QC Development
PO Box 916
Storrs, CT 06268
860-670-9068
QCDevelopment9068@gmail.com

March 1, 2019

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

Notice of Exempt Modification – New Cingular Wireless PCS, LLC (AT&T) – CT1283
171 Short Beach Road, Branford, CT 06405
N 41.26278889
W 72.83442778

Dear Ms. Bachman:

AT&T currently maintains twelve (12) antennas at the 120-foot level of the existing 120-foot Self Support Tower at 171 Short Beach Road, Branford, CT. The tower is owned by American Tower and the property is owned by 171 Short Beach Road Realty LLC. AT&T now intends to remove six (6) Andrew antennas and replace them with three (3) CCI HPA-65R-BU8AA and three (3) Kathrien 800-10966 antennas. AT&T will also swap (3) Ericsson RRUS-11 and (3) RRUS-12 for (3) B5/B12-4449 and (3) B2/B66-8843 Remote Radio Units (RRU). The new antennas and RRUs will also be installed at the 120-foot level of the tower.

This facility was approved by the Connecticut Siting Council, Docket No. 427 on December 13, 2012. This approval included a condition that the tower and antennas not exceed 123 feet above ground level. No modification to the overall facility height is proposed, so this modification therefore complies with the aforementioned approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the Honorable James B. Cosgrove, First Selectman for the Town of Branford and the Branford

Planning & Zoning Department as well as the property owner and the tower owner.

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

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

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

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

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

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

Sincerely,

Mark Roberts
QC Development
Consultant for AT&T

Attachments

cc: James B. Cosgrove - Elected Official
Harry Smith – Town Planner
171 Short Beach Road Realty LLC - Property Owner
American Tower - Tower Owner (via e-mail)

Power Density

Existing Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm^2)	Freq. Band (MHz**)	Limit S (mW /cm^2)	%MPE
Other Carriers*							5.61%
AT&T UMTS	2	500	120	0.0277	880	0.5867	0.47%
AT&T UMTS	2	500	120	0.0277	1900	1.0000	0.28%
AT&T LTE	2	1476	120	0.0817	734	0.4893	1.67%
AT&T LTE	2	3664	120	0.2028	1900	1.0000	2.03%
AT&T LTE	2	1285	120	0.0711	2300	1.0000	0.71%
Site Total							10.77%

*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*							5.61%
AT&T UMTS	1	500	120	0.0138	850	0.5867	0.24%
AT&T LTE	1	1476	120	0.0817	700	0.4667	0.88%
AT&T LTE	1	1000	120	0.0277	850	0.5667	0.49%
AT&T 5G	1	1000	120	0.0277	850	0.5667	0.49%
AT&T LTE	2	3664	120	0.2028	1900	1.0000	2.03%
AT&T LTE	1	3837	120	0.1062	2100	1.0000	1.06%
AT&T LTE	1	1285	120	0.0356	2300	1.0000	0.36%
Site Total							11.15%

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

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

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

PROJECT INFORMATION

SCOPE OF WORK:	****** BIRD NEST ****** ITEMS TO BE MOUNTED ON THE EXISTING MONOPOLE: • INSTALL NEW 2" STD. (2.38" O.D.) HORIZONTAL PIPE BRACES SECURE TO THE EXISTING HANDRAILS (TYP. OF 1 PER SECTOR, TOTAL OF 3). • INSTALL NEW HANDRAIL KIT, SITEPRO 1 P/N HRK12 (OR APPROVED EQUAL). • INSTALL NEW 2-1/2"ø STD. (2.88" O.D.) PIPE MASTS, SECURE TO EXISTING MOUNT AND NEW/EXISTING HANDRAIL (TYP. OF 4 PER SECTOR, TOTAL OF 12). • NEW AT&T ANTENNAS: (800-10966) (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T ANTENNAS: (HPA-65R-BU8AA) (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T RRUS: B2/B66A 8843 (1900/AWS) (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T RRUS: B5/B12 4449 (700/850) (TYP. OF 1 PER SECTOR, TOTAL OF 3). ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION: • SWAP BASEBAND FOR RBS 6630. • REUSE EXISTING XMU & ADD RBS 6630 FOR 5G. • REPLACE EXISTING BBU WITH 6630.
SITE ADDRESS:	171 SHORT BEACH ROAD BRANFORD, CT 06405
LATITUDE:	41.262792 N, 41° 15' 46.05" N
LONGITUDE:	72.834420 W, 72° 50' 03.91" W
TYPE OF SITE:	MONOPOLE / INDOOR EQUIPMENT
STRUCTURE HEIGHT:	120'-0"±
RAD CENTER:	120'-0"±
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

SITE NUMBER: CT1283

SITE NAME: BRANFORD SHORT BEACH ROAD

FA CODE: 10133913

PACE ID: MRCTB034848, MRCTB034883, MRCTB034885, MRCTB034890

PROJECT: LTE 4C_5C 2019 UPGRADE

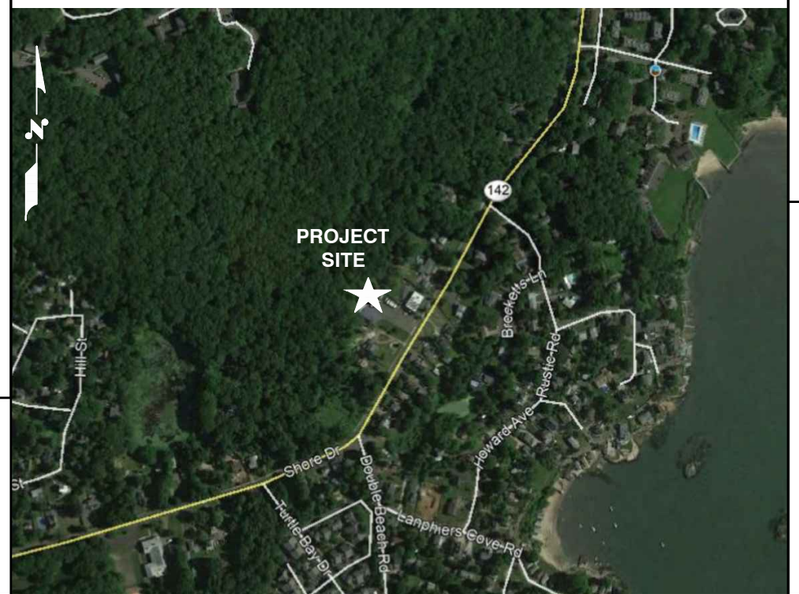
DRAWING INDEX

AMERICAN TOWER SITE #: 283422
AMERICAN TOWER SITE NAME: SHORT BEACH BRANFORD

VICINITY MAP

DIRECTIONS TO SITE:

START OUT GOING NORTHEAST ON ENTERPRISE DR TOWARD CAPITOL BLVD. 0.4 MI. TURN LEFT ONTO CAPITOL BLVD. 0.3 MI. TURN LEFT ONTO WEST ST. 0.3 MI. MERGE ONTO I-91 S VIA THE RAMP ON THE LEFT TOWARD NEW HAVEN. 29.1 MI. MERGE ONTO I-95 S/GOVERNOR JOHN DAVIS LODGE TURNPIKE VIA THE EXIT ON THE LEFT. 4.5 MILES. TAKE EXIT 53 TOWARD SHORT BEACH. 1.1 MILES. TURN SHARP RIGHT ONTO US-1/W MAIN ST. 0.1 MILES. TURN LEFT ONTO 142/SHORT BEACH RD. 1.0 MILES. SITE WILL BE ON THE LEFT.



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

SITE NUMBER: CT1283
SITE NAME: BRANFORD SHORT BEACH ROAD
ATC SITE # 283422
171 SHORT BEACH ROAD
BRANFORD, CT 06405
NEW HAVEN COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
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A	01/21/19	ISSUED FOR REVIEW	AM	AT	DJC

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

STATE OF CONNECTICUT · DANIEL J. CRAWFORD · No. 28354 · LICENSED PROFESSIONAL ENGINEER

AT&T
TITLE SHEET
(LTE 4C_5C)

SITE NUMBER	DRAWING NUMBER	REV
CT1283	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) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWS 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. TOUCHUP 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

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1283
SITE NAME: BRANFORD SHORT BEACH ROAD
ATC SITE # 283422
171 SHORT BEACH ROAD
BRANFORD, CT 06405
NEW HAVEN COUNTY

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

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

STATE OF CONNECTICUT DEREK J. CREASER No. 28551 LICENSED PROFESSIONAL ENGINEER

AT&T

GENERAL NOTES
(LTE 4C_5C)

SITE NUMBER	DRAWING NUMBER	REV
CT1283	GN-1	1

NOTE:

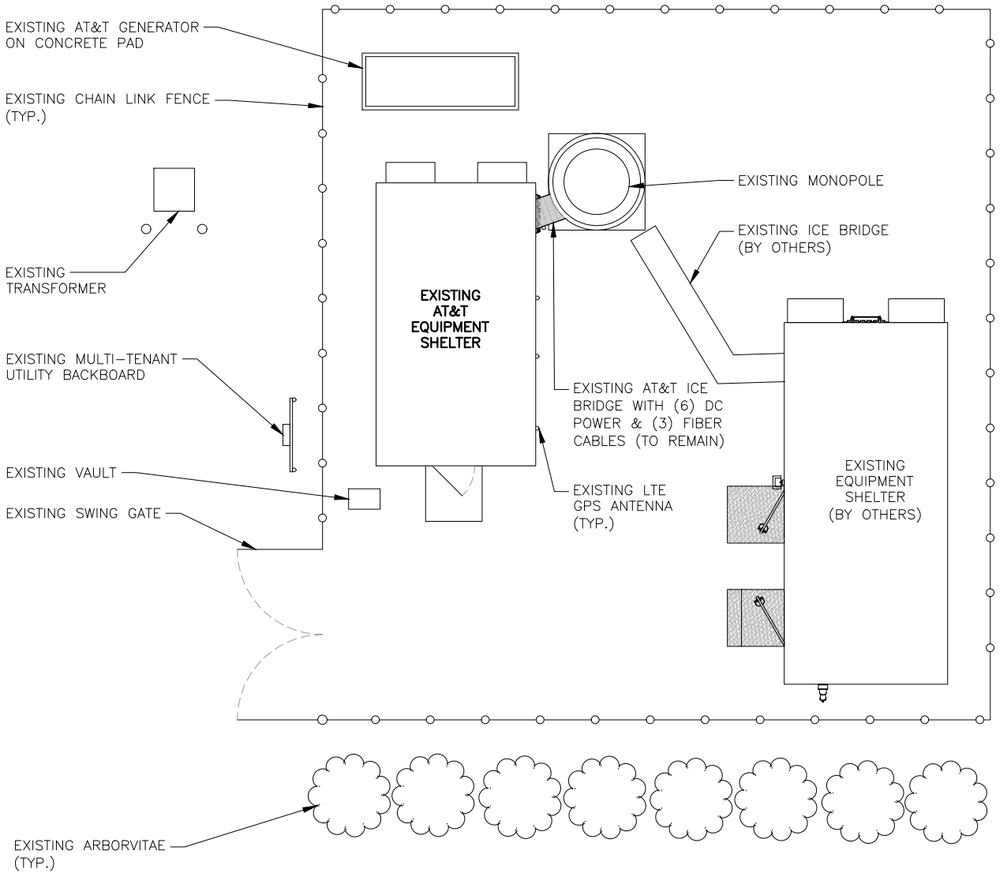
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

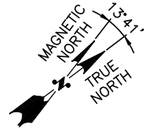
NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:
HUDSON DESIGN GROUP, LLC.
DATED: JANUARY 16, 2019

NOTE:

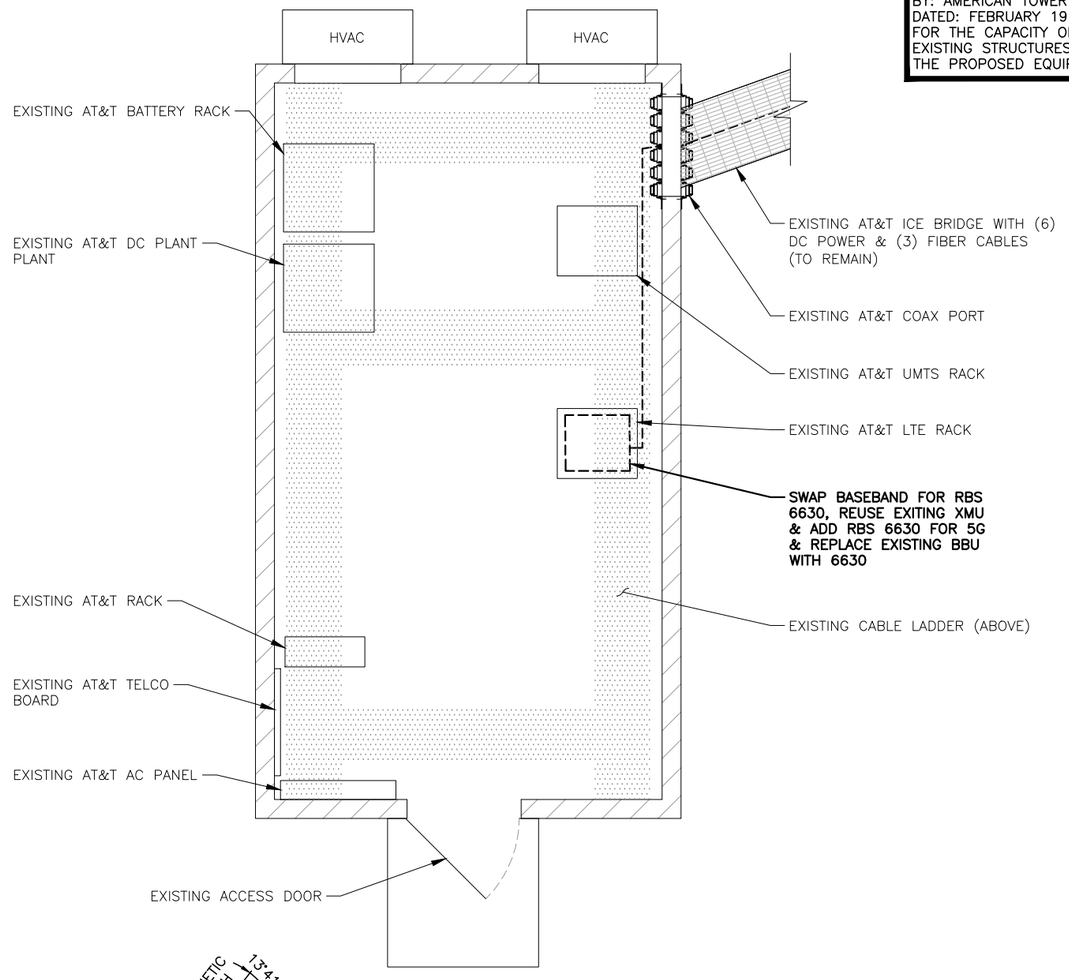
REFER TO STRUCTURAL ANALYSIS BY: AMERICAN TOWER CORP.,
DATED: FEBRUARY 19, 2019,
FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

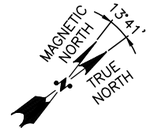




COMPOUND PLAN (1 / A-1)
22x34 SCALE: 3/16"=1'-0"
11x17 SCALE: 3/32"=1'-0"

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





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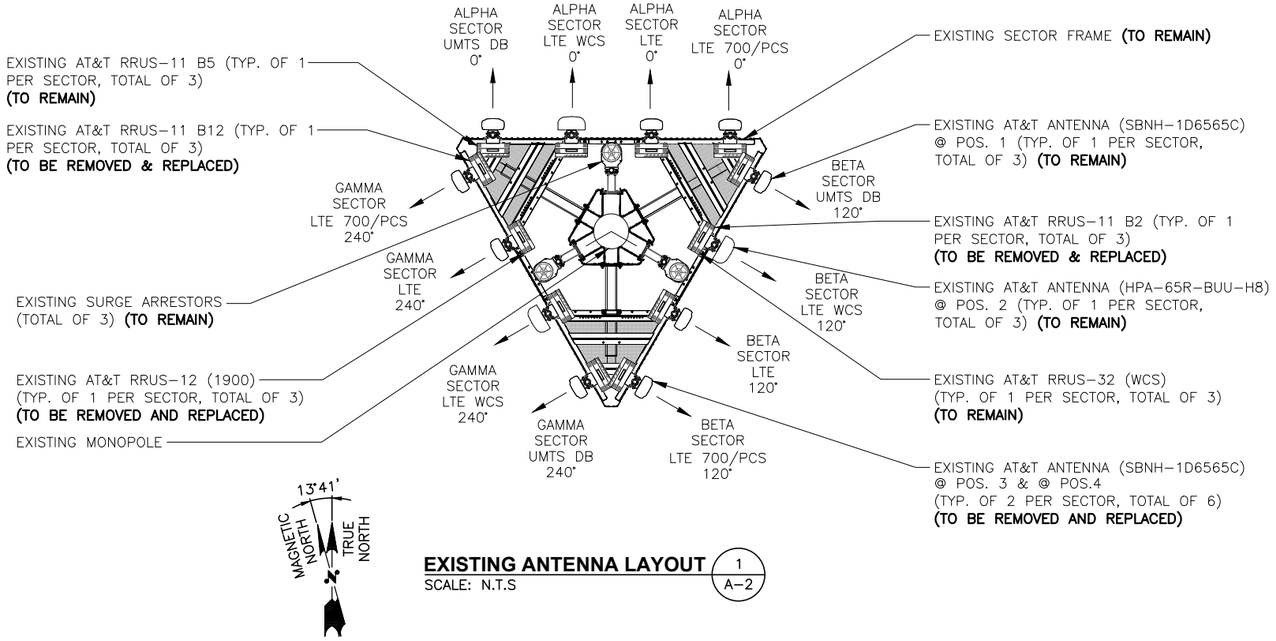
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: AM

STATE OF CONNECTICUT
DEREK J. CREASEY
No. 28558
LICENSED PROFESSIONAL ENGINEER

AT&T

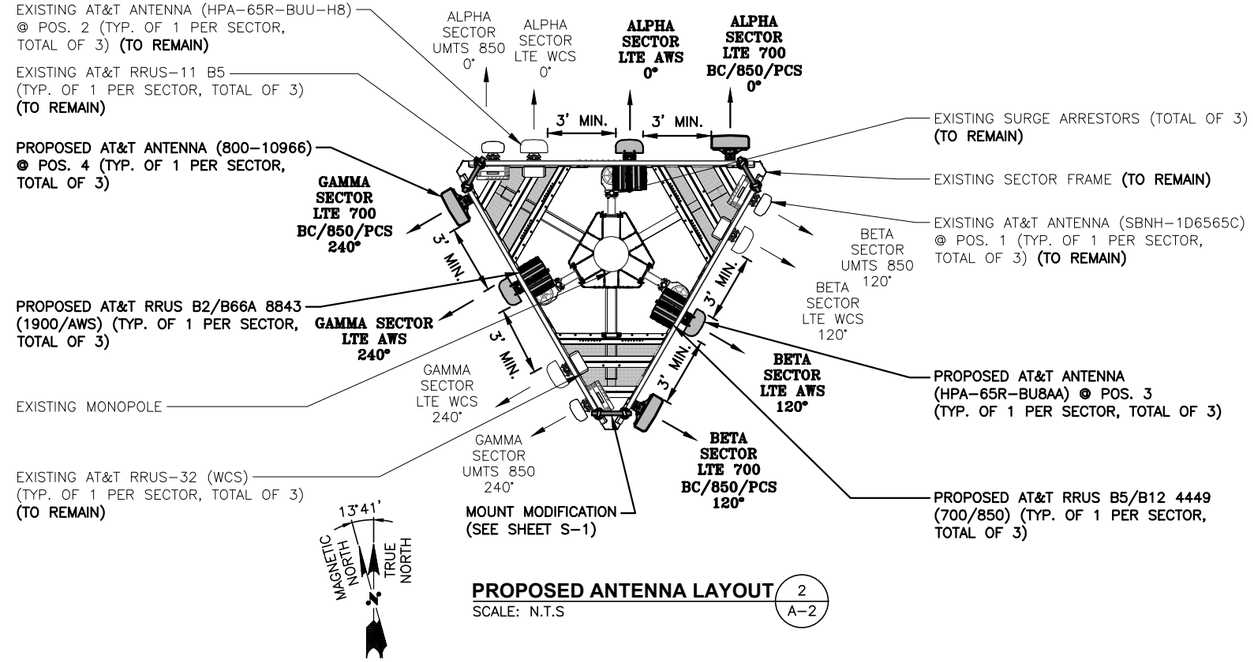
COMPOUND & EQUIPMENT PLANS
(LTE 4C_5C)

SITE NUMBER	DRAWING NUMBER	REV
CT1283	A-1	1



EXISTING ANTENNA LAYOUT (1 / A-2)

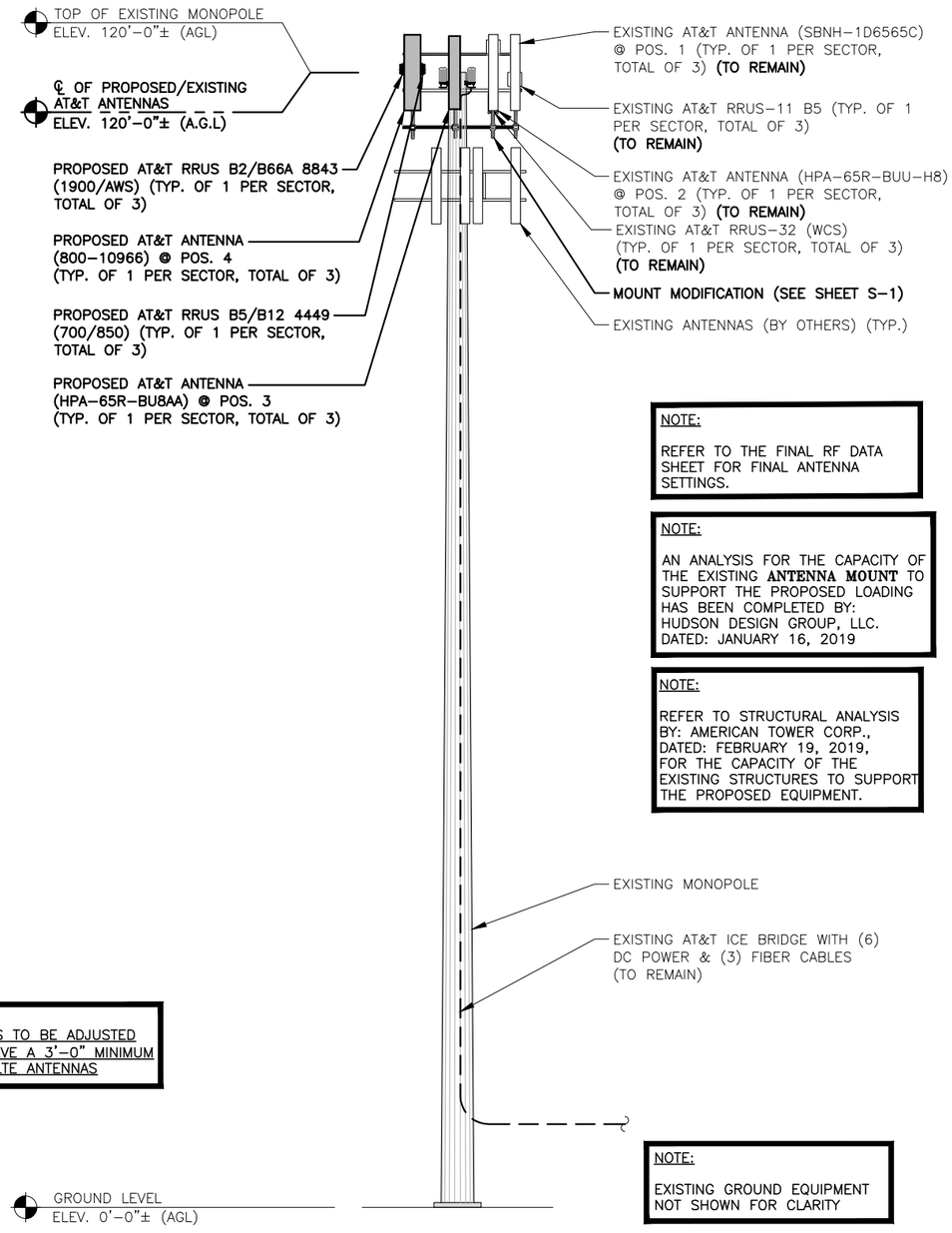
SCALE: N.T.S



PROPOSED ANTENNA LAYOUT (2 / A-2)

SCALE: N.T.S

NOTE:
ANTENNAS AND MOUNTS TO BE ADJUSTED AS REQUIRED TO ACHIEVE A 3'-0" MINIMUM SEPARATION BETWEEN LTE ANTENNAS



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: JANUARY 16, 2019

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: AMERICAN TOWER CORP., DATED: FEBRUARY 19, 2019, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:
EXISTING GROUND EQUIPMENT NOT SHOWN FOR CLARITY

ELEVATION (3 / A-2)

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

0 4'-0" 8'-0" 16'-0" 24'-0"

HUDSON Design Group LLC
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FAX: (978) 336-5586

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1283
SITE NAME: BRANFORD SHORT BEACH ROAD
ATC SITE # 283422
171 SHORT BEACH ROAD
BRANFORD, CT 06405
NEW HAVEN COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	02/28/19	ISSUED FOR CONSTRUCTION	SG	AT	DJC
A	01/21/19	ISSUED FOR REVIEW	AM	AT	DJC

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

STATE OF CONNECTICUT · DEREK J. CREASEY · No. 25551 · LICENSED PROFESSIONAL ENGINEER

AT&T

ANTENNA LAYOUTS & ELEVATION
(LTE 4C_5C)

SITE NUMBER	DRAWING NUMBER	REV
CT1283	A-2	1

NOTE:

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NOTE:

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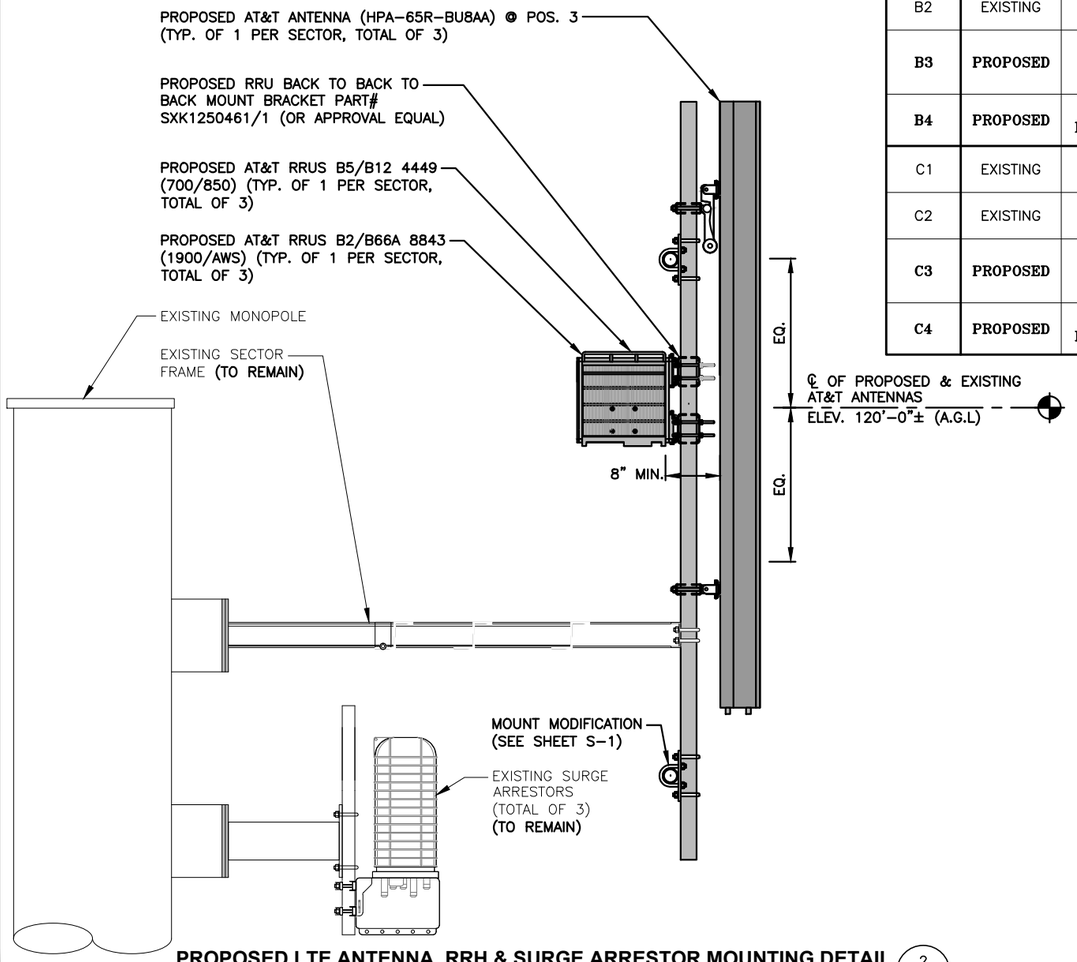
NOTE:

MINIMUM OF 8" SEPARATION REQUIRED BETWEEN THE BACK OF ANTENNA AND THE RRH.



PROPOSED LTE ANTENNA, RRH & SURGE ARRESTOR MOUNTING DETAIL (2 / A-3)

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

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

ANTENNA SCHEDULE

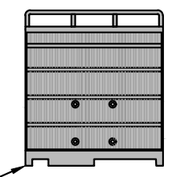
SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	EXISTING	UMTS 850	SBNH-1D6565C	96.4X11.9X7.1	±120'	0°	–	(E)(1) RRUS-11 B5	–	–	(E)(1) RAYCAP DC6-48-60-18-8C
A2	EXISTING	LTE WCS	HPA-65R-BUU-H8	92.4X14.8X7.4	±120'	0°	–	(E)(1) RRUS-32 (WCS)	–	–	
A3	**PROPOSED**	**LTE AWS**	**HPA-65R-BU8AA**	**96X11.7X7.6**	**±120'**	**0°**	–	–	–	–	
A4	**PROPOSED**	**LTE 700 BC/850/700**	**800-10966**	**96X20X6.9**	**±120'**	**0°**	–	**(P)(1) B5/B12 4449 (700/850) (P)(1) B2/B66A 8843 (AWS/1900)**	**14.9X13.2X5.4 14.9X13.2X10.9**	–	
B1	EXISTING	UMTS 850	SBNH-1D6565C	96.4X11.9X7.1	±120'	120°	–	(E)(1) RRUS-11 B5	–	–	(E)(1) RAYCAP DC6-48-60-18-8C
B2	EXISTING	LTE WCS	HPA-65R-BUU-H8	92.4X14.8X7.4	±120'	120°	–	(E)(1) RRUS-32 (WCS)	–	–	
B3	**PROPOSED**	**LTE AWS**	**HPA-65R-BU8AA**	**96X11.7X7.6**	**±120'**	**120°**	–	–	–	–	
B4	**PROPOSED**	**LTE 700 BC/850/700**	**800-10966**	**96X20X6.9**	**±120'**	**120°**	–	**(P)(1) B5/B12 4449 (700/850) (P)(1) B2/B66A 8843 (AWS/1900)**	**14.9X13.2X5.4 14.9X13.2X10.9**	–	
C1	EXISTING	UMTS 850	SBNH-1D6565C	96.4X11.9X7.1	±120'	240°	–	(E)(1) RRUS-11 B5	–	–	(E)(1) RAYCAP DC6-48-60-18-8C
C2	EXISTING	LTE WCS	HPA-65R-BUU-H8	92.4X14.8X7.4	±120'	240°	–	(E)(1) RRUS-32 (WCS)	–	–	
C3	**PROPOSED**	**LTE AWS**	**HPA-65R-BU8AA**	**96X11.7X7.6**	**±120'**	**240°**	–	–	–	–	
C4	**PROPOSED**	**LTE 700 BC/850/700**	**800-10966**	**96X20X6.9**	**±120'**	**240°**	–	**(P)(1) B5/B12 4449 (700/850) (P)(1) B2/B66A 8843 (AWS/1900)**	**14.9X13.2X5.4 14.9X13.2X10.9**	–	

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

RRU CHART				
QUANTITY	MODEL	L	W	D
3(E)	RRUW (850)	25.0"	15.1"	6.6"
3(E)	RRUS 32 (WCS)	27.2"	12.1"	7.0"
3(P)	B2/B66A 8843 (1900/AWS)	14.9"	13.2"	10.9"
3(P)	B5/B12 4449 (700/850)	14.9"	13.2"	5.4"
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 (3 / A-3)
SCALE: N.T.S

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STATE OF CONNECTICUT · DEREK J. CREASER · No. 23581 · LICENSED PROFESSIONAL ENGINEER

AT&T

DETAILS
(LTE 4C_5C)

SITE NUMBER	DRAWING NUMBER	REV
CT1283	A-3	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:	

NOTES:

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

NOTES:

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

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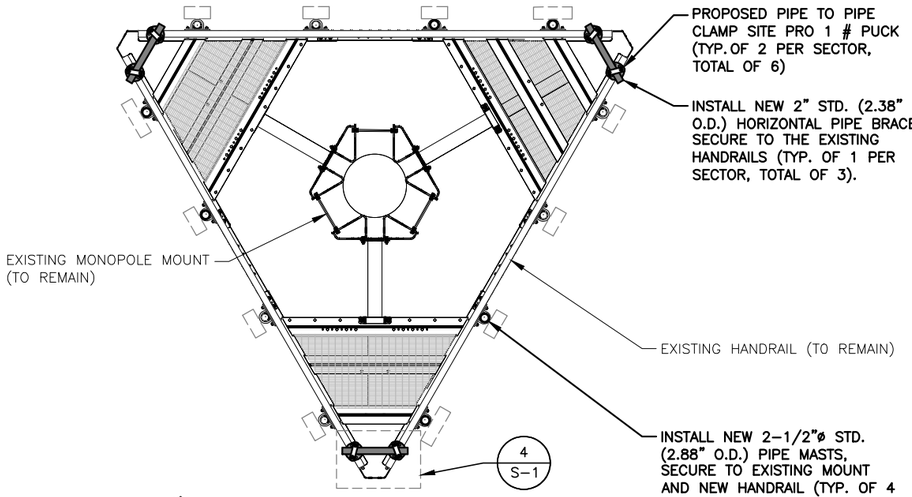
STATE OF CONNECTICUT — DEREK J. CREASER — LICENSED PROFESSIONAL ENGINEER

AT&T
STRUCTURAL NOTES
(LTE 4C_5C)

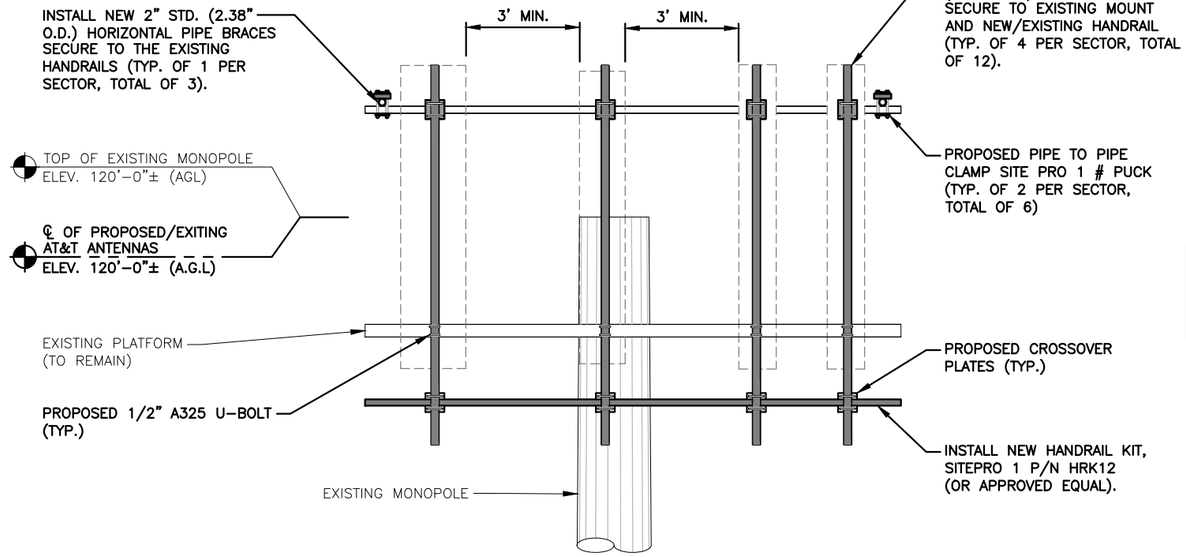
SITE NUMBER	DRAWING NUMBER	REV
CT1283	SN–1	1



PROPOSED MOUNTING MODIFICATION PLAN (1 / S-1)

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

0 1'-0" 2'-0" 4'-0" 6'-0"



PROPOSED MOUNTING MODIFICATION DETAIL (2 / S-1)

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

0 1'-0" 2'-0" 4'-0" 6'-0"

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: JANUARY 16, 2019

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NOTE:

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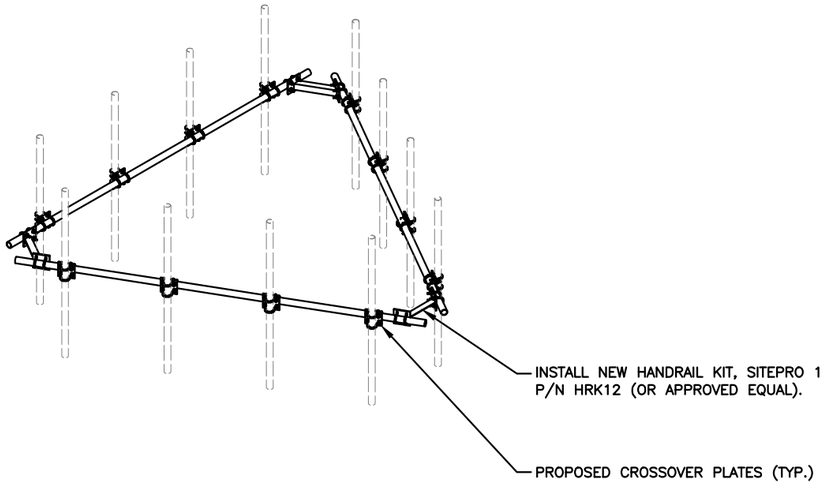
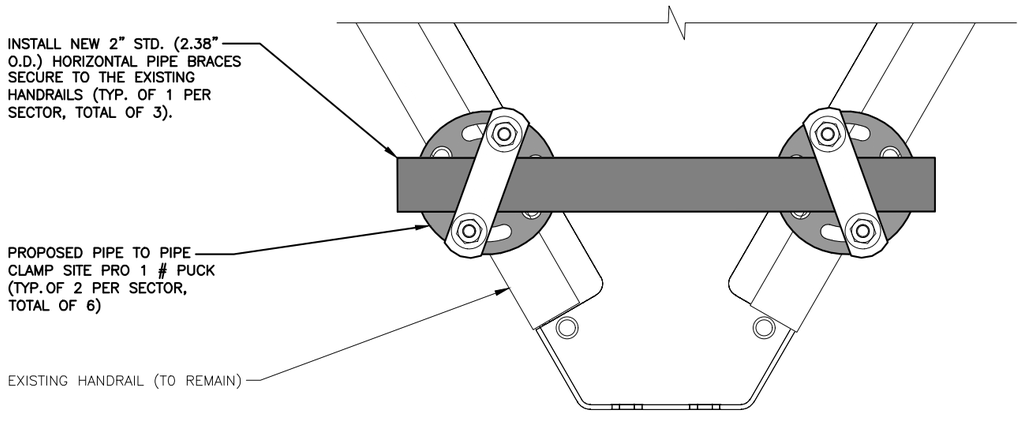


HANDRAIL KIT DETAIL (3 / S-1)

SCALE: N.T.S



PROPOSED PIPE BRACE DETAIL (4 / S-1)

SCALE: N.T.S

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STATE OF CONNECTICUT · DEREK J. CREASER · No. 28551 · LICENSED PROFESSIONAL ENGINEER

AT&T

STRUCTURAL DETAIL
(LTE 4C_5C)

SITE NUMBER	DRAWING NUMBER	REV
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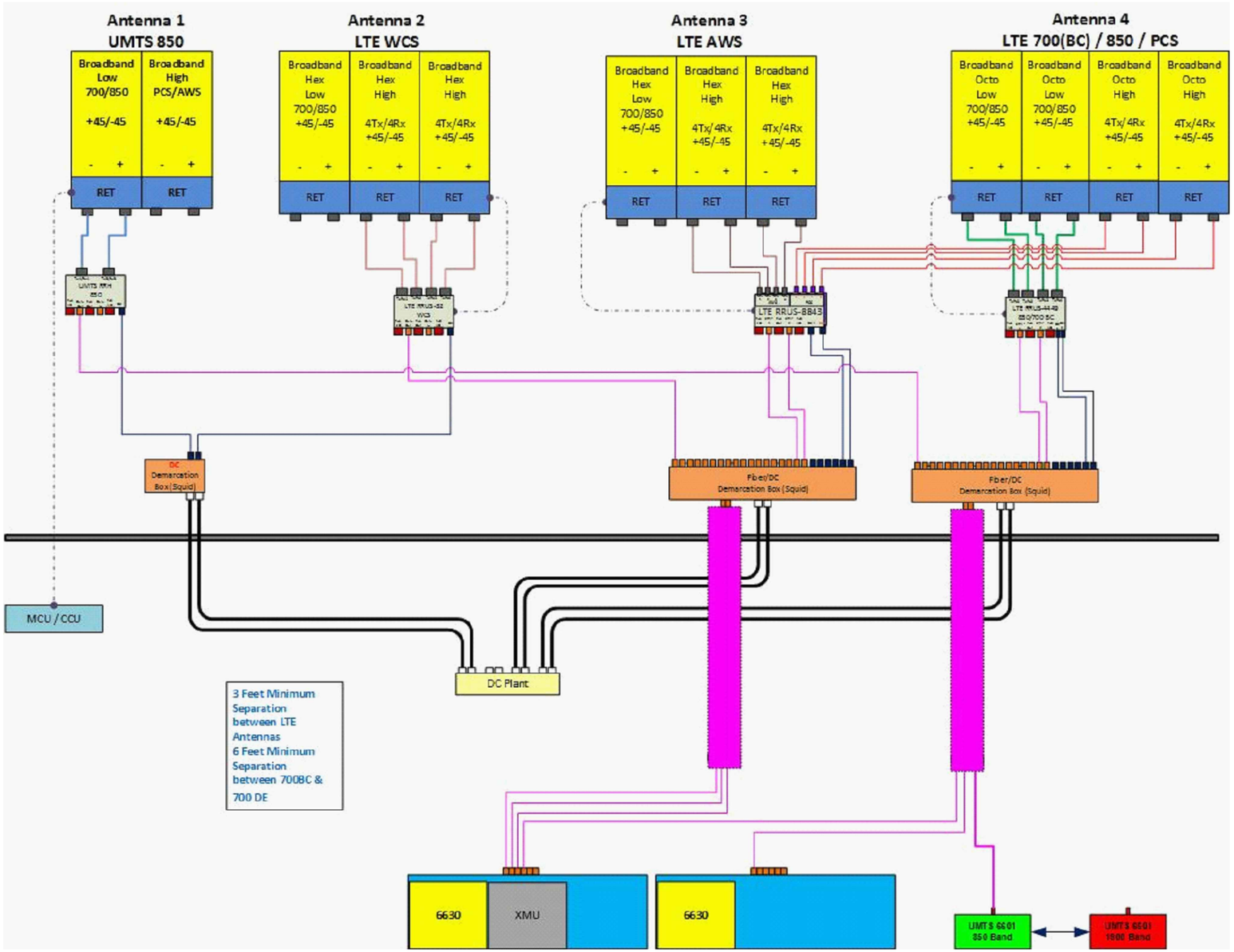

RF PLUMBING DIAGRAM (1 / RF–1)
SCALE: N.T.S

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

NOTE:
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ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	02/28/19	ISSUED FOR CONSTRUCTION	SG	AT	DJC
A	01/21/19	ISSUED FOR REVIEW	AM	AT	DJC

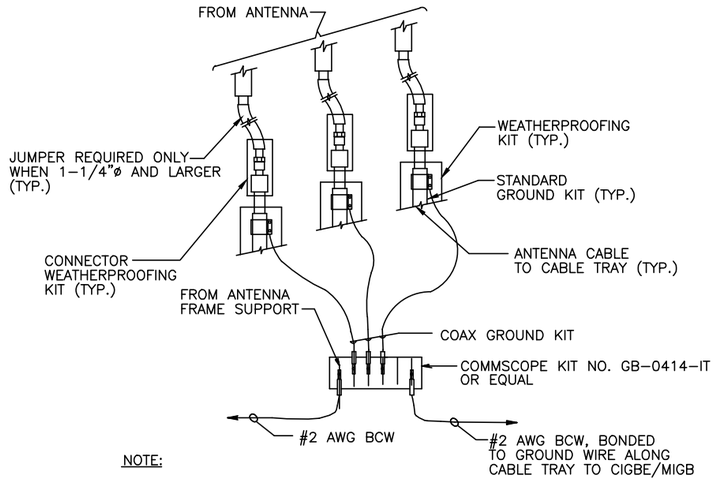
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: AM

STATE OF CONNECTICUT · DEREK J. CREASEY · NO. 25551 · LICENSED PROFESSIONAL ENGINEER

AT&T

RF PLUMBING DIAGRAM
(LTE 4C_5C)

SITE NUMBER	DRAWING NUMBER	REV
CT1283	RF–1	1



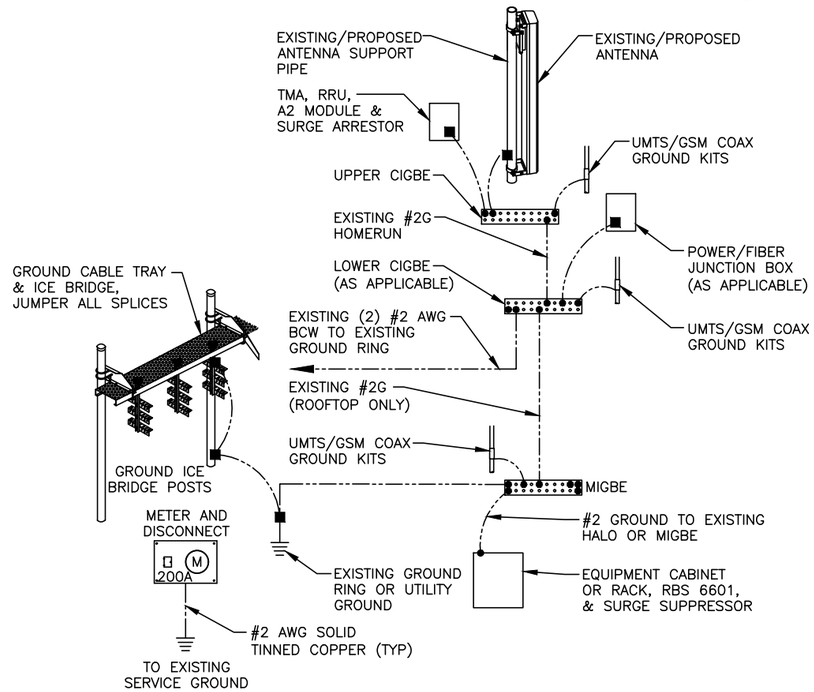
NOTE:

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

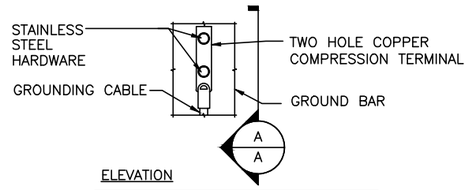
1 / G-1



GROUNDING RISER DIAGRAM

SCALE: N.T.S

2 / G-1



NOTE:
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

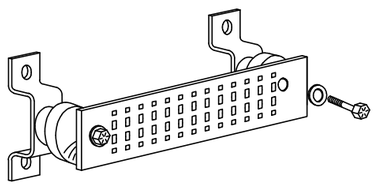
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" – SURGE PRODUCERS

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

SECTION "A" – SURGE ABSORBERS

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



GROUND BAR - DETAIL

SCALE: N.T.S

4 / G-1

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

SITE NUMBER: CT1283
SITE NAME: BRANFORD SHORT BEACH ROAD
ATC SITE # 283422
171 SHORT BEACH ROAD
BRANFORD, CT 06405
NEW HAVEN COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	02/28/19	ISSUED FOR CONSTRUCTION	SG	AT	DJC
A	01/21/19	ISSUED FOR REVIEW	AM	AT	DJC

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

STATE OF CONNECTICUT · DEREK J. CREASEY · No. 25... · LICENSED PROFESSIONAL ENGINEER

AT&T

GROUNDING DETAILS
(LTE 4C_5C)

SITE NUMBER	DRAWING NUMBER	REV
CT1283	G-1	1

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**119 ft Monopole**
ATC Site Name	:	**Short Beach Branford CT, CT**
ATC Site Number	:	**283422**
Engineering Number	:	**OAA745633_C3_01**
Proposed Carrier	:	**AT&T Mobility**
Carrier Site Name	:	**Branford Short Beach Road**
Carrier Site Number	:	**CT1283**
Site Location	:	**171 Short Beach Road** **Branford, CT 06405-4930** **41.262800,-72.834400**
County	:	**New Haven**
Date	:	**February 19, 2019**
Max Usage	:	**78%**
Result	:	**Pass**

Prepared By:
Christophe S. Quenum, E.I.
Structural Engineer I

Reviewed By:

COA: PEC.0001553

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CORPORATION

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 119 ft monopole to reflect the change in loading by AT&T Mobility.

Supporting Documents

Tower Drawings	Sabre Job #73523, dated January 26, 2013
Foundation Drawing	Sabre Job #73523, dated January 26, 2013
Geotechnical Report	Terracon Project #J2135101, dated January 17, 2013

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	97 mph (3-Second Gust, V_{asd}) / 125 mph (3-Second Gust, V_{ult})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2015 IBC / 2018 Connecticut State Building Code
Structure Class:	II
Exposure Category:	C
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 0.06, S_1 = 0.18
Site Class:	D - Stiff Soil

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
117.0	120.0	1	Commscope WCS-IMFQ-AMT	Platform w/ Handrails	(6) 0.78" 8 AWG 6 (3) 0.39" Fiber Trunk (3) 3/8" RET Control Cable	AT&T Mobility
		3	Raycap DC6-48-60-18-8F			
		3	Ericsson RRUS 11 (Band 12)			
		3	Ericsson RRUS 32 B30 (60 lbs)			
		3	Andrew SBNH-1D6565C			
		3	CCI HPA-65R-BUU-H8			
100.0	100.0	3	Alcatel-Lucent RRH2X60-AWS	Platform w/ Handrails	(12) 1 5/8" Coax (2) 1 5/8" Hybriflex	Verizon
		3	Alcatel-Lucent RRH2x60 700			
		3	Alcatel-Lucent PCS B25 RRH2x60/4x30			
		2	RFS DB-T1-6Z-8AB-0Z			
		3	Antel BXA-70063-6CF-EDIN-X			
		3	Andrew LNX-6514DS-A1M			
		6	Commscope SBNHH-1D65B			

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
117.0	120.0	6	Andrew SBNH-1D6565C	-	(3) 2" conduit	AT&T Mobility
		3	Ericsson RRUS-12 B2			
		6	Ericsson RRUS 11 (Band 12)			

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
117.0	120.0	3	Ericsson RRUS 8843 B2, B66A	Platform w/ Handrails w/ Proposed AT&T HRK	(3) 3" conduit	AT&T Mobility
		3	Ericsson RRUS 4449 B5, B12			
		3	Ericsson RRUW			
		3	CCI HPA65R-BU8A			
		3	Kathrein 80010966			

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

Install proposed coax inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	60%	Pass
Shaft	78%	Pass
Base Plate	64%	Pass

Foundations

Reaction Component	Original Design Reactions	Analysis Reactions	% of Design
Moment (Kips-Ft)	2,678.3	1,996.6	75%
Shear (Kips)	30.2	21.4	71%

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
117.0	Ericsson RRUS 8843 B2, B66A	AT&T Mobility	1.599	1.539
	Ericsson RRUS 4449 B5, B12			
	Ericsson RRUW			
	CCI HPA65R-BU8A			
	Kathrein Scala 80010966			

***Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-G**

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Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

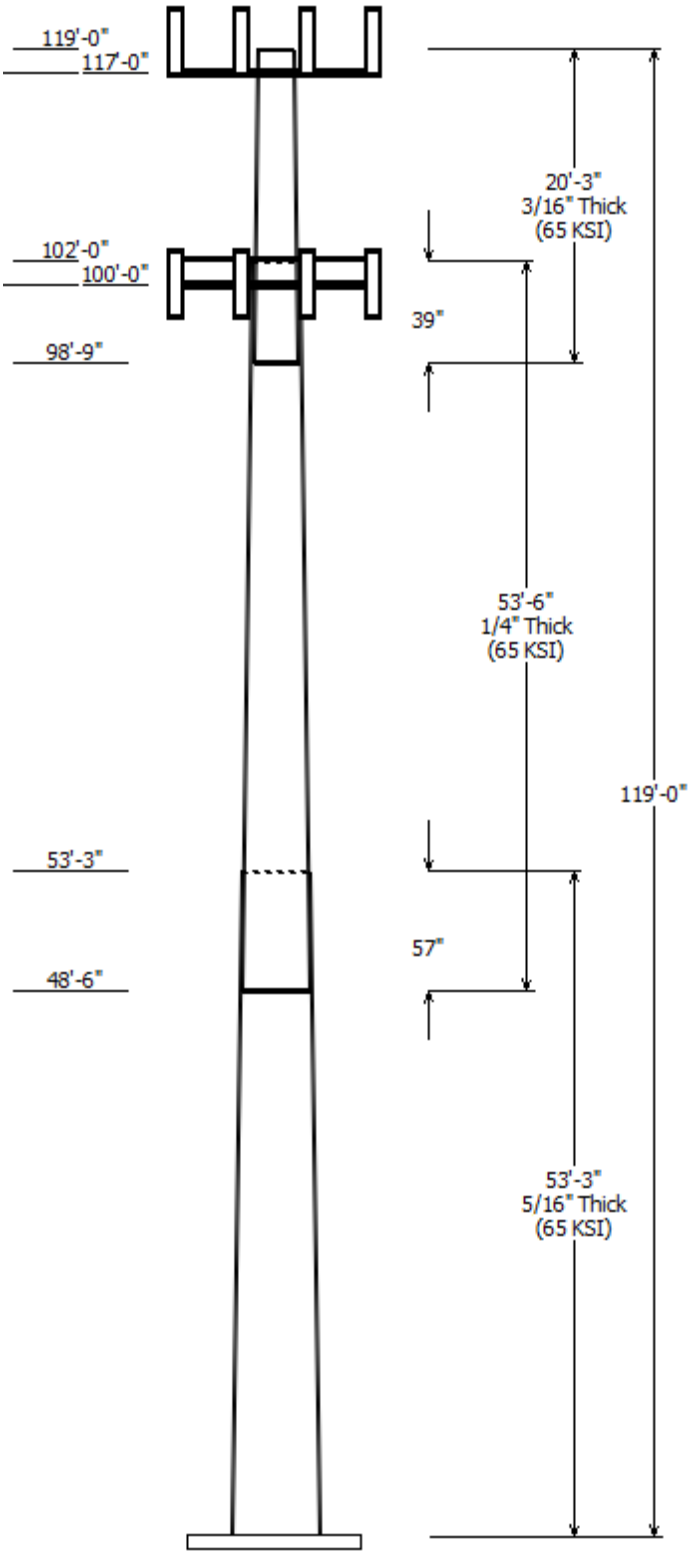
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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

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

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.



Job Information

Pole :	283422	Code:	ANSI/TIA-222-G
Location :	SHORT BEACH BRANFORD CT, CT		
Description :	41.26278, -72.83442		
Client :	AT&T MOBILITY	Struct Class :	II
Shape :	18 Sides	Exposure :	C
Height :	119.00 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.242200 (in/ft)		

Sections Properties

Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	53.250	32.80	45.70	0.313		0.000	18 Sides	65
2	53.500	21.49	34.45	0.250	Slip Joint	57.000	18 Sides	65
3	20.250	17.75	22.65	0.188	Slip Joint	39.000	18 Sides	65

Discrete Appurtenance

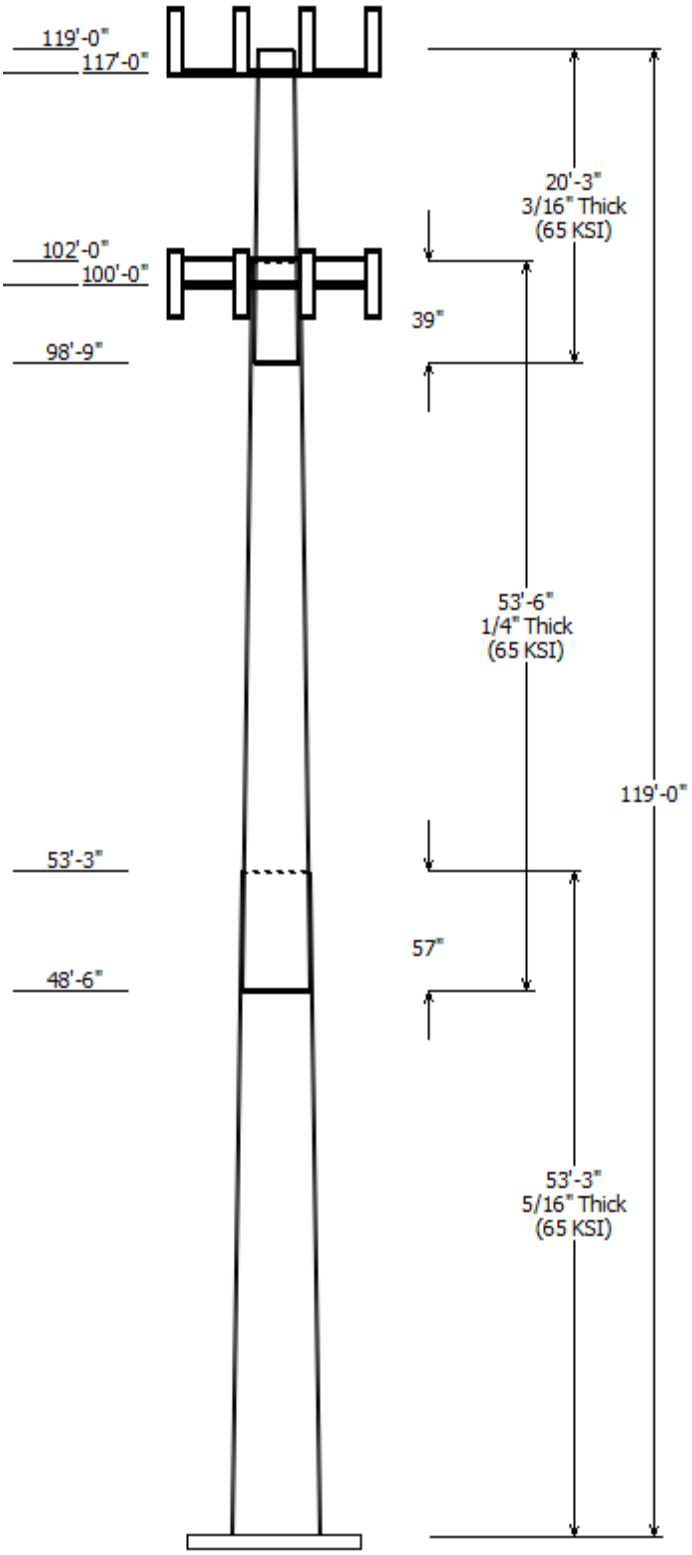
Attach Elev (ft)	Force Elev (ft)	Qty	Description
117.000	120.000	3	Kathrein Scala 80010966
117.000	120.000	3	CCI HPA-65R-BUU-H8
117.000	120.000	3	Andrew SBNH-1D6565C
117.000	120.000	3	CCI HPA65R-BU8A
117.000	120.000	3	Ericsson RRUW
117.000	120.000	3	Ericsson RRUS 32 B30 (60 lbs)
117.000	120.000	3	Ericsson RRUS 11 (Band 12)
117.000	120.000	3	Ericsson RRUS 4449 B5, B12
117.000	120.000	3	Ericsson RRUS 8843 B2, B66A
117.000	120.000	3	Raycap DC6-48-60-18-8F
117.000	120.000	1	Commscope WCS-IMFQ-AMT
117.000	117.000	3	Stand-Off
117.000	117.000	1	Flat Plafform w/ Handrails w/
100.000	100.000	1	Round Platform w/ Handrails
100.000	100.000	6	Commscope SBNHH-1D65B
100.000	100.000	3	Andrew LNX-6514DS-A1M
100.000	100.000	3	Antel BXA-70063-6CF-EDIN-X
100.000	100.000	2	RFS DB-T1-6Z-8AB-0Z
100.000	100.000	3	Alcatel-Lucent PCS B25
100.000	100.000	3	Alcatel-Lucent RRH2x60 700
100.000	100.000	3	Alcatel-Lucent RRH2X60-AWS

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	100.0	1 5/8" Coax	No
0.000	100.0	1 5/8" Hybriflex	No
0.000	120.0	0.39" (10mm)	No
0.000	120.0	0.78" (19.7mm) 8	No
0.000	120.0	3" conduit	No
0.000	120.0	3/8" (0.38"-	No

Load Cases

1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal



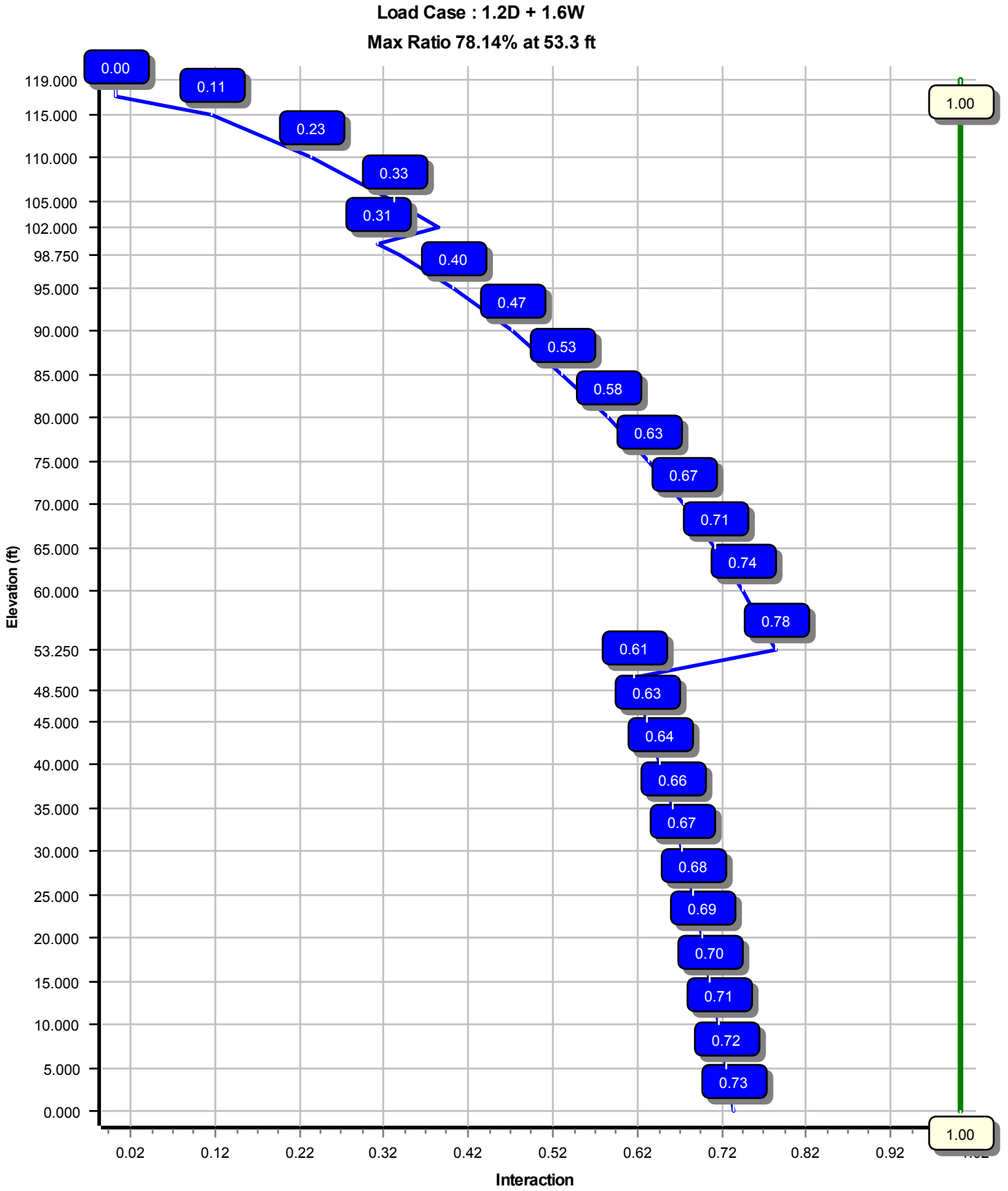
1.0D + 1.0W	Serviceability 60 mph

Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	1996.61	21.38	28.77
0.9D + 1.6W	1973.12	21.37	21.57
1.2D + 1.0Di + 1.0Wi	554.17	5.93	51.60
(1.2 + 0.2Sds) * DL + E ELFM	139.61	1.36	27.97
(1.2 + 0.2Sds) * DL + E EMAM	139.61	1.33	27.97
(0.9 - 0.2Sds) * DL + E ELFM	137.88	1.36	20.45
(0.9 - 0.2Sds) * DL + E EMAM	137.85	1.32	20.45
1.0D + 1.0W	474.47	5.11	24.01

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
	0.00	0.000	0.000


Load Case : 1.2D + 1.6W
Max Ratio 78.14% at 53.3 ft
0.00
0.11
0.23
0.33
0.31
0.40
0.47
0.53
0.58
0.63
0.67
0.71
0.74
0.78
0.61
0.63
0.64
0.66
0.67
0.68
0.69
0.70
0.71
0.72
0.73
1.00
1.00
119.000
115.000
110.000
105.000
102.000
98.750
95.000
90.000
85.000
80.000
75.000
70.000
65.000
60.000
53.250
48.500
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
Elevation (ft)
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
Interaction

Site Number:	283422	Code: ANSI/TIA-222-G	
Site Name:	SHORT BEACH BRANFORD CT, CT	Engineering Number:	OAA745633_C3_01
Customer:	AT&T MOBILITY		2/19/2019 3:54:06 PM

Analysis Parameters

Location :	NEW HAVEN County, CT	Height (ft) :	119
Code :	ANSI/TIA-222-G	Base Diameter (in) :	45.70
Shape :	18 Sides	Top Diameter (in) :	17.75
Pole Type :	Taper	Taper (in/ft) :	0.242
Pole Manfacturer :	Sabre	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	97 mph
Exposure Category:	C	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0 ft	Design Ice Thickness:	0.75 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods				
Site Class:	D - Stiff Soil				
Period Based on Rayleigh Method (sec):	2.16				
T_L (sec):	6	p:	1.3	C_s:	0.043
S_s:	0.061	S_1:	0.180	C_s Max:	0.077
F_a:	1.600	F_v:	2.080	C_s Min:	0.030
S_{ds}:	0.065	S_{d1}:	0.250		

Load Cases

1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2Sds) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 283422 Code: ANSI/TIA-222-G

Site Name: SHORT BEACH BRANFORD CT, CE Engineering Number: OAA745633_C3_01 2/19/2019 3:54:06 PM

Customer: AT&T MOBILITY

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	53.250	0.3125	65		0.00	6,998	45.70	0.00	45.02	11716.6	24.02	146.24	32.80	53.25	32.23	4297.9	16.75	104.97	0.242200
2-18	53.500	0.2500	65	Slip	57.00	4,005	34.45	48.50	27.14	4011.3	22.54	137.81	21.49	102.00	16.86	961.4	13.40	85.98	0.242200
3-18	20.250	0.1875	65	Slip	39.00	821	22.65	98.75	13.37	853.0	19.54	120.84	17.75	119.00	10.45	407.5	14.93	94.68	0.242200
				Shaft Weight		11,824													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Distance From Face (ft)	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor
117.00	Andrew SBNH-1D6565C	3	0.000	3.000	66.10	11.440	0.70
117.00	CCI HPA-65R-BUU-H8	3	0.000	3.000	68.00	12.980	0.67
117.00	CCI HPA65R-BU8A	3	0.000	3.000	54.00	11.230	0.71
117.00	Commscope WCS-IMFQ-AMT	1	0.000	3.000	29.50	0.990	1.00
117.00	Ericsson RRUS 11 (Band 12)	3	0.000	3.000	50.00	2.570	0.50
117.00	Ericsson RRUS 32 B30 (60 lbs)	3	0.000	3.000	60.00	2.690	0.50
117.00	Ericsson RRUS 4449 B5, B12	3	0.000	3.000	71.00	1.970	0.50
117.00	Ericsson RRUS 8843 B2, B66A	3	0.000	3.000	72.00	1.640	0.50
117.00	Ericsson RRUW	3	0.000	3.000	44.10	3.150	0.63
117.00	Flat Plafform w/ Handrails w/	1	0.000	0.000	2500.00	47.900	1.00
117.00	Kathrein Scala 80010966	3	0.000	3.000	114.60	17.360	0.63
117.00	Raycap DC6-48-60-18-8F	3	0.000	3.000	20.00	1.260	1.00
117.00	Stand-Off	3	0.000	0.000	100.00	3.000	0.67
100.00	Alcatel-Lucent PCS B25 RRH2x60	3	0.000	0.000	55.00	2.200	0.67
100.00	Alcatel-Lucent RRH2x60 700	3	0.000	0.000	56.70	2.150	0.67
100.00	Alcatel-Lucent RRH2X60-AWS	3	0.000	0.000	44.00	1.880	0.50
100.00	Andrew LNX-6514DS-A1M	3	0.000	0.000	38.80	8.170	0.69
100.00	Antel BXA-70063-6CF-EDIN-X	3	0.000	0.000	17.00	7.570	0.66
100.00	Commscope SBNHH-1D65B	6	0.000	0.000	50.70	8.170	0.69
100.00	RFS DB-T1-6Z-8AB-0Z	2	0.000	0.000	44.00	4.800	0.72
100.00	Round Platform w/ Handrails	1	0.000	0.000	2000.00	27.200	1.00
Totals	Num Loadings:21	59			7715.60		

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Flat	Projected Width (in)	Exposed To Wind	Carrier
0.00	120.00	3	0.39" (10mm) Fiber	0.39	0.06	N	0.00	N	AT&T Mobility
0.00	120.00	6	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0.00	N	AT&T Mobility
0.00	120.00	3	3" conduit	3.50	7.58	N	0.00	N	AT&T Mobility
0.00	120.00	3	3/8" (0.38"- 9.5mm)	0.38	0.23	N	0.00	N	AT&T Mobility
0.00	100.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	Verizon
0.00	100.00	2	1 5/8" Hybriflex	1.98	1.30	N	0.00	N	Verizon

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.3125	45.700	45.017	11,716.6	24.02	146.24	73.1	505.0	0.0	0.0
5.00		0.3125	44.489	43.816	10,803.6	23.34	142.36	73.9	478.3	0.0	755.7
10.00		0.3125	43.278	42.615	9,939.3	22.66	138.49	74.8	452.3	0.0	735.3
15.00		0.3125	42.067	41.414	9,122.3	21.97	134.61	75.6	427.1	0.0	714.8
20.00		0.3125	40.856	40.213	8,351.4	21.29	130.74	76.4	402.6	0.0	694.4
25.00		0.3125	39.645	39.012	7,625.2	20.61	126.86	77.2	378.8	0.0	674.0
30.00		0.3125	38.434	37.810	6,942.3	19.92	122.99	78.0	355.8	0.0	653.5
35.00		0.3125	37.223	36.609	6,301.5	19.24	119.11	78.8	333.4	0.0	633.1
40.00		0.3125	36.012	35.408	5,701.4	18.56	115.24	79.6	311.8	0.0	612.6
45.00		0.3125	34.801	34.207	5,140.6	17.87	111.36	80.4	290.9	0.0	592.2
48.50	Bot - Section 2	0.3125	33.953	33.366	4,770.8	17.39	108.65	80.9	276.8	0.0	402.4
50.00		0.3125	33.590	33.006	4,617.9	17.19	107.49	81.2	270.8	0.0	307.2
53.25	Top - Section 1	0.2500	33.303	26.226	3,620.0	21.73	133.21	75.8	214.1	0.0	654.2
55.00		0.2500	32.879	25.890	3,482.5	21.43	131.52	76.2	208.6	0.0	155.2
60.00		0.2500	31.668	24.929	3,109.0	20.57	126.67	77.2	193.4	0.0	432.3
65.00		0.2500	30.457	23.968	2,763.2	19.72	121.83	78.2	178.7	0.0	416.0
70.00		0.2500	29.246	23.007	2,444.0	18.86	116.98	79.2	164.6	0.0	399.6
75.00		0.2500	28.035	22.047	2,150.4	18.01	112.14	80.2	151.1	0.0	383.3
80.00		0.2500	26.824	21.086	1,881.3	17.16	107.30	81.2	138.1	0.0	366.9
85.00		0.2500	25.613	20.125	1,635.6	16.30	102.45	82.2	125.8	0.0	350.6
90.00		0.2500	24.402	19.164	1,412.4	15.45	97.61	82.6	114.0	0.0	334.2
95.00		0.2500	23.191	18.203	1,210.4	14.59	92.76	82.6	102.8	0.0	317.9
98.75	Bot - Section 3	0.2500	22.283	17.482	1,072.2	13.95	89.13	82.6	94.8	0.0	227.7
100.0		0.2500	21.980	17.242	1,028.6	13.74	87.92	82.6	92.2	0.0	130.3
102.0	Top - Section 2	0.1875	21.871	12.904	766.5	18.80	116.64	79.3	69.0	0.0	204.8
105.0		0.1875	21.144	12.471	692.0	18.12	112.77	80.1	64.5	0.0	129.5
110.0		0.1875	19.933	11.751	578.8	16.98	106.31	81.4	57.2	0.0	206.1
115.0		0.1875	18.722	11.030	478.7	15.84	99.85	82.6	50.4	0.0	193.8
117.0		0.1875	18.238	10.742	442.2	15.39	97.27	82.6	47.8	0.0	74.1
119.0		0.1875	17.753	10.453	407.5	14.93	94.68	82.6	45.2	0.0	72.1
											11,823.7

Load Case: 1.2D + 1.6W — 97 mph with No Ice — 23 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 1.20
Wind Load Factor : 1.60

Wind Importance Factor 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		212.3	0.0					0.0	0.0	212.3	0.0	0.0	0.0
5.00		418.8	906.8					0.0	237.5	418.8	1,144.4	0.0	0.0
10.00		407.4	882.3					0.0	237.5	407.4	1,119.9	0.0	0.0
15.00		402.2	857.8					0.0	237.5	402.2	1,095.3	0.0	0.0
20.00		407.4	833.3					0.0	237.5	407.4	1,070.8	0.0	0.0
25.00		414.6	808.7					0.0	237.5	414.6	1,046.3	0.0	0.0
30.00		417.8	784.2					0.0	237.5	417.8	1,021.8	0.0	0.0
35.00		418.0	759.7					0.0	237.5	418.0	997.2	0.0	0.0
40.00		416.0	735.2					0.0	237.5	416.0	972.7	0.0	0.0
45.00		351.0	710.7					0.0	237.5	351.0	948.2	0.0	0.0
48.50	Bot - Section 2	205.8	482.9					0.0	166.3	205.8	649.1	0.0	0.0
50.00		195.6	368.6					0.0	71.3	195.6	439.9	0.0	0.0
53.25	Top - Section 1	204.9	785.0					0.0	154.4	204.9	939.4	0.0	0.0
55.00		272.7	186.2					0.0	83.1	272.7	269.3	0.0	0.0
60.00		398.5	518.8					0.0	237.5	398.5	756.3	0.0	0.0
65.00		389.8	499.2					0.0	237.5	389.8	736.7	0.0	0.0
70.00		380.2	479.5					0.0	237.5	380.2	717.1	0.0	0.0
75.00		369.8	459.9					0.0	237.5	369.8	697.5	0.0	0.0
80.00		358.7	440.3					0.0	237.5	358.7	677.8	0.0	0.0
85.00		346.9	420.7					0.0	237.5	346.9	658.2	0.0	0.0
90.00		334.5	401.1					0.0	237.5	334.5	638.6	0.0	0.0
95.00		282.8	381.5					0.0	237.5	282.8	619.0	0.0	0.0
98.75	Bot - Section 3	158.1	273.2					0.0	178.2	158.1	451.4	0.0	0.0
100.00	Appurtenance(s)	101.5	156.4	4,605.2	0.0	0.0	3,632.0	0.0	59.4	4,706.7	3,847.8	0.0	0.0
102.00	Top - Section 2	153.2	245.8					0.0	65.2	153.2	311.0	0.0	0.0
105.00		237.3	155.4					0.0	97.7	237.3	253.2	0.0	0.0
110.00		285.0	247.3					0.0	162.9	285.0	410.2	0.0	0.0
115.00		192.3	232.6					0.0	162.9	192.3	395.5	0.0	0.0
117.00	Appurtenance(s)	105.7	88.9	8,040.0	0.0	15,596.4	5,626.7	0.0	65.2	8,145.7	5,780.7	0.0	0.0
119.00		52.2	86.5					0.0	65.2	52.2	151.7	0.0	0.0
								Totals:		21,536.2	28,817.0	0.00	0.00

Site Number: 283422 Code: ANSI/TIA-222-G

Site Name: SHORT BEACH BRANFORD CT, CE Engineering Number: OAA745633_C3_01 2/19/2019 3:54:07 PM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.6W 97 mph with No Ice 23 Iterations

Gust Response Factor : 1.10 Wind Importance Factor 1.00

Dead Load Factor : 1.20

Wind Load Factor : 1.60

Calculated Forces

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 (deg)	Ratio
0.00	-28.77	-21.38	0.00	-1,996.61	0.00	1,996.61	2,963.53	1,481.76	5,532.27	2,770.25	0.00	0.00	0.731
5.00	-27.54	-21.08	0.00	-1,889.69	0.00	1,889.69	2,916.15	1,458.07	5,297.58	2,652.73	0.13	-0.24	0.722
10.00	-26.33	-20.78	0.00	-1,784.31	0.00	1,784.31	2,867.03	1,433.51	5,064.58	2,536.05	0.50	-0.48	0.713
15.00	-25.15	-20.47	0.00	-1,680.43	0.00	1,680.43	2,816.18	1,408.09	4,833.52	2,420.35	1.14	-0.73	0.703
20.00	-24.00	-20.16	0.00	-1,578.07	0.00	1,578.07	2,763.58	1,381.79	4,604.66	2,305.75	2.03	-0.98	0.693
25.00	-22.87	-19.83	0.00	-1,477.28	0.00	1,477.28	2,709.26	1,354.63	4,378.27	2,192.39	3.20	-1.24	0.682
30.00	-21.77	-19.49	0.00	-1,378.14	0.00	1,378.14	2,653.19	1,326.59	4,154.62	2,080.40	4.64	-1.51	0.671
35.00	-20.69	-19.14	0.00	-1,280.70	0.00	1,280.70	2,595.39	1,297.69	3,933.95	1,969.90	6.36	-1.78	0.658
40.00	-19.64	-18.79	0.00	-1,185.00	0.00	1,185.00	2,535.84	1,267.92	3,716.53	1,861.03	8.38	-2.06	0.645
45.00	-18.63	-18.48	0.00	-1,091.05	0.00	1,091.05	2,474.56	1,237.28	3,502.63	1,753.92	10.68	-2.34	0.630
48.50	-17.94	-18.29	0.00	-1,026.36	0.00	1,026.36	2,430.64	1,215.32	3,355.12	1,680.06	12.48	-2.55	0.619
50.00	-17.47	-18.12	0.00	-998.92	0.00	998.92	2,411.55	1,205.77	3,292.50	1,648.70	13.29	-2.64	0.613
53.25	-16.49	-17.92	0.00	-940.02	0.00	940.02	1,790.30	895.15	2,432.20	1,217.91	15.15	-2.83	0.781
55.00	-16.16	-17.70	0.00	-908.67	0.00	908.67	1,775.53	887.77	2,380.98	1,192.26	16.21	-2.94	0.772
60.00	-15.32	-17.35	0.00	-820.18	0.00	820.18	1,732.17	866.09	2,235.97	1,119.65	19.48	-3.29	0.742
65.00	-14.51	-17.01	0.00	-733.42	0.00	733.42	1,687.08	843.54	2,093.15	1,048.13	23.11	-3.65	0.709
70.00	-13.71	-16.67	0.00	-648.37	0.00	648.37	1,640.24	820.12	1,952.79	977.85	27.12	-4.00	0.672
75.00	-12.94	-16.33	0.00	-565.03	0.00	565.03	1,591.67	795.84	1,815.15	908.92	31.50	-4.36	0.630
80.00	-12.20	-15.99	0.00	-483.40	0.00	483.40	1,541.36	770.68	1,680.48	841.49	36.24	-4.70	0.583
85.00	-11.49	-15.65	0.00	-403.45	0.00	403.45	1,489.32	744.66	1,549.05	775.68	41.35	-5.04	0.528
90.00	-10.80	-15.32	0.00	-325.18	0.00	325.18	1,423.78	711.89	1,409.49	705.79	46.79	-5.35	0.469
95.00	-10.15	-15.02	0.00	-248.58	0.00	248.58	1,352.39	676.20	1,271.00	636.45	52.55	-5.64	0.399
98.75	-9.68	-14.84	0.00	-192.25	0.00	192.25	1,298.85	649.43	1,171.84	586.79	57.05	-5.84	0.336
100.00	-6.32	-9.77	0.00	-173.70	0.00	173.70	1,281.00	640.50	1,139.67	570.68	58.59	-5.90	0.310
102.00	-6.01	-9.60	0.00	-154.15	0.00	154.15	920.75	460.37	819.71	410.46	61.08	-5.99	0.383
105.00	-5.76	-9.35	0.00	-125.35	0.00	125.35	898.91	449.46	773.23	387.19	64.87	-6.11	0.331
110.00	-5.35	-9.04	0.00	-78.58	0.00	78.58	861.13	430.57	697.54	349.29	71.38	-6.32	0.232
115.00	-4.97	-8.81	0.00	-33.36	0.00	33.36	819.47	409.73	622.70	311.81	78.07	-6.46	0.114
117.00	-0.14	-0.07	0.00	-0.14	0.00	0.14	798.05	399.03	590.42	295.65	80.78	-6.49	0.001
119.00	0.00	-0.05	0.00	0.00	0.00	0.00	776.64	388.32	559.00	279.91	83.49	-6.49	0.000

Load Case: 0.9D + 1.6W — 97 mph with No Ice (Reduced DL) — 23 Iterations

Gust Response Factor : 1.10
Dead Load Factor : 0.90
Wind Load Factor : 1.60
Wind Importance Factor 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		212.3	0.0					0.0	0.0	212.3	0.0	0.0	0.0
5.00		418.8	680.1					0.0	178.2	418.8	858.3	0.0	0.0
10.00		407.4	661.7					0.0	178.2	407.4	839.9	0.0	0.0
15.00		402.2	643.3					0.0	178.2	402.2	821.5	0.0	0.0
20.00		407.4	625.0					0.0	178.2	407.4	803.1	0.0	0.0
25.00		414.6	606.6					0.0	178.2	414.6	784.7	0.0	0.0
30.00		417.8	588.2					0.0	178.2	417.8	766.3	0.0	0.0
35.00		418.0	569.8					0.0	178.2	418.0	747.9	0.0	0.0
40.00		416.0	551.4					0.0	178.2	416.0	729.5	0.0	0.0
45.00		351.0	533.0					0.0	178.2	351.0	711.1	0.0	0.0
48.50	Bot - Section 2	205.8	362.2					0.0	124.7	205.8	486.9	0.0	0.0
50.00		195.6	276.5					0.0	53.4	195.6	329.9	0.0	0.0
53.25	Top - Section 1	204.9	588.8					0.0	115.8	204.9	704.6	0.0	0.0
55.00		272.7	139.7					0.0	62.4	272.7	202.0	0.0	0.0
60.00		398.5	389.1					0.0	178.2	398.5	567.2	0.0	0.0
65.00		389.8	374.4					0.0	178.2	389.8	552.5	0.0	0.0
70.00		380.2	359.7					0.0	178.2	380.2	537.8	0.0	0.0
75.00		369.8	344.9					0.0	178.2	369.8	523.1	0.0	0.0
80.00		358.7	330.2					0.0	178.2	358.7	508.4	0.0	0.0
85.00		346.9	315.5					0.0	178.2	346.9	493.7	0.0	0.0
90.00		334.5	300.8					0.0	178.2	334.5	479.0	0.0	0.0
95.00		282.8	286.1					0.0	178.2	282.8	464.2	0.0	0.0
98.75	Bot - Section 3	158.1	204.9					0.0	133.6	158.1	338.5	0.0	0.0
100.00	Appurtenance(s)	101.5	117.3	4,605.2	0.0	0.0	2,724.0	0.0	44.5	4,706.7	2,885.9	0.0	0.0
102.00	Top - Section 2	153.2	184.3					0.0	48.9	153.2	233.2	0.0	0.0
105.00		237.3	116.6					0.0	73.3	237.3	189.9	0.0	0.0
110.00		285.0	185.4					0.0	122.2	285.0	307.6	0.0	0.0
115.00		192.3	174.4					0.0	122.2	192.3	296.6	0.0	0.0
117.00	Appurtenance(s)	105.7	66.7	8,040.0	0.0	15,596.4	4,220.0	0.0	48.9	8,145.7	4,335.6	0.0	0.0
119.00		52.2	64.9					0.0	48.9	52.2	113.8	0.0	0.0
								Totals:		21,536.2	21,612.7	0.00	0.00

Site Number: 283422 Code: ANSI/TIA-222-G

Site Name: SHORT BEACH BRANFORD CT, CE Engineering Number: OAA745633_C3_01 2/19/2019 3:54:09 PM

Customer: AT&T MOBILITY

Load Case: 0.9D + 1.6W 97 mph with No Ice (Reduced DL) 23 Iterations

Gust Response Factor : 1.10 Wind Importance Factor 1.00

Dead Load Factor : 0.90

Wind Load Factor : 1.60

Calculated Forces

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 (deg)	Ratio
0.00	-21.57	-21.37	0.00	-1,973.12	0.00	1,973.12	2,963.53	1,481.76	5,532.27	2,770.25	0.00	0.00	0.720
5.00	-20.62	-21.03	0.00	-1,866.28	0.00	1,866.28	2,916.15	1,458.07	5,297.58	2,652.73	0.13	-0.23	0.711
10.00	-19.70	-20.70	0.00	-1,761.12	0.00	1,761.12	2,867.03	1,433.51	5,064.58	2,536.05	0.50	-0.47	0.702
15.00	-18.79	-20.37	0.00	-1,657.61	0.00	1,657.61	2,816.18	1,408.09	4,833.52	2,420.35	1.12	-0.72	0.692
20.00	-17.91	-20.03	0.00	-1,555.74	0.00	1,555.74	2,763.58	1,381.79	4,604.66	2,305.75	2.01	-0.97	0.681
25.00	-17.04	-19.68	0.00	-1,455.56	0.00	1,455.56	2,709.26	1,354.63	4,378.27	2,192.39	3.16	-1.22	0.670
30.00	-16.20	-19.32	0.00	-1,357.15	0.00	1,357.15	2,653.19	1,326.59	4,154.62	2,080.40	4.58	-1.49	0.659
35.00	-15.37	-18.96	0.00	-1,260.55	0.00	1,260.55	2,595.39	1,297.69	3,933.95	1,969.90	6.28	-1.75	0.646
40.00	-14.57	-18.59	0.00	-1,165.77	0.00	1,165.77	2,535.84	1,267.92	3,716.53	1,861.03	8.26	-2.03	0.632
45.00	-13.79	-18.27	0.00	-1,072.84	0.00	1,072.84	2,474.56	1,237.28	3,502.63	1,753.92	10.54	-2.31	0.617
48.50	-13.27	-18.07	0.00	-1,008.91	0.00	1,008.91	2,430.64	1,215.32	3,355.12	1,680.06	12.30	-2.51	0.606
50.00	-12.91	-17.90	0.00	-981.80	0.00	981.80	2,411.55	1,205.77	3,292.50	1,648.70	13.11	-2.60	0.601
53.25	-12.17	-17.69	0.00	-923.64	0.00	923.64	1,790.30	895.15	2,432.20	1,217.91	14.94	-2.79	0.766
55.00	-11.91	-17.45	0.00	-892.68	0.00	892.68	1,775.53	887.77	2,380.98	1,192.26	15.98	-2.89	0.756
60.00	-11.26	-17.10	0.00	-805.41	0.00	805.41	1,732.17	866.09	2,235.97	1,119.65	19.20	-3.24	0.726
65.00	-10.63	-16.74	0.00	-719.93	0.00	719.93	1,687.08	843.54	2,093.15	1,048.13	22.78	-3.59	0.694
70.00	-10.02	-16.38	0.00	-636.24	0.00	636.24	1,640.24	820.12	1,952.79	977.85	26.73	-3.94	0.657
75.00	-9.43	-16.04	0.00	-554.32	0.00	554.32	1,591.67	795.84	1,815.15	908.92	31.04	-4.29	0.616
80.00	-8.86	-15.69	0.00	-474.15	0.00	474.15	1,541.36	770.68	1,680.48	841.49	35.70	-4.63	0.570
85.00	-8.31	-15.35	0.00	-395.70	0.00	395.70	1,489.32	744.66	1,549.05	775.68	40.72	-4.95	0.516
90.00	-7.78	-15.01	0.00	-318.95	0.00	318.95	1,423.78	711.89	1,409.49	705.79	46.07	-5.26	0.458
95.00	-7.29	-14.72	0.00	-243.88	0.00	243.88	1,352.39	676.20	1,271.00	636.45	51.74	-5.55	0.389
98.75	-6.93	-14.54	0.00	-188.68	0.00	188.68	1,298.85	649.43	1,171.84	586.79	56.17	-5.74	0.327
100.00	-4.52	-9.58	0.00	-170.50	0.00	170.50	1,281.00	640.50	1,139.67	570.68	57.68	-5.80	0.303
102.00	-4.29	-9.41	0.00	-151.35	0.00	151.35	920.75	460.37	819.71	410.46	60.12	-5.89	0.374
105.00	-4.10	-9.16	0.00	-123.13	0.00	123.13	898.91	449.46	773.23	387.19	63.86	-6.01	0.323
110.00	-3.80	-8.86	0.00	-77.31	0.00	77.31	861.13	430.57	697.54	349.29	70.26	-6.22	0.226
115.00	-3.51	-8.64	0.00	-33.01	0.00	33.01	819.47	409.73	622.70	311.81	76.83	-6.35	0.111
117.00	-0.11	-0.06	0.00	-0.13	0.00	0.13	798.05	399.03	590.42	295.65	79.50	-6.38	0.001
119.00	0.00	-0.05	0.00	0.00	0.00	0.00	776.64	388.32	559.00	279.91	82.16	-6.38	0.000

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 0.75 in Radial Ice — 23 Iterations

Gust Response Factor : 1.10 | Ice Dead Load Factor : 1.00 | Wind Importance Factor : 1.00
Dead Load Factor : 1.20 | Ice Importance Factor : 1.00
Wind Load Factor : 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		68.4	0.0					0.0	0.0	68.4	0.0	0.0	0.0
5.00		135.4	1,238.2					0.0	237.5	135.4	1,475.8	0.0	0.0
10.00		132.5	1,243.4					0.0	237.5	132.5	1,481.0	0.0	0.0
15.00		131.3	1,228.1					0.0	237.5	131.3	1,465.6	0.0	0.0
20.00		133.5	1,205.9					0.0	237.5	133.5	1,443.5	0.0	0.0
25.00		136.3	1,180.3					0.0	237.5	136.3	1,417.8	0.0	0.0
30.00		137.8	1,152.4					0.0	237.5	137.8	1,389.9	0.0	0.0
35.00		138.4	1,122.9					0.0	237.5	138.4	1,360.4	0.0	0.0
40.00		138.2	1,092.3					0.0	237.5	138.2	1,329.8	0.0	0.0
45.00		117.0	1,060.8					0.0	237.5	117.0	1,298.3	0.0	0.0
48.50	Bot - Section 2	68.7	724.6					0.0	166.3	68.7	890.9	0.0	0.0
50.00		65.4	473.2					0.0	71.3	65.4	544.4	0.0	0.0
53.25	Top - Section 1	68.6	1,007.7					0.0	154.4	68.6	1,162.1	0.0	0.0
55.00		91.6	305.2					0.0	83.1	91.6	388.4	0.0	0.0
60.00		134.3	849.0					0.0	237.5	134.3	1,086.5	0.0	0.0
65.00		131.9	820.1					0.0	237.5	131.9	1,057.7	0.0	0.0
70.00		129.3	790.9					0.0	237.5	129.3	1,028.4	0.0	0.0
75.00		126.3	761.3					0.0	237.5	126.3	998.8	0.0	0.0
80.00		123.2	731.4					0.0	237.5	123.2	968.9	0.0	0.0
85.00		119.8	701.2					0.0	237.5	119.8	938.8	0.0	0.0
90.00		116.3	670.8					0.0	237.5	116.3	908.4	0.0	0.0
95.00		98.9	640.2					0.0	237.5	98.9	877.7	0.0	0.0
98.75	Bot - Section 3	55.5	461.1					0.0	178.2	55.5	639.2	0.0	0.0
100.00	Appurtenance(s)	35.7	219.4	1,150.0	0.0	0.0	10,659.7	0.0	59.4	1,185.8	10,938.5	0.0	0.0
102.00	Top - Section 2	54.1	344.7					0.0	65.2	54.1	409.9	0.0	0.0
105.00		84.3	299.6					0.0	97.7	84.3	397.3	0.0	0.0
110.00		102.0	475.7					0.0	162.9	102.0	638.6	0.0	0.0
115.00		69.3	449.2					0.0	162.9	69.3	612.1	0.0	0.0
117.00	Appurtenance(s)	38.4	173.8	1,813.8	0.0	3,337.9	13,982.3	0.0	65.2	1,852.2	14,221.2	0.0	0.0
119.00		19.0	169.5					0.0	65.2	19.0	234.7	0.0	0.0
								Totals:		5,965.26	51,604.7	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 0.75 in Radial Ice — 23 Iterations

Gust Response Factor : 1.10 | Ice Dead Load Factor : 1.00 | Wind Importance Factor : 1.00
Dead Load Factor : 1.20 | Ice Importance Factor : 1.00
Wind Load Factor : 1.00

Calculated Forces

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 (deg)	Ratio
0.00	-51.60	-5.93	0.00	-554.17	0.00	554.17	2,963.53	1,481.76	5,532.27	2,770.25	0.00	0.00	0.217
5.00	-50.12	-5.85	0.00	-524.54	0.00	524.54	2,916.15	1,458.07	5,297.58	2,652.73	0.04	-0.07	0.215
10.00	-48.63	-5.77	0.00	-495.30	0.00	495.30	2,867.03	1,433.51	5,064.58	2,536.05	0.14	-0.13	0.212
15.00	-47.16	-5.69	0.00	-466.44	0.00	466.44	2,816.18	1,408.09	4,833.52	2,420.35	0.32	-0.20	0.209
20.00	-45.71	-5.61	0.00	-437.98	0.00	437.98	2,763.58	1,381.79	4,604.66	2,305.75	0.56	-0.27	0.207
25.00	-44.29	-5.52	0.00	-409.93	0.00	409.93	2,709.26	1,354.63	4,378.27	2,192.39	0.89	-0.34	0.203
30.00	-42.89	-5.43	0.00	-382.31	0.00	382.31	2,653.19	1,326.59	4,154.62	2,080.40	1.29	-0.42	0.200
35.00	-41.52	-5.34	0.00	-355.16	0.00	355.16	2,595.39	1,297.69	3,933.95	1,969.90	1.77	-0.49	0.196
40.00	-40.19	-5.24	0.00	-328.47	0.00	328.47	2,535.84	1,267.92	3,716.53	1,861.03	2.33	-0.57	0.192
45.00	-38.88	-5.16	0.00	-302.26	0.00	302.26	2,474.56	1,237.28	3,502.63	1,753.92	2.97	-0.65	0.188
48.50	-37.99	-5.11	0.00	-284.21	0.00	284.21	2,430.64	1,215.32	3,355.12	1,680.06	3.46	-0.71	0.185
50.00	-37.44	-5.06	0.00	-276.55	0.00	276.55	2,411.55	1,205.77	3,292.50	1,648.70	3.69	-0.73	0.183
53.25	-36.28	-5.00	0.00	-260.11	0.00	260.11	1,790.30	895.15	2,432.20	1,217.91	4.21	-0.79	0.234
55.00	-35.89	-4.94	0.00	-251.36	0.00	251.36	1,775.53	887.77	2,380.98	1,192.26	4.50	-0.81	0.231
60.00	-34.79	-4.85	0.00	-226.64	0.00	226.64	1,732.17	866.09	2,235.97	1,119.65	5.40	-0.91	0.223
65.00	-33.73	-4.76	0.00	-202.37	0.00	202.37	1,687.08	843.54	2,093.15	1,048.13	6.41	-1.01	0.213
70.00	-32.70	-4.67	0.00	-178.57	0.00	178.57	1,640.24	820.12	1,952.79	977.85	7.52	-1.11	0.203
75.00	-31.69	-4.58	0.00	-155.23	0.00	155.23	1,591.67	795.84	1,815.15	908.92	8.74	-1.21	0.191
80.00	-30.72	-4.48	0.00	-132.35	0.00	132.35	1,541.36	770.68	1,680.48	841.49	10.05	-1.30	0.177
85.00	-29.78	-4.39	0.00	-109.94	0.00	109.94	1,489.32	744.66	1,549.05	775.68	11.46	-1.39	0.162
90.00	-28.87	-4.29	0.00	-88.02	0.00	88.02	1,423.78	711.89	1,409.49	705.79	12.97	-1.48	0.145
95.00	-27.99	-4.20	0.00	-66.58	0.00	66.58	1,352.39	676.20	1,271.00	636.45	14.56	-1.56	0.125
98.75	-27.35	-4.14	0.00	-50.84	0.00	50.84	1,298.85	649.43	1,171.84	586.79	15.81	-1.61	0.108
100.00	-16.44	-2.65	0.00	-45.66	0.00	45.66	1,281.00	640.50	1,139.67	570.68	16.23	-1.62	0.093
102.00	-16.04	-2.59	0.00	-40.36	0.00	40.36	920.75	460.37	819.71	410.46	16.91	-1.65	0.116
105.00	-15.64	-2.51	0.00	-32.58	0.00	32.58	898.91	449.46	773.23	387.19	17.96	-1.68	0.102
110.00	-15.00	-2.40	0.00	-20.03	0.00	20.03	861.13	430.57	697.54	349.29	19.75	-1.73	0.075
115.00	-14.39	-2.32	0.00	-8.03	0.00	8.03	819.47	409.73	622.70	311.81	21.59	-1.77	0.043
117.00	-0.23	-0.03	0.00	-0.05	0.00	0.05	798.05	399.03	590.42	295.65	22.33	-1.78	0.000
119.00	0.00	-0.02	0.00	0.00	0.00	0.00	776.64	388.32	559.00	279.91	23.08	-1.78	0.000

Load Case: 1.0D + 1.0W Serviceability 60 mph 22 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00
Dead Load Factor :1.00
Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		50.8	0.0					0.0	0.0	50.8	0.0	0.0	0.0
5.00		100.2	755.7					0.0	197.9	100.2	953.6	0.0	0.0
10.00		97.4	735.3					0.0	197.9	97.4	933.2	0.0	0.0
15.00		96.2	714.8					0.0	197.9	96.2	912.8	0.0	0.0
20.00		97.4	694.4					0.0	197.9	97.4	892.3	0.0	0.0
25.00		99.1	674.0					0.0	197.9	99.1	871.9	0.0	0.0
30.00		99.9	653.5					0.0	197.9	99.9	851.5	0.0	0.0
35.00		100.0	633.1					0.0	197.9	100.0	831.0	0.0	0.0
40.00		99.5	612.6					0.0	197.9	99.5	810.6	0.0	0.0
45.00		83.9	592.2					0.0	197.9	83.9	790.2	0.0	0.0
48.50	Bot - Section 2	49.2	402.4					0.0	138.6	49.2	541.0	0.0	0.0
50.00		46.8	307.2					0.0	59.4	46.8	366.6	0.0	0.0
53.25	Top - Section 1	49.0	654.2					0.0	128.7	49.0	782.9	0.0	0.0
55.00		65.2	155.2					0.0	69.3	65.2	224.5	0.0	0.0
60.00		95.3	432.3					0.0	197.9	95.3	630.3	0.0	0.0
65.00		93.2	416.0					0.0	197.9	93.2	613.9	0.0	0.0
70.00		90.9	399.6					0.0	197.9	90.9	597.6	0.0	0.0
75.00		88.4	383.3					0.0	197.9	88.4	581.2	0.0	0.0
80.00		85.8	366.9					0.0	197.9	85.8	564.9	0.0	0.0
85.00		83.0	350.6					0.0	197.9	83.0	548.5	0.0	0.0
90.00		80.0	334.2					0.0	197.9	80.0	532.2	0.0	0.0
95.00		67.6	317.9					0.0	197.9	67.6	515.8	0.0	0.0
98.75	Bot - Section 3	37.8	227.7					0.0	148.5	37.8	376.1	0.0	0.0
100.00	Appurtenance(s)	24.3	130.3	1,101.3	0.0	0.0	3,026.7	0.0	49.5	1,125.5	3,206.5	0.0	0.0
102.00	Top - Section 2	36.6	204.8					0.0	54.3	36.6	259.1	0.0	0.0
105.00		56.7	129.5					0.0	81.5	56.7	211.0	0.0	0.0
110.00		68.2	206.1					0.0	135.7	68.2	341.8	0.0	0.0
115.00		46.0	193.8					0.0	135.7	46.0	329.5	0.0	0.0
117.00	Appurtenance(s)	25.3	74.1	1,922.6	0.0	3,729.6	4,688.9	0.0	54.3	1,947.9	4,817.3	0.0	0.0
119.00		12.5	72.1					0.0	54.3	12.5	126.4	0.0	0.0
								Totals:		5,150.03	24,014.1	0.00	0.00

Load Case: 1.0D + 1.0W Serviceability 60 mph 22 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00
Dead Load Factor :1.00
Wind Load Factor :1.00

Calculated Forces

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 (deg)	Ratio
0.00	-24.01	-5.11	0.00	-474.47	0.00	474.47	2,963.53	1,481.76	5,532.27	2,770.25	0.00	0.00	0.179
5.00	-23.05	-5.03	0.00	-448.92	0.00	448.92	2,916.15	1,458.07	5,297.58	2,652.73	0.03	-0.06	0.177
10.00	-22.11	-4.96	0.00	-423.75	0.00	423.75	2,867.03	1,433.51	5,064.58	2,536.05	0.12	-0.11	0.175
15.00	-21.20	-4.88	0.00	-398.97	0.00	398.97	2,816.18	1,408.09	4,833.52	2,420.35	0.27	-0.17	0.172
20.00	-20.30	-4.80	0.00	-374.57	0.00	374.57	2,763.58	1,381.79	4,604.66	2,305.75	0.48	-0.23	0.170
25.00	-19.42	-4.72	0.00	-350.57	0.00	350.57	2,709.26	1,354.63	4,378.27	2,192.39	0.76	-0.29	0.167
30.00	-18.57	-4.64	0.00	-326.97	0.00	326.97	2,653.19	1,326.59	4,154.62	2,080.40	1.10	-0.36	0.164
35.00	-17.73	-4.55	0.00	-303.79	0.00	303.79	2,595.39	1,297.69	3,933.95	1,969.90	1.51	-0.42	0.161
40.00	-16.92	-4.46	0.00	-281.05	0.00	281.05	2,535.84	1,267.92	3,716.53	1,861.03	1.99	-0.49	0.158
45.00	-16.12	-4.39	0.00	-258.73	0.00	258.73	2,474.56	1,237.28	3,502.63	1,753.92	2.54	-0.56	0.154
48.50	-15.58	-4.34	0.00	-243.37	0.00	243.37	2,430.64	1,215.32	3,355.12	1,680.06	2.96	-0.60	0.151
50.00	-15.21	-4.30	0.00	-236.85	0.00	236.85	2,411.55	1,205.77	3,292.50	1,648.70	3.16	-0.63	0.150
53.25	-14.43	-4.25	0.00	-222.87	0.00	222.87	1,790.30	895.15	2,432.20	1,217.91	3.60	-0.67	0.191
55.00	-14.20	-4.20	0.00	-215.43	0.00	215.43	1,775.53	887.77	2,380.98	1,192.26	3.85	-0.70	0.189
60.00	-13.56	-4.12	0.00	-194.44	0.00	194.44	1,732.17	866.09	2,235.97	1,119.65	4.62	-0.78	0.182
65.00	-12.95	-4.03	0.00	-173.86	0.00	173.86	1,687.08	843.54	2,093.15	1,048.13	5.49	-0.87	0.174
70.00	-12.34	-3.95	0.00	-153.70	0.00	153.70	1,640.24	820.12	1,952.79	977.85	6.44	-0.95	0.165
75.00	-11.76	-3.87	0.00	-133.95	0.00	133.95	1,591.67	795.84	1,815.15	908.92	7.48	-1.03	0.155
80.00	-11.19	-3.79	0.00	-114.61	0.00	114.61	1,541.36	770.68	1,680.48	841.49	8.61	-1.12	0.143
85.00	-10.64	-3.71	0.00	-95.67	0.00	95.67	1,489.32	744.66	1,549.05	775.68	9.82	-1.19	0.130
90.00	-10.10	-3.63	0.00	-77.12	0.00	77.12	1,423.78	711.89	1,409.49	705.79	11.11	-1.27	0.116
95.00	-9.59	-3.56	0.00	-58.97	0.00	58.97	1,352.39	676.20	1,271.00	636.45	12.48	-1.34	0.100
98.75	-9.21	-3.52	0.00	-45.62	0.00	45.62	1,298.85	649.43	1,171.84	586.79	13.55	-1.38	0.085
100.00	-6.03	-2.32	0.00	-41.23	0.00	41.23	1,281.00	640.50	1,139.67	570.68	13.91	-1.40	0.077
102.00	-5.77	-2.28	0.00	-36.59	0.00	36.59	920.75	460.37	819.71	410.46	14.50	-1.42	0.095
105.00	-5.56	-2.22	0.00	-29.76	0.00	29.76	898.91	449.46	773.23	387.19	15.41	-1.45	0.083
110.00	-5.22	-2.15	0.00	-18.67	0.00	18.67	861.13	430.57	697.54	349.29	16.95	-1.50	0.060
115.00	-4.89	-2.09	0.00	-7.95	0.00	7.95	819.47	409.73	622.70	311.81	18.54	-1.53	0.031
117.00	-0.13	-0.02	0.00	-0.03	0.00	0.03	798.05	399.03	590.42	295.65	19.19	-1.54	0.000
119.00	0.00	-0.01	0.00	0.00	0.00	0.00	776.64	388.32	559.00	279.91	19.83	-1.54	0.000

Equivalent Lateral Forces Method Analysis

(Based on ASCE7-10 Chapters 11, 12, 15)

Spectral Response Acceleration for Short Period (S_s):	0.06	
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.18	
Long-Period Transition Period (T_L):	6	
Importance Factor (I_E):	1.00	
Site Coefficient F_a:	1.60	
Site Coeffiecient F_v:	2.08	
Response Modification Coefficient (R):	1.50	
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.07	
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.25	
Seismic Response Coefficient (C_s):	0.04	
Upper Limit C_s	0.08	
Lower Limit C_s	0.03	
Period based on Rayleigh Method (sec):	2.16	
Redundancy Factor (p):	1.30	
Seismic Force Distribution Exponent (k):	1.83	
Total Unfactored Dead Load:	24.01	k
Seismic Base Shear (E):	1.35	k

Load Case (1.2 + 0.2Sds) * DL + E ELFM Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
29	118.00	126	788	0.011	15	153
28	116.00	128	776	0.011	15	156
27	112.50	330	1,883	0.027	36	400
26	107.50	342	1,797	0.026	35	415
25	103.50	211	1,035	0.015	20	256
24	101.00	259	1,215	0.017	23	314
23	99.38	180	819	0.012	16	218
22	96.88	376	1,634	0.023	31	456
21	92.50	516	2,059	0.029	40	626
20	87.50	532	1,919	0.027	37	646
19	82.50	549	1,776	0.025	34	665
18	77.50	565	1,631	0.023	31	685
17	72.50	581	1,485	0.021	29	705
16	67.50	598	1,339	0.019	26	725
15	62.50	614	1,195	0.017	23	745
14	57.50	630	1,053	0.015	20	765
13	54.13	224	336	0.005	6	272
12	51.63	783	1,074	0.015	21	950
11	49.25	367	461	0.007	9	445
10	46.75	541	619	0.009	12	656
9	42.50	790	759	0.011	15	958
8	37.50	811	619	0.009	12	983
7	32.50	831	488	0.007	9	1,008

6	27.50	851	368	0.005	7	1,033
5	22.50	872	261	0.004	5	1,058
4	17.50	892	169	0.002	3	1,082
3	12.50	913	93	0.001	2	1,107
2	7.50	933	37	0.001	1	1,132
1	2.50	954	5	0.000	0	1,157
Commscope WCS-IMFQ-A	117.00	30	181	0.003	3	36
Raycap DC6-48-60-18-	117.00	60	368	0.005	7	73
Ericsson RRUS 8843 B	117.00	216	1,326	0.019	26	262
Ericsson RRUS 4449 B	117.00	213	1,307	0.019	25	258
Ericsson RRUS 11 (Ba	117.00	150	921	0.013	18	182
Ericsson RRUS 32 B30	117.00	180	1,105	0.016	21	218
Stand-Off	117.00	300	1,842	0.026	35	364
Ericsson RRUW	117.00	132	812	0.012	16	160
CCI HPA65R-BU8A	117.00	162	994	0.014	19	197
Andrew SBNH-1D6565C	117.00	198	1,217	0.017	23	241
CCI HPA-65R-BUU-H8	117.00	204	1,252	0.018	24	247
Kathrein Scala 80010	117.00	344	2,110	0.030	41	417
Flat Plafform w/ Han	117.00	2,500	15,346	0.218	295	3,033
Alcatel-Lucent RRH2X	100.00	132	608	0.009	12	160
Alcatel-Lucent RRH2x	100.00	170	783	0.011	15	206
Alcatel-Lucent PCS B	100.00	165	760	0.011	15	200
RFS DB-T1-6Z-8AB-0Z	100.00	88	405	0.006	8	107
Antel BXA-70063-6CF-	100.00	51	235	0.003	5	62
Andrew LNX-6514DS-A1	100.00	116	536	0.008	10	141
Commscope SBNHH-1D65	100.00	304	1,401	0.020	27	369
Round Platform w/ Ha	100.00	2,000	9,209	0.131	177	2,426
		24,014	70,411	1.000	1,354	29,130

Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
29	118.00	126	788	0.011	15	112
28	116.00	128	776	0.011	15	114
27	112.50	330	1,883	0.027	36	292
26	107.50	342	1,797	0.026	35	303
25	103.50	211	1,035	0.015	20	187
24	101.00	259	1,215	0.017	23	230
23	99.38	180	819	0.012	16	160
22	96.88	376	1,634	0.023	31	334
21	92.50	516	2,059	0.029	40	458
20	87.50	532	1,919	0.027	37	472
19	82.50	549	1,776	0.025	34	487
18	77.50	565	1,631	0.023	31	501
17	72.50	581	1,485	0.021	29	516
16	67.50	598	1,339	0.019	26	530
15	62.50	614	1,195	0.017	23	545
14	57.50	630	1,053	0.015	20	559
13	54.13	224	336	0.005	6	199
12	51.63	783	1,074	0.015	21	694
11	49.25	367	461	0.007	9	325
10	46.75	541	619	0.009	12	480
9	42.50	790	759	0.011	15	701
8	37.50	811	619	0.009	12	719
7	32.50	831	488	0.007	9	737
6	27.50	851	368	0.005	7	755
5	22.50	872	261	0.004	5	773
4	17.50	892	169	0.002	3	791
3	12.50	913	93	0.001	2	810

2	7.50	933	37	0.001	1	828
1	2.50	954	5	0.000	0	846
Commscope WCS-IMFQ-A	117.00	30	181	0.003	3	26
Raycap DC6-48-60-18-	117.00	60	368	0.005	7	53
Ericsson RRUS 8843 B	117.00	216	1,326	0.019	26	192
Ericsson RRUS 4449 B	117.00	213	1,307	0.019	25	189
Ericsson RRUS 11 (Ba	117.00	150	921	0.013	18	133
Ericsson RRUS 32 B30	117.00	180	1,105	0.016	21	160
Stand-Off	117.00	300	1,842	0.026	35	266
Ericsson RRUW	117.00	132	812	0.012	16	117
CCI HPA65R-BU8A	117.00	162	994	0.014	19	144
Andrew SBNH-1D6565C	117.00	198	1,217	0.017	23	176
CCI HPA-65R-BUU-H8	117.00	204	1,252	0.018	24	181
Kathrein Scala 80010	117.00	344	2,110	0.030	41	305
Flat Plafform w/ Han	117.00	2,500	15,346	0.218	295	2,217
Alcatel-Lucent RRH2X	100.00	132	608	0.009	12	117
Alcatel-Lucent RRH2x	100.00	170	783	0.011	15	151
Alcatel-Lucent PCS B	100.00	165	760	0.011	15	146
RFS DB-T1-6Z-8AB-0Z	100.00	88	405	0.006	8	78
Antel BXA-70063-6CF-	100.00	51	235	0.003	5	45
Andrew LNX-6514DS-A1	100.00	116	536	0.008	10	103
Commscope SBNHH-1D65	100.00	304	1,401	0.020	27	270
Round Platform w/ Ha	100.00	2,000	9,209	0.131	177	1,774
		24,014	70,411	1.000	1,354	21,300

Load Case (1.2 + 0.2Sds) * DL + E ELFM Seismic Equivalent Lateral Forces Method

Calculated Forces

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 (deg)	Ratio
0.00	-27.97	-1.36	0.00	-139.61	0.00	139.61	2,963.53	1,481.76	5,532.27	2,770.25	0.00	0.00	0.060
5.00	-26.84	-1.36	0.00	-132.82	0.00	132.82	2,916.15	1,458.07	5,297.58	2,652.73	0.01	-0.02	0.059
10.00	-25.73	-1.37	0.00	-126.00	0.00	126.00	2,867.03	1,433.51	5,064.58	2,536.05	0.04	-0.03	0.059
15.00	-24.65	-1.37	0.00	-119.14	0.00	119.14	2,816.18	1,408.09	4,833.52	2,420.35	0.08	-0.05	0.058
20.00	-23.59	-1.38	0.00	-112.28	0.00	112.28	2,763.58	1,381.79	4,604.66	2,305.75	0.14	-0.07	0.057
25.00	-22.56	-1.37	0.00	-105.40	0.00	105.40	2,709.26	1,354.63	4,378.27	2,192.39	0.23	-0.09	0.056
30.00	-21.55	-1.37	0.00	-98.53	0.00	98.53	2,653.19	1,326.59	4,154.62	2,080.40	0.33	-0.11	0.055
35.00	-20.57	-1.36	0.00	-91.68	0.00	91.68	2,595.39	1,297.69	3,933.95	1,969.90	0.45	-0.13	0.054
40.00	-19.61	-1.35	0.00	-84.86	0.00	84.86	2,535.84	1,267.92	3,716.53	1,861.03	0.59	-0.15	0.053
45.00	-18.95	-1.35	0.00	-78.10	0.00	78.10	2,474.56	1,237.28	3,502.63	1,753.92	0.76	-0.17	0.052
48.50	-18.51	-1.34	0.00	-73.39	0.00	73.39	2,430.64	1,215.32	3,355.12	1,680.06	0.88	-0.18	0.051
50.00	-17.56	-1.32	0.00	-71.38	0.00	71.38	2,411.55	1,205.77	3,292.50	1,648.70	0.94	-0.19	0.051
53.25	-17.28	-1.31	0.00	-67.10	0.00	67.10	1,790.30	895.15	2,432.20	1,217.91	1.07	-0.20	0.065
55.00	-16.52	-1.30	0.00	-64.80	0.00	64.80	1,775.53	887.77	2,380.98	1,192.26	1.15	-0.21	0.064
60.00	-15.77	-1.28	0.00	-58.32	0.00	58.32	1,732.17	866.09	2,235.97	1,119.65	1.38	-0.23	0.061
65.00	-15.05	-1.25	0.00	-51.94	0.00	51.94	1,687.08	843.54	2,093.15	1,048.13	1.64	-0.26	0.058
70.00	-14.34	-1.23	0.00	-45.66	0.00	45.66	1,640.24	820.12	1,952.79	977.85	1.93	-0.28	0.055
75.00	-13.66	-1.20	0.00	-39.52	0.00	39.52	1,591.67	795.84	1,815.15	908.92	2.24	-0.31	0.052
80.00	-12.99	-1.17	0.00	-33.52	0.00	33.52	1,541.36	770.68	1,680.48	841.49	2.58	-0.33	0.048
85.00	-12.35	-1.13	0.00	-27.68	0.00	27.68	1,489.32	744.66	1,549.05	775.68	2.94	-0.36	0.044
90.00	-11.72	-1.09	0.00	-22.03	0.00	22.03	1,423.78	711.89	1,409.49	705.79	3.32	-0.38	0.039
95.00	-11.26	-1.06	0.00	-16.57	0.00	16.57	1,352.39	676.20	1,271.00	636.45	3.73	-0.40	0.034
98.75	-11.05	-1.05	0.00	-12.59	0.00	12.59	1,298.85	649.43	1,171.84	586.79	4.05	-0.41	0.030
100.00	-7.06	-0.73	0.00	-11.28	0.00	11.28	1,281.00	640.50	1,139.67	570.68	4.16	-0.41	0.025
102.00	-6.81	-0.70	0.00	-9.83	0.00	9.83	920.75	460.37	819.71	410.46	4.33	-0.42	0.031
105.00	-6.39	-0.67	0.00	-7.72	0.00	7.72	898.91	449.46	773.23	387.19	4.60	-0.43	0.027
110.00	-5.99	-0.63	0.00	-4.38	0.00	4.38	861.13	430.57	697.54	349.29	5.05	-0.44	0.019
115.00	-5.84	-0.61	0.00	-1.23	0.00	1.23	819.47	409.73	622.70	311.81	5.52	-0.45	0.011
117.00	0.00	0.00	0.00	0.00	0.00	0.00	798.05	399.03	590.42	295.65	5.71	-0.45	0.000
119.00	0.00	0.00	0.00	0.00	0.00	0.00	776.64	388.32	559.00	279.91	5.90	-0.45	0.000

Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method

Calculated Forces

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 (deg)	Ratio
0.00	-20.45	-1.36	0.00	-137.88	0.00	137.88	2,963.53	1,481.76	5,532.27	2,770.25	0.00	0.00	0.057
5.00	-19.63	-1.36	0.00	-131.10	0.00	131.10	2,916.15	1,458.07	5,297.58	2,652.73	0.01	-0.02	0.056
10.00	-18.82	-1.36	0.00	-124.29	0.00	124.29	2,867.03	1,433.51	5,064.58	2,536.05	0.03	-0.03	0.056
15.00	-18.02	-1.37	0.00	-117.47	0.00	117.47	2,816.18	1,408.09	4,833.52	2,420.35	0.08	-0.05	0.055
20.00	-17.25	-1.37	0.00	-110.64	0.00	110.64	2,763.58	1,381.79	4,604.66	2,305.75	0.14	-0.07	0.054
25.00	-16.49	-1.36	0.00	-103.81	0.00	103.81	2,709.26	1,354.63	4,378.27	2,192.39	0.22	-0.09	0.053
30.00	-15.76	-1.36	0.00	-96.99	0.00	96.99	2,653.19	1,326.59	4,154.62	2,080.40	0.32	-0.11	0.053
35.00	-15.04	-1.35	0.00	-90.20	0.00	90.20	2,595.39	1,297.69	3,933.95	1,969.90	0.44	-0.12	0.052
40.00	-14.34	-1.34	0.00	-83.45	0.00	83.45	2,535.84	1,267.92	3,716.53	1,861.03	0.58	-0.14	0.050
45.00	-13.86	-1.33	0.00	-76.76	0.00	76.76	2,474.56	1,237.28	3,502.63	1,753.92	0.75	-0.16	0.049
48.50	-13.53	-1.32	0.00	-72.11	0.00	72.11	2,430.64	1,215.32	3,355.12	1,680.06	0.87	-0.18	0.048
50.00	-12.84	-1.30	0.00	-70.12	0.00	70.12	2,411.55	1,205.77	3,292.50	1,648.70	0.93	-0.18	0.048
53.25	-12.64	-1.30	0.00	-65.89	0.00	65.89	1,790.30	895.15	2,432.20	1,217.91	1.06	-0.20	0.061
55.00	-12.08	-1.28	0.00	-63.63	0.00	63.63	1,775.53	887.77	2,380.98	1,192.26	1.13	-0.21	0.060
60.00	-11.53	-1.26	0.00	-57.24	0.00	57.24	1,732.17	866.09	2,235.97	1,119.65	1.36	-0.23	0.058
65.00	-11.00	-1.23	0.00	-50.95	0.00	50.95	1,687.08	843.54	2,093.15	1,048.13	1.62	-0.26	0.055
70.00	-10.49	-1.21	0.00	-44.78	0.00	44.78	1,640.24	820.12	1,952.79	977.85	1.90	-0.28	0.052
75.00	-9.98	-1.18	0.00	-38.74	0.00	38.74	1,591.67	795.84	1,815.15	908.92	2.20	-0.30	0.049
80.00	-9.50	-1.15	0.00	-32.84	0.00	32.84	1,541.36	770.68	1,680.48	841.49	2.54	-0.33	0.045
85.00	-9.03	-1.11	0.00	-27.12	0.00	27.12	1,489.32	744.66	1,549.05	775.68	2.89	-0.35	0.041
90.00	-8.57	-1.07	0.00	-21.57	0.00	21.57	1,423.78	711.89	1,409.49	705.79	3.27	-0.37	0.037
95.00	-8.23	-1.04	0.00	-16.22	0.00	16.22	1,352.39	676.20	1,271.00	636.45	3.67	-0.39	0.032
98.75	-8.08	-1.02	0.00	-12.33	0.00	12.33	1,298.85	649.43	1,171.84	586.79	3.98	-0.40	0.027
100.00	-5.16	-0.71	0.00	-11.05	0.00	11.05	1,281.00	640.50	1,139.67	570.68	4.09	-0.41	0.023
102.00	-4.98	-0.69	0.00	-9.63	0.00	9.63	920.75	460.37	819.71	410.46	4.26	-0.41	0.029
105.00	-4.67	-0.65	0.00	-7.56	0.00	7.56	898.91	449.46	773.23	387.19	4.52	-0.42	0.025
110.00	-4.38	-0.62	0.00	-4.29	0.00	4.29	861.13	430.57	697.54	349.29	4.97	-0.43	0.017
115.00	-4.27	-0.60	0.00	-1.20	0.00	1.20	819.47	409.73	622.70	311.81	5.43	-0.44	0.009
117.00	0.00	0.00	0.00	0.00	0.00	0.00	798.05	399.03	590.42	295.65	5.61	-0.44	0.000
119.00	0.00	0.00	0.00	0.00	0.00	0.00	776.64	388.32	559.00	279.91	5.80	-0.44	0.000

Equivalent Modal Forces Analysis

(Based on ASCE7-10 Chapters 11, 12 & 15 and ANSI/TIA-G, section 2.7)

Spectral Response Acceleration for Short Period (S_s):	0.06
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.18
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v	2.08
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.07
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.25
Period Based on Rayleigh Method (sec):	2.16
Redundancy Factor (p):	1.30

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
29	118.00	126	1.858	1.817	1.081	0.166	18	153
28	116.00	128	1.796	1.520	0.970	0.154	17	156
27	112.50	330	1.689	1.082	0.798	0.134	38	400
26	107.50	342	1.542	0.611	0.595	0.111	33	415
25	103.50	211	1.430	0.342	0.463	0.095	17	256
24	101.00	259	1.361	0.215	0.393	0.087	20	314
23	99.38	180	1.318	0.146	0.352	0.082	13	218
22	96.88	376	1.253	0.060	0.296	0.075	24	456
21	92.50	516	1.142	-0.043	0.214	0.065	29	626
20	87.50	532	1.022	-0.104	0.142	0.056	26	646
19	82.50	549	0.908	-0.122	0.091	0.049	23	665
18	77.50	565	0.802	-0.112	0.054	0.044	21	685
17	72.50	581	0.702	-0.087	0.030	0.039	20	705
16	67.50	598	0.608	-0.056	0.015	0.036	18	725
15	62.50	614	0.521	-0.024	0.008	0.032	17	745
14	57.50	630	0.441	0.005	0.006	0.029	16	765
13	54.13	224	0.391	0.021	0.007	0.027	5	272
12	51.63	783	0.356	0.031	0.008	0.025	17	950
11	49.25	367	0.324	0.040	0.010	0.024	7	445
10	46.75	541	0.292	0.047	0.013	0.022	10	656
9	42.50	790	0.241	0.057	0.018	0.019	13	958
8	37.50	811	0.188	0.064	0.025	0.016	11	983
7	32.50	831	0.141	0.069	0.031	0.013	10	1,008
6	27.50	851	0.101	0.071	0.037	0.011	8	1,033
5	22.50	872	0.068	0.072	0.041	0.009	7	1,058
4	17.50	892	0.041	0.070	0.042	0.007	5	1,082
3	12.50	913	0.021	0.065	0.038	0.005	4	1,107
2	7.50	933	0.008	0.051	0.029	0.004	3	1,132
1	2.50	954	0.001	0.022	0.012	0.001	1	1,157
Commscope WCS-	117.00	30	1.827	1.664	1.024	0.160	4	36
Raycap DC6-48-60-18-	117.00	60	1.827	1.664	1.024	0.160	8	73
Ericsson RRUS 8843 B	117.00	216	1.827	1.664	1.024	0.160	30	262
Ericsson RRUS 4449 B	117.00	213	1.827	1.664	1.024	0.160	29	258
Ericsson RRUS 11 (Ba	117.00	150	1.827	1.664	1.024	0.160	21	182

Ericsson RRUS 32 B30	117.00	180	1.827	1.664	1.024	0.160	25	218
Stand-Off	117.00	300	1.827	1.664	1.024	0.160	42	364
Ericsson RRUW	117.00	132	1.827	1.664	1.024	0.160	18	160
CCI HPA65R-BU8A	117.00	162	1.827	1.664	1.024	0.160	22	197
Andrew SBNH-1D6565C	117.00	198	1.827	1.664	1.024	0.160	27	241
CCI HPA-65R-BUU-H8	117.00	204	1.827	1.664	1.024	0.160	28	247
Kathrein Scala 80010	117.00	344	1.827	1.664	1.024	0.160	48	417
Flat Plafform w/ Han	117.00	2,500	1.827	1.664	1.024	0.160	346	3,033
Alcatel-Lucent RRH2X	100.00	132	1.335	0.171	0.368	0.084	10	160
Alcatel-Lucent RRH2x	100.00	170	1.335	0.171	0.368	0.084	12	206
Alcatel-Lucent PCS B	100.00	165	1.335	0.171	0.368	0.084	12	200
RFS DB-T1-6Z-8AB-0Z	100.00	88	1.335	0.171	0.368	0.084	6	107
Antel BXA-70063-6CF-	100.00	51	1.335	0.171	0.368	0.084	4	62
Andrew LNX-6514DS-A1	100.00	116	1.335	0.171	0.368	0.084	8	141
Commscope SBNHH-	100.00	304	1.335	0.171	0.368	0.084	22	369
Round Platform w/ Ha	100.00	2,000	1.335	0.171	0.368	0.084	145	2,426
		24,014	54.992	28.933	22.079	4.183	1,323	29,130

Load Case (0.9 - 0.2Sds) * DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
29	118.00	126	1.858	1.817	1.081	0.166	18	112
28	116.00	128	1.796	1.520	0.970	0.154	17	114
27	112.50	330	1.689	1.082	0.798	0.134	38	292
26	107.50	342	1.542	0.611	0.595	0.111	33	303
25	103.50	211	1.430	0.342	0.463	0.095	17	187
24	101.00	259	1.361	0.215	0.393	0.087	20	230
23	99.38	180	1.318	0.146	0.352	0.082	13	160
22	96.88	376	1.253	0.060	0.296	0.075	24	334
21	92.50	516	1.142	-0.043	0.214	0.065	29	458
20	87.50	532	1.022	-0.104	0.142	0.056	26	472
19	82.50	549	0.908	-0.122	0.091	0.049	23	487
18	77.50	565	0.802	-0.112	0.054	0.044	21	501
17	72.50	581	0.702	-0.087	0.030	0.039	20	516
16	67.50	598	0.608	-0.056	0.015	0.036	18	530
15	62.50	614	0.521	-0.024	0.008	0.032	17	545
14	57.50	630	0.441	0.005	0.006	0.029	16	559
13	54.13	224	0.391	0.021	0.007	0.027	5	199
12	51.63	783	0.356	0.031	0.008	0.025	17	694
11	49.25	367	0.324	0.040	0.010	0.024	7	325
10	46.75	541	0.292	0.047	0.013	0.022	10	480
9	42.50	790	0.241	0.057	0.018	0.019	13	701
8	37.50	811	0.188	0.064	0.025	0.016	11	719
7	32.50	831	0.141	0.069	0.031	0.013	10	737
6	27.50	851	0.101	0.071	0.037	0.011	8	755
5	22.50	872	0.068	0.072	0.041	0.009	7	773
4	17.50	892	0.041	0.070	0.042	0.007	5	791
3	12.50	913	0.021	0.065	0.038	0.005	4	810
2	7.50	933	0.008	0.051	0.029	0.004	3	828
1	2.50	954	0.001	0.022	0.012	0.001	1	846
Commscope WCS-	117.00	30	1.827	1.664	1.024	0.160	4	26
Raycap DC6-48-60-18-	117.00	60	1.827	1.664	1.024	0.160	8	53
Ericsson RRUS 8843 B	117.00	216	1.827	1.664	1.024	0.160	30	192
Ericsson RRUS 4449 B	117.00	213	1.827	1.664	1.024	0.160	29	189
Ericsson RRUS 11 (Ba	117.00	150	1.827	1.664	1.024	0.160	21	133
Ericsson RRUS 32 B30	117.00	180	1.827	1.664	1.024	0.160	25	160
Stand-Off	117.00	300	1.827	1.664	1.024	0.160	42	266
Ericsson RRUW	117.00	132	1.827	1.664	1.024	0.160	18	117

CCI HPA65R-BU8A	117.00	162	1.827	1.664	1.024	0.160	22	144
Andrew SBNH-1D6565C	117.00	198	1.827	1.664	1.024	0.160	27	176
CCI HPA-65R-BUU-H8	117.00	204	1.827	1.664	1.024	0.160	28	181
Kathrein Scala 80010	117.00	344	1.827	1.664	1.024	0.160	48	305
Flat Plafform w/ Han	117.00	2,500	1.827	1.664	1.024	0.160	346	2,217
Alcatel-Lucent RRH2X	100.00	132	1.335	0.171	0.368	0.084	10	117
Alcatel-Lucent RRH2x	100.00	170	1.335	0.171	0.368	0.084	12	151
Alcatel-Lucent PCS B	100.00	165	1.335	0.171	0.368	0.084	12	146
RFS DB-T1-6Z-8AB-0Z	100.00	88	1.335	0.171	0.368	0.084	6	78
Antel BXA-70063-6CF-	100.00	51	1.335	0.171	0.368	0.084	4	45
Andrew LNX-6514DS-A1	100.00	116	1.335	0.171	0.368	0.084	8	103
Commscope SBNHH-	100.00	304	1.335	0.171	0.368	0.084	22	270
Round Platform w/ Ha	100.00	2,000	1.335	0.171	0.368	0.084	145	1,774
		24,014	54.992	28.933	22.079	4.183	1,323	21,300

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

Calculated Forces

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 (deg)	Ratio
0.00	-27.97	-1.33	0.00	-139.61	0.00	139.61	2,963.53	1,481.76	5,532.27	2,770.25	0.00	0.00	0.060
5.00	-26.84	-1.33	0.00	-132.98	0.00	132.98	2,916.15	1,458.07	5,297.58	2,652.73	0.01	-0.02	0.059
10.00	-25.73	-1.33	0.00	-126.33	0.00	126.33	2,867.03	1,433.51	5,064.58	2,536.05	0.04	-0.03	0.059
15.00	-24.65	-1.33	0.00	-119.67	0.00	119.67	2,816.18	1,408.09	4,833.52	2,420.35	0.08	-0.05	0.058
20.00	-23.59	-1.33	0.00	-113.00	0.00	113.00	2,763.58	1,381.79	4,604.66	2,305.75	0.14	-0.07	0.058
25.00	-22.56	-1.33	0.00	-106.33	0.00	106.33	2,709.26	1,354.63	4,378.27	2,192.39	0.23	-0.09	0.057
30.00	-21.55	-1.33	0.00	-99.67	0.00	99.67	2,653.19	1,326.59	4,154.62	2,080.40	0.33	-0.11	0.056
35.00	-20.57	-1.32	0.00	-93.03	0.00	93.03	2,595.39	1,297.69	3,933.95	1,969.90	0.45	-0.13	0.055
40.00	-19.61	-1.31	0.00	-86.42	0.00	86.42	2,535.84	1,267.92	3,716.53	1,861.03	0.60	-0.15	0.054
45.00	-18.95	-1.31	0.00	-79.85	0.00	79.85	2,474.56	1,237.28	3,502.63	1,753.92	0.76	-0.17	0.053
48.50	-18.51	-1.30	0.00	-75.28	0.00	75.28	2,430.64	1,215.32	3,355.12	1,680.06	0.89	-0.18	0.052
50.00	-17.56	-1.29	0.00	-73.32	0.00	73.32	2,411.55	1,205.77	3,292.50	1,648.70	0.95	-0.19	0.052
53.25	-17.28	-1.28	0.00	-69.15	0.00	69.15	1,790.30	895.15	2,432.20	1,217.91	1.08	-0.20	0.066
55.00	-16.52	-1.27	0.00	-66.90	0.00	66.90	1,775.53	887.77	2,380.98	1,192.26	1.16	-0.21	0.065
60.00	-15.77	-1.26	0.00	-60.56	0.00	60.56	1,732.17	866.09	2,235.97	1,119.65	1.39	-0.24	0.063
65.00	-15.05	-1.24	0.00	-54.28	0.00	54.28	1,687.08	843.54	2,093.15	1,048.13	1.66	-0.26	0.061
70.00	-14.34	-1.22	0.00	-48.08	0.00	48.08	1,640.24	820.12	1,952.79	977.85	1.95	-0.29	0.058
75.00	-13.66	-1.21	0.00	-41.96	0.00	41.96	1,591.67	795.84	1,815.15	908.92	2.27	-0.32	0.055
80.00	-12.99	-1.18	0.00	-35.93	0.00	35.93	1,541.36	770.68	1,680.48	841.49	2.61	-0.34	0.051
85.00	-12.35	-1.16	0.00	-30.01	0.00	30.01	1,489.32	744.66	1,549.05	775.68	2.98	-0.37	0.047
90.00	-11.72	-1.13	0.00	-24.21	0.00	24.21	1,423.78	711.89	1,409.49	705.79	3.38	-0.39	0.043
95.00	-11.26	-1.11	0.00	-18.55	0.00	18.55	1,352.39	676.20	1,271.00	636.45	3.80	-0.41	0.037
98.75	-11.04	-1.09	0.00	-14.40	0.00	14.40	1,298.85	649.43	1,171.84	586.79	4.13	-0.43	0.033
100.00	-7.06	-0.83	0.00	-13.03	0.00	13.03	1,281.00	640.50	1,139.67	570.68	4.25	-0.43	0.028
102.00	-6.81	-0.81	0.00	-11.38	0.00	11.38	920.75	460.37	819.71	410.46	4.43	-0.44	0.035
105.00	-6.39	-0.77	0.00	-8.96	0.00	8.96	898.91	449.46	773.23	387.19	4.71	-0.45	0.030
110.00	-5.99	-0.73	0.00	-5.09	0.00	5.09	861.13	430.57	697.54	349.29	5.18	-0.46	0.022
115.00	-5.84	-0.71	0.00	-1.43	0.00	1.43	819.47	409.73	622.70	311.81	5.67	-0.47	0.012
117.00	0.00	0.00	0.00	0.00	0.00	0.00	798.05	399.03	590.42	295.65	5.87	-0.47	0.000
119.00	0.00	0.00	0.00	0.00	0.00	0.00	776.64	388.32	559.00	279.91	6.07	-0.47	0.000

Load Case (0.9 - 0.2Sds) * DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method

Calculated Forces

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 (deg)	Ratio
0.00	-20.45	-1.32	0.00	-137.85	0.00	137.85	2,963.53	1,481.76	5,532.27	2,770.25	0.00	0.00	0.057
5.00	-19.63	-1.33	0.00	-131.23	0.00	131.23	2,916.15	1,458.07	5,297.58	2,652.73	0.01	-0.02	0.056
10.00	-18.82	-1.33	0.00	-124.59	0.00	124.59	2,867.03	1,433.51	5,064.58	2,536.05	0.03	-0.03	0.056
15.00	-18.02	-1.33	0.00	-117.95	0.00	117.95	2,816.18	1,408.09	4,833.52	2,420.35	0.08	-0.05	0.055
20.00	-17.25	-1.33	0.00	-111.32	0.00	111.32	2,763.58	1,381.79	4,604.66	2,305.75	0.14	-0.07	0.055
25.00	-16.49	-1.32	0.00	-104.69	0.00	104.69	2,709.26	1,354.63	4,378.27	2,192.39	0.22	-0.09	0.054
30.00	-15.76	-1.32	0.00	-98.09	0.00	98.09	2,653.19	1,326.59	4,154.62	2,080.40	0.32	-0.11	0.053
35.00	-15.04	-1.31	0.00	-91.51	0.00	91.51	2,595.39	1,297.69	3,933.95	1,969.90	0.45	-0.13	0.052
40.00	-14.34	-1.30	0.00	-84.97	0.00	84.97	2,535.84	1,267.92	3,716.53	1,861.03	0.59	-0.15	0.051
45.00	-13.86	-1.29	0.00	-78.48	0.00	78.48	2,474.56	1,237.28	3,502.63	1,753.92	0.75	-0.17	0.050
48.50	-13.53	-1.29	0.00	-73.96	0.00	73.96	2,430.64	1,215.32	3,355.12	1,680.06	0.88	-0.18	0.050
50.00	-12.84	-1.27	0.00	-72.03	0.00	72.03	2,411.55	1,205.77	3,292.50	1,648.70	0.93	-0.19	0.049
53.25	-12.64	-1.26	0.00	-67.91	0.00	67.91	1,790.30	895.15	2,432.20	1,217.91	1.07	-0.20	0.063
55.00	-12.08	-1.25	0.00	-65.70	0.00	65.70	1,775.53	887.77	2,380.98	1,192.26	1.14	-0.21	0.062
60.00	-11.53	-1.24	0.00	-59.44	0.00	59.44	1,732.17	866.09	2,235.97	1,119.65	1.37	-0.23	0.060
65.00	-11.00	-1.22	0.00	-53.26	0.00	53.26	1,687.08	843.54	2,093.15	1,048.13	1.63	-0.26	0.057
70.00	-10.49	-1.20	0.00	-47.16	0.00	47.16	1,640.24	820.12	1,952.79	977.85	1.92	-0.29	0.055
75.00	-9.98	-1.18	0.00	-41.14	0.00	41.14	1,591.67	795.84	1,815.15	908.92	2.23	-0.31	0.052
80.00	-9.50	-1.16	0.00	-35.23	0.00	35.23	1,541.36	770.68	1,680.48	841.49	2.57	-0.34	0.048
85.00	-9.03	-1.14	0.00	-29.42	0.00	29.42	1,489.32	744.66	1,549.05	775.68	2.94	-0.36	0.044
90.00	-8.57	-1.11	0.00	-23.74	0.00	23.74	1,423.78	711.89	1,409.49	705.79	3.33	-0.38	0.040
95.00	-8.23	-1.08	0.00	-18.19	0.00	18.19	1,352.39	676.20	1,271.00	636.45	3.74	-0.41	0.035
98.75	-8.07	-1.07	0.00	-14.13	0.00	14.13	1,298.85	649.43	1,171.84	586.79	4.07	-0.42	0.030
100.00	-5.16	-0.81	0.00	-12.79	0.00	12.79	1,281.00	640.50	1,139.67	570.68	4.18	-0.42	0.026
102.00	-4.97	-0.79	0.00	-11.17	0.00	11.17	920.75	460.37	819.71	410.46	4.36	-0.43	0.033
105.00	-4.67	-0.76	0.00	-8.79	0.00	8.79	898.91	449.46	773.23	387.19	4.63	-0.44	0.028
110.00	-4.38	-0.72	0.00	-5.00	0.00	5.00	861.13	430.57	697.54	349.29	5.10	-0.45	0.019
115.00	-4.27	-0.70	0.00	-1.40	0.00	1.40	819.47	409.73	622.70	311.81	5.58	-0.46	0.010
117.00	0.00	0.00	0.00	0.00	0.00	0.00	798.05	399.03	590.42	295.65	5.77	-0.46	0.000
119.00	0.00	0.00	0.00	0.00	0.00	0.00	776.64	388.32	559.00	279.91	5.97	-0.46	0.000

Analysis Summary

	Reactions						Max Usage	
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	21.38	0.00	28.77	0.00	0.00	1996.61	53.25	0.78
0.9D + 1.6W	21.37	0.00	21.57	0.00	0.00	1973.12	53.25	0.77
1.2D + 1.0Di + 1.0Wi	5.93	0.00	51.60	0.00	0.00	554.17	53.25	0.23
(1.2 + 0.2Sds) * DL + E ELFM	1.36	0.00	27.97	0.00	0.00	139.61	53.25	0.06
(1.2 + 0.2Sds) * DL + E EMAM	1.33	0.00	27.97	0.00	0.00	139.61	53.25	0.07
(0.9 - 0.2Sds) * DL + E ELFM	1.36	0.00	20.45	0.00	0.00	137.88	53.25	0.06
(0.9 - 0.2Sds) * DL + E EMAM	1.32	0.00	20.45	0.00	0.00	137.85	53.25	0.06
1.0D + 1.0W	5.11	0.00	24.01	0.00	0.00	474.47	53.25	0.19

Base Plate & Anchor Rod Analysis

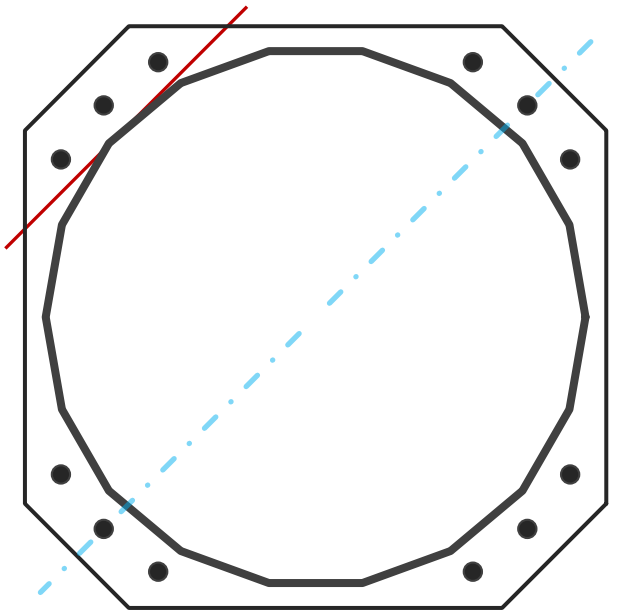
Pole Dimensions		
Number of Sides	18	-
Diameter	45.7	in
Thickness	0.3125	in
Orientation Offset		°

Base Reactions		
Moment, Mu	1996.6	k-ft
Axial, Pu	28.8	k
Shear, Vu	21.4	k
Neutral Axis	45	°

Report Capacities		
Component	Capacity	Result
Base Plate	64%	Pass
Anchor Rods	60%	Pass
Dwyidag	-	-

Base Plate		
Shape	Square	-
Width	50.25	in
Thickness	2 1/2	in
Grade	A572-50	-
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Clip	9	in
Orientation Offset		°
Anchor Rod Detail	d	η=0.5
Clear Distance	4.5	in
Applied Moment, Mu	1127.3	k
Bending Stress, ϕMn	1765.8	k

Original Anchor Rods		
Arrangement	Cluster	-
Quantity	12	-
Diameter, ø	2 1/4	in
Bolt Circle	51.75	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	6.0	in
Orientation Offset		°
Applied Force, Pu	156.6	k
Anchor Rods, ϕPn	259.8	k



Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	21.4	1996.6	1.00
Anchor Rod Forces	21.4	1996.6	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	44.3332	2.4630	0.0805		11417.38
Bolt	3.9761	3.2477	0.8393	4.5	13056.35
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Square	-
Width, W	50.25	in
Thickness, t	2.5	in
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Base Plate Chord	20.894	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	4.5	-

External Base Plate		
Chord Length AA	25.114	in
Additional AA	0.000	in
Section Modulus, Z	39.241	in^3
Applied Moment, Mu	1127.3	k-ft
Bending Capacity, ϕMn	1765.8	k-ft
Capacity, Mu/ϕMn	0.638	OK
Chord Length AB	24.405	in
Additional AB	0.000	in
Section Modulus, Z	38.133	in^3
Applied Moment, Mu	963.7	k-ft
Bending Capacity, ϕMn	1716.0	k-ft
Capacity, Mu/ϕMn	0.562	OK
Bend Line Length	0.000	in
Additional Bend Line	0.000	in
Section Modulus, Z	0.000	in^3
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

Internal Base Plate		
Arc Length	0.000	in
Section Modulus, Z	0.000	in^3
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

Anchor Rods		
Anchor Rod Quantity, N	12	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	51.75	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	156.6	k
Applied Shear, Vu	0.0	k
Compressive Capacity, ϕPn	259.8	k
Tensile Capacity, ϕRnt	0.603	OK
Interaction Capacity	0.363	OK

Additional Bolt Group 1		
Bolt Quantity, N	0	-
Bolt Diameter, d	0	in
Bolt Circle, BC	0	in
Yield Strength, Fy	0	ksi
Tensile Strength, Fu	0	ksi
Applied Axial, Pu	0.0	k
Applied Shear, Vu	0.0	k
Compressive Capacity, ϕPn	0.0	k
Compressive Capacity, ϕPn		
Interaction Capacity		

Additional Bolt Group 2		
Bolt Quantity, N	0	-
Bolt Diameter, d	0	in
Bolt Circle, BC	0	in
Yield Strength, Fy	0	ksi
Tensile Strength, Fu	0	ksi
Applied Axial, Pu	0.0	k
Applied Shear, Vu	0.0	k
Compressive Capacity, ϕPn	0.0	k
Compressive Capacity, ϕPn		
Interaction Capacity		

Dywidag Reinforcement		
Dywidag Quantity, N	0	-
Dywidag Diameter, d	2.5	in
Bolt Circle, BC	52.58	in
Yield Strength, Fy	80	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	0.0	k
Compressive Capacity, ϕPn	0.0	k
Capacity, Pu/ϕPn		

Base Plate Stiffeners		
Applied Axial Force, Pu	0.0	k
Applied Horizontal Force, Vu	0.00	k

Vertical Weld		
Vert.-to-Stiffener $a=e_x/l$	#DIV/0!	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Compressive Capacity, ϕPn	#DIV/0!	k
Vert.-to-Plate $a=e_x/l$	#DIV/0!	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Shear Capacity, ϕVn	#DIV/0!	k
$P_u/\phi_P P_n + V_u/\phi_V V_n$	-	

Horizontal Weld		
Horz.-to-Stiffener $a=e_x/l$	#DIV/0!	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Effective Fillet	0.000	in
Compressive Capacity, ϕPn	#DIV/0!	k
Horz.-to-Pole $a=e_x/l$	#DIV/0!	-
Spacing Ratio, k	#DIV/0!	-
Weld Coefficient, C	#DIV/0!	-
Shear Capacity, ϕVn	#DIV/0!	k
$P_u/\phi_P P_n + V_u/\phi_V V_n$	-	

Plate Tension		
Gross Cross Section	0.000	in^2
Net Cross Section	0.000	in^2
Tensile Capacity, ϕTn	0.0	k
Capacity, Tu/ϕTn	-	

Plate Compression		
Radius of Gyration	#DIV/0!	in^3
kl/r	#DIV/0!	-
4.71 $\sqrt{(E/Fy)}$	0.00	-
Buckling Stress(Fe)	0.0	-
Crit. Buckling Stress(Fcr)	0.0	ksi
Compressive Capacity, ϕPn	0.0	k
Capacity, Pu/ϕPn	-	

January 16, 2019

SAI Communications
12 Industrial Way
Salem NH, 03079

RE:		
	Site Number:	CT1283 (LTE 4C/5C)
	FA Number:	10133913
	PACE Number:	MRCTB034848
	PT Number:	2051A0KG30
	Site Name:	BRANFORD SHORT BEACH ROAD
	Site Address:	171 Short BeachR Branford, CT 06405

To Whom It May Concern:

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

- (3) SBNH-1D6565C Antennas (96.4"x11.9"x7.1" – Wt. = 61 lbs. /each)
- (3) HPA-65R-BUU-H8 Antennas (92.4"x14.8"x7.4" – Wt. = 68 lbs. /each)
- (3) RRUS-11 RRH's (19.7"x17.0"x7.2" – Wt. = 51 lbs. /each)
- (3) RRUS-32 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (3) Squid Surge Arrestors (24.0"x9.7" Φ – Wt. = 33 lbs. /each) (Tower Mount)
- **(3) HPA65R-BU8A Antennas (96.0"x11.7"x7.6" – Wt. = 54 lbs. /each)**
- **(3) 800-10966 Antennas (96.0"x20.0"x6.9"– Wt. = 115 lbs. /each)**
- **(3) B5/B12 4449 RRH's (18.0"x13.2"x9.5" – Wt. = 71 lbs. /each)**
- **(3) B2/B66A 8843 RRH's (14.9"x13.2"x10.9" – Wt. = 72 lbs. /each)**

**Proposed equipment shown in bold*

No original structural design documents or fabrication drawings were available for the existing mounts. HDG's subconsultant, ProVertic LLC, conducted a survey climb and mapping of the existing AT&T antenna mounts on November 29, 2018.

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 – R11.
- 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 130 mph with a max basic wind speed with ice of 50 mph and a max ice thickness of 1.0 in. An escalated ice thickness of 1.14 in was used for this analysis.
- HDG considers this site to be exposure category D; tower is located on flat, unobstructed, shorelines.
- HDG considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- The mount has been analyzed with load combinations consisting of 250 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 4.
- The mount has been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.
- The existing mount is secured to the existing monopole with ring mounts. The connection is considered OK by visual inspection.

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

- **Install new 2" std. (2.38" O.D.) horizontal pipe braces secure to the existing handrails (typ. of 1 per sector, total of 3).**
- **Install new lower handrail kit, SitePro1 P/N HRK12 (or approved equal).**
- **Install new 2-1/2" std. (2.88" O.D.) pipe masts secure to the existing mount and new/existing handrails (typ. of 4 per sector, total of 12).**

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing (LTE 4C/5C) Mount Rating	61	LC2	317%	**FAIL**
Modified (LTE 4C/5C) Mount Rating	12	LC3	97%	**PASS**

Reference Documents:

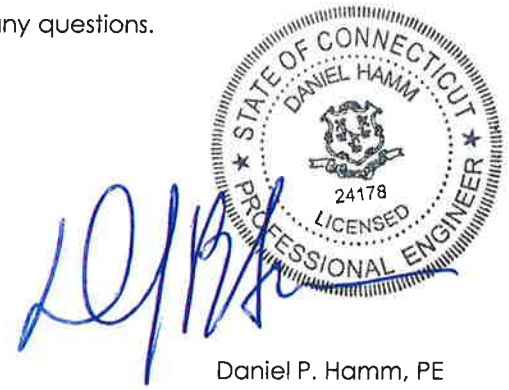
- Mount mapping report prepared by ProVertic LLC.

This determination was based on the following limitations and assumptions:

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

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

Respectfully Submitted,
Hudson Design Group LLC



Michael Cabral
Structural Dept. Head

Daniel P. Hamm, PE
Principal

FIELD PHOTOS:






p: 978.557.5553 f: 978.336.5586 a: 45 Beechwood Drive, N. Andover, MA 01845
p: 413.588.8139 f: 413.517.0590 a: 116 Pleasant Street, Ste 302, Easthampton, MA 01027



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HUDSON
Design Group LLC

Wind & Ice
Calculations

Date: 01/16/2019
Project Name: BRANFORD SHORT BEACH ROAD
Project No.: CT1283
Designed By: JN **Checked By:** MSC

HUDSON Design Group LLC

2.6.5.2 Velocity Pressure Coeff:

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

z=	120	(ft)
z_g=	700	(ft)
α=	11.5	
K_z=	**1.479**	

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

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!

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

Category= **1**

K_h=	#DIV/0!	
K_c=	0	(from Table 2-4)
K_t=	0	(from Table 2-5)
f=	0	(from Table 2-5)
z=	120	
z_s=	60	(Mean elevation of base of structure above se
H=	0	(Ht. of the crest above surrounding terrain)
K_{zt}=	1.00	(from 2.6.6.2.1)
K_e=	1.00	(from 2.6.8)

2.6.10 Design Ice Thickness

Max Ice Thickness =	t_i =	1.00	in
Importance Factor =	I=	1.0	(from Table 2-3)
	K_{iz} =	1.14	(from Sec. 2.6.10)

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

t_{iz} = 1.14 in

Date: 01/16/2019
Project Name: BRANFORD SHORT BEACH ROAD
Project No.: CT1283
Designed By: JN 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=	120	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=	1.479	(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=	**60.66**	K_e=	1.00	(from 2.6.8)
$q_{z\,(Ice)}$=	**8.97**	K_d=	0.95	(from Table 2-2)
$q_{z\,(30)}$=	**3.23**	V_{max}=	130	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: 01/16/2019
Project Name: BRANFORD SHORT BEACH ROAD
Project No.: CT1283
Designed By: JN 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		$1.2 - 2.8(r_s) \geq 0.85$	$1.4 - 4.0(r_s) \geq 0.90$	$2.0 - 6.0(r_s) \geq 1.25$
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 = **1.14 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)
SBNH-1D6565C Antenna	96.4	11.9	7.1	7.97	8.10	1.44	**694**	**125**	**37**
HPA-65R-BUU-H8 Antenna	92.4	14.8	7.4	9.50	6.24	1.37	**787**	**138**	**42**
HPA65R-BU8A Antenna	96.0	11.7	7.6	7.80	8.21	1.44	**681**	**123**	**36**
800-10966 Antenna	96.0	20.0	6.9	13.33	4.80	1.30	**1053**	**178**	**56**
RRUS-11 RRH	19.7	17.0	7.2	2.33	1.16	1.20	**169**	**32**	**9**
RRUS-11 RRH (Shielded)	19.7	5.1	7.2	0.70	3.86	1.26	**53**	**13**	**3**
RRUS-32 RRH	27.2	12.1	7.0	2.29	2.25	1.20	**166**	**32**	**9**
RRUS-32 RRH (Shielded)	27.2	0.0	7.0	0.00	0.00	1.20	**0**	**0**	**0**
B5/B12 4449 RRH	18.0	13.2	9.5	1.65	1.36	1.20	**120**	**23**	**6**
B5/B12 4449 RRH (Shielded)	18.0	1.5	9.5	0.19	12.00	1.57	**18**	**7**	**1**
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.20	**99**	**20**	**5**
B2/B66A 8843 RRH (Shielded)	14.9	0.0	10.9	0.00	0.00	1.20	**0**	**0**	**0**
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	**69**	**14**	**4**

Date: 01/16/2019
Project Name: BRANFORD SHORT BEACH ROAD
Project No.: CT1283
Designed By: JN Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	30	(deg)

Ice Thickness =	1.14	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)
SBNH-1D6565C Antenı	96.4	11.9	7.1	7.97	4.75	8.10	13.58	1.44	1.62	694	467	637
HPA-65R-BUU-H8 Ante	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	787	456	704
HPA65R-BU8A Antenn	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	681	488	633
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	1053	455	904
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	169	72	145
RRUS-11 RRH (Shielde	19.7	8.5	7.2	1.16	0.99	2.32	2.74	1.20	1.21	85	72	82
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	166	101	150
RRUS-32 RRH (Shielde	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	89	101	92
B5/B12 4449 RRH	18.0	13.2	9.5	1.65	1.19	1.36	1.89	1.20	1.20	120	86	112
B5/B12 4449 RRH (Shie	18.0	6.6	9.5	0.83	1.19	2.73	1.89	1.21	1.20	61	86	67
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	99	82	95
B2/B66A 8843 RRH (Sh	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	50	82	58

WIND LOADS WITH ICE:

SBNH-1D6565C Antenı	98.7	14.2	9.4	9.71	6.42	6.96	10.52	1.40	1.52	122	87	113
HPA-65R-BUU-H8 Ante	94.7	17.1	9.7	11.23	6.36	5.54	9.78	1.34	1.49	135	85	122
HPA65R-BU8A Antenn	98.3	14.0	9.9	9.54	6.74	7.03	9.95	1.40	1.50	120	91	113
800-10966 Antenna	98.3	22.3	9.2	15.20	6.26	4.41	10.71	1.28	1.52	175	86	153
RRUS-11 RRH	22.0	19.3	9.5	2.94	1.45	1.14	2.32	1.20	1.20	32	16	28
RRUS-11 RRH (Shielde	22.0	9.6	9.5	1.47	1.45	2.28	2.32	1.20	1.20	16	16	16
RRUS-32 RRH	29.5	14.4	9.3	2.94	1.90	2.05	3.18	1.20	1.23	32	21	29
RRUS-32 RRH (Shielde	29.5	7.2	9.3	1.47	1.90	4.10	3.18	1.27	1.23	17	21	18
B5/B12 4449 RRH	20.3	15.5	11.8	2.18	1.66	1.31	1.72	1.20	1.20	23	18	22
B5/B12 4449 RRH (Shie	20.3	7.7	11.8	1.09	1.66	2.62	1.72	1.21	1.20	12	18	13
B2/B66A 8843 RRH	17.2	15.5	13.2	1.85	1.57	1.11	1.30	1.20	1.20	20	17	19
B2/B66A 8843 RRH (Sh	17.2	7.7	13.2	0.92	1.57	2.22	1.30	1.20	1.20	10	17	12

WIND LOADS AT 30 MPH:

SBNH-1D6565C Antenı	96.4	11.9	7.1	7.97	4.75	8.10	13.58	1.44	1.62	37	25	34
HPA-65R-BUU-H8 Ante	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	42	24	38
HPA65R-BU8A Antenn	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	36	26	34
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	56	24	48
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	9	4	8
RRUS-11 RRH (Shielde	19.7	8.5	7.2	1.16	0.99	2.32	2.74	1.20	1.21	5	4	4
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	9	5	8
RRUS-32 RRH (Shielde	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	5	5	5
B5/B12 4449 RRH	18.0	13.2	9.5	1.65	1.19	1.36	1.89	1.20	1.20	6	5	6
B5/B12 4449 RRH (Shie	18.0	6.6	9.5	0.83	1.19	2.73	1.89	1.21	1.20	3	5	4
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	5
B2/B66A 8843 RRH (Sh	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	3	4	3

Date: 01/16/2019
Project Name: BRANFORD SHORT BEACH ROAD
Project No.: CT1283
Designed By: JN Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	60	(deg)	Ice Thickness =	1.14	in.	Equivalent Angle =	240	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
SBNH-1D6565C Antenı	96.4	11.9	7.1	7.97	4.75	8.10	13.58	1.44	1.62	694	467	524
HPA-65R-BUU-H8 Ante	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	787	456	539
HPA65R-BU8A Antenn	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	681	488	536
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	1053	455	605
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	169	72	97
RRUS-11 RRH (Shielde	19.7	12.8	7.2	1.74	0.99	1.55	2.74	1.20	1.21	127	72	86
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	166	101	117
RRUS-32 RRH (Shielde	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	127	101	108
B5/B12 4449 RRH	18.0	13.2	9.5	1.65	1.19	1.36	1.89	1.20	1.20	120	86	95
B5/B12 4449 RRH (Shie	18.0	9.9	9.5	1.24	1.19	1.82	1.89	1.20	1.20	90	86	87
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	99	82	86
B2/B66A 8843 RRH (Sh	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	75	82	80

WIND LOADS WITH ICE:

SBNH-1D6565C Antenı	98.7	14.2	9.4	9.71	6.42	6.96	10.52	1.40	1.52	122	87	96
HPA-65R-BUU-H8 Ante	94.7	17.1	9.7	11.23	6.36	5.54	9.78	1.34	1.49	135	85	98
HPA65R-BU8A Antenn	98.3	14.0	9.9	9.54	6.74	7.03	9.95	1.40	1.50	120	91	98
800-10966 Antenna	98.3	22.3	9.2	15.20	6.26	4.41	10.71	1.28	1.52	175	86	108
RRUS-11 RRH	22.0	19.3	9.5	2.94	1.45	1.14	2.32	1.20	1.20	32	16	20
RRUS-11 RRH (Shielde	22.0	14.5	9.5	2.21	1.45	1.52	2.32	1.20	1.20	24	16	18
RRUS-32 RRH	29.5	14.4	9.3	2.94	1.90	2.05	3.18	1.20	1.23	32	21	24
RRUS-32 RRH (Shielde	29.5	10.8	9.3	2.21	1.90	2.73	3.18	1.21	1.23	24	21	22
B5/B12 4449 RRH	20.3	15.5	11.8	2.18	1.66	1.31	1.72	1.20	1.20	23	18	19
B5/B12 4449 RRH (Shie	20.3	11.6	11.8	1.63	1.66	1.75	1.72	1.20	1.20	18	18	18
B2/B66A 8843 RRH	17.2	15.5	13.2	1.85	1.57	1.11	1.30	1.20	1.20	20	17	18
B2/B66A 8843 RRH (Sh	17.2	11.6	13.2	1.38	1.57	1.48	1.30	1.20	1.20	15	17	16

WIND LOADS AT 30 MPH:

SBNH-1D6565C Antenı	96.4	11.9	7.1	7.97	4.75	8.10	13.58	1.44	1.62	37	25	28
HPA-65R-BUU-H8 Ante	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	42	24	29
HPA65R-BU8A Antenn	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	36	26	29
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	56	24	32
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	9	4	5
RRUS-11 RRH (Shielde	19.7	12.8	7.2	1.74	0.99	1.55	2.74	1.20	1.21	7	4	5
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	9	5	6
RRUS-32 RRH (Shielde	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	7	5	6
B5/B12 4449 RRH	18.0	13.2	9.5	1.65	1.19	1.36	1.89	1.20	1.20	6	5	5
B5/B12 4449 RRH (Shie	18.0	9.9	9.5	1.24	1.19	1.82	1.89	1.20	1.20	5	5	5
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	5
B2/B66A 8843 RRH (Sh	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	4	4	4

Date: 01/16/2019
Project Name: BRANFORD SHORT BEACH ROAD
Project No.: CT1283
Designed By: JN Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	90	(deg)	Ice Thickness =	1.14	in.	Equivalent Angle =	270	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
SBNH-1D6565C Antenr	96.4	11.9	7.1	7.97	4.75	8.10	13.58	1.44	1.62	694	467	467
HPA-65R-BUU-H8 Ante	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	787	456	456
HPA65R-BU8A Antenn	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	681	488	488
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	1053	455	455
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	169	72	72
RRUS-11 RRH (Shielde	19.7	5.1	7.2	0.70	0.99	3.86	2.74	1.26	1.21	53	72	72
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	166	101	101
RRUS-32 RRH (Shielde	27.2	0.0	7.0	0.00	1.32	0.00	3.89	1.20	1.26	0	101	101
B5/B12 4449 RRH	18.0	13.2	9.5	1.65	1.19	1.36	1.89	1.20	1.20	120	86	86
B5/B12 4449 RRH (Shle	18.0	1.5	9.5	0.19	1.19	12.00	1.89	1.57	1.20	18	86	86
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	99	82	82
B2/B66A 8843 RRH (Sh	14.9	0.0	10.9	0.00	1.13	0.00	1.37	1.20	1.20	0	82	82

WIND LOADS WITH ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
SBNH-1D6565C Antenr	98.7	14.2	9.4	9.71	6.42	6.96	10.52	1.40	1.52	122	87	87
HPA-65R-BUU-H8 Ante	94.7	17.1	9.7	11.23	6.36	5.54	9.78	1.34	1.49	135	85	85
HPA65R-BU8A Antenn	98.3	14.0	9.9	9.54	6.74	7.03	9.95	1.40	1.50	120	91	91
800-10966 Antenna	98.3	22.3	9.2	15.20	6.26	4.41	10.71	1.28	1.52	175	86	86
RRUS-11 RRH	22.0	19.3	9.5	2.94	1.45	1.14	2.32	1.20	1.20	32	16	16
RRUS-11 RRH (Shielde	22.0	7.4	9.5	1.13	1.45	2.98	2.32	1.22	1.20	12	16	16
RRUS-32 RRH	29.5	14.4	9.3	2.94	1.90	2.05	3.18	1.20	1.23	32	21	21
RRUS-32 RRH (Shielde	29.5	2.3	9.3	0.47	1.90	12.95	3.18	1.60	1.23	7	21	21
B5/B12 4449 RRH	20.3	15.5	11.8	2.18	1.66	1.31	1.72	1.20	1.20	23	18	18
B5/B12 4449 RRH (Shle	20.3	3.8	11.8	0.53	1.66	5.37	1.72	1.33	1.20	6	18	18
B2/B66A 8843 RRH	17.2	15.5	13.2	1.85	1.57	1.11	1.30	1.20	1.20	20	17	17
B2/B66A 8843 RRH (Sh	17.2	2.3	13.2	0.27	1.57	7.55	1.30	1.42	1.20	3	17	17

WIND LOADS AT 30 MPH:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
SBNH-1D6565C Antenr	96.4	11.9	7.1	7.97	4.75	8.10	13.58	1.44	1.62	37	25	25
HPA-65R-BUU-H8 Ante	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	42	24	24
HPA65R-BU8A Antenn	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	36	26	26
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	56	24	24
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	9	4	4
RRUS-11 RRH (Shielde	19.7	5.1	7.2	0.70	0.99	3.86	2.74	1.26	1.21	3	4	4
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	9	5	5
RRUS-32 RRH (Shielde	27.2	0.0	7.0	0.00	1.32	0.00	3.89	1.20	1.26	0	5	5
B5/B12 4449 RRH	18.0	13.2	9.5	1.65	1.19	1.36	1.89	1.20	1.20	6	5	5
B5/B12 4449 RRH (Shle	18.0	1.5	9.5	0.19	1.19	12.00	1.89	1.57	1.20	1	5	5
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	4
B2/B66A 8843 RRH (Sh	14.9	0.0	10.9	0.00	1.13	0.00	1.37	1.20	1.20	0	4	4

Date: 01/16/2019
Project Name: BRANFORD SHORT BEACH ROAD
Project No.: CT1283
Designed By: JN Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle = 120 (deg) | Ice Thickness = 1.14 in. | Equivalent Angle = 300 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
SBNH-1D6565C Antenı	96.4	11.9	7.1	7.97	4.75	8.10	13.58	1.44	1.62	694	467	524
HPA-65R-BUU-H8 Ante	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	787	456	539
HPA65R-BU8A Antenn	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	681	488	536
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	1053	455	605
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	169	72	97
RRUS-11 RRH (Shielde	19.7	12.8	7.2	1.74	0.99	1.55	2.74	1.20	1.21	127	72	86
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	166	101	117
RRUS-32 RRH (Shielde	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	127	101	108
B5/B12 4449 RRH	18.0	13.2	9.5	1.65	1.19	1.36	1.89	1.20	1.20	120	86	95
B5/B12 4449 RRH (Shie	18.0	9.9	9.5	1.24	1.19	1.82	1.89	1.20	1.20	90	86	87
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	99	82	86
B2/B66A 8843 RRH (Sh	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	75	82	80

WIND LOADS WITH ICE:

SBNH-1D6565C Antenı	98.7	14.2	9.4	9.71	6.42	6.96	10.52	1.40	1.52	122	87	96
HPA-65R-BUU-H8 Ante	94.7	17.1	9.7	11.23	6.36	5.54	9.78	1.34	1.49	135	85	98
HPA65R-BU8A Antenn	98.3	14.0	9.9	9.54	6.74	7.03	9.95	1.40	1.50	120	91	98
800-10966 Antenna	98.3	22.3	9.2	15.20	6.26	4.41	10.71	1.28	1.52	175	86	108
RRUS-11 RRH	22.0	19.3	9.5	2.94	1.45	1.14	2.32	1.20	1.20	32	16	20
RRUS-11 RRH (Shielde	22.0	14.5	9.5	2.21	1.45	1.52	2.32	1.20	1.20	24	16	18
RRUS-32 RRH	29.5	14.4	9.3	2.94	1.90	2.05	3.18	1.20	1.23	32	21	24
RRUS-32 RRH (Shielde	29.5	10.8	9.3	2.21	1.90	2.73	3.18	1.21	1.23	24	21	22
B5/B12 4449 RRH	20.3	15.5	11.8	2.18	1.66	1.31	1.72	1.20	1.20	23	18	19
B5/B12 4449 RRH (Shie	20.3	11.6	11.8	1.63	1.66	1.75	1.72	1.20	1.20	18	18	18
B2/B66A 8843 RRH	17.2	15.5	13.2	1.85	1.57	1.11	1.30	1.20	1.20	20	17	18
B2/B66A 8843 RRH (Sh	17.2	11.6	13.2	1.38	1.57	1.48	1.30	1.20	1.20	15	17	16

WIND LOADS AT 30 MPH:

SBNH-1D6565C Antenı	96.4	11.9	7.1	7.97	4.75	8.10	13.58	1.44	1.62	37	25	28
HPA-65R-BUU-H8 Ante	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	42	24	29
HPA65R-BU8A Antenn	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	36	26	29
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	56	24	32
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	9	4	5
RRUS-11 RRH (Shielde	19.7	12.8	7.2	1.74	0.99	1.55	2.74	1.20	1.21	7	4	5
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	9	5	6
RRUS-32 RRH (Shielde	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	7	5	6
B5/B12 4449 RRH	18.0	13.2	9.5	1.65	1.19	1.36	1.89	1.20	1.20	6	5	5
B5/B12 4449 RRH (Shie	18.0	9.9	9.5	1.24	1.19	1.82	1.89	1.20	1.20	5	5	5
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	5
B2/B66A 8843 RRH (Sh	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	4	4	4

Date: 01/16/2019
Project Name: BRANFORD SHORT BEACH ROAD
Project No.: CT1283
Designed By: JN Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	150	(deg)	Ice Thickness =	1.14	in.	Equivalent Angle =	330	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
SBNH-1D6565C Antenı	96.4	11.9	7.1	7.97	4.75	8.10	13.58	1.44	1.62	694	467	637
HPA-65R-BUU-H8 Ante	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	787	456	704
HPA65R-BU8A Antenn	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	681	488	633
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	1053	455	904
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	169	72	145
RRUS-11 RRH (Shielde	19.7	8.5	7.2	1.16	0.99	2.32	2.74	1.20	1.21	85	72	82
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	166	101	150
RRUS-32 RRH (Shielde	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	89	101	92
B5/B12 4449 RRH	18.0	13.2	9.5	1.65	1.19	1.36	1.89	1.20	1.20	120	86	112
B5/B12 4449 RRH (Shie	18.0	6.6	9.5	0.83	1.19	2.73	1.89	1.21	1.20	61	86	67
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	99	82	95
B2/B66A 8843 RRH (Sh	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	50	82	58

WIND LOADS WITH ICE:

SBNH-1D6565C Antenı	98.7	14.2	9.4	9.71	6.42	6.96	10.52	1.40	1.52	122	87	113
HPA-65R-BUU-H8 Ante	94.7	17.1	9.7	11.23	6.36	5.54	9.78	1.34	1.49	135	85	122
HPA65R-BU8A Antenn	98.3	14.0	9.9	9.54	6.74	7.03	9.95	1.40	1.50	120	91	113
800-10966 Antenna	98.3	22.3	9.2	15.20	6.26	4.41	10.71	1.28	1.52	175	86	153
RRUS-11 RRH	22.0	19.3	9.5	2.94	1.45	1.14	2.32	1.20	1.20	32	16	28
RRUS-11 RRH (Shielde	22.0	9.6	9.5	1.47	1.45	2.28	2.32	1.20	1.20	16	16	16
RRUS-32 RRH	29.5	14.4	9.3	2.94	1.90	2.05	3.18	1.20	1.23	32	21	29
RRUS-32 RRH (Shielde	29.5	7.2	9.3	1.47	1.90	4.10	3.18	1.27	1.23	17	21	18
B5/B12 4449 RRH	20.3	15.5	11.8	2.18	1.66	1.31	1.72	1.20	1.20	23	18	22
B5/B12 4449 RRH (Shie	20.3	7.7	11.8	1.09	1.66	2.62	1.72	1.21	1.20	12	18	13
B2/B66A 8843 RRH	17.2	15.5	13.2	1.85	1.57	1.11	1.30	1.20	1.20	20	17	19
B2/B66A 8843 RRH (Sh	17.2	7.7	13.2	0.92	1.57	2.22	1.30	1.20	1.20	10	17	12

WIND LOADS AT 30 MPH:

SBNH-1D6565C Antenı	96.4	11.9	7.1	7.97	4.75	8.10	13.58	1.44	1.62	37	25	34
HPA-65R-BUU-H8 Ante	92.4	14.8	7.4	9.50	4.75	6.24	12.49	1.37	1.58	42	24	38
HPA65R-BU8A Antenn	96.0	11.7	7.6	7.80	5.07	8.21	12.63	1.44	1.59	36	26	34
800-10966 Antenna	96.0	20.0	6.9	13.33	4.60	4.80	13.91	1.30	1.63	56	24	48
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	9	4	8
RRUS-11 RRH (Shielde	19.7	8.5	7.2	1.16	0.99	2.32	2.74	1.20	1.21	5	4	4
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	9	5	8
RRUS-32 RRH (Shielde	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	5	5	5
B5/B12 4449 RRH	18.0	13.2	9.5	1.65	1.19	1.36	1.89	1.20	1.20	6	5	6
B5/B12 4449 RRH (Shie	18.0	6.6	9.5	0.83	1.19	2.73	1.89	1.21	1.20	3	5	4
B2/B66A 8843 RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	5
B2/B66A 8843 RRH (Sh	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	3	4	3

Date: 01/16/2019
Project Name: BRANFORD SHORT BEACH ROAD
Project No.: CT1283
Designed By: JN **Checked By:** MSC

HUDSON Design Group LLC

ICE WEIGHT CALCULATIONS

Thickness of ice: 1.14 in.
Density of ice: 56 pcf

SBNH-1D6565C Antenna

Weight of ice based on total radial SF area:

Height (in):	96.4	
Width (in):	11.9	
Depth (in):	7.1	
Total weight of ice on object:		168 lbs
Weight of object:	61.0 lbs	
Combined weight of ice and object:		229 lbs

HPA-65R-BUU-H8 Antenna

Weight of ice based on total radial SF area:

Height (in):	92.4	
Width (in):	14.8	
Depth (in):	7.4	
Total weight of ice on object:		190 lbs
Weight of object:	68.0 lbs	
Combined weight of ice and object:		258 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:		168 lbs
Weight of object:	54.0 lbs	
Combined weight of ice and object:		222 lbs

800-10966 Antenna

Weight of ice based on total radial SF area:

Height (in):	96.0	
Width (in):	20.0	
Depth (in):	6.9	
Total weight of ice on object:		248 lbs
Weight of object:	115.0 lbs	
Combined weight of ice and object:		363 lbs

RRUS-11 RRH

Weight of ice based on total radial SF area:

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

RRUS-32 RRH

Weight of ice based on total radial SF area:

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

B5/B12 4449 RRH

Weight of ice based on total radial SF area:

Height (in):	18.0	
Width (in):	13.2	
Depth (in):	9.5	
Total weight of ice on object:		36 lbs
Weight of object:	71.0 lbs	
Combined weight of ice and object:		107 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:		32 lbs
Weight of object:	72.0 lbs	
Combined weight of ice and object:		104 lbs

Squid Surge Arrestor

Weight of ice based on total radial SF area:

Depth (in):	24.0	
Diameter(in):	9.7	
Total weight of ice on object:		30 lbs
Weight of object:	33 lbs	
Combined weight of ice and object:		63 lbs

Z 4x3x3/16

Weight of ice based on total radial SF area:

Height (in):	4	
Width (in):	3	
Per foot weight of ice on object:		9 plf

C 4-1/2x3x3/16

Weight of ice based on total radial SF area:

Height (in):	4	
Width (in):	3	
Per foot weight of ice on object:		9 plf

HSS 6x3x3/8

Weight of ice based on total radial SF area:

Height (in):	6	
Width (in):	3	
Per foot weight of ice on object:		11 plf

PL 3-1/2x3/16

Weight of ice based on total radial SF area:

Height (in):	3.5	
Width (in):	0.1875	
Per foot weight of ice on object:		6 plf

L 2-1/2x2-1/2x1/4 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:		7 plf

2" pipe

Per foot weight of ice:

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

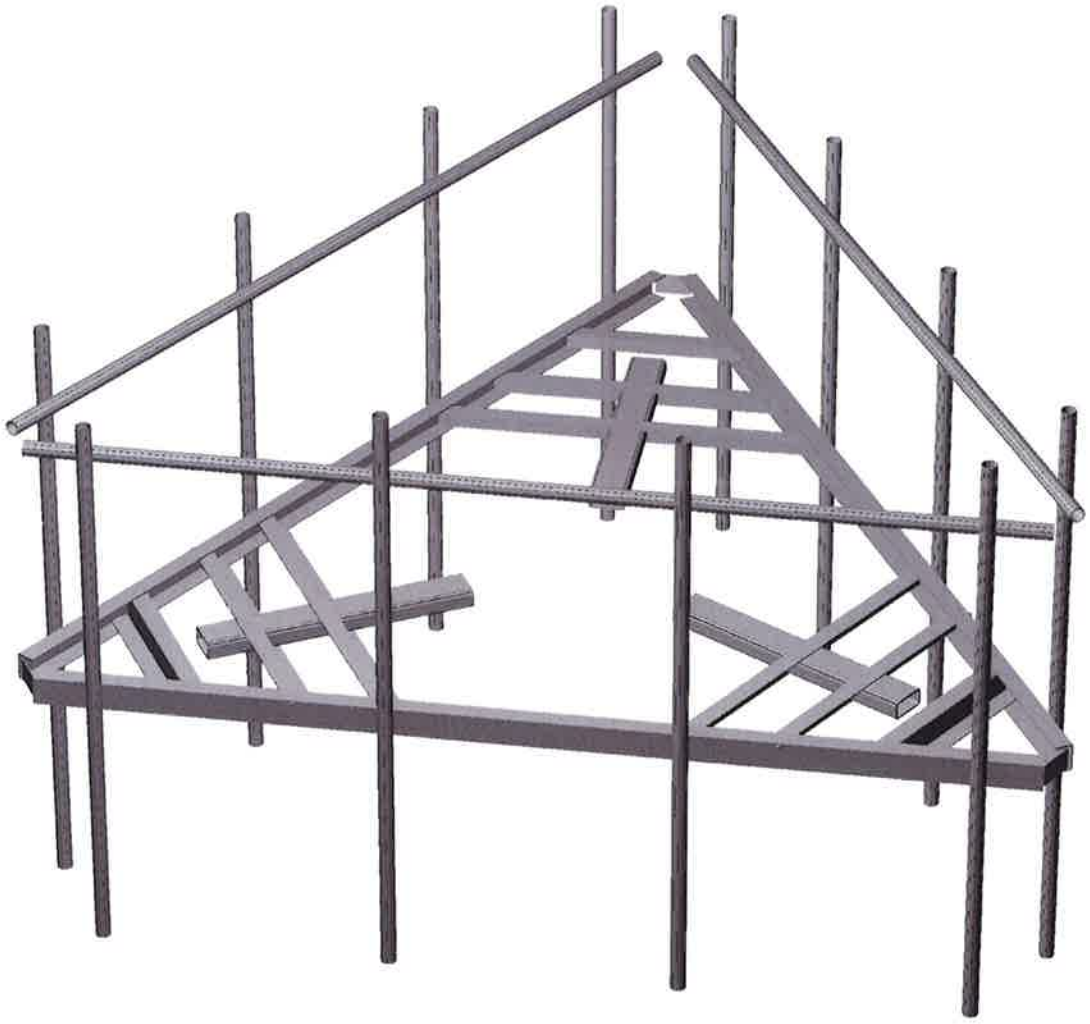
2-1/2" pipe

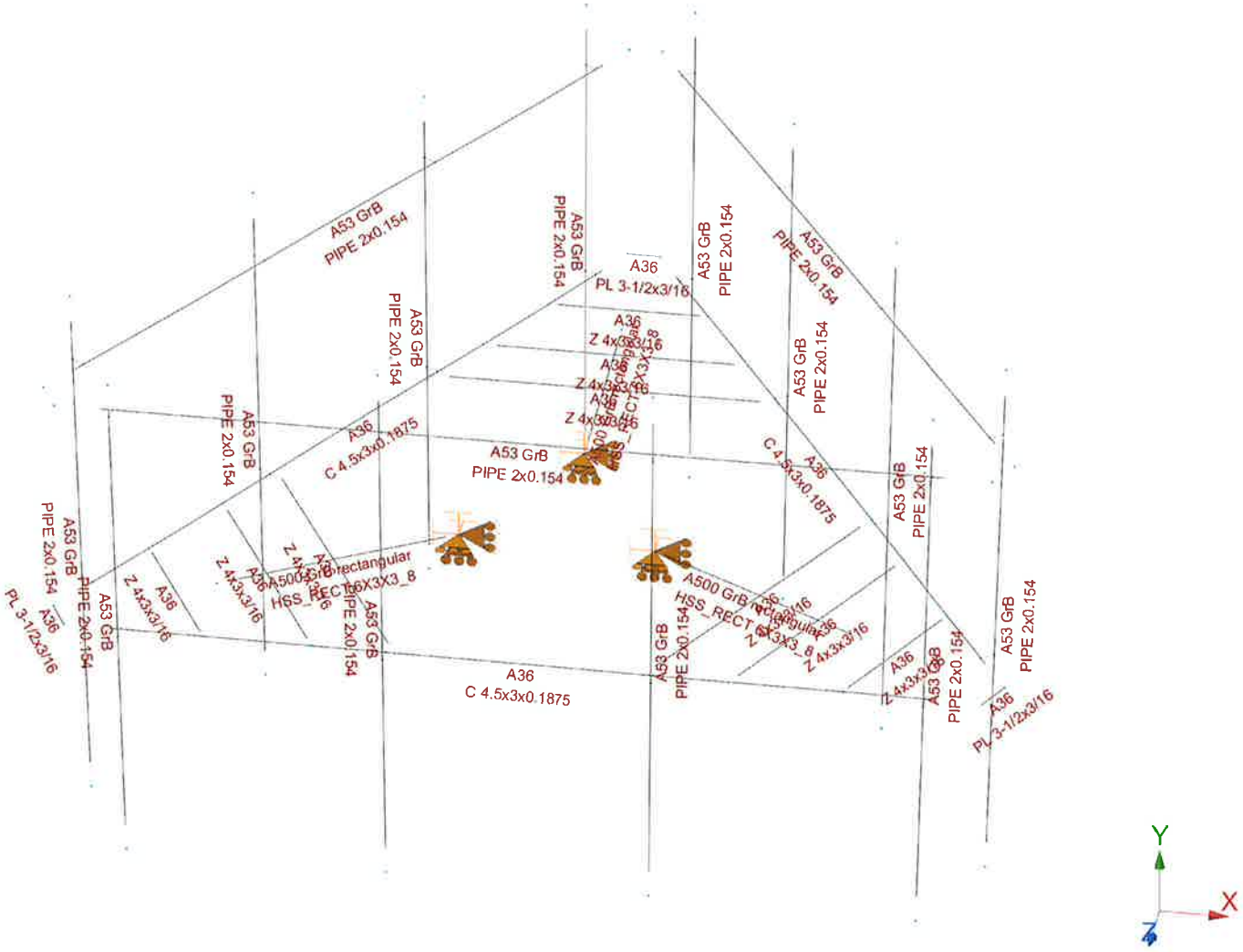
Per foot weight of ice:

diameter (in):	2.88	
Per foot weight of ice on object:		6 plf

HUDSON
Design Group LLC

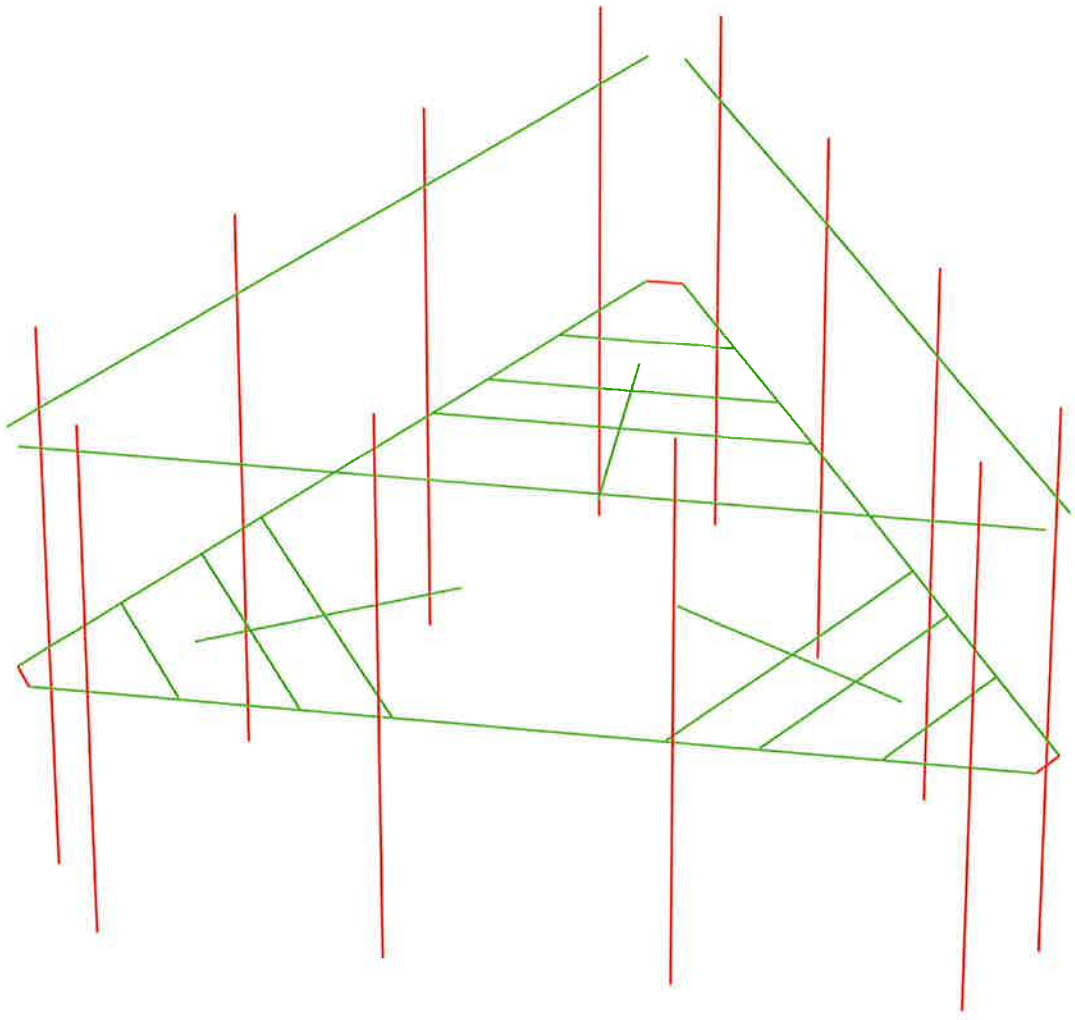
Mount Calculations
(Existing Conditions)

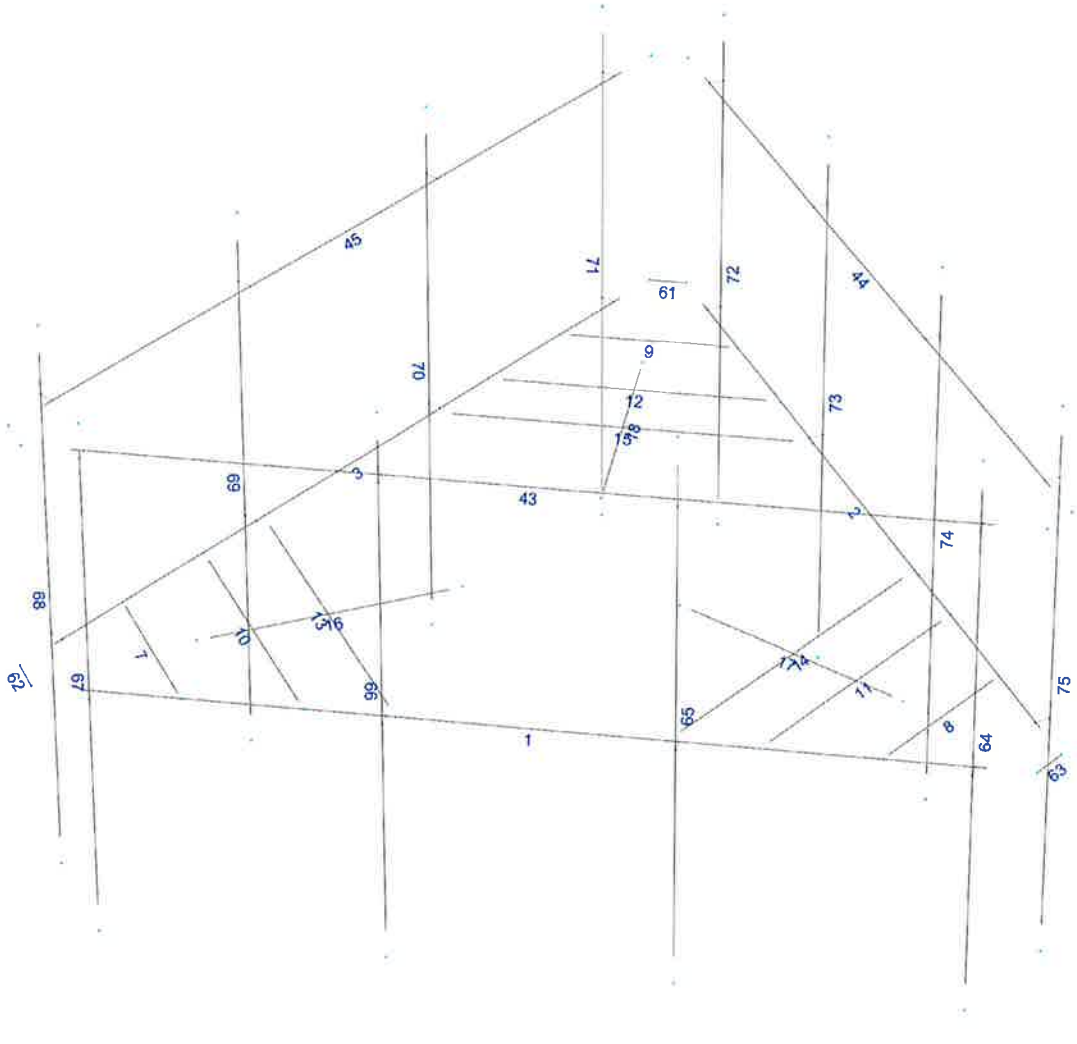

Y
X
Z


A53 GrB
PIPE 2x0.154
A36
PL 3-1/2x3/16
A36
C 4.5x3x0.1875
A500 GrB rectangular
HSS_RECT 6X3X3_8
Z 4x3x3/16
Y
X
Z

Design status

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




45
71
61
72
44
9
70
12
73
43
69
3
2
74
88
10
67
99
65
11
75
1
8
64
63
Y
X
Z

Bentley Hewlett-Packard Company

Current Date: 1/16/2019 3:10 PM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1283\LTE 4C-5C\CT1283 (LTE 4C-5C).etz\

Load data

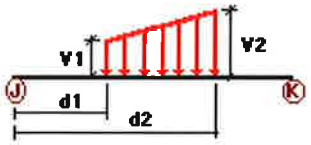
GLOSSARY

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

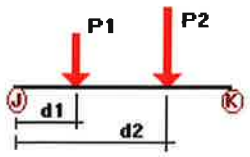


Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
DL	1	Y	-0.01	-0.01	8.00	No	10.70	No
		Y	-0.01	-0.01	1.90	No	4.60	No
	2	Y	-0.01	-0.01	8.00	No	10.70	No
		Y	-0.01	-0.01	1.90	No	4.60	No
	3	Y	-0.01	-0.01	8.00	No	10.70	No
		Y	-0.01	-0.01	1.90	No	4.60	No
	7	Y	-0.01	0.00	0.00	No	0.00	No
	8	Y	-0.01	0.00	0.00	No	0.00	No
	9	Y	-0.01	0.00	0.00	No	0.00	No
	10	Y	-0.01	0.00	0.00	No	0.00	No
	11	Y	-0.01	0.00	0.00	No	0.00	No
	12	Y	-0.01	0.00	0.00	No	0.00	No
	13	Y	-0.01	0.00	0.00	No	0.00	No
	14	Y	-0.01	0.00	0.00	No	0.00	No

	15	Y	-0.01	0.00	0.00	No	0.00	No
W0	1	z	-0.045	0.00	0.00	No	0.00	No
	2	z	-0.045	0.00	0.00	No	0.00	No
	3	z	-0.045	0.00	0.00	No	0.00	No
	43	z	-0.014	0.00	0.00	No	0.00	No
	44	z	-0.014	0.00	0.00	No	0.00	No
	45	z	-0.014	0.00	0.00	No	0.00	No
	61	z	-0.0335	0.00	0.00	No	0.00	No
	62	z	-0.0335	0.00	0.00	No	0.00	No
	63	z	-0.0335	0.00	0.00	No	0.00	No
	68	z	-0.014	0.00	0.00	No	0.00	No
	69	z	-0.014	0.00	0.00	No	0.00	No
	70	z	-0.014	0.00	0.00	No	0.00	No
	71	z	-0.014	0.00	0.00	No	0.00	No
	72	z	-0.014	0.00	0.00	No	0.00	No
	73	z	-0.014	0.00	0.00	No	0.00	No
	74	z	-0.014	0.00	0.00	No	0.00	No
	75	z	-0.014	0.00	0.00	No	0.00	No
W30	2	x	-0.045	0.00	0.00	No	0.00	No
	3	x	-0.045	0.00	0.00	No	0.00	No
	44	x	-0.014	0.00	0.00	No	0.00	No
	45	x	-0.014	0.00	0.00	No	0.00	No
	62	x	-0.0335	0.00	0.00	No	0.00	No
	63	x	-0.0335	0.00	0.00	No	0.00	No
	64	x	-0.014	0.00	0.00	No	0.00	No
	65	x	-0.014	0.00	0.00	No	0.00	No
	66	x	-0.014	0.00	0.00	No	0.00	No
	67	x	-0.014	0.00	0.00	No	0.00	No
	68	x	-0.014	0.00	0.00	No	0.00	No
	69	x	-0.014	0.00	0.00	No	0.00	No
	70	x	-0.014	0.00	0.00	No	0.00	No
	71	x	-0.014	0.00	0.00	No	0.00	No
	72	x	-0.014	0.00	0.00	No	0.00	No
	73	x	-0.014	0.00	0.00	No	0.00	No
	74	x	-0.014	0.00	0.00	No	0.00	No
	75	x	-0.014	0.00	0.00	No	0.00	No
Di	1	y	-0.009	0.00	0.00	No	0.00	No
	2	y	-0.009	0.00	0.00	No	0.00	No
	3	y	-0.009	0.00	0.00	No	0.00	No
	7	y	-0.009	0.00	0.00	No	0.00	No
	8	y	-0.009	0.00	0.00	No	0.00	No
	9	y	-0.009	0.00	0.00	No	0.00	No
	10	y	-0.009	0.00	0.00	No	0.00	No
	11	y	-0.009	0.00	0.00	No	0.00	No
	12	y	-0.009	0.00	0.00	No	0.00	No
	13	y	-0.009	0.00	0.00	No	0.00	No
	14	y	-0.009	0.00	0.00	No	0.00	No
	15	y	-0.009	0.00	0.00	No	0.00	No
	16	y	-0.011	0.00	0.00	No	0.00	No
	17	y	-0.011	0.00	0.00	No	0.00	No
	18	y	-0.011	0.00	0.00	No	0.00	No
	43	y	-0.005	0.00	0.00	No	0.00	No
	44	y	-0.005	0.00	0.00	No	0.00	No
	45	y	-0.005	0.00	0.00	No	0.00	No
	61	y	-0.006	0.00	0.00	No	0.00	No
	62	y	-0.006	0.00	0.00	No	0.00	No
	63	y	-0.006	0.00	0.00	No	0.00	No
	64	y	-0.005	0.00	0.00	No	0.00	No
	65	y	-0.005	0.00	0.00	No	0.00	No
	66	y	-0.005	0.00	0.00	No	0.00	No

67	y	-0.005	0.00	0.00	No	0.00	No
68	y	-0.005	0.00	0.00	No	0.00	No
69	y	-0.005	0.00	0.00	No	0.00	No
70	y	-0.005	0.00	0.00	No	0.00	No
71	y	-0.005	0.00	0.00	No	0.00	No
72	y	-0.005	0.00	0.00	No	0.00	No
73	y	-0.005	0.00	0.00	No	0.00	No
74	y	-0.005	0.00	0.00	No	0.00	No
75	y	-0.005	0.00	0.00	No	0.00	No

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	64	y	-0.031	0.50	No
		y	-0.031	7.50	No
		y	-0.051	2.75	No
	65	y	-0.034	0.50	No
		y	-0.034	7.50	No
		y	-0.06	6.25	No
	66	y	-0.027	0.50	No
		y	-0.027	7.50	No
		y	-0.071	2.75	No
	67	y	-0.058	0.50	No
		y	-0.058	7.50	No
		y	-0.072	2.75	No
	68	y	-0.031	0.50	No
		y	-0.031	7.50	No
		y	-0.051	2.75	No
	69	y	-0.034	0.50	No
		y	-0.034	7.50	No
		y	-0.06	6.25	No
	70	y	-0.027	0.50	No
		y	-0.027	7.50	No
		y	-0.071	2.75	No
	71	y	-0.058	0.50	No
		y	-0.058	7.50	No
		y	-0.072	2.75	No
	72	y	-0.031	0.50	No
		y	-0.031	7.50	No
		y	-0.051	2.75	No
	73	y	-0.034	0.50	No
		y	-0.034	7.50	No
		y	-0.06	6.25	No
	74	y	-0.027	0.50	No
		y	-0.027	7.50	No
		y	-0.071	2.75	No
	75	y	-0.058	0.50	No
		y	-0.058	7.50	No
		y	-0.072	2.75	No

W0	64	z	-0.348	0.50	No
		z	-0.348	7.50	No
		z	-0.053	2.75	No
	65	z	-0.394	0.50	No
		z	-0.394	7.50	No
	66	z	-0.341	0.50	No
		z	-0.341	7.50	No
		z	-0.018	2.75	No
	67	z	-0.527	0.50	No
		z	-0.527	7.50	No
	68	z	-0.262	0.50	No
		z	-0.262	7.50	No
		z	-0.086	2.75	No
	69	z	-0.27	0.50	No
		z	-0.27	7.50	No
		z	-0.108	6.25	No
	70	z	-0.269	0.50	No
		z	-0.269	7.50	No
		z	-0.087	2.75	No
	71	z	-0.303	0.50	No
		z	-0.303	7.50	No
		z	-0.08	2.75	No
	72	z	-0.262	0.50	No
		z	-0.262	7.50	No
		z	-0.086	2.75	No
	73	z	-0.27	0.50	No
		z	-0.27	7.50	No
		z	-0.108	6.25	No
	74	z	-0.269	0.50	No
		z	-0.269	7.50	No
		z	-0.087	2.75	No
	75	z	-0.303	0.50	No
		z	-0.303	7.50	No
		z	-0.08	2.75	No
W30	64	x	-0.234	0.50	No
		x	-0.234	7.50	No
		x	-0.072	2.75	No
	65	x	-0.228	0.50	No
		x	-0.228	7.50	No
		x	-0.101	6.25	No
	66	x	-0.244	0.50	No
		x	-0.244	7.50	No
		x	-0.086	2.75	No
	67	x	-0.228	0.50	No
		x	-0.228	7.50	No
		x	-0.082	2.75	No
	68	x	-0.319	0.50	No
		x	-0.319	7.50	No
		x	-0.082	2.75	No
	69	x	-0.353	0.50	No
		x	-0.353	7.50	No
		x	-0.092	6.25	No
	70	x	-0.317	0.50	No
		x	-0.317	7.50	No
		x	-0.067	2.75	No
	71	x	-0.452	0.50	No
		x	-0.452	7.50	No
		x	-0.058	2.75	No
	72	x	-0.319	0.50	No
		x	-0.319	7.50	No

		x	-0.082	2.75	No
	73	x	-0.353	0.50	No
		x	-0.353	7.50	No
		x	-0.092	6.25	No
	74	x	-0.317	0.50	No
		x	-0.317	7.50	No
		x	-0.067	2.75	No
	75	x	-0.452	0.50	No
		x	-0.452	7.50	No
		x	-0.058	2.75	No
Di	64	y	-0.084	0.50	No
		y	-0.084	7.50	No
		y	-0.045	2.75	No
	65	y	-0.095	0.50	No
		y	-0.095	7.50	No
		y	-0.048	6.25	No
	66	y	-0.084	0.50	No
		y	-0.084	7.50	No
		y	-0.036	2.75	No
	67	y	-0.124	0.50	No
		y	-0.124	7.50	No
		y	-0.032	2.75	No
	68	y	-0.084	0.50	No
		y	-0.084	7.50	No
		y	-0.045	2.75	No
	69	y	-0.095	0.50	No
		y	-0.095	7.50	No
		y	-0.048	6.25	No
	70	y	-0.084	0.50	No
		y	-0.084	7.50	No
		y	-0.036	2.75	No
	71	y	-0.124	0.50	No
		y	-0.124	7.50	No
		y	-0.032	2.75	No
	72	y	-0.084	0.50	No
		y	-0.084	7.50	No
		y	-0.045	2.75	No
	73	y	-0.095	0.50	No
		y	-0.095	7.50	No
		y	-0.048	6.25	No
	74	y	-0.084	0.50	No
		y	-0.084	7.50	No
		y	-0.036	2.75	No
	75	y	-0.124	0.50	No
		y	-0.124	7.50	No
		y	-0.032	2.75	No
Wi0	64	z	-0.063	0.50	No
		z	-0.063	7.50	No
		z	-0.032	2.75	No
	65	z	-0.069	0.50	No
		z	-0.069	7.50	No
		z	-0.032	6.25	No
	66	z	-0.062	0.50	No
		z	-0.062	7.50	No
		z	-0.023	2.75	No
	67	z	-0.089	0.50	No
		z	-0.089	7.50	No
		z	-0.02	2.75	No
	68	z	-0.049	0.50	No
		z	-0.049	7.50	No

		z	-0.02	2.75	No
	69	z	-0.049	0.50	No
		z	-0.049	7.50	No
		z	-0.024	6.25	No
	70	z	-0.049	0.50	No
		z	-0.049	7.50	No
		z	-0.019	2.75	No
	71	z	-0.055	0.50	No
		z	-0.055	7.50	No
		z	-0.018	2.75	No
	72	z	-0.049	0.50	No
		z	-0.049	7.50	No
		z	-0.02	2.75	No
	73	z	-0.049	0.50	No
		z	-0.049	7.50	No
		z	-0.024	6.25	No
	74	z	-0.049	0.50	No
		z	-0.049	7.50	No
		z	-0.019	2.75	No
	75	z	-0.055	0.50	No
		z	-0.055	7.50	No
		z	-0.018	2.75	No
Wi30	64	x	-0.044	0.50	No
		x	-0.044	7.50	No
		x	-0.016	2.75	No
	65	x	-0.043	0.50	No
		x	-0.043	7.50	No
		x	-0.021	6.25	No
	66	x	-0.046	0.50	No
		x	-0.046	7.50	No
		x	-0.018	2.75	No
	67	x	-0.043	0.50	No
		x	-0.043	7.50	No
		x	-0.017	2.75	No
	68	x	-0.057	0.50	No
		x	-0.057	7.50	No
		x	-0.028	2.75	No
	69	x	-0.062	0.50	No
		x	-0.062	7.50	No
		x	-0.029	6.25	No
	70	x	-0.057	0.50	No
		x	-0.057	7.50	No
		x	-0.022	2.75	No
	71	x	-0.077	0.50	No
		x	-0.077	7.50	No
		x	-0.019	2.75	No
	72	x	-0.057	0.50	No
		x	-0.057	7.50	No
		x	-0.028	2.75	No
	73	x	-0.062	0.50	No
		x	-0.062	7.50	No
		x	-0.029	6.25	No
	74	x	-0.057	0.50	No
		x	-0.057	7.50	No
		x	-0.022	2.75	No
	75	x	-0.077	0.50	No
		x	-0.077	7.50	No
		x	-0.019	2.75	No
WL0	64	z	-0.019	0.50	No
		z	-0.019	7.50	No

		z	-0.009	2.75	No
	65	z	-0.021	0.50	No
		z	-0.021	7.50	No
		z	-0.009	6.25	No
	66	z	-0.019	0.50	No
		z	-0.019	7.50	No
		z	-0.006	2.75	No
	67	z	-0.029	0.50	No
		z	-0.029	7.50	No
		z	-0.005	2.75	No
	68	z	-0.014	0.50	No
		z	-0.014	7.50	No
		z	-0.005	2.75	No
	69	z	-0.015	0.50	No
		z	-0.015	7.50	No
		z	-0.006	6.25	No
	70	z	-0.015	0.50	No
		z	-0.015	7.50	No
		z	-0.005	2.75	No
	71	z	-0.017	0.50	No
		z	-0.017	7.50	No
		z	-0.005	2.75	No
	72	z	-0.014	0.50	No
		z	-0.014	7.50	No
		z	-0.005	2.75	No
	73	z	-0.015	0.50	No
		z	-0.015	7.50	No
		z	-0.006	6.25	No
	74	z	-0.015	0.50	No
		z	-0.015	7.50	No
		z	-0.005	2.75	No
	75	z	-0.017	0.50	No
		z	-0.017	7.50	No
		z	-0.005	2.75	No
WL30	64	x	-0.013	0.50	No
		x	-0.013	7.50	No
		x	-0.004	2.75	No
	65	x	-0.013	0.50	No
		x	-0.013	7.50	No
		x	-0.005	6.25	No
	66	x	-0.013	0.50	No
		x	-0.013	7.50	No
		x	-0.005	2.75	No
	67	x	-0.013	0.50	No
		x	-0.013	7.50	No
		x	-0.004	2.75	No
	68	x	-0.017	0.50	No
		x	-0.017	7.50	No
		x	-0.008	2.75	No
	69	x	-0.019	0.50	No
		x	-0.019	7.50	No
		x	-0.008	6.25	No
	70	x	-0.017	0.50	No
		x	-0.017	7.50	No
		x	-0.006	2.75	No
	71	x	-0.025	0.50	No
		x	-0.025	7.50	No
		x	-0.005	2.75	No
	72	x	-0.017	0.50	No
		x	-0.017	7.50	No

		x	-0.008	2.75	No
	73	x	-0.019	0.50	No
		x	-0.019	7.50	No
		x	-0.008	6.25	No
	74	x	-0.017	0.50	No
		x	-0.017	7.50	No
		x	-0.006	2.75	No
	75	x	-0.025	0.50	No
		x	-0.025	7.50	No
		x	-0.005	2.75	No
LL1	1	y	-0.25	50.00	Yes
LL2	1	y	-0.25	0.00	Yes
LLa1	64	y	-0.25	50.00	Yes
LLa2	65	y	-0.25	50.00	Yes
LLa3	66	y	-0.25	50.00	Yes
LLa4	67	y	-0.25	50.00	Yes

Self weight multipliers for load conditions

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

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
W0	0.00	0.00	0.00
W30	0.00	0.00	0.00
Di	0.00	0.00	0.00
Wi0	0.00	0.00	0.00
Wi30	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LLa1	0.00	0.00	0.00

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

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Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

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

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	C 4.5x3x0.1875	**1**	LC3 at 63.64%	0.61	OK	Eq. H1-1b
		2	LC4 at 63.07%	0.67	OK	Eq. H1-1b
		3	LC2 at 36.93%	**0.69**	**OK**	Eq. H1-1b
	HSS_RECT 6X3X3_8	**16**	LC3 at 100.00%	0.50	OK	Eq. H1-1b
		17	LC11 at 100.00%	0.49	OK	Eq. H1-1b
		18	LC2 at 100.00%	**0.52**	**OK**	Eq. H1-1b
	PIPE 2x0.154	**43**	LC3 at 65.00%	0.37	OK	Eq. H1-1b
		44	LC4 at 65.00%	0.63	OK	Eq. H1-1b
		45	LC2 at 35.00%	0.58	OK	Eq. H1-1b
		64	LC3 at 54.17%	1.12	N.G.	Eq. H1-1b
		65	LC3 at 54.17%	1.61	N.G.	Eq. H1-1b
		66	LC3 at 54.17%	1.49	N.G.	Eq. H1-1b
		67	LC3 at 52.08%	1.71	N.G.	Eq. H1-1b
		68	LC2 at 54.17%	1.08	N.G.	Eq. H1-1b
		69	LC2 at 54.17%	**1.95**	**N.G.**	Eq. H1-1b

	70	LC4 at 54.17%	1.69	N.G.	Eq. H1-1b
	71	LC4 at 54.17%	1.42	N.G.	Eq. H1-1b
	72	LC4 at 54.17%	1.07	N.G.	Eq. H1-1b
	73	LC2 at 54.17%	1.88	N.G.	Eq. H1-1b
	74	LC4 at 54.17%	1.77	N.G.	Eq. H1-1b
	75	LC4 at 54.17%	1.39	N.G.	Eq. H1-1b
PL 3-1/2x3/16	**61**	LC2 at 0.00%	**3.17**	**N.G.**	Eq. H3-6
	62	LC3 at 0.00%	1.68	N.G.	Eq. H3-6
	63	LC1 at 0.00%	2.08	N.G.	Eq. H3-6
Z 4x3x3/16	**7**	LC3 at 0.00%	0.48	OK	Eq. H1-1b
	8	LC3 at 100.00%	0.40	OK	Eq. H1-1b
	9	LC4 at 0.00%	0.52	OK	Eq. H1-1b
	10	LC2 at 0.00%	0.88	OK	Eq. H1-1b
	11	LC4 at 53.13%	0.90	OK	Eq. H1-1b
	12	LC3 at 50.00%	**0.92**	**OK**	Eq. H1-1b
	13	LC2 at 0.00%	0.78	OK	Eq. H1-1b
	14	LC4 at 100.00%	0.78	OK	Eq. H1-1b
	15	LC1 at 50.00%	0.77	OK	Eq. H1-1b

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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	-1.7145	0.00	0.00	0
2	-2.8692	0.00	0.00	0
3	-4.4088	0.00	0.00	0
4	-1.4065	0.00	-3.1332	0
5	-6.3333	0.00	0.00	0
6	-6.5833	0.00	-0.433	0
7	-5.6211	0.00	-2.0997	0
8	0.00	0.00	-5.5693	0
9	-4.8513	0.00	-3.433	0
10	-4.2739	0.00	-4.433	0
11	-2.5594	0.00	-7.4027	0
12	-1.9821	0.00	-8.4027	0
13	-1.2123	0.00	-9.736	0
14	-0.25	0.00	-11.4027	0
15	1.7145	0.00	0.00	0
16	2.8692	0.00	0.00	0
17	4.4088	0.00	0.00	0
18	1.4065	0.00	-3.1332	0
19	6.3333	0.00	0.00	0
20	6.5833	0.00	-0.433	0
21	5.6211	0.00	-2.0997	0

22	4.8513	0.00	-3.433	0
23	4.2739	0.00	-4.433	0
24	2.5594	0.00	-7.4027	0
25	1.9821	0.00	-8.4027	0
26	1.2123	0.00	-9.736	0
27	0.25	0.00	-11.4027	0
114	-5.5417	4.00	0.20	0
115	-1.8472	4.50	0.20	0
116	1.8472	4.50	0.20	0
117	5.5417	4.50	0.20	0
118	6.3607	4.50	-1.2186	0
119	4.5135	4.50	-4.418	0
120	2.6662	4.50	-7.6175	0
121	0.819	4.50	-10.817	0
122	-6.3607	4.50	-1.2186	0
123	-4.5135	4.50	-4.418	0
124	-2.6662	4.50	-7.6175	0
125	-0.819	4.50	-10.817	0
134	-5.5417	-3.50	0.20	0
135	-1.8472	-3.50	0.20	0
136	1.8472	-3.50	0.20	0
137	5.5417	-3.50	0.20	0
138	6.3607	-3.50	-1.2186	0
139	4.5135	-3.50	-4.418	0
140	2.6662	-3.50	-7.6175	0
141	0.819	-3.50	-10.817	0
142	-6.3607	-3.50	-1.2186	0
143	-4.5135	-3.50	-4.418	0
144	-2.6662	-3.50	-7.6175	0
145	-0.819	-3.50	-10.817	0
146	-6.3333	3.50	0.00	0
147	6.3333	3.50	0.00	0
148	6.5833	3.50	-0.433	0
149	0.25	3.50	-11.4027	0
150	-0.25	3.50	-11.4027	0
151	-6.5833	3.50	-0.433	0
181	0.00	0.00	-9.1408	0
187	4.4995	0.00	-1.3475	0
188	-4.4995	0.00	-1.3475	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
4	1	1	1	1	1	1
8	1	1	1	1	1	1
18	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
1	5	19		C 4.5x3x0.1875	A36	0.00	0.00	0.00
2	20	27		C 4.5x3x0.1875	A36	0.00	0.00	0.00
3	14	6		C 4.5x3x0.1875	A36	0.00	0.00	0.00
7	3	7		Z 4x3x3/16	A36	0.00	0.00	0.00
8	21	17		Z 4x3x3/16	A36	0.00	0.00	0.00
9	13	26		Z 4x3x3/16	A36	0.00	0.00	0.00
10	9	2		Z 4x3x3/16	A36	0.00	0.00	0.00
11	16	22		Z 4x3x3/16	A36	0.00	0.00	0.00
12	12	25		Z 4x3x3/16	A36	0.00	0.00	0.00
13	10	1		Z 4x3x3/16	A36	0.00	0.00	0.00
14	15	23		Z 4x3x3/16	A36	0.00	0.00	0.00
15	11	24		Z 4x3x3/16	A36	0.00	0.00	0.00
16	188	4		HSS_RECT 6X3X3_8	A500 GrB rectangular	0.00	0.00	0.00
17	187	18		HSS_RECT 6X3X3_8	A500 GrB rectangular	0.00	0.00	0.00
18	181	8		HSS_RECT 6X3X3_8	A500 GrB rectangular	0.00	0.00	0.00
43	146	147		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
44	148	149		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
45	150	151		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
61	14	27		PL 3-1/2x3/16	A36	0.00	0.00	0.00
62	5	6		PL 3-1/2x3/16	A36	0.00	0.00	0.00
63	19	20		PL 3-1/2x3/16	A36	0.00	0.00	0.00
64	117	137		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
65	116	136		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
66	115	135		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
67	114	134		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
68	122	142		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
69	123	143		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
70	124	144		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
71	125	145		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
72	121	141		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
73	120	140		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
74	119	139		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
75	118	138		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
1	180.00	0	0.00	0.00	0.00
2	180.00	0	0.00	0.00	0.00
3	180.00	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
43	180.00	0	0.00	0.00	0.00
44	180.00	0	0.00	0.00	0.00
45	180.00	0	0.00	0.00	0.00

HUDSON
Design Group LLC

Mount Calculations
(Proposed Conditions)

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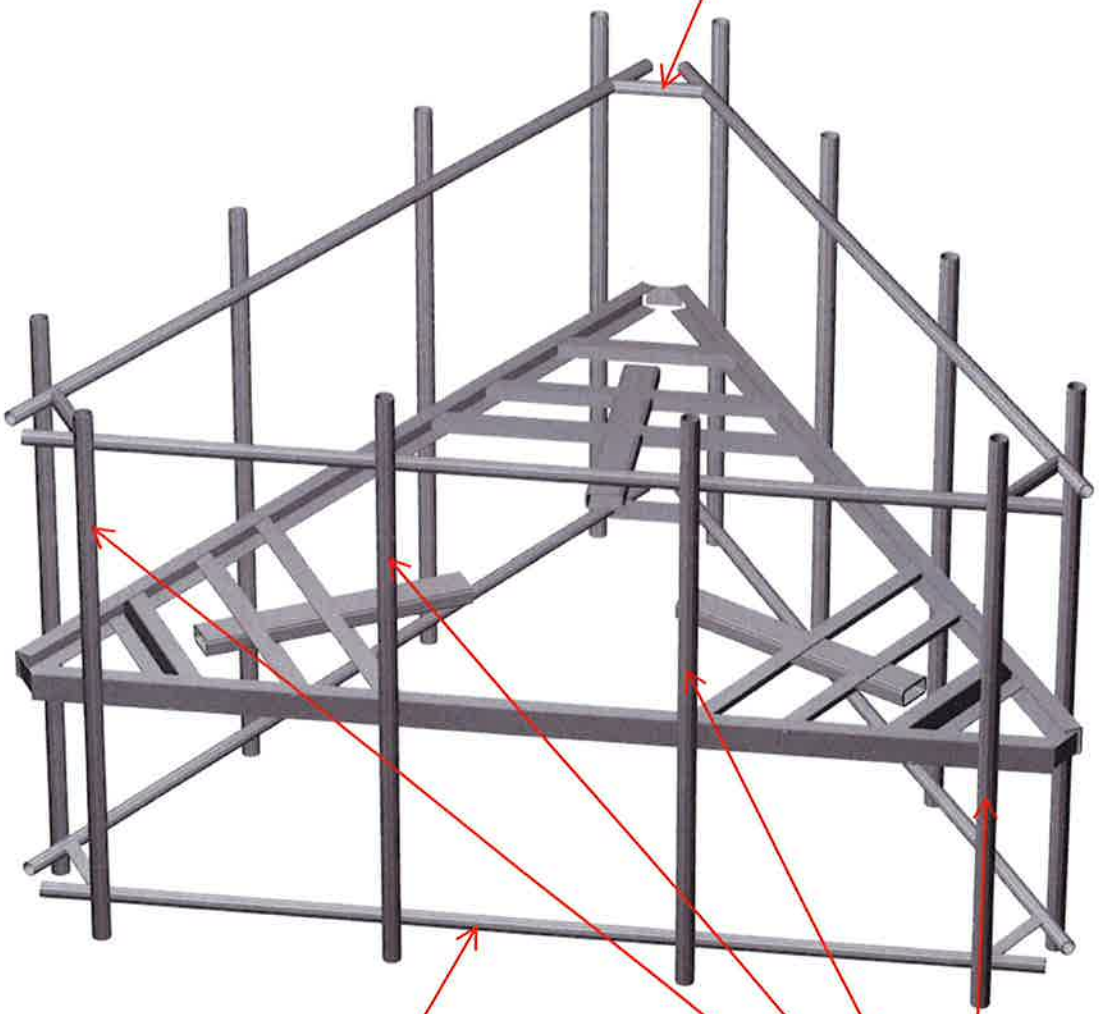
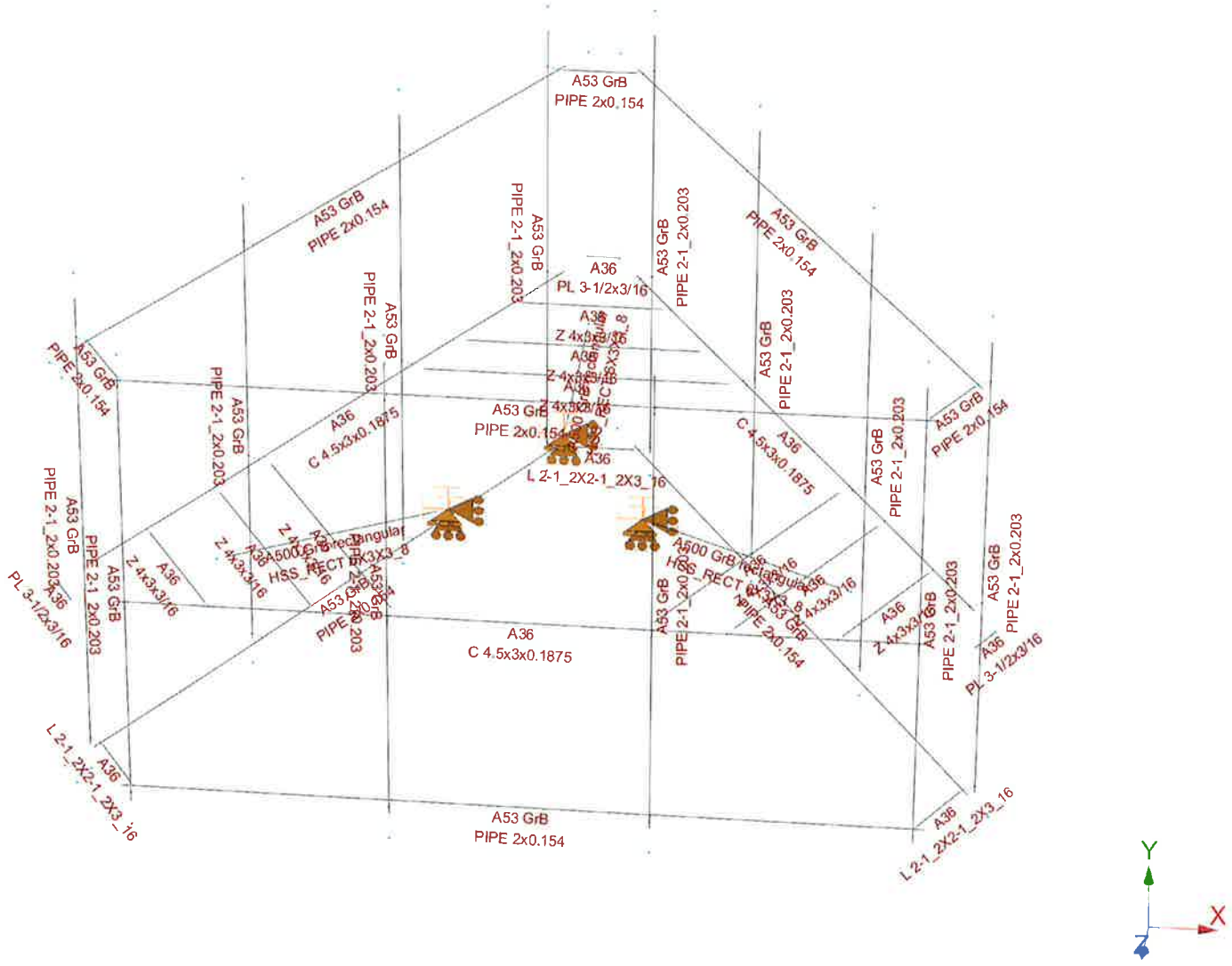
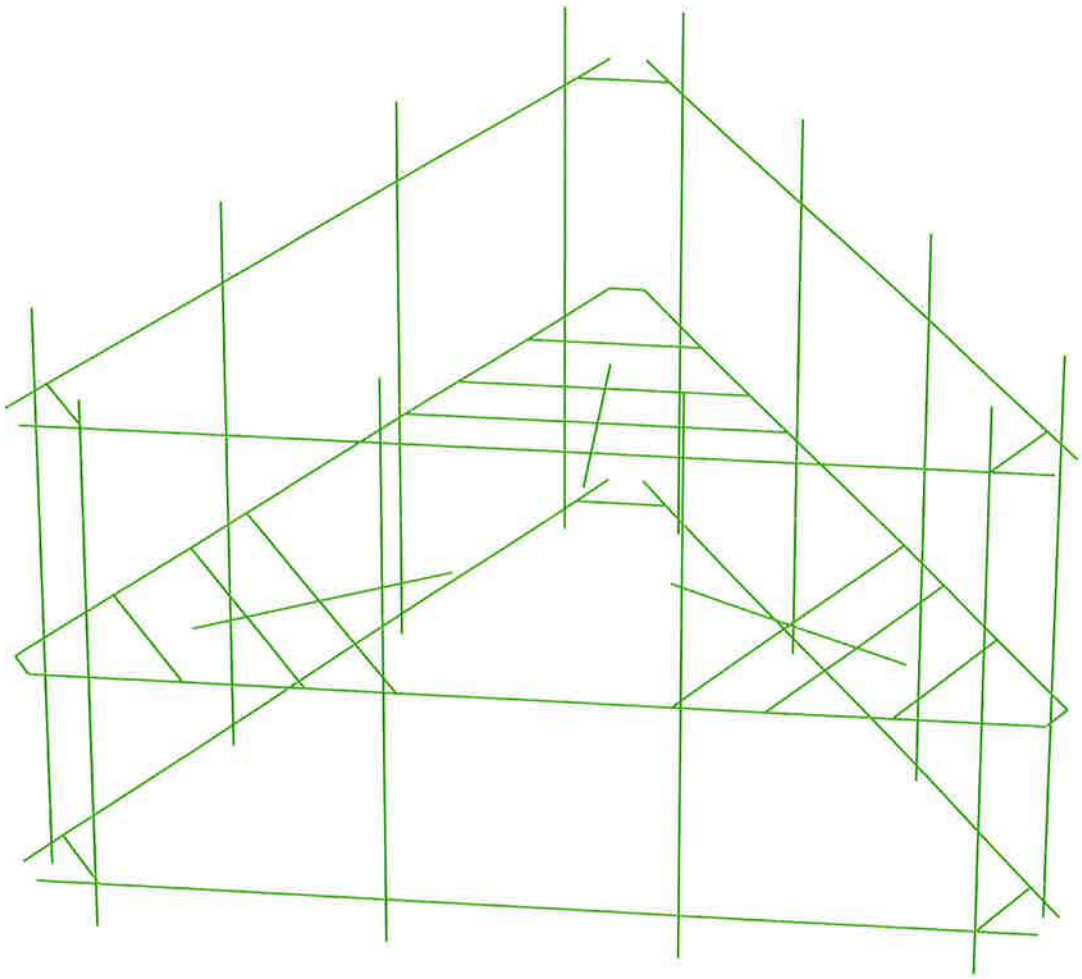
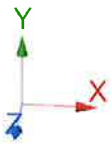



A53 GrB
PIPE 2x0.154
A53 GrB
PIPE 2-1_2x0.203
A36
PL 3-1/2x3/16
A36
C 4.5x3x0.1875
A36
L 2-1_2X2-1_2X3_16
A500 GrB Rectangular
HSS_RECT 6X3X3_8
A36
Z 4x3x3/16
Y
X

Design status

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



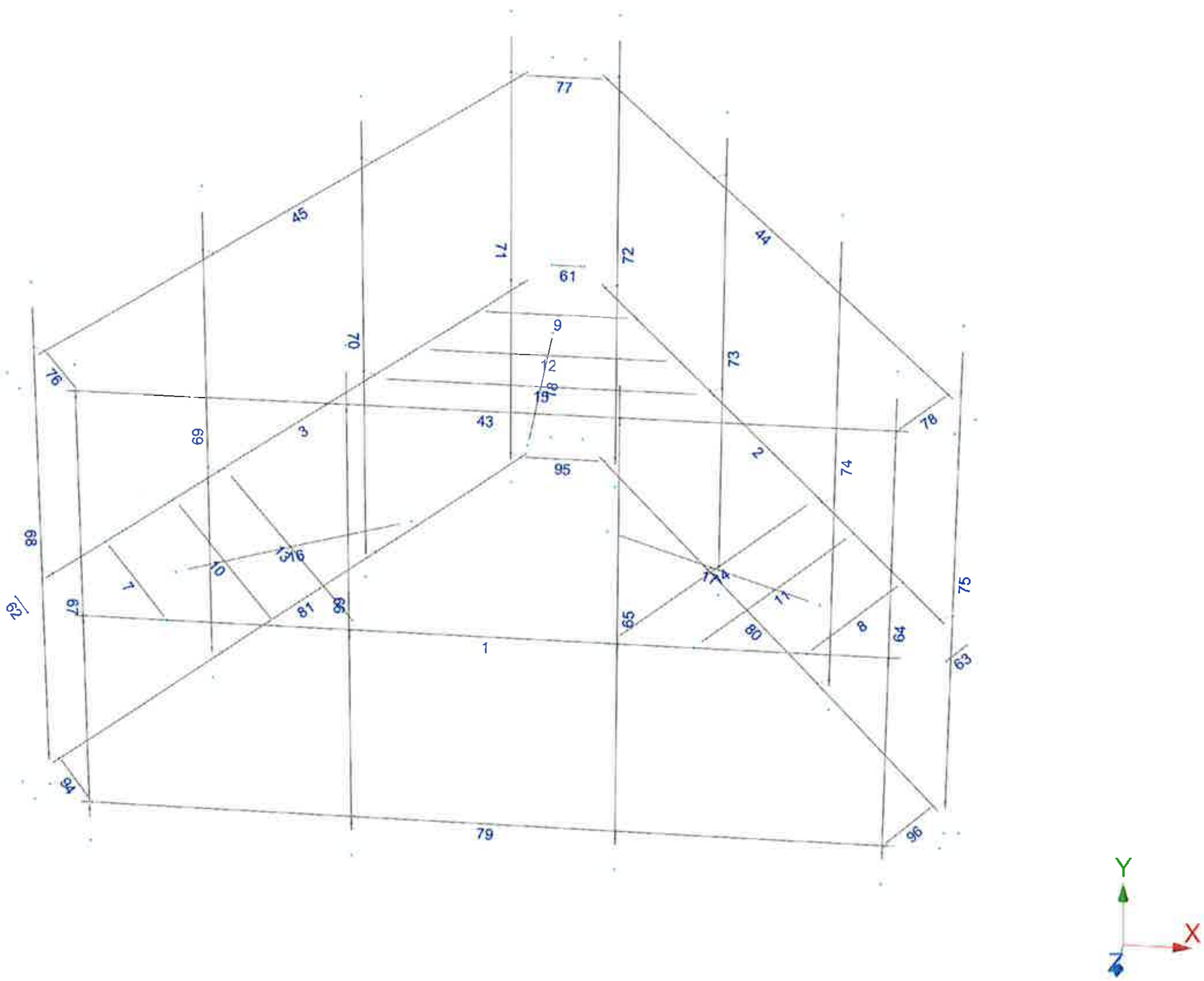


Bentley **Hewlett-Packard Company**

Current Date: 1/16/2019 3:11 PM

Units system: English

File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1283\LTE 4C-5C\CT1283 (LTE 4C-5C) (MC



Bentley Hewlett-Packard Company

Current Date: 1/16/2019 3:11 PM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1283\LTE 4C-5C\CT1283 (LTE 4C-5(
(MOD).etz\

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 4.5x3x0.1875	**1**	LC3 at 36.36%	0.47	OK	Eq. H1-1b
		2	LC4 at 27.84%	0.57	OK	Eq. H1-1b
		3	LC3 at 63.07%	**0.58**	**OK**	Eq. H1-1b
	HSS_RECT 6X3X3_8	**16**	LC3 at 100.00%	0.54	OK	Eq. H1-1b
		17	LC11 at 100.00%	0.52	OK	Eq. H1-1b
		18	LC2 at 100.00%	**0.56**	**OK**	Eq. H1-1b
	L 2-1_2X2-1_2X3_16	**94**	LC3 at 0.00%	0.71	OK	Eq. H3-8
		95	LC2 at 0.00%	**0.81**	**OK**	Eq. H3-8
		96	LC1 at 0.00%	0.62	OK	Eq. H3-8
	PIPE 2-1_2x0.203	**64**	LC2 at 54.69%	0.46	OK	Eq. H1-1b
		65	LC3 at 56.25%	0.58	OK	Eq. H1-1b
		66	LC3 at 56.25%	0.58	OK	Eq. H1-1b
		67	LC4 at 53.13%	0.50	OK	Eq. H1-1b
		68	LC1 at 54.69%	0.52	OK	Eq. H1-1b

	69	LC3 at 54.69%	0.57	OK	Eq. H1-1b
	70	LC2 at 56.25%	0.66	OK	Eq. H1-1b
	71	LC2 at 54.69%	0.56	OK	Eq. H1-1b
	72	LC4 at 54.69%	0.57	OK	Eq. H1-1b
	73	LC4 at 56.25%	**0.68**	**OK**	Eq. H1-1b
	74	LC2 at 54.69%	0.57	OK	Eq. H1-1b
	75	LC1 at 54.69%	0.52	OK	Eq. H1-1b
PIPE 2x0.154	**43**	LC2 at 92.50%	0.50	OK	Eq. H1-1b
	44	LC1 at 6.25%	0.45	OK	Eq. H1-1b
	45	LC3 at 6.25%	0.47	OK	Eq. H1-1b
	76	LC3 at 0.00%	0.55	OK	Eq. H1-1b
	77	LC4 at 0.00%	**0.68**	**OK**	Eq. H1-1b
	78	LC3 at 100.00%	0.54	OK	Eq. H1-1b
	79	LC2 at 6.25%	0.23	OK	Eq. H1-1b
	80	LC4 at 6.25%	0.29	OK	Eq. H1-1b
	81	LC1 at 6.25%	0.30	OK	Eq. H1-1b
PL 3-1/2x3/16	**61**	LC2 at 0.00%	**0.90**	**OK**	Eq. H1-1b
	62	LC5 at 100.00%	0.67	OK	Eq. H1-1b
	63	LC1 at 100.00%	0.66	OK	Eq. H1-1b
Z 4x3x3/16	**7**	LC3 at 0.00%	0.41	OK	Eq. H1-1b
	8	LC3 at 100.00%	0.40	OK	Eq. H1-1b
	9	LC2 at 100.00%	0.51	OK	Eq. H1-1b
	10	LC2 at 0.00%	0.91	OK	Eq. H1-1b
	11	LC4 at 100.00%	0.91	OK	Eq. H1-1b
	12	LC3 at 50.00%	**0.97**	**OK**	Eq. H1-1b
	13	LC11 at 50.00%	0.74	OK	Eq. H1-1b
	14	LC11 at 50.00%	0.75	OK	Eq. H1-1b
	15	LC11 at 50.00%	0.79	OK	Eq. H1-1b

Current Date: 1/16/2019 3:11 PM
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	-1.7145	0.00	0.00	0
2	-2.8692	0.00	0.00	0
3	-4.4088	0.00	0.00	0
4	-1.4065	0.00	-3.1332	0
5	-6.3333	0.00	0.00	0
6	-6.5833	0.00	-0.433	0
7	-5.6211	0.00	-2.0997	0
8	0.00	0.00	-5.5693	0
9	-4.8513	0.00	-3.433	0
10	-4.2739	0.00	-4.433	0
11	-2.5594	0.00	-7.4027	0
12	-1.9821	0.00	-8.4027	0
13	-1.2123	0.00	-9.736	0
14	-0.25	0.00	-11.4027	0
15	1.7145	0.00	0.00	0
16	2.8692	0.00	0.00	0
17	4.4088	0.00	0.00	0
18	1.4065	0.00	-3.1332	0
19	6.3333	0.00	0.00	0
20	6.5833	0.00	-0.433	0
21	5.6211	0.00	-2.0997	0

22	4.8513	0.00	-3.433	0
23	4.2739	0.00	-4.433	0
24	2.5594	0.00	-7.4027	0
25	1.9821	0.00	-8.4027	0
26	1.2123	0.00	-9.736	0
27	0.25	0.00	-11.4027	0
114	-5.5417	4.00	0.20	0
115	-1.8472	4.50	0.20	0
116	1.8472	4.50	0.20	0
117	5.5417	4.50	0.20	0
118	6.3607	4.50	-1.2186	0
119	4.5135	4.50	-4.418	0
120	2.6662	4.50	-7.6175	0
121	0.819	4.50	-10.817	0
122	-6.3607	4.50	-1.2186	0
123	-4.5135	4.50	-4.418	0
124	-2.6662	4.50	-7.6175	0
125	-0.819	4.50	-10.817	0
134	-5.5417	-3.50	0.20	0
135	-1.8472	-3.50	0.20	0
136	1.8472	-3.50	0.20	0
137	5.5417	-3.50	0.20	0
138	6.3607	-3.50	-1.2186	0
139	4.5135	-3.50	-4.418	0
140	2.6662	-3.50	-7.6175	0
141	0.819	-3.50	-10.817	0
142	-6.3607	-3.50	-1.2186	0
143	-4.5135	-3.50	-4.418	0
144	-2.6662	-3.50	-7.6175	0
145	-0.819	-3.50	-10.817	0
146	-6.3333	3.50	0.00	0
147	6.3333	3.50	0.00	0
148	6.5833	3.50	-0.433	0
149	0.25	3.50	-11.4027	0
150	-0.25	3.50	-11.4027	0
151	-6.5833	3.50	-0.433	0
152	5.5417	3.50	0.00	0
158	-5.5417	3.50	0.00	0
160	-6.1875	3.50	-1.1186	0
166	-0.6458	3.50	-10.7171	0
168	0.6458	3.50	-10.7171	0
174	6.1875	3.50	-1.1186	0
181	0.00	0.00	-9.1408	0
187	4.4995	0.00	-1.3475	0
188	-4.4995	0.00	-1.3475	0
193	-6.3333	-3.00	0.00	0
194	6.3333	-3.00	0.00	0
195	6.5833	-3.00	-0.433	0
196	0.25	-3.00	-11.4027	0
197	-0.25	-3.00	-11.4027	0
198	-6.5833	-3.00	-0.433	0
199	5.5417	-3.00	0.00	0
213	-0.6458	-3.00	-10.7171	0
215	0.6458	-3.00	-10.7171	0
220	6.1875	-3.00	-1.1186	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
4	1	1	1	1	1	1
8	1	1	1	1	1	1
18	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
1	5	19		C 4.5x3x0.1875	A36	0.00	0.00	0.00
2	20	27		C 4.5x3x0.1875	A36	0.00	0.00	0.00
3	14	6		C 4.5x3x0.1875	A36	0.00	0.00	0.00
7	3	7		Z 4x3x3/16	A36	0.00	0.00	0.00
8	21	17		Z 4x3x3/16	A36	0.00	0.00	0.00
9	13	26		Z 4x3x3/16	A36	0.00	0.00	0.00
10	9	2		Z 4x3x3/16	A36	0.00	0.00	0.00
11	16	22		Z 4x3x3/16	A36	0.00	0.00	0.00
12	12	25		Z 4x3x3/16	A36	0.00	0.00	0.00
13	10	1		Z 4x3x3/16	A36	0.00	0.00	0.00
14	15	23		Z 4x3x3/16	A36	0.00	0.00	0.00
15	11	24		Z 4x3x3/16	A36	0.00	0.00	0.00
16	188	4		HSS_RECT 6X3X3_8	A500 GrB rectangular	0.00	0.00	0.00
17	187	18		HSS_RECT 6X3X3_8	A500 GrB rectangular	0.00	0.00	0.00
18	181	8		HSS_RECT 6X3X3_8	A500 GrB rectangular	0.00	0.00	0.00
43	146	147		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
44	148	149		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
45	150	151		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
61	14	27		PL 3-1/2x3/16	A36	0.00	0.00	0.00
62	5	6		PL 3-1/2x3/16	A36	0.00	0.00	0.00
63	19	20		PL 3-1/2x3/16	A36	0.00	0.00	0.00
64	117	137		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
65	116	136		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
66	115	135		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
67	114	134		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
68	122	142		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
69	123	143		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
70	124	144		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
71	125	145		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
72	121	141		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
73	120	140		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
74	119	139		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
75	118	138		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
76	160	158		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
77	166	168		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
78	152	174		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
79	193	194		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
80	195	196		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
81	197	198		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
94	207	205		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
95	215	213		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
96	199	220		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	180.00	0	0.00	0.00	0.00
2	180.00	0	0.00	0.00	0.00
3	180.00	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
43	180.00	0	0.00	0.00	0.00
44	180.00	0	0.00	0.00	0.00
45	180.00	0	0.00	0.00	0.00
79	180.00	0	0.00	0.00	0.00
80	180.00	0	0.00	0.00	0.00
81	180.00	0	0.00	0.00	0.00
94	90.00	0	0.00	0.00	0.00
95	90.00	0	0.00	0.00	0.00
96	90.00	0	0.00	0.00	0.00

171 SHORT BEACH RD

Location	171 SHORT BEACH RD	**Assessment**	$368,500
Mblu	C10/000 002/ 00009/ /	**Appraisal**	$526,500
Acct#	000573	**PID**	688
Owner	171 SHORT BEACH ROAD REALTY LLC	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2014	$225,000	$301,500	$526,500
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2014	$157,400	$211,100	$368,500

Owner of Record

Owner	171 SHORT BEACH ROAD REALTY LLC	**Sale Price**	$380,000
Co-Owner		**Certificate**	
Address	171 SHORT BEACH RD BRANFORD, CT 06405	**Book & Page**	0960/0925
		Sale Date	08/29/2006

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
171 SHORT BEACH ROAD REALTY LLC	$380,000		0960/0925	08/29/2006
BATROW ALICE			0640/0284	01/12/1998
BATROW ALICE ET ALS			0475/0297	

Building Information

Building 1 : Section 1

Year Built:	1955
Living Area:	6528
Replacement Cost:	$367,696
Building Percent Good:	55
Replacement Cost Less Depreciation:	$202,200

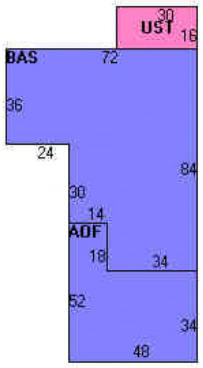
Building Photo

Building Attributes	
Field	**Description**
STYLE	Lt. Industrial
MODEL	Ind/Comm

Grade	C
Stories:	1
Occupancy	1
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	Vinyl Siding
Roof Structure	Gable/Hip
Roof Cover	Asphalt
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	Vinyl/Asphalt
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Heat Pump
Bldg Use	MFRG MDL96
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	4000
Heat/AC	HEAT/AC SPLIT
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & MIN WL
Rooms/Prtns	AVERAGE
Wall Height	10
% Comn Wall	0

(http://images.vgsi.com/photos/BranfordCTPhotos//\00\01\42/13.jpg)

Building Layout



Building Sub-Areas			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	4644	4644
AOF	Office	1884	1884
UST	Utility, Storage, Unfinished	480	0
		7008	6528

Extra Features

Extra Features				Legend
Code	**Description**	**Size**	**Value**	**Bldg #**
A/C	AIR CONDITION	1884 S.F.	$2,300	1

Land

Land Use

Use Code	4000
Description	MFRG MDL96
Zone	R-3
Neighborhood	0050
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	0.87
Frontage	
Depth	
Assessed Value	$211,100
Appraised Value	$301,500

Outbuildings

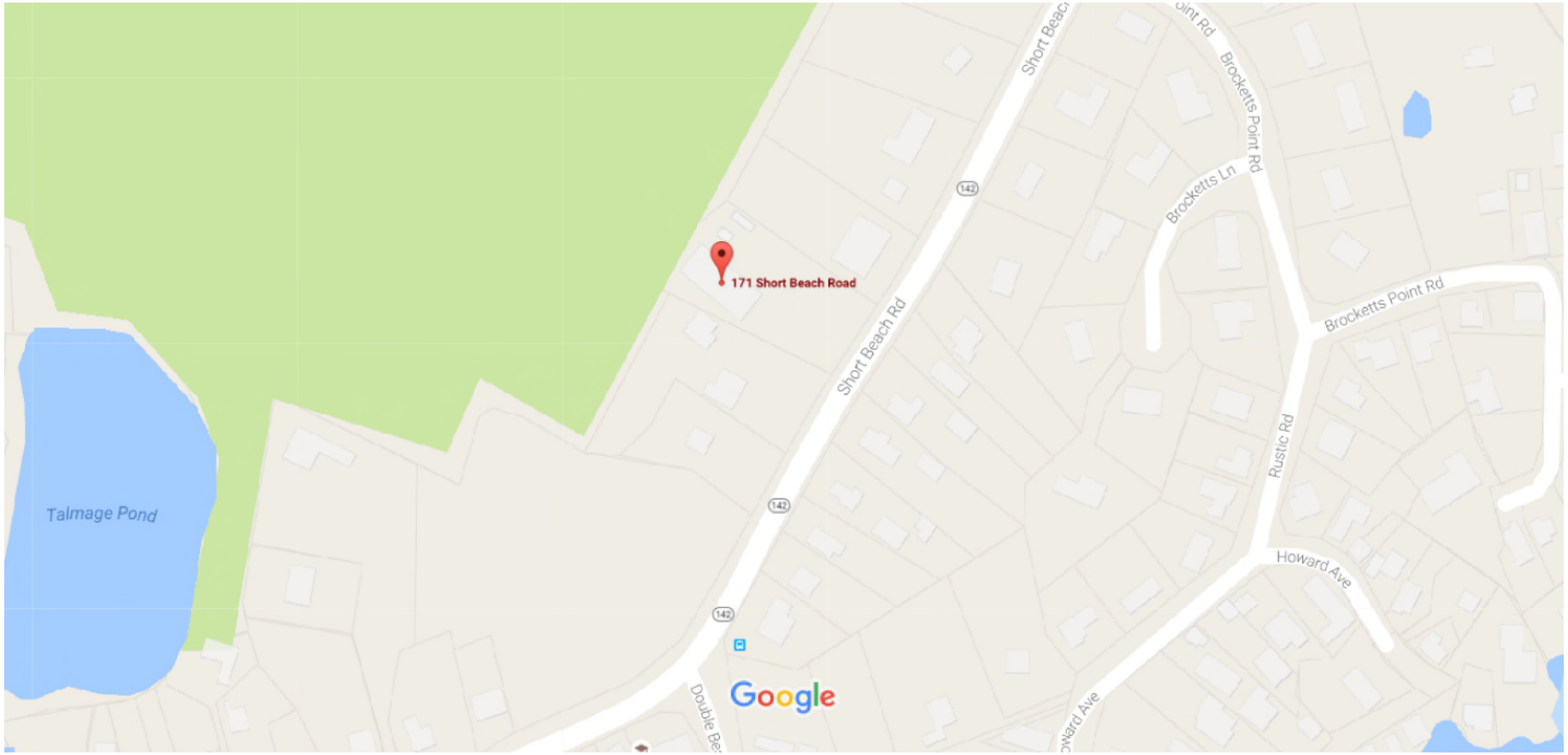
Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
PAV1	PAVING-ASPHALT			4000 S.F.	$3,300	1
PAV2	PAVING-CONC			600 S.F.	$2,000	1
SHD6	SHED COM MAS			240 S.F.	$5,300	1
SHD6	SHED COM MAS			360 S.F.	$7,900	1
FN9	W/O TOP RL-8'			200 L.F.	$2,000	1

Valuation History

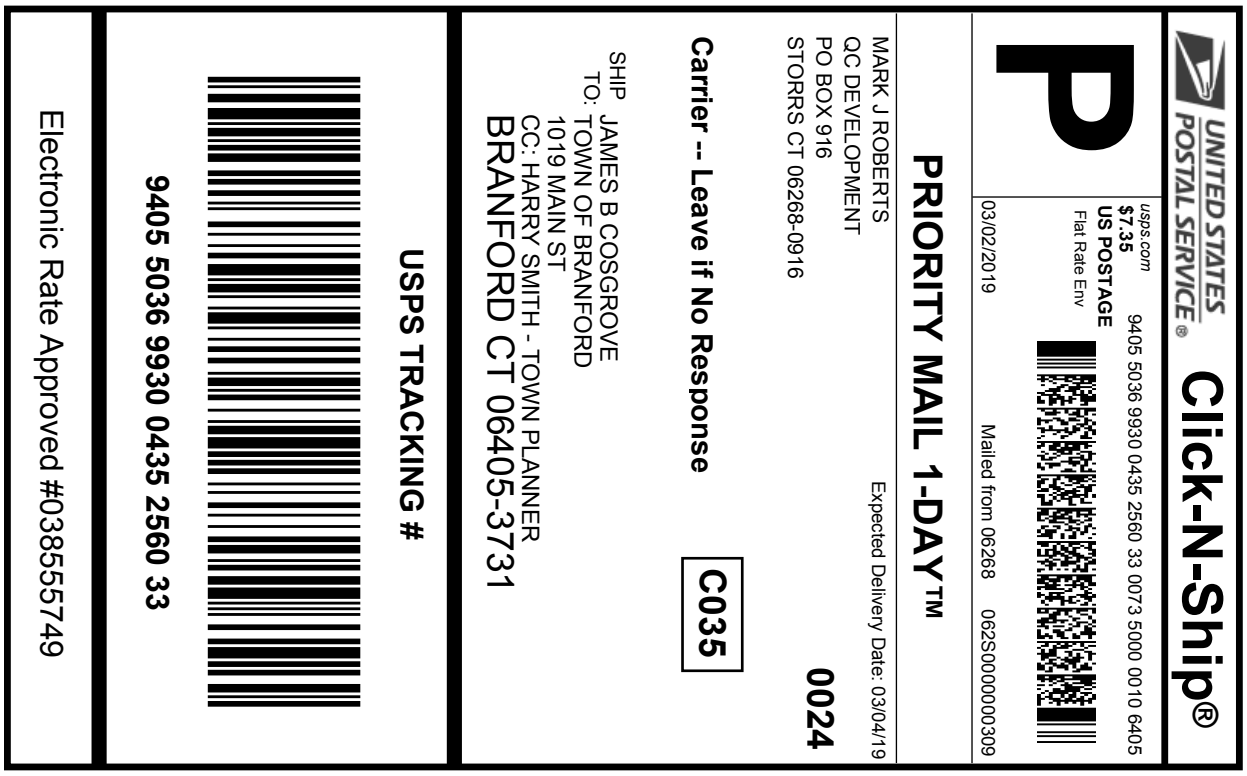
Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2013	$254,700	$301,500	$556,200
2012	$237,500	$101,500	$339,000
2011	$237,500	$101,500	$339,000

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2013	$178,200	$211,100	$389,300
2012	$166,200	$71,100	$237,300
2011	$166,200	$71,100	$237,300

Google Maps 171 Short Beach Rd



Map data ©2016 Google 100 ft



Cut on dotted line.

Instructions

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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0435 2560 33

Trans. #:	458144798
Print Date:	03/01/2019
Ship Date:	03/02/2019
Expected Delivery Date:	03/04/2019

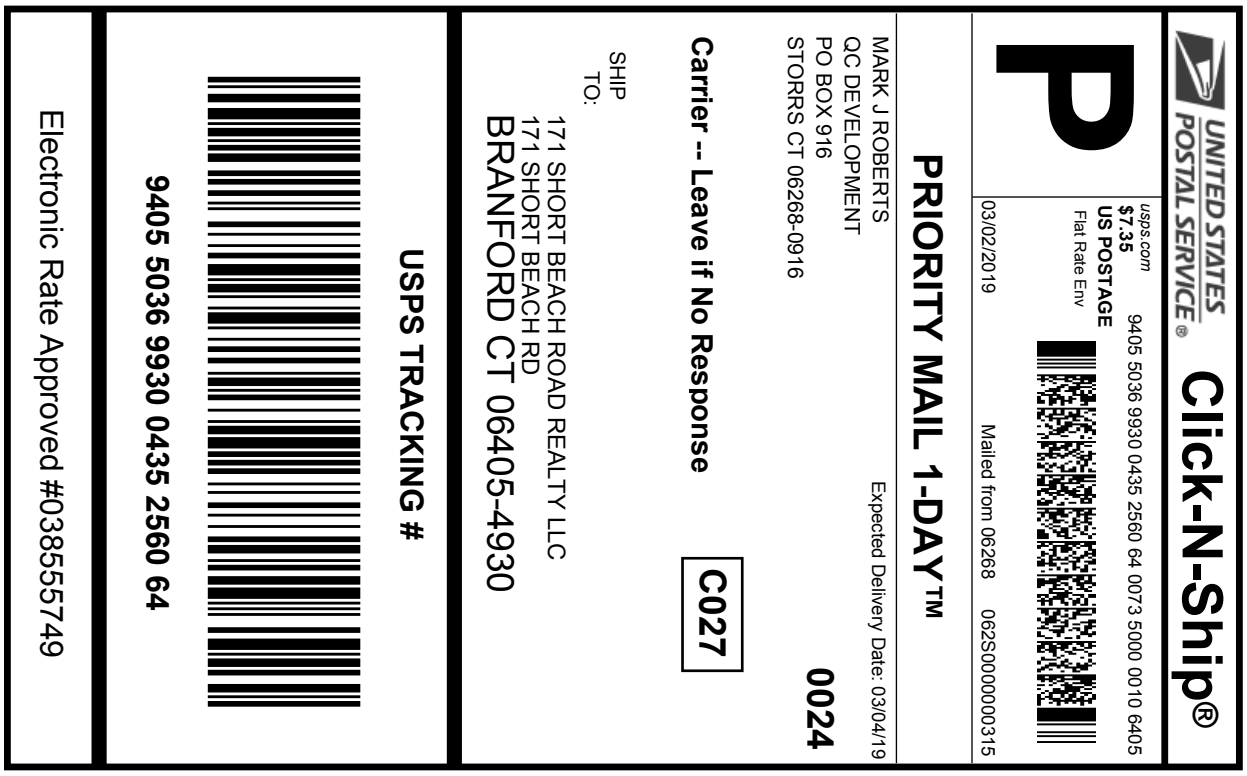
Priority Mail® Postage:	**$7.35**
Total	**$7.35**

From: MARK J ROBERTS
QC DEVELOPMENT
PO BOX 916
STORRS CT 06268-0916

To: JAMES B COSGROVE
TOWN OF BRANFORD
1019 MAIN ST
CC: HARRY SMITH - TOWN PLANNER
BRANFORD CT 06405-3731

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com



Cut on dotted line.

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5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0435 2560 64

Trans. #:	458144798
Print Date:	03/01/2019
Ship Date:	03/02/2019
Expected Delivery Date:	03/04/2019

Priority Mail® Postage:	**$7.35**
Total	**$7.35**

From: MARK J ROBERTS
QC DEVELOPMENT
PO BOX 916
STORRS CT 06268-0916

To: 171 SHORT BEACH ROAD REALTY LLC
171 SHORT BEACH RD
BRANFORD CT 06405-4930

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com