Greg Milano
SAI Group, LLC
12 Industrial Way
Salem, NH 03079
860-707-9001
gmilano@saigrp.com

January 24, 2020

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

Notice of Exempt Modification – New Cingular Wireless PCS, LLC (AT&T) CT5100
220 Evergreen Street, Bridgeport, CT 06606
N 41.197778
W -72.190692

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 130-foot level of the existing 135-foot monopole at 220 Evergreen Street, Bridgeport, CT. The property is owned by The tower is owned by Blue Sky Towers. AT&T now intends to add three (3) DMP65R-BU8DA CCI antennas. These antennas would be installed at the 130-foot level of the tower. AT&T also intends to install three (3) Ericsson B14 4478 RRUS.

This facility was approved by the Siting Council in docket #464 on April 14, 2016. This approval included the condition that the tower height be limited to 135 ft. No change to the existing tower height is proposed, therefore this modification complies with the aforementioned condition.

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 Joseph P. Ganim, Mayor of the City of Bridgeport, the Zoning Department as well as the tower and property 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).

Sincerely,

Greg Milano

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860-707-9001
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Attachments

cc: Joseph P. Ganim - Mayor
Dennis Buckley – Zoning Department
CHAPIN & BANGS COMPANY – Property Owner
Blue Sky Towers, LLC - Tower Owner

Power Density

Existing Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm^2)	Freq. Band (MHz**)	Limit S (mW /cm^2)	%MPE
Other Carriers*							9.59%
AT&T - UMTS	2	762	130	0.0356	850	0.5667	0.63%
AT&T - UMTS	2	865	130	0.0405	850	0.5667	0.71%
AT&T - UMTS	4	1250	130	0.1169	2300	1.0000	1.17%
AT&T - LTE	4	906	130	0.0848	700	0.4667	1.82%
AT&T - LTE	4	1181	130	0.1105	2100	1.0000	1.10%
AT&T - LTE	2	826	130	0.0386	700	0.4667	0.83%
AT&T - LTE	4	1250	130	0.1169	1900	1.0000	1.17%
Site Total							17.03%

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

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

Proposed Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm^2)	Freq. Band (MHz**)	Limit S (mW /cm^2)	%MPE
Other Carriers*							9.59%
AT&T UMTS	1	762	130	0.0178	850	0.5667	0.31%
AT&T LTE AWS	1	5070	130	0.1186	2100	1.0000	1.19%
AT&T LTE	2	1476	130	0.0690	700	0.4667	1.48%
AT&T LTE	1	1000	130	0.0234	850	0.5667	0.41%
AT&T LTE WCS	1	1285	130	0.0301	2300	1.0000	0.30%
AT&T LTE	2	4842	130	0.2265	1900	1.0000	2.26%
AT&T LTE	1	2951	130	0.0690	700	0.4667	1.48%
Site Total							17.03%

*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

PROJECT INFORMATION

SCOPE OF WORK:	ITEMS TO BE MOUNTED ON THE EXISTING MONOPOLE: • NEW AT&T ANTENNAS: DMP65R-BU8DA (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T RRUS: 4478 B14 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3). ITEMS TO REMAIN: • (9) ANTENNAS, (21) RRU'S, (4) SURGE ARRESTORS, (8) DC POWER & (2) FIBER.
SITE ADDRESS:	220 EVERGREEN ST BRIDGEPORT, CT 06606
LATITUDE:	41.197778° N, 41° 11' 52.00" N
LONGITUDE:	73.190692° W, 73° 11' 26.49" W
TYPE OF SITE:	MONOPOLE / INDOOR
STRUCTURE HEIGHT:	135'-0"±
RAD CENTER:	130'-0"±
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

SITE NUMBER: CT5100

SITE NAME: BRIDGEPORT EVERGREEN ST

FA CODE: 10107972

PACE ID: MRCTB043905

PROJECT: LTE 7C_2020 UPGRADE

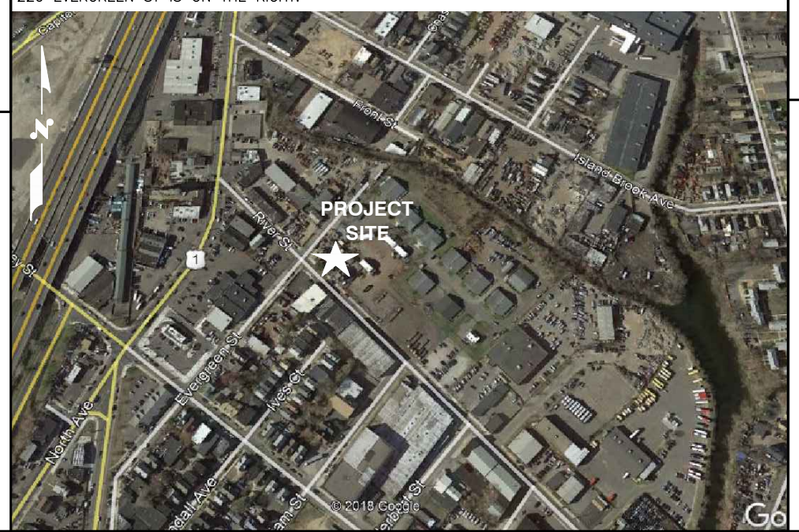
DRAWING INDEX

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

VICINITY MAP

DIRECTIONS TO SITE:

START OUT GOING WEST ON COCHITUATE RD/MA-30 TOWARD BURR ST. MAKE A U-TURN AT BURR ST ONTO COCHITUATE RD/MA-30. MERGE ONTO I-90 W/MASSACHUSETTS TPKE W TOWARD SPRINGFIELD/BOSTON. MERGE ONTO I-84 W/WILBUR CROSS HWY S VIA EXIT 9 TOWARD US-20/HARTFORD/NEW YORK CITY (PORTIONS TOLL) (CROSSING INTO CONNECTICUT).
KEEP LEFT TO TAKE CT-15 S/WILBUR CROSS HWY S VIA EXIT 57 TOWARD I-91 S/CHARTER OAK BR/NY CITY. MERGE ONTO I-91 S VIA EXIT 86 TOWARD NEW HAVEN/NY CITY. MERGE ONTO CT-15 S VIA EXIT 17 TOWARD E MAIN ST. MERGE ONTO CT-8 S VIA EXIT 52 TOWARD BRIDGEPORT. TAKE EXIT 5 TOWARD NORTH AVE/BOSTON AVE/BEARDSLEY ZOOLOGICAL GARDENS/MOTOR VEH DEPT. MERGE ONTO CHOPSEY HILL RD. TURN RIGHT ONTO US-1 S/NORTH AVE. TURN LEFT ONTO RIVER ST. SCRUPLES LOUNGE IS ON THE LEFT. TAKE THE 1ST LEFT ONTO EVERGREEN ST.
220 EVERGREEN ST IS ON THE RIGHT.



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

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

SAI
12 INDUSTRIAL WAY
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500 ENTERPRISE DRIVE, SUITE 3A
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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: TR

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

AT&T

TITLE SHEET
LTE 7C_2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5100	T-1	1

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-H, STRUCTURAL STANDARDS FOR STEEL

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

ABBREVIATIONS

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

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

12 INDUSTRIAL WAY
SALEM, NH 03079

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

SITE NUMBER: CT5100
SITE NAME: BRIDGEPORT EVERGREEN ST

220 EVERGREEN ST
BRIDGEPORT, CT 06606
FAIRFIELD COUNTY

NO.	DATE	REVISIONS	BY	CHK	APP'D
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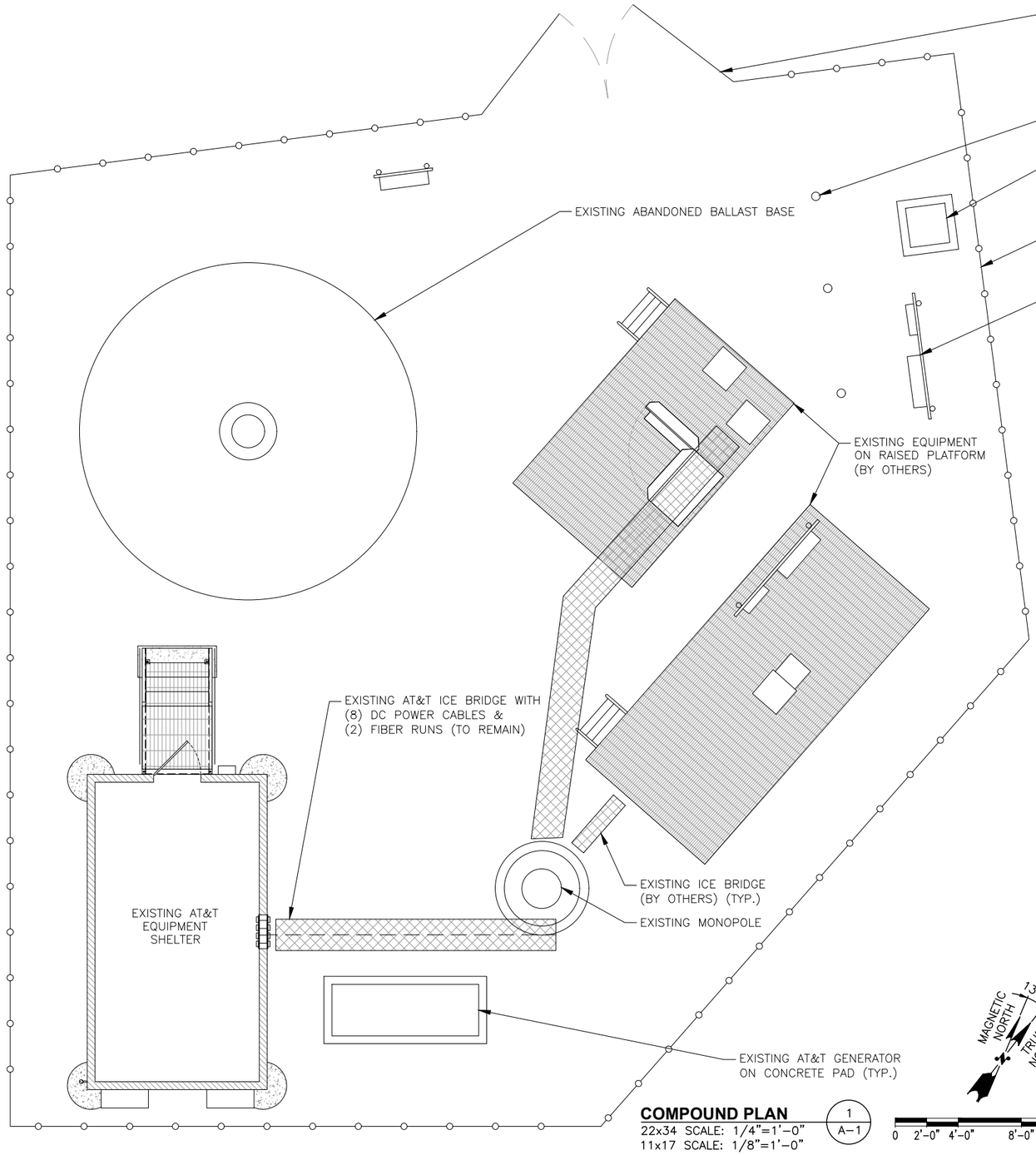
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: TR

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

AT&T

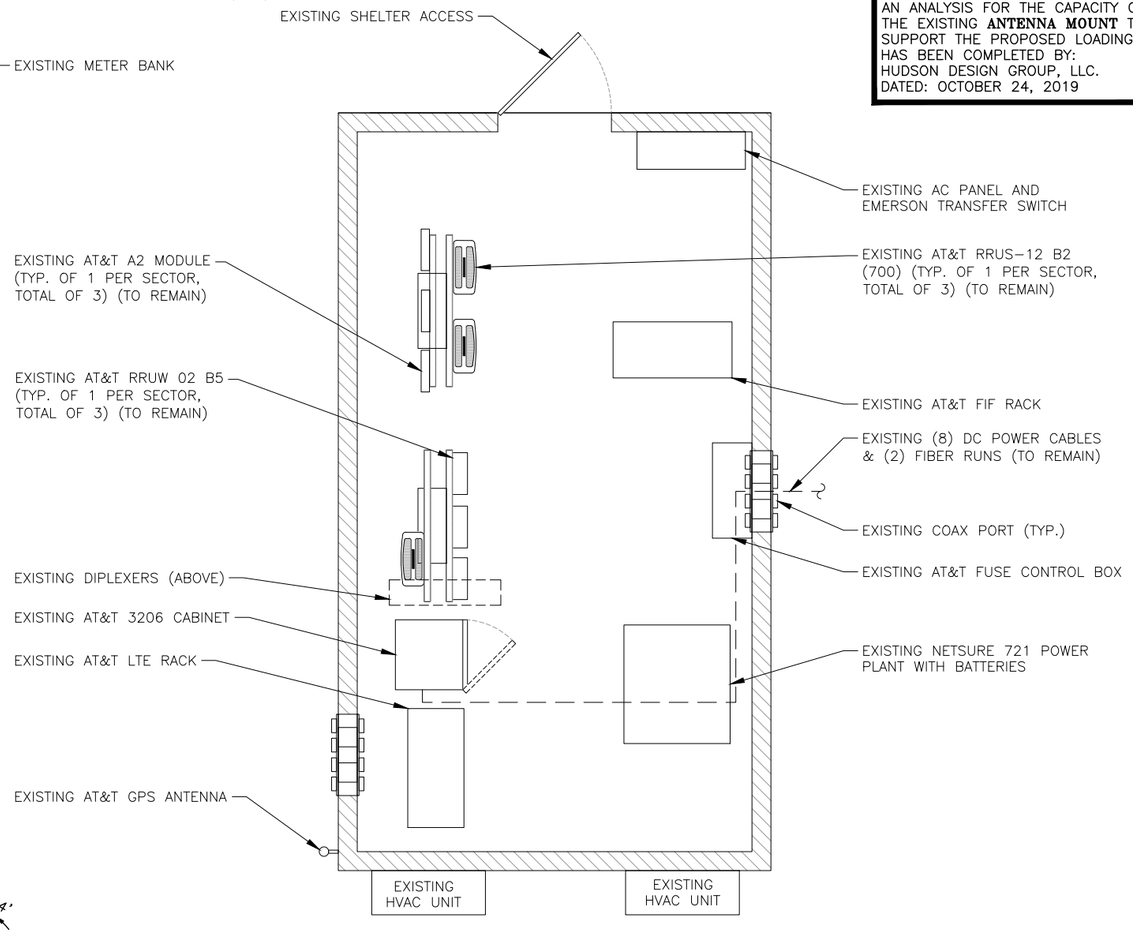
GENERAL NOTES
LTE 7C_2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5100	GN-1	1



COMPOUND PLAN (1 / A–1)
22x34 SCALE: 1/4"=1'–0"
11x17 SCALE: 1/8"=1'–0"

0 2'–0" 4'–0" 8'–0" 12'–0"



MAGNETIC NORTH 13°24' TRUE NORTH

EQUIPMENT PLAN (2 / A–1)
22x34 SCALE: 1/2"=1'–0"
11x17 SCALE: 1/4"=1'–0"

0 1'–0" 2'–0" 4'–0" 6'–0"

NOTE:

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

NOTE:

REFER TO STRUCTURAL ANALYSIS PROVIDED BY: BLUE SKY TOWERS LLC, DATED: NOVEMBER 19, 2019, 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: OCTOBER 24, 2019

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
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STATE OF CONNECTICUT · DANIEL P. HAMM · No. 24178 · LICENSED PROFESSIONAL ENGINEER

AT&T

COMPOUND & EQUIPMENT PLANS
LTE 7C_2020 UPGRADE

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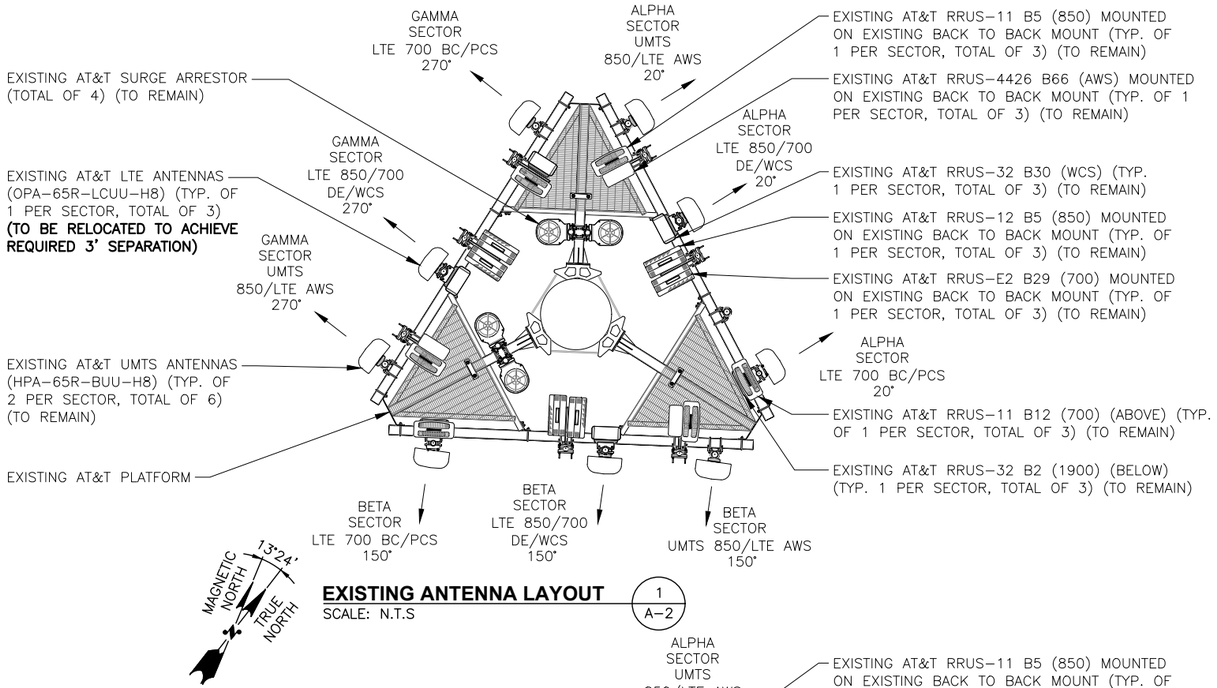
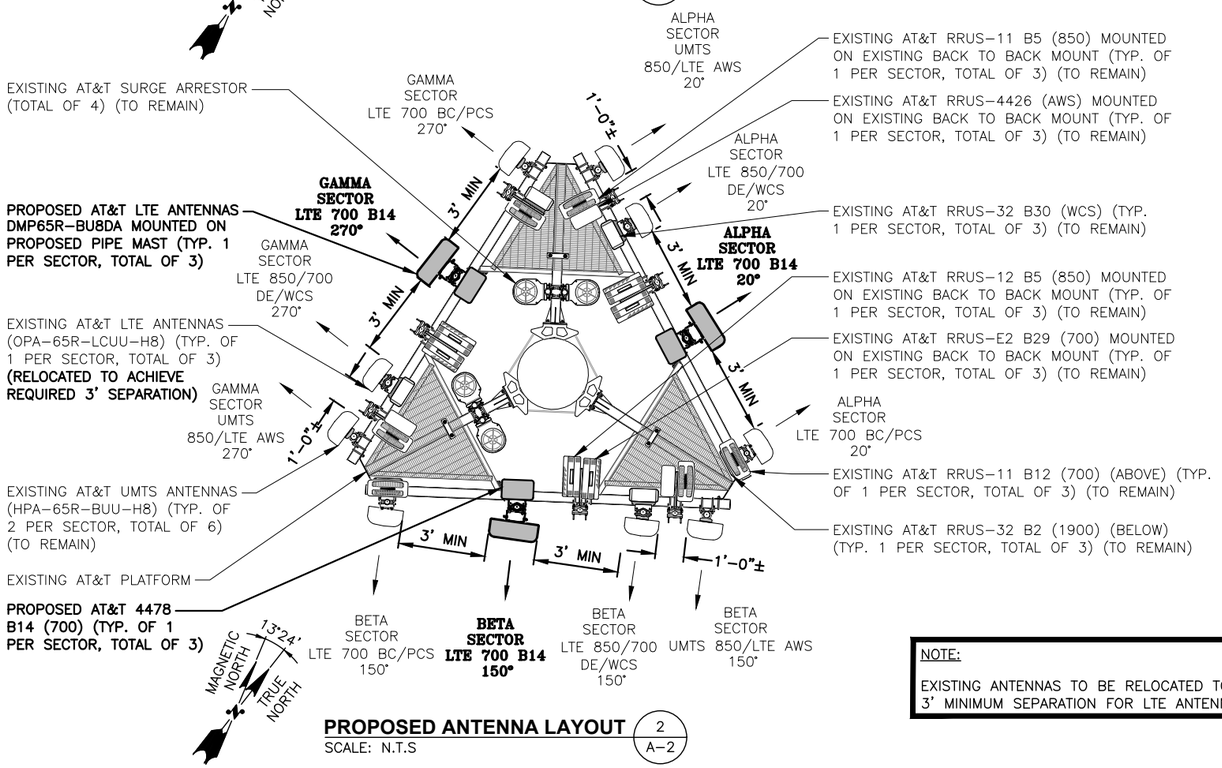


EXISTING ANTENNA LAYOUT

1 / A-2

SCALE: N.T.S



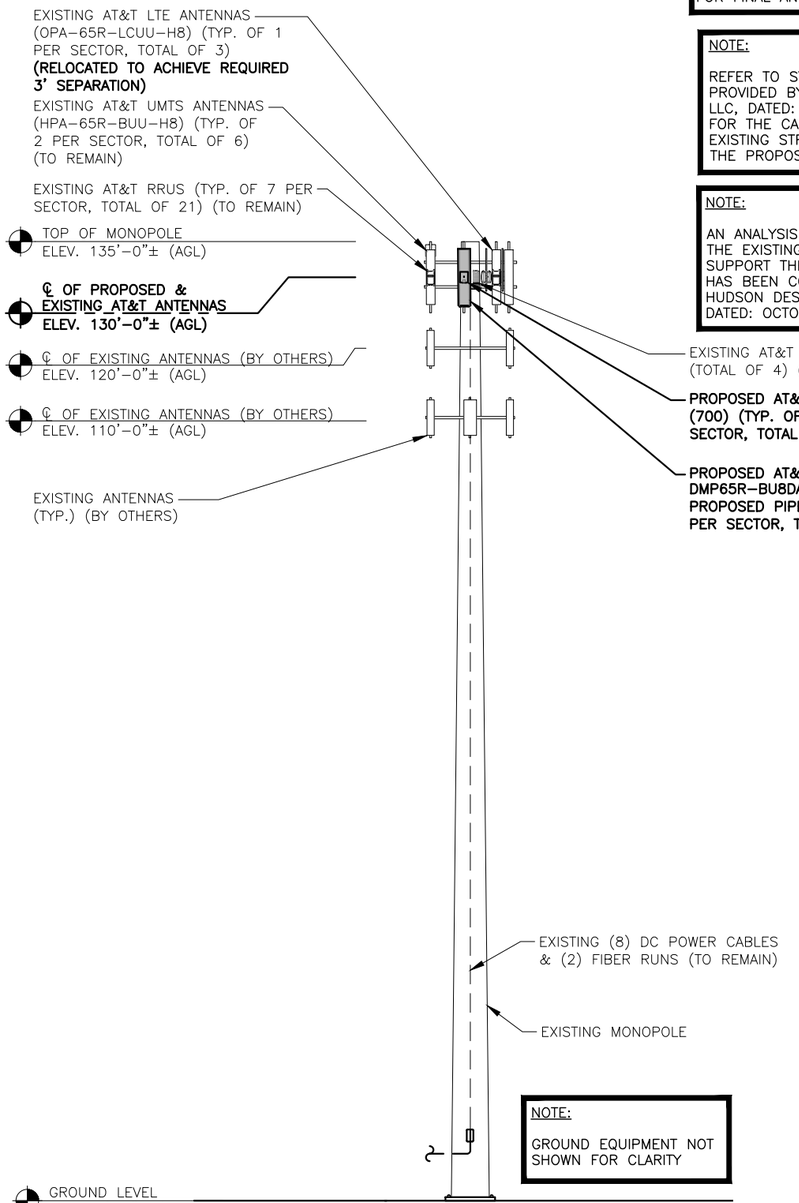
PROPOSED ANTENNA LAYOUT

2 / A-2

SCALE: N.T.S

NOTE:

EXISTING ANTENNAS TO BE RELOCATED TO ACHIEVE 3' MINIMUM SEPARATION FOR LTE ANTENNAS



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NOTE:

GROUND EQUIPMENT NOT SHOWN FOR CLARITY

ELEVATION

3 / A-2

22x34 SCALE: 3/32"=1'-0" 0 5'-4" 10'-8" 21'-4" 32'-0"

11x17 SCALE: 3/64"=1'-0"

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: CT5100
SITE NAME: BRIDGEPORT EVERGREEN ST

220 EVERGREEN ST
BRIDGEPORT, CT 06606
FAIRFIELD COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	12/12/19	ISSUED FOR CONSTRUCTION	GA	HC	DPH
A	10/24/19	ISSUED FOR REVIEW	TR	AT	DPH

SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: TR

STATE OF CONNECTICUT — No. 24178 — LICENSED PROFESSIONAL ENGINEER

AT&T

ANTENNA LAYOUTS & ELEVATION
LTE 7C_2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5100	A-2	1

ANTENNA SCHEDULE

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	EXISTING	UMTS 850/LTE AWS	HPA-65R-BUU-H8	93X15X7	130'-0"±	20°	–	(E)(1) RRUS-11 B5 (850) (E)(1) 4426 B66 (AWS)	–	–	(E) (1) RAYCAP DC6-48-60-18-8F
A2	EXISTING	LTE 850/700 DE/WCS	OPA-65R-LCUU-H8	92.7x14.4x7	130'-0"±	20°	–	(E)(1) RRUS-E2 B29 (700) (E)(1) RRUS-12 B5 (850) (E)(1) RRUS-32 B30 (WCS)	–	–	
A3	**PROPOSED**	**LTE 700 B14**	**DMP65R-BU8DA**	**96X20.7X7.7**	**130'-0"±**	**20°**	–	**(P)(1) 4478 B14 (700)**	**18.1X13.4X8.3**	–	
A4	EXISTING	LTE 700 BC/PCS	HPA-65R-BUU-H8	93X15X7	130'-0"±	20°	–	(E)(1) RRUS-11 B12 (700) (E)(1) RRUS-32 B2 (1900)	–	(4) DC (1) FIBER	
B1	EXISTING	UMTS 850/LTE AWS	HPA-65R-BUU-H8	93X15X7	130'-0"±	150°	–	(E)(1) RRUS-11 B5 (850) (E)(1) 4426 B66 (AWS)	–	–	(E) (2) RAYCAP DC6-48-60-8F
B2	EXISTING	LTE 850/700 DE/WCS	OPA-65R-LCUU-H8	92.7x14.4x7	130'-0"±	150°	–	(E)(1) RRUS-E2 B29 (700) (E)(1) RRUS-12 B5 (850) (E)(1) RRUS-32 B30 (WCS)	–	–	
B3	**PROPOSED**	**LTE 700 B14**	**DMP65R-BU8DA**	**96X20.7X7.7**	**130'-0"±**	**150°**	–	**(P)(1) 4478 B14 (700)**	**18.1X13.4X8.3**	–	
B4	EXISTING	LTE 700 BC/PCS	HPA-65R-BUU-H8	93X15X7	130'-0"±	150°	–	(E)(1) RRUS-11 B12 (700) (E)(1) RRUS-32 B2 (1900)	–	(2) DC (1) FIBER	
C1	EXISTING	UMTS 850/LTE AWS	HPA-65R-BUU-H8	93X15X7	130'-0"±	270°	–	(E)(1) RRUS-11 B5 (850) (E)(1) 4426 B66 (AWS)	–	–	(E) (1) RAYCAP DC6-48-60-18-8F
C2	EXISTING	LTE 850/700 DE/WCS	OPA-65R-LCUU-H8	92.7x14.4x7	130'-0"±	270°	–	(E)(1) RRUS-E2 B29 (700) (E)(1) RRUS-12 B5 (850) (E)(1) RRUS-32 B30 (WCS)	–	–	
C3	**PROPOSED**	**LTE 700 B14**	**DMP65R-BU8DA**	**96X20.7X7.7**	**130'-0"±**	**270°**	–	**(P)(1) 4478 B14 (700)**	**18.1X13.4X8.3**	–	
C4	EXISTING	LTE 700 BC/PCS	HPA-65R-BUU-H8	93X15X7	130'-0"±	270°	–	(E)(1) RRUS-11 B12 (700) (E)(1) RRUS-32 B2 (1900)	–	(2) DC	

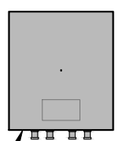
FINAL ANTENNA SCHEDULE (1 / A-3)
SCALE: N.T.S

RRU CHART

QUANTITY	MODEL	SIZE (L x W x D)
P(3)	**4478 B14 (700)**	**18.1"x13.4"x8.3"**
E(3)	4426 (AWS)	14.9"x13.2"x5.8"
E(6)	RRUS-32 (WCS)/(1900)	27.2"x12.1"x7.0"
E(3)	RRUS-E2 B29 (700)	20.4"x18.5"x7.5"
E(3)	RRUS-12 B5 (850)	20.4"x18.5"x7.5"
E(3)	RRUS-11 B5 (850)	19.7"x17.0"x7.2"
E(3)	RRUS-11 B12 (700)	19.7"x17.0"x7.2"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

NOTE:
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER



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

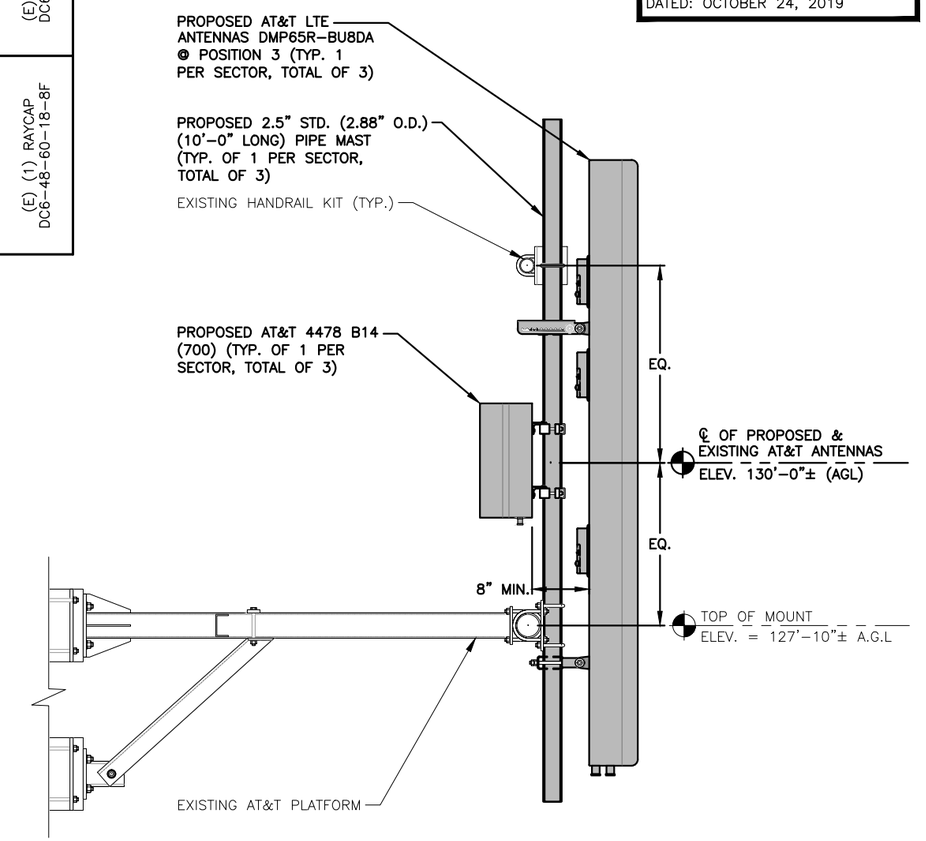
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

PROPOSED RRUS DETAIL (2 / A-3)
SCALE: N.T.S

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

NOTE:
REFER TO STRUCTURAL ANALYSIS PROVIDED BY: BLUE SKY TOWERS LLC, DATED: NOVEMBER 19, 2019, 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: OCTOBER 24, 2019



PROPOSED LTE ANTENNA MOUNTING DETAIL (3 / A-3)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

0 0'-6" 1'-0" 2'-0" 3'-0"

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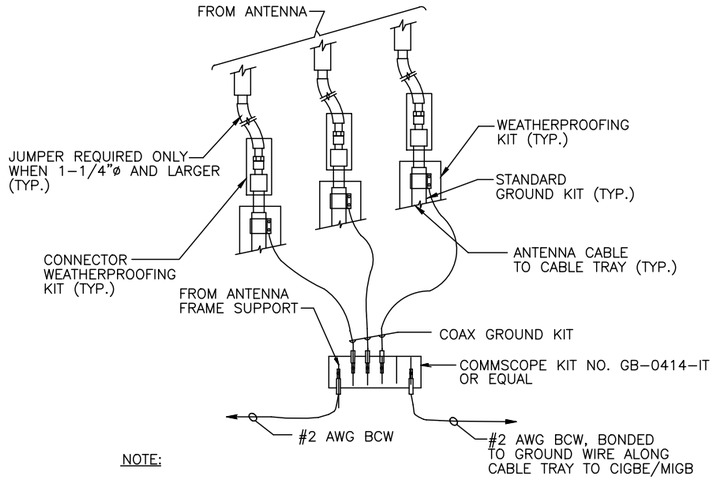
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: TR

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

AT&T

DETAILS
LTE 7C_2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5100	A-3	1

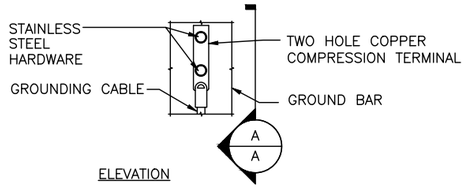


NOTE:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE.

GROUND WIRE TO GROUND BAR CONNECTION DETAIL (1 / G-1)

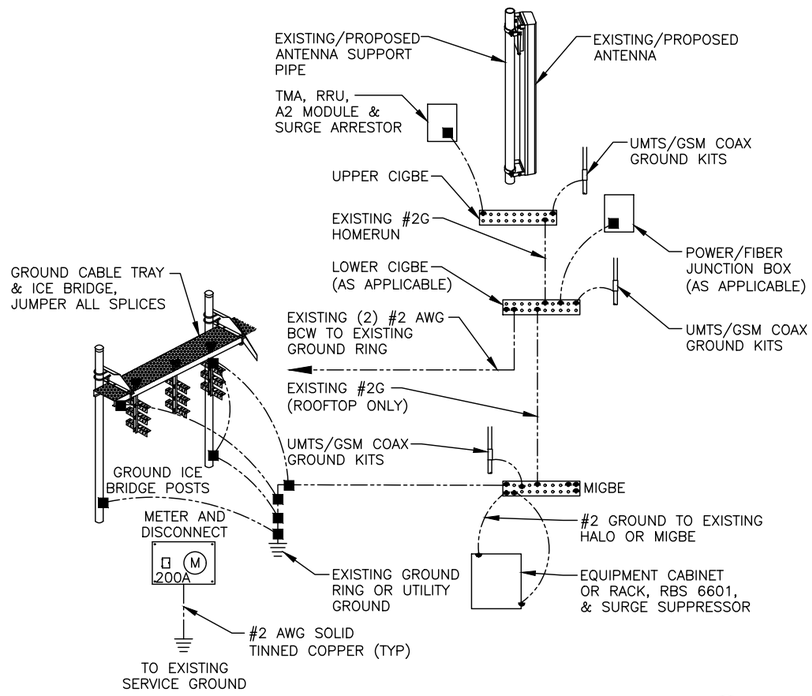
SCALE: N.T.S



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 / G-1)

SCALE: N.T.S



GROUNDING RISER DIAGRAM (2 / G-1)

SCALE: N.T.S

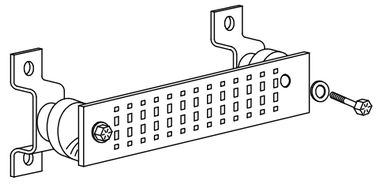
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

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 / G-1)

SCALE: N.T.S

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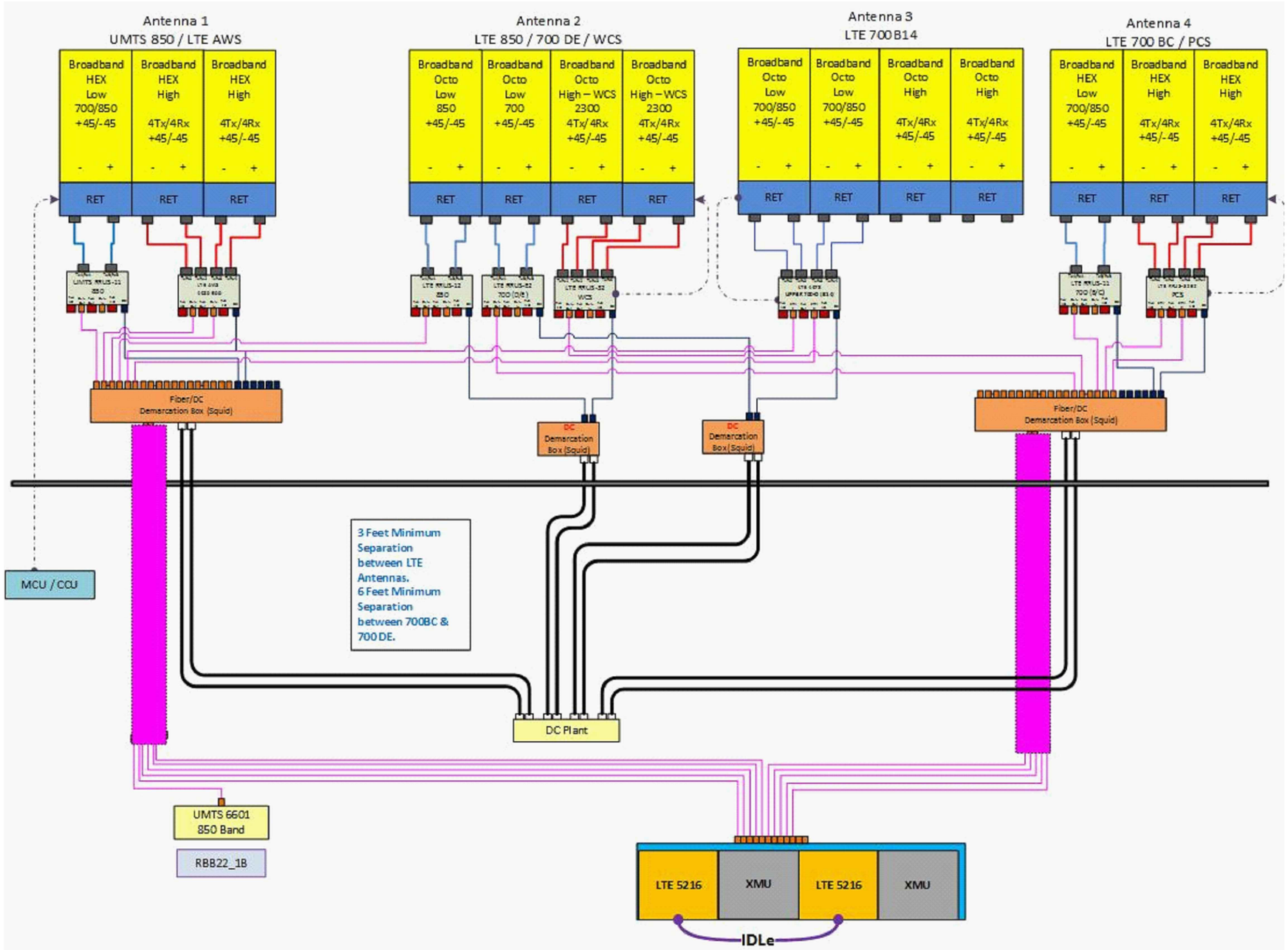
STATE OF CONNECTICUT — DANIEL P. HAMM — No. 24178 — LICENSED PROFESSIONAL ENGINEER

AT&T

GROUNDING DETAILS
LTE 7C_2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5100	G-1	1



RF PLUMBING DIAGRAM (1 / RF–1)
SCALE: N.T.S

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.

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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: TR

AT&T

RF PLUMBING DIAGRAM
LTE 7C_2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5100	RF–1	1

October 24, 2019

SAI Communications
12 Industrial Way
Salem NH, 03079

RE:		
	Site Number:	CT5100 (LTE 7C)
	FA Number:	10107972
	PACE Number:	MRCTB043905
	PT Number:	2051A0RRNX
	Site Name:	BRIDGEPORT EVERGREEN ST
	Site Address:	220 Evergreen Street Bridgeport, CT 06606

To Whom It May Concern:

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

- (6) HPA-65R-BUU-H8 Antennas (92.4"x14.8"x7.4" – Wt. = 68 lbs. /each)
- (3) OPA-65R-LCUU-H8 Antennas (92.7"x14.4"x7.0" – Wt. = 88 lbs. /each)
- (3) RRUS-11 B5 RRH's (19.7"x17.0"x7.2" – Wt. = 51 lbs. /each)
- (3) 4426 B66 RRH's (14.9"x13.2"x5.8" – Wt. = 49 lbs. /each)
- (3) RRUS-32 B30 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (3) RRUS-E2 B29 RRH's (20.4"x18.5"x7.5"– Wt. = 53 lbs. /each)
- (3) RRUS-12 B5 RRH's (20.4"x18.5"x7.5" – Wt. = 58 lbs. /each)
- (3) RRUS-11 B12 RRH's (19.7"x17.0"x7.2" – Wt. = 51 lbs. /each)
- (3) RRUS-32 B2 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (4) Squid Surge Arrestor (24.0"x9.7" Φ – Wt. = 33 lbs. /each)
- **(3) DMP65R-BU8DA Antennas (96.0"x20.7"x7.7" – Wt. = 96 lbs. /each)**
- **(3) B14 4478 RRH's (18.1"x13.4"x8.3" – Wt. = 60 lbs. /each)**

**Proposed equipment shown in bold*

No original structural design documents or fabrication drawings were available for the existing mounts. HDG's subconsultant, ProVertic LLC, conducted a survey climb and mapping of the existing AT&T antenna mounts on September 8, 2019.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-H, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2015 with 2018 Connecticut State Building Code, and AT&T Mount Technical Directive – R13.
- HDG considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-H and Appendix N of the Connecticut State Building Code, the max basic wind speed for this site is equal to 125 mph with a max basic wind speed with ice of 50 mph and a max ice thickness of 1.0 in. An escalated ice thickness of 1.15 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 1; tower is located on flat terrain or the bottom of a hill or ridge.
- The mount has been analyzed with load combinations consisting of 250 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 1.
- The mount has been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.
- The existing mount is secured to the existing monopole with ring mount with thru bolts. The connection is considered OK by visual inspection.

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

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing (LTE 7C) Mount Rating	93	LC4	73%	**PASS**

Reference Documents:

- Mount mapping report prepared by ProVertic LLC.

This determination was based on the following limitations and assumptions:

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

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

Respectfully Submitted,
Hudson Design Group LLC

Michael Cabral
Vice President

Daniel P. Hamm, PE
Principal

FIELD PHOTOS:

p: 978.557.5553 f: 978.336.5586 a: 45 Beechwood Drive, N. Andover, MA 01845
p: 203.208.3919 f: 203.234.6398 a: 110 Washington Avenue, 4th Floor, North Haven CT 06473






p: 978.557.5553 f: 978.336.5586 a: 45 Beechwood Drive, N. Andover, MA 01845
p: 203.208.3919 f: 203.234.6398 a: 110 Washington Avenue, 4th Floor, North Haven CT 06473

HUDSON
Design Group LLC

Wind & Ice
Calculations

Date: 10/24/2019
Project Name: BRIDGEPORT EVERGREEN ST
Project No.: CT5100
Designed By: RL **Checked By:** MSC

HUDSON Design Group LLC

2.6.5.2 Velocity Pressure Coeff:

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

	z=	130 (ft)
	z_g=	1200 (ft)
K_z= 1.065	α=	7.0

Kzmin ≤ Kz ≤ 2.01

Table 2-4

Exposure	Z_g	α	K_{zmin}	K_c
B	1200 ft	7.0	0.70	0.9
C	900 ft	9.5	0.85	1.0
D	700 ft	11.5	1.03	1.1

2.6.6.2 Topographic Factor:

Table 2-5

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

$K_{zt} = [1+(K_c K_t/K_h)]^2$ $K_h = e^{(f*z/H)}$

K_{zt}= #DIV/0!

K_h=	#DIV/0!	
K_c=	0.9	(from Table 2-4)
K_t=	0	(from Table 2-5)
f=	0	(from Table 2-5)
z=	130	
z_s=	25	(Mean elevation of base of structure above sea level)
H=	0	(Ht. of the crest above surrounding terrain)
K_{zt}=	1.00	(from 2.6.6.2.1)
K_e=	1.00	(from 2.6.8)

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

Category= 1

2.6.10 Design Ice Thickness

Max Ice Thickness =	t_i =	1.00 in
Importance Factor =	I=	1.0 (from Table 2-3)
	K_{iz} =	1.15 (from Sec. 2.6.10)

$t_{iz} = t_i * I * K_{iz} * (K_{zt})^{0.35}$ t_{iz} = 1.15 in

Date: 10/24/2019
Project Name: BRIDGEPORT EVERGREEN ST
Project No.: CT5100
Designed By: RL Checked By: MSC

HUDSON Design Group LLC

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=	135	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

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

G_h=	1.35	Gh=	1.00

2.6.11.2 Design Wind Force on Appurtenances

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

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

q_z=	40.44
$q_{z\,(ice)}$=	6.47
$q_{z\,(30)}$=	2.33

K_z=	1.065	(from 2.6.5.2)
K_{zt}=	1.0	(from 2.6.6.2.1)
K_s=	1.0	(from 2.6.7)
K_e=	1.00	(from 2.6.8)
K_d=	0.95	(from Table 2-2)
V_{max}=	125	mph (Ultimate Wind Speed)
$V_{max\,(ice)}$=	50	mph
V_{30}=	30	mph

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

Date: 10/24/2019
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HUDSON Design Group LLC

Determine Ca:

Table 2-9

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

Aspect Ratio is the overall length/width ratio in the plane normal to the wind direction.
(Aspect ratio is independent of the spacing between support points of a linear appurtenance.

Note: Linear interpolation may be used for aspect ratios other than those shown.

Ice Thickness = 1.15 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)
HPA-65R-BUU-H8 Antenna	92.4	14.8	7.4	9.50	6.24	1.37	525	99	30
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	6.44	1.38	515	98	30
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	4.64	1.30	723	132	42
RRUS-11 B5 RRH	19.7	17.0	7.2	2.33	1.16	1.20	113	23	7
RRUS-11 B5 RRH (Side)	19.7	7.2	17.0	0.99	2.74	1.21	48	11	3
4426 B66 RRH	14.9	13.2	5.8	1.37	1.13	1.20	66	14	4
4426 B66 RRH (Side)	14.9	5.8	13.2	0.60	2.57	1.20	29	8	2
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	2.25	1.20	111	23	6
RRUS-32 B30 RRH (Shielded)	27.2	0.0	7.0	0.00	0.00	1.20	0	4	0
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.10	1.20	127	25	7
RRUS-E2 B29 RRH (Side)	20.4	7.5	18.5	1.06	2.72	1.21	52	12	3
RRUS-12 B5 RRH	20.4	18.5	7.5	2.62	1.10	1.20	127	25	7
RRUS-12 B5 RRH (Side)	20.4	7.5	18.5	1.06	2.72	1.21	52	12	3
B14 4478 RRH	18.1	13.4	8.3	1.68	1.35	1.20	82	17	5
B14 4478 RRH (Shielded)	18.1	0.0	8.3	0.00	0.00	1.20	0	3	0
RRUS-11 B12 RRH	19.7	17.0	7.2	2.33	1.16	1.20	113	23	7
RRUS-11 B12 RRH (Side)	19.7	7.2	17.0	0.99	2.74	1.21	48	11	3
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	2.25	1.20	111	23	6
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	3.89	1.26	67	16	4
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	46	10	3
3-1/2" Pipe	4.0	12.0		0.33	0.33	1.20	16	5	1
2" Pipe	2.4	12.0		0.20	0.20	1.20	10	4	1
C 3-3/8x2-1/8x3/16	3.4	2.1		0.05	1.59	1.25	3	1	0
2x2 Angle	2.0	12.0		0.17	0.17	2.00	13	6	1
3x3 Angle	3.0	12.0		0.25	0.25	2.00	20	7	1
PL 6x3/8	0.4	6.0		0.02	0.06	1.25	1	1	0

Date: 10/24/2019
Project Name: BRIDGEPORT EVERGREEN ST
Project No.: CT5100
Designed By: RL Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle = 30 (deg) | Ice Thickness = 1.15 in. | Equivalent Angle = 210 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
HPA-65R-BUU-H8 Antenna	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	525	304	470
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	515	293	460
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	723	328	624
RRUS-11 B5 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	113	48	97
RRUS-11 B5 RRH (Side)	19.7	8.5	17.0	1.16	2.33	2.32	1.16	1.20	1.20	56	113	71
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	66	29	57
4426 B66 RRH (Side)	14.9	6.6	13.2	0.68	1.37	2.26	1.13	1.20	1.20	33	66	41
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	111	67	100
RRUS-32 B30 RRH (Shielded)	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	60	67	62
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	127	52	108
RRUS-E2 B29 RRH (Side)	20.4	9.3	18.5	1.31	2.62	2.21	1.10	1.20	1.20	64	127	79
RRUS-12 B5 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	127	52	108
RRUS-12 B5 RRH (Side)	20.4	9.3	18.5	1.31	2.62	2.21	1.10	1.20	1.20	64	127	79
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	82	51	74
B14 4478 RRH (Shielded)	18.1	6.7	8.3	0.84	1.04	2.70	2.18	1.21	1.20	41	51	44
RRUS-11 B12 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	113	48	97
RRUS-11 B12 RRH (Side)	19.7	8.5	17.0	1.16	2.33	2.32	1.16	1.20	1.20	56	113	71
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	111	67	100
RRUS-32 B2 RRH (Side)	27.2	6.1	12.1	1.14	2.29	4.50	2.25	1.29	1.20	60	111	72

WIND LOADS WITH ICE:

HPA-65R-BUU-H8 Antenna	94.7	17.1	9.7	11.24	6.37	5.54	9.77	1.34	1.49	97	62	88
OPA-65R-LCUU-H8 Antenna	95.0	16.7	9.3	11.01	6.13	5.69	10.22	1.34	1.51	96	60	87
DMP65R-BU8DA Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	130	66	114
RRUS-11 B5 RRH	22.0	19.3	9.5	2.95	1.45	1.14	2.32	1.20	1.20	23	11	20
RRUS-11 B5 RRH (Side)	22.0	9.6	19.3	1.47	2.95	2.28	1.14	1.20	1.20	11	23	14
4426 B66 RRH	17.2	15.5	8.1	1.85	0.97	1.11	2.12	1.20	1.20	14	8	13
4426 B66 RRH (Side)	17.2	7.7	15.5	0.93	1.85	2.22	1.11	1.20	1.20	7	14	9
RRUS-32 B30 RRH	29.5	14.4	9.3	2.95	1.90	2.05	3.17	1.20	1.23	23	15	21
RRUS-32 B30 RRH (Shielded)	29.5	7.2	9.3	1.47	1.90	4.10	3.17	1.27	1.23	12	15	13
RRUS-E2 B29 RRH	22.7	20.8	9.8	3.28	1.54	1.09	2.32	1.20	1.20	25	12	22
RRUS-E2 B29 RRH (Side)	22.7	10.4	20.8	1.64	3.28	2.18	1.09	1.20	1.20	13	25	16
RRUS-12 B5 RRH	22.7	20.8	9.8	3.28	1.54	1.09	2.32	1.20	1.20	25	12	22
RRUS-12 B5 RRH (Side)	22.7	10.4	20.8	1.64	3.28	2.18	1.09	1.20	1.20	13	25	16
B14 4478 RRH	20.4	15.7	10.6	2.22	1.50	1.30	1.93	1.20	1.20	17	12	16
B14 4478 RRH (Shielded)	20.4	7.8	10.6	1.11	1.50	2.60	1.93	1.20	1.20	9	12	9
RRUS-11 B12 RRH	22.0	19.3	9.5	2.95	1.45	1.14	2.32	1.20	1.20	23	11	20
RRUS-11 B12 RRH (Side)	22.0	9.6	19.3	1.47	2.95	2.28	1.14	1.20	1.20	11	23	14
RRUS-32 B2 RRH	29.5	14.4	9.3	2.95	1.90	2.05	3.17	1.20	1.23	23	15	21
RRUS-32 B2 RRH (Side)	29.5	7.2	14.4	1.47	2.95	4.10	2.05	1.27	1.20	12	23	15

WIND LOADS AT 30 MPH:

HPA-65R-BUU-H8 Antenna	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	30	18	27
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	30	17	26
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	42	19	36
RRUS-11 B5 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	7	3	6
RRUS-11 B5 RRH (Side)	19.7	8.5	17.0	1.16	2.33	2.32	1.16	1.20	1.20	3	7	4
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	4	2	3
4426 B66 RRH (Side)	14.9	6.6	13.2	0.68	1.37	2.26	1.13	1.20	1.20	2	4	2
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	6
RRUS-32 B30 RRH (Shielded)	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	3	4	4
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	7	3	6
RRUS-E2 B29 RRH (Side)	20.4	9.3	18.5	1.31	2.62	2.21	1.10	1.20	1.20	4	7	5
RRUS-12 B5 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	7	3	6
RRUS-12 B5 RRH (Side)	20.4	9.3	18.5	1.31	2.62	2.21	1.10	1.20	1.20	4	7	5
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	5	3	4
B14 4478 RRH (Shielded)	18.1	6.7	8.3	0.84	1.04	2.70	2.18	1.21	1.20	2	3	3
RRUS-11 B12 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	7	3	6
RRUS-11 B12 RRH (Side)	19.7	8.5	17.0	1.16	2.33	2.32	1.16	1.20	1.20	3	7	4
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	6
RRUS-32 B2 RRH (Side)	27.2	6.1	12.1	1.14	2.29	4.50	2.25	1.29	1.20	3	6	4

Date: 10/24/2019
Project Name: BRIDGEPORT EVERGREEN ST
Project No.: CT5100
Designed By: RL Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle = 60 (deg) | Ice Thickness = 1.15 in. | Equivalent Angle = 240 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
HPA-65R-BUU-H8 Antenna	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	525	304	359
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	515	293	349
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	723	328	427
RRUS-11 B5 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	113	48	64
RRUS-11 B5 RRH (Side)	19.7	12.8	17.0	1.74	2.33	1.55	1.16	1.20	1.20	85	113	106
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	66	29	38
4426 B66 RRH (Side)	14.9	9.9	13.2	1.02	1.37	1.51	1.13	1.20	1.20	50	66	62
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	111	67	78
RRUS-32 B30 RRH (Shielded)	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	85	67	72
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	127	52	71
RRUS-E2 B29 RRH (Side)	20.4	13.9	18.5	1.97	2.62	1.47	1.10	1.20	1.20	95	127	119
RRUS-12 B5 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	127	52	71
RRUS-12 B5 RRH (Side)	20.4	13.9	18.5	1.97	2.62	1.47	1.10	1.20	1.20	95	127	119
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	82	51	58
B14 4478 RRH (Shielded)	18.1	10.1	8.3	1.26	1.04	1.80	2.18	1.20	1.20	61	51	53
RRUS-11 B12 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	113	48	64
RRUS-11 B12 RRH (Side)	19.7	12.8	17.0	1.74	2.33	1.55	1.16	1.20	1.20	85	113	106
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	111	67	78
RRUS-32 B2 RRH (Side)	27.2	9.1	12.1	1.71	2.29	3.00	2.25	1.22	1.20	85	111	104

WIND LOADS WITH ICE:

HPA-65R-BUU-H8 Antenna	94.7	17.1	9.7	11.24	6.37	5.54	9.77	1.34	1.49	97	62	70
OPA-65R-LCUU-H8 Antenna	95.0	16.7	9.3	11.01	6.13	5.69	10.22	1.34	1.51	96	60	69
DMP65R-BU8DA Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	130	66	82
RRUS-11 B5 RRH	22.0	19.3	9.5	2.95	1.45	1.14	2.32	1.20	1.20	29	11	14
RRUS-11 B5 RRH (Side)	22.0	14.5	19.3	2.21	2.95	1.52	1.14	1.20	1.20	17	23	21
4426 B66 RRH	17.2	15.5	8.1	1.85	0.97	1.11	2.12	1.20	1.20	14	8	9
4426 B66 RRH (Side)	17.2	11.6	15.5	1.39	1.85	1.48	1.11	1.20	1.20	11	14	13
RRUS-32 B30 RRH	29.5	14.4	9.3	2.95	1.90	2.05	3.17	1.20	1.23	23	15	17
RRUS-32 B30 RRH (Shielded)	29.5	10.8	9.3	2.21	1.90	2.73	3.17	1.21	1.23	17	15	16
RRUS-E2 B29 RRH	22.7	20.8	9.8	3.28	1.54	1.09	2.32	1.20	1.20	25	12	15
RRUS-E2 B29 RRH (Side)	22.7	15.6	20.8	2.46	3.28	1.46	1.09	1.20	1.20	19	25	24
RRUS-12 B5 RRH	22.7	20.8	9.8	3.28	1.54	1.09	2.32	1.20	1.20	25	12	15
RRUS-12 B5 RRH (Side)	22.7	15.6	20.8	2.46	3.28	1.46	1.09	1.20	1.20	19	25	24
B14 4478 RRH	20.4	15.7	10.6	2.22	1.50	1.30	1.93	1.20	1.20	17	12	13
B14 4478 RRH (Shielded)	20.4	11.8	10.6	1.67	1.50	1.73	1.93	1.20	1.20	13	12	12
RRUS-11 B12 RRH	22.0	19.3	9.5	2.95	1.45	1.14	2.32	1.20	1.20	23	11	14
RRUS-11 B12 RRH (Side)	22.0	14.5	19.3	2.21	2.95	1.52	1.14	1.20	1.20	17	23	21
RRUS-32 B2 RRH	29.5	14.4	9.3	2.95	1.90	2.05	3.17	1.20	1.23	23	15	17
RRUS-32 B2 RRH (Side)	29.5	10.8	14.4	2.21	2.95	2.73	2.05	1.21	1.20	17	23	21

WIND LOADS AT 30 MPH:

HPA-65R-BUU-H8 Antenna	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	30	18	21
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	30	17	20
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	42	19	25
RRUS-11 B5 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	7	3	4
RRUS-11 B5 RRH (Side)	19.7	12.8	17.0	1.74	2.33	1.55	1.16	1.20	1.20	5	7	6
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	4	2	2
4426 B66 RRH (Side)	14.9	9.9	13.2	1.02	1.37	1.51	1.13	1.20	1.20	3	4	4
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	5
RRUS-32 B30 RRH (Shielded)	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	5	4	4
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	7	3	4
RRUS-E2 B29 RRH (Side)	20.4	13.9	18.5	1.97	2.62	1.47	1.10	1.20	1.20	5	7	7
RRUS-12 B5 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	7	3	4
RRUS-12 B5 RRH (Side)	20.4	13.9	18.5	1.97	2.62	1.47	1.10	1.20	1.20	5	7	7
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	5	3	3
B14 4478 RRH (Shielded)	18.1	10.1	8.3	1.26	1.04	1.80	2.18	1.20	1.20	4	3	3
RRUS-11 B12 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	7	3	4
RRUS-11 B12 RRH (Side)	19.7	12.8	17.0	1.74	2.33	1.55	1.16	1.20	1.20	5	7	6
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	5
RRUS-32 B2 RRH (Side)	27.2	9.1	12.1	1.71	2.29	3.00	2.25	1.22	1.20	5	6	6

Date: 10/24/2019
Project Name: BRIDGEPORT EVERGREEN ST
Project No.: CT5100
Designed By: RL Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle = 90 (deg) | Ice Thickness = 1.15 in. | Equivalent Angle = 270 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
HPA-65R-BUU-H8 Antenna	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	525	304	304
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	515	293	293
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	723	328	328
RRUS-11 B5 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	113	48	48
RRUS-11 B5 RRH (Side)	19.7	7.2	17.0	0.99	2.33	2.74	1.16	1.21	1.20	48	113	113
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	66	29	29
4426 B66 RRH (Side)	14.9	5.8	13.2	0.60	1.37	2.57	1.13	1.20	1.20	29	66	66
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	111	67	67
RRUS-32 B30 RRH (Shielded)	27.2	0.0	7.0	0.00	1.32	0.00	3.89	1.20	1.26	0	67	67
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	127	52	52
RRUS-E2 B29 RRH (Side)	20.4	7.5	18.5	1.06	2.62	2.72	1.10	1.21	1.20	52	127	127
RRUS-12 B5 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	127	52	52
RRUS-12 B5 RRH (Side)	20.4	7.5	18.5	1.06	2.62	2.72	1.10	1.21	1.20	52	127	127
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	82	51	51
B14 4478 RRH (Shielded)	18.1	0.0	8.3	0.00	1.04	0.00	2.18	1.20	1.20	0	51	51
RRUS-11 B12 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	113	48	48
RRUS-11 B12 RRH (Side)	19.7	7.2	17.0	0.99	2.33	2.74	1.16	1.21	1.20	48	113	113
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	111	67	67
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	67	111	111

WIND LOADS WITH ICE:

HPA-65R-BUU-H8 Antenna	94.7	17.1	9.7	11.24	6.37	5.54	9.77	1.34	1.49	97	62	62
OPA-65R-LCUU-H8 Antenna	95.0	16.7	9.3	11.01	6.13	5.69	10.22	1.34	1.51	96	60	60
DMP65R-BU8DA Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	130	66	66
RRUS-11 B5 RRH	22.0	19.3	9.5	2.95	1.45	1.14	2.32	1.20	1.20	23	11	11
RRUS-11 B5 RRH (Side)	22.0	9.5	19.3	1.45	2.95	2.32	1.14	1.20	1.20	11	23	23
4426 B66 RRH	17.2	15.5	8.1	1.85	0.97	1.11	2.12	1.20	1.20	14	8	8
4426 B66 RRH (Side)	17.2	8.1	15.5	0.97	1.85	2.12	1.11	1.20	1.20	8	14	14
RRUS-32 B30 RRH	29.5	14.4	9.3	2.95	1.90	2.05	3.17	1.20	1.23	23	15	15
RRUS-32 B30 RRH (Shielded)	29.5	2.3	9.3	0.47	1.90	12.86	3.17	1.60	1.23	5	15	15
RRUS-E2 B29 RRH	22.7	20.8	9.8	3.28	1.54	1.09	2.32	1.20	1.20	25	12	12
RRUS-E2 B29 RRH (Side)	22.7	9.8	20.8	1.54	3.28	2.32	1.09	1.20	1.20	12	25	25
RRUS-12 B5 RRH	22.7	20.8	9.8	3.28	1.54	1.09	2.32	1.20	1.20	25	12	12
RRUS-12 B5 RRH (Side)	22.7	9.8	20.8	1.54	3.28	2.32	1.09	1.20	1.20	12	25	25
B14 4478 RRH	20.4	15.7	10.6	2.22	1.50	1.30	1.93	1.20	1.20	17	12	12
B14 4478 RRH (Shielded)	20.4	2.3	10.6	0.32	1.50	8.89	1.93	1.46	1.20	3	12	12
RRUS-11 B12 RRH	22.0	19.3	9.5	2.95	1.45	1.14	2.32	1.20	1.20	23	11	11
RRUS-11 B12 RRH (Side)	22.0	9.5	19.3	1.45	2.95	2.32	1.14	1.20	1.20	11	23	23
RRUS-32 B2 RRH	29.5	14.4	9.3	2.95	1.90	2.05	3.17	1.20	1.23	23	15	15
RRUS-32 B2 RRH (Side)	29.5	9.3	14.4	1.90	2.95	3.17	2.05	1.23	1.20	15	23	23

WIND LOADS AT 30 MPH:

HPA-65R-BUU-H8 Antenna	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	30	18	18
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	30	17	17
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	42	19	19
RRUS-11 B5 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	7	3	3
RRUS-11 B5 RRH (Side)	19.7	7.2	17.0	0.99	2.33	2.74	1.16	1.21	1.20	3	7	7
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	4	2	2
4426 B66 RRH (Side)	14.9	5.8	13.2	0.60	1.37	2.57	1.13	1.20	1.20	2	4	4
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	4
RRUS-32 B30 RRH (Shielded)	27.2	0.0	7.0	0.00	1.32	0.00	3.89	1.20	1.26	0	4	4
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	7	3	3
RRUS-E2 B29 RRH (Side)	20.4	7.5	18.5	1.06	2.62	2.72	1.10	1.21	1.20	3	7	7
RRUS-12 B5 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	7	3	3
RRUS-12 B5 RRH (Side)	20.4	7.5	18.5	1.06	2.62	2.72	1.10	1.21	1.20	3	7	7
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	5	3	3
B14 4478 RRH (Shielded)	18.1	0.0	8.3	0.00	1.04	0.00	2.18	1.20	1.20	0	3	3
RRUS-11 B12 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	7	3	3
RRUS-11 B12 RRH (Side)	19.7	7.2	17.0	0.99	2.33	2.74	1.16	1.21	1.20	3	7	7
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	4
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	6

Date: 10/24/2019
Project Name: BRIDGEPORT EVERGREEN ST
Project No.: CT5100
Designed By: RL Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle = 120 (deg) | Ice Thickness = 1.15 in. | Equivalent Angle = 300 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
HPA-65R-BUU-H8 Antenna	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	525	304	359
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	515	293	349
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	723	328	427
RRUS-11 B5 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	113	48	64
RRUS-11 B5 RRH (Side)	19.7	12.8	17.0	1.74	2.33	1.55	1.16	1.20	1.20	85	113	106
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	66	29	38
4426 B66 RRH (Side)	14.9	9.9	13.2	1.02	1.37	1.51	1.13	1.20	1.20	50	66	62
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	111	67	78
RRUS-32 B30 RRH (Shielded)	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	85	67	72
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	127	52	71
RRUS-E2 B29 RRH (Side)	20.4	13.9	18.5	1.97	2.62	1.47	1.10	1.20	1.20	95	127	119
RRUS-12 B5 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	127	52	71
RRUS-12 B5 RRH (Side)	20.4	13.9	18.5	1.97	2.62	1.47	1.10	1.20	1.20	95	127	119
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	82	51	58
B14 4478 RRH (Shielded)	18.1	10.1	8.3	1.26	1.04	1.80	2.18	1.20	1.20	61	51	53
RRUS-11 B12 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	113	48	64
RRUS-11 B12 RRH (Side)	19.7	12.8	17.0	1.74	2.33	1.55	1.16	1.20	1.20	85	113	106
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	111	67	78
RRUS-32 B2 RRH (Side)	27.2	9.1	12.1	1.71	2.29	3.00	2.25	1.22	1.20	85	111	104

WIND LOADS WITH ICE:

HPA-65R-BUU-H8 Antenna	94.7	17.1	9.7	11.24	6.37	5.54	9.77	1.34	1.49	97	62	70
OPA-65R-LCUU-H8 Antenna	95.0	16.7	9.3	11.01	6.13	5.69	10.22	1.34	1.51	96	60	69
DMP65R-BU8DA Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	130	66	82
RRUS-11 B5 RRH	22.0	19.3	9.5	2.95	1.45	1.14	2.32	1.20	1.20	23	11	14
RRUS-11 B5 RRH (Side)	22.0	14.5	19.3	2.21	2.95	1.52	1.14	1.20	1.20	17	23	21
4426 B66 RRH	17.2	15.5	8.1	1.85	0.97	1.11	2.12	1.20	1.20	14	8	9
4426 B66 RRH (Side)	17.2	11.6	15.5	1.39	1.85	1.48	1.11	1.20	1.20	11	14	13
RRUS-32 B30 RRH	29.5	14.4	9.3	2.95	1.90	2.05	3.17	1.20	1.23	23	15	17
RRUS-32 B30 RRH (Shielded)	29.5	10.8	9.3	2.21	1.90	2.73	3.17	1.21	1.23	17	15	16
RRUS-E2 B29 RRH	22.7	20.8	9.8	3.28	1.54	1.09	2.32	1.20	1.20	25	12	15
RRUS-E2 B29 RRH (Side)	22.7	15.6	20.8	2.46	3.28	1.46	1.09	1.20	1.20	19	25	24
RRUS-12 B5 RRH	22.7	20.8	9.8	3.28	1.54	1.09	2.32	1.20	1.20	25	12	15
RRUS-12 B5 RRH (Side)	22.7	15.6	20.8	2.46	3.28	1.46	1.09	1.20	1.20	19	25	24
B14 4478 RRH	20.4	15.7	10.6	2.22	1.50	1.30	1.93	1.20	1.20	17	12	13
B14 4478 RRH (Shielded)	20.4	11.8	10.6	1.67	1.50	1.73	1.93	1.20	1.20	13	12	12
RRUS-11 B12 RRH	22.0	19.3	9.5	2.95	1.45	1.14	2.32	1.20	1.20	23	11	14
RRUS-11 B12 RRH (Side)	22.0	14.5	19.3	2.21	2.95	1.52	1.14	1.20	1.20	17	23	21
RRUS-32 B2 RRH	29.5	14.4	9.3	2.95	1.90	2.05	3.17	1.20	1.23	23	15	17
RRUS-32 B2 RRH (Side)	29.5	10.8	14.4	2.21	2.95	2.73	2.05	1.21	1.20	17	23	21

WIND LOADS AT 30 MPH:

HPA-65R-BUU-H8 Antenna	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	30	18	21
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	30	17	20
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	42	19	25
RRUS-11 B5 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	7	3	4
RRUS-11 B5 RRH (Side)	19.7	12.8	17.0	1.74	2.33	1.55	1.16	1.20	1.20	5	7	6
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	4	2	2
4426 B66 RRH (Side)	14.9	9.9	13.2	1.02	1.37	1.51	1.13	1.20	1.20	3	4	4
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	5
RRUS-32 B30 RRH (Shielded)	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	5	4	4
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	7	3	4
RRUS-E2 B29 RRH (Side)	20.4	13.9	18.5	1.97	2.62	1.47	1.10	1.20	1.20	5	7	7
RRUS-12 B5 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	7	3	4
RRUS-12 B5 RRH (Side)	20.4	13.9	18.5	1.97	2.62	1.47	1.10	1.20	1.20	5	7	7
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	5	3	3
B14 4478 RRH (Shielded)	18.1	10.1	8.3	1.26	1.04	1.80	2.18	1.20	1.20	4	3	3
RRUS-11 B12 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	7	3	4
RRUS-11 B12 RRH (Side)	19.7	12.8	17.0	1.74	2.33	1.55	1.16	1.20	1.20	5	7	6
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	5
RRUS-32 B2 RRH (Side)	27.2	9.1	12.1	1.71	2.29	3.00	2.25	1.22	1.20	5	6	6

Date: 10/24/2019
Project Name: BRIDGEPORT EVERGREEN ST
Project No.: CT5100
Designed By: RL Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle = 150 (deg) | Ice Thickness = 1.15 in. | Equivalent Angle = 330 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
HPA-65R-BUU-H8 Antenna	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	525	304	470
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	515	293	460
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	723	328	624
RRUS-11 B5 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	113	48	97
RRUS-11 B5 RRH (Side)	19.7	8.5	17.0	1.16	2.33	2.32	1.16	1.20	1.20	56	113	71
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	66	29	57
4426 B66 RRH (Side)	14.9	6.6	13.2	0.68	1.37	2.26	1.13	1.20	1.20	33	66	41
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	111	67	100
RRUS-32 B30 RRH (Shielded)	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	60	67	62
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	127	52	108
RRUS-E2 B29 RRH (Side)	20.4	9.3	18.5	1.31	2.62	2.21	1.10	1.20	1.20	64	127	79
RRUS-12 B5 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	127	52	108
RRUS-12 B5 RRH (Side)	20.4	9.3	18.5	1.31	2.62	2.21	1.10	1.20	1.20	64	127	79
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	82	51	74
B14 4478 RRH (Shielded)	18.1	6.7	8.3	0.84	1.04	2.70	2.18	1.21	1.20	41	51	44
RRUS-11 B12 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	113	48	97
RRUS-11 B12 RRH (Side)	19.7	8.5	17.0	1.16	2.33	2.32	1.16	1.20	1.20	56	113	71
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	111	67	100
RRUS-32 B2 RRH (Side)	27.2	6.1	12.1	1.14	2.29	4.50	2.25	1.29	1.20	60	111	72

WIND LOADS WITH ICE:

HPA-65R-BUU-H8 Antenna	94.7	17.1	9.7	11.24	6.37	5.54	9.77	1.34	1.49	97	62	88
OPA-65R-LCUU-H8 Antenna	95.0	16.7	9.3	11.01	6.13	5.69	10.22	1.34	1.51	96	60	87
DMP65R-BU8DA Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	130	66	114
RRUS-11 B5 RRH	22.0	19.3	9.5	2.95	1.45	1.14	2.32	1.20	1.20	25	11	20
RRUS-11 B5 RRH (Side)	22.0	9.6	19.3	1.47	2.95	2.28	1.14	1.20	1.20	11	23	14
4426 B66 RRH	17.2	15.5	8.1	1.85	0.97	1.11	2.12	1.20	1.20	14	8	13
4426 B66 RRH (Side)	17.2	7.7	15.5	0.93	1.85	2.22	1.11	1.20	1.20	7	14	9
RRUS-32 B30 RRH	29.5	14.4	9.3	2.95	1.90	2.05	3.17	1.20	1.23	23	15	21
RRUS-32 B30 RRH (Shielded)	29.5	7.2	9.3	1.47	1.90	4.10	3.17	1.27	1.23	12	15	13
RRUS-E2 B29 RRH	22.7	20.8	9.8	3.28	1.54	1.09	2.32	1.20	1.20	25	12	22
RRUS-E2 B29 RRH (Side)	22.7	10.4	20.8	1.64	3.28	2.18	1.09	1.20	1.20	13	25	16
RRUS-12 B5 RRH	22.7	20.8	9.8	3.28	1.54	1.09	2.32	1.20	1.20	25	12	22
RRUS-12 B5 RRH (Side)	22.7	10.4	20.8	1.64	3.28	2.18	1.09	1.20	1.20	13	25	16
B14 4478 RRH	20.4	15.7	10.6	2.22	1.50	1.30	1.93	1.20	1.20	17	12	16
B14 4478 RRH (Shielded)	20.4	7.8	10.6	1.11	1.50	2.60	1.93	1.20	1.20	9	12	9
RRUS-11 B12 RRH	22.0	19.3	9.5	2.95	1.45	1.14	2.32	1.20	1.20	23	11	20
RRUS-11 B12 RRH (Side)	22.0	9.6	19.3	1.47	2.95	2.28	1.14	1.20	1.20	11	23	14
RRUS-32 B2 RRH	29.5	14.4	9.3	2.95	1.90	2.05	3.17	1.20	1.23	23	15	21
RRUS-32 B2 RRH (Side)	29.5	7.2	14.4	1.47	2.95	4.10	2.05	1.27	1.20	12	23	15

WIND LOADS AT 30 MPH:

HPA-65R-BUU-H8 Antenna	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	30	18	27
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	30	17	26
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	42	19	36
RRUS-11 B5 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	7	3	6
RRUS-11 B5 RRH (Side)	19.7	8.5	17.0	1.16	2.33	2.32	1.16	1.20	1.20	3	7	4
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	4	2	3
4426 B66 RRH (Side)	14.9	6.6	13.2	0.68	1.37	2.26	1.13	1.20	1.20	2	4	2
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	6
RRUS-32 B30 RRH (Shielded)	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	3	4	4
RRUS-E2 B29 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	7	3	6
RRUS-E2 B29 RRH (Side)	20.4	9.3	18.5	1.31	2.62	2.21	1.10	1.20	1.20	4	7	5
RRUS-12 B5 RRH	20.4	18.5	7.5	2.62	1.06	1.10	2.72	1.20	1.21	7	3	6
RRUS-12 B5 RRH (Side)	20.4	9.3	18.5	1.31	2.62	2.21	1.10	1.20	1.20	4	7	5
B14 4478 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	5	3	4
B14 4478 RRH (Shielded)	18.1	6.7	8.3	0.84	1.04	2.70	2.18	1.21	1.20	2	3	3
RRUS-11 B12 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	7	3	6
RRUS-11 B12 RRH (Side)	19.7	8.5	17.0	1.16	2.33	2.32	1.16	1.20	1.20	3	7	4
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	6
RRUS-32 B2 RRH (Side)	27.2	6.1	12.1	1.14	2.29	4.50	2.25	1.29	1.20	3	6	4

Date: 10/24/2019
Project Name: BRIDGEPORT EVERGREEN ST
Project No.: CT5100
Designed By: RL **Checked By:** MSC

HUDSON Design Group LLC

ICE WEIGHT CALCULATIONS

Thickness of ice: 1.15 in.
Density of ice: 56 pcf

HPA-65R-BUU-H8 Antenna

Weight of ice based on total radial SF area:

Height (in):	92.4	
Width (in):	14.8	
Depth (in):	7.4	
Total weight of ice on object:		191 lbs
Weight of object:	68.0 lbs	
Combined weight of ice and object:		259 lbs

OPA-65R-LCUU-H8 Antenna

Weight of ice based on total radial SF area:

Height (in):	92.7	
Width (in):	14.4	
Depth (in):	7.0	
Total weight of ice on object:		186 lbs
Weight of object:	88.0 lbs	
Combined weight of ice and object:		274 lbs

DMP65R-BU8DA Antenna

Weight of ice based on total radial SF area:

Height (in):	96.0	
Width (in):	20.7	
Depth (in):	7.7	
Total weight of ice on object:		261 lbs
Weight of object:	96.0 lbs	
Combined weight of ice and object:		357 lbs

RRUS-11 B5 RRH

Weight of ice based on total radial SF area:

Height (in):	19.7	
Width (in):	17.0	
Depth (in):	7.2	
Total weight of ice on object:		45 lbs
Weight of object:	51.0 lbs	
Combined weight of ice and object:		96 lbs

4426 B66 RRH

Weight of ice based on total radial SF area:

Height (in):	14.9	
Width (in):	13.2	
Depth (in):	5.8	
Total weight of ice on object:		27 lbs
Weight of object:	49.0 lbs	
Combined weight of ice and object:		76 lbs

RRUS-32 B30 RRH

Weight of ice based on total radial SF area:

Height (in):	27.2	
Width (in):	12.1	
Depth (in):	7.0	
Total weight of ice on object:		48 lbs
Weight of object:	60.0 lbs	
Combined weight of ice and object:		108 lbs

RRUS-E2 B29 RRH

Weight of ice based on total radial SF area:

Height (in):	20.4	
Width (in):	18.5	
Depth (in):	7.5	
Total weight of ice on object:		50 lbs
Weight of object:	53.0 lbs	
Combined weight of ice and object:		103 lbs

RRUS-12 B5 RRH

Weight of ice based on total radial SF area:

Height (in):	20.4	
Width (in):	18.5	
Depth (in):	7.5	
Total weight of ice on object:		50 lbs
Weight of object:	53.0 lbs	
Combined weight of ice and object:		103 lbs

B14 4478 RRH

Weight of ice based on total radial SF area:

Height (in):	18.1	
Width (in):	13.4	
Depth (in):	8.3	
Total weight of ice on object:		36 lbs
Weight of object:	60.0 lbs	
Combined weight of ice and object:		96 lbs

RRUS-11 B12 RRH

Weight of ice based on total radial SF area:

Height (in):	19.7	
Width (in):	17.0	
Depth (in):	7.2	
Total weight of ice on object:		45 lbs
Weight of object:	51.0 lbs	
Combined weight of ice and object:		96 lbs

RRUS-32 B2 RRH

Weight of ice based on total radial SF area:

Height (in):	27.2	
Width (in):	12.1	
Depth (in):	7.0	
Total weight of ice on object:		48 lbs
Weight of object:	60.0 lbs	
Combined weight of ice and object:		108 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:		30 lbs
Weight of object:	33 lbs	
Combined weight of ice and object:		63 lbs

3-1/2" Pipe

Per foot weight of ice:

diameter (in):	4	
Per foot weight of ice on object:		7 plf

2" pipe

Per foot weight of ice:

diameter (in):	2.38	
Per foot weight of ice on object:		5 plf

C 3-3/8x2-1/8x3/16

Weight of ice based on total radial SF area:

Height (in):	3.375	
Width (in):	2.125	
Per foot weight of ice on object:		7 plf

L 2x2 Angles

Weight of ice based on total radial SF area:

Height (in):	2	
Width (in):	2	
Per foot weight of ice on object:		6 plf

L 3x3 Angles

Weight of ice based on total radial SF area:

Height (in):	3	
Width (in):	3	
Per foot weight of ice on object:		8 plf

PL 6x3/8

Weight of ice based on total radial SF area:

Height (in):	6	
Width (in):	0.375	
Per foot weight of ice on object:		10 plf

HUDSON
Design Group LLC

Mount Calculations
(Existing Conditions)

Bentley

Current Date: 10/24/2019 1:07 PM
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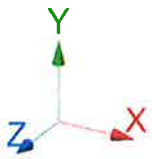

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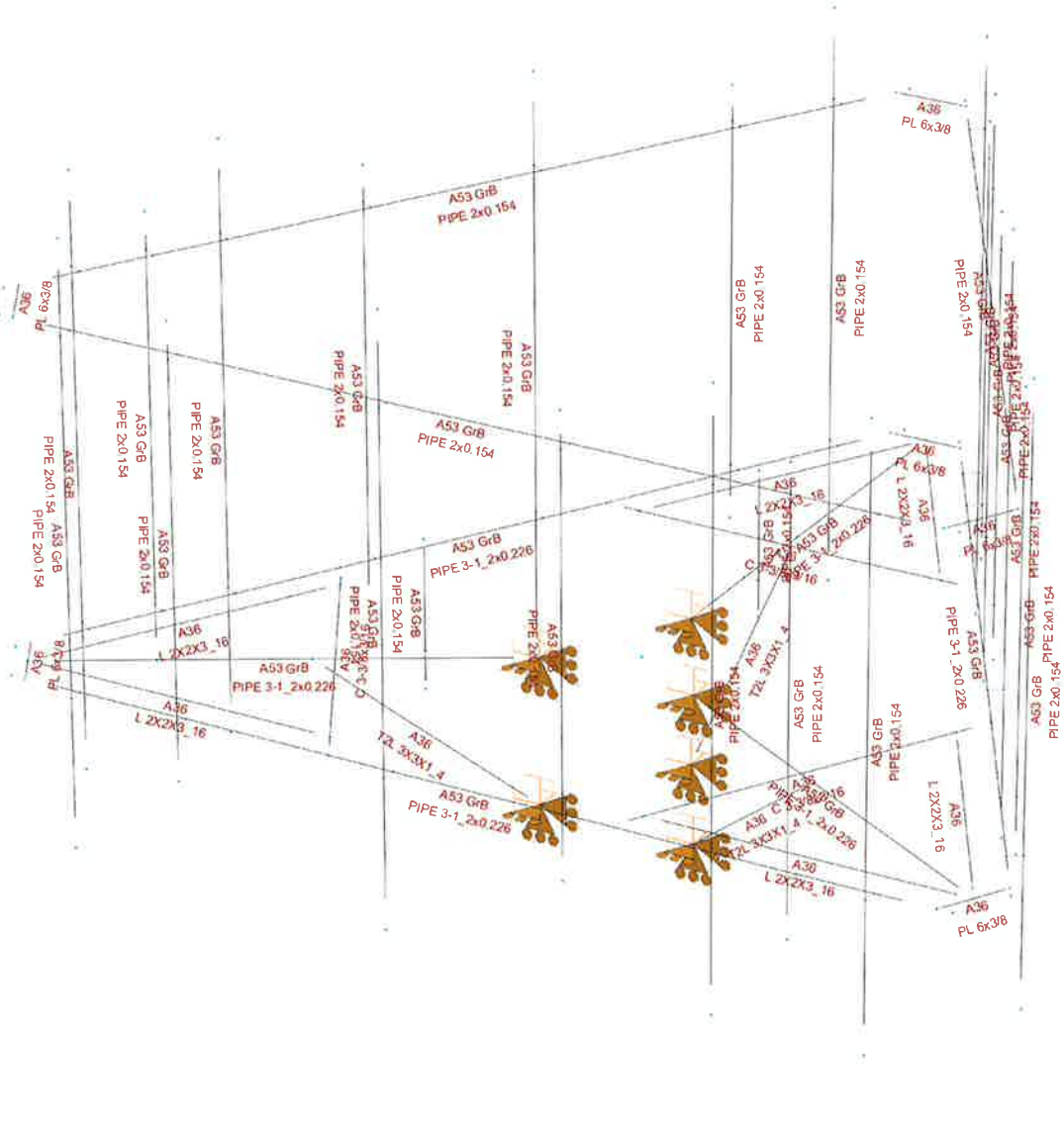

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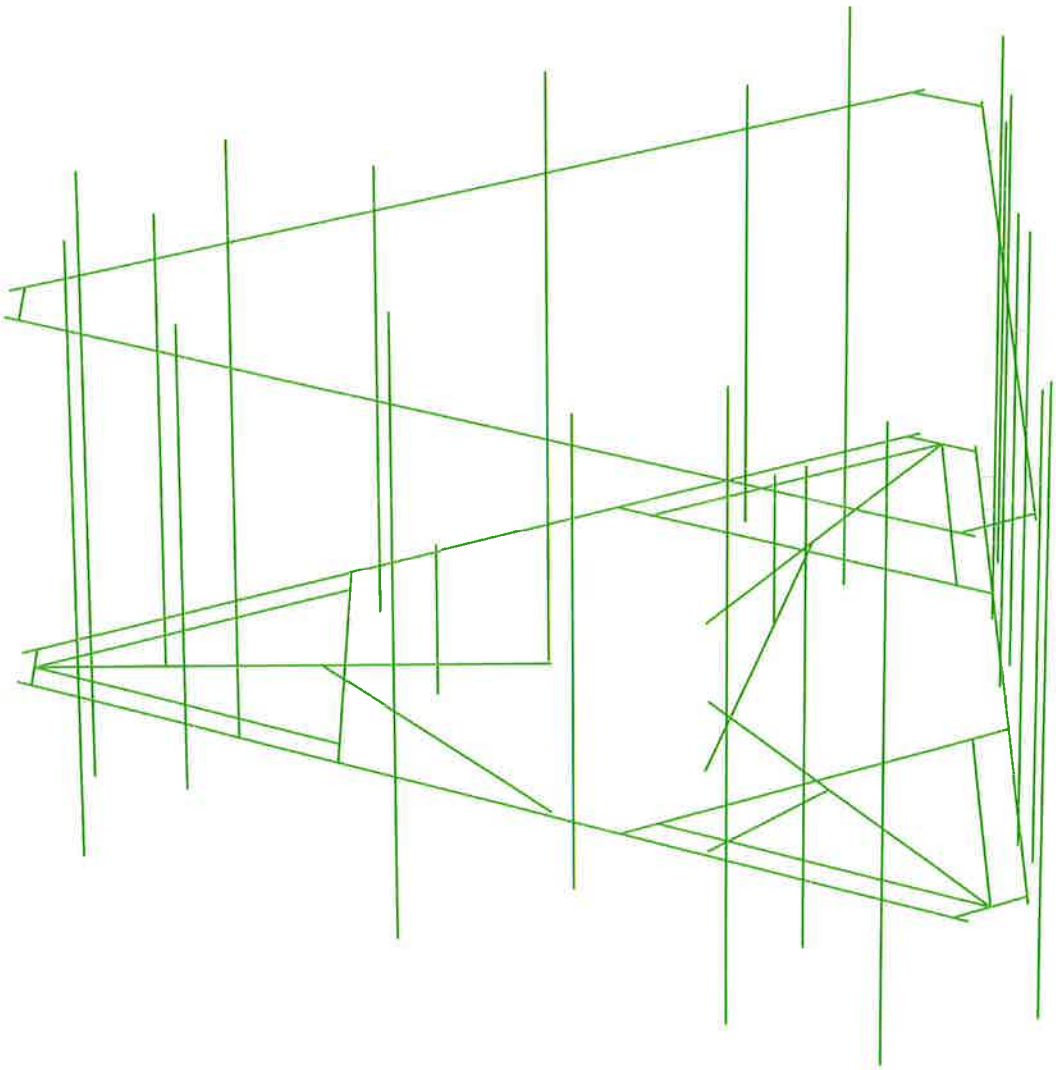
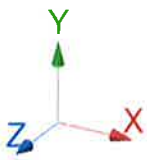
Not designed
Error on design
Design O.K.
With warnings





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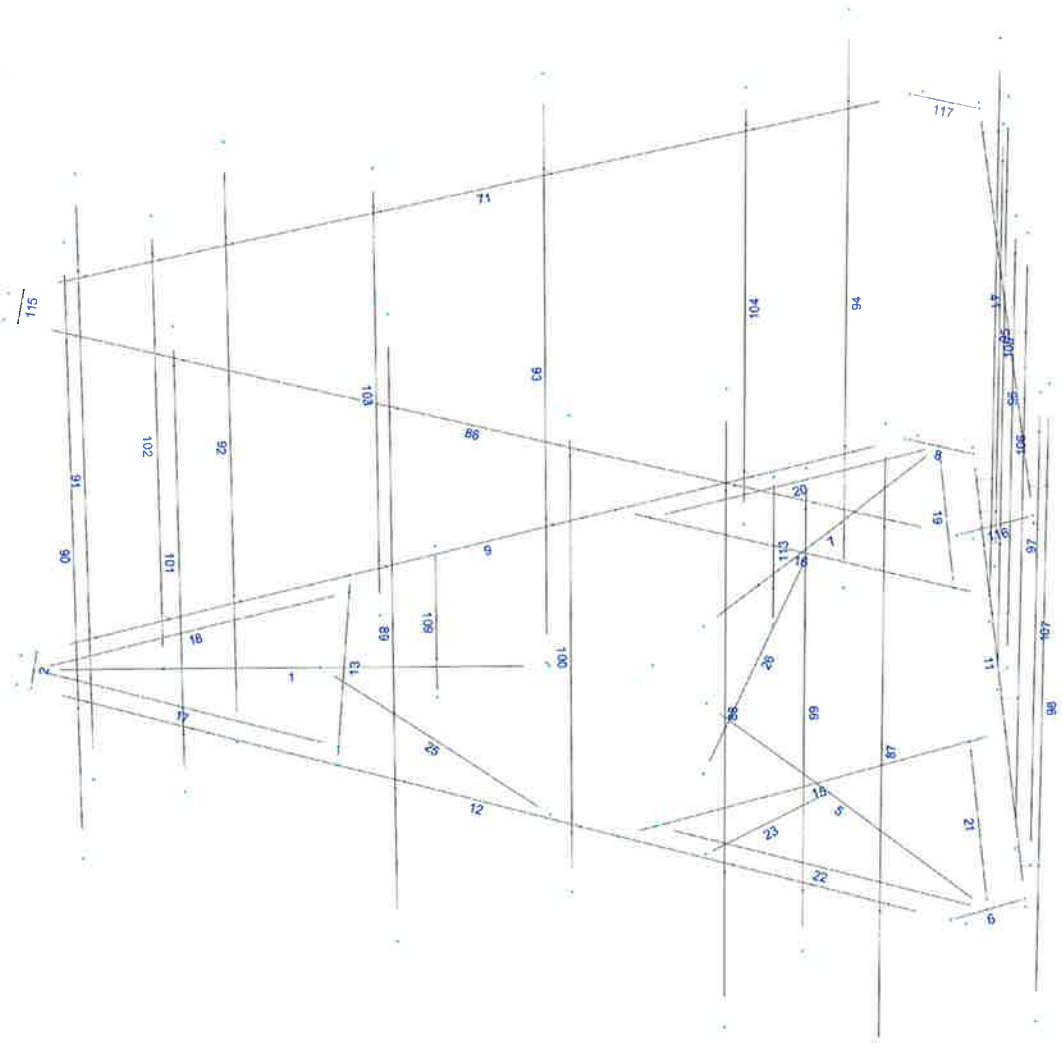

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Load data

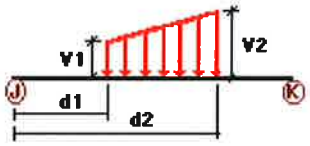
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
DL	Dead Load	No	DL
W0	Wind Load 0/60/120 deg	No	WIND
W30	Wind Load 30/90/150 deg	No	WIND
Di	Ice Load	No	LL
Wi0	Ice Wind Load 0/60/120 deg	No	WIND
Wi30	Ice Wind Load 30/90/150 deg	No	WIND
WL0	WL 30 mph 0/60/120 deg	No	WIND
WL30	WL 30 mph 30/90/150 deg	No	WIND
LL1	250 lb Live Load Center of Mount	No	LL
LL2	250 lb Live Load End of Mount	No	LL
LLa1	250 lb Live Load Antenna 1	No	LL
LLa2	250 lb Live Load Antenna 2	No	LL
LLa3	250 lb Live Load Antenna 3	No	LL
LLa4	250 lb Live Load Antenna 4	No	LL

Distributed force on members



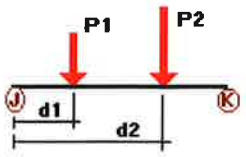
Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
DL	13	y	-0.01	-0.01	10.00	Yes	90.00	Yes
	15	y	-0.01	-0.01	10.00	Yes	90.00	Yes
	16	y	-0.01	-0.01	10.00	Yes	90.00	Yes
	17	y	-0.01	-0.01	0.00	No	100.00	Yes
	18	y	-0.01	-0.01	0.00	No	100.00	Yes
	19	y	-0.01	-0.01	0.00	No	100.00	Yes
	21	y	-0.01	-0.01	0.00	No	100.00	Yes
	22	y	-0.01	-0.01	0.00	No	100.00	Yes
	20	y	-0.01	-0.01	0.00	No	100.00	Yes
W0	1	z	-0.016	-0.016	0.00	No	100.00	Yes
	2	z	-0.001	-0.001	0.00	No	100.00	Yes
	5	z	-0.016	-0.016	0.00	No	100.00	Yes
	6	z	-0.001	-0.001	0.00	No	100.00	Yes
	8	z	-0.001	-0.001	0.00	No	100.00	Yes

	12	z	-0.016	-0.016	0.00	No	100.00	Yes
	13	z	-0.003	-0.003	0.00	No	100.00	Yes
	15	z	-0.003	-0.003	0.00	No	100.00	Yes
	16	z	-0.003	-0.003	0.00	No	100.00	Yes
	17	z	-0.013	-0.013	0.00	No	100.00	Yes
	18	z	-0.013	-0.013	0.00	No	100.00	Yes
	19	z	-0.013	-0.013	0.00	No	100.00	Yes
	21	z	-0.013	-0.013	0.00	No	100.00	Yes
	22	z	-0.013	-0.013	0.00	No	100.00	Yes
	23	z	-0.02	-0.02	0.00	No	100.00	Yes
	25	z	-0.02	-0.02	0.00	No	100.00	Yes
	26	z	-0.02	-0.02	0.00	No	100.00	Yes
	86	z	-0.01	-0.01	0.00	No	100.00	Yes
	91	z	-0.01	-0.01	0.00	No	100.00	Yes
	92	z	-0.01	-0.01	0.00	No	100.00	Yes
	93	z	-0.01	-0.01	0.00	No	100.00	Yes
	94	z	-0.01	-0.01	0.00	No	100.00	Yes
	95	z	-0.01	-0.01	0.00	No	100.00	Yes
	96	z	-0.01	-0.01	0.00	No	100.00	Yes
	97	z	-0.01	-0.01	0.00	No	100.00	Yes
	98	z	-0.01	-0.01	0.00	No	100.00	Yes
	99	z	-0.01	-0.01	0.00	No	100.00	Yes
	100	z	-0.01	-0.01	0.00	No	100.00	Yes
	101	z	-0.01	-0.01	0.00	No	100.00	Yes
	102	z	-0.01	-0.01	0.00	No	100.00	Yes
	103	z	-0.01	-0.01	0.00	No	100.00	Yes
	104	z	-0.01	-0.01	0.00	No	100.00	Yes
	105	z	-0.01	-0.01	0.00	No	100.00	Yes
	106	z	-0.01	-0.01	0.00	No	100.00	Yes
	107	z	-0.01	-0.01	0.00	No	100.00	Yes
	109	z	-0.01	-0.01	0.00	No	100.00	Yes
	113	z	-0.01	-0.01	0.00	No	100.00	Yes
	115	z	-0.001	-0.001	0.00	No	100.00	Yes
	116	z	-0.001	-0.001	0.00	No	100.00	Yes
	117	z	-0.001	-0.001	0.00	No	100.00	Yes
	9	z	-0.016	-0.016	0.00	No	100.00	Yes
	20	z	-0.013	-0.013	0.00	No	100.00	Yes
	71	z	-0.01	-0.01	0.00	No	100.00	Yes
	11	z	-0.016	-0.016	0.00	No	100.00	Yes
W30	1	x	-0.016	-0.016	0.00	No	100.00	Yes
	2	x	-0.001	-0.001	0.00	No	100.00	Yes
	5	x	-0.016	-0.016	0.00	No	100.00	Yes
	6	x	-0.001	-0.001	0.00	No	100.00	Yes
	7	x	-0.016	-0.016	0.00	No	100.00	Yes
	12	x	-0.016	-0.016	0.00	No	100.00	Yes
	13	x	-0.003	-0.003	0.00	No	100.00	Yes
	15	x	-0.003	-0.003	0.00	No	100.00	Yes
	18	x	-0.013	-0.013	0.00	No	100.00	Yes
	19	x	-0.013	-0.013	0.00	No	100.00	Yes
	21	x	-0.013	-0.013	0.00	No	100.00	Yes
	23	x	-0.02	-0.02	0.00	No	100.00	Yes
	25	x	-0.02	-0.02	0.00	No	100.00	Yes
	26	x	-0.02	-0.02	0.00	No	100.00	Yes
	87	x	-0.01	-0.01	0.00	No	100.00	Yes
	88	x	-0.01	-0.01	0.00	No	100.00	Yes
	89	x	-0.01	-0.01	0.00	No	100.00	Yes
	90	x	-0.01	-0.01	0.00	No	100.00	Yes
	91	x	-0.01	-0.01	0.00	No	100.00	Yes
	92	x	-0.01	-0.01	0.00	No	100.00	Yes
	93	x	-0.01	-0.01	0.00	No	100.00	Yes

	94	x	-0.01	-0.01	0.00	No	100.00	Yes
	99	x	-0.01	-0.01	0.00	No	100.00	Yes
	100	x	-0.01	-0.01	0.00	No	100.00	Yes
	101	x	-0.01	-0.01	0.00	No	100.00	Yes
	102	x	-0.01	-0.01	0.00	No	100.00	Yes
	103	x	-0.01	-0.01	0.00	No	100.00	Yes
	104	x	-0.01	-0.01	0.00	No	100.00	Yes
	105	x	-0.01	-0.01	0.00	No	100.00	Yes
	106	x	-0.01	-0.01	0.00	No	100.00	Yes
	107	x	-0.01	-0.01	0.00	No	100.00	Yes
	109	x	-0.01	-0.01	0.00	No	100.00	Yes
	113	x	-0.01	-0.01	0.00	No	100.00	Yes
	115	x	-0.001	-0.001	0.00	No	100.00	Yes
	116	x	-0.001	-0.001	0.00	No	100.00	Yes
	9	x	-0.016	-0.016	0.00	No	100.00	Yes
	20	x	-0.013	-0.013	0.00	No	100.00	Yes
	71	x	-0.01	-0.01	0.00	No	100.00	Yes
	11	x	-0.016	-0.016	0.00	No	100.00	Yes
Di	1	y	-0.007	-0.007	0.00	No	100.00	Yes
	5	y	-0.007	-0.007	0.00	No	100.00	Yes
	7	y	-0.007	-0.007	0.00	No	100.00	Yes
	12	y	-0.007	-0.007	0.00	No	100.00	Yes
	13	y	-0.007	-0.007	0.00	No	100.00	Yes
	15	y	-0.007	-0.007	0.00	No	100.00	Yes
	16	y	-0.007	-0.007	0.00	No	100.00	Yes
	17	y	-0.006	-0.006	0.00	No	100.00	Yes
	18	y	-0.006	-0.006	0.00	No	100.00	Yes
	19	y	-0.006	-0.006	0.00	No	100.00	Yes
	21	y	-0.006	-0.006	0.00	No	100.00	Yes
	22	y	-0.006	-0.006	0.00	No	100.00	Yes
	23	y	-0.008	-0.008	0.00	No	100.00	Yes
	25	y	-0.008	-0.008	0.00	No	100.00	Yes
	26	y	-0.008	-0.008	0.00	No	100.00	Yes
	86	y	-0.005	-0.005	0.00	No	100.00	Yes
	87	y	-0.005	-0.005	0.00	No	100.00	Yes
	88	y	-0.005	-0.005	0.00	No	100.00	Yes
	89	y	-0.005	-0.005	0.00	No	100.00	Yes
	90	y	-0.005	-0.005	0.00	No	100.00	Yes
	91	y	-0.005	-0.005	0.00	No	100.00	Yes
	92	y	-0.005	-0.005	0.00	No	100.00	Yes
	93	y	-0.005	-0.005	0.00	No	100.00	Yes
	94	y	-0.005	-0.005	0.00	No	100.00	Yes
	95	y	-0.005	-0.005	0.00	No	100.00	Yes
	96	y	-0.005	-0.005	0.00	No	100.00	Yes
	97	y	-0.005	-0.005	0.00	No	100.00	Yes
	98	y	-0.005	-0.005	0.00	No	100.00	Yes
	99	y	-0.005	-0.005	0.00	No	100.00	Yes
	100	y	-0.005	-0.005	0.00	No	100.00	Yes
	101	y	-0.005	-0.005	0.00	No	100.00	Yes
	102	y	-0.005	-0.005	0.00	No	100.00	Yes
	103	y	-0.005	-0.005	0.00	No	100.00	Yes
	104	y	-0.005	-0.005	0.00	No	100.00	Yes
	105	y	-0.005	-0.005	0.00	No	100.00	Yes
	106	y	-0.005	-0.005	0.00	No	100.00	Yes
	107	y	-0.005	-0.005	0.00	No	100.00	Yes
	109	y	-0.005	-0.005	0.00	No	100.00	Yes
	113	y	-0.005	-0.005	0.00	No	100.00	Yes
	9	y	-0.007	-0.007	0.00	No	100.00	Yes
	20	y	-0.006	-0.006	0.00	No	100.00	Yes
	71	y	-0.005	-0.005	0.00	No	100.00	Yes

	11	y	-0.007	-0.007	0.00	No	100.00	Yes

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	87	y	-0.034	0.50	No
		y	-0.034	7.50	No
	88	y	-0.044	0.50	No
		y	-0.044	7.50	No
		y	-0.06	4.00	No
	89	y	-0.048	0.50	No
		y	-0.048	7.50	No
		y	-0.06	4.00	No
	90	y	-0.034	0.50	No
		y	-0.034	7.50	No
	91	y	-0.034	0.50	No
		y	-0.034	7.50	No
	92	y	-0.044	0.50	No
		y	-0.044	7.50	No
		y	-0.06	4.00	No
	93	y	-0.048	0.50	No
		y	-0.048	7.50	No
		y	-0.06	4.00	No
	94	y	-0.034	0.50	No
		y	-0.034	7.50	No
	95	y	-0.034	0.50	No
		y	-0.034	7.50	No
	96	y	-0.044	0.50	No
		y	-0.044	7.50	No
		y	-0.06	4.00	No
	97	y	-0.048	0.50	No
		y	-0.048	7.50	No
		y	-0.06	4.00	No
	98	y	-0.034	0.50	No
		y	-0.034	7.50	No
	99	y	-0.10	3.00	No
	100	y	-0.106	3.00	No
	101	y	-0.111	3.00	No
	102	y	-0.10	3.00	No
	103	y	-0.106	3.00	No
	104	y	-0.111	3.00	No
	105	y	-0.10	3.00	No
	106	y	-0.106	3.00	No
	107	y	-0.111	3.00	No
	109	y	-0.033	0.50	No
		y	-0.033	1.00	No
	113	y	-0.033	0.50	No
		y	-0.033	1.00	No
W0	87	z	-0.263	0.50	No

		z	-0.263	7.50	No
	88	z	-0.258	0.50	No
		z	-0.258	7.50	No
	89	z	-0.362	0.50	No
		z	-0.362	7.50	No
	90	z	-0.263	0.50	No
		z	-0.263	7.50	No
	91	z	-0.18	0.50	No
		z	-0.18	7.50	No
	92	z	-0.175	0.50	No
		z	-0.175	7.50	No
		z	-0.072	4.00	No
	93	z	-0.214	0.50	No
		z	-0.214	7.50	No
		z	-0.053	4.00	No
	94	z	-0.18	0.50	No
		z	-0.18	7.50	No
	95	z	-0.18	0.50	No
		z	-0.18	7.50	No
	96	z	-0.175	0.50	No
		z	-0.175	7.50	No
		z	-0.072	4.00	No
	97	z	-0.214	0.50	No
		z	-0.214	7.50	No
		z	-0.053	4.00	No
	98	z	-0.18	0.50	No
		z	-0.18	7.50	No
	99	z	-0.077	3.00	No
	100	z	-0.104	3.00	No
	101	z	-0.116	3.00	No
	102	z	-0.106	3.00	No
	103	z	-0.119	3.00	No
	104	z	-0.106	3.00	No
	105	z	-0.106	3.00	No
	106	z	-0.119	3.00	No
	107	z	-0.106	3.00	No
	109	z	-0.046	0.50	No
		z	-0.046	1.00	No
	113	z	-0.046	0.50	No
		z	-0.046	1.00	No
W30	87	x	-0.152	0.50	No
		x	-0.152	7.50	No
	88	x	-0.147	0.50	No
		x	-0.147	7.50	No
		x	-0.067	4.00	No
	89	x	-0.165	0.50	No
		x	-0.165	7.50	No
		x	-0.051	4.00	No
	90	x	-0.152	0.50	No
		x	-0.152	7.50	No
	91	x	-0.235	0.50	No
		x	-0.235	7.50	No
	92	x	-0.23	0.50	No
		x	-0.23	7.50	No
		x	-0.062	4.00	No
	93	x	-0.313	0.50	No
		x	-0.313	7.50	No
		x	-0.044	4.00	No
	94	x	-0.235	0.50	No
		x	-0.235	7.50	No

	95	x	-0.235	0.50	No
		x	-0.235	7.50	No
	96	x	-0.23	0.50	No
		x	-0.23	7.50	No
		x	-0.062	4.00	No
	97	x	-0.313	0.50	No
		x	-0.313	7.50	No
		x	-0.044	4.00	No
	98	x	-0.235	0.50	No
		x	-0.235	7.50	No
	99	x	-0.113	3.00	No
	100	x	-0.127	3.00	No
	101	x	-0.113	3.00	No
	102	x	-0.071	3.00	No
	103	x	-0.079	3.00	No
	104	x	-0.072	3.00	No
	105	x	-0.071	3.00	No
	106	x	-0.079	3.00	No
	107	x	-0.072	3.00	No
	109	x	-0.048	0.50	No
		x	-0.048	1.00	No
	113	x	-0.048	0.50	No
		x	-0.048	1.00	No
Di	87	y	-0.096	0.50	No
		y	-0.096	7.50	No
	88	y	-0.093	0.50	No
		y	-0.093	7.50	No
		y	-0.048	4.00	No
	89	y	-0.131	0.50	No
		y	-0.131	7.50	No
		y	-0.036	4.00	No
	90	y	-0.096	0.50	No
		y	-0.096	7.50	No
	91	y	-0.096	0.50	No
		y	-0.096	7.50	No
	92	y	-0.093	0.50	No
		y	-0.093	7.50	No
		y	-0.048	4.00	No
	93	y	-0.131	0.50	No
		y	-0.131	7.50	No
		y	-0.036	4.00	No
	94	y	-0.096	0.50	No
		y	-0.096	7.50	No
	95	y	-0.096	0.50	No
		y	-0.096	7.50	No
	96	y	-0.093	0.50	No
		y	-0.093	7.50	No
		y	-0.048	4.00	No
	97	y	-0.131	0.50	No
		y	-0.131	7.50	No
		y	-0.036	4.00	No
	98	y	-0.096	0.50	No
		y	-0.096	7.50	No
	99	y	-0.072	3.00	No
	100	y	-0.101	3.00	No
	101	y	-0.093	3.00	No
	102	y	-0.072	3.00	No
	103	y	-0.101	3.00	No
	104	y	-0.093	3.00	No
	105	y	-0.072	3.00	No

	106	y	-0.101	3.00	No
	107	y	-0.093	3.00	No
	109	y	-0.03	0.50	No
		y	-0.03	1.00	No
	113	y	-0.03	0.50	No
		y	-0.03	1.00	No
Wi0	87	z	-0.05	0.50	No
		z	-0.05	7.50	No
	88	z	-0.049	0.50	No
		z	-0.049	7.50	No
	89	z	-0.066	0.50	No
		z	-0.066	7.50	No
	90	z	-0.05	0.50	No
		z	-0.05	7.50	No
	91	z	-0.036	0.50	No
		z	-0.036	7.50	No
	92	z	-0.035	0.50	No
		z	-0.035	7.50	No
		z	-0.016	4.00	No
	93	z	-0.041	0.50	No
		z	-0.041	7.50	No
		z	-0.012	4.00	No
	94	z	-0.036	0.50	No
		z	-0.036	7.50	No
	95	z	-0.036	0.50	No
		z	-0.036	7.50	No
	96	z	-0.035	0.50	No
		z	-0.035	7.50	No
		z	-0.016	4.00	No
	97	z	-0.041	0.50	No
		z	-0.041	7.50	No
		z	-0.012	4.00	No
	98	z	-0.036	0.50	No
		z	-0.036	7.50	No
	99	z	-0.019	3.00	No
	100	z	-0.024	3.00	No
	101	z	-0.027	3.00	No
	102	z	-0.021	3.00	No
	103	z	-0.024	3.00	No
	104	z	-0.021	3.00	No
	105	z	-0.021	3.00	No
	106	z	-0.024	3.00	No
	107	z	-0.021	3.00	No
	109	z	-0.01	0.50	No
		z	-0.01	1.00	No
	113	z	-0.01	0.50	No
		z	-0.01	1.00	No
Wi30	87	x	-0.031	0.50	No
		x	-0.031	7.50	No
	88	x	-0.03	0.50	No
		x	-0.03	7.50	No
		x	-0.015	4.00	No
	89	x	-0.033	0.50	No
		x	-0.033	7.50	No
		x	-0.012	4.00	No
	90	x	-0.031	0.50	No
		x	-0.031	7.50	No
	91	x	-0.045	0.50	No
		x	-0.045	7.50	No
	92	x	-0.044	0.50	No

		x	-0.044	7.50	No
		x	-0.013	4.00	No
	93	x	-0.057	0.50	No
		x	-0.057	7.50	No
		x	-0.009	4.00	No
	94	x	-0.045	0.50	No
		x	-0.045	7.50	No
	95	x	-0.045	0.50	No
		x	-0.045	7.50	No
	96	x	-0.044	0.50	No
		x	-0.044	7.50	No
		x	-0.013	4.00	No
	97	x	-0.057	0.50	No
		x	-0.057	7.50	No
		x	-0.009	4.00	No
	98	x	-0.045	0.50	No
		x	-0.045	7.50	No
	99	x	-0.023	3.00	No
	100	x	-0.025	3.00	No
	101	x	-0.023	3.00	No
	102	x	-0.014	3.00	No
	103	x	-0.016	3.00	No
	104	x	-0.015	3.00	No
	105	x	-0.014	3.00	No
	106	x	-0.016	3.00	No
	107	x	-0.015	3.00	No
	109	x	-0.01	0.50	No
		x	-0.01	1.00	No
	113	x	-0.01	0.50	No
		x	-0.01	1.00	No
WL0	87	z	-0.016	0.50	No
		z	-0.016	7.50	No
	88	z	-0.015	0.50	No
		z	-0.015	7.50	No
	89	z	-0.021	0.50	No
		z	-0.021	7.50	No
	90	z	-0.016	0.50	No
		z	-0.016	7.50	No
	91	z	-0.011	0.50	No
		z	-0.011	7.50	No
	92	z	-0.011	0.50	No
		z	-0.011	7.50	No
		z	-0.004	4.00	No
	93	z	-0.013	0.50	No
		z	-0.013	7.50	No
		z	-0.003	4.00	No
	94	z	-0.011	0.50	No
		z	-0.011	7.50	No
	95	z	-0.011	0.50	No
		z	-0.011	7.50	No
	96	z	-0.011	0.50	No
		z	-0.011	7.50	No
		z	-0.004	4.00	No
	97	z	-0.013	0.50	No
		z	-0.013	7.50	No
		z	-0.003	4.00	No
	98	z	-0.011	0.50	No
		z	-0.011	7.50	No
	99	z	-0.004	3.00	No
	100	z	-0.006	3.00	No

	101	z	-0.007	3.00	No
	102	z	-0.006	3.00	No
	103	z	-0.007	3.00	No
	104	z	-0.006	3.00	No
	105	z	-0.006	3.00	No
	106	z	-0.007	3.00	No
	107	z	-0.006	3.00	No
	109	z	-0.003	0.50	No
		z	-0.003	1.00	No
	113	z	-0.003	0.50	No
		z	-0.003	1.00	No
WL30	87	x	-0.009	0.50	No
		x	-0.009	7.50	No
	88	x	-0.009	0.50	No
		x	-0.009	7.50	No
		x	-0.004	4.00	No
	89	x	-0.01	0.50	No
		x	-0.01	7.50	No
		x	-0.003	4.00	No
	90	x	-0.009	0.50	No
		x	-0.009	7.50	No
	91	x	-0.014	0.50	No
		x	-0.014	7.50	No
	92	x	-0.014	0.50	No
		x	-0.014	7.50	No
		x	-0.004	4.00	No
	93	x	-0.018	0.50	No
		x	-0.018	7.50	No
		x	-0.003	4.00	No
	94	x	-0.014	0.50	No
		x	-0.014	7.50	No
	95	x	-0.014	0.50	No
		x	-0.014	7.50	No
	96	x	-0.014	0.50	No
		x	-0.014	7.50	No
		x	-0.004	4.00	No
	97	x	-0.018	0.50	No
		x	-0.018	7.50	No
		x	-0.003	4.00	No
	98	x	-0.014	0.50	No
		x	-0.014	7.50	No
	99	x	-0.007	3.00	No
	100	x	-0.007	3.00	No
	101	x	-0.007	3.00	No
	102	x	-0.004	3.00	No
	103	x	-0.005	3.00	No
	104	x	-0.004	3.00	No
	105	x	-0.004	3.00	No
	106	x	-0.005	3.00	No
	107	x	-0.004	3.00	No
	109	x	-0.003	0.50	No
		x	-0.003	1.00	No
	113	x	-0.003	0.50	No
		x	-0.003	1.00	No
LL1	**86**	**y**	**-0.25**	**50.00**	**Yes**
LL2	**86**	**y**	**-0.25**	**0.00**	**Yes**
LLa1	**87**	**y**	**-0.25**	**50.00**	**Yes**
LLa2	**88**	**y**	**-0.25**	**50.00**	**Yes**
LLa3	**89**	**y**	**-0.25**	**50.00**	**Yes**
LLa4	**90**	**y**	**-0.25**	**50.00**	**Yes**

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
DL	Dead Load	No	0.00	-1.00	0.00
W0	Wind Load 0/60/120 deg	No	0.00	0.00	0.00
W30	Wind Load 30/90/150 deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
Wi0	Ice Wind Load 0/60/120 deg	No	0.00	0.00	0.00
Wi30	Ice Wind Load 30/90/150 deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0/60/120 deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30/90/150 deg	No	0.00	0.00	0.00
LL1	250 lb Live Load Center of Mount	No	0.00	0.00	0.00
LL2	250 lb Live Load End of Mount	No	0.00	0.00	0.00
LLa1	250 lb Live Load Antenna 1	No	0.00	0.00	0.00
LLa2	250 lb Live Load Antenna 2	No	0.00	0.00	0.00
LLa3	250 lb Live Load Antenna 3	No	0.00	0.00	0.00
LLa4	250 lb Live Load Antenna 4	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
W0	0.00	0.00	0.00
W30	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
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LLa1	0.00	0.00	0.00
LLa2	0.00	0.00	0.00
LLa3	0.00	0.00	0.00
LLa4	0.00	0.00	0.00

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Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2DL+W0
LC2=1.2DL+W30
LC3=1.2DL-W0
LC4=1.2DL-W30
LC5=0.9DL+W0
LC6=0.9DL+W30
LC7=0.9DL-W0
LC8=0.9DL-W30
LC9=1.2DL+Di+Wi0
LC10=1.2DL+Di+Wi30
LC11=1.2DL+Di-Wi0
LC12=1.2DL+Di-Wi30
LC13=1.2DL
LC15=1.2DL+1.5LL1
LC16=1.2DL+1.5LL2
LC17=1.2DL+WL0+1.5LLa1
LC18=1.2DL+WL30+1.5LLa1
LC19=1.2DL-WL0+1.5LLa1
LC20=1.2DL-WL30+1.5LLa1
LC21=1.2DL+WL0+1.5LLa2
LC22=1.2DL+WL30+1.5LLa2
LC23=1.2DL-WL0+1.5LLa2
LC24=1.2DL-WL30+1.5LLa2
LC25=1.2DL+WL0+1.5LLa3
LC26=1.2DL+WL30+1.5LLa3
LC27=1.2DL-WL0+1.5LLa3
LC28=1.2DL-WL30+1.5LLa3
LC29=1.2DL+WL0+1.5LLa4
LC30=1.2DL+WL30+1.5LLa4
LC31=1.2DL-WL0+1.5LLa4
LC32=1.2DL-WL30+1.5LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	C 3-3/8x3/16	**13**	LC4 at 0.00%	0.68	OK	
		15	LC1 at 0.00%	**0.71**	**OK**	
		16	LC2 at 0.00%	0.60	OK	
	L 2X2X3_16	**17**	LC2 at 100.00%	0.39	OK	
		18	LC2 at 0.00%	0.39	OK	
		19	LC1 at 0.00%	0.43	OK	
		20	LC1 at 100.00%	**0.45**	**OK**	
		21	LC4 at 100.00%	0.40	OK	
		22	LC4 at 0.00%	0.35	OK	
	PIPE 2x0.154	**41**	LC3 at 92.50%	0.42	OK	
		71	LC3 at 7.50%	0.40	OK	
		86	LC8 at 91.88%	0.44	OK	
		87	LC2 at 72.92%	0.41	OK	
		88	LC2 at 72.92%	0.52	OK	
		89	LC1 at 72.92%	0.67	OK	

	90	LC4 at 72.92%	0.43	OK
	91	LC1 at 72.92%	0.40	OK
	92	LC1 at 72.92%	0.53	OK
	93	LC4 at 72.92%	**0.73**	**OK**
	94	LC3 at 72.92%	0.44	OK
	95	LC3 at 72.92%	0.41	OK
	96	LC3 at 72.92%	0.52	OK
	97	LC3 at 72.92%	0.71	OK
	98	LC1 at 72.92%	0.44	OK
	99	LC2 at 85.42%	0.43	OK
	100	LC1 at 85.42%	0.62	OK
	101	LC4 at 85.42%	0.50	OK
	102	LC1 at 85.42%	0.43	OK
	103	LC3 at 85.42%	0.64	OK
	104	LC3 at 85.42%	0.50	OK
	105	LC3 at 85.42%	0.43	OK
	106	LC3 at 85.42%	0.60	OK
	107	LC1 at 85.42%	0.51	OK
	109	LC2 at 71.88%	0.06	OK
	113	LC2 at 71.88%	0.06	OK
PIPE 3-1_2x0.226	**1**	LC2 at 45.31%	0.48	OK
	5	LC4 at 45.83%	0.46	OK
	7	LC1 at 45.31%	**0.51**	**OK**
	9	LC1 at 65.10%	0.24	OK
	11	LC1 at 34.90%	0.23	OK
	12	LC2 at 65.10%	0.25	OK
PL 6x3/8	**2**	LC2 at 46.88%	0.30	OK
	6	LC4 at 50.00%	0.31	OK
	8	LC1 at 50.00%	0.35	OK
	115	LC3 at 100.00%	0.34	OK
	116	LC3 at 0.00%	0.33	OK
	117	LC2 at 0.00%	**0.38**	**OK**
T2L 3X3X1_4	**23**	LC4 at 100.00%	0.33	OK
	25	LC2 at 100.00%	0.30	OK
	26	LC1 at 100.00%	**0.34**	**OK**

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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	-1.0825	0.00	0.625	0
3	-6.4519	0.00	3.725	0
10	1.0825	0.00	0.625	0
11	6.4519	0.00	3.725	0
12	6.2019	0.00	4.158	0
14	0.00	0.00	-1.25	0
21	-1.90	0.00	4.158	0
33	6.40	0.00	4.158	0
34	-6.40	0.00	4.158	0
35	-2.15	0.00	3.725	0
36	-4.3009	0.00	-0.0005	0
42	1.90	0.00	4.158	0
43	4.3009	0.00	-0.0005	0
44	2.15	0.00	3.725	0
48	2.1509	0.00	-3.7245	0
49	1.0825	-2.00	0.625	0
50	3.4641	0.00	2.00	0
53	-1.0825	-2.00	0.625	0
54	-3.4641	0.00	2.00	0
55	0.00	-2.00	-1.25	0

56	0.00	0.00	-4.00	0
175	6.40	4.75	4.158	0
176	-6.40	4.75	4.158	0
177	-5.40	-2.00	4.358	0
178	-1.00	-2.00	4.358	0
179	3.40	-2.00	4.358	0
180	5.40	-2.00	4.358	0
181	-1.0741	-2.00	-6.8555	0
182	-3.2741	-2.00	-3.045	0
183	-5.4741	-2.00	0.7655	0
184	-6.4741	-2.00	2.4975	0
185	1.0741	-2.00	-6.8555	0
186	2.0741	-2.00	-5.1235	0
187	4.2741	-2.00	-1.313	0
188	6.4741	-2.00	2.4975	0
189	1.0741	6.00	-6.8555	0
190	2.0741	6.00	-5.1235	0
191	4.2741	6.00	-1.313	0
192	6.4741	6.00	2.4975	0
193	-1.0741	6.00	-6.8555	0
194	-3.2741	6.00	-3.045	0
195	-5.4741	6.00	0.7655	0
196	-6.4741	6.00	2.4975	0
197	-5.40	6.00	4.358	0
198	-1.00	6.00	4.358	0
199	3.40	6.00	4.358	0
201	4.40	-0.75	4.358	0
202	1.40	-0.75	4.358	0
203	-3.90	-0.75	4.358	0
204	-5.9741	-0.75	1.6315	0
205	-4.4741	-0.75	-0.9666	0
207	1.5741	-0.75	-5.9895	0
208	3.0741	-0.75	-3.3914	0
209	5.7241	-0.75	1.1985	0
210	1.5741	5.25	-5.9895	0
211	-1.8241	5.25	-5.5565	0
212	3.0741	5.25	-3.3914	0
213	5.7241	5.25	1.1985	0
215	1.40	5.25	4.358	0
217	-4.4741	5.25	-0.9666	0
218	-5.9741	5.25	1.6315	0
221	-2.3733	-0.50	1.1393	0
222	-2.3733	1.50	1.1393	0
227	0.20	-0.50	-2.625	0
228	0.20	1.50	-2.625	0
232	-6.2019	4.75	4.158	0
233	6.2019	4.75	4.158	0
200	5.40	6.00	4.358	0
19	-6.8009	0.00	3.4636	0
85	0.4009	4.75	-7.6216	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
2	1	1	1	1	1	1
10	1	1	1	1	1	1
14	1	1	1	1	1	1
49	1	1	1	1	1	1
53	1	1	1	1	1	1
55	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
1	2	3		PIPE 3-1_2x0.226	A53 GrB	0.00	0.00	0.00
2	4	5		PL 6x3/8	A36	0.00	0.00	0.00
5	10	11		PIPE 3-1_2x0.226	A53 GrB	0.00	0.00	0.00
6	12	13		PL 6x3/8	A36	0.00	0.00	0.00
7	14	15		PIPE 3-1_2x0.226	A53 GrB	0.00	0.00	0.00
8	16	17		PL 6x3/8	A36	0.00	0.00	0.00
12	33	34		PIPE 3-1_2x0.226	A53 GrB	0.00	0.00	0.00
13	28	21		C 3-3/8x3/16	A36	0.00	0.00	0.00
15	42	41		C 3-3/8x3/16	A36	0.00	0.00	0.00
16	46	45		C 3-3/8x3/16	A36	0.00	0.00	0.00
17	35	3		L 2X2X3_16	A36	0.00	0.00	0.00
18	3	36		L 2X2X3_16	A36	0.00	0.00	0.00
19	15	48		L 2X2X3_16	A36	0.00	0.00	0.00
21	43	11		L 2X2X3_16	A36	0.00	0.00	0.00
22	11	44		L 2X2X3_16	A36	0.00	0.00	0.00
23	49	50		T2L 3X3X1_4	A36	0.00	0.00	0.00
25	53	54		T2L 3X3X1_4	A36	0.00	0.00	0.00
26	55	56		T2L 3X3X1_4	A36	0.00	0.00	0.00
86	175	176		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
87	200	180		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
88	199	179		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
89	198	178		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
90	197	177		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
91	196	184		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
92	195	183		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
93	194	182		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
94	193	181		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
95	189	185		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
96	190	186		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
97	191	187		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
98	192	188		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
99	214	201		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
100	215	202		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
101	216	203		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
102	218	204		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
103	217	205		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
104	211	206		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
105	210	207		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
106	212	208		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
107	213	209		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
109	222	221		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
113	228	227		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
115	231	232		PL 6x3/8	A36	0.00	0.00	0.00
116	233	234		PL 6x3/8	A36	0.00	0.00	0.00
117	235	236		PL 6x3/8	A36	0.00	0.00	0.00

9	19	20		PIPE 3-1_2x0.226	A53 GrB	0.00	0.00	0.00
20	47	15		L 2X2X3_16	A36	0.00	0.00	0.00
71	145	146		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
11	29	30		PIPE 3-1_2x0.226	A53 GrB	0.00	0.00	0.00
41	85	86		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
87	315.00	0	0.00	0.00	0.00
88	315.00	0	0.00	0.00	0.00
89	315.00	0	0.00	0.00	0.00
90	315.00	0	0.00	0.00	0.00
91	315.00	0	0.00	0.00	0.00
92	315.00	0	0.00	0.00	0.00
93	315.00	0	0.00	0.00	0.00
94	315.00	0	0.00	0.00	0.00
95	315.00	0	0.00	0.00	0.00
96	315.00	0	0.00	0.00	0.00
97	315.00	0	0.00	0.00	0.00
98	315.00	0	0.00	0.00	0.00
99	315.00	0	0.00	0.00	0.00
100	315.00	0	0.00	0.00	0.00
101	315.00	0	0.00	0.00	0.00
102	315.00	0	0.00	0.00	0.00
103	315.00	0	0.00	0.00	0.00
104	315.00	0	0.00	0.00	0.00
105	315.00	0	0.00	0.00	0.00
106	315.00	0	0.00	0.00	0.00
107	315.00	0	0.00	0.00	0.00
109	315.00	0	0.00	0.00	0.00
113	315.00	0	0.00	0.00	0.00
115	90.00	0	0.00	0.00	0.00
116	90.00	0	0.00	0.00	0.00
117	90.00	0	0.00	0.00	0.00

Blue Sky Towers LLC

Structural Analysis Report

Structure	**:** 135 foot Monopole Tower
BST Site Name	**:** Bridgeport-Evergreen St
BST Site Number	**:** CT-5020
Proposed Carrier	**:** AT&T
Carrier Site Name	**:** Bridgeport Evergreen St
Carrier Site Number	**:** CT 5100 / FA#10107972
Site Location	**:** 220 Evergreen Street Bridgeport, CT 06606 (Fairfield County) 41.1977, -73.1907
Date	**:** November 19, 2019
Max Member Stress Level	**:** 43.2% (Tower) **:** 45% (Foundation)
Result	**: PASS**

11/20/2019

Prepared by:
Bennett & Pless, Inc.
B&P Job No.: 19003.009

bennett&pless
Experience Structural Expertise

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750 Park of Commerce Drive, Suite 200, Boca Raton, FL 33487 | T: 561 282 2676 F: 561 989 0277
www.bennett-pless.com

Table of Contents

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 AT&T. 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.

Tower Information	Rohn Drawing No.: 217435-01-D1R2 dated March 17, 2016.
Foundation Information	Rohn Drawing No.: 217435-01-F1R1 dated March 17, 2016.
Geotechnical Information	Geotechnical Information was not available at this time.
Existing Equipment Information	Bennett & Pless Structural Analysis dated October 16, 2019. BlueSky AT&T Application dated October 30, 2019.
Tower Reinforcement Information	Tower has not been previously reinforced.

Final Proposed Equipment Loading for AT&T

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

Antenna/Equipment					Coax	
Mount	RAD	Qty.	Antenna	Type	Qty.	Size/Type
130.0	-	1	Low Profile Platform	Mount	4 3	2” Conduit RET Lines
	130.0	**3**	**CCI DMP65R-BU8DA**	**Panel**		
		6	CCI HPA-65R-BUU-H8	Panel		
		3	CCI OPA-65R-LCUU-H8	Panel		
		3	**B14 4478 RRH**	**RRU**		
		3	RRU-11 B5 RRH	RRU		
		3	4426 B66 RRH	RRU		
		3	RRUS-32 B30 RRH	RRU		
		3	RRUS-E2 B29 RRH	RRU		
		3	RRUS-12 B5 RRH	RRU		
		3	RRUS-11 B12 RRH	RRU		
		3	RRUS-32 B2 RRH	RRU		
		6	RRUS A2 Module	RRU		
		4	DC6-48-60-18-8F	OVP		

Note: Proposed equipment shown in bold.
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.

State/County	Connecticut / Fairfield County
State Building Code	2018 Connecticut State Bldg. Code (IBC 2015)
TIA/EIA Standard Code	TIA-222-G
Basic Wind Speed	125 MPH (V_{ult}) / 97 MPH (V_{asd})
Basic Wind Speed w/ Ice	50 MPH / 0.75" Ice
Steel Grade	65 ksi pole, 50 ksi base plate, anchor bolts A615 Grade 75
Exposure Category	C
Topographic Category (height)	1 (0.0 ft)
Structure Class	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 modification.**

The existing foundation has also been evaluated. Based on the foregoing information, our structural analysis determined that **the existing foundation is structurally capable of supporting the proposed equipment loads without modification.**

Component	Analysis Reactions	Original Reactions*	% Capacity	Results
Vertical (Kips)	95	211.3	**45**	**Pass**
Shear (Kips)	42	107.5	**39**	**Pass**
Moment (Kip-ft)	4306	10890	**40**	**Pass**

***Have been factored by 1.35 to equate to G standard per ANSI/TIA-222-G 15.5.1.**

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 also has sufficient capacity.

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:

Phillip Nejman, P.E.
Project Engineer

Reviewed by:

Tommy Ireland, P.E.
Principal

11/20/2019

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 it 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 contrary, we consider that all structures were constructed in accordance with the drawings and specifications and are in a un-corroded 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.

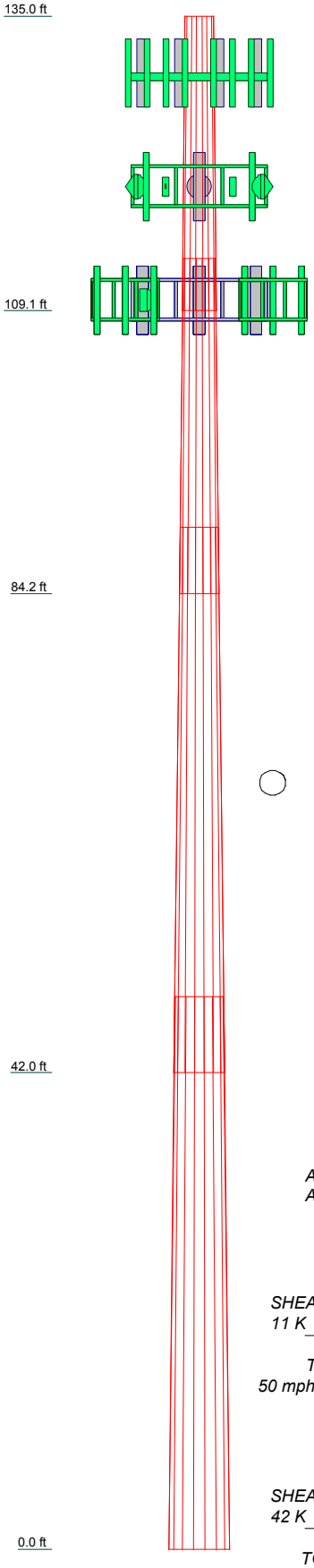
All services are performed, results obtained and recommendations made in accordance with the generally accepted engineering principles and practices. Bennett & Pless Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

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

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	25.920	18	0.2500	4.580	29.5200	36.6900		2.3
2	29.500	18	0.3125	5.833	34.9231	42.8600		3.8
3	48.000	18	0.5000	6.667	40.6656	53.8100	A572-65	12.1
4	48.660	18	0.6250		50.9844	64.0000		18.7



MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure C 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 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TOWER RATING: 43.2%

ALL REACTIONS ARE FACTORED

AXIAL 95 K
SHEAR 11 K *MOMENT 1106 kip-ft*
TORQUE 3 kip-ft
50 mph WIND - 0.7500 in ICE

AXIAL 61 K
SHEAR 42 K *MOMENT 4306 kip-ft*
TORQUE 12 kip-ft
REACTIONS - 97 mph WIND

bennett&pless
Experience Structural Expertise
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47 Perimeter Center East, Suite 500
Atlanta, GA 30346
Phone: (678) 990-8700
FAX: (678) 990-8701

Job: ***CT-5020 Bridgeport - Evergreen St.***			
Project: ***Monopole Structural Analysis***			
Client: Blue Sky Towers	Drawn by: P. Nejman	App'd:	
Code: TIA-222-G	Date: 11/19/19	Scale: NTS	
Path:		Dwg No. E-1	

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
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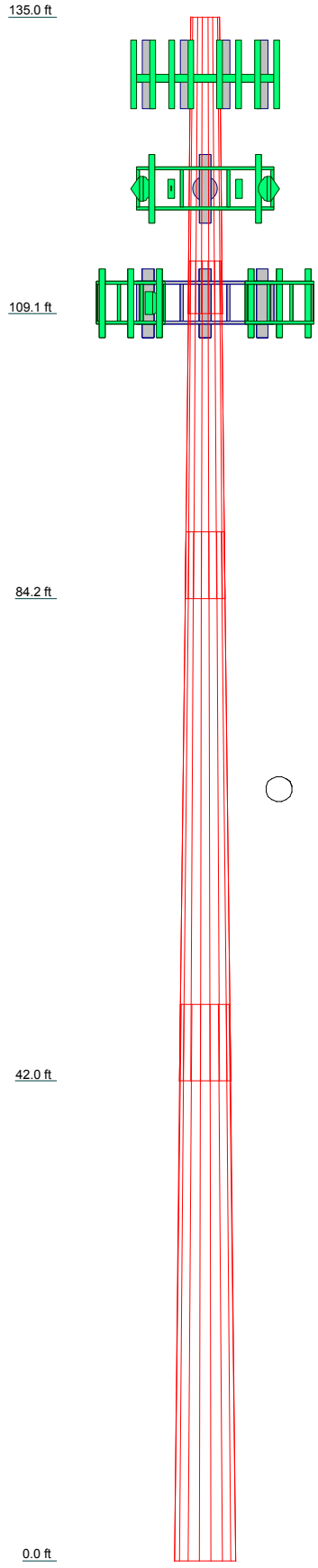
4	48.660	18	0.6250		50.9844	64.0000		18.7
								36.9



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(2) CCI HPA-65R-BUU-H8 (ATT)	130	Nokia - AAHF (Quad) (Sprint)	120
(2) CCI HPA-65R-BUU-H8 (ATT)	130	(2) 1900 MHz RRH (Sprint)	120
(2) CCI HPA-65R-BUU-H8 (ATT)	130	800 MHz RRH (Sprint)	120
CCI OPA-65R-LCUU-H8 (ATT)	130	IBC1900HG-2A (Sprint)	120
CCI OPA-65R-LCUU-H8 (ATT)	130	IBC1900-BB-1 (Sprint)	120
CCI OPA-65R-LCUU-H8 (ATT)	130	DAP Head (Sprint)	120
CCI DMP65R-BU8DA (ATT)	130	DAP Head (Sprint)	120
CCI DMP65R-BU8DA (ATT)	130	DAP Head (Sprint)	120
CCI DMP65R-BU8DA (ATT)	130	ODU (15 lbs, 1.5 CaAa) (Sprint)	120
RRUS 32 B30 (ATT)	130	ODU (15 lbs, 1.5 CaAa) (Sprint)	120
RRUS 32 B30 (ATT)	130	ODU (15 lbs, 1.5 CaAa) (Sprint)	120
RRUS 32 B30 (ATT)	130	ODU (15 lbs, 1.5 CaAa) (Sprint)	120
(2) RRUS-11 (ATT)	130	GPS-TMG-HR-26NCM (Sprint)	120
(2) RRUS-11 (ATT)	130	SitePro1 F4P-10W (4 Sector) (Sprint)	120
(2) RRUS-11 (ATT)	130	VHLP2-18 (Sprint)	120
RRUS 12 (ATT)	130	VHLP2-18 (Sprint)	120
RRUS 12 (ATT)	130	VHLP2-18 (Sprint)	120
RRUS 12 (ATT)	130	MT-485025 (Sprint)	120
Ericsson 4426 B66 (ATT)	130	RFS APXVFWW24X-C-NA20 (T-Mobile)	110
Ericsson 4426 B66 (ATT)	130		
Ericsson 4426 B66 (ATT)	130	RFS APXVFWW24X-C-NA20 (T-Mobile)	110
Ericsson RRUS 4478 B14 (ATT)	130		
Ericsson RRUS 4478 B14 (ATT)	130	RFS APXVFWW24X-C-NA20 (T-Mobile)	110
Ericsson RRUS 4478 B14 (ATT)	130		
Ericsson RRUS 32 B2 (ATT)	130	RFS APXVFWW24X-C-NA20 (T-Mobile)	110
Ericsson RRUS 32 B2 (ATT)	130		
Ericsson RRUS 32 B2 (ATT)	130	Andrew DBXNH-6565B-A2M (T-Mobile)	110
Ericsson RRUS 32 B2 (ATT)	130		
Ericsson E2 B29 (ATT)	130	Andrew DBXNH-6565B-A2M (T-Mobile)	110
Ericsson E2 B29 (ATT)	130		
Ericsson E2 B29 (ATT)	130	Andrew DBXNH-6565B-A2M (T-Mobile)	110
(2) RRUS A2 MODULE (ATT)	130		
(2) RRUS A2 MODULE (ATT)	130	Andrew DBXNH-6565B-A2M (T-Mobile)	110
(2) RRUS A2 MODULE (ATT)	130		
DC6-48-60-18-8F (ATT)	130	RRUS 11 B12 (T-Mobile)	110
DC6-48-60-18-8F (ATT)	130	RRUS 11 B12 (T-Mobile)	110
DC6-48-60-18-8F (ATT)	130	RRUS 11 B12 (T-Mobile)	110
DC6-48-60-18-8F (ATT)	130	RRUS 11 B12 (T-Mobile)	110
12' Low Profile Platform (ATT)	130	RRUS 4478 B14 (T-Mobile)	110
APXVSPP18-C-A20 w/ Mount Pipe (Sprint)	120	RRUS 4478 B14 (T-Mobile)	110
Nokia - AAHF (Quad) (Sprint)	120	RRUS 4478 B14 (T-Mobile)	110
(2) 1900 MHz RRH (Sprint)	120	RRUS 4478 B14 (T-Mobile)	110
800 MHz RRH (Sprint)	120	RRUS 11 (T-Mobile)	110
IBC1900HG-2A (Sprint)	120	RRUS 11 (T-Mobile)	110
IBC1900-BB-1 (Sprint)	120	RRUS 11 (T-Mobile)	110
APXVSPP18-C-A20 w/ Mount Pipe (Sprint)	120	RRUS 11 (T-Mobile)	110
Nokia - AAHF (Quad) (Sprint)	120	F4P-10W (T-Mobile)	110
(2) 1900 MHz RRH (Sprint)	120	Ericsson AIR32 B66AaB2a (T-Mobile)	110
800 MHz RRH (Sprint)	120	Ericsson AIR32 B66AaB2a (T-Mobile)	110
IBC1900HG-2A (Sprint)	120	Ericsson AIR32 B66AaB2a (T-Mobile)	110
IBC1900-BB-1 (Sprint)	120	Ericsson AIR32 B66AaB2a (T-Mobile)	110
APXVSPP18-C-A20 w/ Mount Pipe (Sprint)	120	SHP2-13-3WH/B (T-Mobile)	110

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure C 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 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.000 ft

bennett&pless
Experience Structural Expertise

Bennett & Pless, Inc.
47 Perimeter Center East, Suite 500
Atlanta, GA 30346
Phone: (678) 990-8700
FAX: (678) 990-8701

Job: ***CT-5020 Bridgeport - Evergreen St.***			
Project: ***Monopole Structural Analysis***			
Client: Blue Sky Towers	Drawn by: P. Nejman		App'd:
Code: TIA-222-G	Date: 11/19/19		Scale: NTS
Path:			Dwg No. E-1

Tower Input Data

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

Tower is located in Fairfield County, Connecticut.
Basic wind speed of 97 mph.
Structure Class II.
Exposure Category C.
Topographic Category 1.
Crest Height 0.000 ft.
Nominal ice thickness of 0.7500 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 pole design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Horizontals	Assume Legs Pinned	√ Calculate Redundant Bracing Forces
Consider Moments - Diagonals	√ Assume Rigid Index Plate	Ignore Redundant Members in FEA
Use Moment Magnification	√ Use Clear Spans For Wind Area	SR Leg Bolts Resist Compression
√ Use Code Stress Ratios	√ Use Clear Spans For KL/r	√ All Leg Panels Have Same Allowable
√ Use Code Safety Factors - Guys	√ Retension Guys To Initial Tension	Offset Girt At Foundation
Escalate Ice	Bypass Mast Stability Checks	√ Consider Feed Line Torque
Always Use Max Kz	√ Use Azimuth Dish Coefficients	Include Angle Block Shear Check
Use Special Wind Profile	√ Project Wind Area of Appurt.	Use TIA-222-G Bracing Resist. Exemption
√ Include Bolts In Member Capacity	√ Autocalc Torque Arm Areas	Use TIA-222-G Tension Splice Exemption
√ Leg Bolts Are At Top Of Section	Add IBC .6D+W Combination	Poles
√ Secondary Horizontal Braces Leg	Sort Capacity Reports By Component	Include Shear-Torsion Interaction
Use Diamond Inner Bracing (4 Sided)	√ Triangulate Diamond Inner Bracing	Always Use Sub-Critical Flow
SR Members Have Cut Ends	Treat Feed Line Bundles As Cylinder	Use Top Mounted Sockets
SR Members Are Concentric	Ignore KL/ry For 60 Deg. Angle Legs	Pole Without Linear Attachments
		Pole With Shroud Or No Appurtenances
		Outside and Inside Corner Radii Are Known

Tapered Pole Section Geometry

Section	*Elevation* *ft*	*Section Length* *ft*	*Splice Length* *ft*	*Number of Sides*	*Top Diameter* *in*	*Bottom Diameter* *in*	*Wall Thickness* *in*	*Bend Radius* *in*	*Pole Grade*
L1	135.000-109.08	25.920	4.580	18	29.5200	36.6900	0.2500	1.0000	A572-65

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
	0								(65 ksi)
L2	109.080-84.160	29.500	5.833	18	34.9231	42.8600	0.3125	1.2500	A572-65 (65 ksi)
L3	84.160-41.993	48.000	6.667	18	40.6656	53.8100	0.5000	2.0000	A572-65 (65 ksi)
L4	41.993-0.000	48.660		18	50.9844	64.0000	0.6250	2.5000	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	29.9368	23.2257	2513.9263	10.3909	14.9962	167.6380	5031.1606	11.6151	4.7555	19.022
	37.2174	28.9151	4850.8683	12.9362	18.6385	260.2604	9708.1196	14.4603	6.0174	24.07
L2	36.6649	34.3294	5195.4238	12.2868	17.7409	292.8497	10397.6838	17.1679	5.5965	17.909
	43.4730	42.2018	9651.9827	15.1044	21.7729	443.3030	19316.6657	21.1049	6.9934	22.379
L3	42.8378	63.7427	12991.9966	14.2588	20.6581	628.9055	26001.0883	31.8774	6.2771	12.554
	54.5630	84.6030	30376.6883	18.9250	27.3355	1111.2550	60793.3470	42.3095	8.5906	17.181
L4	53.4852	99.9004	32008.5034	17.8776	25.9001	1235.8466	64059.1244	49.9597	7.8732	12.597
	64.8909	125.7202	63793.7757	22.4981	32.5120	1962.1609	127671.4929	62.8720	10.1640	16.262

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 135.000-109.080				1	1	1			
L2 109.080-84.160				1	1	1			
L3 84.160-41.993				1	1	1			
L4 41.993-0.000				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
***											

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
2" Flex Conduit (AT&T)	C	No	No	Inside Pole	130.000 - 4.000	4	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
RET Cable (AT&T)	C	No	No	Inside Pole	130.000 - 4.000	3	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
***									
1 1/4" Hybriflex (Sprint)	C	No	No	Inside Pole	120.000 - 4.000	4	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
0.92" Hybrid Trunk (Sprint)	C	No	No	Inside Pole	120.000 - 4.000	3	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
5/16" Coax (Sprint)	C	No	No	Inside Pole	120.000 - 4.000	6	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
1/2" ethernet (Sprint)	C	No	No	Inside Pole	120.000 - 4.000	4	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
1/2" Coax (Sprint)	C	No	No	Inside Pole	120.000 - 4.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
***									
1 5/8 Hybrid Flex (1.98" 1.3lbs) (T-Mobile)	C	No	No	Inside Pole	110.000 - 4.000	4	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
1/2" Coax (T-Mobile)	C	No	No	Inside Pole	110.000 - 4.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
***									

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	135.000-109.080	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.099
L2	109.080-84.160	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.327
L3	84.160-41.993	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.553
L4	41.993-0.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.498

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight K
L1	135.000-109.080	A	1.709	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.099
L2	109.080-84.160	A	1.670	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.327
L3	84.160-41.993	A	1.599	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.553
L4	41.993-0.000	A	1.435	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.498

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	135.000-109.080	0.0000	0.0000	0.0000	0.0000
L2	109.080-84.160	0.0000	0.0000	0.0000	0.0000
L3	84.160-41.993	0.0000	0.0000	0.0000	0.0000
L4	41.993-0.000	0.0000	0.0000	0.0000	0.0000

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight K
(2) CCI HPA-65R-BUU-H8 (ATT)	A	From Leg	3.000 0.000 0.000	0.0000	130.000	No Ice 1/2" Ice 1" Ice	12.976 13.558 14.147	7.516 8.087 8.666	0.068 0.142 0.223
(2) CCI HPA-65R-BUU-H8 (ATT)	B	From Leg	3.000 0.000 0.000	0.0000	130.000	No Ice 1/2" Ice 1" Ice	12.976 13.558 14.147	7.516 8.087 8.666	0.068 0.142 0.223
(2) CCI HPA-65R-BUU-H8 (ATT)	C	From Leg	3.000 0.000 0.000	0.0000	130.000	No Ice 1/2" Ice 1" Ice	12.976 13.558 14.147	7.516 8.087 8.666	0.068 0.142 0.223

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
CCI OPA-65R-LCUU-H8	A	From Leg	3.000	0.0000	130.000	No Ice	12.746	7.246	0.073
(ATT)			0.000			1/2" Ice	13.328	7.817	0.144
			0.000			1" Ice	13.916	8.396	0.223
CCI OPA-65R-LCUU-H8	B	From Leg	3.000	0.0000	130.000	No Ice	12.746	7.246	0.073
(ATT)			0.000			1/2" Ice	13.328	7.817	0.144
			0.000			1" Ice	13.916	8.396	0.223
CCI OPA-65R-LCUU-H8	C	From Leg	3.000	0.0000	130.000	No Ice	12.746	7.246	0.073
(ATT)			0.000			1/2" Ice	13.328	7.817	0.144
			0.000			1" Ice	13.916	8.396	0.223
CCI DMP65R-BU8DA	A	From Leg	3.000	0.0000	130.000	No Ice	17.871	8.122	0.096
(ATT)			0.000			1/2" Ice	18.502	8.716	0.194
			0.000			1" Ice	19.141	9.317	0.299
CCI DMP65R-BU8DA	B	From Leg	3.000	0.0000	130.000	No Ice	17.871	8.122	0.096
(ATT)			0.000			1/2" Ice	18.502	8.716	0.194
			0.000			1" Ice	19.141	9.317	0.299
CCI DMP65R-BU8DA	C	From Leg	3.000	0.0000	130.000	No Ice	17.871	8.122	0.096
(ATT)			0.000			1/2" Ice	18.502	8.716	0.194
			0.000			1" Ice	19.141	9.317	0.299
RRUS 32 B30	A	From Leg	3.000	0.0000	130.000	No Ice	2.692	1.573	0.060
(ATT)			0.000			1/2" Ice	2.912	1.756	0.080
			0.000			1" Ice	3.138	1.945	0.104
RRUS 32 B30	B	From Leg	3.000	0.0000	130.000	No Ice	2.692	1.573	0.060
(ATT)			0.000			1/2" Ice	2.912	1.756	0.080
			0.000			1" Ice	3.138	1.945	0.104
RRUS 32 B30	C	From Leg	3.000	0.0000	130.000	No Ice	2.692	1.573	0.060
(ATT)			0.000			1/2" Ice	2.912	1.756	0.080
			0.000			1" Ice	3.138	1.945	0.104
(2) RRUS-11	A	From Leg	3.000	0.0000	130.000	No Ice	2.940	1.250	0.055
(ATT)			0.000			1/2" Ice	3.170	1.410	0.074
			0.000			1" Ice	3.400	1.570	0.094
(2) RRUS-11	B	From Leg	3.000	0.0000	130.000	No Ice	2.940	1.250	0.055
(ATT)			0.000			1/2" Ice	3.170	1.410	0.074
			0.000			1" Ice	3.400	1.570	0.094
(2) RRUS-11	C	From Leg	3.000	0.0000	130.000	No Ice	2.940	1.250	0.055
(ATT)			0.000			1/2" Ice	3.170	1.410	0.074
			0.000			1" Ice	3.400	1.570	0.094
RRUS 12	A	From Leg	3.000	0.0000	130.000	No Ice	3.145	1.285	0.058
(ATT)			0.000			1/2" Ice	3.365	1.438	0.081
			0.000			1" Ice	3.592	1.600	0.108
RRUS 12	B	From Leg	3.000	0.0000	130.000	No Ice	3.145	1.285	0.058
(ATT)			0.000			1/2" Ice	3.365	1.438	0.081
			0.000			1" Ice	3.592	1.600	0.108
RRUS 12	C	From Leg	3.000	0.0000	130.000	No Ice	3.145	1.285	0.058
(ATT)			0.000			1/2" Ice	3.365	1.438	0.081
			0.000			1" Ice	3.592	1.600	0.108
Ericsson 4426 B66	A	From Leg	3.000	0.0000	130.000	No Ice	1.650	0.727	0.048
(ATT)			0.000			1/2" Ice	1.810	0.844	0.061
			0.000			1" Ice	1.978	0.971	0.076
Ericsson 4426 B66	B	From Leg	3.000	0.0000	130.000	No Ice	1.650	0.727	0.048
(ATT)			0.000			1/2" Ice	1.810	0.844	0.061
			0.000			1" Ice	1.978	0.971	0.076
Ericsson 4426 B66	C	From Leg	3.000	0.0000	130.000	No Ice	1.650	0.727	0.048
(ATT)			0.000			1/2" Ice	1.810	0.844	0.061
			0.000			1" Ice	1.978	0.971	0.076
Ericsson RRUS 4478 B14	A	From Leg	3.000	0.0000	130.000	No Ice	2.021	1.246	0.059
(ATT)			0.000			1/2" Ice	2.200	1.396	0.077
			0.000			1" Ice	2.386	1.554	0.097

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Ericsson RRUS 4478 B14	B	From Leg	3.000	0.0000	130.000	No Ice	2.021	1.246	0.059
(ATT)			0.000			1/2" Ice	2.200	1.396	0.077
			0.000			1" Ice	2.386	1.554	0.097
Ericsson RRUS 4478 B14	C	From Leg	3.000	0.0000	130.000	No Ice	2.021	1.246	0.059
(ATT)			0.000			1/2" Ice	2.200	1.396	0.077
			0.000			1" Ice	2.386	1.554	0.097
Ericsson RRUS 32 B2	A	From Leg	3.000	0.0000	130.000	No Ice	2.743	1.668	0.053
(ATT)			0.000			1/2" Ice	2.965	1.855	0.074
			0.000			1" Ice	3.194	2.049	0.098
Ericsson RRUS 32 B2	B	From Leg	3.000	0.0000	130.000	No Ice	2.743	1.668	0.053
(ATT)			0.000			1/2" Ice	2.965	1.855	0.074
			0.000			1" Ice	3.194	2.049	0.098
Ericsson RRUS 32 B2	C	From Leg	3.000	0.0000	130.000	No Ice	2.743	1.668	0.053
(ATT)			0.000			1/2" Ice	2.965	1.855	0.074
			0.000			1" Ice	3.194	2.049	0.098
Ericsson E2 B29	A	From Leg	3.000	0.0000	130.000	No Ice	3.143	1.282	0.053
(ATT)			0.000			1/2" Ice	3.363	1.434	0.076
			0.000			1" Ice	3.590	1.595	0.102
Ericsson E2 B29	B	From Leg	3.000	0.0000	130.000	No Ice	3.143	1.282	0.053
(ATT)			0.000			1/2" Ice	3.363	1.434	0.076
			0.000			1" Ice	3.590	1.595	0.102
Ericsson E2 B29	C	From Leg	3.000	0.0000	130.000	No Ice	3.143	1.282	0.053
(ATT)			0.000			1/2" Ice	3.363	1.434	0.076
			0.000			1" Ice	3.590	1.595	0.102
(2) RRUS A2 MODULE	A	From Leg	3.000	0.0000	130.000	No Ice	1.600	0.380	0.021
(ATT)			0.000			1/2" Ice	1.758	0.470	0.031
			0.000			1" Ice	1.924	0.568	0.044
(2) RRUS A2 MODULE	B	From Leg	3.000	0.0000	130.000	No Ice	1.600	0.380	0.021
(ATT)			0.000			1/2" Ice	1.758	0.470	0.031
			0.000			1" Ice	1.924	0.568	0.044
(2) RRUS A2 MODULE	C	From Leg	3.000	0.0000	130.000	No Ice	1.600	0.380	0.021
(ATT)			0.000			1/2" Ice	1.758	0.470	0.031
			0.000			1" Ice	1.924	0.568	0.044
DC6-48-60-18-8F	A	From Leg	3.000	0.0000	130.000	No Ice	2.045	2.045	0.020
(ATT)			0.000			1/2" Ice	3.111	3.111	0.061
			0.000			1" Ice	3.369	3.369	0.106
DC6-48-60-18-8F	B	From Leg	3.000	0.0000	130.000	No Ice	2.045	2.045	0.020
(ATT)			0.000			1/2" Ice	3.111	3.111	0.061
			0.000			1" Ice	3.369	3.369	0.106
DC6-48-60-18-8F	C	From Leg	3.000	0.0000	130.000	No Ice	2.045	2.045	0.020
(ATT)			0.000			1/2" Ice	3.111	3.111	0.061
			0.000			1" Ice	3.369	3.369	0.106
DC6-48-60-18-8F	C	From Leg	3.000	0.0000	130.000	No Ice	2.045	2.045	0.020
(ATT)			0.000			1/2" Ice	3.111	3.111	0.061
			0.000			1" Ice	3.369	3.369	0.106
12' Low Profile Platform	C	None		0.0000	130.000	No Ice	23.100	23.100	2.100
(ATT)						1/2" Ice	26.800	26.800	2.500
						1" Ice	30.500	30.500	2.900
***									
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.000	0.0000	120.000	No Ice	8.262	6.946	0.083
(Sprint)			0.000			1/2" Ice	8.822	8.127	0.151
			0.000			1" Ice	9.346	9.021	0.227
Nokia - AAHF (Quad)	A	From Leg	4.000	0.0000	120.000	No Ice	4.203	2.061	0.103
(Sprint)			0.000			1/2" Ice	4.458	2.252	0.135
			0.000			1" Ice	4.721	2.454	0.171
(2) 1900 MHz RRH	A	From Leg	2.000	0.0000	120.000	No Ice	4.045	1.533	0.070
(Sprint)			0.000			1/2" Ice	4.298	1.712	0.097

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1" Ice	4.557	1.899	0.128
800 MHz RRH (Sprint)	A	From Leg	2.000 0.000	0.0000	120.000	No Ice 1/2" Ice	2.134 2.320	1.773 1.946	0.053 0.074
			0.000			1" Ice	2.512	2.127	0.098
IBC1900HG-2A (Sprint)	A	From Leg	2.000 0.000	0.0000	120.000	No Ice 1/2" Ice	1.090 1.224	0.531 0.635	0.022 0.030
			0.000			1" Ice	1.365	0.745	0.041
IBC1900-BB-1 (Sprint)	A	From Leg	2.000 0.000	0.0000	120.000	No Ice 1/2" Ice	1.230 1.379	0.512 0.603	0.040 0.052
			0.000			1" Ice	1.536	0.702	0.067
APXVSPP18-C-A20 w/ Mount Pipe (Sprint)	B	From Leg	4.000 0.000 0.000	0.0000	120.000	No Ice 1/2" Ice 1" Ice	8.262 8.822 9.346	6.946 8.127 9.021	0.083 0.151 0.227
Nokia - AAHF (Quad) (Sprint)	B	From Leg	4.000 0.000 0.000	0.0000	120.000	No Ice 1/2" Ice 1" Ice	4.203 4.458 4.721	2.061 2.252 2.454	0.103 0.135 0.171
(2) 1900 MHz RRH (Sprint)	B	From Leg	2.000 0.000 0.000	0.0000	120.000	No Ice 1/2" Ice 1" Ice	4.045 4.298 4.557	1.533 1.712 1.899	0.070 0.097 0.128
800 MHz RRH (Sprint)	B	From Leg	2.000 0.000 0.000	0.0000	120.000	No Ice 1/2" Ice 1" Ice	2.134 2.320 2.512	1.773 1.946 2.127	0.053 0.074 0.098
IBC1900HG-2A (Sprint)	B	From Leg	2.000 0.000 0.000	0.0000	120.000	No Ice 1/2" Ice 1" Ice	1.090 1.224 1.365	0.531 0.635 0.745	0.022 0.030 0.041
IBC1900-BB-1 (Sprint)	B	From Leg	2.000 0.000 0.000	0.0000	120.000	No Ice 1/2" Ice 1" Ice	1.230 1.379 1.536	0.512 0.603 0.702	0.040 0.052 0.067
APXVSPP18-C-A20 w/ Mount Pipe (Sprint)	C	From Leg	4.000 0.000 0.000	0.0000	120.000	No Ice 1/2" Ice 1" Ice	8.262 8.822 9.346	6.946 8.127 9.021	0.083 0.151 0.227
Nokia - AAHF (Quad) (Sprint)	C	From Leg	4.000 0.000 0.000	0.0000	120.000	No Ice 1/2" Ice 1" Ice	4.203 4.458 4.721	2.061 2.252 2.454	0.103 0.135 0.171
(2) 1900 MHz RRH (Sprint)	C	From Leg	2.000 0.000 0.000	0.0000	120.000	No Ice 1/2" Ice 1" Ice	4.045 4.298 4.557	1.533 1.712 1.899	0.070 0.097 0.128
800 MHz RRH (Sprint)	C	From Leg	2.000 0.000 0.000	0.0000	120.000	No Ice 1/2" Ice 1" Ice	2.134 2.320 2.512	1.773 1.946 2.127	0.053 0.074 0.098
IBC1900HG-2A (Sprint)	C	From Leg	2.000 0.000 0.000	0.0000	120.000	No Ice 1/2" Ice 1" Ice	1.090 1.224 1.365	0.531 0.635 0.745	0.022 0.030 0.041
IBC1900-BB-1 (Sprint)	C	From Leg	2.000 0.000 0.000	0.0000	120.000	No Ice 1/2" Ice 1" Ice	1.230 1.379 1.536	0.512 0.603 0.702	0.040 0.052 0.067
DAP Head (Sprint)	A	From Leg	2.000 0.000 0.000	0.0000	120.000	No Ice 1/2" Ice 1" Ice	1.564 1.722 1.888	0.726 0.844 0.969	0.033 0.045 0.059
DAP Head (Sprint)	B	From Leg	2.000 0.000 0.000	0.0000	120.000	No Ice 1/2" Ice 1" Ice	1.564 1.722 1.888	0.726 0.844 0.969	0.033 0.045 0.059
DAP Head (Sprint)	C	From Leg	2.000 0.000 0.000	0.0000	120.000	No Ice 1/2" Ice 1" Ice	1.564 1.722 1.888	0.726 0.844 0.969	0.033 0.045 0.059
ODU (15 lbs, 1.5 CaAa) (Sprint)	A	From Leg	2.000 0.000	0.0000	120.000	No Ice 1/2" Ice	1.500 2.000	1.500 2.000	0.015 0.020

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1" Ice	2.500	2.500	0.024
ODU (15 lbs, 1.5 CaAa)	B	From Leg	2.000	0.0000	120.000	No Ice	1.500	1.500	0.015
(Sprint)			0.000			1/2" Ice	2.000	2.000	0.020
			0.000			1" Ice	2.500	2.500	0.024
ODU (15 lbs, 1.5 CaAa)	C	From Leg	2.000	0.0000	120.000	No Ice	1.500	1.500	0.015
(Sprint)			0.000			1/2" Ice	2.000	2.000	0.020
			0.000			1" Ice	2.500	2.500	0.024
ODU (15 lbs, 1.5 CaAa)	C	From Leg	2.000	0.0000	120.000	No Ice	1.500	1.500	0.015
(Sprint)			0.000			1/2" Ice	2.000	2.000	0.020
			0.000			1" Ice	2.500	2.500	0.024
GPS-TMG-HR-26NCM	C	From Leg	2.000	0.0000	120.000	No Ice	0.073	0.073	0.001
(Sprint)			0.000			1/2" Ice	0.117	0.117	0.002
			0.000			1" Ice	0.170	0.170	0.004
SitePro1 F4P-10W (4 Sector)	C	None		0.0000	120.000	No Ice	40.740	40.740	2.396
(Sprint)						1/2" Ice	52.240	52.240	3.087
						1" Ice	64.600	64.600	4.041
***									
Ericsson AIR32 B66AaB2a	A	From Leg	4.000	0.0000	110.000	No Ice	6.510	4.712	0.132
(T-Mobile)			0.000			1/2" Ice	6.887	5.068	0.178
			0.000			1" Ice	7.271	5.431	0.229
Ericsson AIR32 B66AaB2a	B	From Leg	4.000	0.0000	110.000	No Ice	6.510	4.712	0.132
(T-Mobile)			0.000			1/2" Ice	6.887	5.068	0.178
			0.000			1" Ice	7.271	5.431	0.229
Ericsson AIR32 B66AaB2a	C	From Leg	4.000	0.0000	110.000	No Ice	6.510	4.712	0.132
(T-Mobile)			0.000			1/2" Ice	6.887	5.068	0.178
			0.000			1" Ice	7.271	5.431	0.229
Ericsson AIR32 B66AaB2a	C	From Leg	4.000	90.0000	110.000	No Ice	6.510	4.712	0.132
(T-Mobile)			0.000			1/2" Ice	6.887	5.068	0.178
			0.000			1" Ice	7.271	5.431	0.229
RFS	A	From Leg	4.000	0.0000	110.000	No Ice	11.311	8.278	0.073
APXVFWW24X-C-NA20			0.000			1/2" Ice	11.927	8.872	0.141
(T-Mobile)			0.000			1" Ice	12.550	9.474	0.217
RFS	B	From Leg	4.000	0.0000	110.000	No Ice	11.311	8.278	0.073
APXVFWW24X-C-NA20			0.000			1/2" Ice	11.927	8.872	0.141
(T-Mobile)			0.000			1" Ice	12.550	9.474	0.217
RFS	C	From Leg	4.000	0.0000	110.000	No Ice	11.311	8.278	0.073
APXVFWW24X-C-NA20			0.000			1/2" Ice	11.927	8.872	0.141
(T-Mobile)			0.000			1" Ice	12.550	9.474	0.217
RFS	C	From Leg	4.000	90.0000	110.000	No Ice	11.311	8.278	0.073
APXVFWW24X-C-NA20			0.000			1/2" Ice	11.927	8.872	0.141
(T-Mobile)			0.000			1" Ice	12.550	9.474	0.217
Andrew	A	From Leg	4.000	0.0000	110.000	No Ice	12.613	9.619	0.074
DBXNH-6565B-A2M			0.000			1/2" Ice	13.162	10.171	0.160
(T-Mobile)			0.000			1" Ice	13.718	10.709	0.253
Andrew	B	From Leg	4.000	0.0000	110.000	No Ice	12.613	9.619	0.074
DBXNH-6565B-A2M			0.000			1/2" Ice	13.162	10.171	0.160
(T-Mobile)			0.000			1" Ice	13.718	10.709	0.253
Andrew	C	From Leg	4.000	0.0000	110.000	No Ice	12.613	9.619	0.074
DBXNH-6565B-A2M			0.000			1/2" Ice	13.162	10.171	0.160
(T-Mobile)			0.000			1" Ice	13.718	10.709	0.253
Andrew	C	From Leg	4.000	90.0000	110.000	No Ice	12.613	9.619	0.074
DBXNH-6565B-A2M			0.000			1/2" Ice	13.162	10.171	0.160
(T-Mobile)			0.000			1" Ice	13.718	10.709	0.253
RRUS 11 B12	A	From Leg	3.000	0.0000	110.000	No Ice	2.833	1.182	0.051
(T-Mobile)			0.000			1/2" Ice	3.043	1.330	0.072
			0.000			1" Ice	3.259	1.485	0.095
RRUS 11 B12	B	From Leg	3.000	0.0000	110.000	No Ice	2.833	1.182	0.051

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(T-Mobile)			0.000			1/2" Ice	3.043	1.330	0.072
			0.000			1" Ice	3.259	1.485	0.095
RRUS 11 B12	C	From Leg	3.000	0.0000	110.000	No Ice	2.833	1.182	0.051
(T-Mobile)			0.000			1/2" Ice	3.043	1.330	0.072
			0.000			1" Ice	3.259	1.485	0.095
RRUS 11 B12	C	From Leg	3.000	90.0000	110.000	No Ice	2.833	1.182	0.051
(T-Mobile)			0.000			1/2" Ice	3.043	1.330	0.072
			0.000			1" Ice	3.259	1.485	0.095
RRUS 4478 B14	A	From Leg	3.000	0.0000	110.000	No Ice	2.358	1.454	0.059
(T-Mobile)			0.000			1/2" Ice	2.567	1.629	0.077
			0.000			1" Ice	2.784	1.813	0.097
RRUS 4478 B14	B	From Leg	3.000	0.0000	110.000	No Ice	2.358	1.454	0.059
(T-Mobile)			0.000			1/2" Ice	2.567	1.629	0.077
			0.000			1" Ice	2.784	1.813	0.097
RRUS 4478 B14	C	From Leg	3.000	0.0000	110.000	No Ice	2.358	1.454	0.059
(T-Mobile)			0.000			1/2" Ice	2.567	1.629	0.077
			0.000			1" Ice	2.784	1.813	0.097
RRUS 4478 B14	C	From Leg	3.000	90.0000	110.000	No Ice	2.358	1.454	0.059
(T-Mobile)			0.000			1/2" Ice	2.567	1.629	0.077
			0.000			1" Ice	2.784	1.813	0.097
RRUS 11	A	From Leg	3.000	0.0000	110.000	No Ice	2.784	1.187	0.051
(T-Mobile)			0.000			1/2" Ice	2.992	1.334	0.071
			0.000			1" Ice	3.207	1.490	0.095
RRUS 11	B	From Leg	3.000	0.0000	110.000	No Ice	2.784	1.187	0.051
(T-Mobile)			0.000			1/2" Ice	2.992	1.334	0.071
			0.000			1" Ice	3.207	1.490	0.095
RRUS 11	C	From Leg	3.000	0.0000	110.000	No Ice	2.784	1.187	0.051
(T-Mobile)			0.000			1/2" Ice	2.992	1.334	0.071
			0.000			1" Ice	3.207	1.490	0.095
RRUS 11	C	From Leg	3.000	90.0000	110.000	No Ice	2.784	1.187	0.051
(T-Mobile)			0.000			1/2" Ice	2.992	1.334	0.071
			0.000			1" Ice	3.207	1.490	0.095
F4P-10W	C	None		0.0000	110.000	No Ice	40.740	45.260	2.396
(T-Mobile)						1/2" Ice	52.240	56.430	3.087
						1" Ice	63.740	67.600	3.778

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
VHLP2-18	A	Paraboloid	From	4.000	0.0000		120.000	2.175	No Ice	3.720	0.030
(Sprint)		w/Radome	Leg	0.000					1/2" Ice	4.010	0.050
				0.000					1" Ice	4.300	0.070
VHLP2-18	B	Paraboloid	From	4.000	0.0000		120.000	2.175	No Ice	3.720	0.030
(Sprint)		w/Radome	Leg	0.000					1/2" Ice	4.010	0.050
				0.000					1" Ice	4.300	0.070
VHLP2-18	C	Paraboloid	From	4.000	0.0000		120.000	2.175	No Ice	3.720	0.030
(Sprint)		w/Radome	Leg	0.000					1/2" Ice	4.010	0.050

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft²	Weight K
				0.000					1" Ice	4.300	0.070
MT-485025	C	Grid	From	4.000	0.0000		120.000	1.167	No Ice	1.069	0.006
(Sprint)			Leg	0.000					1/2" Ice	1.227	0.012
				0.000					1" Ice	1.385	0.019
SHP2-13-3WH/B	C	Paraboloid	From	3.000	0.0000		110.000	2.000	No Ice	6.250	0.024
(T-Mobile)		w/Shroud (HP)	Leg	0.000					1/2" Ice	6.500	0.030
				0.000					1" Ice	6.800	0.036

Load Combinations

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

Comb. No.	Description
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
L1	135 - 109.08	Pole	Max Tension	36	0.000	-0.001	0.000
			Max. Compression	26	-27.256	1.016	-0.587
			Max. Mx	20	-11.740	252.274	-0.308
			Max. My	2	-11.737	0.240	252.107
			Max. Vy	20	-19.793	252.274	-0.308
			Max. Vx	2	-19.809	0.240	252.107
			Max. Torque	24			10.622
L2	109.08 - 84.16	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-45.492	8.364	-4.829
			Max. Mx	20	-21.023	941.991	1.010
			Max. My	14	-21.012	-0.206	-944.409
			Max. Vy	8	31.843	-938.292	-5.046
			Max. Vx	2	-32.051	3.722	943.758
			Max. Torque	25			12.206
L3	84.16 - 41.9933	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-63.949	8.459	-4.884
			Max. Mx	20	-35.355	2354.936	6.574
			Max. My	2	-35.347	6.397	2368.645
			Max. Vy	8	36.678	-2354.585	-11.994
			Max. Vx	2	-36.885	6.397	2368.645
			Max. Torque	25			12.200
L4	41.9933 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-95.138	8.459	-4.884
			Max. Mx	8	-61.318	-4272.918	-20.009
			Max. My	2	-61.318	9.358	4297.008
			Max. Vy	8	41.942	-4272.918	-20.009
			Max. Vx	2	-42.147	9.358	4297.008
			Max. Torque	25			12.192

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	95.138	0.000	-0.000
	Max. H_x	20	61.334	41.839	0.135
	Max. H_z	2	61.334	0.060	42.124
	Max. M_x	2	4297.008	0.060	42.124
	Max. M_z	8	4272.918	-41.920	-0.163
	Max. Torsion	25	12.189	21.109	36.536
	Min. Vert	7	46.000	-36.158	20.876
	Min. H_x	8	61.334	-41.920	-0.163

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Min. H_z	14	61.334	-0.136	-42.038
	Min. M_x	14	-4289.879	-0.136	-42.038
	Min. M_z	20	-4269.316	41.839	0.135
	Min. Torsion	13	-12.189	-21.087	-36.549

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	51.111	0.000	0.000	1.273	2.205	0.000
1.2 Dead+1.6 Wind 0 deg - No Ice	61.334	-0.060	-42.124	-4297.008	9.357	-10.441
0.9 Dead+1.6 Wind 0 deg - No Ice	46.000	-0.060	-42.124	-4279.473	8.637	-10.441
1.2 Dead+1.6 Wind 30 deg - No Ice	61.334	20.819	-36.385	-3710.460	-2119.131	-6.258
0.9 Dead+1.6 Wind 30 deg - No Ice	46.000	20.819	-36.385	-3695.372	-2110.971	-6.258
1.2 Dead+1.6 Wind 60 deg - No Ice	61.334	36.158	-20.876	-2126.619	-3683.412	-0.000
0.9 Dead+1.6 Wind 60 deg - No Ice	46.000	36.158	-20.876	-2118.140	-3668.725	-0.000
1.2 Dead+1.6 Wind 90 deg - No Ice	61.334	41.920	0.163	20.009	-4272.918	6.258
0.9 Dead+1.6 Wind 90 deg - No Ice	46.000	41.920	0.163	19.532	-4255.771	6.258
1.2 Dead+1.6 Wind 120 deg - No Ice	61.334	36.450	21.114	2156.608	-3716.640	10.441
0.9 Dead+1.6 Wind 120 deg - No Ice	46.000	36.450	21.114	2147.216	-3701.814	10.441
1.2 Dead+1.6 Wind 150 deg - No Ice	61.334	21.087	36.549	3731.540	-2149.412	12.188
0.9 Dead+1.6 Wind 150 deg - No Ice	46.000	21.087	36.549	3715.576	-2141.125	12.189
1.2 Dead+1.6 Wind 180 deg - No Ice	61.334	0.136	42.038	4289.879	-12.388	10.613
0.9 Dead+1.6 Wind 180 deg - No Ice	46.000	0.136	42.038	4271.584	-13.019	10.613
1.2 Dead+1.6 Wind 210 deg - No Ice	61.334	-20.803	36.301	3703.922	2123.252	6.233
0.9 Dead+1.6 Wind 210 deg - No Ice	46.000	-20.803	36.301	3688.069	2113.706	6.233
1.2 Dead+1.6 Wind 240 deg - No Ice	61.334	-36.150	20.871	2129.656	3688.673	-0.000
0.9 Dead+1.6 Wind 240 deg - No Ice	46.000	-36.150	20.871	2120.372	3672.591	-0.000
1.2 Dead+1.6 Wind 270 deg - No Ice	61.334	-41.839	-0.135	-13.171	4269.316	-6.233
0.9 Dead+1.6 Wind 270 deg - No Ice	46.000	-41.839	-0.135	-13.511	4250.814	-6.233
1.2 Dead+1.6 Wind 300 deg - No Ice	61.334	-36.338	-21.136	-2155.668	3708.951	-10.612
0.9 Dead+1.6 Wind 300 deg - No Ice	46.000	-36.338	-21.136	-2147.067	3692.791	-10.613
1.2 Dead+1.6 Wind 330 deg - No Ice	61.334	-21.109	-36.536	-3727.216	2156.902	-12.188

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
0.9 Dead+1.6 Wind 330 deg - No Ice	46.000	-21.109	-36.536	-3712.057	2147.221	-12.189
1.2 Dead+1.0 Ice+1.0 Temp	95.138	-0.000	0.000	4.884	8.459	0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	95.138	0.010	-11.179	-1098.732	7.251	-2.150
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	95.138	5.559	-9.662	-948.598	-539.834	-1.272
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	95.138	9.630	-5.560	-543.437	-941.260	-0.000
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	95.138	11.147	0.017	6.789	-1091.424	1.272
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	95.138	9.687	5.581	555.647	-947.906	2.150
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	95.138	5.590	9.685	960.986	-543.197	2.517
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	95.138	0.020	11.156	1105.792	6.317	2.203
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	95.138	-5.544	9.645	956.594	555.338	1.304
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	95.138	-9.623	5.556	552.982	957.794	-0.000
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	95.138	-11.125	-0.021	2.640	1106.101	-1.304
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	95.138	-9.651	-5.596	-547.426	960.805	-2.203
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	95.138	-5.592	-9.683	-950.915	560.640	-2.517
Dead+Wind 0 deg - Service	51.111	-0.013	-9.013	-916.105	3.681	-2.239
Dead+Wind 30 deg - Service	51.111	4.454	-7.785	-790.921	-450.585	-1.342
Dead+Wind 60 deg - Service	51.111	7.736	-4.467	-452.894	-784.435	-0.000
Dead+Wind 90 deg - Service	51.111	8.969	0.035	5.242	-910.250	1.342
Dead+Wind 120 deg - Service	51.111	7.799	4.517	461.240	-791.530	2.239
Dead+Wind 150 deg - Service	51.111	4.512	7.820	797.365	-457.048	2.613
Dead+Wind 180 deg - Service	51.111	0.029	8.994	916.524	-0.960	2.276
Dead+Wind 210 deg - Service	51.111	-4.451	7.767	791.465	454.829	1.337
Dead+Wind 240 deg - Service	51.111	-7.735	4.466	455.484	788.921	-0.000
Dead+Wind 270 deg - Service	51.111	-8.952	-0.029	-1.839	912.843	-1.337
Dead+Wind 300 deg - Service	51.111	-7.775	-4.522	-459.093	793.253	-2.276
Dead+Wind 330 deg - Service	51.111	-4.516	-7.817	-794.498	462.015	-2.613

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.000	-51.111	0.000	0.000	51.111	0.000	0.000%
2	-0.060	-61.334	-42.124	0.060	61.334	42.124	0.000%
3	-0.060	-46.000	-42.124	0.060	46.000	42.124	0.000%
4	20.819	-61.334	-36.385	-20.819	61.334	36.385	0.000%
5	20.819	-46.000	-36.385	-20.819	46.000	36.385	0.000%
6	36.158	-61.334	-20.876	-36.158	61.334	20.876	0.000%
7	36.158	-46.000	-20.876	-36.158	46.000	20.876	0.000%
8	41.920	-61.334	0.163	-41.920	61.334	-0.163	0.000%
9	41.920	-46.000	0.163	-41.920	46.000	-0.163	0.000%
10	36.450	-61.334	21.114	-36.450	61.334	-21.114	0.000%
11	36.450	-46.000	21.114	-36.450	46.000	-21.114	0.000%
12	21.087	-61.334	36.549	-21.087	61.334	-36.549	0.000%
13	21.087	-46.000	36.549	-21.087	46.000	-36.549	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
14	0.136	-61.334	42.038	-0.136	61.334	-42.038	0.000%
15	0.136	-46.000	42.038	-0.136	46.000	-42.038	0.000%
16	-20.803	-61.334	36.301	20.803	61.334	-36.301	0.000%
17	-20.803	-46.000	36.301	20.803	46.000	-36.301	0.000%
18	-36.150	-61.334	20.871	36.150	61.334	-20.871	0.000%
19	-36.150	-46.000	20.871	36.150	46.000	-20.871	0.000%
20	-41.839	-61.334	-0.135	41.839	61.334	0.135	0.000%
21	-41.839	-46.000	-0.135	41.839	46.000	0.135	0.000%
22	-36.338	-61.334	-21.136	36.338	61.334	21.136	0.000%
23	-36.338	-46.000	-21.136	36.338	46.000	21.136	0.000%
24	-21.109	-61.334	-36.536	21.109	61.334	36.536	0.000%
25	-21.109	-46.000	-36.536	21.109	46.000	36.536	0.000%
26	0.000	-95.138	0.000	0.000	95.138	-0.000	0.000%
27	0.010	-95.138	-11.179	-0.010	95.138	11.179	0.000%
28	5.559	-95.138	-9.662	-5.559	95.138	9.662	0.000%
29	9.630	-95.138	-5.560	-9.630	95.138	5.560	0.000%
30	11.147	-95.138	0.017	-11.147	95.138	-0.017	0.000%
31	9.687	-95.138	5.581	-9.687	95.138	-5.581	0.000%
32	5.590	-95.138	9.684	-5.590	95.138	-9.685	0.000%
33	0.020	-95.138	11.156	-0.020	95.138	-11.156	0.000%
34	-5.544	-95.138	9.645	5.544	95.138	-9.645	0.000%
35	-9.623	-95.138	5.556	9.623	95.138	-5.556	0.000%
36	-11.125	-95.138	-0.021	11.125	95.138	0.021	0.000%
37	-9.651	-95.138	-5.596	9.651	95.138	5.596	0.000%
38	-5.592	-95.138	-9.683	5.592	95.138	9.683	0.000%
39	-0.013	-51.111	-9.013	0.013	51.111	9.013	0.000%
40	4.454	-51.111	-7.785	-4.454	51.111	7.785	0.000%
41	7.736	-51.111	-4.467	-7.736	51.111	4.467	0.000%
42	8.969	-51.111	0.035	-8.969	51.111	-0.035	0.000%
43	7.799	-51.111	4.517	-7.799	51.111	-4.517	0.000%
44	4.512	-51.111	7.820	-4.512	51.111	-7.820	0.000%
45	0.029	-51.111	8.994	-0.029	51.111	-8.994	0.000%
46	-4.451	-51.111	7.767	4.451	51.111	-7.767	0.000%
47	-7.735	-51.111	4.466	7.735	51.111	-4.466	0.000%
48	-8.952	-51.111	-0.029	8.952	51.111	0.029	0.000%
49	-7.775	-51.111	-4.522	7.775	51.111	4.522	0.000%
50	-4.516	-51.111	-7.817	4.516	51.111	7.817	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00096236
3	Yes	4	0.00000001	0.00060551
4	Yes	5	0.00000001	0.00003259
5	Yes	5	0.00000001	0.00001460
6	Yes	5	0.00000001	0.00003669
7	Yes	5	0.00000001	0.00001654
8	Yes	4	0.00000001	0.00059300
9	Yes	4	0.00000001	0.00037312
10	Yes	5	0.00000001	0.00005069
11	Yes	5	0.00000001	0.00002317
12	Yes	5	0.00000001	0.00003324
13	Yes	5	0.00000001	0.00001498
14	Yes	4	0.00000001	0.00095593

15	Yes	4	0.00000001	0.00060164
16	Yes	5	0.00000001	0.00004435
17	Yes	5	0.00000001	0.00002015
18	Yes	5	0.00000001	0.00003705
19	Yes	5	0.00000001	0.00001666
20	Yes	4	0.00000001	0.00055801
21	Yes	4	0.00000001	0.00035112
22	Yes	5	0.00000001	0.00003296
23	Yes	5	0.00000001	0.00001481
24	Yes	5	0.00000001	0.00005349
25	Yes	5	0.00000001	0.00002449
26	Yes	4	0.00000001	0.00002069
27	Yes	4	0.00000001	0.00096467
28	Yes	5	0.00000001	0.00004354
29	Yes	5	0.00000001	0.00004334
30	Yes	4	0.00000001	0.00094521
31	Yes	5	0.00000001	0.00004515
32	Yes	5	0.00000001	0.00004489
33	Yes	4	0.00000001	0.00098238
34	Yes	5	0.00000001	0.00004583
35	Yes	5	0.00000001	0.00004543
36	Yes	4	0.00000001	0.00097694
37	Yes	5	0.00000001	0.00004519
38	Yes	5	0.00000001	0.00004597
39	Yes	4	0.00000001	0.00005319
40	Yes	4	0.00000001	0.00003456
41	Yes	4	0.00000001	0.00003006
42	Yes	4	0.00000001	0.00003298
43	Yes	4	0.00000001	0.00006922
44	Yes	4	0.00000001	0.00005729
45	Yes	4	0.00000001	0.00005398
46	Yes	4	0.00000001	0.00005130
47	Yes	4	0.00000001	0.00003108
48	Yes	4	0.00000001	0.00003279
49	Yes	4	0.00000001	0.00005090
50	Yes	4	0.00000001	0.00007762

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	135 - 109.08	8.324	44	0.5361	0.0058
L2	113.66 - 84.16	5.963	44	0.5066	0.0056
L3	89.9933 - 41.9933	3.677	44	0.3952	0.0029
L4	48.66 - 0	1.049	44	0.1973	0.0010

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
130.000	(2) CCI HPA-65R-BUU-H8	44	7.760	0.5331	0.0059	76289
120.000	VHLP2-18	44	6.647	0.5217	0.0059	25429
110.000	SHP2-13-3WH/B	44	5.580	0.4941	0.0053	16479

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	135 - 109.08	39.011	12	2.5125	0.0271
L2	113.66 - 84.16	27.949	12	2.3749	0.0262
L3	89.9933 - 41.9933	17.233	12	1.8528	0.0136
L4	48.66 - 0	4.917	12	0.9248	0.0045

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
130.000	(2) CCI HPA-65R-BUU-H8	12	36.367	2.4984	0.0276	16526
120.000	VHLP2-18	12	31.152	2.4450	0.0275	5508
110.000	SHP2-13-3WH/B	12	26.154	2.3164	0.0248	3567

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	135 - 109.08 (1)	TP36.69x29.52x0.25	25.920	135.000	129.7	27.9098	-11.741	374.580	0.031
L2	109.08 - 84.16 (2)	TP42.86x34.9231x0.3125	29.500	135.000	111.4	40.6451	-21.003	740.419	0.028
L3	84.16 - 41.9933 (3)	TP53.81x40.6656x0.5	48.000	135.000	88.6	81.7057	-35.344	2350.470	0.015
L4	41.9933 - 0 (4)	TP64x50.9844x0.625	48.660	135.000	72.0	125.7200	-61.318	4988.760	0.012

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	135 - 109.08 (1)	TP36.69x29.52x0.25	252.468	1347.958	0.187	0.000	1347.958	0.000
L2	109.08 - 84.16 (2)	TP42.86x34.9231x0.3125	946.483	2346.867	0.403	0.000	2346.867	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L3	84.16 - 41.9933 (3)	TP53.81x40.6656x0.5	2374.408	6368.033	0.373	0.000	6368.033	0.000
L4	41.9933 - 0 (4)	TP64x50.9844x0.625	4306.317	12107.500	0.356	0.000	12107.500	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	135 - 109.08 (1)	TP36.69x29.52x0.25	19.819	931.149	0.021	0.000	2702.108	0.000
L2	109.08 - 84.16 (2)	TP42.86x34.9231x0.3125	32.124	1392.240	0.023	12.201	4704.875	0.003
L3	84.16 - 41.9933 (3)	TP53.81x40.6656x0.5	36.958	3013.040	0.012	12.192	12770.333	0.001
L4	41.9933 - 0 (4)	TP64x50.9844x0.625	42.219	4654.520	0.009	12.188	24280.584	0.001

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	135 - 109.08 (1)	0.031	0.187	0.000	0.021	0.000	0.219 ✔	1.000	4.8.2 ✔
L2	109.08 - 84.16 (2)	0.028	0.403	0.000	0.023	0.003	0.432 ✔	1.000	4.8.2 ✔
L3	84.16 - 41.9933 (3)	0.015	0.373	0.000	0.012	0.001	0.388 ✔	1.000	4.8.2 ✔
L4	41.9933 - 0 (4)	0.012	0.356	0.000	0.009	0.001	0.368 ✔	1.000	4.8.2 ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	135 - 109.08	Pole	TP36.69x29.52x0.25	1	-11.741	374.580	21.9	Pass
L2	109.08 - 84.16	Pole	TP42.86x34.9231x0.3125	2	-21.003	740.419	43.2	Pass
L3	84.16 - 41.9933	Pole	TP53.81x40.6656x0.5	3	-35.344	2350.470	38.8	Pass
L4	41.9933 - 0	Pole	TP64x50.9844x0.625	4	-61.318	4988.760	36.8	Pass
							Summary	
						Pole (L2)	43.2	Pass
						RATING =	**43.2**	**Pass**

Attachment 2:
Collocation Application

BlueSky Tower Partners LLC

Collocation Application

Installation Type: Anchor ☐ Collocation ☐ Add to Existing ☒

BlueSky Towers, LLC Info

Contact:	James Burgess	Site Number:	CT-5020
Email	jamesb@blueskytower.com	Site Name:	Bridgeport-Evergreen St
Office:	508-530-3580	Submittal Date	10/29/2019
Fax:	508-530-3564	Revision Date(s)	

PLEASE SUBMIT THIS APPLICATION VIA E-MAIL

Applicant Information

Applicant Name:	New Cingular Wireless PCS, LLC	Primary Contact/Agent Name:	Anne McGuinnes
Applicant Site Name:	Bridgeport Evergreen St	Contact/Agent Company Name:	SAI
Applicant Site Number:	CT 5100 / FA#10107972	Contact/Agent Number:	857-928-6276
Proposed ON AIR Date:		Contact/Agent Fax:	N/A
Applicant Legal Entity:	New Cingular Wireless PCS, LLC	Contact Email:	amcguinnes@saigrp.com
Notice Address for Site License:	Attn: Network RE Admin. Re: Cell Site# 5100; Bridgeport-HiHo Relo FA# 10107972 575 Morosgo Dr., Atlanta, GA 30324		

Applicant Contact Information

Leasing Contact Name:	Anne McGuinnes	Email:	amcguinnes@saigrp.com	Number:	857-928-
RF Contact Name:		Email:		Number:	
Construction Contact Name:		Email:		Number:	
Emergency Contact Name:	Network Operations	Email:	N/A	Number:	800-638-
Account Payable Contact Name:		Email:		Number:	

Tower Information

Latitude:	41.197838 N	Structure Type:	Monopole
Longitude:	73.190772 W	Structure Height:	135
AMSL:	25 FT		
Site Address:	220 Evergreen St., Bridgeport, CT		

EQUIPMENT SPECIFICATIONS

Summary of Work to be Completed: Add 3 antennas; Add 3 RRUs

Sector	SECTOR 1	SECTOR 2	SECTOR 3	SEC
Equipment Type	Panel	Panel	Panel	
Installation Status	Proposed	Proposed	Proposed	
Desired RAD Center (Ft AGL)	130	130	130	
Tower Mount Mounting Height				
Mount Type(Attach Specs)	Existing	Existing	Existing	
Equipment Manufacturer	CCI	CCI	CCI	
Equipment Model# (Attached Specs)	DMP65R-BU8DA	DMP65R-BU8DA	DMP65R-BU8DA	
Equipment Dimensions (WxHxD)(Feet Or Inches)	96"x20.7"x7.7"	96"x20.7"x7.7"	96"x20.7"x7.7"	
Equipment Weight (Per Item, In Lbs.)	96lbs	96lbs	96lbs	
Equipment Quantity	1	1	1	
Orientation/Azimuth (Degrees)	20	150	270	
Transmit Frequency (Mhz)				
Receive Frequency (Mhz)				
Antenna Gain (Db)				
Total# Of Lines For Equipment In Column				
Line Type				
Diameter Of Coax Cables (In)				
Removing Equipment (If Applicable)				
Transmitter/Receiver Type	RRU	RRU	RRU	
Qty Of Transmitters/Receivers	1	1	1	
Manufacturer				
Type & Model	B14 4478 RRH	B14 4478 RRH	B14 4478 RRH	
Type of Technology				
TX Power Output				
ERP (Watts)				
Electric Service Required (Amps/Volts)				

Will RRUs be located behind antennas: Yes

GROUND SPACE REQUIREMENTS

Exisiting Lease Area:	DIMS: L(ft)		W(ft)		OR		Square footage
New/Add'l Lease Area being requested:	DIMS: L(ft)	20	W(ft)	12	OR		Square footage
New/Add'l Rooftop Lease Area being requested (if space is needed on both ground and rooftop:	DIMS: L(ft)		W(ft)		OR		Square footage
Shelter:	DIMS: L(ft)		W(ft)		H(ft)		
Concrete Pad for Shelter:	DIMS: L(ft)		W(ft)				
Cabinets:	DIMS: L(ft)		W(ft)		H(ft)		
Concrete Pad for Cabinets:	DIMS: L(ft)		W(ft)				
Cabinet/Shelter Manufacturer/Model:							

POWER REQUIREMENTS

Power Provided by: Power Company Electrical Service Provider: CL&P Electrical Service Telephone Number:

Average Monthly Power Consumption: KWH units

Is a multi-tenant meter rack present: No How many, if any, empty meter banks are present:

Telco/Interconnect Requirements: POTS ☐ T1 ☐ MICROWAVE ☐ FIBER OPTICS ☒

Fiber Provider: Utility company

BACK-UP POWER INFORMATION

Generator Required: Yes Generation Location: Inside Lease Area

Generator Ground Space Requirement: DIMS: L(ft) 4 W(ft) 8 H(ft) Fuel Type: D

BST Generator: Generator Owner: AT&T Shared Generator Peak Usage: KW

Generator Capacity: 50 KW Generator Make: Generac Generator Model: SD-050

Fuel Tank Location: Inside Lease Area Fuel Tank Size: DIMS: L(ft) W(ft) Fuel Tank Size: Gallons

Pad for Fuel Tank (if required) DIMS: L(ft) W(ft)

Comments:

Attach manufacturer's equipment specifications for antennas, mounts, cabinets, shelters if available

Final Configuration after work is completed: 12 panels/24 RRU's / 6 A2 modules/4-surge arrestors ("squids") + 8 DC/2 fiber (within 4-2" conduit)/ 3 RET lines / 12x20 equip. shelter + 4'x 8' gener

Total RRU breakout: (3) RRU-11 B5 RRH, (3) 4426 B66 RRH (3) RRUS-32-B30 RRH (3) RRUS-E2 B29 RRH (3) RRUS-12 B5 RRH (3) RRUS-11 B12 RRH (3) RRUS-32 B2 RRH (3)
Total Antenna Breakout: (6) HPA-65R-BUU-H8; (3) OPA-65R-LCUU-H8; (3) DMP65R-BU8DA

6276

2822

TOR 4

iesel

ator pad

B14 4478 RRH

Property Location 220 EVERGREEN ST | Map ID 53/ 1527/ 2/ / | Bldg Name | State Use 399
Vision ID 13578 | Account # R--0048990 | Bldg # 1 | Sec # 1 of 1 | Card # 1 of 1 | Print Date 7/19/2019 5:00:

CURRENT OWNER

CHAPIN & BANGS COMPANY

PO BOX 1117

BRIDGEPORT CT 06601

TOPO / UTILITIES / STRT / ROAD / LOCATION

SUPPLEMENTAL DATA

Alt Prcl ID	1527--02-------		
Census Tr	CEN717		
Heart			
Abstract	500:500		
Freeze		Special Dis	
GIS ID	1527-2	Assoc Pid#	

CURRENT ASSESSMENT

Description	Code	Appraised	Assessed
Vac In Ld	5-3	350,110	245,072
Vac Outbl	5-5	2,250	1,580
Total		352,360	246,652

6015

BRIDGEPORT, CT

VISION

RECORD OF OWNERSHIP

RECORD OF OWNERSHIP	BK-VOL/PAGE		SALE DATE	Q/U	V/I	SALE PRICE	VC
CHAPIN & BANGS COMPANY	2291	0054	05-12-1987	U	I	0	

PREVIOUS ASSESSMENTS (HISTORY)

Year	Code	Assessed	Year	Code	Assessed V	Year	Code	Assessed
2018	5-3	245,072	2017	5-3	245,072	2016	5-3	140,080
	5-5	1,580		5-5	1,580		5-5	1,580
	Total	246652		Total	246652		Total	141660

EXEMPTIONS

Year	Code	Description	Amount
		Total	0.00

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm Int

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD

Nbhd	Nbhd Name	B	Tracing	Batch
IND				

NOTES

COMBINATION OF LAND HERE FOR 2007

1527--01 + 1527--05 + 1527--06

MAP VOL54 PG 25

CELL TOWER 2016

PER STIP JUDGMENT DATED 6/8/17

HHB-CV-16-6034085-S

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	0
Appraised Xf (B) Value (Bldg)	0
Appraised Ob (B) Value (Bldg)	2,250
Appraised Land Value (Bldg)	350,110
Special Land Value	0
Total Appraised Parcel Value	352,360
Valuation Method	C
Total Appraised Parcel Value	352,360

BUILDING PERMIT RECORD

Permit Id	Issue Date	Type	Description	Amount	Insp Date	% Comp	Date Comp	Comments
117118	03-27-2018		Telecommunica	90,000		0		Install TMobile
7670	08-29-2017		Telecommunica	50,000	09-26-2017	0		
6976	09-16-2016		TOWER	35,000	09-28-2016	100	09-28-2016	
6975	09-16-2016		Telecommunica	125,000	04-12-2018	100	01-22-2018	C/O #6362
6416	12-11-2015		TEMP TOWER	40,000	05-19-2016	100	05-19-2016	

VISIT / CHANGE HISTORY

Date	Id	Type	Is	Cd	Purpost/Result
09-28-2016	RK	02		P	Permit Activity
01-20-2016	J			41	Hearing No Cng
12-15-2008	AD			41	Hearing No Cng
06-09-2008	AD			91	Com Field Review
05-15-2008	JF			00	Measured & Listed
03-04-1992	KC			A	Inside Inspection

LAND LINE VALUATION SECTION

B	Use Code	Description	Zone	Land Type	Land Units		Unit Price	Size Adj	Site Index	Cond.	Nbhd.	Nbhd. Adj	Notes	Location Adjustment		Adj Unit P	Land Value
1	399	Vac Ind Lnd	ILI		43,579	SF	5.74	1.00000	I	1.00	IND	0.800			0.0000	0.00	350,110
				Total Card Land Units	43,579	SF	Parcel Total Land Area			1.0004					Total Land Value		350,110

Property Location	220 EVERGREEN ST		Map ID	53/ 1527/ 2/ /		Bldg Name	State Use 399
Vision ID	13578	Account #	R--0048990	Bldg #	1	Sec # 1 of 1	Card # 1 of 1	Print Date

CONSTRUCTION DETAIL

Element	Cd	Description
Style:	99	Vacant Land
Model	00	Vacant
Grade:		
Stories:		
Occupancy:		
Exterior Wall 1:		
Exterior Wall 2:		
Roof Structure:		
Roof Cover:		
Interior Wall 1:		
Interior Wall 2:		
Interior Flr 1:		
Interior Flr 2		
Heat Fuel:		
Heat Type:		
AC Type:		
Total Bedrooms		
Total Full Baths		
Total Half Baths		
Total Xtra Fixtrs		
Total Rooms		
Bath Style:		
Kitchen Style:		
Fireplaces		
Fin Bsmt Area		
Fin Bsmt Qualit		
Bsmt Garages		
.		

CONSTRUCTION DETAIL (CONTINUED)

Element	Cd	Description

CONDO DATA

Parcel Id		C		Owne	
		B		S	

Adjust Type	Code	Description	Factor%
Condo Flr			
Condo Unit			

COST / MARKET VALUATION

Building Value New	
Year Built	
Effective Year Built	
Depreciation Code	
Remodel Rating	
Year Remodeled	
Depreciation %	
Functional Obsol	
External Obsolescence	
Trend Factor	1.000
Condition	
Condition %	
Percent Good	
RCNLD	
Dep % Ovr	
Dep Ovr Comment	
Misc Imp Ovr	
Misc Imp Ovr Comment	
Cost to Cure Ovr	
Cost to Cure Ovr Comment	

No Sketch

OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)

Code	Description	L/B	Units	Unit Price	Yr Blt	Cond. Cd	% Gd	Grade	Grade Adj.	Appr. Value
FN2	Fence, WD	L	150	15.00	1993		100		0.00	2,250

BUILDING SUB-AREA SUMMARY SECTION

Code	Description	Living Area	Floor Area	Eff Area	Unit Cost	Undeprec Value
	Ttl Gross Liv / Lease Area	0	0	0		0

City of Bridgeport

My Map

Legend

- Parcels
- Streetname
- Roadways
  - Local
  - Collector
  - Minor Collector
  - Minor Arterial
  - Major Collector
  - PA Other
  - PA Other Expwy
  - PA Interstate

141.9 0 70.97 141.9 Feet

WGS_1984_Web_Mercator_Auxiliary_Sphere
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METROCOG
Connecticut Metropolitan Council of Governments

DOCKET NO. 464 – Blue Sky Towers, LLC and New Cingular Wireless PCS, LLC application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a telecommunications facility located at Bridgeport Tax Assessor Map 53, Block 1527, Lot 2, 220 Evergreen Street, Bridgeport, Connecticut.	}	Connecticut
	}	Siting
	}	Council
		April 14, 2016

Decision and Order

Pursuant to Connecticut General Statutes §16-50p and the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, maintenance, and operation of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Blue Sky Towers, LLC, hereinafter referred to as the Certificate Holder, for a telecommunications facility at the proposed site located at 220 Evergreen Street, Bridgeport, Connecticut.

Unless otherwise approved by the Council, the facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a monopole at a height of 135 feet above ground level to provide the proposed wireless services, sufficient to accommodate the antennas of New Cingular Wireless PCS, LLC (AT&T) and other entities, both public and private. The height of the tower may be extended after the date of this Decision and Order pursuant to regulations of the Federal Communications Commission.

2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the City of Bridgeport (City) for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
    a) final site plan(s) for development of the facility to include specifications for the tower, tower foundation, antennas, equipment compound including, but not limited to, fence with less than two inch mesh, radio equipment, access road, utility line, transformer, emergency backup generator, space for a future shared generator, flood elevation mitigation plan for equipment, and landscaping that employ the governing standard in the State of Connecticut for tower design in accordance with the currently adopted International Building Code and taking into account inundation risk;
    b) the tower designed with a yield point to ensure that the tower setback radius remains within the boundaries of the subject property;
    c) location of emergency generator and equipment shelter with air conditioning units and evidence of compliance with noise regulations;
    d) construction plans for site clearing, grading, landscaping, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended; and
    e) hours of construction.

3. Prior to the commencement of operation, the Certificate Holder shall provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

4. Upon the establishment of any new federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

6. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed with at least one fully operational wireless telecommunications carrier providing wireless service within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The Certificate Holder shall provide written notice to the Executive Director of any schedule changes as soon as is practicable.

7. Any request for extension of the time period referred to in Condition 6 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the City of Bridgeport.

8. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council within 90 days from the one year period of cessation of service. The Certificate Holder may submit a written request to the Council for an extension of the 90 day period not later than 60 days prior to the expiration of the 90 day period.

9. Any nonfunctioning antenna, and associated antenna mounting equipment, on this facility shall be removed within 60 days of the date the antenna ceased to function.

10. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction, and the commencement of site operation.

11. The Certificate Holder shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v.

12. This Certificate may be transferred in accordance with Conn. Gen. Stat. §16-50k(b), provided both the Certificate Holder/transferor and the transferee are current with payments to the Council for their respective annual assessments and invoices under Conn. Gen. Stat. §16-50v. In addition, both the Certificate Holder/transferor and the transferee shall provide the Council a written agreement as to the entity responsible for any quarterly assessment charges under Conn. Gen. Stat. §16-50v(b)(2) that may be associated with this facility.

13. The Certificate Holder shall maintain the facility and associated equipment, including but not limited to, the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line and landscaping in a reasonable physical and operational condition that is consistent with this Decision and Order and a Development and Management Plan to be approved by the Council.

14. If the Certificate Holder is a wholly-owned subsidiary of a corporation or other entity and is sold/transferred to another corporation or other entity, the Council shall be notified of such sale and/or transfer and of any change in contact information for the individual or representative responsible for management and operations of the Certificate Holder within 30 days of the sale and/or transfer.

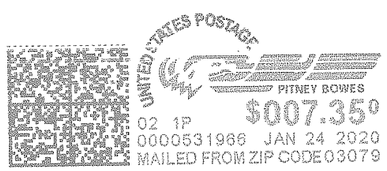
15. This Certificate may be surrendered by the Certificate Holder upon written notification and approval by the Council.

We hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed in the Service List, dated December 3, 2015, and notice of issuance published in the Connecticut Post.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

PRESS FIRMLY TO SEAL

PRESS FIRMLY TO SEAL



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BRIDGEPORT CT 06604

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