November 6, 2020

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

Re: Notice of Exempt Modification New Cingular Wireless PCS LLC ("AT&T") Site CT1219
15 North Granby Road, Granby, CT 06035 (the "Property")
Latitude: 41.953575 N Longitude: 72.793721 W

Dear Ms. Bachman:

AT&T currently maintains (9) antennas at the 140-foot level on the existing 150' monopole tower ("Tower") at 15 North Granby Road, Granby, CT. The Tower is owned by SBA 2012 TC Assets, LLC ("SBA") and the property is owned by the Town of Granby. AT&T intends to modify its facility by replacing (6) antennas with (3) HPA65R-BU8A & (3) DMP65R-BU8DA antennas, replacing (6) RRUs with (3) B5/B12 4449 and (3) 8843 B2 B66A RRUs. The height of AT&Ts existing and proposed antennas & RRUs is 140'.

This modification includes B2, B5, and B12 hardware that is both 4G (LTE) and 5GNR capable through remote software configuration and either or both services may be turned on or off at various times.

The facility received approval from the Town of Granby Planning & Zoning Commission on April 28, 1998. Building permit # 20680 was issued on January 18, 2000 for the construction of the tower. There are no known copies of the original zoning approval available.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies ("R.C.S.A") §16-50j-73 for construction that constitutes an exempt modification pursuant to R.C.S.A §16-50j-72(b)(2). In accordance with to R.C.S.A §16-50j-73, a copy of this letter is being sent the Honorable B. Scott Kuhnly, First Selectman, Town of Granby as elected official & property owner, and Mr. Joel Skilton, Building Official/Zoning Enforcement, Town of Granby. SBA, the towner owner, received a copy by email.

The planned modification of the facility falls squarely within those activities explicitly provided for in R.C.S.A §16-50j-72(b)(2). Specifically:

1. The proposed modifications will not result in an increase in the height of the existing structure.

2. The proposed modifications will not require an extension of the site boundary.

3. The proposed modification 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 modified facility 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 foundation can support the proposed loading.

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

Sincerely,

Hollis M. Redding

Hollis M. Redding
SAI Communications, LLC
12 Industrial Way
Salem, NH 03079
Mobile: 860-834-6964
hredding@saigrp.com

Enclosures

Cc: Honorable B. Scott Kuhnly, First Selectman, Town of Granby & as property owner
Mr. Joel Skilton, Building Official/Zoning Enforcement, Town of Granby
SBA 2012 TC Assets, LLC., as 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*							11.16%
AT&T	2	1133	140	0.0454	850	0.5867	0.80%
AT&T	2	1574	140	0.0703	1900	1.0000	0.70%
AT&T	2	1133	140	0.0454	850	0.5867	0.80%
AT&T	2	1574	140	0.0703	1900	1.0000	0.70%
AT&T	1	1417	140	0.0284	737	0.4913	0.58%
AT&T	1	2131	140	0.0427	1900	1.0000	0.43%
Site Total							15.17%

*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*							11.16%
AT&T UMTS	1	324	140	0.0065	850	0.5667	0.11%
AT&T LTE	1	2951	140	0.0591	770	0.5133	1.15%
AT&T AWS	1	3837	140	0.0768	2170	1.0000	0.77%
AT&T LTE	1	1476	140	0.0296	725	0.4833	0.61%
AT&T LTE	1	1000	140	0.0200	850	0.5667	0.35%
AT&T 5G	3	3664	140	0.2201	1930	1.0000	2.20%
AT&T LTE	1	1000	140	0.0200	850	0.5667	0.35%
Site Total							16.71%

*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: (HPA65R-BU8A) @ POS. 3 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T ANTENNAS: (DMP65R-BU8DA) @ POS. 4 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS: B5/B12 4449 (850/700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS: 8843 B2/B66A (PCS/AWS) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T DC/FIBER SURGE ARRESTOR DC9-48-60-24-18C-EV (TOTAL OF 1) WITH (3) DC POWER AND (1) FIBER RUN (TO FOLLOW EXISTING ROUTING).
- ADD Y-CABLES (TOTAL OF 6).
- INSTALL NEW 2-1/2" STD. (2.88" O.D.) PIPE MAST (10'-0" LONG) BEHIND NEW ANTENNAS SECURED TO THE EXISTING MOUNT (TYP. OF 2 PER SECTOR, TOTAL OF 6).
- INSTALL NEW HANDRAIL KIT SITEPRO1 PART# HRK12 (OR APPROVED EQUAL)
- INSTALL NEW PLATFORM REINFORCEMENT KIT, SITEPRO1 P/N PRK-SFS (OR APPROVED EQUAL).

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:
- NEW AT&T RRUS: RRUS-4478 B14 (700) (TYP. OF 1 PER ALPHA & BETA SECTORS, TOTAL OF 2), (ALPHA & GAMMA WILL SHARE).
- NEW AT&T SURGE ARRESTOR (TSXDC-4310FM) (TYP. OF 4 PER ALPHA & BETA SECTORS, TOTAL OF 8) (ALPHA & GAMMA WILL SHARE).
- ADD RBS 6630 FOR 5G.
- ADD IDLe.
- ADD 2x XMU.
- ADD DC12.
- PROPOSED FIBER MANAGEMENT BOX (TOTAL OF 1).
- ADD NEW PLANT NETSURE 7100 (TO REPLACE EXISTING).
- BASEBAND CONFIGURATION AS PER PD / SECTION-7.

ITEMS TO BE REMOVED:
- EXISTING AT&T ANTENNAS (7770) @ POS. 3 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T ANTENNAS (P65-17-XLH-RR) @ POS. 4 (TYP. OF 1 PER ALPHA & GAMMA SECTORS, TOTAL OF 2).
- EXISTING AT&T ANTENNAS (SBNH-1D6565C) @ POS. 4 (TOTAL OF 1 PER GAMMA SECTOR)
- EXISTING AT&T RRUS-11 B12 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T RRUS-12 B2 (PCS) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T SURGE ARRESTOR (TOTAL OF 1).
- EXISTING TMA'S (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T (2) DC & (1) FIBER.

ITEMS TO REMAIN:
- EXISTING AT&T ANTENNAS (7770) @ POS. 1 (TYP. OF 1 PER SECTOR, TOTAL OF 3)
- EXISTING TMA'S (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- (12) 1-5/8" COAX CABLES,

SITE ADDRESS:	15 NORTH GRANBY ROAD GRANBY, CT 06035
LATITUDE:	41.953575° N, 41° 57' 12.87" N
LONGITUDE:	72.793721° W, 72° 47' 37.40" W
TYPE OF SITE:	MONOPOLE / INDOOR EQUIPMENT
STRUCTURE HEIGHT:	150'-0"±
RAD CENTER:	140'-0"±
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
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A-2	ANTENNA LAYOUTS & ELEVATION	1
A-3	DETAILS	1
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SN-1	STRUCTURAL NOTES	1
S-1	MOUNT MODIFICATION DESIGN	1
G-1	GROUNDING DETAILS	1
RF-1	RF PLUMBING DIAGRAM	1

SBA SITE #: CT46134

SITE NUMBER: CT1219

SITE NAME: GRANBY EAST

FA CODE: 10035127

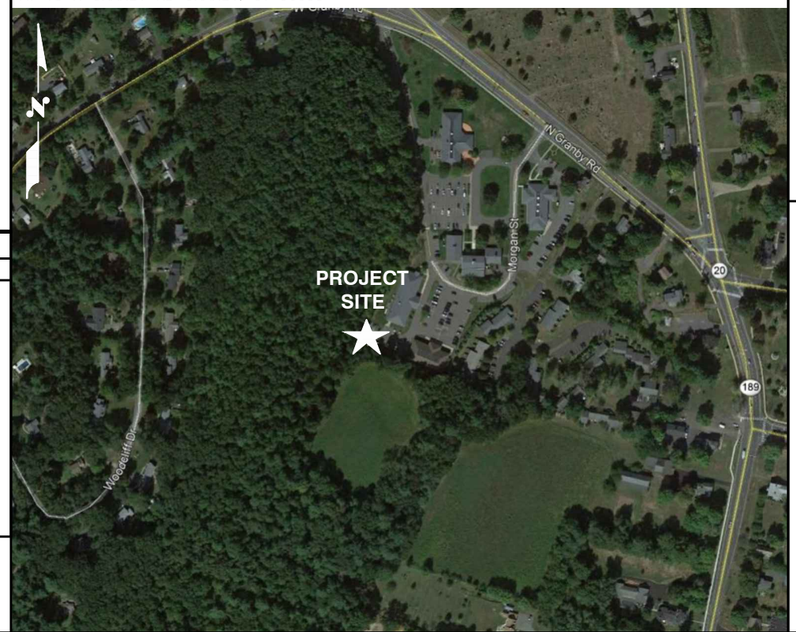
PACE ID: MRCTB048890, MRCTB048974, MRCTB048954, MRCTB048895, MRCTB048949

PROJECT: LTE 3C_4C_BWE_5G RETROFIT 2020 UPGRADE

VICINITY MAP

DIRECTIONS TO SITE:

START AT 500 ENTERPRISE DR, ROCKY HILL GOING TOWARD CAPITOL BLVD. 0.4 MI TURN LEFT ONTO CAPITOL BLVD. 0.3 MI TURN LEFT ONTO WEST ST. 0.2 MI MERGE ONTO I-91 N VIA THE RAMP ON THE LEFT TOWARD HARTFORD. 18.8 MI MERGE ONTO CT-20 W VIA EXIT 40 TOWARD BRADLEY INTERNATIONAL AIRPORT. 3.5 MI MERGE ONTO CT-20 W TOWARD E. GRANBY/GRANBY. 6.2 MI END AT 15 N GRANBY RD GRANBY, CT 06035



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

12 INDUSTRIAL WAY
SALEM, NH 03079

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

SITE NUMBER: CT1219
SITE NAME: GRANBY EAST
SBA SITE # ID: CT46134

15 NORTH GRANBY ROAD
GRANBY, CT 06035
HARTFORD COUNTY

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	10/26/20	ISSUED FOR CONSTRUCTION	AM	HC	DPH
0	10/20/20	ISSUED FOR REVIEW	AM	HC	DPH
A	10/13/20	ISSUED FOR REVIEW	AM	HC	DPH

SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: AM

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

AT&T

TITLE SHEET

LTE 3C_4C_BWE_5G RETROFIT 2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT1219	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: CT1219
SITE NAME: GRANBY EAST
SBA SITE # ID: CT46134

15 NORTH GRANBY ROAD
GRANBY, CT 06035
HARTFORD COUNTY

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SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: AM

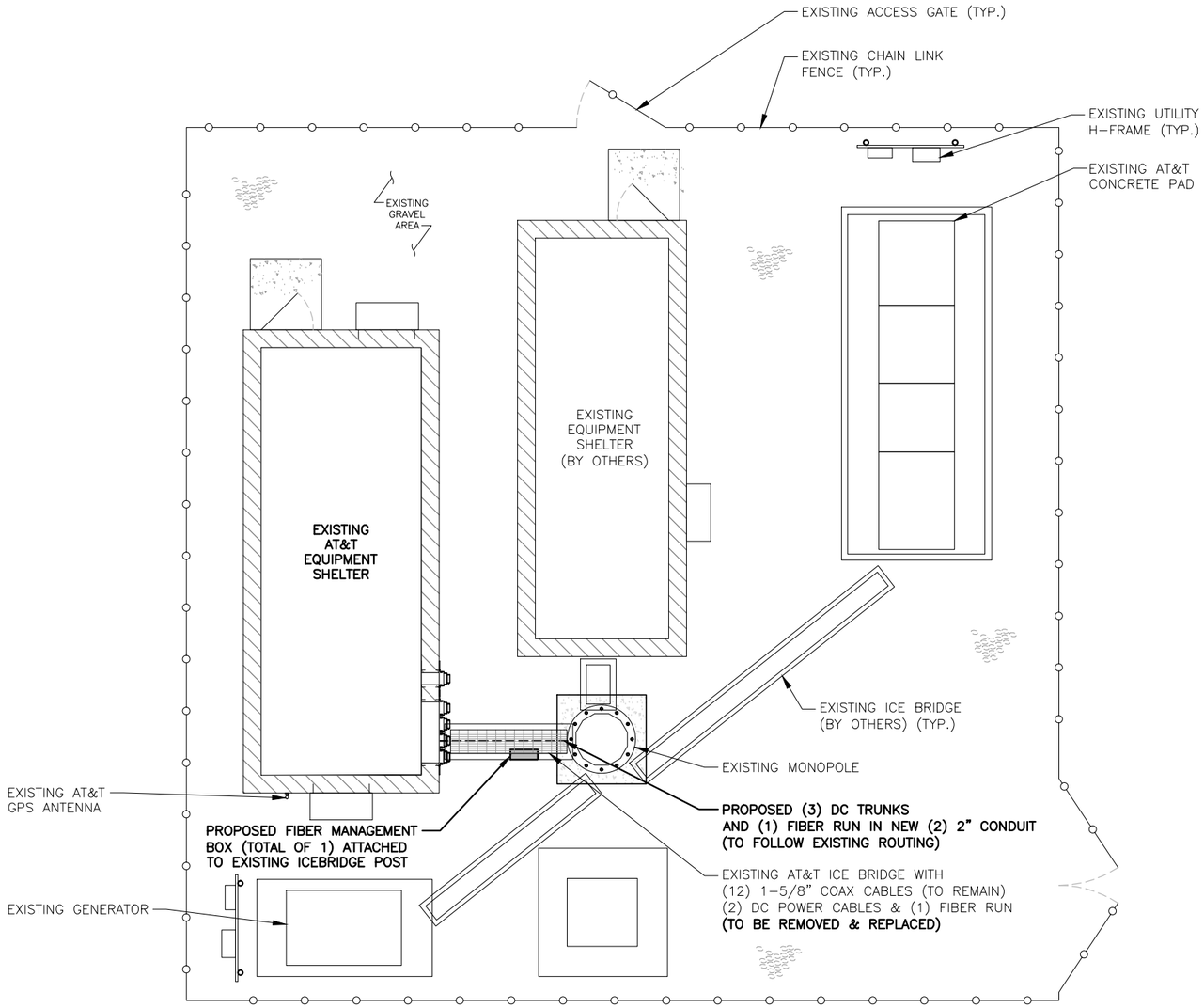
STATE OF CONNECTICUT · DANIEL P. HAMM · No.24178 · LICENSED PROFESSIONAL ENGINEER

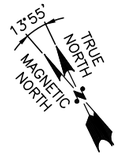
AT&T

GENERAL NOTES

LTE 3C_4C_BWE_5G RETROFIT 2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT1219	GN-1	1





COMPOUND PLAN (1 / A-1)
22x34 SCALE: 3/16"=1'-0"
11x17 SCALE: 3/32"=1'-0"

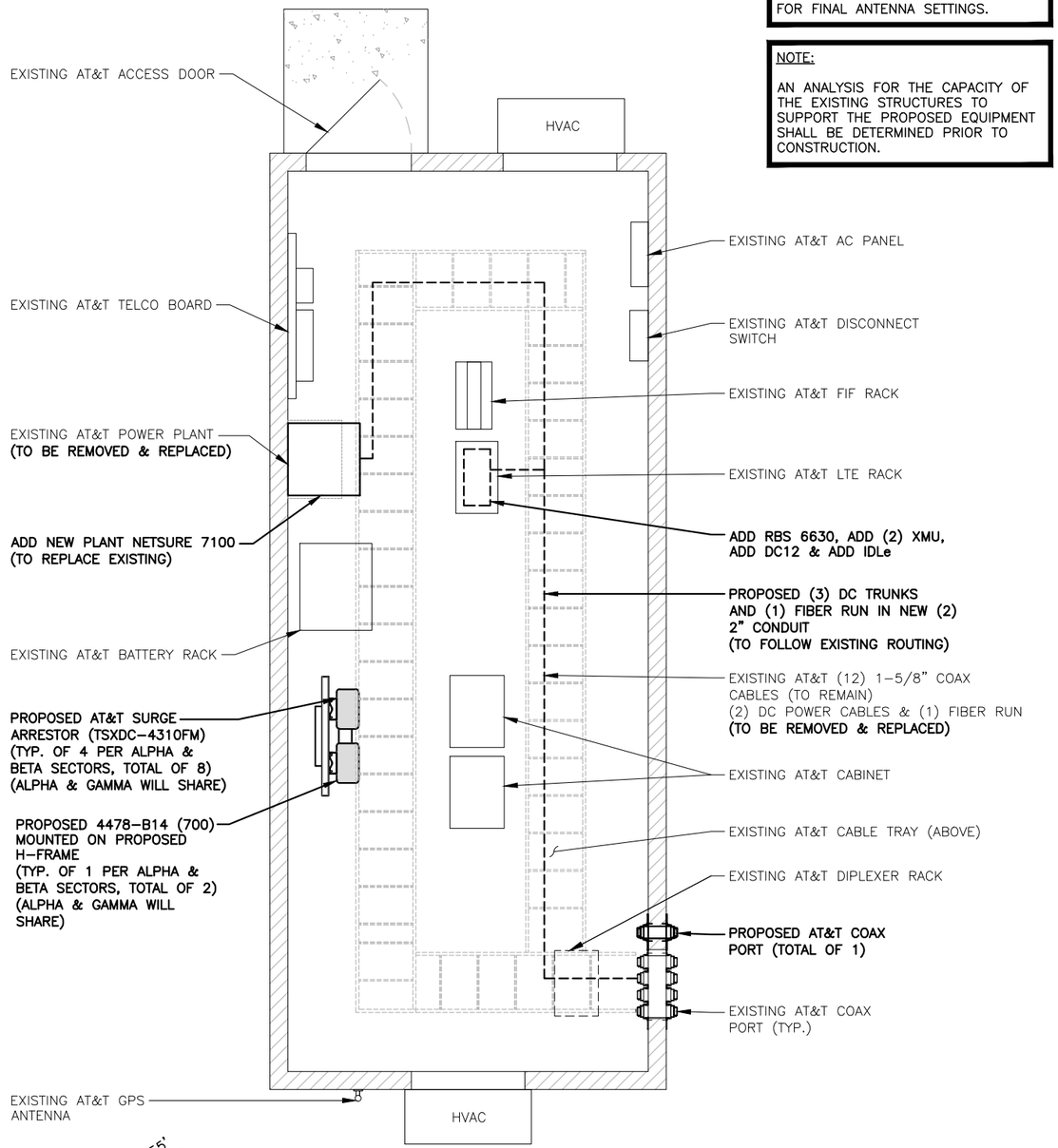
0 2'-8" 5'-4" 10'-8" 16'-0"

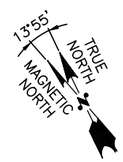
NOTE:

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

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.





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"

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: CT1219
SITE NAME: GRANBY EAST
SBA SITE # ID: CT46134

15 NORTH GRANBY ROAD
GRANBY, CT 06035
HARTFORD COUNTY

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	10/26/20	ISSUED FOR CONSTRUCTION	AM	HC	DPH
0	10/20/20	ISSUED FOR REVIEW	AM	HC	DPH
A	10/13/20	ISSUED FOR REVIEW	AM	HC	DPH

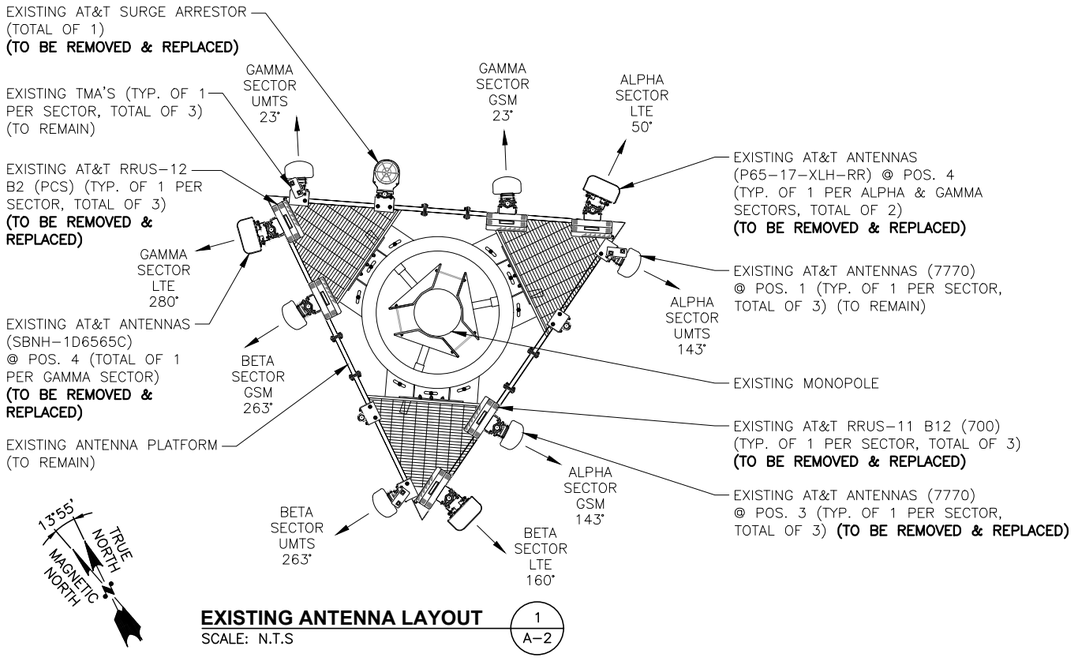
SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: AM

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

AT&T

COMPOUND & EQUIPMENT PLANS
LTE 3C_4C_BWE_5G RETROFIT 2020 UPGRADE

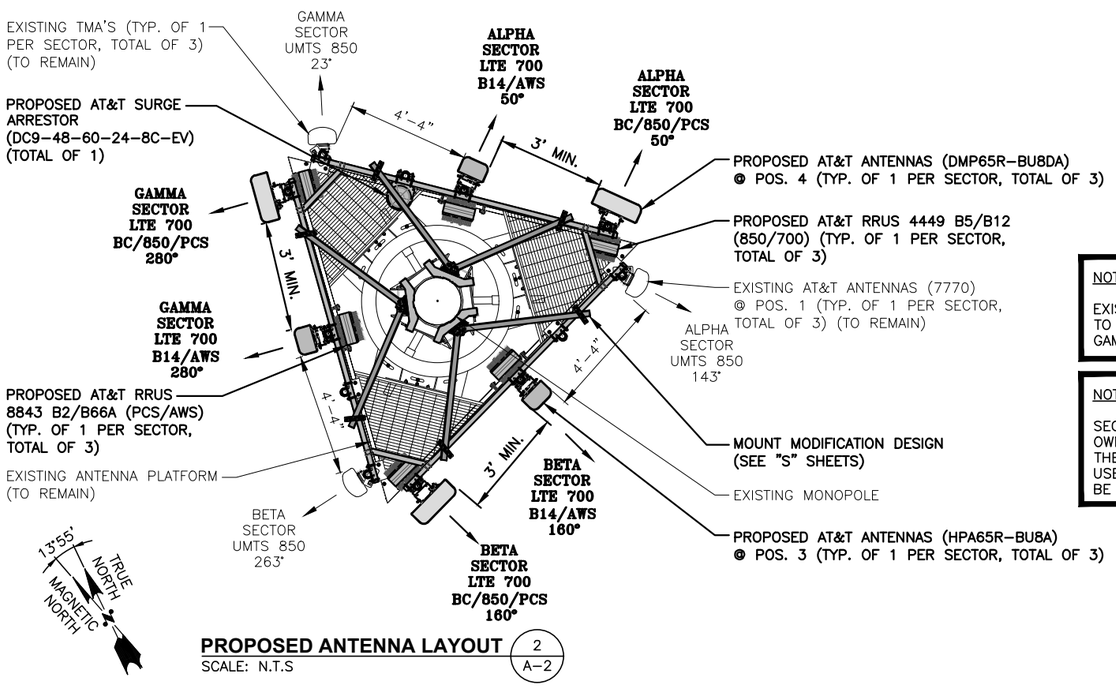
SITE NUMBER	DRAWING NUMBER	REV
CT1219	A-1	1



EXISTING ANTENNA LAYOUT

SCALE: N.T.S

1 / A-2



PROPOSED ANTENNA LAYOUT

SCALE: N.T.S

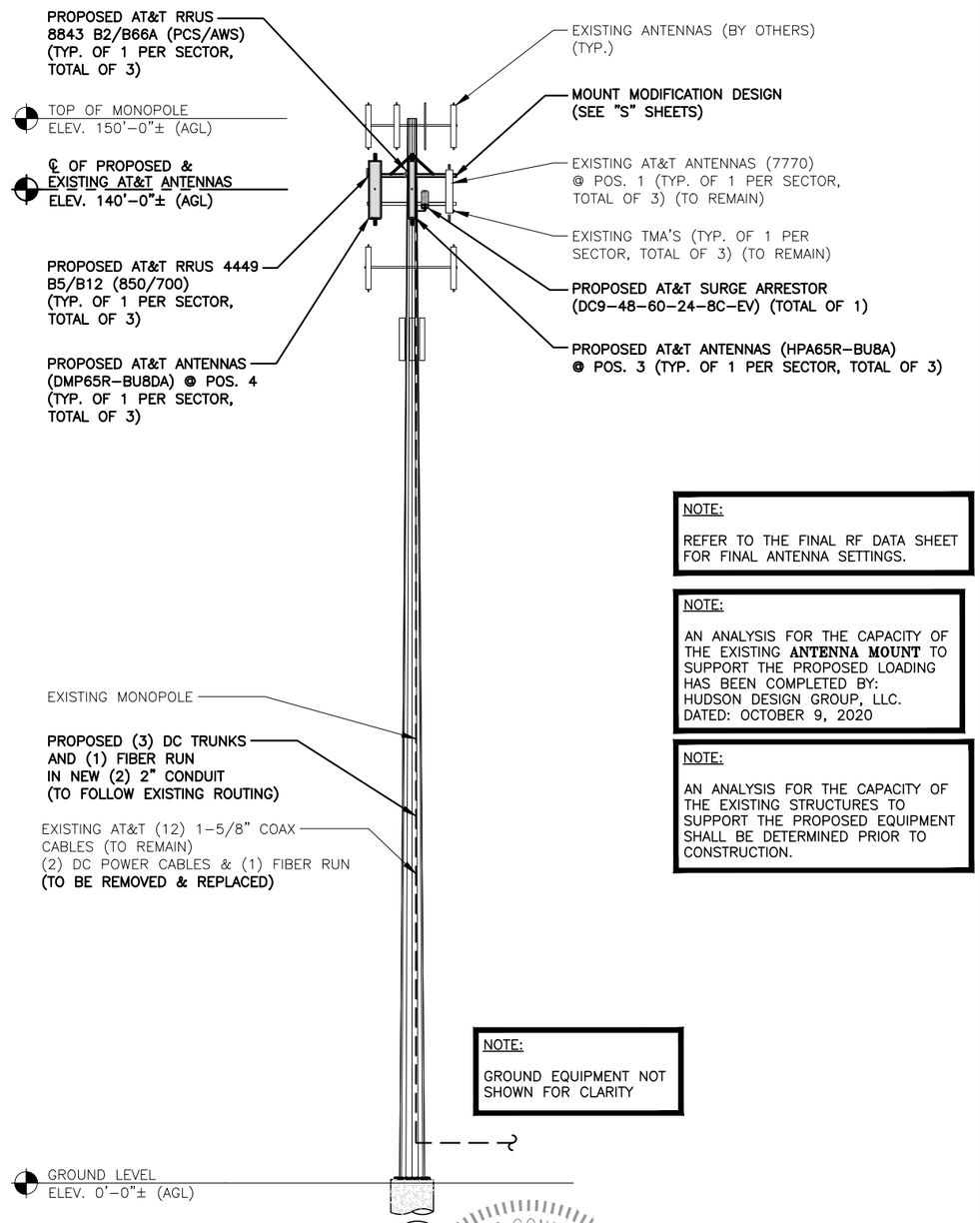
2 / A-2

NOTE:

EXISTING ANTENNA MOUNTING PLATFORM TO BE ROTATED TO MATCH BETA & GAMMA LTE AZIMUTHS.

NOTE:

SECTOR-B B14 RADIO WILL BE ON ITS OWN. SECTOR A AND C WILL SHARE THE B14 RADIO. PORT 1 & 2 WILL BE USED FOR SECTOR-A. PORT 3 & 4 TO BE USED FOR SECTOR-C.



ELEVATION

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

3 / A-2

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

NOTE:

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

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 9, 2020

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

NOTE:

GROUND EQUIPMENT NOT SHOWN FOR CLARITY

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

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SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: AM

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

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ANTENNA LAYOUTS & ELEVATION

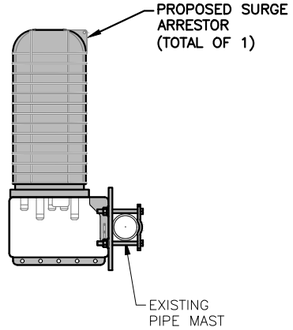
LTE 3C_4C_BWE_5G RETROFIT 2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT1219	A-2	1

ANTENNA SCHEDULE

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	FREQUENCY	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	EXISTING	UMTS 850	7770	55X11X5	140'-0"±	143°	(1)(E) TT19-08BP111-001 (2)(E)(G) LGP21901	–	–	–	(2)1-5/8" COAX	SHARED
A2	–	–	–	–	–	–	–	–	–	–	–	
A3	**PROPOSED**	**LTE 700 B14/AWS**	**HPA65R-BU8A**	**96X11.7X7.6**	**140'-0"±**	**50°**	–	**(P)(1)(G) RRUS 4478 B14 (P)(1) RRUS 8843 B2/B66A**	**(700) (AWS/PCS)**	**18.1"x13.4"x8.3" 14.9"X13.2"X10.9"**	(2)1-5/8" COAX	
A4	**PROPOSED**	**LTE 700 BC/850/PCS**	**DMP65R-BU8DA**	**96.0X20.7X7.7**	**140'-0"±**	**50°**	–	**(P)(1) RRUS 4449 B5/B12**	**(850/700)**	**14.9"x13.2"x10.4"**	–	
B1	EXISTING	UMTS 850	7770	55X11X5	140'-0"±	263°	(1)(E) TT19-08BP111-001 (2)(E)(G) LGP21901	–	–	–	(2)1-5/8" COAX	(P) (1) RAYCAP DC9-48-60-24-18C-EV
B2	–	–	–	–	–	–	–	–	–	–	–	
B3	**PROPOSED**	**LTE 700 B14/AWS**	**HPA65R-BU8A**	**96X11.7X7.6**	**140'-0"±**	**160°**	–	**(P)(1)(G) RRUS 4478 B14 (P)(1) RRUS 8843 B2/B66A**	**(700) (AWS/PCS)**	**18.1"x13.4"x8.3" 14.9"X13.2"X10.9"**	(2)1-5/8" COAX	
B4	**PROPOSED**	**LTE 700 BC/850/PCS**	**DMP65R-BU8DA**	**96.0X20.7X7.7**	**140'-0"±**	**160°**	–	**(P)(1) RRUS 4449 B5/B12**	**(850/700)**	**14.9"x13.2"x10.4"**	**(P)(3) DC & (1) FIBER**	
C1	EXISTING	UMTS 850	7770	55X11X5	140'-0"±	23°	(1)(E) TT19-08BP111-001 (2)(E)(G) LGP21901	–	–	–	(2)1-5/8" COAX	SHARED
C2	–	–	–	–	–	–	–	–	–	–	–	
C3	**PROPOSED**	**LTE 700 B14/AWS**	**HPA65R-BU8A**	**96X11.7X7.6**	**140'-0"±**	**280°**	–	**(P)(1) RRUS 8843 B2/B66A**	**(AWS/PCS)**	**14.9"X13.2"X10.9"**	(2)1-5/8" COAX	
C4	**PROPOSED**	**LTE 700 BC/850/PCS**	**DMP65R-BU8DA**	**96.0X20.7X7.7**	**140'-0"±**	**280°**	–	**(P)(1) RRUS 4449 B5/B12**	**(850/700)**	**14.9"x13.2"x10.4"**	–	

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



SURGE SUPPRESSOR MOUNTING DETAIL (2 / A-3)
SCALE: N.T.S

NOTE:
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NOTE:
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DATED: OCTOBER 9, 2020

NOTE:
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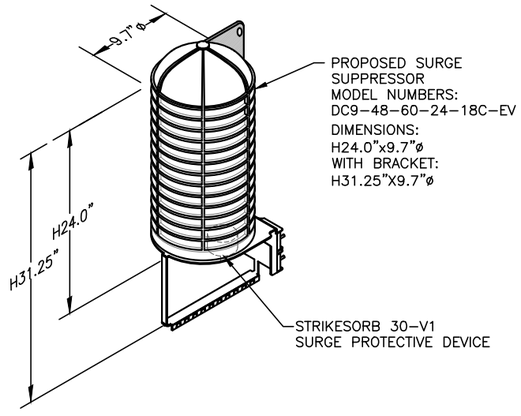


NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

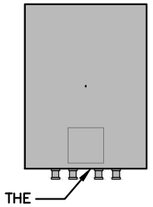
DC SURGE SUPPRESSOR DETAIL (3 / A-3)
SCALE: N.T.S

RRU CHART

QUANTITY	MODEL	SIZE (L x W x D)
3(P)	4449 B5/B12 (850/700)	14.9"x13.2"x10.4"
3(P)	8843 B2/B66A (AWS/PCS)	14.9"x13.2"x10.9"
2(P)(G)	4478 B14 (700)	18.1"x13.4"x8.3"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

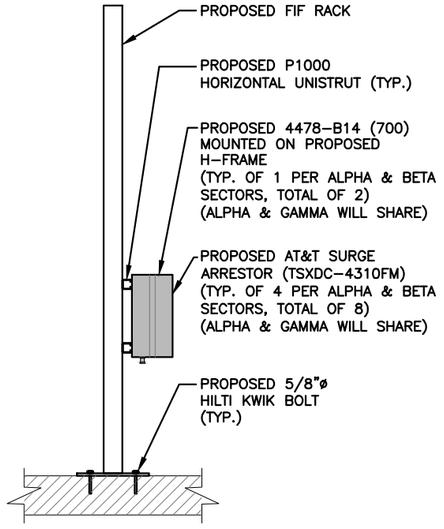
NOTE:
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER



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

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

PROPOSED RRUS DETAIL (4 / A-3)
SCALE: N.T.S



PROPOSED EQUIPMENT RACK DETAIL (5 / A-3)
SCALE: N.T.S

PROPOSED NETSURE 7100 POWER PLANT DETAIL (6 / A-3)
SCALE: N.T.S

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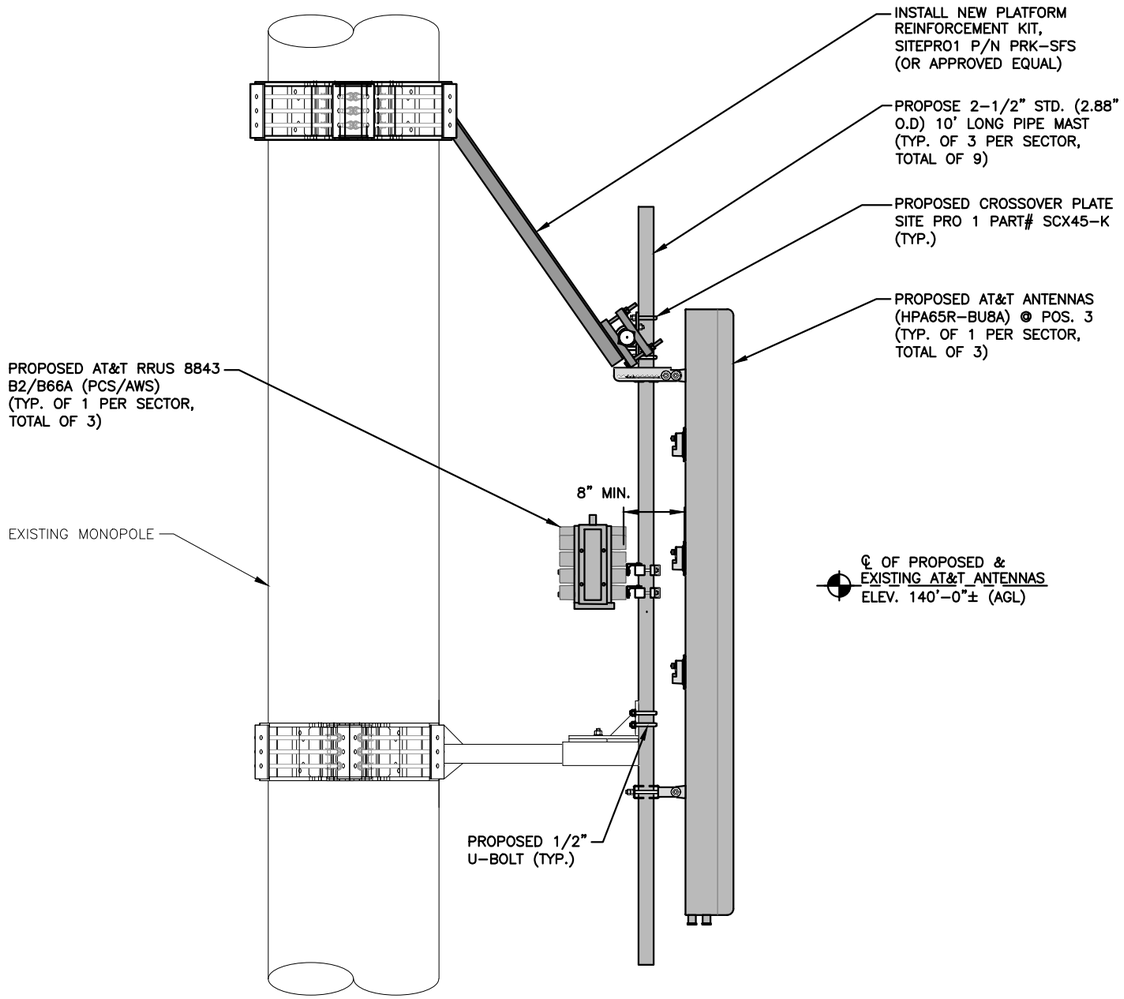
DETAILS

LTE 3C_4C_BWE_5G RETROFIT 2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT1219	A-3	1



PROPOSED LTE ANTENNA & RRUS MOUNTING DETAIL @ POS. 3

1 / A-4

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

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

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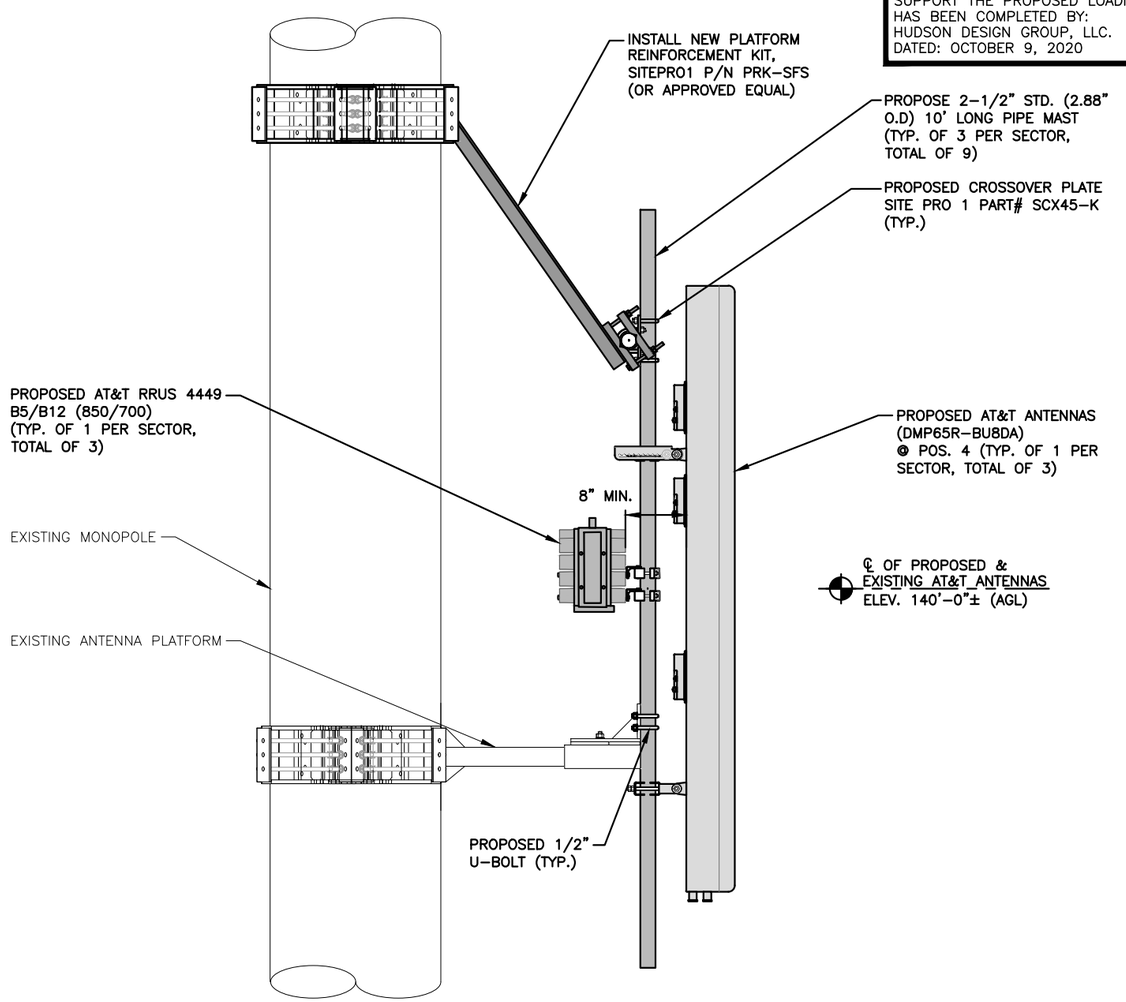

PROPOSED LTE ANTENNA & RRUS MOUNTING DETAIL @ POS. 4

2 / A-4

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: HC | DRAWN BY: AM

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

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DETAILS

LTE 3C_4C_BWE_5G RETROFIT 2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT1219	A-4	1

STRUCTURAL NOTES:

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

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

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

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

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

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

SPECIAL INSPECTION CHECKLIST

BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
N/A	ENGINEER OF RECORD APPROVED SHOP DRAWINGS [1]
N/A	MATERIAL SPECIFICATIONS REPORT [2]
N/A	FABRICATOR NDE INSPECTION
N/A	PACKING SLIPS [3]
ADDITIONAL TESTING AND INSPECTIONS:	
DURING CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS [4]
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION [5]
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT
ADDITIONAL TESTING AND INSPECTIONS:	
AFTER CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS [6]
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
REQUIRED	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

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SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: AM

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AT&T

DETAILS

LTE 3C_4C_BWE_5G RETROFIT 2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
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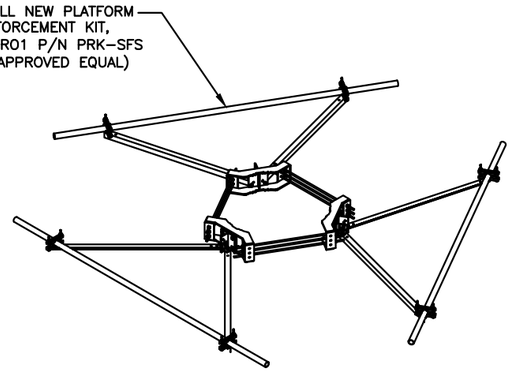
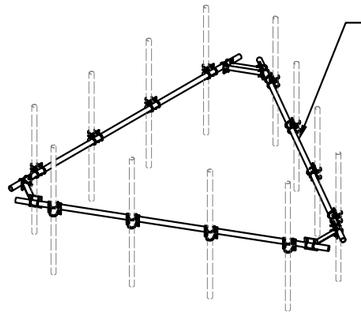


PROPOSED SECTOR FRAME STABILIZER (1 / S-1)
SCALE: N.T.S



PROPOSED HANDRAIL KIT DETAIL (2 / S-1)
SCALE: N.T.S

NOTE:

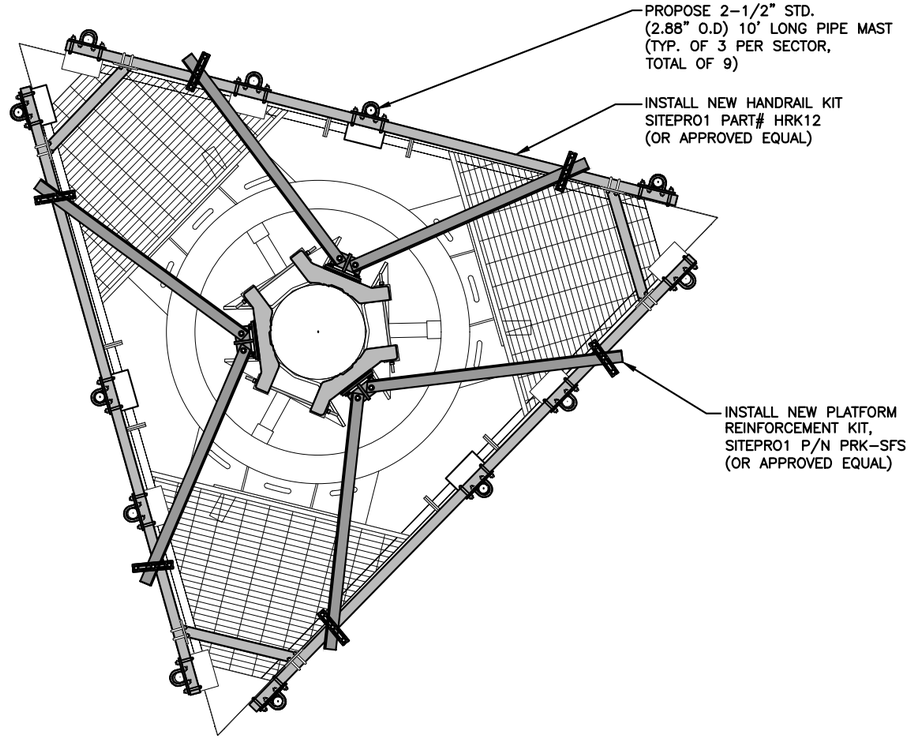
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

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 9, 2020

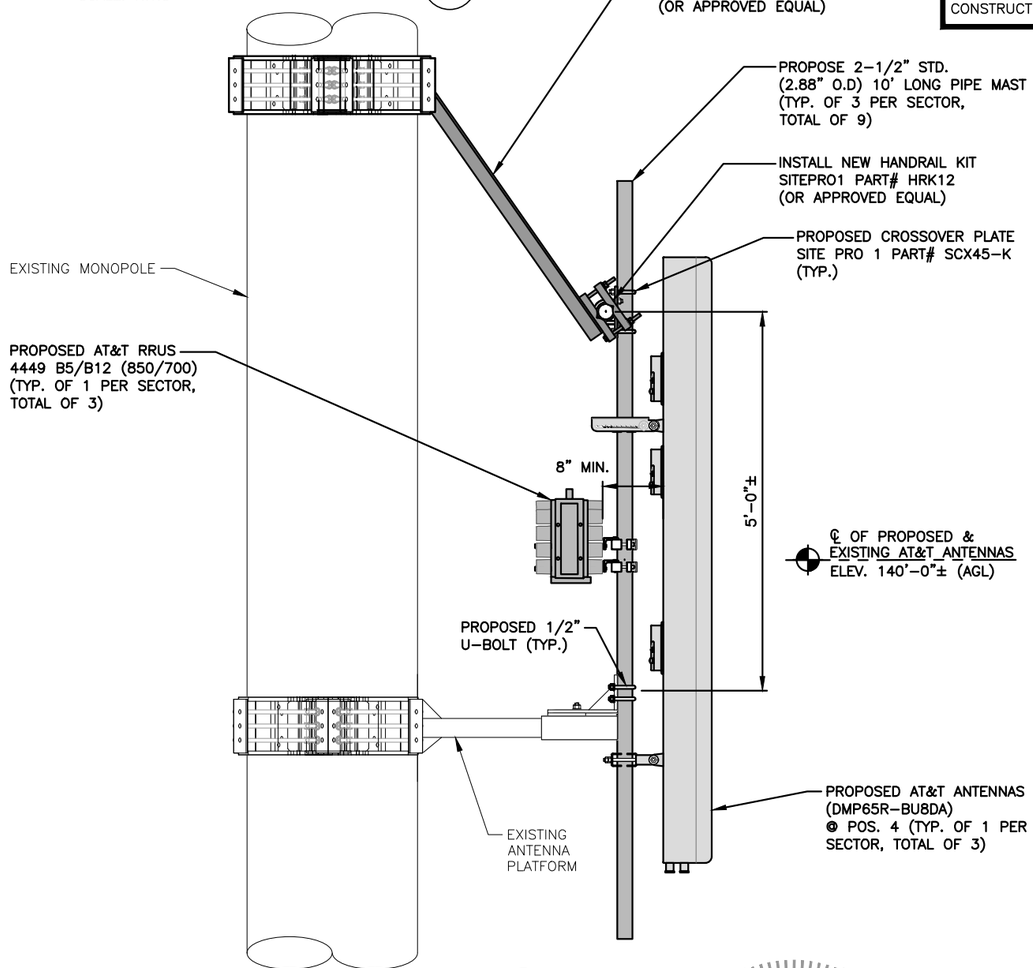
NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.



PROPOSED MOUNT MODIFICATIONS PLAN (3 / S-1)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"

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



PROPOSED MOUNT MODIFICATIONS DETAIL (4 / S-1)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

0 0'-6" 1'-0" 2'-0" 3'-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: CT1219
SITE NAME: GRANBY EAST
SBA SITE # ID: CT46134

15 NORTH GRANBY ROAD
GRANBY, CT 06035
HARTFORD COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	10/26/20	ISSUED FOR CONSTRUCTION	AM	HC	DPH
0	10/20/20	ISSUED FOR REVIEW	AM	HC	DPH
A	10/13/20	ISSUED FOR REVIEW	AM	HC	DPH

SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: AM

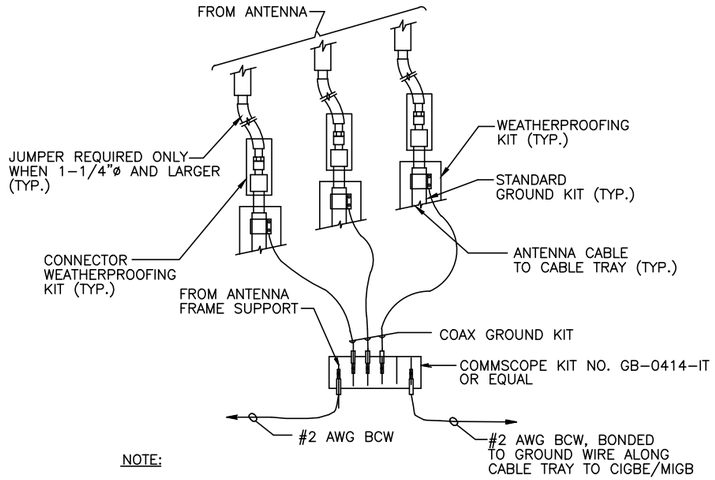
STATE OF CONNECTICUT
DANIEL P. HAMM
No.24178
LICENSED PROFESSIONAL ENGINEER

AT&T

DETAILS

LTE 3C_4C_BWE_5G RETROFIT 2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT1219	S-1	1



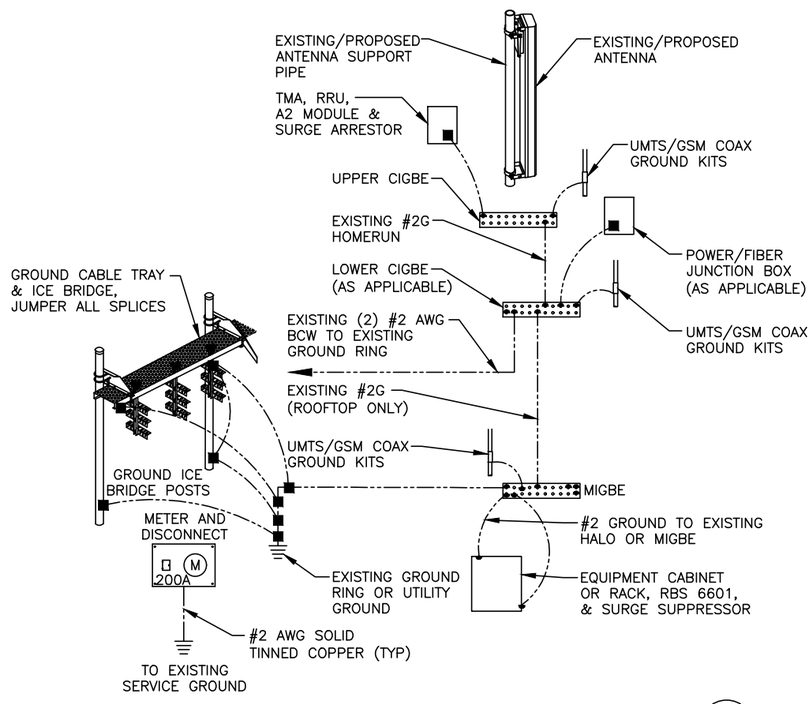
NOTE:

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

SCALE: N.T.S

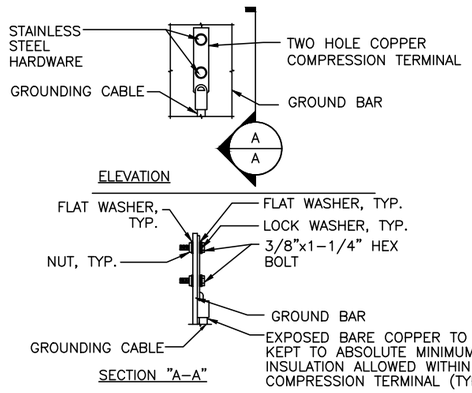
1 / G–1



GROUNDING RISER DIAGRAM

SCALE: N.T.S

2 / G–1



NOTES:

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

TYPICAL GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

3 / G–1

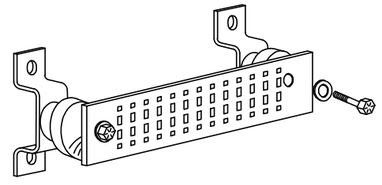
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" – SURGE PRODUCERS

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

SECTION "A" – SURGE ABSORBERS

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



GROUND BAR - DETAIL (AS REQUIRED)

SCALE: N.T.S

4 / G–1

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
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SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1219
SITE NAME: GRANBY EAST
SBA SITE # ID: CT46134

15 NORTH GRANBY ROAD
GRANBY, CT 06035
HARTFORD COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	10/26/20	ISSUED FOR CONSTRUCTION	AM	HC	DPH
0	10/20/20	ISSUED FOR REVIEW	AM	HC	DPH
A	10/13/20	ISSUED FOR REVIEW	AM	HC	DPH

SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: AM

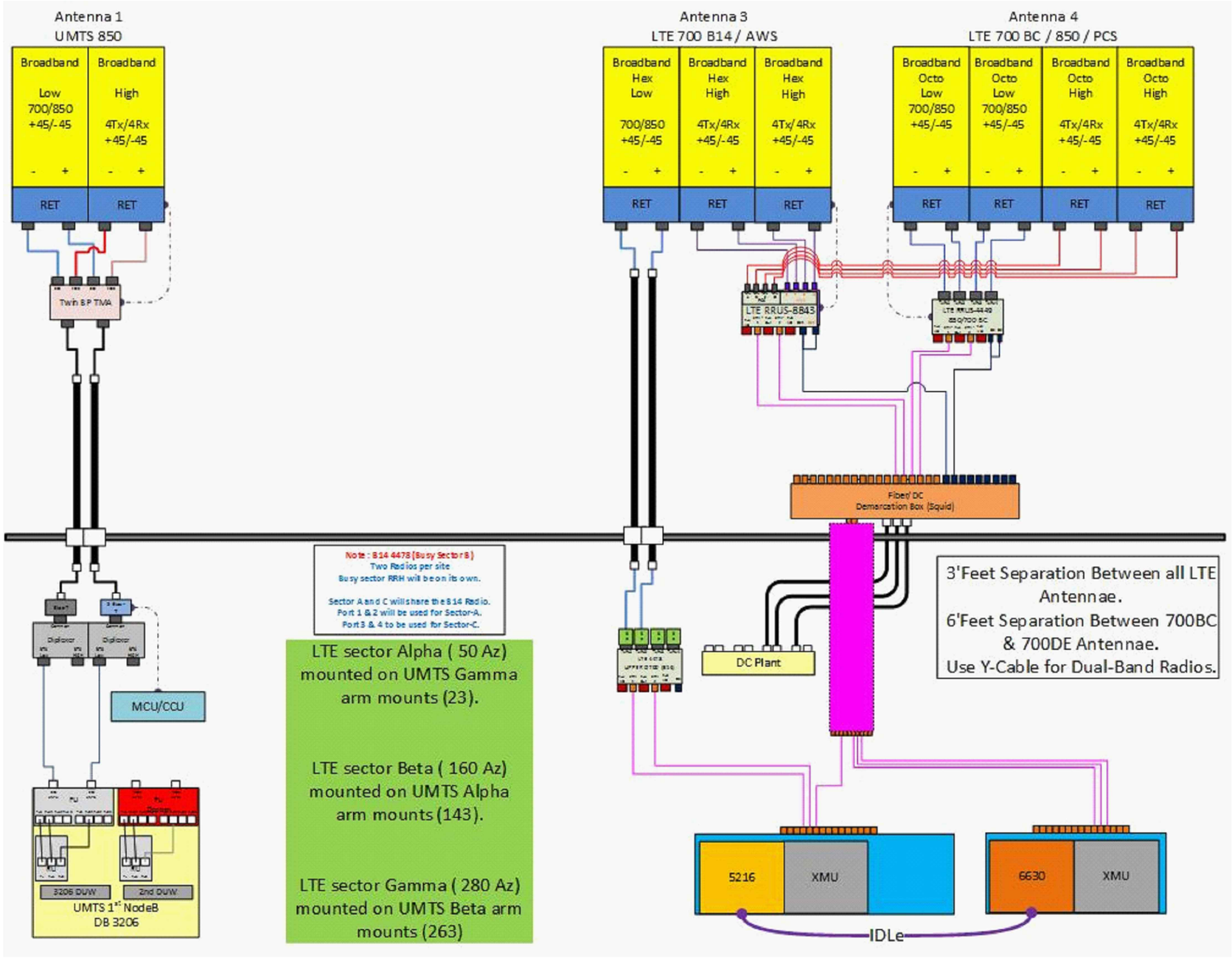
STATE OF CONNECTICUT · DANIEL P. HAMM · No.24178 · LICENSED PROFESSIONAL ENGINEER

AT&T

GROUNDING DETAILS

LTE 3C_4C_BWE_5G RETROFIT 2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT1219	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.

HUDSON Design Group LLC
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0	10/20/20	ISSUED FOR REVIEW	AM	HC	DPH
A	10/13/20	ISSUED FOR REVIEW	AM	HC	DPH

SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: AM

AT&T

RF PLUMBING DIAGRAM
LTE 3C_4C_BWE_5G RETROFIT 2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT1219	RF–1	1

Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Structural Analysis Report

Existing 150 ft. EEI Monopole
Customer Name: SBA Communications Corp
Customer Site Number: CT46134-A
Customer Site Name: Granby-n. Granby
Carrier Name: AT&T (App#: 140829 V1)
Carrier Site ID / Name: CT1219 / GRANBY POLICE DEPT
Site Location: 15 North Granby Road
Granby, Connecticut
Hartford County
Latitude: 41.953583
Longitude: -72.793722

10/22/20

Analysis Result:

Max Structural Usage: 98.4% [Pass]
Max Foundation Usage: 98.0% [Pass]
Additional Usage Caused by Mount Modification: + 2.6%

Report Prepared By : Billy Davis

Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
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Structural Analysis Report

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Analysis Result:

Max Structural Usage: 98.4% [Pass]

Max Foundation Usage: 98.0% [Pass]

Additional Usage Caused by Mount Modification: + 2.6%

Report Prepared By : Billy Davis

Introduction

The purpose of this report is to summarize the analysis results on the 150 ft. EEI Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Engineered Endeavors, Inc. Job #3934, Drawing #GS51005, Dated 06/26/98
Foundation Drawing	Engineered Endeavors, Inc. Job #3934, Drawing #F3934-150, Dated 06/26/98
Geotechnical Report	Tectonic Engineering Consultants Job #1170.C938, Dated 06/18/98
Modification Drawings	Semaan Engineering Solutions Project #CT2010, Dated 02/06/09; Vertical Solutions Project #121657, Dated 09/07/12; FDH Project #1331731400, Dated 09/11/13 TES Job # 66021, dated February 18, 2019.
Mount Analysis	SAI Communications, dated October 9, 2020.

Analysis Criteria

The /rigorous analysis was performed in accordance with the requirements and stipulations of the TIA-222-G-2**.** In accordance with this standard, the structure was analyzed using **TESPoles,** a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed V_{ult} = 120.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 93.0 mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 1" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft.
Seismic Parameters:	S_S = 0.177, S_1 = 0.065

This structural analysis is based upon the tower being classified as a Structure Class II; however, if a different classification is required subsequent to the date hereof, the tower classification will be changed to meet such requirement and a new structural analysis will be run.

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft.)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	150.0	1	UNK - 10' Omni - Omni	Low Profile Platform	(3) 1/2" (1) 7/8"	Town of Granby
2		1	UNK - 18' Omni - Omni			
3		1	UNK - 10' Dipole - Dipole			
4		1	UNK - 3' Yagi - Yagi			
-	138.0	1	Andrew - SBNH-1D6565C - Panel	Low Profile Platform	(12) 1 1/4" Coax (3) 3" Conduit	AT&T
-		6	Powerwave - 7770 - Panel			
-		2	Powerwave - P65-17-XLH-RR - Panel			
-		6	Powerwave - TT19-08BP111-001 - TMA			
-		3	Ericsson - RRUS-12 1900 MHz - RRU			
-		6	Ericsson - RRUS-11 700MHz - RRU			
-		6	Powerwave - LGP 21901 - TMA			
-		1	Raycap - DC6-48-60-18-8F - SP			
15	126.0	3	RFS - APXVTM14-C-120 – Panel	Low Profile Platform	(3) 1-1/4"	Sprint
16		3	ALU - 1900MHz - RRU			
17		3	ALU - 800 MHz - RRU			
18		3	ALU - TD-RRH8x20-25 - RRU			
19		3	ALU - 800MHz Filter - Filter			
20		4	ALU - ACU-A20-N - RET			
21		3	RFS - APXVSPP18-C-A20 - Panel			
22	115.0	4	Ericsson - AIR32 KRD901146-1_B66A_B2A - Panel	Flush Mount	(6) 1 5/8"	T-Mobile
23		4	RFS - APXVAARR24_43-U-NA20 (Octa) - Panel			
24		4	RFS - APX16DWV-16DWVS-E-A20 - Panel			
25		4	Ericsson - KRY 112 489/2 - TMA			
26		4	Ericsson - Radio 4449 B71 + B12 - RRU			
27	50.0	1	GPS	Stand-Off	---	Sprint

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft.)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
6	138.0	3	Cci - DMP65R-BU8DA - Panel	Low Profile Platform SitePro1 HRK-12 Handrail Kit SitePro1 PRK-SFS Reinforcement Kit	(12) 1 1/4" Coax (1) 3" Conduit (3) 1" DC (1) 1/2" Fiber	AT&T
7		3	Powerwave - 7770 - Panel			
8		3	HPA-65R-BU8A - Panel			
9		6	Powerwave - TT19-08BP111-001 - TMA			
10		6	Powerwave - LGP 21901 - Diplexer			
11		3	Ericsson - 4449 B5/B12- RRU			
12		3	Ericsson - RRUS-11 700MHz - RRU			
13		3	Ericsson – 8843 B2 B66A- RRU			
14		1	Raycap DC9-48-60-24-8C-EV			

All transmission lines are considered running inside of the pole shafts.

Analysis Results

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	**98.4%**	**87.0%**	**86.6%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	3839.8	36.2	74.0

The foundation has been investigated using the supplied documents and soils report and was found adequate. Therefore, no modification to the foundation will be required.

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.9407 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing pole and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the ANSI/TIA/EIA 222-G Standard under the design basic wind speed as specified in the Analysis Criteria. No modifications to the existing structure will be required.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC.** Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.

2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.

3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the EIA/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.

4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.

5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.

6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

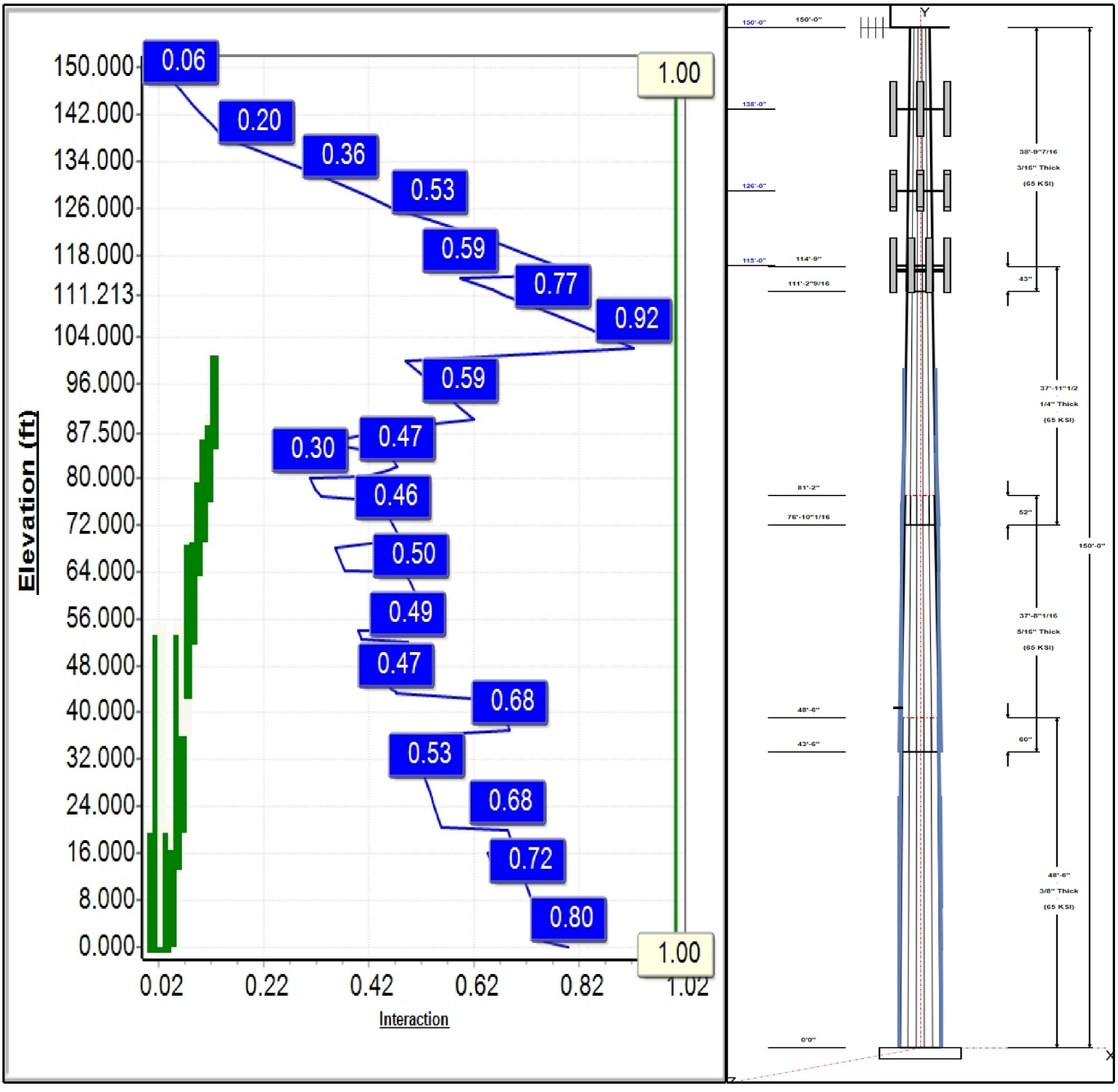
Usage Diagram - Max Ratio 92.02% at 102.0ft

Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Gh:**	1.1		
Base Elev:	0.000 (ft)			Page: 1	

Tower Engineering Solutions

Dead Load Factor:	1.20	**Iterations:**	28
Wind Load Factor:	1.60		

Load Case : 1.2D + 1.6W 93 mph Wind



Structure: CT46134-A-SBA

Type: Tapered
Site Name: Granby-n. Granby
Height: 150.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 12 Sided
Taper: 0.18000

10/22/2020

Tower Engineering Solutions

Shaft Properties

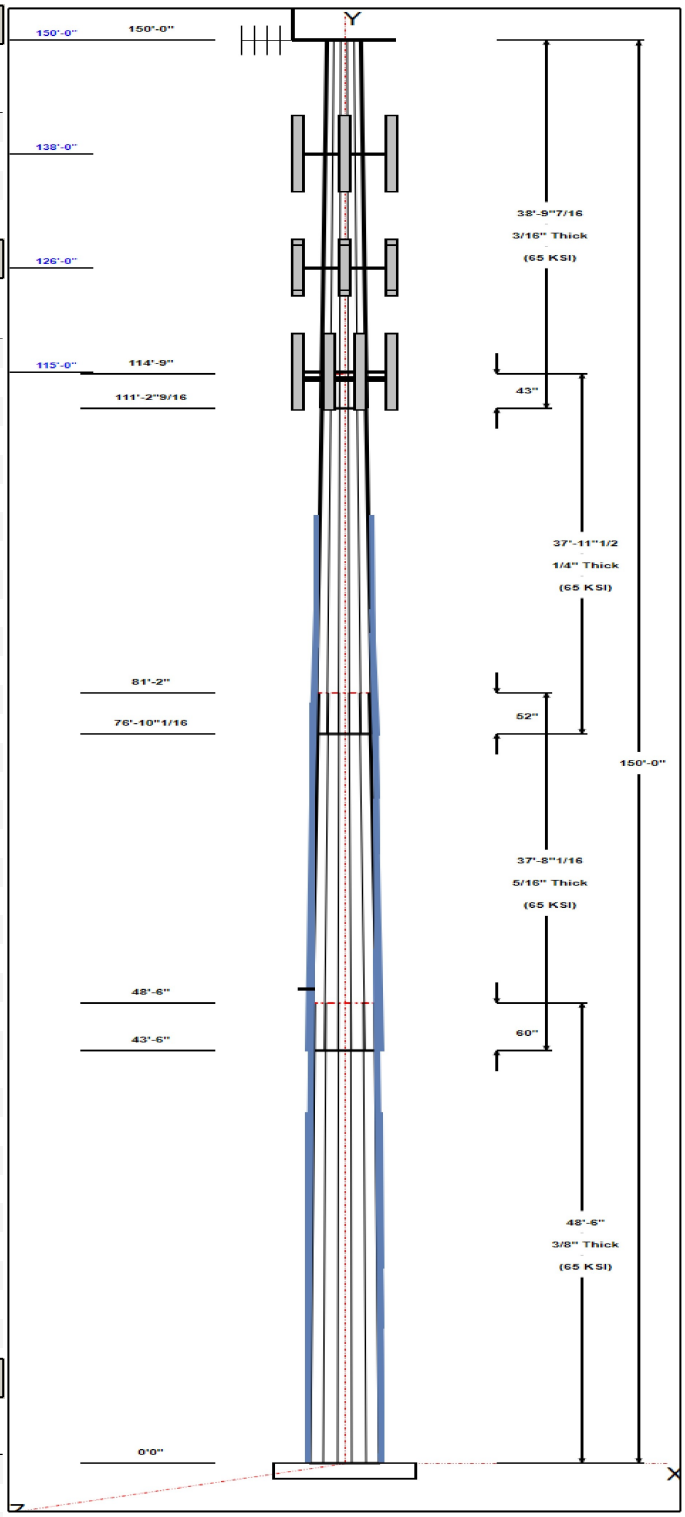
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	48.50	34.27	43.00	0.375		0.18000	65
2	37.67	29.01	35.80	0.313	Slip	0.18000	65
3	37.96	23.46	30.29	0.250	Slip	0.18000	65
4	38.79	17.50	24.48	0.188	Slip	0.18000	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
150.00	150.00	1	Low Profile Platform-flat	Town of Granby
150.00	155.00	1	10' Omni	Town of Granby
150.00	159.00	1	18' Omni	Town of Granby
150.00	155.00	1	10' Dipole	Town of Granby
150.00	150.00	1	3' Yagi	Town of Granby
138.00	138.00	1	Low Profile Platform-flat	AT&T
138.00	138.00	3	7770.00	AT&T
138.00	138.00	6	TT19-08BP111-001	AT&T
138.00	138.00	3	RRUS-11 700MHz	AT&T
138.00	138.00	6	LGP 21901	AT&T
138.00	138.00	3	DMP65R-BU8DA	AT&T
138.00	138.00	3	HPA-65R-BU8A	AT&T
138.00	138.00	3	4449 B5/B12	AT&T
138.00	138.00	3	B2 B66A 8843	AT&T
138.00	138.00	1	DC9-48-60-24-8C-EV	AT&T
138.00	138.00	1	HRK12 (Handrail Kit)	AT&T
138.00	138.00	1	PRK-1245 (kicker kit)	AT&T
126.00	126.00	1	Low Profile Platform-flat	Sprint
126.00	126.00	3	APXVTM14-C-120	Sprint
126.00	126.00	3	1900MHz	Sprint
126.00	126.00	3	800 MHz	Sprint
126.00	126.00	3	TD-RRH8x20-25	Sprint
126.00	126.00	3	800MHz Filter	Sprint
126.00	126.00	4	ACU-A20-N	Sprint
126.00	126.00	3	APXVSPP18-C-A20	Sprint
115.00	115.00	1	F4P-12W	T-Mobile
115.00	115.00	1	F4P-HRK12	T-Mobile
115.00	115.00	4	AIR32	T-Mobile
115.00	115.00	4	APXVAARR24_43-U-NA20	T-Mobile
115.00	115.00	4	APX16DWV-16DWVS-E-A	T-Mobile
115.00	115.00	4	KRY 112 489/2	T-Mobile
115.00	115.00	4	Radio 4449 B71 + B12	T-Mobile
50.00	50.00	1	Standoff	Sprint
50.00	50.00	1	GPS	Sprint
20.50	20.50	2	Splice Plate	---

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	150.00	Inside	1/2"	Town of Granby
0.00	150.00	Inside	7/8"	Town of Granby
0.00	138.00	Inside	1 1/4" Coax	AT&T
0.00	138.00	Inside	1" DC	AT&T
0.00	138.00	Inside	1/2" Fiber	AT&T
0.00	138.00	Inside	3" Conduit	AT&T
0.00	126.00	Inside	1-1/4" Fiber	Sprint



0.00	115.00	Outside	1 1/4" Hybrid	T-Mobile
0.00	115.00	Inside	1 5/8" Coax	T-Mobile
0.00	115.00	Outside	1 5/8" Coax	T-Mobile
76.70	90.00	Outside	1.5" Reinforcing Plate	---
69.50	76.70	Outside	1.25" Reinforcing Plate	---
43.40	69.50	Outside	1.5" Reinforcing Plate	---
37.00	43.40	Outside	1.25" Reinforcing Plate	---
0.50	37.00	Outside	1.5" Reinforcing Plate	---

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
12	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
1.7500	57.0	60.0	Round

Reactions

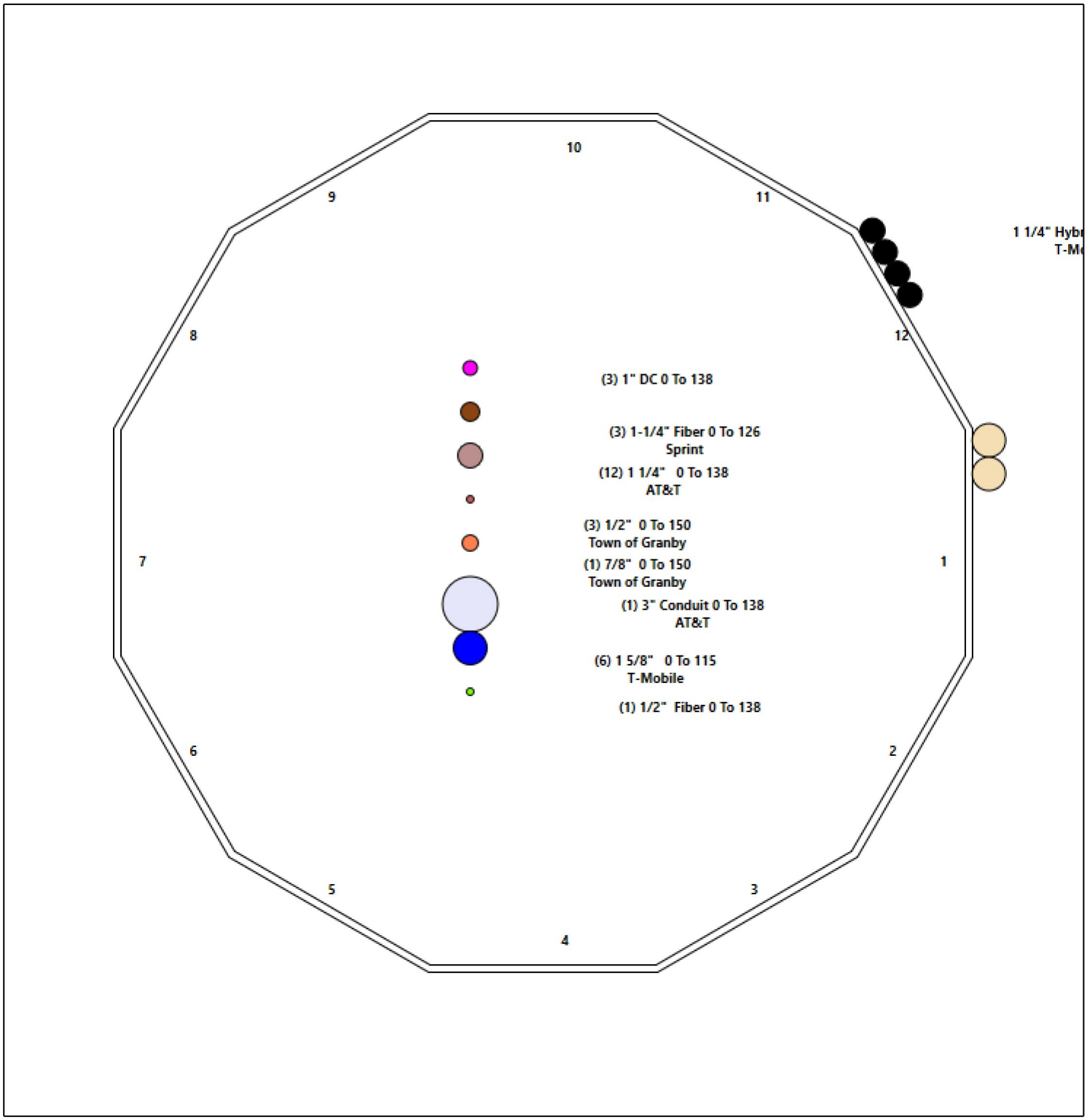
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 93 mph Wind	3839.8	36.2	38.1
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1249.5	10.6	74.0
1.2D + 1.0E	150.0	1.3	38.1
0.9D + 1.0E	148.4	1.3	28.6
1.0D + 1.0W 60 mph Wind	993.9	9.4	31.7

Structure: CT46134-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Granby-n. Granby
Height: 150.00 (ft)

10/22/2020

Tower Engineering Solutions



Shaft Properties

Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 5	

Tower Engineering Solutions

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	12	48.500	0.3750	65		0.00	7,624
2	12	37.670	0.3125	65	Slip	60.00	4,139
3	12	37.960	0.2500	65	Slip	52.00	2,769
4	12	38.787	0.1875	65	Slip	43.00	1,658
					Total Shaft Weight:		**16,190**

	Bottom						Top						
Sec. No.	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper
1	43.00	0.00	51.47	11936.20	28.58	114.67	34.27	48.50	40.93	6001.78	22.34	91.39	0.180000
2	35.80	43.50	35.70	5737.66	28.55	114.54	29.01	81.17	28.88	3036.85	22.73	92.85	0.180000
3	30.29	76.84	24.19	2786.59	30.33	121.18	23.46	114.80	18.69	1284.98	23.00	93.85	0.180000
4	24.48	111.2	14.67	1104.96	32.84	130.57	17.50	150.00	10.45	399.87	22.86	93.33	0.180000

Additional Steel

							Intermediate Connectors		Termination Connectors			
Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Fu (ksi)	Offset (in)	Description	Spacing (in)	Description	Spacing (in)	Lower Qty	Upper Qty
0.00	20.50	1	PLT 7.25"x1.25(1.25hole)	65	80	0.00	AJM20&sleeve	18.00	AJM20&sleeve	3.00	13	13
0.00	54.17	2	PLT 7.25"x1.25(1.25hole)	65	80	0.00	AJM20&sleeve	18.00	AJM20&sleeve	3.00	13	13
0.00	1.00	1	SOL 1 3/4" William R71	128	150	2.50	5/8" Hollo Bolt	12.00	5/8" Hollo Bolt	3.00		
0.00	20.50	2	PLT 6.5x1.5(31mm Hole)	50	65	0.00	AJM20&sleeve	15.00	AJM20&sleeve	3.00	12	11
1.00	17.50	1	LNP LP6X125-B-20T	65	80	0.00	5/8" Hollo Bolt	24.00	5/8" Hollo Bolt	3.00		10
14.17	54.17	1	PLT 7.25"x1.25(1.25hole)	65	80	0.00	AJM20&sleeve	18.00	AJM20&sleeve	3.00	13	13
20.50	37.00	3	PLT 5.75x1.5(31mm Hole)	50	65	0.00	AJM20&sleeve	18.00	AJM20&sleeve	3.00	11	11
43.36	69.50	3	PLT 5.75x1.5(31mm Hole)	50	65	0.00	AJM20&sleeve	18.00	AJM20&sleeve	3.00	11	9
52.50	70.00	3	LNP LP6X100-G-20TC	65	80	0.00	5/8" Hollo Bolt	24.00	5/8" Hollo Bolt	3.00	8	
64.17	80.17	3	PLT 6"X1-1/4"(1.25" Hole	65	80	0.00	AJM20&sleeve	18.00	AJM20&sleeve	3.00	11	11
70.00	87.50	3	LNP LP6X100-G-20CT	65	80	0.00	5/8" Hollo Bolt	24.00	5/8" Hollo Bolt	3.00		8
76.71	90.00	3	PLT 4.75x1.5(31mm Hole)	50	65	0.00	AJM20&sleeve	24.00	AJM20&sleeve	3.00	8	7
85.92	100.0	3	PLT 5"x1-1/4"(1.25"Hole)	65	80	0.00	AJM20&sleeve	24.00	AJM20&sleeve	3.00	9	9

Load Summary

Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 6	

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Discrete Appurtenances

				No Ice			Ice				
No.	Elev (ft)	Description	Qty	Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
1	150.00	Low Profile Platform-flat	1	1200.00	34.00	1.00	2596.17	71.976	1.00	0.00	0.00
2	150.00	10' Omni	1	25.00	3.00	1.00	126.41	7.808	1.00	0.00	5.00
3	150.00	18' Omni	1	55.00	5.40	1.00	236.02	13.934	1.00	0.00	9.00
4	150.00	10' Dipole	1	30.00	3.76	1.00	178.78	11.760	1.00	0.00	5.00
5	150.00	3' Yagi	1	10.00	2.98	1.00	130.02	11.351	1.00	0.00	0.00
6	138.00	Low Profile Platform-flat	1	1200.00	34.00	1.00	2584.58	71.661	1.00	0.00	0.00
7	138.00	7770.00	3	35.00	5.50	0.77	228.42	6.962	0.77	0.00	0.00
8	138.00	TT19-08BP111-001	6	16.00	0.64	0.50	42.76	1.424	0.50	0.00	0.00
9	138.00	RRUS-11 700MHz	3	51.00	2.52	0.50	146.56	3.357	0.50	0.00	0.00
10	138.00	LGP 21901	6	5.50	0.23	0.50	15.67	0.717	0.50	0.00	0.00
11	138.00	DMP65R-BU8DA	3	95.70	17.07	0.74	616.38	20.314	0.74	0.00	0.00
12	138.00	HPA-65R-BU8A	3	54.00	11.20	0.89	329.09	13.402	0.89	0.00	0.00
13	138.00	4449 B5/B12	3	71.00	1.97	0.50	141.58	2.694	0.50	0.00	0.00
14	138.00	B2 B66A 8843	3	70.00	1.64	0.50	130.80	2.323	0.50	0.00	0.00
15	138.00	DC9-48-60-24-8C-EV	1	26.20	1.14	1.00	166.35	3.238	1.00	0.00	0.00
16	138.00	HRK12 (Handrail Kit)	1	261.72	6.75	1.00	672.41	15.473	1.00	0.00	0.00
17	138.00	PRK-1245 (kicker kit)	1	464.91	9.50	1.00	894.05	22.654	1.00	0.00	0.00
18	126.00	Low Profile Platform-flat	1	1200.00	34.00	1.00	2572.04	71.320	1.00	0.00	0.00
19	126.00	APXVTM14-C-120	3	56.00	6.34	0.78	278.10	7.854	0.82	0.00	0.00
20	126.00	1900MHz	3	44.00	3.80	0.50	187.04	5.621	0.50	0.00	0.00
21	126.00	800 MHz	3	53.00	2.49	0.50	149.91	3.989	0.50	0.00	0.00
22	126.00	TD-RRH8x20-25	3	70.00	4.05	0.50	207.47	5.173	0.50	0.00	0.00
23	126.00	800MHz Filter	3	8.80	0.78	0.50	31.92	1.628	0.50	0.00	0.00
24	126.00	ACU-A20-N	4	1.00	0.14	0.50	6.63	0.529	0.50	0.00	0.00
25	126.00	APXVSPP18-C-A20	3	57.00	8.02	0.86	283.49	11.681	0.88	0.00	0.00
26	115.00	F4P-12W	1	3100.00	63.31	1.00	7033.67	66.599	1.00	0.00	0.00
27	115.00	F4P-HRK12	1	507.00	7.57	1.00	1150.35	19.920	1.00	0.00	0.00
28	115.00	AIR32 KRD901146-1_B66A_B2A	4	132.20	6.51	0.91	366.57	7.991	0.92	0.00	0.00
29	115.00	APXVAARR24_43-U-NA20 (Octa)	4	99.00	20.24	0.81	712.40	22.735	0.83	0.00	0.00
30	115.00	APX16DWV-16DWVS-E-A20	4	40.70	6.61	0.77	192.68	9.438	0.81	0.00	0.00
31	115.00	KRY 112 489/2	4	15.40	0.64	0.50	38.31	1.431	0.50	0.00	0.00
32	115.00	Radio 4449 B71 + B12	4	70.00	1.65	0.50	196.89	2.398	0.50	0.00	0.00
33	50.00	Standoff	1	50.00	1.50	1.00	154.24	3.585	1.00	0.00	0.00
34	50.00	GPS	1	1.00	0.01	1.00	1.08	0.011	1.00	0.00	0.00
35	20.50	Splice Plate	2	276.00	3.83	0.94	378.53	5.118	0.96	0.00	0.00
		Totals:	**88**	**12,241.53**			**33,850.05**				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	150.00	(3) 1/2"	0.00	Inside
0.00	150.00	(1) 7/8"	0.00	Inside
0.00	138.00	(12) 1 1/4" Coax	0.00	Inside
0.00	138.00	(3) 1" DC	0.00	Inside
0.00	138.00	(1) 1/2" Fiber	0.00	Inside
0.00	138.00	(1) 3" Conduit	0.00	Inside

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	No Ice CaAa Factor	Ice Weight (lb)	Ice CaAa (sf)	Ice CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
0.00	126.00	(3) 1-1/4" Fiber			0.00	Inside					
0.00	115.00	(4) 1 1/4" Hybrid			0.01	Outside					
0.00	115.00	(6) 1 5/8" Coax			0.00	Inside					
0.00	115.00	(2) 1 5/8" Coax			0.01	Outside					
76.70	90.00	(1) 1.5" Reinforcing Plate			3.00	Outside					
69.50	76.70	(1) 1.25" Reinforcing Plate			2.50	Outside					
43.40	69.50	(1) 1.5" Reinforcing Plate			3.00	Outside					
37.00	43.40	(1) 1.25" Reinforcing Plate			2.50	Outside					
0.50	37.00	(1) 1.5" Reinforcing Plate			3.00	Outside					

Shaft Section Properties

Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 8	

Tower Engineering Solutions

Increment Length: **2 (ft)**

											Additional Reinforcing			
Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Area (in^2)	Ixp (in^4)	Iyp (in^4)	Weight (lb)
0.00	RB1 RB2 RB3 RB4	0.3750	43.000	51.470	11936.2	28.58	114.67	65	74	0.0	49.29	15667.3	7010.8	
1.00	RT3 RB5	0.3750	42.820	51.252	11785.6	28.45	114.19	65	74	174.8	54.19	15905.4	7717.3	184.4
2.00		0.3750	42.640	51.035	11636.3	28.32	113.71	65	74	174.0	54.19	15776.9	7651.4	184.4
4.00		0.3750	42.280	50.600	11341.5	28.07	112.75	65	74	345.8	54.19	15521.4	7520.5	368.8
6.00		0.3750	41.920	50.166	11051.7	27.81	111.79	65	74	342.9	54.19	15268.0	7390.8	368.8
8.00		0.3750	41.560	49.731	10766.9	27.55	110.83	65	75	339.9	54.19	15016.7	7262.4	368.8
10.00		0.3750	41.200	49.296	10487.0	27.30	109.87	65	75	337.0	54.19	14767.5	7135.2	368.8
12.00		0.3750	40.840	48.861	10212.0	27.04	108.91	65	75	334.0	54.19	14520.4	7009.3	368.8
14.00		0.3750	40.480	48.427	9941.9	26.78	107.95	65	76	331.1	54.19	14275.4	6884.6	368.8
14.17	RB6	0.3750	40.449	48.390	9919.1	26.76	107.87	65	76	28.0	63.25	17499.3	8716.2	36.6
16.00		0.3750	40.120	47.992	9676.6	26.52	106.99	65	76	300.1	63.25	17226.5	8577.7	393.9
17.50	RT5	0.3750	39.850	47.666	9480.7	26.33	106.27	65	76	244.1	55.75	15471.8	7343.9	284.6
18.00		0.3750	39.760	47.557	9416.0	26.27	106.03	65	76	81.0	55.75	15404.5	7311.9	94.9
20.00		0.3750	39.400	47.123	9160.1	26.01	105.07	65	76	322.2	55.75	15136.8	7184.7	379.4
20.50	RT1 RT4 RB7	0.3750	39.310	47.014	9096.9	25.94	104.83	65	76	80.1	53.06	11076.9	11076.9	90.3
22.00		0.3750	39.040	46.688	8909.0	25.75	104.11	65	77	239.1	53.06	10931.7	10931.7	270.8
24.00		0.3750	38.680	46.253	8662.4	25.49	103.15	65	77	316.3	53.06	10739.5	10739.5	361.1
26.00		0.3750	38.320	45.819	8420.5	25.24	102.19	65	77	313.3	53.06	10549.1	10549.1	361.1
28.00		0.3750	37.960	45.384	8183.1	24.98	101.23	65	77	310.3	53.06	10360.4	10360.4	361.1
30.00		0.3750	37.600	44.949	7950.2	24.72	100.27	65	78	307.4	53.06	10173.5	10173.5	361.1
32.00		0.3750	37.240	44.514	7721.8	24.47	99.31	65	78	304.4	53.06	9988.2	9988.2	361.1
34.00		0.3750	36.880	44.080	7497.7	24.21	98.35	65	78	301.5	53.06	9804.7	9804.7	361.1
36.00		0.3750	36.520	43.645	7278.1	23.95	97.39	65	79	298.5	53.06	9622.9	9622.9	361.1
37.00	RT7	0.3750	36.340	43.428	7169.9	23.82	96.91	65	79	148.1	27.19	4863.3	4863.3	92.5
38.00		0.3750	36.160	43.210	7062.8	23.69	96.43	65	79	147.4	27.19	4817.5	4817.5	92.5
40.00		0.3750	35.800	42.776	6851.8	23.44	95.47	65	79	292.6	27.19	4726.4	4726.4	185.0
42.00		0.3750	35.440	42.341	6645.0	23.18	94.51	65	79	289.6	27.19	4636.1	4636.1	185.0
43.36	RB8	0.3750	35.195	42.045	6506.8	23.00	93.85	65	80	195.3	53.06	8968.6	8968.6	245.6
43.50	Bot - Section 2	0.3750	35.170	42.015	6492.7	22.99	93.79	65	80	20.0	53.06	8956.4	8956.4	25.3
44.00		0.3750	35.080	41.906	6442.4	22.92	93.55	65	80	132.1	53.06	9217.6	9217.6	90.3
46.00		0.3750	34.720	41.472	6244.0	22.66	92.59	65	80	524.9	53.06	9041.4	9041.4	361.1
48.00		0.3750	34.360	41.037	6049.7	22.41	91.63	65	80	519.4	53.06	8866.9	8866.9	361.1
48.50	Top - Section 1	0.3125	34.895	34.799	5312.0	27.78	111.66	65	74	129.0	53.06	8823.6	8823.6	90.3
50.00		0.3125	34.625	34.527	5188.6	27.55	110.80	65	75	176.9	53.06	8694.1	8694.1	270.8
52.00		0.3125	34.265	34.165	5027.0	27.24	109.65	65	75	233.7	53.06	8523.1	8523.1	361.1
52.50	RB9	0.3125	34.175	34.074	4987.1	27.16	109.36	65	75	58.1	71.06	11292.2	11292.2	120.9
54.00		0.3125	33.905	33.802	4868.8	26.93	108.50	65	75	173.2	71.06	11122.8	11122.8	362.7
54.17	RT2 RT6	0.3125	33.874	33.772	4855.5	26.90	108.40	65	75	19.5	43.88	6849.7	6849.7	25.4
56.00		0.3125	33.545	33.440	4713.9	26.62	107.34	65	76	209.3	43.88	6723.2	6723.2	273.2
58.00		0.3125	33.185	33.078	4562.4	26.31	106.19	65	76	226.3	43.88	6586.3	6586.3	298.6
60.00		0.3125	32.825	32.716	4414.1	26.00	105.04	65	76	223.9	43.88	6450.9	6450.9	298.6
62.00		0.3125	32.465	32.353	4269.1	25.69	103.89	65	77	221.4	43.88	6316.9	6316.9	298.6
64.00		0.3125	32.105	31.991	4127.3	25.38	102.74	65	77	219.0	43.88	6184.3	6184.3	298.6
64.17	RB10	0.3125	32.074	31.960	4115.4	25.36	102.64	65	77	18.5	66.38	9331.6	9331.6	38.4
66.00		0.3125	31.745	31.629	3988.7	25.08	101.58	65	77	198.0	66.38	9150.2	9150.2	413.3
68.00		0.3125	31.385	31.267	3853.2	24.77	100.43	65	78	214.0	66.38	8954.0	8954.0	451.7
69.50	RT8	0.3125	31.115	30.995	3753.6	24.54	99.57	65	78	158.9	40.50	5329.6	5329.6	206.7
70.00	RT9 RB11	0.3125	31.025	30.904	3720.8	24.46	99.28	65	78	52.7	40.50	5300.3	5300.3	68.9
72.00		0.3125	30.665	30.542	3591.5	24.15	98.13	65	78	209.1	40.50	5183.7	5183.7	275.6
74.00		0.3125	30.305	30.180	3465.2	23.84	96.98	65	79	206.6	40.50	5068.4	5068.4	275.6

Increment Length: **2 (ft)**

Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Additional Reinforcing Area (in^2)	Additional Reinforcing Ixp (in^4)	Additional Reinforcing Iyp (in^4)	Additional Reinforcing Weight (lb)
76.00		0.3125	29.945	29.818	3341.9	23.53	95.82	65	79	204.2	40.50	4954.5	4954.5	275.6
76.71	RB12	0.3125	29.817	29.689	3298.9	23.42	95.42	65	79	71.9	61.88	7556.9	7556.9	149.5
76.84	Bot - Section 3	0.3125	29.794	29.666	3291.2	23.40	95.34	65	79	12.8	61.88	7546.0	7546.0	26.7
78.00		0.3125	29.585	29.455	3221.6	23.22	94.67	65	79	212.4	61.88	7686.2	7686.2	244.9
80.00		0.3125	29.225	29.093	3104.2	22.92	93.52	65	80	361.7	61.88	7512.7	7512.7	421.1
80.17	RT10	0.3125	29.194	29.062	3094.3	22.89	93.42	65	80	30.5	39.38	4769.7	4769.7	22.8
81.17	Top - Section 2	0.2500	29.514	23.558	2575.1	29.49	118.06	65	73	179.0	39.38	4714.9	4714.9	134.0
82.00		0.2500	29.365	23.438	2535.9	29.33	117.46	65	73	66.4	39.38	4669.8	4669.8	111.2
84.00		0.2500	29.005	23.148	2443.0	28.94	116.02	65	73	158.5	39.38	4561.9	4561.9	268.0
85.92	RB13	0.2500	28.659	22.870	2356.0	28.57	114.64	65	74	150.3	58.13	6576.8	6576.8	379.7
86.00		0.2500	28.645	22.858	2352.4	28.56	114.58	65	74	6.2	58.13	6570.6	6570.6	15.8
87.50	RT11	0.2500	28.375	22.641	2285.9	28.27	113.50	65	74	116.1	40.13	4484.5	4484.5	204.8
88.00		0.2500	28.285	22.568	2264.0	28.17	113.14	65	74	38.5	40.13	4457.7	4457.7	68.3
90.00	RT12	0.2500	27.925	22.278	2177.9	27.79	111.70	65	74	152.6	18.75	2015.7	2015.7	127.6
92.00		0.2500	27.565	21.989	2094.0	27.40	110.26	65	75	150.6	18.75	1966.8	1966.8	127.6
94.00		0.2500	27.205	21.699	2012.3	27.01	108.82	65	75	148.7	18.75	1918.5	1918.5	127.6
96.00		0.2500	26.845	21.409	1932.8	26.63	107.38	65	76	146.7	18.75	1870.7	1870.7	127.6
98.00		0.2500	26.485	21.119	1855.3	26.24	105.94	65	76	144.7	18.75	1823.6	1823.6	127.6
100.00	RT13	0.2500	26.125	20.829	1780.0	25.86	104.50	65	77	142.7	18.75	1777.1	1777.1	127.6
102.00		0.2500	25.765	20.540	1706.7	25.47	103.06	65	77	140.8				
104.00		0.2500	25.405	20.250	1635.5	25.09	101.62	65	77	138.8				
106.00		0.2500	25.045	19.960	1566.3	24.70	100.18	65	78	136.8				
108.00		0.2500	24.685	19.670	1499.1	24.31	98.74	65	78	134.9				
110.00		0.2500	24.325	19.380	1433.8	23.93	97.30	65	79	132.9				
111.21	Bot - Section 4	0.2500	24.107	19.205	1395.1	23.69	96.43	65	79	79.7				
112.00		0.2500	23.965	19.091	1370.4	23.54	95.86	65	79	90.4				
114.00		0.2500	23.605	18.801	1308.9	23.16	94.42	65	79	227.4				
114.80	Top - Section 3	0.1875	23.837	14.278	1019.3	31.92	127.13	65	70	89.6				
115.00		0.1875	23.800	14.256	1014.5	31.87	126.93	65	70	9.9				
116.00		0.1875	23.620	14.147	991.5	31.61	125.97	65	70	48.3				
118.00		0.1875	23.260	13.930	946.5	31.10	124.05	65	71	95.5				
120.00		0.1875	22.900	13.713	902.9	30.58	122.13	65	71	94.1				
122.00		0.1875	22.540	13.495	860.6	30.07	120.21	65	72	92.6				
124.00		0.1875	22.180	13.278	819.7	29.55	118.29	65	72	91.1				
126.00		0.1875	21.820	13.061	780.1	29.04	116.37	65	73	89.6				
128.00		0.1875	21.460	12.843	741.8	28.52	114.45	65	74	88.1				
130.00		0.1875	21.100	12.626	704.8	28.01	112.53	65	74	86.7				
132.00		0.1875	20.740	12.409	669.0	27.50	110.61	65	75	85.2				
134.00		0.1875	20.380	12.191	634.5	26.98	108.69	65	75	83.7				
136.00		0.1875	20.020	11.974	601.1	26.47	106.77	65	76	82.2				
138.00		0.1875	19.660	11.757	569.0	25.95	104.85	65	76	80.7				
140.00		0.1875	19.300	11.539	538.0	25.44	102.93	65	77	79.3				
142.00		0.1875	18.940	11.322	508.2	24.92	101.01	65	78	77.8				
144.00		0.1875	18.580	11.104	479.5	24.41	99.09	65	78	76.3				
146.00		0.1875	18.220	10.887	451.9	23.89	97.17	65	79	74.8				
148.00		0.1875	17.860	10.670	425.3	23.38	95.25	65	79	73.4				
150.00		0.1875	17.500	10.452	399.9	22.86	93.33	65	80	71.9				
									Total Weight	**16190.3**				**15815.1**

Wind Loading - Shaft

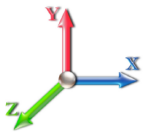
Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 10	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 28

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00	RB1 RB2 RB3 RB4	1.00	0.85	17.879	19.67	318.08	1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
1.00	RT3 RB5	1.00	0.85	17.879	19.67	316.75	1.000	0.000	1.00	3.702	3.70	116.5	0.0	209.7
2.00		1.00	0.85	17.879	19.67	315.42	1.000	0.000	1.00	3.686	3.69	116.0	0.0	208.8
4.00		1.00	0.85	17.879	19.67	312.75	1.000	0.000	2.00	7.326	7.33	230.5	0.0	415.0
6.00		1.00	0.85	17.879	19.67	310.09	1.000	0.000	2.00	7.264	7.26	228.6	0.0	411.5
8.00		1.00	0.85	17.879	19.67	307.43	1.000	0.000	2.00	7.202	7.20	226.6	0.0	407.9
10.00		1.00	0.85	17.879	19.67	304.76	1.000	0.000	2.00	7.140	7.14	224.7	0.0	404.4
12.00		1.00	0.85	17.879	19.67	302.10	1.000	0.000	2.00	7.078	7.08	222.7	0.0	400.8
14.00		1.00	0.85	17.879	19.67	299.44	1.000	0.000	2.00	7.016	7.02	220.8	0.0	397.3
14.17	RB6	1.00	0.85	17.879	19.67	299.21	1.000	0.000	0.17	0.593	0.59	18.7	0.0	33.6
16.00		1.00	0.86	18.100	19.91	298.60	1.000	0.000	1.83	6.360	6.36	202.6	0.0	360.1
17.50	RT5	1.00	0.88	18.445	20.29	299.40	1.000	0.000	1.50	5.174	5.17	168.0	0.0	293.0
18.00		1.00	0.88	18.554	20.41	299.61	1.000	0.000	0.50	1.717	1.72	56.1	0.0	97.2
20.00		1.00	0.90	18.971	20.87	300.21	1.000	0.000	2.00	6.829	6.83	228.0	0.0	386.6
20.50	RT1 RT4 RB7	1.00	0.91	19.069	20.98	300.31	1.000	0.000	0.50	1.698	1.70	57.0	0.0	96.1
22.00		1.00	0.92	19.355	21.29	300.47	1.000	0.000	1.50	5.070	5.07	172.7	0.0	287.0
24.00		1.00	0.94	19.713	21.68	300.44	1.000	0.000	2.00	6.705	6.71	232.6	0.0	379.5
26.00		1.00	0.95	20.048	22.05	300.16	1.000	0.000	2.00	6.643	6.64	234.4	0.0	376.0
28.00		1.00	0.97	20.363	22.40	299.67	1.000	0.000	2.00	6.581	6.58	235.9	0.0	372.4
30.00		1.00	0.98	20.661	22.73	298.99	1.000	0.000	2.00	6.519	6.52	237.0	0.0	368.9
32.00		1.00	1.00	20.944	23.04	298.15	1.000	0.000	2.00	6.457	6.46	238.0	0.0	365.3
34.00		1.00	1.01	21.213	23.33	297.15	1.000	0.000	2.00	6.395	6.39	238.7	0.0	361.8
36.00		1.00	1.02	21.470	23.62	296.03	1.000	0.000	2.00	6.332	6.33	239.3	0.0	358.2
37.00	RT7	1.00	1.03	21.594	23.75	295.42	1.000	0.000	1.00	3.143	3.14	119.4	0.0	177.8
38.00		1.00	1.03	21.715	23.89	294.78	1.000	0.000	1.00	3.127	3.13	119.5	0.0	176.9
40.00		1.00	1.04	21.951	24.15	293.43	1.000	0.000	2.00	6.208	6.21	239.8	0.0	351.1
42.00		1.00	1.05	22.178	24.40	291.97	1.000	0.000	2.00	6.146	6.15	239.9	0.0	347.6
43.36	RB8	1.00	1.06	22.327	24.56	290.93	1.000	0.000	1.36	4.144	4.14	162.8	0.0	234.3
43.50	Bot - Section 2	1.00	1.06	22.342	24.58	290.82	1.000	0.000	0.14	0.425	0.42	16.7	0.0	24.0
44.00		1.00	1.06	22.396	24.64	290.43	1.000	0.000	0.50	1.542	1.54	60.8	0.0	158.5
46.00		1.00	1.07	22.607	24.87	288.80	1.000	0.000	2.00	6.130	6.13	243.9	0.0	629.8
48.00		1.00	1.08	22.810	25.09	287.08	1.000	0.000	2.00	6.068	6.07	243.6	0.0	623.3
48.50	Top - Section 1	1.00	1.09	22.860	25.15	286.64	1.000	0.000	0.50	1.507	1.51	60.6	0.0	154.8
50.00	Appurtenance(s)	1.00	1.09	23.007	25.31	290.54	1.000	0.000	1.50	4.498	4.50	182.1	0.0	212.3
52.00		1.00	1.10	23.198	25.52	288.71	1.000	0.000	2.00	5.943	5.94	242.7	0.0	280.5
52.50	RB9	1.00	1.11	23.244	25.57	288.24	1.000	0.000	0.50	1.476	1.48	60.4	0.0	69.7
54.00		1.00	1.11	23.383	25.72	286.82	1.000	0.000	1.50	4.405	4.41	181.3	0.0	207.9
54.17	RT2 RT6	1.00	1.11	23.398	25.74	286.65	1.000	0.000	0.17	0.497	0.50	20.5	0.0	23.5
56.00		1.00	1.12	23.562	25.92	284.86	1.000	0.000	1.83	5.322	5.32	220.7	0.0	251.1
58.00		1.00	1.13	23.737	26.11	282.85	1.000	0.000	2.00	5.757	5.76	240.5	0.0	271.6
60.00		1.00	1.14	23.907	26.30	280.78	1.000	0.000	2.00	5.695	5.69	239.6	0.0	268.7
62.00		1.00	1.14	24.073	26.48	278.66	1.000	0.000	2.00	5.633	5.63	238.6	0.0	265.7
64.00		1.00	1.15	24.234	26.66	276.49	1.000	0.000	2.00	5.571	5.57	237.6	0.0	262.7
64.17	RB10	1.00	1.15	24.248	26.67	276.30	1.000	0.000	0.17	0.471	0.47	20.1	0.0	22.2
66.00		1.00	1.16	24.392	26.83	274.28	1.000	0.000	1.83	5.038	5.04	216.3	0.0	237.6
68.00		1.00	1.17	24.545	27.00	272.02	1.000	0.000	2.00	5.446	5.45	235.3	0.0	256.8
69.50	RT8	1.00	1.17	24.658	27.12	270.30	1.000	0.000	1.50	4.044	4.04	175.5	0.0	190.7

Wind Loading - Shaft

Structure: CT46134-A-SBA | **Code:** EIA/TIA-222-G | 10/22/2020

Site Name: Granby-n. Granby | **Exposure:** C

Height: 150.00 (ft) | **Crest Height:** 0.00

Base Elev: 0.000 (ft) | **Site Class:** D - Stiff Soil

Gh: 1.1 | **Topography:** 1 | **Struct Class:** II

Tower Engineering Solutions

70.00	RT9 RB11	1.00	1.17	24.696	27.17	269.72	1.000	0.000	0.50	1.340	1.34	58.3	0.0	63.2
72.00		1.00	1.18	24.843	27.33	267.38	1.000	0.000	2.00	5.322	5.32	232.7	0.0	250.9
74.00		1.00	1.19	24.986	27.48	265.01	1.000	0.000	2.00	5.260	5.26	231.3	0.0	247.9
76.00		1.00	1.19	25.127	27.64	262.60	1.000	0.000	2.00	5.198	5.20	229.9	0.0	245.0
76.71	RB12	1.00	1.20	25.176	27.69	261.73	1.000	0.000	0.71	1.830	1.83	81.1	0.0	86.3
76.84	Bot - Section 3	1.00	1.20	25.185	27.70	261.58	1.000	0.000	0.13	0.326	0.33	14.4	0.0	15.3
78.00		1.00	1.20	25.265	27.79	260.15	1.000	0.000	1.16	3.030	3.03	134.7	0.0	254.9
80.00		1.00	1.21	25.400	27.94	257.67	1.000	0.000	2.00	5.160	5.16	230.7	0.0	434.0
80.17	RT10	1.00	1.21	25.411	27.95	257.46	1.000	0.000	0.17	0.436	0.44	19.5	0.0	36.6
81.17	Top - Section 2	1.00	1.21	25.478	28.03	256.20	1.001 *	0.000	1.00	2.554	2.56	114.6	0.0	214.8
82.00		1.00	1.21	25.532	28.09	259.58	1.000	0.000	0.83	2.108	2.11	94.7	0.0	79.6
84.00		1.00	1.22	25.662	28.23	257.05	1.000	0.000	2.00	5.036	5.04	227.4	0.0	190.2
85.92	RB13	1.00	1.23	25.784	28.36	254.59	1.004 *	0.000	1.92	4.776	4.79	217.5	0.0	180.4
86.00		1.00	1.23	25.789	28.37	254.49	1.005 *	0.000	0.08	0.198	0.20	9.0	0.0	7.5
87.50	RT11	1.00	1.23	25.884	28.47	252.55	1.007 *	0.000	1.50	3.689	3.72	169.2	0.0	139.3
88.00		1.00	1.23	25.915	28.51	251.90	1.009 *	0.000	0.50	1.222	1.23	56.2	0.0	46.2
90.00	RT12	1.00	1.24	26.037	28.64	249.28	1.011 *	0.000	2.00	4.849	4.90	224.8	0.0	183.1
92.00		1.00	1.24	26.158	28.77	246.64	1.000	0.000	2.00	4.787	4.79	220.4	0.0	180.8
94.00		1.00	1.25	26.277	28.90	243.97	1.000	0.000	2.00	4.725	4.73	218.5	0.0	178.4
96.00		1.00	1.25	26.394	29.03	241.27	1.000	0.000	2.00	4.663	4.66	216.6	0.0	176.0
98.00		1.00	1.26	26.509	29.16	238.55	1.000	0.000	2.00	4.601	4.60	214.7	0.0	173.7
100.00	RT13	1.00	1.27	26.621	29.28	235.81	1.000	0.000	2.00	4.539	4.54	212.7	0.0	171.3
102.00		1.00	1.27	26.733	29.41	233.05	1.000	0.000	2.00	4.477	4.48	210.6	0.0	168.9
104.00		1.00	1.28	26.842	29.53	230.26	1.000	0.000	2.00	4.415	4.41	208.6	0.0	166.6
106.00		1.00	1.28	26.950	29.65	227.45	1.000	0.000	2.00	4.352	4.35	206.4	0.0	164.2
108.00		1.00	1.29	27.056	29.76	224.63	1.000	0.000	2.00	4.290	4.29	204.3	0.0	161.8
110.00		1.00	1.29	27.161	29.88	221.78	1.000	0.000	2.00	4.228	4.23	202.1	0.0	159.5
111.21	Bot - Section 4	1.00	1.29	27.224	29.95	220.04	1.000	0.000	1.21	2.535	2.53	121.5	0.0	95.6
112.00		1.00	1.30	27.264	29.99	218.91	1.000	0.000	0.79	1.657	1.66	79.5	0.0	108.5
114.00		1.00	1.30	27.366	30.10	216.02	1.000	0.000	2.00	4.169	4.17	200.8	0.0	272.9
114.80	Top - Section 3	1.00	1.30	27.406	30.15	214.87	1.000	0.000	0.80	1.643	1.64	79.3	0.0	107.6
115.00	Appurtenance(s)	1.00	1.30	27.416	30.16	218.01	1.000	0.000	0.20	0.418	0.42	20.2	0.0	11.8
116.00		1.00	1.31	27.466	30.21	216.56	1.000	0.000	1.00	2.046	2.05	98.9	0.0	58.0
118.00		1.00	1.31	27.565	30.32	213.64	1.000	0.000	2.00	4.044	4.04	196.2	0.0	114.6
120.00		1.00	1.32	27.663	30.43	210.71	1.000	0.000	2.00	3.982	3.98	193.9	0.0	112.9
122.00		1.00	1.32	27.760	30.54	207.76	1.000	0.000	2.00	3.920	3.92	191.5	0.0	111.1
124.00		1.00	1.32	27.855	30.64	204.79	1.000	0.000	2.00	3.858	3.86	189.1	0.0	109.3
126.00	Appurtenance(s)	1.00	1.33	27.949	30.74	201.80	1.000	0.000	2.00	3.796	3.80	186.7	0.0	107.5
128.00		1.00	1.33	28.042	30.85	198.80	1.000	0.000	2.00	3.734	3.73	184.3	0.0	105.8
130.00		1.00	1.34	28.133	30.95	195.79	1.000	0.000	2.00	3.672	3.67	181.8	0.0	104.0
132.00		1.00	1.34	28.224	31.05	192.76	1.000	0.000	2.00	3.610	3.61	179.3	0.0	102.2
134.00		1.00	1.35	28.313	31.14	189.71	1.000	0.000	2.00	3.548	3.55	176.8	0.0	100.4
136.00		1.00	1.35	28.402	31.24	186.65	1.000	0.000	2.00	3.485	3.49	174.2	0.0	98.7
138.00	Appurtenance(s)	1.00	1.35	28.489	31.34	183.58	1.000	0.000	2.00	3.423	3.42	171.6	0.0	96.9
140.00		1.00	1.36	28.576	31.43	180.49	1.000	0.000	2.00	3.361	3.36	169.0	0.0	95.1
142.00		1.00	1.36	28.661	31.53	177.39	1.000	0.000	2.00	3.299	3.30	166.4	0.0	93.3
144.00		1.00	1.37	28.746	31.62	174.27	1.000	0.000	2.00	3.237	3.24	163.8	0.0	91.6
146.00		1.00	1.37	28.829	31.71	171.14	1.000	0.000	2.00	3.175	3.17	161.1	0.0	89.8
148.00		1.00	1.37	28.912	31.80	168.00	1.000	0.000	2.00	3.113	3.11	158.4	0.0	88.0
150.00	Appurtenance(s)	1.00	1.38	28.994	31.89	164.85	1.000	0.000	2.00	3.051	3.05	155.7	0.0	86.2
								Totals:	**150.00**			**16,224.7**		**19,428.4**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

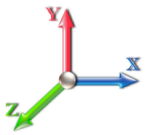
Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 12	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 28

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	150.00	3' Yagi	1	28.994	31.893	1.00	1.00	2.98	12.00	0.000	0.000	152.07	0.00	0.00
2	150.00	10' Dipole	1	29.195	32.114	1.00	1.00	3.76	36.00	0.000	5.000	193.20	0.00	965.99
3	150.00	18' Omni	1	29.352	32.287	1.00	1.00	5.40	66.00	0.000	9.000	278.96	0.00	2510.62
4	150.00	10' Omni	1	29.195	32.114	1.00	1.00	3.00	30.00	0.000	5.000	154.15	0.00	770.74
5	150.00	Low Profile Platform-flat	1	28.994	31.893	1.00	1.00	34.00	1440.00	0.000	0.000	1734.99	0.00	0.00
6	138.00	LGP 21901	6	28.489	31.338	0.38	0.75	0.52	39.60	0.000	0.000	25.95	0.00	0.00
7	138.00	RRUS-11 700MHz	3	28.489	31.338	0.38	0.75	2.83	183.60	0.000	0.000	142.15	0.00	0.00
8	138.00	DMP65R-BU8DA	3	28.489	31.338	0.55	0.75	28.42	344.52	0.000	0.000	1425.09	0.00	0.00
9	138.00	TT19-08BP111-001	6	28.489	31.338	0.38	0.75	1.44	115.20	0.000	0.000	72.20	0.00	0.00
10	138.00	7770.00	3	28.489	31.338	0.58	0.75	9.53	126.00	0.000	0.000	477.78	0.00	0.00
11	138.00	Low Profile Platform-flat	1	28.489	31.338	1.00	1.00	34.00	1440.00	0.000	0.000	1704.80	0.00	0.00
12	138.00	B2 B66A 8843	3	28.489	31.338	0.38	0.75	1.84	252.00	0.000	0.000	92.51	0.00	0.00
13	138.00	HPA-65R-BU8A	3	28.489	31.338	0.67	0.75	22.43	194.40	0.000	0.000	1124.56	0.00	0.00
14	138.00	4449 B5/B12	3	28.489	31.338	0.38	0.75	2.22	255.60	0.000	0.000	111.13	0.00	0.00
15	138.00	DC9-48-60-24-8C-EV	1	28.489	31.338	0.75	0.75	0.85	31.44	0.000	0.000	42.87	0.00	0.00
16	138.00	HRK12 (Handrail Kit)	1	28.489	31.338	0.75	0.75	5.06	314.06	0.000	0.000	253.84	0.00	0.00
17	138.00	PRK-1245 (kicker kit)	1	28.489	31.338	0.75	0.75	7.13	557.89	0.000	0.000	357.25	0.00	0.00
18	126.00	APXVSPP18-C-A20	3	27.949	30.744	0.69	0.80	16.55	205.20	0.000	0.000	814.25	0.00	0.00
19	126.00	800MHz Filter	3	27.949	30.744	0.40	0.80	0.94	31.68	0.000	0.000	46.04	0.00	0.00
20	126.00	TD-RRH8x20-25	3	27.949	30.744	0.40	0.80	4.86	252.00	0.000	0.000	239.06	0.00	0.00
21	126.00	800 MHz	3	27.949	30.744	0.40	0.80	2.99	190.80	0.000	0.000	146.98	0.00	0.00
22	126.00	1900MHz	3	27.949	30.744	0.40	0.80	4.56	158.40	0.000	0.000	224.31	0.00	0.00
23	126.00	APXVTM14-C-120	3	27.949	30.744	0.62	0.80	11.87	201.60	0.000	0.000	583.81	0.00	0.00
24	126.00	Low Profile Platform-flat	1	27.949	30.744	1.00	1.00	34.00	1440.00	0.000	0.000	1672.46	0.00	0.00
25	126.00	ACU-A20-N	4	27.949	30.744	0.40	0.80	0.22	4.80	0.000	0.000	11.02	0.00	0.00
26	115.00	AIR32	4	27.416	30.158	0.68	0.75	17.73	634.56	0.000	0.000	855.68	0.00	0.00
27	115.00	F4P-12W	1	27.416	30.158	1.00	1.00	63.31	3720.00	0.000	0.000	3054.89	0.00	0.00
28	115.00	F4P-HRK12	1	27.416	30.158	1.00	1.00	7.57	608.40	0.000	0.000	365.27	0.00	0.00
29	115.00	KRY 112 489/2	4	27.416	30.158	0.38	0.75	0.96	73.92	0.000	0.000	46.32	0.00	0.00
30	115.00	APXVAARR24_43-U-NA2	4	27.416	30.158	0.61	0.75	49.18	475.20	0.000	0.000	2373.23	0.00	0.00
31	115.00	APX16DWV-16DWVS-E-A	4	27.416	30.158	0.58	0.75	15.35	195.36	0.000	0.000	740.61	0.00	0.00
32	115.00	Radio 4449 B71 + B12	4	27.416	30.158	0.38	0.75	2.47	336.00	0.000	0.000	119.43	0.00	0.00
33	50.00	GPS	1	23.007	25.308	1.00	1.00	0.01	1.20	0.000	0.000	0.40	0.00	0.00
34	50.00	Standoff	1	23.007	25.308	1.00	1.00	1.50	60.00	0.000	0.000	60.74	0.00	0.00
35	20.50	Splice Plate	2	19.069	20.976	0.94	1.00	7.20	662.40	0.000	0.000	241.66	0.00	0.00
							Totals:		**14,689.84**			**19,939.65**		

Total Applied Force Summary

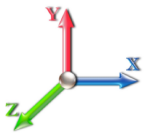
Structure:	CT46134-A-SBA		**Code:**	EIA/TIA-222-G	10/22/2020
Site Name:	Granby-n. Granby		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 13

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 28

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
1.00		116.49	240.82	0.00	0.00
2.00		116.00	239.93	0.00	0.00
4.00		230.54	477.20	0.00	0.00
6.00		228.59	473.65	0.00	0.00
8.00		226.63	470.10	0.00	0.00
10.00		224.68	466.55	0.00	0.00
12.00		222.72	463.00	0.00	0.00
14.00		220.77	459.45	0.00	0.00
14.17		18.68	38.89	0.00	0.00
16.00		202.61	417.01	0.00	0.00
17.50		167.98	339.59	0.00	0.00
18.00		56.07	112.75	0.00	0.00
20.00		228.02	448.80	0.00	0.00
20.50	(2) attachments	298.64	774.05	0.00	0.00
22.00		172.70	333.60	0.00	0.00
24.00		232.63	441.70	0.00	0.00
26.00		234.39	438.15	0.00	0.00
28.00		235.85	434.60	0.00	0.00
30.00		237.05	431.05	0.00	0.00
32.00		238.00	427.50	0.00	0.00
34.00		238.74	423.95	0.00	0.00
36.00		239.28	420.40	0.00	0.00
37.00		119.45	208.87	0.00	0.00
38.00		119.53	207.98	0.00	0.00
40.00		239.85	413.30	0.00	0.00
42.00		239.90	409.75	0.00	0.00
43.36		162.84	276.60	0.00	0.00
43.50		16.71	28.38	0.00	0.00
44.00		60.79	174.02	0.00	0.00
46.00		243.89	692.01	0.00	0.00
48.00		243.59	685.51	0.00	0.00
48.50		60.64	170.36	0.00	0.00
50.00	(2) attachments	243.29	320.15	0.00	0.00
52.00		242.65	342.68	0.00	0.00
52.50		60.39	85.21	0.00	0.00
54.00		181.29	254.51	0.00	0.00
54.17		20.47	28.74	0.00	0.00
56.00		220.71	308.02	0.00	0.00
58.00		240.51	333.80	0.00	0.00
60.00		239.62	330.85	0.00	0.00
62.00		238.65	327.89	0.00	0.00
64.00		237.60	324.93	0.00	0.00
64.17		20.09	27.48	0.00	0.00
66.00		216.27	294.49	0.00	0.00
68.00		235.29	319.01	0.00	0.00
69.50		175.51	237.32	0.00	0.00

Total Applied Force Summary

Structure:	CT46134-A-SBA		**Code:**	EIA/TIA-222-G	10/22/2020
Site Name:	Granby-n. Granby		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 14

Tower Engineering Solutions

70.00		58.25	78.74	0.00	0.00
72.00		232.70	313.10	0.00	0.00
74.00		231.32	310.14	0.00	0.00
76.00		229.87	307.18	0.00	0.00
76.71		81.10	108.34	0.00	0.00
76.84		14.44	19.29	0.00	0.00
78.00		134.73	291.08	0.00	0.00
80.00		230.67	496.22	0.00	0.00
80.17		19.49	41.93	0.00	0.00
81.17		114.60	245.89	0.00	0.00
82.00		94.73	105.45	0.00	0.00
84.00		227.44	252.41	0.00	0.00
85.92		217.50	240.09	0.00	0.00
86.00		9.02	9.96	0.00	0.00
87.50		169.24	185.98	0.00	0.00
88.00		56.23	61.70	0.00	0.00
90.00		224.76	245.31	0.00	0.00
92.00		220.40	242.95	0.00	0.00
94.00		218.53	240.58	0.00	0.00
96.00		216.61	238.21	0.00	0.00
98.00		214.66	235.85	0.00	0.00
100.00		212.66	233.48	0.00	0.00
102.00		210.63	231.11	0.00	0.00
104.00		208.56	228.75	0.00	0.00
106.00		206.45	226.38	0.00	0.00
108.00		204.30	224.01	0.00	0.00
110.00		202.12	221.65	0.00	0.00
111.21		121.46	133.31	0.00	0.00
112.00		79.50	132.95	0.00	0.00
114.00		200.78	335.11	0.00	0.00
114.80		79.26	132.33	0.00	0.00
115.00	(22) attachments	7575.60	6061.61	0.00	0.00
116.00		98.88	75.93	0.00	0.00
118.00		196.22	150.53	0.00	0.00
120.00		193.89	148.76	0.00	0.00
122.00		191.53	146.98	0.00	0.00
124.00		189.14	145.21	0.00	0.00
126.00	(23) attachments	3924.65	2627.91	0.00	0.00
128.00		184.28	134.79	0.00	0.00
130.00		181.81	133.02	0.00	0.00
132.00		179.31	131.24	0.00	0.00
134.00		176.78	129.47	0.00	0.00
136.00		174.23	127.69	0.00	0.00
138.00	(34) attachments	6001.77	3980.23	0.00	0.00
140.00		169.05	97.52	0.00	0.00
142.00		166.42	95.75	0.00	0.00
144.00		163.77	93.97	0.00	0.00
146.00		161.09	92.20	0.00	0.00
148.00		158.39	90.42	0.00	0.00
150.00	(5) attachments	2669.02	1672.65	0.00	4247.35
	Totals:	**36,164.36**	**38,079.94**	**0.00**	**4,247.35**

Linear Appurtenance Segment Forces (Factored)

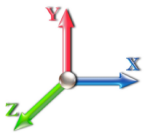
Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 15	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 28

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
1.00	1 1/4" Hybrid	Yes	1.00	0.000	0.01	0.00	0.00	0.034	0.000	17.879	0.00	3.17
1.00	1 5/8" Coax	Yes	1.00	0.000	0.01	0.00	0.00	0.034	0.000	17.879	0.00	2.50
1.00	1.5" Reinforcing Plate	Yes	0.50	0.000	3.00	0.13	0.00	0.034	0.000	17.879	0.00	0.00
2.00	1 1/4" Hybrid	Yes	1.00	0.000	0.01	0.00	0.00	0.068	0.000	17.879	0.00	3.17
2.00	1 5/8" Coax	Yes	1.00	0.000	0.01	0.00	0.00	0.068	0.000	17.879	0.00	2.50
2.00	1.5" Reinforcing Plate	Yes	1.00	0.000	3.00	0.25	0.00	0.068	0.000	17.879	0.00	0.00
4.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.069	0.000	17.879	0.00	6.34
4.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.069	0.000	17.879	0.00	4.99
4.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.069	0.000	17.879	0.00	0.00
6.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.069	0.000	17.879	0.00	6.34
6.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.069	0.000	17.879	0.00	4.99
6.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.069	0.000	17.879	0.00	0.00
8.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.070	0.000	17.879	0.00	6.34
8.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.070	0.000	17.879	0.00	4.99
8.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.070	0.000	17.879	0.00	0.00
10.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.070	0.000	17.879	0.00	6.34
10.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.070	0.000	17.879	0.00	4.99
10.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.070	0.000	17.879	0.00	0.00
12.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.071	0.000	17.879	0.00	6.34
12.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.071	0.000	17.879	0.00	4.99
12.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.071	0.000	17.879	0.00	0.00
14.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.072	0.000	17.879	0.00	6.34
14.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.072	0.000	17.879	0.00	4.99
14.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.072	0.000	17.879	0.00	0.00
14.17	1 1/4" Hybrid	Yes	0.17	0.000	0.01	0.00	0.00	0.072	0.000	17.879	0.00	0.54
14.17	1 5/8" Coax	Yes	0.17	0.000	0.01	0.00	0.00	0.072	0.000	17.879	0.00	0.42
14.17	1.5" Reinforcing Plate	Yes	0.17	0.000	3.00	0.04	0.00	0.072	0.000	17.879	0.00	0.00
16.00	1 1/4" Hybrid	Yes	1.83	0.000	0.01	0.00	0.00	0.072	0.000	18.100	0.00	5.80
16.00	1 5/8" Coax	Yes	1.83	0.000	0.01	0.00	0.00	0.072	0.000	18.100	0.00	4.57
16.00	1.5" Reinforcing Plate	Yes	1.83	0.000	3.00	0.46	0.00	0.072	0.000	18.100	0.00	0.00
17.50	1 1/4" Hybrid	Yes	1.50	0.000	0.01	0.00	0.00	0.073	0.000	18.445	0.00	4.75
17.50	1 5/8" Coax	Yes	1.50	0.000	0.01	0.00	0.00	0.073	0.000	18.445	0.00	3.74
17.50	1.5" Reinforcing Plate	Yes	1.50	0.000	3.00	0.38	0.00	0.073	0.000	18.445	0.00	0.00
18.00	1 1/4" Hybrid	Yes	0.50	0.000	0.01	0.00	0.00	0.073	0.000	18.554	0.00	1.58
18.00	1 5/8" Coax	Yes	0.50	0.000	0.01	0.00	0.00	0.073	0.000	18.554	0.00	1.25
18.00	1.5" Reinforcing Plate	Yes	0.50	0.000	3.00	0.13	0.00	0.073	0.000	18.554	0.00	0.00
20.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.074	0.000	18.971	0.00	6.34
20.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.074	0.000	18.971	0.00	4.99
20.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.074	0.000	18.971	0.00	0.00
20.50	1 1/4" Hybrid	Yes	0.50	0.000	0.01	0.00	0.00	0.074	0.000	19.069	0.00	1.58
20.50	1 5/8" Coax	Yes	0.50	0.000	0.01	0.00	0.00	0.074	0.000	19.069	0.00	1.25
20.50	1.5" Reinforcing Plate	Yes	0.50	0.000	3.00	0.13	0.00	0.074	0.000	19.069	0.00	0.00
22.00	1 1/4" Hybrid	Yes	1.50	0.000	0.01	0.00	0.00	0.074	0.000	19.355	0.00	4.75
22.00	1 5/8" Coax	Yes	1.50	0.000	0.01	0.00	0.00	0.074	0.000	19.355	0.00	3.74
22.00	1.5" Reinforcing Plate	Yes	1.50	0.000	3.00	0.38	0.00	0.074	0.000	19.355	0.00	0.00
24.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.075	0.000	19.713	0.00	6.34
24.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.075	0.000	19.713	0.00	4.99

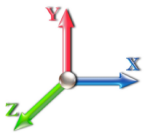
Linear Appurtenance Segment Forces (Factored)

Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 16	

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 28

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
24.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.075	0.000	19.713	0.00	0.00
26.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.076	0.000	20.048	0.00	6.34
26.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.076	0.000	20.048	0.00	4.99
26.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.076	0.000	20.048	0.00	0.00
28.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.076	0.000	20.363	0.00	6.34
28.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.076	0.000	20.363	0.00	4.99
28.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.076	0.000	20.363	0.00	0.00
30.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.077	0.000	20.661	0.00	6.34
30.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.077	0.000	20.661	0.00	4.99
30.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.077	0.000	20.661	0.00	0.00
32.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.078	0.000	20.944	0.00	6.34
32.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.078	0.000	20.944	0.00	4.99
32.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.078	0.000	20.944	0.00	0.00
34.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.079	0.000	21.213	0.00	6.34
34.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.079	0.000	21.213	0.00	4.99
34.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.079	0.000	21.213	0.00	0.00
36.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.079	0.000	21.470	0.00	6.34
36.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.079	0.000	21.470	0.00	4.99
36.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.079	0.000	21.470	0.00	0.00
37.00	1 1/4" Hybrid	Yes	1.00	0.000	0.01	0.00	0.00	0.080	0.000	21.594	0.00	3.17
37.00	1 5/8" Coax	Yes	1.00	0.000	0.01	0.00	0.00	0.080	0.000	21.594	0.00	2.50
37.00	1.5" Reinforcing Plate	Yes	1.00	0.000	3.00	0.25	0.00	0.080	0.000	21.594	0.00	0.00
38.00	1 1/4" Hybrid	Yes	1.00	0.000	0.01	0.00	0.00	0.067	0.000	21.715	0.00	3.17
38.00	1 5/8" Coax	Yes	1.00	0.000	0.01	0.00	0.00	0.067	0.000	21.715	0.00	2.50
38.00	1.25" Reinforcing	Yes	1.00	0.000	2.50	0.21	0.00	0.067	0.000	21.715	0.00	0.00
40.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.068	0.000	21.951	0.00	6.34
40.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.068	0.000	21.951	0.00	4.99
40.00	1.25" Reinforcing	Yes	2.00	0.000	2.50	0.42	0.00	0.068	0.000	21.951	0.00	0.00
42.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.068	0.000	22.178	0.00	6.34
42.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.068	0.000	22.178	0.00	4.99
42.00	1.25" Reinforcing	Yes	2.00	0.000	2.50	0.42	0.00	0.068	0.000	22.178	0.00	0.00
43.36	1 1/4" Hybrid	Yes	1.36	0.000	0.01	0.00	0.00	0.069	0.000	22.327	0.00	4.31
43.36	1 5/8" Coax	Yes	1.36	0.000	0.01	0.00	0.00	0.069	0.000	22.327	0.00	3.39
43.36	1.25" Reinforcing	Yes	1.36	0.000	2.50	0.28	0.00	0.069	0.000	22.327	0.00	0.00
43.50	1 1/4" Hybrid	Yes	0.14	0.000	0.01	0.00	0.00	0.079	0.000	22.342	0.00	0.44
43.50	1 5/8" Coax	Yes	0.14	0.000	0.01	0.00	0.00	0.079	0.000	22.342	0.00	0.35
43.50	1.5" Reinforcing Plate	Yes	0.10	0.000	3.00	0.03	0.00	0.079	0.000	22.342	0.00	0.00
43.50	1.25" Reinforcing	Yes	0.04	0.000	2.50	0.01	0.00	0.079	0.000	22.342	0.00	0.00
44.00	1 1/4" Hybrid	Yes	0.50	0.000	0.01	0.00	0.00	0.083	0.000	22.396	0.00	1.58
44.00	1 5/8" Coax	Yes	0.50	0.000	0.01	0.00	0.00	0.083	0.000	22.396	0.00	1.25
44.00	1.5" Reinforcing Plate	Yes	0.50	0.000	3.00	0.13	0.00	0.083	0.000	22.396	0.00	0.00
46.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.084	0.000	22.607	0.00	6.34
46.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.084	0.000	22.607	0.00	4.99
46.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.084	0.000	22.607	0.00	0.00
48.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.084	0.000	22.810	0.00	6.34
48.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.084	0.000	22.810	0.00	4.99
48.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.084	0.000	22.810	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

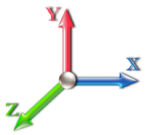
Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 17	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 28

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
48.50	1 1/4" Hybrid	Yes	0.50	0.000	0.01	0.00	0.00	0.085	0.000	22.860	0.00	1.58
48.50	1 5/8" Coax	Yes	0.50	0.000	0.01	0.00	0.00	0.085	0.000	22.860	0.00	1.25
48.50	1.5" Reinforcing Plate	Yes	0.50	0.000	3.00	0.13	0.00	0.085	0.000	22.860	0.00	0.00
50.00	1 1/4" Hybrid	Yes	1.50	0.000	0.01	0.00	0.00	0.084	0.000	23.007	0.00	4.75
50.00	1 5/8" Coax	Yes	1.50	0.000	0.01	0.00	0.00	0.084	0.000	23.007	0.00	3.74
50.00	1.5" Reinforcing Plate	Yes	1.50	0.000	3.00	0.38	0.00	0.084	0.000	23.007	0.00	0.00
52.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.085	0.000	23.198	0.00	6.34
52.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.085	0.000	23.198	0.00	4.99
52.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.085	0.000	23.198	0.00	0.00
52.50	1 1/4" Hybrid	Yes	0.50	0.000	0.01	0.00	0.00	0.085	0.000	23.244	0.00	1.58
52.50	1 5/8" Coax	Yes	0.50	0.000	0.01	0.00	0.00	0.085	0.000	23.244	0.00	1.25
52.50	1.5" Reinforcing Plate	Yes	0.50	0.000	3.00	0.13	0.00	0.085	0.000	23.244	0.00	0.00
54.00	1 1/4" Hybrid	Yes	1.50	0.000	0.01	0.00	0.00	0.086	0.000	23.383	0.00	4.75
54.00	1 5/8" Coax	Yes	1.50	0.000	0.01	0.00	0.00	0.086	0.000	23.383	0.00	3.74
54.00	1.5" Reinforcing Plate	Yes	1.50	0.000	3.00	0.38	0.00	0.086	0.000	23.383	0.00	0.00
54.17	1 1/4" Hybrid	Yes	0.17	0.000	0.01	0.00	0.00	0.086	0.000	23.398	0.00	0.54
54.17	1 5/8" Coax	Yes	0.17	0.000	0.01	0.00	0.00	0.086	0.000	23.398	0.00	0.42
54.17	1.5" Reinforcing Plate	Yes	0.17	0.000	3.00	0.04	0.00	0.086	0.000	23.398	0.00	0.00
56.00	1 1/4" Hybrid	Yes	1.83	0.000	0.01	0.00	0.00	0.087	0.000	23.562	0.00	5.80
56.00	1 5/8" Coax	Yes	1.83	0.000	0.01	0.00	0.00	0.087	0.000	23.562	0.00	4.57
56.00	1.5" Reinforcing Plate	Yes	1.83	0.000	3.00	0.46	0.00	0.087	0.000	23.562	0.00	0.00
58.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.087	0.000	23.737	0.00	6.34
58.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.087	0.000	23.737	0.00	4.99
58.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.087	0.000	23.737	0.00	0.00
60.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.088	0.000	23.907	0.00	6.34
60.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.088	0.000	23.907	0.00	4.99
60.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.088	0.000	23.907	0.00	0.00
62.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.089	0.000	24.073	0.00	6.34
62.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.089	0.000	24.073	0.00	4.99
62.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.089	0.000	24.073	0.00	0.00
64.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.090	0.000	24.234	0.00	6.34
64.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.090	0.000	24.234	0.00	4.99
64.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.090	0.000	24.234	0.00	0.00
64.17	1 1/4" Hybrid	Yes	0.17	0.000	0.01	0.00	0.00	0.091	0.000	24.248	0.00	0.54
64.17	1 5/8" Coax	Yes	0.17	0.000	0.01	0.00	0.00	0.091	0.000	24.248	0.00	0.42
64.17	1.5" Reinforcing Plate	Yes	0.17	0.000	3.00	0.04	0.00	0.091	0.000	24.248	0.00	0.00
66.00	1 1/4" Hybrid	Yes	1.83	0.000	0.01	0.00	0.00	0.091	0.000	24.392	0.00	5.80
66.00	1 5/8" Coax	Yes	1.83	0.000	0.01	0.00	0.00	0.091	0.000	24.392	0.00	4.57
66.00	1.5" Reinforcing Plate	Yes	1.83	0.000	3.00	0.46	0.00	0.091	0.000	24.392	0.00	0.00
68.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.092	0.000	24.545	0.00	6.34
68.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.092	0.000	24.545	0.00	4.99
68.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.092	0.000	24.545	0.00	0.00
69.50	1 1/4" Hybrid	Yes	1.50	0.000	0.01	0.00	0.00	0.093	0.000	24.658	0.00	4.75
69.50	1 5/8" Coax	Yes	1.50	0.000	0.01	0.00	0.00	0.093	0.000	24.658	0.00	3.74
69.50	1.5" Reinforcing Plate	Yes	1.50	0.000	3.00	0.38	0.00	0.093	0.000	24.658	0.00	0.00
70.00	1 1/4" Hybrid	Yes	0.50	0.000	0.01	0.00	0.00	0.078	0.000	24.696	0.00	1.58
70.00	1 5/8" Coax	Yes	0.50	0.000	0.01	0.00	0.00	0.078	0.000	24.696	0.00	1.25

Linear Appurtenance Segment Forces (Factored)

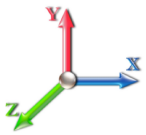
Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 18	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 28

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
70.00	1.25" Reinforcing	Yes	0.50	0.000	2.50	0.10	0.00	0.078	0.000	24.696	0.00	0.00
72.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.079	0.000	24.843	0.00	6.34
72.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.079	0.000	24.843	0.00	4.99
72.00	1.25" Reinforcing	Yes	2.00	0.000	2.50	0.42	0.00	0.079	0.000	24.843	0.00	0.00
74.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.080	0.000	24.986	0.00	6.34
74.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.080	0.000	24.986	0.00	4.99
74.00	1.25" Reinforcing	Yes	2.00	0.000	2.50	0.42	0.00	0.080	0.000	24.986	0.00	0.00
76.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.081	0.000	25.127	0.00	6.34
76.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.081	0.000	25.127	0.00	4.99
76.00	1.25" Reinforcing	Yes	2.00	0.000	2.50	0.42	0.00	0.081	0.000	25.127	0.00	0.00
76.71	1 1/4" Hybrid	Yes	0.71	0.000	0.01	0.00	0.00	0.082	0.000	25.176	0.00	2.25
76.71	1 5/8" Coax	Yes	0.71	0.000	0.01	0.00	0.00	0.082	0.000	25.176	0.00	1.77
76.71	1.5" Reinforcing Plate	Yes	0.01	0.000	3.00	0.00	0.00	0.082	0.000	25.176	0.00	0.00
76.71	1.25" Reinforcing	Yes	0.70	0.000	2.50	0.15	0.00	0.082	0.000	25.176	0.00	0.00
76.84	1 1/4" Hybrid	Yes	0.13	0.000	0.01	0.00	0.00	0.098	0.000	25.185	0.00	0.40
76.84	1 5/8" Coax	Yes	0.13	0.000	0.01	0.00	0.00	0.098	0.000	25.185	0.00	0.32
76.84	1.5" Reinforcing Plate	Yes	0.13	0.000	3.00	0.03	0.00	0.098	0.000	25.185	0.00	0.00
78.00	1 1/4" Hybrid	Yes	1.16	0.000	0.01	0.00	0.00	0.098	0.000	25.265	0.00	3.69
78.00	1 5/8" Coax	Yes	1.16	0.000	0.01	0.00	0.00	0.098	0.000	25.265	0.00	2.90
78.00	1.5" Reinforcing Plate	Yes	1.16	0.000	3.00	0.29	0.00	0.098	0.000	25.265	0.00	0.00
80.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.099	0.000	25.400	0.00	6.34
80.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.099	0.000	25.400	0.00	4.99
80.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.099	0.000	25.400	0.00	0.00
80.17	1 1/4" Hybrid	Yes	0.17	0.000	0.01	0.00	0.00	0.100	0.000	25.411	0.00	0.54
80.17	1 5/8" Coax	Yes	0.17	0.000	0.01	0.00	0.00	0.100	0.000	25.411	0.00	0.42
80.17	1.5" Reinforcing Plate	Yes	0.17	0.000	3.00	0.04	0.00	0.100	0.000	25.411	0.00	0.00
81.17	1 1/4" Hybrid	Yes	1.00	0.000	0.01	0.00	0.00	0.100	1.001	25.478	0.00	3.17
81.17	1 5/8" Coax	Yes	1.00	0.000	0.01	0.00	0.00	0.100	1.001	25.478	0.00	2.50
81.17	1.5" Reinforcing Plate	Yes	1.00	0.000	3.00	0.25	0.00	0.100	1.001	25.478	0.00	0.00
82.00	1 1/4" Hybrid	Yes	0.83	0.000	0.01	0.00	0.00	0.099	0.000	25.532	0.00	2.63
82.00	1 5/8" Coax	Yes	0.83	0.000	0.01	0.00	0.00	0.099	0.000	25.532	0.00	2.07
82.00	1.5" Reinforcing Plate	Yes	0.83	0.000	3.00	0.21	0.00	0.099	0.000	25.532	0.00	0.00
84.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.100	0.000	25.662	0.00	6.34
84.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.100	0.000	25.662	0.00	4.99
84.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.100	0.000	25.662	0.00	0.00
85.92	1 1/4" Hybrid	Yes	1.92	0.000	0.01	0.00	0.00	0.101	1.004	25.784	0.00	6.08
85.92	1 5/8" Coax	Yes	1.92	0.000	0.01	0.00	0.00	0.101	1.004	25.784	0.00	4.79
85.92	1.5" Reinforcing Plate	Yes	1.92	0.000	3.00	0.48	0.00	0.101	1.004	25.784	0.00	0.00
86.00	1 1/4" Hybrid	Yes	0.08	0.000	0.01	0.00	0.00	0.102	1.005	25.789	0.00	0.25
86.00	1 5/8" Coax	Yes	0.08	0.000	0.01	0.00	0.00	0.102	1.005	25.789	0.00	0.20
86.00	1.5" Reinforcing Plate	Yes	0.08	0.000	3.00	0.02	0.00	0.102	1.005	25.789	0.00	0.00
87.50	1 1/4" Hybrid	Yes	1.50	0.000	0.01	0.00	0.00	0.102	1.007	25.884	0.00	4.75
87.50	1 5/8" Coax	Yes	1.50	0.000	0.01	0.00	0.00	0.102	1.007	25.884	0.00	3.74
87.50	1.5" Reinforcing Plate	Yes	1.50	0.000	3.00	0.38	0.00	0.102	1.007	25.884	0.00	0.00
88.00	1 1/4" Hybrid	Yes	0.50	0.000	0.01	0.00	0.00	0.103	1.009	25.915	0.00	1.58
88.00	1 5/8" Coax	Yes	0.50	0.000	0.01	0.00	0.00	0.103	1.009	25.915	0.00	1.25
88.00	1.5" Reinforcing Plate	Yes	0.50	0.000	3.00	0.13	0.00	0.103	1.009	25.915	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

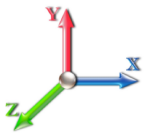
Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 19	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 28

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
90.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.104	1.011	26.037	0.00	6.34
90.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.104	1.011	26.037	0.00	4.99
90.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.104	1.011	26.037	0.00	0.00
92.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	26.158	0.00	6.34
92.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	26.158	0.00	4.99
94.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	26.277	0.00	6.34
94.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	26.277	0.00	4.99
96.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	26.394	0.00	6.34
96.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	26.394	0.00	4.99
98.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	26.509	0.00	6.34
98.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	26.509	0.00	4.99
100.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	26.621	0.00	6.34
100.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	26.621	0.00	4.99
102.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	26.733	0.00	6.34
102.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	26.733	0.00	4.99
104.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	26.842	0.00	6.34
104.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	26.842	0.00	4.99
106.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	26.950	0.00	6.34
106.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	26.950	0.00	4.99
108.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	27.056	0.00	6.34
108.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	27.056	0.00	4.99
110.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	27.161	0.00	6.34
110.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	27.161	0.00	4.99
111.21	1 1/4" Hybrid	Yes	1.21	0.000	0.01	0.00	0.00	0.001	0.000	27.224	0.00	3.84
111.21	1 5/8" Coax	Yes	1.21	0.000	0.01	0.00	0.00	0.001	0.000	27.224	0.00	3.03
112.00	1 1/4" Hybrid	Yes	0.79	0.000	0.01	0.00	0.00	0.001	0.000	27.264	0.00	2.49
112.00	1 5/8" Coax	Yes	0.79	0.000	0.01	0.00	0.00	0.001	0.000	27.264	0.00	1.96
114.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	27.366	0.00	6.34
114.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	27.366	0.00	4.99
114.80	1 1/4" Hybrid	Yes	0.80	0.000	0.01	0.00	0.00	0.001	0.000	27.406	0.00	2.52
114.80	1 5/8" Coax	Yes	0.80	0.000	0.01	0.00	0.00	0.001	0.000	27.406	0.00	1.99
115.00	1 1/4" Hybrid	Yes	0.20	0.000	0.01	0.00	0.00	0.001	0.000	27.416	0.00	0.64
115.00	1 5/8" Coax	Yes	0.20	0.000	0.01	0.00	0.00	0.001	0.000	27.416	0.00	0.51
										Totals:	**0.0**	**651.4**

Calculated Forces

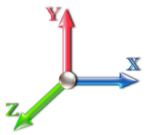
Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 20	

Tower Engineering Solutions

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 28

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-38.06	-36.18	0.00	-3839.8	0.00	3839.82	3406.69	1703.35	5989.16	2957.82	0.00	0.000	0.000	0.795
1.00	-37.79	-36.10	0.00	-3803.6	0.00	3803.64	3398.78	1699.39	5949.79	2938.38	0.01	-0.055	0.000	0.751
2.00	-37.50	-36.04	0.00	-3767.5	0.00	3767.54	3390.81	1695.40	5910.44	2918.95	0.02	-0.108	0.000	0.747
4.00	-36.96	-35.87	0.00	-3695.4	0.00	3695.46	3374.70	1687.35	5831.83	2880.12	0.09	-0.213	0.000	0.740
6.00	-36.42	-35.71	0.00	-3623.7	0.00	3623.72	3358.38	1679.19	5753.31	2841.35	0.20	-0.318	0.000	0.733
8.00	-35.88	-35.55	0.00	-3552.3	0.00	3552.30	3341.83	1670.92	5674.92	2802.63	0.36	-0.423	0.000	0.725
10.00	-35.35	-35.38	0.00	-3481.2	0.00	3481.21	3325.07	1662.53	5596.65	2763.98	0.56	-0.529	0.000	0.718
12.00	-34.83	-35.22	0.00	-3410.4	0.00	3410.45	3308.08	1654.04	5518.52	2725.39	0.80	-0.634	0.000	0.711
14.00	-34.34	-35.03	0.00	-3340.0	0.00	3340.01	3290.88	1645.44	5440.53	2686.87	1.09	-0.740	0.000	0.703
14.17	-34.27	-35.04	0.00	-3334.0	0.00	3334.05	3289.41	1644.70	5433.91	2683.60	1.12	-0.750	0.000	0.649
16.00	-33.80	-34.88	0.00	-3269.9	0.00	3269.94	3273.46	1636.73	5362.70	2648.44	1.42	-0.839	0.000	0.643
17.50	-33.44	-34.73	0.00	-3217.6	0.00	3217.62	3260.25	1630.12	5304.43	2619.66	1.70	-0.913	0.000	0.689
18.00	-33.28	-34.72	0.00	-3200.2	0.00	3200.25	3255.82	1627.91	5285.03	2610.08	1.80	-0.940	0.000	0.687
20.00	-32.80	-34.52	0.00	-3130.8	0.00	3130.82	3237.96	1618.98	5207.54	2571.81	2.21	-1.047	0.000	0.679
20.50	-32.00	-34.23	0.00	-3113.5	0.00	3113.56	3233.46	1616.73	5188.20	2562.26	2.32	-1.073	0.000	0.553
22.00	-31.63	-34.09	0.00	-3062.2	0.00	3062.22	3219.87	1609.94	5130.24	2533.63	2.67	-1.139	0.000	0.548
24.00	-31.14	-33.90	0.00	-2994.0	0.00	2994.03	3201.57	1600.79	5053.13	2495.55	3.17	-1.226	0.000	0.541
26.00	-30.66	-33.70	0.00	-2926.2	0.00	2926.24	3183.05	1591.53	4976.22	2457.57	3.70	-1.312	0.000	0.533
28.00	-30.18	-33.50	0.00	-2858.8	0.00	2858.84	3164.31	1582.16	4899.54	2419.70	4.27	-1.399	0.000	0.526
30.00	-29.70	-33.30	0.00	-2791.8	0.00	2791.84	3145.35	1572.68	4823.07	2381.93	4.87	-1.486	0.000	0.519
32.00	-29.23	-33.09	0.00	-2725.2	0.00	2725.24	3126.18	1563.09	4746.84	2344.29	5.51	-1.572	0.000	0.512
34.00	-28.76	-32.89	0.00	-2659.0	0.00	2659.06	3106.78	1553.39	4670.86	2306.76	6.19	-1.659	0.000	0.504
36.00	-28.31	-32.67	0.00	-2593.2	0.00	2593.29	3087.16	1543.58	4595.12	2269.36	6.90	-1.745	0.000	0.497
37.00	-28.08	-32.57	0.00	-2560.6	0.00	2560.62	3077.27	1538.63	4557.36	2250.71	7.28	-1.789	0.000	0.684
38.00	-27.82	-32.48	0.00	-2528.0	0.00	2528.05	3067.32	1533.66	4519.66	2232.09	7.66	-1.849	0.000	0.679
40.00	-27.35	-32.29	0.00	-2463.0	0.00	2463.09	3047.27	1523.63	4444.46	2194.95	8.46	-1.968	0.000	0.670
42.00	-26.89	-32.08	0.00	-2398.5	0.00	2398.52	3026.99	1513.49	4369.56	2157.96	9.31	-2.088	0.000	0.661
43.36	-26.60	-31.93	0.00	-2354.8	0.00	2354.89	3013.08	1506.54	4318.79	2132.89	9.91	-2.169	0.000	0.469
43.50	-26.56	-31.92	0.00	-2350.4	0.00	2350.42	3011.64	1505.82	4313.57	2130.31	9.98	-2.175	0.000	0.468
44.00	-26.36	-31.87	0.00	-2334.4	0.00	2334.46	3006.49	1503.25	4294.94	2121.11	10.21	-2.197	0.000	0.457
46.00	-25.63	-31.64	0.00	-2270.7	0.00	2270.72	2985.78	1492.89	4220.63	2084.41	11.14	-2.281	0.000	0.449
48.00	-24.93	-31.39	0.00	-2207.4	0.00	2207.44	2964.84	1482.42	4146.63	2047.87	12.12	-2.364	0.000	0.441
48.50	-24.74	-31.34	0.00	-2191.7	0.00	2191.74	2330.75	1165.37	3323.66	1641.43	12.37	-2.385	0.000	0.483
50.00	-24.39	-31.12	0.00	-2144.7	0.00	2144.73	2320.40	1160.20	3282.84	1621.27	13.13	-2.447	0.000	0.499
52.00	-24.03	-30.88	0.00	-2082.5	0.00	2082.50	2306.40	1153.20	3228.50	1594.43	14.17	-2.534	0.000	0.489
52.50	-23.93	-30.83	0.00	-2067.0	0.00	2067.06	2302.87	1151.43	3214.93	1587.73	14.44	-2.556	0.000	0.403
54.00	-23.66	-30.65	0.00	-2020.8	0.00	2020.81	2292.19	1146.09	3174.27	1567.65	15.25	-2.609	0.000	0.397
54.17	-23.61	-30.65	0.00	-2015.6	0.00	2015.60	2290.97	1145.49	3169.67	1565.38	15.34	-2.615	0.000	0.539
56.00	-23.26	-30.45	0.00	-1959.5	0.00	1959.51	2277.76	1138.88	3120.17	1540.93	16.36	-2.704	0.000	0.529
58.00	-22.89	-30.24	0.00	-1898.6	0.00	1898.60	2263.10	1131.55	3066.20	1514.28	17.51	-2.800	0.000	0.518
60.00	-22.52	-30.02	0.00	-1838.1	0.00	1838.13	2248.23	1124.12	3012.38	1487.70	18.71	-2.895	0.000	0.507
62.00	-22.16	-29.80	0.00	-1778.1	0.00	1778.10	2233.14	1116.57	2958.71	1461.20	19.94	-2.990	0.000	0.496
64.00	-21.82	-29.56	0.00	-1718.5	0.00	1718.50	2217.83	1108.92	2905.21	1434.77	21.21	-3.084	0.000	0.484
64.17	-21.78	-29.56	0.00	-1713.4	0.00	1713.48	2216.52	1108.26	2900.67	1432.53	21.32	-3.092	0.000	0.370
66.00	-21.46	-29.35	0.00	-1659.3	0.00	1659.39	2202.30	1101.15	2851.88	1408.44	22.52	-3.157	0.000	0.362
68.00	-21.12	-29.12	0.00	-1600.6	0.00	1600.69	2186.55	1093.28	2798.74	1382.19	23.86	-3.228	0.000	0.352
69.50	-20.88	-28.94	0.00	-1557.0	0.00	1557.01	2174.60	1087.30	2759.01	1362.57	24.88	-3.280	0.000	0.477
70.00	-20.77	-28.90	0.00	-1542.5	0.00	1542.54	2170.58	1085.29	2745.79	1356.04	25.22	-3.305	0.000	0.474

Calculated Forces

Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 21

TES Tower Engineering Solutions

72.00	-20.42	-28.69	0.00	-1484.7	0.00	1484.74	2154.39	1077.20	2693.05	1329.99	26.63	-3.400	0.000	0.462
74.00	-20.08	-28.47	0.00	-1427.3	0.00	1427.36	2137.99	1068.99	2640.51	1304.05	28.07	-3.495	0.000	0.449
76.00	-19.76	-28.24	0.00	-1370.4	0.00	1370.42	2121.36	1060.68	2588.21	1278.22	29.55	-3.588	0.000	0.437
76.71	-19.65	-28.16	0.00	-1350.3	0.00	1350.37	2115.40	1057.70	2569.69	1269.07	30.09	-3.621	0.000	0.327
76.84	-19.62	-28.15	0.00	-1346.8	0.00	1346.80	2114.34	1057.17	2566.39	1267.45	30.19	-3.625	0.000	0.326
78.00	-19.31	-28.02	0.00	-1314.0	0.00	1314.05	2104.51	1052.26	2536.13	1252.50	31.07	-3.666	0.000	0.314
80.00	-18.81	-27.77	0.00	-1258.0	0.00	1258.01	2087.45	1043.72	2484.30	1226.90	32.62	-3.733	0.000	0.303
80.17	-18.76	-27.76	0.00	-1253.2	0.00	1253.29	2085.98	1042.99	2479.91	1224.73	32.76	-3.739	0.000	0.407
81.17	-18.50	-27.64	0.00	-1225.5	0.00	1225.53	1538.24	769.12	1857.13	917.17	33.54	-3.784	0.000	0.449
82.00	-18.37	-27.56	0.00	-1202.5	0.00	1202.59	1534.07	767.04	1842.56	909.97	34.20	-3.821	0.000	0.471
84.00	-18.09	-27.34	0.00	-1147.4	0.00	1147.48	1523.87	761.94	1807.49	892.65	35.82	-3.914	0.000	0.454
85.92	-17.85	-27.12	0.00	-1094.9	0.00	1094.98	1513.87	756.94	1773.86	876.04	37.41	-4.001	0.000	0.334
86.00	-17.82	-27.12	0.00	-1092.8	0.00	1092.81	1513.45	756.73	1772.46	875.35	37.48	-4.004	0.000	0.334
87.50	-17.63	-26.95	0.00	-1052.1	0.00	1052.13	1505.49	752.75	1746.23	862.40	38.75	-4.055	0.000	0.417
88.00	-17.55	-26.91	0.00	-1038.6	0.00	1038.66	1502.81	751.41	1737.49	858.08	39.17	-4.077	0.000	0.413
90.00	-17.27	-26.70	0.00	-984.84	0.00	984.84	1491.95	745.98	1702.59	840.84	40.90	-4.163	0.000	0.616
92.00	-16.98	-26.50	0.00	-931.45	0.00	931.45	1480.87	740.44	1667.76	823.65	42.67	-4.293	0.000	0.591
94.00	-16.70	-26.30	0.00	-878.45	0.00	878.45	1469.57	734.79	1633.03	806.49	44.49	-4.419	0.000	0.565
96.00	-16.43	-26.10	0.00	-825.85	0.00	825.85	1458.05	729.03	1598.39	789.39	46.37	-4.543	0.000	0.539
98.00	-16.16	-25.90	0.00	-773.66	0.00	773.66	1446.32	723.16	1563.86	772.33	48.30	-4.662	0.000	0.512
100.00	-15.89	-25.70	0.00	-721.86	0.00	721.86	1434.36	717.18	1529.45	755.34	50.27	-4.778	0.000	0.485
102.00	-15.60	-25.52	0.00	-670.46	0.00	670.46	1422.18	711.09	1495.16	738.41	52.30	-4.889	0.000	0.920
104.00	-15.30	-25.34	0.00	-619.43	0.00	619.43	1409.79	704.89	1461.02	721.54	54.39	-5.104	0.000	0.871
106.00	-15.01	-25.17	0.00	-568.74	0.00	568.74	1397.17	698.58	1427.02	704.75	56.57	-5.311	0.000	0.819
108.00	-14.72	-25.00	0.00	-518.40	0.00	518.40	1384.33	692.17	1393.17	688.04	58.84	-5.509	0.000	0.765
110.00	-14.45	-24.81	0.00	-468.41	0.00	468.41	1371.28	685.64	1359.50	671.40	61.18	-5.696	0.000	0.710
111.21	-14.30	-24.70	0.00	-438.30	0.00	438.30	1363.25	681.63	1339.15	661.36	62.64	-5.805	0.000	0.675
112.00	-14.12	-24.64	0.00	-418.87	0.00	418.87	1358.00	679.00	1326.00	654.86	63.60	-5.874	0.000	0.651
114.00	-13.76	-24.43	0.00	-369.60	0.00	369.60	1344.51	672.26	1292.68	638.41	66.10	-6.038	0.000	0.591
114.80	-13.62	-24.34	0.00	-350.14	0.00	350.14	898.25	449.12	876.91	433.07	67.11	-6.100	0.000	0.827
115.00	-8.39	-16.17	0.00	-345.19	0.00	345.19	897.59	448.79	874.90	432.08	67.37	-6.115	0.000	0.810
116.00	-8.28	-16.09	0.00	-329.02	0.00	329.02	894.32	447.16	865.01	427.20	68.66	-6.210	0.000	0.781
118.00	-8.11	-15.90	0.00	-296.85	0.00	296.85	887.61	443.81	845.23	417.43	71.29	-6.390	0.000	0.722
120.00	-7.93	-15.71	0.00	-265.04	0.00	265.04	880.69	440.34	825.45	407.66	74.00	-6.558	0.000	0.660
122.00	-7.77	-15.53	0.00	-233.62	0.00	233.62	873.54	436.77	805.67	397.89	76.78	-6.716	0.000	0.597
124.00	-7.61	-15.34	0.00	-202.56	0.00	202.56	866.18	433.09	785.90	388.13	79.62	-6.860	0.000	0.532
126.00	-5.45	-11.14	0.00	-171.88	0.00	171.88	858.60	429.30	766.16	378.38	82.51	-6.990	0.000	0.461
128.00	-5.32	-10.95	0.00	-149.60	0.00	149.60	850.80	425.40	746.46	368.65	85.46	-7.107	0.000	0.413
130.00	-5.19	-10.76	0.00	-127.70	0.00	127.70	842.77	421.39	726.80	358.94	88.45	-7.213	0.000	0.363
132.00	-5.07	-10.58	0.00	-106.18	0.00	106.18	834.53	417.27	707.19	349.25	91.49	-7.308	0.000	0.311
134.00	-4.95	-10.39	0.00	-85.02	0.00	85.02	826.07	413.04	687.65	339.60	94.56	-7.389	0.000	0.257
136.00	-4.83	-10.21	0.00	-64.24	0.00	64.24	817.39	408.69	668.18	329.99	97.66	-7.456	0.000	0.201
138.00	-1.67	-3.74	0.00	-43.83	0.00	43.83	808.49	404.24	648.79	320.41	100.79	-7.507	0.000	0.139
140.00	-1.59	-3.56	0.00	-36.36	0.00	36.36	799.37	399.68	629.50	310.89	103.93	-7.547	0.000	0.119
142.00	-1.52	-3.38	0.00	-29.24	0.00	29.24	790.03	395.01	610.32	301.41	107.09	-7.582	0.000	0.099
144.00	-1.44	-3.21	0.00	-22.47	0.00	22.47	780.47	390.24	591.24	291.99	110.27	-7.611	0.000	0.079
146.00	-1.37	-3.04	0.00	-16.06	0.00	16.06	770.69	385.35	572.29	282.63	113.45	-7.634	0.000	0.059
148.00	-1.30	-2.87	0.00	-9.98	0.00	9.98	760.69	380.35	553.47	273.34	116.64	-7.650	0.000	0.038
150.00	0.00	-2.67	0.00	-4.25	0.00	4.25	750.48	375.24	534.80	264.12	119.84	-7.660	0.000	0.016

Wind Loading - Shaft

Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 22	

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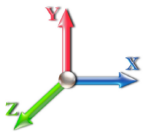
Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 27

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00	RB1 RB2 RB3 RB4	1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
1.00	RT3 RB5	1.00	0.85	5.168	5.68	0.00	1.200	1.410	1.00	3.937	4.72	26.9	80.8	290.5
2.00		1.00	0.85	5.168	5.68	0.00	1.200	1.511	1.00	3.938	4.73	26.9	86.4	295.2
4.00		1.00	0.85	5.168	5.68	0.00	1.200	1.620	2.00	7.866	9.44	53.7	184.1	599.1
6.00		1.00	0.85	5.168	5.68	0.00	1.200	1.687	2.00	7.826	9.39	53.4	190.4	601.9
8.00		1.00	0.85	5.168	5.68	0.00	1.200	1.736	2.00	7.781	9.34	53.1	194.6	602.5
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.775	2.00	7.732	9.28	52.7	197.5	601.9
12.00		1.00	0.85	5.168	5.68	0.00	1.200	1.808	2.00	7.680	9.22	52.4	199.6	600.4
14.00		1.00	0.85	5.168	5.68	0.00	1.200	1.836	2.00	7.628	9.15	52.0	201.1	598.4
14.17	RB6	1.00	0.85	5.168	5.68	0.00	1.200	1.838	0.17	0.646	0.77	4.4	17.1	50.7
16.00		1.00	0.86	5.232	5.76	0.00	1.200	1.860	1.83	6.928	8.31	47.8	185.0	545.1
17.50	RT5	1.00	0.88	5.331	5.86	0.00	1.200	1.877	1.50	5.644	6.77	39.7	152.1	445.0
18.00		1.00	0.88	5.363	5.90	0.00	1.200	1.882	0.50	1.874	2.25	13.3	50.7	147.9
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.902	2.00	7.463	8.96	54.0	203.4	590.0
20.50	RT1 RT4 RB7	1.00	0.91	5.512	6.06	0.00	1.200	1.907	0.50	1.857	2.23	13.5	50.9	147.0
22.00		1.00	0.92	5.595	6.15	0.00	1.200	1.921	1.50	5.550	6.66	41.0	152.7	439.7
24.00		1.00	0.94	5.698	6.27	0.00	1.200	1.937	2.00	7.351	8.82	55.3	203.7	583.2
26.00		1.00	0.95	5.795	6.37	0.00	1.200	1.953	2.00	7.294	8.75	55.8	203.6	579.5
28.00		1.00	0.97	5.886	6.47	0.00	1.200	1.967	2.00	7.237	8.68	56.2	203.3	575.7
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.981	2.00	7.179	8.61	56.6	203.0	571.8
32.00		1.00	1.00	6.054	6.66	0.00	1.200	1.994	2.00	7.121	8.55	56.9	202.5	567.8
34.00		1.00	1.01	6.132	6.74	0.00	1.200	2.006	2.00	7.063	8.48	57.2	201.9	563.7
36.00		1.00	1.02	6.206	6.83	0.00	1.200	2.017	2.00	7.005	8.41	57.4	201.2	559.4
37.00	RT7	1.00	1.03	6.242	6.87	0.00	1.200	2.023	1.00	3.480	4.18	28.7	100.4	278.2
38.00		1.00	1.03	6.277	6.90	0.00	1.200	2.028	1.00	3.465	4.16	28.7	100.2	277.1
40.00		1.00	1.04	6.345	6.98	0.00	1.200	2.039	2.00	6.888	8.27	57.7	199.7	550.8
42.00		1.00	1.05	6.410	7.05	0.00	1.200	2.049	2.00	6.829	8.19	57.8	198.8	546.3
43.36	RB8	1.00	1.06	6.454	7.10	0.00	1.200	2.055	1.36	4.610	5.53	39.3	134.7	369.0
43.50	Bot - Section 2	1.00	1.06	6.458	7.10	0.00	1.200	2.056	0.14	0.473	0.57	4.0	13.9	37.9
44.00		1.00	1.06	6.474	7.12	0.00	1.200	2.058	0.50	1.714	2.06	14.6	50.3	208.8
46.00		1.00	1.07	6.534	7.19	0.00	1.200	2.068	2.00	6.819	8.18	58.8	200.2	830.0
48.00		1.00	1.08	6.593	7.25	0.00	1.200	2.076	2.00	6.760	8.11	58.8	199.1	822.5
48.50	Top - Section 1	1.00	1.09	6.608	7.27	0.00	1.200	2.079	0.50	1.680	2.02	14.7	49.7	204.5
50.00	Appurtenance(s)	1.00	1.09	6.650	7.32	0.00	1.200	2.085	1.50	5.019	6.02	44.1	148.5	360.9
52.00		1.00	1.10	6.705	7.38	0.00	1.200	2.093	2.00	6.641	7.97	58.8	196.9	477.4
52.50	RB9	1.00	1.11	6.719	7.39	0.00	1.200	2.095	0.50	1.651	1.98	14.6	49.2	118.8
54.00		1.00	1.11	6.759	7.43	0.00	1.200	2.101	1.50	4.930	5.92	44.0	146.8	354.7
54.17	RT2 RT6	1.00	1.11	6.763	7.44	0.00	1.200	2.102	0.17	0.557	0.67	5.0	16.6	40.1
56.00		1.00	1.12	6.811	7.49	0.00	1.200	2.109	1.83	5.965	7.16	53.6	178.0	429.1
58.00		1.00	1.13	6.861	7.55	0.00	1.200	2.116	2.00	6.462	7.75	58.5	193.3	464.9
60.00		1.00	1.14	6.910	7.60	0.00	1.200	2.123	2.00	6.403	7.68	58.4	192.0	460.7
62.00		1.00	1.14	6.958	7.65	0.00	1.200	2.130	2.00	6.343	7.61	58.3	190.7	456.4
64.00		1.00	1.15	7.005	7.71	0.00	1.200	2.137	2.00	6.283	7.54	58.1	189.3	452.1
64.17	RB10	1.00	1.15	7.009	7.71	0.00	1.200	2.138	0.17	0.531	0.64	4.9	16.1	38.3
66.00		1.00	1.16	7.050	7.76	0.00	1.200	2.144	1.83	5.692	6.83	53.0	172.0	409.5
68.00		1.00	1.17	7.095	7.80	0.00	1.200	2.150	2.00	6.163	7.40	57.7	186.5	443.4
69.50	RT8	1.00	1.17	7.128	7.84	0.00	1.200	2.155	1.50	4.583	5.50	43.1	139.1	329.8

Wind Loading - Shaft

Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 23

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70.00	RT9 RB11	1.00	1.17	7.138	7.85	0.00	1.200	2.156	0.50	1.520	1.82	14.3	46.3	109.5
72.00		1.00	1.18	7.181	7.90	0.00	1.200	2.162	2.00	6.043	7.25	57.3	183.6	434.5
74.00		1.00	1.19	7.222	7.94	0.00	1.200	2.168	2.00	5.983	7.18	57.0	182.1	430.1
76.00		1.00	1.19	7.263	7.99	0.00	1.200	2.174	2.00	5.923	7.11	56.8	180.6	425.6
76.71	RB12	1.00	1.20	7.277	8.00	0.00	1.200	2.176	0.71	2.088	2.51	20.1	63.9	150.2
76.84	Bot - Section 3	1.00	1.20	7.280	8.01	0.00	1.200	2.176	0.13	0.372	0.45	3.6	11.4	26.7
78.00		1.00	1.20	7.303	8.03	0.00	1.200	2.180	1.16	3.453	4.14	33.3	105.8	360.7
80.00		1.00	1.21	7.342	8.08	0.00	1.200	2.185	2.00	5.888	7.07	57.1	180.4	614.4
80.17	RT10	1.00	1.21	7.345	8.08	0.00	1.200	2.186	0.17	0.498	0.60	4.8	15.3	52.0
81.17	Top - Section 2	1.00	1.21	7.364	8.10	0.00	1.201 *	2.188	1.00	2.919	3.50	28.4	89.7	304.5
82.00		1.00	1.21	7.380	8.12	0.00	1.200	2.191	0.83	2.411	2.89	23.5	74.2	153.8
84.00		1.00	1.22	7.418	8.16	0.00	1.200	2.196	2.00	5.768	6.92	56.5	177.2	367.4
85.92	RB13	1.00	1.23	7.453	8.20	0.00	1.204 *	2.201	1.92	5.480	6.60	54.1	168.6	349.0
86.00		1.00	1.23	7.454	8.20	0.00	1.207 *	2.201	0.08	0.227	0.27	2.2	7.0	14.5
87.50	RT11	1.00	1.23	7.482	8.23	0.00	1.208 *	2.205	1.50	4.241	5.12	42.2	130.8	270.1
88.00		1.00	1.23	7.491	8.24	0.00	1.211 *	2.206	0.50	1.406	1.70	14.0	43.5	89.6
90.00	RT12	1.00	1.24	7.526	8.28	0.00	1.214 *	2.211	2.00	5.586	6.78	56.1	172.3	355.5
92.00		1.00	1.24	7.561	8.32	0.00	1.200	2.216	2.00	5.526	6.63	55.2	170.7	351.4
94.00		1.00	1.25	7.595	8.35	0.00	1.200	2.221	2.00	5.465	6.56	54.8	169.0	347.4
96.00		1.00	1.25	7.629	8.39	0.00	1.200	2.225	2.00	5.405	6.49	54.4	167.3	343.3
98.00		1.00	1.26	7.662	8.43	0.00	1.200	2.230	2.00	5.344	6.41	54.1	165.6	339.2
100.00	RT13	1.00	1.27	7.695	8.46	0.00	1.200	2.234	2.00	5.284	6.34	53.7	163.9	335.2
102.00		1.00	1.27	7.727	8.50	0.00	1.200	2.239	2.00	5.223	6.27	53.3	162.1	331.0
104.00		1.00	1.28	7.759	8.53	0.00	1.200	2.243	2.00	5.162	6.19	52.9	160.4	326.9
106.00		1.00	1.28	7.790	8.57	0.00	1.200	2.248	2.00	5.102	6.12	52.5	158.6	322.8
108.00		1.00	1.29	7.821	8.60	0.00	1.200	2.252	2.00	5.041	6.05	52.0	156.8	318.6
110.00		1.00	1.29	7.851	8.64	0.00	1.200	2.256	2.00	4.980	5.98	51.6	155.0	314.5
111.21	Bot - Section 4	1.00	1.29	7.869	8.66	0.00	1.200	2.258	1.21	2.992	3.59	31.1	93.4	189.0
112.00		1.00	1.30	7.881	8.67	0.00	1.200	2.260	0.79	1.953	2.34	20.3	61.1	169.6
114.00		1.00	1.30	7.910	8.70	0.00	1.200	2.264	2.00	4.923	5.91	51.4	153.6	426.5
114.80	Top - Section 3	1.00	1.30	7.922	8.71	0.00	1.200	2.266	0.80	1.944	2.33	20.3	60.9	168.5
115.00	Appurtenance(s)	1.00	1.30	7.925	8.72	0.00	1.200	2.266	0.20	0.495	0.59	5.2	15.5	27.4
116.00		1.00	1.31	7.939	8.73	0.00	1.200	2.268	1.00	2.424	2.91	25.4	75.9	133.9
118.00		1.00	1.31	7.968	8.76	0.00	1.200	2.272	2.00	4.802	5.76	50.5	149.9	264.6
120.00		1.00	1.32	7.996	8.80	0.00	1.200	2.276	2.00	4.741	5.69	50.0	148.1	261.0
122.00		1.00	1.32	8.024	8.83	0.00	1.200	2.279	2.00	4.680	5.62	49.6	146.2	257.3
124.00		1.00	1.32	8.051	8.86	0.00	1.200	2.283	2.00	4.619	5.54	49.1	144.3	253.7
126.00	Appurtenance(s)	1.00	1.33	8.079	8.89	0.00	1.200	2.287	2.00	4.558	5.47	48.6	142.5	250.0
128.00		1.00	1.33	8.105	8.92	0.00	1.200	2.290	2.00	4.497	5.40	48.1	140.6	246.3
130.00		1.00	1.34	8.132	8.95	0.00	1.200	2.294	2.00	4.436	5.32	47.6	138.7	242.7
132.00		1.00	1.34	8.158	8.97	0.00	1.200	2.297	2.00	4.375	5.25	47.1	136.8	239.0
134.00		1.00	1.35	8.184	9.00	0.00	1.200	2.301	2.00	4.314	5.18	46.6	134.8	235.3
136.00		1.00	1.35	8.210	9.03	0.00	1.200	2.304	2.00	4.254	5.10	46.1	132.9	231.6
138.00	Appurtenance(s)	1.00	1.35	8.235	9.06	0.00	1.200	2.308	2.00	4.193	5.03	45.6	131.0	227.9
140.00		1.00	1.36	8.260	9.09	0.00	1.200	2.311	2.00	4.132	4.96	45.0	129.0	224.1
142.00		1.00	1.36	8.285	9.11	0.00	1.200	2.314	2.00	4.070	4.88	44.5	127.1	220.4
144.00		1.00	1.37	8.309	9.14	0.00	1.200	2.317	2.00	4.009	4.81	44.0	125.1	216.7
146.00		1.00	1.37	8.333	9.17	0.00	1.200	2.321	2.00	3.948	4.74	43.4	123.1	212.9
148.00		1.00	1.37	8.357	9.19	0.00	1.200	2.324	2.00	3.887	4.66	42.9	121.1	209.2
150.00	Appurtenance(s)	1.00	1.38	8.381	9.22	0.00	1.200	2.327	2.00	3.826	4.59	42.3	119.1	205.4
								Totals:	**150.00**			**4,015.7**		**32,468.9**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

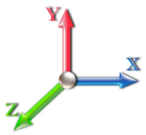
Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 24	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 27

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	150.00	3' Yagi	1	8.381	9.219	1.00	1.00	11.35	106.32	0.000	0.000	104.64	0.00	0.00
2	150.00	10' Dipole	1	8.439	9.283	1.00	1.00	11.76	152.78	0.000	5.000	109.17	0.00	545.83
3	150.00	18' Omni	1	8.484	9.333	1.00	1.00	13.93	208.22	0.000	9.000	130.04	0.00	1170.40
4	150.00	10' Omni	1	8.439	9.283	1.00	1.00	7.81	109.71	0.000	5.000	72.48	0.00	362.41
5	150.00	Low Profile Platform-flat	1	8.381	9.219	1.00	1.00	71.98	2536.17	0.000	0.000	663.53	0.00	0.00
6	138.00	LGP 21901	6	8.235	9.058	0.38	0.75	1.61	87.41	0.000	0.000	14.61	0.00	0.00
7	138.00	RRUS-11 700MHz	3	8.235	9.058	0.38	0.75	3.78	422.29	0.000	0.000	34.21	0.00	0.00
8	138.00	DMP65R-BU8DA	3	8.235	9.058	0.55	0.75	33.82	1906.57	0.000	0.000	306.37	0.00	0.00
9	138.00	TT19-08BP111-001	6	8.235	9.058	0.38	0.75	3.20	240.97	0.000	0.000	29.02	0.00	0.00
10	138.00	7770.00	3	8.235	9.058	0.58	0.75	12.06	811.26	0.000	0.000	109.26	0.00	0.00
11	138.00	Low Profile Platform-flat	1	8.235	9.058	1.00	1.00	71.66	2524.58	0.000	0.000	649.12	0.00	0.00
12	138.00	B2 B66A 8843	3	8.235	9.058	0.38	0.75	2.61	400.50	0.000	0.000	23.67	0.00	0.00
13	138.00	HPA-65R-BU8A	3	8.235	9.058	0.67	0.75	26.84	956.98	0.000	0.000	243.10	0.00	0.00
14	138.00	4449 B5/B12	3	8.235	9.058	0.38	0.75	3.03	426.55	0.000	0.000	27.45	0.00	0.00
15	138.00	DC9-48-60-24-8C-EV	1	8.235	9.058	0.75	0.75	2.43	154.49	0.000	0.000	22.00	0.00	0.00
16	138.00	HRK12 (Handrail Kit)	1	8.235	9.058	0.75	0.75	11.60	986.47	0.000	0.000	105.12	0.00	0.00
17	138.00	PRK-1245 (kicker kit)	1	8.235	9.058	0.75	0.75	16.99	891.94	0.000	0.000	153.90	0.00	0.00
18	126.00	APXVSPP18-C-A20	3	8.079	8.886	0.70	0.80	24.67	736.16	0.000	0.000	219.22	0.00	0.00
19	126.00	800MHz Filter	3	8.079	8.886	0.40	0.80	1.95	86.03	0.000	0.000	17.36	0.00	0.00
20	126.00	TD-RRH8x20-25	3	8.079	8.886	0.40	0.80	6.21	598.41	0.000	0.000	55.16	0.00	0.00
21	126.00	800 MHz	3	8.079	8.886	0.40	0.80	4.79	418.23	0.000	0.000	42.53	0.00	0.00
22	126.00	1900MHz	3	8.079	8.886	0.40	0.80	6.75	493.91	0.000	0.000	59.94	0.00	0.00
23	126.00	APXVTM14-C-120	3	8.079	8.886	0.66	0.80	15.46	760.21	0.000	0.000	137.35	0.00	0.00
24	126.00	Low Profile Platform-flat	1	8.079	8.886	1.00	1.00	71.32	2512.04	0.000	0.000	633.78	0.00	0.00
25	126.00	ACU-A20-N	4	8.079	8.886	0.40	0.80	0.85	22.12	0.000	0.000	7.52	0.00	0.00
26	115.00	AIR32	4	7.925	8.717	0.69	0.75	22.06	1407.65	0.000	0.000	192.26	0.00	0.00
27	115.00	F4P-12W	1	7.925	8.717	1.00	1.00	166.60	6812.67	0.000	0.000	1452.28	0.00	0.00
28	115.00	F4P-HRK12	1	7.925	8.717	1.00	1.00	19.92	1140.75	0.000	0.000	173.65	0.00	0.00
29	115.00	KRY 112 489/2	4	7.925	8.717	0.38	0.75	2.15	145.54	0.000	0.000	18.71	0.00	0.00
30	115.00	APXVAARR24_43-U-NA2	4	7.925	8.717	0.62	0.75	56.34	2514.81	0.000	0.000	491.10	0.00	0.00
31	115.00	APX16DWV-16DWVS-E-A	4	7.925	8.717	0.60	0.75	22.82	669.30	0.000	0.000	198.93	0.00	0.00
32	115.00	Radio 4449 B71 + B12	4	7.925	8.717	0.38	0.75	3.60	798.37	0.000	0.000	31.35	0.00	0.00
33	50.00	GPS	1	6.650	7.315	1.00	1.00	0.01	2.28	0.000	0.000	0.08	0.00	0.00
34	50.00	Standoff	1	6.650	7.315	1.00	1.00	3.58	139.24	0.000	0.000	26.22	0.00	0.00
35	20.50	Splice Plate	2	5.512	6.063	0.96	1.00	9.83	1419.46	0.000	0.000	59.59	0.00	0.00
							Totals:		**33,600.39**			**6,614.74**		

Total Applied Force Summary

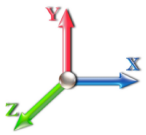
Structure:	CT46134-A-SBA		**Code:**	EIA/TIA-222-G	10/22/2020
Site Name:	Granby-n. Granby		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 25

TES Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 27

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
1.00		26.86	341.16	0.00	0.00
2.00		26.87	350.04	0.00	0.00
4.00		53.66	713.19	0.00	0.00
6.00		53.39	718.81	0.00	0.00
8.00		53.08	721.54	0.00	0.00
10.00		52.74	722.62	0.00	0.00
12.00		52.39	722.61	0.00	0.00
14.00		52.03	721.84	0.00	0.00
14.17		4.40	61.21	0.00	0.00
16.00		47.84	659.10	0.00	0.00
17.50		39.72	539.04	0.00	0.00
18.00		13.27	179.34	0.00	0.00
20.00		54.02	716.51	0.00	0.00
20.50	(2) attachments	73.09	1598.11	0.00	0.00
22.00		40.98	535.20	0.00	0.00
24.00		55.29	711.33	0.00	0.00
26.00		55.79	708.40	0.00	0.00
28.00		56.23	705.28	0.00	0.00
30.00		56.59	701.99	0.00	0.00
32.00		56.91	698.57	0.00	0.00
34.00		57.17	695.01	0.00	0.00
36.00		57.38	691.34	0.00	0.00
37.00		28.67	344.29	0.00	0.00
38.00		28.71	342.89	0.00	0.00
40.00		57.69	682.79	0.00	0.00
42.00		57.79	678.83	0.00	0.00
43.36		39.27	459.36	0.00	0.00
43.50		4.03	47.24	0.00	0.00
44.00		14.64	242.23	0.00	0.00
46.00		58.82	964.32	0.00	0.00
48.00		58.83	957.20	0.00	0.00
48.50		14.66	238.24	0.00	0.00
50.00	(2) attachments	70.37	603.74	0.00	0.00
52.00		58.78	612.97	0.00	0.00
52.50		14.64	152.73	0.00	0.00
54.00		43.99	456.64	0.00	0.00
54.17		4.97	51.64	0.00	0.00
56.00		53.63	553.85	0.00	0.00
58.00		58.53	601.58	0.00	0.00
60.00		58.40	597.68	0.00	0.00
62.00		58.26	593.75	0.00	0.00
64.00		58.10	589.77	0.00	0.00
64.17		4.91	49.99	0.00	0.00
66.00		52.97	535.85	0.00	0.00
68.00		57.72	581.71	0.00	0.00
69.50		43.12	433.71	0.00	0.00

Total Applied Force Summary

Structure:	CT46134-A-SBA		**Code:**	EIA/TIA-222-G	10/22/2020
Site Name:	Granby-n. Granby		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 26

TES Tower Engineering Solutions

70.00		14.32	143.89	0.00	0.00
72.00		57.28	572.55	0.00	0.00
74.00		57.04	568.40	0.00	0.00
76.00		56.78	564.21	0.00	0.00
76.71		20.06	199.43	0.00	0.00
76.84		3.57	35.60	0.00	0.00
78.00		33.28	442.07	0.00	0.00
80.00		57.07	754.52	0.00	0.00
80.17		4.83	63.88	0.00	0.00
81.17		28.39	374.66	0.00	0.00
82.00		23.49	212.10	0.00	0.00
84.00		56.47	508.09	0.00	0.00
85.92		54.10	484.30	0.00	0.00
86.00		2.25	20.13	0.00	0.00
87.50		42.17	375.96	0.00	0.00
88.00		14.02	124.94	0.00	0.00
90.00		56.13	496.88	0.00	0.00
92.00		55.15	475.55	0.00	0.00
94.00		54.80	471.68	0.00	0.00
96.00		54.43	467.80	0.00	0.00
98.00		54.05	463.89	0.00	0.00
100.00		53.67	459.97	0.00	0.00
102.00		53.27	456.03	0.00	0.00
104.00		52.87	452.07	0.00	0.00
106.00		52.46	448.10	0.00	0.00
108.00		52.04	444.11	0.00	0.00
110.00		51.61	440.10	0.00	0.00
111.21		31.07	265.24	0.00	0.00
112.00		20.32	219.09	0.00	0.00
114.00		51.41	552.45	0.00	0.00
114.80		20.33	218.64	0.00	0.00
115.00	(22) attachments	2563.46	13529.27	0.00	0.00
116.00		25.40	151.82	0.00	0.00
118.00		50.50	300.47	0.00	0.00
120.00		50.04	296.84	0.00	0.00
122.00		49.57	293.21	0.00	0.00
124.00		49.09	289.56	0.00	0.00
126.00	(23) attachments	1221.47	5913.00	0.00	0.00
128.00		48.12	275.37	0.00	0.00
130.00		47.62	271.69	0.00	0.00
132.00		47.12	268.00	0.00	0.00
134.00		46.61	264.30	0.00	0.00
136.00		46.09	260.60	0.00	0.00
138.00	(34) attachments	1763.41	10066.90	0.00	0.00
140.00		45.05	226.54	0.00	0.00
142.00		44.51	222.81	0.00	0.00
144.00		43.97	219.07	0.00	0.00
146.00		43.43	215.32	0.00	0.00
148.00		42.88	211.56	0.00	0.00
150.00	(5) attachments	1122.19	3320.99	0.00	2078.64
	Totals:	**10,630.46**	**73,958.81**	**0.00**	**2,078.64**

Linear Appurtenance Segment Forces (Factored)

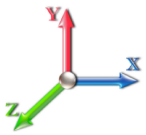
Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 27	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
1.00	1 1/4" Hybrid	Yes	1.00	0.000	0.01	0.24	0.00	0.034	0.000	5.168	0.00	13.20
1.00	1 5/8" Coax	Yes	1.00	0.000	0.01	0.24	0.00	0.034	0.000	5.168	0.00	9.92
1.00	1.5" Reinforcing Plate	Yes	0.50	0.000	3.00	0.24	0.00	0.034	0.000	5.168	0.00	2.13
2.00	1 1/4" Hybrid	Yes	1.00	0.000	0.01	0.25	0.00	0.068	0.000	5.168	0.00	14.05
2.00	1 5/8" Coax	Yes	1.00	0.000	0.01	0.25	0.00	0.068	0.000	5.168	0.00	10.59
2.00	1.5" Reinforcing Plate	Yes	1.00	0.000	3.00	0.50	0.00	0.068	0.000	5.168	0.00	4.74
4.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.54	0.00	0.069	0.000	5.168	0.00	29.97
4.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.54	0.00	0.069	0.000	5.168	0.00	22.69
4.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	1.04	0.00	0.069	0.000	5.168	0.00	10.56
6.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.56	0.00	0.069	0.000	5.168	0.00	31.16
6.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.56	0.00	0.069	0.000	5.168	0.00	23.64
6.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	1.06	0.00	0.069	0.000	5.168	0.00	11.26
8.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.58	0.00	0.070	0.000	5.168	0.00	32.04
8.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.58	0.00	0.070	0.000	5.168	0.00	24.35
8.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	1.08	0.00	0.070	0.000	5.168	0.00	11.79
10.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.59	0.00	0.070	0.000	5.168	0.00	32.76
10.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.59	0.00	0.070	0.000	5.168	0.00	24.93
10.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	1.09	0.00	0.070	0.000	5.168	0.00	12.21
12.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.60	0.00	0.071	0.000	5.168	0.00	33.36
12.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.60	0.00	0.071	0.000	5.168	0.00	25.42
12.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	1.10	0.00	0.071	0.000	5.168	0.00	12.58
14.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.61	0.00	0.072	0.000	5.168	0.00	33.88
14.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.61	0.00	0.072	0.000	5.168	0.00	25.84
14.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	1.11	0.00	0.072	0.000	5.168	0.00	12.89
14.17	1 1/4" Hybrid	Yes	0.17	0.000	0.01	0.05	0.00	0.072	0.000	5.168	0.00	2.88
14.17	1 5/8" Coax	Yes	0.17	0.000	0.01	0.05	0.00	0.072	0.000	5.168	0.00	2.20
14.17	1.5" Reinforcing Plate	Yes	0.17	0.000	3.00	0.09	0.00	0.072	0.000	5.168	0.00	1.10
16.00	1 1/4" Hybrid	Yes	1.83	0.000	0.01	0.57	0.00	0.072	0.000	5.232	0.00	31.42
16.00	1 5/8" Coax	Yes	1.83	0.000	0.01	0.57	0.00	0.072	0.000	5.232	0.00	23.99
16.00	1.5" Reinforcing Plate	Yes	1.83	0.000	3.00	1.02	0.00	0.072	0.000	5.232	0.00	12.05
17.50	1 1/4" Hybrid	Yes	1.50	0.000	0.01	0.47	0.00	0.073	0.000	5.331	0.00	25.99
17.50	1 5/8" Coax	Yes	1.50	0.000	0.01	0.47	0.00	0.073	0.000	5.331	0.00	19.85
17.50	1.5" Reinforcing Plate	Yes	1.50	0.000	3.00	0.84	0.00	0.073	0.000	5.331	0.00	10.02
18.00	1 1/4" Hybrid	Yes	0.50	0.000	0.01	0.16	0.00	0.073	0.000	5.363	0.00	8.69
18.00	1 5/8" Coax	Yes	0.50	0.000	0.01	0.16	0.00	0.073	0.000	5.363	0.00	6.64
18.00	1.5" Reinforcing Plate	Yes	0.50	0.000	3.00	0.28	0.00	0.073	0.000	5.363	0.00	3.36
20.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.64	0.00	0.074	0.000	5.483	0.00	35.13
20.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.64	0.00	0.074	0.000	5.483	0.00	26.86
20.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	1.13	0.00	0.074	0.000	5.483	0.00	13.66
20.50	1 1/4" Hybrid	Yes	0.50	0.000	0.01	0.16	0.00	0.074	0.000	5.512	0.00	8.80
20.50	1 5/8" Coax	Yes	0.50	0.000	0.01	0.16	0.00	0.074	0.000	5.512	0.00	6.73
20.50	1.5" Reinforcing Plate	Yes	0.50	0.000	3.00	0.28	0.00	0.074	0.000	5.512	0.00	3.43
22.00	1 1/4" Hybrid	Yes	1.50	0.000	0.01	0.48	0.00	0.074	0.000	5.595	0.00	26.61
22.00	1 5/8" Coax	Yes	1.50	0.000	0.01	0.48	0.00	0.074	0.000	5.595	0.00	20.36
22.00	1.5" Reinforcing Plate	Yes	1.50	0.000	3.00	0.86	0.00	0.074	0.000	5.595	0.00	10.40
24.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.65	0.00	0.075	0.000	5.698	0.00	35.80
24.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.65	0.00	0.075	0.000	5.698	0.00	27.41

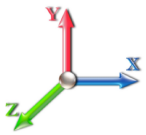
Linear Appurtenance Segment Forces (Factored)

Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 28	

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
24.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	1.15	0.00	0.075	0.000	5.698	0.00	14.07
26.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.65	0.00	0.076	0.000	5.795	0.00	36.09
26.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.65	0.00	0.076	0.000	5.795	0.00	27.65
26.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	1.15	0.00	0.076	0.000	5.795	0.00	14.25
28.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.66	0.00	0.076	0.000	5.886	0.00	36.37
28.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.66	0.00	0.076	0.000	5.886	0.00	27.88
28.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	1.16	0.00	0.076	0.000	5.886	0.00	14.42
30.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.66	0.00	0.077	0.000	5.972	0.00	36.64
30.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.66	0.00	0.077	0.000	5.972	0.00	28.09
30.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	1.16	0.00	0.077	0.000	5.972	0.00	14.59
32.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.67	0.00	0.078	0.000	6.054	0.00	36.88
32.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.67	0.00	0.078	0.000	6.054	0.00	28.30
32.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	1.16	0.00	0.078	0.000	6.054	0.00	14.74
34.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.67	0.00	0.079	0.000	6.132	0.00	37.12
34.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.67	0.00	0.079	0.000	6.132	0.00	28.49
34.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	1.17	0.00	0.079	0.000	6.132	0.00	14.89
36.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.67	0.00	0.079	0.000	6.206	0.00	37.34
36.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.67	0.00	0.079	0.000	6.206	0.00	28.67
36.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	1.17	0.00	0.079	0.000	6.206	0.00	15.03
37.00	1 1/4" Hybrid	Yes	1.00	0.000	0.01	0.34	0.00	0.080	0.000	6.242	0.00	18.73
37.00	1 5/8" Coax	Yes	1.00	0.000	0.01	0.34	0.00	0.080	0.000	6.242	0.00	14.38
37.00	1.5" Reinforcing Plate	Yes	1.00	0.000	3.00	0.59	0.00	0.080	0.000	6.242	0.00	7.55
38.00	1 1/4" Hybrid	Yes	1.00	0.000	0.01	0.34	0.00	0.067	0.000	6.277	0.00	18.78
38.00	1 5/8" Coax	Yes	1.00	0.000	0.01	0.34	0.00	0.067	0.000	6.277	0.00	14.42
38.00	1.25" Reinforcing	Yes	1.00	0.000	2.50	0.55	0.00	0.067	0.000	6.277	0.00	7.13
40.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.68	0.00	0.068	0.000	6.345	0.00	37.76
40.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.68	0.00	0.068	0.000	6.345	0.00	29.02
40.00	1.25" Reinforcing	Yes	2.00	0.000	2.50	1.10	0.00	0.068	0.000	6.345	0.00	14.38
42.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.68	0.00	0.068	0.000	6.410	0.00	37.96
42.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.68	0.00	0.068	0.000	6.410	0.00	29.18
42.00	1.25" Reinforcing	Yes	2.00	0.000	2.50	1.10	0.00	0.068	0.000	6.410	0.00	14.50
43.36	1 1/4" Hybrid	Yes	1.36	0.000	0.01	0.47	0.00	0.069	0.000	6.454	0.00	25.90
43.36	1 5/8" Coax	Yes	1.36	0.000	0.01	0.47	0.00	0.069	0.000	6.454	0.00	19.91
43.36	1.25" Reinforcing	Yes	1.36	0.000	2.50	0.75	0.00	0.069	0.000	6.454	0.00	9.91
43.50	1 1/4" Hybrid	Yes	0.14	0.000	0.01	0.05	0.00	0.079	0.000	6.458	0.00	2.67
43.50	1 5/8" Coax	Yes	0.14	0.000	0.01	0.05	0.00	0.079	0.000	6.458	0.00	2.05
43.50	1.5" Reinforcing Plate	Yes	0.10	0.000	3.00	0.06	0.00	0.079	0.000	6.458	0.00	0.78
43.50	1.25" Reinforcing	Yes	0.04	0.000	2.50	0.02	0.00	0.079	0.000	6.458	0.00	0.29
44.00	1 1/4" Hybrid	Yes	0.50	0.000	0.01	0.17	0.00	0.083	0.000	6.474	0.00	9.54
44.00	1 5/8" Coax	Yes	0.50	0.000	0.01	0.17	0.00	0.083	0.000	6.474	0.00	7.33
44.00	1.5" Reinforcing Plate	Yes	0.50	0.000	3.00	0.30	0.00	0.083	0.000	6.474	0.00	3.88
46.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.69	0.00	0.084	0.000	6.534	0.00	38.33
46.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.69	0.00	0.084	0.000	6.534	0.00	29.48
46.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	1.19	0.00	0.084	0.000	6.534	0.00	15.64
48.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.69	0.00	0.084	0.000	6.593	0.00	38.50
48.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.69	0.00	0.084	0.000	6.593	0.00	29.63
48.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	1.19	0.00	0.084	0.000	6.593	0.00	15.75

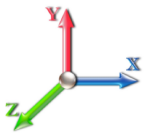
Linear Appurtenance Segment Forces (Factored)

Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 29	

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
48.50	1 1/4" Hybrid	Yes	0.50	0.000	0.01	0.17	0.00	0.085	0.000	6.608	0.00	9.64
48.50	1 5/8" Coax	Yes	0.50	0.000	0.01	0.17	0.00	0.085	0.000	6.608	0.00	7.42
48.50	1.5" Reinforcing Plate	Yes	0.50	0.000	3.00	0.30	0.00	0.085	0.000	6.608	0.00	3.95
50.00	1 1/4" Hybrid	Yes	1.50	0.000	0.01	0.52	0.00	0.084	0.000	6.650	0.00	29.00
50.00	1 5/8" Coax	Yes	1.50	0.000	0.01	0.52	0.00	0.084	0.000	6.650	0.00	22.32
50.00	1.5" Reinforcing Plate	Yes	1.50	0.000	3.00	0.90	0.00	0.084	0.000	6.650	0.00	11.90
52.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.70	0.00	0.085	0.000	6.705	0.00	38.83
52.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.70	0.00	0.085	0.000	6.705	0.00	29.90
52.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	1.20	0.00	0.085	0.000	6.705	0.00	15.96
52.50	1 1/4" Hybrid	Yes	0.50	0.000	0.01	0.18	0.00	0.085	0.000	6.719	0.00	9.72
52.50	1 5/8" Coax	Yes	0.50	0.000	0.01	0.18	0.00	0.085	0.000	6.719	0.00	7.48
52.50	1.5" Reinforcing Plate	Yes	0.50	0.000	3.00	0.30	0.00	0.085	0.000	6.719	0.00	4.00
54.00	1 1/4" Hybrid	Yes	1.50	0.000	0.01	0.53	0.00	0.086	0.000	6.759	0.00	29.24
54.00	1 5/8" Coax	Yes	1.50	0.000	0.01	0.53	0.00	0.086	0.000	6.759	0.00	22.52
54.00	1.5" Reinforcing Plate	Yes	1.50	0.000	3.00	0.90	0.00	0.086	0.000	6.759	0.00	12.05
54.17	1 1/4" Hybrid	Yes	0.17	0.000	0.01	0.06	0.00	0.086	0.000	6.763	0.00	3.32
54.17	1 5/8" Coax	Yes	0.17	0.000	0.01	0.06	0.00	0.086	0.000	6.763	0.00	2.55
54.17	1.5" Reinforcing Plate	Yes	0.17	0.000	3.00	0.10	0.00	0.086	0.000	6.763	0.00	1.37
56.00	1 1/4" Hybrid	Yes	1.83	0.000	0.01	0.64	0.00	0.087	0.000	6.811	0.00	35.81
56.00	1 5/8" Coax	Yes	1.83	0.000	0.01	0.64	0.00	0.087	0.000	6.811	0.00	27.59
56.00	1.5" Reinforcing Plate	Yes	1.83	0.000	3.00	1.10	0.00	0.087	0.000	6.811	0.00	14.79
58.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.71	0.00	0.087	0.000	6.861	0.00	39.29
58.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.71	0.00	0.087	0.000	6.861	0.00	30.28
58.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	1.21	0.00	0.087	0.000	6.861	0.00	16.25
60.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.71	0.00	0.088	0.000	6.910	0.00	39.43
60.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.71	0.00	0.088	0.000	6.910	0.00	30.39
60.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	1.21	0.00	0.088	0.000	6.910	0.00	16.34
62.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.71	0.00	0.089	0.000	6.958	0.00	39.57
62.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.71	0.00	0.089	0.000	6.958	0.00	30.51
62.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	1.21	0.00	0.089	0.000	6.958	0.00	16.43
64.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.71	0.00	0.090	0.000	7.005	0.00	39.71
64.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.71	0.00	0.090	0.000	7.005	0.00	30.62
64.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	1.21	0.00	0.090	0.000	7.005	0.00	16.52
64.17	1 1/4" Hybrid	Yes	0.17	0.000	0.01	0.06	0.00	0.091	0.000	7.009	0.00	3.38
64.17	1 5/8" Coax	Yes	0.17	0.000	0.01	0.06	0.00	0.091	0.000	7.009	0.00	2.60
64.17	1.5" Reinforcing Plate	Yes	0.17	0.000	3.00	0.10	0.00	0.091	0.000	7.009	0.00	1.40
66.00	1 1/4" Hybrid	Yes	1.83	0.000	0.01	0.66	0.00	0.091	0.000	7.050	0.00	36.45
66.00	1 5/8" Coax	Yes	1.83	0.000	0.01	0.66	0.00	0.091	0.000	7.050	0.00	28.12
66.00	1.5" Reinforcing Plate	Yes	1.83	0.000	3.00	1.11	0.00	0.091	0.000	7.050	0.00	15.19
68.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.72	0.00	0.092	0.000	7.095	0.00	39.97
68.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.72	0.00	0.092	0.000	7.095	0.00	30.84
68.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	1.22	0.00	0.092	0.000	7.095	0.00	16.69
69.50	1 1/4" Hybrid	Yes	1.50	0.000	0.01	0.54	0.00	0.093	0.000	7.128	0.00	30.05
69.50	1 5/8" Coax	Yes	1.50	0.000	0.01	0.54	0.00	0.093	0.000	7.128	0.00	23.19
69.50	1.5" Reinforcing Plate	Yes	1.50	0.000	3.00	0.91	0.00	0.093	0.000	7.128	0.00	12.56
70.00	1 1/4" Hybrid	Yes	0.50	0.000	0.01	0.18	0.00	0.078	0.000	7.138	0.00	10.02
70.00	1 5/8" Coax	Yes	0.50	0.000	0.01	0.18	0.00	0.078	0.000	7.138	0.00	7.74

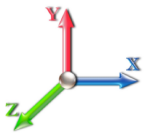
Linear Appurtenance Segment Forces (Factored)

Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 30	

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
70.00	1.25" Reinforcing	Yes	0.50	0.000	2.50	0.28	0.00	0.078	0.000	7.138	0.00	3.95
72.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.72	0.00	0.079	0.000	7.181	0.00	40.22
72.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.72	0.00	0.079	0.000	7.181	0.00	31.04
72.00	1.25" Reinforcing	Yes	2.00	0.000	2.50	1.14	0.00	0.079	0.000	7.181	0.00	15.89
74.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.72	0.00	0.080	0.000	7.222	0.00	40.34
74.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.72	0.00	0.080	0.000	7.222	0.00	31.14
74.00	1.25" Reinforcing	Yes	2.00	0.000	2.50	1.14	0.00	0.080	0.000	7.222	0.00	15.96
76.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.73	0.00	0.081	0.000	7.263	0.00	40.46
76.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.73	0.00	0.081	0.000	7.263	0.00	31.24
76.00	1.25" Reinforcing	Yes	2.00	0.000	2.50	1.14	0.00	0.081	0.000	7.263	0.00	16.04
76.71	1 1/4" Hybrid	Yes	0.71	0.000	0.01	0.26	0.00	0.082	0.000	7.277	0.00	14.38
76.71	1 5/8" Coax	Yes	0.71	0.000	0.01	0.26	0.00	0.082	0.000	7.277	0.00	11.10
76.71	1.5" Reinforcing Plate	Yes	0.01	0.000	3.00	0.01	0.00	0.082	0.000	7.277	0.00	0.09
76.71	1.25" Reinforcing	Yes	0.70	0.000	2.50	0.40	0.00	0.082	0.000	7.277	0.00	5.62
76.84	1 1/4" Hybrid	Yes	0.13	0.000	0.01	0.05	0.00	0.098	0.000	7.280	0.00	2.57
76.84	1 5/8" Coax	Yes	0.13	0.000	0.01	0.05	0.00	0.098	0.000	7.280	0.00	1.98
76.84	1.5" Reinforcing Plate	Yes	0.13	0.000	3.00	0.08	0.00	0.098	0.000	7.280	0.00	1.08
78.00	1 1/4" Hybrid	Yes	1.16	0.000	0.01	0.42	0.00	0.098	0.000	7.303	0.00	23.60
78.00	1 5/8" Coax	Yes	1.16	0.000	0.01	0.42	0.00	0.098	0.000	7.303	0.00	18.23
78.00	1.5" Reinforcing Plate	Yes	1.16	0.000	3.00	0.71	0.00	0.098	0.000	7.303	0.00	9.93
80.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.73	0.00	0.099	0.000	7.342	0.00	40.68
80.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.73	0.00	0.099	0.000	7.342	0.00	31.43
80.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	1.23	0.00	0.099	0.000	7.342	0.00	17.14
80.17	1 1/4" Hybrid	Yes	0.17	0.000	0.01	0.06	0.00	0.100	0.000	7.345	0.00	3.46
80.17	1 5/8" Coax	Yes	0.17	0.000	0.01	0.06	0.00	0.100	0.000	7.345	0.00	2.67
80.17	1.5" Reinforcing Plate	Yes	0.17	0.000	3.00	0.10	0.00	0.100	0.000	7.345	0.00	1.46
81.17	1 1/4" Hybrid	Yes	1.00	0.000	0.01	0.37	0.00	0.100	1.001	7.364	0.00	20.37
81.17	1 5/8" Coax	Yes	1.00	0.000	0.01	0.37	0.00	0.100	1.001	7.364	0.00	15.74
81.17	1.5" Reinforcing Plate	Yes	1.00	0.000	3.00	0.61	0.00	0.100	1.001	7.364	0.00	8.59
82.00	1 1/4" Hybrid	Yes	0.83	0.000	0.01	0.30	0.00	0.099	0.000	7.380	0.00	16.93
82.00	1 5/8" Coax	Yes	0.83	0.000	0.01	0.30	0.00	0.099	0.000	7.380	0.00	13.08
82.00	1.5" Reinforcing Plate	Yes	0.83	0.000	3.00	0.51	0.00	0.099	0.000	7.380	0.00	7.14
84.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.73	0.00	0.100	0.000	7.418	0.00	40.90
84.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.73	0.00	0.100	0.000	7.418	0.00	31.61
84.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	1.23	0.00	0.100	0.000	7.418	0.00	17.28
85.92	1 1/4" Hybrid	Yes	1.92	0.000	0.01	0.71	0.00	0.101	1.004	7.453	0.00	39.36
85.92	1 5/8" Coax	Yes	1.92	0.000	0.01	0.71	0.00	0.101	1.004	7.453	0.00	30.43
85.92	1.5" Reinforcing Plate	Yes	1.92	0.000	3.00	1.18	0.00	0.101	1.004	7.453	0.00	16.65
86.00	1 1/4" Hybrid	Yes	0.08	0.000	0.01	0.03	0.00	0.102	1.005	7.454	0.00	1.64
86.00	1 5/8" Coax	Yes	0.08	0.000	0.01	0.03	0.00	0.102	1.005	7.454	0.00	1.27
86.00	1.5" Reinforcing Plate	Yes	0.08	0.000	3.00	0.05	0.00	0.102	1.005	7.454	0.00	0.69
87.50	1 1/4" Hybrid	Yes	1.50	0.000	0.01	0.55	0.00	0.102	1.007	7.482	0.00	30.81
87.50	1 5/8" Coax	Yes	1.50	0.000	0.01	0.55	0.00	0.102	1.007	7.482	0.00	23.82
87.50	1.5" Reinforcing Plate	Yes	1.50	0.000	3.00	0.93	0.00	0.102	1.007	7.482	0.00	13.05
88.00	1 1/4" Hybrid	Yes	0.50	0.000	0.01	0.18	0.00	0.103	1.009	7.491	0.00	10.28
88.00	1 5/8" Coax	Yes	0.50	0.000	0.01	0.18	0.00	0.103	1.009	7.491	0.00	7.95
88.00	1.5" Reinforcing Plate	Yes	0.50	0.000	3.00	0.31	0.00	0.103	1.009	7.491	0.00	4.35

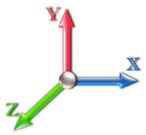
Linear Appurtenance Segment Forces (Factored)

Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 31	

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
90.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.74	0.00	0.104	1.011	7.526	0.00	41.21
90.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.74	0.00	0.104	1.011	7.526	0.00	31.87
90.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	1.24	0.00	0.104	1.011	7.526	0.00	17.48
92.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.74	0.00	0.001	0.000	7.561	0.00	41.31
92.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.74	0.00	0.001	0.000	7.561	0.00	31.95
94.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.74	0.00	0.001	0.000	7.595	0.00	41.41
94.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.74	0.00	0.001	0.000	7.595	0.00	32.03
96.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.74	0.00	0.001	0.000	7.629	0.00	41.50
96.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.74	0.00	0.001	0.000	7.629	0.00	32.11
98.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.74	0.00	0.001	0.000	7.662	0.00	41.60
98.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.74	0.00	0.001	0.000	7.662	0.00	32.19
100.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.75	0.00	0.001	0.000	7.695	0.00	41.69
100.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.75	0.00	0.001	0.000	7.695	0.00	32.27
102.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.75	0.00	0.001	0.000	7.727	0.00	41.78
102.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.75	0.00	0.001	0.000	7.727	0.00	32.34
104.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.75	0.00	0.001	0.000	7.759	0.00	41.87
104.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.75	0.00	0.001	0.000	7.759	0.00	32.42
106.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.75	0.00	0.001	0.000	7.790	0.00	41.96
106.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.75	0.00	0.001	0.000	7.790	0.00	32.49
108.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.75	0.00	0.001	0.000	7.821	0.00	42.05
108.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.75	0.00	0.001	0.000	7.821	0.00	32.56
110.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.75	0.00	0.001	0.000	7.851	0.00	42.13
110.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.75	0.00	0.001	0.000	7.851	0.00	32.63
111.21	1 1/4" Hybrid	Yes	1.21	0.000	0.01	0.46	0.00	0.001	0.000	7.869	0.00	25.59
111.21	1 5/8" Coax	Yes	1.21	0.000	0.01	0.46	0.00	0.001	0.000	7.869	0.00	19.82
112.00	1 1/4" Hybrid	Yes	0.79	0.000	0.01	0.30	0.00	0.001	0.000	7.881	0.00	16.60
112.00	1 5/8" Coax	Yes	0.79	0.000	0.01	0.30	0.00	0.001	0.000	7.881	0.00	12.86
114.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.76	0.00	0.001	0.000	7.910	0.00	42.30
114.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.76	0.00	0.001	0.000	7.910	0.00	32.77
114.80	1 1/4" Hybrid	Yes	0.80	0.000	0.01	0.30	0.00	0.001	0.000	7.922	0.00	16.86
114.80	1 5/8" Coax	Yes	0.80	0.000	0.01	0.30	0.00	0.001	0.000	7.922	0.00	13.06
115.00	1 1/4" Hybrid	Yes	0.20	0.000	0.01	0.08	0.00	0.001	0.000	7.925	0.00	4.30
115.00	1 5/8" Coax	Yes	0.20	0.000	0.01	0.08	0.00	0.001	0.000	7.925	0.00	3.34
										Totals:	**0.0**	**4,579.1**

Calculated Forces

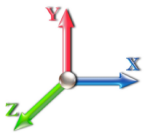
Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 32	

Tower Engineering Solutions

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 27

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-73.96	-10.64	0.00	-1249.5	0.00	1249.52	3406.69	1703.35	5989.16	2957.82	0.00	0.000	0.000	0.268
1.00	-73.61	-10.64	0.00	-1238.8	0.00	1238.88	3398.78	1699.39	5949.79	2938.38	0.00	-0.018	0.000	0.253
2.00	-73.26	-10.64	0.00	-1228.2	0.00	1228.24	3390.81	1695.40	5910.44	2918.95	0.01	-0.035	0.000	0.252
4.00	-72.54	-10.63	0.00	-1206.9	0.00	1206.95	3374.70	1687.35	5831.83	2880.12	0.03	-0.069	0.000	0.250
6.00	-71.81	-10.62	0.00	-1185.6	0.00	1185.69	3358.38	1679.19	5753.31	2841.35	0.07	-0.104	0.000	0.248
8.00	-71.09	-10.61	0.00	-1164.4	0.00	1164.45	3341.83	1670.92	5674.92	2802.63	0.12	-0.138	0.000	0.246
10.00	-70.36	-10.60	0.00	-1143.2	0.00	1143.23	3325.07	1662.53	5596.65	2763.98	0.18	-0.173	0.000	0.244
12.00	-69.63	-10.58	0.00	-1122.0	0.00	1122.04	3308.08	1654.04	5518.52	2725.39	0.26	-0.208	0.000	0.242
14.00	-68.90	-10.55	0.00	-1100.8	0.00	1100.87	3290.88	1645.44	5440.53	2686.87	0.36	-0.242	0.000	0.240
14.17	-68.84	-10.57	0.00	-1099.0	0.00	1099.08	3289.41	1644.70	5433.91	2683.60	0.37	-0.245	0.000	0.222
16.00	-68.17	-10.55	0.00	-1079.7	0.00	1079.74	3273.46	1636.73	5362.70	2648.44	0.47	-0.275	0.000	0.220
17.50	-67.63	-10.53	0.00	-1063.9	0.00	1063.92	3260.25	1630.12	5304.43	2619.66	0.56	-0.300	0.000	0.236
18.00	-67.45	-10.54	0.00	-1058.6	0.00	1058.65	3255.82	1627.91	5285.03	2610.08	0.59	-0.308	0.000	0.235
20.00	-66.73	-10.51	0.00	-1037.5	0.00	1037.58	3237.96	1618.98	5207.54	2571.81	0.72	-0.344	0.000	0.233
20.50	-65.13	-10.44	0.00	-1032.3	0.00	1032.33	3233.46	1616.73	5188.20	2562.26	0.76	-0.353	0.000	0.191
22.00	-64.59	-10.42	0.00	-1016.6	0.00	1016.67	3219.87	1609.94	5130.24	2533.63	0.88	-0.374	0.000	0.190
24.00	-63.87	-10.40	0.00	-995.82	0.00	995.82	3201.57	1600.79	5053.13	2495.55	1.04	-0.403	0.000	0.187
26.00	-63.16	-10.37	0.00	-975.03	0.00	975.03	3183.05	1591.53	4976.22	2457.57	1.21	-0.432	0.000	0.185
28.00	-62.45	-10.34	0.00	-954.30	0.00	954.30	3164.31	1582.16	4899.54	2419.70	1.40	-0.461	0.000	0.183
30.00	-61.74	-10.31	0.00	-933.62	0.00	933.62	3145.35	1572.68	4823.07	2381.93	1.60	-0.490	0.000	0.181
32.00	-61.04	-10.27	0.00	-913.01	0.00	913.01	3126.18	1563.09	4746.84	2344.29	1.81	-0.519	0.000	0.179
34.00	-60.34	-10.24	0.00	-892.47	0.00	892.47	3106.78	1553.39	4670.86	2306.76	2.03	-0.548	0.000	0.177
36.00	-59.65	-10.20	0.00	-871.99	0.00	871.99	3087.16	1543.58	4595.12	2269.36	2.27	-0.577	0.000	0.174
37.00	-59.30	-10.18	0.00	-861.79	0.00	861.79	3077.27	1538.63	4557.36	2250.71	2.39	-0.592	0.000	0.240
38.00	-58.95	-10.18	0.00	-851.60	0.00	851.60	3067.32	1533.66	4519.66	2232.09	2.52	-0.612	0.000	0.239
40.00	-58.26	-10.16	0.00	-831.24	0.00	831.24	3047.27	1523.63	4444.46	2194.95	2.78	-0.652	0.000	0.236
42.00	-57.58	-10.13	0.00	-810.92	0.00	810.92	3026.99	1513.49	4369.56	2157.96	3.07	-0.692	0.000	0.233
43.36	-57.12	-10.10	0.00	-797.15	0.00	797.15	3013.08	1506.54	4318.79	2132.89	3.27	-0.720	0.000	0.166
43.50	-57.07	-10.10	0.00	-795.73	0.00	795.73	3011.64	1505.82	4313.57	2130.31	3.29	-0.722	0.000	0.165
44.00	-56.82	-10.10	0.00	-790.68	0.00	790.68	3006.49	1503.25	4294.94	2121.11	3.36	-0.729	0.000	0.162
46.00	-55.85	-10.05	0.00	-770.49	0.00	770.49	2985.78	1492.89	4220.63	2084.41	3.68	-0.758	0.000	0.159
48.00	-54.89	-10.00	0.00	-750.38	0.00	750.38	2964.84	1482.42	4146.63	2047.87	4.00	-0.786	0.000	0.157
48.50	-54.65	-9.99	0.00	-745.38	0.00	745.38	2330.75	1165.37	3323.66	1641.43	4.08	-0.793	0.000	0.171
50.00	-54.05	-9.94	0.00	-730.39	0.00	730.39	2320.40	1160.20	3282.84	1621.27	4.33	-0.814	0.000	0.178
52.00	-53.43	-9.89	0.00	-710.51	0.00	710.51	2306.40	1153.20	3228.50	1594.43	4.68	-0.844	0.000	0.174
52.50	-53.28	-9.88	0.00	-705.57	0.00	705.57	2302.87	1151.43	3214.93	1587.73	4.77	-0.851	0.000	0.144
54.00	-52.82	-9.84	0.00	-690.74	0.00	690.74	2292.19	1146.09	3174.27	1567.65	5.04	-0.870	0.000	0.142
54.17	-52.77	-9.85	0.00	-689.07	0.00	689.07	2290.97	1145.49	3169.67	1565.38	5.07	-0.872	0.000	0.193
56.00	-52.21	-9.82	0.00	-671.04	0.00	671.04	2277.76	1138.88	3120.17	1540.93	5.41	-0.902	0.000	0.189
58.00	-51.60	-9.78	0.00	-651.40	0.00	651.40	2263.10	1131.55	3066.20	1514.28	5.80	-0.935	0.000	0.186
60.00	-51.00	-9.74	0.00	-631.84	0.00	631.84	2248.23	1124.12	3012.38	1487.70	6.20	-0.968	0.000	0.182
62.00	-50.40	-9.70	0.00	-612.36	0.00	612.36	2233.14	1116.57	2958.71	1461.20	6.61	-1.000	0.000	0.179
64.00	-49.81	-9.65	0.00	-592.96	0.00	592.96	2217.83	1108.92	2905.21	1434.77	7.03	-1.033	0.000	0.175
64.17	-49.76	-9.65	0.00	-591.32	0.00	591.32	2216.52	1108.26	2900.67	1432.53	7.07	-1.035	0.000	0.134
66.00	-49.22	-9.61	0.00	-573.66	0.00	573.66	2202.30	1101.15	2851.88	1408.44	7.47	-1.058	0.000	0.131
68.00	-48.63	-9.56	0.00	-554.44	0.00	554.44	2186.55	1093.28	2798.74	1382.19	7.92	-1.082	0.000	0.128
69.50	-48.20	-9.52	0.00	-540.10	0.00	540.10	2174.60	1087.30	2759.01	1362.57	8.26	-1.101	0.000	0.173
70.00	-48.05	-9.52	0.00	-535.34	0.00	535.34	2170.58	1085.29	2745.79	1356.04	8.38	-1.109	0.000	0.172

Calculated Forces

Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 33

TES Tower Engineering Solutions

72.00	-47.48	-9.48	0.00	-516.30	0.00	516.30	2154.39	1077.20	2693.05	1329.99	8.85	-1.142	0.000	0.168
74.00	-46.90	-9.44	0.00	-497.34	0.00	497.34	2137.99	1068.99	2640.51	1304.05	9.34	-1.175	0.000	0.164
76.00	-46.34	-9.39	0.00	-478.46	0.00	478.46	2121.36	1060.68	2588.21	1278.22	9.84	-1.208	0.000	0.160
76.71	-46.14	-9.37	0.00	-471.80	0.00	471.80	2115.40	1057.70	2569.69	1269.07	10.02	-1.219	0.000	0.120
76.84	-46.10	-9.37	0.00	-470.61	0.00	470.61	2114.34	1057.17	2566.39	1267.45	10.05	-1.221	0.000	0.120
78.00	-45.65	-9.34	0.00	-459.71	0.00	459.71	2104.51	1052.26	2536.13	1252.50	10.35	-1.235	0.000	0.115
80.00	-44.90	-9.28	0.00	-441.03	0.00	441.03	2087.45	1043.72	2484.30	1226.90	10.87	-1.258	0.000	0.112
80.17	-44.83	-9.28	0.00	-439.45	0.00	439.45	2085.98	1042.99	2479.91	1224.73	10.92	-1.260	0.000	0.150
81.17	-44.46	-9.25	0.00	-430.17	0.00	430.17	1538.24	769.12	1857.13	917.17	11.18	-1.276	0.000	0.166
82.00	-44.24	-9.24	0.00	-422.49	0.00	422.49	1534.07	767.04	1842.56	909.97	11.40	-1.289	0.000	0.174
84.00	-43.73	-9.20	0.00	-404.01	0.00	404.01	1523.87	761.94	1807.49	892.65	11.95	-1.322	0.000	0.169
85.92	-43.25	-9.15	0.00	-386.35	0.00	386.35	1513.87	756.94	1773.86	876.04	12.49	-1.353	0.000	0.125
86.00	-43.22	-9.15	0.00	-385.61	0.00	385.61	1513.45	756.73	1772.46	875.35	12.51	-1.354	0.000	0.124
87.50	-42.85	-9.11	0.00	-371.89	0.00	371.89	1505.49	752.75	1746.23	862.40	12.94	-1.372	0.000	0.156
88.00	-42.72	-9.11	0.00	-367.34	0.00	367.34	1502.81	751.41	1737.49	858.08	13.08	-1.379	0.000	0.155
90.00	-42.22	-9.07	0.00	-349.12	0.00	349.12	1491.95	745.98	1702.59	840.84	13.67	-1.410	0.000	0.231
92.00	-41.74	-9.03	0.00	-330.99	0.00	330.99	1480.87	740.44	1667.76	823.65	14.27	-1.456	0.000	0.223
94.00	-41.26	-9.00	0.00	-312.93	0.00	312.93	1469.57	734.79	1633.03	806.49	14.89	-1.501	0.000	0.214
96.00	-40.79	-8.96	0.00	-294.93	0.00	294.93	1458.05	729.03	1598.39	789.39	15.53	-1.545	0.000	0.205
98.00	-40.32	-8.92	0.00	-277.01	0.00	277.01	1446.32	723.16	1563.86	772.33	16.18	-1.588	0.000	0.196
100.00	-39.85	-8.89	0.00	-259.16	0.00	259.16	1434.36	717.18	1529.45	755.34	16.86	-1.629	0.000	0.186
102.00	-39.39	-8.86	0.00	-241.39	0.00	241.39	1422.18	711.09	1495.16	738.41	17.55	-1.669	0.000	0.355
104.00	-38.93	-8.85	0.00	-223.66	0.00	223.66	1409.79	704.89	1461.02	721.54	18.27	-1.747	0.000	0.338
106.00	-38.47	-8.83	0.00	-205.97	0.00	205.97	1397.17	698.58	1427.02	704.75	19.01	-1.822	0.000	0.320
108.00	-38.02	-8.81	0.00	-188.31	0.00	188.31	1384.33	692.17	1393.17	688.04	19.79	-1.893	0.000	0.301
110.00	-37.57	-8.78	0.00	-170.70	0.00	170.70	1371.28	685.64	1359.50	671.40	20.60	-1.961	0.000	0.282
111.21	-37.30	-8.76	0.00	-160.05	0.00	160.05	1363.25	681.63	1339.15	661.36	21.10	-2.001	0.000	0.270
112.00	-37.08	-8.76	0.00	-153.16	0.00	153.16	1358.00	679.00	1326.00	654.86	21.44	-2.026	0.000	0.261
114.00	-36.52	-8.71	0.00	-135.64	0.00	135.64	1344.51	672.26	1292.68	638.41	22.30	-2.086	0.000	0.240
114.80	-36.30	-8.69	0.00	-128.70	0.00	128.70	898.25	449.12	876.91	433.07	22.65	-2.109	0.000	0.338
115.00	-22.87	-5.64	0.00	-126.93	0.00	126.93	897.59	448.79	874.90	432.08	22.74	-2.115	0.000	0.319
116.00	-22.72	-5.63	0.00	-121.29	0.00	121.29	894.32	447.16	865.01	427.20	23.19	-2.150	0.000	0.309
118.00	-22.41	-5.59	0.00	-110.03	0.00	110.03	887.61	443.81	845.23	417.43	24.10	-2.216	0.000	0.289
120.00	-22.11	-5.56	0.00	-98.84	0.00	98.84	880.69	440.34	825.45	407.66	25.04	-2.279	0.000	0.268
122.00	-21.82	-5.52	0.00	-87.72	0.00	87.72	873.54	436.77	805.67	397.89	26.01	-2.338	0.000	0.246
124.00	-21.52	-5.48	0.00	-76.69	0.00	76.69	866.18	433.09	785.90	388.13	27.00	-2.392	0.000	0.223
126.00	-15.66	-4.02	0.00	-65.74	0.00	65.74	858.60	429.30	766.16	378.38	28.01	-2.441	0.000	0.192
128.00	-15.39	-3.97	0.00	-57.70	0.00	57.70	850.80	425.40	746.46	368.65	29.05	-2.486	0.000	0.175
130.00	-15.12	-3.92	0.00	-49.77	0.00	49.77	842.77	421.39	726.80	358.94	30.10	-2.528	0.000	0.157
132.00	-14.85	-3.87	0.00	-41.92	0.00	41.92	834.53	417.27	707.19	349.25	31.16	-2.565	0.000	0.138
134.00	-14.58	-3.82	0.00	-34.18	0.00	34.18	826.07	413.04	687.65	339.60	32.24	-2.597	0.000	0.118
136.00	-14.33	-3.77	0.00	-26.54	0.00	26.54	817.39	408.69	668.18	329.99	33.34	-2.624	0.000	0.098
138.00	-4.35	-1.54	0.00	-19.01	0.00	19.01	808.49	404.24	648.79	320.41	34.44	-2.646	0.000	0.065
140.00	-4.12	-1.49	0.00	-15.92	0.00	15.92	799.37	399.68	629.50	310.89	35.55	-2.663	0.000	0.056
142.00	-3.90	-1.44	0.00	-12.94	0.00	12.94	790.03	395.01	610.32	301.41	36.67	-2.678	0.000	0.048
144.00	-3.69	-1.38	0.00	-10.06	0.00	10.06	780.47	390.24	591.24	291.99	37.80	-2.691	0.000	0.039
146.00	-3.47	-1.33	0.00	-7.30	0.00	7.30	770.69	385.35	572.29	282.63	38.93	-2.702	0.000	0.030
148.00	-3.26	-1.28	0.00	-4.63	0.00	4.63	760.69	380.35	553.47	273.34	40.06	-2.709	0.000	0.021
150.00	0.00	-1.12	0.00	-2.08	0.00	2.08	750.48	375.24	534.80	264.12	41.20	-2.714	0.000	0.008

Seismic Segment Forces (Factored)

Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 34	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	24
Gust Response Factor	1.10				**Sds**	0.19		**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.24		**SA**	0.02	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00	RB1 RB2 RB3 RB4	0.00	0.00	0.00	0.00	0.00	
1.00	RT3 RB5	174.77	0.00	0.01	0.00	1.17	
2.00		174.03	0.00	0.01	0.01	2.05	
4.00		345.84	0.00	0.03	0.01	6.60	
6.00		342.88	0.00	0.04	0.02	8.27	
8.00		339.93	0.01	0.05	0.03	9.41	
10.00		336.97	0.01	0.05	0.03	10.21	
12.00		334.01	0.01	0.06	0.03	10.77	
14.00		331.05	0.02	0.06	0.04	11.15	
14.17	RB6	28.00	0.02	0.06	0.04	0.95	
16.00		300.09	0.02	0.06	0.04	10.43	
17.50	RT5	244.13	0.03	0.07	0.04	8.64	
18.00		81.01	0.03	0.07	0.04	2.88	
20.00		322.18	0.03	0.07	0.04	11.67	
20.50	RT1 RT4 RB7	632.08	0.04	0.07	0.04	22.99	
22.00		239.14	0.04	0.07	0.04	8.79	
24.00		316.26	0.05	0.07	0.04	11.76	
26.00		313.30	0.06	0.07	0.04	11.77	
28.00		310.34	0.07	0.07	0.04	11.78	
30.00		307.38	0.08	0.07	0.04	11.78	
32.00		304.43	0.09	0.07	0.04	11.78	
34.00		301.47	0.10	0.07	0.04	11.78	
36.00		298.51	0.11	0.07	0.04	11.78	
37.00	RT7	148.14	0.11	0.07	0.04	5.88	
38.00		147.41	0.12	0.07	0.03	5.88	
40.00		292.59	0.13	0.07	0.03	11.79	
42.00		289.63	0.15	0.07	0.03	11.78	
43.36	RB8	195.26	0.16	0.07	0.03	7.98	
43.50	Bot - Section 2	20.02	0.16	0.07	0.03	0.82	
44.00		132.06	0.16	0.07	0.03	5.41	
46.00		524.85	0.18	0.07	0.03	21.65	
48.00		519.43	0.19	0.06	0.02	21.49	
48.50	Top - Section 1	129.01	0.20	0.06	0.02	5.34	
50.00	Appurtenance(s)	227.92	0.21	0.06	0.02	9.43	
52.00		233.74	0.23	0.06	0.02	9.61	
52.50	RB9	58.05	0.23	0.06	0.02	2.38	
54.00		173.23	0.24	0.06	0.02	7.03	
54.17	RT2 RT6	19.54	0.25	0.06	0.02	0.79	
56.00		209.27	0.26	0.05	0.02	8.32	
58.00		226.35	0.28	0.05	0.01	8.71	
60.00		223.88	0.30	0.04	0.01	8.21	
62.00		221.42	0.32	0.04	0.01	7.60	
64.00		218.95	0.34	0.03	0.01	6.85	
64.17	RB10	18.50	0.35	0.03	0.01	0.57	
66.00		197.99	0.37	0.03	0.01	5.45	
68.00		214.02	0.39	0.02	0.01	4.91	

Seismic Segment Forces (Factored)

Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 35	

69.50	RT8	158.90	0.41	0.02	0.01	3.03	
70.00	RT9 RB11	52.66	0.41	0.01	0.01	0.93	
72.00		209.09	0.44	0.01	0.01	2.43	
74.00		206.62	0.46	0.00	0.01	1.05	
76.00		204.16	0.49	-0.01	0.01	-0.39	
76.71	RB12	71.88	0.49	-0.01	0.01	-0.32	
76.84	Bot - Section 3	12.79	0.50	-0.01	0.01	-0.06	
78.00		212.43	0.51	-0.02	0.01	-1.91	
80.00		361.69	0.54	-0.03	0.01	-5.77	
80.17	RT10	30.54	0.54	-0.03	0.01	-0.50	
81.17	Top - Section 2	178.99	0.55	-0.04	0.01	-3.55	
82.00		66.36	0.56	-0.04	0.01	-1.49	
84.00		158.52	0.59	-0.05	0.01	-4.52	
85.92	RB13	150.32	0.62	-0.06	0.02	-5.04	
86.00		6.22	0.62	-0.06	0.02	-0.21	
87.50	RT11	116.12	0.64	-0.07	0.02	-4.31	
88.00		38.46	0.65	-0.07	0.02	-1.46	
90.00	RT12	152.60	0.68	-0.08	0.03	-6.34	
92.00		150.63	0.71	-0.09	0.03	-6.63	
94.00		148.66	0.74	-0.10	0.04	-6.78	
96.00		146.69	0.77	-0.11	0.05	-6.79	
98.00		144.71	0.81	-0.11	0.06	-6.67	
100.00	RT13	142.74	0.84	-0.12	0.07	-6.43	
102.00		140.77	0.87	-0.12	0.08	-6.08	
104.00		138.80	0.91	-0.12	0.09	-5.63	
106.00		136.82	0.94	-0.12	0.11	-5.07	
108.00		134.85	0.98	-0.11	0.12	-4.43	
110.00		132.88	1.02	-0.11	0.14	-3.70	
111.21	Bot - Section 4	79.65	1.04	-0.10	0.15	-1.95	
112.00		90.40	1.05	-0.09	0.16	-2.00	
114.00		227.44	1.09	-0.07	0.18	-3.56	
114.80	Top - Section 3	89.63	1.11	-0.07	0.19	-1.15	
115.00	Appurtenance(s)	5046.0	1.11	-0.06	0.19	-61.18	
116.00		48.33	1.13	-0.05	0.21	-0.41	
118.00		95.54	1.17	-0.02	0.23	-0.04	
120.00		94.06	1.21	0.01	0.26	0.78	
122.00		92.58	1.25	0.06	0.29	1.65	
124.00		91.10	1.29	0.11	0.33	2.56	
126.00	Appurtenance(s)	2160.0	1.33	0.17	0.37	84.66	
128.00		88.15	1.38	0.24	0.41	4.50	
130.00		86.67	1.42	0.32	0.45	5.52	
132.00		85.19	1.46	0.42	0.50	6.57	
134.00		83.71	1.51	0.52	0.55	7.65	
136.00		82.23	1.55	0.64	0.61	8.75	
138.00	Appurtenance(s)	3292.6	1.60	0.78	0.67	402.70	
140.00		79.27	1.65	0.93	0.73	11.02	
142.00		77.79	1.69	1.10	0.81	12.18	
144.00		76.31	1.74	1.29	0.88	13.36	
146.00		74.83	1.79	1.50	0.96	14.54	
148.00		73.35	1.84	1.73	1.05	15.73	
150.00	Appurtenance(s)	1391.8	1.89	1.98	1.14	327.79	
	Totals:	**28,431.8**				**1,149.3**	**Total Wind:** **36,164.4**

Seismic Base Shear was not tested because the override was selected - An Analysis is Required

Calculated Forces

Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 36	

Tower Engineering Solutions

Load Case:	1.2D + 1.0E							**Iterations**	24
Gust Response Factor	1.10			**Sds**	0.19			**Ss**	0.18
Dead Load Factor	1.20	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.24	**SA**	0.02	**Seismic Importance Factor**			1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-38.08	-1.31	0.00	-150.03	0.00	150.03	3406.69	1703.35	5989.16	2957.82		0.00	0.00	0.037
1.00	-37.84	-1.31	0.00	-148.72	0.00	148.72	3398.78	1699.39	5949.79	2938.38		0.00	0.00	0.035
2.00	-37.60	-1.31	0.00	-147.41	0.00	147.41	3390.81	1695.40	5910.44	2918.95		0.00	0.00	0.034
4.00	-37.12	-1.31	0.00	-144.78	0.00	144.78	3374.70	1687.35	5831.83	2880.12		0.00	-0.01	0.034
6.00	-36.65	-1.30	0.00	-142.17	0.00	142.17	3358.38	1679.19	5753.31	2841.35		0.01	-0.01	0.034
8.00	-36.18	-1.30	0.00	-139.56	0.00	139.56	3341.83	1670.92	5674.92	2802.63		0.01	-0.02	0.033
10.00	-35.71	-1.29	0.00	-136.97	0.00	136.97	3325.07	1662.53	5596.65	2763.98		0.02	-0.02	0.033
12.00	-35.25	-1.28	0.00	-134.40	0.00	134.40	3308.08	1654.04	5518.52	2725.39		0.03	-0.02	0.033
14.00	-34.79	-1.27	0.00	-131.84	0.00	131.84	3290.88	1645.44	5440.53	2686.87		0.04	-0.03	0.033
14.17	-34.75	-1.27	0.00	-131.62	0.00	131.62	3289.41	1644.70	5433.91	2683.60		0.04	-0.03	0.030
16.00	-34.33	-1.26	0.00	-129.30	0.00	129.30	3273.46	1636.73	5362.70	2648.44		0.06	-0.03	0.030
17.50	-33.99	-1.25	0.00	-127.41	0.00	127.41	3260.25	1630.12	5304.43	2619.66		0.07	-0.04	0.032
18.00	-33.88	-1.25	0.00	-126.78	0.00	126.78	3255.82	1627.91	5285.03	2610.08		0.07	-0.04	0.032
20.00	-33.43	-1.24	0.00	-124.27	0.00	124.27	3237.96	1618.98	5207.54	2571.81		0.09	-0.04	0.031
20.50	-32.66	-1.22	0.00	-123.65	0.00	123.65	3233.46	1616.73	5188.20	2562.26		0.09	-0.04	0.027
22.00	-32.32	-1.21	0.00	-121.83	0.00	121.83	3219.87	1609.94	5130.24	2533.63		0.10	-0.04	0.026
24.00	-31.88	-1.20	0.00	-119.40	0.00	119.40	3201.57	1600.79	5053.13	2495.55		0.12	-0.05	0.026
26.00	-31.44	-1.19	0.00	-117.00	0.00	117.00	3183.05	1591.53	4976.22	2457.57		0.15	-0.05	0.026
28.00	-31.01	-1.18	0.00	-114.62	0.00	114.62	3164.31	1582.16	4899.54	2419.70		0.17	-0.06	0.025
30.00	-30.58	-1.17	0.00	-112.25	0.00	112.25	3145.35	1572.68	4823.07	2381.93		0.19	-0.06	0.025
32.00	-30.15	-1.16	0.00	-109.91	0.00	109.91	3126.18	1563.09	4746.84	2344.29		0.22	-0.06	0.025
34.00	-29.73	-1.15	0.00	-107.59	0.00	107.59	3106.78	1553.39	4670.86	2306.76		0.24	-0.07	0.025
36.00	-29.31	-1.14	0.00	-105.29	0.00	105.29	3087.16	1543.58	4595.12	2269.36		0.27	-0.07	0.024
37.00	-29.10	-1.13	0.00	-104.15	0.00	104.15	3077.27	1538.63	4557.36	2250.71		0.29	-0.07	0.033
38.00	-28.89	-1.13	0.00	-103.02	0.00	103.02	3067.32	1533.66	4519.66	2232.09		0.30	-0.07	0.033
40.00	-28.48	-1.12	0.00	-100.76	0.00	100.76	3047.27	1523.63	4444.46	2194.95		0.33	-0.08	0.033
42.00	-28.07	-1.11	0.00	-98.52	0.00	98.52	3026.99	1513.49	4369.56	2157.96		0.37	-0.08	0.033
43.36	-27.79	-1.10	0.00	-97.01	0.00	97.01	3013.08	1506.54	4318.79	2132.89		0.39	-0.09	0.023
43.50	-27.76	-1.10	0.00	-96.86	0.00	96.86	3011.64	1505.82	4313.57	2130.31		0.39	-0.09	0.023
44.00	-27.59	-1.10	0.00	-96.31	0.00	96.31	3006.49	1503.25	4294.94	2121.11		0.40	-0.09	0.023
46.00	-26.89	-1.08	0.00	-94.12	0.00	94.12	2985.78	1492.89	4220.63	2084.41		0.44	-0.09	0.022
48.00	-26.21	-1.05	0.00	-91.96	0.00	91.96	2964.84	1482.42	4146.63	2047.87		0.48	-0.09	0.022
48.50	-26.04	-1.05	0.00	-91.44	0.00	91.44	2330.75	1165.37	3323.66	1641.43		0.49	-0.10	0.024
50.00	-25.72	-1.04	0.00	-89.86	0.00	89.86	2320.40	1160.20	3282.84	1621.27		0.52	-0.10	0.025
52.00	-25.38	-1.03	0.00	-87.78	0.00	87.78	2306.40	1153.20	3228.50	1594.43		0.56	-0.10	0.025
52.50	-25.29	-1.03	0.00	-87.27	0.00	87.27	2302.87	1151.43	3214.93	1587.73		0.57	-0.10	0.020
54.00	-25.04	-1.02	0.00	-85.72	0.00	85.72	2292.19	1146.09	3174.27	1567.65		0.61	-0.10	0.020
54.17	-25.01	-1.02	0.00	-85.55	0.00	85.55	2290.97	1145.49	3169.67	1565.38		0.61	-0.11	0.027
56.00	-24.70	-1.02	0.00	-83.68	0.00	83.68	2277.76	1138.88	3120.17	1540.93		0.65	-0.11	0.027
58.00	-24.37	-1.01	0.00	-81.65	0.00	81.65	2263.10	1131.55	3066.20	1514.28		0.70	-0.11	0.027
60.00	-24.03	-1.00	0.00	-79.63	0.00	79.63	2248.23	1124.12	3012.38	1487.70		0.75	-0.12	0.026
62.00	-23.71	-0.99	0.00	-77.63	0.00	77.63	2233.14	1116.57	2958.71	1461.20		0.80	-0.12	0.026
64.00	-23.38	-0.99	0.00	-75.64	0.00	75.64	2217.83	1108.92	2905.21	1434.77		0.85	-0.13	0.026
64.17	-23.35	-0.99	0.00	-75.47	0.00	75.47	2216.52	1108.26	2900.67	1432.53		0.85	-0.13	0.020
66.00	-23.06	-0.98	0.00	-73.67	0.00	73.67	2202.30	1101.15	2851.88	1408.44		0.90	-0.13	0.019
68.00	-22.74	-0.98	0.00	-71.70	0.00	71.70	2186.55	1093.28	2798.74	1382.19		0.95	-0.13	0.019
69.50	-22.50	-0.98	0.00	-70.23	0.00	70.23	2174.60	1087.30	2759.01	1362.57		1.00	-0.13	0.026

Calculated Forces

Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 37

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70.00	-22.42	-0.98	0.00	-69.75	0.00	69.75	2170.58	1085.29	2745.79	1356.04	1.01	-0.14	0.026
72.00	-22.11	-0.97	0.00	-67.80	0.00	67.80	2154.39	1077.20	2693.05	1329.99	1.07	-0.14	0.025
74.00	-21.80	-0.97	0.00	-65.85	0.00	65.85	2137.99	1068.99	2640.51	1304.05	1.13	-0.14	0.025
76.00	-21.49	-0.97	0.00	-63.90	0.00	63.90	2121.36	1060.68	2588.21	1278.22	1.19	-0.15	0.024
76.71	-21.39	-0.97	0.00	-63.21	0.00	63.21	2115.40	1057.70	2569.69	1269.07	1.21	-0.15	0.018
76.84	-21.37	-0.97	0.00	-63.09	0.00	63.09	2114.34	1057.17	2566.39	1267.45	1.21	-0.15	0.018
78.00	-21.07	-0.97	0.00	-61.95	0.00	61.95	2104.51	1052.26	2536.13	1252.50	1.25	-0.15	0.018
80.00	-20.58	-0.97	0.00	-60.00	0.00	60.00	2087.45	1043.72	2484.30	1226.90	1.32	-0.16	0.017
80.17	-20.54	-0.97	0.00	-59.84	0.00	59.84	2085.98	1042.99	2479.91	1224.73	1.32	-0.16	0.023
81.17	-20.29	-0.97	0.00	-58.86	0.00	58.86	1538.24	769.12	1857.13	917.17	1.35	-0.16	0.026
82.00	-20.19	-0.98	0.00	-58.05	0.00	58.05	1534.07	767.04	1842.56	909.97	1.38	-0.16	0.027
84.00	-19.93	-0.98	0.00	-56.10	0.00	56.10	1523.87	761.94	1807.49	892.65	1.45	-0.16	0.027
85.92	-19.69	-0.98	0.00	-54.23	0.00	54.23	1513.87	756.94	1773.86	876.04	1.52	-0.17	0.020
86.00	-19.68	-0.98	0.00	-54.15	0.00	54.15	1513.45	756.73	1772.46	875.35	1.52	-0.17	0.020
87.50	-19.50	-0.98	0.00	-52.69	0.00	52.69	1505.49	752.75	1746.23	862.40	1.57	-0.17	0.025
88.00	-19.43	-0.98	0.00	-52.20	0.00	52.20	1502.81	751.41	1737.49	858.08	1.59	-0.17	0.025
90.00	-19.19	-0.98	0.00	-50.25	0.00	50.25	1491.95	745.98	1702.59	840.84	1.66	-0.18	0.038
92.00	-18.95	-0.98	0.00	-48.29	0.00	48.29	1480.87	740.44	1667.76	823.65	1.74	-0.18	0.037
94.00	-18.71	-0.98	0.00	-46.33	0.00	46.33	1469.57	734.79	1633.03	806.49	1.82	-0.19	0.036
96.00	-18.47	-0.98	0.00	-44.37	0.00	44.37	1458.05	729.03	1598.39	789.39	1.90	-0.20	0.035
98.00	-18.23	-0.98	0.00	-42.40	0.00	42.40	1446.32	723.16	1563.86	772.33	1.98	-0.20	0.034
100.00	-18.00	-0.99	0.00	-40.43	0.00	40.43	1434.36	717.18	1529.45	755.34	2.07	-0.21	0.033
102.00	-17.77	-0.99	0.00	-38.46	0.00	38.46	1422.18	711.09	1495.16	738.41	2.16	-0.22	0.065
104.00	-17.54	-0.99	0.00	-36.49	0.00	36.49	1409.79	704.89	1461.02	721.54	2.25	-0.23	0.063
106.00	-17.31	-0.99	0.00	-34.51	0.00	34.51	1397.17	698.58	1427.02	704.75	2.35	-0.24	0.061
108.00	-17.09	-1.00	0.00	-32.52	0.00	32.52	1384.33	692.17	1393.17	688.04	2.45	-0.25	0.060
110.00	-16.87	-1.00	0.00	-30.53	0.00	30.53	1371.28	685.64	1359.50	671.40	2.56	-0.26	0.058
111.21	-16.73	-1.00	0.00	-29.32	0.00	29.32	1363.25	681.63	1339.15	661.36	2.63	-0.27	0.057
112.00	-16.60	-1.00	0.00	-28.53	0.00	28.53	1358.00	679.00	1326.00	654.86	2.67	-0.28	0.056
114.00	-16.26	-1.00	0.00	-26.53	0.00	26.53	1344.51	672.26	1292.68	638.41	2.79	-0.29	0.054
114.80	-16.13	-1.00	0.00	-25.74	0.00	25.74	898.25	449.12	876.91	433.07	2.84	-0.29	0.077
115.00	-10.07	-0.97	0.00	-25.53	0.00	25.53	897.59	448.79	874.90	432.08	2.85	-0.29	0.070
116.00	-9.99	-0.97	0.00	-24.56	0.00	24.56	894.32	447.16	865.01	427.20	2.91	-0.30	0.069
118.00	-9.84	-0.97	0.00	-22.62	0.00	22.62	887.61	443.81	845.23	417.43	3.04	-0.31	0.065
120.00	-9.69	-0.97	0.00	-20.67	0.00	20.67	880.69	440.34	825.45	407.66	3.18	-0.33	0.062
122.00	-9.55	-0.97	0.00	-18.72	0.00	18.72	873.54	436.77	805.67	397.89	3.32	-0.34	0.058
124.00	-9.40	-0.97	0.00	-16.77	0.00	16.77	866.18	433.09	785.90	388.13	3.46	-0.35	0.054
126.00	-6.77	-0.87	0.00	-14.82	0.00	14.82	858.60	429.30	766.16	378.38	3.61	-0.36	0.047
128.00	-6.64	-0.87	0.00	-13.08	0.00	13.08	850.80	425.40	746.46	368.65	3.76	-0.37	0.043
130.00	-6.51	-0.86	0.00	-11.34	0.00	11.34	842.77	421.39	726.80	358.94	3.92	-0.38	0.039
132.00	-6.37	-0.86	0.00	-9.61	0.00	9.61	834.53	417.27	707.19	349.25	4.08	-0.39	0.035
134.00	-6.24	-0.85	0.00	-7.90	0.00	7.90	826.07	413.04	687.65	339.60	4.25	-0.40	0.031
136.00	-6.12	-0.84	0.00	-6.20	0.00	6.20	817.39	408.69	668.18	329.99	4.42	-0.40	0.026
138.00	-2.14	-0.41	0.00	-4.52	0.00	4.52	808.49	404.24	648.79	320.41	4.59	-0.41	0.017
140.00	-2.04	-0.40	0.00	-3.70	0.00	3.70	799.37	399.68	629.50	310.89	4.76	-0.41	0.014
142.00	-1.95	-0.39	0.00	-2.91	0.00	2.91	790.03	395.01	610.32	301.41	4.93	-0.42	0.012
144.00	-1.85	-0.37	0.00	-2.14	0.00	2.14	780.47	390.24	591.24	291.99	5.11	-0.42	0.010
146.00	-1.76	-0.36	0.00	-1.39	0.00	1.39	770.69	385.35	572.29	282.63	5.28	-0.42	0.007
148.00	-1.67	-0.34	0.00	-0.68	0.00	0.68	760.69	380.35	553.47	273.34	5.46	-0.42	0.005
150.00	0.00	-0.33	0.00	0.00	0.00	0.00	750.48	375.24	534.80	264.12	5.64	-0.42	0.000

Seismic Segment Forces (Factored)

Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 38	

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Load Case:	0.9D + 1.0E							**Iterations**	24
Gust Response Factor	1.10				**Sds**	0.19		**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00		**Sd1**	0.10		**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.24		**SA**	0.02	**Seismic Importance Factor**		1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00	RB1 RB2 RB3 RB4	0.00	0.00	0.00	0.00	0.00	
1.00	RT3 RB5	174.77	0.00	0.01	0.00	1.17	
2.00		174.03	0.00	0.01	0.01	2.05	
4.00		345.84	0.00	0.03	0.01	6.60	
6.00		342.88	0.00	0.04	0.02	8.27	
8.00		339.93	0.01	0.05	0.03	9.41	
10.00		336.97	0.01	0.05	0.03	10.21	
12.00		334.01	0.01	0.06	0.03	10.77	
14.00		331.05	0.02	0.06	0.04	11.15	
14.17	RB6	28.00	0.02	0.06	0.04	0.95	
16.00		300.09	0.02	0.06	0.04	10.43	
17.50	RT5	244.13	0.03	0.07	0.04	8.64	
18.00		81.01	0.03	0.07	0.04	2.88	
20.00		322.18	0.03	0.07	0.04	11.67	
20.50	RT1 RT4 RB7	632.08	0.04	0.07	0.04	22.99	
22.00		239.14	0.04	0.07	0.04	8.79	
24.00		316.26	0.05	0.07	0.04	11.76	
26.00		313.30	0.06	0.07	0.04	11.77	
28.00		310.34	0.07	0.07	0.04	11.78	
30.00		307.38	0.08	0.07	0.04	11.78	
32.00		304.43	0.09	0.07	0.04	11.78	
34.00		301.47	0.10	0.07	0.04	11.78	
36.00		298.51	0.11	0.07	0.04	11.78	
37.00	RT7	148.14	0.11	0.07	0.04	5.88	
38.00		147.41	0.12	0.07	0.03	5.88	
40.00		292.59	0.13	0.07	0.03	11.79	
42.00		289.63	0.15	0.07	0.03	11.78	
43.36	RB8	195.26	0.16	0.07	0.03	7.98	
43.50	Bot - Section 2	20.02	0.16	0.07	0.03	0.82	
44.00		132.06	0.16	0.07	0.03	5.41	
46.00		524.85	0.18	0.07	0.03	21.65	
48.00		519.43	0.19	0.06	0.02	21.49	
48.50	Top - Section 1	129.01	0.20	0.06	0.02	5.34	
50.00	Appurtenance(s)	227.92	0.21	0.06	0.02	9.43	
52.00		233.74	0.23	0.06	0.02	9.61	
52.50	RB9	58.05	0.23	0.06	0.02	2.38	
54.00		173.23	0.24	0.06	0.02	7.03	
54.17	RT2 RT6	19.54	0.25	0.06	0.02	0.79	
56.00		209.27	0.26	0.05	0.02	8.32	
58.00		226.35	0.28	0.05	0.01	8.71	
60.00		223.88	0.30	0.04	0.01	8.21	
62.00		221.42	0.32	0.04	0.01	7.60	
64.00		218.95	0.34	0.03	0.01	6.85	
64.17	RB10	18.50	0.35	0.03	0.01	0.57	
66.00		197.99	0.37	0.03	0.01	5.45	
68.00		214.02	0.39	0.02	0.01	4.91	

Seismic Segment Forces (Factored)

Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 39	

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69.50	RT8	158.90	0.41	0.02	0.01	3.03		
70.00	RT9 RB11	52.66	0.41	0.01	0.01	0.93		
72.00		209.09	0.44	0.01	0.01	2.43		
74.00		206.62	0.46	0.00	0.01	1.05		
76.00		204.16	0.49	-0.01	0.01	-0.39		
76.71	RB12	71.88	0.49	-0.01	0.01	-0.32		
76.84	Bot - Section 3	12.79	0.50	-0.01	0.01	-0.06		
78.00		212.43	0.51	-0.02	0.01	-1.91		
80.00		361.69	0.54	-0.03	0.01	-5.77		
80.17	RT10	30.54	0.54	-0.03	0.01	-0.50		
81.17	Top - Section 2	178.99	0.55	-0.04	0.01	-3.55		
82.00		66.36	0.56	-0.04	0.01	-1.49		
84.00		158.52	0.59	-0.05	0.01	-4.52		
85.92	RB13	150.32	0.62	-0.06	0.02	-5.04		
86.00		6.22	0.62	-0.06	0.02	-0.21		
87.50	RT11	116.12	0.64	-0.07	0.02	-4.31		
88.00		38.46	0.65	-0.07	0.02	-1.46		
90.00	RT12	152.60	0.68	-0.08	0.03	-6.34		
92.00		150.63	0.71	-0.09	0.03	-6.63		
94.00		148.66	0.74	-0.10	0.04	-6.78		
96.00		146.69	0.77	-0.11	0.05	-6.79		
98.00		144.71	0.81	-0.11	0.06	-6.67		
100.00	RT13	142.74	0.84	-0.12	0.07	-6.43		
102.00		140.77	0.87	-0.12	0.08	-6.08		
104.00		138.80	0.91	-0.12	0.09	-5.63		
106.00		136.82	0.94	-0.12	0.11	-5.07		
108.00		134.85	0.98	-0.11	0.12	-4.43		
110.00		132.88	1.02	-0.11	0.14	-3.70		
111.21	Bot - Section 4	79.65	1.04	-0.10	0.15	-1.95		
112.00		90.40	1.05	-0.09	0.16	-2.00		
114.00		227.44	1.09	-0.07	0.18	-3.56		
114.80	Top - Section 3	89.63	1.11	-0.07	0.19	-1.15		
115.00	Appurtenance(s)	5046.0	1.11	-0.06	0.19	-61.18		
116.00		48.33	1.13	-0.05	0.21	-0.41		
118.00		95.54	1.17	-0.02	0.23	-0.04		
120.00		94.06	1.21	0.01	0.26	0.78		
122.00		92.58	1.25	0.06	0.29	1.65		
124.00		91.10	1.29	0.11	0.33	2.56		
126.00	Appurtenance(s)	2160.0	1.33	0.17	0.37	84.66		
128.00		88.15	1.38	0.24	0.41	4.50		
130.00		86.67	1.42	0.32	0.45	5.52		
132.00		85.19	1.46	0.42	0.50	6.57		
134.00		83.71	1.51	0.52	0.55	7.65		
136.00		82.23	1.55	0.64	0.61	8.75		
138.00	Appurtenance(s)	3292.6	1.60	0.78	0.67	402.70		
140.00		79.27	1.65	0.93	0.73	11.02		
142.00		77.79	1.69	1.10	0.81	12.18		
144.00		76.31	1.74	1.29	0.88	13.36		
146.00		74.83	1.79	1.50	0.96	14.54		
148.00		73.35	1.84	1.73	1.05	15.73		
150.00	Appurtenance(s)	1391.8	1.89	1.98	1.14	327.79		
	Totals:	**28,431.8**				**1,149.3**	**Total Wind:**	**36,164.4**

Seismic Base Shear was not tested because the override was selected - An Analysis is Required

Calculated Forces

Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 40	

Tower Engineering Solutions

Load Case:	0.9D + 1.0E							**Iterations**	24
Gust Response Factor	1.10			**Sds**	0.19			**Ss**	0.18
Dead Load Factor	0.90	**Seismic Load Factor**	1.00	**Sd1**	0.10			**S1**	0.07
Wind Load Factor	0.00	**Structure Frequency (f1)**	0.24	**SA**	0.02	**Seismic Importance Factor**			1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-28.56	-1.31	0.00	-148.36	0.00	148.36	3406.69	1703.35	5989.16	2957.82		0.00	0.00	0.035
1.00	-28.38	-1.31	0.00	-147.05	0.00	147.05	3398.78	1699.39	5949.79	2938.38		0.00	0.00	0.033
2.00	-28.20	-1.31	0.00	-145.74	0.00	145.74	3390.81	1695.40	5910.44	2918.95		0.00	0.00	0.033
4.00	-27.84	-1.31	0.00	-143.12	0.00	143.12	3374.70	1687.35	5831.83	2880.12		0.00	-0.01	0.032
6.00	-27.49	-1.30	0.00	-140.50	0.00	140.50	3358.38	1679.19	5753.31	2841.35		0.01	-0.01	0.032
8.00	-27.13	-1.29	0.00	-137.90	0.00	137.90	3341.83	1670.92	5674.92	2802.63		0.01	-0.02	0.032
10.00	-26.78	-1.28	0.00	-135.32	0.00	135.32	3325.07	1662.53	5596.65	2763.98		0.02	-0.02	0.032
12.00	-26.44	-1.28	0.00	-132.75	0.00	132.75	3308.08	1654.04	5518.52	2725.39		0.03	-0.02	0.031
14.00	-26.09	-1.27	0.00	-130.20	0.00	130.20	3290.88	1645.44	5440.53	2686.87		0.04	-0.03	0.031
14.17	-26.06	-1.27	0.00	-129.98	0.00	129.98	3289.41	1644.70	5433.91	2683.60		0.04	-0.03	0.029
16.00	-25.75	-1.26	0.00	-127.67	0.00	127.67	3273.46	1636.73	5362.70	2648.44		0.06	-0.03	0.028
17.50	-25.49	-1.25	0.00	-125.78	0.00	125.78	3260.25	1630.12	5304.43	2619.66		0.07	-0.04	0.030
18.00	-25.41	-1.25	0.00	-125.16	0.00	125.16	3255.82	1627.91	5285.03	2610.08		0.07	-0.04	0.030
20.00	-25.07	-1.24	0.00	-122.67	0.00	122.67	3237.96	1618.98	5207.54	2571.81		0.09	-0.04	0.030
20.50	-24.49	-1.21	0.00	-122.05	0.00	122.05	3233.46	1616.73	5188.20	2562.26		0.09	-0.04	0.025
22.00	-24.24	-1.21	0.00	-120.23	0.00	120.23	3219.87	1609.94	5130.24	2533.63		0.10	-0.04	0.025
24.00	-23.91	-1.19	0.00	-117.82	0.00	117.82	3201.57	1600.79	5053.13	2495.55		0.12	-0.05	0.025
26.00	-23.58	-1.18	0.00	-115.43	0.00	115.43	3183.05	1591.53	4976.22	2457.57		0.14	-0.05	0.024
28.00	-23.26	-1.17	0.00	-113.06	0.00	113.06	3164.31	1582.16	4899.54	2419.70		0.17	-0.05	0.024
30.00	-22.93	-1.16	0.00	-110.72	0.00	110.72	3145.35	1572.68	4823.07	2381.93		0.19	-0.06	0.024
32.00	-22.61	-1.15	0.00	-108.39	0.00	108.39	3126.18	1563.09	4746.84	2344.29		0.21	-0.06	0.023
34.00	-22.29	-1.14	0.00	-106.09	0.00	106.09	3106.78	1553.39	4670.86	2306.76		0.24	-0.06	0.023
36.00	-21.98	-1.13	0.00	-103.81	0.00	103.81	3087.16	1543.58	4595.12	2269.36		0.27	-0.07	0.023
37.00	-21.82	-1.12	0.00	-102.68	0.00	102.68	3077.27	1538.63	4557.36	2250.71		0.28	-0.07	0.032
38.00	-21.67	-1.12	0.00	-101.55	0.00	101.55	3067.32	1533.66	4519.66	2232.09		0.30	-0.07	0.031
40.00	-21.36	-1.11	0.00	-99.31	0.00	99.31	3047.27	1523.63	4444.46	2194.95		0.33	-0.08	0.031
42.00	-21.05	-1.10	0.00	-97.10	0.00	97.10	3026.99	1513.49	4369.56	2157.96		0.36	-0.08	0.031
43.36	-20.84	-1.09	0.00	-95.60	0.00	95.60	3013.08	1506.54	4318.79	2132.89		0.39	-0.09	0.022
43.50	-20.82	-1.09	0.00	-95.45	0.00	95.45	3011.64	1505.82	4313.57	2130.31		0.39	-0.09	0.022
44.00	-20.69	-1.09	0.00	-94.90	0.00	94.90	3006.49	1503.25	4294.94	2121.11		0.40	-0.09	0.021
46.00	-20.17	-1.06	0.00	-92.73	0.00	92.73	2985.78	1492.89	4220.63	2084.41		0.44	-0.09	0.021
48.00	-19.66	-1.04	0.00	-90.60	0.00	90.60	2964.84	1482.42	4146.63	2047.87		0.47	-0.09	0.021
48.50	-19.53	-1.04	0.00	-90.08	0.00	90.08	2330.75	1165.37	3323.66	1641.43		0.48	-0.09	0.023
50.00	-19.29	-1.03	0.00	-88.53	0.00	88.53	2320.40	1160.20	3282.84	1621.27		0.51	-0.10	0.024
52.00	-19.03	-1.02	0.00	-86.47	0.00	86.47	2306.40	1153.20	3228.50	1594.43		0.56	-0.10	0.023
52.50	-18.97	-1.02	0.00	-85.96	0.00	85.96	2302.87	1151.43	3214.93	1587.73		0.57	-0.10	0.019
54.00	-18.78	-1.01	0.00	-84.43	0.00	84.43	2292.19	1146.09	3174.27	1567.65		0.60	-0.10	0.019
54.17	-18.75	-1.01	0.00	-84.26	0.00	84.26	2290.97	1145.49	3169.67	1565.38		0.60	-0.10	0.026
56.00	-18.52	-1.00	0.00	-82.41	0.00	82.41	2277.76	1138.88	3120.17	1540.93		0.64	-0.11	0.026
58.00	-18.27	-1.00	0.00	-80.40	0.00	80.40	2263.10	1131.55	3066.20	1514.28		0.69	-0.11	0.025
60.00	-18.03	-0.99	0.00	-78.41	0.00	78.41	2248.23	1124.12	3012.38	1487.70		0.74	-0.12	0.025
62.00	-17.78	-0.98	0.00	-76.44	0.00	76.44	2233.14	1116.57	2958.71	1461.20		0.78	-0.12	0.024
64.00	-17.54	-0.97	0.00	-74.48	0.00	74.48	2217.83	1108.92	2905.21	1434.77		0.84	-0.12	0.024
64.17	-17.51	-0.97	0.00	-74.31	0.00	74.31	2216.52	1108.26	2900.67	1432.53		0.84	-0.12	0.018
66.00	-17.29	-0.97	0.00	-72.53	0.00	72.53	2202.30	1101.15	2851.88	1408.44		0.89	-0.13	0.018
68.00	-17.05	-0.96	0.00	-70.59	0.00	70.59	2186.55	1093.28	2798.74	1382.19		0.94	-0.13	0.018
69.50	-16.88	-0.96	0.00	-69.14	0.00	69.14	2174.60	1087.30	2759.01	1362.57		0.98	-0.13	0.024

Calculated Forces

Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 41

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70.00	-16.82	-0.96	0.00	-68.66	0.00	68.66	2170.58	1085.29	2745.79	1356.04	1.00	-0.13	0.024
72.00	-16.58	-0.96	0.00	-66.74	0.00	66.74	2154.39	1077.20	2693.05	1329.99	1.05	-0.14	0.024
74.00	-16.35	-0.96	0.00	-64.82	0.00	64.82	2137.99	1068.99	2640.51	1304.05	1.11	-0.14	0.023
76.00	-16.12	-0.96	0.00	-62.90	0.00	62.90	2121.36	1060.68	2588.21	1278.22	1.17	-0.15	0.023
76.71	-16.04	-0.96	0.00	-62.22	0.00	62.22	2115.40	1057.70	2569.69	1269.07	1.20	-0.15	0.017
76.84	-16.02	-0.96	0.00	-62.10	0.00	62.10	2114.34	1057.17	2566.39	1267.45	1.20	-0.15	0.017
78.00	-15.81	-0.96	0.00	-60.98	0.00	60.98	2104.51	1052.26	2536.13	1252.50	1.24	-0.15	0.017
80.00	-15.43	-0.96	0.00	-59.06	0.00	59.06	2087.45	1043.72	2484.30	1226.90	1.30	-0.15	0.016
80.17	-15.40	-0.96	0.00	-58.90	0.00	58.90	2085.98	1042.99	2479.91	1224.73	1.30	-0.15	0.022
81.17	-15.22	-0.96	0.00	-57.94	0.00	57.94	1538.24	769.12	1857.13	917.17	1.34	-0.16	0.024
82.00	-15.14	-0.96	0.00	-57.14	0.00	57.14	1534.07	767.04	1842.56	909.97	1.36	-0.16	0.026
84.00	-14.95	-0.96	0.00	-55.22	0.00	55.22	1523.87	761.94	1807.49	892.65	1.43	-0.16	0.025
85.92	-14.77	-0.96	0.00	-53.38	0.00	53.38	1513.87	756.94	1773.86	876.04	1.50	-0.17	0.019
86.00	-14.76	-0.96	0.00	-53.30	0.00	53.30	1513.45	756.73	1772.46	875.35	1.50	-0.17	0.019
87.50	-14.62	-0.96	0.00	-51.86	0.00	51.86	1505.49	752.75	1746.23	862.40	1.55	-0.17	0.024
88.00	-14.58	-0.96	0.00	-51.38	0.00	51.38	1502.81	751.41	1737.49	858.08	1.57	-0.17	0.024
90.00	-14.39	-0.96	0.00	-49.45	0.00	49.45	1491.95	745.98	1702.59	840.84	1.64	-0.17	0.036
92.00	-14.21	-0.96	0.00	-47.53	0.00	47.53	1480.87	740.44	1667.76	823.65	1.72	-0.18	0.035
94.00	-14.03	-0.97	0.00	-45.60	0.00	45.60	1469.57	734.79	1633.03	806.49	1.79	-0.19	0.034
96.00	-13.85	-0.97	0.00	-43.67	0.00	43.67	1458.05	729.03	1598.39	789.39	1.87	-0.19	0.033
98.00	-13.67	-0.97	0.00	-41.74	0.00	41.74	1446.32	723.16	1563.86	772.33	1.95	-0.20	0.032
100.00	-13.50	-0.97	0.00	-39.80	0.00	39.80	1434.36	717.18	1529.45	755.34	2.04	-0.21	0.031
102.00	-13.32	-0.97	0.00	-37.87	0.00	37.87	1422.18	711.09	1495.16	738.41	2.13	-0.21	0.061
104.00	-13.15	-0.97	0.00	-35.93	0.00	35.93	1409.79	704.89	1461.02	721.54	2.22	-0.22	0.059
106.00	-12.98	-0.97	0.00	-33.98	0.00	33.98	1397.17	698.58	1427.02	704.75	2.32	-0.24	0.058
108.00	-12.81	-0.98	0.00	-32.04	0.00	32.04	1384.33	692.17	1393.17	688.04	2.42	-0.25	0.056
110.00	-12.65	-0.98	0.00	-30.09	0.00	30.09	1371.28	685.64	1359.50	671.40	2.52	-0.26	0.054
111.21	-12.55	-0.98	0.00	-28.90	0.00	28.90	1363.25	681.63	1339.15	661.36	2.59	-0.27	0.053
112.00	-12.45	-0.98	0.00	-28.13	0.00	28.13	1358.00	679.00	1326.00	654.86	2.64	-0.27	0.052
114.00	-12.20	-0.98	0.00	-26.17	0.00	26.17	1344.51	672.26	1292.68	638.41	2.75	-0.28	0.050
114.80	-12.10	-0.98	0.00	-25.39	0.00	25.39	898.25	449.12	876.91	433.07	2.80	-0.29	0.072
115.00	-7.55	-0.96	0.00	-25.19	0.00	25.19	897.59	448.79	874.90	432.08	2.81	-0.29	0.067
116.00	-7.49	-0.96	0.00	-24.24	0.00	24.24	894.32	447.16	865.01	427.20	2.87	-0.30	0.065
118.00	-7.38	-0.96	0.00	-22.32	0.00	22.32	887.61	443.81	845.23	417.43	3.00	-0.31	0.062
120.00	-7.27	-0.96	0.00	-20.40	0.00	20.40	880.69	440.34	825.45	407.66	3.13	-0.32	0.058
122.00	-7.16	-0.96	0.00	-18.48	0.00	18.48	873.54	436.77	805.67	397.89	3.27	-0.33	0.055
124.00	-7.05	-0.96	0.00	-16.56	0.00	16.56	866.18	433.09	785.90	388.13	3.41	-0.35	0.051
126.00	-5.08	-0.86	0.00	-14.65	0.00	14.65	858.60	429.30	766.16	378.38	3.56	-0.36	0.045
128.00	-4.98	-0.86	0.00	-12.92	0.00	12.92	850.80	425.40	746.46	368.65	3.71	-0.37	0.041
130.00	-4.88	-0.85	0.00	-11.21	0.00	11.21	842.77	421.39	726.80	358.94	3.87	-0.38	0.037
132.00	-4.78	-0.85	0.00	-9.50	0.00	9.50	834.53	417.27	707.19	349.25	4.03	-0.38	0.033
134.00	-4.68	-0.84	0.00	-7.81	0.00	7.81	826.07	413.04	687.65	339.60	4.19	-0.39	0.029
136.00	-4.59	-0.83	0.00	-6.14	0.00	6.14	817.39	408.69	668.18	329.99	4.36	-0.40	0.024
138.00	-1.60	-0.41	0.00	-4.48	0.00	4.48	808.49	404.24	648.79	320.41	4.52	-0.40	0.016
140.00	-1.53	-0.39	0.00	-3.67	0.00	3.67	799.37	399.68	629.50	310.89	4.69	-0.41	0.014
142.00	-1.46	-0.38	0.00	-2.88	0.00	2.88	790.03	395.01	610.32	301.41	4.86	-0.41	0.011
144.00	-1.39	-0.37	0.00	-2.12	0.00	2.12	780.47	390.24	591.24	291.99	5.04	-0.41	0.009
146.00	-1.32	-0.35	0.00	-1.38	0.00	1.38	770.69	385.35	572.29	282.63	5.21	-0.42	0.007
148.00	-1.25	-0.34	0.00	-0.67	0.00	0.67	760.69	380.35	553.47	273.34	5.39	-0.42	0.004
150.00	0.00	-0.33	0.00	0.00	0.00	0.00	750.48	375.24	534.80	264.12	5.56	-0.42	0.000

Wind Loading - Shaft

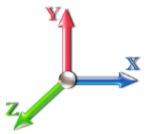
Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 42	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 26

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00	RB1 RB2 RB3 RB4	1.00	0.85	7.442	8.19	205.21	1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
1.00	RT3 RB5	1.00	0.85	7.442	8.19	204.35	1.000	0.000	1.00	3.702	3.70	30.3	0.0	174.8
2.00		1.00	0.85	7.442	8.19	203.49	1.000	0.000	1.00	3.686	3.69	30.2	0.0	174.0
4.00		1.00	0.85	7.442	8.19	201.78	1.000	0.000	2.00	7.326	7.33	60.0	0.0	345.8
6.00		1.00	0.85	7.442	8.19	200.06	1.000	0.000	2.00	7.264	7.26	59.5	0.0	342.9
8.00		1.00	0.85	7.442	8.19	198.34	1.000	0.000	2.00	7.202	7.20	59.0	0.0	339.9
10.00		1.00	0.85	7.442	8.19	196.62	1.000	0.000	2.00	7.140	7.14	58.4	0.0	337.0
12.00		1.00	0.85	7.442	8.19	194.90	1.000	0.000	2.00	7.078	7.08	57.9	0.0	334.0
14.00		1.00	0.85	7.442	8.19	193.19	1.000	0.000	2.00	7.016	7.02	57.4	0.0	331.1
14.17	RB6	1.00	0.85	7.442	8.19	193.04	1.000	0.000	0.17	0.593	0.59	4.9	0.0	28.0
16.00		1.00	0.86	7.534	8.29	192.65	1.000	0.000	1.83	6.360	6.36	52.7	0.0	300.1
17.50	RT5	1.00	0.88	7.677	8.45	193.16	1.000	0.000	1.50	5.174	5.17	43.7	0.0	244.1
18.00		1.00	0.88	7.723	8.50	193.30	1.000	0.000	0.50	1.717	1.72	14.6	0.0	81.0
20.00		1.00	0.90	7.896	8.69	193.69	1.000	0.000	2.00	6.829	6.83	59.3	0.0	322.2
20.50	RT1 RT4 RB7	1.00	0.91	7.937	8.73	193.75	1.000	0.000	0.50	1.698	1.70	14.8	0.0	80.1
22.00		1.00	0.92	8.056	8.86	193.85	1.000	0.000	1.50	5.070	5.07	44.9	0.0	239.1
24.00		1.00	0.94	8.205	9.03	193.83	1.000	0.000	2.00	6.705	6.71	60.5	0.0	316.3
26.00		1.00	0.95	8.345	9.18	193.65	1.000	0.000	2.00	6.643	6.64	61.0	0.0	313.3
28.00		1.00	0.97	8.476	9.32	193.33	1.000	0.000	2.00	6.581	6.58	61.4	0.0	310.3
30.00		1.00	0.98	8.600	9.46	192.90	1.000	0.000	2.00	6.519	6.52	61.7	0.0	307.4
32.00		1.00	1.00	8.717	9.59	192.35	1.000	0.000	2.00	6.457	6.46	61.9	0.0	304.4
34.00		1.00	1.01	8.829	9.71	191.71	1.000	0.000	2.00	6.395	6.39	62.1	0.0	301.5
36.00		1.00	1.02	8.936	9.83	190.99	1.000	0.000	2.00	6.332	6.33	62.2	0.0	298.5
37.00	RT7	1.00	1.03	8.988	9.89	190.59	1.000	0.000	1.00	3.143	3.14	31.1	0.0	148.1
38.00		1.00	1.03	9.039	9.94	190.18	1.000	0.000	1.00	3.127	3.13	31.1	0.0	147.4
40.00		1.00	1.04	9.137	10.05	189.31	1.000	0.000	2.00	6.208	6.21	62.4	0.0	292.6
42.00		1.00	1.05	9.231	10.15	188.37	1.000	0.000	2.00	6.146	6.15	62.4	0.0	289.6
43.36	RB8	1.00	1.06	9.293	10.22	187.70	1.000	0.000	1.36	4.144	4.14	42.4	0.0	195.3
43.50	Bot - Section 2	1.00	1.06	9.300	10.23	187.63	1.000	0.000	0.14	0.425	0.42	4.3	0.0	20.0
44.00		1.00	1.06	9.322	10.25	187.37	1.000	0.000	0.50	1.542	1.54	15.8	0.0	132.1
46.00		1.00	1.07	9.410	10.35	186.32	1.000	0.000	2.00	6.130	6.13	63.4	0.0	524.9
48.00		1.00	1.08	9.494	10.44	185.22	1.000	0.000	2.00	6.068	6.07	63.4	0.0	519.4
48.50	Top - Section 1	1.00	1.09	9.515	10.47	184.93	1.000	0.000	0.50	1.507	1.51	15.8	0.0	129.0
50.00	Appurtenance(s)	1.00	1.09	9.576	10.53	187.45	1.000	0.000	1.50	4.498	4.50	47.4	0.0	176.9
52.00		1.00	1.10	9.656	10.62	186.27	1.000	0.000	2.00	5.943	5.94	63.1	0.0	233.7
52.50	RB9	1.00	1.11	9.675	10.64	185.96	1.000	0.000	0.50	1.476	1.48	15.7	0.0	58.1
54.00		1.00	1.11	9.733	10.71	185.04	1.000	0.000	1.50	4.405	4.41	47.2	0.0	173.2
54.17	RT2 RT6	1.00	1.11	9.739	10.71	184.94	1.000	0.000	0.17	0.497	0.50	5.3	0.0	19.5
56.00		1.00	1.12	9.807	10.79	183.78	1.000	0.000	1.83	5.322	5.32	57.4	0.0	209.3
58.00		1.00	1.13	9.880	10.87	182.48	1.000	0.000	2.00	5.757	5.76	62.6	0.0	226.3
60.00		1.00	1.14	9.951	10.95	181.15	1.000	0.000	2.00	5.695	5.69	62.3	0.0	223.9
62.00		1.00	1.14	10.020	11.02	179.78	1.000	0.000	2.00	5.633	5.63	62.1	0.0	221.4
64.00		1.00	1.15	10.087	11.10	178.38	1.000	0.000	2.00	5.571	5.57	61.8	0.0	219.0
64.17	RB10	1.00	1.15	10.093	11.10	178.26	1.000	0.000	0.17	0.471	0.47	5.2	0.0	18.5
66.00		1.00	1.16	10.153	11.17	176.95	1.000	0.000	1.83	5.038	5.04	56.3	0.0	198.0
68.00		1.00	1.17	10.217	11.24	175.50	1.000	0.000	2.00	5.446	5.45	61.2	0.0	214.0
69.50	RT8	1.00	1.17	10.264	11.29	174.39	1.000	0.000	1.50	4.044	4.04	45.7	0.0	158.9

Wind Loading - Shaft

Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 43

TES Tower Engineering Solutions

70.00	RT9 RB11	1.00	1.17	10.279	11.31	174.01	1.000	0.000	0.50	1.340	1.34	15.2	0.0	52.7
72.00		1.00	1.18	10.340	11.37	172.51	1.000	0.000	2.00	5.322	5.32	60.5	0.0	209.1
74.00		1.00	1.19	10.400	11.44	170.97	1.000	0.000	2.00	5.260	5.26	60.2	0.0	206.6
76.00		1.00	1.19	10.459	11.50	169.42	1.000	0.000	2.00	5.198	5.20	59.8	0.0	204.2
76.71	RB12	1.00	1.20	10.479	11.53	168.86	1.000	0.000	0.71	1.830	1.83	21.1	0.0	71.9
76.84	Bot - Section 3	1.00	1.20	10.483	11.53	168.76	1.000	0.000	0.13	0.326	0.33	3.8	0.0	12.8
78.00		1.00	1.20	10.516	11.57	167.84	1.000	0.000	1.16	3.030	3.03	35.0	0.0	212.4
80.00		1.00	1.21	10.572	11.63	166.24	1.000	0.000	2.00	5.160	5.16	60.0	0.0	361.7
80.17	RT10	1.00	1.21	10.577	11.63	166.10	1.000	0.000	0.17	0.436	0.44	5.1	0.0	30.5
81.17	Top - Section 2	1.00	1.21	10.605	11.67	165.29	1.001 *	0.000	1.00	2.554	2.56	29.8	0.0	179.0
82.00		1.00	1.21	10.627	11.69	167.47	1.000	0.000	0.83	2.108	2.11	24.6	0.0	66.4
84.00		1.00	1.22	10.681	11.75	165.84	1.000	0.000	2.00	5.036	5.04	59.2	0.0	158.5
85.92	RB13	1.00	1.23	10.732	11.81	164.25	1.004 *	0.000	1.92	4.776	4.79	56.6	0.0	150.3
86.00		1.00	1.23	10.734	11.81	164.18	1.005 *	0.000	0.08	0.198	0.20	2.3	0.0	6.2
87.50	RT11	1.00	1.23	10.774	11.85	162.93	1.007 *	0.000	1.50	3.689	3.72	44.0	0.0	116.1
88.00		1.00	1.23	10.787	11.87	162.51	1.009 *	0.000	0.50	1.222	1.23	14.6	0.0	38.5
90.00	RT12	1.00	1.24	10.838	11.92	160.83	1.011 *	0.000	2.00	4.849	4.90	58.5	0.0	152.6
92.00		1.00	1.24	10.888	11.98	159.12	1.000	0.000	2.00	4.787	4.79	57.3	0.0	150.6
94.00		1.00	1.25	10.937	12.03	157.40	1.000	0.000	2.00	4.725	4.73	56.8	0.0	148.7
96.00		1.00	1.25	10.986	12.08	155.66	1.000	0.000	2.00	4.663	4.66	56.4	0.0	146.7
98.00		1.00	1.26	11.034	12.14	153.91	1.000	0.000	2.00	4.601	4.60	55.8	0.0	144.7
100.00	RT13	1.00	1.27	11.081	12.19	152.14	1.000	0.000	2.00	4.539	4.54	55.3	0.0	142.7
102.00		1.00	1.27	11.127	12.24	150.35	1.000	0.000	2.00	4.477	4.48	54.8	0.0	140.8
104.00		1.00	1.28	11.173	12.29	148.56	1.000	0.000	2.00	4.415	4.41	54.3	0.0	138.8
106.00		1.00	1.28	11.218	12.34	146.74	1.000	0.000	2.00	4.352	4.35	53.7	0.0	136.8
108.00		1.00	1.29	11.262	12.39	144.92	1.000	0.000	2.00	4.290	4.29	53.1	0.0	134.9
110.00		1.00	1.29	11.305	12.44	143.08	1.000	0.000	2.00	4.228	4.23	52.6	0.0	132.9
111.21	Bot - Section 4	1.00	1.29	11.331	12.46	141.96	1.000	0.000	1.21	2.535	2.53	31.6	0.0	79.7
112.00		1.00	1.30	11.348	12.48	141.23	1.000	0.000	0.79	1.657	1.66	20.7	0.0	90.4
114.00		1.00	1.30	11.391	12.53	139.37	1.000	0.000	2.00	4.169	4.17	52.2	0.0	227.4
114.80	Top - Section 3	1.00	1.30	11.407	12.55	138.63	1.000	0.000	0.80	1.643	1.64	20.6	0.0	89.6
115.00	Appurtenance(s)	1.00	1.30	11.412	12.55	140.65	1.000	0.000	0.20	0.418	0.42	5.2	0.0	9.9
116.00		1.00	1.31	11.432	12.58	139.71	1.000	0.000	1.00	2.046	2.05	25.7	0.0	48.3
118.00		1.00	1.31	11.474	12.62	137.83	1.000	0.000	2.00	4.044	4.04	51.0	0.0	95.5
120.00		1.00	1.32	11.514	12.67	135.94	1.000	0.000	2.00	3.982	3.98	50.4	0.0	94.1
122.00		1.00	1.32	11.554	12.71	134.04	1.000	0.000	2.00	3.920	3.92	49.8	0.0	92.6
124.00		1.00	1.32	11.594	12.75	132.12	1.000	0.000	2.00	3.858	3.86	49.2	0.0	91.1
126.00	Appurtenance(s)	1.00	1.33	11.633	12.80	130.20	1.000	0.000	2.00	3.796	3.80	48.6	0.0	89.6
128.00		1.00	1.33	11.672	12.84	128.26	1.000	0.000	2.00	3.734	3.73	47.9	0.0	88.1
130.00		1.00	1.34	11.710	12.88	126.31	1.000	0.000	2.00	3.672	3.67	47.3	0.0	86.7
132.00		1.00	1.34	11.748	12.92	124.36	1.000	0.000	2.00	3.610	3.61	46.6	0.0	85.2
134.00		1.00	1.35	11.785	12.96	122.39	1.000	0.000	2.00	3.548	3.55	46.0	0.0	83.7
136.00		1.00	1.35	11.822	13.00	120.42	1.000	0.000	2.00	3.485	3.49	45.3	0.0	82.2
138.00	Appurtenance(s)	1.00	1.35	11.858	13.04	118.44	1.000	0.000	2.00	3.423	3.42	44.7	0.0	80.7
140.00		1.00	1.36	11.894	13.08	116.44	1.000	0.000	2.00	3.361	3.36	44.0	0.0	79.3
142.00		1.00	1.36	11.930	13.12	114.44	1.000	0.000	2.00	3.299	3.30	43.3	0.0	77.8
144.00		1.00	1.37	11.965	13.16	112.43	1.000	0.000	2.00	3.237	3.24	42.6	0.0	76.3
146.00		1.00	1.37	12.000	13.20	110.41	1.000	0.000	2.00	3.175	3.17	41.9	0.0	74.8
148.00		1.00	1.37	12.034	13.24	108.39	1.000	0.000	2.00	3.113	3.11	41.2	0.0	73.4
150.00	Appurtenance(s)	1.00	1.38	12.068	13.27	106.35	1.000	0.000	2.00	3.051	3.05	40.5	0.0	71.9
								Totals:	**150.00**			**4,220.8**		**16,190.3**

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

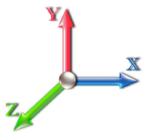
Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 44	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 26

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	150.00	3' Yagi	1	12.068	13.275	1.00	1.00	2.98	10.00	0.000	0.000	39.56	0.00	0.00
2	150.00	10' Dipole	1	12.152	13.367	1.00	1.00	3.76	30.00	0.000	5.000	50.26	0.00	251.30
3	150.00	18' Omni	1	12.217	13.439	1.00	1.00	5.40	55.00	0.000	9.000	72.57	0.00	653.13
4	150.00	10' Omni	1	12.152	13.367	1.00	1.00	3.00	25.00	0.000	5.000	40.10	0.00	200.50
5	150.00	Low Profile Platform-flat	1	12.068	13.275	1.00	1.00	34.00	1200.00	0.000	0.000	451.35	0.00	0.00
6	138.00	LGP 21901	6	11.858	13.044	0.38	0.75	0.52	33.00	0.000	0.000	6.75	0.00	0.00
7	138.00	RRUS-11 700MHz	3	11.858	13.044	0.38	0.75	2.83	153.00	0.000	0.000	36.98	0.00	0.00
8	138.00	DMP65R-BU8DA	3	11.858	13.044	0.55	0.75	28.42	287.10	0.000	0.000	370.73	0.00	0.00
9	138.00	TT19-08BP111-001	6	11.858	13.044	0.38	0.75	1.44	96.00	0.000	0.000	18.78	0.00	0.00
10	138.00	7770.00	3	11.858	13.044	0.58	0.75	9.53	105.00	0.000	0.000	124.29	0.00	0.00
11	138.00	Low Profile Platform-flat	1	11.858	13.044	1.00	1.00	34.00	1200.00	0.000	0.000	443.50	0.00	0.00
12	138.00	B2 B66A 8843	3	11.858	13.044	0.38	0.75	1.84	210.00	0.000	0.000	24.07	0.00	0.00
13	138.00	HPA-65R-BU8A	3	11.858	13.044	0.67	0.75	22.43	162.00	0.000	0.000	292.55	0.00	0.00
14	138.00	4449 B5/B12	3	11.858	13.044	0.38	0.75	2.22	213.00	0.000	0.000	28.91	0.00	0.00
15	138.00	DC9-48-60-24-8C-EV	1	11.858	13.044	0.75	0.75	0.85	26.20	0.000	0.000	11.15	0.00	0.00
16	138.00	HRK12 (Handrail Kit)	1	11.858	13.044	0.75	0.75	5.06	261.72	0.000	0.000	66.04	0.00	0.00
17	138.00	PRK-1245 (kicker kit)	1	11.858	13.044	0.75	0.75	7.13	464.91	0.000	0.000	92.94	0.00	0.00
18	126.00	APXVSPP18-C-A20	3	11.633	12.797	0.69	0.80	16.55	171.00	0.000	0.000	211.82	0.00	0.00
19	126.00	800MHz Filter	3	11.633	12.797	0.40	0.80	0.94	26.40	0.000	0.000	11.98	0.00	0.00
20	126.00	TD-RRH8x20-25	3	11.633	12.797	0.40	0.80	4.86	210.00	0.000	0.000	62.19	0.00	0.00
21	126.00	800 MHz	3	11.633	12.797	0.40	0.80	2.99	159.00	0.000	0.000	38.24	0.00	0.00
22	126.00	1900MHz	3	11.633	12.797	0.40	0.80	4.56	132.00	0.000	0.000	58.35	0.00	0.00
23	126.00	APXVTM14-C-120	3	11.633	12.797	0.62	0.80	11.87	168.00	0.000	0.000	151.88	0.00	0.00
24	126.00	Low Profile Platform-flat	1	11.633	12.797	1.00	1.00	34.00	1200.00	0.000	0.000	435.08	0.00	0.00
25	126.00	ACU-A20-N	4	11.633	12.797	0.40	0.80	0.22	4.00	0.000	0.000	2.87	0.00	0.00
26	115.00	AIR32	4	11.412	12.553	0.68	0.75	17.73	528.80	0.000	0.000	222.60	0.00	0.00
27	115.00	F4P-12W	1	11.412	12.553	1.00	1.00	63.31	3100.00	0.000	0.000	794.72	0.00	0.00
28	115.00	F4P-HRK12	1	11.412	12.553	1.00	1.00	7.57	507.00	0.000	0.000	95.02	0.00	0.00
29	115.00	KRY 112 489/2	4	11.412	12.553	0.38	0.75	0.96	61.60	0.000	0.000	12.05	0.00	0.00
30	115.00	APXVAARR24_43-U-NA2	4	11.412	12.553	0.61	0.75	49.18	396.00	0.000	0.000	617.39	0.00	0.00
31	115.00	APX16DWV-16DWVS-E-A	4	11.412	12.553	0.58	0.75	15.35	162.80	0.000	0.000	192.67	0.00	0.00
32	115.00	Radio 4449 B71 + B12	4	11.412	12.553	0.38	0.75	2.47	280.00	0.000	0.000	31.07	0.00	0.00
33	50.00	GPS	1	9.576	10.534	1.00	1.00	0.01	1.00	0.000	0.000	0.11	0.00	0.00
34	50.00	Standoff	1	9.576	10.534	1.00	1.00	1.50	50.00	0.000	0.000	15.80	0.00	0.00
35	20.50	Splice Plate	2	7.937	8.731	0.94	1.00	7.20	552.00	0.000	0.000	62.87	0.00	0.00
							Totals:		**12,241.53**			**5,187.21**		

Total Applied Force Summary

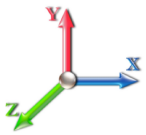
Structure:	CT46134-A-SBA		**Code:**	EIA/TIA-222-G	10/22/2020
Site Name:	Granby-n. Granby		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 45

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 26

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
1.00		30.30	200.68	0.00	0.00
2.00		30.18	199.94	0.00	0.00
4.00		59.97	397.67	0.00	0.00
6.00		59.47	394.71	0.00	0.00
8.00		58.96	391.75	0.00	0.00
10.00		58.45	388.79	0.00	0.00
12.00		57.94	385.83	0.00	0.00
14.00		57.43	382.87	0.00	0.00
14.17		4.86	32.41	0.00	0.00
16.00		52.71	347.51	0.00	0.00
17.50		43.70	283.00	0.00	0.00
18.00		14.59	93.96	0.00	0.00
20.00		59.32	374.00	0.00	0.00
20.50	(2) attachments	77.69	645.04	0.00	0.00
22.00		44.93	278.00	0.00	0.00
24.00		60.52	368.08	0.00	0.00
26.00		60.98	365.12	0.00	0.00
28.00		61.36	362.17	0.00	0.00
30.00		61.67	359.21	0.00	0.00
32.00		61.91	356.25	0.00	0.00
34.00		62.11	353.29	0.00	0.00
36.00		62.25	350.33	0.00	0.00
37.00		31.07	174.06	0.00	0.00
38.00		31.09	173.32	0.00	0.00
40.00		62.40	344.42	0.00	0.00
42.00		62.41	341.46	0.00	0.00
43.36		42.36	230.50	0.00	0.00
43.50		4.35	23.65	0.00	0.00
44.00		15.81	145.02	0.00	0.00
46.00		63.45	576.68	0.00	0.00
48.00		63.37	571.26	0.00	0.00
48.50		15.78	141.97	0.00	0.00
50.00	(2) attachments	63.29	266.79	0.00	0.00
52.00		63.13	285.57	0.00	0.00
52.50		15.71	71.01	0.00	0.00
54.00		47.16	212.09	0.00	0.00
54.17		5.32	23.95	0.00	0.00
56.00		57.42	256.69	0.00	0.00
58.00		62.57	278.17	0.00	0.00
60.00		62.34	275.71	0.00	0.00
62.00		62.08	273.24	0.00	0.00
64.00		61.81	270.77	0.00	0.00
64.17		5.23	22.90	0.00	0.00
66.00		56.26	245.41	0.00	0.00
68.00		61.21	265.84	0.00	0.00
69.50		45.66	197.77	0.00	0.00

Total Applied Force Summary

Structure:	CT46134-A-SBA		**Code:**	EIA/TIA-222-G	10/22/2020
Site Name:	Granby-n. Granby		**Exposure:**	C	
Height:	150.00 (ft)		**Crest Height:**	0.00	
Base Elev:	0.000 (ft)		**Site Class:**	D - Stiff Soil	
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 46

70.00		15.15	65.61	0.00	0.00
72.00		60.54	260.91	0.00	0.00
74.00		60.18	258.45	0.00	0.00
76.00		59.80	255.98	0.00	0.00
76.71		21.10	90.28	0.00	0.00
76.84		3.76	16.07	0.00	0.00
78.00		35.05	242.57	0.00	0.00
80.00		60.01	413.52	0.00	0.00
80.17		5.07	34.94	0.00	0.00
81.17		29.81	204.91	0.00	0.00
82.00		24.64	87.87	0.00	0.00
84.00		59.17	210.34	0.00	0.00
85.92		56.58	200.07	0.00	0.00
86.00		2.35	8.30	0.00	0.00
87.50		44.03	154.98	0.00	0.00
88.00		14.63	51.41	0.00	0.00
90.00		58.47	204.43	0.00	0.00
92.00		57.34	202.45	0.00	0.00
94.00		56.85	200.48	0.00	0.00
96.00		56.35	198.51	0.00	0.00
98.00		55.84	196.54	0.00	0.00
100.00		55.32	194.57	0.00	0.00
102.00		54.79	192.59	0.00	0.00
104.00		54.25	190.62	0.00	0.00
106.00		53.71	188.65	0.00	0.00
108.00		53.15	186.68	0.00	0.00
110.00		52.58	184.70	0.00	0.00
111.21		31.60	111.09	0.00	0.00
112.00		20.68	110.79	0.00	0.00
114.00		52.23	279.26	0.00	0.00
114.80		20.62	110.28	0.00	0.00
115.00	(22) attachments	1970.76	5051.34	0.00	0.00
116.00		25.72	63.28	0.00	0.00
118.00		51.05	125.45	0.00	0.00
120.00		50.44	123.97	0.00	0.00
122.00		49.83	122.49	0.00	0.00
124.00		49.20	121.01	0.00	0.00
126.00	(23) attachments	1020.98	2189.93	0.00	0.00
128.00		47.94	112.33	0.00	0.00
130.00		47.30	110.85	0.00	0.00
132.00		46.65	109.37	0.00	0.00
134.00		45.99	107.89	0.00	0.00
136.00		45.32	106.41	0.00	0.00
138.00	(34) attachments	1561.34	3316.86	0.00	0.00
140.00		43.98	81.27	0.00	0.00
142.00		43.29	79.79	0.00	0.00
144.00		42.60	78.31	0.00	0.00
146.00		41.91	76.83	0.00	0.00
148.00		41.20	75.35	0.00	0.00
150.00	(5) attachments	694.34	1393.87	0.00	1104.93
	Totals:	**9,408.00**	**31,733.28**	**0.00**	**1,104.93**

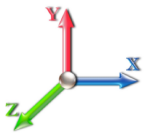
Linear Appurtenance Segment Forces (Factored)

Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 47	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
1.00	1 1/4" Hybrid	Yes	1.00	0.000	0.01	0.00	0.00	0.034	0.000	7.442	0.00	2.64
1.00	1 5/8" Coax	Yes	1.00	0.000	0.01	0.00	0.00	0.034	0.000	7.442	0.00	2.08
1.00	1.5" Reinforcing Plate	Yes	0.50	0.000	3.00	0.13	0.00	0.034	0.000	7.442	0.00	0.00
2.00	1 1/4" Hybrid	Yes	1.00	0.000	0.01	0.00	0.00	0.068	0.000	7.442	0.00	2.64
2.00	1 5/8" Coax	Yes	1.00	0.000	0.01	0.00	0.00	0.068	0.000	7.442	0.00	2.08
2.00	1.5" Reinforcing Plate	Yes	1.00	0.000	3.00	0.25	0.00	0.068	0.000	7.442	0.00	0.00
4.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.069	0.000	7.442	0.00	5.28
4.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.069	0.000	7.442	0.00	4.16
4.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.069	0.000	7.442	0.00	0.00
6.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.069	0.000	7.442	0.00	5.28
6.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.069	0.000	7.442	0.00	4.16
6.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.069	0.000	7.442	0.00	0.00
8.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.070	0.000	7.442	0.00	5.28
8.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.070	0.000	7.442	0.00	4.16
8.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.070	0.000	7.442	0.00	0.00
10.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.070	0.000	7.442	0.00	5.28
10.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.070	0.000	7.442	0.00	4.16
10.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.070	0.000	7.442	0.00	0.00
12.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.071	0.000	7.442	0.00	5.28
12.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.071	0.000	7.442	0.00	4.16
12.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.071	0.000	7.442	0.00	0.00
14.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.072	0.000	7.442	0.00	5.28
14.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.072	0.000	7.442	0.00	4.16
14.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.072	0.000	7.442	0.00	0.00
14.17	1 1/4" Hybrid	Yes	0.17	0.000	0.01	0.00	0.00	0.072	0.000	7.442	0.00	0.45
14.17	1 5/8" Coax	Yes	0.17	0.000	0.01	0.00	0.00	0.072	0.000	7.442	0.00	0.35
14.17	1.5" Reinforcing Plate	Yes	0.17	0.000	3.00	0.04	0.00	0.072	0.000	7.442	0.00	0.00
16.00	1 1/4" Hybrid	Yes	1.83	0.000	0.01	0.00	0.00	0.072	0.000	7.534	0.00	4.83
16.00	1 5/8" Coax	Yes	1.83	0.000	0.01	0.00	0.00	0.072	0.000	7.534	0.00	3.81
16.00	1.5" Reinforcing Plate	Yes	1.83	0.000	3.00	0.46	0.00	0.072	0.000	7.534	0.00	0.00
17.50	1 1/4" Hybrid	Yes	1.50	0.000	0.01	0.00	0.00	0.073	0.000	7.677	0.00	3.96
17.50	1 5/8" Coax	Yes	1.50	0.000	0.01	0.00	0.00	0.073	0.000	7.677	0.00	3.12
17.50	1.5" Reinforcing Plate	Yes	1.50	0.000	3.00	0.38	0.00	0.073	0.000	7.677	0.00	0.00
18.00	1 1/4" Hybrid	Yes	0.50	0.000	0.01	0.00	0.00	0.073	0.000	7.723	0.00	1.32
18.00	1 5/8" Coax	Yes	0.50	0.000	0.01	0.00	0.00	0.073	0.000	7.723	0.00	1.04
18.00	1.5" Reinforcing Plate	Yes	0.50	0.000	3.00	0.13	0.00	0.073	0.000	7.723	0.00	0.00
20.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.074	0.000	7.896	0.00	5.28
20.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.074	0.000	7.896	0.00	4.16
20.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.074	0.000	7.896	0.00	0.00
20.50	1 1/4" Hybrid	Yes	0.50	0.000	0.01	0.00	0.00	0.074	0.000	7.937	0.00	1.32
20.50	1 5/8" Coax	Yes	0.50	0.000	0.01	0.00	0.00	0.074	0.000	7.937	0.00	1.04
20.50	1.5" Reinforcing Plate	Yes	0.50	0.000	3.00	0.13	0.00	0.074	0.000	7.937	0.00	0.00
22.00	1 1/4" Hybrid	Yes	1.50	0.000	0.01	0.00	0.00	0.074	0.000	8.056	0.00	3.96
22.00	1 5/8" Coax	Yes	1.50	0.000	0.01	0.00	0.00	0.074	0.000	8.056	0.00	3.12
22.00	1.5" Reinforcing Plate	Yes	1.50	0.000	3.00	0.38	0.00	0.074	0.000	8.056	0.00	0.00
24.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.075	0.000	8.205	0.00	5.28
24.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.075	0.000	8.205	0.00	4.16

Linear Appurtenance Segment Forces (Factored)

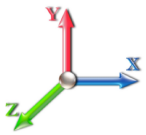
Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 48	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
24.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.075	0.000	8.205	0.00	0.00
26.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.076	0.000	8.345	0.00	5.28
26.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.076	0.000	8.345	0.00	4.16
26.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.076	0.000	8.345	0.00	0.00
28.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.076	0.000	8.476	0.00	5.28
28.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.076	0.000	8.476	0.00	4.16
28.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.076	0.000	8.476	0.00	0.00
30.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.077	0.000	8.600	0.00	5.28
30.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.077	0.000	8.600	0.00	4.16
30.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.077	0.000	8.600	0.00	0.00
32.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.078	0.000	8.717	0.00	5.28
32.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.078	0.000	8.717	0.00	4.16
32.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.078	0.000	8.717	0.00	0.00
34.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.079	0.000	8.829	0.00	5.28
34.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.079	0.000	8.829	0.00	4.16
34.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.079	0.000	8.829	0.00	0.00
36.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.079	0.000	8.936	0.00	5.28
36.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.079	0.000	8.936	0.00	4.16
36.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.079	0.000	8.936	0.00	0.00
37.00	1 1/4" Hybrid	Yes	1.00	0.000	0.01	0.00	0.00	0.080	0.000	8.988	0.00	2.64
37.00	1 5/8" Coax	Yes	1.00	0.000	0.01	0.00	0.00	0.080	0.000	8.988	0.00	2.08
37.00	1.5" Reinforcing Plate	Yes	1.00	0.000	3.00	0.25	0.00	0.080	0.000	8.988	0.00	0.00
38.00	1 1/4" Hybrid	Yes	1.00	0.000	0.01	0.00	0.00	0.067	0.000	9.039	0.00	2.64
38.00	1 5/8" Coax	Yes	1.00	0.000	0.01	0.00	0.00	0.067	0.000	9.039	0.00	2.08
38.00	1.25" Reinforcing	Yes	1.00	0.000	2.50	0.21	0.00	0.067	0.000	9.039	0.00	0.00
40.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.068	0.000	9.137	0.00	5.28
40.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.068	0.000	9.137	0.00	4.16
40.00	1.25" Reinforcing	Yes	2.00	0.000	2.50	0.42	0.00	0.068	0.000	9.137	0.00	0.00
42.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.068	0.000	9.231	0.00	5.28
42.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.068	0.000	9.231	0.00	4.16
42.00	1.25" Reinforcing	Yes	2.00	0.000	2.50	0.42	0.00	0.068	0.000	9.231	0.00	0.00
43.36	1 1/4" Hybrid	Yes	1.36	0.000	0.01	0.00	0.00	0.069	0.000	9.293	0.00	3.59
43.36	1 5/8" Coax	Yes	1.36	0.000	0.01	0.00	0.00	0.069	0.000	9.293	0.00	2.83
43.36	1.25" Reinforcing	Yes	1.36	0.000	2.50	0.28	0.00	0.069	0.000	9.293	0.00	0.00
43.50	1 1/4" Hybrid	Yes	0.14	0.000	0.01	0.00	0.00	0.079	0.000	9.300	0.00	0.37
43.50	1 5/8" Coax	Yes	0.14	0.000	0.01	0.00	0.00	0.079	0.000	9.300	0.00	0.29
43.50	1.5" Reinforcing Plate	Yes	0.10	0.000	3.00	0.03	0.00	0.079	0.000	9.300	0.00	0.00
43.50	1.25" Reinforcing	Yes	0.04	0.000	2.50	0.01	0.00	0.079	0.000	9.300	0.00	0.00
44.00	1 1/4" Hybrid	Yes	0.50	0.000	0.01	0.00	0.00	0.083	0.000	9.322	0.00	1.32
44.00	1 5/8" Coax	Yes	0.50	0.000	0.01	0.00	0.00	0.083	0.000	9.322	0.00	1.04
44.00	1.5" Reinforcing Plate	Yes	0.50	0.000	3.00	0.13	0.00	0.083	0.000	9.322	0.00	0.00
46.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.084	0.000	9.410	0.00	5.28
46.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.084	0.000	9.410	0.00	4.16
46.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.084	0.000	9.410	0.00	0.00
48.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.084	0.000	9.494	0.00	5.28
48.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.084	0.000	9.494	0.00	4.16
48.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.084	0.000	9.494	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

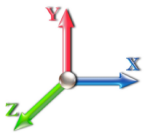
Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 49	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
48.50	1 1/4" Hybrid	Yes	0.50	0.000	0.01	0.00	0.00	0.085	0.000	9.515	0.00	1.32
48.50	1 5/8" Coax	Yes	0.50	0.000	0.01	0.00	0.00	0.085	0.000	9.515	0.00	1.04
48.50	1.5" Reinforcing Plate	Yes	0.50	0.000	3.00	0.13	0.00	0.085	0.000	9.515	0.00	0.00
50.00	1 1/4" Hybrid	Yes	1.50	0.000	0.01	0.00	0.00	0.084	0.000	9.576	0.00	3.96
50.00	1 5/8" Coax	Yes	1.50	0.000	0.01	0.00	0.00	0.084	0.000	9.576	0.00	3.12
50.00	1.5" Reinforcing Plate	Yes	1.50	0.000	3.00	0.38	0.00	0.084	0.000	9.576	0.00	0.00
52.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.085	0.000	9.656	0.00	5.28
52.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.085	0.000	9.656	0.00	4.16
52.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.085	0.000	9.656	0.00	0.00
52.50	1 1/4" Hybrid	Yes	0.50	0.000	0.01	0.00	0.00	0.085	0.000	9.675	0.00	1.32
52.50	1 5/8" Coax	Yes	0.50	0.000	0.01	0.00	0.00	0.085	0.000	9.675	0.00	1.04
52.50	1.5" Reinforcing Plate	Yes	0.50	0.000	3.00	0.13	0.00	0.085	0.000	9.675	0.00	0.00
54.00	1 1/4" Hybrid	Yes	1.50	0.000	0.01	0.00	0.00	0.086	0.000	9.733	0.00	3.96
54.00	1 5/8" Coax	Yes	1.50	0.000	0.01	0.00	0.00	0.086	0.000	9.733	0.00	3.12
54.00	1.5" Reinforcing Plate	Yes	1.50	0.000	3.00	0.38	0.00	0.086	0.000	9.733	0.00	0.00
54.17	1 1/4" Hybrid	Yes	0.17	0.000	0.01	0.00	0.00	0.086	0.000	9.739	0.00	0.45
54.17	1 5/8" Coax	Yes	0.17	0.000	0.01	0.00	0.00	0.086	0.000	9.739	0.00	0.35
54.17	1.5" Reinforcing Plate	Yes	0.17	0.000	3.00	0.04	0.00	0.086	0.000	9.739	0.00	0.00
56.00	1 1/4" Hybrid	Yes	1.83	0.000	0.01	0.00	0.00	0.087	0.000	9.807	0.00	4.83
56.00	1 5/8" Coax	Yes	1.83	0.000	0.01	0.00	0.00	0.087	0.000	9.807	0.00	3.81
56.00	1.5" Reinforcing Plate	Yes	1.83	0.000	3.00	0.46	0.00	0.087	0.000	9.807	0.00	0.00
58.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.087	0.000	9.880	0.00	5.28
58.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.087	0.000	9.880	0.00	4.16
58.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.087	0.000	9.880	0.00	0.00
60.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.088	0.000	9.951	0.00	5.28
60.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.088	0.000	9.951	0.00	4.16
60.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.088	0.000	9.951	0.00	0.00
62.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.089	0.000	10.020	0.00	5.28
62.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.089	0.000	10.020	0.00	4.16
62.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.089	0.000	10.020	0.00	0.00
64.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.090	0.000	10.087	0.00	5.28
64.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.090	0.000	10.087	0.00	4.16
64.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.090	0.000	10.087	0.00	0.00
64.17	1 1/4" Hybrid	Yes	0.17	0.000	0.01	0.00	0.00	0.091	0.000	10.093	0.00	0.45
64.17	1 5/8" Coax	Yes	0.17	0.000	0.01	0.00	0.00	0.091	0.000	10.093	0.00	0.35
64.17	1.5" Reinforcing Plate	Yes	0.17	0.000	3.00	0.04	0.00	0.091	0.000	10.093	0.00	0.00
66.00	1 1/4" Hybrid	Yes	1.83	0.000	0.01	0.00	0.00	0.091	0.000	10.153	0.00	4.83
66.00	1 5/8" Coax	Yes	1.83	0.000	0.01	0.00	0.00	0.091	0.000	10.153	0.00	3.81
66.00	1.5" Reinforcing Plate	Yes	1.83	0.000	3.00	0.46	0.00	0.091	0.000	10.153	0.00	0.00
68.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.092	0.000	10.217	0.00	5.28
68.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.092	0.000	10.217	0.00	4.16
68.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.092	0.000	10.217	0.00	0.00
69.50	1 1/4" Hybrid	Yes	1.50	0.000	0.01	0.00	0.00	0.093	0.000	10.264	0.00	3.96
69.50	1 5/8" Coax	Yes	1.50	0.000	0.01	0.00	0.00	0.093	0.000	10.264	0.00	3.12
69.50	1.5" Reinforcing Plate	Yes	1.50	0.000	3.00	0.38	0.00	0.093	0.000	10.264	0.00	0.00
70.00	1 1/4" Hybrid	Yes	0.50	0.000	0.01	0.00	0.00	0.078	0.000	10.279	0.00	1.32
70.00	1 5/8" Coax	Yes	0.50	0.000	0.01	0.00	0.00	0.078	0.000	10.279	0.00	1.04

Linear Appurtenance Segment Forces (Factored)

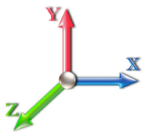
Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 50	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
70.00	1.25" Reinforcing	Yes	0.50	0.000	2.50	0.10	0.00	0.078	0.000	10.279	0.00	0.00
72.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.079	0.000	10.340	0.00	5.28
72.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.079	0.000	10.340	0.00	4.16
72.00	1.25" Reinforcing	Yes	2.00	0.000	2.50	0.42	0.00	0.079	0.000	10.340	0.00	0.00
74.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.080	0.000	10.400	0.00	5.28
74.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.080	0.000	10.400	0.00	4.16
74.00	1.25" Reinforcing	Yes	2.00	0.000	2.50	0.42	0.00	0.080	0.000	10.400	0.00	0.00
76.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.081	0.000	10.459	0.00	5.28
76.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.081	0.000	10.459	0.00	4.16
76.00	1.25" Reinforcing	Yes	2.00	0.000	2.50	0.42	0.00	0.081	0.000	10.459	0.00	0.00
76.71	1 1/4" Hybrid	Yes	0.71	0.000	0.01	0.00	0.00	0.082	0.000	10.479	0.00	1.87
76.71	1 5/8" Coax	Yes	0.71	0.000	0.01	0.00	0.00	0.082	0.000	10.479	0.00	1.48
76.71	1.5" Reinforcing Plate	Yes	0.01	0.000	3.00	0.00	0.00	0.082	0.000	10.479	0.00	0.00
76.71	1.25" Reinforcing	Yes	0.70	0.000	2.50	0.15	0.00	0.082	0.000	10.479	0.00	0.00
76.84	1 1/4" Hybrid	Yes	0.13	0.000	0.01	0.00	0.00	0.098	0.000	10.483	0.00	0.33
76.84	1 5/8" Coax	Yes	0.13	0.000	0.01	0.00	0.00	0.098	0.000	10.483	0.00	0.26
76.84	1.5" Reinforcing Plate	Yes	0.13	0.000	3.00	0.03	0.00	0.098	0.000	10.483	0.00	0.00
78.00	1 1/4" Hybrid	Yes	1.16	0.000	0.01	0.00	0.00	0.098	0.000	10.516	0.00	3.07
78.00	1 5/8" Coax	Yes	1.16	0.000	0.01	0.00	0.00	0.098	0.000	10.516	0.00	2.42
78.00	1.5" Reinforcing Plate	Yes	1.16	0.000	3.00	0.29	0.00	0.098	0.000	10.516	0.00	0.00
80.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.099	0.000	10.572	0.00	5.28
80.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.099	0.000	10.572	0.00	4.16
80.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.099	0.000	10.572	0.00	0.00
80.17	1 1/4" Hybrid	Yes	0.17	0.000	0.01	0.00	0.00	0.100	0.000	10.577	0.00	0.45
80.17	1 5/8" Coax	Yes	0.17	0.000	0.01	0.00	0.00	0.100	0.000	10.577	0.00	0.35
80.17	1.5" Reinforcing Plate	Yes	0.17	0.000	3.00	0.04	0.00	0.100	0.000	10.577	0.00	0.00
81.17	1 1/4" Hybrid	Yes	1.00	0.000	0.01	0.00	0.00	0.100	1.001	10.605	0.00	2.64
81.17	1 5/8" Coax	Yes	1.00	0.000	0.01	0.00	0.00	0.100	1.001	10.605	0.00	2.08
81.17	1.5" Reinforcing Plate	Yes	1.00	0.000	3.00	0.25	0.00	0.100	1.001	10.605	0.00	0.00
82.00	1 1/4" Hybrid	Yes	0.83	0.000	0.01	0.00	0.00	0.099	0.000	10.627	0.00	2.19
82.00	1 5/8" Coax	Yes	0.83	0.000	0.01	0.00	0.00	0.099	0.000	10.627	0.00	1.73
82.00	1.5" Reinforcing Plate	Yes	0.83	0.000	3.00	0.21	0.00	0.099	0.000	10.627	0.00	0.00
84.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.100	0.000	10.681	0.00	5.28
84.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.100	0.000	10.681	0.00	4.16
84.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.100	0.000	10.681	0.00	0.00
85.92	1 1/4" Hybrid	Yes	1.92	0.000	0.01	0.00	0.00	0.101	1.004	10.732	0.00	5.07
85.92	1 5/8" Coax	Yes	1.92	0.000	0.01	0.00	0.00	0.101	1.004	10.732	0.00	3.99
85.92	1.5" Reinforcing Plate	Yes	1.92	0.000	3.00	0.48	0.00	0.101	1.004	10.732	0.00	0.00
86.00	1 1/4" Hybrid	Yes	0.08	0.000	0.01	0.00	0.00	0.102	1.005	10.734	0.00	0.21
86.00	1 5/8" Coax	Yes	0.08	0.000	0.01	0.00	0.00	0.102	1.005	10.734	0.00	0.17
86.00	1.5" Reinforcing Plate	Yes	0.08	0.000	3.00	0.02	0.00	0.102	1.005	10.734	0.00	0.00
87.50	1 1/4" Hybrid	Yes	1.50	0.000	0.01	0.00	0.00	0.102	1.007	10.774	0.00	3.96
87.50	1 5/8" Coax	Yes	1.50	0.000	0.01	0.00	0.00	0.102	1.007	10.774	0.00	3.12
87.50	1.5" Reinforcing Plate	Yes	1.50	0.000	3.00	0.38	0.00	0.102	1.007	10.774	0.00	0.00
88.00	1 1/4" Hybrid	Yes	0.50	0.000	0.01	0.00	0.00	0.103	1.009	10.787	0.00	1.32
88.00	1 5/8" Coax	Yes	0.50	0.000	0.01	0.00	0.00	0.103	1.009	10.787	0.00	1.04
88.00	1.5" Reinforcing Plate	Yes	0.50	0.000	3.00	0.13	0.00	0.103	1.009	10.787	0.00	0.00

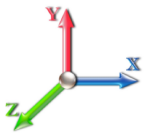
Linear Appurtenance Segment Forces (Factored)

Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 51	

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
90.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.104	1.011	10.838	0.00	5.28
90.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.104	1.011	10.838	0.00	4.16
90.00	1.5" Reinforcing Plate	Yes	2.00	0.000	3.00	0.50	0.00	0.104	1.011	10.838	0.00	0.00
92.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	10.888	0.00	5.28
92.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	10.888	0.00	4.16
94.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	10.937	0.00	5.28
94.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	10.937	0.00	4.16
96.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	10.986	0.00	5.28
96.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	10.986	0.00	4.16
98.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	11.034	0.00	5.28
98.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	11.034	0.00	4.16
100.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	11.081	0.00	5.28
100.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	11.081	0.00	4.16
102.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	11.127	0.00	5.28
102.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	11.127	0.00	4.16
104.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	11.173	0.00	5.28
104.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	11.173	0.00	4.16
106.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	11.218	0.00	5.28
106.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	11.218	0.00	4.16
108.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	11.262	0.00	5.28
108.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	11.262	0.00	4.16
110.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	11.305	0.00	5.28
110.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	11.305	0.00	4.16
111.21	1 1/4" Hybrid	Yes	1.21	0.000	0.01	0.00	0.00	0.001	0.000	11.331	0.00	3.20
111.21	1 5/8" Coax	Yes	1.21	0.000	0.01	0.00	0.00	0.001	0.000	11.331	0.00	2.52
112.00	1 1/4" Hybrid	Yes	0.79	0.000	0.01	0.00	0.00	0.001	0.000	11.348	0.00	2.08
112.00	1 5/8" Coax	Yes	0.79	0.000	0.01	0.00	0.00	0.001	0.000	11.348	0.00	1.64
114.00	1 1/4" Hybrid	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	11.391	0.00	5.28
114.00	1 5/8" Coax	Yes	2.00	0.000	0.01	0.00	0.00	0.001	0.000	11.391	0.00	4.16
114.80	1 1/4" Hybrid	Yes	0.80	0.000	0.01	0.00	0.00	0.001	0.000	11.407	0.00	2.10
114.80	1 5/8" Coax	Yes	0.80	0.000	0.01	0.00	0.00	0.001	0.000	11.407	0.00	1.66
115.00	1 1/4" Hybrid	Yes	0.20	0.000	0.01	0.00	0.00	0.001	0.000	11.412	0.00	0.54
115.00	1 5/8" Coax	Yes	0.20	0.000	0.01	0.00	0.00	0.001	0.000	11.412	0.00	0.42
									Totals:		**0.0**	**542.8**

Calculated Forces

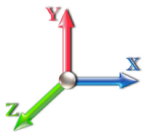
Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1 **Topography:** 1	**Struct Class:**	II	Page: 52	

Tower Engineering Solutions

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 26

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-31.73	-9.41	0.00	-993.85	0.00	993.85	3406.69	1703.35	5989.16	2957.82	0.00	0.000	0.000	0.209
1.00	-31.53	-9.39	0.00	-984.44	0.00	984.44	3398.78	1699.39	5949.79	2938.38	0.00	-0.014	0.000	0.197
2.00	-31.33	-9.37	0.00	-975.05	0.00	975.05	3390.81	1695.40	5910.44	2918.95	0.01	-0.028	0.000	0.196
4.00	-30.92	-9.32	0.00	-956.32	0.00	956.32	3374.70	1687.35	5831.83	2880.12	0.02	-0.055	0.000	0.194
6.00	-30.52	-9.28	0.00	-937.67	0.00	937.67	3358.38	1679.19	5753.31	2841.35	0.05	-0.082	0.000	0.193
8.00	-30.13	-9.23	0.00	-919.11	0.00	919.11	3341.83	1670.92	5674.92	2802.63	0.09	-0.109	0.000	0.191
10.00	-29.74	-9.19	0.00	-900.65	0.00	900.65	3325.07	1662.53	5596.65	2763.98	0.14	-0.137	0.000	0.189
12.00	-29.35	-9.14	0.00	-882.28	0.00	882.28	3308.08	1654.04	5518.52	2725.39	0.21	-0.164	0.000	0.187
14.00	-28.96	-9.09	0.00	-863.99	0.00	863.99	3290.88	1645.44	5440.53	2686.87	0.28	-0.192	0.000	0.185
14.17	-28.93	-9.09	0.00	-862.45	0.00	862.45	3289.41	1644.70	5433.91	2683.60	0.29	-0.194	0.000	0.171
16.00	-28.58	-9.05	0.00	-845.81	0.00	845.81	3273.46	1636.73	5362.70	2648.44	0.37	-0.217	0.000	0.169
17.50	-28.29	-9.01	0.00	-832.23	0.00	832.23	3260.25	1630.12	5304.43	2619.66	0.44	-0.236	0.000	0.181
18.00	-28.19	-9.00	0.00	-827.73	0.00	827.73	3255.82	1627.91	5285.03	2610.08	0.46	-0.243	0.000	0.180
20.00	-27.82	-8.95	0.00	-809.72	0.00	809.72	3237.96	1618.98	5207.54	2571.81	0.57	-0.271	0.000	0.178
20.50	-27.17	-8.88	0.00	-805.24	0.00	805.24	3233.46	1616.73	5188.20	2562.26	0.60	-0.278	0.000	0.146
22.00	-26.89	-8.84	0.00	-791.93	0.00	791.93	3219.87	1609.94	5130.24	2533.63	0.69	-0.295	0.000	0.144
24.00	-26.52	-8.79	0.00	-774.25	0.00	774.25	3201.57	1600.79	5053.13	2495.55	0.82	-0.317	0.000	0.142
26.00	-26.15	-8.73	0.00	-756.67	0.00	756.67	3183.05	1591.53	4976.22	2457.57	0.96	-0.340	0.000	0.141
28.00	-25.79	-8.68	0.00	-739.20	0.00	739.20	3164.31	1582.16	4899.54	2419.70	1.10	-0.362	0.000	0.139
30.00	-25.42	-8.63	0.00	-721.84	0.00	721.84	3145.35	1572.68	4823.07	2381.93	1.26	-0.384	0.000	0.137
32.00	-25.06	-8.57	0.00	-704.59	0.00	704.59	3126.18	1563.09	4746.84	2344.29	1.43	-0.407	0.000	0.135
34.00	-24.71	-8.52	0.00	-687.44	0.00	687.44	3106.78	1553.39	4670.86	2306.76	1.60	-0.429	0.000	0.133
36.00	-24.36	-8.46	0.00	-670.41	0.00	670.41	3087.16	1543.58	4595.12	2269.36	1.79	-0.451	0.000	0.131
37.00	-24.18	-8.43	0.00	-661.95	0.00	661.95	3077.27	1538.63	4557.36	2250.71	1.88	-0.463	0.000	0.180
38.00	-24.00	-8.41	0.00	-653.52	0.00	653.52	3067.32	1533.66	4519.66	2232.09	1.98	-0.478	0.000	0.179
40.00	-23.66	-8.36	0.00	-636.69	0.00	636.69	3047.27	1523.63	4444.46	2194.95	2.19	-0.509	0.000	0.176
42.00	-23.31	-8.30	0.00	-619.98	0.00	619.98	3026.99	1513.49	4369.56	2157.96	2.41	-0.540	0.000	0.174
43.36	-23.08	-8.26	0.00	-608.69	0.00	608.69	3013.08	1506.54	4318.79	2132.89	2.56	-0.561	0.000	0.123
43.50	-23.05	-8.26	0.00	-607.53	0.00	607.53	3011.64	1505.82	4313.57	2130.31	2.58	-0.563	0.000	0.123
44.00	-22.91	-8.25	0.00	-603.40	0.00	603.40	3006.49	1503.25	4294.94	2121.11	2.64	-0.568	0.000	0.120
46.00	-22.33	-8.19	0.00	-586.91	0.00	586.91	2985.78	1492.89	4220.63	2084.41	2.88	-0.590	0.000	0.118
48.00	-21.76	-8.12	0.00	-570.53	0.00	570.53	2964.84	1482.42	4146.63	2047.87	3.14	-0.611	0.000	0.116
48.50	-21.61	-8.11	0.00	-566.47	0.00	566.47	2330.75	1165.37	3323.66	1641.43	3.20	-0.617	0.000	0.127
50.00	-21.34	-8.05	0.00	-554.31	0.00	554.31	2320.40	1160.20	3282.84	1621.27	3.40	-0.633	0.000	0.131
52.00	-21.06	-7.99	0.00	-538.21	0.00	538.21	2306.40	1153.20	3228.50	1594.43	3.67	-0.655	0.000	0.129
52.50	-20.99	-7.98	0.00	-534.21	0.00	534.21	2302.87	1151.43	3214.93	1587.73	3.73	-0.661	0.000	0.106
54.00	-20.77	-7.93	0.00	-522.25	0.00	522.25	2292.19	1146.09	3174.27	1567.65	3.94	-0.675	0.000	0.104
54.17	-20.75	-7.93	0.00	-520.90	0.00	520.90	2290.97	1145.49	3169.67	1565.38	3.97	-0.676	0.000	0.142
56.00	-20.49	-7.88	0.00	-506.39	0.00	506.39	2277.76	1138.88	3120.17	1540.93	4.23	-0.699	0.000	0.139
58.00	-20.21	-7.82	0.00	-490.64	0.00	490.64	2263.10	1131.55	3066.20	1514.28	4.53	-0.724	0.000	0.136
60.00	-19.93	-7.76	0.00	-475.00	0.00	475.00	2248.23	1124.12	3012.38	1487.70	4.84	-0.749	0.000	0.134
62.00	-19.65	-7.70	0.00	-459.48	0.00	459.48	2233.14	1116.57	2958.71	1461.20	5.16	-0.773	0.000	0.131
64.00	-19.38	-7.64	0.00	-444.07	0.00	444.07	2217.83	1108.92	2905.21	1434.77	5.49	-0.797	0.000	0.128
64.17	-19.36	-7.64	0.00	-442.77	0.00	442.77	2216.52	1108.26	2900.67	1432.53	5.52	-0.799	0.000	0.097
66.00	-19.11	-7.59	0.00	-428.79	0.00	428.79	2202.30	1101.15	2851.88	1408.44	5.83	-0.816	0.000	0.095
68.00	-18.84	-7.53	0.00	-413.62	0.00	413.62	2186.55	1093.28	2798.74	1382.19	6.17	-0.835	0.000	0.093
69.50	-18.65	-7.48	0.00	-402.33	0.00	402.33	2174.60	1087.30	2759.01	1362.57	6.44	-0.848	0.000	0.126
70.00	-18.58	-7.47	0.00	-398.58	0.00	398.58	2170.58	1085.29	2745.79	1356.04	6.53	-0.854	0.000	0.125

Calculated Forces

Structure:	CT46134-A-SBA	**Code:**	EIA/TIA-222-G	10/22/2020	
Site Name:	Granby-n. Granby	**Exposure:**	C		
Height:	150.00 (ft)	**Crest Height:**	0.00		
Base Elev:	0.000 (ft)	**Site Class:**	D - Stiff Soil		
Gh:	1.1	**Topography:** 1	**Struct Class:**	II	Page: 53

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72.00	-18.31	-7.41	0.00	-383.64	0.00	383.64	2154.39	1077.20	2693.05	1329.99	6.89	-0.879	0.000	0.122
74.00	-18.05	-7.36	0.00	-368.81	0.00	368.81	2137.99	1068.99	2640.51	1304.05	7.26	-0.904	0.000	0.118
76.00	-17.80	-7.30	0.00	-354.10	0.00	354.10	2121.36	1060.68	2588.21	1278.22	7.65	-0.928	0.000	0.115
76.71	-17.71	-7.28	0.00	-348.92	0.00	348.92	2115.40	1057.70	2569.69	1269.07	7.78	-0.936	0.000	0.086
76.84	-17.69	-7.28	0.00	-348.00	0.00	348.00	2114.34	1057.17	2566.39	1267.45	7.81	-0.937	0.000	0.086
78.00	-17.45	-7.24	0.00	-339.53	0.00	339.53	2104.51	1052.26	2536.13	1252.50	8.04	-0.948	0.000	0.083
80.00	-17.03	-7.18	0.00	-325.05	0.00	325.05	2087.45	1043.72	2484.30	1226.90	8.44	-0.965	0.000	0.080
80.17	-17.00	-7.17	0.00	-323.83	0.00	323.83	2085.98	1042.99	2479.91	1224.73	8.47	-0.967	0.000	0.108
81.17	-16.79	-7.14	0.00	-316.66	0.00	316.66	1538.24	769.12	1857.13	917.17	8.68	-0.978	0.000	0.119
82.00	-16.70	-7.12	0.00	-310.73	0.00	310.73	1534.07	767.04	1842.56	909.97	8.85	-0.988	0.000	0.124
84.00	-16.49	-7.07	0.00	-296.49	0.00	296.49	1523.87	761.94	1807.49	892.65	9.27	-1.012	0.000	0.120
85.92	-16.29	-7.01	0.00	-282.92	0.00	282.92	1513.87	756.94	1773.86	876.04	9.68	-1.034	0.000	0.088
86.00	-16.28	-7.01	0.00	-282.36	0.00	282.36	1513.45	756.73	1772.46	875.35	9.70	-1.035	0.000	0.088
87.50	-16.12	-6.96	0.00	-271.85	0.00	271.85	1505.49	752.75	1746.23	862.40	10.02	-1.048	0.000	0.110
88.00	-16.07	-6.95	0.00	-268.36	0.00	268.36	1502.81	751.41	1737.49	858.08	10.13	-1.054	0.000	0.109
90.00	-15.87	-6.90	0.00	-254.46	0.00	254.46	1491.95	745.98	1702.59	840.84	10.58	-1.076	0.000	0.163
92.00	-15.66	-6.85	0.00	-240.66	0.00	240.66	1480.87	740.44	1667.76	823.65	11.04	-1.110	0.000	0.156
94.00	-15.46	-6.79	0.00	-226.97	0.00	226.97	1469.57	734.79	1633.03	806.49	11.51	-1.142	0.000	0.150
96.00	-15.26	-6.74	0.00	-213.39	0.00	213.39	1458.05	729.03	1598.39	789.39	12.00	-1.174	0.000	0.143
98.00	-15.06	-6.69	0.00	-199.90	0.00	199.90	1446.32	723.16	1563.86	772.33	12.49	-1.205	0.000	0.136
100.00	-14.86	-6.64	0.00	-186.52	0.00	186.52	1434.36	717.18	1529.45	755.34	13.01	-1.235	0.000	0.129
102.00	-14.66	-6.59	0.00	-173.25	0.00	173.25	1422.18	711.09	1495.16	738.41	13.53	-1.264	0.000	0.245
104.00	-14.47	-6.55	0.00	-160.07	0.00	160.07	1409.79	704.89	1461.02	721.54	14.07	-1.320	0.000	0.232
106.00	-14.27	-6.50	0.00	-146.98	0.00	146.98	1397.17	698.58	1427.02	704.75	14.64	-1.373	0.000	0.219
108.00	-14.08	-6.45	0.00	-133.98	0.00	133.98	1384.33	692.17	1393.17	688.04	15.22	-1.424	0.000	0.205
110.00	-13.90	-6.41	0.00	-121.07	0.00	121.07	1371.28	685.64	1359.50	671.40	15.83	-1.472	0.000	0.191
111.21	-13.78	-6.38	0.00	-113.29	0.00	113.29	1363.25	681.63	1339.15	661.36	16.21	-1.501	0.000	0.182
112.00	-13.67	-6.36	0.00	-108.28	0.00	108.28	1358.00	679.00	1326.00	654.86	16.46	-1.518	0.000	0.175
114.00	-13.39	-6.31	0.00	-95.55	0.00	95.55	1344.51	672.26	1292.68	638.41	17.10	-1.561	0.000	0.160
114.80	-13.28	-6.29	0.00	-90.53	0.00	90.53	898.25	449.12	876.91	433.07	17.36	-1.577	0.000	0.224
115.00	-8.28	-4.18	0.00	-89.25	0.00	89.25	897.59	448.79	874.90	432.08	17.43	-1.581	0.000	0.216
116.00	-8.22	-4.16	0.00	-85.07	0.00	85.07	894.32	447.16	865.01	427.20	17.77	-1.605	0.000	0.208
118.00	-8.09	-4.11	0.00	-76.75	0.00	76.75	887.61	443.81	845.23	417.43	18.45	-1.652	0.000	0.193
120.00	-7.96	-4.06	0.00	-68.53	0.00	68.53	880.69	440.34	825.45	407.66	19.15	-1.695	0.000	0.177
122.00	-7.84	-4.01	0.00	-60.41	0.00	60.41	873.54	436.77	805.67	397.89	19.87	-1.736	0.000	0.161
124.00	-7.72	-3.97	0.00	-52.38	0.00	52.38	866.18	433.09	785.90	388.13	20.60	-1.773	0.000	0.144
126.00	-5.56	-2.88	0.00	-44.45	0.00	44.45	858.60	429.30	766.16	378.38	21.35	-1.807	0.000	0.124
128.00	-5.45	-2.83	0.00	-38.69	0.00	38.69	850.80	425.40	746.46	368.65	22.12	-1.837	0.000	0.111
130.00	-5.34	-2.78	0.00	-33.03	0.00	33.03	842.77	421.39	726.80	358.94	22.89	-1.865	0.000	0.098
132.00	-5.23	-2.73	0.00	-27.47	0.00	27.47	834.53	417.27	707.19	349.25	23.68	-1.889	0.000	0.085
134.00	-5.12	-2.69	0.00	-22.00	0.00	22.00	826.07	413.04	687.65	339.60	24.48	-1.910	0.000	0.071
136.00	-5.02	-2.64	0.00	-16.62	0.00	16.62	817.39	408.69	668.18	329.99	25.28	-1.927	0.000	0.057
138.00	-1.75	-0.97	0.00	-11.35	0.00	11.35	808.49	404.24	648.79	320.41	26.09	-1.941	0.000	0.038
140.00	-1.67	-0.92	0.00	-9.41	0.00	9.41	799.37	399.68	629.50	310.89	26.91	-1.951	0.000	0.032
142.00	-1.60	-0.88	0.00	-7.57	0.00	7.57	790.03	395.01	610.32	301.41	27.73	-1.960	0.000	0.027
144.00	-1.52	-0.83	0.00	-5.82	0.00	5.82	780.47	390.24	591.24	291.99	28.55	-1.968	0.000	0.022
146.00	-1.44	-0.79	0.00	-4.16	0.00	4.16	770.69	385.35	572.29	282.63	29.37	-1.973	0.000	0.017
148.00	-1.37	-0.74	0.00	-2.59	0.00	2.59	760.69	380.35	553.47	273.34	30.20	-1.978	0.000	0.011
150.00	0.00	-0.69	0.00	-1.10	0.00	1.10	750.48	375.24	534.80	264.12	31.03	-1.980	0.000	0.004

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 93 mph Wind	36.2	0.00	38.06	0.00	0.00	3839.82
1.2D + 1.0Di + 1.0Wi 50 mph Wind	10.6	0.00	73.96	0.00	0.00	1249.52
1.2D + 1.0E	1.3	0.00	38.08	0.00	0.00	150.03
0.9D + 1.0E	1.3	0.00	28.56	0.00	0.00	148.36
1.0D + 1.0W 60 mph Wind	9.4	0.00	31.73	0.00	0.00	993.85

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 93 mph Wind	-15.60	-25.52	0.00	-670.46	0.00	-670.46	1422.18	711.09	1495.16	738.41	102.00	0.920
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-39.39	-8.86	0.00	-241.39	0.00	-241.39	1422.18	711.09	1495.16	738.41	102.00	0.355
1.2D + 1.0E	-16.13	-1.00	0.00	-25.74	0.00	-25.74	898.25	449.12	876.91	433.07	114.80	0.077
0.9D + 1.0E	-12.10	-0.98	0.00	-25.39	0.00	-25.39	898.25	449.12	876.91	433.07	114.80	0.072
1.0D + 1.0W 60 mph Wind	-14.66	-6.59	0.00	-173.25	0.00	-173.25	1422.18	711.09	1495.16	738.41	102.00	0.245

Additional Steel Summary

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors VQ/I (lb/in)	Vu (kips)	phi Vn (kips)	Lower Termination MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	Upper Termination MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	Max Member Pu (kips)	phi Pn (kips)	phi Tn (kips)	Ratio
0.0	20.5	(1) PLT-7.25"x1.25(1.25hole)	295.0	5.31	37.1	356.2	37.1	10	13	259.5	37.1	7	13	356.16	499.7	450.00	0.791
0.0	54.2	(2) PLT-7.25"x1.25(1.25hole)	-475.8	-8.56	37.1	404.4	37.1	11	13	241.2	37.1	7	13	434.94	499.7	450.00	0.967
0.0	1.0	(1) SOL-1 3/4" William R71	-224.2	-2.69	25.3	126.1	25.3	5	0	283.4	25.3			126.08	288.5	298.82	0.437
0.0	20.5	(2) PLT-6.5x1.5(31mm Hole)	-312.0	-4.68	37.1	373.8	37.1	11	12	338.8	37.1	10	11	373.84	429.2	386.10	0.968
1.0	17.5	(1) LNP-LP6X125-B-20T	-236.6	-5.68	25.3	283.4	25.3			244.1	25.3	10	10	283.41	395.0	360.94	0.785
14.2	54.2	(1) PLT-7.25"x1.25(1.25hole)	475.8	8.56	37.1	314.8	37.1	9	13	241.2	37.1	7	13	434.94	499.7	450.00	0.967
20.5	37.0	(3) PLT-5.75x1.5(31mm Hole)	318.2	5.73	37.1	325.9	37.1	9	11	300.2	37.1	9	11	325.95	376.1	331.26	0.984
43.4	69.5	(3) PLT-5.75x1.5(31mm Hole)	415.9	7.49	37.1	289.0	37.1	8	11	209.2	37.1	6	9	315.23	376.1	331.26	0.952
52.5	70.0	(3) LNP-LP6X100-G-20TC	307.8	7.39	25.3	160.8	25.3	7	8	197.1	25.3			216.19	297.8	288.75	0.749
64.2	80.2	(3) PLT-6"X1-1/4"(1.25" Hole	-399.5	-7.19	37.1	191.1	37.1	6	11	164.8	37.1	5	11	249.65	413.6	356.25	0.701
70.0	87.5	(3) LNP-LP6X100-G-20CT	354.1	8.50	25.3	197.1	25.3			127.3	25.3	6	8	197.14	297.8	288.75	0.683
76.7	90.0	(3) PLT-4.75x1.5(31mm Hole)	428.6	10.29	37.1	166.5	37.1	5	8	189.7	37.1	6	7	220.21	303.1	258.13	0.853
85.9	100.0	(3) PLT-5"x1-1/4"(1.25"Hole)	-618.1	-14.83	37.1	137.5	37.1	4	9	208.3	37.1	6	9	256.93	329.1	281.25	0.914

Monopole Mat Foundation Design

				Date
				10/22/2020
Customer Name:	AT&T	**EIA/TIA Standard:**	EIA-222-G
Site Name:	Granby-nGranby	**Structure Height (Ft.):**	150
Site Number:	CT46134-A-SBA	**Engineer Name:**	B. Davis
Engr. Number:	98945	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

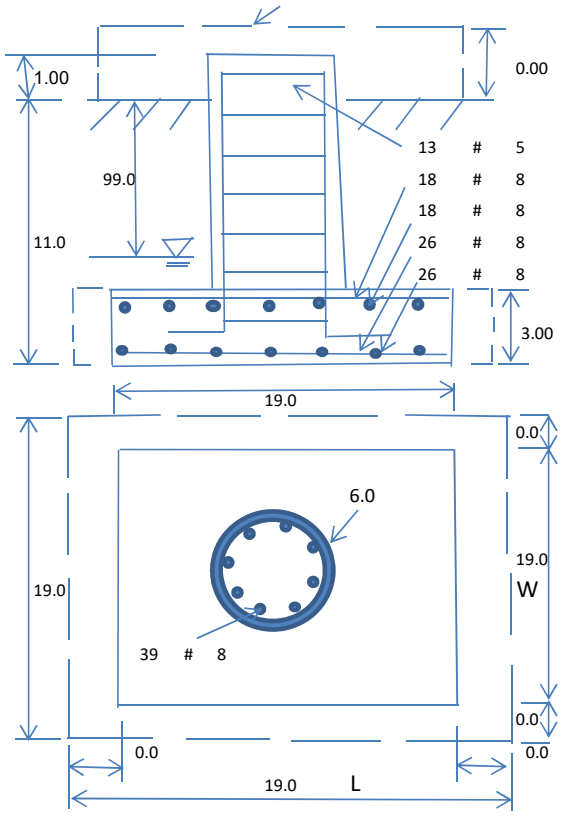
Analysis or Design? Analysis

Base Reactions (Factored):

Axial Load (Kips):	38.1	Shear Force (Kips):	36.2
Uplift Force (Kips):	0.0	Moment (Kips-ft):	3839.8
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	6.0	Depth of Base BG (ft.):	11.0
Pier Height A. G. (ft.):	1.00	Thickness of Pad (ft):	3.00
Length of Pad (ft.):	19	Width of Pad (ft.):	19
Final Length of pad (ft)	19.0	Final width of pad (ft):	19.0



Material Properties and Reabr Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	8	Tie / Stirrup Size #:	5	
Qty. of Vertical Rebars:	39	Tie Spacing (in):	11.5	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	8	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	26	Qty. of Rebar in Pad (W):	26	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	18	Qty. of Rebar in Pad (W):	18	
Apply 1.35 factor for e/w Per G:	1.35			

Soil Design Parameters:

Soil Unit Weight (pcf):	110.0	Soil Buoyant Weight:	37.6	Pcf		
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	12000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	Yes	Reduction factor on the maximum soil bearing pressure:			1.00	

Foundation Analysis and Design: Uplift Strength Reduction Factor: 0.75 — Compression Strength Reduction Factor: 0.75

Total Dry Soil Volume (cu. Ft.):	2661.81	Total Dry Soil Weight (Kips):	292.80
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	292.80	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	1337.47	Total Dry Concrete Weight (Kips):	200.62
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	200.62	Total Vertical Load on Base (Kips):	531.48

Check Soil Capacities:

				Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	6730	<	Allowable Factored Soil Bearing (psf): 9000	0.75	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	4580.3	>	Design Factored Momont (kips-ft): 3818	0.83	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.20	OK!			

Check the capacities of Reinforceing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90		Strength reduction factor (Shear):	0.75		
Strength reduction factor (Axial compresion):	0.65		Wind Load Factor on Concrete Design:	1.00		
(1) Concrete Pier:					Capacity	
Vertical Steel Rebar Area (sq. in./each):	0.79		Tie / Stirrup Area (sq. in./each):	0.31		
Calculated Moment Capacity (Mn,Kips-Ft):	4258.7	>	Design Factored Moment (Mu, Kips-F	4165.6	0.98	OK!
Calculated Shear Capacity (Kips):	572.6	>	Design Factored Shear (Kips):	36.2	0.06	OK!
Calculated Tension Capacity (Tn, Kips):	1663.7	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	7143.9	>	Design Factored Axial Load (Pu Kips):	38.1	0.01	OK!
Moment & Axial Strength Combination:	0.98	OK!	Check Tie Spacing (Design/Required):		0.9583	OK!
Pier Reinforcement Ratio:	0.008		Reinforcement Ratio is satisfied per ACI			
(2).Concrete Pad:						
One-Way Design Shear Capacity (L-Direction, Kips):	703.0	>	One-Way Factored Shear (L-D. Kips):	258.7	0.37	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	703.0	>	One-Way Factored Shear (W-D., Kips)	258.7	0.37	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	571.8	>	One-Way Factored Shear (C-C, Kips):	254.3	0.44	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0028	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0028		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	2930.5	>	Moment at Bottom (L-Dir. K-Ft):	1087.3	0.37	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	2930.5	>	Moment at Bottom (W-Dir. K-Ft):	1087.3	0.37	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	4114.5	>	Moment at Bottom (C-C Dir. K-Ft):	1537.7	0.37	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0019	OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0019		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	2044.5	>	Moment at the top (L-Dir K-Ft):	534.0	0.26	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	2044.5	>	Moment at the top (W-Dir K-Ft):	534.0	0.26	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	2877.0	>	Moment at the top (C-C Dir. K-Ft):	503.9	0.18	OK!
(3).Check Punching Shear Capacity due to Moment in the Pier:						
Moment transferred by punching shear:	1535.9	k-ft.	Max. factored shear stress v_{u_CD}:		7.5	Psi
Max. factored shear stress v_{u_AB}:	12.9	Psi	Factored shear Strength ϕv_n:		189.7	Psi
Max. factored shear stress v_u:	12.9	Psi	Check Usage of Punching Shear Capacity:		0.07	OK!

October 9, 2020

SAI Communications
12 Industrial Way
Salem NH, 03079

RE:

Site Number:	CT1219 (LTE 3C/4C/5G)
FA Number:	10035127
PACE Number:	MRCTB048895
PT Number:	2051A0WKHJ
Site Name:	GRANBY EAST
Site Address:	15 North Granby Road Granby, CT 06035

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 mount to determine their capability of supporting the following additional loading:

- (3) 7770 Antennas (55.0"x11.0"x5.0" - Wt. = 35 lbs. /each)
- (3) TT19-08BP111-001 TMA's (9.9"x6.7"x5.4" - Wt. = 16 lbs. /each)
- **(3) HPA65R-BU8A Antennas (96.0"x11.7"x7.6" – Wt. = 54 lbs. /each)**
- **(3) DMP65R-BU8DA Antennas (96.0"x20.7"x7.7" – Wt. = 96 lbs. /each)**
- **(3) B2/B66A 8843 RRH's (14.9"x13.2"x10.9" – Wt. = 72 lbs. /each)**
- **(3) B5/B12 4449 RRH's (17.9"x13.2"x9.4" – Wt. = 73 lbs. /each)**
- **(1) Squid Surge Arrestor (24.0"x9.7" Φ – Wt. = 33 lbs. /each)**

**Proposed equipment shown in bold*

No original structural design documents or fabrication drawings were available for the existing mount. HDG's subconsultant, ProVertic LLC, conducted a survey climb and mapping of the existing AT&T antenna mount on September 11, 2020.

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 120 mph with a max basic wind speed with ice of 50 mph and a max ice thickness of 1.5 in. An escalated ice thickness of 1.73 in was used for this analysis.
- HDG considers this site to be exposure category C; tower is located near large, flat, open, terrain/grasslands.
- HDG considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- HDG considers this site to have a spectral response acceleration parameter at short periods, S_S, of 0.176 and a spectral response acceleration parameter at a period of 1 second, S_1, of 0.065.
- The mount has been analyzed with load combinations consisting of 250 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 3.
- The mount has been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.
- The existing mount is secured to the existing monopole with a ring mount. The connection is considered OK by visual inspection.

Based on our evaluation, we have determined that the existing mount **IS NOT CAPABLE** of supporting the proposed installation. HDG recommends the following modifications:

- **Install new handrail kit, SitePro1 P/N HRK-12 (or approved equal).**
- **Install new platform reinforcement kit, SitePro1 P/N PRK-SFS (or approved equal).**

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing (LTE 3C/4C/5G) Mount Rating	28	LC1	113%	**FAIL**
Modified (LTE 3C/4C/5G) Mount Rating	125	LC2	91%	**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 mount 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.

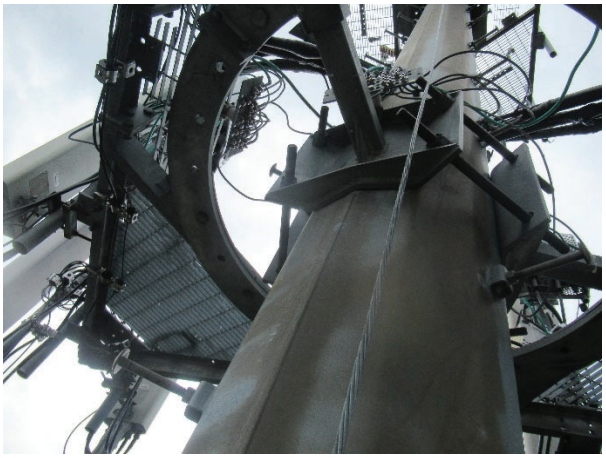
Please feel free to contact our office should you have any questions.

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

HUDSON
Design Group LLC

Wind & Ice
Calculations

Date: 10/9/2020
Project Name: GRANBY EAST
Project No.: CT1219
Designed By: LBW **Checked By:** MSC

HUDSON Design Group LLC

2.6.5.2 Velocity Pressure Coeff:

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

z=	140	(ft)
z_g=	900	(ft)
α=	7.0	

K_z= 1.181

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=	1	(from Table 2-4)
K_t=	0	(from Table 2-5)
f=	0	(from Table 2-5)
z=	140	
z_s=	240	(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=	0.99	(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 = 1.50 in
Importance Factor = I= 1.0 (from Table 2-3)
K_{iz} = 1.16 (from Sec. 2.6.10)

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

t_{iz} = 1.73 in

Date: 10/9/2020
Project Name: GRANBY EAST
Project No.: CT1219
Designed By: LBW 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=	150	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

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

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

		K_z=	1.181	(from 2.6.5.2)
		K_{zt}=	1.0	(from 2.6.6.2.1)
		K_s=	1.0	(from 2.6.7)
q_z=	**41.01**	K_e=	0.99	(from 2.6.8)
$q_{z\ (ice)}$=	**7.12**	K_d=	0.95	(from Table 2-2)
$q_{z\ (30)}$=	**2.56**	V_{max}=	120	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: 10/9/2020
Project Name: GRANBY EAST
Project No.: CT1219
Designed By: LBW Checked By: MSC

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 = **1.73** in | **Angle =** **0 (deg)** | **Equivalent Angle =** **180 (deg)**

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)	Force (lbs) (30 mph)
7770 Antenna	55.0	11.0	5.0	4.20	5.00	1.31	**226**	**55**	**14**
HPA65R-BU8A Antenna	96.0	11.7	7.6	7.80	8.21	1.44	**461**	**107**	**29**
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	4.64	1.30	**733**	**154**	**46**
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.20	**67**	**18**	**4**
B2/B66A 8843 RRH (Shielded)	14.9	1.5	10.9	0.16	9.93	1.50	**10**	**7**	**1**
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.13	1.20	**67**	**18**	**4**
B5/B12 4449 RRH (Shielded)	14.9	0.0	10.4	0.00	0.00	1.20	**0**	**4**	**0**
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	1.83	1.20	**18**	**7**	**1**
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	**46**	**13**	**3**
2" Pipe	2.4	12.0		0.20	0.20	1.20	**10**	**5**	**1**
2-1/2" Pipe	2.9	12.0		0.24	0.24	1.20	**12**	**6**	**1**
C5x6.7	5.0	12.0		0.42	0.42	2.00	**34**	**13**	**2**
3x3 HSS	3.0	12.0		0.25	0.25	1.25	**13**	**6**	**1**
2-1/2x2-1/2 Angle	2.5	12.0		0.21	0.21	2.00	**17**	**9**	**1**

Date: 10/9/2020
Project Name: GRANBY EAST
Project No.: CT1219
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	30	(deg)	Ice Thickness =	1.73	in.	Equivalent Angle =	210	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	226	120	199
HPA65R-BU8A Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	461	330	428
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	733	333	633
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	67	55	64
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	34	55	39
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	67	53	64
B5/B12 4449 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	34	53	38
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	18	23	19

WIND LOADS WITH ICE:

7770 Antenna	58.5	14.5	8.5	5.87	3.44	4.04	6.91	1.27	1.40	53	34	48
HPA65R-BU8A Antenna	99.5	15.2	11.1	10.48	7.64	6.56	8.99	1.38	1.47	103	80	97
DMP65R-BU8DA Antenna	99.5	24.2	11.2	16.69	7.71	4.12	8.91	1.27	1.46	151	80	133
B2/B66A 8843 RRH	18.4	16.7	14.4	2.13	1.83	1.10	1.28	1.20	1.20	18	16	18
B2/B66A 8843 RRH (Shielded)	18.4	8.3	14.4	1.06	1.83	2.20	1.28	1.20	1.20	9	16	11
B5/B12 4449 RRH	18.4	16.7	13.9	2.13	1.77	1.10	1.32	1.20	1.20	18	15	17
B5/B12 4449 RRH (Shielded)	18.4	8.3	13.9	1.06	1.77	2.20	1.32	1.20	1.20	9	15	11
TT19-08BP111-001 TMA	13.4	8.9	10.2	0.82	0.94	1.51	1.31	1.20	1.20	7	8	7

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	14	8	12
HPA65R-BU8A Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	29	21	27
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	46	21	40
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	3	4
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	2	3	2
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	4	3	4
B5/B12 4449 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	2	3	2
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	1	1	1

Date: 10/9/2020
Project Name: GRANBY EAST
Project No.: CT1219
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	60	(deg)	Ice Thickness =	1.73	in.	Equivalent Angle =	240	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	226	120	147
HPA65R-BU8A Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	461	330	363
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	733	333	433
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	67	55	58
B2/B66A 8843 RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	50	55	54
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	67	53	57
B5/B12 4449 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	50	53	52
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	18	23	22

WIND LOADS WITH ICE:

7770 Antenna	58.5	14.5	8.5	5.87	3.44	4.04	6.91	1.27	1.40	53	34	39
HPA65R-BU8A Antenna	99.5	15.2	11.1	10.48	7.64	6.56	8.99	1.38	1.47	103	80	86
DMP65R-BU8DA Antenna	99.5	24.2	11.2	16.69	7.71	4.12	8.91	1.27	1.46	151	80	98
B2/B66A 8843 RRH	18.4	16.7	14.4	2.13	1.83	1.10	1.28	1.20	1.20	18	16	16
B2/B66A 8843 RRH (Shielded)	18.4	12.5	14.4	1.59	1.83	1.47	1.28	1.20	1.20	14	16	15
B5/B12 4449 RRH	18.4	16.7	13.9	2.13	1.77	1.10	1.32	1.20	1.20	18	15	16
B5/B12 4449 RRH (Shielded)	18.4	12.5	13.9	1.59	1.77	1.47	1.32	1.20	1.20	14	15	15
TT19-08BP111-001 TMA	13.4	8.9	10.2	0.82	0.94	1.51	1.31	1.20	1.20	7	8	8

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	14	8	9
HPA65R-BU8A Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	29	21	23
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	46	21	27
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	3	4
B2/B66A 8843 RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	3	3	3
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	4	3	4
B5/B12 4449 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	3	3	3
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	1	1	1

Date: 10/9/2020
Project Name: GRANBY EAST
Project No.: CT1219
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	90	(deg)	Ice Thickness =	1.73	in.	Equivalent Angle =	270	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	226	120	120
HPA65R-BU8A Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	461	330	330
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	733	333	333
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	67	55	55
B2/B66A 8843 RRH (Shielded)	14.9	1.5	10.9	0.16	1.13	9.93	1.37	1.50	1.20	10	55	55
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	67	53	53
B5/B12 4449 RRH (Shielded)	14.9	0.0	10.4	0.00	1.08	0.00	1.43	1.20	1.20	0	53	53
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	18	23	23

WIND LOADS WITH ICE:

7770 Antenna	58.5	14.5	8.5	5.87	3.44	4.04	6.91	1.27	1.40	53	34	34
HPA65R-BU8A Antenna	99.5	15.2	11.1	10.48	7.64	6.56	8.99	1.38	1.47	103	80	80
DMP65R-BU8DA Antenna	99.5	24.2	11.2	16.69	7.71	4.12	8.91	1.27	1.46	151	80	80
B2/B66A 8843 RRH	18.4	16.7	14.4	2.13	1.83	1.10	1.28	1.20	1.20	18	16	16
B2/B66A 8843 RRH (Shielded)	18.4	5.0	14.4	0.63	1.83	3.70	1.28	1.25	1.20	6	16	16
B5/B12 4449 RRH	18.4	16.7	13.9	2.13	1.77	1.10	1.32	1.20	1.20	18	15	15
B5/B12 4449 RRH (Shielded)	18.4	3.5	13.9	0.44	1.77	5.30	1.32	1.32	1.20	4	15	15
TT19-08BP111-001 TMA	13.4	8.9	10.2	0.82	0.94	1.51	1.31	1.20	1.20	7	8	8

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	14	8	8
HPA65R-BU8A Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	29	21	21
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	46	21	21
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	3	3
B2/B66A 8843 RRH (Shielded)	14.9	1.5	10.9	0.16	1.13	9.93	1.37	1.50	1.20	1	3	3
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	4	3	3
B5/B12 4449 RRH (Shielded)	14.9	0.0	10.4	0.00	1.08	0.00	1.43	1.20	1.20	0	3	3
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	1	1	1

Date: 10/9/2020
Project Name: GRANBY EAST
Project No.: CT1219
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	120	(deg)	Ice Thickness =	1.73	in.	Equivalent Angle =	300	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	226	120	147
HPA65R-BU8A Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	461	330	363
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	733	333	433
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	67	55	58
B2/B66A 8843 RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	50	55	54
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	67	53	57
B5/B12 4449 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	50	53	52
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	18	23	22

WIND LOADS WITH ICE:

7770 Antenna	58.5	14.5	8.5	5.87	3.44	4.04	6.91	1.27	1.40	53	34	39
HPA65R-BU8A Antenna	99.5	15.2	11.1	10.48	7.64	6.56	8.99	1.38	1.47	103	80	86
DMP65R-BU8DA Antenna	99.5	24.2	11.2	16.69	7.71	4.12	8.91	1.27	1.46	151	80	98
B2/B66A 8843 RRH	18.4	16.7	14.4	2.13	1.83	1.10	1.28	1.20	1.20	18	16	16
B2/B66A 8843 RRH (Shielded)	18.4	12.5	14.4	1.59	1.83	1.47	1.28	1.20	1.20	14	16	15
B5/B12 4449 RRH	18.4	16.7	13.9	2.13	1.77	1.10	1.32	1.20	1.20	18	15	16
B5/B12 4449 RRH (Shielded)	18.4	12.5	13.9	1.59	1.77	1.47	1.32	1.20	1.20	14	15	15
TT19-08BP111-001 TMA	13.4	8.9	10.2	0.82	0.94	1.51	1.31	1.20	1.20	7	8	8

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	14	8	9
HPA65R-BU8A Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	29	21	23
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	46	21	27
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	3	4
B2/B66A 8843 RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	3	3	3
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	4	3	4
B5/B12 4449 RRH (Shielded)	14.9	9.9	10.4	1.02	1.08	1.51	1.43	1.20	1.20	3	3	3
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	1	1	1

Date: 10/9/2020
Project Name: GRANBY EAST
Project No.: CT1219
Designed By: LBW Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	150	(deg)	Ice Thickness =	1.73	in.	Equivalent Angle =	330	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	226	120	199
HPA65R-BU8A Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	461	330	428
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	733	333	633
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	67	55	64
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	34	55	39
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	67	53	64
B5/B12 4449 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	34	53	38
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	18	23	19

WIND LOADS WITH ICE:

7770 Antenna	58.5	14.5	8.5	5.87	3.44	4.04	6.91	1.27	1.40	53	34	48
HPA65R-BU8A Antenna	99.5	15.2	11.1	10.48	7.64	6.56	8.99	1.38	1.47	103	80	97
DMP65R-BU8DA Antenna	99.5	24.2	11.2	16.69	7.71	4.12	8.91	1.27	1.46	151	80	133
B2/B66A 8843 RRH	18.4	16.7	14.4	2.13	1.83	1.10	1.28	1.20	1.20	18	16	18
B2/B66A 8843 RRH (Shielded)	18.4	8.3	14.4	1.06	1.83	2.20	1.28	1.20	1.20	9	16	11
B5/B12 4449 RRH	18.4	16.7	13.9	2.13	1.77	1.10	1.32	1.20	1.20	18	15	17
B5/B12 4449 RRH (Shielded)	18.4	8.3	13.9	1.06	1.77	2.20	1.32	1.20	1.20	9	15	11
TT19-08BP111-001 TMA	13.4	8.9	10.2	0.82	0.94	1.51	1.31	1.20	1.20	7	8	7

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	14	8	12
HPA65R-BU8A Antenna	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	29	21	27
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	46	21	40
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	4	3	4
B2/B66A 8843 RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	2	3	2
B5/B12 4449 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	4	3	4
B5/B12 4449 RRH (Shielded)	14.9	6.6	10.4	0.68	1.08	2.26	1.43	1.20	1.20	2	3	2
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	1	1	1

Date: 10/8/2020
Project Name: GRANBY EAST
Project No.: CT1219
Designed By: LBW **Checked By:** MSC

HUDSON Design Group LLC

ICE WEIGHT CALCULATIONS

Thickness of ice: 1.73 in.
Density of ice: 56 pcf

7770 Antenna

Weight of ice based on total radial SF area:

Height (in):	55.0	
Width (in):	11.0	
Depth (in):	5.0	
Total weight of ice on object:		134 lbs
Weight of object:	35.0 lbs	
Combined weight of ice and object:		169 lbs

HPA65R-BU8A Antenna

Weight of ice based on total radial SF area:

Height (in):	96.0	
Width (in):	11.7	
Depth (in):	7.6	
Total weight of ice on object:		265 lbs
Weight of object:	54.0 lbs	
Combined weight of ice and object:		319 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:		403 lbs
Weight of object:	96.0 lbs	
Combined weight of ice and object:		499 lbs

B2/B66A 8843 RRH

Weight of ice based on total radial SF area:

Height (in):	14.9	
Width (in):	13.2	
Depth (in):	10.9	
Total weight of ice on object:		49 lbs
Weight of object:	72.0 lbs	
Combined weight of ice and object:		121 lbs

B5/B12 4449 RRH

Weight of ice based on total radial SF area:

Height (in):	14.9	
Width (in):	13.2	
Depth (in):	10.4	
Total weight of ice on object:		49 lbs
Weight of object:	73.0 lbs	
Combined weight of ice and object:		122 lbs

TT19-08BP111-001 TMA

Weight of ice based on total radial SF area:

Height (in):	9.9	
Width (in):	5.4	
Depth (in):	6.7	
Total weight of ice on object:		18 lbs
Weight of object:	16.0 lbs	
Combined weight of ice and object:		34 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:		48 lbs
Weight of object:	33 lbs	
Combined weight of ice and object:		81 lbs

2" pipe

Per foot weight of ice:

diameter (in):	2.38	
Per foot weight of ice on object:		9 plf

2" pipe

Per foot weight of ice:

diameter (in):	2.38	
Per foot weight of ice on object:		9 plf

2-1/2" pipe

Per foot weight of ice:

diameter (in):	2.88	
Per foot weight of ice on object:		10 plf

C 5x6.7

Weight of ice based on total radial SF area:

Height (in):	5	
Width (in):	1.75	
Per foot weight of ice on object:		15 plf

HSS 3x3

Weight of ice based on total radial SF area:

Height (in):	3	
Width (in):	3	
Per foot weight of ice on object:		13 plf

PL 6x1

Weight of ice based on total radial SF area:

Height (in):	1	
Width (in):	6	
Per foot weight of ice on object:		17 plf

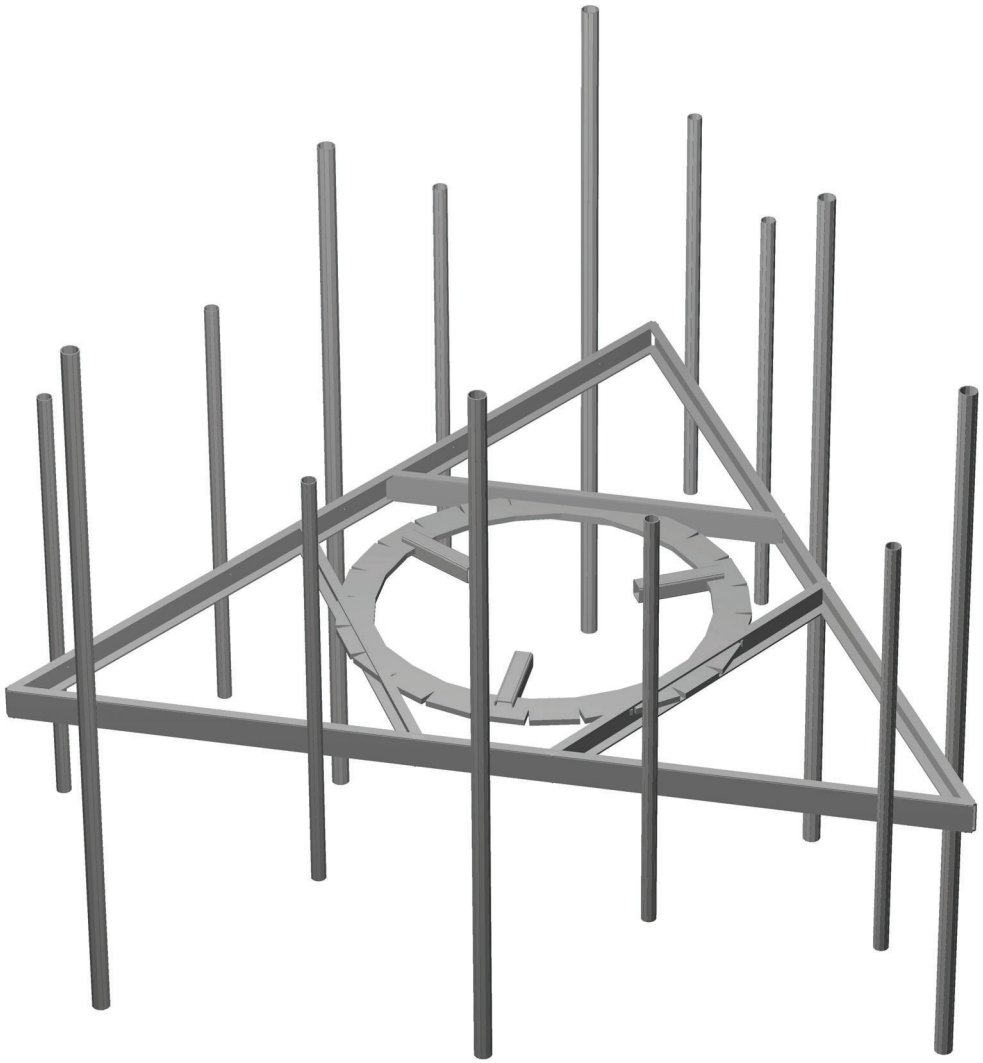
L 2-1/2x2-1/2 Angles

Weight of ice based on total radial SF area:

Height (in):	2.5	
Width (in):	2.5	
Per foot weight of ice on object:		11 plf

HUDSON
Design Group LLC

Mount Calculations
(Existing Conditions)


Y
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Current Date: 10/7/2020 10:29 AM
Units system: English
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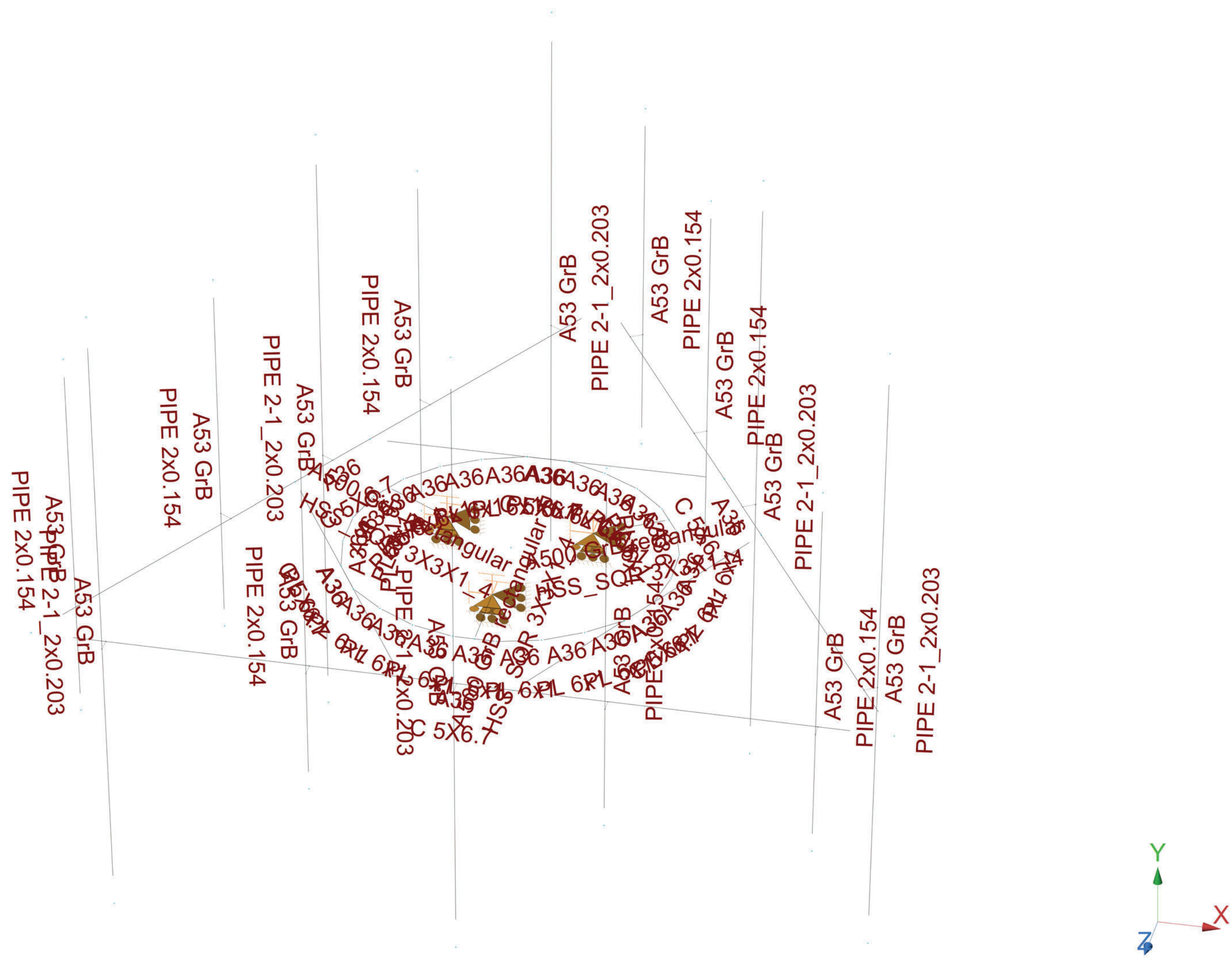
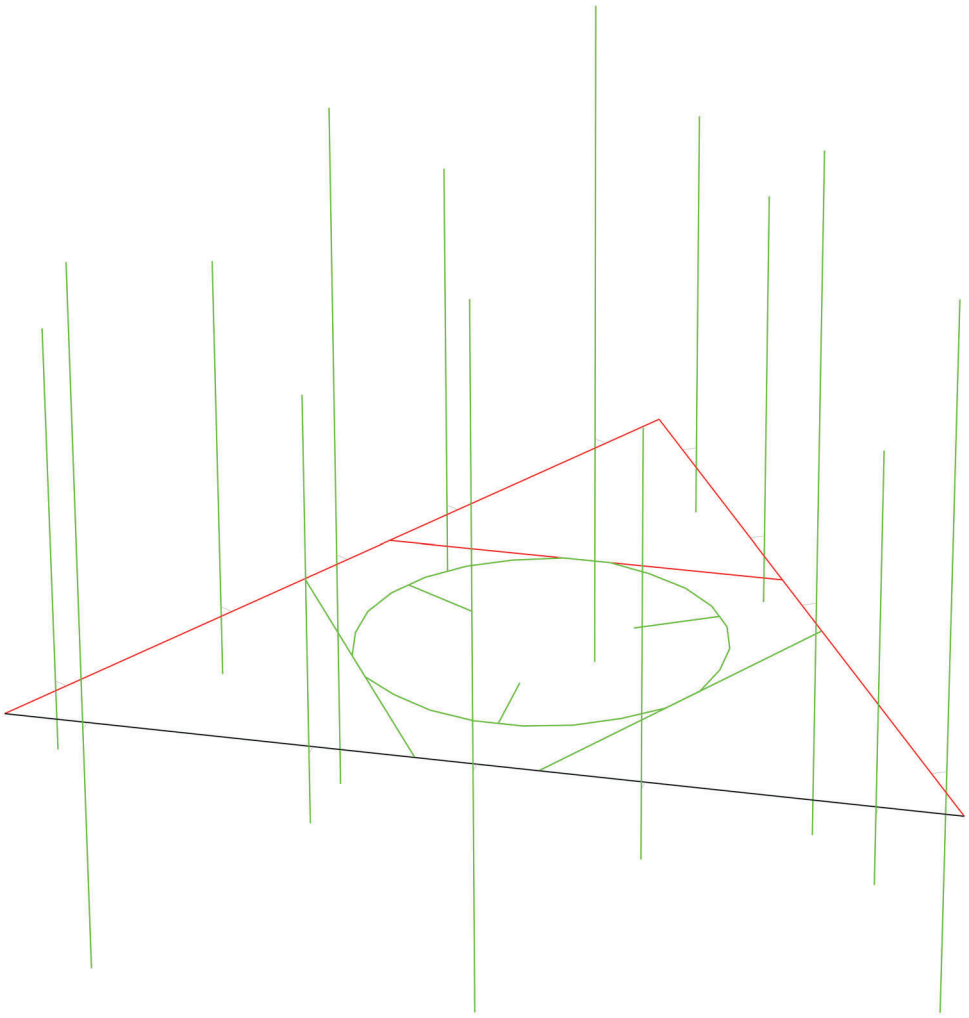
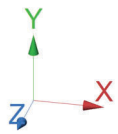
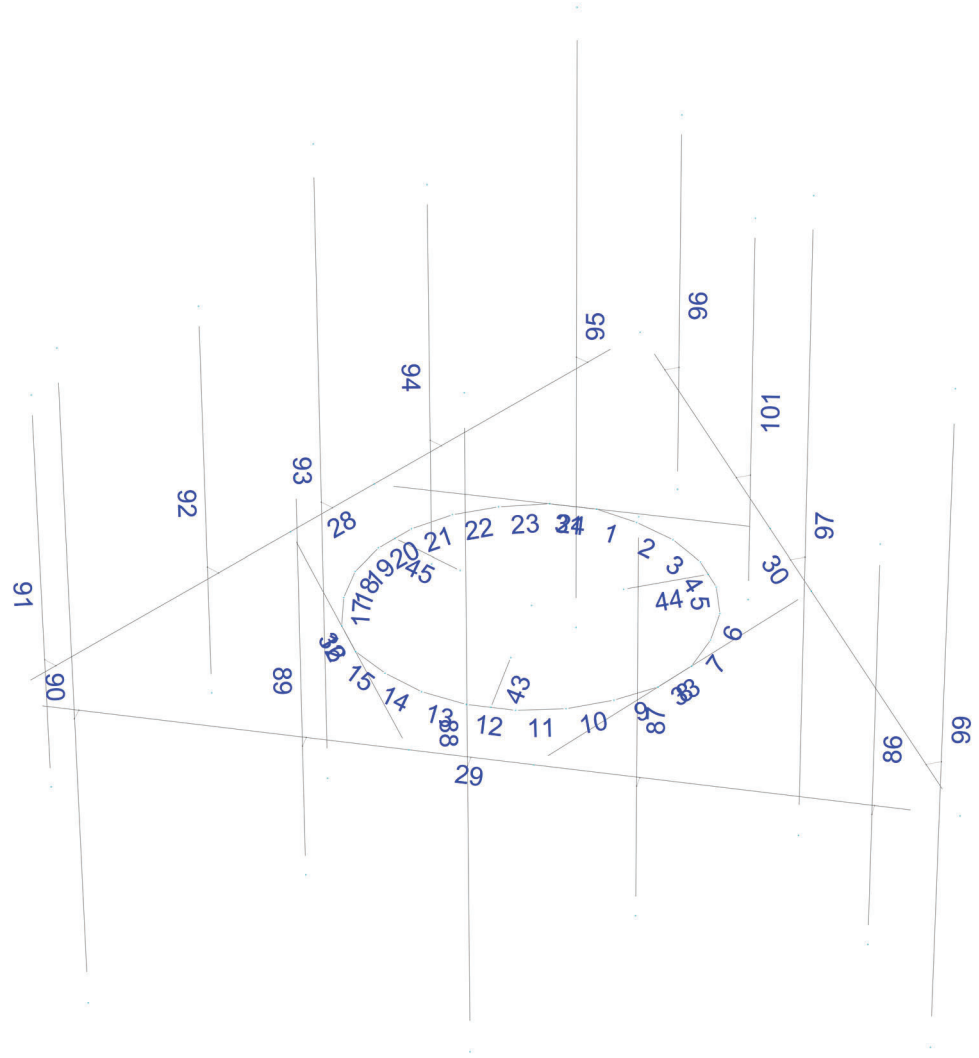





Y
X
Z


95
96
94
101
93
92
28
97
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86
99
Y
X
Z

Current Date: 10/12/2020 1:50 PM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1219\LTE 3C-4C-5G\CT1219 (LTE 3C-4C-5G).retx

Load data

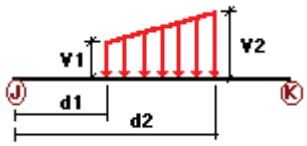
GLOSSARY

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

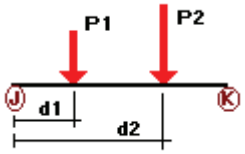


Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
DL	28	y	-0.01	0.00	0.00	No	0.00	No
	29	y	-0.01	0.00	0.00	No	0.00	No
	30	y	-0.01	0.00	0.00	No	0.00	No
	31	y	-0.01	0.00	0.00	No	0.00	No
	32	y	-0.01	0.00	0.00	No	0.00	No
	33	y	-0.01	0.00	0.00	No	0.00	No
W0	28	z	-0.034	0.00	0.00	No	0.00	No
	29	z	-0.034	0.00	0.00	No	0.00	No
	30	z	-0.034	0.00	0.00	No	0.00	No
	31	z	-0.031	0.00	0.00	No	0.00	No
	32	z	-0.031	0.00	0.00	No	0.00	No
	33	z	-0.031	0.00	0.00	No	0.00	No
	87	z	-0.01	0.00	0.00	No	0.00	No
	89	z	-0.01	0.00	0.00	No	0.00	No

	91	z	-0.01	0.00	0.00	No	0.00	No
	92	z	-0.01	0.00	0.00	No	0.00	No
	93	z	-0.012	0.00	0.00	No	0.00	No
	94	z	-0.01	0.00	0.00	No	0.00	No
	95	z	-0.012	0.00	0.00	No	0.00	No
	96	z	-0.01	0.00	0.00	No	0.00	No
	97	z	-0.012	0.00	0.00	No	0.00	No
	99	z	-0.012	0.00	0.00	No	0.00	No
	101	z	-0.01	0.00	0.00	No	0.00	No
W30	28	x	-0.034	0.00	0.00	No	0.00	No
	29	x	-0.034	0.00	0.00	No	0.00	No
	30	x	-0.034	0.00	0.00	No	0.00	No
	31	x	-0.031	0.00	0.00	No	0.00	No
	32	x	-0.031	0.00	0.00	No	0.00	No
	33	x	-0.031	0.00	0.00	No	0.00	No
	86	x	-0.01	0.00	0.00	No	0.00	No
	87	x	-0.01	0.00	0.00	No	0.00	No
	88	x	-0.012	0.00	0.00	No	0.00	No
	89	x	-0.01	0.00	0.00	No	0.00	No
	90	x	-0.012	0.00	0.00	No	0.00	No
	91	x	-0.01	0.00	0.00	No	0.00	No
	92	x	-0.01	0.00	0.00	No	0.00	No
	93	x	-0.012	0.00	0.00	No	0.00	No
	94	x	-0.01	0.00	0.00	No	0.00	No
	95	x	-0.012	0.00	0.00	No	0.00	No
	96	x	-0.01	0.00	0.00	No	0.00	No
	97	x	-0.012	0.00	0.00	No	0.00	No
	99	x	-0.012	0.00	0.00	No	0.00	No
	101	x	-0.01	0.00	0.00	No	0.00	No
Di	1	y	-0.017	0.00	0.00	No	0.00	No
	2	y	-0.017	0.00	0.00	No	0.00	No
	3	y	-0.017	0.00	0.00	No	0.00	No
	4	y	-0.017	0.00	0.00	No	0.00	No
	5	y	-0.017	0.00	0.00	No	0.00	No
	6	y	-0.017	0.00	0.00	No	0.00	No
	7	y	-0.017	0.00	0.00	No	0.00	No
	8	y	-0.017	0.00	0.00	No	0.00	No
	9	y	-0.017	0.00	0.00	No	0.00	No
	10	y	-0.017	0.00	0.00	No	0.00	No
	11	y	-0.017	0.00	0.00	No	0.00	No
	12	y	-0.017	0.00	0.00	No	0.00	No
	13	y	-0.017	0.00	0.00	No	0.00	No
	14	y	-0.017	0.00	0.00	No	0.00	No
	15	y	-0.017	0.00	0.00	No	0.00	No
	16	y	-0.017	0.00	0.00	No	0.00	No
	17	y	-0.017	0.00	0.00	No	0.00	No
	18	y	-0.017	0.00	0.00	No	0.00	No
	19	y	-0.017	0.00	0.00	No	0.00	No
	20	y	-0.017	0.00	0.00	No	0.00	No
	21	y	-0.017	0.00	0.00	No	0.00	No
	22	y	-0.017	0.00	0.00	No	0.00	No
	23	y	-0.017	0.00	0.00	No	0.00	No
	24	y	-0.017	0.00	0.00	No	0.00	No
	28	y	-0.015	0.00	0.00	No	0.00	No
	29	y	-0.015	0.00	0.00	No	0.00	No
	30	y	-0.015	0.00	0.00	No	0.00	No
	31	y	-0.015	0.00	0.00	No	0.00	No
	32	y	-0.015	0.00	0.00	No	0.00	No
	33	y	-0.015	0.00	0.00	No	0.00	No
	43	y	-0.013	0.00	0.00	No	0.00	No

44	y	-0.013	0.00	0.00	No	0.00	No
45	y	-0.013	0.00	0.00	No	0.00	No
86	y	-0.009	0.00	0.00	No	0.00	No
87	y	-0.009	0.00	0.00	No	0.00	No
88	y	-0.01	0.00	0.00	No	0.00	No
89	y	-0.009	0.00	0.00	No	0.00	No
90	y	-0.01	0.00	0.00	No	0.00	No
91	y	-0.009	0.00	0.00	No	0.00	No
92	y	-0.009	0.00	0.00	No	0.00	No
93	y	-0.01	0.00	0.00	No	0.00	No
94	y	-0.009	0.00	0.00	No	0.00	No
95	y	-0.01	0.00	0.00	No	0.00	No
96	y	-0.009	0.00	0.00	No	0.00	No
97	y	-0.01	0.00	0.00	No	0.00	No
99	y	-0.01	0.00	0.00	No	0.00	No
101	y	-0.009	0.00	0.00	No	0.00	No

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	86	y	-0.018	1.00	No
		y	-0.018	4.50	No
		y	-0.016	3.00	No
	88	y	-0.027	1.50	No
		y	-0.027	8.50	No
		y	-0.072	3.00	No
	90	y	-0.048	1.50	No
		y	-0.048	8.50	No
		y	-0.073	3.00	No
	91	y	-0.018	1.00	No
		y	-0.018	4.50	No
		y	-0.016	3.00	No
	93	y	-0.027	1.50	No
		y	-0.027	8.50	No
		y	-0.072	3.00	No
	95	y	-0.048	1.50	No
		y	-0.048	8.50	No
		y	-0.073	3.00	No
	96	y	-0.018	1.00	No
		y	-0.018	4.50	No
		y	-0.016	3.00	No
	97	y	-0.027	1.50	No
		y	-0.027	8.50	No
		y	-0.072	3.00	No
	99	y	-0.048	1.50	No
		y	-0.048	8.50	No
		y	-0.073	3.00	No
	101	y	-0.033	2.00	No
W0	86	z	-0.113	1.00	No

		z	-0.113	4.50	No
	88	z	-0.231	1.50	No
		z	-0.231	8.50	No
		z	-0.01	3.00	No
	90	z	-0.367	1.50	No
		z	-0.367	8.50	No
	91	z	-0.074	1.00	No
		z	-0.074	4.50	No
		z	-0.022	3.00	No
	93	z	-0.182	1.50	No
		z	-0.182	8.50	No
		z	-0.054	3.00	No
	95	z	-0.217	1.50	No
		z	-0.217	8.50	No
		z	-0.052	3.00	No
	96	z	-0.074	1.00	No
		z	-0.074	4.50	No
		z	-0.022	3.00	No
	97	z	-0.182	1.50	No
		z	-0.182	8.50	No
		z	-0.054	3.00	No
	99	z	-0.217	1.50	No
		z	-0.217	8.50	No
		z	-0.052	3.00	No
	101	z	-0.046	2.00	No
W30	86	x	-0.061	1.00	No
		x	-0.061	4.50	No
		x	-0.023	3.00	No
	88	x	-0.165	1.50	No
		x	-0.165	8.50	No
		x	-0.055	3.00	No
	90	x	-0.167	1.50	No
		x	-0.167	8.50	No
		x	-0.053	3.00	No
	91	x	-0.10	1.00	No
		x	-0.10	4.50	No
		x	-0.019	3.00	No
	93	x	-0.214	1.50	No
		x	-0.214	8.50	No
		x	-0.039	3.00	No
	95	x	-0.317	1.50	No
		x	-0.317	8.50	No
		x	-0.038	3.00	No
	96	x	-0.10	1.00	No
		x	-0.10	4.50	No
		x	-0.019	3.00	No
	97	x	-0.214	1.50	No
		x	-0.214	8.50	No
		x	-0.039	3.00	No
	99	x	-0.317	1.50	No
		x	-0.317	8.50	No
		x	-0.038	3.00	No
	101	x	-0.046	2.00	No
Di	86	y	-0.067	1.00	No
		y	-0.067	4.50	No
		y	-0.018	3.00	No
	88	y	-0.133	1.50	No
		y	-0.133	8.50	No
		y	-0.049	3.00	No
	90	y	-0.201	1.50	No

		y	-0.201	8.50	No
		y	-0.049	3.00	No
	91	y	-0.067	1.00	No
		y	-0.067	4.50	No
		y	-0.018	3.00	No
	93	y	-0.133	1.50	No
		y	-0.133	8.50	No
		y	-0.049	3.00	No
	95	y	-0.201	1.50	No
		y	-0.201	8.50	No
		y	-0.049	3.00	No
	96	y	-0.067	1.00	No
		y	-0.067	4.50	No
		y	-0.018	3.00	No
	97	y	-0.133	1.50	No
		y	-0.133	8.50	No
		y	-0.049	3.00	No
	99	y	-0.201	1.50	No
		y	-0.201	8.50	No
		y	-0.049	3.00	No
	101	y	-0.048	2.00	No
Wi0	86	z	-0.028	1.00	No
		z	-0.028	4.50	No
	88	z	-0.054	1.50	No
		z	-0.054	8.50	No
		z	-0.007	3.00	No
	90	z	-0.077	1.50	No
		z	-0.077	8.50	No
		z	-0.004	3.00	No
	91	z	-0.02	1.00	No
		z	-0.02	4.50	No
		z	-0.008	3.00	No
	93	z	-0.043	1.50	No
		z	-0.043	8.50	No
		z	-0.015	3.00	No
	95	z	-0.05	1.50	No
		z	-0.05	8.50	No
		z	-0.015	3.00	No
	96	z	-0.02	1.00	No
		z	-0.02	4.50	No
		z	-0.008	3.00	No
	97	z	-0.043	1.50	No
		z	-0.043	8.50	No
		z	-0.015	3.00	No
	99	z	-0.05	1.50	No
		z	-0.05	8.50	No
		z	-0.015	3.00	No
	101	z	-0.013	2.00	No
Wi30	86	x	-0.018	1.00	No
		x	-0.018	4.50	No
		x	-0.008	3.00	No
	88	x	-0.04	1.50	No
		x	-0.04	8.50	No
		x	-0.016	3.00	No
	90	x	-0.041	1.50	No
		x	-0.041	8.50	No
		x	-0.015	3.00	No
	91	x	-0.025	1.00	No
		x	-0.025	4.50	No
		x	-0.007	3.00	No

	93	x	-0.049	1.50	No
		x	-0.049	8.50	No
		x	-0.011	3.00	No
	95	x	-0.067	1.50	No
		x	-0.067	8.50	No
		x	-0.011	3.00	No
	96	x	-0.025	1.00	No
		x	-0.025	4.50	No
		x	-0.007	3.00	No
	97	x	-0.049	1.50	No
		x	-0.049	8.50	No
		x	-0.011	3.00	No
	99	x	-0.067	1.50	No
		x	-0.067	8.50	No
		x	-0.011	3.00	No
	101	x	-0.013	2.00	No
WL0	86	z	-0.008	1.00	No
		z	-0.008	4.50	No
	88	z	-0.015	1.50	No
		z	-0.015	8.50	No
		z	-0.001	3.00	No
	90	z	-0.023	1.50	No
		z	-0.023	8.50	No
	91	z	-0.005	1.00	No
		z	-0.005	4.50	No
		z	-0.001	3.00	No
	93	z	-0.012	1.50	No
		z	-0.012	8.50	No
		z	-0.003	3.00	No
	95	z	-0.014	1.50	No
		z	-0.013	8.50	No
		z	-0.003	3.00	No
	96	z	-0.005	1.00	No
		z	-0.005	4.50	No
		z	-0.001	3.00	No
	97	z	-0.012	1.50	No
		z	-0.012	8.50	No
		z	-0.003	3.00	No
	99	z	-0.014	1.50	No
		z	-0.013	8.50	No
		z	-0.003	3.00	No
	101	z	-0.003	2.00	No
WL30	86	x	-0.004	1.00	No
		x	-0.004	4.50	No
		x	-0.001	3.00	No
	88	x	-0.011	1.50	No
		x	-0.011	8.50	No
		x	-0.003	3.00	No
	90	x	-0.011	1.50	No
		x	-0.011	8.50	No
		x	-0.003	3.00	No
	91	x	-0.007	1.00	No
		x	-0.007	4.50	No
		x	-0.001	3.00	No
	93	x	-0.014	1.50	No
		x	-0.014	8.50	No
		x	-0.002	3.00	No
	95	x	-0.02	1.50	No
		x	-0.02	8.50	No
		x	-0.002	3.00	No

	96	x	-0.007	1.00	No
		x	-0.007	4.50	No
		x	-0.001	3.00	No
	97	x	-0.014	1.50	No
		x	-0.014	8.50	No
		x	-0.002	3.00	No
	99	x	-0.02	1.50	No
		x	-0.02	8.50	No
		x	-0.002	3.00	No
	101	x	-0.003	2.00	No
LL1	29	y	-0.25	50.00	Yes
LL2	29	y	-0.25	0.00	Yes
LLa1	86	y	-0.25	50.00	Yes
LLa2	88	y	-0.25	50.00	Yes
LLa3	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

Current Date: 10/12/2020 1:50 PM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1219\LTE 3C-4C-5G\CT1219 (LTE 3C-4C-5G).retx

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 5X6.7	**28**	LC1 at 56.25%	**1.13**	**N.G.**	Eq. H1-1b
		29	LC4 at 56.25%	0.96	With warnings	Eq. H1-1b
		30	LC4 at 56.25%	1.10	N.G.	Eq. H1-1b
		31	LC1 at 43.75%	1.07	N.G.	Eq. H1-1b
		32	LC2 at 43.75%	0.92	OK	Eq. H1-1b
		33	LC4 at 43.75%	0.99	OK	Eq. H1-1b
	HSS_SQR 3X3X1_4	**43**	LC3 at 0.00%	0.60	OK	Eq. H1-1b
		44	LC4 at 100.00%	**0.71**	**OK**	Eq. H1-1b
		45	LC2 at 100.00%	0.70	OK	Eq. H1-1b
	PIPE 2-1_2x0.203	**88**	LC2 at 62.50%	0.51	OK	Eq. H1-1b
		90	LC3 at 62.50%	0.73	OK	Eq. H1-1b
		93	LC4 at 62.50%	0.58	OK	Eq. H1-1b
		95	LC4 at 62.50%	0.79	OK	Eq. H1-1b
		97	LC2 at 62.50%	0.58	OK	Eq. H1-1b
		99	LC2 at 62.50%	**0.79**	**OK**	Eq. H1-1b

PIPE 2x0.154	**86**	LC1 at 81.25%	0.39	OK	Eq. H1-1b
	87	LC1 at 81.25%	0.10	OK	Eq. H1-1b
	89	LC1 at 81.25%	0.10	OK	Eq. H1-1b
	91	LC4 at 81.25%	**0.47**	**OK**	Eq. H1-1b
	92	LC1 at 81.25%	0.10	OK	Eq. H1-1b
	94	LC3 at 81.25%	0.10	OK	Eq. H1-1b
	96	LC2 at 81.25%	0.47	OK	Eq. H1-1b
	101	LC2 at 81.25%	0.20	OK	Eq. H1-1b
PL 6x1	**1**	LC4 at 0.00%	0.55	OK	Eq. H1-1b
	2	LC4 at 100.00%	0.22	OK	Eq. H1-1b
	3	LC9 at 100.00%	0.58	OK	Eq. H1-1b
	4	LC4 at 46.88%	0.84	OK	Eq. H1-1b
	5	LC4 at 0.00%	0.63	OK	Eq. H1-1b
	6	LC12 at 100.00%	0.21	OK	Eq. H1-1b
	7	LC4 at 100.00%	0.63	OK	Eq. H1-1b
	8	LC4 at 100.00%	0.07	OK	Eq. H1-1b
	9	LC3 at 0.00%	0.58	OK	Eq. H1-1b
	10	LC3 at 100.00%	0.21	OK	Eq. H1-1b
	11	LC3 at 100.00%	0.57	OK	Eq. H1-1b
	12	LC3 at 50.00%	0.77	OK	Eq. H1-1b
	13	LC3 at 0.00%	0.56	OK	Eq. H1-1b
	14	LC3 at 0.00%	0.22	OK	Eq. H1-1b
	15	LC3 at 100.00%	0.59	OK	Eq. H1-1b
	16	LC2 at 0.00%	0.07	OK	Eq. H1-1b
	17	LC2 at 0.00%	0.63	OK	Eq. H1-1b
	18	LC10 at 0.00%	0.22	OK	Eq. H1-1b
	19	LC2 at 100.00%	0.64	OK	Eq. H1-1b
	20	LC2 at 50.00%	**0.86**	**OK**	Eq. H1-1b
	21	LC9 at 0.00%	0.58	OK	Eq. H1-1b
	22	LC9 at 100.00%	0.22	OK	Eq. H1-1b
	23	LC2 at 100.00%	0.56	OK	Eq. H1-1b
	24	LC1 at 0.00%	0.06	OK	Eq. H1-1b

Current Date: 10/7/2020 10:30 AM
Units system: English
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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	-2.458	0.00	-0.3236	0
2	-1.9669	0.00	-1.5092	0
3	-0.9487	0.00	-2.2905	0
4	0.3534	0.00	-2.5096	0
5	1.5092	0.00	-1.9669	0
6	2.2905	0.00	-0.9487	0
7	2.458	0.00	0.3236	0
8	-2.322	0.00	0.9948	0
9	-1.5092	0.00	1.9669	0
10	-0.3236	0.00	2.458	0
11	0.9487	0.00	2.2905	0
12	2.0032	0.00	1.5513	0
13	0.9487	0.00	-2.2905	0
14	1.9669	0.00	-1.5092	0
15	2.458	0.00	-0.3236	0
16	0.3236	0.00	2.458	0
17	1.5092	0.00	1.9669	0
18	2.3335	0.00	0.9773	0
19	-0.294	0.00	-2.5092	0
20	-0.9487	0.00	2.2905	0
21	-1.5092	0.00	-1.9669	0

22	-2.0002	0.00	1.5531	0
23	-2.2905	0.00	-0.9487	0
24	-2.458	0.00	0.3236	0
28	-6.2604	0.00	3.6205	0
29	-3.5328	0.00	-1.1039	0
30	-2.7224	0.00	-2.5076	0
31	0.00	0.00	-7.2274	0
32	2.7263	0.00	-2.5098	0
33	3.5367	0.00	-1.1061	0
34	6.2643	0.00	3.6182	0
35	0.8104	0.00	3.6205	0
36	-0.8104	0.00	3.6205	0
79	1.03E-07	0.00	2.458	0
83	6.81E-08	0.00	1.2727	0
84	2.1287	0.00	-1.229	0
86	1.1022	0.00	-0.6363	0
87	-2.1287	0.00	-1.229	0
89	-1.1022	0.00	-0.6363	0
99	0.00	0.00	0.00	0
106	5.8433	5.50	2.48	0
107	5.8433	-4.50	2.48	0
109	3.3086	5.50	-1.9102	0
111	3.3086	-4.50	-1.9102	0
112	0.7207	4.00	-6.3926	0
114	0.7207	-2.00	-6.3926	0
115	-0.7333	5.50	-6.3709	0
116	-0.7333	-4.50	-6.3709	0
119	-3.3086	5.50	-1.9102	0
120	-3.3086	-4.50	-1.9102	0
121	-5.8998	4.00	2.5778	0
122	-5.8998	-2.00	2.5778	0
124	-5.149	5.50	3.8205	0
125	-5.149	-4.50	3.8205	0
128	0.00	5.50	3.8205	0
129	0.00	-4.50	3.8205	0
130	5.181	4.00	3.8205	0
131	5.181	-2.00	3.8205	0
134	2.181	-2.00	3.8205	0
136	2.181	4.00	3.8205	0
139	-2.149	-2.00	3.8205	0
141	-2.149	4.00	3.8205	0
143	-4.3998	4.00	-0.0203	0
144	-4.3998	-2.00	-0.0203	0
147	-2.2333	4.00	-3.7728	0
148	-2.2333	-2.00	-3.7728	0
161	2.2207	4.00	-3.7945	0
163	2.2207	-2.00	-3.7945	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
83	1	1	1	1	1	1
86	1	1	1	1	1	1
89	1	1	1	1	1	1

Members

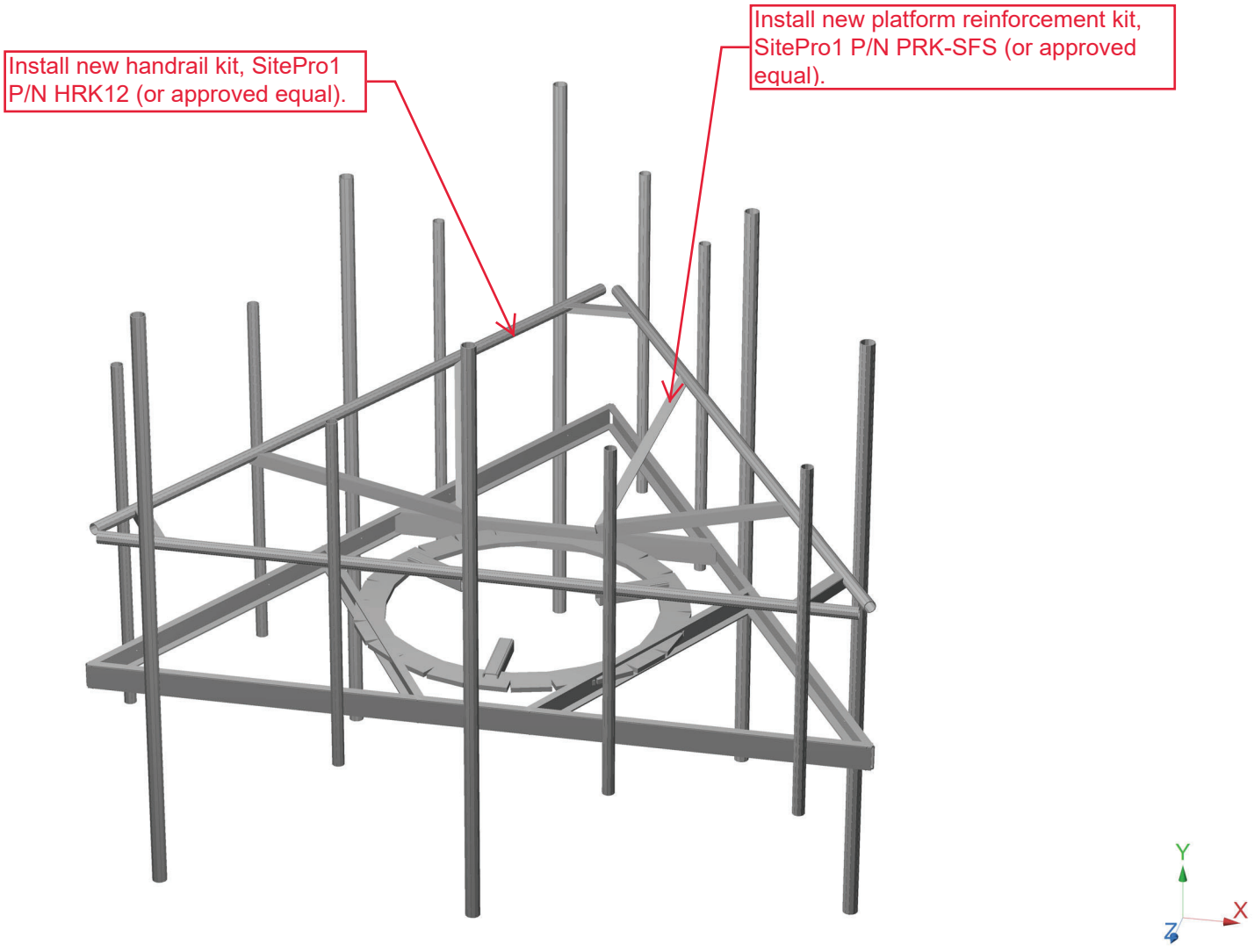
Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
1	4	13		PL 6x1	A36	0.00	0.00	0.00
2	5	13		PL 6x1	A36	0.00	0.00	0.00
3	5	14		PL 6x1	A36	0.00	0.00	0.00
4	6	14		PL 6x1	A36	0.00	0.00	0.00
5	6	15		PL 6x1	A36	0.00	0.00	0.00
6	7	15		PL 6x1	A36	0.00	0.00	0.00
7	7	18		PL 6x1	A36	0.00	0.00	0.00
8	12	18		PL 6x1	A36	0.00	0.00	0.00
9	12	17		PL 6x1	A36	0.00	0.00	0.00
10	11	17		PL 6x1	A36	0.00	0.00	0.00
11	11	16		PL 6x1	A36	0.00	0.00	0.00
12	10	16		PL 6x1	A36	0.00	0.00	0.00
13	10	20		PL 6x1	A36	0.00	0.00	0.00
14	9	20		PL 6x1	A36	0.00	0.00	0.00
15	9	22		PL 6x1	A36	0.00	0.00	0.00
16	8	22		PL 6x1	A36	0.00	0.00	0.00
17	8	24		PL 6x1	A36	0.00	0.00	0.00
18	1	24		PL 6x1	A36	0.00	0.00	0.00
19	1	23		PL 6x1	A36	0.00	0.00	0.00
20	2	23		PL 6x1	A36	0.00	0.00	0.00
21	2	21		PL 6x1	A36	0.00	0.00	0.00
22	3	21		PL 6x1	A36	0.00	0.00	0.00
23	3	19		PL 6x1	A36	0.00	0.00	0.00
24	4	19		PL 6x1	A36	0.00	0.00	0.00
28	31	28		C 5X6.7	A36	0.00	0.00	0.00
29	28	34		C 5X6.7	A36	0.00	0.00	0.00
30	34	31		C 5X6.7	A36	0.00	0.00	0.00
31	30	32		C 5X6.7	A36	0.00	0.00	0.00
32	29	36		C 5X6.7	A36	0.00	0.00	0.00
33	33	35		C 5X6.7	A36	0.00	0.00	0.00
43	83	79		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
44	84	86		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
45	87	89		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
86	130	131		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
87	136	134		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
88	128	129		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
89	141	139		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
90	124	125		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
91	121	122		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
92	143	144		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
93	119	120		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
94	147	148		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
95	115	116		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
96	112	114		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
97	109	111		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
99	106	107		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
101	161	163		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

Orientation of local axes

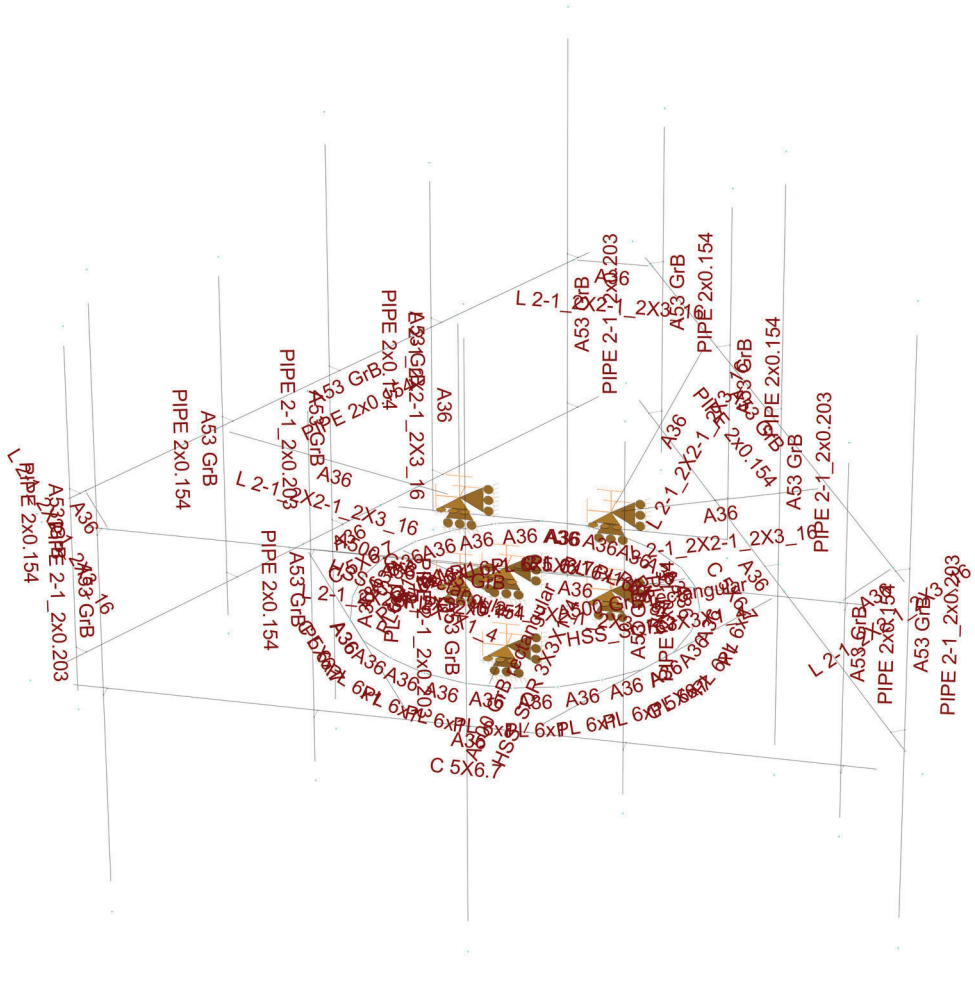
Member	Rotation [Deg]	Axes23	NX	NY	NZ
1	90.00	0	0.00	0.00	0.00
2	90.00	0	0.00	0.00	0.00
3	0.00	2	-0.7071	0.00	0.7071
4	0.00	2	0.866	0.00	-0.50
5	90.00	0	0.00	0.00	0.00
6	90.00	0	0.00	0.00	0.00
7	90.00	0	0.00	0.00	0.00
8	90.00	0	0.00	0.00	0.00
9	0.00	2	-0.6438	0.00	-0.7652
10	0.00	2	0.50	0.00	0.866
11	90.00	0	0.00	0.00	0.00
12	90.00	0	0.00	0.00	0.00
13	90.00	0	0.00	0.00	0.00
14	90.00	0	0.00	0.00	0.00
15	90.00	0	0.00	0.00	0.00
16	90.00	0	0.00	0.00	0.00
17	90.00	0	0.00	0.00	0.00
18	90.00	0	0.00	0.00	0.00
19	90.00	0	0.00	0.00	0.00
20	90.00	0	0.00	0.00	0.00
21	90.00	0	0.00	0.00	0.00
22	90.00	0	0.00	0.00	0.00
23	90.00	0	0.00	0.00	0.00
24	90.00	0	0.00	0.00	0.00
28	180.00	0	0.00	0.00	0.00
29	180.00	0	0.00	0.00	0.00
30	180.00	0	0.00	0.00	0.00
31	180.00	0	0.00	0.00	0.00
33	180.00	0	0.00	0.00	0.00
86	0.00	2	1.00	0.00	0.00
87	0.00	2	1.00	0.00	0.00
88	0.00	2	1.00	0.00	0.00
89	0.00	2	1.00	0.00	0.00
90	0.00	2	1.00	0.00	0.00
91	0.00	2	1.00	0.00	0.00
92	0.00	2	1.00	0.00	0.00
93	0.00	2	1.00	0.00	0.00
94	0.00	2	1.00	0.00	0.00
95	0.00	2	1.00	0.00	0.00
96	0.00	2	1.00	0.00	0.00
97	0.00	2	1.00	0.00	0.00
99	0.00	2	1.00	0.00	0.00
101	0.00	2	1.00	0.00	0.00

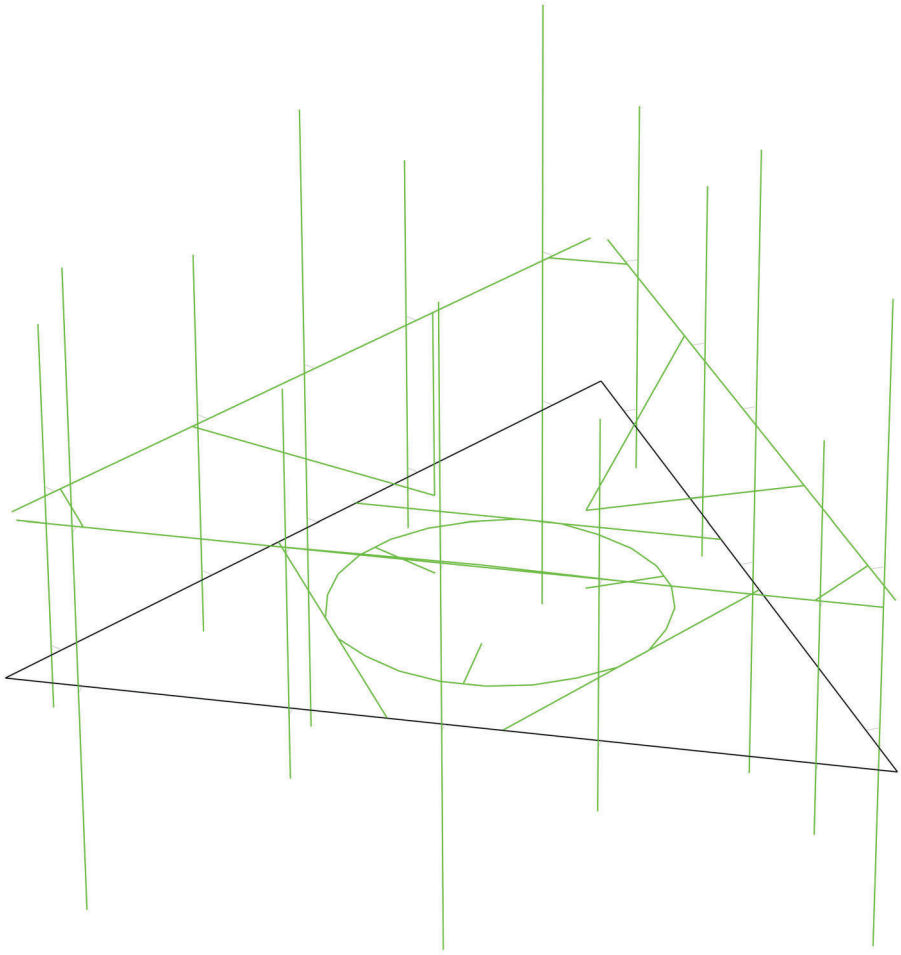
HUDSON
Design Group LLC

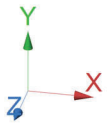
Mount Calculations
(Modified Conditions)


Install new handrail kit, SitePro1 P/N HRK12 (or approved equal).
Install new platform reinforcement kit, SitePro1 P/N PRK-SFS (or approved equal).
Y
X
Z

Current Date: 10/12/2020 2:57 PM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1219\LTE 3C-4C-5G\CT1219 (LTE 3C-4C-5G) - MODS






Y
X
Z

Current Date: 10/12/2020 2:57 PM
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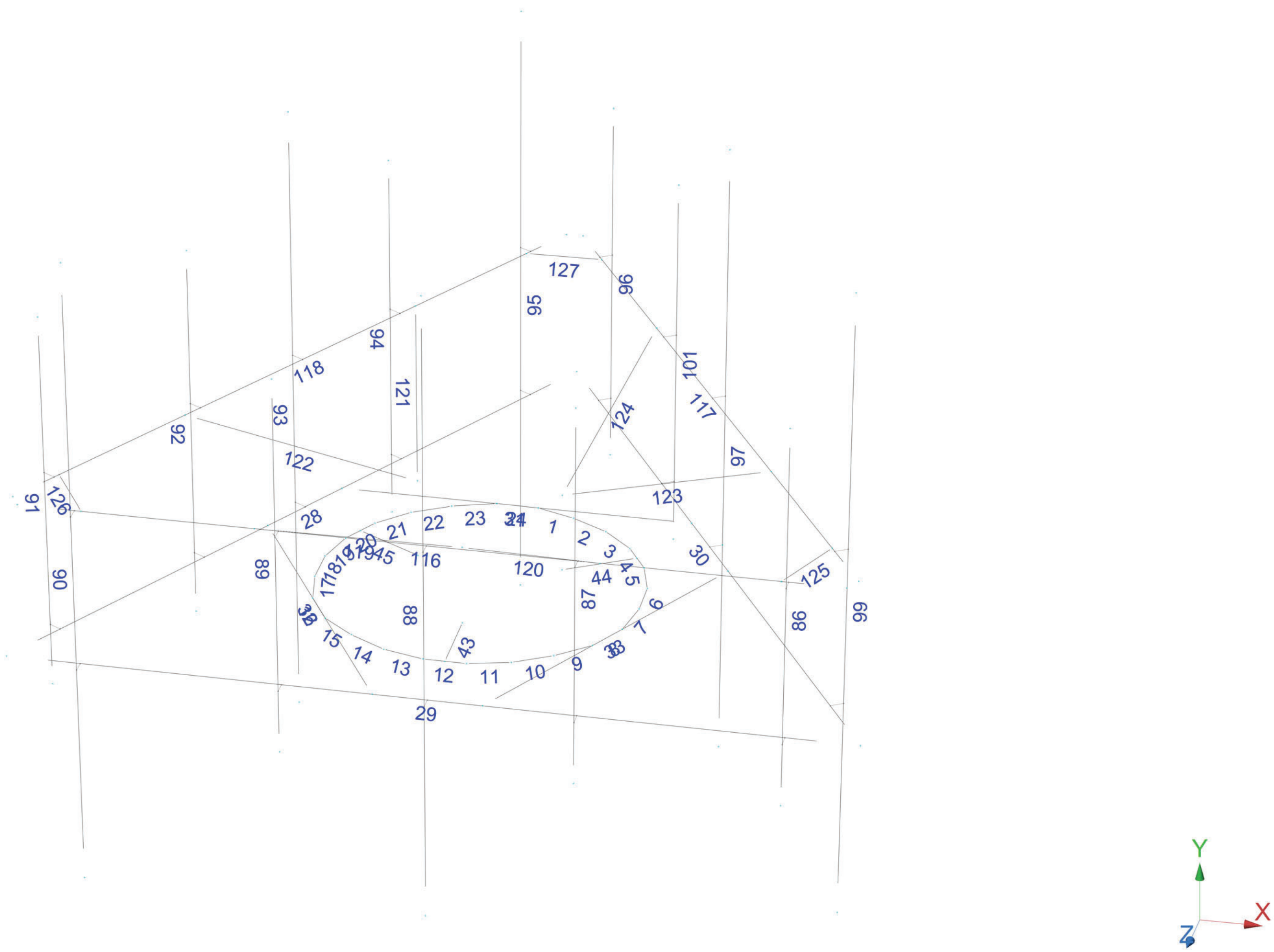

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Load data

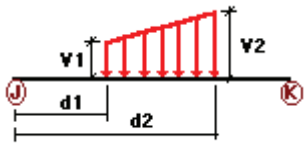
GLOSSARY

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

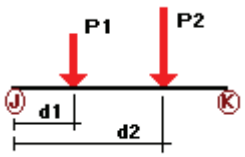


Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
DL	28	y	-0.01	0.00	0.00	No	0.00	No
	29	y	-0.01	0.00	0.00	No	0.00	No
	30	y	-0.01	0.00	0.00	No	0.00	No
	31	y	-0.01	0.00	0.00	No	0.00	No
	32	y	-0.01	0.00	0.00	No	0.00	No
	33	y	-0.01	0.00	0.00	No	0.00	No
W0	28	z	-0.034	0.00	0.00	No	0.00	No
	29	z	-0.034	0.00	0.00	No	0.00	No
	30	z	-0.034	0.00	0.00	No	0.00	No
	31	z	-0.031	0.00	0.00	No	0.00	No
	32	z	-0.031	0.00	0.00	No	0.00	No
	33	z	-0.031	0.00	0.00	No	0.00	No
	87	z	-0.01	0.00	0.00	No	0.00	No
	89	z	-0.01	0.00	0.00	No	0.00	No

	91	z	-0.01	0.00	0.00	No	0.00	No
	92	z	-0.01	0.00	0.00	No	0.00	No
	93	z	-0.012	0.00	0.00	No	0.00	No
	94	z	-0.01	0.00	0.00	No	0.00	No
	95	z	-0.012	0.00	0.00	No	0.00	No
	96	z	-0.01	0.00	0.00	No	0.00	No
	97	z	-0.012	0.00	0.00	No	0.00	No
	99	z	-0.012	0.00	0.00	No	0.00	No
	101	z	-0.01	0.00	0.00	No	0.00	No
	119	z	-0.017	0.00	0.00	No	0.00	No
	120	z	-0.017	0.00	0.00	No	0.00	No
	121	z	-0.017	0.00	0.00	No	0.00	No
	122	z	-0.017	0.00	0.00	No	0.00	No
	123	z	-0.017	0.00	0.00	No	0.00	No
	124	z	-0.017	0.00	0.00	No	0.00	No
W30	28	x	-0.034	0.00	0.00	No	0.00	No
	29	x	-0.034	0.00	0.00	No	0.00	No
	30	x	-0.034	0.00	0.00	No	0.00	No
	31	x	-0.031	0.00	0.00	No	0.00	No
	32	x	-0.031	0.00	0.00	No	0.00	No
	33	x	-0.031	0.00	0.00	No	0.00	No
	86	x	-0.01	0.00	0.00	No	0.00	No
	87	x	-0.01	0.00	0.00	No	0.00	No
	88	x	-0.012	0.00	0.00	No	0.00	No
	89	x	-0.01	0.00	0.00	No	0.00	No
	90	x	-0.012	0.00	0.00	No	0.00	No
	91	x	-0.01	0.00	0.00	No	0.00	No
	92	x	-0.01	0.00	0.00	No	0.00	No
	93	x	-0.012	0.00	0.00	No	0.00	No
	94	x	-0.01	0.00	0.00	No	0.00	No
	95	x	-0.012	0.00	0.00	No	0.00	No
	96	x	-0.01	0.00	0.00	No	0.00	No
	97	x	-0.012	0.00	0.00	No	0.00	No
	99	x	-0.012	0.00	0.00	No	0.00	No
	101	x	-0.01	0.00	0.00	No	0.00	No
	119	x	-0.017	0.00	0.00	No	0.00	No
	120	x	-0.017	0.00	0.00	No	0.00	No
	121	x	-0.017	0.00	0.00	No	0.00	No
	122	x	-0.017	0.00	0.00	No	0.00	No
	123	x	-0.017	0.00	0.00	No	0.00	No
	124	x	-0.017	0.00	0.00	No	0.00	No
Di	1	y	-0.017	0.00	0.00	No	0.00	No
	2	y	-0.017	0.00	0.00	No	0.00	No
	3	y	-0.017	0.00	0.00	No	0.00	No
	4	y	-0.017	0.00	0.00	No	0.00	No
	5	y	-0.017	0.00	0.00	No	0.00	No
	6	y	-0.017	0.00	0.00	No	0.00	No
	7	y	-0.017	0.00	0.00	No	0.00	No
	8	y	-0.017	0.00	0.00	No	0.00	No
	9	y	-0.017	0.00	0.00	No	0.00	No
	10	y	-0.017	0.00	0.00	No	0.00	No
	11	y	-0.017	0.00	0.00	No	0.00	No
	12	y	-0.017	0.00	0.00	No	0.00	No
	13	y	-0.017	0.00	0.00	No	0.00	No
	14	y	-0.017	0.00	0.00	No	0.00	No
	15	y	-0.017	0.00	0.00	No	0.00	No
	16	y	-0.017	0.00	0.00	No	0.00	No
	17	y	-0.017	0.00	0.00	No	0.00	No
	18	y	-0.017	0.00	0.00	No	0.00	No
	19	y	-0.017	0.00	0.00	No	0.00	No

20	y	-0.017	0.00	0.00	No	0.00	No
21	y	-0.017	0.00	0.00	No	0.00	No
22	y	-0.017	0.00	0.00	No	0.00	No
23	y	-0.017	0.00	0.00	No	0.00	No
24	y	-0.017	0.00	0.00	No	0.00	No
28	y	-0.015	0.00	0.00	No	0.00	No
29	y	-0.015	0.00	0.00	No	0.00	No
30	y	-0.015	0.00	0.00	No	0.00	No
31	y	-0.015	0.00	0.00	No	0.00	No
32	y	-0.015	0.00	0.00	No	0.00	No
33	y	-0.015	0.00	0.00	No	0.00	No
43	y	-0.013	0.00	0.00	No	0.00	No
44	y	-0.013	0.00	0.00	No	0.00	No
45	y	-0.013	0.00	0.00	No	0.00	No
86	y	-0.009	0.00	0.00	No	0.00	No
87	y	-0.009	0.00	0.00	No	0.00	No
88	y	-0.01	0.00	0.00	No	0.00	No
89	y	-0.009	0.00	0.00	No	0.00	No
90	y	-0.01	0.00	0.00	No	0.00	No
91	y	-0.009	0.00	0.00	No	0.00	No
92	y	-0.009	0.00	0.00	No	0.00	No
93	y	-0.01	0.00	0.00	No	0.00	No
94	y	-0.009	0.00	0.00	No	0.00	No
95	y	-0.01	0.00	0.00	No	0.00	No
96	y	-0.009	0.00	0.00	No	0.00	No
97	y	-0.01	0.00	0.00	No	0.00	No
99	y	-0.01	0.00	0.00	No	0.00	No
101	y	-0.009	0.00	0.00	No	0.00	No
116	y	-0.009	0.00	0.00	No	0.00	No
117	y	-0.009	0.00	0.00	No	0.00	No
118	y	-0.009	0.00	0.00	No	0.00	No
119	y	-0.011	0.00	0.00	No	0.00	No
120	y	-0.011	0.00	0.00	No	0.00	No
121	y	-0.011	0.00	0.00	No	0.00	No
122	y	-0.011	0.00	0.00	No	0.00	No
123	y	-0.011	0.00	0.00	No	0.00	No
124	y	-0.011	0.00	0.00	No	0.00	No

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	86	y	-0.018	1.00	No
		y	-0.018	4.50	No
		y	-0.016	3.00	No
	88	y	-0.027	1.50	No
		y	-0.027	8.50	No
		y	-0.072	3.00	No
	90	y	-0.048	1.50	No
		y	-0.048	8.50	No

		y	-0.073	3.00	No
	91	y	-0.018	1.00	No
		y	-0.018	4.50	No
		y	-0.016	3.00	No
	93	y	-0.027	1.50	No
		y	-0.027	8.50	No
		y	-0.072	3.00	No
	95	y	-0.048	1.50	No
		y	-0.048	8.50	No
		y	-0.073	3.00	No
	96	y	-0.018	1.00	No
		y	-0.018	4.50	No
		y	-0.016	3.00	No
	97	y	-0.027	1.50	No
		y	-0.027	8.50	No
		y	-0.072	3.00	No
	99	y	-0.048	1.50	No
		y	-0.048	8.50	No
		y	-0.073	3.00	No
	101	y	-0.033	2.00	No
W0	86	z	-0.113	1.00	No
		z	-0.113	4.50	No
	88	z	-0.231	1.50	No
		z	-0.231	8.50	No
		z	-0.01	3.00	No
	90	z	-0.367	1.50	No
		z	-0.367	8.50	No
	91	z	-0.074	1.00	No
		z	-0.074	4.50	No
		z	-0.022	3.00	No
	93	z	-0.182	1.50	No
		z	-0.182	8.50	No
		z	-0.054	3.00	No
	95	z	-0.217	1.50	No
		z	-0.217	8.50	No
		z	-0.052	3.00	No
	96	z	-0.074	1.00	No
		z	-0.074	4.50	No
		z	-0.022	3.00	No
	97	z	-0.182	1.50	No
		z	-0.182	8.50	No
		z	-0.054	3.00	No
	99	z	-0.217	1.50	No
		z	-0.217	8.50	No
		z	-0.052	3.00	No
	101	z	-0.046	2.00	No
W30	86	x	-0.061	1.00	No
		x	-0.061	4.50	No
		x	-0.023	3.00	No
	88	x	-0.165	1.50	No
		x	-0.165	8.50	No
		x	-0.055	3.00	No
	90	x	-0.167	1.50	No
		x	-0.167	8.50	No
		x	-0.053	3.00	No
	91	x	-0.10	1.00	No
		x	-0.10	4.50	No
		x	-0.019	3.00	No
	93	x	-0.214	1.50	No
		x	-0.214	8.50	No

		x	-0.039	3.00	No
	95	x	-0.317	1.50	No
		x	-0.317	8.50	No
		x	-0.038	3.00	No
	96	x	-0.10	1.00	No
		x	-0.10	4.50	No
		x	-0.019	3.00	No
	97	x	-0.214	1.50	No
		x	-0.214	8.50	No
		x	-0.039	3.00	No
	99	x	-0.317	1.50	No
		x	-0.317	8.50	No
		x	-0.038	3.00	No
	101	x	-0.046	2.00	No
Di	86	y	-0.067	1.00	No
		y	-0.067	4.50	No
		y	-0.018	3.00	No
	88	y	-0.133	1.50	No
		y	-0.133	8.50	No
		y	-0.049	3.00	No
	90	y	-0.201	1.50	No
		y	-0.201	8.50	No
		y	-0.049	3.00	No
	91	y	-0.067	1.00	No
		y	-0.067	4.50	No
		y	-0.018	3.00	No
	93	y	-0.133	1.50	No
		y	-0.133	8.50	No
		y	-0.049	3.00	No
	95	y	-0.201	1.50	No
		y	-0.201	8.50	No
		y	-0.049	3.00	No
	96	y	-0.067	1.00	No
		y	-0.067	4.50	No
		y	-0.018	3.00	No
	97	y	-0.133	1.50	No
		y	-0.133	8.50	No
		y	-0.049	3.00	No
	99	y	-0.201	1.50	No
		y	-0.201	8.50	No
		y	-0.049	3.00	No
	101	y	-0.048	2.00	No
Wi0	86	z	-0.028	1.00	No
		z	-0.028	4.50	No
	88	z	-0.054	1.50	No
		z	-0.054	8.50	No
		z	-0.007	3.00	No
	90	z	-0.077	1.50	No
		z	-0.077	8.50	No
		z	-0.004	3.00	No
	91	z	-0.02	1.00	No
		z	-0.02	4.50	No
		z	-0.008	3.00	No
	93	z	-0.043	1.50	No
		z	-0.043	8.50	No
		z	-0.015	3.00	No
	95	z	-0.05	1.50	No
		z	-0.05	8.50	No
		z	-0.015	3.00	No
	96	z	-0.02	1.00	No

		z	-0.02	4.50	No
		z	-0.008	3.00	No
	97	z	-0.043	1.50	No
		z	-0.043	8.50	No
		z	-0.015	3.00	No
	99	z	-0.05	1.50	No
		z	-0.05	8.50	No
		z	-0.015	3.00	No
	101	z	-0.013	2.00	No
Wi30	86	x	-0.018	1.00	No
		x	-0.018	4.50	No
		x	-0.008	3.00	No
	88	x	-0.04	1.50	No
		x	-0.04	8.50	No
		x	-0.016	3.00	No
	90	x	-0.041	1.50	No
		x	-0.041	8.50	No
		x	-0.015	3.00	No
	91	x	-0.025	1.00	No
		x	-0.025	4.50	No
		x	-0.007	3.00	No
	93	x	-0.049	1.50	No
		x	-0.049	8.50	No
		x	-0.011	3.00	No
	95	x	-0.067	1.50	No
		x	-0.067	8.50	No
		x	-0.011	3.00	No
	96	x	-0.025	1.00	No
		x	-0.025	4.50	No
		x	-0.007	3.00	No
	97	x	-0.049	1.50	No
		x	-0.049	8.50	No
		x	-0.011	3.00	No
	99	x	-0.067	1.50	No
		x	-0.067	8.50	No
		x	-0.011	3.00	No
	101	x	-0.013	2.00	No
WL0	86	z	-0.008	1.00	No
		z	-0.008	4.50	No
	88	z	-0.015	1.50	No
		z	-0.015	8.50	No
		z	-0.001	3.00	No
	90	z	-0.023	1.50	No
		z	-0.023	8.50	No
	91	z	-0.005	1.00	No
		z	-0.005	4.50	No
		z	-0.001	3.00	No
	93	z	-0.012	1.50	No
		z	-0.012	8.50	No
		z	-0.003	3.00	No
	95	z	-0.014	1.50	No
		z	-0.013	8.50	No
		z	-0.003	3.00	No
	96	z	-0.005	1.00	No
		z	-0.005	4.50	No
		z	-0.001	3.00	No
	97	z	-0.012	1.50	No
		z	-0.012	8.50	No
		z	-0.003	3.00	No
	99	z	-0.014	1.50	No

		z	-0.013	8.50	No
		z	-0.003	3.00	No
	101	z	-0.003	2.00	No
WL30	86	x	-0.004	1.00	No
		x	-0.004	4.50	No
		x	-0.001	3.00	No
	88	x	-0.011	1.50	No
		x	-0.011	8.50	No
		x	-0.003	3.00	No
	90	x	-0.011	1.50	No
		x	-0.011	8.50	No
		x	-0.003	3.00	No
	91	x	-0.007	1.00	No
		x	-0.007	4.50	No
		x	-0.001	3.00	No
	93	x	-0.014	1.50	No
		x	-0.014	8.50	No
		x	-0.002	3.00	No
	95	x	-0.02	1.50	No
		x	-0.02	8.50	No
		x	-0.002	3.00	No
	96	x	-0.007	1.00	No
		x	-0.007	4.50	No
		x	-0.001	3.00	No
	97	x	-0.014	1.50	No
		x	-0.014	8.50	No
		x	-0.002	3.00	No
	99	x	-0.02	1.50	No
		x	-0.02	8.50	No
		x	-0.002	3.00	No
	101	x	-0.003	2.00	No
LL1	29	y	-0.25	50.00	Yes
LL2	29	y	-0.25	0.00	Yes
LLa1	86	y	-0.25	50.00	Yes
LLa2	88	y	-0.25	50.00	Yes
LLa3	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

Current Date: 10/12/2020 2:58 PM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1219\LTE 3C-4C-5G\CT1219 (LTE 3C-4C-5G) - MODS.retx

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 5X6.7	**28**	LC2 at 42.97%	**0.62**	**With warnings**	Eq. H1-1a
		29	LC3 at 42.97%	0.44	With warnings	Eq. H1-1b
		30	LC4 at 57.14%	0.59	With warnings	Eq. H1-1a
		31	LC1 at 43.75%	0.49	OK	Eq. H1-1b
		32	LC2 at 43.75%	0.50	OK	Eq. H1-1b
		33	LC4 at 43.75%	0.56	OK	Eq. H1-1b
	HSS_SQR 3X3X1_4	**43**	LC11 at 0.00%	0.47	OK	Eq. H1-1b
		44	LC4 at 100.00%	**0.52**	**OK**	Eq. H1-1b
		45	LC2 at 100.00%	0.51	OK	Eq. H1-1b
	L 2-1_2X2-1_2X3_16	**119**	LC4 at 50.00%	0.13	OK	Eq. H2-1
		120	LC2 at 50.00%	0.13	OK	Eq. H2-1
		121	LC3 at 56.25%	0.14	OK	Eq. H2-1
		122	LC4 at 43.75%	0.14	OK	Eq. H2-1
		123	LC2 at 56.25%	0.14	OK	Eq. H2-1
		124	LC3 at 43.75%	0.13	OK	Eq. H2-1

	125	LC2 at 0.00%	**0.91**	**OK**	Eq. H2-1
	126	LC4 at 100.00%	0.87	OK	Sec. F1
	127	LC11 at 100.00%	0.75	OK	Sec. F1
PIPE 2-1_2x0.203	**88**	LC1 at 39.58%	0.25	OK	Eq. H1-1b
	90	LC3 at 64.58%	**0.40**	**OK**	Eq. H1-1b
	93	LC2 at 39.58%	0.28	OK	Eq. H1-1b
	95	LC2 at 39.58%	0.39	OK	Eq. H1-1b
	97	LC2 at 41.67%	0.28	OK	Eq. H1-1b
	99	LC2 at 39.58%	0.39	OK	Eq. H1-1b
PIPE 2x0.154	**86**	LC11 at 81.25%	0.27	OK	Eq. H1-1b
	87	LC10 at 41.67%	0.20	OK	Eq. H1-1b
	89	LC12 at 41.67%	0.21	OK	Eq. H1-1b
	91	LC10 at 81.25%	0.32	OK	Eq. H1-1b
	92	LC2 at 41.67%	0.22	OK	Eq. H1-1b
	94	LC10 at 41.67%	0.23	OK	Eq. H1-1b
	96	LC9 at 81.25%	0.28	OK	Eq. H1-1b
	101	LC12 at 41.67%	0.20	OK	Eq. H1-1b
	116	LC4 at 29.38%	0.62	OK	Eq. H1-1b
	117	LC2 at 29.17%	**0.87**	**OK**	Eq. H1-1b
	118	LC3 at 29.38%	0.71	OK	Eq. H1-1b
PL 6x1	**1**	LC12 at 0.00%	0.41	OK	Eq. H1-1b
	2	LC9 at 0.00%	0.19	OK	Eq. H1-1b
	3	LC9 at 100.00%	0.52	OK	Eq. H1-1b
	4	LC9 at 50.00%	**0.67**	**OK**	Eq. H1-1b
	5	LC12 at 0.00%	0.52	OK	Eq. H1-1b
	6	LC12 at 100.00%	0.19	OK	Eq. H1-1b
	7	LC4 at 100.00%	0.44	OK	Eq. H1-1b
	8	LC12 at 100.00%	0.04	OK	Eq. H1-1b
	9	LC3 at 0.00%	0.42	OK	Eq. H1-1b
	10	LC12 at 0.00%	0.19	OK	Eq. H1-1b
	11	LC11 at 100.00%	0.50	OK	Eq. H1-1b
	12	LC11 at 50.00%	0.65	OK	Eq. H1-1b
	13	LC11 at 0.00%	0.50	OK	Eq. H1-1b
	14	LC10 at 100.00%	0.19	OK	Eq. H1-1b
	15	LC3 at 100.00%	0.43	OK	Eq. H1-1b
	16	LC2 at 0.00%	0.03	OK	Eq. H1-1b
	17	LC2 at 0.00%	0.45	OK	Eq. H1-1b
	18	LC10 at 0.00%	0.19	OK	Eq. H1-1b
	19	LC10 at 100.00%	0.51	OK	Eq. H1-1b
	20	LC10 at 50.00%	0.67	OK	Eq. H1-1b
	21	LC9 at 0.00%	0.52	OK	Eq. H1-1b
	22	LC9 at 100.00%	0.20	OK	Eq. H1-1b
	23	LC2 at 100.00%	0.42	OK	Eq. H1-1b
	24	LC9 at 0.00%	0.04	OK	Eq. H1-1b

Current Date: 10/12/2020 2:58 PM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1219\LTE 3C-4C-5G\CT1219 (LTE 3C-4C-5G) - MODS.retx

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	-2.458	0.00	-0.3236	0
2	-1.9669	0.00	-1.5092	0
3	-0.9487	0.00	-2.2905	0
4	0.3534	0.00	-2.5098	0
5	1.5092	0.00	-1.9669	0
6	2.2905	0.00	-0.9487	0
7	2.458	0.00	0.3236	0
8	-2.3253	0.00	0.9967	0
9	-1.5092	0.00	1.9669	0
10	-0.3236	0.00	2.458	0
11	0.9487	0.00	2.2905	0
12	2.0026	0.00	1.551	0
13	0.9487	0.00	-2.2905	0
14	1.9669	0.00	-1.5092	0
15	2.458	0.00	-0.3236	0
16	0.3236	0.00	2.458	0
17	1.5092	0.00	1.9669	0
18	2.3338	0.00	0.9775	0
19	-0.294	0.00	-2.5098	0
20	-0.9487	0.00	2.2905	0
21	-1.5092	0.00	-1.9669	0

22	-2.0031	0.00	1.5548	0
23	-2.2905	0.00	-0.9487	0
24	-2.458	0.00	0.3236	0
28	-6.2604	0.00	3.6205	0
29	-3.5367	0.00	-1.1016	0
30	-2.7224	0.00	-2.5098	0
31	0.0029	0.00	-7.2268	0
32	2.7263	0.00	-2.5098	0
33	3.5367	0.00	-1.1061	0
34	6.2653	0.00	3.6199	0
35	0.8085	0.00	3.6193	0
36	-0.8104	0.00	3.6205	0
79	1.03E-07	0.00	2.458	0
83	6.81E-08	0.00	1.2727	0
84	2.1287	0.00	-1.229	0
86	1.1022	0.00	-0.6363	0
87	-2.1287	0.00	-1.229	0
89	-1.1022	0.00	-0.6363	0
106	5.8433	6.50	2.48	0
107	5.8433	-3.50	2.48	0
109	3.3086	6.50	-1.9102	0
110	3.3086	0.00	-1.9102	0
111	3.3086	-3.50	-1.9102	0
112	0.7207	5.00	-6.3926	0
114	0.7207	-1.00	-6.3926	0
115	-0.7333	6.50	-6.3709	0
116	-0.7333	-3.50	-6.3709	0
119	-3.3086	6.50	-1.9102	0
120	-3.3086	-3.50	-1.9102	0
121	-5.8998	5.00	2.5778	0
122	-5.8998	-1.00	2.5778	0
124	-5.149	6.50	3.8205	0
125	-5.149	-3.50	3.8205	0
128	0.00	6.50	3.8205	0
129	0.00	-3.50	3.8205	0
130	5.181	5.00	3.8205	0
131	5.181	-1.00	3.8205	0
134	2.181	-1.00	3.8205	0
136	2.181	5.00	3.8205	0
139	-2.149	-1.00	3.8205	0
141	-2.149	5.00	3.8205	0
143	-4.3998	5.00	-0.0203	0
144	-4.3998	-1.00	-0.0203	0
147	-2.2333	5.00	-3.7728	0
148	-2.2333	-1.00	-3.7728	0
161	2.2207	5.00	-3.7945	0
163	2.2207	-1.00	-3.7945	0
195	-1.1022	1.25	-0.6363	0
196	6.81E-08	1.25	1.2727	0
197	1.1022	1.25	-0.6363	0
198	-5.9976	2.50	3.6205	0
199	6.0024	2.50	3.6199	0
200	-0.1285	2.50	-6.9992	0
201	-6.129	2.50	3.3928	0
202	6.1339	2.50	3.3923	0
203	0.1344	2.50	-6.9992	0
204	-2.50	2.50	3.6205	0
205	2.50	2.50	3.6205	0
206	-1.8776	2.50	-3.9708	0
208	4.3815	2.50	0.3571	0

209	1.8815	2.50	-3.973	0
210	-5.049	2.50	3.6205	0
211	5.081	2.50	3.6199	0
212	-0.6018	2.50	-6.1795	0
214	5.6162	2.50	2.4957	0
215	0.5936	2.50	-6.2037	0
207	-4.3776	2.50	0.3593	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
83	1	1	1	1	1	1
86	1	1	1	1	1	1
89	1	1	1	1	1	1
195	1	1	1	1	1	1
196	1	1	1	1	1	1
197	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
1	4	13		PL 6x1	A36	0.00	0.00	0.00
2	5	13		PL 6x1	A36	0.00	0.00	0.00
3	5	14		PL 6x1	A36	0.00	0.00	0.00
4	6	14		PL 6x1	A36	0.00	0.00	0.00
5	6	15		PL 6x1	A36	0.00	0.00	0.00
6	7	15		PL 6x1	A36	0.00	0.00	0.00
7	7	18		PL 6x1	A36	0.00	0.00	0.00
8	12	18		PL 6x1	A36	0.00	0.00	0.00
9	12	17		PL 6x1	A36	0.00	0.00	0.00
10	11	17		PL 6x1	A36	0.00	0.00	0.00
11	11	16		PL 6x1	A36	0.00	0.00	0.00
12	10	16		PL 6x1	A36	0.00	0.00	0.00
13	10	20		PL 6x1	A36	0.00	0.00	0.00
14	9	20		PL 6x1	A36	0.00	0.00	0.00
15	9	22		PL 6x1	A36	0.00	0.00	0.00
16	8	22		PL 6x1	A36	0.00	0.00	0.00
17	8	24		PL 6x1	A36	0.00	0.00	0.00
18	1	24		PL 6x1	A36	0.00	0.00	0.00
19	1	23		PL 6x1	A36	0.00	0.00	0.00
20	2	23		PL 6x1	A36	0.00	0.00	0.00
21	2	21		PL 6x1	A36	0.00	0.00	0.00
22	3	21		PL 6x1	A36	0.00	0.00	0.00
23	3	19		PL 6x1	A36	0.00	0.00	0.00
24	4	19		PL 6x1	A36	0.00	0.00	0.00
28	31	28		C 5X6.7	A36	0.00	0.00	0.00
29	28	34		C 5X6.7	A36	0.00	0.00	0.00
30	34	31		C 5X6.7	A36	0.00	0.00	0.00
31	30	32		C 5X6.7	A36	0.00	0.00	0.00
32	29	36		C 5X6.7	A36	0.00	0.00	0.00

33	33	35	C 5X6.7	A36	0.00	0.00	0.00
43	83	79	HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
44	84	86	HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
45	87	89	HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
86	130	131	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
87	136	134	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
88	128	129	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
89	141	139	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
90	124	125	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
91	121	122	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
92	143	144	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
93	119	120	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
94	147	148	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
95	115	116	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
96	112	114	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
97	109	111	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
99	106	107	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
101	161	163	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
116	198	199	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
117	202	203	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
118	200	201	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
119	204	196	L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
120	196	205	L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
121	206	195	L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
122	195	207	L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
123	208	197	L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
124	197	209	L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
125	214	211	L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
126	210	213	L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
127	212	215	L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
1	90.00	0	0.00	0.00	0.00
2	90.00	0	0.00	0.00	0.00
3	0.00	2	-0.7071	0.00	0.7071
4	0.00	2	0.866	0.00	-0.50
5	90.00	0	0.00	0.00	0.00
6	90.00	0	0.00	0.00	0.00
7	90.00	0	0.00	0.00	0.00
8	90.00	0	0.00	0.00	0.00
9	0.00	2	-0.6445	0.00	-0.7646
10	0.00	2	0.50	0.00	0.866
11	90.00	0	0.00	0.00	0.00
12	90.00	0	0.00	0.00	0.00
13	90.00	0	0.00	0.00	0.00
14	90.00	0	0.00	0.00	0.00
15	90.00	0	0.00	0.00	0.00
16	90.00	0	0.00	0.00	0.00
17	90.00	0	0.00	0.00	0.00
18	90.00	0	0.00	0.00	0.00
19	90.00	0	0.00	0.00	0.00
20	90.00	0	0.00	0.00	0.00
21	90.00	0	0.00	0.00	0.00

22	90.00	0	0.00	0.00	0.00
23	90.00	0	0.00	0.00	0.00
24	90.00	0	0.00	0.00	0.00
28	180.00	0	0.00	0.00	0.00
29	180.00	0	0.00	0.00	0.00
30	180.00	0	0.00	0.00	0.00
31	180.00	0	0.00	0.00	0.00
33	180.00	0	0.00	0.00	0.00
86	0.00	2	1.00	0.00	0.00
87	0.00	2	1.00	0.00	0.00
88	0.00	2	1.00	0.00	0.00
89	0.00	2	1.00	0.00	0.00
90	0.00	2	1.00	0.00	0.00
91	0.00	2	1.00	0.00	0.00
92	0.00	2	1.00	0.00	0.00
93	0.00	2	1.00	0.00	0.00
94	0.00	2	1.00	0.00	0.00
95	0.00	2	1.00	0.00	0.00
96	0.00	2	1.00	0.00	0.00
97	0.00	2	1.00	0.00	0.00
99	0.00	2	1.00	0.00	0.00
101	0.00	2	1.00	0.00	0.00
119	90.00	0	0.00	0.00	0.00
120	90.00	0	0.00	0.00	0.00
121	90.00	0	0.00	0.00	0.00
122	90.00	0	0.00	0.00	0.00
123	90.00	0	0.00	0.00	0.00
124	90.00	0	0.00	0.00	0.00
125	90.00	0	0.00	0.00	0.00
126	90.00	0	0.00	0.00	0.00
127	90.00	0	0.00	0.00	0.00

Hinges

	Node-J				Node-K						
Member	**M33**	**M22**	**V3**	**V2**	**M33**	**M22**	**V3**	**V2**	**TOR**	**AXL**	**Axial rigidity**
119	1	1	0	0	1	1	0	0	0	0	Full
120	1	1	0	0	1	1	0	0	0	0	Full
121	1	1	0	0	1	1	0	0	0	0	Full
122	1	1	0	0	1	1	0	0	0	0	Full
123	1	1	0	0	1	1	0	0	0	0	Full
124	1	1	0	0	1	1	0	0	0	0	Full

15 NORTH GRANBY RD

Location	15 NORTH GRANBY RD	**Mblu**	G-42/ 68/ 8/ /
Acct#	10400015	**Owner**	GRANBY TOWN OF
Assessment	$2,865,380	**Appraisal**	$4,093,400
PID	3604	**Building Count**	5

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$3,565,300	$528,100	$4,093,400
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$2,495,710	$369,670	$2,865,380

Owner of Record

Owner	GRANBY TOWN OF	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	15 NORTH GRANBY ROAD GRANBY, CT 06035	**Book & Page**	226/0147
		Sale Date	09/21/1998

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
GRANBY TOWN OF	$0		226/0147	09/21/1998
GRANBY TOWN OF	$0		226/0146	09/21/1998
GRANBY TOWN OF	$0		208/0293	05/08/1996
GRANBY TOWN OF	$0		140/0511	02/03/1987
GRANBY TOWN OF	$0		116/0880	02/17/1983

Building Information

Building 1 : Section 1

Year Built:	1964
Living Area:	10,354
Replacement Cost:	$962,813
Building Percent Good:	72
Replacement Cost Less Depreciation:	$693,200

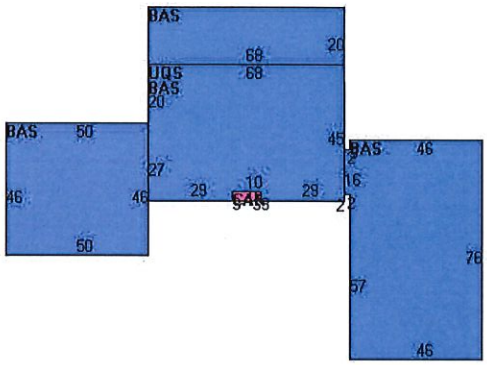
Building Attributes

Building Photo

Field	Description
STYLE	City/Town Hall
MODEL	Commercial
Grade	Good
Stories:	1.75
Occupancy	1
Exterior Wall 1	Brick Veneer
Exterior Wall 2	
Roof Structure	Gambrel
Roof Cover	Asphalt
Interior Wall 1	Minimum
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Bldg Use	MUNICIPAL M94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	9030
Heat/AC	HEAT/AC PKGS
Frame Type	WOOD FRAME
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	8
% Comn Wall	0

(http://images.vgsi.com/photos2/GranbyCTPhotos//\00\01\26/68.jpg)

Building Layout



(http://images.vgsi.com/photos2/GranbyCTPhotos//Sketches/

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	10,354	10,354
CAN	Canopy	30	0
UQS	3/4 story, Unfinished	3,166	0
		13,550	10,354

Building 2 : Section 1

Year Built: 1981
Living Area: 10,426
Replacement Cost: $1,133,544
Building Percent Good: 71
Replacement Cost Less Depreciation: $804,800

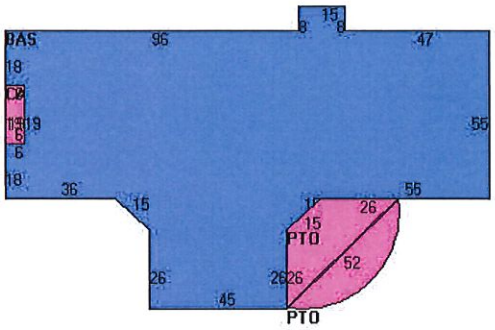
Building Photo

Building Attributes : Bldg 2 of 5	
Field	Description
STYLE	Library
MODEL	Commercial
Grade	Good
Stories:	1

Occupancy	1
Exterior Wall 1	Brick Veneer
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt
Interior Wall 1	Drywall
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Bldg Use	MUNICIPAL M94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	9030
Heat/AC	HEAT/AC PKGS
Frame Type	WOOD FRAME
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	10
% Comn Wall	0

(http://images.vgsi.com/photos2/GranbyCTPhotos//\00\01\26/69.jpg)

Building Layout



(http://images.vgsi.com/photos2/GranbyCTPhotos//Sketches/

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	10,426	10,426
CAN	Canopy	114	0
PTO	PATIO	1,088	0
		11,628	10,426

Building 3 : Section 1

Year Built: 1999
Living Area: 8,913
Replacement Cost: $972,496
Building Percent Good: 84
Replacement Cost Less Depreciation: $816,900

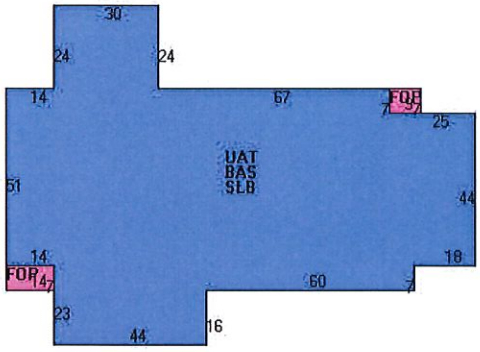
Building Photo

Building Attributes : Bldg 3 of 5	
Field	Description
STYLE	Other Municip
MODEL	Commercial
Grade	Excellent
Stories:	1

Occupancy	1
Exterior Wall 1	Brick Veneer
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt
Interior Wall 1	Drywall
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	Vinyl/Asphalt
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Heat Pump
Bldg Use	MUNICIPAL M96
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	903I
Heat/AC	HEAT/AC PKGS
Frame Type	WOOD FRAME
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	8
% Comn Wall	0

(http://images.vgsi.com/photos2/GranbyCTPhotos//\00\01\26/70.jpg)

Building Layout



(http://images.vgsi.com/photos2/GranbyCTPhotos//Sketches/

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	8,913	8,913
FOP	Porch, Open	161	0
SLB	Slab	0	0
UAT	Attic, Unfinished	8,913	0
		17,987	8,913

Building 4 : Section 1

Year Built: 2000
Living Area: 6,416
Replacement Cost: $457,063
Building Percent Good: 83
Replacement Cost Less Depreciation: $379,400

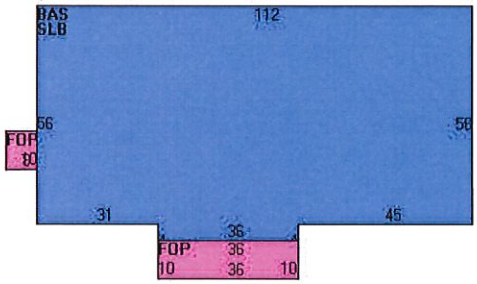
Building Photo

Building Attributes : Bldg 4 of 5	
Field	Description
STYLE	Office Bldg
MODEL	Commercial
Grade	Good

Stories:	1
Occupancy	
Exterior Wall 1	Brick Veneer
Exterior Wall 2	Vinyl Siding
Roof Structure	Gable
Roof Cover	Asphalt
Interior Wall 1	Drywall
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Bldg Use	MUNICIPAL M94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	9030
Heat/AC	HEAT/AC PKGS
Frame Type	WOOD FRAME
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	9
% Comn Wall	

(http://images.vgsi.com/photos2/GranbyCTPhotos//\00\01\26/71.jpg)

Building Layout



(http://images.vgsi.com/photos2/GranbyCTPhotos//Sketches/

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	6,416	6,416
FOP	Porch, Open	440	0
SLB	Slab	0	0
		6,856	6,416

Building 5 : Section 1

Year Built: 2001
Living Area: 8,578
Replacement Cost: $674,326
Building Percent Good: 84
Replacement Cost Less Depreciation: $566,400

Building Photo

Building Attributes : Bldg 5 of 5	
Field	**Description**
STYLE	Other Municip
MODEL	Commercial
Grade	Good
Stories:	1

Occupancy	1
Exterior Wall 1	Brick Veneer
Exterior Wall 2	Vinyl Siding
Roof Structure	Gable
Roof Cover	Asphalt
Interior Wall 1	Drywall
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	Ceram Clay Til
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Bldg Use	SCHOOL M94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	903I
Heat/AC	HEAT/AC PKGS
Frame Type	WOOD FRAME
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	10
% Comn Wall	

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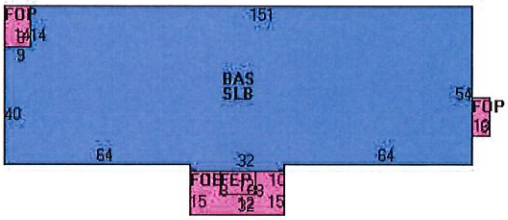
Building Layout



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Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	8,578	8,578
FEP	Porch, Enclosed	96	0
FOP	Porch, Open	588	0
SLB	Slab	0	0
		9,262	8,578

Extra Features

Extra Features				Legend
Code	Description	Size	Value	Bldg #
SPR1	SPRINKLERS-WET	190 S.F.	$200	4
SPR1	SPRINKLERS-WET	350 S.F.	$300	3
SPR1	SPRINKLERS-WET	8578 S.F.	$7,200	5
VLT2	VAULT-GOOD	1000 S.F.	$90,000	1

Land

Land Use **Land Line Valuation**

Use Code	9030	**Size (Acres)**	14.46
Description	MUNICIPAL M94	**Frontage**	0
Zone	R30	**Depth**	0
Neighborhood	200	**Assessed Value**	$369,670
Alt Land Appr	No	**Appraised Value**	$528,100
Category			

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
PAV1	PAVING-ASPHALT			60000 S.F.	$60,000	1
LT1	LIGHTS-IN W/PL			19 UNITS	$6,600	1
SHD1	SHED FRAME			120 S.F.	$1,100	1
	CELL TOWER			1	$135,000	1
SHD1	SHED FRAME			280 S.F.	$2,100	1
FN4	FENCE-8' CHAIN			200 L.F.	$2,100	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$3,565,300	$528,100	$4,093,400
2016	$3,471,600	$506,700	$3,978,300
2015	$3,471,600	$506,700	$3,978,300

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$2,495,710	$369,670	$2,865,380
2016	$2,430,120	$354,690	$2,784,810
2015	$2,430,120	$354,690	$2,784,810

Results:

Parcel ID 3604
Location 15 NORTH GRANBY RD
View Assessor website
View: Report | Google Maps opens in a new tab

SBA Communications Corporation
8051 Congress Avenue
Boca Raton, FL 33487-1307

T + 561.995.7670
F + 561.995.7626

sbasite.com

LETTER OF AUTHORIZATION

SBA Site ID: CT46134-A, Granby-n. Granby

Property Located at: 15 North Granby Road, Granby, CT, 06035

THE CITY/COUNTY OF: Granby / Hartford

APPLICATION FOR ZONING/USE/BUILDING PERMIT

This letter authorizes AT&T and its authorized agents to file for all necessary zoning, planning and building permits (local, state and federal) for the purposes of installing, operating and maintaining a telecommunications facility on the existing tower on the property referenced above on behalf of Town of Granby.

All approval conditions that may be granted to AT&T in connection with above referenced facility relating to this specific application are the sole responsibility of AT&T.

SBA 2012 TC Assets, LLC

Jason Silberstein

Executive VP, Site Leasing

Date: 10/13/2020

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SAI GROUP
39 WESTVIEW DR
MERIDEN CT 06450-4723

Expected Delivery Date: 11/07/20

0005

Carrier -- Leave if No Response **C006**

SHIP TO: MELANIE BACHMAN
CT SITING COUNCIL
10 FRANKLIN SQ
NEW BRITAIN CT 06051-2655

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Electronic Rate Approved #038555749

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Flat Rate Env

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PRIORITY MAIL 1-DAY™

HOLLIS REDDING
SAI GROUP
39 WESTVIEW DR
MERIDEN CT 06450-4723

Expected Delivery Date: 11/07/20

0005

Carrier -- Leave if No Response **R003**

SHIP TO: HONORABLE B. SCOTT KUHNLY 1ST SELECTMAN
TOWN OF GRANBY TOWN HALL
15 N GRANBY RD
GRANBY CT 06035-2102

USPS TRACKING #

9405 5036 9930 0117 9878 66

Electronic Rate Approved #038555749