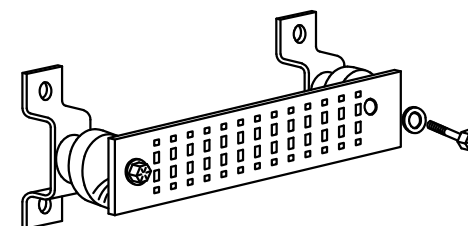
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

**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**

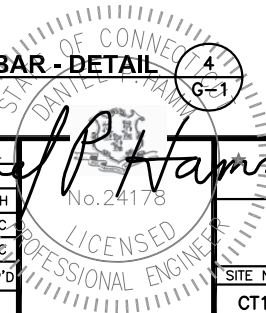
- INTERIOR GROUND RING (#2 AWG)
- EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2 AWG)
- METALLIC COLD WATER PIPE (IF AVAILABLE) (#2 AWG)
- BUILDING STEEL (IF AVAILABLE) (#2 AWG)



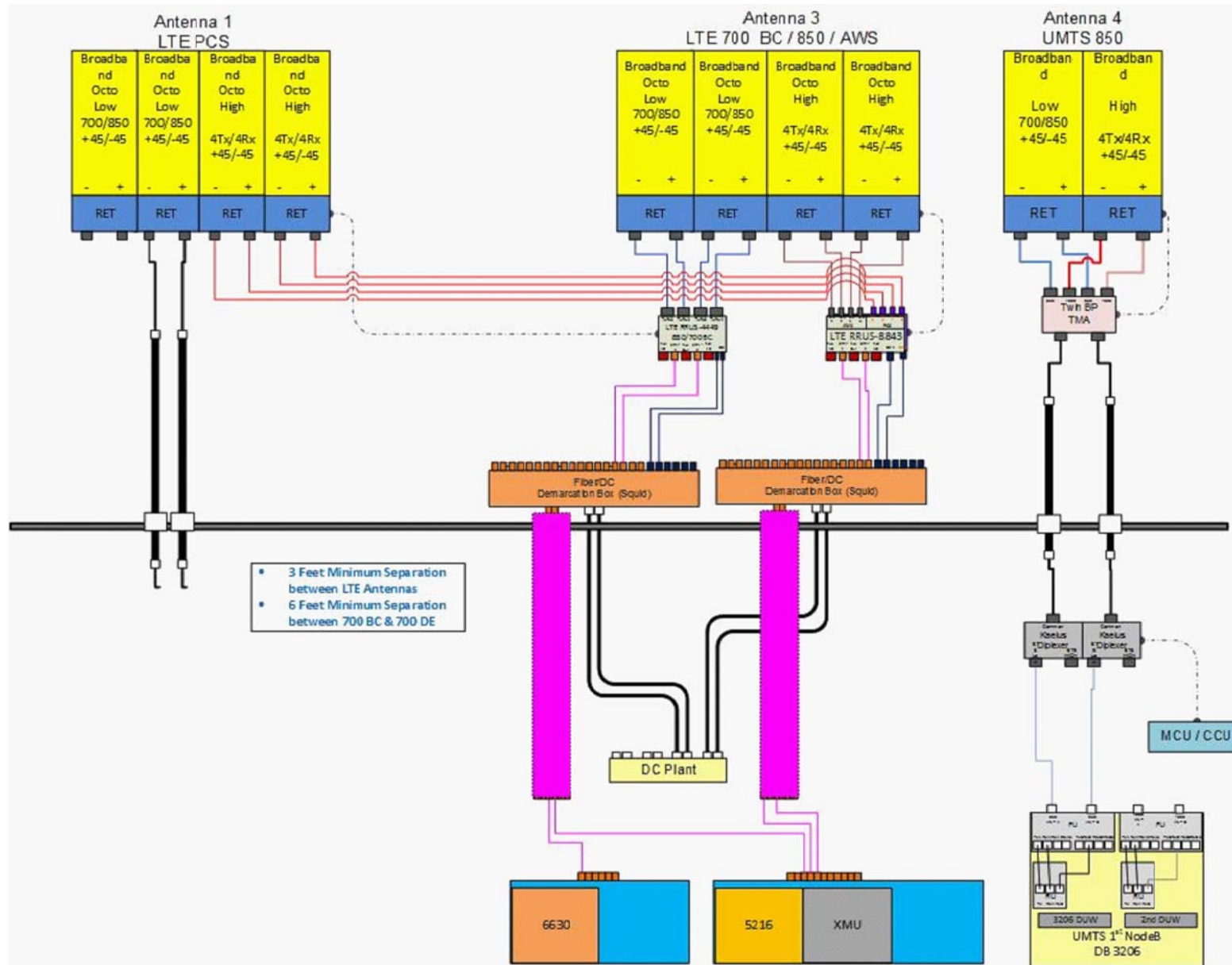
**GROUND BAR - DETAIL** 4  
SCALE: N.T.S. G-1

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	09/11/19	ISSUED FOR CONSTRUCTION	SF	AT	DPH
1	07/02/19	ISSUED FOR CONSTRUCTION	SG	AT	DJC
A	04/24/19	ISSUED FOR REVIEW	GP	AT	DJC

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



<b>AT&amp;T</b>		
<b>GROUNDING DETAILS</b> (LTE 2C 3C 4C)		
SITE NUMBER	DRAWING NUMBER	REV
CT1048	G-1	2



**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.

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	09/11/19	ISSUED FOR CONSTRUCTION	SF	AT	DPH
1	07/02/19	ISSUED FOR CONSTRUCTION	SG	AT	DJC
A	04/24/19	ISSUED FOR REVIEW	GP	AT	DJC
SCALE: AS SHOWN			DESIGNED BY: AT	DRAWN BY: GP	

<b>AT&amp;T</b>		
<b>RF PLUMBING DIAGRAM</b> (LTE 2C 3C 4C)		
SITE NUMBER	DRAWING NUMBER	REV
CT1048	RF-1	2



## Structural Analysis Report

**Structure** : 110 foot Self-support Tower (Top of Highest Appurtenance = 125 feet)  
**Insite Site Name** : Union  
**Insite Site Number** : CT907  
**Proposed Carrier** : New Cingular Wireless PCS  
**Carrier Site Name** : Union - Stickney Hill  
**Carrier Site Number** : CT1048  
**Site Location** : 107 Stickney Hill Rd  
Union, CT 06076 (Tolland County)  
41.9857, -72.1918  
**Date** : June 26, 2019  
**Max Member Stress Level** : 95.9%  
**Result** : PASS

Prepared by:  
Bennett & Pless, Inc.  
B&P Job No.: 19313.007



6/26/2019



**Table of Contents**

**Introduction ..... 1**

**Existing Structural Information ..... 1**

**Final Proposed Equipment Loading for New Cingular Wireless PCS..... 1**

**Design Criteria ..... 2**

**Analysis Results ..... 2**

**Assumptions..... 2**

**Conclusions ..... 3**

**Standard Conditions ..... 4**

**Disclaimer of Warranties ..... 4**

**Calculations..... Attached**

**Collocation Application ..... Attached**

## Introduction

We have completed our structural analysis of the proposed equipment installation on the foregoing tower to determine its ability to support the new loads proposed by New Cingular Wireless PCS. The objective of the analysis was to determine if the tower meets the current structural codes and standards with the proposed equipment installation.

## Existing Structural Information

The following documents for the existing structure were made available for our structural analysis.

<b>Tower Information</b>	Structural Components Tower Mapping Report dated September 10, 2017.
<b>Foundation Information</b>	No foundation information was available.
<b>Geotechnical Information</b>	No geotechnical information was available.
<b>Existing Equipment Information</b>	Structural Components Tower Mapping Report dated September 10, 2017. Insite Customer Application dated 4/29/19
<b>Tower Reinforcement Information</b>	No reinforcement information was available.

## Final Proposed Equipment Loading for New Cingular Wireless PCS

The following proposed loading was obtained from the Insite Collocation Application:

Antenna/Equipment					Coax	
Mount	RAD	Qty.	Antenna	Type	Qty.	Size/Type
105	105	1	Raycap DC6-48-60-18-8F	OVP	12 <b>1</b> 1 <b>2</b> 2 1	1-1/4" <b>3/8" Fiber</b> 3/8" Fiber <b>5/8" Power</b> 5/8" Power 2-1/4" Conduit
		<b>1</b>	<b>Raycap DC6-48-60-18-8F</b>	<b>OVP</b>		
110	111	3	Kathrein 800-10121	Panel		
		3	Powerwave TT19-08BP111-001	TMA		
		6	Kathrein 860-10025	RET		
		6	Stand Off	Mount		
110	113	<b>6</b>	<b>Kathrein 800-10966</b>	<b>Panel</b>		
		<b>3</b>	<b>Ericsson B2/B66A 8843</b>	<b>RRH</b>		
		<b>3</b>	<b>Ericsson B5/B12 4449</b>	<b>RRH</b>		
		3	T-Arm w/ Mods Per Hudson Design Group SA dated May 15, 2019	Mount		

Note: Proposed equipment is shown in bold above.

Note: Other existing loading can be found on the tower profile attached.

## Design Criteria

The tower was analyzed using tnxTower (Version 8.0.5.0) tower analysis software using the following design criteria.

<b>State/County</b>	Connecticut/Tolland County
<b>State Building Code</b>	Connecticut State Building Code (IBC 2015)
<b>TIA/EIA Standard Code</b>	TIA-222-G
<b>Basic Wind Speed</b>	125 MPH ( $V_{ult}$ )/97 MPH ( $V_{asd}$ )
<b>Basic Wind Speed w/ Ice</b>	50 MPH/ 1" Ice
<b>Steel Grade</b>	See attached tower profile for details
<b>Exposure Category</b>	B
<b>Topographic Category (height)</b>	5 (165 ft)
<b>Structure Class</b>	II

## Analysis Results

Based on the foregoing information, our structural analysis determined that **the existing tower is structurally capable of supporting the proposed equipment loads without modifications.** The existing foundation has not been evaluated due to the lack of information.

## Assumptions

The below assumptions are true, complete and accurate.

1. The existing tower has been maintained to manufacturer's specifications and is in good condition.
2. Foundations are considered to have been properly designed for the original design loads.
3. All member connections are considered to have been designed to meet the load carrying capacity of the connected member.
4. Antenna mount loads have been estimated based on generally accepted industry standards.
5. The mounts for the proposed antennas have been analyzed and designed by others.
6. See additional assumptions contained in the report attached.
7. Tower is within acceptable engineering tolerance at 105%.
8. Foundations are within acceptable engineering tolerance at 110%.



## Conclusions

The existing tower described above **does have sufficient capacity** to support the proposed loading based on the governing Building Code. The existing tower foundation has not been evaluated.

We appreciate the opportunity of providing our continuing professional services to you. If you have any questions or need further assistance, please call us anytime at 561-288-1187.

Sincerely,

Analysis by:



Chunhui Song, P.E.  
Design Engineer

Reviewed by:

Thomas F. Ireland, PE  
Principal, Chattanooga Office



6/26/2019

## **Standard Conditions**

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but not necessarily limited, to:

- Information supplied by the client regarding the structure itself, the antenna and transmission line loading on the structure and its components, or relevant information.
- Information from drawings in possession of Bennett & Pless Inc., or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to Bennett & Pless Inc. and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we consider that all structures were constructed in accordance with the drawings and specifications and are in an uncorroded condition and have not deteriorated; and we, therefore, consider that their capacity has not significantly changed from the original design condition.

All services will be performed to the codes and standards specified by the client, and we do not imply to meet any other code and standard requirements unless explicitly agreed to in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes and standards, the client shall specify the exact requirements. In the absence of information to the contrary, all work will be performed in accordance with the revision of ANSI/TIA/EIA-222 requested.

All services are performed, results obtained and recommendations made in accordance with the generally accepted engineering principles and practices. Bennett & Pless Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

## **Disclaimer of Warranties**

Bennett & Pless Inc. makes no warranties, expressed or implied, in connection with this report, and disclaims any liability arising from the ability of the existing structure to support the design loads for which it was originally designed. Bennett & Pless Inc. will not be responsible whatsoever for or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of Bennett & Pless Inc. pursuant to this report will be limited to the total fee received for preparation of this report.

Attachment 1:  
Calculations

**DESIGNED APPURTENANCE LOADING**

TYPE	ELEVATION	TYPE	ELEVATION
10' Dipole	115	(2) Kathrein 860-10025 (ATI)	111
(2) Kathrein 800 10966 (ATI)	113	Kathrein 800 10121 (ATI)	111
(2) Kathrein 800 10966 (ATI)	113	(2) 1' Stand-off (ATI)	111
(2) Kathrein 800 10966 (ATI)	113	(2) 1' Stand-off (ATI)	111
Ericsson B2/B66A 8843 (ATI)	113	(2) 1' Stand-off (ATI)	111
Ericsson B2/B66A 8843 (ATI)	113	4'x2-3/8" Pipe Mount	108
Ericsson B2/B66A 8843 (ATI)	113	8' Dish w/o Radome	108
Ericsson B5/B12 4449 (ATI)	113	RayCap DC6-48-60-18-8F (ATI)	105
Ericsson B5/B12 4449 (ATI)	113	RayCap DC6-48-60-18-8F (ATI)	105
Ericsson B5/B12 4449 (ATI)	113	8' Grid Dish (140lbs 50.27CaAa)	104
T-Arm Mount [TA 602-3] (ATI)	113	12-Element x 8' Long Yagi	103
Kathrein 800 10121 (ATI)	111	12-Element x 12' Long Yagi w/ Mount	94
Kathrein 800 10121 (ATI)	111	6'x2-3/8" Pipe Mount	94
Powerwave TT19-08BP111-001 (ATI)	111	2" x 20' Tall Omni	83.5
Powerwave TT19-08BP111-001 (ATI)	111	12' Cross Arm	83.5
Powerwave TT19-08BP111-001 (ATI)	111	4' Grid Dish (51lbs 7.46CaAa)	82.5
(2) Kathrein 860-10025 (ATI)	111	12-Element x 12' Long Yagi w/ Mount	77.5
(2) Kathrein 860-10025 (ATI)	111	6'x2-3/8" Pipe Mount	77.5

**SYMBOL LIST**

MARK	SIZE	MARK	SIZE
A	2-7/8" x 0.286"	B	L2 1/2x2 1/2x3/16

**MATERIAL STRENGTH**

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

**TOWER DESIGN NOTES**

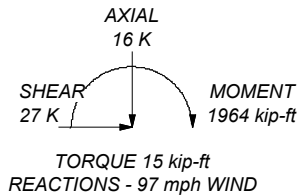
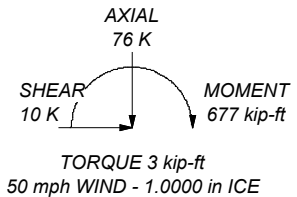
1. Tower is located in Tolland County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 97 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 5 with Crest Height of 165.000 ft
8. TOWER RATING: 95.9%

ALL REACTIONS  
ARE FACTORED

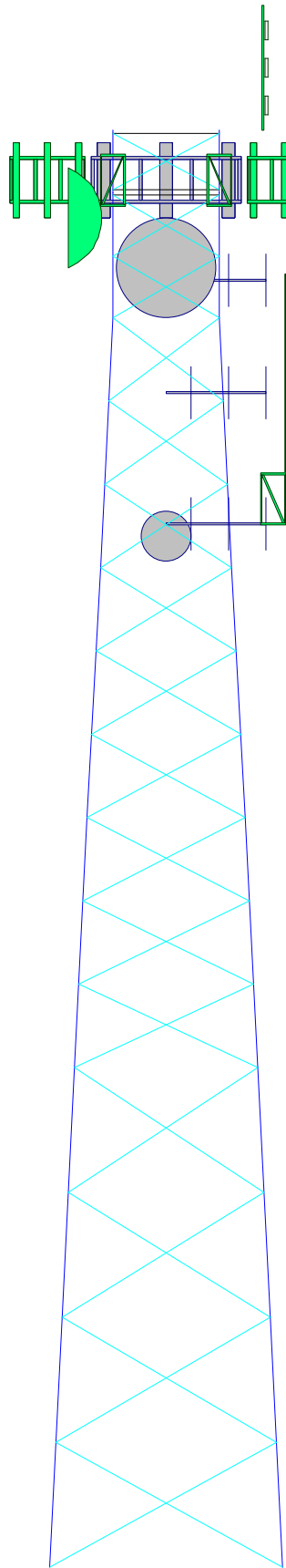
MAX. CORNER REACTIONS AT BASE:

DOWN: 126 K  
SHEAR: 16 K

UPLIFT: -105 K  
SHEAR: 13 K



110.0 ft  
100.0 ft  
80.0 ft  
60.0 ft  
40.0 ft  
20.0 ft  
0.0 ft



Section	T2	T3	T4	T5	T6	T7
Legs	2-7/8" x 0.240"	2-7/8" x 0.328"	2-7/8" x 0.276"	3-1/2" x 0.364"	4-1/2" x 0.367"	5-5/8" x 0.28"
Leg Grade				A572-50		
Diagonals	L2x2x3/16		L2 1/2x2 1/2x3/16	L3x3x3/16		L3x3x1/4
Diagonal Grade				A36		
Top Girts	2L2x2x3/16			N.A.		
Bottom Girts				N.A.		
Face Width (ft)		10.567		12.592	14.617	16.642
# Panels @ (ft)	2 @ 4.89583		9 @ 6.66667		4 @ 10	
Weight (K)	0.6	1.0	1.2	1.7	1.8	2.2

<p><b>Bennett and Pless</b> 750 Park of Commerce Drive Boca Raton, Florida 33487 Experience Structural Expertise Phone: 678.990.8700 FAX: 678.990.8701</p>	Job: <b>CT907</b>
	Project: <b>SST Structural Analysis</b>
	Client: <b>InSite Wireless Group LLC</b>
	Code: <b>TIA-222-G</b>
	Path:
Drawn by: <b>Chunhui Song</b>	App'd:
Date: <b>06/11/19</b>	Scale: <b>NTS</b>
	Dwg No. <b>E-1</b>

<b>tnxTower</b>  <b>Bennett and Pless</b> 750 Park of Commerce Drive Boca Raton, Florida 33487 Phone: 678.990.8700 FAX: 678.990.8701	<b>Job</b> CT907	<b>Page</b> 1 of 25
	<b>Project</b> SST Structural Analysis	<b>Date</b> 11:18:22 06/11/19
	<b>Client</b> InSite Wireless Group LLC	<b>Designed by</b> Chunhui Song

## Tower Input Data

The main tower is a 3x free standing tower with an overall height of 115.000 ft above the ground line.

The base of the tower is set at an elevation of 0.000 ft above the ground line.

The face width of the tower is 8.542 ft at the top and 18.667 ft at the base.

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

The following design criteria apply:

Tower is located in Tolland County, Connecticut.

Basic wind speed of 97 mph.

Structure Class II.

Exposure Category B.

Topographic Category 5.

Crest Height 165.000 ft.

SEAW RSM-03 procedures for wind speed-up calculations are used.

Topographic Feature: Hill.

Slope Distance L: 1444.000 ft.

Distance from Crest x: 18.000 ft.

Nominal ice thickness of 1.0000 in.

Ice thickness is considered to increase with height.

Ice density of 56.000 pcf.

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

Temperature drop of 50.000 °F.

Deflections calculated using a wind speed of 60 mph.

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

Pressures are calculated at each section.

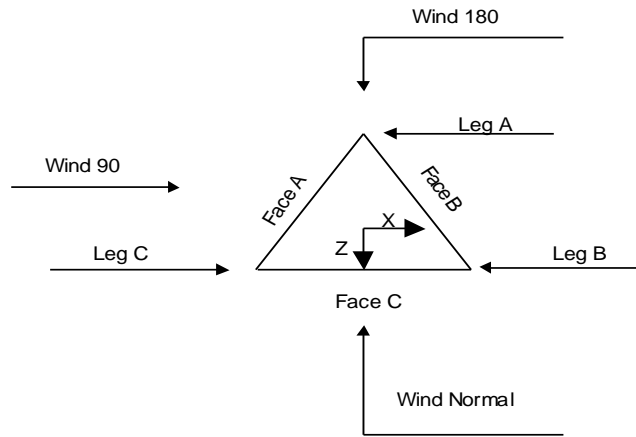
Stress ratio used in tower member design is 1.

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

## Options

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

<b>tnxTower</b>  <b>Bennett and Pless</b> 750 Park of Commerce Drive Boca Raton, Florida 33487 Phone: 678.990.8700 FAX: 678.990.8701	<b>Job</b> CT907	<b>Page</b> 2 of 25
	<b>Project</b> SST Structural Analysis	<b>Date</b> 11:18:22 06/11/19
	<b>Client</b> InSite Wireless Group LLC	<b>Designed by</b> Chunhui Song



**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	115.000-110.000			8.542	1	5.000
T2	110.000-100.000			8.542	1	10.000
T3	100.000-80.000			8.542	1	20.000
T4	80.000-60.000			10.567	1	20.000
T5	60.000-40.000			12.592	1	20.000
T6	40.000-20.000			14.617	1	20.000
T7	20.000-0.000			16.642	1	20.000

**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	115.000-110.000	4.500	X Brace	No	No	3.0000	3.0000
T2	110.000-100.000	4.896	X Brace	No	No	2.5000	0.0000
T3	100.000-80.000	6.667	X Brace	No	No	0.0000	0.0000
T4	80.000-60.000	6.667	X Brace	No	No	0.0000	0.0000
T5	60.000-40.000	6.667	X Brace	No	No	0.0000	0.0000
T6	40.000-20.000	10.000	X Brace	No	No	0.0000	0.0000
T7	20.000-0.000	10.000	X Brace	No	No	0.0000	0.0000

<b>tnxTower</b>  <b>Bennett and Pless</b> 750 Park of Commerce Drive Boca Raton, Florida 33487 Phone: 678.990.8700 FAX: 678.990.8701	<b>Job</b> CT907	<b>Page</b> 3 of 25
	<b>Project</b> SST Structural Analysis	<b>Date</b> 11:18:22 06/11/19
	<b>Client</b> InSite Wireless Group LLC	<b>Designed by</b> Chunhui Song

### Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 115.000-110.000	Pipe	2-7/8" x 0.286"	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T2 110.000-100.000	Pipe	2-7/8" x 0.240"	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T3 100.000-80.000	Pipe	2-7/8" x 0.328"	A572-50 (50 ksi)	Equal Angle	L2x2x3/16	A36 (36 ksi)
T4 80.000-60.000	Pipe	2-7/8" x 0.276"	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T5 60.000-40.000	Pipe	3-1/2" x 0.364"	A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T6 40.000-20.000	Pipe	4-1/2" x 0.367"	A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T7 20.000-0.000	Pipe	5-5/8" x 0.28"	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	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 115.000-110.000	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T2 110.000-100.000	Double Equal Angle	2L2x2x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)

### Tower Section Geometry (cont'd)

Tower Elevation ft	Gusset Area (per face) ft <sup>2</sup>	Gusset Thickness in	Gusset Grade	Adjust. Factor A <sub>f</sub>	Adjust. Factor A <sub>r</sub>	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontal in	Double Angle Stitch Bolt Spacing Redundants in
T1 115.000-110.000	0.000	0.2500	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T2 110.000-100.000	0.000	0.2500	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T3 100.000-80.000	0.000	0.2500	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T4 80.000-60.000	0.000	0.2500	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T5 60.000-40.000	0.000	0.2500	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T6	0.000	0.2500	A36	1	1	1	36.0000	36.0000	36.0000





<p><b>tnxTower</b></p> <p><b>Bennett and Pless</b> 750 Park of Commerce Drive Boca Raton, Florida 33487 Phone: 678.990.8700 FAX: 678.990.8701</p>	<p><b>Job</b></p> <p>CT907</p>	<p><b>Page</b></p> <p>5 of 25</p>
	<p><b>Project</b></p> <p>SST Structural Analysis</p>	<p><b>Date</b></p> <p>11:18:22 06/11/19</p>
	<p><b>Client</b></p> <p>InSite Wireless Group LLC</p>	<p><b>Designed by</b></p> <p>Chunhui Song</p>

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T4 80.000-60.000	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 60.000-40.000	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 40.000-20.000	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 20.000-0.000	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

### Tower Section Geometry (cont'd)

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.
T1 115.000-110.000	Flange	0.6250 A325N	4	0.5000 A325X	1	0.6250 A325N	1	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 110.000-100.000	Flange	0.6250 A325N	4	0.5000 A325X	1	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T3 100.000-80.000	Flange	0.6250 A325N	4	0.5000 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T4 80.000-60.000	Flange	0.7500 A325N	4	0.5000 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T5 60.000-40.000	Flange	0.8750 A325N	4	0.5000 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T6 40.000-20.000	Flange	1.0000 A325N	4	0.5000 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T7 20.000-0.000	Flange	1.0000 F1554-55	4	0.5000 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

### 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 klf
Step Pegs (5/8" SR) 7-in. w/30" step	A	No	No	Ar (CaAa)	115.000 - 6.000	0.0000	0	1	1	24.0000 0.0000	0.3500		0.000
Step Pegs (5/8" SR) 7-in. w/30" step	B	No	No	Ar (CaAa)	115.000 - 6.000	0.0000	0	1	1	24.0000 0.0000	0.3500		0.000
Step Pegs (5/8" SR) 7-in.	C	No	No	Ar (CaAa)	115.000 - 6.000	0.0000	0	1	1	24.0000 0.0000	0.3500		0.000

<p><b>tnxTower</b></p> <p><b>Bennett and Pless</b> 750 Park of Commerce Drive Boca Raton, Florida 33487 Phone: 678.990.8700 FAX: 678.990.8701</p>	<b>Job</b>	CT907	<b>Page</b>	6 of 25
	<b>Project</b>	SST Structural Analysis	<b>Date</b>	11:18:22 06/11/19
	<b>Client</b>	InSite Wireless Group LLC	<b>Designed by</b>	Chunhui Song

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 klf
w/30" step													
***													
1 1/8" Coax	A	No	No	Ar (CaAa)	115.000 - 6.000	0.0000	-0.46	1	1	1.1250	1.1250		0.000
EW52	C	No	No	Ar (CaAa)	108.000 - 6.000	0.0000	0.46	1	1	2.2500	2.2500		0.001
9/16" O.D.	A	No	No	Ar (CaAa)	104.000 - 6.000	0.0000	0.5	1	1	0.5625	0.5625		0.000
9/16" O.D.	A	No	No	Ar (CaAa)	103.000 - 6.000	0.0000	0.5	1	1	0.5625	0.5625		0.000
9/16" O.D.	A	No	No	Ar (CaAa)	94.000 - 6.000	0.0000	0.5	1	1	0.5625	0.5625		0.000
1 1/8" Coax	A	No	No	Ar (CaAa)	83.500 - 6.000	0.0000	0.48	1	1	1.1250	1.1250		0.000
9/16" O.D.	A	No	No	Ar (CaAa)	82.500 - 6.000	0.0000	0.5	1	1	0.5625	0.5625		0.000
9/16" O.D.	A	No	No	Ar (CaAa)	77.500 - 6.000	0.0000	0.5	1	1	0.5625	0.5625		0.000
***													
1 1/4 (AT&T)	C	No	No	Ar (CaAa)	115.000 - 6.000	0.0000	-0.25	12	12	0.5000	1.5840		0.001
2-1/4" Conduit (AT&T)	C	No	No	Ar (CaAa)	115.000 - 6.000	0.0000	-0.1	1	1	2.2500	2.2500		0.000
3/8" Coax (AT&T)	C	No	No	Ar (CaAa)	115.000 - 6.000	0.0000	-0.05	1	1	0.4400	0.4400		0.000
3/8" Coax (AT&T)	C	No	No	Ar (CaAa)	115.000 - 6.000	0.0000	-0.08	1	1	0.4400	0.4400		0.000
5/8" Coax (AT&T)	C	No	No	Ar (CaAa)	115.000 - 6.000	0.0000	-0.03	2	2	0.5000	0.7700		0.000
5/8" Coax (AT&T)	C	No	No	Ar (CaAa)	115.000 - 6.000	0.0000	0	2	2	0.5000	0.7700		0.000

### Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>	Weight K
T1	115.000-110.000	A	0.000	0.000	0.738	0.000	0.004
		B	0.000	0.000	0.175	0.000	0.002
		C	0.000	0.000	12.784	0.000	0.051
T2	110.000-100.000	A	0.000	0.000	1.869	0.000	0.009
		B	0.000	0.000	0.350	0.000	0.005
		C	0.000	0.000	27.368	0.000	0.107
T3	100.000-80.000	A	0.000	0.000	6.522	0.000	0.026
		B	0.000	0.000	0.700	0.000	0.010
		C	0.000	0.000	55.636	0.000	0.216
T4	80.000-60.000	A	0.000	0.000	10.684	0.000	0.037
		B	0.000	0.000	0.700	0.000	0.010
		C	0.000	0.000	55.636	0.000	0.216
T5	60.000-40.000	A	0.000	0.000	10.825	0.000	0.038
		B	0.000	0.000	0.700	0.000	0.010
		C	0.000	0.000	55.636	0.000	0.216
T6	40.000-20.000	A	0.000	0.000	10.825	0.000	0.038
		B	0.000	0.000	0.700	0.000	0.010
		C	0.000	0.000	55.636	0.000	0.216

<b>tnxTower</b>  <b>Bennett and Pless</b> 750 Park of Commerce Drive Boca Raton, Florida 33487 Phone: 678.990.8700 FAX: 678.990.8701	<b>Job</b>	CT907	<b>Page</b>	7 of 25
	<b>Project</b>	SST Structural Analysis	<b>Date</b>	11:18:22 06/11/19
	<b>Client</b>	InSite Wireless Group LLC	<b>Designed by</b>	Chunhui Song

Tower Section	Tower Elevation ft	Face	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>	Weight K
T7	20.000-0.000	A	0.000	0.000	7.577	0.000	0.026
		B	0.000	0.000	0.490	0.000	0.007
		C	0.000	0.000	38.945	0.000	0.151

### Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>	Weight K
T1	115.000-110.000	A	2.441	0.000	0.000	5.620	0.000	0.098
		B		0.000	0.000	2.616	0.000	0.044
		C		0.000	0.000	41.483	0.000	0.677
T2	110.000-100.000	A	2.432	0.000	0.000	15.000	0.000	0.259
		B		0.000	0.000	5.213	0.000	0.088
		C		0.000	0.000	88.488	0.000	1.463
T3	100.000-80.000	A	2.410	0.000	0.000	54.724	0.000	0.928
		B		0.000	0.000	10.340	0.000	0.172
		C		0.000	0.000	178.958	0.000	2.950
T4	80.000-60.000	A	2.373	0.000	0.000	85.421	0.000	1.430
		B		0.000	0.000	10.190	0.000	0.168
		C		0.000	0.000	177.456	0.000	2.892
T5	60.000-40.000	A	2.318	0.000	0.000	85.003	0.000	1.395
		B		0.000	0.000	9.972	0.000	0.161
		C		0.000	0.000	175.275	0.000	2.808
T6	40.000-20.000	A	2.228	0.000	0.000	82.119	0.000	1.303
		B		0.000	0.000	9.612	0.000	0.150
		C		0.000	0.000	171.672	0.000	2.673
T7	20.000-0.000	A	2.021	0.000	0.000	52.856	0.000	0.773
		B		0.000	0.000	6.150	0.000	0.089
		C		0.000	0.000	114.394	0.000	1.662

### Feed Line Center of Pressure

Section	Elevation ft	CP <sub>X</sub> in	CP <sub>Z</sub> in	CP <sub>X</sub> Ice in	CP <sub>Z</sub> Ice in
T1	115.000-110.000	4.8465	3.4980	2.7920	5.4255
T2	110.000-100.000	4.8426	4.9987	2.6815	7.8173
T3	100.000-80.000	5.5266	4.5245	2.6866	4.0034
T4	80.000-60.000	5.5861	1.7736	2.8093	-2.4115
T5	60.000-40.000	5.5331	1.6037	3.1155	-2.8521
T6	40.000-20.000	6.6530	1.9101	3.8016	-3.2925
T7	20.000-0.000	5.3699	1.4528	3.6008	-2.6319

### Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
---------------	----------------------	-------------	-------------------------	--------------------------	-----------------------

<b>Job</b>	CT907	<b>Page</b>	8 of 25
<b>Project</b>	SST Structural Analysis	<b>Date</b>	11:18:22 06/11/19
<b>Client</b>	InSite Wireless Group LLC	<b>Designed by</b>	Chunhui Song

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	$K_a$ No Ice	$K_a$ Ice
T1	1	Step Pegs (5/8" SR) 7-in. w/30" step	110.00 - 115.00	0.6000	0.4027
T1	2	Step Pegs (5/8" SR) 7-in. w/30" step	110.00 - 115.00	0.6000	0.4027
T1	3	Step Pegs (5/8" SR) 7-in. w/30" step	110.00 - 115.00	0.6000	0.4027
T1	5	1 1/8" Coax	110.00 - 115.00	0.6000	0.4027
T1	14	1 1/4"	110.00 - 115.00	0.6000	0.4027
T1	15	2-1/4" Conduit	110.00 - 115.00	0.6000	0.4027
T1	16	3/8" Coax	110.00 - 115.00	0.6000	0.4027
T1	17	3/8" Coax	110.00 - 115.00	0.6000	0.4027
T1	18	5/8" Coax	110.00 - 115.00	0.6000	0.4027
T1	19	5/8" Coax	110.00 - 115.00	0.6000	0.4027
T2	1	Step Pegs (5/8" SR) 7-in. w/30" step	100.00 - 110.00	0.6000	0.5696
T2	2	Step Pegs (5/8" SR) 7-in. w/30" step	100.00 - 110.00	0.6000	0.5696
T2	3	Step Pegs (5/8" SR) 7-in. w/30" step	100.00 - 110.00	0.6000	0.5696
T2	5	1 1/8" Coax	100.00 - 110.00	0.6000	0.5696
T2	6	EW52	100.00 - 108.00	0.6000	0.5696
T2	7	9/16" O.D.	100.00 - 104.00	0.6000	0.5696
T2	8	9/16" O.D.	100.00 - 103.00	0.6000	0.5696
T2	14	1 1/4"	100.00 - 110.00	0.6000	0.5696
T2	15	2-1/4" Conduit	100.00 - 110.00	0.6000	0.5696
T2	16	3/8" Coax	100.00 - 110.00	0.6000	0.5696
T2	17	3/8" Coax	100.00 - 110.00	0.6000	0.5696
T2	18	5/8" Coax	100.00 - 110.00	0.6000	0.5696
T2	19	5/8" Coax	100.00 - 110.00	0.6000	0.5696
T3	1	Step Pegs (5/8" SR) 7-in. w/30" step	80.00 - 100.00	0.6000	0.6000
T3	2	Step Pegs (5/8" SR) 7-in. w/30" step	80.00 - 100.00	0.6000	0.6000
T3	3	Step Pegs (5/8" SR) 7-in. w/30" step	80.00 - 100.00	0.6000	0.6000
T3	5	1 1/8" Coax	80.00 - 100.00	0.6000	0.6000
T3	6	EW52	80.00 - 100.00	0.6000	0.6000
T3	7	9/16" O.D.	80.00 - 100.00	0.6000	0.6000
T3	8	9/16" O.D.	80.00 - 100.00	0.6000	0.6000
T3	9	9/16" O.D.	80.00 - 94.00	0.6000	0.6000
T3	10	1 1/8" Coax	80.00 - 83.50	0.6000	0.6000
T3	11	9/16" O.D.	80.00 - 82.50	0.6000	0.6000
T3	14	1 1/4"	80.00 - 100.00	0.6000	0.6000
T3	15	2-1/4" Conduit	80.00 - 100.00	0.6000	0.6000
T3	16	3/8" Coax	80.00 - 100.00	0.6000	0.6000

<b>Job</b>	CT907	<b>Page</b>	9 of 25
<b>Project</b>	SST Structural Analysis	<b>Date</b>	11:18:22 06/11/19
<b>Client</b>	InSite Wireless Group LLC	<b>Designed by</b>	Chunhui Song

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	$K_a$ No Ice	$K_a$ Ice
T3	17	3/8" Coax	80.00 - 100.00	0.6000	0.6000
T3	18	5/8" Coax	80.00 - 100.00	0.6000	0.6000
T3	19	5/8" Coax	80.00 - 100.00	0.6000	0.6000
T4	1	Step Pegs (5/8" SR) 7-in. w/30" step	60.00 - 80.00	0.6000	0.6000
T4	2	Step Pegs (5/8" SR) 7-in. w/30" step	60.00 - 80.00	0.6000	0.6000
T4	3	Step Pegs (5/8" SR) 7-in. w/30" step	60.00 - 80.00	0.6000	0.6000
T4	5	1 1/8" Coax	60.00 - 80.00	0.6000	0.6000
T4	6	EW52	60.00 - 80.00	0.6000	0.6000
T4	7	9/16" O.D.	60.00 - 80.00	0.6000	0.6000
T4	8	9/16" O.D.	60.00 - 80.00	0.6000	0.6000
T4	9	9/16" O.D.	60.00 - 80.00	0.6000	0.6000
T4	10	1 1/8" Coax	60.00 - 80.00	0.6000	0.6000
T4	11	9/16" O.D.	60.00 - 80.00	0.6000	0.6000
T4	12	9/16" O.D.	60.00 - 77.50	0.6000	0.6000
T4	14	1 1/4"	60.00 - 80.00	0.6000	0.6000
T4	15	2-1/4" Conduit	60.00 - 80.00	0.6000	0.6000
T4	16	3/8" Coax	60.00 - 80.00	0.6000	0.6000
T4	17	3/8" Coax	60.00 - 80.00	0.6000	0.6000
T4	18	5/8" Coax	60.00 - 80.00	0.6000	0.6000
T4	19	5/8" Coax	60.00 - 80.00	0.6000	0.6000
T5	1	Step Pegs (5/8" SR) 7-in. w/30" step	40.00 - 60.00	0.6000	0.6000
T5	2	Step Pegs (5/8" SR) 7-in. w/30" step	40.00 - 60.00	0.6000	0.6000
T5	3	Step Pegs (5/8" SR) 7-in. w/30" step	40.00 - 60.00	0.6000	0.6000
T5	5	1 1/8" Coax	40.00 - 60.00	0.6000	0.6000
T5	6	EW52	40.00 - 60.00	0.6000	0.6000
T5	7	9/16" O.D.	40.00 - 60.00	0.6000	0.6000
T5	8	9/16" O.D.	40.00 - 60.00	0.6000	0.6000
T5	9	9/16" O.D.	40.00 - 60.00	0.6000	0.6000
T5	10	1 1/8" Coax	40.00 - 60.00	0.6000	0.6000
T5	11	9/16" O.D.	40.00 - 60.00	0.6000	0.6000
T5	12	9/16" O.D.	40.00 - 60.00	0.6000	0.6000
T5	14	1 1/4"	40.00 - 60.00	0.6000	0.6000
T5	15	2-1/4" Conduit	40.00 - 60.00	0.6000	0.6000
T5	16	3/8" Coax	40.00 - 60.00	0.6000	0.6000
T5	17	3/8" Coax	40.00 - 60.00	0.6000	0.6000
T5	18	5/8" Coax	40.00 - 60.00	0.6000	0.6000
T5	19	5/8" Coax	40.00 - 60.00	0.6000	0.6000
T6	1	Step Pegs (5/8" SR) 7-in. w/30" step	20.00 - 40.00	0.6000	0.6000
T6	2	Step Pegs (5/8" SR) 7-in. w/30" step	20.00 - 40.00	0.6000	0.6000
T6	3	Step Pegs (5/8" SR) 7-in. w/30" step	20.00 - 40.00	0.6000	0.6000
T6	5	1 1/8" Coax	20.00 - 40.00	0.6000	0.6000
T6	6	EW52	20.00 - 40.00	0.6000	0.6000
T6	7	9/16" O.D.	20.00 - 40.00	0.6000	0.6000
T6	8	9/16" O.D.	20.00 - 40.00	0.6000	0.6000
T6	9	9/16" O.D.	20.00 - 40.00	0.6000	0.6000
T6	10	1 1/8" Coax	20.00 - 40.00	0.6000	0.6000
T6	11	9/16" O.D.	20.00 - 40.00	0.6000	0.6000
T6	12	9/16" O.D.	20.00 - 40.00	0.6000	0.6000
T6	14	1 1/4"	20.00 - 40.00	0.6000	0.6000
T6	15	2-1/4" Conduit	20.00 - 40.00	0.6000	0.6000
T6	16	3/8" Coax	20.00 - 40.00	0.6000	0.6000
T6	17	3/8" Coax	20.00 - 40.00	0.6000	0.6000
T6	18	5/8" Coax	20.00 - 40.00	0.6000	0.6000

<p><b>tnxTower</b></p> <p><b>Bennett and Pless</b> 750 Park of Commerce Drive Boca Raton, Florida 33487 Phone: 678.990.8700 FAX: 678.990.8701</p>	<p><b>Job</b></p> <p>CT907</p>	<p><b>Page</b></p> <p>10 of 25</p>
	<p><b>Project</b></p> <p>SST Structural Analysis</p>	<p><b>Date</b></p> <p>11:18:22 06/11/19</p>
	<p><b>Client</b></p> <p>InSite Wireless Group LLC</p>	<p><b>Designed by</b></p> <p>Chunhui Song</p>

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	$K_a$ No Ice	$K_a$ Ice
T6	19	5/8" Coax	20.00 - 40.00	0.6000	0.6000
T7	1	Step Pegs (5/8" SR) 7-in. w/30" step	6.00 - 20.00	0.6000	0.6000
T7	2	Step Pegs (5/8" SR) 7-in. w/30" step	6.00 - 20.00	0.6000	0.6000
T7	3	Step Pegs (5/8" SR) 7-in. w/30" step	6.00 - 20.00	0.6000	0.6000
T7	5	1 1/8" Coax	6.00 - 20.00	0.6000	0.6000
T7	6	EW52	6.00 - 20.00	0.6000	0.6000
T7	7	9/16" O.D.	6.00 - 20.00	0.6000	0.6000
T7	8	9/16" O.D.	6.00 - 20.00	0.6000	0.6000
T7	9	9/16" O.D.	6.00 - 20.00	0.6000	0.6000
T7	10	1 1/8" Coax	6.00 - 20.00	0.6000	0.6000
T7	11	9/16" O.D.	6.00 - 20.00	0.6000	0.6000
T7	12	9/16" O.D.	6.00 - 20.00	0.6000	0.6000
T7	14	1 1/4"	6.00 - 20.00	0.6000	0.6000
T7	15	2-1/4" Conduit	6.00 - 20.00	0.6000	0.6000
T7	16	3/8" Coax	6.00 - 20.00	0.6000	0.6000
T7	17	3/8" Coax	6.00 - 20.00	0.6000	0.6000
T7	18	5/8" Coax	6.00 - 20.00	0.6000	0.6000
T7	19	5/8" Coax	6.00 - 20.00	0.6000	0.6000

### Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	Placement	$C_{AA}$ Front	$C_{AA}$ Side	Weight
			ft ft ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K
10' Dipole	B	From Leg	4.000 0.000 5.000	0.0000	115.000	No Ice 3.000 1/2" Ice 4.000 1" Ice 5.000	3.000 4.000 5.000	0.030 0.055 0.080
12-Element x 8' Long Yagi	A	From Leg	0.000 0.000 0.000	0.0000	103.000	No Ice 4.000 1/2" Ice 4.250 1" Ice 4.500	4.000 4.250 4.500	0.040 0.050 0.060
12-Element x 12' Long Yagi w/ Mount	A	From Leg	1.000 0.000 0.000	0.0000	94.000	No Ice 6.000 1/2" Ice 6.375 1" Ice 6.750	6.000 6.375 6.750	0.060 0.078 0.096
6'x2-3/8" Pipe Mount	A	From Leg	0.000 0.000 0.000	0.0000	94.000	No Ice 1.425 1/2" Ice 1.925 1" Ice 2.294	1.425 1.925 2.294	0.022 0.033 0.048
2" x 20' Tall Omni	B	From Leg	4.000 0.000 10.000	0.0000	83.500	No Ice 6.375 1/2" Ice 9.428 1" Ice 12.515	6.375 9.428 12.515	0.097 0.154 0.226
12' Cross Arm	B	From Leg	0.000 0.000 0.000	0.0000	83.500	No Ice 4.800 1/2" Ice 6.000 1" Ice 7.200	4.800 6.000 7.200	0.150 0.200 0.300
12-Element x 12' Long Yagi w/ Mount	A	From Leg	1.000 0.000 6.000	0.0000	77.500	No Ice 6.000 1/2" Ice 6.375 1" Ice 6.750	6.000 6.375 6.750	0.060 0.078 0.096
6'x2-3/8" Pipe Mount	A	From Leg	0.000 0.000 0.000	0.0000	77.500	No Ice 1.425 1/2" Ice 1.925 1" Ice 2.294	1.425 1.925 2.294	0.022 0.033 0.048

<b>tnxTower</b>  <b>Bennett and Pless</b> 750 Park of Commerce Drive Boca Raton, Florida 33487 Phone: 678.990.8700 FAX: 678.990.8701	<b>Job</b>	CT907	<b>Page</b>	11 of 25
	<b>Project</b>	SST Structural Analysis	<b>Date</b>	11:18:22 06/11/19
	<b>Client</b>	InSite Wireless Group LLC	<b>Designed by</b>	Chunhui Song

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	CAAA Front ft <sup>2</sup>	CAAA Side ft <sup>2</sup>	Weight K
4x2-3/8" Pipe Mount	C	From Leg	0.000 0.000 0.000	0.0000	108.000	No Ice 0.790 1/2" Ice 1.030 1" Ice 1.270	0.790 1.030 1.270	0.030 0.040 0.050
***								
Kathrein 800 10121 (AT&T)	A	From Leg	4.000 0.000 0.000	0.0000	111.000	No Ice 5.162 1/2" Ice 5.514 1" Ice 5.874	3.293 3.639 3.994	0.046 0.079 0.117
Kathrein 800 10121 (AT&T)	B	From Leg	4.000 0.000 0.000	0.0000	111.000	No Ice 5.162 1/2" Ice 5.514 1" Ice 5.874	3.293 3.639 3.994	0.046 0.079 0.117
Kathrein 800 10121 (AT&T)	C	From Leg	4.000 0.000 0.000	0.0000	111.000	No Ice 5.162 1/2" Ice 5.514 1" Ice 5.874	3.293 3.639 3.994	0.046 0.079 0.117
(2) Kathrein 800 10966 (AT&T)	A	From Leg	4.000 0.000 0.000	0.0000	113.000	No Ice 17.363 1/2" Ice 17.991 1" Ice 18.626	7.500 8.089 8.686	0.115 0.207 0.307
(2) Kathrein 800 10966 (AT&T)	B	From Leg	4.000 0.000 0.000	0.0000	113.000	No Ice 17.363 1/2" Ice 17.991 1" Ice 18.626	7.500 8.089 8.686	0.115 0.207 0.307
(2) Kathrein 800 10966 (AT&T)	C	From Leg	4.000 0.000 0.000	0.0000	113.000	No Ice 17.363 1/2" Ice 17.991 1" Ice 18.626	7.500 8.089 8.686	0.115 0.207 0.307
Ericsson B2/B66A 8843 (AT&T)	A	From Leg	3.500 0.000 0.000	0.0000	113.000	No Ice 1.968 1/2" Ice 2.144 1" Ice 2.328	1.408 1.564 1.727	0.075 0.094 0.115
Ericsson B2/B66A 8843 (AT&T)	B	From Leg	3.500 0.000 0.000	0.0000	113.000	No Ice 1.968 1/2" Ice 2.144 1" Ice 2.328	1.408 1.564 1.727	0.075 0.094 0.115
Ericsson B2/B66A 8843 (AT&T)	C	From Leg	3.500 0.000 0.000	0.0000	113.000	No Ice 1.968 1/2" Ice 2.144 1" Ice 2.328	1.408 1.564 1.727	0.075 0.094 0.115
Ericsson B5/B12 4449 (AT&T)	A	From Leg	3.500 0.000 0.000	0.0000	113.000	No Ice 1.954 1/2" Ice 2.130 1" Ice 2.313	1.408 1.564 1.727	0.071 0.089 0.110
Ericsson B5/B12 4449 (AT&T)	B	From Leg	3.500 0.000 0.000	0.0000	113.000	No Ice 1.954 1/2" Ice 2.130 1" Ice 2.313	1.408 1.564 1.727	0.071 0.089 0.110
Ericsson B5/B12 4449 (AT&T)	C	From Leg	3.500 0.000 0.000	0.0000	113.000	No Ice 1.954 1/2" Ice 2.130 1" Ice 2.313	1.408 1.564 1.727	0.071 0.089 0.110
Powerwave TT19-08BP111-001 (AT&T)	A	From Leg	3.500 0.000 0.000	0.0000	111.000	No Ice 0.553 1/2" Ice 0.649 1" Ice 0.752	0.446 0.534 0.630	0.016 0.022 0.029
Powerwave TT19-08BP111-001 (AT&T)	B	From Leg	3.500 0.000 0.000	0.0000	111.000	No Ice 0.553 1/2" Ice 0.649 1" Ice 0.752	0.446 0.534 0.630	0.016 0.022 0.029
Powerwave TT19-08BP111-001 (AT&T)	C	From Leg	3.500 0.000 0.000	0.0000	111.000	No Ice 0.553 1/2" Ice 0.649 1" Ice 0.752	0.446 0.534 0.630	0.016 0.022 0.029
(2) Kathrein 860-10025 (AT&T)	A	From Leg	3.500 0.000 0.000	0.0000	111.000	No Ice 0.137 1/2" Ice 0.190 1" Ice 0.252	0.116 0.167 0.225	0.001 0.003 0.005
(2) Kathrein 860-10025 (AT&T)	B	From Leg	3.500 0.000 0.000	0.0000	111.000	No Ice 0.137 1/2" Ice 0.190 1" Ice 0.252	0.116 0.167 0.225	0.001 0.003 0.005
(2) Kathrein 860-10025 (AT&T)	C	From Leg	3.500 0.000 0.000	0.0000	111.000	No Ice 0.137 1/2" Ice 0.190	0.116 0.167	0.001 0.003

<b>tnxTower</b>  <b>Bennett and Pless</b> 750 Park of Commerce Drive Boca Raton, Florida 33487 Phone: 678.990.8700 FAX: 678.990.8701	<b>Job</b>	CT907	<b>Page</b>	12 of 25
	<b>Project</b>	SST Structural Analysis	<b>Date</b>	11:18:22 06/11/19
	<b>Client</b>	InSite Wireless Group LLC	<b>Designed by</b>	Chunhui Song

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	CAAA Front	CAAA Side	Weight	
			Horz	Lateral						Vert
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K	
RayCap DC6-48-60-18-8F (AT&T)	A	From Leg	0.000		0.0000	105.000	1" Ice	0.252	0.225	0.005
			0.000				No Ice	0.791	0.791	0.020
			0.000				1/2" Ice	1.274	1.274	0.035
			0.000				1" Ice	1.450	1.450	0.053
RayCap DC6-48-60-18-8F (AT&T)	B	From Leg	0.000		0.0000	105.000	No Ice	0.791	0.791	0.020
			0.000				1/2" Ice	1.274	1.274	0.035
			0.000				1" Ice	1.450	1.450	0.053
			0.000				1" Ice	19.290	19.290	0.770
T-Arm Mount [TA 602-3] (AT&T)	A	From Leg	1.000		0.0000	113.000	No Ice	11.590	11.590	0.770
			0.000				1/2" Ice	15.440	15.440	0.990
			0.000				1" Ice	19.290	19.290	1.210
			0.000				No Ice	1.500	1.500	0.008
(2) 1' Stand-off (AT&T)	A	From Leg	0.000		0.0000	111.000	1/2" Ice	1.500	1.500	0.012
			0.000				1" Ice	1.500	1.500	0.016
			0.000				No Ice	1.500	1.500	0.008
			0.000				1/2" Ice	1.500	1.500	0.012
(2) 1' Stand-off (AT&T)	B	From Leg	0.000		0.0000	111.000	1" Ice	1.500	1.500	0.016
			0.000				No Ice	1.500	1.500	0.008
			0.000				1/2" Ice	1.500	1.500	0.012
			0.000				1" Ice	1.500	1.500	0.016
(2) 1' Stand-off (AT&T)	C	From Leg	0.000		0.0000	111.000	No Ice	1.500	1.500	0.008
			0.000				1/2" Ice	1.500	1.500	0.012
			0.000				1" Ice	1.500	1.500	0.016
			0.000				1" Ice	1.500	1.500	0.016

## Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets:		Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight	
				Horz	Lateral							Vert
			ft	ft	°	°	ft	ft	ft <sup>2</sup>	K		
8' Dish w/o Radome	C	Paraboloid w/o Radome	From Leg	1.000		0.0000		108.000	8.000	No Ice	50.265	0.150
				0.000						1/2" Ice	51.318	0.168
				0.000						1" Ice	52.371	0.186
8' Grid Dish (140lbs 50.27CaAa)	A	Grid	From Leg	1.000		0.0000		104.000	8.000	No Ice	50.270	0.140
				0.000						1/2" Ice	51.320	0.320
				0.000						1" Ice	52.370	0.590
4' Grid Dish (51lbs 7.46CaAa)	A	Grid	From Leg	0.500		0.0000		82.500	4.000	No Ice	7.460	0.050
				0.000						1/2" Ice	9.170	0.170
				0.000						1" Ice	13.620	0.190

## 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



<p style="text-align: center;"><b>tnxTower</b></p> <p style="text-align: center;"><b>Bennett and Pless</b> 750 Park of Commerce Drive Boca Raton, Florida 33487 Phone: 678.990.8700 FAX: 678.990.8701</p>	<p style="text-align: center;"><b>Job</b></p> <p style="text-align: center;">CT907</p>	<p style="text-align: center;"><b>Page</b></p> <p style="text-align: center;">13 of 25</p>
	<p style="text-align: center;"><b>Project</b></p> <p style="text-align: center;">SST Structural Analysis</p>	<p style="text-align: center;"><b>Date</b></p> <p style="text-align: center;">11:18:22 06/11/19</p>
	<p style="text-align: center;"><b>Client</b></p> <p style="text-align: center;">InSite Wireless Group LLC</p>	<p style="text-align: center;"><b>Designed by</b></p> <p style="text-align: center;">Chunhui Song</p>

Comb. No.	Description
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

### Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	115 - 110	Leg	Max Tension	23	0.913	0.162	-0.162
			Max. Compression	27	-5.790	-0.066	-0.023
			Max. Mx	20	-1.646	-1.238	-0.016
			Max. My	14	-0.484	0.007	1.110
			Max. Vy	20	-1.592	0.613	0.072
			Max. Vx	2	-1.918	-0.311	0.590
		Diagonal	Max Tension	25	1.032	0.000	0.000
			Max. Compression	12	-1.096	0.000	0.000
			Max. Mx	36	0.150	0.048	0.000
			Max. My	14	-0.874	0.008	0.001

<b>tnxTower</b>  <b>Bennett and Pless</b> 750 Park of Commerce Drive Boca Raton, Florida 33487 Phone: 678.990.8700 FAX: 678.990.8701	<b>Job</b>	CT907	<b>Page</b>	14 of 25
	<b>Project</b>	SST Structural Analysis	<b>Date</b>	11:18:22 06/11/19
	<b>Client</b>	InSite Wireless Group LLC	<b>Designed by</b>	Chunhui Song

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft	
T2	110 - 100	Top Girt	Max. Vy	29	-0.050	0.048	-0.000	
			Max. Vx	14	0.000	0.000	0.000	
			Max Tension	18	0.358	0.000	0.000	
			Max. Compression	14	-0.358	0.000	0.000	
			Max. Mx	26	0.005	-0.196	0.000	
			Max. My	8	-0.022	0.000	0.000	
		Bottom Girt	Max. Vy	26	0.092	0.000	0.000	
			Max. Vx	8	-0.000	0.000	0.000	
			Max Tension	14	0.179	0.000	0.000	
			Max. Compression	3	-0.143	0.000	0.000	
			Max. Mx	26	0.109	-0.196	0.000	
			Max. My	8	0.042	0.000	0.000	
		Leg	Max. Vy	26	0.092	0.000	0.000	
			Max. Vx	8	-0.000	0.000	0.000	
			Max Tension	7	8.079	-0.137	0.168	
			Max. Compression	2	-10.915	0.071	0.153	
			Max. Mx	10	-4.431	-0.994	-0.255	
			Max. My	2	-3.245	-0.292	0.989	
			Max. Vy	20	-1.595	0.945	-0.008	
			Max. Vx	2	-1.919	-0.292	0.989	
			Diagonal	Max Tension	16	3.722	0.000	0.000
				Max. Compression	16	-3.775	0.000	0.000
				Max. Mx	27	0.732	0.055	0.000
			Top Girt	Max. My	16	-1.256	0.008	-0.003
				Max. Vy	27	-0.051	0.055	0.000
				Max. Vx	16	0.001	0.000	0.000
				Max Tension	19	0.745	0.000	0.000
Max. Compression	6	-0.803		0.000	0.000			
Max. Mx	26	-0.133		0.228	0.000			
T3	100 - 80	Leg	Max. My	8	0.060	0.000	-0.000	
			Max. Vy	26	-0.107	0.000	0.000	
			Max. Vx	8	0.000	0.000	0.000	
		Max Tension	7	28.788	-0.196	-0.020		
		Max. Compression	2	-33.157	0.197	-0.080		
		Max. Mx	14	24.711	-0.205	0.085		
		Max. My	16	-1.885	-0.016	-0.377		
		Max. Vy	3	-0.133	0.200	-0.080		
		Max. Vx	4	0.235	-0.014	-0.305		
		Diagonal	Max Tension	16	4.050	0.000	0.000	
			Max. Compression	16	-4.025	0.000	0.000	
			Max. Mx	28	0.671	0.073	0.010	
T4	80 - 60	Leg	Max. My	27	-0.022	0.064	-0.011	
			Max. Vy	29	0.060	0.073	-0.010	
			Max. Vx	27	-0.003	0.000	0.000	
		Max Tension	7	48.932	-0.073	-0.026		
		Max. Compression	2	-56.096	0.108	-0.001		
		Max. Mx	14	31.272	-0.205	0.085		
		Max. My	4	-6.559	-0.014	-0.305		
		Max. Vy	14	-0.106	-0.205	0.085		
		Max. Vx	8	0.164	-0.002	0.237		
Diagonal	Max Tension	16	4.230	0.000	0.000			
	Max. Compression	16	-4.285	0.000	0.000			
	Max. Mx	29	0.981	0.127	-0.016			
T5	60 - 40	Leg	Max. My	27	-0.125	0.114	-0.016	
			Max. Vy	28	0.083	0.127	-0.016	
			Max. Vx	27	-0.005	0.000	0.000	
		Max Tension	7	67.689	-0.083	-0.009		
		Max. Compression	2	-78.629	0.234	-0.021		
		Max. Mx	29	6.309	-0.377	0.002		
Max. My	4	-9.748	-0.003	-0.170				
Max. Vy	37	0.110	-0.376	-0.002				

<b>tnxTower</b>  <b>Bennett and Pless</b> 750 Park of Commerce Drive Boca Raton, Florida 33487 Phone: 678.990.8700 FAX: 678.990.8701	<b>Job</b>	CT907	<b>Page</b>	15 of 25
	<b>Project</b>	SST Structural Analysis	<b>Date</b>	11:18:22 06/11/19
	<b>Client</b>	InSite Wireless Group LLC	<b>Designed by</b>	Chunhui Song

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft	
T6	40 - 20	Diagonal	Max. Vx	4	0.073	-0.003	-0.170	
			Max Tension	12	4.585	0.000	0.000	
			Max. Compression	12	-4.629	0.000	0.000	
			Max. Mx	29	0.944	0.175	-0.020	
			Max. My	27	0.372	0.131	-0.022	
			Max. Vy	29	0.103	0.175	-0.020	
		Leg	Max. Vx	27	-0.005	0.000	0.000	
			Max Tension	7	84.062	-0.196	-0.023	
			Max. Compression	2	-98.826	0.467	-0.049	
			Max. Mx	33	10.214	-0.684	0.005	
			Max. My	4	-11.327	-0.027	-0.519	
			Max. Vy	37	0.133	-0.678	-0.001	
			Max. Vx	4	-0.146	-0.027	-0.519	
			Diagonal	Max Tension	12	5.347	0.000	0.000
Max. Compression	2	-5.478		0.000	0.000			
Max. Mx	33	1.219		0.219	0.028			
Max. My	33	-2.056		0.188	0.030			
Max. Vy	28	0.113		0.208	-0.028			
Max. Vx	33	0.006		0.000	0.000			
T7	20 - 0	Leg		Max Tension	7	101.038	-0.394	-0.013
				Max. Compression	2	-120.373	-0.000	0.000
				Max. Mx	27	-64.780	0.723	0.022
				Max. My	4	-13.100	-0.027	-0.931
			Max. Vy	37	-0.151	-0.678	-0.001	
			Max. Vx	4	-0.201	-0.027	-0.931	
		Diagonal	Max Tension	12	5.745	0.000	0.000	
			Max. Compression	2	-6.075	0.000	0.000	
			Max. Mx	33	1.044	0.274	0.033	
			Max. My	33	-2.726	0.257	0.037	
			Max. Vy	28	0.122	0.234	-0.032	
			Max. Vx	33	0.007	0.000	0.000	

### Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	18	114.565	12.690	-7.238
	Max. H <sub>x</sub>	18	114.565	12.690	-7.238
	Max. H <sub>z</sub>	5	-102.738	-11.080	7.090
	Min. Vert	7	-105.235	-11.621	6.619
	Min. H <sub>x</sub>	7	-105.235	-11.621	6.619
	Min. H <sub>z</sub>	16	102.629	10.868	-7.291
Leg B	Max. Vert	10	114.741	-12.659	-7.259
	Max. H <sub>x</sub>	23	-93.950	10.757	6.078
	Max. H <sub>z</sub>	25	-87.610	9.618	6.881
	Min. Vert	23	-93.950	10.757	6.078
	Min. H <sub>x</sub>	10	114.741	-12.659	-7.259
	Min. H <sub>z</sub>	12	97.346	-10.267	-7.298
Leg A	Max. Vert	2	125.856	0.224	16.064
	Max. H <sub>x</sub>	20	5.580	1.805	0.442
	Max. H <sub>z</sub>	2	125.856	0.224	16.064
	Min. Vert	15	-104.151	-0.160	-13.748
	Min. H <sub>x</sub>	9	14.300	-2.044	1.248
	Min. H <sub>z</sub>	15	-104.151	-0.160	-13.748

<p><b>tnxTower</b></p> <p><i>Bennett and Pless</i> 750 Park of Commerce Drive Boca Raton, Florida 33487 Phone: 678.990.8700 FAX: 678.990.8701</p>	<p><b>Job</b></p> <p>CT907</p>	<p><b>Page</b></p> <p>16 of 25</p>
	<p><b>Project</b></p> <p>SST Structural Analysis</p>	<p><b>Date</b></p> <p>11:18:22 06/11/19</p>
	<p><b>Client</b></p> <p>InSite Wireless Group LLC</p>	<p><b>Designed by</b></p> <p>Chunhui Song</p>

## Tower Mast Reaction Summary

Load Combination	Vertical	Shear <sub>x</sub>	Shear <sub>z</sub>	Overturing Moment, M <sub>x</sub>	Overturing Moment, M <sub>z</sub>	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead Only	13.414	0.000	0.000	-1.966	-3.273	0.000
1.2 Dead+1.6 Wind 0 deg - No Ice	16.097	2.311	-27.009	-1947.865	-254.153	11.188
0.9 Dead+1.6 Wind 0 deg - No Ice	12.073	2.311	-27.009	-1946.318	-253.023	11.183
1.2 Dead+1.6 Wind 30 deg - No Ice	16.097	14.127	-21.873	-1584.376	-1080.513	14.761
0.9 Dead+1.6 Wind 30 deg - No Ice	12.073	14.127	-21.873	-1583.009	-1078.990	14.758
1.2 Dead+1.6 Wind 60 deg - No Ice	16.097	20.310	-11.938	-900.386	-1522.049	2.823
0.9 Dead+1.6 Wind 60 deg - No Ice	12.073	20.310	-11.938	-899.344	-1520.310	2.828
1.2 Dead+1.6 Wind 90 deg - No Ice	16.097	21.731	-1.525	-166.801	-1622.048	-6.012
0.9 Dead+1.6 Wind 90 deg - No Ice	12.073	21.731	-1.525	-166.110	-1620.259	-5.998
1.2 Dead+1.6 Wind 120 deg - No Ice	16.097	22.263	10.329	674.933	-1652.044	-2.166
0.9 Dead+1.6 Wind 120 deg - No Ice	12.073	22.263	10.329	675.218	-1650.244	-2.157
1.2 Dead+1.6 Wind 150 deg - No Ice	16.097	12.058	21.051	1490.901	-856.223	-2.704
0.9 Dead+1.6 Wind 150 deg - No Ice	12.073	12.058	21.051	1490.783	-854.827	-2.704
1.2 Dead+1.6 Wind 180 deg - No Ice	16.097	-0.296	24.341	1749.018	28.094	-5.691
0.9 Dead+1.6 Wind 180 deg - No Ice	12.073	-0.296	24.341	1748.767	29.061	-5.686
1.2 Dead+1.6 Wind 210 deg - No Ice	16.097	-12.611	21.796	1571.614	908.237	-7.862
0.9 Dead+1.6 Wind 210 deg - No Ice	12.073	-12.611	21.796	1571.449	908.779	-7.857
1.2 Dead+1.6 Wind 240 deg - No Ice	16.097	-21.139	12.349	893.603	1522.504	-2.753
0.9 Dead+1.6 Wind 240 deg - No Ice	12.073	-21.139	12.349	893.763	1522.747	-2.757
1.2 Dead+1.6 Wind 270 deg - No Ice	16.097	-20.908	-0.016	-3.465	1525.000	-0.543
0.9 Dead+1.6 Wind 270 deg - No Ice	12.073	-20.908	-0.016	-2.869	1525.237	-0.558
1.2 Dead+1.6 Wind 300 deg - No Ice	16.097	-19.039	-10.862	-783.930	1376.544	-3.409
0.9 Dead+1.6 Wind 300 deg - No Ice	12.073	-19.039	-10.862	-782.953	1376.857	-3.416
1.2 Dead+1.6 Wind 330 deg - No Ice	16.097	-12.039	-21.062	-1496.603	846.645	2.355
0.9 Dead+1.6 Wind 330 deg - No Ice	12.073	-12.039	-21.062	-1495.289	847.225	2.356
1.2 Dead+1.0 Ice+1.0 Temp	76.240	-0.000	0.000	2.720	-19.697	0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	76.240	0.423	-9.729	-674.173	-65.876	3.444
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	76.240	4.859	-7.935	-549.673	-369.171	2.264
1.2 Dead+1.0 Wind 60 deg+1.0	76.240	7.487	-4.401	-310.565	-548.667	-1.063

<p style="text-align: center;"><b>tnxTower</b></p> <p style="text-align: center;"><b>Bennett and Pless</b> 750 Park of Commerce Drive Boca Raton, Florida 33487 Phone: 678.990.8700 FAX: 678.990.8701</p>	<p style="text-align: center;"><b>Job</b></p> <p style="text-align: center;">CT907</p>	<p style="text-align: center;"><b>Page</b></p> <p style="text-align: center;">17 of 25</p>
	<p style="text-align: center;"><b>Project</b></p> <p style="text-align: center;">SST Structural Analysis</p>	<p style="text-align: center;"><b>Date</b></p> <p style="text-align: center;">11:18:22 06/11/19</p>
	<p style="text-align: center;"><b>Client</b></p> <p style="text-align: center;">InSite Wireless Group LLC</p>	<p style="text-align: center;"><b>Designed by</b></p> <p style="text-align: center;">Chunhui Song</p>

Load Combination	Vertical K	Shear <sub>x</sub> K	Shear <sub>z</sub> K	Overturing Moment, M <sub>x</sub> kip-ft	Overturing Moment, M <sub>z</sub> kip-ft	Torque kip-ft
Ice+1.0 Temp						
1.2 Dead+1.0 Wind 90 deg+1.0	76.240	8.295	-0.265	-26.189	-602.061	-2.645
Ice+1.0 Temp						
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	76.240	7.677	4.556	322.210	-558.744	-1.067
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	76.240	4.299	8.108	571.221	-309.521	-0.516
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	76.240	-0.054	9.555	672.024	-13.790	-2.438
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	76.240	-4.401	8.244	586.119	281.178	-2.540
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	76.240	-7.471	4.926	362.566	496.892	-0.136
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	76.240	-8.144	0.011	3.951	546.206	1.446
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	76.240	-7.254	-4.204	-289.073	483.866	1.252
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	76.240	-4.477	-7.787	-533.472	288.069	1.987
Dead+Wind 0 deg - Service	13.414	0.553	-6.459	-467.062	-63.089	2.677
Dead+Wind 30 deg - Service	13.414	3.378	-5.230	-380.169	-260.638	3.532
Dead+Wind 60 deg - Service	13.414	4.857	-2.855	-216.652	-366.193	0.676
Dead+Wind 90 deg - Service	13.414	5.197	-0.365	-41.277	-390.093	-1.439
Dead+Wind 120 deg - Service	13.414	5.324	2.470	159.944	-397.273	-0.520
Dead+Wind 150 deg - Service	13.414	2.883	5.034	354.999	-207.023	-0.644
Dead+Wind 180 deg - Service	13.414	-0.071	5.821	416.706	4.378	-1.360
Dead+Wind 210 deg - Service	13.414	-3.016	5.212	374.292	214.781	-1.881
Dead+Wind 240 deg - Service	13.414	-5.055	2.953	212.212	361.627	-0.659
Dead+Wind 270 deg - Service	13.414	-5.000	-0.004	-2.237	362.219	-0.130
Dead+Wind 300 deg - Service	13.414	-4.553	-2.598	-188.814	326.733	-0.816
Dead+Wind 330 deg - Service	13.414	-2.879	-5.037	-359.181	200.057	0.561

## Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.000	-13.414	0.000	0.000	13.414	0.000	0.000%
2	2.311	-16.097	-27.009	-2.311	16.097	27.009	0.000%
3	2.311	-12.073	-27.009	-2.311	12.073	27.009	0.002%
4	14.127	-16.097	-21.873	-14.127	16.097	21.873	0.000%
5	14.127	-12.073	-21.873	-14.127	12.073	21.873	0.000%
6	20.310	-16.097	-11.938	-20.310	16.097	11.938	0.000%
7	20.310	-12.073	-11.938	-20.310	12.073	11.938	0.000%
8	21.731	-16.097	-1.525	-21.731	16.097	1.525	0.000%
9	21.731	-12.073	-1.525	-21.731	12.073	1.525	0.000%
10	22.263	-16.097	10.329	-22.263	16.097	-10.329	0.000%
11	22.263	-12.073	10.329	-22.263	12.073	-10.329	0.000%
12	12.058	-16.097	21.051	-12.058	16.097	-21.051	0.000%
13	12.058	-12.073	21.051	-12.058	12.073	-21.051	0.000%
14	-0.296	-16.097	24.341	0.296	16.097	-24.341	0.000%
15	-0.296	-12.073	24.341	0.296	12.073	-24.341	0.000%
16	-12.611	-16.097	21.796	12.611	16.097	-21.796	0.000%
17	-12.611	-12.073	21.796	12.611	12.073	-21.796	0.001%
18	-21.139	-16.097	12.349	21.139	16.097	-12.349	0.000%
19	-21.139	-12.073	12.349	21.139	12.073	-12.349	0.000%
20	-20.908	-16.097	-0.016	20.908	16.097	0.016	0.000%
21	-20.908	-12.073	-0.016	20.908	12.073	0.016	0.000%

<p><b>tnxTower</b></p> <p><b>Bennett and Pless</b> 750 Park of Commerce Drive Boca Raton, Florida 33487 Phone: 678.990.8700 FAX: 678.990.8701</p>	Job	CT907	Page	18 of 25
	Project	SST Structural Analysis	Date	11:18:22 06/11/19
	Client	InSite Wireless Group LLC	Designed by	Chunhui Song

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
22	-19.039	-16.097	-10.862	19.039	16.097	10.862	0.000%
23	-19.039	-12.073	-10.862	19.039	12.073	10.862	0.000%
24	-12.039	-16.097	-21.062	12.039	16.097	21.062	0.000%
25	-12.039	-12.073	-21.062	12.039	12.073	21.062	0.000%
26	0.000	-76.240	0.000	0.000	76.240	0.000	0.000%
27	0.423	-76.240	-9.729	-0.423	76.240	9.729	0.000%
28	4.859	-76.240	-7.935	-4.859	76.240	7.935	0.000%
29	7.487	-76.240	-4.401	-7.487	76.240	4.401	0.000%
30	8.295	-76.240	-0.265	-8.295	76.240	0.265	0.000%
31	7.677	-76.240	4.556	-7.677	76.240	-4.556	0.000%
32	4.299	-76.240	8.108	-4.299	76.240	-8.108	0.000%
33	-0.054	-76.240	9.555	0.054	76.240	-9.555	0.000%
34	-4.401	-76.240	8.244	4.401	76.240	-8.244	0.000%
35	-7.471	-76.240	4.926	7.471	76.240	-4.926	0.000%
36	-8.144	-76.240	0.011	8.144	76.240	-0.011	0.000%
37	-7.254	-76.240	-4.204	7.254	76.240	4.204	0.000%
38	-4.477	-76.240	-7.787	4.477	76.240	7.787	0.000%
39	0.553	-13.414	-6.459	-0.553	13.414	6.459	0.000%
40	3.378	-13.414	-5.230	-3.378	13.414	5.230	0.000%
41	4.857	-13.414	-2.855	-4.857	13.414	2.855	0.000%
42	5.197	-13.414	-0.365	-5.197	13.414	0.365	0.000%
43	5.324	-13.414	2.470	-5.324	13.414	-2.470	0.000%
44	2.883	-13.414	5.034	-2.883	13.414	-5.034	0.000%
45	-0.071	-13.414	5.821	0.071	13.414	-5.821	0.000%
46	-3.016	-13.414	5.212	3.016	13.414	-5.212	0.000%
47	-5.055	-13.414	2.953	5.055	13.414	-2.953	0.000%
48	-5.000	-13.414	-0.004	5.000	13.414	0.004	0.000%
49	-4.553	-13.414	-2.598	4.553	13.414	2.598	0.000%
50	-2.879	-13.414	-5.037	2.879	13.414	5.037	0.000%

## Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.0000001	0.0000001
2	Yes	4	0.0000001	0.0000001
3	Yes	4	0.0000001	0.0000335
4	Yes	4	0.0000001	0.0000281
5	Yes	4	0.0000001	0.0000270
6	Yes	4	0.0000001	0.0000258
7	Yes	4	0.0000001	0.0000001
8	Yes	4	0.0000001	0.0000001
9	Yes	4	0.0000001	0.0000001
10	Yes	4	0.0000001	0.0000001
11	Yes	4	0.0000001	0.0000001
12	Yes	4	0.0000001	0.0000001
13	Yes	4	0.0000001	0.0000001
14	Yes	4	0.0000001	0.0000001
15	Yes	4	0.0000001	0.0000001
16	Yes	4	0.0000001	0.0000001
17	Yes	4	0.0000001	0.0000256
18	Yes	4	0.0000001	0.0000001
19	Yes	4	0.0000001	0.0000001
20	Yes	4	0.0000001	0.0000001
21	Yes	4	0.0000001	0.0000001
22	Yes	4	0.0000001	0.0000001

<b>tnxTower</b>  <b>Bennett and Pless</b> 750 Park of Commerce Drive Boca Raton, Florida 33487 Phone: 678.990.8700 FAX: 678.990.8701	<b>Job</b>	CT907	<b>Page</b>	19 of 25
	<b>Project</b>	SST Structural Analysis	<b>Date</b>	11:18:22 06/11/19
	<b>Client</b>	InSite Wireless Group LLC	<b>Designed by</b>	Chunhui Song

23	Yes	4	0.00000001	0.00000001
24	Yes	4	0.00000001	0.00000001
25	Yes	4	0.00000001	0.00000001
26	Yes	4	0.00000001	0.00000001
27	Yes	4	0.00000001	0.00000001
28	Yes	4	0.00000001	0.00000001
29	Yes	4	0.00000001	0.00000001
30	Yes	4	0.00000001	0.00000001
31	Yes	4	0.00000001	0.00000001
32	Yes	4	0.00000001	0.00000001
33	Yes	4	0.00000001	0.00000001
34	Yes	4	0.00000001	0.00000001
35	Yes	4	0.00000001	0.00000001
36	Yes	4	0.00000001	0.00000001
37	Yes	4	0.00000001	0.00000001
38	Yes	4	0.00000001	0.00000001
39	Yes	4	0.00000001	0.00000001
40	Yes	4	0.00000001	0.00000001
41	Yes	4	0.00000001	0.00000001
42	Yes	4	0.00000001	0.00000001
43	Yes	4	0.00000001	0.00000001
44	Yes	4	0.00000001	0.00000001
45	Yes	4	0.00000001	0.00000001
46	Yes	4	0.00000001	0.00000001
47	Yes	4	0.00000001	0.00000001
48	Yes	4	0.00000001	0.00000001
49	Yes	4	0.00000001	0.00000001
50	Yes	4	0.00000001	0.00000001

### Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	115 - 110	1.621	39	0.1131	0.0138
T2	110 - 100	1.502	39	0.1127	0.0137
T3	100 - 80	1.259	39	0.1086	0.0117
T4	80 - 60	0.810	39	0.0930	0.0076
T5	60 - 40	0.458	39	0.0637	0.0055
T6	40 - 20	0.217	39	0.0409	0.0035
T7	20 - 0	0.064	39	0.0216	0.0015

### Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
115.000	10' Dipole	39	1.621	0.1131	0.0138	104366
113.000	(2) Kathrein 800 10966	39	1.574	0.1131	0.0138	104366
111.000	Kathrein 800 10121	39	1.526	0.1129	0.0138	104366
108.000	8' Dish w/o Radome	39	1.454	0.1122	0.0135	116601
105.000	RayCap DC6-48-60-18-8F	39	1.380	0.1111	0.0129	304822
104.000	8' Grid Dish (140lbs 50.27CaAa)	39	1.356	0.1106	0.0127	394410
103.000	12-Element x 8' Long Yagi	39	1.332	0.1102	0.0125	232984
94.000	12-Element x 12' Long Yagi w/ Mount	39	1.116	0.1052	0.0101	71198

<b>tnxTower</b>  <b>Bennett and Pless</b> 750 Park of Commerce Drive Boca Raton, Florida 33487 Phone: 678.990.8700 FAX: 678.990.8701	<b>Job</b>	CT907	<b>Page</b>	20 of 25
	<b>Project</b>	SST Structural Analysis	<b>Date</b>	11:18:22 06/11/19
	<b>Client</b>	InSite Wireless Group LLC	<b>Designed by</b>	Chunhui Song

Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
83.500	2" x 20' Tall Omni	39	0.883	0.0968	0.0078	52029
82.500	4' Grid Dish (51lbs 7.46CaAa)	39	0.862	0.0958	0.0077	50783
77.500	12-Element x 12' Long Yagi w/ Mount	39	0.760	0.0898	0.0074	46525

### Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	115 - 110	6.680	2	0.4583	0.0578
T2	110 - 100	6.196	2	0.4573	0.0574
T3	100 - 80	5.204	2	0.4436	0.0490
T4	80 - 60	3.363	2	0.3828	0.0316
T5	60 - 40	1.907	2	0.2636	0.0231
T6	40 - 20	0.904	2	0.1701	0.0147
T7	20 - 0	0.265	2	0.0897	0.0064

### Critical Deflections and Radius of Curvature - Design Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
115.000	10' Dipole	2	6.680	0.4583	0.0578	24648
113.000	(2) Kathrein 800 10966	2	6.487	0.4582	0.0578	24648
111.000	Kathrein 800 10121	2	6.294	0.4578	0.0576	24648
108.000	8' Dish w/o Radome	2	5.999	0.4558	0.0564	28729
105.000	RayCap DC6-48-60-18-8F	2	5.701	0.4521	0.0541	112123
104.000	8' Grid Dish (140lbs 50.27CaAa)	2	5.601	0.4506	0.0532	188347
103.000	12-Element x 8' Long Yagi	2	5.502	0.4490	0.0522	79558
94.000	12-Element x 12' Long Yagi w/ Mount	2	4.622	0.4309	0.0423	18508
83.500	2" x 20' Tall Omni	2	3.662	0.3983	0.0324	13023
82.500	4' Grid Dish (51lbs 7.46CaAa)	2	3.575	0.3941	0.0322	12680
77.500	12-Element x 12' Long Yagi w/ Mount	2	3.157	0.3700	0.0309	11526

### Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load Allowable	Allowable Ratio	Criteria
T1	115	Leg	A325N	0.6250	4	0.482	20.709	0.023	✓	1 Bolt Tension
		Diagonal	A325X	0.5000	1	1.032	6.199	0.166	✓	1 Member Bearing
		Top Girt	A325N	0.6250	1	0.358	7.830	0.046	✓	1 Member Bearing



<b>tnxTower</b>  <b>Bennett and Pless</b> 750 Park of Commerce Drive Boca Raton, Florida 33487 Phone: 678.990.8700 FAX: 678.990.8701	<b>Job</b>	CT907	<b>Page</b>	21 of 25
	<b>Project</b>	SST Structural Analysis	<b>Date</b>	11:18:22 06/11/19
	<b>Client</b>	InSite Wireless Group LLC	<b>Designed by</b>	Chunhui Song

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load Allowable	Allowable Ratio	Criteria	
T2	110	Bottom Girt	A325N	0.6250	1	0.179	7.830	0.023	✓	1	Member Bearing
		Leg	A325N	0.6250	4	2.020	20.709	0.098	✓	1	Bolt Tension
		Diagonal	A325X	0.5000	1	3.722	6.199	0.601	✓	1	Member Bearing
T3	100	Top Girt	A325N	0.6250	1	0.745	10.440	0.071	✓	1	Gusset Bearing
		Leg	A325N	0.6250	4	7.197	20.709	0.348	✓	1	Bolt Tension
		Diagonal	A325X	0.5000	1	4.050	6.199	0.653	✓	1	Member Bearing
T4	80	Leg	A325N	0.7500	4	12.233	29.821	0.410	✓	1	Bolt Tension
		Diagonal	A325X	0.5000	1	4.230	6.199	0.682	✓	1	Member Bearing
		Leg	A325N	0.8750	4	16.922	40.589	0.417	✓	1	Bolt Tension
T5	60	Diagonal	A325X	0.5000	1	4.585	6.199	0.740	✓	1	Member Bearing
		Leg	A325N	1.0000	4	21.015	53.014	0.396	✓	1	Bolt Tension
		Diagonal	A325X	0.5000	1	5.347	6.199	0.863	✓	1	Member Bearing
T6	40	Leg	A325N	1.0000	4	21.015	53.014	0.396	✓	1	Bolt Tension
		Diagonal	A325X	0.5000	1	5.347	6.199	0.863	✓	1	Member Bearing
		Leg	F1554-55	1.0000	4	25.259	33.134	0.762	✓	1	Bolt Tension
T7	20	Diagonal	A325X	0.5000	1	5.745	8.265	0.695	✓	1	Member Bearing

### Compression Checks

### Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio P <sub>u</sub> / φP <sub>n</sub> <sup>1</sup>
T1	115 - 110	2-7/8" x 0.286"	5.000	4.500	58.6 K=1.00	2.3262	-4.961	81.410	0.061 <sup>1</sup> ✓
T2	110 - 100	2-7/8" x 0.240"	10.000	4.896	62.8 K=1.00	1.9867	-10.915	67.005	0.163 <sup>1</sup> ✓
T3	100 - 80	2-7/8" x 0.328"	20.034	6.678	88.3 K=1.00	2.6245	-33.157	66.818	0.496 <sup>1</sup> ✓
T4	80 - 60	2-7/8" x 0.276"	20.034	6.678	86.7 K=1.00	2.2535	-56.096	58.514	0.959 <sup>1</sup> ✓
T5	60 - 40	3-1/2" x 0.364"	20.034	6.678	71.8 K=1.00	3.5861	-78.629	110.703	0.710 <sup>1</sup> ✓
T6	40 - 20	4-1/2" x 0.367"	20.034	10.017	81.9 K=1.00	4.7652	-98.826	131.247	0.753 <sup>1</sup> ✓
T7	20 - 0	5-5/8" x 0.28"	20.034	10.017	63.5 K=1.00	4.7017	-120.373	157.521	0.764 <sup>1</sup> ✓

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

<b>tnxTower</b>  <b>Bennett and Pless</b> 750 Park of Commerce Drive Boca Raton, Florida 33487 Phone: 678.990.8700 FAX: 678.990.8701	<b>Job</b> CT907	<b>Page</b> 22 of 25
	<b>Project</b> SST Structural Analysis	<b>Date</b> 11:18:22 06/11/19
	<b>Client</b> InSite Wireless Group LLC	<b>Designed by</b> Chunhui Song

### Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T1	115 - 110	L2x2x3/16	9.655	4.588	139.7 K=1.00	0.7150	-1.096	8.273	0.133 <sup>1</sup> ✓
T2	110 - 100	L2x2x3/16	9.846	4.681	142.6 K=1.00	0.7150	-3.775	7.948	0.475 <sup>1</sup> ✓
T3	100 - 80	L2x2x3/16	12.212	6.060	184.6 K=1.00	0.7150	-3.976	4.741	0.839 <sup>1</sup> ✓
T4	80 - 60	L2 1/2x2 1/2x3/16	13.952	6.928	167.9 K=1.00	0.9020	-4.285	7.225	0.593 <sup>1</sup> ✓
T5	60 - 40	L3x3x3/16	15.760	7.801	157.1 K=1.00	1.0900	-4.629	9.981	0.464 <sup>1</sup> ✓
T6	40 - 20	L3x3x3/16	18.986	9.466	190.6 K=1.00	1.0900	-5.478	6.779	0.808 <sup>1</sup> ✓
T7	20 - 0	L3x3x1/4	20.734	10.284	208.5 K=1.00	1.4400	-6.075	7.486	0.812 <sup>1</sup> ✓

KL/R > 200 (C) - 118

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T1	115 - 110	L2 1/2x2 1/2x3/16	8.542	8.063	195.5 K=1.00	0.9020	-0.358	5.334	0.067 <sup>1</sup> ✓
T2	110 - 100	2L2x2x3/16	8.542	8.063	156.8 K=1.00	1.4300	-0.803	13.137	0.061 <sup>1</sup> ✓

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T1	115 - 110	L2 1/2x2 1/2x3/16	8.542	8.063	195.5 K=1.00	0.9020	-0.143	5.334	0.027 <sup>1</sup> ✓

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Tension Checks

<p><b>tnxTower</b></p> <p><b>Bennett and Pless</b> 750 Park of Commerce Drive Boca Raton, Florida 33487 Phone: 678.990.8700 FAX: 678.990.8701</p>	<p><b>Job</b></p> <p>CT907</p>	<p><b>Page</b></p> <p>23 of 25</p>
	<p><b>Project</b></p> <p>SST Structural Analysis</p>	<p><b>Date</b></p> <p>11:18:22 06/11/19</p>
	<p><b>Client</b></p> <p>InSite Wireless Group LLC</p>	<p><b>Designed by</b></p> <p>Chunhui Song</p>

**Leg Design Data (Tension)**

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T1	115 - 110	2-7/8" x 0.286"	5.000	0.250	3.3	2.3262	0.913	104.679	0.009 <sup>1</sup>
T2	110 - 100	2-7/8" x 0.240"	10.000	4.896	62.8	1.9867	8.079	89.403	0.090 <sup>1</sup>
T3	100 - 80	2-7/8" x 0.328"	20.034	6.678	88.3	2.6245	28.788	118.104	0.244 <sup>1</sup>
T4	80 - 60	2-7/8" x 0.276"	20.034	6.678	86.7	2.2535	48.932	101.409	0.483 <sup>1</sup>
T5	60 - 40	3-1/2" x 0.364"	20.034	6.678	71.8	3.5861	67.689	161.376	0.419 <sup>1</sup>
T6	40 - 20	4-1/2" x 0.367"	20.034	10.017	81.9	4.7652	84.062	214.434	0.392 <sup>1</sup>
T7	20 - 0	5-5/8" x 0.28"	20.034	10.017	63.5	4.7017	101.038	211.577	0.478 <sup>1</sup>

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

**Diagonal Design Data (Tension)**

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T1	115 - 110	L2x2x3/16	9.655	4.588	91.3	0.4484	1.032	19.504	0.053 <sup>1</sup>
T2	110 - 100	L2x2x3/16	9.846	4.681	93.1	0.4484	3.722	19.504	0.191 <sup>1</sup>
T3	100 - 80	L2x2x3/16	11.652	5.785	114.5	0.4484	4.050	19.504	0.208 <sup>1</sup>
T4	80 - 60	L2 1/2x2 1/2x3/16	13.952	6.928	108.5	0.5886	4.230	25.605	0.165 <sup>1</sup>
T5	60 - 40	L3x3x3/16	15.760	7.801	101.0	0.7296	4.585	31.738	0.144 <sup>1</sup>
T6	40 - 20	L3x3x3/16	18.986	9.466	122.3	0.7296	5.347	31.738	0.168 <sup>1</sup>
T7	20 - 0	L3x3x1/4	20.734	10.284	134.0	0.9628	5.745	41.882	0.137 <sup>1</sup>

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

**Top Girt Design Data (Tension)**

<b>tnxTower</b>  <b>Bennett and Pless</b> 750 Park of Commerce Drive Boca Raton, Florida 33487 Phone: 678.990.8700 FAX: 678.990.8701	<b>Job</b> CT907	<b>Page</b> 24 of 25
	<b>Project</b> SST Structural Analysis	<b>Date</b> 11:18:22 06/11/19
	<b>Client</b> InSite Wireless Group LLC	<b>Designed by</b> Chunhui Song

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T1	115 - 110	L2 1/2x2 1/2x3/16	8.542	8.063	128.1	0.5710	0.358	24.840	0.014 <sup>1</sup>
T2	110 - 100	2L2x2x3/16	8.542	8.063	161.5	0.8616	0.745	37.478	0.020 <sup>1</sup>

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T1	115 - 110	L2 1/2x2 1/2x3/16	8.542	8.063	128.1	0.5710	0.179	24.840	0.007 <sup>1</sup>

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	φP <sub>allow</sub> K	% Capacity	Pass Fail	
T1	115 - 110	Leg	2-7/8" x 0.286"	3	-4.961	81.410	6.1	Pass	
T2	110 - 100	Leg	2-7/8" x 0.240"	18	-10.915	67.005	16.3	Pass	
T3	100 - 80	Leg	2-7/8" x 0.328"	36	-33.157	66.818	49.6	Pass	
T4	80 - 60	Leg	2-7/8" x 0.276"	57	-56.096	58.514	95.9	Pass	
T5	60 - 40	Leg	3-1/2" x 0.364"	78	-78.629	110.703	71.0	Pass	
T6	40 - 20	Leg	4-1/2" x 0.367"	99	-98.826	131.247	75.3	Pass	
T7	20 - 0	Leg	5-5/8" x 0.28"	114	-120.373	157.521	76.4	Pass	
T1	115 - 110	Diagonal	L2x2x3/16	12	-1.096	8.273	13.3	Pass	
T2	110 - 100	Diagonal	L2x2x3/16	27	-3.775	7.948	16.6 (b) 47.5	Pass	
T3	100 - 80	Diagonal	L2x2x3/16	42	-3.976	4.741	60.1 (b) 83.9	Pass	
T4	80 - 60	Diagonal	L2 1/2x2 1/2x3/16	63	-4.285	7.225	59.3 68.2 (b)	Pass	
T5	60 - 40	Diagonal	L3x3x3/16	81	-4.629	9.981	46.4 74.0 (b)	Pass	
T6	40 - 20	Diagonal	L3x3x3/16	103	-5.478	6.779	80.8 86.3 (b)	Pass	
T7	20 - 0	Diagonal	L3x3x1/4	118	-6.075	7.486	81.2	Pass	
T1	115 - 110	Top Girt	L2 1/2x2 1/2x3/16	4	-0.358	5.334	6.7	Pass	
T2	110 - 100	Top Girt	2L2x2x3/16	20	-0.803	13.137	6.1	Pass	
T1	115 - 110	Bottom Girt	L2 1/2x2 1/2x3/16	7	-0.143	5.334	7.1 (b) 2.7	Pass	
							Summary		
							Leg (T4)	95.9	Pass
							Diagonal (T6)	86.3	Pass
							Top Girt (T2)	7.1	Pass


<p><b>tnxTower</b></p> <p><b>Bennett and Pless</b>  750 Park of Commerce Drive  Boca Raton, Florida 33487  Phone: 678.990.8700  FAX: 678.990.8701</p>	<b>Job</b> CT907	<b>Page</b> 25 of 25
	<b>Project</b> SST Structural Analysis	<b>Date</b> 11:18:22 06/11/19
	<b>Client</b> InSite Wireless Group LLC	<b>Designed by</b> Chunhui Song

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$\phi P_{allow}$ K	% Capacity	Pass Fail
						Bottom Girt (T1)	2.7	Pass
						Bolt Checks	86.3	Pass
						<b>RATING =</b>	<b>95.9</b>	<b>Pass</b>

Program Version 8.0.5.0 - 11/28/2018 File:C:/Egnyte/Shared/Projects/2019/19300 - 19499 - Boca/19313.xxx - InSite/19313.007- CT907 Union (ATT) 115ft SST/19313.007-CT907 Union (ATT) 115ft SST\_SA\_CS.eri

Attachment 2:  
Collocation Application

**WORKSHEET 1 OF 2 (COMPLETE BOTH WORKSHEET TABS)**

		<h2>CUSTOMER APPLICATION</h2>		A Site Application Fee to be paid upon submission of this Customer Application.
		DATE SUBMITTED: 04.29.2019		
<b>CUSTOMER INFORMATION</b>				
COMPANY NAME:	NEW CINGULAR WIRELESS PCS	PHONE:		
ENTITY Type: i.e. Inc., LLP	LLC	FAX:		
STATE of Inc.	DELAWARE	SERVICE (PCS, SMR):		
<b>CUSTOMER ADDRESSES</b>				
COMPANY Address:	575 MOROSGO DRIVE	CITY/STATE:	ATLANTA, GA	ZIP : 30324
BILLING Address:		CITY/STATE:		ZIP :
NOTICE Address 1:	1025 Lenox Park Blvd NE, 3rd Floor	CITY/STATE:	ATLANTA, GA	ZIP : 30319
NOTICE Address 2:	208 S. AKARD STREET	CITY/STATE:	DALLAS, TX	ZIP : 75202-4206
<b>CUSTOMER CONTACTS</b>				
PRIMARY CONTACT:	DAVID HERDMAN	PHONE:	203-213-6588	
TITLE:	SENIOR PM	E-MAIL Address:	dh1681@att.com	
SIGNATORY NAME:	JESSICA RINCON	PHONE:	508-395-4841	
TITLE:	AREA MANAGER	E-MAIL Address:	JR7293@att.com	
EMERGENCY CONTACT:		PHONE:		
TITLE:		E-MAIL Address:		
TECHNICAL/OPS:		PHONE:		
TITLE:		E-MAIL Address:		
RF ENGINEER:	Mohammed Rahman	PHONE:	860-258-6350	
TITLE:		E-MAIL Address:	MR673A@ATT.COM	
BILLING CONTACT:		PHONE:		
TITLE:		E-MAIL Address:		
LEGAL CONTACT:	JAY PEREZ	PHONE:	201-576-2042	
TITLE:	ATTORNEY	E-MAIL Address:	VP8049@att.com	
<b>SITE INFORMATION</b>				
CUSTOMER Site # / Name:	CT1048 / UNION - STICKNEY HILL	INSITE Site # and Name:	CT907 / Union	
SITE LATITUDE:	41.9853811	SITE LONGITUDE:	-72.1921661	
SITE ADDRESS:	107 STICKNEY HILL ROAD	CITY:	UNION	
STATE:	CT	ZIP:	6076	
		STRUCTURE TYPE:	SELF SUPPORT TOWER	
<b>USE THIS SECTION TO PROVIDE A DESCRIPTION OF COLOCATION OR MODIFICATION REQUEST</b>				
SWAP (6) POWERWAVE ANTENNAS FOR (6) KATHRIEN ANTENNAS; SWAP (3) diplexers (3) RRUS for (6) RRU; ADD (1) SQUID, (1) FIBER & (2) DC LINES. Mount at 113' being modified per MA.				
<b>USE THIS SECTION TO LIST EQUIPMENT TO BE REMOVED</b>				
(6) Powerwave P65E-17-XLH-RRC antennas (3) diplexers at 113', (3) RRUS 11 B12 RRU at 98.5'				
<b>APPLICATION PREPARED BY</b>				
NAME:	MARK ROBERTS	PHONE:	860-670-9068	
COMPANY:	QC DEVELOPMENT	ADDRESS:	PO BOX 916, STORRS, CT 06268	
TITLE:	SITE ACQ CONSULTANT	E-MAIL Address:	Mark.Roberts@QCDevelopment.net	

**EXHIBIT  
Equipment**

Site Name and #: **CT907 / Union**

Licensee Name: **NEW CINGULAR WIRELESS PCS**

The mounting method and exact location of the space and equipment listed herein shall be subject to InSite's approval

SYSTEM REQUIREMENTS						
POWER provided by:	Utility Company direct			TELCO provided by:		Fiber
Power Requirements:	Amps:	200	Volts:	N/A	No. of Outlets:	N/A
Generator Provided by:	N/A	Make:	N/A	Model:	N/A	Fuel Type: N/A Capacity: N/A
Batteries:	Quantity:	None	Make:	N/A	Model:	N/A
SPACE REQUIREMENTS & RADIO INVENTORY						
Type of Space Required:	Ground:	Yes	Floor:		Total Square Feet:	351 sq. ft.
Dimensions of Equipment Floor/Ground Space:			13' x 27'		Equipment Height:	120"
Dimensions of Generator Ground Space:			N/A		Dimensions of Fuel Tank Ground Space:	N/A
No. of Transmitters (Tx):	Three (3)	Transmitter Make/Model:	Unknown		Transmitter Power Output:	200 Watts
No. of Receivers (Rx):	Three (3)	Receiver Make/Model:	Unknown		Transmitter ERP:	Unknown
Cabinet also contains:	N/A					
EQUIPMENT LOADING DESCRIPTION (FINAL CONFIGURATION)						
	Sector 1	Sector 2	Sector 3	DISH(ES)	OTHER	
Antenna Type (1):	Panel	Panel	Panel	N/A	N/A	
# of Antennas (1)/ Sector:	One (1)	One (1)	One (1)	None	None	
Tx, Rx or Both:	Both	Both	Both	N/A	N/A	
Antenna Manufacturer (1):	Kathrein	Kathrein	Kathrein	N/A	N/A	
Antenna Model (1):	800-10121	800-10121	800-10121	N/A	N/A	
Antenna Dimensions (1):	54.5" x 10.3" x 5.9"	54.5" x 10.3" x 5.9"	54.5" x 10.3" x 5.9"	N/A	N/A	
Antenna Weight (1):	44 lbs	44 lbs	44 lbs	N/A	N/A	
Antenna RAD Ctr / Azimuth (1):	111 ft	111 ft	111 ft	N/A	N/A	
Antenna Type (2):	Panel	Panel	Panel	N/A	N/A	
# of Antennas (2)/ Sector:	Two (2)	Two (2)	Two (2)	None	None	
Tx, Rx or Both:	Both	Both	Both	N/A	N/A	
Antenna Manufacturer (2):	Kathrein	Kathrein	Kathrein	N/A	N/A	
Antenna Model (2):	800-10966	800-10966	800-10966	N/A	N/A	
Antenna Dimensions (2):	96" x 20" x 6.9"	96" x 20" x 6.9"	96" x 20" x 6.9"	N/A	N/A	
Antenna Weight (2):	115 lbs	115 lbs	115 lbs	N/A	N/A	
Antenna RAD Ctr / Azimuth (2):	113 ft	113 ft	113 ft	N/A	N/A	
# of RRU/RRHs/ Sector (1):	One (1)	One (1)	One (1)			
RRU/RRH Manufacturer (1):	Ericsson	Ericsson	Ericsson			
RRU/RRH Model (1):	B2/B66A 8843	B2/B66A 8843	B2/B66A 8843			
RRU/RRH Dimensions (1):	14.96" x 13.19" x 11.1"	14.96" x 13.19" x 11.1"	14.96" x 13.19" x 11.1"			
RRU/RRH Weight (1):	75 lbs	75 lbs	75 lbs			
RRU/RRH RAD Ctr (1):	113 ft	113 ft	113 ft			
# of RRU/RRHs/ Sector (2):	One (1)	One (1)	One (1)			
RRU/RRH Manufacturer (2):	Ericsson	Ericsson	Ericsson			
RRU/RRH Model (2):	B5/B12 4449	B5/B12 4449	B5/B12 4449			
RRU/RRH Dimension (2):	17.9" x 13.19" x 9.44"	17.9" x 13.19" x 9.44"	17.9" x 13.19" x 9.44"			
RRU/RRH Weight (2):	71 lbs	71 lbs	71 lbs			
RRU/RRH RAD Ctr (2):	113 ft	113 ft	113 ft			
# of TMAs/ Sector (1):	One (1)	One (1)	One (1)			
TMA Manufacturer (1):	Powerwave	Powerwave	Powerwave			
TMA Model (1):	TT19-08BP111-001	TT19-08BP111-001	TT19-08BP111-001			
TMA Dimensions (1):	9.9" x 6.7" x 5.4"	9.9" x 6.7" x 5.4"	9.9" x 6.7" x 5.4"			
TMA Weight (1):	16 lbs	16 lbs	16 lbs			
TMA RAD Ctr (1):	111'	111'	111'			
# of Diplexers/ Sector:	None	None	None			
# of RET Motors/Sctr:	Two (2)	Two (2)	Two (2)			
RET Motor Make:	Kathrein	Kathrein	Kathrein			
RET Motor Model:	860-10025	860-10025	860-10025			
RET Motor Dimensions:	7" x 2.3" x 1.9"	7" x 2.3" x 1.9"	7" x 2.3" x 1.9"			
RET Motor Weight:	1.16 lbs	1.16 lbs	1.16 lbs			
RET Motor RAD Ctr:	111 ft	111 ft	111 ft			
# of Surge Suppressors/Sctr:	One (1)	One (1)	None			
Surge Suppressor Make:	Raycap	Raycap	N/A			
Surge Suppressor Model:	DC6-48-60-18-8F	DC6-48-60-18-8F	N/A			
Surge Suppressor Dimensions:	23.5" x 9.7" dia.	23.5" x 9.7" dia.	N/A			
Surge Suppressor Weight:	20 lbs	20 lbs	N/A			
Surge Suppressor RAD Ctr:	105 ft (Leg Mounted)	105 ft (Leg Mounted)	N/A			
OTHER:	None	None	None			
Transmit Frequencies:	734-746, 880-890, 891.5-894, 1930-1945, 1965-1970, 2110-2135 MHz			N/A	N/A	
Receive Frequencies:	704-716, 835-845, 846.5-849, 1850-1860, 1885-1890, 1710-1735 MHz			N/A	N/A	
# of Lines:	Four (4)	Four (4)	Four (4)	None	None	
Line Size:	1-1/4"	1-1/4"	1-1/4"	N/A	N/A	
# of Lines:	Two (2)	Four (4)	One (1)	None	None	
Line Size:	3/8" Fiber	5/8" Power	2 1/4" Conduit	N/A	N/A	
Mount Type:	T-Arm at 113 ft	T-Arm at 113 ft	T-Arm at 113 ft	N/A	N/A	
Mount Size:	Four Feet (4')	Four Feet (4')	Four Feet (4')	N/A	N/A	
Mount Type:	(2) Stand Off Mount at 111 ft	(2) Stand Off Mount at 111 ft	(2) Stand Off Mount at 111 ft	N/A	N/A	
Mount Size:	One Foot (1')	One Foot (1')	One Foot (1')	N/A	N/A	



May 15, 2019  
**May 21, 2019 (Rev. 1)**



SAI Communications  
12 Industrial Way  
Salem NH, 03079

RE:      Site Number:            CT1048 (LTE 2C/4C)  
            FA Number:             10035011  
            PACE Number:            MRCTB033603  
            PT Number:              2051A0JDBE  
            Site Name:                UNION-STICKNEY HILL  
            Site Address:            107 Stickney Hill Road  
   Union, CT 06076

To Whom It May Concern:

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

- (3) 800-10121 Antennas (54.5"x10.3"x5.9" – Wt. = 45 lbs. /each)
- (3) TT19-08BP1111-001 TMA's (9.9"x6.7"x5.4" - Wt. = 16 lbs. /each)
- (1) Squid Surge Arrestor (24.0"x9.7"  $\Phi$  – Wt. = 33 lbs. /each) (Tower Mount)
- **(6) 800-10966 Antennas (96.0"x20.0"x6.9" – Wt. = 115 lbs. /each)**
- **(3) B2/B66A 8843 RRH's (14.9"x13.2"x10.9" – Wt. = 72 lbs. /each)**
- **(3) B5/B12 4449 RRH's (14.9"x13.2"x10.4" – Wt. = 73 lbs. /each)**
- **(1) Squid Surge Arrestor (24.0"x9.7"  $\Phi$  – Wt. = 33 lbs. /each) (Tower Mount)**

*\*Proposed equipment shown in bold*

Fabrication drawings prepared by Sabre Industries Towers and Poles, P/N USF-3U, dated February 4, 2011 and CWT01, dated August 10, 2012, were available for the proposed and existing mounts.

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 1.97 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.
- AT&T policy forbids walking on or suspending below T-arm mounts. This analysis does not include live load conditions for this mount.

Based on our evaluation, we have determined that the existing mounts **ARE NOT CAPABLE** of supporting the proposed equipment without modifications. The following modifications are required to satisfy RF objectives:

- **Install new universal standoff frame, Sabre Industries Towers and Poles P/N USF-3U (or approved equal) (typ. of 1 per sector, total of 3).**
- **Install new 2-1/2" XXS (2.88" O.D.) pipe masts behind new 800-10966 antennas secured to the proposed and existing mounts (typ. of 2 per sector, total of 6).**

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing (LTE 2C/4C) Mount Rating	4	LC1	276%	<b>FAIL</b>
Modified (LTE 2C/4C) Mount Rating	4	LC1	68%	<b>PASS</b>

Reference Documents:

- Fabrication drawings prepared by Sabre Industries Towers and Poles, P/N USF-3U, dated February 4, 2011.
- Fabrication drawings prepared by Sabre Industries Towers and Poles, CWT01, dated February 19, 2013

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  
Structural Dept. Head



Daniel P. Hamm, PE  
Principal

**FIELD PHOTOS:**





**HUDSON**  
Design Group LLC

## Wind & Ice Calculations

Date: 5/15/2019  
 Project Name: UNION- STICKNEY ROAD  
 Project No.: CT1048  
 Designed By: LBW Checked By: MSC



**2.6.5.2 Velocity Pressure Coeff:**

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

$z = 117$  (ft)  
 $z_g = 1200$  (ft)  
 $\alpha = 7.0$   
 **$K_z = 1.034$**

$K_{zmin} \leq K_z \leq 2.01$

**Table 2-4**

Exposure	$Z_g$	$\alpha$	$K_{zmin}$	$K_c$
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

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

$$K_h = e^{(fz/H)}$$

**$K_{zt} = 1.51187541$**

$K_h = 2.0776761$

$K_c = 0.9$  (from Table 2-4)

$K_t = 0.53$  (from Table 2-5)

$f = 2$  (from Table 2-5)

$z = 117$

$z_s = 1250$  (Mean elevation of base of structure above sea level)

$H = 320$  (Ht. of the crest above surrounding terrain)

$K_{zt} = 1.51$  (from 2.6.6.2.1)

$K_e = 0.96$  (from 2.6.8)

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

**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)

$K_{iz} = 1.13$  (from Sec. 2.6.10)

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

**$t_{iz} = 1.97$  in**

Date: 5/15/2019  
 Project Name: UNION- STICKNEY ROAD  
 Project No.: CT1048  
 Designed By: LBW Checked By: MSC



**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

$h = 117$   $G_h = 0.85$

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**

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

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

- $K_z = 1.034$  (from 2.6.5.2)
- $K_{zt} = 1.5$  (from 2.6.6.2.1)
- $K_s = 1.0$  (from 2.6.7)
- $K_e = 0.96$  (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

$q_z = 50.78$   
 $q_z(ice) = 8.12$   
 $q_z(30) = 2.92$

**Table 2-2**

Structure Type	Wind Direction Probability Factor, Kd
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 <sub>s</sub> ) ≥ 0.85	1.4 - 4.0(r <sub>s</sub> ) ≥ 0.90	2.0 - 6.0(r <sub>s</sub> ) ≥ 1.25
Round	C < 39 (Subcritical)	0.7	0.8	1.2
	39 ≤ C ≤ 78 (Transitional)	4.14/(C <sup>0.485</sup> )	3.66/(C <sup>0.415</sup> )	46.8/(C <sup>1.0</sup> )
	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 = **1.97 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)
800-10121 Antenna	54.5	10.3	5.9	3.90	5.29	1.32	262	62	15
800-10966 Antenna	96.0	20.0	6.9	13.33	4.80	1.30	882	176	51
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.20	83	22	5
B2/B66A 8843 RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.20	69	19	4
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	2.26	1.20	42	13	2
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.13	1.20	83	22	5
B5/B12 4449 RRH (Side)	14.9	10.4	13.2	1.08	1.43	1.20	66	18	4
B5/B12 4449 RRH (Shielded)	14.9	6.6	10.4	0.68	2.26	1.20	42	13	2
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	1.83	1.20	23	9	1
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	57	15	3
2" Pipe	2.4	12.0		0.20	0.20	1.20	12	7	1
3" Pipe	3.5	12.0		0.29	0.29	1.20	18	8	1
3x3 HSS	3.0	12.0		0.25	0.25	1.25	16	8	1



Date: 5/15/2019  
 Project Name: UNION- STICKNEY ROAD  
 Project No.: CT1048  
 Designed By: LBW Checked By: MSC



WIND LOADS

Angle = 30 (deg) Ice Thickness = 1.97 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) (normal)	Force (lbs) (side)	Force (lbs) (angle)
800-10121 Antenna	54.5	10.3	5.9	3.90	2.23	5.29	9.24	1.32	1.47	262	167	238
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	882	381	756
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	83	69	80
B2/B66A 8843 RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	69	83	72
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	42	69	48
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	83	66	79
B5/B12 4449 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	66	83	70
B5/B12 4449 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	42	66	48
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	23	28	24

WIND LOADS WITH ICE:

800-10121 Antenna	58.4	14.2	9.8	5.78	3.99	4.11	5.94	1.27	1.35	60	44	56
800-10966 Antenna	99.9	23.9	10.8	16.61	7.52	4.18	9.22	1.27	1.47	172	90	152
B2/B66A 8843 RRH	18.8	17.1	14.8	2.24	1.94	1.10	1.27	1.20	1.20	22	19	21
B2/B66A 8843 RRH (Side)	18.8	14.8	17.1	1.94	2.24	1.27	1.10	1.20	1.20	19	22	20
B2/B66A 8843 RRH (Shielded)	18.8	8.6	14.8	1.12	1.94	2.20	1.27	1.20	1.20	11	19	13
B5/B12 4449 RRH	18.8	17.1	14.3	2.24	1.87	1.10	1.31	1.20	1.20	22	18	21
B5/B12 4449 RRH (Side)	18.8	14.3	17.1	1.87	2.24	1.31	1.10	1.20	1.20	18	22	19
B5/B12 4449 RRH (Shielded)	18.8	8.6	14.3	1.12	1.87	2.20	1.31	1.20	1.20	11	18	13
TT19-08BP111-001 TMA	13.8	9.3	10.6	0.90	1.02	1.48	1.30	1.20	1.20	9	10	9

WIND LOADS AT 30 MPH:

800-10121 Antenna	54.5	10.3	5.9	3.90	2.23	5.29	9.24	1.32	1.47	15	10	14
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	51	22	44
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	5
B2/B66A 8843 RRH (Side)	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	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	2	4	3
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	5	4	5
B5/B12 4449 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	4	5	4
B5/B12 4449 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	2	4	3
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	1	2	1

Date: 5/15/2019  
 Project Name: UNION- STICKNEY ROAD  
 Project No.: CT1048  
 Designed By: LBW Checked By: MSC



**WIND LOADS**

Angle = 60 (deg)      Ice Thickness = 1.97 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) (normal)	Force (lbs) (side)	Force (lbs) (angle)
800-10121 Antenna	54.5	10.3	5.9	3.90	2.23	5.29	9.24	1.32	1.47	262	167	191
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	882	381	506
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	83	69	72
B2/B66A 8843 RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	69	83	80
B2/B66A 8843 RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	62	69	67
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	83	66	70
B5/B12 4449 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	66	83	79
B5/B12 4449 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	62	66	65
TT19-088P111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	23	28	27

**WIND LOADS WITH ICE:**

800-10121 Antenna	58.4	14.2	9.8	5.78	3.99	4.11	5.94	1.27	1.35	60	44	48
800-10966 Antenna	99.9	23.9	10.8	16.61	7.52	4.18	9.22	1.27	1.47	172	90	111
B2/B66A 8843 RRH	18.8	17.1	14.8	2.24	1.94	1.10	1.27	1.20	1.20	22	19	20
B2/B66A 8843 RRH (Side)	18.8	14.8	17.1	1.94	2.24	1.27	1.10	1.20	1.20	19	22	21
B2/B66A 8843 RRH (Shielded)	18.8	12.9	14.8	1.68	1.94	1.47	1.27	1.20	1.20	16	19	18
B5/B12 4449 RRH	18.8	17.1	14.3	2.24	1.87	1.10	1.31	1.20	1.20	22	18	19
B5/B12 4449 RRH (Side)	18.8	14.3	17.1	1.87	2.24	1.31	1.10	1.20	1.20	18	22	21
B5/B12 4449 RRH (Shielded)	18.8	12.9	14.3	1.68	1.87	1.47	1.31	1.20	1.20	16	18	18
TT19-088P111-001 TMA	13.8	9.3	10.6	0.90	1.02	1.48	1.30	1.20	1.20	9	10	10

**WIND LOADS AT 30 MPH:**

800-10121 Antenna	54.5	10.3	5.9	3.90	2.23	5.29	9.24	1.32	1.47	15	10	11
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	51	22	29
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	4
B2/B66A 8843 RRH (Side)	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	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	4	4	4
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	5	4	4
B5/B12 4449 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	4	5	5
B5/B12 4449 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	4	4	4
TT19-088P111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	1	2	2

Date: 5/15/2019  
 Project Name: UNION- STICKNEY ROAD  
 Project No.: CT1048  
 Designed By: LBW Checked By: MSC



WIND LOADS

Angle = 90 (deg) Ice Thickness = 1.97 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) (normal)	Force (lbs) (side)	Force (lbs) (angle)
800-10121 Antenna	54.5	10.3	5.9	3.90	2.23	5.29	9.24	1.32	1.47	262	167	167
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	882	381	381
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	83	69	69
B2/B66A 8843 RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	69	83	83
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	42	69	69
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	83	66	66
B5/B12 4449 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	66	83	83
B5/B12 4449 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	42	66	66
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	23	28	28

WIND LOADS WITH ICE:

800-10121 Antenna	58.4	14.2	9.8	5.78	3.99	4.11	5.94	1.27	1.35	60	44	44
800-10966 Antenna	99.9	23.9	10.8	16.61	7.52	4.18	9.22	1.27	1.47	172	90	90
B2/B66A 8843 RRH	18.8	17.1	14.8	2.24	1.94	1.10	1.27	1.20	1.20	22	19	19
B2/B66A 8843 RRH (Side)	18.8	14.8	17.1	1.94	2.24	1.27	1.10	1.20	1.20	19	22	22
B2/B66A 8843 RRH (Shielded)	18.8	10.5	14.8	1.38	1.94	1.79	1.27	1.20	1.20	13	19	19
B5/B12 4449 RRH	18.8	17.1	14.3	2.24	1.87	1.10	1.31	1.20	1.20	22	18	18
B5/B12 4449 RRH (Side)	18.8	14.3	17.1	1.87	2.24	1.31	1.10	1.20	1.20	18	22	22
B5/B12 4449 RRH (Shielded)	18.8	10.5	14.3	1.38	1.87	1.79	1.31	1.20	1.20	13	18	18
TT19-08BP111-001 TMA	13.8	9.3	10.6	0.90	1.02	1.48	1.30	1.20	1.20	9	10	10

WIND LOADS AT 30 MPH:

800-10121 Antenna	54.5	10.3	5.9	3.90	2.23	5.29	9.24	1.32	1.47	15	10	10
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	51	22	22
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	4
B2/B66A 8843 RRH (Side)	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	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	2	4	4
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	5	4	4
B5/B12 4449 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	4	5	5
B5/B12 4449 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	2	4	4
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	1	2	2

Date: 5/15/2019  
 Project Name: UNION- STICKNEY ROAD  
 Project No.: CT1048  
 Designed By: LBW Checked By: MSC



WIND LOADS

Angle = 120 (deg) Ice Thickness = 1.97 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) (normal)	Force (lbs) (side)	Force (lbs) (angle)
800-10121 Antenna	54.5	10.3	5.9	3.90	2.23	5.29	9.24	1.32	1.47	262	167	191
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	882	381	506
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	83	69	72
B2/B66A 8843 RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	69	83	80
B2/B66A 8843 RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	62	69	67
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	83	66	70
B5/B12 4449 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	66	83	79
B5/B12 4449 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	62	66	65
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	23	28	27

WIND LOADS WITH ICE:

800-10121 Antenna	58.4	14.2	9.8	5.78	3.99	4.11	5.94	1.27	1.35	60	44	48
800-10966 Antenna	99.9	23.9	10.8	16.61	7.52	4.18	9.22	1.27	1.47	172	90	111
B2/B66A 8843 RRH	18.8	17.1	14.8	2.24	1.94	1.10	1.27	1.20	1.20	22	19	20
B2/B66A 8843 RRH (Side)	18.8	14.8	17.1	1.94	2.24	1.27	1.10	1.20	1.20	19	22	21
B2/B66A 8843 RRH (Shielded)	18.8	12.9	14.8	1.68	1.94	1.47	1.27	1.20	1.20	16	19	18
B5/B12 4449 RRH	18.8	17.1	14.3	2.24	1.87	1.10	1.31	1.20	1.20	22	18	19
B5/B12 4449 RRH (Side)	18.8	14.3	17.1	1.87	2.24	1.31	1.10	1.20	1.20	18	22	21
B5/B12 4449 RRH (Shielded)	18.8	12.9	14.3	1.68	1.87	1.47	1.31	1.20	1.20	16	18	18
TT19-08BP111-001 TMA	13.8	9.3	10.6	0.90	1.02	1.48	1.30	1.20	1.20	9	10	10

WIND LOADS AT 30 MPH:

800-10121 Antenna	54.5	10.3	5.9	3.90	2.23	5.29	9.24	1.32	1.47	15	10	11
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	51	22	29
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	4
B2/B66A 8843 RRH (Side)	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	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	4	4	4
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	5	4	4
B5/B12 4449 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	4	5	5
B5/B12 4449 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	4	4	4
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	1	2	2

Date: 5/15/2019  
 Project Name: UNION- STICKNEY ROAD  
 Project No.: CT1048  
 Designed By: LBW Checked By: MSC



**WIND LOADS**

Angle = 150 (deg)

Ice Thickness = 1.97 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) (normal)	Force (lbs) (side)	Force (lbs) (angle)
800-10121 Antenna	54.5	10.3	5.9	3.90	2.23	5.29	9.24	1.32	1.47	262	167	238
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	882	381	756
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	83	69	80
B2/B66A 8843 RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	69	83	72
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	42	69	48
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	83	66	79
B5/B12 4449 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	66	83	70
B5/B12 4449 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	42	66	48
TT19-088P111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	23	28	24

**WIND LOADS WITH ICE:**

800-10121 Antenna	58.4	14.2	9.8	5.78	3.99	4.11	5.94	1.27	1.35	60	44	56
800-10966 Antenna	99.9	23.9	10.8	16.61	7.52	4.18	9.22	1.27	1.47	172	90	152
B2/B66A 8843 RRH	18.8	17.1	14.8	2.24	1.94	1.10	1.27	1.20	1.20	22	19	21
B2/B66A 8843 RRH (Side)	18.8	14.8	17.1	1.94	2.24	1.27	1.10	1.20	1.20	19	22	20
B2/B66A 8843 RRH (Shielded)	18.8	8.6	14.8	1.12	1.94	2.20	1.27	1.20	1.20	11	19	13
B5/B12 4449 RRH	18.8	17.1	14.3	2.24	1.87	1.10	1.31	1.20	1.20	22	18	21
B5/B12 4449 RRH (Side)	18.8	14.3	17.1	1.87	2.24	1.31	1.10	1.20	1.20	18	22	19
B5/B12 4449 RRH (Shielded)	18.8	8.6	14.3	1.12	1.87	2.20	1.31	1.20	1.20	11	18	13
TT19-088P111-001 TMA	13.8	9.3	10.6	0.90	1.02	1.48	1.30	1.20	1.20	9	10	9

**WIND LOADS AT 30 MPH:**

800-10121 Antenna	54.5	10.3	5.9	3.90	2.23	5.29	9.24	1.32	1.47	15	10	14
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	51	22	44
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	5
B2/B66A 8843 RRH (Side)	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	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	2	4	3
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	5	4	5
B5/B12 4449 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	4	5	4
B5/B12 4449 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	2	4	3
TT19-088P111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	1	2	1

Date: 5/15/2019

Project Name: UNION- STICKNEY ROAD

Project No.: CT1048

Designed By: LBW Checked By: MSC



**HUDSON**  
Design Group LLC

### ICE WEIGHT CALCULATIONS

Thickness of ice: 1.97 in.  
Density of ice: 56 pcf

#### 800-10121 Antenna

Weight of ice based on total radial SF area:  
Height (in): 54.5  
Width (in): 10.3  
Depth (in): 5.9  
Total weight of ice on object: 151 lbs  
Weight of object: 47.0 lbs  
**Combined weight of ice and object: 198 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: 445 lbs  
Weight of object: 115.0 lbs  
**Combined weight of ice and object: 560 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: 57 lbs  
Weight of object: 72.0 lbs  
**Combined weight of ice and object: 129 lbs**

#### B5/B12 4449 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: 56 lbs  
Weight of object: 73.0 lbs  
**Combined weight of ice and object: 129 lbs**

#### TT19-08BP111-001 TMA

Weight of ice based on total radial SF area:  
Height (in): 9.9  
Width (in): 5.4  
Depth (in): 6.7  
Total weight of ice on object: 21 lbs  
Weight of object: 16.0 lbs  
**Combined weight of ice and object: 37 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: 56 lbs  
Weight of object: 33 lbs  
**Combined weight of ice and object: 89 lbs**

#### 2" pipe

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

#### 3" Pipe

Per foot weight of ice:  
diameter (in): 3.5  
**Per foot weight of ice on object: 13 plf**

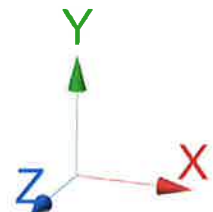
#### HSS 3x3

Weight of ice based on total radial SF area:  
Height (in): 3  
Width (in): 3  
**Per foot weight of ice on object: 15 plf**

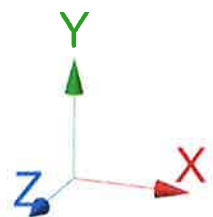
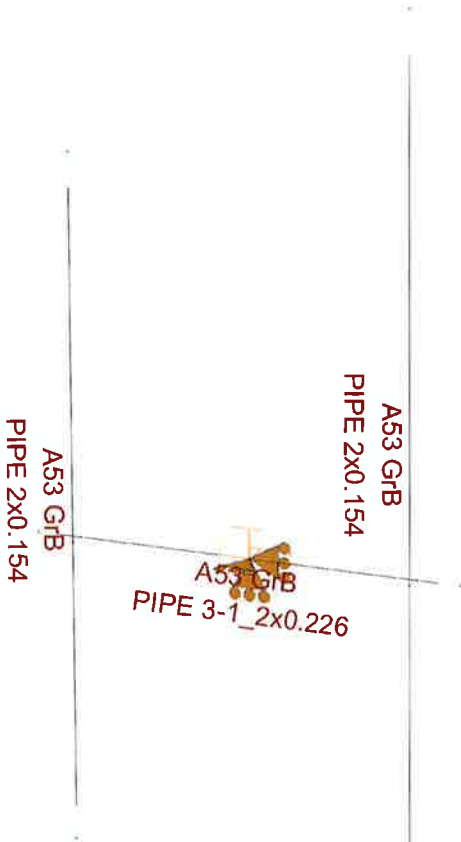


**HUDSON**  
Design Group LLC





**Mount Calculations  
(Existing Conditions)**

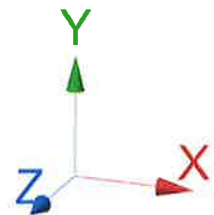
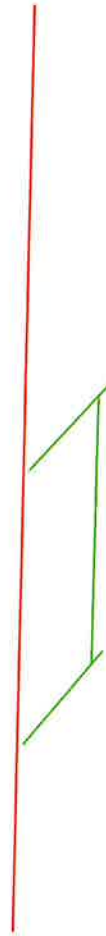
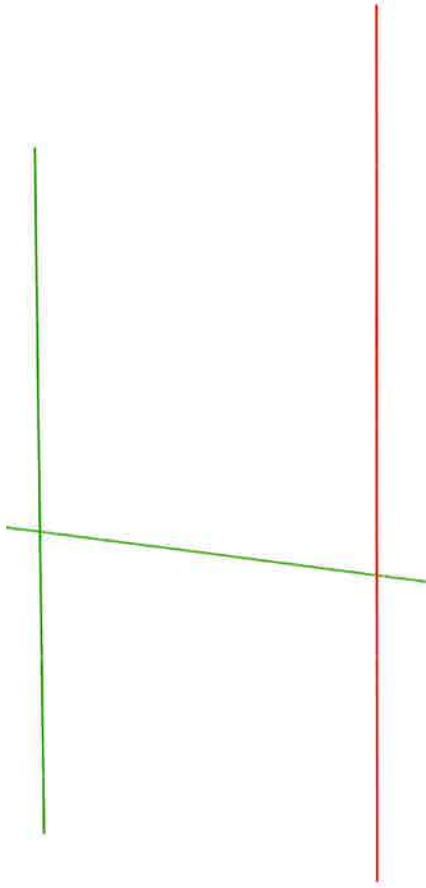


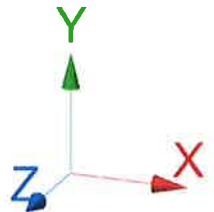
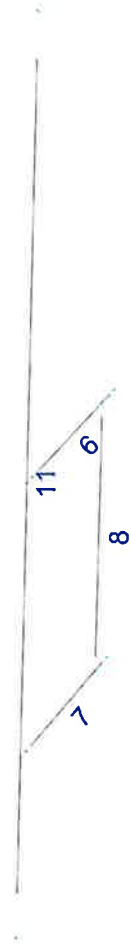
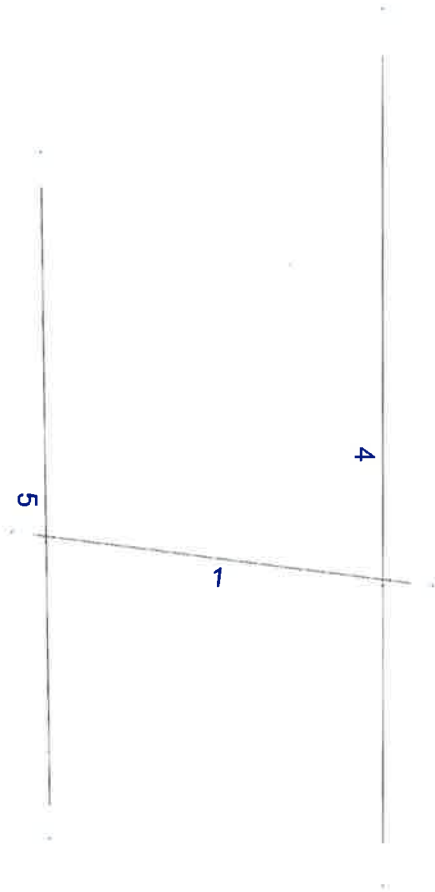




## Design status

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





Current Date: 5/15/2019 4:07 PM

Units system: English

File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1048\LTE 2C-4C\CT1048 (LTE 2C-4C).etz\

## Load data

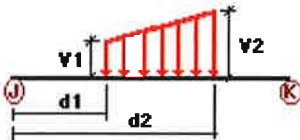
### GLOSSARY

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 <td WIND	W120	WL 120deg	No	WIND	W150	WL 150deg	No	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
W120	WL 120deg	No	WIND																																																											
W150	WL 150deg	No	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																																																											

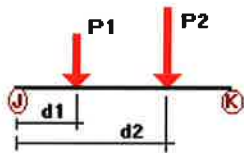
### Distributed force on members



Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
Wo	1	z	-0.018	0.00	0.00	No	0.00	No
	6	z	-0.016	0.00	0.00	No	0.00	No
	7	z	-0.016	0.00	0.00	No	0.00	No
	8	z	-0.012	0.00	0.00	No	0.00	No
W30	1	z	-0.018	0.00	0.00	No	0.00	No
	6	z	-0.016	0.00	0.00	No	0.00	No
	7	z	-0.016	0.00	0.00	No	0.00	No
	8	z	-0.012	0.00	0.00	No	0.00	No

W60	1	x	-0.018	0.00	0.00	No	0.00	No
	4	x	-0.012	0.00	0.00	No	0.00	No
	5	x	-0.012	0.00	0.00	No	0.00	No
	6	x	-0.016	0.00	0.00	No	0.00	No
	7	x	-0.016	0.00	0.00	No	0.00	No
	8	x	-0.012	0.00	0.00	No	0.00	No
	11	x	-0.012	0.00	0.00	No	0.00	No
W90	4	x	-0.012	0.00	0.00	No	0.00	No
	5	x	-0.012	0.00	0.00	No	0.00	No
	6	x	-0.016	0.00	0.00	No	0.00	No
	7	x	-0.016	0.00	0.00	No	0.00	No
	8	x	-0.012	0.00	0.00	No	0.00	No
	11	x	-0.012	0.00	0.00	No	0.00	No
W120	1	x	-0.018	0.00	0.00	No	0.00	No
	4	x	-0.012	0.00	0.00	No	0.00	No
	5	x	-0.012	0.00	0.00	No	0.00	No
	6	x	-0.016	0.00	0.00	No	0.00	No
	7	x	-0.016	0.00	0.00	No	0.00	No
	8	x	-0.012	0.00	0.00	No	0.00	No
W150	1	z	0.018	0.00	0.00	No	0.00	No
	6	z	0.016	0.00	0.00	No	0.00	No
	7	z	0.016	0.00	0.00	No	0.00	No
	8	z	0.012	0.00	0.00	No	0.00	No
	11	x	-0.012	0.00	0.00	No	0.00	No
Di	1	y	-0.013	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
	6	y	-0.015	0.00	0.00	No	0.00	No
	7	y	-0.015	0.00	0.00	No	0.00	No
	8	y	-0.01	0.00	0.00	No	0.00	No
	11	y	-0.01	0.00	0.00	No	0.00	No

### Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%	
D	4	y	-0.058	1.50	No	
		y	-0.058	9.00	No	
	5	y	-0.145	2.50	No	
		y	-0.024	2.00	No	
		y	-0.024	6.50	No	
		y	-0.016	5.50	No	
		y	-0.058	1.50	No	
	Wo	4	z	-0.441	1.50	No
			z	-0.441	9.00	No
		5	z	-0.084	2.50	No
z			-0.132	2.00	No	
z			-0.132	6.50	No	

	11	z	-0.441	1.50	No
		z	-0.441	9.00	No
W30	4	3	-0.379	1.50	No
		3	-0.379	9.00	No
		3	-0.048	2.50	No
	5	3	-0.12	2.00	No
		3	-0.12	6.50	No
		3	-0.024	5.50	No
	11	3	-0.379	1.50	No
		3	-0.379	9.00	No
W60	4	3	-0.254	1.50	No
		3	-0.254	9.00	No
		3	-0.067	2.50	No
	5	3	-0.096	2.00	No
		3	-0.096	6.50	No
		3	-0.027	5.50	No
	11	3	-0.254	1.50	No
		3	-0.254	9.00	No
W90	4	x	-0.191	1.50	No
		x	-0.191	9.00	No
		x	-0.069	2.50	No
	5	x	-0.084	2.00	No
		x	-0.084	6.50	No
		x	-0.028	5.50	No
	11	x	-0.191	1.50	No
		x	-0.191	9.00	No
W120	4	2	-0.254	1.50	No
		2	-0.254	9.00	No
		2	-0.067	2.50	No
	5	2	-0.096	2.00	No
		2	-0.096	6.50	No
		2	-0.027	5.50	No
	11	2	-0.254	1.50	No
		2	-0.254	9.00	No
W150	4	2	-0.379	1.50	No
		2	-0.379	9.00	No
		2	-0.048	2.50	No
	5	2	-0.12	2.00	No
		2	-0.12	6.50	No
		2	-0.024	5.50	No
	11	2	-0.379	1.50	No
		2	-0.379	9.00	No
Di	4	y	-0.223	1.50	No
		y	-0.223	9.00	No
		y	-0.113	2.50	No
	5	y	-0.076	2.00	No
		y	-0.076	6.50	No
		y	-0.021	5.50	No
	11	y	-0.223	1.50	No
		y	-0.223	9.00	No
WI0	4	z	-0.088	1.50	No
		z	-0.088	9.00	No
		z	-0.026	2.50	No
	5	z	-0.032	2.00	No
		z	-0.032	6.50	No
		z	-0.009	5.50	No
	11	z	-0.088	1.50	No
		z	-0.088	9.00	No
WI30	4	3	-0.076	1.50	No
		3	-0.076	9.00	No

		3	-0.013	2.50	No
	5	3	-0.028	2.00	No
		3	-0.028	6.50	No
		3	-0.009	5.50	No
	11	3	-0.076	1.50	No
		3	-0.076	9.00	No
WI60	4	3	-0.056	1.50	No
		3	-0.056	9.00	No
		3	-0.018	2.50	No
	5	3	-0.024	2.00	No
		3	-0.024	6.50	No
		3	-0.01	5.50	No
	11	3	-0.056	1.50	No
		3	-0.056	9.00	No
WI90	4	x	-0.046	1.50	No
		x	-0.046	9.00	No
		x	-0.019	2.50	No
	5	x	-0.022	2.00	No
		x	-0.022	6.50	No
		x	-0.01	5.50	No
	11	x	-0.046	1.50	No
		x	-0.046	9.00	No
WI120	4	2	-0.056	1.50	No
		2	-0.056	9.00	No
		2	-0.018	2.50	No
	5	2	-0.024	2.00	No
		2	-0.024	6.50	No
		2	-0.01	5.50	No
	11	2	-0.056	1.50	No
		2	-0.056	9.00	No
WI150	4	2	-0.076	1.50	No
		2	-0.076	9.00	No
		2	-0.013	2.50	No
	5	2	-0.028	2.00	No
		2	-0.028	6.50	No
		2	-0.009	5.50	No
	11	2	-0.076	1.50	No
		2	-0.076	9.00	No
WL0	4	z	-0.026	1.50	No
		z	-0.026	9.00	No
		z	-0.004	2.50	No
	5	z	-0.008	2.00	No
		z	-0.008	6.50	No
		z	-0.001	5.50	No
	11	z	-0.026	1.50	No
		z	-0.026	9.00	No
WL30	4	3	-0.022	1.50	No
		3	-0.022	9.00	No
		3	-0.003	2.50	No
	5	3	-0.007	2.00	No
		3	-0.007	6.50	No
		3	-0.001	5.50	No
	11	3	-0.022	1.50	No
		3	-0.022	9.00	No
WL60	4	3	-0.015	1.50	No
		3	-0.015	9.00	No
		3	-0.004	2.50	No
	5	3	-0.006	2.00	No
		3	-0.006	6.50	No
		3	-0.002	5.50	No

	11	3	-0.015	1.50	No
		3	-0.015	9.00	No
WL90	4	x	-0.011	1.50	No
		x	-0.011	9.00	No
		x	-0.004	2.50	No
	5	x	-0.005	2.00	No
		x	-0.005	6.50	No
		x	-0.002	5.50	No
	11	x	-0.011	1.50	No
		x	-0.011	9.00	No
WL120	4	2	-0.015	1.50	No
		2	-0.015	9.00	No
		2	-0.004	2.50	No
	5	2	-0.006	2.00	No
		2	-0.006	6.50	No
		2	-0.002	5.50	No
	11	2	-0.015	1.50	No
		2	-0.015	9.00	No
WL150	4	2	-0.022	1.50	No
		2	-0.022	9.00	No
		2	-0.003	2.50	No
	5	2	-0.007	2.00	No
		2	-0.007	6.50	No
		2	-0.001	5.50	No
	11	2	-0.022	1.50	No
		2	-0.022	9.00	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



## 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

---



Current Date: 5/15/2019 4:09 PM

Units system: English

File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1048\LTE 2C-4C\CT1048 (LTE 2C-4C).etx\

## Steel Code Check

Report: Summary - Group by member

**Load conditions to be included in design :**

- LC1=1.2D+Wo
- LC2=1.2D+W30
- LC3=1.2D+W60
- LC4=1.2D+W90
- LC5=1.2D+W120
- LC6=1.2D+W150
- LC7=1.2D-Wo
- LC8=1.2D-W30
- LC9=1.2D-W60
- LC10=1.2D-W90
- LC11=1.2D-W120
- LC12=1.2D-W150
- LC13=0.9D+Wo
- LC14=0.9D+W30
- LC15=0.9D+W60
- LC16=0.9D+W90
- LC17=0.9D+W120
- LC18=0.9D+W150
- LC19=0.9D-Wo
- LC20=0.9D-W30
- LC21=0.9D-W60
- LC22=0.9D-W90
- LC23=0.9D-W120
- LC24=0.9D-W150
- LC25=1.2D+Di+W10
- LC26=1.2D+Di+W130
- LC27=1.2D+Di+W160
- LC28=1.2D+Di+W190
- LC29=1.2D+Di+W120
- LC30=1.2D+Di+W150
- LC31=1.2D+Di-W10
- LC32=1.2D+Di-W130
- LC33=1.2D+Di-W160
- LC34=1.2D+Di-W190
- LC35=1.2D+Di-W120
- LC36=1.2D+Di-W150

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	<b>HSS_SQR 3X3X1_4</b>	<b>6</b>	LC2 at 0.00%	<b>0.25</b>	<b>OK</b>	Eq. H1-1b
		<b>7</b>	LC8 at 0.00%	<b>0.16</b>	<b>OK</b>	Eq. H1-1b
	<b>PIPE 2x0.154</b>	<b>4</b>	LC1 at 62.50%	<b>2.76</b>	<b>N.G.</b>	Eq. H1-1b
		<b>5</b>	LC10 at 53.13%	<b>0.34</b>	<b>OK</b>	
		<b>8</b>	LC30 at 100.00%	<b>0.10</b>	<b>OK</b>	Eq. H1-1b
		<b>11</b>	LC1 at 47.92%	<b>1.66</b>	<b>N.G.</b>	Eq. H1-1b
	<b>PIPE 3-1_2x0.226</b>	<b>1</b>	LC12 at 50.00%	<b>0.55</b>	<b>OK</b>	Eq. H1-1b

Current Date: 5/15/2019 4:09 PM

Units system: English

File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1048\LTE 2C-4C\CT1048 (LTE 2C-4C).etx\

## 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
1	0.00	0.00	0.00	0
2	2.50	0.00	0.00	0
3	-2.50	0.00	0.00	0
6	-2.00	-3.50	0.20	0
7	2.00	-3.50	0.20	0
8	-2.00	4.50	0.20	0
9	2.00	6.50	0.20	0
10	10.00	-1.50	0.00	0
11	10.00	1.50	0.00	0
14	10.00	-1.50	0.42	0
15	10.00	1.50	0.42	0
18	10.00	-3.50	3.075	0
19	10.00	6.50	3.075	0

### Restraints

Node	TX	TY	TZ	RX	RY	RZ
1	1	1	1	1	1	1
10	1	1	1	1	1	1
11	1	1	1	1	1	1

### Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	Ig factor
1	3	2		PIPE 3-1_2x0.226	A53 GrB	0.00	0.00	0.00
4	9	7		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
5	8	6		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
6	11	13		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
7	10	12		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
8	14	15		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
11	19	18		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

### Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
4	315.00	0	0.00	0.00	0.00
5	315.00	0	0.00	0.00	0.00
11	315.00	0	0.00	0.00	0.00

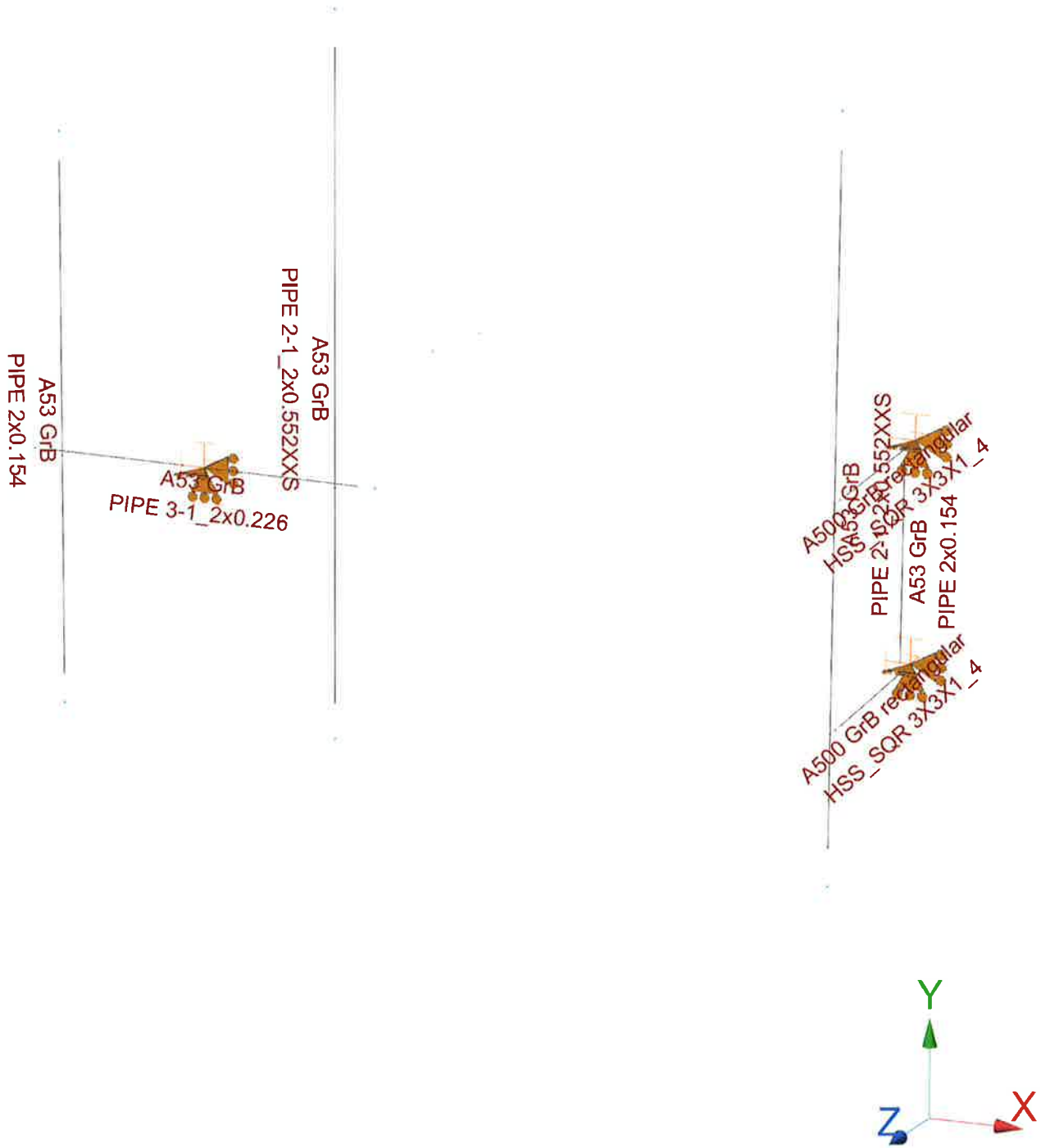


**HUDSON**  
Design Group LLC





**Mount Calculations  
(Modified Conditions)**

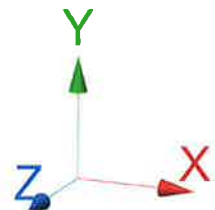
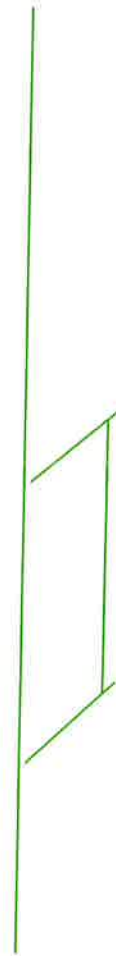
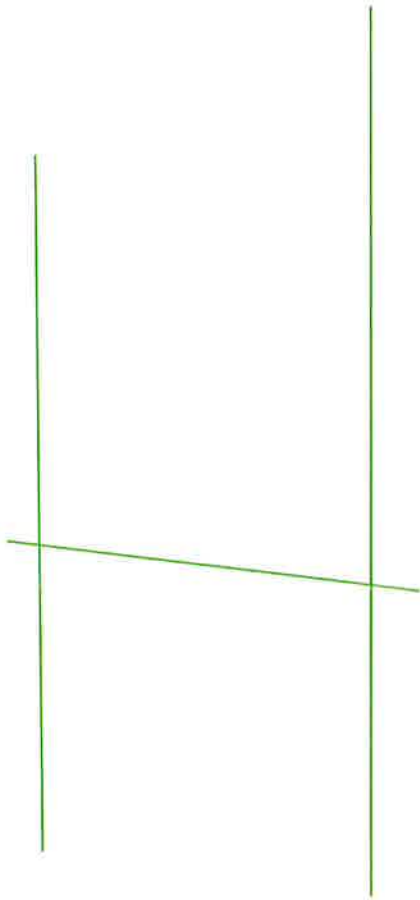


Install new 2-1/2" XXS (2.88" O.D.) pipe masts behind new 800-10966 antennas secured to the proposed and existing mounts (typ. of 2 per sector, total of 6).

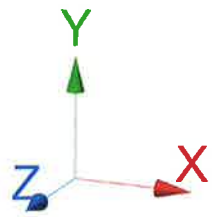
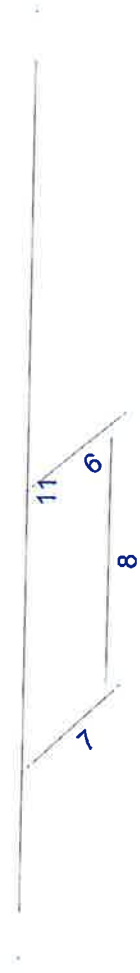
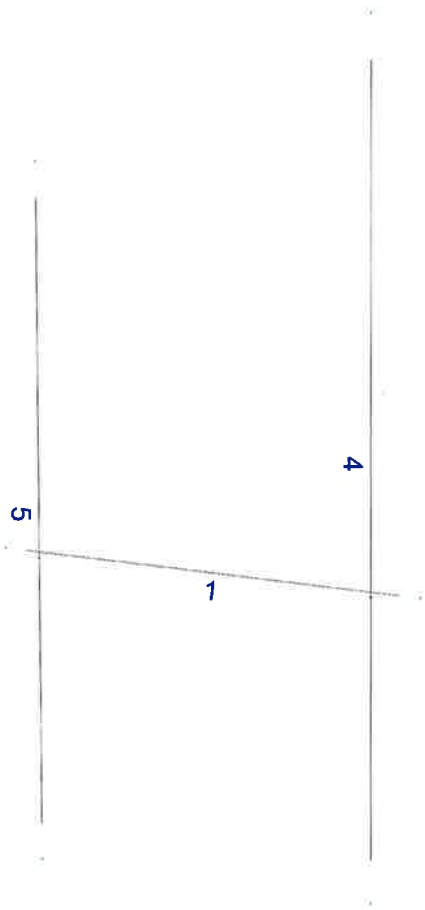


## Design status

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







Current Date: 5/15/2019 4:10 PM

Units system: English

File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1048\LTE 2C-4C\CT1048 (LTE 2C-4C)(MODS).etz\

## Load data

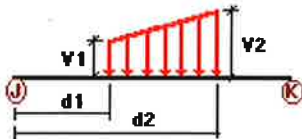
### GLOSSARY

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	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

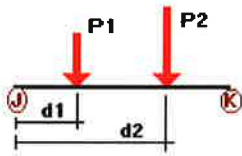
### Distributed force on members



Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
Wo	1	z	-0.018	0.00	0.00	No	0.00	No
	6	z	-0.016	0.00	0.00	No	0.00	No
	7	z	-0.016	0.00	0.00	No	0.00	No
	8	z	-0.012	0.00	0.00	No	0.00	No
W30	1	z	-0.018	0.00	0.00	No	0.00	No
	6	z	-0.016	0.00	0.00	No	0.00	No
	7	z	-0.016	0.00	0.00	No	0.00	No
	8	z	-0.012	0.00	0.00	No	0.00	No

W60	1	x	-0.018	0.00	0.00	No	0.00	No
	4	x	-0.012	0.00	0.00	No	0.00	No
	5	x	-0.012	0.00	0.00	No	0.00	No
	6	x	-0.016	0.00	0.00	No	0.00	No
	7	x	-0.016	0.00	0.00	No	0.00	No
	8	x	-0.012	0.00	0.00	No	0.00	No
W90	11	x	-0.012	0.00	0.00	No	0.00	No
	4	x	-0.012	0.00	0.00	No	0.00	No
	5	x	-0.012	0.00	0.00	No	0.00	No
	6	x	-0.016	0.00	0.00	No	0.00	No
	7	x	-0.016	0.00	0.00	No	0.00	No
W120	8	x	-0.012	0.00	0.00	No	0.00	No
	11	x	-0.012	0.00	0.00	No	0.00	No
	1	x	-0.018	0.00	0.00	No	0.00	No
	4	x	-0.012	0.00	0.00	No	0.00	No
	5	x	-0.012	0.00	0.00	No	0.00	No
	6	x	-0.016	0.00	0.00	No	0.00	No
W150	7	x	-0.016	0.00	0.00	No	0.00	No
	8	x	-0.012	0.00	0.00	No	0.00	No
	11	x	-0.012	0.00	0.00	No	0.00	No
	1	z	0.018	0.00	0.00	No	0.00	No
	6	z	0.016	0.00	0.00	No	0.00	No
	7	z	0.016	0.00	0.00	No	0.00	No
Di	8	z	0.012	0.00	0.00	No	0.00	No
	1	y	-0.013	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
	6	y	-0.015	0.00	0.00	No	0.00	No
	7	y	-0.015	0.00	0.00	No	0.00	No
	8	y	-0.01	0.00	0.00	No	0.00	No
	11	y	-0.01	0.00	0.00	No	0.00	No

### Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
D	4	y	-0.058	1.50	No
		y	-0.058	9.00	No
		y	-0.145	2.50	No
	5	y	-0.024	2.00	No
		y	-0.024	6.50	No
		y	-0.016	5.50	No
	11	y	-0.058	1.50	No
		y	-0.058	9.00	No
		y	-0.058	9.00	No
Wo	4	z	-0.441	1.50	No
		z	-0.441	9.00	No
		z	-0.084	2.50	No
	5	z	-0.132	2.00	No
		z	-0.132	6.50	No
		z	-0.023	5.50	No

	11	z	-0.441	1.50	No
		z	-0.441	9.00	No
W30	4	3	-0.379	1.50	No
		3	-0.379	9.00	No
		3	-0.048	2.50	No
	5	3	-0.12	2.00	No
		3	-0.12	6.50	No
		3	-0.024	5.50	No
	11	3	-0.379	1.50	No
		3	-0.379	9.00	No
W60	4	3	-0.254	1.50	No
		3	-0.254	9.00	No
		3	-0.067	2.50	No
	5	3	-0.096	2.00	No
		3	-0.096	6.50	No
		3	-0.027	5.50	No
	11	3	-0.254	1.50	No
		3	-0.254	9.00	No
W90	4	x	-0.191	1.50	No
		x	-0.191	9.00	No
		x	-0.069	2.50	No
	5	x	-0.084	2.00	No
		x	-0.084	6.50	No
		x	-0.028	5.50	No
	11	x	-0.191	1.50	No
		x	-0.191	9.00	No
W120	4	2	-0.254	1.50	No
		2	-0.254	9.00	No
		2	-0.067	2.50	No
	5	2	-0.096	2.00	No
		2	-0.096	6.50	No
		2	-0.027	5.50	No
	11	2	-0.254	1.50	No
		2	-0.254	9.00	No
W150	4	2	-0.379	1.50	No
		2	-0.379	9.00	No
		2	-0.048	2.50	No
	5	2	-0.12	2.00	No
		2	-0.12	6.50	No
		2	-0.024	5.50	No
	11	2	-0.379	1.50	No
		2	-0.379	9.00	No
Di	4	y	-0.223	1.50	No
		y	-0.223	9.00	No
		y	-0.113	2.50	No
	5	y	-0.076	2.00	No
		y	-0.076	6.50	No
		y	-0.021	5.50	No
	11	y	-0.223	1.50	No
		y	-0.223	9.00	No
W10	4	z	-0.088	1.50	No
		z	-0.088	9.00	No
		z	-0.026	2.50	No
	5	z	-0.032	2.00	No
		z	-0.032	6.50	No
		z	-0.009	5.50	No
	11	z	-0.088	1.50	No
		z	-0.088	9.00	No
WI30	4	3	-0.076	1.50	No
		3	-0.076	9.00	No

		3	-0.013	2.50	No
	5	3	-0.028	2.00	No
		3	-0.028	6.50	No
		3	-0.009	5.50	No
	11	3	-0.076	1.50	No
		3	-0.076	9.00	No
WI60	4	3	-0.056	1.50	No
		3	-0.056	9.00	No
		3	-0.018	2.50	No
	5	3	-0.024	2.00	No
		3	-0.024	6.50	No
		3	-0.01	5.50	No
	11	3	-0.056	1.50	No
		3	-0.056	9.00	No
WI90	4	x	-0.046	1.50	No
		x	-0.046	9.00	No
		x	-0.019	2.50	No
	5	x	-0.022	2.00	No
		x	-0.022	6.50	No
		x	-0.01	5.50	No
	11	x	-0.046	1.50	No
		x	-0.046	9.00	No
WI120	4	2	-0.056	1.50	No
		2	-0.056	9.00	No
		2	-0.018	2.50	No
	5	2	-0.024	2.00	No
		2	-0.024	6.50	No
		2	-0.01	5.50	No
	11	2	-0.056	1.50	No
		2	-0.056	9.00	No
WI150	4	2	-0.076	1.50	No
		2	-0.076	9.00	No
		2	-0.013	2.50	No
	5	2	-0.028	2.00	No
		2	-0.028	6.50	No
		2	-0.009	5.50	No
	11	2	-0.076	1.50	No
		2	-0.076	9.00	No
WL0	4	z	-0.026	1.50	No
		z	-0.026	9.00	No
		z	-0.004	2.50	No
	5	z	-0.008	2.00	No
		z	-0.008	6.50	No
		z	-0.001	5.50	No
	11	z	-0.026	1.50	No
		z	-0.026	9.00	No
WL30	4	3	-0.022	1.50	No
		3	-0.022	9.00	No
		3	-0.003	2.50	No
	5	3	-0.007	2.00	No
		3	-0.007	6.50	No
		3	-0.001	5.50	No
	11	3	-0.022	1.50	No
		3	-0.022	9.00	No
WL60	4	3	-0.015	1.50	No
		3	-0.015	9.00	No
		3	-0.004	2.50	No
	5	3	-0.006	2.00	No
		3	-0.006	6.50	No
		3	-0.002	5.50	No

	11	3	-0.015	1.50	No
		3	-0.015	9.00	No
WL90	4	x	-0.011	1.50	No
		x	-0.011	9.00	No
		x	-0.004	2.50	No
	5	x	-0.005	2.00	No
		x	-0.005	6.50	No
		x	-0.002	5.50	No
	11	x	-0.011	1.50	No
		x	-0.011	9.00	No
WL120	4	2	-0.015	1.50	No
		2	-0.015	9.00	No
		2	-0.004	2.50	No
	5	2	-0.006	2.00	No
		2	-0.006	6.50	No
		2	-0.002	5.50	No
	11	2	-0.015	1.50	No
		2	-0.015	9.00	No
WL150	4	2	-0.022	1.50	No
		2	-0.022	9.00	No
		2	-0.003	2.50	No
	5	2	-0.007	2.00	No
		2	-0.007	6.50	No
		2	-0.001	5.50	No
	11	2	-0.022	1.50	No
		2	-0.022	9.00	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

## 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



Current Date: 5/15/2019 4:10 PM

Units system: English

File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1048\LTE 2C-4C\CT1048 (LTE 2C-4C)(MODS).etx\

## Steel Code Check

Report: Summary - Group by member

**Load conditions to be included in design :**

- LC1=1.2D+Wo
- LC2=1.2D+W30
- LC3=1.2D+W60
- LC4=1.2D+W90
- LC5=1.2D+W120
- LC6=1.2D+W150
- LC7=1.2D-Wo
- LC8=1.2D-W30
- LC9=1.2D-W60
- LC10=1.2D-W90
- LC11=1.2D-W120
- LC12=1.2D-W150
- LC13=0.9D+Wo
- LC14=0.9D+W30
- LC15=0.9D+W60
- LC16=0.9D+W90
- LC17=0.9D+W120
- LC18=0.9D+W150
- LC19=0.9D-Wo
- LC20=0.9D-W30
- LC21=0.9D-W60
- LC22=0.9D-W90
- LC23=0.9D-W120
- LC24=0.9D-W150
- LC25=1.2D+Di+W10
- LC26=1.2D+Di+W130
- LC27=1.2D+Di+W160
- LC28=1.2D+Di+W190
- LC29=1.2D+Di+W120
- LC30=1.2D+Di+W150
- LC31=1.2D+Di-W10
- LC32=1.2D+Di-W130
- LC33=1.2D+Di-W160
- LC34=1.2D+Di-W190
- LC35=1.2D+Di-W120
- LC36=1.2D+Di-W150

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	<i>HSS_SQR 3X3X1_4</i>	6	LC2 at 0.00%	0.25	OK	Eq. H1-1b
		7	LC8 at 0.00%	0.16	OK	Eq. H1-1b
	<i>PIPE 2-1_2x0.552XXS</i>	4	LC1 at 62.50%	0.68	OK	Eq. H1-1b
		11	LC1 at 47.92%	0.41	OK	Eq. H1-1b
	<i>PIPE 2x0.154</i>	5	LC10 at 53.13%	0.34	OK	
		8	LC30 at 100.00%	0.10	OK	Eq. H1-1b
	<i>PIPE 3-1_2x0.226</i>	1	LC12 at 50.00%	0.55	OK	Eq. H1-1b



Current Date: 5/15/2019 4:10 PM

Units system: English

File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1048\LTE 2C-4C\CT1048 (LTE 2C-4C)(MODS).etz\

## 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
1	0.00	0.00	0.00	0
2	2.50	0.00	0.00	0
3	-2.50	0.00	0.00	0
6	-2.00	-3.50	0.20	0
7	2.00	-3.50	0.20	0
8	-2.00	4.50	0.20	0
9	2.00	6.50	0.20	0
10	10.00	-1.50	0.00	0
11	10.00	1.50	0.00	0
14	10.00	-1.50	0.42	0
15	10.00	1.50	0.42	0
18	10.00	-3.50	3.075	0
19	10.00	6.50	3.075	0

### Restraints

Node	TX	TY	TZ	RX	RY	RZ
1	1	1	1	1	1	1
10	1	1	1	1	1	1
11	1	1	1	1	1	1

### Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	Ig factor
1	3	2		PIPE 3-1_2x0.226	A53 GrB	0.00	0.00	0.00
4	9	7		PIPE 2-1_2x0.552XXS	A53 GrB	0.00	0.00	0.00
5	8	6		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
6	11	13		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
7	10	12		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
8	14	15		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
11	19	18		PIPE 2-1_2x0.552XXS	A53 GrB	0.00	0.00	0.00

### Orientation of local axes

Member	Rotation [Deg]	Axis23	NX	NY	NZ
4	315.00	0	0.00	0.00	0.00
5	315.00	0	0.00	0.00	0.00
11	315.00	0	0.00	0.00	0.00

# 107 STICKNEY HILL RD

**Location** 107 STICKNEY HILL RD

**Mblu** 03/ 15/ 013/ /

**Acct#** 00046500

**Owner** HARRISON MARGARET M

**Assessment** \$165,530

**Appraisal** \$236,460

**PID** 583

**Building Count** 1

## Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2018	\$0	\$236,460	\$236,460
Assessment			
Valuation Year	Improvements	Land	Total
2018	\$0	\$165,530	\$165,530

## Owner of Record

**Owner** HARRISON MARGARET M  
**Co-Owner**  
**Address** 145 MIHALIAK ROAD  
 WILLINGTON, CT 06279

**Sale Price** \$0  
**Certificate**  
**Book & Page** 50/14  
**Sale Date** 06/08/2004  
**Instrument** 10

## Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
HARRISON MARGARET M	\$0		50/14	10	06/08/2004
MIHALIAK, JOSEPH ESTATE OF	\$169,200		42/223		05/03/1999
RIZNER GEO JR & PAUL, ESTATE OF	\$0		30/264		07/17/1984

## Building Information

### Building 1 : Section 1

**Year Built:**  
**Living Area:** 0  
**Replacement Cost:** \$0  
**Building Percent Good:**  
**Replacement Cost Less Depreciation:** \$0

Building Attributes	
Field	Description
Style	Vacant Land
Model	
Grade:	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	

### Building Photo



(<http://images.vgsi.com/photos/UnionCTPhotos//default.jpg>)

### Building Layout

(<ParcelSketch.ashx?pid=583&bid=583>)

<b>Building Sub-Areas (sq ft)</b>	<b>Legend</b>
-----------------------------------	---------------

Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	

No Data for Building Sub-Areas

### Extra Features

Extra Features	<u>Legend</u>
No Data for Extra Features	

### Land

#### Land Use

**Use Code** 1300  
**Description** Vacant Land  
**Zone** RR  
**Neighborhood** 12  
**Alt Land Appr Category** No

#### Land Line Valuation

**Size (Acres)** 3.50  
**Frontage** 0  
**Depth** 0  
**Assessed Value** \$165,530  
**Appraised Value** \$236,460

### Outbuildings




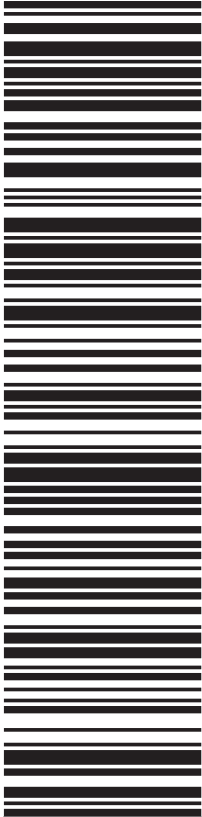
Outbuildings	<u>Legend</u>
No Data for Outbuildings	

### Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2018	\$0	\$236,460	\$236,460
2017	\$0	\$248,860	\$248,860
2013	\$0	\$248,860	\$248,860

Assessment			
Valuation Year	Improvements	Land	Total
2018	\$0	\$165,530	\$165,530
2017	\$0	\$174,210	\$174,210
2013	\$0	\$174,210	\$174,210



 <b>UNITED STATES POSTAL SERVICE®</b>			
		<small>usps.com</small> <b>\$7.35</b> <b>US POSTAGE</b> <small>Flat Rate Env</small>	
<small>09/20/2019</small>		<small>Mailed from 06268 062S00000000315</small>	
<b>PRIORITY MAIL 1-DAY™</b>			
<small>MARK J ROBERTS</small> <small>QC DEVELOPMENT</small> <small>PO BOX 916</small> <small>STORRS CT 06268-0916</small>		<small>Expected Delivery Date: 09/21/19</small>  <b>0024</b>	
<b>Carrier -- Leave if No Response</b>			
<div style="border: 1px solid black; padding: 2px; display: inline-block;"><b>R024</b></div>			
<small>SHIP TO:</small> <small>MARGARET M HARRISON</small> <small>145 MIHALIAK RD</small> <small>WILLINGTON CT 06279-2410</small>			
<b>USPS TRACKING #</b>			
			
<b>9405 5036 9930 0116 5025 65</b>			
<small>Electronic Rate Approved #038555749</small>			



Cut on dotted line.

### Instructions

1. Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. **DO NOT PHOTO COPY OR ALTER LABEL.**
2. Place your label so it does not wrap around the edge of the package.
3. Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, **DO NOT TAPE OVER BARCODE.** Be sure all edges are secure.
4. To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
5. Mail your package on the "Ship Date" you selected when creating this label.



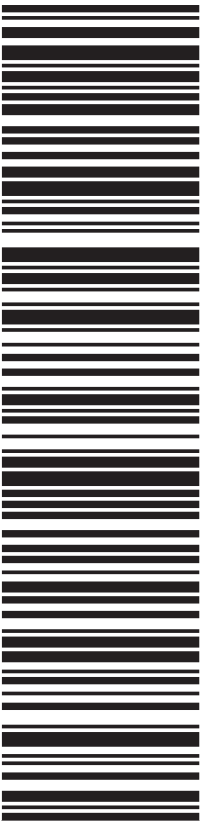
### Click-N-Ship® Label Record

<b>USPS TRACKING # :</b> <b>9405 5036 9930 0116 5025 65</b>	
<small>Trans. #:</small> 472967460 <small>Print Date:</small> 09/20/2019 <small>Ship Date:</small> 09/20/2019 <small>Expected Delivery Date:</small> 09/21/2019	<small>Priority Mail® Postage:</small> <b>\$7.35</b> <small>Total</small> <b>\$7.35</b>
<b>From:</b> MARK J ROBERTS QC DEVELOPMENT PO BOX 916 STORRS CT 06268-0916	
<b>To:</b> MARGARET M HARRISON 145 MIHALIAK RD WILLINGTON CT 06279-2410	
<small>* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.</small>	



Thank you for shipping with the United States Postal Service!

Check the status of your shipment on the USPS Tracking® page at usps.com

 <b>UNITED STATES POSTAL SERVICE®</b>		<b>Click-N-Ship®</b>	
		<small>usps.com</small> <b>\$7.35</b> <b>US POSTAGE</b> <small>Flat Rate Env</small>	<small>9405 5036 9930 0116 5025 72 0073 5000 0010 6076</small>
<b>PRIORITY MAIL 1-DAY™</b>		<small>09/20/2019</small>	<small>Mailed from 06268 062S0000001309</small>
<small>MARK J ROBERTS</small> <small>QC DEVELOPMENT</small> <small>PO BOX 916</small> <small>STORRS CT 06268-0916</small>		<small>Expected Delivery Date: 09/21/19</small> <b>0024</b>	
<b>Carrier -- Leave if No Response</b>		<div style="border: 1px solid black; padding: 2px; display: inline-block;"><b>R002</b></div>	
<small>SHIP MR. DAVID D EATON</small> <small>TO: TOWN OF UNION</small> <small>1043 BUCKLEY HWY</small> <small>CC: MR JOE PAJAK -- BLDG OFFICE</small> <small>UNION CT 06076-4802</small>			
<b>USPS TRACKING #</b>			
			
<b>9405 5036 9930 0116 5025 72</b>			
Electronic Rate Approved #038555749			



Cut on dotted line.

## Instructions

- Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. **DO NOT PHOTO COPY OR ALTER LABEL.**
- Place your label so it does not wrap around the edge of the package.
- Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, **DO NOT TAPE OVER BARCODE.** Be sure all edges are secure.
- To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
- Mail your package on the "Ship Date" you selected when creating this label.

## Click-N-Ship® Label Record

<b>USPS TRACKING # :</b> <b>9405 5036 9930 0116 5025 72</b>					
Trans. #: 472967460 Print Date: 09/20/2019 Ship Date: 09/20/2019 Expected Delivery Date: 09/21/2019	<table border="0"> <tr> <td>Priority Mail® Postage:</td> <td style="text-align: right;"><b>\$7.35</b></td> </tr> <tr> <td>Total</td> <td style="text-align: right;"><b>\$7.35</b></td> </tr> </table>	Priority Mail® Postage:	<b>\$7.35</b>	Total	<b>\$7.35</b>
Priority Mail® Postage:	<b>\$7.35</b>				
Total	<b>\$7.35</b>				
<b>From:</b> MARK J ROBERTS QC DEVELOPMENT PO BOX 916 STORRS CT 06268-0916					
<b>To:</b> MR. DAVID D EATON TOWN OF UNION 1043 BUCKLEY HWY CC; MR JOE PAJAK -- BLDG OFFICE UNION CT 06076-4802					
<small>* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.</small>					



Thank you for shipping with the United States Postal Service!

Check the status of your shipment on the USPS Tracking® page at usps.com