



November 5, 2020

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

Re: Notice of Exempt Modification New Cingular Wireless PCS LLC ("AT&T") Site CT1167  
350 Hartland Boulevard, East Hartland, CT 06027 (the "Property")  
Latitude: 41.977018 N Longitude: 72.887831 W

Dear Ms. Bachman:

AT&T currently maintains (9) antennas at the 120' level on the existing 120' monopole tower ("Tower") at 350 Hartland Boulevard, East Hartland, CT. The tower is owned by CCATT, LLC ("Crown Castle") and the property is owned by Marlene D. Jung. AT&T intends to modify its facility by replacing (6) antennas with (2) OPA65R -BU6DA, (2) DMP65R-BU6DA, (1) OPA65R-BU8DA & (1) DMP65R-BU8DA antennas, replacing (6) TMAs with (3) 4449 B5/B12 & (3) 8843 B2 B66A RRUs. The height of AT&Ts existing and proposed antennas & RRUs is 120'.

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

The AT&T facility received CT Siting Council ("Council") approval in Docket 312 on May 17, 2006. The approval contained no conditions that could feasibly be violated by this modification, including facility height or mounting restrictions. AT&Ts modification complies with the above-mentioned approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies ("R.C.S.A") §16-50j-73 for construction that constitutes an exempt modification pursuant to R.C.S.A §16-50j-72(b)(2). In accordance with to R.C.S.A §16-50j-73, a copy of this letter is being sent to the Honorable Magi Winslow, First Selectman Town of Hartland, the Town of Hartland Planning & Zoning Commission, Marlene D. Jung, the property owner. Crown Castle, the tower owner, received a copy by email.

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

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

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

Sincerely,

*Hollis M. Redding*

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

Enclosures

Cc: Honorable Magi Winslow, First Selectman, Town of Hartland  
Planning & Zoning Commission, Town of Hartland  
Ms. Marlene D. Jung, property owner  
Crown Castle, tower owner

## Power Density

### Existing Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm <sup>2</sup> )	Freq. Band (MHz <sup>**</sup> )	Limit S (mW/cm <sup>2</sup> )	%MPE
Other Carriers*							3.21%
AT&T UMTS	2	565	120	0.0313	880	0.5867	0.53%
AT&T UMTS	2	875	120	0.0484	1900	1.0000	0.48%
AT&T GSM	1	283	120	0.0078	880	0.5867	0.13%
AT&T LTE	4	525	120	0.0581	1900	1.0000	0.58%
AT&T LTE 700	1	1771	120	0.0490	734	0.4893	1.00%
Site Total							5.95%

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


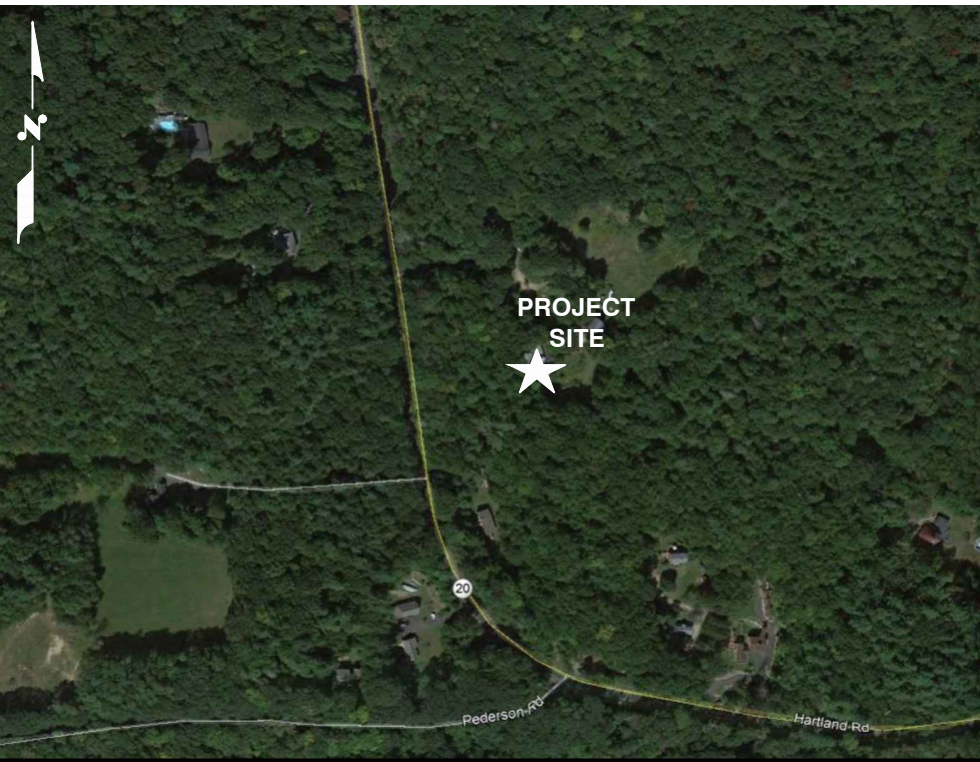


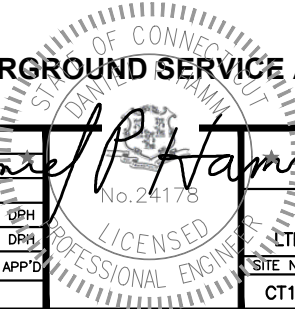



\*\* If a range of frequencies are used, such as 880-894, enter the lowest value, i.e. 880

### Proposed Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm <sup>2</sup> )	Freq. Band (MHz <sup>**</sup> )	Limit S (mW/cm <sup>2</sup> )	%MPE
Other Carriers*							3.21%
AT&T UMTS 850	1	565	120	0.0156	880	0.5867	0.27%
AT&T LTE 700	1	2951	120	0.0817	763	0.5087	1.61%
AT&T LTE 1900	3	3664	120	0.3042	1950	1.0000	3.04%
AT&T LTE 700	1	1476	120	0.0482	725	0.4833	0.85%
AT&T LTE 850	1	1000	120	0.0277	850	0.5667	0.49%
AT&T 5G 850	1	1000	120	0.0277	850	0.5667	0.49%
AT&T LTE AWS	1	3837	120	0.1062	2170	1.0000	1.06%
Site Total							11.02%

\*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

<div>PROJECT INFORMATION</div> <div>SCOPE OF WORK: ITEMS TO BE MOUNTED ON THE EXISTING MONOPOLE:<ul style="list-style-type: none"><li>NEW AT&amp;T ANTENNAS: (OPA65R-BU6DA) @ POS. 3 (TYP. OF 1 PER ALPHA &amp; GAMMA SECTORS, TOTAL OF 2).</li><li>NEW AT&amp;T ANTENNAS: (DMP65R-BU6DA) @ POS. 4 (TYP. OF 1 PER ALPHA &amp; GAMMA SECTORS, TOTAL OF 2).</li><li>NEW AT&amp;T ANTENNAS: (OPA65R-BU8DA) @ POS. 3 (TOTAL OF 1 FOR BETA SECTOR).</li><li>NEW AT&amp;T ANTENNAS: (DMP65R-BU8DA) @ POS. 4 (TOTAL OF 1 FOR BETA SECTOR).</li><li>NEW AT&amp;T RRUS: B5/B12 4449 (850/700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).</li><li>NEW AT&amp;T RRUS: 8843 B2/B66A (PCS/AWS) (TYP. OF 1 PER SECTOR, TOTAL OF 3).</li><li>NEW AT&amp;T RRUS: 4478 B14 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).</li><li>NEW AT&amp;T DC &amp; FIBER SURGE ARRESTOR DC6-48-60-18-8C (TOTAL OF 1) WITH (2) DC POWER &amp; (1) FIBER RUN IN (2) 2"Ø FLEX CONDUIT (TO FOLLOW EXISTING ROUTING).</li><li>ADD (6) Y-CABLES FOR DUAL BAND RRUS.</li><li>INSTALL NEW HANDRAIL KIT, SITEPRO1 PART# HRK-12 (OR APPROVED EQUAL).</li></ul>ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:<ul style="list-style-type: none"><li>ADD XMU.</li><li>ADD RBS 6630.</li><li>ADD IDLe.</li><li>ADD DC12.</li><li>ADD FIBER MANAGEMENT BOX.</li><li>ADD NEW PLANT NETSURE 7100.</li></ul>ITEMS TO BE REMOVED:<ul style="list-style-type: none"><li>EXISTING AT&amp;T ANTENNAS (AM-X-CD-17-65-00T-RET) @ POS. 3 (TOTAL OF 1 FOR BETA SECTOR).</li><li>EXISTING AT&amp;T ANTENNAS (AM-X-CD-16-65-00T-RET) @ POS. 3 (TYP. OF 1 PER ALPHA &amp; GAMMA SECTORS, TOTAL OF 2).</li><li>EXISTING AT&amp;T ANTENNAS (7770) @ POS. 4 (TYP. OF 1 PER SECTOR, TOTAL OF 3).</li><li>EXISTING AT&amp;T RRUS-11 B12 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).</li><li>EXISTING TMA'S (TYP. OF 2 PER SECTOR, TOTAL OF 6)</li><li>EXISTING DIPLEXER (TYP. OF 2 PER SECTOR, TOTAL OF 6) (FROM TOWER).</li><li>EXISTING DIPLEXER (LGP13519) (TYP. OF 2 PER SECTOR, TOTAL OF 6) (FROM SHELTER).</li><li>EXISTING (6) COAX CABLES.</li></ul>ITEMS TO REMAIN:<ul style="list-style-type: none"><li>(3) ANTENNAS, (6) DIPLEXERS (G), (1) SURGE ARRESTOR, (6) COAX CABLES, (2) DC POWER &amp; (1) FIBER.</li></ul>SITE ADDRESS: 350 HARTLAND BOULEVARD EAST HARTLAND, CT 06027 LATITUDE: 41.977018° N, 41° 58' 37.27" N LONGITUDE: 72.887831° W, 72° 53' 16.19" W TYPE OF SITE: MONOPOLE / INDOOR EQUIPMENT STRUCTURE HEIGHT: 120'-0"± RAD CENTER: 120'-0"± CURRENT USE: TELECOMMUNICATIONS FACILITY PROPOSED USE: TELECOMMUNICATIONS FACILITY</div>			<div><div>SITE NUMBER: CT1167</div><div>SITE NAME: HARTLAND - HARTLAND BOULEVARD</div><div>FA CODE: 10105847</div><div>PACE ID: MRCTB048846, MRCTB048922, MRCTB048873, MRCTB048871, MRCTB048847</div><div>PROJECT: LTE 2C_3C_4C_4TX4RX_5G 2020 UPGRADE</div></div>																																										
<div>VICINITY MAP</div> <div>DIRECTIONS TO SITE: DEPART ENTERPRISE DR TOWARD CAPITOL BLVD. 0.4 MI. TURN LEFT ONTO CAPITOL BLVD. 0.2 MI. TURN LEFT ONTO WEST ST .0.2 MI. TAKE RAMP LEFT FOR I-91 NORTH. 18.9 MI. AT EXIT 40, TAKE RAMP RIGHT FOR CT-20 TOWARD BRADLEY INTERNATIONAL AIRPORT. 3.5 MI. TAKE RAMP RIGHT FOR CT-20 WEST TOWARD E. GRANBY/GRANBY. 0.4 MI. KEEP STRAIGHT ONTO CT-20PASS PHILLIPS 66 ON THE LEFT IN 0.8 MI. 5.7 MI. KEEP STRAIGHT ONTO CT-20 / CT-189/N GRANBY RD. 0.2 MI. BEAR LEFT ONTO CT-20/W GRANBY RD. 5.7 MI. ARRIVE AT 350 HARTLAND BLVD, EAST HARTLAND, CT.</div> <div></div>			<div>GENERAL NOTES</div> <div>1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&amp;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.</div> <div>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.</div> <div>3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&amp;T MOBILITY REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.</div> <div>4. CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN.</div>																																										
<div>DRAWING INDEX</div> <table><tr><th>SHEET NO.</th><th>DESCRIPTION</th><th>REV.</th></tr><tr><td>T-1</td><td>TITLE SHEET</td><td>1</td></tr><tr><td>GN-1</td><td>GENERAL NOTES</td><td>1</td></tr><tr><td>A-1</td><td>COMPOUND &amp; EQUIPMENT PLANS</td><td>1</td></tr><tr><td>A-2</td><td>ANTENNA LAYOUTS &amp; ELEVATION</td><td>1</td></tr><tr><td>A-3</td><td>DETAILS</td><td>1</td></tr><tr><td>SN-1</td><td>STRUCTURAL NOTES</td><td>1</td></tr><tr><td>S-1</td><td>MOUNT MODIFICATION DESIGN</td><td>1</td></tr><tr><td>G-1</td><td>GROUNDING DETAILS</td><td>1</td></tr><tr><td>RF-1</td><td>RF PLUMBING DIAGRAM</td><td>1</td></tr></table>			SHEET NO.	DESCRIPTION	REV.	T-1	TITLE SHEET	1	GN-1	GENERAL NOTES	1	A-1	COMPOUND & EQUIPMENT PLANS	1	A-2	ANTENNA LAYOUTS & ELEVATION	1	A-3	DETAILS	1	SN-1	STRUCTURAL NOTES	1	S-1	MOUNT MODIFICATION DESIGN	1	G-1	GROUNDING DETAILS	1	RF-1	RF PLUMBING DIAGRAM	1	<div>72 HOURS</div> <div><div></div><div>CALL BEFORE YOU DIG</div><div></div></div> <div>CALL TOLL FREE 1-800-922-4455</div> <div>OR CALL 811</div> <div>UNDERGROUND SERVICE ALERT</div> <div></div>												
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<div><div>45 BEECHWOOD DRIVE NORTH ANDOVER, MA 01845</div><div>TEL: (978) 557-5553 FAX: (978) 336-5586</div></div>		<div><div>12 INDUSTRIAL WAY SALEM, NH 03079</div></div>		<div>SITE NUMBER: CT1167 SITE NAME: HARTLAND - HARTLAND BOULEVARD</div> <div>350 HARTLAND BOULEVARD EAST HARTLAND, CT 06027 HARTFORD COUNTY</div>		<div><div>500 ENTERPRISE DRIVE, SUITE 3A ROCKY HILL, CT 06067</div></div>		<table><tr><td>1</td><td>10/26/20</td><td>ISSUED FOR CONSTRUCTION</td><td>AM</td><td>HC</td><td>DPH</td></tr><tr><td>A</td><td>09/24/20</td><td>ISSUED FOR REVIEW</td><td>AM</td><td>HC</td><td>DPH</td></tr><tr><td>NO.</td><td>DATE</td><td>REVISIONS</td><td>BY</td><td>CHK</td><td>APP'D</td></tr><tr><td colspan="2">SCALE: AS SHOWN</td><td>DESIGNED BY: HC</td><td colspan="3">DRAWN BY: AM</td></tr></table>		1	10/26/20	ISSUED FOR CONSTRUCTION	AM	HC	DPH	A	09/24/20	ISSUED FOR REVIEW	AM	HC	DPH	NO.	DATE	REVISIONS	BY	CHK	APP'D	SCALE: AS SHOWN		DESIGNED BY: HC	DRAWN BY: AM			<div>AT&amp;T</div> <div>TITLE SHEET</div> <div>LTE 2C_3C_4C_4TX4RX_5G 2020 UPGRADE</div> <table><tr><td colspan="2">SITE NUMBER</td><td colspan="2">DRAWING NUMBER</td><td>REV</td></tr><tr><td colspan="2">CT1167</td><td colspan="2">T-1</td><td>1</td></tr></table>		SITE NUMBER		DRAWING NUMBER		REV	CT1167		T-1		1
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1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTNING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81 STANDARDS) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUIT TO BTS EQUIPMENT.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS AND #2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

1. FOR THE PURPOSE OF THE SUBCONTRACTOR 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.

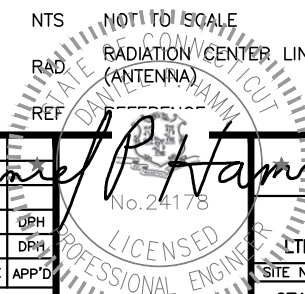
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

- 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.

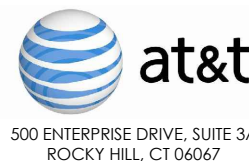
ABBREVIATIONS					
AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	GC	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BBU	BATTERY BACKUP UNIT	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
BTCW	BARE TINNED SOLID COPPER WIRE	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BGR	BURIED GROUND RING	MIN	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		

			AT&T		
ISSUED FOR CONSTRUCTION			GENERAL NOTES		
ISSUED FOR REVIEW			LTE 2C_3C_4C_4TX4RX_5G 2020 UPGRADE		
REVISIONS			SITE NUMBER		
BY	CHK	APP'D	DRAWING NUMBER		
W	DESIGNED BY: HC	DRAWN BY: AM	CT1167		
			GN-1		
			1		



**SITE NUMBER: CT1167**  
**SITE NAME: HARTLAND - HARTLAND BOULEVARD**

350 HARTLAND BOULEVARD  
EAST HARTLAND, CT 06027  
HARTFORD COUNTY

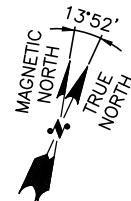
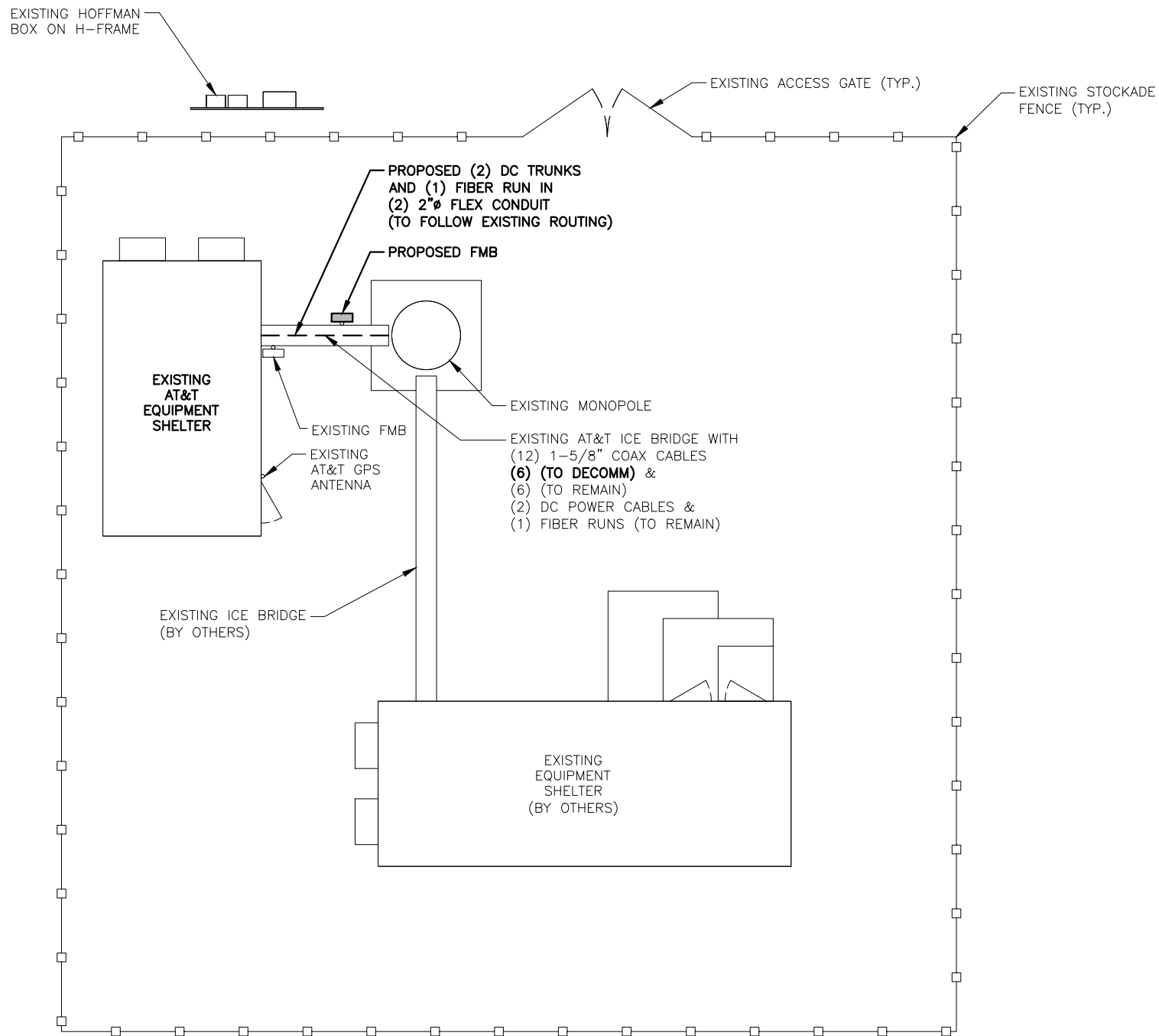
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**NOTE:**

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

**NOTE:**

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

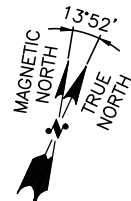
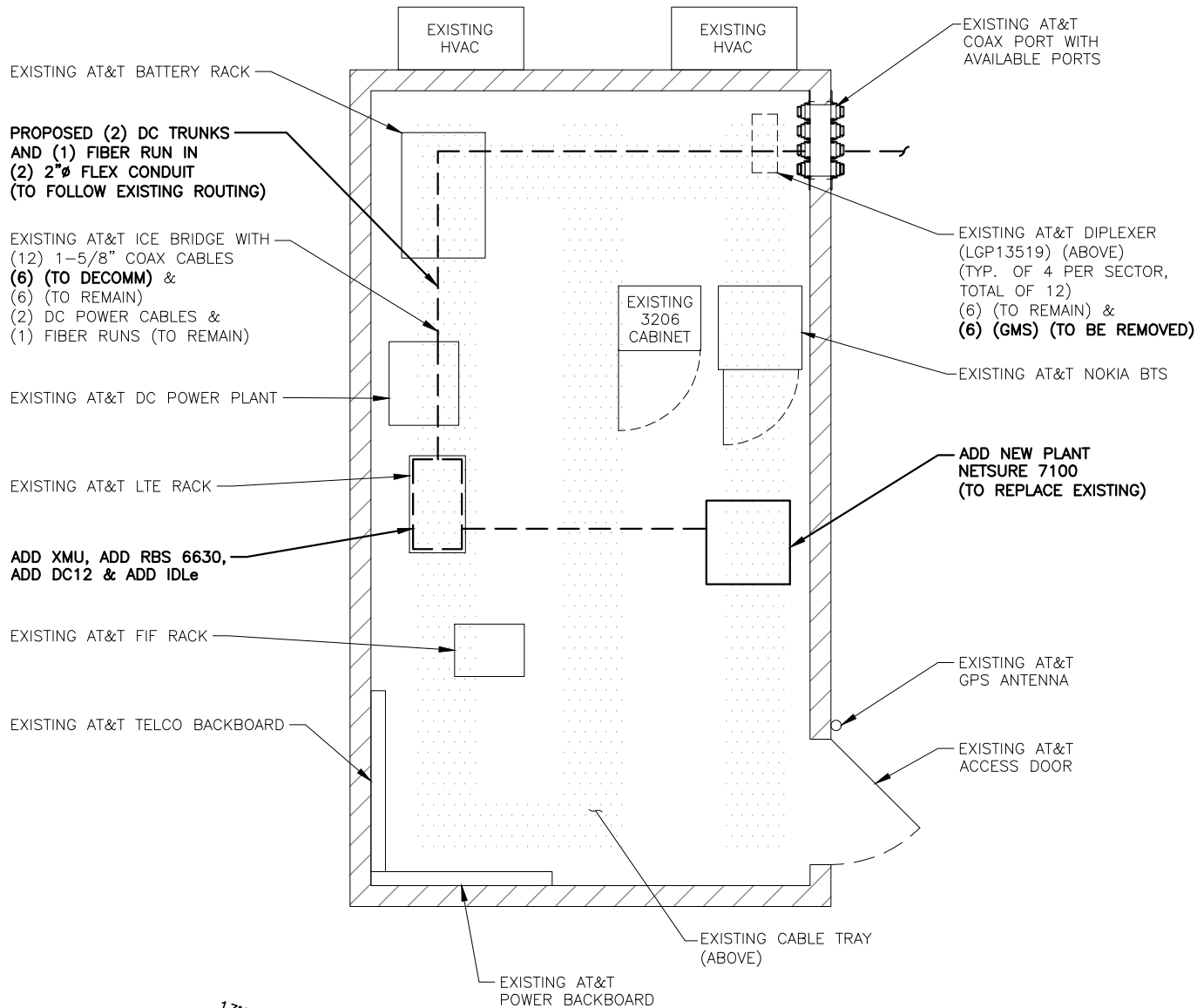


**COMPOUND PLAN**

22x34 SCALE: 3/16"=1'-0"  
11x17 SCALE: 3/32"=1'-0"

1  
A-1

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



**EQUIPMENT PLAN**

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

2  
A-1

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

**HDG** HUDSON  
Design Group LLC

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

**SAI**

12 INDUSTRIAL WAY  
SALEM, NH 03079

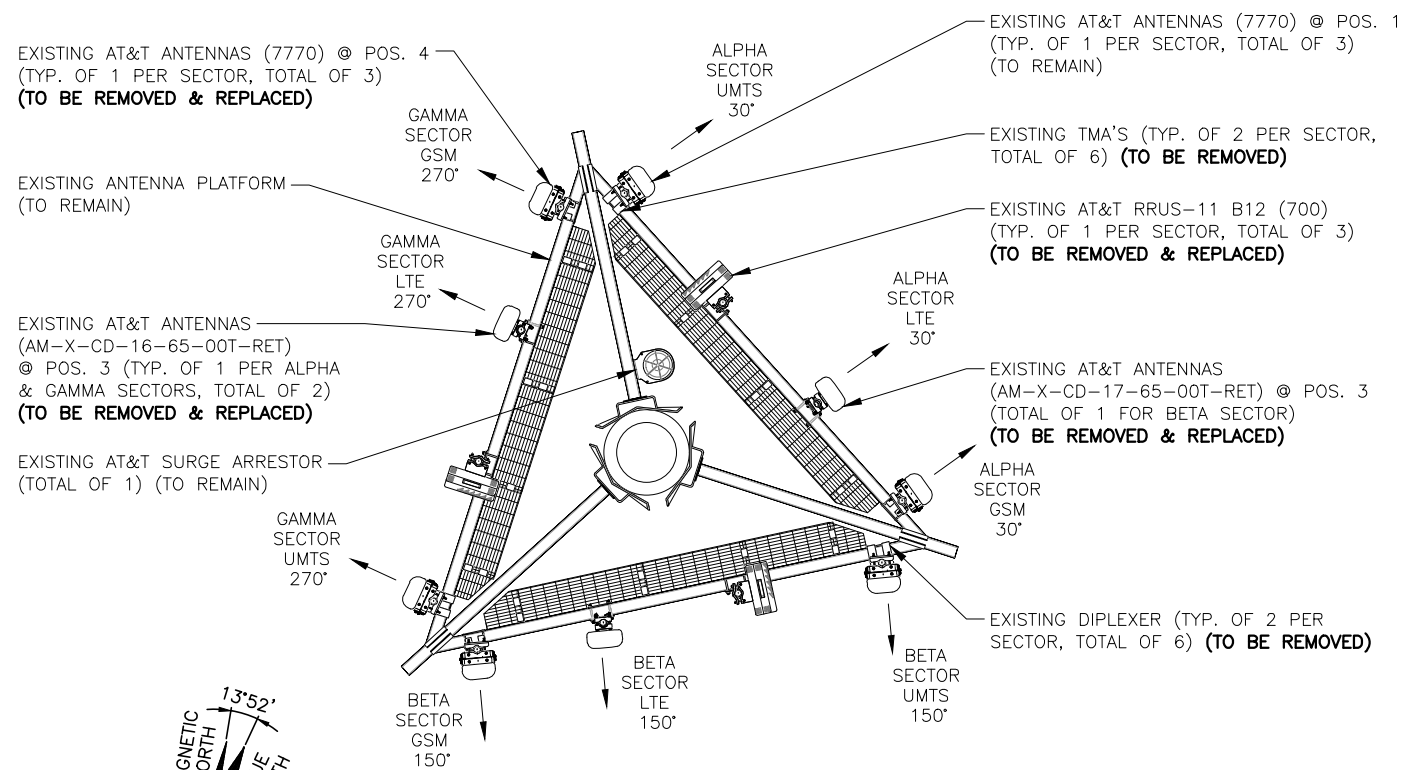
SITE NUMBER: CT1167  
SITE NAME: HARTLAND - HARTLAND BOULEVARD

350 HARTLAND BOULEVARD  
EAST HARTLAND, CT 06027  
HARTFORD COUNTY

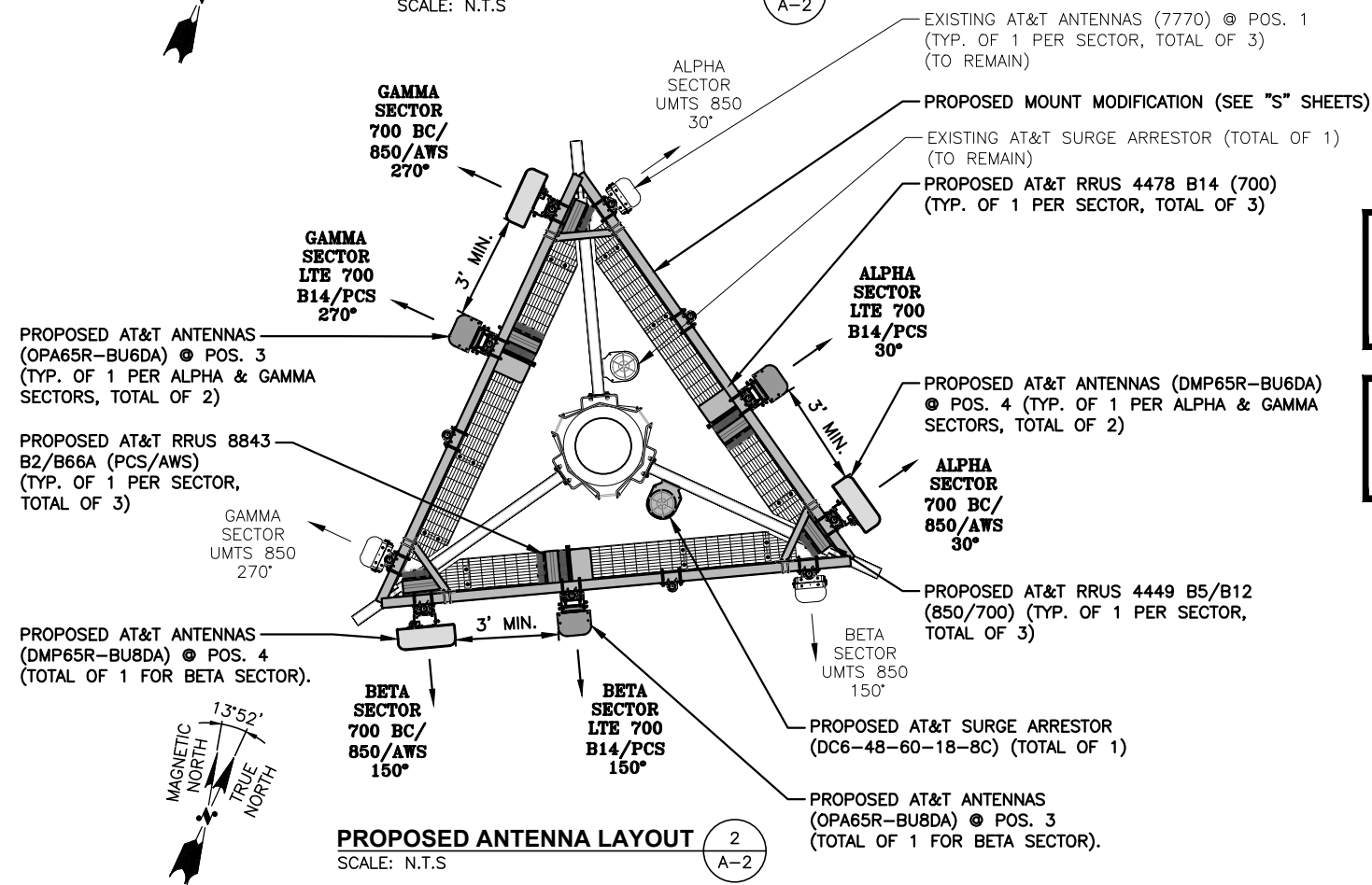
**at&t**

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

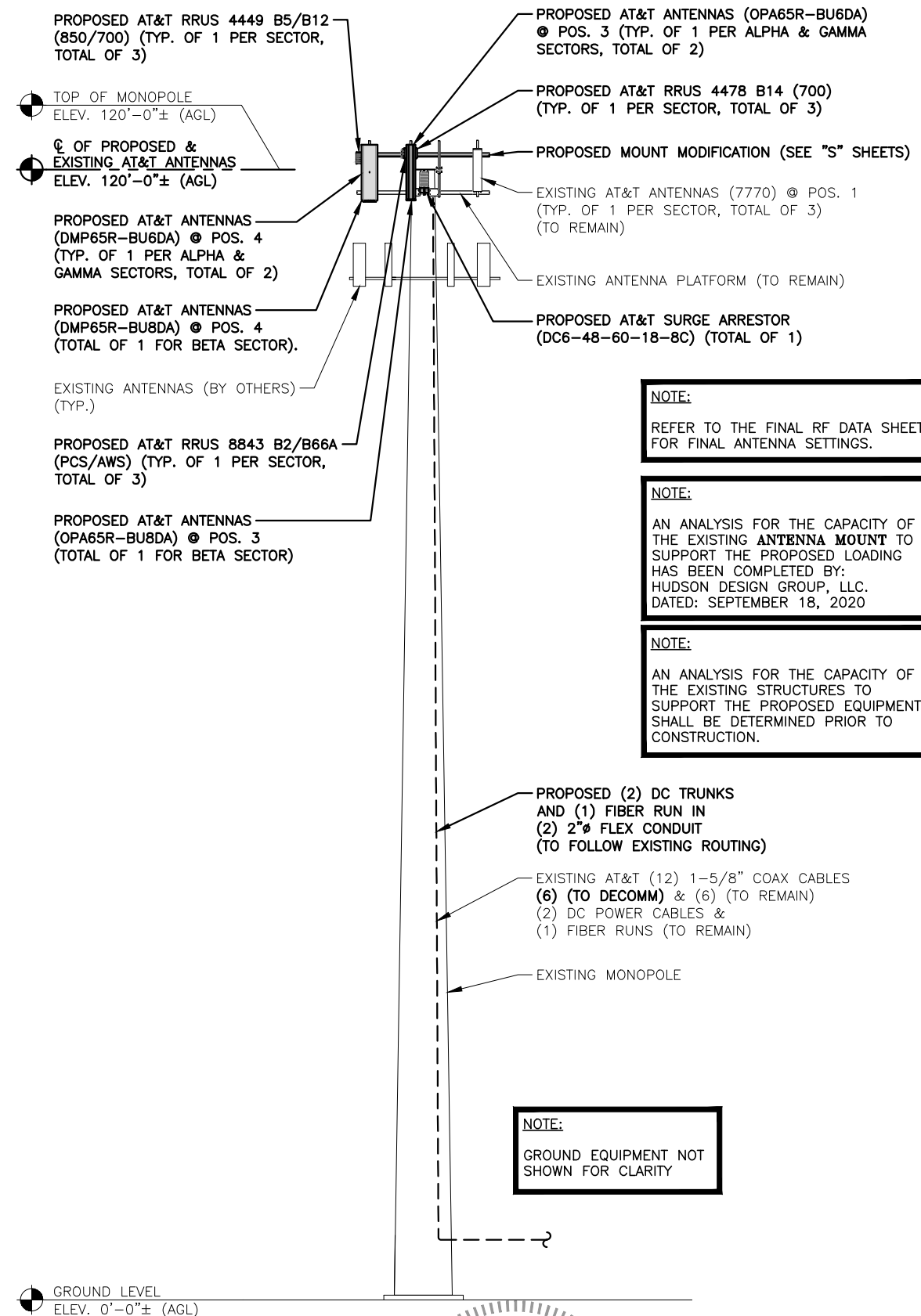
				AT&T			
				COMPOUND & EQUIPMENT PLANS			
				LTE 2C_3C_4C_4TX4RX_5G 2020 UPGRADE			
NO.		DATE	REVISIONS	BY	CHK	APP'D	
1		10/26/20	ISSUED FOR CONSTRUCTION	AM	HC	DPH	
A		09/24/20	ISSUED FOR REVIEW	AM	HC	DPH	
SCALE:		AS SHOWN		DESIGNED BY: HC		DRAWN BY: AM	
SITE NUMBER		DRAWING NUMBER		REV			
CT1167		A-1		1			



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



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



**ELEVATION**

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



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SITE NUMBER: CT1167  
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350 HARTLAND BOULEVARD  
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HARTFORD COUNTY



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

				AT&T			
				ANTENNA LAYOUTS & ELEVATION			
				LTE 2C_3C_4C_4TX4RX_5G 2020 UPGRADE			
NO.	DATE	REVISIONS	BY	CHK	APP'D	SITE NUMBER	DRAWING NUMBER
1	10/26/20	ISSUED FOR CONSTRUCTION	AM	HC	DPH	CT1167	A-2
A	09/24/20	ISSUED FOR REVIEW	AM	HC	DPH		
SCALE: AS SHOWN				DESIGNED BY: HC			
				DRAWN BY: AM			
				REV			
				1			



ANTENNA SCHEDULE											
SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA C H EIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	EXISTING	UMTS 850	7770	55X11X5	120'-0"±	30°	(E)(2)(G) LGP13519	—	—	(2)1-5/8" COAX	(E) (1) RAYCAP DC6-48-60-18-8F
A2	—	—	—	—	—	—	—	—	—	—	
A3	PROPOSED	LTE 700 B14/PCS	OPA65R-BU6DA	71.2X21X7.8	120'-0"±	30°	—	(1)(P) RRUS 4478 B14 (700) (1)(P) RRUS 8843 B2/B66A (AWS/PCS)	18.1"x13.4"x8.3" 14.9"x13.2"x10.9"	(2) DC & (1) FIBER	
A4	PROPOSED	LTE 700 BC /850/AWS	DMP65R-BU6DA	71.2X20.7X7.7	120'-0"±	30°	—	(1)(P) RRUS 4449 B5/B12 (850/700)	14.9"x13.2"x10.4"	—	
B1	EXISTING	UMTS 850	7770	55X11X5	120'-0"±	150°	(E)(2)(G) LGP13519	—	—	(2)1-5/8" COAX	(P) (1) RAYCAP DC6-48-60-18-8C
B2	—	—	—	—	—	—	—	—	—	—	
B3	PROPOSED	LTE 700 B14/PCS	OPA65R-BU8DA	96X21X7.8	120'-0"±	150°	—	(1)(P) RRUS 4478 B14 (700) (1)(P) RRUS 8843 B2/B66A (AWS/PCS)	18.1"x13.4"x8.3" 14.9"x13.2"x10.9"	(2) DC & (1) FIBER	
B4	PROPOSED	LTE 700 BC /850/AWS	DMP65R-BU8DA	96X20.7X7.7	120'-0"±	150°	—	(1)(P) RRUS 4449 B5/B12 (850/700)	14.9"x13.2"x10.4"	—	
C1	EXISTING	UMTS 850	7770	55X11X5	120'-0"±	270°	(E)(2)(G) LGP13519	—	—	(2)1-5/8" COAX	SHARED
C2	—	—	—	—	—	—	—	—	—	—	
C3	PROPOSED	LTE 700 B14/PCS	OPA65R-BU6DA	71.2X21X7.8	120'-0"±	270°	—	(1)(P) RRUS 4478 B14 (700) (1)(P) RRUS 8843 B2/B66A (AWS/PCS)	18.1"x13.4"x8.3" 14.9"x13.2"x10.9"	—	
C4	PROPOSED	LTE 700 BC /850/AWS	DMP65R-BU6DA	71.2X20.7X7.7	120'-0"±	270°	—	(1)(P) RRUS 4449 B5/B12 (850/700)	14.9"x13.2"x10.4"	—	

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

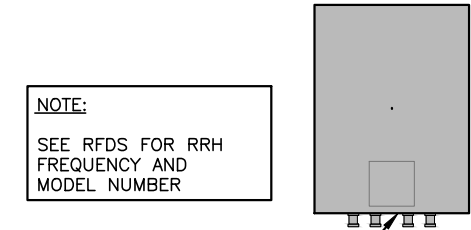
NOTE:  
AN ANALYSIS FOR THE CAPACITY OF  
THE EXISTING **ANTENNA MOUNT** TO  
SUPPORT THE PROPOSED LOADING  
HAS BEEN COMPLETED BY:  
HUDSON DESIGN GROUP, LLC.  
DATED: SEPTEMBER 18, 2020

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

FINAL ANTENNA SCHEDULE  
SCALE: N.T.S

1  
A-3

RRU CHART		
QUANTITY	MODEL	SIZE (L x W x D)
3(P)	4449 B5/B12 (850/700)	14.9"x13.2"x10.4"
3(P)	8843 B2/B66A (AWS/PCS)	14.9"x13.2"x10.9"
3(P)	4478 B14 (700)	18.1"x13.4"x8.3"
NOTE: MOUNT PER MANUFACTURER'S SPECIFICATIONS		



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

NOTE:  
MOUNT PER MANUFACTURER'S  
SPECIFICATIONS.

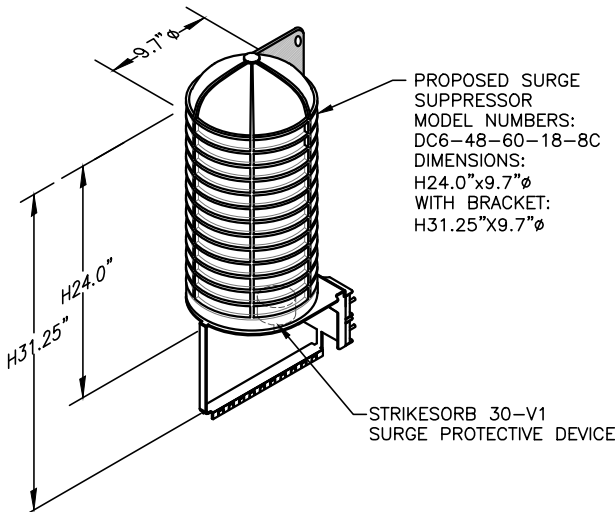
PROPOSED RRUS DETAIL  
SCALE: N.T.S

2  
A-3



PROPOSED NETSURE 7100  
POWER PLANT DETAIL  
SCALE: N.T.S

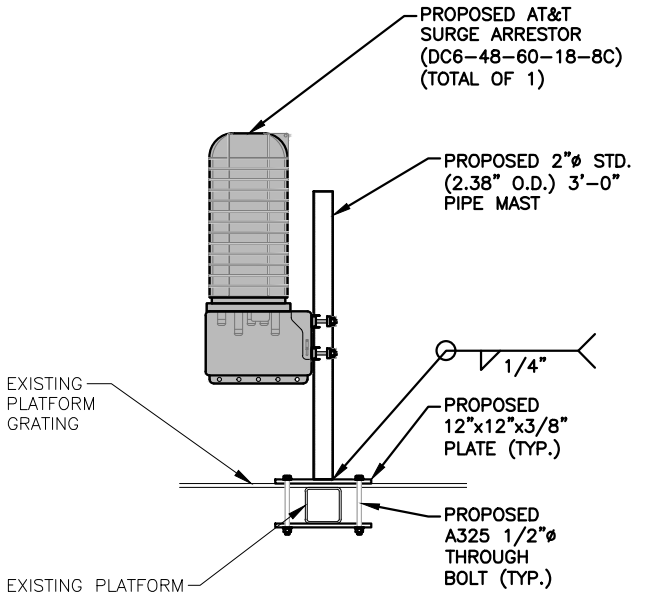
3  
A-3



NOTE:  
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE  
SUPPRESSOR DETAIL  
SCALE: N.T.S

4  
A-3



PROPOSED SURGE  
ARRESTOR MOUNTING DETAIL  
22x34 SCALE: 1/2"=1'-0"  
11x17 SCALE: 1/2"=1'-0"

5  
A-3

NOTE:

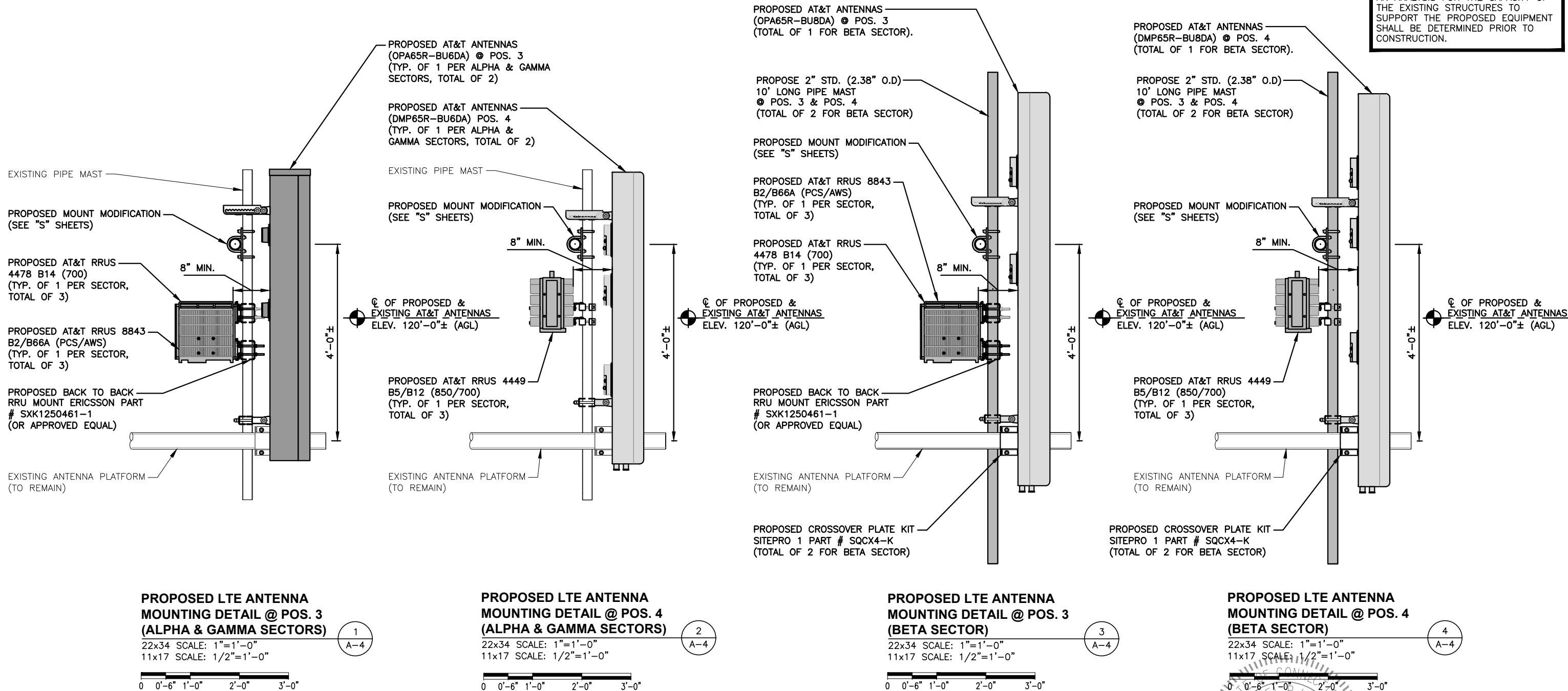
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

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: SEPTEMBER 18, 2020

NOTE:

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



NO.	DATE	REVISIONS	BY	CHK	APP'D
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A	09/24/20	ISSUED FOR REVIEW	AM	HC	DPH
SCALE: AS SHOWN			DESIGNED BY: HC	DRAWN BY: AM	



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 D1.1. 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 KWI-K 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.

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.

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.

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



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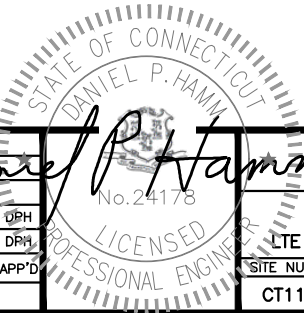
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HARTFORD COUNTY



500 ENTERPRISE DRIVE, SUITE 3A  
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NO.	DATE	REVISIONS		BY	CHK	APP'D			
SCALE: AS SHOWN		DESIGNED BY: HC	DRAWN BY: AM						



AT&T		
STRUCTURAL NOTES		
LTE 2C_3C_4C_4TX4RX_5G 2020 UPGRADE		
SITE NUMBER	DRAWING NUMBER	REV
CT1167	SN-1	1

NOTE:

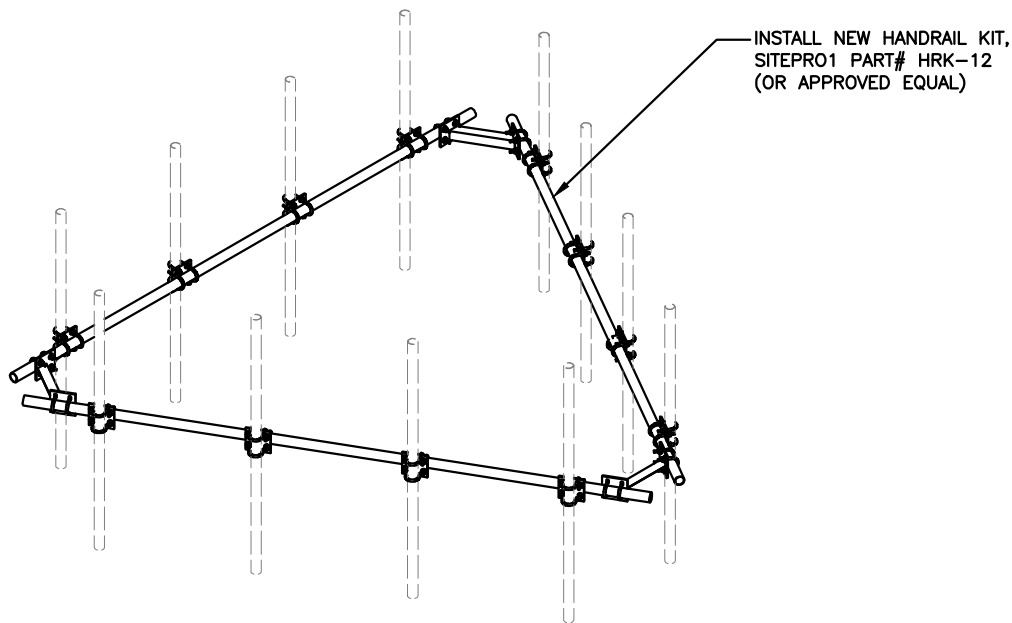
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

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DATED: SEPTEMBER 18, 2020

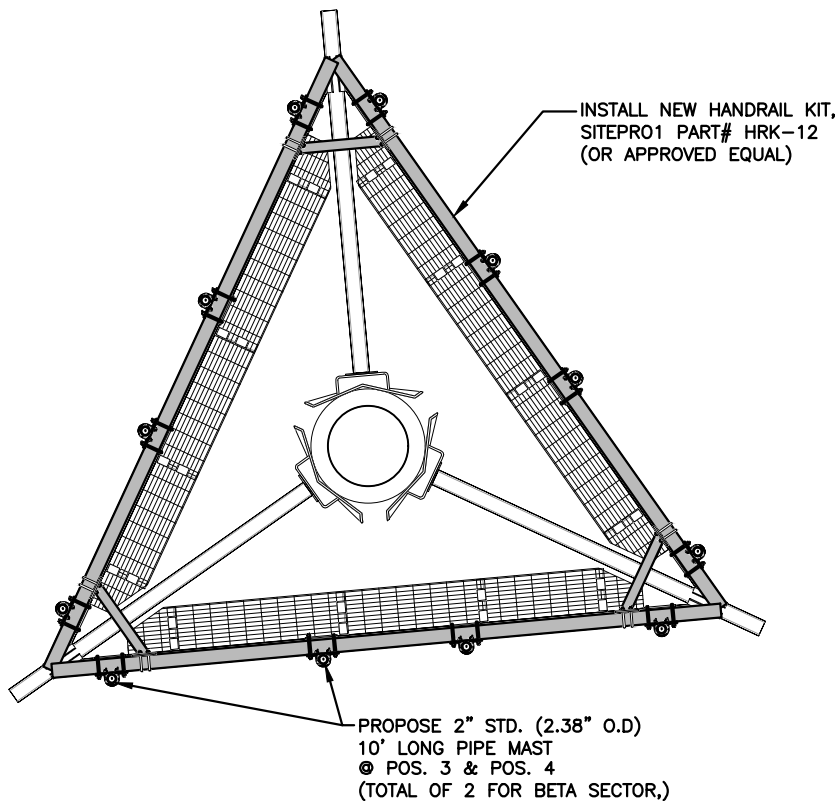
NOTE:

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PROPOSED HANDRAIL KIT DETAIL  
SCALE: N.T.S.

1  
S-1

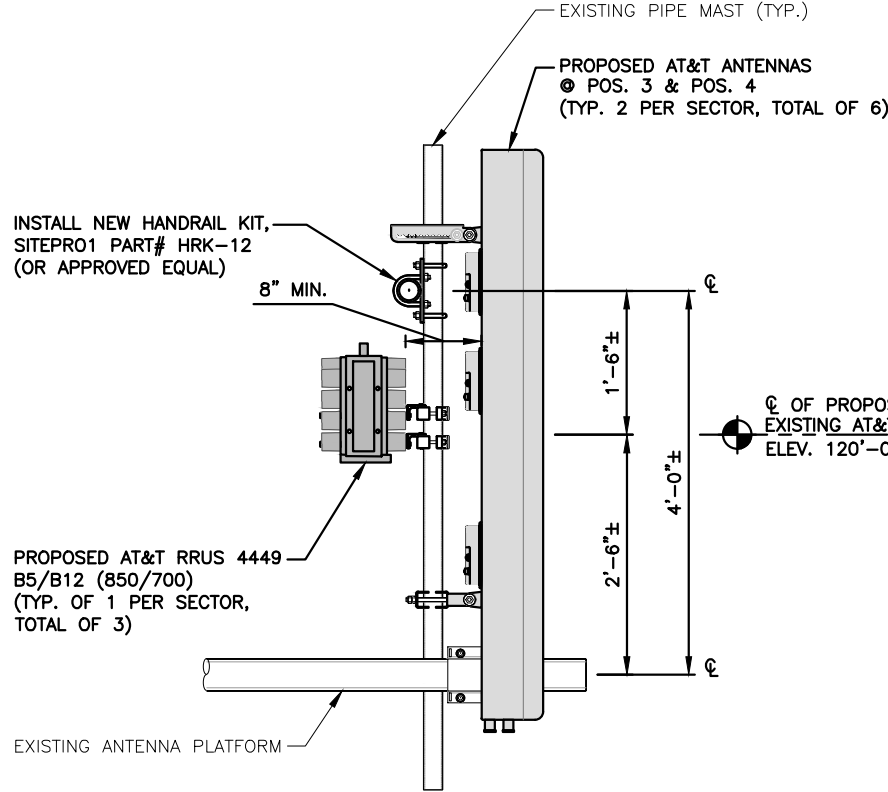
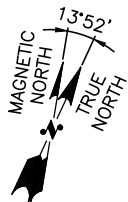


PROPOSED MOUNT MODIFICATIONS PLAN

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

2  
S-1

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



PROPOSED LTE ANTENNA MOUNTING DETAIL

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

3  
S-1

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



45 BEECHWOOD DRIVE  
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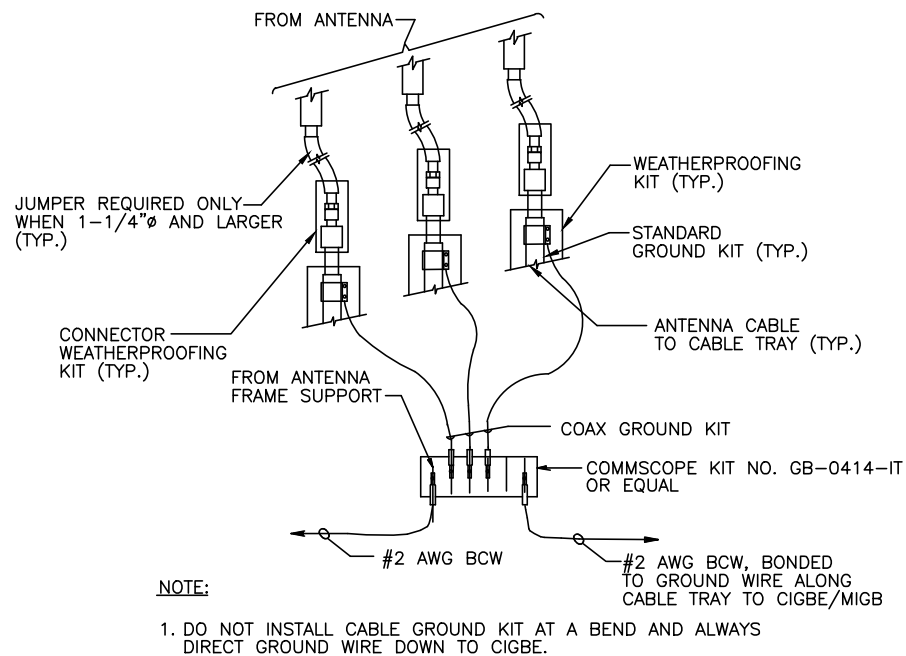
500 ENTERPRISE DRIVE, SUITE 3A  
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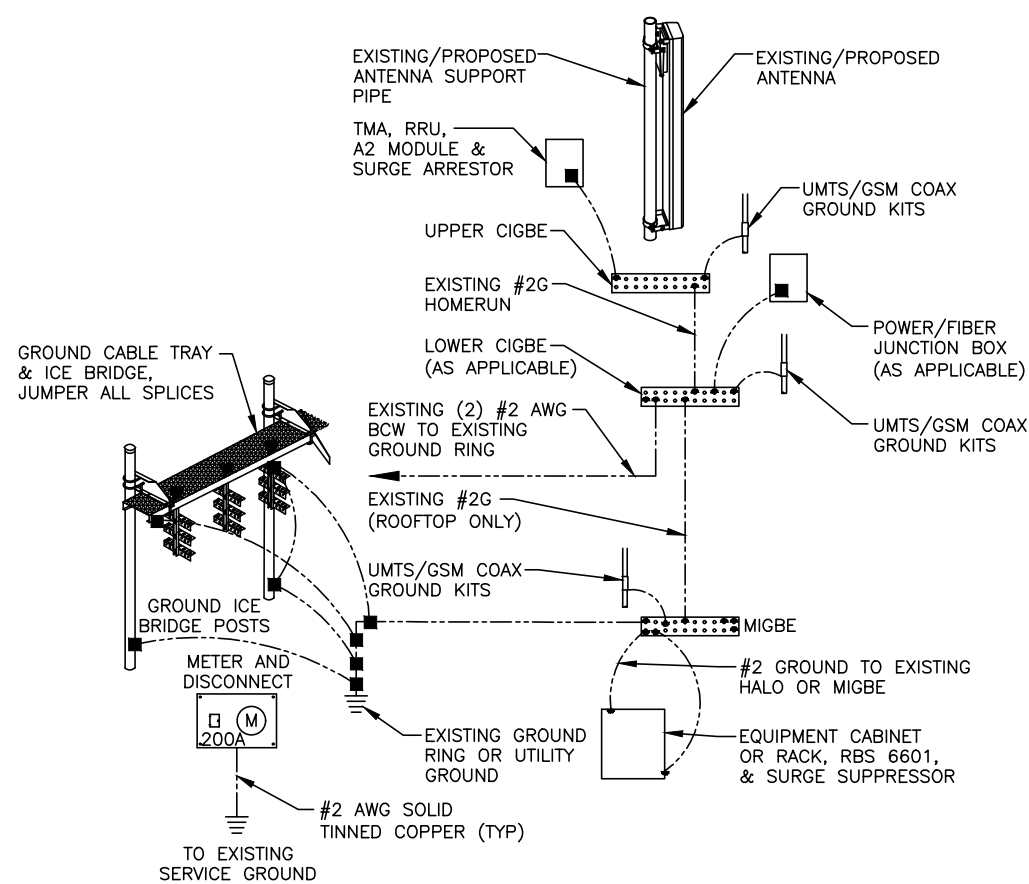
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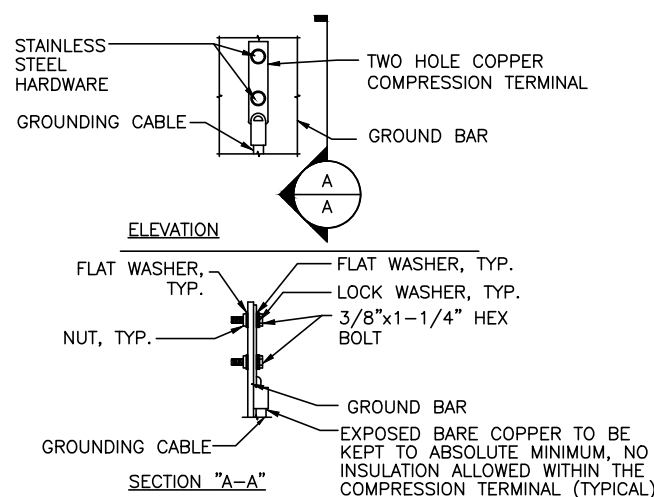
AT&T	
MOUNT MODIFICATION DESIGN	
LTE 2C_3C_4C_4TX4RX_5G 2020 UPGRADE	
SITE NUMBER	DRAWING NUMBER
CT1167	S-1
REV	1



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



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



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

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

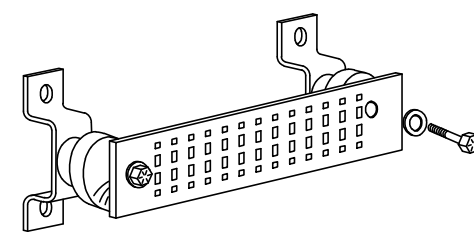
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

**SECTION "P" - SURGE PRODUCERS**

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

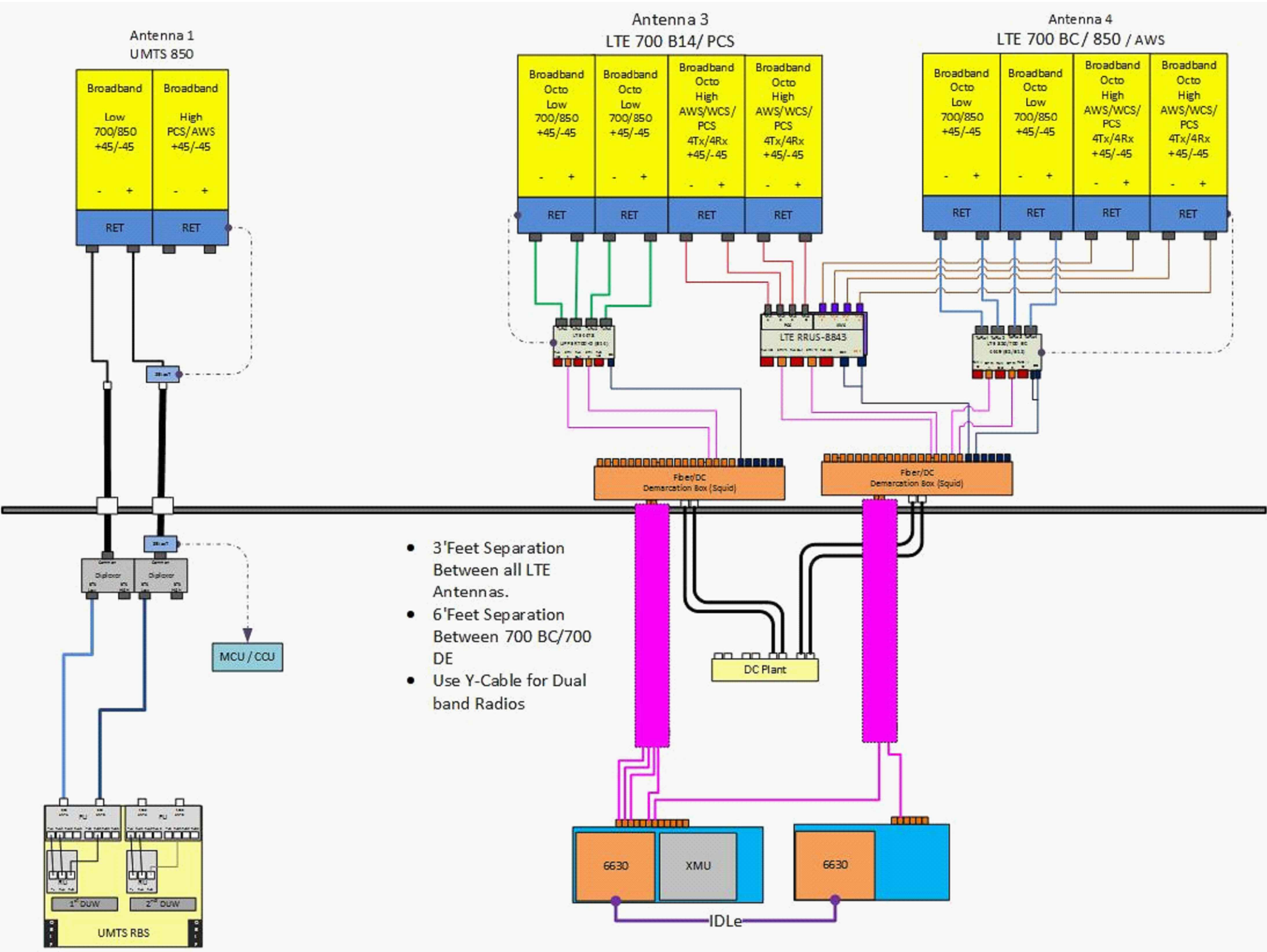
**SECTION "A" - SURGE ABSORBERS**

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



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





RF PLUMBING DIAGRAM  
SCALE: N.T.S.

1  
RF-1

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

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

Date: **November 03, 2020**

Amanda D Brown  
Crown Castle  
6325 Ardrey Kell RddSuite 600  
Charlotte, NC 28277



Crown Castle  
2000 Corporate Drive  
Canonsburg, PA 15317  
724-416-2000

**Subject:** **Structural Analysis Report**

**Carrier Designation:** **AT&T Mobility Co-Locate**  
**Carrier Site Number:** CT1167  
**Carrier Site Name:** HARTLAND - HARTLAND BOULEVARD  
**Carrier FA Number:** 10105847

**Crown Castle Designation:** **Crown Castle BU Number:** 857014  
**Crown Castle Site Name:** HARTLAND - HARTLAND BOULEVARD  
**Crown Castle JDE Job Number:** 621410  
**Crown Castle Work Order Number:** 1897764  
**Crown Castle Order Number:** 530810 Rev. 2

**Engineering Firm Designation:** **Crown Castle Project Number:** 1897764

**Site Data:** **350 HARTLAND BOULEVARD, EAST HARTLAND, Hartford County, CT**  
**Latitude 41° 58' 37.5", Longitude -72° 53' 16.34"**  
**120 Foot - Monopole Tower**

Dear Amanda D Brown,

Crown Castle is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above-mentioned tower.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC5: Proposed Equipment Configuration

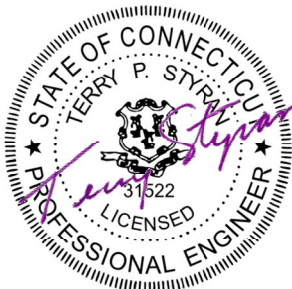
**Sufficient Capacity- 19.3%**

This analysis utilizes an ultimate 3-second gust wind speed of 120 mph as required by the 2018 Connecticut Building Code & 2015 International Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Bernadette Rossmiller

Respectfully submitted by:

Terry P. Styran, P.E.  
Senior Project Engineer





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## 1) INTRODUCTION

This tower is a 120 ft Monopole tower designed by Engineered Endeavors Incorporated.

## 2) ANALYSIS CRITERIA

<b>TIA-222 Revision:</b>	TIA-222-H
<b>Risk Category:</b>	II
<b>Wind Speed:</b>	120
<b>Exposure Category:</b>	B
<b>Topographic Factor:</b>	1
<b>Ice Thickness:</b>	2 in
<b>Wind Speed with Ice:</b>	50 mph
<b>Service Wind Speed:</b>	60 mph

**Table 1 - Proposed Equipment Configuration**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
117.0	120.0	2	cci antennas	DMP65R-BU6D w/ Mount Pipe	12 2 2 2 2	1-5/8 Conduit 1-1/2 3/4 3/8
		1	cci antennas	DMP65R-BU8D w/ Mount Pipe		
		2	cci antennas	OPA65R-BU6D w/ Mount Pipe		
		1	cci antennas	OPA65R-BU8D w/ Mount Pipe		
		3	Ericsson	RRUS 4449 B5/B12		
		3	Ericsson	RRUS 4478 B14_CCIV2		
		3	Ericsson	RRUS 8843 B2/B66A		
		3	powerwave technologies	7770.00 w/ Mount Pipe		
		6	powerwave technologies	LGP13519		
		6	powerwave technologies	LGP21401		
		1	Raycap	DC6-48-60-18-8C		
		1	Raycap	DC6-48-60-18-8F		
	117.0	1	tower mounts	Platform Mount [LP 712-1]		
		1	tower mounts	SitePro1 P/N HRK12		

**Table 2 - Other Considered Equipment**

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
110.0	110.0	3	antel	BXA-171085-12BF w/ Mount Pipe	12	1-5/8
		3	antel	BXA-70063-6CF-2 w/ Mount Pipe		
		6	antel	LPA-80080/6CF w/ Mount Pipe		
		6	rfs celwave	FD9R6004/2C-3L		
		1	tower mounts	Platform Mount [LP 303-1]		

### 3) ANALYSIS PROCEDURE

**Table 3 - Documents Provided**

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	FDH Velocitel	6121289	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Engineered Endeavors Incorporated	5177752	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Engineered Endeavors Incorporated	5177737	CCISITES

#### 3.1) Analysis Method

tnxTower (version 8.0.7.5), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 Standard.

#### 3.2) Assumptions

- 1) Tower and structures were maintained in accordance with the TIA-222 Standard.
- 2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

This analysis may be affected if any assumptions are not valid or have been made in error. Crown Castle should be notified to determine the effect on the structural integrity of the tower.

### 4) ANALYSIS RESULTS

**Table 4 - Section Capacity (Summary)**

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	120 - 92.51	Pole	TP37.3834x29.3x0.25	1	-8.69	1735.81	10.9	Pass
L2	92.51 - 45.69	Pole	TP50.5408x35.3632x0.375	2	-19.77	3522.11	15.9	Pass
L3	45.69 - 0	Pole	TP63x47.7998x0.4375	3	-39.41	5336.35	18.5	Pass
							Summary	
						Pole (L3)	18.5	Pass
						<b>RATING =</b>	<b>18.5</b>	<b>Pass</b>

**Table 5 - Tower Component Stresses vs. Capacity - LC5**

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	11.2	Pass
1	Base Plate	0	6.8	Pass
1	Base Foundation (Structure)	0	14.8	Pass
1	Base Foundation (Soil Interaction)	0	19.3	Pass
<b>Structure Rating (max from all components) =</b>				<b>19.3%</b>

Notes:

- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

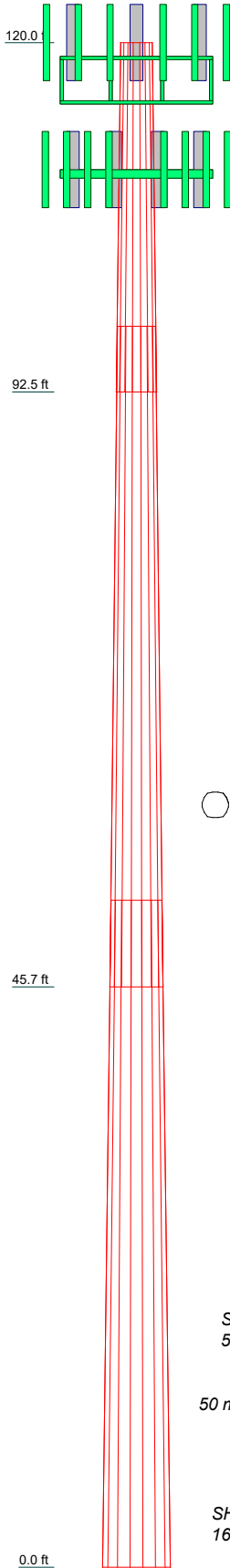
#### **4.1) Recommendations**

The tower and its foundation have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.

**APPENDIX A**  
**TNXTOWER OUTPUT**



Section	1	2	3	
Length (ft)	27.49	51.99	52.51	
Number of Sides	18	18	18	
Thickness (in)	0.2500	0.3750	0.4375	
Socket Length (ft)	5.17	6.82		
Top Dia (in)	29.3000	35.3632	47.7998	
Bot Dia (in)	37.3834	50.5408	63.0000	
Grade		A572-65		
Weight (K)	2.5	9.0	13.6	25.1

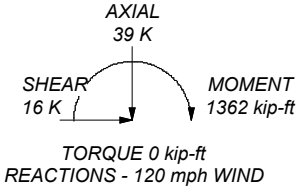
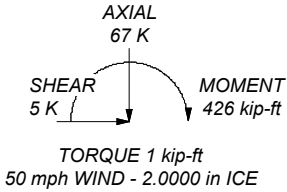



MATERIAL STRENGTH					
GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

### TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 120 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 2.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 18.5%

ALL REACTIONS  
ARE FACTORED





**CROWN CASTLE**  
The Pathway to Possible

**Crown Castle**  
2000 Corporate Drive  
Canonsburg, PA 15317  
Phone: 724-416-2000  
FAX:

Job: **857014**

Project:	Client: Crown Castle	Drawn by: BRossmiller	App'd:
Code: TIA-222-H	Date: 11/04/20	Scale: NTS	Dwg No. E-1
Path: C:\Users\brossmiller\Desktop\Temporary\857014\WO 1897764 - SAIProd\857014_RPA.dwg			

## Tower Input Data

The tower is a monopole.

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

The following design criteria apply:

- 1) Tower is located in Hartford County, Connecticut.
- 2) Tower base elevation above sea level: 928.00 ft.
- 3) Basic wind speed of 120 mph.
- 4) Risk Category II.
- 5) Exposure Category B.
- 6) Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- 7) Topographic Category: 1.
- 8) Crest Height: 0.00 ft.
- 9) Nominal ice thickness of 2.0000 in.
- 10) Ice thickness is considered to increase with height.
- 11) Ice density of 56 pcf.
- 12) A wind speed of 50 mph is used in combination with ice.
- 13) Temperature drop of 50 °F.
- 14) Deflections calculated using a wind speed of 60 mph.
- 15) A non-linear (P-delta) analysis was used.
- 16) Pressures are calculated at each section.
- 17) Stress ratio used in pole design is 1.05.
- 18) Tower analysis based on target reliabilities in accordance with Annex S.
- 19) Load Modification Factors used:  $K_{es}(F_w) = 0.95$ ,  $K_{es}(t_i) = 0.85$ .
- 20) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

## Options

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

## Tapered Pole Section Geometry

Section	Elevation	Section Length	Splice Length	Number of Sides	Top Diameter	Bottom Diameter	Wall Thickness	Bend Radius	Pole Grade
	ft	ft	ft		in	in	in	in	
L1	120.00-92.51	27.49	5.17	18	29.3000	37.3834	0.2500	1.0000	A572-65 (65 ksi)

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L2	92.51-45.69	51.99	6.82	18	35.3632	50.5408	0.3750	1.5000	A572-65 (65 ksi)
L3	45.69-0.00	52.51		18	47.7998	63.0000	0.4375	1.7500	A572-65 (65 ksi)

### Tapered Pole Properties

Section	Tip Dia. in	Area in <sup>2</sup>	I in <sup>4</sup>	r in	C in	I/C in <sup>3</sup>	J in <sup>4</sup>	It/Q in <sup>2</sup>	w in	w/t
L1	29.7134 37.9215	23.0512 29.4654	2457.6656 5133.0859	10.3127 13.1824	14.8844 18.9908	165.1169 270.2938	4918.5651 10272.9260	11.5278 14.7355	4.7168 6.1395	18.867 24.558
L2	37.3834 51.2626	41.6447 59.7098	6440.7916 18984.4871	12.4208 17.8089	17.9645 25.6747	358.5291 739.4231	12890.0582 37993.9544	20.8263 29.8606	5.5639 8.2352	14.837 21.96
L3	50.4744 63.9044	65.7685 86.8759	18638.9358 42960.0437	16.8136 22.2097	24.2823 32.0040	767.5934 1342.3336	37302.3973 85976.6153	32.8905 43.4462	7.6428 10.3180	17.469 23.584

Tower Elevation ft	Gusset Area (per face) ft <sup>2</sup>	Gusset Thickness in	Gusset Grade	Adjust. Factor A <sub>r</sub>	Adjust. Factor A <sub>r</sub>	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 120.00- 92.51				1	1	1			
L2 92.51- 45.69				1	1	1			
L3 45.69-0.00				1	1	1			

### Feed Line/Linear Appurtenances - Entered As Round Or Flat

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

### Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	CA A <sub>A</sub> ft <sup>2</sup> /ft	Weight klf
***								
LDF7-50A(1-5/8)	C	No	No	Inside Pole	117.00 - 0.00	12	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00
FB-L98-002- XXX(3/8)	C	No	No	Inside Pole	117.00 - 0.00	1	No Ice 1/2" Ice 1" Ice 2" Ice	0.00 0.00 0.00 0.00
WR-VG86ST- BRD(3/4)	C	No	No	Inside Pole	117.00 - 0.00	2	No Ice 1/2" Ice	0.00 0.00

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C <sub>A</sub> A <sub>A</sub> ft <sup>2</sup> /ft	Weight klf
FB-L98-002- XXX(3/8)	C	No	No	Inside Pole	117.00 - 0.00	1	1" Ice	0.00	0.00
							2" Ice	0.00	0.00
							No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
WR- VGCO43PR(1-1/2)	C	No	No	Inside Pole	117.00 - 0.00	2	2" Ice	0.00	0.00
							No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
							2" Ice	0.00	0.00
2" Flex Conduit	C	No	No	Inside Pole	117.00 - 0.00	2	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
							2" Ice	0.00	0.00
***									
LDF7-50A(1-5/8)	C	No	No	Inside Pole	110.00 - 0.00	12	No Ice	0.00	0.00
							1/2" Ice	0.00	0.00
							1" Ice	0.00	0.00
							2" Ice	0.00	0.00
***									
Safety Line 3/8	C	No	No	CaAa (Out Of Face)	120.00 - 0.00	1	No Ice	0.04	0.00
							1/2" Ice	0.14	0.00
							1" Ice	0.24	0.00
							2" Ice	0.44	0.00
5/8 rod/step	C	No	No	CaAa (Out Of Face)	120.00 - 0.00	1	No Ice	0.02	0.00
							1/2" Ice	0.12	0.00
							1" Ice	0.22	0.00
							2" Ice	0.42	0.01
***									

### Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>	Weight K
L1	120.00-92.51	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	1.581	0.54
L2	92.51-45.69	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	2.692	1.16
L3	45.69-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	2.627	1.13

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

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>	Weight K
L1	120.00-92.51	A	1.910	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	22.582	0.73
L2	92.51-45.69	A	1.829	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	38.460	1.49
L3	45.69-0.00	A	1.634	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	36.048	1.43

### Feed Line Center of Pressure

Section	Elevation	CP <sub>x</sub>	CP <sub>z</sub>	CP <sub>x</sub> Ice	CP <sub>z</sub> Ice
	ft	in	in	in	in
L1	120.00-92.51	-0.4529	0.2615	-2.7764	1.6030
L2	92.51-45.69	-0.4564	0.2635	-2.9784	1.7196
L3	45.69-0.00	-0.4588	0.2649	-3.0428	1.7568

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

### Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight K
***									
7770.00 w/ Mount Pipe	A	From Leg	4.00	0.0000	117.00	No Ice	5.75	4.25	0.06
			0.00			1/2"	6.18	5.01	0.10
			3.00			Ice	6.61	5.71	0.16
						1" Ice	7.49	7.16	0.29
						2" Ice			
7770.00 w/ Mount Pipe	B	From Leg	4.00	0.0000	117.00	No Ice	5.75	4.25	0.06
			0.00			1/2"	6.18	5.01	0.10
			3.00			Ice	6.61	5.71	0.16
						1" Ice	7.49	7.16	0.29
						2" Ice			
7770.00 w/ Mount Pipe	C	From Leg	4.00	0.0000	117.00	No Ice	5.75	4.25	0.06
			0.00			1/2"	6.18	5.01	0.10
			3.00			Ice	6.61	5.71	0.16
						1" Ice	7.49	7.16	0.29
						2" Ice			
DMP65R-BU6D w/ Mount Pipe	A	From Leg	4.00	0.0000	117.00	No Ice	11.96	5.97	0.11
			0.00			1/2"	12.70	6.63	0.20
			3.00			Ice	13.46	7.30	0.30
						1" Ice	15.02	8.69	0.53
						2" Ice			
DMP65R-BU8D w/ Mount Pipe	B	From Leg	4.00	0.0000	117.00	No Ice	15.89	7.89	0.14
			0.00			1/2"	16.81	8.74	0.25
			3.00			Ice	17.76	9.60	0.38
						1" Ice	19.70	11.37	0.68
						2" Ice			
DMP65R-BU6D w/ Mount Pipe	C	From Leg	4.00	0.0000	117.00	No Ice	11.96	5.97	0.11
			0.00			1/2"	12.70	6.63	0.20
			3.00			Ice	13.46	7.30	0.30
						1" Ice	15.02	8.69	0.53
						2" Ice			
OPA65R-BU6D w/ Mount Pipe	A	From Leg	4.00	0.0000	117.00	No Ice	12.25	6.05	0.09
			0.00			1/2"	13.00	6.71	0.18
			3.00			Ice	13.76	7.39	0.27
						1" Ice	15.34	8.79	0.51
						2" Ice			
OPA65R-BU8D w/ Mount Pipe	B	From Leg	4.00	0.0000	117.00	No Ice	17.46	8.58	0.11
			0.00			1/2"	18.46	9.49	0.22
			3.00			Ice	19.48	10.42	0.35
						1" Ice	21.58	12.33	0.66
						2" Ice			

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight K
OPA65R-BU6D w/ Mount Pipe	C	From Leg	4.00 0.00 3.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	12.25 13.00 13.76 15.34	6.05 6.71 7.39 8.79	0.09 0.18 0.27 0.51
(2) LGP21401	A	From Leg	4.00 0.00 3.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.10 1.24 1.38 1.69	0.21 0.27 0.35 0.52	0.01 0.02 0.03 0.05
(2) LGP21401	B	From Leg	4.00 0.00 3.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.10 1.24 1.38 1.69	0.21 0.27 0.35 0.52	0.01 0.02 0.03 0.05
(2) LGP21401	C	From Leg	4.00 0.00 3.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.10 1.24 1.38 1.69	0.21 0.27 0.35 0.52	0.01 0.02 0.03 0.05
DC6-48-60-18-8F	A	From Leg	4.00 0.00 3.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.21 1.89 2.11 2.57	1.21 1.89 2.11 2.57	0.02 0.04 0.07 0.13
(2) LGP13519	A	From Leg	4.00 0.00 3.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.29 0.36 0.44 0.62	0.18 0.24 0.31 0.47	0.01 0.01 0.01 0.02
(2) LGP13519	B	From Leg	4.00 0.00 3.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.29 0.36 0.44 0.62	0.18 0.24 0.31 0.47	0.01 0.01 0.01 0.02
(2) LGP13519	C	From Leg	4.00 0.00 3.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.29 0.36 0.44 0.62	0.18 0.24 0.31 0.47	0.01 0.01 0.01 0.02
RRUS 8843 B2/B66A	A	From Leg	4.00 0.00 3.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.64 1.80 1.97 2.32	1.35 1.50 1.65 1.99	0.07 0.09 0.11 0.16
RRUS 8843 B2/B66A	B	From Leg	4.00 0.00 3.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.64 1.80 1.97 2.32	1.35 1.50 1.65 1.99	0.07 0.09 0.11 0.16
RRUS 8843 B2/B66A	C	From Leg	4.00 0.00 3.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.64 1.80 1.97 2.32	1.35 1.50 1.65 1.99	0.07 0.09 0.11 0.16
RRUS 4449 B5/B12	A	From Leg	4.00 0.00 3.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.97 2.14 2.33 2.72	1.41 1.56 1.73 2.07	0.07 0.09 0.11 0.16
RRUS 4449 B5/B12	B	From Leg	4.00 0.00 3.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.97 2.14 2.33 2.72	1.41 1.56 1.73 2.07	0.07 0.09 0.11 0.16

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight K
RRUS 4449 B5/B12	C	From Leg	4.00 0.00 3.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.97 2.14 2.33 2.72	1.41 1.56 1.73 2.07	0.07 0.09 0.11 0.16
RRUS 4478 B14_CCIV2	A	From Leg	4.00 0.00 3.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.02 2.20 2.39 2.78	1.25 1.40 1.55 1.89	0.06 0.08 0.10 0.15
RRUS 4478 B14_CCIV2	B	From Leg	4.00 0.00 3.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.02 2.20 2.39 2.78	1.25 1.40 1.55 1.89	0.06 0.08 0.10 0.15
RRUS 4478 B14_CCIV2	C	From Leg	4.00 0.00 3.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.02 2.20 2.39 2.78	1.25 1.40 1.55 1.89	0.06 0.08 0.10 0.15
DC6-48-60-18-8C	C	From Leg	4.00 0.00 3.00	0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.14 1.79 2.00 2.45	1.14 1.79 2.00 2.45	0.03 0.05 0.07 0.13
Platform Mount [LP 712-1]	C	None		0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	24.56 27.92 31.27 37.98	24.56 27.92 31.27 37.98	1.34 1.91 2.55 3.97
Miscellaneous [NA 507-1]	C	None		0.0000	117.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.56 6.39 8.18 11.66	4.56 6.39 8.18 11.66	0.25 0.31 0.40 0.66
***									
(2) LPA-80080/6CF w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	110.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.56 5.11 5.61 6.65	10.26 11.43 12.31 14.13	0.05 0.11 0.19 0.36
(2) LPA-80080/6CF w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	110.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.56 5.11 5.61 6.65	10.26 11.43 12.31 14.13	0.05 0.11 0.19 0.36
(2) LPA-80080/6CF w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	110.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.56 5.11 5.61 6.65	10.26 11.43 12.31 14.13	0.05 0.11 0.19 0.36
BXA-171085-12BF w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	110.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.97 5.52 6.04 7.09	5.23 6.39 7.26 9.05	0.04 0.09 0.14 0.27
BXA-171085-12BF w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	110.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.97 5.52 6.04 7.09	5.23 6.39 7.26 9.05	0.04 0.09 0.14 0.27
BXA-171085-12BF w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	110.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.97 5.52 6.04 7.09	5.23 6.39 7.26 9.05	0.04 0.09 0.14 0.27

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C <sub>AA</sub> Front ft <sup>2</sup>	C <sub>AA</sub> Side ft <sup>2</sup>	Weight K
BXA-70063-6CF-2 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	110.00	2" Ice No Ice 1/2" Ice 1" Ice	7.81 8.36 8.87 9.93	5.80 6.95 7.82 9.60	0.04 0.10 0.17 0.34
BXA-70063-6CF-2 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	110.00	2" Ice No Ice 1/2" Ice 1" Ice	7.81 8.36 8.87 9.93	5.80 6.95 7.82 9.60	0.04 0.10 0.17 0.34
BXA-70063-6CF-2 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	110.00	2" Ice No Ice 1/2" Ice 1" Ice	7.81 8.36 8.87 9.93	5.80 6.95 7.82 9.60	0.04 0.10 0.17 0.34
(2) FD9R6004/2C-3L	A	From Leg	4.00 0.00 0.00	0.0000	110.00	2" Ice No Ice 1/2" Ice 1" Ice	0.31 0.39 0.47 0.65	0.08 0.12 0.17 0.29	0.00 0.01 0.01 0.02
(2) FD9R6004/2C-3L	B	From Leg	4.00 0.00 0.00	0.0000	110.00	2" Ice No Ice 1/2" Ice 1" Ice	0.31 0.39 0.47 0.65	0.08 0.12 0.17 0.29	0.00 0.01 0.01 0.02
(2) FD9R6004/2C-3L	C	From Leg	4.00 0.00 0.00	0.0000	110.00	2" Ice No Ice 1/2" Ice 1" Ice	0.31 0.39 0.47 0.65	0.08 0.12 0.17 0.29	0.00 0.01 0.01 0.02
Platform Mount [LP 303-1]	C	None		0.0000	110.00	2" Ice No Ice 1/2" Ice 1" Ice 2" Ice	14.69 18.01 21.34 28.08	14.69 18.01 21.34 28.08	1.25 1.57 1.94 2.85
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## Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice



Comb. No.	Description
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

### Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	120 - 92.51	Pole	Max Tension	8	0.00	-0.00	0.00
			Max. Compression	26	-23.32	-0.57	-0.58
			Max. Mx	8	-8.69	-146.97	-1.63
			Max. My	14	-8.69	-1.58	-145.27
			Max. Vy	8	8.78	-146.97	-1.63
			Max. Vx	14	8.70	-1.58	-145.27
			Max. Torque	5			-0.57
L2	92.51 - 45.69	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.76	-0.04	-0.88
			Max. Mx	8	-19.77	-618.16	-4.76
			Max. My	14	-19.77	-4.63	-612.95
			Max. Vy	20	-12.12	618.11	4.47
			Max. Vx	14	12.04	-4.63	-612.95
			Max. Torque	32			-0.71
L3	45.69 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66.51	0.71	-1.32
			Max. Mx	20	-39.41	1356.94	8.01
			Max. My	14	-39.41	-8.15	-1347.63
			Max. Vy	20	-16.04	1356.94	8.01
			Max. Vx	14	15.96	-8.15	-1347.63
			Max. Torque	32			-1.14

### Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	66.51	0.00	-0.00
	Max. H <sub>x</sub>	21	29.56	16.03	0.07
	Max. H <sub>z</sub>	3	29.56	0.07	15.95
	Max. M <sub>x</sub>	2	1347.27	0.07	15.95
	Max. M <sub>z</sub>	8	1356.86	-16.03	-0.07
	Max. Torsion	38	1.14	2.62	4.52
	Min. Vert	11	29.56	-13.91	-8.03
	Min. H <sub>x</sub>	9	29.56	-16.03	-0.07
	Min. H <sub>z</sub>	15	29.56	-0.07	-15.95
	Min. M <sub>x</sub>	14	-1347.63	-0.07	-15.95
	Min. M <sub>z</sub>	20	-1356.94	16.03	0.07
	Min. Torsion	32	-1.14	-2.62	-4.52

## Tower Mast Reaction Summary

Load Combination	Vertical K	Shear <sub>x</sub> K	Shear <sub>z</sub> K	Overturing Moment, M <sub>x</sub> kip-ft	Overturing Moment, M <sub>z</sub> kip-ft	Torque kip-ft
Dead Only	32.85	0.00	0.00	0.15	0.03	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	39.42	-0.07	-15.95	-1347.27	8.23	0.16
0.9 Dead+1.0 Wind 0 deg - No Ice	29.56	-0.07	-15.95	-1343.46	8.19	0.16
1.2 Dead+1.0 Wind 30 deg - No Ice	39.42	7.96	-13.78	-1162.65	-671.32	0.38
0.9 Dead+1.0 Wind 30 deg - No Ice	29.56	7.96	-13.78	-1159.37	-669.41	0.38
1.2 Dead+1.0 Wind 60 deg - No Ice	39.42	13.85	-7.92	-666.46	-1170.98	0.49
0.9 Dead+1.0 Wind 60 deg - No Ice	29.56	13.85	-7.92	-664.59	-1167.63	0.49
1.2 Dead+1.0 Wind 90 deg - No Ice	39.42	16.03	0.07	8.37	-1356.86	0.47
0.9 Dead+1.0 Wind 90 deg - No Ice	29.56	16.03	0.07	8.29	-1352.98	0.47
1.2 Dead+1.0 Wind 120 deg - No Ice	39.42	13.91	8.03	680.99	-1179.16	0.32
0.9 Dead+1.0 Wind 120 deg - No Ice	29.56	13.91	8.03	678.99	-1175.79	0.32
1.2 Dead+1.0 Wind 150 deg - No Ice	39.42	8.07	13.85	1171.20	-685.50	0.09
0.9 Dead+1.0 Wind 150 deg - No Ice	29.56	8.07	13.85	1167.80	-683.54	0.09
1.2 Dead+1.0 Wind 180 deg - No Ice	39.42	0.07	15.95	1347.63	-8.15	-0.16
0.9 Dead+1.0 Wind 180 deg - No Ice	29.56	0.07	15.95	1343.72	-8.13	-0.16
1.2 Dead+1.0 Wind 210 deg - No Ice	39.42	-7.96	13.78	1163.01	671.40	-0.38
0.9 Dead+1.0 Wind 210 deg - No Ice	29.56	-7.96	13.78	1159.64	669.47	-0.38
1.2 Dead+1.0 Wind 240 deg - No Ice	39.42	-13.85	7.92	666.82	1171.06	-0.49
0.9 Dead+1.0 Wind 240 deg - No Ice	29.56	-13.85	7.92	664.86	1167.69	-0.49
1.2 Dead+1.0 Wind 270 deg - No Ice	39.42	-16.03	-0.07	-8.01	1356.94	-0.47
0.9 Dead+1.0 Wind 270 deg - No Ice	29.56	-16.03	-0.07	-8.03	1353.04	-0.47
1.2 Dead+1.0 Wind 300 deg - No Ice	39.42	-13.91	-8.03	-680.63	1179.24	-0.32
0.9 Dead+1.0 Wind 300 deg - No Ice	29.56	-13.91	-8.03	-678.73	1175.85	-0.32
1.2 Dead+1.0 Wind 330 deg - No Ice	39.42	-8.07	-13.85	-1170.84	685.58	-0.09

Load Combination	Vertical K	Shear <sub>x</sub> K	Shear <sub>z</sub> K	Overturning Moment, M <sub>x</sub> kip-ft	Overturning Moment, M <sub>z</sub> kip-ft	Torque kip-ft
0.9 Dead+1.0 Wind 330 deg - No Ice	29.56	-8.07	-13.85	-1167.53	683.60	-0.09
1.2 Dead+1.0 Ice+1.0 Temp	66.51	-0.00	0.00	1.32	0.71	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	66.51	-0.02	-5.20	-421.74	3.04	-0.94
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	66.51	2.59	-4.50	-363.92	-209.16	-0.49
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	66.51	4.50	-2.58	-208.19	-365.13	0.09
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	66.51	5.21	0.02	3.69	-423.07	0.65
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	66.51	4.52	2.62	214.95	-367.46	1.03
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	66.51	2.62	4.52	368.97	-213.20	1.14
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	66.51	0.02	5.20	424.50	-1.61	0.94
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	66.51	-2.59	4.50	366.65	210.59	0.49
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	66.51	-4.50	2.58	210.91	366.56	-0.09
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	66.51	-5.21	-0.02	-0.97	424.50	-0.65
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	66.51	-4.52	-2.62	-212.22	368.89	-1.03
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	66.51	-2.62	-4.52	-366.25	214.63	-1.14
Dead+Wind 0 deg - Service	32.85	-0.02	-3.76	-316.48	1.96	0.04
Dead+Wind 30 deg - Service	32.85	1.87	-3.24	-273.10	-157.73	0.09
Dead+Wind 60 deg - Service	32.85	3.26	-1.86	-156.50	-275.14	0.11
Dead+Wind 90 deg - Service	32.85	3.77	0.02	2.07	-318.82	0.11
Dead+Wind 120 deg - Service	32.85	3.28	1.89	160.13	-277.06	0.08
Dead+Wind 150 deg - Service	32.85	1.90	3.26	275.32	-161.06	0.02
Dead+Wind 180 deg - Service	32.85	0.02	3.76	316.78	-1.89	-0.04
Dead+Wind 210 deg - Service	32.85	-1.87	3.24	273.40	157.79	-0.09
Dead+Wind 240 deg - Service	32.85	-3.26	1.86	156.80	275.21	-0.11
Dead+Wind 270 deg - Service	32.85	-3.77	-0.02	-1.77	318.89	-0.11
Dead+Wind 300 deg - Service	32.85	-3.28	-1.89	-159.83	277.13	-0.08
Dead+Wind 330 deg - Service	32.85	-1.90	-3.26	-275.02	161.13	-0.02

## Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-32.85	0.00	0.00	32.85	0.00	0.000%
2	-0.07	-39.42	-15.95	0.07	39.42	15.95	0.001%
3	-0.07	-29.56	-15.95	0.07	29.56	15.95	0.001%
4	7.96	-39.42	-13.78	-7.96	39.42	13.78	0.001%
5	7.96	-29.56	-13.78	-7.96	29.56	13.78	0.001%
6	13.85	-39.42	-7.92	-13.85	39.42	7.92	0.001%
7	13.85	-29.56	-7.92	-13.85	29.56	7.92	0.001%
8	16.03	-39.42	0.07	-16.03	39.42	-0.07	0.001%
9	16.03	-29.56	0.07	-16.03	29.56	-0.07	0.001%
10	13.92	-39.42	8.03	-13.91	39.42	-8.03	0.001%
11	13.92	-29.56	8.03	-13.91	29.56	-8.03	0.001%
12	8.07	-39.42	13.85	-8.07	39.42	-13.85	0.001%
13	8.07	-29.56	13.85	-8.07	29.56	-13.85	0.001%

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
14	0.07	-39.42	15.95	-0.07	39.42	-15.95	0.001%
15	0.07	-29.56	15.95	-0.07	29.56	-15.95	0.001%
16	-7.96	-39.42	13.78	7.96	39.42	-13.78	0.001%
17	-7.96	-29.56	13.78	7.96	29.56	-13.78	0.001%
18	-13.85	-39.42	7.92	13.85	39.42	-7.92	0.001%
19	-13.85	-29.56	7.92	13.85	29.56	-7.92	0.001%
20	-16.03	-39.42	-0.07	16.03	39.42	0.07	0.001%
21	-16.03	-29.56	-0.07	16.03	29.56	0.07	0.001%
22	-13.92	-39.42	-8.03	13.91	39.42	8.03	0.001%
23	-13.92	-29.56	-8.03	13.91	29.56	8.03	0.001%
24	-8.07	-39.42	-13.85	8.07	39.42	13.85	0.001%
25	-8.07	-29.56	-13.85	8.07	29.56	13.85	0.001%
26	0.00	-66.51	0.00	0.00	66.51	-0.00	0.000%
27	-0.02	-66.51	-5.20	0.02	66.51	5.20	0.000%
28	2.59	-66.51	-4.50	-2.59	66.51	4.50	0.000%
29	4.50	-66.51	-2.58	-4.50	66.51	2.58	0.000%
30	5.21	-66.51	0.02	-5.21	66.51	-0.02	0.000%
31	4.52	-66.51	2.62	-4.52	66.51	-2.62	0.000%
32	2.62	-66.51	4.52	-2.62	66.51	-4.52	0.000%
33	0.02	-66.51	5.20	-0.02	66.51	-5.20	0.000%
34	-2.59	-66.51	4.50	2.59	66.51	-4.50	0.000%
35	-4.50	-66.51	2.58	4.50	66.51	-2.58	0.000%
36	-5.21	-66.51	-0.02	5.21	66.51	0.02	0.000%
37	-4.52	-66.51	-2.62	4.52	66.51	2.62	0.000%
38	-2.62	-66.51	-4.52	2.62	66.51	4.52	0.000%
39	-0.02	-32.85	-3.76	0.02	32.85	3.76	0.001%
40	1.87	-32.85	-3.24	-1.87	32.85	3.24	0.001%
41	3.26	-32.85	-1.86	-3.26	32.85	1.86	0.001%
42	3.77	-32.85	0.02	-3.77	32.85	-0.02	0.001%
43	3.28	-32.85	1.89	-3.28	32.85	-1.89	0.001%
44	1.90	-32.85	3.26	-1.90	32.85	-3.26	0.001%
45	0.02	-32.85	3.76	-0.02	32.85	-3.76	0.001%
46	-1.87	-32.85	3.24	1.87	32.85	-3.24	0.001%
47	-3.26	-32.85	1.86	3.26	32.85	-1.86	0.001%
48	-3.77	-32.85	-0.02	3.77	32.85	0.02	0.001%
49	-3.28	-32.85	-1.89	3.28	32.85	1.89	0.001%
50	-1.90	-32.85	-3.26	1.90	32.85	3.26	0.001%

## Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	9	0.00000001	0.00005940
3	Yes	9	0.00000001	0.00005559
4	Yes	9	0.00000001	0.00011195
5	Yes	9	0.00000001	0.00010105
6	Yes	9	0.00000001	0.00008769
7	Yes	9	0.00000001	0.00007876
8	Yes	9	0.00000001	0.00006026
9	Yes	9	0.00000001	0.00005632
10	Yes	9	0.00000001	0.00010497
11	Yes	9	0.00000001	0.00009435
12	Yes	9	0.00000001	0.00010538
13	Yes	9	0.00000001	0.00009477
14	Yes	9	0.00000001	0.00006042
15	Yes	9	0.00000001	0.00005648
16	Yes	9	0.00000001	0.00008743
17	Yes	9	0.00000001	0.00007853
18	Yes	9	0.00000001	0.00011260
19	Yes	9	0.00000001	0.00010160
20	Yes	9	0.00000001	0.00005932
21	Yes	9	0.00000001	0.00005549
22	Yes	9	0.00000001	0.00009907
23	Yes	9	0.00000001	0.00008898
24	Yes	9	0.00000001	0.00009765
25	Yes	9	0.00000001	0.00008771
26	Yes	6	0.00000001	0.00000001
27	Yes	9	0.00000001	0.00014961
28	Yes	10	0.00000001	0.00004826
29	Yes	10	0.00000001	0.00004838
30	Yes	10	0.00000001	0.00004787
31	Yes	10	0.00000001	0.00004941
32	Yes	10	0.00000001	0.00004935
33	Yes	10	0.00000001	0.00004800
34	Yes	10	0.00000001	0.00004869
35	Yes	10	0.00000001	0.00004864
36	Yes	10	0.00000001	0.00004783
37	Yes	10	0.00000001	0.00004901
38	Yes	10	0.00000001	0.00004899
39	Yes	8	0.00000001	0.00005812
40	Yes	8	0.00000001	0.00005676
41	Yes	8	0.00000001	0.00005678
42	Yes	8	0.00000001	0.00005864
43	Yes	8	0.00000001	0.00005749
44	Yes	8	0.00000001	0.00005728
45	Yes	8	0.00000001	0.00005822
46	Yes	8	0.00000001	0.00005659
47	Yes	8	0.00000001	0.00005706
48	Yes	8	0.00000001	0.00005862
49	Yes	8	0.00000001	0.00005738
50	Yes	8	0.00000001	0.00005712

### Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	120 - 92.51	3.173	43	0.2274	0.0005
L2	97.68 - 45.69	2.146	43	0.2033	0.0002
L3	52.51 - 0	0.625	43	0.1084	0.0001

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

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
117.00	7770.00 w/ Mount Pipe	43	3.031	0.2247	0.0005	151546
110.00	(2) LPA-80080/6CF w/ Mount Pipe	43	2.702	0.2181	0.0004	75773

### Maximum Tower Deflections - Design Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
L1	120 - 92.51	13.500	10	0.9672	0.0022
L2	97.68 - 45.69	9.131	10	0.8650	0.0013
L3	52.51 - 0	2.661	10	0.4615	0.0006

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

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
117.00	7770.00 w/ Mount Pipe	10	12.896	0.9558	0.0020	35712
110.00	(2) LPA-80080/6CF w/ Mount Pipe	10	11.498	0.9277	0.0016	17856

### Compression Checks

### Pole Design Data

Section No.	Elevation	Size	L	L <sub>u</sub>	KI/r	A	P <sub>u</sub>	φP <sub>n</sub>	Ratio P <sub>u</sub> φP <sub>n</sub>
	ft		ft	ft		in <sup>2</sup>	K	K	
L1	120 - 92.51 (1)	TP37.3834x29.3x0.25	27.49	0.00	0.0	28.259 0	-8.69	1653.15	0.005
L2	92.51 - 45.69 (2)	TP50.5408x35.3632x0.37 5	51.99	0.00	0.0	57.340 1	-19.77	3354.39	0.006
L3	45.69 - 0 (3)	TP63x47.7998x0.4375	52.51	0.00	0.0	86.875 9	-39.41	5082.24	0.008

### Pole Bending Design Data

Section No.	Elevation	Size	M <sub>ux</sub>	φM <sub>nx</sub>	Ratio M <sub>ux</sub> φM <sub>nx</sub>	M <sub>uy</sub>	φM <sub>ny</sub>	Ratio M <sub>uy</sub> φM <sub>ny</sub>
	ft		kip-ft	kip-ft		kip-ft	kip-ft	
L1	120 - 92.51 (1)	TP37.3834x29.3x0.25	147.89	1355.93	0.109	0.00	1355.93	0.000
L2	92.51 - 45.69 (2)	TP50.5408x35.3632x0.37 5	620.89	3866.97	0.161	0.00	3866.97	0.000
L3	45.69 - 0 (3)	TP63x47.7998x0.4375	1361.68	7311.70	0.186	0.00	7311.70	0.000

### Pole Shear Design Data

Section No.	Elevation ft	Size	Actual $V_u$ K	$\phi V_n$ K	Ratio $\frac{V_u}{\phi V_n}$	Actual $T_u$ kip-ft	$\phi T_n$ kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	120 - 92.51 (1)	TP37.3834x29.3x0.25	8.82	495.95	0.018	0.04	1546.77	0.000
L2	92.51 - 45.69 (2)	TP50.5408x35.3632x0.375	12.16	1006.32	0.012	0.17	4245.57	0.000
L3	45.69 - 0 (3)	TP63x47.7998x0.4375	16.07	1524.67	0.011	0.32	8353.50	0.000

### Pole Interaction Design Data

Section No.	Elevation ft	Ratio $P_u$ $\phi P_n$	Ratio $M_{ux}$ $\phi M_{nx}$	Ratio $M_{uy}$ $\phi M_{ny}$	Ratio $V_u$ $\phi V_n$	Ratio $T_u$ $\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	120 - 92.51 (1)	0.005	0.109	0.000	0.018	0.000	0.115	1.050	4.8.2
L2	92.51 - 45.69 (2)	0.006	0.161	0.000	0.012	0.000	0.167	1.050	4.8.2
L3	45.69 - 0 (3)	0.008	0.186	0.000	0.011	0.000	0.194	1.050	4.8.2

### Section Capacity Table

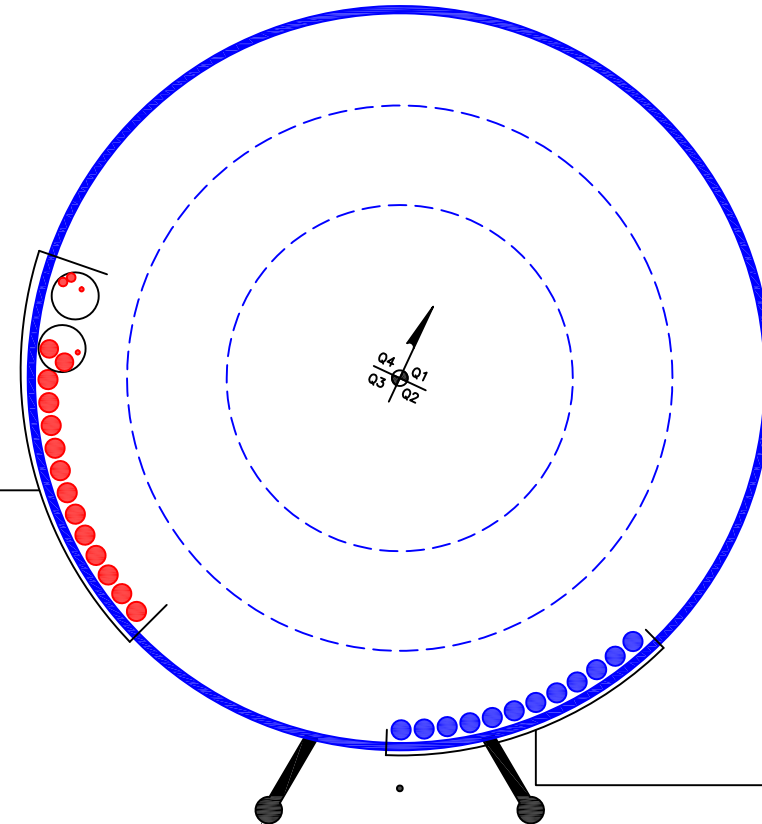
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$\phi P_{allow}$ K	% Capacity	Pass Fail
L1	120 - 92.51	Pole	TP37.3834x29.3x0.25	1	-8.69	1735.81	10.9	Pass
L2	92.51 - 45.69	Pole	TP50.5408x35.3632x0.375	2	-19.77	3522.11	15.9	Pass
L3	45.69 - 0	Pole	TP63x47.7998x0.4375	3	-39.41	5336.35	18.5	Pass
							Summary	
							Pole (L3)	18.5 Pass
							<b>RATING =</b>	<b>18.5 Pass</b>

**APPENDIX B**  
**BASE LEVEL DRAWING**





(PROPOSED EQUIPMENT CONFIGURATION—IN CONDUIT)  
(2) 3/8" TO 117 FT LEVEL  
(2) 3/4" TO 117 FT LEVEL  
(2) 1-1/2" TO 117 FT LEVEL  
(PROPOSED EQUIPMENT CONFIGURATION)  
(12) 1-5/8" TO 117 FT LEVEL



CLIMBING PEGS  
W/ SAFETY CLIMB

(OTHER CONSIDERED EQUIPMENT)  
(12) 1-5/8" TO 110 FT LEVEL

## **APPENDIX C**

### **ADDITIONAL CALCULATIONS**

## Monopole Base Plate Connection

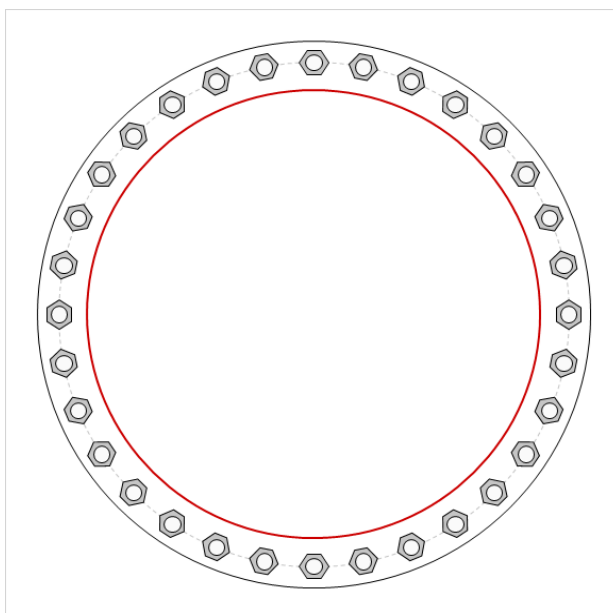


Site Info	
BU #	857014
Site Name	AND - HARTLAND BOU
Order #	530810, Rev. 2

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
$l_{ar}$ (in)	2.5

Applied Loads	
Moment (kip-ft)	1361.68
Axial Force (kips)	39.41
Shear Force (kips)	16.07

\*TIA-222-H Section 15.5 Applied



Connection Properties		Analysis Results	
<b>Anchor Rod Data</b>		<b>Anchor Rod Summary</b> <i>(units of kips, kip-in)</i>	
(32) 2-1/4" $\phi$ bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 71" BC		$Pu\_c = 29.99$	$\phi Pn\_c = 268.39$ <b>Stress Rating</b>
<b>Base Plate Data</b>		$Vu = 0.5$	$\phi Vn = 120.77$ <b>11.2%</b>
77" OD x 3.5" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)		$Mu = 0.82$	$\phi Mn = 128.14$ <b>Pass</b>
<b>Stiffener Data</b>		<b>Base Plate Summary</b>	
N/A		Max Stress (ksi):	3.86 (Flexural)
<b>Pole Data</b>		Allowable Stress (ksi):	54
63" x 0.4375" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)		Stress Rating:	<b>6.8%</b> <b>Pass</b>

## Drilled Pier Foundation

BU #: 857014  
 Site Name: HARTLAND - HARTLA  
 Order Number: 530810, Rev. 2

TIA-222 Revision: H  
 Tower Type: Monopole

Applied Loads		
	Comp.	Uplift
Moment (kip-ft)	1361.68	
Axial Force (kips)	39.42	
Shear Force (kips)	16.06	

Material Properties	
Concrete Strength, f <sub>c</sub> :	4 ksi
Rebar Strength, F <sub>y</sub> :	60 ksi
Tie Yield Strength, F <sub>yt</sub> :	40 ksi

Pier Design Data	
Depth	31 ft
Ext. Above Grade	1 ft
Pier Section 1	
From 1' above grade to 31' below grade	
Pier Diameter	8 ft
Rebar Quantity	48
Rebar Size	8
Clear Cover to Ties	4 in
Tie Size	5
Tie Spacing	in

Rebar & Pier Options

Embedded Pole Inputs

Belled Pier Inputs

Analysis Results		
Soil Lateral Check		
	Compression	Uplift
D <sub>v=0</sub> (ft from TOC)	8.51	-
Soil Safety Factor	15.16	-
Max Moment (kip-ft)	1466.13	-
Rating*	8.4%	-
Soil Vertical Check		
	Compression	Uplift
Skin Friction (kips)	927.21	-
End Bearing (kips)	1040.50	-
Weight of Concrete (kips)	266.95	-
Total Capacity (kips)	1967.71	-
Axial (kips)	306.37	-
Rating*	14.8%	-
Reinforced Concrete Flexure		
	Compression	Uplift
Critical Depth (ft from TOC)	8.29	-
Critical Moment (kip-ft)	1465.97	-
Critical Moment Capacity	7226.71	-
Rating*	19.3%	-
Reinforced Concrete Shear		
	Compression	Uplift
Critical Depth (ft from TOC)	24.48	-
Critical Shear (kip)	124.60	-
Critical Shear Capacity	870.89	-
Rating*	13.6%	-

Soil Interaction Rating*	14.8%
Structural Foundation Rating*	19.3%

\*Rating per TIA-222-H Section 15.5



Check Limitation	
Apply TIA-222-H Section 15.5:	<input checked="" type="checkbox"/>
N/A	<input type="checkbox"/>
Shear Design Options	
Check Shear along Depth of Pier:	<input checked="" type="checkbox"/>
Utilize Shear-Friction Methodology:	<input type="checkbox"/>

[Go to Soil Calculations](#)

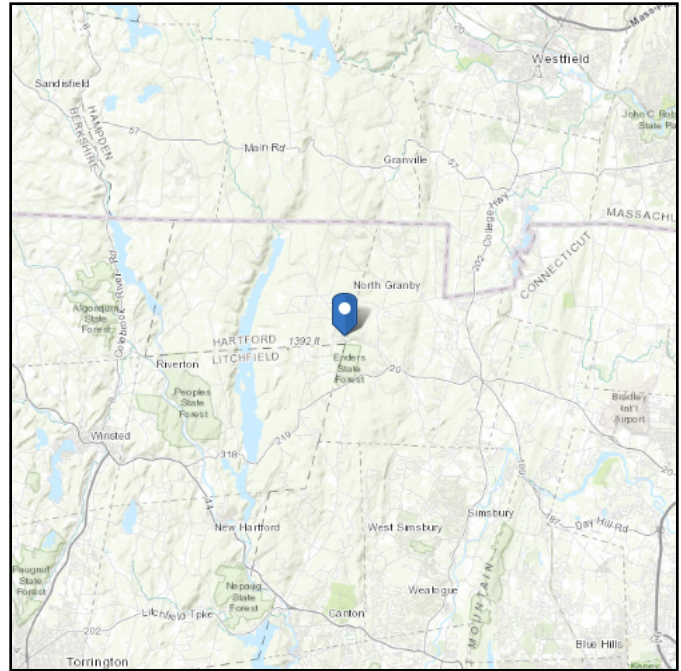
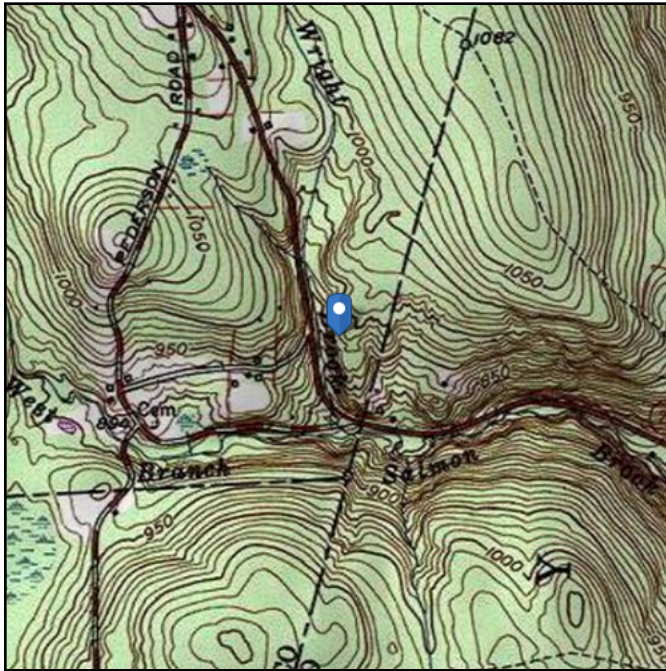
Soil Profile														
Groundwater Depth		25				# of Layers	8							
Layer	Top (ft)	Bottom (ft)	Thickness (ft)	Y <sub>soil</sub> (pcf)	Y <sub>concrete</sub> (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	6	6	105	150	0	28	0.000	0.000	0.00	0.00			Cohesionless
2	6	8	2	135	150	0	40	0.000	0.000	1.49	1.49			Cohesionless
3	8	10	2	122	150	0	34	0.000	0.000	1.26	1.26			Cohesionless
4	10	15	5	118	150	0	32	0.000	0.000	1.14	1.14			Cohesionless
5	15	20	5	118	150	0.5	0	0.275	0.275	0.50	0.50			Cohesive
6	20	25	5	135	150	0	40	0.000	0.000	3.21	3.21			Cohesionless
7	25	30	5	135	87.6	0	40	0.00	0.00	3.21	3.21			Cohesionless
8	30	31	1	135	87.6	0	40	0.00	0.00	3.39	3.39	27.6		Cohesionless

# ASCE 7 Hazards Report

**Address:**  
No Address at This  
Location

**Standard:** ASCE/SEI 7-10  
**Risk Category:** II  
**Soil Class:** D - Stiff Soil

**Elevation:** 928.17 ft (NAVD 88)  
**Latitude:** 41.977083  
**Longitude:** -72.887872



## Wind

### Results:

Wind Speed:	120 Vmph per the 2018 Connecticut Building Code
10-year MRI	76 Vmph
25-year MRI	85 Vmph
50-year MRI	90 Vmph
100-year MRI	97 Vmph

**Data Source:** ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, incorporating errata of March 12, 2014

**Date Accessed:** Wed Sep 30 2020

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

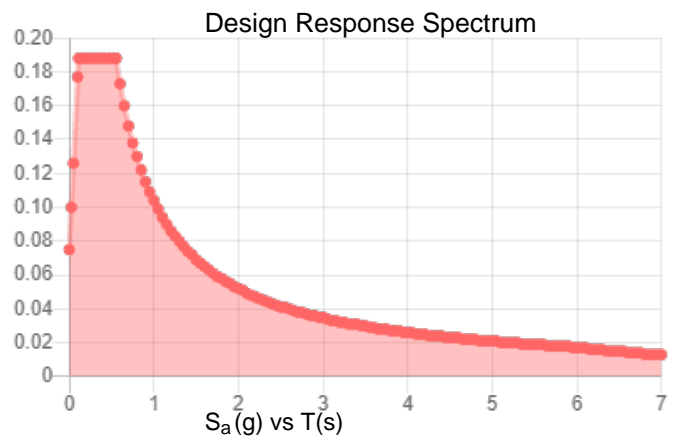
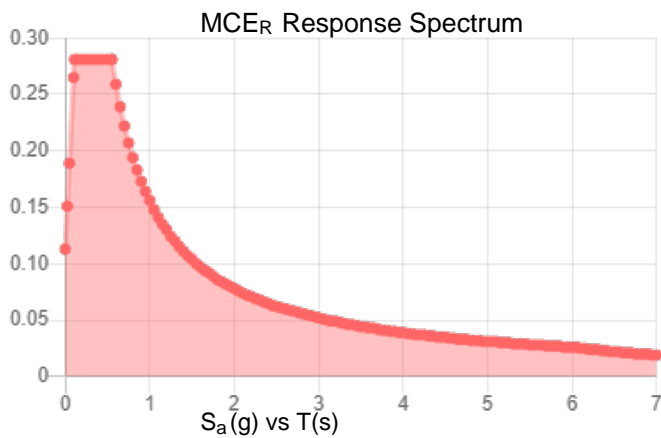
Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.

**Site Soil Class:** D - Stiff Soil

**Results:**

$S_S$ :	0.176	$S_{DS}$ :	0.188
$S_1$ :	0.065	$S_{D1}$ :	0.104
$F_a$ :	1.6	$T_L$ :	6
$F_v$ :	2.4	PGA :	0.086
$S_{MS}$ :	0.281	$PGA_M$ :	0.138
$S_{M1}$ :	0.156	$F_{PGA}$ :	1.6
		$I_e$ :	1

**Seismic Design Category** B



**Data Accessed:**

Wed Sep 30 2020

**Date Source:**

USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

**Results:**

Ice Thickness: 1.00 in.

Concurrent Temperature: 5 F

Gust Speed: 50 mph

**Data Source:** Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8

**Date Accessed:** Wed Sep 30 2020

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

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The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided "as is" and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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September 18, 2020



SAI Communications  
12 Industrial Way  
Salem NH, 03079

RE:      Site Number:                    CT1167 (LTE 2C/3C/4C/4TX4RX/5G)  
         FA Number:                    10105847  
         PACE Number:                  MRCTB048871  
         PT Number:                    2051A0WKHD  
         Site Name:                    HARTLAND - HARTLAND BOULEVARD  
         Site Address:                  350 Hartland Boulevard  
                                              East Hartland, CT 06027

To Whom It May Concern:

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

- (3) 7770 Antennas (55.0"x11.0"x5.0" - Wt. = 35 lbs. /each)
- (1) Squid Surge Arrestor (24.0"x9.7"  $\Phi$  - Wt. = 33 lbs. /each)
- **(2) DMP65R-BU6DA Antennas (71.2"x20.7"x7.7" - Wt. = 80 lbs. /each)**
- **(1) DMP65R-BU8DA Antennas (96.0"x20.7"x7.7" - Wt. = 96 lbs. /each)**
- **(2) OPA65R-BU6DA Antennas (71.2"x21.0"x7.8" - Wt. = 61 lbs. /each)**
- **(1) OPA65R-BU8DA Antennas (96.0"x21.0"x7.8" - Wt. = 77 lbs. /each)**
- **(3) B14 4478 RRH's (18.1"x13.4"x8.3" - Wt. = 60 lbs. /each)**
- **(3) 4449 B5/B12 RRH's (17.9"x13.2"x9.5" - Wt. = 71 lbs. /each)**
- **(3) B2/B66A 8843 RRH's (14.9"x13.2"x10.9" - Wt. = 72 lbs. /each)**
- **(1) Squid Surge Arrestor (24.0"x9.7"  $\Phi$  - Wt. = 33 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 August 27, 2020.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-H, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2015 with 2018 Connecticut State Building Code, and AT&T Mount Technical Directive – R13.
- HDG considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-H and Appendix N of the Connecticut State Building Code, the max basic wind speed for this site is equal to 120 mph with a max basic wind speed with ice of 50 mph and a max ice thickness of 1.5 in. An escalated ice thickness of 1.71 in was used for this analysis.
- HDG considers this site to be exposure category B; tower is located in an urban/suburban or wooded area with numerous closely spaced obstructions.
- HDG considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- The mount has been analyzed with load combinations consisting of 250 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 3.
- The mount has been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.
- The existing mount is secured to the existing monopole with ring mount. 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 handrail kit, SitePro1 P/N HRK12 (or approved equal).**

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
<b>Existing (LTE 2C/3C/4C/4TX4RX/5G) Mount Rating</b>	48	LC1	120%	<b>FAIL</b>
<b>Modified (LTE 2C/3C/4C/4TX4RX/5G) Mount Rating</b>	13	LC10	98%	<b>PASS</b>

Reference Documents:

- Mount mapping report prepared by ProVertic LLC.

This determination was based on the following limitations and assumptions:

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

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

Respectfully Submitted,  
Hudson Design Group LLC



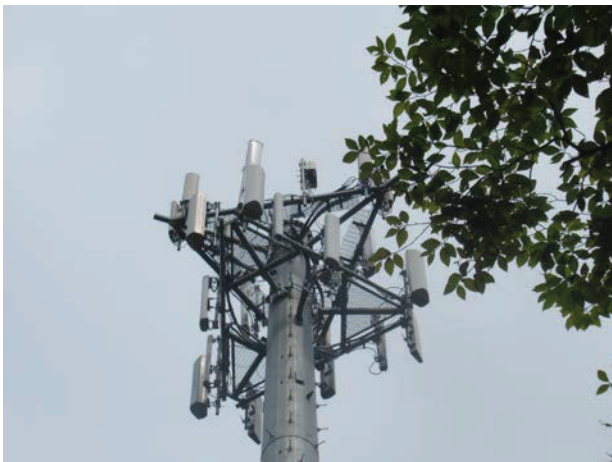
Michael Cabral  
Vice President



Daniel P. Hamm, PE  
Principal

**FIELD PHOTOS:**







**HUDSON**  
Design Group LLC

## Wind & Ice Calculations



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### 2.6.5.2 Velocity Pressure Coeff:

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

$K_z =$  **1.041**

$z =$  120 (ft)  
 $z_g =$  1200 (ft)  
 $\alpha =$  7.0

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

Table 2-4

Exposure	$Z_g$	$\alpha$	$K_{zmin}$	$K_z$
B	1200 ft	7.0	0.70	0.9
C	900 ft	9.5	0.85	1.0
D	700 ft	11.5	1.03	1.1

### 2.6.6.2 Topographic Factor:

Table 2-5

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

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

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

$$K_{zt} = \text{\#DIV/0!}$$

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

$$\text{Category} = 1$$

$$K_h = \text{\#DIV/0!}$$

$$K_c = 0.9 \text{ (from Table 2-4)}$$

$$K_t = \text{(from Table 2-5)}$$

$$f = \text{(from Table 2-5)}$$

$$z = 120$$

$$z_s = 950 \text{ (Mean elevation of base of structure above sea level)}$$

$$H = \text{(Ht. of the crest above surrounding terrain)}$$

$$K_{zt} = 1.00 \text{ (from 2.6.6.2.1)}$$

$$K_e = 0.97 \text{ (from 2.6.8)}$$

### 2.6.10 Design Ice Thickness

Max Ice Thickness =

Importance Factor =

$$t_i = 1.50 \text{ in}$$

$$I = 1.0 \text{ (from Table 2-3)}$$

$$K_{iz} = 1.14 \text{ (from Sec. 2.6.10)}$$

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

$$t_{iz} = 1.71 \text{ in}$$



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## 2.6.9 Gust Effect Factor

### 2.6.9.1 Self Supporting Lattice Structures

$G_h = 1.0$  Latticed Structures > 600 ft

$G_h = 0.85$  Latticed Structures 450 ft or less

$G_h = 0.85 + 0.15 [h/150 - 3.0]$

$h =$  ht. of structure

$h =$  124

$G_h =$  0.85

### 2.6.9.2 Guyed Masts

$G_h =$  0.85

### 2.6.9.3 Pole Structures

$G_h =$  1.1

### 2.6.9 Appurtenances

$G_h =$  1.0

### 2.6.9.4 Structures Supported on Other Structures

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

$G_h =$  1.35

$G_h =$  1.00

## 2.6.11.2 Design Wind Force on Appurtenances

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

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

$q_z =$  35.23

$q_z (ice) =$  6.12

$q_z (30) =$  2.20

$K_z =$  1.041 (from 2.6.5.2)

$K_{zt} =$  1.0 (from 2.6.6.2.1)

$K_s =$  1.0 (from 2.6.7)

$K_e =$  0.97 (from 2.6.8)

$K_d =$  0.95 (from Table 2-2)

$V_{max} =$  120 mph (Ultimate Wind Speed)

$V_{max (ice)} =$  50 mph

$V_{30} =$  30 mph

Table 2-2

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

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**Determine  $C_a$ :**

**Table 2-9**

Force Coefficients ( $C_a$ ) for Appurtenances				
Member Type		Aspect Ratio $\leq 2.5$	Aspect Ratio = 7	Aspect Ratio $\geq 25$
		$C_a$	$C_a$	$C_a$
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
	$39 \leq C \leq 78$ (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 = 1.71 in      Angle = 0 (deg)      Equivalent Angle = 180 (deg)

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	$C_a$	Force (lbs)	Force (lbs) (w/ Ice)	Force (lbs) (30 mph)
7770 Antenna	55.0	11.0	5.0	4.20	5.00	1.31	194	47	12
OPA65R-BU8DA Antenna	96.0	21.0	7.8	14.00	4.57	1.29	637	133	40
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	4.64	1.30	630	132	39
OPA65R-BU6DA Antenna	71.2	21.0	7.8	10.38	3.39	1.24	453	96	28
DMP65R-BU8DA Antenna	71.2	20.0	7.7	9.89	3.56	1.25	434	93	27
B14 4478 RRH	18.1	8.3	13.4	1.04	2.18	1.20	44	13	3
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	4.36	1.28	24	9	1
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.20	48	13	3
B2/B66A 8843 RRH (Shielded)	14.9	5.5	13.2	0.56	2.73	1.21	24	8	2
4449 B5/B12 RRH	17.9	13.2	9.5	1.64	1.36	1.20	69	18	4
4449 B5/B12 RRH (Shielded)	17.9	0.0	9.5	0.00	0.00	1.20	0	4	0
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	40	11	2
2" Pipe	2.4	12.0		0.20	0.20	1.20	8	5	1
2-1/2x2-1/2 Angle	2.5	12.0		0.21	0.21	2.00	15	8	1
HSS 4x4	4.0	12.0		0.33	0.33	1.25	15	6	1

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# WIND LOADS

Angle = 30 (deg)

Ice Thickness = 1.71 in.

Equivalent Angle = 210 (deg)

## WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	194	103	171
OPA65R-BU8DA Antenna	96.0	21.0	7.8	14.00	5.20	4.57	12.31	1.29	1.58	637	289	550
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	630	286	544
OPA65R-BU6DA Antenna	71.2	21.0	7.8	10.38	3.86	3.39	9.13	1.24	1.47	453	200	390
DMP65R-BU8DA Antenna	71.2	20.0	7.7	9.89	3.81	3.56	9.25	1.25	1.47	434	198	375
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	44	71	51
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	24	71	35
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	48	58	50
B2/B66A 8843 RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	24	58	32
4449 B5/B12 RRH	17.9	13.2	9.5	1.64	1.18	1.36	1.88	1.20	1.20	69	50	65
4449 B5/B12 RRH (Shielded)	17.9	6.6	9.5	0.82	1.18	2.71	1.88	1.21	1.20	35	50	39

## WIND LOADS WITH ICE:

7770 Antenna	58.4	14.4	8.4	5.85	3.41	4.05	6.94	1.27	1.40	45	29	41
OPA65R-BU8DA Antenna	99.4	24.4	11.2	16.85	7.74	4.07	8.87	1.27	1.46	131	69	115
DMP65R-BU8DA Antenna	99.4	24.1	11.1	16.65	7.67	4.12	8.95	1.27	1.46	130	69	114
OPA65R-BU6DA Antenna	74.6	24.4	11.2	12.65	5.81	3.06	6.65	1.22	1.38	95	49	83
DMP65R-BU8DA Antenna	74.6	23.4	11.1	12.13	5.76	3.19	6.71	1.23	1.39	91	49	81
B14 4478 RRH	21.5	11.7	16.8	1.75	2.51	1.84	1.28	1.20	1.20	13	18	14
B14 4478 RRH (Shielded)	21.5	5.9	16.8	0.87	2.51	3.67	1.28	1.25	1.20	7	18	10
B2/B66A 8843 RRH	18.3	14.3	16.6	1.82	2.11	1.28	1.10	1.20	1.20	13	16	14
B2/B66A 8843 RRH (Shielded)	18.3	7.2	16.6	0.91	2.11	2.56	1.10	1.20	1.20	7	16	9
4449 B5/B12 RRH	21.3	16.6	12.9	2.46	1.91	1.28	1.65	1.20	1.20	18	14	17
4449 B5/B12 RRH (Shielded)	21.3	8.3	12.9	1.23	1.91	2.57	1.65	1.20	1.20	9	14	10

## WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	12	6	11
OPA65R-BU8DA Antenna	96.0	21.0	7.8	14.00	5.20	4.57	12.31	1.29	1.58	40	18	34
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	39	18	34
OPA65R-BU6DA Antenna	71.2	21.0	7.8	10.38	3.86	3.39	9.13	1.24	1.47	28	12	24
DMP65R-BU8DA Antenna	71.2	20.0	7.7	9.89	3.81	3.56	9.25	1.25	1.47	27	12	23
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	4	3
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	1	4	2
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	3	4	3
B2/B66A 8843 RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	2	4	2
4449 B5/B12 RRH	17.9	13.2	9.5	1.64	1.18	1.36	1.88	1.20	1.20	4	3	4
4449 B5/B12 RRH (Shielded)	17.9	6.6	9.5	0.82	1.18	2.71	1.88	1.21	1.20	2	3	2

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WIND LOADS

Angle = 60 (deg)

Ice Thickness = 1.71 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)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	194	103	126
OPA65R-BU8DA Antenna	96.0	21.0	7.8	14.00	5.20	4.57	12.31	1.29	1.58	637	289	376
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	630	286	372
OPA65R-BU6DA Antenna	71.2	21.0	7.8	10.38	3.86	3.39	9.13	1.24	1.47	453	200	263
DMP65R-BU8DA Antenna	71.2	20.0	7.7	9.89	3.81	3.56	9.25	1.25	1.47	434	198	257
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	44	71	64
B14 4478 RRH (Shielded)	18.1	6.2	13.4	0.78	1.68	2.91	1.35	1.22	1.20	34	71	62
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	48	58	55
B2/B66A 8843 RRH (Shielded)	14.9	8.2	13.2	0.85	1.37	1.82	1.13	1.20	1.20	36	58	52
4449 B5/B12 RRH	17.9	13.2	9.5	1.64	1.18	1.36	1.88	1.20	1.20	69	50	55
4449 B5/B12 RRH (Shielded)	17.9	9.9	9.5	1.23	1.18	1.81	1.88	1.20	1.20	52	50	50

WIND LOADS WITH ICE:

7770 Antenna	58.4	14.4	8.4	5.85	3.41	4.05	6.94	1.27	1.40	45	29	33
OPA65R-BU8DA Antenna	99.4	24.4	11.2	16.85	7.74	4.07	8.87	1.27	1.46	131	69	85
DMP65R-BU8DA Antenna	99.4	24.1	11.1	16.65	7.67	4.12	8.95	1.27	1.46	130	69	84
OPA65R-BU6DA Antenna	74.6	24.4	11.2	12.65	5.81	3.06	6.65	1.22	1.38	95	49	61
DMP65R-BU8DA Antenna	74.6	23.4	11.1	12.13	5.76	3.19	6.71	1.23	1.39	91	49	59
B14 4478 RRH	21.5	11.7	16.8	1.75	2.51	1.84	1.28	1.20	1.20	13	18	17
B14 4478 RRH (Shielded)	21.5	8.8	16.8	1.31	2.51	2.45	1.28	1.20	1.20	10	18	16
B2/B66A 8843 RRH	18.3	14.3	16.6	1.82	2.11	1.28	1.10	1.20	1.20	13	16	15
B2/B66A 8843 RRH (Shielded)	18.3	10.7	16.6	1.37	2.11	1.71	1.10	1.20	1.20	10	16	14
4449 B5/B12 RRH	21.3	16.6	12.9	2.46	1.91	1.28	1.65	1.20	1.20	18	14	15
4449 B5/B12 RRH (Shielded)	21.3	12.5	12.9	1.84	1.91	1.71	1.65	1.20	1.20	14	14	14

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	12	6	8
OPA65R-BU8DA Antenna	96.0	21.0	7.8	14.00	5.20	4.57	12.31	1.29	1.58	40	18	23
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	39	18	23
OPA65R-BU6DA Antenna	71.2	21.0	7.8	10.38	3.86	3.39	9.13	1.24	1.47	28	12	16
DMP65R-BU8DA Antenna	71.2	20.0	7.7	9.89	3.81	3.56	9.25	1.25	1.47	27	12	16
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	4	4
B14 4478 RRH (Shielded)	18.1	6.2	13.4	0.78	1.68	2.91	1.35	1.22	1.20	2	4	4
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	3	4	3
B2/B66A 8843 RRH (Shielded)	14.9	8.2	13.2	0.85	1.37	1.82	1.13	1.20	1.20	2	4	3
4449 B5/B12 RRH	17.9	13.2	9.5	1.64	1.18	1.36	1.88	1.20	1.20	4	3	3
4449 B5/B12 RRH (Shielded)	17.9	9.9	9.5	1.23	1.18	1.81	1.88	1.20	1.20	3	3	3

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# WIND LOADS

Angle = 90 (deg)

Ice Thickness = 1.71 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)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	194	103	103
OPA65R-BU8DA Antenna	96.0	21.0	7.8	14.00	5.20	4.57	12.31	1.29	1.58	637	289	289
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	630	286	286
OPA65R-BU6DA Antenna	71.2	21.0	7.8	10.38	3.86	3.39	9.13	1.24	1.47	453	200	200
DMP65R-BU8DA Antenna	71.2	20.0	7.7	9.89	3.81	3.56	9.25	1.25	1.47	434	198	198
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	44	71	71
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	24	71	71
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	48	58	58
B2/B66A 8843 RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	24	58	58
4449 B5/B12 RRH	17.9	13.2	9.5	1.64	1.18	1.36	1.88	1.20	1.20	69	50	50
4449 B5/B12 RRH (Shielded)	17.9	0.0	9.5	0.00	1.18	0.00	1.88	1.20	1.20	0	50	50

## WIND LOADS WITH ICE:

7770 Antenna	58.4	14.4	8.4	5.85	3.41	4.05	6.94	1.27	1.40	45	29	29
OPA65R-BU8DA Antenna	99.4	24.4	11.2	16.85	7.74	4.07	8.87	1.27	1.46	131	69	69
DMP65R-BU8DA Antenna	99.4	24.1	11.1	16.65	7.67	4.12	8.95	1.27	1.46	130	69	69
OPA65R-BU6DA Antenna	74.6	24.4	11.2	12.65	5.81	3.06	6.65	1.22	1.38	95	49	49
DMP65R-BU8DA Antenna	74.6	23.4	11.1	12.13	5.76	3.19	6.71	1.23	1.39	91	49	49
B14 4478 RRH	21.5	11.7	16.8	1.75	2.51	1.84	1.28	1.20	1.20	13	18	18
B14 4478 RRH (Shielded)	21.5	7.6	16.8	1.13	2.51	2.84	1.28	1.22	1.20	8	18	18
B2/B66A 8843 RRH	18.3	14.3	16.6	1.82	2.11	1.28	1.10	1.20	1.20	13	16	16
B2/B66A 8843 RRH (Shielded)	18.3	8.9	16.6	1.13	2.11	2.07	1.10	1.20	1.20	8	16	16
4449 B5/B12 RRH	21.3	16.6	12.9	2.46	1.91	1.28	1.65	1.20	1.20	18	14	14
4449 B5/B12 RRH (Shielded)	21.3	3.4	12.9	0.51	1.91	6.24	1.65	1.37	1.20	4	14	14

## WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	12	6	6
OPA65R-BU8DA Antenna	96.0	21.0	7.8	14.00	5.20	4.57	12.31	1.29	1.58	40	18	18
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	39	18	18
OPA65R-BU6DA Antenna	71.2	21.0	7.8	10.38	3.86	3.39	9.13	1.24	1.47	28	12	12
DMP65R-BU8DA Antenna	71.2	20.0	7.7	9.89	3.81	3.56	9.25	1.25	1.47	27	12	12
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	4	4
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	1	4	4
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	3	4	4
B2/B66A 8843 RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	2	4	4
4449 B5/B12 RRH	17.9	13.2	9.5	1.64	1.18	1.36	1.88	1.20	1.20	4	3	3
4449 B5/B12 RRH (Shielded)	17.9	0.0	9.5	0.00	1.18	0.00	1.88	1.20	1.20	0	3	3

Date: 9/21/2020  
 Project Name: HARTLAND - HARTLAND BOULEVARD  
 Project No.: CT1167  
 Designed By: ID Checked By: MSC



WIND LOADS

Angle = 120 (deg)

Ice Thickness = 1.71 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)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	194	103	126
OPA65R-BU8DA Antenna	96.0	21.0	7.8	14.00	5.20	4.57	12.31	1.29	1.58	637	289	376
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	630	286	372
OPA65R-BU6DA Antenna	71.2	21.0	7.8	10.38	3.86	3.39	9.13	1.24	1.47	453	200	263
DMP65R-BU8DA Antenna	71.2	20.0	7.7	9.89	3.81	3.56	9.25	1.25	1.47	434	198	257
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	44	71	64
B14 4478 RRH (Shielded)	18.1	6.2	13.4	0.78	1.68	2.91	1.35	1.22	1.20	34	71	62
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	48	58	55
B2/B66A 8843 RRH (Shielded)	14.9	8.2	13.2	0.85	1.37	1.82	1.13	1.20	1.20	36	58	52
4449 B5/B12 RRH	17.9	13.2	9.5	1.64	1.18	1.36	1.88	1.20	1.20	69	50	55
4449 B5/B12 RRH (Shielded)	17.9	9.9	9.5	1.23	1.18	1.81	1.88	1.20	1.20	52	50	50

WIND LOADS WITH ICE:

7770 Antenna	58.4	14.4	8.4	5.85	3.41	4.05	6.94	1.27	1.40	45	29	33
OPA65R-BU8DA Antenna	99.4	24.4	11.2	16.85	7.74	4.07	8.87	1.27	1.46	131	69	85
DMP65R-BU8DA Antenna	99.4	24.1	11.1	16.65	7.67	4.12	8.95	1.27	1.46	130	69	84
OPA65R-BU6DA Antenna	74.6	24.4	11.2	12.65	5.81	3.06	6.65	1.22	1.38	95	49	61
DMP65R-BU8DA Antenna	74.6	23.4	11.1	12.13	5.76	3.19	6.71	1.23	1.39	91	49	59
B14 4478 RRH	21.5	11.7	16.8	1.75	2.51	1.84	1.28	1.20	1.20	13	18	17
B14 4478 RRH (Shielded)	21.5	8.8	16.8	1.31	2.51	2.45	1.28	1.20	1.20	10	18	16
B2/B66A 8843 RRH	18.3	14.3	16.6	1.82	2.11	1.28	1.10	1.20	1.20	13	16	15
B2/B66A 8843 RRH (Shielded)	18.3	10.7	16.6	1.37	2.11	1.71	1.10	1.20	1.20	10	16	14
4449 B5/B12 RRH	21.3	16.6	12.9	2.46	1.91	1.28	1.65	1.20	1.20	18	14	15
4449 B5/B12 RRH (Shielded)	21.3	12.5	12.9	1.84	1.91	1.71	1.65	1.20	1.20	14	14	14

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	12	6	8
OPA65R-BU8DA Antenna	96.0	21.0	7.8	14.00	5.20	4.57	12.31	1.29	1.58	40	18	23
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	39	18	23
OPA65R-BU6DA Antenna	71.2	21.0	7.8	10.38	3.86	3.39	9.13	1.24	1.47	28	12	16
DMP65R-BU8DA Antenna	71.2	20.0	7.7	9.89	3.81	3.56	9.25	1.25	1.47	27	12	16
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	4	4
B14 4478 RRH (Shielded)	18.1	6.2	13.4	0.78	1.68	2.91	1.35	1.22	1.20	2	4	4
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	3	4	3
B2/B66A 8843 RRH (Shielded)	14.9	8.2	13.2	0.85	1.37	1.82	1.13	1.20	1.20	2	4	3
4449 B5/B12 RRH	17.9	13.2	9.5	1.64	1.18	1.36	1.88	1.20	1.20	4	3	3
4449 B5/B12 RRH (Shielded)	17.9	9.9	9.5	1.23	1.18	1.81	1.88	1.20	1.20	3	3	3

Date: 9/21/2020  
 Project Name: HARTLAND - HARTLAND BOULEVARD  
 Project No.: CT1167  
 Designed By: ID Checked By: MSC



# WIND LOADS

Angle = 150 (deg)

Ice Thickness = 1.71 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)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	194	103	171
OPA65R-BU8DA Antenna	96.0	21.0	7.8	14.00	5.20	4.57	12.31	1.29	1.58	637	289	550
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	630	286	544
OPA65R-BU6DA Antenna	71.2	21.0	7.8	10.38	3.86	3.39	9.13	1.24	1.47	453	200	390
DMP65R-BU8DA Antenna	71.2	20.0	7.7	9.89	3.81	3.56	9.25	1.25	1.47	434	198	375
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	44	71	51
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	24	71	35
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	48	58	50
B2/B66A 8843 RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	24	58	32
4449 B5/B12 RRH	17.9	13.2	9.5	1.64	1.18	1.36	1.88	1.20	1.20	69	50	65
4449 B5/B12 RRH (Shielded)	17.9	6.6	9.5	0.82	1.18	2.71	1.88	1.21	1.20	35	50	39

## WIND LOADS WITH ICE:

7770 Antenna	58.4	14.4	8.4	5.85	3.41	4.05	6.94	1.27	1.40	45	29	41
OPA65R-BU8DA Antenna	99.4	24.4	11.2	16.85	7.74	4.07	8.87	1.27	1.46	131	69	115
DMP65R-BU8DA Antenna	99.4	24.1	11.1	16.65	7.67	4.12	8.95	1.27	1.46	130	69	114
OPA65R-BU6DA Antenna	74.6	24.4	11.2	12.65	5.81	3.06	6.65	1.22	1.38	95	49	83
DMP65R-BU8DA Antenna	74.6	23.4	11.1	12.13	5.76	3.19	6.71	1.23	1.39	91	49	81
B14 4478 RRH	21.5	11.7	16.8	1.75	2.51	1.84	1.28	1.20	1.20	13	18	14
B14 4478 RRH (Shielded)	21.5	5.9	16.8	0.87	2.51	3.67	1.28	1.25	1.20	7	18	10
B2/B66A 8843 RRH	18.3	14.3	16.6	1.82	2.11	1.28	1.10	1.20	1.20	13	16	14
B2/B66A 8843 RRH (Shielded)	18.3	7.2	16.6	0.91	2.11	2.56	1.10	1.20	1.20	7	16	9
4449 B5/B12 RRH	21.3	16.6	12.9	2.46	1.91	1.28	1.65	1.20	1.20	18	14	17
4449 B5/B12 RRH (Shielded)	21.3	8.3	12.9	1.23	1.91	2.57	1.65	1.20	1.20	9	14	10

## WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	12	6	11
OPA65R-BU8DA Antenna	96.0	21.0	7.8	14.00	5.20	4.57	12.31	1.29	1.58	40	18	34
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	39	18	34
OPA65R-BU6DA Antenna	71.2	21.0	7.8	10.38	3.86	3.39	9.13	1.24	1.47	28	12	24
DMP65R-BU8DA Antenna	71.2	20.0	7.7	9.89	3.81	3.56	9.25	1.25	1.47	27	12	23
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	4	3
B14 4478 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	1	4	2
B2/B66A 8843 RRH	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	3	4	3
B2/B66A 8843 RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	2	4	2
4449 B5/B12 RRH	17.9	13.2	9.5	1.64	1.18	1.36	1.88	1.20	1.20	4	3	4
4449 B5/B12 RRH (Shielded)	17.9	6.6	9.5	0.82	1.18	2.71	1.88	1.21	1.20	2	3	2



Date: 9/21/2020

Project Name: HARTLAND - HARTLAND BOULEVARE

Project No.: CT1167

Designed By: ID Checked By: MSC



**HUDSON**  
Design Group LLC

### ICE WEIGHT CALCULATIONS

Thickness of ice: 1.71 in.  
Density of ice: 56 pcf

#### 7770 Antenna

Weight of ice based on total radial SF area:

Height (in): 55.0  
Width (in): 11.0  
Depth (in): 5.0

Total weight of ice on object: 132 lbs

Weight of object: 35.0 lbs

Combined weight of ice and object: 167 lbs

#### OPA65R-BU8DA Antenna

Weight of ice based on total radial SF area:

Height (in): 96.0  
Width (in): 21.0  
Depth (in): 7.8

Total weight of ice on object: 403 lbs

Weight of object: 77.0 lbs

Combined weight of ice and object: 480 lbs

#### DMP65R-BU8DA Antenna

Weight of ice based on total radial SF area:

Height (in): 96.0  
Width (in): 20.7  
Depth (in): 7.7

Total weight of ice on object: 398 lbs

Weight of object: 96.0 lbs

Combined weight of ice and object: 494 lbs

#### OPA65R-BU6DA Antenna

Weight of ice based on total radial SF area:

Height (in): 71.2  
Width (in): 21.0  
Depth (in): 7.8

Total weight of ice on object: 299 lbs

Weight of object: 61.0 lbs

Combined weight of ice and object: 360 lbs

#### DMP65R-BU6DA Antenna

Weight of ice based on total radial SF area:

Height (in): 71.2  
Width (in): 20.7  
Depth (in): 7.7

Total weight of ice on object: 295 lbs

Weight of object: 80.0 lbs

Combined weight of ice and object: 375 lbs

#### B14 4478 RRH

Weight of ice based on total radial SF area:

Height (in): 18.1  
Width (in): 13.4  
Depth (in): 8.3

Total weight of ice on object: 55 lbs

Weight of object: 60.0 lbs

Combined weight of ice and object: 115 lbs

#### B2/B66A 8843 RRH

Weight of ice based on total radial SF area:

Height (in): 14.9  
Width (in): 13.2  
Depth (in): 10.9

Total weight of ice on object: 49 lbs

Weight of object: 72.0 lbs

Combined weight of ice and object: 121 lbs

#### 4449 B5/B12 RRH

Weight of ice based on total radial SF area:

Height (in): 17.9  
Width (in): 13.2  
Depth (in): 9.5

Total weight of ice on object: 56 lbs

Weight of object: 71.0 lbs

Combined weight of ice and object: 127 lbs

#### 2" pipe

Per foot weight of ice:

diameter (in): 2.38

Per foot weight of ice on object: 9 plf

#### Squid Surge Arrestor

Weight of ice based on total radial SF area:

Depth (in): 24.0  
Diameter(in): 9.7

Total weight of ice on object: 48 lbs

Weight of object: 33 lbs

Combined weight of ice and object: 81 lbs

#### HSS 4x4

Weight of ice based on total radial SF area:

Height (in): 4  
Width (in): 4

Per foot weight of ice on object: 15 plf

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

Weight of ice based on total radial SF area:

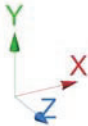
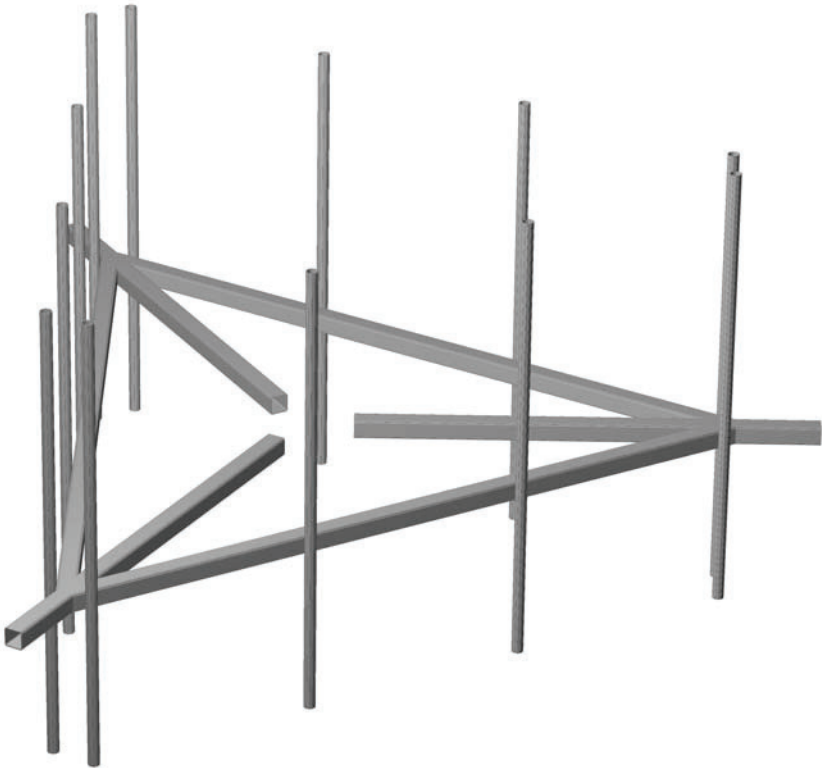
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Width (in): 2.5

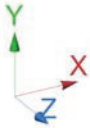
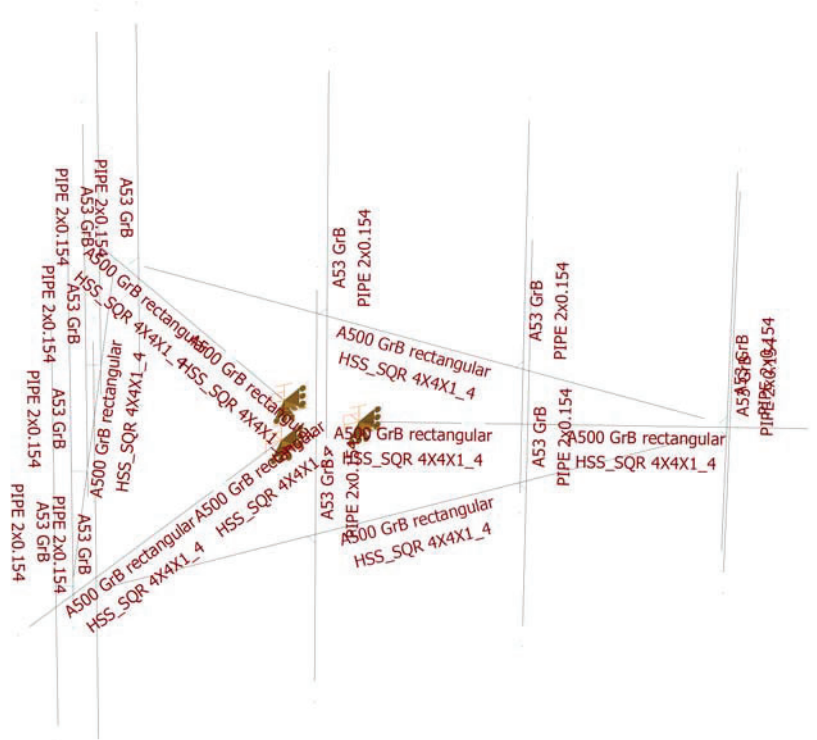
Per foot weight of ice on object: 11 plf

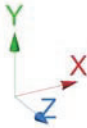
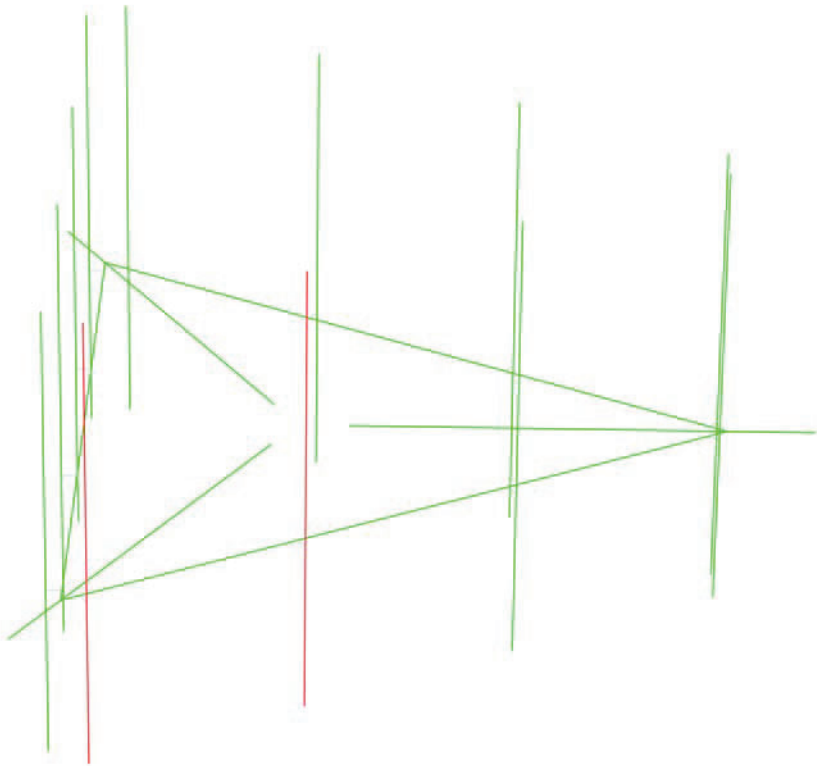


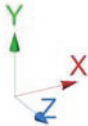
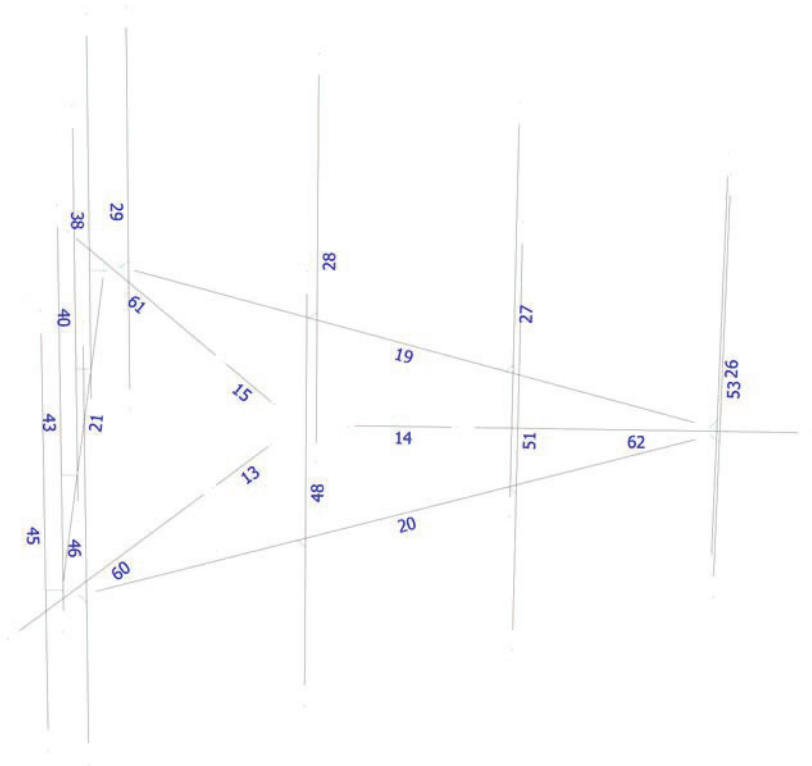
**HUDSON**  
Design Group LLC

**Mount Calculations  
(Existing Conditions)**









Current Date: 9/22/2020 12:36 PM

Units system: English

File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1167\CT1167.retx

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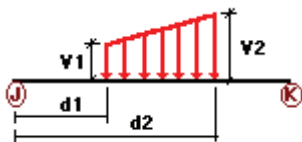
### GLOSSARY

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



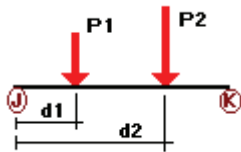
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DL	19	y	-0.01	0.00	0.00	No	0.00	No
	20	y	-0.01	0.00	0.00	No	0.00	No
	21	y	-0.01	0.00	0.00	No	0.00	No
	60	y	-0.01	-0.01	40.00	Yes	75.00	Yes
	62	y	-0.01	-0.01	40.00	Yes	75.00	Yes
	61	y	-0.01	-0.01	40.00	Yes	75.00	Yes
W0	13	z	-0.015	0.00	0.00	No	0.00	No
	14	z	-0.015	0.00	0.00	No	0.00	No
	15	z	-0.015	0.00	0.00	No	0.00	No
	19	z	-0.015	0.00	0.00	No	0.00	No
	20	z	-0.015	0.00	0.00	No	0.00	No
	21	z	-0.015	0.00	0.00	No	0.00	No
	26	z	-0.008	0.00	0.00	No	0.00	No
	29	z	-0.008	0.00	0.00	No	0.00	No
	38	z	-0.008	0.00	0.00	No	0.00	No



W30	40	z	-0.008	0.00	0.00	No	0.00	No
	43	z	-0.008	0.00	0.00	No	0.00	No
	27	z	-0.008	0.00	0.00	No	0.00	No
	45	z	-0.008	0.00	0.00	No	0.00	No
	28	z	-0.008	0.00	0.00	No	0.00	No
	46	z	-0.008	0.00	0.00	No	0.00	No
	48	z	-0.008	0.00	0.00	No	0.00	No
	51	z	-0.008	0.00	0.00	No	0.00	No
	53	z	-0.008	0.00	0.00	No	0.00	No
	60	z	-0.015	0.00	0.00	No	0.00	No
	62	z	-0.015	0.00	0.00	No	0.00	No
	61	z	-0.015	0.00	0.00	No	0.00	No
	13	x	-0.015	0.00	0.00	No	0.00	No
	14	x	-0.015	0.00	0.00	No	0.00	No
	15	x	-0.015	0.00	0.00	No	0.00	No
	19	x	-0.015	0.00	0.00	No	0.00	No
	26	x	-0.008	0.00	0.00	No	0.00	No
	29	x	-0.008	0.00	0.00	No	0.00	No
	38	x	-0.008	0.00	0.00	No	0.00	No
	40	x	-0.008	0.00	0.00	No	0.00	No
	43	x	-0.008	0.00	0.00	No	0.00	No
	27	x	-0.008	0.00	0.00	No	0.00	No
	45	x	-0.008	0.00	0.00	No	0.00	No
	28	x	-0.008	0.00	0.00	No	0.00	No
	46	x	-0.008	0.00	0.00	No	0.00	No
	48	x	-0.008	0.00	0.00	No	0.00	No
	51	x	-0.008	0.00	0.00	No	0.00	No
	53	x	-0.008	0.00	0.00	No	0.00	No
	60	x	-0.015	0.00	0.00	No	0.00	No
	62	x	-0.015	0.00	0.00	No	0.00	No
Di	61	x	-0.015	0.00	0.00	No	0.00	No
	13	y	-0.015	0.00	0.00	No	0.00	No
	14	y	-0.015	0.00	0.00	No	0.00	No
	15	y	-0.015	0.00	0.00	No	0.00	No
	19	y	-0.015	0.00	0.00	No	0.00	No
	20	y	-0.015	0.00	0.00	No	0.00	No
	21	y	-0.015	0.00	0.00	No	0.00	No
	26	y	-0.009	0.00	0.00	No	0.00	No
	29	y	-0.009	0.00	0.00	No	0.00	No
	38	y	-0.009	0.00	0.00	No	0.00	No
	40	y	-0.009	0.00	0.00	No	0.00	No
	43	y	-0.009	0.00	0.00	No	0.00	No
	27	y	-0.009	0.00	0.00	No	0.00	No
	45	y	-0.009	0.00	0.00	No	0.00	No
	28	y	-0.009	0.00	0.00	No	0.00	No
	46	y	-0.009	0.00	0.00	No	0.00	No
	48	y	-0.009	0.00	0.00	No	0.00	No
	51	y	-0.009	0.00	0.00	No	0.00	No
	53	y	-0.009	0.00	0.00	No	0.00	No
	60	y	-0.015	0.00	0.00	No	0.00	No
	62	y	-0.015	0.00	0.00	No	0.00	No
	61	y	-0.015	0.00	0.00	No	0.00	No

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## Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	26	y	-0.04	0.50	No
		y	-0.04	5.50	No
		y	-0.071	4.00	No
	29	y	-0.018	0.50	No
		y	-0.018	4.50	No
		y	-0.019	3.00	No
	38	y	-0.04	0.50	No
		y	-0.04	5.50	No
		y	-0.071	4.00	No
	40	y	-0.031	0.50	No
		y	-0.031	5.50	No
		y	-0.06	4.00	No
	27	y	-0.072	4.00	No
		y	-0.031	0.50	No
		y	-0.031	5.50	No
		y	-0.06	4.00	No
	45	y	-0.072	4.00	No
		y	-0.018	0.50	No
		y	-0.018	4.50	No
	46	y	-0.019	3.00	No
		y	-0.048	0.50	No
		y	-0.048	7.50	No
	48	y	-0.071	4.00	No
		y	-0.039	0.50	No
		y	-0.039	7.50	No
		y	-0.06	4.00	No
W0	53	y	-0.072	4.00	No
		y	-0.018	0.50	No
		y	-0.018	4.50	No
	26	y	-0.019	3.00	No
		z	-0.129	0.50	No
		z	-0.129	5.50	No
	29	z	-0.05	4.00	No
		z	-0.063	0.50	No
		z	-0.063	4.50	No
	38	z	-0.032	3.00	No
		z	-0.129	0.50	No
		z	-0.129	5.50	No
	40	z	-0.05	4.00	No
		z	-0.132	0.50	No
		z	-0.132	5.50	No
	27	z	-0.062	4.00	No
		z	-0.132	0.50	No
		z	-0.132	5.50	No
	45	z	-0.062	4.00	No
		z	-0.063	0.50	No
		z	-0.063	4.50	No
	46	z	-0.032	3.00	No
		z	-0.315	0.50	No
		z	-0.315	7.50	No
	48	z	-0.319	0.50	No
		z	-0.319	7.50	No
		z	-0.024	4.00	No
		z	-0.024	4.00	No

W30	53	z	-0.098	0.50	No
		z	-0.098	4.50	No
		z	-0.013	3.00	No
	26	x	-0.188	0.50	No
		x	-0.188	5.50	No
		x	-0.039	4.00	No
	29	x	-0.086	0.50	No
		x	-0.086	4.50	No
		x	-0.019	3.00	No
	38	x	-0.188	0.50	No
		x	-0.188	5.50	No
		x	-0.039	4.00	No
	40	x	-0.196	0.50	No
		x	-0.196	5.50	No
		x	-0.035	4.00	No
	27	x	-0.196	0.50	No
		x	-0.196	5.50	No
		x	-0.035	4.00	No
	45	x	-0.086	0.50	No
		x	-0.086	4.50	No
		x	-0.019	3.00	No
	46	x	-0.144	0.50	No
		x	-0.144	7.50	No
		x	-0.05	4.00	No
	48	x	-0.145	0.50	No
		x	-0.145	7.50	No
		x	-0.071	4.00	No
Di	53	x	-0.052	0.50	No
		x	-0.052	4.50	No
		x	-0.038	3.00	No
	26	y	-0.15	0.50	No
		y	-0.15	5.50	No
		y	-0.056	4.00	No
	29	y	-0.066	0.50	No
		y	-0.066	4.50	No
		y	-0.028	3.00	No
	38	y	-0.15	0.50	No
		y	-0.15	5.50	No
		y	-0.056	4.00	No
	40	y	-0.148	0.50	No
		y	-0.148	5.50	No
		y	-0.055	4.00	No
		y	-0.049	4.00	No
	27	y	-0.148	0.50	No
		y	-0.148	5.50	No
		y	-0.055	4.00	No
		y	-0.049	4.00	No
	45	y	-0.066	0.50	No
		y	-0.066	4.50	No
		y	-0.028	3.00	No
	46	y	-0.199	0.50	No
		y	-0.199	7.50	No
		y	-0.056	4.00	No
	48	y	-0.202	0.50	No
		y	-0.202	7.50	No
		y	-0.055	4.00	No
		y	-0.049	4.00	No
	53	y	-0.066	0.50	No
		y	-0.066	4.50	No
		y	-0.028	3.00	No

Wi0	26	z	-0.03	0.50	No
		z	-0.03	5.50	No
		z	-0.014	4.00	No
	29	z	-0.017	0.50	No
		z	-0.017	4.50	No
		z	-0.01	3.00	No
	38	z	-0.03	0.50	No
		z	-0.03	5.50	No
		z	-0.014	4.00	No
	40	z	-0.031	0.50	No
		z	-0.031	5.50	No
		z	-0.016	4.00	No
	27	z	-0.031	0.50	No
		z	-0.031	5.50	No
		z	-0.016	4.00	No
	45	z	-0.017	0.50	No
		z	-0.017	4.50	No
		z	-0.01	3.00	No
	46	z	-0.066	0.50	No
		z	-0.066	7.50	No
	48	z	-0.067	0.50	No
		z	-0.067	7.50	No
		z	-0.009	4.00	No
	53	z	-0.008	4.00	No
		z	-0.024	0.50	No
		z	-0.024	4.50	No
		z	-0.006	3.00	No
		z	-0.006	3.00	No
Wi30	26	x	-0.041	0.50	No
		x	-0.041	5.50	No
		x	-0.01	4.00	No
	29	x	-0.021	0.50	No
		x	-0.021	4.50	No
		x	-0.007	3.00	No
	38	x	-0.041	0.50	No
		x	-0.041	5.50	No
		x	-0.01	4.00	No
	40	x	-0.042	0.50	No
		x	-0.042	5.50	No
		x	-0.01	4.00	No
	27	x	-0.042	0.50	No
		x	-0.042	5.50	No
		x	-0.01	4.00	No
	45	x	-0.021	0.50	No
		x	-0.021	4.50	No
		x	-0.007	3.00	No
	46	x	-0.035	0.50	No
		x	-0.035	7.50	No
		x	-0.014	4.00	No
	48	x	-0.035	0.50	No
		x	-0.035	7.50	No
		x	-0.018	4.00	No
	53	x	-0.015	0.50	No
		x	-0.015	4.50	No
		x	-0.011	3.00	No
WL0	26	z	-0.009	0.50	No
		z	-0.009	5.50	No
		z	-0.003	4.00	No
	29	z	-0.004	0.50	No
		z	-0.004	4.50	No
		z	-0.01	3.00	No

WL30	38	z	-0.009	0.50	No
		z	-0.009	5.50	No
		z	-0.003	4.00	No
	40	z	-0.009	0.50	No
		z	-0.009	5.50	No
		z	-0.003	4.00	No
	27	z	-0.009	0.50	No
		z	-0.009	5.50	No
		z	-0.003	4.00	No
	45	z	-0.004	0.50	No
		z	-0.004	4.50	No
		z	-0.01	3.00	No
	46	z	-0.02	0.50	No
		z	-0.02	7.50	No
	48	z	-0.02	0.50	No
		z	-0.02	7.50	No
		z	-0.001	4.00	No
		z	-0.002	4.00	No
	53	z	-0.007	0.50	No
		z	-0.007	4.50	No
		z	-0.001	3.00	No
	26	x	-0.012	0.50	No
		x	-0.012	5.50	No
		x	-0.002	4.00	No
	29	x	-0.006	0.50	No
		x	-0.006	4.50	No
		x	-0.001	3.00	No
	38	x	-0.012	0.50	No
		x	-0.012	5.50	No
		x	-0.002	4.00	No
	40	x	-0.013	0.50	No
		x	-0.013	5.50	No
		x	-0.002	4.00	No
	27	x	-0.013	0.50	No
		x	-0.013	5.50	No
		x	-0.002	4.00	No
	45	x	-0.006	0.50	No
		x	-0.006	4.50	No
		x	-0.001	3.00	No
	46	x	-0.009	0.50	No
		x	-0.009	7.50	No
		x	-0.003	4.00	No
	48	x	-0.01	0.50	No
		x	-0.01	7.50	No
		x	-0.004	4.00	No
	53	x	-0.004	0.50	No
		x	-0.004	4.50	No
		x	-0.002	3.00	No
LL1	20	y	-0.25	50.00	Yes
LL2	20	y	-0.25	100.00	Yes
LLa1	53	y	-0.25	50.00	Yes
LLa2	48	y	-0.25	50.00	Yes
LLa3	46	y	-0.25	50.00	Yes

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### Self weight multipliers for load conditions

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

### Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
W0	0.00	0.00	0.00
W30	0.00	0.00	0.00
Di	0.00	0.00	0.00
Wi0	0.00	0.00	0.00
Wi30	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LLa1	0.00	0.00	0.00
LLa2	0.00	0.00	0.00
LLa3	0.00	0.00	0.00
LLa4	0.00	0.00	0.00

Current Date: 9/22/2020 12:36 PM

Units system: English

File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1167\CT1167.rtx

## 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
<b>HSS_SQR 4X4X1_4</b>		13	LC11 at 0.00%	0.96	OK	Eq. H1-1b
		14	LC12 at 0.00%	0.88	OK	Eq. H1-1b
		15	LC9 at 0.00%	0.87	OK	Eq. H1-1b
		19	LC12 at 100.00%	0.33	OK	Eq. H1-1b
		20	LC9 at 0.00%	0.37	OK	Eq. H1-1b
		21	LC9 at 100.00%	0.33	OK	Eq. H1-1b
		60	LC11 at 75.00%	0.56	OK	Eq. H1-1b
		61	LC12 at 75.00%	0.50	OK	Eq. H1-1b
		62	LC12 at 25.00%	0.52	OK	Eq. H1-1b
<b>PIPE 2x0.154</b>		26	LC2 at 59.38%	0.75	OK	Eq. H1-1b
		29	LC2 at 59.38%	0.41	OK	Eq. H1-1b
		38	LC2 at 59.38%	0.75	OK	Eq. H1-1b
		40	LC2 at 59.38%	0.77	OK	Eq. H1-1b
		43	LC4 at 59.38%	0.10	OK	Eq. H1-1b
		27	LC2 at 59.38%	0.77	OK	Eq. H1-1b
		45	LC4 at 59.38%	0.41	OK	Eq. H1-1b
		28	LC3 at 59.38%	0.10	OK	Eq. H1-1b

<b>46</b>	LC1 at 59.38%	<b>1.16</b>	N.G.	Eq. H1-1b
<b>48</b>	LC1 at 59.38%	<b>1.20</b>	<b>N.G.</b>	Eq. H1-1b
<b>51</b>	LC1 at 59.38%	0.07	OK	Eq. H1-1b
<b>53</b>	LC1 at 59.38%	0.45	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
18	-0.0012	0.00	-7.312	0
19	0.0036	0.00	-0.8677	0
24	-0.7533	0.00	0.4307	0
26	-6.3318	0.00	3.657	0
28	0.7497	0.00	0.437	0
30	6.333	0.00	3.655	0
32	2.3449	0.00	1.3564	0
41	-2.3472	0.00	1.3525	0
47	0.0022	0.00	-2.709	0
48	6.1665	0.00	3.3666	0
49	4.1665	0.00	-0.0975	0
50	2.1665	0.00	-3.5616	0
51	0.1665	0.00	-7.0257	0
52	6.3942	0.00	3.2351	0
53	4.3942	0.00	-0.229	0
54	2.3942	0.00	-3.6931	0
55	0.3942	0.00	-7.1572	0
56	0.3942	5.00	-7.1572	0
57	2.3942	5.00	-3.6931	0
58	4.3942	5.00	-0.229	0
59	6.3942	5.00	3.2351	0
60	6.3942	-3.00	3.2351	0

62	4.3942	-3.00	-0.229	0
63	2.3942	-3.00	-3.6931	0
64	0.3942	-3.00	-7.1572	0
81	-0.1677	0.00	-7.0237	0
82	-2.3954	0.00	-3.691	0
83	-4.3954	0.00	-0.2269	0
84	-0.3954	5.00	-7.1551	0
85	-0.3954	-3.00	-7.1551	0
86	-0.3954	0.00	-7.1551	0
87	-2.3954	5.00	-3.691	0
88	-2.3954	-3.00	-3.691	0
89	-2.1677	0.00	-3.5596	0
90	-4.1677	0.00	-0.0954	0
91	-4.3954	5.00	-0.2269	0
92	-4.3954	-3.00	-0.2269	0
93	-6.1677	0.00	3.3687	0
94	-6.3954	0.00	3.2372	0
95	-6.3954	5.00	3.2372	0
96	-6.3954	-3.00	3.2372	0
102	-5.9988	0.00	3.657	0
103	-1.9988	0.00	3.92	0
104	2.0012	0.00	3.92	0
105	-5.9988	5.00	3.92	0
106	-5.9988	-3.00	3.92	0
107	-5.9988	0.00	3.92	0
108	-1.9988	5.00	3.92	0
109	-1.9988	-3.00	3.92	0
110	-1.9988	0.00	3.657	0
111	2.0012	0.00	3.657	0
112	2.0012	5.00	3.92	0
113	2.0012	-3.00	3.92	0
114	6.0012	0.00	3.657	0
115	6.0012	0.00	3.92	0
116	6.0012	5.00	3.92	0
117	6.0012	-3.00	3.92	0
118	-7.6309	0.00	4.407	0
121	7.632	0.00	4.405	0
122	-0.0012	0.00	-8.812	0

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## Restraints

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Node	TX	TY	TZ	RX	RY	RZ
<hr/>						
19	1	1	1	1	1	1
24	1	1	1	1	1	1
28	1	1	1	1	1	1

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## Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	Ig factor
13	24	41		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
14	28	32		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
15	19	47		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
19	18	30		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
20	26	30		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
21	26	18		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
26	59	60		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
29	56	64		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
38	84	85		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
40	87	88		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
43	91	92		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
45	95	96		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
28	57	63		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
46	105	106		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
48	108	109		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
51	112	113		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
53	116	117		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
60	41	118		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
61	47	122		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
62	121	32		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
27	58	62		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

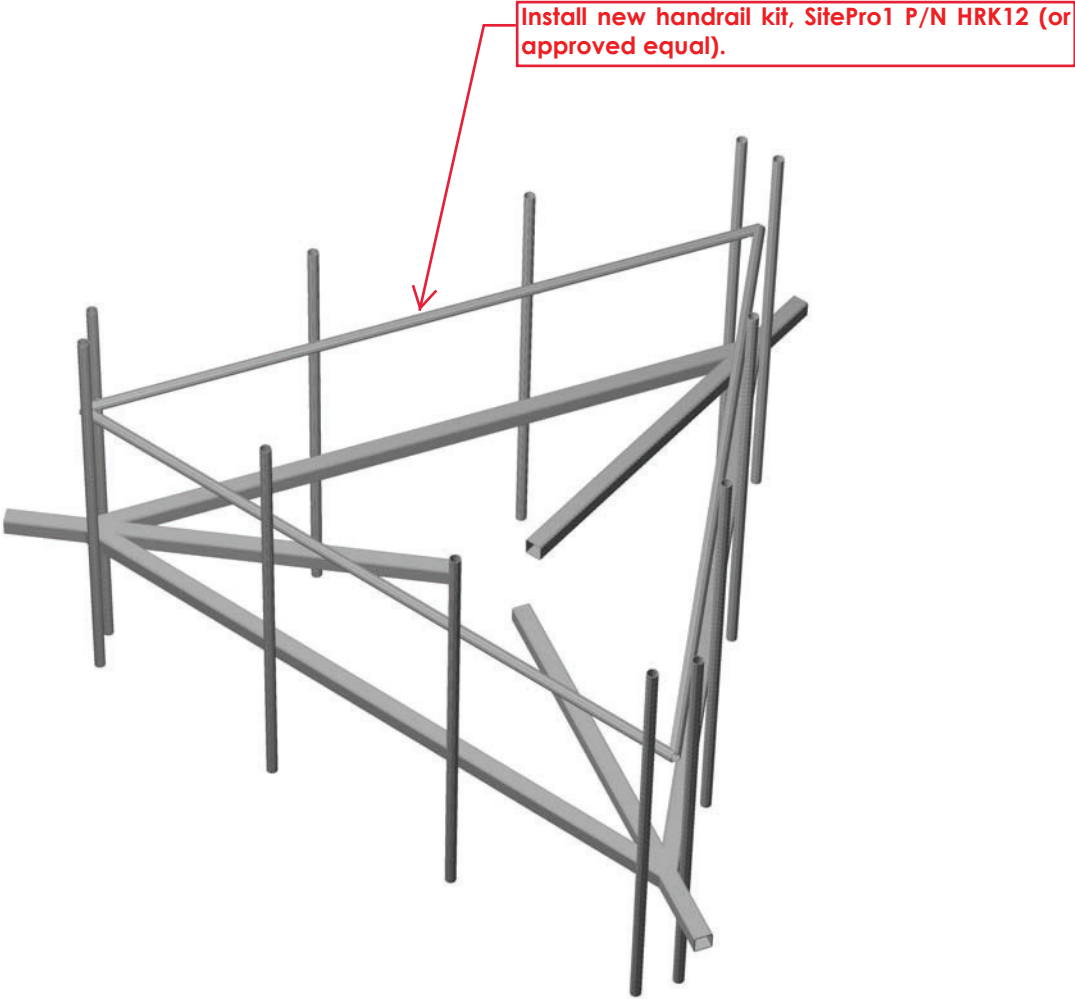
#### Orientation of local axes

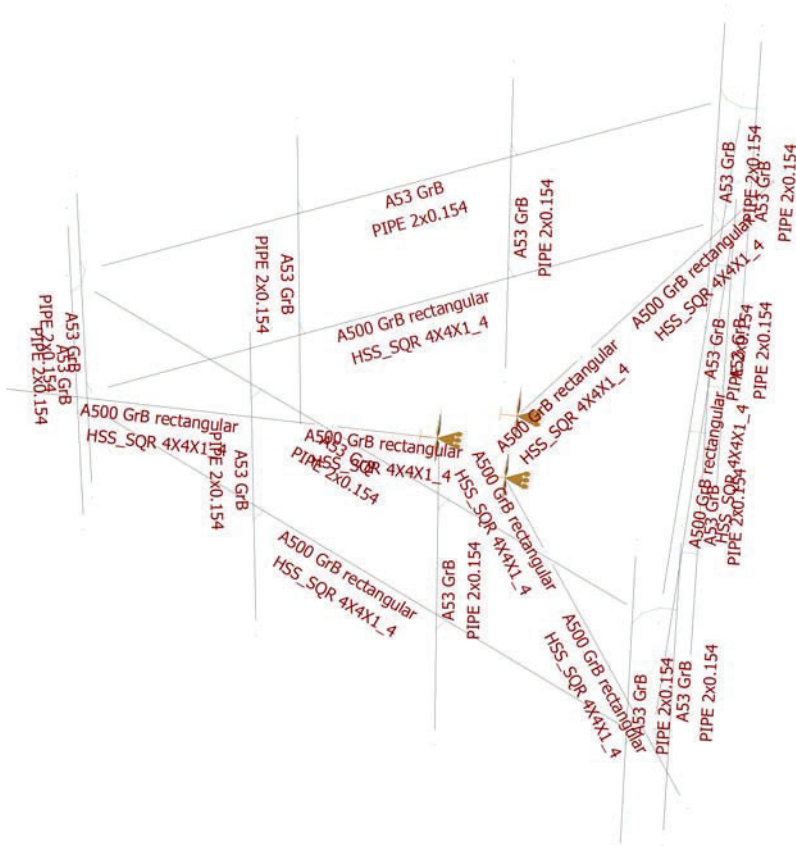
Member	Rotation [Deg]	Axes23	NX	NY	NZ
43	0.00	2	-0.50	0.00	0.866
28	0.00	2	-0.50	0.00	-0.866

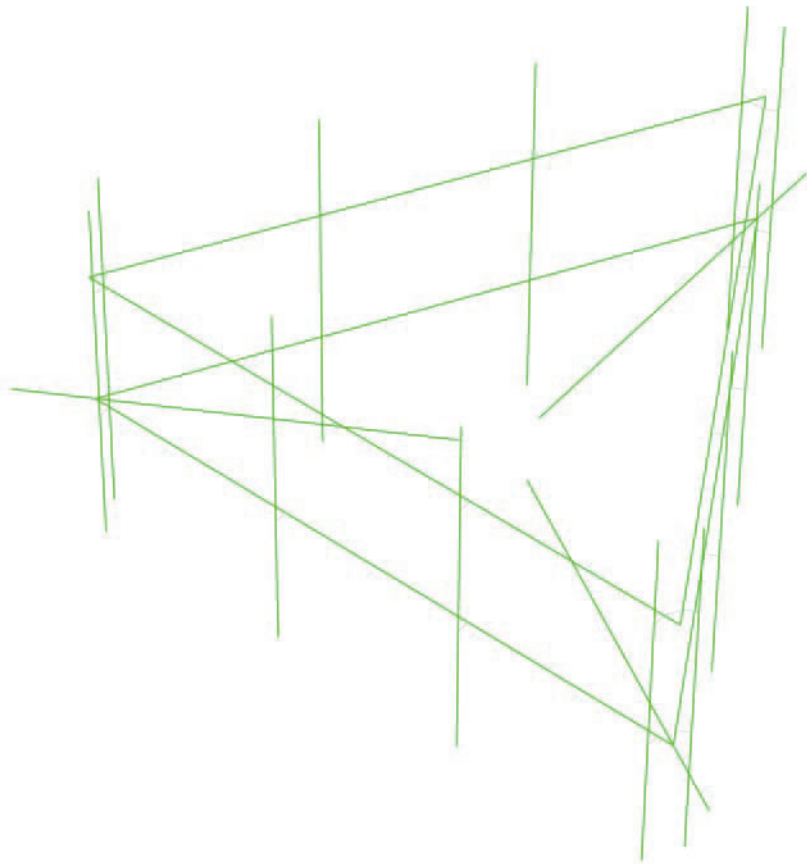


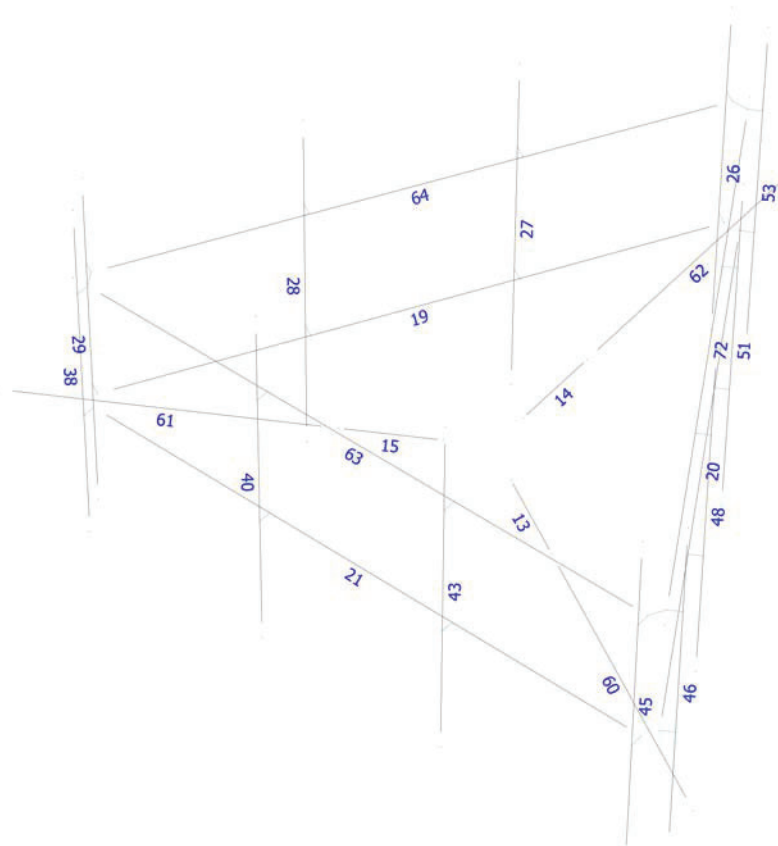
**HUDSON**  
Design Group LLC

**Mount Calculations  
(Modified Conditions)**











Current Date: 9/22/2020 12:34 PM

Units system: English

File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1167\CT1167 (MOD).retx

## Load data

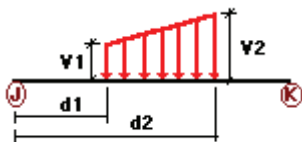
### GLOSSARY

Comb : Indicates if load condition is a load combination

### Load Conditions

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

### Distributed force on members

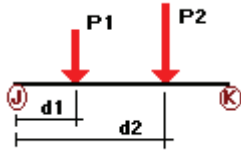


Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
DL	19	y	-0.01	0.00	0.00	No	0.00	No
	20	y	-0.01	0.00	0.00	No	0.00	No
	21	y	-0.01	0.00	0.00	No	0.00	No
	60	y	-0.01	-0.01	40.00	Yes	75.00	Yes
	61	y	-0.01	-0.01	40.00	Yes	75.00	Yes
	62	y	-0.01	-0.01	40.00	Yes	75.00	Yes
W0	13	z	-0.015	0.00	0.00	No	0.00	No
	14	z	-0.015	0.00	0.00	No	0.00	No
	15	z	-0.015	0.00	0.00	No	0.00	No
	19	z	-0.015	0.00	0.00	No	0.00	No
	20	z	-0.015	0.00	0.00	No	0.00	No
	21	z	-0.015	0.00	0.00	No	0.00	No
	26	z	-0.008	0.00	0.00	No	0.00	No
	29	z	-0.008	0.00	0.00	No	0.00	No
	38	z	-0.008	0.00	0.00	No	0.00	No

W30	40	z	-0.008	0.00	0.00	No	0.00	No
	43	z	-0.008	0.00	0.00	No	0.00	No
	27	z	-0.008	0.00	0.00	No	0.00	No
	45	z	-0.008	0.00	0.00	No	0.00	No
	28	z	-0.008	0.00	0.00	No	0.00	No
	46	z	-0.008	0.00	0.00	No	0.00	No
	48	z	-0.008	0.00	0.00	No	0.00	No
	51	z	-0.008	0.00	0.00	No	0.00	No
	53	z	-0.008	0.00	0.00	No	0.00	No
	60	z	-0.015	0.00	0.00	No	0.00	No
	61	z	-0.015	0.00	0.00	No	0.00	No
	62	z	-0.015	0.00	0.00	No	0.00	No
	63	z	-0.008	0.00	0.00	No	0.00	No
	64	z	-0.008	0.00	0.00	No	0.00	No
	72	z	-0.008	0.00	0.00	No	0.00	No
	13	x	-0.015	0.00	0.00	No	0.00	No
	14	x	-0.015	0.00	0.00	No	0.00	No
	15	x	-0.015	0.00	0.00	No	0.00	No
	19	x	-0.015	0.00	0.00	No	0.00	No
	26	x	-0.008	0.00	0.00	No	0.00	No
	29	x	-0.008	0.00	0.00	No	0.00	No
	38	x	-0.008	0.00	0.00	No	0.00	No
	40	x	-0.008	0.00	0.00	No	0.00	No
	43	x	-0.008	0.00	0.00	No	0.00	No
	27	x	-0.008	0.00	0.00	No	0.00	No
	45	x	-0.008	0.00	0.00	No	0.00	No
	28	x	-0.008	0.00	0.00	No	0.00	No
	46	x	-0.008	0.00	0.00	No	0.00	No
	48	x	-0.008	0.00	0.00	No	0.00	No
	51	x	-0.008	0.00	0.00	No	0.00	No
	53	x	-0.008	0.00	0.00	No	0.00	No
	60	x	-0.015	0.00	0.00	No	0.00	No
	61	x	-0.015	0.00	0.00	No	0.00	No
	62	x	-0.015	0.00	0.00	No	0.00	No
	63	x	-0.008	0.00	0.00	No	0.00	No
	64	x	-0.008	0.00	0.00	No	0.00	No
Di	72	x	-0.008	0.00	0.00	No	0.00	No
	13	y	-0.015	0.00	0.00	No	0.00	No
	14	y	-0.015	0.00	0.00	No	0.00	No
	15	y	-0.015	0.00	0.00	No	0.00	No
	19	y	-0.015	0.00	0.00	No	0.00	No
	20	y	-0.015	0.00	0.00	No	0.00	No
	21	y	-0.015	0.00	0.00	No	0.00	No
	26	y	-0.009	0.00	0.00	No	0.00	No
	29	y	-0.009	0.00	0.00	No	0.00	No
	38	y	-0.009	0.00	0.00	No	0.00	No
	40	y	-0.009	0.00	0.00	No	0.00	No
	43	y	-0.009	0.00	0.00	No	0.00	No
	27	y	-0.009	0.00	0.00	No	0.00	No
	45	y	-0.009	0.00	0.00	No	0.00	No
	28	y	-0.009	0.00	0.00	No	0.00	No
	46	y	-0.009	0.00	0.00	No	0.00	No
	48	y	-0.009	0.00	0.00	No	0.00	No
	51	y	-0.009	0.00	0.00	No	0.00	No
	53	y	-0.009	0.00	0.00	No	0.00	No
	60	y	-0.015	0.00	0.00	No	0.00	No
	61	y	-0.015	0.00	0.00	No	0.00	No
	62	y	-0.015	0.00	0.00	No	0.00	No
	63	y	-0.009	0.00	0.00	No	0.00	No
	64	y	-0.009	0.00	0.00	No	0.00	No

72      y      -0.009      0.00      0.00      No      0.00      No

## Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	26	y	-0.04	0.50	No
		y	-0.04	5.50	No
		y	-0.071	4.00	No
	29	y	-0.018	0.50	No
		y	-0.018	4.50	No
		y	-0.019	3.00	No
	38	y	-0.04	0.50	No
		y	-0.04	5.50	No
		y	-0.071	4.00	No
	40	y	-0.031	0.50	No
		y	-0.031	5.50	No
		y	-0.06	4.00	No
	27	y	-0.072	4.00	No
		y	-0.031	0.50	No
		y	-0.031	5.50	No
	45	y	-0.06	4.00	No
		y	-0.072	4.00	No
		y	-0.018	0.50	No
	46	y	-0.018	4.50	No
		y	-0.019	3.00	No
		y	-0.048	0.50	No
	48	y	-0.048	7.50	No
		y	-0.071	4.00	No
		y	-0.039	0.50	No
W0	53	y	-0.039	7.50	No
		y	-0.06	4.00	No
		y	-0.072	4.00	No
	26	y	-0.018	0.50	No
		y	-0.018	4.50	No
		y	-0.019	3.00	No
	29	z	-0.129	0.50	No
		z	-0.129	5.50	No
		z	-0.05	4.00	No
	38	z	-0.063	0.50	No
		z	-0.063	4.50	No
		z	-0.032	3.00	No
	40	z	-0.129	0.50	No
		z	-0.129	5.50	No
		z	-0.05	4.00	No
	27	z	-0.132	0.50	No
		z	-0.132	5.50	No
		z	-0.062	4.00	No
	27	z	-0.132	0.50	No
		z	-0.132	5.50	No

W30	45	z	-0.062	4.00	No
		z	-0.063	0.50	No
		z	-0.063	4.50	No
	46	z	-0.032	3.00	No
		z	-0.315	0.50	No
		z	-0.315	7.50	No
	48	z	-0.319	0.50	No
		z	-0.319	7.50	No
		z	-0.024	4.00	No
	53	z	-0.024	4.00	No
		z	-0.098	0.50	No
		z	-0.098	4.50	No
	26	z	-0.013	3.00	No
		x	-0.188	0.50	No
		x	-0.188	5.50	No
	29	x	-0.039	4.00	No
		x	-0.086	0.50	No
		x	-0.086	4.50	No
	38	x	-0.019	3.00	No
		x	-0.188	0.50	No
		x	-0.188	5.50	No
	40	x	-0.039	4.00	No
		x	-0.196	0.50	No
		x	-0.196	5.50	No
	27	x	-0.035	4.00	No
		x	-0.196	0.50	No
		x	-0.196	5.50	No
	45	x	-0.035	4.00	No
		x	-0.086	0.50	No
		x	-0.086	4.50	No
	46	x	-0.019	3.00	No
		x	-0.144	0.50	No
		x	-0.144	7.50	No
	48	x	-0.05	4.00	No
		x	-0.145	0.50	No
		x	-0.145	7.50	No
	53	x	-0.071	4.00	No
		x	-0.052	0.50	No
		x	-0.052	4.50	No
Di	26	x	-0.038	3.00	No
		y	-0.15	0.50	No
		y	-0.15	5.50	No
	29	y	-0.056	4.00	No
		y	-0.066	0.50	No
		y	-0.066	4.50	No
	38	y	-0.028	3.00	No
		y	-0.15	0.50	No
		y	-0.15	5.50	No
	40	y	-0.056	4.00	No
		y	-0.148	0.50	No
		y	-0.148	5.50	No
	27	y	-0.055	4.00	No
		y	-0.049	4.00	No
		y	-0.148	0.50	No
	45	y	-0.148	5.50	No
		y	-0.055	4.00	No
		y	-0.049	4.00	No
	45	y	-0.066	0.50	No
		y	-0.066	4.50	No
		y	-0.028	3.00	No

Wi0	46	y	-0.199	0.50	No
		y	-0.199	7.50	No
		y	-0.056	4.00	No
	48	y	-0.202	0.50	No
		y	-0.202	7.50	No
		y	-0.055	4.00	No
		y	-0.049	4.00	No
	53	y	-0.066	0.50	No
		y	-0.066	4.50	No
		y	-0.028	3.00	No
	26	z	-0.03	0.50	No
		z	-0.03	5.50	No
		z	-0.014	4.00	No
	29	z	-0.017	0.50	No
		z	-0.017	4.50	No
		z	-0.01	3.00	No
	38	z	-0.03	0.50	No
		z	-0.03	5.50	No
		z	-0.014	4.00	No
	40	z	-0.031	0.50	No
		z	-0.031	5.50	No
		z	-0.016	4.00	No
	27	z	-0.031	0.50	No
		z	-0.031	5.50	No
		z	-0.016	4.00	No
	45	z	-0.017	0.50	No
		z	-0.017	4.50	No
		z	-0.01	3.00	No
	46	z	-0.066	0.50	No
		z	-0.066	7.50	No
	48	z	-0.067	0.50	No
		z	-0.067	7.50	No
		z	-0.009	4.00	No
		z	-0.008	4.00	No
	53	z	-0.024	0.50	No
		z	-0.024	4.50	No
		z	-0.006	3.00	No
Wi30	26	x	-0.041	0.50	No
		x	-0.041	5.50	No
		x	-0.01	4.00	No
	29	x	-0.021	0.50	No
		x	-0.021	4.50	No
		x	-0.007	3.00	No
	38	x	-0.041	0.50	No
		x	-0.041	5.50	No
		x	-0.01	4.00	No
	40	x	-0.042	0.50	No
		x	-0.042	5.50	No
		x	-0.01	4.00	No
	27	x	-0.042	0.50	No
		x	-0.042	5.50	No
		x	-0.01	4.00	No
	45	x	-0.021	0.50	No
		x	-0.021	4.50	No
		x	-0.007	3.00	No
	46	x	-0.035	0.50	No
		x	-0.035	7.50	No
		x	-0.014	4.00	No
	48	x	-0.035	0.50	No
		x	-0.035	7.50	No

		x	-0.018	4.00	No
	53	x	-0.015	0.50	No
		x	-0.015	4.50	No
		x	-0.011	3.00	No
WL0	26	z	-0.009	0.50	No
		z	-0.009	5.50	No
		z	-0.003	4.00	No
	29	z	-0.004	0.50	No
		z	-0.004	4.50	No
		z	-0.01	3.00	No
	38	z	-0.009	0.50	No
		z	-0.009	5.50	No
		z	-0.003	4.00	No
	40	z	-0.009	0.50	No
		z	-0.009	5.50	No
		z	-0.003	4.00	No
	27	z	-0.009	0.50	No
		z	-0.009	5.50	No
		z	-0.003	4.00	No
	45	z	-0.004	0.50	No
		z	-0.004	4.50	No
		z	-0.01	3.00	No
	46	z	-0.02	0.50	No
		z	-0.02	7.50	No
	48	z	-0.02	0.50	No
		z	-0.02	7.50	No
		z	-0.001	4.00	No
		z	-0.002	4.00	No
	53	z	-0.007	0.50	No
		z	-0.007	4.50	No
		z	-0.001	3.00	No
WL30	26	x	-0.012	0.50	No
		x	-0.012	5.50	No
		x	-0.002	4.00	No
	29	x	-0.006	0.50	No
		x	-0.006	4.50	No
		x	-0.001	3.00	No
	38	x	-0.012	0.50	No
		x	-0.012	5.50	No
		x	-0.002	4.00	No
	40	x	-0.013	0.50	No
		x	-0.013	5.50	No
		x	-0.002	4.00	No
	27	x	-0.013	0.50	No
		x	-0.013	5.50	No
		x	-0.002	4.00	No
	45	x	-0.006	0.50	No
		x	-0.006	4.50	No
		x	-0.001	3.00	No
	46	x	-0.009	0.50	No
		x	-0.009	7.50	No
		x	-0.003	4.00	No
	48	x	-0.01	0.50	No
		x	-0.01	7.50	No
		x	-0.004	4.00	No
	53	x	-0.004	0.50	No
		x	-0.004	4.50	No
		x	-0.002	3.00	No
LL1	20	y	-0.25	50.00	Yes
LL2	20	y	-0.25	100.00	Yes

LLa1	53	y	-0.25	50.00	Yes
LLa2	48	y	-0.25	50.00	Yes
LLa3	46	y	-0.25	50.00	Yes

### Self weight multipliers for load conditions

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

### Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
W0	0.00	0.00	0.00
W30	0.00	0.00	0.00
Di	0.00	0.00	0.00
Wi0	0.00	0.00	0.00
Wi30	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LLa1	0.00	0.00	0.00
LLa2	0.00	0.00	0.00
LLa3	0.00	0.00	0.00
LLa4	0.00	0.00	0.00

Current Date: 9/22/2020 12:34 PM

Units system: English

File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT1167\CT1167 (MOD).retx

## Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

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

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
<b>HSS_SQR 4X4X1_4</b>		13	LC10 at 0.00%	0.98	OK	Eq. H1-1b
		14	LC12 at 0.00%	0.90	OK	Eq. H1-1b
		15	LC9 at 0.00%	0.89	OK	Eq. H1-1b
		19	LC11 at 100.00%	0.36	OK	Eq. H1-1b
		20	LC9 at 0.00%	0.40	OK	Eq. H1-1b
		21	LC12 at 100.00%	0.37	OK	Eq. H1-1b
		60	LC11 at 75.00%	0.65	OK	Eq. H1-1b
		61	LC9 at 75.00%	0.59	OK	Eq. H1-1b
		62	LC12 at 25.00%	0.61	OK	Eq. H1-1b
<b>PIPE 2x0.154</b>		26	LC9 at 60.42%	0.44	OK	Eq. H1-1b
		29	LC11 at 60.42%	0.39	OK	Eq. H1-1b
		38	LC11 at 60.42%	0.40	OK	Eq. H1-1b
		40	LC3 at 60.42%	0.42	OK	Eq. H1-1b
		43	LC3 at 60.42%	0.43	OK	Eq. H1-1b
		27	LC2 at 60.42%	0.42	OK	Eq. H1-1b
		45	LC9 at 60.42%	0.48	OK	Eq. H1-1b
		28	LC2 at 60.42%	0.42	OK	Eq. H1-1b



<b>46</b>	LC1 at 62.50%	0.66	OK	Eq. H1-1b
<b>48</b>	LC1 at 60.42%	<b>0.68</b>	<b>OK</b>	Eq. H1-1b
<b>51</b>	LC4 at 60.42%	0.37	OK	Eq. H1-1b
<b>53</b>	LC10 at 60.42%	0.47	OK	Eq. H1-1b
<b>63</b>	LC1 at 3.75%	0.42	OK	Eq. H1-1b
<b>64</b>	LC2 at 96.25%	0.33	OK	Eq. H1-1b
<b>72</b>	LC2 at 96.25%	0.41	OK	Eq. H1-1b

---

## Geometry data

### GLOSSARY

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

### Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
18	-0.0012	0.00	-7.312	0
19	0.0036	0.00	-0.8677	0
24	-0.7533	0.00	0.4307	0
26	-6.3318	0.00	3.657	0
28	0.7497	0.00	0.437	0
30	6.333	0.00	3.655	0
32	2.3449	0.00	1.3564	0
41	-2.3472	0.00	1.3525	0
47	0.0022	0.00	-2.709	0
48	6.1665	0.00	3.3666	0
49	4.1665	0.00	-0.0975	0
50	2.1665	0.00	-3.5616	0
51	0.1665	0.00	-7.0257	0
52	6.3942	0.00	3.2351	0
53	4.3942	0.00	-0.229	0
54	2.3942	0.00	-3.6931	0
55	0.3942	0.00	-7.1572	0
56	0.3942	5.00	-7.1572	0
57	2.3942	5.00	-3.6931	0
58	4.3942	5.00	-0.229	0
59	6.3942	5.00	3.2351	0
60	6.3942	-3.00	3.2351	0

62	4.3942	-3.00	-0.229	0
63	2.3942	-3.00	-3.6931	0
64	0.3942	-3.00	-7.1572	0
81	-0.1677	0.00	-7.0237	0
82	-2.3954	0.00	-3.691	0
83	-4.3954	0.00	-0.2269	0
84	-0.3954	5.00	-7.1551	0
85	-0.3954	-3.00	-7.1551	0
86	-0.3954	0.00	-7.1551	0
87	-2.3954	5.00	-3.691	0
88	-2.3954	-3.00	-3.691	0
89	-2.1677	0.00	-3.5596	0
90	-4.1677	0.00	-0.0954	0
91	-4.3954	5.00	-0.2269	0
92	-4.3954	-3.00	-0.2269	0
93	-6.1677	0.00	3.3687	0
94	-6.3954	0.00	3.2372	0
95	-6.3954	5.00	3.2372	0
96	-6.3954	-3.00	3.2372	0
102	-5.9988	0.00	3.657	0
103	-1.9988	0.00	3.92	0
104	2.0012	0.00	3.92	0
105	-5.9988	5.00	3.92	0
106	-5.9988	-3.00	3.92	0
107	-5.9988	0.00	3.92	0
108	-1.9988	5.00	3.92	0
109	-1.9988	-3.00	3.92	0
110	-1.9988	0.00	3.657	0
111	2.0012	0.00	3.657	0
112	2.0012	5.00	3.92	0
113	2.0012	-3.00	3.92	0
114	6.0012	0.00	3.657	0
115	6.0012	0.00	3.92	0
116	6.0012	5.00	3.92	0
117	6.0012	-3.00	3.92	0
118	-7.6309	0.00	4.407	0
121	7.632	0.00	4.405	0
122	-0.0012	0.00	-8.812	0
123	0.1665	3.00	-7.0257	0
124	0.3942	3.00	-7.1572	0
125	2.1665	3.00	-3.5616	0
126	2.3942	3.00	-3.6931	0
127	-0.1677	3.00	-7.0237	0
128	-0.3954	3.00	-7.1551	0
129	-2.3954	3.00	-3.691	0
130	-2.1677	3.00	-3.5596	0
131	-4.3954	3.00	-0.2269	0
132	-4.1677	3.00	-0.0954	0
133	-6.1677	3.00	3.3687	0
134	-6.3954	3.00	3.2372	0
136	-5.9988	3.00	3.92	0
137	-1.9988	3.00	3.92	0
138	-1.9988	3.00	3.657	0
139	2.0012	3.00	3.92	0
140	2.0012	3.00	3.657	0
141	6.333	3.00	3.655	0
142	6.0012	3.00	3.657	0
143	6.0012	3.00	3.92	0
144	6.1665	3.00	3.3666	0
145	6.3942	3.00	3.2351	0

146	4.1665	3.00	-0.0975	0
147	4.3942	3.00	-0.229	0
148	-6.3318	3.00	3.657	0
149	-0.0012	3.00	-7.312	0
135	-5.9988	3.00	3.657	0

## Restraints

Node	TX	TY	TZ	RX	RY	RZ
19	1	1	1	1	1	1
24	1	1	1	1	1	1
28	1	1	1	1	1	1

## Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	Ig factor
13	24	41		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
14	28	32		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
15	19	47		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
19	18	30		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
20	26	30		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
21	26	18		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
26	59	60		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
29	56	64		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
38	84	85		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
40	87	88		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
43	91	92		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
27	58	62		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
45	95	96		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
28	57	63		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
46	105	106		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
48	108	109		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
51	112	113		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
53	116	117		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
60	41	118		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
61	47	122		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
62	121	32		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
63	148	149		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
64	149	141		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
72	148	141		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

## Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
43	0.00	2	-0.50	0.00	0.866
28	0.00	2	-0.50	0.00	-0.866

29-23-013

JUNG MARLENE D

HARTLAND BLVD 350

107

## ADMINISTRATIVE INFORMATION

PARCEL NUMBER  
29-23-013  
Parent Parcel Number

Property Address  
HARTLAND BLVD 350

Neighborhood  
1 East Hartland

Property Class  
107 Multiple Dwellings

## TAXING DISTRICT INFORMATION

Jurisdiction 065  
Area 065  
Routing Number 98100225

## OWNERSHIP

JUNG MARLENE D  
PO BOX 658  
SIMSBURY, CT 06070-0658  
Census Tract: 3301

Tax ID 29-23-013

## TRANSFER OF OWNERSHIP

Date		
12/03/2003	DRENA FRANK F	\$220000
	Bk/Pg: 74, 27	
06/14/1994	NA	\$0
	Bk/Pg: 57, 869	
10/02/1986	NA	\$142000
	Bk/Pg: 45, 342	

## RESIDENTIAL

## VALUATION RECORD

Assessment Year	10/01/2005	10/01/2008	10/01/2009	10/01/2011	10/01/2015
Reason for Change	2005	Use Chg	BAA	2011 Reval	2015 Reval
VALUATION L	98900	415960	362160	160240	150090
Market Value B	208980	208980	208980	423780	807100
T	307880	624940	571140	584020	957190
VALUATION L	69230	291170	253510	112170	105070
70% Assessed/Use B	146290	146290	146290	296660	564970
T	215520	437460	399800	408830	670040

## LAND DATA AND CALCULATIONS

## Site Description

Topography:  
High, Rolling  
Public Utilities:  
Electric

Street or Road:  
Paved

Neighborhood:

Land Type	Rating Soil ID -or- Actual Frontage	Measured Acreage -or- Effective Frontage	Table Effective Depth	Prod. Factor -or- Depth Factor -or- Square Feet	Base Rate	Adjusted Rate	Extended Value	Influence Factor	Value
Zoning: R-1	1 Homesite	2.0000		1.00	31856.00	31856.00	63710		63710
Legal Acres: 8.3000	2 Res Excess Acres	6.1880		1.00	2400.00	2400.00	14850		14850
	3 Primary Commercial	0.1120		1.00	638636.36	638636.36	71530		71530

## G: GENERAL NOTES

LAND TYPE 61 ADDED 11/08. CELL TOWER ON .112  
ACRES AS INCOME PROPERTY. SEE FILE FOR FMV  
COMPUTATION.

ADDED CELL TOWER AS PRIMARY COMMERCIAL FOR .112  
ACRES.

CORRECTED CELL TOWER LAND TYPE VALUE TO  
\$263,600 PER BAA DECISION 3/20/2010.

CELL TOWER VALUE CHANGED FOR 2015 GL.

## L: LAND NOTES

SEE V82/P604 & V82/P608 FOR EASEMENTS GRANTED TO  
CL&P AND SNET FOR CONSTRUCTION OF A CELL TOWER

Supplemental Cards

TRUE TAX VALUE

150090

Permit Number Type	FilingDate	Est. Cost Est. Sqft	Field Visit

Supplemental Cards

TOTAL LAND VALUE

150090

## IMPROVEMENT DATA

02 03 04 05

01

## PHYSICAL CHARACTERISTICS

Style: Ranch  
Occupancy: Single family  
Story Height: 1.0  
Finished Area: 1342  
Attic: None  
Basement: Full

## ROOFING

Material: Metal Standing Seam  
Type: Gable  
Framing: Std for class  
Pitch: Not available

## FLOORING

Slab B, 1.0  
Carpet 1.0

## EXTERIOR COVER

Vinyl 1.0

## INTERIOR FINISH

Drywall 1.0

## ACCOMMODATIONS

Finished Rooms 7  
Bedrooms 4  
Formal Dining Rooms 1  
Fireplaces: 1

## HEATING AND AIR CONDITIONING

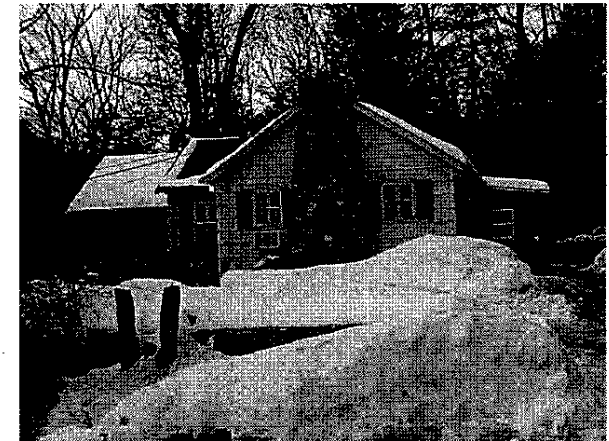
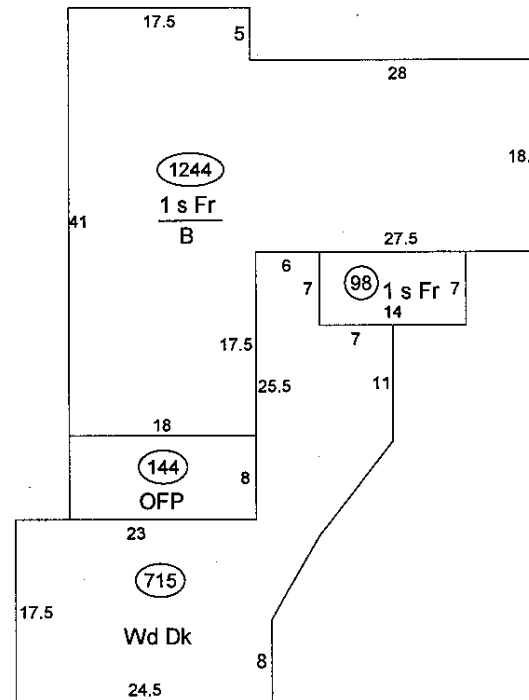
Primary Heat: Hot Water - oil  
Lower Full Part  
/Bsmt 1 Upper Upper  
Air Cond 0 1342 0 0

## PLUMBING

#  
3 Fixt. Baths 2 6  
Kit Sink 1 1  
Water Heat 1 1  
TOTAL 8

## REMODELING AND MODERNIZATION

Amount Date



(LCM: 100.00)

## SPECIAL FEATURES

Description Value

D :FP-CUST 5000

## SUMMARY OF IMPROVEMENTS

Description	Value	ID	Use	Stry Hgt	Const Type	Grade	Year Const	Eff Year	Cond	Base Rate	Feat- ures	Adj Rate	Size or Area	Computed Value	Phys Depr	Obsol Depr	Market Adj	% Comp	Value
D :FP-CUST	5000	D	DWELL	0.00		Gd-	1950	1985	AV	0.00	Y	0.00	2586	190790	25	0	100	100	143090
		01	SHEDGP	1.00	1	Avg	1993	1993	AV	25.00	N	25.00	11x 16	4400	30	0	100	100	3080
		02	BARN2STY	2.00	1	Avg	1950	1950	AV	25.00	N	25.00	31x 31	24030	55	0	100	100	10810
		03	SHEDGP	1.00	1	Avg	1950	1950	AV	25.00	N	25.00	12x 31	9300	55	0	100	100	4190
		04	LEANTO	1.00	0	Fair	1950	1950	FR	6.95	N	5.91	13x 31	2380	70	0	100	100	710
		05	LEANTO	1.00	0	Fair	1950	1950	FR	6.95	N	5.91	13x 43	3300	70	0	100	100	990

Data Collector/Date

DB 08/19/2010

Appraiser/Date

ARG 10/01/2011

Neighborhood

Neigh 1 AV

Supplemental Cards

TOTAL IMPROVEMENT VALUE

162870

## IMPROVEMENT DATA

## PHYSICAL CHARACTERISTICS

Style: Cottage (year round)  
Occupancy: Single family  
Story Height: 1.0  
Finished Area: 546  
Attic: None  
Basement: Full

## ROOFING

Material: Asphalt Shingles  
Type: Gable  
Framing: Std for class  
Pitch: Not available

## FLOORING

Slab B, 1.0  
Carpet 1.0

## EXTERIOR COVER

Wood Shingle 1.0

## INTERIOR FINISH

Drywall 1.0

## ACCOMMODATIONS

Finished Rooms 3  
Bedrooms 1

## HEATING AND AIR CONDITIONING

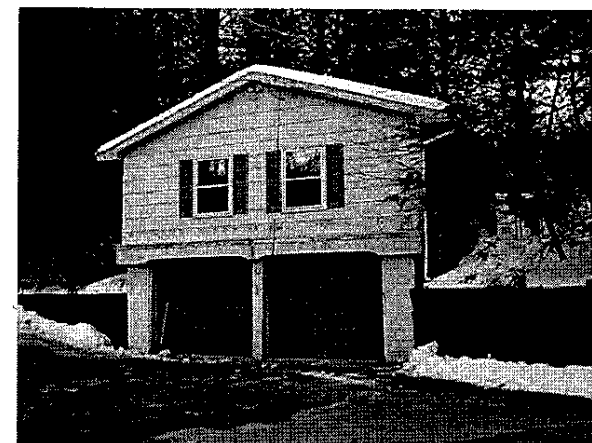
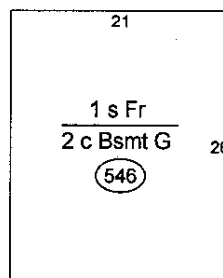
Primary Heat: Electric Baseboard  
Lower Full Part  
/Bsmt 1 Upper Upper

## PLUMBING

#  
3 Fixt. Baths 1 3  
Kit Sink 1 1  
Water Heat 1 1  
TOTAL 5

## REMODELING AND MODERNIZATION

Amount Date



(LCM: 100.00)

## SPECIAL FEATURES

## SUMMARY OF IMPROVEMENTS

Description	Value	ID	Use	Stry Hgt	Const Type	Grade	Year	Eff Const	Year	Cond	Base Rate	Feat- ures	Adj Rate	Size or Area	Computed Value	Phys Obsol	Market Adj	% Comp	Value	
		D	DWELL	0.00		Avg	1950	1980	FR	0.00	N	0.00		1092	67010	34	0	100	100	44230

Data Collector/Date

DB 08/19/2010

Appraiser/Date

ARG 10/01/2011

Neighborhood

Neigh 1 AV

Supplemental Cards

TOTAL IMPROVEMENT VALUE

44230



800

2.225 AC

0.78 AC

14

2.26 AC

10

2.11 AC

13

2.205 AC

WRIGHT'S WAY

BLVD

1

3.82 AC

2

<b>DOCKET NO. 312</b> – New Cingular Wireless PCS, LLC }	Connecticut
application for a Certificate of Environmental Compatibility and	
Public Need for the construction, maintenance and operation of a }	Siting
telecommunications facility at 350 Hartland Boulevard in	
Hartland, Connecticut. }	Council

May 17, 2006

### Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to New Cingular Wireless PCS, LLC for the construction, maintenance and operation of a wireless telecommunications facility to be located at 350 Hartland Boulevard in Hartland, Connecticut.

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

1. The tower shall be designed as a monopole and shall be constructed no taller than 120 feet above ground level to provide telecommunications services to both public and private entities. The height of the tower may be extended upon a petition to the Council.
2. The location of the tower shall be moved 20 to 30 feet to the north of the location proposed in Cingular's application, and the tower shall be designed with a yield point to effectively maintain a setback radius on the lessor's property.
3. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of Hartland and all parties and intervenors, as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
  - a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas mountings, equipment building, access road, utility line, and landscaping; and
  - b) construction plans for site clearing, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

4. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of electromagnetic radio frequency power density is submitted to the Council in the event other carriers locate at this facility or if circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.
5. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
6. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
7. The Certificate Holder shall provide reasonable space on the tower for no compensation for any municipal antennas, provided such antennas are compatible with the structural integrity of the tower.
8. If the facility authorized herein is not fully constructed and providing wireless services within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline.
9. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.
10. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and cease to function.
11. Any request for extension of the time periods referred to in Conditions 8, 9, and 10 shall be filed with the Council not later than sixty days prior to the expiration date of this Certificate and shall be served on all parties and intervenors and the Town of Hartland, as listed in the service list. Any proposed modifications to this Decision and Order shall likewise be so served.

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

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in the Hartford Courant and Torrington's Register-Citizen.

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

The party to this proceeding is:

<b>Status Granted</b>	<b>Status Holder (name, address &amp; phone number)</b>	<b>Representative (name, address &amp; phone number)</b>
<b>Applicant</b>	New Cingular Wireless PCS, LLC 500 Enterprise Drive Rocky Hill, CT 06067	Christopher B. Fisher, Esq. Cuddy & Feder LLP 90 Maple Avenue White Plains, NY 10601 (914) 761-1300 (914) 761-6405 Fax



3200 Horizon Dr,  
King of Prussia, PA 19406

Phone: (610) 635-3208  
www.crowncastle.com

**Crown Castle Letter of Authorization**

**CT - CONNECTICUT SITING COUNCIL**

**M. Bachman**

**10 FRANKLIN SQUARE**

**NEW BRITAIN, CT 06051**

**Re: Application for Zoning/Building Permit**

**Crown Castle telecommunications site at: 350 HARTLAND BOULEVARD, EAST  
HARTLAND, CT 06027**

CCATT LLC ("Crown Castle") hereby authorizes AT&T MOBILITY, including their Agent, to act as our Agent in the processing of all zoning applications, building permits and approvals through the CT - CONNECTICUT SITING COUNCIL for the existing wireless communications site described below:

**Crown Site ID/Name: 857014/HARTLAND - HARTLAND BOULEVARD**

**Customer Site ID: CT1167/HARTLAND - HARTLAND BOULEVARD**

**Site Address: 350 HARTLAND BOULEVARD, EAST HARTLAND, CT 06027**

**APN:**

Crown Castle

A handwritten signature in black ink, appearing to read 'S. Pass'.

10/26/20

By: \_\_\_\_\_ Date: \_\_\_\_\_

Samantha Pass

Real Estate Specialist



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**C006**

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




**USPS TRACKING #**



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<b>USPS TRACKING #</b>	
	
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<b>B013</b>	
SHIP TO: MARLENE D JUNG PO BOX 658 SIMSBURY CT 06070-0658	
<b>USPS TRACKING #</b>	
	
<b>9405 5036 9930 0116 8365 85</b>	
Electronic Rate Approved #038555749	

## Hollis Redding

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**To:** George, Sarah  
**Subject:** AT&T Wireless Exempt Mod Filing Crown BU 857014, Hartland-Hartland Boulevard

Hi Sarah-

Attached please find the AT&T Wireless Exempt Modification which will be filed with the CT Siting Council on November 5, 2020.

Thank you. Hollis

Hollis M. Redding



SAI Communications LLC  
Mobile: 860-834-6964  
[hredding@saigrp.com](mailto:hredding@saigrp.com)