UPS CampusShip: View/Print Label

1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

3. **GETTING YOUR SHIPMENT TO UPS**
   Customers with a Daily Pickup
   Your driver will pickup your shipment(s) as usual.

   Customers without a Daily Pickup
   Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.
   Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages.
   Hand the package to any UPS driver in your area.

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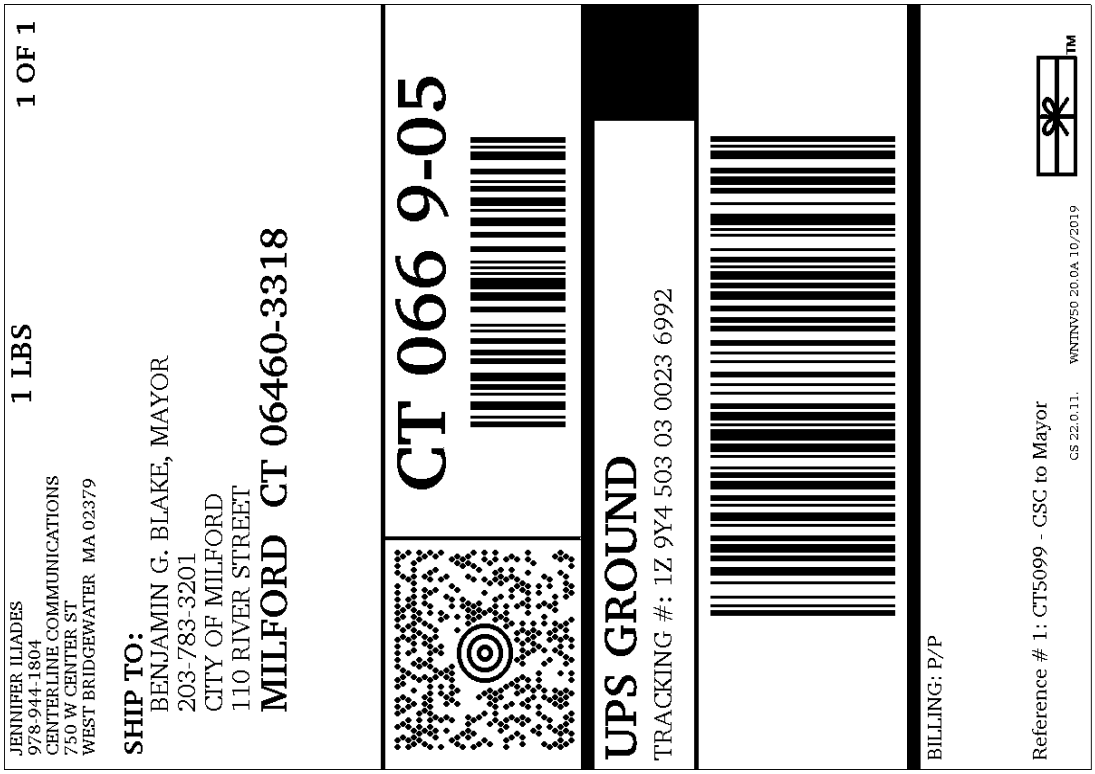

Jennifer Iliades

From: UPS Quantum View <pkginfo@ups.com>
Sent: Tuesday, January 14, 2020 12:42 PM
To: Jennifer Iliades
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030300236992

Your package has been delivered.

Delivery Date: Tuesday, 01/14/2020
Delivery Time: 12:37 PM

At the request of CENTERLINE SITE ACQUISITION this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z9Y45030300236992
Ship To:	Benjamin G. Blake, Mayor City of Milford 110 RIVER ST MILFORD, CT 06460 US
UPS Service:	UPS GROUND
Number of Packages:	1
Weight:	0.2 LBS
Delivery Location:	FRONT DESK MAYOR
Reference Number 1:	CT5099 - CSC to Mayor

Download the UPS mobile app

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1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

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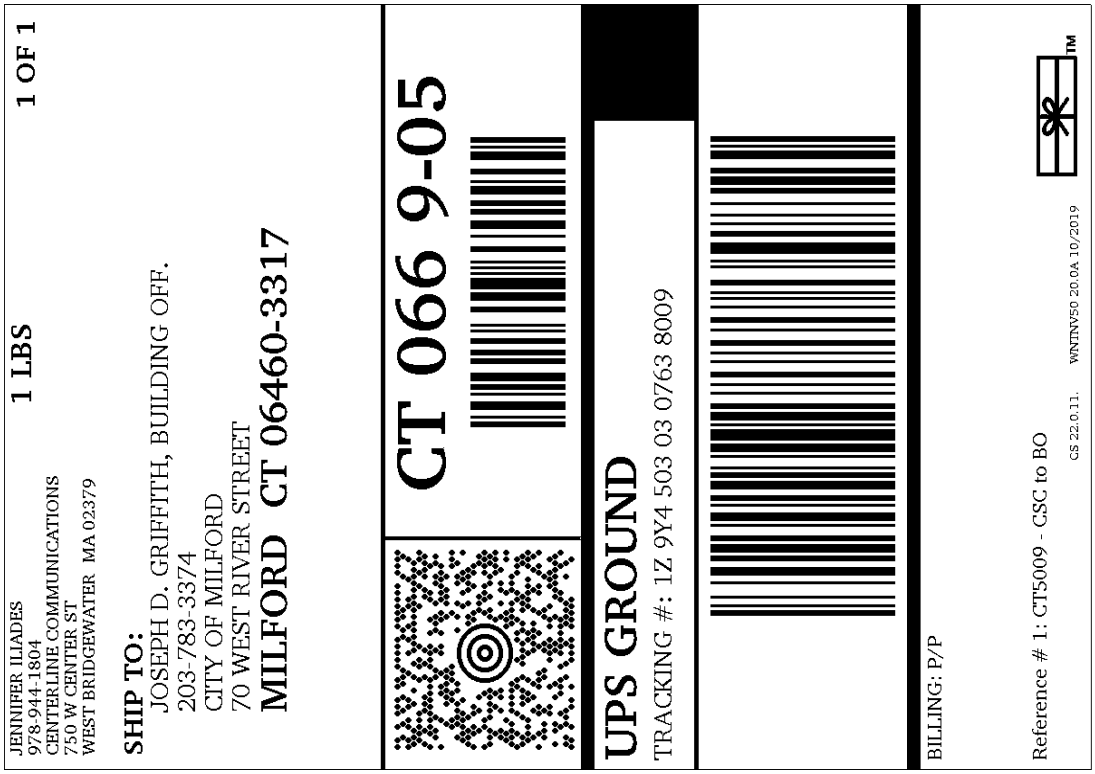

Jennifer Iliades

From: UPS Quantum View <pkginfo@ups.com>
Sent: Tuesday, January 14, 2020 10:38 AM
To: Jennifer Iliades
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030307638009

Your package has been delivered.

Delivery Date: Tuesday, 01/14/2020
Delivery Time: 10:32 AM

At the request of CENTERLINE SITE ACQUISITION this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z9Y45030307638009
Ship To:	Joseph D. Griffith, Building Off. City of Milford 70 W RIVER ST MILFORD, CT 06460 US
UPS Service:	UPS GROUND
Number of Packages:	1
Weight:	0.5 LBS
Delivery Location:	OFFICE LAFOND
Reference Number 1:	CT5009 - CSC to BO

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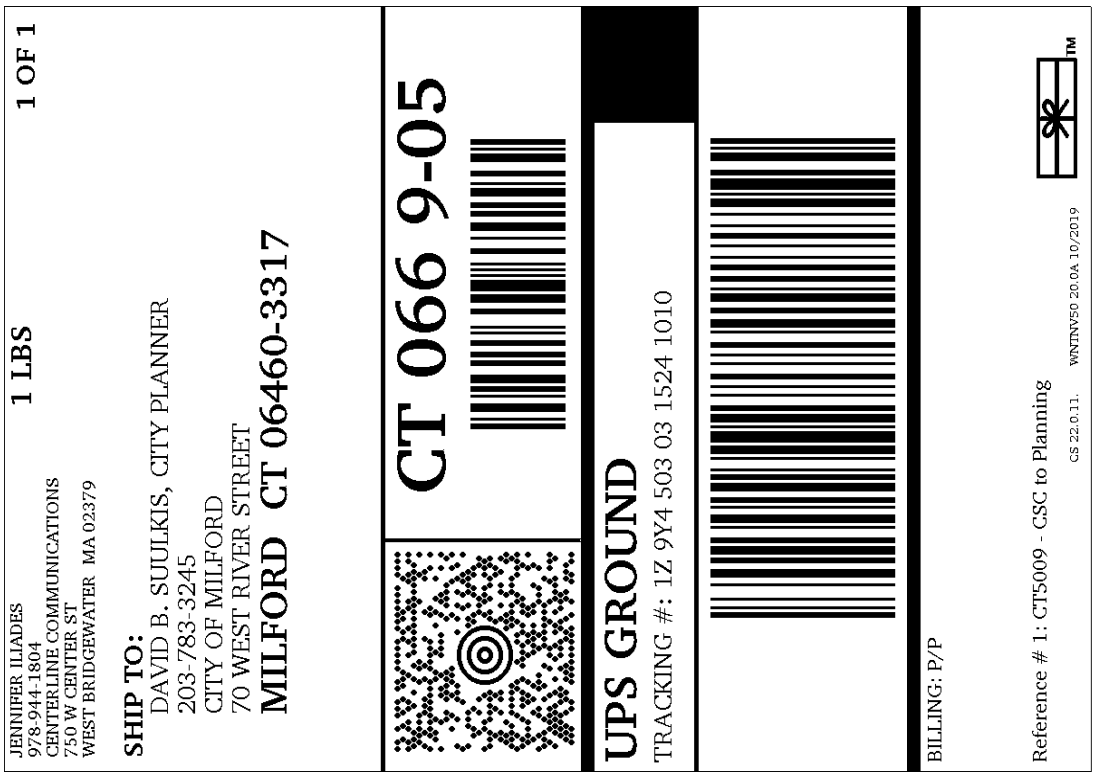

Jennifer Iliades

From: UPS Quantum View <pkginfo@ups.com>
Sent: Tuesday, January 14, 2020 10:38 AM
To: Jennifer Iliades
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030315241010

Your package has been delivered.

Delivery Date: Tuesday, 01/14/2020
Delivery Time: 10:32 AM

At the request of CENTERLINE SITE ACQUISITION this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z9Y45030315241010
Ship To:	David B. Suulkis, City Planner City of Milford 70 W RIVER ST MILFORD, CT 06460 US
UPS Service:	UPS GROUND
Number of Packages:	1
Weight:	0.5 LBS
Delivery Location:	OFFICE LAFOND
Reference Number 1:	CT5009 - CSC to Planning

Download the UPS mobile app

UPS CampusShip: View/Print Label

1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

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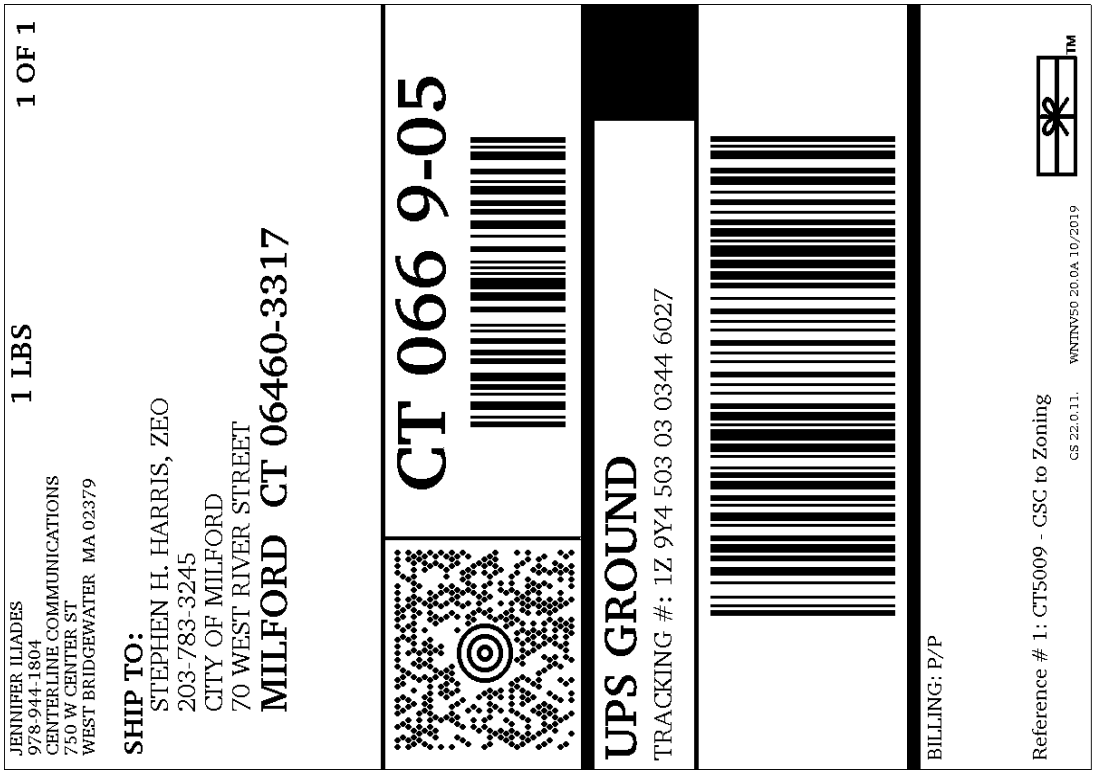

Jennifer Iliades

From: UPS Quantum View <pkginfo@ups.com>
Sent: Tuesday, January 14, 2020 10:38 AM
To: Jennifer Iliades
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030303446027

Your package has been delivered.

Delivery Date: Tuesday, 01/14/2020
Delivery Time: 10:32 AM

At the request of CENTERLINE SITE ACQUISITION this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z9Y45030303446027
Ship To:	Stephen H. Harris, ZEO City of Milford 70 W RIVER ST MILFORD, CT 06460 US
UPS Service:	UPS GROUND
Number of Packages:	1
Weight:	0.5 LBS
Delivery Location:	OFFICE LAFOND
Reference Number 1:	CT5009 - CSC to Zoning

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UPS CampusShip: View/Print Label

1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.

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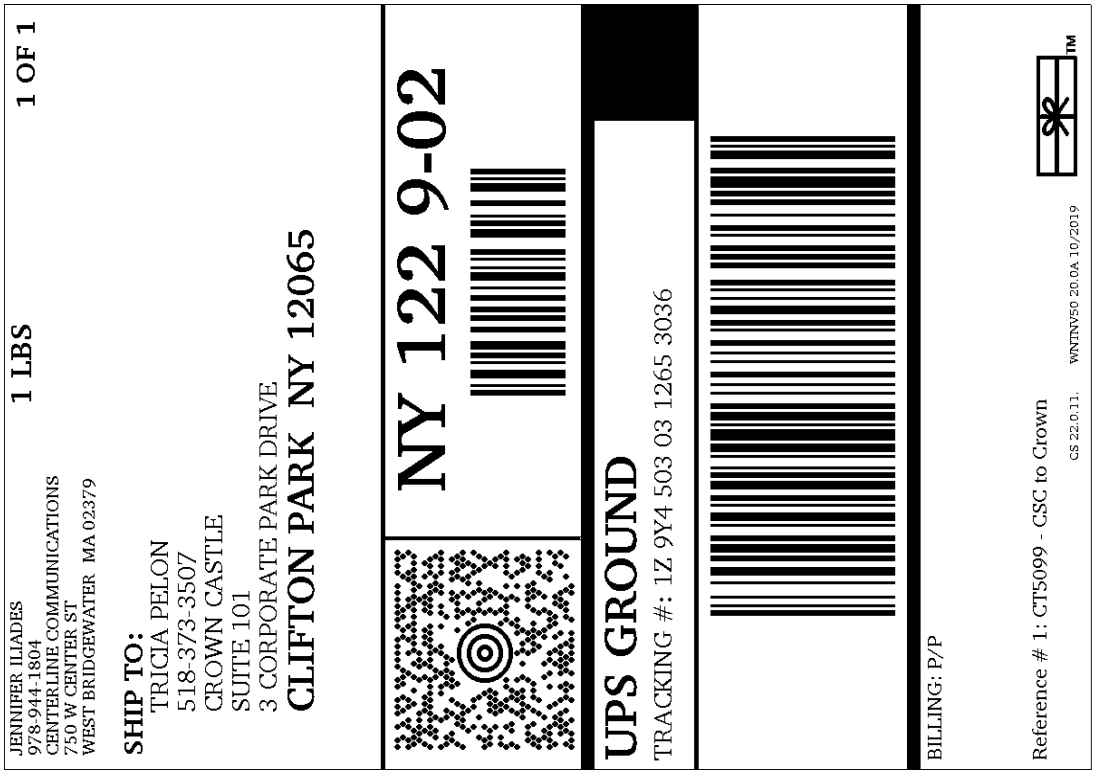

Jennifer Iliades

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, January 15, 2020 10:43 AM
To: Jennifer Iliades
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030312653036

Your package has been delivered.

Delivery Date: Wednesday, 01/15/2020
Delivery Time: 10:38 AM

At the request of CENTERLINE SITE ACQUISITION this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1Z9Y45030312653036
Ship To:	Tricia Pelon Crown Castle 3 CORPORATE DR CLIFTON PARK, NY 12065 US
UPS Service:	UPS GROUND
Number of Packages:	1
Weight:	0.5 LBS
Delivery Location:	INSIDE DELIVERY SNOW
Reference Number 1:	CT5099 - CSC to Crown

Download the UPS mobile app

January 10, 2020

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

Regarding: Notice of Exempt Modification – AT&T Site CT5099
Address: 434 Boston Post Road, Milford, CT

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC ("AT&T") currently maintains a wireless telecommunications facility on an existing 150' self-support tower at the above-referenced address, latitude 41.2274919, longitude -73.0705989. Said self-support tower is managed by Crown Castle

AT&T desires to modify its existing telecommunications facility by adding (3) antennas, swapping (3) remote radio heads, adding (6) remote radio heads, adding (6) diplexers, adding (1) surge arrestor and accompanying feedlines as more particularly detailed and described on the enclosed Construction Drawings prepared by Hudson Design Group LLC, last revised December 16, 2019. The centerline height of the existing antennas is and will remain at 141 feet.

Please accept this letter as notification pursuant to 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 R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the following individuals: Benjamin B. Blake, Mayor, City of Milford; Joseph D. Griffith, Building Official, City of Milford; David B. Sulkis, City Planner, City of Milford; Stephen H. Harris, Zoning Enforcement Officer, City of Milford; Crown Castle as manager of the above referenced tower; and City of Milford, as property owner at the above referenced address.

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

4. The operation of the modified facility will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. *Please see the RF emissions calculation for AT&T's modified facility enclosed herewith.*

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

6. The existing structure and its foundation can support the proposed loading. *Please see the structural analysis dated December 23, 2019 and prepared by B+T Group enclosed herewith.*

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

Sincerely,

Jennifer Iliades
Site Acquisition Consultant
Centerline Communications, LLC
750 West Center Street, Suite 301
West Bridgewater, MA 02379
jiliades@clinellc.com

Enclosures:
Exhibit 1 – Construction Drawings
Exhibit 2 – Property Card and GIS
Exhibit 3 – Structural Analysis
Exhibit 4 – Mount Analysis
Exhibit 5 – RF Emissions Analysis Report Evaluation
Exhibit 6 – Earliest Available CSC Decision

cc:
Benjamin B. Blake, Mayor, City of Milford as elected official and property owner
Joseph D. Griffith, Building Official, City of Milford
David B. Sulkis, City Planner, City of Milford
Stephen H. Harris, Zoning Enforcement Officer, City of Milford
Crown Castle, as manager of tower

EXHIBIT 1

PROJECT INFORMATION

SCOPE OF WORK:

ITEMS TO BE MOUNTED ON THE EXISTING TOWER:
- NEW AT&T ANTENNA: ANTENNA (800-10964) (TYP. OF 1 PER SECTOR, TOTAL OF 3)
- NEW AT&T RRUS: B14 4478 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3)
- NEW AT&T RRUS: 4478 B5 (850) (TYP. OF 1 PER SECTOR, TOTAL OF 3)
- NEW AT&T RRUS: 4426 B66 (AWS) (TYP. OF 1 PER SECTOR, TOTAL OF 3)
- NEW SURGE ARRESTOR: SURGE ARRESTOR (DC6-48-60-18-8C) (TOTAL OF 1)
- INSTALL (2) DC TRUNKS & (1) FIBER (TO FOLLOW EXISTING ROUTE)
- INSTALL NEW MOUNTING FRAME: SITE PRO1 P/N # VFA12-WLL-30120 (TYP.)

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:
- REPLACE DUS WITH 5216 AND REPLACE IDL2 WITH IDLe
- ADD LTE RBS 6630
- NEW AT&T LOW BAND COMBINER (DBCT108F1V92-1) (TYP. OF 2 PER SECTOR, TOTAL OF 6)

ITEMS TO REMAIN:
- (9) ANTENNAS, (9) RRUS, (12) COAX CABLES, (2) SURGE ARRESTOR, (4) DC POWER & (2) FIBER.

SITE ADDRESS:	434 BOSTON POST ROAD MILFORD, CT 06460
LATITUDE:	41° 13' 42.69" N
LONGITUDE:	73° 4' 12.57" W
TYPE OF SITE:	LATTICE TOWER/INDOOR EQUIPMENT
STRUCTURE HEIGHT:	150'-0"
RAD CENTER:	141'-0"
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

at&t

SITE NUMBER: CT5099

SITE NAME: MILFORD

FA CODE: 10071130

PACE ID: MRCTB031057, MRCTB031062, MRCTB032140

PROJECT: LTE 5C/6C/5G NR 2020 UPGRADE

FOR ZONING
NOT FOR CONSTRUCTION

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	0
GN-1	GENERAL NOTES	0
A-1	COMPOUND & EQUIPMENT PLANS	0
A-2	ANTENNA LAYOUTS & ELEVATION	0
A-3	DETAILS	0
SN-1	STRUCTURAL NOTES	0
RF-1	RF PLUMBING DIAGRAM	0
G-1	GROUNDING DETAILS	0

CCI SITE NAME: MILFORD
CCI SITE #: 842870

VICINITY MAP

DIRECTIONS TO SITE:

HEAD NORTHEAST TOWARD LEGGATT McCALL CONN. TURN LEFT ONTO LEGGATT McCALL CONN. CONTINUE LEFT ONTO BURR ST. TURN LEFT ONTO COCHITUATE RD. TAKE RAMP TO I-90 E/MASSPIKE W/SPRINGFIELD/BOSTON. KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR I-90 W/MASSPIKE/WORCESTER/SPRINGFIELD AND MERGE ONTO I-90 W/MASSPIKE. MERGE ONTO I-90 W/MASSPIKE. TAKE EXIT 9 FOR I-84 TOWARD US-20/ HARTFORD/NEW YORK CITY. CONTINUE ONTO I-84. TAKE EXIT 57 ON THE LEFT FOR CT-15 TOWARD I-91 S/CHARTER OAK BRIDGE/N.Y.C. CONTINUE ONTO CT-15 S.US-5 S. TAKE EXIT 86 TO MERGE ONTO I-91 S TOWARD NEW HAVEN/NEW YORK. TAKE EXIT 17 TO MERGE ONTO CT-15 S/ WILBUR CROSS PKWY. TAKE EXIT 54 TOWARD I-95/US-1/MILFORD. CONTINUE ONTO MILFORD PKWY. TAKE THE US-1 S EXIT. MERGE ONTO MEADOW ST. TURN LEFT ONTO BOSTON POST RD.

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.

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

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT5099
SITE NAME: MILFORD
CCI SITE #: 842870

434 BOSTON POST ROAD
MILFORD, CT 06460
NEW HAVEN COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	12/16/19	ISSUED FOR ZONING	SG	AT	DPH
A	06/26/19	ISSUED FOR REVIEW	TR	AT	DPH

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

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

AT&T

TITLE SHEET
LTE 5C/6C/5G NR 2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5099	T-1	0

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 – CENTERLINE
   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

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT5099
SITE NAME: MILFORD
CCI SITE #: 842870

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MILFORD, CT 06460
NEW HAVEN COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
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A	06/26/19	ISSUED FOR REVIEW	TR	AT	DPH

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

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

AT&T

GENERAL NOTES
LTE 5C/6C/5G NR 2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5099	GN-1	0

NOTE:

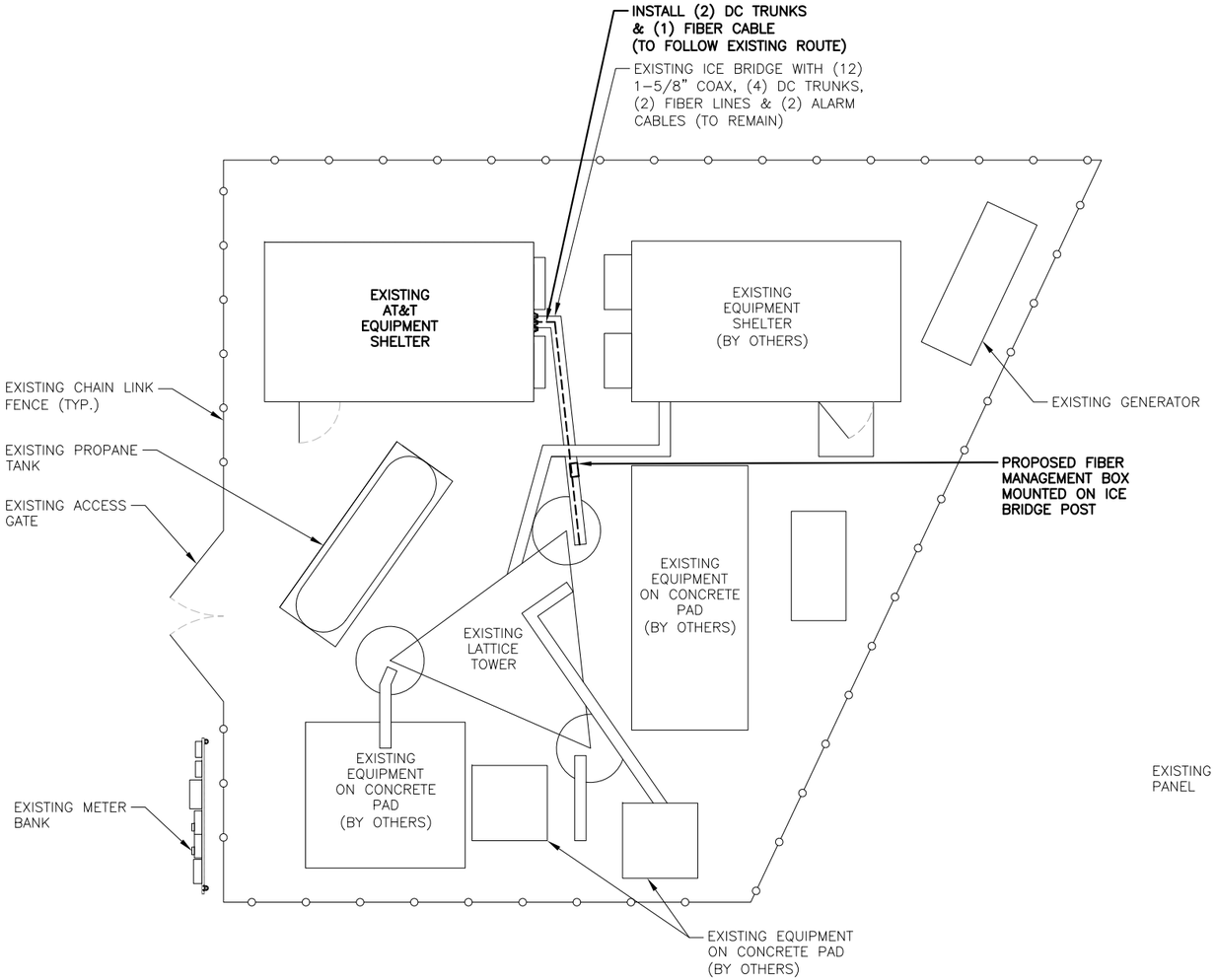
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

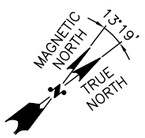
NOTE:

AN ASSESSMENT FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:
HUDSON DESIGN GROUP, LLC.
DATED: DECEMBER 10, 2019 (REV.1)

NOTE:

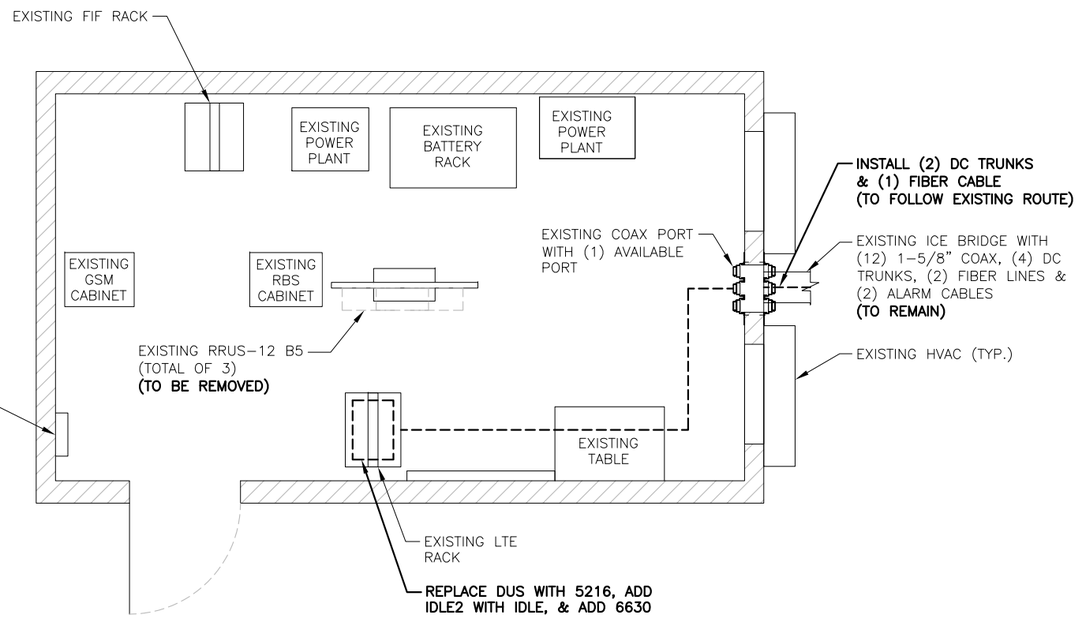
ALL ANTENNAS AND LINES TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY CROWN CASTLE AND FINAL AT&T RF DATA SHEET.

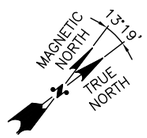




COMPOUND PLAN (1 / A-1)
22x34 SCALE: 3/16"=1'-0"
11x17 SCALE: 3/32"=1'-0"

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





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

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

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

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A	06/26/19	ISSUED FOR REVIEW	TR	AT	DPH

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

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

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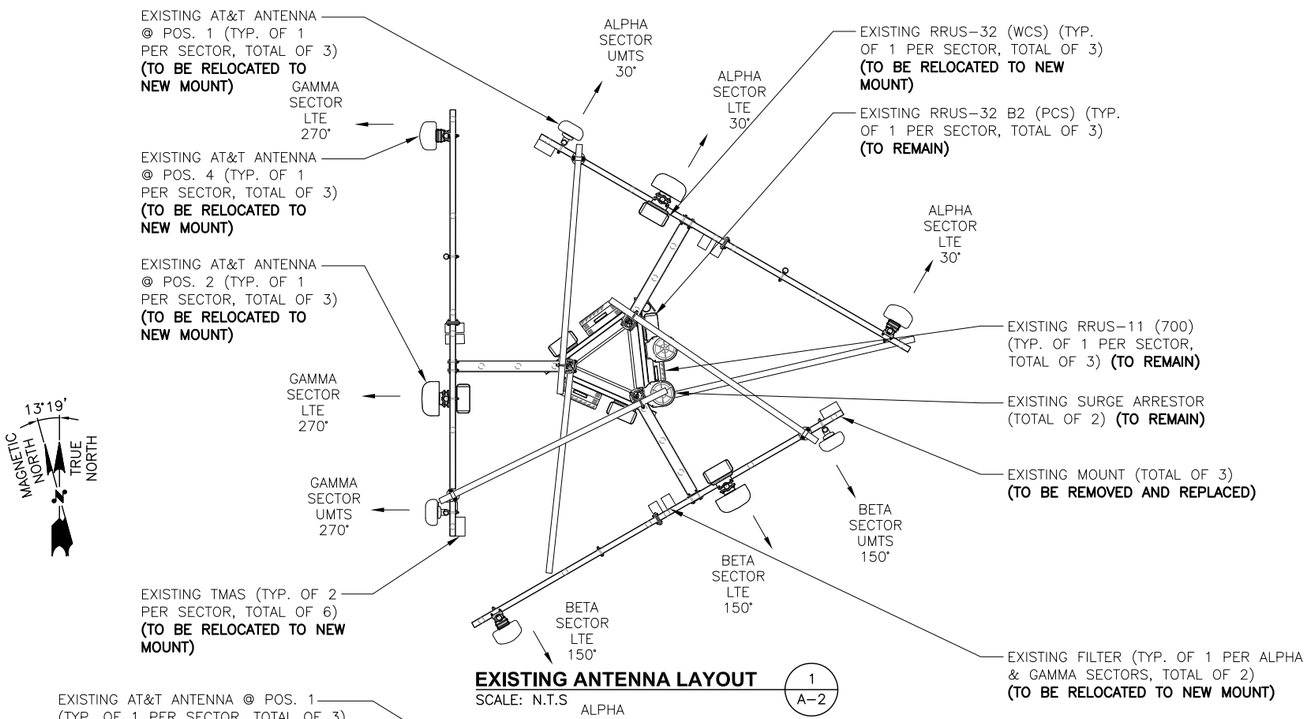
COMPOUND & EQUIPMENT PLANS
LTE 5C/6C/5G NR 2020 UPGRADE

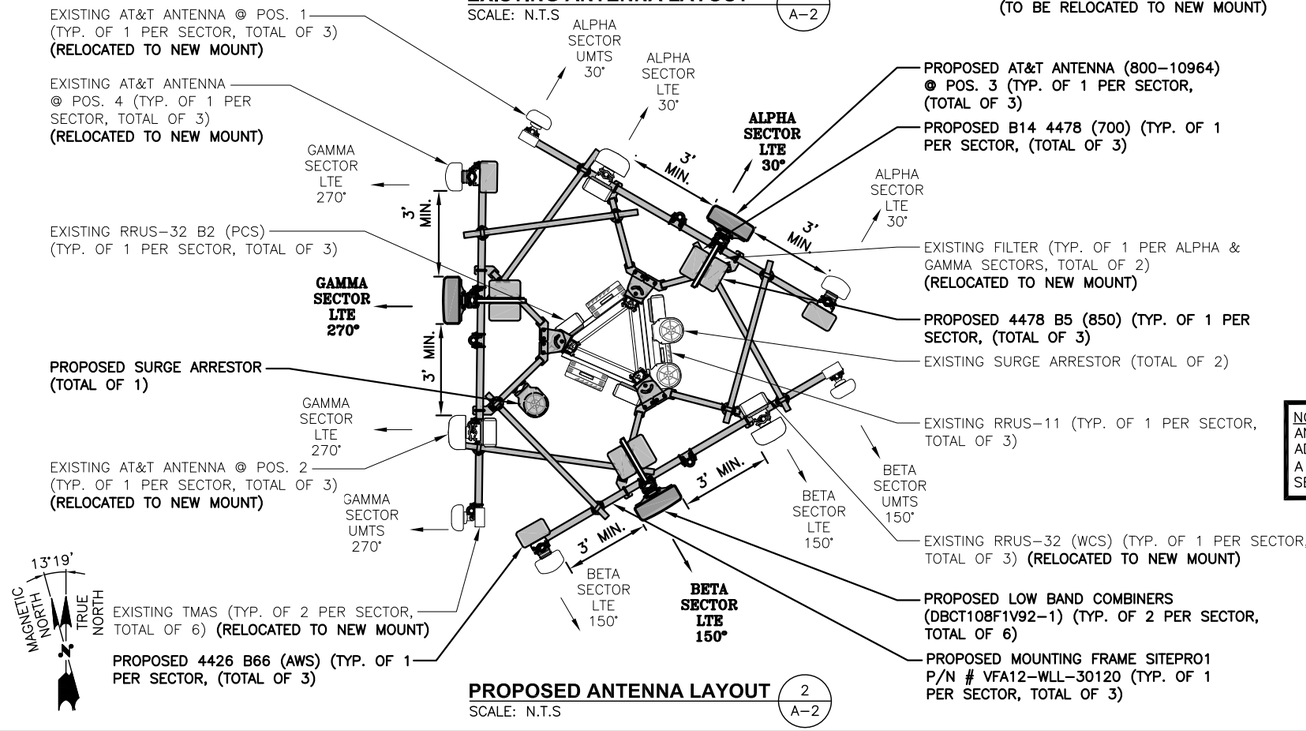
SITE NUMBER	DRAWING NUMBER	REV
CT5099	A-1	0



EXISTING ANTENNA LAYOUT

SCALE: N.T.S

1 / A-2



PROPOSED ANTENNA LAYOUT

SCALE: N.T.S

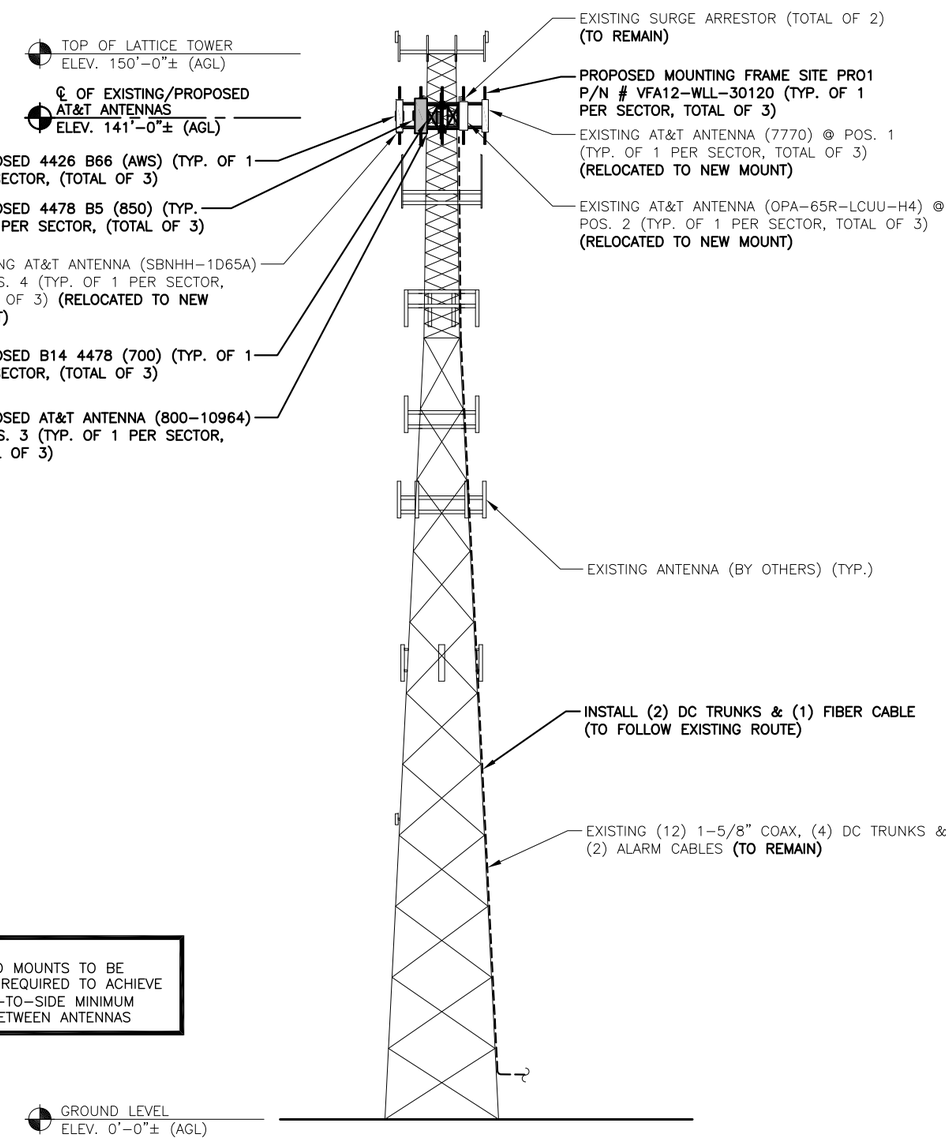
2 / A-2

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

NOTE:
AN ASSESSMENT FOR THE CAPACITY OF THE EXISTING **ANTENNA MOUNT** TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY:
HUDSON DESIGN GROUP, LLC.
DATED: DECEMBER 10, 2019 (REV.1)

NOTE:
ALL ANTENNAS AND LINES TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY CROWN CASTLE AND FINAL AT&T RF DATA SHEET.

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



ELEVATION

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

3 / A-2

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

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
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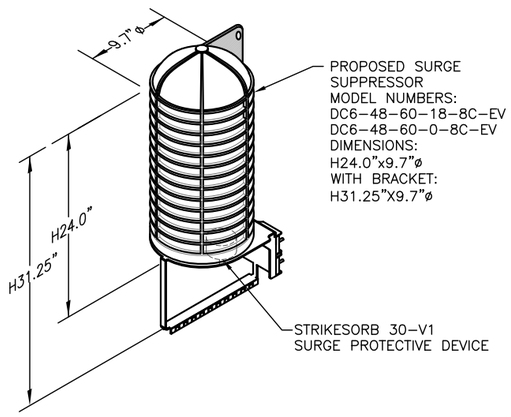
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: TR

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

AT&T

ANTENNA LAYOUTS & ELEVATION
LTE 5C/6C/5G NR 2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5099	A-2	0



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE SUPPRESSOR DETAIL (1 / A-3)
SCALE: N.T.S

NOTE:

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

NOTE:

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NOTE:

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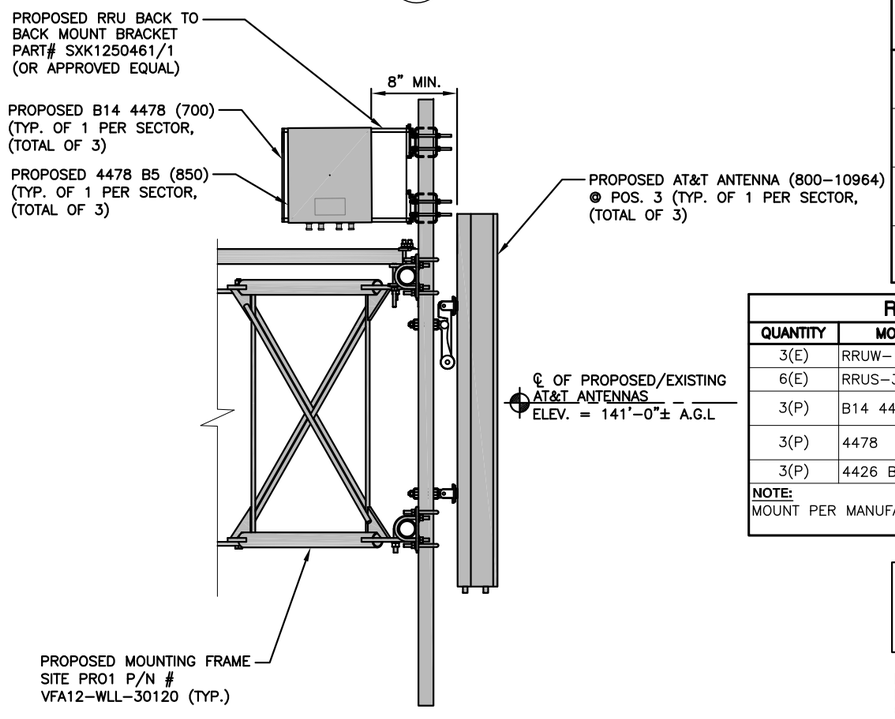


PROPOSED ANTENNA & RRU'S MOUNTING DETAIL (2 / A-3)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

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

ANTENNA SCHEDULE

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	EXISTING	UMTS 850	7770	55X11X5	±141'	30°	(E) LGP 21401	–	–	(2) 1-5/8 COAX	--
A2	EXISTING	LTE 700BC/WCS	OPA-65R-LCUU-H4	48.3X14.4X7.3	±141'	30°	(E) (1) FILTER	(E) RRUS-11 (700) (E) RRUS-32 (WCS)	– –	(2) 1-5/8 COAX	(E) (1) RAYCAP DC6-48-60-18-8F
A3	**PROPOSED**	**LTE 700 (B14) /AWS/850**	**800-10964**	**59X20X6.9**	**±141'**	**30°**	**(P)(2) DBCT108F1V92-1**	**(P) B14 4478 (700) (P) 4478 B5 (850) (P) 4426 B66 (AWS)**	**14.9X13.2X10.9 14.9X13.2X10.9 18.1X13.4X8.3**	–	
A4	EXISTING	LTE PCS	SBNHH-1D65A	56.6X11.9X7.1	±141'	30°	–	(E) RRUS-32 B2 (PCS)	–	–	
B1	EXISTING	UMTS 850	7770	55X11X5	±141'	150°	(E) LGP 21401	–	–	(2) 1-5/8 COAX	
B2	EXISTING	LTE 700BC/WCS	OPA-65R-LCUU-H4	48.3X14.4X7.3	±141'	150°	–	(E) RRUS-11 (700) (E) RRUS-32 (WCS)	– –	(2) 1-5/8 COAX	(E) (1) RAYCAP DC6-48-60-18-8F
B3	**PROPOSED**	**LTE 700 (B14) /AWS/850**	**800-10964**	**59X20X6.9**	**±141'**	**150°**	**(P)(2) DBCT108F1V92-1**	**(P) B14 4478 (700) (P) 4478 B5 (850) (P) 4426 B66 (AWS)**	**14.9X13.2X10.9 14.9X13.2X10.9 18.1X13.4X8.3**	–	
B4	EXISTING	LTE PCS	SBNHH-1D65A	56.6X11.9X7.1	±141'	150°	–	(E) RRUS-32 B2 (PCS)	–	–	
C1	EXISTING	UMTS 850	7770	55X11X5	±141'	270°	(E) LGP 21401	–	–	(2) 1-5/8 COAX	
C2	EXISTING	LTE 700BC/WCS	OPA-65R-LCUU-H4	48.3X14.4X7.3	±141'	270°	(E) (1) FILTER	(E) RRUS-11 (700) (E) RRUS-32 (WCS)	– –	(2) 1-5/8 COAX	(P) (1) RAYCAP DC6-48-60-18-8C
C3	**PROPOSED**	**LTE 700 (B14) /AWS/850**	**800-10964**	**59X20X6.9**	**±141'**	**270°**	**(P)(2) DBCT108F1V92-1**	**(P) B14 4478 (700) (P) 4478 B5 (850) (P) 4426 B66 (AWS)**	**14.9X13.2X10.9 14.9X13.2X10.9 18.1X13.4X8.3**	–	
C4	EXISTING	LTE PCS	SBNHH-1D65A	56.6X11.9X7.1	±141'	270°	–	(E) RRUS-32 B2 (PCS)	–	–	

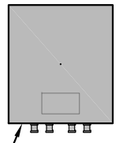
RRU CHART

QUANTITY	MODEL	L	W	D
3(E)	RRUW-11	19.7"	17.0"	7.2"
6(E)	RRUS-32	27.2"	12.1"	7.0"
3(P)	B14 4478	14.9"	13.2"	10.9"
3(P)	4478 B5	14.9"	13.2"	10.9"
3(P)	4426 B66	18.1"	13.4"	8.3"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

NOTE:

SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

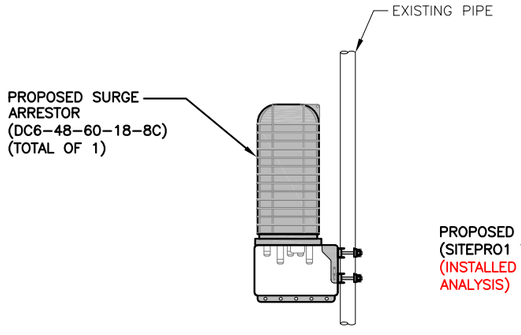


PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS

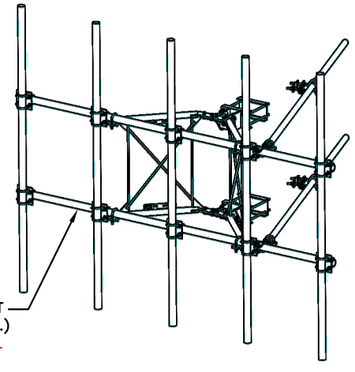
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

RRU DETAIL (3 / A-3)
SCALE: N.T.S

FINAL ANTENNA CONFIGURATION TABLE (4 / A-3)



SURGE ARRESTOR MOUNTING DETAIL (5 / A-3)
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"



HEAVY DUTY V-FRAME MOUNT DETAIL (6 / A-3)
SCALE: N.T.S

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

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

AT&T

DETAILS
LTE 5C/6C/5G NR 2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5099	A-3	0

STRUCTURAL NOTES:

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

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

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

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

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

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

NOTES:

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

NOTES:

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

SPECIAL INSPECTION CHECKLIST

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

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

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT5099
SITE NAME: MILFORD
CCI SITE #: 842870

434 BOSTON POST ROAD
MILFORD, CT 06460
NEW HAVEN COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	12/16/19	ISSUED FOR ZONING	SG	AT	DPH
A	06/26/19	ISSUED FOR REVIEW	TR	AT	DPH

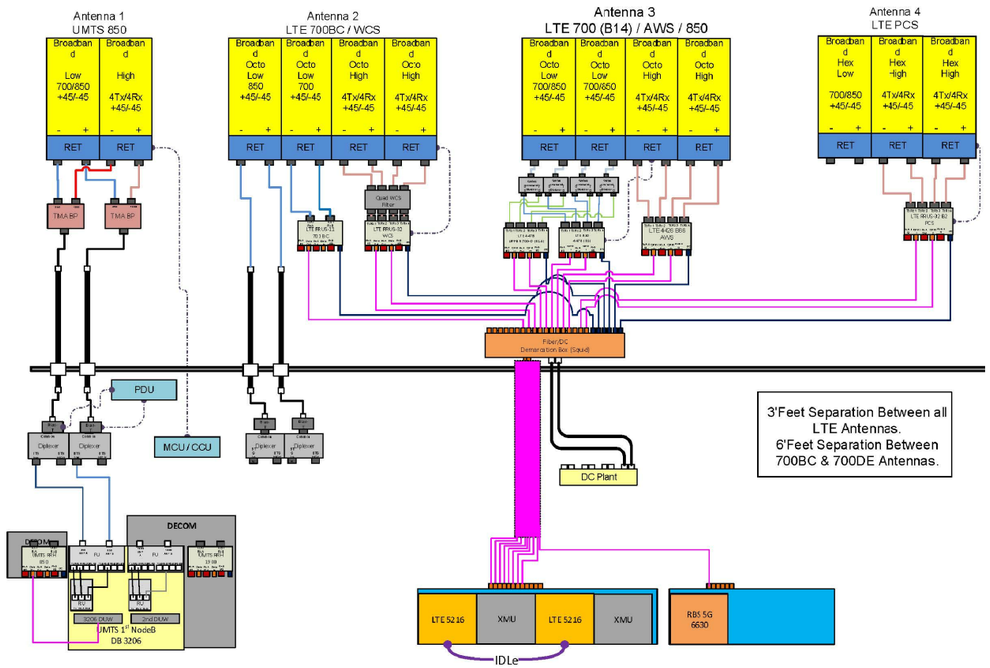
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: TR

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

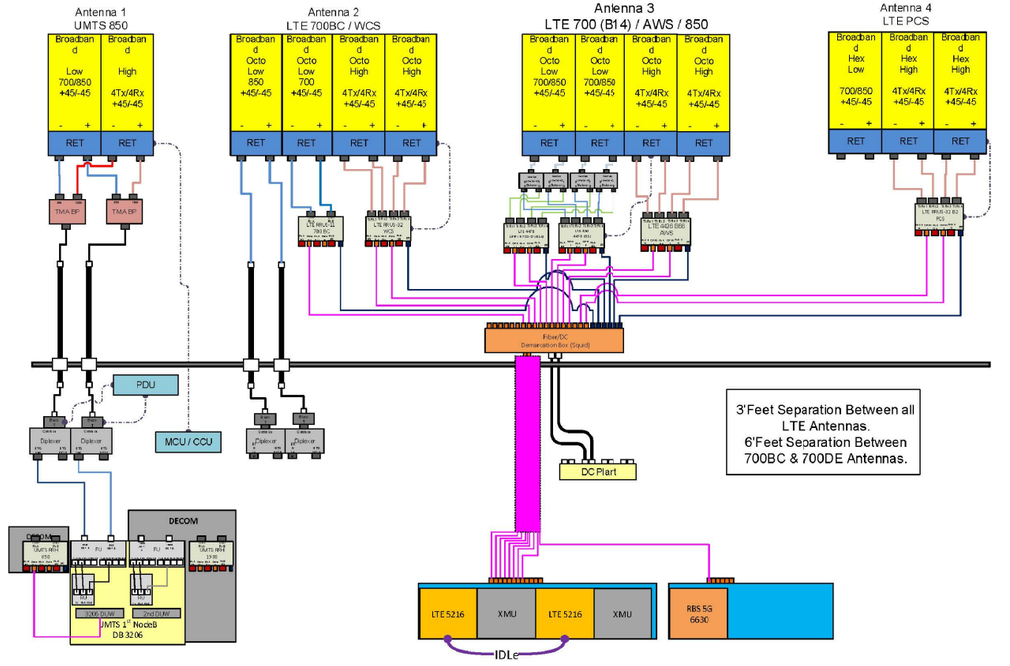
AT&T

STRUCTURAL NOTES
LTE 5C/6C/5G NR 2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5099	SN–1	0



ALPHA & GAMMA SECTORS



BETA SECTOR

RF PLUMBING DIAGRAM 1
SCALE: N.T.S RF–1

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

NOTE:

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

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: TR

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

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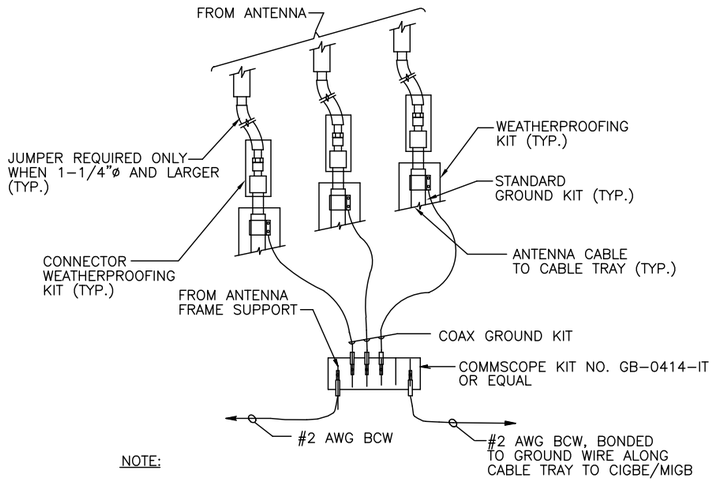
RF PLUMBING DIAGRAM
LTE 5C/6C/5G NR 2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5099	RF–1	0

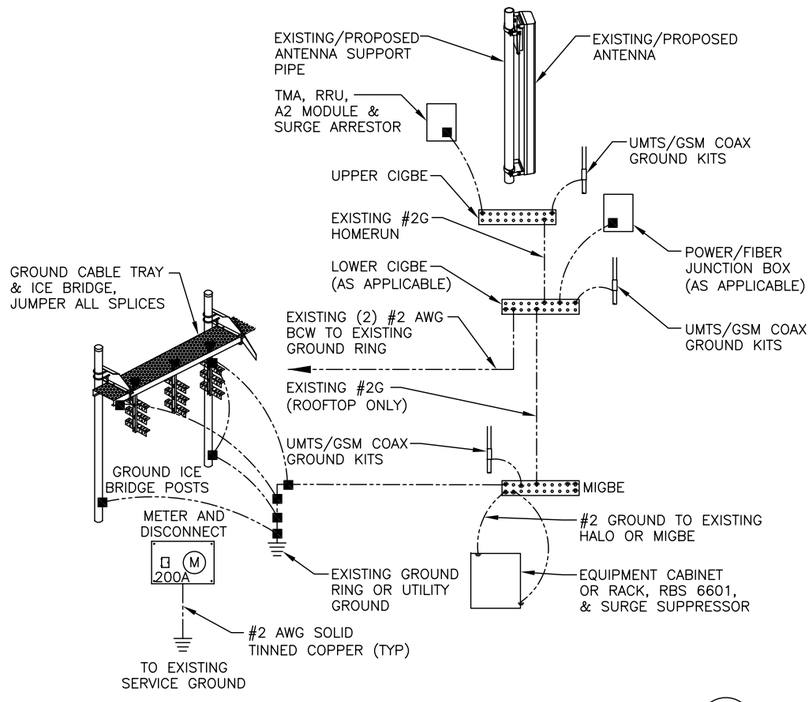


NOTE:

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

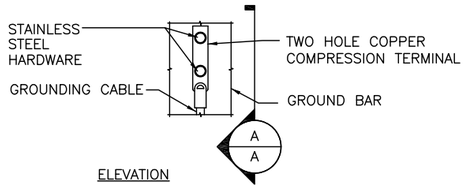
GROUND WIRE TO GROUND BAR CONNECTION DETAIL (1 / G-1)

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

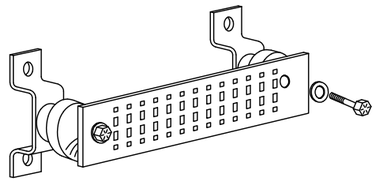
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

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 (4 / G-1)

SCALE: N.T.S

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

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

AT&T

GROUNDING DETAILS
LTE 5C/6C/5G NR 2020 UPGRADE

SITE NUMBER	DRAWING NUMBER	REV
CT5099	G-1	0

EXHIBIT 2

434 BOSTON POST RD

Location	434 BOSTON POST RD	**Mblu**	64/ 930/ 6/A /
Acct#	023341	**Owner**	CITY OF MILFORD
Assessment	$315,000	**Appraisal**	$450,000
PID	101882	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2016	$450,000	$0	$450,000
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2016	$315,000	$0	$315,000

Owner of Record

Owner	CITY OF MILFORD	**Sale Price**	$0
Other	C/O AT&T MBLTY-TAX DEPT	**Certificate**	
Address	575 MOROSGO DR STE 12 EAST TOWER ATLANTA, GA 30324	**Book & Page**	02435/0430
		Sale Date	11/22/1999

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
CITY OF MILFORD	$0		02435/0430	11/22/1999

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0
Replacement Cost: $0
Building Percent Good:
Replacement Cost Less Depreciation: $0

Building Attributes	
Field	**Description**

Style	Outbuildings
Model	
Grade:	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
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 Description:	
Kitchen Descrip:	
Num Kitchens	
Cndtn	
Usrfld 103	
Int Condition:	
Solar Panels	
House Generator	
Usrfld 107	
Num Park	
Fireplaces	
Usrfld 108	
Usrfld 101	
Usrfld 102	
Usrfld 100	

Building Photo

(http://images.vgsi.com/photos/MilfordCTPhotos//\00\05\05\74.j

Building Layout

(http://images.vgsi.com/photos/MilfordCTPhotos//Sketches/1018

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

Use Code	434V
Description	CELL TOWER MDL-00
Zone	
Neighborhood	D
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	0
Frontage	
Depth	
Assessed Value	$0
Appraised Value	$0

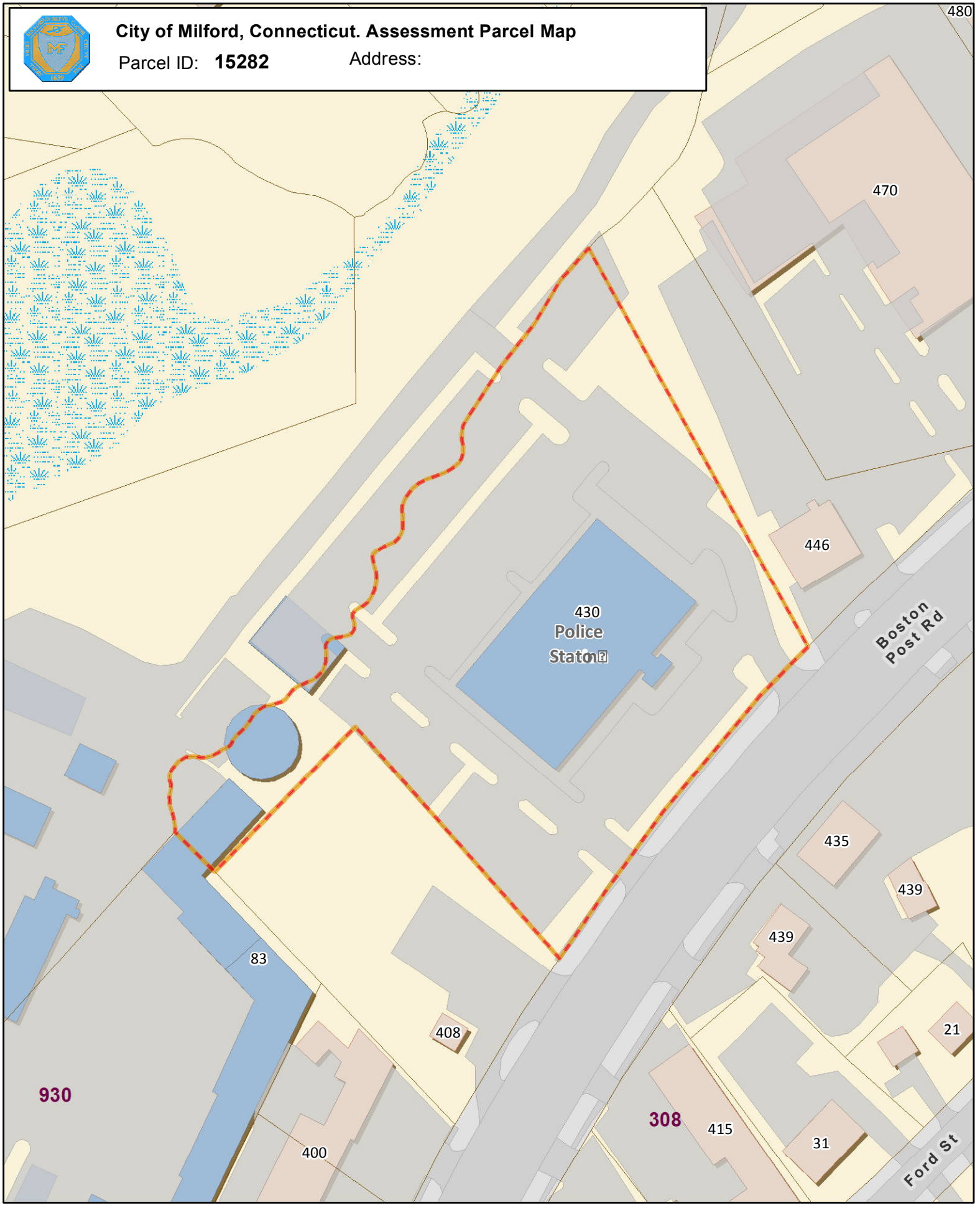
Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
CEL1	CEL TWR SITE			1.00 UNITS	$450,000	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$450,000	$0	$450,000
2017	$450,000	$0	$450,000
2016	$450,000	$0	$450,000

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$315,000	$0	$315,000
2017	$315,000	$0	$315,000
2016	$315,000	$0	$315,000



1 inch = 100 feet

0 50 100 150 200 Feet

Map Produced: July 2016

EXHIBIT 3

Date: **December 23, 2019**

Denice Nicholson
Crown Castle
3 Corporate Dr
Clifton Park, NY 12065

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Subject:	**Structural Analysis Report**	
Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Carrier Site Number:	CT5099
	Carrier Site Name:	Milford
Crown Castle Designation:	**Crown Castle BU Number:**	842870
	Crown Castle Site Name:	Milford
	Crown Castle JDE Job Number:	545574
	Crown Castle Work Order Number:	1817922
	Crown Castle Order Number:	467605 Rev. 4
Engineering Firm Designation:	**B+T Group Project Number:**	91292.016.01
Site Data:	**434 Boston Post Road, Milford, New Haven County, CT** **Latitude *41° 13' 42.69"*, Longitude *-73° 4' 12.47"*** **150 Foot - Self Support Tower**	

Dear Denice Nicholson,

B+T Group is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above-mentioned tower.

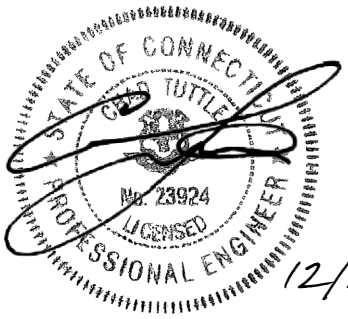
The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration **Sufficient Capacity – 85.8%**

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Jacob Johnson, E.I.T.

Respectfully submitted by: B+T Engineering, Inc.
COA: PEC.0001564; Expires: 02/10/2020



12/23/19

Chad E. Tuttle, P.E.

tnxTower Report - version 8.0.5.0

TABLE OF CONTENTS

1) INTRODUCTION

This is a 150 ft. Self-Support tower designed by PiRod Inc. in March 2000. This tower has been modified by GPD Group in 2012 and those modifications were incorporated in this analysis.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	0.75 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
141.0	141.0	3	Andrew	SBNHH-1D65A	12 4 3 2	1-5/8 5/8 3/8 7/8
		3	CCI Antennas	OPA-65R-LCUU-H4		
		1	Commscope	WCS-IMFQ-AMT		
		3	Ericsson	RRUS 11 B2		
		3	Ericsson	RRUS 32 B2		
		3	Ericsson	RRUS 32 B30		
		3	Ericsson	RRUS 4426 B66		
		3	Ericsson	RRUS 4478 B14		
		3	Ericsson	RRUS 4478 B5		
		6	Kaelus	DBCT108F1V92-1		
		3	Kathrein	80010964		
		3	Powerwave Tech.	7020.00		
		3	Powerwave Tech.	7770.00		
		6	Powerwave Tech.	LGP21401		
		3	Raycap	DC6-48-60-18-8F		
		3	SitePro1	VFA12-WLL-30-30120		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
150.0	160.0	2	Sinclair	SC226-SFXSNM	6 1	5/8 3/8
	151.0	2	Radiowaves	HPLPD1-18		
	150.0	1	--	Platform Mount [LP 405-1]		
130.0	130.0	2	Terrawave	M5160160P10006	2	7/8
		2	--	Side Arm Mount [SO 301-1]		
118.0	128.0	1	Sinclair	SC229-SFXLDF	2	7/8
		1	Sinclair	SC320		
	118.0	2	--	Side Arm Mount [SO 306-1]		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
114.0	114.0	3	Site Pro1	SFS-H Stabilizer Kit	6 3	1-5/8 1-3/8
		1	--	Sector Mount [SM 307-3]		
	112.0	3	Ericsson	AIR 32 B2a/B66Aa		
		3	Ericsson	ERICSSON AIR 21 B2A B4P		
		3	Ericsson	KRY 112 71		
		3	Ericsson	RADIO 4449 B12/B71		
		3	Rfs Celwave	APXVAARR24_43-U-NA20		
103.0	103.0	3	Alcatel Lucent	800MHZ 2X50W RRH W/FILTER	--	--
		3	Alcatel Lucent	PCS 1900MHZ 2X40W		
		1	--	Pipe Mount [PM 601-3]		
100.0	103.0	3	Alcatel Lucent	TD-RRH8X20-25	3 1	1-1/4 7/8
	100.0	3	Commscope	DT465B-2XR		
		3	Rfs Celwave	APXVSPP18-C-A20		
		1	--	Sector Mount [SM 406-3]		
	97.0	3	Alcatel Lucent	RRH2X50-800		
88.0	90.0	6	Antel	BXA-171063/8CF	12	1-5/8
		6	Antel	LPA-80063/4CF		
		1	Rfs Celwave	DB-T1-6Z-8AB-0Z		
		6	Rfs Celwave	FD9R6004/2C-3L		
		3	Swedcom	SWCP 2x5514		
	88.0	1	--	Pipe Mount [PM 601-3]		
		1	--	Sector Mount [SM 408-3]		
65.0	65.0	3	Rfs Celwave	APXV18-206517S-C	6	1-5/8
50.0	50.0	1	PCTEL	GPS-TMG-HR-26NCM	1	1/2

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
Online Order Information	AT&T Mobility Co-Locate, Rev. 4	467605	CCI Sites
Tower Manufacturer Drawing	PiRod Inc., Eng. File No. A-116849-Q-92250	4480661	CCI Sites
Mount Analysis Report	Hudson, Project No. 12/10/2019	Date: 12/10/2019	CCI Sites
Tower Modification Drawing	GPD Group, Date: 03/27/2012	4713244	CCI Sites
Post Modification Inspection	GPD Group, Date: 10/23/2012	4713239	CCI Sites
Foundation Drawing	PiRod Inc., Eng. File No. A-116849-Q-92250	4480652	CCI Sites
Geotech Report	Clarence Welti Associates, Date: 01/17/2000	5359323	CCI Sites
Exposure Category Determination	Crown Castle, Date: 11/13/2015	5974782	CCI Sites
Antenna Configuration	Crown CAD Package	Date: 12/18/2019	CCI Sites

3.1) Analysis Method

tnxTower (version 8.0.5.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1) The tower and structures were built and have been maintained in accordance with the manufacturer's specification.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
3) Mount areas and weights are assumed based on photographs provided.

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T1	150 - 147.583	Leg	1 1/2	1	-3.839	53.917	7.1	Pass
T2	147.583 - 130	Leg	1 1/2	15	-31.140	53.917	57.8	Pass
T3	130 - 110	Leg	2	72	-80.690	117.290	68.8	Pass
T4	110 - 100	Leg	Pirod 105244	136	-87.182	149.618	58.3	Pass
T5	100 - 80	Leg	Pirod 105216	148	-128.297	149.618	85.8	Pass
T6	80 - 60	Leg	Pirod 105217	169	-185.946	225.602	82.4	Pass
T7	60 - 40	Leg	Pirod 105218	187	-227.732	315.715	72.1	Pass
T8	40 - 20	Leg	Pirod 105218	202	-267.250	315.715	84.6	Pass
T9	20 - 0	Leg	Pirod 105219	217	-303.719	419.861	72.3	Pass
T1	150 - 147.583	Diagonal	3/4	11	-1.345	5.577	24.1	Pass
T2	147.583 - 130	Diagonal	3/4	26	-3.774	5.123	73.7	Pass
T3	130 - 110	Diagonal	7/8	80	-5.512	8.211	67.1	Pass
T4	110 - 100	Diagonal	L2 1/2x2 1/2x3/16	142	-9.620	18.455	52.1 73.3 (b)	Pass
T5	100 - 80	Diagonal	L2 1/2x2 1/2x3/8	157	-16.538	27.043	61.2 62.4 (b)	Pass
T6	80 - 60	Diagonal	L3x3x3/16	177	-8.282	20.182	41.0 68.1 (b)	Pass
T7	60 - 40	Diagonal	L3x3x3/16	193	-8.216	16.112	51.0 66.7 (b)	Pass
T8	40 - 20	Diagonal	L3x3x5/16	208	-8.884	20.744	42.8	Pass
T9	20 - 0	Diagonal	L3x3x5/16	223	-11.088	17.119	64.8	Pass
T2	147.583 - 130	Horizontal	7/8	35	-0.401	5.364	7.5	Pass
T3	130 - 110	Horizontal	3/4	127	-0.965	2.691	35.9	Pass
T1	150 - 147.583	Top Girt	5x1/2	6	-0.934	10.158	9.2	Pass
T2	147.583 - 130	Top Girt	7/8	17	-0.150	6.213	2.4	Pass
T3	130 - 110	Top Girt	7/8	74	-1.750	5.122	34.2	Pass
T4	110 - 100	Top Girt	L3x3x3/16	137	1.223	30.113	4.1 10.0 (b)	Pass
T5	100 - 80	Top Girt	L3x3x3/16	150	9.601	30.113	31.9 78.3 (b)	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T6	80 - 60	Top Girt	L3x3x3/16	170	-7.917	18.645	42.5 77.9 (b)	Pass
T2	147.583 - 130	Bottom Girt	7/8	19	-1.644	5.073	32.4	Pass
T3	130 - 110	Bottom Girt	7/8	76	-1.889	4.166	45.4	Pass
T5	100 - 80	Mid Girt	L3x3x3/16	152	-11.094	22.249	49.9	Pass
							Summary	
						Leg (T5)	85.8	Pass
						Diagonal (T2)	73.7	Pass
						Horizontal (T3)	35.9	Pass
						Top Girt (T5)	78.3	Pass
						Bottom Girt (T3)	45.4	Pass
						Mid Girt (T5)	49.9	Pass
						Bolt Checks	78.3	Pass
						Rating =	85.8	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	Base	25.3	Pass
1	Base Foundation (Structure)	Base	16.0	Pass
1	Base Foundation (Soil Interaction)	Base	44.3	Pass

Structure Rating (max from all components) =	85.8%

Notes:
1) See additional documentation in “Appendix C – Additional Calculations” for calculations supporting the % capacity consumed.
2) Rating per TIA-222-H Section 15.5.

4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section		T1									
Legs		T2	SR 1 1/2								
Leg Grade			A572-50								
Diagonals			L3x3x5/16								
Diagonal Grade			A36								
Top Girts			N.A.								
Mid Girts			N.A.								
Bottom Girts			N.A.								
Horizontals			N.A.								
Face Width (ft)	16		14								
# Panels @ (ft)			11 @ 10								
Weight (K)	19.2		4.2								

Section		T1									
Legs		T2	SR 1 1/2								
Leg Grade			A572-50								
Diagonals			L3x3x3/16								
Diagonal Grade			A36								
Top Girts			N.A.								
Mid Girts			N.A.								
Bottom Girts			N.A.								
Horizontals			N.A.								
Face Width (ft)	16		12								
# Panels @ (ft)			11 @ 10								
Weight (K)	19.2		3.5								

Section		T1									
Legs		T2	SR 1 1/2								
Leg Grade			A572-50								
Diagonals			L3x3x3/16								
Diagonal Grade			A36								
Top Girts			N.A.								
Mid Girts			N.A.								
Bottom Girts			N.A.								
Horizontals			N.A.								
Face Width (ft)	16		10								
# Panels @ (ft)			11 @ 10								
Weight (K)	19.2		3.0								

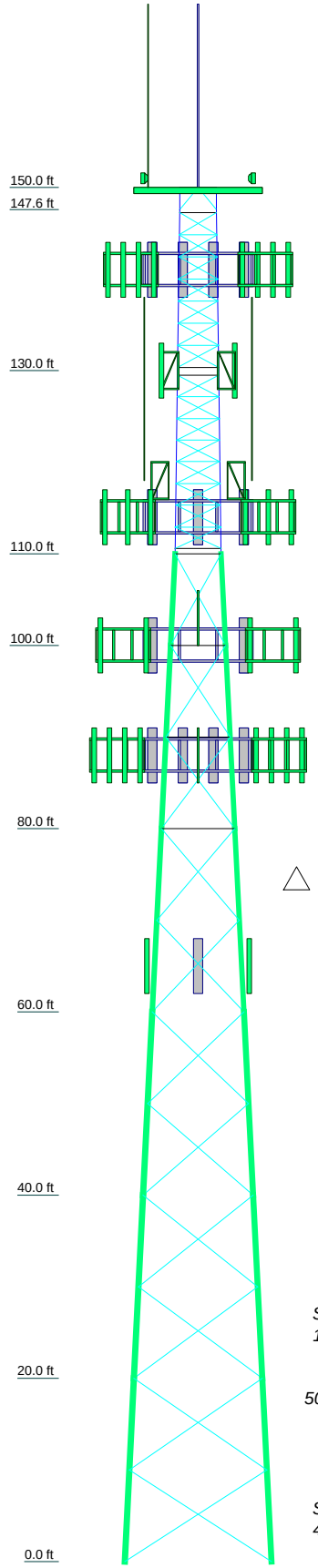
Section		T1									
Legs		T2	SR 1 1/2								
Leg Grade			A572-50								
Diagonals			L3x3x3/16								
Diagonal Grade			A36								
Top Girts			N.A.								
Mid Girts			N.A.								
Bottom Girts			N.A.								
Horizontals			N.A.								
Face Width (ft)	16		8								
# Panels @ (ft)			11 @ 10								
Weight (K)	19.2		2.6								

Section		T1									
Legs		T2	SR 1 1/2								
Leg Grade			A572-50								
Diagonals			L2 1/2x2 1/2x3/8								
Diagonal Grade			A								
Top Girts			L3x3x3/16								
Mid Girts			L3x3x3/16								
Bottom Girts			N.A.								
Horizontals			N.A.								
Face Width (ft)	16		6								
# Panels @ (ft)			8 @ 2.36458								
Weight (K)	19.2		2.6								

Section		T1									
Legs		T2	SR 1 1/2								
Leg Grade			A572-50								
Diagonals			L2 1/2x2 1/2x3/8								
Diagonal Grade			A								
Top Girts			L3x3x3/16								
Mid Girts			N.A.								
Bottom Girts			N.A.								
Horizontals			N.A.								
Face Width (ft)	16		5								
# Panels @ (ft)			8 @ 2.36458								
Weight (K)	19.2		1.3								

Section		T1									
Legs		T2	SR 1 1/2								
Leg Grade			A572-50								
Diagonals			SR 3/4								
Diagonal Grade			A572-50								
Top Girts			SR 7/8								
Mid Girts			N.A.								
Bottom Girts			SR 7/8								
Horizontals			SR 7/8								
Face Width (ft)	16		4.5								
# Panels @ (ft)			8 @ 2.41667								
Weight (K)	19.2		0.7								

Section		T1									
Legs		T2	SR 1 1/2								
Leg Grade			A572-50								
Diagonals			SR 3/4								
Diagonal Grade			A572-50								
Top Girts			SR 7/8								
Mid Girts			N.A.								
Bottom Girts			C								
Horizontals			C								
Face Width (ft)	16		4								
# Panels @ (ft)			4.0625								
Weight (K)	19.2		0.2								



SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L2 1/2x2 1/2x3/16	C	N.A.
B	5x1/2		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	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 C to the TIA-222-H Standard.
3. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0'
8. TIA-222-H Annex S
9. TOWER RATING: 85.8%

ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 315 K
SHEAR: 32 K

UPLIFT: -277 K
SHEAR: 29 K

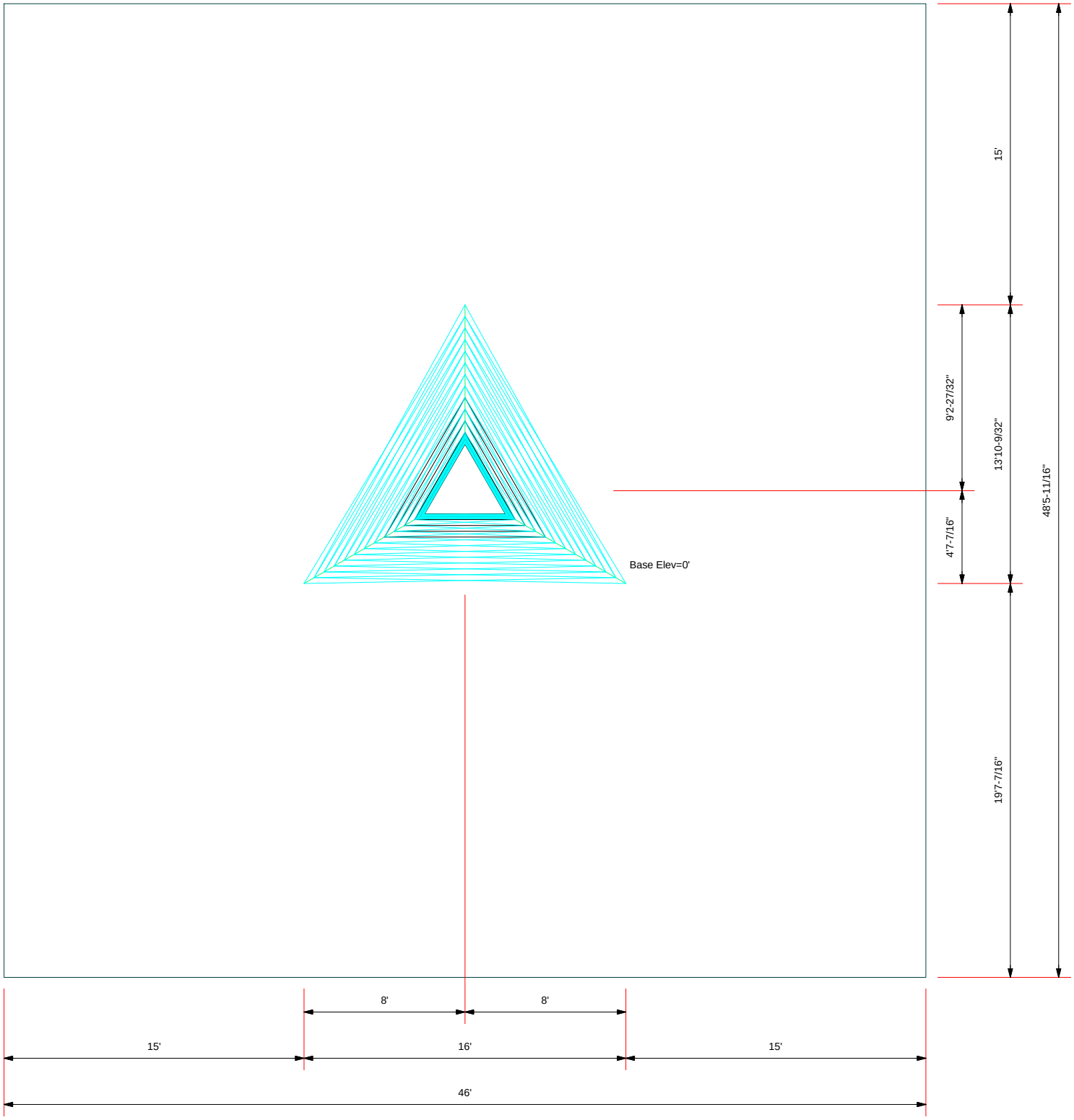
AXIAL 140 K
SHEAR 14 K
MOMENT 1225 kip-ft
TORQUE 5 kip-ft
50 mph WIND - 1.500 in ICE

AXIAL 54 K
SHEAR 49 K
MOMENT 4108 kip-ft
TORQUE 25 kip-ft
REACTIONS - 125 mph WIND

B+T Group
1717 S.Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: ***91292.016.01 - MILFORD, CT (BU# 842870)***		
Project:		
Client: Crown Castle	Drawn by: Suhas Poojary	App'd:
Code: TIA-222-H	Date: 12/19/19	Scale: NTS
Path: C:\Users\SHIVA\Desktop\jobs\19-12-2019\91292_842870_Milford---Suhas---Adarsh-QCD\Tnx_016_01\91292_016_01_MILFORD_CT.eri		Dwg No. E-1

Plot Plan
Total Area - 0.05 Acres



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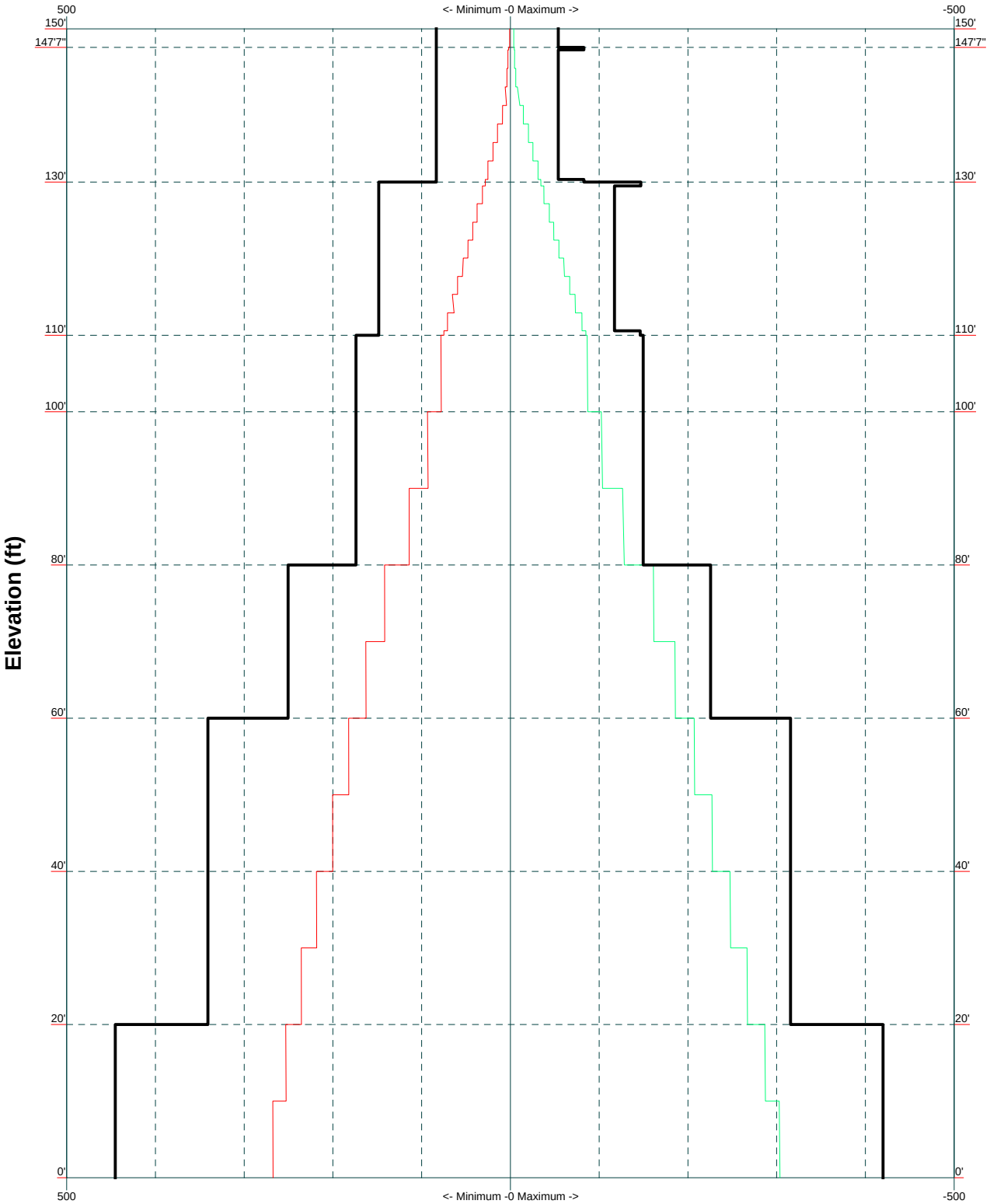
Path: C:\Users\SHIVA\Desktop\jobs\19-12-2019\91292_842870_Milford---Suhas---Adarsh-QCD\Tnx_016_01\91292_016_01_MILFORD_CT.eri		Dwg No. E-2

TIA-222-H - 125 mph/50 mph 1.500 in Ice Exposure C

Leg Capacity ——— **Leg Compression (K)**



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1717 S.Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

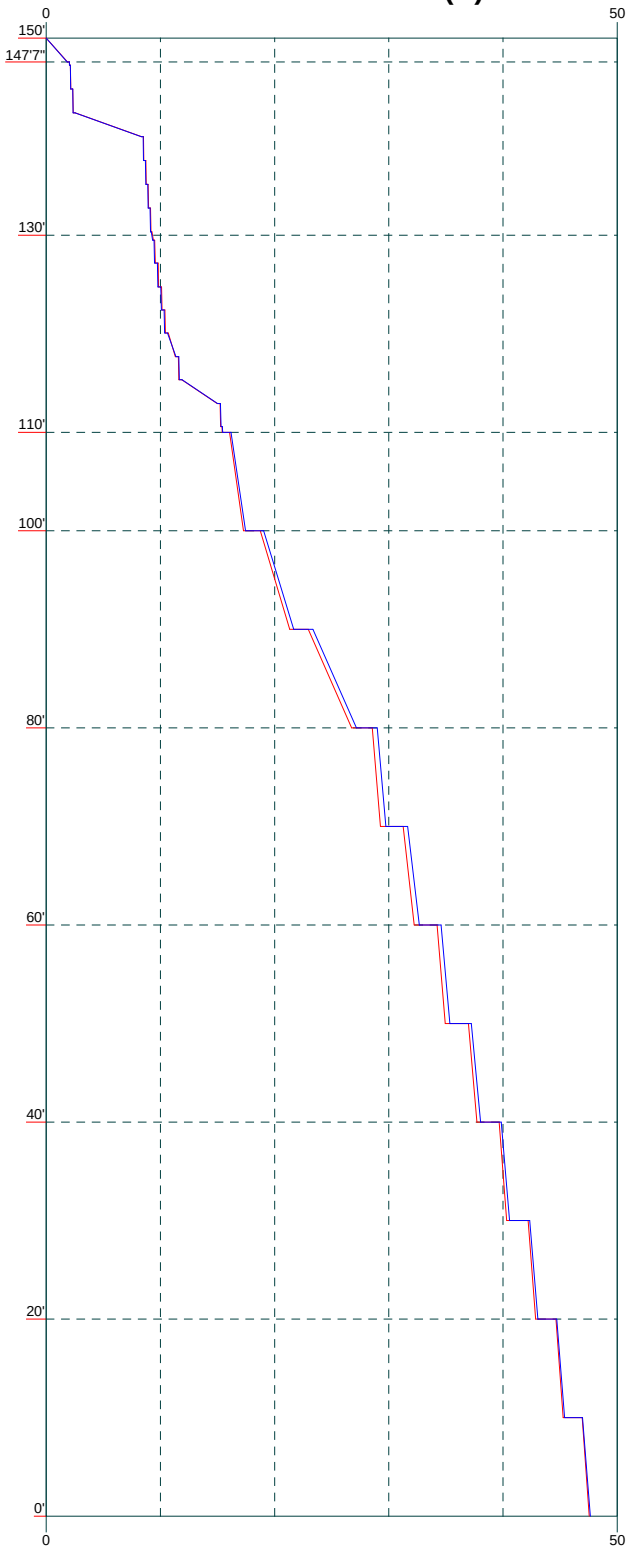
Job: ***91292.016.01 - MILFORD, CT (BU# 842870)***		
Project:		
Client: Crown Castle	Drawn by: Suhas Poojary	App'd:
Code: TIA-222-H	Date: 12/19/19	Scale: NTS
Path: C:\Users\SHIVA\Desktop\jobs\19-12-2019\91292_842870_Milford---Suhas---Adarsh-QCD\Tnx_016_01\91292_016_01_MILFORD_CT.eri		Dwg No. E-3

TIA-222-H - 125 mph/50 mph 1.500 in Ice Exposure C

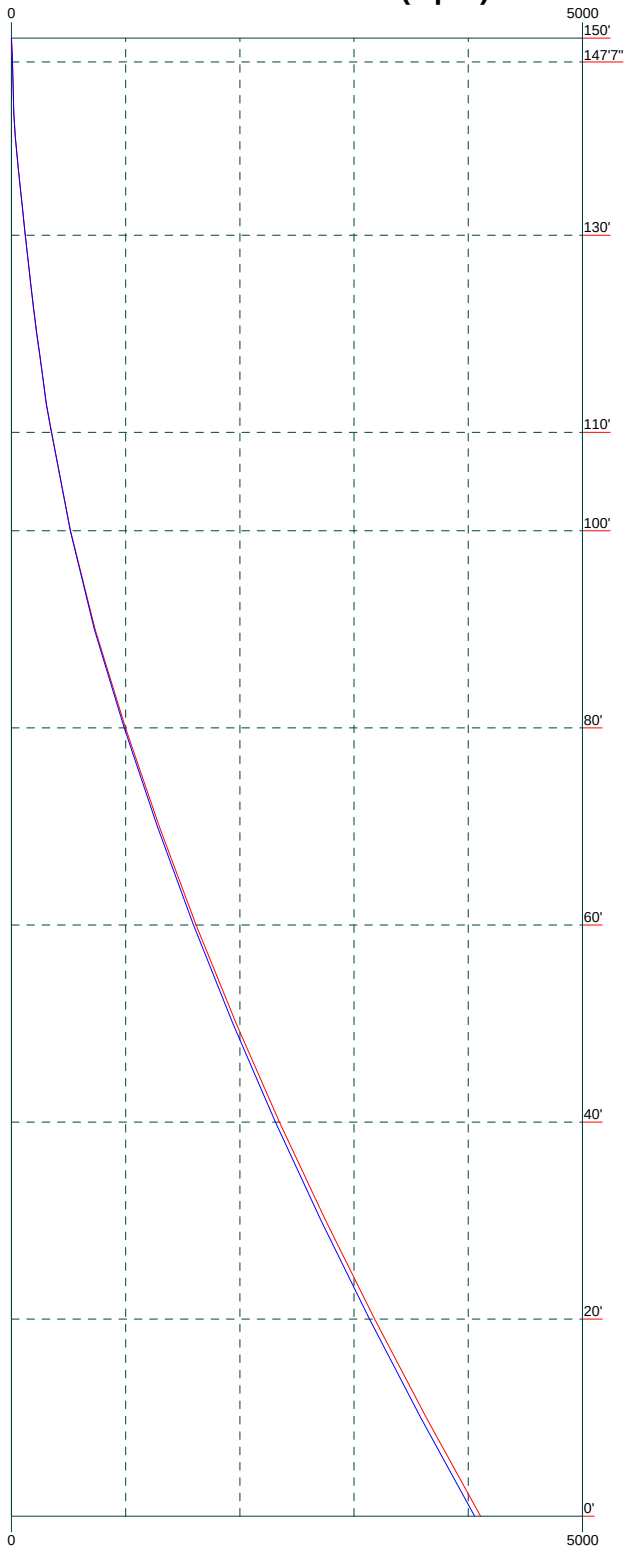
Maximum Values

Vx Vz Mx Mz

Global Mast Shear (K)



Global Mast Moment (kip-ft)

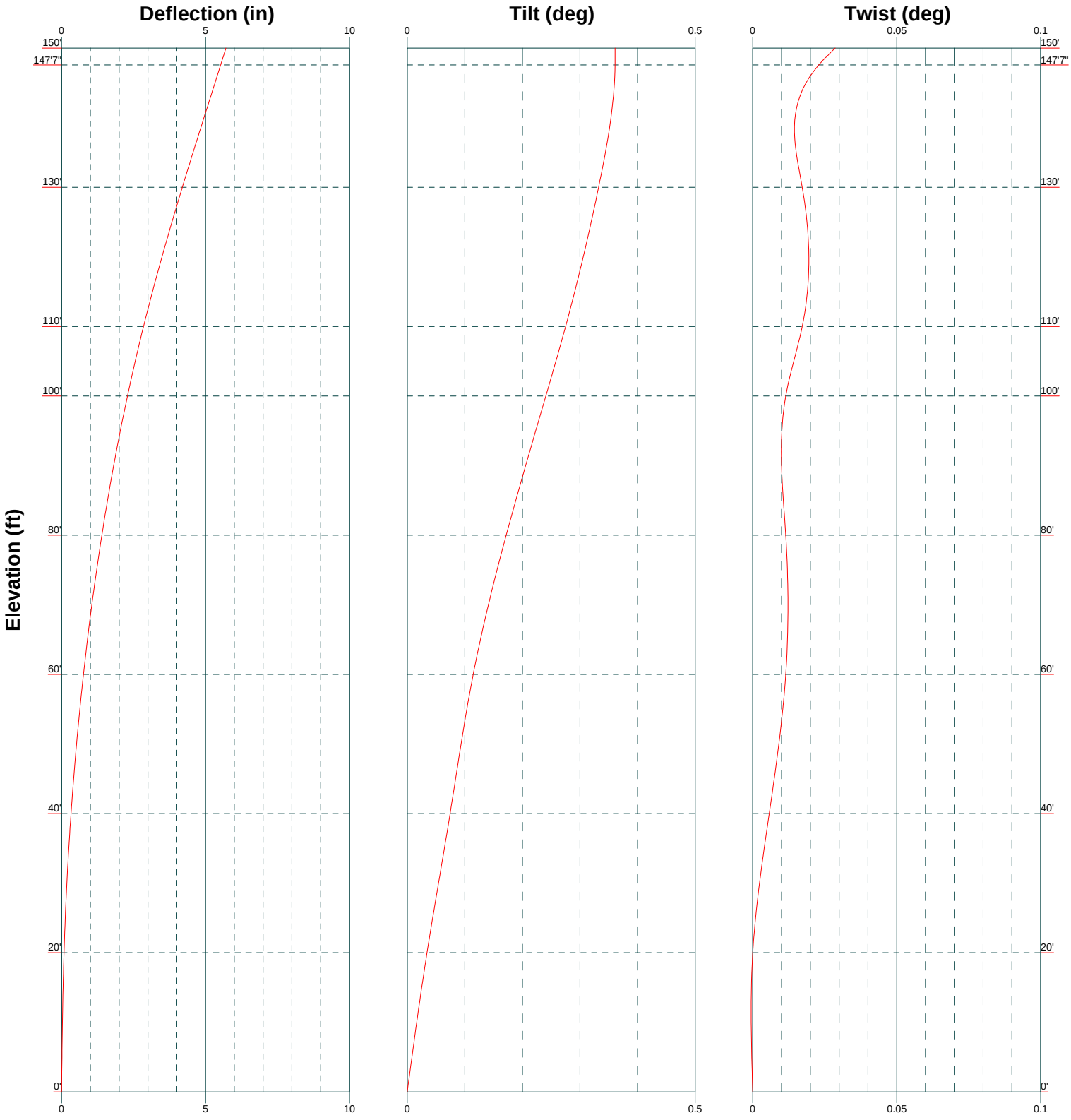


B+T Group
1717 S.Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 91292.016.01 - MILFORD, CT (BU# 842870)			
Project:			
Client: Crown Castle	Drawn by: Suhas Poojary	App'd:	
Code: TIA-222-H	Date: 12/19/19	Scale: NTS	
Path: C:\Users\SHIVA\Desktop\jobs\19-12-2019\91292_842870_Milford---Suhas---Adarsh-QCD\Tnx_016_01\91292_016_01_MILFORD_CT.eri		Dwg No. E-4	

TIA-222-H - Service - 60 mph

Maximum Values



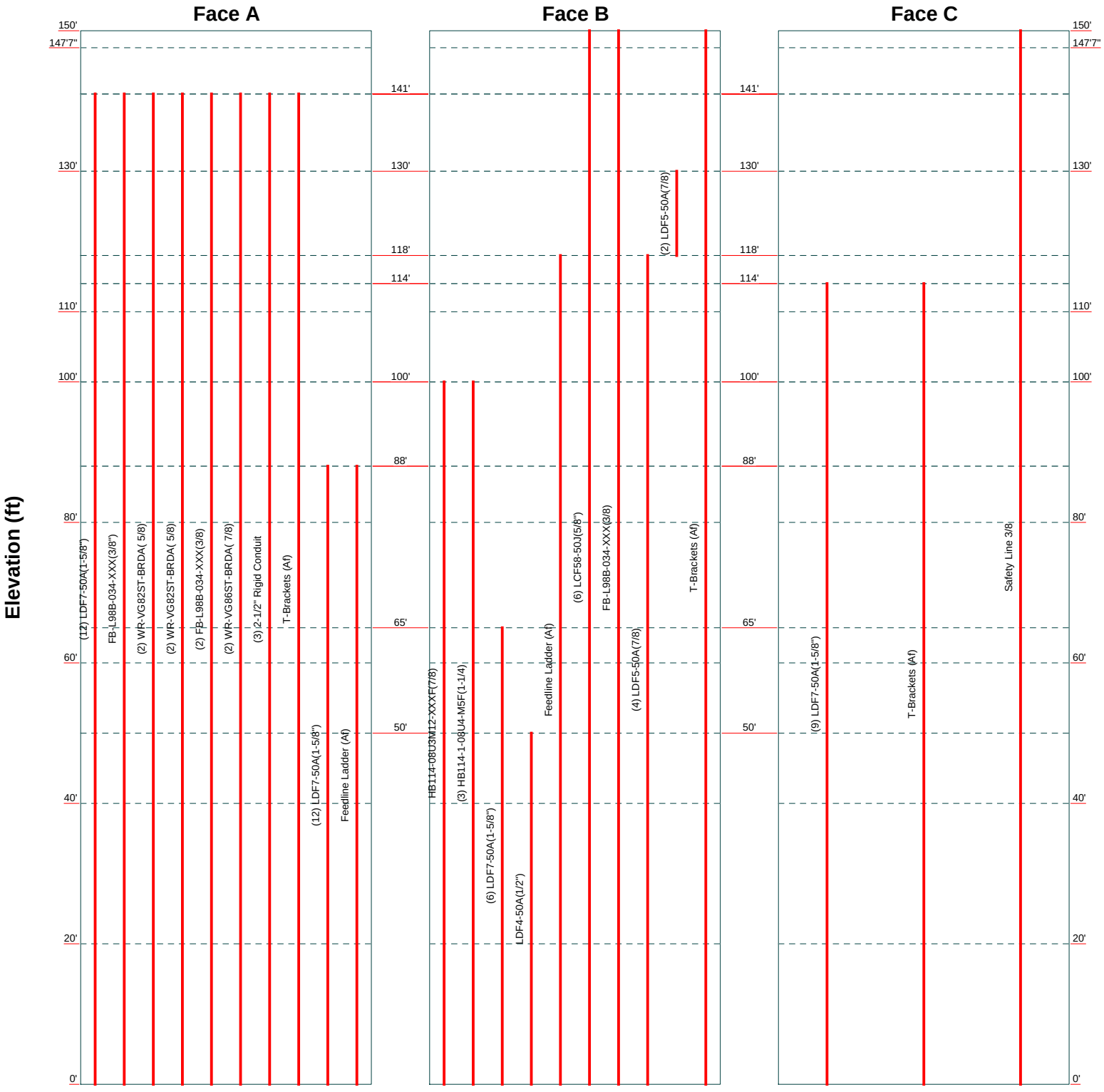
B+T GRP

B+T Group
1717 S.Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: ***91292.016.01 - MILFORD, CT (BU# 842870)***			
Project:			
Client: Crown Castle	Drawn by: Suhas Poojary	App'd:	
Code: TIA-222-H	Date: 12/19/19	Scale: NTS	
Path: C:\Users\SHIVA\Desktop\jobs\19-12-2019\91292_842870_Milford---Suhas---Adarsh-QCD\Tnx_016_01\91292_016_01_MILFORD_CT.eri		Dwg No. E-5	

Feed Line Distribution Chart
0' - 150'

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



B+T Group
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Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: *91292.016.01 - MILFORD, CT (BU# 842870)*			
Project:			
Client: Crown Castle	Drawn by: Suhas Poojary		App'd:
Code: TIA-222-H	Date: 12/19/19		Scale: NTS
Path: C:\Users\SHIVA\Desktop\jobs\19-12-2019\91292_842870_Milford---Suhas---Adarsh-QCD\Tnx_016_01\91292_016_01_MILFORD_CT.eri			Dwg No. E-7

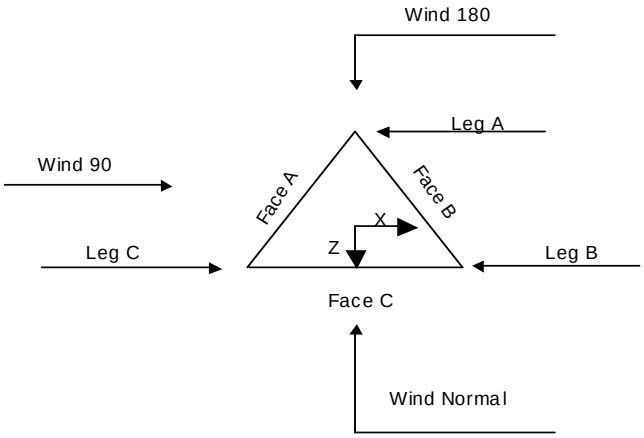
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 150' above the ground line.
The base of the tower is set at an elevation of 0' above the ground line.
The face width of the tower is 4' at the top and 16' at the base.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower is located in New Haven County, Connecticut.
Tower base elevation above sea level: 68'.
Basic wind speed of 125 mph.
Risk Category II.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0'.
Nominal ice thickness of 1.500 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 60 mph.
TIA-222-H Annex S.
Pressures are calculated at each section.
Tower analysis based on target reliabilities in accordance with Annex S.
Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
Stress ratio used in tower member design is 1.05.
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-H Bracing Resist. Exemption
√	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-H 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



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	150'-147'7"			4'	1	2'5"
T2	147'7"-130'			4'3/4"	1	17'7"
T3	130'-110'			4'6"	1	20'
T4	110'-100'			5'	1	10'
T5	100'-80'			6'	1	20'
T6	80'-60'			8'	1	20'
T7	60'-40'			10'	1	20'
T8	40'-20'			12'	1	20'
T9	20'-0'			14'	1	20'

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	150'-147'7"	2'5"	K Brace Down	No	Yes	0.000	0.000
T2	147'7"-130'	2'5"	X Brace	No	Steps	4.000	4.000
T3	130'-110'	2'4-3/8"	X Brace	No	Steps	6.000	7.000
T4	110'-100'	10'	X Brace	No	No	0.000	0.000
T5	100'-80'	10'	X Brace	No	No	0.000	0.000
T6	80'-60'	10'	X Brace	No	No	0.000	0.000

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
T7	60'-40'	10'	X Brace	No	No	0.000	0.000
T8	40'-20'	10'	X Brace	No	No	0.000	0.000
T9	20'-0'	10'	X Brace	No	No	0.000	0.000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 150'-147'7"	Solid Round	1 1/2	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T2 147'7"-130'	Solid Round	1 1/2	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T3 130'-110'	Solid Round	2	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T4 110'-100'	Truss Leg	Pirod 105244	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T5 100'-80'	Truss Leg	Pirod 105216	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x3/8	A36 (36 ksi)
T6 80'-60'	Truss Leg	Pirod 105217	A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T7 60'-40'	Truss Leg	Pirod 105218	A572-50 (50 ksi)	Equal Angle	L3x3x3/16	A36 (36 ksi)
T8 40'-20'	Truss Leg	Pirod 105218	A572-50 (50 ksi)	Equal Angle	L3x3x5/16	A36 (36 ksi)
T9 20'-0'	Truss Leg	Pirod 105219	A572-50 (50 ksi)	Equal Angle	L3x3x5/16	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
T2 147'7"-130'	Solid Round	7/8	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T3 130'-110'	Solid Round	7/8	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T4 110'-100'	Equal Angle	L3x3x3/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T5 100'-80'	Equal Angle	L3x3x3/16	A36 (36 ksi)	Equal Angle		A36 (36 ksi)
T6 80'-60'	Equal Angle	L3x3x3/16	A36 (36 ksi)	Equal Angle		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 150'-147'7"	None	Solid Round		A36 (36 ksi)	Flat Bar	5x1/2	A36 (36 ksi)
T2 147'7"-130'	None	Solid Round		A36 (36 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T3 130'-110'	None	Solid Round		A36 (36 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T5 100'-80'	1	Equal Angle	L3x3x3/16	A36 (36 ksi)	Equal Angle		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 150'-147'7"	0.000	0.000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T2 147'7"-130'	0.000	0.000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T3 130'-110'	0.000	0.000	A36 (36 ksi)	1	1	1	Mid-Pt	Mid-Pt	Mid-Pt
T4 110'-100'	0.000	0.000	A36 (36 ksi)	1.05	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T5 100'-80'	0.000	0.000	A36 (36 ksi)	1.05	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T6 80'-60'	0.000	0.000	A36 (36 ksi)	1.05	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T7 60'-40'	0.000	0.000	A36 (36 ksi)	1.05	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T8 40'-20'	0.000	0.000	A36 (36 ksi)	1.05	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt
T9 20'-0'	0.000	0.000	A36 (36 ksi)	1.05	1	1.05	Mid-Pt	Mid-Pt	Mid-Pt

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 150'-147'7"	No	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 147'7"-130'	No	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 130'-110'	No	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 110'-100'	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T5 100'-80'	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T6 80'-60'	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T7 60'-40'	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T8 40'-20'	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T9 20'-0'	Yes	No	1	1	1	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	Truss-Leg K Factors: Truss-Legs Used As Leg Members — Leg Panels	X Brace Diagonals	Z Brace Diagonals	Truss-Legs Used As Inner Members — Leg Panels	X Brace Diagonals	Z Brace Diagonals
T4 110'-100'	1	0.5	0.85	1	0.5	0.85
T5 100'-80'	1	0.5	0.85	1	0.5	0.85
T6 80'-60'	1	0.5	0.85	1	0.5	0.85
T7 60'-40'	1	0.5	0.85	1	0.5	0.85
T8 40'-20'	1	0.5	0.85	1	0.5	0.85
T9 20'-0'	1	0.5	0.85	1	0.5	0.85

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 150'-147'7"	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75
T2 147'7"-130'	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75
T3 130'-110'	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75
T4 110'-100'	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
T5 100'-80'	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
T6 80'-60'	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
T7 60'-40'	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
T8 40'-20'	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
T9 20'-0'	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 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 150'-147'7"	Sleeve DS	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0
T2 147'7"-130'	Sleeve DS	0.625 A325N	5	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0
T3 130'-110'	Flange	1.000 A325N	6	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0
T4 110'-100'	Flange	1.000 A325N	6	1.000 A325N	1	1.000 A325N	1	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0
T5 100'-80'	Flange	1.000 A325N	6	1.000 A325N	1	1.000 A325N	1	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0
T6 80'-60'	Flange	1.000 A325N	6	1.000 A325N	1	1.000 A325N	1	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0
T7 60'-40'	Flange	1.000 A325N	6	1.000 A325N	1	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0
T8 40'-20'	Flange	1.000 A325N	6	1.000 A325N	1	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0
T9 20'-0'	Flange	1.250 A687	0	1.250 A325N_H (1.125"-1.5")(Shear)	1	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.000 A325N	0	0.625 A325N	0

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 klf
LDF7-50A(1-5/8")	A	No	No	Ar (CaAa)	141' - 0'	-15.000	0.4	12	4	1.000 2.000	1.980		0.001
FB-L98B-034-XXX(3/8")	A	No	No	Ar (CaAa)	141' - 0'	-4.000	0.38	1	1	0.300	0.394		0.000
WR-VG82ST-BRDA(5/8)	A	No	No	Ar (CaAa)	141' - 0'	-4.000	0.37	2	2	0.300	0.645		0.000
WR-VG82ST-BRDA(5/8)	A	No	No	Ar (CaAa)	141' - 0'	-4.000	0.37	2	2	0.300	0.645		0.000
FB-L98B-034-XXX(3/8)	A	No	No	Ar (CaAa)	141' - 0'	-15.000	0.35	2	2	0.300	0.394		0.000
WR-VG86ST-BRDA(7/8)	A	No	No	Ar (CaAa)	141' - 0'	-15.000	0.36	2	2	0.300	0.880		0.001
2-1/2" Rigid Conduit	A	No	No	Ar (CaAa)	141' - 0'	-4.000	0.38	3	3	2.500	2.500		0.003
T-Brackets (Af) *	A	No	No	Af (CaAa)	141' - 0'	-8.000	0.42	1	1	1.000	1.000		0.008
LDF7-50A(1-5/8")	A	No	No	Ar (CaAa)	88' - 0'	0.000	-0.1	12	12	1.000	1.980		0.001
Feedline Ladder (Af) *	A	No	No	Af (CaAa)	88' - 0'	0.000	-0.1	1	1	3.000	3.000		0.008
HB114-08U3M12-XXXF(7	B	No	No	Ar (CaAa)	100' - 0'	-2.000	-0.18	1	1	1.000	1.110		0.001

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 klf
/8)													
HB114-1-08U4-M5F(1-1/4) *	B	No	No	Ar (CaAa)	100' - 0'	-2.000	-0.22	3	3	1.000 0.750	1.540		0.001
LDF7-50A(1-5/8") *	B	No	No	Ar (CaAa)	65' - 0'	-2.000	-0.3	6	6	1.000	1.980		0.001
LDF4-50A(1/2")	B	No	No	Ar (CaAa)	50' - 0'	-1.000	-0.19	1	1	1.000	0.630		0.000
Feedline Ladder (Af) *	B	No	No	Af (CaAa)	118' - 0'	-1.000	-0.26	1	1	3.000	3.000		0.008
LCF58-50J(5/8")	B	No	No	Ar (CaAa)	150' - 0'	-4.000	0.46	6	4	1.000 2.000	0.840		0.000
FB-L98B-034-XXX(3/8) *	B	No	No	Ar (CaAa)	150' - 0'	-5.000	0.39	1	1	0.500	0.394		0.000
LDF5-50A(7/8)	B	No	No	Ar (CaAa)	118' - 0'	-4.000	0.42	4	4	1.000	1.090		0.000
LDF5-50A(7/8)	B	No	No	Ar (CaAa)	130' - 118'	-4.000	0.42	2	2	1.000	1.090		0.000
T-Brackets (Af) *	B	No	No	Af (CaAa)	150' - 0'	-3.000	0.47	1	1	1.000	1.000		0.008
LDF7-50A(1-5/8")	C	No	No	Ar (CaAa)	114' - 0'	-7.000	0.42	9	6	1.000 2.000	1.980		0.001
T-Brackets (Af) *	C	No	No	Af (CaAa)	114' - 0'	-4.000	0.44	1	1	1.000	1.000		0.008
Safety Line 3/8 *	C	No	No	Ar (CaAa)	150' - 0'	0.000	0.5	1	1	0.375	0.375		0.000

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C_AA_A ft^2/ft	Weight klf
*								

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	150'-147'7"	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	1.716	0.000	0.024
		C	0.000	0.000	0.091	0.000	0.001
T2	147'7"-130'	A	0.000	0.000	42.293	0.000	0.330

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
		B	0.000	0.000	12.485	0.000	0.175
		C	0.000	0.000	0.659	0.000	0.004
T3	130'-110'	A	0.000	0.000	76.896	0.000	0.600
		B	0.000	0.000	24.305	0.000	0.285
		C	0.000	0.000	8.545	0.000	0.068
T4	110'-100'	A	0.000	0.000	38.448	0.000	0.300
		B	0.000	0.000	16.460	0.000	0.197
		C	0.000	0.000	19.862	0.000	0.160
T5	100'-80'	A	0.000	0.000	99.904	0.000	0.746
		B	0.000	0.000	44.381	0.000	0.472
		C	0.000	0.000	39.723	0.000	0.320
T6	80'-60'	A	0.000	0.000	134.416	0.000	0.965
		B	0.000	0.000	50.321	0.000	0.497
		C	0.000	0.000	39.723	0.000	0.320
T7	60'-40'	A	0.000	0.000	134.416	0.000	0.965
		B	0.000	0.000	68.771	0.000	0.572
		C	0.000	0.000	39.723	0.000	0.320
T8	40'-20'	A	0.000	0.000	134.416	0.000	0.965
		B	0.000	0.000	69.401	0.000	0.573
		C	0.000	0.000	39.723	0.000	0.320
T9	20'-0'	A	0.000	0.000	134.416	0.000	0.965
		B	0.000	0.000	69.401	0.000	0.573
		C	0.000	0.000	39.723	0.000	0.320

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	150'-147'7"	A	1.482	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	5.389	0.000	0.090
		C		0.000	0.000	0.807	0.000	0.009
T2	147'7"-130'	A	1.472	0.000	0.000	89.040	0.000	1.500
		B		0.000	0.000	39.078	0.000	0.651
		C		0.000	0.000	5.836	0.000	0.062
T3	130'-110'	A	1.451	0.000	0.000	160.838	0.000	2.700
		B		0.000	0.000	72.373	0.000	1.090
		C		0.000	0.000	19.218	0.000	0.330
T4	110'-100'	A	1.431	0.000	0.000	79.942	0.000	1.338
		B		0.000	0.000	43.485	0.000	0.686
		C		0.000	0.000	34.798	0.000	0.682
T5	100'-80'	A	1.410	0.000	0.000	202.940	0.000	3.301
		B		0.000	0.000	120.264	0.000	1.764
		C		0.000	0.000	69.277	0.000	1.350
T6	80'-60'	A	1.375	0.000	0.000	267.082	0.000	4.208
		B		0.000	0.000	131.622	0.000	1.887
		C		0.000	0.000	68.766	0.000	1.330
T7	60'-40'	A	1.329	0.000	0.000	264.396	0.000	4.116
		B		0.000	0.000	170.855	0.000	2.337
		C		0.000	0.000	68.102	0.000	1.303
T8	40'-20'	A	1.263	0.000	0.000	260.488	0.000	3.983
		B		0.000	0.000	171.098	0.000	2.275
		C		0.000	0.000	67.137	0.000	1.265
T9	20'-0'	A	1.132	0.000	0.000	242.539	0.000	3.634
		B		0.000	0.000	165.065	0.000	2.092
		C		0.000	0.000	65.221	0.000	1.191

Feed Line Center of Pressure

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
T1	150'-147'7"	2.919	2.470	2.311	2.770
T2	147'7"-130'	5.728	-4.885	3.862	-1.712
T3	130'-110'	4.203	-6.485	3.669	-3.115
T4	110'-100'	-1.351	-3.993	-0.259	-1.390
T5	100'-80'	-3.004	-6.299	-1.113	-3.754
T6	80'-60'	-5.661	-8.425	-3.225	-6.286
T7	60'-40'	-6.224	-12.589	-3.711	-10.650
T8	40'-20'	-7.139	-14.603	-4.247	-12.627
T9	20'-0'	-7.936	-16.238	-5.011	-14.113

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	21	LCF58-50J(5/8")	147.58 - 150.00	0.6000	0.4113
T1	22	FB-L98B-034-XXX(3/8)	147.58 - 150.00	0.6000	0.4113
T1	26	T-Brackets (Af)	147.58 - 150.00	0.6000	0.4113
T1	33	Safety Line 3/8	147.58 - 150.00	0.6000	0.4113
T2	1	LDF7-50A(1-5/8")	130.00 - 141.00	0.6000	0.5569
T2	2	FB-L98B-034-XXX(3/8")	130.00 - 141.00	0.0000	0.0000
T2	3	WR-VG82ST-BRDA(5/8)	130.00 - 141.00	0.0000	0.0000
T2	4	WR-VG82ST-BRDA(5/8)	130.00 - 141.00	0.0000	0.0000
T2	5	FB-L98B-034-XXX(3/8)	130.00 - 141.00	0.0000	0.0000
T2	6	WR-VG86ST-BRDA(7/8)	130.00 - 141.00	0.0000	0.0000
T2	7	2-1/2" Rigid Conduit	130.00 - 141.00	0.6000	0.5569
T2	8	T-Brackets (Af)	130.00 - 141.00	0.6000	0.5569
T2	21	LCF58-50J(5/8")	130.00 - 147.58	0.6000	0.5569
T2	22	FB-L98B-034-XXX(3/8)	130.00 - 147.58	0.6000	0.5569
T2	26	T-Brackets (Af)	130.00 - 147.58	0.6000	0.5569
T2	33	Safety Line 3/8	130.00 - 147.58	0.6000	0.5569
T3	1	LDF7-50A(1-5/8")	110.00 - 130.00	0.6000	0.5638
T3	2	FB-L98B-034-XXX(3/8")	110.00 - 130.00	0.0000	0.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T3	3	WR-VG82ST-BRDA(5/8)	110.00 - 130.00	0.0000	0.0000
T3	4	WR-VG82ST-BRDA(5/8)	110.00 - 130.00	0.0000	0.0000
T3	5	FB-L98B-034-XXX(3/8)	110.00 - 130.00	0.0000	0.0000
T3	6	WR-VG86ST-BRDA(7/8)	110.00 - 130.00	0.0000	0.0000
T3	7	2-1/2" Rigid Conduit	110.00 - 130.00	0.6000	0.5638
T3	8	T-Brackets (Af)	110.00 - 130.00	0.6000	0.5638
T3	19	Feedline Ladder (Af)	110.00 - 118.00	0.6000	0.5638
T3	21	LCF58-50J(5/8")	110.00 - 130.00	0.6000	0.5638
T3	22	FB-L98B-034-XXX(3/8)	110.00 - 130.00	0.6000	0.5638
T3	24	LDF5-50A(7/8)	110.00 - 118.00	0.6000	0.5638
T3	25	LDF5-50A(7/8)	118.00 - 130.00	0.6000	0.5638
T3	26	T-Brackets (Af)	110.00 - 130.00	0.6000	0.5638
T3	29	LDF7-50A(1-5/8")	110.00 - 114.00	0.6000	0.5638
T3	31	T-Brackets (Af)	110.00 - 114.00	0.6000	0.5638
T3	33	Safety Line 3/8	110.00 - 130.00	0.6000	0.5638
T4	1	LDF7-50A(1-5/8")	100.00 - 110.00	0.6000	0.3163
T4	2	FB-L98B-034-XXX(3/8")	100.00 - 110.00	0.0000	0.0000
T4	3	WR-VG82ST-BRDA(5/8)	100.00 - 110.00	0.0000	0.0000
T4	4	WR-VG82ST-BRDA(5/8)	100.00 - 110.00	0.0000	0.0000
T4	5	FB-L98B-034-XXX(3/8)	100.00 - 110.00	0.0000	0.0000
T4	6	WR-VG86ST-BRDA(7/8)	100.00 - 110.00	0.0000	0.0000
T4	7	2-1/2" Rigid Conduit	100.00 - 110.00	0.6000	0.3163
T4	8	T-Brackets (Af)	100.00 - 110.00	0.6000	0.3163
T4	19	Feedline Ladder (Af)	100.00 - 110.00	0.6000	0.3163
T4	21	LCF58-50J(5/8")	100.00 - 110.00	0.6000	0.3163
T4	22	FB-L98B-034-XXX(3/8)	100.00 - 110.00	0.6000	0.3163
T4	24	LDF5-50A(7/8)	100.00 - 110.00	0.6000	0.3163
T4	26	T-Brackets (Af)	100.00 - 110.00	0.6000	0.3163
T4	29	LDF7-50A(1-5/8")	100.00 - 110.00	0.6000	0.3163
T4	31	T-Brackets (Af)	100.00 - 110.00	0.6000	0.3163
T4	33	Safety Line 3/8	100.00 - 110.00	0.6000	0.3163

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T5	1	LDF7-50A(1-5/8")	80.00 - 100.00	0.6000	0.4220
T5	2	FB-L98B-034-XXX(3/8")	80.00 - 100.00	0.0000	0.0000
T5	3	WR-VG82ST-BRDA(5/8)	80.00 - 100.00	0.0000	0.0000
T5	4	WR-VG82ST-BRDA(5/8)	80.00 - 100.00	0.0000	0.0000
T5	5	FB-L98B-034-XXX(3/8)	80.00 - 100.00	0.0000	0.0000
T5	6	WR-VG86ST-BRDA(7/8)	80.00 - 100.00	0.0000	0.0000
T5	7	2-1/2" Rigid Conduit	80.00 - 100.00	0.6000	0.4220
T5	8	T-Brackets (Af)	80.00 - 100.00	0.6000	0.4220
T5	10	LDF7-50A(1-5/8")	80.00 - 88.00	0.6000	0.4220
T5	11	Feedline Ladder (Af)	80.00 - 88.00	0.6000	0.4220
T5	13	HB114-08U3M12-XXXF(7/8)	80.00 - 100.00	0.6000	0.4220
T5	14	HB114-1-08U4-M5F(1-1/4)	80.00 - 100.00	0.6000	0.4220
T5	19	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.4220
T5	21	LCF58-50J(5/8")	80.00 - 100.00	0.6000	0.4220
T5	22	FB-L98B-034-XXX(3/8)	80.00 - 100.00	0.6000	0.4220
T5	24	LDF5-50A(7/8)	80.00 - 100.00	0.6000	0.4220
T5	26	T-Brackets (Af)	80.00 - 100.00	0.6000	0.4220
T5	29	LDF7-50A(1-5/8")	80.00 - 100.00	0.6000	0.4220
T5	31	T-Brackets (Af)	80.00 - 100.00	0.6000	0.4220
T5	33	Safety Line 3/8	80.00 - 100.00	0.6000	0.4220
T6	1	LDF7-50A(1-5/8")	60.00 - 80.00	0.6000	0.5201
T6	2	FB-L98B-034-XXX(3/8")	60.00 - 80.00	0.0000	0.0000
T6	3	WR-VG82ST-BRDA(5/8)	60.00 - 80.00	0.0000	0.0000
T6	4	WR-VG82ST-BRDA(5/8)	60.00 - 80.00	0.0000	0.0000
T6	5	FB-L98B-034-XXX(3/8)	60.00 - 80.00	0.0000	0.0000
T6	6	WR-VG86ST-BRDA(7/8)	60.00 - 80.00	0.0000	0.0000
T6	7	2-1/2" Rigid Conduit	60.00 - 80.00	0.6000	0.5201
T6	8	T-Brackets (Af)	60.00 - 80.00	0.6000	0.5201
T6	10	LDF7-50A(1-5/8")	60.00 - 80.00	0.6000	0.5201
T6	11	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.5201
T6	13	HB114-08U3M12-XXXF(7/8)	60.00 - 80.00	0.6000	0.5201
T6	14	HB114-1-08U4-M5F(1-1/4)	60.00 - 80.00	0.6000	0.5201
T6	16	LDF7-50A(1-5/8")	60.00 - 65.00	0.6000	0.5201
T6	19	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.5201
T6	21	LCF58-50J(5/8")	60.00 - 80.00	0.6000	0.5201
T6	22	FB-L98B-034-XXX(3/8)	60.00 - 80.00	0.6000	0.5201
T6	24	LDF5-50A(7/8)	60.00 - 80.00	0.6000	0.5201
T6	26	T-Brackets (Af)	60.00 - 80.00	0.6000	0.5201
T6	29	LDF7-50A(1-5/8")	60.00 - 80.00	0.6000	0.5201
T6	31	T-Brackets (Af)	60.00 - 80.00	0.6000	0.5201
T6	33	Safety Line 3/8	60.00 - 80.00	0.6000	0.5201
T7	1	LDF7-50A(1-5/8")	40.00 - 60.00	0.6000	0.5999
T7	2	FB-L98B-034-XXX(3/8")	40.00 - 60.00	0.0000	0.0000
T7	3	WR-VG82ST-BRDA(5/8)	40.00 - 60.00	0.0000	0.0000
T7	4	WR-VG82ST-BRDA(5/8)	40.00 - 60.00	0.0000	0.0000
T7	5	FB-L98B-034-XXX(3/8)	40.00 - 60.00	0.0000	0.0000
T7	6	WR-VG86ST-BRDA(7/8)	40.00 - 60.00	0.0000	0.0000
T7	7	2-1/2" Rigid Conduit	40.00 - 60.00	0.6000	0.5999
T7	8	T-Brackets (Af)	40.00 - 60.00	0.6000	0.5999
T7	10	LDF7-50A(1-5/8")	40.00 - 60.00	0.6000	0.5999
T7	11	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.5999
T7	13	HB114-08U3M12-XXXF(7/8)	40.00 - 60.00	0.6000	0.5999
T7	14	HB114-1-08U4-M5F(1-1/4)	40.00 - 60.00	0.6000	0.5999
T7	16	LDF7-50A(1-5/8")	40.00 - 60.00	0.6000	0.5999
T7	18	LDF4-50A(1/2")	40.00 - 50.00	0.6000	0.5999
T7	19	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.5999
T7	21	LCF58-50J(5/8")	40.00 - 60.00	0.6000	0.5999
T7	22	FB-L98B-034-XXX(3/8)	40.00 - 60.00	0.6000	0.5999
T7	24	LDF5-50A(7/8)	40.00 - 60.00	0.6000	0.5999

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T7	26	T-Brackets (Af)	40.00 - 60.00	0.6000	0.5999
T7	29	LDF7-50A(1-5/8")	40.00 - 60.00	0.6000	0.5999
T7	31	T-Brackets (Af)	40.00 - 60.00	0.6000	0.5999
T7	33	Safety Line 3/8	40.00 - 60.00	0.6000	0.5999
T8	1	LDF7-50A(1-5/8")	20.00 - 40.00	0.6000	0.6000
T8	2	FB-L98B-034-XXX(3/8")	20.00 - 40.00	0.0000	0.0000
T8	3	WR-VG82ST-BRDA(5/8)	20.00 - 40.00	0.0000	0.0000
T8	4	WR-VG82ST-BRDA(5/8)	20.00 - 40.00	0.0000	0.0000
T8	5	FB-L98B-034-XXX(3/8)	20.00 - 40.00	0.0000	0.0000
T8	6	WR-VG86ST-BRDA(7/8)	20.00 - 40.00	0.0000	0.0000
T8	7	2-1/2" Rigid Conduit	20.00 - 40.00	0.6000	0.6000
T8	8	T-Brackets (Af)	20.00 - 40.00	0.6000	0.6000
T8	10	LDF7-50A(1-5/8")	20.00 - 40.00	0.6000	0.6000
T8	11	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T8	13	HB114-08U3M12-XXXF(7/8)	20.00 - 40.00	0.6000	0.6000
T8	14	HB114-1-08U4-M5F(1-1/4)	20.00 - 40.00	0.6000	0.6000
T8	16	LDF7-50A(1-5/8")	20.00 - 40.00	0.6000	0.6000
T8	18	LDF4-50A(1/2")	20.00 - 40.00	0.6000	0.6000
T8	19	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T8	21	LCF58-50J(5/8")	20.00 - 40.00	0.6000	0.6000
T8	22	FB-L98B-034-XXX(3/8)	20.00 - 40.00	0.6000	0.6000
T8	24	LDF5-50A(7/8)	20.00 - 40.00	0.6000	0.6000
T8	26	T-Brackets (Af)	20.00 - 40.00	0.6000	0.6000
T8	29	LDF7-50A(1-5/8")	20.00 - 40.00	0.6000	0.6000
T8	31	T-Brackets (Af)	20.00 - 40.00	0.6000	0.6000
T8	33	Safety Line 3/8	20.00 - 40.00	0.6000	0.6000
T9	1	LDF7-50A(1-5/8")	0.00 - 20.00	0.6000	0.6000
T9	2	FB-L98B-034-XXX(3/8")	0.00 - 20.00	0.0000	0.0000
T9	3	WR-VG82ST-BRDA(5/8)	0.00 - 20.00	0.0000	0.0000
T9	4	WR-VG82ST-BRDA(5/8)	0.00 - 20.00	0.0000	0.0000
T9	5	FB-L98B-034-XXX(3/8)	0.00 - 20.00	0.0000	0.0000
T9	6	WR-VG86ST-BRDA(7/8)	0.00 - 20.00	0.0000	0.0000
T9	7	2-1/2" Rigid Conduit	0.00 - 20.00	0.6000	0.6000
T9	8	T-Brackets (Af)	0.00 - 20.00	0.6000	0.6000
T9	10	LDF7-50A(1-5/8")	0.00 - 20.00	0.6000	0.6000
T9	11	Feedline Ladder (Af)	0.00 - 20.00	0.6000	0.6000
T9	13	HB114-08U3M12-XXXF(7/8)	0.00 - 20.00	0.6000	0.6000
T9	14	HB114-1-08U4-M5F(1-1/4)	0.00 - 20.00	0.6000	0.6000
T9	16	LDF7-50A(1-5/8")	0.00 - 20.00	0.6000	0.6000
T9	18	LDF4-50A(1/2")	0.00 - 20.00	0.6000	0.6000
T9	19	Feedline Ladder (Af)	0.00 - 20.00	0.6000	0.6000
T9	21	LCF58-50J(5/8")	0.00 - 20.00	0.6000	0.6000
T9	22	FB-L98B-034-XXX(3/8)	0.00 - 20.00	0.6000	0.6000
T9	24	LDF5-50A(7/8)	0.00 - 20.00	0.6000	0.6000
T9	26	T-Brackets (Af)	0.00 - 20.00	0.6000	0.6000
T9	29	LDF7-50A(1-5/8")	0.00 - 20.00	0.6000	0.6000
T9	31	T-Brackets (Af)	0.00 - 20.00	0.6000	0.6000
T9	33	Safety Line 3/8	0.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
SC226-SFXSNM	A	From Leg	4.000 0' 10'	0.000	150'	No Ice 1/2" Ice 1" Ice 2" Ice	5.748 7.776 9.804 13.860	5.748 7.776 9.804 13.860	0.032 0.340 0.661 1.340
SC226-SFXSNM	C	From Leg	4.000 0' 10'	0.000	150'	No Ice 1/2" Ice 1" Ice 2" Ice	5.748 7.776 9.804 13.860	5.748 7.776 9.804 13.860	0.032 0.340 0.661 1.340
1' x 6" x 3"	C	From Leg	4.000 0' 0'	0.000	150'	No Ice 1/2" Ice 1" Ice 2" Ice	0.600 0.704 0.815 1.059	0.317 0.401 0.492 0.695	0.033 0.038 0.044 0.062
(3) 6' x 2" Mount Pipe	A	From Leg	4.000 0' 0'	0.000	150'	No Ice 1/2" Ice 1" Ice 2" Ice	1.425 1.925 2.294 3.060	1.425 1.925 2.294 3.060	0.022 0.033 0.048 0.090
(3) 6' x 2" Mount Pipe	B	From Leg	4.000 0' 0'	0.000	150'	No Ice 1/2" Ice 1" Ice 2" Ice	1.425 1.925 2.294 3.060	1.425 1.925 2.294 3.060	0.022 0.033 0.048 0.090
(3) 6' x 2" Mount Pipe	C	From Leg	4.000 0' 0'	0.000	150'	No Ice 1/2" Ice 1" Ice 2" Ice	1.425 1.925 2.294 3.060	1.425 1.925 2.294 3.060	0.022 0.033 0.048 0.090
6' x 2" Mount Pipe	C	From Leg	0.000 0' 3'	0.000	150'	No Ice 1/2" Ice 1" Ice 2" Ice	1.425 1.925 2.294 3.060	1.425 1.925 2.294 3.060	0.022 0.033 0.048 0.090
Platform Mount [LP 405-1]	C	None		0.000	150'	No Ice 1/2" Ice 1" Ice 2" Ice	20.880 28.890 37.040 53.730	20.880 28.890 37.040 53.730	1.800 2.277 2.868 4.394
*									
7770.00	A	From Leg	4.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	5.508 5.867 6.233 6.986	2.928 3.273 3.625 4.352	0.035 0.068 0.105 0.195
7770.00	B	From Leg	4.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	5.508 5.867 6.233 6.986	2.928 3.273 3.625 4.352	0.035 0.068 0.105 0.195
7770.00	C	From Leg	4.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	5.508 5.867 6.233 6.986	2.928 3.273 3.625 4.352	0.035 0.068 0.105 0.195
LGP21401	A	From Leg	4.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	1.104 1.239 1.381 1.688	0.207 0.274 0.348 0.521	0.014 0.021 0.030 0.055
LGP21401	B	From Leg	4.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	1.104 1.239 1.381 1.688	0.207 0.274 0.348 0.521	0.014 0.021 0.030 0.055
LGP21401	C	From Leg	4.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	1.104 1.239 1.381 1.688	0.207 0.274 0.348 0.521	0.014 0.021 0.030 0.055

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
7020.00	A	From Leg	4.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	0.102 0.147 0.199 0.326	0.175 0.239 0.311 0.476	0.002 0.005 0.009 0.022
7020.00	B	From Leg	4.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	0.102 0.147 0.199 0.326	0.175 0.239 0.311 0.476	0.002 0.005 0.009 0.022
7020.00	C	From Leg	4.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	0.102 0.147 0.199 0.326	0.175 0.239 0.311 0.476	0.002 0.005 0.009 0.022
RRUS 11 B2	A	From Leg	4.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	2.833 3.043 3.259 3.715	1.182 1.330 1.485 1.826	0.051 0.072 0.095 0.153
RRUS 11 B2	B	From Leg	4.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	2.833 3.043 3.259 3.715	1.182 1.330 1.485 1.826	0.051 0.072 0.095 0.153
RRUS 11 B2	C	From Leg	4.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	2.833 3.043 3.259 3.715	1.182 1.330 1.485 1.826	0.051 0.072 0.095 0.153
DC6-48-60-18-8F	B	From Leg	4.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	1.212 1.892 2.105 2.570	1.212 1.892 2.105 2.570	0.033 0.055 0.080 0.138
80010964	A	From Leg	4.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	8.580 9.160 9.750 10.990	2.960 3.440 3.940 4.980	0.095 0.154 0.218 0.365
80010964	B	From Leg	4.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	8.580 9.160 9.750 10.990	2.960 3.440 3.940 4.980	0.095 0.154 0.218 0.365
80010964	C	From Leg	4.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	8.580 9.160 9.750 10.990	2.960 3.440 3.940 4.980	0.095 0.154 0.218 0.365
SBNHH-1D65A	A	From Leg	4.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	3.080 3.400 3.730 4.410	1.850 2.140 2.450 3.090	0.034 0.073 0.117 0.222
SBNHH-1D65A	B	From Leg	4.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	3.080 3.400 3.730 4.410	1.850 2.140 2.450 3.090	0.034 0.073 0.117 0.222
SBNHH-1D65A	C	From Leg	4.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	3.080 3.400 3.730 4.410	1.850 2.140 2.450 3.090	0.034 0.073 0.117 0.222
OPA-65R-LCUU-H4	A	From Leg	4.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	6.000 6.550 7.110 8.290	3.030 3.510 4.010 5.070	0.064 0.103 0.148 0.251
OPA-65R-LCUU-H4	B	From Leg	4.000	0.000	141'	No Ice	6.000	3.030	0.064

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'			1/2" Ice	6.550	3.510	0.103
			0'			1" Ice	7.110	4.010	0.148
						2" Ice	8.290	5.070	0.251
OPA-65R-LCUU-H4	C	From Leg	4.000	0.000	141'	No Ice	6.000	3.030	0.064
			0'			1/2" Ice	6.550	3.510	0.103
			0'			1" Ice	7.110	4.010	0.148
						2" Ice	8.290	5.070	0.251
(3) DBCT108F1V92-1	A	From Leg	4.000	0.000	141'	No Ice	0.637	0.604	0.029
			0'			1/2" Ice	0.740	0.705	0.036
			0'			1" Ice	0.850	0.813	0.045
						2" Ice	1.093	1.052	0.069
(2) DBCT108F1V92-1	B	From Leg	4.000	0.000	141'	No Ice	0.637	0.604	0.029
			0'			1/2" Ice	0.740	0.705	0.036
			0'			1" Ice	0.850	0.813	0.045
						2" Ice	1.093	1.052	0.069
DBCT108F1V92-1	C	From Leg	4.000	0.000	141'	No Ice	0.637	0.604	0.029
			0'			1/2" Ice	0.740	0.705	0.036
			0'			1" Ice	0.850	0.813	0.045
						2" Ice	1.093	1.052	0.069
LGP21401	A	From Leg	4.000	0.000	141'	No Ice	1.104	0.207	0.014
			0'			1/2" Ice	1.239	0.274	0.021
			0'			1" Ice	1.381	0.348	0.030
						2" Ice	1.688	0.521	0.055
LGP21401	B	From Leg	4.000	0.000	141'	No Ice	1.104	0.207	0.014
			0'			1/2" Ice	1.239	0.274	0.021
			0'			1" Ice	1.381	0.348	0.030
						2" Ice	1.688	0.521	0.055
LGP21401	C	From Leg	4.000	0.000	141'	No Ice	1.104	0.207	0.014
			0'			1/2" Ice	1.239	0.274	0.021
			0'			1" Ice	1.381	0.348	0.030
						2" Ice	1.688	0.521	0.055
RRUS 4478 B5	A	From Leg	4.000	0.000	141'	No Ice	1.843	1.059	0.060
			0'			1/2" Ice	2.012	1.197	0.076
			0'			1" Ice	2.190	1.342	0.094
						2" Ice	2.566	1.656	0.140
RRUS 4478 B5	B	From Leg	4.000	0.000	141'	No Ice	1.843	1.059	0.060
			0'			1/2" Ice	2.012	1.197	0.076
			0'			1" Ice	2.190	1.342	0.094
						2" Ice	2.566	1.656	0.140
RRUS 4478 B5	C	From Leg	4.000	0.000	141'	No Ice	1.843	1.059	0.060
			0'			1/2" Ice	2.012	1.197	0.076
			0'			1" Ice	2.190	1.342	0.094
						2" Ice	2.566	1.656	0.140
RRUS 32 B2	A	From Leg	4.000	0.000	141'	No Ice	2.731	1.668	0.053
			0'			1/2" Ice	2.953	1.855	0.074
			0'			1" Ice	3.182	2.049	0.098
						2" Ice	3.663	2.458	0.157
RRUS 32 B2	B	From Leg	4.000	0.000	141'	No Ice	2.731	1.668	0.053
			0'			1/2" Ice	2.953	1.855	0.074
			0'			1" Ice	3.182	2.049	0.098
						2" Ice	3.663	2.458	0.157
RRUS 32 B2	C	From Leg	4.000	0.000	141'	No Ice	2.731	1.668	0.053
			0'			1/2" Ice	2.953	1.855	0.074
			0'			1" Ice	3.182	2.049	0.098
						2" Ice	3.663	2.458	0.157
RRUS 4478 B14	A	From Leg	4.000	0.000	141'	No Ice	1.843	1.059	0.060
			0'			1/2" Ice	2.012	1.197	0.076

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'			1" Ice	2.190	1.342	0.094
						2" Ice	2.566	1.656	0.140
RRUS 4478 B14	B	From Leg	4.000	0.000	141'	No Ice	1.843	1.059	0.060
			0'			1/2" Ice	2.012	1.197	0.076
			0'			1" Ice	2.190	1.342	0.094
						2" Ice	2.566	1.656	0.140
RRUS 4478 B14	C	From Leg	4.000	0.000	141'	No Ice	1.843	1.059	0.060
			0'			1/2" Ice	2.012	1.197	0.076
			0'			1" Ice	2.190	1.342	0.094
						2" Ice	2.566	1.656	0.140
RRUS 32 B30	A	From Leg	4.000	0.000	141'	No Ice	2.731	1.668	0.053
			0'			1/2" Ice	2.953	1.855	0.074
			0'			1" Ice	3.182	2.049	0.098
						2" Ice	3.663	2.458	0.157
RRUS 32 B30	B	From Leg	4.000	0.000	141'	No Ice	2.731	1.668	0.053
			0'			1/2" Ice	2.953	1.855	0.074
			0'			1" Ice	3.182	2.049	0.098
						2" Ice	3.663	2.458	0.157
RRUS 32 B30	C	From Leg	4.000	0.000	141'	No Ice	2.731	1.668	0.053
			0'			1/2" Ice	2.953	1.855	0.074
			0'			1" Ice	3.182	2.049	0.098
						2" Ice	3.663	2.458	0.157
RRUS 4426 B66	A	From Leg	4.000	0.000	141'	No Ice	1.644	0.725	0.048
			0'			1/2" Ice	1.804	0.842	0.061
			0'			1" Ice	1.972	0.969	0.076
						2" Ice	2.329	1.244	0.115
RRUS 4426 B66	B	From Leg	4.000	0.000	141'	No Ice	1.644	0.725	0.048
			0'			1/2" Ice	1.804	0.842	0.061
			0'			1" Ice	1.972	0.969	0.076
						2" Ice	2.329	1.244	0.115
RRUS 4426 B66	C	From Leg	4.000	0.000	141'	No Ice	1.644	0.725	0.048
			0'			1/2" Ice	1.804	0.842	0.061
			0'			1" Ice	1.972	0.969	0.076
						2" Ice	2.329	1.244	0.115
WCS-IMFQ-AMT	C	From Leg	4.000	0.000	141'	No Ice	0.989	0.644	0.030
			0'			1/2" Ice	1.114	0.748	0.039
			0'			1" Ice	1.246	0.860	0.051
						2" Ice	1.533	1.105	0.081
DC6-48-60-18-8F	A	From Leg	4.000	0.000	141'	No Ice	1.212	1.212	0.033
			0'			1/2" Ice	1.892	1.892	0.055
			0'			1" Ice	2.105	2.105	0.080
						2" Ice	2.570	2.570	0.138
DC6-48-60-18-8F	C	From Leg	4.000	0.000	141'	No Ice	1.212	1.212	0.033
			0'			1/2" Ice	1.892	1.892	0.055
			0'			1" Ice	2.105	2.105	0.080
						2" Ice	2.570	2.570	0.138
(5) 10' x 2.875" Mount Pipe	A	From Leg	4.000	0.000	141'	No Ice	2.875	2.875	0.058
			0'			1/2" Ice	3.907	3.907	0.079
			0'			1" Ice	4.956	4.956	0.107
						2" Ice	6.188	6.188	0.182
(5) 10' x 2.875" Mount Pipe	B	From Leg	4.000	0.000	141'	No Ice	2.875	2.875	0.058
			0'			1/2" Ice	3.907	3.907	0.079
			0'			1" Ice	4.956	4.956	0.107
						2" Ice	6.188	6.188	0.182
(5) 10' x 2.875" Mount Pipe	C	From Leg	4.000	0.000	141'	No Ice	2.875	2.875	0.058
			0'			1/2" Ice	3.907	3.907	0.079
			0'			1" Ice	4.956	4.956	0.107

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
						2" Ice	6.188	6.188	0.182
(2) 7'x2" Mount Pipe	A	From Leg	2.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	1.663 2.391 2.825 3.706	1.663 2.391 2.825 3.706	0.026 0.039 0.056 0.105
(2) 7'x2" Mount Pipe	B	From Leg	2.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	1.663 2.391 2.825 3.706	1.663 2.391 2.825 3.706	0.026 0.039 0.056 0.105
(2) 7'x2" Mount Pipe	C	From Leg	2.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	1.663 2.391 2.825 3.706	1.663 2.391 2.825 3.706	0.026 0.039 0.056 0.105
10.5' x 2.375" horizontal mount pipe	A	From Leg	4.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	2.494 3.572 4.667 6.317	2.494 3.572 4.667 6.317	0.035 0.054 0.079 0.151
10.5' x 2.375" horizontal mount pipe	B	From Leg	4.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	2.494 3.572 4.667 6.317	2.494 3.572 4.667 6.317	0.035 0.054 0.079 0.151
10.5' x 2.375" horizontal mount pipe	C	From Leg	4.000 0' 0'	0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	2.494 3.572 4.667 6.317	2.494 3.572 4.667 6.317	0.035 0.054 0.079 0.151
Sector Mount [SM 503-3]	C	None		0.000	141'	No Ice 1/2" Ice 1" Ice 2" Ice	30.430 43.020 55.430 79.890	30.430 43.020 55.430 79.890	1.690 2.296 3.097 5.269
*									
M5160160P10006	B	From Leg	2.000 0' 0'	0.000	130'	No Ice 1/2" Ice 1" Ice 2" Ice	0.917 1.049 1.187 1.493	0.294 0.408 0.530 0.783	0.002 0.007 0.014 0.035
M5160160P10006	C	From Leg	2.000 0' 0'	0.000	130'	No Ice 1/2" Ice 1" Ice 2" Ice	0.917 1.049 1.187 1.493	0.294 0.408 0.530 0.783	0.002 0.007 0.014 0.035
Side Arm Mount [SO 301-1]	B	From Leg	1.000 0' 0'	0.000	130'	No Ice 1/2" Ice 1" Ice 2" Ice	0.460 0.650 0.870 1.410	0.910 1.300 1.710 2.620	0.023 0.033 0.047 0.091
Side Arm Mount [SO 301-1]	C	From Leg	1.000 0' 0'	0.000	130'	No Ice 1/2" Ice 1" Ice 2" Ice	0.460 0.650 0.870 1.410	0.910 1.300 1.710 2.620	0.023 0.033 0.047 0.091
*									
SC320	B	From Leg	4.000 0' 10'	0.000	118'	No Ice 1/2" Ice 1" Ice 2" Ice	6.380 8.613 10.862 15.410	6.380 8.613 10.862 15.410	0.025 0.071 0.131 0.293
SC229-SFXLDF	C	From Leg	4.000 0' 10'	0.000	118'	No Ice 1/2" Ice 1" Ice 2" Ice	5.950 7.967 10.000 14.117	5.950 7.967 10.000 14.117	0.032 0.075 0.130 0.279
Side Arm Mount [SO 306-1]	B	From Leg	2.000 0'	0.000	118'	No Ice 1/2" Ice	0.410 0.810	2.260 3.830	0.042 0.062

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'			1" Ice	1.230	5.480	0.094
						2" Ice	2.080	9.370	0.187
Side Arm Mount [SO 306-1]	C	From Leg	2.000	0.000	118'	No Ice	0.410	2.260	0.042
			0'			1/2" Ice	0.810	3.830	0.062
			0'			1" Ice	1.230	5.480	0.094
						2" Ice	2.080	9.370	0.187
10' x 2.375" Horizontal Mount Pipe	B	From Face	1.000	0.000	118'	No Ice	2.375	0.061	0.040
			0'			1/2" Ice	3.403	0.124	0.058
			0'			1" Ice	4.448	0.209	0.082
						2" Ice	5.911	0.443	0.151
10' x 2.375" Horizontal Mount Pipe	C	From Face	1.000	0.000	118'	No Ice	2.375	0.061	0.040
			0'			1/2" Ice	3.403	0.124	0.058
			0'			1" Ice	4.448	0.209	0.082
						2" Ice	5.911	0.443	0.151
*									
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	4.000	0.000	114'	No Ice	6.329	5.642	0.112
			0'			1/2" Ice	6.775	6.426	0.169
			-2'			1" Ice	7.214	7.131	0.233
						2" Ice	8.117	8.591	0.383
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Leg	4.000	0.000	114'	No Ice	6.329	5.642	0.112
			0'			1/2" Ice	6.775	6.426	0.169
			-2'			1" Ice	7.214	7.131	0.233
						2" Ice	8.117	8.591	0.383
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Leg	4.000	0.000	114'	No Ice	6.329	5.642	0.112
			0'			1/2" Ice	6.775	6.426	0.169
			-2'			1" Ice	7.214	7.131	0.233
						2" Ice	8.117	8.591	0.383
KRY 112 71	A	From Leg	4.000	0.000	114'	No Ice	0.583	0.398	0.013
			0'			1/2" Ice	0.688	0.488	0.018
			-2'			1" Ice	0.799	0.586	0.025
						2" Ice	1.045	0.805	0.044
KRY 112 71	B	From Leg	4.000	0.000	114'	No Ice	0.583	0.398	0.013
			0'			1/2" Ice	0.688	0.488	0.018
			-2'			1" Ice	0.799	0.586	0.025
						2" Ice	1.045	0.805	0.044
KRY 112 71	C	From Leg	4.000	0.000	114'	No Ice	0.583	0.398	0.013
			0'			1/2" Ice	0.688	0.488	0.018
			-2'			1" Ice	0.799	0.586	0.025
						2" Ice	1.045	0.805	0.044
AIR 32 B2a/B66Aa	A	From Leg	4.000	0.000	114'	No Ice	6.510	4.712	0.132
			0'			1/2" Ice	6.887	5.068	0.178
			-2'			1" Ice	7.271	5.431	0.229
						2" Ice	8.060	6.178	0.348
AIR 32 B2a/B66Aa	B	From Leg	4.000	0.000	114'	No Ice	6.510	4.712	0.132
			0'			1/2" Ice	6.887	5.068	0.178
			-2'			1" Ice	7.271	5.431	0.229
						2" Ice	8.060	6.178	0.348
AIR 32 B2a/B66Aa	C	From Leg	4.000	0.000	114'	No Ice	6.510	4.712	0.132
			0'			1/2" Ice	6.887	5.068	0.178
			-2'			1" Ice	7.271	5.431	0.229
						2" Ice	8.060	6.178	0.348
APXVAARR24_43-U-NA20	A	From Leg	4.000	0.000	114'	No Ice	14.670	5.320	0.153
			0'			1/2" Ice	15.430	5.990	0.266
			-2'			1" Ice	16.210	6.680	0.387
						2" Ice	17.810	8.080	0.656
APXVAARR24_43-U-NA20	B	From Leg	4.000	0.000	114'	No Ice	14.670	5.320	0.153
			0'			1/2" Ice	15.430	5.990	0.266

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
			-2'			1" Ice	16.210	6.680	0.387
						2" Ice	17.810	8.080	0.656
APXVAARR24_43-U-NA20	C	From Leg	4.000	0.000	114'	No Ice	14.670	5.320	0.153
			0'			1/2" Ice	15.430	5.990	0.266
			-2'			1" Ice	16.210	6.680	0.387
						2" Ice	17.810	8.080	0.656
RADIO 4449 B12/B71	A	From Leg	4.000	0.000	114'	No Ice	1.650	1.300	0.075
			0'			1/2" Ice	1.810	1.445	0.092
			-2'			1" Ice	1.978	1.597	0.112
						2" Ice	2.336	1.924	0.161
RADIO 4449 B12/B71	B	From Leg	4.000	0.000	114'	No Ice	1.650	1.300	0.075
			0'			1/2" Ice	1.810	1.445	0.092
			-2'			1" Ice	1.978	1.597	0.112
						2" Ice	2.336	1.924	0.161
RADIO 4449 B12/B71	C	From Leg	4.000	0.000	114'	No Ice	1.650	1.300	0.075
			0'			1/2" Ice	1.810	1.445	0.092
			-2'			1" Ice	1.978	1.597	0.112
						2" Ice	2.336	1.924	0.161
(2) L 2.5x2.5x3/16x6'	A	From Leg	2.000	0.000	114'	No Ice	1.500	0.005	0.025
			0'			1/2" Ice	1.918	0.024	0.034
			0'			1" Ice	2.343	0.049	0.048
						2" Ice	3.215	0.123	0.091
(2) L 2.5x2.5x3/16x6'	B	From Leg	2.000	0.000	114'	No Ice	1.500	0.005	0.025
			0'			1/2" Ice	1.918	0.024	0.034
			0'			1" Ice	2.343	0.049	0.048
						2" Ice	3.215	0.123	0.091
(2) L 2.5x2.5x3/16x6'	C	From Leg	2.000	0.000	114'	No Ice	1.500	0.005	0.025
			0'			1/2" Ice	1.918	0.024	0.034
			0'			1" Ice	2.343	0.049	0.048
						2" Ice	3.215	0.123	0.091
Sector Mount [SM 307-3]	C	None		0.000	114'	No Ice	26.180	26.180	1.620
						1/2" Ice	35.720	35.720	2.113
						1" Ice	45.160	45.160	2.761
						2" Ice	63.920	63.920	4.520
*									
800MHZ 2X50W RRH W/FILTER	A	From Leg	2.000	0.000	103'	No Ice	2.058	1.932	0.064
			0'			1/2" Ice	2.240	2.109	0.086
			0'			1" Ice	2.429	2.293	0.111
						2" Ice	2.829	2.684	0.172
800MHZ 2X50W RRH W/FILTER	B	From Leg	2.000	0.000	103'	No Ice	2.058	1.932	0.064
			0'			1/2" Ice	2.240	2.109	0.086
			0'			1" Ice	2.429	2.293	0.111
						2" Ice	2.829	2.684	0.172
800MHZ 2X50W RRH W/FILTER	C	From Leg	2.000	0.000	103'	No Ice	2.058	1.932	0.064
			0'			1/2" Ice	2.240	2.109	0.086
			0'			1" Ice	2.429	2.293	0.111
						2" Ice	2.829	2.684	0.172
PCS 1900MHZ 2X40W	A	From Leg	2.000	0.000	103'	No Ice	2.351	1.278	0.044
			0'			1/2" Ice	2.547	1.434	0.062
			0'			1" Ice	2.751	1.598	0.084
						2" Ice	3.181	1.946	0.135
PCS 1900MHZ 2X40W	B	From Leg	2.000	0.000	103'	No Ice	2.351	1.278	0.044
			0'			1/2" Ice	2.547	1.434	0.062
			0'			1" Ice	2.751	1.598	0.084
						2" Ice	3.181	1.946	0.135
PCS 1900MHZ 2X40W	C	From Leg	2.000	0.000	103'	No Ice	2.351	1.278	0.044
			0'			1/2" Ice	2.547	1.434	0.062

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0'			1" Ice	2.751	1.598	0.084
						2" Ice	3.181	1.946	0.135
(2) 4' x 2" Pipe Mount	A	From Leg	1.000	0.000	103'	No Ice	0.785	0.785	0.029
			0'			1/2" Ice	1.028	1.028	0.035
			0'			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
(2) 4' x 2" Pipe Mount	B	From Leg	1.000	0.000	103'	No Ice	0.785	0.785	0.029
			0'			1/2" Ice	1.028	1.028	0.035
			0'			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
(2) 4' x 2" Pipe Mount	C	From Leg	1.000	0.000	103'	No Ice	0.785	0.785	0.029
			0'			1/2" Ice	1.028	1.028	0.035
			0'			1" Ice	1.281	1.281	0.044
						2" Ice	1.814	1.814	0.072
Pipe Mount [PM 601-3]	C	None		0.000	103'	No Ice	3.170	3.170	0.195
						1/2" Ice	3.790	3.790	0.232
						1" Ice	4.420	4.420	0.279
						2" Ice	5.760	5.760	0.401
*									
DT465B-2XR w/ Mount Pipe	A	From Leg	4.000	0.000	100'	No Ice	5.500	4.380	0.091
			0'			1/2" Ice	5.970	4.840	0.164
			0'			1" Ice	6.450	5.300	0.248
						2" Ice	7.440	6.260	0.451
DT465B-2XR w/ Mount Pipe	B	From Leg	4.000	0.000	100'	No Ice	5.500	4.380	0.091
			0'			1/2" Ice	5.970	4.840	0.164
			0'			1" Ice	6.450	5.300	0.248
						2" Ice	7.440	6.260	0.451
DT465B-2XR w/ Mount Pipe	C	From Leg	4.000	0.000	100'	No Ice	5.500	4.380	0.091
			0'			1/2" Ice	5.970	4.840	0.164
			0'			1" Ice	6.450	5.300	0.248
						2" Ice	7.440	6.260	0.451
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.000	0.000	100'	No Ice	4.600	4.010	0.095
			0'			1/2" Ice	5.050	4.450	0.160
			0'			1" Ice	5.500	4.890	0.235
						2" Ice	6.440	5.820	0.419
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.000	0.000	100'	No Ice	4.600	4.010	0.095
			0'			1/2" Ice	5.050	4.450	0.160
			0'			1" Ice	5.500	4.890	0.235
						2" Ice	6.440	5.820	0.419
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.000	0.000	100'	No Ice	4.600	4.010	0.095
			0'			1/2" Ice	5.050	4.450	0.160
			0'			1" Ice	5.500	4.890	0.235
						2" Ice	6.440	5.820	0.419
RRH2X50-800	A	From Leg	4.000	0.000	100'	No Ice	1.701	1.282	0.053
			0'			1/2" Ice	1.864	1.428	0.070
			-3'			1" Ice	2.035	1.580	0.090
						2" Ice	2.398	1.908	0.138
RRH2X50-800	B	From Leg	4.000	0.000	100'	No Ice	1.701	1.282	0.053
			0'			1/2" Ice	1.864	1.428	0.070
			-3'			1" Ice	2.035	1.580	0.090
						2" Ice	2.398	1.908	0.138
RRH2X50-800	C	From Leg	4.000	0.000	100'	No Ice	1.701	1.282	0.053
			0'			1/2" Ice	1.864	1.428	0.070
			-3'			1" Ice	2.035	1.580	0.090
						2" Ice	2.398	1.908	0.138
TD-RRH8X20-25	A	From Leg	4.000	0.000	100'	No Ice	4.045	1.535	0.070
			0'			1/2" Ice	4.298	1.714	0.097

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
			3'			1" Ice	4.557	1.901	0.128
						2" Ice	5.098	2.295	0.201
TD-RRH8X20-25	B	From Leg	4.000 0' 3'	0.000	100'	No Ice 1/2" Ice 1" Ice 2" Ice	4.045 4.298 4.557 5.098	1.535 1.714 1.901 2.295	0.070 0.097 0.128 0.201
TD-RRH8X20-25	C	From Leg	4.000 0' 3'	0.000	100'	No Ice 1/2" Ice 1" Ice 2" Ice	4.045 4.298 4.557 5.098	1.535 1.714 1.901 2.295	0.070 0.097 0.128 0.201
10' x 2.375" Horizontal Mount Pipe	A	From Leg	4.000 0' 0'	0.000	100'	No Ice 1/2" Ice 1" Ice 2" Ice	2.375 3.403 4.448 5.911	0.061 0.124 0.209 0.443	0.040 0.058 0.082 0.151
10' x 2.375" Horizontal Mount Pipe	B	From Leg	4.000 0' 0'	0.000	100'	No Ice 1/2" Ice 1" Ice 2" Ice	2.375 3.403 4.448 5.911	0.061 0.124 0.209 0.443	0.040 0.058 0.082 0.151
10' x 2.375" Horizontal Mount Pipe	C	From Leg	4.000 0' 0'	0.000	100'	No Ice 1/2" Ice 1" Ice 2" Ice	2.375 3.403 4.448 5.911	0.061 0.124 0.209 0.443	0.040 0.058 0.082 0.151
Sector Mount [SM 406-3]	C	None		0.000	100'	No Ice 1/2" Ice 1" Ice 2" Ice	19.760 29.240 38.800 58.910	19.760 29.240 38.800 58.910	0.923 1.311 1.845 3.330
*									
(2) BXA-171063/8CF w/ Mount Pipe	A	From Leg	4.000 0' 2'	0.000	88'	No Ice 1/2" Ice 1" Ice 2" Ice	3.140 3.515 3.892 4.654	3.510 4.130 4.757 6.059	0.029 0.062 0.100 0.196
(2) BXA-171063/8CF w/ Mount Pipe	B	From Leg	4.000 0' 2'	0.000	88'	No Ice 1/2" Ice 1" Ice 2" Ice	3.140 3.515 3.892 4.654	3.510 4.130 4.757 6.059	0.029 0.062 0.100 0.196
(2) BXA-171063/8CF w/ Mount Pipe	C	From Leg	4.000 0' 2'	0.000	88'	No Ice 1/2" Ice 1" Ice 2" Ice	3.140 3.515 3.892 4.654	3.510 4.130 4.757 6.059	0.029 0.062 0.100 0.196
SWCP 2x5514 w/ Mount Pipe	A	From Leg	4.000 0' 2'	0.000	88'	No Ice 1/2" Ice 1" Ice 2" Ice	6.560 7.150 7.760 9.020	6.390 6.980 7.580 8.840	0.039 0.099 0.167 0.332
SWCP 2x5514 w/ Mount Pipe	B	From Leg	4.000 0' 2'	0.000	88'	No Ice 1/2" Ice 1" Ice 2" Ice	6.560 7.150 7.760 9.020	6.390 6.980 7.580 8.840	0.039 0.099 0.167 0.332
SWCP 2x5514 w/ Mount Pipe	C	From Leg	4.000 0' 2'	0.000	88'	No Ice 1/2" Ice 1" Ice 2" Ice	6.560 7.150 7.760 9.020	6.390 6.980 7.580 8.840	0.039 0.099 0.167 0.332
(2) LPA-80063/4CF w/ Mount Pipe	A	From Leg	4.000 0' 2'	0.000	88'	No Ice 1/2" Ice 1" Ice 2" Ice	6.385 6.784 7.192 8.035	6.603 7.232 7.876 9.214	0.038 0.104 0.176 0.344
(2) LPA-80063/4CF w/ Mount Pipe	B	From Leg	4.000 0'	0.000	88'	No Ice 1/2" Ice	6.385 6.784	6.603 7.232	0.038 0.104

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
			2'			1" Ice	7.192	7.876	0.176
						2" Ice	8.035	9.214	0.344
(2) LPA-80063/4CF w/ Mount Pipe	C	From Leg	4.000 0' 2'	0.000	88'	No Ice 1/2" Ice 1" Ice 2" Ice	6.385 6.784 7.192 8.035	6.603 7.232 7.876 9.214	0.038 0.104 0.176 0.344
(2) FD9R6004/2C-3L	A	From Leg	4.000 0' 2'	0.000	88'	No Ice 1/2" Ice 1" Ice 2" Ice	0.314 0.386 0.466 0.647	0.076 0.119 0.169 0.294	0.003 0.005 0.009 0.020
(2) FD9R6004/2C-3L	B	From Leg	4.000 0' 2'	0.000	88'	No Ice 1/2" Ice 1" Ice 2" Ice	0.314 0.386 0.466 0.647	0.076 0.119 0.169 0.294	0.003 0.005 0.009 0.020
(2) FD9R6004/2C-3L	C	From Leg	4.000 0' 2'	0.000	88'	No Ice 1/2" Ice 1" Ice 2" Ice	0.314 0.386 0.466 0.647	0.076 0.119 0.169 0.294	0.003 0.005 0.009 0.020
DB-T1-6Z-8AB-0Z	C	From Leg	4.000 0' 2'	0.000	88'	No Ice 1/2" Ice 1" Ice 2" Ice	4.800 5.070 5.348 5.926	2.000 2.193 2.393 2.815	0.044 0.080 0.120 0.213
Sector Mount [SM 408-3]	C	None		0.000	88'	No Ice 1/2" Ice 1" Ice 2" Ice	22.380 33.310 44.350 67.760	22.380 33.310 44.350 67.760	1.019 1.459 2.064 3.750
Pipe Mount [PM 601-3]	C	None		0.000	88'	No Ice 1/2" Ice 1" Ice 2" Ice	3.170 3.790 4.420 5.760	3.170 3.790 4.420 5.760	0.195 0.232 0.279 0.401
*									
APXV18-206517S-C w/ Mount Pipe	A	From Leg	1.000 0' 0'	0.000	65'	No Ice 1/2" Ice 1" Ice 2" Ice	3.790 4.380 4.990 6.250	3.160 3.750 4.350 5.590	0.053 0.094 0.145 0.281
APXV18-206517S-C w/ Mount Pipe	B	From Leg	1.000 0' 0'	0.000	65'	No Ice 1/2" Ice 1" Ice 2" Ice	3.790 4.380 4.990 6.250	3.160 3.750 4.350 5.590	0.053 0.094 0.145 0.281
APXV18-206517S-C w/ Mount Pipe	C	From Leg	1.000 0' 0'	0.000	65'	No Ice 1/2" Ice 1" Ice 2" Ice	3.790 4.380 4.990 6.250	3.160 3.750 4.350 5.590	0.053 0.094 0.145 0.281
*									
GPS-TMG-HR-26NCM	C	From Leg	1.000 0' 0'	0.000	50'	No Ice 1/2" Ice 1" Ice 2" Ice	0.133 0.183 0.239 0.375	0.133 0.183 0.239 0.375	0.001 0.002 0.005 0.014
4' x 2" Pipe Mount	C	From Leg	0.500 0' 0'	0.000	50'	No Ice 1/2" Ice 1" Ice 2" Ice	0.785 1.028 1.281 1.814	0.785 1.028 1.281 1.814	0.029 0.035 0.044 0.072
*									

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
HPLPD1-18	B	Paraboloid w/Shroud (HP)	From Leg	4.000 0' 1'	-27.000		150'	1.140	No Ice 1/2" Ice 1" Ice 2" Ice	1.021 1.175 1.330 1.639	0.017 0.023 0.029 0.041
HPLPD1-18	C	Paraboloid w/Shroud (HP)	From Leg	4.000 0' 1'	-11.000		150'	1.140	No Ice 1/2" Ice 1" Ice 2" Ice	1.021 1.175 1.330 1.639	0.017 0.023 0.029 0.041

*

Truss-Leg Properties

Section Designation	Area in²	Area Ice in²	Self Weight K	Ice Weight K	Equiv. Diameter in	Equiv. Diameter Ice in	Leg Area in²
Pirod 105244	1026.861	3022.418	0.563	0.444	7.131	20.989	3.682
Pirod 105216	1998.089	6207.095	0.505	0.833	6.938	21.552	3.682
Pirod 105217	2130.748	6248.170	0.619	0.819	7.398	21.695	5.301
Pirod 105218	2263.469	6279.964	0.755	0.796	7.859	21.805	7.216
Pirod 105218	2263.469	6221.454	0.755	0.737	7.859	21.602	7.216
Pirod 105219	2441.869	6177.301	0.944	0.658	8.479	21.449	9.425

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice

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

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	150 - 147.583	Leg	Max Tension	23	0.796	0.000	0.000
			Max. Compression	35	-3.839	-0.052	0.009
			Max. Mx	18	-2.396	-0.132	0.021
			Max. My	2	-0.324	0.060	-0.064
			Max. Vy	18	0.062	0.000	0.000
			Max. Vx	24	0.031	0.000	0.000
		Diagonal	Max Tension	5	1.294	0.000	0.000
			Max. Compression	4	-1.345	0.000	0.000
			Max. Mx	26	-0.069	0.005	0.000
			Max. Vy	26	-0.006	0.000	0.000
		Top Girt	Max Tension	15	0.918	0.000	0.000
			Max. Compression	2	-0.934	0.018	-0.000
			Max. Mx	2	0.155	-0.093	-0.000
			Max. My	27	0.050	-0.053	-0.000
			Max. Vy	31	0.068	-0.093	-0.000
			Max. Vx	27	-0.000	0.000	0.000
T2	147.583 - 130	Leg	Max Tension	7	28.333	-0.329	0.024
			Max. Compression	2	-34.253	0.340	0.008
			Max. Mx	6	3.651	0.778	0.007
			Max. My	21	-2.276	-0.004	0.788
			Max. Vy	2	-3.124	0.340	0.008
			Max. Vx	9	-2.727	0.003	0.262
		Diagonal	Max Tension	5	3.762	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	4	-3.774	0.000	0.000
			Max. Mx	27	0.945	-0.005	0.000
			Max. My	6	-3.000	-0.001	-0.000
			Max. Vy	27	0.008	-0.005	0.000
			Max. Vx	6	0.000	-0.001	-0.000
		Horizontal	Max Tension	14	0.671	0.000	0.000
			Max. Compression	3	-0.401	0.000	0.000
			Max. Mx	26	0.415	0.016	0.000
			Max. Vy	26	0.015	0.000	0.000
		Top Girt	Max Tension	10	0.197	0.000	0.000
			Max. Compression	7	-0.150	0.000	0.000
			Max. Mx	26	0.047	0.014	0.000
			Max. Vy	26	-0.014	0.000	0.000
		Bottom Girt	Max Tension	14	1.787	0.000	0.000
			Max. Compression	3	-1.644	0.000	0.000
			Max. Mx	26	0.058	0.017	0.000
			Max. Vy	26	-0.015	0.000	0.000
T3	130 - 110	Leg	Max Tension	7	75.040	-2.536	0.002
			Max. Compression	2	-85.029	2.524	-0.005
			Max. Mx	6	73.685	-2.538	0.002
			Max. My	8	-6.163	-0.006	1.780
			Max. Vy	6	5.480	-2.538	0.002
			Max. Vx	9	-3.713	-0.001	1.780
		Diagonal	Max Tension	25	5.386	0.000	0.000
			Max. Compression	8	-5.512	0.000	0.000
			Max. Mx	27	1.325	-0.007	0.000
			Max. My	6	-3.942	-0.002	-0.001
			Max. Vy	27	0.011	-0.007	0.000
			Max. Vx	6	0.000	0.000	0.000
		Horizontal	Max Tension	14	1.124	0.000	0.000
			Max. Compression	3	-0.965	0.000	0.000
			Max. Mx	26	0.299	0.017	0.000
			Max. Vy	26	-0.014	0.000	0.000
		Top Girt	Max Tension	10	1.767	0.000	0.000
			Max. Compression	7	-1.750	0.000	0.000
			Max. Mx	26	0.032	0.017	0.000
			Max. Vy	26	-0.015	0.000	0.000
		Bottom Girt	Max Tension	14	2.027	0.000	0.000
			Max. Compression	3	-1.889	0.000	0.000
			Max. Mx	26	0.170	0.020	0.000
			Max. Vy	26	0.016	0.000	0.000
T4	110 - 100	Leg	Max Tension	7	78.314	-2.536	0.002
			Max. Compression	2	-87.182	5.467	0.042
			Max. Mx	2	-87.182	5.467	0.042
			Max. My	8	-5.716	0.022	5.510
			Max. Vy	14	0.548	-5.364	-0.020
			Max. Vx	8	-0.650	0.022	5.510
		Diagonal	Max Tension	9	8.204	0.053	0.002
			Max. Compression	8	-9.620	0.000	0.000
			Max. Mx	8	4.626	0.076	-0.001
			Max. My	35	-4.318	0.005	0.008
			Max. Vy	28	0.026	0.046	-0.005
			Max. Vx	35	-0.002	0.000	0.000
		Top Girt	Max Tension	14	1.223	0.000	0.000
			Max. Compression	3	-0.827	0.000	0.000
			Max. Mx	26	0.548	-0.046	0.000
			Max. My	26	0.552	0.000	0.001
			Max. Vy	26	0.036	0.000	0.000
			Max. Vx	26	0.001	0.000	0.000
T5	100 - 80	Leg	Max Tension	7	114.036	-5.366	0.020
			Max. Compression	2	-128.297	5.827	0.030

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	2	-128.297	5.827	0.030
			Max. My	8	-6.579	-0.113	5.990
			Max. Vy	6	-0.909	-4.835	0.074
			Max. Vx	8	1.322	-0.113	5.990
		Diagonal	Max Tension	9	13.962	0.000	0.000
			Max. Compression	8	-16.538	0.000	0.000
			Max. Mx	2	-0.002	0.155	-0.004
			Max. My	35	-6.566	0.017	0.010
			Max. Vy	27	-0.044	0.096	0.009
			Max. Vx	35	-0.003	0.000	0.000
		Top Girt	Max Tension	6	9.601	0.000	0.000
			Max. Compression	3	-7.787	0.000	0.000
			Max. Mx	26	2.661	-0.065	0.000
			Max. My	26	2.483	0.000	0.002
			Max. Vy	26	-0.043	0.000	0.000
			Max. Vx	26	-0.001	0.000	0.000
		Mid Girt	Max Tension	6	13.588	0.000	0.000
			Max. Compression	3	-11.093	0.000	0.000
			Max. Mx	26	3.798	-0.088	0.000
			Max. My	26	3.565	0.000	0.003
			Max. Vy	26	0.050	0.000	0.000
			Max. Vx	26	0.001	0.000	0.000
T6	80 - 60	Leg	Max Tension	7	162.862	-4.624	0.082
			Max. Compression	2	-185.946	6.069	0.044
			Max. Mx	2	-185.946	6.069	0.044
			Max. My	9	-8.555	-0.287	8.302
			Max. Vy	10	-0.367	5.986	0.003
			Max. Vx	9	-0.749	-0.287	8.302
		Diagonal	Max Tension	16	8.349	0.000	0.000
			Max. Compression	10	-8.542	0.000	0.000
			Max. Mx	2	6.995	0.132	0.010
			Max. My	4	-8.011	-0.068	0.019
			Max. Vy	27	-0.048	0.109	0.012
			Max. Vx	4	-0.004	0.000	0.000
		Top Girt	Max Tension	6	9.552	0.000	0.000
			Max. Compression	3	-7.917	0.000	0.000
			Max. Mx	26	2.545	-0.113	0.000
			Max. My	26	2.400	0.000	0.003
			Max. Vy	26	0.056	0.000	0.000
			Max. Vx	26	-0.002	0.000	0.000
T7	60 - 40	Leg	Max Tension	23	200.404	-5.225	-0.017
			Max. Compression	2	-227.732	6.769	0.149
			Max. Mx	2	-227.732	6.769	0.149
			Max. My	9	-11.326	0.081	6.566
			Max. Vy	10	-0.280	6.731	0.096
			Max. Vx	9	-0.370	0.081	6.566
		Diagonal	Max Tension	16	8.183	0.000	0.000
			Max. Compression	16	-8.245	0.000	0.000
			Max. Mx	27	1.648	0.100	0.011
			Max. My	36	-1.004	0.062	-0.012
			Max. Vy	37	0.053	0.091	0.011
			Max. Vx	36	0.003	0.000	0.000
T8	40 - 20	Leg	Max Tension	23	235.730	-4.977	-0.022
			Max. Compression	2	-267.250	6.152	0.037
			Max. Mx	2	-247.411	6.769	0.149
			Max. My	9	-11.802	0.081	6.566
			Max. Vy	33	0.493	-4.361	-0.033
			Max. Vx	9	0.438	-0.134	6.244
		Diagonal	Max Tension	16	8.642	0.000	0.000
			Max. Compression	18	-8.884	0.000	0.000
			Max. Mx	2	6.607	0.157	0.012

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	30	2.773	0.127	0.018
			Max. Vy	37	0.071	0.130	0.016
			Max. Vx	30	-0.004	0.000	0.000
T9	20 - 0	Leg	Max Tension	23	267.754	-5.593	-0.031
			Max. Compression	2	-303.719	0.000	0.000
			Max. Mx	2	-286.665	6.152	0.037
			Max. My	24	-16.420	-0.434	9.530
			Max. Vy	33	-0.815	-4.361	-0.033
			Max. Vx	9	1.115	-0.291	9.521
		Diagonal	Max Tension	7	10.252	0.000	0.000
			Max. Compression	18	-11.088	0.000	0.000
			Max. Mx	27	0.713	0.160	0.017
			Max. My	8	8.669	0.126	0.023
			Max. Vy	37	0.074	0.157	-0.017
			Max. Vx	36	0.004	0.000	0.000

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	18	308.389	27.351	-16.669
	Max. H_x	18	308.389	27.351	-16.669
	Max. H_z	7	-273.739	-24.536	14.980
	Min. Vert	7	-273.739	-24.536	14.980
	Min. H_x	7	-273.739	-24.536	14.980
	Min. H_z	18	308.389	27.351	-16.669
Leg B	Max. Vert	10	312.130	-28.081	-16.732
	Max. H_x	23	-277.248	25.177	15.010
	Max. H_z	23	-277.248	25.177	15.010
	Min. Vert	23	-277.248	25.177	15.010
	Min. H_x	10	312.130	-28.081	-16.732
	Min. H_z	10	312.130	-28.081	-16.732
Leg A	Max. Vert	2	314.638	-0.473	32.487
	Max. H_x	21	13.850	2.304	1.106
	Max. H_z	2	314.638	-0.473	32.487
	Min. Vert	15	-273.606	0.456	-28.868
	Min. H_x	8	20.316	-2.315	1.628
	Min. H_z	15	-273.606	0.456	-28.868

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	45.361	0.000	-0.000	-15.576	5.356	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	54.433	0.102	-48.425	-4108.343	-5.775	-12.896
0.9 Dead+1.0 Wind 0 deg - No Ice	40.825	0.102	-48.425	-4103.670	-7.382	-12.896
1.2 Dead+1.0 Wind 30 deg - No Ice	54.433	23.024	-39.801	-3430.296	-1968.688	-11.113
0.9 Dead+1.0 Wind 30 deg - No	40.825	23.024	-39.801	-3425.623	-1970.295	-11.113

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Ice						
1.2 Dead+1.0 Wind 60 deg - No Ice	54.433	40.413	-23.395	-2013.322	-3436.253	-20.243
0.9 Dead+1.0 Wind 60 deg - No Ice	40.825	40.413	-23.395	-2008.650	-3437.860	-20.243
1.2 Dead+1.0 Wind 90 deg - No Ice	54.433	48.390	-0.097	-30.096	-4054.521	-25.011
0.9 Dead+1.0 Wind 90 deg - No Ice	40.825	48.390	-0.097	-25.424	-4056.128	-25.011
1.2 Dead+1.0 Wind 120 deg - No Ice	54.433	42.409	24.436	2020.977	-3536.962	-11.820
0.9 Dead+1.0 Wind 120 deg - No Ice	40.825	42.409	24.436	2025.650	-3538.569	-11.820
1.2 Dead+1.0 Wind 150 deg - No Ice	54.433	23.950	41.595	3488.941	-2011.393	11.180
0.9 Dead+1.0 Wind 150 deg - No Ice	40.825	23.950	41.595	3493.614	-2012.999	11.180
1.2 Dead+1.0 Wind 180 deg - No Ice	54.433	-0.089	46.960	3975.079	16.615	12.909
0.9 Dead+1.0 Wind 180 deg - No Ice	40.825	-0.089	46.960	3979.752	15.008	12.909
1.2 Dead+1.0 Wind 210 deg - No Ice	54.433	-22.931	39.628	3370.435	1969.539	11.095
0.9 Dead+1.0 Wind 210 deg - No Ice	40.825	-22.931	39.628	3375.107	1967.932	11.095
1.2 Dead+1.0 Wind 240 deg - No Ice	54.433	-41.356	23.933	1998.642	3489.993	20.195
0.9 Dead+1.0 Wind 240 deg - No Ice	40.825	-41.356	23.933	2003.315	3488.386	20.195
1.2 Dead+1.0 Wind 270 deg - No Ice	54.433	-48.205	0.092	-8.018	4043.590	24.978
0.9 Dead+1.0 Wind 270 deg - No Ice	40.825	-48.205	0.092	-3.345	4041.983	24.978
1.2 Dead+1.0 Wind 300 deg - No Ice	54.433	-41.314	-23.806	-2023.874	3489.522	11.776
0.9 Dead+1.0 Wind 300 deg - No Ice	40.825	-41.314	-23.806	-2019.201	3487.915	11.776
1.2 Dead+1.0 Wind 330 deg - No Ice	54.433	-23.960	-41.591	-3525.802	2025.745	-11.212
0.9 Dead+1.0 Wind 330 deg - No Ice	40.825	-23.960	-41.591	-3521.129	2024.138	-11.212
1.2 Dead+1.0 Ice+1.0 Temp	139.598	-0.000	-0.000	-67.885	26.806	0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	139.598	0.025	-13.353	-1222.978	23.780	-1.995
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	139.598	6.606	-11.447	-1061.086	-546.406	-1.099
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	139.598	11.711	-6.790	-651.637	-978.529	-3.207
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	139.598	13.952	-0.024	-70.727	-1157.809	-5.438
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	139.598	12.069	6.969	519.601	-990.657	-2.854
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	139.598	6.715	11.682	930.216	-546.054	1.377
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	139.598	-0.022	13.059	1060.737	29.366	1.998
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	139.598	-6.537	11.324	909.493	591.109	1.094
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	139.598	-11.725	6.797	510.997	1024.071	3.196
1.2 Dead+1.0 Wind 270	139.598	-13.814	0.023	-65.213	1193.654	5.430

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	139.598	-11.936	-6.893	-651.382	1037.228	2.844
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	139.598	-6.718	-11.681	-1065.865	600.014	-1.384
Dead+Wind 0 deg - Service	45.361	0.025	-11.744	-1007.424	2.397	-3.128
Dead+Wind 30 deg - Service	45.361	5.584	-9.653	-842.980	-473.662	-2.695
Dead+Wind 60 deg - Service	45.361	9.801	-5.674	-499.327	-829.585	-4.910
Dead+Wind 90 deg - Service	45.361	11.736	-0.024	-18.342	-979.531	-6.066
Dead+Wind 120 deg - Service	45.361	10.285	5.926	479.097	-854.009	-2.867
Dead+Wind 150 deg - Service	45.361	5.809	10.088	835.117	-484.018	2.711
Dead+Wind 180 deg - Service	45.361	-0.022	11.389	953.018	7.827	3.131
Dead+Wind 210 deg - Service	45.361	-5.561	9.611	806.376	481.462	2.691
Dead+Wind 240 deg - Service	45.361	-10.030	5.804	473.680	850.212	4.898
Dead+Wind 270 deg - Service	45.361	-11.691	0.022	-12.987	984.474	6.058
Dead+Wind 300 deg - Service	45.361	-10.020	-5.774	-501.886	850.098	2.856
Dead+Wind 330 deg - Service	45.361	-5.811	-10.087	-866.143	495.094	-2.719

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.000	-45.361	0.000	0.000	45.361	0.000	0.000%
2	0.102	-54.433	-48.425	-0.102	54.433	48.425	0.000%
3	0.102	-40.825	-48.425	-0.102	40.825	48.425	0.000%
4	23.024	-54.433	-39.801	-23.024	54.433	39.801	0.000%
5	23.024	-40.825	-39.801	-23.024	40.825	39.801	0.000%
6	40.413	-54.433	-23.395	-40.413	54.433	23.395	0.000%
7	40.413	-40.825	-23.395	-40.413	40.825	23.395	0.000%
8	48.390	-54.433	-0.097	-48.390	54.433	0.097	0.000%
9	48.390	-40.825	-0.097	-48.390	40.825	0.097	0.000%
10	42.409	-54.433	24.436	-42.409	54.433	-24.436	0.000%
11	42.409	-40.825	24.436	-42.409	40.825	-24.436	0.000%
12	23.950	-54.433	41.594	-23.950	54.433	-41.595	0.000%
13	23.950	-40.825	41.594	-23.950	40.825	-41.595	0.000%
14	-0.089	-54.433	46.960	0.089	54.433	-46.960	0.000%
15	-0.089	-40.825	46.960	0.089	40.825	-46.960	0.000%
16	-22.931	-54.433	39.628	22.931	54.433	-39.628	0.000%
17	-22.931	-40.825	39.628	22.931	40.825	-39.628	0.000%
18	-41.356	-54.433	23.933	41.356	54.433	-23.933	0.000%
19	-41.356	-40.825	23.933	41.356	40.825	-23.933	0.000%
20	-48.205	-54.433	0.092	48.205	54.433	-0.092	0.000%
21	-48.205	-40.825	0.092	48.205	40.825	-0.092	0.000%
22	-41.314	-54.433	-23.806	41.314	54.433	23.806	0.000%
23	-41.314	-40.825	-23.806	41.314	40.825	23.806	0.000%
24	-23.960	-54.433	-41.591	23.960	54.433	41.591	0.000%
25	-23.960	-40.825	-41.591	23.960	40.825	41.591	0.000%
26	0.000	-139.598	0.000	0.000	139.598	0.000	0.000%
27	0.025	-139.598	-13.353	-0.025	139.598	13.353	0.000%
28	6.606	-139.598	-11.447	-6.606	139.598	11.447	0.000%
29	11.711	-139.598	-6.790	-11.711	139.598	6.790	0.000%
30	13.952	-139.598	-0.024	-13.952	139.598	0.024	0.000%
31	12.069	-139.598	6.969	-12.069	139.598	-6.969	0.000%
32	6.715	-139.598	11.682	-6.715	139.598	-11.682	0.000%
33	-0.022	-139.598	13.059	0.022	139.598	-13.059	0.000%
34	-6.537	-139.598	11.324	6.537	139.598	-11.324	0.000%
35	-11.725	-139.598	6.797	11.725	139.598	-6.797	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
36	-13.814	-139.598	0.023	13.814	139.598	-0.023	0.000%
37	-11.936	-139.598	-6.893	11.936	139.598	6.893	0.000%
38	-6.718	-139.598	-11.681	6.718	139.598	11.681	0.000%
39	0.025	-45.361	-11.744	-0.025	45.361	11.744	0.000%
40	5.584	-45.361	-9.653	-5.584	45.361	9.653	0.000%
41	9.801	-45.361	-5.674	-9.801	45.361	5.674	0.000%
42	11.736	-45.361	-0.024	-11.736	45.361	0.024	0.000%
43	10.285	-45.361	5.926	-10.285	45.361	-5.926	0.000%
44	5.809	-45.361	10.088	-5.809	45.361	-10.088	0.000%
45	-0.022	-45.361	11.389	0.022	45.361	-11.389	0.000%
46	-5.561	-45.361	9.611	5.561	45.361	-9.611	0.000%
47	-10.030	-45.361	5.804	10.030	45.361	-5.804	0.000%
48	-11.691	-45.361	0.022	11.691	45.361	-0.022	0.000%
49	-10.020	-45.361	-5.774	10.020	45.361	5.774	0.000%
50	-5.811	-45.361	-10.087	5.811	45.361	10.087	0.000%

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	150 - 147.583	5.709	39	0.360	0.026
T2	147.583 - 130	5.525	39	0.360	0.025
T3	130 - 110	4.195	39	0.335	0.020
T4	110 - 100	2.847	39	0.276	0.015
T5	100 - 80	2.290	39	0.243	0.014
T6	80 - 60	1.400	39	0.173	0.012
T7	60 - 40	0.761	39	0.117	0.009
T8	40 - 20	0.329	39	0.075	0.005
T9	20 - 0	0.086	39	0.032	0.003

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
151'	HPLPD1-18	39	5.709	0.360	0.026	187924
150'	SC226-SFXSNM	39	5.709	0.360	0.026	187924
141'	7770.00	39	5.022	0.355	0.023	154286
130'	M5160160P10006	39	4.195	0.335	0.020	26733
118'	SC320	39	3.353	0.302	0.016	16605
114'	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	39	3.093	0.289	0.016	14796
103'	800MHZ 2X50W RRH W/FILTER	39	2.448	0.253	0.014	14963
100'	DT465B-2XR w/ Mount Pipe	39	2.290	0.243	0.014	15620
88'	(2) BXA-171063/8CF w/ Mount Pipe	39	1.723	0.201	0.013	17684
65'	APXV18-206517S-C w/ Mount Pipe	39	0.900	0.129	0.010	22384
50'	GPS-TMG-HR-26NCM	39	0.521	0.096	0.007	24834

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	150 - 147.583	23.339	2	1.472	0.107
T2	147.583 - 130	22.588	2	1.471	0.104
T3	130 - 110	17.147	2	1.370	0.081
T4	110 - 100	11.634	2	1.129	0.062
T5	100 - 80	9.358	2	0.993	0.058
T6	80 - 60	5.722	2	0.707	0.051
T7	60 - 40	3.111	2	0.478	0.038
T8	40 - 20	1.347	2	0.307	0.022
T9	20 - 0	0.351	11	0.132	0.011

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
151'	HPLPD1-18	2	23.339	1.472	0.107	49076
150'	SC226-SFXSNM	2	23.339	1.472	0.107	49076
141'	7770.00	2	20.533	1.451	0.097	38888
130'	M5160160P10006	2	17.147	1.370	0.081	6546
118'	SC320	2	13.704	1.233	0.068	4051
114'	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	2	12.643	1.182	0.065	3612
103'	800MHZ 2X50W RRH W/FILTER	2	10.006	1.035	0.059	3651
100'	DT465B-2XR w/ Mount Pipe	2	9.358	0.993	0.058	3812
88'	(2) BXA-171063/8CF w/ Mount Pipe	2	7.041	0.819	0.054	4323
65'	APXV18-206517S-C w/ Mount Pipe	2	3.679	0.528	0.041	5480
50'	GPS-TMG-HR-26NCM	2	2.130	0.390	0.029	6077

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
T2	147.583	Leg	A325N	0.625	5	6.851	27.612	0.248 ✔	1.05	Bolt DS
T3	130	Leg	A325N	1.000	6	12.507	54.517	0.229 ✔	1.05	Bolt Tension
T4	110	Leg	A325N	1.000	6	13.052	54.517	0.239 ✔	1.05	Bolt Tension
		Diagonal	A325N	1.000	1	8.204	10.663	0.769 ✔	1.05	Member Block Shear
		Top Girt	A325N	1.000	1	1.223	11.682	0.105 ✔	1.05	Member Block Shear
T5	100	Leg	A325N	1.000	6	19.006	54.517	0.349 ✔	1.05	Bolt Tension
		Diagonal	A325N	1.000	1	13.962	21.326	0.655 ✔	1.05	Member Block Shear
		Top Girt	A325N	1.000	1	9.601	11.682	0.822 ✔	1.05	Member Block

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
T6	80	Leg	A325N	1.000	6	27.144	54.517	0.498 ✔	1.05	Shear Bolt Tension
		Diagonal	A325N	1.000	1	8.349	11.682	0.715 ✔	1.05	Member Block Shear
		Top Girt	A325N	1.000	1	9.552	11.682	0.818 ✔	1.05	Member Block Shear
T7	60	Leg	A325N	1.000	6	33.401	54.517	0.613 ✔	1.05	Bolt Tension
		Diagonal	A325N	1.000	1	8.183	11.682	0.700 ✔	1.05	Member Block Shear
T8	40	Leg	A325N	1.000	6	39.288	54.517	0.721 ✔	1.05	Bolt Tension
		Diagonal	A325N	1.000	1	8.642	19.471	0.444 ✔	1.05	Member Block Shear
T9	20	Diagonal	A325N_H (1.125"-1.5")(Shear)	1.250	1	10.252	23.701	0.433 ✔	1.05	Member Block Shear

Compression Checks

Leg 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	150 - 147.583	1 1/2	2'5"	2'5"	77.3 K=1.00	1.767	-3.839	51.350	0.075 [1] ✔
T2	147.583 - 130	1 1/2	17'7-1/32"	2'5"	77.3 K=1.00	1.767	-31.140	51.350	0.606 [1] ✔
T3	130 - 110	2	20'1/32"	2'4-3/8"	56.8 K=1.00	3.142	-80.690	111.705	0.722 [1] ✔
T4	110 - 100	Pirod 105244	10'7/32"	10'7/32"	45.4 K=1.00	3.682	-87.182	142.493	0.612 [1] ✔
T5	100 - 80	Pirod 105216	20'13/32"	10'7/32"	45.4 K=1.00	3.682	-128.297	142.493	0.900 [1] ✔
T6	80 - 60	Pirod 105217	20'13/32"	10'7/32"	37.8 K=1.00	5.301	-185.946	214.859	0.865 [1] ✔
T7	60 - 40	Pirod 105218	20'13/32"	10'7/32"	32.4 K=1.00	7.216	-227.732	300.681	0.757 [1] ✔
T8	40 - 20	Pirod 105218	20'13/32"	10'7/32"	32.4 K=1.00	7.216	-267.250	300.681	0.889 [1] ✔
T9	20 - 0	Pirod 105219	20'13/32"	10'7/32"	28.4 K=1.00	9.425	-303.719	399.868	0.760 [1] ✔

[1] P_u / ϕP_n controls

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	ϕP_n K	A in^2	V_u K	ϕV_n K	Stress Ratio
T4	110 - 100	0.5	1'5-25/32"	121.0	165.670	0.196	0.650	3.389	0.193 ✔
T5	100 - 80	0.5	1'5-25/32"	121.0	165.670	0.196	1.324	3.292	0.403 ✔
T6	80 - 60	0.5	1'5-21/32"	120.0	238.565	0.196	0.753	3.335	0.227 ✔
T7	60 - 40	0.5	1'5-1/2"	119.0	324.713	0.196	0.371	3.378	0.111 ✔
T8	40 - 20	0.5	1'5-1/2"	119.0	324.713	0.196	0.493	3.378	0.146 ✔
T9	20 - 0	0.625	1'5-11/32"	94.4	424.115	0.307	1.116	6.958	0.161 ✔

Diagonal 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	150 - 147.583	3/4	3'1-7/8"	3'23/32"	137.1 K=0.70	0.442	-1.345	5.311	0.253 [1] ✔
T2	147.583 - 130	3/4	5'7/8"	2'5-25/32"	143.0 K=0.90	0.442	-3.774	4.879	0.773 [1] ✔
T3	130 - 110	7/8	5'5-29/32"	2'8-1/32"	131.8 K=0.90	0.601	-5.512	7.820	0.705 [1] ✔
T4	110 - 100	L2 1/2x2 1/2x3/16	11'5"	4'11-25/32"	120.8 K=1.00	0.902	-9.620	17.576	0.547 [1] ✔
T5	100 - 80	L2 1/2x2 1/2x3/8	12'6-1/32"	5'7-17/32"	138.7 K=1.00	1.730	-16.538	25.755	0.642 [1] ✔
T6	80 - 60	L3x3x3/16	13'9-9/16"	6'3-15/16"	127.4 K=1.00	1.090	-8.282	19.221	0.431 [1] ✔
T7	60 - 40	L3x3x3/16	15'2-29/32"	7'31/32"	142.6 K=1.00	1.090	-8.216	15.345	0.535 [1] ✔
T8	40 - 20	L3x3x5/16	16'9-5/8"	7'10-19/32"	160.6 K=1.00	1.780	-8.884	19.756	0.450 [1] ✔
T9	20 - 0	L3x3x5/16	18'5-3/8"	8'8-1/8"	176.8 K=1.00	1.780	-11.088	16.304	0.680 [1] ✔

[1] P_u / ϕP_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 $\frac{P_u}{\phi P_n}$
T2	147.583 - 130	7/8	4'4-7/16"	4'2-15/1	163.1	0.601	-0.401	5.109	0.079 [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	130 - 110	3/4	4'6-7/8"	4'4-7/8"	6" 197.3 K=0.70	0.442	-0.965	2.563	0.377 [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	150 - 147.583	5x1/2	4'	2'10-7/8"	241.6 K=1.00	2.500	-0.934	9.674	0.097 [1]
		KL/R > 200 (C) - 6							
T2	147.583 - 130	7/8	4'27/32"	3'11-11/32"	151.5 K=0.70	0.601	-0.150	5.917	0.025 [1]
T3	130 - 110	7/8	4'6-5/32"	4'4-5/32"	166.9 K=0.70	0.601	-1.750	4.878	0.359 [1]
T4	110 - 100	L3x3x3/16	5'	4'5"	104.5 K=1.17	1.090	-0.827	25.343	0.033 [1]
T5	100 - 80	L3x3x3/16	6'	4'7"	106.1 K=1.15	1.090	-7.787	24.936	0.312 [1]
T6	80 - 60	L3x3x3/16	8'	6'7"	132.6 K=1.00	1.090	-7.917	17.757	0.446 [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 $\frac{P_u}{\phi P_n}$
T2	147.583 - 130	7/8	4'5-29/32"	4'4-13/32"	167.7 K=0.70	0.601	-1.644	4.831	0.340 [1]
T3	130 - 110	7/8	4'11-13/16"	4'9-13/16"	185.0 K=0.70	0.601	-1.889	3.967	0.476 [1]

[1] P_u / ϕP_n controls

Mid 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 $\frac{P_u}{\phi P_n}$
T5	100 - 80	L3x3x3/16	7'	6'	120.5 K=1.00	1.090	-11.094	21.189	0.524 [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	150 - 147.583	1 1/2	2'5"	2'5"	77.3	1.767	0.796	79.522	0.010 [1] ✔
T2	147.583 - 130	1 1/2	17'7-1/32"	4"	10.7	1.767	28.333	79.522	0.356 [1] ✔
T3	130 - 110	2	20'1/32"	7"	14.0	3.142	75.040	141.372	0.531 [1] ✔
T4	110 - 100	Pirod 105244	10'7/32"	10'7/32"	45.4	3.682	78.314	165.670	0.473 [1] ✔
T5	100 - 80	Pirod 105216	20'13/32"	10'7/32"	45.4	3.682	114.036	165.670	0.688 [1] ✔
T6	80 - 60	Pirod 105217	20'13/32"	10'7/32"	37.8	5.301	162.862	238.565	0.683 [1] ✔
T7	60 - 40	Pirod 105218	20'13/32"	10'7/32"	32.4	7.216	200.406	324.713	0.617 [1] ✔
T8	40 - 20	Pirod 105218	20'13/32"	10'7/32"	32.4	7.216	235.730	324.713	0.726 [1] ✔
T9	20 - 0	Pirod 105219	20'13/32"	10'7/32"	28.4	9.425	267.754	424.115	0.631 [1] ✔

[1] P_u / ϕP_n controls

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	ϕP_n K	A in^2	V_u K	ϕV_n K	Stress Ratio
T4	110 - 100	0.5	1'5-25/32"	121.0	165.670	0.196	0.650	3.389	0.193 ✔
T5	100 - 80	0.5	1'5-25/32"	121.0	165.670	0.196	1.324	3.292	0.403 ✔
T6	80 - 60	0.5	1'5-21/32"	120.0	238.565	0.196	0.753	3.335	0.227 ✔
T7	60 - 40	0.5	1'5-1/2"	119.0	324.713	0.196	0.371	3.378	0.111 ✔

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	ϕP_n K	A in^2	V_u K	ϕV_n K	Stress Ratio
T8	40 - 20	0.5	1'5-1/2"	119.0	324.713	0.196	0.493	3.378	0.146 ✔
T9	20 - 0	0.625	1'5-11/32"	94.4	424.115	0.307	1.116	6.958	0.161 ✔

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	150 - 147.583	3/4	3'1-7/8"	3'23/32"	195.8	0.442	1.294	19.880	0.065 [1] ✔
T2	147.583 - 130	3/4	5'7/8"	2'5-25/32"	158.9	0.442	3.762	19.880	0.189 [1] ✔
T3	130 - 110	7/8	5'5-29/32"	2'8-1/32"	146.4	0.601	5.386	27.059	0.199 [1] ✔
T4	110 - 100	L2 1/2x2 1/2x3/16	11'5"	4'11-25/32"	80.1	0.518	8.204	22.546	0.364 [1] ✔
T5	100 - 80	L2 1/2x2 1/2x3/8	12'6-1/32"	5'7-17/32"	93.0	0.981	13.962	42.678	0.327 [1] ✔
T6	80 - 60	L3x3x3/16	13'9-9/16"	6'3-15/16"	83.5	0.659	8.349	28.679	0.291 [1] ✔
T7	60 - 40	L3x3x3/16	14'6-1/32"	6'8-23/32"	88.6	0.659	8.183	28.679	0.285 [1] ✔
T8	40 - 20	L3x3x5/16	16'1/8"	7'5-15/16"	100.3	1.071	8.642	46.603	0.185 [1] ✔
T9	20 - 0	L3x3x5/16	18'5-3/8"	8'8-1/8"	116.2	1.013	10.252	44.054	0.233 [1] ✔

[1] P_u / ϕP_n controls

Horizontal 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 $\frac{P_u}{\phi P_n}$
T2	147.583 - 130	7/8	4'4-7/16"	4'2-15/16"	232.9	0.601	0.671	27.059	0.025 [1] ✔
T3	130 - 110	3/4	4'6-7/8"	4'4-7/8"	281.9	0.442	1.124	19.880	0.057 [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 $\frac{P_u}{\phi P_n}$
T1	150 - 147.583	5x1/2	4'	2'10-7/8"	241.6	2.500	0.918	81.000	0.011 [1] ✔
T2	147.583 - 130	7/8	4'27/32"	3'11-11/32"	216.5	0.601	0.197	27.059	0.007 [1] ✔
T3	130 - 110	7/8	4'6-5/32"	4'4-5/32"	238.4	0.601	1.767	27.059	0.065 [1] ✔
T4	110 - 100	L3x3x3/16	5'	4'5"	61.8	0.659	1.223	28.679	0.043 [1] ✔
T5	100 - 80	L3x3x3/16	6'	4'7"	63.9	0.659	9.601	28.679	0.335 [1] ✔
T6	80 - 60	L3x3x3/16	8'	6'7"	89.5	0.659	9.552	28.679	0.333 [1] ✔

[1] P_u / ϕP_n controls

Bottom 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 $\frac{P_u}{\phi P_n}$
T2	147.583 - 130	7/8	4'5-29/32"	4'4-13/32"	239.5	0.601	1.787	27.059	0.066 [1] ✔
T3	130 - 110	7/8	4'11-13/16"	4'9-13/16"	264.3	0.601	2.027	27.059	0.075 [1] ✔

[1] P_u / ϕP_n controls

Mid 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 $\frac{P_u}{\phi P_n}$
T5	100 - 80	L3x3x3/16	7'	6'	76.7	1.090	13.588	35.316	0.385 [1] ✔

[1] P_u / ϕP_n controls

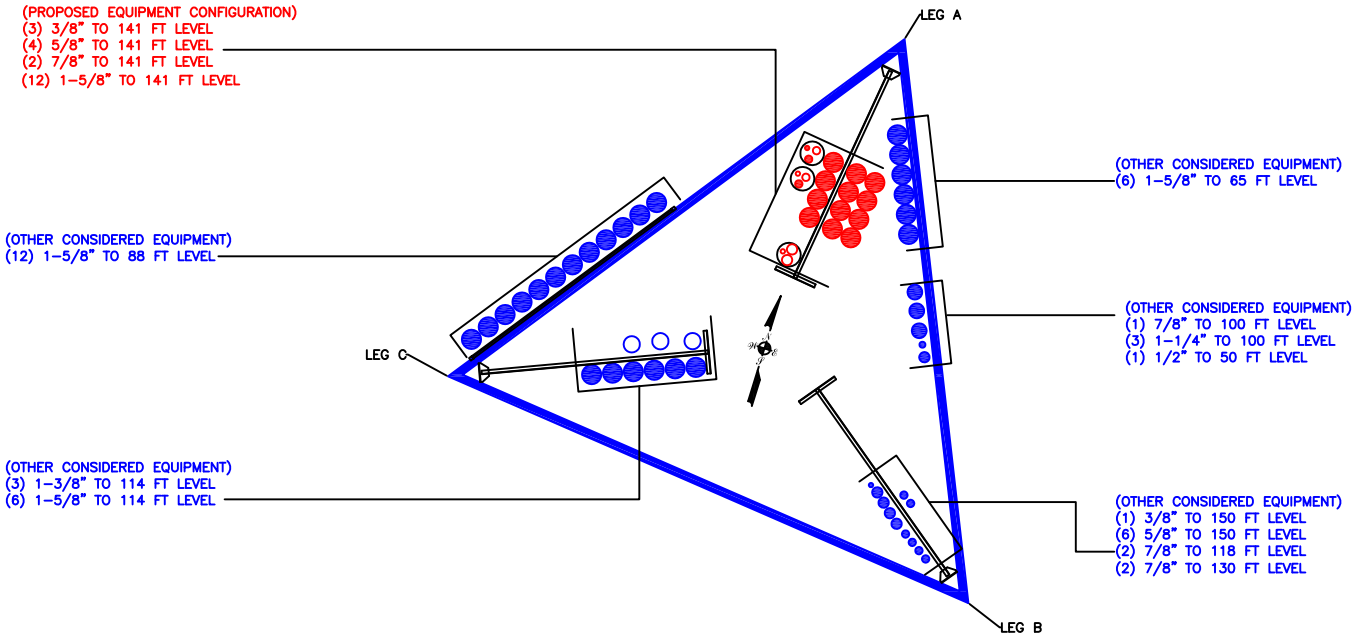
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	150 - 147.583	Leg	1 1/2	1	-3.839	53.917	7.1	Pass
T2	147.583 - 130	Leg	1 1/2	15	-31.140	53.917	57.8	Pass
T3	130 - 110	Leg	2	72	-80.690	117.290	68.8	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T4	110 - 100	Leg	Pirod 105244	136	-87.182	149.618	58.3	Pass
T5	100 - 80	Leg	Pirod 105216	148	-128.297	149.618	85.8	Pass
T6	80 - 60	Leg	Pirod 105217	169	-185.946	225.602	82.4	Pass
T7	60 - 40	Leg	Pirod 105218	187	-227.732	315.715	72.1	Pass
T8	40 - 20	Leg	Pirod 105218	202	-267.250	315.715	84.6	Pass
T9	20 - 0	Leg	Pirod 105219	217	-303.719	419.861	72.3	Pass
T1	150 - 147.583	Diagonal	3/4	11	-1.345	5.577	24.1	Pass
T2	147.583 - 130	Diagonal	3/4	26	-3.774	5.123	73.7	Pass
T3	130 - 110	Diagonal	7/8	80	-5.512	8.211	67.1	Pass
T4	110 - 100	Diagonal	L2 1/2x2 1/2x3/16	142	-9.620	18.455	52.1 73.3 (b)	Pass
T5	100 - 80	Diagonal	L2 1/2x2 1/2x3/8	157	-16.538	27.043	61.2 62.4 (b)	Pass
T6	80 - 60	Diagonal	L3x3x3/16	177	-8.282	20.182	41.0 68.1 (b)	Pass
T7	60 - 40	Diagonal	L3x3x3/16	193	-8.216	16.112	51.0 66.7 (b)	Pass
T8	40 - 20	Diagonal	L3x3x5/16	208	-8.884	20.744	42.8	Pass
T9	20 - 0	Diagonal	L3x3x5/16	223	-11.088	17.119	64.8	Pass
T2	147.583 - 130	Horizontal	7/8	35	-0.401	5.364	7.5	Pass
T3	130 - 110	Horizontal	3/4	127	-0.965	2.691	35.9	Pass
T1	150 - 147.583	Top Girt	5x1/2	6	-0.934	10.158	9.2	Pass
T2	147.583 - 130	Top Girt	7/8	17	-0.150	6.213	2.4	Pass
T3	130 - 110	Top Girt	7/8	74	-1.750	5.122	34.2	Pass
T4	110 - 100	Top Girt	L3x3x3/16	137	1.223	30.113	4.1 10.0 (b)	Pass
T5	100 - 80	Top Girt	L3x3x3/16	150	9.601	30.113	31.9 78.3 (b)	Pass
T6	80 - 60	Top Girt	L3x3x3/16	170	-7.917	18.645	42.5 77.9 (b)	Pass
T2	147.583 - 130	Bottom Girt	7/8	19	-1.644	5.073	32.4	Pass
T3	130 - 110	Bottom Girt	7/8	76	-1.889	4.166	45.4	Pass
T5	100 - 80	Mid Girt	L3x3x3/16	152	-11.094	22.249	49.9	Pass
							Summary	
						Leg (T5)	85.8	Pass
						Diagonal (T2)	73.7	Pass
						Horizontal (T3)	35.9	Pass
						Top Girt (T5)	78.3	Pass
						Bottom Girt (T3)	45.4	Pass
						Mid Girt (T5)	49.9	Pass
						Bolt Checks	78.3	Pass
						RATING =	**85.8**	**Pass**

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 842870

APPENDIX C

ADDITIONAL CALCULATIONS

CCIplate

Project Information

BU #	842870
Site Name	MILFORD, CT
Order #	467605 Rev# 4

Tower Information

Tower Type	Self Support
TIA-222 Rev	H

☑ Apply TIA-222-H Section 15.5

Applied Loads

	Comp.	Uplift
Axial (k)	0.00	277.00
Shear (k)	0.00	29.00

Anchor Rod Data

Quantity:	6	
Diameter (in):	1.25	
Material Grade:	A687	Fy=105 ksi Fu=125 ksi
Grout Considered:	Yes	Not Considered, lar<=1(d)
l_{ar} (in):	0	
Eta Factor, η:	0.55	
Thread Type:	N-Included	
Configuration:	Symmetrical	

Anchor Rod Results

Axial, Pu_t (kips)	46.17
Shear, Vu (kips)	4.83
Moment, Mu (kip-in)	-
Axial Cap., φPn_t (kips)	90.84
Shear Cap., ϕVn (kips)	57.52
Moment Cap., ϕMn (kip-in)	-
Stress Rating	25.3%

Pass

SST Unit Base Foundation

BU # :	842870
Site Name:	MILFORD, CT
App. Number:	467605 Rev# 4
TIA-222 Revision:	H

Top & Bot. Pad Rein. Different?:	☐
Tower Centroid Offset?:	☑
Block Foundation?:	☐

Superstructure Analysis Reactions

Global Moment, **M**:	4108	ft-kips
Global Axial, **P**:	54	kips
Global Shear, **V**:	49	kips
Leg Compression, $\mathbf{P_{comp}}$:	315	kips
Leg Comp. Shear, $\mathbf{V_{u\_comp}}$:	32	kips
Leg Uplift, $\mathbf{P_{uplift}}$:	277	kips
Leg Uplift. Shear, $\mathbf{V_{u\_uplift}}$:	29	kips
Tower Height, **H**:	150	ft
Base Face Width, **BW**:	16	ft
BP Dist. Above Fdn, $\mathbf{bp_{dist}}$:	4.75	in

Foundation Analysis Checks

	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	493.80	49.00	**9.5%**	**Pass**
Bearing Pressure (ksf)	9.00	1.91	**20.2%**	**Pass**
*Overturning (kip*ft)*	10416.75	4612.14	**44.3%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	1670.32	104.00	**5.9%**	**Pass**
*Pier Flexure (Tension) (kip*ft)*	828.10	94.25	**10.8%**	**Pass**
Pier Compression (kip)	7592.08	324.30	**4.1%**	**Pass**
*Pad Flexure (kip*ft)*	10017.30	477.19	**4.5%**	**Pass**
Pad Shear - 1-way (kips)	1172.32	78.72	**6.4%**	**Pass**
Pad Shear - Comp 2-way (ksi)	0.164	0.028	**16.0%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	9194.09	62.40	**0.6%**	**Pass**
Pad Shear - Tension 2-way (ksi)	0.164	0.026	**15.0%**	**Pass**
*Flexural 2-way (Tension) (kip*ft)*	9194.09	56.55	**0.6%**	**Pass**

**Rating per TIA-222-H Section 15.5*

Soil Rating*:	**44.3%**
Structural Rating*:	**16.0%**

Pier Properties

Pier Shape:	Circular	
Pier Diameter, **dpier**:	4.5	ft
Ext. Above Grade, **E**:	0.50	ft
Pier Rebar Size, **Sc**:	8	
Pier Rebar Quantity, **mc**:	16	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	7	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, $\mathbf{cc_{pier}}$:	3	in

Pad Properties

Depth, **D**:	6.50	ft
Pad Width, **W**:	29.50	ft
Pad Thickness, **T**:	3.75	ft
Pad Rebar Size (Bottom), **Sp**:	9	
Pad Rebar Quantity (Bottom), **mp**:	58	
Pad Clear Cover, $\mathbf{cc_{pad}}$:	3	in

Material Properties

Rebar Grade, **Fy**:	60	ksi
Concrete Compressive Strength, **F'c**:	3	ksi
Dry Concrete Density, δ**c**:	150	pcf

Soil Properties

Total Soil Unit Weight, γ:	125	pcf
Ultimate Gross Bearing, Qult:	12.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:	34	degrees
SPT Blow Count, $\mathbf{N_{blows}}$:		
Base Friction, μ:	0.6	
Neglected Depth, **N**:	3.3	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	7	ft

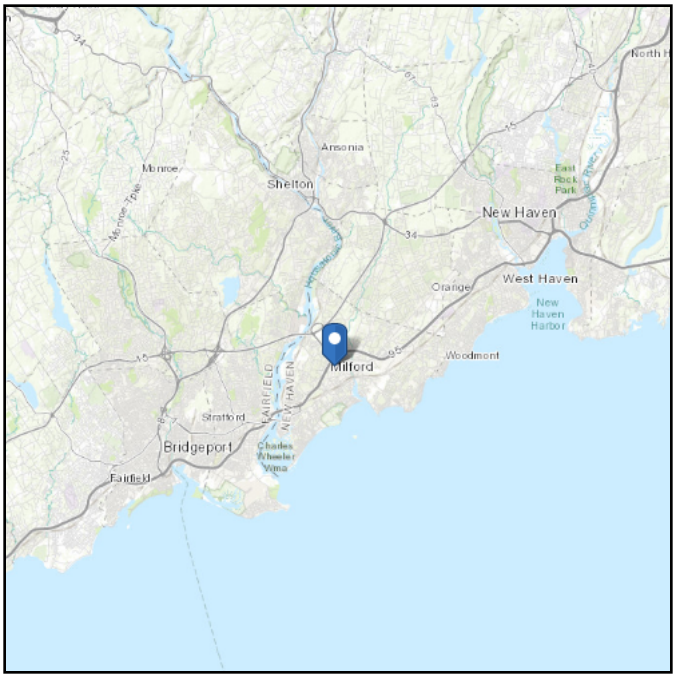
<-- Toggle between Gross and Net

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 68.18 ft (NAVD 88)
Latitude: 41.228525
Longitude: -73.070131



Seismic

Site Soil Class: D - Stiff Soil

Results:

S_S :	0.195	S_{DS} :	0.209
S_1 :	0.063	S_{D1} :	0.101
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.104
S_{MS} :	0.313	PGA_M :	0.166
S_{M1} :	0.151	F_{PGA} :	1.592
		I_e :	1

Seismic Design Category B

Data Accessed: Thu Dec 19 2019

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

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Thu Dec 19 2019

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

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

EXHIBIT 4

December 2, 2019
December 10, 2019 (Rev. 1)

CENTERLINE COMMUNICATIONS at&t

Centerline Communications
750 West Center Street, Suite #301
West Bridgewater, MA 02379

RE:		
	Site Number:	CT5099 (LTE 5C/6C)
	FA Number:	10071130
	PACE Number:	MRCTB032140
	PT Number:	2051A0GKKW
	Site Name:	MILFORD
	Site Address:	434 Boston Post Road Milford, CT 06460

To Whom It May Concern:

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

- (3) 7770 Antennas (55.0"x11.0"x5.0" - Wt. = 35 lbs. /each)
- (3) OPA-65R-LCUU-H4 Antennas (48.0"x14.4"x7.3"– Wt. = 57 lbs. /each)
- (3) SBNHH-1D65A Antennas (55.6"x11.9"x7.1" - Wt. = 34 lbs. /each)
- (3) RRUS-32 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) RRUS-11 RRH's (19.7"x17.0"x7.2" – Wt. = 51 lbs. /each)
- (2) LGP21401 TMA's (14.4"x9.0"x2.7" – Wt. = 19 lbs. /each)
- (2) TT19-08BP111-001 TMA's (9.9"x6.7"x5.4" - Wt. = 16 lbs. /each)
- (4) 800 MHz Filter (15.2"x9.7"x8.2" – Wt. = 53 lbs. /each)
- (12) APTDC-BDFDM-DB Surge Arrestors (3.5"x3.5"x1.7" – Wt. = 2 lbs. /each)
- (2) Squid Surge Arrestors (24.0"x9.7" Φ – Wt. = 33 lbs. /each)
- **(3) 800-10964 Antennas (59.0"x20.0"x6.9" – Wt. = 95 lbs. /each)**
- **(3) B14 4478 RRH's (18.1"x13.4"x8.3" – Wt. = 60 lbs. /each)**
- **(3) 4478 B5 RRH's (18.1"x13.4"x8.3" – Wt. = 60 lbs. /each)**
- **(3) 4426 B66 RRH's (14.9"x13.2"x5.8" – Wt. = 49 lbs. /each)**
- **(1) Squid Surge Arrestor (24.0"x9.7" Φ – Wt. = 33 lbs.)**

**Proposed equipment shown in bold*

Mount fabrication drawings prepared by SitePro1 P/N 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 1.16 in was used for this analysis.
- HDG considers this site to be exposure category B; tower is located in an urban/suburban or wooded area with numerous closely spaced obstructions.
- HDG considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- The mount has been analyzed with load combinations consisting of 250 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 3.
- The mount has been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.

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

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Proposed (LTE 5C/6C) Mount Rating	96	LC42	59%	**PASS**

Reference Documents:

- Fabrication drawings prepared by SitePro1 P/N 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.











p: 978.557.5553 f: 978.336.5586 a: 45 Beechwood Drive, N. Andover, MA 01845
p: 203.208.3919 f: 203.234.6398 a: 110 Washington Avenue, 4th Floor, North Haven CT 06473

HUDSON
Design Group LLC

Wind & Ice
Calculations

Date: 12/10/2019
Project Name: MILFORD
Project No.: CT5099
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=	141 (ft)
	z_g=	1200 (ft)
K_z= 1.090	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}= #DIV/0!

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

Category= 1

K_h=	#DIV/0!	
K_c=	0.9	(from Table 2-4)
K_t=	0	(from Table 2-5)
f=	0	(from Table 2-5)
z=	141	
z_s=	70	(Mean elevation of base of structure above sea level)
H=	0	(Ht. of the crest above surrounding terrain)
K_{zt}=	1.00	(from 2.6.6.2.1)
K_e=	1.00	(from 2.6.8)

2.6.10 Design Ice Thickness

Max Ice Thickness =	t_i =	1.00 in
Importance Factor =	I=	1.0 (from Table 2-3)
	K_{iz} =	1.16 (from Sec. 2.6.10)

$t_{iz} = t_i * I * K_{iz} * (K_{zt})^{0.35}$ t_{iz} = 1.16 in

Date: 12/10/2019
Project Name: MILFORD
Project No.: CT5099
Designed By: RL Checked By: MSC

HUDSON Design Group LLC

2.6.9 Gust Effect Factor

2.6.9.1 Self Supporting Lattice Structures

G_h = 1.0 Latticed Structures > 600 ft

G_h = 0.85 Latticed Structures 450 ft or less

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

h=	150	G_h=	0.85

2.6.9.2 Guyed Masts G_h= 0.85

2.6.9.3 Pole Structures G_h= 1.1

2.6.9 Appurtenances G_h= 1.0

2.6.9.4 Structures Supported on Other Structures

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

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

2.6.11.2 Design Wind Force on Appurtenances

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

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

		K_z=	1.090	(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=	**36.97**	K_e=	1.00	(from 2.6.8)
$q_{z\,(ice)}$=	**5.92**	K_d=	0.85	(from Table 2-2)
$q_{z\,(30)}$=	**2.13**	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: 12/10/2019
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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 = **1.16** in **Angle = 0 (deg)** **Equivalent Angle = 180 (deg)**

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)	Force (lbs) (30 mph)
7770 Antenna	55.0	11.0	5.0	4.20	5.00	1.31	204	41	12
OPA-65R-LCUU-H4 Antenna	48.0	14.4	7.3	4.80	3.33	1.24	220	43	13
800-10964 Antenna	59.0	20.0	6.9	8.19	2.95	1.22	370	69	21
SBNHH-1D65A Antenna	55.6	11.9	7.1	4.59	4.67	1.30	220	44	13
RRUS-32 RRH	27.2	12.1	7.0	2.29	2.25	1.20	101	21	6
RRUS-11 RRH	19.7	17.0	7.2	2.33	1.16	1.20	103	21	6
B14 4478 RRH	18.1	8.3	13.4	1.04	2.18	1.20	46	11	3
4478 B5 RRH	18.1	8.3	13.4	1.04	2.18	1.20	46	11	3
4426 B66 RRH	14.9	13.2	5.8	1.37	1.13	1.20	61	13	3
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	2.25	1.20	101	21	6
800 MHz Filter	15.2	9.7	8.2	1.02	1.57	1.20	45	10	3
LGP21401 TMA	14.4	2.7	9.0	0.27	5.33	1.33	13	5	1
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	1.83	1.20	16	5	1
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	42	9	2
PL 3-1/2x5/8	3.5	0.5		0.01	7.00	1.20	1	1	0
PL 11-1/4x5/8	11.3	0.5		0.04	22.50	1.20	2	2	0
5/8" Round Bar	0.6	12.0		0.05	0.05	1.20	2	2	0
3/4" Round Bar	0.8	12.0		0.06	0.06	1.20	3	2	0
2" Pipe	2.4	12.0		0.20	0.20	1.20	9	3	1
2-1/2" Pipe	2.9	12.0		0.24	0.24	1.20	11	4	1

Date: 12/10/2019
Project Name: MILFORD
Project No.: CT5099
Designed By: RL Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	30	(deg)	Ice Thickness =	1.16	in.	Equivalent Angle =	210	(deg)

WIND LOADS WITH NO ICE: 195.7111

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	204	108	180
OPA-65R-LCUU-H4 Antenna	48.0	14.4	7.3	4.80	2.43	3.33	6.58	1.24	1.38	220	124	196
800-10964 Antenna	59.0	20.0	6.9	8.19	2.83	2.95	8.55	1.22	1.45	370	152	315
SBNHH-1D65A Antenna	55.6	11.9	7.1	4.59	2.74	4.67	7.83	1.30	1.43	220	145	201
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	101	62	91
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	103	44	88
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	46	75	53
4478 B5 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	46	75	53
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	61	27	52
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	101	62	91
800 MHz Filter	15.2	9.7	8.2	1.02	0.87	1.57	1.85	1.20	1.20	45	38	44
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	13	40	20
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	16	20	17
WIND LOADS WITH ICE:												
7770 Antenna	57.3	13.3	7.3	5.30	2.91	4.31	7.84	1.28	1.43	40	25	36
OPA-65R-LCUU-H4 Antenna	50.3	16.7	9.6	5.84	3.36	3.01	5.23	1.22	1.32	42	26	38
800-10964 Antenna	61.3	22.3	9.2	9.50	3.92	2.75	6.66	1.21	1.38	68	32	59
SBNHH-1D65A Antenna	57.9	14.2	9.4	5.72	3.79	4.07	6.15	1.27	1.36	43	31	40
RRUS-32 RRH	29.5	14.4	9.3	2.95	1.91	2.05	3.17	1.20	1.23	21	14	19
RRUS-11 RRH	22.0	19.3	9.5	2.95	1.45	1.14	2.31	1.20	1.20	21	10	18
B14 4478 RRH	20.4	10.6	15.7	1.50	2.23	1.92	1.30	1.20	1.20	11	16	12
4478 B5 RRH	20.4	10.6	15.7	1.50	2.23	1.92	1.30	1.20	1.20	11	16	12
4426 B66 RRH	17.2	15.5	8.1	1.85	0.97	1.11	2.12	1.20	1.20	13	7	12
RRUS-32 B2 RRH	29.5	14.4	9.3	2.95	1.91	2.05	3.17	1.20	1.23	21	14	19
800 MHz Filter	17.5	12.0	10.5	1.46	1.28	1.46	1.67	1.20	1.20	10	9	10
LGP21401 TMA	16.7	5.0	11.3	0.58	1.31	3.33	1.48	1.24	1.20	4	9	6
TT19-08BP111-001 TMA	12.2	7.7	9.0	0.65	0.76	1.58	1.36	1.20	1.20	5	5	5
WIND LOADS AT 30 MPH:												
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	12	6	10
OPA-65R-LCUU-H4 Antenna	48.0	14.4	7.3	4.80	2.43	3.33	6.58	1.24	1.38	13	7	11
800-10964 Antenna	59.0	20.0	6.9	8.19	2.83	2.95	8.55	1.22	1.45	21	9	18
SBNHH-1D65A Antenna	55.6	11.9	7.1	4.59	2.74	4.67	7.83	1.30	1.43	13	8	12
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	5
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	6	3	5
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	4	3
4478 B5 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	4	3
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	3	2	3
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	5
800 MHz Filter	15.2	9.7	8.2	1.02	0.87	1.57	1.85	1.20	1.20	3	2	3
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	2	1
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	1	1	1

Date: 12/10/2019
Project Name: MILFORD
Project No.: CT5099
Designed By: RL Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	60	(deg)	Ice Thickness =	1.16	in.	Equivalent Angle =	240	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	204	108	132
OPA-65R-LCUU-H4 Antenna	48.0	14.4	7.3	4.80	2.43	3.33	6.58	1.24	1.38	220	124	148
800-10964 Antenna	59.0	20.0	6.9	8.19	2.83	2.95	8.55	1.22	1.45	370	152	206
SBNHH-1D65A Antenna	55.6	11.9	7.1	4.59	2.74	4.67	7.83	1.30	1.43	220	145	164
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	101	62	72
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	103	44	59
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	46	75	68
4478 B5 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	46	75	68
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	61	27	35
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	101	62	72
800 MHz Filter	15.2	9.7	8.2	1.02	0.87	1.57	1.85	1.20	1.20	45	38	40
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	13	40	33
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	16	20	19

WIND LOADS WITH ICE:

7770 Antenna	57.3	13.3	7.3	5.30	2.91	4.31	7.84	1.28	1.43	40	25	28
OPA-65R-LCUU-H4 Antenna	50.3	16.7	9.6	5.84	3.36	3.01	5.23	1.22	1.32	42	26	30
800-10964 Antenna	61.3	22.3	9.2	9.50	3.92	2.75	6.66	1.21	1.38	68	32	41
SBNHH-1D65A Antenna	57.9	14.2	9.4	5.72	3.79	4.07	6.15	1.27	1.36	43	31	34
RRUS-32 RRH	29.5	14.4	9.3	2.95	1.91	2.05	3.17	1.20	1.23	21	14	16
RRUS-11 RRH	22.0	19.3	9.5	2.95	1.45	1.14	2.31	1.20	1.20	21	10	13
B14 4478 RRH	20.4	10.6	15.7	1.50	2.23	1.92	1.30	1.20	1.20	11	16	15
4478 B5 RRH	20.4	10.6	15.7	1.50	2.23	1.92	1.30	1.20	1.20	11	16	15
4426 B66 RRH	17.2	15.5	8.1	1.85	0.97	1.11	2.12	1.20	1.20	13	7	8
RRUS-32 B2 RRH	29.5	14.4	9.3	2.95	1.91	2.05	3.17	1.20	1.23	21	14	16
800 MHz Filter	17.5	12.0	10.5	1.46	1.28	1.46	1.67	1.20	1.20	10	9	9
LGP21401 TMA	16.7	5.0	11.3	0.58	1.31	3.33	1.48	1.24	1.20	4	9	8
TT19-08BP111-001 TMA	12.2	7.7	9.0	0.65	0.76	1.58	1.36	1.20	1.20	5	5	5

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	12	6	8
OPA-65R-LCUU-H4 Antenna	48.0	14.4	7.3	4.80	2.43	3.33	6.58	1.24	1.38	13	7	9
800-10964 Antenna	59.0	20.0	6.9	8.19	2.83	2.95	8.55	1.22	1.45	21	9	12
SBNHH-1D65A Antenna	55.6	11.9	7.1	4.59	2.74	4.67	7.83	1.30	1.43	13	8	9
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	4
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	6	3	3
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	4	4
4478 B5 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	4	4
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	3	2	2
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	4
800 MHz Filter	15.2	9.7	8.2	1.02	0.87	1.57	1.85	1.20	1.20	3	2	2
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	2	2
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	1	1	1

Date: 12/10/2019
Project Name: MILFORD
Project No.: CT5099
Designed By: RL Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	90	(deg)	Ice Thickness =	1.16	in.	Equivalent Angle =	270	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	204	108	108
OPA-65R-LCUU-H4 Antenna	48.0	14.4	7.3	4.80	2.43	3.33	6.58	1.24	1.38	220	124	124
800-10964 Antenna	59.0	20.0	6.9	8.19	2.83	2.95	8.55	1.22	1.45	370	152	152
SBNHH-1D65A Antenna	55.6	11.9	7.1	4.59	2.74	4.67	7.83	1.30	1.43	220	145	145
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	101	62	62
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	103	44	44
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	46	75	75
4478 B5 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	46	75	75
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	61	27	27
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	101	62	62
800 MHz Filter	15.2	9.7	8.2	1.02	0.87	1.57	1.85	1.20	1.20	45	38	38
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	13	40	40
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	16	20	20

WIND LOADS WITH ICE:

7770 Antenna	57.3	13.3	7.3	5.30	2.91	4.31	7.84	1.28	1.43	40	25	25
OPA-65R-LCUU-H4 Antenna	50.3	16.7	9.6	5.84	3.36	3.01	5.23	1.22	1.32	42	26	26
800-10964 Antenna	61.3	22.3	9.2	9.50	3.92	2.75	6.66	1.21	1.38	68	32	32
SBNHH-1D65A Antenna	57.9	14.2	9.4	5.72	3.79	4.07	6.15	1.27	1.36	43	31	31
RRUS-32 RRH	29.5	14.4	9.3	2.95	1.91	2.05	3.17	1.20	1.23	21	14	14
RRUS-11 RRH	22.0	19.3	9.5	2.95	1.45	1.14	2.31	1.20	1.20	21	10	10
B14 4478 RRH	20.4	10.6	15.7	1.50	2.23	1.92	1.30	1.20	1.20	11	16	16
4478 B5 RRH	20.4	10.6	15.7	1.50	2.23	1.92	1.30	1.20	1.20	11	16	16
4426 B66 RRH	17.2	15.5	8.1	1.85	0.97	1.11	2.12	1.20	1.20	13	7	7
RRUS-32 B2 RRH	29.5	14.4	9.3	2.95	1.91	2.05	3.17	1.20	1.23	21	14	14
800 MHz Filter	17.5	12.0	10.5	1.46	1.28	1.46	1.67	1.20	1.20	10	9	9
LGP21401 TMA	16.7	5.0	11.3	0.58	1.31	3.33	1.48	1.24	1.20	4	9	9
TT19-08BP111-001 TMA	12.2	7.7	9.0	0.65	0.76	1.58	1.36	1.20	1.20	5	5	5

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	12	6	6
OPA-65R-LCUU-H4 Antenna	48.0	14.4	7.3	4.80	2.43	3.33	6.58	1.24	1.38	13	7	7
800-10964 Antenna	59.0	20.0	6.9	8.19	2.83	2.95	8.55	1.22	1.45	21	9	9
SBNHH-1D65A Antenna	55.6	11.9	7.1	4.59	2.74	4.67	7.83	1.30	1.43	13	8	8
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	4
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	6	3	3
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	4	4
4478 B5 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	4	4
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	3	2	2
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	4
800 MHz Filter	15.2	9.7	8.2	1.02	0.87	1.57	1.85	1.20	1.20	3	2	2
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	2	2
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	1	1	1

Date: 12/10/2019
Project Name: MILFORD
Project No.: CT5099
Designed By: RL Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	120	(deg)	Ice Thickness =	1.16	in.	Equivalent Angle =	300	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	204	108	132
OPA-65R-LCUU-H4 Antenna	48.0	14.4	7.3	4.80	2.43	3.33	6.58	1.24	1.38	220	124	148
800-10964 Antenna	59.0	20.0	6.9	8.19	2.83	2.95	8.55	1.22	1.45	370	152	206
SBNHH-1D65A Antenna	55.6	11.9	7.1	4.59	2.74	4.67	7.83	1.30	1.43	220	145	164
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	101	62	72
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	103	44	59
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	46	75	68
4478 B5 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	46	75	68
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	61	27	35
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	101	62	72
800 MHz Filter	15.2	9.7	8.2	1.02	0.87	1.57	1.85	1.20	1.20	45	38	40
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	13	40	33
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	16	20	19

WIND LOADS WITH ICE:

7770 Antenna	57.3	13.3	7.3	5.30	2.91	4.31	7.84	1.28	1.43	40	25	28
OPA-65R-LCUU-H4 Antenna	50.3	16.7	9.6	5.84	3.36	3.01	5.23	1.22	1.32	42	26	30
800-10964 Antenna	61.3	22.3	9.2	9.50	3.92	2.75	6.66	1.21	1.38	68	32	41
SBNHH-1D65A Antenna	57.9	14.2	9.4	5.72	3.79	4.07	6.15	1.27	1.36	43	31	34
RRUS-32 RRH	29.5	14.4	9.3	2.95	1.91	2.05	3.17	1.20	1.23	21	14	16
RRUS-11 RRH	22.0	19.3	9.5	2.95	1.45	1.14	2.31	1.20	1.20	21	10	13
B14 4478 RRH	20.4	10.6	15.7	1.50	2.23	1.92	1.30	1.20	1.20	11	16	15
4478 B5 RRH	20.4	10.6	15.7	1.50	2.23	1.92	1.30	1.20	1.20	11	16	15
4426 B66 RRH	17.2	15.5	8.1	1.85	0.97	1.11	2.12	1.20	1.20	13	7	8
RRUS-32 B2 RRH	29.5	14.4	9.3	2.95	1.91	2.05	3.17	1.20	1.23	21	14	16
800 MHz Filter	17.5	12.0	10.5	1.46	1.28	1.46	1.67	1.20	1.20	10	9	9
LGP21401 TMA	16.7	5.0	11.3	0.58	1.31	3.33	1.48	1.24	1.20	4	9	8
TT19-08BP111-001 TMA	12.2	7.7	9.0	0.65	0.76	1.58	1.36	1.20	1.20	5	5	5

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	12	6	8
OPA-65R-LCUU-H4 Antenna	48.0	14.4	7.3	4.80	2.43	3.33	6.58	1.24	1.38	13	7	9
800-10964 Antenna	59.0	20.0	6.9	8.19	2.83	2.95	8.55	1.22	1.45	21	9	12
SBNHH-1D65A Antenna	55.6	11.9	7.1	4.59	2.74	4.67	7.83	1.30	1.43	13	8	9
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	4
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	6	3	3
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	4	4
4478 B5 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	4	4
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	3	2	2
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	4
800 MHz Filter	15.2	9.7	8.2	1.02	0.87	1.57	1.85	1.20	1.20	3	2	2
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	2	2
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	1	1	1

Date: 12/10/2019
Project Name: MILFORD
Project No.: CT5099
Designed By: RL Checked By: MSC

HUDSON Design Group LLC

WIND LOADS

Angle =	150	(deg)	Ice Thickness =	1.16	in.	Equivalent Angle =	330	(deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	204	108	180
OPA-65R-LCUU-H4 Antenna	48.0	14.4	7.3	4.80	2.43	3.33	6.58	1.24	1.38	220	124	196
800-10964 Antenna	59.0	20.0	6.9	8.19	2.83	2.95	8.55	1.22	1.45	370	152	315
SBNHH-1D65A Antenna	55.6	11.9	7.1	4.59	2.74	4.67	7.83	1.30	1.43	220	145	201
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	101	62	91
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	103	44	88
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	46	75	53
4478 B5 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	46	75	53
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	61	27	52
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	101	62	91
800 MHz Filter	15.2	9.7	8.2	1.02	0.87	1.57	1.85	1.20	1.20	45	38	44
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	13	40	20
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	16	20	17

WIND LOADS WITH ICE:

7770 Antenna	57.3	13.3	7.3	5.30	2.91	4.31	7.84	1.28	1.43	40	25	36
OPA-65R-LCUU-H4 Antenna	50.3	16.7	9.6	5.84	3.36	3.01	5.23	1.22	1.32	42	26	38
800-10964 Antenna	61.3	22.3	9.2	9.50	3.92	2.75	6.66	1.21	1.38	68	32	59
SBNHH-1D65A Antenna	57.9	14.2	9.4	5.72	3.79	4.07	6.15	1.27	1.36	43	31	40
RRUS-32 RRH	29.5	14.4	9.3	2.95	1.91	2.05	3.17	1.20	1.23	21	14	19
RRUS-11 RRH	22.0	19.3	9.5	2.95	1.45	1.14	2.31	1.20	1.20	21	10	18
B14 4478 RRH	20.4	10.6	15.7	1.50	2.23	1.92	1.30	1.20	1.20	11	16	12
4478 B5 RRH	20.4	10.6	15.7	1.50	2.23	1.92	1.30	1.20	1.20	11	16	12
4426 B66 RRH	17.2	15.5	8.1	1.85	0.97	1.11	2.12	1.20	1.20	13	7	12
RRUS-32 B2 RRH	29.5	14.4	9.3	2.95	1.91	2.05	3.17	1.20	1.23	21	14	19
800 MHz Filter	17.5	12.0	10.5	1.46	1.28	1.46	1.67	1.20	1.20	10	9	10
LGP21401 TMA	16.7	5.0	11.3	0.58	1.31	3.33	1.48	1.24	1.20	4	9	6
TT19-08BP111-001 TMA	12.2	7.7	9.0	0.65	0.76	1.58	1.36	1.20	1.20	5	5	5

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	12	6	10
OPA-65R-LCUU-H4 Antenna	48.0	14.4	7.3	4.80	2.43	3.33	6.58	1.24	1.38	13	7	11
800-10964 Antenna	59.0	20.0	6.9	8.19	2.83	2.95	8.55	1.22	1.45	21	9	18
SBNHH-1D65A Antenna	55.6	11.9	7.1	4.59	2.74	4.67	7.83	1.30	1.43	13	8	12
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	5
RRUS-11 RRH	19.7	17.0	7.2	2.33	0.99	1.16	2.74	1.20	1.21	6	3	5
B14 4478 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	4	3
4478 B5 RRH	18.1	8.3	13.4	1.04	1.68	2.18	1.35	1.20	1.20	3	4	3
4426 B66 RRH	14.9	13.2	5.8	1.37	0.60	1.13	2.57	1.20	1.20	3	2	3
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	5
800 MHz Filter	15.2	9.7	8.2	1.02	0.87	1.57	1.85	1.20	1.20	3	2	3
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	2	1
TT19-08BP111-001 TMA	9.9	5.4	6.7	0.37	0.46	1.83	1.48	1.20	1.20	1	1	1

Date: 12/10/2019
Project Name: MILFORD
Project No.: CT5099
Designed By: RL **Checked By:** MSC

HUDSON Design Group LLC

ICE WEIGHT CALCULATIONS

Thickness of ice: 1.16 in.
Density of ice: 56 pcf

7770 Antenna

Weight of ice based on total radial SF area:

Height (in):	55.0	
Width (in):	11.0	
Depth (in):	5.0	
Total weight of ice on object:		86 lbs
Weight of object:	35.0 lbs	
Combined weight of ice and object:		121 lbs

OPA-65R-LCUU-H4 Antenna

Weight of ice based on total radial SF area:

Height (in):	48.0	
Width (in):	14.4	
Depth (in):	7.3	
Total weight of ice on object:		98 lbs
Weight of object:	57.0 lbs	
Combined weight of ice and object:		155 lbs

800-10964 Antenna

Weight of ice based on total radial SF area:

Height (in):	59.0	
Width (in):	20.0	
Depth (in):	6.9	
Total weight of ice on object:		156 lbs
Weight of object:	84.0 lbs	
Combined weight of ice and object:		240 lbs

SBNHH-1D65A Antenna

Weight of ice based on total radial SF area:

Height (in):	55.6	
Width (in):	11.9	
Depth (in):	7.1	
Total weight of ice on object:		99 lbs
Weight of object:	34.0 lbs	
Combined weight of ice and object:		133 lbs

RRUS-32 RRH

Weight of ice based on total radial SF area:

Height (in):	27.2	
Width (in):	12.1	
Depth (in):	7.0	
Total weight of ice on object:		49 lbs
Weight of object:	60.0 lbs	
Combined weight of ice and object:		109 lbs

RRUS-11 RRH

Weight of ice based on total radial SF area:

Height (in):	19.7	
Width (in):	17.0	
Depth (in):	7.2	
Total weight of ice on object:		46 lbs
Weight of object:	51.0 lbs	
Combined weight of ice and object:		97 lbs

B14 4478 RRH

Weight of ice based on total radial SF area:

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

4478 B5 RRH

Weight of ice based on total radial SF area:

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

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:		27 lbs
Weight of object:	49.0 lbs	
Combined weight of ice and object:		76 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:		49 lbs
Weight of object:	60.0 lbs	
Combined weight of ice and object:		109 lbs

800 MHz Filter

Weight of ice based on total radial SF area:

Height (in):	15.2	
Width (in):	9.7	
Depth (in):	8.2	
Total weight of ice on object:		25 lbs
Weight of object:	53.0 lbs	
Combined weight of ice and object:		78 lbs

LGP21401 TMA

Weight of ice based on total radial SF area:

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

TT19-08BP111-001 TMA

Weight of ice based on total radial SF area:

Height (in):	9.9	
Width (in):	5.4	
Depth (in):	6.7	
Total weight of ice on object:		11 lbs
Weight of object:	16.0 lbs	
Combined weight of ice and object:		27 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:		31 lbs
Weight of object:	33 lbs	
Combined weight of ice and object:		64 lbs

PL 11-1/4x5/8

Weight of ice based on total radial SF area:

Height (in):	11.25	
Width (in):	0.625	
Per foot weight of ice on object:		18 plf

PL 3-1/2x5/8

Weight of ice based on total radial SF area:

Height (in):	3.5	
Width (in):	0.625	
Per foot weight of ice on object:		7 plf

3/4" Round Bar

Per foot weight of ice:

diameter (in):	0.75	
Per foot weight of ice on object:		3 plf

5/8" Round Bar

Per foot weight of ice:

diameter (in):	0.625	
Per foot weight of ice on object:		3 plf

2-1/2" pipe

Per foot weight of ice:

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

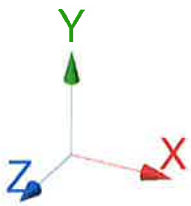
2" pipe

Per foot weight of ice:

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

HUDSON
Design Group LLC

Mount Calculations
(Existing Conditions)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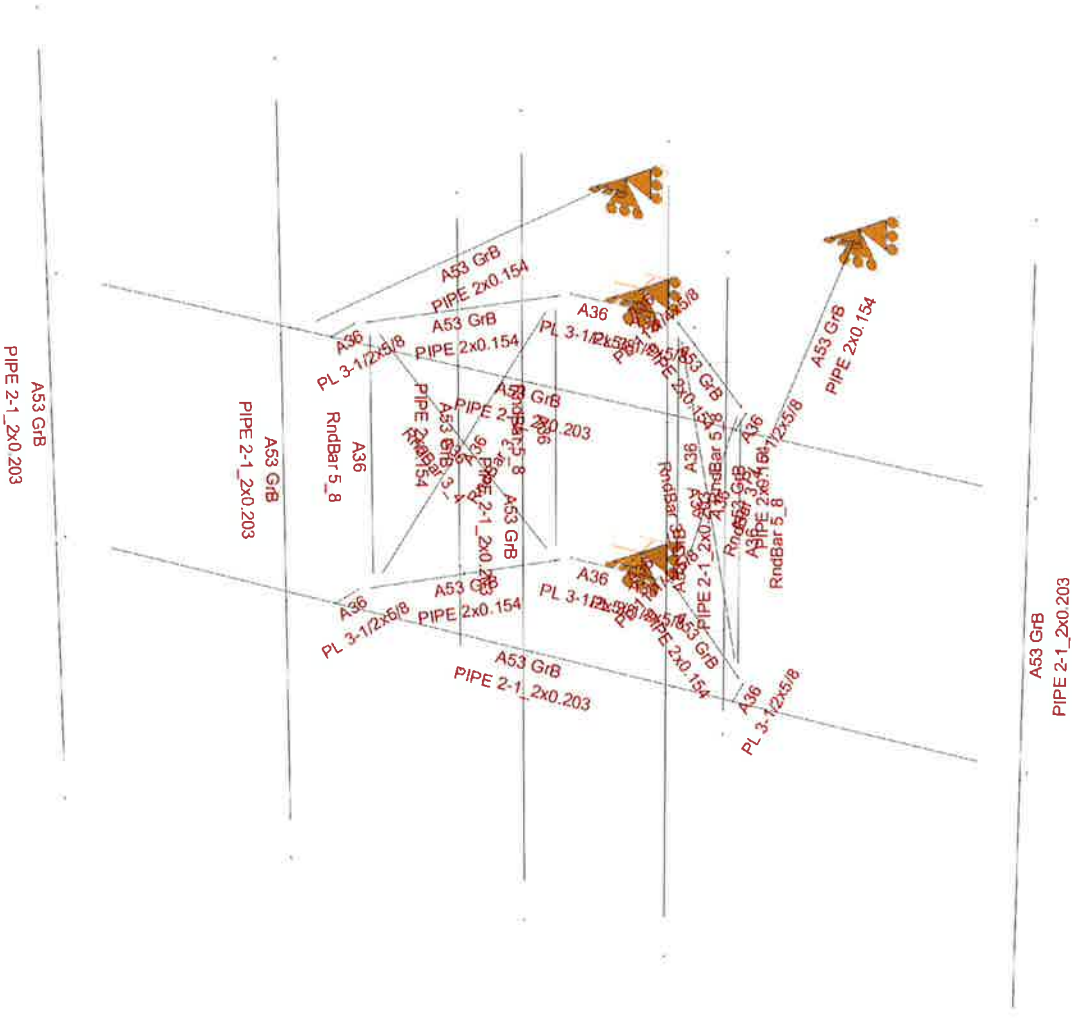

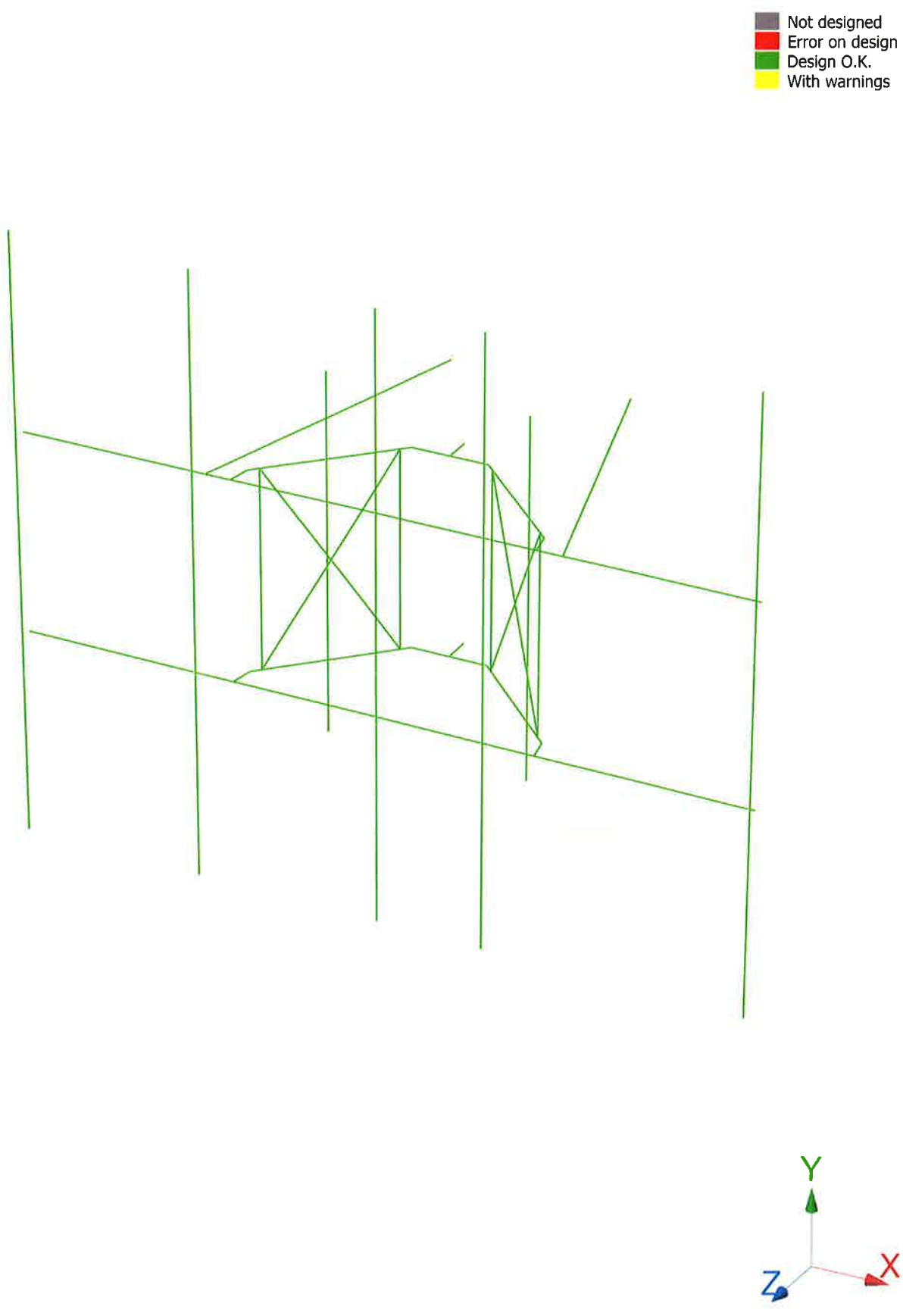
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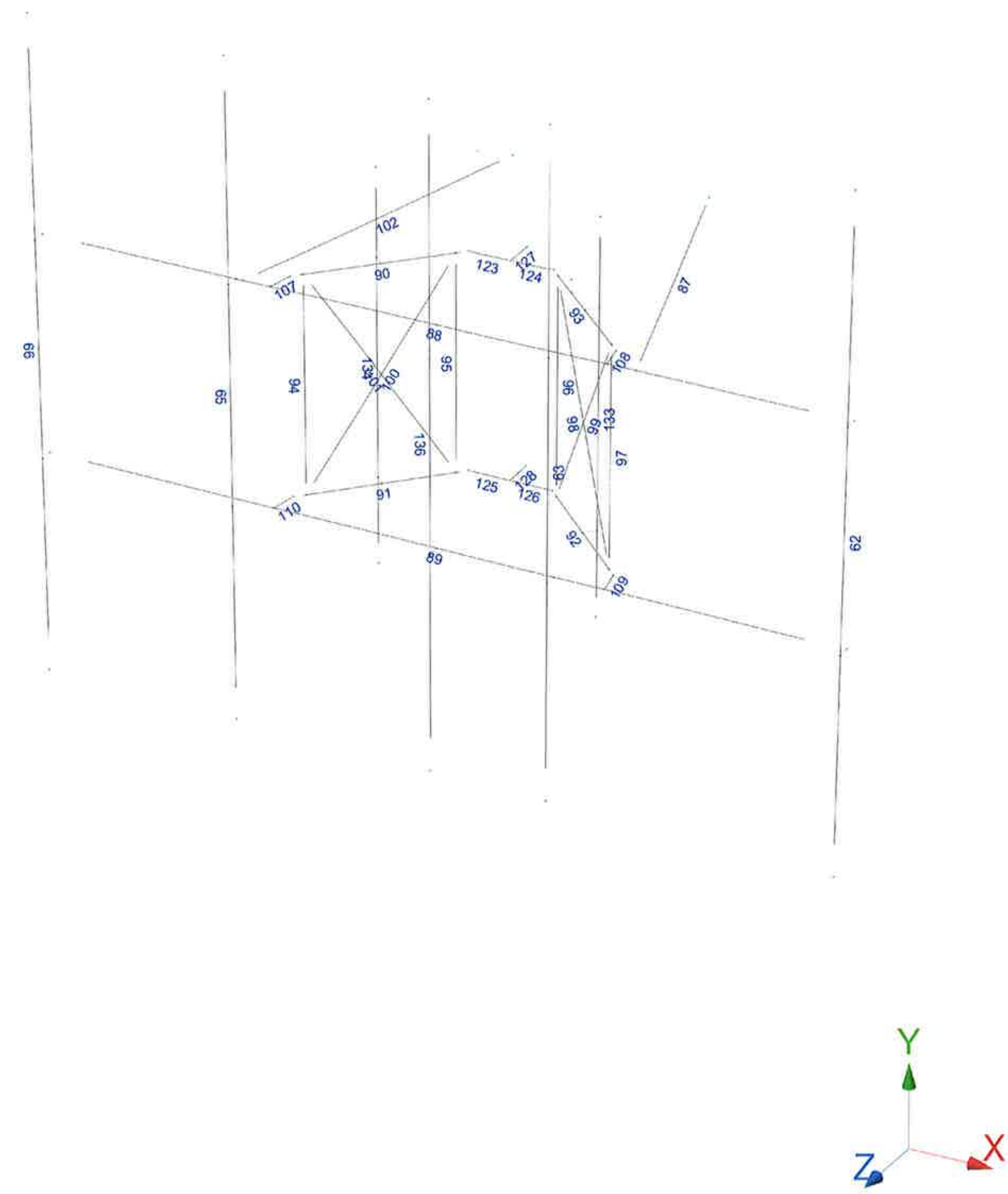


Current Date: 12/10/2019 1:13 PM
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT5099\LTE (5C 6C)\Rev. 1\CT5099 (L 5C-6C)(Rev. 1).retx\

Load data

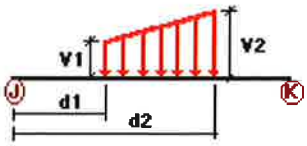
GLOSSARY

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	250 lb Live Load Antenna 1	No	LL
LLa2	250 lb Live Load Antenna 2	No	LL
LLa3	250 lb Live Load Antenna 3	No	LL
LLa4	250 lb Live Load Antenna 4	No	LL

Distributed force on members



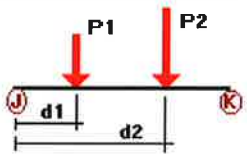
Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
Wo	87	z	-0.009	-0.009	0.00	No	100.00	Yes
	90	z	-0.009	-0.009	0.00	No	100.00	Yes
	91	z	-0.009	-0.009	0.00	No	100.00	Yes
	92	z	-0.009	-0.009	0.00	No	100.00	Yes
	93	z	-0.009	-0.009	0.00	No	100.00	Yes
	94	z	-0.002	-0.002	0.00	No	100.00	Yes
	95	z	-0.002	-0.002	0.00	No	100.00	Yes
	96	z	-0.002	-0.002	0.00	No	100.00	Yes
	97	z	-0.002	-0.002	0.00	No	100.00	Yes
	98	z	-0.003	-0.003	0.00	No	100.00	Yes
	99	z	-0.003	-0.003	0.00	No	100.00	Yes
	100	z	-0.003	-0.003	0.00	No	100.00	Yes
	101	z	-0.003	-0.003	0.00	No	100.00	Yes
	102	z	-0.009	-0.009	0.00	No	100.00	Yes
	123	z	-0.001	-0.001	0.00	No	100.00	Yes
	124	z	-0.001	-0.001	0.00	No	100.00	Yes
	125	z	-0.001	-0.001	0.00	No	100.00	Yes
	126	z	-0.001	-0.001	0.00	No	100.00	Yes
	133	z	-0.009	-0.009	0.00	No	100.00	Yes
	134	z	-0.009	-0.009	0.00	No	100.00	Yes
	136	z	-0.011	-0.011	0.00	No	100.00	Yes
	89	z	-0.011	-0.011	0.00	No	100.00	Yes
	88	z	-0.011	-0.011	0.00	No	100.00	Yes
W30	62	z	-0.011	-0.011	0.00	No	100.00	Yes
	63	z	-0.011	-0.011	0.00	No	100.00	Yes
	65	z	-0.011	-0.011	0.00	No	100.00	Yes
	66	z	-0.011	-0.011	0.00	No	100.00	Yes
	87	z	-0.009	-0.009	0.00	No	100.00	Yes
	90	z	-0.009	-0.009	0.00	No	100.00	Yes
	91	z	-0.009	-0.009	0.00	No	100.00	Yes
	92	z	-0.009	-0.009	0.00	No	100.00	Yes
	93	z	-0.009	-0.009	0.00	No	100.00	Yes
	94	z	-0.002	-0.002	0.00	No	100.00	Yes
	95	z	-0.002	-0.002	0.00	No	100.00	Yes
	96	z	-0.002	-0.002	0.00	No	100.00	Yes
	97	z	-0.002	-0.002	0.00	No	100.00	Yes
	98	z	-0.003	-0.003	0.00	No	100.00	Yes
	99	z	-0.003	-0.003	0.00	No	100.00	Yes
	100	z	-0.003	-0.003	0.00	No	100.00	Yes
	101	z	-0.003	-0.003	0.00	No	100.00	Yes
	102	z	-0.009	-0.009	0.00	No	100.00	Yes
	107	z	-0.001	-0.001	0.00	No	100.00	Yes
	108	z	-0.001	-0.001	0.00	No	100.00	Yes
	109	z	-0.001	-0.001	0.00	No	100.00	Yes
	110	z	-0.001	-0.001	0.00	No	100.00	Yes
	123	z	-0.001	-0.001	0.00	No	100.00	Yes
	124	z	-0.001	-0.001	0.00	No	100.00	Yes
	125	z	-0.001	-0.001	0.00	No	100.00	Yes
	126	z	-0.001	-0.001	0.00	No	100.00	Yes
	127	z	-0.002	-0.002	0.00	No	100.00	Yes
	128	z	-0.002	-0.002	0.00	No	100.00	Yes
	133	z	-0.009	-0.009	0.00	No	100.00	Yes
	134	z	-0.009	-0.009	0.00	No	100.00	Yes
	136	z	-0.011	-0.011	0.00	No	100.00	Yes
	89	z	-0.011	-0.011	0.00	No	100.00	Yes
	88	z	-0.011	-0.011	0.00	No	100.00	Yes
W60	62	x	-0.011	-0.011	0.00	No	100.00	Yes
	63	x	-0.011	-0.011	0.00	No	100.00	Yes
	65	x	-0.011	-0.011	0.00	No	100.00	Yes
	66	x	-0.011	-0.011	0.00	No	100.00	Yes

	87	x	-0.009	-0.009	0.00	No	100.00	Yes
	90	x	-0.009	-0.009	0.00	No	100.00	Yes
	91	x	-0.009	-0.009	0.00	No	100.00	Yes
	92	x	-0.009	-0.009	0.00	No	100.00	Yes
	93	x	-0.009	-0.009	0.00	No	100.00	Yes
	94	x	-0.002	-0.002	0.00	No	100.00	Yes
	95	x	-0.002	-0.002	0.00	No	100.00	Yes
	96	x	-0.002	-0.002	0.00	No	100.00	Yes
	97	x	-0.002	-0.002	0.00	No	100.00	Yes
	98	x	-0.003	-0.003	0.00	No	100.00	Yes
	99	x	-0.003	-0.003	0.00	No	100.00	Yes
	100	x	-0.003	-0.003	0.00	No	100.00	Yes
	101	x	-0.003	-0.003	0.00	No	100.00	Yes
	102	x	-0.009	-0.009	0.00	No	100.00	Yes
	107	x	-0.001	-0.001	0.00	No	100.00	Yes
	108	x	-0.001	-0.001	0.00	No	100.00	Yes
	109	x	-0.001	-0.001	0.00	No	100.00	Yes
	110	x	-0.001	-0.001	0.00	No	100.00	Yes
	123	x	-0.001	-0.001	0.00	No	100.00	Yes
	124	x	-0.001	-0.001	0.00	No	100.00	Yes
	125	x	-0.001	-0.001	0.00	No	100.00	Yes
	126	x	-0.001	-0.001	0.00	No	100.00	Yes
	127	x	-0.002	-0.002	0.00	No	100.00	Yes
	128	x	-0.002	-0.002	0.00	No	100.00	Yes
	133	x	-0.009	-0.009	0.00	No	100.00	Yes
	134	x	-0.009	-0.009	0.00	No	100.00	Yes
	136	x	-0.011	-0.011	0.00	No	100.00	Yes
	89	x	-0.011	-0.011	0.00	No	100.00	Yes
	88	x	-0.011	-0.011	0.00	No	100.00	Yes
W90	62	x	-0.011	-0.011	0.00	No	100.00	Yes
	63	x	-0.011	-0.011	0.00	No	100.00	Yes
	65	x	-0.011	-0.011	0.00	No	100.00	Yes
	66	x	-0.011	-0.011	0.00	No	100.00	Yes
	87	x	-0.009	-0.009	0.00	No	100.00	Yes
	90	x	-0.009	-0.009	0.00	No	100.00	Yes
	91	x	-0.009	-0.009	0.00	No	100.00	Yes
	92	x	-0.009	-0.009	0.00	No	100.00	Yes
	93	x	-0.009	-0.009	0.00	No	100.00	Yes
	94	x	-0.002	-0.002	0.00	No	100.00	Yes
	95	x	-0.002	-0.002	0.00	No	100.00	Yes
	96	x	-0.002	-0.002	0.00	No	100.00	Yes
	97	x	-0.002	-0.002	0.00	No	100.00	Yes
	98	x	-0.003	-0.003	0.00	No	100.00	Yes
	99	x	-0.003	-0.003	0.00	No	100.00	Yes
	100	x	-0.003	-0.003	0.00	No	100.00	Yes
	101	x	-0.003	-0.003	0.00	No	100.00	Yes
	102	x	-0.009	-0.009	0.00	No	100.00	Yes
	107	x	-0.001	-0.001	0.00	No	100.00	Yes
	108	x	-0.001	-0.001	0.00	No	100.00	Yes
	109	x	-0.001	-0.001	0.00	No	100.00	Yes
	110	x	-0.001	-0.001	0.00	No	100.00	Yes
	127	x	-0.002	-0.002	0.00	No	100.00	Yes
	128	x	-0.002	-0.002	0.00	No	100.00	Yes
	133	x	-0.009	-0.009	0.00	No	100.00	Yes
	134	x	-0.009	-0.009	0.00	No	100.00	Yes
	136	x	-0.011	-0.011	0.00	No	100.00	Yes
W120	62	x	-0.011	-0.011	0.00	No	100.00	Yes
	63	x	-0.011	-0.011	0.00	No	100.00	Yes
	65	x	-0.011	-0.011	0.00	No	100.00	Yes
	66	x	-0.011	-0.011	0.00	No	100.00	Yes

	87	x	-0.009	-0.009	0.00	No	100.00	Yes
	90	x	-0.009	-0.009	0.00	No	100.00	Yes
	91	x	-0.009	-0.009	0.00	No	100.00	Yes
	92	x	-0.009	-0.009	0.00	No	100.00	Yes
	93	x	-0.009	-0.009	0.00	No	100.00	Yes
	94	x	-0.002	-0.002	0.00	No	100.00	Yes
	95	x	-0.002	-0.002	0.00	No	100.00	Yes
	96	x	-0.002	-0.002	0.00	No	100.00	Yes
	97	x	-0.002	-0.002	0.00	No	100.00	Yes
	98	x	-0.003	-0.003	0.00	No	100.00	Yes
	99	x	-0.003	-0.003	0.00	No	100.00	Yes
	100	x	-0.003	-0.003	0.00	No	100.00	Yes
	101	x	-0.003	-0.003	0.00	No	100.00	Yes
	102	x	-0.009	-0.009	0.00	No	100.00	Yes
	107	x	-0.001	-0.001	0.00	No	100.00	Yes
	108	x	-0.001	-0.001	0.00	No	100.00	Yes
	109	x	-0.001	-0.001	0.00	No	100.00	Yes
	110	x	-0.001	-0.001	0.00	No	100.00	Yes
	123	x	-0.001	-0.001	0.00	No	100.00	Yes
	124	x	-0.001	-0.001	0.00	No	100.00	Yes
	125	x	-0.001	-0.001	0.00	No	100.00	Yes
	126	x	-0.001	-0.001	0.00	No	100.00	Yes
	127	x	-0.002	-0.002	0.00	No	100.00	Yes
	128	x	-0.002	-0.002	0.00	No	100.00	Yes
	133	x	-0.009	-0.009	0.00	No	100.00	Yes
	134	x	-0.009	-0.009	0.00	No	100.00	Yes
	136	x	-0.011	-0.011	0.00	No	100.00	Yes
	89	x	-0.011	-0.011	0.00	No	100.00	Yes
	88	x	-0.011	-0.011	0.00	No	100.00	Yes
W150	62	z	0.011	0.011	0.00	No	100.00	Yes
	63	z	0.011	0.011	0.00	No	100.00	Yes
	65	z	0.011	0.011	0.00	No	100.00	Yes
	66	z	0.011	0.011	0.00	No	100.00	Yes
	87	z	0.009	0.009	0.00	No	100.00	Yes
	90	z	0.009	0.009	0.00	No	100.00	Yes
	91	z	0.009	0.009	0.00	No	100.00	Yes
	92	z	0.009	0.009	0.00	No	100.00	Yes
	93	z	0.009	0.009	0.00	No	100.00	Yes
	94	z	0.002	0.002	0.00	No	100.00	Yes
	95	z	0.002	0.002	0.00	No	100.00	Yes
	96	z	0.002	0.002	0.00	No	100.00	Yes
	97	z	0.002	0.002	0.00	No	100.00	Yes
	98	z	0.003	0.003	0.00	No	100.00	Yes
	99	z	0.003	0.003	0.00	No	100.00	Yes
	100	z	0.003	0.003	0.00	No	100.00	Yes
	101	z	0.003	0.003	0.00	No	100.00	Yes
	102	z	0.009	0.009	0.00	No	100.00	Yes
	107	z	0.001	0.001	0.00	No	100.00	Yes
	108	z	0.001	0.001	0.00	No	100.00	Yes
	109	z	0.001	0.001	0.00	No	100.00	Yes
	110	z	0.001	0.001	0.00	No	100.00	Yes
	123	z	0.001	0.001	0.00	No	100.00	Yes
	124	z	0.001	0.001	0.00	No	100.00	Yes
	125	z	0.001	0.001	0.00	No	100.00	Yes
	126	z	0.001	0.001	0.00	No	100.00	Yes
	136	z	0.011	0.011	0.00	No	100.00	Yes
	89	z	0.011	0.011	0.00	No	100.00	Yes
	88	z	0.011	0.011	0.00	No	100.00	Yes
Di	62	y	-0.006	-0.006	0.00	No	100.00	Yes
	63	y	-0.006	-0.006	0.00	No	100.00	Yes

65	y	-0.006	-0.006	0.00	No	100.00	Yes
66	y	-0.006	-0.006	0.00	No	100.00	Yes
87	y	-0.005	-0.005	0.00	No	100.00	Yes
90	y	-0.005	-0.005	0.00	No	100.00	Yes
91	y	-0.005	-0.005	0.00	No	100.00	Yes
92	y	-0.005	-0.005	0.00	No	100.00	Yes
93	y	-0.005	-0.005	0.00	No	100.00	Yes
94	y	-0.003	-0.003	0.00	No	100.00	Yes
95	y	-0.003	-0.003	0.00	No	100.00	Yes
96	y	-0.003	-0.003	0.00	No	100.00	Yes
97	y	-0.003	-0.003	0.00	No	100.00	Yes
98	y	-0.003	-0.003	0.00	No	100.00	Yes
99	y	-0.003	-0.003	0.00	No	100.00	Yes
100	y	-0.003	-0.003	0.00	No	100.00	Yes
101	y	-0.003	-0.003	0.00	No	100.00	Yes
102	y	-0.005	-0.005	0.00	No	100.00	Yes
107	y	-0.007	-0.007	0.00	No	100.00	Yes
108	y	-0.007	-0.007	0.00	No	100.00	Yes
109	y	-0.007	-0.007	0.00	No	100.00	Yes
110	y	-0.007	-0.007	0.00	No	100.00	Yes
123	y	-0.007	-0.007	0.00	No	100.00	Yes
124	y	-0.007	-0.007	0.00	No	100.00	Yes
125	y	-0.007	-0.007	0.00	No	100.00	Yes
126	y	-0.007	-0.007	0.00	No	100.00	Yes
127	y	-0.018	-0.018	0.00	No	100.00	Yes
128	y	-0.018	-0.018	0.00	No	100.00	Yes
133	y	-0.005	-0.005	0.00	No	100.00	Yes
134	y	-0.005	-0.005	0.00	No	100.00	Yes
136	y	-0.006	-0.006	0.00	No	100.00	Yes
89	y	-0.006	-0.006	0.00	No	100.00	Yes
88	y	-0.006	-0.006	0.00	No	100.00	Yes

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
D	62	y	-0.018	3.00	No
		y	-0.018	7.00	No
		y	-0.038	5.00	No
	63	y	-0.029	3.50	No
		y	-0.029	6.50	No
	65	y	-0.042	3.00	No
		y	-0.042	7.00	No
	66	y	-0.017	3.00	No
		y	-0.017	7.00	No
	133	y	-0.06	1.50	No
		y	-0.06	3.00	No
		y	-0.049	4.50	No
	134	y	-0.051	1.50	No
		y	-0.06	3.00	No

		y	-0.06	4.50	No
	136	y	-0.106	5.00	No
Wo	62	z	-0.102	3.00	No
		z	-0.102	7.00	No
	63	z	-0.11	3.50	No
		z	-0.11	6.50	No
	65	z	-0.185	3.00	No
		z	-0.185	7.00	No
	66	z	-0.111	3.00	No
		z	-0.111	7.00	No
	133	z	-0.101	1.50	No
		z	-0.046	3.00	No
		z	-0.061	4.50	No
	134	z	-0.103	1.50	No
		z	-0.046	3.00	No
		z	-0.101	4.50	No
	136	z	-0.091	5.00	No
W30	62	3	-0.09	3.00	No
		3	-0.09	7.00	No
		3	-0.02	5.00	No
	63	3	-0.098	3.50	No
		3	-0.098	6.50	No
	65	3	-0.158	3.00	No
		3	-0.158	7.00	No
	66	3	-0.101	3.00	No
		3	-0.101	7.00	No
	133	3	-0.091	1.50	No
		3	-0.053	3.00	No
		3	-0.052	4.50	No
	134	3	-0.088	1.50	No
		3	-0.053	3.00	No
		3	-0.091	4.50	No
	136	3	-0.044	5.00	No
W60	62	3	-0.067	3.00	No
		3	-0.067	7.00	No
		3	-0.033	5.00	No
	63	3	-0.075	3.50	No
		3	-0.075	6.50	No
	65	3	-0.104	3.00	No
		3	-0.104	7.00	No
	66	3	-0.082	3.00	No
		3	-0.082	7.00	No
	133	3	-0.072	1.50	No
		3	-0.068	3.00	No
		3	-0.035	4.50	No
	134	3	-0.059	1.50	No
		3	-0.068	3.00	No
		3	-0.072	4.50	No
	136	3	-0.04	5.00	No
W90	62	x	-0.055	3.00	No
		x	-0.055	7.00	No
		x	-0.04	5.00	No
	63	x	-0.063	3.50	No
		x	-0.063	6.50	No
	65	x	-0.076	3.00	No
		x	-0.076	7.00	No
	66	x	-0.073	3.00	No
		x	-0.073	7.00	No
	133	x	-0.062	1.50	No
		x	-0.075	3.00	No

		x	-0.027	4.50	No
	134	x	-0.044	1.50	No
		x	-0.075	3.00	No
		x	-0.062	4.50	No
	136	x	-0.038	5.00	No
W120	62	2	-0.067	3.00	No
		2	-0.067	7.00	No
		2	-0.033	5.00	No
	63	2	-0.075	3.50	No
		2	-0.075	6.50	No
	65	2	-0.104	3.00	No
		2	-0.104	7.00	No
	66	2	-0.082	3.00	No
		2	-0.082	7.00	No
	133	2	-0.072	1.50	No
		2	-0.068	3.00	No
		2	-0.035	4.50	No
	134	2	-0.059	1.50	No
		2	-0.068	3.00	No
		2	-0.072	4.50	No
	136	2	-0.04	5.00	No
W150	62	2	-0.09	3.00	No
		2	-0.09	7.00	No
		2	-0.02	5.00	No
	63	2	-0.098	3.50	No
		2	-0.098	6.50	No
	65	2	-0.158	3.00	No
		2	-0.158	7.00	No
	66	2	-0.101	3.00	No
		2	-0.101	7.00	No
	133	2	-0.091	1.50	No
		2	-0.053	3.00	No
		2	-0.052	4.50	No
	134	2	-0.088	1.50	No
		2	-0.053	3.00	No
		2	-0.091	4.50	No
	136	2	-0.044	5.00	No
Di	62	y	-0.043	3.00	No
		y	-0.043	7.00	No
		y	-0.036	5.00	No
	63	y	-0.049	3.50	No
		y	-0.049	6.50	No
	65	y	-0.078	3.00	No
		y	-0.078	7.00	No
	66	y	-0.049	3.00	No
		y	-0.049	7.00	No
	133	y	-0.049	1.50	No
		y	-0.036	3.00	No
		y	-0.027	4.50	No
	134	y	-0.046	1.50	No
		y	-0.036	3.00	No
		y	-0.049	4.50	No
	136	y	-0.05	5.00	No
WI0	62	z	-0.021	3.00	No
		z	-0.021	7.00	No
	63	z	-0.022	3.50	No
		z	-0.022	6.50	No
	65	z	-0.035	3.00	No
		z	-0.035	7.00	No
	66	z	-0.022	3.00	No

		z	-0.022	7.00	No
	133	z	-0.021	1.50	No
		z	-0.011	3.00	No
		z	-0.013	4.50	No
	134	z	-0.021	1.50	No
		z	-0.011	3.00	No
		z	-0.021	4.50	No
	136	z	-0.009	5.00	No
WI30	62	3	-0.019	3.00	No
		3	-0.019	7.00	No
		3	-0.006	5.00	No
	63	3	-0.02	3.50	No
		3	-0.02	6.50	No
	65	3	-0.03	3.00	No
		3	-0.03	7.00	No
	66	3	-0.02	3.00	No
		3	-0.02	7.00	No
	133	3	-0.019	1.50	No
		3	-0.012	3.00	No
		3	-0.012	4.50	No
	134	3	-0.018	1.50	No
		3	-0.012	3.00	No
		3	-0.019	4.50	No
	136	3	-0.01	5.00	No
WI60	62	3	-0.015	3.00	No
		3	-0.015	7.00	No
		3	-0.008	5.00	No
	63	3	-0.016	3.50	No
		3	-0.016	6.50	No
	65	3	-0.021	3.00	No
		3	-0.021	7.00	No
	66	3	-0.017	3.00	No
		3	-0.017	7.00	No
	133	3	-0.016	1.50	No
		3	-0.015	3.00	No
		3	-0.008	4.50	No
	134	3	-0.013	1.50	No
		3	-0.015	3.00	No
		3	-0.016	4.50	No
	136	3	-0.009	5.00	No
WI90	62	x	-0.013	3.00	No
		x	-0.013	7.00	No
		x	-0.009	5.00	No
	63	x	-0.014	3.50	No
		x	-0.014	6.50	No
	65	x	-0.017	3.00	No
		x	-0.017	7.00	No
	66	x	-0.016	3.00	No
		x	-0.016	7.00	No
	133	x	-0.014	1.50	No
		x	-0.016	3.00	No
		x	-0.007	4.50	No
	134	x	-0.01	1.50	No
		x	-0.016	3.00	No
		x	-0.014	4.50	No
	136	x	-0.009	5.00	No
WI120	62	2	-0.015	3.00	No
		2	-0.015	7.00	No
		2	-0.008	5.00	No
	63	2	-0.016	3.50	No

		2	-0.016	6.50	No
	65	2	-0.021	3.00	No
		2	-0.021	7.00	No
	66	2	-0.017	3.00	No
		2	-0.017	7.00	No
	133	2	-0.016	1.50	No
		2	-0.015	3.00	No
		2	-0.008	4.50	No
	134	2	-0.013	1.50	No
		2	-0.015	3.00	No
		2	-0.016	4.50	No
	136	2	-0.009	5.00	No
WI150	62	2	-0.019	3.00	No
		2	-0.019	7.00	No
		2	-0.006	5.00	No
	63	2	-0.02	3.50	No
		2	-0.02	6.50	No
	65	2	-0.03	3.00	No
		2	-0.03	7.00	No
	66	2	-0.02	3.00	No
		2	-0.02	7.00	No
	133	2	-0.019	1.50	No
		2	-0.012	3.00	No
		2	-0.012	4.50	No
	134	2	-0.018	1.50	No
		2	-0.012	3.00	No
		2	-0.019	4.50	No
	136	2	-0.01	5.00	No
WL0	62	z	-0.006	3.00	No
		z	-0.006	7.00	No
	63	z	-0.007	3.50	No
		z	-0.007	6.50	No
	65	z	-0.011	3.00	No
		z	-0.011	7.00	No
	66	z	-0.007	3.00	No
		z	-0.007	7.00	No
	133	z	-0.006	1.50	No
		z	-0.003	3.00	No
		z	-0.003	4.50	No
	134	z	-0.006	1.50	No
		z	-0.003	3.00	No
		z	-0.006	4.50	No
	136	z	-0.005	5.00	No
WL30	62	3	-0.006	3.00	No
		3	-0.006	7.00	No
		3	-0.001	5.00	No
	63	3	-0.006	3.50	No
		3	-0.006	6.50	No
	65	3	-0.01	3.00	No
		3	-0.01	7.00	No
	66	3	-0.006	3.00	No
		3	-0.006	7.00	No
	133	3	-0.005	1.50	No
		3	-0.003	3.00	No
		3	-0.003	4.50	No
	134	3	-0.005	1.50	No
		3	-0.003	3.00	No
		3	-0.005	4.50	No
	136	3	-0.003	5.00	No
WL60	62	3	-0.004	3.00	No

		3	-0.004	7.00	No
		3	-0.002	5.00	No
	63	3	-0.005	3.50	No
		3	-0.005	6.50	No
	65	3	-0.006	3.00	No
		3	-0.006	7.00	No
	66	3	-0.005	3.00	No
		3	-0.005	7.00	No
	133	3	-0.004	1.50	No
		3	-0.004	3.00	No
		3	-0.002	4.50	No
	134	3	-0.003	1.50	No
		3	-0.004	3.00	No
		3	-0.004	4.50	No
	136	3	-0.002	5.00	No
WL90	62	x	-0.004	3.00	No
		x	-0.004	7.00	No
		x	-0.002	5.00	No
	63	x	-0.004	3.50	No
		x	-0.004	6.50	No
	65	x	-0.005	3.00	No
		x	-0.005	7.00	No
	66	x	-0.005	3.00	No
		x	-0.005	7.00	No
	133	x	-0.004	1.50	No
		x	-0.004	3.00	No
		x	-0.002	4.50	No
	134	x	-0.003	1.50	No
		x	-0.004	3.00	No
		x	-0.004	4.50	No
	136	x	-0.002	5.00	No
WL120	62	2	-0.004	3.00	No
		2	-0.004	7.00	No
		2	-0.002	5.00	No
	63	2	-0.005	3.50	No
		2	-0.005	6.50	No
	65	2	-0.006	3.00	No
		2	-0.006	7.00	No
	66	2	-0.005	3.00	No
		2	-0.005	7.00	No
	133	2	-0.004	1.50	No
		2	-0.004	3.00	No
		2	-0.002	4.50	No
	134	2	-0.003	1.50	No
		2	-0.004	3.00	No
		2	-0.004	4.50	No
	136	2	-0.002	5.00	No
WL150	62	2	-0.006	3.00	No
		2	-0.006	7.00	No
		2	-0.001	5.00	No
	63	2	-0.006	3.50	No
		2	-0.006	6.50	No
	65	2	-0.01	3.00	No
		2	-0.01	7.00	No
	66	2	-0.006	3.00	No
		2	-0.006	7.00	No
	133	2	-0.005	1.50	No
		2	-0.003	3.00	No
		2	-0.003	4.50	No
	134	2	-0.005	1.50	No

		2	-0.003	3.00	No
		2	-0.005	4.50	No
	136	2	-0.003	5.00	No
LL1	88	y	-0.25	50.00	Yes
LL2	88	y	-0.25	100.00	Yes
LL3	88	y	-0.25	0.00	Yes
LLa1	62	y	-0.25	5.00	No
LLa2	63	y	-0.25	5.00	No
LLa3	65	y	-0.25	5.00	No
LLa4	66	y	-0.25	5.00	No

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	250 lb Live Load Antenna 1	No	0.00	0.00	0.00
LLa2	250 lb Live Load Antenna 2	No	0.00	0.00	0.00
LLa3	250 lb Live Load Antenna 3	No	0.00	0.00	0.00
LLa4	250 lb Live Load Antenna 4	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
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
LLa4	0.00	0.00	0.00

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Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2D+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
LC38=1.2D+1.5LL1
LC39=1.2D+1.5LL2
LC40=1.2D+1.5LL3
LC41=1.2D+WL0+1.5LLa1
LC42=1.2D+WL30+1.5LLa1
LC43=1.2D+WL60+1.5LLa1
LC44=1.2D+WL90+1.5LLa1
LC45=1.2D+WL120+1.5LLa1
LC46=1.2D+WL150+1.5LLa1
LC47=1.2D-WL0+1.5LLa1
LC48=1.2D-WL30+1.5LLa1
LC49=1.2D-WL60+1.5LLa1
LC50=1.2D-WL90+1.5LLa1
LC51=1.2D-WL120+1.5LLa1
LC52=1.2D-WL150+1.5LLa1
LC53=1.2D+WL0+1.5LLa2

LC54=1.2D+WL30+1.5LLa2
LC55=1.2D+WL60+1.5LLa2
LC56=1.2D+WL90+1.5LLa2
LC57=1.2D+WL120+1.5LLa2
LC58=1.2D+WL150+1.5LLa2
LC59=1.2D-WL0+1.5LLa2
LC60=1.2D-WL30+1.5LLa2
LC61=1.2D-WL60+1.5LLa2
LC62=1.2D-WL90+1.5LLa2
LC63=1.2D-WL120+1.5LLa2
LC64=1.2D-WL150+1.5LLa2
LC65=1.2D+WL0+1.5LLa3
LC66=1.2D+WL30+1.5LLa3
LC67=1.2D+WL60+1.5LLa3
LC68=1.2D+WL90+1.5LLa3
LC69=1.2D+WL120+1.5LLa3
LC70=1.2D+WL150+1.5LLa3
LC71=1.2D-WL0+1.5LLa3
LC72=1.2D-WL30+1.5LLa3
LC73=1.2D-WL60+1.5LLa3
LC74=1.2D-WL90+1.5LLa3
LC75=1.2D-WL120+1.5LLa3
LC76=1.2D-WL150+1.5LLa3
LC77=1.2D+WL0+1.5LLa4
LC78=1.2D+WL30+1.5LLa4
LC79=1.2D+WL60+1.5LLa4
LC80=1.2D+WL90+1.5LLa4
LC81=1.2D+WL120+1.5LLa4
LC82=1.2D+WL150+1.5LLa4
LC83=1.2D-WL0+1.5LLa4
LC84=1.2D-WL30+1.5LLa4
LC85=1.2D-WL60+1.5LLa4
LC86=1.2D-WL90+1.5LLa4
LC87=1.2D-WL120+1.5LLa4
LC88=1.2D-WL150+1.5LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	PIPE 2-1_2x0.203	**62**	LC48 at 33.33%	0.25	OK	Eq. H1-1b
		63	LC10 at 33.33%	0.14	OK	Eq. H1-1b
		65	LC78 at 33.33%	0.16	OK	Eq. H1-1b
		66	LC40 at 33.33%	0.20	OK	Eq. H1-1b
		88	LC8 at 25.78%	0.36	OK	Eq. H1-1b
		89	LC2 at 70.83%	**0.37**	**OK**	Eq. H1-1b
		136	LC10 at 33.33%	0.14	OK	Eq. H1-1b
	PIPE 2x0.154	**87**	LC5 at 50.00%	0.07	OK	Eq. H1-1b
		90	LC40 at 93.75%	0.29	OK	Eq. H1-1b
		91	LC9 at 50.00%	0.26	OK	Eq. H1-1b
		92	LC42 at 93.75%	0.26	OK	Eq. H1-1b
		93	LC39 at 93.75%	**0.30**	**OK**	Eq. H1-1b
		102	LC14 at 100.00%	0.09	OK	Sec. E1
		133	LC39 at 22.92%	0.13	OK	Eq. H1-1b
		134	LC40 at 22.92%	0.12	OK	Eq. H1-1b
	PL 11-1/4x5/8	**127**	LC25 at 100.00%	**0.35**	**OK**	Eq. H1-1b
		128	LC31 at 100.00%	0.28	OK	Eq. H1-1b
	PL 3-1/2x5/8	**107**	LC9 at 100.00%	0.31	OK	Eq. H1-1b
		108	LC39 at 100.00%	0.32	OK	Eq. H1-1b
		109	LC42 at 100.00%	0.38	OK	Eq. H1-1b
		110	LC88 at 100.00%	0.38	OK	Eq. H1-1b
		123	LC26 at 100.00%	0.51	OK	Eq. H1-1b
		124	LC39 at 0.00%	0.52	OK	Eq. H1-1b
		125	LC36 at 100.00%	0.55	OK	Eq. H1-1b

	126	LC26 at 0.00%	**0.55**	**OK**	Eq. H1-1b
RndBar 3_4	**98**	LC39 at 0.00%	0.21	OK	Eq. H1-1b
	99	LC42 at 0.00%	**0.22**	**OK**	Eq. H1-1b
	100	LC32 at 100.00%	0.21	OK	Eq. H1-1b
	101	LC36 at 100.00%	0.22	OK	Eq. H1-1b
RndBar 5_8	**94**	LC40 at 87.50%	0.54	OK	Eq. H1-1a
	95	LC40 at 87.50%	0.56	OK	Eq. H1-1a
	96	LC42 at 87.50%	**0.59**	**OK**	Eq. H1-1a
	97	LC39 at 87.50%	0.57	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
142	0.00	0.00	0.00	0
144	0.00	-3.3333	0.00	0
175	-1.50	0.00	-2.50	0
157	1.50	0.00	-2.50	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
142	1	1	1	1	0	1
144	1	1	1	1	0	1
175	1	1	1	0	0	0
157	1	1	1	0	0	0

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	lg factor
62	153	152		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
63	181	180		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
65	177	176		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
66	155	154		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
87	156	157		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
90	162	143		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
91	163	145		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
92	164	146		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
93	165	147		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
94	166	167		RndBar 5_8	A36	0.00	0.00	0.00
95	168	169		RndBar 5_8	A36	0.00	0.00	0.00
96	170	171		RndBar 5_8	A36	0.00	0.00	0.00
97	172	173		RndBar 5_8	A36	0.00	0.00	0.00
98	170	173		RndBar 3_4	A36	0.00	0.00	0.00
99	171	172		RndBar 3_4	A36	0.00	0.00	0.00
100	167	168		RndBar 3_4	A36	0.00	0.00	0.00
101	166	169		RndBar 3_4	A36	0.00	0.00	0.00
102	174	175		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
107	162	184		PL 3-1/2x5/8	A36	0.00	0.00	0.00
108	165	185		PL 3-1/2x5/8	A36	0.00	0.00	0.00
109	164	186		PL 3-1/2x5/8	A36	0.00	0.00	0.00
110	163	187		PL 3-1/2x5/8	A36	0.00	0.00	0.00
123	143	208		PL 3-1/2x5/8	A36	0.00	0.00	0.00
124	208	147		PL 3-1/2x5/8	A36	0.00	0.00	0.00
125	145	209		PL 3-1/2x5/8	A36	0.00	0.00	0.00
126	209	146		PL 3-1/2x5/8	A36	0.00	0.00	0.00
127	208	142		PL 11-1/4x5/8	A36	11.25	9.25	0.00
128	209	144		PL 11-1/4x5/8	A36	11.25	9.25	0.00
133	222	220		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
134	223	221		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
136	189	188		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
89	160	161		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
88	158	159		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
62	315.00	0	0.00	0.00	0.00
63	315.00	0	0.00	0.00	0.00
65	315.00	0	0.00	0.00	0.00
66	315.00	0	0.00	0.00	0.00
94	0.00	2	0.00	0.00	1.00
95	0.00	2	0.00	0.00	1.00
96	0.00	2	0.00	0.00	1.00
97	0.00	2	0.00	0.00	1.00
107	90.00	0	0.00	0.00	0.00
108	90.00	0	0.00	0.00	0.00
109	90.00	0	0.00	0.00	0.00
110	90.00	0	0.00	0.00	0.00
123	90.00	0	0.00	0.00	0.00
124	90.00	0	0.00	0.00	0.00
125	90.00	0	0.00	0.00	0.00
126	90.00	0	0.00	0.00	0.00
127	90.00	0	0.00	0.00	0.00
128	90.00	0	0.00	0.00	0.00

133	315.00	0	0.00	0.00	0.00
134	315.00	0	0.00	0.00	0.00
136	315.00	0	0.00	0.00	0.00

Rigid end offsets

Member	DJX [in]	DJY [in]	DJZ [in]	DKX [in]	DKY [in]	DKZ [in]
98	0.00	-3.50	0.00	0.00	3.50	0.00
99	0.00	3.50	0.00	0.00	-3.50	0.00
100	0.00	3.50	0.00	0.00	-3.50	0.00
101	0.00	-3.50	0.00	0.00	3.50	0.00
127	0.00	-0.625	0.00	0.00	-0.625	0.00
128	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**
87	1	1	0	0	0	0	0	0	0	0	Full
99	0	0	0	0	0	0	0	0	0	0	Tension only
101	0	0	0	0	0	0	0	0	0	0	Tension only
102	1	1	0	0	0	0	0	0	0	0	Full
107	1	1	0	0	0	0	0	0	0	0	Full
108	1	1	0	0	0	0	0	0	0	0	Full
109	1	1	0	0	0	0	0	0	0	0	Full
110	1	1	0	0	0	0	0	0	0	0	Full

EXHIBIT 5

Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT5099

Milford
434 Boston Post Road

Milford, CT 06460

July 22, 2019

Centerline Communications Project Number: 950012-237

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**27.89 %**

Centerline Communications, LLC 95 Ryan Drive, Suite 1 Raynham MA 02767

June 22, 2019

AT&T Mobility – New England
Attn: John Benedetto, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 06040

Emissions Analysis for Site: **CT5099 – Milford**

Centerline Communications, LLC ("Centerline") was directed to analyze the proposed AT&T facility located at **434 Boston Post Road in Milford, Connecticut** for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu W/cm^2$). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 700 and 850 MHz Bands are approximately 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed AT&T Wireless antenna facility located at **434 Boston Post Road in Milford, Connecticut**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
UMTS	850 MHz	2	30
5G	850 MHz	2	25
LTE	850 MHz	2	40
LTE	700 MHz	4	40
LTE	2100 MHz (AWS)	4	30
LTE	1900 MHz (PCS)	4	40
LTE	2300 (WCS)	4	30

Table 1: Channel Data Table

The following antennas listed in Table 2 were used in the modeling for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS), 2100 MHz (AWS), and 2300 MHz (WCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Powerwave 7770	141
A	2	CCI OPA-65R-LCUU-H4	141
A	3	Kathrein 800-10964	141
A	4	Andrew SBNHH-1D65A	141
B	1	Powerwave 7770	141
B	2	CCI OPA-65R-LCUU-H4	141
B	3	Kathrein 800-10964	141
B	4	Andrew SBNHH-1D65A	141
C	1	Powerwave 7770	141
C	2	CCI OPA-65R-LCUU-H4	141
C	3	Kathrein 800-10964	141
C	4	Andrew SBNHH-1D65A	141

Table 2: Antenna Data

All calculations were done with respect to uncontrolled / general population threshold limits.

RESULTS

Per the calculations completed for the proposed AT&T configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX	ERP (W)	MPE %
Antenna A1	Powerwave 7770	850 MHz	11.5 dBd	2	60	847.52	0.27
Antenna A2	CCI OPA-65R-LCUU-H4	700 MHz / 2300 MHz	10.55 dBd / 14.65 dBd	8	280	5,316.93	1.34
Antenna A3	Kathrein 800-10964	700 MHz / 850 MHz / 2100 MHz / 850 MHz	11.45 dBd / 12.15 dBd / 15.35 dBd / 12.15 dBd	12	410	8,480.17	2.29
Antenna A4	Andrew SBNHH-1D65A	1900 MHz / 1900 MHz	14.35 dBd / 14.35 dBd	8	320	8,712.64	1.59
						Sector A Composite MPE%	**5.47**
Antenna B1	Powerwave 7770	850 MHz	11.5 dBd	2	60	847.52	0.27
Antenna B2	CCI OPA-65R-LCUU-H4	700 MHz / 2300 MHz	10.55 dBd / 14.65 dBd	8	280	5,316.93	1.34
Antenna B3	Kathrein 800-10964	700 MHz / 850 MHz / 2100 MHz / 850 MHz	11.45 dBd / 12.15 dBd / 15.35 dBd / 12.15 dBd	12	410	8,480.17	2.29
Antenna B4	Andrew SBNHH-1D65A	1900 MHz / 1900 MHz	14.35 dBd / 14.35 dBd	8	320	8,712.64	1.59
						Sector B Composite MPE%	**5.47**
Antenna C1	Powerwave 7770	850 MHz	11.5 dBd	2	60	847.52	0.27
Antenna C2	CCI OPA-65R-LCUU-H4	700 MHz / 2300 MHz	10.55 dBd / 14.65 dBd	8	280	5,316.93	1.34
Antenna C3	Kathrein 800-10964	700 MHz / 850 MHz /	11.45 dBd / 12.15 dBd	12	410	8,480.17	2.29
Antenna C4	Andrew SBNHH-1D65A	1900 MHz / 1900 MHz	14.35 dBd / 14.35 dBd	8	320	8,712.64	1.59
						Sector C Composite MPE%	**5.47**

Table 3: AT&T Emissions Levels

The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum AT&T MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each AT&T Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max Per Sector Value	**5.47 %**
T-Mobile	6.32%
Metro PCS	1.96%
XM Satellite	2.85%
Sprint	5.56%
Verizon	5.73%
Site Total MPE %:	**27.89 %**

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	5.47 %
AT&T Sector B Total:	5.47 %
AT&T Sector C Total:	5.47 %
Site Total:	27.89 %

Table 5: Site MPE Summary

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated AT&T sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

AT&T _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($i.tW/cm^2$)	Frequency (MHz)	Allowable MPE ($i.tW/cm^2$)	Calculated % MPE
AT&T 850 MHz UMTS	2	423.76	141.0	1.53	850 MHz UMTS	567	0.27%
AT&T 700 MHz LTE	4	454.00	141.0	3.28	700 MHz LTE	467	0.70%
AT&T 2300 MHz LTE WCS	4	875.23	141.0	6.33	2300 MHz LTE WCS	1000	0.63%
AT&T 700 MHz LTE	4	558.55	141.0	4.04	700 MHz LTE	467	0.87%
AT&T 850 MHz LTE	2	656.24	141.0	2.37	850 MHz LTE	567	0.42%
AT&T 2100 MHz LTE AWS	4	1028.30	141.0	7.44	2100 MHz LTE AWS	1000	0.74%
AT&T 850 MHz 5G	2	410.15	141.0	1.48	850 MHz 5G	567	0.26%
AT&T 1900 MHz LTE	4	1089.08	141.0	7.88	1900 MHz LTE	1000	0.79%
AT&T 1900 MHz LTE	4	1089.08	141.0	7.88	1900 MHz LTE	1000	0.79%
						Total:	**5.47%**

Table 6: AT&T Maximum Sector MPE Power Values

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the AT&T facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector A:	5.47 %
Sector B:	5.47 %
Sector C:	5.47 %
AT&T Maximum Total (per sector):	5.47 %
Site Total:	27.89 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **27.89 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

Ryan McManus
Senior RF EME Compliance Manager
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767

EXHIBIT 6

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@po.state.ct.us
www.ct.gov/csc

June 12, 2006

Douglas J. Hulbert
Project Manager
CH2M Hill
2 Willow Street, Suite 102
Southborough, MA 01745

RE: **EM-CING-060-084-101-060525** - New Cingular Wireless PCS, LLC notice of intent to modify existing telecommunications facilities located at 125 Washington Avenue, North Haven; 430-434 Boston Post Road, Milford; and 201 Granite Road, Guilford, Connecticut.

Dear Mr. Hulbert:

At a public meeting held on June 7, 2006, the Connecticut Siting Council (Council) acknowledged your notice to modify these existing telecommunications facilities, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies.

The proposed modifications are to be implemented as specified here and in your notice dated May 23, 2006, including the placement of all necessary equipment and shelters within the tower compounds. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to existing facility sites that would not increase tower heights, extend the boundaries of the tower sites, increase noise levels at the tower site boundaries by six decibels, and increase the total radio frequencies electromagnetic radiation power densities measured at the tower site boundaries to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. These facilities have also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on these towers.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to any of these facilities will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Thank you for your attention and cooperation.

Very truly yours,

Pamela B. Katz, P.E.
Chairman

PBK/laf

c: See Attached List

G:\EM\CINGULAR\GUILFORD\dc060706(multiplesites).DOC

CSC
CONNECTICUT SITING COUNCIL

List Attachment.

The Honorable Carl A. Balestracci, Jr., First Selectman, Town of Guilford
Regina Reid, Zoning Enforcement Officer, Town of Guilford
The Honorable Kevin J. Kopetz, First Selectman, Town of North Haven
Arthur Hausman, Zoning Enforcement Officer, Town of North Haven
The Honorable James L. Richetelli, Jr., Mayor, City of Milford
David Sulkis, City Planner, City of Milford
Christopher B. Fisher, Esq., Cuddy & Feder LLP
Michele G. Briggs, New Cingular Wireless PCS, LLC
Kenneth C. Baldwin, Esq., Robinson & Cole LLP
Christine Farrell, T-Mobile
Candid Communications of Trumbull, LLC
Milford Police Department