January 18, 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 CT2040
265 Benham Street, Hamden, CT 06514 (the "Property")
Latitude: 41.370186 N Longitude: 72.931471 W

Dear Ms. Bachman:

AT&T currently maintains (9) antennas at the 70-foot level on the existing 65-foot guyed lattice tower roof mounted on top of an approximate 41-foot building for a total structure height of 105' 11" ("Structure") at 265 Benham Street, Hamden, CT. A recent tower mapping field visit determined AT&T's antennas are at the 70-foot level of the existing Structure. Previous filings to the CT Siting Council incorrectly noted AT&T's equipment at the 54.5-foot level of the Structure. The tower mapping completed by Hudson Design Group on 5/10/21 supports the updated 70' height. The Property and Structure are owned by the Apostles of the Sacred Heart of Jesus, Inc. AT&T intends to modify its facility by replacing (3) antennas with (3) DMP65R-BU6DA antennas and replacing (6) RRUs with (3) B5/B12 4449 and (3) 4478 B14 RRUs. The height of AT&Ts existing and proposed antennas & RRUs is 70-foot on the Structure.

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

The facility was approved by the Hamden Planning and Zoning Commission on August 22, 2000. The approval contained no conditions that could feasibly be violated by this modification, including facility height or mounting restrictions. AT&Ts modification complies with the above-mentioned approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies ("R.C.S.A") §16-50j-73 for construction that constitutes an exempt modification pursuant to R.C.S.A §16-50j-72(b)(2). In accordance with to R.C.S.A §16-50j-73, a copy of this letter is being sent to the Honorable Lauren Garrett, Mayor, Town of Hamden, as elected official, Erik Johnson,

acting Town Planner, Town of Hamden, and the Apostles of the Sacred Heart of Jesus, the tower and property owner.

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

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

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

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

4. The operation of the modified facility will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

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

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

Sincerely,

Hollis M. Redding

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

Enclosures

Cc: Honorable Lauren Garrett, Mayor, Town of Hamden, elected official
Erik Johnson, acting Town Planner, Town of Hamden
The Apostles of the Sacred Heart of Jesus, Inc. tower & property owner

Power Density

Existing Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm^2)	Freq. Band (MHz**)	Limit S (mW /cm^2)	%MPE
Other Carriers*							63.56%
AT&T	1	530	54.5	0.0810	850	0.5667	1.43%
AT&T	1	1476	54.5	0.2257	700	0.4667	4.84%
AT&T	1	1000	54.5	0.1529	850	0.5667	2.70%
AT&T	2	3664	54.5	1.1203	1900	1.0000	11.20%
AT&T	1	3837	54.5	0.5866	2100	1.0000	5.87%
AT&T	1	1285	54.5	0.1965	2300	1.0000	1.96%
Site Total							91.56%

*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*							63.56%
AT&T	1	1476	70	0.1296	700	0.4667	2.78%
AT&T	1	1476	70	0.1296	850	0.5667	2.29%
AT&T	1	1285	70	0.1128	2300	1.0000	1.13%
AT&T	1	1476	70	0.1296	850	0.5667	2.29%
AT&T	1	1000	70	0.0878	700	0.4667	1.88%
AT&T	2	3664	70	0.6434	1900	1.0000	6.43%
AT&T	1	3837	70	0.3369	2100	1.0000	3.37%
AT&T	1	530	70	0.0465	850	0.5667	0.82%
Site Total							84.55%

*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 GUYED:
- NEW AT&T ANTENNAS: DMP65R-BU6DA (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T ANTENNAS: AM-X-CD-16-65-00T-RET (TYP. OF 1 PER SECTOR, TOTAL OF 3) (TO BE RELOCATED TO POS. 4).
- NEW AT&T RRUS: B5/B12 4449 (850/700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS: 4478 B14 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- ADD (3) Y-CABLES.
- PROPOSED NEW SECTOR FRAME SITEPRO1 P/N VFA12-WLL (TYP. OF 1 PER SECTOR TOTAL OF 3).

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:
- ADD (1) IDLE.
- ADD (3) BATTERY STRING.

ITEMS TO BE REMOVED:
- EXISTING AT&T ANTENNAS: HPA-65R-BUU-H6 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T RRUS: 4478 B5 (850) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T RRUS: RRUS-11 B12 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T SECTOR FRAME (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING DC POWER LINES.

ITEMS TO REMAIN:
- (6) ANTENNAS, (9) RRU'S, (3) TMA'S (13 SURGE ARRESTOR, (6) COAX CABLES, (6) DC POWER LINES & (1) FIBER.

SITE ADDRESS:	265 BENHAM STREET HAMDEN, CT 06514
LATITUDE:	41.370186° N, 41° 22' 12.66" N
LONGITUDE:	72.931471° W, 72° 55' 53.29" W
TYPE OF SITE:	GUYED / INDOOR
STRUCTURE HEIGHT:	105'-11"±
RAD CENTER:	70'-0"±
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	1
GN-1	GENERAL NOTES	1
A-1	ROOFTOP & EQUIPMENT PLANS	1
A-2	ANTENNA LAYOUTS	1
A-3	ELEVATION	1
A-4	DETAILS	1
A-5	DETAILS	1
SN-1	STRUCTURAL NOTES	1
G-1	GROUNDING DETAILS	1
RF-1	RF PLUMBING DIAGRAM	1

SITE NUMBER: CT2040

SITE NAME: HAMDEN BENHAM ST

FA CODE: 10035317

PACE ID: MRCTB049073, MRCTB049067

PROJECT: LTE 6C_4TXRX RETROFIT 2021 UPGRADE

VICINITY MAP

DIRECTIONS TO SITE:

FROM ROCKY HILL, CT: HEAD EAST ON ENTERPRISE DR TOWARD CAPITOL BLVD – GO 0.4 MI. TURN LEFT AT CAPITOL BLVD – GO 0.3 MI. TURN LEFT AT WEST ST – GO 0.3 MI. TURN LEFT TO MERGE ONTO I-91 S TOWARD NEW HAVEN – GO 9.6 MI. TAKE EXIT 17 FOR W CROSS PKWY/CT-15 S – GO 0.4 MI. MERGE ONTO CT-15 S/WILLBUR CROSS PKWY – GO 14.2 MI. TAKE EXIT 60 FOR CT-10 TOWARD HAMDEN/NEW HAVEN – GO 0.2 MI. TURN RIGHT AT CT-10/DIXWELL AVE – GO 0.3 MI. TURN RIGHT AT NEBHAM ST – GO 0.5 MI. ARRIVE AT 261 BENHAM ST, HAMDEN.

GENERAL NOTES

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

72 HOURS

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

UNDERGROUND SERVICE ALERT

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

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

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at&t
500 ENTERPRISE DRIVE, SUITE 3A
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SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: GA

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

AT&T

TITLE SHEET
LTE 6C_4TXRX RETROFIT 2021 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT2040	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: CT2040
SITE NAME: HAMDEN BENHAM ST

265 BENHAM STREET
HAMDEN, CT 06514
NEW HAVEN COUNTY

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

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

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

AT&T

GENERAL NOTES

LTE 6C_4TXRX RETROFIT 2021 UPGRADE

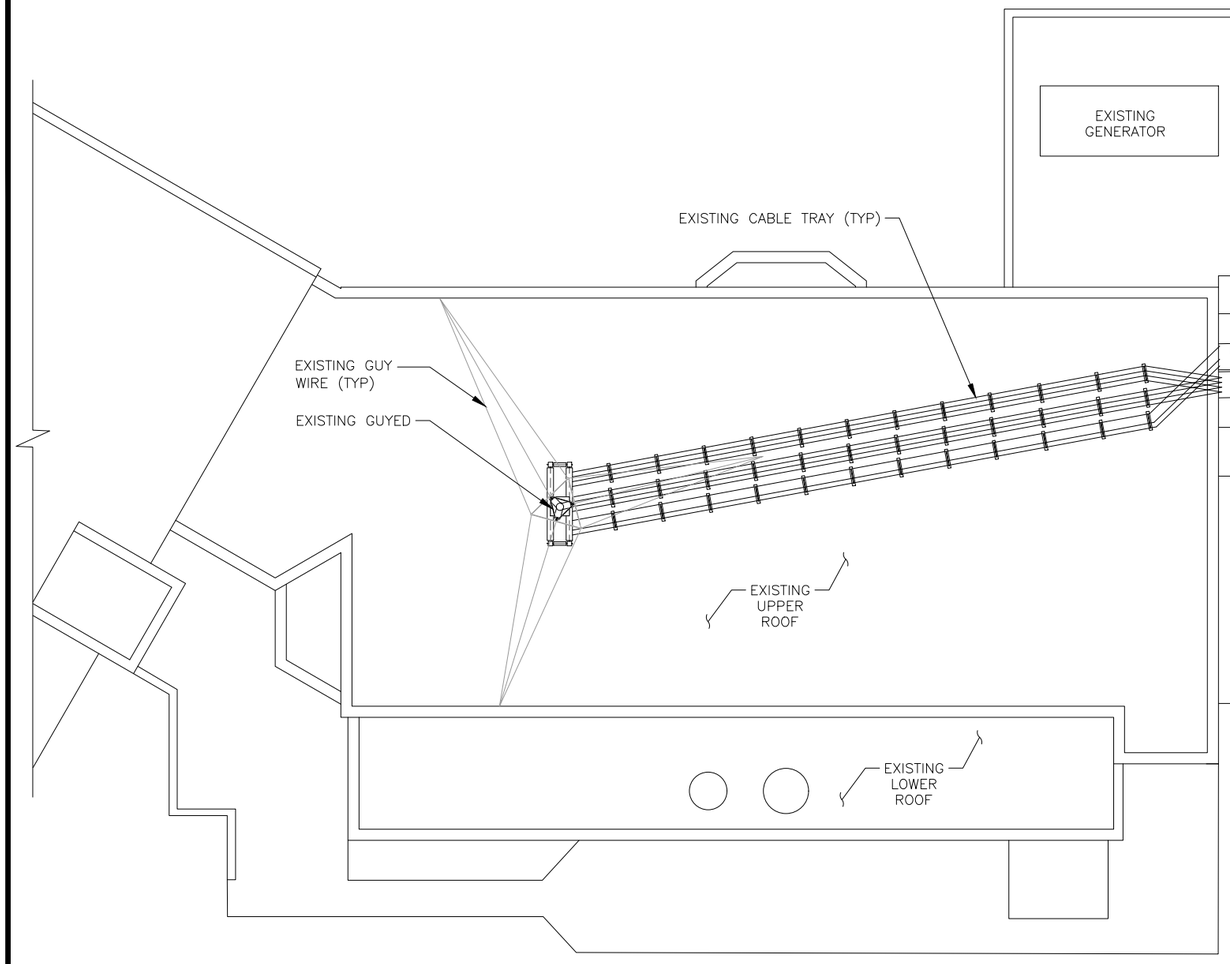
SITE NUMBER	DRAWING NUMBER	REV
CT2040	GN-1	1

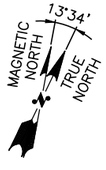
NOTE:

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

NOTE:

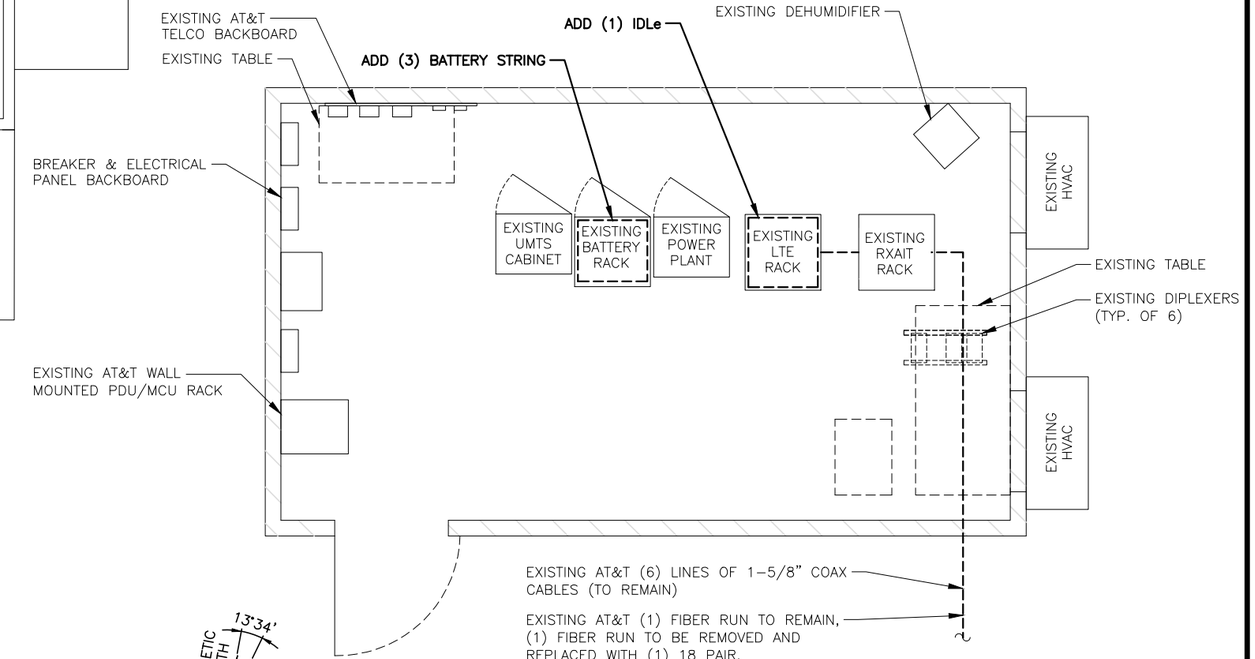
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.





COMPOUND PLAN (1 / A-1)
22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0"

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



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

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
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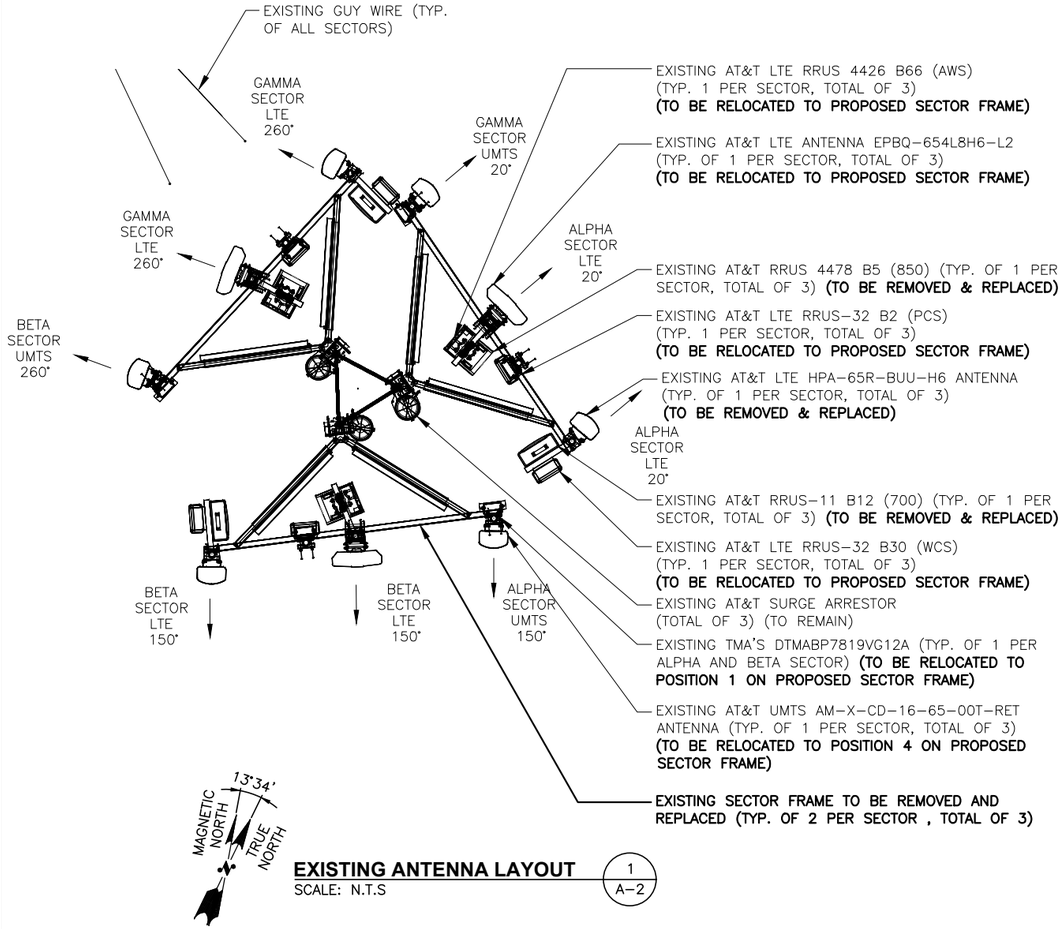
ROOFTOP & EQUIPMENT PLANS
LTE 6C_4TXRX RETROFIT 2021 UPGRADE

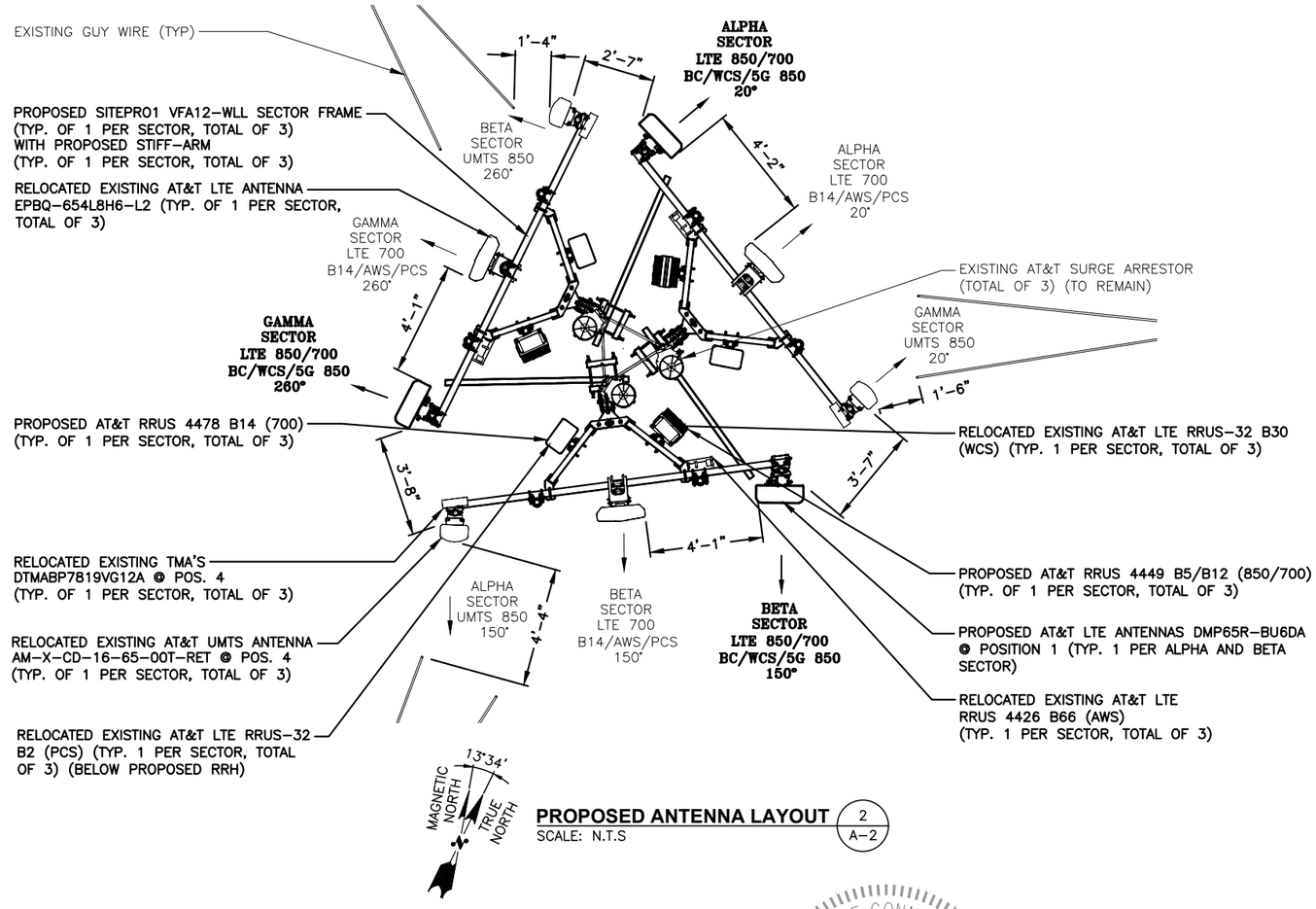
SITE NUMBER	DRAWING NUMBER	REV
CT2040	A-1	1



EXISTING ANTENNA LAYOUT

SCALE: N.T.S

1 / A-2



PROPOSED ANTENNA LAYOUT

SCALE: N.T.S

2 / A-2

HUDSON Design Group LLC
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500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

SITE NUMBER: CT2040
SITE NAME: HAMDEN BENHAM ST

265 BENHAM STREET
HAMDEN, CT 06514
NEW HAVEN COUNTY

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	10/12/21	ISSUED FOR CONSTRUCTION	GA	HC	DPH
A	09/24/21	ISSUED FOR REVIEW	GA	HC	DPH

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

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

AT&T

ANTENNA LAYOUTS
LTE 6C_4TXRX RETROFIT 2021 UPGRADE

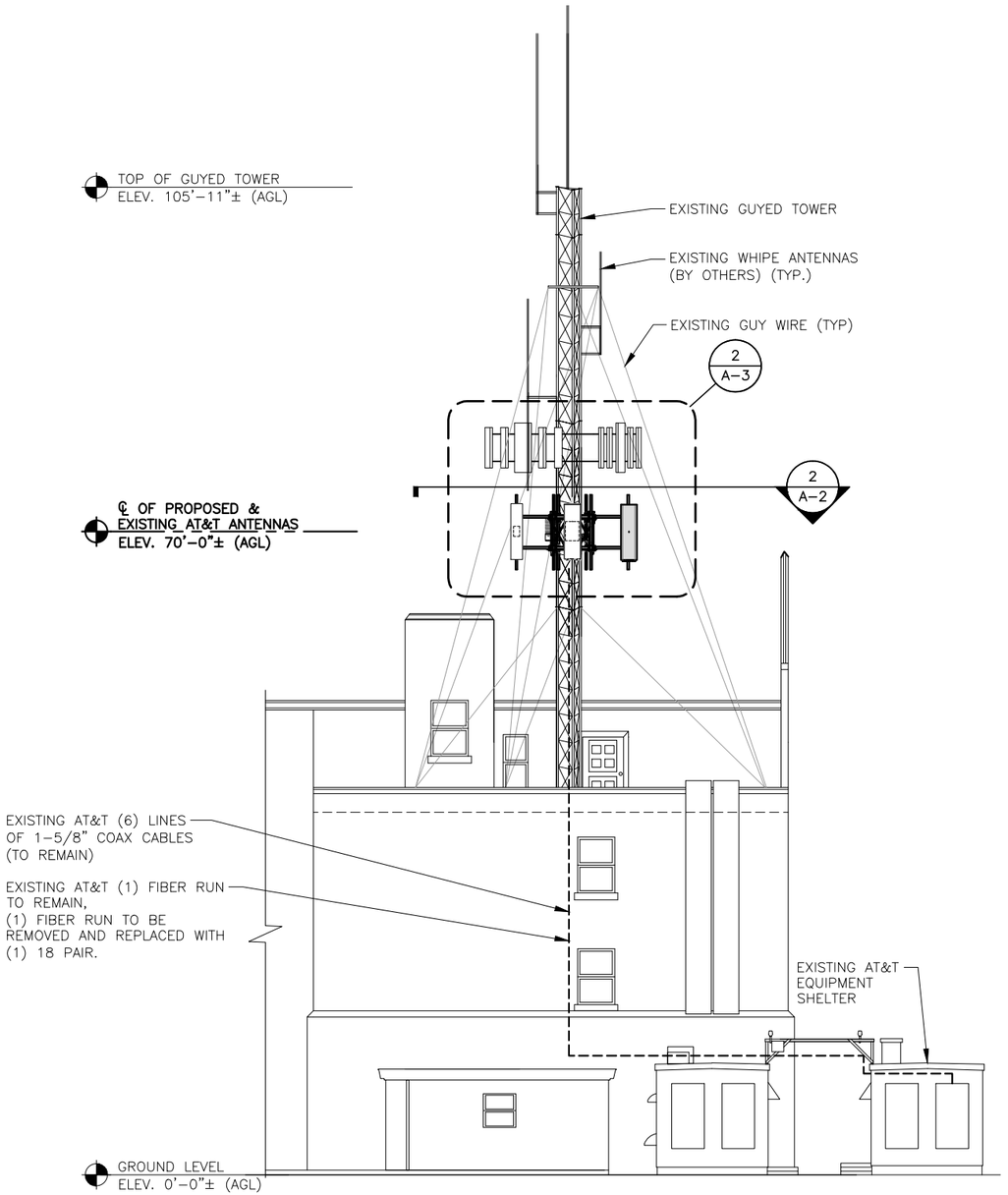
SITE NUMBER	DRAWING NUMBER	REV
CT2040	A-2	1

NOTE:

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

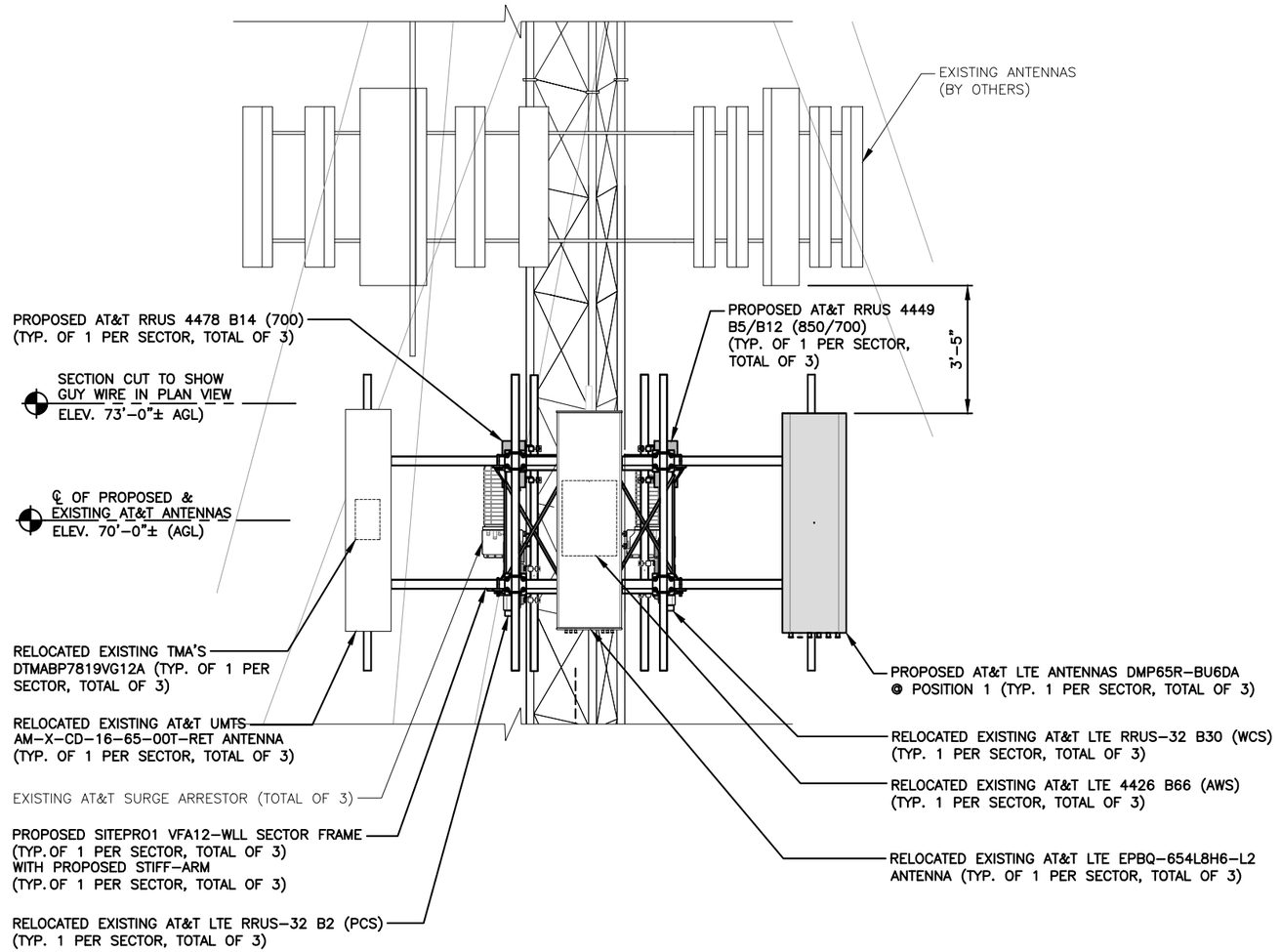
NOTE:

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



ELEVATION 1 A-3
22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0"

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



ELEVATION 2 A-3
22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0"

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

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

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

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

Daniel P. Hamm

AT&T

ELEVATION
LTE 6C_4TXRX RETROFIT 2021 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT2040	A-3	1

NOTE:

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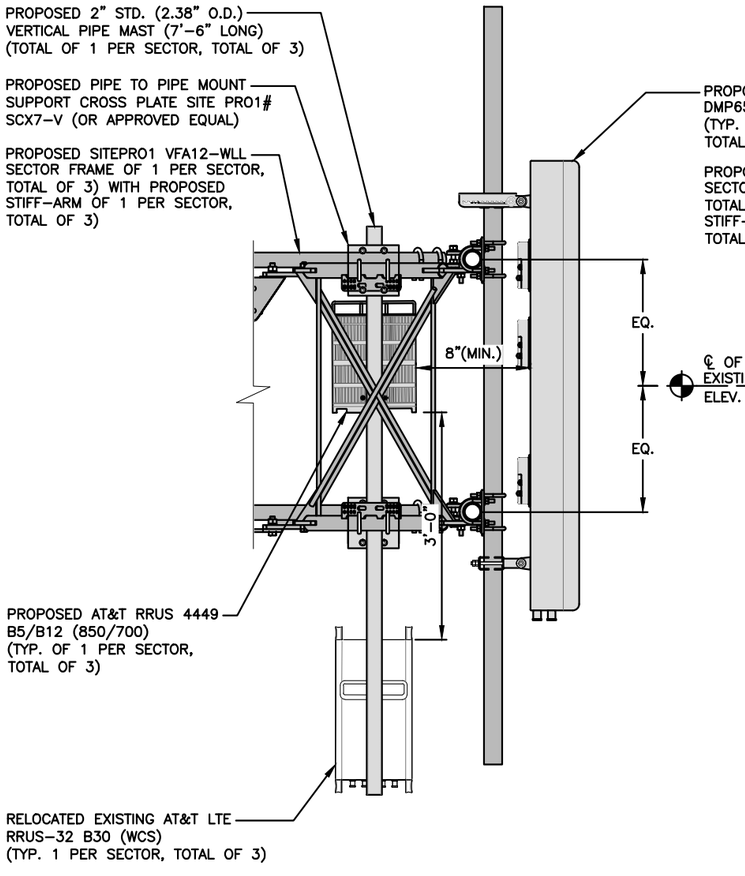
NOTE:

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

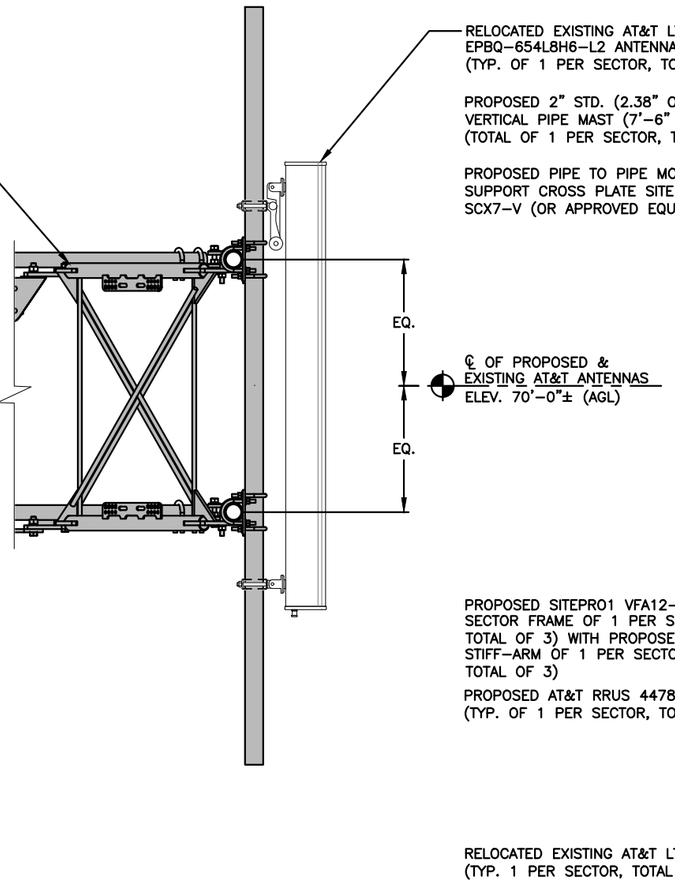


PROPOSED LTE ANTENNA MOUNTING DETAIL (POS.1)

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

1 / A-4

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

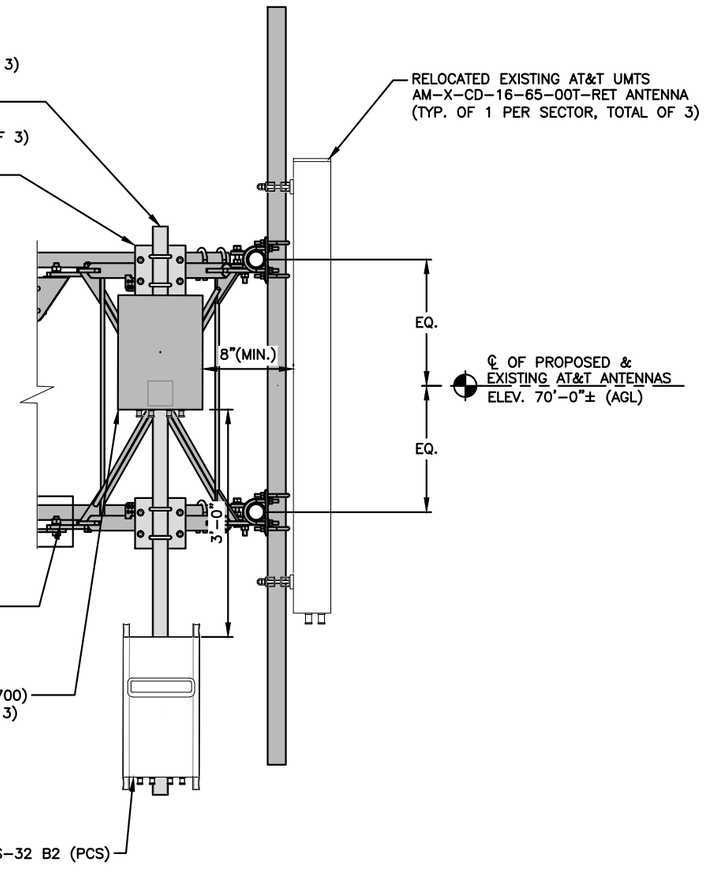


EXISTING LTE ANTENNA MOUNTING DETAIL (POS.2)

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

2 / A-4

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



EXISTING UMTS ANTENNA MOUNTING DETAIL (POS.4)

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

3 / A-4

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

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DETAILS
LTE 6C_4TXRX RETROFIT 2021 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT2040	A-4	1

ANTENNA SCHEDULE

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	**PROPOSED**	**LTE 850/700 BC/WCS/5G 850**	**DMP65R-BU6DA**	**71.2X20.7X7.7**	**70'-0"±**	**20°**	–	**(P)(1) 4449 B5/B12 (850/700)** (E)(1) RRUS-32 B30 (700)	**17.9X13.2X10.4** –	(E)(2) DC LINES (E)(1) FIBER	(E) (1) RAYCAP DC6-48-60-18-8F
A2	EXISTING	LTE 700 B14/AWS/PCS	EPBQ-654L8H6-L2	73X21X6.3	70'-0"±	20°	–	**(P)(1) 4478 B14 (700)** (E)(1) RRUS-32 B2 (PCS) (E)(1) 4426 B66 (AWS)	**18.1X13.4X8.3** – –		
A3	–	–	–	–	–	–	–	–	–	–	
A4	EXISTING	UMTS 850	AM-X-CD-16-65-00T-RET	72X11.8X5.9	70'-0"±	150°	(E)(1)DTMABP7819VG12A	–	–	(2)1-5/8 COAX	
B1	**PROPOSED**	**LTE 850/700 BC/WCS/5G 850**	**DMP65R-BU6DA**	**71.2X20.7X7.7**	**70'-0"±**	**150°**	(2)(E) LGP21401	**(P)(1) 4449 B5/B12 (850/700)** (E)(1) RRUS-32 B30 (700)	**17.9X13.2X10.4** –	(E)(2) DC LINES **(P)(1) FIBER**	(E) (1) RAYCAP DC6-48-60-18-8F
B2	EXISTING	LTE 700 B14/AWS/PCS	EPBQ-654L8H6-L2	73X21X6.3	70'-0"±	150°	–	**(P)(1) 4478 B14 (700)** (E)(1) RRUS-32 B2 (PCS) (E)(1) 4426 B66 (AWS)	**18.1X13.4X8.3** – –	–	
B3	–	–	–	–	–	–	–	–	–	–	
B4	EXISTING	UMTS 850	AM-X-CD-16-65-00T-RET	72X11.8X5.9	70'-0"±	260°	(E)(1)DTMABP7819VG12A	–	–	(2)1-5/8 COAX	
C1	**PROPOSED**	**LTE 850/700 BC/WCS/5G 850**	**DMP65R-BU6DA**	**71.2X20.7X7.7**	**70'-0"±**	**260°**	–	**(P)(1) 4449 B5/B12 (850/700)** (E)(1) RRUS-32 B30 (700)	**17.9X13.2X10.4** –	(E)(2) DC LINES	(E) (1) RAYCAP DC6-48-60-0-8C-EV
C2	EXISTING	LTE 700 B14/AWS/PCS	EPBQ-654L8H6-L2	73X21X6.3	70'-0"±	260°	–	**(P)(1) 4478 B14 (700)** (E)(1) RRUS-32 B2 (PCS) (E)(1) 4426 B66 (AWS)	**18.1X13.4X8.3** – –	–	
C3	–	–	–	–	–	–	–	–	–	–	
C4	EXISTING	UMTS 850	AM-X-CD-16-65-00T-RET	72X11.8X5.9	70'-0"±	20°	(E)(1)DTMABP7819VG12A	–	–	(2)1-5/8 COAX	

NOTE:

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

NOTE:

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

FINAL ANTENNA SCHEDULE
SCALE: N.T.S

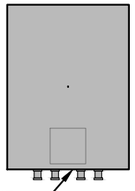
(1 / A-5)

RRU CHART		
QUANTITY	MODEL	SIZE (L x W x D)
3(P)	**4449 (850/700)**	**17.9"x13.2"x10.4"**
3(P)	**4478 B14 (700)**	**18.1"x13.4"x8.3"**
3(E)	4426	14.9"x13.2"x5.8"
6(E)	RRUS-32	27.2"x12.1"x7.0"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

NOTE:

SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

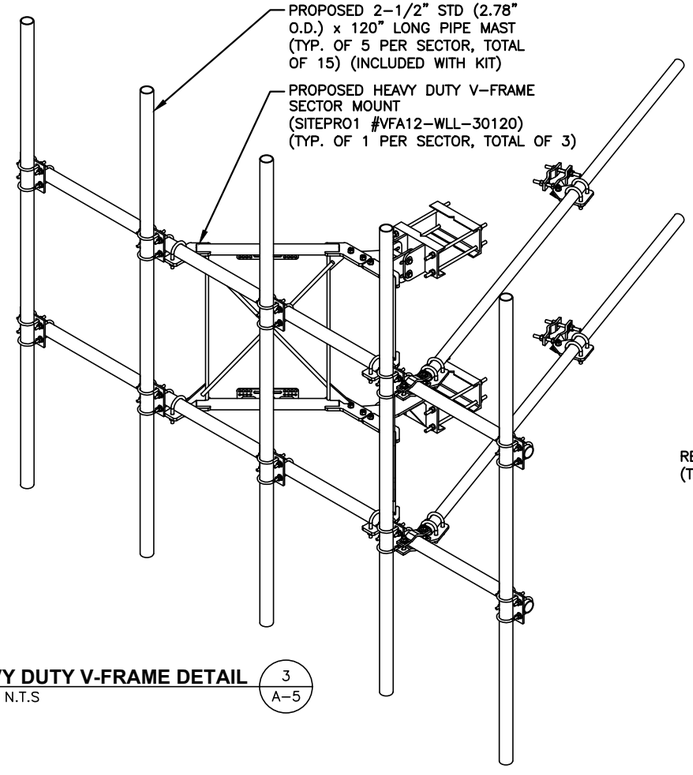


PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

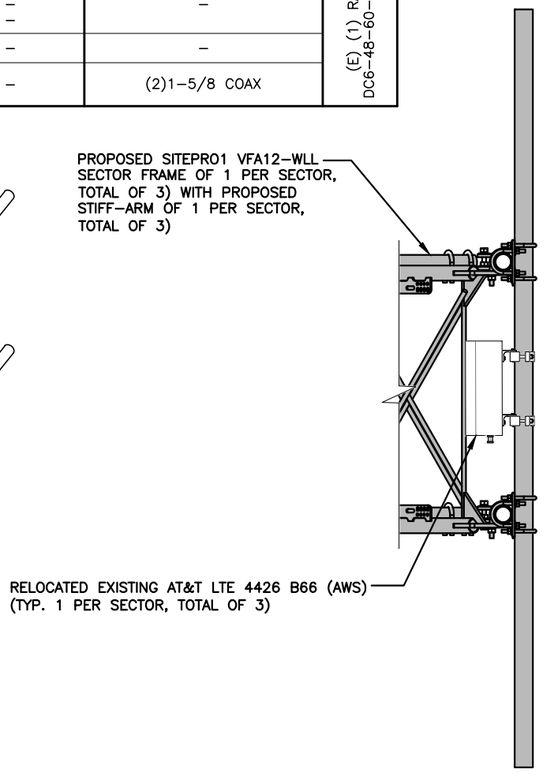
PROPOSED RRUS DETAIL
SCALE: N.T.S

(2 / A-5)



HEAVY DUTY V-FRAME DETAIL
SCALE: N.T.S

(3 / A-5)



EXISTING RRUS MOUNTING DETAIL
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

(4 / A-5)

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

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

Daniel P. Hamm

AT&T

DETAILS

LTE 6C_4TXRX RETROFIT 2021 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT2040	A-5	1

STRUCTURAL NOTES:

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

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

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

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

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

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

SPECIAL INSPECTION CHECKLIST

BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
N/A	ENGINEER OF RECORD APPROVED SHOP DRAWINGS [1]
N/A	MATERIAL SPECIFICATIONS REPORT [2]
N/A	FABRICATOR NDE INSPECTION
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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STRUCTURAL NOTES

LTE 6C_4TXRX RETROFIT 2021 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
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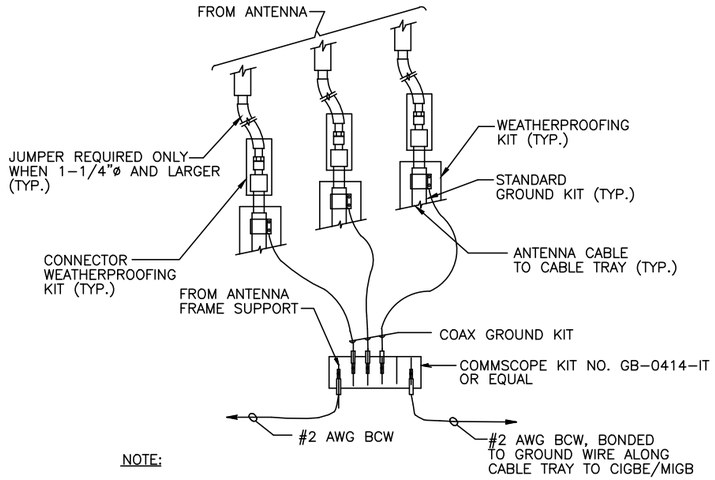
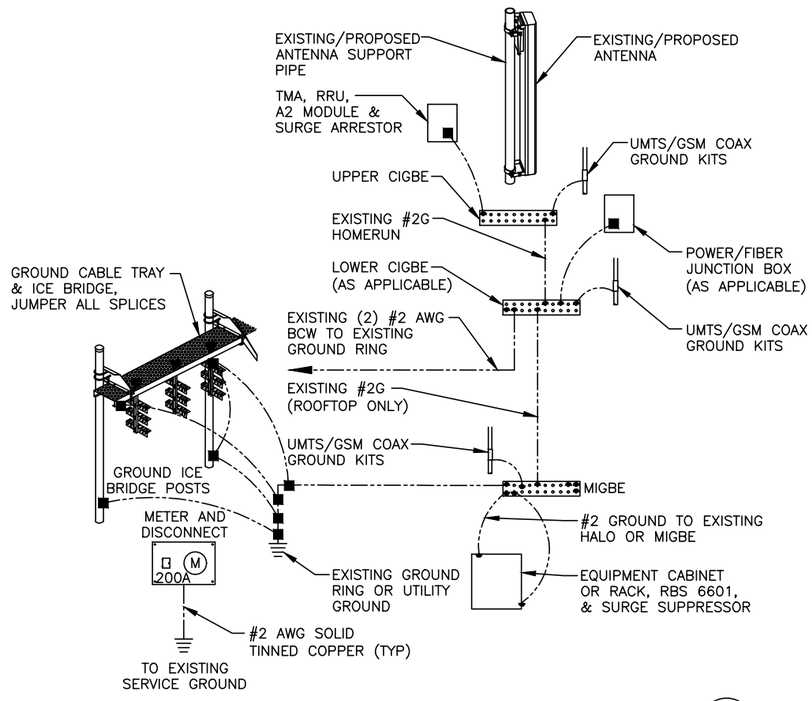


NOTE:

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

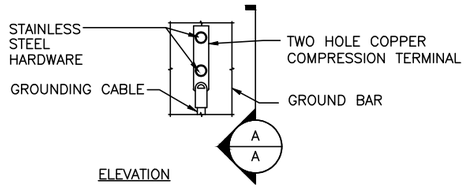
GROUND WIRE TO GROUND BAR CONNECTION DETAIL (1 / G-1)

SCALE: N.T.S



GROUNDING RISER DIAGRAM (2 / G-1)

SCALE: N.T.S



NOTES:

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

TYPICAL GROUND BAR CONNECTION DETAIL (3 / G-1)

SCALE: N.T.S

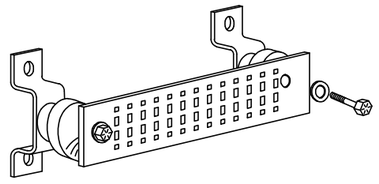
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" – SURGE PRODUCERS

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

SECTION "A" – SURGE ABSORBERS

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



GROUND BAR - DETAIL (AS REQUIRED) (4 / G-1)

SCALE: N.T.S

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: CT2040
SITE NAME: HAMDEN BENHAM ST

265 BENHAM STREET
HAMDEN, CT 06514
NEW HAVEN COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	10/12/21	ISSUED FOR CONSTRUCTION	GA	HC	DPH
A	09/24/21	ISSUED FOR REVIEW	GA	HC	DPH

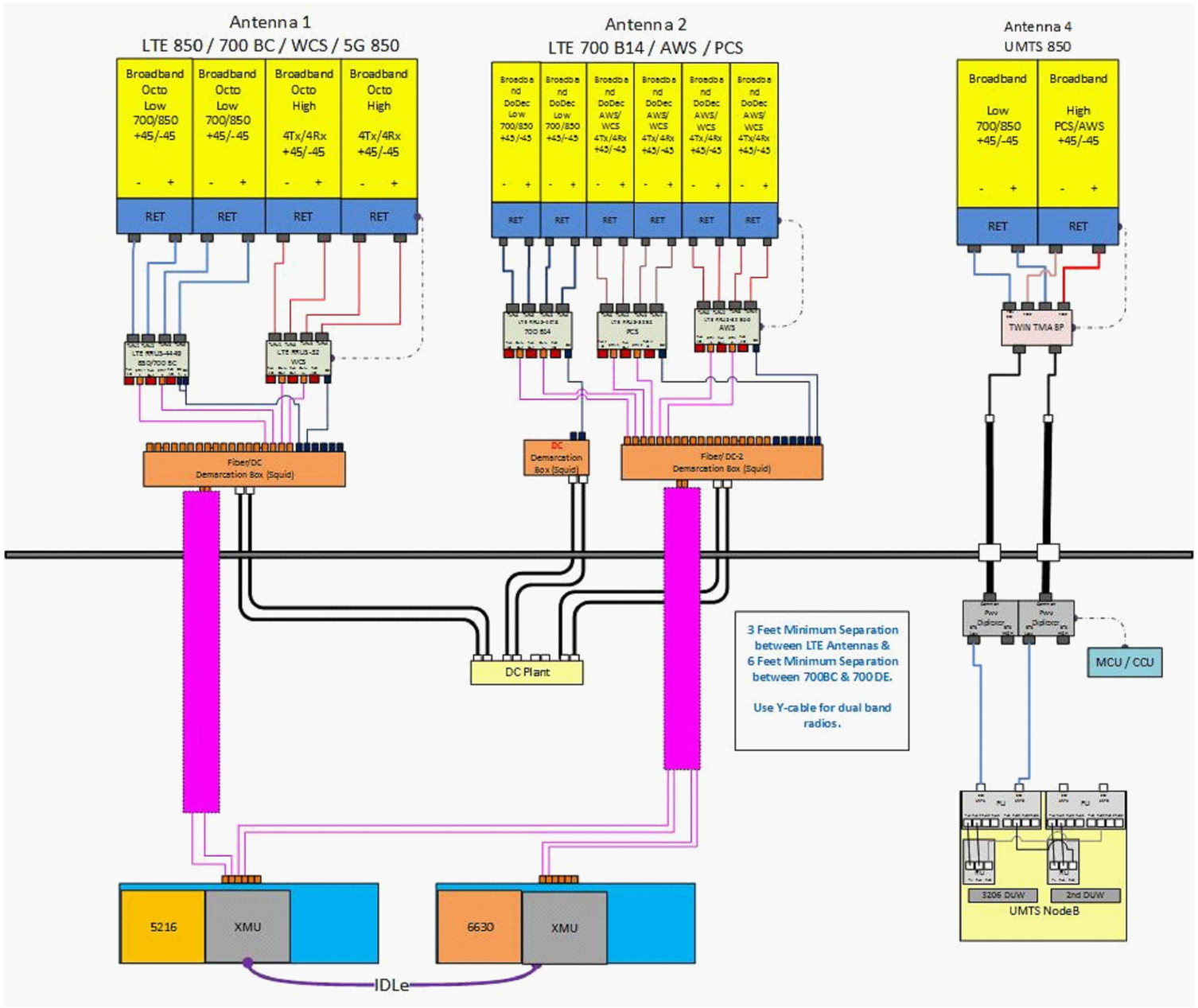
SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: GA

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

AT&T

GROUNDING DETAILS
LTE 6C_4TXRX RETROFIT 2021 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT2040	G-1	1



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

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

NOTE:

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

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

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT2040
SITE NAME: HAMDEN BENHAM ST

265 BENHAM STREET
HAMDEN, CT 06514
NEW HAVEN COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
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NO.	DATE	REVISIONS	BY	CHK	APP'D
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A	09/24/21	ISSUED FOR REVIEW	GA	HC	DPH

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

AT&T

RF PLUMBING DIAGRAM
LTE 6C_4TXRX RETROFIT 2021 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT2040	RF–1	1

CENTEK engineering

Centered on Solutions℠

Structural Analysis Report

65' Existing Roof Top Mounted
NUDD Guyed Lattice Tower

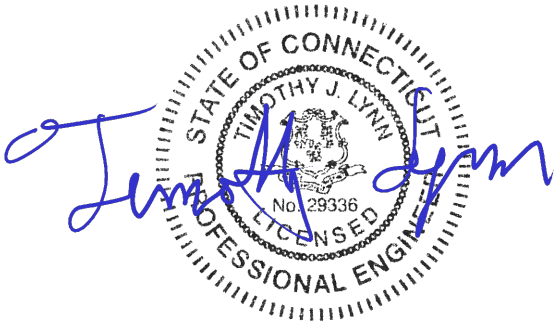
Proposed AT&T Mobility
Antenna Upgrade

AT&T Site Ref: CT2040

265 Benham Street
Hamden, CT

CENTEK Project No. 21111.00

Date: October 25, 2021



Prepared for:

AT&T Mobility
500 Enterprise Drive, Suite 3A
Rocky Hill, CT 06405

Table of Contents

Introduction

The purpose of this report is to summarize the results of the non-linear, P-Δ structural analysis of the antenna upgrade proposed by AT&T Mobility on the existing lattice tower located in Hamden, Connecticut.

The host tower is a 65-ft, four-section, three-legged guyed lattice tower originally designed and manufactured by Fred A Nudd Corporation. The tower type, geometry and structure member sizes were taken from a previous structural analysis report prepared by Centek Engineering project no. 16034.07 dated September 6, 2016.

The tower is made up of four (4) vertical sections consisting of A36 MOD-50 solid steel legs. Diagonal and horizontal bracing consists of A36 solid round and steel angle construction. The vertical tower legs are connected together with bolted flanges while bracing is connected by fully welded connections. The width of the tower face is 2'-6".

Antenna and appurtenance inventory was taken from the aforementioned Centek structural analysis report, a tower mapping prepared by ProVertic dated May 10, 2021 and an AT&T RF datasheet.

Antenna and Appurtenance Summary

The existing and proposed loads considered in the analysis consist of the following:

- MUNICIPAL (Existing):
  Antennas: One (1) 2-ft dish leg mounted with an elevation of 108-ft above grade (66-ft above tower base).
  Cable: One (1) 7/8" dia. coax cable.
- MUNICIPAL (Existing):
  Antennas: Two (2) 1-ftx1-ft panel antennas leg mounted with an elevation of 107-ft above grade (65-ft above tower base).
  Cable: Two (2) 3/8" dia. coax cables
- MUNICIPAL (Existing):
  Antennas: One (1) 10-ft Omni-directional whip antenna mounted on a 2-ft side arm with an elevation of 106-ft above grade (64-ft above tower base).
  Cable: One (1) 7/8" dia. coax cable running on the face of the existing tower as specified in Section 3 of this report.
- MUNICIPAL (Existing):
  Antennas: One (1) 20-ft dipole antenna mounted on a 3-ft side arm with an elevation of 106-ft above grade (64-ft above tower base).
  Cable: One (1) 7/8" dia. coax cable running on the face of the existing tower as specified in Section 3 of this report.
- MUNICIPAL (Existing):
  Antennas: One (1) 1-ftx1-ft panel antennas leg mounted with an elevation of 104-ft above grade (62-ft above tower base).
  Cable: One (1) 3/8" dia. coax cable.

- MUNICIPAL (Existing):
  Antennas: One (1) 1-ftx1-ft panel antennas leg mounted with an elevation of 99.5-ft above grade (57.5-ft above tower base).
  Cable: One (1) 3/8" dia. coax cable.
- MUNICIPAL (Existing):
  Antennas: One (1) 20-ft dipole antenna mounted on a 3-ft side arm with an elevation of 85-ft above grade (43-ft above tower base).
  Cable: One (1) 7/8" dia. coax cable running on the face of the existing tower as specified in Section 3 of this report.
- VERIZON (Existing to Remain):
  Antennas: Four (4) Andrew DB844G65ZAXY, three (3) Andrew HBXX-6517DS panel antennas, two (2) Andrew LNX-6514DS panel antennas, two (2) RFS APL866513 panel antennas, one (1) Andrew SBNHH-1D45B, two (2) Andrew SBNHH-1D65B and one (1) JMA X7C-FRO-640 panel antennas mounted to existing T-frames with a RAD center elevation of 80-ft above existing grade (38-ft above tower base).
  Appurtenances: Three (3) Alcatel-Lucent RRH2x60-AWS remote radio heads, three (3) Alcatel-Lucent RRH2x60-700 remote radio heads and two (2) main distribution boxes mounted to existing T-frames with a RAD center elevation of 80-ft above existing grade (38-ft above tower base).
  Coax Cables: Twelve (12) 1-5/8" ∅ coax cables and two (2) 1-5/8" ∅ fiber line running on the face of the existing tower as specified in Section 3 of this report.
- AT&T (Existing to Remain):
  Antennas: Three (3) KMW AMX-CD-16-65-00T-RET panel antennas, three (3) KMW EPBQ-654L8H6-L2 panel antennas mounted on three (3) proposed tower stand-off sector frames with a RAD center elevation of 70-ft above existing grade (28-ft above tower base).
  Appurtenances: Three (3) CCI DTMABP7819VG12A TMAs, six (6) Ericsson RRUS-32 remote radio heads, three (3) 4426 remote radio heads and three (3) surge arrestors mounted on (3) tower stand-off sector frames with a RAD center elevation of 70-ft above existing grade (28-ft above tower base).
  Coax Cables: Six (6) 1-5/8" ∅ coax cables and six (6) DC power cables and two (2) fiber cables running on a face of the existing tower as specified in Section 3 of this report.
- AT&T (Existing to Remove):
  Antennas: Three (3) CCI HPA-65R-BUU-H6 panel antennas mounted on (3) tower stand-off sector frames with a RAD center elevation of 70-ft above existing grade (28-ft above tower base).
  Appurtenances: Three (3) Ericsson RRUS-11 b12 mounted and three (3) Ericsson RRUS 4478 b5 on three (3) tower stand-off sector frames with a RAD center elevation of 70-ft above existing grade (28-ft above tower base).

- **AT&T (Proposed):**
  Antennas: Three (3) CCI DMP65R-BU6DA panel antennas mounted on three (3) proposed sector frames with a RAD center elevation of 70-ft above existing grade (28-ft above tower base).
  Appurtenances: Three (3) Ericsson 4449 b5/b12 remote radio and three (3) Ericsson 4478 b14 remote radio heads mounted on three (3) proposed sector frames with a RAD center elevation of 70-ft above existing grade (28-ft above tower base).

Primary Assumptions Used in the Analysis

- The tower structure's theoretical capacity not including any assessment of the condition of the tower.
- The tower carries the horizontal and vertical loads due to the weight of antennas, ice load and wind.
- Tower is properly installed and maintained.
- Tower is in plumb condition.
- Tower loading for antennas and mounts as listed in this report.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All welds are fabricated with ER-70S-6 electrodes.
- All members are assumed to be as specified in the original tower design documents.
- All members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
- All member protective coatings are in good condition.
- All tower members were properly designed, detailed, fabricated, installed and have been properly maintained since erection.
- Any deviation from the analyzed antenna loading will require a new analysis for verification of structural adequacy.
- All coax cables should be routed as specified in section 3 of this report.

Analysis

The existing tower was analyzed using a comprehensive computer program entitled tnxTower. The program analyzes the tower, considering the worst case loading condition. The tower is considered as loaded by concentric forces along the tower, and the model assumes that the tower members are subjected to bending, axial, and shear forces.

The existing tower was analyzed for the controlling basic wind speed (3-second gust) with no ice and the applicable wind and ice combination to determine stresses in members as per guidelines of TIA-222-G-2005 entitled "Structural Standard for Antenna Support Structures and Antennas", the American Institute of Steel Construction (AISC) and the Manual of Steel Construction; Load and Resistance Factor Design (LRFD).

The controlling wind speed is determined by evaluating the local available wind speed data as provided in Appendix N of the CSBC[1] and the wind speed data available in the TIA-222-G-2005 Standard.

Tower Loading

Tower loading was determined by the basic wind speed as applied to projected surface areas with modification factors per TIA-222-G-2005, gravity loads of the tower structure and its components, and the application of 0.75" radial ice on the tower structure and its components.

Basic Wind Speed:	Hamden; v = 97 mph (3 second gust)	*[Appendix N of the 2018 CT Building Code]*
Load Cases:	Load Case 1; 97 mph wind speed w/ no ice plus gravity load – used in calculation of tower stresses and rotation.	*[Appendix N of the 2018 CT Building Code]*
	Load Case 2; 50 mph wind speed w/ 0.75" radial ice plus gravity load – used in calculation of tower stresses.	*[Annex B of TIA-222-G-2005]*

[1] The 2015 International Building Code as amended by the 2018 Connecticut State Building Code (CSBC).

Tower Capacity

- Calculated stresses were found to be within allowable limits.

Tower Section	Elevation (AGL)	Stress Ratio (percentage of capacity)	Result
Leg (T4)	42'-0"-62'-0"	72.9%	**PASS**
Diagonal (T3)	62'-0"-82'-0"	99.4%	**PASS**
Guy B (T4)	42'-0"-62'-0"	40.4%	**PASS**

Existing Guy Anchors and Tower Base

Guy forces are transferred to the existing building structure via six (6) 9/16" and three (3) 3/4" ∅ galvanized steel guy wires with turnbuckles. All guy anchorage posts are positively attached to the existing building structure and consist of 6"x6"x1/4" tube steel with 1/2" thick guy connection plates with three 5/8" ∅ A325-N bolts in double shear. Connections to the existing building were originally designed by Natcomm for Verizon Wireless on October 02, 2000, reference project no. 985094.

The guyed tower base is pin connected to a 1-3/4" thick x 24" square base plate welded to an existing W8 steel dunnage frame. Frame loads are then transferred down onto the existing concrete roof structure via four (4) 6"x6"x1/4" tube steel posts with 1-1/4" thick x 12in square base plates.

Review of the anchor and tower base connections consisted of verification of applied loads obtained from the tower design calculations and code checks of allowable stresses:

- The worst case tower base and guy anchor reactions developed from the governing Load Case 2 were used in the verification of the anchorage:

Tower Guy Reactions	
Vector	**Guy C**
Horizontal (In Plane of GW)	15 kips
Horizontal (Out of Plane of GW)	0 kips
Vertical	24 kips
Tower Base Reactions	
Vector	**Proposed Reaction**
Horizontal Shear	1 kips
Axial Compression	67kips

- The guy anchor bolts were found to be within allowable limits.

Location	Design Limit	Load	Stress Ratio (percentage of capacity)	Result
Guy Anchor B	Shear	28.1 kips	75%	**PASS**

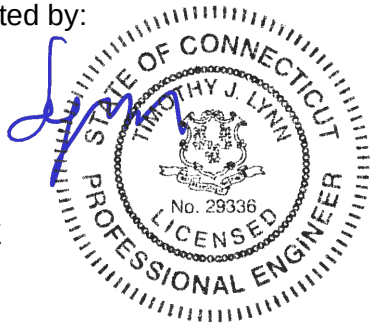
Conclusion

This analysis shows that the subject tower **is adequate** to support the proposed modified antenna configuration.

The analysis is based, in part, on the information provided to this office by AT&T Mobility. If the existing conditions are different than the information in this report, Centek Engineering, Inc. must be contacted for resolution of any potential issues.

Please feel free to call with any questions or comments.

Respectfully Submitted by:



Timothy J. Lynn, PE
Structural Engineer

Prepared by:

Fernando J. Palacios
Engineer

Standard Conditions for Furnishing of Professional Engineering Services on Existing Structures

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessarily limited to:

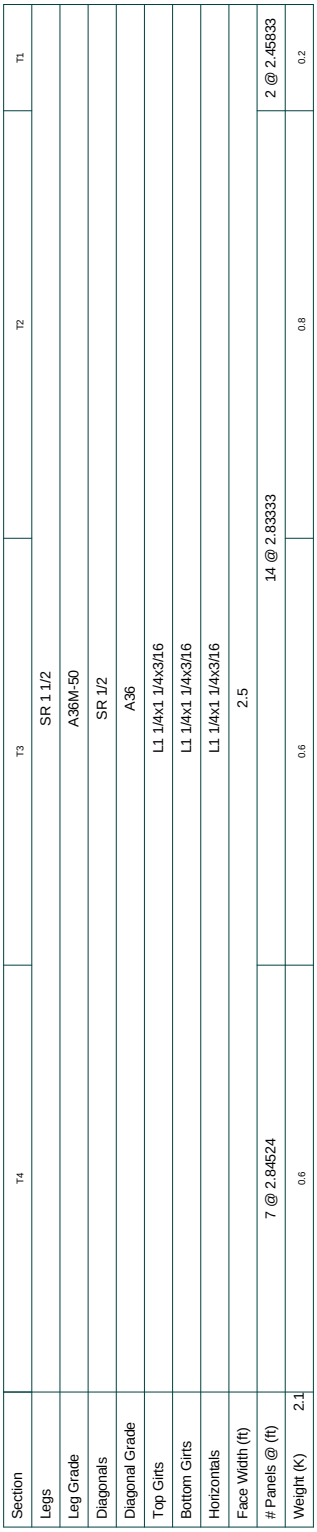
- Information supplied by the client regarding the structure itself, its foundations, the soil conditions, the antenna and feed line loading on the structure and its components, or other relevant information.
- Information from the field and/or drawings in the possession of Centek Engineering, Inc. or generated by field inspections or measurements of the structure.
- It is the responsibility of the client to ensure that the information provided to Centek Engineering, Inc. and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated. It is therefore assumed that its capacity has not significantly changed from the "as new" condition.
- All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest revision of ANSI/ASCE10 & ANSI/EIA-222
- All services performed, results obtained, and recommendations made are in accordance with generally accepted engineering principles and practices. Centek Engineering, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

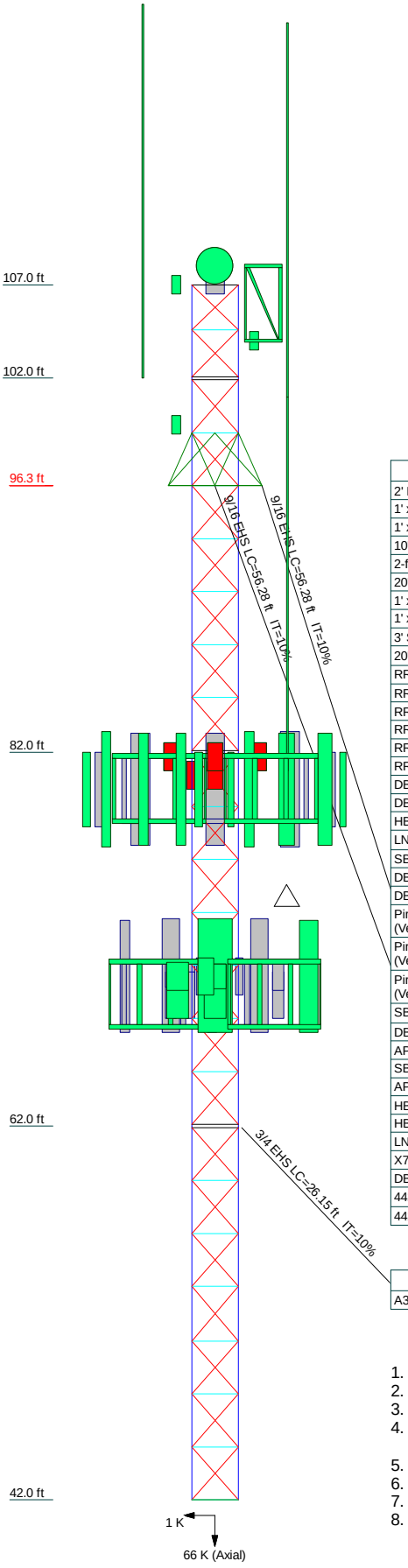
GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAM

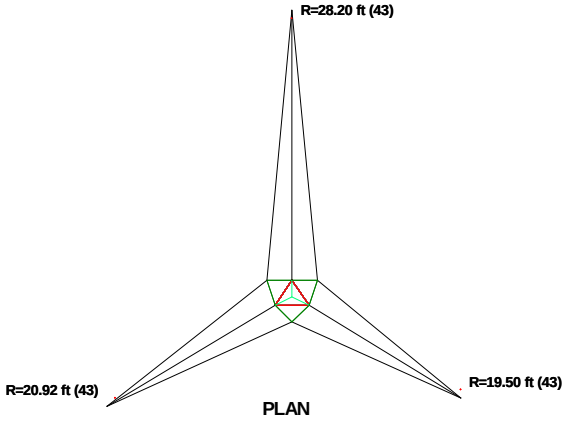
TnxTower, is an integrated structural analysis and design software package for Designed specifically for the telecommunications industry, TnxTower, formerly ERITower, automates much of the tower analysis and design required by the TIA/EIA 222 Standard.

TnxTower Features:

- TnxTower can analyze and design 3- and 4-sided guyed towers, 3- and 4-sided self-supporting towers and either round or tapered ground mounted poles with or without guys.
- The program analyzes towers using the TIA-222-G (2005) standard or any of the previous TIA/EIA standards back to RS-222 (1959). Steel design is checked using the AISC ASD 14th Edition or the AISC LRFD specifications.
- Linear and non-linear (P-delta) analyses can be used in determining displacements and forces in the structure. Wind pressures and forces are automatically calculated.
- Extensive graphics plots include material take-off, shear-moment, leg compression, displacement, twist, feed line, guy anchor and stress plots.
- TnxTower contains unique features such as True Cable behavior, hog rod take-up, foundation stiffness and much more.







DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
2' Dish	108	4426 B66 (ATI - Existing)	70
1' x 1' Panel	107	4449 B5/B12 (ATI - Proposed)	70
1' x 1' Panel	107	4449 B5/B12 (ATI - Proposed)	70
10' x 2" Dia Omni (Municipal)	106	4449 B5/B12 (ATI - Proposed)	70
2-ft Stand Off (Municipal)	106	4478 B14 (ATI - Proposed)	70
20' 4-Bay Dipole (Municipal)	106	4478 B14 (ATI - Proposed)	70
1' x 1' Panel	104	4478 B14 (ATI - Proposed)	70
1' x 1' Panel	99.5	DC6-48-60-18-8F Surge Arrestor (ATI - Existing)	70
3' Side arm mount (Municipal)	85	DC6-48-60-18-8F Surge Arrestor (ATI - Existing)	70
20' 4-Bay Dipole (Municipal)	85	DC6-48-60-18-8F Surge Arrestor (ATI - Existing)	70
RRH2x60-AWS (Verizon - Existing)	81	AM-X-CD-16-65-00T-RET(72") (ATI - Existing)	70
RRH2x60-AWS (Verizon - Existing)	81	AM-X-CD-16-65-00T-RET(72") (ATI - Existing)	70
RRH2x60-AWS (Verizon - Existing)	81	AM-X-CD-16-65-00T-RET(72") (ATI - Existing)	70
RRH2x60-07-U (Verizon - Existing)	81	DMP65R-BU6DA (ATI - Proposed)	70
RRH2x60-07-U (Verizon - Existing)	81	DMP65R-BU6DA (ATI - Proposed)	70
RRH2x60-07-U (Verizon - Existing)	81	DMP65R-BU6DA (ATI - Proposed)	70
DB-T1-6Z-8AB-0Z (Verizon - Existing)	80	EPBQ-654L8H6-L2 (ATI - Existing)	70
DB844G65ZAXY (Verizon - Existing)	80	EPBQ-654L8H6-L2 (ATI - Existing)	70
HBXX-6517DS (Verizon - Existing)	80	EPBQ-654L8H6-L2 (ATI - Existing)	70
LNX-6514DS-VTM (Verizon - Existing)	80	SitePro VFA12-HD (ATI - Existing)	69
SBNHH-1D65B (Verizon - Existing)	80	SitePro VFA12-HD (ATI - Existing)	69
DB844G65ZAXY (Verizon - Existing)	80	DTMABP7819VG12A TMA (ATI - Existing)	69
DB-T1-6Z-8AB-0Z (Verizon - Existing)	80	RRUS-32 (ATI - Existing)	69
Pirod 12' T-Frame Sector Mount (1) (Verizon - Existing)	80	RRUS-32 (ATI - Existing)	69
Pirod 12' T-Frame Sector Mount (1) (Verizon - Existing)	80	RRUS-32 (ATI - Existing)	69
Pirod 12' T-Frame Sector Mount (1) (Verizon - Existing)	80	RRUS-32 (ATI - Existing)	69
SBNHH-1D65B (Verizon - Existing)	80	RRUS-32 (ATI - Existing)	69
DB844G65ZAXY (Verizon - Existing)	80	RRUS-32 (ATI - Existing)	69
APL866513-42T0 (Verizon - Existing)	80	DTMABP7819VG12A TMA (ATI - Existing)	69
SBNHH-1D45B (Verizon - Existing)	80	DTMABP7819VG12A TMA (ATI - Existing)	69
APL866513-42T0 (Verizon - Existing)	80	SitePro VFA12-HD (ATI - Existing)	69
HBXX-6517DS (Verizon - Existing)	80		
HBXX-6517DS (Verizon - Existing)	80		
LNX-6514DS-VTM (Verizon - Existing)	80		
X7C-FR0-640-V (Verizon - Existing)	80		
DB844G65ZAXY (Verizon - Existing)	80		
4426 B66 (ATI - Existing)	70		
4426 B66 (ATI - Existing)	70		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36M-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 97 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 99.4%

R=19.50 ft

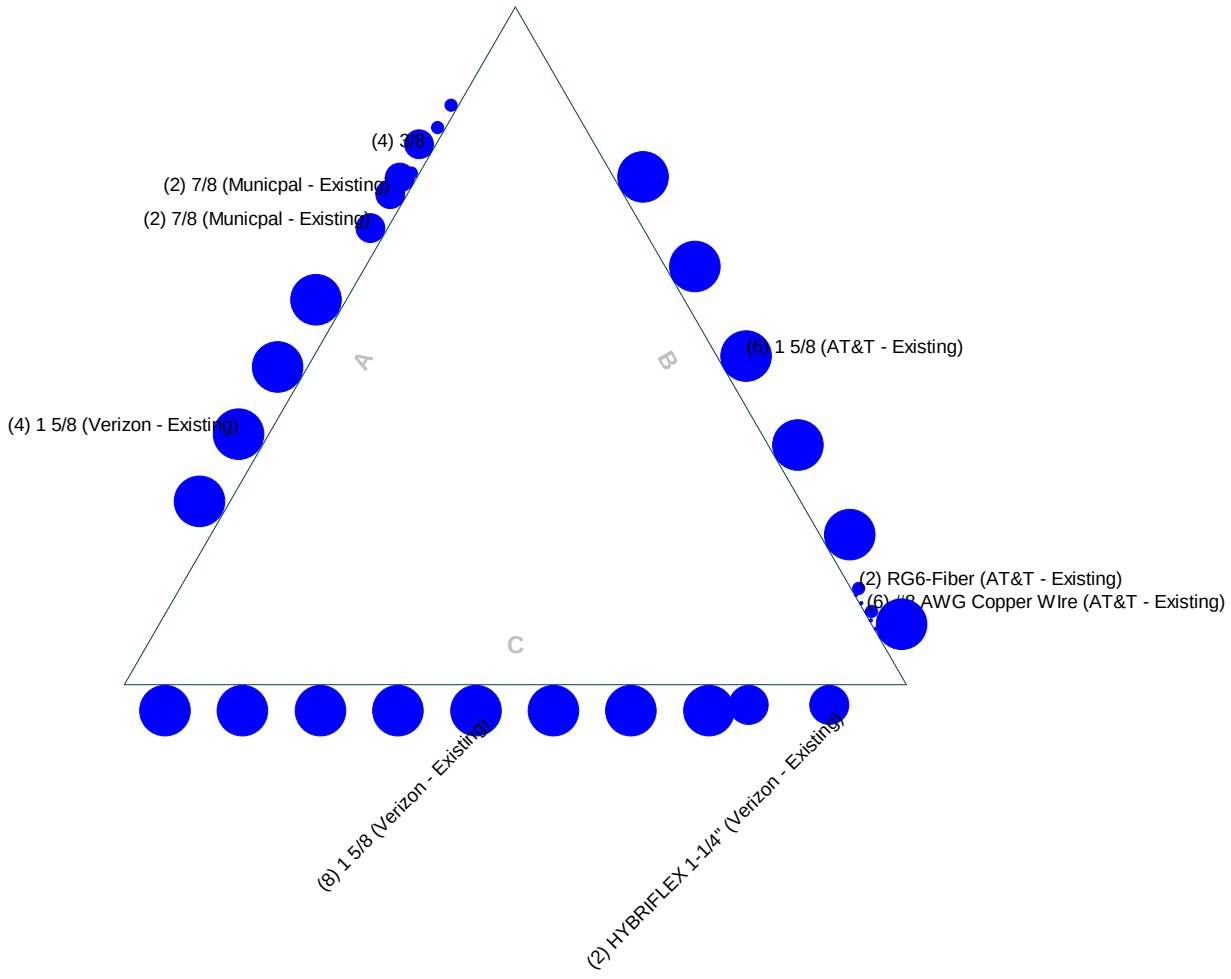
ALL REACTIONS ARE FACTORED

Centek Engineering Inc.
63-2 North Branford Rd.
Branford, CT 06405
Phone: (203) 488-0580
FAX: (203) 488-8587

Job: 21111.00 - CT2040			
Project: 65-ft NUDD Guyed Tower - 265 Benham Street - Hamden, CT			
Client: AT&T Mobility	Drawn by: TJL	App'd:	
Code: TIA-222-G	Date: 10/25/21	Scale: NTS	
Path: J:\Jobs\2111100.W\05_Structural\Backup Documentation\ERI\100_NUDD_Guyed_Twr_Hamden_CT_erl		Dwg No. E-1	

Feed Line Plan

Round Flat App In Face App Out Face



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Client: AT&T Mobility		Drawn by: TJL	App'd:
Code: TIA-222-G		Date: 10/25/21	Scale: NTS
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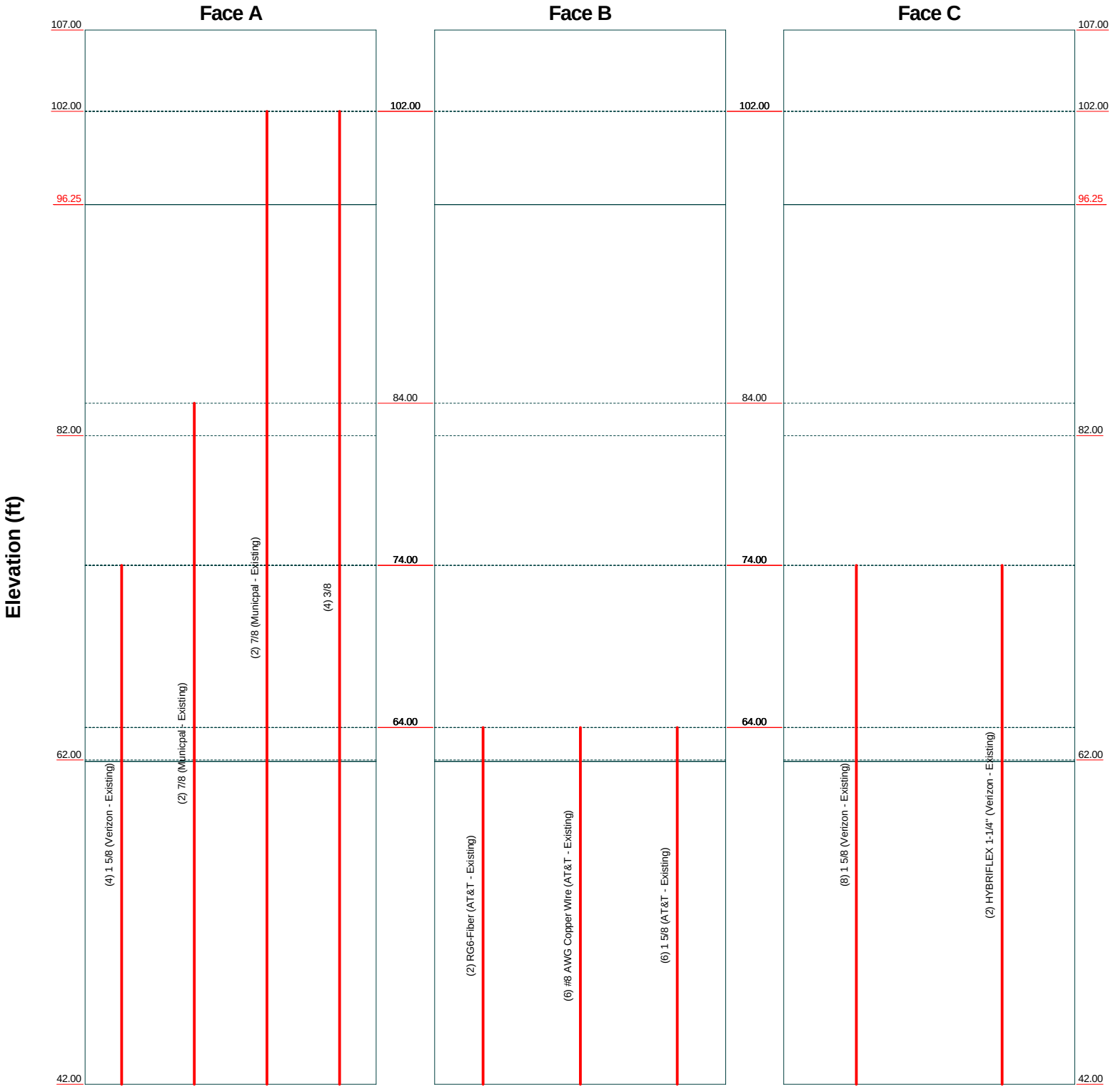
Feed Line Distribution Chart
42' - 107'

Round | Flat | App In Face | App Out Face | Truss Leg



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Code: TIA-222-G	Date: 10/25/21	Scale: NTS
Path: J:\Jobs\2111100.W\05_Structural\Backup Documentation\ERI\100_NUDD_Guyed_Twr_Hamden_CT_erd		Dwg No. E-7

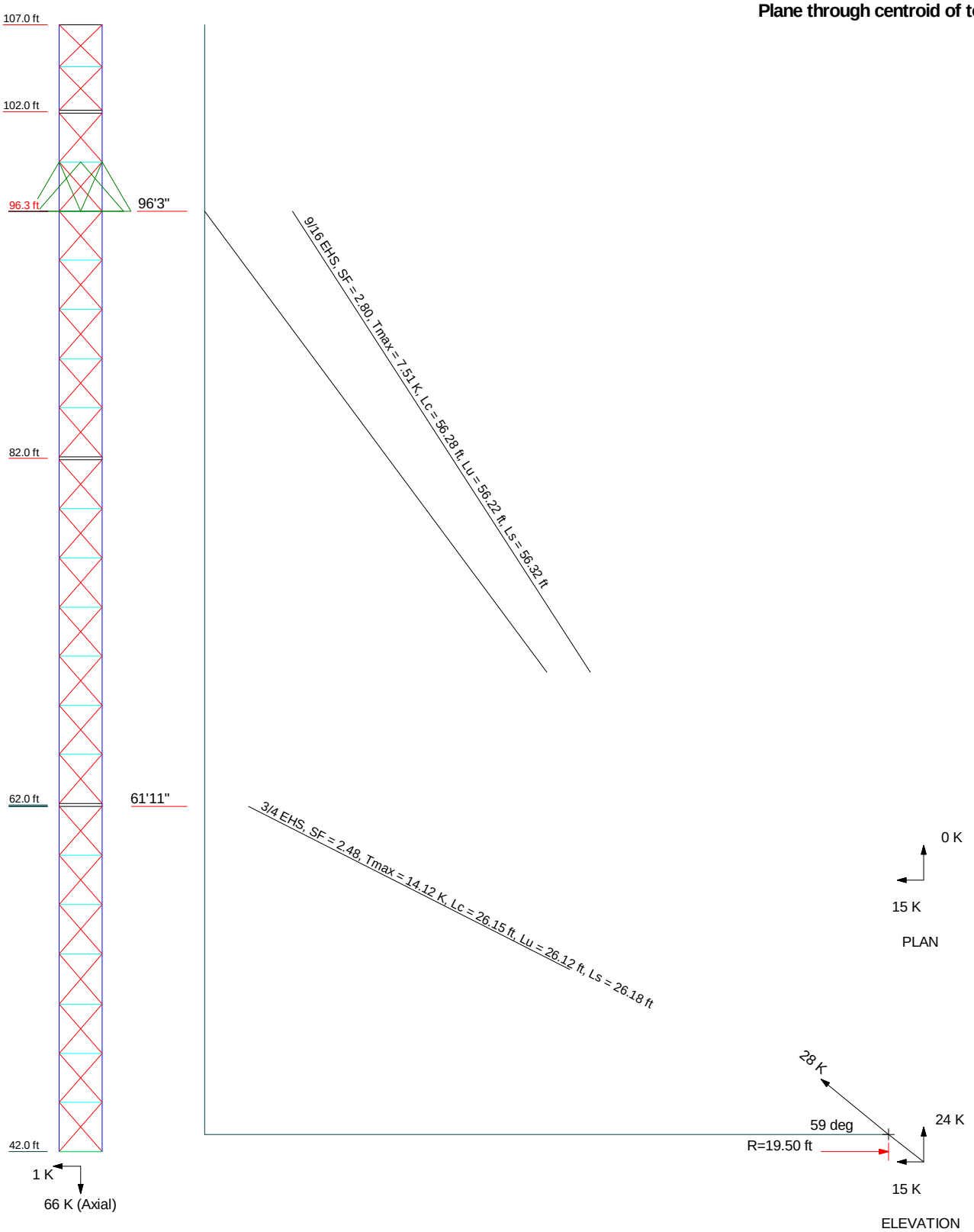
Guy Tensions and Tower Reactions

TIA-222-G - 97 mph/50 mph 0.750 in Ice Exposure B

Maximum Values

Anchor 'B'@19.5 ft Azimuth 120 deg Elev 43 ft

Plane through centroid of tower



Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job: ***21111.00 - CT2040***		
	Project: ***65-ft NUDD Guyed Tower - 265 Benham Street - Hamden, CT***		
	Client: AT&T Mobility	Drawn by: TJL	App'd:
	Code: TIA-222-G	Date: 10/25/21	Scale: NTS
	Path: J:\Jobs\2111100.W\05_Structural\Backup Documentation\ERI\100_NUDD_Guyed_Twr_Hamden_CT_erl		Dwg No. E-6

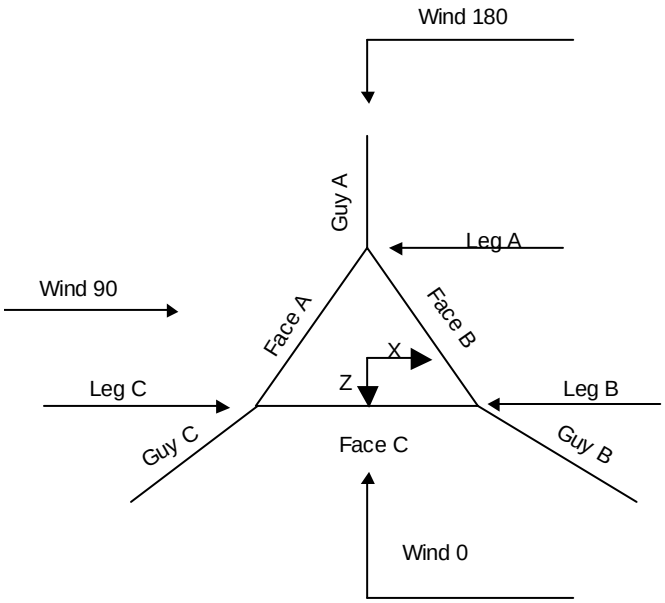
Tower Input Data

The main tower is a 3x guyed tower with an overall height of 107.00 ft above the ground line.
The base of the tower is set at an elevation of 42.00 ft above the ground line.
The face width of the tower is 2.50 ft at the top and 2.50 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

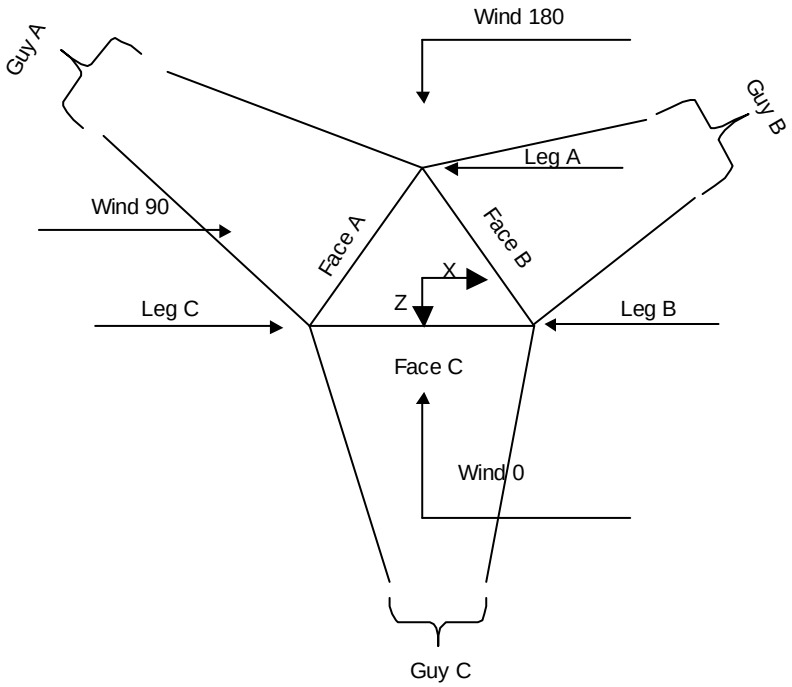
Tower is located in New Haven County, Connecticut.
Basic wind speed of 97 mph.
Structure Class II.
Exposure Category B.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 0.750 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
Tension only take-up is 0.031 in.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Safety factor used in guy design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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



Corner & Starmount Guyed Tower



Face Guyed

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	107.00-102.00			2.50	1	5.00
T2	102.00-82.00			2.50	1	20.00
T3	82.00-62.00			2.50	1	20.00
T4	62.00-42.00			2.50	1	20.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	107.00-102.00	2.46	TX Brace	No	Yes	0.000	1.000

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T2	102.00-82.00	2.83	TX Brace	No	Yes	1.000	1.000
T3	82.00-62.00	2.83	TX Brace	No	Yes	1.000	1.000
T4	62.00-42.00	2.85	TX Brace	No	Yes	1.000	0.000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 107.00-102.00	Solid Round	1 1/2	A36M-50 (50 ksi)	Solid Round	1/2	A36 (36 ksi)
T2 102.00-82.00	Solid Round	1 1/2	A36M-50 (50 ksi)	Solid Round	1/2	A36 (36 ksi)
T3 82.00-62.00	Solid Round	1 1/2	A36M-50 (50 ksi)	Solid Round	1/2	A36 (36 ksi)
T4 62.00-42.00	Solid Round	1 1/2	A36M-50 (50 ksi)	Solid Round	1/2	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 107.00-102.00	Single Angle	L1 1/4x1 1/4x3/16	A36 (36 ksi)	Single Angle	L1 1/4x1 1/4x3/16	A36 (36 ksi)
T2 102.00-82.00	Single Angle	L1 1/4x1 1/4x3/16	A36 (36 ksi)	Single Angle	L1 1/4x1 1/4x3/16	A36 (36 ksi)
T3 82.00-62.00	Single Angle	L1 1/4x1 1/4x3/16	A36 (36 ksi)	Single Angle	L1 1/4x1 1/4x3/16	A36 (36 ksi)
T4 62.00-42.00	Single Angle	L1 1/4x1 1/4x3/16	A36 (36 ksi)	Single Angle	L1 1/4x1 1/4x3/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 107.00-102.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/4x1 1/4x3/16	A36 (36 ksi)
T2 102.00-82.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/4x1 1/4x3/16	A36 (36 ksi)
T3 82.00-62.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/4x1 1/4x3/16	A36 (36 ksi)
T4 62.00-42.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L1 1/4x1 1/4x3/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

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
T1 107.00-102.00	0.00	0.000	A36 (36 ksi)	1	1	1.05	36.000	36.000	36.000
T2 102.00-82.00	0.00	0.000	A36 (36 ksi)	1	1	1.05	36.000	36.000	36.000
T3 82.00-62.00	0.00	0.000	A36 (36 ksi)	1	1	1.05	36.000	36.000	36.000
T4 62.00-42.00	0.00	0.000	A36 (36 ksi)	1	1	1.05	36.000	36.000	36.000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X	X Brace Diags Y	K Single Diags X	K Single Diags Y	Girts X	Girts Y	Horiz. X	Horiz. Y	Sec. Horiz. X	Sec. Horiz. Y	Inner Brace X	Inner Brace Y
T1	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
107.00-102.00				1	1	1	1	1	1	1	1	1	1	1	1
T2	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
102.00-82.00				1	1	1	1	1	1	1	1	1	1	1	1
T3	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
82.00-62.00				1	1	1	1	1	1	1	1	1	1	1	1
T4	Yes	Yes	1	1	1	1	1	1	1	1	1	1	1	1	1
62.00-42.00				1	1	1	1	1	1	1	1	1	1	1	1

[1]*Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.*

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Net Width Deduct in	Leg U	Diagonal Net Width Deduct in	Diagonal U	Top Girt Net Width Deduct in	Top Girt U	Bottom Girt Net Width Deduct in	Bottom Girt U	Mid Girt Net Width Deduct in	Mid Girt U	Long Horizontal Net Width Deduct in	Long Horizontal U	Short Horizontal Net Width Deduct in	Short Horizontal U
T1 107.00-102.00	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T2 102.00-82.00	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T3 82.00-62.00	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T4 62.00-42.00	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 107.00-102.00	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T2 102.00-82.00	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T3 82.00-62.00	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T4 62.00-42.00	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 107.00-102.00	Flange	0.875 A325N	1	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0
T2 102.00-82.00	Flange	0.875 A325N	1	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0
T3 82.00-62.00	Flange	0.875 A325N	1	0.000 A325N	0	0.500 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0
T4 62.00-42.00	Flange	0.875 A325N	1	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0

Guy Data

Guy Elevation ft	Guy Grade		Guy Size	Initial Tension K	%	Guy Modulus ksi	Guy Weight plf	L_u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
96.25	EHS	A	9/16	3.50	10%	21000	0.671	59.60	28.20	0.0000	43.00	100%
		B	9/16	3.50	10%	21000	0.671	56.24	19.50	0.0000	43.00	100%
		C	9/16	3.50	10%	21000	0.671	56.71	20.92	0.0000	43.00	100%
61.9167	EHS	A	3/4	5.83	10%	19000	1.155	32.74	28.20	0.0000	43.00	100%
		B	3/4	5.83	10%	19000	1.155	26.13	19.50	0.0000	43.00	100%
		C	3/4	5.83	10%	19000	1.155	27.13	20.92	0.0000	43.00	100%

Guy Data *(cont'd)*

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
96.25	Torque Arm	5.00	45.0000	Dog Ear	A36 (36 ksi)	Single Angle	L2x2x5/16 L3x3x1/4

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
61.9167	Corner						

Guy Data *(cont'd)*

Guy Elevation ft	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap.	Pull-Off Grade	Pull-Off Type	Pull-Off Size
96.25	A36 (36 ksi)	Solid Round				A36 (36 ksi)	Single Angle	
61.92	A36 (36 ksi)	Solid Round				A36 (36 ksi)	Single Angle	

Guy Data *(cont'd)*

Guy Elevation ft	Cable Weight A K	Cable Weight B K	Cable Weight C K	Cable Weight D K	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
96.25	0.04	0.04	0.04		0.34 1.0 sec/pulse	0.30 0.9 sec/pulse	0.31 1.0 sec/pulse	
61.9167	0.04	0.03	0.03		0.11 0.6 sec/pulse	0.07 0.4 sec/pulse	0.07 0.5 sec/pulse	

Guy Data *(cont'd)*

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm K_x	Torque Arm K_y	Pull Off K_x	Pull Off K_y	Diagonal K_x	Diagonal K_y
96.25	Yes	Yes	1	1	1	1	1	1
61.9167	No	No			1	1	1	1

Guy Data *(cont'd)*

Guy Elevation ft	Torque-Arm Bolt Size in	Torque-Arm Number	Torque-Arm Net Width Deduct in	Torque-Arm U	Pull Off Bolt Size in	Pull Off Number	Pull Off Net Width Deduct in	Pull Off U	Diagonal Bolt Size in	Diagonal Number	Diagonal Net Width Deduct in	Diagonal U
96.25	0.000 A325N	0	0.000	1	0.625 A325N	0	0.000	0.75	0.625 A325N	0	0.000	0.75
61.9167	0.000 A325N	0	0.000	1	0.625 A325N	0	0.000	0.75	0.625 A325N	0	0.000	0.75

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
96.25	A	69.63	18	5	1.616
	B	69.63	18	5	1.616
	C	69.63	18	5	1.616
61.9167	A	52.46	17	4	1.571
	B	52.46	17	4	1.571
	C	52.46	17	4	1.571

Guy-Mast Forces (Excluding Wind) - No Ice

Guy Elevation ft	Guy Location	Chord Angle °	Guy Tension Top Bottom K	F_x K	F_y K	F_z K	M_x kip-ft	M_y kip-ft	M_z kip-ft
96.25	A	63.2217	3.54 3.50	-0.15	3.16	-1.58	-4.56	4.16	-7.90
	A	63.2217	3.54 3.50	0.15	3.16	-1.58	-4.56	-4.16	7.90
	B	71.1026	3.54 3.50	1.06	3.35	0.43	9.66	3.05	0.00
	B	71.1026	3.54 3.50	0.90	3.35	0.70	-4.83	-3.05	-8.37
	C	69.7581	3.54 3.50	-0.97	3.32	0.74	-4.79	3.24	8.30
	C	69.7581	3.54 3.50	-1.12	3.32	0.47	9.58	-3.24	0.00
			Sum:	**-0.14**	19.65	**-0.82**	**0.50**	0.00	**-0.07**
61.9167	A	35.2599	5.85 5.83	0.00	3.39	-4.77	-4.89	0.00	0.00
	B	46.3325	5.85 5.83	3.49	4.24	2.02	3.06	0.00	-5.30
	C	44.1644	5.85 5.83	-3.63	4.09	2.09	2.95	-0.00	5.11
			Sum:	**-0.14**	11.72	**-0.66**	**1.11**	0.00	**-0.19**

Guy-Mast Forces (Excluding Wind) - Ice

Guy Elevation ft	Guy Location	Chord Angle °	Guy Tension Top Bottom K	F_x K	F_y K	F_z K	M_x kip-ft	M_y kip-ft	M_z kip-ft
96.25	A	63.2217	5.10 4.83	-0.21	4.58	-2.23	-6.61	5.87	-11.45
	A	63.2217	5.10 4.83	0.21	4.58	-2.23	-6.61	-5.87	11.45
	B	71.1026	5.03	1.47	4.78	0.60	13.79	4.24	0.00

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top / Bottom	F_x	F_y	F_z	M_x	M_y	M_z
ft		°	K	K	K	K	kip-ft	kip-ft	kip-ft
			4.77						
	B	71.1026	5.03	1.25	4.78	0.97	-6.90	-4.24	-11.94
			4.77						
	C	69.7581	5.04	-1.35	4.75	1.03	-6.85	4.52	11.87
			4.78						
	C	69.7581	5.04	-1.57	4.75	0.66	13.71	-4.52	0.00
			4.78						
			Sum:	**-0.19**	28.21	**-1.20**	**0.53**	0.00	**-0.07**
61.9167	A	35.2599	8.06	0.00	4.71	-6.53	-6.80	0.00	0.00
			7.95						
	B	46.3325	8.01	4.76	5.83	2.75	4.21	0.00	-7.29
			7.90						
	C	44.1644	8.02	-4.95	5.62	2.86	4.06	-0.00	7.03
			7.91						
			Sum:	**-0.19**	16.17	**-0.93**	**1.46**	0.00	**-0.26**

Guy-Mast Forces (Excluding Wind) - Service

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top / Bottom	F_x	F_y	F_z	M_x	M_y	M_z
ft		°	K	K	K	K	kip-ft	kip-ft	kip-ft
96.25	A	63.2217	3.54	-0.15	3.16	-1.58	-4.56	4.16	-7.90
			3.50						
	A	63.2217	3.54	0.15	3.16	-1.58	-4.56	-4.16	7.90
			3.50						
	B	71.1026	3.54	1.06	3.35	0.43	9.66	3.05	0.00
			3.50						
	B	71.1026	3.54	0.90	3.35	0.70	-4.83	-3.05	-8.37
			3.50						
	C	69.7581	3.54	-0.97	3.32	0.74	-4.79	3.24	8.30
			3.50						
	C	69.7581	3.54	-1.12	3.32	0.47	9.58	-3.24	0.00
			3.50						
			Sum:	**-0.14**	19.65	**-0.82**	**0.50**	0.00	**-0.07**
61.9167	A	35.2599	5.85	0.00	3.39	-4.77	-4.89	0.00	0.00
			5.83						
	B	46.3325	5.85	3.49	4.24	2.02	3.06	0.00	-5.30
			5.83						
	C	44.1644	5.85	-3.63	4.09	2.09	2.95	-0.00	5.11
			5.83						
			Sum:	**-0.14**	11.72	**-0.66**	**1.11**	0.00	**-0.19**

Guy-Tensioning Information

Temperature At Time Of Tensioning						
0 F	20 F	40 F	60 F	80 F	100 F	120 F

Guy Elevation ft		H ft	V ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft
96.25	A	26.87	53.25	3.823	0.31	3.715	0.32	3.608	0.33	3.500	0.34	3.393	0.35	3.285	0.36	3.178	0.37
	B	18.23	53.25	3.667	0.29	3.611	0.29	3.556	0.30	3.500	0.30	3.444	0.31	3.389	0.31	3.333	0.32
	C	19.64	53.25	3.691	0.29	3.627	0.30	3.563	0.30	3.500	0.31	3.437	0.31	3.373	0.32	3.310	0.32
61.9167	A	26.76	18.92	7.488	0.08	6.935	0.09	6.382	0.10	5.830	0.11	5.278	0.12	4.728	0.13	4.178	0.15
	B	18.06	18.92	7.017	0.06	6.621	0.06	6.225	0.06	5.830	0.07	5.435	0.07	5.040	0.08	4.645	0.08
	C	19.48	18.92	7.111	0.06	6.684	0.06	6.257	0.07	5.830	0.07	5.403	0.08	4.977	0.09	4.551	0.09

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
1 5/8 (Verizon - Existing)	A	No	No	Ar (CaAa)	74.00 - 42.00	0.000	-0.1	4	4	1.000 1.980	1.980		1.04
1 5/8 (Verizon - Existing)	C	No	No	Ar (CaAa)	74.00 - 42.00	0.000	0.1	8	8	1.000	1.980		1.04
7/8 (Municpal - Existing)	A	No	No	Ar (CaAa)	84.00 - 42.00	0.000	0.2	2	2	1.110	1.110		0.54
7/8 (Municpal - Existing)	A	No	No	Ar (CaAa)	102.00 - 42.00	0.000	0.25	2	2	1.110	1.110		0.54
RG6-Fiber (AT&T - Existing)	B	No	No	Ar (CaAa)	64.00 - 42.00	0.000	0.38	2	2	0.500	0.500		1.00
#8 AWG Copper WIre (AT&T - Existing)	B	No	No	Ar (CaAa)	64.00 - 42.00	0.000	0.4	6	6	0.250	0.129		0.05
1 5/8 (AT&T - Existing)	B	No	No	Ar (CaAa)	64.00 - 42.00	0.000	0.1	6	6	1.980	1.980		1.04
HYBRIFLEX 1-1/4" (Verizon - Existing)	C	No	No	Ar (CaAa)	74.00 - 42.00	0.000	-0.35	2	2	1.540	1.540		1.30
3/8	A	No	No	Ar (CaAa)	102.00 - 42.00	0.000	0.3	4	4	0.500	0.500		0.40

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	107.00-102.00	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	0.00
T2	102.00-82.00	A	0.000	0.000	8.884	0.000	0.06
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
T3	82.00-62.00	A	0.000	0.000	22.384	0.000	0.13
		B	0.000	0.000	2.730	0.000	0.02

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C	0.000	0.000	22.704	0.000	0.13
T4	62.00-42.00	A	0.000	0.000	28.720	0.000	0.16
		B	0.000	0.000	27.302	0.000	0.17
		C	0.000	0.000	37.840	0.000	0.22

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 K
T1	107.00-102.00	A	1.683	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	0.00
T2	102.00-82.00	A	1.662	0.000	0.000	41.544	0.000	0.43
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
T3	82.00-62.00	A	1.622	0.000	0.000	81.347	0.000	0.90
		B		0.000	0.000	9.464	0.000	0.12
		C		0.000	0.000	53.708	0.000	0.76
T4	62.00-42.00	A	1.570	0.000	0.000	95.038	0.000	1.08
		B		0.000	0.000	93.613	0.000	1.19
		C		0.000	0.000	88.852	0.000	1.23

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	107.00-102.00	0.000	0.000	0.000	0.000
T2	102.00-82.00	-0.928	-2.923	-0.662	-2.040
T3	82.00-62.00	-1.822	0.703	-1.027	-0.552
T4	62.00-42.00	0.343	1.282	1.036	0.366

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T2	3	7/8	82.00 - 84.00	0.6000	0.3012
T2	4	7/8	82.00 - 102.00	0.6000	0.3012
T2	9	3/8	82.00 - 102.00	0.6000	0.3012
T3	1	1 5/8	62.00 - 74.00	0.6000	0.3126
T3	2	1 5/8	62.00 - 74.00	0.6000	0.3126
T3	3	7/8	62.00 - 82.00	0.6000	0.3126
T3	4	7/8	62.00 - 82.00	0.6000	0.3126
T3	5	RG6-Fiber	62.00 - 64.00	0.6000	0.3126
T3	6	#8 AWG Copper WIre	62.00 - 64.00	0.6000	0.3126
T3	7	1 5/8	62.00 - 64.00	0.6000	0.3126
T3	8	HYBRIFLEX 1-1/4"	62.00 - 74.00	0.6000	0.3126

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T3	9	3/8	62.00 - 82.00	0.6000	0.3126
T4	1	1 5/8	42.00 - 62.00	0.6000	0.3268
T4	2	1 5/8	42.00 - 62.00	0.6000	0.3268
T4	3	7/8	42.00 - 62.00	0.6000	0.3268
T4	4	7/8	42.00 - 62.00	0.6000	0.3268
T4	5	RG6-Fiber	42.00 - 62.00	0.6000	0.3268
T4	6	#8 AWG Copper WIre	42.00 - 62.00	0.6000	0.3268
T4	7	1 5/8	42.00 - 62.00	0.6000	0.3268
T4	8	HYBRIFLEX 1-1/4"	42.00 - 62.00	0.6000	0.3268
T4	9	3/8	42.00 - 62.00	0.6000	0.3268

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
DB844G65ZAXY	A	From Leg	3.00	0.0000	80.00	No Ice	4.34	3.61	0.02
(Verizon - Existing)			6.00			1/2" Ice	4.66	3.92	0.05
			0.00			1" Ice	4.98	4.23	0.09
HBXX-6517DS	A	From Leg	3.00	0.0000	80.00	No Ice	8.53	5.24	0.05
(Verizon - Existing)			4.00			1/2" Ice	9.00	5.71	0.10
			0.00			1" Ice	9.48	6.18	0.16
LNX-6514DS-VTM	A	From Leg	3.00	0.0000	80.00	No Ice	8.17	5.41	0.04
(Verizon - Existing)			0.00			1/2" Ice	8.63	5.86	0.09
			0.00			1" Ice	9.10	6.33	0.15
SBNHH-1D65B	A	From Leg	3.00	0.0000	80.00	No Ice	8.08	5.34	0.04
(Verizon - Existing)			-4.00			1/2" Ice	8.53	5.79	0.09
			0.00			1" Ice	9.00	6.26	0.15
DB844G65ZAXY	A	From Leg	3.00	0.0000	80.00	No Ice	4.34	3.61	0.02
(Verizon - Existing)			-6.00			1/2" Ice	4.66	3.92	0.05
			0.00			1" Ice	4.98	4.23	0.09
APL866513-42T0	B	From Leg	3.00	0.0000	80.00	No Ice	4.05	3.61	0.02
(Verizon - Existing)			6.00			1/2" Ice	4.36	3.92	0.05
			0.00			1" Ice	4.68	4.23	0.08
HBXX-6517DS	B	From Leg	3.00	0.0000	80.00	No Ice	8.53	5.24	0.05
(Verizon - Existing)			4.00			1/2" Ice	9.00	5.71	0.10
			0.00			1" Ice	9.48	6.18	0.16
X7C-FR0-640-V	B	From Leg	3.00	0.0000	80.00	No Ice	11.84	6.51	0.05
(Verizon - Existing)			0.00			1/2" Ice	12.33	6.97	0.12
			0.00			1" Ice	12.82	7.44	0.20
SBNHH-1D45B	B	From Leg	3.00	0.0000	80.00	No Ice	11.40	5.28	0.07
(Verizon - Existing)			-4.00			1/2" Ice	11.89	5.74	0.13
			0.00			1" Ice	12.38	6.20	0.20
APL866513-42T0	B	From Leg	3.00	0.0000	80.00	No Ice	4.05	3.61	0.02
(Verizon - Existing)			-6.00			1/2" Ice	4.36	3.92	0.05
			0.00			1" Ice	4.68	4.23	0.08
DB844G65ZAXY	C	From Leg	3.00	0.0000	80.00	No Ice	4.34	3.61	0.02
(Verizon - Existing)			6.00			1/2" Ice	4.66	3.92	0.05
			0.00			1" Ice	4.98	4.23	0.09
HBXX-6517DS	C	From Leg	3.00	0.0000	80.00	No Ice	8.53	5.24	0.05
(Verizon - Existing)			4.00			1/2" Ice	9.00	5.71	0.10

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1" Ice	9.48	6.18	0.16
LNX-6514DS-VTM	C	From Leg	3.00	0.0000	80.00	No Ice	8.17	5.41	0.04
(Verizon - Existing)			0.00			1/2" Ice	8.63	5.86	0.09
			0.00			1" Ice	9.10	6.33	0.15
SBNHH-1D65B	C	From Leg	3.00	0.0000	80.00	No Ice	8.08	5.34	0.04
(Verizon - Existing)			-4.00			1/2" Ice	8.53	5.79	0.09
			0.00			1" Ice	9.00	6.26	0.15
DB844G65ZAXY	C	From Leg	3.00	0.0000	80.00	No Ice	4.34	3.61	0.02
(Verizon - Existing)			-6.00			1/2" Ice	4.66	3.92	0.05
			0.00			1" Ice	4.98	4.23	0.09
DB-T1-6Z-8AB-0Z	C	From Face	0.50	0.0000	80.00	No Ice	4.80	2.00	0.04
(Verizon - Existing)			0.00			1/2" Ice	5.07	2.19	0.08
			0.00			1" Ice	5.35	2.39	0.12
DB-T1-6Z-8AB-0Z	A	From Face	0.50	0.0000	80.00	No Ice	4.80	2.00	0.04
(Verizon - Existing)			0.00			1/2" Ice	5.07	2.19	0.08
			0.00			1" Ice	5.35	2.39	0.12
RRH2x60-AWS	A	From Face	2.00	0.0000	81.00	No Ice	3.36	2.03	0.06
(Verizon - Existing)			0.00			1/2" Ice	3.61	2.26	0.08
			0.00			1" Ice	3.88	2.50	0.11
RRH2x60-AWS	B	From Face	2.00	0.0000	81.00	No Ice	3.36	2.03	0.06
(Verizon - Existing)			0.00			1/2" Ice	3.61	2.26	0.08
			0.00			1" Ice	3.88	2.50	0.11
RRH2x60-AWS	C	From Face	2.00	0.0000	81.00	No Ice	3.36	2.03	0.06
(Verizon - Existing)			0.00			1/2" Ice	3.61	2.26	0.08
			0.00			1" Ice	3.88	2.50	0.11
RRH2x60-07-U	A	From Face	2.00	0.0000	81.00	No Ice	2.10	1.41	0.05
(Verizon - Existing)			0.00			1/2" Ice	2.29	1.56	0.07
			0.00			1" Ice	2.48	1.74	0.09
RRH2x60-07-U	B	From Face	2.00	0.0000	81.00	No Ice	2.10	1.41	0.05
(Verizon - Existing)			0.00			1/2" Ice	2.29	1.56	0.07
			0.00			1" Ice	2.48	1.74	0.09
RRH2x60-07-U	C	From Face	2.00	0.0000	81.00	No Ice	2.10	1.41	0.05
(Verizon - Existing)			0.00			1/2" Ice	2.29	1.56	0.07
			0.00			1" Ice	2.48	1.74	0.09
Pirod 12' T-Frame Sector Mount (1)	A	From Leg	2.00	0.0000	80.00	No Ice	13.60	13.60	0.47
			0.00			1/2" Ice	18.40	18.40	0.60
(Verizon - Existing)			0.00			1" Ice	23.20	23.20	0.73
Pirod 12' T-Frame Sector Mount (1)	B	From Leg	2.00	0.0000	80.00	No Ice	13.60	13.60	0.47
			0.00			1/2" Ice	18.40	18.40	0.60
(Verizon - Existing)			0.00			1" Ice	23.20	23.20	0.73
Pirod 12' T-Frame Sector Mount (1)	C	From Leg	2.00	0.0000	80.00	No Ice	13.60	13.60	0.47
			0.00			1/2" Ice	18.40	18.40	0.60
(Verizon - Existing)			0.00			1" Ice	23.20	23.20	0.73
DC6-48-60-18-8F Surge Arrestor	A	From Face	0.50	0.0000	70.00	No Ice	1.91	1.91	0.02
			0.50			1/2" Ice	2.10	2.10	0.04
(AT&T - Existing)			0.00			1" Ice	2.29	2.29	0.06
AM-X-CD-16-65-00T-RET(72")	A	From Face	2.00	0.0000	70.00	No Ice	8.02	4.64	0.05
			-5.00			1/2" Ice	8.48	5.09	0.10
(AT&T - Existing)			0.00			1" Ice	8.94	5.54	0.15
AM-X-CD-16-65-00T-RET(72")	B	From Face	2.00	0.0000	70.00	No Ice	8.02	4.64	0.05
			-5.00			1/2" Ice	8.48	5.09	0.10
(AT&T - Existing)			0.00			1" Ice	8.94	5.54	0.15
AM-X-CD-16-65-00T-RET(72")	C	From Face	2.00	0.0000	70.00	No Ice	8.02	4.64	0.05
			-5.00			1/2" Ice	8.48	5.09	0.10
(AT&T - Existing)			0.00			1" Ice	8.94	5.54	0.15
DMP65R-BU6DA	A	From Face	2.00	0.0000	70.00	No Ice	12.71	5.62	0.08
(AT&T - Proposed)			5.00			1/2" Ice	13.21	6.07	0.15

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1" Ice	13.71	6.53	0.23
DMP65R-BU6DA	B	From Face	2.00	0.0000	70.00	No Ice	12.71	5.62	0.08
(AT&T - Proposed)			5.00			1/2" Ice	13.21	6.07	0.15
			0.00			1" Ice	13.71	6.53	0.23
DMP65R-BU6DA	C	From Face	2.00	0.0000	70.00	No Ice	12.71	5.62	0.08
(AT&T - Proposed)			5.00			1/2" Ice	13.21	6.07	0.15
			0.00			1" Ice	13.71	6.53	0.23
EPBQ-654L8H6-L2	A	From Face	2.00	0.0000	70.00	No Ice	13.24	4.96	0.07
(AT&T - Existing)			0.00			1/2" Ice	13.74	5.41	0.15
			0.00			1" Ice	14.26	5.88	0.22
EPBQ-654L8H6-L2	B	From Face	2.00	0.0000	70.00	No Ice	13.24	4.96	0.07
(AT&T - Existing)			0.00			1/2" Ice	13.74	5.41	0.15
			0.00			1" Ice	14.26	5.88	0.22
EPBQ-654L8H6-L2	C	From Face	2.00	0.0000	70.00	No Ice	13.24	4.96	0.07
(AT&T - Existing)			0.00			1/2" Ice	13.74	5.41	0.15
			0.00			1" Ice	14.26	5.88	0.22
DTMABP7819VG12A TMA	A	From Face	2.00	0.0000	69.00	No Ice	0.00	0.00	0.02
(AT&T - Existing)			5.00			1/2" Ice	0.00	0.00	0.03
			0.00			1" Ice	0.00	0.00	0.04
DTMABP7819VG12A TMA	B	From Face	2.00	0.0000	69.00	No Ice	0.00	0.00	0.02
(AT&T - Existing)			5.00			1/2" Ice	0.00	0.00	0.03
			0.00			1" Ice	0.00	0.00	0.04
DTMABP7819VG12A TMA	C	From Face	2.00	0.0000	69.00	No Ice	0.00	0.00	0.02
(AT&T - Existing)			5.00			1/2" Ice	0.00	0.00	0.03
			0.00			1" Ice	0.00	0.00	0.04
RRUS-32	A	From Face	2.00	0.0000	69.00	No Ice	3.31	2.42	0.08
(AT&T - Existing)			0.00			1/2" Ice	3.56	2.64	0.10
			0.00			1" Ice	3.81	2.86	0.14
RRUS-32	B	From Face	2.00	0.0000	69.00	No Ice	3.31	2.42	0.08
(AT&T - Existing)			0.00			1/2" Ice	3.56	2.64	0.10
			0.00			1" Ice	3.81	2.86	0.14
RRUS-32	C	From Face	2.00	0.0000	69.00	No Ice	3.31	2.42	0.08
(AT&T - Existing)			0.00			1/2" Ice	3.56	2.64	0.10
			0.00			1" Ice	3.81	2.86	0.14
RRUS-32	A	From Face	2.00	0.0000	69.00	No Ice	3.31	2.42	0.08
(AT&T - Existing)			2.00			1/2" Ice	3.56	2.64	0.10
			0.00			1" Ice	3.81	2.86	0.14
RRUS-32	B	From Face	2.00	0.0000	69.00	No Ice	3.31	2.42	0.08
(AT&T - Existing)			2.00			1/2" Ice	3.56	2.64	0.10
			0.00			1" Ice	3.81	2.86	0.14
RRUS-32	C	From Face	2.00	0.0000	69.00	No Ice	3.31	2.42	0.08
(AT&T - Existing)			2.00			1/2" Ice	3.56	2.64	0.10
			0.00			1" Ice	3.81	2.86	0.14
4426 B66	A	From Face	2.00	0.0000	70.00	No Ice	1.65	0.73	0.05
(AT&T - Existing)			0.00			1/2" Ice	1.81	0.84	0.06
			0.00			1" Ice	1.98	0.97	0.08
4426 B66	B	From Face	2.00	0.0000	70.00	No Ice	1.65	0.73	0.05
(AT&T - Existing)			0.00			1/2" Ice	1.81	0.84	0.06
			0.00			1" Ice	1.98	0.97	0.08
4426 B66	C	From Face	2.00	0.0000	70.00	No Ice	1.65	0.73	0.05
(AT&T - Existing)			0.00			1/2" Ice	1.81	0.84	0.06
			0.00			1" Ice	1.98	0.97	0.08
4449 B5/B12	A	From Face	2.00	0.0000	70.00	No Ice	1.97	1.41	0.07
(AT&T - Proposed)			2.00			1/2" Ice	2.14	1.56	0.09
			0.00			1" Ice	2.33	1.73	0.11
4449 B5/B12	B	From Face	2.00	0.0000	70.00	No Ice	1.97	1.41	0.07
(AT&T - Proposed)			2.00			1/2" Ice	2.14	1.56	0.09

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1" Ice	2.33	1.73	0.11
4449 B5/B12	C	From Face	2.00	0.0000	70.00	No Ice	1.97	1.41	0.07
(AT&T - Proposed)			2.00			1/2" Ice	2.14	1.56	0.09
			0.00			1" Ice	2.33	1.73	0.11
4478 B14	A	From Face	2.00	0.0000	70.00	No Ice	1.84	1.06	0.06
(AT&T - Proposed)			0.00			1/2" Ice	2.01	1.20	0.08
			0.00			1" Ice	2.19	1.34	0.09
4478 B14	B	From Face	2.00	0.0000	70.00	No Ice	1.84	1.06	0.06
(AT&T - Proposed)			0.00			1/2" Ice	2.01	1.20	0.08
			0.00			1" Ice	2.19	1.34	0.09
4478 B14	C	From Face	2.00	0.0000	70.00	No Ice	1.84	1.06	0.06
(AT&T - Proposed)			0.00			1/2" Ice	2.01	1.20	0.08
			0.00			1" Ice	2.19	1.34	0.09
DC6-48-60-18-8F Surge	B	From Face	0.50	0.0000	70.00	No Ice	1.91	1.91	0.02
Arrestor			0.50			1/2" Ice	2.10	2.10	0.04
(AT&T - Existing)			0.00			1" Ice	2.29	2.29	0.06
DC6-48-60-18-8F Surge	C	From Face	0.50	0.0000	70.00	No Ice	1.91	1.91	0.02
Arrestor			0.50			1/2" Ice	2.10	2.10	0.04
(AT&T - Existing)			0.00			1" Ice	2.29	2.29	0.06
SitePro VFA12-HD	A	From Leg	2.25	0.0000	69.00	No Ice	21.00	21.00	0.75
(AT&T - Existing)			0.00			1/2" Ice	25.00	25.00	0.90
			0.00			1" Ice	29.00	29.00	1.05
SitePro VFA12-HD	B	From Leg	2.25	0.0000	69.00	No Ice	21.00	21.00	0.75
(AT&T - Existing)			0.00			1/2" Ice	25.00	25.00	0.90
			0.00			1" Ice	29.00	29.00	1.05
SitePro VFA12-HD	C	From Leg	2.25	0.0000	69.00	No Ice	21.00	21.00	0.75
(AT&T - Existing)			0.00			1/2" Ice	25.00	25.00	0.90
			0.00			1" Ice	29.00	29.00	1.05
10' x 2" Dia Omni	B	From Leg	3.00	0.0000	106.00	No Ice	2.00	2.00	0.02
(Municipal)			0.00			1/2" Ice	3.02	3.02	0.03
			5.00			1" Ice	4.07	4.07	0.05
2-ft Stand Off	B	From Leg	1.50	0.0000	106.00	No Ice	1.07	1.07	0.02
(Municipal)			0.00			1/2" Ice	1.62	1.62	0.03
			0.00			1" Ice	2.17	2.17	0.04
20' 4-Bay Dipole	C	From Leg	3.00	0.0000	106.00	No Ice	4.00	4.00	0.06
(Municipal)			0.00			1/2" Ice	6.00	6.00	0.10
			6.00			1" Ice	8.00	8.00	0.14
3' Side arm mount	B	From Leg	1.50	0.0000	85.00	No Ice	2.00	2.00	0.07
(Municipal)			0.00			1/2" Ice	2.60	2.60	0.08
			0.00			1" Ice	3.20	3.20	0.09
20' 4-Bay Dipole	B	From Leg	3.00	0.0000	85.00	No Ice	4.00	4.00	0.06
(Municipal)			0.00			1/2" Ice	6.00	6.00	0.10
			6.00			1" Ice	8.00	8.00	0.14
1' x 1' Panel	A	From Leg	1.00	0.0000	107.00	No Ice	1.20	0.32	0.02
			0.00			1/2" Ice	1.34	0.40	0.03
			0.00			1" Ice	1.48	0.49	0.04
1' x 1' Panel	B	From Leg	1.00	0.0000	104.00	No Ice	1.20	0.32	0.02
			0.00			1/2" Ice	1.34	0.40	0.03
			0.00			1" Ice	1.48	0.49	0.04
1' x 1' Panel	C	From Leg	1.00	0.0000	107.00	No Ice	1.20	0.32	0.02
			0.00			1/2" Ice	1.34	0.40	0.03
			0.00			1" Ice	1.48	0.49	0.04
1' x 1' Panel	C	From Leg	1.00	0.0000	99.50	No Ice	1.20	0.32	0.02
			0.00			1/2" Ice	1.34	0.40	0.03
			0.00			1" Ice	1.48	0.49	0.04

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft²	Weight K
2' Dish		Paraboloid w/Radome	None		Worst		108.00	2.00	No Ice	28.27	0.05
									1/2" Ice	29.07	0.10
									1" Ice	29.87	0.12

Tower Pressures - No Ice

G_H = 0.850

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	104.50	1.001	20	13.125	A	0.781	1.834	1.250	47.79	0.000	0.000
107.00-102.00					B	0.781	1.834		47.79	0.000	0.000
					C	0.781	1.834		47.79	0.000	0.000
T2	92.00	0.965	20	52.500	A	2.083	7.204	5.000	53.84	8.884	0.000
102.00-82.00					B	2.083	7.204		53.84	0.000	0.000
					C	2.083	7.204		53.84	0.000	0.000
T3 82.00-62.00	72.00	0.9	18	52.500	A	2.083	7.204	5.000	53.84	22.384	0.000
					B	2.083	7.204		53.84	2.730	0.000
					C	2.083	7.204		53.84	22.704	0.000
T4 62.00-42.00	52.00	0.82	17	52.500	A	2.083	7.209	5.000	53.81	28.720	0.000
					B	2.083	7.209		53.81	27.302	0.000
					C	2.083	7.209		53.81	37.840	0.000

Tower Pressure - With Ice

G_H = 0.850

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	104.50	1.001	5	1.683	14.528	A	0.781	10.678	4.055	35.39	0.000	0.000
107.00-102.00						B	0.781	10.678		35.39	0.000	0.000
						C	0.781	10.678		35.39	0.000	0.000
T2 102.00-82.00	92.00	0.965	5	1.662	58.040	A	2.083	38.477	16.080	39.64	41.544	0.000
						B	2.083	38.477		39.64	0.000	0.000
						C	2.083	38.477		39.64	0.000	0.000
T3 82.00-62.00	72.00	0.9	5	1.622	57.906	A	2.083	37.719	15.811	39.72	81.347	0.000
						B	2.083	37.719		39.72	9.464	0.000
						C	2.083	37.719		39.72	53.708	0.000
T4 62.00-42.00	52.00	0.82	4	1.570	57.733	A	2.083	36.780	15.465	39.79	95.038	0.000
						B	2.083	36.780		39.79	93.613	0.000
						C	2.083	36.780		39.79	88.852	0.000

Tower Pressure - Service

G_H = 0.850

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	104.50	1.001	8	13.125	A	0.781	1.834	1.250	47.79	0.000	0.000
107.00-102.00					B	0.781	1.834		47.79	0.000	0.000
					C	0.781	1.834		47.79	0.000	0.000
T2	92.00	0.965	8	52.500	A	2.083	7.204	5.000	53.84	8.884	0.000
102.00-82.00					B	2.083	7.204		53.84	0.000	0.000
					C	2.083	7.204		53.84	0.000	0.000
T3 82.00-62.00	72.00	0.9	7	52.500	A	2.083	7.204	5.000	53.84	22.384	0.000
					B	2.083	7.204		53.84	2.730	0.000
					C	2.083	7.204		53.84	22.704	0.000
T4 62.00-42.00	52.00	0.82	6	52.500	A	2.083	7.209	5.000	53.81	28.720	0.000
					B	2.083	7.209		53.81	27.302	0.000
					C	2.083	7.209		53.81	37.840	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.00	0.16	A	0.199	2.598	20	1	1	1.835	0.08	16.61	C
107.00-102.00			B	0.199	2.598		1	1	1.835			
			C	0.199	2.598		1	1	1.835			
T2	0.06	0.58	A	0.177	2.675	20	1	1	6.196	0.37	18.39	C
102.00-82.00		TA 0.17	B	0.177	2.675		1	1	6.196			
			C	0.177	2.675		1	1	6.196			
T3	0.27	0.58	A	0.177	2.675	18	1	1	6.196	0.71	35.44	C
82.00-62.00			B	0.177	2.675		1	1	6.196			
			C	0.177	2.675		1	1	6.196			
T4	0.55	0.58	A	0.177	2.675	17	1	1	6.199	1.04	52.00	C
62.00-42.00			B	0.177	2.675		1	1	6.199			
			C	0.177	2.675		1	1	6.199			
Sum Weight:	0.88	2.08								2.20		

Tower Forces - No Ice - Wind 45 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.00	0.16	A	0.199	2.598	20	0.825	1	1.698	0.08	15.37	C
107.00-102.00			B	0.199	2.598		0.825	1	1.698			
			C	0.199	2.598		0.825	1	1.698			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T2	0.06	0.58	A	0.177	2.675	20	0.825	1	5.831	0.35	17.57	C
102.00-82.00		TA 0.17	B	0.177	2.675		0.825	1	5.831			
			C	0.177	2.675		0.825	1	5.831			
T3	0.27	0.58	A	0.177	2.675	18	0.825	1	5.831	0.69	34.67	C
82.00-62.00			B	0.177	2.675		0.825	1	5.831			
			C	0.177	2.675		0.825	1	5.831			
T4	0.55	0.58	A	0.177	2.675	17	0.825	1	5.834	1.03	51.31	C
62.00-42.00			B	0.177	2.675		0.825	1	5.834			
			C	0.177	2.675		0.825	1	5.834			
Sum Weight:	0.88	2.08								2.15		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.00	0.16	A	0.199	2.598	20	0.8	1	1.679	0.08	15.19	C
107.00-102.00			B	0.199	2.598		0.8	1	1.679			
			C	0.199	2.598		0.8	1	1.679			
T2	0.06	0.58	A	0.177	2.675	20	0.8	1	5.779	0.35	17.46	C
102.00-82.00		TA 0.17	B	0.177	2.675		0.8	1	5.779			
			C	0.177	2.675		0.8	1	5.779			
T3	0.27	0.58	A	0.177	2.675	18	0.8	1	5.779	0.69	34.56	C
82.00-62.00			B	0.177	2.675		0.8	1	5.779			
			C	0.177	2.675		0.8	1	5.779			
T4	0.55	0.58	A	0.177	2.675	17	0.8	1	5.782	1.02	51.21	C
62.00-42.00			B	0.177	2.675		0.8	1	5.782			
			C	0.177	2.675		0.8	1	5.782			
Sum Weight:	0.88	2.08								2.14		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.00	0.16	A	0.199	2.598	20	0.85	1	1.718	0.08	15.55	C
107.00-102.00			B	0.199	2.598		0.85	1	1.718			
			C	0.199	2.598		0.85	1	1.718			
T2	0.06	0.58	A	0.177	2.675	20	0.85	1	5.883	0.35	17.69	C
102.00-82.00		TA 0.17	B	0.177	2.675		0.85	1	5.883			
			C	0.177	2.675		0.85	1	5.883			
T3	0.27	0.58	A	0.177	2.675	18	0.85	1	5.883	0.70	34.78	C
82.00-62.00			B	0.177	2.675		0.85	1	5.883			
			C	0.177	2.675		0.85	1	5.883			
T4	0.55	0.58	A	0.177	2.675	17	0.85	1	5.886	1.03	51.40	C
62.00-42.00			B	0.177	2.675		0.85	1	5.886			
			C	0.177	2.675		0.85	1	5.886			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
Sum Weight:	0.88	2.08								2.16		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.00	0.61	A	0.789	1.808	5	1	1	10.145	0.08	16.98	C
107.00-102.00			B	0.789	1.808		1	1	10.145			
			C	0.789	1.808		1	1	10.145			
T2	0.43	2.08	A	0.699	1.776	5	1	1	33.259	0.32	15.97	C
102.00-82.00		TA 0.56	B	0.699	1.776		1	1	33.259			
			C	0.699	1.776		1	1	33.259			
T3	1.79	2.02	A	0.687	1.776	5	1	1	32.340	0.43	21.34	C
82.00-62.00			B	0.687	1.776		1	1	32.340			
			C	0.687	1.776		1	1	32.340			
T4	3.50	1.95	A	0.673	1.777	4	1	1	31.223	0.46*	22.98	C
62.00-42.00			B	0.673	1.777		1	1	31.223			
			C	0.673	1.777		1	1	31.223			
Sum Weight:	5.72	7.22			*2.1A_g limit					1.29		

Tower Forces - With Ice - Wind 45 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.00	0.61	A	0.789	1.808	5	0.825	1	10.008	0.08	16.75	C
107.00-102.00			B	0.789	1.808		0.825	1	10.008			
			C	0.789	1.808		0.825	1	10.008			
T2	0.43	2.08	A	0.699	1.776	5	0.825	1	32.894	0.32	15.82	C
102.00-82.00		TA 0.56	B	0.699	1.776		0.825	1	32.894			
			C	0.699	1.776		0.825	1	32.894			
T3	1.79	2.02	A	0.687	1.776	5	0.825	1	31.976	0.42	21.21	C
82.00-62.00			B	0.687	1.776		0.825	1	31.976			
			C	0.687	1.776		0.825	1	31.976			
T4	3.50	1.95	A	0.673	1.777	4	0.825	1	30.858	0.46*	22.98	C
62.00-42.00			B	0.673	1.777		0.825	1	30.858			
			C	0.673	1.777		0.825	1	30.858			
Sum Weight:	5.72	7.22			*2.1A_g limit					1.28		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.00	0.61	A	0.789	1.808	5	0.8	1	9.989	0.08	16.72	C
107.00-102.00			B	0.789	1.808		0.8	1	9.989			
			C	0.789	1.808		0.8	1	9.989			
T2	0.43	2.08	A	0.699	1.776	5	0.8	1	32.842	0.32	15.80	C
102.00-82.00		TA 0.56	B	0.699	1.776		0.8	1	32.842			
			C	0.699	1.776		0.8	1	32.842			
T3	1.79	2.02	A	0.687	1.776	5	0.8	1	31.924	0.42	21.19	C
82.00-62.00			B	0.687	1.776		0.8	1	31.924			
			C	0.687	1.776		0.8	1	31.924			
T4	3.50	1.95	A	0.673	1.777	4	0.8	1	30.806	0.46*	22.98	C
62.00-42.00			B	0.673	1.777		0.8	1	30.806			
			C	0.673	1.777		0.8	1	30.806			
Sum Weight:	5.72	7.22			*2.1A_g limit					1.28		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.00	0.61	A	0.789	1.808	5	0.85	1	10.028	0.08	16.78	C
107.00-102.00			B	0.789	1.808		0.85	1	10.028			
			C	0.789	1.808		0.85	1	10.028			
T2	0.43	2.08	A	0.699	1.776	5	0.85	1	32.947	0.32	15.85	C
102.00-82.00		TA 0.56	B	0.699	1.776		0.85	1	32.947			
			C	0.699	1.776		0.85	1	32.947			
T3	1.79	2.02	A	0.687	1.776	5	0.85	1	32.028	0.42	21.23	C
82.00-62.00			B	0.687	1.776		0.85	1	32.028			
			C	0.687	1.776		0.85	1	32.028			
T4	3.50	1.95	A	0.673	1.777	4	0.85	1	30.910	0.46*	22.98	C
62.00-42.00			B	0.673	1.777		0.85	1	30.910			
			C	0.673	1.777		0.85	1	30.910			
Sum Weight:	5.72	7.22			*2.1A_g limit					1.28		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.00	0.16	A	0.199	2.598	8	1	1	1.835	0.03	6.35	C
107.00-102.00			B	0.199	2.598		1	1	1.835			
			C	0.199	2.598		1	1	1.835			
T2	0.06	0.58	A	0.177	2.675	8	1	1	6.196	0.14	7.04	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
102.00-82.00		TA 0.17	B	0.177	2.675		1	1	6.196			
			C	0.177	2.675		1	1	6.196			
T3	0.27	0.58	A	0.177	2.675	7	1	1	6.196	0.27	13.56	C
82.00-62.00			B	0.177	2.675		1	1	6.196			
			C	0.177	2.675		1	1	6.196			
T4	0.55	0.58	A	0.177	2.675	6	1	1	6.199	0.40	19.90	C
62.00-42.00			B	0.177	2.675		1	1	6.199			
			C	0.177	2.675		1	1	6.199			
Sum Weight:	0.88	2.08								0.84		

Tower Forces - Service - Wind 45 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.00	0.16	A	0.199	2.598	8	0.825	1	1.698	0.03	5.88	C
107.00-102.00			B	0.199	2.598		0.825	1	1.698			
			C	0.199	2.598		0.825	1	1.698			
T2	0.06	0.58	A	0.177	2.675	8	0.825	1	5.831	0.13	6.72	C
102.00-82.00		TA 0.17	B	0.177	2.675		0.825	1	5.831			
			C	0.177	2.675		0.825	1	5.831			
T3	0.27	0.58	A	0.177	2.675	7	0.825	1	5.831	0.27	13.27	C
82.00-62.00			B	0.177	2.675		0.825	1	5.831			
			C	0.177	2.675		0.825	1	5.831			
T4	0.55	0.58	A	0.177	2.675	6	0.825	1	5.834	0.39	19.63	C
62.00-42.00			B	0.177	2.675		0.825	1	5.834			
			C	0.177	2.675		0.825	1	5.834			
Sum Weight:	0.88	2.08								0.82		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.00	0.16	A	0.199	2.598	8	0.8	1	1.679	0.03	5.81	C
107.00-102.00			B	0.199	2.598		0.8	1	1.679			
			C	0.199	2.598		0.8	1	1.679			
T2	0.06	0.58	A	0.177	2.675	8	0.8	1	5.779	0.13	6.68	C
102.00-82.00		TA 0.17	B	0.177	2.675		0.8	1	5.779			
			C	0.177	2.675		0.8	1	5.779			
T3	0.27	0.58	A	0.177	2.675	7	0.8	1	5.779	0.26	13.22	C
82.00-62.00			B	0.177	2.675		0.8	1	5.779			
			C	0.177	2.675		0.8	1	5.779			
T4	0.55	0.58	A	0.177	2.675	6	0.8	1	5.782	0.39	19.59	C
62.00-42.00			B	0.177	2.675		0.8	1	5.782			
			C	0.177	2.675		0.8	1	5.782			
Sum Weight:	0.88	2.08								0.82		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.00	0.16	A	0.199	2.598	8	0.85	1	1.718	0.03	5.95	C
107.00-102.00			B	0.199	2.598		0.85	1	1.718			
			C	0.199	2.598		0.85	1	1.718			
T2	0.06	0.58	A	0.177	2.675	8	0.85	1	5.883	0.14	6.77	C
102.00-82.00		TA 0.17	B	0.177	2.675		0.85	1	5.883			
			C	0.177	2.675		0.85	1	5.883			
T3	0.27	0.58	A	0.177	2.675	7	0.85	1	5.883	0.27	13.31	C
82.00-62.00			B	0.177	2.675		0.85	1	5.883			
			C	0.177	2.675		0.85	1	5.883			
T4	0.55	0.58	A	0.177	2.675	6	0.85	1	5.886	0.39	19.67	C
62.00-42.00			B	0.177	2.675		0.85	1	5.886			
			C	0.177	2.675		0.85	1	5.886			
Sum Weight:	0.88	2.08								0.82		

Force Totals (Does not include forces on guys)

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Torques kip-ft
Leg Weight	1.23			
Bracing Weight	0.85			
Total Member Self-Weight	2.08			
Guy Weight	0.33			
Total Weight	9.98			
Wind 0 deg - No Ice		-0.04	-6.88	0.24
Wind 30 deg - No Ice		3.40	-5.90	0.42
Wind 45 deg - No Ice		4.82	-4.80	0.48
Wind 60 deg - No Ice		5.91	-3.38	0.50
Wind 90 deg - No Ice		6.86	0.04	0.44
Wind 120 deg - No Ice		6.00	3.47	0.26
Wind 135 deg - No Ice		4.89	4.88	0.14
Wind 150 deg - No Ice		3.46	5.94	0.01
Wind 180 deg - No Ice		0.04	6.82	-0.24
Wind 210 deg - No Ice		-3.40	5.90	-0.42
Wind 225 deg - No Ice		-4.82	4.80	-0.48
Wind 240 deg - No Ice		-5.96	3.41	-0.50
Wind 270 deg - No Ice		-6.86	-0.04	-0.44
Wind 300 deg - No Ice		-5.95	-3.44	-0.26
Wind 315 deg - No Ice		-4.87	-4.85	-0.14
Wind 330 deg - No Ice		-3.46	-5.94	-0.01
Member Ice	5.14			
Guy Ice	1.87			
Total Weight Ice	32.26			
Wind 0 deg - Ice		-0.01	-3.11	0.16
Wind 30 deg - Ice		1.55	-2.68	0.26

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Torques kip-ft
Wind 45 deg - Ice		2.19	-2.19	0.28
Wind 60 deg - Ice		2.69	-1.54	0.28
Wind 90 deg - Ice		3.11	0.01	0.24
Wind 120 deg - Ice		2.70	1.56	0.12
Wind 135 deg - Ice		2.21	2.20	0.05
Wind 150 deg - Ice		1.56	2.69	-0.02
Wind 180 deg - Ice		0.01	3.10	-0.16
Wind 210 deg - Ice		-1.55	2.68	-0.26
Wind 225 deg - Ice		-2.19	2.19	-0.28
Wind 240 deg - Ice		-2.69	1.55	-0.28
Wind 270 deg - Ice		-3.11	-0.01	-0.24
Wind 300 deg - Ice		-2.70	-1.56	-0.12
Wind 315 deg - Ice		-2.21	-2.20	-0.05
Wind 330 deg - Ice		-1.56	-2.69	0.02
Total Weight	9.98			
Wind 0 deg - Service		-0.01	-2.63	0.09
Wind 30 deg - Service		1.30	-2.26	0.16
Wind 45 deg - Service		1.84	-1.84	0.18
Wind 60 deg - Service		2.26	-1.29	0.19
Wind 90 deg - Service		2.62	0.01	0.17
Wind 120 deg - Service		2.29	1.33	0.10
Wind 135 deg - Service		1.87	1.87	0.05
Wind 150 deg - Service		1.32	2.27	0.00
Wind 180 deg - Service		0.01	2.61	-0.09
Wind 210 deg - Service		-1.30	2.26	-0.16
Wind 225 deg - Service		-1.84	1.84	-0.18
Wind 240 deg - Service		-2.28	1.30	-0.19
Wind 270 deg - Service		-2.62	-0.01	-0.17
Wind 300 deg - Service		-2.27	-1.32	-0.10
Wind 315 deg - Service		-1.86	-1.86	-0.05
Wind 330 deg - Service		-1.32	-2.27	-0.00

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice+1.0 Guy
3	1.2 Dead+1.6 Wind 30 deg - No Ice+1.0 Guy
4	1.2 Dead+1.6 Wind 45 deg - No Ice+1.0 Guy
5	1.2 Dead+1.6 Wind 60 deg - No Ice+1.0 Guy
6	1.2 Dead+1.6 Wind 90 deg - No Ice+1.0 Guy
7	1.2 Dead+1.6 Wind 120 deg - No Ice+1.0 Guy
8	1.2 Dead+1.6 Wind 135 deg - No Ice+1.0 Guy
9	1.2 Dead+1.6 Wind 150 deg - No Ice+1.0 Guy
10	1.2 Dead+1.6 Wind 180 deg - No Ice+1.0 Guy
11	1.2 Dead+1.6 Wind 210 deg - No Ice+1.0 Guy
12	1.2 Dead+1.6 Wind 225 deg - No Ice+1.0 Guy
13	1.2 Dead+1.6 Wind 240 deg - No Ice+1.0 Guy
14	1.2 Dead+1.6 Wind 270 deg - No Ice+1.0 Guy
15	1.2 Dead+1.6 Wind 300 deg - No Ice+1.0 Guy
16	1.2 Dead+1.6 Wind 315 deg - No Ice+1.0 Guy
17	1.2 Dead+1.6 Wind 330 deg - No Ice+1.0 Guy
18	1.2 Dead+1.0 Ice+1.0 Temp+Guy

Comb. No.	Description
19	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy
20	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy
21	1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp+1.0 Guy
22	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy
23	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy
24	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy
25	1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp+1.0 Guy
26	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy
27	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy
28	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy
29	1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp+1.0 Guy
30	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy
31	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy
32	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy
33	1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp+1.0 Guy
34	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy
35	Dead+Wind 0 deg - Service+Guy
36	Dead+Wind 30 deg - Service+Guy
37	Dead+Wind 45 deg - Service+Guy
38	Dead+Wind 60 deg - Service+Guy
39	Dead+Wind 90 deg - Service+Guy
40	Dead+Wind 120 deg - Service+Guy
41	Dead+Wind 135 deg - Service+Guy
42	Dead+Wind 150 deg - Service+Guy
43	Dead+Wind 180 deg - Service+Guy
44	Dead+Wind 210 deg - Service+Guy
45	Dead+Wind 225 deg - Service+Guy
46	Dead+Wind 240 deg - Service+Guy
47	Dead+Wind 270 deg - Service+Guy
48	Dead+Wind 300 deg - Service+Guy
49	Dead+Wind 315 deg - Service+Guy
50	Dead+Wind 330 deg - Service+Guy

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	107 - 102	Leg	Max Tension	10	2.96	-0.00	0.04
			Max. Compression	13	-7.94	-0.05	0.01
			Max. Mx	6	-4.53	0.06	-0.02
			Max. My	16	-5.89	0.04	-0.06
			Max. Vy	14	-0.54	-0.00	0.01
			Max. Vx	10	0.54	-0.00	-0.00
		Diagonal	Max Tension	14	4.52	0.00	0.00
		Horizontal	Max Tension	1	0.00	0.00	0.00
			Max. Compression	12	-5.49	0.00	0.00
			Max. Mx	24	-5.46	-0.01	0.00
			Max. Vy	24	0.01	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	5	-2.87	0.00	0.00
			Max. Mx	31	-2.76	-0.01	0.00
			Max. Vy	31	0.01	0.00	0.00
		Bottom Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	13	-2.80	0.00	0.00
			Max. Mx	25	-2.68	-0.01	0.00
			Max. Vy	25	0.01	0.00	0.00
T2	102 - 82	Leg	Max Tension	7	3.90	-0.16	-0.11
			Max. Compression	10	-22.32	-0.01	-0.21

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	6	-17.19	-0.18	0.00
			Max. My	10	-22.32	-0.01	-0.21
			Max. Vy	6	-0.54	-0.17	-0.02
			Max. Vx	10	-0.78	-0.01	-0.21
		Diagonal	Max Tension	9	4.40	0.00	0.00
		Horizontal	Max Tension	1	0.00	0.00	0.00
			Max. Compression	2	-5.69	0.00	0.00
			Max. Mx	25	-4.22	-0.01	0.00
			Max. Vy	25	-0.01	0.00	0.00
			Max. Vx	13	-0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	15	-2.54	0.00	0.00
			Max. Mx	26	-2.47	-0.01	0.00
			Max. Vy	26	-0.01	0.00	0.00
		Bottom Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	10	-2.60	0.00	0.00
			Max. Mx	27	-2.09	-0.01	0.00
			Max. Vy	27	-0.01	0.00	0.00
			Max. Vx	13	-0.00	0.00	0.00
		Guy A	Bottom Tension	10	6.36		
			Top Tension	10	6.40		
			Top Cable Vert	10	5.73		
			Top Cable Norm	10	2.85		
			Top Cable Tan	10	0.00		
			Bot Cable Vert	10	-5.66		
			Bot Cable Norm	10	2.91		
			Bot Cable Tan	10	0.00		
		Guy B	Bottom Tension	14	7.47		
			Top Tension	14	7.51		
			Top Cable Vert	14	7.11		
			Top Cable Norm	14	2.42		
			Top Cable Tan	14	0.01		
			Bot Cable Vert	14	-7.05		
			Bot Cable Norm	14	2.48		
			Bot Cable Tan	14	0.02		
		Guy C	Bottom Tension	6	7.26		
			Top Tension	6	7.30		
			Top Cable Vert	6	6.85		
			Top Cable Norm	6	2.51		
			Top Cable Tan	6	0.01		
			Bot Cable Vert	6	-6.79		
			Bot Cable Norm	6	2.57		
			Bot Cable Tan	6	0.02		
		Torque Arm Top	Max Tension	14	7.52	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	32	4.73	-0.02	0.00
			Max. My	14	7.50	0.00	0.00
			Max. Vy	32	0.02	0.00	0.00
			Max. Vx	14	-0.00	0.00	0.00
		Torque Arm Bottom	Max Tension	8	0.50	0.00	0.00
			Max. Compression	14	-5.67	0.00	0.00
			Max. Mx	34	-1.37	-0.01	0.00
			Max. My	13	-3.71	0.00	0.00
			Max. Vy	34	0.02	0.00	0.00
			Max. Vx	13	-0.00	0.00	0.00
T3	82 - 62	Leg	Max Tension	15	8.70	-0.20	-0.12
			Max. Compression	2	-28.93	-0.00	-0.11
			Max. Mx	6	-13.49	0.42	-0.00
			Max. My	2	-19.99	0.00	-0.41
			Max. Vy	14	-3.25	0.07	0.01
			Max. Vx	10	3.43	-0.00	-0.06

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Diagonal	Max Tension	16	6.33	0.00	0.00
		Horizontal	Max Tension	1	0.00	0.00	0.00
			Max. Compression	10	-5.01	0.00	0.00
			Max. Mx	31	-4.24	-0.01	0.00
			Max. My	14	-4.02	0.00	-0.00
			Max. Vy	31	-0.01	0.00	0.00
			Max. Vx	14	-0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	15	-2.40	0.00	0.00
			Max. Mx	27	-2.10	-0.01	0.00
			Max. Vy	27	-0.01	0.00	0.00
			Max. Vx	13	-0.00	0.00	0.00
		Bottom Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	16	-1.87	0.00	0.00
			Max. Mx	28	-1.48	-0.01	0.00
			Max. Vy	28	-0.01	0.00	0.00
			Max. Vx	13	-0.00	0.00	0.00
T4	62 - 42	Leg	Max Tension	15	8.70	0.06	0.03
			Max. Compression	2	-31.61	0.00	-0.04
			Max. Mx	14	-9.68	0.34	0.12
			Max. My	10	-10.17	-0.00	-0.35
			Max. Vy	14	-3.25	0.34	0.12
			Max. Vx	10	3.43	-0.00	-0.35
		Diagonal	Max Tension	15	4.17	0.00	0.00
		Horizontal	Max Tension	1	0.00	0.00	0.00
			Max. Compression	6	-4.20	0.00	0.00
			Max. Mx	26	-3.36	-0.01	0.00
			Max. Vy	26	0.01	0.00	0.00
			Max. Vx	13	-0.00	0.00	0.00
		Top Girt	Max Tension	2	1.97	0.00	0.00
			Max. Compression	15	-1.56	0.00	0.00
			Max. Mx	28	0.75	-0.01	0.00
			Max. Vy	28	0.01	0.00	0.00
			Max. Vx	14	-0.00	0.00	0.00
		Bottom Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	17	-0.15	0.00	0.00
			Max. Mx	31	-0.13	-0.01	0.00
			Max. Vy	31	0.01	0.00	0.00
			Max. Vx	13	-0.00	0.00	0.00
		Guy A	Bottom Tension	10	11.36		
			Top Tension	10	11.38		
			Top Cable Vert	10	6.59		
			Top Cable Norm	10	9.28		
			Top Cable Tan	10	0.00		
			Bot Cable Vert	10	-6.53		
			Bot Cable Norm	10	9.30		
			Bot Cable Tan	10	0.00		
		Guy B	Bottom Tension	15	14.10		
			Top Tension	15	14.12		
			Top Cable Vert	15	10.22		
			Top Cable Norm	15	9.75		
			Top Cable Tan	15	0.00		
			Bot Cable Vert	15	-10.17		
			Bot Cable Norm	15	9.77		
			Bot Cable Tan	15	0.00		
		Guy C	Bottom Tension	5	13.43		
			Top Tension	5	13.45		
			Top Cable Vert	5	9.38		
			Top Cable Norm	5	9.64		
			Top Cable Tan	5	0.00		
			Bot Cable Vert	5	-9.33		

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Bot Cable Norm	5	9.66		
			Bot Cable Tan	5	0.00		
		Base Beam	Max Tension	1	0.00	0.00	0.00
			Max. Compression	6	-3.50	0.02	0.00
			Max. Mx	22	-22.04	-31.79	-0.05
			Max. My	14	-15.30	-22.06	0.13
			Max. Vy	22	-22.04	-31.79	-0.05
			Max. Vx	14	0.09	-22.06	0.13

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Guy C @ 20.92 ft Elev 43 ft Azimuth 240 deg	Max. Vert	13	-1.11	-0.29	0.17
	Max. H_x	13	-1.11	-0.29	0.17
	Max. H_z	5	-22.67	-12.70	7.33
	Min. Vert	5	-22.67	-12.70	7.33
	Min. H_x	5	-22.67	-12.70	7.33
	Min. H_z	13	-1.11	-0.29	0.17
Guy B @ 19.5 ft Elev 43 ft Azimuth 120 deg	Max. Vert	7	-1.32	0.33	0.20
	Max. H_x	15	-23.99	12.63	7.29
	Max. H_z	15	-23.99	12.63	7.29
	Min. Vert	15	-23.99	12.63	7.29
	Min. H_x	7	-1.32	0.33	0.20
	Min. H_z	7	-1.32	0.33	0.20
Guy A @ 28.2 ft Elev 43 ft Azimuth 0 deg	Max. Vert	2	-0.62	0.00	-0.30
	Max. H_x	14	-8.70	0.14	-7.32
	Max. H_z	2	-0.62	0.00	-0.30
	Min. Vert	10	-17.73	-0.01	-15.04
	Min. H_x	7	-14.27	-0.14	-12.17
	Min. H_z	10	-17.73	-0.01	-15.04
Mast	Max. Vert	22	66.11	0.23	-0.12
	Max. H_x	6	45.16	0.64	-0.04
	Max. H_z	10	42.60	0.01	0.33
	Max. M_x	1	0.00	-0.01	-0.04
	Max. M_z	1	0.00	-0.01	-0.04
	Max. Torsion	1	0.00	-0.01	-0.04
	Min. Vert	43	40.91	-0.00	0.04
	Min. H_x	14	45.87	-0.68	-0.08
	Min. H_z	2	51.20	-0.05	-0.66
	Min. M_x	1	0.00	-0.01	-0.04
	Min. M_z	1	0.00	-0.01	-0.04
	Min. Torsion	1	0.00	-0.01	-0.04

Tower Mast Reaction Summary

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead Only	40.96	0.01	0.04	0.00	0.00	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice+1.0 Guy	51.20	0.05	0.66	0.00	0.00	0.00
1.2 Dead+1.6 Wind 30 deg - No Ice+1.0 Guy	47.13	-0.28	0.51	0.00	0.00	0.00
1.2 Dead+1.6 Wind 45 deg - No Ice+1.0 Guy	44.47	-0.43	0.40	0.00	0.00	0.00
1.2 Dead+1.6 Wind 60 deg - No Ice+1.0 Guy	43.61	-0.55	0.25	0.00	0.00	0.00
1.2 Dead+1.6 Wind 90 deg - No Ice+1.0 Guy	45.16	-0.64	0.04	0.00	0.00	0.00
1.2 Dead+1.6 Wind 120 deg - No Ice+1.0 Guy	46.78	-0.52	-0.12	0.00	0.00	0.00
1.2 Dead+1.6 Wind 135 deg - No Ice+1.0 Guy	45.65	-0.43	-0.20	0.00	0.00	0.00
1.2 Dead+1.6 Wind 150 deg - No Ice+1.0 Guy	43.83	-0.33	-0.28	0.00	0.00	0.00
1.2 Dead+1.6 Wind 180 deg - No Ice+1.0 Guy	42.60	-0.01	-0.33	0.00	0.00	0.00
1.2 Dead+1.6 Wind 210 deg - No Ice+1.0 Guy	43.92	0.31	-0.26	0.00	0.00	0.00
1.2 Dead+1.6 Wind 225 deg - No Ice+1.0 Guy	45.92	0.43	-0.17	0.00	0.00	0.00
1.2 Dead+1.6 Wind 240 deg - No Ice+1.0 Guy	47.38	0.56	-0.09	0.00	0.00	0.00
1.2 Dead+1.6 Wind 270 deg - No Ice+1.0 Guy	45.87	0.68	0.08	0.00	0.00	0.00
1.2 Dead+1.6 Wind 300 deg - No Ice+1.0 Guy	43.79	0.60	0.30	0.00	0.00	0.00
1.2 Dead+1.6 Wind 315 deg - No Ice+1.0 Guy	44.93	0.49	0.45	0.00	0.00	0.00
1.2 Dead+1.6 Wind 330 deg - No Ice+1.0 Guy	47.80	0.36	0.56	0.00	0.00	0.00
1.2 Dead+1.0 Ice+1.0 Temp+Guy	65.73	-0.01	0.04	0.00	0.00	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy	65.99	0.00	0.16	0.00	0.00	0.00
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy	66.06	-0.13	0.15	0.00	0.00	0.00
1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp+1.0 Guy	66.10	-0.19	0.14	0.00	0.00	0.00
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy	66.11	-0.23	0.12	0.00	0.00	0.00
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy	66.04	-0.25	0.06	0.00	0.00	0.00
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy	65.93	-0.21	-0.02	0.00	0.00	0.00
1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp+1.0 Guy	65.89	-0.18	-0.06	0.00	0.00	0.00
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy	65.88	-0.13	-0.09	0.00	0.00	0.00
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy	65.87	-0.02	-0.11	0.00	0.00	0.00
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy	65.85	0.10	-0.08	0.00	0.00	0.00
1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp+1.0 Guy	65.86	0.14	-0.05	0.00	0.00	0.00
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy	65.89	0.19	-0.01	0.00	0.00	0.00
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy	66.02	0.23	0.08	0.00	0.00	0.00

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy	66.11	0.22	0.14	0.00	0.00	0.00
1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp+1.0 Guy	66.10	0.18	0.15	0.00	0.00	0.00
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy	66.06	0.13	0.16	0.00	0.00	0.00
Dead+Wind 0 deg - Service+Guy	41.03	0.02	0.13	0.00	0.00	0.00
Dead+Wind 30 deg - Service+Guy	41.03	-0.06	0.11	0.00	0.00	0.00
Dead+Wind 45 deg - Service+Guy	41.03	-0.09	0.10	0.00	0.00	0.00
Dead+Wind 60 deg - Service+Guy	41.02	-0.11	0.08	0.00	0.00	0.00
Dead+Wind 90 deg - Service+Guy	40.99	-0.14	0.04	0.00	0.00	0.00
Dead+Wind 120 deg - Service+Guy	40.96	-0.12	-0.00	0.00	0.00	0.00
Dead+Wind 135 deg - Service+Guy	40.94	-0.10	-0.02	0.00	0.00	0.00
Dead+Wind 150 deg - Service+Guy	40.93	-0.07	-0.03	0.00	0.00	0.00
Dead+Wind 180 deg - Service+Guy	40.91	0.00	-0.04	0.00	0.00	0.00
Dead+Wind 210 deg - Service+Guy	40.91	0.08	-0.02	0.00	0.00	0.00
Dead+Wind 225 deg - Service+Guy	40.92	0.11	-0.01	0.00	0.00	0.00
Dead+Wind 240 deg - Service+Guy	40.93	0.13	0.01	0.00	0.00	0.00
Dead+Wind 270 deg - Service+Guy	40.97	0.15	0.05	0.00	0.00	0.00
Dead+Wind 300 deg - Service+Guy	41.00	0.14	0.09	0.00	0.00	0.00
Dead+Wind 315 deg - Service+Guy	41.01	0.12	0.11	0.00	0.00	0.00
Dead+Wind 330 deg - Service+Guy	41.02	0.09	0.12	0.00	0.00	0.00

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-9.98	0.00	-0.00	9.98	-0.00	0.047%
2	-0.06	-11.90	-11.51	0.06	11.90	11.50	0.094%
3	5.70	-11.90	-9.88	-5.70	11.90	9.87	0.050%
4	8.09	-11.89	-8.04	-8.09	11.89	8.03	0.059%
5	9.92	-11.90	-5.66	-9.92	11.89	5.65	0.045%
6	11.52	-11.91	0.06	-11.51	11.91	-0.05	0.046%
7	10.06	-11.93	5.81	-10.06	11.93	-5.81	0.053%
8	8.21	-11.93	8.16	-8.20	11.93	-8.16	0.068%
9	5.80	-11.92	9.94	-5.80	11.92	-9.94	0.045%
10	0.06	-11.91	11.42	-0.06	11.91	-11.42	0.027%
11	-5.70	-11.92	9.88	5.69	11.92	-9.88	0.058%
12	-8.09	-11.92	8.04	8.08	11.92	-8.04	0.045%
13	-10.00	-11.92	5.71	9.99	11.92	-5.70	0.086%
14	-11.52	-11.91	-0.06	11.51	11.91	0.06	0.039%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
15	-9.98	-11.89	-5.77	9.98	11.89	5.76	0.023%
16	-8.17	-11.89	-8.13	8.18	11.89	8.12	0.045%
17	-5.80	-11.90	-9.94	5.81	11.90	9.93	0.067%
18	0.00	-34.19	0.00	-0.00	34.19	-0.00	0.010%
19	-0.01	-34.18	-3.65	0.01	34.18	3.65	0.012%
20	1.83	-34.18	-3.16	-1.83	34.18	3.15	0.015%
21	2.60	-34.17	-2.57	-2.60	34.17	2.57	0.018%
22	3.19	-34.17	-1.82	-3.19	34.17	1.81	0.019%
23	3.69	-34.19	0.01	-3.69	34.19	-0.02	0.015%
24	3.21	-34.21	1.84	-3.21	34.21	-1.84	0.009%
25	2.62	-34.21	2.59	-2.62	34.21	-2.60	0.018%
26	1.85	-34.20	3.17	-1.85	34.20	-3.17	0.012%
27	0.01	-34.20	3.65	-0.02	34.20	-3.65	0.019%
28	-1.83	-34.20	3.16	1.83	34.20	-3.16	0.014%
29	-2.60	-34.20	2.57	2.59	34.20	-2.58	0.021%
30	-3.19	-34.20	1.82	3.19	34.20	-1.82	0.010%
31	-3.69	-34.19	-0.01	3.69	34.19	0.01	0.018%
32	-3.20	-34.17	-1.84	3.20	34.17	1.83	0.007%
33	-2.61	-34.17	-2.59	2.61	34.17	2.59	0.020%
34	-1.85	-34.17	-3.17	1.85	34.17	3.16	0.017%
35	-0.01	-9.98	-2.75	0.01	9.98	2.75	0.035%
36	1.36	-9.98	-2.36	-1.36	9.98	2.36	0.032%
37	1.93	-9.98	-1.92	-1.93	9.98	1.92	0.033%
38	2.37	-9.98	-1.35	-2.37	9.98	1.35	0.035%
39	2.75	-9.98	0.01	-2.75	9.98	-0.02	0.035%
40	2.41	-9.98	1.39	-2.40	9.98	-1.39	0.025%
41	1.96	-9.98	1.95	-1.96	9.98	-1.95	0.017%
42	1.39	-9.98	2.38	-1.39	9.98	-2.38	0.012%
43	0.01	-9.98	2.73	-0.01	9.98	-2.73	0.007%
44	-1.36	-9.98	2.36	1.36	9.98	-2.36	0.017%
45	-1.93	-9.98	1.92	1.93	9.98	-1.92	0.022%
46	-2.39	-9.98	1.37	2.39	9.98	-1.36	0.032%
47	-2.75	-9.98	-0.01	2.75	9.98	0.01	0.044%
48	-2.39	-9.98	-1.38	2.38	9.98	1.38	0.044%
49	-1.95	-9.98	-1.94	1.95	9.98	1.94	0.041%
50	-1.39	-9.98	-2.38	1.39	9.98	2.37	0.037%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	7	0.00000001	0.00038656
2	Yes	13	0.00089738	0.00056514
3	Yes	12	0.00000001	0.00035969
4	Yes	9	0.00093703	0.00064360
5	Yes	7	0.00091054	0.00079089
6	Yes	10	0.00000001	0.00034795
7	Yes	11	0.00000001	0.00034148
8	Yes	10	0.00087875	0.00043845
9	Yes	9	0.00000001	0.00032075
10	Yes	6	0.00000001	0.00051522
11	Yes	9	0.00000001	0.00042004
12	Yes	11	0.00000001	0.00030176
13	Yes	11	0.00097619	0.00056346
14	Yes	11	0.00000001	0.00029907
15	Yes	8	0.00000001	0.00048716

16	Yes	10	0.00000001	0.00046755
17	Yes	12	0.00079151	0.00047128
18	Yes	7	0.00000001	0.00026986
19	Yes	7	0.00000001	0.00028218
20	Yes	7	0.00000001	0.00037216
21	Yes	7	0.00000001	0.00044557
22	Yes	7	0.00000001	0.00047911
23	Yes	7	0.00000001	0.00040647
24	Yes	7	0.00000001	0.00024495
25	Yes	6	0.00000001	0.00039635
26	Yes	6	0.00000001	0.00026656
27	Yes	5	0.00000001	0.00030903
28	Yes	6	0.00000001	0.00031839
29	Yes	6	0.00000001	0.00046806
30	Yes	7	0.00000001	0.00029255
31	Yes	7	0.00000001	0.00048657
32	Yes	8	0.00000001	0.00022644
33	Yes	7	0.00000001	0.00053471
34	Yes	7	0.00000001	0.00044461
35	Yes	5	0.00000001	0.00021515
36	Yes	5	0.00000001	0.00020751
37	Yes	5	0.00000001	0.00023258
38	Yes	5	0.00000001	0.00024291
39	Yes	5	0.00000001	0.00024098
40	Yes	5	0.00000001	0.00015582
41	Yes	5	0.00000001	0.00010694
42	Yes	5	0.00000001	0.00008557
43	Yes	5	0.00000001	0.00007285
44	Yes	5	0.00000001	0.00013080
45	Yes	5	0.00000001	0.00015945
46	Yes	5	0.00000001	0.00022048
47	Yes	5	0.00000001	0.00028194
48	Yes	5	0.00000001	0.00027965
49	Yes	5	0.00000001	0.00025539
50	Yes	5	0.00000001	0.00022564

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	107 - 102	0.653	48	0.0355	0.0303
T2	102 - 82	0.614	49	0.0340	0.0277
T3	82 - 62	0.468	49	0.0523	0.0407
T4	62 - 42	0.166	50	0.0556	0.0439

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
108.00	2' Dish	48	0.653	0.0355	0.0303	26835
107.00	1' x 1' Panel	48	0.653	0.0355	0.0303	26835
106.00	10' x 2" Dia Omni	48	0.645	0.0350	0.0296	26835
104.00	1' x 1' Panel	48	0.629	0.0343	0.0284	26835
99.50	1' x 1' Panel	49	0.598	0.0346	0.0275	28838

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
96.25	Guy	49	0.579	0.0368	0.0286	55274
85.00	3' Side arm mount	49	0.500	0.0495	0.0384	17681
81.00	RRH2x60-AWS	49	0.456	0.0530	0.0414	16361
80.00	DB844G65ZAXY	49	0.442	0.0537	0.0419	17379
70.00	DC6-48-60-18-8F Surge Arrestor	50	0.287	0.0559	0.0440	106836
69.00	DTMABP7819VG12A TMA	50	0.271	0.0558	0.0440	64571
61.92	Guy	50	0.165	0.0556	0.0439	18624

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	107 - 102	2.901	2	0.1683	0.1836
T2	102 - 82	2.717	2	0.1620	0.1677
T3	82 - 62	2.064	2	0.2170	0.2050
T4	62 - 42	0.795	2	0.2542	0.2181

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
108.00	2' Dish	2	2.901	0.1683	0.1836	7596
107.00	1' x 1' Panel	2	2.901	0.1683	0.1836	7596
106.00	10' x 2" Dia Omni	2	2.863	0.1666	0.1800	7596
104.00	1' x 1' Panel	2	2.788	0.1636	0.1732	7596
99.50	1' x 1' Panel	2	2.638	0.1629	0.1634	8549
96.25	Guy	2	2.546	0.1684	0.1626	20950
85.00	3' Side arm mount	2	2.198	0.2067	0.1966	4537
81.00	RRH2x60-AWS	2	2.013	0.2200	0.2073	4119
80.00	DB844G65ZAXY	2	1.959	0.2229	0.2093	4344
70.00	DC6-48-60-18-8F Surge Arrestor	2	1.312	0.2429	0.2177	37972
69.00	DTMABP7819VG12A TMA	2	1.244	0.2444	0.2178	19015
61.92	Guy	2	0.790	0.2543	0.2181	4873

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	107	Leg	A325N	0.875	1	2.27	40.59	0.056 ✔	1	Bolt Tension
T2	102	Leg	A325N	0.875	1	2.96	40.59	0.073 ✔	1	Bolt Tension
T3	82	Leg	A325N	0.875	1	6.31	40.59	0.156 ✔	1	Bolt Tension
T4	62	Leg	A325N	0.875	1	9.46	40.59	0.233 ✔	1	Bolt Tension

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T_u K	Allowable ϕT_n K	Required S.F.	Actual S.F.
T2	96.25 (A) (244)	9/16 EHS	3.50	35.00	6.40	21.00	1.000	3.283 ✔
	96.25 (A) (245)	9/16 EHS	3.50	35.00	6.27	21.00	1.000	3.347 ✔
	96.25 (B) (238)	9/16 EHS	3.50	35.00	7.51	21.00	1.000	2.798 ✔
	96.25 (B) (239)	9/16 EHS	3.50	35.00	7.36	21.00	1.000	2.852 ✔
	96.25 (C) (232)	9/16 EHS	3.50	35.00	7.09	21.00	1.000	2.962 ✔
	96.25 (C) (233)	9/16 EHS	3.50	35.00	7.30	21.00	1.000	2.878 ✔
T4	61.92 (A) (252)	3/4 EHS	5.83	58.30	11.38	34.98	1.000	3.073 ✔
	61.92 (B) (251)	3/4 EHS	5.83	58.30	14.12	34.98	1.000	2.476 ✔
	61.92 (C) (250)	3/4 EHS	5.83	58.30	13.45	34.98	1.000	2.601 ✔

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	Mast Stability Index	P_u K	ϕP_n K	Ratio $P_u / \phi P_n$
T1	107 - 102	1 1/2	5.00	2.46	78.7 K=1.00	1.767	1.00	-7.94	50.58	0.157 [1] ✔
T2	102 - 82	1 1/2	20.00	2.83	90.7 K=1.00	1.767	1.00	-22.32	43.60	0.512 [1] ✔
T3	82 - 62	1 1/2	20.00	2.83	90.7 K=1.00	1.767	1.00	-28.93	43.60	0.664 [1] ✔
T4	62 - 42	1 1/2	20.00	2.85	91.0 K=1.00	1.767	1.00	-31.61	43.38	0.729 [1] ✔

[1] $P_u / \phi P_n$ controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	107 - 102	L1 1/4x1 1/4x3/16	2.50	2.38	118.5 K=1.01	0.434	-5.49	6.71	0.818 [1] ✔
T2	102 - 82	L1 1/4x1 1/4x3/16	2.50	2.38	118.5 K=1.01	0.434	-5.69	6.71	0.848 [1] ✔
T3	82 - 62	L1 1/4x1 1/4x3/16	2.50	2.38	118.5 K=1.01	0.434	-5.01	6.71	0.747 [1] ✔
T4	62 - 42	L1 1/4x1 1/4x3/16	2.50	2.38	118.5 K=1.01	0.434	-4.20	6.71	0.626 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	107 - 102	L1 1/4x1 1/4x3/16	2.50	2.38	118.5 K=1.01	0.434	-2.87	6.71	0.428 [1] ✔
T2	102 - 82	L1 1/4x1 1/4x3/16	2.50	2.38	118.5 K=1.01	0.434	-2.54	6.71	0.379 [1] ✔
T3	82 - 62	L1 1/4x1 1/4x3/16	2.50	2.38	118.5 K=1.01	0.434	-2.40	6.71	0.358 [1] ✔
T4	62 - 42	L1 1/4x1 1/4x3/16	2.50	2.38	118.5 K=1.01	0.434	-1.56	6.71	0.232 [1] ✔

[1] P_u / ϕP_n controls

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	107 - 102	L1 1/4x1 1/4x3/16	2.50	2.38	118.5 K=1.01	0.434	-2.80	6.71	0.418 [1] ✔
T2	102 - 82	L1 1/4x1 1/4x3/16	2.50	2.38	118.5 K=1.01	0.434	-2.60	6.71	0.388 [1] ✔
T3	82 - 62	L1 1/4x1 1/4x3/16	2.50	2.38	118.5 K=1.01	0.434	-1.87	6.71	0.278 [1] ✔
T4	62 - 42	L1 1/4x1 1/4x3/16	2.50	2.38	118.5 K=1.01	0.434	-0.15	6.71	0.022 [1] ✔

[1] P_u / ϕP_n controls

Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	102 - 82 (236)	L3x3x1/4	2.50	2.44	84.7 K=1.71	1.440	-5.21	31.98	0.163 [1] ✔
T2	102 - 82 (237)	L3x3x1/4	2.50	2.44	84.7 K=1.71	1.440	-4.61	31.98	0.144 [1] ✔
T2	102 - 82 (242)	L3x3x1/4	2.50	2.44	84.7 K=1.71	1.440	-5.67	31.98	0.177 [1] ✔
T2	102 - 82 (243)	L3x3x1/4	2.50	2.44	84.7 K=1.71	1.440	-5.52	31.98	0.173 [1] ✔
T2	102 - 82 (248)	L3x3x1/4	2.50	2.44	84.7 K=1.71	1.440	-5.53	31.98	0.173 [1] ✔
T2	102 - 82 (249)	L3x3x1/4	2.50	2.44	84.7 K=1.71	1.440	-4.77	31.98	0.149 [1] ✔

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	107 - 102	1 1/2	5.00	2.46	78.7	1.767	2.96	79.52	0.037 [1] ✔
T2	102 - 82	1 1/2	20.00	2.83	90.7	1.767	3.90	79.52	0.049 [1] ✔
T3	82 - 62	1 1/2	20.00	2.83	90.7	1.767	8.70	79.52	0.109 [1] ✔
T4	62 - 42	1 1/2	20.00	2.85	91.0	1.767	8.70	79.52	0.109 [1] ✔

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	107 - 102	1/2	3.51	3.33	319.8	0.196	4.52	6.36	0.710 [1] ✔
T2	102 - 82	1/2	3.78	3.59	344.6	0.196	4.40	6.36	0.692 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T3	82 - 62	1/2	3.78	3.59	344.6	0.196	6.33	6.36	0.994 [1] ✔
T4	62 - 42	1/2	3.79	3.60	345.4	0.196	4.17	6.36	0.655 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T4	62 - 42	L1 1/4x1 1/4x3/16	2.50	2.38	75.7	0.434	1.97	14.05	0.141 [1] ✔

[1] P_u / ϕP_n controls

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	102 - 82 (234)	L2x2x5/16	3.78	3.68	73.6	1.150	7.27	37.26	0.195 [1] ✔
T2	102 - 82 (235)	L2x2x5/16	3.78	3.68	73.6	1.150	6.14	37.26	0.165 [1] ✔
T2	102 - 82 (240)	L2x2x5/16	3.78	3.68	73.6	1.150	7.36	37.26	0.198 [1] ✔
T2	102 - 82 (241)	L2x2x5/16	3.78	3.68	73.6	1.150	7.04	37.26	0.189 [1] ✔
T2	102 - 82 (246)	L2x2x5/16	3.78	3.68	73.6	1.150	7.52	37.26	0.202 [1] ✔
T2	102 - 82 (247)	L2x2x5/16	3.78	3.68	73.6	1.150	6.05	37.26	0.162 [1] ✔

[1] P_u / ϕP_n controls

Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	102 - 82 (236)	L3x3x1/4	2.50	2.44	31.5	1.440	0.47	46.66	0.010 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	102 - 82 (237)	L3x3x1/4	2.50	2.44	31.5	1.440	0.17	46.66	0.004 [1]
T2	102 - 82 (242)	L3x3x1/4	2.50	2.44	31.5	1.440	0.00	46.66	0.000 [1]
T2	102 - 82 (248)	L3x3x1/4	2.50	2.44	31.5	1.440	0.50	46.66	0.011 [1]
T2	102 - 82 (249)	L3x3x1/4	2.50	2.44	31.5	1.440	0.15	46.66	0.003 [1]

[1] P_u / ϕP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	107 - 102	Leg	1 1/2	1	-7.94	50.58	15.7	Pass
T2	102 - 82	Leg	1 1/2	27	-22.32	43.60	51.2	Pass
T3	82 - 62	Leg	1 1/2	96	-28.93	43.60	66.4	Pass
T4	62 - 42	Leg	1 1/2	165	-31.61	43.38	72.9	Pass
T1	107 - 102	Diagonal	1/2	11	4.52	6.36	71.0	Pass
T2	102 - 82	Diagonal	1/2	72	4.40	6.36	69.2	Pass
T3	82 - 62	Diagonal	1/2	105	6.33	6.36	99.4	Pass
T4	62 - 42	Diagonal	1/2	226	4.17	6.36	65.5	Pass
T1	107 - 102	Horizontal	L1 1/4x1 1/4x3/16	17	-5.49	6.71	81.8	Pass
T2	102 - 82	Horizontal	L1 1/4x1 1/4x3/16	85	-5.69	6.71	84.8	Pass
T3	82 - 62	Horizontal	L1 1/4x1 1/4x3/16	154	-5.01	6.71	74.7	Pass
T4	62 - 42	Horizontal	L1 1/4x1 1/4x3/16	225	-4.20	6.71	62.6	Pass
T1	107 - 102	Top Girt	L1 1/4x1 1/4x3/16	5	-2.87	6.71	42.8	Pass
T2	102 - 82	Top Girt	L1 1/4x1 1/4x3/16	30	-2.54	6.71	37.9	Pass
T3	82 - 62	Top Girt	L1 1/4x1 1/4x3/16	99	-2.40	6.71	35.8	Pass
T4	62 - 42	Top Girt	L1 1/4x1 1/4x3/16	168	-1.56	6.71	23.2	Pass
T1	107 - 102	Bottom Girt	L1 1/4x1 1/4x3/16	8	-2.80	6.71	41.8	Pass
T2	102 - 82	Bottom Girt	L1 1/4x1 1/4x3/16	31	-2.60	6.71	38.8	Pass
T3	82 - 62	Bottom Girt	L1 1/4x1 1/4x3/16	100	-1.87	6.71	27.8	Pass
T4	62 - 42	Bottom Girt	L1 1/4x1 1/4x3/16	170	-0.15	6.71	2.2	Pass
T2	102 - 82	Guy A@96.25	9/16	244	6.40	21.00	30.5	Pass
T4	62 - 42	Guy A@61.9167	3/4	252	11.38	34.98	32.5	Pass
T2	102 - 82	Guy B@96.25	9/16	238	7.51	21.00	35.7	Pass
T4	62 - 42	Guy B@61.9167	3/4	251	14.12	34.98	40.4	Pass
T2	102 - 82	Guy C@96.25	9/16	233	7.30	21.00	34.8	Pass
T4	62 - 42	Guy C@61.9167	3/4	250	13.45	34.98	38.4	Pass
T2	102 - 82	Torque Arm Top@96.25	L2x2x5/16	246	7.52	37.26	20.2	Pass
T2	102 - 82	Torque Arm Bottom@96.25	L3x3x1/4	242	-5.67	31.98	17.7	Pass

Summary		
Leg (T4)	72.9	Pass
Diagonal (T3)	99.4	Pass
Horizontal (T2)	84.8	Pass
Top Girt (T1)	42.8	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
						Bottom Girt (T1)	41.8	Pass
						Guy A (T4)	32.5	Pass
						Guy B (T4)	40.4	Pass
						Guy C (T4)	38.4	Pass
						Torque Arm Top (T2)	20.2	Pass
						Torque Arm Bottom (T2)	17.7	Pass
						Bolt Checks	23.3	Pass
						RATING =	**99.4**	**Pass**

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Branford, CT 06405 F: (203) 488-8587

Subject:	GUY ANCHOR ANALYSIS
Location:	65-ft Guyed Lattice Tower Hamden, CT
Rev. 0: 10/25/21	Prepared by: TJL. Checked by: C.F.C. Job No. 21111.00

Guy Anchor Connection Bolts Capacity Check:

Input Data:

Guy Anchor Reactions:

Guy Anchor B @ 19.5ft:

Horz Force (H) = $Fh := 15 \cdot kips$ (Input From tnxTower)

Vertical Force (V)= $Fv := 24 \cdot kips$ (Input From tnxTower)

Resultant Force (R) = $Fr := 28kips$ (Input From tnxTower)

Guy Anchor B Connection Bolt Data:

Bolt Design Shear Stress: $\phi F_{nv} := 20.3ksi$

Diameter of Bolt = $D := 0.625 \cdot in$ (User Input)

Calculated Bolt Properties:

Gross Area of Bolt= $A_g := \frac{\pi}{4} \cdot D^2 = 0.307 \cdot in^2$

Number of Shear Planes = $N_{sp} := 6$ (3 Bolts in Double Shear Considered)

Check Anchor Connection Bolt Shear Force:

Maximum Shear Stress in 1 Bolt = $f_v := \frac{Fr}{(A_g \cdot N_{sp})}$ $f_v = 15.21 \cdot ksi$

Condition1 = $Condition1 := if\left(\frac{f_v}{\phi F_{nv}} \le 1.00, "OK", "Overstressed"\right)$

$\frac{f_v}{\phi F_{nv}} = 0.75$

Condition1 = "OK"

Section 1 - RFDS GENERAL INFORMATION

RFDS NAME:	CTL02040	DATE:	4/3/2018	RF DESIGN ENG:	Parminder Singh	RF PERF ENG:		RFDS PROGRAM TYPE:	2021 LTE Next Carrier
ISSUE:	Bronze Standard	Approved? (Y/N):	Yes	RF DESIGN PHONE:	510-493-3024	RF PERF PHONE:		RFDS TECHNOLOGY:	LTE
REVISION:	Preliminary	RF MANAGER:	John Benedetto	RF DESIGN EMAIL:	SP656B@ATT.COM	RF PERF EMAIL:		STATE/STATUS:	Preliminary/Approved
						ADDITIONAL WORKFLOW NOTIFICATIONS:		RFDS ID:	4165484
						RFDS VERSION	2.00	Created By: sp656b	Updated By: sp656b
						UMTS FREQUENCY:	850	Created: 9/22/2020	Updated: 8/31/2021
						LTE FREQUENCY:	700,850,1900,AWS,WCS	EXPIRATION DATE:	
						5G FREQUENCY:	850	ESTIMATED SQIN: 18,049	Calculation ID: 20210911217474900
						IPLAN JOB # 1:	NER-RCTB-20-03271	PRD || SUB GRP #1	LTE Next Carrier || LTE 6C
						IPLAN JOB # 2:	NER-RCTB-20-03338	PRD || SUB GRP #2	Antenna Modifications || 4TXRX Antenna Retrofit
						IPLAN JOB # 3:		PRD || SUB GRP #3	
						IPLAN JOB # 4:		PRD || SUB GRP #4	
						IPLAN JOB # 5:		PRD || SUB GRP #5	
						IPLAN JOB # 6:		PRD || SUB GRP #6	
						IPLAN JOB # 7:		PRD || SUB GRP #7	
						IPLAN JOB # 8:		PRD || SUB GRP #8	

LTE 6C 700 UPPER D & LTE 700 BC 4TXRX Antenna Retrofit

Section 2 - LOCATION INFORMATION

USID:	61171	FA LOCATION CODE:	10035317	LOCATION NAME:	HAMDEN BENHAM ST	ORACLE PRJT # 1:	2051A0WQB8	PACE JOB #1:	MRCTB049073
REGION:	NORTHEAST	MARKET CLUSTER:	NEW ENGLAND	MARKET:	CONNECTICUT	ORACLE PRJT # 2:	2051A0WRPK	PACE JOB #2:	MRCTB049067
ADDRESS:.	265 BENHAM STREET	CITY:	HAMDEN	STATE:	CT	ORACLE PRJT # 3:		PACE JOB #3:	
ZIP CODE:	06514	COUNTY:	NEW HAVEN	LONG (DEC. DEG.):	-72.9314711	ORACLE PRJT # 4:		PACE JOB #4:	
LATITUDE (D-M-S):	41d 22m 12.66996s	LONGITUDE (D-M-S):	-72d -55m -53.29596s	LAT (DEC. DEG.):	41.3701861	ORACLE PRJT # 5:		PACE JOB #5:	
						ORACLE PRJT # 6:		PACE JOB #6:	
						ORACLE PRJT # 7:		PACE JOB #7:	
						ORACLE PRJT # 8:		PACE JOB #8:	
						BORDER CELL WITH CONTOUR COORD:		SEARCH RING NAME:	
						AM STUDY REQ'D (Y/N):	No	SEARCH RING ID:	
						FREQ COORD:		BTA:	MSA / RSA:
								LAC(UMTS):	05988
						RF DISTRICT:	NPO TRIAGE		
						RF ZONE:	HOTSEAT	RNC(UMTS):	BRIDGEPORT RNC07 ERICSSON 3820
								MME POOL ID(LTE):	FF01
						PARENT NAME(UMTS):	BRPTCT04CRBR07		

DIRECTIONS, ACCESS AND EQUIPMENT LOCATION:

2040 SACRED HEART RT15 NO/SO TO RTE 10 (EXIT 60) HMDN END OF EXIT GO SOUTH (RIGHT) 3RD RIGHT ONTO BENHAM ST GO TO 2ND LIGHT (1/2 MI) AND TURN RIGHT AT LIGHT (CHERRY HILL ON LEFT) FOLLOW YELLOW STRIPED ROAD TO END THEN GO LEFT INTO STUDENT PARKING AREA AND GO TO END COME OUT SAME WAY ANTENNA ACCESS NEEDS 24HR NOTICE W/SISTER ANN MARIA 2034648976 CIENNA LOCATED INSIDE SHELTER LTE RADIOS ARE LOCATED ON STRUCTURE OF ROOF

Section 3 - LICENSE COVERAGE/FILING INFORMATION

CGSA - NO FILING TRIGGERED (Yes/No):	No	CGSA LOSS:		PCS REDUCED - UPS ZIP:		CGSA CALL SIGNS:	
CGSA - MINOR FILING NEEDED (Yes/No):	No	CGSA EXT AGMT NEEDED:		PCS POPS REDUCED:			
CGSA - MAJOR FILING NEEDED (Yes/No):	Yes	CGSA SCORECARD UPDATED:					

Section 4 - TOWER/REGULATORY INFORMATION

STRUCTURE AT&T OWNED?:	No	GROUND ELEVATION (ft):		STRUCTURE TYPE:	GUYED	MARKET LOCATION 700 MHz Band:	
ADDITIONAL REGULATORY?:	No	HEIGHT OVERALL (ft):	0.00	FCC ASR NUMBER:		MARKET LOCATION 850 MHz Band:	
SUB-LEASE RIGHTS?:	No	STRUCTURE HEIGHT (ft):	82.00			MARKET LOCATION 1900 MHz Band:	
LIGHTING TYPE:	NOT REQUIRED					MARKET LOCATION AWS Band:	
						MARKET LOCATION WCS Band:	
						MARKET LOCATION Future Band:	

Section 5 - E-911 INFORMATION - existing

	PSAP NAME:	PSAP ID:	E911 PHASE:	MPC SVC PROVIDER:	LMU REQUIRED:	ESRN:	DATE LIVE PH1:	DATE LIVE PH2:
SECTOR A E-911				INTRADO		0		
SECTOR B				INTRADO		0		
SECTOR C				INTRADO		0		
SECTOR D								
SECTOR E								
SECTOR F								
OMNI								

Section 5 - E-911 INFORMATION - final

	PSAP NAME:	PSAP ID:	E911 PHASE:	MPC SVC PROVIDER:	LMU REQUIRED:	ESRN:	DATE LIVE PH1:	DATE LIVE PH2:
SECTOR A E-911				INTRADO		0		
SECTOR B				INTRADO		0		
SECTOR C				INTRADO		0		
SECTOR D								
SECTOR E								

SECTOR F									
OMNI									

Section 6/7 - BBU INFORMATION - existing																					
	BBU 1	BBU 2	BBU 3	BBU 4	BBU 5	BBU 6															
BBU ID:	250429	257806	210605	379815	366897	702382															
TECHNOLOGY:	UMTS	UMTS	UMTS	UMTS	LTE	5G															
BBU NAME:	CTU2040	CTU6040	CTV2040	CTV6040	CTL02040	CTCN002040															
BBU USID:	61171	61171	61171	61171	61171	61171															
CELL ID / BCF:	CTV2040	CTV6040	CTV2040	CTV6040	CTL02040	CTCN002040															
BTA/TID:	318V	318V	318U	318W	318L	318N															
4-9 DIGIT SITE ID:	2040	6040	2040	6040	2040	2040															
COW OR TOY?:	No	No	No	No	No	No															
CELL SITE TYPE:	SECTORIZED	SECTORIZED	SECTORIZED	SECTORIZED	SECTORIZED	SECTORIZED															
SITE TYPE:	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL															
BTS LOCATION ID:	INTERNAL	INTERNAL	INTERNAL	INTERNAL	INTERNAL	INTERNAL															
BASE STATION TYPE:	OVERLAY	OVERLAY	BASE	OVERLAY	BASE	BASE															
EQUIPMENT NAME:	HAMDEN - SACRED HEART	HAMDEN - SACRED HEART	HAMDEN BENHAM ST	HAMDEN 265 BENHAM STREET	HAMDEN BENHAM ST	HAMDEN BENHAM ST															
DISASTER PRIORITY:	0	0	0	3	3	3															
EQUIPMENT VENDOR:	ERICSSON	ERICSSON	ERICSSON	ERICSSON	ERICSSON	ERICSSON															
EQUIPMENT TYPE (Model):	3206 INDOOR	3206 INDOOR	3206 INDOOR	3206 INDOOR	6601 INDOOR MU	BASEBAND 6630															
BASEBAND CONFIGURATION :						xxxxx / 1x6630 / xxxxx															
MARKET STATE CODE:					CT	CTC															
NODE B NUMBER:	0	0	0	0	2040	2040															
SIDEHAUL SWITCH VENDOR:																					
SIDEHAUL SWITCH MODEL:																					
SIDEHAUL SWITCH NAME:																					
CSS - CTS COMMON ID:	CTU2040	CTU6040	CTV2040	CTV6040	CTL02040	CTCN002040															
CSS - SECONDARY FUNCTION ID:																					

Section 6/7 - BBU INFORMATION - final																					
	BBU 1	BBU 2	BBU 3	BBU 4																	
BBU ID:	210605	379815	366897	702382																	
TECHNOLOGY:	UMTS	UMTS	LTE	LTE,5G																	
BBU NAME:	CTV2040	CTV6040	CTL02040	CTL00840R,CTCN002040																	
BBU USID:	61171	61171	61171	61171																	
CELL ID / BCF:	CTV2040	CTV6040	CTL02040	CTCN002040																	
BTA/TID:	318U	318W	318L	318N																	
4-9 DIGIT SITE ID:	2040	6040	2040	2040																	
COW OR TOY?:	No	No	No	No																	
CELL SITE TYPE:	SECTORIZED	SECTORIZED	SECTORIZED	SECTORIZED																	
SITE TYPE:	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL																	
BTS LOCATION ID:	INTERNAL	INTERNAL	INTERNAL	INTERNAL																	
BASE STATION TYPE:	BASE	OVERLAY	BASE	BASE																	
EQUIPMENT NAME:	HAMDEN BENHAM ST	HAMDEN 265 BENHAM STREET	HAMDEN BENHAM ST	CTCN002040																	
DISASTER PRIORITY:	0	3	3	3																	
EQUIPMENT VENDOR:	ERICSSON	ERICSSON	ERICSSON	ERICSSON																	
EQUIPMENT TYPE (Model):	3206 INDOOR	3206 INDOOR	6601 RADIONODE 5216	2102 COMPACT																	
BASEBAND CONFIGURATION :			1x6601 / 1x5216 / 1xXMU03 + IDLe	1x6601 / 1x6630 Mixed-Mode / 1xXMU																	
MARKET STATE CODE:			CT	CT,CTC																	
NODE B NUMBER:	0	0	2040	840,2040																	
SIDEHAUL SWITCH VENDOR:																					
SIDEHAUL SWITCH MODEL:																					
SIDEHAUL SWITCH NAME:																					
CSS - CTS COMMON ID:	CTV2040	CTV6040	CTL02040	CTCN002040																	
CSS - SECONDARY FUNCTION ID:																					

Section 7b - Radio INFORMATION - existing

Section 7b - Radio INFORMATION - final

Section 8 - RBS/SECTOR ASSOCIATION - existing

	BBU 1	BBU 2	BBU 3	BBU 4	BBU 5	BBU 6
CTS Common ID	CTU2040	CTU6040	CTV2040	CTV6040	CTL02040	CTCN002040
Soft Sector IDs	CTU20407	CTU60404	CTV20401	CTV6040A	CTL02040_2A_2	CTCN002040_N005A_1
	CTU20408	CTU60405	CTV20402	CTV6040B	CTL02040_2B_2	CTCN002040_N005B_1
	CTU20409	CTU60406	CTV20403	CTV6040C	CTL02040_2C_2	CTCN002040_N005C_1
		CTU60407			CTL02040_3A_1	
		CTU60408			CTL02040_3B_1	
		CTU60409			CTL02040_3C_1	
					CTL02040_7A_1	
					CTL02040_7B_1	
					CTL02040_7C_1	
					CTL02040_8A_1	
					CTL02040_8B_1	
					CTL02040_8C_1	
					CTL02040_9A_1	
					CTL02040_9A_2	
					CTL02040_9B_1	
					CTL02040_9B_2	
					CTL02040_9C_1	
					CTL02040_9C_2	

Section 8 - RBS/SECTOR ASSOCIATION - final

	BBU 1	BBU 2	BBU 3	BBU 4
CTS Common ID	CTV2040	CTV6040	CTL02040	CTL00840R,CTCN002040
Soft Sector IDs	CTV20401		CTL02040_3A_1	CTCN002040_N005A_1
	CTV20402		CTL02040_3B_1	CTCN002040_N005B_1
	CTV20403		CTL02040_3C_1	CTCN002040_N005C_1
			CTL02040_7A_1	CTL00840_2A_2
			CTL02040_7A_3_F	CTL00840_2B_2
			CTL02040_7B_1	CTL00840_2C_2
			CTL02040_7B_3_F	CTL00840_9A_1
			CTL02040_7C_1	CTL00840_9A_2
			CTL02040_7C_3_F	CTL00840_9B_1
			CTL02040_8A_1	CTL00840_9B_2
			CTL02040_8B_1	CTL00840_9C_1
			CTL02040_8C_1	CTL00840_9C_2

Section 9 - SOFT SECTOR ID - existing

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	UMTS 3RD 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 1ST WCS	LTE 2ND 1900	LTE 4TH AWS	LTE 5TH 700	5G 1ST 850
USEID (excluding Hard Sector)	61171.850.3G.1	61171.1900.3G.1	61171.850.3G.2	61171.1900.3G.2	61171.1900.3G.3									
SECTOR A SOFT SECTOR ID	CTV20401	CTU20407	CTV6040A	CTU60407	CTU60404	CTL02040_7A_1	CTL02040_8A_1	CTL02040_9A_1	CTL02040_2A_2	CTL02040_3A_1	CTL02040_9A_2			CTCN002040_N005A_1
SECTOR_B	CTV20402	CTU20408	CTV6040B	CTU60408	CTU60405	CTL02040_7B_1	CTL02040_8B_1	CTL02040_9B_1	CTL02040_2B_2	CTL02040_3B_1	CTL02040_9B_2			CTCN002040_N005B_1
SECTOR_C	CTV20403	CTU20409	CTV6040C	CTU60409	CTU60406	CTL02040_7C_1	CTL02040_8C_1	CTL02040_9C_1	CTL02040_2C_2	CTL02040_3C_1	CTL02040_9C_2			CTCN002040_N005C_1
SECTOR_D														
SECTOR_E														
SECTOR_F														
OMNI														

Section 9 - SOFT SECTOR ID - final

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	UMTS 3RD 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 1ST WCS	LTE 2ND 1900	LTE 4TH AWS	LTE 5TH 700	5G 1ST 850
USEID (excluding Hard Sector)	61171.850.3G.1													
SECTOR A SOFT SECTOR ID	CTV20401					CTL02040_7A_1	CTL02040_8A_1	CTL00840_9A_1		CTL02040_3A_1	CTL00840_9A_2	CTL00840_2A_2	CTL02040_7A_3_F	CTCN002040_N005A_1
SECTOR_B	CTV20402					CTL02040_7B_1	CTL02040_8B_1	CTL00840_9B_1		CTL02040_3B_1	CTL00840_9B_2	CTL00840_2B_2	CTL02040_7B_3_F	CTCN002040_N005B_1
SECTOR_C	CTV20403					CTL02040_7C_1	CTL02040_8C_1	CTL00840_9C_1		CTL02040_3C_1	CTL00840_9C_2	CTL00840_2C_2	CTL02040_7C_3_F	CTCN002040_N005C_1
SECTOR_D														
SECTOR_E														
SECTOR_F														
OMNI														

Section 9 - Cell Number - existing

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	UMTS 3RD 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 1ST WCS	LTE 2ND 1900	LTE 4TH AWS	LTE 5TH 700	5G 1ST 850
USEID (excluding Hard Sector)	61171.850.3G.1	61171.1900.3G.1	61171.850.3G.2	61171.1900.3G.2	61171.1900.3G.3									
SECTOR A CELL NUMBER						15	1	8	192	149	178			25
SECTOR B						16	2	9	193	150	179			49
SECTOR C						17	3	10	194	151	180			73
SECTOR D														
SECTOR E														
SECTOR F														
OMNI														

Section 9 - Cell Number - final

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	UMTS 3RD 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 1ST WCS	LTE 2ND 1900	LTE 4TH AWS	LTE 5TH 700	5G 1ST 850
USEID (excluding Hard Sector)	61171.850.3G.1													
SECTOR A CELL NUMBER						15	1	8		149	178	192	171	25
SECTOR B						16	2	9		150	179	193	172	49
SECTOR C						17	3	10		151	180	194	173	73
SECTOR D														
SECTOR E														
SECTOR F														
OMNI														

Section 10 - CID/SAC - existing

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	UMTS 3RD 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 1ST WCS	LTE 2ND 1900	LTE 4TH AWS	LTE 5TH 700	5G 1ST 850
SECTOR A CID/SAC	20401	20407	60401	60407	60404									
SECTOR B	20402	20408	60402	60408	60405									
SECTOR C	20403	20409	60403	60409	60406									
SECTOR D														
SECTOR E														
SECTOR F														
OMNI														

Section 10 - CID/SAC - final

	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	UMTS 3RD 1900	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST AWS	LTE 1ST WCS	LTE 2ND 1900	LTE 4TH AWS	LTE 5TH 700	5G 1ST 850
SECTOR A CID/SAC	20401													
SECTOR B	20402													
SECTOR C	20403													
SECTOR D														
SECTOR E														
SECTOR F														
OMNI														

Section 11 - CURRENT RADIO COUNTS existing

Section 12 - CURRENT T1 COUNTS existing

Section 13 - NEW/PROPOSED RADIO COUNTS

Section 14 - NEW/PROPOSED T1 COUNTS

Section 15A - CURRENT TOWER CONFIGURATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	AM-X-CD-16-65-00T-RET		EPBQ-654L8H6-L2	HPA-65R-BUU-H6			
ANTENNA VENDOR	KMW		KMW	CCI Products			
ANTENNA SIZE (H x W x D)	72X11.8X5.9		73X21X6.3	72X14.8X9			
ANTENNA WEIGHT	48.5		72.8	51			
AZIMUTH	150		20	20			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	70		70	70			
ANTENNA TIP HEIGHT	73		73	73			
MECHANICAL DOWNTILT	0		0	0			
FEEDER AMOUNT	2						
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Built-In RET		Built-In RET	Built-In RET			
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)	2 CM1007-DBPX8C-003						
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)	1 860-10006						
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	1 DTMABP7819VG12A						
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)			2 DC6-48-60-18-8F	1 DC6-48-60-08F			
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)				1 RRUS-11 B12			
RRH - 850 band (QTY/MODEL)			1 4478 B5				
RRH - 1900 band (QTY/MODEL)			1 RRUS-32 B2				
RRH - AWS band (QTY/MODEL)			1 4426 B66				
RRH - WCS band (QTY/MODEL)				1 RRUS-32 B30			
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1							
Local Market Note 2							
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AtoII)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	PORT 1			CTV20401	CTV20401		UMTS 850	00T-RET_850MHz_0	16.1	150	2	NONE	Andrew 1-5/8 (850)	154.04						529.66		1	
ANTENNA POSITION 3	PORT 1			CTL02040_8A_1	CTL02040_8A_1		LTE 850	L2_851MHz_04DT	15.38	20	4	TOP	FIBER	0						1000		5	
	PORT 2			CTCN002040_N005A_1	CTCN002040_N005A_1		5G 850	L2_851MHz_04DT	15.38	20	4	TOP	FIBER	0						1000		5	
	PORT 3			CTL02040_9A_1	CTL02040_9A_1		LTE 1900	L2_1930MHz_02DT	16.04	20	2	TOP	FIBER	0						3664.3757		6	
	PORT 4			CTL02040_9A_2	CTL02040_9A_2		LTE 1900	L2_1930MHz_02DT	16.04	20	2	TOP	FIBER	0						3664.3757		6	
	PORT 7			CTL02040_2A_2	CTL02040_2A_2		LTE AWS	L2_2130MHz_02DT	15.99	20	2	TOP	FIBER	0						3837.0724		6	

ANTENNA POSITION 4	**PORT 1**			CTL02040_7A_1	CTL02040_7A_1		LTE 700	H6_719MHz_04 DT	14.16	20	4	TOP	FIBER	0						1475.7065		7	
	PORT 3			CTL02040_3A_1	CTL02040_3A_1		LTE WCS	H6_2360MHz_03 DT	17.45	20	3	TOP	FIBER	0						1285.2866		8	

Section 15B - CURRENT TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	AM-X-CD-16-65-00T-RET		EPBQ-654L8H6-L2	HPA-65R-BUU-H6			
ANTENNA VENDOR	KMW		KMW	CCI Products			
ANTENNA SIZE (H x W x D)	72X11.8X5.9		73X21X6.3	72X14.8X9			
ANTENNA WEIGHT	48.5		72.8	51			
AZIMUTH	260		150	150			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	70		70	70			
ANTENNA TIP HEIGHT	73		73	73			
MECHANICAL DOWNTILT	0		0	0			
FEEDER AMOUNT	2						
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Built-In RET		Built-In RET	Built-In RET			
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)	2 CM1007-DBPX8C-003						
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	1 DTMABP7819VG12A						
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)				1 RRUS-11 B12			
RRH - 850 band (QTY/MODEL)			1 4478 B5				
RRH - 1900 band (QTY/MODEL)			1 RRUS-32 B2				
RRH - AWS band (QTY/MODEL)			1 4426 B66				
RRH - WCS band (QTY/MODEL)				1 RRUS-32 B30			
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1							
Local Market Note 2							
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AtoII)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	PORT 1			CTV20402	CTV20402		UMTS 850	00T-RET_850MHz_0	16.1	260	2	NONE	Andrew 1-5/8 (850)	154.04						529.66		9	
ANTENNA POSITION 3	PORT 1			CTL02040_8B_1	CTL02040_8B_1		LTE 850	L2_851MHz_05DT	15.44	150	5	TOP	FIBER	0						1000		13	
	PORT 2			CTCN002040_N005B_1	CTCN002040_N005B_1		5G 850	L2_851MHz_05DT	15.44	150	5	TOP	FIBER	0						1000		13	
	PORT 3			CTL02040_9B_1	CTL02040_9B_1		LTE 1900	L2_1930MHz_04DT	16.23	150	4	TOP	FIBER	0						3664.3757		14	
	PORT 4			CTL02040_9B_2	CTL02040_9B_2		LTE 1900	L2_1930MHz_04DT	16.23	150	4	TOP	FIBER	0						3664.3757		14	
	PORT 7			CTL02040_2B_2	CTL02040_2B_2		LTE AWS	L2_2130MHz_04DT	16.14	150	4	TOP	FIBER	0						3837.0724		14	

ANTENNA POSITION 4	**PORT 1**			CTL02040_7B_1	CTL02040_7B_1		LTE 700	H6_719MHz_05 DT	14.11	150	5	TOP	FIBER	0						1475.7065		15	
	PORT 3			CTL02040_3B_1	CTL02040_3B_1		LTE WCS	H6_2360MHz_03 DT	17.45	150	3	TOP	FIBER	0						1285.2866		16	

Section 15C - CURRENT TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	AM-X-CD-16-65-00T-RET		EPBQ-654L8H6-L2	HPA-65R-BUU-H6			
ANTENNA VENDOR	KMW		KMW	CCI Products			
ANTENNA SIZE (H x W x D)	72X11.8X5.9		73X21X6.3	72X14.8X9			
ANTENNA WEIGHT	48.5		72.8	51			
AZIMUTH	20		260	260			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	70		70	70			
ANTENNA TIP HEIGHT	73		73	73			
MECHANICAL DOWNTILT	0		0	0			
FEEDER AMOUNT	2						
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Built-In RET		Built-In RET	Built-In RET			
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)	2 CM1007-DBPX8C-003						
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)	1 DTMABP7819VG12A						
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)				1 RRUS-11 B12			
RRH - 850 band (QTY/MODEL)			1 4478 B5				
RRH - 1900 band (QTY/MODEL)			1 RRUS-32 B2				
RRH - AWS band (QTY/MODEL)			1 4426 B66				
RRH - WCS band (QTY/MODEL)				1 RRUS-32 B30			
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1							
Local Market Note 2							
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AtoII)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	PORT 1			CTV20403	CTV20403		UMTS 850	00T-RET_850MHz_0	16.1	20	2	NONE	Andrew 1-5/8 (850)	154.04						529.66		17	
ANTENNA POSITION 3	PORT 1			CTL02040_8C_1	CTL02040_8C_1		LTE 850	L2_851MHz_02DT	15.28	260	2	TOP	FIBER	0						1000		21	
	PORT 2			CTCN002040_N005C_1	CTCN002040_N005C_1		5G 850	L2_851MHz_02DT	15.28	260	2	TOP	FIBER	0						1000		21	
	PORT 3			CTL02040_9C_1	CTL02040_9C_1		LTE 1900	L2_1930MHz_04DT	16.23	260	4	TOP	FIBER	0						3664.3757		22	
	PORT 4			CTL02040_9C_2	CTL02040_9C_2		LTE 1900	L2_1930MHz_04DT	16.23	260	4	TOP	FIBER	0						3664.3757		22	
	PORT 7			CTL02040_2C_2	CTL02040_2C_2		LTE AWS	L2_2130MHz_04DT	16.14	260	4	TOP	FIBER	0						3837.0724		22	

ANTENNA POSITION 4	**PORT 1**			CTL02040_7C_1	CTL02040_7C_1		LTE 700	H6_719MHz_02 DT	14.28	260	2	TOP	FIBER	0						1475.7065		23	
	PORT 3			CTL02040_3C_1	CTL02040_3C_1		LTE WCS	H6_2360MHz_03 DT	17.45	260	3	TOP	FIBER	0						1285.2866		24	

Section 16A - PLANNED/PROPOSED TOWER CONFIGURATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
Existing Antenna?			Yes											
ANTENNA MAKE - MODEL	DMP65R-BU6DA													
ANTENNA VENDOR	CCI													
ANTENNA SIZE (H x W x D)	71.2X20.7X7.7													
ANTENNA WEIGHT	79.4													
AZIMUTH	20													
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	70													
ANTENNA TIP HEIGHT	73													
MECHANICAL DOWNTILT	0													
FEEDER AMOUNT														
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)		Built-In RET												
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)														
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)														
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)	1	4449 B5/B12	1	4478 B14										
RRH - 850 band (QTY/MODEL)		with another band												
RRH - 1900 band (QTY/MODEL)														
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
RRH_7B_1 (QTY/MODEL)														
RRH_7B_2 (QTY/MODEL)														
RRH_7B_3 (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)	1	Y Cable												
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	Arrange antenna and radio positions as per PD.Swap LTE antenna with 8 port antenna. Swap and add radios. Add IDLe and Y cable.													
Local Market Note 2														
Local Market Note 3	1x6601 / 1x5216 / 2xXMU03 / 1x6630 + IDLe													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AtoII)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	PORT 1		61171.A.700.4G.1	CTL02040_7A_1	CTL02040_7A_1		LTE 700	BU6D_725MHz_04DT	13	20	4	TOP	FIBER	0						1475.7065		7	
	PORT 2		61171.A.850.4G.1	CTL02040_8A_1	CTL02040_8A_1		LTE 850	BU6D_850MHz_04DT	13.1	20	4	TOP	FIBER	0						1475.7065		7	
	PORT 5		61171.A.850.5G.1	CTCN002040_N005A_1	CTCN002040_N005A_1		5G 850	BU6D_850MHz_04DT	13.1	20	4	TOP	FIBER	0						1475.7065		7	
ANTENNA POSITION 2	PORT 1		61171.A.700.4G.5	CTL02040_7A_3_F	CTL02040_7A_3_F		LTE 700	L2_776MHz_04DT	14.9	20	4	TOP	FIBER	0						1000		5	

Section 16B - PLANNED/PROPOSED TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
Existing Antenna?			Yes											
ANTENNA MAKE - MODEL	DMP65R-BU6DA													
ANTENNA VENDOR	CCI													
ANTENNA SIZE (H x W x D)	71.2X20.7X7.7													
ANTENNA WEIGHT	79.4													
AZIMUTH	150													
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	70													
ANTENNA TIP HEIGHT	73													
MECHANICAL DOWNTILT	0													
FEEDER AMOUNT														
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)		Built-In RET												
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)														
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)														
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)	1	4449 B5/B12	1	4478 B14										
RRH - 850 band (QTY/MODEL)		with another band												
RRH - 1900 band (QTY/MODEL)														
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
RRH_7B_1 (QTY/MODEL)														
RRH_7B_2 (QTY/MODEL)														
RRH_7B_3 (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)	1	Y Cable												
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	Arrange antenna and radio positions as per PD.Swap LTE antenna with 8 port antenna. Swap and add radios. Add IDLe and Y cable.													
Local Market Note 2														
Local Market Note 3	1x6601 / 1x5216 / 2xXMU03 / 1x6630 + IDLe													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AtoII)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	PORT 1		61171.B.700.4G.1	CTL02040_7B_1	CTL02040_7B_1		LTE 700	BU6D_725MHz_05DT	12.9	150	5	TOP	FIBER	0						1475.7065		15	
	PORT 2		61171.B.850.4G.1	CTL02040_8B_1	CTL02040_8B_1		LTE 850	BU6D_850MHz_05DT	13.1	150	5	TOP	FIBER	0						1475.7065		15	
	PORT 5		61171.B.850.5G.1	CTCN002040_N005B_1	CTCN002040_N005B_1		5G 850	BU6D_850MHz_05DT	13.1	150	5	TOP	FIBER	0						1475.7065		15	
ANTENNA POSITION 2	PORT 1		61171.B.700.4G.5	CTL02040_7B_3_F	CTL02040_7B_3_F		LTE 700	L2_776MHz_05DT	14.95	150	5	TOP	FIBER	0						1000		13	

Section 16C - PLANNED/PROPOSED TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
Existing Antenna?			Yes											
ANTENNA MAKE - MODEL	DMP65R-BU6DA													
ANTENNA VENDOR	CCI													
ANTENNA SIZE (H x W x D)	71.2X20.7X7.7													
ANTENNA WEIGHT	79.4													
AZIMUTH	260													
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	70													
ANTENNA TIP HEIGHT	73													
MECHANICAL DOWNTILT	0													
FEEDER AMOUNT														
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)		Built-In RET												
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)														
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)														
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)	1	4449 B5/B12	1	4478 B14										
RRH - 850 band (QTY/MODEL)		with another band												
RRH - 1900 band (QTY/MODEL)														
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
RRH_7B_1 (QTY/MODEL)														
RRH_7B_2 (QTY/MODEL)														
RRH_7B_3 (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)	1	Y Cable												
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	and radio positions as per													
Local Market Note 2														
Local Market Note 3	/ 2xXMU03 / 1x9630 + IDLe													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AtoII)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	PORT 1		61171.C.700.4G.1	CTL02040_7C_1	CTL02040_7C_1		LTE 700	BU6D_725MHz_02DT	13.2	260	2	TOP	FIBER	0						1475.7065		23	
	PORT 2		61171.C.850.4G.1	CTL02040_8C_1	CTL02040_8C_1		LTE 850	BU6D_850MHz_02DT	13.1	260	2	TOP	FIBER	0						1475.7065		23	
	PORT 5		61171.C.850.5G.1	CTCN002040_N005C_1	CTCN002040_N005C_1		5G 850	BU6D_850MHz_02DT	13.1	260	2	TOP	FIBER	0						1475.7065		23	
ANTENNA POSITION 2	PORT 1		61171.C.700.4G.5	CTL02040_7C_3_F	CTL02040_7C_3_F		LTE 700	L2_776MHz_02DT	14.78	260	2	TOP	FIBER	0						1000		21	

Section 16.5A - SCOPING TOWER CONFIGURATION - SECTOR A (OR OMNI)

Section 17A - FINAL TOWER CONFIGURATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	DMP65R-BU6DA	EPBQ-654L8H6-L2		AM-X-CD-16-65-00T-RET			
ANTENNA VENDOR	CCI	KMW		KMW			
ANTENNA SIZE (H x W x D)	71.2X20.7X7.7	73X21X6.3		72X11.8X5.9			
ANTENNA WEIGHT	79.4	72.8		48.5			
AZIMUTH	20	20		150			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	70	70		70			
ANTENNA TIP HEIGHT	73	73		73			
MECHANICAL DOWNTILT	0	0		0			
FEEDER AMOUNT				2			
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Built-In RET	Built-In RET		Built-In RET			
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)				2 CM1007-DBPXBC-003			
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)				1 860-10006			
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)				1 DTMABP7819VG12A			
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)	1 DC6-48-60-08F	2 DC6-48-60-18-8F					
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)	1 4449 B5/B12	1 4478 B14					
RRH - 850 band (QTY/MODEL)	with another band						
RRH - 1900 band (QTY/MODEL)		1 RRUS-32 B2					
RRH - AWS band (QTY/MODEL)		1 4426 B66					
RRH - WCS band (QTY/MODEL)	1 RRUS-32 B30						
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)	1 Y Cable						
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Arrange antenna and radio positions as per PD.Swap LTE antenna with 8 port antenna. Swap and add radios. Add IDLe and Y cable.						
Local Market Note 2							
Local Market Note 3	1x6601 / 1x5216 / 2xXMU03 / 1x6630 + IDLe						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AtoII)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	PORT 1	61171.A.700.4G.1	61171.A.700.4G.1	CTL02040_7A_1	CTL02040_7A_1		LTE 700	BU6D_725MHz_04DT	13	20	4	TOP	FIBER	0						1475.7065		7	
	PORT 2	61171.A.850.4G.1	61171.A.850.4G.1	CTL02040_8A_1	CTL02040_8A_1		LTE 850	BU6D_850MHz_04DT	13.1	20	4	TOP	FIBER	0						1475.7065		7	
	PORT 3	61171.A.WCS.4G.1	61171.A.WCS.4G.1	CTL02040_3A_1	CTL02040_3A_1		LTE WCS	BU6D_2355MHz_03DT	17.2	20	3	TOP	FIBER	0						1285.2866		8	
	PORT 5	61171.A.850.5G.1	61171.A.850.5G.1	CTCN002040_N005A_1	CTCN002040_N005A_1		5G 850	BU6D_850MHz_04DT	13.1	20	4	TOP	FIBER	0						1475.7065		7	
ANTENNA POSITION 2	PORT 1	61171.A.700.4G.tmp5	61171.A.700.4G.5	CTL02040_7A_3_F	CTL02040_7A_3_F		LTE 700	L2_776MHz_04DT	14.9	20	4	TOP	FIBER	0						1000		5	
	PORT 3	61171.A.1900.4G.tmp1	61171.A.1900.4G.1	CTL00840_9A_1	CTL00840_9A_1		LTE 1900	BU4D_1930MHz_02DT	15.6	20	0	TOP	FIBER	0						3664.3757		6	

ANTENNA POSITION 2																							
	PORT 4	61171.A.1900.4G.tmp2	61171.A.1900.4G.4	CTL00840_9A_2	CTL00840_9A_2		LTE 1900	BU4D_1930MHz_02DT	15.6	20	0	TOP	FIBER	0						3664.3757		6	
	PORT 7	61171.A.AWS.4G.tmp4	61171.A.AWS.4G.4	CTL00840_2A_2	CTL00840_2A_2		LTE AWS	BU6D_2170MHz_02DT	16.2	20	0	TOP	FIBER	0						3837.0724		6	
ANTENNA POSITION 4	**PORT 1**	61171.A.850.3G.1		CTV20401	CTV20401		UMTS 850	00T-RET_850MHz_0	16.1	150	2	NONE	Andrew 1-5/8 (850)	154.04						529.66		1	

Section 17B - FINAL TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	DMP65R-BU6DA	EPBQ-654L8H6-L2		AM-X-CD-16-65-00T-RET			
ANTENNA VENDOR	CCI	KMW		KMW			
ANTENNA SIZE (H x W x D)	71.2X20.7X7.7	73X21X6.3		72X11.8X5.9			
ANTENNA WEIGHT	79.4	72.8		48.5			
AZIMUTH	150	150		260			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	70	70		70			
ANTENNA TIP HEIGHT	73	73		73			
MECHANICAL DOWNTILT	0	0		0			
FEEDER AMOUNT				2			
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Built-In RET	Built-In RET		Built-In RET			
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)				2 CM1007-DBPXBC-003			
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)				1 DTMABP7819VG12A			
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
REPEATER (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)	1 4449 B5/B12_ with another band	1 4478 B14					
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)		1 RRUS-32 B2					
RRH - AWS band (QTY/MODEL)		1 4426 B66					
RRH - WCS band (QTY/MODEL)	1 RRUS-32 B30						
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
RRH_7B_1 (QTY/MODEL)							
RRH_7B_2 (QTY/MODEL)							
RRH_7B_3 (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)	1 Y Cable						
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Arrange antenna and radio positions as per PD.Swap LTE antenna with 8 port antenna. Swap and add radios. Add IDLe and Y cable.						
Local Market Note 2							
Local Market Note 3	1x6601 / 1x5216 / 2xXMU03 / 1x6630 + IDLe						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AtoII)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	PORT 1	61171.B.700.4G.1	61171.B.700.4G.1	CTL02040_7B_1	CTL02040_7B_1		LTE 700	BU6D_725MHz_05DT	12.9	150	5	TOP	FIBER	0						1475.7065		15	
	PORT 2	61171.B.850.4G.1	61171.B.850.4G.1	CTL02040_8B_1	CTL02040_8B_1		LTE 850	BU6D_850MHz_05DT	13.1	150	5	TOP	FIBER	0						1475.7065		15	
	PORT 3	61171.B.WCS.4G.1	61171.B.WCS.4G.1	CTL02040_3B_1	CTL02040_3B_1		LTE WCS	BU6D_2355MHz_03DT	17.2	150	3	TOP	FIBER	0						1285.2866		16	
	PORT 5	61171.B.850.5G.1	61171.B.850.5G.1	CTCN002040_N005B_1	CTCN002040_N005B_1		5G 850	BU6D_850MHz_05DT	13.1	150	5	TOP	FIBER	0						1475.7065		15	
ANTENNA POSITION 2	PORT 1	61171.B.700.4G.tmp5	61171.B.700.4G.5	CTL02040_7B_3_F	CTL02040_7B_3_F		LTE 700	L2_776MHz_05DT	14.95	150	5	TOP	FIBER	0						1000		13	
	PORT 3	61171.B.1900.4G.tmp1	61171.B.1900.4G.1	CTL00840_9B_1	CTL00840_9B_1		LTE 1900	BU4D_1930MHz_02DT	15.6	150	0	TOP	FIBER	0						3664.3757		14	
	PORT 4	61171.B.1900.4G.tmp2	61171.B.1900.4G.4	CTL00840_9B_2	CTL00840_9B_2		LTE 1900	BU4D_1930MHz_02DT	15.6	150	0	TOP	FIBER	0						3664.3757		14	

	PORT 7	61171.B.AWS.4G.tmp4	61171.B.AWS.4G.4	CTL00840_2B_2	CTL00840_2B_2		LTE AWS	BU6D_2170MHz_02DT	16.2	150	0	TOP	FIBER	0						3837.0724		14	
ANTENNA POSITION 4	PORT 1	61171.B.850.3G.1		CTV20402	CTV20402		UMTS 850	00T-RET_850MHz_0	16.1	260	2	NONE	Andrew 1-5/8 (850)	154.04						529.66		9	

Section 17C - FINAL TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	DMP65R-BU6DA		EPBQ-654L8H6-L2				AM-X-CD-16-65-00T-RET							
ANTENNA VENDOR	CCI		KMW				KMW							
ANTENNA SIZE (H x W x D)	71.2X20.7X7.7		73X21X6.3				72X11.8X5.9							
ANTENNA WEIGHT	79.4		72.8				48.5							
AZIMUTH	260		260				20							
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	70		70				70							
ANTENNA TIP HEIGHT	73		73				73							
MECHANICAL DOWNTILT	0		0				0							
FEEDER AMOUNT							2							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)		Built-In RET		Built-In RET				Built-In RET						
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)							2	CM1007-DBPXBC-003						
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)							1	DTMABP7819VG12A						
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)	1	4449 B5/B12_	1	4478 B14										
RRH - 850 band (QTY/MODEL)		with another band												
RRH - 1900 band (QTY/MODEL)			1	RRUS-32 B2										
RRH - AWS band (QTY/MODEL)			1	4426 B66										
RRH - WCS band (QTY/MODEL)	1	RRUS-32 B30												
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
RRH_7B_1 (QTY/MODEL)														
RRH_7B_2 (QTY/MODEL)														
RRH_7B_3 (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)	1	Y Cable												
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	Arrange antenna and radio positions as per PD.Swap LTE antenna with 8 port antenna. Swap and add radios. Add IDLe and Y cable.													
Local Market Note 2														
Local Market Note 3	1x6601 / 1x5216 / 2xXMU03 / 1x6630 + IDLe													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AtoII)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY / FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/ Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID(cssng)
ANTENNA POSITION 1	PORT 1	61171.C.700.4G.1	61171.C.700.4G.1	CTL02040_7C_1	CTL02040_7C_1		LTE 700	BU6D_725MHz_02DT	13.2	260	2	TOP	FIBER	0						1475.7065		23	
	PORT 2	61171.C.850.4G.1	61171.C.850.4G.1	CTL02040_8C_1	CTL02040_8C_1		LTE 850	BU6D_850MHz_02DT	13.1	260	2	TOP	FIBER	0						1475.7065		23	
	PORT 3	61171.C.WCS.4G.1	61171.C.WCS.4G.1	CTL02040_3C_1	CTL02040_3C_1		LTE WCS	BU6D_2355MHz_03DT	17.2	260	3	TOP	FIBER	0						1285.2866		24	
	PORT 5	61171.C.850.5G.1	61171.C.850.5G.1	CTCN002040_N005C_1	CTCN002040_N005C_1		5G 850	BU6D_850MHz_02DT	13.1	260	2	TOP	FIBER	0						1475.7065		23	
ANTENNA POSITION 2	PORT 1	61171.C.700.4G.tmp5	61171.C.700.4G.5	CTL02040_7C_3_F	CTL02040_7C_3_F		LTE 700	L2_776MHz_02DT	14.78	260	2	TOP	FIBER	0						1000		21	
	PORT 3	61171.C.1900.4G.tmp1	61171.C.1900.4G.1	CTL00840_9C_1	CTL00840_9C_1		LTE 1900	BU4D_1930MHz_02DT	15.6	260	0	TOP	FIBER	0						3664.3757		22	
	PORT 4	61171.C.1900.4G.tmp2	61171.C.1900.4G.4	CTL00840_9C_2	CTL00840_9C_2		LTE 1900	BU4D_1930MHz_02DT	15.6	260	0	TOP	FIBER	0						3664.3757		22	

	PORT 7	61171.C.AWS.4G.tmp4	61171.C.AWS.4G.4	CTL00840_2C_2	CTL00840_2C_2		LTE AWS	BU6D_2170MHz_02DT	16.2	260	0	TOP	FIBER	0						3837.0724		22	
ANTENNA POSITION 4	PORT 1	61171.C.850.3G.1		CTV20403	CTV20403		UMTS 850	00T-RET_850MHz_0	16.1	20	2	NONE	Andrew 1-5/8 (850)	154.04						529.66		17	

September 17, 2021

SAI Communications
12 Industrial Way
Salem NH, 03079

RE:	Site Number:	CT2040 (LTE 6C)
	FA Number:	10035317
	PACE Number:	MRCTB049073
	PT Number:	2051A0WQB8
	Site Name:	HAMDEN BENHAM ST
	Site Address:	265 Benham Street Hamden, CT 06514

To Whom It May Concern:

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

- (3) AM-X-CD-16-65-00T-RET Antennas (72.0"x11.8"x5.9" – Wt. = 49 lbs. /each)
- (3) EPBQ-654L8H6-L2 Antennas (73.0"x21.0"x6.3" – Wt. = 73 lbs. /each)
- (3) 4426 B66 RRH's (14.9"x13.2"x5.8" – Wt. = 49 lbs. /each)
- (3) RRUS-32 B30 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (3) RRUS-32 B2 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (3) DTMABP7819VG12A TMA's (10.7"x11.1"x3.8" - Wt. = 20 lbs. /each)
- (3) Squid Surge Arrestors (24.0"x9.7" Ø – Wt. = 33 lbs.) (Tower Mounted)
- **(3) DMP65R-BU6DA Antennas (71.2"x20.7"x7.7" – Wt. = 80 lbs. /each)**
- **(3) 4449 B5/B12 RRH's (17.9"x13.2"x9.4" – Wt. = 73 lbs. /each)**
- **(3) 4478 B14 RRH's (18.1"x13.4"x8.3" – Wt. = 60 lbs. /each)**

**Proposed equipment shown in bold*

Mount fabrication drawings prepared by SitePro1 VFA12-WLL-30120, dated May 3, 2018, were used to perform this analysis.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-H, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2015 with 2018 Connecticut State Building Code, and AT&T Mount Technical Directive – R13.
- HDG considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-H and Appendix N of the Connecticut State Building Code, the max basic wind speed for this site is equal to 125 mph with a max basic wind speed with ice of 50 mph and a max ice thickness of 1.0 in. An escalated ice thickness of 1.10 in was used for this analysis.
- HDG considers this site to be exposure category B; tower is located in an urban/suburban or wooded area with numerous closely spaced obstructions.
- HDG considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- HDG considers this site to have a spectral response acceleration parameter at short periods, S_S, of 0.187 and a spectral response acceleration parameter at a period of 1 second, S_1, of 0.063.
- 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 3.
- The mount has been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.
- The existing mount is secured to the existing tower with bent plates and threaded rods. The connection is considered OK by visual inspection.

Based on our evaluation, we have determined that the proposed SitePro1 VFA12-WLL-30120 mounts **ARE CAPABLE** of supporting the proposed installation.

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Proposed (LTE 6C) Mount Rating	14	LC45	83%	**PASS**

Reference Documents:

- Fabrication drawings prepared by SitePro1 VFA12-WLL-30120, dated May 3, 2018.

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 proposed mount will be 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

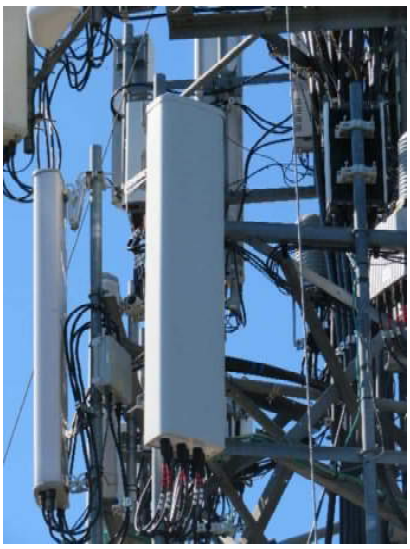
Daniel P. Hamm, PE
Principal

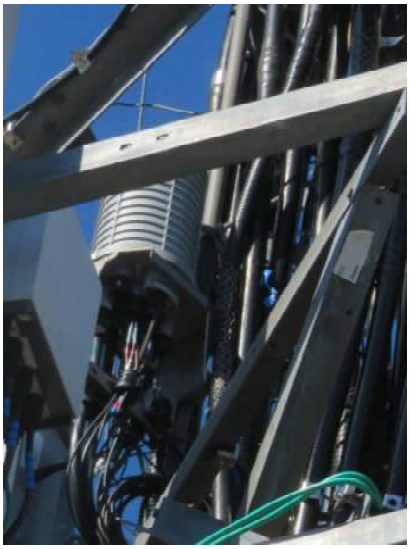
FIELD PHOTOS:
*Note: Existing mount to be removed and replaced.






FIELD PHOTOS (CONT.):





HUDSON
Design Group LLC

Wind & Ice
Calculations

Date: 9/15/2021
Project Name: HAMDEN BENHAM ST
Project No.: CT2040
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=	70	(ft)
	z_g=	1200	(ft)
K_z= 0.892	α=	7.0	

Kzmin ≤ Kz ≤ 2.01

Table 2-4

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

2.6.6.2 Topographic Factor:

Table 2-5

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

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

K_{zt}= 1	K_h=	1	
	K_c=	0.9	(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=	70	
	z_s=	255	(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} =	1.08	(from Sec. 2.6.10)

$t_{iz} = t_i * I * K_{iz} * (K_{zt})^{0.35}$ t_{iz} = 1.08 in

Date: 9/15/2021
Project Name: HAMDEN BENHAM ST
Project No.: CT2040
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=	106	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=	0.892	(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=	**30.07**	K_e=	0.99	(from 2.6.8)
$q_{z\ (ice)}$=	**4.81**	K_d=	0.85	(from Table 2-2)
$q_{z\ (30)}$=	**1.73**	V_{max}=	125	mph (Ultimate Wind Speed)
		$V_{max\ (ice)}$=	50	mph
		V_{30}=	30	mph

Table 2-2

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

Date: 9/17/2021
Project Name: HAMDEN BENHAM ST
Project No.: CT2040
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 = **1.08** 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)
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.44	1.24	**382**	**70**	**22**
EPBQ-654L8H6-L2 Antenna	73.0	21.0	6.3	10.65	3.48	1.24	**398**	**72**	**23**
AM-X-CD-16-65-00T-RET Antenna	72.0	11.8	5.9	5.90	6.10	1.36	**241**	**47**	**14**
4426 B66 RRH	14.9	13.2	5.8	1.37	1.13	1.20	**49**	**10**	**3**
4426 B66 RRH (Shielded)	14.9	0.0	13.2	0.00	0.00	1.20	**0**	**1**	**0**
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	2.25	1.20	**82**	**17**	**5**
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	2.25	1.20	**82**	**17**	**5**
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.36	1.20	**59**	**12**	**3**
4478 B14 RRH	18.1	13.4	8.3	1.68	1.35	1.20	**61**	**13**	**4**
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	**34**	**7**	**2**
5/8" Round Bar	0.6	12.0	-	0.05	0.05	1.20	**2**		
3/4" Round Bar	0.8	12.0	-	0.06	0.06	1.20	**2**		
2" Pipe	2.4	12.0	-	0.20	0.20	1.20	**7**		
2-1/2" Pipe	2.9	12.0	-	0.24	0.24	1.20	**9**		
PL 3-1/2x5/8	0.6	12.0	-	0.05	0.05	2.00	**3**		
PL 11-1/4x5/8	0.6	12.0	-	0.05	0.05	2.00	**3**		

Date: 9/17/2021
Project Name: HAMDEN BENHAM ST
Project No.: CT2040
Designed By: RL Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	30	(deg)	Ice Thickness =	1.08	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)
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	382	169	329
EPBQ-654L8H6-L2 Antenna	73.0	21.0	6.3	10.65	3.19	3.48	11.59	1.24	1.55	398	149	336
AM-X-CD-16-65-00T-RET Antenna	72.0	11.8	5.9	5.90	2.95	6.10	12.20	1.36	1.57	241	140	216
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	49	22	42
4426 B66 RRH (Shielded)	14.9	6.6	13.2	0.68	1.37	2.26	1.13	1.20	1.20	25	49	31
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	82	50	74
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	82	50	74
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	59	42	55
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	61	38	55

WIND LOADS WITH ICE:

DMP65R-BU6DA Antenna	73.4	22.9	9.9	11.64	5.02	3.21	7.44	1.23	1.41	69	34	60
EPBQ-654L8H6-L2 Antenna	75.2	23.2	8.5	12.09	4.41	3.25	8.89	1.23	1.46	72	31	62
AM-X-CD-16-65-00T-RET Antenna	74.2	14.0	8.1	7.19	4.15	5.31	9.20	1.33	1.47	46	29	42
4426 B66 RRH	17.1	15.4	8.0	1.82	0.94	1.11	2.14	1.20	1.20	10	5	9
4426 B66 RRH (Shielded)	17.1	7.7	15.4	0.91	1.82	2.22	1.11	1.20	1.20	5	10	7
RRUS-32 B30 RRH	29.4	14.3	9.2	2.91	1.87	2.06	3.21	1.20	1.23	17	11	15
RRUS-32 B2 RRH	29.4	14.3	9.2	2.91	1.87	2.06	3.21	1.20	1.23	17	11	15
4449 B5/B12 RRH	20.1	15.4	11.6	2.14	1.61	1.31	1.74	1.20	1.20	12	9	12
4478 B14 RRH	20.3	15.6	10.5	2.19	1.47	1.30	1.94	1.20	1.20	13	8	12

WIND LOADS AT 30 MPH:

DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	22	10	19
EPBQ-654L8H6-L2 Antenna	73.0	21.0	6.3	10.65	3.19	3.48	11.59	1.24	1.55	23	9	19
AM-X-CD-16-65-00T-RET Antenna	72.0	11.8	5.9	5.90	2.95	6.10	12.20	1.36	1.57	14	8	12
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	3	1	2
4426 B66 RRH (Shielded)	14.9	6.6	13.2	0.68	1.37	2.26	1.13	1.20	1.20	1	3	2
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	5	3	4
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	5	3	4
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	3	2	3
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	4	2	3

Date: 9/17/2021
Project Name: HAMDEN BENHAM ST
Project No.: CT2040
Designed By: RL Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	60	(deg)	Ice Thickness =	1.08	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)
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	382	169	222
EPBQ-654L8H6-L2 Antenna	73.0	21.0	6.3	10.65	3.19	3.48	11.59	1.24	1.55	398	149	211
AM-X-CD-16-65-00T-RET Antenna	72.0	11.8	5.9	5.90	2.95	6.10	12.20	1.36	1.57	241	140	165
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	49	22	29
4426 B66 RRH (Shielded)	14.9	9.9	13.2	1.02	1.37	1.51	1.13	1.20	1.20	37	49	46
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	82	50	58
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	82	50	58
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	59	42	46
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	61	38	43

WIND LOADS WITH ICE:

DMP65R-BU6DA Antenna	73.4	22.9	9.9	11.64	5.02	3.21	7.44	1.23	1.41	69	34	43
EPBQ-654L8H6-L2 Antenna	75.2	23.2	8.5	12.09	4.41	3.25	8.89	1.23	1.46	72	31	41
AM-X-CD-16-65-00T-RET Antenna	74.2	14.0	8.1	7.19	4.15	5.31	9.20	1.33	1.47	46	29	34
4426 B66 RRH	17.1	15.4	8.0	1.82	0.94	1.11	2.14	1.20	1.20	10	5	7
4426 B66 RRH (Shielded)	17.1	11.5	15.4	1.36	1.82	1.48	1.11	1.20	1.20	8	10	10
RRUS-32 B30 RRH	29.4	14.3	9.2	2.91	1.87	2.06	3.21	1.20	1.23	17	11	12
RRUS-32 B2 RRH	29.4	14.3	9.2	2.91	1.87	2.06	3.21	1.20	1.23	17	11	12
4449 B5/B12 RRH	20.1	15.4	11.6	2.14	1.61	1.31	1.74	1.20	1.20	12	9	10
4478 B14 RRH	20.3	15.6	10.5	2.19	1.47	1.30	1.94	1.20	1.20	13	8	10

WIND LOADS AT 30 MPH:

DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	22	10	13
EPBQ-654L8H6-L2 Antenna	73.0	21.0	6.3	10.65	3.19	3.48	11.59	1.24	1.55	23	9	12
AM-X-CD-16-65-00T-RET Antenna	72.0	11.8	5.9	5.90	2.95	6.10	12.20	1.36	1.57	14	8	10
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	3	1	2
4426 B66 RRH (Shielded)	14.9	9.9	13.2	1.02	1.37	1.51	1.13	1.20	1.20	2	3	3
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	5	3	3
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	5	3	3
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	3	2	3
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	4	2	3

Date: 9/17/2021
Project Name: HAMDEN BENHAM ST
Project No.: CT2040
Designed By: RL Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	90	(deg)	Ice Thickness =	1.08	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)
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	382	169	169
EPBQ-654L8H6-L2 Antenna	73.0	21.0	6.3	10.65	3.19	3.48	11.59	1.24	1.55	398	149	149
AM-X-CD-16-65-00T-RET Antenna	72.0	11.8	5.9	5.90	2.95	6.10	12.20	1.36	1.57	241	140	140
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	49	22	22
4426 B66 RRH (Shielded)	14.9	0.0	13.2	0.00	1.37	0.00	1.13	1.20	1.20	0	49	49
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	82	50	50
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	82	50	50
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	59	42	42
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	61	38	38

WIND LOADS WITH ICE:

DMP65R-BU6DA Antenna	73.4	22.9	9.9	11.64	5.02	3.21	7.44	1.23	1.41	69	34	34
EPBQ-654L8H6-L2 Antenna	75.2	23.2	8.5	12.09	4.41	3.25	8.89	1.23	1.46	72	31	31
AM-X-CD-16-65-00T-RET Antenna	74.2	14.0	8.1	7.19	4.15	5.31	9.20	1.33	1.47	46	29	29
4426 B66 RRH	17.1	15.4	8.0	1.82	0.94	1.11	2.14	1.20	1.20	10	5	5
4426 B66 RRH (Shielded)	17.1	0.0	15.4	0.00	1.82	0.00	1.11	1.20	1.20	0	10	10
RRUS-32 B30 RRH	29.4	14.3	9.2	2.91	1.87	2.06	3.21	1.20	1.23	17	11	11
RRUS-32 B2 RRH	29.4	14.3	9.2	2.91	1.87	2.06	3.21	1.20	1.23	17	11	11
4449 B5/B12 RRH	20.1	15.4	11.6	2.14	1.61	1.31	1.74	1.20	1.20	12	9	9
4478 B14 RRH	20.3	15.6	10.5	2.19	1.47	1.30	1.94	1.20	1.20	13	8	8

WIND LOADS AT 30 MPH:

DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	22	10	10
EPBQ-654L8H6-L2 Antenna	73.0	21.0	6.3	10.65	3.19	3.48	11.59	1.24	1.55	23	9	9
AM-X-CD-16-65-00T-RET Antenna	72.0	11.8	5.9	5.90	2.95	6.10	12.20	1.36	1.57	14	8	8
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	3	1	1
4426 B66 RRH (Shielded)	14.9	0.0	13.2	0.00	1.37	0.00	1.13	1.20	1.20	0	3	3
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	5	3	3
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	5	3	3
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	3	2	2
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	4	2	2

Date: 9/17/2021
Project Name: HAMDEN BENHAM ST
Project No.: CT2040
Designed By: RL Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	120	(deg)	Ice Thickness =	1.08	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)
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	382	169	222
EPBQ-654L8H6-L2 Antenna	73.0	21.0	6.3	10.65	3.19	3.48	11.59	1.24	1.55	398	149	211
AM-X-CD-16-65-00T-RET Antenna	72.0	11.8	5.9	5.90	2.95	6.10	12.20	1.36	1.57	241	140	165
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	49	22	29
4426 B66 RRH (Shielded)	14.9	9.9	13.2	1.02	1.37	1.51	1.13	1.20	1.20	37	49	46
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	82	50	58
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	82	50	58
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	59	42	46
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	61	38	43

WIND LOADS WITH ICE:

DMP65R-BU6DA Antenna	73.4	22.9	9.9	11.64	5.02	3.21	7.44	1.23	1.41	69	34	43
EPBQ-654L8H6-L2 Antenna	75.2	23.2	8.5	12.09	4.41	3.25	8.89	1.23	1.46	72	31	41
AM-X-CD-16-65-00T-RET Antenna	74.2	14.0	8.1	7.19	4.15	5.31	9.20	1.33	1.47	46	29	34
4426 B66 RRH	17.1	15.4	8.0	1.82	0.94	1.11	2.14	1.20	1.20	10	5	7
4426 B66 RRH (Shielded)	17.1	11.5	15.4	1.36	1.82	1.48	1.11	1.20	1.20	8	10	10
RRUS-32 B30 RRH	29.4	14.3	9.2	2.91	1.87	2.06	3.21	1.20	1.23	17	11	12
RRUS-32 B2 RRH	29.4	14.3	9.2	2.91	1.87	2.06	3.21	1.20	1.23	17	11	12
4449 B5/B12 RRH	20.1	15.4	11.6	2.14	1.61	1.31	1.74	1.20	1.20	12	9	10
4478 B14 RRH	20.3	15.6	10.5	2.19	1.47	1.30	1.94	1.20	1.20	13	8	10

WIND LOADS AT 30 MPH:

DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	22	10	13
EPBQ-654L8H6-L2 Antenna	73.0	21.0	6.3	10.65	3.19	3.48	11.59	1.24	1.55	23	9	12
AM-X-CD-16-65-00T-RET Antenna	72.0	11.8	5.9	5.90	2.95	6.10	12.20	1.36	1.57	14	8	10
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	3	1	2
4426 B66 RRH (Shielded)	14.9	9.9	13.2	1.02	1.37	1.51	1.13	1.20	1.20	2	3	3
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	5	3	3
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	5	3	3
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	3	2	3
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	4	2	3

Date: 9/17/2021
Project Name: HAMDEN BENHAM ST
Project No.: CT2040
Designed By: RL Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	150	(deg)	Ice Thickness =	1.08	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)
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	382	169	329
EPBQ-654L8H6-L2 Antenna	73.0	21.0	6.3	10.65	3.19	3.48	11.59	1.24	1.55	398	149	336
AM-X-CD-16-65-00T-RET Antenna	72.0	11.8	5.9	5.90	2.95	6.10	12.20	1.36	1.57	241	140	216
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	49	22	42
4426 B66 RRH (Shielded)	14.9	6.6	13.2	0.68	1.37	2.26	1.13	1.20	1.20	25	49	31
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	82	50	74
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	82	50	74
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	59	42	55
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	61	38	55

WIND LOADS WITH ICE:

DMP65R-BU6DA Antenna	73.4	22.9	9.9	11.64	5.02	3.21	7.44	1.23	1.41	69	34	60
EPBQ-654L8H6-L2 Antenna	75.2	23.2	8.5	12.09	4.41	3.25	8.89	1.23	1.46	72	31	62
AM-X-CD-16-65-00T-RET Antenna	74.2	14.0	8.1	7.19	4.15	5.31	9.20	1.33	1.47	46	29	42
4426 B66 RRH	17.1	15.4	8.0	1.82	0.94	1.11	2.14	1.20	1.20	10	5	9
4426 B66 RRH (Shielded)	17.1	7.7	15.4	0.91	1.82	2.22	1.11	1.20	1.20	5	10	7
RRUS-32 B30 RRH	29.4	14.3	9.2	2.91	1.87	2.06	3.21	1.20	1.23	17	11	15
RRUS-32 B2 RRH	29.4	14.3	9.2	2.91	1.87	2.06	3.21	1.20	1.23	17	11	15
4449 B5/B12 RRH	20.1	15.4	11.6	2.14	1.61	1.31	1.74	1.20	1.20	12	9	12
4478 B14 RRH	20.3	15.6	10.5	2.19	1.47	1.30	1.94	1.20	1.20	13	8	12

WIND LOADS AT 30 MPH:

DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	22	10	19
EPBQ-654L8H6-L2 Antenna	73.0	21.0	6.3	10.65	3.19	3.48	11.59	1.24	1.55	23	9	19
AM-X-CD-16-65-00T-RET Antenna	72.0	11.8	5.9	5.90	2.95	6.10	12.20	1.36	1.57	14	8	12
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	3	1	2
4426 B66 RRH (Shielded)	14.9	6.6	13.2	0.68	1.37	2.26	1.13	1.20	1.20	1	3	2
RRUS-32 B30 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	5	3	4
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	5	3	4
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	3	2	3
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	4	2	3

Date: 9/15/2021
Project Name: HAMDEN BENHAM ST
Project No.: CT2040
Designed By: RL **Checked By:** MSC

HUDSON Design Group LLC

ICE WEIGHT CALCULATIONS

Thickness of ice:	1.08	in.
Density of ice:	56	pcf

DMP65R-BU6DA Antenna

Weight of ice based on total radial SF area:

Height (in):	71.2		
Width (in):	20.7		
Depth (in):	7.7		
Total weight of ice on object:		181	lbs
Weight of object:	80.0	lbs	
Combined weight of ice and object:		261	lbs

EPBQ-654L8H6-L2 Antenna

Weight of ice based on total radial SF area:

Height (in):	73.0		
Width (in):	21.0		
Depth (in):	6.3		
Total weight of ice on object:		185	lbs
Weight of object:	73.0	lbs	
Combined weight of ice and object:		258	lbs

AM-X-CD-16-65-00T-RET Antenna

Weight of ice based on total radial SF area:

Height (in):	72.0		
Width (in):	11.8		
Depth (in):	5.9		
Total weight of ice on object:		113	lbs
Weight of object:	49.0	lbs	
Combined weight of ice and object:		162	lbs

4426 B66 RRH

Weight of ice based on total radial SF area:

Height (in):	14.9		
Width (in):	13.2		
Depth (in):	5.8		
Total weight of ice on object:		25	lbs
Weight of object:	49.0	lbs	
Combined weight of ice and object:		74	lbs

RRUS-32 B30 RRH

Weight of ice based on total radial SF area:

Height (in):	27.2		
Width (in):	12.1		
Depth (in):	7.0		
Total weight of ice on object:		45	lbs
Weight of object:	60.0	lbs	
Combined weight of ice and object:		105	lbs

RRUS-32 B2 RRH

Weight of ice based on total radial SF area:

Height (in):	27.2		
Width (in):	12.1		
Depth (in):	7.0		
Total weight of ice on object:		45	lbs
Weight of object:	60.0	lbs	
Combined weight of ice and object:		105	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:		34	lbs
Weight of object:	73.0	lbs	
Combined weight of ice and object:		107	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:		34	lbs
Weight of object:	60.0	lbs	
Combined weight of ice and object:		94	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:		28	lbs
Weight of object:	33	lbs	
Combined weight of ice and object:		61	lbs

5/8" Round Bar

Per foot weight of ice:

diameter (in):	0.63		
Per foot weight of ice on object:		2	plf

3/4" Round Bar

Per foot weight of ice:

diameter (in):	0.75		
Per foot weight of ice on object:		2	plf

2" Pipe

Per foot weight of ice:

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

2-1/2" Pipe

Per foot weight of ice:

diameter (in):	2.88		
Per foot weight of ice on object:		5	plf

PL 3-1/2x5/8

Weight of ice based on total radial SF area:

Height (in):	3.5		
Width (in):	0.63		
Per foot weight of ice on object:		6	plf

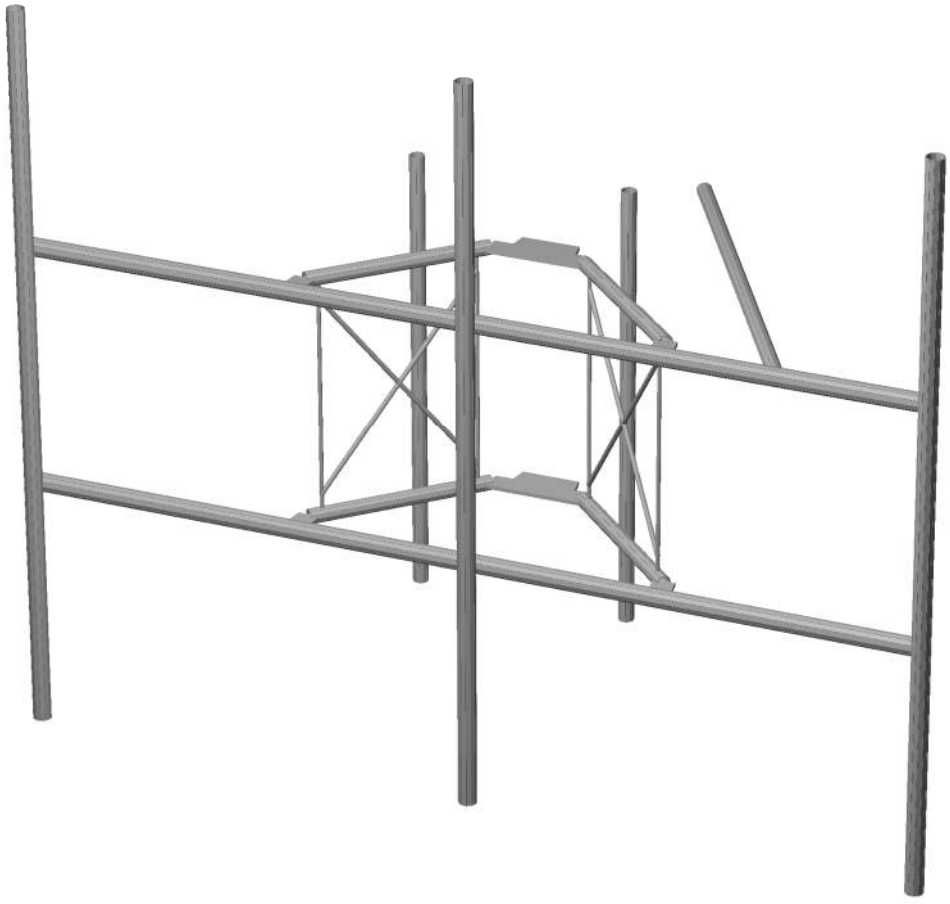
PL 11-1/4x5/8

Weight of ice based on total radial SF area:

Height (in):	11.25		
Width (in):	0.63		
Per foot weight of ice on object:		16	plf

HUDSON
Design Group LLC

Mount Calculations
(New Conditions)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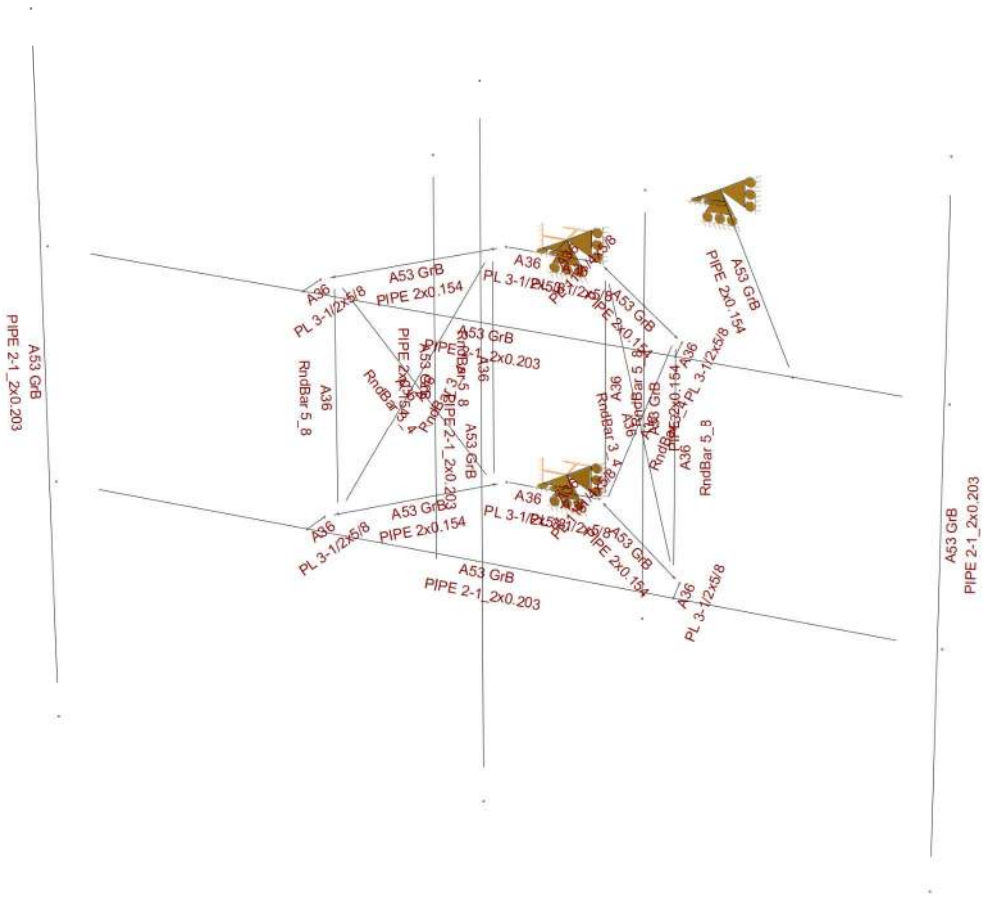
X
Z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A53 GrB
PIPE 2x0.154
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PL 3-1/2x5/8
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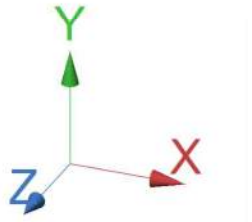
RndBar 5_8
A36
RndBar 3_4
A53 GrB
PIPE 2-1_2x0.203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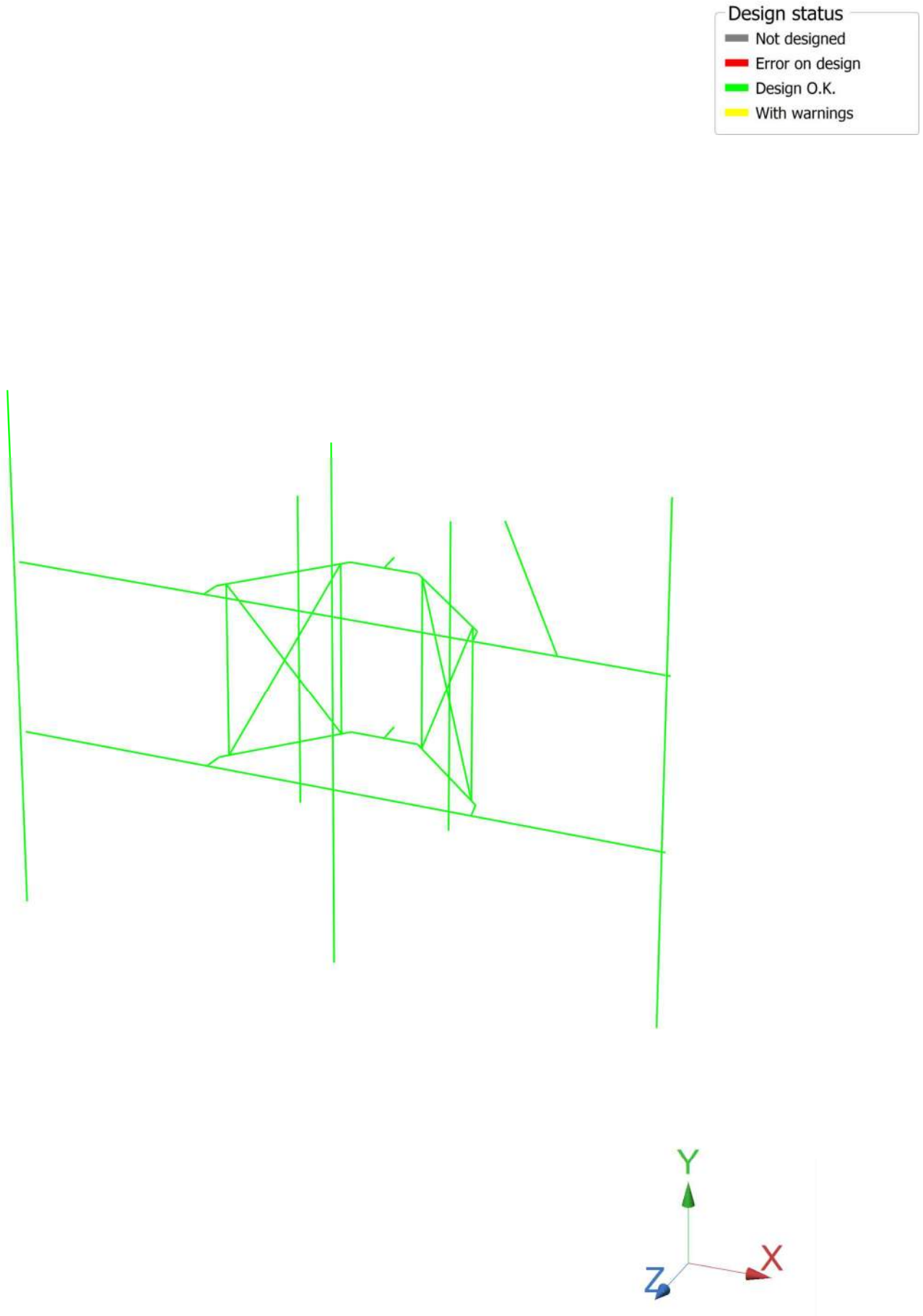
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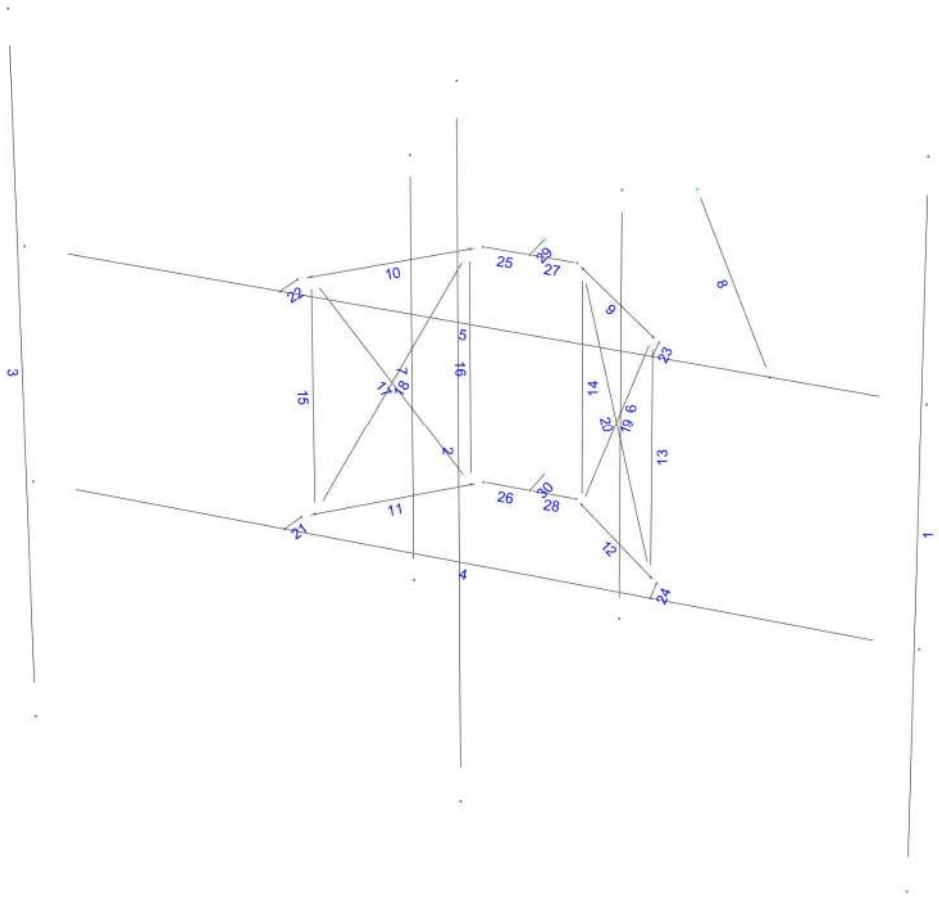
Error on design
Design O.K.
With warnings
Y
X
Z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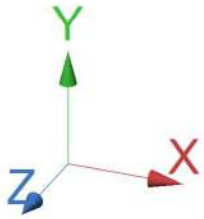
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Load data

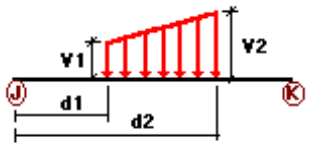
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
D	Dead Load	No	DL
Wo	Wind Load (NO ICE)	No	WIND
W30	WL 30deg	No	WIND
W60	WL 60deg	No	WIND
W90	WL 90deg	No	WIND
W120	WL 120deg	No	WIND
W150	WL 150deg	No	WIND
Di	Ice Load	No	LL
WI0	WL ICE 0deg	No	WIND
WI30	WL ICE 30deg	No	WIND
WI60	WL ICE 60deg	No	WIND
WI90	WL ICE 90deg	No	WIND
WI120	WL ICE 120deg	No	WIND
WI150	WL ICE 150deg	No	WIND
WL0	WL 30 mph 0deg	No	WIND
WL30	WL 30 mph 30deg	No	WIND
WL60	WL 30 mph 60deg	No	WIND
WL90	WL 30 mph 90deg	No	WIND
WL120	WL 30 mph 120deg	No	WIND
WL150	WL 30 mph 150deg	No	WIND
LL1	250 lb Live Load Center of Mount	No	LL
LL2	250 lb Live Load Right End of Mount	No	LL
LL3	250 lb Live Load Left 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

Distributed force on members



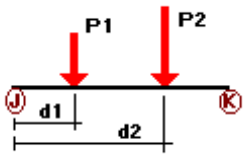
Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
Wo	4	z	-0.009	-0.009	0.00	No	100.00	Yes
	5	z	-0.009	-0.009	0.00	No	100.00	Yes
	6	z	-0.007	-0.007	0.00	No	100.00	Yes
	7	z	-0.007	-0.007	0.00	No	100.00	Yes
	8	z	-0.007	-0.007	0.00	No	100.00	Yes
	9	z	-0.007	-0.007	0.00	No	100.00	Yes
	10	z	-0.007	-0.007	0.00	No	100.00	Yes
	11	z	-0.007	-0.007	0.00	No	100.00	Yes
	12	z	-0.007	-0.007	0.00	No	100.00	Yes
	13	z	-0.002	-0.002	0.00	No	100.00	Yes
	14	z	-0.002	-0.002	0.00	No	100.00	Yes
	15	z	-0.002	-0.002	0.00	No	100.00	Yes
	16	z	-0.002	-0.002	0.00	No	100.00	Yes
	17	z	-0.002	-0.002	0.00	No	100.00	Yes
	18	z	-0.002	-0.002	0.00	No	100.00	Yes
	19	z	-0.002	-0.002	0.00	No	100.00	Yes
	20	z	-0.002	-0.002	0.00	No	100.00	Yes
	22	z	-0.003	-0.003	0.00	No	100.00	Yes
	23	z	-0.003	-0.003	0.00	No	100.00	Yes
	24	z	-0.003	-0.003	0.00	No	100.00	Yes
	21	z	-0.003	-0.003	0.00	No	100.00	Yes
	25	z	-0.003	-0.003	0.00	No	100.00	Yes
	27	z	-0.003	-0.003	0.00	No	100.00	Yes
	26	z	-0.003	-0.003	0.00	No	100.00	Yes
	28	z	-0.003	-0.003	0.00	No	100.00	Yes
	29	z	-0.003	-0.003	0.00	No	100.00	Yes
	30	z	-0.003	-0.003	0.00	No	100.00	Yes
W30	1	z	-0.009	-0.009	0.00	No	100.00	Yes
	2	z	-0.009	-0.009	0.00	No	100.00	Yes
	3	z	-0.009	-0.009	0.00	No	100.00	Yes
	4	z	-0.009	-0.009	0.00	No	100.00	Yes
	5	z	-0.009	-0.009	0.00	No	100.00	Yes
	6	z	-0.007	-0.007	0.00	No	100.00	Yes
	7	z	-0.007	-0.007	0.00	No	100.00	Yes
	8	z	-0.007	-0.007	0.00	No	100.00	Yes
	9	z	-0.007	-0.007	0.00	No	100.00	Yes
	10	z	-0.007	-0.007	0.00	No	100.00	Yes
	11	z	-0.007	-0.007	0.00	No	100.00	Yes
	12	z	-0.007	-0.007	0.00	No	100.00	Yes
	13	z	-0.002	-0.002	0.00	No	100.00	Yes
	14	z	-0.002	-0.002	0.00	No	100.00	Yes
	15	z	-0.002	-0.002	0.00	No	100.00	Yes
	16	z	-0.002	-0.002	0.00	No	100.00	Yes
	17	z	-0.002	-0.002	0.00	No	100.00	Yes
	18	z	-0.002	-0.002	0.00	No	100.00	Yes
	19	z	-0.002	-0.002	0.00	No	100.00	Yes
	20	z	-0.002	-0.002	0.00	No	100.00	Yes
	22	z	-0.003	-0.003	0.00	No	100.00	Yes
	23	z	-0.003	-0.003	0.00	No	100.00	Yes
	24	z	-0.003	-0.003	0.00	No	100.00	Yes
	21	z	-0.003	-0.003	0.00	No	100.00	Yes
	25	z	-0.003	-0.003	0.00	No	100.00	Yes
	27	z	-0.003	-0.003	0.00	No	100.00	Yes
	26	z	-0.003	-0.003	0.00	No	100.00	Yes
	28	z	-0.003	-0.003	0.00	No	100.00	Yes
	29	z	-0.003	-0.003	0.00	No	100.00	Yes
	30	z	-0.003	-0.003	0.00	No	100.00	Yes
W60	1	x	-0.009	-0.009	0.00	No	100.00	Yes
	2	x	-0.009	-0.009	0.00	No	100.00	Yes
	3	x	-0.009	-0.009	0.00	No	100.00	Yes

	4	x	-0.009	-0.009	0.00	No	100.00	Yes
	5	x	-0.009	-0.009	0.00	No	100.00	Yes
	6	x	-0.007	-0.007	0.00	No	100.00	Yes
	7	x	-0.007	-0.007	0.00	No	100.00	Yes
	8	x	-0.007	-0.007	0.00	No	100.00	Yes
	9	x	-0.007	-0.007	0.00	No	100.00	Yes
	10	x	-0.007	-0.007	0.00	No	100.00	Yes
	11	x	-0.007	-0.007	0.00	No	100.00	Yes
	12	x	-0.007	-0.007	0.00	No	100.00	Yes
	13	x	-0.002	-0.002	0.00	No	100.00	Yes
	14	x	-0.002	-0.002	0.00	No	100.00	Yes
	15	x	-0.002	-0.002	0.00	No	100.00	Yes
	16	x	-0.002	-0.002	0.00	No	100.00	Yes
	17	x	-0.002	-0.002	0.00	No	100.00	Yes
	18	x	-0.002	-0.002	0.00	No	100.00	Yes
	19	x	-0.002	-0.002	0.00	No	100.00	Yes
	20	x	-0.002	-0.002	0.00	No	100.00	Yes
	22	x	-0.003	-0.003	0.00	No	100.00	Yes
	23	x	-0.003	-0.003	0.00	No	100.00	Yes
	24	x	-0.003	-0.003	0.00	No	100.00	Yes
	21	x	-0.003	-0.003	0.00	No	100.00	Yes
	25	x	-0.003	-0.003	0.00	No	100.00	Yes
	27	x	-0.003	-0.003	0.00	No	100.00	Yes
	26	x	-0.003	-0.003	0.00	No	100.00	Yes
	28	x	-0.003	-0.003	0.00	No	100.00	Yes
	29	x	-0.003	-0.003	0.00	No	100.00	Yes
	30	x	-0.003	-0.003	0.00	No	100.00	Yes
W90	1	x	-0.009	-0.009	0.00	No	100.00	Yes
	2	x	-0.009	-0.009	0.00	No	100.00	Yes
	3	x	-0.009	-0.009	0.00	No	100.00	Yes
	6	x	-0.007	-0.007	0.00	No	100.00	Yes
	7	x	-0.007	-0.007	0.00	No	100.00	Yes
	8	x	-0.007	-0.007	0.00	No	100.00	Yes
	9	x	-0.007	-0.007	0.00	No	100.00	Yes
	10	x	-0.007	-0.007	0.00	No	100.00	Yes
	11	x	-0.007	-0.007	0.00	No	100.00	Yes
	12	x	-0.007	-0.007	0.00	No	100.00	Yes
	13	x	-0.002	-0.002	0.00	No	100.00	Yes
	14	x	-0.002	-0.002	0.00	No	100.00	Yes
	15	x	-0.002	-0.002	0.00	No	100.00	Yes
	16	x	-0.002	-0.002	0.00	No	100.00	Yes
	17	x	-0.002	-0.002	0.00	No	100.00	Yes
	18	x	-0.002	-0.002	0.00	No	100.00	Yes
	19	x	-0.002	-0.002	0.00	No	100.00	Yes
	20	x	-0.002	-0.002	0.00	No	100.00	Yes
	22	x	-0.003	-0.003	0.00	No	100.00	Yes
	23	x	-0.003	-0.003	0.00	No	100.00	Yes
	24	x	-0.003	-0.003	0.00	No	100.00	Yes
	21	x	-0.003	-0.003	0.00	No	100.00	Yes
	25	x	-0.003	-0.003	0.00	No	100.00	Yes
	27	x	-0.003	-0.003	0.00	No	100.00	Yes
	26	x	-0.003	-0.003	0.00	No	100.00	Yes
	28	x	-0.003	-0.003	0.00	No	100.00	Yes
	29	x	-0.003	-0.003	0.00	No	100.00	Yes
	30	x	-0.003	-0.003	0.00	No	100.00	Yes
W120	1	x	-0.009	-0.009	0.00	No	100.00	Yes
	2	x	-0.009	-0.009	0.00	No	100.00	Yes
	3	x	-0.009	-0.009	0.00	No	100.00	Yes
	4	x	-0.009	-0.009	0.00	No	100.00	Yes
	5	x	-0.009	-0.009	0.00	No	100.00	Yes

	6	x	-0.007	-0.007	0.00	No	100.00	Yes
	7	x	-0.007	-0.007	0.00	No	100.00	Yes
	8	x	-0.007	-0.007	0.00	No	100.00	Yes
	9	x	-0.007	-0.007	0.00	No	100.00	Yes
	10	x	-0.007	-0.007	0.00	No	100.00	Yes
	11	x	-0.007	-0.007	0.00	No	100.00	Yes
	12	x	-0.007	-0.007	0.00	No	100.00	Yes
	13	x	-0.002	-0.002	0.00	No	100.00	Yes
	14	x	-0.002	-0.002	0.00	No	100.00	Yes
	15	x	-0.002	-0.002	0.00	No	100.00	Yes
	16	x	-0.002	-0.002	0.00	No	100.00	Yes
	17	x	-0.002	-0.002	0.00	No	100.00	Yes
	18	x	-0.002	-0.002	0.00	No	100.00	Yes
	19	x	-0.002	-0.002	0.00	No	100.00	Yes
	20	x	-0.002	-0.002	0.00	No	100.00	Yes
	22	x	-0.003	-0.003	0.00	No	100.00	Yes
	23	x	-0.003	-0.003	0.00	No	100.00	Yes
	24	x	-0.003	-0.003	0.00	No	100.00	Yes
	21	x	-0.003	-0.003	0.00	No	100.00	Yes
	25	x	-0.003	-0.003	0.00	No	100.00	Yes
	27	x	-0.003	-0.003	0.00	No	100.00	Yes
	26	x	-0.003	-0.003	0.00	No	100.00	Yes
	28	x	-0.003	-0.003	0.00	No	100.00	Yes
	29	x	-0.003	-0.003	0.00	No	100.00	Yes
	30	x	-0.003	-0.003	0.00	No	100.00	Yes
W150	1	z	0.009	0.009	0.00	No	100.00	Yes
	2	z	0.009	0.009	0.00	No	100.00	Yes
	3	z	0.009	0.009	0.00	No	100.00	Yes
	4	z	0.009	0.009	0.00	No	100.00	Yes
	5	z	0.009	0.009	0.00	No	100.00	Yes
	6	z	0.007	0.007	0.00	No	100.00	Yes
	7	z	0.007	0.007	0.00	No	100.00	Yes
	8	z	0.007	0.007	0.00	No	100.00	Yes
	9	z	0.007	0.007	0.00	No	100.00	Yes
	10	z	0.007	0.007	0.00	No	100.00	Yes
	11	z	0.007	0.007	0.00	No	100.00	Yes
	12	z	0.007	0.007	0.00	No	100.00	Yes
	13	z	0.002	0.002	0.00	No	100.00	Yes
	14	z	0.002	0.002	0.00	No	100.00	Yes
	15	z	0.002	0.002	0.00	No	100.00	Yes
	16	z	0.002	0.002	0.00	No	100.00	Yes
	17	z	0.002	0.002	0.00	No	100.00	Yes
	18	z	0.002	0.002	0.00	No	100.00	Yes
	19	z	0.002	0.002	0.00	No	100.00	Yes
	20	z	0.002	0.002	0.00	No	100.00	Yes
	22	z	0.003	0.003	0.00	No	100.00	Yes
	23	z	0.003	0.003	0.00	No	100.00	Yes
	24	z	0.003	0.003	0.00	No	100.00	Yes
	21	z	0.003	0.003	0.00	No	100.00	Yes
	25	z	0.003	0.003	0.00	No	100.00	Yes
	27	z	0.003	0.003	0.00	No	100.00	Yes
	26	z	0.003	0.003	0.00	No	100.00	Yes
	28	z	0.003	0.003	0.00	No	100.00	Yes
	29	z	0.003	0.003	0.00	No	100.00	Yes
	30	z	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
13	y	-0.002	-0.002	0.00	No	100.00	Yes
14	y	-0.002	-0.002	0.00	No	100.00	Yes
15	y	-0.002	-0.002	0.00	No	100.00	Yes
16	y	-0.002	-0.002	0.00	No	100.00	Yes
17	y	-0.002	-0.002	0.00	No	100.00	Yes
18	y	-0.002	-0.002	0.00	No	100.00	Yes
19	y	-0.002	-0.002	0.00	No	100.00	Yes
20	y	-0.002	-0.002	0.00	No	100.00	Yes
22	y	-0.006	-0.006	0.00	No	100.00	Yes
23	y	-0.006	-0.006	0.00	No	100.00	Yes
24	y	-0.006	-0.006	0.00	No	100.00	Yes
21	y	-0.006	-0.006	0.00	No	100.00	Yes
25	y	-0.006	-0.006	0.00	No	100.00	Yes
27	y	-0.006	-0.006	0.00	No	100.00	Yes
26	y	-0.006	-0.006	0.00	No	100.00	Yes
28	y	-0.006	-0.006	0.00	No	100.00	Yes
29	y	-0.016	-0.016	0.00	No	100.00	Yes
30	y	-0.016	-0.016	0.00	No	100.00	Yes

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
D	1	y	-0.04	1.50	No
		y	-0.04	8.50	No
	2	y	-0.037	1.50	No
		y	-0.037	8.50	No
		y	-0.049	5.00	No
	3	y	-0.025	1.50	No
		y	-0.025	8.50	No
	6	y	-0.06	2.00	No
		y	-0.073	4.00	No
	7	y	-0.06	2.00	No
		y	-0.06	4.00	No
Wo	1	z	-0.192	1.50	No
		z	-0.192	8.50	No
	2	z	-0.199	1.50	No
		z	-0.199	8.50	No
	3	z	-0.121	1.50	No
		z	-0.121	8.50	No
	6	z	-0.082	2.00	No
		z	-0.059	4.00	No
	7	z	-0.082	2.00	No

		z	-0.061	4.00	No
W30	1	3	-0.165	1.50	No
		3	-0.165	8.50	No
	2	3	-0.168	1.50	No
		3	-0.168	8.50	No
		3	-0.031	5.00	No
	3	3	-0.108	1.50	No
		3	-0.108	8.50	No
	6	3	-0.074	2.00	No
		3	-0.055	4.00	No
	7	3	-0.074	2.00	No
		3	-0.055	4.00	No
W60	1	3	-0.112	1.50	No
		3	-0.112	8.50	No
	2	3	-0.106	1.50	No
		3	-0.106	8.50	No
		3	-0.046	5.00	No
	3	3	-0.083	1.50	No
		3	-0.083	8.50	No
	6	3	-0.058	2.00	No
		3	-0.046	4.00	No
	7	3	-0.058	2.00	No
		3	-0.043	4.00	No
W90	1	x	-0.085	1.50	No
		x	-0.085	8.50	No
	2	x	-0.075	1.50	No
		x	-0.075	8.50	No
		x	-0.049	5.00	No
	3	x	-0.07	1.50	No
		x	-0.07	8.50	No
	6	x	-0.05	2.00	No
		x	-0.042	4.00	No
	7	x	-0.05	2.00	No
		x	-0.038	4.00	No
W120	1	2	-0.112	1.50	No
		2	-0.112	8.50	No
	2	2	-0.106	1.50	No
		2	-0.106	8.50	No
		2	-0.046	5.00	No
	3	2	-0.083	1.50	No
		2	-0.083	8.50	No
	6	2	-0.058	2.00	No
		2	-0.046	4.00	No
	7	2	-0.058	2.00	No
		2	-0.043	4.00	No
W150	1	2	-0.165	1.50	No
		2	-0.165	8.50	No
	2	2	-0.168	1.50	No
		2	-0.168	8.50	No
		2	-0.031	5.00	No
	3	2	-0.108	1.50	No
		2	-0.108	8.50	No
	6	2	-0.074	2.00	No
		2	-0.055	4.00	No
	7	2	-0.074	2.00	No
		2	-0.055	4.00	No
Di	1	y	-0.091	1.50	No
		y	-0.091	8.50	No
	2	y	-0.093	1.50	No
		y	-0.093	8.50	No

		y	-0.025	5.00	No
	3	y	-0.057	1.50	No
		y	-0.057	8.50	No
	6	y	-0.045	2.00	No
		y	-0.034	4.00	No
	7	y	-0.045	2.00	No
		y	-0.034	4.00	No
WI0	1	z	-0.035	1.50	No
		z	-0.035	8.50	No
	2	z	-0.037	1.50	No
		z	-0.037	8.50	No
	3	z	-0.024	1.50	No
		z	-0.024	8.50	No
	6	z	-0.017	2.00	No
		z	-0.012	4.00	No
	7	z	-0.017	2.00	No
		z	-0.013	4.00	No
WI30	1	3	-0.031	1.50	No
		3	-0.031	8.50	No
	2	3	-0.031	1.50	No
		3	-0.031	8.50	No
		3	-0.007	5.00	No
	3	3	-0.021	1.50	No
		3	-0.021	8.50	No
	6	3	-0.015	2.00	No
		3	-0.012	4.00	No
	7	3	-0.015	2.00	No
		3	-0.012	4.00	No
WI60	1	3	-0.022	1.50	No
		3	-0.022	8.50	No
	2	3	-0.021	1.50	No
		3	-0.021	8.50	No
		3	-0.01	5.00	No
	3	3	-0.017	1.50	No
		3	-0.017	8.50	No
	6	3	-0.012	2.00	No
		3	-0.01	4.00	No
	7	3	-0.012	2.00	No
		3	-0.01	4.00	No
WI90	1	x	-0.018	1.50	No
		x	-0.018	8.50	No
	2	x	-0.016	1.50	No
		x	-0.016	8.50	No
		x	-0.01	5.00	No
	3	x	-0.015	1.50	No
		x	-0.015	8.50	No
	6	x	-0.011	2.00	No
		x	-0.009	4.00	No
	7	x	-0.011	2.00	No
		x	-0.008	4.00	No
WI120	1	2	-0.022	1.50	No
		2	-0.022	8.50	No
	2	2	-0.021	1.50	No
		2	-0.021	8.50	No
		2	-0.01	5.00	No
	3	2	-0.017	1.50	No
		2	-0.017	8.50	No
	6	2	-0.012	2.00	No
		2	-0.01	4.00	No
	7	2	-0.012	2.00	No

		2	-0.01	4.00	No
WI150	1	2	-0.031	1.50	No
		2	-0.031	8.50	No
	2	2	-0.031	1.50	No
		2	-0.031	8.50	No
		2	-0.007	5.00	No
	3	2	-0.021	1.50	No
		2	-0.021	8.50	No
	6	2	-0.015	2.00	No
		2	-0.012	4.00	No
	7	2	-0.015	2.00	No
		2	-0.012	4.00	No
WL0	1	z	-0.012	1.50	No
		z	-0.012	8.50	No
	2	z	-0.012	1.50	No
		z	-0.012	8.50	No
	3	z	-0.007	1.50	No
		z	-0.007	8.50	No
	6	z	-0.005	2.00	No
		z	-0.003	4.00	No
	7	z	-0.005	2.00	No
		z	-0.004	4.00	No
WL30	1	3	-0.01	1.50	No
		3	-0.01	8.50	No
	2	3	-0.01	1.50	No
		3	-0.01	8.50	No
		3	-0.002	5.00	No
	3	3	-0.007	1.50	No
		3	-0.007	8.50	No
	6	3	-0.004	2.00	No
		3	-0.003	4.00	No
	7	3	-0.004	2.00	No
		3	-0.003	4.00	No
WL60	1	3	-0.007	1.50	No
		3	-0.007	8.50	No
	2	3	-0.007	1.50	No
		3	-0.007	8.50	No
		3	-0.003	5.00	No
	3	3	-0.005	1.50	No
		3	-0.005	8.50	No
	6	3	-0.003	2.00	No
		3	-0.003	4.00	No
	7	3	-0.003	2.00	No
		3	-0.003	4.00	No
WL90	1	x	-0.005	1.50	No
		x	-0.005	8.50	No
	2	x	-0.005	1.50	No
		x	-0.005	8.50	No
		x	-0.003	5.00	No
	3	x	-0.005	1.50	No
		x	-0.005	8.50	No
	6	x	-0.003	2.00	No
		x	-0.002	4.00	No
	7	x	-0.003	2.00	No
		x	-0.002	4.00	No
WL120	1	2	-0.007	1.50	No
		2	-0.007	8.50	No
	2	2	-0.007	1.50	No
		2	-0.007	8.50	No
		2	-0.003	5.00	No

	3	2	-0.005	1.50	No
		2	-0.005	8.50	No
	6	2	-0.003	2.00	No
		2	-0.003	4.00	No
	7	2	-0.003	2.00	No
		2	-0.003	4.00	No
WL150	1	2	-0.01	1.50	No
		2	-0.01	8.50	No
	2	2	-0.01	1.50	No
		2	-0.01	8.50	No
		2	-0.002	5.00	No
	3	2	-0.007	1.50	No
		2	-0.007	8.50	No
	6	2	-0.004	2.00	No
		2	-0.003	4.00	No
	7	2	-0.004	2.00	No
		2	-0.003	4.00	No
LL1	5	y	-0.25	50.00	Yes
LL2	5	y	-0.25	100.00	Yes
LL3	5	y	-0.25	0.00	Yes
LLa1	1	y	-0.50	50.00	Yes
LLa2	2	y	-0.50	50.00	Yes
LLa3	3	y	-0.50	50.00	Yes

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
D	Dead Load	No	0.00	-1.00	0.00
Wo	Wind Load (NO ICE)	No	0.00	0.00	0.00
W30	WL 30deg	No	0.00	0.00	0.00
W60	WL 60deg	No	0.00	0.00	0.00
W90	WL 90deg	No	0.00	0.00	0.00
W120	WL 120deg	No	0.00	0.00	0.00
W150	WL 150deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
WI0	WL ICE 0deg	No	0.00	0.00	0.00
WI30	WL ICE 30deg	No	0.00	0.00	0.00
WI60	WL ICE 60deg	No	0.00	0.00	0.00
WI90	WL ICE 90deg	No	0.00	0.00	0.00
WI120	WL ICE 120deg	No	0.00	0.00	0.00
WI150	WL ICE 150deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30deg	No	0.00	0.00	0.00
WL60	WL 30 mph 60deg	No	0.00	0.00	0.00
WL90	WL 30 mph 90deg	No	0.00	0.00	0.00
WL120	WL 30 mph 120deg	No	0.00	0.00	0.00
WL150	WL 30 mph 150deg	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 Right End of Mount	No	0.00	0.00	0.00
LL3	250 lb Live Load Left 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

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
D	0.00	0.00	0.00
Wo	0.00	0.00	0.00
W30	0.00	0.00	0.00
W60	0.00	0.00	0.00
W90	0.00	0.00	0.00
W120	0.00	0.00	0.00
W150	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
WI60	0.00	0.00	0.00
WI90	0.00	0.00	0.00
WI120	0.00	0.00	0.00
WI150	0.00	0.00	0.00
WL0	0.00	0.00	0.00
WL30	0.00	0.00	0.00
WL60	0.00	0.00	0.00
WL90	0.00	0.00	0.00
WL120	0.00	0.00	0.00
WL150	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LL3	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

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Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2D+Wo
LC2=1.2D+W30
LC3=1.2D+W60
LC4=1.2D+W90
LC5=1.2D+W120
LC6=1.2D+W150
LC7=1.2D-Wo
LC8=1.2D-W30
LC9=1.2D-W60
LC10=1.2D-W90
LC11=1.2D-W120
LC12=1.2D-W150
LC13=0.9D+Wo
LC14=0.9D+W30
LC15=0.9D+W60
LC16=0.9D+W90
LC17=0.9D+W120
LC18=0.9D+W150
LC19=0.9D-Wo
LC20=0.9D-W30
LC21=0.9D-W60
LC22=0.9D-W90
LC23=0.9D-W120
LC24=0.9D-W150
LC25=1.2D+Di+WI0
LC26=1.2D+Di+WI30
LC27=1.2D+Di+WI60
LC28=1.2D+Di+WI90
LC29=1.2D+Di+WI120
LC30=1.2D+Di+WI150
LC31=1.2D+Di-WI0
LC32=1.2D+Di-WI30
LC33=1.2D+Di-WI60
LC34=1.2D+Di-WI90
LC35=1.2D+Di-WI120
LC36=1.2D+Di-WI150
LC37=1.2D+1.6LL1
LC38=1.2D+1.6LL2
LC39=1.2D+1.6LL3
LC40=1.2D+WL0+1.6LLa1
LC41=1.2D+WL30+1.6LLa1
LC42=1.2D+WL60+1.6LLa1
LC43=1.2D+WL90+1.6LLa1
LC44=1.2D+WL120+1.6LLa1
LC45=1.2D+WL150+1.6LLa1
LC46=1.2D-WL0+1.6LLa1
LC47=1.2D-WL30+1.6LLa1
LC48=1.2D-WL60+1.6LLa1
LC49=1.2D-WL90+1.6LLa1
LC50=1.2D-WL120+1.6LLa1
LC51=1.2D-WL150+1.6LLa1
LC52=1.2D+WL0+1.6LLa2

LC53=1.2D+WL30+1.6LLa2
LC54=1.2D+WL60+1.6LLa2
LC55=1.2D+WL90+1.6LLa2
LC56=1.2D+WL120+1.6LLa2
LC57=1.2D+WL150+1.6LLa2
LC58=1.2D-WL0+1.6LLa2
LC59=1.2D-WL30+1.6LLa2
LC60=1.2D-WL60+1.6LLa2
LC61=1.2D-WL90+1.6LLa2
LC62=1.2D-WL120+1.6LLa2
LC63=1.2D-WL150+1.6LLa2
LC64=1.2D+WL0+1.6LLa3
LC65=1.2D+WL30+1.6LLa3
LC66=1.2D+WL60+1.6LLa3
LC67=1.2D+WL90+1.6LLa3
LC68=1.2D+WL120+1.6LLa3
LC69=1.2D+WL150+1.6LLa3
LC70=1.2D-WL0+1.6LLa3
LC71=1.2D-WL30+1.6LLa3
LC72=1.2D-WL60+1.6LLa3
LC73=1.2D-WL90+1.6LLa3
LC74=1.2D-WL120+1.6LLa3
LC75=1.2D-WL150+1.6LLa3

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	PIPE 2-1_2x0.203	**1**	LC51 at 33.33%	0.48	OK	Eq. H1-1b
		2	LC1 at 64.58%	0.25	OK	Eq. H1-1b
		3	LC65 at 33.33%	0.46	OK	Eq. H1-1b
		4	LC41 at 71.88%	0.55	OK	Eq. H1-1b
		5	LC2 at 71.25%	**0.62**	**OK**	Eq. H1-1b
	PIPE 2x0.154	**6**	LC49 at 22.92%	0.22	OK	Eq. H1-1b
		7	LC65 at 22.92%	0.21	OK	Eq. H1-1b
		8	LC11 at 100.00%	0.09	OK	Sec. E1
		9	LC47 at 93.75%	**0.45**	**OK**	Eq. H1-1b
		10	LC71 at 93.75%	0.42	OK	Eq. H1-1b
		11	LC64 at 93.75%	0.34	OK	Eq. H1-1b
		12	LC41 at 93.75%	0.36	OK	Eq. H1-1b
	PL 11-1/4x5/8	**29**	LC32 at 100.00%	**0.29**	**OK**	Eq. H1-1b
		30	LC32 at 100.00%	0.22	OK	Eq. H1-1b
	PL 3-1/2x5/8	**22**	LC75 at 100.00%	0.49	OK	Eq. H1-1b
		23	LC51 at 100.00%	0.52	OK	Eq. H1-1b
		24	LC45 at 100.00%	0.55	OK	Eq. H1-1b
		21	LC71 at 100.00%	0.52	OK	Eq. H1-1b
		25	LC71 at 100.00%	0.70	OK	Eq. H1-1b
		27	LC47 at 0.00%	**0.74**	**OK**	Eq. H1-1b
		26	LC75 at 100.00%	0.69	OK	Eq. H1-1b
		28	LC41 at 0.00%	0.73	OK	Eq. H1-1b
	RndBar 3_4	**17**	LC75 at 100.00%	0.26	OK	Eq. H1-1b
		18	LC69 at 0.00%	0.36	OK	Eq. H1-1a
		19	LC41 at 0.00%	0.27	OK	Eq. H1-1b
		20	LC45 at 100.00%	**0.38**	**OK**	Eq. H1-1a
	RndBar 5_8	**13**	LC40 at 87.50%	0.82	OK	Eq. H1-1a
		14	LC45 at 87.50%	**0.83**	**OK**	Eq. H1-1a
		15	LC64 at 87.50%	0.78	OK	Eq. H1-1a
		16	LC75 at 87.50%	0.79	OK	Eq. H1-1a

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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
211	0.00	0.00	0.00	0
213	0.00	-3.3333	0.00	0
438	1.25	0.00	-2.1651	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
211	1	1	1	1	0	1
213	1	1	1	1	0	1
438	1	1	1	0	0	0

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
1	218	217		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
2	430	429		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
3	405	404		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
4	225	226		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
5	223	224		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
6	427	425		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
7	426	424		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
8	438	437		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
9	230	216		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
10	227	212		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
11	228	214		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
12	229	215		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
13	237	238		RndBar 5_8	A36	0.00	0.00	0.00
14	235	236		RndBar 5_8	A36	0.00	0.00	0.00
15	231	232		RndBar 5_8	A36	0.00	0.00	0.00
16	233	234		RndBar 5_8	A36	0.00	0.00	0.00
17	231	234		RndBar 3_4	A36	0.00	0.00	0.00
18	232	233		RndBar 3_4	A36	0.00	0.00	0.00
19	236	237		RndBar 3_4	A36	0.00	0.00	0.00
20	235	238		RndBar 3_4	A36	0.00	0.00	0.00
22	227	245		PL 3-1/2x5/8	A36	0.00	0.00	0.00
23	230	246		PL 3-1/2x5/8	A36	0.00	0.00	0.00
24	229	247		PL 3-1/2x5/8	A36	0.00	0.00	0.00
21	228	248		PL 3-1/2x5/8	A36	0.00	0.00	0.00
25	212	267		PL 3-1/2x5/8	A36	0.00	0.00	0.00
27	267	216		PL 3-1/2x5/8	A36	0.00	0.00	0.00
26	214	268		PL 3-1/2x5/8	A36	0.00	0.00	0.00
28	268	215		PL 3-1/2x5/8	A36	0.00	0.00	0.00
29	267	211		PL 11-1/4x5/8	A36	11.25	9.25	0.00
30	268	213		PL 11-1/4x5/8	A36	11.25	9.25	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
1	315.00	0	0.00	0.00	0.00
2	315.00	0	0.00	0.00	0.00
3	315.00	0	0.00	0.00	0.00
6	315.00	0	0.00	0.00	0.00
7	315.00	0	0.00	0.00	0.00
13	0.00	2	0.00	0.00	1.00
14	0.00	2	0.00	0.00	1.00
15	0.00	2	0.00	0.00	1.00
16	0.00	2	0.00	0.00	1.00
22	90.00	0	0.00	0.00	0.00
23	90.00	0	0.00	0.00	0.00
24	90.00	0	0.00	0.00	0.00
21	90.00	0	0.00	0.00	0.00
25	90.00	0	0.00	0.00	0.00
27	90.00	0	0.00	0.00	0.00
26	90.00	0	0.00	0.00	0.00
28	90.00	0	0.00	0.00	0.00
29	90.00	0	0.00	0.00	0.00
30	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]
17	0.00	-3.50	0.00	0.00	3.50	0.00
18	0.00	3.50	0.00	0.00	-3.50	0.00
19	0.00	3.50	0.00	0.00	-3.50	0.00
20	0.00	-3.50	0.00	0.00	3.50	0.00
29	0.00	-0.625	0.00	0.00	-0.625	0.00
30	0.00	-0.625	0.00	0.00	-0.625	0.00

Hinges

	Node-J				Node-K						
Member	M33	M22	V3	V2	M33	M22	V3	V2	TOR	AXL	Axial rigidity
8	0	0	0	0	1	1	0	0	0	0	Full
17	0	0	0	0	0	0	0	0	0	0	Tension only
19	0	0	0	0	0	0	0	0	0	0	Tension only
22	1	1	0	0	0	0	0	0	0	0	Full
23	1	1	0	0	0	0	0	0	0	0	Full
24	1	1	0	0	0	0	0	0	0	0	Full
21	1	1	0	0	0	0	0	0	0	0	Full

TOWER MAPPING REPORT

FOR

CT2040
FA CODE:10035317
265 BENHAM STREET
HAMDEN, CT, 06514
65'-0" GUYED TOWER

PREPARED FOR:

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

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

SAI COMMUNICATIONS
12 INDUSTRIAL WAY
SALEM, NH 03079

DATED: MAY 10, 2021

PREPARED BY:

ProVertic
45 Beechwood Drive
N. ANDOVER, MA 01845
PHONE: 978.416.0122
www.ProVertic.com

ProVertic

GUYED MAPPING FORM

Site Name: HAMDEN BENHAM ST

Date of Inspection: 05/04/2021

Carrier & Site Number: AT&T / CT2040

Mapped by: PROVERTIC / JC,KC

Site Address: 265 BENHAM STREET
HAMDEN, CT, 06514

Tower Latitude: 41° 22' 12.66" N

Tower Longitude: 72° 55' 53.29" W

Site Owner: N/A

Gate Combo: N/A

Site Contact & Info: N/A

Tower Manufacturer: NUDD TOWERS

Date Built: N/A

Tower Plate Information: N/A

Exposure Category: (Open) Wooded Urban Ocean Other:

Site Topography: (Flat) Ridge Hill Other:

Access Gate/Road Latitude: 41° 21' 55.60" N

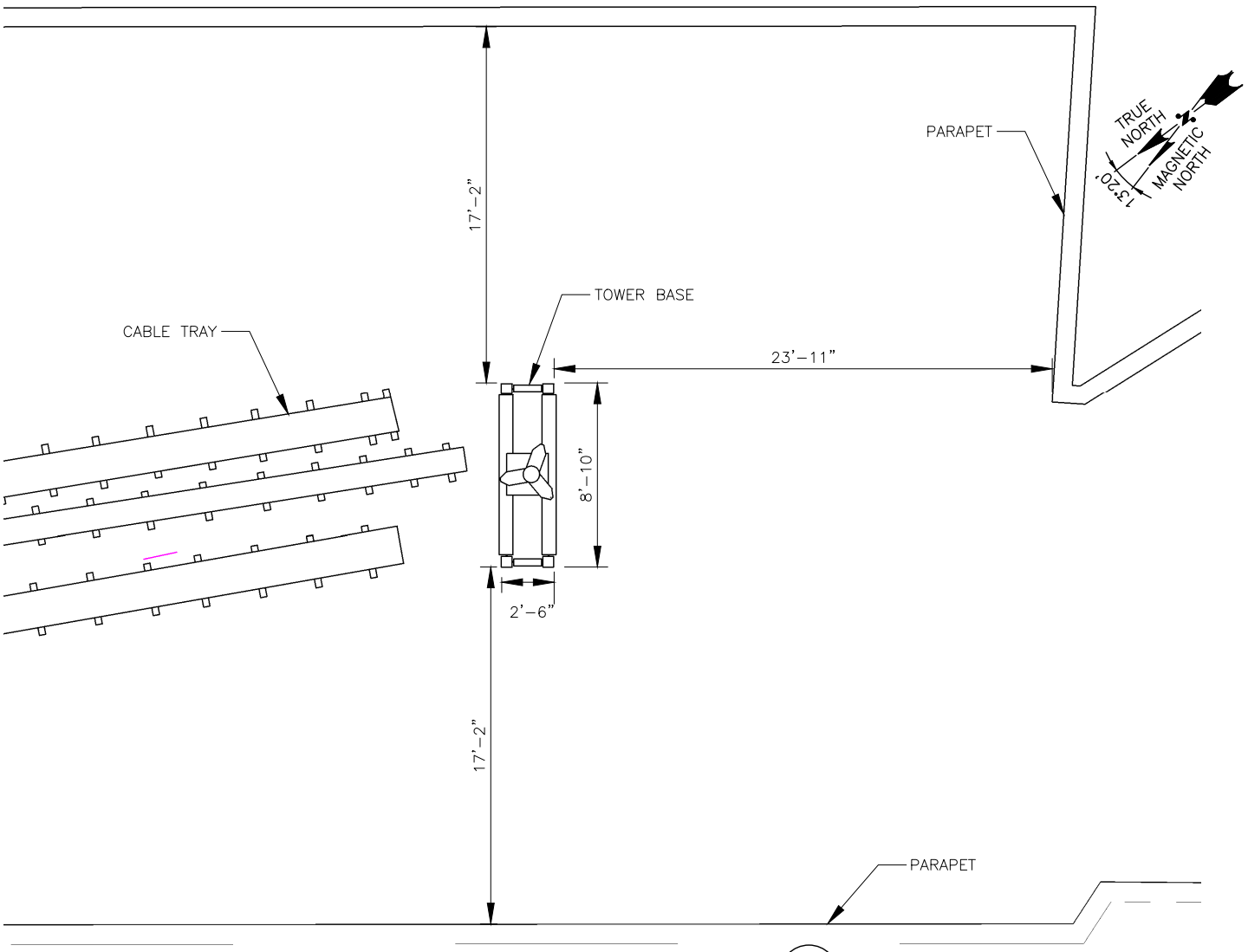
Site Access Description: N/A

Access Gate/Road Longitude: 72° 56' 2.96" W

Access Notes: N/A

General Comments/Observations:

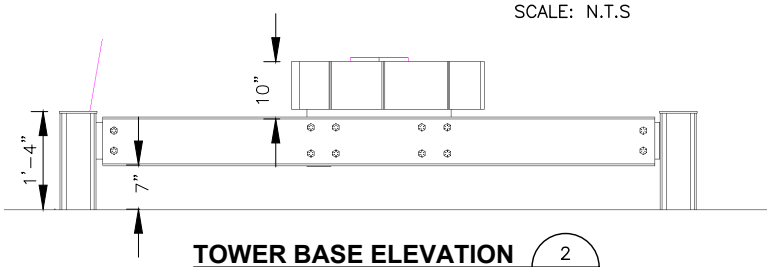
t: 978.416.0211 f: 978.610.1888 a: 45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845



ROOFTOP TOWER BASE PLAN

SCALE: N.T.S

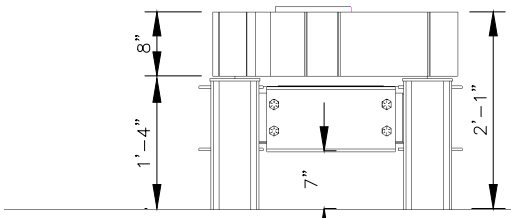
1 / SK-1



TOWER BASE ELEVATION

SCALE: N.T.S

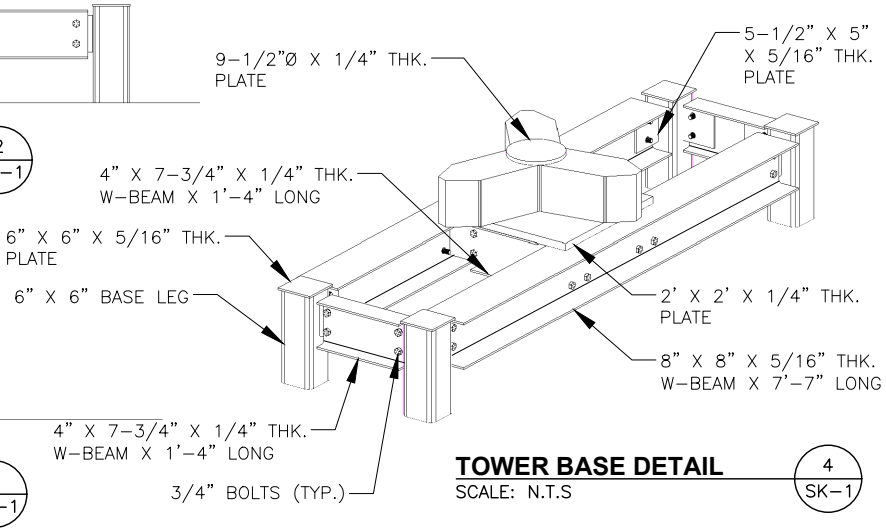
2 / SK-1



TOWER BASE ELEVATION

SCALE: N.T.S

3 / SK-1



TOWER BASE DETAIL

SCALE: N.T.S

4 / SK-1

PREPARED FOR: at&t 550 COCHITUATE ROAD FRAMINGHAM, MA 01701	PREPARED BY: ProVertic 45 Beechwood Drive N. ANDOVER, MA 01845	**SITE NUMBER:** CT2040 **SITE NAME:** HAMDEN BENHAM ST 265 BENHAM STREET HAMDEN, CT, 06514 NEW HAVEN COUNTY	REVISION: 0 — DATE: 05/10/21 — DRAWN BY: AM SITE TYPE: GUYED TOWER CHECKED BY: MSC SCALE: N.T.S **SK-1**

ProVertic

GUYED MAPPING FORM

BASE PLATE AND FOUNDATION INFORMATION

Number of Base Plates: 1

Base Plate Thickness: 1–1/4"

Base Plate Shape: Square Circle (Other:) _____

Base Plate Dimensions: 2'–0" X 2'–0"

Number of Foundation Pedestals: 4

Pedestal Extension from Grade: 1'–5"

Pedestal Shape: (Square) Circle Other: _____

Pedestal Dimensions: 6"X6"X1/4" HSS STUB UP

Number of Anchor Bolts per Plate: 1

Bolt Diameter: 1"

℄ Bolt To Edge: 3"

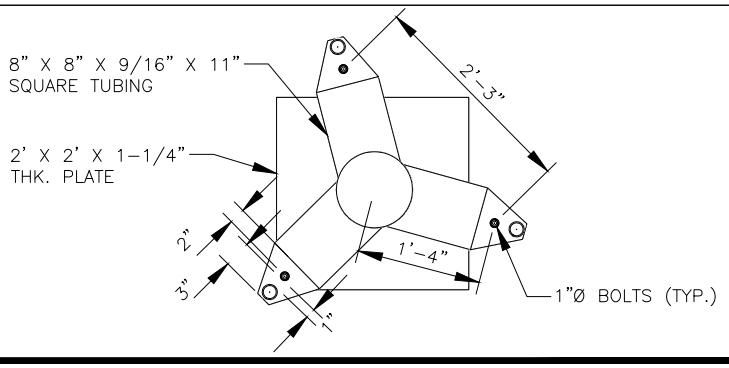
℄ Bolt To Leg Face: 1"

℄ Bolt To ℄ Bolt: 2'–3"

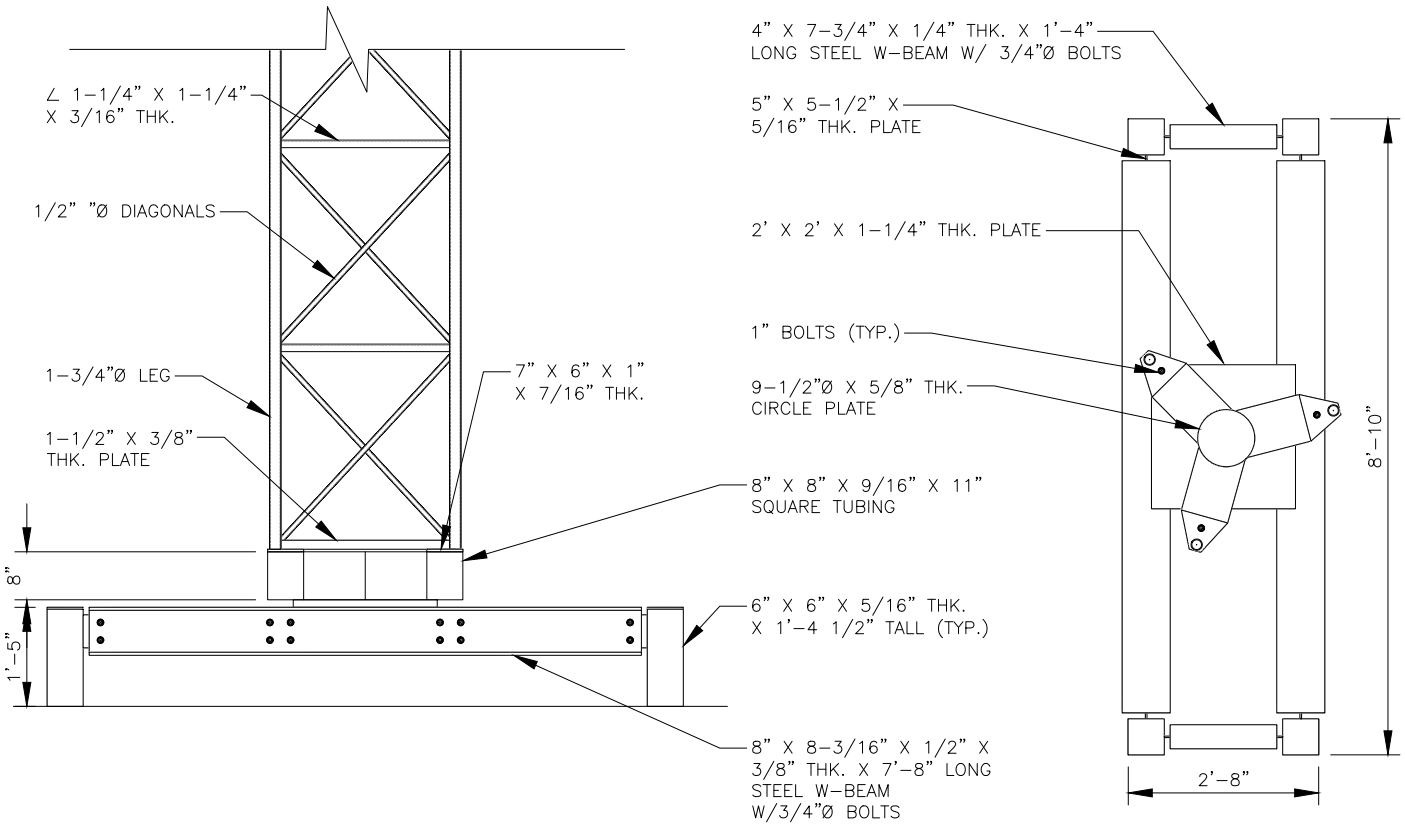
Grouting Distance: N/A

Is Grouting Present? YES (NO)

Bolt Pattern (Draw & Dimension)



Sketch Overall Base Plate & Foundation (Plan & Elevation Views)



ELEVATION **PLAN**

t: 978.416.0211 f: 978.610.1888 a: 45 BEECHWOOD DRIVE, NORTH ANDOVER, MA 01845

TOP OF TOWER
ELEV. = 67'-2"± A.R.L

TOP OF SECTION 3
ELEV. = 62'-2"± A.R.L

TOP OF SECTION 2
ELEV. = 42'-2"± A.R.L

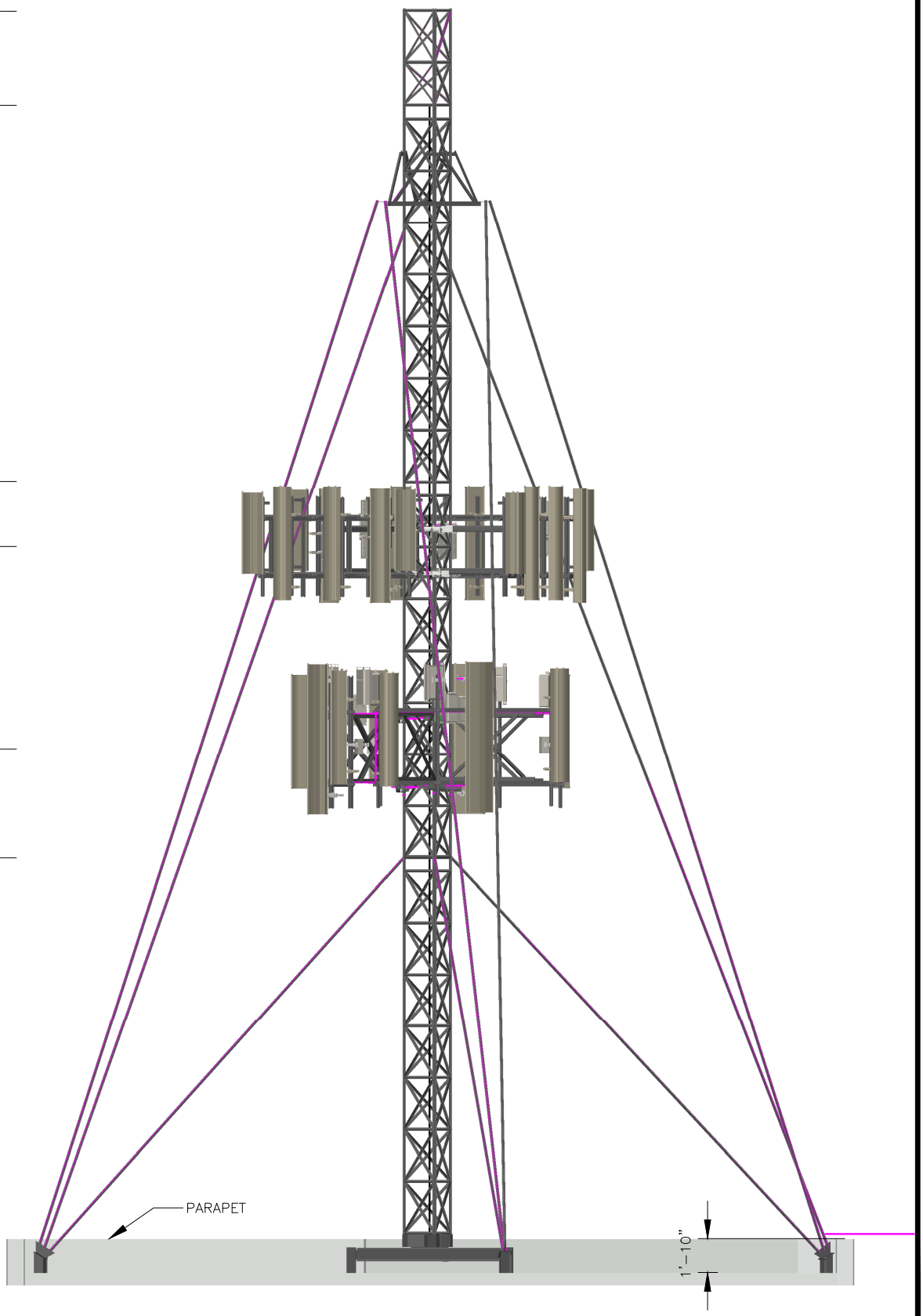
MOUNT BY OTHERS
ELEV. = 38'-7"± A.R.L

MOUNT BY AT&T
ELEV. = 27'-10"± A.R.L

TOP OF SECTION 1
ELEV. = 22'-2"± A.R.L

TOP OF TOWER BASE
ELEV. = 2'-2"± A.R.L

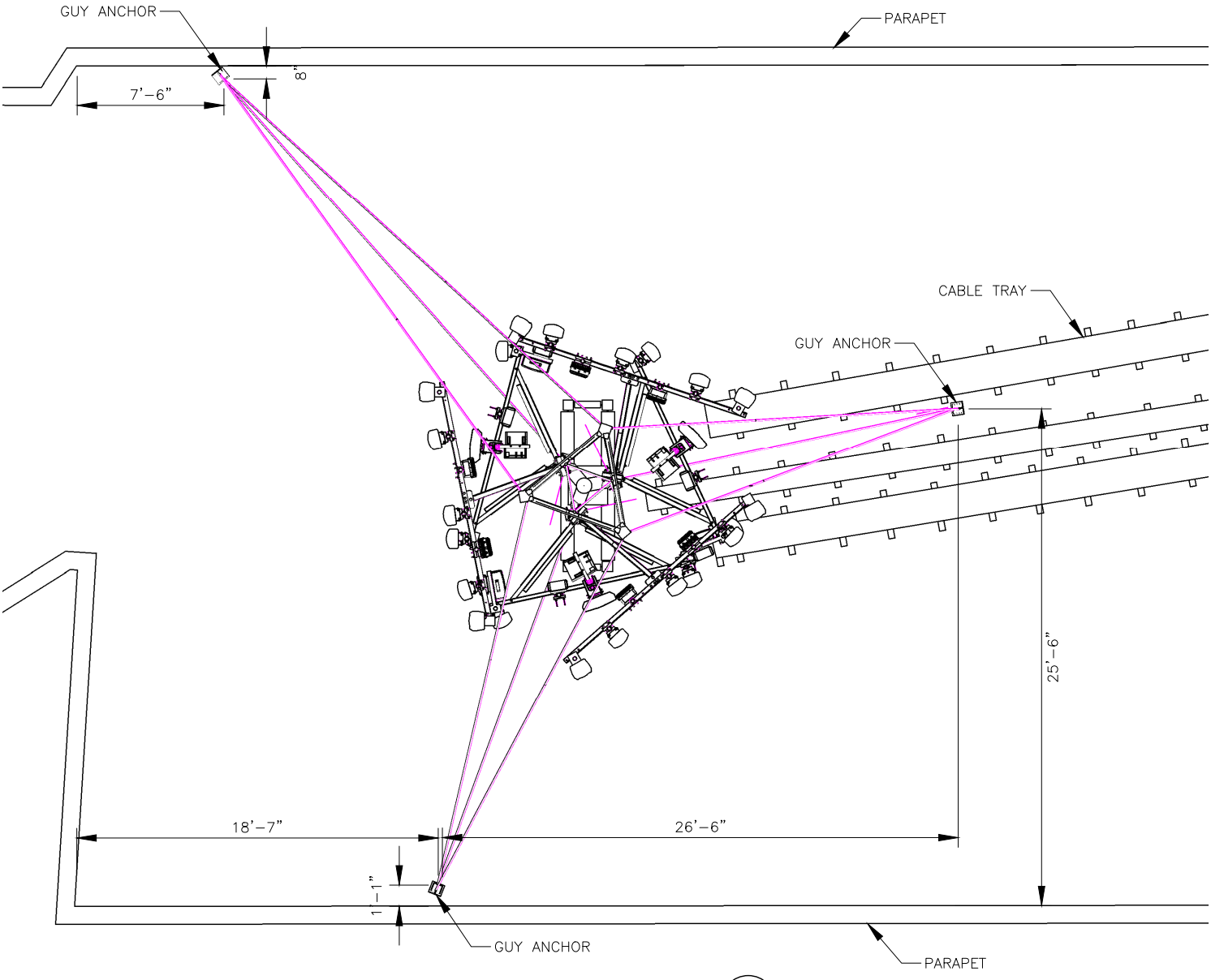
TOP OF ROOF
ELEV. = 0.0'± A.R.L



OVERALL TOWER ELEVATION

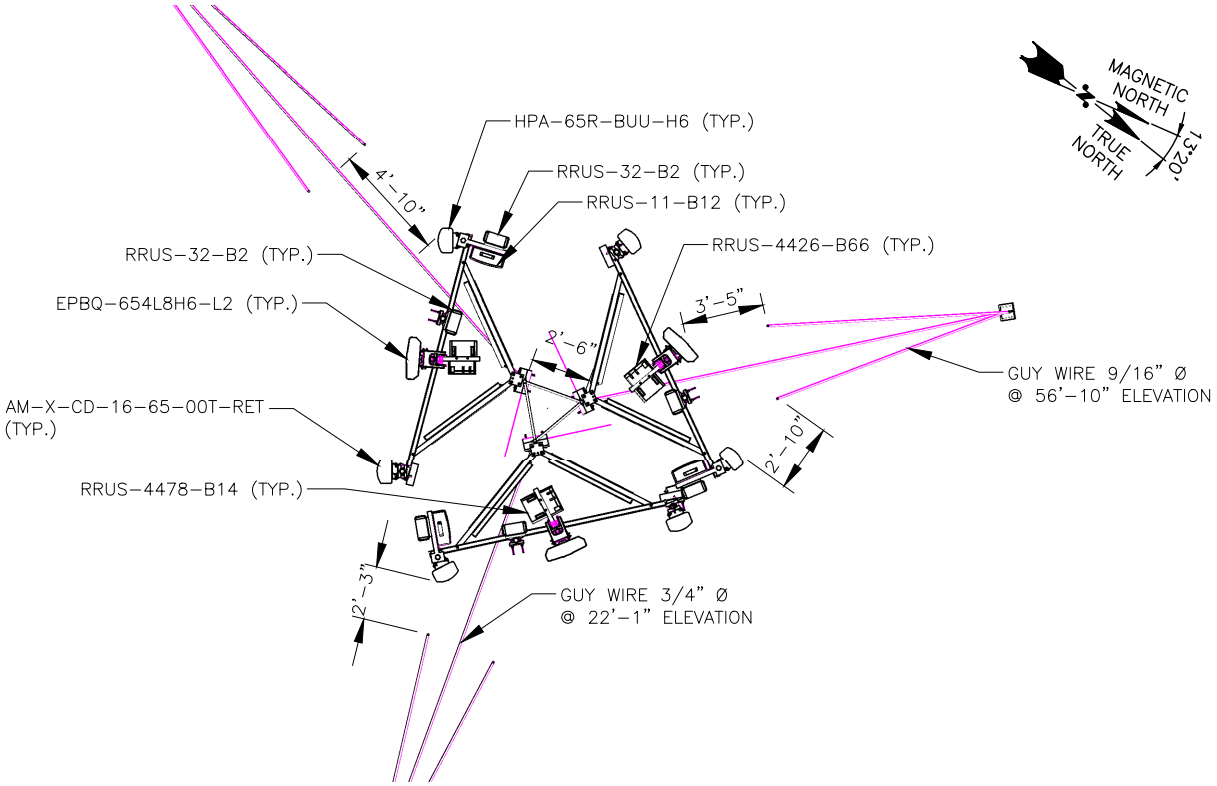
PREPARED FOR: at&t 550 COCHITUATE ROAD FRAMINGHAM, MA 01701	PREPARED BY: ProVertic 45 Beechwood Drive N. ANDOVER, MA 01845	**SITE NUMBER:** **CT2040** **SITE NAME:** **HAMDEN BENHAM ST** 265 BENHAM STREET HAMDEN, CT, 06514 NEW HAVEN COUNTY	REVISION / DATE / DRAWN BY 0 / 05/10/21 / AM SITE TYPE: GUYED TOWER CHECKED BY: MSC SCALE: N.T.S **SK-2**

GUY TENSION INFORMATION			
GUY ELEVATION	AZIMUTH	TENSION	
22'-1"	20°	1640 LB.	
	140°	1620 LB.	
	260°	2080 LB.	
56'-10"	20°	(L) 820 LB	(R) 1060 LB
	140°	(L) 1640 LB	(R) 900 LB.
	260°	(L) 1020 LB.	(R) 1040 LB.

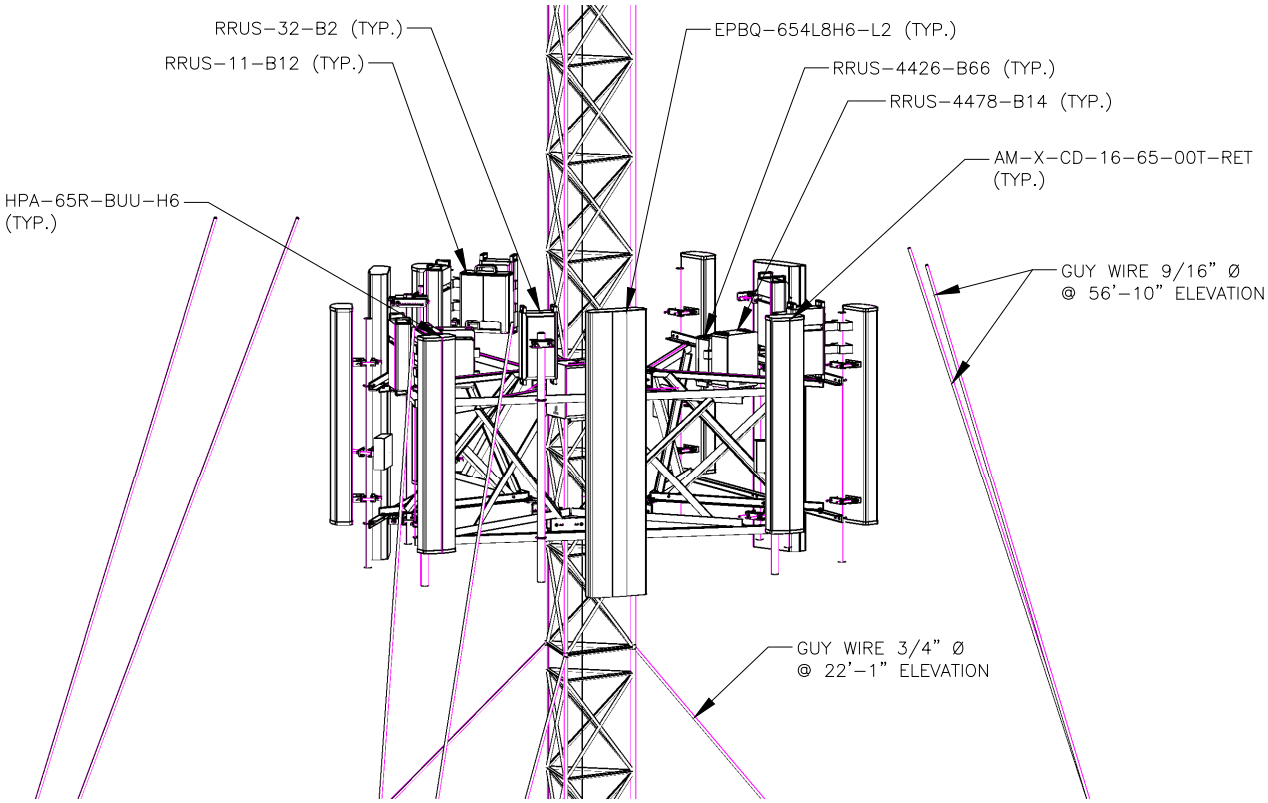


ROOFTOP PLAN (1 / SK-3)
SCALE: N.T.S

PREPARED FOR:	PREPARED BY:				
at&t 550 COCHITUATE ROAD FRAMINGHAM, MA 01701	ProVertic 45 Beechwood Drive N. ANDOVER, MA 01845	**SITE NUMBER:** **CT2040** **SITE NAME:** **HAMDEN BENHAM ST** 265 BENHAM STREET HAMDEN, CT, 06514 NEW HAVEN COUNTY	REVISION	DATE	DRAWN BY
			0	05/10/21	AM
			SITE TYPE: GUYED TOWER		
			CHECKED BY: MSC		**SK-3**
			SCALE: N.T.S		



MOUNT PLAN DETAIL



MOUNT ELEVATION VIEW

PREPARED FOR: at&t 550 COCHITUATE ROAD FRAMINGHAM, MA 01701	PREPARED BY: ProVertic 45 Beechwood Drive N. ANDOVER, MA 01845	**SITE NUMBER:** CT2040 **SITE NAME:** HAMDEN BENHAM ST 265 BENHAM STREET HAMDEN, CT, 06514 NEW HAVEN COUNTY	REVISION	DATE	DRAWN BY
			0	05/10/21	AM
			SITE TYPE: GUYED TOWER		
			CHECKED BY: MSC		SK-4
			SCALE: N.T.S		

ProVertic

GUYED MAPPING FORM

SST Section Information

Section Number: 1

Section Elevation (Top): 22'–2"

Section Elevation (Bottom): 2'–2"

Section Bay Quantity: 7

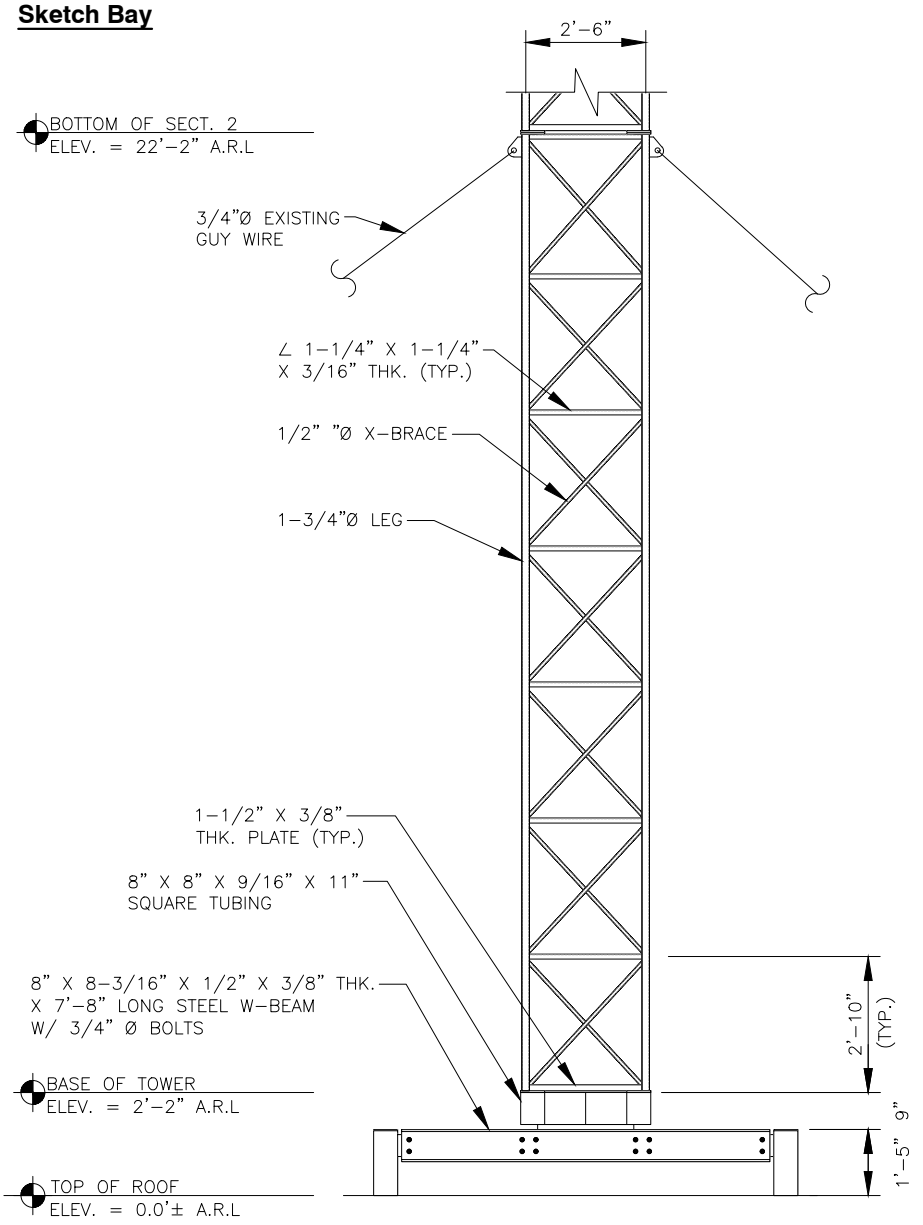
Bay Height: 2'–10"

Face Width (Top): 2'–6"

Face Width (Bottom): 2'–6"

Comments

Sketch Bay



Member	Member Size	End Bolt Diameter & Qty.	End Plate Details
Leg Pipe (Solid) Angle 2xAngle	1–3/4"Ø S.R.	1"Ø	7" X 6" X 7/16" THK.
Diagonal Pipe (Solid) Angle 2xAngle	1/2"Ø S.R.	–	–
Horizontal Pipe Solid (Angle) 2xAngle	1–1/4"X1–1/4"X3/16"	–	–
Mid-Brace Pipe Solid Angle 2xAngle	–	–	–
Other Member Pipe Solid Angle 2xAngle	–	–	–

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GUYED MAPPING FORM

SST Section Information

Section Number: 2

Section Elevation (Top): 42'–2"

Section Elevation (Bottom): 22'–2"

Section Bay Quantity: 7

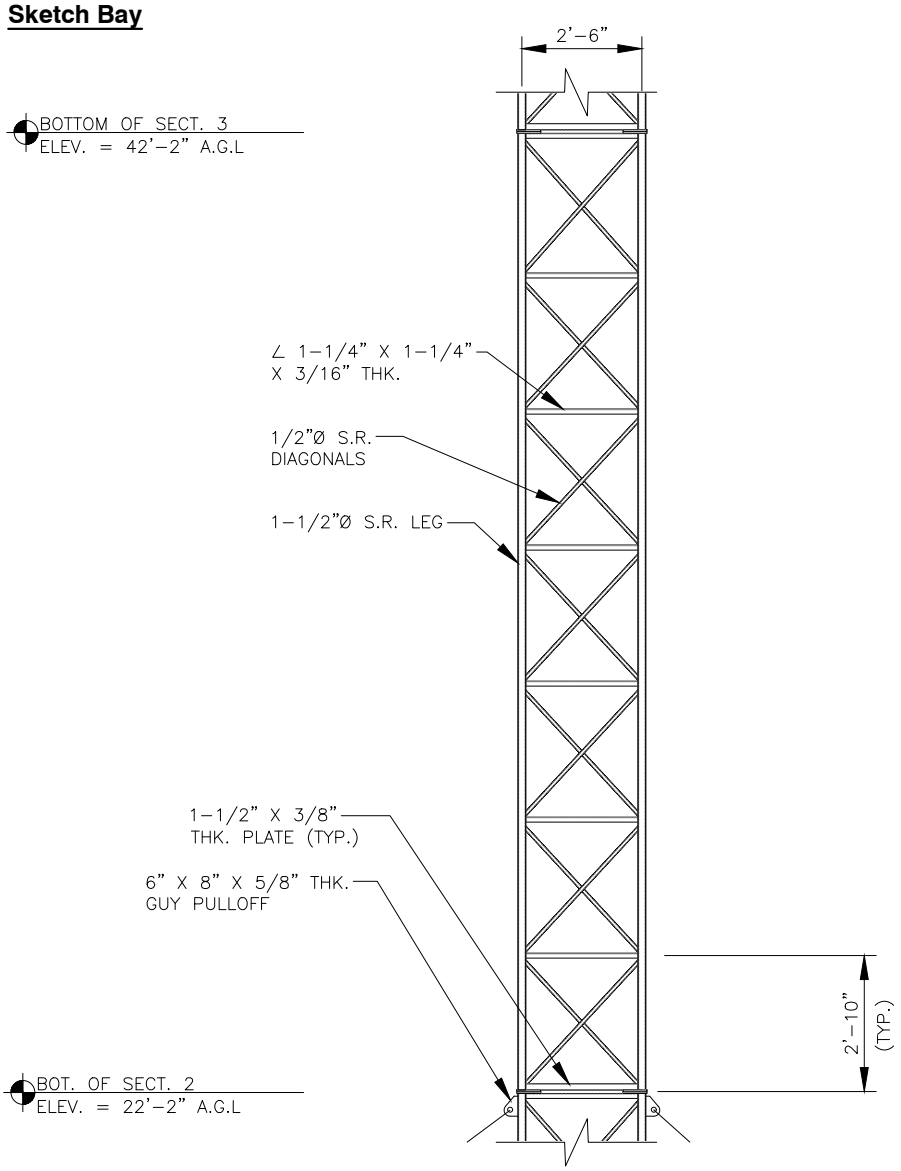
Bay Height: 2'–10"

Face Width (Top): 2'–6"

Face Width (Bottom): 2'–6"

Comments

Sketch Bay



Member	Member Size	End Bolt Diameter & Qty.	End Plate Details
Leg Pipe (Solid) Angle 2xAngle	1–1/2"Ø S.R.	1"Ø	7" X 6" X 7/16" THK.
Diagonal Pipe (Solid) Angle 2xAngle	1/2"Ø S.R.	–	–
Horizontal Pipe Solid (Angle) 2xAngle	1–1/4"X1–1/4"X3/16"	–	–
Mid-Brace Pipe Solid Angle 2xAngle	–	–	–
Other Member Pipe Solid Angle 2xAngle	–	–	–

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GUYED MAPPING FORM

SST Section Information

Section Number: 3

Section Elevation (Top): 62'–2"

Section Elevation (Bottom): 42'–2"

Section Bay Quantity: 7

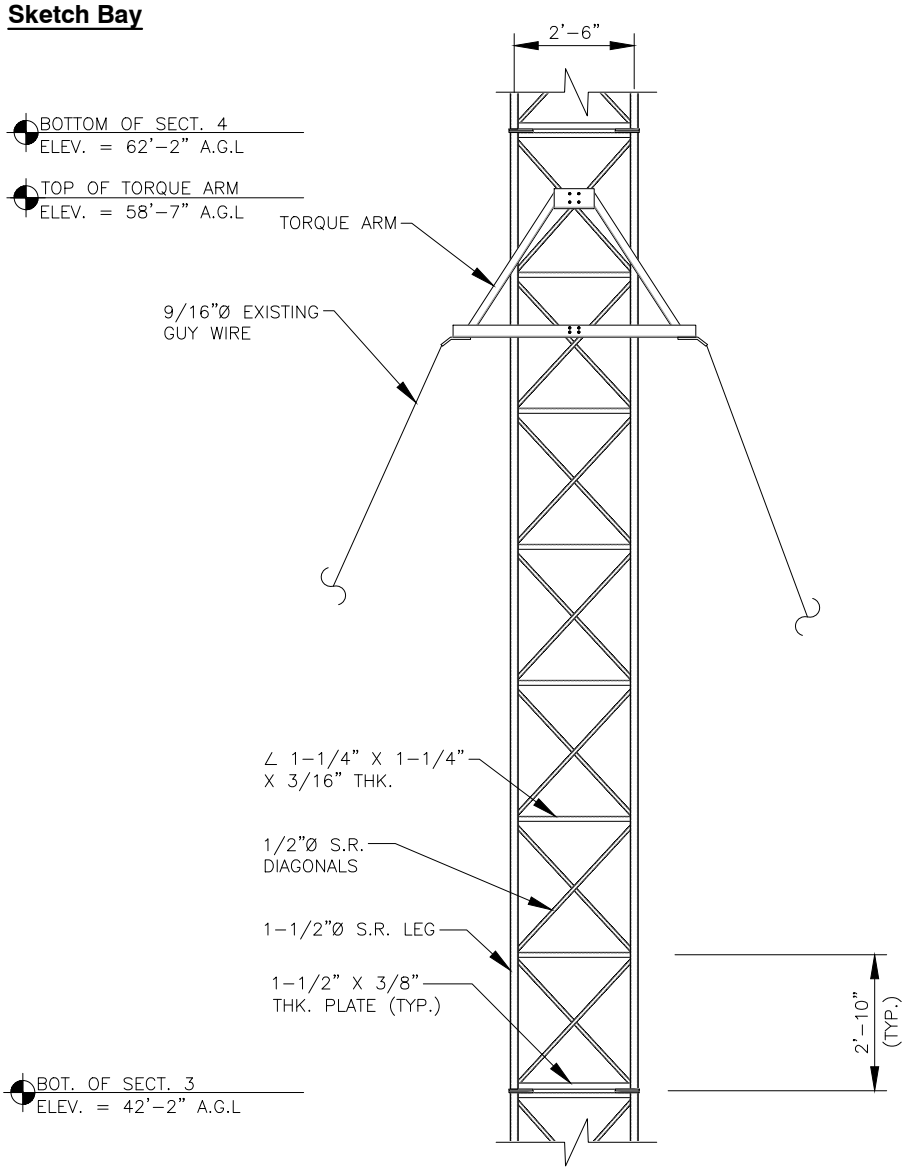
Bay Height: 2'–10"

Face Width (Top): 2'–6"

Face Width (Bottom): 2'–6"

Comments

Sketch Bay



Member	Member Size	End Bolt Diameter & Qty.	End Plate Details
Leg Pipe (Solid) Angle 2xAngle	1–1/2"Ø S.R.	1"Ø	7" X 6" X 7/16" THK.
Diagonal Pipe (Solid) Angle 2xAngle	1/2"Ø S.R.	–	–
Horizontal Pipe Solid (Angle) 2xAngle	1–1/4"X1–1/4"X3/16"	–	–
Mid-Brace Pipe Solid Angle 2xAngle	–	–	–
Other Member Pipe Solid Angle 2xAngle	–	–	–

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GUYED MAPPING FORM

SST Section Information

Section Number: 4

Section Elevation (Top): 67'–2"

Section Elevation (Bottom): 62'–2"

Section Bay Quantity: 2

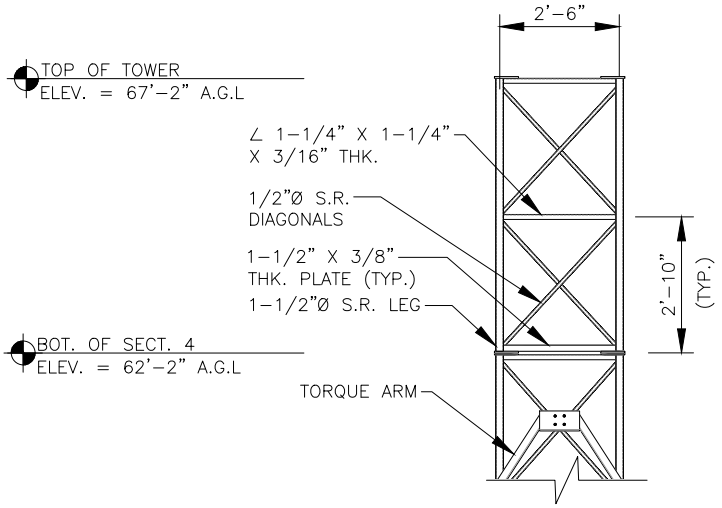
Bay Height: 2'–10"

Face Width (Top): 2'–6"

Face Width (Bottom): 2'–6"

Comments

Sketch Bay



Member	Member Size	End Bolt Diameter & Qty.	End Plate Details
Leg Pipe (Solid) Angle 2xAngle	1–1/2"Ø S.R.	1"Ø	7" X 6" X 7/16" THK.
Diagonal Pipe (Solid) Angle 2xAngle	1/2"Ø S.R.	–	–
Horizontal Pipe Solid (Angle) 2xAngle	1–1/4"X1–1/4"X3/16"	–	–
Mid-Brace Pipe Solid Angle 2xAngle	–	–	–
Other Member Pipe Solid Angle 2xAngle	–	–	–

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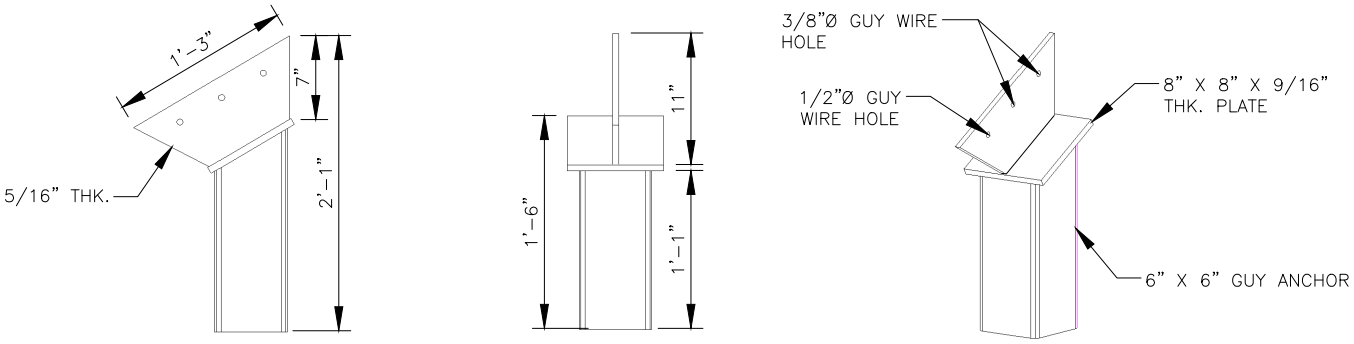
GUYED MAPPING FORM

GUY ANCHOR INFORMATION **GUY ANCHOR POSITION:** INNER (MIDDLE) OUTER

Anchor	Azimuth	Anchor Radius Tower Center to Anchor	Elevation Difference From Tower Base	Angle From Horizon
A	20°	22'–0"	0'–0"±	51° / 73°
B	140°	28'–2"	0'–0"	51° / 73°
C	260°	19'–6"	0'–0"	51° / 73°
D	–	–	–	–

Sketch Guy Anchor Fan Plate



Hole	Guy Level Number	Guy Elevation (On Tower)	Guy Wire Diameter (Nearest 1/16")	Guy Wire Type
1	1	22'–1"	3/4"Ø	(EHS) BS UHS
2	2	56'–10"	9/16"Ø	(EHS) BS UHS
3	–	–	–	EHS BS UHS
4	–	–	–	EHS BS UHS
5	–	–	–	EHS BS UHS
6	–	–	–	EHS BS UHS
7	–	–	–	EHS BS UHS
8	–	–	–	EHS BS UHS

Hole	PreForm Color or Socket Size	Turnbuckle Size or Hairpin Diameter	Pin Diameter (Nearest 1/16")	Hole Diameter (Nearest 1/16")	Plate Hole to Edge Distance
1	GREEN	3/4"Ø	3/4"Ø	1/2"Ø	–
2	GREEN	3/4"Ø	3/4"Ø	3/8"Ø	–
3	–	–	–	–	–
4	–	–	–	–	–
5	–	–	–	–	–
6	–	–	–	–	–
7	–	–	–	–	–
8	–	–	–	–	–

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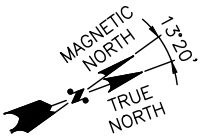
GUYED MAPPING FORM

TRANSMISSION LINE CROSS SECTON

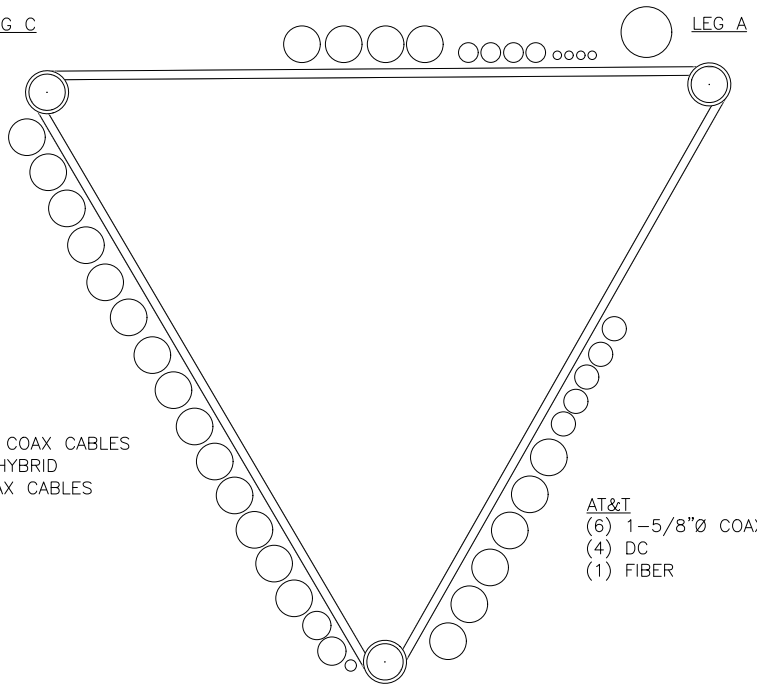
Notes:
1. Sketch tower cross section
2. Label faces and legs to match the rest of the form
3. Locate transmission lines with respect to tower legs
4. Identify the quantity, size and carrier to each transmission line
5. Identify the transmission line brackets (Ladder, Banjo, etc.)
6. Indicate north



VERIZON, AT&T AND OTHERS
(1) 2-1/4"Ø INNERDUCT AT&T
(4) 3/8"Ø CABLES
(4) 7/8"Ø COAX CABLES
(4) 1-5/8"Ø COAX CABLES VZW

LEG C

LEG A



VERIZON
(14) 1-5/8"Ø COAX CABLES
(2) 1-1/4"Ø HYBRID
(1) 1/2"Ø COAX CABLES

AT&T
(6) 1-5/8"Ø COAX CABLES
(4) DC
(1) FIBER

LEG B

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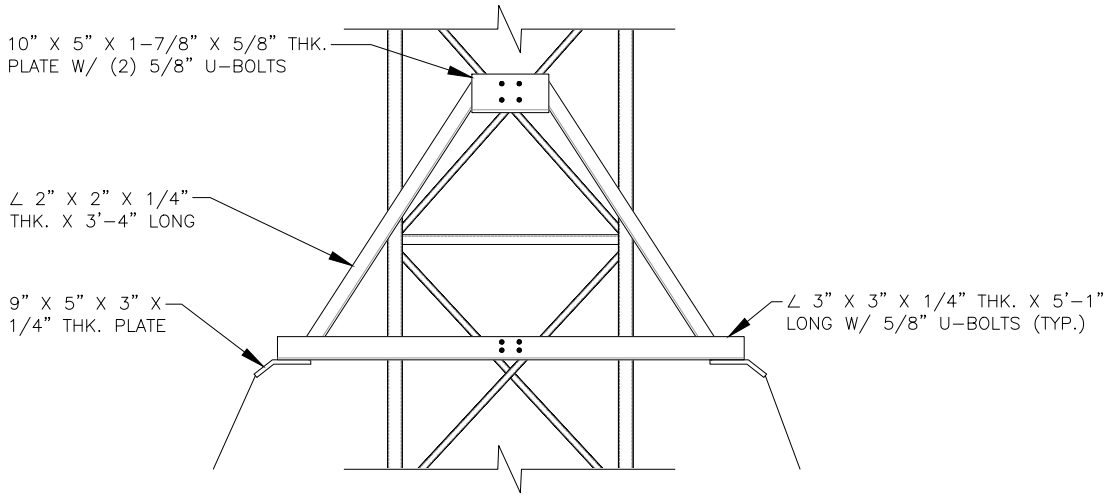
GUYED MAPPING FORM

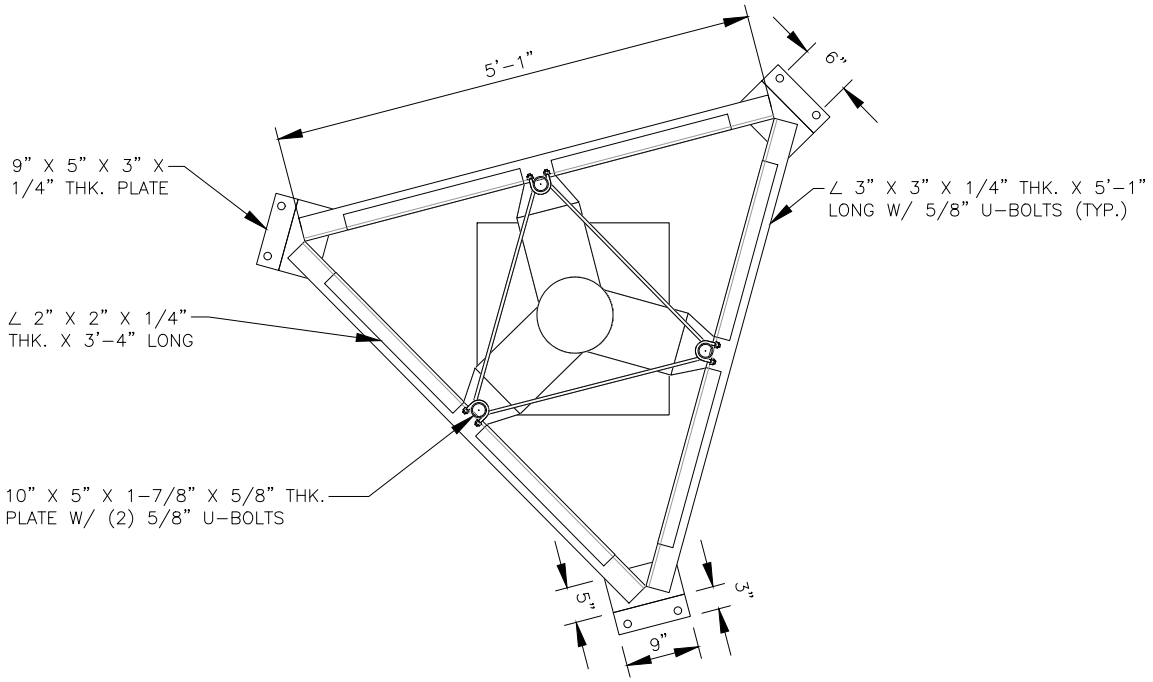
TORQUE ARM INFORMATION

Notes:
1. Sketch torque arm below
2. Show overall Height, Spread (hole to hole), Face Width, Member Sizes
3. Detail Pulloff Plates that guys are attached to
4. Measure to the nearest 1/16" and Hole/Bolt Center
5. Repeat this sheet for each torque arm

Elevation: 58'–7"	**Pin Diameter:** XXX
Guy Level: 56'–10"	**Hole Diameter on Plate:** XXX
Section #: 3 **Bay #:** 6	**Plate Hole End Distance:** XXX
Shackle or Socket Size: XXX	**Pulloff Plate Distance:** XXX
Other Info: XXX	



ELEVATION



PLAN

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ProVertic

GUYED MAPPING FORM

CARRIER	TOA ELEVATION	ATTACH. LOC. LEG/FACE	ANTENNA (OR OTHER APPURTENANCE)			MOUNT DESCRIPTION & SIZE	MOUNT ELEVATION	TRANSMISSION LINES		
			QUANTITY	AZIMUTH	SIZE AND DESCRIPTION OR MANUFACTURER AND MODEL			QUANTITY	SIZE/TYPE	ATTACH. LOC.
AT&T	–	A,B,G	3	–	UNKNOWN DIPLEXER	10'–6" FACE 3'–9" S.O.	28'–8"	6	1–5/8"	A–B
AT&T	–	A,B,G	3	–	ERICSSON: RRUS 4426 B66	10'–6" FACE 3'–9" S.O.	28'–8"	–	–	–
AT&T	–	A,B,G	3	–	ERICSSON: RRUS 4478 B14	10'–6" FACE 3'–9" S.O.	28'–8"	–	–	–
AT&T	–	A,B,G	3	–	ERICSSON: RRUS 11 B12	10'–6" FACE 3'–9" S.O.	28'–8"	–	–	–
AT&T	–	A,B,G	6	–	ERICSSON: RRUS 32 B2	10'–6" FACE 3'–9" S.O.	28'–8"	–	–	–
AT&T	–	A,B,G	2	–	RAYCAP DC6–48–60–18–8F	TOWER LEG	–	DC FIBER	4 1	C–A
AT&T	32'–3"	A,B,G	3	–	KWW:AM–X–CD–16–65–00T–RET	10'–6" FACE 3'–9" S.O.	28'–8"	–	–	–
AT&T	32'–6"	A,B,G	3	–	KMW: EPBQ–654L8H6–L2	10'–6" FACE 3'–9" S.O.	28'–8"	–	–	–
AT&T	32'–3"	A,B,G	3	–	CCI: HPA–65R–BUU–H6	10'–6" FACE 3'–9" S.O.	28'–8"	–	–	–
VZW	–	A,B,G	3	–	B25 RRH 4X30	MOUNT FACE	39'–6"	18	1–5/8"	C–A
VZW	–	A,B,G	3	–	B4 RRH 2X60–4R	MOUNT FACE	39'–6"	–	–	–
VZW	–	A,B,G	6	–	DB644B652AXY	MOUNT FACE	39'–6"	–	–	–
VZW	–	A,B,G	3	–	HBXX–6517D5–AZM	MOUNT FACE	39'–6"	–	–	–
VZW	–	B	1	–	X7C–FR0–640–VR0	MOUNT FACE	39'–6"	–	–	–
VZW	–	B	1	–	SBNHH–1D45B	MOUNT FACE	39'–6"	–	–	–
VZW	–	A,C	2	–	LNX–6514D5–A1M	MOUNT FACE	39'–6"	–	–	–
VZW	–	A,C	2	–	SBNHH–1D65C	MOUNT FACE	39'–6"	–	–	–
VZW	–	A,B	2	–	RRFDC–3315–PF–48	TOWER LEG	42'	2	1–1/4"Ø HYBRID	B–C
UNKNOWN	–	C	1	–	20' DIPOLE	4' – STANDOFF	44'	1	7/8"	C–A
UNKNOWN	–	B	1	–	10' OMNI	2' – STANDOFF	51'–6"	1	7/8"	C–A
UNKNOWN	–	C	1	–	MAR2622	TOWER LEG	57'–6"	1	3/8"	C–A
UNKNOWN	–	B	1	–	MAR2622	TOWER LEG	62'	1	3/8"	C–A
UNKNOWN	–	A	1	–	MAR2622	TOWER LEG	65'	1	3/8"	C–A
UNKNOWN	–	A	1	–	20' DIPOLE	4' – STANDOFF	65'	1	7/8"	C–A
UNKNOWN	–	C	1	–	MAR2622	TOWER LEG	65'	1	3/8"	C–A
UNKNOWN	–	C	1	–	SPD2–4.2NS	TOWER LEG	66'	1	7/8"	C–A
UNKNOWN	–	–	1	–	TOP OF SAFETY CLIMB	TOWER FACE	67'–2"	N/A	N/A	C–A

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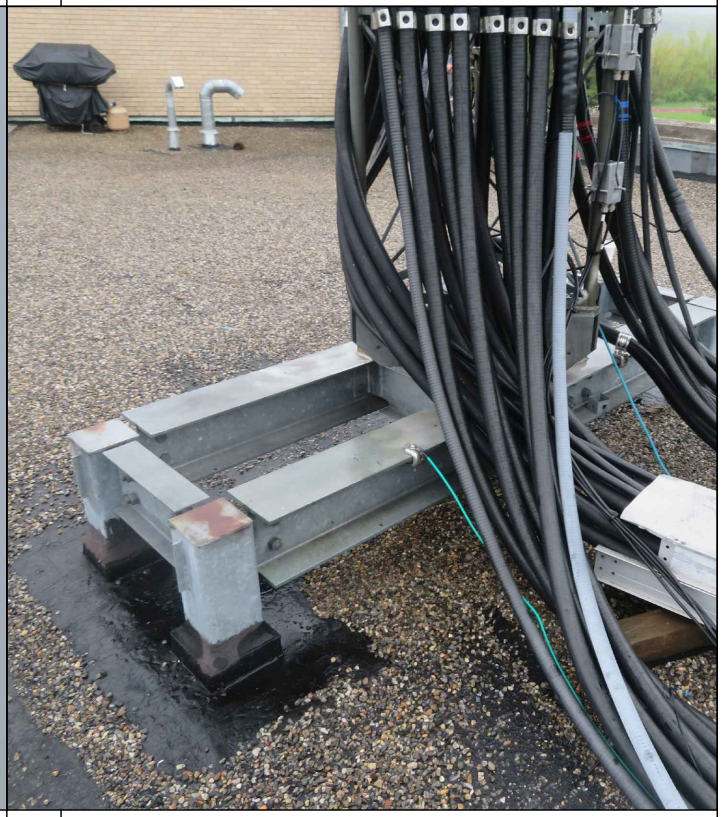
EXISTING GUYED TOWER

1. GUY TOWER

2. TORQUE

3. DIPOLE



4. TOWER BASE

ProVertic

EXISTING SELF SUPPORT TOWER

1. CABLE TRAY

2. GUY ANCHOR

3. GUY WIRES

4. GUY ANCHOR AND WIRES

EXISTING GUYED TOWER

1. TOWER BASE

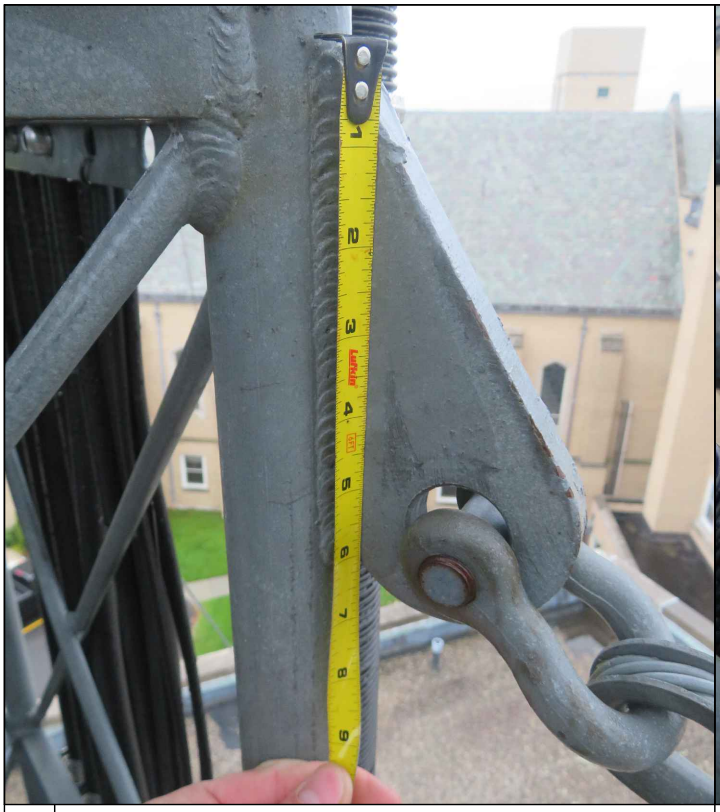
2. TOWER BASE CONNECTIONS

3. TOWER BASE CONNECTIONS

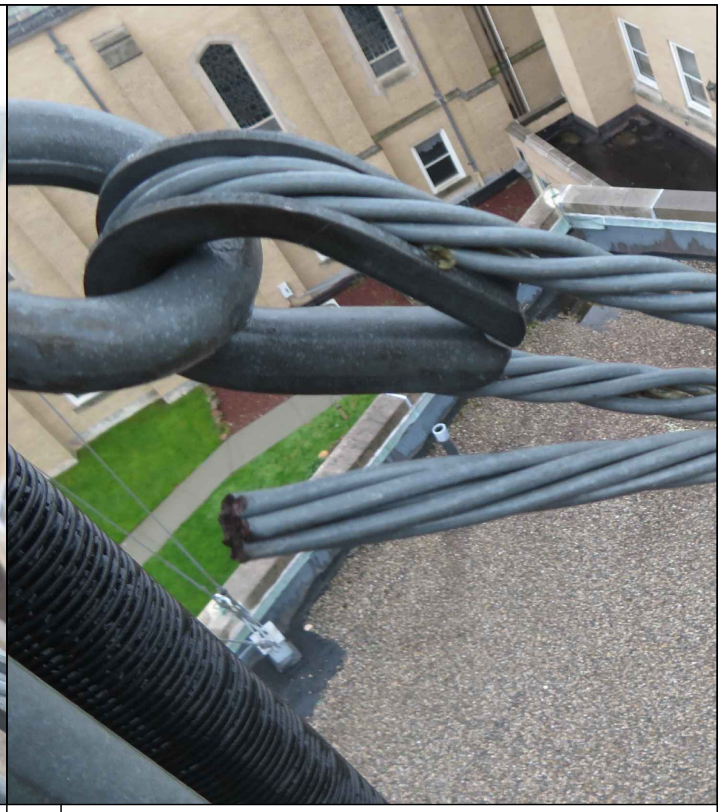
4. TOWER BASE CONNECTIONS

ProVertic

EXISTING GUYED TOWER



1. GUY CONNECTION TO TOWER



2. GUY CONNECTION TO TOWER

3. MOUNT CONNECTIONS

4. MOUNT CONNECTIONS

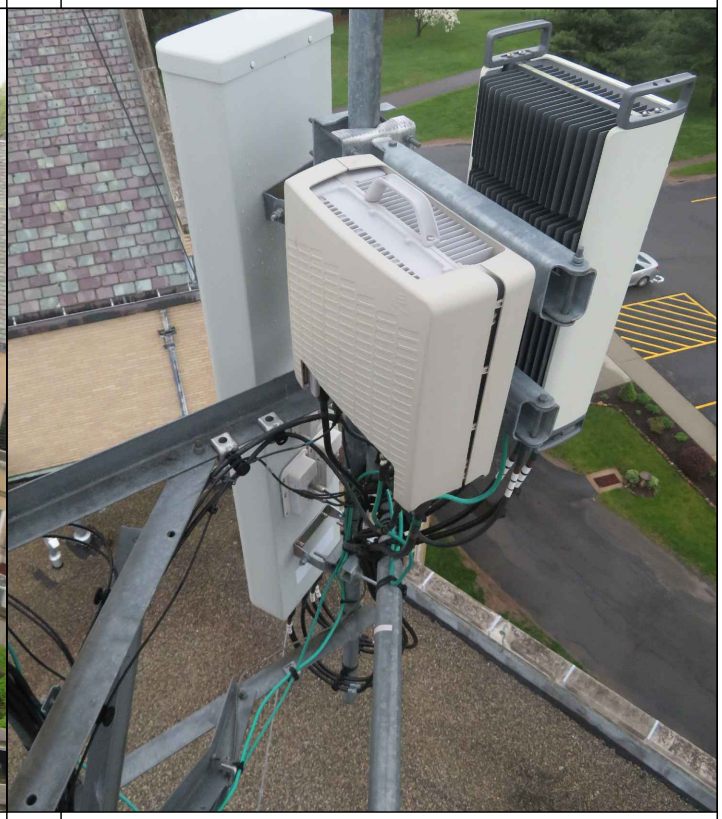
ProVertic

EXISTING GUYED TOWER

1. MOUNT CONNECTIONS

2. MOUNT CONNECTIONS

3. MOUNT CONNECTIONS



4. MOUNT CONNECTIONS

191 BENHAM ST

Location	191 BENHAM ST	**Mblu**	2526/ 011/ 01/ /
Acct#		**Owner**	APOSTLES OF THE SACRED HEART OF JESUS
Assessment	$119,910	**Appraisal**	$171,300
PID	123442	**Building Count**	1

Current Value

Appraisal					
Valuation Year	**Building**	**Extra Features**	**Outbuildings**	**Land**	**Total**
2020	$0	$0	$6,300	$165,000	$171,300
Assessment					
Valuation Year	**Building**	**Extra Features**	**Outbuildings**	**Land**	**Total**
2020	$0	$0	$4,410	$115,500	$119,910

Owner of Record

Owner	APOSTLES OF THE SACRED HEART OF JESUS	**Sale Price**	$0
Co-Owner	INC THE	**Certificate**	
		Book & Page	726/ 301

Address 295 BENHAM ST
HAMDEN, CT 06514

Sale Date 06/13/1985

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
APOSTLES OF THE SACRED HEART OF JESUS	$0		726/ 301	06/13/1985

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0
Building Percent Good:

Building Attributes	
Field	**Description**
Style	Outbuildings
Model	
Grade:	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	

Building Photo

(http://images.vgsi.com/photos/HamdenCTPhotos//default.jpg)

Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Whirlpool	

Building Layout

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Land Line Valuation

Use Code	431V	**Size (Acres)**	0
Description	CELL SITE M00	**Frontage**	
Zone	R3	**Depth**	
Neighborhood	100	**Assessed Value**	$115,500
Alt Land Appr	No	**Appraised Value**	$165,000
Category			

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
SHD6	SHED COM MAS			240 S.F.	$2,500	1
SHD6	SHED COM MAS			360 S.F.	$3,800	1

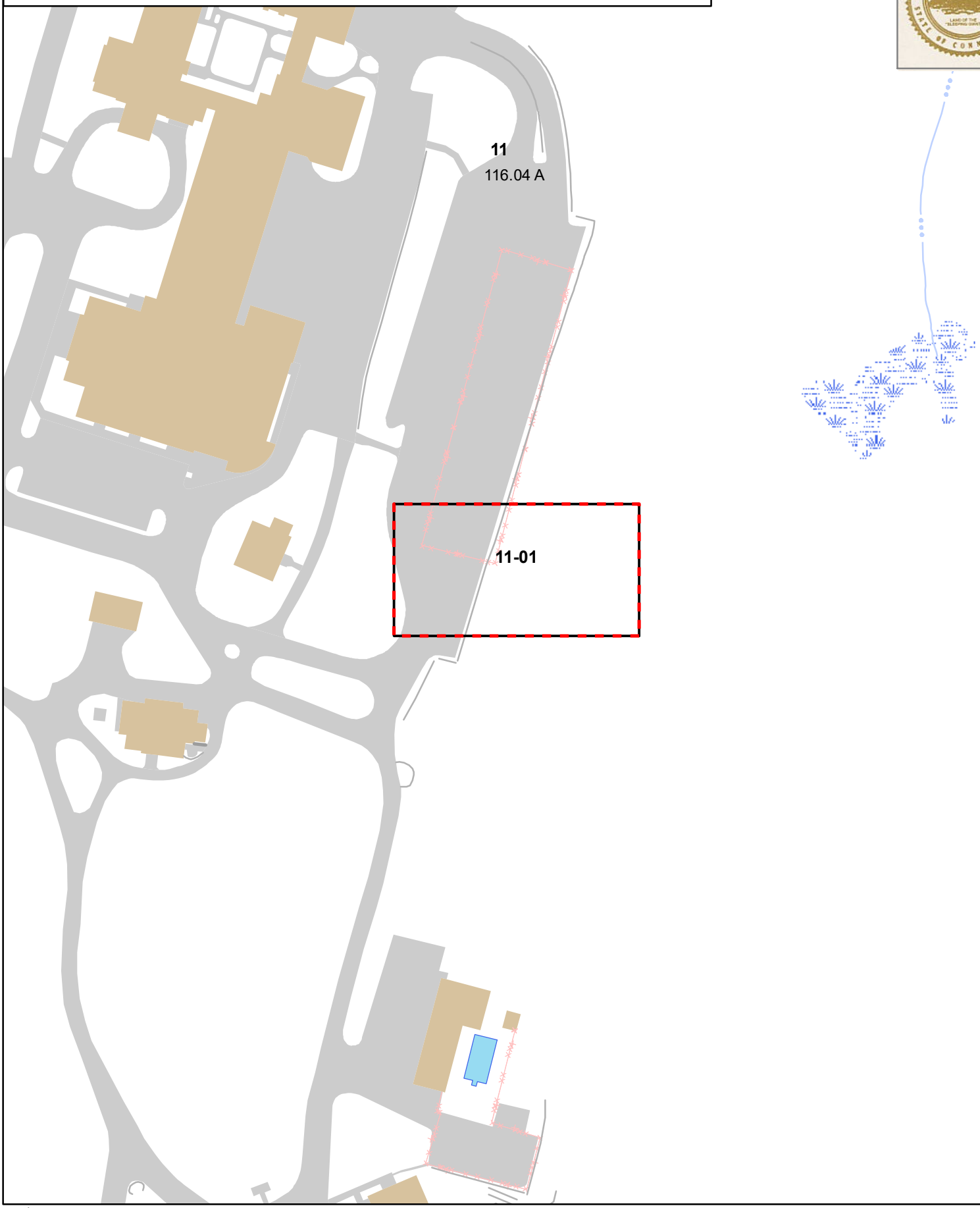
Valuation History

Appraisal					
Valuation Year	**Building**	**Extra Features**	**Outbuildings**	**Land**	**Total**
2019	$0	$0	$6,000	$172,500	$178,500
2018	$0	$0	$6,000	$172,500	$178,500
2017	$0	$0	$6,000	$172,500	$178,500

Assessment					
Valuation Year	**Building**	**Extra Features**	**Outbuildings**	**Land**	**Total**
2019	$0	$0	$4,200	$120,750	$124,950
2018	$0	$0	$4,200	$120,750	$124,950
2017	$0	$0	$4,200	$120,750	$124,950

Town of Hamden, Connecticut - Assessment Parcel Map

Parcel: 2526-011-01-0000 Address: 191 BENHAM ST



N

Approximate Scale: **1 inch = 100 feet**

0 50 100 150 200 Feet

Map Produced: October 2020

TOWN OF HAMDEN

CONNECTICUT

August 24, 2000

New Haven Register
40 Sargent Drive
New Haven, CT. 06511
Attn: Judy

FAX# 865-8360
Bill: 287-2592

RE: LEGAL NOTICE TO APPEAR IN THE NEW HAVEN REGISTER ON TUESDAY, AUGUST 29, 2000.

DP71964 – Special Meetings and Public Hearings were held on Tuesday, August 22, 2000 starting at 7:30 p.m. of the **Zoning Section**, and the **Planning Section**, and the **Planning & Zoning Commission**. All meetings were held in the Council Chambers, Memorial Town Hall and the following actions were taken:

1. Site Plan/WS 00-1267. 2582 Whitney Ave. B-1. Restaurant expansion from 61 to 108 seats. Whitney & Hawthorne LLC., Property Owner. ZaRus Grille, Applicant. **APPROVED WITH CONDITIONS.**

2. Site Plan/WS 00-1272. 720 Sherman Ave. M-1. Expansion of existing manufacturing/office. Amphenol Corporation , Property Owner. Paul Pizzo, Applicant. **APPROVED WITH CONDITIONS.**

3. Site Plan 00-1276. 2039 Dixwell Ave. CDD-1. Laundromat/Dry Cleaners. Rosalie Lambert Family Trust, Owner. **APPROVED WITH CONDITIONS.**

4. Site Plan 00-1257. 265 Benham St. R-3. Telecommunication Antenna. Sandy Carter, Applicant. **APPROVED WITH CONDITIONS.**

5. Resubdivision 00-1201. High Ridge Rd. R-2. 2 lots. Leslie Corey, Property Owner. Leslie Corey, Applicant. **APPROVED WITH CONDITIONS.**

6. Resubdivision/WS/FP 00-1202. Chatterton Way. Lot #1. R-2. Natalie Wheatley, Property Owner and Applicant. **APPROVED WITH CONDITIONS.**

MINUTES: THE ZONING SECTION, Planning & Zoning Commission, Town of Hamden, held a Special Meeting on Tuesday, August 22, 2000 in the Council Chambers, Memorial Town Hall, immediately following the Planning and Zoning Commission meeting. The following issues were discussed:

Connolly Parkway frontage. Mr. Thompson said he has not seen that letter. Mr. O'Brien said the bond is $3,350. The RWA submitted a letter today asking that their inspectors continue to be granted access to the site. Mr. Ingengro said he believes the items the Town Engineer is asking for were completed a year ago, and he feels the sidewalk was revisited with the prior Town Planner and they were not required to replace the sidewalk, but to repair it. The previous applicant posted the bond. Mr. O'Brien asked the property owner if he would be willing to replace 100' of sidewalk. Mr. Lambert, the property owner, said they did 100' of sidewalk when Auto Tune filed their application. If the engineering detail is not on file Mr. Lambert is willing to submit it.

Mr. Crocco said Mr. Savarese's conditions should be made part of the motion. Mr. Crocco said the applicant will provide the information requested by Mr. Savarese. The sidewalk must be inspected and there is already a bond.

Mr. McDonagh made a motion to approve Site Plan 00-1276 subject to the following conditions:

Prior to the issuance of a Zoning Permit, the applicant must:

1. **Submit an easement from 27 Connolly Parkway for the common driveway:**
2. **Submit landscaping details for approval of the Town Planner;**
3. **Post a bond in an amount estimated by the applicant and approved by the Town Planner;**
4. **Submit drainage information from previous application.**
5. **The sidewalk must be inspected and repaired or replaced as necessary.**

Mr. Sims seconded the motion. The vote was unanimous, in favor.

Mr. Thompson said they are making no substantial changes to the site and the landscaping is existing.

4. Site Plan 00-1257
   265 Benham Street, R-3 Zone
   Telecommunication Antenna
   Sandy Carter, Agent
   Verizon Cellular, Applicant

Mr. O'Brien said the Town Police and Fire Departments entered into agreement between Verizon Telecommunications and the Sisters at Sacred Heart Academy, and if the Town Police and Fire antennas are going to be on the tower, the tower is not subject to zoning. This Commission approved an 8-24, which went to the Council and was approved and then signed by the Mayor.

December 3, 2021

Apostles of the Sacred Heart of Jesus, Inc.
Attn: Sister Mary Lee, ASCJ
Vice Provincial/Treasurer
295 Benham Street
Hamden, CT 06514-2801

RE: AT&T Wireless Equipment at: 265 Benham Street, Hamden, CT 06514-2801
Site #: CT2040
Site Name: Hamden-Benham Street

Dear Sister Mary Lee:

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 New Cingular Wireless PCS, LLC and Apostles of the Sacred Heart of Jesus, Inc., dated April 19, 2021, your consent is required 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, 10/12/21.

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.

As the Landlord, I hereby consent to this work and authorize AT&T Wireless, its agents or representatives, to apply for any and all permits that may be required for this project.

Thank you for your attention to this matter.

Sincerely,

Hollis M. Redding

Hollis M. Redding

Site Acquisition
860-834-6964
hredding@saigrp.com
Enclosures

Landlord/Authorized Agent's Consent

Name: Sr. Mary Lee

Signature: Sr. Mary Lee

Title: Treasurer

Date: 12/3/21

Telephone: 203-248-4225

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SAI GROUP
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Expected Delivery Date: 01/21/22

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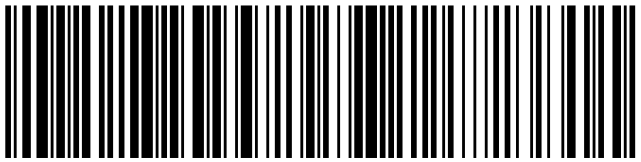
C006

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

USPS TRACKING #



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PRIORITY MAIL 2-DAY™

HOLLIS M REDDING
SAI GROUP
12 INDUSTRIAL WAY
SALEM NH 03079-2837

Expected Delivery Date: 01/21/22
Ref#: CT2040

0006

C052

SHIP TO: HON. LAUREN GARRETT MAYOR ERIK JOHNSON
TOWN OF HAMDEN
2750 DIXWELL AVE
HAMDEN CT 06518-3320

USPS TRACKING #

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PRIORITY MAIL 2-DAY™

HOLLIS M REDDING
SAI GROUP
12 INDUSTRIAL WAY
SALEM NH 03079-2837

Expected Delivery Date: 01/21/22
Ref#: CT2040
0006

C003

SHIP TO: SISTER MARY LEE, ASCJ
APOSTLES OF THE SACRED HEART OF JESUS
295 BENHAM ST
HAMDEN CT 06514-2801

USPS TRACKING #

9405 5036 9930 0136 0561 92

Electronic Rate Approved #038555749

Cut on dotted line.

From: auto-reply@usps.com
Sent: Tuesday, January 18, 2022 12:02 PM
To: Hollis Redding
Subject: USPS® Expected Delivery by Wednesday, January 19, 2022 arriving by 9:00pm 9405503699300136056192

UNITED STATES POSTAL SERVICE®

Hello **HOLLIS M REDDING**,

USPS is now in possession of your item as of 11:45 am on January 18, 2022 in MERIDEN, CT 06450.

Tracking Number: **9405503699300136056192**

Expected Delivery By

Wed
19
Jan

By 9:00pm

Tracking & Delivery Options

My Account

Visit **USPS Tracking**® to check the most up-to-date status of your package. Sign up for **Informed Delivery**® to digitally preview the address side of your incoming letter-

From: auto-reply@usps.com
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Hello **HOLLIS M REDDING**,

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Tracking Number: **9405503699300136056192**

Expected Delivery By

Wed
19
Jan

By 9:00pm

Tracking & Delivery Options

Visit **USPS Tracking**® to check the most up-to-date status of your package. Sign up for **Informed Delivery**® to digitally preview the address side of your incoming letter-sized mail and manage your packages scheduled to arrive soon! To update how frequently you receive emails from USPS, log in to your **USPS.com** account.

Want regular updates on your package? **Set up text alerts**.