

**STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL**

NEW CINGULAR WIRELESS PCS, LLC (AT&T) : SUB-PETITION NO. _____
**SUB-PETITION FOR A DECLARATORY :
RULING FOR COLLOCATION, MODIFICATION :
AND EXTENSION OF THE EXISTING :
TELECOMMUNICATIONS FACILITY ON :
PROPERTY LOCATED AT 160 WAMPUS LANE, :
MILFORD, CONNECTICUT. : NOVEMBER 2, 2022**

SUB-PETITION FOR A DECLARATORY RULING

I. INTRODUCTION

On behalf of New Cingular Wireless PCS LLC d/b/a AT&T (“AT&T”), we respectfully submit this sub-petition (the “Sub-Petition”) to the Connecticut Siting Council (the “Council”) for an administrative approval of a modification to an existing wireless telecommunications facility qualifying as an eligible facility request pursuant to Section 6409(a) of the Federal Middle Class Tax Relief and Job Creation Act of 2012 (the “Spectrum Act”, codified at 47 U.S.C. §1455) and the Council’s ruling in Petition 1133 (the “Ruling”) by extending the existing 120’ above ground level (AGL”) monopole (the “Monopole”) to a height of 140’ AGL and collocating twelve (12) panel antennas at the 136’ AGL antenna centerline height on the Monopole, as extended, located on property with an address of 160 Wampus Lane, Milford, Connecticut (the “Site”). **Attachment 1** contains a letter from SBA, the owner of the tower, authorizing AT&T to file this Sub-Petition. The Site is located within the ID (Industrial) zoning district. The area surrounding the Site contains a mix of commercial and residential uses.

II. DESCRIPTION OF WIRELESS SERVICES TO BE PROVIDED

The modification and collocation will allow AT&T to provide wireless voice and data services to AT&T’s customers. These services will be provided via 4G and 5G technologies. AT&T will use the 850 MHz and 3500 MHz frequency bands to provide 5G services and the 700 MHz and 1900 MHz frequency bands to provide 4G services over LTE technology. These data networks are used by mobile devices for fast web browsing, media streaming, and other applications that require broadband connections. The mobile devices benefitting from these advanced data networks are not limited to basic handheld phones, but also include devices such as smartphones, tablets, and laptop air-cards. AT&T will also deploy FirstNet services at this facility. FirstNet is a federal agency with a mandate to create a nationwide, interoperable public safety broadband network for first responders using FirstNet’s Band 14 spectrum (20 MHz of the 700 MHz spectrum).

III. HISTORY OF EXISTING TELECOMMUNICATIONS FACILITY

The Monopole is owned by SBA and was approved by the City of Milford Planning and Zoning Board on June 6, 2001 (please see the Decision at **Attachment 2**). As noted in the Decision, the Monopole approved at a height of 120’ AGL.

IV. PROPOSED MODIFICATION

AT&T is licensed by the Federal Communications Commission (“FCC”) to provide wireless services in this area of the State of Connecticut and proposes to extend the existing 120’ Monopole by 20’ to a height of 140’ AGL and collocate twelve (12) panel antennas at the 136’ AGL antenna centerline height, together with related amplifiers, cables, fiber and other associated antenna equipment, including, without limitation, remote radio heads, surge arrestors, and global positioning system antenna with associated electronic equipment in a walk-in-cabinet and a 15kw emergency backup power generator and other appurtenances on a proposed 20’ by 10’ equipment pad all located within an existing compound enclosed by a chain link fence (the “Facility”) as depicted on the plans submitted with this Sub-Petition as **Attachment 3**.

The passing structural reports and analyses evidencing that the proposed modification, including the tower and the antenna and remote radio head mounts, will comply with applicable structural requirements and codes is provided in **Attachment 4**. The modification does not require marking and lighting as evidenced by the Determination of No Hazard to Air Navigation issued by the FAA provided in **Attachment 5**. A visual assessment demonstrating the minimal visibility of the proposed modification to the Monopole is provided in **Attachment 6**.

Once AT&T receives all required approvals, the installation of the Facility will take approximately three (3) to four (4) weeks. AT&T intends to commence construction of the Facility this year. Construction will take place during normal business hours.

While there is a state and federal listed species area within .36 mile to the southeast of the Site, given that AT&T’s proposed Facility will be located on a Monopole on land which has previously been disturbed, AT&T respectfully asserts that the proposed Facility will not impact any state listed species. Please see the Avian Resources Evaluation with DEEP Map submitted as **Attachment 7**.

V. SECTION 6409 OF THE SPECTRUM ACT

Section 6409(a) of the Spectrum Act mandates that state and local governments "may not deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station."¹ An eligible facilities request is defined in the Spectrum Act as any request to modify a Tower or Base Station that involves "collocations of new Transmission Equipment," "removal," or "replacement" of Transmission Equipment.²

Under this eligible facilities request, AT&T is proposing to install the extension to the Monopole with a twenty-foot (20’) tower extension to a total height of 140’ AGL and install the Facility as depicted on the plans submitted with this Sub-Petition. The modification proposed by AT&T in this Sub-Petition does not substantially change the physical dimensions of the Monopole

¹ 47 U.S.C. §1455(a)(1).

² 47 U.S.C. §1455(a)(2).

in accordance with the Spectrum Act, as interpreted and implemented by regulations (the "Regulations")³ promulgated by the FCC.

The equipment identified in this eligible facilities request to be collocated at the Site qualifies as transmission equipment pursuant to the FCC definition. The FCC has defined transmission equipment as "any equipment that facilitates transmission for any Commission-licensed or authorized wireless communication service, including, but not limited to, radio transceivers, antennas and other relevant equipment associated with and necessary to their operation, including coaxial or fiber-optic cable, and regular and back-up power supply. This definition includes equipment used in any technological configuration associated with any Commission-authorized wireless transmission, licensed or unlicensed, terrestrial or satellite, including commercial mobile, private mobile, broadcast and public safety services, as well as fixed wireless services such as microwave backhaul or fixed broadband."⁴

Pursuant to the Regulations, the FCC determined that any modification to an existing telecommunications tower that meets six (6) specified criteria does not substantially change the physical dimensions of the existing tower and, therefore, is an eligible facilities request, approval of which must be granted.⁵ These six criteria and analysis of how this eligible facilities request satisfies each of the six (6) review criteria identified by the FCC are discussed below.

- 1. For towers not in the public rights-of-way, in this case the Monopole, the modification increases the height of the Monopole by more than 10% or by the height of one additional antenna array with separation from the nearest existing antenna not to exceed twenty feet (20'), whichever is greater. Changes in height should be measured from the dimensions of the tower, inclusive of originally approved appurtenances and any modifications that were approved prior to the passage of the Spectrum Act.**

As depicted on the Plans, AT&T's proposed modification does not increase the height of the Monopole by more than twenty feet (20') from the nearest existing antenna as approved by the City of Milford Planning and Zoning Board prior to the passage of the Spectrum Act.

- 2. For towers not in the public rights-of-way, in this case the Monopole, the modification involves adding an appurtenance to the body of the Monopole that would protrude from the edge of the monopole by twenty feet (20') or more than the width of the Monopole at the level of the appurtenance, whichever is greater;**

As depicted on the Plans, AT&T's antennas and appurtenances will not protrude from the edge of the Monopole by more than twenty feet (20'). The outside face of the antenna is approximately eleven feet (11') from the edge of the Monopole and the Facility is consistent with the existing antenna installations on the Monopole.

³ 47 C.F.R. §1.6100

⁴ 47 C.F.R. §1.6100(b)(8)

⁵ 47 C.F.R. §1.6100(b)(7)

3. **For any eligible support structure, in this case the Monopole, the modification involves installation of more than the standard number of new equipment cabinets for the technology involved, but not to exceed four cabinets;**

AT&T proposes one walk-in equipment cabinet.

4. **The modification entails any excavation or deployment outside of the current site, except that, for towers other than towers in the public rights-of-way, it entails any excavation or deployment of transmission equipment outside of the current site by more than 30 feet in any direction. The site boundary from which the 30 feet is measured excludes any access or utility easements currently related to the site;**

AT&T does not propose excavation or deployment outside the current Site.

5. **The modification would defeat the concealment elements of the eligible support structure; or**

The Monopole does not incorporate concealment elements. The new panel antennas will be mounted in a similar fashion to the existing panel antennas currently attached to the Monopole.

6. **The modification does not comply with conditions associated with the siting approval of the construction or modification of the eligible support structure or base station equipment, provided however that this limitation does not apply to any modification that is non-compliant only in a manner that would not exceed the thresholds identified in § 1.40001(b)(7)(i) through (iv).**

The modification is consistent with all applicable terms and conditions of the City of Milford Planning and Zoning Board's approval in the Decision.

VI. MAXIMUM PERMISSIBLE EXPOSURE COMPLIANCE

The cumulative power density levels for AT&T's proposed Facility, along with the existing antennas on the Monopole, is calculated to be 29.33% of the federally permitted emission standards for the public pursuant to the FCC standards. Please refer to the Calculated Radio Frequency Emissions analysis submitted as **Attachment 8**. The total radio frequency power density will comply with the standards adopted by the Connecticut Department of Environmental Protection and the Maximum Permissible Exposure limits of the FCC.

VII. NOTICE TO MUNICIPAL OFFICIALS AND ABUTTING PROPERTY OWNERS

Pursuant to the Ruling, AT&T sent notice of its filing of this Sub-Petition to the City of Milford and to each abutting property owner as listed in the City of Milford's Assessor records. The notice indicates that comments or concerns should be submitted to the Council within thirty (30) days of the date the notice was sent. A certification of such notice, a copy of the notice, the

list of City officials and abutting property owners are submitted in **Attachment 9**. Additionally, a map produced from the City of Milford's GIS mapping data depicting abutting properties is included as **Attachment 10**.

VIII. CONCLUSION

AT&T respectfully asserts that its proposed modification does not substantially change the physical dimensions of the Monopole at the Site as enumerated in the Spectrum Act and the Regulations, and therefore qualifies as an eligible facilities request. For the foregoing reasons, AT&T respectfully requests that the Council issue an order approving AT&T's proposed modification to the existing wireless telecommunications facility.

Respectfully submitted,

/s/ Thomas J. Regan
Thomas J. Regan, Esq.

cc: Mayor Benjamin G. Blake
City of Milford
110 River Street
Milford, CT 06460

David B. Sulkis, City Planner
City of Milford
Parsons Government Center
70 West River Street
Milford, CT 06460

Karen Fortunati, City Clerk
City of Milford
Parsons Government Center
70 West River Street
Milford, CT 06460

ATTACHMENT 1



SBA Communications Corporation
8051 Congress Avenue
Boca Raton, FL 33487-1307

T + 561.995.7670
F + 561.995.7626

sbasite.com

LETTER OF AUTHORIZATION

SBA Site ID: CT46128-A, Milford - West

Property Located at: 160 Wampus Lane, Milford, CT, 06460

THE CITY/COUNTY OF: Milford / New Haven/Milford

APPLICATION FOR ZONING/USE/BUILDING PERMIT

This letter authorizes AT&T and its authorized agents to file for all necessary zoning, planning and building permits (local, state and federal) for the purposes of installing, operating and maintaining a telecommunications facility on the existing tower on the property referenced above on behalf of Cutting Edge Technologies, LLC.

All approval conditions that may be granted to AT&T in connection with above referenced facility relating to this specific application are the sole responsibility of AT&T.

SBA 2012 TC Assets, LLC

A handwritten signature in black ink, appearing to read "Jason Silberstein", is written over a light blue horizontal line.

Jason Silberstein

Executive VP, Site Leasing

Date: 3/01/2022

ATTACHMENT 2



City of Milford, Connecticut

Founded 1639

INLAND WETLANDS
OFFICE

70 West River Street
Milford, CT 06460-3317
Telephone (203) 783-3256

CERTIFIED MAIL #7000 1670 0011 1309 3698

May 22, 2001

Mr. John Knuff
Hurwitz & Sagarin, L.L.C.
147 North Broad Street
P.O. Box 112
Milford, Connecticut 06460

Re: Jurisdictional Ruling IW-JR-01-022; 166 Wampus Lane, Map 56, Block 813, Parcel 1-B; Nextel Communications. Proposed Wireless Telecommunications Facility with no work proposed within a wetland or 50' review area in the Indian River Watershed. Jurisdictional Ruling to be issued.

Mr. Knuff:

Pursuant to Section 22a-42a of the Connecticut General Statutes and Milford Inland Wetlands Regulations Sections 6-12, this is to inform you that the Milford Inland Wetlands Agency voted to authorize the Designated Agent to issue a Jurisdictional Ruling for your application IW-A-01-022 - 166 Wampus Lane, based on the information in the file, presented at the meeting and the plans entitled "Nextel Communications of the Mid-Atlantic, Inc. DBA Nextel Communications Site Number CT 0638, Milford, 166 Wampus Lane, Milford, CT" by URS Corporation AES, cover & 3 sheets, cover, sheets Z1 & Z2 dated 5/2/01, Boundary & Topographic Survey dated January 2001, last revised 4/12/01". The Agency also moved that the Designated Agent can authorize a reconfigured footprint as discussed at the meeting.

Therefore, I am issuing you this Jurisdictional Ruling allowing the construction of a wireless telecommunications facility and associated structures as shown on the plans referenced above within 50' of wetlands in the Indian River Watershed.

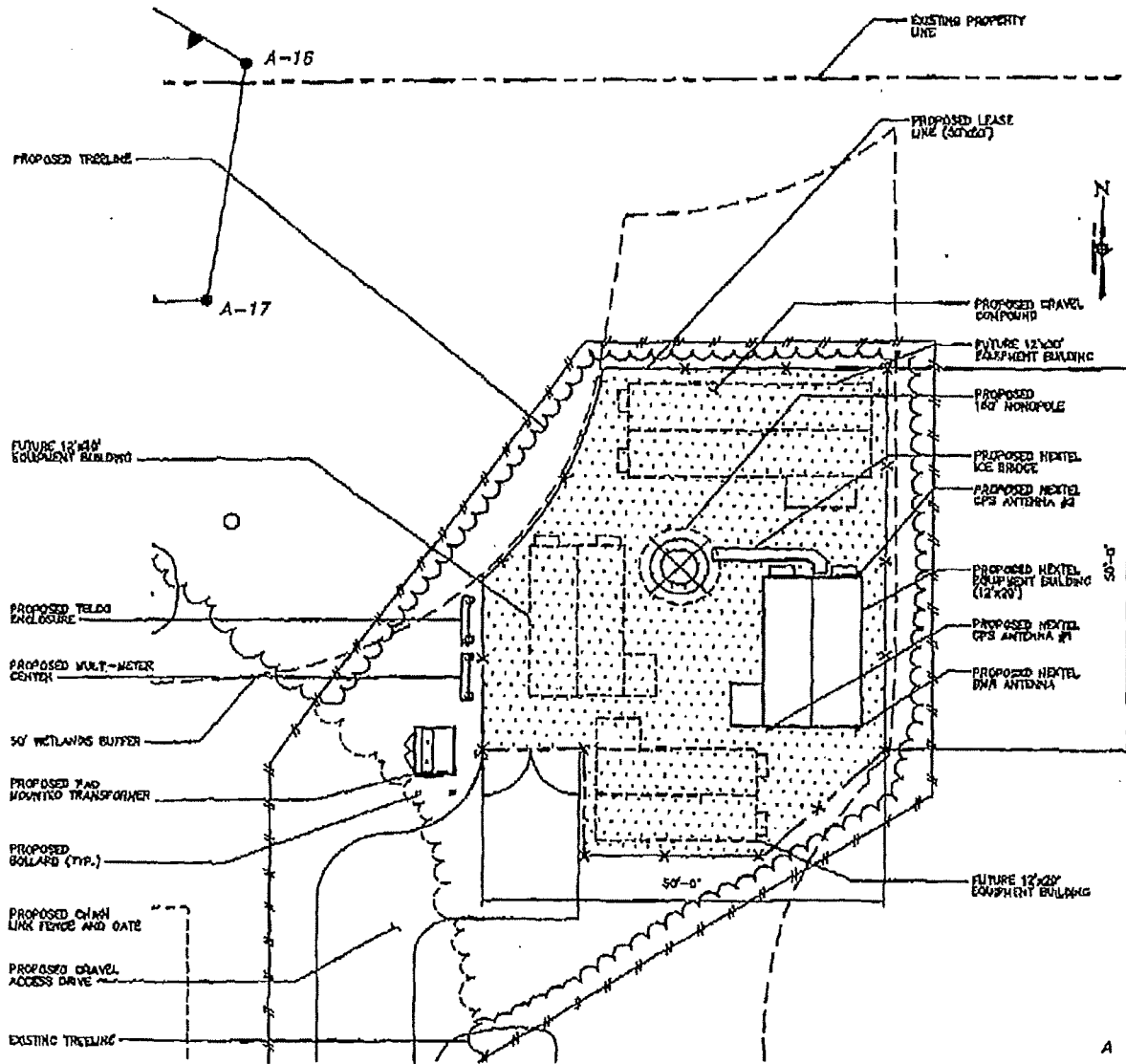
Prior to the start of construction you must install soil erosion and sedimentation controls as required on the plans to prevent erosion into wetlands both on and off site during construction. As soon as the disturbed soils on site are stabilized the soil erosion and sedimentation controls can be removed. At no time during construction can soils be stockpiled or deposited within the wetlands or regulated area on the property.

Should you have any questions concerning this matter, please contact the Inland Wetlands Agency Office at 783-3256.

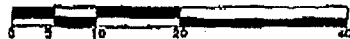
Sincerely,

Mary Rose Palumbo
Inland Wetlands Compliance Officer

cc: Planning & Zoning
City Engineer



1 COMPOUND PLAN
 SK-2 SCALE 1" = 20'-0"



SITE NO. 01
 CT-0838
 DESIGNED BY
 JCF
 3/20/01
 APPROVED BY

ONS CORPORATION AES
 600 ENTERPRISE DRIVE
 ROCKY HILL, CONNECTICUT
 1-860-528-5562

NEXTEL
 MILFORD
 160 WAMPUS LANE
 MILFORD, CONNECTICUT

REV	DATE	DESCRIPTION
1	05/22/01	ISSUED AS SHOWN

Job No. 01721.93 File No. SK-2

Draw. No.
SK-2
 Page 2 of 2



City of Milford, Connecticut

Founded 1639

PLANNING AND ZONING BOARD

70 WEST RIVER STREET
MILFORD, CONNECTICUT 06460
TELEPHONE 783-3245

June 6, 2001

Attorney John Knuff
147 North Broad Street
Milford, CT 06460

RE: 166 WAMPUS LANE (NEXTEL)

Dear Mr. Knuff:

At its meeting held on Tuesday, June 5, 2001 the Milford Planning & Zoning Board moved to grant Coastal Area Management Site Plan Review approval to Nextel Communications to construct a 120' tall enhanced specialized mobile radio monopole. This approval shall include 12 antennas (4 elements) facing in 3 different directions) at the top most portion of the tower. The height of the tower will allow co-location of 3 additional (lower) antenna arrays. All work shall be performed in conjunction with the following plan prepared by URS Corporation AES.

Title Sheet (T-1)

Survey dated January 1; revised to April 12, 2001

Site Plan, Legend & Zoning Table (2-1) revised to April 23, 2001

Compound Plan, Tower Elevation & Details (2-2) revised to April 23, 2001

The following city department reports shall apply: Fire Department report dated May 9, 2001 from Edward L. Beatty; Department of Public Works memo from B. C. Kolwicz dated May 15, 2001 and Inland Wetland letter from Mary Rose Palumbo dated May 22, 2001.

Very truly yours,

WADE E. PIERCE
Executive Secretary to the
Planning & Zoning Board

WEP/cv

CITY OF MILFORD, CONN.

BUILDING PERMIT

No 33671

Estimate cost (structural) - \$176,275.00

Fee - \$1,086.00

Date issued: 06-03-2001

Permission is hereby granted to Cutting Edge Technologies LLC/Owner - Spectrasite Const., Inc./Contractor to erect a new cellular telecommunications facility for Nextel Communications 120' high

Address 166 Wampus Lane (map 56, block 813, parcel 1B)

as follows: - Size ft. long ft. wide stories high supported on roof covered with walls to be (EXTERIOR) (INTERIOR); No. of house-keeping units

Owner Cutting Edge Technologies LLC

BUILDING DEPARTMENT, CITY OF MILFORD, CONN.

Thomas Ranni/Building Inspector

CITY OF MILFORD, CONNECTICUT

Date 8/9/01

Received of URS Corp - CT One thousand seven hundred and one Dollars \$ 1071 -

In payment of BP # 33671

CRK # 9069

DEPARTMENT

BY

Signature of Building Inspector

WHITE COPY - ORIGINAL

YELLOW COPY - DEPARTMENT COPY

ATTACHMENT 3

PROJECT INFORMATION

SCOPE OF WORK: TELECOMMUNICATIONS FACILITY (NSB A EXISTING 120'-0" A.G.L. TALL MONOPOLE WITH PROPOSED 20'-0" MONOPOLE EXTENSION. PROPOSED WALK-IN CABINET, AND GENERATOR WILL BE INSTALLED AT GRADE INSIDE A EXISTING FENCED-IN COMPOUND. PROPOSED TWELVE PANEL ANTENNAS, TWELVE RRH'S & TWO SURGE ARRESTORS WILL BE INSTALLED AT A HEIGHT OF 136'-0" A.G.L.):

SITE ADDRESS: 160 WAMPUS LANE
MILFORD, CT 06460

APPLICANT: AT&T
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

SITE OWNER: CUTTING EDGE TECHNOLOGY
160 WAMPUS LANE,
MILFORD, CT 06460

LATITUDE: 41.225122 N, 41° 13' 30.44" N

LONGITUDE: 73.042283 W, 73° 02' 32.22" W

TYPE OF SITE: MONOPOLE/ WALK-IN CABINET

EXISTING TOWER HEIGHT: 120'-0"±

PROPOSED TOWER HEIGHT: 140'-0"±

RAD CENTER: 136'-0"±



SITE NUMBER: CT1231

SITE NAME: MILFORD WAMPUS LANE

FA CODE:12712096

**PACE ID: MRCTB051866, MRCTB051858, MRCTB051863,
MRCTB051860, MRCTB048400, MRCTB051857, MRCTB051862**

PROJECT: NSB

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	2
GN-1	GENERAL NOTES	2
SN-1	SPECIAL INSPECTION NOTES	2
C-1	PLOT PLAN	2
A-1	COMPOUND & EQUIPMENT PLANS	2
A-2	ANTENNA LAYOUT & ELEVATION	2
A-3	DETAILS	2
A-4	DETAILS	2
E-1	ELECTRICAL NOTES & ONE-LINE DIAGRAM	2
G-1	GROUNDING DETAILS	2
RF-1	RF PLUMBING DIAGRAM (ALPHA & BETA)	2
RF-2	RF PLUMBING DIAGRAM (GAMMA)	2

VICINITY MAP

DIRECTIONS TO SITE:
GET ON I-90 W, HEAD SOUTHWEST, TURN RIGHT TOWARD LEGGATT MCCALL CONN, TURN LEFT ONTO LEGGATT MCCALL CONN, CONTINUE ONTO BURR ST, TURN LEFT ONTO COCHITUATE RD, USE THE RIGHT LANE TO MERGE ONTO I-90 W VIA THE RAMP TO SPRINGFIELD, (TOLL ROAD), FOLLOW I-90 W, I-84 AND I-91 S TO US-1 S/BOSTON POST RD IN MILFORD. TAKE EXIT 39A FROM I-95 S, MERGE ONTO I-90 W, (TOLL ROAD), KEEP LEFT TO STAY ON I-90 W, (TOLL ROAD), TAKE EXIT 78 TOWARD I-84 (TOLL ROAD), CONTINUE ONTO I-84, (TOLL ROAD), ENTERING CONNECTICUT, KEEP LEFT TO STAY ON I-84, USE THE LEFT 2 LANES TO TAKE EXIT 57 FOR CT-15 S TOWARD I-91 S/CHARTER OAK BRIDGE/N.Y.CITY, CONTINUE ONTO CT-15 S, CONTINUE ONTO CT-15 S/US-5 S, TAKE EXIT 86 TO MERGE ONTO I-91 S TOWARD NEW HAVEN/N.Y.CITY, TAKE THE EXIT ON THE LEFT ONTO I-95 S TOWARD N.Y. CITY, TAKE EXIT 39A TO MERGE ONTO US-1 S/BOSTON POST RD, TAKE CHERRY ST TO WAMPUS LN, MERGE ONTO US-1 S/BOSTON POST RD, SLIGHT LEFT TOWARD CHERRY ST, CONTINUE ONTO CHERRY ST, TURN LEFT ONTO GULF ST, SLIGHT LEFT ONTO OLD BUCKINGHAM AVE, SLIGHT LEFT ONTO WAMPUS LN, DESTINATION WILL BE ON THE LEFT



GENERAL NOTES

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

SBA SITE ID #: CT46128

72 HOURS



CALL BEFORE YOU DIG

CALL TOLL FREE 1-800-922-4455

OR CALL 811

UNDERGROUND SERVICE ALERT

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

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1231
SITE NAME: MILFORD WAMPUS LANE

160 WAMPUS LANE
MILFORD, CT 06460
NEW HAVEN COUNTY

550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	03/02/22	ISSUED FOR CONSTRUCTION	CC	JC	DPH
1	12/15/21	ISSUED FOR REVIEW	CC	JC	DPH
0	11/17/21	ISSUED FOR REVIEW	AR	JC	DPH

SCALE: AS SHOWN DESIGNED BY: JC DRAWN BY: AR



AT&T	
TITLE SHEET (NSB)	
SITE NUMBER	DRAWING NUMBER
CT1231	T-1
REV	2

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) LIGHTNING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81 STANDARDS) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS AND #2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
 CONTRACTOR – SAI
 SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
 OWNER – AT&T MOBILITY
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."
17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
20. **APPLICABLE BUILDING CODES:**
 SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

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

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

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

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

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

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

ABBREVIATIONS

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

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12 INDUSTRIAL WAY
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SITE NUMBER: CT1231
SITE NAME: MILFORD WAMPUS LANE

160 WAMPUS LANE
MILFORD, CT 06460
NEW HAVEN COUNTY

550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
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1	12/15/21	ISSUED FOR REVIEW	CC	JC	DPH
0	11/17/21	ISSUED FOR REVIEW	AR	JC	DPH

SCALE: AS SHOWN DESIGNED BY: JC DRAWN BY: AR

AT&T		
GENERAL NOTES (NSB)		
SITE NUMBER	DRAWING NUMBER	REV
CT1231	GN-1	2

STRUCTURAL NOTES:

- 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.
- 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.
- 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".
- STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
- 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.
- 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.
- 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.
- 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.
- 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 LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
- 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 D.I.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL", 14TH EDITION.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
- 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:

- ALL CONNECTIONS TO BE SHOP WELDED & FIELD BOLTED USING 3/4"Ø A325-X BOLTS, UNLESS OTHERWISE NOTIFIED.
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED BEFORE ORDERING MATERIAL.
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED PRIOR TO STEEL FABRICATION.
- 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.
- CENTERLINE OF PROPOSED STEEL PLATFORM SUPPORT COLUMNS TO BE CENTRALLY LOCATED OVER THE EXISTING BUILDING COLUMNS.
- EXISTING BRICK MASONRY COLUMNS/BEARING TO BE REPAIRED/REPLACED AT ALL PROPOSED PLATFORM SUPPORT POINTS. ENGINEER OF RECORD TO REVIEW AND APPROVE.

NOTES:

- REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
- PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
- PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
- HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
- 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.
- AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.

SPECIAL INSPECTION CHECKLIST

BEFORE CONSTRUCTION

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	ENGINEER OF RECORD APPROVED SHOP DRAWINGS ¹
REQUIRED	MATERIAL SPECIFICATIONS REPORT ²
N/A	FABRICATOR NDE INSPECTION
REQUIRED	PACKING SLIPS ³

ADDITIONAL TESTING AND INSPECTIONS:

DURING CONSTRUCTION

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS ⁴
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION ⁵
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT

ADDITIONAL TESTING AND INSPECTIONS:

AFTER CONSTRUCTION

CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS ⁶
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
REQUIRED	PHOTOGRAPHS

ADDITIONAL TESTING AND INSPECTIONS:



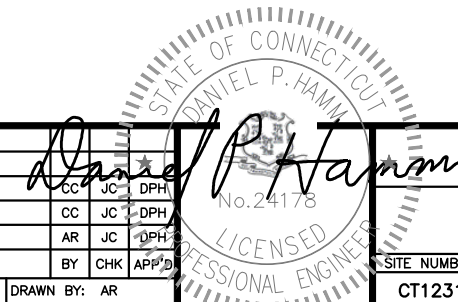
SITE NUMBER: CT1231
SITE NAME: MILFORD WAMPUS LANE

160 WAMPUS LANE
MILFORD, CT 06460
NEW HAVEN COUNTY



550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
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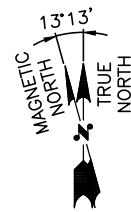
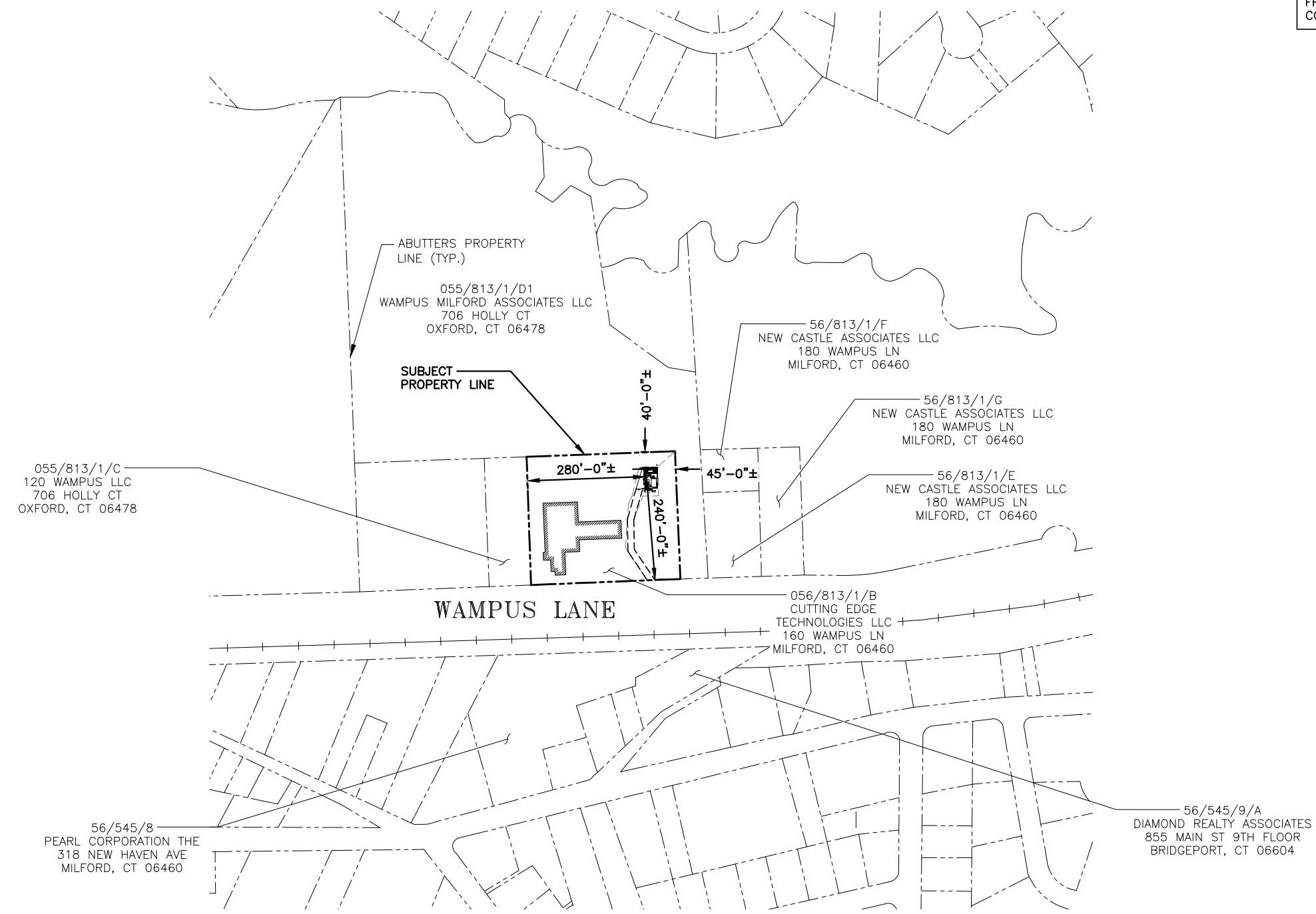
AT&T

STRUCTURAL NOTES
(NSB)

SITE NUMBER	DRAWING NUMBER	REV
CT1231	SN-1	2

ZONING INFORMATION		
ZONING DISTRICT:	INDUSTRIAL DISTRICT: ID	
DIMENSIONS REQUIREMENTS:	REQUIRED	PROPOSED
ANTENNA SETBACKS		
FRONT YARD SETBACK:	30'-0"	240'-0"±
SIDE YARD SETBACK:	0'-0"	280'-0"±
SIDE YARD SETBACK:	0'-0"	45'-0"±
REAR YARD SETBACK:	0'-0"	40'-0"±

INFORMATION TAKEN FROM PLANS BY CONNECTICUT GIS



PLOT PLAN
 22x34 SCALE: 1"=80'
 11x17 SCALE: 1"=160'

1
C-1



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

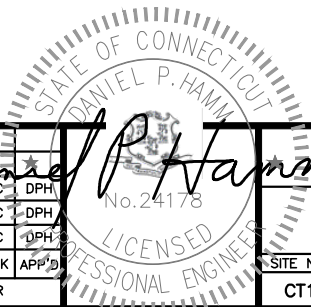
SAI
 12 INDUSTRIAL WAY SALEM, NH 03079

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SITE NAME: MILFORD WAMPUS LANE
 160 WAMPUS LANE
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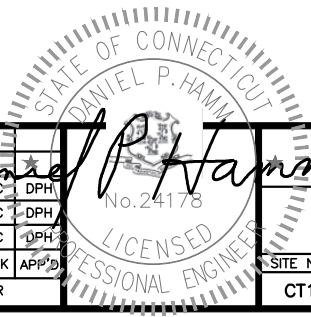
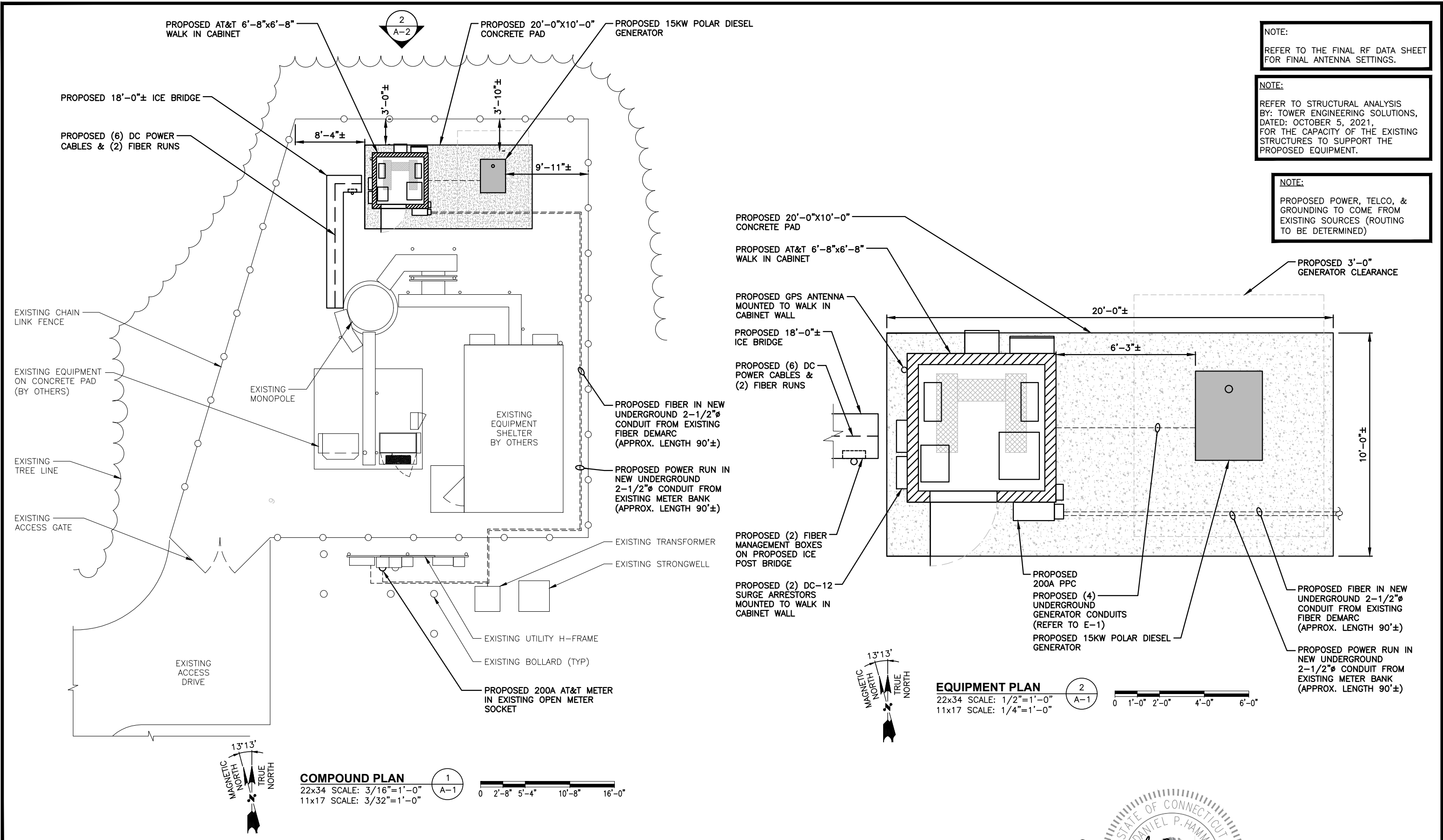
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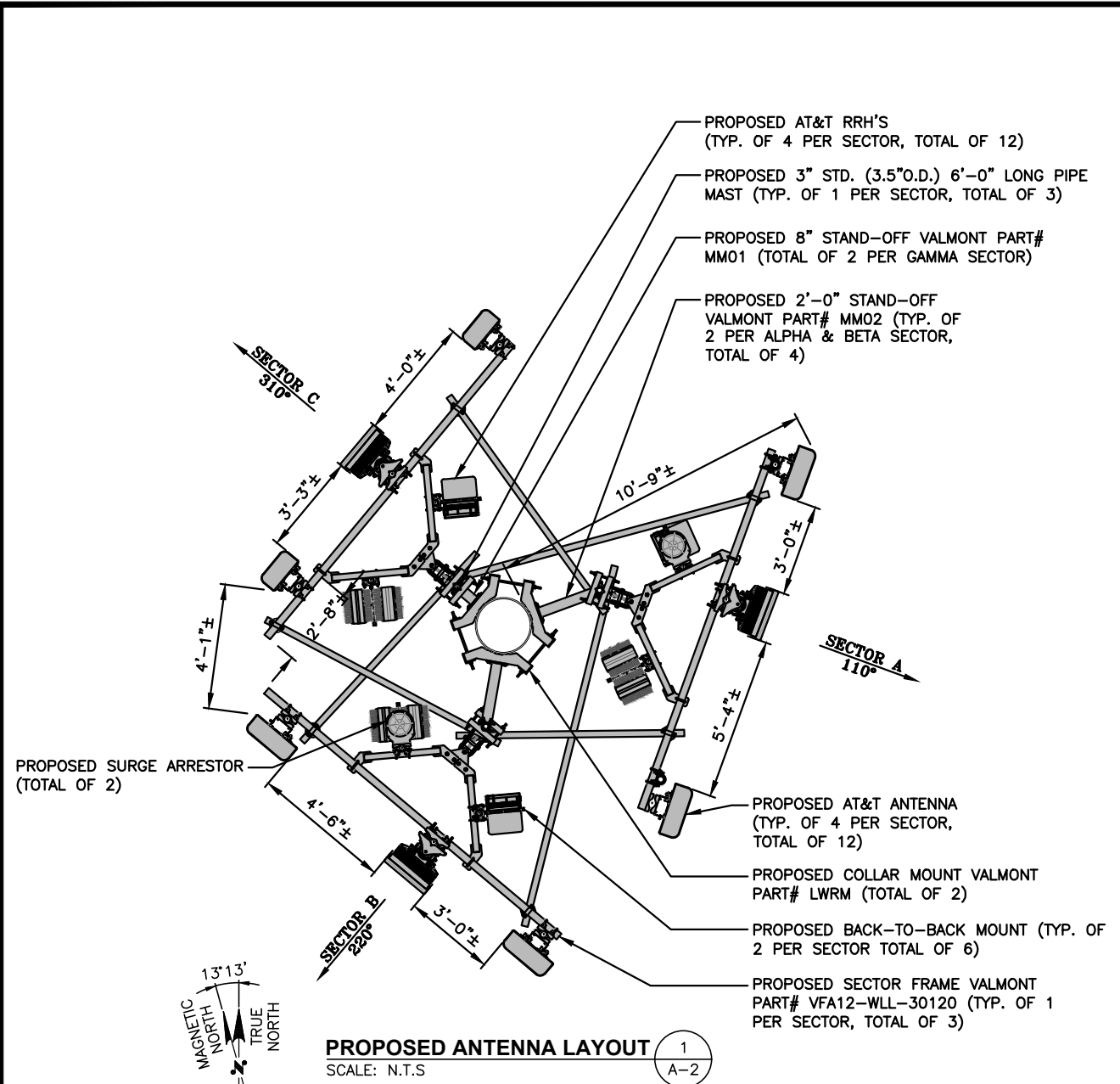
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SCALE: AS SHOWN DESIGNED BY: JC DRAWN BY: AR



AT&T	
PLOT PLAN (NSB)	
SITE NUMBER	DRAWING NUMBER
CT1231	C-1
REV	2

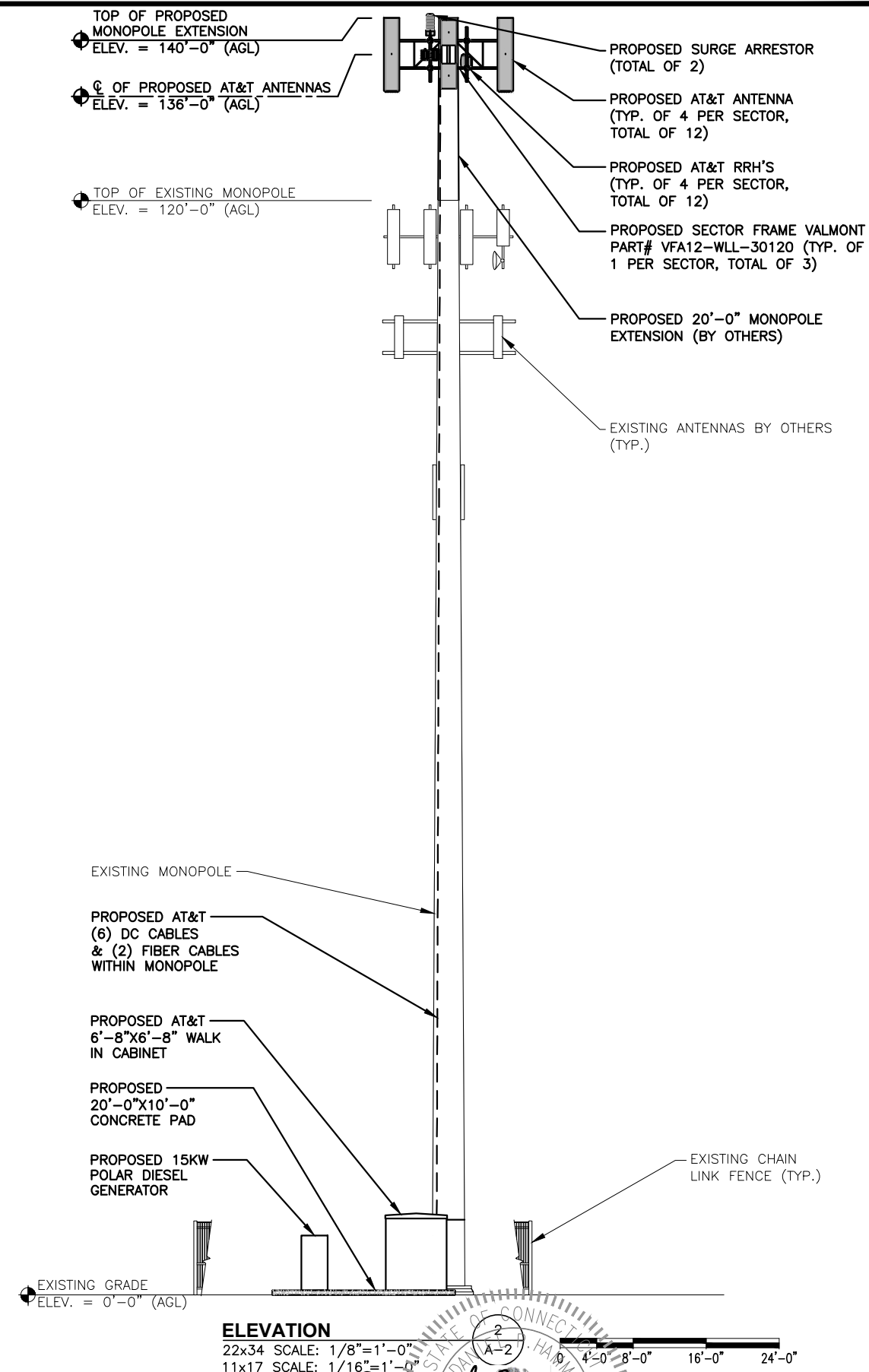




NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: JUNE 24, 2021.

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: TOWER ENGINEERING SOLUTIONS, DATED: OCTOBER 5, 2021, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

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



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160 WAMPUS LANE MILFORD, CT 06460 NEW HAVEN COUNTY

at&t
550 COCHITUATE ROAD FRAMINGHAM, MA 01701

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SCALE: AS SHOWN DESIGNED BY: JC DRAWN BY: AR

AT&T
ANTENNA LAYOUT & ELEVATION (NSB)
SITE NUMBER: CT1231 DRAWING NUMBER: A-2 REV: 2

NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: JUNE 24, 2021.

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PROPOSED 2' STAND-OFF VALMONT PART# MM02 (TYP. OF 2 PER BETA & GAMMA SECTORS, TOTAL OF 4)

PROPOSED 8" STAND-OFF VALMONT PART# MM01 (TOTAL OF 2 PER ALPHA SECTOR)

PROPOSED COLLAR MOUNT VALMONT PART# LWRM (TOTAL OF 2)

PROPOSED 3" STD. (3.5" O.D.) 7'-0" LONG PIPE MAST (TYP. OF 1 PER SECTOR, TOTAL OF 3)

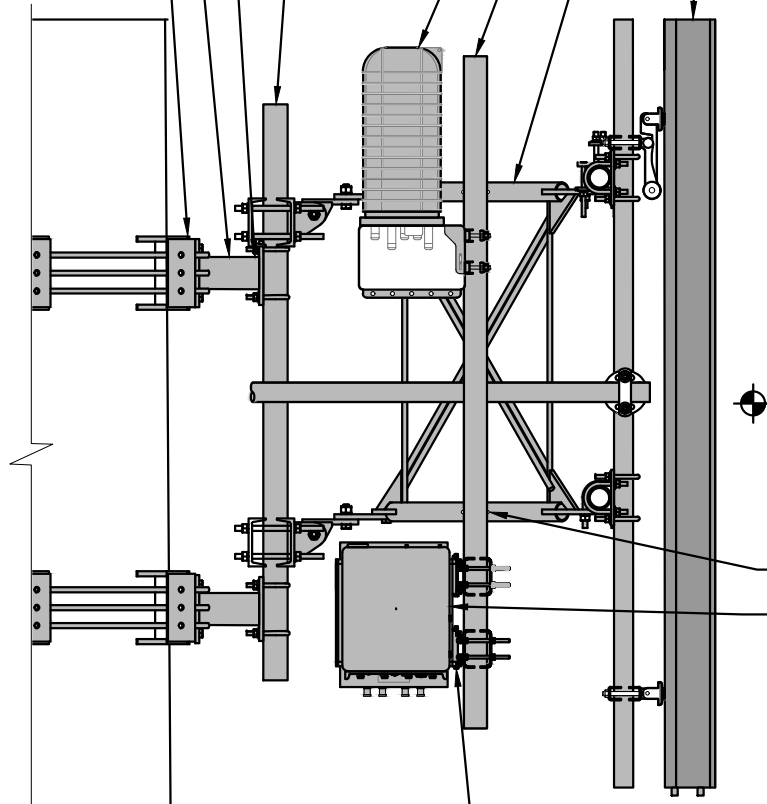
PROPOSED SURGE ARRESTOR (TOTAL OF 2)

PROPOSED 2-1/2" STD. (2.88" O.D.) MOUNTING PIPE (7'-0" LONG PIPE) (TYP. OF 2 PER SECTOR, TOTAL OF 6)

PROPOSED SECTOR FRAME VALMONT PART# VFA12-WLL-30120 (TYP. OF 1 PER SECTOR, TOTAL OF 3)

PROPOSED AT&T ANTENNAS (TYP. OF 4 PER SECTOR, TOTAL OF 12)

ANTENNA SCHEDULE										
SECTOR	EXISTING/PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA Q. HEIGHT	AZIMUTH	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	PROPOSED	LTE B14/AWS/WCS	TPA65R-BU8DA-K	96X21X7.8	136'-0"	110°	(P) (1) 4478 B14 (P) (1) 4415 B30	18.1X13.4X8.3 16.5X13.4X5.9	(P) (6) DC POWER CABLES (P) (2) FIBER RUN (LENGTH=170±)	(P) (2) RAYCAP DC9-48-60-24-8C-EV
A2	PROPOSED	C-BAND	AIR6449 B77D	30.4X15.9X8.1	136'-0"	110°	-	-		
A3	PROPOSED	LTE 700 BC/580/PCS	DMP65R-BU8DA-K	96X20.7X7.7	136'-0"	110°	(P) (1) 4449 B5/B12 (P) (1) 8843 B2/B66A	17.9X13.2X9.7 14.9X13.2X10.9		
A4	-	-	-	-	-	-	-	-		
B1	PROPOSED	LTE B14/AWS/WCS	TPA65R-BU8DA-K	96X21X7.8	136'-0"	220°	(P) (1) 4478 B14 (P) (1) 4415 B30	18.1X13.4X8.3 16.5X13.4X5.9		
B2	PROPOSED	C-BAND	AIR6449 B77D	30.4X15.9X8.1	136'-0"	220°	-	-		
B3	PROPOSED	LTE 700 BC/580/PCS	DMP65R-BU8DA-K	96X20.7X7.7	136'-0"	220°	(P) (1) 4449 B5/B12 (P) (1) 8843 B2/B66A	17.9X13.2X9.7 14.9X13.2X10.9		
B4	-	-	-	-	-	-	-	-		
C1	PROPOSED	LTE B14/AWS/WCS	TPA45R-KU8A	98.7X15.4X8.2	136'-0"	310°	(P) (1) 4478 B14 (P) (1) 4415 B30	18.1X13.4X8.3 16.5X13.4X5.9		
C2	PROPOSED	C-BAND	AIR6449 B77D	30.4X15.9X8.1	136'-0"	310°	-	-		
C3	PROPOSED	LTE 700 BC/580/PCS	TPA45R-KU8A	98.7X15.4X8.2	136'-0"	310°	(P) (1) 4449 B5/B12 (P) (1) 8843 B2/B66A	17.9X13.2X9.7 14.9X13.2X10.9		
C4	-	-	-	-	-	-	-	-		



CL OF PROPOSED AT&T ANTENNAS
ELEV. = 136'-0"± A.G.L.

PROPOSED 1/2" U-BOLT (TYP.)

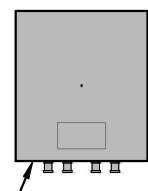
PROPOSED AT&T RRH'S (TYP. OF 4 PER SECTOR, TOTAL OF 12)

NOTE:
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

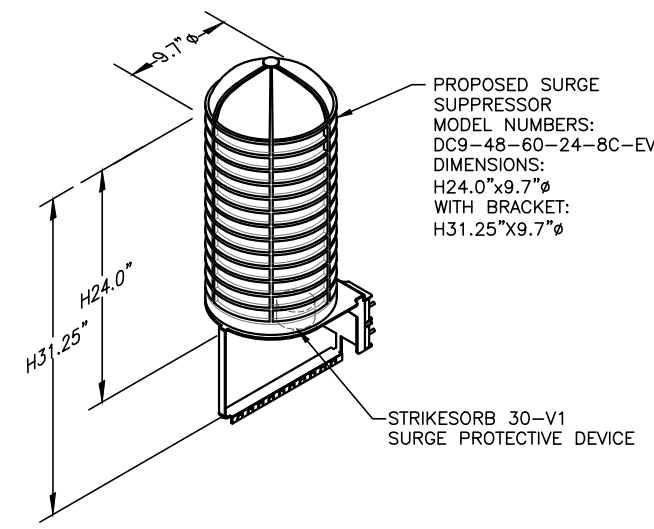
PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

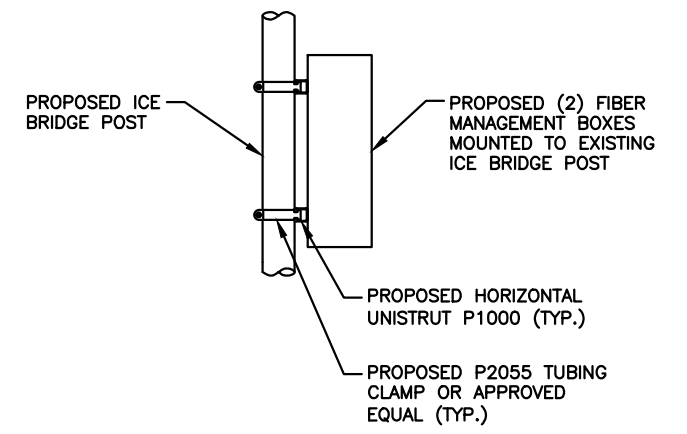
PROPOSED RRUS DETAIL
SCALE: N.T.S.



FINAL ANTENNA SCHEDULE
SCALE: N.T.S.



DC SURGE SUPPRESSOR DETAIL
SCALE: N.T.S.

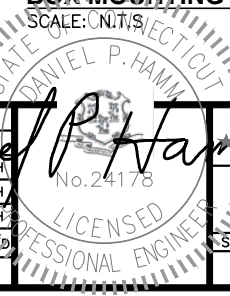


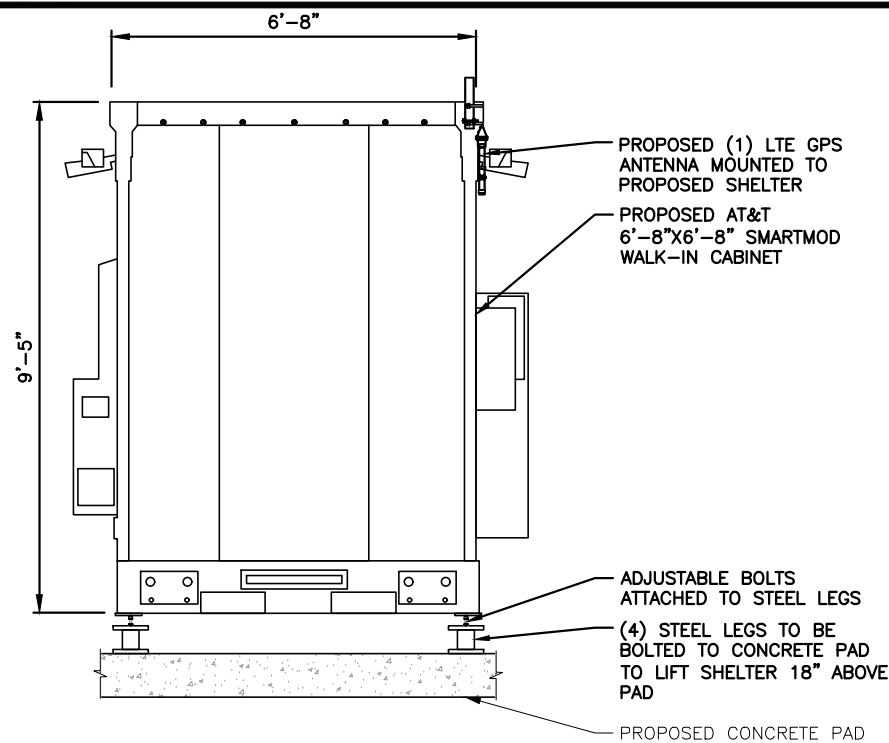
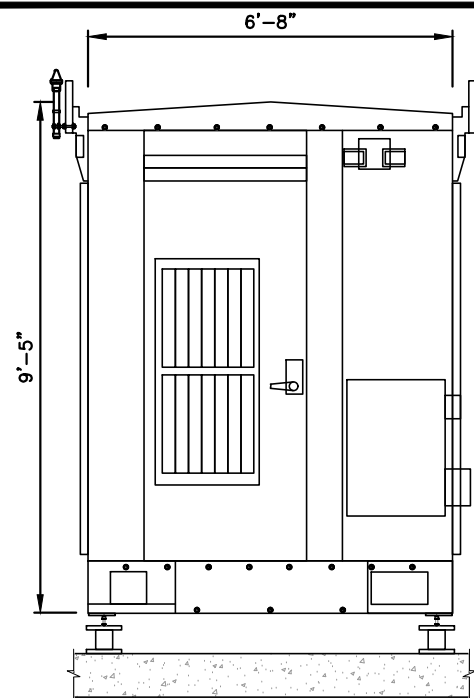
PROPOSED FIBER MANAGEMENT BOX MOUNTING DETAIL
SCALE: N.T.S.

NOTE:
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

PROPOSED SECTOR FRAME, ANTENNA, SURGE SUPPRESSOR & RRH'S MOUNTING DETAIL
SCALE: N.T.S.

2	03/02/22	ISSUED FOR CONSTRUCTION	CC	JC	DPH
1	12/15/21	ISSUED FOR REVIEW	CC	JC	DPH
0	11/17/21	ISSUED FOR REVIEW	AR	JC	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: JC	DRAWN BY: AR		

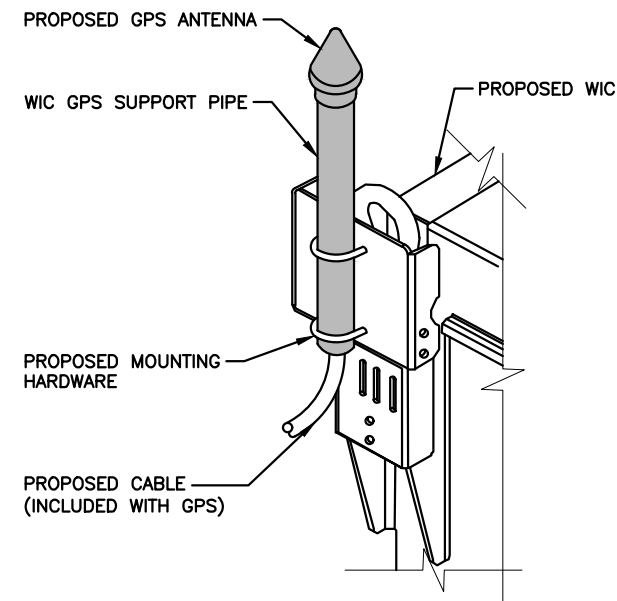




NOTE:
SHELTER SHALL BE MOUNTED PER
MANUFACTURER'S SPECIFICATIONS.

TYPICAL SHELTER DETAIL
SCALE: N.T.S

1
A-4

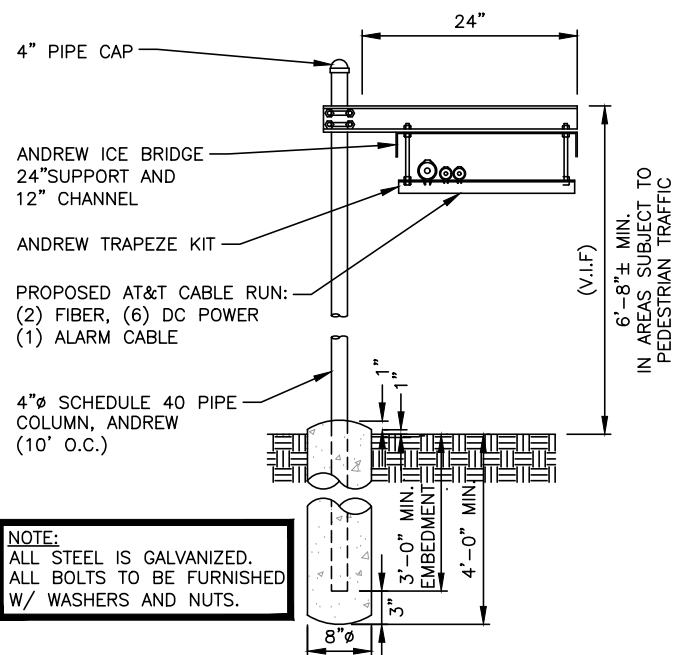


GPS MOUNTING DETAIL
N.T.S

2
A-4

FOUNDATION NOTES & CONCRETE SPECIFICATIONS:

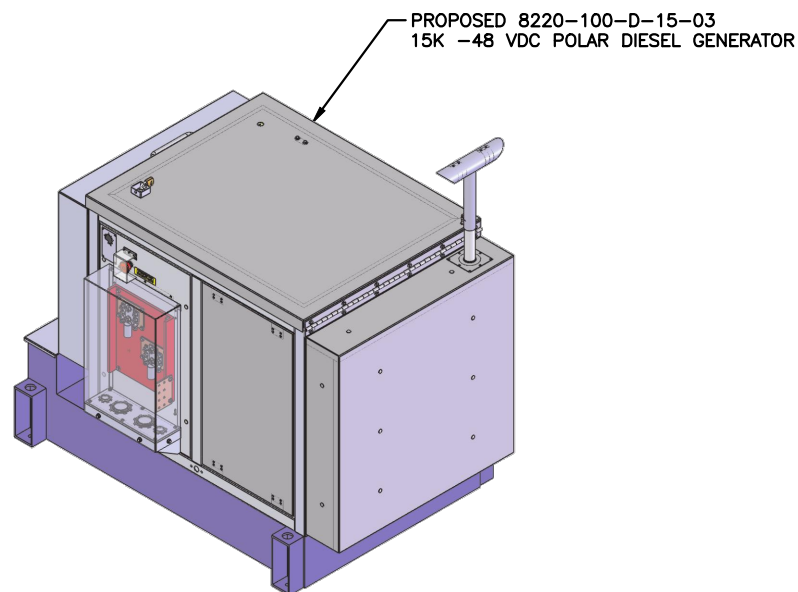
- FOUNDATION AREA SHALL BE EXCAVATED TO THE DEPTH AND DIMENSIONS SHOWN ON THE PLANS. EXISTING LEDGE AND ALL OTHER EXISTING UNSUITABLE MATERIAL SHALL BE REMOVED AND LEGALLY DISPOSED OF OFF-SITE. THE SUBGRADE SHALL BE ROLLED WITH A 1-TON, VIBRATORY, WALK-BEHIND ROLLER AT A SPEED OF LESS THAN 2 FPS, 6 PASSES MINIMUM, TO PROVIDE UNYIELDING SURFACE.
- UNDERCUT SOFT OR "WEAVING" AREAS A MINIMUM OF 12 INCHES DEEP. BACKFILL UNDERCUT AREA WITH FILL MEETING THE SPECIFICATIONS OF STRUCTURAL FILL.
- CONCRETE TO HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH (f'c)=4000 psi. CONCRETE TO BE AIR ENTRAINED, DESIRED AIR CONTENT TO BE 6% (PLUS OR MINUS 2%)
- REINFORCING BAR TO BE ASTM A615 GRADE 60.
- WELDED WIRE FABRIC TO CONFORM TO THE REQUIREMENTS OF ASTM A185. WIRES FOR FABRIC TO CONFORM TO THE REQUIREMENTS OF ASTM A82.
- COORDINATE WITH MANUFACTURER OF PREFABRICATED SHELTER FOR LOCATION OF ATTACHMENTS TO BASE SLAB.
- ALL REINFORCING TO HAVE MINIMUM CONCRETE COVER PER ACI SPECIFICATIONS.
- ALL CONCRETE MATERIALS AND WORKMANSHIP SHALL CONFORM TO LATEST EDITION OF ACI 318 AND APPLICABLE STATE BUILDING CODE.



NOTE:
ALL STEEL IS GALVANIZED.
ALL BOLTS TO BE FURNISHED
W/ WASHERS AND NUTS.

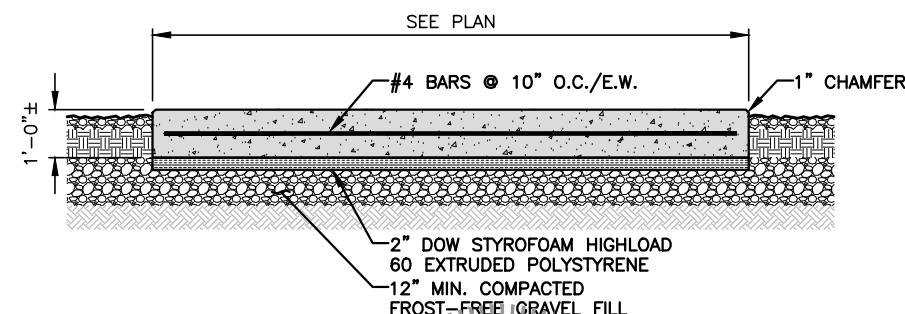
ICE BRIDGE DETAIL
SCALE: N.T.S

3
A-4



PROPOSED 15kW DIESEL POLAR GENERATOR
SCALE: N.T.S

4
A-4



CONCRETE PAD DETAIL
22x34 SCALE: N.T.S

5
A-4

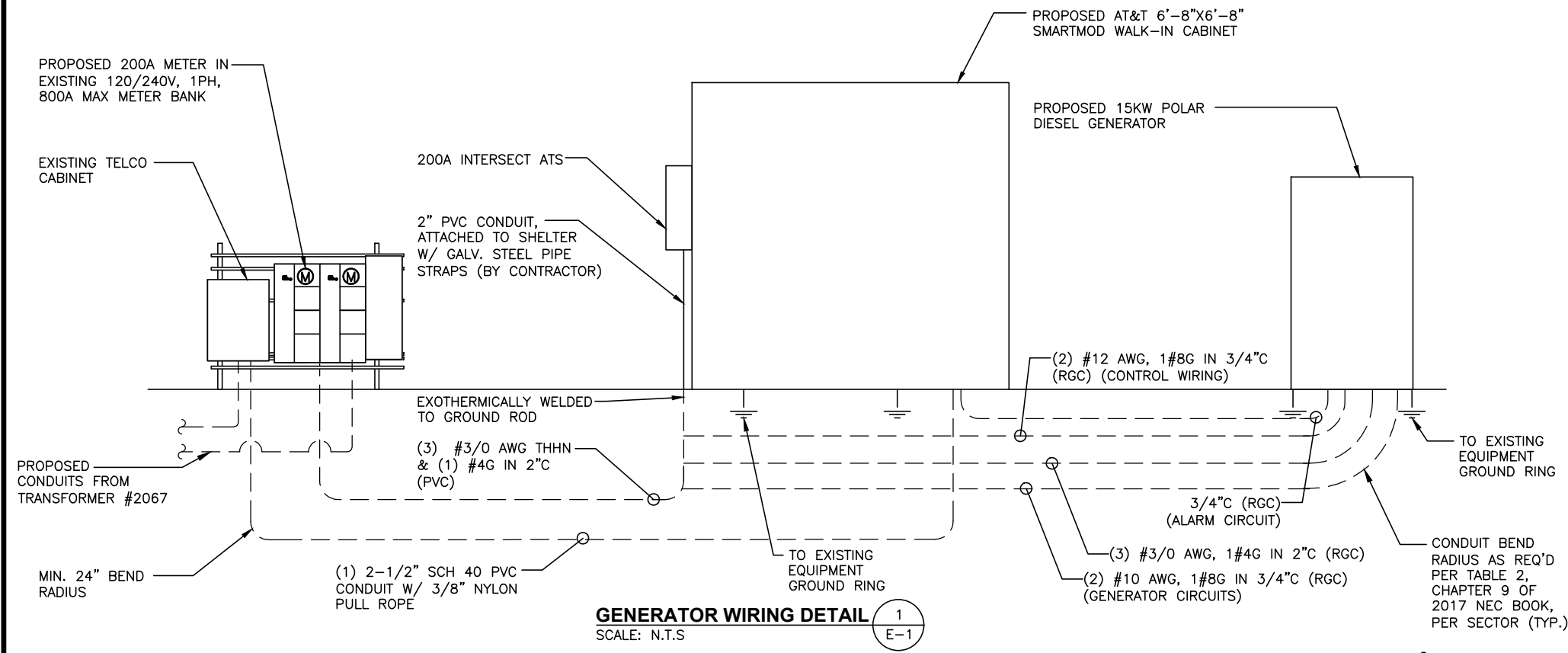
NO.	DATE	REVISIONS	BY	CHK	APP'D
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1	12/15/21	ISSUED FOR REVIEW	CC	JC	DPH
0	11/17/21	ISSUED FOR REVIEW	AR	JC	DPH

SCALE: AS SHOWN DESIGNED BY: JC DRAWN BY: AR

Daniel P. Hamm
No. 24178
LICENSED PROFESSIONAL ENGINEER

SITE NUMBER	DRAWING NUMBER	REV
CT1231	A-4	2

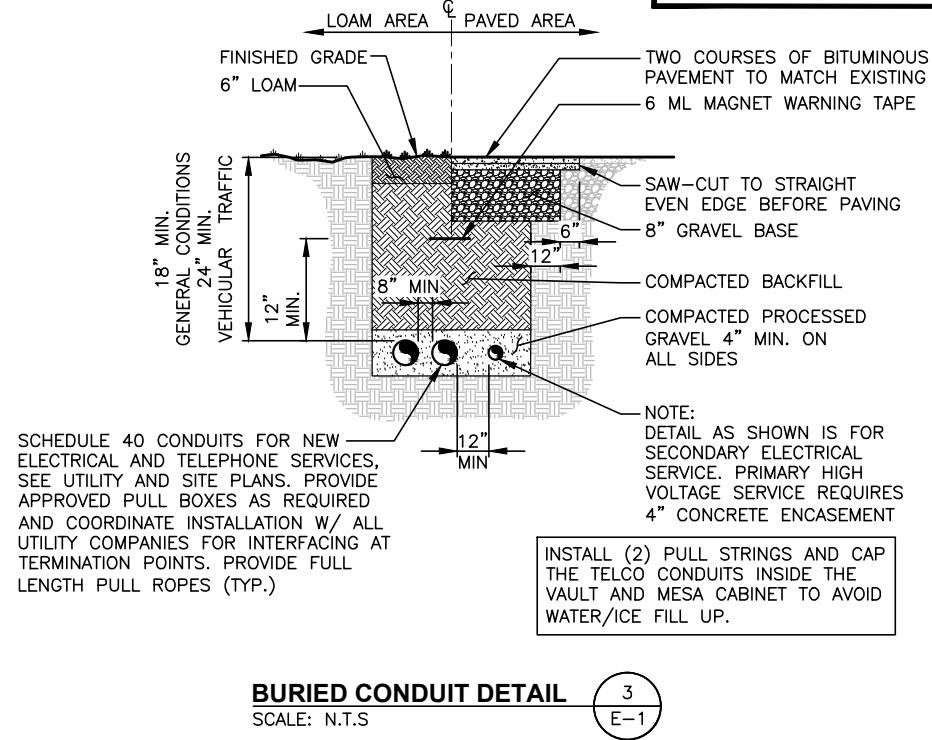
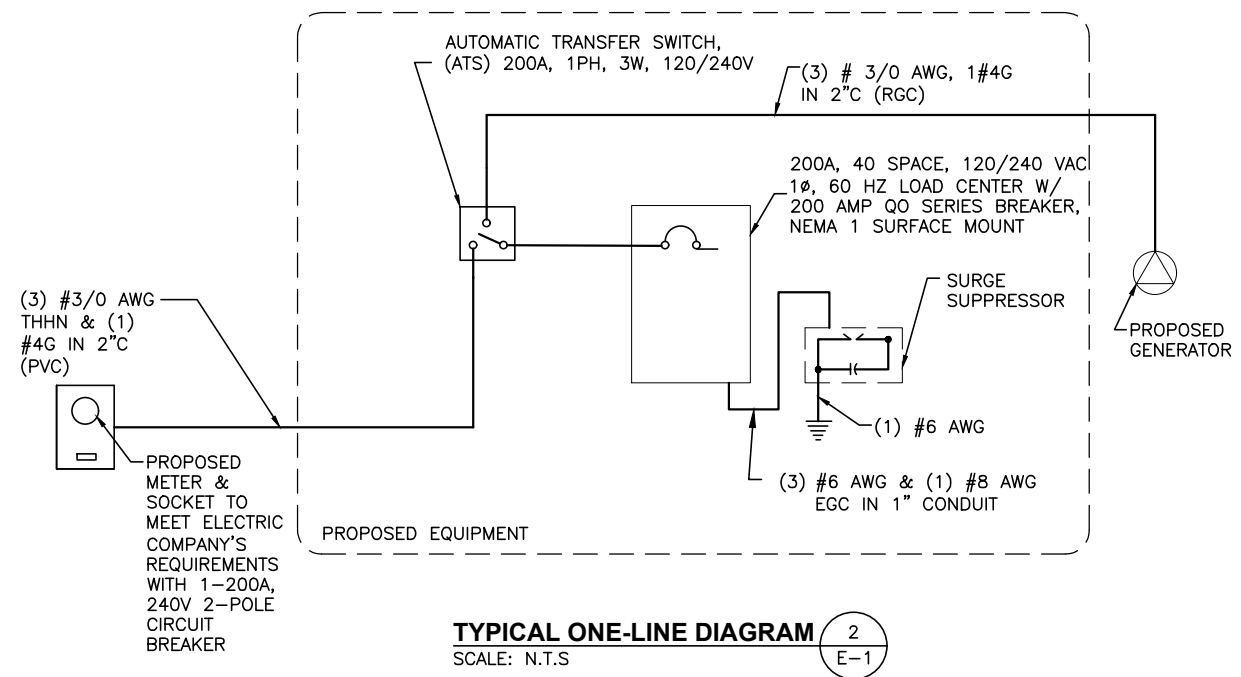
NOTES:
 1. GROUND [ATS] TO EXISTING GROUND BAR
 2. GROUND GENERATOR TO EXISTING GROUND RING WITH (2) #2 AWG GROUND WIRES.



ELECTRICAL LEGEND & ABBREVIATIONS

	NEW PANEL BOARD, SURFACE MOUNTED
	EXISTING PANEL BOARD, SURFACE MOUNTED
	DRY TYPE TRANSFORMER
	METER
	CIRCUIT BREAKER
	NON-FUSIBLE DISCONNECT SWITCH, MOUNTED 54" A.F.F.
	FUSIBLE DISCONNECT SWITCH, MOUNTED 54" A.F.F.
	TRANSIENT VOLTAGE SURGE SUPPRESSOR WITH BUILT-IN FUSES, SURFACE MOUNTED
	DUPLEX OUTLET, SURFACE MOUNTED, 20 AMPS, 125 VOLTS, SINGLE PHASE
	JUNCTION BOX, SURFACE MOUNTED 18" A.F.F.
	EXPOSED WIRING
	HOME RUNS, MINIMUM 2#10 + 1#8G IN 3/4" CONDUIT U.O.N.
A.F.F.	ABOVE FINISHED FLOOR
U.O.N.	UNLESS OTHERWISE NOTED
WP	WEATHERPROOF
GI	GROUND FAULT INTERRUPTER
A	AMPERE
V	VOLT
KWH	KILOWATT - HOUR
C	CONDUIT
PVC	POLYVINYL CHLORIDE
HZ	HERTZ
PH, #	PHASE
W	WATTS
NEC	NATIONAL ELECTRIC CODE
PPC	POWER PROTECTION CABINET
UL	UNDERWRITER LABORATORIES
PTS	POWER TRANSFER SWITCH
QO	QUICK OPEN
GRC	GALVANIZED RIGID CONDUIT
G	GROUND
⊕	GROUND
MGB	MASTER GROUND BAR
EGB	EQUIPMENT GROUND BAR
⊕	MECHANICAL CONNECTION
⊕	CADWELD CONNECTION
G	GROUND COPPER WIRE, SIZE AS NOTED
---	EXPOSED WIRING
---	COAXIAL CABLE
---	5/8"x8" COPPER CLAD STAINLESS STEEL GROUND ROD
⊕	EXOTHERMIC (CAD WELD) OR MECHANICAL (COMPRESSION TYPE) CONNECTION
PF	POWER FACTOR

- ### ELECTRICAL AND GROUNDING NOTES
- ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
 - ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
 - THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
 - GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
 - ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
 - BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
 - ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THINSULATION.
 - RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
 - RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
 - WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
 - ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
 - PPC SUPPLIED BY PROJECT OWNER.
 - GROUNDING SHALL COMPLY WITH NEC ART. 250.
 - GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
 - USE #6 AWG COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 AWG SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
 - ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
 - ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 AWG WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
 - CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
 - APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
 - BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, AND LNA TO EGB PLACED NEAR THE ANTENNA LOCATION.
 - BOND ANTENNA EGB'S AND MGB TO GROUND RING.
 - CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMS MAXIMUM RESISTANCE REQUIRED.
 - CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE-TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.
 - ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2" 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.



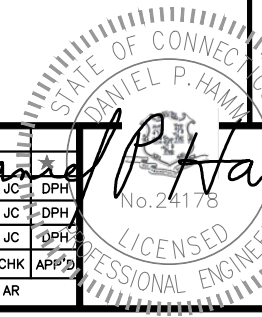
HGD HUDSON Design Group LLC
 45 BEECHWOOD DRIVE
 NORTH ANDOVER, MA 01845
 TEL: (978) 557-5553
 FAX: (978) 336-5586

SAI
 12 INDUSTRIAL WAY
 SALEM, NH 03079

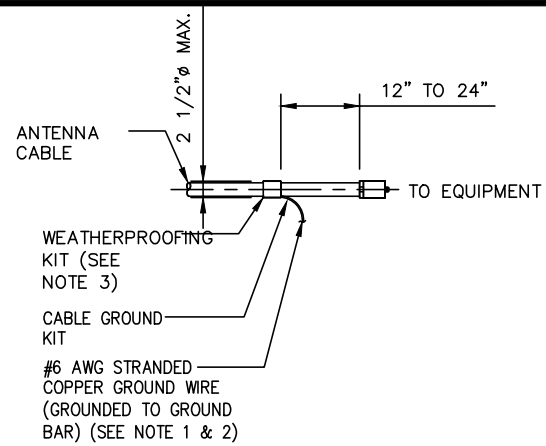
SITE NUMBER: CT1231
 SITE NAME: MILFORD WAMPUS LANE
 160 WAMPUS LANE
 MILFORD, CT 06460
 NEW HAVEN COUNTY

at&t
 550 COCHITUATE ROAD
 FRAMINGHAM, MA 01701

2	03/02/22	ISSUED FOR CONSTRUCTION	CC	JC	DPH
1	12/15/21	ISSUED FOR REVIEW	CC	JC	DPH
0	11/17/21	ISSUED FOR REVIEW	AR	JC	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: JC	DRAWN BY: AR		

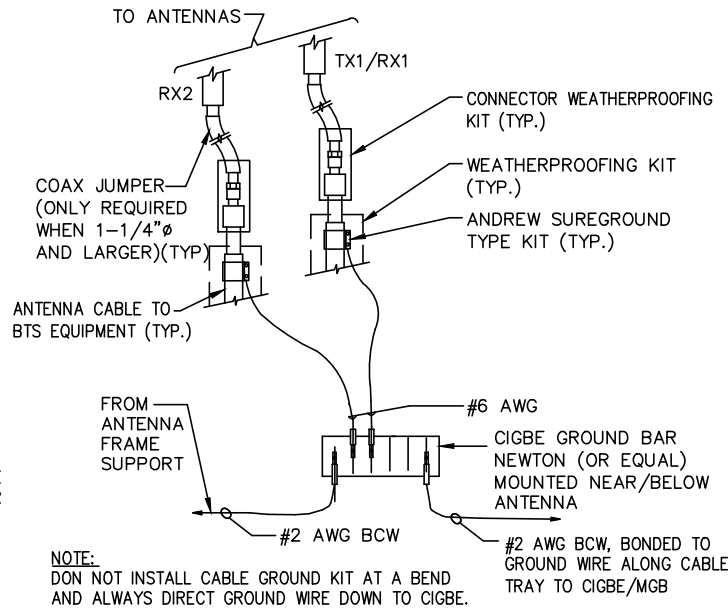
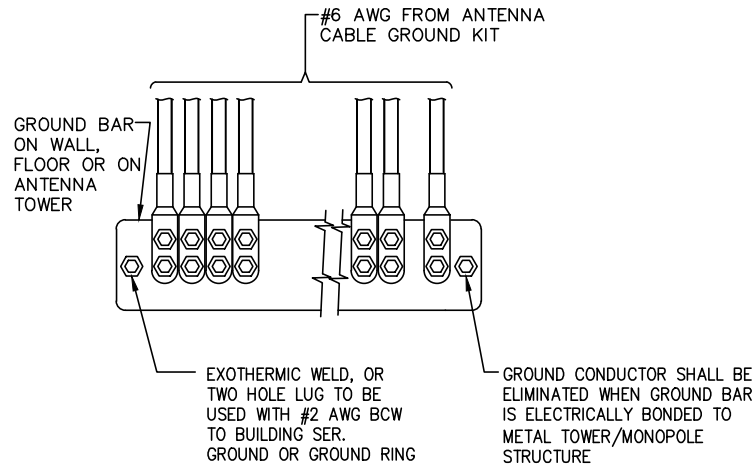


AT&T
ELECTRICAL NOTES & ONE-LINE DIAGRAM (NSB)
 SITE NUMBER: CT1231
 DRAWING NUMBER: E-1
 REV: 2



NOTES:

- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
- GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
- WEATHER PROOFING SHALL BE TWO-PART TAPE SUPPLIED WITH KIT. COLD SHRINK SHALL NOT BE USED.



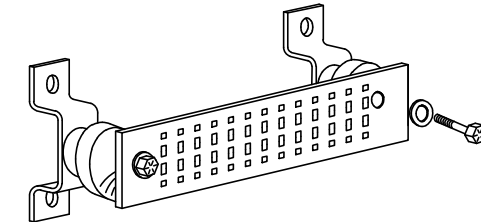
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

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)



CONNECTION OF CABLE GROUND KIT TO ANTENNA CABLE

SCALE: N.T.S.

1
G-1

INSTALLATION OF GROUND WIRE TO GROUND BAR

SCALE: N.T.S.

2
G-1

INSTALLATION OF GROUND WIRE TO GROUNDING BAR TOWER

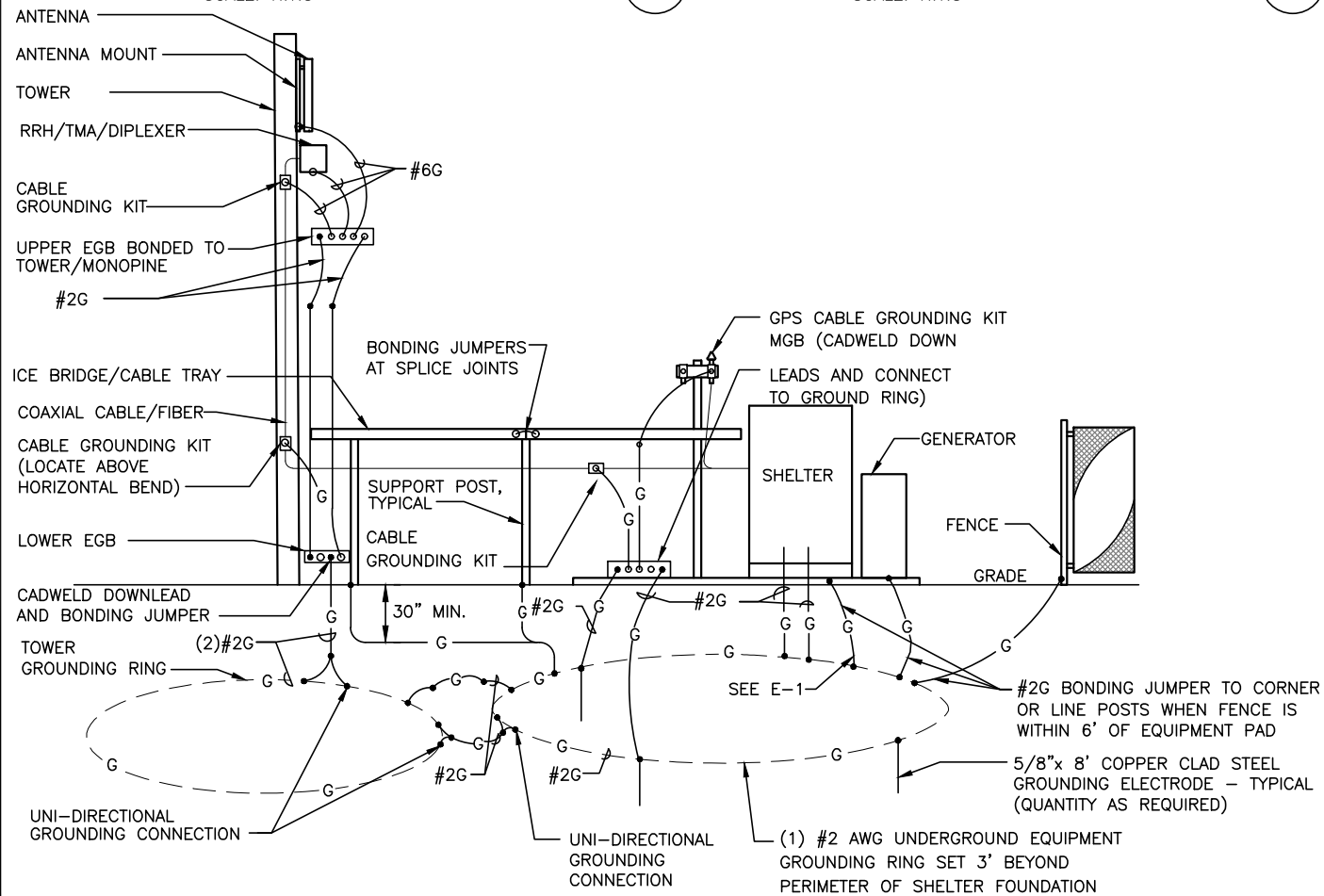
SCALE: N.T.S.

3
G-1

GROUND BAR - DETAIL

SCALE: N.T.S.

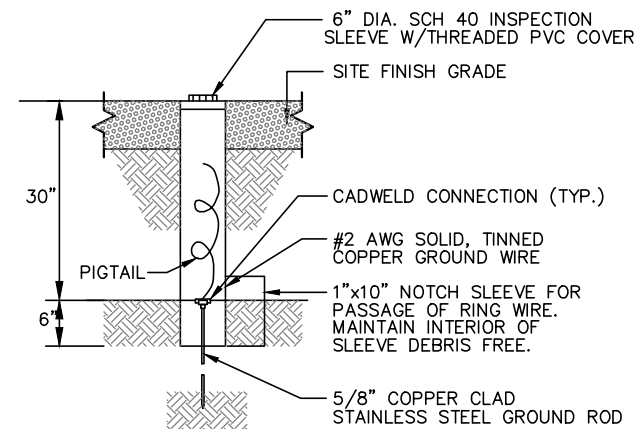
4
G-1



GROUNDING ONE-LINE DIAGRAM

SCALE: N.T.S.

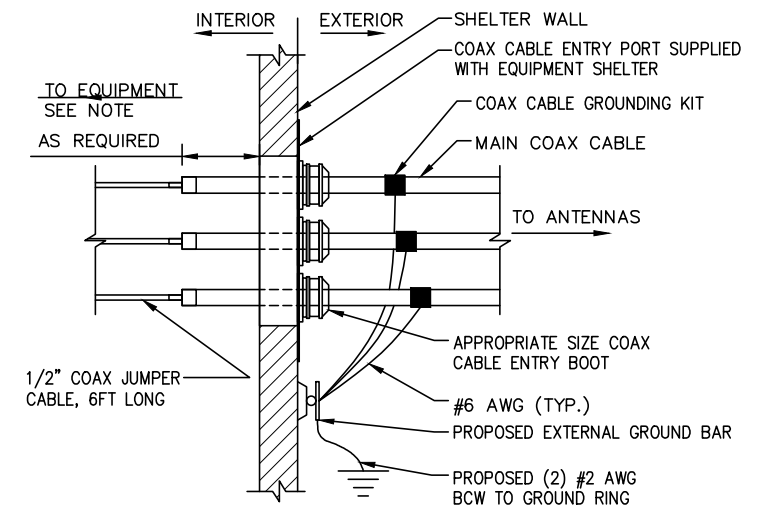
5
G-1



GROUND ROD TEST WELL DETAIL

SCALE: N.T.S.

6
G-1



NOTE: EXTEND MAIN COAXIAL CABLE AS CLOSE AS POSSIBLE TO BTS EQUIPMENT. MAX LENGTH OF BTS JUMPER IS 6 FT.

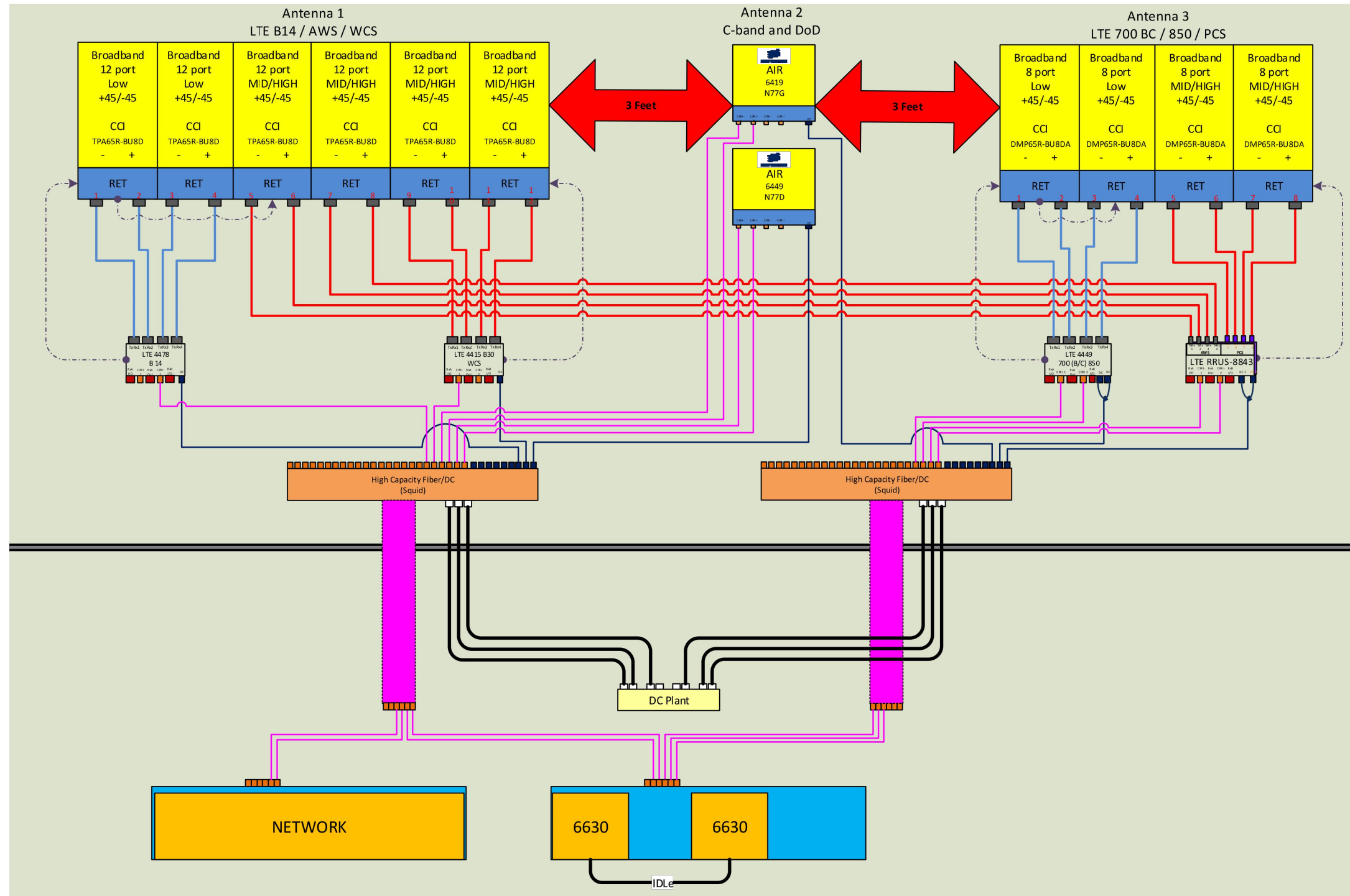
INSTALLATION OF GROUND WIRE TO GROUND BAR

SCALE: N.T.S.

7
G-1

2	03/02/22	ISSUED FOR CONSTRUCTION	CC	JC	DPH
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NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: JC	DRAWN BY: AR		

Daniel P. Hamm
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER



**RF PLUMBING DIAGRAM
(ALPHA & BETA SECTORS)**

SCALE: N.T.S

1
RF-1

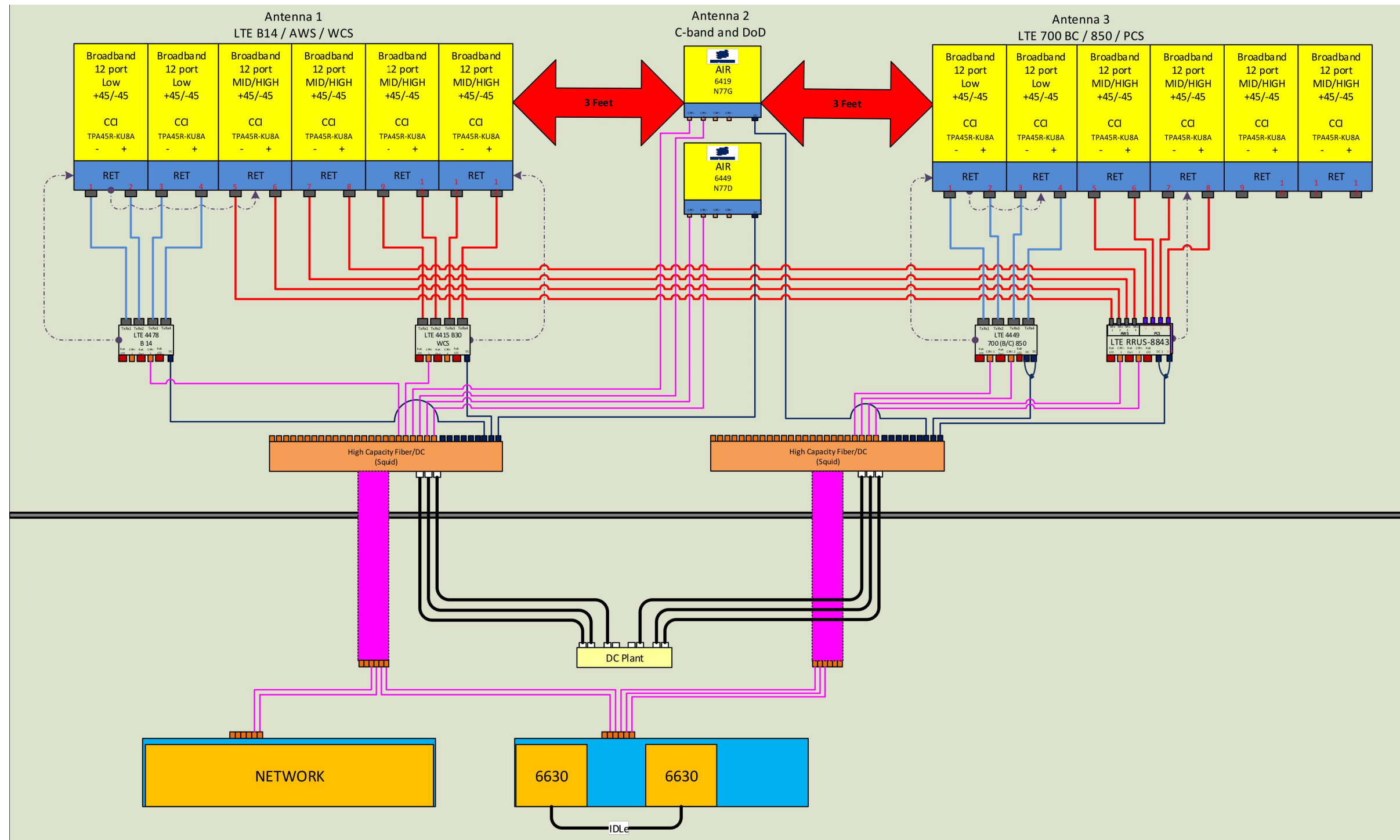
NOTE:
1. CONTRACTOR TO CONFIRM ALL PARTS.
2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	03/02/22	ISSUED FOR CONSTRUCTION	CC	JC	DPH
1	12/15/21	ISSUED FOR REVIEW	CC	JC	DPH
0	11/17/21	ISSUED FOR REVIEW	AR	JC	DPH

SCALE: AS SHOWN DESIGNED BY: JC DRAWN BY: AR

AT&T		
RF PLUMBING DIAGRAM (ALPHA & BETA) (NSB)		
SITE NUMBER	DRAWING NUMBER	REV
CT1231	RF-1	2



**RF PLUMBING DIAGRAM
(GAMMA SECTOR)**

SCALE: N.T.S

1
RF-2

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.

NO.	DATE	REVISIONS	BY	CHK	APP'D
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1	12/15/21	ISSUED FOR REVIEW	CC	JC	DPH
0	11/17/21	ISSUED FOR REVIEW	AR	JC	DPH

SCALE: AS SHOWN DESIGNED BY: JC DRAWN BY: AR

AT&T		
RF PLUMBING DIAGRAM (GAMMA) (NSB)		
SITE NUMBER	DRAWING NUMBER	REV
CT1231	RF-2	2

ATTACHMENT 4



June 24, 2021



SAI Communications
12 Industrial Way
Salem NH, 03079

RE: Site Number: CT1231 (NSB)
 FA Number: 12712096
 PACE Number: MRCTB051866
 PT Number: 2051A0ZE7S
 Site Name: MILFORD WAMPUS LANE
 Site Address: 160 Wampus Lane
 Milford, CT 06460

To Whom It May Concern:

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

- **(2) TPA65R-BU8DA-K Antennas (96.0"x20.7"x7.7" – Wt. = 87 lbs. /each)**
- **(2) TPA45R-KUBA Antennas (98.7"x15.4"x8.2" – Wt. = 80 lbs. /each)**
- **(2) DMP65R-BU8DA-K Antennas (96.0"x20.7"x7.7" – Wt. = 96 lbs. /each)**
- **(3) AIR6449 N77D Antennas (30.4"x15.9"x8.1" – Wt. = 82 lbs. /each)**
- **(3) AIR6419 N77G Antennas (28.0"x15.7"x6.7" – Wt. = 66 lbs. /each)**
- **(3) 4415 B30 RRH's (16.5"x13.4"x5.9" – Wt. = 46 lbs. /each)**
- **(3) B14 4478 RRH's (18.1"x13.4"x8.3" – Wt. = 60 lbs. /each)**
- **(3) B5/B12 4449 RRH's (17.9"x13.2"x9.4" – Wt. = 73 lbs. /each)**
- **(3) B2/B66A 8843 RRH's (14.9"x13.2"x10.9" – Wt. = 72 lbs. /each)**
- **(2) Squid Surge Arrestors (24.0"x9.7"Ø – Wt. = 33 lbs.)**

*Proposed equipment shown in bold.

Mount fabrication drawings prepared by SitePro1, P/N VFA12-WLL-30120 dated May 3, 2018; P/N LWRM dated August 24, 2012; P/N MM01 dated May 10, 2010; and P/N MM02 dated May 10, 2010, 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 1.15 in was used for this analysis.
- HDG considers this site to be exposure category C; tower is located near large, flat, open, terrain/grasslands.
- HDG considers this site to have a spectral response acceleration parameter at short periods, S_s , of 0.194 and a spectral response acceleration parameter at a period of 1 second, S_1 , of 0.063.
- The mount has been analyzed with load combinations consisting of 500 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 3.
- The mount has been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.

Based on our evaluation, we have determined that the New SitePro P/N VFA12-WLL-30120, P/N LWRM, P/N MM01, and P/N MM02 mounts ARE CAPABLE of supporting the proposed installation.

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
New Mount Rating	141	LC27	98%	PASS

Reference Documents:

- Fabrication drawings prepared by SitePro1, P/N VFA12-WLL-30120, dated May 3, 2018.
- Fabrication drawings prepared by SitePro1, P/N LWRM, dated August 24, 2012.
- Fabrication drawings prepared by SitePro1, P/N MM01, dated May 10, 2010.
- Fabrication drawings prepared by SitePro1, P/N MM02, dated May 10, 2010.

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



HUDSON
Design Group LLC

**Wind & Ice
Calculations**

Date: 6/23/2021
 Project Name: MILFORD WAMPUS LANE
 Project No.: CT1231
 Designed By: CL Checked By: MSC



2.6.5.2 Velocity Pressure Coeff:

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

$K_z = 1.350$

$z = 136$ (ft)
 $z_g = 900$ (ft)
 $\alpha = 9.5$

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

Table 2-4

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

2.6.6.2 Topographic Factor:

Table 2-5

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

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

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

$K_{zt} = 1$

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

Category = 1

$K_h = 1$
 $K_c = 1$ (from Table 2-4)
 $K_t = 0$ (from Table 2-5)
 $f = 0$ (from Table 2-5)
 $z = 136$
 $z_s = 10$ (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)
 $K_a = 1.00$ (from 2.6.8)

2.6.10 Design Ice Thickness

Max Ice Thickness =
 Importance Factor =

$t_i = 1.00$ in
 $I = 1.0$ (from Table 2-3)
 $K_{iz} = 1.15$ (from Sec. 2.6.10)

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

$t_{iz} = 1.15$ in

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2.6.9 Gust Effect Factor

2.6.9.1 Self Supporting Lattice Structures

$G_h = 1.0$ Latticed Structures > 600 ft

$G_h = 0.85$ Latticed Structures 450 ft or less

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

h = ht. of structure

h = 140

$G_h = 0.85$

2.6.9.2 Guyed Masts

$G_h = 0.85$

2.6.9.3 Pole Structures

$G_h = 1.1$

2.6.9 Appurtenances

$G_h = 1.0$

2.6.9.4 Structures Supported on Other Structures

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

$G_h = 1.35$

$G_h = 1.00$

2.6.11.2 Design Wind Force on Appurtenances

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

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

$q_z = 51.29$
 $q_{z(ice)} = 5.25$
 $q_{z(30)} = 2.95$

$K_z = 1.350$ (from 2.6.5.2)
 $K_{zt} = 1.0$ (from 2.6.6.2.1)
 $K_s = 1.0$ (from 2.6.7)
 $K_e = 1.00$ (from 2.6.8)
 $K_d = 0.95$ (from Table 2-2)
 $V_{max} = 125$ mph (Ultimate Wind Speed)
 $V_{max(ice)} = 40$ 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

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Determine Ca:

Table 2-9

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

Aspect Ratio is the overall length/width ratio in the plane normal to the wind direction.
 (Aspect ratio is independent of the spacing between support points of a linear appurtenance,
 Note: Linear interpolation may be used for aspect ratios other than those shown.

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

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)	Force (lbs) (30 mph)
TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	4.64	1.30	917	107	53
TPA45R-KU8A Antenna	98.7	15.4	8.2	10.56	6.41	1.37	744	90	43
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	4.64	1.30	917	107	53
AIR6449 N77D Antenna	30.4	15.9	8.1	3.36	1.91	1.20	207	26	12
AIR6419 N77G Antenna	28.0	15.7	6.7	3.05	1.78	1.20	188	24	11
4415 B30 RRH	16.5	13.4	5.9	1.54	1.23	1.20	95	13	5
4478 B14 RRH	18.1	13.4	8.3	1.68	1.35	1.20	104	14	6
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.36	1.20	101	14	6
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.20	84	12	5
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	58	8	3
2" Pipe	2.4	12.0		0.20	0.20	0.70	7		
2-1/2" Pipe	2.9	12.0		0.24	0.24	0.70	9		
3" Pipe	3.5	12.0		0.29	0.29	0.70	10		
5/8" Round Bar	0.6	12.0		0.05	0.05	0.70	2		
3/4" Round Bar	0.8	12.0		0.06	0.06	0.70	2		
HSS 4x4	4.0	12.0		0.33	0.33	0.70	12		
PL 3-1/2x5/8"	0.6	12.0		0.05	0.05	0.70	2		
PL 11-1/4x5/8"	0.6	12.0		0.05	0.05	0.70	2		

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WIND LOADS

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

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	917	417	792
TPA45R-KU8A Antenna	98.7	15.4	8.2	10.56	5.62	6.41	12.04	1.37	1.57	744	452	671
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	917	417	792
AIR6449 N77D Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	207	110	182
AIR6419 N77G Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	188	85	162
4415 B30 RRH	16.5	13.4	5.9	1.54	0.68	1.23	2.80	1.20	1.21	95	42	81
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	104	64	94
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	101	72	94
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	84	69	80

WIND LOADS WITH ICE:

TPA65R-BU8DA-K Antenna	98.3	23.0	10.0	15.70	6.83	4.27	9.83	1.28	1.49	105	54	93
TPA45R-KU8A Antenna	101.0	17.7	10.5	12.42	7.37	5.71	9.62	1.34	1.49	88	58	80
DMP65R-BU8DA-K Antenna	98.3	23.0	10.0	15.70	6.83	4.27	9.83	1.28	1.49	105	54	93
AIR6449 N77D Antenna	32.7	18.2	10.4	4.13	2.36	1.80	3.14	1.20	1.23	26	15	23
AIR6419 N77G Antenna	30.3	18.0	9.0	3.79	1.89	1.68	3.37	1.20	1.24	24	12	21
4415 B30 RRH	18.8	15.7	8.2	2.05	1.07	1.20	2.29	1.20	1.20	13	7	11
4478 B14 RRH	20.4	15.7	10.6	2.23	1.50	1.30	1.92	1.20	1.20	14	9	13
4449 B5/B12 RRH	20.2	15.5	11.7	2.18	1.64	1.30	1.73	1.20	1.20	14	10	13
8843 B2/B66A RRH	17.2	15.5	13.2	1.85	1.58	1.11	1.30	1.20	1.20	12	10	11

WIND LOADS AT 30 MPH:

TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	53	24	46
TPA45R-KU8A Antenna	98.7	15.4	8.2	10.56	5.62	6.41	12.04	1.37	1.57	43	26	39
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	53	24	46
AIR6449 N77D Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	12	6	11
AIR6419 N77G Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	11	5	9
4415 B30 RRH	16.5	13.4	5.9	1.54	0.68	1.23	2.80	1.20	1.21	5	2	5
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	6	4	5
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	6	4	5
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	5

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WIND LOADS

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

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	917	417	542
TPA45R-KU8A Antenna	98.7	15.4	8.2	10.56	5.62	6.41	12.04	1.37	1.57	744	452	525
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	917	417	542
AIR6449 N77D Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	207	110	134
AIR6419 N77G Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	188	85	111
4415 B30 RRH	16.5	13.4	5.9	1.54	0.68	1.23	2.80	1.20	1.21	95	42	55
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	104	64	74
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	101	72	79
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	84	69	73

WIND LOADS WITH ICE:

TPA65R-BU8DA-K Antenna	98.3	23.0	10.0	15.70	6.83	4.27	9.83	1.28	1.49	105	54	67
TPA45R-KU8A Antenna	101.0	17.7	10.5	12.42	7.37	5.71	9.62	1.34	1.49	88	58	65
DMP65R-BU8DA-K Antenna	98.3	23.0	10.0	15.70	6.83	4.27	9.83	1.28	1.49	105	54	67
AIR6449 N77D Antenna	32.7	18.2	10.4	4.13	2.36	1.80	3.14	1.20	1.23	26	15	18
AIR6419 N77G Antenna	30.3	18.0	9.0	3.79	1.89	1.68	3.37	1.20	1.24	24	12	15
4415 B30 RRH	18.8	15.7	8.2	2.05	1.07	1.20	2.29	1.20	1.20	13	7	8
4478 B14 RRH	20.4	15.7	10.6	2.23	1.50	1.30	1.92	1.20	1.20	14	9	11
4449 B5/B12 RRH	20.2	15.5	11.7	2.18	1.64	1.30	1.73	1.20	1.20	14	10	11
8843 B2/B66A RRH	17.2	15.5	13.2	1.85	1.58	1.11	1.30	1.20	1.20	12	10	10

WIND LOADS AT 30 MPH:

TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	53	24	31
TPA45R-KU8A Antenna	98.7	15.4	8.2	10.56	5.62	6.41	12.04	1.37	1.57	43	26	30
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	53	24	31
AIR6449 N77D Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	12	6	8
AIR6419 N77G Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	11	5	6
4415 B30 RRH	16.5	13.4	5.9	1.54	0.68	1.23	2.80	1.20	1.21	5	2	3
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	6	4	4
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	6	4	5
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	4

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WIND LOADS

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

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	917	417	417
TPA45R-KU8A Antenna	98.7	15.4	8.2	10.56	5.62	6.41	12.04	1.37	1.57	744	452	452
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	917	417	417
AIR6449 N77D Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	207	110	110
AIR6419 N77G Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	188	85	85
4415 B30 RRH	16.5	13.4	5.9	1.54	0.68	1.23	2.80	1.20	1.21	95	42	42
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	104	64	64
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	101	72	72
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	84	69	69

WIND LOADS WITH ICE:

TPA65R-BU8DA-K Antenna	98.3	23.0	10.0	15.70	6.83	4.27	9.83	1.28	1.49	105	54	54
TPA45R-KU8A Antenna	101.0	17.7	10.5	12.42	7.37	5.71	9.62	1.34	1.49	88	58	58
DMP65R-BU8DA-K Antenna	98.3	23.0	10.0	15.70	6.83	4.27	9.83	1.28	1.49	105	54	54
AIR6449 N77D Antenna	32.7	18.2	10.4	4.13	2.36	1.80	3.14	1.20	1.23	26	15	15
AIR6419 N77G Antenna	30.3	18.0	9.0	3.79	1.89	1.68	3.37	1.20	1.24	24	12	12
4415 B30 RRH	18.8	15.7	8.2	2.05	1.07	1.20	2.29	1.20	1.20	13	7	7
4478 B14 RRH	20.4	15.7	10.6	2.23	1.50	1.30	1.92	1.20	1.20	14	9	9
4449 B5/B12 RRH	20.2	15.5	11.7	2.18	1.64	1.30	1.73	1.20	1.20	14	10	10
8843 B2/B66A RRH	17.2	15.5	13.2	1.85	1.58	1.11	1.30	1.20	1.20	12	10	10

WIND LOADS AT 30 MPH:

TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	53	24	24
TPA45R-KU8A Antenna	98.7	15.4	8.2	10.56	5.62	6.41	12.04	1.37	1.57	43	26	26
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	53	24	24
AIR6449 N77D Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	12	6	6
AIR6419 N77G Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	11	5	5
4415 B30 RRH	16.5	13.4	5.9	1.54	0.68	1.23	2.80	1.20	1.21	5	2	2
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	6	4	4
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	6	4	4
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	4

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WIND LOADS

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

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	917	417	542
TPA45R-KUBA Antenna	98.7	15.4	8.2	10.56	5.62	6.41	12.04	1.37	1.57	744	452	525
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	917	417	542
AIR6449 N77D Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	207	110	134
AIR6419 N77G Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	188	85	111
4415 B30 RRH	16.5	13.4	5.9	1.54	0.68	1.23	2.80	1.20	1.21	95	42	55
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	104	64	74
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	101	72	79
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	84	69	73

WIND LOADS WITH ICE:

TPA65R-BU8DA-K Antenna	98.3	23.0	10.0	15.70	6.83	4.27	9.83	1.28	1.49	105	54	67
TPA45R-KUBA Antenna	101.0	17.7	10.5	12.42	7.37	5.71	9.62	1.34	1.49	88	58	65
DMP65R-BU8DA-K Antenna	98.3	23.0	10.0	15.70	6.83	4.27	9.83	1.28	1.49	105	54	67
AIR6449 N77D Antenna	32.7	18.2	10.4	4.13	2.36	1.80	3.14	1.20	1.23	26	15	18
AIR6419 N77G Antenna	30.3	18.0	9.0	3.79	1.89	1.68	3.37	1.20	1.24	24	12	15
4415 B30 RRH	18.8	15.7	8.2	2.05	1.07	1.20	2.29	1.20	1.20	13	7	8
4478 B14 RRH	20.4	15.7	10.6	2.23	1.50	1.30	1.92	1.20	1.20	14	9	11
4449 B5/B12 RRH	20.2	15.5	11.7	2.18	1.64	1.30	1.73	1.20	1.20	14	10	11
8843 B2/B66A RRH	17.2	15.5	13.2	1.85	1.58	1.11	1.30	1.20	1.20	12	10	10

WIND LOADS AT 30 MPH:

TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	53	24	31
TPA45R-KUBA Antenna	98.7	15.4	8.2	10.56	5.62	6.41	12.04	1.37	1.57	43	26	30
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	53	24	31
AIR6449 N77D Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	12	6	8
AIR6419 N77G Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	11	5	6
4415 B30 RRH	16.5	13.4	5.9	1.54	0.68	1.23	2.80	1.20	1.21	5	2	3
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	6	4	4
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	6	4	5
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	4

Date: 6/23/2021
 Project Name: MILFORD WAMPUS LANE
 Project No.: CT1231
 Designed By: CL Checked By: MSC



WIND LOADS

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

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs) (normal)	Force (lbs) (side)	Force (lbs) (angle)
TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	917	417	792
TPA45R-KU8A Antenna	98.7	15.4	8.2	10.56	5.62	6.41	12.04	1.37	1.57	744	452	671
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	917	417	792
AIR6449 N77D Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	207	110	182
AIR6419 N77G Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	188	85	162
4415 B30 RRH	16.5	13.4	5.9	1.54	0.68	1.23	2.80	1.20	1.21	95	42	81
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	104	64	94
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	101	72	94
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	84	69	80

WIND LOADS WITH ICE:

TPA65R-BU8DA-K Antenna	98.3	23.0	10.0	15.70	6.83	4.27	9.83	1.28	1.49	105	54	93
TPA45R-KU8A Antenna	101.0	17.7	10.5	12.42	7.37	5.71	9.62	1.34	1.49	88	58	80
DMP65R-BU8DA-K Antenna	98.3	23.0	10.0	15.70	6.83	4.27	9.83	1.28	1.49	105	54	93
AIR6449 N77D Antenna	32.7	18.2	10.4	4.13	2.36	1.80	3.14	1.20	1.23	26	15	23
AIR6419 N77G Antenna	30.3	18.0	9.0	3.79	1.89	1.68	3.37	1.20	1.24	24	12	21
4415 B30 RRH	18.8	15.7	8.2	2.05	1.07	1.20	2.29	1.20	1.20	13	7	11
4478 B14 RRH	20.4	15.7	10.6	2.23	1.50	1.30	1.92	1.20	1.20	14	9	13
4449 B5/B12 RRH	20.2	15.5	11.7	2.18	1.64	1.30	1.73	1.20	1.20	14	10	13
8843 B2/B66A RRH	17.2	15.5	13.2	1.85	1.58	1.11	1.30	1.20	1.20	12	10	11

WIND LOADS AT 30 MPH:

TPA65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	53	24	46
TPA45R-KU8A Antenna	98.7	15.4	8.2	10.56	5.62	6.41	12.04	1.37	1.57	43	26	39
DMP65R-BU8DA-K Antenna	96.0	20.7	7.7	13.80	5.13	4.64	12.47	1.30	1.58	53	24	46
AIR6449 N77D Antenna	30.4	15.9	8.1	3.36	1.71	1.91	3.75	1.20	1.26	12	6	11
AIR6419 N77G Antenna	28.0	15.7	6.7	3.05	1.30	1.78	4.18	1.20	1.27	11	5	9
4415 B30 RRH	16.5	13.4	5.9	1.54	0.68	1.23	2.80	1.20	1.21	5	2	5
4478 B14 RRH	18.1	13.4	8.3	1.68	1.04	1.35	2.18	1.20	1.20	6	4	5
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	6	4	5
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.13	1.37	1.20	1.20	5	4	5

Date: 6/23/2021
 Project Name: MILFORD WAMPUS LANE
 Project No.: CT1231
 Designed By: CL Checked By: MSC



ICE WEIGHT CALCULATIONS

Thickness of ice: 1.15 in.
 Density of ice: 56 pcf

TPA65R-BU8DA-K Antenna

Weight of ice based on total radial SF area:
 Height (in): 96.0
 Width (in): 20.7
 Depth (in): 7.7
 Total weight of ice on object: 261 lbs
 Weight of object: 87.0 lbs
 Combined weight of ice and object: 348 lbs

TPA45R-KU8A Antenna

Weight of ice based on total radial SF area:
 Height (in): 98.7
 Width (in): 15.4
 Depth (in): 8.2
 Total weight of ice on object: 215 lbs
 Weight of object: 80.0 lbs
 Combined weight of ice and object: 295 lbs

DMP65R-BU8DA-K Antenna

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

AIR6449 N77D Antenna

Weight of ice based on total radial SF area:
 Height (in): 30.4
 Width (in): 15.9
 Depth (in): 8.1
 Total weight of ice on object: 68 lbs
 Weight of object: 82.0 lbs
 Combined weight of ice and object: 150 lbs

AIR6419 N77G Antenna

Weight of ice based on total radial SF area:
 Height (in): 28.0
 Width (in): 15.7
 Depth (in): 6.7
 Total weight of ice on object: 60 lbs
 Weight of object: 66.0 lbs
 Combined weight of ice and object: 126 lbs

4415 B30 RRH

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

4478 B14 RRH

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

4449 B5/B12 RRH

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

8843 B2/B66A RRH

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

Squid Surge Arrestor

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

2" Pipe

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

2-1/2" Pipe

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

3" Pipe

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

5/8" Round Bar

Per foot weight of ice:
 diameter (in): 0.625
 Per foot weight of ice on object: 2 plf

3/4" Round Bar

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

HSS 4x4

Weight of ice based on total radial SF area:
 Height (in): 4
 Width (in): 4
 Per foot weight of ice on object: 10 plf

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

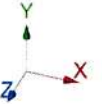
PL 11-1/4x5/8

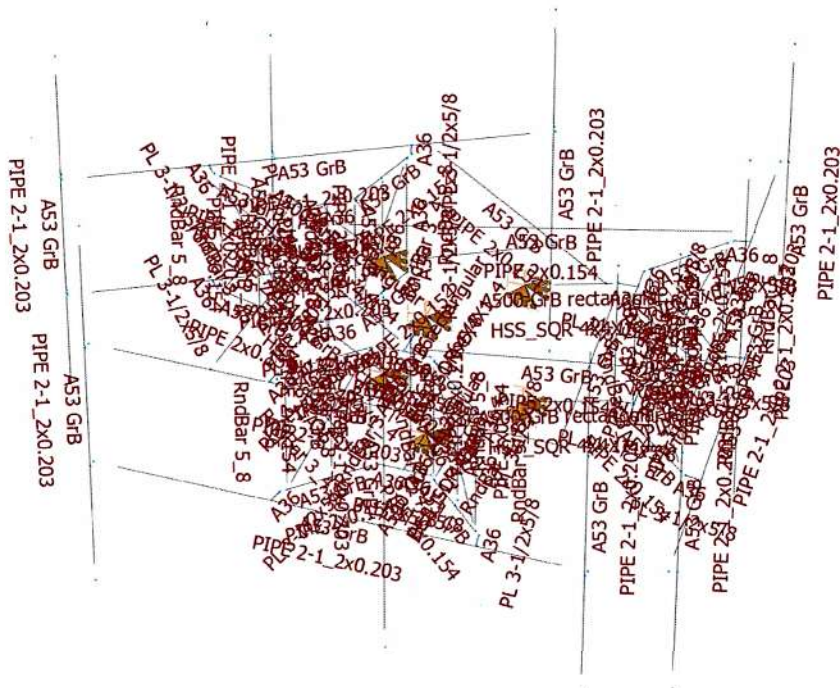
Weight of ice based on total radial SF area:
 Height (in): 11.25
 Width (in): 0.625
 Per foot weight of ice on object: 17 plf



HUDSON
Design Group LLC

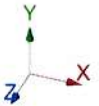
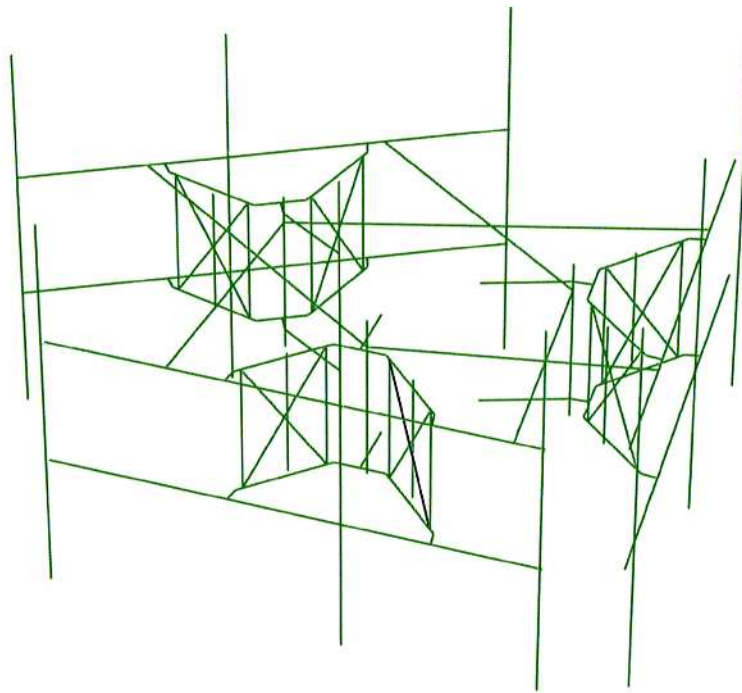
**Mount Calculations
(New Conditions)**

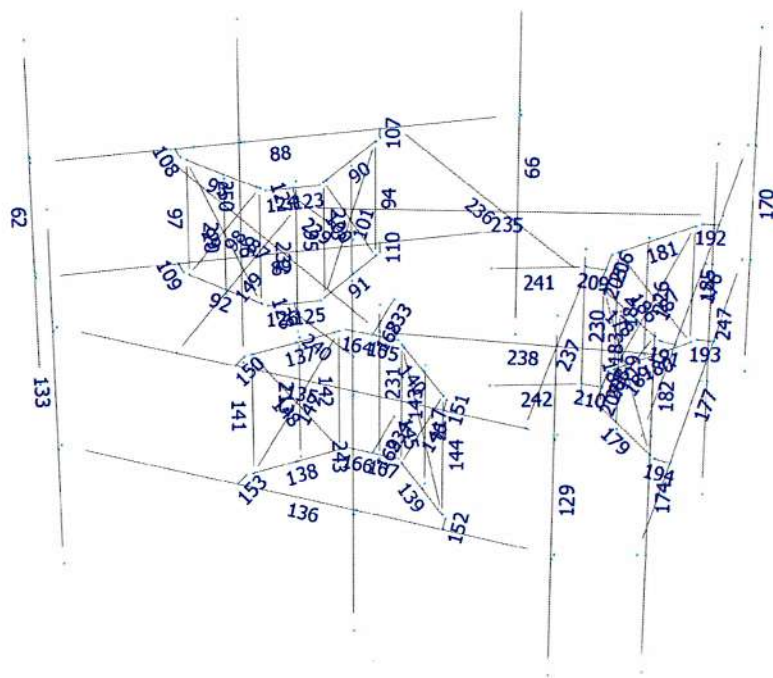




Design status

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





Current Date: 6/24/2021 9:13 AM

Units system: English

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Load data

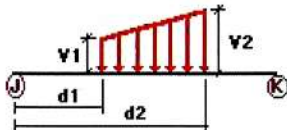
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

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

Distributed force on members



Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
W0	62	z	-0.009	-0.009	0.00	No	100.00	Yes
	66	z	-0.009	-0.009	0.00	No	100.00	Yes
	87	z	-0.007	-0.007	0.00	No	100.00	Yes
	88	z	-0.009	-0.009	0.00	No	100.00	Yes
	89	z	-0.009	-0.009	0.00	No	100.00	Yes
	90	z	-0.007	-0.007	0.00	No	100.00	Yes
	91	z	-0.007	-0.007	0.00	No	100.00	Yes
	92	z	-0.007	-0.007	0.00	No	100.00	Yes
	93	z	-0.007	-0.007	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	-0.002	-0.002	0.00	No	100.00	Yes
	99	z	-0.002	-0.002	0.00	No	100.00	Yes

100	z	-0.002	-0.002	0.00	No	100.00	Yes
101	z	-0.002	-0.002	0.00	No	100.00	Yes
107	z	-0.002	-0.002	0.00	No	100.00	Yes
108	z	-0.002	-0.002	0.00	No	100.00	Yes
109	z	-0.002	-0.002	0.00	No	100.00	Yes
110	z	-0.002	-0.002	0.00	No	100.00	Yes
123	z	-0.002	-0.002	0.00	No	100.00	Yes
124	z	-0.002	-0.002	0.00	No	100.00	Yes
125	z	-0.002	-0.002	0.00	No	100.00	Yes
126	z	-0.002	-0.002	0.00	No	100.00	Yes
135	z	-0.009	-0.009	0.00	No	100.00	Yes
136	z	-0.009	-0.009	0.00	No	100.00	Yes
137	z	-0.007	-0.007	0.00	No	100.00	Yes
138	z	-0.007	-0.007	0.00	No	100.00	Yes
139	z	-0.007	-0.007	0.00	No	100.00	Yes
140	z	-0.007	-0.007	0.00	No	100.00	Yes
141	z	-0.002	-0.002	0.00	No	100.00	Yes
142	z	-0.002	-0.002	0.00	No	100.00	Yes
143	z	-0.002	-0.002	0.00	No	100.00	Yes
144	z	-0.002	-0.002	0.00	No	100.00	Yes
145	z	-0.002	-0.002	0.00	No	100.00	Yes
146	z	-0.002	-0.002	0.00	No	100.00	Yes
147	z	-0.002	-0.002	0.00	No	100.00	Yes
148	z	-0.002	-0.002	0.00	No	100.00	Yes
149	z	-0.007	-0.007	0.00	No	100.00	Yes
164	z	-0.002	-0.002	0.00	No	100.00	Yes
165	z	-0.002	-0.002	0.00	No	100.00	Yes
166	z	-0.002	-0.002	0.00	No	100.00	Yes
167	z	-0.002	-0.002	0.00	No	100.00	Yes
170	z	-0.009	-0.009	0.00	No	100.00	Yes
174	z	-0.009	-0.009	0.00	No	100.00	Yes
176	z	-0.009	-0.009	0.00	No	100.00	Yes
177	z	-0.009	-0.009	0.00	No	100.00	Yes
178	z	-0.007	-0.007	0.00	No	100.00	Yes
179	z	-0.007	-0.007	0.00	No	100.00	Yes
180	z	-0.007	-0.007	0.00	No	100.00	Yes
181	z	-0.007	-0.007	0.00	No	100.00	Yes
182	z	-0.002	-0.002	0.00	No	100.00	Yes
183	z	-0.002	-0.002	0.00	No	100.00	Yes
184	z	-0.002	-0.002	0.00	No	100.00	Yes
185	z	-0.002	-0.002	0.00	No	100.00	Yes
186	z	-0.002	-0.002	0.00	No	100.00	Yes
187	z	-0.002	-0.002	0.00	No	100.00	Yes
188	z	-0.002	-0.002	0.00	No	100.00	Yes
189	z	-0.002	-0.002	0.00	No	100.00	Yes
191	z	-0.002	-0.002	0.00	No	100.00	Yes
192	z	-0.002	-0.002	0.00	No	100.00	Yes
193	z	-0.002	-0.002	0.00	No	100.00	Yes
194	z	-0.002	-0.002	0.00	No	100.00	Yes
205	z	-0.002	-0.002	0.00	No	100.00	Yes
206	z	-0.002	-0.002	0.00	No	100.00	Yes
207	z	-0.002	-0.002	0.00	No	100.00	Yes
208	z	-0.002	-0.002	0.00	No	100.00	Yes
209	z	-0.002	-0.002	0.00	No	100.00	Yes
210	z	-0.002	-0.002	0.00	No	100.00	Yes
213	z	-0.007	-0.007	0.00	No	100.00	Yes
217	z	-0.007	-0.007	0.00	No	100.00	Yes
220	z	-0.007	-0.007	0.00	No	100.00	Yes
223	z	-0.007	-0.007	0.00	No	100.00	Yes
226	z	-0.007	-0.007	0.00	No	100.00	Yes

W30

229	z	-0.007	-0.007	0.00	No	100.00	Yes
230	z	-0.01	-0.01	0.00	No	100.00	Yes
231	z	-0.01	-0.01	0.00	No	100.00	Yes
232	z	-0.01	-0.01	0.00	No	100.00	Yes
235	z	-0.007	-0.007	0.00	No	100.00	Yes
236	z	-0.007	-0.007	0.00	No	100.00	Yes
237	z	-0.007	-0.007	0.00	No	100.00	Yes
238	z	-0.007	-0.007	0.00	No	100.00	Yes
239	z	-0.012	-0.012	0.00	No	100.00	Yes
240	z	-0.012	-0.012	0.00	No	100.00	Yes
241	z	-0.012	-0.012	0.00	No	100.00	Yes
242	z	-0.012	-0.012	0.00	No	100.00	Yes
247	z	-0.009	-0.009	0.00	No	100.00	Yes
250	z	-0.009	-0.009	0.00	No	100.00	Yes
62	x	-0.009	-0.009	0.00	No	100.00	Yes
66	x	-0.009	-0.009	0.00	No	100.00	Yes
87	x	-0.007	-0.007	0.00	No	100.00	Yes
88	x	-0.009	-0.009	0.00	No	100.00	Yes
89	x	-0.009	-0.009	0.00	No	100.00	Yes
90	x	-0.007	-0.007	0.00	No	100.00	Yes
91	x	-0.007	-0.007	0.00	No	100.00	Yes
92	x	-0.007	-0.007	0.00	No	100.00	Yes
93	x	-0.007	-0.007	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	-0.002	-0.002	0.00	No	100.00	Yes
99	x	-0.002	-0.002	0.00	No	100.00	Yes
100	x	-0.002	-0.002	0.00	No	100.00	Yes
101	x	-0.002	-0.002	0.00	No	100.00	Yes
107	x	-0.002	-0.002	0.00	No	100.00	Yes
108	x	-0.002	-0.002	0.00	No	100.00	Yes
109	x	-0.002	-0.002	0.00	No	100.00	Yes
110	x	-0.002	-0.002	0.00	No	100.00	Yes
123	x	-0.002	-0.002	0.00	No	100.00	Yes
124	x	-0.002	-0.002	0.00	No	100.00	Yes
125	x	-0.002	-0.002	0.00	No	100.00	Yes
126	x	-0.002	-0.002	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
129	x	-0.009	-0.009	0.00	No	100.00	Yes
133	x	-0.009	-0.009	0.00	No	100.00	Yes
135	x	-0.009	-0.009	0.00	No	100.00	Yes
136	x	-0.009	-0.009	0.00	No	100.00	Yes
137	x	-0.007	-0.007	0.00	No	100.00	Yes
138	x	-0.007	-0.007	0.00	No	100.00	Yes
139	x	-0.007	-0.007	0.00	No	100.00	Yes
140	x	-0.007	-0.007	0.00	No	100.00	Yes
141	x	-0.002	-0.002	0.00	No	100.00	Yes
142	x	-0.002	-0.002	0.00	No	100.00	Yes
143	x	-0.002	-0.002	0.00	No	100.00	Yes
144	x	-0.002	-0.002	0.00	No	100.00	Yes
145	x	-0.002	-0.002	0.00	No	100.00	Yes
146	x	-0.002	-0.002	0.00	No	100.00	Yes
147	x	-0.002	-0.002	0.00	No	100.00	Yes
148	x	-0.002	-0.002	0.00	No	100.00	Yes
149	x	-0.007	-0.007	0.00	No	100.00	Yes
150	x	-0.002	-0.002	0.00	No	100.00	Yes
151	x	-0.002	-0.002	0.00	No	100.00	Yes

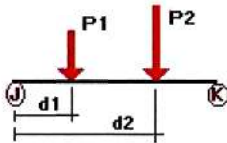
152	x	-0.002	-0.002	0.00	No	100.00	Yes
153	x	-0.002	-0.002	0.00	No	100.00	Yes
164	x	-0.002	-0.002	0.00	No	100.00	Yes
165	x	-0.002	-0.002	0.00	No	100.00	Yes
166	x	-0.002	-0.002	0.00	No	100.00	Yes
167	x	-0.002	-0.002	0.00	No	100.00	Yes
168	x	-0.002	-0.002	0.00	No	100.00	Yes
169	x	-0.002	-0.002	0.00	No	100.00	Yes
176	x	-0.009	-0.009	0.00	No	100.00	Yes
177	x	-0.009	-0.009	0.00	No	100.00	Yes
178	x	-0.007	-0.007	0.00	No	100.00	Yes
179	x	-0.007	-0.007	0.00	No	100.00	Yes
180	x	-0.007	-0.007	0.00	No	100.00	Yes
181	x	-0.007	-0.007	0.00	No	100.00	Yes
182	x	-0.002	-0.002	0.00	No	100.00	Yes
183	x	-0.002	-0.002	0.00	No	100.00	Yes
184	x	-0.002	-0.002	0.00	No	100.00	Yes
185	x	-0.002	-0.002	0.00	No	100.00	Yes
186	x	-0.002	-0.002	0.00	No	100.00	Yes
187	x	-0.002	-0.002	0.00	No	100.00	Yes
188	x	-0.002	-0.002	0.00	No	100.00	Yes
189	x	-0.002	-0.002	0.00	No	100.00	Yes
191	x	-0.002	-0.002	0.00	No	100.00	Yes
192	x	-0.002	-0.002	0.00	No	100.00	Yes
193	x	-0.002	-0.002	0.00	No	100.00	Yes
194	x	-0.002	-0.002	0.00	No	100.00	Yes
205	x	-0.002	-0.002	0.00	No	100.00	Yes
206	x	-0.002	-0.002	0.00	No	100.00	Yes
207	x	-0.002	-0.002	0.00	No	100.00	Yes
208	x	-0.002	-0.002	0.00	No	100.00	Yes
209	x	-0.002	-0.002	0.00	No	100.00	Yes
210	x	-0.002	-0.002	0.00	No	100.00	Yes
213	x	-0.007	-0.007	0.00	No	100.00	Yes
217	x	-0.007	-0.007	0.00	No	100.00	Yes
220	x	-0.007	-0.007	0.00	No	100.00	Yes
223	x	-0.007	-0.007	0.00	No	100.00	Yes
226	x	-0.007	-0.007	0.00	No	100.00	Yes
229	x	-0.007	-0.007	0.00	No	100.00	Yes
230	x	-0.01	-0.01	0.00	No	100.00	Yes
231	x	-0.01	-0.01	0.00	No	100.00	Yes
232	x	-0.01	-0.01	0.00	No	100.00	Yes
233	x	-0.012	-0.012	0.00	No	100.00	Yes
234	x	-0.012	-0.012	0.00	No	100.00	Yes
235	x	-0.007	-0.007	0.00	No	100.00	Yes
236	x	-0.007	-0.007	0.00	No	100.00	Yes
237	x	-0.007	-0.007	0.00	No	100.00	Yes
238	x	-0.007	-0.007	0.00	No	100.00	Yes
239	x	-0.012	-0.012	0.00	No	100.00	Yes
240	x	-0.012	-0.012	0.00	No	100.00	Yes
241	x	-0.012	-0.012	0.00	No	100.00	Yes
242	x	-0.012	-0.012	0.00	No	100.00	Yes
243	x	-0.009	-0.009	0.00	No	100.00	Yes
250	x	-0.009	-0.009	0.00	No	100.00	Yes
62	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
88	y	-0.006	-0.006	0.00	No	100.00	Yes
89	y	-0.006	-0.006	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

Di

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	-0.002	-0.002	0.00	No	100.00	Yes
95	y	-0.002	-0.002	0.00	No	100.00	Yes
96	y	-0.002	-0.002	0.00	No	100.00	Yes
97	y	-0.002	-0.002	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
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	-0.017	-0.017	0.00	No	100.00	Yes
128	y	-0.017	-0.017	0.00	No	100.00	Yes
129	y	-0.006	-0.006	0.00	No	100.00	Yes
133	y	-0.006	-0.006	0.00	No	100.00	Yes
135	y	-0.006	-0.006	0.00	No	100.00	Yes
136	y	-0.006	-0.006	0.00	No	100.00	Yes
137	y	-0.005	-0.005	0.00	No	100.00	Yes
138	y	-0.005	-0.005	0.00	No	100.00	Yes
139	y	-0.005	-0.005	0.00	No	100.00	Yes
140	y	-0.005	-0.005	0.00	No	100.00	Yes
141	y	-0.002	-0.002	0.00	No	100.00	Yes
142	y	-0.002	-0.002	0.00	No	100.00	Yes
143	y	-0.002	-0.002	0.00	No	100.00	Yes
144	y	-0.002	-0.002	0.00	No	100.00	Yes
145	y	-0.003	-0.003	0.00	No	100.00	Yes
146	y	-0.003	-0.003	0.00	No	100.00	Yes
147	y	-0.003	-0.003	0.00	No	100.00	Yes
148	y	-0.003	-0.003	0.00	No	100.00	Yes
149	y	-0.005	-0.005	0.00	No	100.00	Yes
150	y	-0.007	-0.007	0.00	No	100.00	Yes
151	y	-0.007	-0.007	0.00	No	100.00	Yes
152	y	-0.007	-0.007	0.00	No	100.00	Yes
153	y	-0.007	-0.007	0.00	No	100.00	Yes
164	y	-0.007	-0.007	0.00	No	100.00	Yes
165	y	-0.007	-0.007	0.00	No	100.00	Yes
166	y	-0.007	-0.007	0.00	No	100.00	Yes
167	y	-0.007	-0.007	0.00	No	100.00	Yes
168	y	-0.017	-0.017	0.00	No	100.00	Yes
169	y	-0.017	-0.017	0.00	No	100.00	Yes
170	y	-0.006	-0.006	0.00	No	100.00	Yes
174	y	-0.006	-0.006	0.00	No	100.00	Yes
176	y	-0.006	-0.006	0.00	No	100.00	Yes
177	y	-0.006	-0.006	0.00	No	100.00	Yes
178	y	-0.005	-0.005	0.00	No	100.00	Yes
179	y	-0.005	-0.005	0.00	No	100.00	Yes
180	y	-0.005	-0.005	0.00	No	100.00	Yes
181	y	-0.005	-0.005	0.00	No	100.00	Yes
182	y	-0.002	-0.002	0.00	No	100.00	Yes
183	y	-0.002	-0.002	0.00	No	100.00	Yes
184	y	-0.002	-0.002	0.00	No	100.00	Yes
185	y	-0.002	-0.002	0.00	No	100.00	Yes
186	y	-0.003	-0.003	0.00	No	100.00	Yes

187	y	-0.003	-0.003	0.00	No	100.00	Yes
188	y	-0.003	-0.003	0.00	No	100.00	Yes
189	y	-0.003	-0.003	0.00	No	100.00	Yes
191	y	-0.007	-0.007	0.00	No	100.00	Yes
192	y	-0.007	-0.007	0.00	No	100.00	Yes
193	y	-0.007	-0.007	0.00	No	100.00	Yes
194	y	-0.007	-0.007	0.00	No	100.00	Yes
205	y	-0.007	-0.007	0.00	No	100.00	Yes
206	y	-0.007	-0.007	0.00	No	100.00	Yes
207	y	-0.007	-0.007	0.00	No	100.00	Yes
208	y	-0.007	-0.007	0.00	No	100.00	Yes
209	y	-0.017	-0.017	0.00	No	100.00	Yes
210	y	-0.017	-0.017	0.00	No	100.00	Yes
213	y	-0.005	-0.005	0.00	No	100.00	Yes
217	y	-0.005	-0.005	0.00	No	100.00	Yes
220	y	-0.005	-0.005	0.00	No	100.00	Yes
223	y	-0.005	-0.005	0.00	No	100.00	Yes
226	y	-0.005	-0.005	0.00	No	100.00	Yes
229	y	-0.005	-0.005	0.00	No	100.00	Yes
230	y	-0.007	-0.007	0.00	No	100.00	Yes
231	y	-0.007	-0.007	0.00	No	100.00	Yes
232	y	-0.007	-0.007	0.00	No	100.00	Yes
233	y	-0.01	-0.01	0.00	No	100.00	Yes
234	y	-0.01	-0.01	0.00	No	100.00	Yes
235	y	-0.005	-0.005	0.00	No	100.00	Yes
236	y	-0.005	-0.005	0.00	No	100.00	Yes
237	y	-0.005	-0.005	0.00	No	100.00	Yes
238	y	-0.005	-0.005	0.00	No	100.00	Yes
239	y	-0.01	-0.01	0.00	No	100.00	Yes
240	y	-0.01	-0.01	0.00	No	100.00	Yes
241	y	-0.01	-0.01	0.00	No	100.00	Yes
242	y	-0.01	-0.01	0.00	No	100.00	Yes
243	y	-0.006	-0.006	0.00	No	100.00	Yes
247	y	-0.006	-0.006	0.00	No	100.00	Yes
250	y	-0.006	-0.006	0.00	No	100.00	Yes

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	62	y	-0.044	2.50	No
		y	-0.044	7.50	No
	66	y	-0.048	2.50	No
		y	-0.048	7.50	No
	129	y	-0.04	2.50	No
		y	-0.04	7.50	No
	133	y	-0.033	2.50	No
		y	-0.033	4.50	No
		y	-0.041	6.50	No
		y	-0.041	8.50	No

	170	y	-0.044	2.50	No
		y	-0.044	7.50	No
	174	y	-0.048	2.50	No
		y	-0.048	7.50	No
	213	y	-0.073	2.00	No
		y	-0.072	2.00	No
	217	y	-0.046	3.00	No
		y	-0.06	3.00	No
		y	-0.033	1.50	No
	220	y	-0.046	3.00	No
		y	-0.06	3.00	No
		y	-0.033	1.50	No
	223	y	-0.073	2.00	No
		y	-0.072	2.00	No
	226	y	-0.046	2.00	No
		y	-0.06	2.00	No
	229	y	-0.073	2.00	No
		y	-0.072	2.00	No
	243	y	-0.04	2.50	No
		y	-0.04	7.50	No
	247	y	-0.033	2.50	No
		y	-0.033	4.50	No
		y	-0.041	6.50	No
		y	-0.041	8.50	No
	250	y	-0.033	2.50	No
		y	-0.033	4.50	No
		y	-0.041	6.50	No
		y	-0.041	8.50	No
W0	62	z	-0.271	2.50	No
		z	-0.271	7.50	No
	66	z	-0.271	2.50	No
		z	-0.271	7.50	No
	129	z	-0.372	2.50	No
		z	-0.372	7.50	No
	133	z	-0.094	2.50	No
		z	-0.094	4.50	No
		z	-0.104	6.50	No
		z	-0.104	8.50	No
	170	z	-0.271	2.50	No
		z	-0.271	7.50	No
	174	z	-0.271	2.50	No
		z	-0.271	7.50	No
	213	z	-0.101	2.00	No
		z	-0.084	2.00	No
	217	z	-0.095	3.00	No
		z	-0.104	3.00	No
		z	-0.058	1.50	No
	220	z	-0.055	3.00	No
		z	-0.074	3.00	No
		z	-0.058	1.50	No
	223	z	-0.079	2.00	No
		z	-0.073	2.00	No
	226	z	-0.055	2.00	No
		z	-0.074	2.00	No
	229	z	-0.079	2.00	No
		z	-0.073	2.00	No
	243	z	-0.372	2.50	No
		z	-0.372	7.50	No
	247	z	-0.056	2.50	No
		z	-0.056	4.50	No

		z	-0.067	6.50	No
		z	-0.067	8.50	No
	250	z	-0.056	2.50	No
		z	-0.056	4.50	No
		z	-0.067	6.50	No
		z	-0.067	8.50	No
W30	62	x	-0.396	2.50	No
		x	-0.396	7.50	No
	66	x	-0.396	2.50	No
		x	-0.396	7.50	No
	129	x	-0.226	2.50	No
		x	-0.226	7.50	No
	133	x	-0.043	2.50	No
		x	-0.043	4.50	No
		x	-0.055	6.50	No
		x	-0.055	8.50	No
	170	x	-0.396	2.50	No
		x	-0.396	7.50	No
	174	x	-0.396	2.50	No
		x	-0.396	7.50	No
	213	x	-0.072	2.00	No
	217	x	-0.064	3.00	No
		x	-0.058	1.50	No
	220	x	-0.094	3.00	No
		x	-0.058	1.50	No
	223	x	-0.094	2.00	No
	226	x	-0.094	2.00	No
	229	x	-0.094	2.00	No
	243	x	-0.226	2.50	No
		x	-0.226	7.50	No
	247	x	-0.081	2.50	No
		x	-0.081	4.50	No
		x	-0.091	6.50	No
		x	-0.091	8.50	No
	250	x	-0.081	2.50	No
		x	-0.081	4.50	No
		x	-0.091	6.50	No
		x	-0.091	8.50	No
Di	62	y	-0.131	2.50	No
		y	-0.131	7.50	No
	66	y	-0.131	2.50	No
		y	-0.131	7.50	No
	129	y	-0.108	2.50	No
		y	-0.108	7.50	No
	133	y	-0.03	2.50	No
		y	-0.03	4.50	No
		y	-0.034	6.50	No
		y	-0.034	8.50	No
	170	y	-0.131	2.50	No
		y	-0.131	7.50	No
	174	y	-0.131	2.50	No
		y	-0.131	7.50	No
	213	y	-0.036	2.00	No
		y	-0.032	2.00	No
	217	y	-0.031	3.00	No
		y	-0.036	3.00	No
		y	-0.03	1.50	No
	220	y	-0.031	3.00	No
		y	-0.036	3.00	No
		y	-0.03	1.50	No

	223	y	-0.036	2.00	No
		y	-0.032	2.00	No
	226	y	-0.031	2.00	No
		y	-0.036	2.00	No
	229	y	-0.036	2.00	No
		y	-0.032	2.00	No
	243	y	-0.108	2.50	No
		y	-0.108	7.50	No
	247	y	-0.03	2.50	No
		y	-0.03	4.50	No
		y	-0.034	6.50	No
		y	-0.034	8.50	No
	250	y	-0.03	2.50	No
		y	-0.03	4.50	No
		y	-0.034	6.50	No
		y	-0.034	8.50	No
Wi0	62	z	-0.034	2.50	No
		z	-0.034	7.50	No
	66	z	-0.034	2.50	No
		z	-0.034	7.50	No
	129	z	-0.045	2.50	No
		z	-0.045	7.50	No
	133	z	-0.012	2.50	No
		z	-0.012	4.50	No
		z	-0.013	6.50	No
		z	-0.013	8.50	No
	170	z	-0.034	2.50	No
		z	-0.034	7.50	No
	174	z	-0.034	2.50	No
		z	-0.034	7.50	No
	213	z	-0.014	2.00	No
		z	-0.012	2.00	No
	217	z	-0.013	3.00	No
		z	-0.014	3.00	No
		z	-0.008	1.50	No
	220	z	-0.008	3.00	No
		z	-0.011	3.00	No
		z	-0.008	1.50	No
	223	z	-0.011	2.00	No
		z	-0.01	2.00	No
	226	z	-0.008	2.00	No
		z	-0.011	2.00	No
	229	z	-0.011	2.00	No
		z	-0.01	2.00	No
	243	z	-0.045	2.50	No
		z	-0.045	7.50	No
	247	z	-0.008	2.50	No
		z	-0.008	4.50	No
		z	-0.009	6.50	No
		z	-0.009	8.50	No
	250	z	-0.008	2.50	No
		z	-0.008	4.50	No
		z	-0.009	6.50	No
		z	-0.009	8.50	No
Wi30	62	x	-0.047	2.50	No
		x	-0.047	7.50	No
	66	x	-0.047	2.50	No
		x	-0.047	7.50	No
	129	x	-0.029	2.50	No
		x	-0.029	7.50	No

	133	x	-0.006	2.50	No
		x	-0.006	4.50	No
		x	-0.008	6.50	No
		x	-0.008	8.50	No
	170	x	-0.047	2.50	No
		x	-0.047	7.50	No
	174	x	-0.047	2.50	No
		x	-0.047	7.50	No
	213	x	-0.01	2.00	No
	217	x	-0.009	3.00	No
		x	-0.008	1.50	No
	220	x	-0.013	3.00	No
		x	-0.008	1.50	No
	223	x	-0.013	2.00	No
	226	x	-0.013	2.00	No
	229	x	-0.013	2.00	No
	243	x	-0.029	2.50	No
		x	-0.029	7.50	No
	247	x	-0.011	2.50	No
		x	-0.011	4.50	No
		x	-0.012	6.50	No
		x	-0.012	8.50	No
	250	x	-0.011	2.50	No
		x	-0.011	4.50	No
		x	-0.012	6.50	No
		x	-0.012	8.50	No
WLO	62	z	-0.016	2.50	No
		z	-0.016	7.50	No
	66	z	-0.016	2.50	No
		z	-0.016	7.50	No
	129	z	-0.022	2.50	No
		z	-0.022	7.50	No
	133	z	-0.006	2.50	No
		z	-0.006	4.50	No
		z	-0.006	6.50	No
		z	-0.006	8.50	No
	170	z	-0.016	2.50	No
		z	-0.016	7.50	No
	174	z	-0.016	2.50	No
		z	-0.016	7.50	No
	213	z	-0.006	2.00	No
		z	-0.005	2.00	No
	217	z	-0.005	3.00	No
		z	-0.006	3.00	No
		z	-0.003	1.50	No
	220	z	-0.003	3.00	No
		z	-0.004	3.00	No
		z	-0.003	1.50	No
	223	z	-0.005	2.00	No
		z	-0.004	2.00	No
	226	z	-0.003	2.00	No
		z	-0.004	2.00	No
	229	z	-0.005	2.00	No
		z	-0.004	2.00	No
	243	z	-0.022	2.50	No
		z	-0.022	7.50	No
	247	z	-0.003	2.50	No
		z	-0.003	4.50	No
		z	-0.004	6.50	No
		z	-0.004	8.50	No

	250	z	-0.003	2.50	No
		z	-0.003	4.50	No
		z	-0.004	6.50	No
		z	-0.004	8.50	No
WL30	62	x	-0.023	2.50	No
		x	-0.023	7.50	No
	66	x	-0.023	2.50	No
		x	-0.023	7.50	No
	129	x	-0.013	2.50	No
		x	-0.013	7.50	No
	133	x	-0.003	2.50	No
		x	-0.003	4.50	No
		x	-0.003	6.50	No
		x	-0.003	8.50	No
	170	x	-0.023	2.50	No
		x	-0.023	7.50	No
	174	x	-0.023	2.50	No
		x	-0.023	7.50	No
	213	x	-0.004	2.00	No
	217	x	-0.004	3.00	No
		x	-0.003	1.50	No
	220	x	-0.005	3.00	No
		x	-0.003	1.50	No
	223	x	-0.005	2.00	No
	226	x	-0.005	2.00	No
	229	x	-0.005	2.00	No
	243	x	-0.013	2.50	No
		x	-0.013	7.50	No
	247	x	-0.005	2.50	No
		x	-0.005	4.50	No
		x	-0.006	6.50	No
		x	-0.006	8.50	No
	250	x	-0.005	2.50	No
		x	-0.005	4.50	No
		x	-0.006	6.50	No
		x	-0.006	8.50	No
LL1	136	y	-0.25	50.00	Yes
LL2	136	y	-0.25	0.00	Yes
LLa1	129	y	-0.50	50.00	Yes
LLa2	243	y	-0.50	50.00	Yes
LLa3	133	y	-0.50	50.00	Yes

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
DL	Dead Load	No	0.00	-1.00	0.00
W0	Wind Load 0/60/120 deg	No	0.00	0.00	0.00
W30	Wind Load 30/90/150 deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
Wi0	Ice Wind Load 0/60/120 deg	No	0.00	0.00	0.00
Wi30	Ice Wind Load 30/90/150 deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0/60/120 deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30/90/150 deg	No	0.00	0.00	0.00
LL1	250 lb Live Load Center of Mount	No	0.00	0.00	0.00

LL2	250 lb Live Load End of Mount	No	0.00	0.00	0.00
LLa1	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

Earthquake (Dynamic analysis only)

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



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Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

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

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	<i>HSS_SQR 4X4X1_4</i>	233	LC25 at 100.00%	0.26	OK	Eq. H1-1b
		234	LC27 at 100.00%	0.31	OK	Eq. H1-1b
		239	LC4 at 100.00%	0.31	OK	Eq. H1-1b
		240	LC3 at 100.00%	0.37	OK	Eq. H1-1b
		241	LC3 at 100.00%	0.31	OK	Eq. H1-1b
		242	LC1 at 100.00%	0.37	OK	Eq. H1-1b
	<i>PIPE 2-1_2x0.203</i>	62	LC2 at 33.33%	0.26	OK	Eq. H1-1b
		66	LC4 at 33.33%	0.33	OK	Eq. H1-1b
		88	LC2 at 25.00%	0.56	OK	Eq. H1-1b
		89	LC3 at 28.13%	0.61	OK	Eq. H1-1b
		129	LC19 at 33.33%	0.38	OK	Eq. H1-1b
		133	LC25 at 33.33%	0.63	OK	Eq. H1-1b
		135	LC26 at 36.46%	0.68	OK	Eq. H1-1b
		136	LC1 at 35.94%	0.79	OK	Eq. H1-1b
		170	LC9 at 33.33%	0.25	OK	Eq. H1-1b
		174	LC3 at 33.33%	0.27	OK	Eq. H1-1b
		176	LC4 at 73.96%	0.61	OK	Eq. H1-1b
		177	LC2 at 28.13%	0.70	OK	Eq. H1-1b
		243	LC7 at 33.33%	0.91	OK	Eq. H1-1b
		247	LC1 at 33.33%	0.24	OK	Eq. H1-1b

		LC2 at 33.33%	0.25	OK	Eq. H1-1b
250					
	PIPE 2x0.154				
87		LC3 at 50.00%	0.13	OK	Eq. H1-1b
90		LC2 at 93.75%	0.34	OK	Eq. H1-1b
91		LC3 at 93.75%	0.34	OK	Eq. H1-1b
92		LC4 at 93.75%	0.55	OK	Eq. H1-1b
93		LC1 at 93.75%	0.35	OK	Eq. H1-1b
137		LC26 at 93.75%	0.53	OK	Eq. H1-1b
138		LC24 at 93.75%	0.61	OK	Eq. H1-1b
139		LC17 at 93.75%	0.37	OK	Eq. H1-1b
140		LC16 at 93.75%	0.37	OK	Eq. H1-1b
149		LC26 at 0.00%	0.14	OK	Eq. H3-1
178		LC12 at 93.75%	0.27	OK	Eq. H1-1b
179		LC2 at 93.75%	0.34	OK	Eq. H1-1b
180		LC3 at 93.75%	0.36	OK	Eq. H1-1b
181		LC4 at 93.75%	0.41	OK	Eq. H1-1b
213		LC26 at 0.00%	0.21	OK	Eq. H1-1b
217		LC18 at 0.00%	0.14	OK	Eq. H1-1b
220		LC11 at 0.00%	0.13	OK	Eq. H1-1b
223		LC12 at 0.00%	0.11	OK	Eq. H1-1b
226		LC3 at 100.00%	0.09	OK	Eq. H1-1b
229		LC3 at 62.50%	0.11	OK	Eq. H1-1b
235		LC1 at 50.00%	0.20	OK	Eq. H1-1b
236		LC8 at 100.00%	0.11	OK	Sec. E1
237		LC18 at 0.00%	0.06	OK	Eq. H3-1
238		LC3 at 50.00%	0.08	OK	Eq. H1-1b
	PIPE 3x0.216				
230		LC12 at 87.50%	0.27	OK	Eq. H1-1b
231		LC9 at 87.50%	0.11	OK	Eq. H1-1b
232		LC9 at 87.50%	0.28	OK	Eq. H1-1b
	PL 11-1/4x5/8				
127		LC12 at 100.00%	0.31	OK	Eq. H1-1b
128		LC9 at 100.00%	0.24	OK	Eq. H1-1b
168		LC11 at 100.00%	0.31	OK	Eq. H1-1b
169		LC12 at 100.00%	0.23	OK	Eq. H1-1b
209		LC12 at 100.00%	0.31	OK	Eq. H1-1b
210		LC11 at 100.00%	0.23	OK	Eq. H1-1b
	PL 3-1/2x5/8				
107		LC3 at 100.00%	0.29	OK	Eq. H1-1b
108		LC4 at 100.00%	0.32	OK	Eq. H1-1b
109		LC12 at 100.00%	0.31	OK	Eq. H1-1b
110		LC11 at 100.00%	0.28	OK	Eq. H1-1b
123		LC12 at 100.00%	0.53	OK	Eq. H1-1b
124		LC11 at 0.00%	0.48	OK	Eq. H1-1b
125		LC11 at 100.00%	0.52	OK	Eq. H1-1b
126		LC12 at 0.00%	0.47	OK	Eq. H1-1b
150		LC27 at 100.00%	0.61	OK	Eq. H1-1b
151		LC17 at 100.00%	0.46	OK	Eq. H1-1b
152		LC16 at 100.00%	0.42	OK	Eq. H1-1b
153		LC24 at 100.00%	0.57	OK	Eq. H1-1b
164		LC26 at 100.00%	0.77	OK	Eq. H1-1b
165		LC18 at 0.00%	0.62	OK	Eq. H1-1b
166		LC27 at 100.00%	0.72	OK	Eq. H1-1b
167		LC16 at 0.00%	0.61	OK	Eq. H1-1b
191		LC9 at 100.00%	0.27	OK	Eq. H1-1b
192		LC3 at 100.00%	0.33	OK	Eq. H1-1b
193		LC11 at 100.00%	0.31	OK	Eq. H1-1b
194		LC9 at 100.00%	0.28	OK	Eq. H1-1b
205		LC10 at 100.00%	0.53	OK	Eq. H1-1b
206		LC10 at 0.00%	0.50	OK	Eq. H1-1b
207		LC10 at 100.00%	0.49	OK	Eq. H1-1b
208		LC11 at 0.00%	0.47	OK	Eq. H1-1b
	RndBar 3_4				
98		LC9 at 0.00%	0.20	OK	Eq. H1-1b

99	LC4 at 0.00%	0.22	OK	Eq. H1-1b
100	LC12 at 0.00%	0.17	OK	Eq. H1-1b
101	LC2 at 100.00%	0.18	OK	Eq. H1-1b
145	LC17 at 0.00%	0.33	OK	Eq. H1-1a
146	LC17 at 0.00%	0.26	OK	Eq. H1-1b
147	LC27 at 100.00%	0.43	OK	Eq. H1-1a
148	LC24 at 100.00%	0.37	OK	Eq. H1-1b
186	LC12 at 0.00%	0.18	OK	Eq. H1-1b
187	LC11 at 0.00%	0.19	OK	Eq. H1-1b
188	LC11 at 0.00%	0.18	OK	Eq. H1-1b
189	LC1 at 100.00%	0.18	OK	Eq. H1-1b

RndBar 5_8

94	LC11 at 87.50%	0.54	OK	Eq. H1-1a
95	LC10 at 87.50%	0.51	OK	Eq. H1-1a
96	LC12 at 87.50%	0.54	OK	Eq. H1-1a
97	LC12 at 87.50%	0.56	OK	Eq. H1-1a
141	LC27 at 87.50%	0.98	OK	Eq. H1-1a
142	LC27 at 87.50%	0.96	OK	Eq. H1-1a
143	LC17 at 87.50%	0.72	OK	Eq. H1-1a
144	LC17 at 87.50%	0.78	OK	Eq. H1-1a
182	LC9 at 87.50%	0.53	OK	Eq. H1-1a
183	LC9 at 87.50%	0.50	OK	Eq. H1-1a
184	LC11 at 87.50%	0.52	OK	Eq. H1-1a
185	LC11 at 87.50%	0.53	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	-3.5625	0.00	-1.337	0
143	-3.2507	0.00	-2.0693	0
144	-3.5625	-3.3333	-1.337	0
145	-3.2507	-3.3333	-2.0693	0
146	-4.3526	-3.3333	-1.4332	0
147	-4.3526	0.00	-1.4332	0
152	-10.1737	-6.6667	-0.7879	0
153	-10.1737	3.3333	-0.7879	0
154	0.2187	-6.6667	-6.7879	0
155	0.2187	3.3333	-6.7879	0
156	-7.3854	0.00	-2.1667	0
157	-0.8376	0.00	3.4078	0
158	0.3187	0.00	-6.6146	0
159	-10.0737	0.00	-0.6146	0
160	0.3187	-3.3333	-6.6146	0
161	-10.0737	-3.3333	-0.6146	0
162	-2.5918	0.00	-4.4809	0
163	-2.5918	-3.3333	-4.4809	0
164	-6.7706	-3.3333	-2.0684	0
165	-6.7706	0.00	-2.0684	0
166	-2.6397	0.00	-4.3057	0

167	-2.6397	-3.3333	-4.3057	0
168	-3.2028	0.00	-2.2446	0
169	-3.2028	-3.3333	-2.2446	0
170	-4.5283	0.00	-1.4793	0
171	-4.5283	-3.3333	-1.4793	0
172	-6.5949	0.00	-2.0222	0
173	-6.5949	-3.3333	-2.0222	0
174	-2.3696	0.00	-5.0626	0
175	4.3342	0.00	-1.8934	0
184	-2.7305	0.00	-4.8542	0
185	-7.0245	0.00	-2.3751	0
186	-7.0245	-3.3333	-2.3751	0
187	-2.7305	-3.3333	-4.8542	0
192	0.2187	3.33E-06	-6.7879	0
193	-10.1737	3.33E-06	-0.7879	0
200	0.2187	-3.3333	-6.7879	0
207	-10.1737	-3.3333	-0.7879	0
208	-3.8017	0.00	-1.7512	0
209	-3.8017	-3.3333	-1.7512	0
211	0.00	0.00	2.73	0
212	-0.6362	0.00	3.2083	0
213	0.00	-3.3333	2.73	0
214	-0.6362	-3.3333	3.2083	0
215	0.6362	-3.3333	3.2083	0
216	0.6362	0.00	3.2083	0
217	5.1375	-6.6667	5.56	0
218	5.1375	3.3333	5.56	0
219	-6.8625	-6.6667	5.56	0
220	-6.8625	3.3333	5.56	0
221	4.3958	0.00	5.36	0
222	4.4802	0.00	-0.2247	0
223	-6.8625	0.00	5.36	0
224	5.1375	0.00	5.36	0
225	-6.8625	-3.3333	5.36	0
226	5.1375	-3.3333	5.36	0
227	-2.4126	0.00	4.9674	0
228	-2.4126	-3.3333	4.9674	0
229	2.4126	-3.3333	4.9674	0
230	2.4126	0.00	4.9674	0
231	-2.2835	0.00	4.8396	0
232	-2.2835	-3.3333	4.8396	0
233	-0.7653	0.00	3.3362	0
234	-0.7653	-3.3333	3.3362	0
235	0.7653	0.00	3.3362	0
236	0.7653	-3.3333	3.3362	0
237	2.2835	0.00	4.8396	0
238	2.2835	-3.3333	4.8396	0
239	-3.8958	0.00	5.36	0
240	-4.6267	0.00	-1.5052	0
245	-2.4792	0.00	5.36	0
246	2.4792	0.00	5.36	0
247	2.4792	-3.3333	5.36	0
248	-2.4792	-3.3333	5.36	0
251	-6.8625	3.33E-06	5.56	0
252	5.1375	3.33E-06	5.56	0
259	-6.8625	-3.3333	5.56	0
266	5.1375	-3.3333	5.56	0
267	0.00	0.00	3.2083	0
268	0.00	-3.3333	3.2083	0
269	0.00	0.00	1.73	0

270	3.7321	0.00	-1.00	0
271	4.264	0.00	-0.4079	0
272	3.7321	-3.3333	-1.00	0
273	4.264	-3.3333	-0.4079	0
274	4.1531	-3.3333	-1.6754	0
275	4.1531	0.00	-1.6754	0
276	6.0283	-6.6667	-7.2238	0
277	6.0283	3.3333	-7.2238	0
278	7.0742	-6.6667	4.7305	0
279	7.0742	3.3333	4.7305	0
280	6.0997	0.00	-4.114	0
281	-3.176	0.00	-2.3427	0
282	6.875	0.00	4.7479	0
283	5.8291	0.00	-7.2064	0
284	6.875	-3.3333	4.7479	0
285	5.8291	-3.3333	-7.2064	0
286	6.1712	0.00	1.2084	0
287	6.1712	-3.3333	1.2084	0
288	5.7507	-3.3333	-3.5984	0
289	5.7507	0.00	-3.5984	0
290	6.0326	0.00	1.0909	0
291	6.0326	-3.3333	1.0909	0
292	4.4026	0.00	-0.2905	0
293	4.4026	-3.3333	-0.2905	0
294	4.2692	0.00	-1.8152	0
295	4.2692	-3.3333	-1.8152	0
296	5.6346	0.00	-3.4587	0
297	5.6346	-3.3333	-3.4587	0
298	6.6044	0.00	1.6556	0
299	0.8376	0.00	3.4078	0
304	6.5681	0.00	1.2405	0
305	6.136	0.00	-3.699	0
306	6.136	-3.3333	-3.699	0
307	6.5681	-3.3333	1.2405	0
310	7.0742	3.33E-06	4.7305	0
311	6.0283	3.33E-06	-7.2238	0
318	7.0742	-3.3333	4.7305	0
325	6.0283	-3.3333	-7.2238	0
326	4.2086	0.00	-1.0417	0
327	4.2086	-3.3333	-1.0417	0
328	-1.5244	0.00	4.0879	0
329	-1.5244	-3.3333	4.0879	0
330	-1.5244	0.00	3.8879	0
331	-1.5244	-3.3333	3.8879	0
332	1.5244	0.00	4.0879	0
333	1.5244	-3.3333	3.8879	0
334	1.5244	-3.3333	4.0879	0
335	1.5244	0.00	3.8879	0
336	-5.5616	0.00	-1.7508	0
337	4.9519	0.00	-2.6369	0
338	-5.4616	-3.3333	-1.5776	0
339	4.7527	-3.3333	-2.6195	0
340	-5.5616	-3.3333	-1.7508	0
341	4.9519	-3.3333	-2.6369	0
342	-5.4616	0.00	-1.5776	0
343	4.7527	0.00	-2.6195	0
344	-2.9213	0.00	-3.2751	0
345	5.2176	0.00	0.4002	0
346	-2.9213	-3.3333	-3.2751	0
347	5.2176	-3.3333	0.4002	0

348	-2.8213	0.00	-3.1019	0
349	5.0184	0.00	0.4177	0
350	-2.8213	-3.3333	-3.1019	0
351	5.0184	-3.3333	0.4177	0
352	3.7321	0.50	-1.00	0
353	3.7321	-3.8333	-1.00	0
354	4.04E-07	0.50	2.73	0
355	4.04E-07	-3.8333	2.73	0
356	-3.5625	0.50	-1.337	0
357	-3.5625	-3.8333	-1.337	0
358	0.00	-3.3333	1.73	0
359	-3.5625	-0.25	-1.337	0
360	3.7321	-0.25	-1.00	0
361	0.00	-0.25	2.73	0
362	-1.7213	0.00	-0.1995	0
363	-1.7213	-3.3333	-0.1995	0
364	1.7213	0.00	-0.1995	0
365	1.7213	-3.3333	-0.1995	0
366	0.3875	-6.6667	5.56	0
367	0.3875	3.3333	5.56	0
368	0.3875	0.00	5.36	0
369	0.3875	-3.3333	5.36	0
370	0.3875	3.33E-06	5.56	0
371	0.3875	-3.3333	5.56	0
372	6.2788	0.00	-2.0661	0
373	6.2788	-3.3333	-2.0661	0
374	6.4538	0.00	-2.0911	0
375	6.4538	-3.3333	-2.0911	0
376	6.4538	-6.6667	-2.0911	0
377	6.4538	3.3333	-2.0911	0
387	-6.6342	0.00	-2.6004	0
403	-5.6405	0.00	-3.1741	0
404	-5.6405	-3.3333	-3.1741	0
405	-5.7655	0.00	-3.3491	0
406	-5.7655	-3.3333	-3.3491	0
407	-5.7655	-6.6667	-3.3491	0
408	-5.7655	3.3333	-3.3491	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
269	1	1	1	1	1	1
358	1	1	1	1	1	1
362	1	1	1	1	1	1
363	1	1	1	1	1	1
364	1	1	1	1	1	1
365	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	Ig factor
62	153	152		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	361		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
88	158	159		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
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
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
129	218	217		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
133	220	219		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
135	223	224		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
136	225	226		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
137	227	212		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
138	228	214		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
139	229	215		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
140	230	216		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
141	231	232		RndBar 5_8	A36	0.00	0.00	0.00
142	233	234		RndBar 5_8	A36	0.00	0.00	0.00
143	235	236		RndBar 5_8	A36	0.00	0.00	0.00
144	237	238		RndBar 5_8	A36	0.00	0.00	0.00
145	235	238		RndBar 3_4	A36	0.00	0.00	0.00
146	236	237		RndBar 3_4	A36	0.00	0.00	0.00
147	232	233		RndBar 3_4	A36	0.00	0.00	0.00
148	231	234		RndBar 3_4	A36	0.00	0.00	0.00
149	239	359		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
150	227	245		PL 3-1/2x5/8	A36	0.00	0.00	0.00
151	230	246		PL 3-1/2x5/8	A36	0.00	0.00	0.00
152	229	247		PL 3-1/2x5/8	A36	0.00	0.00	0.00
153	228	248		PL 3-1/2x5/8	A36	0.00	0.00	0.00
164	212	267		PL 3-1/2x5/8	A36	0.00	0.00	0.00
165	267	216		PL 3-1/2x5/8	A36	0.00	0.00	0.00
166	214	268		PL 3-1/2x5/8	A36	0.00	0.00	0.00
167	268	215		PL 3-1/2x5/8	A36	0.00	0.00	0.00
168	267	211		PL 11-1/4x5/8	A36	11.25	9.25	0.00
169	268	213		PL 11-1/4x5/8	A36	11.25	9.25	0.00
170	277	276		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
174	279	278		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
176	282	283		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
177	284	285		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
178	286	271		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
179	287	273		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

180	288	274	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
181	289	275	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
182	290	291	RndBar 5_8	A36	0.00	0.00	0.00
183	292	293	RndBar 5_8	A36	0.00	0.00	0.00
184	294	295	RndBar 5_8	A36	0.00	0.00	0.00
185	296	297	RndBar 5_8	A36	0.00	0.00	0.00
186	294	297	RndBar 3_4	A36	0.00	0.00	0.00
187	295	296	RndBar 3_4	A36	0.00	0.00	0.00
188	291	292	RndBar 3_4	A36	0.00	0.00	0.00
189	290	293	RndBar 3_4	A36	0.00	0.00	0.00
191	286	304	PL 3-1/2x5/8	A36	0.00	0.00	0.00
192	289	305	PL 3-1/2x5/8	A36	0.00	0.00	0.00
193	288	306	PL 3-1/2x5/8	A36	0.00	0.00	0.00
194	287	307	PL 3-1/2x5/8	A36	0.00	0.00	0.00
205	271	326	PL 3-1/2x5/8	A36	0.00	0.00	0.00
206	326	275	PL 3-1/2x5/8	A36	0.00	0.00	0.00
207	273	327	PL 3-1/2x5/8	A36	0.00	0.00	0.00
208	327	274	PL 3-1/2x5/8	A36	0.00	0.00	0.00
209	326	270	PL 11-1/4x5/8	A36	11.25	9.25	0.00
210	327	272	PL 11-1/4x5/8	A36	11.25	9.25	0.00
213	330	331	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
217	335	333	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
220	342	338	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
223	348	350	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
226	343	339	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
229	349	351	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
230	352	353	PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
231	354	355	PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
232	356	357	PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
233	211	269	HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
234	213	358	HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
235	280	359	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
236	174	360	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
237	221	360	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
238	298	361	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
239	142	362	HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
240	144	363	HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
241	270	364	HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
242	272	365	HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
243	367	366	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
247	377	376	PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
250	408	407	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
66	315.00	0	0.00	0.00	0.00
94	0.00	2	-0.50	0.00	-0.866
95	0.00	2	-0.50	0.00	-0.866
96	0.00	2	-0.50	0.00	-0.866
97	0.00	2	-0.50	0.00	-0.866
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
129	315.00	0	0.00	0.00	0.00
133	315.00	0	0.00	0.00	0.00
141	0.00	2	0.00	0.00	1.00
142	0.00	2	0.00	0.00	1.00
143	0.00	2	0.00	0.00	1.00
144	0.00	2	0.00	0.00	1.00
150	90.00	0	0.00	0.00	0.00
151	90.00	0	0.00	0.00	0.00
152	90.00	0	0.00	0.00	0.00
153	90.00	0	0.00	0.00	0.00
164	90.00	0	0.00	0.00	0.00
165	90.00	0	0.00	0.00	0.00
166	90.00	0	0.00	0.00	0.00
167	90.00	0	0.00	0.00	0.00
168	90.00	0	0.00	0.00	0.00
169	90.00	0	0.00	0.00	0.00
170	315.00	0	0.00	0.00	0.00
174	315.00	0	0.00	0.00	0.00
182	0.00	2	0.9962	0.00	-0.0872
183	0.00	2	0.9962	0.00	-0.0872
184	0.00	2	0.9962	0.00	-0.0872
185	0.00	2	0.9962	0.00	-0.0872
191	90.00	0	0.00	0.00	0.00
192	90.00	0	0.00	0.00	0.00
193	90.00	0	0.00	0.00	0.00
194	90.00	0	0.00	0.00	0.00
205	90.00	0	0.00	0.00	0.00
206	90.00	0	0.00	0.00	0.00
207	90.00	0	0.00	0.00	0.00
208	90.00	0	0.00	0.00	0.00
209	90.00	0	0.00	0.00	0.00
210	90.00	0	0.00	0.00	0.00
213	315.00	0	0.00	0.00	0.00
217	315.00	0	0.00	0.00	0.00
220	315.00	0	0.00	0.00	0.00
223	315.00	0	0.00	0.00	0.00
226	315.00	0	0.00	0.00	0.00
229	315.00	0	0.00	0.00	0.00
230	0.00	2	0.9397	0.00	-0.342
232	0.00	2	0.866	0.00	0.50
243	315.00	0	0.00	0.00	0.00
247	315.00	0	0.00	0.00	0.00
250	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
145	0.00	-3.50	0.00	0.00	3.50	0.00
146	0.00	3.50	0.00	0.00	-3.50	0.00
147	0.00	3.50	0.00	0.00	-3.50	0.00
148	0.00	-3.50	0.00	0.00	3.50	0.00
168	0.00	-0.625	0.00	0.00	-0.625	0.00
169	0.00	-0.625	0.00	0.00	-0.625	0.00
186	0.00	-3.50	0.00	0.00	3.50	0.00
187	0.00	3.50	0.00	0.00	-3.50	0.00
188	0.00	3.50	0.00	0.00	-3.50	0.00
189	0.00	-3.50	0.00	0.00	3.50	0.00
209	0.00	-0.625	0.00	0.00	-0.625	0.00
210	0.00	-0.625	0.00	0.00	-0.625	0.00

Hinges

Member	Node-J				Node-K				TOR	AXL	Axial rigidity
	M33	M22	V3	V2	M33	M22	V3	V2			
87	1	1	0	0	1	1	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
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
146	0	0	0	0	0	0	0	0	0	0	Tension only
148	0	0	0	0	0	0	0	0	0	0	Tension only
149	1	1	0	0	1	1	0	0	0	0	Full
150	1	1	0	0	0	0	0	0	0	0	Full
151	1	1	0	0	0	0	0	0	0	0	Full
152	1	1	0	0	0	0	0	0	0	0	Full
153	1	1	0	0	0	0	0	0	0	0	Full
187	0	0	0	0	0	0	0	0	0	0	Tension only
189	0	0	0	0	0	0	0	0	0	0	Tension only
191	1	1	0	0	0	0	0	0	0	0	Full
192	1	1	0	0	0	0	0	0	0	0	Full
193	1	1	0	0	0	0	0	0	0	0	Full
194	1	1	0	0	0	0	0	0	0	0	Full
235	1	1	0	0	1	1	0	0	0	0	Full
236	1	1	0	0	1	1	0	0	0	0	Full
237	1	1	0	0	1	1	0	0	0	0	Full
238	1	1	0	0	1	1	0	0	0	0	Full



Tower Engineering Solutions

Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Post-Mod Structural Analysis Report

Existing 120-ft Rohn Monopole Plus a Proposed 20-ft Extension

Customer Name: SBA Communications Corp

Customer Site Number: CT46128-A

Customer Site Name: Milford - West

Carrier Name: AT&T (App#: 165974, V5)

Carrier Site ID / Name: CT1231 / Milford Wampus

Site Location: 160 Wampus Lane

Milford, Connecticut

New Haven County

Latitude: 41.225166

Longitude: -73.042361

Analysis Result:

Max Structural Usage: 95.1% [Pass]

Max Foundation Usage: 94.0% [Pass]

Report Prepared By: Tawfeeq Alajaj





Tower Engineering Solutions

Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Post-Mod Structural Analysis Report

Existing 120-ft Rohn Monopole Plus a Proposed 20-ft Extension

Customer Name: SBA Communications Corp

Customer Site Number: CT46128-A

Customer Site Name: Milford - West

Carrier Name: AT&T (App#: 165974, V5)

Carrier Site ID / Name: CT1231 / Milford Wampus

Site Location: 160 Wampus Lane

Milford, Connecticut

New Haven County

Latitude: 41.225166

Longitude: -73.042361

Analysis Result:

Max Structural Usage: 95.1% [Pass]

Max Foundation Usage: 94.0% [Pass]

Report Prepared By: Tawfeeq Alajaj

Introduction

The purpose of this report is to summarize the analysis results on the 140 ft Rohn Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any existing modification listed under Sources of Information was assumed completed and was included in this analysis.

The proposed modification by **TES** listed under Sources of Information was considered completed and was included in this analysis.

Sources of Information

Tower Drawings	Rohn Project #51361AE, dated April 3, 2002
Foundation Drawing	Rohn Project #51361AE, dated April 3, 2002
Geotechnical Report	Clarence welti Associates Inc. Site #CT-0638, dated June 19, 2001
Mount Analysis	Hudson Design Group, Project No. CT1231, dated 06/24/2021
Existing Modification	TES, Project # 18033, dated 11/04/2015
Proposed Modification	TES Job # 115988

Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the TIA-222-G-2. In accordance with this standard, the structure was analyzed using **TESPoles**, a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed $V_{ult} = 125.0$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 97.0$ mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_s = 0.193$, $S_1 = 0.063$

This structural analysis is based upon the tower being classified as a Structure Class II; however, if a different classification is required subsequent to the date hereof, the tower classification will be changed to meet such requirement and a new structural analysis will be run.

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft.)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
-	*116.5	-	-	-	-	Sprint
11	105.0	3	Ericsson AIR 21 B2A/ B4P - Panel	Platform w/ Handrails w/ MS-KI22-5 Kicker Support Kit & MS-1436 Collar Mount Plate Assy.	(9) 1 5/8" (4) 1 5/8" Fiber	T-Mobile
12		3	Ericsson AIR32 KRD901146-1_B66A_B2A - Panel			
13		3	RFS APXVAARR24_43-U-NA20 - Panel			
14		3	Ericsson AIR6449 B41 - Panel			
15		3	Ericsson KRY 112 144/1 TTA			
16		3	Ericsson Radio 4449 B71 + B85 RRU			
17		3	Ericsson Radio 4415 B25 RRU			
18	78.0	2	GPS - Whip	(2) Side Arm		Unknown

* Sprint is terminating from 116.5 ft RAD and not included in this analysis.

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	136.0	2	Cci TPA65R-BU8D - Panel	Sector Frames [(3) SitePro VFA12-WLL-30120 w/ (2) SitePro LWRM Collar Mount & (2) SitePro MM01 8" Standoff & (4) SitePro MM02 2' Standoff]	(2) 0.4" Fiber (6) 1" DC Power	AT&T
2		2	Cci TPA45R-KU8A - Panel			
3		2	Cci DMP65R-BU8DA-K - Panel			
4		3	Ericsson AIR6449 N77 - Panel			
5		3	Ericsson AIR6419 N77G - Panel			
6		5	Ericsson 4415 B30 - RRU			
7		5	Ericsson 4478 B14 - RRU			
8		4	Ericsson 4449 B71 + B85 - RRU			
9		4	Ericsson RRUS 8843 B2 B66A - RRU			
10		4	Raycap DC9-48-60-24-8C-EV - OVP			

See the attached coax layout for the line placement considered in the analysis.

Analysis Results

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

	Pole shafts	Anchor Bolts	Base Plate	Reinforcing Plates
Max. Usage:	89.7%	73.9%	43.3%	95.1%
Pass/Fail	Pass	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	2385.6	22.7	28.2

The foundation has been investigated using the supplied documents and soils report and was found **adequate**. Therefore, no modification to the foundation will be required.

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.9751 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the structure and its foundation will be **adequate** to safely support the existing and proposed equipment and meet the minimum requirements per the TIA-222-H Standard after the following proposed modification is successfully completed.

- Proposed modification design drawing by TES Job # 115988

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC**. Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.
2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.
3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the EIA/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.
4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.
5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.
6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

Usage Diagram - Max Ratio 89.67% at 99.4ft

Structure: CT46128-A-SBA
Site Name: Milford - West
Height: 140.00 (ft)
Base Elev: 0.000 (ft)

Code: EIA/TIA-222-G
Exposure: C
Gh: 1.1

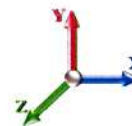
10/5/2021

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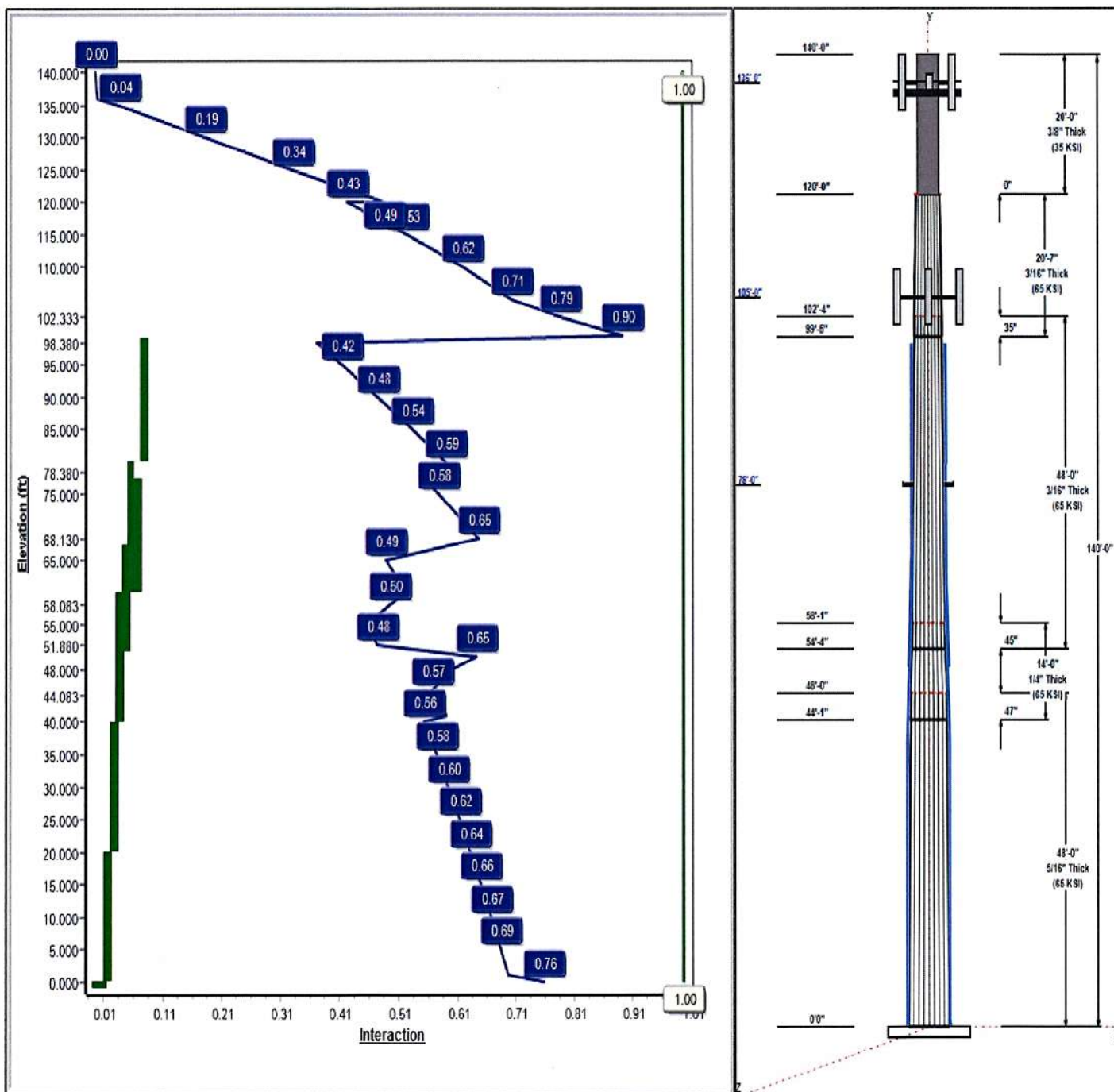
Dead Load Factor: 1.20
Wind Load Factor: 1.60

Load Case : 1.2D + 1.6W 97 mph Wind



Iterations: 27

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Structure: CT46128-A-SBA

Type: Custom
 Site Name: Milford - West
 Height: 140.00 (ft)
 Base Elev: 0.00 (ft)

Base Shape: 18 Sided
 Taper: 0.15625

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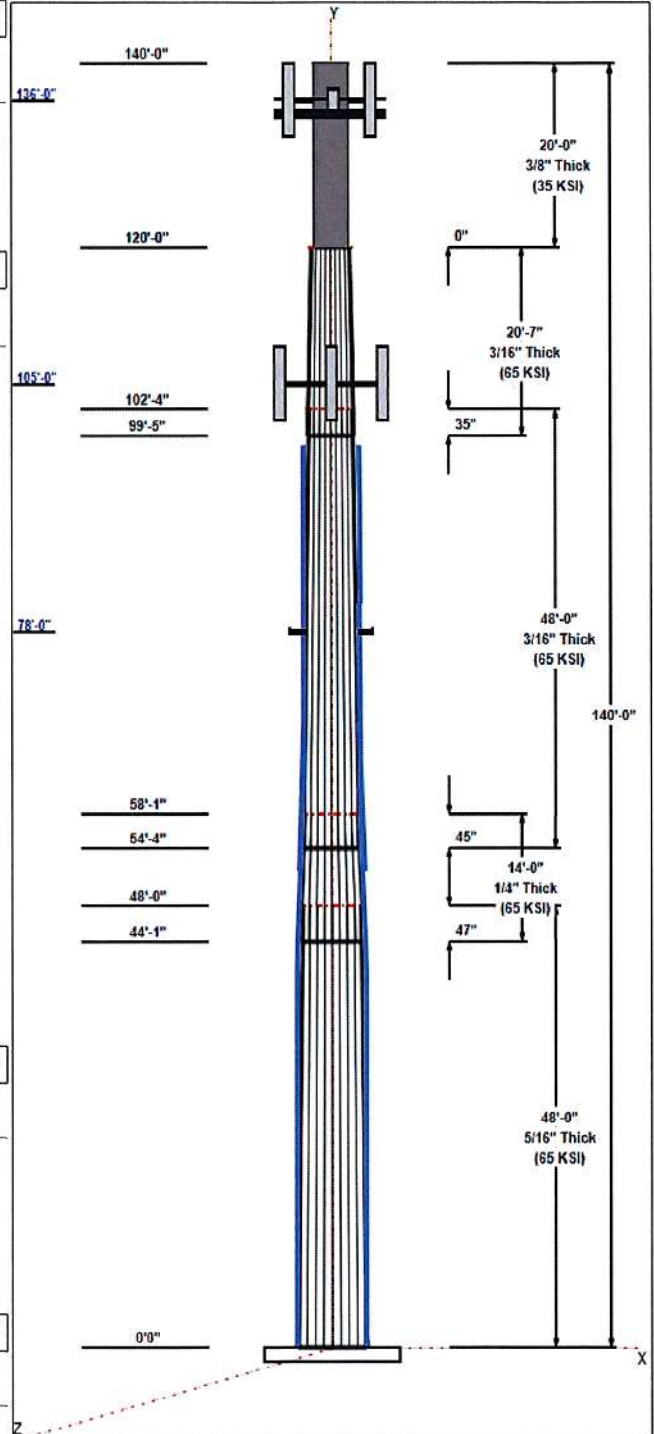
Shaft Properties							
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	48.00	30.00	37.50	0.313		0.15625	65
2	14.00	28.92	31.11	0.250	Slip	0.15625	65
3	48.00	22.39	29.89	0.188	Slip	0.15625	65
4	20.58	20.00	23.22	0.188	Slip	0.15625	65
5	20.00	18.00	18.00	0.375	Butt	0.00000	35

Discrete Appurtenances				
Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
136.00	136.00	2	TPA65R-BU8D	AT&T
136.00	136.00	2	TPA-45R-KU8AA-K	AT&T
136.00	136.00	2	DMP65R-BU8D	AT&T
136.00	136.00	3	AIR 6449 B77D	AT&T
136.00	136.00	3	Ericsson AIR6419 N77G	AT&T
136.00	136.00	5	Radio 4415	AT&T
136.00	136.00	5	B14 4478	AT&T
136.00	136.00	4	4449 B71 + B85	AT&T
136.00	136.00	4	B2 B66A 8843	AT&T
136.00	136.00	4	DC9-48-60-24-8C-EV	AT&T
136.00	136.00	3	VFA12-HD	AT&T
136.00	136.00	2	Collar Mount (3-Sided)	AT&T
136.00	136.00	6	3 ft Standoff	AT&T
105.00	105.00	3	RRUS 4415 B25	T-Mobile
105.00	105.00	1	MS-1436 (Collar Mount)	T-Mobile
105.00	105.00	1	MS-KI22-5 (Kickers w/o	T-Mobile
105.00	105.00	1	Platform w/ Hand Rail	T-Mobile
105.00	105.00	3	AIR B2A/ B4P	T-Mobile
105.00	105.00	3	KRY 112 144/1	T-Mobile
105.00	105.00	3	APXVAARR24_43-U-NA20	T-Mobile
105.00	105.00	3	4449 B71 + B95	T-Mobile
105.00	105.00	3	AIR32	T-Mobile
105.00	105.00	3	AIR6449 B41	T-Mobile
78.00	78.00	2	Side Arm (L. Heavy)	Unknown
78.00	78.00	2	GPS	Unknown

Linear Appurtenances				
Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	136.00	Inside	0.4" Fiber	AT&T
0.00	136.00	Inside	1" DC Power	AT&T
0.00	105.00	Inside	1 5/8" Coax	T-Mobile
0.00	105.00	Inside	1 5/8" fiber	T-Mobile
1.00	101.00	Outside	1.25" Reinforcing plate	
0.00	88.00	Inside	1 5/8" Coax	Metro PCS

Anchor Bolts			
Qty	Specifications	Grade (ksi)	Arrangement
8	2.25" 18J	75.0	Radial

Base Plate			
Thickness (in)	Specifications (in)	Grade (ksi)	Geometry



Type: Custom
 Site Name: Milford - West
 Height: 140.00 (ft)
 Base Elev: 0.00 (ft)

Base Shape: 18 Sided
 Taper: 0.00000

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2.0000 49.5 60.0 Round

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 97 mph Wind	2385.6	22.7	28.2
0.9D + 1.6W 97 mph Wind	2348.2	22.7	21.1
1.2D + 1.0Di + 1.0Wi 50 mph Wind	715.7	6.6	49.6
1.2D + 1.0E	231.5	1.8	28.2
0.9D + 1.0E	227.3	1.8	21.1
1.0D + 1.0W 60 mph Wind	565.9	5.4	23.5

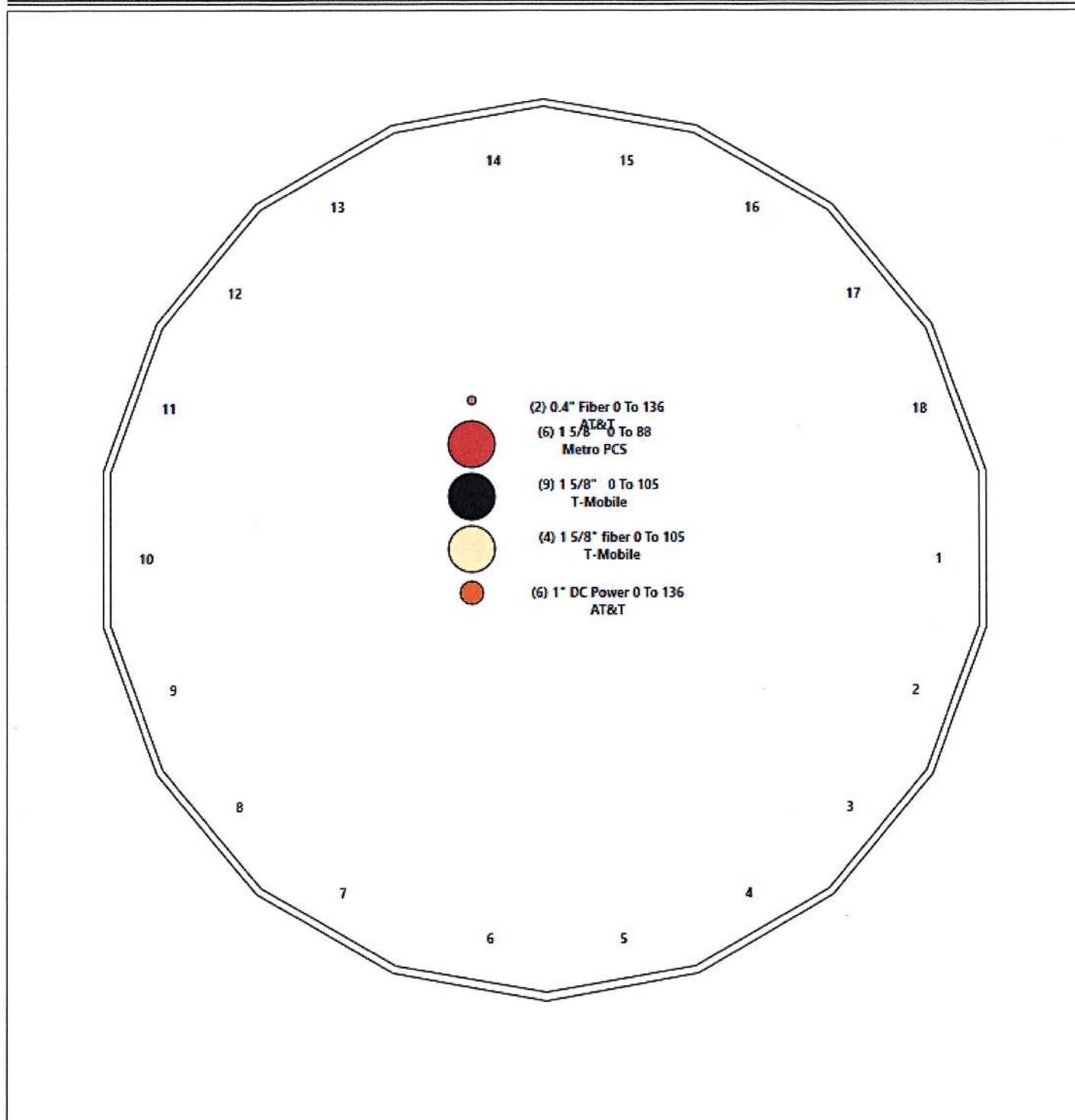
Structure: CT46128-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Milford - West
Height: 140.00 (ft)

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Shaft Properties

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	48.000	0.3125	65		0.00	5,417
2	18	14.000	0.2500	65	Slip	47.00	1,125
3	18	48.000	0.1875	65	Slip	45.00	2,522
4	18	20.583	0.1875	65	Slip	35.00	893
5	R	20.000	0.3750	35	Flange	0.00	1,413
Total Shaft Weight:							11,370

Bottom							Top						
Sec. No.	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper
1	37.50	0.00	36.88	6444.44	19.75	120.00	30.00	48.00	29.45	3278.80	15.52	96.00	0.156250
2	31.11	44.08	24.49	2946.83	20.53	124.45	28.92	58.08	22.75	2363.58	18.99	115.7	0.156250
3	29.89	54.33	17.67	1969.35	26.69	159.39	22.39	102.33	13.21	822.40	19.64	119.3	0.156250
4	23.22	99.42	13.70	918.23	20.42	123.82	20.00	120.00	11.79	584.74	17.40	106.6	0.156250
5	18.00	120.0	20.76	806.88	0.00	48.00	18.00	140.00	20.76	806.88	0.00	48.00	0.000000

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Fu (ksi)	Offset (in)	Intermediate Connectors			Termination Connectors		
							Description	Spacing (in)	Description	Spacing (in)	Lower Qty	Upper Qty
0.00	1.00	4	SOL 2 1/4" William R71	128	150	0.00	5/8" Hollo Bolt	12.00	5/8" Hollo Bolt	3.00		
0.00	1.00	3	SOL 1 3/4" William R71	128	150	0.00	5/8" Hollo Bolt	12.00	5/8" Hollo Bolt	3.00		
1.00	21.00	4	LNP LP7X125-B-20A	65	80	0.00	5/8" Hollo Bolt	24.00	5/8" Hollo Bolt	3.00		
21.00	41.00	4	LNP LP7X125-G-20AA	65	80	0.00	5/8" Hollo Bolt	24.00	5/8" Hollo Bolt	3.00		
41.00	61.00	4	LNP LP6X125-G-20AB	65	80	0.00	5/8" Hollo Bolt	24.00	5/8" Hollo Bolt	3.00		
51.88	68.13	3	LNP LP6X100-G-20TT	65	80	0.00	5/8" Hollo Bolt	24.00	5/8" Hollo Bolt	3.00	8	8
61.00	81.00	3	LNP LP6X125-G-20BB	65	80	0.00	5/8" Hollo Bolt	24.00	5/8" Hollo Bolt	3.00		
61.00	78.38	1	LNP LP6X125-G-20BT	65	80	0.00	5/8" Hollo Bolt	24.00	5/8" Hollo Bolt	3.00		10
81.00	98.38	3	LNP LP6X125-G-20BT	65	80	0.00	5/8" Hollo Bolt	24.00	5/8" Hollo Bolt	3.00		10

Load Summary

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
1	136.00	TPA65R-BU8D	2	87.10	17.87	0.72	501.71	19.649	0.72	0.00	0.00
2	136.00	TPA-45R-KU8AA-K	2	80.00	14.50	0.81	406.23	16.164	0.81	0.00	0.00
3	136.00	DMP65R-BU8D	2	96.00	17.87	0.73	490.53	19.649	0.73	0.00	0.00
4	136.00	AIR 6449 B77D	3	82.00	4.13	0.85	201.78	4.924	0.85	0.00	0.00
5	136.00	Ericsson AIR6419 N77G	3	66.00	4.13	0.85	168.89	4.456	0.85	0.00	0.00
6	136.00	Radio 4415	5	46.00	1.86	0.50	106.01	2.418	0.50	0.00	0.00
7	136.00	B14 4478	5	60.00	1.84	0.50	106.62	2.361	0.50	0.00	0.00
8	136.00	4449 B71 + B85	4	71.00	1.97	0.50	126.46	2.534	0.50	0.00	0.00
9	136.00	B2 B66A 8843	4	72.00	1.64	0.50	118.84	2.151	0.50	0.00	0.00
10	136.00	DC9-48-60-24-8C-EV	4	26.20	1.14	0.50	131.16	2.711	0.50	0.00	0.00
11	136.00	VFA12-HD	3	1055.00	17.90	0.75	2076.02	40.173	0.75	0.00	0.00
12	136.00	Collar Mount (3-Sided)	2	220.00	2.25	0.75	524.16	4.583	0.75	0.00	0.00
13	136.00	3 ft Standoff	6	45.00	2.50	0.75	134.43	8.118	0.75	0.00	0.00
14	105.00	RRUS 4415 B25	3	46.00	1.64	0.50	85.66	2.137	0.50	0.00	0.00
15	105.00	MS-1436 (Collar Mount)	1	150.60	2.25	1.00	353.50	4.524	1.00	0.00	0.00
16	105.00	MS-KI22-5 (Kickers w/o Collar)	1	146.00	5.33	1.00	342.70	10.716	1.00	0.00	0.00
17	105.00	Platform w/ Hand Rail (round)	1	1400.00	32.00	1.00	3172.98	58.945	1.00	0.00	0.00
18	105.00	AIR B2A/ B4P	3	91.50	6.09	0.86	253.36	7.146	0.86	0.00	0.00
19	105.00	KRY 112 144/1	3	11.00	0.41	0.50	21.40	0.869	0.50	0.00	0.00
20	105.00	APXVAARR24_43-U-NA20	3	128.00	20.24	0.70	529.49	22.071	0.70	0.00	0.00
21	105.00	4449 B71 + B95	3	74.00	1.65	0.50	138.64	2.154	0.50	0.00	0.00
22	105.00	AIR32 KRD901146-1_B66A_B2A	3	132.20	6.51	0.87	307.88	7.590	0.87	0.00	0.00
23	105.00	AIR6449 B41	3	103.00	5.65	0.71	235.31	6.567	0.71	0.00	0.00
24	78.00	Side Arm (L. Heavy)	2	120.00	4.50	1.00	218.08	9.414	1.00	0.00	0.00
25	78.00	GPS	2	10.00	1.00	1.00	37.46	1.667	1.00	0.00	0.00
Totals:			73	9,765.70			23,656.46				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	136.00	(2) 0.4" Fiber	0.00	Inside
0.00	136.00	(6) 1" DC Power	0.00	Inside
0.00	105.00	(9) 1 5/8" Coax	0.00	Inside
0.00	105.00	(4) 1 5/8" fiber	0.00	Inside
1.00	101.00	(4) 1.25" Reinforcing plate	2.50	Outside
0.00	88.00	(6) 1 5/8" Coax	0.00	Inside

Shaft Section Properties

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Additional Reinforcing			
											Area (in^2)	Ixp (in^4)	Iyp (in^4)	Weight (lb)
0.00	RB1 RB2	0.3125	37.500	36.884	6444.4	19.75	120.00	65	78	0.0	24.12	5557.0	3800.0	
1.00	RT1 RT2 RB3	0.3125	37.344	36.729	6363.6	19.66	119.50	65	78	125.2	35.00	8327.7	4596.7	119.1
5.00		0.3125	36.719	36.109	6046.8	19.31	117.50	65	79	495.7	35.00	8061.1	4451.4	476.4
10.00		0.3125	35.938	35.334	5665.8	18.87	115.00	65	79	607.8	35.00	7734.0	4273.0	595.5
15.00		0.3125	35.156	34.559	5301.1	18.43	112.50	65	80	594.6	35.00	7413.8	4098.4	595.5
20.00		0.3125	34.375	33.785	4952.5	17.99	110.00	65	80	581.4	35.00	7100.5	3927.6	595.5
21.00	RT3 RB4	0.3125	34.219	33.630	4884.7	17.90	109.50	65	80	114.7	35.00	7038.7	3893.8	119.1
25.00		0.3125	33.594	33.010	4619.5	17.54	107.50	65	81	453.5	35.00	6794.1	3760.4	476.4
30.00		0.3125	32.813	32.235	4301.7	17.10	105.00	65	81	555.0	35.00	6494.6	3597.0	595.5
35.00		0.3125	32.031	31.460	3998.9	16.66	102.50	65	82	541.8	35.00	6201.9	3437.2	595.5
40.00		0.3125	31.250	30.685	3710.7	16.22	100.00	65	82	528.7	35.00	5916.1	3281.2	595.5
41.00	RT4 RB5	0.3125	31.094	30.530	3654.7	16.13	99.50	65	82	104.2	30.00	5014.3	2769.7	102.1
44.08	Bot - Section 2	0.3125	30.612	30.052	3485.8	15.86	97.96	65	83	317.8	30.00	4866.6	2689.2	314.8
45.00		0.3125	30.469	29.910	3436.6	15.78	97.50	65	83	169.7	30.00	4975.0	2748.6	93.6
48.00	Top - Section 1	0.2500	30.500	24.003	2775.0	20.10	122.00	65	78	549.9	30.00	4831.9	2670.6	306.2
50.00		0.2500	30.188	23.755	2689.9	19.88	120.75	65	78	162.5	30.00	4729.2	2618.3	204.2
51.88	RB6	0.2500	29.894	23.521	2611.5	19.67	119.58	65	78	151.2	48.00	7274.1	4271.9	307.1
54.33	Bot - Section 3	0.2500	29.510	23.217	2511.5	19.40	118.04	65	79	195.1	48.00	7097.0	4169.0	400.7
55.00		0.2500	29.406	23.135	2484.7	19.33	117.63	65	79	92.6	48.00	7221.5	4241.6	108.9
58.08	Top - Section 2	0.1875	29.299	17.325	1855.1	26.14	156.26	65	71	424.0	48.00	7000.2	4112.9	503.6
60.00		0.1875	29.000	17.146	1798.4	25.86	154.67	65	71	112.4	48.00	6858.4	4033.9	313.1
61.00	RT5 RB7 RB8	0.1875	28.844	17.053	1769.3	25.71	153.83	65	71	58.2	48.00	6788.1	3993.0	163.3
65.00		0.1875	28.219	16.681	1656.0	25.13	150.50	65	72	229.6	48.00	6510.8	3831.5	653.3
68.13	RT6	0.1875	27.730	16.390	1570.9	24.67	147.89	65	72	176.1	30.00	4014.7	2231.1	319.5
70.00		0.1875	27.438	16.217	1521.4	24.39	146.33	65	73	103.7	30.00	3934.8	2187.3	190.9
75.00		0.1875	26.656	15.752	1394.3	23.66	142.17	65	74	272.0	30.00	3725.1	2072.4	510.4
78.00		0.1875	26.188	15.473	1321.5	23.22	139.67	65	74	159.4	30.00	3602.2	2004.9	306.2
78.38	RT8	0.1875	26.128	15.437	1312.5	23.16	139.35	65	74	20.0	22.50	2593.8	1645.8	29.1
80.00		0.1875	25.875	15.287	1274.4	22.92	138.00	65	74	84.7	22.50	2546.5	1616.2	124.0
81.00	RT7 RB9	0.1875	25.719	15.194	1251.3	22.78	137.17	65	75	51.9	22.50	2517.6	1598.1	76.6
85.00		0.1875	25.094	14.822	1161.6	22.19	133.83	65	75	204.3	22.50	2403.4	1526.7	306.2
90.00		0.1875	24.313	14.357	1055.7	21.45	129.67	65	76	248.2	22.50	2264.5	1439.8	382.8
95.00		0.1875	23.531	13.892	956.4	20.72	125.50	65	77	240.3	22.50	2129.7	1355.5	382.8
98.38	RT9	0.1875	23.003	13.578	893.0	20.22	122.68	65	78	158.0	22.50	2041.0	1300.1	258.8
99.42	Bot - Section 4	0.1875	22.841	13.481	874.1	20.07	121.82	65	78	47.7				
100.00		0.1875	22.750	13.427	863.6	19.98	121.33	65	78	53.9				
102.33	Top - Section 3	0.1875	22.760	13.433	864.8	19.99	121.39	65	78	213.3				
105.00		0.1875	22.344	13.185	817.8	19.60	119.17	65	78	120.8				
110.00		0.1875	21.563	12.720	734.3	18.87	115.00	65	79	220.4				
115.00		0.1875	20.781	12.255	656.7	18.13	110.83	65	80	212.5				
120.00	Top - Section 4	0.1875	20.000	11.790	584.7	17.40	106.67	65	81	204.6				
120.00	Bot - Section 5	0.3750	18.000	20.764	806.9	8.70	53.33	35	35					
125.00		0.3750	18.000	20.764	806.9	0.00	48.00	35	35	353.3				
130.00		0.3750	18.000	20.764	806.9	0.00	48.00	35	35	353.3				
135.00		0.3750	18.000	20.764	806.9	0.00	48.00	35	35	353.3				
136.00		0.3750	18.000	20.764	806.9	0.00	48.00	35	35	70.7				
140.00		0.3750	18.000	20.764	806.9	0.00	48.00	35	35	282.6				
Total Weight										11370.2	11122.1			

Wind Loading - Shaft

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.6W 97 mph Wind	Iterations 27
Dead Load Factor 1.20	
Wind Load Factor 1.60	

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00	RB1 RB2	1.00	0.85	19.450	21.40	283.78	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
1.00	RT1 RT2 RB3	1.00	0.85	19.450	21.40	282.60	0.650	0.000	1.00	3.167	2.06	70.5	0.0	150.3
5.00		1.00	0.85	19.450	21.40	277.87	0.650	0.000	4.00	12.534	8.15	278.9	0.0	594.8
10.00		1.00	0.85	19.450	21.40	271.95	0.650	0.000	5.00	15.370	9.99	342.0	0.0	729.3
15.00		1.00	0.85	19.450	21.40	266.04	0.650	0.000	5.00	15.040	9.78	334.6	0.0	713.5
20.00		1.00	0.90	20.638	22.70	267.95	0.650	0.000	5.00	14.709	9.56	347.3	0.0	697.7
21.00	RT3 RB4	1.00	0.91	20.851	22.94	268.11	0.650	0.000	1.00	2.902	1.89	69.2	0.0	137.6
25.00		1.00	0.95	21.630	23.79	268.09	0.650	0.000	4.00	11.476	7.46	284.0	0.0	544.2
30.00		1.00	0.98	22.477	24.72	266.93	0.650	0.000	5.00	14.048	9.13	361.2	0.0	666.0
35.00		1.00	1.01	23.218	25.54	264.83	0.650	0.000	5.00	13.718	8.92	364.4	0.0	650.2
40.00		1.00	1.04	23.880	26.27	262.03	0.650	0.000	5.00	13.387	8.70	365.7	0.0	634.4
41.00	RT4 RB5	1.00	1.05	24.004	26.40	261.40	0.650	0.000	1.00	2.638	1.71	72.4	0.0	125.0
44.08	Bot - Section 2	1.00	1.07	24.374	26.81	259.32	0.650	0.000	3.08	8.050	5.23	224.5	0.0	381.4
45.00		1.00	1.07	24.479	26.93	258.67	0.650	0.000	0.92	2.408	1.57	67.4	0.0	203.7
48.00	Top - Section 1	1.00	1.08	24.814	27.30	256.42	0.650	0.000	3.00	7.802	5.07	221.5	0.0	659.9
50.00		1.00	1.09	25.029	27.53	259.14	0.650	0.000	2.00	5.135	3.34	147.0	0.0	195.0
51.88	RB6	1.00	1.10	25.224	27.75	257.61	0.650	0.000	1.88	4.779	3.11	137.9	0.0	181.5
54.33	Bot - Section 3	1.00	1.11	25.470	28.02	255.55	0.650	0.000	2.45	6.166	4.01	179.7	0.0	234.1
55.00		1.00	1.12	25.536	28.09	254.98	0.650	0.000	0.67	1.683	1.09	49.2	0.0	111.1
58.08	Top - Section 2	1.00	1.13	25.831	28.41	252.24	0.650	0.000	3.08	7.707	5.01	227.8	0.0	508.8
60.00		1.00	1.14	26.008	28.61	253.77	0.650	0.000	1.92	4.728	3.07	140.7	0.0	134.9
61.00	RT5 RB7 RB8	1.00	1.14	26.099	28.71	252.84	0.650	0.000	1.00	2.447	1.59	73.1	0.0	69.8
65.00		1.00	1.16	26.450	29.09	249.02	0.650	0.000	4.00	9.657	6.28	292.2	0.0	275.5
68.13	RT6	1.00	1.17	26.713	29.38	245.92	0.650	0.000	3.13	7.409	4.82	226.4	0.0	211.3
70.00		1.00	1.17	26.866	29.55	244.02	0.650	0.000	1.87	4.365	2.84	134.1	0.0	124.5
75.00		1.00	1.19	27.259	29.98	238.80	0.650	0.000	5.00	11.443	7.44	356.9	0.0	326.3
78.00	Appurtenance(s)	1.00	1.20	27.485	30.23	235.57	0.650	0.000	3.00	6.707	4.36	210.9	0.0	191.2
78.38	RT8	1.00	1.20	27.513	30.26	235.16	0.650	0.000	0.38	0.841	0.55	26.5	0.0	24.0
80.00		1.00	1.21	27.632	30.39	233.38	0.650	0.000	1.62	3.564	2.32	112.7	0.0	101.6
81.00	RT7 RB9	1.00	1.21	27.704	30.47	232.28	0.650	0.000	1.00	2.183	1.42	69.2	0.0	62.2
85.00		1.00	1.22	27.987	30.79	227.79	0.650	0.000	4.00	8.599	5.59	275.3	0.0	245.1
90.00		1.00	1.24	28.325	31.16	222.03	0.650	0.000	5.00	10.452	6.79	338.7	0.0	297.9
95.00		1.00	1.25	28.650	31.51	216.12	0.656 *	0.000	5.00	10.121	6.64	334.6	0.0	288.4
98.38	RT9	1.00	1.26	28.861	31.75	212.05	0.661 *	0.000	3.38	6.655	4.40	223.6	0.0	189.6
99.42	Bot - Section 4	1.00	1.26	28.925	31.82	210.79	0.664 *	0.000	1.04	2.011	1.34	68.0	0.0	57.3
100.00		1.00	1.27	28.961	31.86	210.07	0.666 *	0.000	0.58	1.144	0.76	38.8	0.0	64.6
102.33	Top - Section 3	1.00	1.27	29.102	32.01	207.21	0.650	0.000	2.33	4.530	2.94	150.8	0.0	255.9
105.00	Appurtenance(s)	1.00	1.28	29.260	32.19	207.38	0.650	0.000	2.67	5.089	3.31	170.3	0.0	144.9
110.00		1.00	1.29	29.548	32.50	201.12	0.650	0.000	5.00	9.288	6.04	314.0	0.0	264.5
115.00		1.00	1.30	29.826	32.81	194.74	0.650	0.000	5.00	8.958	5.82	305.6	0.0	255.0
120.00	Top - Section 4	1.00	1.32	30.094	33.10	188.26	0.650	0.000	5.00	8.627	5.61	297.0	0.0	245.5
125.00		1.00	1.33	30.354	33.39	167.58	0.600	0.000	5.00	7.500	4.50	240.4	0.0	423.9
130.00		1.00	1.34	30.605	33.67	168.27	0.600	0.000	5.00	7.500	4.50	242.4	0.0	423.9
135.00		1.00	1.35	30.850	33.93	168.94	0.600	0.000	5.00	7.500	4.50	244.3	0.0	423.9
136.00	Appurtenance(s)	1.00	1.35	30.898	33.99	169.07	0.600	0.000	1.00	1.500	0.90	48.9	0.0	84.8
140.00		1.00	1.36	31.087	34.20	169.59	0.600	0.000	4.00	6.000	3.60	197.0	0.0	339.1

Wind Loading - Shaft

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 9



*Cf Adjusted by Linear Load Ra Effect

Totals:	140.00	9,277.5	13,644.3
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Discrete Appurtenance Forces

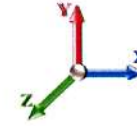
Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 27

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	136.00	B14 4478	5	30.898	33.987	0.40	0.80	3.68	360.00	0.000	0.000	200.12	0.00	0.00
2	136.00	TPA-45R-KU8AA-K	2	30.898	33.987	0.65	0.80	18.79	192.00	0.000	0.000	1021.90	0.00	0.00
3	136.00	DMP65R-BU8D	2	30.898	33.987	0.58	0.80	20.87	230.40	0.000	0.000	1135.02	0.00	0.00
4	136.00	AIR 6449 B77D	3	30.898	33.987	0.68	0.80	8.43	295.20	0.000	0.000	458.16	0.00	0.00
5	136.00	Ericsson AIR6419 N77G	3	30.898	33.987	0.68	0.80	8.43	237.60	0.000	0.000	458.16	0.00	0.00
6	136.00	Radio 4415	5	30.898	33.987	0.40	0.80	3.72	276.00	0.000	0.000	202.29	0.00	0.00
7	136.00	TPA65R-BU8D	2	30.898	33.987	0.58	0.80	20.59	209.04	0.000	0.000	1119.47	0.00	0.00
8	136.00	4449 B71 + B85	4	30.898	33.987	0.40	0.80	3.15	340.80	0.000	0.000	171.40	0.00	0.00
9	136.00	B2 B66A 8843	4	30.898	33.987	0.40	0.80	2.62	345.60	0.000	0.000	142.69	0.00	0.00
10	136.00	DC9-48-60-24-8C-EV	4	30.898	33.987	0.40	0.80	1.82	125.76	0.000	0.000	99.19	0.00	0.00
11	136.00	VFA12-HD	3	30.898	33.987	0.56	0.75	30.21	3798.00	0.000	0.000	1642.60	0.00	0.00
12	136.00	Collar Mount (3-Sided)	2	30.898	33.987	0.56	0.75	2.53	528.00	0.000	0.000	137.65	0.00	0.00
13	136.00	3 ft Standoff	6	30.898	33.987	0.56	0.75	8.44	324.00	0.000	0.000	458.83	0.00	0.00
14	105.00	RRUS 4415 B25	3	29.260	32.186	0.38	0.75	1.84	165.60	0.000	0.000	95.01	0.00	0.00
15	105.00	APXVAARR24_43-U-NA2	3	29.260	32.186	0.52	0.75	31.88	460.80	0.000	0.000	1641.63	0.00	0.00
16	105.00	4449 B71 + B95	3	29.260	32.186	0.38	0.75	1.86	266.40	0.000	0.000	95.59	0.00	0.00
17	105.00	AIR32	3	29.260	32.186	0.65	0.75	12.74	475.92	0.000	0.000	656.25	0.00	0.00
18	105.00	AIR6449 B41	3	29.260	32.186	0.53	0.75	9.03	370.80	0.000	0.000	464.81	0.00	0.00
19	105.00	KRY 112 144/1	3	29.260	32.186	0.38	0.75	0.46	39.60	0.000	0.000	23.75	0.00	0.00
20	105.00	MS-1436 (Collar Mount)	1	29.260	32.186	1.00	1.00	2.25	180.72	0.000	0.000	115.87	0.00	0.00
21	105.00	MS-KI22-5 (Kickers w/o	1	29.260	32.186	1.00	1.00	5.33	175.20	0.000	0.000	274.48	0.00	0.00
22	105.00	Platform w/ Hand Rail	1	29.260	32.186	1.00	1.00	32.00	1680.00	0.000	0.000	1647.91	0.00	0.00
23	105.00	AIR B2A/ B4P	3	29.260	32.186	0.65	0.75	11.78	329.40	0.000	0.000	606.85	0.00	0.00
24	78.00	GPS	2	27.485	30.233	1.00	1.00	2.00	24.00	0.000	0.000	96.75	0.00	0.00
25	78.00	Side Arm (L. Heavy)	2	27.485	30.233	1.00	1.00	9.00	288.00	0.000	0.000	435.36	0.00	0.00
Totals:									11,718.84			13,401.74		

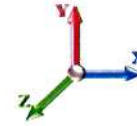
Total Applied Force Summary

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 27

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
1.00		70.46	177.29	0.00	0.00
5.00		278.90	702.85	0.00	0.00
10.00		342.00	864.32	0.00	0.00
15.00		334.65	848.50	0.00	0.00
20.00		347.27	832.68	0.00	0.00
21.00		69.23	164.64	0.00	0.00
25.00		283.98	652.22	0.00	0.00
30.00		361.22	801.04	0.00	0.00
35.00		364.36	785.22	0.00	0.00
40.00		365.71	769.40	0.00	0.00
41.00		72.43	151.98	0.00	0.00
44.08		224.46	464.62	0.00	0.00
45.00		67.43	228.42	0.00	0.00
48.00		221.48	740.86	0.00	0.00
50.00		147.04	249.01	0.00	0.00
51.88		137.90	232.22	0.00	0.00
54.33		179.67	300.35	0.00	0.00
55.00		49.16	129.12	0.00	0.00
58.08		227.75	592.04	0.00	0.00
60.00		140.66	186.64	0.00	0.00
61.00		73.07	96.82	0.00	0.00
65.00		292.21	383.50	0.00	0.00
68.13		226.42	295.85	0.00	0.00
70.00		134.15	174.98	0.00	0.00
75.00		356.85	461.34	0.00	0.00
78.00	(4) attachments	743.00	584.25	0.00	0.00
78.38		26.47	34.24	0.00	0.00
80.00		112.67	145.36	0.00	0.00
81.00		69.18	89.23	0.00	0.00
85.00		275.32	353.13	0.00	0.00
90.00		338.68	417.89	0.00	0.00
95.00		334.63	385.93	0.00	0.00
98.38		223.55	255.51	0.00	0.00
99.42		68.02	77.50	0.00	0.00
100.00		38.80	76.01	0.00	0.00
102.33		150.81	301.45	0.00	0.00
105.00	(24) attachments	5792.49	4341.39	0.00	0.00
110.00		313.97	279.45	0.00	0.00
115.00		305.64	269.96	0.00	0.00
120.00		297.01	260.47	0.00	0.00
125.00		240.40	438.93	0.00	0.00
130.00		242.39	438.93	0.00	0.00
135.00		244.33	438.93	0.00	0.00
136.00	(45) attachments	7296.43	7350.19	0.00	0.00
140.00		196.96	339.14	0.00	0.00

Total Applied Force Summary

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Totals:	22,679.26	28,163.80	0.00	0.00
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Linear Appurtenance Segment Forces (Factored)

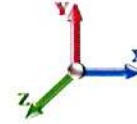
Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 27

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1.25" Reinforcing	Yes	4.00	0.000	2.50	0.83	0.00	0.066	0.000	19.450	0.00	0.00
10.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.068	0.000	19.450	0.00	0.00
15.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.069	0.000	19.450	0.00	0.00
20.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.071	0.000	20.638	0.00	0.00
21.00	1.25" Reinforcing	Yes	1.00	0.000	2.50	0.21	0.00	0.072	0.000	20.851	0.00	0.00
25.00	1.25" Reinforcing	Yes	4.00	0.000	2.50	0.83	0.00	0.073	0.000	21.630	0.00	0.00
30.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.074	0.000	22.477	0.00	0.00
35.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.076	0.000	23.218	0.00	0.00
40.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.078	0.000	23.880	0.00	0.00
41.00	1.25" Reinforcing	Yes	1.00	0.000	2.50	0.21	0.00	0.079	0.000	24.004	0.00	0.00
44.08	1.25" Reinforcing	Yes	3.08	0.000	2.50	0.64	0.00	0.080	0.000	24.374	0.00	0.00
45.00	1.25" Reinforcing	Yes	0.92	0.000	2.50	0.19	0.00	0.081	0.000	24.479	0.00	0.00
48.00	1.25" Reinforcing	Yes	3.00	0.000	2.50	0.63	0.00	0.081	0.000	24.814	0.00	0.00
50.00	1.25" Reinforcing	Yes	2.00	0.000	2.50	0.42	0.00	0.081	0.000	25.029	0.00	0.00
51.88	1.25" Reinforcing	Yes	1.88	0.000	2.50	0.39	0.00	0.082	0.000	25.224	0.00	0.00
54.33	1.25" Reinforcing	Yes	2.45	0.000	2.50	0.51	0.00	0.083	0.000	25.470	0.00	0.00
55.00	1.25" Reinforcing	Yes	0.67	0.000	2.50	0.14	0.00	0.084	0.000	25.536	0.00	0.00
58.08	1.25" Reinforcing	Yes	3.08	0.000	2.50	0.64	0.00	0.084	0.000	25.831	0.00	0.00
60.00	1.25" Reinforcing	Yes	1.92	0.000	2.50	0.40	0.00	0.084	0.000	26.008	0.00	0.00
61.00	1.25" Reinforcing	Yes	1.00	0.000	2.50	0.21	0.00	0.085	0.000	26.099	0.00	0.00
65.00	1.25" Reinforcing	Yes	4.00	0.000	2.50	0.83	0.00	0.086	0.000	26.450	0.00	0.00
68.13	1.25" Reinforcing	Yes	3.13	0.000	2.50	0.65	0.00	0.088	0.000	26.713	0.00	0.00
70.00	1.25" Reinforcing	Yes	1.87	0.000	2.50	0.39	0.00	0.089	0.000	26.866	0.00	0.00
75.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.091	0.000	27.259	0.00	0.00
78.00	1.25" Reinforcing	Yes	3.00	0.000	2.50	0.63	0.00	0.093	0.000	27.485	0.00	0.00
78.38	1.25" Reinforcing	Yes	0.38	0.000	2.50	0.08	0.00	0.094	0.000	27.513	0.00	0.00
80.00	1.25" Reinforcing	Yes	1.62	0.000	2.50	0.34	0.00	0.095	0.000	27.632	0.00	0.00
81.00	1.25" Reinforcing	Yes	1.00	0.000	2.50	0.21	0.00	0.095	0.000	27.704	0.00	0.00
85.00	1.25" Reinforcing	Yes	4.00	0.000	2.50	0.83	0.00	0.097	0.000	27.987	0.00	0.00
90.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.100	0.000	28.325	0.00	0.00
95.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.103	1.009	28.650	0.00	0.00
98.38	1.25" Reinforcing	Yes	3.38	0.000	2.50	0.70	0.00	0.106	1.017	28.861	0.00	0.00
99.42	1.25" Reinforcing	Yes	1.04	0.000	2.50	0.22	0.00	0.107	1.022	28.925	0.00	0.00
100.00	1.25" Reinforcing	Yes	0.58	0.000	2.50	0.12	0.00	0.108	1.024	28.961	0.00	0.00
102.33	1.25" Reinforcing	Yes	1.00	0.000	2.50	0.21	0.00	0.047	0.000	29.102	0.00	0.00
Totals:											0.0	0.0

Calculated Forces

Structure: CT46128-A-SBA

Code: EIA/TIA-222-G

10/5/2021

Site Name: Milford - West

Exposure: C



Height: 140.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

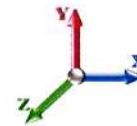
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Load Case: 1.2D + 1.6W 97 mph Wind

Iterations 27

Dead Load Factor 1.20

Wind Load Factor 1.60



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-28.15	-22.70	0.00	-2385.6	0.00	2385.63	2594.99	1297.50	3963.12	1984.50	0.00	0.000	0.000	0.762
1.00	-27.91	-22.70	0.00	-2362.9	0.00	2362.93	2587.52	1293.76	3934.96	1970.40	0.01	-0.066	0.000	0.702
5.00	-27.10	-22.55	0.00	-2272.1	0.00	2272.14	2557.32	1278.66	3822.86	1914.27	0.16	-0.306	0.000	0.689
10.00	-26.13	-22.34	0.00	-2159.4	0.00	2159.40	2518.93	1259.47	3683.98	1844.73	0.65	-0.606	0.000	0.672
15.00	-25.17	-22.12	0.00	-2047.7	0.00	2047.72	2479.82	1239.91	3546.55	1775.91	1.44	-0.907	0.000	0.655
20.00	-24.27	-21.84	0.00	-1937.1	0.00	1937.11	2439.98	1219.99	3410.64	1707.85	2.55	-1.208	0.000	0.637
21.00	-24.05	-21.83	0.00	-1915.2	0.00	1915.28	2431.93	1215.96	3383.64	1694.34	2.81	-1.270	0.000	0.634
25.00	-23.30	-21.64	0.00	-1827.9	0.00	1827.97	2399.42	1199.71	3276.32	1640.59	3.98	-1.513	0.000	0.619
30.00	-22.40	-21.37	0.00	-1719.7	0.00	1719.77	2358.14	1179.07	3143.66	1574.17	5.72	-1.813	0.000	0.599
35.00	-21.52	-21.09	0.00	-1612.9	0.00	1612.91	2316.13	1158.07	3012.73	1508.60	7.78	-2.113	0.000	0.579
40.00	-20.70	-20.76	0.00	-1507.4	0.00	1507.44	2273.40	1136.70	2883.60	1443.94	10.15	-2.412	0.000	0.558
41.00	-20.50	-20.73	0.00	-1486.6	0.00	1486.68	2264.77	1132.39	2858.00	1431.12	10.66	-2.472	0.000	0.595
44.08	-20.00	-20.53	0.00	-1422.7	0.00	1422.76	2232.73	1116.36	2773.02	1388.57	12.33	-2.671	0.000	0.583
45.00	-19.73	-20.50	0.00	-1403.9	0.00	1403.95	2222.17	1111.09	2746.73	1375.41	12.84	-2.731	0.000	0.571
48.00	-18.95	-20.29	0.00	-1342.4	0.00	1342.46	1679.75	839.87	2087.05	1045.08	14.62	-2.920	0.000	0.604
50.00	-18.66	-20.17	0.00	-1301.8	0.00	1301.88	1667.94	833.97	2050.79	1026.92	15.87	-3.046	0.000	0.647
51.88	-18.39	-20.06	0.00	-1263.9	0.00	1263.96	1656.73	828.36	2016.86	1009.93	17.09	-3.175	0.000	0.479
54.33	-18.08	-19.89	0.00	-1214.7	0.00	1214.74	1641.95	820.98	1972.80	987.87	18.76	-3.301	0.000	0.466
55.00	-17.92	-19.86	0.00	-1201.4	0.00	1201.48	1637.90	818.95	1960.88	981.90	19.22	-3.335	0.000	0.456
58.08	-17.30	-19.64	0.00	-1140.2	0.00	1140.24	1101.62	550.81	1319.63	660.80	21.42	-3.488	0.000	0.499
60.00	-17.10	-19.51	0.00	-1102.6	0.00	1102.60	1095.40	547.70	1298.60	650.26	22.84	-3.582	0.000	0.528
61.00	-16.96	-19.47	0.00	-1083.0	0.00	1083.09	1092.11	546.06	1287.63	644.77	23.60	-3.636	0.000	0.521
65.00	-16.53	-19.20	0.00	-1005.2	0.00	1005.22	1078.67	539.34	1243.87	622.86	26.73	-3.842	0.000	0.492
68.13	-16.21	-19.00	0.00	-945.11	0.00	945.11	1067.83	533.92	1209.74	605.77	29.30	-4.000	0.000	0.651
70.00	-15.97	-18.92	0.00	-909.58	0.00	909.58	1061.22	530.61	1189.41	595.59	30.89	-4.130	0.000	0.632
75.00	-15.45	-18.60	0.00	-814.99	0.00	814.99	1043.04	521.52	1135.29	568.49	35.39	-4.460	0.000	0.582
78.00	-14.89	-17.84	0.00	-759.20	0.00	759.20	1031.79	515.90	1103.02	552.33	38.25	-4.654	0.000	0.552
78.38	-14.84	-17.83	0.00	-752.42	0.00	752.42	1030.35	515.17	1098.94	550.29	38.62	-4.678	0.000	0.612
80.00	-14.67	-17.73	0.00	-723.54	0.00	723.54	1024.15	512.07	1081.59	541.60	40.23	-4.793	0.000	0.595
81.00	-14.54	-17.69	0.00	-705.82	0.00	705.82	1020.28	510.14	1070.91	536.25	41.24	-4.863	0.000	0.584
85.00	-14.12	-17.46	0.00	-635.04	0.00	635.04	1004.52	502.26	1028.37	514.95	45.42	-5.130	0.000	0.538
90.00	-13.65	-17.16	0.00	-547.74	0.00	547.74	984.18	492.09	975.70	488.58	50.96	-5.443	0.000	0.480
95.00	-13.23	-16.84	0.00	-461.96	0.00	461.96	963.11	481.56	923.66	462.52	56.80	-5.730	0.000	0.419
98.38	-12.96	-16.62	0.00	-405.04	0.00	405.04	948.46	474.23	888.87	445.09	60.92	-5.910	0.000	0.376
98.38	-12.96	-16.62	0.00	-405.04	0.00	405.04	948.46	474.23	888.87	445.09	60.92	-5.910	0.000	0.376
99.42	-12.87	-16.56	0.00	-387.81	0.00	387.81	943.90	471.95	878.26	439.78	62.21	-5.963	0.000	0.897
100.00	-12.75	-16.55	0.00	-378.15	0.00	378.15	941.32	470.66	872.31	436.80	62.94	-6.035	0.000	0.881
102.33	-12.39	-16.43	0.00	-339.54	0.00	339.54	941.62	470.81	872.99	437.14	65.95	-6.311	0.000	0.791
105.00	-8.66	-10.24	0.00	-295.73	0.00	295.73	929.71	464.85	845.90	423.58	69.56	-6.604	0.000	0.708
110.00	-8.34	-9.96	0.00	-244.52	0.00	244.52	906.82	453.41	795.74	398.46	76.71	-7.074	0.000	0.623
115.00	-8.04	-9.68	0.00	-194.71	0.00	194.71	883.20	441.60	746.45	373.78	84.33	-7.500	0.000	0.531
120.00	-7.77	-9.40	0.00	-146.30	0.00	146.30	858.87	429.43	698.09	349.57	92.37	-7.869	0.000	0.428
120.00	-7.77	-9.40	0.00	-146.30	0.00	146.30	854.06	427.03	470.04	305.83	92.37	-7.869	0.000	0.491
125.00	-7.33	-9.13	0.00	-99.31	0.00	99.31	654.06	327.03	470.04	305.83	100.75	-8.168	0.000	0.337
130.00	-6.92	-8.83	0.00	-53.68	0.00	53.68	654.06	327.03	470.04	305.83	109.35	-8.303	0.000	0.187
135.00	-6.52	-8.53	0.00	-9.51	0.00	9.51	654.06	327.03	470.04	305.83	118.06	-8.358	0.000	0.042
136.00	-0.31	-0.24	0.00	-0.98	0.00	0.98	654.06	327.03	470.04	305.83	119.80	-8.360	0.000	0.004
140.00	0.00	-0.20	0.00	0.00	0.00	0.00	654.06	327.03	470.04	305.83	126.78	-8.361	0.000	0.000

Calculated Forces

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Wind Loading - Shaft

Structure: CT46128-A-SBA
Site Name: Milford - West
Height: 140.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: EIA/TIA-222-G
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

10/5/2021

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Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 26

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00	RB1 RB2	1.00	0.85	19.450	21.40	283.78	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
1.00	RT1 RT2 RB3	1.00	0.85	19.450	21.40	282.60	0.650	0.000	1.00	3.167	2.06	70.5	0.0	112.7
5.00		1.00	0.85	19.450	21.40	277.87	0.650	0.000	4.00	12.534	8.15	278.9	0.0	446.1
10.00		1.00	0.85	19.450	21.40	271.95	0.650	0.000	5.00	15.370	9.99	342.0	0.0	547.0
15.00		1.00	0.85	19.450	21.40	266.04	0.650	0.000	5.00	15.040	9.78	334.6	0.0	535.1
20.00		1.00	0.90	20.638	22.70	267.95	0.650	0.000	5.00	14.709	9.56	347.3	0.0	523.3
21.00	RT3 RB4	1.00	0.91	20.851	22.94	268.11	0.650	0.000	1.00	2.902	1.89	69.2	0.0	103.2
25.00		1.00	0.95	21.630	23.79	268.09	0.650	0.000	4.00	11.476	7.46	284.0	0.0	408.2
30.00		1.00	0.98	22.477	24.72	266.93	0.650	0.000	5.00	14.048	9.13	361.2	0.0	499.5
35.00		1.00	1.01	23.218	25.54	264.83	0.650	0.000	5.00	13.718	8.92	364.4	0.0	487.7
40.00		1.00	1.04	23.880	26.27	262.03	0.650	0.000	5.00	13.387	8.70	365.7	0.0	475.8
41.00	RT4 RB5	1.00	1.05	24.004	26.40	261.40	0.650	0.000	1.00	2.638	1.71	72.4	0.0	93.7
44.08	Bot - Section 2	1.00	1.07	24.374	26.81	259.32	0.650	0.000	3.08	8.050	5.23	224.5	0.0	286.0
45.00		1.00	1.07	24.479	26.93	258.67	0.650	0.000	0.92	2.408	1.57	67.4	0.0	152.8
48.00	Top - Section 1	1.00	1.08	24.814	27.30	256.42	0.650	0.000	3.00	7.802	5.07	221.5	0.0	494.9
50.00		1.00	1.09	25.029	27.53	259.14	0.650	0.000	2.00	5.135	3.34	147.0	0.0	146.3
51.88	RB6	1.00	1.10	25.224	27.75	257.61	0.650	0.000	1.88	4.779	3.11	137.9	0.0	136.1
54.33	Bot - Section 3	1.00	1.11	25.470	28.02	255.55	0.650	0.000	2.45	6.166	4.01	179.7	0.0	175.6
55.00		1.00	1.12	25.536	28.09	254.98	0.650	0.000	0.67	1.683	1.09	49.2	0.0	83.3
58.08	Top - Section 2	1.00	1.13	25.831	28.41	252.24	0.650	0.000	3.08	7.707	5.01	227.8	0.0	381.6
60.00		1.00	1.14	26.008	28.61	253.77	0.650	0.000	1.92	4.728	3.07	140.7	0.0	101.2
61.00	RT5 RB7 RB8	1.00	1.14	26.099	28.71	252.84	0.650	0.000	1.00	2.447	1.59	73.1	0.0	52.4
65.00		1.00	1.16	26.450	29.09	249.02	0.650	0.000	4.00	9.657	6.28	292.2	0.0	206.6
68.13	RT6	1.00	1.17	26.713	29.38	245.92	0.650	0.000	3.13	7.409	4.82	226.4	0.0	158.5
70.00		1.00	1.17	26.866	29.55	244.02	0.650	0.000	1.87	4.365	2.84	134.1	0.0	93.4
75.00		1.00	1.19	27.259	29.98	238.80	0.650	0.000	5.00	11.443	7.44	356.9	0.0	244.8
78.00	Appurtenance(s)	1.00	1.20	27.485	30.23	235.57	0.650	0.000	3.00	6.707	4.36	210.9	0.0	143.4
78.38	RT8	1.00	1.20	27.513	30.26	235.16	0.650	0.000	0.38	0.841	0.55	26.5	0.0	18.0
80.00		1.00	1.21	27.632	30.39	233.38	0.650	0.000	1.62	3.564	2.32	112.7	0.0	76.2
81.00	RT7 RB9	1.00	1.21	27.704	30.47	232.28	0.650	0.000	1.00	2.183	1.42	69.2	0.0	46.7
85.00		1.00	1.22	27.987	30.79	227.79	0.650	0.000	4.00	8.599	5.59	275.3	0.0	183.8
90.00		1.00	1.24	28.325	31.16	222.03	0.650	0.000	5.00	10.452	6.79	338.7	0.0	223.4
95.00		1.00	1.25	28.650	31.51	216.12	0.656 *	0.000	5.00	10.121	6.64	334.6	0.0	216.3
98.38	RT9	1.00	1.26	28.861	31.75	212.05	0.661 *	0.000	3.38	6.655	4.40	223.6	0.0	142.2
99.42	Bot - Section 4	1.00	1.26	28.925	31.82	210.79	0.664 *	0.000	1.04	2.011	1.34	68.0	0.0	43.0
100.00		1.00	1.27	28.961	31.86	210.07	0.666 *	0.000	0.58	1.144	0.76	38.8	0.0	48.5
102.33	Top - Section 3	1.00	1.27	29.102	32.01	207.21	0.650	0.000	2.33	4.530	2.94	150.8	0.0	191.9
105.00	Appurtenance(s)	1.00	1.28	29.260	32.19	207.38	0.650	0.000	2.67	5.089	3.31	170.3	0.0	108.7
110.00		1.00	1.29	29.548	32.50	201.12	0.650	0.000	5.00	9.288	6.04	314.0	0.0	198.3
115.00		1.00	1.30	29.826	32.81	194.74	0.650	0.000	5.00	8.958	5.82	305.6	0.0	191.2
120.00	Top - Section 4	1.00	1.32	30.094	33.10	188.26	0.650	0.000	5.00	8.627	5.61	297.0	0.0	184.1
125.00		1.00	1.33	30.354	33.39	167.58	0.600	0.000	5.00	7.500	4.50	240.4	0.0	317.9
130.00		1.00	1.34	30.605	33.67	168.27	0.600	0.000	5.00	7.500	4.50	242.4	0.0	317.9
135.00		1.00	1.35	30.850	33.93	168.94	0.600	0.000	5.00	7.500	4.50	244.3	0.0	317.9
136.00	Appurtenance(s)	1.00	1.35	30.898	33.99	169.07	0.600	0.000	1.00	1.500	0.90	48.9	0.0	63.6
140.00		1.00	1.36	31.087	34.20	169.59	0.600	0.000	4.00	6.000	3.60	197.0	0.0	254.4

Wind Loading - Shaft

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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* Cf Adjusted by Linear Load Ra Effect

Totals: 140.00

9,277.5

10,233.2

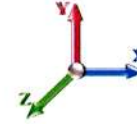
Discrete Appurtenance Forces

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 18
	Struct Class: II	



Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 26

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	136.00	B14 4478	5	30.898	33.987	0.40	0.80	3.68	270.00	0.000	0.000	200.12	0.00	0.00
2	136.00	TPA-45R-KU8AA-K	2	30.898	33.987	0.65	0.80	18.79	144.00	0.000	0.000	1021.90	0.00	0.00
3	136.00	DMP65R-BU8D	2	30.898	33.987	0.58	0.80	20.87	172.80	0.000	0.000	1135.02	0.00	0.00
4	136.00	AIR 6449 B77D	3	30.898	33.987	0.68	0.80	8.43	221.40	0.000	0.000	458.16	0.00	0.00
5	136.00	Ericsson AIR6419 N77G	3	30.898	33.987	0.68	0.80	8.43	178.20	0.000	0.000	458.16	0.00	0.00
6	136.00	Radio 4415	5	30.898	33.987	0.40	0.80	3.72	207.00	0.000	0.000	202.29	0.00	0.00
7	136.00	TPA65R-BU8D	2	30.898	33.987	0.58	0.80	20.59	156.78	0.000	0.000	1119.47	0.00	0.00
8	136.00	4449 B71 + B85	4	30.898	33.987	0.40	0.80	3.15	255.60	0.000	0.000	171.40	0.00	0.00
9	136.00	B2 B66A 8843	4	30.898	33.987	0.40	0.80	2.62	259.20	0.000	0.000	142.69	0.00	0.00
10	136.00	DC9-48-60-24-8C-EV	4	30.898	33.987	0.40	0.80	1.82	94.32	0.000	0.000	99.19	0.00	0.00
11	136.00	VFA12-HD	3	30.898	33.987	0.56	0.75	30.21	2848.50	0.000	0.000	1642.60	0.00	0.00
12	136.00	Collar Mount (3-Sided)	2	30.898	33.987	0.56	0.75	2.53	396.00	0.000	0.000	137.65	0.00	0.00
13	136.00	3 ft Standoff	6	30.898	33.987	0.56	0.75	8.44	243.00	0.000	0.000	458.83	0.00	0.00
14	105.00	RRUS 4415 B25	3	29.260	32.186	0.38	0.75	1.84	124.20	0.000	0.000	95.01	0.00	0.00
15	105.00	APXVAARR24_43-U-NA2	3	29.260	32.186	0.52	0.75	31.88	345.60	0.000	0.000	1641.63	0.00	0.00
16	105.00	4449 B71 + B95	3	29.260	32.186	0.38	0.75	1.86	199.80	0.000	0.000	95.59	0.00	0.00
17	105.00	AIR32	3	29.260	32.186	0.65	0.75	12.74	356.94	0.000	0.000	656.25	0.00	0.00
18	105.00	AIR6449 B41	3	29.260	32.186	0.53	0.75	9.03	278.10	0.000	0.000	464.81	0.00	0.00
19	105.00	KRY 112 144/1	3	29.260	32.186	0.38	0.75	0.46	29.70	0.000	0.000	23.75	0.00	0.00
20	105.00	MS-1436 (Collar Mount)	1	29.260	32.186	1.00	1.00	2.25	135.54	0.000	0.000	115.87	0.00	0.00
21	105.00	MS-KI22-5 (Kickers w/o	1	29.260	32.186	1.00	1.00	5.33	131.40	0.000	0.000	274.48	0.00	0.00
22	105.00	Platform w/ Hand Rail	1	29.260	32.186	1.00	1.00	32.00	1260.00	0.000	0.000	1647.91	0.00	0.00
23	105.00	AIR B2A/ B4P	3	29.260	32.186	0.65	0.75	11.78	247.05	0.000	0.000	606.85	0.00	0.00
24	78.00	GPS	2	27.485	30.233	1.00	1.00	2.00	18.00	0.000	0.000	96.75	0.00	0.00
25	78.00	Side Arm (L. Heavy)	2	27.485	30.233	1.00	1.00	9.00	216.00	0.000	0.000	435.36	0.00	0.00
Totals:									8,789.13			13,401.74		

Total Applied Force Summary

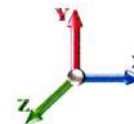
Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 26

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
1.00		70.46	132.97	0.00	0.00
5.00		278.90	527.13	0.00	0.00
10.00		342.00	648.24	0.00	0.00
15.00		334.65	636.37	0.00	0.00
20.00		347.27	624.51	0.00	0.00
21.00		69.23	123.48	0.00	0.00
25.00		283.98	489.17	0.00	0.00
30.00		361.22	600.78	0.00	0.00
35.00		364.36	588.91	0.00	0.00
40.00		365.71	577.05	0.00	0.00
41.00		72.43	113.99	0.00	0.00
44.08		224.46	348.47	0.00	0.00
45.00		67.43	171.31	0.00	0.00
48.00		221.48	555.65	0.00	0.00
50.00		147.04	186.76	0.00	0.00
51.88		137.90	174.17	0.00	0.00
54.33		179.67	225.26	0.00	0.00
55.00		49.16	96.84	0.00	0.00
58.08		227.75	444.03	0.00	0.00
60.00		140.66	139.98	0.00	0.00
61.00		73.07	72.62	0.00	0.00
65.00		292.21	287.63	0.00	0.00
68.13		226.42	221.89	0.00	0.00
70.00		134.15	131.24	0.00	0.00
75.00		356.85	346.01	0.00	0.00
78.00	(4) attachments	743.00	438.19	0.00	0.00
78.38		26.47	25.68	0.00	0.00
80.00		112.67	109.02	0.00	0.00
81.00		69.18	66.92	0.00	0.00
85.00		275.32	264.85	0.00	0.00
90.00		338.68	313.42	0.00	0.00
95.00		334.63	289.45	0.00	0.00
98.38		223.55	191.64	0.00	0.00
99.42		68.02	58.12	0.00	0.00
100.00		38.80	57.01	0.00	0.00
102.33		150.81	226.08	0.00	0.00
105.00	(24) attachments	5792.49	3256.05	0.00	0.00
110.00		313.97	209.59	0.00	0.00
115.00		305.64	202.47	0.00	0.00
120.00		297.01	195.35	0.00	0.00
125.00		240.40	329.20	0.00	0.00
130.00		242.39	329.20	0.00	0.00
135.00		244.33	329.20	0.00	0.00
136.00	(45) attachments	7296.43	5512.64	0.00	0.00
140.00		196.96	254.36	0.00	0.00

Total Applied Force Summary

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Totals:	22,679.26	21,122.85	0.00	0.00
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Linear Appurtenance Segment Forces (Factored)

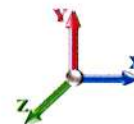
Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1.25" Reinforcing	Yes	4.00	0.000	2.50	0.83	0.00	0.066	0.000	19.450	0.00	0.00
10.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.068	0.000	19.450	0.00	0.00
15.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.069	0.000	19.450	0.00	0.00
20.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.071	0.000	20.638	0.00	0.00
21.00	1.25" Reinforcing	Yes	1.00	0.000	2.50	0.21	0.00	0.072	0.000	20.851	0.00	0.00
25.00	1.25" Reinforcing	Yes	4.00	0.000	2.50	0.83	0.00	0.073	0.000	21.630	0.00	0.00
30.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.074	0.000	22.477	0.00	0.00
35.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.076	0.000	23.218	0.00	0.00
40.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.078	0.000	23.880	0.00	0.00
41.00	1.25" Reinforcing	Yes	1.00	0.000	2.50	0.21	0.00	0.079	0.000	24.004	0.00	0.00
44.08	1.25" Reinforcing	Yes	3.08	0.000	2.50	0.64	0.00	0.080	0.000	24.374	0.00	0.00
45.00	1.25" Reinforcing	Yes	0.92	0.000	2.50	0.19	0.00	0.081	0.000	24.479	0.00	0.00
48.00	1.25" Reinforcing	Yes	3.00	0.000	2.50	0.63	0.00	0.081	0.000	24.814	0.00	0.00
50.00	1.25" Reinforcing	Yes	2.00	0.000	2.50	0.42	0.00	0.081	0.000	25.029	0.00	0.00
51.88	1.25" Reinforcing	Yes	1.88	0.000	2.50	0.39	0.00	0.082	0.000	25.224	0.00	0.00
54.33	1.25" Reinforcing	Yes	2.45	0.000	2.50	0.51	0.00	0.083	0.000	25.470	0.00	0.00
55.00	1.25" Reinforcing	Yes	0.67	0.000	2.50	0.14	0.00	0.084	0.000	25.536	0.00	0.00
58.08	1.25" Reinforcing	Yes	3.08	0.000	2.50	0.64	0.00	0.084	0.000	25.831	0.00	0.00
60.00	1.25" Reinforcing	Yes	1.92	0.000	2.50	0.40	0.00	0.084	0.000	26.008	0.00	0.00
61.00	1.25" Reinforcing	Yes	1.00	0.000	2.50	0.21	0.00	0.085	0.000	26.099	0.00	0.00
65.00	1.25" Reinforcing	Yes	4.00	0.000	2.50	0.83	0.00	0.086	0.000	26.450	0.00	0.00
68.13	1.25" Reinforcing	Yes	3.13	0.000	2.50	0.65	0.00	0.088	0.000	26.713	0.00	0.00
70.00	1.25" Reinforcing	Yes	1.87	0.000	2.50	0.39	0.00	0.089	0.000	26.866	0.00	0.00
75.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.091	0.000	27.259	0.00	0.00
78.00	1.25" Reinforcing	Yes	3.00	0.000	2.50	0.63	0.00	0.093	0.000	27.485	0.00	0.00
78.38	1.25" Reinforcing	Yes	0.38	0.000	2.50	0.08	0.00	0.094	0.000	27.513	0.00	0.00
80.00	1.25" Reinforcing	Yes	1.62	0.000	2.50	0.34	0.00	0.095	0.000	27.632	0.00	0.00
81.00	1.25" Reinforcing	Yes	1.00	0.000	2.50	0.21	0.00	0.095	0.000	27.704	0.00	0.00
85.00	1.25" Reinforcing	Yes	4.00	0.000	2.50	0.83	0.00	0.097	0.000	27.987	0.00	0.00
90.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.100	0.000	28.325	0.00	0.00
95.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.103	1.009	28.650	0.00	0.00
98.38	1.25" Reinforcing	Yes	3.38	0.000	2.50	0.70	0.00	0.106	1.017	28.861	0.00	0.00
99.42	1.25" Reinforcing	Yes	1.04	0.000	2.50	0.22	0.00	0.107	1.022	28.925	0.00	0.00
100.00	1.25" Reinforcing	Yes	0.58	0.000	2.50	0.12	0.00	0.108	1.024	28.961	0.00	0.00
102.33	1.25" Reinforcing	Yes	1.00	0.000	2.50	0.21	0.00	0.047	0.000	29.102	0.00	0.00
Totals:											0.0	0.0

Calculated Forces

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 26

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-21.11	-22.69	0.00	-2348.1	0.00	2348.17	2594.99	1297.50	3963.12	1984.50	0.00	0.000	0.000	0.748
1.00	-20.92	-22.68	0.00	-2325.4	0.00	2325.48	2587.52	1293.76	3934.96	1970.40	0.01	-0.065	0.000	0.689
5.00	-20.29	-22.49	0.00	-2234.7	0.00	2234.78	2557.32	1278.66	3822.86	1914.27	0.16	-0.301	0.000	0.676
10.00	-19.53	-22.24	0.00	-2122.3	0.00	2122.34	2518.93	1259.47	3683.98	1844.73	0.63	-0.596	0.000	0.660
15.00	-18.78	-22.00	0.00	-2011.1	0.00	2011.12	2479.82	1239.91	3546.55	1775.91	1.42	-0.892	0.000	0.642
20.00	-18.10	-21.70	0.00	-1901.1	0.00	1901.13	2439.98	1219.99	3410.64	1707.85	2.51	-1.188	0.000	0.624
21.00	-17.92	-21.67	0.00	-1879.4	0.00	1879.44	2431.93	1215.96	3383.64	1694.34	2.76	-1.248	0.000	0.621
25.00	-17.34	-21.46	0.00	-1792.7	0.00	1792.76	2399.42	1199.71	3276.32	1640.59	3.91	-1.486	0.000	0.606
30.00	-16.64	-21.16	0.00	-1685.4	0.00	1685.48	2358.14	1179.07	3143.66	1574.17	5.62	-1.781	0.000	0.586
35.00	-15.95	-20.86	0.00	-1579.6	0.00	1579.67	2316.13	1158.07	3012.73	1508.60	7.65	-2.075	0.000	0.566
40.00	-15.33	-20.52	0.00	-1475.3	0.00	1475.36	2273.40	1136.70	2883.60	1443.94	9.97	-2.367	0.000	0.545
41.00	-15.17	-20.48	0.00	-1454.8	0.00	1454.84	2264.77	1132.39	2858.00	1431.12	10.48	-2.426	0.000	0.582
44.08	-14.79	-20.27	0.00	-1391.7	0.00	1391.71	2232.73	1116.36	2773.02	1388.57	12.11	-2.621	0.000	0.569
45.00	-14.58	-20.23	0.00	-1373.1	0.00	1373.13	2222.17	1111.09	2746.73	1375.41	12.61	-2.679	0.000	0.558
48.00	-13.98	-20.01	0.00	-1312.4	0.00	1312.45	1679.75	839.87	2087.05	1045.08	14.36	-2.864	0.000	0.589
50.00	-13.76	-19.89	0.00	-1272.4	0.00	1272.42	1667.94	833.97	2050.79	1026.92	15.58	-2.988	0.000	0.632
51.88	-13.55	-19.77	0.00	-1235.0	0.00	1235.03	1656.73	828.36	2016.86	1009.93	16.78	-3.114	0.000	0.467
54.33	-13.31	-19.60	0.00	-1186.5	0.00	1186.53	1641.95	820.98	1972.80	987.87	18.42	-3.237	0.000	0.455
55.00	-13.18	-19.56	0.00	-1173.4	0.00	1173.46	1637.90	818.95	1960.88	981.90	18.87	-3.270	0.000	0.445
58.08	-12.71	-19.34	0.00	-1113.1	0.00	1113.14	1101.62	550.81	1319.63	660.80	21.03	-3.419	0.000	0.487
60.00	-12.56	-19.20	0.00	-1076.0	0.00	1076.08	1095.40	547.70	1298.60	650.26	22.42	-3.511	0.000	0.515
61.00	-12.45	-19.15	0.00	-1056.8	0.00	1056.87	1092.11	546.06	1287.63	644.77	23.16	-3.563	0.000	0.508
65.00	-12.12	-18.88	0.00	-980.26	0.00	980.26	1078.67	539.34	1243.87	622.86	26.23	-3.765	0.000	0.479
68.13	-11.87	-18.67	0.00	-921.16	0.00	921.16	1067.83	533.92	1209.74	605.77	28.75	-3.919	0.000	0.633
70.00	-11.67	-18.57	0.00	-886.24	0.00	886.24	1061.22	530.61	1189.41	595.59	30.31	-4.045	0.000	0.615
75.00	-11.27	-18.24	0.00	-793.37	0.00	793.37	1043.04	521.52	1135.29	568.49	34.71	-4.367	0.000	0.566
78.00	-10.86	-17.49	0.00	-738.64	0.00	738.64	1031.79	515.90	1103.02	552.33	37.51	-4.555	0.000	0.535
78.38	-10.82	-17.47	0.00	-732.00	0.00	732.00	1030.35	515.17	1098.94	550.29	37.88	-4.579	0.000	0.594
80.00	-10.69	-17.37	0.00	-703.69	0.00	703.69	1024.15	512.07	1081.59	541.60	39.45	-4.691	0.000	0.577
81.00	-10.58	-17.32	0.00	-686.33	0.00	686.33	1020.28	510.14	1070.91	536.25	40.44	-4.759	0.000	0.566
85.00	-10.25	-17.08	0.00	-617.03	0.00	617.03	1004.52	502.26	1028.37	514.95	44.53	-5.019	0.000	0.522
90.00	-9.89	-16.76	0.00	-531.64	0.00	531.64	984.18	492.09	975.70	488.58	49.94	-5.322	0.000	0.464
95.00	-9.57	-16.44	0.00	-447.83	0.00	447.83	963.11	481.56	923.66	462.52	55.66	-5.600	0.000	0.405
98.38	-9.37	-16.22	0.00	-392.26	0.00	392.26	948.46	474.23	888.87	445.09	59.68	-5.775	0.000	0.363
98.38	-9.37	-16.22	0.00	-392.26	0.00	392.26	948.46	474.23	888.87	445.09	59.68	-5.775	0.000	0.363
99.42	-9.30	-16.15	0.00	-375.45	0.00	375.45	943.90	471.95	878.26	439.78	60.94	-5.826	0.000	0.865
100.00	-9.20	-16.14	0.00	-366.02	0.00	366.02	941.32	470.66	872.31	436.80	61.66	-5.897	0.000	0.849
102.33	-8.91	-16.01	0.00	-328.37	0.00	328.37	941.62	470.81	872.99	437.14	64.60	-6.163	0.000	0.762
105.00	-6.25	-9.93	0.00	-285.69	0.00	285.69	929.71	464.85	845.90	423.58	68.12	-6.447	0.000	0.682
110.00	-6.00	-9.64	0.00	-236.03	0.00	236.03	906.82	453.41	795.74	398.46	75.10	-6.900	0.000	0.599
115.00	-5.78	-9.35	0.00	-187.83	0.00	187.83	883.20	441.60	746.45	373.78	82.54	-7.311	0.000	0.510
120.00	-5.57	-9.06	0.00	-141.07	0.00	141.07	858.87	429.43	698.09	349.57	90.37	-7.667	0.000	0.411
120.00	-5.57	-9.06	0.00	-141.07	0.00	141.07	654.06	327.03	470.04	305.83	90.37	-7.667	0.000	0.471
125.00	-5.25	-8.80	0.00	-95.76	0.00	95.76	654.06	327.03	470.04	305.83	98.54	-7.955	0.000	0.322
130.00	-4.94	-8.52	0.00	-51.76	0.00	51.76	654.06	327.03	470.04	305.83	106.92	-8.085	0.000	0.177
135.00	-4.65	-8.23	0.00	-9.16	0.00	9.16	654.06	327.03	470.04	305.83	115.39	-8.139	0.000	0.038
136.00	-0.22	-0.23	0.00	-0.92	0.00	0.92	654.06	327.03	470.04	305.83	117.09	-8.141	0.000	0.003
140.00	0.00	-0.20	0.00	0.00	0.00	0.00	654.06	327.03	470.04	305.83	123.89	-8.142	0.000	0.000

Calculated Forces

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 23



Wind Loading - Shaft

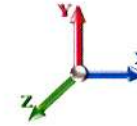
Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 26

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00	RB1 RB2	1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
1.00	RT1 RT2 RB3	1.00	0.85	5.168	5.68	0.00	1.200	1.057	1.00	3.343	4.01	22.8	50.4	200.6
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.242	4.00	13.362	16.03	91.2	233.9	828.7
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	16.480	19.78	112.4	307.6	1036.9
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	16.195	19.43	110.5	314.0	1027.5
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	15.898	19.08	115.1	316.6	1014.3
21.00	RT3 RB4	1.00	0.91	5.540	6.09	0.00	1.200	1.434	1.00	3.141	3.77	23.0	63.4	201.0
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	4.00	12.449	14.94	94.4	253.6	797.8
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	15.286	18.34	120.5	315.9	981.9
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	14.975	17.97	121.9	313.7	963.9
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	5.00	14.661	17.59	122.8	310.7	945.1
41.00	RT4 RB5	1.00	1.05	6.378	7.02	0.00	1.200	1.533	1.00	2.893	3.47	24.4	62.0	187.0
44.08	Bot - Section 2	1.00	1.07	6.476	7.12	0.00	1.200	1.544	3.08	8.843	10.61	75.6	189.8	571.2
45.00		1.00	1.07	6.504	7.15	0.00	1.200	1.547	0.92	2.644	3.17	22.7	57.2	260.8
48.00	Top - Section 1	1.00	1.08	6.593	7.25	0.00	1.200	1.557	3.00	8.581	10.30	74.7	185.7	845.5
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	2.00	5.657	6.79	49.7	123.1	318.1
51.88	RB6	1.00	1.10	6.702	7.37	0.00	1.200	1.569	1.88	5.271	6.32	46.6	115.1	296.5
54.33	Bot - Section 3	1.00	1.11	6.768	7.44	0.00	1.200	1.577	2.45	6.811	8.17	60.8	149.1	383.2
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	0.67	1.858	2.23	16.6	40.9	152.0
58.08	Top - Section 2	1.00	1.13	6.863	7.55	0.00	1.200	1.587	3.08	8.523	10.23	77.2	187.4	696.2
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	1.92	5.236	6.28	47.8	115.7	250.6
61.00	RT5 RB7 RB8	1.00	1.14	6.934	7.63	0.00	1.200	1.595	1.00	2.713	3.26	24.8	60.2	130.0
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	4.00	10.727	12.87	99.5	237.4	512.9
68.13	RT6	1.00	1.17	7.098	7.81	0.00	1.200	1.613	3.13	8.251	9.90	77.3	183.6	394.9
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	1.87	4.869	5.84	45.9	108.9	233.4
75.00		1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	12.800	15.36	122.4	285.4	611.8
78.00	Appurtenance(s)	1.00	1.20	7.303	8.03	0.00	1.200	1.635	3.00	7.525	9.03	72.5	169.1	360.4
78.38	RT8	1.00	1.20	7.310	8.04	0.00	1.200	1.636	0.38	0.945	1.13	9.1	21.4	45.4
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	1.62	4.007	4.81	38.8	90.5	192.2
81.00	RT7 RB9	1.00	1.21	7.361	8.10	0.00	1.200	1.641	1.00	2.456	2.95	23.9	55.6	117.9
85.00		1.00	1.22	7.436	8.18	0.00	1.200	1.649	4.00	9.699	11.64	95.2	218.6	463.7
90.00		1.00	1.24	7.526	8.28	0.00	1.200	1.658	5.00	11.834	14.20	117.6	266.9	564.7
95.00		1.00	1.25	7.612	8.37	0.00	1.211 *	1.667	5.00	11.511	13.93	116.7	260.3	548.7
98.38	RT9	1.00	1.26	7.669	8.44	0.00	1.221 *	1.673	3.38	7.597	9.28	78.2	172.9	362.5
99.42	Bot - Section 4	1.00	1.26	7.685	8.45	0.00	1.227 *	1.675	1.04	2.300	2.82	23.9	52.8	110.0
100.00		1.00	1.27	7.695	8.46	0.00	1.229 *	1.676	0.58	1.307	1.61	13.6	30.0	94.7
102.33	Top - Section 3	1.00	1.27	7.732	8.51	0.00	1.200	1.680	2.33	5.183	6.22	52.9	118.7	374.6
105.00	Appurtenance(s)	1.00	1.28	7.774	8.55	0.00	1.200	1.684	2.67	5.837	7.00	59.9	133.7	278.6
110.00		1.00	1.29	7.851	8.64	0.00	1.200	1.692	5.00	10.698	12.84	110.9	243.8	508.2
115.00		1.00	1.30	7.925	8.72	0.00	1.200	1.699	5.00	10.374	12.45	108.5	236.7	491.7
120.00	Top - Section 4	1.00	1.32	7.996	8.80	0.00	1.200	1.707	5.00	10.049	12.06	106.1	229.5	475.0
125.00		1.00	1.33	8.065	8.87	0.00	1.200	1.714	5.00	8.928	10.71	95.0	206.4	630.3
130.00		1.00	1.34	8.132	8.95	0.00	1.200	1.720	5.00	8.934	10.72	95.9	207.3	631.2
135.00		1.00	1.35	8.197	9.02	0.00	1.200	1.727	5.00	8.939	10.73	96.7	208.1	632.0
136.00	Appurtenance(s)	1.00	1.35	8.210	9.03	0.00	1.200	1.728	1.00	1.788	2.15	19.4	41.7	126.4
140.00		1.00	1.36	8.260	9.09	0.00	1.200	1.733	4.00	7.155	8.59	78.0	167.1	506.3

Wind Loading - Shaft

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Struct Class: II	Page: 25



*Cf Adjusted by Linear Load Ra Effect

Totals:	140.00	3,213.4	21,356.6
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Discrete Appurtenance Forces

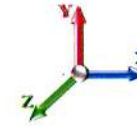
Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 26

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 26

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	136.00	B14 4478	5	8.210	9.031	0.40	0.80	4.72	535.10	0.000	0.000	42.65	0.00	0.00
2	136.00	TPA-45R-KU8AA-K	2	8.210	9.031	0.65	0.80	20.95	689.66	0.000	0.000	189.18	0.00	0.00
3	136.00	DMP65R-BU8D	2	8.210	9.031	0.58	0.80	22.95	1211.45	0.000	0.000	207.25	0.00	0.00
4	136.00	AIR 6449 B77D	3	8.210	9.031	0.68	0.80	10.04	654.54	0.000	0.000	90.71	0.00	0.00
5	136.00	Ericsson AIR6419 N77G	3	8.210	9.031	0.68	0.80	9.09	546.26	0.000	0.000	82.08	0.00	0.00
6	136.00	Radio 4415	5	8.210	9.031	0.40	0.80	4.84	576.07	0.000	0.000	43.68	0.00	0.00
7	136.00	TPA65R-BU8D	2	8.210	9.031	0.58	0.80	22.64	865.86	0.000	0.000	204.41	0.00	0.00
8	136.00	4449 B71 + B85	4	8.210	9.031	0.40	0.80	4.05	320.25	0.000	0.000	36.61	0.00	0.00
9	136.00	B2 B66A 8843	4	8.210	9.031	0.40	0.80	3.44	495.74	0.000	0.000	31.08	0.00	0.00
10	136.00	DC9-48-60-24-8C-EV	4	8.210	9.031	0.40	0.80	4.34	477.19	0.000	0.000	39.18	0.00	0.00
11	136.00	VFA12-HD	3	8.210	9.031	0.56	0.75	67.79	7326.06	0.000	0.000	612.20	0.00	0.00
12	136.00	Collar Mount (3-Sided)	2	8.210	9.031	0.56	0.75	5.16	942.33	0.000	0.000	46.56	0.00	0.00
13	136.00	3 ft Standoff	6	8.210	9.031	0.56	0.75	27.40	752.61	0.000	0.000	247.43	0.00	0.00
14	105.00	RRUS 4415 B25	3	7.774	8.552	0.38	0.75	2.40	256.39	0.000	0.000	20.56	0.00	0.00
15	105.00	APXVAARR24_43-U-NA2	3	7.774	8.552	0.52	0.75	34.76	1665.28	0.000	0.000	297.28	0.00	0.00
16	105.00	4449 B71 + B95	3	7.774	8.552	0.38	0.75	2.42	460.31	0.000	0.000	20.73	0.00	0.00
17	105.00	AIR32	3	7.774	8.552	0.65	0.75	14.86	1002.97	0.000	0.000	127.06	0.00	0.00
18	105.00	AIR6449 B41	3	7.774	8.552	0.53	0.75	10.49	672.64	0.000	0.000	89.72	0.00	0.00
19	105.00	KRY 112 144/1	3	7.774	8.552	0.38	0.75	0.98	61.51	0.000	0.000	8.36	0.00	0.00
20	105.00	MS-1436 (Collar Mount)	1	7.774	8.552	1.00	1.00	4.52	317.32	0.000	0.000	38.68	0.00	0.00
21	105.00	MS-KI22-5 (Kickers w/o	1	7.774	8.552	1.00	1.00	10.72	307.90	0.000	0.000	91.64	0.00	0.00
22	105.00	Platform w/ Hand Rail	1	7.774	8.552	1.00	1.00	58.95	3052.98	0.000	0.000	504.09	0.00	0.00
23	105.00	AIR B2A/ B4P	3	7.774	8.552	0.65	0.75	13.83	814.99	0.000	0.000	118.26	0.00	0.00
24	78.00	GPS	2	7.303	8.033	1.00	1.00	3.33	62.93	0.000	0.000	26.78	0.00	0.00
25	78.00	Side Arm (L. Heavy)	2	7.303	8.033	1.00	1.00	18.83	424.17	0.000	0.000	151.25	0.00	0.00
Totals:									24,492.50			3,367.40		

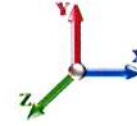
Total Applied Force Summary

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 27
	Struct Class: II	



Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 26

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
1.00		22.80	227.65	0.00	0.00
5.00		91.15	965.64	0.00	0.00
10.00		112.42	1211.20	0.00	0.00
15.00		110.48	1203.85	0.00	0.00
20.00		115.07	1192.11	0.00	0.00
21.00		22.97	236.62	0.00	0.00
25.00		94.44	941.01	0.00	0.00
30.00		120.50	1161.91	0.00	0.00
35.00		121.94	1144.77	0.00	0.00
40.00		122.79	1126.71	0.00	0.00
41.00		24.36	223.34	0.00	0.00
44.08		75.60	683.51	0.00	0.00
45.00		22.70	294.27	0.00	0.00
48.00		74.68	955.14	0.00	0.00
50.00		49.65	391.28	0.00	0.00
51.88		46.63	365.41	0.00	0.00
54.33		60.84	473.19	0.00	0.00
55.00		16.64	176.50	0.00	0.00
58.08		77.21	809.55	0.00	0.00
60.00		47.76	321.19	0.00	0.00
61.00		24.84	166.84	0.00	0.00
65.00		99.51	660.52	0.00	0.00
68.13		77.30	510.66	0.00	0.00
70.00		45.88	302.60	0.00	0.00
75.00		122.38	797.25	0.00	0.00
78.00	(4) attachments	250.57	958.90	0.00	0.00
78.38		9.12	59.49	0.00	0.00
80.00		38.83	252.39	0.00	0.00
81.00		23.87	155.07	0.00	0.00
85.00		95.20	612.75	0.00	0.00
90.00		117.56	736.42	0.00	0.00
95.00		116.67	698.28	0.00	0.00
98.38		78.24	463.77	0.00	0.00
99.42		23.85	141.10	0.00	0.00
100.00		13.59	112.16	0.00	0.00
102.33		52.90	430.66	0.00	0.00
105.00	(24) attachments	1376.27	8942.97	0.00	0.00
110.00		110.87	523.23	0.00	0.00
115.00		108.52	506.67	0.00	0.00
120.00		106.07	489.99	0.00	0.00
125.00		95.05	645.30	0.00	0.00
130.00		95.90	646.18	0.00	0.00
135.00		96.72	647.03	0.00	0.00
136.00	(45) attachments	1892.39	15522.55	0.00	0.00
140.00		78.02	506.29	0.00	0.00

Total Applied Force Summary

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Totals:	6,580.76	49,593.92	0.00	0.00
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Linear Appurtenance Segment Forces (Factored)

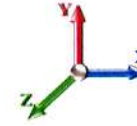
Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 26

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1.25" Reinforcing	Yes	4.00	0.000	2.50	1.66	0.00	0.066	0.000	5.168	0.00	28.95
10.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	2.15	0.00	0.068	0.000	5.168	0.00	39.32
15.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	2.20	0.00	0.069	0.000	5.168	0.00	41.30
20.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	2.23	0.00	0.071	0.000	5.483	0.00	42.78
21.00	1.25" Reinforcing	Yes	1.00	0.000	2.50	0.45	0.00	0.072	0.000	5.540	0.00	8.61
25.00	1.25" Reinforcing	Yes	4.00	0.000	2.50	1.81	0.00	0.073	0.000	5.747	0.00	35.18
30.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	2.28	0.00	0.074	0.000	5.972	0.00	44.98
35.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	2.30	0.00	0.076	0.000	6.169	0.00	45.85
40.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	2.32	0.00	0.078	0.000	6.345	0.00	46.62
41.00	1.25" Reinforcing	Yes	1.00	0.000	2.50	0.46	0.00	0.079	0.000	6.378	0.00	9.35
44.08	1.25" Reinforcing	Yes	3.08	0.000	2.50	1.44	0.00	0.080	0.000	6.476	0.00	29.10
45.00	1.25" Reinforcing	Yes	0.92	0.000	2.50	0.43	0.00	0.081	0.000	6.504	0.00	8.67
48.00	1.25" Reinforcing	Yes	3.00	0.000	2.50	1.40	0.00	0.081	0.000	6.593	0.00	28.62
50.00	1.25" Reinforcing	Yes	2.00	0.000	2.50	0.94	0.00	0.081	0.000	6.650	0.00	19.18
51.88	1.25" Reinforcing	Yes	1.88	0.000	2.50	0.88	0.00	0.082	0.000	6.702	0.00	18.11
54.33	1.25" Reinforcing	Yes	2.45	0.000	2.50	1.16	0.00	0.083	0.000	6.768	0.00	23.77
55.00	1.25" Reinforcing	Yes	0.67	0.000	2.50	0.31	0.00	0.084	0.000	6.785	0.00	6.47
58.08	1.25" Reinforcing	Yes	3.08	0.000	2.50	1.46	0.00	0.084	0.000	6.863	0.00	30.13
60.00	1.25" Reinforcing	Yes	1.92	0.000	2.50	0.91	0.00	0.084	0.000	6.910	0.00	18.81
61.00	1.25" Reinforcing	Yes	1.00	0.000	2.50	0.47	0.00	0.085	0.000	6.934	0.00	9.83
65.00	1.25" Reinforcing	Yes	4.00	0.000	2.50	1.90	0.00	0.086	0.000	7.028	0.00	39.65
68.13	1.25" Reinforcing	Yes	3.13	0.000	2.50	1.49	0.00	0.088	0.000	7.098	0.00	31.21
70.00	1.25" Reinforcing	Yes	1.87	0.000	2.50	0.89	0.00	0.089	0.000	7.138	0.00	18.71
75.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	2.40	0.00	0.091	0.000	7.243	0.00	50.47
78.00	1.25" Reinforcing	Yes	3.00	0.000	2.50	1.44	0.00	0.093	0.000	7.303	0.00	30.43
78.38	1.25" Reinforcing	Yes	0.38	0.000	2.50	0.18	0.00	0.094	0.000	7.310	0.00	3.86
80.00	1.25" Reinforcing	Yes	1.62	0.000	2.50	0.78	0.00	0.095	0.000	7.342	0.00	16.49
81.00	1.25" Reinforcing	Yes	1.00	0.000	2.50	0.48	0.00	0.095	0.000	7.361	0.00	10.19
85.00	1.25" Reinforcing	Yes	4.00	0.000	2.50	1.93	0.00	0.097	0.000	7.436	0.00	41.02
90.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	2.42	0.00	0.100	0.000	7.526	0.00	51.65
95.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	2.43	0.00	0.103	1.009	7.612	0.00	52.01
98.38	1.25" Reinforcing	Yes	3.38	0.000	2.50	1.65	0.00	0.106	1.017	7.669	0.00	35.32
99.42	1.25" Reinforcing	Yes	1.04	0.000	2.50	0.51	0.00	0.107	1.022	7.685	0.00	10.85
100.00	1.25" Reinforcing	Yes	0.58	0.000	2.50	0.28	0.00	0.108	1.024	7.695	0.00	6.11
102.33	1.25" Reinforcing	Yes	1.00	0.000	2.50	0.49	0.00	0.047	0.000	7.732	0.00	10.50
Totals:											0.0	944.1

Calculated Forces

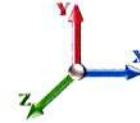
Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 26

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-49.59	-6.59	0.00	-715.66	0.00	715.66	2594.99	1297.50	3963.12	1984.50	0.00	0.000	0.000	0.238
1.00	-49.36	-6.61	0.00	-709.07	0.00	709.07	2587.52	1293.76	3934.96	1970.40	0.00	-0.020	0.000	0.219
5.00	-48.38	-6.58	0.00	-682.65	0.00	682.65	2557.32	1278.66	3822.86	1914.27	0.05	-0.092	0.000	0.215
10.00	-47.16	-6.54	0.00	-649.74	0.00	649.74	2518.93	1259.47	3683.98	1844.73	0.19	-0.182	0.000	0.210
15.00	-45.95	-6.50	0.00	-617.03	0.00	617.03	2479.82	1239.91	3546.55	1775.91	0.43	-0.273	0.000	0.205
20.00	-44.75	-6.42	0.00	-584.53	0.00	584.53	2439.98	1219.99	3410.64	1707.85	0.77	-0.364	0.000	0.200
21.00	-44.51	-6.43	0.00	-578.11	0.00	578.11	2431.93	1215.96	3383.64	1694.34	0.84	-0.382	0.000	0.199
25.00	-43.56	-6.39	0.00	-552.39	0.00	552.39	2399.42	1199.71	3276.32	1640.59	1.20	-0.455	0.000	0.194
30.00	-42.39	-6.33	0.00	-520.43	0.00	520.43	2358.14	1179.07	3143.66	1574.17	1.72	-0.546	0.000	0.189
35.00	-41.24	-6.26	0.00	-488.78	0.00	488.78	2316.13	1158.07	3012.73	1508.60	2.34	-0.637	0.000	0.183
40.00	-40.11	-6.16	0.00	-457.48	0.00	457.48	2273.40	1136.70	2883.60	1443.94	3.06	-0.728	0.000	0.176
41.00	-39.88	-6.16	0.00	-451.31	0.00	451.31	2264.77	1132.39	2858.00	1431.12	3.21	-0.746	0.000	0.188
44.08	-39.19	-6.10	0.00	-432.31	0.00	432.31	2232.73	1116.36	2773.02	1388.57	3.71	-0.806	0.000	0.184
45.00	-38.89	-6.10	0.00	-426.72	0.00	426.72	2222.17	1111.09	2746.73	1375.41	3.87	-0.825	0.000	0.181
48.00	-37.94	-6.05	0.00	-408.41	0.00	408.41	1679.75	839.87	2087.05	1045.08	4.41	-0.882	0.000	0.191
50.00	-37.54	-6.02	0.00	-396.32	0.00	396.32	1667.94	833.97	2050.79	1026.92	4.78	-0.921	0.000	0.205
51.88	-37.17	-5.99	0.00	-385.01	0.00	385.01	1656.73	828.36	2016.86	1009.93	5.16	-0.960	0.000	0.152
54.33	-36.70	-5.94	0.00	-370.32	0.00	370.32	1641.95	820.98	1972.80	987.87	5.66	-0.998	0.000	0.148
55.00	-36.52	-5.93	0.00	-366.36	0.00	366.36	1637.90	818.95	1960.88	981.90	5.80	-1.009	0.000	0.145
58.08	-35.71	-5.87	0.00	-348.06	0.00	348.06	1101.62	550.81	1319.63	660.80	6.47	-1.055	0.000	0.159
60.00	-35.38	-5.83	0.00	-336.82	0.00	336.82	1095.40	547.70	1298.60	650.26	6.89	-1.084	0.000	0.168
61.00	-35.21	-5.82	0.00	-331.00	0.00	331.00	1092.11	546.06	1287.63	644.77	7.12	-1.100	0.000	0.166
65.00	-34.55	-5.74	0.00	-307.71	0.00	307.71	1078.67	539.34	1243.87	622.86	8.07	-1.163	0.000	0.157
68.13	-34.04	-5.68	0.00	-289.73	0.00	289.73	1067.83	533.92	1209.74	605.77	8.85	-1.212	0.000	0.209
70.00	-33.73	-5.67	0.00	-279.11	0.00	279.11	1061.22	530.61	1189.41	595.59	9.33	-1.252	0.000	0.203
75.00	-32.93	-5.58	0.00	-250.75	0.00	250.75	1043.04	521.52	1135.29	568.49	10.70	-1.353	0.000	0.188
78.00	-31.97	-5.32	0.00	-234.02	0.00	234.02	1031.79	515.90	1103.02	552.33	11.57	-1.413	0.000	0.179
78.38	-31.91	-5.32	0.00	-232.00	0.00	232.00	1030.35	515.17	1098.94	550.29	11.68	-1.420	0.000	0.199
80.00	-31.66	-5.29	0.00	-223.38	0.00	223.38	1024.15	512.07	1081.59	541.60	12.17	-1.456	0.000	0.194
81.00	-31.50	-5.29	0.00	-218.09	0.00	218.09	1020.28	510.14	1070.91	536.25	12.48	-1.477	0.000	0.191
85.00	-30.88	-5.23	0.00	-196.91	0.00	196.91	1004.52	502.26	1028.37	514.95	13.75	-1.560	0.000	0.177
90.00	-30.14	-5.14	0.00	-170.75	0.00	170.75	984.18	492.09	975.70	488.58	15.44	-1.657	0.000	0.160
95.00	-29.44	-5.04	0.00	-145.03	0.00	145.03	963.11	481.56	923.66	462.52	17.22	-1.747	0.000	0.141
98.38	-28.97	-4.97	0.00	-127.99	0.00	127.99	948.46	474.23	888.87	445.09	18.48	-1.804	0.000	0.128
98.38	-28.97	-4.97	0.00	-127.99	0.00	127.99	948.46	474.23	888.87	445.09	18.48	-1.804	0.000	0.128
99.42	-28.83	-4.95	0.00	-122.84	0.00	122.84	943.90	471.95	878.26	439.78	18.87	-1.820	0.000	0.310
100.00	-28.71	-4.96	0.00	-119.95	0.00	119.95	941.32	470.66	872.31	436.80	19.09	-1.843	0.000	0.305
102.33	-28.28	-4.94	0.00	-108.37	0.00	108.37	941.62	470.81	872.99	437.14	20.02	-1.931	0.000	0.278
105.00	-19.38	-3.30	0.00	-95.20	0.00	95.20	929.71	464.85	845.90	423.58	21.12	-2.025	0.000	0.246
110.00	-18.85	-3.21	0.00	-78.72	0.00	78.72	906.82	453.41	795.74	398.46	23.33	-2.176	0.000	0.218
115.00	-18.34	-3.13	0.00	-62.65	0.00	62.65	883.20	441.60	746.45	373.78	25.68	-2.313	0.000	0.188
120.00	-17.85	-3.03	0.00	-47.01	0.00	47.01	858.87	429.43	698.09	349.57	28.17	-2.432	0.000	0.155
120.00	-17.85	-3.03	0.00	-47.01	0.00	47.01	654.06	327.03	470.04	305.83	28.17	-2.432	0.000	0.181
125.00	-17.21	-2.93	0.00	-31.84	0.00	31.84	654.06	327.03	470.04	305.83	30.77	-2.528	0.000	0.130
130.00	-16.57	-2.82	0.00	-17.18	0.00	17.18	654.06	327.03	470.04	305.83	33.44	-2.571	0.000	0.082
135.00	-15.92	-2.69	0.00	-3.10	0.00	3.10	654.06	327.03	470.04	305.83	36.14	-2.589	0.000	0.035
136.00	-0.50	-0.10	0.00	-0.40	0.00	0.40	654.06	327.03	470.04	305.83	36.69	-2.590	0.000	0.002
140.00	0.00	-0.08	0.00	0.00	0.00	0.00	654.06	327.03	470.04	305.83	38.85	-2.590	0.000	0.000

Calculated Forces

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



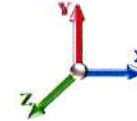
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Seismic Segment Forces (Factored)

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.0E		Iterations 24
Gust Response Factor 1.10	Sds 0.21	Ss 0.19
Dead Load Factor 1.20	Seismic Load Factor 1.00	S1 0.06
Wind Load Factor 0.00	Structure Frequency (f1) 0.23	SA 0.02
	Seismic Importance Factor 1.00	



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00	RB1 RB2	0.00	0.00	0.00	0.00	0.00	
1.00	RT1 RT2 RB3	125.24	0.00	0.01	0.00	1.09	
5.00		495.70	0.00	0.03	0.02	13.14	
10.00		607.77	0.01	0.05	0.03	21.64	
15.00		594.58	0.02	0.06	0.04	23.55	
20.00		581.40	0.04	0.07	0.04	24.14	
21.00	RT3 RB4	114.70	0.04	0.07	0.04	4.79	
25.00		453.52	0.06	0.07	0.04	19.38	
30.00		555.03	0.09	0.07	0.04	24.35	
35.00		541.85	0.12	0.07	0.03	24.46	
40.00		528.66	0.15	0.07	0.03	24.55	
41.00	RT4 RB5	104.15	0.16	0.07	0.03	4.86	
44.08	Bot - Section 2	317.81	0.19	0.06	0.02	15.01	
45.00		169.72	0.20	0.06	0.02	8.03	
48.00	Top - Section 1	549.88	0.22	0.06	0.02	25.99	
50.00		162.51	0.24	0.06	0.02	7.61	
51.88	RB6	151.22	0.26	0.05	0.02	6.96	
54.33	Bot - Section 3	195.09	0.28	0.05	0.01	8.63	
55.00		92.60	0.29	0.05	0.01	4.04	
58.08	Top - Section 2	423.99	0.33	0.04	0.01	16.68	
60.00		112.41	0.35	0.03	0.01	4.00	
61.00	RT5 RB7 RB8	58.19	0.36	0.03	0.01	1.93	
65.00		229.58	0.41	0.02	0.01	4.78	
68.13	RT6	176.12	0.45	0.00	0.01	1.44	
70.00		103.74	0.47	-0.01	0.01	-0.03	
75.00		271.95	0.54	-0.03	0.01	-6.26	
78.00	Appurtenance(s)	419.37	0.59	-0.05	0.01	-14.57	
78.38	RT8	19.98	0.59	-0.05	0.01	-0.72	
80.00		84.68	0.62	-0.06	0.02	-3.49	
81.00	RT7 RB9	51.86	0.63	-0.06	0.02	-2.28	
85.00		204.27	0.70	-0.09	0.03	-10.56	
90.00		248.22	0.78	-0.11	0.05	-13.53	
95.00		240.31	0.87	-0.12	0.08	-12.14	
98.38	RT9	157.97	0.93	-0.12	0.10	-7.00	
99.42	Bot - Section 4	47.73	0.95	-0.12	0.11	-2.00	
100.00		53.85	0.96	-0.12	0.11	-2.17	
102.33	Top - Section 3	213.27	1.01	-0.11	0.14	-7.17	
105.00	Appurtenance(s)	3574.4	1.06	-0.09	0.17	-87.17	
110.00		220.38	1.17	-0.02	0.23	-0.58	
115.00		212.47	1.28	0.09	0.31	5.29	
120.00	Top - Section 4	204.56	1.39	0.26	0.42	11.96	
125.00		353.28	1.51	0.52	0.55	34.67	
130.00		353.28	1.63	0.87	0.71	50.94	
135.00		353.28	1.76	1.35	0.91	69.53	
136.00	Appurtenance(s)	6122.6	1.78	1.46	0.95	1274.34	
140.00		282.62	1.89	1.98	1.14	72.40	

Seismic Segment Forces (Factored)

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Totals:	21,135.9	1,640.5	Total Wind:	22,679.3
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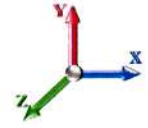
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.0E								Iterations 24
Gust Response Factor	1.10	Sds	0.21					Ss 0.19
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.10			S1 0.06
Wind Load Factor	0.00	Structure Frequency (f1)	0.23	SA	0.02	Seismic Importance Factor	1.00	



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-28.16	-1.81	0.00	-231.51	0.00	231.51	2594.99	1297.50	3963.12	1984.50	0.00	0.00	0.00	0.080
1.00	-27.99	-1.82	0.00	-229.70	0.00	229.70	2587.52	1293.76	3934.96	1970.40	0.00	-0.01	0.073	
5.00	-27.28	-1.82	0.00	-222.43	0.00	222.43	2557.32	1278.66	3822.86	1914.27	0.02	-0.03	0.072	
10.00	-26.42	-1.81	0.00	-213.35	0.00	213.35	2518.93	1259.47	3683.98	1844.73	0.06	-0.06	0.071	
15.00	-25.57	-1.80	0.00	-204.31	0.00	204.31	2479.82	1239.91	3546.55	1775.91	0.14	-0.09	0.070	
20.00	-24.73	-1.78	0.00	-195.33	0.00	195.33	2439.98	1219.99	3410.64	1707.85	0.25	-0.12	0.069	
21.00	-24.57	-1.78	0.00	-193.55	0.00	193.55	2431.93	1215.96	3383.64	1694.34	0.28	-0.13	0.068	
25.00	-23.92	-1.77	0.00	-186.43	0.00	186.43	2399.42	1199.71	3276.32	1640.59	0.39	-0.15	0.067	
30.00	-23.11	-1.76	0.00	-177.57	0.00	177.57	2358.14	1179.07	3143.66	1574.17	0.57	-0.18	0.066	
35.00	-22.33	-1.74	0.00	-168.79	0.00	168.79	2316.13	1158.07	3012.73	1508.60	0.77	-0.21	0.065	
40.00	-21.56	-1.72	0.00	-160.08	0.00	160.08	2273.40	1136.70	2883.60	1443.94	1.01	-0.24	0.063	
41.00	-21.41	-1.72	0.00	-158.36	0.00	158.36	2264.77	1132.39	2858.00	1431.12	1.06	-0.25	0.068	
44.08	-20.94	-1.71	0.00	-153.06	0.00	153.06	2232.73	1116.36	2773.02	1388.57	1.23	-0.27	0.067	
45.00	-20.71	-1.70	0.00	-151.49	0.00	151.49	2222.17	1111.09	2746.73	1375.41	1.28	-0.28	0.066	
48.00	-19.97	-1.68	0.00	-146.38	0.00	146.38	1679.75	839.87	2087.05	1045.08	1.47	-0.30	0.070	
50.00	-19.72	-1.68	0.00	-143.02	0.00	143.02	1667.94	833.97	2050.79	1026.92	1.59	-0.31	0.076	
51.88	-19.49	-1.67	0.00	-139.86	0.00	139.86	1656.73	828.36	2016.86	1009.93	1.72	-0.33	0.056	
54.33	-19.19	-1.67	0.00	-135.76	0.00	135.76	1641.95	820.98	1972.80	987.87	1.89	-0.34	0.055	
55.00	-19.06	-1.66	0.00	-134.65	0.00	134.65	1637.90	818.95	1960.88	981.90	1.94	-0.34	0.054	
58.08	-18.47	-1.65	0.00	-129.52	0.00	129.52	1101.62	550.81	1319.63	660.80	2.17	-0.36	0.060	
60.00	-18.28	-1.65	0.00	-126.36	0.00	126.36	1095.40	547.70	1298.60	650.26	2.31	-0.37	0.064	
61.00	-18.18	-1.65	0.00	-124.71	0.00	124.71	1092.11	546.06	1287.63	644.77	2.39	-0.38	0.064	
65.00	-17.80	-1.65	0.00	-118.12	0.00	118.12	1078.67	539.34	1243.87	622.86	2.72	-0.40	0.061	
68.13	-17.50	-1.65	0.00	-112.96	0.00	112.96	1067.83	533.92	1209.74	605.77	2.99	-0.42	0.083	
70.00	-17.33	-1.66	0.00	-109.87	0.00	109.87	1061.22	530.61	1189.41	595.59	3.16	-0.44	0.081	
75.00	-16.86	-1.66	0.00	-101.59	0.00	101.59	1043.04	521.52	1135.29	568.49	3.64	-0.48	0.077	
78.00	-16.28	-1.66	0.00	-96.60	0.00	96.60	1031.79	515.90	1103.02	552.33	3.94	-0.50	0.075	
78.38	-16.25	-1.66	0.00	-95.97	0.00	95.97	1030.35	515.17	1098.94	550.29	3.98	-0.50	0.084	
80.00	-16.10	-1.67	0.00	-93.28	0.00	93.28	1024.15	512.07	1081.59	541.60	4.16	-0.52	0.082	
81.00	-16.01	-1.67	0.00	-91.61	0.00	91.61	1020.28	510.14	1070.91	536.25	4.27	-0.53	0.081	
85.00	-15.66	-1.68	0.00	-84.93	0.00	84.93	1004.52	502.26	1028.37	514.95	4.73	-0.56	0.077	
90.00	-15.24	-1.69	0.00	-76.53	0.00	76.53	984.18	492.09	975.70	488.58	5.34	-0.61	0.072	
95.00	-14.85	-1.69	0.00	-68.11	0.00	68.11	963.11	481.56	923.66	462.52	6.00	-0.65	0.067	
98.38	-14.59	-1.69	0.00	-62.39	0.00	62.39	948.46	474.23	888.87	445.09	6.46	-0.67	0.063	
98.38	-14.59	-1.69	0.00	-62.39	0.00	62.39	948.46	474.23	888.87	445.09	6.46	-0.67	0.063	
99.42	-14.52	-1.69	0.00	-60.64	0.00	60.64	943.90	471.95	878.26	439.78	6.61	-0.68	0.153	
100.00	-14.44	-1.70	0.00	-59.65	0.00	59.65	941.32	470.66	872.31	436.80	6.70	-0.69	0.152	
102.33	-14.14	-1.71	0.00	-55.69	0.00	55.69	941.62	470.81	872.99	437.14	7.05	-0.74	0.142	
105.00	-9.79	-1.66	0.00	-51.14	0.00	51.14	929.71	464.85	845.90	423.58	7.47	-0.79	0.131	
110.00	-9.51	-1.67	0.00	-42.83	0.00	42.83	906.82	453.41	795.74	398.46	8.34	-0.87	0.118	
115.00	-9.24	-1.67	0.00	-34.48	0.00	34.48	883.20	441.60	746.45	373.78	9.29	-0.94	0.103	
120.00	-8.98	-1.66	0.00	-26.13	0.00	26.13	858.87	429.43	698.09	349.57	10.32	-1.01	0.085	
120.00	-8.98	-1.66	0.00	-26.13	0.00	26.13	654.06	327.03	470.04	305.83	10.32	-1.01	0.099	
125.00	-8.54	-1.63	0.00	-17.80	0.00	17.80	654.06	327.03	470.04	305.83	11.41	-1.06	0.071	
130.00	-8.10	-1.57	0.00	-9.66	0.00	9.66	654.06	327.03	470.04	305.83	12.53	-1.09	0.044	
135.00	-7.66	-1.49	0.00	-1.81	0.00	1.81	654.06	327.03	470.04	305.83	13.68	-1.10	0.018	
136.00	-0.34	-0.08	0.00	-0.32	0.00	0.32	654.06	327.03	470.04	305.83	13.91	-1.10	0.002	

Calculated Forces

Structure: CT46128-A-SBA **Code:** EIA/TIA-222-G 10/5/2021
Site Name: Milford - West **Exposure:** C
Height: 140.00 (ft) **Crest Height:** 0.00
Base Elev: 0.000 (ft) **Site Class:** D - Stiff Soil
Gh: 1.1 **Topography:** 1 **Struct Class:** II Page: 35



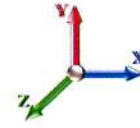
140.00 0.00 -0.07 0.00 0.00 0.00 0.00 0.00 654.06 327.03 470.04 305.83 14.83 -1.10 0.000

Seismic Segment Forces (Factored)

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 0.9D + 1.0E		Iterations 24
Gust Response Factor 1.10	Sds 0.21	Ss 0.19
Dead Load Factor 0.90	Seismic Load Factor 1.00	S1 0.06
Wind Load Factor 0.00	Structure Frequency (f1) 0.23	SA 0.02
	Seismic Importance Factor 1.00	



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00	RB1 RB2	0.00	0.00	0.00	0.00	0.00	
1.00	RT1 RT2 RB3	125.24	0.00	0.01	0.00	1.09	
5.00		495.70	0.00	0.03	0.02	13.14	
10.00		607.77	0.01	0.05	0.03	21.64	
15.00		594.58	0.02	0.06	0.04	23.55	
20.00		581.40	0.04	0.07	0.04	24.14	
21.00	RT3 RB4	114.70	0.04	0.07	0.04	4.79	
25.00		453.52	0.06	0.07	0.04	19.38	
30.00		555.03	0.09	0.07	0.04	24.35	
35.00		541.85	0.12	0.07	0.03	24.46	
40.00		528.66	0.15	0.07	0.03	24.55	
41.00	RT4 RB5	104.15	0.16	0.07	0.03	4.86	
44.08	Bot - Section 2	317.81	0.19	0.06	0.02	15.01	
45.00		169.72	0.20	0.06	0.02	8.03	
48.00	Top - Section 1	549.88	0.22	0.06	0.02	25.99	
50.00		162.51	0.24	0.06	0.02	7.61	
51.88	RB6	151.22	0.26	0.05	0.02	6.96	
54.33	Bot - Section 3	195.09	0.28	0.05	0.01	8.63	
55.00		92.60	0.29	0.05	0.01	4.04	
58.08	Top - Section 2	423.99	0.33	0.04	0.01	16.68	
60.00		112.41	0.35	0.03	0.01	4.00	
61.00	RT5 RB7 RB8	58.19	0.36	0.03	0.01	1.93	
65.00		229.58	0.41	0.02	0.01	4.78	
68.13	RT6	176.12	0.45	0.00	0.01	1.44	
70.00		103.74	0.47	-0.01	0.01	-0.03	
75.00		271.95	0.54	-0.03	0.01	-6.26	
78.00	Appurtenance(s)	419.37	0.59	-0.05	0.01	-14.57	
78.38	RT8	19.98	0.59	-0.05	0.01	-0.72	
80.00		84.68	0.62	-0.06	0.02	-3.49	
81.00	RT7 RB9	51.86	0.63	-0.06	0.02	-2.28	
85.00		204.27	0.70	-0.09	0.03	-10.56	
90.00		248.22	0.78	-0.11	0.05	-13.53	
95.00		240.31	0.87	-0.12	0.08	-12.14	
98.38	RT9	157.97	0.93	-0.12	0.10	-7.00	
99.42	Bot - Section 4	47.73	0.95	-0.12	0.11	-2.00	
100.00		53.85	0.96	-0.12	0.11	-2.17	
102.33	Top - Section 3	213.27	1.01	-0.11	0.14	-7.17	
105.00	Appurtenance(s)	3574.4	1.06	-0.09	0.17	-87.17	
110.00		220.38	1.17	-0.02	0.23	-0.58	
115.00		212.47	1.28	0.09	0.31	5.29	
120.00	Top - Section 4	204.56	1.39	0.26	0.42	11.96	
125.00		353.28	1.51	0.52	0.55	34.67	
130.00		353.28	1.63	0.87	0.71	50.94	
135.00		353.28	1.76	1.35	0.91	69.53	
136.00	Appurtenance(s)	6122.6	1.78	1.46	0.95	1274.34	
140.00		282.62	1.89	1.98	1.14	72.40	

Seismic Segment Forces (Factored)

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Totals: 21,135.9

1,640.5

Total Wind:

22,679.3

Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 0.9D + 1.0E						Iterations 24	
Gust Response Factor	1.10	Sds	0.21			Ss 0.19	
Dead Load Factor	0.90	Seismic Load Factor	1.00			Sd1 0.10	S1 0.06
Wind Load Factor	0.00	Structure Frequency (f1)	0.23			SA 0.02	Seismic Importance Factor 1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-21.12	-1.81	0.00	-227.28	0.00	227.28	2594.99	1297.50	3963.12	1984.50	0.00	0.00	0.00	0.077
1.00	-20.99	-1.81	0.00	-225.47	0.00	225.47	2587.52	1293.76	3934.96	1970.40	0.00	-0.01	-0.01	0.071
5.00	-20.46	-1.81	0.00	-218.21	0.00	218.21	2557.32	1278.66	3822.86	1914.27	0.02	-0.03	-0.03	0.070
10.00	-19.81	-1.80	0.00	-209.16	0.00	209.16	2518.93	1259.47	3683.98	1844.73	0.06	-0.06	-0.06	0.069
15.00	-19.18	-1.78	0.00	-200.16	0.00	200.16	2479.82	1239.91	3546.55	1775.91	0.14	-0.09	-0.09	0.067
20.00	-18.55	-1.76	0.00	-191.24	0.00	191.24	2439.98	1219.99	3410.64	1707.85	0.25	-0.12	-0.12	0.066
21.00	-18.43	-1.76	0.00	-189.48	0.00	189.48	2431.93	1215.96	3383.64	1694.34	0.27	-0.12	-0.12	0.066
25.00	-17.94	-1.75	0.00	-182.42	0.00	182.42	2399.42	1199.71	3276.32	1640.59	0.38	-0.15	-0.15	0.065
30.00	-17.33	-1.74	0.00	-173.66	0.00	173.66	2358.14	1179.07	3143.66	1574.17	0.55	-0.18	-0.18	0.064
35.00	-16.74	-1.72	0.00	-164.98	0.00	164.98	2316.13	1158.07	3012.73	1508.60	0.76	-0.21	-0.21	0.062
40.00	-16.17	-1.70	0.00	-156.39	0.00	156.39	2273.40	1136.70	2883.60	1443.94	0.99	-0.24	-0.24	0.061
41.00	-16.05	-1.70	0.00	-154.69	0.00	154.69	2264.77	1132.39	2858.00	1431.12	1.04	-0.24	-0.24	0.065
44.08	-15.70	-1.68	0.00	-149.47	0.00	149.47	2232.73	1116.36	2773.02	1388.57	1.21	-0.27	-0.27	0.064
45.00	-15.53	-1.68	0.00	-147.92	0.00	147.92	2222.17	1111.09	2746.73	1375.41	1.26	-0.27	-0.27	0.063
48.00	-14.98	-1.65	0.00	-142.89	0.00	142.89	1679.75	839.87	2087.05	1045.08	1.44	-0.29	-0.29	0.067
50.00	-14.79	-1.65	0.00	-139.59	0.00	139.59	1667.94	833.97	2050.79	1026.92	1.56	-0.31	-0.31	0.073
51.88	-14.61	-1.64	0.00	-136.49	0.00	136.49	1656.73	828.36	2016.86	1009.93	1.68	-0.32	-0.32	0.054
54.33	-14.39	-1.64	0.00	-132.46	0.00	132.46	1641.95	820.98	1972.80	987.87	1.85	-0.33	-0.33	0.053
55.00	-14.29	-1.63	0.00	-131.37	0.00	131.37	1637.90	818.95	1960.88	981.90	1.90	-0.34	-0.34	0.052
58.08	-13.85	-1.62	0.00	-126.33	0.00	126.33	1101.62	550.81	1319.63	660.80	2.12	-0.35	-0.35	0.058
60.00	-13.71	-1.61	0.00	-123.23	0.00	123.23	1095.40	547.70	1298.60	650.26	2.27	-0.36	-0.36	0.062
61.00	-13.63	-1.62	0.00	-121.62	0.00	121.62	1092.11	546.06	1287.63	644.77	2.34	-0.37	-0.37	0.061
65.00	-13.35	-1.61	0.00	-115.16	0.00	115.16	1078.67	539.34	1243.87	622.86	2.66	-0.39	-0.39	0.059
68.13	-13.12	-1.61	0.00	-110.11	0.00	110.11	1067.83	533.92	1209.74	605.77	2.93	-0.41	-0.41	0.079
70.00	-12.99	-1.62	0.00	-107.09	0.00	107.09	1061.22	530.61	1189.41	595.59	3.09	-0.43	-0.43	0.078
75.00	-12.65	-1.62	0.00	-98.99	0.00	98.99	1043.04	521.52	1135.29	568.49	3.56	-0.47	-0.47	0.074
78.00	-12.21	-1.62	0.00	-94.12	0.00	94.12	1031.79	515.90	1103.02	552.33	3.86	-0.49	-0.49	0.072
78.38	-12.18	-1.62	0.00	-93.50	0.00	93.50	1030.35	515.17	1098.94	550.29	3.90	-0.49	-0.49	0.080
80.00	-12.07	-1.63	0.00	-90.87	0.00	90.87	1024.15	512.07	1081.59	541.60	4.07	-0.51	-0.51	0.079
81.00	-12.00	-1.63	0.00	-89.24	0.00	89.24	1020.28	510.14	1070.91	536.25	4.18	-0.52	-0.52	0.078
85.00	-11.74	-1.64	0.00	-82.72	0.00	82.72	1004.52	502.26	1028.37	514.95	4.62	-0.55	-0.55	0.074
90.00	-11.42	-1.64	0.00	-74.54	0.00	74.54	984.18	492.09	975.70	488.58	5.22	-0.59	-0.59	0.069
95.00	-11.13	-1.64	0.00	-66.34	0.00	66.34	963.11	481.56	923.66	462.52	5.86	-0.63	-0.63	0.064
98.38	-10.94	-1.65	0.00	-60.78	0.00	60.78	948.46	474.23	888.87	445.09	6.32	-0.66	-0.66	0.060
98.38	-10.94	-1.65	0.00	-60.78	0.00	60.78	948.46	474.23	888.87	445.09	6.32	-0.66	-0.66	0.060
99.42	-10.88	-1.65	0.00	-59.07	0.00	59.07	943.90	471.95	878.26	439.78	6.46	-0.67	-0.67	0.146
100.00	-10.82	-1.65	0.00	-58.11	0.00	58.11	941.32	470.66	872.31	436.80	6.55	-0.68	-0.68	0.145
102.33	-10.60	-1.66	0.00	-54.26	0.00	54.26	941.62	470.81	872.99	437.14	6.89	-0.72	-0.72	0.135
105.00	-7.34	-1.62	0.00	-49.84	0.00	49.84	929.71	464.85	845.90	423.58	7.31	-0.77	-0.77	0.126
110.00	-7.13	-1.63	0.00	-41.73	0.00	41.73	906.82	453.41	795.74	398.46	8.15	-0.85	-0.85	0.113
115.00	-6.92	-1.63	0.00	-33.58	0.00	33.58	883.20	441.60	746.45	373.78	9.08	-0.92	-0.92	0.098
120.00	-6.73	-1.62	0.00	-25.44	0.00	25.44	858.87	429.43	698.09	349.57	10.08	-0.99	-0.99	0.081
120.00	-6.73	-1.62	0.00	-25.44	0.00	25.44	654.06	327.03	470.04	305.83	10.08	-0.99	-0.99	0.093
125.00	-6.40	-1.58	0.00	-17.33	0.00	17.33	654.06	327.03	470.04	305.83	11.14	-1.04	-1.04	0.066
130.00	-6.07	-1.53	0.00	-9.41	0.00	9.41	654.06	327.03	470.04	305.83	12.24	-1.06	-1.06	0.040
135.00	-5.74	-1.45	0.00	-1.76	0.00	1.76	654.06	327.03	470.04	305.83	13.36	-1.07	-1.07	0.015
136.00	-0.25	-0.08	0.00	-0.31	0.00	0.31	654.06	327.03	470.04	305.83	13.59	-1.07	-1.07	0.001

Calculated Forces

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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140.00	0.00	-0.07	0.00	0.00	0.00	0.00	0.00	654.06	327.03	470.04	305.83	14.48	-1.07	0.000
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Wind Loading - Shaft

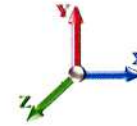
Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00	RB1 RB2	1.00	0.85	7.442	8.19	175.53	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
1.00	RT1 RT2 RB3	1.00	0.85	7.442	8.19	174.80	0.650	0.000	1.00	3.167	2.06	16.8	0.0	125.2
5.00		1.00	0.85	7.442	8.19	171.88	0.650	0.000	4.00	12.534	8.15	66.7	0.0	495.7
10.00		1.00	0.85	7.442	8.19	168.22	0.650	0.000	5.00	15.370	9.99	81.8	0.0	607.8
15.00		1.00	0.85	7.442	8.19	164.56	0.650	0.000	5.00	15.040	9.78	80.0	0.0	594.6
20.00		1.00	0.90	7.896	8.69	165.74	0.650	0.000	5.00	14.709	9.56	83.0	0.0	581.4
21.00	RT3 RB4	1.00	0.91	7.978	8.78	165.84	0.650	0.000	1.00	2.902	1.89	16.6	0.0	114.7
25.00		1.00	0.95	8.276	9.10	165.83	0.650	0.000	4.00	11.476	7.46	67.9	0.0	453.5
30.00		1.00	0.98	8.600	9.46	165.11	0.650	0.000	5.00	14.048	9.13	86.4	0.0	555.0
35.00		1.00	1.01	8.883	9.77	163.81	0.650	0.000	5.00	13.718	8.92	87.1	0.0	541.8
40.00		1.00	1.04	9.137	10.05	162.08	0.650	0.000	5.00	13.387	8.70	87.5	0.0	528.7
41.00	RT4 RB5	1.00	1.05	9.184	10.10	161.69	0.650	0.000	1.00	2.638	1.71	17.3	0.0	104.2
44.08	Bot - Section 2	1.00	1.07	9.326	10.26	160.40	0.650	0.000	3.08	8.050	5.23	53.7	0.0	317.8
45.00		1.00	1.07	9.366	10.30	160.00	0.650	0.000	0.92	2.408	1.57	16.1	0.0	169.7
48.00	Top - Section 1	1.00	1.08	9.494	10.44	158.61	0.650	0.000	3.00	7.802	5.07	53.0	0.0	549.9
50.00		1.00	1.09	9.576	10.53	160.29	0.650	0.000	2.00	5.135	3.34	35.2	0.0	162.5
51.88	RB6	1.00	1.10	9.651	10.62	159.35	0.650	0.000	1.88	4.779	3.11	33.0	0.0	151.2
54.33	Bot - Section 3	1.00	1.11	9.745	10.72	158.07	0.650	0.000	2.45	6.166	4.01	43.0	0.0	195.1
55.00		1.00	1.12	9.770	10.75	157.72	0.650	0.000	0.67	1.683	1.09	11.8	0.0	92.6
58.08	Top - Section 2	1.00	1.13	9.883	10.87	156.03	0.650	0.000	3.08	7.707	5.01	54.5	0.0	424.0
60.00		1.00	1.14	9.951	10.95	156.97	0.650	0.000	1.92	4.728	3.07	33.6	0.0	112.4
61.00	RT5 RB7 RB8	1.00	1.14	9.986	10.98	156.40	0.650	0.000	1.00	2.447	1.59	17.5	0.0	58.2
65.00		1.00	1.16	10.120	11.13	154.03	0.650	0.000	4.00	9.657	6.28	69.9	0.0	229.6
68.13	RT6	1.00	1.17	10.221	11.24	152.11	0.650	0.000	3.13	7.409	4.82	54.1	0.0	176.1
70.00		1.00	1.17	10.279	11.31	150.94	0.650	0.000	1.87	4.365	2.84	32.1	0.0	103.7
75.00		1.00	1.19	10.430	11.47	147.71	0.650	0.000	5.00	11.443	7.44	85.3	0.0	272.0
78.00	Appurtenance(s)	1.00	1.20	10.516	11.57	145.72	0.650	0.000	3.00	6.707	4.36	50.4	0.0	159.4
78.38	RT8	1.00	1.20	10.527	11.58	145.46	0.650	0.000	0.38	0.841	0.55	6.3	0.0	20.0
80.00		1.00	1.21	10.572	11.63	144.36	0.650	0.000	1.62	3.564	2.32	26.9	0.0	84.7
81.00	RT7 RB9	1.00	1.21	10.600	11.66	143.68	0.650	0.000	1.00	2.183	1.42	16.5	0.0	51.9
85.00		1.00	1.22	10.708	11.78	140.90	0.650	0.000	4.00	8.599	5.59	65.8	0.0	204.3
90.00		1.00	1.24	10.838	11.92	137.34	0.650	0.000	5.00	10.452	6.79	81.0	0.0	248.2
95.00		1.00	1.25	10.962	12.06	133.68	0.656 *	0.000	5.00	10.121	6.64	80.0	0.0	240.3
98.38	RT9	1.00	1.26	11.043	12.15	131.16	0.661 *	0.000	3.38	6.655	4.40	53.5	0.0	158.0
99.42	Bot - Section 4	1.00	1.26	11.067	12.17	130.38	0.664 *	0.000	1.04	2.011	1.34	16.3	0.0	47.7
100.00		1.00	1.27	11.081	12.19	129.94	0.666 *	0.000	0.58	1.144	0.76	9.3	0.0	53.9
102.33	Top - Section 3	1.00	1.27	11.135	12.25	128.17	0.650	0.000	2.33	4.530	2.94	36.1	0.0	213.3
105.00	Appurtenance(s)	1.00	1.28	11.195	12.31	128.28	0.650	0.000	2.67	5.089	3.31	40.7	0.0	120.8
110.00		1.00	1.29	11.305	12.44	124.40	0.650	0.000	5.00	9.288	6.04	75.1	0.0	220.4
115.00		1.00	1.30	11.412	12.55	120.46	0.650	0.000	5.00	8.958	5.82	73.1	0.0	212.5
120.00	Top - Section 4	1.00	1.32	11.514	12.67	116.45	0.650	0.000	5.00	8.627	5.61	71.0	0.0	204.6
125.00		1.00	1.33	11.614	12.78	103.66	0.600	0.000	5.00	7.500	4.50	57.5	0.0	353.3
130.00		1.00	1.34	11.710	12.88	104.08	0.600	0.000	5.00	7.500	4.50	58.0	0.0	353.3
135.00		1.00	1.35	11.803	12.98	104.50	0.600	0.000	5.00	7.500	4.50	58.4	0.0	353.3
136.00	Appurtenance(s)	1.00	1.35	11.822	13.00	104.58	0.600	0.000	1.00	1.500	0.90	11.7	0.0	70.7
140.00		1.00	1.36	11.894	13.08	104.90	0.600	0.000	4.00	6.000	3.60	47.1	0.0	282.6

Wind Loading - Shaft

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 41



* Cf Adjusted by Linear Load Ra Effect

Totals:	140.00	2,218.6	11,370.2
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Discrete Appurtenance Forces

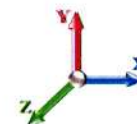
Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	136.00	B14 4478	5	11.822	13.004	0.40	0.80	3.68	300.00	0.000	0.000	47.85	0.00	0.00
2	136.00	TPA-45R-KU8AA-K	2	11.822	13.004	0.65	0.80	18.79	160.00	0.000	0.000	244.37	0.00	0.00
3	136.00	DMP65R-BU8D	2	11.822	13.004	0.58	0.80	20.87	192.00	0.000	0.000	271.42	0.00	0.00
4	136.00	AIR 6449 B77D	3	11.822	13.004	0.68	0.80	8.43	246.00	0.000	0.000	109.56	0.00	0.00
5	136.00	Ericsson AIR6419 N77G	3	11.822	13.004	0.68	0.80	8.43	198.00	0.000	0.000	109.56	0.00	0.00
6	136.00	Radio 4415	5	11.822	13.004	0.40	0.80	3.72	230.00	0.000	0.000	48.37	0.00	0.00
7	136.00	TPA65R-BU8D	2	11.822	13.004	0.58	0.80	20.59	174.20	0.000	0.000	267.70	0.00	0.00
8	136.00	4449 B71 + B85	4	11.822	13.004	0.40	0.80	3.15	284.00	0.000	0.000	40.99	0.00	0.00
9	136.00	B2 B66A 8843	4	11.822	13.004	0.40	0.80	2.62	288.00	0.000	0.000	34.12	0.00	0.00
10	136.00	DC9-48-60-24-8C-EV	4	11.822	13.004	0.40	0.80	1.82	104.80	0.000	0.000	23.72	0.00	0.00
11	136.00	VFA12-HD	3	11.822	13.004	0.56	0.75	30.21	3165.00	0.000	0.000	392.80	0.00	0.00
12	136.00	Collar Mount (3-Sided)	2	11.822	13.004	0.56	0.75	2.53	440.00	0.000	0.000	32.92	0.00	0.00
13	136.00	3 ft Standoff	6	11.822	13.004	0.56	0.75	8.44	270.00	0.000	0.000	109.72	0.00	0.00
14	105.00	RRUS 4415 B25	3	11.195	12.315	0.38	0.75	1.84	138.00	0.000	0.000	22.72	0.00	0.00
15	105.00	APXVAARR24_43-U-NA2	3	11.195	12.315	0.52	0.75	31.88	384.00	0.000	0.000	392.57	0.00	0.00
16	105.00	4449 B71 + B95	3	11.195	12.315	0.38	0.75	1.86	222.00	0.000	0.000	22.86	0.00	0.00
17	105.00	AIR32	3	11.195	12.315	0.65	0.75	12.74	396.60	0.000	0.000	156.93	0.00	0.00
18	105.00	AIR6449 B41	3	11.195	12.315	0.53	0.75	9.03	309.00	0.000	0.000	111.15	0.00	0.00
19	105.00	KRY 112 144/1	3	11.195	12.315	0.38	0.75	0.46	33.00	0.000	0.000	5.68	0.00	0.00
20	105.00	MS-1436 (Collar Mount)	1	11.195	12.315	1.00	1.00	2.25	150.60	0.000	0.000	27.71	0.00	0.00
21	105.00	MS-KI22-5 (Kickers w/o	1	11.195	12.315	1.00	1.00	5.33	146.00	0.000	0.000	65.64	0.00	0.00
22	105.00	Platform w/ Hand Rail	1	11.195	12.315	1.00	1.00	32.00	1400.00	0.000	0.000	394.07	0.00	0.00
23	105.00	AIR B2A/ B4P	3	11.195	12.315	0.65	0.75	11.78	274.50	0.000	0.000	145.12	0.00	0.00
24	78.00	GPS	2	10.516	11.568	1.00	1.00	2.00	20.00	0.000	0.000	23.14	0.00	0.00
25	78.00	Side Arm (L. Heavy)	2	10.516	11.568	1.00	1.00	9.00	240.00	0.000	0.000	104.11	0.00	0.00
Totals:									9,765.70			3,204.79		

Total Applied Force Summary

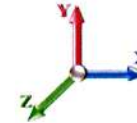
Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
1.00		16.85	147.74	0.00	0.00
5.00		66.69	585.70	0.00	0.00
10.00		81.78	720.27	0.00	0.00
15.00		80.03	707.08	0.00	0.00
20.00		83.04	693.90	0.00	0.00
21.00		16.55	137.20	0.00	0.00
25.00		67.91	543.52	0.00	0.00
30.00		86.38	667.53	0.00	0.00
35.00		87.13	654.35	0.00	0.00
40.00		87.45	641.16	0.00	0.00
41.00		17.32	126.65	0.00	0.00
44.08		53.67	387.19	0.00	0.00
45.00		16.12	190.35	0.00	0.00
48.00		52.96	617.38	0.00	0.00
50.00		35.16	207.51	0.00	0.00
51.88		32.98	193.52	0.00	0.00
54.33		42.96	250.29	0.00	0.00
55.00		11.76	107.60	0.00	0.00
58.08		54.46	493.37	0.00	0.00
60.00		33.64	155.53	0.00	0.00
61.00		17.47	80.69	0.00	0.00
65.00		69.88	319.58	0.00	0.00
68.13		54.14	246.54	0.00	0.00
70.00		32.08	145.82	0.00	0.00
75.00		85.33	384.45	0.00	0.00
78.00	(4) attachments	177.68	486.87	0.00	0.00
78.38		6.33	28.53	0.00	0.00
80.00		26.94	121.13	0.00	0.00
81.00		16.54	74.36	0.00	0.00
85.00		65.84	294.27	0.00	0.00
90.00		80.99	348.24	0.00	0.00
95.00		80.02	321.61	0.00	0.00
98.38		53.46	212.93	0.00	0.00
99.42		16.26	64.58	0.00	0.00
100.00		9.28	63.34	0.00	0.00
102.33		36.06	251.21	0.00	0.00
105.00	(24) attachments	1385.17	3617.83	0.00	0.00
110.00		75.08	232.88	0.00	0.00
115.00		73.09	224.97	0.00	0.00
120.00		71.03	217.06	0.00	0.00
125.00		57.49	365.78	0.00	0.00
130.00		57.96	365.78	0.00	0.00
135.00		58.43	365.78	0.00	0.00
136.00	(45) attachments	1744.81	6125.16	0.00	0.00
140.00		47.10	282.62	0.00	0.00

Total Applied Force Summary

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Totals:	5,423.35	23,469.84	0.00	0.00
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Linear Appurtenance Segment Forces (Factored)

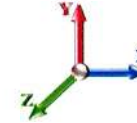
Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1.25" Reinforcing	Yes	4.00	0.000	2.50	0.83	0.00	0.066	0.000	7.442	0.00	0.00
10.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.068	0.000	7.442	0.00	0.00
15.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.069	0.000	7.442	0.00	0.00
20.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.071	0.000	7.896	0.00	0.00
21.00	1.25" Reinforcing	Yes	1.00	0.000	2.50	0.21	0.00	0.072	0.000	7.978	0.00	0.00
25.00	1.25" Reinforcing	Yes	4.00	0.000	2.50	0.83	0.00	0.073	0.000	8.276	0.00	0.00
30.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.074	0.000	8.600	0.00	0.00
35.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.076	0.000	8.883	0.00	0.00
40.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.078	0.000	9.137	0.00	0.00
41.00	1.25" Reinforcing	Yes	1.00	0.000	2.50	0.21	0.00	0.079	0.000	9.184	0.00	0.00
44.08	1.25" Reinforcing	Yes	3.08	0.000	2.50	0.64	0.00	0.080	0.000	9.326	0.00	0.00
45.00	1.25" Reinforcing	Yes	0.92	0.000	2.50	0.19	0.00	0.081	0.000	9.366	0.00	0.00
48.00	1.25" Reinforcing	Yes	3.00	0.000	2.50	0.63	0.00	0.081	0.000	9.494	0.00	0.00
50.00	1.25" Reinforcing	Yes	2.00	0.000	2.50	0.42	0.00	0.081	0.000	9.576	0.00	0.00
51.88	1.25" Reinforcing	Yes	1.88	0.000	2.50	0.39	0.00	0.082	0.000	9.651	0.00	0.00
54.33	1.25" Reinforcing	Yes	2.45	0.000	2.50	0.51	0.00	0.083	0.000	9.745	0.00	0.00
55.00	1.25" Reinforcing	Yes	0.67	0.000	2.50	0.14	0.00	0.084	0.000	9.770	0.00	0.00
58.08	1.25" Reinforcing	Yes	3.08	0.000	2.50	0.64	0.00	0.084	0.000	9.883	0.00	0.00
60.00	1.25" Reinforcing	Yes	1.92	0.000	2.50	0.40	0.00	0.084	0.000	9.951	0.00	0.00
61.00	1.25" Reinforcing	Yes	1.00	0.000	2.50	0.21	0.00	0.085	0.000	9.986	0.00	0.00
65.00	1.25" Reinforcing	Yes	4.00	0.000	2.50	0.83	0.00	0.086	0.000	10.120	0.00	0.00
68.13	1.25" Reinforcing	Yes	3.13	0.000	2.50	0.65	0.00	0.088	0.000	10.221	0.00	0.00
70.00	1.25" Reinforcing	Yes	1.87	0.000	2.50	0.39	0.00	0.089	0.000	10.279	0.00	0.00
75.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.091	0.000	10.430	0.00	0.00
78.00	1.25" Reinforcing	Yes	3.00	0.000	2.50	0.63	0.00	0.093	0.000	10.516	0.00	0.00
78.38	1.25" Reinforcing	Yes	0.38	0.000	2.50	0.08	0.00	0.094	0.000	10.527	0.00	0.00
80.00	1.25" Reinforcing	Yes	1.62	0.000	2.50	0.34	0.00	0.095	0.000	10.572	0.00	0.00
81.00	1.25" Reinforcing	Yes	1.00	0.000	2.50	0.21	0.00	0.095	0.000	10.600	0.00	0.00
85.00	1.25" Reinforcing	Yes	4.00	0.000	2.50	0.83	0.00	0.097	0.000	10.708	0.00	0.00
90.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.100	0.000	10.838	0.00	0.00
95.00	1.25" Reinforcing	Yes	5.00	0.000	2.50	1.04	0.00	0.103	1.009	10.962	0.00	0.00
98.38	1.25" Reinforcing	Yes	3.38	0.000	2.50	0.70	0.00	0.106	1.017	11.043	0.00	0.00
99.42	1.25" Reinforcing	Yes	1.04	0.000	2.50	0.22	0.00	0.107	1.022	11.067	0.00	0.00
100.00	1.25" Reinforcing	Yes	0.58	0.000	2.50	0.12	0.00	0.108	1.024	11.081	0.00	0.00
102.33	1.25" Reinforcing	Yes	1.00	0.000	2.50	0.21	0.00	0.047	0.000	11.135	0.00	0.00
Totals:											0.0	0.0

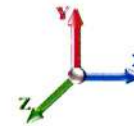
Calculated Forces

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 25

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-23.47	-5.43	0.00	-565.88	0.00	565.88	2594.99	1297.50	3963.12	1984.50	0.00	0.000	0.000	0.185
1.00	-23.32	-5.42	0.00	-560.45	0.00	560.45	2587.52	1293.76	3934.96	1970.40	0.00	-0.016	0.000	0.170
5.00	-22.73	-5.38	0.00	-538.76	0.00	538.76	2557.32	1278.66	3822.86	1914.27	0.04	-0.073	0.000	0.167
10.00	-22.00	-5.33	0.00	-511.84	0.00	511.84	2518.93	1259.47	3683.98	1844.73	0.15	-0.144	0.000	0.162
15.00	-21.29	-5.27	0.00	-485.21	0.00	485.21	2479.82	1239.91	3546.55	1775.91	0.34	-0.215	0.000	0.158
20.00	-20.59	-5.20	0.00	-458.86	0.00	458.86	2439.98	1219.99	3410.64	1707.85	0.60	-0.286	0.000	0.154
21.00	-20.45	-5.20	0.00	-453.66	0.00	453.66	2431.93	1215.96	3383.64	1694.34	0.67	-0.301	0.000	0.153
25.00	-19.90	-5.15	0.00	-432.88	0.00	432.88	2399.42	1199.71	3276.32	1640.59	0.94	-0.358	0.000	0.149
30.00	-19.23	-5.08	0.00	-407.14	0.00	407.14	2358.14	1179.07	3143.66	1574.17	1.36	-0.430	0.000	0.145
35.00	-18.57	-5.01	0.00	-381.74	0.00	381.74	2316.13	1158.07	3012.73	1508.60	1.84	-0.501	0.000	0.140
40.00	-17.92	-4.93	0.00	-356.69	0.00	356.69	2273.40	1136.70	2883.60	1443.94	2.41	-0.571	0.000	0.135
41.00	-17.79	-4.92	0.00	-351.76	0.00	351.76	2264.77	1132.39	2858.00	1431.12	2.53	-0.586	0.000	0.144
44.08	-17.40	-4.87	0.00	-336.59	0.00	336.59	2232.73	1116.36	2773.02	1388.57	2.92	-0.633	0.000	0.141
45.00	-17.21	-4.86	0.00	-332.12	0.00	332.12	2222.17	1111.09	2746.73	1375.41	3.04	-0.647	0.000	0.138
48.00	-16.59	-4.81	0.00	-317.53	0.00	317.53	1679.75	839.87	2087.05	1045.08	3.46	-0.692	0.000	0.146
50.00	-16.38	-4.78	0.00	-307.90	0.00	307.90	1667.94	833.97	2050.79	1026.92	3.76	-0.721	0.000	0.156
51.88	-16.19	-4.76	0.00	-298.91	0.00	298.91	1656.73	828.36	2016.86	1009.93	4.05	-0.752	0.000	0.116
54.33	-15.94	-4.72	0.00	-287.24	0.00	287.24	1641.95	820.98	1972.80	987.87	4.45	-0.782	0.000	0.113
55.00	-15.83	-4.71	0.00	-284.09	0.00	284.09	1637.90	818.95	1960.88	981.90	4.56	-0.790	0.000	0.110
58.08	-15.33	-4.66	0.00	-269.57	0.00	269.57	1101.62	550.81	1319.63	660.80	5.08	-0.826	0.000	0.120
60.00	-15.17	-4.62	0.00	-260.65	0.00	260.65	1095.40	547.70	1298.60	650.26	5.41	-0.848	0.000	0.127
61.00	-15.09	-4.61	0.00	-256.02	0.00	256.02	1092.11	546.06	1287.63	644.77	5.59	-0.861	0.000	0.126
65.00	-14.77	-4.55	0.00	-237.56	0.00	237.56	1078.67	539.34	1243.87	622.86	6.33	-0.910	0.000	0.119
68.13	-14.52	-4.50	0.00	-223.32	0.00	223.32	1067.83	533.92	1209.74	605.77	6.94	-0.947	0.000	0.157
70.00	-14.37	-4.48	0.00	-214.90	0.00	214.90	1061.22	530.61	1189.41	595.59	7.32	-0.978	0.000	0.153
75.00	-13.98	-4.40	0.00	-192.50	0.00	192.50	1043.04	521.52	1135.29	568.49	8.39	-1.056	0.000	0.141
78.00	-13.50	-4.22	0.00	-179.29	0.00	179.29	1031.79	515.90	1103.02	552.33	9.06	-1.101	0.000	0.133
78.38	-13.47	-4.22	0.00	-177.69	0.00	177.69	1030.35	515.17	1098.94	550.29	9.15	-1.107	0.000	0.148
80.00	-13.35	-4.20	0.00	-170.85	0.00	170.85	1024.15	512.07	1081.59	541.60	9.53	-1.134	0.000	0.144
81.00	-13.27	-4.19	0.00	-166.66	0.00	166.66	1020.28	510.14	1070.91	536.25	9.77	-1.151	0.000	0.141
85.00	-12.97	-4.13	0.00	-149.91	0.00	149.91	1004.52	502.26	1028.37	514.95	10.76	-1.214	0.000	0.131
90.00	-12.62	-4.06	0.00	-129.26	0.00	129.26	984.18	492.09	975.70	488.58	12.07	-1.288	0.000	0.117
95.00	-12.30	-3.98	0.00	-108.98	0.00	108.98	963.11	481.56	923.66	462.52	13.46	-1.355	0.000	0.102
98.38	-12.08	-3.93	0.00	-95.52	0.00	95.52	948.46	474.23	888.87	445.09	14.43	-1.398	0.000	0.092
98.38	-12.08	-3.93	0.00	-95.52	0.00	95.52	948.46	474.23	888.87	445.09	14.43	-1.398	0.000	0.092
99.42	-12.02	-3.91	0.00	-91.44	0.00	91.44	943.90	471.95	878.26	439.78	14.74	-1.410	0.000	0.221
100.00	-11.95	-3.91	0.00	-89.16	0.00	89.16	941.32	470.66	872.31	436.80	14.91	-1.427	0.000	0.217
102.33	-11.70	-3.88	0.00	-80.03	0.00	80.03	941.62	470.81	872.99	437.14	15.63	-1.492	0.000	0.196
105.00	-8.12	-2.41	0.00	-69.68	0.00	69.68	929.71	464.85	845.90	423.58	16.48	-1.561	0.000	0.173
110.00	-7.88	-2.35	0.00	-57.60	0.00	57.60	906.82	453.41	795.74	398.46	18.18	-1.672	0.000	0.153
115.00	-7.65	-2.28	0.00	-45.86	0.00	45.86	883.20	441.60	746.45	373.78	19.98	-1.772	0.000	0.131
120.00	-7.44	-2.21	0.00	-34.46	0.00	34.46	858.87	429.43	698.09	349.57	21.89	-1.859	0.000	0.107
120.00	-7.44	-2.21	0.00	-34.46	0.00	34.46	654.06	327.03	470.04	305.83	21.89	-1.859	0.000	0.124
125.00	-7.07	-2.15	0.00	-23.40	0.00	23.40	654.06	327.03	470.04	305.83	23.87	-1.930	0.000	0.087
130.00	-6.71	-2.08	0.00	-12.65	0.00	12.65	654.06	327.03	470.04	305.83	25.91	-1.962	0.000	0.052
135.00	-6.34	-2.01	0.00	-2.24	0.00	2.24	654.06	327.03	470.04	305.83	27.97	-1.975	0.000	0.017
136.00	-0.28	-0.06	0.00	-0.23	0.00	0.23	654.06	327.03	470.04	305.83	28.39	-1.975	0.000	0.001
140.00	0.00	-0.05	0.00	0.00	0.00	0.00	654.06	327.03	470.04	305.83	30.04	-1.975	0.000	0.000

Calculated Forces

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

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Final Analysis Summary

Structure: CT46128-A-SBA	Code: EIA/TIA-222-G	10/5/2021
Site Name: Milford - West	Exposure: C	
Height: 140.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 97 mph Wind	22.7	0.00	28.15	0.00	0.00	2385.63
0.9D + 1.6W 97 mph Wind	22.7	0.00	21.11	0.00	0.00	2348.17
1.2D + 1.0Di + 1.0Wi 50 mph Wind	6.6	0.00	49.59	0.00	0.00	715.66
1.2D + 1.0E	1.8	0.00	28.16	0.00	0.00	231.51
0.9D + 1.0E	1.8	0.00	21.12	0.00	0.00	227.28
1.0D + 1.0W 60 mph Wind	5.4	0.00	23.47	0.00	0.00	565.88

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 97 mph Wind	-12.87	-16.56	0.00	-387.81	0.00	-387.81	943.90	471.95	878.26	439.78	99.42	0.897
0.9D + 1.6W 97 mph Wind	-9.30	-16.15	0.00	-375.45	0.00	-375.45	943.90	471.95	878.26	439.78	99.42	0.865
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-28.83	-4.95	0.00	-122.84	0.00	-122.84	943.90	471.95	878.26	439.78	99.42	0.310
1.2D + 1.0E	-14.52	-1.69	0.00	-60.64	0.00	-60.64	943.90	471.95	878.26	439.78	99.42	0.153
0.9D + 1.0E	-10.88	-1.65	0.00	-59.07	0.00	-59.07	943.90	471.95	878.26	439.78	99.42	0.146
1.0D + 1.0W 60 mph Wind	-12.02	-3.91	0.00	-91.44	0.00	-91.44	943.90	471.95	878.26	439.78	99.42	0.221

Additional Steel Summary

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors			Lower Termination				Upper Termination				Max Member			
			VQ/I (lb/in)	Vu (kips)	phi Vn (kips)	MQ/I (kips)	Vn (kips)	Num Reqd	Num Actual	MQ/I (kips)	Vn (kips)	Num Reqd	Num Actual	Pu (kips)	phi Pn (kips)	phi Tn (kips)	Ratio
0.0	1.0	(4) SOL-2 1/4" William R71	331.9	3.98	25.3	223.2	25.3	9	0	414.6	25.3			223.19	459.1	468.91	0.486
0.0	1.0	(3) SOL-1 3/4" William R71	-108.9	-1.31	25.3	136.4	25.3	6	0	136.0	25.3	6	0	136.36	288.5	298.82	0.473
1.0	21.0	(4) LNP-LP7X125-B-20A	365.3	8.77	25.3	414.6	25.3			384.7	25.3			414.61	460.8	435.94	0.951
21.0	41.0	(4) LNP-LP7X125-G-20AA	401.2	9.63	25.3	384.7	25.3			345.3	25.3			384.68	460.8	435.94	0.882
41.0	61.0	(4) LNP-LP6X125-G-20AB	425.7	10.22	25.3	319.3	25.3			246.1	25.3	10	0	326.74	395.0	360.94	0.905
51.9	68.1	(3) LNP-LP6X100-G-20TT	-286.9	-6.89	25.3	189.7	25.3	8	8	171.3	25.3	7	8	189.69	297.8	288.75	0.657
61.0	81.0	(3) LNP-LP6X125-G-20BB	-567.2	-13.61	25.3	246.1	25.3	10	0	271.5	25.3			302.41	395.0	360.94	0.838
61.0	78.4	(1) LNP-LP6X125-G-20BT	356.3	8.55	25.3	164.1	25.3	7	0	177.3	25.3	8	10	206.92	395.0	360.94	0.573
81.0	98.4	(3) LNP-LP6X125-G-20BT	-620.0	-14.88	25.3	271.5	25.3			181.3	25.3	8	10	271.50	395.0	360.94	0.752



Pier Foundation Design For Monopole			Date
			Customer Name: AT&T
Site Name:		EIA/TIA Standard:	EIA-222-G
Site Number: CT46128-A-SBA		Structure Height (Ft.):	140
Engr. Number: 115988		Engineer Name:	J. Tibbetts
		Engineer Login ID:	

Foundation Info Obtained from:

Structure Type:

Analysis or Design?

Base Reactions (Factored):

Axial Load (Kips):	28.2	Shear Force (Kips):	22.7
Uplift Force (Kips):	0.0	Moment (Kips-ft):	2385.6

Foundation Geometries:

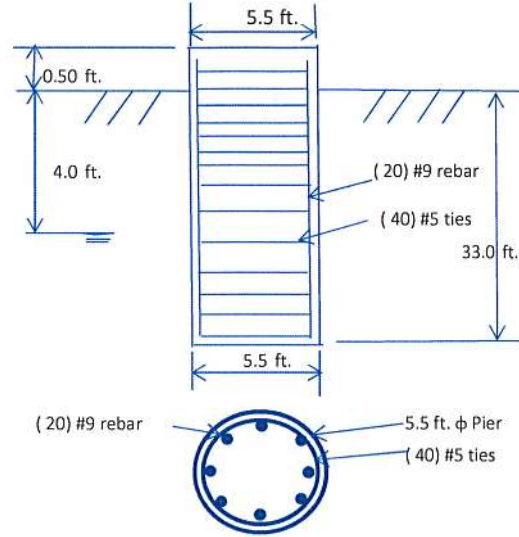
Diameter of Pier (ft.):	5.5	Depth of Base B. G. S. :	33.0 ft.
Pier Height A. G. (ft.):	0.50		

Material Properties and Reabr Info:

Concrete Strength (psi):	5000	Steel Elastic Modulus:	29000 ksi
Vertical bar yield (ksi):	60	Tie steel yield strength:	60 ksi
Vertical Rebar Size #:	9	Tie / Stirrup Size #:	5
Qty. of Vertical Rebars:	20	Tie Spacing:	12.0 in.
Concrete Cover (in.):	3	Concrete unit weight:	150.0 pcf

Soil Design Parameters:

Water Table B.G.S. (ft):	4.0	Unit weight of water:	62.4 psf
Ratio of Uplift/Axial Skin Friction:	1.0	Pullout failure Angle:	30 (°)
Skin Frictions are to be obtained from:	Soil Report		



Monopole Pier Foundation

Sand
5000

Depth of Layers (ft)		γ_{soil} (pcf)	ϕ (°)	Cohesion (psf)	Ultimate Skin Friction (psf)	Ultimate Bearing (psf)	Soil Types				
Top	Bottom										
0.0	3.0	120	0	0	0		Sand				
3.0	15.0	120	30	0	200	16000	Sand				
15.0	34.0	120	30	0	500	16000	Sand				
34.0	39.0	120	33	0	500	16000	Sand				

Soil weight Increase Factor for bouyant soils (1.0 to 1.15): 1.1

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Soil Bearing Strength Reduction Factor:	0.75
Total Dry Soil Volume from Conical Failure (cu. Ft.):	5256	Dry Soil Weight from Conical Failure:	631 Kips
Total Buoyant Soil Volume from Conical Failure (cu. Ft.):	12708	Buoyant Soil Weight from Conical Failure (K)	961 Kips
Total Dry Concrete Volume (cu. Ft.):	107	Total Dry Concrete Weight:	16.0 Kips
Total Buoyant Concrete Volume (cu. Ft.):	689.0	Total Buoyant Concrete Weight:	60.36 Kips
Total Effective Concrete Weight (Kips):	76.4	Total Effective Soil Weight:	1591.5 Kips
Total Effective Vertical Load on Base (Kips):	41.1		

Check Soil Capacities:

				Usage	
Allowable Foundation Overturning Resistance (kips-ft.):	8115.2	>	Design Factored Moment (kips-ft):	2898	0.36 OK!
Factor of Safety of Passive Soil Resistance against Moment:	2.80	OK!			

Check the capacities of Reinforcing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75
Strength reduction factor (Axial compression):	0.65	Wind Load Factor on Concrete Design:	1.00

Reinforcing Concrete Pier:

				Usage	
Vertical Steel Rebar Area (sq. in./each):	1.00	Tie / Stirrup Area (sq. in./each):	0.31		
Calculated Moment Capacity (Mn, Kips-Ft):	2636.2	>	Design Factored Moment (Mu, K-Ft):	2483.9	0.94 OK!
Calculated Shear Capacity (Kips):	613.8	>	Design Factored Shear (Kips):	191.5	0.31 OK!
Calculated Tension Capacity (Tn, Kips):	1080.0	>	Design Factored Tension (Tu Kips):	0.0	0.00 OK!
Calculated Compression Capacity (Pn, Kips):	7517	>	Design Factored Axial Load (Pu Kips):	28.2	0.00 OK!
Moment & Axial Strength Combination:	0.94	OK!	Max. Allowable Tie/Stirrup Spacing:	12.00	in.
Pier Reinforcement Ratio:	0.006	Reinforcement Ratio is satisfied per ACI			

ATTACHMENT 5



Mail Processing Center
 Federal Aviation Administration
 Southwest Regional Office
 Obstruction Evaluation Group
 10101 Hillwood Parkway
 Fort Worth, TX 76177

Aeronautical Study No.
 2021-ANE-5462-OE
 Prior Study No.
 2013-ANE-1908-OE

Issued Date: 11/05/2021

Clinton Papenfuss
 SBA Towers
 8051 Congress Avenue
 Boca Raton, FL 33487-1310

**** DETERMINATION OF NO HAZARD TO AIR NAVIGATION ****

The Federal Aviation Administration has conducted an aeronautical study under the provisions of 49 U.S.C., Section 44718 and if applicable Title 14 of the Code of Federal Regulations, part 77, concerning:

Structure: Antenna Tower CT 46128-A
 Location: Milford, CT
 Latitude: 41-13-30.60N NAD 83
 Longitude: 73-02-32.50W
 Heights: 13 feet site elevation (SE)
 154 feet above ground level (AGL)
 167 feet above mean sea level (AMSL)

This aeronautical study revealed that the structure does not exceed obstruction standards and would not be a hazard to air navigation provided the following condition(s), if any, is(are) met:

It is required that FAA Form 7460-2, Notice of Actual Construction or Alteration, be e-filed any time the project is abandoned or:

- At least 10 days prior to start of construction (7460-2, Part 1)
- Within 5 days after the construction reaches its greatest height (7460-2, Part 2)

As a result of this structure being critical to flight safety, it is required that the FAA be kept apprised as to the status of the project. Failure to respond to periodic FAA inquiries could invalidate this determination.

This aeronautical study included evaluation of a structure that exists at this time. Action will be taken to ensure aeronautical charts are updated to reflect the most current coordinates, elevation and height as indicated in the case description.

Based on this evaluation, marking and lighting are not necessary for aviation safety. However, if marking/lighting are accomplished on a voluntary basis, we recommend it be installed in accordance with FAA Advisory circular 70/7460-1 M.

This determination expires on 05/05/2023 unless:

- (a) the construction is started (not necessarily completed) and FAA Form 7460-2, Notice of Actual Construction or Alteration, is received by this office.
- (b) extended, revised, or terminated by the issuing office.
- (c) the construction is subject to the licensing authority of the Federal Communications Commission (FCC) and an application for a construction permit has been filed, as required by the FCC, within 6 months of the date of this determination. In such case, the determination expires on the date prescribed by the FCC for completion of construction, or the date the FCC denies the application.

NOTE: REQUEST FOR EXTENSION OF THE EFFECTIVE PERIOD OF THIS DETERMINATION MUST BE E-FILED AT LEAST 15 DAYS PRIOR TO THE EXPIRATION DATE. AFTER RE-EVALUATION OF CURRENT OPERATIONS IN THE AREA OF THE STRUCTURE TO DETERMINE THAT NO SIGNIFICANT AERONAUTICAL CHANGES HAVE OCCURRED, YOUR DETERMINATION MAY BE ELIGIBLE FOR ONE EXTENSION OF THE EFFECTIVE PERIOD.

This determination is based, in part, on the foregoing description which includes specific coordinates, heights, frequency(ies) and power. Any changes in coordinates, heights, and frequencies or use of greater power, except those frequencies specified in the Colo Void Clause Coalition; Antenna System Co-Location; Voluntary Best Practices, effective 21 Nov 2007, will void this determination. Any future construction or alteration, including increase to heights, power, or the addition of other transmitters, requires separate notice to the FAA. This determination includes all previously filed frequencies and power for this structure.

If construction or alteration is dismantled or destroyed, you must submit notice to the FAA within 5 days after the construction or alteration is dismantled or destroyed.

This determination does include temporary construction equipment such as cranes, derricks, etc., which may be used during actual construction of the structure. However, this equipment shall not exceed the overall heights as indicated above. Equipment which has a height greater than the studied structure requires separate notice to the FAA.

This determination concerns the effect of this structure on the safe and efficient use of navigable airspace by aircraft and does not relieve the sponsor of compliance responsibilities relating to any law, ordinance, or regulation of any Federal, State, or local government body.

A copy of this determination will be forwarded to the Federal Communications Commission (FCC) because the structure is subject to their licensing authority.

If we can be of further assistance, please contact our office at (404) 305-6582, or Stephanie.Kimmel@faa.gov. On any future correspondence concerning this matter, please refer to Aeronautical Study Number 2021-ANE-5462-OE.

Signature Control No: 492305178-500127420

(DNE)

Stephanie Kimmel
Specialist

Attachment(s)
Frequency Data
Map(s)

Frequency Data for ASN 2021-ANE-5462-OE

LOW FREQUENCY	HIGH FREQUENCY	FREQUENCY UNIT	ERP	ERP UNIT
6	7	GHz	55	dBW
6	7	GHz	42	dBW
10	11.7	GHz	55	dBW
10	11.7	GHz	42	dBW
17.7	19.7	GHz	55	dBW
17.7	19.7	GHz	42	dBW
21.2	23.6	GHz	55	dBW
21.2	23.6	GHz	42	dBW
614	698	MHz	1000	W
614	698	MHz	2000	W
698	806	MHz	1000	W
806	901	MHz	500	W
806	824	MHz	500	W
824	849	MHz	500	W
851	866	MHz	500	W
869	894	MHz	500	W
896	901	MHz	500	W
901	902	MHz	7	W
929	932	MHz	3500	W
930	931	MHz	3500	W
931	932	MHz	3500	W
932	932.5	MHz	17	dBW
935	940	MHz	1000	W
940	941	MHz	3500	W
1670	1675	MHz	500	W
1710	1755	MHz	500	W
1850	1910	MHz	1640	W
1850	1990	MHz	1640	W
1930	1990	MHz	1640	W
1990	2025	MHz	500	W
2110	2200	MHz	500	W
2305	2360	MHz	2000	W
2305	2310	MHz	2000	W
2345	2360	MHz	2000	W
2496	2690	MHz	500	W



ATTACHMENT 6

Visual Assessment & Photo-Simulations

CT1231
MILFORD WAMPUS LANE
160 WAMPUS LANE
MILFORD, CT

Prepared in June 2022 by:
All-Points Technology Corporation, P.C.
567 Vauxhall Street Extension – Suite 311
Waterford, CT 06320

Prepared for AT&T



VISUAL ASSESSMENT & PHOTO-SIMULATIONS

New Cingular Wireless PCS, LLC, d/b/a AT&T ("AT&T") is seeking approval for the extension of an existing wireless communications facility (the "Facility") at 160 Wampus Lane in Milford, Connecticut. At the request of AT&T, All-Points Technology Corporation, P.C. ("APT") completed this assessment to evaluate the potential visual effects of the proposed Facility extension from within a 2-mile radius (the "Study Area"), including the preparation of computer-generated photo-simulations.

Project Setting

The existing Facility is located on a ±2.41-acre, industrially-developed property north of Wampus Lane. The property is bordered by commercial and industrial development to the east and west, undeveloped woodlands to the north, and the Metro North Railroad ("MNR") corridor to the south. Residential development is located at distances of ±0.25 mile beyond. The MNR corridor bisects the Study Area east to west.

The topography within the Study Area consists of generally level terrain. Ground elevations range from sea level in the southern portion of the Study Area to approximately 167 feet above mean sea level ("AMSL") in the northwestern portion of the Study Area. Tree cover within the Study Area (consisting primarily of mixed deciduous hardwoods) occupies approximately 2,381 acres (or ±29.6%) of the 8,042-acre Study Area.

Project Undertaking

The existing Facility consists of an ±120' tall steel monopole tower currently occupied by two antenna arrays and an associated fenced compound. AT&T intends to collocate on the proposed 20-foot tower extension, which would increase the height of the monopole to ±140' above ground level ("AGL"). AT&T would install 12 panel antennas, six (6) remote radio heads ("RRHs"), and two (2) surge arrestors on a new frame at an approximate centerline height of 136' AGL. Related ground equipment would be placed within the existing compound on a new 20' by 10' concrete pad.

Please refer to the Site Drawings prepared by Hudson Design Group, LLC, Rev. 2, dated March 2, 2022, and provided under separate cover, for details regarding the proposed installation.

Methodology

APT used the combination of a predictive computer model, in-field analysis, and a review of various data sources to evaluate the visibility associated with the proposed Facility on both a quantitative and qualitative basis. The predictive model provides a measurable assessment of visibility throughout the entire Study Area, including private properties and other areas inaccessible for direct observations. The in-field analysis consisted of field reconnaissance of the Study Area to record existing conditions, verify results of the model, inventory seasonal and year-round view locations, and provide photographic documentation from publicly accessible areas. A description of the procedures used in the analysis is provided below.

Preliminary Computer Modeling

To conduct this assessment, a predictive computer model was developed specifically for this project using ESRI's ArcMap GIS¹ software and available GIS data. The predictive model incorporates Project and Study Area-specific data, including the Site location, its ground elevation and both the existing Facility height and the proposed extension, as well as the surrounding topography, existing vegetation, and structures (the primary features that can block direct lines of sight).

A digital surface model ("DSM"), capturing both the natural and built features on the Earth's surface, was generated for the extent of the Study Area utilizing State of Connecticut 2016 LiDAR² LAS³ data points. LiDAR is a remote-sensing technology that develops elevation data by measuring the time it takes for laser light to return from the surface to the instrument's sensors. The varying reflectivity of objects also means that the "returns" can be classified based on the characteristics of the reflected light, normally into categories such as "bare earth," "vegetation," "road," "surface water" or "building". Derived from the 2016 LiDAR data, the LAS datasets contain the corresponding elevation point data and return classification values. The Study Area DSM incorporates the first return LAS dataset values that are associated with the highest feature in the landscape, typically a treetop, top of a building, and/or the highest point of other tall structures.

Once the DSM was generated, ESRI's Viewshed Tool was utilized to identify locations within the Study Area where the proposed Facility extension may be visible. ESRI's Viewshed Tool predicts visibility by identifying those cells⁴ within the DSM that can be seen from an observer location.

¹ ArcMap is a Geographic Information System desktop application developed by the Environmental Systems Research Institute for creating maps, performing spatial analysis, and managing geographic data.

² Light Detection and Ranging

³ An LAS file is an industry-standard binary format for storing airborne LiDAR data.

⁴ Each DSM cell size is 1 square meter.

Cells where visibility was indicated were extracted and converted from a raster dataset to a polygon feature which was then overlaid onto aerial photograph and topographic base maps. Since the DSM includes the highest relative feature in the landscape, isolated “visible” cells are often indicated within heavily forested areas (e.g., from the top of the highest tree) or on building rooftops during the initial processing. It is recognized that these areas do not represent typical viewer locations and overstate visibility. As such, the resulting polygon feature is further refined by extracting those areas. The viewshed results are also cross-checked against the most current aerial photographs to assess whether significant changes (a new housing development, for example) have occurred since the time the LiDAR-based LAS datasets were captured.

The results of the preliminary analysis are intended to provide a comparative representation of those areas where portions of the existing and extended Facility may potentially be visible to the human eye without the aid of magnification, based on a viewer eye-height of five (5) feet above the ground and the combination of intervening topography, trees and other vegetation, and structures. However, the Facility may not necessarily be visible from all locations within those areas identified by the predictive model, which has its limitations. For instance, the computer model cannot account for mass density, tree diameters and branching variability of trees, or the degradation of views that occur with distance. As a result, some areas depicted on the viewshed maps as theoretically offering potential visibility of the extended Facility may be over-predictive because the quality of those views is not sufficient for the human eye to recognize the Facility or discriminate it from other surrounding or intervening objects.

Seasonal Visibility

Visibility also varies seasonally with increased, albeit obstructed, views occurring during “leaf-off” conditions. Beyond the variabilities associated with density of woodland stands found within any given Study Area, each individual tree also has its own unique trunk, pole timber and branching patterns that provide varying degrees of screening in leafless conditions which, as introduced above, cannot be precisely modeled. Seasonal visibility is therefore estimated based on a combination of factors including the type, size, and density of trees within a given area; topographic constraints; and other visual obstructions that may be present. Taking into account these considerations, areas depicting seasonal visibility on the viewshed maps are intended to represent locations from where there is a potential for views through intervening trees, as opposed to indicating that leaf-off views will exist from within an entire seasonally-shaded area.

Field Reconnaissance and Photographic Documentation

To supplement and fine tune the results of the computer modeling efforts, APT completed in-field verification activities on May 20, 2022 consisting of vehicular and pedestrian reconnaissance, and photo-documentation throughout the Study Area.

Using the combination of the preliminary predictive viewshed mapping and the known landmark of the existing tower, APT compiled an inventory of locations where the existing tower is visible. Visual observations from along local and State roads and other publicly accessible locations were used to evaluate the results of the preliminary viewshed mapping and identify any discrepancies in the initial modeling. During the reconnaissance, APT captured photographs from locations within and beyond the areas of predicted visibility. Collectively, the selection of photographs represents the general extent of visibility of the existing and proposed extended Facility throughout the Study Area.

Photographic Simulations

Photographic simulations were generated to portray scaled renderings of the proposed extended Facility. Using field data, site plan information and 3-dimensional (3D) modeling software, spatially referenced models of the existing tower and the proposed extension were generated and merged. The geographic coordinates of the photograph locations and existing features observed in the field (e.g., roads, utility poles, catch basins, buildings and other structures) were incorporated into the model to produce virtual camera positions within the spatial 3D model. Photo-simulations were then created by merging these virtual scenes with corresponding existing conditions photographs and composited using image editing software. The scales of the subjects in the photograph and their corresponding simulation (in this case, the proposed extended Facility) are proportional to their surroundings.

Photo-documentation of the field reconnaissance and photo-simulations of the proposed Facility are presented in the attachment at the end of this report and are intended to provide the reader with a general comparison of existing and proposed view characteristics. Photographs were taken from publicly accessible areas and chosen to present direct view lines towards the Facility (unobstructed where possible).

For presentation purposes in this report, the photographs were produced in an approximate 7-inch by 10.5-inch format. This format size allows for the inclusion of key contextual landscape elements (existing development, street signs, utility poles, etc.) so that the viewer can understand the proportionate scale of each object within the scene.

The table on the following page summarizes the photographs and simulations presented in the attachment to this report, and includes a description of each location, view orientation, and distance from where the photo was taken relative to the Facility. The photo locations are depicted on the photolog provided as an attachment to this report.

Table 1 – Photo Locations

Photo	Location	Orientation	Distance to Site	Visibility
1	Wampus Lane	Northeast	± 0.28 Mile	Not Visible
2	Wampus Lane	Northeast	± 0.26 Mile	Visible
3	Wampus Lane	Northeast	± 403 Feet	Visible
4	Wampus Lane	Northwest	± 370 Feet	Visible
5	Edgewood Avenue	Northeast	± 0.33 Mile	Visible
6	New Haven Avenue	Northwest	± 0.14 Mile	Visible
7	Gulf Beach	North	± 1.15 Miles	Visible
8	Buckingham Avenue	Northwest	± 0.65 Mile	Visible
9	Shadyside Lane	Northwest	± 0.62 Mile	Not Visible
10	Shadyside Lane	Northwest	± 0.65 Mile	Visible
11	Old Gate Lane	Southwest	± 0.57 Mile	Not Visible
12	King’s Highway Cemetery	South	± 0.31 Mile	Not Visible
13	Cherry Street at Corona Drive	Southeast	± 0.42 Mile	Not Visible
14	Plymouth Place	East	± 0.71 Mile	Not Visible

Conclusions

As presented on the attached comparative viewshed maps, predicted overall year-round visibility is estimated to increase from ±151 acres to ±264 acres. It is important to note that the year-round visibility of the existing Facility consists of approximately 139 acres (or 92.05% of the Study Area) over open water and associated tidal marsh areas. Similarly, approximately 96.5% of the predicted increase to year-round visibility occurs over these undeveloped areas. Seasonal visibility of the proposed extended Facility is estimated to remain similar with approximately 122 acres of predicted visibility. Overall, the proposed extended Facility would not significantly increase the land-based visibility of the existing tower within the Study Area.

The overall predicted visibility of the proposed extended Facility (±386 acres, including year-round and seasonal views) represents less than 5% of the 8,042-acre Study Area, with ±79.5% of predicted visibility being over open water and the associated tidal marsh areas. The increase in visibility would not significantly alter the characteristics of the area.

Proximity to Schools And Commercial Child Day Care Centers

No schools or commercial child day care centers are located within 250 feet of the proposed Facility. Harborside Middle School is located approximately 0.91 mile to the west of the Site at 175 High Street in Milford. The nearest commercial child care center, Duck Pond Day Care, is

located at 132 New Haven Avenue in Milford, approximately 0.50 mile to the southwest of the Site. The viewshed mapping depicts minute pockets of visibility from both locations. However, based on observations made during the field reconnaissance, neither the existing Facility nor the proposed extended Facility is highly visible from these areas.

Limitations

The photo-simulations provide a representation of the Facility under similar settings as those encountered during the field review and reconnaissance. Views can change throughout the seasons and the time of day, and are dependent on weather and other atmospheric conditions (e.g., haze, fog, clouds); the location, angle and intensity of the sun; and the specific viewer location. Weather conditions on the day of the field review included mostly clear skies.

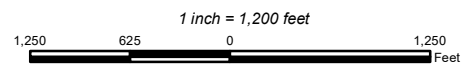
ATTACHMENTS



PHOTO LOG

Legend

- Site
- Visible
- Not Visible
- Municipal Boundary





PHOTOGRAPHED ON 5/20/2022

EXISTING

PHOTO

1

LOCATION

WAMPUS LANE

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 0.28 MILE

VISIBILITY

NOT VISIBLE



PHOTOGRAPHED ON 5/20/2022

EXISTING

PHOTO

2

LOCATION

WAMPUS LANE

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 0.26 MILE

VISIBILITY

VISIBLE



PROPOSED

PHOTO

2

LOCATION

WAMPUS LANE

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 0.26 MILE

VISIBILITY

VISIBLE



PHOTOGRAPHED ON 5/20/2022

EXISTING

PHOTO

3

LOCATION

WAMPUS LANE

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 403 FEET

VISIBILITY

VISIBLE



PROPOSED

PHOTO

3

LOCATION

WAMPUS LANE

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 403 FEET

VISIBILITY

VISIBLE



PHOTOGRAPHED ON 5/20/2022

EXISTING

PHOTO

4

LOCATION

WAMPUS LANE

ORIENTATION

NORTHWEST

DISTANCE TO SITE

+/- 370 FEET

VISIBILITY

VISIBLE



PROPOSED

PHOTO

4

LOCATION

WAMPUS LANE

ORIENTATION

NORTHWEST

DISTANCE TO SITE

+/- 370 FEET

VISIBILITY

VISIBLE



PHOTOGRAPHED ON 5/20/2022

EXISTING

PHOTO

5

LOCATION

EDGEWOOD AVENUE

ORIENTATION

NORTHEAST

DISTANCE TO SITE

+/- 0.33 MILE

VISIBILITY

VISIBLE



PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
5	EDGEWOOD AVENUE	NORTHEAST	+/- 0.33 MILE	VISIBLE



PHOTOGRAPHED ON 5/20/2022

EXISTING

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
6	NEW HAVEN AVENUE	NORTHWEST	+/- 0.14 MILE	VISIBLE



PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
6	NEW HAVEN AVENUE	NORTHWEST	+/- 0.14 MILE	VISIBLE



PHOTOGRAPHED ON 5/20/2022

EXISTING

PHOTO

7

LOCATION

GULF BEACH

ORIENTATION

NORTH

DISTANCE TO SITE

+/- 1.15 MILES

VISIBILITY

VISIBLE



PROPOSED

PHOTO	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
7	GULF BEACH	NORTH	+/- 1.15 MILES	VISIBLE



PHOTOGRAPHED ON 5/20/2022

EXISTING

PHOTO

8

LOCATION

BUCKINGHAM AVENUE

ORIENTATION

NORTHWEST

DISTANCE TO SITE

+/- 0.65 MILE

VISIBILITY

VISIBLE



PROPOSED

PHOTO

8

LOCATION

BUCKINGHAM AVENUE

ORIENTATION

NORTHWEST

DISTANCE TO SITE

+/- 0.65 MILE

VISIBILITY

VISIBLE



PHOTOGRAPHED ON 5/20/2022

EXISTING

PHOTO

9

LOCATION

SHADYSIDE LANE

ORIENTATION

NORTHWEST

DISTANCE TO SITE

+/- 0.62 MILE

VISIBILITY

NOT VISIBLE



PHOTOGRAPHED ON 5/20/2022

EXISTING

PHOTO

10

LOCATION

SHADYSIDE LANE

ORIENTATION

NORTHWEST

DISTANCE TO SITE

+/- 0.65 MILE

VISIBILITY

VISIBLE



PROPOSED

PHOTO

10

LOCATION

SHADYSIDE LANE

ORIENTATION

NORTHWEST

DISTANCE TO SITE

+/- 0.65 MILE

VISIBILITY

VISIBLE



PHOTOGRAPHED ON 5/20/2022

EXISTING

PHOTO

11

LOCATION

OLD GATE LANE

ORIENTATION

SOUTHWEST

DISTANCE TO SITE

+/- 0.57 MILE

VISIBILITY

NOT VISIBLE



PHOTOGRAPHED ON 5/20/2022

EXISTING

PHOTO

12

LOCATION

KING'S HIGHWAY CEMETERY

ORIENTATION

SOUTH

DISTANCE TO SITE

+/- 0.31 MILE

VISIBILITY

NOT VISIBLE



PHOTOGRAPHED ON 5/20/2022

EXISTING

PHOTO

13

LOCATION

CHERRY STREET AT CORONA DRIVE

ORIENTATION

SOUTHEAST

DISTANCE TO SITE

+/- 0.42 MILE

VISIBILITY

NOT VISIBLE



PHOTOGRAPHED ON 5/20/2022

EXISTING

PHOTO

14

LOCATION

PLYMOUTH PLACE

ORIENTATION

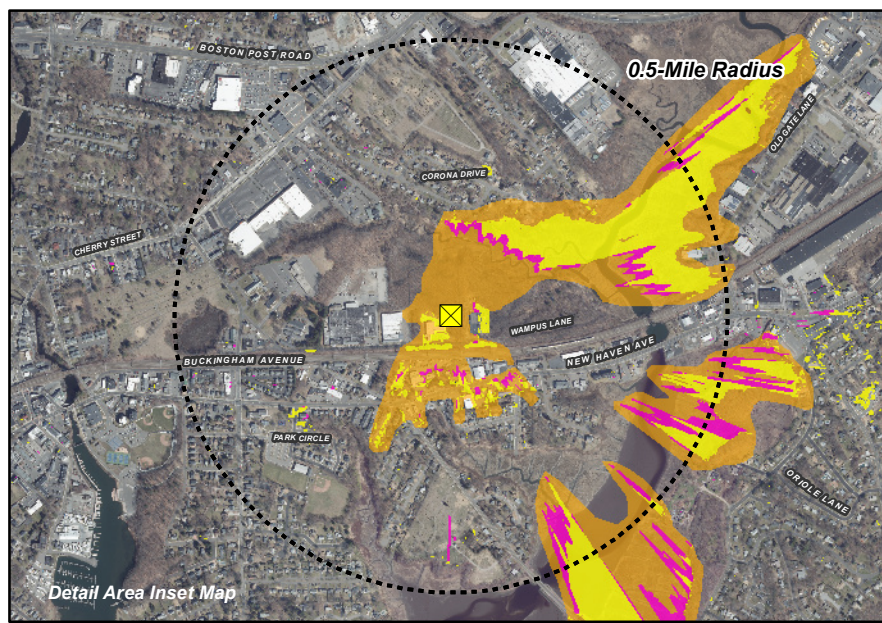
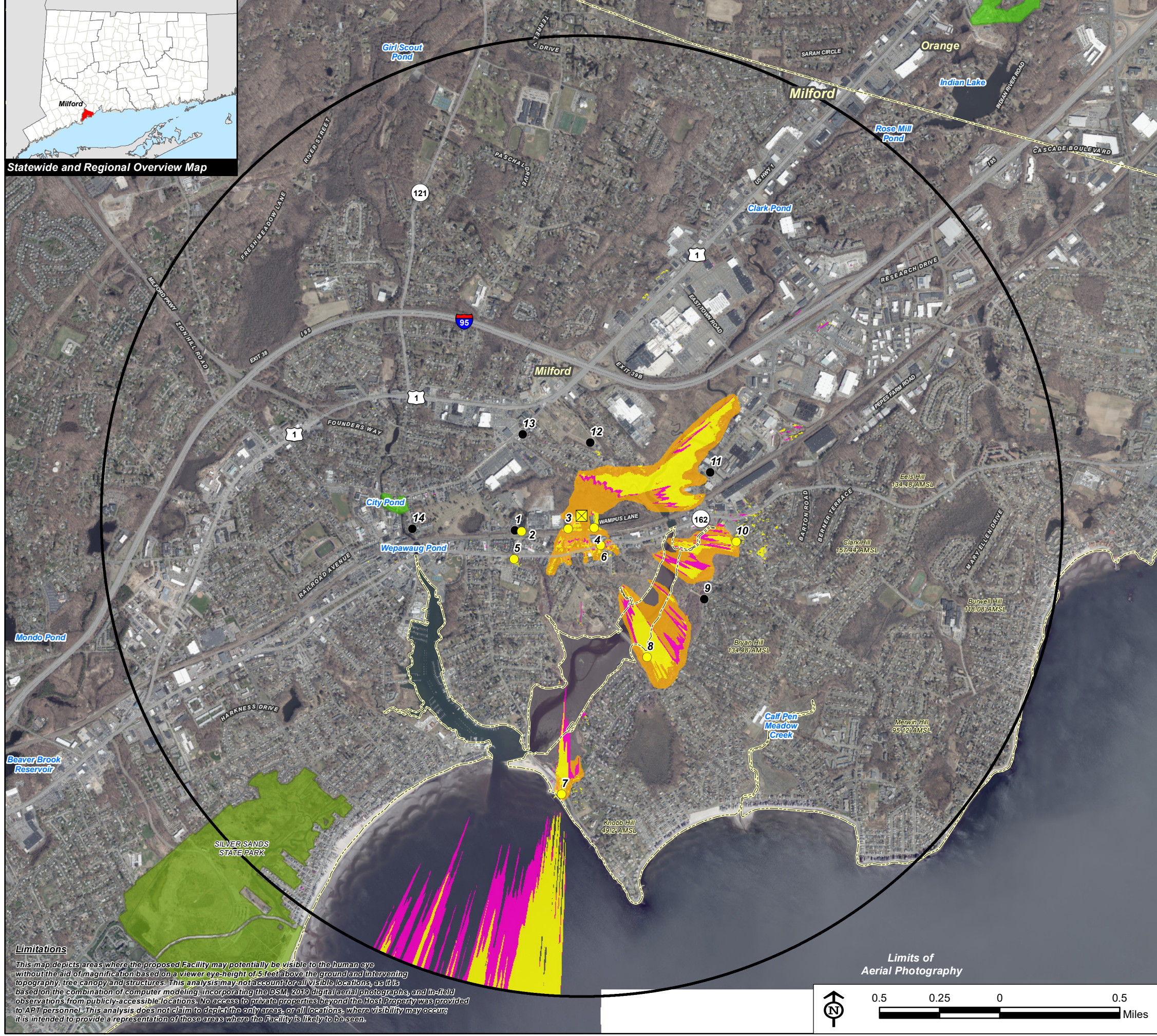
EAST

DISTANCE TO SITE

+/- 0.71 MILE

VISIBILITY

NOT VISIBLE



Comparative Viewshed Analysis Map

Proposed Wireless Telecommunications Facility Extension
 CT1231 - Milford Wampus Lane
 160 Wampus Lane
 Milford, Connecticut

Existing facility height is 120 feet AGL; Proposed facility height is 140 feet AGL.
 Forest canopy height is derived from LIDAR data.
 Study area encompasses a two-mile radius and includes 8,042 acres.
 Existing conditions field verified by APT on May 20, 2022
 Base Map Source: 2019 Aerial Photograph (CTECO)
 Map Date: May 2022

Legend

- Facility Location
- Study Area (2-Mile Radius)
- Year-Round Visibility 120' AGL and 140' AGL (151 Acres; +/- 139 acres occurs over open water and associated tidal marsh areas)
- Additional Year-Round Visibility 140' AGL (113 Acres; +/- 109 acres occurs over open water and associated tidal marsh areas)
- Areas of Potential Seasonal Visibility - 120' AGL and/or 140' AGL (122 Acres)
- Not Visible
- Visible
- Municipal Boundary
- Trail
- Scenic Highway
- DEEP Boat Launches
- Municipal and Private Open Space Property
- State Forest/Park
- Protected Open Space Property**
- Federal
- Land Trust
- Municipal
- Private
- State

Data Sources:

Physical Geography / Background Data
 A digital surface model (DSM) was created from the State of Connecticut 2016 LIDAR LAS data points. The DSM captures the natural and built features on the Earth's surface.

Municipal Open Space, State Recreation Areas, Trails, County Recreation Areas, and Town Boundary data obtained from CT DEEP. Scenic Roads: CTDOT State Scenic Highways (2015); Municipal Scenic Roads (compiled by APT)

Dedicated Open Space & Recreation Areas
 Connecticut Department of Energy and Environmental Protection (DEEP): DEEP Property (May 2007); Federal Open Space (1997); Municipal and Private Open Space (1997); DEEP Boat Launches (1994)

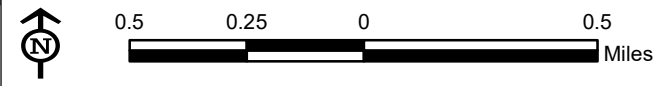
Connecticut Forest & Parks Association, Connecticut Walk Books East & West

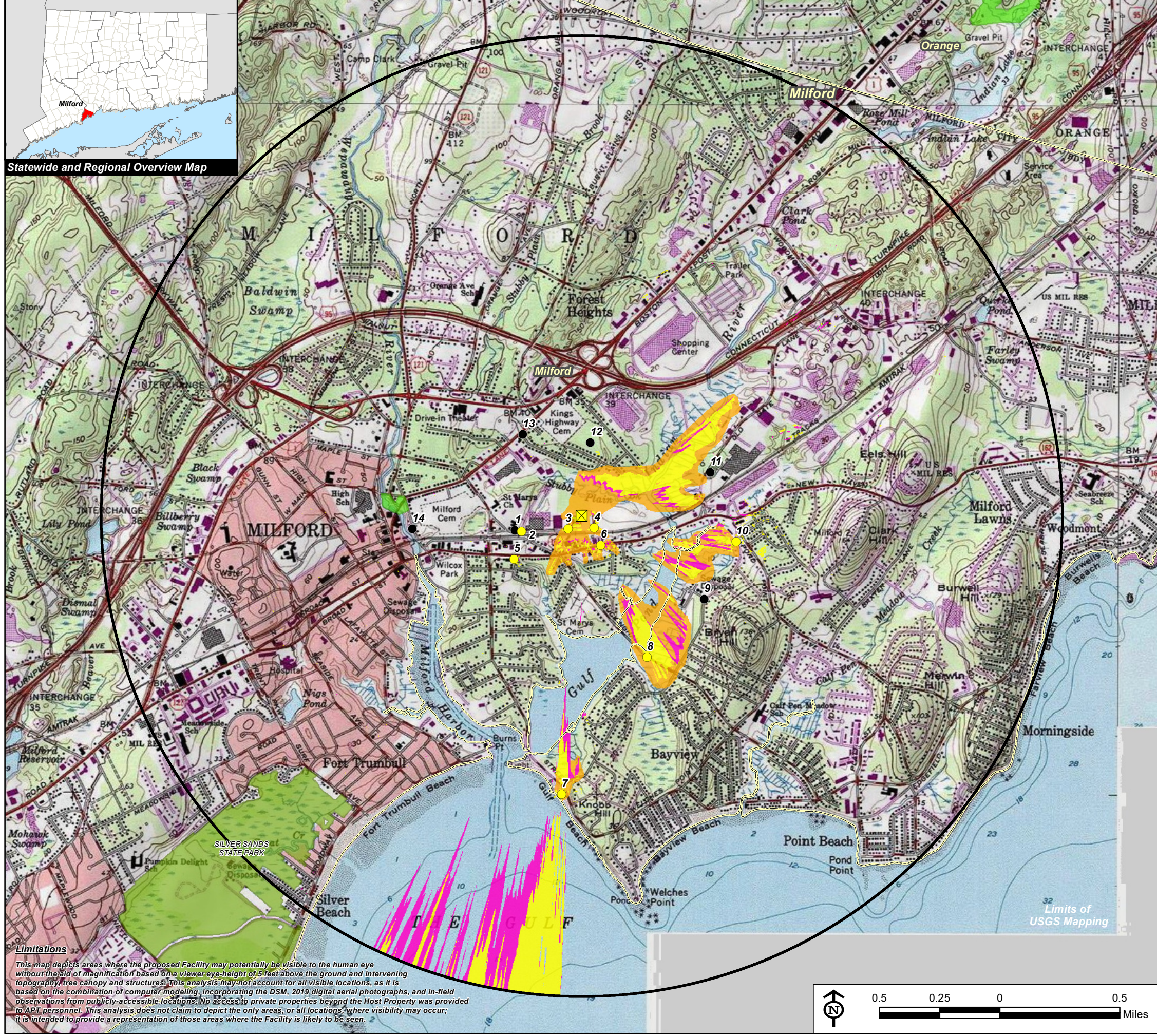
Other
 CTDOT Scenic Strips (based on Department of Transportation data)

Notes

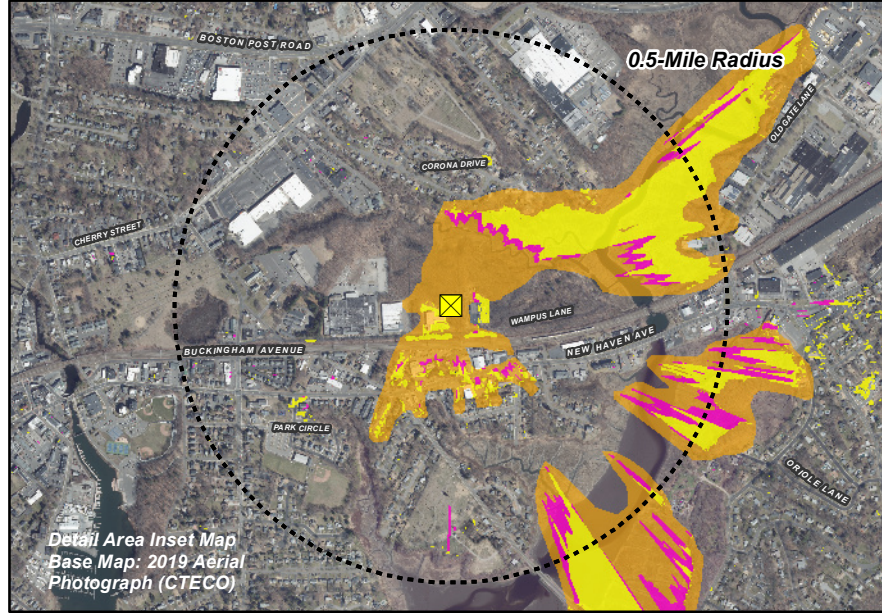
**Not all the sources listed above appear on the Viewshed Maps. Only those features within the scale of the graphic are shown.

Limitations
 This map depicts areas where the proposed Facility may potentially be visible to the human eye without the aid of magnification based on a viewer eye-height of 5 feet above the ground and intervening topography, tree canopy and structures. This analysis may not account for all visible locations, as it is based on the combination of computer modeling, incorporating the DSM, 2019 digital aerial photographs, and in-field observations from publicly-accessible locations. No access to private properties beyond the Host Property was provided to APT personnel. This analysis does not claim to depict the only areas, or all locations, where visibility may occur; it is intended to provide a representation of those areas where the Facility is likely to be seen.





Statewide and Regional Overview Map



Detail Area Inset Map
Base Map: 2019 Aerial Photograph (CTECO)

Comparative Viewshed Analysis Map

Proposed Wireless Telecommunications Facility Extension
CT1231 - Milford Wampus Lane
160 Wampus Lane
Milford, Connecticut

Existing facility height is 120 feet AGL; Proposed facility height is 140 feet AGL.
Forest canopy height is derived from LIDAR data.
Study area encompasses a two-mile radius and includes 8,042 acres.
Existing conditions field verified by APT on May 20, 2022
Base Map Source: USGS 7.5 Minute Topographic Quadrangle Maps, Ansonia, CT (1984), Milford, CT (1984), New Haven, CT (1984) and Woodmont, CT (1976)
Map Date: May 2022

Legend

- Facility Location
- Study Area (2-Mile Radius)
- Year-Round Visibility 120' AGL and 140' AGL (151 Acres; +/- 139 acres occurs over open water and associated tidal marsh areas)
- Additional Year-Round Visibility 140' AGL (113 Acres; +/- 109 acres occurs over open water and associated tidal marsh areas)
- Areas of Potential Seasonal Visibility - 120' AGL and/or 140' AGL (122 Acres)
- Not Visible
- Visible
- Municipal Boundary
- Trail
- Scenic Highway
- DEEP Boat Launches
- Municipal and Private Open Space Property
- State Forest/Park
- Protected Open Space Property**
- Federal
- Land Trust
- Municipal
- Private
- State

Data Sources:

Physical Geography / Background Data
A digital surface model (DSM) was created from the State of Connecticut 2016 LIDAR LAS data points. The DSM captures the natural and built features on the Earth's surface.

Municipal Open Space, State Recreation Areas, Trails, County Recreation Areas, and Town Boundary data obtained from CT DEEP. Scenic Roads: CTDOT State Scenic Highways (2015); Municipal Scenic Roads (compiled by APT)

Dedicated Open Space & Recreation Areas
Connecticut Department of Energy and Environmental Protection (DEEP): DEEP Property (May 2007); Federal Open Space (1997); Municipal and Private Open Space (1997); DEEP Boat Launches (1994)

Connecticut Forest & Parks Association, Connecticut Walk Books East & West

Other

CTDOT Scenic Strips (based on Department of Transportation data)

Notes

**Not all the sources listed above appear on the Viewshed Maps. Only those features within the scale of the graphic are shown.

Limitations
This map depicts areas where the proposed Facility may potentially be visible to the human eye without the aid of magnification based on a viewer eye-height of 5 feet above the ground and intervening topography, tree canopy and structures. This analysis may not account for all visible locations, as it is based on the combination of computer modeling, incorporating the DSM, 2019 digital aerial photographs, and in-field observations from publicly-accessible locations. No access to private properties beyond the Host Property was provided to APT personnel. This analysis does not claim to depict the only areas, or all locations, where visibility may occur; it is intended to provide a representation of those areas where the Facility is likely to be seen.



ATTACHMENT 7



AVIAN RESOURCES EVALUATION

March 31, 2022

SAI Communications
12 Industrial Way
Salem, NH 03079

Re: Proposed CT1231 Milford Wampus Facility
160 Wampus Lane, Milford, Connecticut
APT Job No.: CT1931760

On behalf of SAI Communications ("SAI"), All-Points Technology Corporation, P.C. ("APT") performed an evaluation with respect to possible affect to migratory birds from the proposed activity.

AT&T proposes to modify and existing monopole tower telecommunications facility at 160 Wampus Lane in Milford, Connecticut (the "Site" or "host Property"). The proposed undertaking consists of extending an existing 120-foot-tall monopole tower to 140 feet, adding a walk-in cabinet and 15 kW diesel generator (the "Facility"). The Site is an approximately 2.41-acre parcel that is developed with an industrial building and the existing tower.

The purpose of this evaluation is to document the proposed Facility's proximity to avian resource areas and its compliance with recommended guidelines of the United States Fish and Wildlife Service ("USFWS") for minimizing the potential for telecommunications towers to impact bird species. It is not definitively understood why direct and indirect bird mortality occurs around towers, but evidence suggests that night-migrating songbirds are either attracted to or disoriented by tower obstruction warning lighting systems, especially during overcast (i.e., low cloud ceiling), foggy, or other low visibility conditions. Additionally, birds moving across the landscape at night can collide with communication tower guy wires when they are placed in high bird movement areas. Tower height also appears to have a relationship to bird collisions with towers greater than 199 feet above ground level that can intercept the average bird flight height. Towers less than 200 feet provides sufficient airspace between the top of the tower and average bird flight height, even in weather conditions with reduced cloud ceiling. The proposed Facility consists of a 140-foot tall monopile (20-foot extension to an existing 120-foot tall monopole tower), is unlit and does not contain guy wires.

APT reviewed several publicly-available sources of avian data for the state of Connecticut to provide the following information with respect to potential impacts on migratory birds associated with the proposed development. This desktop analysis and attached graphics identify avian resources and their proximities to the host Property. Information within an approximate 3-mile radius of the host Property is graphically depicted on the attached Avian Resources Map. Some of the avian data referenced herein are not located in proximity to the host Property and are therefore not visible on the referenced map due to its scale. However, in those cases the distances separating the host Property from the resources are identified in the discussions below.

Proximity to Important Bird Areas

The National Audubon Society has identified 27 Important Bird Areas (“IBAs”) in the state of Connecticut. IBAs are sites that provide essential habitat for breeding, wintering, and/or migrating birds. To achieve this designation, an IBA must support species of conservation concern, restricted-range species, species vulnerable due to concentration in one general habitat type or biome, or species vulnerable due to their occurrence at high densities as a result of their congregatory behavior¹. The closest IBA to the host Property is Silver Sands State Park and Charles Island in Milford located approximately 1.5 miles to the southwest. Silver Sands is a recently improved state park comprised of woodland edge, grassland, beach, and restored salt marsh and dune areas. This site is a very important area for both wintering and nesting birds as it provides nesting areas that are relatively isolated from human interference. The marsh and intertidal habitats of the area provide foraging areas for migrant shorebirds.

Due to its distance from the Site and considering this is a collocation with a 20-foot extension off the existing 120-foot tower with no expansion of the existing fenced compound, this IBA would not experience an adverse impact resulting from the proposed action.

Supporting Migratory Bird Data

Beyond Audubon’s IBAs, the following analysis and attached graphics also identify several additional avian resources and their proximities to the host Property. Although these data sources may not represent habitat indicative of important bird areas, they may indicate possible bird concentrations² or migratory pathways.

Critical Habitat

Connecticut Critical Habitats depict the classification and distribution of 25 rare and specialized wildlife habitats in the state. It represents a compilation of ecological information collected over many years by state agencies, conservation organizations and individuals. Critical habitats range in size from areas less than one acre to areas that are tens of acres in extent. The Connecticut Critical Habitats information can serve to highlight ecologically significant areas and to target areas of species diversity for land conservation and protection but may not necessarily be indicative of habitat for bird species. The nearest Critical Habitat to the proposed Facility is an eustuarine intertidal marsh area associated with Stubby Plain Brook located approximately 0.10 mile to the north. Based on the pre-existing nature of this monopole tower and the proposed collocation activities will not expand the existing fenced compound, no adverse impacts are anticipated to this nearby Critical Habitat.

Avian Survey Routes and Points

Breeding Bird Survey Route

The North American Breeding Bird Survey is a cooperative effort between various agencies and volunteer groups to monitor the status and trends of North American bird populations. Routes are randomly located to sample habitats that are representative of an entire region and do not necessarily represent concentrations of avifauna or identification of critical avian habitats. Each year during the height of the avian breeding season (June for most of the United States) participants skilled in avian identification collect

¹ http://web4.audubon.org/bird/iba/iba_intro.html

² “bird concentrations” is related to the USFWS *Revised Voluntary Guidelines for communication Tower Design, Siting, Construction, Operation, Retrofitting, and Decommissioning* (September 27, 2013) analysis provided at the end of this document

bird population data along roadside survey routes. Each survey route is approximately 24.5 miles long and contains 50 stops located at 0.5-mile intervals. At each stop, a three-minute count is conducted. During each count, every bird seen or heard within a 0.25-mile radius is recorded. The resulting data is used by conservation managers, scientists, and the general public to estimate population trends and relative abundances and to assess bird conservation priorities.

The nearest survey route to the host Property is the Long Hill Breeding Bird Survey Route (Route #18013) located approximately 10.8 miles to the northwest. This ±25-mile long bird survey route begins on the Easton/Trumbull town line and generally winds its way north through Monroe, Newtown, and Southbury before terminating in Roxbury. Since bird survey routes represent randomly selected data collection areas, they do not necessarily represent a potential restriction to development projects, including the proposed Facility.

Hawk Watch Site

The Hawk Migration Association of North America ("HMANA") is a membership-based organization committed to the conservation of raptors through the scientific study, enjoyment and appreciation of raptor migration. HMANA collects hawk count data from almost 200 affiliated raptor monitoring sites throughout the United States, Canada and Mexico, identified as "Hawk Watch Sites." In Connecticut, Hawk Watch Sites are typically situated on prominent hills and mountains that tend to concentrate migrating raptors. The nearest Hawk Watch Site, Boothe Memorial Park, is located in Stratford, approximately 3.6 miles to the northwest of the proposed Facility. Based on the distance separating this possible raptor migratory route from the proposed Facility, no adverse impacts are anticipated.

Most hawks migrate during the day (diurnal) to take advantage of two theorized benefits: (1) diurnal migration allows for the use of updrafts or rising columns of air called thermals to gain lift without flapping thereby reducing energy loss; and, (2) day migrants can search for prey and forage as they migrate.

Based on the distance separating the existing Facility from the Booth Memorial Park Hawk Watch Site and hawk migration behavior occurring during the daytime under favorable weather conditions when thermals form, no adverse impacts to migrating hawks are anticipated from the proposed 20-foot extension to the existing tower.

Bald Eagle Survey Route

Bald Eagle Survey Routes consist of locations of midwinter Bald Eagle counts from 1986 to 2005 with an update provided in 2008. This survey was initiated in 1979 by the National Wildlife Federation. This database includes information on statewide, regional and national trends. Survey routes are included in the database only if they were surveyed consistently in at least four years and where at least four eagles were counted in a single year. The nearest Bald Eagle Survey Route is the Housatonic River Survey Route Number 2 located in the towns of Milford and Stratford along the Housatonic River approximately 3.5 miles west of the host Property.

Bald eagle migration patterns are complex, dependent on age of the individual, climate (particularly during the winter) and availability of food.³ Adult birds typically migrate alone and generally as needed when food becomes unavailable, although concentrations of migrants can occur at communal feeding and roost sites. Migration typically occurs during the middle of day (10:30–17:00) as thermals provide for opportunities to soar up with limited energetic expense; Bald Eagle migration altitudes are estimated to average 1,500–3,050 m by ground observers.⁴ Four adults tracked by fixed-wing aircraft in Montana averaged 98 km/d during spring migration and migrated at 200–600 m above ground (McClelland et al. 1996).⁵

The USFWS's *National Bald Eagle Management Guidelines* (May 2007) recommends a 660-foot buffer to bald eagle nests if the activity will be visible from the nest with an additional management practice recommendation of retaining mature trees and old growth stands, particularly within 0.5 mile from water. APT is not aware of any known bald eagle nests in the vicinity of the host Property.

Therefore, no adverse impacts to migrating Bald Eagle are anticipated with proposed modifications to the existing Facility. This conclusion is based on the short 140-foot height of the extended Facility, eagle migration patterns during the daytime under favorable weather conditions when thermals form and compliance with USFWS bald eagle management guidelines.

Flyways

The host Property is located in New Haven County, approximately 0.7 mile north of Long Island Sound. The Connecticut coast lies within the Atlantic Flyway, which includes the host Property, one of four generally recognized regional primary migratory bird flyways (Mississippi, Central and Pacific being the others). This regional flyway is used by migratory birds travelling to and from summering and wintering grounds. The Atlantic Flyway is particularly important for many species of migratory waterfowl and shorebirds, and Connecticut's coast serves as vital stopover habitat. Migratory land birds also stop along coastal habitats before making their way inland. Smaller inland migratory flyways ("secondary flyways") are often concentrated along major riparian areas as birds use these valuable stopover habitats to rest and refuel as they make their way further inland to their preferred breeding habitats. The Connecticut Migratory Bird Stopover Habitat Project (Stokowski, 2002)⁶ identified potential flyways along the Housatonic, Naugatuck, Thames, and Connecticut Rivers. This study paralleled a similar earlier study conducted by the Silvio O. Conte National Fish & Wildlife Refuge (Neotropical Migrant Bird Stopover Habitat Survey⁷), which consisted of collection of migratory bird data along the Connecticut River and the following major Connecticut River tributaries: Farmington, Hockanum, Scantic, Park, Mattabeset, Salmon, and Eight Mile Rivers. Of these potential flyways, the nearest to the host Property is the Housatonic River, located approximately 3.4 miles to the west. The Indian River riparian corridor, located 0.30 miles northeast of the proposed Facility, is not identified as a potential flyway but potentially forms a secondary flyway as birds move northward from the Housatonic River corridor during the spring migration. These major

³ Buehler, David A. 2000. Bald Eagle (*Haliaeetus leucocephalus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/506> [Accessed 09/09/13].

⁴ Harmata, A. R. 1984. Bald Eagles of the San Luis valley, Colorado: their winter ecology and spring migration. Ph.D. Thesis. Montana State Univ. Bozeman.

⁵ McClelland, B. R., P. T. McClelland, R. E. Yates, E. L. Caton, and M. E. McFadden. 1996. Fledging and migration of juvenile Bald Eagles from Glacier National Park, Montana. *J. Raptor Res.* 30:79-89.

⁶ Stokowski, J.T. 2002. Migratory Bird Stopover Habitat Project Finishes First Year. *Connecticut Wildlife*, November/December 2002. P.4.

⁷ The Silvio O. Conte National Fish & Wildlife Refuge Neotropical Migrant Bird Stopover Habitat Survey <http://www.science.smith.edu/stopoverbirds/index.html>

riparian corridors may provide secondary flyways as they likely offer more food and protection than more exposed upland sites, particularly during the spring migration⁸.

Siting of tower structures within flyways can be a concern, particularly for tall towers and even more particularly for tall towers with guy wires and lighting. The majority of studies on bird mortality due to towers focuses on very tall towers (greater than 1000 feet), illuminated with non-flashing lights, and guyed. These types of towers, particularly if sited in major migratory pathways, do result in significant bird mortality (Manville, 2005)⁹. Neither the existing Facility nor the proposed extended Facility this type of tower, being an unlit, unguyed monopole structure with the extension resulting in only 140 feet in height. More recent studies of short communication towers (<300 feet) reveal that they rarely kill migratory birds¹⁰. Studies of mean flight altitude of migrating birds reveal flight altitudes of 410 meters (1350 feet), with flight altitudes on nights with bad weather between 200 and 300 meters above ground level (656 to 984 feet)¹¹.

No adverse impacts to migrating bird species are anticipated with the proposed modifications to the existing Facility, based on its design (unlit and unguyed) and relatively short 140-foot height, and since it only consists of a 20-foot extension off the existing 120-foot tall tower.

Waterfowl Focus Areas

The Atlantic Coast Joint Venture ("ACJV") is an affiliation of federal, state, regional and local partners working together to address bird conservation planning along the Atlantic Flyway. The ACJV has identified waterfowl focus areas recognizing the most important habitats for waterfowl along the Atlantic Flyway. Connecticut contains several of these waterfowl focus areas. The nearest waterfowl focus area to the host Property is the New Haven Harbor area, located approximately 2.6 miles to the east. Please refer to the attached Connecticut Waterfowl Focus Areas Map. Based on the distance of this waterfowl focus area to the host Property, no impact to migratory waterfowl would result from collocation activities at the existing tower Facility

CTDEEP Migratory Waterfowl Data

The Connecticut Department of Energy and Environmental Protection ("CTDEEP") created a Geographic Information System ("GIS") data layer in 1999 identifying concentration areas of migratory waterfowl at specific locations in Connecticut. The intent of this data layer is to assist in the identification of migratory waterfowl resource areas in the event of an oil spill or other condition that might be a threat to waterfowl species. This data layer identifies conditions at a particular point in time and has not been updated since 1999.

The nearest migratory waterfowl area, the Gulf Pond in Milford, is located approximately 0.4 mile to the southeast of the host Property. The associated species are identified as American black duck, Canada goose,

⁸ The Silvio O. Conte National Fish & Wildlife Refuge Neotropical Migrant Bird Stopover Habitat Survey. http://www.science.smith.edu/stopoverbirds/Chapter5_Conclusions&Recommendations.html

⁹ Manville, A.M. II. 2005. Bird strikes and electrocutions at power lines, communications towers, and wind turbines: state of the art and state of the science - next steps toward mitigation. Bird Conservation Implementation in the Americas: Proceedings 3rd International Partners in Flight Conference 2002. C.J. Ralph and T.D. Rich, editors. USDA Forest Service General Technical Report PSW-GTR-191. Pacific Southwest Research Station, Albany CA. pp. 1-51-1064.

¹⁰ Kerlinger, P. 2000. Avian Mortality at Communication Towers: A Review of Recent Literature, Research, and Methodology. Prepared for U.S. Fish and Wildlife Service Office of Migratory Bird Management.

¹¹ Mabee, T.J., B.A. Cooper, J.H. Plissner, D.P. Young. 2006. Nocturnal bird migration over an Appalachian ridge at a proposed wind power project. *Wildlife Society Bulletin* 34:682-690.

canvasback and green wing teal. Potential impacts to this migratory waterfowl area are mitigated by the proposed Facility's short (140-foot) height and the fact that it would be unlit and unguyed.

CTDEEP Natural Diversity Data Base

CTDEEP's Natural Diversity Data Base ("NDDB") program performs hundreds of environmental reviews each year to determine the impact of proposed development projects on state listed species and to help landowners conserve the state's biodiversity. State agencies are required to ensure that any activity authorized, funded or performed by a state agency does not threaten the continued existence of endangered or threatened species. Maps have been developed to serve as a pre-screening tool to help applicants determine if there is a potential impact to state listed species.

The NDDB maps represent approximate locations of endangered, threatened and special concern species and significant natural communities in Connecticut. The locations of species and natural communities depicted on the maps are based on data collected over the years by CTDEEP staff, scientists, conservation groups, and landowners. In some cases an occurrence represents a location derived from literature, museum records and/or specimens. These data are compiled and maintained in the NDDB. The general locations of species and communities are symbolized as shaded areas on the maps. Exact locations have been masked to protect sensitive species from collection and disturbance and to protect landowner's rights whenever species occur on private property.

The nearest NDDB buffer area is ±0.13 mile northeast of the Site. Since the Facility is not located within a NDDB buffer area, consultation with DEEP is not required in accordance with their review policy or the Connecticut Siting Council's NDDB review policy.

Based on these factors, the proposed modifications to the existing Facility are not anticipated to adversely impact any federal or state threatened, endangered or species of special concern.

USFWS Communications Towers Compliance

In 2021, the USFWS prepared its *Recommended Best Practices for Communication Tower Design, Siting, Construction, Operation, Maintenance, and Decommissioning*¹² for tower construction and operation. These voluntary guidelines are designed to assist tower companies in developing their communication systems in a way which minimizes the risk to migratory birds. APT offers the following responses to each of the USFWS recommendations which are abridged from the original document for brevity.

1. Contact with USFWS Field Office. Communicate project plans to nearest USFWS Field Office.

The USFWS New England Field Office has been contacted to determine what review process has been developed for the receipt of communication project plans. A response has not been received to date.

¹² Migratory Bird Program, U.S. Fish and Wildlife Service. March 2021. Recommended Best Practices for Communication Tower Design, Siting, Construction, Operation, Maintenance, and Decommissioning. These recommendations replace all previous recommendations for communication tower construction and operation. These recommendations have been modified and updated from previous versions to incorporate the state of the science and the 2020 Federal Aviation Administration *Obstruction Marking and Lighting Advisory Circular AC 70/7460-1M*.

2. *Co-location. Co-locate communications equipment on existing communication towers or other structures (e.g., billboard, water and transmission tower, distribution pole, or building mounts). This recommendation is intended to reduce the number of towers across the landscape.*

The proposed Facility satisfies this recommendation by collocating on an existing tower, requiring only a 20-foot extension to achieve the required radio frequency ("RF") coverage objectives of AT&T.

3. *Placement. All new towers should be sited to minimize environmental impacts to the maximum extent practicable.*

- a. *Place new towers within existing "antenna farms" (i.e., clusters of towers) when possible.*

With this project consisting of collocation on an existing tower, no new tower is proposed.

- b. *Select already degraded areas for tower placement.*

This Site is already developed with an existing telecommunications facility. All work will occur on the existing tower and within the existing fenced compound.

- c. *Towers should not be sited in or near wetlands, other known bird concentration areas (e.g., state or federal refuges, staging areas, rookeries, and Important Bird Areas), or in known migratory bird movement routes, daily movement flyways, areas of breeding concentration, in habitat of threatened or endangered species, key habitats for Birds of Conservation Concern or near the breeding areas ("leks") of prairie grouse.*

The Facility is not within wetlands, a known bird concentration area, migratory or daily movement flyway, or habitat of avian threatened/endangered species.

- d. *Towers should avoid ridgelines, coastal areas, wetlands or other known bird concentration areas.*

The Facility is not located near ridgelines. Although located in proximity to coastal areas including coastal wetlands, which could contain concentration of birds, this is an existing tower facility.

- e. *Towers and associated facilities should be designed, sited, and constructed so as to avoid or minimize habitat loss within and adjacent to the tower "footprint". In addition, several shorter, un-guyed towers may be preferable to one, tall guyed, lit tower.*

The proposed modifications would stay within the footprint of the existing telecommunications facility compound. The proposed Facility would consist of a 20-foot extension on the existing 120-foot tall monopole tower, which requires neither guy wires nor lighting and is therefore consistent with USFWS' environmentally preferred "gold standard".

4. *Construction. During construction, the following considerations can reduce the risk of take of birds:*

- a. *Schedule all vegetation removal and maintenance (e.g., general landscaping activities, trimming, grubbing) activities outside of the peak bird breeding season to reduce the risk of bird take.*

No tree or vegetation clearing is required for this project, as all proposed work is within the existing fenced compound surrounding the existing tower.

b. *When vegetation removal activities cannot avoid the bird breeding season, conduct nest clearance surveys:*

Not applicable. No tree or vegetation clearing is required for this collocation project.

c. *Prevent the introduction of invasive plants during construction to minimize vegetation community degradation by:*

No soil disturbance outside of the existing fenced compound is proposed. Therefore, there is little risk of introduction of invasive plants associated with this collocation project.

5. *Tower Design. Tower design should consider the following attributes:*

a. *Tower Height. It is recommended that new towers should be not more than 199 ft. above ground level (AGL).*

The proposed project does not involve construction of a new tower. Extension of the existing tower from 120 feet to 140 feet satisfies this maximum height recommendation.

b. *Guy Wires. We recommend using free standing towers such as lattice towers or monopole structures.*

The facility satisfies this recommendation with a pre-existing self-supporting monopole structure that will be receiving a 20-foot increase in height.

c. *Lights are a primary source of bird aggregation around towers, thus minimizing all light is recommended. No tower lighting is the preferred option if Federal Aviation Administration (FAA) regulations and lighting standards (FAA 2015, 2020, Patterson 2012) permit.*

The facility will not contain tower lighting.

Operation and Maintenance of All Towers

6. *We recommend that existing infrastructure be unlit, when allowed by FAA regulations. If associated buildings require security or operational lighting, minimize light trespass using motion sensors and down-shielding with minimum intensity light.*

Equipment within the compound requires security lighting, which will be set on motion sensors, down-shielded and minimum intensity lighting.

7. *Schedule all vegetation removal and maintenance (e.g., general landscaping activities, trimming, grubbing, etc.) activities outside of the peak bird breeding season to reduce the risk of bird take. When vegetation removal activities cannot avoid the bird breeding season, conduct nest clearance surveys.*

There is no tree or vegetation clearing proposed for this Facility due to the structure being pre-existing. Therefore, restricting this minimal vegetation maintenance work to outside the peak bird breeding season is not necessary.

8. *Birds Nesting on Towers: If birds are nesting on communication towers that require maintenance activities, contact the state natural resource protection agency and/or the USFWS for permits, recommendations, and requirements.*

Following construction of the Facility, if tower maintenance activities encounter bird nests, CTDEEP Wildlife Division and USFWS will be contacted.

9. *Representatives from the USFWS or researchers should be allowed access to the site to evaluate bird use, conduct dead-bird searches, and conduct other research, as necessary.*

AT&T agrees, upon advance notice from USFWS, to allow agency representatives access to the Facility.

Summary and Conclusions

Based on the results of this desk-top evaluation, no migratory bird species are anticipated to be impacted by AT&T's proposed development. The proposed Facility is not proximate to an Important Bird Area and would comply with the USFWS guidelines for minimizing the potential impacts to bird species.

Figures

- Avian Resources Map
- Connecticut Waterfowl Focus Areas Map



Avian Resources Map

Proposed Extension to an Existing Wireless Telecommunications Facility
 Milford Wampus Lane
 160 Wampus Lane
 Milford, Connecticut

Legend

- Facility Location
- Bald Eagle Site*
- Hawk Watch Site
- Important Bird Site
- Important Bird Area
- Bald Eagle Survey Route
- Breeding Bird Survey Route*
- Migratory Waterfowl (CTDEEP, 2019)
- Protected Open Space (CTDEEP, 2011)
- Federal Open Space (CTDEEP, 2004)
- CT DEP Property (CT DEEP, 12/2010)
- State Forest
- State Park
- DEP Owned Waterbody*
- State Park Scenic Reserve*
- Historic Preserve*
- Natural Area Preserve*
- Fish Hatchery*
- Flood Control*
- State Park Trail*
- Water Access
- Wildlife Area
- Wildlife Sanctuary*
- Other
- Open Water
- Town Boundary
- State Boundary

*Waves within mapped extents
 Avian Source Information:
 Bald Eagle Sites: U.S. Geological Survey, National Biological Information Infrastructure, 2008. Midwestern Bald Eagle Counts, 1966-2005 (update 2009).
 Hawk Watch Sites: Hawk Migration Association of North America (HMANA), Hawk Count website: <http://hawkcount.org>
<http://www.fisheries.gov> & <http://www.ct.gov>
 Migratory Waterfowl: CTDEEP GIS, 2019
 Important Bird Sites/Areas: National Audubon Society, Audubon Connecticut
<http://ct.audubon.org/index.cfm>, IBA.html
 Breeding Bird Survey Routes: Palawan Wildlife Research Center of the U.S. Geological Survey and the Canadian Wildlife Service's National Wildlife Research Centre
<http://www.nationalatlas.gov/midbrs.html>

Base Map Source: ESRI Shaded Relief
 Map Date: March 2022





Legend

- Facility Location
- Waterfowl Planning Area**
- Upper Thames River
- Waterfowl Focus Areas**
- Connecticut River and Tidal Wetlands Complex
- Norwalk Islands
- Fishers Island Sound Complex
- Greater Hammonasset Complex
- Lower Housatonic River - Great Meadows
- Lower Thames River System
- New Haven Harbor

Connecticut Waterfowl Focus Areas Map

Proposed Extension to an Existing Wireless Telecommunications Facility
 Milford Wampus Lane
 160 Wampus Lane
 Milford, Connecticut





USFWS & NDDB COMPLIANCE

May 11, 2022

SAI Communications
12 Industrial Way
Salem, NH 03079

Re: CT1231 Milford Wampus: 160 Wampus Lane, Milford, Connecticut
APT Job No: CT1931760

On behalf of SAI Communications ("SAI"), All-Points Technology Corporation, P.C. ("APT") performed an evaluation with respect to possible federally- and state-listed, threatened, endangered or special concern species in order to determine if the proposed referenced telecommunications facility ("Facility") would result in a potential adverse effect to listed species.

The Facility consists of an existing 120' tall monopole tower (the "existing tower") and an associated fenced compound at 160 Wampus Lane, Milford, Connecticut ("Subject Property"). AT&T is proposing to extend the existing tower by 20', bringing the top of the modified monopole to a height of $\pm 140'$ above ground level ("AGL"). AT&T would install 12 panel antennas (four per sector), 12 remote radio heads ("RRHs"), and two (2) surge arrestors on a new frame at an approximate centerline height of 136' AGL. A 6'-8" by 6'-8" walk-in cabinet and a 15kW diesel fueled emergency backup generator would be installed within the existing fenced compound on new concrete pads.

USFWS

The federal rare species consultation was completed in accordance with Federal Communications Commission ("FCC") rules implementing the National Environmental Policy Act ("NEPA") and Section 7 of the Endangered Species Act through the U.S. Fish and Wildlife Service's ("USFWS") Information, Planning, and Conservation System ("IPaC"). Based on the results of the IPaC review, two federally-listed¹ threatened species are known to occur in the vicinity of the Subject Property documented as Northern Long-eared Bat ("NLEB"; *Myotis septentrionalis*) and Red Knot (*Calidris canutus rufa*); please refer to the attached IPaC review. As a result of this preliminary finding, APT performed an evaluation to determine if the proposed referenced collocation activities at the existing Facility would result in a likely adverse effect to NLEB and Red Knot.

Northern Long-eared Bat

The proposed Facility would be located in an already constructed telecommunications facility and would not require any tree or vegetation clearing. Consultation with the Connecticut Department of Energy & Environmental Protection ("CTDEEP") Wildlife Division Natural Diversity Data Base ("NDDB") revealed that the proposed Facility is not within 150 feet of a known occupied NLEB maternity roost tree and is

¹ Listing under the federal Endangered Species Act

not within 0.25 mile of a known NLEB hibernaculum. The nearest NLEB habitat resource to the proposed Facility is located ±16.4 miles to the northeast in North Branford.

APT submitted the effects determination using the NLEB key within the IPaC system for the proposed Facility (the "Action"). This IPaC key assists users in determining whether a Federal action is consistent with the activities analyzed in the USFWS's January 5, 2016, intra-Service Programmatic Biological Opinion ("PBO") on the Final 4(d) Rule for the NLEB for Section 7(a)(2) compliance.

Based upon the IPaC submission, the Action is consistent with activities analyzed in the PBO; please refer to the enclosed March 16, 2022 USFWS letter. The Action may affect NLEB; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). If the USFWS does not respond within 30 days from the date of the letter (April 16, 2022), one may presume that the IPaC-assisted determination was correct and that the PBO satisfies and concludes SAI-AT&T's responsibilities for this Action under ESA Section 7(a)(2) with respect to NLEB. No response was received from USFWS; therefore, the Action complies with ESA Section 7(a)(2) with respect to NLEB.

In addition, SAI-AT&T would consider the following USFWS voluntary conservation measures for NLEB conservation, as encouraged in the April 29, 2016 FCC Public Notice², where appropriate and as the project schedule allows, to reduce the potential for impact to NLEB.

- Conduct tree removal activities outside of the NLEB pup season (June 1-July 31) and active season (April 1-October 31) to minimize impacts to pups at roosts not yet identified. *Not applicable: no tree removal will occur.*
- Avoid clearing suitable spring staging and fall swarming habitat within a five-mile radius of known or assumed NLEB hibernacula during the staging and swarming seasons (April 1-May 15 and August 15-November 14, respectively). *Not applicable: site is located > 5 miles from the nearest hibernacula.*
- Maintain dead trees (snags) and large trees when possible. *Not applicable: no tree removal will occur.*
- Use herbicides and pesticides only if unavoidable. If necessary, spot treatment is preferred over aerial application.
- Minimize exterior lighting, opting for down-shielded, motion-sensor security lights instead of constant illumination.

Red Knot

A Biological Assessment was performed for Red Knot through the IPaC system. The Red Knot is a shorebird typically found along the Connecticut coastline during northbound and southbound migration. These birds spend most of their time foraging along the waterline within the intertidal zone. Not known to occur at inland locations, Red Knots can be found on Connecticut's barrier beaches from mid-April to the end of May, and then again from July through mid-September³. Sometimes non-breeding individuals may linger along Connecticut barrier beaches between migratory periods, and late individuals may pass through on southbound migration well into November.

² Federal Communications Commission. *Tower Construction Guidance for Protection of Northern Long-Eared Bat Under the Endangered Species Act*. Public Notice DA 16-476. April 29, 2016.

³ Connecticut Audubon Society Bird Finder for May 23: Red Knot - <http://www.ctaudubon.org/2014/05/connecticut-audubon-society-bird-finder-for-may-23-red-knot/#sthash.oT1QBhV3.dpuf>

Coastal habitats used by Red Knot in migration and wintering areas are similar in character, generally coastal marine and estuarine (partially enclosed tidal area where fresh and saltwater mixes) habitats with large areas of exposed intertidal sediments⁴. Migration and wintering habitats include both high-energy ocean- or bay-front areas, as well as tidal flats in more sheltered bays and lagoons. Preferred wintering and migration microhabitats are muddy or sandy coastal areas, specifically, the mouths of bays and estuaries, unimproved tidal inlets and tidal flats. In many wintering and stopover areas, quality high-tide roosting habitat (i.e., close to feeding areas, protected from predators, with sufficient space during the highest tides, free from excessive human disturbance) is limited.

The proposed Project action area is located within an existing cleared, developed and disturbed telecommunications tower and compound located on an existing industrial developed parcel. The tower and compound are surrounded by forested uplands. The nearest coastline habitat potentially supporting Red Knot habitat is the mouth of Indian River and its confluence with Gulf Pond, which includes tidal wetlands and mudflats, located ±0.36 mile southeast of the proposed Facility across the Amtrak rail line, State Route 162 and associated commercial development. Therefore, since no suitable habitat (either feeding or roosting) for Red Knot is supported within or adjacent to the Project action area, the proposed Facility would result in "No Effect" to this species and no further consultation with USFWS is required. Please refer to the attached Biological Assessment report.

NDDB

No known areas of state-listed species are currently depicted on the most recent CTDEEP NDDB Maps in the location of the proposed Facility or the Subject Property. Please refer to the enclosed NDDB Map which depicts the nearest NDDB buffer ±0.13 mile northeast of the Subject Property. Since the Subject Property is not located within a NDDB buffer area, consultation with DEEP is not required in accordance with their review policy⁵.

Therefore, the proposed Facility is not anticipated to adversely impact any federal or state threatened, endangered or special concern species.

Sincerely,
All-Points Technology Corporation, P.C.



Dean Gustafson
Senior Biologist

Enclosures

⁴ US Fish and Wildlife Service. Rufa Red Knot Background Information and Threats Assessment, Supplement to Endangered and Threatened Wildlife and Plants; Final Threatened Status for the Rufa Red Knot (*Calidris canutus rufa*). November 2014. 383 pp.

⁵ DEEP Requests for NDDB State Listed Species Reviews.

http://www.ct.gov/deep/cwp/view.asp?a=2702&q=323466&deepNav_GID=1628%20

USFWS IPaC Review



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
<http://www.fws.gov/newengland>

In Reply Refer To:
Project Code: 2022-0020477
Project Name: SAI - CT1231 Milford Wampus Lane

March 16, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

Please review this letter each time you request an Official Species List, we will continue to update it with additional information and links to websites may change.

About Official Species Lists

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Federal and non-Federal project proponents have responsibilities under the Act to consider effects on listed species.

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested by returning to an existing project's page in IPaC.

Endangered Species Act Project Review

Please visit the “**New England Field Office Endangered Species Project Review and Consultation**” website for step-by-step instructions on how to consider effects on listed

species and prepare and submit a project review package if necessary:

<https://www.fws.gov/newengland/endangeredspecies/project-review/index.html>

NOTE Please do not use the **Consultation Package Builder** tool in IPaC except in specific situations following coordination with our office. Please follow the project review guidance on our website instead and reference your **Project Code** in all correspondence.

Additional Info About Section 7 of the Act

Under section 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to determine whether projects may affect threatened and endangered species and/or designated critical habitat. If a Federal agency, or its non-Federal representative, determines that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Federal agency also may need to consider proposed species and proposed critical habitat in the consultation. 50 CFR 402.14(c)(1) specifies the information required for consultation under the Act regardless of the format of the evaluation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

In addition to consultation requirements under Section 7(a)(2) of the ESA, please note that under sections 7(a)(1) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species. Please contact NEFO if you would like more information.

Candidate species that appear on the enclosed species list have no current protections under the ESA. The species' occurrence on an official species list does not convey a requirement to consider impacts to this species as you would a proposed, threatened, or endangered species. The ESA does not provide for interagency consultations on candidate species under section 7, however, the Service recommends that all project proponents incorporate measures into projects to benefit candidate species and their habitats wherever possible.

Migratory Birds

In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see:

<https://www.fws.gov/birds/policies-and-regulations.php>

Please feel free to contact us at newengland@fws.gov with your **Project Code** in the subject line if you need more information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat.

Attachment(s): Official Species List

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office

70 Commercial Street, Suite 300

Concord, NH 03301-5094

(603) 223-2541

Project Summary

Project Code: 2022-0020477
Event Code: None
Project Name: SAI - CT1231 Milford Wampus Lane
Project Type: Co-location of Towers
Project Description: AT&T is proposing a 20-foot monopole extension on an existing +/-120-foot AGL tall monopole with proposed walk-in cabinets, and generator install at grade level inside an existing fenced in compound. Proposed 12 panel antennas, 12 RRH's and two surge arrestors will be installed at a height of +/-136 AGL.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@41.224904949999996,-73.04267211863784,14z>



Counties: New Haven County, Connecticut

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Red Knot <i>Calidris canutus rufa</i> There is proposed critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency: All-Points Technology Corporation, P.C.
Name: Deborah Gustafson
Address: 567 Vauxhall Street Extension
Address Line 2: Suite 311
City: Waterford
State: CT
Zip: 06235
Email: dleonardo@allpointstech.com
Phone: 8609849514

USFWS NLEB Letter



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
<http://www.fws.gov/newengland>

In Reply Refer To:
Project code: 2022-0020477
Project Name: SAI - CT1231 Milford Wampus Lane

March 16, 2022

Subject: Consistency letter for the 'SAI - CT1231 Milford Wampus Lane' project indicating that any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o).

Dear Deborah Gustafson:

The U.S. Fish and Wildlife Service (Service) received on March 16, 2022 your effects determination for the 'SAI - CT1231 Milford Wampus Lane' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. You indicated that no Federal agencies are involved in funding or authorizing this Action. This IPaC key assists users in determining whether a non-Federal action may cause "take"^[1] of the northern long-eared bat that is prohibited under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the Action is not likely to result in unauthorized take of the northern long-eared bat.

Please report to our office any changes to the information about the Action that you entered into IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation.

If your Action proceeds as described and no additional information about the Action's effects on species protected under the ESA becomes available, no further coordination with the Service is required with respect to the northern long-eared bat.

The IPaC-assisted determination for the northern long-eared bat **does not** apply to the following ESA-protected species that also may occur in your Action area:

- Monarch Butterfly *Danaus plexippus* Candidate

- Red Knot *Calidris canutus rufa* Threatened

You may coordinate with our Office to determine whether the Action may cause prohibited take of the animal species listed above.

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

SAI - CT1231 Milford Wampus Lane

2. Description

The following description was provided for the project 'SAI - CT1231 Milford Wampus Lane':

AT&T is proposing a 20-foot monopole extension on an existing +/-120-foot AGL tall monopole with proposed walk-in cabinets, and generator install at grade level inside an existing fenced in compound. Proposed 12 panel antennas, 12 RRH's and two surge arrestors will be installed at a height of +/-136 AGL.

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@41.224904949999996,-73.04267211863784,14z>

**Determination Key Result**

This non-Federal Action may affect the northern long-eared bat; however, any take of this species that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o).

Determination Key Description: Northern Long-eared Bat 4(d) Rule

This key was last updated in IPaC on **May 15, 2017**. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for non-Federal actions is to assist determinations as to whether proposed actions are excepted from take prohibitions under the northern long-eared bat 4(d) rule.

If a non-Federal action may cause prohibited take of northern long-eared bats or other ESA-listed animal species, we recommend that you coordinate with the Service.

Determination Key Result

Based upon your IPaC submission, any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o).

Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?

No

2. Will your activity purposefully **Take** northern long-eared bats?

No

3. [Semantic] Is the project action area located wholly outside the White-nose Syndrome Zone?

Automatically answered

No

4. Have you contacted the appropriate agency to determine if your project is near a known hibernaculum or maternity roost tree?

Location information for northern long-eared bat hibernacula is generally kept in state Natural Heritage Inventory databases – the availability of this data varies state-by-state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited. A web page with links to state Natural Heritage Inventory databases and other sources of information on the locations of northern long-eared bat roost trees and hibernacula is available at www.fws.gov/midwest/angered/mammals/nleb/nhisites.html.

Yes

5. Will the action affect a cave or mine where northern long-eared bats are known to hibernate (i.e., hibernaculum) or could it alter the entrance or the environment (physical or other alteration) of a hibernaculum?

No

6. Will the action involve Tree Removal?

No

Project Questionnaire

If the project includes forest conversion, report the appropriate acreages below.

Otherwise, type '0' in questions 1-3.

1. Estimated total acres of forest conversion:

0

2. If known, estimated acres of forest conversion from April 1 to October 31

0

3. If known, estimated acres of forest conversion from June 1 to July 31

0

If the project includes timber harvest, report the appropriate acreages below.

Otherwise, type '0' in questions 4-6.

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

If the project includes prescribed fire, report the appropriate acreages below.

Otherwise, type '0' in questions 7-9.

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type '0' in question 10.

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?

0

IPaC User Contact Information

Agency: All-Points Technology Corporation, P.C.
Name: Deborah Gustafson
Address: 567 Vauxhall Street Extension
Address Line 2: Suite 311
City: Waterford
State: CT
Zip: 06235
Email: dleonardo@allpointstech.com
Phone: 8609849514

Red Knot Biological Assessment Report

SAI - CT1231 Milford Wampus Lane

Biological Assessment

Prepared using IPaC

Generated by Deborah Gustafson (dleonardo@allpointstech.com)

May 11, 2022

The purpose of this Biological Assessment (BA) is to assess the effects of the proposed project and determine whether the project may affect any Federally threatened, endangered, proposed or candidate species. This BA is prepared in accordance with legal requirements set forth under Section 7 of the Endangered Species Act (16 U.S.C. 1536 (c)).

In this document, any data provided by U.S. Fish and Wildlife Service is based on data as of May 11, 2022.

Prepared using IPaC version 6.74.0-rc8

SAI - CT1231 Milford Wampus Lane Biological Assessment

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1 Description Of The Action

1.1 Project Name

SAI - CT1231 Milford Wampus Lane

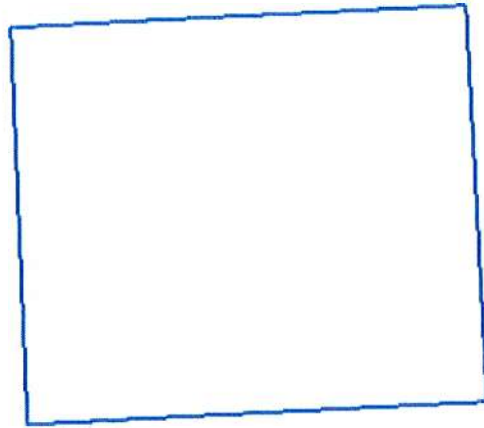
1.2 Executive Summary

AT&T is proposing a 20-foot extension to an existing wireless telecommunications facility to install antenna and equipment and install ground equipment within an existing gravel-based fenced compound. All project action activities will occur within the cleared, developed and disturbed limits of the existing tower facility, which is located on an existing industrial developed parcel. No vegetation removal or tree removal activities are associated with this collocation project and no impact to habitat possibly used by rare species would occur.

Effect determination summary

1.3 Project Description

1.3.1 Location



LOCATION

New Haven County, Connecticut

1.3.2 Description of project habitat

AT&T is proposing a 20-foot monopole extension on an existing +/-120-foot AGL tall monopole with proposed walk-in cabinets, and generator install at grade level inside an existing fenced in compound. Proposed 12 panel antennas, 12 RRH's and two surge arrestors will be installed at a height of +/-136 AGL.

1.3.3 Project proponent information

Provide information regarding who is proposing to conduct the project, and their contact information. Please provide details on whether there is a Federal nexus.

Requesting Agency

All-Points Technology Corporation, P.C.

FULL NAME

Deborah Gustafson

STREET ADDRESS

567 Vauxhall Street Extension

Suite 311

CITY

Waterford

STATE

CT

ZIP

06235

PHONE NUMBER

8609849514

E-MAIL ADDRESS

dleonardo@allpointstech.com

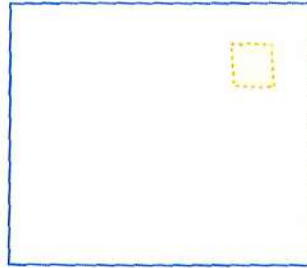
1.3.4 Project purpose

AT&T proposes to collocate on an existing wireless telecommunications facility with extension of the existing monopole tower and placement of ground equipment within an existing gravel-based fenced compound. AT&T requires this location to improve their wireless services network in the town of Milford, CT.

1.3.5 Project type and deconstruction

This project is a collocation on existing wireless telecommunications tower project.

1.3.5.1 Project map



LEGEND



Project footprint



Layer 1: Collocation on existing wireless telecommunications tower & facility

1.3.5.2 collocation on existing wireless telecommunications tower & facility

Activity start date

July 01, 2022

Activity end date

November 01, 2022

Stressors

This activity is not expected to have any impact on the environment.

Description

All project activities will occur within the existing developed and disturbed limits of the existing wireless telecommunications facility, which occurs on an existing industrial developed parcel.

1.3.6 Anticipated environmental stressors

Describe the anticipated effects of your proposed project on the aspects of the land, air and water that will occur due to the activities above. These should be based on the activity deconstructions done in the previous section and will be used to inform the action area.

1.3.6.1 Animal Features

Individuals from the Animalia kingdom, such as raptors, mollusks, and fish. This feature also includes byproducts and remains of animals (e.g., carrion, feathers, scat, etc.), and animal-related structures (e.g., dens, nests, hibernacula, etc.).

1.3.6.2 Plant Features

Individuals from the Plantae kingdom, such as trees, shrubs, herbs, grasses, ferns, and mosses. This feature also includes products of plants (e.g., nectar, flowers, seeds, etc.).

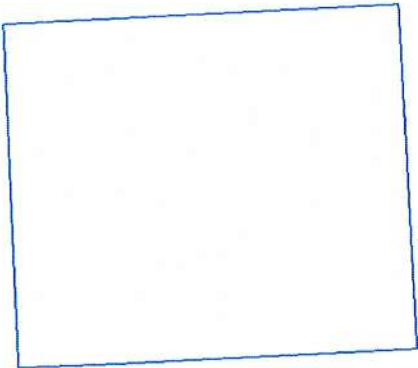
1.3.6.3 Aquatic Features

Bodies of water on the landscape, such as streams, rivers, ponds, wetlands, etc., and their physical characteristics (e.g., depth, current, etc.). This feature includes the groundwater and its characteristics. Water quality attributes (e.g., turbidity, pH, temperature, DO, nutrients, etc.) should be placed in the Environmental Quality Features.

1.3.6.4 Miscellaneous

Miscellaneous should only be used if the created feature does not fit into one of the other categories or if the creator is not sure in which category it should be placed.

1.4 Action Area



1.5 Conservation Measures

Describe any proposed measures being implemented as part of the project that are designed to reduce the impacts to the environment and their resulting effects to listed species. To avoid extra verbiage, don't list measures that have no relevance to the species being analyzed.

No conservation measures have been selected for this project.

1.6 Prior Consultation History

No previous consultation has occurred to the best of our knowledge for this proposed AT&T collocation project action.

1.7 Other Agency Partners And Interested Parties

NEPA compliance through FCC

Connecticut Siting Council

1.8 Other Reports And Helpful Information

none

2 Species Effects Analysis

This section describes, species by species, the effects of the proposed action on listed, proposed, and candidate species, and the habitat on which they depend. In this document, effects are broken down as direct interactions (something happening directly to the species) or indirect interactions (something happening to the environment on which a species depends that could then result in effects to the species).

These interactions encompass effects that occur both during project construction and those which could be ongoing after the project is finished. All effects, however, should be considered, including effects from direct and indirect interactions and cumulative effects.

2.1 Monarch Butterfly

This species has been excluded from analysis in this environmental review document.

Relevant documentation

The project action consists of extension of an existing telecommunications tower and work within an existing gravel-based fenced compound. No habitat for Monarch Butterfly exists within the project action area.

Justification for exclusion

No habitat present.

2.2 Northern Long-Eared Bat

2.2.1 Status of the species

This section should provide information on the species' background, its biology and life history that is relevant to the proposed project within the action area that will inform the effects analysis.

2.2.1.1 Legal status

The Northern Long-eared Bat is federally listed as 'Threatened' and additional information regarding its legal status can be found on the [ECOS species profile](#).

2.2.1.2 Recovery plans

Available recovery plans for the Northern Long-eared Bat can be found on the [ECOS species profile](#).

2.2.1.3 Life history information

The northern long-eared bat is a medium-sized bat about 3 to 3.7 inches in length but with a wingspan of 9 to 10 inches. As its name suggests, this bat is distinguished by its long ears, particularly as compared to other bats in its genus, *Myotis*, which are actually bats noted for their small ears (*Myotis* means mouse-eared). The northern long-eared bat is found across much of the eastern and north central United States and all Canadian provinces from the Atlantic coast west to the southern Northwest Territories and eastern British Columbia. The species range includes 37 states. White-nose syndrome, a fungal disease known to affect bats, is currently the predominant threat to this bat, especially throughout the Northeast where the species has declined by up to 99 percent from pre-white-nose syndrome levels at many hibernation sites. Although the disease has not yet spread throughout the northern long-eared bats entire range (white-nose syndrome is currently found in at least 25 of 37 states where the northern long-eared bat occurs), it continues to spread. Experts expect that where it spreads, it will have the same impact as seen in the Northeast.

Identified resource needs

Hibernacula

Humidity: high, noise: low, with minimal disturbance, temperature: 0-9 degrees celsius, time of year: august through april, type: caves, mines, sewers and spillways

Insects

Type: lepidoptera (moths and butterflies), coleoptera (beetles), trichoptera (caddisflies), diptera (flies), spiders and lepidopterous larvae

Open water

Type: streams, rivers, ponds, wetlands, lakes and road ruts

Travel corridors

Location: between forest patches, type: riparian corridors, wooded paths, hedgerows and fence rows

Trees

Size: > or equal to 3 inch dbh, spatial arrangement: within 1000 feet of forest, structure: cracks, crevices, cavities, exfoliating bark, time of year: april through august, type: dead, nearly dead, living tree with dead parts and living with appropriate structure

2.2.1.4 Conservation needs

Potential NLEB habitat, namely trees, will not be impacted by the project action as work will occur within the existing cleared, developed and disturbed limits of the existing wireless telecommunications facility. No tree removal is associated with this project and there will be no impact to NLEB conservation needs.

2.2.2 Environmental baseline

The environmental baseline describes the species' health within the action area only at the time of the consultation, and does not include the effects of the action under

review. Unlike the species information provided above, the environmental baseline is at the scale of the Action area.

2.2.2.1 Species presence and use

Rule 4d assessment was completed.

2.2.2.2 Species conservation needs within the action area

Potential NLEB habitat, namely trees, will not be impacted by the project action as work will occur within the existing cleared, developed and disturbed limits of the existing wireless telecommunications facility. No tree removal is associated with this project and there will be no impact to NLEB conservation needs.

2.2.2.3 Habitat condition (general)

Potential NLEB habitat, namely trees, will not be impacted by the project action as work will occur within the existing cleared, developed and disturbed limits of the existing wireless telecommunications facility. No tree removal is associated with this project and there will be no impact to NLEB.

2.2.2.4 Influences

Potential NLEB habitat, namely trees, will not be impacted by the project action as work will occur within the existing cleared, developed and disturbed limits of the existing wireless telecommunications facility. No tree removal is associated with this project and there will be no impact to NLEB.

2.2.2.5 Additional baseline information

no additional information

2.2.3 Effects of the action

This section considers and discusses all effects on the listed species that are caused by the proposed action and are reasonably certain to occur, including the effects of other activities that would not occur but for the proposed action.

2.2.3.1 Indirect interactions

Provide a brief overview of what the applicable science has discovered regarding the species and its response to the stressors that each project activity may cause. This should include an explanation of the pathways and mechanisms that have potential to translate environmental change (impact) into response and effects to individuals.

2.2.3.2 Direct interactions

No direct interactions leading to effects on species are expected to occur from the proposed project.

2.2.4 Cumulative effects

No cumulative effects are associated with the project action activities which consist of collocation on an existing wireless telecommunications facility.

2.2.5 Discussion and conclusion

Determination: NLAA

Compensation measures

Potential NLEB habitat, namely trees, will not be impacted by the project action as work will occur within the existing cleared, developed and disturbed limits of the existing wireless telecommunications facility. No tree removal is associated with this project and there will be no impact to NLEB or need for compensation measures.

2.3 Red Knot

This species has been excluded from analysis in this environmental review document.

Relevant documentation

The project activities consist of extension of an existing telecommunications tower and work within an existing gravel-based fenced compound. No habitat for Red Knot is present within or adjacent to the project action area.

Justification for exclusion

No habitat for Red Knot is present within the project action area.

3 Critical Habitat Effects Analysis

No critical habitats intersect with the project action area.

4 Summary Discussion, Conclusion, And Effect Determinations

4.1 Effect Determination Summary

SPECIES (COMMON NAME)	SCIENTIFIC NAME	LISTING STATUS	PRESENT IN ACTION AREA	EFFECT DETERMINATION
<u>Monarch Butterfly</u>	Danaus plexippus	Candidate	Excluded from analysis	Excluded from analysis
<u>Northern Long-eared Bat</u>	Myotis septentrionalis	Threatened	Yes	NLAA
<u>Red Knot</u>	Calidris canutus rufa	Threatened	No	NE

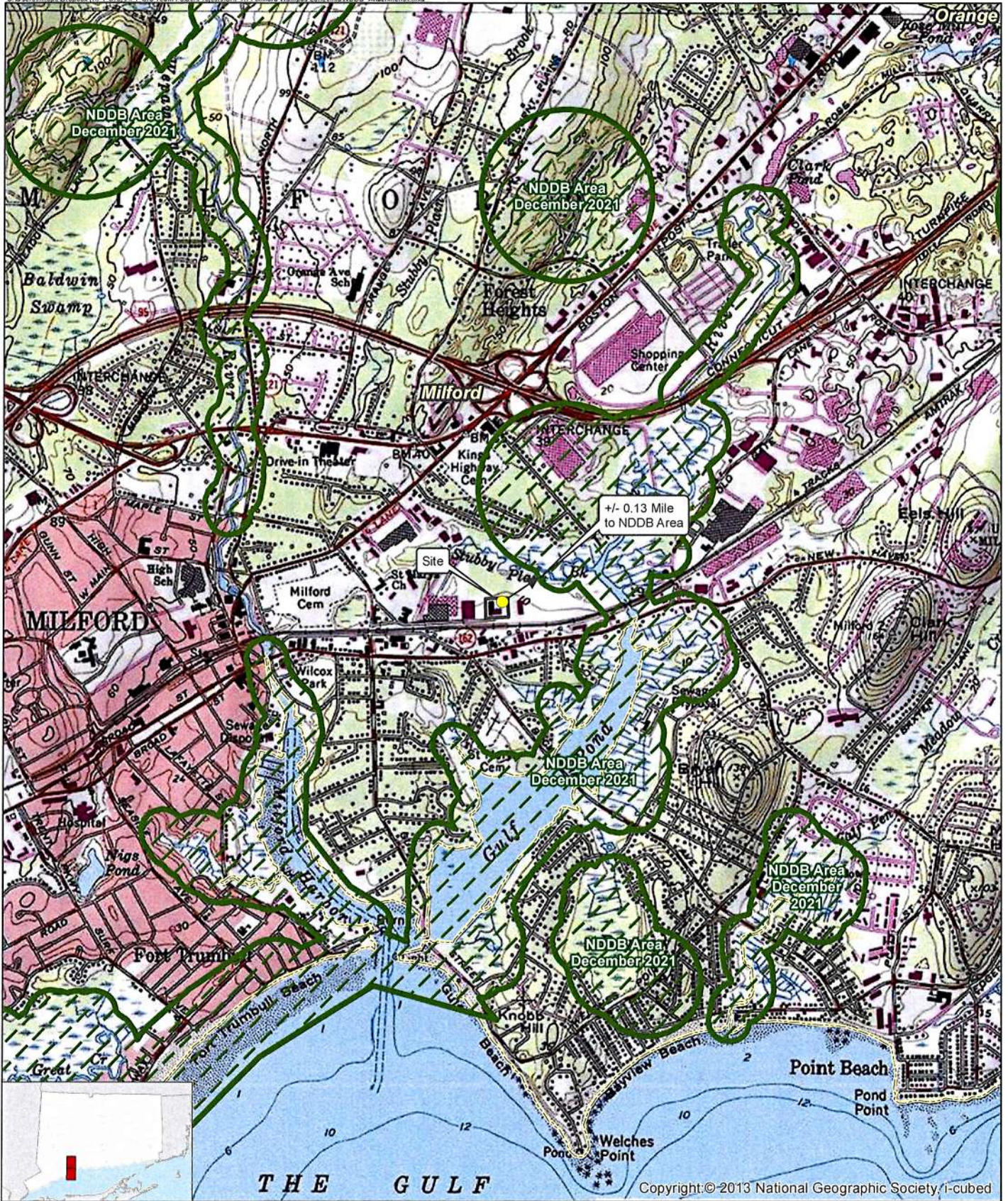
4.2 Summary Discussion

Potential NLEB habitat, namely trees, will not be impacted by the project action as work will occur within the existing cleared, developed and disturbed limits of the existing wireless telecommunications facility. No tree removal is associated with this project and there will be no impact to NLEB.

4.3 Conclusion

Potential NLEB habitat, namely trees, will not be impacted by the project action as work will occur within the existing cleared, developed and disturbed limits of the existing wireless telecommunications facility. No tree removal is associated with this project and there will be no impact to NLEB.

NDDDB Map



Legend

-  Proposed Tower Extension
-  Subject Property
-  CTDEEP Natural Diversity Database (updated Dec 2021)
-  Municipal Boundary

Map Notes:
 Base Map Source: USGS 7.5 Minute
 Topographic Quadrangle Map: Ansonia, CT (1984) and Milford, CT (1984)
 Map Scale: 1:24,000
 Map Date: March 2022



**NDDB Attachment A:
 Overview Map**

Proposed Wireless
 Telecommunications Facility Extension
 Milford Wampus Lane
 160 Wampus Lane
 Milford, Connecticut



ATTACHMENT 8



C Squared Systems, LLC
65 Dartmouth Drive
Auburn, NH 03032
(603) 644-2800

support@csquaredsystems.com

Calculated Radio Frequency Emissions Report



CT1231

160 Wampus Lane, Milford, CT 06850

October 19, 2022

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1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed installation of AT&T antenna arrays on an extension of the existing tower located at 160 Wampus Lane in Milford, CT. The coordinates of the tower are 41° 13' 30.44" N, 73° 02' 32.22" W.

AT&T is proposing the following:

- 1) Install twelve (12) multi-band antennas (four (4) per sector) to support its commercial LTE network and the FirstNet National Public Safety Broadband Network (“NPSBN”).

This report considers the planned antenna configuration for AT&T¹ to derive the resulting % MPE of its proposed installation.

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm²). The general population exposure limits for the various frequency ranges are defined in the attached “FCC Limits for Maximum Permissible Exposure (MPE)” in Attachment C of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment C contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

¹ As referenced to AT&T’s Radio Frequency Design Sheet updated 6/3/2021.

3. RF Exposure Prediction Methods

The emission field calculation results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{Power Density} = \left(\frac{EIRP}{\pi \times R^2} \right) \times \text{Off Beam Loss}$$

Where:

EIRP = Effective Isotropic Radiated Power

R = Radial Distance = $\sqrt{(H^2 + V^2)}$

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Off Beam Loss is determined by the selected antenna patterns

Ground reflection factor of 2.0

These calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. The calculations assume even terrain in the area of study and do not take into account actual terrain elevations which could attenuate the signal. As a result, the predicted signal levels reported below are much higher than the actual signal levels will be from the final installations.

4. Antenna Inventory

Table 1 below outlines AT&T's proposed antenna configuration for the site. The associated data sheets and antenna patterns for these specific antenna models are included in Attachments C.

Operator	Sector / Call Sign	TX Freq (MHz)	Power at Antenna (Watts)	Ant Gain (dBi)	Power EIRP (Watts)	Antenna Model	Beam Width	Mech. Tilt	Length (ft)	Antenna Centerline Height (ft)		
AT&T	Alpha / 110°	739	160	15.1	5177	DMP65R-BU8D	75	0	8.0	136		
		850	160	16	6370		64					
		1900	160	17.8	9641		68					
		Beta / 220°	Gamma / 310°	739	160	15.1	5177	DMP65R-BU8D	75	0	8.0	136
				850	160	16	6370		64			
				1900	160	17.8	9641		68			
				763	160	15.6	5809	TPA65R-BU8D	73	0	8.0	136
				2100	240	18.3	16226		66			
	2300			160	18.2	10571	60					
	3500			108	23.5	24178	AIR 6419	11	0	2.5	136	
	3500	108		23.5	24178	AIR 6449	11	0	2.5	136		
	739	160	15.1	5177	DMP65R-BU8D	75	0	8.0	136			
	850	160	16	6370		64						
	1900	160	17.8	9641		68						
	763	160	15.6	5809	TPA65R-BU8D	73	0	8.0	136			
	2100	240	18.3	16226		66						
	3500	108	23.5	24178		AIR 6419				11	0	2.5
	3500	108	23.5	24178	AIR 6449	11	0	2.5	136			

Table 1: Proposed Antenna Inventory^{2 3}

² Antenna heights are in reference to the Hudson Design Group LLC. Construction Drawings, dated 02/03/2022.

³ Transmit power assumes 0 dB of cable loss.

5. Calculation Results

The calculated power density results are shown in Figure 1 below. For completeness, the calculations for this analysis range from 0 feet horizontal distance (directly below the antennas) to a value of 3,000 feet horizontal distance from the site. In addition to the other worst-case scenario considerations that were previously mentioned, the power density calculations to each horizontal distance point away from the antennas was completed using a local maximum off beam antenna gain (within ± 5 degrees of the true mathematical angle) to incorporate a realistic worst-case scenario.

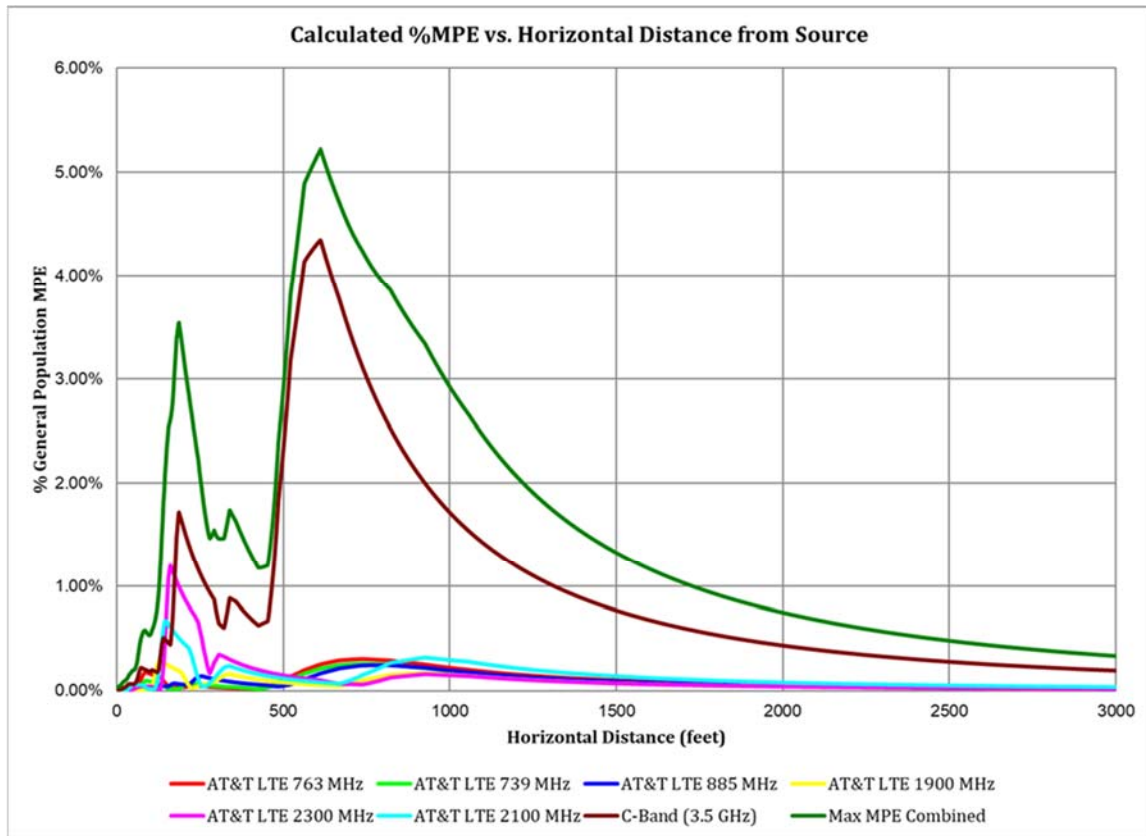


Figure 1: Graph of General Population % MPE vs. Distance⁴

The highest percent of MPE (5.22% of the General Population limit) is calculated to occur at a horizontal distance of 611 feet from antennas. Please note that the percent of MPE calculations close to the site take into account off beam loss, which is determined from the vertical pattern of the antennas used. Therefore, RF power density levels may increase as the distance from the site increases. At distances of approximately 1500 feet and beyond, one would now be in the main beam of the antenna pattern and off beam loss is no longer considered. Beyond this point, RF levels become calculated solely on distance from the site and the percent of MPE decreases significantly as distance from the site increases.

⁴ The graph of the General Population %MPE VS. Distance information is for AT&T proposed antennas.

Table 2 below lists percent of MPE values as well as the associated parameters that were included in the calculations. The highest percent of MPE value was calculated to occur at a horizontal distance of 611 feet from the site (reference Figure 1).

As stated in Section 3, all calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. Obstructions (trees, buildings etc.) that would normally attenuate the signal are not taken into account. In addition, a six-foot height offset was considered in this analysis to account for average human height. As a result, the predicted signal levels are significantly higher than the actual signal levels will be from the final configuration. The results presented in Figure 1 and Table 2 assume level ground elevation from the base of the tower out to the horizontal distances calculated.

Carrier	Number of Trans.	Power out of Base Station Per Transmitter (Watts)	Antenna Height (Feet)	Distance to the Base of Antennas (Feet)	Power Density (mW/cm ²)	Limit (mW/cm ²)	% MPE
AT&T LTE 1900 MHz	1	160.0	136.0	611	0.000544	1.000	0.05%
AT&T LTE 2100 MHz	1	240.0	136.0	611	0.000809	1.000	0.08%
AT&T LTE 2300 MHz	1	160.0	136.0	611	0.001018	1.000	0.10%
AT&T LTE 739 MHz	1	160.0	136.0	611	0.001049	0.493	0.21%
AT&T LTE 763 MHz	1	160.0	136.0	611	0.001294	0.509	0.25%
AT&T LTE 885 MHz	1	160.0	136.0	611	0.000982	0.590	0.17%
C-Band (3.5 GHz)	2	108.5	136.0	611	0.043455	1.000	4.35%
Total							5.22%

Table 2: Maximum Percent of General Population Exposure Values for AT&T⁵

Carrier	Antenna Height (Feet)	Operating Frequency (MHz)	Number of Trans.	ERP Per Transmitter (Watts)	Power Density (mw/cm ²)	Limit	% MPE
T-Mobile	105	2100	2	2057	0.1510	1.000	1.51%
T-Mobile	105	700	2	2308	0.1694	0.467	3.63%
T-Mobile	105	1900	2	592	0.0434	1.000	0.43%
T-Mobile	105	2100	1	1578	0.0579	1.000	0.58%
T-Mobile	105	700	2	649	0.0476	0.467	1.02%
T-Mobile	105	1900	2	2204	0.1617	1.000	1.62%
T-Mobile	105	2100	2	6413	0.4706	1.000	4.71%
T-Mobile	105	2100	2	6413	0.4706	1.000	4.71%
T-Mobile	105	700	4	1028	0.1509	0.467	3.23%
T-Mobile	105	1900	2	1028	0.0754	1.000	0.75%
T-Mobile	105	2100	2	1028	0.0754	1.000	0.75%
Pocket (now MetroPCS)	88	2130	3	631	0.1012	1.000	1.01%
Clearwire	116	2496	2	153	0.0091	1.000	0.09%
Clearwire	116	11 GHz	1	211	0.0063	1.000	0.06%
Sprint	116	1900	3	0.05	0.0000	1.000	0.00%
Sprint	116	850	1	0.03	0.0000	0.567	0.00%
Sprint	116	2500	1	0.09	0.0000	1.000	0.00%
Total							24.11%
Overall Total							29.33%

Table 3: Carrier Information⁶

⁵ The power density information for AT&T was calculated based on the antenna pattern.

⁶ The power density information for T-Mobile, Pocket (Now MetroPCS), Clearwire and Sprint was taken directly from the CSC database dated 01/21/2022. Please note that % MPE values list are rounded to two decimal points and the total % MPE listed is a summation of each unrounded contribution. Therefore, summing each rounded value may not identically match the total value reflected in the table.

6. Conclusion

The above analysis verifies that RF exposure levels from the site with AT&T's proposed antenna configuration will be well below the maximum permissible levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Using the conservative calculation methods and parameters detailed above, the maximum cumulative percent of MPE in consideration of all transmitters is calculated to be **29.33% of the FCC limit (General Population/Uncontrolled)**. This maximum cumulative percent of MPE value is calculated to occur 611 feet away from the site.

7. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in ANSI/IEEE Std. C95.3, ANSI/IEEE Std. C95.1 and FCC OET Bulletin 65 Edition 97-01.



Report Prepared By:

Ram Acharya
RF Engineer 1
C Squared Systems, LLC

October 17, 2022

Date



Reviewed/Approved By:

Martin J. Lavin
Senior RF Engineer
C Squared Systems, LLC

October 19, 2022

Date

Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

IEEE C95.1-2005, IEEE Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz IEEE-SA Standards Board

IEEE C95.3-2002 (R2008), IEEE Recommended Practice for Measurements and Computations of Radio Frequency Electromagnetic Fields With Respect to Human Exposure to Such Fields, 100 kHz-300 GHz IEEE-SA Standards Board

Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure⁷				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	f/300	6
1500-100,000	-	-	5	6

(B) Limits for General Population/Uncontrolled Exposure⁸				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

f = frequency in MHz * Plane-wave equivalent power density

Table 4: FCC Limits for Maximum Permissible Exposure

⁷ Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

⁸ General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

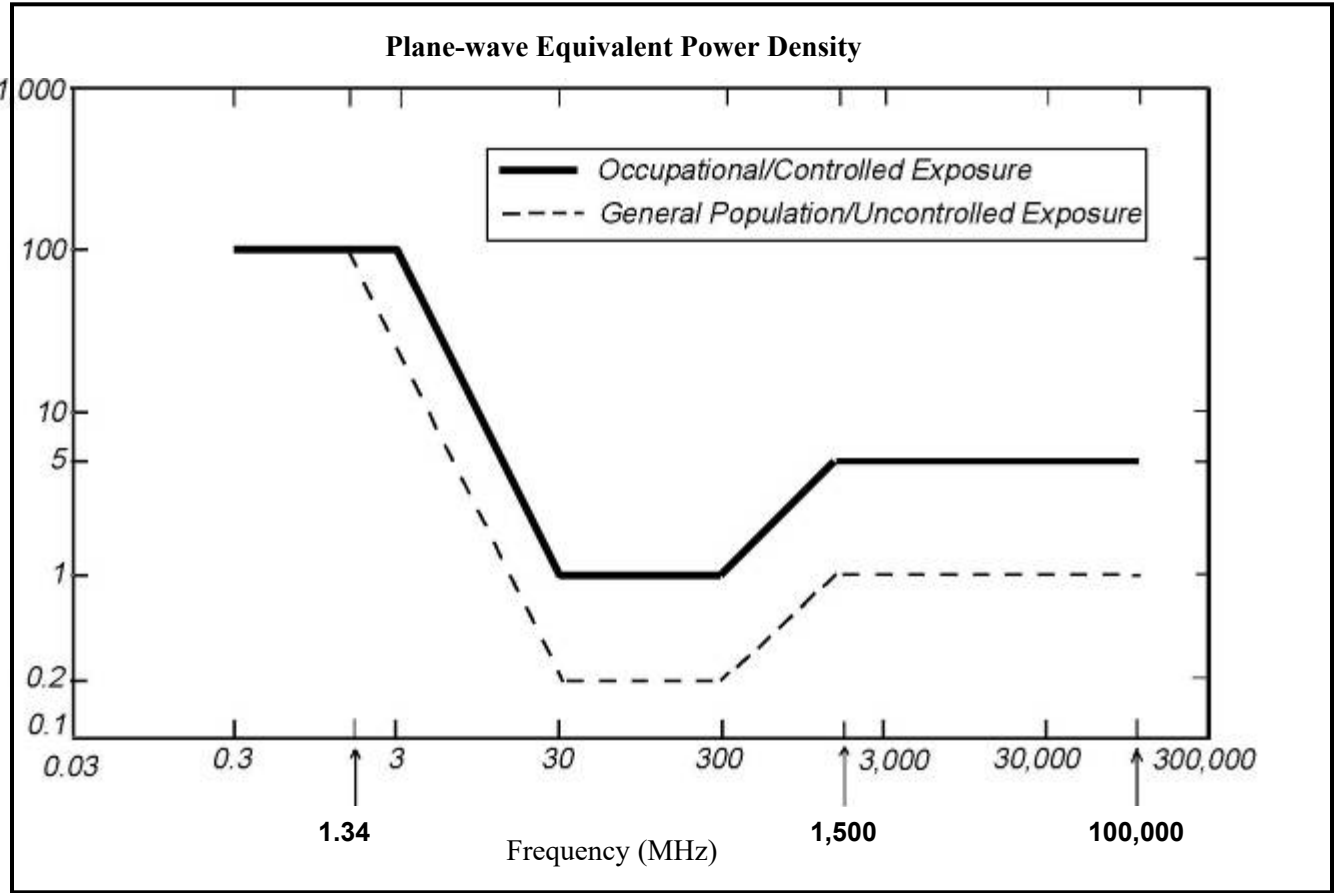
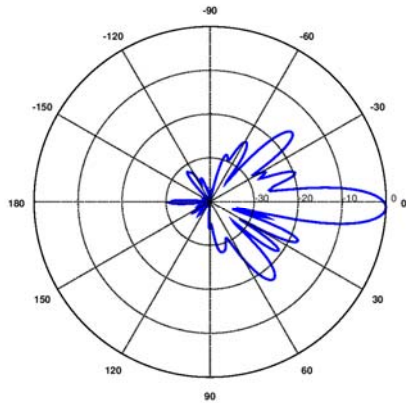
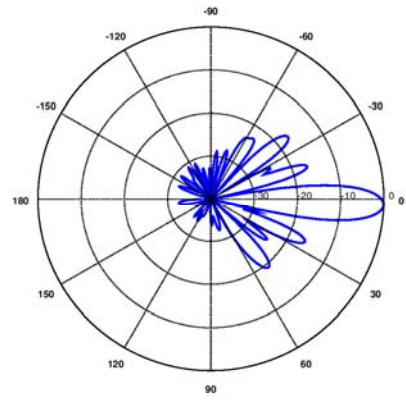
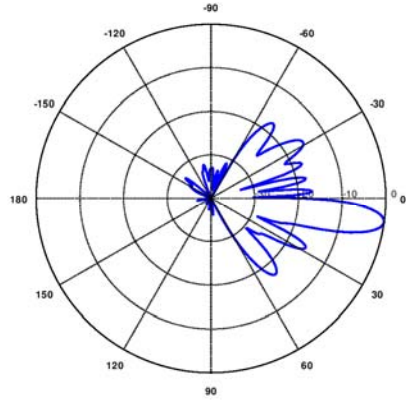


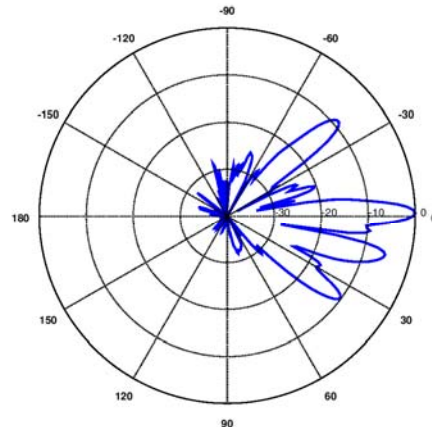
Figure 2: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

Attachment C: AT&T Mobility Antenna Model Data Sheets and Electrical Patterns

<p>700 MHz</p> <p>Manufacturer: CCI Products Model #: TPA65R-BU8D Frequency Band: 698-798 MHz Gain: 15.6 dBi Vertical Beamwidth: 9.5° Horizontal Beamwidth: 74° Polarization: Dual Linear 45° Size L x W x D: 96.0" x 20.7" x 7.7"</p>	
<p>700 MHz</p> <p>Manufacturer: CCI Products Model #: DMP65R-BU8D Frequency Band: 698 - 806MHz Gain: 15.1 dBi Vertical Beamwidth: 9.5° Horizontal Beamwidth: 75° Polarization: Dual Linear 45° Size L x W x D: 96.0" x 20.7" x 7.7"</p>	
<p>885 MHz</p> <p>Manufacturer: CCI Products Model #: DMP65R-BU8D Frequency Band: 824 - 896 MHz Gain: 16.0 dBi Vertical Beamwidth: 8.0° Horizontal Beamwidth: 64° Polarization: Dual Linear 45° Size L x W x D: 96.0" x 20.7" x 7.7"</p>	

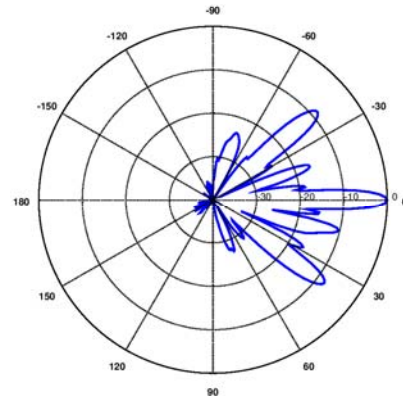
1900 MHz

Manufacturer: CCI Products
 Model #: DMP65R-BU8D
 Frequency Band: 1850-1990 MHz
 Gain: 17.8 dBi
 Vertical Beamwidth: 5.1°
 Horizontal Beamwidth: 68°
 Polarization: Dual Linear 45°
 Size L x W x D: 96.0" x 20.7" x 7.7"



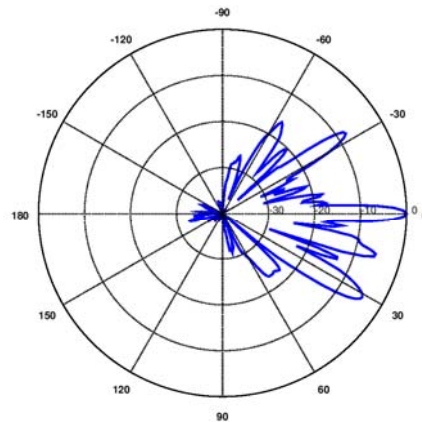
2100 MHz

Manufacturer: CCI Products
 Model #: TPA65R-BU8D
 Frequency Band: 1920-2180 MHz
 Gain: 18.3 dBi
 Vertical Beamwidth: 4.7°
 Horizontal Beamwidth: 67°
 Polarization: Dual Linear 45°
 Size L x W x D: 96.0" x 20.7" x 7.7"



2300 MHz

Manufacturer: CCI Products
 Model #: TPA65R-BU8D
 Frequency Band: 2300-2400 MHz
 Gain: 18.1 dBi
 Vertical Beamwidth: 4.1°
 Horizontal Beamwidth: 54°
 Polarization: Dual Linear 45°
 Size L x W x D: 96.0" x 20.7" x 7.7"




ATTACHMENT 9

CERTIFICATE OF SERVICE

I hereby certify that on the 2nd day of November, 2022, a copy of the following letter and notice of the intended filing of a Sub-Petition with the Connecticut Siting Council for a declaratory ruling was sent by certified mail, return receipt requested, to the attached list of City Officials:

Dated: November 2, 2022



Brown Rudnick LLP
Joseph A. Giammarco


City of Milford

MAYOR BENJAMIN G. BLAKE CITY OF MILFORD 110 RIVER STREET MILFORD, CT 06460	DAVID B. SULKIS CITY PLANNER CITY OF MILFORD PARSONS GOVERNMENT CENTER 70 WEST RIVER STREET MILFORD, CT 06460
INLAND WETLANDS OFFICE CITY OF MILFORD MARY ROSE PALUMBO PARSONS GOVERNMENT CENTER 70 WEST RIVER STREET MILFORD, CT 06460	CITY CLERK KAREN FORTUNATI CITY OF MILFORD PARSONS GOVERNMENT CENTER 70 WEST RIVER STREET MILFORD, CT 06460
CITY OF MILFORD HISTORIC DISTRICT COMMISSION ROBERT BERCHEM, CHAIR PARSONS GOVERNMENT CENTER 70 WEST RIVER STREET MILFORD, MA 06460	

CERTIFICATE OF SERVICE

I hereby certify that on the 2nd day of November, 2022, a copy of the following letter and notice of the intended filing of a Sub-Petition with the Connecticut Siting Council for a declaratory ruling was sent by certified mail, return receipt requested, to the attached list of abutting property owners:

Dated: November 2, 2022


Brown Rudnick LLP
Joseph A. Giammarco

<p>CUTTING EDGE TECHNOLOGIES, LLC 160 WAMPUS LANE MILFORD, CT 06460 Subject Property: 160 Wampus Lane, Milford, CT Parcel ID: 13774 <i>Identified as parcel A on Abutters Map</i></p> <p>Property Address: 0 Wampus Lane, Milford, CT Parcel ID: 13630 <i>Identified as parcel E on Abutters Map</i></p>	<p>SBA COMMUNICATIONS CORPORATION 8051 CONGRESS AVENUE BOCA RATON, FL 33487 Property Address: 160 Wampus Lane # Cell Milford, CT Parcel ID: 105042 <i>Identified as parcel A on Abutters Map</i></p>
<p>NEW CASTLE ASSOCIATES, LLC 180 WAMPUS LANE MILFORD, CT 06460 Property Address: 180 Wampus Lane, Milford, CT Parcel ID: 13775 <i>Identified as parcel B on Abutters Map</i></p> <p>Property Address: 180 Wampus Lane, Milford, CT Parcel ID: 13776 <i>Identified as parcel C on Abutters Map</i></p> <p>Property Address: 0 Wampus Lane, Milford, CT Parcel ID: 13777 <i>Identified as parcel D on Abutters Map</i></p>	<p>CITY OF MILFORD 70 WEST RIVER STREET MILFORD, CT 06460 Property Address: Wampus Lane # Rear Milford, CT Parcel ID: 108443 <i>Identified as parcel F on Abutters Map</i></p> <p>Property Address: 0 Wampus Lane Milford, CT Parcel ID: 13773 <i>Identified as parcel G on Abutters Map</i></p> <p>Property Address: 0 Corona Drive Milford, CT Parcel ID: 15906 <i>Identified as parcel II on Abutters Map</i></p>

<p>WAMPUS MILFORD ASSOCIATES, LLC C/O 120 WAMPUS LLC 706 HOLLY COURT OXFORD, CT 06478 Property Address: Wampus Lane Milford, CT Parcel ID: 108442 <i>Identified as parcel H on Abutters Map</i></p>	<p>MILFORD HOLDINGS, LLC 4506 12TH AVENUE BROOKLYN, NY 11219 Property Address: 80 Wampus Lane Milford, CT Parcel ID: 13632 <i>Identified as parcel I on Abutters Map</i></p>
<p>SI INVESTMENTS, LLC P. O. BOX 2385 WESTPORT, CT 06880 Property Address: 184 Buckingham Avenue Milford, CT Parcel ID: 13579 <i>Identified as parcel J on Abutters Map</i></p>	<p>MS BUCKINGHAM ASSOCIATES, LLC 190 BUCKINGHAM AVENUE, UNIT B MILFORD, CT 06460 Property Address: 190 Buckingham Avenue Milford, CT Parcel ID: 13580 <i>Identified as Parcel K on Abutters Map</i></p>
<p>CARO, MARIE 206 BUCKINGHAM AVENUE MILFORD, CT 06460 Property Address: 206 Buckingham Avenue Bloomfield, CT Parcel ID: 13581 <i>Identified as parcel L on Abutters Map</i></p>	<p>RMBK, LLC 210 BUCKINGHAM AVENUE MILFORD, CT 06460 Property Address: 210 Buckingham Avenue Milford, CT Parcel ID: 13582 <i>Identified as parcel M on Abutters Map</i></p> <p>Property Address: 216 Buckingham Avenue Milford, CT Parcel ID: 13585 <i>Identified as parcel N on Abutters Map</i></p>
<p>DUTKO, DONNA L. 236 BUCKINGHAM AVENUE MILFORD, CT 06460 Property Address: 0 Buckingham Avenue, Milford, CT Parcel ID: 13584 <i>Identified as parcel O on Abutters Map</i></p> <p>Property Address: 236 Buckingham Avenue, Milford, CT Parcel ID: 13583 <i>Identified as parcel P on Abutters Map</i></p>	<p>HAYES, THOMAS & HAYES, MARYANN & SURV. 85 OVERHILL ROAD, MILFORD, CT 06460 Property Address: 242 Buckingham Avenue, Milford, CT Parcel ID: 13586 <i>Identified as parcel FF on Abutters Map</i></p>

<p>HANSENS REALTY, LLC 325 NEW HAVEN AVENUE MILFORD, CT 06460 Property Address: 325 New Haven Avenue, Milford, CT Parcel ID: 13674 <i>Identified as parcel Q on Abutters Map</i></p>	<p>SAW WHET ENTERPRISES, LLC 926 STONINGTON ROAD #3 STONINGTON, CT 06378 Property Address : 354 New Haven Avenue, Milford, CT Parcel ID: 13757 <i>Identified as parcel R on Abutters Map</i></p>
<p>HAWLEY, CATHERINE 1/3 INT. & MANNING, DIANE 1/3 INT. & MILANO, JOHN 1/6 INT. AND 300 NEW HAVEN AVENUE MILFORD, CT 06460 Property Address: 300 New Haven Avenue, Milford, CT Parcel ID: 13587 <i>Identified as parcel S on Abutters Map</i></p>	<p>THE PEARL CORPORATION 318 NEW HAVEN AVENUE MILFORD, CT 06460 Property Address: 318 New Haven Avenue, Milford, CT Parcel ID: 13752 <i>Identified as parcel T on Abutters Map.</i></p>
<p>ACE RENTALS, LLC 324 NEW HAVEN AVENUE MILFORD, CT 06460 Property Address: 324 New Haven Avenue Milford, CT Parcel ID: 13753 <i>Identified as parcel U on Abutters Map</i></p> <p>Property Address: 334 New Haven Avenue, Milford, CT Parcel ID: 13755 <i>Identified as parcel V on Abutters Map</i></p>	<p>DIAMOND REALTY ASSOCIATES 855 MAIN STREET, 9TH FL. BRIDGEPORT, CT 06604 Property Address: 338 New Haven Avenue Milford, CT Parcel ID: 13754 <i>Identified as parcel W on Abutters Map</i></p> <p>Property Address: 360 New Haven Avenue Milford, CT Parcel ID: 13758 <i>Identified as parcel X on Abutters Map</i></p>
<p>WOODSY'S PLACE, LLC 926 STONINGTON ROAD #3 STONINGTON, CT 06378 Property Address: 336 New Haven Avenue Windsor, CT Parcel ID: 13756 <i>Identified as parcel Y on Abutters Map</i></p>	<p>BEACH BUM HOLDING, LLC 321 NEW HAVEN AVENUE MILFORD, CT 06460 Property Address: 321 New Haven Avenue, Milford, CT Parcel ID: 13675 <i>Identified as parcel Z on Abutters Map</i></p>
<p>AICAD HOLDINGS, LLC 8305 YUKON LANE AUBREY, TX 76227 Property Address: 362 New Haven Avenue Milford, CT Parcel ID: 13759 <i>Identified as parcel AA on Abutters Map</i></p>	<p>CHMIEL, HENRY LIFE USE THEN TO CHMIEL, ROBERT 240 GOLDBACH DRIVE STRATFORD, CT 06614 Property Address: 374 New Haven Avenue, Milford, CT Parcel ID: 13761 <i>Identified as parcel BB on Abutters Map</i></p>

<p>MINAUDO FAMILY TRUST 2 OLD TOWN HIGHWAY, UNIT 17 EAST HAVEN, CT 06512 Property Address: 133 Corona Drive, Milford, CT Parcel ID: 15911 <i>Identified as parcel GG on Abutters Map</i></p>	<p>EWEN, WILLIAM G. & LINDA J. & SURV. & EWEN, ERIKA 143 CORONA DRIVE MILFORD, CT 06460 Property Address: 143 Corona Drive, Milford, CT Parcel ID: 15913 <i>Identified as parcel HH on Abutters Map</i></p>
<p>UNITED ILLUMINATING COMPANY ATTENTION: ACCOUNTS PAYABLE ONE CITY CENTER, 5TH FL PORTLAND, ME 04101 Property Address: 0 New Haven Avenue, Milford, CT Parcel ID: 13760 <i>Identified as parcel CC on Abutters Map</i></p>	<p>394 NEW HAVEN AVENUE, LLC 183 QUARRY ROAD MILFORD, CT 06460 Property Address: 394 New Haven Avenue Milford, CT Parcel ID: 13762 <i>Identified as parcel DD on Abutters Map</i></p>
<p>120 WAMPUS, LLC 706 HOLLY COURT OXFORD, CT 06478 Property Address: 120 Wampus Lane, Milford, CT Parcel: 13631 <i>Identified as parcel EE on Abutters Map</i></p>	

November __, 2022

**VIA CERTIFIED MAIL/
RETURN RECEIPT REQUESTED**

[Insert Abutter/Official
Name and Address]

**Re: New Cingular Wireless PCS, LLC (“AT&T”) – Connecticut Siting Council
Sub-Petition for a Declaratory Ruling -- Modification and Extension of an
Existing Monopole and Collocation of a Wireless Telecommunications
Facility at 160 Wampus Lane, Milford, Connecticut**

To Whom it May Concern:

On behalf of our client New Cingular Wireless PCS, LLC (“AT&T”), we are providing this notice to you with respect to the above referenced matter pursuant to the Connecticut Siting Council’s (the “Siting Council”) ruling in Petition No. 1133. AT&T is filing this sub-petition (the “Sub-Petition”) for a declaratory ruling from the Siting Council for approval to collocate a new wireless telecommunications facility (the “Facility”) on the existing monopole, located at 160 Wampus Lane, Milford, Connecticut. The Facility consists of twelve (12) panel antennas at the 136’ above ground level (“AGL”) antenna centerline height on a on a twenty foot (20’) tall extension (the “Extension”) to the existing monopole (the “Monopole”) together with related amplifiers, cables, fiber and other associated antenna equipment, including, without limitation, remote radio heads, surge arrestors, and global positioning system antenna with associated electronic equipment in a walk-in cabinet and an emergency backup power generator on concrete pads, and other appurtenances all located within an existing compound enclosed by a chain link fence, all as depicted on the plans submitted with the Sub-Petition. The Monopole is owned by SBA. The Monopole is currently 120’ tall and, after modification, will be 140’ tall.

The Sub-Petition is an eligible facilities request submitted pursuant to the Federal Middle Class Tax Relief and Job Creation Act of 2012, also known as the Spectrum Act and codified at 47 U.S.C. §1455(a). AT&T’s proposed modification does not substantially change the physical dimensions of the tower under the Spectrum Act and associated regulations promulgated by the Federal Communications Commission.

Any comments or concerns regarding this Sub-Petition should be submitted to the Siting Council within thirty (30) days of the date of this notice.

If you have any questions, please do not hesitate to contact us or the Siting Council at 860-827-2935.

Sincerely,

/s/ Thomas J. Regan
Thomas J. Regan, Esq.

Enclosure

ATTACHMENT 10

Full Town View

Reset Map

Base Maps / Air Photos

Map Layer

