January 7, 2022

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 CT5463
79 Putnam Turnpike, Dayville, CT 06241 (the "Property")
Latitude: 41-50-44.81 N Longitude: 71-52-45.48 W

Dear Ms. Bachman:

AT&T currently maintains (9) antennas at the 130-foot level on the existing 150-foot monopole tower ("Tower") at 79 Putnam Turnpike, in the Dayville section of Killingly, CT. The property and Tower are owned by the Town of Killingly. AT&T intends to modify its facility by replacing (3) antennas with (3) OPA65R-BU8D and adding (3) DMP65R-BU8DA antennas, replacing (6) RRUs with (3) 4415 B30, and (3) 4478 B14 RRUs, and adding (3) 4449 B5/B12 and (3) 8843 B2/B66A RRUs. The height of AT&Ts existing and proposed antennas & RRUs is 130-feet on the Tower.

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 town of Killingly issued a zoning permit approving the Tower on June 18, 1998. The original permit did not include any conditions to the approval. AT&T received CT Siting Council approval under EM-AT&T-069-030501 on May 20, 2003. This 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 Ms. Mary Calorio, Town Manager, Town of Killingly, as chief elected official, property & tower owner and Ms. Ann-Marie L. Aubrey, Director of Planning & Development, Town of Killingly.

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

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

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

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

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

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

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

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

Sincerely,

Hollis M. Redding

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

Enclosures

Cc:
Hon. Mary Calorio, Town Manager, Town of Killingly, chief elected official, property & tower owner
Ms. Ann-Marie L. Aubrey, Director of Planning & Development, Town of Killingly

Power Density

Existing Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm^2)	Freq. Band (MHz**)	Limit S (mW /cm^2)	%MPE
Other Carriers*							21.73%
AT&T	1	296	130	0.0069	880	0.5867	0.12%
AT&T	1	296	130	0.0069	880	0.5867	0.12%
AT&T	1	500	130	0.0117	1900	1.0000	0.12%
AT&T	1	500	130	0.0117	700	0.4667	0.25%
AT&T	1	427	130	0.0100	1900	1.0000	0.10%
AT&T	1	427	130	0.0100	1900	1.0000	0.10%
Site Total							22.53%

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

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

Proposed Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm^2)	Freq. Band (MHz**)	Limit S (mW /cm^2)	%MPE
Other Carriers*							21.73%
AT&T LTE	1	302	130	0.0071	850	0.5667	0.12%
AT&T LTE	3	1476	130	0.1036	700	0.4667	2.22%
AT&T LTE AWS	1	1476	130	0.0345	2300	1.0000	0.35%
AT&T 5G	1	1476	130	0.0345	2100	1.0000	0.35%
AT&T LTE	1	1476	130	0.0345	850	0.5667	0.61%
AT&T UMTS	2	3664	130	0.1714	1900	1.0000	1.71%
Site Total							27.09%

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

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

PROJECT INFORMATION

SCOPE OF WORK:	ITEMS TO BE MOUNTED ON THE EXISTING MONOPOLE: • NEW AT&T ANTENNAS: OPA65R-BU8D (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T ANTENNAS: DMP65R-BU8DA (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T RRUS: 4415 B30 (WCS) (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T RRUS: 4478 B14 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T RRUS: 4449 B5/B12 (850/700) (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T RRUS: 8843 B2/B66A (PCS/AWS) (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T SURGE ARRESTOR: DC6-48-60-18-8C (TOTAL OF 1) WITH (2) 4 AWG DC TRUCK AND (1) 18-FIBER TRUNK. • NEW (6) Y-CABLES. ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION: • ADD 2ND 6630 FOR 5G. • ADD IDLe CABLE. • ADD (5) RECTIFIERS. • ADD (1) DC12. • NEW AT&T RRUS: 2012 B29 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T SURGE ARRESTOR: APTDC-BDFDM-DB (TYP. OF 2 PER SECTOR, TOTAL OF 6). ITEMS TO BE REMOVED: • EXISTING AT&T ANTENNA: 7770 (TYP. OF 1 PER SECTOR, TOTAL OF 3). • EXISTING AT&T RRUS: RRUS-11 B12 (TYP. OF 1 PER SECTOR, TOTAL OF 3). • EXISTING AT&T RRUS: RRUS-12 B2 (TYP. OF 1 PER SECTOR, TOTAL OF 3). ITEMS TO REMAIN: (6) ANTENNAS, (2) SURGE ARRESTOR, (12) COAX CABLES, (2) DC POWER & (1) FIBER.
SITE ADDRESS:	79 PUTNAM PIKE DAYVILLE, CT 06241
LATITUDE:	41.846891° N, 41° 50' 48.81" N
LONGITUDE:	71.879300° W, 71° 52' 45.48" W
TYPE OF SITE:	MONOPOLE / OUTDOOR EQUIPMENT
STRUCTURE HEIGHT:	150'-0"±
RAD CENTER:	130'-0"±
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

DRAWING INDEX

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

SITE NUMBER: CT5463

SITE NAME: KILLINGLY NORTH

FA CODE: 10071084

PACE ID: MRCTB053113, MRCTB053099, MRCTB052742, MRCTB052741, MRCTB052743

PROJECT: LTE 3C-4C-5C-6C-5G NR UPGRADE

VICINITY MAP

DIRECTIONS TO SITE:

START OUT GOING EAST ON ENTERPRISE DR TOWARD CAPITAL BLVD. TURN LEFT ONTO CAPITAL BLVD. TURN LEFT ONTO WEST ST. MERGE ONTO I-91 N VIA THE RAMP ON THE LEFT TOWARD HARTFORD. MERGE ONTO CT-15 N VIA EXIT 29 ON THE LEFT TOWARD BOSTON/E HARTFORD/I-84 E. CT-15 N BECOMES I-84 E. TAKE THE CT-74 EXIT, EXIT 69, TOWARD WILLINGTON/US-44. TURN RIGHT ONTO TOLLAND STAGE RD/CT-74. CONTINUE TO FOLLOW CT-74. TURN LEFT ONTO POMPEY HOLLOW RD/US-44 E. CONTINUE TO FOLLOW US-44 E. STAY STRAIGHT TO GO ONTO MASHAMOQUET RD/CT-101. CONTINUE TO FOLLOW CT-101. TURN SHARP LEFT ONTO PUTNAM PIKE/CT-12. IF YOU REACH VALLEY RD YOU'VE GONE ABOUT 0.1 MILES TOO FAR 79 PUTNAM PIKE, DAYVILLE, CT 06241-1606, 79 PUTNAM PIKE IS ON THE LEFT.

GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T MOBILITY REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
4. CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN.

72 HOURS

CALL
BEFORE YOU DIG
CALL TOLL FREE 1-800-922-4455
OR CALL 811

UNDERGROUND SERVICE ALERT

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

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT5463
SITE NAME: KILLINGLY NORTH

79 PUTNAM PIKE
DAYVILLE, CT 06241
WINDHAM COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	12/09/21	ISSUED FOR REVIEW	AM	HC	DPH
A	17/17/21	ISSUED FOR REVIEW	JC	HC	DPH

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

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

AT&T

TITLE SHEET
LTE 3C-4C-5C-6C-5G NR UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5463	T-1	1

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81 STANDARDS) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS AND #2 AWG STRANDED COPPER FOR OUTDOOR BTS.

6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

   CONTRACTOR – SAI
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – AT&T MOBILITY

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.

10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

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

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

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

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."

17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

20. APPLICABLE BUILDING CODES:
    SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

    BUILDING CODE: IBC 2015 WITH 2018 CT STATE BUILDING CODE AMENDMENTS
    ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE (NFPA 70-2017)

    SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

    AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;

    AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;

    TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-H, STRUCTURAL STANDARDS FOR STEEL

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

ABBREVIATIONS

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

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

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT5463
SITE NAME: KILLINGLY NORTH

79 PUTNAM PIKE
DAYVILLE, CT 06241
WINDHAM COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	12/09/21	ISSUED FOR REVIEW	AM	HC	DPH
A	17/17/21	ISSUED FOR REVIEW	JG	HC	DPH

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

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

AT&T

GENERAL NOTES

LTE 3C-4C-5C-6C-5G NR UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5463	GN-1	1

NOTE:

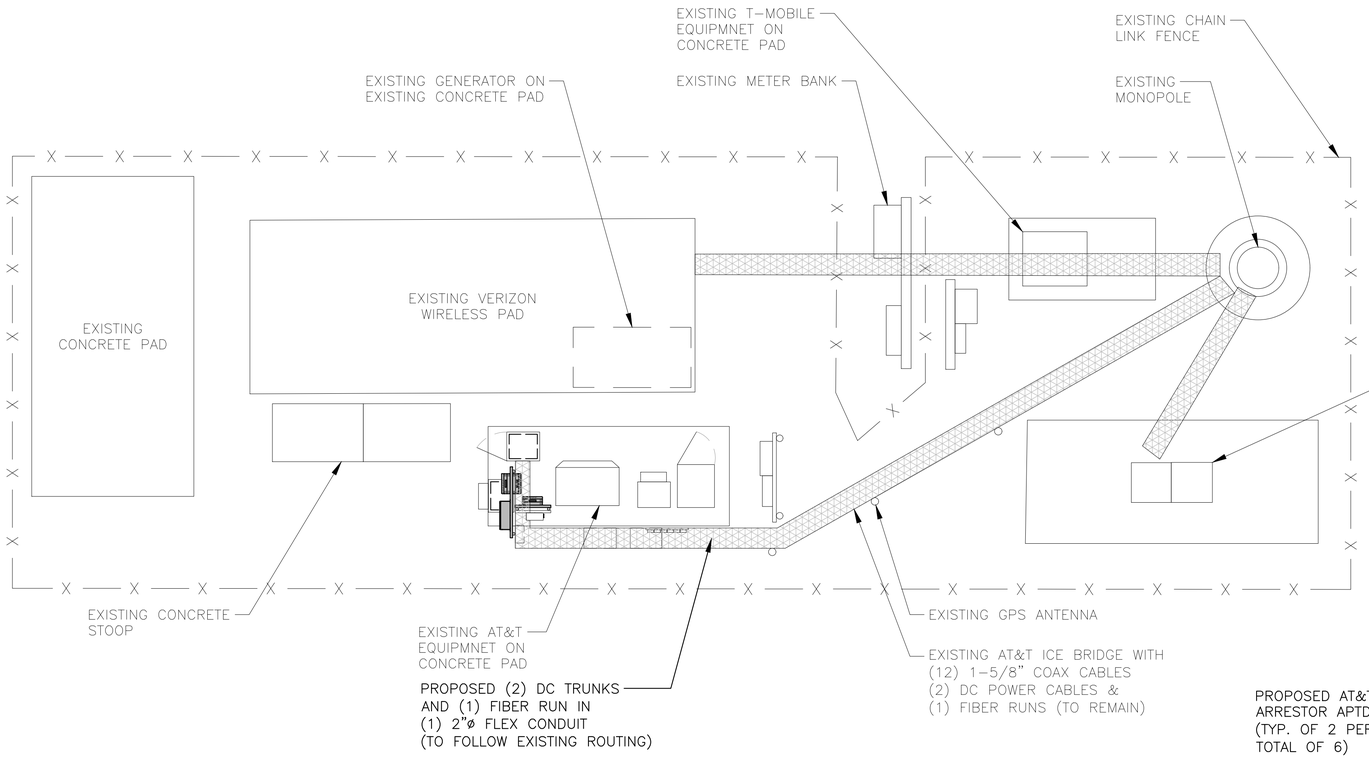
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

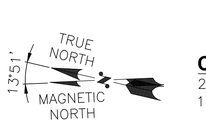
NOTE:

REFER TO THE STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC. DATED: NOVEMBER 4, 2021, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:

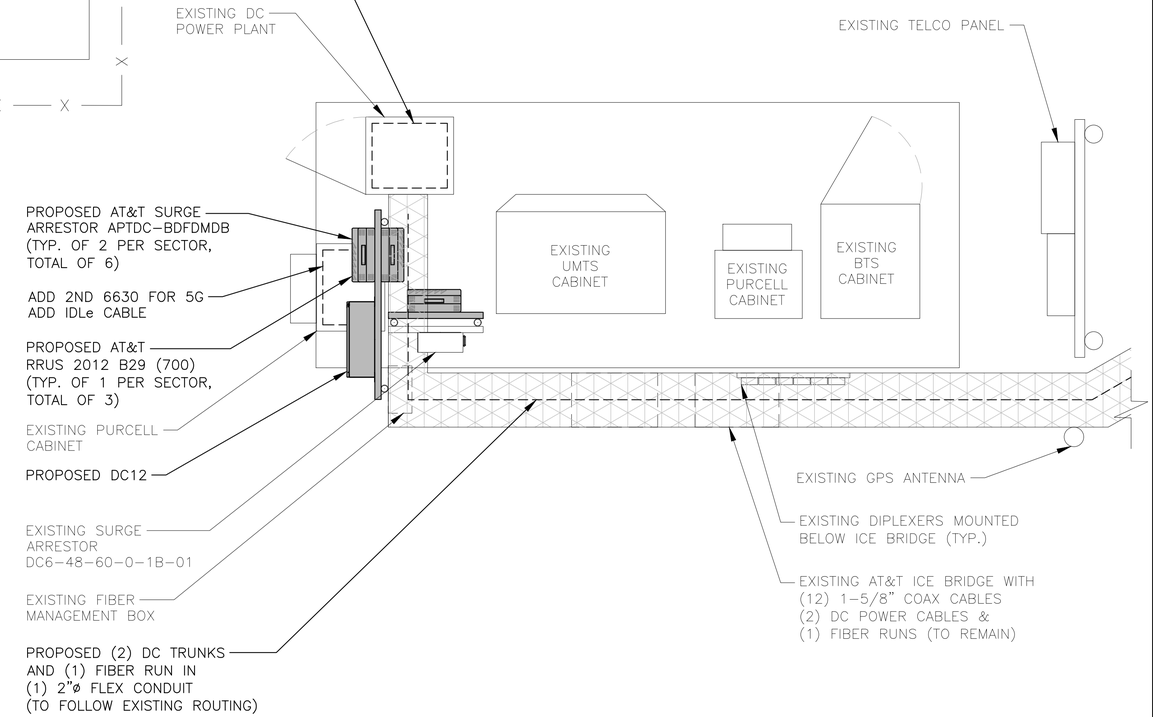
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED EQUIPMENT LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: NOVEMBER 1, 2021.

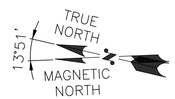




COMPOUND PLAN (1 / A-1)
22x34 SCALE: 3/16"=1'-0"
11x17 SCALE: 3/32"=1'-0"

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





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

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

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

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT5463
SITE NAME: KILLINGLY NORTH

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at&t
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NO.	DATE	REVISIONS	BY	CHK	APP'D
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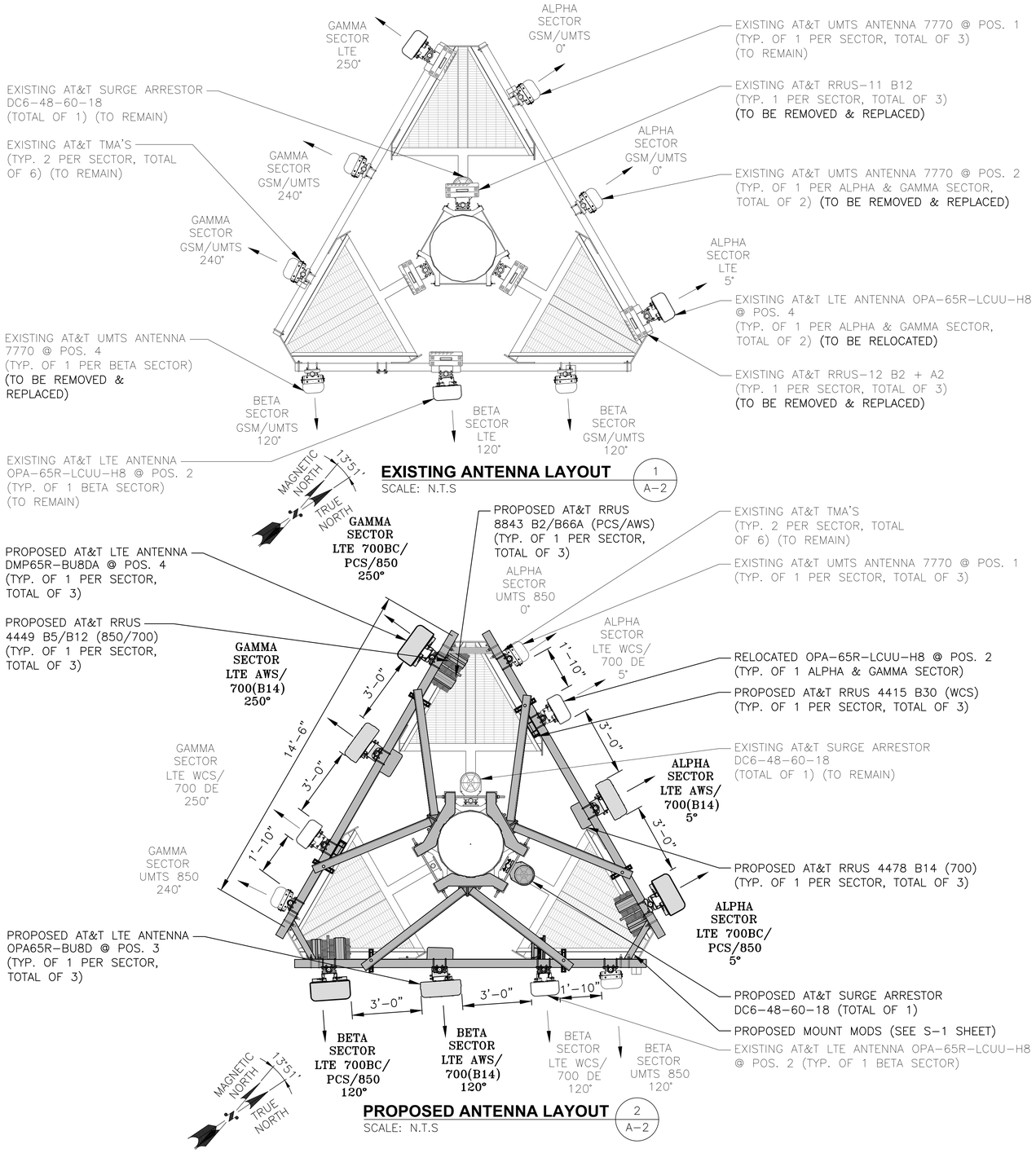
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: AM

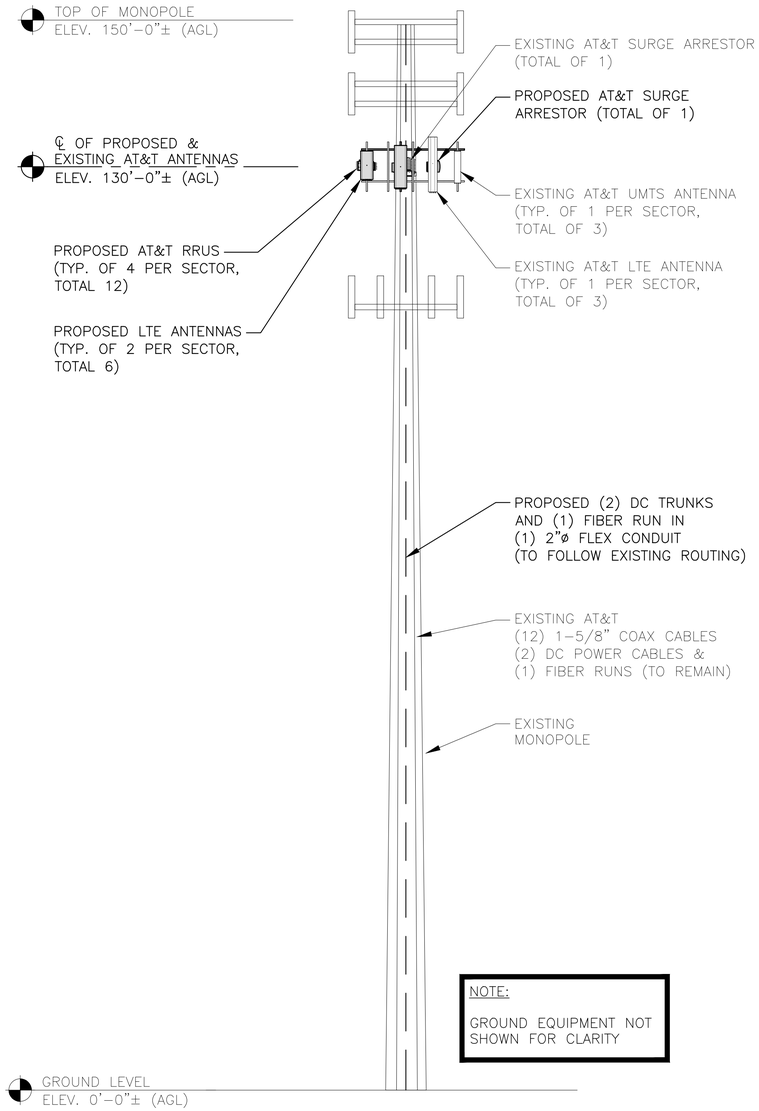
STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

COMPOUND & EQUIPMENT PLANS
LTE 3C-4C-5C-6C-5G NR UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5463	A-1	1





NOTE:

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

NOTE:

REFER TO THE STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC. DATED: NOVEMBER 4, 2021, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED EQUIPMENT LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: NOVEMBER 1, 2021.

NOTE:

GROUND EQUIPMENT NOT SHOWN FOR CLARITY

ELEVATION
22x34 SCALE: 3/32"=1'-0"
11x17 SCALE: 3/64"=1'-0"
3
A-2

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

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

12 INDUSTRIAL WAY
SALEM, NH 03079

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

SITE NUMBER: CT5463
SITE NAME: KILLINGLY NORTH

79 PUTNAM PIKE
DAYVILLE, CT 06241
WINDHAM COUNTY

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	12/09/21	ISSUED FOR REVIEW	AM	HC	DPH
A	17/17/21	ISSUED FOR REVIEW	JC	HC	DPH

SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: AM | CHK'D BY: HC | APP'D BY: DPH

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

AT&T

ANTENNA LAYOUTS & ELEVATION
LTE 3C-4C-5C-6C-5G NR UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5463	A-2	1

NOTE:

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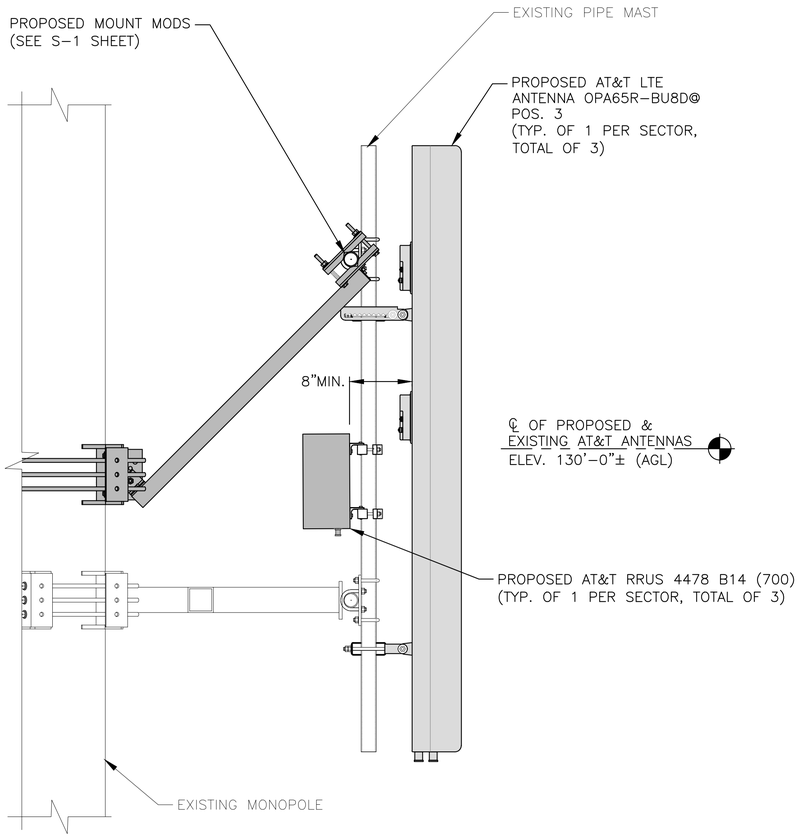
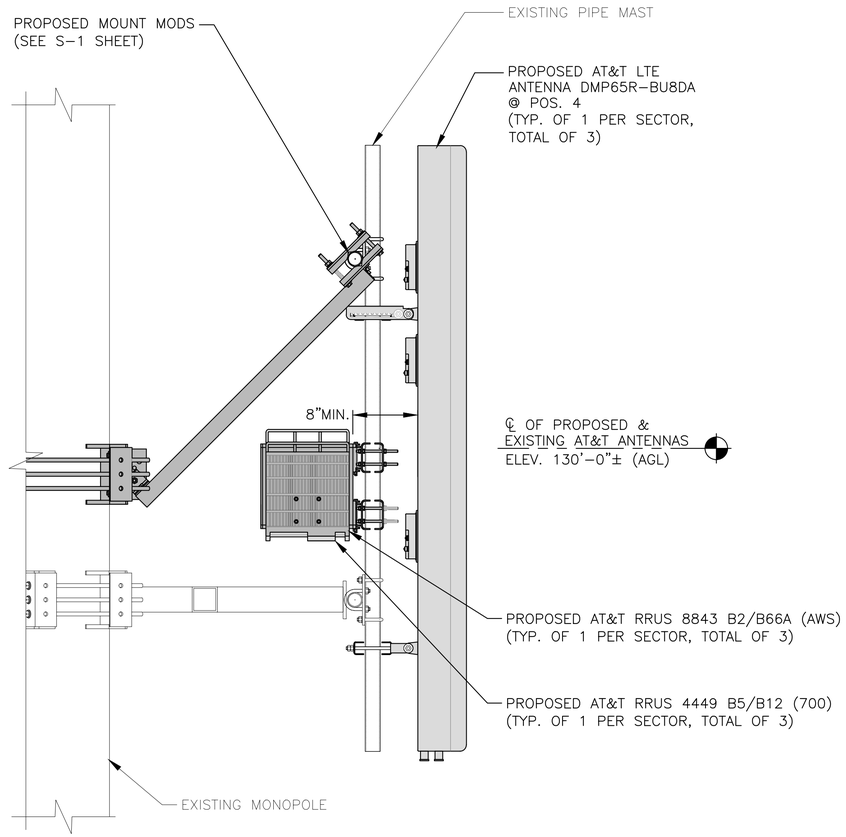


PROPOSED LTE ANTENNA MOUNTING DETAIL @ POS.3

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

1 / A-3

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



PROPOSED LTE ANTENNA MOUNTING DETAIL @ POS.4

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

2 / A-3

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

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SITE NAME: KILLINGLY NORTH

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500 ENTERPRISE DRIVE, SUITE 3A
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DETAILS

LTE 3C-4C-5C-6C-5G NR UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5463	A-3	1

ANTENNA SCHEDULE

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	FREQUENCY	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	EXISTING	UMTS 850	7770	55X11X5	130'-0"±	0°	(2)(E)LGP21401	–	–	–	(2)1-5/8 COAX	(E)(1) RAYCAP DC6-48-60-18
A2	EXISTING	LTE WCS/ 700 DE	OPA-65R-LCUU-H8	92.7X14.4x7	130'-0"±	5°	–	(1)(G)(P)2012 B29 (1)(P)4415 B30	700 WCS	20.4"x18.5"x7.5" 16.5"x13.4"x5.9"	–	
A3	PROPOSED	LTE AWS/ 700(B14)	OPA65R-BU8D	96X21x7.8	130'-0"±	5°	–	(1)(P)4478 B14	700	18.1"x13.4"x8.3"	–	
A4	PROPOSED	LTE 700BC/ PCS/850	DMP65R-BU8DA	96X20.7x7.7	130'-0"±	5°	–	(1)(P)4449 B5/B12 (1)(P)8843 B2/B66A	850/700 PCS/WCS	17.9"x13.2"x10.4" 14.9"x13.2"x10.9"	(2) DC LINES (1) FIBER LINE	
B1	EXISTING	UMTS 850	7770	55X11X5	130'-0"±	120°	(2)(E)LGP21401	–	–	–	(2)1-5/8 COAX	(P)(1) RAYCAP DC6-48-60-18
B2	EXISTING	LTE WCS/ 700 DE	OPA-65R-LCUU-H8	92.7X14.4x7	130'-0"±	120°	–	(1)(G)(P)2012 B29 (1)(P)4415 B30	700 WCS	20.4"x18.5"x7.5" 16.5"x13.4"x5.9"	–	
B3	PROPOSED	LTE AWS/ 700(B14)	OPA65R-BU8D	96X21x7.8	130'-0"±	120°	–	(1)(P)4478 B14	700	18.1"x13.4"x8.3"	(2) DC LINES (1) FIBER LINE	
B4	PROPOSED	LTE 700BC/ PCS/850	DMP65R-BU8DA	96X20.7x7.7	130'-0"±	120°	–	(1)(P)4449 B5/B12 (1)(P)8843 B2/B66A	850/700 PCS/WCS	17.9"x13.2"x10.4" 14.9"x13.2"x10.9"	–	
C1	EXISTING	UMTS 850	7770	55X11X5	130'-0"±	240°	(2)(E)LGP21401	–	–	–	(2)1-5/8 COAX	(P)(G)(1) RAYCAP DC12-48-60-0-25E
C2	EXISTING	LTE WCS/ 700 DE	OPA-65R-LCUU-H8	92.7X14.4x7	130'-0"±	250°	–	(1)(G)(P)2012 B29 (1)(P)4415 B30	700 WCS	20.4"x18.5"x7.5" 16.5"x13.4"x5.9"	–	
C3	PROPOSED	LTE AWS/ 700(B14)	OPA65R-BU8D	96X21x7.8	130'-0"±	250°	–	(1)(P)4478 B14	700	18.1"x13.4"x8.3"	–	
C4	PROPOSED	LTE 700BC/ PCS/850	DMP65R-BU8DA	96X20.7x7.7	130'-0"±	250°	–	(1)(P)4449 B5/B12 (1)(P)8843 B2/B66A	850/700 PCS/WCS	17.9"x13.2"x10.4" 14.9"x13.2"x10.9"	–	

FINAL ANTENNA SCHEDULE (1 / A-4)
SCALE: N.T.S

NOTE:
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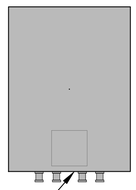
RRU CHART

QUANTITY	MODEL	SIZE (L x W x D)
3(P)	4449 (700)	17.9"x13.2"x10.4"
3(P)	8843 (AWS)	14.9"x13.2"x10.9"
3(P)	4478 B14 (700)	18.1"x13.4"x8.3"
3(P)	4415 (WCS)	16.5"x13.4"x5.9"
3(P)	RRUS-E2 B29 (700)	20.4"x18.5"x7.5"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

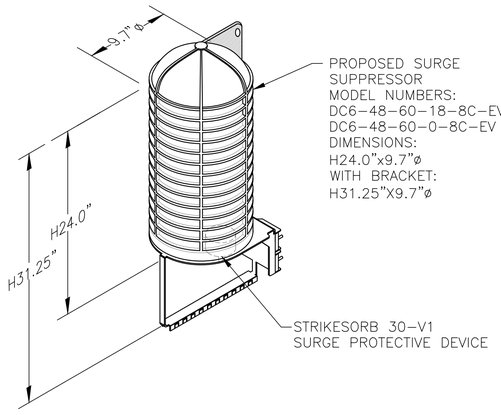
NOTE:
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER



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

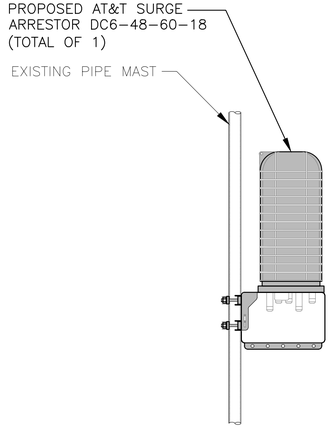
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

PROPOSED RRUS DETAIL (2 / A-4)
SCALE: N.T.S

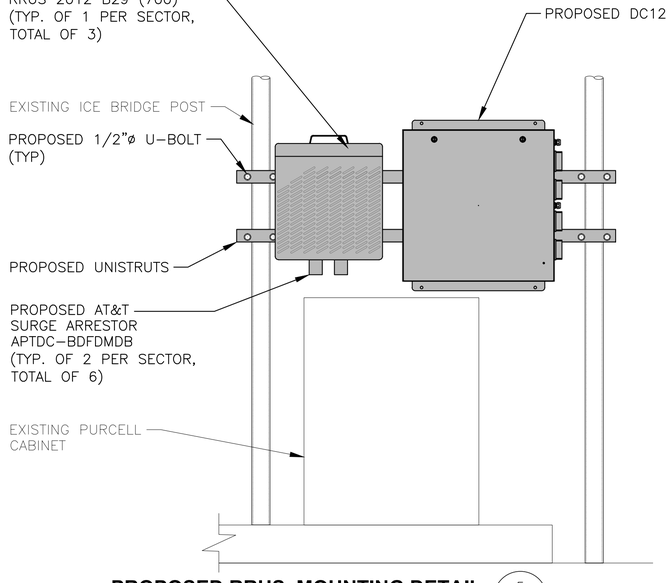


NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE SUPPRESSOR DETAIL (3 / A-4)
SCALE: N.T.S



PROPOSED SURGE ARRESTOR MOUNTING DETAIL (4 / A-4)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"
0 0'-6" 1'-0" 2'-0" 3'-0"



PROPOSED RRUS MOUNTING DETAIL (5 / A-4)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"
0 0'-6" 1'-0" 2'-0" 3'-0"

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DETAILS
LTE 3C-4C-5C-6C-5G NR UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5463	A-4	1

STRUCTURAL NOTES:

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

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

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

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

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

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

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

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A	17/17/21	ISSUED FOR REVIEW	JC	HC	DPH

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

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

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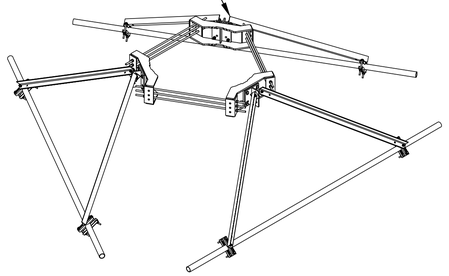
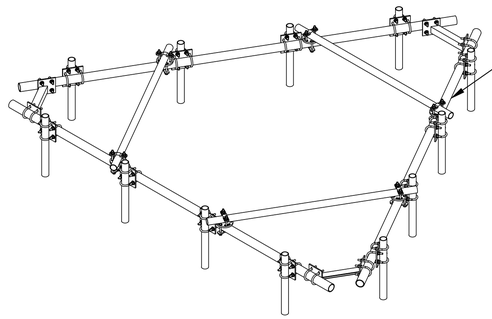
STRUCTURAL NOTES
LTE 3C-4C-5C-6C-5G NR UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5463	SN-1	1

PROPOSED SECTOR FRAME STABILIZER (SITEPRO1 PRK-SFS-L) (TOTAL OF 1)



HANDRAIL REINFORCEMENT KIT DETAIL 3 / S-1
SCALE: N.T.S



PROPOSED HANDRAIL KIT, SITEPRO1 P/N HRK14-3HD (OR APPROVAL EQUAL), HANDRAIL KIT REQUIRED PER AT&T TECHNICAL DIRECTIVE TO STABILIZE EXISTING CANTILEVERED ANTENNAS

HANDRAIL KIT DETAIL 4 / S-1
SCALE: N.T.S

NOTE:

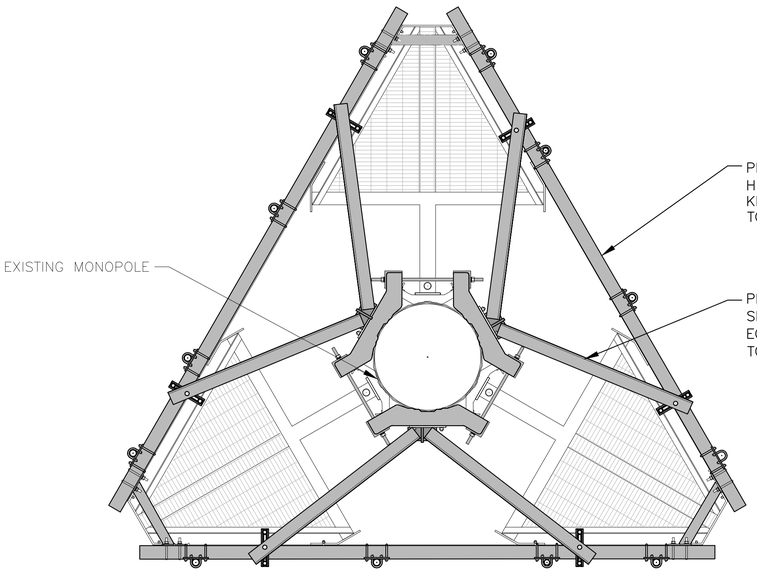
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

HDG RECOMMENDS THE EXISTING ANTENNA MOUNT BE MAPPED IN ITS ENTIRETY & A MOUNT STRUCTURAL ANALYSIS PERFORMED PRIOR TO THE ANTENNA INSTALLATION.

NOTE:

AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED EQUIPMENT LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: NOVEMBER 1, 2021.



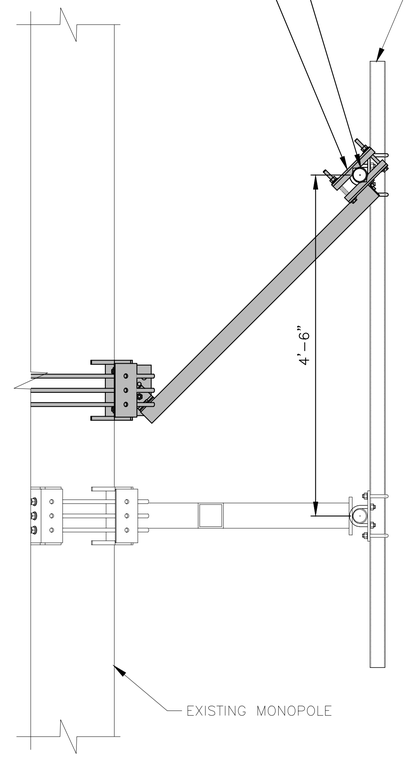
PROPOSED MOUNT MODIFICATIONS PLAN 1 / S-1
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"

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

PROPOSED HANDRAIL KIT, SITEPRO1 P/N HRK14-3HD (OR APPROVAL EQUAL), HANDRAIL KIT REQUIRED PER AT&T TECHNICAL DIRECTIVE TO STABILIZE EXISTING CANTILEVERED ANTENNAS

PROPOSED HANDRAIL REINFORCEMENT KIT, SITEPRO1 P/N PRK-SFS-L (OR APPROVAL EQUAL) SECURED TO NEW HORIZONTAL PIPE AND TOWER (TOTAL OF 1)

EXISTING PIPE MAST



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

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

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

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT5463
SITE NAME: KILLINGLY NORTH

79 PUTNAM PIKE
DAYVILLE, CT 06241
WINDHAM COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	12/09/21	ISSUED FOR REVIEW	AM	HC	DPH
A	17/17/21	ISSUED FOR REVIEW	JC	HC	DPH

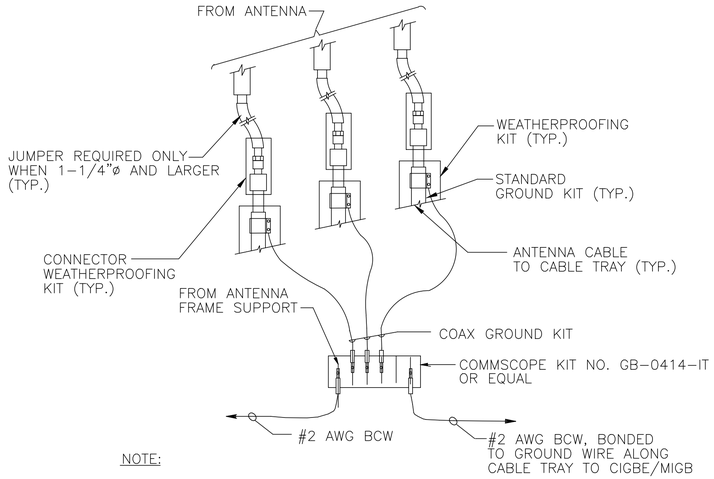
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: AM

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

AT&T

MOUNT MODIFICATION DESIGN
LTE 3C-4C-5C-6C-5G NR UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5463	S-1	1



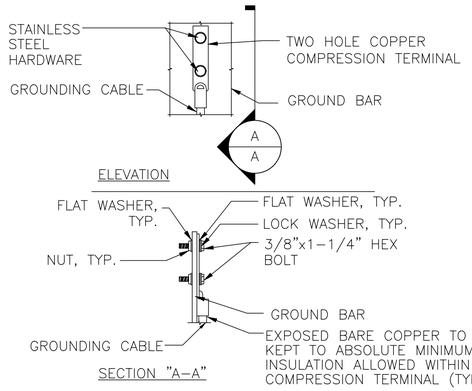
NOTE:

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

GROUND WIRE TO GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

1 / G-1

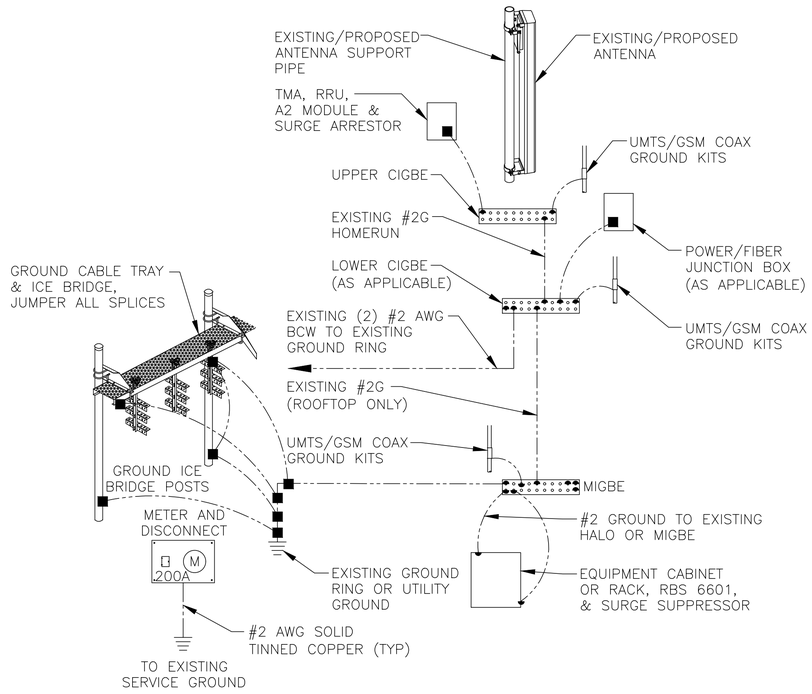


NOTES:
1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATION.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB

TYPICAL GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

3 / G-1



GROUNDING RISER DIAGRAM

SCALE: N.T.S

2 / G-1

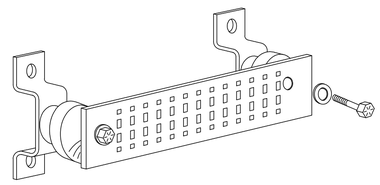
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" – SURGE PRODUCERS

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

SECTION "A" – SURGE ABSORBERS

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



GROUND BAR - DETAIL (AS REQUIRED)

SCALE: N.T.S

4 / G-1

HUDSON Design Group LLC
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TEL: (978) 557-5553
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12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT5463
SITE NAME: KILLINGLY NORTH

79 PUTNAM PIKE
DAYVILLE, CT 06241
WINDHAM COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	12/09/21	ISSUED FOR REVIEW	AM	HC	DPH
A	17/17/21	ISSUED FOR REVIEW	JC	HC	DPH

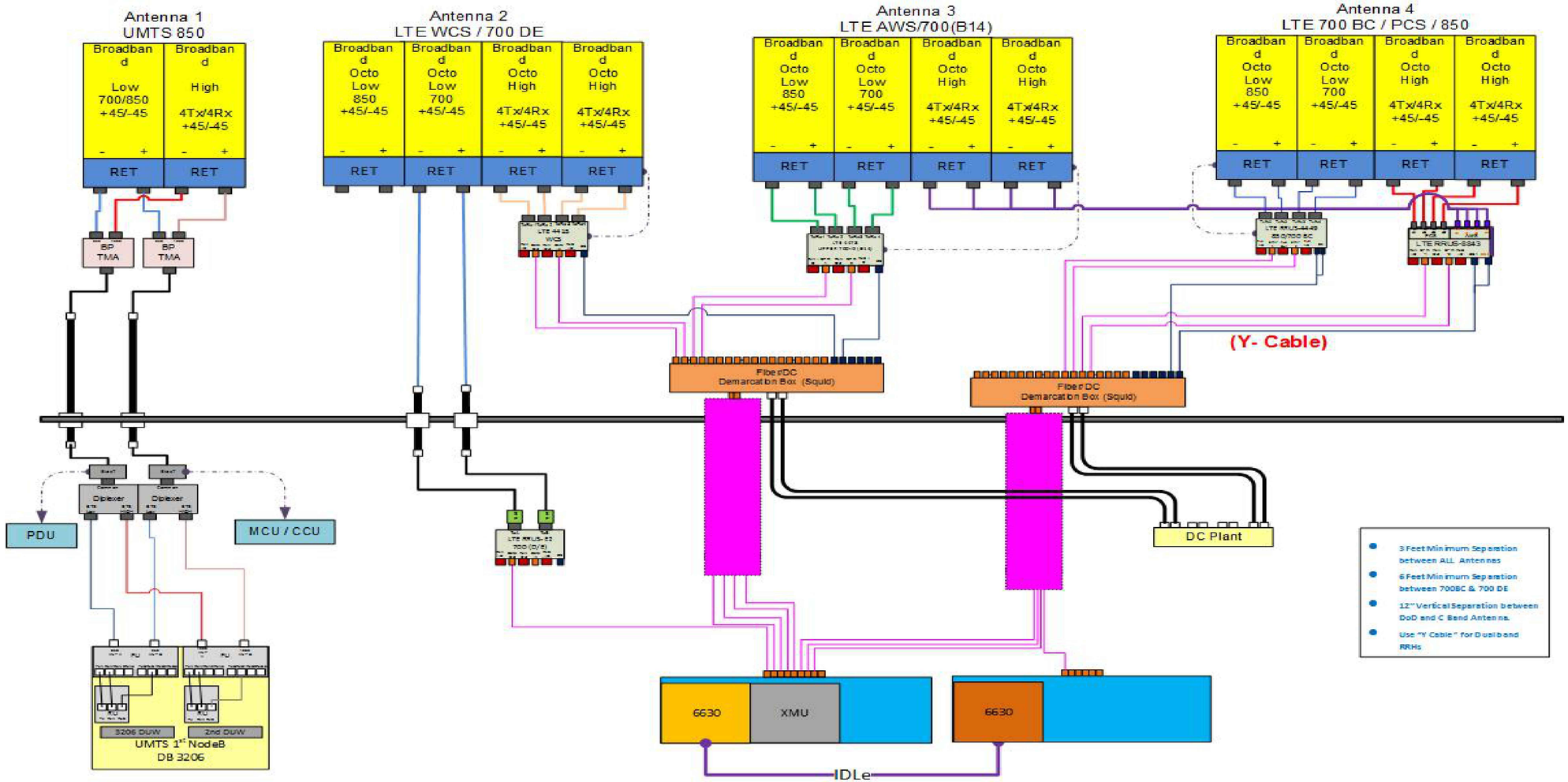
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: AM

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

AT&T

GROUNDING DETAILS
LTE 3C-4C-5C-6C-5G NR UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5463	G-1	1



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

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

NOTE:

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

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SITE NUMBER: CT5463
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500 ENTERPRISE DRIVE, SUITE 3A
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NO.	DATE	REVISIONS	BY	CHK	APP'D
1	12/09/21	ISSUED FOR REVIEW	AM	HC	DPH
A	17/17/21	ISSUED FOR REVIEW	JC	HC	DPH

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

AT&T

RF PLUMBING DIAGRAM
LTE 3C–4C–5C–6C–5G NR UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5463	RF–1	1

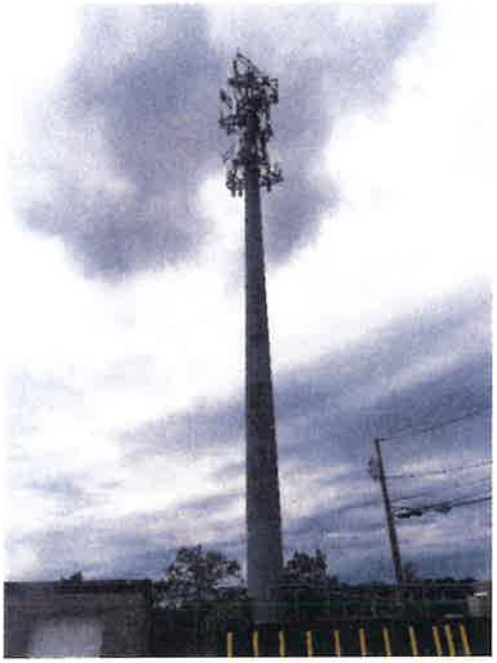
STRUCTURAL ANALYSIS REPORT

For

SITE NUMBER: CT5463 (LTE 3C/4C/5C/6C/5G)
SITE NAME: KILLINGLY NORTH

79 Putnam Pike
Dayville, CT 06241

Antennas Mounted to the Monopole



Prepared for:

SAI at&t

Dated: November 1, 2021

Prepared by:

HDG HUDSON Design Group LLC

45 Beechwood Drive
North Andover, MA 01845
(P) 978.557.5553 (F) 978.336.5586
www.hudsondesigngroupllc.com

SCOPE OF WORK:

Hudson Design Group LLC (HDG) has been authorized by AT&T to conduct a structural evaluation of the 150' monopole supporting the proposed AT&T's antennas located at elevation 130' above the ground level.

This report represents this office's findings, conclusions and recommendations pertaining to the support of AT&T's existing and proposed antennas listed below.

The following documents were used for our reference:

- Structural Analysis prepared by Centek Engineering dated August 8, 2014.
- Structural Analysis Report prepared by INFINIGY Engineering PLLC, dated May 4, 2018.
- Previous HDG Structural Analysis Report dated February 8, 2019.
- Previous HDG Structural Analysis Report dated October 18, 2021.

CONCLUSION SUMMARY:

Based on our evaluation, we have determined that the existing monopole **is in conformance** with the ANSI/TIA-222-H Standard for the loading considered under the criteria listed in this report. The monopole structure is rated at **94.4 %** - (Pole Section L6 from El.40' to El.51' Controlling).

FOUNDATION SUMMARY:

Based on our evaluation, we have determined that the existing foundation **is in conformance** with the ANSI/TIA-222-H Standard for the loading considered under the criteria listed in this report. The foundation is rated at **70.7 %** - (Moment Capacity Controlling).

HUDSON Design Group LLC

APPURTENANCES CONFIGURATION:

Tenant	Appurtenances	Elev.	Mount
	Lightning Rod	153'	Top of Monopole
	(2) 4' Omni	153'	10'-6" Pipe
	(3) RV90-17-02DP Antennas	150'	T - Frame
	(3) LNX-6515DS-VTM Antennas	150'	T - Frame
	(3) Gen. TMA	150'	T - Frame
	(3) NNVV-65B-R4 Antennas	140'	T - Frame
	(3) APXVTM14 Antennas	140'	T - Frame
	(6) RRH-800	140'	T - Frame
	(3) RRH-1900	140'	T - Frame
	(3) TD-RRH8x20-25	140'	T - Frame
AT&T	(3) 7770 Antennas	130'	Low Profile Platform
AT&T	(3) OPA-65R-LCUU-H8 Antennas	130'	Low Profile Platform
AT&T	(6) LGP21401 TMA's	130'	Low Profile Platform
AT&T	(1) Squid Surge Arrestor	130'	Low Profile Platform
AT&T	**(3) DMP65R-BU8DA Antenna**	130'	Low Profile Platform
AT&T	**(3) OPA65R-BU8DA Antenna**	130'	Low Profile Platform
AT&T	**(3) 4449 B5/B12 RRH's**	130'	Low Profile Platform
AT&T	**(3) B2/B66A 8843 RRH's**	130'	Low Profile Platform
AT&T	**(3) B14 4478 RRH's**	130'	Low Profile Platform
AT&T	**(3) 4415 B30 RRH's**	130'	Low Profile Platform
AT&T	**(1) Squid Surge Arrestor**	130'	Low Profile Platform
	4' Omni	124'-4"	6' Side Mount Standoff
	4' Omni	123'-8"	6' Side Mount Standoff
	(3) HBXX-6517DS-VTM Antennas	108'	Low Profile Platform
	(6) MX06FRO660-03 Antennas	108'	Low Profile Platform
	(3) MT6407-77A Antennas	108'	Low Profile Platform
	(3) RF4439d-25A RRH's	108'	Low Profile Platform
	(3) RF4440d-13A RRH's	108'	Low Profile Platform
	(1) Junction Box	108'	Low Profile Platform

Proposed AT&T Appurtenances shown in Bold.

AT&T EXISTING/PROPOSED COAX CABLES:

Tenant	Coax Cables	Elev.	Mount
AT&T	(12) 1-5/8" Cables	130'	Inside Monopole
AT&T	(2) DC Power Cables	130'	Inside Monopole
AT&T	(2) Fiber Cable	130'	Inside Monopole
AT&T	***(2) DC Power Cables***	130'	Inside Monopole
AT&T	***(1) Fiber Cable***	130'	Inside Monopole

Proposed AT&T Coax Cables shown in Bold.

HUDSON Design Group LLC

ANALYSIS RESULTS SUMMARY:

Component	Max. Stress Ratio	Elev. of Component (ft)	Pass/Fail	Comments
Pole Section-L1	17.1 %	130 – 150	PASS	
Pole Section-L2	55.6 %	115 – 130	PASS	
Pole Section-L3	59.7 %	95 – 115	PASS	
Pole Section-L4	74.3 %	91 – 95	PASS	
Pole Section-L5	81.0 %	51 – 91	PASS	
Pole Section-L6	**94.4 %**	40 – 51	PASS	**Controlling**
Pole Section-L7	79.6 %	19 – 40	PASS	
Pole Section-L8	91.9 %	0 – 19	PASS	
Anchor Rods	79.8 %	-	PASS	

FOUNDATION RESULTS SUMMARY:

	Stress Ratio	Pass/Fail	Comments
Bearing Capacity	13.7 %	PASS	
Moment Capacity	**70.7 %**	PASS	**Controlling**

HUDSON Design Group LLC

DESIGN CRITERIA:

1. EIA/TIA-222-H Structural Standards for Steel Antenna Towers and Antenna Supporting Structures

   County: Windham
   Ultimate Wind Speed: 130 mph (3 second gust)
   Structural Class: II
   Exposure Category: C
   Topographic Category: 1
   Nominal Ice Thickness: 1 inch

2. Approximate height above grade to proposed antennas: 130'

***Calculations and referenced documents are attached.**

ASSUMPTIONS:

1. The appurtenances configuration is as stated in this report. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.

2. The tower and foundation are properly constructed and maintained. 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. The support mounts and platforms are not analyzed and are considered adequate to support the loading. The analysis is limited to the primary support structure itself.

4. All prior structural modification, if any, are assumed to be as per the data supplied (if available), and installed properly.

SUPPORT RECOMMENDATIONS:

HDG recommends that the proposed antennas, RRHs and surge arrestors to be mounted on the existing platform supported by the monopole.

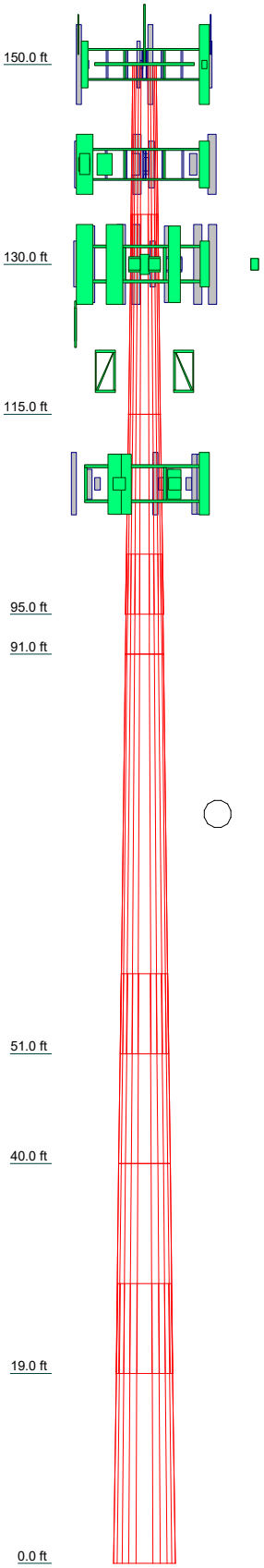
Reference HDG's Latest Construction Drawings for all component and connection requirements.

Photo 1: Photo illustrating the monopole with Appurtenances shown.

HUDSON
Design Group LLC

CALCULATIONS

Section	1	2	3	4	5	6	7	8	Grade	Weight (lb)
Length (ft)	20.00	20.00	20.00	10.00	40.00	19.00	21.00	28.00		36802.4
Number of Sides	12	12	12	12	12	12	12	12	A36M-45	9237.4
Thickness (in)	0.2500	0.2500	0.3125	0.3125	0.3750	0.3750	0.4375	0.4375		6508.7
Socket Length (ft)	5.00		6.00		8.00		9.00			4545.5
Top Dia (in)	27.8125	32.1875	38.6875	42.6125	45.8125	55.5125	61.6875	64.7054		8541.3
Bot Dia (in)	34.3125	38.6875	45.1875	45.8125	58.8750	61.6875	68.5000	73.8125		1503.2
										2850.5
										1927.7
										1688.1



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
6' Lightning Rod	153	Squid Surge Arrestor	130
Omni 3"x4'	153	DMP65R-BU8DA Antenna w/ Mounting Pipe	130
Omni 3"x4'	153	DMP65R-BU8DA Antenna w/ Mounting Pipe	130
10'-6" Horizontal Pipe	150	DMP65R-BU8DA Antenna w/ Mounting Pipe	130
12' Sector Frame (T-Mobile)	150	OPA65R-BU8D Antenna w/ Mounting Pipe	130
12' Sector Frame	150	OPA65R-BU8D Antenna w/ Mounting Pipe	130
12' Sector Frame	150	OPA65R-BU8D Antenna w/ Mounting Pipe	130
LNX-6515DS-VTM Antenna w/ Mounting Pipe	150	4449 B5/B12 RRH	130
LNX-6515DS-VTM Antenna w/ Mounting Pipe	150	4449 B5/B12 RRH	130
LNX-6515DS-VTM Antenna w/ Mounting Pipe	150	4449 B5/B12 RRH	130
RV90-17-02DP Antenna w/ Mounting Pipe	150	B2/B66A 8843 RRH	130
RV90-17-02DP Antenna w/ Mounting Pipe	150	B2/B66A 8843 RRH	130
RV90-17-02DP Antenna w/ Mounting Pipe	150	B2/B66A 8843 RRH	130
Gen. TMA	150	B14 4478 RRH	130
Gen. TMA	150	B14 4478 RRH	130
Gen. TMA	150	B14 4478 RRH	130
12' Sector Frame (Sprint)	140	4415 B30 RRH	130
12' Sector Frame	140	4415 B30 RRH	130
12' Sector Frame	140	4415 B30 RRH	130
NNVV-65B-R4 Antenna w/ Mounting Pipe	140	Omni 3"x4'	124.3
NNVV-65B-R4 Antenna w/ Mounting Pipe	140	Omni 3"x4'	123.7
NNVV-65B-R4 Antenna w/ Mounting Pipe	140	Pirod 6' Side Mount Standoff	119.3
APXVTM14-C Antenna w/ Mounting Pipe	140	2' Side Mount Standoff	119.3
APXVTM14-C Antenna w/ Mounting Pipe	140	Pirod 6' Side Mount Standoff	119.3
APXVTM14-C Antenna w/ Mounting Pipe	140	MX06FRO660-03 Antenna w/ Mounting Pipe (Verizon)	108
800 RRH	140	MX06FRO660-03 Antenna w/ Mounting Pipe	108
800 RRH	140	MX06FRO660-03 Antenna w/ Mounting Pipe	108
800 RRH	140	MX06FRO660-03 Antenna w/ Mounting Pipe	108
800 RRH	140	MX06FRO660-03 Antenna w/ Mounting Pipe	108
800 RRH	140	MX06FRO660-03 Antenna w/ Mounting Pipe	108
800 RRH	140	MT6407-77A Antenna w/ Mounting Pipe	108
1900 RRH	140	MT6407-77A Antenna w/ Mounting Pipe	108
1900 RRH	140	MT6407-77A Antenna w/ Mounting Pipe	108
1900 RRH	140	RF4439d-25A RRH	108
TD-RRH8x20-25 RRH	140	RF4439d-25A RRH	108
TD-RRH8x20-25 RRH	140	RF4439d-25A RRH	108
TD-RRH8x20-25 RRH	140	RF4440d-13A RRH	108
Platform w/ Handrails (ATI)	130	RF4440d-13A RRH	108
7770 Antenna w/ Mounting Pipe	130	RF4440d-13A RRH	108
7770 Antenna w/ Mounting Pipe	130	Junction Box	108
7770 Antenna w/ Mounting Pipe	130	HBXX-6517DS-VTM Antenna w/ Mounting PIpe (Verizon)	108
OPA-65R-LCUU-H8 Antenna w/ Mounting Pipe	130	HBXX-6517DS-VTM Antenna w/ Mounting PIpe	108
OPA-65R-LCUU-H8 Antenna w/ Mounting Pipe	130	HBXX-6517DS-VTM Antenna w/ Mounting PIpe	108
OPA-65R-LCUU-H8 Antenna w/ Mounting Pipe	130	Platform w/ Handrails	108
(2) LGP21401 TMA	130		
(2) LGP21401 TMA	130		
(2) LGP21401 TMA	130		

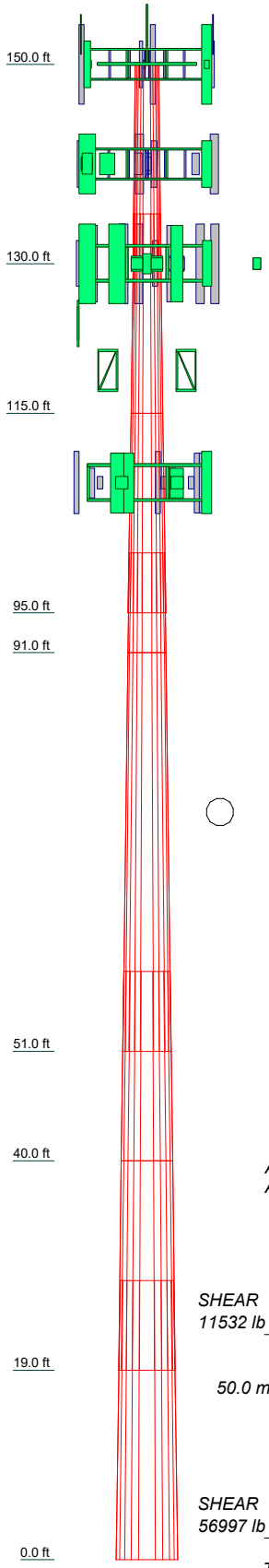
MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36M-45	45 ksi	60 ksi			

Hudson Design Group
45 Beechwood Drive
North Andover, MA
Phone: 978.557.5553
FAX: 978.336.5586

Job: ***150' Monopole***			
Project: ***CT5463***			
Client: AT&T	Drawn by: ID		App'd:
Code: TIA-222-H	Date: 11/02/21		Scale: NTS
Path:			Dwg No. E-1

Section	1	2	3	4	5	6	7	8
Length (ft)	20.00	20.00	20.00	10.00	40.00	19.00	21.00	28.00
Number of Sides	12	12	12	12	12	12	12	12
Thickness (in)	0.2500	0.2500	0.3125	0.3125	0.3750	0.3750	0.4375	0.4375
Socket Length (ft)	5.00		6.00		8.00		9.00	
Top Dia (in)	27.8125	32.1875	38.6875	42.6125	45.8125	55.5125	61.6875	64.7054
Bot Dia (in)	34.3125	38.6875	45.1875	45.8125	58.8750	61.6875	68.5000	73.8125
Grade	A36M-45							
Weight (lb) 36802.4	1688.1	1927.7	2850.5	1503.2	8541.3	4545.5	6508.7	9237.4



ALL REACTIONS ARE FACTORED

AXIAL 91135 lb

SHEAR 11532 lb *MOMENT 1173946 lb-ft*

TORQUE 416 lb-ft
50.0 mph WIND - 1.0000 in ICE

AXIAL 64654 lb

SHEAR 56997 lb *MOMENT 5605448 lb-ft*

TORQUE 1941 lb-ft
REACTIONS - 130.0 mph WIND

TOWER DESIGN NOTES

1. Tower is located in Windham County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 130.0 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50.0 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60.0 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 94.4%

Hudson Design Group
45 Beechwood Drive
North Andover, MA
Phone: 978.557.5553
FAX: 978.336.5586

Job: ***150' Monopole***			
Project: ***CT5463***			
Client: AT&T	Drawn by: ID		App'd:
Code: TIA-222-H	Date: 11/02/21		Scale: NTS
Path:			Dwg No. E-1

Tower Input Data

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

Tower is located in Windham County, Connecticut.
Tower base elevation above sea level: 0.00 ft.
Basic wind speed of 130.0 mph.
Risk Category II.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.00 ft.
Nominal ice thickness of 1.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56.0 pcf.
A wind speed of 50.0 mph is used in combination with ice.
Temperature drop of 50.0 °F.
Deflections calculated using a wind speed of 60.0 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Tapered Pole Section Geometry

Section	*Elevation* *ft*	*Section Length* *ft*	*Splice Length* *ft*	*Number of Sides*	*Top Diameter* *in*	*Bottom Diameter* *in*	*Wall Thickness* *in*	*Bend Radius* *in*	*Pole Grade*
L1	150.00-130.00	20.00	5.00	12	27.8125	34.3125	0.2500	1.0000	A36M-45 (45 ksi)
L2	130.00-115.00	20.00	0.00	12	32.1875	38.6875	0.2500	1.0000	A36M-45 (45 ksi)
L3	115.00-95.00	20.00	6.00	12	38.6875	45.1875	0.3125	1.2500	A36M-45 (45 ksi)
L4	95.00-91.00	10.00	0.00	12	42.6125	45.8125	0.3125	1.2500	A36M-45 (45 ksi)
L5	91.00-51.00	40.00	8.00	12	45.8125	58.8750	0.3750	1.5000	A36M-45 (45 ksi)
L6	51.00-40.00	19.00	0.00	12	55.5125	61.6875	0.3750	1.5000	A36M-45 (45 ksi)
L7	40.00-19.00	21.00	9.00	12	61.6875	68.5000	0.4375	1.7500	A36M-45 (45 ksi)
L8	19.00-0.00	28.00		12	64.7054	73.8125	0.4375	1.7500	A36M-45 (45 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	28.7054	22.1878	2151.4817	9.8674	14.4069	149.3372	4359.4852	10.9202	6.7838	27.135
	35.4347	27.4203	4060.7980	12.1944	17.7739	228.4700	8228.2777	13.4954	8.5258	34.103
L2	34.9171	25.7097	3347.2225	11.4336	16.6731	200.7556	6782.3803	12.6535	7.9562	31.825
	39.9641	30.9422	5835.0856	13.7606	20.0401	291.1701	11823.4654	15.2288	9.6982	38.793
L3	39.9420	38.6148	7258.3350	13.7382	20.0401	362.1901	14707.3546	19.0051	9.5307	30.498
	46.6713	45.1555	11606.6056	16.0652	23.4071	495.8578	23518.1297	22.2241	11.2728	36.073
L4	45.9932	42.5644	9721.0448	15.1434	22.0733	440.3988	19697.4723	20.9489	10.5826	33.864
	47.3184	45.7844	12098.3469	16.2890	23.7309	509.8146	24514.5309	22.5337	11.4403	36.609
L5	47.2963	54.8658	14458.2714	16.2666	23.7309	609.2599	29296.3778	27.0033	11.2728	30.061
	60.8196	70.6388	30856.0755	20.9430	30.4973	1011.7658	62522.7744	34.7662	14.7735	39.396
L6	60.0302	66.5785	25835.3472	19.7392	28.7555	898.4497	52349.4177	32.7679	13.8724	36.993
	63.7313	74.0348	35523.8611	21.9499	31.9541	1111.7144	71980.9737	36.4377	15.5273	41.406
L7	63.7093	86.2859	41317.8922	21.9275	31.9541	1293.0378	83721.2515	42.4673	15.3598	35.108
	70.7621	95.8830	56694.8448	24.3664	35.4830	1597.8030	114879.1262	47.1907	17.1855	39.281
L8	69.8641	90.5373	47731.0881	23.0079	33.5174	1424.0700	96716.1251	44.5597	16.1685	36.957
	76.2620	103.3670	71033.6649	26.2682	38.2349	1857.8239	143933.4632	50.8741	18.6092	42.535

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 150.00-130.00				1	1	1			
L2 130.00-115.00				1	1	1			
L3 115.00-95.00				1	1	1			
L4 95.00-91.00				1	1	1			
L5 91.00-51.00				1	1	1			
L6 51.00-40.00				1	1	1			
L7 40.00-19.00				1	1	1			
L8 19.00-0.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
1 1/4 (SPRINT)	C	No	Yes	Inside Pole	140.00 - 7.00	3	No Ice	0.00	0.66
							1/2" Ice	0.00	0.66
							1" Ice	0.00	0.66
1 **	C	No	Yes	Inside Pole	140.00 - 7.00	1	No Ice	0.00	0.58
							1/2" Ice	0.00	0.58
							1" Ice	0.00	0.58
7/8	C	No	Yes	Inside Pole	150.00 - 7.00	2	No Ice	0.00	0.54
							1/2" Ice	0.00	0.54
							1" Ice	0.00	0.54
1/2	C	No	Yes	Inside Pole	124.33 - 7.00	2	No Ice	0.00	0.25
							1/2" Ice	0.00	0.25

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
							1" Ice	0.00	0.25
**									
12 x 24 LI Hybrid Cable (VERIZON)	C	No	Yes	Inside Pole	108.00 - 7.00	1	No Ice	0.00	3.20
							1/2" Ice	0.00	3.20
							1" Ice	0.00	3.20
**									
1 5/8 (AT&T - EXISTING)	C	No	Yes	Inside Pole	130.00 - 7.00	12	No Ice	0.00	1.04
							1/2" Ice	0.00	1.04
							1" Ice	0.00	1.04
DC Cable	C	No	Yes	Inside Pole	130.00 - 7.00	2	No Ice	0.00	1.70
							1/2" Ice	0.00	1.70
							1" Ice	0.00	1.70
Fiber	C	No	Yes	Inside Pole	130.00 - 7.00	2	No Ice	0.00	0.48
							1/2" Ice	0.00	0.48
							1" Ice	0.00	0.48
**									
DC Cable	C	No	Yes	Inside Pole	130.00 - 7.00	2	No Ice	0.00	1.70
							1/2" Ice	0.00	1.70
							1" Ice	0.00	1.70
Fiber	C	No	Yes	Inside Pole	130.00 - 7.00	1	No Ice	0.00	0.48
							1/2" Ice	0.00	0.48
							1" Ice	0.00	0.48

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
L1	150.00-130.00	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	0.000	47.20
L2	130.00-115.00	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	0.000	370.25
L3	115.00-95.00	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	0.000	539.04
L4	95.00-91.00	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	0.000	112.29
L5	91.00-51.00	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	0.000	1122.88
L6	51.00-40.00	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	0.000	308.79
L7	40.00-19.00	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	0.000	589.51
L8	19.00-0.00	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	0.000	336.86

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
L1	150.00-130.00	A	1.155	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	0.000	47.20
L2	130.00-115.00	A	1.140	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	0.000	370.25
L3	115.00-95.00	A	1.122	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	0.000	539.04
L4	95.00-91.00	A	1.109	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	0.000	112.29
L5	91.00-51.00	A	1.079	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	0.000	1122.88
L6	51.00-40.00	A	1.033	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	0.000	308.79
L7	40.00-19.00	A	0.988	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	0.000	589.51
L8	19.00-0.00	A	0.882	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	0.000	336.86

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
6' Lightning Rod	C	None		0.0000	153.00	No Ice	0.75	0.75	50.00
						1/2" Ice	1.37	1.37	56.54
						1" Ice	1.92	1.92	67.03
Omni 3"x4'	C	From Leg	6.50 0.00 0.00	0.0000	153.00	No Ice 1/2" Ice 1" Ice	1.00 1.25 1.50	1.00 1.25 1.50	15.00 23.96 35.82
Omni 3"x4'	B	From Face	6.50 0.00 0.00	0.0000	153.00	No Ice 1/2" Ice 1" Ice	1.00 1.25 1.50	1.00 1.25 1.50	15.00 23.96 35.82
10'-6" Horizontal Pipe	C	None		0.0000	150.00	No Ice	1.26	1.26	80.00
						1/2" Ice	2.36	2.36	474.22
						1" Ice	2.98	2.98	881.01
Omni 3"x4'	C	From Leg	6.50 0.00 0.00	0.0000	124.30	No Ice 1/2" Ice 1" Ice	1.00 1.25 1.50	1.00 1.25 1.50	15.00 23.96 35.82
Omni 3"x4'	C	From Leg	6.50 0.00 0.00	0.0000	123.70	No Ice 1/2" Ice 1" Ice	1.00 1.25 1.50	1.00 1.25 1.50	15.00 23.96 35.82
Pirod 6' Side Mount Standoff	C	From Leg	3.00 0.00 0.00	0.0000	119.30	No Ice 1/2" Ice 1" Ice	4.97 6.12 7.27	4.97 6.12 7.27	70.00 130.00 190.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
Pirod 6' Side Mount Standoff	B	From Leg	3.00	0.0000	119.30	No Ice	4.97	4.97	70.00
			0.00			1/2" Ice	6.12	6.12	130.00
			0.00			1" Ice	7.27	7.27	190.00
2' Side Mount Standoff	A	From Leg	1.00	0.0000	119.30	No Ice	1.00	1.00	30.00
			0.00			1/2" Ice	1.50	1.50	50.00
			0.00			1" Ice	2.00	2.00	70.00
****									
12' Sector Frame (T-Mobile)	A	From Face	2.00	0.0000	150.00	No Ice	13.20	9.20	660.00
			0.00			1/2" Ice	19.50	14.60	805.00
			0.00			1" Ice	25.80	19.50	1015.00
12' Sector Frame	B	From Face	2.00	0.0000	150.00	No Ice	13.20	9.20	660.00
			0.00			1/2" Ice	19.50	14.60	805.00
			0.00			1" Ice	25.80	19.50	1015.00
12' Sector Frame	C	From Face	2.00	0.0000	150.00	No Ice	13.20	9.20	660.00
			0.00			1/2" Ice	19.50	14.60	805.00
			0.00			1" Ice	25.80	19.50	1015.00
LNX-6515DS-VTM Antenna w/ Mounting Pipe	A	From Face	3.00	0.0000	150.00	No Ice	11.47	9.62	73.20
			-6.00			1/2" Ice	12.09	11.04	160.30
			0.00			1" Ice	12.72	12.31	257.16
LNX-6515DS-VTM Antenna w/ Mounting Pipe	B	From Face	3.00	0.0000	150.00	No Ice	11.47	9.62	73.20
			-6.00			1/2" Ice	12.09	11.04	160.30
			0.00			1" Ice	12.72	12.31	257.16
LNX-6515DS-VTM Antenna w/ Mounting Pipe	C	From Face	3.00	0.0000	150.00	No Ice	11.47	9.62	73.20
			-6.00			1/2" Ice	12.09	11.04	160.30
			0.00			1" Ice	12.72	12.31	257.16
RV90-17-02DP Antenna w/ Mounting Pipe	A	From Face	3.00	0.0000	150.00	No Ice	4.67	3.42	96.90
			6.00			1/2" Ice	5.13	4.26	135.31
			0.00			1" Ice	5.57	4.97	179.92
RV90-17-02DP Antenna w/ Mounting Pipe	B	From Face	3.00	0.0000	150.00	No Ice	4.67	3.42	96.90
			6.00			1/2" Ice	5.13	4.26	135.31
			0.00			1" Ice	5.57	4.97	179.92
RV90-17-02DP Antenna w/ Mounting Pipe	C	From Face	3.00	0.0000	150.00	No Ice	4.67	3.42	96.90
			6.00			1/2" Ice	5.13	4.26	135.31
			0.00			1" Ice	5.57	4.97	179.92
Gen. TMA	A	From Face	2.00	0.0000	150.00	No Ice	0.50	0.33	16.00
			-6.00			1/2" Ice	0.59	0.41	20.70
			0.00			1" Ice	0.69	0.50	26.89
Gen. TMA	B	From Face	2.00	0.0000	150.00	No Ice	0.50	0.33	16.00
			-6.00			1/2" Ice	0.59	0.41	20.70
			0.00			1" Ice	0.69	0.50	26.89
Gen. TMA	C	From Face	2.00	0.0000	150.00	No Ice	0.50	0.33	16.00
			-6.00			1/2" Ice	0.59	0.41	20.70
			0.00			1" Ice	0.69	0.50	26.89
****									
12' Sector Frame (Sprint)	A	From Face	2.00	0.0000	140.00	No Ice	13.20	9.20	660.00
			0.00			1/2" Ice	19.50	14.60	805.00
			0.00			1" Ice	25.80	19.50	1015.00
12' Sector Frame	B	From Face	2.00	0.0000	140.00	No Ice	13.20	9.20	660.00
			0.00			1/2" Ice	19.50	14.60	805.00
			0.00			1" Ice	25.80	19.50	1015.00
12' Sector Frame	C	From Face	2.00	0.0000	140.00	No Ice	13.20	9.20	660.00
			0.00			1/2" Ice	19.50	14.60	805.00
			0.00			1" Ice	25.80	19.50	1015.00
NNVV-65B-R4 Antenna w/ Mounting Pipe	A	From Face	3.00	0.0000	140.00	No Ice	12.27	7.17	131.90
			6.00			1/2" Ice	12.77	8.13	219.93
			0.00			1" Ice	13.27	8.97	316.27
NNVV-65B-R4 Antenna w/	B	From Face	3.00	0.0000	140.00	No Ice	12.27	7.17	131.90

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
Mounting Pipe			6.00			1/2" Ice	12.77	8.13	219.93
			0.00			1" Ice	13.27	8.97	316.27
NNVV-65B-R4 Antenna w/ Mounting Pipe	C	From Face	3.00	0.0000	140.00	No Ice	12.27	7.17	131.90
			6.00			1/2" Ice	12.77	8.13	219.93
			0.00			1" Ice	13.27	8.97	316.27
APXVTM14-C Antenna w/ Mounting Pipe	A	From Face	3.00	0.0000	140.00	No Ice	6.65	5.03	52.90
			-6.00			1/2" Ice	7.14	5.89	108.31
			0.00			1" Ice	7.60	6.63	170.47
APXVTM14-C Antenna w/ Mounting Pipe	B	From Face	3.00	0.0000	140.00	No Ice	6.65	5.03	52.90
			-6.00			1/2" Ice	7.14	5.89	108.31
			0.00			1" Ice	7.60	6.63	170.47
APXVTM14-C Antenna w/ Mounting Pipe	C	From Face	3.00	0.0000	140.00	No Ice	6.65	5.03	52.90
			-6.00			1/2" Ice	7.14	5.89	108.31
			0.00			1" Ice	7.60	6.63	170.47
800 RRH	A	From Face	2.00	0.0000	140.00	No Ice	1.71	1.84	64.00
			6.00			1/2" Ice	1.88	2.01	85.14
			0.00			1" Ice	2.05	2.19	109.25
800 RRH	B	From Face	2.00	0.0000	140.00	No Ice	1.71	1.84	64.00
			6.00			1/2" Ice	1.88	2.01	85.14
			0.00			1" Ice	2.05	2.19	109.25
800 RRH	C	From Face	2.00	0.0000	140.00	No Ice	1.71	1.84	64.00
			6.00			1/2" Ice	1.88	2.01	85.14
			0.00			1" Ice	2.05	2.19	109.25
800 RRH	A	From Face	2.00	0.0000	140.00	No Ice	1.71	1.84	64.00
			6.00			1/2" Ice	1.88	2.01	85.14
			0.00			1" Ice	2.05	2.19	109.25
800 RRH	B	From Face	2.00	0.0000	140.00	No Ice	1.71	1.84	64.00
			6.00			1/2" Ice	1.88	2.01	85.14
			0.00			1" Ice	2.05	2.19	109.25
800 RRH	C	From Face	2.00	0.0000	140.00	No Ice	1.71	1.84	64.00
			6.00			1/2" Ice	1.88	2.01	85.14
			0.00			1" Ice	2.05	2.19	109.25
1900 RRH	A	From Face	2.00	0.0000	140.00	No Ice	2.31	2.38	60.00
			6.00			1/2" Ice	2.52	2.58	83.90
			0.00			1" Ice	2.73	2.79	111.08
1900 RRH	B	From Face	2.00	0.0000	140.00	No Ice	2.31	2.38	60.00
			6.00			1/2" Ice	2.52	2.58	83.90
			0.00			1" Ice	2.73	2.79	111.08
1900 RRH	C	From Face	2.00	0.0000	140.00	No Ice	2.31	2.38	60.00
			6.00			1/2" Ice	2.52	2.58	83.90
			0.00			1" Ice	2.73	2.79	111.08
TD-RRH8x20-25 RRH	A	From Face	2.00	0.0000	140.00	No Ice	4.05	1.53	70.00
			4.00			1/2" Ice	4.30	1.71	97.14
			0.00			1" Ice	4.56	1.90	127.80
TD-RRH8x20-25 RRH	B	From Face	2.00	0.0000	140.00	No Ice	4.05	1.53	70.00
			4.00			1/2" Ice	4.30	1.71	97.14
			0.00			1" Ice	4.56	1.90	127.80
TD-RRH8x20-25 RRH	C	From Face	2.00	0.0000	140.00	No Ice	4.05	1.53	70.00
			4.00			1/2" Ice	4.30	1.71	97.14
			0.00			1" Ice	4.56	1.90	127.80
****									
Platform w/ Handrails	C	None		0.0000	108.00	No Ice	26.30	26.30	1920.00
						1/2" Ice	35.60	35.60	2340.00
						1" Ice	44.90	44.90	2760.00
HBXX-6517DS-VTM Antenna w/ Mounting PIpe (Verizon)	A	From Face	3.00	0.0000	108.00	No Ice	8.54	6.68	62.90
			-6.00			1/2" Ice	9.01	7.64	129.34
			0.00			1" Ice	9.49	8.49	203.72

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
HBXX-6517DS-VTM	B	From Face	3.00	0.0000	108.00	No Ice	8.54	6.68	62.90
Antenna w/ Mounting PIpe			-6.00			1/2" Ice	9.01	7.64	129.34
			0.00			1" Ice	9.49	8.49	203.72
HBXX-6517DS-VTM	C	From Face	3.00	0.0000	108.00	No Ice	8.54	6.68	62.90
Antenna w/ Mounting PIpe			-6.00			1/2" Ice	9.01	7.64	129.34
			0.00			1" Ice	9.49	8.49	203.72
****									
MX06FRO660-03 Antenna	A	From Face	3.00	0.0000	108.00	No Ice	9.89	8.76	99.90
w/ Mounting Pipe			2.00			1/2" Ice	10.36	9.71	184.62
(Verizon)			0.00			1" Ice	10.84	10.53	277.53
MX06FRO660-03 Antenna	B	From Face	3.00	0.0000	108.00	No Ice	9.89	8.76	99.90
w/ Mounting Pipe			2.00			1/2" Ice	10.36	9.71	184.62
			0.00			1" Ice	10.84	10.53	277.53
MX06FRO660-03 Antenna	C	From Face	3.00	0.0000	108.00	No Ice	9.89	8.76	99.90
w/ Mounting Pipe			2.00			1/2" Ice	10.36	9.71	184.62
			0.00			1" Ice	10.84	10.53	277.53
MX06FRO660-03 Antenna	A	From Face	3.00	0.0000	108.00	No Ice	9.89	8.76	99.90
w/ Mounting Pipe			3.00			1/2" Ice	10.36	9.71	184.62
			0.00			1" Ice	10.84	10.53	277.53
MX06FRO660-03 Antenna	B	From Face	3.00	0.0000	108.00	No Ice	9.89	8.76	99.90
w/ Mounting Pipe			3.00			1/2" Ice	10.36	9.71	184.62
			0.00			1" Ice	10.84	10.53	277.53
MX06FRO660-03 Antenna	C	From Face	3.00	0.0000	108.00	No Ice	9.89	8.76	99.90
w/ Mounting Pipe			3.00			1/2" Ice	10.36	9.71	184.62
			0.00			1" Ice	10.84	10.53	277.53
MT6407-77A Antenna w/	A	From Face	3.00	0.0000	108.00	No Ice	5.43	3.27	109.00
Mounting Pipe			-3.00			1/2" Ice	5.97	3.99	154.17
			0.00			1" Ice	6.46	4.59	204.90
MT6407-77A Antenna w/	B	From Face	3.00	0.0000	108.00	No Ice	5.43	3.27	109.00
Mounting Pipe			-3.00			1/2" Ice	5.97	3.99	154.17
			0.00			1" Ice	6.46	4.59	204.90
MT6407-77A Antenna w/	C	From Face	3.00	0.0000	108.00	No Ice	5.43	3.27	109.00
Mounting Pipe			-3.00			1/2" Ice	5.97	3.99	154.17
			0.00			1" Ice	6.46	4.59	204.90
RF4439d-25A RRH	A	From Face	2.00	0.0000	108.00	No Ice	1.88	1.25	98.00
			-3.00			1/2" Ice	2.05	1.39	116.34
			0.00			1" Ice	2.22	1.54	137.47
RF4439d-25A RRH	B	From Face	2.00	0.0000	108.00	No Ice	1.88	1.25	98.00
			-3.00			1/2" Ice	2.05	1.39	116.34
			0.00			1" Ice	2.22	1.54	137.47
RF4439d-25A RRH	C	From Face	2.00	0.0000	108.00	No Ice	1.88	1.25	98.00
			-3.00			1/2" Ice	2.05	1.39	116.34
			0.00			1" Ice	2.22	1.54	137.47
RF4440d-13A RRH	A	From Face	2.00	0.0000	108.00	No Ice	1.88	1.01	82.00
			2.50			1/2" Ice	2.05	1.14	98.43
			0.00			1" Ice	2.22	1.28	117.53
RF4440d-13A RRH	B	From Face	2.00	0.0000	108.00	No Ice	1.88	1.01	82.00
			2.50			1/2" Ice	2.05	1.14	98.43
			0.00			1" Ice	2.22	1.28	117.53
RF4440d-13A RRH	C	From Face	2.00	0.0000	108.00	No Ice	1.88	1.01	82.00
			2.50			1/2" Ice	2.05	1.14	98.43
			0.00			1" Ice	2.22	1.28	117.53
Junction Box	A	From Face	0.50	0.0000	108.00	No Ice	3.78	2.51	32.00
			0.00			1/2" Ice	4.03	2.72	63.40
			0.00			1" Ice	4.29	2.94	98.56
****									
Platform w/ Handrails	C	None		0.0000	130.00	No Ice	26.30	26.30	1920.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight lb
(AT&T)						1/2" Ice	35.60	35.60	2340.00
						1" Ice	44.90	44.90	2760.00
7770 Antenna w/ Mounting Pipe	A	From Face	3.00	0.0000	130.00	No Ice	5.84	4.35	56.90
			-6.00			1/2" Ice	6.32	5.20	105.42
			0.00			1" Ice	6.77	5.92	160.42
7770 Antenna w/ Mounting Pipe	B	From Face	3.00	0.0000	130.00	No Ice	5.84	4.35	56.90
			-6.00			1/2" Ice	6.32	5.20	105.42
			0.00			1" Ice	6.77	5.92	160.42
7770 Antenna w/ Mounting Pipe	C	From Face	3.00	0.0000	130.00	No Ice	5.84	4.35	56.90
			-6.00			1/2" Ice	6.32	5.20	105.42
			0.00			1" Ice	6.77	5.92	160.42
OPA-65R-LCUU-H8 Antenna w/ Mounting Pipe	A	From Face	3.00	0.0000	130.00	No Ice	12.83	9.38	93.50
			-3.00			1/2" Ice	13.44	10.78	187.01
			0.00			1" Ice	14.05	12.04	290.22
OPA-65R-LCUU-H8 Antenna w/ Mounting Pipe	B	From Face	3.00	0.0000	130.00	No Ice	12.83	9.38	93.50
			-3.00			1/2" Ice	13.44	10.78	187.01
			0.00			1" Ice	14.05	12.04	290.22
OPA-65R-LCUU-H8 Antenna w/ Mounting Pipe	C	From Face	3.00	0.0000	130.00	No Ice	12.83	9.38	93.50
			-3.00			1/2" Ice	13.44	10.78	187.01
			0.00			1" Ice	14.05	12.04	290.22
(2) LGP21401 TMA	C	From Face	0.00	0.0000	130.00	No Ice	1.08	0.36	19.00
			-6.00			1/2" Ice	1.21	0.45	26.13
			0.00			1" Ice	1.35	0.56	35.14
(2) LGP21401 TMA	C	From Face	0.00	0.0000	130.00	No Ice	1.08	0.36	19.00
			-6.00			1/2" Ice	1.21	0.45	26.13
			0.00			1" Ice	1.35	0.56	35.14
(2) LGP21401 TMA	C	From Face	0.00	0.0000	130.00	No Ice	1.08	0.36	19.00
			-6.00			1/2" Ice	1.21	0.45	26.13
			0.00			1" Ice	1.35	0.56	35.14
Squid Surge Arrestor	C	From Face	0.00	0.0000	130.00	No Ice	0.81	0.81	33.00
			0.00			1/2" Ice	1.30	1.30	48.38
			0.00			1" Ice	1.48	1.48	66.11
**									
DMP65R-BU8DA Antenna w/ Mounting Pipe	A	From Face	3.00	0.0000	130.00	No Ice	17.87	10.02	148.20
			6.00			1/2" Ice	18.50	11.44	266.88
			0.00			1" Ice	19.14	12.72	395.91
DMP65R-BU8DA Antenna w/ Mounting Pipe	B	From Face	3.00	0.0000	130.00	No Ice	17.87	10.02	148.20
			6.00			1/2" Ice	18.50	11.44	266.88
			0.00			1" Ice	19.14	12.72	395.91
DMP65R-BU8DA Antenna w/ Mounting Pipe	C	From Face	3.00	0.0000	130.00	No Ice	17.87	10.02	148.20
			6.00			1/2" Ice	18.50	11.44	266.88
			0.00			1" Ice	19.14	12.72	395.91
OPA65R-BU8D Antenna w/ Mounting Pipe	A	From Face	3.00	0.0000	130.00	No Ice	17.87	10.02	107.60
			3.00			1/2" Ice	18.50	11.44	226.28
			0.00			1" Ice	19.14	12.72	355.31
OPA65R-BU8D Antenna w/ Mounting Pipe	B	From Face	3.00	0.0000	130.00	No Ice	17.87	10.02	107.60
			3.00			1/2" Ice	18.50	11.44	226.28
			0.00			1" Ice	19.14	12.72	355.31
OPA65R-BU8D Antenna w/ Mounting Pipe	C	From Face	3.00	0.0000	130.00	No Ice	17.87	10.02	107.60
			3.00			1/2" Ice	18.50	11.44	226.28
			0.00			1" Ice	19.14	12.72	355.31
4449 B5/B12 RRH	A	From Face	2.00	0.0000	130.00	No Ice	1.97	1.40	7.20
			1.00			1/2" Ice	2.15	1.56	25.68
			0.00			1" Ice	2.33	1.72	46.97
4449 B5/B12 RRH	B	From Face	2.00	0.0000	130.00	No Ice	1.97	1.40	7.20
			1.00			1/2" Ice	2.15	1.56	25.68
			0.00			1" Ice	2.33	1.72	46.97

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
4449 B5/B12 RRH	C	From Face	2.00	0.0000	130.00	No Ice	1.97	1.40	7.20
			1.00			1/2" Ice	2.15	1.56	25.68
			0.00			1" Ice	2.33	1.72	46.97
B2/B66A 8843 RRH	A	From Face	2.00	0.0000	130.00	No Ice	1.64	1.35	72.00
			1.00			1/2" Ice	1.80	1.50	89.60
			0.00			1" Ice	1.97	1.65	109.91
B2/B66A 8843 RRH	B	From Face	2.00	0.0000	130.00	No Ice	1.64	1.35	72.00
			1.00			1/2" Ice	1.80	1.50	89.60
			0.00			1" Ice	1.97	1.65	109.91
B2/B66A 8843 RRH	C	From Face	2.00	0.0000	130.00	No Ice	1.64	1.35	72.00
			1.00			1/2" Ice	1.80	1.50	89.60
			0.00			1" Ice	1.97	1.65	109.91
B14 4478 RRH	A	From Face	2.00	0.0000	130.00	No Ice	2.02	1.25	60.00
			-1.00			1/2" Ice	2.20	1.40	77.66
			0.00			1" Ice	2.39	1.56	98.08
B14 4478 RRH	B	From Face	2.00	0.0000	130.00	No Ice	2.02	1.25	60.00
			-1.00			1/2" Ice	2.20	1.40	77.66
			0.00			1" Ice	2.39	1.56	98.08
B14 4478 RRH	C	From Face	2.00	0.0000	130.00	No Ice	2.02	1.25	60.00
			-1.00			1/2" Ice	2.20	1.40	77.66
			0.00			1" Ice	2.39	1.56	98.08
4415 B30 RRH	A	From Face	2.00	0.0000	130.00	No Ice	1.64	0.68	44.00
			-1.00			1/2" Ice	1.80	0.79	56.41
			0.00			1" Ice	1.97	0.91	71.18
4415 B30 RRH	B	From Face	2.00	0.0000	130.00	No Ice	1.64	0.68	44.00
			-1.00			1/2" Ice	1.80	0.79	56.41
			0.00			1" Ice	1.97	0.91	71.18
4415 B30 RRH	C	From Face	2.00	0.0000	130.00	No Ice	1.64	0.68	44.00
			-1.00			1/2" Ice	1.80	0.79	56.41
			0.00			1" Ice	1.97	0.91	71.18

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
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice

Comb. No.	Description
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 lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
L1	150 - 130	Pole	Max Tension	45	0.00	0.16	0.04
			Max. Compression	26	-15596.57	-0.00	-0.00
			Max. Mx	8	-8119.40	-108452.36	-26.05
			Max. My	14	-8115.66	11.52	-108505.69
			Max. Vy	8	11957.98	-108452.36	-26.05
			Max. Vx	14	11966.75	11.52	-108505.69
			Max. Torque	13			585.46
L2	130 - 115	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-29869.71	-929.21	-1621.25
			Max. Mx	8	-15721.04	-525807.84	-653.20
			Max. My	14	-15704.21	-536.19	-529316.18
			Max. Vy	8	25542.24	-525807.84	-653.20
			Max. Vx	14	25762.19	-536.19	-529316.18
			Max. Torque	14			2424.60
L3	115 - 95	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41171.02	-708.82	-1494.03
			Max. Mx	8	-22611.54	-947963.58	-817.95
			Max. My	14	-22596.10	-672.61	-954382.17
			Max. Vy	8	34824.97	-947963.58	-817.95
			Max. Vx	14	35016.31	-672.61	-954382.17
			Max. Torque	4			-2176.65
L4	95 - 91	Pole	Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Compression	26	-45391.82	-708.83	-1494.06
			Max. Mx	8	-25870.15	-1306903.25	-1089.75
			Max. My	14	-25855.77	-943.43	-1315236.67
			Max. Vy	8	36948.38	-1306903.25	-1089.75
			Max. Vx	14	37139.88	-943.43	-1315236.67
			Max. Torque	6			-1943.30
L5	91 - 51	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-56772.74	-708.88	-1494.15
			Max. Mx	8	-35331.88	-2598235.06	-1944.32
			Max. My	14	-35322.82	-1795.97	-2612678.97
			Max. Vy	8	43897.89	-2598235.06	-1944.32
			Max. Vx	14	44088.22	-1795.97	-2612678.97
			Max. Torque	6			-1943.05
L6	51 - 40	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-67197.63	-708.91	-1494.20
			Max. Mx	8	-43943.52	-3474675.31	-2445.14
			Max. My	14	-43937.32	-2296.07	-3492731.00
			Max. Vy	8	48299.06	-3474675.31	-2445.14
			Max. Vx	14	48488.63	-2296.07	-3492731.00
			Max. Torque	6			-1941.39
L7	40 - 19	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-72945.55	-708.93	-1494.24
			Max. Mx	8	-48923.44	-4069486.04	-2757.67
			Max. My	14	-48919.28	-2608.36	-4089810.55
			Max. Vy	8	50884.27	-4069486.04	-2757.67
			Max. Vx	14	51072.95	-2608.36	-4089810.55
			Max. Torque	6			-1941.02
L8	19 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-91135.36	-708.98	-1494.34
			Max. Mx	8	-64642.71	-5579863.63	-3479.50
			Max. My	14	-64642.62	-3330.01	-5605446.79
			Max. Vy	8	56822.42	-5579863.63	-3479.50
			Max. Vx	14	57008.90	-3330.01	-5605446.79
			Max. Torque	6			-1940.70

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Pole	Max. Vert	26	91135.36	-0.00	-0.00
	Max. H_x	21	48490.37	56810.38	25.63
	Max. H_z	3	48490.37	25.63	56996.80
	Max. M_x	2	5604112.98	25.63	56996.20
	Max. M_z	8	5579863.63	-56809.77	-25.63
	Max. Torsion	18	1940.55	49187.71	-28476.95
	Min. Vert	15	48490.37	-25.63	-56996.80
	Min. H_x	9	48490.37	-56810.38	-25.63
	Min. H_z	15	48490.37	-25.63	-56996.80
	Min. M_x	14	-5605446.79	-25.63	-56996.20
	Min. M_z	20	-5578827.79	56809.78	25.63
	Min. Torsion	6	-1940.56	-49187.71	28476.95

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Dead Only	53878.25	0.00	0.00	536.86	-415.26	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	64653.83	-25.63	-56996.20	-5604112.98	2298.64	1371.30
0.9 Dead+1.0 Wind 0 deg - No Ice	48490.37	-25.63	-56996.80	-5578964.38	2419.45	1360.57
1.2 Dead+1.0 Wind 30 deg - No Ice	64653.89	28383.74	-49349.16	-4852053.73	-2787879.57	1912.11
0.9 Dead+1.0 Wind 30 deg - No Ice	48490.42	28383.74	-49349.17	-4830231.40	-2775121.87	1902.13
1.2 Dead+1.0 Wind 60 deg - No Ice	64653.89	49187.71	-28476.95	-2799435.31	-4831197.61	1940.56
0.9 Dead+1.0 Wind 60 deg - No Ice	48490.42	49187.72	-28476.96	-2786914.93	-4809185.23	1934.02
1.2 Dead+1.0 Wind 90 deg - No Ice	64653.83	56809.77	25.63	3479.42	-5579863.63	1449.02
0.9 Dead+1.0 Wind 90 deg - No Ice	48490.37	56810.38	25.63	3296.63	-5554541.15	1447.67
1.2 Dead+1.0 Wind 120 deg - No Ice	64653.89	49213.34	28521.35	2805639.16	-4834011.00	569.17
0.9 Dead+1.0 Wind 120 deg - No Ice	48490.42	49213.35	28521.36	2792756.09	-4811986.28	573.37
1.2 Dead+1.0 Wind 150 deg - No Ice	64653.89	28428.14	49374.80	4856198.16	-2792754.46	-463.12
0.9 Dead+1.0 Wind 150 deg - No Ice	48490.42	28428.14	49374.81	4834021.35	-2779975.67	-454.49
1.2 Dead+1.0 Wind 180 deg - No Ice	64653.83	25.63	56996.20	5605446.79	-3329.93	-1371.30
0.9 Dead+1.0 Wind 180 deg - No Ice	48490.37	25.63	56996.80	5579955.38	-3185.35	-1360.55
1.2 Dead+1.0 Wind 210 deg - No Ice	64653.89	-28383.74	49349.16	4853384.39	2786849.39	-1912.05
0.9 Dead+1.0 Wind 210 deg - No Ice	48490.42	-28383.74	49349.17	4831220.04	2774356.94	-1902.06
1.2 Dead+1.0 Wind 240 deg - No Ice	64653.89	-49187.71	28476.95	2800763.87	4830164.80	-1940.55
0.9 Dead+1.0 Wind 240 deg -	48490.42	-49187.72	28476.96	2787902.01	4808418.36	-1933.99

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
No Ice						
1.2 Dead+1.0 Wind 270 deg - No Ice	64653.83	-56809.78	-25.63	-2149.17	5578827.79	-1449.08
0.9 Dead+1.0 Wind 270 deg - No Ice	48490.37	-56810.38	-25.63	-2308.19	5553772.01	-1447.71
1.2 Dead+1.0 Wind 300 deg - No Ice	64653.89	-49213.34	-28521.35	-2804306.10	4832974.49	-569.28
0.9 Dead+1.0 Wind 300 deg - No Ice	48490.42	-49213.35	-28521.36	-2791765.70	4811216.67	-573.46
1.2 Dead+1.0 Wind 330 deg - No Ice	64653.89	-28428.14	-49374.80	-4854863.00	2791720.58	463.04
0.9 Dead+1.0 Wind 330 deg - No Ice	48490.42	-28428.14	-49374.81	-4833029.40	2779207.99	454.42
1.2 Dead+1.0 Ice+1.0 Temp	91135.36	0.00	0.00	1494.34	-708.98	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	91135.36	-4.05	-11532.49	-1170761.98	-310.88	143.92
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	91135.36	5747.68	-9985.40	-1013471.72	-584470.10	323.36
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	91135.36	9959.33	-5762.74	-584196.05	-1012224.95	416.12
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	91135.36	11502.38	4.05	2041.12	-1168958.75	397.37
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	91135.36	9963.38	5769.75	588157.93	-1012674.65	272.12
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	91135.36	5754.70	9989.45	1017104.73	-585248.89	73.94
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	91135.36	4.05	11532.49	1173945.58	-1209.95	-144.07
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	91135.36	-5747.68	9985.40	1016655.15	582949.43	-323.50
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	91135.36	-9959.33	5762.74	587379.27	1010704.20	-416.26
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	91135.36	-11502.38	-4.05	1142.05	1167437.78	-397.52
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	91135.36	-9963.38	-5769.75	-584974.59	1011153.53	-272.27
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	91135.36	-5754.70	-9989.45	-1013921.17	583727.85	-74.09
Dead+Wind 0 deg - Service	53878.24	-4.89	-10864.55	-1065026.41	105.84	260.90
Dead+Wind 30 deg - Service	53878.24	5409.86	-9405.81	-921905.90	-530284.10	365.29
Dead+Wind 60 deg - Service	53878.24	9375.04	-5427.63	-531719.82	-918699.89	371.80
Dead+Wind 90 deg - Service	53878.24	10828.18	4.88	1088.65	-1061065.76	278.69
Dead+Wind 120 deg - Service	53878.24	9379.92	5436.08	533753.79	-919234.88	110.90
Dead+Wind 150 deg - Service	53878.24	5418.32	9410.69	923548.24	-531210.74	-86.61
Dead+Wind 180 deg - Service	53878.24	4.88	10863.71	1066027.04	-964.09	-260.91
Dead+Wind 210 deg - Service	53878.24	-5409.86	9405.80	923013.24	529425.90	-365.31
Dead+Wind 240 deg - Service	53878.24	-9375.04	5427.62	532827.14	917841.65	-371.82
Dead+Wind 270 deg - Service	53878.25	-10829.36	-127.27	-42.42	1060356.98	-278.71
Dead+Wind 300 deg - Service	53878.24	-9379.92	-5436.09	-532646.40	918376.59	-110.92
Dead+Wind 330 deg - Service	53878.24	-5418.32	-9410.69	-922440.83	530352.48	86.59

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	lb	lb	lb	lb	lb	lb	
1	0.00	-53878.25	0.00	-0.00	53878.25	-0.00	0.000%
2	-25.63	-64653.90	-56998.34	25.63	64653.83	56996.20	0.002%

Load Comb.	Sum of Applied Forces PX lb	PY lb	PZ lb	Sum of Reactions PX lb	PY lb	PZ lb	% Error
3	-25.63	-48490.42	-56998.34	25.63	48490.37	56996.80	0.002%
4	28383.76	-64653.90	-49349.20	-28383.74	64653.89	49349.16	0.000%
5	28383.76	-48490.42	-49349.20	-28383.74	48490.42	49349.17	0.000%
6	49187.74	-64653.90	-28476.97	-49187.71	64653.89	28476.95	0.000%
7	49187.74	-48490.42	-28476.97	-49187.72	48490.42	28476.96	0.000%
8	56811.91	-64653.90	25.63	-56809.77	64653.83	-25.63	0.002%
9	56811.91	-48490.42	25.63	-56810.38	48490.37	-25.63	0.002%
10	49213.37	-64653.90	28521.37	-49213.34	64653.89	-28521.35	0.000%
11	49213.37	-48490.42	28521.37	-49213.35	48490.42	-28521.36	0.000%
12	28428.15	-64653.90	49374.83	-28428.14	64653.89	-49374.80	0.000%
13	28428.15	-48490.42	49374.83	-28428.14	48490.42	-49374.81	0.000%
14	25.63	-64653.90	56998.34	-25.63	64653.83	-56996.20	0.002%
15	25.63	-48490.42	56998.34	-25.63	48490.37	-56996.80	0.002%
16	-28383.76	-64653.90	49349.20	28383.74	64653.89	-49349.16	0.000%
17	-28383.76	-48490.42	49349.20	28383.74	48490.42	-49349.17	0.000%
18	-49187.74	-64653.90	28476.97	49187.71	64653.89	-28476.95	0.000%
19	-49187.74	-48490.42	28476.97	49187.72	48490.42	-28476.96	0.000%
20	-56811.91	-64653.90	-25.63	56809.78	64653.83	25.63	0.002%
21	-56811.91	-48490.42	-25.63	56810.38	48490.37	25.63	0.002%
22	-49213.37	-64653.90	-28521.37	49213.34	64653.89	28521.35	0.000%
23	-49213.37	-48490.42	-28521.37	49213.35	48490.42	28521.36	0.000%
24	-28428.15	-64653.90	-49374.83	28428.14	64653.89	49374.80	0.000%
25	-28428.15	-48490.42	-49374.83	28428.14	48490.42	49374.81	0.000%
26	0.00	-91135.36	0.00	-0.00	91135.36	-0.00	0.000%
27	-4.05	-91135.36	-11532.50	4.05	91135.36	11532.49	0.000%
28	5747.69	-91135.36	-9985.42	-5747.68	91135.36	9985.40	0.000%
29	9959.34	-91135.36	-5762.75	-9959.33	91135.36	5762.74	0.000%
30	11502.40	-91135.36	4.05	-11502.38	91135.36	-4.05	0.000%
31	9963.39	-91135.36	5769.76	-9963.38	91135.36	-5769.75	0.000%
32	5754.71	-91135.36	9989.47	-5754.70	91135.36	-9989.45	0.000%
33	4.05	-91135.36	11532.50	-4.05	91135.36	-11532.49	0.000%
34	-5747.69	-91135.36	9985.42	5747.68	91135.36	-9985.40	0.000%
35	-9959.34	-91135.36	5762.75	9959.33	91135.36	-5762.74	0.000%
36	-11502.40	-91135.36	-4.05	11502.38	91135.36	4.05	0.000%
37	-9963.39	-91135.36	-5769.76	9963.38	91135.36	5769.75	0.000%
38	-5754.71	-91135.36	-9989.47	5754.70	91135.36	9989.45	0.000%
39	-4.89	-53878.25	-10864.89	4.89	53878.24	10864.55	0.001%
40	5410.45	-53878.25	-9406.83	-5409.86	53878.24	9405.81	0.002%
41	9376.05	-53878.25	-5428.21	-9375.04	53878.24	5427.63	0.002%
42	10829.36	-53878.25	4.89	-10828.18	53878.24	-4.88	0.002%
43	9380.94	-53878.25	5436.68	-9379.92	53878.24	-5436.08	0.002%
44	5418.91	-53878.25	9411.71	-5418.32	53878.24	-9410.69	0.002%
45	4.89	-53878.25	10864.89	-4.88	53878.24	-10863.71	0.002%
46	-5410.45	-53878.25	9406.83	5409.86	53878.24	-9405.80	0.002%
47	-9376.05	-53878.25	5428.21	9375.04	53878.24	-5427.62	0.002%
48	-10829.36	-53878.25	-4.89	10829.36	53878.25	127.27	0.223%
49	-9380.94	-53878.25	-5436.68	9379.92	53878.24	5436.09	0.002%
50	-5418.91	-53878.25	-9411.71	5418.32	53878.24	9410.69	0.002%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	11	0.00003909	0.00011642
3	Yes	11	0.00000001	0.00009561
4	Yes	14	0.00000001	0.00006441
5	Yes	14	0.00000001	0.00004907

6	Yes	14	0.00000001	0.00005996
7	Yes	14	0.00000001	0.00004562
8	Yes	11	0.00003910	0.00010873
9	Yes	11	0.00000001	0.00008996
10	Yes	14	0.00000001	0.00006267
11	Yes	14	0.00000001	0.00004771
12	Yes	14	0.00000001	0.00006301
13	Yes	14	0.00000001	0.00004795
14	Yes	11	0.00003909	0.00012074
15	Yes	11	0.00000001	0.00009901
16	Yes	14	0.00000001	0.00005999
17	Yes	14	0.00000001	0.00004563
18	Yes	14	0.00000001	0.00006421
19	Yes	14	0.00000001	0.00004893
20	Yes	11	0.00003910	0.00010440
21	Yes	11	0.00000001	0.00008656
22	Yes	14	0.00000001	0.00006156
23	Yes	14	0.00000001	0.00004687
24	Yes	14	0.00000001	0.00006146
25	Yes	14	0.00000001	0.00004678
26	Yes	6	0.00000001	0.00000001
27	Yes	13	0.00000001	0.00005771
28	Yes	13	0.00000001	0.00006030
29	Yes	13	0.00000001	0.00006020
30	Yes	13	0.00000001	0.00005778
31	Yes	13	0.00000001	0.00006054
32	Yes	13	0.00000001	0.00006064
33	Yes	13	0.00000001	0.00005809
34	Yes	13	0.00000001	0.00006045
35	Yes	13	0.00000001	0.00006034
36	Yes	13	0.00000001	0.00005758
37	Yes	13	0.00000001	0.00006005
38	Yes	13	0.00000001	0.00006017
39	Yes	11	0.00000001	0.00013130
40	Yes	10	0.00000001	0.00006151
41	Yes	10	0.00000001	0.00004417
42	Yes	10	0.00000001	0.00003905
43	Yes	10	0.00000001	0.00005258
44	Yes	10	0.00000001	0.00005377
45	Yes	10	0.00000001	0.00003975
46	Yes	10	0.00000001	0.00004422
47	Yes	10	0.00000001	0.00006087
48	Yes	20	0.00000001	0.00000000
49	Yes	10	0.00000001	0.00004815
50	Yes	10	0.00000001	0.00004771

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
L1	150 - 130	Pole	TP34.3125x27.8125x0.25	1	-8116.19	245527.00	17.1	Pass
L2	130 - 115	Pole	TP38.6875x32.1875x0.25	2	-15704.20	408528.00	55.6	Pass
L3	115 - 95	Pole	TP45.1875x38.6875x0.3125	3	-22596.10	709192.00	59.7	Pass
L4	95 - 91	Pole	TP45.8125x42.6125x0.3125	4	-25855.80	830215.00	74.3	Pass
L5	91 - 51	Pole	TP58.875x45.8125x0.375	5	-35322.80	1604520.00	81.0	Pass
L6	51 - 40	Pole	TP61.6875x55.5125x0.375	6	-43937.30	1926210.00	94.4	Pass
L7	40 - 19	Pole	TP68.5x61.6875x0.4375	7	-48919.30	2511330.00	79.6	Pass
L8	19 - 0	Pole	TP73.8125x64.7054x0.4375	8	-64642.60	3070270.00	91.9	Pass
							Summary	
						Pole (L6)	94.4	Pass
						RATING =	**94.4**	**Pass**

Stiffened or Unstiffened, Ungrouted, Circular Base Plate - Any Rod Material

Assumption: Clear space between bottom of leveling nut and top of concrete **not** exceeding (1)*(Rod Diameter)

Site Data

BU#:	*0*
Site Name:	*KILLINGLY NORTH*
App #:	*0*
Pole Manufacturer:	*Other*

Reactions

Mu:	5605	ft-kips
Axial, Pu:	65	kips
Shear, Vu:	57	kips
Eta Factor, η	0.5	TIA G (Fig. 4-4)

If No stiffeners, Criteria:	AISC LRFD	<-Only Applcable to Unstiffened Cases

Anchor Rod Data

Qty:	24	
Diam:	2	in
Rod Material:	Other	
Strength (Fu):	105	ksi
Yield (Fy):	125	ksi
Bolt Circle:	70	in

Plate Data

Diam:	73.8124	in
Thick:	2	in
Grade:	42	ksi
Single-Rod B-eff:	-5.63	in

Stiffener Data (Welding at both sides)

Config:	1	*
Weld Type:	Both	
Groove Depth:	0.25	in **
Groove Angle:	45	degrees
Fillet H. Weld:	0.3125	in
Fillet V. Weld:	0.3125	in
Width:	5	in
Height:	18	in
Thick:	0.5	in
Notch:	0	in
Grade:	50	ksi
Weld str.:	70	ksi

Pole Data

Diam:	73.8125	in
Thick:	0.4375	in
Grade:	45	ksi
# of Sides:	12	"0" IF Round
Fu	60	ksi
Reinf. Fillet Weld	0	"0" if None

Stiffened
AISC LRFD
φ*Tn

Anchor Rod Results

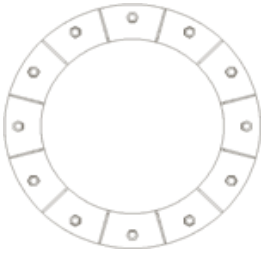
Max Rod (Cu+ Vu/ń):	167.6 Kips	
Allowable Axial, Φ*Fu*Anet:	210.0 Kips	
Anchor Rod Stress Ratio:	79.8%	**Pass**

Stiffener Results

Horizontal Weld :	79.0%	**Pass**
Vertical Weld:	0.0%	**Pass**
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	0.0%	**Pass**
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	79.0%	**Pass**
Plate Comp. (AISC Bracket):	0.0%	**Pass**

Pole Results

Pole Punching Shear Check:	0.0%	**Pass**



* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

tnxFoundation	Job:	150' Monopole	Date:
	Client:	AT&T;	11/2/2021 4:10:22 PM

Foundation

Foundation name: Tower Foundation

Foundation type: Caisson

Geometry and Materials

Caisson:

Diameter	D	7.00 ft
Caisson length	L	24.00 ft
Base area		38.48 ft2

Levels:

Pier above ground	h	0.25 ft
Foundation level	hf	23.75 ft
Frost depth	fd	3.50 ft
Ground water level	hw	15.00 ft

Concrete:

Strength	f'c	3.0 ksi
Unit weight		0.15 kcf

Parameters:

Caisson unit skin friction and unit end bearing stress are defined	No
End bearing capacity factors Nc and Nq are defined	No

Soils:

#	Name	Φ	Cu	Kp	γ.dry	γ.sat	fs	qb	Top level
1	Sand Custom 1	30.00	0.00 ksf	3	100.0 pcf	120.0 pcf	0.0 ksf	0.0 ksf	0.00 ft
2	Sand Custom 2	30.00	0.00 ksf	3	105.0 pcf	120.0 pcf	0.0 ksf	0.0 ksf	1.00 ft
3	Sand Custom 3	30.00	0.00 ksf	3	105.0 pcf	120.0 pcf	0.0 ksf	0.0 ksf	2.00 ft

Φ - internal friction angle

Cu - soil cohesion

Kp - coefficient of passive pressure

γ.dry - dry soil density

γ.sat - saturated soil density

fs - external skin friction (unit value)

qb - end bearing stress (unit value)

Soils:

#	Name	∈	Kt	Ξ	Nc	Nq
1	Sand Custom 1	30.00	0.50	0.50	9.00	1.00
2	Sand Custom 2	30.00	0.50	0.50	9.00	1.00
3	Sand Custom 3	30.00	0.50	0.50	9.00	1.00

δ - friction angle between soil and the pile

Kt - coefficient for lateral earth pressure

α - adhesion factor

Nc - pile Bearing capacity factor Nc

Nq - pile Bearing capacity factor Nq

Loads:

#	Name	Description	P	Vx	Vz	Mz	Mx
1	Dead Only	TIA-222-H load combination	53.9 kip	0.0 kip	0.0 kip	0.4 kip-ft	-0.5 kip-ft
2	1.2 Dead+1.0 Wind 0 deg - No Ice	TIA-222-H load combination	64.7 kip	0.0 kip	57.0 kip	-2.3 kip-ft	5604.1 kip-ft
3	0.9 Dead+1.0 Wind 0 deg - No Ice	TIA-222-H load combination	48.5 kip	0.0 kip	57.0 kip	-2.4 kip-ft	5579.0 kip-ft
4	1.2 Dead+1.0 Wind 30 deg - No Ice	TIA-222-H load combination	64.7 kip	-28.4 kip	49.3 kip	2787.9 kip-ft	4852.1 kip-ft
5	0.9 Dead+1.0 Wind 30 deg - No Ice	TIA-222-H load combination	48.5 kip	-28.4 kip	49.3 kip	2775.1 kip-ft	4830.2 kip-ft
6	1.2 Dead+1.0 Wind 60 deg - No Ice	TIA-222-H load combination	64.7 kip	-49.2 kip	28.5 kip	4831.2 kip-ft	2799.4 kip-ft
7	0.9 Dead+1.0 Wind 60 deg - No Ice	TIA-222-H load combination	48.5 kip	-49.2 kip	28.5 kip	4809.2 kip-ft	2786.9 kip-ft
8	1.2 Dead+1.0 Wind 90 deg - No Ice	TIA-222-H load combination	64.7 kip	-56.8 kip	0.0 kip	5579.9 kip-ft	-3.5 kip-ft
9	0.9 Dead+1.0 Wind 90 deg - No Ice	TIA-222-H load combination	48.5 kip	-56.8 kip	0.0 kip	5554.5 kip-ft	-3.3 kip-ft
10	1.2 Dead+1.0 Wind 120 deg - No Ice	TIA-222-H load combination	64.7 kip	-49.2 kip	-28.5 kip	4834.0 kip-ft	-2805.6 kip-ft
11	0.9 Dead+1.0 Wind 120 deg - No Ice	TIA-222-H load combination	48.5 kip	-49.2 kip	-28.5 kip	4812.0 kip-ft	-2792.8 kip-ft
12	1.2 Dead+1.0 Wind 150 deg - No Ice	TIA-222-H load combination	64.7 kip	-28.4 kip	-49.4 kip	2792.8 kip-ft	-4856.2 kip-ft
13	0.9 Dead+1.0 Wind 150 deg - No Ice	TIA-222-H load combination	48.5 kip	-28.4 kip	-49.4 kip	2780.0 kip-ft	-4834.0 kip-ft
14	1.2 Dead+1.0 Wind 180 deg - No Ice	TIA-222-H load combination	64.7 kip	0.0 kip	-57.0 kip	3.3 kip-ft	-5605.4 kip-ft
15	0.9 Dead+1.0 Wind 180 deg - No Ice	TIA-222-H load combination	48.5 kip	0.0 kip	-57.0 kip	3.2 kip-ft	-5580.0 kip-ft
16	1.2 Dead+1.0 Wind 210 deg - No Ice	TIA-222-H load combination	64.7 kip	28.4 kip	-49.3 kip	-2786.8 kip-ft	-4853.4 kip-ft
17	0.9 Dead+1.0 Wind 210 deg - No Ice	TIA-222-H load combination	48.5 kip	28.4 kip	-49.3 kip	-2774.4 kip-ft	-4831.2 kip-ft
18	1.2 Dead+1.0 Wind 240 deg - No Ice	TIA-222-H load combination	64.7 kip	49.2 kip	-28.5 kip	-4830.2 kip-ft	-2800.8 kip-ft
19	0.9 Dead+1.0 Wind 240 deg - No Ice	TIA-222-H load combination	48.5 kip	49.2 kip	-28.5 kip	-4808.4 kip-ft	-2787.9 kip-ft
20	1.2 Dead+1.0 Wind 270 deg - No Ice	TIA-222-H load combination	64.7 kip	56.8 kip	0.0 kip	-5578.8 kip-ft	2.1 kip-ft
21	0.9 Dead+1.0 Wind 270 deg - No Ice	TIA-222-H load combination	48.5 kip	56.8 kip	0.0 kip	-5553.8 kip-ft	2.3 kip-ft
22	1.2 Dead+1.0 Wind 300 deg - No Ice	TIA-222-H load combination	64.7 kip	49.2 kip	28.5 kip	-4833.0 kip-ft	2804.3 kip-ft
23	0.9 Dead+1.0 Wind 300 deg - No Ice	TIA-222-H load combination	48.5 kip	49.2 kip	28.5 kip	-4811.2 kip-ft	2791.8 kip-ft
24	1.2 Dead+1.0 Wind 330 deg - No Ice	TIA-222-H load combination	64.7 kip	28.4 kip	49.4 kip	-2791.7 kip-ft	4854.9 kip-ft
25	0.9 Dead+1.0 Wind 330 deg - No Ice	TIA-222-H load combination	48.5 kip	28.4 kip	49.4 kip	-2779.2 kip-ft	4833.0 kip-ft
26	1.2 Dead+1.0 Ice+1.0 Temp	TIA-222-H load combination	91.1 kip	0.0 kip	0.0 kip	0.7 kip-ft	-1.5 kip-ft

27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	TIA-222-H load combination	91.1 kip	0.0 kip	11.5 kip	0.3 kip-ft	1170.8 kip-ft
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	TIA-222-H load combination	91.1 kip	-5.7 kip	10.0 kip	584.5 kip-ft	1013.5 kip-ft
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	TIA-222-H load combination	91.1 kip	-10.0 kip	5.8 kip	1012.2 kip-ft	584.2 kip-ft
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	TIA-222-H load combination	91.1 kip	-11.5 kip	0.0 kip	1169.0 kip-ft	-2.0 kip-ft
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	TIA-222-H load combination	91.1 kip	-10.0 kip	-5.8 kip	1012.7 kip-ft	-588.2 kip-ft
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	TIA-222-H load combination	91.1 kip	-5.8 kip	-10.0 kip	585.2 kip-ft	-1017.1 kip-ft
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	TIA-222-H load combination	91.1 kip	0.0 kip	-11.5 kip	1.2 kip-ft	-1173.9 kip-ft
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	TIA-222-H load combination	91.1 kip	5.7 kip	-10.0 kip	-582.9 kip-ft	-1016.7 kip-ft
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	TIA-222-H load combination	91.1 kip	10.0 kip	-5.8 kip	-1010.7 kip-ft	-587.4 kip-ft
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	TIA-222-H load combination	91.1 kip	11.5 kip	0.0 kip	-1167.4 kip-ft	-1.1 kip-ft
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	TIA-222-H load combination	91.1 kip	10.0 kip	5.8 kip	-1011.2 kip-ft	585.0 kip-ft
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	TIA-222-H load combination	91.1 kip	5.8 kip	10.0 kip	-583.7 kip-ft	1013.9 kip-ft
39	Dead+Wind 0 deg - Service	TIA-222-H load combination	53.9 kip	0.0 kip	10.9 kip	-0.1 kip-ft	1065.0 kip-ft
40	Dead+Wind 30 deg - Service	TIA-222-H load combination	53.9 kip	-5.4 kip	9.4 kip	530.3 kip-ft	921.9 kip-ft
41	Dead+Wind 60 deg - Service	TIA-222-H load combination	53.9 kip	-9.4 kip	5.4 kip	918.7 kip-ft	531.7 kip-ft
42	Dead+Wind 90 deg - Service	TIA-222-H load combination	53.9 kip	-10.8 kip	0.0 kip	1061.1 kip-ft	-1.1 kip-ft
43	Dead+Wind 120 deg - Service	TIA-222-H load combination	53.9 kip	-9.4 kip	-5.4 kip	919.2 kip-ft	-533.8 kip-ft
44	Dead+Wind 150 deg - Service	TIA-222-H load combination	53.9 kip	-5.4 kip	-9.4 kip	531.2 kip-ft	-923.5 kip-ft
45	Dead+Wind 180 deg - Service	TIA-222-H load combination	53.9 kip	0.0 kip	-10.9 kip	1.0 kip-ft	-1066.0 kip-ft
46	Dead+Wind 210 deg - Service	TIA-222-H load combination	53.9 kip	5.4 kip	-9.4 kip	-529.4 kip-ft	-923.0 kip-ft
47	Dead+Wind 240 deg - Service	TIA-222-H load combination	53.9 kip	9.4 kip	-5.4 kip	-917.8 kip-ft	-532.8 kip-ft
48	Dead+Wind 270 deg - Service	TIA-222-H load combination	53.9 kip	10.8 kip	0.1 kip	-1060.4 kip-ft	0.0 kip-ft
49	Dead+Wind 300 deg - Service	TIA-222-H load combination	53.9 kip	9.4 kip	5.4 kip	-918.4 kip-ft	532.6 kip-ft
50	Dead+Wind 330 deg - Service	TIA-222-H load combination	53.9 kip	5.4 kip	9.4 kip	-530.4 kip-ft	922.4 kip-ft

Uplift capacity

Resistance factors

Resistance factor for shaft resistance of caisson - Uplift 0.35

Load factor for foundation weight	0.750
Load factor for soil weigth	0.750

Details for maximum uplift force:

Number of critical combination	1
Maximum uplift force from critical combination	0.00 kip
Shaft resistance of caisson due to skin friction	171.74 kip
Weight of caisson	139.18 kip
Weight of soil (for belled caissons)	0.00 kip
Allowable uplift resistance	164.49 kip
Ratio = Maximum uplift force / Uplift resistance	0

Bearing capacity

Resistance factors

Resistance factor for shaft resistance of caisson - Bearing	0.45
Resistance factor for base resistance of caisson - Bearing	0.4

Details for maximum compression force:

Number of critical combination	26
Maximum compression force from critical combination	91.14 kip
Shaft resistance of caisson due to skin friction	171.74 kip
Base resistance	1468.53 kip
Allowable bearing resistance	664.70 kip
Ratio = Maximum compression / Compression resistance	0.137

Maximum moment along Caisson (P-Y)

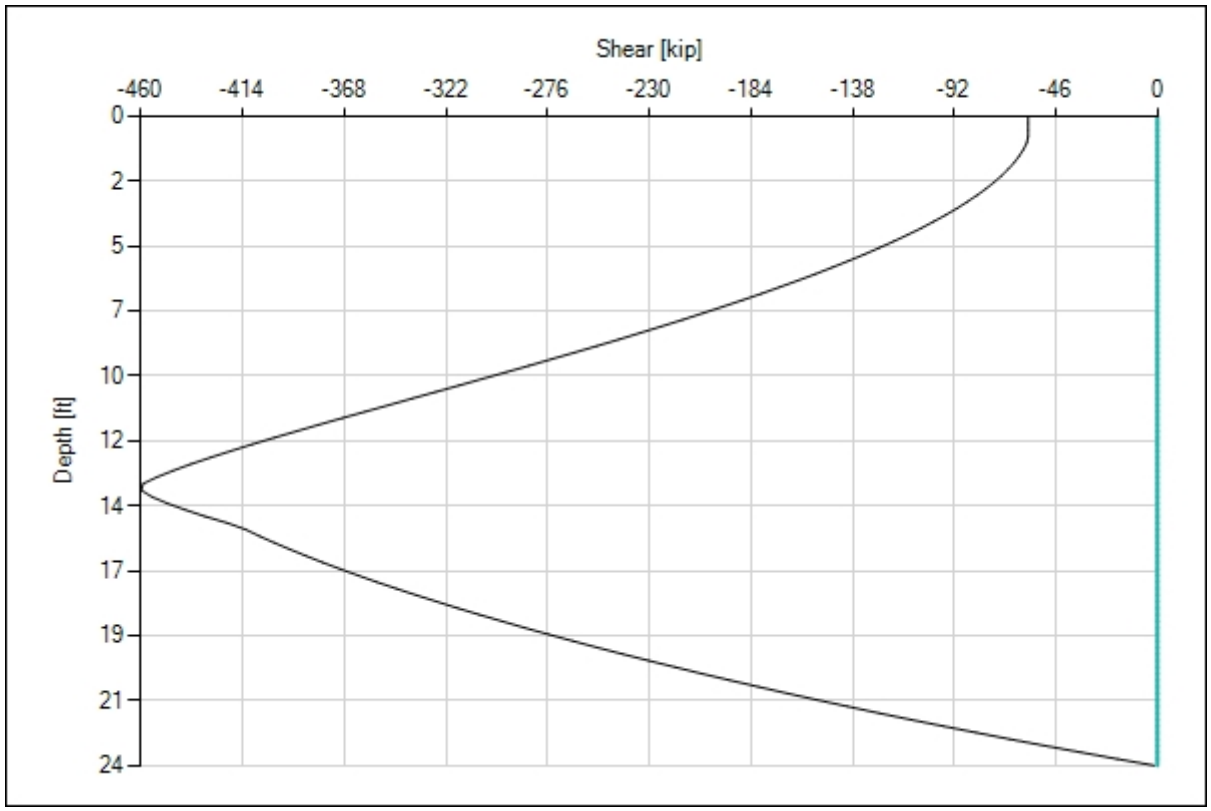
Results for the critical load:

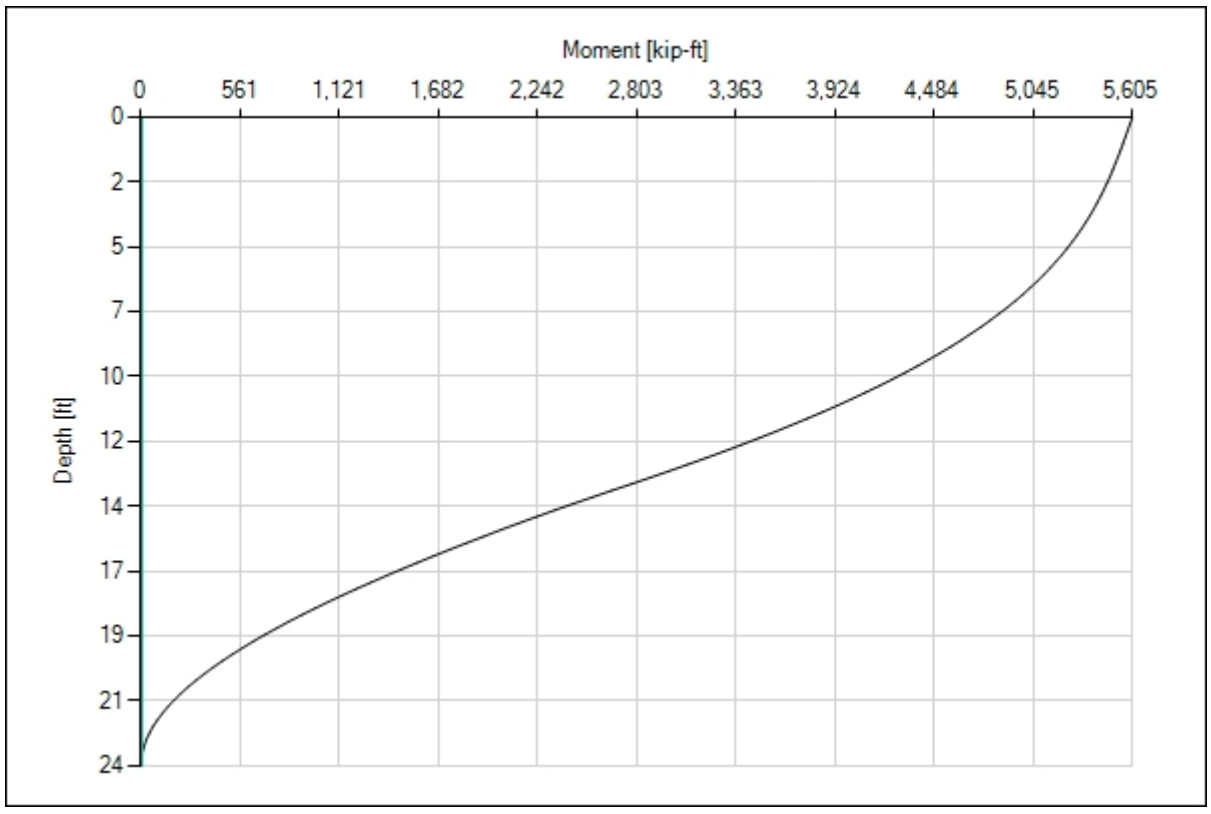
Number of critical combination		14
Max moment in caisson	Mmax	5605.45 kip-ft

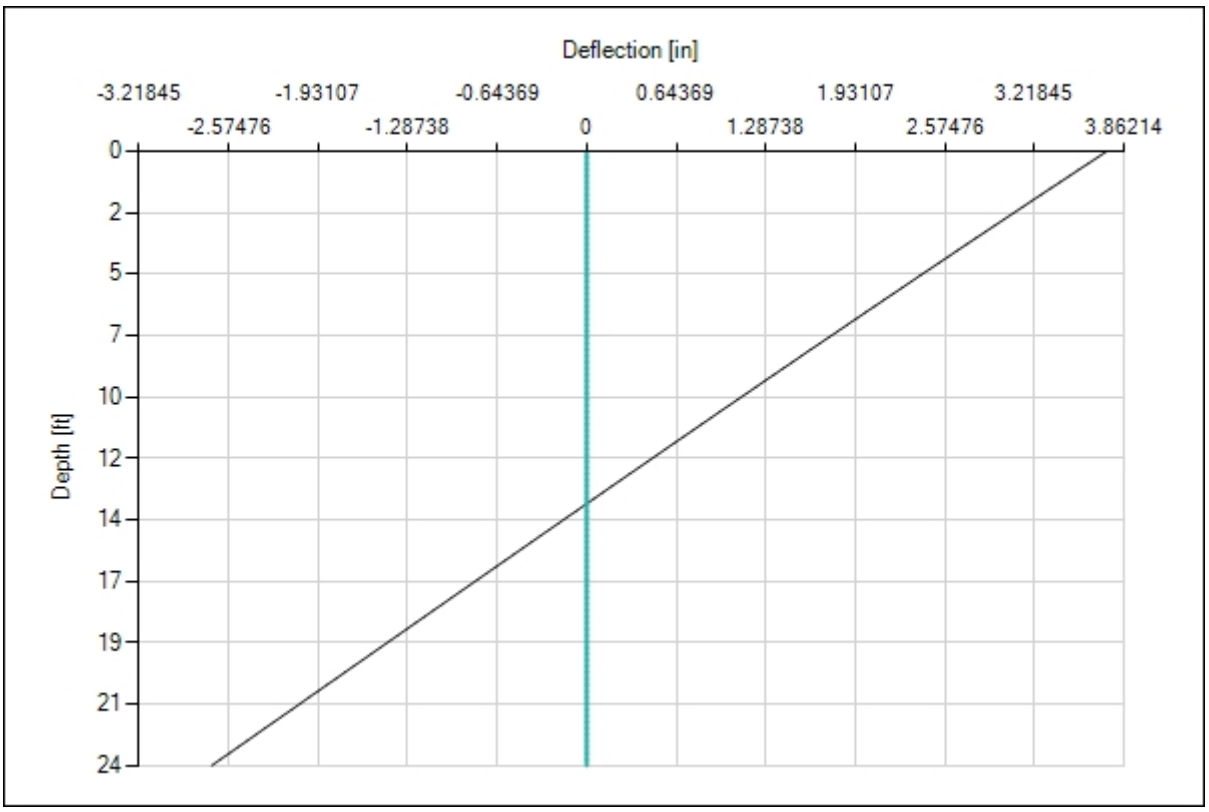
Shear and Moments along Caisson:

Level	Shear	Moment	Deflection
0.0 ft	-58.52 kip	5605.45 kip-ft	3.740 in
2.6 ft	-77.68 kip	5444.99 kip-ft	2.999 in
5.3 ft	-139.75 kip	5174.30 kip-ft	2.267 in
7.9 ft	-234.07 kip	4694.86 kip-ft	1.543 in
10.6 ft	-347.84 kip	3937.14 kip-ft	0.826 in
13.4 ft	-458.95 kip	2771.43 kip-ft	0.052 in
16.1 ft	-385.47 kip	1653.59 kip-ft	-0.654 in
18.7 ft	-286.24 kip	767.35 kip-ft	-1.357 in
21.4 ft	-153.99 kip	186.43 kip-ft	-2.059 in

23.8 ft	-1.43 kip	0.00 kip-ft	-2.697 in







Caisson Flexure

Data:

Resistance factor for tension		0.9
Concrete cover		3.50 in
Steel strength of vertical bars	fy	60.00 ksi
Number of vertical bars		66
Diameter of vertical bars		1.00 in
Area of one bar		0.79 in2

Reinforcement ratio:

Reinforcement area		51.84 in2
Reinforcement ratio		0.009
Min reinforcement ratio		0.002
Verification: Reinforcement ratio > Min reinforcement ratio		OK

Results for the critical load:

Max moment in caisson	Mu	5605.45 kip-ft
Vertical load	Pu	64.65 kip
Caisson moment capacity	Mn	7933.30 kip-ft
Ratio = Mu / Mn		0.707

November 4, 2021

SAI Communications
12 Industrial Way
Salem NH, 03079

RE:

Site Number:	CT5463 (LTE 3C/4C/5G/6C)
FA Number:	10071084
PACE Number:	MRCTB052742
PT Number:	2051A10L36
Site Name:	KILLINGLY NORTH
Site Address:	79 Putman Pike Dayville, CT 06421

To Whom It May Concern:

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

- (3) 7770 Antennas (55.0"x11.0"x5.0" - Wt. = 35 lbs. /each)
- (3) OPA-65R-LCUU-H8 Antennas (92.7"x14.4"x7.0" – Wt. = 88 lbs. /each)
- (6) LGP21401 TMA's (14.4"x9.0"x2.7" – Wt. = 19 lbs. /each)
- (1) Squid Surge Arrestor (24.0"x9.7" Ø – Wt. = 33 lbs.)
- **(3) OPA65R-BU8D Antennas (96.0"x20.7"x7.7" – Wt. = 74 lbs. /each)**
- **(3) DMP65R-BU8DA Antennas (96.0"x20.7"x7.7" – Wt. = 96 lbs. /each)**
- **(3) 4449 B5/B12 RRH's (17.9"x13.2"x9.4" – Wt. = 73 lbs. /each)**
- **(3) 8843 B2/B66A RRH's (14.9"x13.2"x10.9" – Wt. = 72 lbs. /each)**
- **(3) 4478 B14 RRH's (18.1"x13.4"x8.3" – Wt. = 60 lbs. /each)**
- **(3) 4415 B30 RRH's (16.5"x13.4"x5.9" – Wt. = 46 lbs. /each)**
- **(1) Squid Surge Arrestor (24.0"x9.7" Ø – Wt. = 33 lbs.)**

**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 mount on January 14, 2015. HDG conducted a ground audit of the existing antenna mount on July 21, 2021.

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 130 mph with a max basic wind speed with ice of 50 mph and a max ice thickness of 1.0 in. An escalated ice thickness of 1.15 in was used for this analysis.
- HDG considers this site to be exposure category C; tower is located near large, flat, open, terrain/grasslands.
- HDG considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- HDG considers this site to have a spectral response acceleration parameter at short periods, S_S, of 0.171 and a spectral response acceleration parameter at a period of 1 second, S_1, of 0.062.
- The mount has been analyzed with load combinations consisting of 500 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 4.
- The mount has been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.
- The existing mount is secured to the existing monopole with ring mount and threaded rods. The connection is considered OK by visual inspection.

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

- **Proposed handrail kit, SitePro1 P/N HRK14-3HD (or approved equal). Handrail kit is required per AT&T Technical Directive to stabilize existing cantilevered antennas.**
- **Proposed handrail reinforcement kit, SitePro1 P/N PRK-SFS-L (or approved equal) secured to new horizontal pipe and tower leg (total of 1).**

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing (LTE 3C/4C/5G/6C) Mount Rating	4	LC3	196%	**FAIL**
Modified (LTE 3C/4C/5G/6C) Mount Rating	34	LC1	88%	**PASS**

Reference Documents:

- Mount mapping report prepared by ProVertic LLC.

This determination was based on the following limitations and assumptions:

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

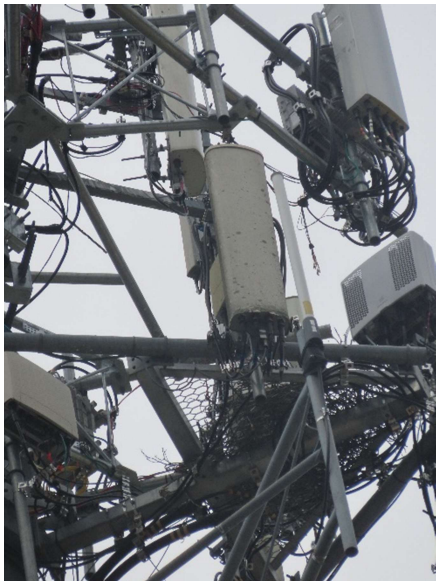
Please feel free to contact our office should you have any questions.

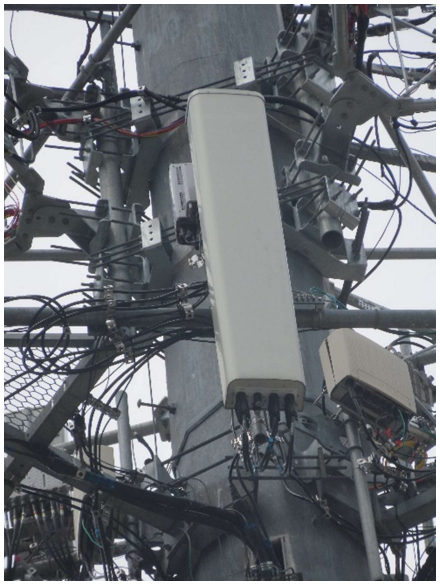
Respectfully Submitted,
Hudson Design Group LLC

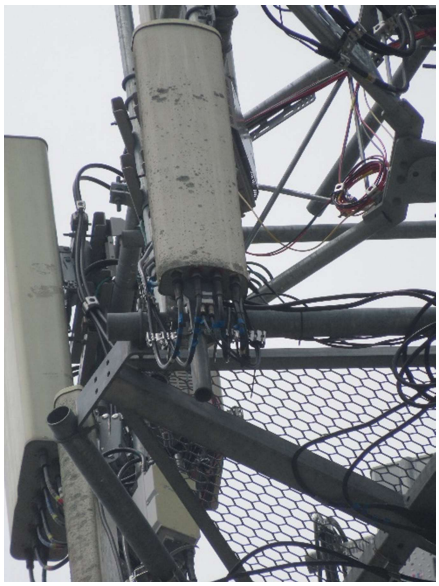
Michael Cabral
Vice President

Daniel P. Hamm, PE
Principal

FIELD PHOTOS:







HUDSON
Design Group LLC

Wind & Ice
Calculations

Date: 11/3/2021
Project Name: KILLINGLY NORTH
Project No.: CT5463
Designed By: RL **Checked By:** MSC

HUDSON Design Group LLC

2.6.5.2 Velocity Pressure Coeff:

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

	z=	130	(ft)
	z_g=	900	(ft)
K_z= **1.337**	α=	9.5	

Kzmin ≤ Kz ≤ 2.01

Table 2-4

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

2.6.6.2 Topographic Factor:

Table 2-5

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

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

K_{zt}= **1**	K_h=	1	
	K_c=	1.0	(from Table 2-4)
(If Category 1 then K_{zt}=1.0)	K_t=		(from Table 2-5)
	f=		(from Table 2-5)
Category= **1**	z=	130	
	z_s=	280	(Mean elevation of base of structure above sea level)
	H=		(Ht. of the crest above surrounding terrain)
	K_{zt}=	1.00	(from 2.6.6.2.1)
	K_e=	0.99	(from 2.6.8)

2.6.10 Design Ice Thickness

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

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

Date: 11/3/2021
Project Name: KILLINGLY NORTH
Project No.: CT5463
Designed By: RL Checked By: MSC

HUDSON Design Group LLC

2.6.9 Gust Effect Factor

2.6.9.1 Self Supporting Lattice Structures

G_h = 1.0 Latticed Structures > 600 ft

G_h = 0.85 Latticed Structures 450 ft or less

G_h = 0.85 + 0.15 [h/150 - 3.0] h= ht. of structure

h=	150	G_h=	0.85

2.6.9.2 Guyed Masts G_h= 0.85

2.6.9.3 Pole Structures G_h= 1.1

2.6.9 Appurtenances G_h= 1.0

2.6.9.4 Structures Supported on Other Structures

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

G_h=	1.35	**Gh=**	**1.00**

2.6.11.2 Design Wind Force on Appurtenances

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

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

		K_z=	1.337	(from 2.6.5.2)
		K_{zt}=	1.0	(from 2.6.6.2.1)
		K_s=	1.0	(from 2.6.7)
q_z=	**54.42**	K_e=	0.99	(from 2.6.8)
$q_{z\ (ice)}$=	**8.05**	K_d=	0.95	(from Table 2-2)
$q_{z\ (30)}$=	**2.90**	V_{max}=	130	mph (Ultimate Wind Speed)
		$V_{max\ (ice)}$=	50	mph
		V_{30}=	30	mph

Table 2-2

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

Date: 11/3/2021
Project Name: KILLINGLY NORTH
Project No.: CT5463
Designed By: RL Checked By: MSC

HUDSON Design Group LLC

Determine Ca:

Table 2-9

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

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

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

Ice Thickness = 1.15 in | **Angle =** 0 (deg) | **Equivalent Angle =** 180 (deg)

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)	Force (lbs) (30 mph)
7770 Antenna	55.0	11.0	5.0	4.20	5.00	1.31	300	56	16
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	6.44	1.38	694	122	37
OPA65R-BU8D Antenna	96.0	20.7	7.7	13.80	4.64	1.30	973	164	52
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	4.64	1.30	973	164	52
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.36	1.20	107	21	6
4449 B5/B12 RRH (Shielded)	17.9	0.0	9.4	0.00	0.00	1.20	0	3	0
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.20	89	18	5
8843 B2/B66A RRH (Shielded)	14.9	0.0	10.9	0.00	0.00	1.20	0	3	0
4478 B14 RRH	18.1	8.3	13.4	1.04	2.18	1.20	68	14	4
4478 B14 RRH (Shielded)	18.1	4.2	13.4	0.52	0.00	1.20	34	9	2
4415 B30 RRH	16.5	5.9	13.4	0.68	2.80	1.21	45	10	2
4415 B30 RRH (Shielded)	16.5	3.0	13.4	0.34	0.00	1.20	22	7	1
LGP21401 TMA	14.4	9.0	2.7	0.90	1.60	1.20	59	13	3
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	62	12	3
2" Pipe	2.4	12.0	-	0.20	0.20	1.20	13		
2-1/2" Pipe	2.9	12.0	-	0.24	0.24	1.20	16		
3" Pipe	3.5	12.0	-	0.29	0.29	1.20	19		
L 2x2 Angles	2.0	12.0	-	0.17	0.17	1.25	11		
L 2-1/2x2-1/2 Angles	2.5	12.0	-	0.21	0.21	1.25	14		
HSS 4x4	4.0	12.0	-	0.33	0.33	1.25	23		
HSS 6x3/8	0.4	12.0	-	0.03	0.03	2.00	3		

Date: 11/3/2021
Project Name: KILLINGLY NORTH
Project No.: CT5463
Designed By: RL Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

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

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs) (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	300	159	265
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	694	394	619
OPA65R-BU8D Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	973	442	840
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	973	442	840
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	107	76	99
4449 B5/B12 RRH (Shielded)	17.9	6.6	9.4	0.82	1.17	2.71	1.90	1.21	1.20	54	76	60
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	89	74	85
8843 B2/B66A RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	45	74	52
4478 B14 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	68	110	79
4478 B14 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	36	110	55
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	45	100	59
4415 B30 RRH (Shielded)	16.5	3.0	13.4	0.34	1.54	5.59	1.23	1.34	1.20	25	100	44
LGP21401 TMA	14.4	9.0	2.7	0.90	0.27	1.60	5.33	1.20	1.33	59	19	49

WIND LOADS WITH ICE:

7770 Antenna	57.3	13.3	7.3	5.29	2.90	4.31	7.86	1.28	1.43	55	33	49
OPA-65R-LCUU-H8 Antenna	95.0	16.7	9.3	11.01	6.13	5.69	10.22	1.34	1.51	119	74	108
OPA65R-BU8D Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	162	82	142
DMP65R-BU8DA Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	162	82	142
4449 B5/B12 RRH	20.2	15.5	11.7	2.17	1.64	1.30	1.73	1.20	1.20	21	16	20
4449 B5/B12 RRH (Shielded)	20.2	7.7	11.7	1.09	1.64	2.61	1.73	1.20	1.20	11	16	12
8843 B2/B66A RRH	17.2	15.5	13.2	1.85	1.58	1.11	1.30	1.20	1.20	18	15	17
8843 B2/B66A RRH (Shielded)	17.2	7.7	13.2	0.93	1.58	2.22	1.30	1.20	1.20	9	15	11
4478 B14 RRH	20.4	10.6	15.7	1.50	2.22	1.93	1.30	1.20	1.20	14	21	16
4478 B14 RRH (Shielded)	20.4	6.4	15.7	0.91	2.22	3.16	1.30	1.23	1.20	9	21	12
4415 B30 RRH	18.8	8.2	15.7	1.07	2.05	2.29	1.20	1.20	1.20	10	20	13
4415 B30 RRH (Shielded)	18.8	5.2	15.7	0.68	2.05	3.58	1.20	1.25	1.20	7	20	10
LGP21401 TMA	16.7	11.3	5.0	1.31	0.58	1.48	3.34	1.20	1.24	13	6	11

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	16	8	14
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	37	21	33
OPA65R-BU8D Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	52	24	45
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	52	24	45
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	6	4	5
4449 B5/B12 RRH (Shielded)	17.9	6.6	9.4	0.82	1.17	2.71	1.90	1.21	1.20	3	4	3
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	5
8843 B2/B66A RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	2	4	3
4478 B14 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	4	6	4
4478 B14 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	2	6	3
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	5	3
4415 B30 RRH (Shielded)	16.5	3.0	13.4	0.34	1.54	5.59	1.23	1.34	1.20	1	5	2
LGP21401 TMA	14.4	9.0	2.7	0.90	0.27	1.60	5.33	1.20	1.33	3	1	3

Date: 11/3/2021
Project Name: KILLINGLY NORTH
Project No.: CT5463
Designed By: RL Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

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

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (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	300	159	194
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	694	394	469
OPA65R-BU8D Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	973	442	575
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	973	442	575
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	107	76	84
4449 B5/B12 RRH (Shielded)	17.9	9.9	9.4	1.23	1.17	1.81	1.90	1.20	1.20	80	76	77
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	89	74	78
8843 B2/B66A RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	67	74	72
4478 B14 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	68	110	100
4478 B14 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	36	110	92
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	45	100	86
4415 B30 RRH (Shielded)	16.5	3.0	13.4	0.34	1.54	5.59	1.23	1.34	1.20	25	100	81
LGP21401 TMA	14.4	9.0	2.7	0.90	0.27	1.60	5.33	1.20	1.33	59	19	29

WIND LOADS WITH ICE:

7770 Antenna	57.3	13.3	7.3	5.29	2.90	4.31	7.86	1.28	1.43	55	33	39
OPA-65R-LCUU-H8 Antenna	95.0	16.7	9.3	11.01	6.13	5.69	10.22	1.34	1.51	119	74	86
OPA65R-BU8D Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	162	82	102
DMP65R-BU8DA Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	162	82	102
4449 B5/B12 RRH	20.2	15.5	11.7	2.17	1.64	1.30	1.73	1.20	1.20	21	16	17
4449 B5/B12 RRH (Shielded)	20.2	11.6	11.7	1.63	1.64	1.74	1.73	1.20	1.20	16	16	16
8843 B2/B66A RRH	17.2	15.5	13.2	1.85	1.58	1.11	1.30	1.20	1.20	18	15	16
8843 B2/B66A RRH (Shielded)	17.2	11.6	13.2	1.39	1.58	1.48	1.30	1.20	1.20	13	15	15
4478 B14 RRH	20.4	10.6	15.7	1.50	2.22	1.93	1.30	1.20	1.20	14	21	20
4478 B14 RRH (Shielded)	20.4	6.4	15.7	0.91	2.22	3.16	1.30	1.23	1.20	9	21	18
4415 B30 RRH	18.8	8.2	15.7	1.07	2.05	2.29	1.20	1.20	1.20	10	20	17
4415 B30 RRH (Shielded)	18.8	5.2	15.7	0.68	2.05	3.58	1.20	1.25	1.20	7	20	17
LGP21401 TMA	16.7	11.3	5.0	1.31	0.58	1.48	3.34	1.20	1.24	13	6	7

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	16	8	10
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	37	21	25
OPA65R-BU8D Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	52	24	31
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	52	24	31
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	6	4	4
4449 B5/B12 RRH (Shielded)	17.9	9.9	9.4	1.23	1.17	1.81	1.90	1.20	1.20	4	4	4
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	4
8843 B2/B66A RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	4	4	4
4478 B14 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	4	6	5
4478 B14 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	2	6	5
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	5	5
4415 B30 RRH (Shielded)	16.5	3.0	13.4	0.34	1.54	5.59	1.23	1.34	1.20	1	5	4
LGP21401 TMA	14.4	9.0	2.7	0.90	0.27	1.60	5.33	1.20	1.33	3	1	2

Date: 11/3/2021
Project Name: KILLINGLY NORTH
Project No.: CT5463
Designed By: RL Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

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

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (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	300	159	159
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	694	394	394
OPA65R-BU8D Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	973	442	442
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	973	442	442
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	107	76	76
4449 B5/B12 RRH (Shielded)	17.9	0.0	9.4	0.00	1.17	0.00	1.90	1.20	1.20	0	76	76
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	89	74	74
8843 B2/B66A RRH (Shielded)	14.9	0.0	10.9	0.00	1.13	0.00	1.37	1.20	1.20	0	74	74
4478 B14 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	68	110	110
4478 B14 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	36	110	110
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	45	100	100
4415 B30 RRH (Shielded)	16.5	3.0	13.4	0.34	1.54	5.59	1.23	1.34	1.20	25	100	100
LGP21401 TMA	14.4	9.0	2.7	0.90	0.27	1.60	5.33	1.20	1.33	59	19	19

WIND LOADS WITH ICE:

7770 Antenna	57.3	13.3	7.3	5.29	2.90	4.31	7.86	1.28	1.43	55	33	33
OPA-65R-LCUU-H8 Antenna	95.0	16.7	9.3	11.01	6.13	5.69	10.22	1.34	1.51	119	74	74
OPA65R-BU8D Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	162	82	82
DMP65R-BU8DA Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	162	82	82
4449 B5/B12 RRH	20.2	15.5	11.7	2.17	1.64	1.30	1.73	1.20	1.20	21	16	16
4449 B5/B12 RRH (Shielded)	20.2	2.3	11.7	0.32	1.64	8.80	1.73	1.46	1.20	4	16	16
8843 B2/B66A RRH	17.2	15.5	13.2	1.85	1.58	1.11	1.30	1.20	1.20	18	15	15
8843 B2/B66A RRH (Shielded)	17.2	2.3	13.2	0.27	1.58	7.50	1.30	1.42	1.20	3	15	15
4478 B14 RRH	20.4	10.6	15.7	1.50	2.22	1.93	1.30	1.20	1.20	14	21	21
4478 B14 RRH (Shielded)	20.4	6.4	15.7	0.91	2.22	3.16	1.30	1.23	1.20	9	21	21
4415 B30 RRH	18.8	8.2	15.7	1.07	2.05	2.29	1.20	1.20	1.20	10	20	20
4415 B30 RRH (Shielded)	18.8	5.2	15.7	0.68	2.05	3.58	1.20	1.25	1.20	7	20	20
LGP21401 TMA	16.7	11.3	5.0	1.31	0.58	1.48	3.34	1.20	1.24	13	6	6

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	16	8	8
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	37	21	21
OPA65R-BU8D Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	52	24	24
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	52	24	24
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	6	4	4
4449 B5/B12 RRH (Shielded)	17.9	0.0	9.4	0.00	1.17	0.00	1.90	1.20	1.20	0	4	4
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	4
8843 B2/B66A RRH (Shielded)	14.9	0.0	10.9	0.00	1.13	0.00	1.37	1.20	1.20	0	4	4
4478 B14 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	4	6	6
4478 B14 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	2	6	6
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	5	5
4415 B30 RRH (Shielded)	16.5	3.0	13.4	0.34	1.54	5.59	1.23	1.34	1.20	1	5	5
LGP21401 TMA	14.4	9.0	2.7	0.90	0.27	1.60	5.33	1.20	1.33	3	1	1

Date: 11/3/2021
Project Name: KILLINGLY NORTH
Project No.: CT5463
Designed By: RL Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

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

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (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	300	159	194
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	694	394	469
OPA65R-BU8D Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	973	442	575
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	973	442	575
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	107	76	84
4449 B5/B12 RRH (Shielded)	17.9	9.9	9.4	1.23	1.17	1.81	1.90	1.20	1.20	80	76	77
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	89	74	78
8843 B2/B66A RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	67	74	72
4478 B14 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	68	110	100
4478 B14 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	36	110	92
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	45	100	86
4415 B30 RRH (Shielded)	16.5	3.0	13.4	0.34	1.54	5.59	1.23	1.34	1.20	25	100	81
LGP21401 TMA	14.4	9.0	2.7	0.90	0.27	1.60	5.33	1.20	1.33	59	19	29

WIND LOADS WITH ICE:

7770 Antenna	57.3	13.3	7.3	5.29	2.90	4.31	7.86	1.28	1.43	55	33	39
OPA-65R-LCUU-H8 Antenna	95.0	16.7	9.3	11.01	6.13	5.69	10.22	1.34	1.51	119	74	86
OPA65R-BU8D Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	162	82	102
DMP65R-BU8DA Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	162	82	102
4449 B5/B12 RRH	20.2	15.5	11.7	2.17	1.64	1.30	1.73	1.20	1.20	21	16	17
4449 B5/B12 RRH (Shielded)	20.2	11.6	11.7	1.63	1.64	1.74	1.73	1.20	1.20	16	16	16
8843 B2/B66A RRH	17.2	15.5	13.2	1.85	1.58	1.11	1.30	1.20	1.20	18	15	16
8843 B2/B66A RRH (Shielded)	17.2	11.6	13.2	1.39	1.58	1.48	1.30	1.20	1.20	13	15	15
4478 B14 RRH	20.4	10.6	15.7	1.50	2.22	1.93	1.30	1.20	1.20	14	21	20
4478 B14 RRH (Shielded)	20.4	6.4	15.7	0.91	2.22	3.16	1.30	1.23	1.20	9	21	18
4415 B30 RRH	18.8	8.2	15.7	1.07	2.05	2.29	1.20	1.20	1.20	10	20	17
4415 B30 RRH (Shielded)	18.8	5.2	15.7	0.68	2.05	3.58	1.20	1.25	1.20	7	20	17
LGP21401 TMA	16.7	11.3	5.0	1.31	0.58	1.48	3.34	1.20	1.24	13	6	7

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	16	8	10
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	37	21	25
OPA65R-BU8D Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	52	24	31
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	52	24	31
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	6	4	4
4449 B5/B12 RRH (Shielded)	17.9	9.9	9.4	1.23	1.17	1.81	1.90	1.20	1.20	4	4	4
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	4
8843 B2/B66A RRH (Shielded)	14.9	9.9	10.9	1.02	1.13	1.51	1.37	1.20	1.20	4	4	4
4478 B14 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	4	6	5
4478 B14 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	2	6	5
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	5	5
4415 B30 RRH (Shielded)	16.5	3.0	13.4	0.34	1.54	5.59	1.23	1.34	1.20	1	5	4
LGP21401 TMA	14.4	9.0	2.7	0.90	0.27	1.60	5.33	1.20	1.33	3	1	2

Date: 11/3/2021
Project Name: KILLINGLY NORTH
Project No.: CT5463
Designed By: RL Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

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

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (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	300	159	265
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	694	394	619
OPA65R-BU8D Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	973	442	840
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	973	442	840
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	107	76	99
4449 B5/B12 RRH (Shielded)	17.9	6.6	9.4	0.82	1.17	2.71	1.90	1.21	1.20	54	76	60
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	89	74	85
8843 B2/B66A RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	45	74	52
4478 B14 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	68	110	79
4478 B14 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	36	110	55
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	45	100	59
4415 B30 RRH (Shielded)	16.5	3.0	13.4	0.34	1.54	5.59	1.23	1.34	1.20	25	100	44
LGP21401 TMA	14.4	9.0	2.7	0.90	0.27	1.60	5.33	1.20	1.33	59	19	49

WIND LOADS WITH ICE:

7770 Antenna	57.3	13.3	7.3	5.29	2.90	4.31	7.86	1.28	1.43	55	33	49
OPA-65R-LCUU-H8 Antenna	95.0	16.7	9.3	11.01	6.13	5.69	10.22	1.34	1.51	119	74	108
OPA65R-BU8D Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	162	82	142
DMP65R-BU8DA Antenna	98.3	23.0	10.0	15.70	6.82	4.27	9.84	1.28	1.49	162	82	142
4449 B5/B12 RRH	20.2	15.5	11.7	2.17	1.64	1.30	1.73	1.20	1.20	21	16	20
4449 B5/B12 RRH (Shielded)	20.2	7.7	11.7	1.09	1.64	2.61	1.73	1.20	1.20	11	16	12
8843 B2/B66A RRH	17.2	15.5	13.2	1.85	1.58	1.11	1.30	1.20	1.20	18	15	17
8843 B2/B66A RRH (Shielded)	17.2	7.7	13.2	0.93	1.58	2.22	1.30	1.20	1.20	9	15	11
4478 B14 RRH	20.4	10.6	15.7	1.50	2.22	1.93	1.30	1.20	1.20	14	21	16
4478 B14 RRH (Shielded)	20.4	6.4	15.7	0.91	2.22	3.16	1.30	1.23	1.20	9	21	12
4415 B30 RRH	18.8	8.2	15.7	1.07	2.05	2.29	1.20	1.20	1.20	10	20	13
4415 B30 RRH (Shielded)	18.8	5.2	15.7	0.68	2.05	3.58	1.20	1.25	1.20	7	20	10
LGP21401 TMA	16.7	11.3	5.0	1.31	0.58	1.48	3.34	1.20	1.24	13	6	11

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	16	8	14
OPA-65R-LCUU-H8 Antenna	92.7	14.4	7.0	9.27	4.51	6.44	13.24	1.38	1.61	37	21	33
OPA65R-BU8D Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	52	24	45
DMP65R-BU8DA Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	52	24	45
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	6	4	5
4449 B5/B12 RRH (Shielded)	17.9	6.6	9.4	0.82	1.17	2.71	1.90	1.21	1.20	3	4	3
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	5
8843 B2/B66A RRH (Shielded)	14.9	6.6	10.9	0.68	1.13	2.26	1.37	1.20	1.20	2	4	3
4478 B14 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	4	6	4
4478 B14 RRH (Shielded)	18.1	4.2	13.4	0.52	1.68	4.36	1.35	1.28	1.20	2	6	3
4415 B30 RRH	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	5	3
4415 B30 RRH (Shielded)	16.5	3.0	13.4	0.34	1.54	5.59	1.23	1.34	1.20	1	5	2
LGP21401 TMA	14.4	9.0	2.7	0.90	0.27	1.60	5.33	1.20	1.33	3	1	3

Date: 11/3/2021
Project Name: KILLINGLY NORTH
Project No.: CT5463
Designed By: RL **Checked By:** MSC

HUDSON Design Group LLC

ICE WEIGHT CALCULATIONS

Thickness of ice: 1.15 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:		85 lbs
Weight of object:	35.0 lbs	
Combined weight of ice and object:		120 lbs

OPA-65R-LCUU-H8 Antenna
Weight of ice based on total radial SF area:

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

OPA65R-BU8D Antenna
Weight of ice based on total radial SF area:

Height (in):	96.0	
Width (in):	20.7	
Depth (in):	7.7	
Total weight of ice on object:		261 lbs
Weight of object:	74.0 lbs	
Combined weight of ice and object:		335 lbs

DMP65R-BU8DA Antenna
Weight of ice based on total radial SF area:

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

4449 B5/B12 RRH
Weight of ice based on total radial SF area:

Height (in):	17.9	
Width (in):	13.2	
Depth (in):	9.4	
Total weight of ice on object:		36 lbs
Weight of object:	73.0 lbs	
Combined weight of ice and object:		109 lbs

8843 B2/B66A RRH
Weight of ice based on total radial SF area:

Height (in):	14.9	
Width (in):	13.2	
Depth (in):	10.9	
Total weight of ice on object:		32 lbs
Weight of object:	72.0 lbs	
Combined weight of ice and object:		104 lbs

4478 B14 RRH
Weight of ice based on total radial SF area:

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

4415 B30 RRH
Weight of ice based on total radial SF area:

Height (in):	16.5	
Width (in):	13.4	
Depth (in):	5.9	
Total weight of ice on object:		31 lbs
Weight of object:	46.0 lbs	
Combined weight of ice and object:		77 lbs

LGP21401 TMA
Weight of ice based on total radial SF area:

Height (in):	14.4	
Width (in):	2.7	
Depth (in):	9.0	
Total weight of ice on object:		18 lbs
Weight of object:	19.0 lbs	
Combined weight of ice and object:		37 lbs

Squid Surge Arrestor
Weight of ice based on total radial SF area:

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

2" Pipe
Per foot weight of ice:

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

2-1/2" Pipe
Per foot weight of ice:

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

3" Pipe
Per foot weight of ice:

diameter (in):	3.5	
Per foot weight of ice on object:		7 plf

L 2x2 Angles
Weight of ice based on total radial SF area:

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

L 2-1/2x2-1/2 Angles
Weight of ice based on total radial SF area:

Height (in):	2.5	
Width (in):	2.5	
Per foot weight of ice on object:		7 plf

HSS 4x4
Weight of ice based on total radial SF area:

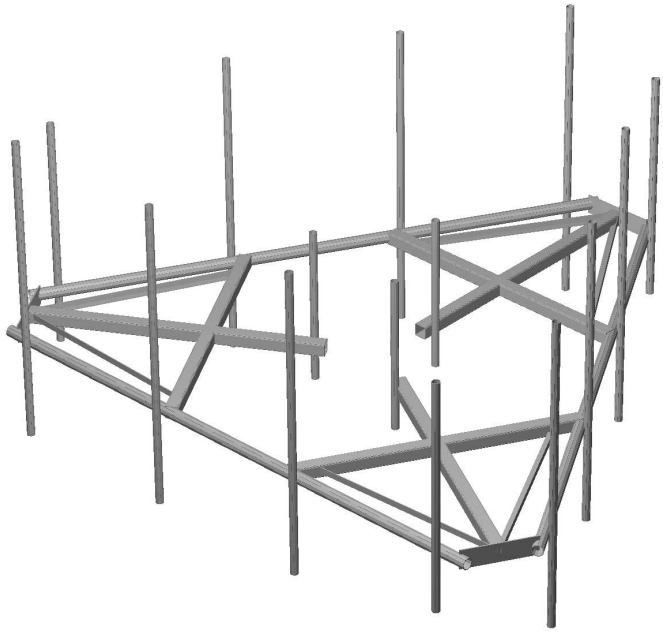
Height (in):	4	
Width (in):	4	
Per foot weight of ice on object:		10 plf

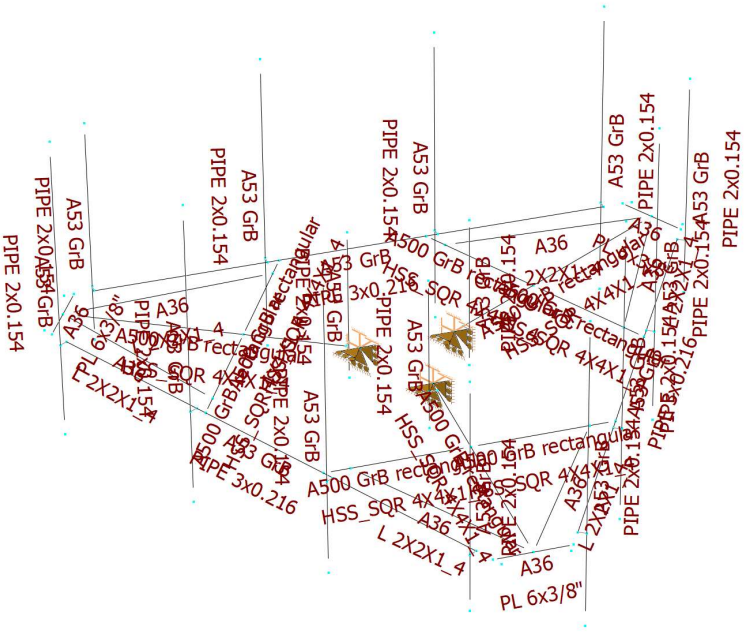
HSS 6x3/8
Weight of ice based on total radial SF area:

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

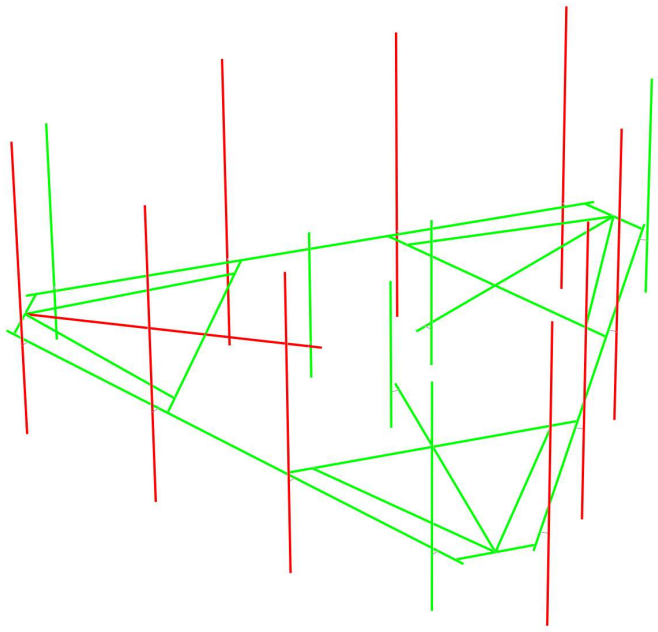
HUDSON
Design Group LLC

Mount Calculations
(Existing Conditions)


Y
Z
X


A53 GrB
PIPE 2x0.154
A500 GrB rectangular
HSS_SQR 4X4X1_4
A36
L 2X2X1_4
PL 6x3/8"
PIPE 3x0.216
Y
Z
X

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



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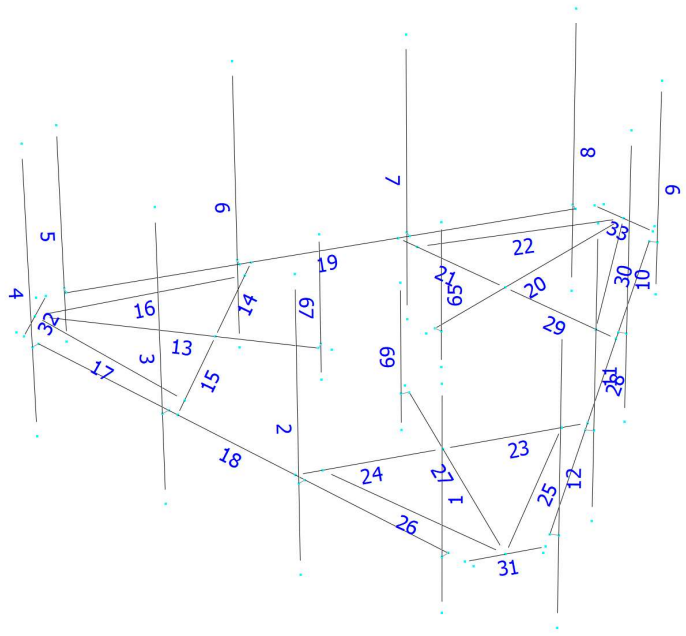

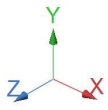

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Load data

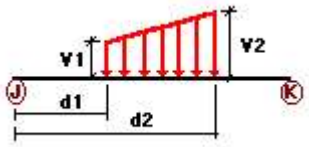
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
DL	Dead Load	No	DL
W0	Wind Load 0/60/120 deg	No	WIND
W30	Wind Load 30/90/150 deg	No	WIND
Di	Ice Load	No	LL
Wi0	Ice Wind Load 0/60/120 deg	No	WIND
Wi30	Ice Wind Load 30/90/150 deg	No	WIND
WL0	WL 30 mph 0/60/120 deg	No	WIND
WL30	WL 30 mph 30/90/150 deg	No	WIND
LL1	250 lb Live Load Center of Mount	No	LL
LL2	250 lb Live Load End of Mount	No	LL
LLa1	500 lb Live Load Antenna 1	No	LL
LLa2	500 lb Live Load Antenna 2	No	LL
LLa3	500 lb Live Load Antenna 3	No	LL
LLa4	500 lb Live Load Antenna 4	No	LL

Distributed force on members

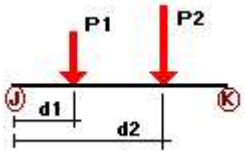


Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
DL	16	y	-0.01	-0.01	0.00	No	100.00	Yes
	17	y	-0.01	-0.01	0.00	No	100.00	Yes
	22	y	-0.01	-0.01	0.00	No	100.00	Yes
	25	y	-0.01	-0.01	0.00	No	100.00	Yes
	26	y	-0.01	-0.01	0.00	No	100.00	Yes
	30	y	-0.01	-0.01	0.00	No	100.00	Yes
	13	y	-0.01	-0.01	0.00	No	60.00	Yes
	14	y	-0.01	-0.01	0.00	No	80.00	Yes
	15	y	-0.01	-0.01	0.00	No	80.00	Yes
	20	y	-0.01	-0.01	0.00	No	60.00	Yes
	21	y	-0.01	-0.01	0.00	No	80.00	Yes
	23	y	-0.01	-0.01	0.00	No	80.00	Yes
	24	y	-0.01	-0.01	0.00	No	80.00	Yes
	27	y	-0.01	-0.01	0.00	No	60.00	Yes

	29	y	-0.01	-0.01	0.00	No	80.00	Yes
W0	5	z	-0.013	-0.013	0.00	No	100.00	Yes
	6	z	-0.013	-0.013	0.00	No	100.00	Yes
	7	z	-0.013	-0.013	0.00	No	100.00	Yes
	8	z	-0.013	-0.013	0.00	No	100.00	Yes
	9	z	-0.013	-0.013	0.00	No	100.00	Yes
	10	z	-0.013	-0.013	0.00	No	100.00	Yes
	11	z	-0.013	-0.013	0.00	No	100.00	Yes
	12	z	-0.013	-0.013	0.00	No	100.00	Yes
	65	z	-0.013	-0.013	0.00	No	100.00	Yes
	67	z	-0.013	-0.013	0.00	No	100.00	Yes
	69	z	-0.013	-0.013	0.00	No	100.00	Yes
	18	z	-0.019	-0.019	0.00	No	100.00	Yes
	19	z	-0.019	-0.019	0.00	No	100.00	Yes
	28	z	-0.019	-0.019	0.00	No	100.00	Yes
	16	z	-0.011	-0.011	0.00	No	100.00	Yes
	17	z	-0.011	-0.011	0.00	No	100.00	Yes
	22	z	-0.011	-0.011	0.00	No	100.00	Yes
	25	z	-0.011	-0.011	0.00	No	100.00	Yes
	26	z	-0.011	-0.011	0.00	No	100.00	Yes
	30	z	-0.011	-0.011	0.00	No	100.00	Yes
	13	z	-0.023	-0.023	0.00	No	100.00	Yes
	14	z	-0.023	-0.023	0.00	No	100.00	Yes
	15	z	-0.023	-0.023	0.00	No	100.00	Yes
	21	z	-0.023	-0.023	0.00	No	100.00	Yes
	23	z	-0.023	-0.023	0.00	No	100.00	Yes
	24	z	-0.023	-0.023	0.00	No	100.00	Yes
	27	z	-0.023	-0.023	0.00	No	100.00	Yes
	29	z	-0.023	-0.023	0.00	No	100.00	Yes
	32	z	-0.003	-0.003	0.00	No	100.00	Yes
	33	z	-0.003	-0.003	0.00	No	100.00	Yes
	31	z	-0.003	-0.003	0.00	No	100.00	Yes
W30	1	x	-0.013	-0.013	0.00	No	100.00	Yes
	2	x	-0.013	-0.013	0.00	No	100.00	Yes
	3	x	-0.013	-0.013	0.00	No	100.00	Yes
	4	x	-0.013	-0.013	0.00	No	100.00	Yes
	5	x	-0.013	-0.013	0.00	No	100.00	Yes
	6	x	-0.013	-0.013	0.00	No	100.00	Yes
	7	x	-0.013	-0.013	0.00	No	100.00	Yes
	8	x	-0.013	-0.013	0.00	No	100.00	Yes
	65	x	-0.013	-0.013	0.00	No	100.00	Yes
	67	x	-0.013	-0.013	0.00	No	100.00	Yes
	69	x	-0.013	-0.013	0.00	No	100.00	Yes
	19	x	-0.019	-0.019	0.00	No	100.00	Yes
	28	x	-0.019	-0.019	0.00	No	100.00	Yes
	16	x	-0.011	-0.011	0.00	No	100.00	Yes
	17	x	-0.011	-0.011	0.00	No	100.00	Yes
	22	x	-0.011	-0.011	0.00	No	100.00	Yes
	25	x	-0.011	-0.011	0.00	No	100.00	Yes
	26	x	-0.011	-0.011	0.00	No	100.00	Yes
	30	x	-0.011	-0.011	0.00	No	100.00	Yes
	13	x	-0.023	-0.023	0.00	No	100.00	Yes
	14	x	-0.023	-0.023	0.00	No	100.00	Yes
	15	x	-0.023	-0.023	0.00	No	100.00	Yes
	20	x	-0.023	-0.023	0.00	No	100.00	Yes
	23	x	-0.023	-0.023	0.00	No	100.00	Yes
	24	x	-0.023	-0.023	0.00	No	100.00	Yes
	27	x	-0.023	-0.023	0.00	No	100.00	Yes
	32	x	-0.003	-0.003	0.00	No	100.00	Yes
	31	x	-0.003	-0.003	0.00	No	100.00	Yes

Di	1	y	-0.005	-0.005	0.00	No	100.00	Yes
	2	y	-0.005	-0.005	0.00	No	100.00	Yes
	3	y	-0.005	-0.005	0.00	No	100.00	Yes
	4	y	-0.005	-0.005	0.00	No	100.00	Yes
	5	y	-0.005	-0.005	0.00	No	100.00	Yes
	6	y	-0.005	-0.005	0.00	No	100.00	Yes
	7	y	-0.005	-0.005	0.00	No	100.00	Yes
	8	y	-0.005	-0.005	0.00	No	100.00	Yes
	9	y	-0.005	-0.005	0.00	No	100.00	Yes
	10	y	-0.005	-0.005	0.00	No	100.00	Yes
	11	y	-0.005	-0.005	0.00	No	100.00	Yes
	12	y	-0.005	-0.005	0.00	No	100.00	Yes
	65	y	-0.005	-0.005	0.00	No	100.00	Yes
	67	y	-0.005	-0.005	0.00	No	100.00	Yes
	69	y	-0.005	-0.005	0.00	No	100.00	Yes
	18	y	-0.007	-0.007	0.00	No	100.00	Yes
	19	y	-0.007	-0.007	0.00	No	100.00	Yes
	28	y	-0.007	-0.007	0.00	No	100.00	Yes
	16	y	-0.006	-0.006	0.00	No	100.00	Yes
	17	y	-0.006	-0.006	0.00	No	100.00	Yes
	22	y	-0.006	-0.006	0.00	No	100.00	Yes
	25	y	-0.006	-0.006	0.00	No	100.00	Yes
	26	y	-0.006	-0.006	0.00	No	100.00	Yes
	30	y	-0.006	-0.006	0.00	No	100.00	Yes
	13	y	-0.01	-0.01	0.00	No	100.00	Yes
	14	y	-0.01	-0.01	0.00	No	100.00	Yes
	15	y	-0.01	-0.01	0.00	No	100.00	Yes
	20	y	-0.01	-0.01	0.00	No	100.00	Yes
	21	y	-0.01	-0.01	0.00	No	100.00	Yes
	23	y	-0.01	-0.01	0.00	No	100.00	Yes
	24	y	-0.01	-0.01	0.00	No	100.00	Yes
	27	y	-0.01	-0.01	0.00	No	100.00	Yes
	29	y	-0.01	-0.01	0.00	No	100.00	Yes
	32	y	-0.01	-0.01	0.00	No	100.00	Yes
	33	y	-0.01	-0.01	0.00	No	100.00	Yes
	31	y	-0.01	-0.01	0.00	No	100.00	Yes

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	1	y	-0.018	0.50	No
		y	-0.018	4.00	No
		y	-0.019	2.00	No
		y	-0.019	2.00	No
	2	y	-0.044	0.50	No
		y	-0.044	7.50	No
		y	-0.073	4.00	No
	3	y	-0.037	0.50	No
		y	-0.037	7.50	No

		y	-0.072	4.00	No
	4	y	-0.048	0.50	No
		y	-0.048	7.50	No
		y	-0.06	4.00	No
		y	-0.046	4.00	No
	5	y	-0.018	0.50	No
		y	-0.018	4.00	No
		y	-0.019	2.00	No
		y	-0.019	2.00	No
	6	y	-0.044	0.50	No
		y	-0.044	7.50	No
		y	-0.073	4.00	No
	7	y	-0.037	0.50	No
		y	-0.037	7.50	No
		y	-0.072	4.00	No
	8	y	-0.048	0.50	No
		y	-0.048	7.50	No
		y	-0.06	4.00	No
		y	-0.046	4.00	No
	9	y	-0.018	0.50	No
		y	-0.018	4.00	No
		y	-0.019	2.00	No
		y	-0.019	2.00	No
	10	y	-0.044	0.50	No
		y	-0.044	7.50	No
		y	-0.073	4.00	No
	11	y	-0.037	0.50	No
		y	-0.037	7.50	No
		y	-0.072	4.00	No
	12	y	-0.048	0.50	No
		y	-0.048	7.50	No
		y	-0.06	4.00	No
		y	-0.046	4.00	No
	65	y	-0.033	2.00	No
	67	y	-0.033	2.00	No
W0	1	z	-0.15	0.50	No
		z	-0.15	4.00	No
	2	z	-0.347	0.50	No
		z	-0.347	7.50	No
	3	z	-0.487	0.50	No
		z	-0.487	7.50	No
	4	z	-0.487	0.50	No
		z	-0.487	7.50	No
		z	-0.034	4.00	No
		z	-0.034	4.00	No
	5	z	-0.098	0.50	No
		z	-0.098	4.00	No
		z	-0.029	2.00	No
	6	z	-0.235	0.50	No
		z	-0.235	7.50	No
		z	-0.077	4.00	No
	7	z	-0.288	0.50	No
		z	-0.288	7.50	No
		z	-0.072	4.00	No
	8	z	-0.288	0.50	No
		z	-0.288	7.50	No
		z	-0.092	4.00	No
	9	z	-0.098	0.50	No
		z	-0.098	4.00	No
		z	-0.029	2.00	No

	10	z	-0.235	0.50	No
		z	-0.235	7.50	No
		z	-0.077	4.00	No
	11	z	-0.288	0.50	No
		z	-0.288	7.50	No
		z	-0.072	4.00	No
	12	z	-0.288	0.50	No
		z	-0.288	7.50	No
		z	-0.092	4.00	No
	65	z	-0.062	2.00	No
	67	z	-0.062	2.00	No
W30	1	x	-0.08	0.50	No
		x	-0.08	4.00	No
		x	-0.019	2.00	No
	2	x	-0.198	0.50	No
		x	-0.198	7.50	No
		x	-0.076	4.00	No
	3	x	-0.221	0.50	No
		x	-0.221	7.50	No
		x	-0.074	4.00	No
	4	x	-0.221	0.50	No
		x	-0.221	7.50	No
		x	-0.11	4.00	No
	5	x	-0.133	0.50	No
		x	-0.133	4.00	No
		x	-0.049	2.00	No
	6	x	-0.31	0.50	No
		x	-0.31	7.50	No
		x	-0.06	4.00	No
	7	x	-0.42	0.50	No
		x	-0.42	7.50	No
		x	-0.052	4.00	No
	8	x	-0.42	0.50	No
		x	-0.42	7.50	No
		x	-0.055	4.00	No
	9	x	-0.133	0.50	No
		x	-0.133	4.00	No
		x	-0.049	2.00	No
	10	x	-0.31	0.50	No
		x	-0.31	7.50	No
		x	-0.06	4.00	No
	11	x	-0.42	0.50	No
		x	-0.42	7.50	No
		x	-0.052	4.00	No
	12	x	-0.42	0.50	No
		x	-0.42	7.50	No
		x	-0.055	4.00	No
	65	x	-0.062	2.00	No
	67	x	-0.062	2.00	No
Di	1	y	-0.043	0.50	No
		y	-0.043	4.00	No
		y	-0.018	2.00	No
		y	-0.018	2.00	No
	2	y	-0.093	0.50	No
		y	-0.093	7.50	No
		y	-0.036	4.00	No
	3	y	-0.131	0.50	No
		y	-0.131	7.50	No
		y	-0.032	4.00	No
	4	y	-0.131	0.50	No

		y	-0.131	7.50	No
		y	-0.036	4.00	No
		y	-0.031	4.00	No
	5	y	-0.043	0.50	No
		y	-0.043	4.00	No
		y	-0.018	2.00	No
		y	-0.018	2.00	No
	6	y	-0.093	0.50	No
		y	-0.093	7.50	No
		y	-0.036	4.00	No
	7	y	-0.131	0.50	No
		y	-0.131	7.50	No
		y	-0.032	4.00	No
	8	y	-0.131	0.50	No
		y	-0.131	7.50	No
		y	-0.036	4.00	No
		y	-0.031	4.00	No
	9	y	-0.043	0.50	No
		y	-0.043	4.00	No
		y	-0.018	2.00	No
		y	-0.018	2.00	No
	10	y	-0.093	0.50	No
		y	-0.093	7.50	No
		y	-0.036	4.00	No
	11	y	-0.131	0.50	No
		y	-0.131	7.50	No
		y	-0.032	4.00	No
	12	y	-0.131	0.50	No
		y	-0.131	7.50	No
		y	-0.036	4.00	No
		y	-0.031	4.00	No
	65	y	-0.03	2.00	No
	67	y	-0.03	2.00	No
Wi0	1	z	-0.028	0.50	No
		z	-0.028	4.00	No
	2	z	-0.061	0.50	No
		z	-0.061	7.50	No
	3	z	-0.082	0.50	No
		z	-0.082	7.50	No
	4	z	-0.082	0.50	No
		z	-0.082	7.50	No
		z	-0.009	4.00	No
		z	-0.013	2.00	No
	5	z	-0.02	0.50	No
		z	-0.02	4.00	No
		z	-0.007	2.00	No
	6	z	-0.043	0.50	No
		z	-0.043	7.50	No
		z	-0.016	4.00	No
	7	z	-0.051	0.50	No
		z	-0.051	7.50	No
		z	-0.015	4.00	No
	8	z	-0.051	0.50	No
		z	-0.051	7.50	No
		z	-0.018	4.00	No
	9	z	-0.02	0.50	No
		z	-0.02	4.00	No
		z	-0.007	2.00	No
	10	z	-0.043	0.50	No
		z	-0.043	7.50	No

		z	-0.016	4.00	No
	11	z	-0.051	0.50	No
		z	-0.051	7.50	No
		z	-0.015	4.00	No
	12	z	-0.051	0.50	No
		z	-0.051	7.50	No
		z	-0.018	4.00	No
	65	z	-0.012	2.00	No
	67	z	-0.012	2.00	No
Wi30	1	x	-0.017	0.50	No
		x	-0.017	4.00	No
		x	-0.006	2.00	No
	2	x	-0.038	0.50	No
		x	-0.038	7.50	No
		x	-0.016	4.00	No
	3	x	-0.042	0.50	No
		x	-0.042	7.50	No
		x	-0.015	4.00	No
	4	x	-0.042	0.50	No
		x	-0.042	7.50	No
		x	-0.021	4.00	No
	5	x	-0.025	0.50	No
		x	-0.025	4.00	No
		x	-0.011	2.00	No
	6	x	-0.054	0.50	No
		x	-0.054	7.50	No
		x	-0.012	4.00	No
	7	x	-0.071	0.50	No
		x	-0.071	7.50	No
		x	-0.011	4.00	No
	8	x	-0.071	0.50	No
		x	-0.071	7.50	No
		x	-0.012	4.00	No
	9	x	-0.025	0.50	No
		x	-0.025	4.00	No
		x	-0.011	2.00	No
	10	x	-0.054	0.50	No
		x	-0.054	7.50	No
		x	-0.012	4.00	No
	11	x	-0.071	0.50	No
		x	-0.071	7.50	No
		x	-0.011	4.00	No
	12	x	-0.071	0.50	No
		x	-0.071	7.50	No
		x	-0.012	4.00	No
	65	x	-0.012	2.00	No
	67	x	-0.012	2.00	No
WL0	1	z	-0.008	0.50	No
		z	-0.008	4.00	No
	2	z	-0.019	0.50	No
		z	-0.019	7.50	No
	3	z	-0.026	0.50	No
		z	-0.026	7.50	No
	4	z	-0.026	0.50	No
		z	-0.026	7.50	No
		z	-0.002	4.00	No
		z	-0.001	4.00	No
	5	z	-0.006	0.50	No
		z	-0.006	4.00	No
		z	-0.002	2.00	No

	6	z	-0.013	0.50	No
		z	-0.013	7.50	No
		z	-0.004	4.00	No
	7	z	-0.016	0.50	No
		z	-0.016	7.50	No
		z	-0.004	4.00	No
	8	z	-0.016	0.50	No
		z	-0.016	7.50	No
		z	-0.005	4.00	No
	9	z	-0.006	0.50	No
		z	-0.006	4.00	No
		z	-0.002	2.00	No
	10	z	-0.013	0.50	No
		z	-0.013	7.50	No
		z	-0.004	4.00	No
	11	z	-0.016	0.50	No
		z	-0.016	7.50	No
		z	-0.004	4.00	No
	12	z	-0.016	0.50	No
		z	-0.016	7.50	No
		z	-0.005	4.00	No
	65	z	-0.003	2.00	No
	67	z	-0.003	2.00	No
WL30	1	x	-0.005	0.50	No
		x	-0.005	4.00	No
		x	-0.001	2.00	No
	2	x	-0.011	0.50	No
		x	-0.011	7.50	No
		x	-0.004	4.00	No
	3	x	-0.012	0.50	No
		x	-0.012	7.50	No
		x	-0.004	4.00	No
	4	x	-0.012	0.50	No
		x	-0.012	7.50	No
		x	-0.006	4.00	No
	5	x	-0.008	0.50	No
		x	-0.008	4.00	No
		x	-0.003	2.00	No
	6	x	-0.017	0.50	No
		x	-0.017	7.50	No
		x	-0.003	4.00	No
	7	x	-0.023	0.50	No
		x	-0.023	7.50	No
		x	-0.003	4.00	No
	8	x	-0.023	0.50	No
		x	-0.023	7.50	No
		x	-0.003	4.00	No
	9	x	-0.008	0.50	No
		x	-0.008	4.00	No
		x	-0.003	2.00	No
	10	x	-0.017	0.50	No
		x	-0.017	7.50	No
		x	-0.003	4.00	No
	11	x	-0.023	0.50	No
		x	-0.023	7.50	No
		x	-0.003	4.00	No
	12	x	-0.023	0.50	No
		x	-0.023	7.50	No
		x	-0.003	4.00	No
	65	x	-0.003	2.00	No

	67	x	-0.003	2.00	No
LLa1	1	y	-0.50	50.00	Yes
LLa2	2	y	-0.50	50.00	Yes
LLa3	3	y	-0.50	50.00	Yes
LLa4	4	y	-0.50	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	500 lb Live Load Antenna 1	No	0.00	0.00	0.00
LLa2	500 lb Live Load Antenna 2	No	0.00	0.00	0.00
LLa3	500 lb Live Load Antenna 3	No	0.00	0.00	0.00
LLa4	500 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: 11/4/2021 10:50 AM
Units system: English
File name: Z:\Shared\Work2.0\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT5463\LTE 3C 4C 5C 6C\CT5463.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=1.4DL
LC14=1.2DL+1.6LL1
LC15=1.2DL+1.6LL2
LC16=1.2DL+WL0+1.6LLa1
LC17=1.2DL+WL30+1.6LLa1
LC18=1.2DL-WL0+1.6LLa1
LC19=1.2DL-WL30+1.6LLa1
LC20=1.2DL+WL0+1.6LLa2
LC21=1.2DL+WL30+1.6LLa2
LC22=1.2DL-WL0+1.6LLa2
LC23=1.2DL-WL30+1.6LLa2
LC24=1.2DL+WL0+1.6LLa3
LC25=1.2DL+WL30+1.6LLa3
LC26=1.2DL-WL0+1.6LLa3
LC27=1.2DL-WL30+1.6LLa3
LC28=1.2DL+WL0+1.6LLa4
LC29=1.2DL+WL30+1.6LLa4
LC30=1.2DL-WL0+1.6LLa4
LC31=1.2DL-WL30+1.6LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	HSS_SQR 4X4X1_4	**13**	LC3 at 100.00%	**1.02**	**N.G.**	Eq. H1-1b
		14	LC2 at 0.00%	0.39	OK	Eq. H1-1b
		15	LC3 at 0.00%	0.36	OK	Eq. H1-1b
		20	LC4 at 100.00%	1.00	OK	Eq. H3-6
		21	LC1 at 0.00%	0.34	OK	Eq. H1-1b
		23	LC4 at 0.00%	0.38	OK	Eq. H1-1b
		24	LC3 at 0.00%	0.35	OK	Eq. H1-1b
		27	LC12 at 100.00%	0.97	OK	Eq. H1-1b
		29	LC1 at 0.00%	0.35	OK	Eq. H1-1b
	L 2X2X1_4	**16**	LC2 at 0.00%	0.69	OK	Eq. H2-1
		17	LC3 at 100.00%	0.67	OK	Eq. H2-1
		22	LC1 at 0.00%	0.74	OK	Eq. H2-1
		25	LC4 at 0.00%	**0.77**	**OK**	Eq. H2-1
		26	LC3 at 100.00%	0.57	OK	Eq. H2-1
		30	LC1 at 0.00%	0.65	OK	Eq. H2-1

PIPE 2x0.154	**1**	LC3 at 71.88%	0.51	OK	Eq. H1-1b
	2	LC3 at 65.63%	1.35	N.G.	Eq. H1-1b
	3	LC3 at 65.63%	1.88	N.G.	Eq. H1-1b
	4	LC3 at 65.63%	**1.96**	**N.G.**	Eq. H1-1b
	5	LC2 at 71.88%	0.64	OK	Eq. H1-1b
	6	LC2 at 65.63%	1.41	N.G.	Eq. H1-1b
	7	LC2 at 65.63%	1.82	N.G.	Eq. H1-1b
	8	LC2 at 65.63%	1.84	N.G.	Eq. H1-1b
	9	LC4 at 71.88%	0.54	OK	Eq. H1-1b
	10	LC4 at 65.63%	1.27	N.G.	Eq. H1-1b
	11	LC4 at 65.63%	1.68	N.G.	Eq. H1-1b
	12	LC4 at 65.63%	1.69	N.G.	Eq. H1-1b
	65	LC1 at 71.88%	0.09	OK	Eq. H1-1b
	67	LC2 at 71.88%	0.12	OK	Eq. H1-1b
	69	LC4 at 71.88%	0.06	OK	Eq. H1-1b
PIPE 3x0.216	**18**	LC1 at 36.81%	**0.73**	**OK**	Eq. H3-6
	19	LC4 at 63.19%	0.73	OK	Eq. H3-6
	28	LC4 at 37.50%	0.68	OK	Eq. H1-1b
PL 6x3/8"	**32**	LC3 at 50.00%	**0.36**	**OK**	Eq. H1-1b
	33	LC1 at 46.88%	0.27	OK	Eq. H1-1b
	31	LC4 at 46.88%	0.33	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
4	-1.8737	0.00	5.122	0
5	-2.1901	0.00	4.5725	0
6	-7.25	0.00	5.122	0
7	-8.0612	0.00	3.7171	0
8	-5.3724	0.00	-0.9392	0
9	-5.056	0.00	-0.3897	0
10	-3.6231	0.00	2.0914	0
3	-1.1693	0.00	0.6754	0
11	7.25	0.00	5.122	0
12	-3.50	0.00	-4.184	0
13	-2.8646	0.00	-4.184	0
14	-0.8112	0.00	-8.8402	0
15	0.00	0.00	-4.184	0
1	0.00	0.00	-1.3507	0
16	2.1901	0.00	4.5725	0
17	8.0612	0.00	3.7171	0
18	5.3724	0.00	-0.9392	0
19	5.056	0.00	-0.3897	0
20	3.6231	0.00	2.0914	0
21	0.8112	0.00	-8.8402	0
22	1.8737	0.00	5.122	0

2	1.1693	0.00	0.6754	0
23	3.50	0.00	-4.184	0
24	2.8646	0.00	-4.184	0
25	-7.00	0.00	5.122	0
26	7.00	0.00	5.122	0
27	-0.9358	0.00	-8.6232	0
28	-7.9358	0.00	3.5012	0
29	7.9358	0.00	3.5012	0
30	0.9358	0.00	-8.6232	0
31	7.4679	0.00	4.3116	0
32	-7.4679	0.00	4.3116	0
33	0.00	0.00	-8.6232	0
34	6.50	0.00	5.122	0
35	-6.50	0.00	5.122	0
36	2.1667	0.00	5.122	0
37	-2.1667	0.00	5.122	0
38	6.50	0.00	5.322	0
39	-6.50	0.00	5.322	0
40	2.1667	0.00	5.322	0
41	-2.1667	0.00	5.322	0
42	7.6858	0.00	3.0682	0
43	7.859	0.00	2.9682	0
44	5.5191	0.00	-0.6846	0
45	5.6923	0.00	-0.7846	0
46	3.3524	0.00	-4.4374	0
47	3.5256	0.00	-4.5374	0
48	1.1858	0.00	-8.1901	0
49	1.359	0.00	-8.2901	0
50	-1.1858	0.00	-8.1901	0
51	-1.359	0.00	-8.2901	0
52	-3.3524	0.00	-4.4374	0
53	-3.5256	0.00	-4.5374	0
54	-5.5191	0.00	-0.6846	0
55	-5.6923	0.00	-0.7846	0
56	-7.6858	0.00	3.0682	0
57	-7.859	0.00	2.9682	0
58	6.50	4.50	5.322	0
59	-6.50	5.50	5.322	0
60	2.1667	5.50	5.322	0
61	-2.1667	5.50	5.322	0
62	7.859	5.50	2.9682	0
63	5.6923	5.50	-0.7846	0
64	3.5256	5.50	-4.5374	0
65	1.359	4.50	-8.2902	0
66	-1.359	5.50	-8.2902	0
67	-3.5256	5.50	-4.5374	0
68	-5.6923	5.50	-0.7846	0
69	-7.859	4.50	2.9682	0
70	6.50	-1.50	5.322	0
71	-6.50	-2.50	5.322	0
72	2.1667	-2.50	5.322	0
73	-2.1667	-2.50	5.322	0
74	7.859	-2.50	2.9682	0
75	5.6923	-2.50	-0.7846	0
76	3.5256	-2.50	-4.5374	0
77	1.359	-1.50	-8.2902	0
78	-1.359	-2.50	-8.2902	0
79	-3.5256	-2.50	-4.5374	0
80	-5.6923	-2.50	-0.7846	0
81	-7.859	-1.50	2.9682	0

112	0.00	0.00	-1.6667	0
113	0.20	0.00	-1.6667	0
114	0.20	3.00	-1.6667	0
115	0.20	-1.00	-1.6667	0
116	-1.4434	0.00	0.8333	0
117	-1.5434	0.00	0.6601	0
118	-1.5434	3.00	0.6601	0
119	-1.5434	-1.00	0.6601	0
120	1.4434	0.00	0.8333	0
121	1.3434	0.00	1.0065	0
122	1.3434	3.00	1.0065	0
123	1.3434	-1.00	1.0065	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
3	1	1	1	1	1	1
1	1	1	1	1	1	1
2	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
1	58	70		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
2	60	72		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
3	61	73		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
4	59	71		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
5	69	81		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
6	68	80		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
7	67	79		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
8	66	78		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
9	65	77		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
10	64	76		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
11	63	75		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
12	62	74		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
65	114	115		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
67	118	119		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
69	122	123		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
18	6	11		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
19	7	14		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
28	17	21		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
16	9	32		L 2X2X1_4	A36	0.00	0.00	0.00
17	32	5		L 2X2X1_4	A36	0.00	0.00	0.00
22	13	33		L 2X2X1_4	A36	0.00	0.00	0.00
25	19	31		L 2X2X1_4	A36	0.00	0.00	0.00
26	31	16		L 2X2X1_4	A36	0.00	0.00	0.00
30	24	33		L 2X2X1_4	A36	0.00	0.00	0.00
13	32	3		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
14	10	8		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
15	10	4		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00

20	33	1	HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
21	15	12	HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
23	20	18	HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
24	20	22	HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
27	31	2	HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
29	15	23	HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
32	28	25	PL 6x3/8"	A36	0.00	0.00	0.00
33	27	30	PL 6x3/8"	A36	0.00	0.00	0.00
31	29	26	PL 6x3/8"	A36	0.00	0.00	0.00

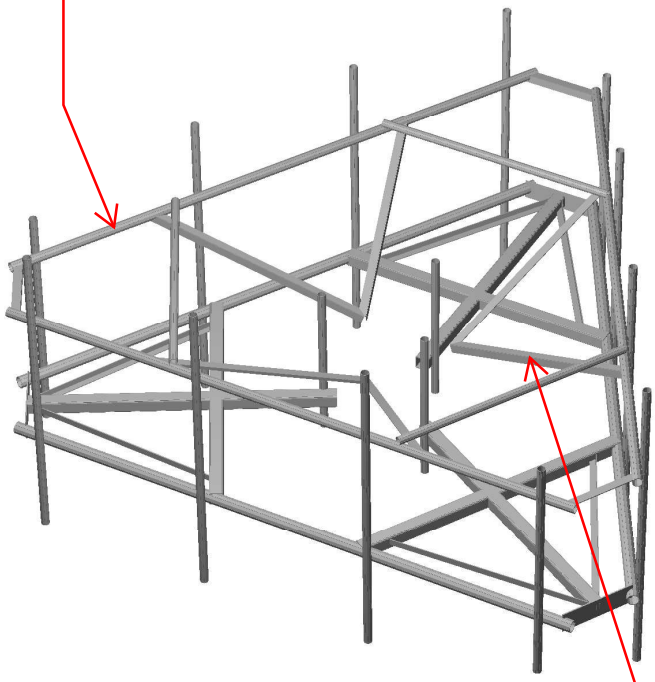
Orientation of local axes

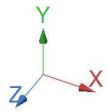
Member	Rotation [Deg]	Axes23	NX	NY	NZ
67	0.00	2	-0.50	0.00	-0.866
69	0.00	2	-0.50	0.00	0.866
16	270.00	0	0.00	0.00	0.00
17	270.00	0	0.00	0.00	0.00
30	270.00	0	0.00	0.00	0.00

HUDSON
Design Group LLC

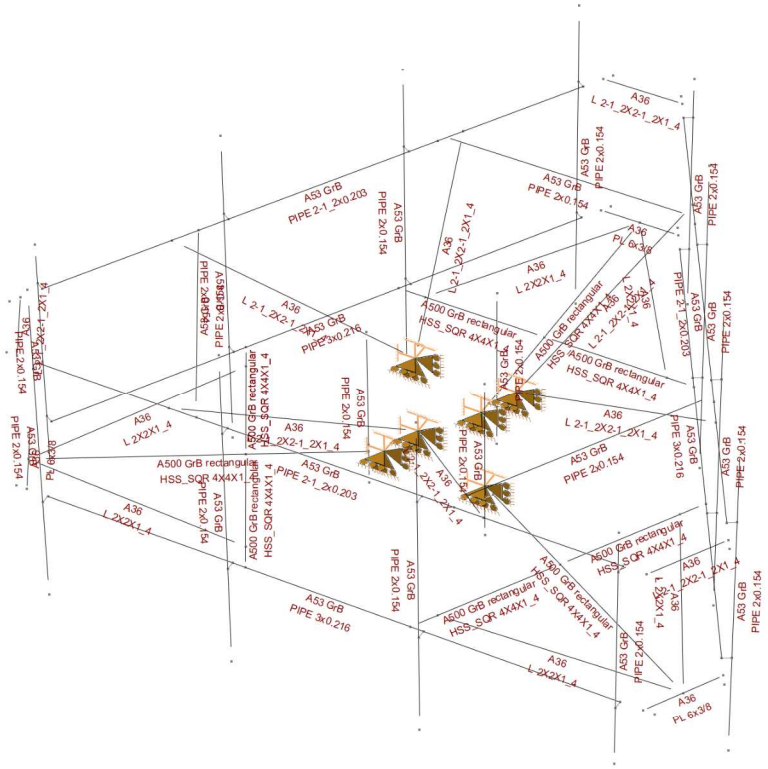
Mount Calculations
(Modified Conditions)

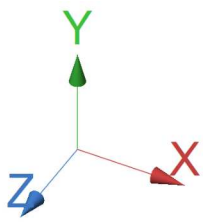
Proposed handrail kit, SitePro1 P/N HRK14-3HD (or approved equal). Handrail kit is required per AT&T Technical Directive to stabilize existing cantilevered antennas.





Proposed handrail reinforcement kit, SitePro1 P/N PRK-SFS-L (or approved equal) secured to new horizontal pipe and tower leg (total of 1).


A53 GrB
PIPE 2-1_2x0.203
PIPE 2x0.154
PIPE 3x0.216
A36
L 2-1_2X2-1_2X1_4
L 2X2X1_4
PL 6x3/8
A500 GrB rectangular
HSS_SQR 4X4X1_4
PIPE 2x0.154
PIPE 2x0.203
PIPE 2x0.154
PIPE 3x0.216


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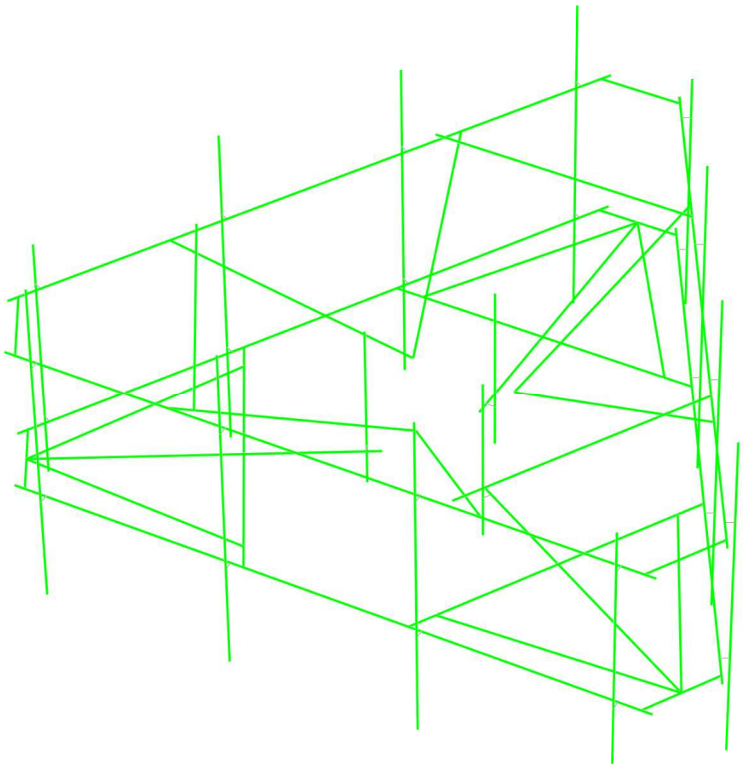
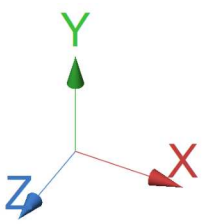
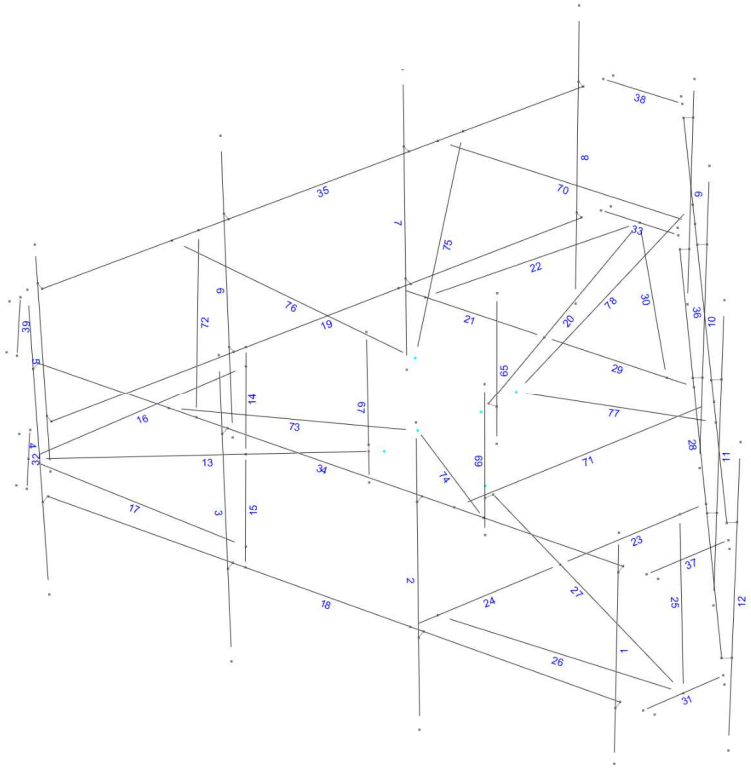
Design status
- Not designed
- Error on design
- Design O.K.
- With warnings



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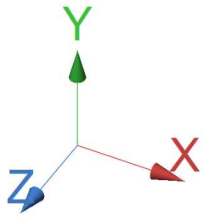
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Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2DL+W0
LC2=1.2DL+W30
LC3=1.2DL-W0
LC4=1.2DL-W30
LC5=0.9DL+W0
LC6=0.9DL+W30
LC7=0.9DL-W0
LC8=0.9DL-W30
LC9=1.2DL+Di+Wi0
LC10=1.2DL+Di+Wi30
LC11=1.2DL+Di-Wi0
LC12=1.2DL+Di-Wi30
LC13=1.4DL
LC14=1.2DL+1.6LL1
LC15=1.2DL+1.6LL2
LC16=1.2DL+WL0+1.6LLa1
LC17=1.2DL+WL30+1.6LLa1
LC18=1.2DL-WL0+1.6LLa1
LC19=1.2DL-WL30+1.6LLa1
LC20=1.2DL+WL0+1.6LLa2
LC21=1.2DL+WL30+1.6LLa2
LC22=1.2DL-WL0+1.6LLa2
LC23=1.2DL-WL30+1.6LLa2
LC24=1.2DL+WL0+1.6LLa3
LC25=1.2DL+WL30+1.6LLa3
LC26=1.2DL-WL0+1.6LLa3
LC27=1.2DL-WL30+1.6LLa3
LC28=1.2DL+WL0+1.6LLa4
LC29=1.2DL+WL30+1.6LLa4
LC30=1.2DL-WL0+1.6LLa4
LC31=1.2DL-WL30+1.6LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	HSS_SQR 4X4X1_4	**13**	LC3 at 100.00%	0.47	OK	Eq. H1-1b
		14	LC2 at 0.00%	0.18	OK	Eq. H1-1b
		15	LC3 at 0.00%	0.17	OK	Eq. H1-1b
		20	LC1 at 100.00%	**0.48**	**OK**	Eq. H1-1b
		21	LC1 at 0.00%	0.17	OK	Eq. H1-1b
		23	LC4 at 0.00%	0.19	OK	Eq. H1-1b
		24	LC3 at 0.00%	0.16	OK	Eq. H1-1b
		27	LC4 at 100.00%	0.44	OK	Eq. H1-1b
		29	LC1 at 0.00%	0.17	OK	Eq. H1-1b
	L 2-1_2X2-1_2X1_4	**37**	LC2 at 100.00%	0.40	OK	Sec. F1
		38	LC4 at 100.00%	0.47	OK	Sec. F1
		39	LC1 at 100.00%	0.54	OK	Sec. F1
		73	LC9 at 100.00%	0.51	OK	Eq. H2-1
		74	LC12 at 0.00%	0.50	OK	Eq. H2-1
		75	LC4 at 100.00%	0.55	OK	Eq. H2-1
		76	LC4 at 0.00%	0.55	OK	Eq. H2-1

	77	LC2 at 100.00%	0.55	OK	Eq. H2-1
	78	LC2 at 0.00%	**0.55**	**OK**	Eq. H2-1
L 2X2X1_4	**16**	LC2 at 0.00%	0.35	OK	Eq. H2-1
	17	LC3 at 100.00%	0.33	OK	Eq. H2-1
	22	LC1 at 0.00%	0.35	OK	Eq. H2-1
	25	LC4 at 0.00%	**0.37**	**OK**	Eq. H2-1
	26	LC3 at 100.00%	0.30	OK	Eq. H2-1
	30	LC1 at 0.00%	0.33	OK	Eq. H2-1
PIPE 2-1_2x0.203	**34**	LC1 at 26.14%	**0.80**	**OK**	Eq. H1-1b
	35	LC4 at 26.14%	0.74	OK	Eq. H1-1b
	36	LC2 at 26.14%	0.79	OK	Eq. H1-1b
PIPE 2x0.154	**1**	LC19 at 72.92%	0.42	OK	Eq. H1-1b
	2	LC3 at 68.75%	0.56	OK	Eq. H1-1b
	3	LC3 at 68.75%	0.78	OK	Eq. H1-1b
	4	LC3 at 68.75%	**0.78**	**OK**	Eq. H1-1b
	5	LC30 at 16.67%	0.42	OK	Eq. H1-1b
	6	LC2 at 68.75%	0.53	OK	Eq. H1-1b
	7	LC2 at 68.75%	0.71	OK	Eq. H1-1b
	8	LC2 at 68.75%	0.71	OK	Eq. H1-1b
	9	LC9 at 16.67%	0.32	OK	Eq. H1-1b
	10	LC4 at 68.75%	0.50	OK	Eq. H1-1b
	11	LC4 at 68.75%	0.68	OK	Eq. H1-1b
	12	LC4 at 68.75%	0.68	OK	Eq. H1-1b
	65	LC1 at 71.88%	0.09	OK	Eq. H1-1b
	67	LC2 at 71.88%	0.12	OK	Eq. H1-1b
	69	LC4 at 71.88%	0.06	OK	Eq. H1-1b
	70	LC3 at 100.00%	0.22	OK	Eq. H1-1b
	71	LC2 at 100.00%	0.30	OK	Eq. H1-1b
	72	LC1 at 100.00%	0.29	OK	Eq. H1-1b
PIPE 3x0.216	**18**	LC3 at 36.81%	**0.26**	**OK**	Eq. H3-6
	19	LC2 at 63.19%	0.23	OK	Eq. H1-1b
	28	LC4 at 35.42%	0.23	OK	Eq. H3-1
PL 6x3/8	**32**	LC3 at 100.00%	**0.15**	**OK**	Eq. H1-1b
	33	LC2 at 0.00%	0.12	OK	Eq. H1-1b
	31	LC4 at 0.00%	0.11	OK	Eq. H1-1b

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Geometry data

GLOSSARY

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d0	: Tapered member section depth at J end of member
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DKX	: Rigid end offset distance measured from K node in axis X
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K22	: Effective length factor about axis 2
K33	: Effective length factor about axis 3
L22	: Member length for calculation of axial capacity
L33	: Member length for calculation of axial capacity
LB pos	: Lateral unbraced length of the compression flange in the positive side of local axis 2
LB neg	: Lateral unbraced length of the compression flange in the negative side of local axis 2
RX	: Rotation about X
RY	: Rotation about Y
RZ	: Rotation about Z
TO	: 1 = Tension only member 0 = Normal member
TX	: Translation in X
TY	: Translation in Y
TZ	: Translation in Z

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
1	0.00	0.00	-1.3507	0
3	-1.1693	0.00	0.6754	0
169	-1.1695	1.50	-0.675	0
172	1.1693	1.50	-0.6754	0
165	0.0002	1.50	1.3503	0
2	1.1693	0.00	0.6754	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
1	1	1	1	1	1	1
3	1	1	1	1	1	1
169	1	1	1	1	1	1
172	1	1	1	1	1	1
165	1	1	1	1	1	1
2	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
1	58	70		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
2	60	72		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
3	61	73		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
4	59	71		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
5	69	81		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
6	68	80		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
7	67	79		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
8	66	78		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
9	65	77		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
10	64	76		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
11	63	75		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
12	62	74		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
65	114	115		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
67	118	119		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
69	122	123		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
70	162	163		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
71	160	161		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
72	158	159		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
34	82	83		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
35	92	93		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
36	102	103		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
18	6	11		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
19	7	14		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
28	17	21		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
16	9	32		L 2X2X1_4	A36	0.00	0.00	0.00
17	32	5		L 2X2X1_4	A36	0.00	0.00	0.00
22	13	33		L 2X2X1_4	A36	0.00	0.00	0.00
25	19	31		L 2X2X1_4	A36	0.00	0.00	0.00
26	31	16		L 2X2X1_4	A36	0.00	0.00	0.00
30	24	33		L 2X2X1_4	A36	0.00	0.00	0.00
37	127	126		L 2-1_2X2-1_2X1_4	A36	0.00	0.00	0.00
38	129	128		L 2-1_2X2-1_2X1_4	A36	0.00	0.00	0.00
39	125	124		L 2-1_2X2-1_2X1_4	A36	0.00	0.00	0.00
13	32	3		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
14	10	8		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
15	10	4		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
20	33	1		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
21	15	12		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
23	20	18		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
24	20	22		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
27	31	2		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
29	15	23		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
32	28	25		PL 6x3/8	A36	0.00	0.00	0.00
33	27	30		PL 6x3/8	A36	0.00	0.00	0.00
31	29	26		PL 6x3/8	A36	0.00	0.00	0.00
73	167	165		L 2-1_2X2-1_2X1_4	A36	0.00	0.00	0.00
74	165	168		L 2-1_2X2-1_2X1_4	A36	0.00	0.00	0.00
75	170	169		L 2-1_2X2-1_2X1_4	A36	0.00	0.00	0.00
76	169	171		L 2-1_2X2-1_2X1_4	A36	0.00	0.00	0.00
77	173	172		L 2-1_2X2-1_2X1_4	A36	0.00	0.00	0.00
78	172	174		L 2-1_2X2-1_2X1_4	A36	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
67	0.00	2	-0.50	0.00	-0.866
69	0.00	2	-0.50	0.00	0.866
16	270.00	0	0.00	0.00	0.00
17	270.00	0	0.00	0.00	0.00
30	270.00	0	0.00	0.00	0.00
37	90.00	0	0.00	0.00	0.00
38	90.00	0	0.00	0.00	0.00
39	90.00	0	0.00	0.00	0.00
73	90.00	0	0.00	0.00	0.00
74	90.00	0	0.00	0.00	0.00
75	90.00	0	0.00	0.00	0.00
76	90.00	0	0.00	0.00	0.00
77	90.00	0	0.00	0.00	0.00
78	90.00	0	0.00	0.00	0.00

Rigid end offsets

Member	DJX [in]	DJY [in]	DJZ [in]	DKX [in]	DKY [in]	DKZ [in]
70	0.00	2.00	0.00	0.00	2.00	0.00
71	0.00	2.00	0.00	0.00	2.00	0.00
72	0.00	2.00	0.00	0.00	2.00	0.00

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2018.

Information on the Property Records for the Municipality of Killingly was last updated on 10/21/2021.

Parcel Information

Location:	79 PUTNAM PIKE	Property Use:	Public Use	Primary Use:	Town Hall
Unique ID:	6994	Map Block Lot:	106-42	Acres:	5.83
490 Acres:	0.00	Zone:	GC	Volume / Page:	1375/ 618
Developers Map / Lot:		Census:	9041-1032		

Value Information

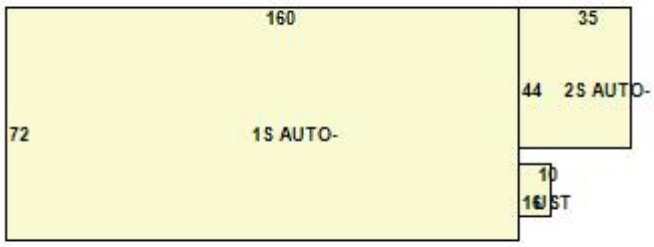
	Appraised Value	Assessed Value
Land	604,240	423,010
Buildings	553,600	387,520
Detached Outbuildings	0	0

	Appraised Value	Assessed Value
Total	1,157,840	810,530

Owner's Information

Owner's Data
KILLINGY TOWN OF 172 MAIN ST KILLINGLY CT 06239

Building 1



Category:	Automotive	Use:	Auto Repair	GLA:	15,800
Stories:	2.00	Construction:	Steel	Year Built:	1960
Heating:	Hot Water	Fuel:		Cooling Percent:	0
Siding:	ENCLOSURE	Roof Material:		Beds/Units:	0

Special Features

Attached Components

Type:	Year Built:	Area:
Lump Sum	1960	1
Utility Storage	1960	160

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Det Brick Stone Garage	1960	60.00	22.00	1,320
Paving	1960	0.00	0.00	20,000
Cblk/Fr Shed	2014	12.00	30.00	360

Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Sale Price
KILLINGY TOWN OF	1375	618	11/03/2020	Quit Claim	$0

Building Permits

Permit Number	Permit Type	Date Opened	Reason
21-000476	T:BUSINESS PERSONAL PROPERTY	04/26/2021	UPGRADE & REPL EQUIP AT EXISTING TELECOMM FACILITY
21-000547	Commercial	04/26/2021	INSTALL NEW CONCRETE PAD FOR NEW 25KW DIESEL GENERATOR & APPROP CONDUITS & ATS
27799	Solar	09/21/2020	INSTALL ROOF MOUNTED SOLAR PV SYSTEM - 168 MODULES-66,360 KW
26169	T:BUSINESS PERSONAL PROPERTY	07/12/2018	REPLACE 6 EXISTING ANTENNAS W/ 6 NEW ON EXISTING RAD HEIGHT ON EXISTING TELECOMMUNICATIONS TOWERS
25354	T:BUSINESS PERSONAL PROPERTY	06/15/2017	REMOVE & REPL 3 PANEL ANTENNAS, ADD 6 DIPLEXERS TO TOP & GROUND BASE & ADD 3 RR HEADS & 6 RET CABLE
23978	Boiler	10/20/2015	NVC REPL BOILER & BURNER

Permit Number	Permit Type	Date Opened	Reason
23714	T:BUSINESS PERSONAL PROPERTY	07/01/2015	REMOVE/REPL 6 ANTENNAES & ADD 9 RRU'S
23485	Comm Renovations	04/09/2015	MODIFICATION OF EXISTING TELECOM FACILITY PER PLANS
23332	Gas Line	12/02/2014	RUN UNDERGROUND GAS LINES FOR 1000 GAL AG PROPANE TANK FOR AT&T CELL TOWER
23297	Mechanical	11/13/2014	HOOK UP PREFAB COMMUNICATION SHELTER TO EXISTING UTILITIES
23235	Commercial New	10/10/2014	WIRELESS TELECOMM FACILITY - 12X30 EQUIP SHELTER, 12 ANTENNAS & ASSOC APPURTENANCES ON ANTENNA PLAT
23177	Fuel Tank	09/17/2014	INSTALL 2 AG 10000 GAL FUEL TANKS & REMV 2 UG FUEL TANKS PERSONAL PROPERTY
22544	Roof	08/29/2013	NVC ROOF REPL
22389	Roof	06/12/2013	NVC ROOF REPL
22121	T:BUSINESS PERSONAL PROPERTY	11/30/2012	ADD 12 NEW ANTENNAS (NEXLINK GLOBAL)
19971	Commercial New	05/06/2009	18X50 ANIMAL CONTROL KENNELS
19865	Commercial	01/29/2009	REPL WIRELESS COMM TOWER - EXISTING
19790	Generator	11/19/2008	NVC CELL PHONE TOWER GENERATOR
19723	Electrical	10/22/2008	ELEC FOR NEW EQUIP SHELTER
19649	T:BUSINESS PERSONAL PROPERTY	09/18/2008	ADD ANTENNAS TO EXISTING TELECOMM TOWER
19431	T:BUSINESS PERSONAL PROPERTY	06/12/2008	REPL EXISTING CINGULAR ANTENNAS W/NEW
17357	T:BUILDING	07/29/2005	MODIF TEL TOWER
16879	Electrical	11/10/2004	ELEC UPGRADE NVC
16011	T:BUSINESS PERSONAL PROPERTY	07/23/2003	ADD ANTENNAS NV
15235	Windows	05/03/2002	WINDOW REPLACE
13926	T:BUILDING	11/10/1999	INSTALL PROPANE
13763	T:BUILDING	07/30/1999	DOG PND TANK OU

Permit Number	Permit Type	Date Opened	Reason
13718	T:BUILDING	07/02/1999	DOG PND ENC WIN
13659	Electrical	06/07/1999	ELEC TO COMM TO
13580	Commercial	04/29/1999	SEE NOTES
12830	Addition	10/01/1997	ADDN 35X42

Killingly, CT

1 inch = 280 Feet

0 280 560 840

November 10, 2021

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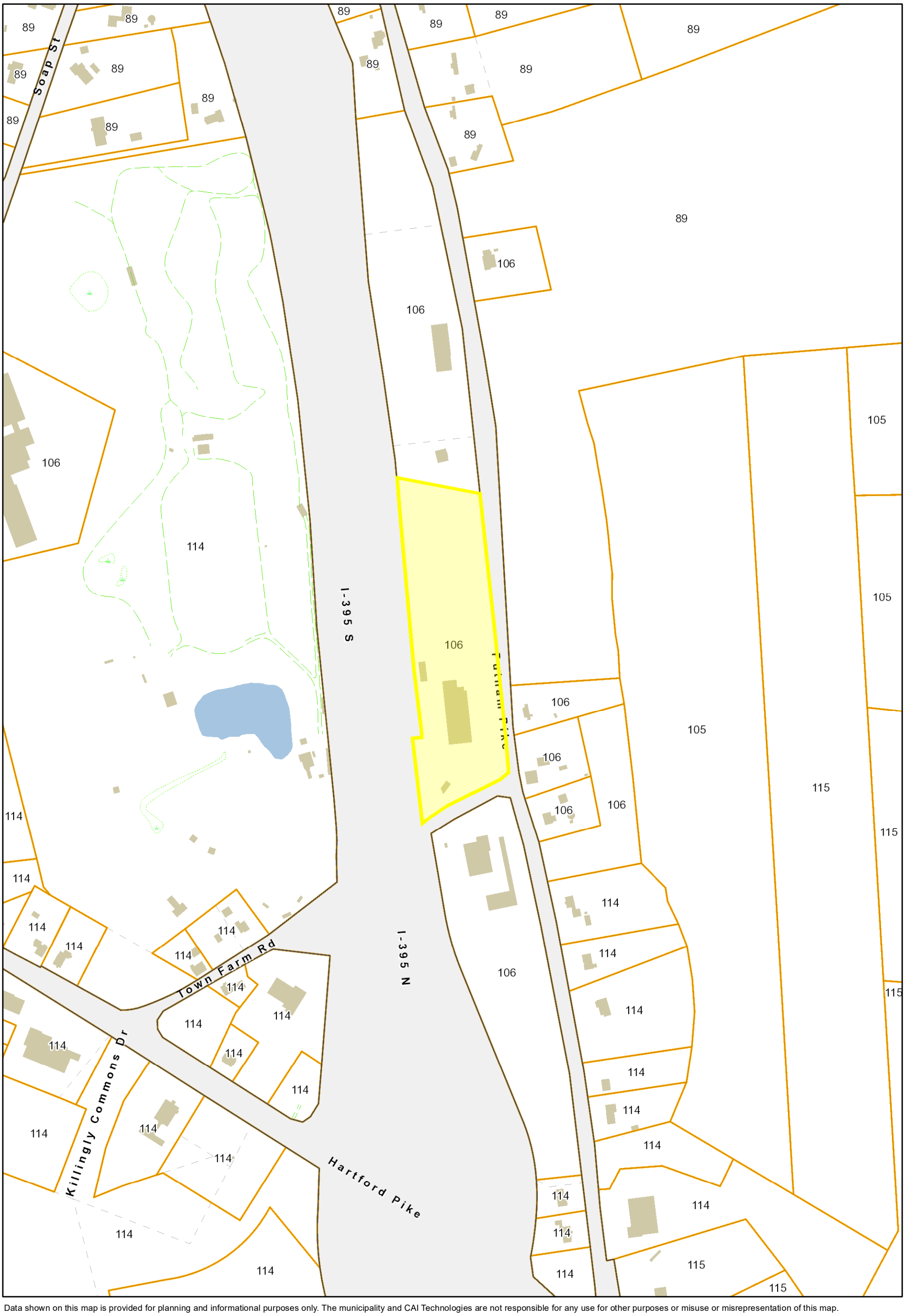

Data shown on this map is provided for planning and informational purposes only. The municipality and CAI Technologies are not responsible for any use for other purposes or misuse or misrepresentation of this map.

DATE: 6/18/98

TOWN OF KILLINGLY, CONNECTICUT
ZONING PERMIT

№ 006352

Complete Items #1-9 and the plot plan on the reverse side of the top sheet.

1. Location of Property 79 Putnam Pike
   House # & Street
   Tax Map Number 4683 Block 329 Lot 1 Zoning District LD Volume 34 Page 1 List 6991
2. Property Owner's Name Town of Killingly Phone
3. Property Owner's Address if different from property location 172 Main St.
4. Applicant's Name and Address if different from Property Owner's Name and Address ~~Robert~~ Omnipoint
   25 Van Zant St Norwalk CT Phone 203-855-5427

5. Lot Size 30,000 sq ft Lot Frontage 100'
6. This permit is applied for in accordance with the requirements of the Town of Killingly and/or Borough of Danielson Zoning Regulations for:
   - ☒ new construction
   - ☐ addition
   - ☐ accessory structure (sheds, satellite dishes, etc.)
   - ☐ swimming pool
   - ☐ excavating/filling/earth removal
   - ☐ sign
   - ☐ change of use
   - ☐ other
7. Proposed structure or project —
   Provide description and dimensions:
   Construction of a 150' monopole with related telecommunication facilities

8. Property Use:
   - ☐ single family residential
   - ☐ two-family residential
   - ☐ mobile home — residential
   - ☐ multi-family — residential
   - ☐ Industrial specify
   - ☒ Commercial specify telecommunication facility
   - ☐ Professional and Business specify

9. PERMIT VOID IF ...
work or activity is not commenced within one year from the date of issue and diligently prosecuted to completion.
This permit, if issued, is based upon the plot plan submitted. Falsification, by misrepresentation or omission, or failure to comply with the conditions of approval of this permit shall constitute a violation of the Town of Killingly and/or Borough of Danielson Zoning Regulations.
Agents of the Town of Killingly are authorized to enter upon the property for the purpose of inspection and verification of compliance with the terms of this permit.

(Signature of Owner or authorized agent)

203-855-5427
(Agent's phone #)

FOR OFFICE USE ONLY:

Inland Wetlands NA - no impact to wetlands 6-18-98
Historic District? Yes (No)
Slope greater than 15%? Yes (No)
Flood Hazard Zone? NO
Aquifer Protection Zone? (Yes) No
Public Sewer (On-Site Septic)
Site Plan Review Necessary? (Yes) No
Applicant's Name
Application No.
P&Z Commission Approval Date

Driveway Permit
Special Permit necessary? (Yes) No
Applicant's Name Omni Point
Application No. 98-706
P&Z Commission Approval Date 5-13-98
Subdivision necessary? Yes (No)
Applicant's Name
Application No.
P&Z Commission Approval Date
Variance Necessary? Yes (No)
Applicant's Name
Application No.
ZBA Approval Date

Approved ✓ Disapproved Date 6-18-98
Reason for Disapproval:
Comments: Able to condition approval of SP #98-706 Condition 1-5

George C Dion
Zoning Enforcement Officer

Orig./White: Z.E.O. / Blue: P &Z / Green: Bldg. Official / Yellow: Applicant

January 4, 2022

Honorable Mary Calorio
Town Manager
Killingly Town Hall
172 Main Street, 2nd Floor
Killingly, CT 06239

Re: AT&T Wireless Equipment at 79 Putnam Pike, Killingly, CT
AT&T Site Name/Number: CT5463 Killingly North

Dear Ms. Calorio:

SAI Communications is a contractor for New Cingular Wireless PCS, LLC ("AT&T"). In order to maintain AT&T's commitment to the highest standards of service and technology, AT&T will need to make modifications to their equipment at the above referenced wireless communications facility.

Pursuant to the Agreement between the Town of Killingly and New Cingular Wireless PCS LLC, dated July 23, 2003, your consent is needed for these modifications. AT&T will be modifying their existing antenna configuration which may include, but is not limited to, adding and/or replacing antennas and ancillary equipment within AT&T's leased premises. The improvements are described in the attached construction drawings by Hudson Design Group LLC, Revision 1, dated, 12/9/21.

Please indicate your acknowledgement and consent to AT&T's modifications to its telecommunication facility by signing & dating below. Please email one copy of this letter to me at the email address listed below. Thank you in advance for your prompt attention to this matter. I appreciate your time & consideration.

Sincerely,

Hollis M. Redding

Hollis M. Redding
Agent on behalf of AT&T Wireless
(860) 834-6964
SAI Communications
12 Industrial Way
Salem, NH 03079
hredding@saigrp.com

ACKNOWLEDGED AND AGREED TO:

Mary T. Calorio

Printed Name: Honorable Mary Calorio, Town Manager
Authorized Signatory for the Town of Killingly

Date: 1/4/22

Enclosures

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

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

Expected Delivery Date: 01/08/22
Ref#: CT5463

0005

C005

SHIP TO: MARY CALORIO TWN MGR ANN-MARIE L. AUBREY
TOWN OF KILLINGLY TOWN HALL
172 MAIN ST
DANIELSON CT 06239-2822

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Electronic Rate Approved #038555749

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FAQs >

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TUESDAY

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by

9:00pm ⓘ

USPS Tracking Plus™ Available ⌄

Feedback

USPS in possession of item

January 10, 2022 at 11:02 am
MERIDEN, CT 06450

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Text & Email Updates ⌄

Delivery Instructions ⌄

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USPS Tracking Plus™ ⌄

Product Information ⌄