

PATRICIA NOWAK  
508-265-5599  
CENTERLINE COMMUNICATIONS, LLC  
750 WEST CENTER STREET  
WEST BRIDGEWATER MA 02379

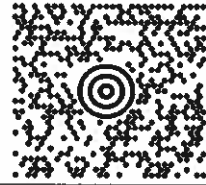
1 LBS

PAK

1 OF 1

**SHIP TO:**

MELANIE A. BACHMAN  
860-827-2935  
CONNECTICUT SITING COUNCIL  
EXECUTIVE DIRECTOR  
TEN FRANKLIN SQUARE  
NEW BRITAIN CT 06051-2655



**CT 067 9-06**



**UPS NEXT DAY AIR**

**1**

TRACKING #: 1Z 9Y4 503 01 1966 6200



BILLING: P/P

Reference # 1: CT2381-CSC

CS 21.0.21

WNTNVS0 09 0A 01/2019



April 1, 2019

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

**Regarding: Notice of Exempt Modification – AT&T Site CT2381**  
**Address: 23 Stonybrook Road, Stratford, CT 06614-3715**

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC (“AT&T”) currently maintains a wireless telecommunications facility on an existing 119’ monopole tower at the above-referenced address, latitude 41.20327778, longitude -73.14862500. Said monopole tower is owned by American Towers LLC.

AT&T desires to modify its existing telecommunications facility by adding (3) antennas and swapping (3) remote radio head units, as more particularly detailed in the attached construction drawings prepared by Hudson Design Group LLC, dated March 3, 2019 and last updated March 25, 2019. The centerline height of the existing antennas and the additional antennas will be 117 feet.

Please accept this letter as notification pursuant to R.C.S.A §16-50j-73 for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the following individuals: Laura R. Hoydick, Mayor of the Town of Stratford; Richard Fredette, Chair of the Zoning Commission of the Town of Stratford; John Rusatsky, the Zoning Enforcement Officer of the Town of Stratford; and Brian Donovan, the Building Official of the Town of the Stratford; as well as the property owner of the above referenced address, Stonybrook Management LLC, and the owner of the above referenced monopole tower, American Towers LLC.

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

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require an extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.


4. The operation of the modified facility will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. *Please see the Radio Frequency Emissions Analysis Report dated March 22, 2019 for AT&T's modified facility enclosed herewith.*

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

6. The existing structure and its foundation can support the proposed loading. *Please see the Structural Analysis Report dated March 14, 2019 prepared by American Tower Corporation enclosed herewith.*

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

Sincerely,



Patricia Nowak  
Site Acquisition Consultant  
Centerline Communications, LLC  
750 West Center Street, Suite 301  
West Bridgewater, MA 02379  
pnowak@clinellc.com

Enclosures: Exhibit 1 – Construction Drawings  
Exhibit 2 – Structural Analysis Report  
Exhibit 3 – Mount Analysis  
Exhibit 4 – RF Emissions Analysis Report

cc: Laura R. Hoydick, Mayor of the Town of Stratford  
Richard Fredette, Chair of the Zoning Commission of the Town of Stratford  
John Rusatsky, the Zoning Enforcement Officer of the Town of Stratford  
Brian Donovan, the Building Official of the Town of the Stratford  
Stonybrook Management LLC, property owner  
American Towers LLC, tower owner

# EXHIBIT 1

**PROJECT INFORMATION**

SCOPE OF WORK: ITEMS TO BE MOUNTED ON THE EXISTING MONOPOLE:

- NEW 24" STANDOFF SITE PRO 1 PART# MMO2 (TYP. OF 1 PER SECTOR, TOTAL OF 3) (TO REPLACE EXISTING).
- NEW 3" STD (3.5" O.D.) 6'-0" LONG HORIZONTAL PIPE (TYP. OF 1 PER SECTOR, TOTAL OF 3) (TO REPLACE EXISTING).
- NEW 2.5" STD (2.88" O.D.) 8'-0" LONG MOUNTING PIPE (TYP. OF 2 PER SECTOR, TOTAL OF 6) (TO REPLACE EXISTING).
- NEW AT&T ANTENNAS: (800-10965) MOUNTED @ POSITION 4 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS-32 (WCS) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T RRUS B5/B12 4449 (850/700) (TYP. OF 1 PER SECTOR, TOTAL OF 3).

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:

- ADD XMU.
- ADD 6630.
- FUTURE AT&T RRUS-11 (850) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- FUTURE COAX (TYP. OF 2 PER SECTOR, TOTAL OF 6) (TO FOLLOW EXISTING ROUTE).
- BASEBAND CONFIGURATION AS PER PD / SECTION-7.

ITEMS TO REMAIN:

- (3) ANTENNAS, (3) RRU'S, (1) SURGE ARRESTOR, (2) DC POWER & (1) FIBER.

SITE ADDRESS: 23 STONYBROOK ROAD  
STRATFORD, CT 06614

LATITUDE: 41.203280 N, 41' 12' 11.80" N  
LONGITUDE: 73.148630 W, 73' 08' 55.06" W  
TYPE OF SITE: MONOPOLE / INDOOR EQUIPMENT  
STRUCTURE HEIGHT: 120'±  
RAD CENTER: 117'±  
CURRENT USE: TELECOMMUNICATIONS FACILITY  
PROPOSED USE: TELECOMMUNICATIONS FACILITY



**SITE NUMBER: CT2381**

**SITE NAME: STRATFORD STONYBROOK ROAD**

**FA CODE: 12906923**

**PACE ID: MRCTB035102, MRCTB035114, MRCTB035363**

**PROJECT: LTE 3C/4C/4TX4RX 2019 UPGRADE**

**ISSUED FOR ZONING**

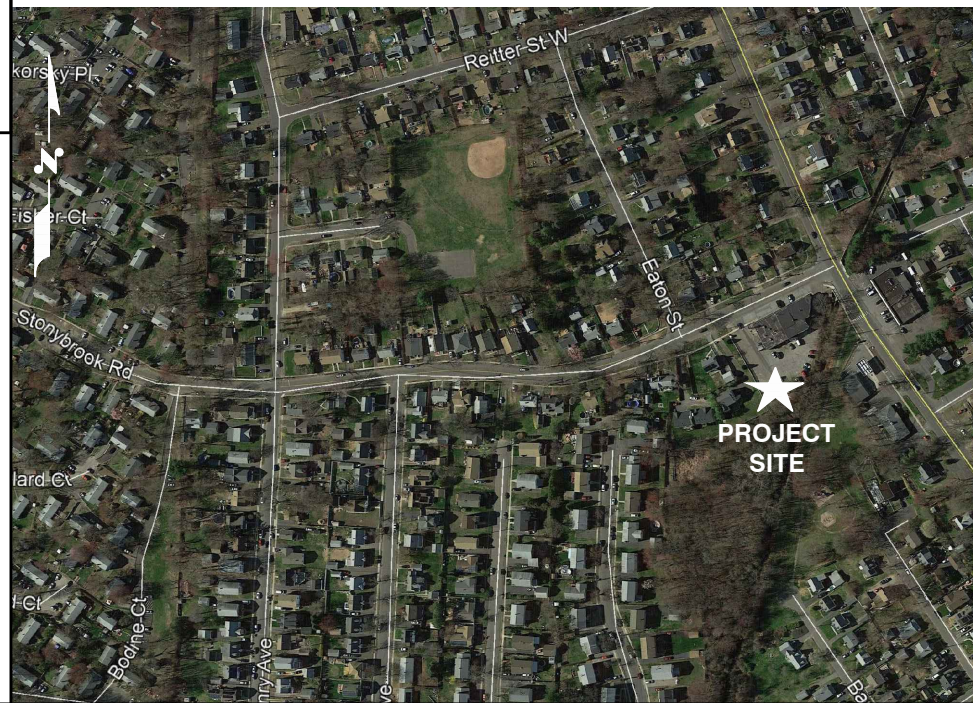
**DRAWING INDEX**

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

**VICINITY MAP**

**DIRECTIONS TO SITE:**

TAKE I-90 WEST TOWARD WORCESTER / SPRINGFIELD TOLL ROAD 38.8 MI, 34 MIN 4. AT EXIT 9, TAKE RAMP RIGHT FOR I-84 TOWARD NEW YORK CITY / HARTFORD ENTERING CONNECTICUT 41.7 MI, 35 MIN 5. AT EXIT 57, TAKE RAMP LEFT FOR CT-15 SOUTH TOWARD N.Y. CITY / CHARTER OAK BR 1.1 MI 6. KEEP STRAIGHT ONTO US-5 S / CT-15 S 0.8 MI 7. TAKE RAMP RIGHT FOR I-91 S 17.1 MI, 15 MIN 8. AT EXIT 17, TAKE RAMP RIGHT FOR CT-15 SOUTH TOWARD E. MAIN ST / W. CROSS PKWY 30.2 MI, 30 MIN 9. AT EXIT 52, TAKE RAMP RIGHT FOR CT-108 TOWARD STRATFORD 0.9 MI 10. TURN LEFT ONTO CT-108 / NICHOLS AVE PASS MOBIL IN 0.3 MI 2.2 MI 11. TURN RIGHT ONTO LONDON TER 0.3 MI 12. TURN RIGHT ONTO BROAD BRIDGE AVE SHELL ON THE CORNER 400 FT 13. TURN LEFT ONTO STONYBROOK RD 184 FT 14. ARRIVE AT STONYBROOK RD.



**GENERAL NOTES**

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

**ATC SITE NAME: STONYBROOK RD CT**  
**ATC SITE #: 283420**

**72 HOURS**

CALL BEFORE YOU DIG

CALL TOLL FREE 1-800-922-4455

OR CALL 811

**UNDERGROUND SERVICE ALERT**

**HGD HUDSON Design Group LLC**

45 BEECHWOOD DRIVE  
NORTH ANDOVER, MA 01845

TEL: (978) 557-5553  
FAX: (978) 336-5586

**CENTERLINE COMMUNICATIONS**

750 WEST CENTER STREET., SUITE #301  
WEST BRIDGEWATER, MA 02379

**SITE NUMBER: CT2381**  
**SITE NAME: STRATFORD STONYBROOK ROAD**  
**ATC SITE #: 283420**

23 STONYBROOK ROAD  
STRATFORD, CT 06614  
FAIRFIELD COUNTY

**at&t**

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

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SCALE: AS SHOWN    DESIGNED BY: AT    DRAWN BY: ET

**AT&T**

TITLE SHEET  
(LTE 3C/4C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT2381	T-1	B



**GROUNDING NOTES**

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) 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 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

**GENERAL NOTES**

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

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP 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		

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

750 WEST CENTER STREET., SUITE #301  
WEST BRIDGEWATER, MA 02379

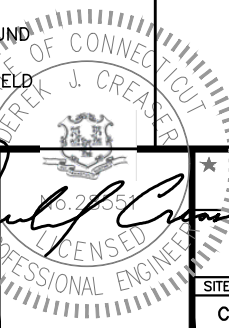
**SITE NUMBER: CT2381**  
**SITE NAME: STRATFORD STONYBROOK ROAD**  
**ATC SITE #: 283420**

23 STONYBROOK ROAD  
STRATFORD, CT 06614  
FAIRFIELD COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
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SCALE: AS SHOWN    DESIGNED BY: AT    DRAWN BY: ET



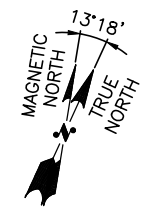
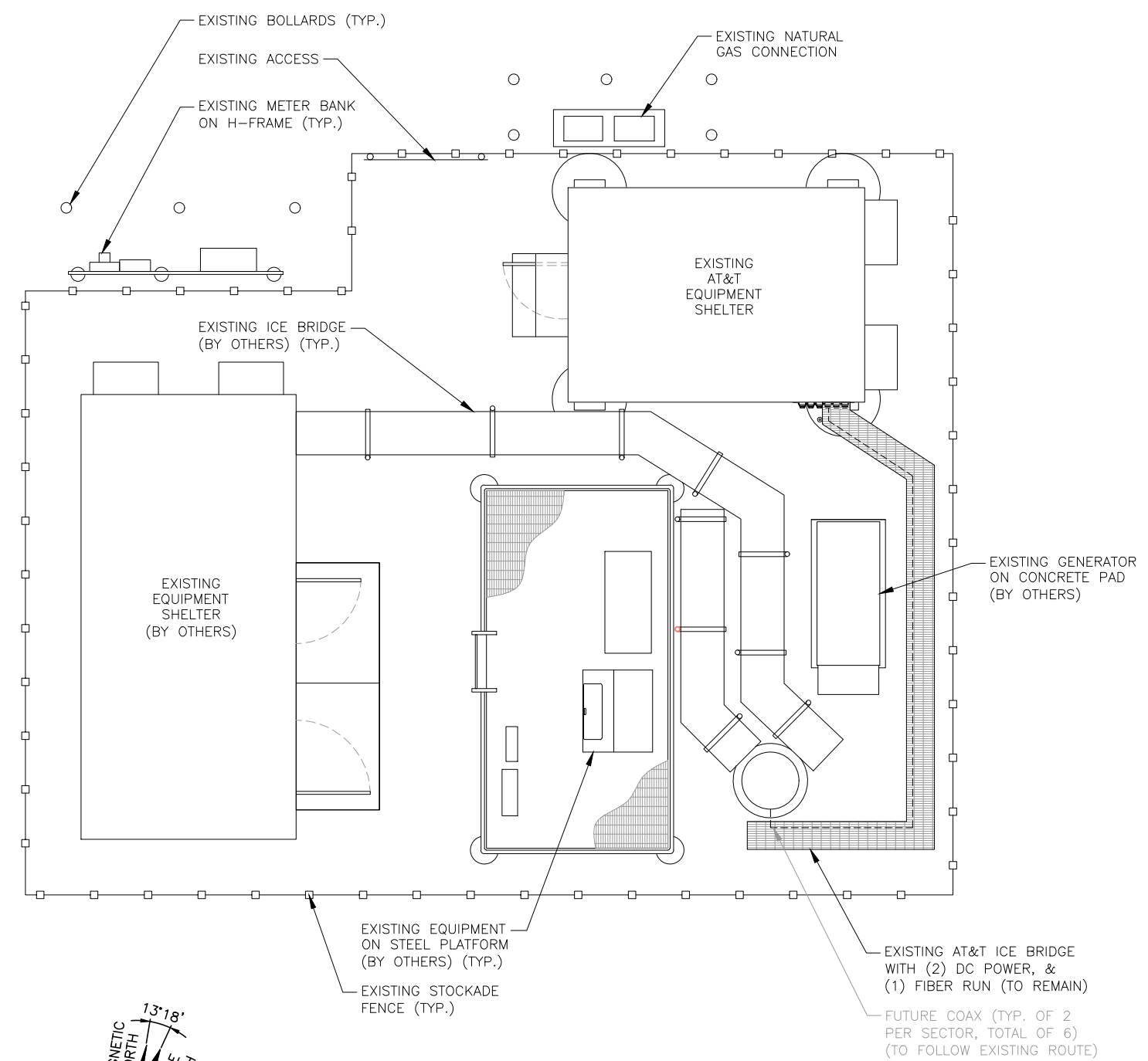
AT&T

GENERAL NOTES  
(LTE 3C/4C/4TX4RX)

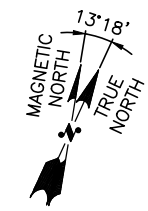
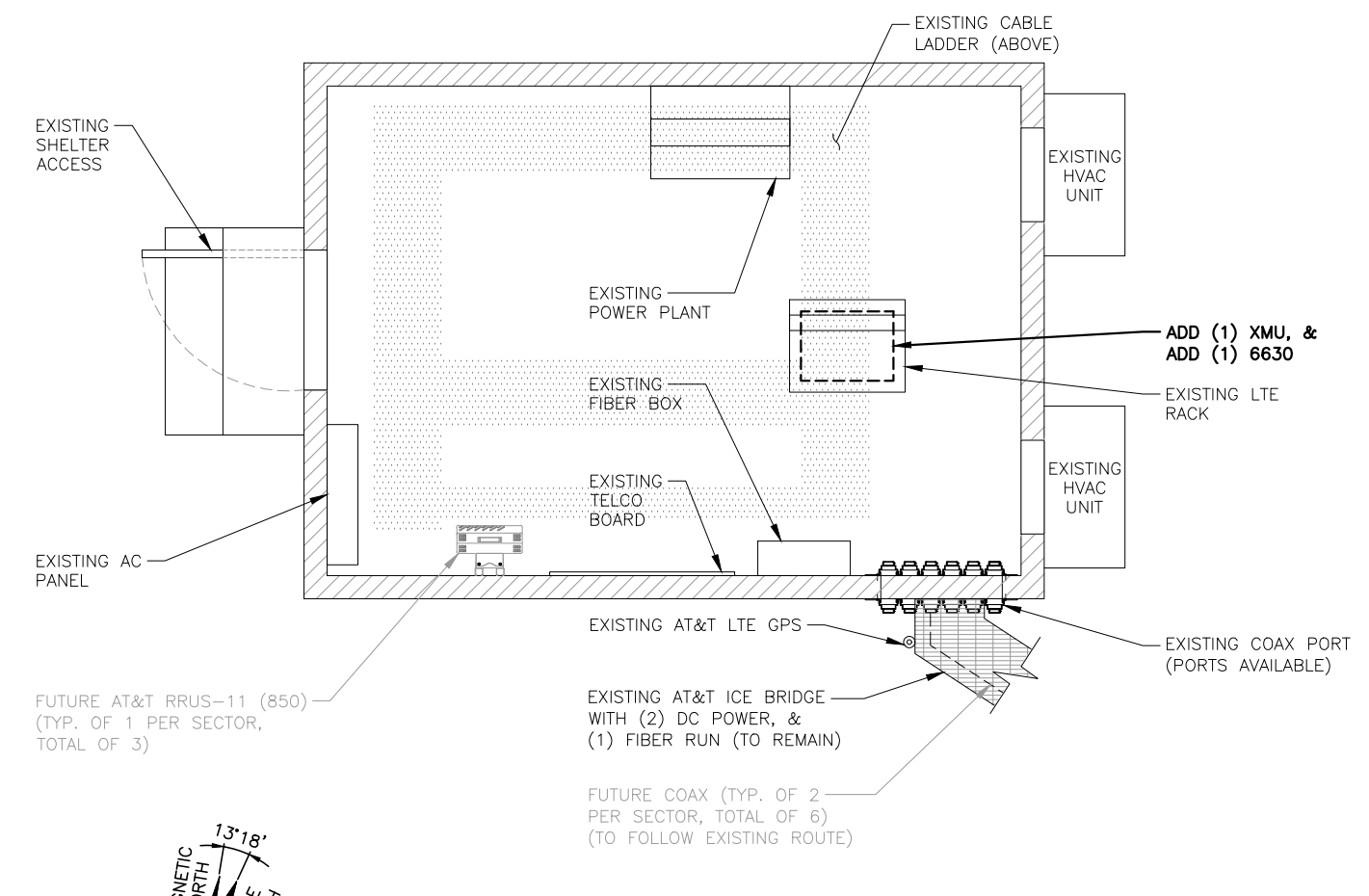
SITE NUMBER	DRAWING NUMBER	REV
CT2381	GN-1	B

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

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



**COMPOUND PLAN** 1  
22x34 SCALE: 1/4"=1'-0"  
11x17 SCALE: 1/8"=1'-0"  
A-1



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

**HG HUDSON Design Group LLC**  
45 BEECHWOOD DRIVE  
NORTH ANDOVER, MA 01845  
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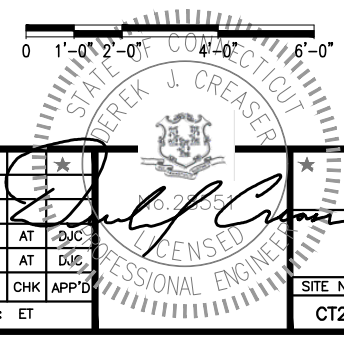
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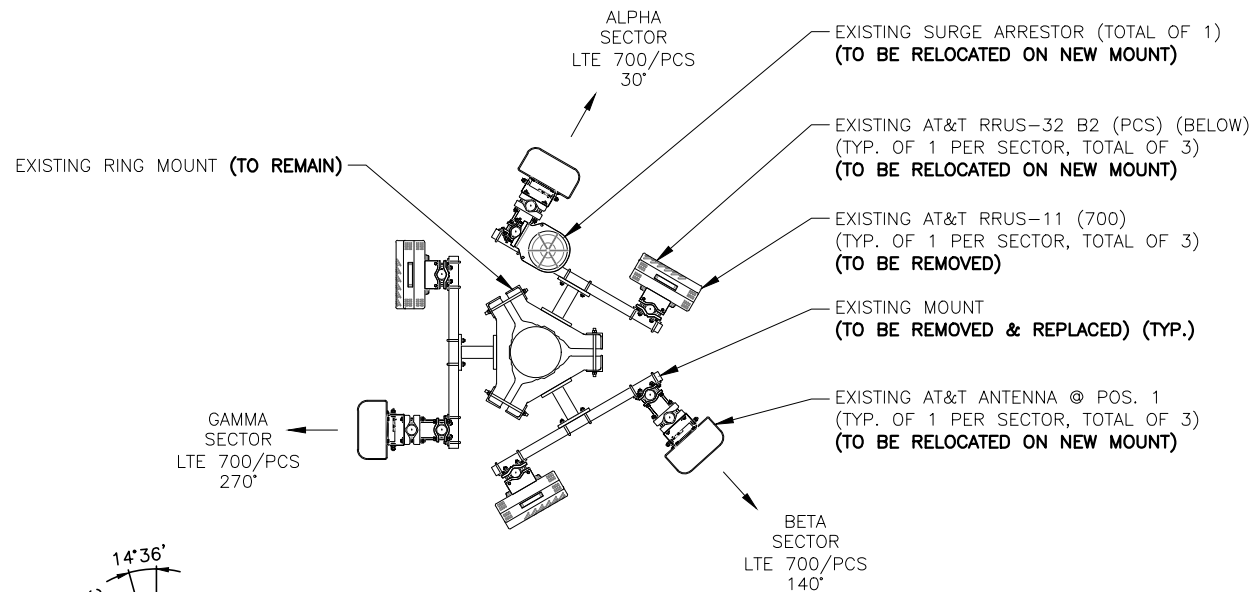
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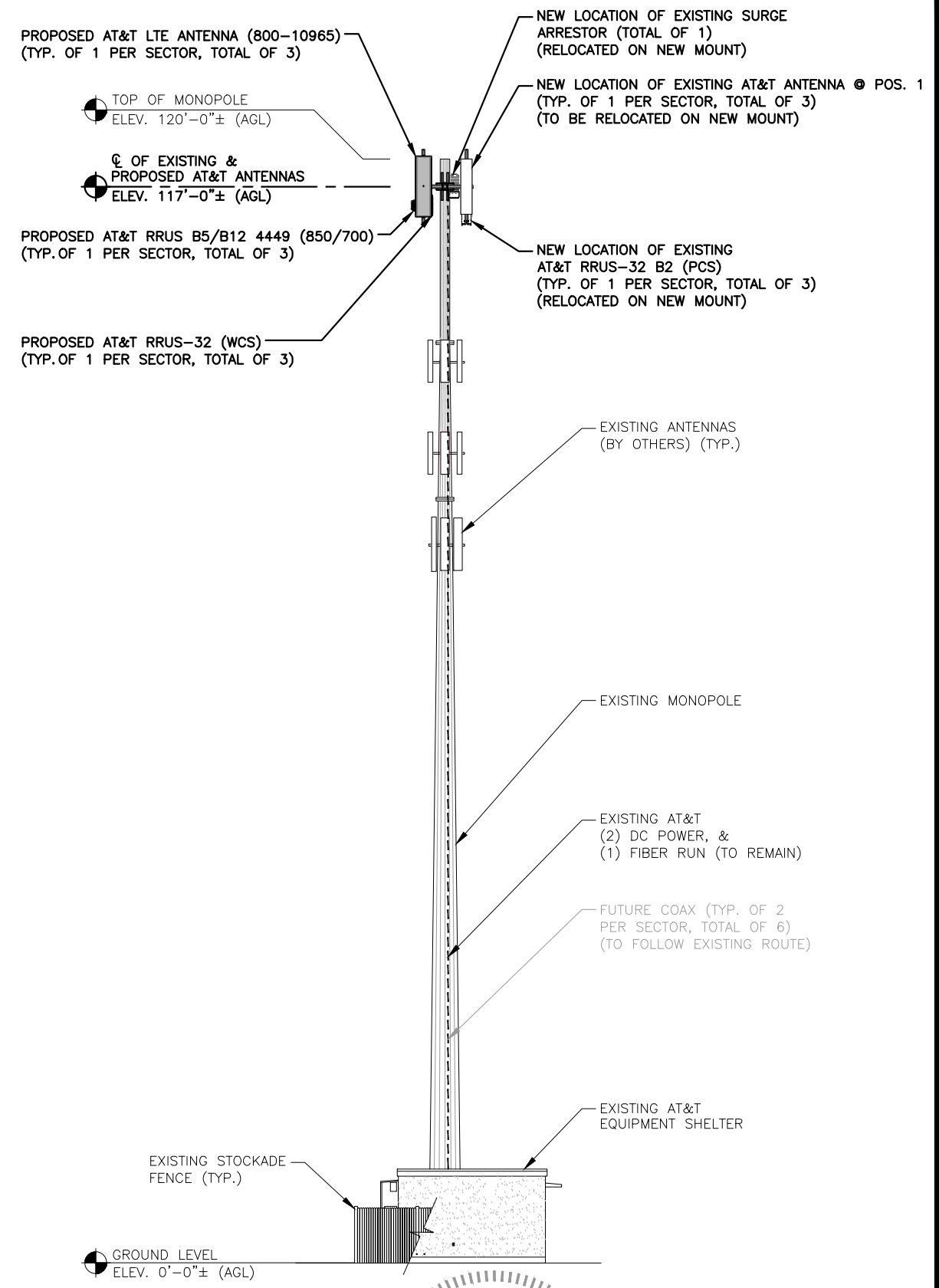
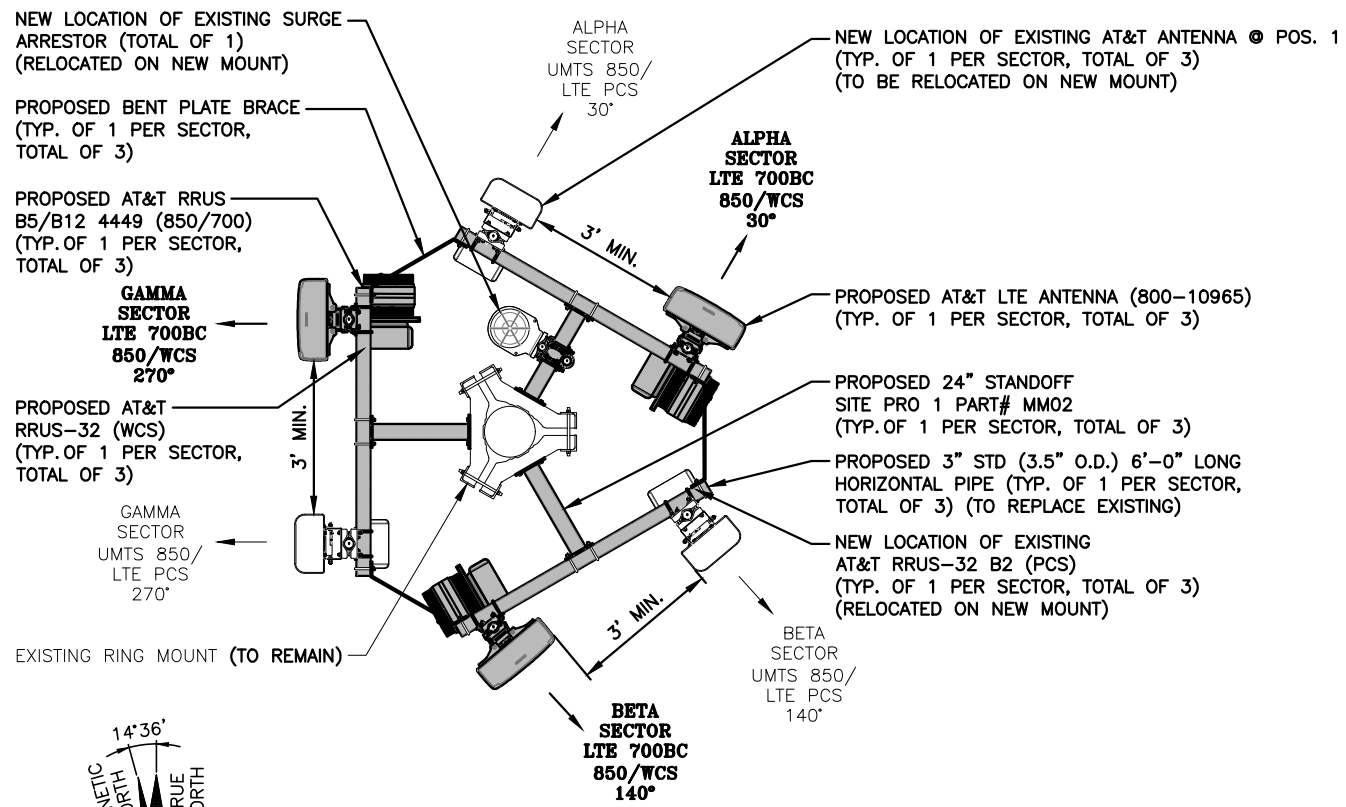


**AT&T**  
**COMPOUND & EQUIPMENT PLANS**  
**(LTE 3C/4C/4TX4RX)**  
SITE NUMBER: CT2381    DRAWING NUMBER: A-1    REV: B



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

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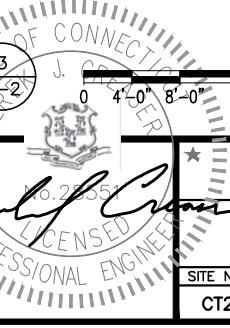
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750 WEST CENTER STREET., SUITE #301  
WEST BRIDGEWATER, MA 02379

**SITE NUMBER: CT2381**  
**SITE NAME: STRATFORD STONYBROOK ROAD**  
**ATC SITE #: 283420**  
23 STONYBROOK ROAD  
STRATFORD, CT 06614  
FAIRFIELD COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
B	03/25/19	ISSUED FOR ZONING	ET	AT	DJC
A	03/08/19	ISSUED FOR REVIEW	ET	AT	DJC

SCALE: AS SHOWN    DESIGNED BY: AT    DRAWN BY: ET



**AT&T**  
**ANTENNA LAYOUTS & ELEVATION**  
**(LTE 3C/4C/4TX4RX)**  
SITE NUMBER: CT2381    DRAWING NUMBER: A-2    REV: B



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

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

ANTENNA SCHEDULE											
SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA CL HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE ( INCHES) (L x W x D)	FEEDER	RAYCAP
A1	EXISTING	UMTS 850/ LTE PCS	OPA-65R-LCUU-H6	72X14.8X7.4	±117'	30°	-	(F)(G)(1) RRUS-11 (850) (E)(1) RRUS-32 B2 (PCS)	-	(F)(2) 1-5/8 COAX	(E) (1) RAYCAP DC6-48-60-18-8F
A2							-	-	-	-	
A3							-	-	-	-	
A4	PROPOSED	LTE 700BC 850/WCS	800-10965	78.7X20X6.9	±117'	30°	-	(P)(1) 4449 B5/B12 (700BC/850) (P)(1) RRUS-32 (WCS)	14.9X13.2X10.4 27.2X12.1X7.0	-	
B1	EXISTING	UMTS 850/ LTE PCS	OPA-65R-LCUU-H6	72X14.8X7.4	±117'	140°	-	(F)(G)(1) RRUS-11 (850) (E)(1) RRUS-32 B2 (PCS)	-	(F)(2) 1-5/8 COAX	SHARED
B2							-	-	-	-	
B3							-	-	-	-	
B4	PROPOSED	LTE 700BC 850/WCS	800-10965	78.7X20X6.9	±117'	140°	-	(P)(1) 4449 B5/B12 (700BC/850) (P)(1) RRUS-32 (WCS)	14.9X13.2X10.4 27.2X12.1X7.0	-	
C1	EXISTING	UMTS 850/ LTE PCS	OPA-65R-LCUU-H6	72X14.8X7.4	±117'	270°	-	(F)(G)(1) RRUS-11 (850) (E)(1) RRUS-32 B2 (PCS)	-	(F)(2) 1-5/8 COAX	SHARED
C2							-	-	-	-	
C3							-	-	-	-	
C4	PROPOSED	LTE 700BC 850/WCS	800-10965	78.7X20X6.9	±117'	270°	-	(P)(1) 4449 B5/B12 (700BC/850) (P)(1) RRUS-32 (WCS)	14.9X13.2X10.4 27.2X12.1X7.0	-	

PROPOSED 2.5" STD (3.88" O.D.) 8'-0" LONG HORIZONTAL PIPE (TYP. OF 2 PER SECTOR, TOTAL OF 6) (TO REPLACE EXISTING)

PROPOSED 3" STD (3.5" O.D.) 6'-0" LONG HORIZONTAL PIPE (TYP. OF 1 PER SECTOR, TOTAL OF 3) (TO REPLACE EXISTING)

PROPOSED 24" STANDOFF SITE PRO 1 PART# MM02 (TYP. OF 1 PER SECTOR, TOTAL OF 3)

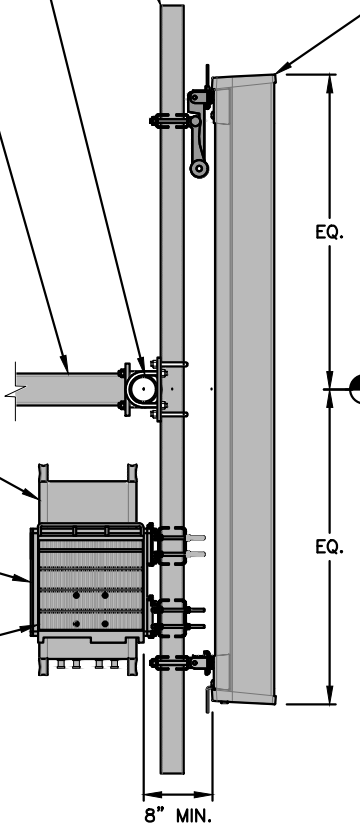
PROPOSED AT&T RRUS-32 (WCS) (TYP. OF 1 PER SECTOR, TOTAL OF 3)

PROPOSED RRU BACK TO BACK MOUNT ERICSSON PART# SXK1250461-1 (TYP.)

PROPOSED AT&T RRUS B5/B12 4449 (850/700) (TYP. OF 1 PER SECTOR, TOTAL OF 3)

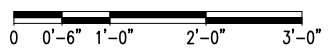
PROPOSED AT&T LTE ANTENNA (800-10965) @ POS. 4 (TYP. OF 1 PER SECTOR, TOTAL OF 3)

CL OF EXISTING & PROPOSED AT&T ANTENNAS ELEV. 117'-0"± (AGL)



**PROPOSED LTE ANTENNA & RRH MOUNTING DETAIL**  
22x34 SCALE: 1"=1'-0"  
11x17 SCALE: 1/2"=1'-0"

2  
A-3



**FINAL ANTENNA SCHEDULE**  
SCALE: N.T.S.

1  
A-3

RRU CHART				
QUANTITY	MODEL	L	W	D
3(E)	RRUS-32 B2	27.2"	12.1"	7.0"
3(P)	RRUS-32	27.2"	12.1"	7.0"
3(F)	RRUS-11	19.7"	17.0"	7.2"
3(P)	4449	14.9"	13.2"	10.4"

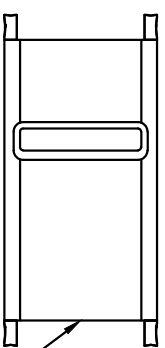
NOTE:  
MOUNT PER MANUFACTURER'S SPECIFICATIONS

NOTE:  
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

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

NOTE:  
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

**PROPOSED RRU DETAIL**  
SCALE: N.T.S.



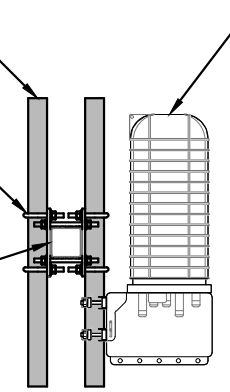
3  
A-3

PROPOSED 2" STD (2.38" O.D.) - 3'-0" LONG PIPE MAST (TOTAL OF 2)

PROPOSED BACK TO BACK PIPE MOUNT SITE PRO 1 PART# BBPM-K1

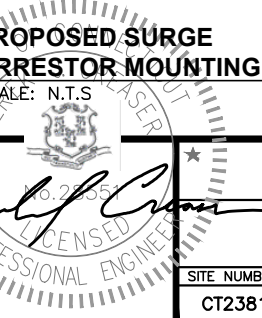
PROPOSED MOUNT STAND-OFF

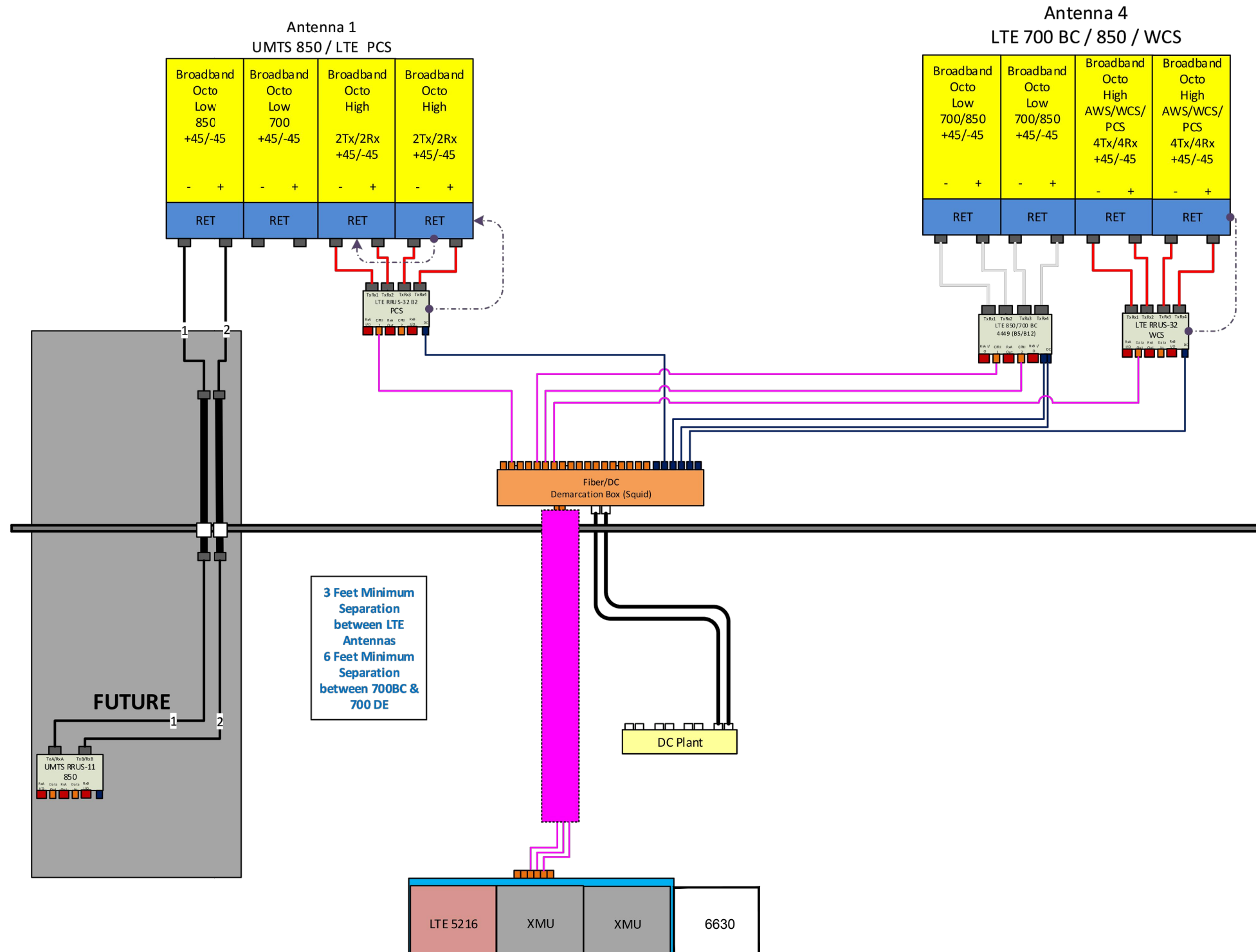
NEW LOCATION OF EXISTING SURGE ARRESTOR (TOTAL OF 1) (RELOCATED ON NEW MOUNT)



**PROPOSED SURGE ARRESTOR MOUNTING DETAIL**  
SCALE: N.T.S.

4  
A-3

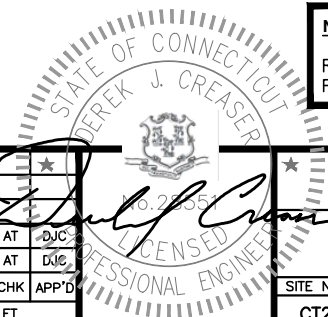




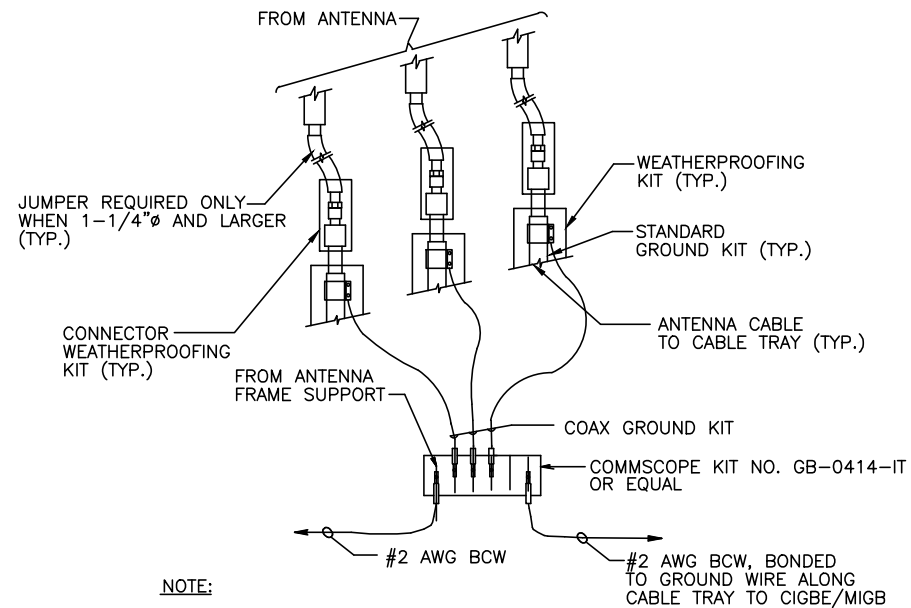
**RF PLUMBING DIAGRAM** 1  
SCALE: N.T.S. RF-1

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

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



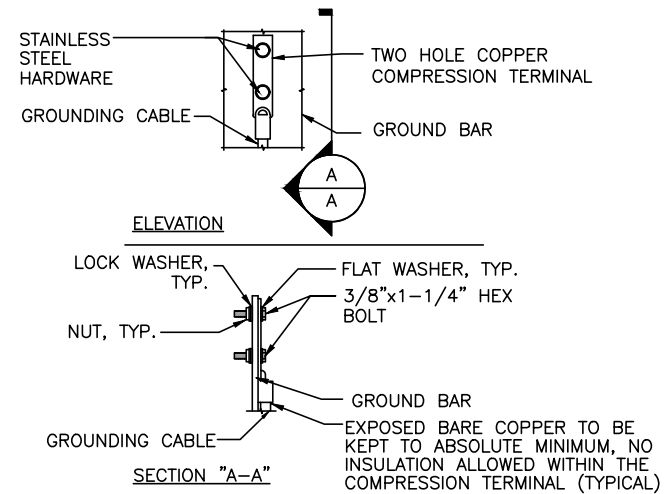
NO.	DATE	REVISIONS	BY	CHK	APP'D
B	03/25/19	ISSUED FOR ZONING	ET	AT	DJC
A	03/08/19	ISSUED FOR REVIEW	ET	AT	DJC
SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: ET		



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

**GROUND WIRE TO GROUND BAR CONNECTION DETAIL**

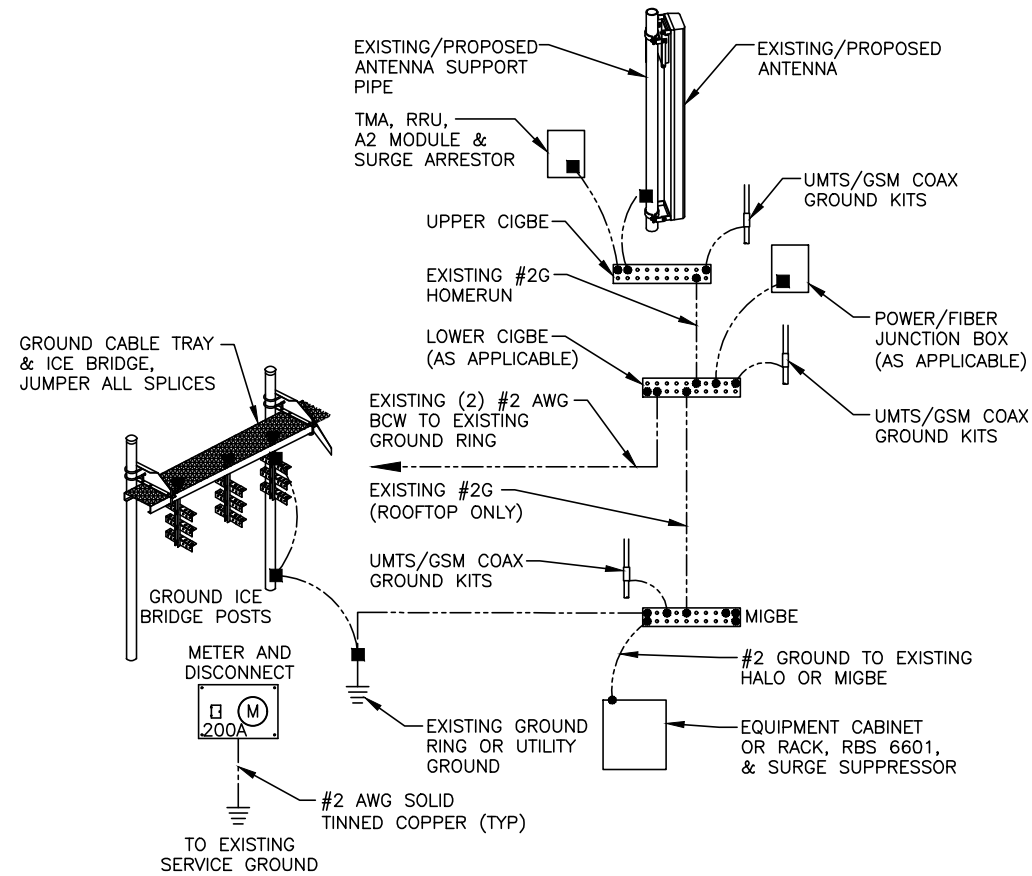
SCALE: N.T.S



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

**TYPICAL GROUND BAR CONNECTION DETAIL**

SCALE: N.T.S



**GROUNDING RISER DIAGRAM**

SCALE: N.T.S



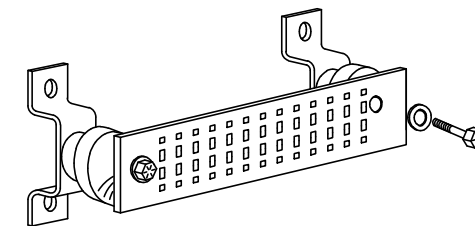
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

**SECTION "P" - SURGE PRODUCERS**

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

**SECTION "A" - SURGE ABSORBERS**

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



**GROUND BAR - DETAIL**

SCALE: N.T.S



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



750 WEST CENTER STREET., SUITE #301  
 WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT2381  
 SITE NAME: STRATFORD STONYBROOK ROAD  
 ATC SITE #: 283420

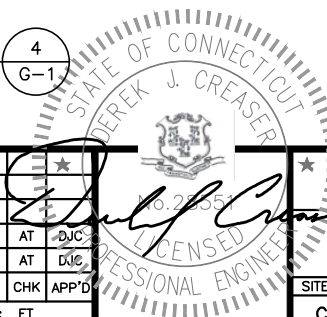
23 STONYBROOK ROAD  
 STRATFORD, CT 06614  
 FAIRFIELD COUNTY



500 ENTERPRISE DRIVE, SUITE 3A  
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SCALE: AS SHOWN    DESIGNED BY: AT    DRAWN BY: ET



AT&T

GROUNDING DETAILS  
 (LTE 3C/4C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT2381	G-1	B

# EXHIBIT 2





**AMERICAN TOWER®**  
CORPORATION

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## Structural Analysis Report

**Structure** : 119 ft Monopole  
**ATC Site Name** : Stoneybrook RD CT, CT  
**ATC Site Number** : 283420  
**Engineering Number** : OAA746858\_C3\_01  
**Proposed Carrier** : AT&T Mobility  
**Carrier Site Name** : Stratford Stonybrook Road  
**Carrier Site Number** : CT2381  
**Site Location** : 23 Stonybrook Road  
Stratford, CT 06614-3715  
41.203300,-73.148600  
**County** : Fairfield  
**Date** : March 14, 2019  
**Max Usage** : 73%  
**Result** : Pass

Prepared By:  
Peter Giordano  
Structural Engineer II

*Peter J. Giordano*

Reviewed By:

**COA: PEC.0001553**



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Deflection and Sway .....	3
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Calculations .....	Attached



## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 119 ft monopole to reflect the change in loading by AT&T Mobility.

## Supporting Documents

<b>Tower Drawings</b>	Valmont Order #20380-60, dated June 11, 2010
<b>Foundation Drawing</b>	Valmont Order #20380-60, dated June 11, 2010 MFP Engineering Project #40913-019, dated June 21, 2013
<b>Geotechnical Report</b>	Terracon Project #J2105132, dated April 2, 2010
<b>Modifications</b>	TES Job #13142 Rev 3, dated November 12, 2014

## Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

<b>Basic Wind Speed:</b>	97 mph (3-Second Gust, Vasd) / 125 mph (3-Second Gust, Vult)
<b>Basic Wind Speed w/ Ice:</b>	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
<b>Code:</b>	ANSI/TIA-222-G / 2015 IBC / 2018 Connecticut State Building Code
<b>Structure Class:</b>	II
<b>Exposure Category:</b>	B
<b>Topographic Category:</b>	1
<b>Crest Height:</b>	0 ft
<b>Spectral Response:</b>	$S_s = 0.20$ , $S_1 = 0.06$
<b>Site Class:</b>	D - Stiff Soil

## Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at [Engineering@americantower.com](mailto:Engineering@americantower.com). Please include the American Tower site name, site number, and engineering number in the subject line for any questions.



**Existing and Reserved Equipment**

Elev. <sup>1</sup> (ft)	Qty	Antenna	Mount Type	Lines	Carrier
117.0	6	CCI TPX-070821	T-Arm	(1) 0.39" (10mm) Fiber Trunk (12) 1 5/8" Coax (4) 7/8" (0.88"-22.2mm) Fiber	AT&T MOBILITY
	2	Raycap DC6-48-60-18-8F(32.8 lbs)			
	3	Ericsson RRUS 32 B2			
	3	Ericsson RRUS-32 B30 (77 lbs)			
	3	Amphenol Antel BXA-171063-12CF			
	3	CCI OPA-65R-LCUU-H6			
109.0	3	Amphenol Antel BXA-171063-12CF	Flush	-	
	3	CCI OPA-65R-LCUU-H6			
98.0	3	RFS ATMAA1412D-1A20	Side Arm	(2) 1 1/4" Hybriflex Cable (12) 7/8" Coax (2) 1 1/4" (1.25"-31.8mm) Fiber (1) 1 5/8" Hybriflex	T-MOBILE
	3	Ericsson RRUS 11 B12			
	3	Ericsson RRUS 01 B2 w/ Solar Shield			
97.0	3	Ericsson KRY 112 144/2			
	3	Ericsson Radio 4449 B12,B71			
	3	RFS APXVAARR24_43-U-NA20			
87.0	3	Ericsson AIR32 B66Aa/B2a	Side Arm	(12) 1 5/8" Coax	
77.0	3	Alcatel-Lucent 9442 RRH2x40-AWS	T-Arm	(12) 1 5/8" Coax	VERIZON WIRELESS
	3	Alcatel-Lucent 9442 RRH 2x40 700U			
	6	Amphenol Antel BXA-171063-12CF			
	6	Amphenol Antel BXA-70063-6CF-6			

**Equipment to be Removed**

Elev. <sup>1</sup> (ft)	Qty	Antenna	Mount Type	Lines	Carrier
117.0	3	Ericsson RRUS-11	-	(3) 0.38" (9.6mm) Cable	AT&T MOBILITY

**Proposed Equipment**

Elev. <sup>1</sup> (ft)	Qty	Antenna	Mount Type	Lines	Carrier
117.0	3	Ericsson RRUS 4449 B5, B12	T-Arm	(3) 3/8" (0.38"-9.5mm) RET Control Cable	AT&T MOBILITY
	3	Kathrein Scala 80010965			

<sup>1</sup> Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Install proposed lines inside the pole shaft.





**Structure Usages**

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	43%	Pass
Shaft	68%	Pass
Base Plate	22%	Pass
Flanges	56%	Pass
Reinforcement	73%	Pass

**Foundations**

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	1,312.9	52%
Axial (Kips)	26.7	50%
Shear (Kips)	15.2	24%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

**Deflection and Sway\***

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
117.0	Ericsson RRUS 4449 B5, B12	AT&T MOBILITY	1.356	1.432
	Kathrein Scala 80010965			

\*Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-G



## Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

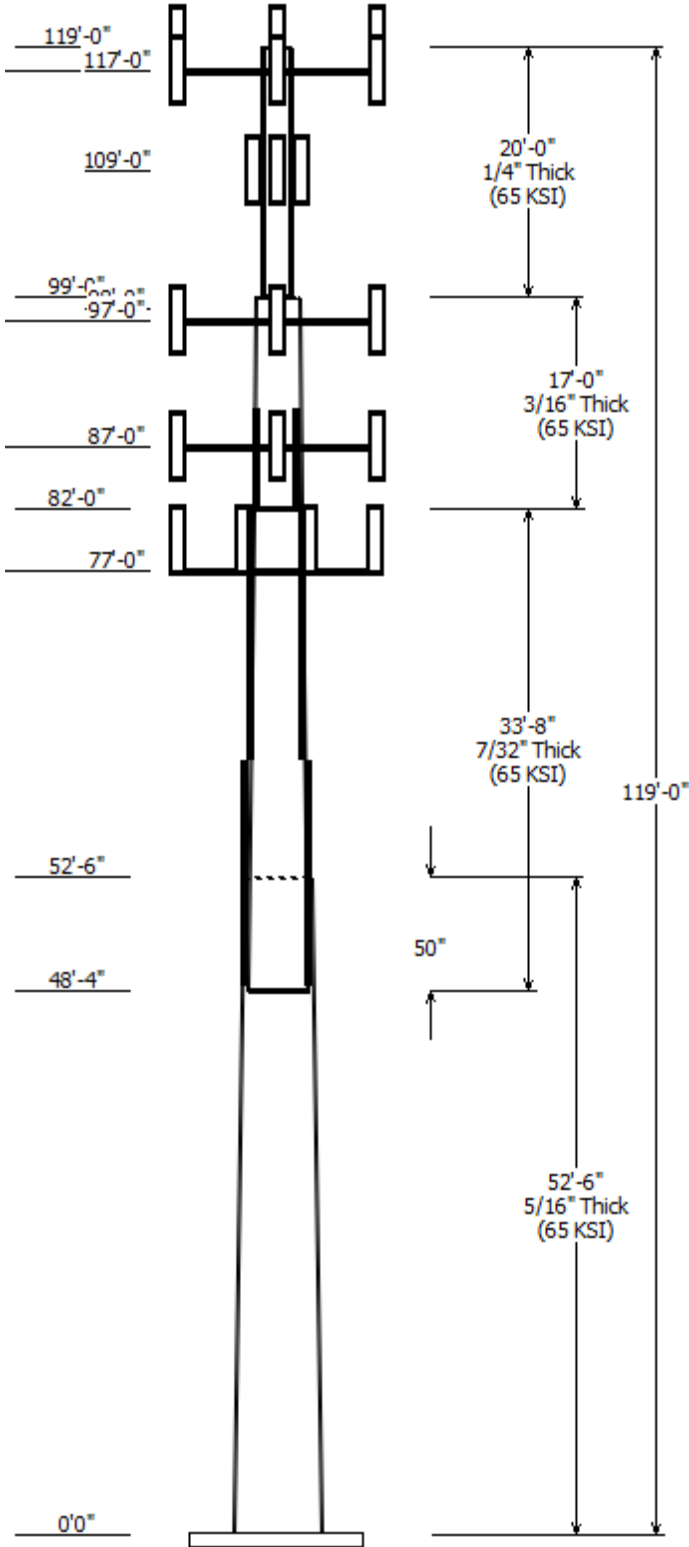
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

All assets of American Tower Corporation, its affiliates and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.

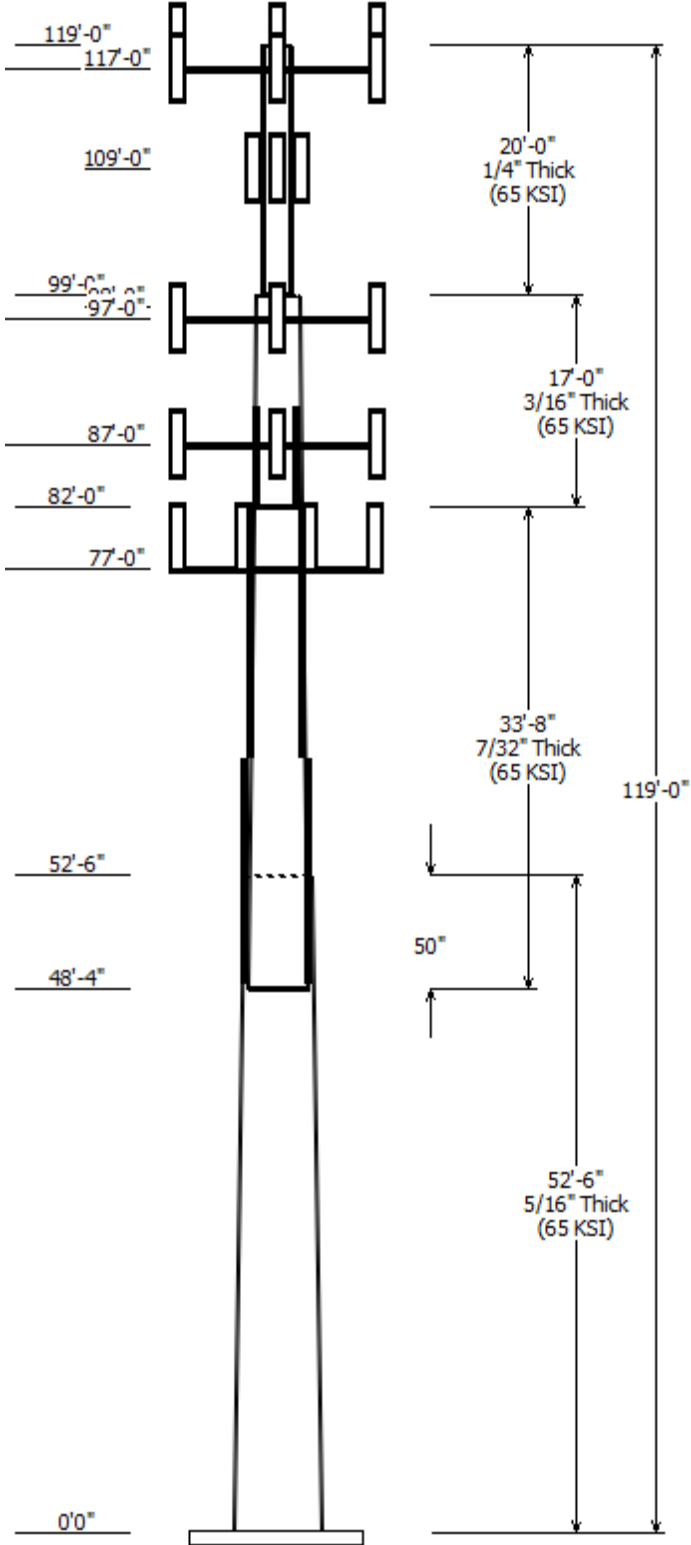


Job Information	
Pole : 283420	Code: ANSI/TIA-222-G
Location : STONEYBROOK RD CT, CT	
Description :	
Client : AT&T MOBILITY	Struct Class : II
Shape : 18 Sides	Exposure : B
Height : 119.00 (ft)	Topo : 1
Base Elev (ft): 0.00	
Taper: 0.30000@in/ft)	

Sections Properties							
Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Joint Type	Overlap Length (in)	Steel Grade
		Top	Bottom				
1	52.500	26.25	42.00	0.313		0.000	18 Sides 65
2	33.667	17.83	27.93	0.219	Slip Joint	50.000	18 Sides 65
3	17.000	12.73	17.83	0.188	Butt Joint	0.000	18 Sides 65
4	20.000	12.56	12.56	0.250	Butt Joint	0.000	18 Sides 65

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
117.000	117.000	3	Generic Round T-Arm
117.000	117.000	3	Kathrein Scala 80010965
117.000	118.000	3	CCI OPA-65R-LCUU-H6
117.000	117.000	3	Amphenol Antel BXA-171063-
117.000	117.000	3	Ericsson RRUS-32 B30 (77 lbs)
117.000	118.000	3	Ericsson RRUS 32 B2
117.000	117.000	3	Ericsson RRUS 4449 B5, B12
117.000	118.000	2	Raycap DC6-48-60-18-8F(32.8 lb
117.000	117.000	6	CCI TPX-070821
109.000	109.000	3	CCI OPA-65R-LCUU-H6
109.000	109.000	3	Amphenol Antel BXA-171063-
98.000	98.000	3	Ericsson RRUS 01 B2 w/ Solar S
98.000	98.000	3	Ericsson RRUS 11 B12
98.000	98.000	3	RFS ATMAA1412D-1A20
97.000	97.000	3	RFS APXVAARR24_43-U-NA20
97.000	97.000	3	Ericsson Radio 4449 B12,B71
97.000	97.000	3	Ericsson KRY 112 144/2
97.000	97.000	3	Generic Flat Side Arm
87.000	87.000	3	Generic Flat Side Arm
87.000	87.000	3	Ericsson AIR32 B66Aa/B2a
77.000	78.000	6	Amphenol Antel BXA-70063-
77.000	78.000	6	Amphenol Antel BXA-171063-
77.000	77.000	3	Alcatel-Lucent 9442 RRH 2x40 7
77.000	77.000	3	Alcatel-Lucent 9442 RRH2x40-
77.000	77.000	3	Generic Flat T-Arm

Linear Appurtenance			
Elev (ft)			
From	To	Description	Exposed To Wind
42.000	92.000	Flat Bar	Yes
0.000	97.000	1 1/4" (1.25"-	No
0.000	97.000	1 5/8" Hybriflex	No
0.000	98.000	1 1/4" Hybriflex	No
0.000	98.000	7/8" Coax	No
0.000	117.0	0.39" (10mm)	No
0.000	117.0	1 5/8" Coax	No
0.000	117.0	3/8" (0.38"-	No
0.000	117.0	7/8" (0.88"-	No
0.000	77.000	1 5/8" Coax	No
0.000	87.000	1 5/8" Coax	No



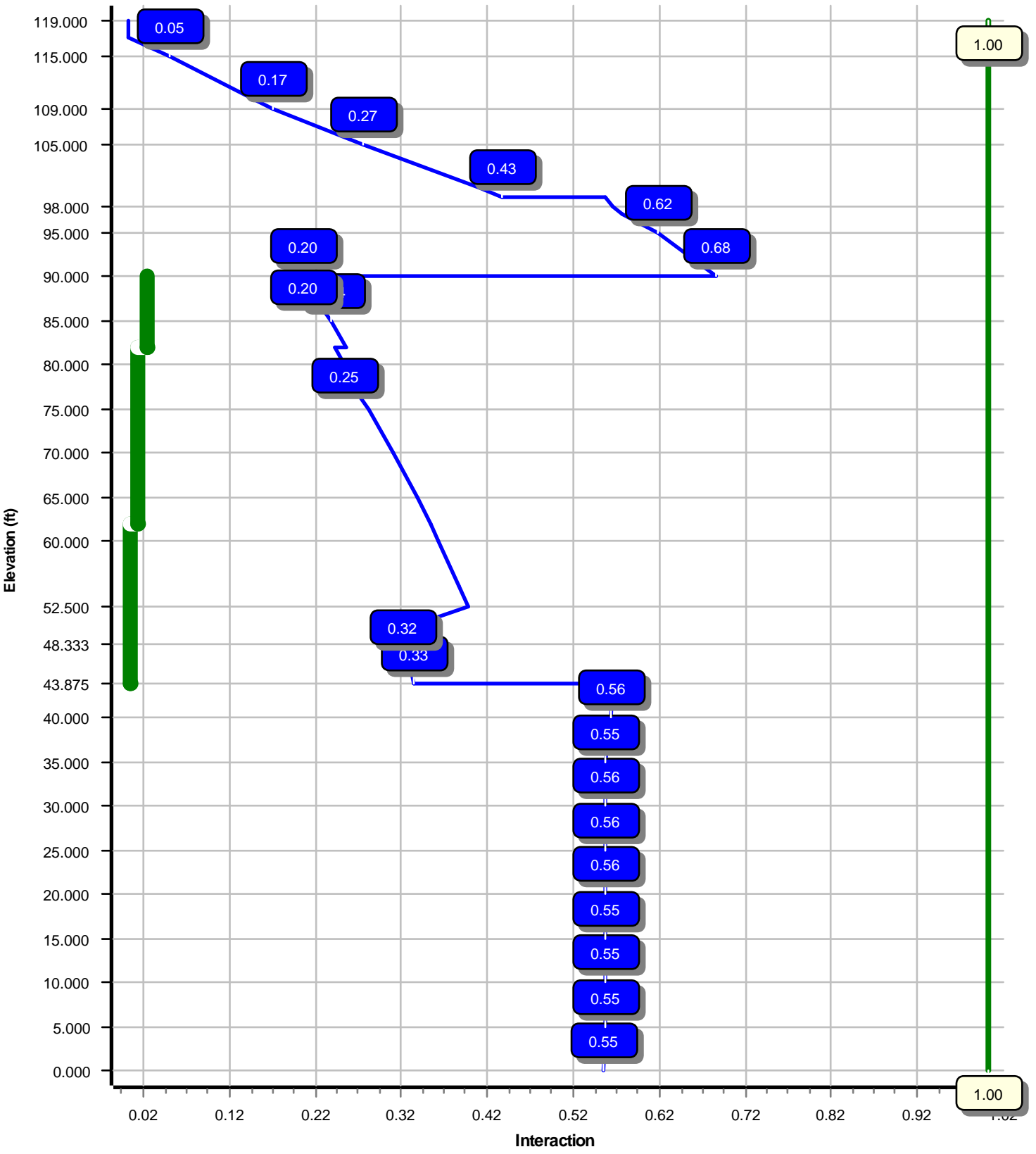
Load Cases	
1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	1312.92	15.17	26.68
0.9D + 1.6W	1296.02	15.14	20.01
1.2D + 1.0Di + 1.0Wi	359.35	4.08	49.06
(1.2 + 0.2Sds) * DL + E ELFM	69.06	0.74	26.55
(1.2 + 0.2Sds) * DL + E EMAM	89.78	0.93	26.55
(0.9 - 0.2Sds) * DL + E ELFM	68.08	0.74	18.30
(0.9 - 0.2Sds) * DL + E EMAM	88.33	0.93	18.30
1.0D + 1.0W	311.37	3.62	22.26

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
	0.00	0.000	0.000



Load Case : 1.2D + 1.6W  
Max Ratio 68.39% at 90.1 ft



Site Number: 283420

Code: ANSI/TIA-222-G

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Site Name: STONEYBROOK RD CT, CT

Engineering Number: OAA746858\_C3\_01

3/15/2019 4:09:50 PM

Customer: AT&T MOBILITY

**Analysis Parameters**

Location :	FAIRFIELD County, CT	Height (ft) :	119
Code :	ANSI/TIA-222-G	Base Diameter (in) :	42.00
Shape :	18 Sides	Top Diameter (in) :	12.56
Pole Type :	Custom	Taper (in/ft) :	0.300
Pole Manufacturer :	Valmont	Rotation (deg) :	0.00

**Ice & Wind Parameters**

Structure Class:	II	Design Wind Speed Without Ice:	97 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0 ft	Design Ice Thickness:	0.75 in

**Seismic Parameters**

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	2.05		
T <sub>L</sub> (sec):	6	p:	1
S <sub>s</sub> :	0.203	S <sub>1</sub> :	0.064
F <sub>a</sub> :	1.600	F <sub>v</sub> :	2.400
S <sub>ds</sub> :	0.217	S <sub>d1</sub> :	0.102
		C <sub>s</sub> :	0.033
		C <sub>s</sub> Max:	0.033
		C <sub>s</sub> Min:	0.030

**Load Cases**

1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2S <sub>ds</sub> ) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2S <sub>ds</sub> ) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2S <sub>ds</sub> ) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2S <sub>ds</sub> ) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 283420

Code: ANSI/TIA-222-G

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Site Name: STONEYBROOK RD CT, CT

Engineering Number: OAA746858\_C3\_01

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Customer: AT&T MOBILITY

**Shaft Section Properties**

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom						Top						
							Dia (in)	Elev (ft)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	52.500	0.3125	65		0.00	5,991	42.00	0.00	41.35	9078.5	21.94	134.40	26.25	52.50	25.73	2186.6	13.05	84.00	0.300000
2-18	33.667	0.2188	65	Slip	50.00	1,803	27.93	48.33	19.24	1868.2	20.76	127.71	17.83	82.00	12.23	479.8	12.61	81.54	0.300000
3-18	17.000	0.1875	65	Butt	0.00	520	17.83	82.00	10.50	413.4	15.01	95.13	12.73	99.00	7.47	148.6	10.22	67.93	0.300000
4-18	20.000	0.2500	65	Butt	0.00	665	12.56	99.00	9.77	187.1	7.10	50.25	12.56	119.00	9.77	187.1	7.10	50.25	0.000000
Shaft Weight						8,979													

**Discrete Appurtenance Properties**

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor	Weight (lb)	Ice EPAa (sf)	Orientation Factor
117.00	CCI TPX-070821	6	0.80	0.000	7.50	0.470	0.50	19.34	0.939	0.50
117.00	Raycap DC6-48-60-18-8F(32.8	2	0.80	1.000	32.80	1.470	1.00	93.05	2.152	1.00
117.00	Ericsson RRUS 4449 B5, B12	3	0.80	0.000	71.00	1.970	0.50	133.94	2.881	0.50
117.00	Ericsson RRUS 32 B2	3	0.80	1.000	53.00	2.740	0.67	124.83	3.881	0.67
117.00	Ericsson RRUS-32 B30 (77 lbs)	3	0.80	0.000	77.00	3.310	0.71	171.98	4.562	0.71
117.00	Amphenol Antel BXA-171063-	3	0.80	0.000	12.80	4.790	0.72	106.31	7.094	0.72
117.00	CCI OPA-65R-LCUU-H6	3	0.80	1.000	73.00	9.660	0.66	271.77	12.368	0.66
117.00	Generic Round T-Arm	3	0.75	0.000	312.50	9.700	0.67	567.64	17.752	0.67
117.00	Kathrein Scala 80010965	3	0.80	0.000	97.60	13.810	0.62	357.97	16.789	0.62
109.00	Amphenol Antel BXA-171063-	3	0.80	0.000	12.80	4.790	0.72	105.56	7.076	0.72
109.00	CCI OPA-65R-LCUU-H6	3	0.80	0.000	73.00	9.660	0.66	270.17	12.346	0.66
98.00	RFS ATMAA1412D-1A20	3	0.90	0.000	13.00	1.000	0.50	38.46	1.641	0.50
98.00	Ericsson RRUS 11 B12	3	0.90	0.000	50.70	2.790	0.67	120.20	3.842	0.67
98.00	Ericsson RRUS 01 B2 w/ Solar	3	0.90	0.000	44.00	3.150	0.63	119.02	4.296	0.63
97.00	Ericsson KRY 112 144/2	3	0.90	0.000	9.70	0.480	0.50	23.31	0.934	0.50
97.00	Ericsson Radio 4449 B12,B71	3	0.90	0.000	74.00	1.640	0.50	127.65	2.449	0.50
97.00	Generic Flat Side Arm	3	1.00	0.000	187.50	6.300	0.67	315.18	9.286	0.67
97.00	RFS APXVAARR24_43-U-NA20	3	0.90	0.000	127.90	20.240	0.63	504.12	23.794	0.63
87.00	Generic Flat Side Arm	3	1.00	0.000	187.50	6.300	0.67	313.78	9.254	0.67
87.00	Ericsson AIR32 B66Aa/B2a	3	0.90	0.000	132.20	6.510	0.71	283.48	8.586	0.71
77.00	Alcatel-Lucent 9442 RRH2x40-	3	0.80	0.000	49.00	2.500	0.67	120.87	3.532	0.67
77.00	Alcatel-Lucent 9442 RRH 2x40	3	0.80	0.000	50.70	2.740	0.67	129.37	3.755	0.67
77.00	Amphenol Antel BXA-171063-	6	0.80	1.000	12.80	4.790	0.72	102.44	6.999	0.72
77.00	Amphenol Antel BXA-70063-6CF-	6	0.80	1.000	17.00	7.570	0.66	177.45	8.741	0.66
77.00	Generic Flat T-Arm	3	0.75	0.000	312.50	12.900	0.67	557.08	20.556	0.67
Totals	Num Loadings:25	83			6,353.60			16,269.62		

**Linear Appurtenance Properties**

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Projected Flat	Projected Width (in)	Exposed To Wind	Carrier
0.00	117.00	1	0.39" (10mm) Fiber	0.39	0.06	N	0.00	N	AT&T MOBILITY
0.00	117.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	AT&T MOBILITY
0.00	117.00	3	3/8" (0.38"- 9.5mm)	0.38	0.23	N	0.00	N	AT&T MOBILITY
0.00	117.00	4	7/8" (0.88"- 22.2mm)	0.88	0.70	N	0.00	N	AT&T MOBILITY
0.00	98.00	2	1 1/4" Hybriflex Cable	1.54	1.00	N	0.00	N	T-MOBILE
0.00	98.00	12	7/8" Coax	1.09	0.33	N	0.00	N	T-MOBILE
0.00	97.00	2	1 1/4" (1.25"- 31.8mm)	1.25	1.05	N	0.00	N	T-MOBILE
0.00	97.00	1	1 5/8" Hybriflex	1.98	1.30	N	0.00	N	T-MOBILE
42.00	92.00	3	Flat Bar	1.00	0.00	Y	2.00	Y	--
0.00	87.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	T-MOBILE

Site Number: 283420

Code: ANSI/TIA-222-G

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Site Name: STONEYBROOK RD CT, CT

Engineering Number: OAA746858\_C3\_01

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Customer: AT&T MOBILITY

0.00 77.00 12 1 5/8" Coax 1.98 0.82 N 0.00 N VERIZON WIRELESS

**Additional Steel**

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Offset (in)	— Intermediate Connections —			Connectors	Continuation?
						Description	Spacing (in)	Len (in)		
43.88	62.00	3	PL PL 6" x 1"	65	0.00	5/8" Hollo Bolt	24.0	3.00	5/8" Hollo Bolt	Yes
62.00	82.00	3	PL PL 6" x 1"	65	0.00	5/8" Hollo Bolt	24.0	3.00	5/8" Hollo Bolt	Yes
82.00	90.13	3	PL PL 6" x 1"	65	0.00	5/8" Hollo Bolt	24.0	3.00	5/8" Hollo Bolt	Yes



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Customer: AT&T MOBILITY

**Segment Properties** (Max Len : 5.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	F'y (ksi)	S (in <sup>3</sup> )	Z (in <sup>3</sup> )	Weight (lb)	Additional Reinforcing		
												Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	Weight (lb)
0.00		0.3125	42.000	41.347	9,078.5	21.94	134.40	75.6	425.7	0.0	0.0			
5.00		0.3125	40.500	39.860	8,133.3	21.09	129.60	76.6	395.5	0.0	690.8			
10.00		0.3125	39.000	38.372	7,256.2	20.24	124.80	77.6	366.5	0.0	665.5			
15.00		0.3125	37.500	36.884	6,444.4	19.40	120.00	78.6	338.5	0.0	640.2			
20.00		0.3125	36.000	35.396	5,695.6	18.55	115.20	79.6	311.6	0.0	614.9			
25.00		0.3125	34.500	33.909	5,007.2	17.70	110.40	80.6	285.9	0.0	589.6			
30.00		0.3125	33.000	32.421	4,376.6	16.86	105.60	81.6	261.2	0.0	564.3			
35.00		0.3125	31.500	30.933	3,801.3	16.01	100.80	82.6	237.7	0.0	538.9			
40.00		0.3125	30.000	29.445	3,278.8	15.16	96.00	82.6	215.3	0.0	513.6			
43.88	Reinf Bottom	0.3125	28.838	28.292	2,908.5	14.51	92.28	82.6	198.7	0.0	380.7			
45.00		0.3125	28.500	27.957	2,806.5	14.32	91.20	82.6	194.0	0.0	107.7	18.00	1,985	68.9
48.33	Bot - Section 2	0.3125	27.500	26.966	2,518.3	13.75	88.00	82.6	180.4	0.0	311.5	18.00	1,855	204.2
50.00		0.3125	27.000	26.470	2,381.9	13.47	86.40	82.6	173.8	0.0	259.7	18.00	1,847	102.1
52.50	Top - Section 1	0.2188	26.688	18.377	1,626.6	19.75	122.00	78.2	120.1	0.0	380.6	18.00	1,752	153.1
55.00		0.2188	25.938	17.856	1,492.3	19.14	118.57	78.9	113.3	0.0	154.1	18.00	1,660	153.1
60.00		0.2188	24.438	16.815	1,246.1	17.93	111.71	80.3	100.4	0.0	294.9	18.00	1,483	306.3
62.00	Reinf. Top Reinf	0.2188	23.837	16.398	1,155.7	17.45	108.97	80.9	95.5	0.0	113.0	18.00	1,415	122.5
65.00		0.2188	22.938	15.773	1,028.6	16.73	104.86	81.7	88.3	0.0	164.2	18.00	1,317	183.8
70.00		0.2188	21.438	14.732	838.0	15.52	98.00	82.6	77.0	0.0	259.5	18.00	1,160	306.3
75.00		0.2188	19.938	13.690	672.6	14.31	91.14	82.6	66.4	0.0	241.8	18.00	1,014	306.3
77.00		0.2188	19.337	13.274	613.0	13.82	88.40	82.6	62.4	0.0	91.8	18.00	958.4	122.5
80.00		0.2188	18.438	12.649	530.5	13.10	84.29	82.6	56.7	0.0	132.3	18.00	877.9	183.8
82.00	Top - Section 2	0.2188	17.837	12.232	479.8	12.61	81.54	82.6	53.0	0.0	84.7	18.00	826.2	122.5
82.00	Bot - Section 3	0.1875	17.837	10.504	413.4	15.01	95.13	82.6	45.6	0.0		18.00	826.2	
85.00		0.1875	16.938	9.968	353.3	14.16	90.33	82.6	41.1	0.0	104.5	18.00	751.7	183.8
87.00		0.1875	16.337	9.611	316.7	13.60	87.13	82.6	38.2	0.0	66.6	18.00	704.1	122.5
90.00		0.1875	15.438	9.075	266.7	12.75	82.33	82.6	34.0	0.0	95.4	18.00	635.7	183.8
90.13	Reinf. Top	0.1875	15.400	9.053	264.7	12.72	82.13	82.6	33.9	0.0	3.9	18.00	633.0	7.7
95.00		0.1875	13.938	8.183	195.5	11.34	74.33	82.6	27.6	0.0	143.0			
97.00		0.1875	13.337	7.826	171.0	10.78	71.13	82.6	25.2	0.0	54.5			
98.00		0.1875	13.038	7.647	159.5	10.50	69.53	82.6	24.1	0.0	26.3			
99.00	Top - Section 3	0.1875	12.738	7.469	148.6	10.22	67.93	82.6	23.0	0.0	25.7			
99.00	Bot - Section 4	0.2500	12.563	9.770	187.1	7.10	50.25	82.6	29.3	0.0				
100.0		0.2500	12.563	9.770	187.1	7.10	50.25	82.6	29.3	0.0	33.2			
105.0		0.2500	12.563	9.770	187.1	7.10	50.25	82.6	29.3	0.0	166.2			
109.0		0.2500	12.563	9.770	187.1	7.10	50.25	82.6	29.3	0.0	133.0			
110.0		0.2500	12.563	9.770	187.1	7.10	50.25	82.6	29.3	0.0	33.2			
115.0		0.2500	12.563	9.770	187.1	7.10	50.25	82.6	29.3	0.0	166.2			
117.0		0.2500	12.563	9.770	187.1	7.10	50.25	82.6	29.3	0.0	66.5			
119.0		0.2500	12.563	9.770	187.1	7.10	50.25	82.6	29.3	0.0	66.5			
											8,978.9	2,832.9		

Site Number: 283420

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Customer: AT&T MOBILITY

**Load Case: 1.2D + 1.6W**

97 mph with No Ice

26 Iterations

Gust Response Factor :1.10

Wind Importance Factor 1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

**Applied Segment Forces Summary**

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		159.9	0.0					0.0	0.0	159.9	0.0	0.0	0.0
5.00		314.0	829.0					0.0	254.6	314.0	1,083.6	0.0	0.0
10.00		302.4	798.6					0.0	254.6	302.4	1,053.2	0.0	0.0
15.00		290.7	768.2					0.0	254.6	290.7	1,022.8	0.0	0.0
20.00		279.1	737.9					0.0	254.6	279.1	992.4	0.0	0.0
25.00		267.5	707.5					0.0	254.6	267.5	962.1	0.0	0.0
30.00		258.8	677.1					0.0	254.6	258.8	931.7	0.0	0.0
35.00		255.2	646.7					0.0	254.6	255.2	901.3	0.0	0.0
40.00		224.5	616.4					0.0	254.6	224.5	870.9	0.0	0.0
43.88	Reinf Bottom	125.3	456.8					0.0	197.3	125.3	654.1	0.0	0.0
45.00		110.2	129.2					0.0	140.0	110.2	269.2	0.0	0.0
48.33	Bot - Section 2	123.4	373.8					0.0	414.7	123.4	788.5	0.0	0.0
50.00		102.4	311.6					0.0	207.4	102.4	519.0	0.0	0.0
52.50	Top - Section 1	121.5	456.7					0.0	311.0	121.5	767.7	0.0	0.0
55.00		178.0	184.9					0.0	311.0	178.0	496.0	0.0	0.0
60.00		163.6	353.9					0.0	622.1	163.6	976.0	0.0	0.0
62.00	Reinf. Top Reinf	113.3	135.6					0.0	248.8	113.3	384.5	0.0	0.0
65.00		176.0	197.1					0.0	373.3	176.0	570.3	0.0	0.0
70.00		211.8	311.4					0.0	622.1	211.8	933.5	0.0	0.0
75.00		143.1	290.1					0.0	622.1	143.1	912.2	0.0	0.0
77.00	Appurtenance(s)	98.4	110.1	2,532.3	0.0	1,502.8	1,698.5	0.0	248.8	2,630.7	2,057.4	0.0	0.0
80.00		97.0	158.8					0.0	337.8	97.0	496.6	0.0	0.0
82.00	Top - Section 2	94.7	101.6					0.0	225.2	94.7	326.8	0.0	0.0
85.00		93.2	125.4					0.0	337.8	93.2	463.2	0.0	0.0
87.00	Appurtenance(s)	90.8	79.9	961.6	0.0	0.0	1,150.9	0.0	225.2	1,052.4	1,456.1	0.0	0.0
90.00		56.2	114.5					0.0	302.4	56.2	416.9	0.0	0.0
90.13	Reinf. Top	78.8	4.6					0.0	12.6	78.8	17.2	0.0	0.0
95.00		106.1	171.5					0.0	133.1	106.1	304.6	0.0	0.0
97.00	Appurtenance(s)	43.8	65.4	1,970.9	0.0	0.0	1,436.8	0.0	54.6	2,014.7	1,556.7	0.0	0.0
98.00	Appurtenance(s)	28.4	31.6	465.2	0.0	0.0	387.7	0.0	23.2	493.5	442.5	0.0	0.0
99.00	Top - Section 3	27.8	30.9					0.0	16.1	27.8	46.9	0.0	0.0
100.00		83.0	39.9					0.0	16.1	83.0	56.0	0.0	0.0
105.00		125.3	199.5					0.0	80.3	125.3	279.8	0.0	0.0
109.00	Appurtenance(s)	70.2	159.6	961.8	0.0	0.0	308.9	0.0	64.3	1,032.0	532.7	0.0	0.0
110.00		85.2	39.9					0.0	16.1	85.2	56.0	0.0	0.0
115.00		99.8	199.5					0.0	80.3	99.8	279.8	0.0	0.0
117.00	Appurtenance(s)	57.5	79.8	3,109.2	0.0	920.5	2,641.6	0.0	32.1	3,166.7	2,753.5	0.0	0.0
119.00		28.8	79.8					0.0	0.0	28.8	79.8	0.0	0.0
<b>Totals:</b>										15,286.5	26,711.5	0.00	0.00

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Customer: AT&T MOBILITY

Load Case: 1.2D + 1.6W

97 mph with No Ice

26 Iterations

Gust Response Factor :1.10

Wind Importance Factor 1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Calculated Forces

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 (deg)	Ratio
0.00	-26.68	-15.17	0.00	-1,312.92	0.00	1,312.92	2,813.31	1,406.66	4,820.79	2,413.98	0.00	0.00	0.553
5.00	-25.55	-14.95	0.00	-1,237.05	0.00	1,237.05	2,747.79	1,373.90	4,537.84	2,272.29	0.11	-0.20	0.554
10.00	-24.44	-14.73	0.00	-1,162.31	0.00	1,162.31	2,679.61	1,339.80	4,258.79	2,132.56	0.43	-0.41	0.554
15.00	-23.36	-14.53	0.00	-1,088.64	0.00	1,088.64	2,608.76	1,304.38	3,984.14	1,995.03	0.98	-0.63	0.555
20.00	-22.32	-14.33	0.00	-1,016.01	0.00	1,016.01	2,535.24	1,267.62	3,714.39	1,859.96	1.76	-0.86	0.555
25.00	-21.30	-14.14	0.00	-944.38	0.00	944.38	2,459.06	1,229.53	3,450.04	1,727.58	2.80	-1.11	0.555
30.00	-20.31	-13.95	0.00	-873.70	0.00	873.70	2,380.22	1,190.11	3,191.57	1,598.16	4.09	-1.37	0.555
35.00	-19.34	-13.77	0.00	-803.94	0.00	803.94	2,298.17	1,149.08	2,938.80	1,471.58	5.67	-1.64	0.555
40.00	-18.42	-13.60	0.00	-735.11	0.00	735.11	2,187.63	1,093.82	2,661.58	1,332.77	7.54	-1.93	0.560
43.88	-17.73	-13.50	0.00	-682.40	0.00	682.40	2,101.97	1,050.99	2,456.17	1,229.91	9.20	-2.16	0.563
45.00	-17.44	-13.41	0.00	-667.22	0.00	667.22	2,077.10	1,038.55	2,398.08	1,200.82	9.72	-2.24	0.331
48.33	-16.64	-13.28	0.00	-622.51	0.00	622.51	2,003.41	1,001.71	2,230.05	1,116.68	11.33	-2.37	0.326
50.00	-16.11	-13.18	0.00	-600.37	0.00	600.37	1,966.57	983.28	2,148.32	1,075.76	12.17	-2.43	0.319
52.50	-15.32	-13.05	0.00	-567.42	0.00	567.42	1,292.92	646.46	1,405.62	703.85	13.47	-2.53	0.394
55.00	-14.80	-12.90	0.00	-534.78	0.00	534.78	1,267.71	633.85	1,338.84	670.42	14.82	-2.63	0.384
60.00	-13.80	-12.73	0.00	-470.29	0.00	470.29	1,215.29	607.65	1,208.00	604.90	17.70	-2.86	0.361
62.00	-13.39	-12.62	0.00	-444.84	0.00	444.84	1,193.58	596.79	1,156.76	579.24	18.92	-2.95	0.351
62.00	-13.39	-12.62	0.00	-444.84	0.00	444.84	1,193.58	596.79	1,156.76	579.24	18.92	-2.95	0.351
65.00	-12.79	-12.46	0.00	-406.98	0.00	406.98	1,160.21	580.11	1,081.18	541.39	20.82	-3.09	0.335
70.00	-11.82	-12.24	0.00	-344.70	0.00	344.70	1,094.51	547.25	951.97	476.69	24.18	-3.32	0.309
75.00	-10.89	-12.07	0.00	-283.50	0.00	283.50	1,017.13	508.57	821.49	411.36	27.78	-3.55	0.280
77.00	-8.98	-9.33	0.00	-257.85	0.00	257.85	986.19	493.09	772.00	386.57	29.29	-3.64	0.264
80.00	-8.47	-9.22	0.00	-229.85	0.00	229.85	939.76	469.88	700.63	350.84	31.61	-3.77	0.251
82.00	-8.14	-9.12	0.00	-211.40	0.00	211.40	908.81	454.41	654.98	327.98	33.21	-3.86	0.241
82.00	-8.14	-9.12	0.00	-211.40	0.00	211.40	780.36	390.18	564.40	282.62	33.21	-3.86	0.000
85.00	-7.66	-9.01	0.00	-184.04	0.00	184.04	740.57	370.29	508.03	254.39	35.68	-3.99	0.236
87.00	-6.27	-7.87	0.00	-166.01	0.00	166.01	714.04	357.02	472.09	236.39	37.37	-4.08	0.221
90.00	-5.85	-7.79	0.00	-142.40	0.00	142.40	674.25	337.13	420.65	210.64	39.97	-4.21	0.203
90.13	-5.82	-7.72	0.00	-141.42	0.00	141.42	672.59	336.30	418.57	209.60	40.08	-4.21	0.202
90.13	-5.82	-7.72	0.00	-141.42	0.00	141.42	672.59	336.30	418.57	209.60	40.08	-4.21	0.684
95.00	-5.50	-7.62	0.00	-103.78	0.00	103.78	607.93	303.97	341.52	171.01	44.48	-4.40	0.617
97.00	-4.09	-5.50	0.00	-88.54	0.00	88.54	581.40	290.70	312.17	156.32	46.39	-4.68	0.574
98.00	-3.67	-4.98	0.00	-83.04	0.00	83.04	568.14	284.07	297.99	149.22	47.38	-4.82	0.563
99.00	-3.62	-4.96	0.00	-78.06	0.00	78.06	554.88	277.44	284.14	142.28	48.41	-4.97	0.555
99.00	-3.62	-4.96	0.00	-78.06	0.00	78.06	725.83	362.92	362.74	181.64	48.41	-4.97	0.435
100.00	-3.54	-4.89	0.00	-73.11	0.00	73.11	725.83	362.92	362.74	181.64	49.46	-5.11	0.408
105.00	-3.24	-4.76	0.00	-48.66	0.00	48.66	725.83	362.92	362.74	181.64	55.07	-5.58	0.273
109.00	-2.81	-3.69	0.00	-29.62	0.00	29.62	725.83	362.92	362.74	181.64	59.84	-5.81	0.167
110.00	-2.76	-3.60	0.00	-25.94	0.00	25.94	725.83	362.92	362.74	181.64	61.06	-5.86	0.147
115.00	-2.48	-3.47	0.00	-7.94	0.00	7.94	725.83	362.92	362.74	181.64	67.26	-5.98	0.047
117.00	-0.08	-0.04	0.00	-0.07	0.00	0.07	725.83	362.92	362.74	181.64	69.77	-6.00	0.001
119.00	0.00	-0.03	0.00	0.00	0.00	0.00	725.83	362.92	362.74	181.64	72.28	-6.00	0.000

Site Number: 283420

Code: ANSI/TIA-222-G

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Site Name: STONEYBROOK RD CT, CT

Engineering Number: OAA746858\_C3\_01

3/15/2019 4:09:54 PM

Customer: AT&T MOBILITY

**Load Case: 0.9D + 1.6W**

97 mph with No Ice (Reduced DL)

26 Iterations

Gust Response Factor :1.10

Wind Importance Factor 1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

**Applied Segment Forces Summary**

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		159.9	0.0					0.0	0.0	159.9	0.0	0.0	0.0
5.00		314.0	621.7					0.0	190.9	314.0	812.7	0.0	0.0
10.00		302.4	599.0					0.0	190.9	302.4	789.9	0.0	0.0
15.00		290.7	576.2					0.0	190.9	290.7	767.1	0.0	0.0
20.00		279.1	553.4					0.0	190.9	279.1	744.3	0.0	0.0
25.00		267.5	530.6					0.0	190.9	267.5	721.5	0.0	0.0
30.00		258.8	507.8					0.0	190.9	258.8	698.8	0.0	0.0
35.00		255.2	485.1					0.0	190.9	255.2	676.0	0.0	0.0
40.00		224.5	462.3					0.0	190.9	224.5	653.2	0.0	0.0
43.88	Reinf Bottom	125.3	342.6					0.0	148.0	125.3	490.6	0.0	0.0
45.00		110.2	96.9					0.0	105.0	110.2	201.9	0.0	0.0
48.33	Bot - Section 2	123.4	280.3					0.0	311.0	123.4	591.4	0.0	0.0
50.00		102.4	233.7					0.0	155.5	102.4	389.2	0.0	0.0
52.50	Top - Section 1	121.5	342.5					0.0	233.3	121.5	575.8	0.0	0.0
55.00		178.0	138.7					0.0	233.3	178.0	372.0	0.0	0.0
60.00		163.6	265.4					0.0	466.6	163.6	732.0	0.0	0.0
62.00	Reinf. Top Reinf	113.3	101.7					0.0	186.6	113.3	288.3	0.0	0.0
65.00		176.0	147.8					0.0	279.9	176.0	427.7	0.0	0.0
70.00		211.8	233.6					0.0	466.6	211.8	700.1	0.0	0.0
75.00		143.0	217.6					0.0	466.6	143.0	684.2	0.0	0.0
77.00	Appurtenance(s)	97.6	82.6	2,532.3	0.0	1,502.8	1,273.9	0.0	186.6	2,629.9	1,543.1	0.0	0.0
80.00		95.3	119.1					0.0	253.4	95.3	372.5	0.0	0.0
82.00	Top - Section 2	91.6	76.2					0.0	168.9	91.6	245.1	0.0	0.0
85.00		89.1	94.0					0.0	253.4	89.1	347.4	0.0	0.0
87.00	Appurtenance(s)	85.3	60.0	961.6	0.0	0.0	863.2	0.0	168.9	1,046.9	1,092.1	0.0	0.0
90.00		52.4	85.8					0.0	226.8	52.4	312.6	0.0	0.0
90.13	Reinf. Top	78.6	3.5					0.0	9.5	78.6	12.9	0.0	0.0
95.00		106.1	128.7					0.0	99.8	106.1	228.5	0.0	0.0
97.00	Appurtenance(s)	43.8	49.0	1,970.9	0.0	0.0	1,077.6	0.0	40.9	2,014.7	1,167.5	0.0	0.0
98.00	Appurtenance(s)	28.4	23.7	465.2	0.0	0.0	290.8	0.0	17.4	493.5	331.9	0.0	0.0
99.00	Top - Section 3	27.8	23.1					0.0	12.1	27.8	35.2	0.0	0.0
100.00		83.0	29.9					0.0	12.1	83.0	42.0	0.0	0.0
105.00		125.3	149.6					0.0	60.3	125.3	209.9	0.0	0.0
109.00	Appurtenance(s)	70.2	119.7	961.8	0.0	0.0	231.7	0.0	48.2	1,032.0	399.5	0.0	0.0
110.00		85.2	29.9					0.0	12.1	85.2	42.0	0.0	0.0
115.00		99.8	149.6					0.0	60.3	99.8	209.9	0.0	0.0
117.00	Appurtenance(s)	57.5	59.8	3,109.2	0.0	920.5	1,981.2	0.0	24.1	3,166.7	2,065.1	0.0	0.0
119.00		28.8	59.8					0.0	0.0	28.8	59.8	0.0	0.0
<b>Totals:</b>										15,267.3	20,033.6	0.00	0.00

Site Number: 283420

Code: ANSI/TIA-222-G

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Site Name: STONEYBROOK RD CT, CT

Engineering Number: OAA746858\_C3\_01

3/15/2019 4:09:57 PM

Customer: AT&T MOBILITY

**Load Case: 0.9D + 1.6W**

97 mph with No Ice (Reduced DL)

26 Iterations

Gust Response Factor :1.10

Wind Importance Factor 1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

**Calculated Forces**

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 (deg)	Ratio
0.00	-20.01	-15.14	0.00	-1,296.02	0.00	1,296.02	2,813.31	1,406.66	4,820.79	2,413.98	0.00	0.00	0.544
5.00	-19.14	-14.89	0.00	-1,220.31	0.00	1,220.31	2,747.79	1,373.90	4,537.84	2,272.29	0.11	-0.20	0.544
10.00	-18.30	-14.66	0.00	-1,145.84	0.00	1,145.84	2,679.61	1,339.80	4,258.79	2,132.56	0.42	-0.40	0.544
15.00	-17.48	-14.43	0.00	-1,072.56	0.00	1,072.56	2,608.76	1,304.38	3,984.14	1,995.03	0.96	-0.62	0.544
20.00	-16.68	-14.21	0.00	-1,000.43	0.00	1,000.43	2,535.24	1,267.62	3,714.39	1,859.96	1.74	-0.85	0.545
25.00	-15.90	-14.00	0.00	-929.40	0.00	929.40	2,459.06	1,229.53	3,450.04	1,727.58	2.76	-1.09	0.545
30.00	-15.15	-13.79	0.00	-859.42	0.00	859.42	2,380.22	1,190.11	3,191.57	1,598.16	4.04	-1.35	0.544
35.00	-14.41	-13.59	0.00	-790.47	0.00	790.47	2,298.17	1,149.08	2,938.80	1,471.58	5.59	-1.61	0.544
40.00	-13.71	-13.41	0.00	-722.53	0.00	722.53	2,187.63	1,093.82	2,661.58	1,332.77	7.43	-1.90	0.549
43.88	-13.19	-13.30	0.00	-670.59	0.00	670.59	2,101.97	1,050.99	2,456.17	1,229.91	9.07	-2.13	0.552
45.00	-12.97	-13.20	0.00	-655.63	0.00	655.63	2,077.10	1,038.55	2,398.08	1,200.82	9.58	-2.20	0.324
48.33	-12.36	-13.08	0.00	-611.62	0.00	611.62	2,003.41	1,001.71	2,230.05	1,116.68	11.16	-2.33	0.319
50.00	-11.95	-12.98	0.00	-589.82	0.00	589.82	1,966.57	983.28	2,148.32	1,075.76	11.99	-2.39	0.313
52.50	-11.36	-12.85	0.00	-557.39	0.00	557.39	1,292.92	646.46	1,405.62	703.85	13.27	-2.49	0.386
55.00	-10.96	-12.69	0.00	-525.26	0.00	525.26	1,267.71	633.85	1,338.84	670.42	14.60	-2.59	0.376
60.00	-10.21	-12.52	0.00	-461.84	0.00	461.84	1,215.29	607.65	1,208.00	604.90	17.43	-2.81	0.353
62.00	-9.90	-12.41	0.00	-436.81	0.00	436.81	1,193.58	596.79	1,156.76	579.24	18.63	-2.90	0.343
62.00	-9.90	-12.41	0.00	-436.81	0.00	436.81	1,193.58	596.79	1,156.76	579.24	18.63	-2.90	0.343
65.00	-9.44	-12.24	0.00	-399.58	0.00	399.58	1,160.21	580.11	1,081.18	541.39	20.50	-3.04	0.328
70.00	-8.71	-12.02	0.00	-338.38	0.00	338.38	1,094.51	547.25	951.97	476.69	23.81	-3.27	0.302
75.00	-8.00	-11.86	0.00	-278.26	0.00	278.26	1,017.13	508.57	821.49	411.36	27.35	-3.49	0.274
77.00	-6.61	-9.15	0.00	-253.03	0.00	253.03	986.19	493.09	772.00	386.57	28.83	-3.58	0.259
80.00	-6.22	-9.05	0.00	-225.57	0.00	225.57	939.76	469.88	700.63	350.84	31.12	-3.71	0.245
82.00	-5.97	-8.95	0.00	-207.47	0.00	207.47	908.81	454.41	654.98	327.98	32.69	-3.79	0.235
82.00	-5.97	-8.95	0.00	-207.47	0.00	207.47	780.36	390.18	564.40	282.62	32.69	-3.79	0.000
85.00	-5.61	-8.85	0.00	-180.62	0.00	180.62	740.57	370.29	508.03	254.39	35.11	-3.92	0.230
87.00	-4.58	-7.74	0.00	-162.92	0.00	162.92	714.04	357.02	472.09	236.39	36.77	-4.01	0.217
90.00	-4.26	-7.67	0.00	-139.70	0.00	139.70	674.25	337.13	420.65	210.64	39.33	-4.14	0.199
90.13	-4.24	-7.60	0.00	-138.74	0.00	138.74	672.59	336.30	418.57	209.60	39.44	-4.14	0.198
90.13	-4.24	-7.60	0.00	-138.74	0.00	138.74	672.59	336.30	418.57	209.60	39.44	-4.14	0.669
95.00	-3.99	-7.49	0.00	-101.71	0.00	101.71	607.93	303.97	341.52	171.01	43.77	-4.33	0.602
97.00	-2.96	-5.40	0.00	-86.73	0.00	86.73	581.40	290.70	312.17	156.32	45.64	-4.60	0.560
98.00	-2.66	-4.89	0.00	-81.33	0.00	81.33	568.14	284.07	297.99	149.22	46.62	-4.74	0.550
99.00	-2.62	-4.86	0.00	-76.44	0.00	76.44	554.88	277.44	284.14	142.28	47.63	-4.88	0.542
99.00	-2.62	-4.86	0.00	-76.44	0.00	76.44	725.83	362.92	362.74	181.64	47.63	-4.88	0.425
100.00	-2.56	-4.79	0.00	-71.57	0.00	71.57	725.83	362.92	362.74	181.64	48.66	-5.02	0.398
105.00	-2.33	-4.66	0.00	-47.61	0.00	47.61	725.83	362.92	362.74	181.64	54.17	-5.48	0.265
109.00	-2.03	-3.60	0.00	-28.96	0.00	28.96	725.83	362.92	362.74	181.64	58.86	-5.71	0.162
110.00	-1.99	-3.52	0.00	-25.36	0.00	25.36	725.83	362.92	362.74	181.64	60.06	-5.75	0.142
115.00	-1.79	-3.40	0.00	-7.78	0.00	7.78	725.83	362.92	362.74	181.64	66.15	-5.88	0.045
117.00	-0.06	-0.03	0.00	-0.07	0.00	0.07	725.83	362.92	362.74	181.64	68.61	-5.89	0.000
119.00	0.00	-0.03	0.00	0.00	0.00	0.00	725.83	362.92	362.74	181.64	71.07	-5.89	0.000

Site Number: 283420

Code: ANSI/TIA-222-G

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Site Name: STONEYBROOK RD CT, CT

Engineering Number: OAA746858\_C3\_01

3/15/2019 4:09:58 PM

Customer: AT&T MOBILITY

<b>Load Case:</b> 1.2D + 1.0Di + 1.0Wi	<b>50 mph with 0.75 in Radial Ice</b>	<b>25 Iterations</b>
Gust Response Factor :1.10	Ice Dead Load Factor :1.00	Wind Importance Factor :1.00
Dead Load Factor :1.20		Ice Importance Factor :1.00
Wind Load Factor :1.00		

**Applied Segment Forces Summary**

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		51.7	0.0					0.0	0.0	51.7	0.0	0.0	0.0
5.00		102.0	1,131.4					0.0	254.6	102.0	1,386.0	0.0	0.0
10.00		98.9	1,125.1					0.0	254.6	98.9	1,379.6	0.0	0.0
15.00		95.6	1,099.6					0.0	254.6	95.6	1,354.1	0.0	0.0
20.00		92.2	1,067.7					0.0	254.6	92.2	1,322.3	0.0	0.0
25.00		88.8	1,032.5					0.0	254.6	88.8	1,287.0	0.0	0.0
30.00		86.4	995.1					0.0	254.6	86.4	1,249.7	0.0	0.0
35.00		85.6	956.2					0.0	254.6	85.6	1,210.8	0.0	0.0
40.00		75.7	916.2					0.0	254.6	75.7	1,170.8	0.0	0.0
43.88	Reinf Bottom	42.4	683.3					0.0	209.9	42.4	893.2	0.0	0.0
45.00		37.4	194.6					0.0	147.6	37.4	342.2	0.0	0.0
48.33	Bot - Section 2	42.0	562.1					0.0	437.5	42.0	999.6	0.0	0.0
50.00		34.9	406.1					0.0	218.8	34.9	624.9	0.0	0.0
52.50	Top - Section 1	41.6	595.3					0.0	328.3	41.6	923.6	0.0	0.0
55.00		61.2	320.6					0.0	328.4	61.2	649.0	0.0	0.0
60.00		56.4	612.3					0.0	657.2	56.4	1,269.5	0.0	0.0
62.00	Reinf. Top Reinf	39.4	237.2					0.0	263.0	39.4	500.2	0.0	0.0
65.00		61.5	344.7					0.0	394.6	61.5	739.3	0.0	0.0
70.00		74.6	543.9					0.0	658.0	74.6	1,201.9	0.0	0.0
75.00		50.7	509.2					0.0	658.4	50.7	1,167.5	0.0	0.0
77.00	Appurtenance(s)	34.9	195.7	581.3	0.0	319.4	5,697.8	0.0	263.4	616.3	6,156.9	0.0	0.0
80.00		34.3	282.1					0.0	359.8	34.3	641.9	0.0	0.0
82.00	Top - Section 2	33.2	181.6					0.0	240.0	33.2	421.6	0.0	0.0
85.00		32.5	240.2					0.0	360.0	32.5	600.3	0.0	0.0
87.00	Appurtenance(s)	31.4	154.3	222.7	0.0	0.0	2,942.7	0.0	240.1	254.1	3,337.1	0.0	0.0
90.00		19.4	220.7					0.0	324.8	19.4	545.5	0.0	0.0
90.13	Reinf. Top	29.5	9.1					0.0	13.5	29.5	22.6	0.0	0.0
95.00		39.9	329.8					0.0	147.2	39.9	477.0	0.0	0.0
97.00	Appurtenance(s)	16.7	128.0	417.4	0.0	0.0	4,347.5	0.0	54.6	434.1	4,530.2	0.0	0.0
98.00	Appurtenance(s)	10.9	62.4	108.2	0.0	0.0	1,220.8	0.0	23.2	119.1	1,306.3	0.0	0.0
99.00	Top - Section 3	10.7	61.0					0.0	16.1	10.7	77.1	0.0	0.0
100.00		32.1	69.7					0.0	16.1	32.1	85.8	0.0	0.0
105.00		48.6	349.1					0.0	80.3	48.6	429.5	0.0	0.0
109.00	Appurtenance(s)	27.2	279.9	215.3	0.0	0.0	1,436.1	0.0	64.3	242.5	1,780.2	0.0	0.0
110.00		33.1	70.0					0.0	16.1	33.1	86.1	0.0	0.0
115.00		38.7	350.7					0.0	80.3	38.7	431.0	0.0	0.0
117.00	Appurtenance(s)	22.3	140.5	738.5	0.0	202.9	8,147.1	0.0	32.1	760.8	8,319.7	0.0	0.0
119.00		11.2	140.6					0.0	0.0	11.2	140.6	0.0	0.0
<b>Totals:</b>									<b>4,109.40</b>	<b>49,060.6</b>	<b>0.00</b>	<b>0.00</b>	

Site Number: 283420

Code: ANSI/TIA-222-G

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Site Name: STONEYBROOK RD CT, CT

Engineering Number: OAA746858\_C3\_01

3/15/2019 4:10:01 PM

Customer: AT&T MOBILITY

**Load Case: 1.2D + 1.0Di + 1.0Wi**

50 mph with 0.75 in Radial Ice

25 Iterations

Gust Response Factor :1.10

Ice Dead Load Factor :1.00

Wind Importance Factor :1.00

Dead Load Factor :1.20

Ice Importance Factor :1.00

Wind Load Factor :1.00

**Calculated Forces**

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 (deg)	Ratio
0.00	-49.06	-4.08	0.00	-359.35	0.00	359.35	2,813.31	1,406.66	4,820.79	2,413.98	0.00	0.00	0.166
5.00	-47.67	-4.02	0.00	-338.95	0.00	338.95	2,747.79	1,373.90	4,537.84	2,272.29	0.03	-0.05	0.167
10.00	-46.29	-3.97	0.00	-318.82	0.00	318.82	2,679.61	1,339.80	4,258.79	2,132.56	0.12	-0.11	0.167
15.00	-44.93	-3.92	0.00	-298.97	0.00	298.97	2,608.76	1,304.38	3,984.14	1,995.03	0.27	-0.17	0.167
20.00	-43.60	-3.87	0.00	-279.36	0.00	279.36	2,535.24	1,267.62	3,714.39	1,859.96	0.48	-0.24	0.167
25.00	-42.31	-3.83	0.00	-259.99	0.00	259.99	2,459.06	1,229.53	3,450.04	1,727.58	0.77	-0.30	0.168
30.00	-41.06	-3.79	0.00	-240.84	0.00	240.84	2,380.22	1,190.11	3,191.57	1,598.16	1.12	-0.38	0.168
35.00	-39.84	-3.75	0.00	-221.89	0.00	221.89	2,298.17	1,149.08	2,938.80	1,471.58	1.56	-0.45	0.168
40.00	-38.67	-3.71	0.00	-203.15	0.00	203.15	2,187.63	1,093.82	2,661.58	1,332.77	2.07	-0.53	0.170
43.88	-37.77	-3.69	0.00	-188.76	0.00	188.76	2,101.97	1,050.99	2,456.17	1,229.91	2.53	-0.60	0.171
45.00	-37.43	-3.67	0.00	-184.61	0.00	184.61	2,077.10	1,038.55	2,398.08	1,200.82	2.67	-0.62	0.101
48.33	-36.43	-3.63	0.00	-172.39	0.00	172.39	2,003.41	1,001.71	2,230.05	1,116.68	3.11	-0.65	0.100
50.00	-35.80	-3.60	0.00	-166.34	0.00	166.34	1,966.57	983.28	2,148.32	1,075.76	3.34	-0.67	0.098
52.50	-34.88	-3.57	0.00	-157.33	0.00	157.33	1,292.92	646.46	1,405.62	703.85	3.70	-0.70	0.121
55.00	-34.22	-3.52	0.00	-148.42	0.00	148.42	1,267.71	633.85	1,338.84	670.42	4.08	-0.72	0.118
60.00	-32.95	-3.48	0.00	-130.79	0.00	130.79	1,215.29	607.65	1,208.00	604.90	4.87	-0.79	0.112
62.00	-32.45	-3.45	0.00	-123.84	0.00	123.84	1,193.58	596.79	1,156.76	579.24	5.20	-0.81	0.109
62.00	-32.45	-3.45	0.00	-123.84	0.00	123.84	1,193.58	596.79	1,156.76	579.24	5.20	-0.81	0.109
65.00	-31.71	-3.41	0.00	-113.49	0.00	113.49	1,160.21	580.11	1,081.18	541.39	5.73	-0.85	0.105
70.00	-30.51	-3.35	0.00	-96.46	0.00	96.46	1,094.51	547.25	951.97	476.69	6.66	-0.92	0.097
75.00	-29.34	-3.30	0.00	-79.73	0.00	79.73	1,017.13	508.57	821.49	411.36	7.65	-0.98	0.090
77.00	-23.19	-2.59	0.00	-72.81	0.00	72.81	986.19	493.09	772.00	386.57	8.07	-1.01	0.083
80.00	-22.55	-2.56	0.00	-65.05	0.00	65.05	939.76	469.88	700.63	350.84	8.71	-1.04	0.080
82.00	-22.12	-2.53	0.00	-59.94	0.00	59.94	908.81	454.41	654.98	327.98	9.16	-1.07	0.077
82.00	-22.12	-2.53	0.00	-59.94	0.00	59.94	780.36	390.18	564.40	282.62	9.16	-1.07	0.000
85.00	-21.52	-2.49	0.00	-52.36	0.00	52.36	740.57	370.29	508.03	254.39	9.84	-1.11	0.076
87.00	-18.19	-2.18	0.00	-47.37	0.00	47.37	714.04	357.02	472.09	236.39	10.31	-1.13	0.071
90.00	-17.65	-2.16	0.00	-40.81	0.00	40.81	674.25	337.13	420.65	210.64	11.03	-1.17	0.066
90.13	-17.62	-2.14	0.00	-40.54	0.00	40.54	672.59	336.30	418.57	209.60	11.06	-1.17	0.066
90.13	-17.62	-2.14	0.00	-40.54	0.00	40.54	672.59	336.30	418.57	209.60	11.06	-1.17	0.220
95.00	-17.14	-2.11	0.00	-30.11	0.00	30.11	607.93	303.97	341.52	171.01	12.29	-1.22	0.204
97.00	-12.62	-1.59	0.00	-25.89	0.00	25.89	581.40	290.70	312.17	156.32	12.82	-1.31	0.187
98.00	-11.32	-1.45	0.00	-24.30	0.00	24.30	568.14	284.07	297.99	149.22	13.10	-1.35	0.183
99.00	-11.24	-1.44	0.00	-22.86	0.00	22.86	554.88	277.44	284.14	142.28	13.38	-1.39	0.181
99.00	-11.24	-1.44	0.00	-22.86	0.00	22.86	725.83	362.92	362.74	181.64	13.38	-1.39	0.141
100.00	-11.15	-1.43	0.00	-21.41	0.00	21.41	725.83	362.92	362.74	181.64	13.68	-1.43	0.133
105.00	-10.72	-1.39	0.00	-14.27	0.00	14.27	725.83	362.92	362.74	181.64	15.25	-1.57	0.093
109.00	-8.95	-1.10	0.00	-8.72	0.00	8.72	725.83	362.92	362.74	181.64	16.60	-1.64	0.060
110.00	-8.86	-1.07	0.00	-7.62	0.00	7.62	725.83	362.92	362.74	181.64	16.94	-1.65	0.054
115.00	-8.43	-1.02	0.00	-2.28	0.00	2.28	725.83	362.92	362.74	181.64	18.69	-1.69	0.024
117.00	-0.14	-0.02	0.00	-0.03	0.00	0.03	725.83	362.92	362.74	181.64	19.40	-1.69	0.000
119.00	0.00	-0.01	0.00	0.00	0.00	0.00	725.83	362.92	362.74	181.64	20.11	-1.69	0.000



Site Number: 283420

Code: ANSI/TIA-222-G

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Site Name: STONEYBROOK RD CT, CT

Engineering Number: OAA746858\_C3\_01

3/15/2019 4:10:01 PM

Customer: AT&T MOBILITY

**Load Case: 1.0D + 1.0W**

**Serviceability 60 mph**

**24 Iterations**

Gust Response Factor :1.10

Wind Importance Factor 1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

**Applied Segment Forces Summary**

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		38.2	0.0					0.0	0.0	38.2	0.0	0.0	0.0
5.00		75.1	690.8					0.0	212.2	75.1	903.0	0.0	0.0
10.00		72.3	665.5					0.0	212.2	72.3	877.7	0.0	0.0
15.00		69.5	640.2					0.0	212.2	69.5	852.3	0.0	0.0
20.00		66.7	614.9					0.0	212.2	66.7	827.0	0.0	0.0
25.00		64.0	589.6					0.0	212.2	64.0	801.7	0.0	0.0
30.00		61.9	564.3					0.0	212.2	61.9	776.4	0.0	0.0
35.00		61.0	538.9					0.0	212.2	61.0	751.1	0.0	0.0
40.00		53.7	513.6					0.0	212.2	53.7	725.8	0.0	0.0
43.88	Reinf Bottom	30.0	380.7					0.0	164.4	30.0	545.1	0.0	0.0
45.00		26.3	107.7					0.0	116.6	26.3	224.3	0.0	0.0
48.33	Bot - Section 2	29.5	311.5					0.0	345.6	29.5	657.1	0.0	0.0
50.00		24.5	259.7					0.0	172.8	24.5	432.5	0.0	0.0
52.50	Top - Section 1	29.0	380.6					0.0	259.2	29.0	639.8	0.0	0.0
55.00		42.6	154.1					0.0	259.2	42.6	413.3	0.0	0.0
60.00		39.1	294.9					0.0	518.4	39.1	813.3	0.0	0.0
62.00	Reinf. Top Reinf	27.1	113.0					0.0	207.4	27.1	320.4	0.0	0.0
65.00		42.1	164.2					0.0	311.0	42.1	475.3	0.0	0.0
70.00		50.6	259.5					0.0	518.4	50.6	777.9	0.0	0.0
75.00		34.2	241.8					0.0	518.4	34.2	760.2	0.0	0.0
77.00	Appurtenance(s)	23.3	91.8	605.5	0.0	359.4	1,415.4	0.0	207.4	628.9	1,714.5	0.0	0.0
80.00		22.8	132.3					0.0	281.5	22.8	413.8	0.0	0.0
82.00	Top - Section 2	21.9	84.7					0.0	187.7	21.9	272.3	0.0	0.0
85.00		21.3	104.5					0.0	281.5	21.3	386.0	0.0	0.0
87.00	Appurtenance(s)	20.4	66.6	230.0	0.0	0.0	959.1	0.0	187.7	250.3	1,213.4	0.0	0.0
90.00		12.5	95.4					0.0	252.0	12.5	347.4	0.0	0.0
90.13	Reinf. Top	18.8	3.9					0.0	10.5	18.8	14.4	0.0	0.0
95.00		25.4	143.0					0.0	110.9	25.4	253.9	0.0	0.0
97.00	Appurtenance(s)	10.5	54.5	471.3	0.0	0.0	1,197.3	0.0	45.5	481.8	1,297.3	0.0	0.0
98.00	Appurtenance(s)	6.8	26.3	111.2	0.0	0.0	323.1	0.0	19.4	118.0	368.8	0.0	0.0
99.00	Top - Section 3	6.7	25.7					0.0	13.4	6.7	39.1	0.0	0.0
100.00		20.0	33.2					0.0	13.4	20.0	46.6	0.0	0.0
105.00		30.1	166.2					0.0	67.0	30.1	233.2	0.0	0.0
109.00	Appurtenance(s)	16.8	133.0	230.0	0.0	0.0	257.4	0.0	53.6	246.8	443.9	0.0	0.0
110.00		20.4	33.2					0.0	13.4	20.4	46.6	0.0	0.0
115.00		23.9	166.2					0.0	67.0	23.9	233.2	0.0	0.0
117.00	Appurtenance(s)	13.8	66.5	743.5	0.0	220.1	2,201.3	0.0	26.8	757.3	2,294.6	0.0	0.0
119.00		6.9	66.5					0.0	0.0	6.9	66.5	0.0	0.0
<b>Totals:</b>										<b>3,651.17</b>	<b>22,259.6</b>	<b>0.00</b>	<b>0.00</b>

Site Number: 283420

Code: ANSI/TIA-222-G

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Site Name: STONEYBROOK RD CT, CT

Engineering Number: OAA746858\_C3\_01

3/15/2019 4:10:05 PM

Customer: AT&T MOBILITY

**Load Case: 1.0D + 1.0W**

Serviceability 60 mph

24 Iterations

Gust Response Factor :1.10

Wind Importance Factor 1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

**Calculated Forces**

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 (deg)	Ratio
0.00	-22.26	-3.62	0.00	-311.37	0.00	311.37	2,813.31	1,406.66	4,820.79	2,413.98	0.00	0.00	0.137
5.00	-21.35	-3.56	0.00	-293.27	0.00	293.27	2,747.79	1,373.90	4,537.84	2,272.29	0.03	-0.05	0.137
10.00	-20.47	-3.51	0.00	-275.45	0.00	275.45	2,679.61	1,339.80	4,258.79	2,132.56	0.10	-0.10	0.137
15.00	-19.62	-3.46	0.00	-257.91	0.00	257.91	2,608.76	1,304.38	3,984.14	1,995.03	0.23	-0.15	0.137
20.00	-18.79	-3.40	0.00	-240.63	0.00	240.63	2,535.24	1,267.62	3,714.39	1,859.96	0.42	-0.20	0.137
25.00	-17.98	-3.36	0.00	-223.61	0.00	223.61	2,459.06	1,229.53	3,450.04	1,727.58	0.66	-0.26	0.137
30.00	-17.20	-3.31	0.00	-206.83	0.00	206.83	2,380.22	1,190.11	3,191.57	1,598.16	0.97	-0.32	0.137
35.00	-16.45	-3.26	0.00	-190.28	0.00	190.28	2,298.17	1,149.08	2,938.80	1,471.58	1.34	-0.39	0.136
40.00	-15.72	-3.22	0.00	-173.97	0.00	173.97	2,187.63	1,093.82	2,661.58	1,332.77	1.79	-0.46	0.138
43.88	-15.17	-3.20	0.00	-161.49	0.00	161.49	2,101.97	1,050.99	2,456.17	1,229.91	2.18	-0.51	0.139
45.00	-14.95	-3.17	0.00	-157.89	0.00	157.89	2,077.10	1,038.55	2,398.08	1,200.82	2.30	-0.53	0.081
48.33	-14.29	-3.14	0.00	-147.31	0.00	147.31	2,003.41	1,001.71	2,230.05	1,116.68	2.68	-0.56	0.080
50.00	-13.85	-3.12	0.00	-142.07	0.00	142.07	1,966.57	983.28	2,148.32	1,075.76	2.88	-0.58	0.079
52.50	-13.21	-3.09	0.00	-134.27	0.00	134.27	1,292.92	646.46	1,405.62	703.85	3.19	-0.60	0.097
55.00	-12.80	-3.05	0.00	-126.55	0.00	126.55	1,267.71	633.85	1,338.84	670.42	3.51	-0.62	0.094
60.00	-11.98	-3.01	0.00	-111.30	0.00	111.30	1,215.29	607.65	1,208.00	604.90	4.19	-0.68	0.089
62.00	-11.66	-2.99	0.00	-105.27	0.00	105.27	1,193.58	596.79	1,156.76	579.24	4.48	-0.70	0.086
62.00	-11.66	-2.99	0.00	-105.27	0.00	105.27	1,193.58	596.79	1,156.76	579.24	4.48	-0.70	0.086
65.00	-11.19	-2.95	0.00	-96.32	0.00	96.32	1,160.21	580.11	1,081.18	541.39	4.93	-0.73	0.083
70.00	-10.41	-2.89	0.00	-81.59	0.00	81.59	1,094.51	547.25	951.97	476.69	5.73	-0.79	0.076
75.00	-9.64	-2.86	0.00	-67.11	0.00	67.11	1,017.13	508.57	821.49	411.36	6.58	-0.84	0.069
77.00	-7.94	-2.21	0.00	-61.04	0.00	61.04	986.19	493.09	772.00	386.57	6.94	-0.86	0.065
80.00	-7.52	-2.18	0.00	-54.42	0.00	54.42	939.76	469.88	700.63	350.84	7.49	-0.89	0.062
82.00	-7.25	-2.16	0.00	-50.06	0.00	50.06	908.81	454.41	654.98	327.98	7.87	-0.91	0.059
82.00	-7.25	-2.16	0.00	-50.06	0.00	50.06	780.36	390.18	564.40	282.62	7.87	-0.91	0.000
85.00	-6.86	-2.13	0.00	-43.59	0.00	43.59	740.57	370.29	508.03	254.39	8.45	-0.94	0.058
87.00	-5.65	-1.86	0.00	-39.33	0.00	39.33	714.04	357.02	472.09	236.39	8.85	-0.97	0.054
90.00	-5.31	-1.85	0.00	-33.73	0.00	33.73	674.25	337.13	420.65	210.64	9.47	-1.00	0.050
90.13	-5.29	-1.83	0.00	-33.50	0.00	33.50	672.59	336.30	418.57	209.60	9.50	-1.00	0.050
90.13	-5.29	-1.83	0.00	-33.50	0.00	33.50	672.59	336.30	418.57	209.60	9.50	-1.00	0.168
95.00	-5.04	-1.81	0.00	-24.58	0.00	24.58	607.93	303.97	341.52	171.01	10.54	-1.04	0.152
97.00	-3.75	-1.30	0.00	-20.97	0.00	20.97	581.40	290.70	312.17	156.32	10.99	-1.11	0.141
98.00	-3.38	-1.18	0.00	-19.66	0.00	19.66	568.14	284.07	297.99	149.22	11.23	-1.14	0.138
99.00	-3.34	-1.17	0.00	-18.48	0.00	18.48	554.88	277.44	284.14	142.28	11.47	-1.18	0.136
99.00	-3.34	-1.17	0.00	-18.48	0.00	18.48	725.83	362.92	362.74	181.64	11.47	-1.18	0.106
100.00	-3.29	-1.16	0.00	-17.31	0.00	17.31	725.83	362.92	362.74	181.64	11.72	-1.21	0.100
105.00	-3.06	-1.13	0.00	-11.52	0.00	11.52	725.83	362.92	362.74	181.64	13.05	-1.32	0.068
109.00	-2.62	-0.87	0.00	-7.01	0.00	7.01	725.83	362.92	362.74	181.64	14.18	-1.38	0.042
110.00	-2.57	-0.85	0.00	-6.14	0.00	6.14	725.83	362.92	362.74	181.64	14.47	-1.39	0.037
115.00	-2.34	-0.82	0.00	-1.88	0.00	1.88	725.83	362.92	362.74	181.64	15.94	-1.42	0.014
117.00	-0.07	-0.01	0.00	-0.02	0.00	0.02	725.83	362.92	362.74	181.64	16.53	-1.42	0.000
119.00	0.00	-0.01	0.00	0.00	0.00	0.00	725.83	362.92	362.74	181.64	17.13	-1.42	0.000

Site Number: 283420

Code: ANSI/TIA-222-G

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Site Name: STONEYBROOK RD CT, CT

Engineering Number: OAA746858\_C3\_01

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Customer: AT&T MOBILITY

### Equivalent Lateral Forces Method Analysis

(Based on ASCE7-10 Chapters 11, 12, 15)

Spectral Response Acceleration for Short Period ( $S_s$ ):	0.20
Spectral Response Acceleration at 1.0 Second Period ( $S_1$ ):	0.06
Long-Period Transition Period ( $T_L$ ):	6
Importance Factor ( $I_E$ ):	1.00
Site Coefficient $F_a$ :	1.60
Site Coefficient $F_v$ :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period ( $S_{ds}$ ):	0.22
Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.10
Seismic Response Coefficient ( $C_s$ ):	0.03
Upper Limit $C_s$	0.03
Lower Limit $C_s$	0.03
Period based on Rayleigh Method (sec):	2.05
Redundancy Factor (p):	1.00
Seismic Force Distribution Exponent (k):	1.77
Total Unfactored Dead Load:	22.26 k
Seismic Base Shear (E):	0.74 k

#### Load Case (1.2 + 0.2Sds) \* DL + E ELFM

#### Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	$W_z$ (lb-ft)	$C_{vx}$	Horizontal Force (lb)	Vertical Force (lb)
37	118.00	66	313	0.008	6	83
36	116.00	93	426	0.010	8	116
35	112.50	233	1,008	0.024	18	290
34	109.50	47	192	0.005	3	58
33	107.00	187	738	0.018	13	232
32	102.50	233	855	0.021	15	290
31	99.50	47	162	0.004	3	58
30	98.50	39	134	0.003	2	49
29	97.50	46	153	0.004	3	57
28	96.00	100	326	0.008	6	124
27	92.56	254	777	0.019	14	316
26	90.06	14	42	0.001	1	18
25	88.50	347	981	0.024	18	432
24	86.00	254	683	0.016	12	316
23	83.50	386	984	0.024	18	480
22	81.00	272	658	0.016	12	339
21	78.50	414	945	0.023	17	515
20	76.00	299	645	0.016	12	372
19	72.50	760	1,508	0.036	27	945
18	67.50	778	1,360	0.033	24	967
17	63.50	475	745	0.018	13	591
16	61.00	320	468	0.011	8	398
15	57.50	813	1,070	0.026	19	1,011

Site Number: 283420

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Site Name: STONEYBROOK RD CT, CT

Engineering Number: OAA746858\_C3\_01

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Customer: AT&T MOBILITY

14	53.75	413	482	0.012	9	514
13	51.25	640	686	0.017	12	795
12	49.17	432	431	0.010	8	538
11	46.67	657	597	0.014	11	817
10	44.44	224	187	0.004	3	279
9	41.94	545	410	0.010	7	678
8	37.50	726	448	0.011	8	902
7	32.50	751	359	0.009	6	934
6	27.50	776	276	0.007	5	965
5	22.50	802	200	0.005	4	997
4	17.50	827	132	0.003	2	1,028
3	12.50	852	75	0.002	1	1,060
2	7.50	878	31	0.001	1	1,091
1	2.50	903	5	0.000	0	1,123
CCI TPX-070821	117.00	45	209	0.005	4	56
Raycap DC6-48-60-18-	117.00	66	304	0.007	5	82
Ericsson RRUS 4449 B	117.00	213	987	0.024	18	265
Ericsson RRUS 32 B2	117.00	159	737	0.018	13	198
Ericsson RRUS-32 B30	117.00	231	1,070	0.026	19	287
Amphenol Antel BXA-1	117.00	38	178	0.004	3	48
CCI OPA-65R-LCUU-H6	117.00	219	1,015	0.024	18	272
Generic Round T-Arm	117.00	938	4,344	0.105	78	1,166
Kathrein Scala 80010	117.00	293	1,357	0.033	24	364
Amphenol Antel BXA-1	109.00	38	157	0.004	3	48
CCI OPA-65R-LCUU-H6	109.00	219	895	0.022	16	272
RFS ATMAA1412D-1A20	98.00	39	132	0.003	2	48
Ericsson RRUS 11 B12	98.00	152	515	0.012	9	189
Ericsson RRUS 01 B2	98.00	132	447	0.011	8	164
Ericsson KRY 112 144	97.00	29	97	0.002	2	36
Ericsson Radio 4449	97.00	222	738	0.018	13	276
Generic Flat Side Ar	97.00	563	1,870	0.045	33	699
RFS APXVAARR24_43-U-	97.00	384	1,275	0.031	23	477
Generic Flat Side Ar	87.00	563	1,542	0.037	28	699
Ericsson AIR32 B66Aa	87.00	397	1,087	0.026	19	493
Alcatel-Lucent 9442	77.00	147	324	0.008	6	183
Alcatel-Lucent 9442	77.00	152	336	0.008	6	189
Amphenol Antel BXA-1	77.00	77	170	0.004	3	95
Amphenol Antel BXA-7	77.00	102	225	0.005	4	127
Generic Flat T-Arm	77.00	938	2,069	0.050	37	1,166
		22,260	41,570	1.000	743	27,676

**Load Case (0.9 - 0.2Sds) \* DL + E ELFM**

**Seismic (Reduced DL) Equivalent Lateral Forces Method**

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
37	118.00	66	313	0.008	6	57
36	116.00	93	426	0.010	8	80
35	112.50	233	1,008	0.024	18	200
34	109.50	47	192	0.005	3	40
33	107.00	187	738	0.018	13	160
32	102.50	233	855	0.021	15	200
31	99.50	47	162	0.004	3	40
30	98.50	39	134	0.003	2	34
29	97.50	46	153	0.004	3	39
28	96.00	100	326	0.008	6	86
27	92.56	254	777	0.019	14	217
26	90.06	14	42	0.001	1	12
25	88.50	347	981	0.024	18	298
24	86.00	254	683	0.016	12	218
23	83.50	386	984	0.024	18	331

Site Number: 283420

Code: ANSI/TIA-222-G

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Site Name: STONEYBROOK RD CT, CT

Engineering Number: OAA746858\_C3\_01

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Customer: AT&T MOBILITY

22	81.00	272	658	0.016	12	233
21	78.50	414	945	0.023	17	355
20	76.00	299	645	0.016	12	256
19	72.50	760	1,508	0.036	27	651
18	67.50	778	1,360	0.033	24	666
17	63.50	475	745	0.018	13	407
16	61.00	320	468	0.011	8	274
15	57.50	813	1,070	0.026	19	697
14	53.75	413	482	0.012	9	354
13	51.25	640	686	0.017	12	548
12	49.17	432	431	0.010	8	371
11	46.67	657	597	0.014	11	563
10	44.44	224	187	0.004	3	192
9	41.94	545	410	0.010	7	467
8	37.50	726	448	0.011	8	622
7	32.50	751	359	0.009	6	643
6	27.50	776	276	0.007	5	665
5	22.50	802	200	0.005	4	687
4	17.50	827	132	0.003	2	709
3	12.50	852	75	0.002	1	730
2	7.50	878	31	0.001	1	752
1	2.50	903	5	0.000	0	774
CCI TPX-070821	117.00	45	209	0.005	4	39
Raycap DC6-48-60-18-	117.00	66	304	0.007	5	56
Ericsson RRUS 4449 B	117.00	213	987	0.024	18	182
Ericsson RRUS 32 B2	117.00	159	737	0.018	13	136
Ericsson RRUS-32 B30	117.00	231	1,070	0.026	19	198
Amphenol Antel BXA-1	117.00	38	178	0.004	3	33
CCI OPA-65R-LCUU-H6	117.00	219	1,015	0.024	18	188
Generic Round T-Arm	117.00	938	4,344	0.105	78	803
Kathrein Scala 80010	117.00	293	1,357	0.033	24	251
Amphenol Antel BXA-1	109.00	38	157	0.004	3	33
CCI OPA-65R-LCUU-H6	109.00	219	895	0.022	16	188
RFS ATMAA1412D-1A20	98.00	39	132	0.003	2	33
Ericsson RRUS 11 B12	98.00	152	515	0.012	9	130
Ericsson RRUS 01 B2	98.00	132	447	0.011	8	113
Ericsson KRY 112 144	97.00	29	97	0.002	2	25
Ericsson Radio 4449	97.00	222	738	0.018	13	190
Generic Flat Side Ar	97.00	563	1,870	0.045	33	482
RFS APXVAARR24_43-U-	97.00	384	1,275	0.031	23	329
Generic Flat Side Ar	87.00	563	1,542	0.037	28	482
Ericsson AIR32 B66Aa	87.00	397	1,087	0.026	19	340
Alcatel-Lucent 9442	77.00	147	324	0.008	6	126
Alcatel-Lucent 9442	77.00	152	336	0.008	6	130
Amphenol Antel BXA-1	77.00	77	170	0.004	3	66
Amphenol Antel BXA-7	77.00	102	225	0.005	4	87
Generic Flat T-Arm	77.00	938	2,069	0.050	37	803
		22,260	41,570	1.000	743	19,070

Site Number: 283420

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Site Name: STONEYBROOK RD CT, CT

Engineering Number: OAA746858\_C3\_01

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Customer: AT&T MOBILITY

**Load Case (1.2 + 0.2Sds) \* DL + E ELFM      Seismic Equivalent Lateral Forces Method**

**Calculated Forces**

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 (deg)	Ratio
0.00	-26.55	-0.74	0.00	-69.06	0.00	69.06	2,813.31	1,406.66	4,820.79	2,413.98	0.00	0.00	0.038
5.00	-25.46	-0.75	0.00	-65.34	0.00	65.34	2,747.79	1,373.90	4,537.84	2,272.29	0.01	-0.01	0.038
10.00	-24.40	-0.75	0.00	-61.60	0.00	61.60	2,679.61	1,339.80	4,258.79	2,132.56	0.02	-0.02	0.038
15.00	-23.37	-0.75	0.00	-57.84	0.00	57.84	2,608.76	1,304.38	3,984.14	1,995.03	0.05	-0.03	0.038
20.00	-22.38	-0.75	0.00	-54.07	0.00	54.07	2,535.24	1,267.62	3,714.39	1,859.96	0.09	-0.05	0.038
25.00	-21.41	-0.75	0.00	-50.29	0.00	50.29	2,459.06	1,229.53	3,450.04	1,727.58	0.15	-0.06	0.038
30.00	-20.48	-0.75	0.00	-46.52	0.00	46.52	2,380.22	1,190.11	3,191.57	1,598.16	0.22	-0.07	0.038
35.00	-19.57	-0.75	0.00	-42.76	0.00	42.76	2,298.17	1,149.08	2,938.80	1,471.58	0.30	-0.09	0.038
40.00	-18.90	-0.74	0.00	-39.03	0.00	39.03	2,187.63	1,093.82	2,661.58	1,332.77	0.40	-0.10	0.038
43.88	-18.62	-0.74	0.00	-36.15	0.00	36.15	2,101.97	1,050.99	2,456.17	1,229.91	0.49	-0.11	0.038
45.00	-17.80	-0.73	0.00	-35.31	0.00	35.31	2,077.10	1,038.55	2,398.08	1,200.82	0.52	-0.12	0.022
48.33	-17.26	-0.72	0.00	-32.87	0.00	32.87	2,003.41	1,001.71	2,230.05	1,116.68	0.60	-0.13	0.022
50.00	-16.47	-0.71	0.00	-31.67	0.00	31.67	1,966.57	983.28	2,148.32	1,075.76	0.65	-0.13	0.022
52.50	-15.95	-0.70	0.00	-29.89	0.00	29.89	1,292.92	646.46	1,405.62	703.85	0.71	-0.13	0.027
55.00	-14.94	-0.68	0.00	-28.13	0.00	28.13	1,267.71	633.85	1,338.84	670.42	0.79	-0.14	0.026
60.00	-14.54	-0.68	0.00	-24.71	0.00	24.71	1,215.29	607.65	1,208.00	604.90	0.94	-0.15	0.024
62.00	-13.95	-0.66	0.00	-23.36	0.00	23.36	1,193.58	596.79	1,156.76	579.24	1.00	-0.16	0.024
62.00	-13.95	-0.66	0.00	-23.36	0.00	23.36	1,193.58	596.79	1,156.76	579.24	1.00	-0.16	0.024
65.00	-12.99	-0.64	0.00	-21.37	0.00	21.37	1,160.21	580.11	1,081.18	541.39	1.10	-0.16	0.023
70.00	-12.04	-0.61	0.00	-18.17	0.00	18.17	1,094.51	547.25	951.97	476.69	1.28	-0.18	0.021
75.00	-11.67	-0.60	0.00	-15.12	0.00	15.12	1,017.13	508.57	821.49	411.36	1.47	-0.19	0.020
77.00	-9.39	-0.52	0.00	-13.92	0.00	13.92	986.19	493.09	772.00	386.57	1.55	-0.19	0.018
80.00	-9.06	-0.51	0.00	-12.35	0.00	12.35	939.76	469.88	700.63	350.84	1.68	-0.20	0.017
82.00	-8.58	-0.49	0.00	-11.33	0.00	11.33	908.81	454.41	654.98	327.98	1.76	-0.20	0.017
82.00	-8.58	-0.49	0.00	-11.33	0.00	11.33	780.36	390.18	564.40	282.62	1.76	-0.20	0.000
85.00	-8.26	-0.48	0.00	-9.86	0.00	9.86	740.57	370.29	508.03	254.39	1.89	-0.21	0.016
87.00	-6.64	-0.41	0.00	-8.91	0.00	8.91	714.04	357.02	472.09	236.39	1.98	-0.22	0.015
90.00	-6.62	-0.41	0.00	-7.68	0.00	7.68	674.25	337.13	420.65	210.64	2.12	-0.22	0.014
90.13	-6.30	-0.39	0.00	-7.63	0.00	7.63	672.59	336.30	418.57	209.60	2.13	-0.22	0.014
90.13	-6.30	-0.39	0.00	-7.63	0.00	7.63	672.59	336.30	418.57	209.60	2.13	-0.22	0.046
95.00	-6.18	-0.39	0.00	-5.71	0.00	5.71	607.93	303.97	341.52	171.01	2.36	-0.23	0.044
97.00	-4.63	-0.31	0.00	-4.93	0.00	4.93	581.40	290.70	312.17	156.32	2.46	-0.25	0.040
98.00	-4.18	-0.29	0.00	-4.62	0.00	4.62	568.14	284.07	297.99	149.22	2.51	-0.26	0.038
99.00	-4.12	-0.28	0.00	-4.34	0.00	4.34	554.88	277.44	284.14	142.28	2.57	-0.27	0.038
99.00	-4.12	-0.28	0.00	-4.34	0.00	4.34	725.83	362.92	362.74	181.64	2.57	-0.27	0.030
100.00	-3.83	-0.27	0.00	-4.06	0.00	4.06	725.83	362.92	362.74	181.64	2.63	-0.27	0.028
105.00	-3.60	-0.25	0.00	-2.72	0.00	2.72	725.83	362.92	362.74	181.64	2.93	-0.30	0.020
109.00	-3.22	-0.23	0.00	-1.70	0.00	1.70	725.83	362.92	362.74	181.64	3.18	-0.31	0.014
110.00	-2.93	-0.21	0.00	-1.47	0.00	1.47	725.83	362.92	362.74	181.64	3.25	-0.31	0.012
115.00	-2.82	-0.20	0.00	-0.41	0.00	0.41	725.83	362.92	362.74	181.64	3.58	-0.32	0.006
117.00	0.00	0.00	0.00	0.00	0.00	0.00	725.83	362.92	362.74	181.64	3.72	-0.32	0.000
119.00	0.00	0.00	0.00	0.00	0.00	0.00	725.83	362.92	362.74	181.64	3.85	-0.32	0.000

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Site Name: STONEYBROOK RD CT, CT

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Customer: AT&T MOBILITY

**Load Case (0.9 - 0.2Sds) \* DL + E ELMF**

**Seismic (Reduced DL) Equivalent Lateral Forces Method**

**Calculated Forces**

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 (deg)	Ratio
0.00	-18.30	-0.74	0.00	-68.08	0.00	68.08	2,813.31	1,406.66	4,820.79	2,413.98	0.00	0.00	0.035
5.00	-17.54	-0.75	0.00	-64.36	0.00	64.36	2,747.79	1,373.90	4,537.84	2,272.29	0.01	-0.01	0.035
10.00	-16.81	-0.75	0.00	-60.63	0.00	60.63	2,679.61	1,339.80	4,258.79	2,132.56	0.02	-0.02	0.035
15.00	-16.10	-0.75	0.00	-56.89	0.00	56.89	2,608.76	1,304.38	3,984.14	1,995.03	0.05	-0.03	0.035
20.00	-15.42	-0.75	0.00	-53.14	0.00	53.14	2,535.24	1,267.62	3,714.39	1,859.96	0.09	-0.04	0.035
25.00	-14.75	-0.75	0.00	-49.40	0.00	49.40	2,459.06	1,229.53	3,450.04	1,727.58	0.15	-0.06	0.035
30.00	-14.11	-0.74	0.00	-45.67	0.00	45.67	2,380.22	1,190.11	3,191.57	1,598.16	0.21	-0.07	0.035
35.00	-13.49	-0.74	0.00	-41.96	0.00	41.96	2,298.17	1,149.08	2,938.80	1,471.58	0.30	-0.09	0.034
40.00	-13.02	-0.73	0.00	-38.27	0.00	38.27	2,187.63	1,093.82	2,661.58	1,332.77	0.39	-0.10	0.035
43.88	-12.83	-0.73	0.00	-35.44	0.00	35.44	2,101.97	1,050.99	2,456.17	1,229.91	0.48	-0.11	0.035
45.00	-12.26	-0.72	0.00	-34.62	0.00	34.62	2,077.10	1,038.55	2,398.08	1,200.82	0.51	-0.12	0.020
48.33	-11.89	-0.71	0.00	-32.22	0.00	32.22	2,003.41	1,001.71	2,230.05	1,116.68	0.59	-0.12	0.020
50.00	-11.35	-0.70	0.00	-31.03	0.00	31.03	1,966.57	983.28	2,148.32	1,075.76	0.63	-0.13	0.020
52.50	-10.99	-0.69	0.00	-29.28	0.00	29.28	1,292.92	646.46	1,405.62	703.85	0.70	-0.13	0.024
55.00	-10.30	-0.67	0.00	-27.55	0.00	27.55	1,267.71	633.85	1,338.84	670.42	0.77	-0.14	0.023
60.00	-10.02	-0.66	0.00	-24.20	0.00	24.20	1,215.29	607.65	1,208.00	604.90	0.92	-0.15	0.022
62.00	-9.61	-0.65	0.00	-22.87	0.00	22.87	1,193.58	596.79	1,156.76	579.24	0.99	-0.15	0.022
62.00	-9.61	-0.65	0.00	-22.87	0.00	22.87	1,193.58	596.79	1,156.76	579.24	0.99	-0.15	0.022
65.00	-8.95	-0.63	0.00	-20.92	0.00	20.92	1,160.21	580.11	1,081.18	541.39	1.09	-0.16	0.021
70.00	-8.30	-0.60	0.00	-17.78	0.00	17.78	1,094.51	547.25	951.97	476.69	1.26	-0.17	0.019
75.00	-8.04	-0.59	0.00	-14.79	0.00	14.79	1,017.13	508.57	821.49	411.36	1.45	-0.18	0.018
77.00	-6.47	-0.51	0.00	-13.61	0.00	13.61	986.19	493.09	772.00	386.57	1.53	-0.19	0.017
80.00	-6.24	-0.50	0.00	-12.08	0.00	12.08	939.76	469.88	700.63	350.84	1.65	-0.20	0.016
82.00	-5.91	-0.48	0.00	-11.08	0.00	11.08	908.81	454.41	654.98	327.98	1.73	-0.20	0.015
82.00	-5.91	-0.48	0.00	-11.08	0.00	11.08	780.36	390.18	564.40	282.62	1.73	-0.20	0.000
85.00	-5.69	-0.47	0.00	-9.64	0.00	9.64	740.57	370.29	508.03	254.39	1.86	-0.21	0.015
87.00	-4.57	-0.40	0.00	-8.71	0.00	8.71	714.04	357.02	472.09	236.39	1.95	-0.21	0.014
90.00	-4.56	-0.40	0.00	-7.51	0.00	7.51	674.25	337.13	420.65	210.64	2.08	-0.22	0.013
90.13	-4.34	-0.39	0.00	-7.46	0.00	7.46	672.59	336.30	418.57	209.60	2.09	-0.22	0.013
90.13	-4.34	-0.39	0.00	-7.46	0.00	7.46	672.59	336.30	418.57	209.60	2.09	-0.22	0.042
95.00	-4.26	-0.38	0.00	-5.58	0.00	5.58	607.93	303.97	341.52	171.01	2.32	-0.23	0.040
97.00	-3.19	-0.30	0.00	-4.82	0.00	4.82	581.40	290.70	312.17	156.32	2.42	-0.24	0.036
98.00	-2.88	-0.28	0.00	-4.51	0.00	4.51	568.14	284.07	297.99	149.22	2.47	-0.25	0.035
99.00	-2.84	-0.28	0.00	-4.23	0.00	4.23	554.88	277.44	284.14	142.28	2.52	-0.26	0.035
99.00	-2.84	-0.28	0.00	-4.23	0.00	4.23	725.83	362.92	362.74	181.64	2.52	-0.26	0.027
100.00	-2.64	-0.26	0.00	-3.96	0.00	3.96	725.83	362.92	362.74	181.64	2.58	-0.27	0.025
105.00	-2.48	-0.25	0.00	-2.65	0.00	2.65	725.83	362.92	362.74	181.64	2.87	-0.29	0.018
109.00	-2.22	-0.23	0.00	-1.65	0.00	1.65	725.83	362.92	362.74	181.64	3.12	-0.31	0.012
110.00	-2.02	-0.21	0.00	-1.43	0.00	1.43	725.83	362.92	362.74	181.64	3.19	-0.31	0.011
115.00	-1.94	-0.20	0.00	-0.40	0.00	0.40	725.83	362.92	362.74	181.64	3.51	-0.32	0.005
117.00	0.00	0.00	0.00	0.00	0.00	0.00	725.83	362.92	362.74	181.64	3.65	-0.32	0.000
119.00	0.00	0.00	0.00	0.00	0.00	0.00	725.83	362.92	362.74	181.64	3.78	-0.32	0.000



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Customer: AT&T MOBILITY

### Equivalent Modal Forces Analysis

(Based on ASCE7-10 Chapters 11, 12 & 15 and ANSI/TIA-G, section 2.7)

Spectral Response Acceleration for Short Period ( $S_s$ ):	0.20
Spectral Response Acceleration at 1.0 Second Period ( $S_1$ ):	0.06
Importance Factor ( $I_E$ ):	1.00
Site Coefficient $F_a$ :	1.60
Site Coefficient $F_v$ :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period ( $S_{ds}$ ):	0.22
Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.10
Period Based on Rayleigh Method (sec):	2.05
Redundancy Factor ( $\rho$ ):	1.00

### Load Case (1.2 + 0.2Sds) \* DL + E EMAM      Seismic Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
37	118.00	66	1.858	1.817	1.081	0.390	17	83
36	116.00	93	1.796	1.520	0.970	0.346	22	116
35	112.50	233	1.689	1.082	0.798	0.275	43	290
34	109.50	47	1.600	0.779	0.670	0.220	7	58
33	107.00	187	1.528	0.573	0.577	0.178	22	232
32	102.50	233	1.402	0.288	0.434	0.113	18	290
31	99.50	47	1.321	0.151	0.355	0.075	2	58
30	98.50	39	1.295	0.114	0.332	0.064	2	49
29	97.50	46	1.269	0.080	0.309	0.053	2	57
28	96.00	100	1.230	0.035	0.278	0.038	3	124
27	92.56	254	1.144	-0.042	0.215	0.008	1	316
26	90.06	14	1.083	-0.079	0.176	-0.010	0	18
25	88.50	347	1.045	-0.096	0.155	-0.019	-4	432
24	86.00	254	0.987	-0.113	0.125	-0.031	-5	316
23	83.50	386	0.931	-0.121	0.100	-0.039	-10	480
22	81.00	272	0.876	-0.121	0.078	-0.044	-8	339
21	78.50	414	0.822	-0.116	0.060	-0.046	-13	515
20	76.00	299	0.771	-0.106	0.046	-0.044	-9	372
19	72.50	760	0.702	-0.087	0.030	-0.037	-19	945
18	67.50	778	0.608	-0.056	0.015	-0.019	-10	967
17	63.50	475	0.538	-0.030	0.009	-0.001	0	591
16	61.00	320	0.497	-0.015	0.007	0.010	2	398
15	57.50	813	0.441	0.005	0.006	0.025	14	1,011
14	53.75	413	0.386	0.023	0.007	0.038	10	514
13	51.25	640	0.351	0.033	0.009	0.045	19	795
12	49.17	432	0.323	0.040	0.010	0.049	14	538
11	46.67	657	0.291	0.047	0.013	0.053	23	817
10	44.44	224	0.264	0.053	0.016	0.055	8	279
9	41.94	545	0.235	0.058	0.019	0.057	21	678
8	37.50	726	0.188	0.064	0.025	0.057	28	902
7	32.50	751	0.141	0.069	0.031	0.057	28	934
6	27.50	776	0.101	0.071	0.037	0.055	28	965
5	22.50	802	0.068	0.072	0.041	0.053	28	997
4	17.50	827	0.041	0.070	0.042	0.051	28	1,028

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3	12.50	852	0.021	0.065	0.038	0.047	27	1,060
2	7.50	878	0.008	0.051	0.029	0.038	23	1,091
1	2.50	903	0.001	0.022	0.012	0.019	11	1,123
CCI TPX-070821	117.00	45	1.827	1.664	1.024	0.367	11	56
Raycap DC6-48-60-18-	117.00	66	1.827	1.664	1.024	0.367	16	82
Ericsson RRUS 4449 B	117.00	213	1.827	1.664	1.024	0.367	52	265
Ericsson RRUS 32 B2	117.00	159	1.827	1.664	1.024	0.367	39	198
Ericsson RRUS-32 B30	117.00	231	1.827	1.664	1.024	0.367	57	287
Amphenol Antel BXA-1	117.00	38	1.827	1.664	1.024	0.367	9	48
CCI OPA-65R-LCUU-H6	117.00	219	1.827	1.664	1.024	0.367	54	272
Generic Round T-Arm	117.00	938	1.827	1.664	1.024	0.367	230	1,166
Kathrein Scala 80010	117.00	293	1.827	1.664	1.024	0.367	72	364
Amphenol Antel BXA-1	109.00	38	1.586	0.735	0.651	0.211	5	48
CCI OPA-65R-LCUU-H6	109.00	219	1.586	0.735	0.651	0.211	31	272
RFS ATMAA1412D-1A20	98.00	39	1.282	0.096	0.320	0.058	2	48
Ericsson RRUS 11 B12	98.00	152	1.282	0.096	0.320	0.058	6	189
Ericsson RRUS 01 B2	98.00	132	1.282	0.096	0.320	0.058	5	164
Ericsson KRY 112 144	97.00	29	1.256	0.064	0.298	0.048	1	36
Ericsson Radio 4449	97.00	222	1.256	0.064	0.298	0.048	7	276
Generic Flat Side Ar	97.00	563	1.256	0.064	0.298	0.048	18	699
RFS APXVAARR24_43-U-	97.00	384	1.256	0.064	0.298	0.048	12	477
Generic Flat Side Ar	87.00	563	1.010	-0.107	0.136	-0.026	-10	699
Ericsson AIR32 B66Aa	87.00	397	1.010	-0.107	0.136	-0.026	-7	493
Alcatel-Lucent 9442	77.00	147	0.791	-0.110	0.051	-0.045	-4	183
Alcatel-Lucent 9442	77.00	152	0.791	-0.110	0.051	-0.045	-5	189
Amphenol Antel BXA-1	77.00	77	0.791	-0.110	0.051	-0.045	-2	95
Amphenol Antel BXA-7	77.00	102	0.791	-0.110	0.051	-0.045	-3	127
Generic Flat T-Arm	77.00	938	0.791	-0.110	0.051	-0.045	-28	1,166
		22,260	62.308	22.422	20.362	5.993	938	27,676

**Load Case (0.9 - 0.2Sds) \* DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method**

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
37	118.00	66	1.858	1.817	1.081	0.390	17	57
36	116.00	93	1.796	1.520	0.970	0.346	22	80
35	112.50	233	1.689	1.082	0.798	0.275	43	200
34	109.50	47	1.600	0.779	0.670	0.220	7	40
33	107.00	187	1.528	0.573	0.577	0.178	22	160
32	102.50	233	1.402	0.288	0.434	0.113	18	200
31	99.50	47	1.321	0.151	0.355	0.075	2	40
30	98.50	39	1.295	0.114	0.332	0.064	2	34
29	97.50	46	1.269	0.080	0.309	0.053	2	39
28	96.00	100	1.230	0.035	0.278	0.038	3	86
27	92.56	254	1.144	-0.042	0.215	0.008	1	217
26	90.06	14	1.083	-0.079	0.176	-0.010	0	12
25	88.50	347	1.045	-0.096	0.155	-0.019	-4	298
24	86.00	254	0.987	-0.113	0.125	-0.031	-5	218
23	83.50	386	0.931	-0.121	0.100	-0.039	-10	331
22	81.00	272	0.876	-0.121	0.078	-0.044	-8	233
21	78.50	414	0.822	-0.116	0.060	-0.046	-13	355
20	76.00	299	0.771	-0.106	0.046	-0.044	-9	256
19	72.50	760	0.702	-0.087	0.030	-0.037	-19	651
18	67.50	778	0.608	-0.056	0.015	-0.019	-10	666
17	63.50	475	0.538	-0.030	0.009	-0.001	0	407
16	61.00	320	0.497	-0.015	0.007	0.010	2	274
15	57.50	813	0.441	0.005	0.006	0.025	14	697
14	53.75	413	0.386	0.023	0.007	0.038	10	354
13	51.25	640	0.351	0.033	0.009	0.045	19	548

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12	49.17	432	0.323	0.040	0.010	0.049	14	371
11	46.67	657	0.291	0.047	0.013	0.053	23	563
10	44.44	224	0.264	0.053	0.016	0.055	8	192
9	41.94	545	0.235	0.058	0.019	0.057	21	467
8	37.50	726	0.188	0.064	0.025	0.057	28	622
7	32.50	751	0.141	0.069	0.031	0.057	28	643
6	27.50	776	0.101	0.071	0.037	0.055	28	665
5	22.50	802	0.068	0.072	0.041	0.053	28	687
4	17.50	827	0.041	0.070	0.042	0.051	28	709
3	12.50	852	0.021	0.065	0.038	0.047	27	730
2	7.50	878	0.008	0.051	0.029	0.038	23	752
1	2.50	903	0.001	0.022	0.012	0.019	11	774
CCI TPX-070821	117.00	45	1.827	1.664	1.024	0.367	11	39
Raycap DC6-48-60-18-	117.00	66	1.827	1.664	1.024	0.367	16	56
Ericsson RRUS 4449 B	117.00	213	1.827	1.664	1.024	0.367	52	182
Ericsson RRUS 32 B2	117.00	159	1.827	1.664	1.024	0.367	39	136
Ericsson RRUS-32 B30	117.00	231	1.827	1.664	1.024	0.367	57	198
Amphenol Antel BXA-1	117.00	38	1.827	1.664	1.024	0.367	9	33
CCI OPA-65R-LCUU-H6	117.00	219	1.827	1.664	1.024	0.367	54	188
Generic Round T-Arm	117.00	938	1.827	1.664	1.024	0.367	230	803
Kathrein Scala 80010	117.00	293	1.827	1.664	1.024	0.367	72	251
Amphenol Antel BXA-1	109.00	38	1.586	0.735	0.651	0.211	5	33
CCI OPA-65R-LCUU-H6	109.00	219	1.586	0.735	0.651	0.211	31	188
RFS ATMAA1412D-1A20	98.00	39	1.282	0.096	0.320	0.058	2	33
Ericsson RRUS 11 B12	98.00	152	1.282	0.096	0.320	0.058	6	130
Ericsson RRUS 01 B2	98.00	132	1.282	0.096	0.320	0.058	5	113
Ericsson KRY 112 144	97.00	29	1.256	0.064	0.298	0.048	1	25
Ericsson Radio 4449	97.00	222	1.256	0.064	0.298	0.048	7	190
Generic Flat Side Ar	97.00	563	1.256	0.064	0.298	0.048	18	482
RFS APXVAARR24_43-U-	97.00	384	1.256	0.064	0.298	0.048	12	329
Generic Flat Side Ar	87.00	563	1.010	-0.107	0.136	-0.026	-10	482
Ericsson AIR32 B66Aa	87.00	397	1.010	-0.107	0.136	-0.026	-7	340
Alcatel-Lucent 9442	77.00	147	0.791	-0.110	0.051	-0.045	-4	126
Alcatel-Lucent 9442	77.00	152	0.791	-0.110	0.051	-0.045	-5	130
Amphenol Antel BXA-1	77.00	77	0.791	-0.110	0.051	-0.045	-2	66
Amphenol Antel BXA-7	77.00	102	0.791	-0.110	0.051	-0.045	-3	87
Generic Flat T-Arm	77.00	938	0.791	-0.110	0.051	-0.045	-28	803
		22,260	62.308	22.422	20.362	5.993	938	19,070

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Site Name: STONEYBROOK RD CT, CT

Engineering Number: OAA746858\_C3\_01

3/15/2019 4:10:05 PM

Customer: AT&T MOBILITY

**Load Case (1.2 + 0.2Sds) \* DL + E EMAM Seismic Equivalent Modal Analysis Method**

**Calculated Forces**

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 (deg)	Ratio
0.00	-26.55	-0.93	0.00	-89.78	0.00	89.78	2,813.31	1,406.66	4,820.79	2,413.98	0.00	0.00	0.047
5.00	-25.46	-0.91	0.00	-85.14	0.00	85.14	2,747.79	1,373.90	4,537.84	2,272.29	0.01	-0.01	0.047
10.00	-24.40	-0.89	0.00	-80.58	0.00	80.58	2,679.61	1,339.80	4,258.79	2,132.56	0.03	-0.03	0.047
15.00	-23.37	-0.87	0.00	-76.12	0.00	76.12	2,608.76	1,304.38	3,984.14	1,995.03	0.07	-0.04	0.047
20.00	-22.38	-0.85	0.00	-71.77	0.00	71.77	2,535.24	1,267.62	3,714.39	1,859.96	0.12	-0.06	0.047
25.00	-21.41	-0.82	0.00	-67.54	0.00	67.54	2,459.06	1,229.53	3,450.04	1,727.58	0.19	-0.08	0.048
30.00	-20.48	-0.80	0.00	-63.42	0.00	63.42	2,380.22	1,190.11	3,191.57	1,598.16	0.28	-0.10	0.048
35.00	-19.57	-0.78	0.00	-59.41	0.00	59.41	2,298.17	1,149.08	2,938.80	1,471.58	0.40	-0.12	0.049
40.00	-18.90	-0.76	0.00	-55.52	0.00	55.52	2,187.63	1,093.82	2,661.58	1,332.77	0.53	-0.14	0.050
43.88	-18.62	-0.76	0.00	-52.56	0.00	52.56	2,101.97	1,050.99	2,456.17	1,229.91	0.65	-0.16	0.052
45.00	-17.80	-0.74	0.00	-51.71	0.00	51.71	2,077.10	1,038.55	2,398.08	1,200.82	0.68	-0.16	0.030
48.33	-17.26	-0.72	0.00	-49.25	0.00	49.25	2,003.41	1,001.71	2,230.05	1,116.68	0.80	-0.17	0.031
50.00	-16.47	-0.70	0.00	-48.05	0.00	48.05	1,966.57	983.28	2,148.32	1,075.76	0.86	-0.18	0.030
52.50	-15.95	-0.69	0.00	-46.30	0.00	46.30	1,292.92	646.46	1,405.62	703.85	0.96	-0.18	0.038
55.00	-14.94	-0.68	0.00	-44.56	0.00	44.56	1,267.71	633.85	1,338.84	670.42	1.05	-0.19	0.037
60.00	-14.54	-0.68	0.00	-41.17	0.00	41.17	1,215.29	607.65	1,208.00	604.90	1.27	-0.21	0.037
62.00	-13.95	-0.68	0.00	-39.81	0.00	39.81	1,193.58	596.79	1,156.76	579.24	1.36	-0.22	0.036
62.00	-13.95	-0.68	0.00	-39.81	0.00	39.81	1,193.58	596.79	1,156.76	579.24	1.36	-0.22	0.036
65.00	-12.98	-0.69	0.00	-37.77	0.00	37.77	1,160.21	580.11	1,081.18	541.39	1.50	-0.23	0.036
70.00	-12.04	-0.71	0.00	-34.32	0.00	34.32	1,094.51	547.25	951.97	476.69	1.76	-0.26	0.035
75.00	-11.67	-0.72	0.00	-30.77	0.00	30.77	1,017.13	508.57	821.49	411.36	2.04	-0.28	0.035
77.00	-9.39	-0.77	0.00	-29.33	0.00	29.33	986.19	493.09	772.00	386.57	2.15	-0.29	0.034
80.00	-9.05	-0.78	0.00	-27.03	0.00	27.03	939.76	469.88	700.63	350.84	2.34	-0.30	0.033
82.00	-8.57	-0.78	0.00	-25.48	0.00	25.48	908.81	454.41	654.98	327.98	2.47	-0.31	0.032
82.00	-8.57	-0.78	0.00	-25.48	0.00	25.48	780.36	390.18	564.40	282.62	2.47	-0.31	0.000
85.00	-8.26	-0.79	0.00	-23.13	0.00	23.13	740.57	370.29	508.03	254.39	2.67	-0.33	0.033
87.00	-6.63	-0.80	0.00	-21.55	0.00	21.55	714.04	357.02	472.09	236.39	2.81	-0.34	0.032
90.00	-6.61	-0.80	0.00	-19.14	0.00	19.14	674.25	337.13	420.65	210.64	3.03	-0.36	0.030
90.13	-6.30	-0.80	0.00	-19.04	0.00	19.04	672.59	336.30	418.57	209.60	3.04	-0.36	0.030
90.13	-6.30	-0.80	0.00	-19.04	0.00	19.04	672.59	336.30	418.57	209.60	3.04	-0.36	0.100
95.00	-6.17	-0.80	0.00	-15.12	0.00	15.12	607.93	303.97	341.52	171.01	3.43	-0.39	0.099
97.00	-4.63	-0.76	0.00	-13.52	0.00	13.52	581.40	290.70	312.17	156.32	3.60	-0.43	0.094
98.00	-4.18	-0.74	0.00	-12.76	0.00	12.76	568.14	284.07	297.99	149.22	3.69	-0.45	0.093
99.00	-4.12	-0.74	0.00	-12.02	0.00	12.02	554.88	277.44	284.14	142.28	3.78	-0.47	0.092
99.00	-4.12	-0.74	0.00	-12.02	0.00	12.02	725.83	362.92	362.74	181.64	3.78	-0.47	0.072
100.00	-3.83	-0.72	0.00	-11.29	0.00	11.29	725.83	362.92	362.74	181.64	3.89	-0.49	0.067
105.00	-3.60	-0.70	0.00	-7.68	0.00	7.68	725.83	362.92	362.74	181.64	4.44	-0.57	0.047
109.00	-3.22	-0.65	0.00	-4.88	0.00	4.88	725.83	362.92	362.74	181.64	4.94	-0.60	0.031
110.00	-2.93	-0.61	0.00	-4.22	0.00	4.22	725.83	362.92	362.74	181.64	5.06	-0.61	0.027
115.00	-2.81	-0.59	0.00	-1.17	0.00	1.17	725.83	362.92	362.74	181.64	5.72	-0.63	0.010
117.00	0.00	0.00	0.00	0.00	0.00	0.00	725.83	362.92	362.74	181.64	5.98	-0.63	0.000
119.00	0.00	0.00	0.00	0.00	0.00	0.00	725.83	362.92	362.74	181.64	6.25	-0.63	0.000

Site Number: 283420

Code: ANSI/TIA-222-G

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Site Name: STONEYBROOK RD CT, CT

Engineering Number: OAA746858\_C3\_01

3/15/2019 4:10:05 PM

Customer: AT&T MOBILITY

**Load Case (0.9 - 0.2Sds) \* DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method**

**Calculated Forces**

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 (deg)	Ratio
0.00	-18.30	-0.93	0.00	-88.33	0.00	88.33	2,813.31	1,406.66	4,820.79	2,413.98	0.00	0.00	0.043
5.00	-17.54	-0.91	0.00	-83.69	0.00	83.69	2,747.79	1,373.90	4,537.84	2,272.29	0.01	-0.01	0.043
10.00	-16.81	-0.89	0.00	-79.14	0.00	79.14	2,679.61	1,339.80	4,258.79	2,132.56	0.03	-0.03	0.043
15.00	-16.10	-0.86	0.00	-74.71	0.00	74.71	2,608.76	1,304.38	3,984.14	1,995.03	0.07	-0.04	0.044
20.00	-15.42	-0.84	0.00	-70.39	0.00	70.39	2,535.24	1,267.62	3,714.39	1,859.96	0.12	-0.06	0.044
25.00	-14.75	-0.81	0.00	-66.20	0.00	66.20	2,459.06	1,229.53	3,450.04	1,727.58	0.19	-0.08	0.044
30.00	-14.11	-0.79	0.00	-62.14	0.00	62.14	2,380.22	1,190.11	3,191.57	1,598.16	0.28	-0.09	0.045
35.00	-13.49	-0.76	0.00	-58.19	0.00	58.19	2,298.17	1,149.08	2,938.80	1,471.58	0.39	-0.11	0.045
40.00	-13.02	-0.75	0.00	-54.37	0.00	54.37	2,187.63	1,093.82	2,661.58	1,332.77	0.52	-0.13	0.047
43.88	-12.83	-0.74	0.00	-51.47	0.00	51.47	2,101.97	1,050.99	2,456.17	1,229.91	0.64	-0.15	0.048
45.00	-12.26	-0.72	0.00	-50.63	0.00	50.63	2,077.10	1,038.55	2,398.08	1,200.82	0.67	-0.16	0.028
48.33	-11.89	-0.70	0.00	-48.24	0.00	48.24	2,003.41	1,001.71	2,230.05	1,116.68	0.79	-0.17	0.028
50.00	-11.35	-0.69	0.00	-47.06	0.00	47.06	1,966.57	983.28	2,148.32	1,075.76	0.85	-0.17	0.028
52.50	-10.99	-0.68	0.00	-45.35	0.00	45.35	1,292.92	646.46	1,405.62	703.85	0.94	-0.18	0.035
55.00	-10.29	-0.66	0.00	-43.66	0.00	43.66	1,267.71	633.85	1,338.84	670.42	1.03	-0.19	0.035
60.00	-10.02	-0.66	0.00	-40.35	0.00	40.35	1,215.29	607.65	1,208.00	604.90	1.24	-0.21	0.034
62.00	-9.61	-0.66	0.00	-39.03	0.00	39.03	1,193.58	596.79	1,156.76	579.24	1.33	-0.22	0.034
62.00	-9.61	-0.66	0.00	-39.03	0.00	39.03	1,193.58	596.79	1,156.76	579.24	1.33	-0.22	0.034
65.00	-8.95	-0.67	0.00	-37.04	0.00	37.04	1,160.21	580.11	1,081.18	541.39	1.47	-0.23	0.034
70.00	-8.29	-0.69	0.00	-33.68	0.00	33.68	1,094.51	547.25	951.97	476.69	1.72	-0.25	0.033
75.00	-8.04	-0.70	0.00	-30.22	0.00	30.22	1,017.13	508.57	821.49	411.36	2.00	-0.27	0.033
77.00	-6.47	-0.75	0.00	-28.82	0.00	28.82	986.19	493.09	772.00	386.57	2.11	-0.28	0.032
80.00	-6.24	-0.76	0.00	-26.57	0.00	26.57	939.76	469.88	700.63	350.84	2.30	-0.30	0.031
82.00	-5.91	-0.77	0.00	-25.05	0.00	25.05	908.81	454.41	654.98	327.98	2.42	-0.31	0.031
82.00	-5.91	-0.77	0.00	-25.05	0.00	25.05	780.36	390.18	564.40	282.62	2.42	-0.31	0.000
85.00	-5.69	-0.77	0.00	-22.74	0.00	22.74	740.57	370.29	508.03	254.39	2.62	-0.32	0.031
87.00	-4.57	-0.79	0.00	-21.19	0.00	21.19	714.04	357.02	472.09	236.39	2.76	-0.34	0.030
90.00	-4.56	-0.79	0.00	-18.82	0.00	18.82	674.25	337.13	420.65	210.64	2.98	-0.35	0.029
90.13	-4.34	-0.79	0.00	-18.72	0.00	18.72	672.59	336.30	418.57	209.60	2.99	-0.35	0.029
90.13	-4.34	-0.79	0.00	-18.72	0.00	18.72	672.59	336.30	418.57	209.60	2.99	-0.35	0.096
95.00	-4.25	-0.79	0.00	-14.87	0.00	14.87	607.93	303.97	341.52	171.01	3.36	-0.38	0.094
97.00	-3.19	-0.74	0.00	-13.30	0.00	13.30	581.40	290.70	312.17	156.32	3.53	-0.42	0.091
98.00	-2.88	-0.73	0.00	-12.55	0.00	12.55	568.14	284.07	297.99	149.22	3.62	-0.44	0.089
99.00	-2.84	-0.73	0.00	-11.82	0.00	11.82	554.88	277.44	284.14	142.28	3.71	-0.46	0.088
99.00	-2.84	-0.73	0.00	-11.82	0.00	11.82	725.83	362.92	362.74	181.64	3.71	-0.46	0.069
100.00	-2.64	-0.71	0.00	-11.10	0.00	11.10	725.83	362.92	362.74	181.64	3.81	-0.48	0.065
105.00	-2.48	-0.69	0.00	-7.55	0.00	7.55	725.83	362.92	362.74	181.64	4.36	-0.56	0.045
109.00	-2.22	-0.64	0.00	-4.79	0.00	4.79	725.83	362.92	362.74	181.64	4.84	-0.59	0.029
110.00	-2.02	-0.60	0.00	-4.15	0.00	4.15	725.83	362.92	362.74	181.64	4.97	-0.60	0.026
115.00	-1.94	-0.58	0.00	-1.15	0.00	1.15	725.83	362.92	362.74	181.64	5.61	-0.62	0.009
117.00	0.00	0.00	0.00	0.00	0.00	0.00	725.83	362.92	362.74	181.64	5.87	-0.62	0.000
119.00	0.00	0.00	0.00	0.00	0.00	0.00	725.83	362.92	362.74	181.64	6.13	-0.62	0.000

Site Number: 283420

Code: ANSI/TIA-222-G

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Site Name: STONEYBROOK RD CT, CT

Engineering Number: OAA746858\_C3\_01

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Customer: AT&T MOBILITY

### Analysis Summary

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	15.17	0.00	26.68	0.00	0.00	1312.92	90.13	0.68
0.9D + 1.6W	15.14	0.00	20.01	0.00	0.00	1296.02	90.13	0.67
1.2D + 1.0Di + 1.0Wi	4.08	0.00	49.06	0.00	0.00	359.35	90.13	0.22
(1.2 + 0.2Sds) * DL + E ELFM	0.74	0.00	26.55	0.00	0.00	69.06	90.13	0.05
(1.2 + 0.2Sds) * DL + E EMAM	0.93	0.00	26.55	0.00	0.00	89.78	90.13	0.10
(0.9 - 0.2Sds) * DL + E ELFM	0.74	0.00	18.30	0.00	0.00	68.08	90.13	0.04
(0.9 - 0.2Sds) * DL + E EMAM	0.93	0.00	18.30	0.00	0.00	88.33	90.13	0.10
1.0D + 1.0W	3.62	0.00	22.26	0.00	0.00	311.37	90.13	0.17

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Site Name: STONEYBROOK RD CT, CT

Engineering Number: OAA746858\_C3\_01

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Customer: AT&T MOBILITY

**Additional Steel Summary**

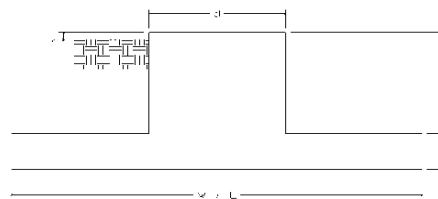
Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors				Max Member		
			VQ/I (lb/in)	Shear Applied (kips)	Shear phiVn (kips)	Ratio	Pu (kip)	phiPn (kip)	Ratio
43.88	62.00	(3) PL-PL 6" x 1"	365.7	8.8	25.3	0.347	167.0	300.9	0.555
62.00	82.00	(3) PL-PL 6" x 1"	449.6	10.8	25.3	0.427	157.0	300.9	0.522
82.00	90.13	(3) PL-PL 6" x 1"	438.8	10.5	25.3	0.417	111.4	300.9	0.370

Elev From (ft)	Elev To (ft)	Member	Upper Termination Connectors					Lower Termination Connectors				
			MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Ratio	MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Ratio
43.88	62.00	(3) PL-PL 6" x 1"	0.0	25.3	0	0	0.000	148.4	25.3	6	8	0.734
62.00	82.00	(3) PL-PL 6" x 1"	0.0	25.3	0	0	0.000	0.0	25.3	0	0	0.000
82.00	90.13	(3) PL-PL 6" x 1"	93.0	25.3	4	8	0.460	0.0	25.3	0	0	0.000



Site Name: STONEYBROOK RD CT, CT  
 Site Number: 283420  
 Engineering Number: OAA746858  
 Engineer: Peter.Giordano  
 Date: 03/15/19  
 Tower Type: MP

Program Last Updated: 5/13/2014



**Design Loads (Factored) - Analysis per TIA-222-G Standards**

Design / Analysis / Mapping:

	Analysis		
Compression/Leg:	26.7 k	Concrete Strength ( $f'_c$ ):	4000 psi
Uplift/Leg:	0.0 k	Pad Tension Steel Depth:	20.00 in
Total Shear:	15.2 k	$\phi_{\text{Shear}}$ :	0.75
Moment:	1312.9 k-ft	$\phi_{\text{Flexure / Tension}}$ :	0.90
Tower + Appurtenance Weight:	22.3 k	$\phi_{\text{Compression}}$ :	0.65
Depth to Base of Foundation (l + t - h):	7.00 ft	$\beta$ :	0.85
Diameter of Pier (d):	6.50 ft	Bottom Pad Rebar Size #:	7
Height of Pier above Ground (h):	0.50	# of Bottom Pad Rebar:	16
Width of Pad (W):	18.00 ft	Pad Bottom Steel Area:	9.60 in <sup>2</sup>
Length of Pad (L):	18.00 ft	Pad Steel $F_y$ :	60000 psi
Thickness of Pad (t):	2.00 ft	Top Pad Rebar Size #:	7
Tower Leg Center to Center:	0.00 ft	# of Top Pad Rebar:	13
Number of Tower Legs:	1.0 (1 if MP or GT)	Pad Top Steel Area:	7.80 in <sup>2</sup>
Tower Center from Mat Center:	0.00 ft	Pier Rebar Size #:	9
Depth Below Ground Surface to Water Table:	6.50 ft	Pier Steel Area (Single Bar):	1.00 in <sup>2</sup>
Unit Weight of Concrete:	150.0 pcf	# of Pier Rebar:	24
Unit Weight of Soil Above Water Table:	120.0 pcf	Pier Steel $F_y$ :	60000 psi
Unit Weight of Water:	62.4 pcf	Pier Cage Diameter:	70.0 in
Unit Weight of Soil Below Water Table:	57.6 pcf	Rebar Strain Limit:	0.008
Friction Angle of Uplift:	15.0 Degrees	Steel Elastic Modulus:	29000 ksi
Ultimate Coefficient of Shear Friction:	0.35	Tie Rebar Size #:	4
Ultimate Compressive Bearing Pressure:	6000.0 psf	Tie Steel Area (Single Bar):	0.20 in <sup>2</sup>
Ultimate Passive Pressure on Pad Face:	0.0 psf	Tie Spacing:	12 in
$\phi_{\text{Soil and Concrete Weight}}$ :	0.9	Tie Steel $F_y$ :	60000 psi
$\phi_{\text{Soil}}$ :	0.75		

**Overturning Moment Usage**

Design OTM: 1426.9 k-ft  
 OTM Resistance: 2728.1 k-ft  
 Design OTM / OTM Resistance: 0.52 Result: OK

**Soil Bearing Pressure Usage**

Net Bearing Pressure: 2260 psf  
 Factored Nominal Bearing Pressure: 4500 psf  
 Net Bearing Pressure/Factored Nominal Bearing Pressure: 0.50 Result: OK  
 Load Direction Controlling Design Bearing Pressure: Diagonal to Pad Edge

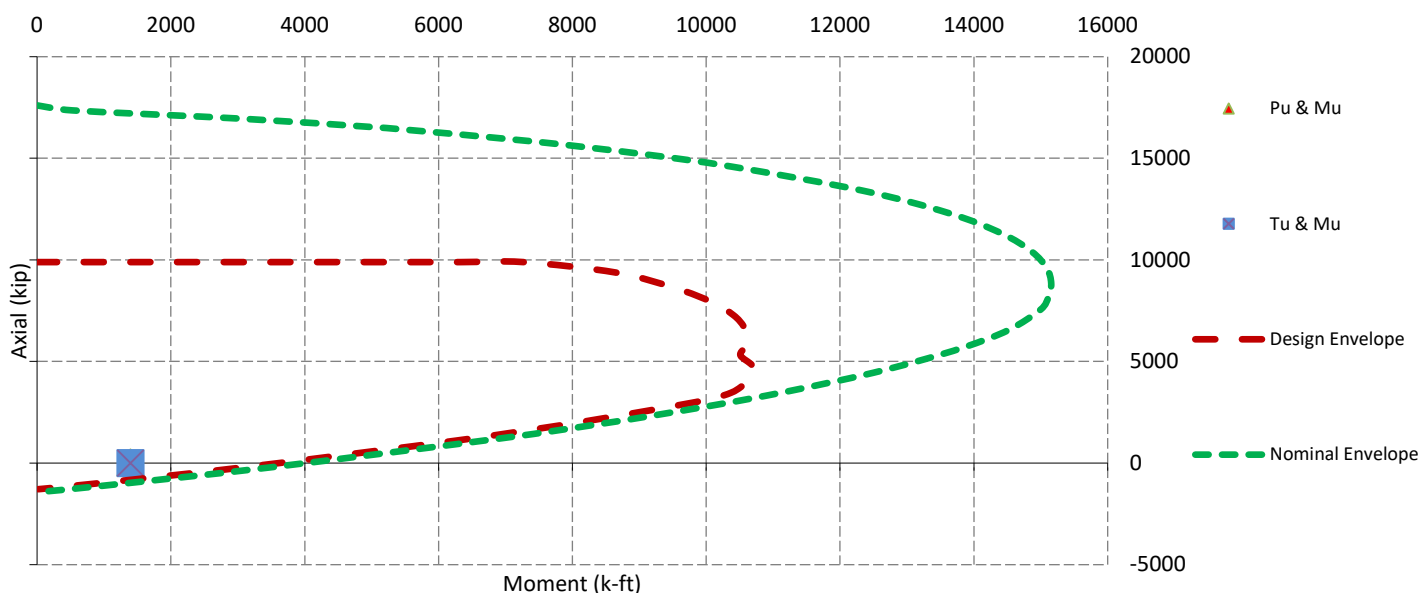
**Sliding Factor of Safety**

Total Factored Sliding Resistance: 80.7 k  
 Sliding Design / Sliding Resistance: 0.19 Result: OK

## One Way Shear, Flexural Capacity, and Punching Shear

Factored One Way Shear ( $V_u$ ):	86.9 k
One Way Shear Capacity ( $\phi V_c$ ):	355.7 k - ACI11.3.1.1
$V_u / \phi V_c$ :	0.24 Result: OK
Load Direction Controlling Shear Capacity:	Diagonal to Pad Edge
Lower Steel Pad Factored Moment ( $M_u$ ):	407.9 k-ft
Lower Steel Pad Moment Capacity ( $\phi M_n$ ):	849.6 k-ft - ACI10.3
$M_u / \phi M_n$ :	0.48 Result: OK
Load Direction Controlling Flexural Capacity:	Parallel to Pad Edge
Upper Steel Pad Factored Moment ( $M_u$ ):	302.7 k-ft
Upper Steel Pad Moment Capacity ( $\phi M_n$ ):	692.5 k-ft
$M_u / \phi M_n$ :	0.44 Result: OK
Lower Pad Flexural Reinforcement Ratio:	0.0022 OK - Minimum Reinforcement Ratio Met - ACI10.5.1
Upper Pad Flexural Reinforcement Ratio:	0.0018 OK - Minimum Reinforcement Ratio Met - ACI10.5.1
Lower Pad Reinforcement Spacing:	14 in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Upper Pad Reinforcement Spacing:	17 in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Factored Punching Shear ( $V_u$ ):	0.0 k
Nominal Punching Shear Capacity ( $\phi_c V_n$ ):	1168.3 k - ACI11.12.2.1
$V_u / \phi V_c$ :	0.00 Result: OK
Factored Moment in Pier ( $M_u$ ):	1396.5 k-ft
Pier Moment Capacity ( $\phi M_n$ ):	3701.8 k-ft
$M_u / \phi M_n$ :	0.38 Result: OK
Factored Shear in Pier ( $V_u$ ):	15.2 k
Pier Shear Capacity ( $\phi V_n$ ):	454.6 k
$V_u / \phi V_c$ :	0.03 Result: OK
Pier Shear Reinforcement Ratio:	0.0004 No Ties Necessary for Shear - ACI11.5.6.1
Factored Tension in Pier ( $T_u$ ):	0.0 k
Pier Tension Capacity ( $\phi T_n$ ):	1296.0 k
$T_u / \phi T_n$ :	0.00 Result: OK
Factored Compression in Pier ( $P_u$ ):	26.7 k
Pier Compression Capacity ( $\phi P_n$ ):	8405.7 k - ACI10.3.6.2
$P_u / \phi P_n$ :	0.00 Result: OK
Pier Compression Reinforcement Ratio:	0.005 OK - Reinforcement Ratio Met - ACI10.9.1 & 10.8.4
$M_u / \phi_B M_n + T_u / \phi_T T_n$ :	0.38 Result: OK

Nominal and Design Moment Capacity and Factored Design Loads



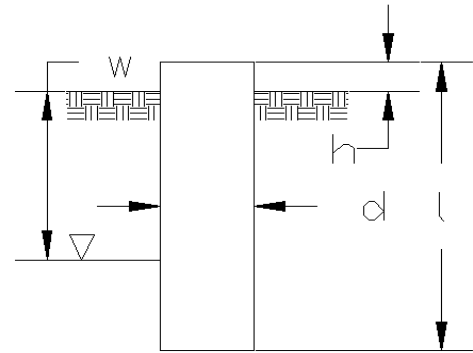
Site Name: STONEYBROOK RD CT, CT  
 Site Number: 283420  
 Engineer: Peter.Giordano  
 Engineering Number: OAA746858  
 Date: 03/15/19

Program Last Updated: 5/13/2014  
 American Tower Corporation

**Design Base Loads (Factored) - Analysis per TIA-222-G Standards**

Analyze or Design a Foundation? Analyze  
 Foundation Mapped: N  
 Moment (M): 1312.9 k-ft  
 Shear/Leg (V): 15.2 k  
 Axial Load (P): 26.7 k  
 Uplift/Leg (U): 0.0 k  
 Tower Type (GT / SST / MP): MP

Diameter of Caisson (d): 6.5 ft  
 Caisson Embedment (L-h): 31 ft  
 Caisson Height Above Ground (h): 0.5 ft  
 Depth Below Ground Surface to Water Table (w): 6.5 ft  
 Unit Weight of Concrete: 150 pcf  
 Unit Weight of Water: 62.4 pcf  
 Tension Skin Friction/Compression Skin Friction: 1  
 Pullout Angle: 30 degrees



**Engineer Notes**

**Soil Mechanical Properties**

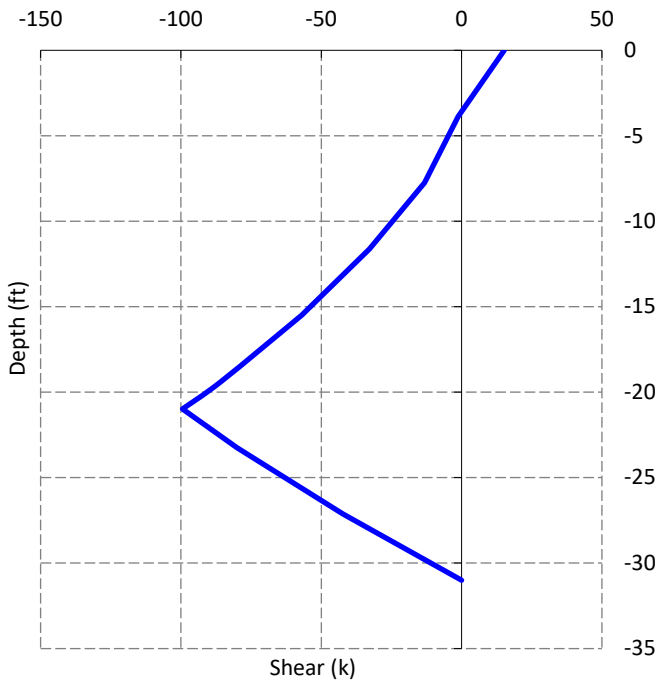
Depth (ft)		$\gamma_{\text{Soil}}$	Cohesion	$\phi$	Ultimate Skin	Ultimate Bearing
Top	Bottom	(pcf)	(psf)	(degree)	Friction (psf)	Pressure (psf)
0	3	120	0	0	0	0
3	7	120	0	32	3000	0
7	32	125	0	34	3000	24000

Required Embedment: 16.2 ft - OK, Caisson Embedment Satisfactory  
 Volume of Concrete: 1045.3 ft<sup>3</sup> = 38.7 yd<sup>3</sup>  
 Weight of Concrete (Buoyancy Effect Considered): 106.1 k  
 Average Soil Unit Weight: 74.6 pcf  
 Skin Friction Resistance: 1715.3 k  
 Compressive Bearing Resistance: 796.4 k  
 Pullout Weight (Minus Concrete Weight): 1197.6 k  
 Nominal Uplift Capacity per Leg ( $\phi_s T_n$ ): 898.2 k  
 Nominal Compressive Capacity per Leg ( $\phi_s P_n$ ): 1883.8 k  
 $P_u$ : 59.0 k  
 $T_u / \phi_s T_n$ : 0.00 Result: OK  
 $P_u / \phi_s P_n$ : 0.03 Result: OK  
 Total Lateral Resistance: 2429.8 k  
 Inflection Point (Below Ground Surface): 21.0 ft  
 Design Overturning Moment At Inflection Point ( $M_D$ ): 1639.4 k-ft  
 Nominal Moment Capacity ( $\phi_s M_n$ ): 11371.4 k-ft  
 $M_D / \phi_s M_n$ : 0.14 Result: OK  
 $\phi_s$ : 0.75

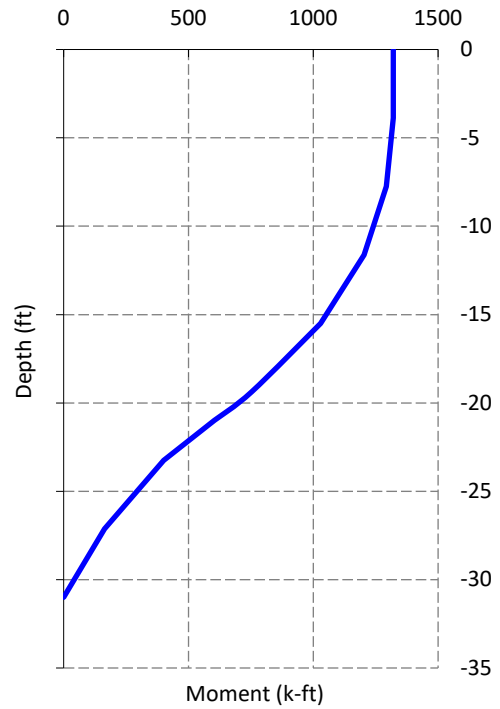
## Caisson Strength Capacity

Concrete Compressive Strength ( $f'_c$ ):	4000 psi
Vertical Steel Rebar Size #:	11
Vertical Steel Rebar Area:	1.56 in <sup>2</sup>
# of Vertical Steel Rebars:	24
Vertical Steel Rebar Yield Strength ( $F_y$ ):	60 ksi
Horizontal Tie / Stirrup Size #:	4
Horizontal Tie / Stirrup Area:	0.2 in <sup>2</sup>
Design Horizontal Tie / Stirrup Spacing:	12 in
Horizontal Tie / Stirrup Steel Yield Strength ( $F_y$ ):	60 ksi
Rebar Cage Diameter:	70.0 in
Strength Bending/Tension Reduction Factor ( $\phi_B$ ):	0.90 ACI318-05 - 9.3.2.1
Strength Shear Reduction Factor ( $\phi_V$ ):	0.85 ACI318-05 - 9.3.2.3
Strength Compression Reduction Factor ( $\phi_P$ ):	0.65 ACI318-05 - 9.3.2.2
Steel Elastic Modulus:	29000 ksi
Design Moment ( $M_u$ ):	1320.5 k-ft
Nominal Moment Capacity ( $\phi_B M_n$ ):	5774.9 k-ft - ACI318-005 - 10.2
$M_u / \phi_B M_n$ :	0.23 Result: OK
Design Shear ( $V_u$ ):	99.4 k
Nominal Shear Capacity ( $\phi_V V_n$ ):	515.2 k - ACI318-05 - 11.3.1.1 or 11.5.7.2
$V_u / \phi_V V_n$ :	0.19 Result: OK
Design Tension ( $T_u$ ):	0.0 k
Nominal Tension Capacity ( $\phi_T T_n$ ):	2021.8 k - ACI318-05 - 10.2
$T_u / \phi_T T_n$ :	0.00 Result: OK
Design Compression ( $P_u$ ):	59.0 k
Nominal Compression Capacity ( $\phi_P P_n$ ):	8382.0 k - ACI318-05 - 10.3.6.2
$P_u / \phi_P P_n$ :	0.01 Result: OK
Bending Reinforcement Ratio:	0.008 ACI318-05 - 10.8.4 & 10.9.1
$M_u / \phi_B M_n + T_u / \phi_T T_n$ :	0.23 Result: OK

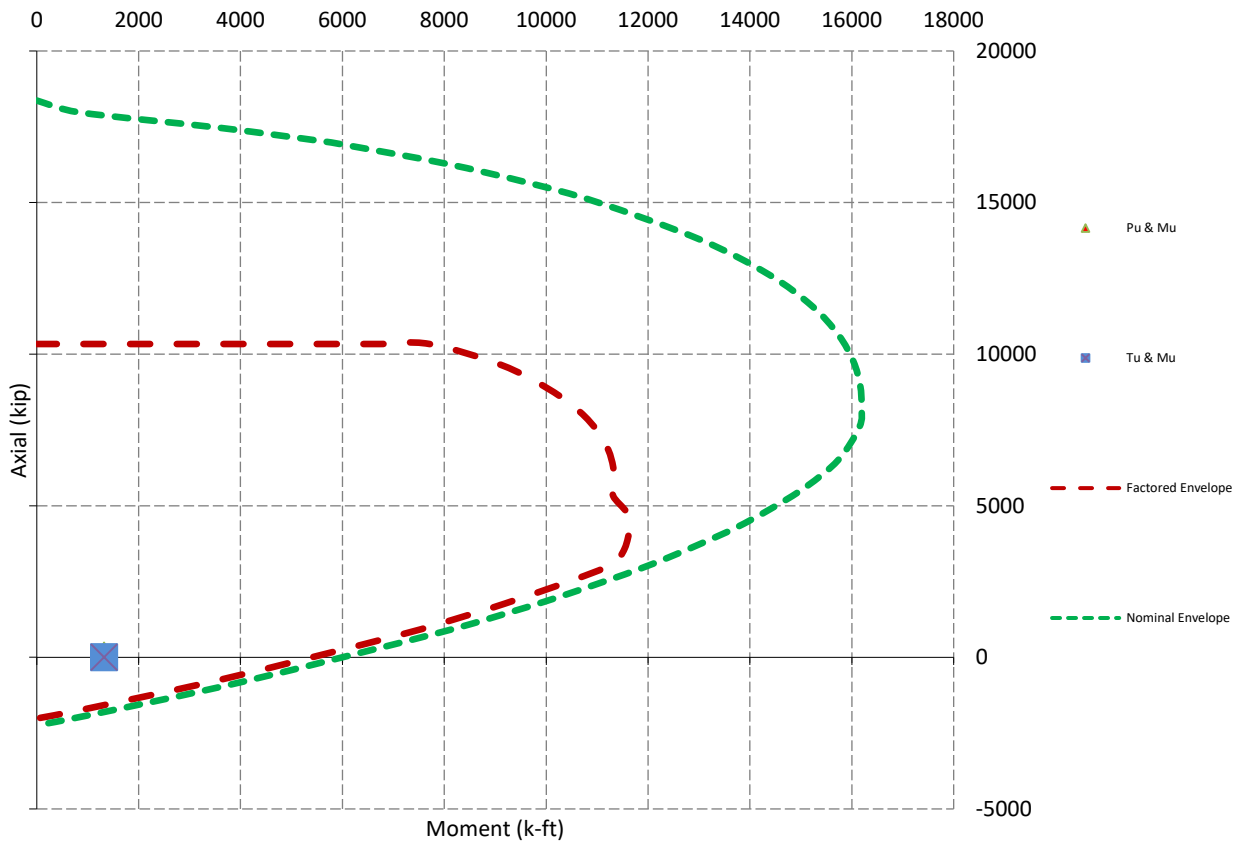
Design Factored Shear / Depth



Design Factored Moment / Depth



Nominal and Factored Moment Capacity and Factored Design Loads





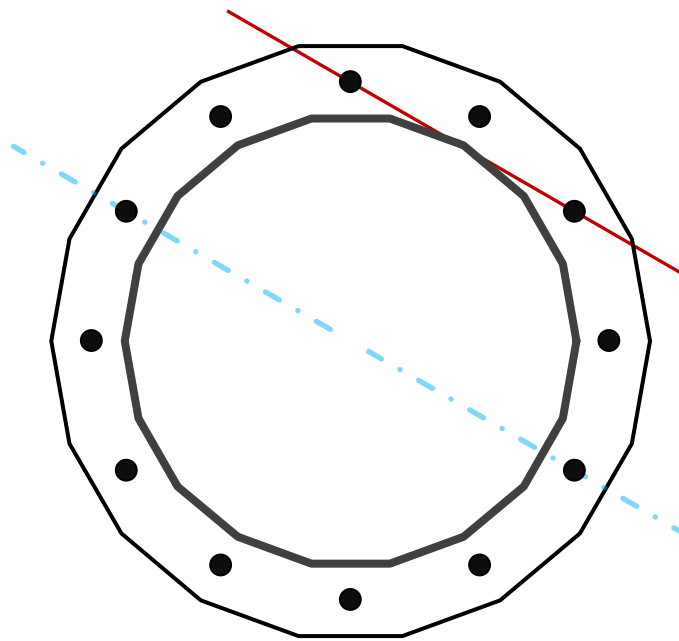
## Base Plate & Anchor Rod Analysis

Pole Dimensions		
Number of Sides	18	-
Diameter	42	in
Thickness	0.3125	in
Orientation Offset		°

Base Reactions		
Moment, Mu	1312.9	k-ft
Axial, Pu	26.7	k
Shear, Vu	15.2	k
Neutral Axis	330	°

Report Capacities		
Component	Capacity	Result
Base Plate	22%	Pass
Anchor Rods	43%	Pass
Dwyidag	-	-

Base Plate		
Number of Sides	18	-
Diameter, $\phi$	56	in
Thickness	2	in
Grade	A572-50	-
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Clip	N/A	in
Orientation Offset		°
Anchor Rod Detail	d	$\eta=0.5$
Clear Distance	3	in
Applied Moment, Mu	405.8	k
Bending Stress, $\phi Mn$	1842.6	k



Original Anchor Rods		
Arrangement	Radial	-
Quantity	12	-
Diameter, $\phi$	2 1/4	in
Bolt Circle	49.15	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	12.9	in
Orientation Offset	0	°
Applied Force, Pu	109.0	k
Anchor Rods, $\phi Pn$	259.8	k

# Calculations for Monopole Base Plate & Anchor Rod Analysis

## Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	15.2	1312.9	1.00
Anchor Rod Forces	15.2	1312.9	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

## Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in <sup>2</sup>	in <sup>2</sup>	in <sup>4</sup>	#	in <sup>4</sup>
Pole	40.7191	2.2622	0.0739		8846.79
Bolt	3.9761	3.2477	0.8393	4.5	11778.35
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	18	-
Width, W	56	in
Thickness, t	2	in
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Base Plate Chord	37.041	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

Anchor Rods		
Anchor Rod Quantity, N	12	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	49.15	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	109.0	k
Applied Shear, Vu	1.0	k
Compressive Capacity, $\phi P_n$	259.8	k
Tensile Capacity, $\phi R_n$	0.419	OK
Interaction Capacity	0.427	OK

External Base Plate		
Chord Length AA	36.946	in
Additional AA	4.000	in
Section Modulus, Z	40.946	in <sup>3</sup>
Applied Moment, Mu	405.8	k-ft
Bending Capacity, $\phi M_n$	1842.6	k-ft
Capacity, Mu/ $\phi M_n$	0.220	OK

Chord Length AB	36.294	in
Additional AB	4.000	in
Section Modulus, Z	40.294	in <sup>3</sup>
Applied Moment, Mu	340.5	k-ft
Bending Capacity, $\phi M_n$	1813.2	k-ft
Capacity, Mu/ $\phi M_n$	0.188	OK

Bend Line Length	42.418	in
Additional Bend Line	0.000	in
Section Modulus, Z	42.418	in <sup>3</sup>
Applied Moment, Mu	405.8	k-ft
Bending Capacity, $\phi M_n$	1908.8	k-ft
Capacity, Mu/ $\phi M_n$	0.213	OK

Internal Base Plate		
Arc Length	0.000	in
Section Modulus, Z	0.000	in <sup>3</sup>
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, $\phi M_n$	0.0	k-ft
Capacity, Mu/ $\phi M_n$		

<b>Base/Flange Plate</b>	Plate Type	<b>Flange @ 82.0 ft</b>
	Pole Diameter	17.8375 in
	Pole Thickness	0.1875 in
	Plate Diameter	24.2 in
	Plate Thickness	1.5 in
	Plate Fy	50 ksi
	Weld Length	0.1875 in
	$\phi_s$ Resistance	6527.34 k-in
	Applied	-13.19 k-in
<b>Stiffeners</b>	#	<b>6 Show</b>
	Thickness	1 in
	Length	8 in
	Height	12 in
	Chamfer	0 in
	Offset Angle	30 °
	Fy	65 ksi

Code Rev. **G**

Moment **211.4 k-ft**

Axial **8.1 k**

Date **3/15/2019**

Engineer **Peter.Giordano**

Site # **283420**

Carrier **AT&T MOBILITY**

<b>Bolts</b>	#	<b>3</b>
	Bolt Circle	21.7 in
	(R)adial / (S)quare	R
	Diameter	1 in
	Hole Diameter	1.125 in
	Type	A325
	Fy	92 ksi
	Fu	120 ksi
<b>Bypass</b>	$\phi_s$ Resistance	54.52 k
	Applied	2.70 k
	#	<b>6</b>
	DYW. Circle	28.25 in
<b>Flat Plate O</b>	Offset Angle	°
	Type	Other
	Diameter	2.2567 in
	Fu	50 ksi
	$\phi_s$ Resistance	159.99 k
<b>Flat Plate O</b>	Applied	47.99 k
	#	<b>3</b>
	Bolt Circle	19 in
	(R)adial / (S)quare	R
	Offset Angle	°
	Diameter	2.76395 in
	Type	Other
Fy	50 ksi	
Fu	65 ksi	
$\phi_s$ Resistance	243.22 k	
Applied	25.74 k	

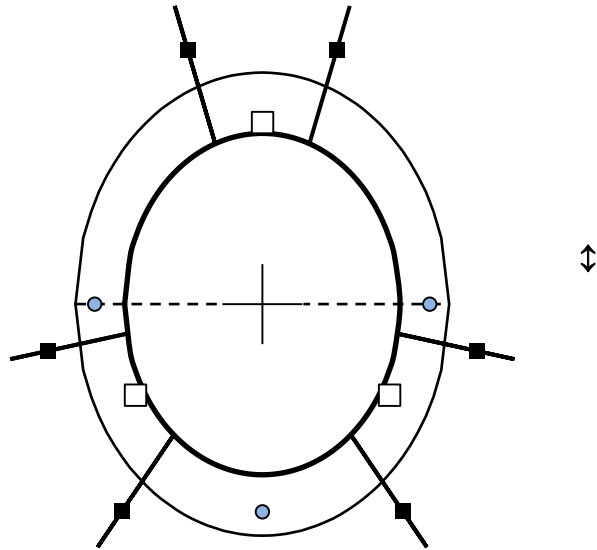


Plate Stress Ratio:  
**0.00** (Pass)

Bolt Stress Ratio:  
**0.05** (Pass)

Flat Plate Stress Ratio:  
**0.11** (Pass)

Bypass Stress Ratio:  
**0.30** (Pass)



<b>Base/Flange Plate</b>	Plate Type	<b>Flange @ 99 ft</b>
	Pole Diameter	12.5625 in
	Pole Thickness	0.25 in
	Plate Diameter	18 in
	Plate Thickness	1.125 in
	Plate Fy	50 ksi
	Weld Length	0.1875 in
	$\phi_s$ Resistance	50.86 k-in
	Applied	14.41 k-in
	<b>Stiffeners</b>	#

Code Rev. **G**

Date **3/15/2019**  
 Engineer **Peter.Giordano**  
 Site # **283420**  
 Carrier **AT&T MOBILITY**

Moment **78.1 k-ft**  
 Axial **3.6 k**

Required Flange Thickness:  
**0.60 in** OK

<b>Bolts</b>	#	<b>8</b>
	Bolt Circle (R)adial / (S)quare	15 in R
	Diameter	1 in
	Hole Diameter	1.125 in
	Type	A325
	Fy	92 ksi
	Fu	120 ksi
	$\phi_s$ Resistance	54.52 k
	Applied	30.74 k
	<b>Reinforcement</b>	#
<b>Extra Bolts</b>	#	<b>0</b>

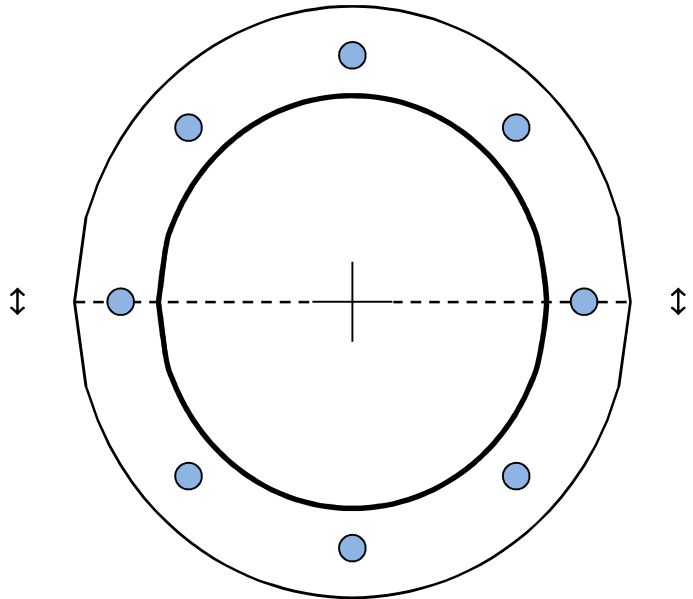


Plate Stress Ratio:  
**0.28** (Pass)

Bolt Stress Ratio:  
**0.56** (Pass)

# EXHIBIT 3

March 29, 2019



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

RE:      Site Number:            CT2381 (LTE 3C/4C)  
          FA Number:            12906923  
          PACE Number:         MRCTB035102  
          PT Number:            2051AOKPGV  
          Site Name:             STRATFORD STONYBROOK ROAD  
          Site Address:         23 Stonybrook Road  
   Stratford, CT 06614

To Whom It May Concern:

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

- (3) OPA-65R-LCUU-H6 Antennas (72.0"x14.8"x7.4" – Wt. = 73 lbs. /each)
- (3) RRUS-32 B2 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (1) Squid Surge Arrestor (24.0"x9.7"  $\varnothing$  – Wt. = 33 lbs.)
- **(3) 800-10965 Antennas (78.7"x20.0"x6.9" – Wt. = 109 lbs. /each)**
- **(3) RRUS-32 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)**
- **(3) 4449 B5/B12 RRH's (14.9"x13.2"x10.4" – Wt. = 73 lbs. /each)**

*\*Proposed equipment shown in bold.*

A survey climb and mapping of the existing AT&T antenna mounts was not performed at this site. HDG conducted a ground audit site visit on March 7, 2019. Fabrication drawings prepared by SitePro1, P/N MM02, dated March 23, 2010 were available for the proposed mounts.

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 – R12.
- 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 124 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 1.13 in was used for this analysis.
- HDG considers this site to be exposure category B; tower is located in an urban/suburban or wooded area with numerous closely spaced obstructions.
- HDG considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- AT&T policy forbids walking on or suspending below T-arm mounts. This analysis does not include live load conditions for this mount.

Based on our evaluation, we have determined that the proposed mounts **ARE CAPABLE** of supporting the proposed installation.

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
<b>Existing (LTE 3C/4C) Mount Rating</b>	3	LC2	55%	<b>PASS</b>

Reference Documents:

- Fabrication drawings prepared by SitePro1, P/N MM02, dated March 23, 2010.

This determination was based on the following limitations and assumptions:

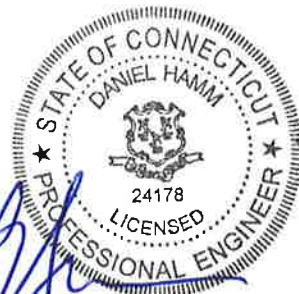

1. HDG is not responsible for any modifications completed prior to and hereafter which HDG was not directly involved.
2. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.
3. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.
4. The proposed mounts 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  
Structural Dept. Head

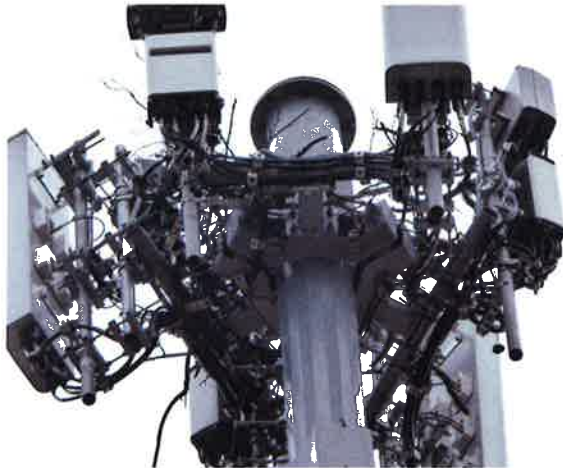
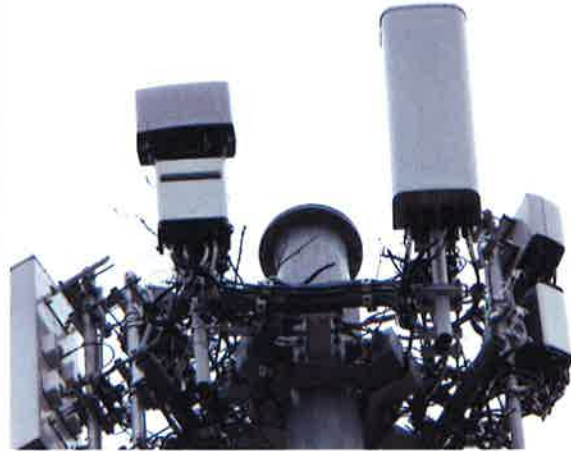
Daniel P. Hamm, PE  
Principal

**FIELD PHOTOS:**

*[Existing mounts to be removed]*









**HUDSON**  
Design Group LLC

## Wind & Ice Calculations

Date: 3/29/2019  
 Project Name: STRATFORD STONYBROOK ROAD  
 Project No.: CT2381  
 Designed By: BD Checked By: MSC



**2.6.5.2 Velocity Pressure Coeff:**

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

$K_z =$  **1.034**       $z =$  117 (ft)  
 $z_g =$  1200 (ft)  
 $\alpha =$  7.0

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

**Table 2-4**

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

**2.6.6.2 Topographic Factor:**

**Table 2-5**

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

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

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

$K_{zt} =$  **#DIV/0!**

$K_h =$  **#DIV/0!**

$K_c =$  0.9 (from Table 2-4)

$K_t =$  (from Table 2-5)

$f =$  (from Table 2-5)

$z =$  117

$z_s =$  74 (Mean elevation of base of structure above sea level)

$H =$  0 (Ht. of the crest above surrounding terrain)

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

$K_e =$  1.00 (from 2.6.8)

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

**Category = 1**

**2.6.10 Design Ice Thickness**

Max Ice Thickness =

$t_i =$  1.00 in

Importance Factor =

$I =$  1.0 (from Table 2-3)

$K_{iz} =$  1.13 (from Sec. 2.6.10)

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

$t_{iz} =$  1.13 in



Date: 3/29/2019  
 Project Name: STRATFORD STONYBROOK ROAD  
 Project No.: CT2381  
 Designed By: BD Checked By: MSC



**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

$h = 120$   $G_h = 0.85$

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

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

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

$q_z = 38.55$   
 $q_z (ice) = 6.27$   
 $q_z (30) = 2.26$

$K_z = 1.034$  (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)  
 $V_{max} = 124$  mph (Ultimate Wind Speed)  
 $V_{max (ice)} = 50$  mph  
 $V_{30} = 30$  mph

**Table 2-2**

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

**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 = **1.13 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)
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	4.86	1.31	372	72	22
800-10965 Antenna	78.7	20.0	6.9	10.93	3.94	1.26	532	99	31
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	2.25	1.20	106	22	6
RRUS-32 B2 RRH (Shielded)	27.2	0.0	7.0	0.00	0.00	1.20	0	0	0
RRUS-32 RRH	27.2	12.1	7.0	2.29	2.25	1.20	106	22	6
RRUS-32 RRH (Side)	27.2	7.0	12.1	1.32	3.89	1.26	64	15	4
4449 B5/B12 RRH	14.9	13.2	10.4	1.37	1.13	1.20	63	14	4
4449 B5/B12 RRH (Side)	14.9	10.4	13.2	1.08	1.43	1.20	50	11	3
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	44	10	3
2-1/2" Pipe	2.9	12.0		0.24	0.24	1.20	11	4	1
3" Pipe	3.5	12.0		0.29	0.29	1.20	13	4	1
HSS 4x4	4.0	12.0		0.33	0.33	1.25	16	5	1
PL 4x1/2	4.0	12.0		0.33	0.33	1.25	16	5	1

Date: 3/29/2019  
 Project Name: STRATFORD STONYBROOK ROAD  
 Project No.: CT2381  
 Designed By: BD Checked By: MSC



WIND LOADS

Angle = 30 (deg)      Ice Thickness = 1.13 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)
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	372	213	392
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	532	225	456
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	106	64	95
RRUS-32 B2 RRH (Shielded)	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	57	64	59
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	106	64	95
RRUS-32 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	64	106	75
4449 B5/B12 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	63	50	60
4449 B5/B12 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	50	63	53

WIND LOADS WITH ICE:

OPA-65R-LCUU-H6 Antenna	74.3	17.1	9.7	8.80	4.99	4.35	7.68	1.28	1.42	71	44	64
800-10965 Antenna	81.0	22.3	9.2	12.52	5.16	3.64	8.83	1.25	1.46	98	47	85
RRUS-32 B2 RRH	29.5	14.4	9.3	2.94	1.90	2.05	3.18	1.20	1.23	22	15	20
RRUS-32 B2 RRH (Shielded)	29.5	7.2	9.3	1.47	1.90	4.10	3.18	1.27	1.23	12	15	12
RRUS-32 RRH	29.5	14.4	9.3	2.94	1.90	2.05	3.18	1.20	1.23	22	15	20
RRUS-32 RRH (Side)	29.5	9.3	14.4	1.90	2.94	3.18	2.05	1.23	1.20	15	22	16
4449 B5/B12 RRH	17.2	15.5	12.7	1.84	1.51	1.11	1.36	1.20	1.20	14	11	13
4449 B5/B12 RRH (Side)	17.2	12.7	15.5	1.51	1.84	1.36	1.11	1.20	1.20	11	14	12

WIND LOADS AT 30 MPH:

OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	22	12	19
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	31	13	27
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	6
RRUS-32 B2 RRH (Shielded)	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	3	4	3
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	6
RRUS-32 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	4
4449 B5/B12 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	4	3	4
4449 B5/B12 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	3	4	3

Date: 3/29/2019  
 Project Name: STRATFORD STONYBROOK ROAD  
 Project No.: CT2381  
 Designed By: BD Checked By: MSC



**WIND LOADS**

Angle = 60 (deg)

Ice Thickness = 1.13 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)
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	372	213	253
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	532	225	302
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	106	64	75
RRUS-32 B2 RRH (Shielded)	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	81	64	68
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	106	64	75
RRUS-32 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	64	106	95
4449 B5/B12 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	63	50	53
4449 B5/B12 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	50	63	60

**WIND LOADS WITH ICE:**

OPA-65R-LCUU-H6 Antenna	74.3	17.1	9.7	8.80	4.99	4.35	7.68	1.28	1.42	71	44	51
800-10965 Antenna	81.0	22.3	9.2	12.52	5.16	3.64	8.83	1.25	1.46	98	47	60
RRUS-32 B2 RRH	29.5	14.4	9.3	2.94	1.90	2.05	3.18	1.20	1.23	22	15	16
RRUS-32 B2 RRH (Shielded)	29.5	10.8	9.3	2.21	1.90	2.73	3.18	1.21	1.23	17	15	15
RRUS-32 RRH	29.5	14.4	9.3	2.94	1.90	2.05	3.18	1.20	1.23	22	15	16
RRUS-32 RRH (Side)	29.5	9.3	14.4	1.90	2.94	3.18	2.05	1.23	1.20	15	22	20
4449 B5/B12 RRH	17.2	15.5	12.7	1.84	1.51	1.11	1.36	1.20	1.20	14	11	12
4449 B5/B12 RRH (Side)	17.2	12.7	15.5	1.51	1.84	1.36	1.11	1.20	1.20	11	14	13

**WIND LOADS AT 30 MPH:**

OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	22	12	15
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	31	13	18
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	4
RRUS-32 B2 RRH (Shielded)	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	5	4	4
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	4
RRUS-32 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	6
4449 B5/B12 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	4	3	3
4449 B5/B12 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	3	4	4

Date: 3/29/2019  
 Project Name: STRATFORD STONYBROOK ROAD  
 Project No.: C12381  
 Designed By: BD Checked By: MSC



WIND LOADS

Angle = 90 (deg)      Ice Thickness = 1.13 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)
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	372	213	213
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	532	225	225
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	106	64	64
RRUS-32 B2 RRH (Shielded)	27.2	0.0	7.0	0.00	1.32	0.00	3.89	1.20	1.26	0	64	64
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	106	64	64
RRUS-32 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	64	106	106
4449 B5/B12 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	63	50	50
4449 B5/B12 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	50	63	63

WIND LOADS WITH ICE:

OPA-65R-LCUU-H6 Antenna	74.3	17.1	9.7	8.80	4.99	4.35	7.68	1.28	1.42	71	44	44
800-10965 Antenna	81.0	22.3	9.2	12.52	5.16	3.64	8.83	1.25	1.46	98	47	47
RRUS-32 B2 RRH	29.5	14.4	9.3	2.94	1.90	2.05	3.18	1.20	1.23	22	15	15
RRUS-32 B2 RRH (Shielded)	29.5	2.3	9.3	0.46	1.90	12.98	3.18	1.60	1.23	5	15	15
RRUS-32 RRH	29.5	14.4	9.3	2.94	1.90	2.05	3.18	1.20	1.23	22	15	15
RRUS-32 RRH (Side)	29.5	9.3	14.4	1.90	2.94	3.18	2.05	1.23	1.20	15	22	22
4449 B5/B12 RRH	17.2	15.5	12.7	1.84	1.51	1.11	1.36	1.20	1.20	14	11	11
4449 B5/B12 RRH (Side)	17.2	12.7	15.5	1.51	1.84	1.36	1.11	1.20	1.20	11	14	14

WIND LOADS AT 30 MPH:

OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	22	12	12
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	31	13	13
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	4
RRUS-32 B2 RRH (Shielded)	27.2	0.0	7.0	0.00	1.32	0.00	3.89	1.20	1.26	0	4	4
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	4
RRUS-32 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	6
4449 B5/B12 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	4	3	3
4449 B5/B12 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	3	4	4

Date: 3/29/2019  
 Project Name: STRATFORD STONYBROOK ROAD  
 Project No.: CT2381  
 Designed By: BD Checked By: MSC



WIND LOADS

Angle = 120 (deg)      Ice Thickness = 1.13 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)
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	372	213	253
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	532	225	302
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	106	64	75
RRUS-32 B2 RRH (Shielded)	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	81	64	68
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	106	64	75
RRUS-32 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	64	106	95
4449 B5/B12 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	63	50	53
4449 B5/B12 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	50	63	60

WIND LOADS WITH ICE:

OPA-65R-LCUU-H6 Antenna	74.3	17.1	9.7	8.80	4.99	4.35	7.68	1.28	1.42	71	44	51
800-10965 Antenna	81.0	22.3	9.2	12.52	5.16	3.64	8.83	1.25	1.46	98	47	60
RRUS-32 B2 RRH	29.5	14.4	9.3	2.94	1.90	2.05	3.18	1.20	1.23	22	15	16
RRUS-32 B2 RRH (Shielded)	29.5	10.8	9.3	2.21	1.90	2.73	3.18	1.21	1.23	17	15	15
RRUS-32 RRH	29.5	14.4	9.3	2.94	1.90	2.05	3.18	1.20	1.23	22	15	16
RRUS-32 RRH (Side)	29.5	9.3	14.4	1.90	2.94	3.18	2.05	1.23	1.20	15	22	20
4449 B5/B12 RRH	17.2	15.5	12.7	1.84	1.51	1.11	1.36	1.20	1.20	14	11	12
4449 B5/B12 RRH (Side)	17.2	12.7	15.5	1.51	1.84	1.36	1.11	1.20	1.20	11	14	13

WIND LOADS AT 30 MPH:

OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	22	12	15
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	31	13	18
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	4
RRUS-32 B2 RRH (Shielded)	27.2	9.1	7.0	1.71	1.32	3.00	3.89	1.22	1.26	5	4	4
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	4
RRUS-32 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	6
4449 B5/B12 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	4	3	3
4449 B5/B12 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	3	4	4

Date: 3/29/2019  
 Project Name: STRATFORD STONYBROOK ROAD  
 Project No.: CT2381  
 Designed By: BD Checked By: MSC



**WIND LOADS**

Angle = 150 (deg)      Ice Thickness = 1.13 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)
OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	372	213	332
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	532	225	456
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	106	64	95
RRUS-32 B2 RRH (Shielded)	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	57	64	59
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	106	64	95
RRUS-32 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	64	106	75
4449 B5/B12 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	63	50	60
4449 B5/B12 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	50	63	53

**WIND LOADS WITH ICE:**

OPA-65R-LCUU-H6 Antenna	74.3	17.1	9.7	8.80	4.99	4.35	7.68	1.28	1.42	71	44	64
800-10965 Antenna	81.0	22.3	9.2	12.52	5.16	3.64	8.83	1.25	1.46	98	47	85
RRUS-32 B2 RRH	29.5	14.4	9.3	2.94	1.90	2.05	3.18	1.20	1.23	22	15	20
RRUS-32 B2 RRH (Shielded)	29.5	7.2	9.3	1.47	1.90	4.10	3.18	1.27	1.23	12	15	12
RRUS-32 RRH	29.5	14.4	9.3	2.94	1.90	2.05	3.18	1.20	1.23	22	15	20
RRUS-32 RRH (Side)	29.5	9.3	14.4	1.90	2.94	3.18	2.05	1.23	1.20	15	22	16
4449 B5/B12 RRH	17.2	15.5	12.7	1.84	1.51	1.11	1.36	1.20	1.20	14	11	13
4449 B5/B12 RRH (Side)	17.2	12.7	15.5	1.51	1.84	1.36	1.11	1.20	1.20	11	14	12

**WIND LOADS AT 30 MPH:**

OPA-65R-LCUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	22	12	19
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	31	13	27
RRUS-32 B2 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	6
RRUS-32 B2 RRH (Shielded)	27.2	6.1	7.0	1.14	1.32	4.50	3.89	1.29	1.26	3	4	3
RRUS-32 RRH	27.2	12.1	7.0	2.29	1.32	2.25	3.89	1.20	1.26	6	4	6
RRUS-32 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	4
4449 B5/B12 RRH	14.9	13.2	10.4	1.37	1.08	1.13	1.43	1.20	1.20	4	3	4
4449 B5/B12 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	3	4	3

Date: 3/29/2019

Project Name: STRATFORD STONYBROOK ROAD

Project No.: CT2381

Designed By: BD Checked By: MSC



**HUDSON**  
Design Group LLC

### ICE WEIGHT CALCULATIONS

Thickness of ice: 1.13 in.  
Density of ice: 56 pcf

#### OPA-65R-LCUU-H6 Antenna

Weight of ice based on total radial SF area:  
Height (in): 72.0  
Width (in): 14.8  
Depth (in): 7.4  
Total weight of ice on object: 146 lbs  
Weight of object: 73.0 lbs  
Combined weight of ice and object: 219 lbs

#### 800-10965 Antenna

Weight of ice based on total radial SF area:  
Height (in): 78.7  
Width (in): 20.0  
Depth (in): 6.9  
Total weight of ice on object: 202 lbs  
Weight of object: 109.0 lbs  
Combined weight of ice and object: 311 lbs

#### RRUS-32 RRH

Weight of ice based on total radial SF area:  
Height (in): 27.2  
Width (in): 12.1  
Depth (in): 7.0  
Total weight of ice on object: 47 lbs  
Weight of object: 60.0 lbs  
Combined weight of ice and object: 107 lbs

#### RRUS-32 B2 RRH

Weight of ice based on total radial SF area:  
Height (in): 27.2  
Width (in): 12.1  
Depth (in): 7.0  
Total weight of ice on object: 47 lbs  
Weight of object: 60.0 lbs  
Combined weight of ice and object: 107 lbs

#### 4449 B5/B12 RRH

Weight of ice based on total radial SF area:  
Height (in): 14.9  
Width (in): 13.2  
Depth (in): 10.4  
Total weight of ice on object: 31 lbs  
Weight of object: 73.0 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

#### 2-1/2" 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: 6 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: 9 plf

#### PL 4x1/2

Weight of ice based on total radial SF area:  
Height (in): 4  
Width (in): 0.5  
Per foot weight of ice on object: 7 plf

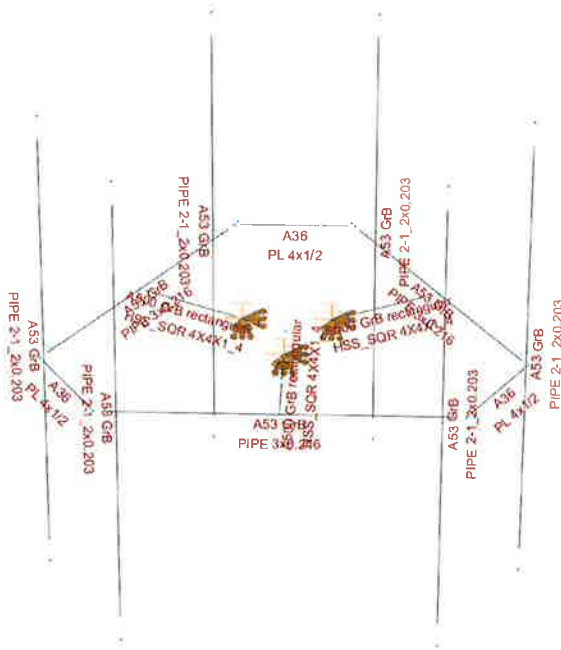








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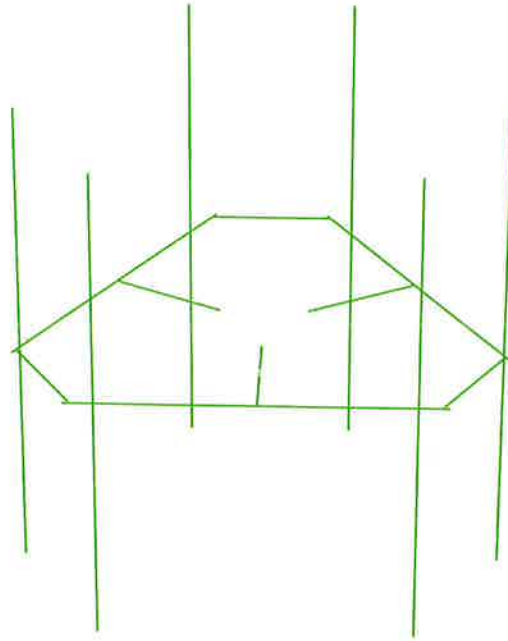
## Mount Calculations

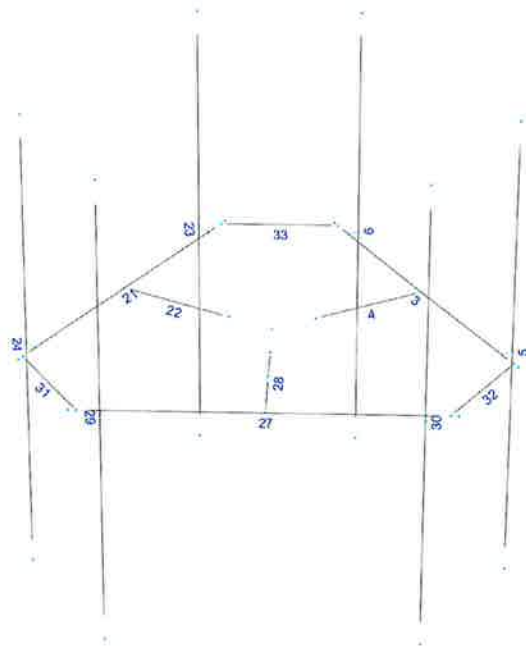




Design status

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





## Load data

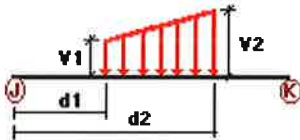
### GLOSSARY

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

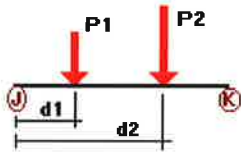
### Distributed force on members



Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
W0	3	Z	-0.013	-0.013	0.00	Yes	100.00	Yes
	4	Z	-0.016	-0.016	0.00	Yes	100.00	Yes
	5	Z	-0.011	-0.011	0.00	Yes	100.00	Yes
	6	Z	-0.011	-0.011	0.00	Yes	100.00	Yes
	21	Z	-0.013	-0.013	0.00	Yes	100.00	Yes
	22	Z	-0.016	-0.016	0.00	Yes	100.00	Yes
	23	Z	-0.011	-0.011	0.00	Yes	100.00	Yes
	24	Z	-0.011	-0.011	0.00	Yes	100.00	Yes
	27	Z	-0.013	-0.013	0.00	Yes	100.00	Yes
	31	Z	-0.016	-0.016	0.00	Yes	100.00	Yes
	32	Z	-0.016	-0.016	0.00	Yes	100.00	Yes
	33	Z	-0.016	-0.016	0.00	Yes	100.00	Yes
	W30	3	X	-0.013	-0.013	0.00	Yes	100.00
4		X	-0.016	-0.016	0.00	Yes	100.00	Yes
5		X	-0.011	-0.011	0.00	Yes	100.00	Yes
6		X	-0.011	-0.011	0.00	Yes	100.00	Yes
21		X	-0.013	-0.013	0.00	Yes	100.00	Yes
22		X	-0.016	-0.016	0.00	Yes	100.00	Yes
23		X	-0.011	-0.011	0.00	Yes	100.00	Yes
24		X	-0.011	-0.011	0.00	Yes	100.00	Yes
28	X	-0.016	-0.016	0.00	Yes	100.00	Yes	

	29	X	-0.011	-0.011	0.00	Yes	100.00	Yes
	30	X	-0.011	-0.011	0.00	Yes	100.00	Yes
	31	X	-0.016	-0.016	0.00	Yes	100.00	Yes
	32	X	-0.016	-0.016	0.00	Yes	100.00	Yes
Di	3	Y	-0.006	-0.006	0.00	Yes	100.00	Yes
	4	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	5	Y	-0.006	-0.006	0.00	Yes	100.00	Yes
	6	Y	-0.006	-0.006	0.00	Yes	100.00	Yes
	21	Y	-0.006	-0.006	0.00	Yes	100.00	Yes
	22	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	23	Y	-0.006	-0.006	0.00	Yes	100.00	Yes
	24	Y	-0.006	-0.006	0.00	Yes	100.00	Yes
	27	Y	-0.006	-0.006	0.00	Yes	100.00	Yes
	28	Y	-0.009	-0.009	0.00	Yes	100.00	Yes
	29	Y	-0.006	-0.006	0.00	Yes	100.00	Yes
	30	Y	-0.006	-0.006	0.00	Yes	100.00	Yes
	31	Y	-0.007	-0.007	0.00	Yes	100.00	Yes
	32	Y	-0.007	-0.007	0.00	Yes	100.00	Yes
	33	Y	-0.007	-0.007	0.00	Yes	100.00	Yes

### Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	5	y	-0.055	1.50	No
		y	-0.055	6.50	No
		y	-0.133	5.50	No
	6	y	-0.037	1.50	No
		y	-0.037	6.50	No
		y	-0.06	5.50	No
	23	y	-0.055	1.50	No
		y	-0.055	6.50	No
		y	-0.133	5.50	No
	24	y	-0.037	1.50	No
		y	-0.037	6.50	No
		y	-0.06	5.50	No
	29	y	-0.055	1.50	No
		y	-0.055	6.50	No
		y	-0.133	5.50	No
30	y	-0.037	1.50	No	
	y	-0.037	6.50	No	
	y	-0.06	5.50	No	
W0	5	z	-0.151	1.50	No
		z	-0.151	6.50	No
	6	z	-0.127	1.50	No
		z	-0.127	6.50	No
	23	z	-0.151	1.50	No
		z	-0.151	6.50	No
24	z	-0.127	1.50	No	
	z	-0.127	6.50	No	

	29	z	-0.266	1.50	No
		z	-0.266	6.50	No
	30	z	-0.186	1.50	No
		z	-0.186	6.50	No
W30	5	x	-0.228	1.50	No
		x	-0.228	6.50	No
		x	-0.075	5.50	No
	6	x	-0.166	1.50	No
		x	-0.166	6.50	No
		x	-0.059	5.50	No
	23	x	-0.228	1.50	No
		x	-0.228	6.50	No
		x	-0.075	5.50	No
	24	x	-0.166	1.50	No
		x	-0.166	6.50	No
		x	-0.059	5.50	No
	29	x	-0.113	1.50	No
		x	-0.113	6.50	No
		x	-0.106	5.50	No
	30	x	-0.107	1.50	No
		x	-0.107	6.50	No
		x	-0.064	5.50	No
Di	5	y	-0.101	1.50	No
		y	-0.101	6.50	No
		y	-0.078	5.50	No
	6	y	-0.073	1.50	No
		y	-0.073	6.50	No
		y	-0.047	5.50	No
	23	y	-0.101	1.50	No
		y	-0.101	6.50	No
		y	-0.078	5.50	No
	24	y	-0.073	1.50	No
		y	-0.073	6.50	No
		y	-0.047	5.50	No
	29	y	-0.101	1.50	No
		y	-0.101	6.50	No
		y	-0.078	5.50	No
	30	y	-0.073	1.50	No
		y	-0.073	6.50	No
		y	-0.047	5.50	No
Wi0	5	z	-0.03	1.50	No
		z	-0.03	6.50	No
	6	z	-0.026	1.50	No
		z	-0.026	6.50	No
	23	z	-0.03	1.50	No
		z	-0.03	6.50	No
	24	z	-0.026	1.50	No
		z	-0.026	6.50	No
	29	z	-0.05	1.50	No
		z	-0.05	6.50	No
	30	z	-0.036	1.50	No
		z	-0.036	6.50	No
Wi30	5	x	-0.043	1.50	No
		x	-0.043	6.50	No
		x	-0.016	5.50	No
	6	x	-0.032	1.50	No
		x	-0.032	6.50	No
		x	-0.012	5.50	No
	23	x	-0.043	1.50	No
		x	-0.043	6.50	No



		x	-0.016	5.50	No
	24	x	-0.032	1.50	No
		x	-0.032	6.50	No
		x	-0.012	5.50	No
	29	x	-0.024	1.50	No
		x	-0.024	6.50	No
		x	-0.022	5.50	No
	30	x	-0.022	1.50	No
		x	-0.022	6.50	No
		x	-0.015	5.50	No
WLO	5	z	-0.009	1.50	No
		z	-0.009	6.50	No
	6	z	-0.008	1.50	No
		z	-0.008	6.50	No
	23	z	-0.009	1.50	No
		z	-0.009	6.50	No
	24	z	-0.008	1.50	No
		z	-0.008	6.50	No
	29	z	-0.016	1.50	No
		z	-0.016	6.50	No
	30	z	-0.011	1.50	No
		z	-0.011	6.50	No
WL30	5	x	-0.014	1.50	No
		x	-0.014	6.50	No
		x	-0.004	5.50	No
	6	x	-0.01	1.50	No
		x	-0.01	6.50	No
		x	-0.003	5.50	No
	23	x	-0.014	1.50	No
		x	-0.014	6.50	No
		x	-0.004	5.50	No
	24	x	-0.01	1.50	No
		x	-0.01	6.50	No
		x	-0.003	5.50	No
	29	x	-0.007	1.50	No
		x	-0.007	6.50	No
		x	-0.006	5.50	No
	30	x	-0.006	1.50	No
		x	-0.006	6.50	No
		x	-0.004	5.50	No

### 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
WLO	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

## 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



Current Date: 3/29/2019 11:57 AM

Units system: English

File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT2381\CT2381 (LTE 3C-4C).etz\

## Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

- LC1=1.2DL+W0
- LC2=1.2DL+W30
- LC3=1.2DL-W0
- LC4=1.2DL-W30
- LC5=0.9DL+W0
- LC6=0.9DL+W30
- LC7=0.9DL-W0
- LC8=0.9DL-W30
- LC9=1.2DL+Di+Wi0
- LC10=1.2DL+Di+Wi30
- LC11=1.2DL+Di-Wi0
- LC12=1.2DL+Di-Wi30
- LC13=1.2DL

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	<i>HSS_SQR 4X4X1_4</i>	4	LC10 at 0.00%	0.27	OK	Eq. H1-1b
		22	LC12 at 0.00%	0.27	OK	Eq. H1-1b
		28	LC4 at 0.00%	<b>0.28</b>	<b>OK</b>	Eq. H1-1b
	<i>PIPE 2-1_2x0.203</i>	5	LC4 at 50.00%	<b>0.44</b>	<b>OK</b>	Eq. H1-1b
		6	LC4 at 50.00%	0.34	OK	Eq. H1-1b
		23	LC2 at 50.00%	0.44	OK	Eq. H1-1b
		24	LC2 at 50.00%	0.34	OK	Eq. H1-1b
		29	LC3 at 50.00%	0.28	OK	Eq. H1-1b
		30	LC3 at 50.00%	0.20	OK	Eq. H1-1b
	<i>PIPE 3x0.216</i>	3	LC2 at 48.96%	<b>0.55</b>	<b>OK</b>	Eq. H1-1b
		21	LC4 at 50.00%	0.53	OK	Eq. H1-1b
		27	LC3 at 48.96%	0.48	OK	Eq. H1-1b
	<i>PL 4x1/2</i>	31	LC1 at 100.00%	0.22	OK	Eq. H1-1b
		32	LC3 at 0.00%	0.18	OK	Eq. H1-1b
		33	LC2 at 0.00%	<b>0.29</b>	<b>OK</b>	Eq. H1-1b

## Geometry data

### GLOSSARY

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

### Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
1	0.00	0.00	0.00	0
2	0.7119	0.00	-0.411	0
3	2.4439	0.00	-1.411	0
4	0.9439	0.00	-4.0091	0
5	3.9439	0.00	1.1871	0
6	3.6939	0.00	0.7541	0
7	1.1939	0.00	-3.5761	0
8	3.8671	0.00	0.6541	0
9	1.3671	0.00	-3.6761	0
10	1.3671	4.00	-3.6761	0
11	3.8671	4.00	0.6541	0
12	1.3671	-4.00	-3.6761	0
13	3.8671	-4.00	0.6541	0
38	-0.7119	0.00	-0.411	0
39	-2.4439	0.00	-1.411	0
40	-3.9439	0.00	1.1871	0
41	-0.9439	0.00	-4.0091	0
42	-1.1939	0.00	-3.5761	0
43	-3.6939	0.00	0.7541	0
44	-1.3671	0.00	-3.6761	0
45	-3.8671	0.00	0.6541	0
46	-3.8671	4.00	0.6541	0

47	-1.3671	4.00	-3.6761	0
48	-3.8671	-4.00	0.6541	0
49	-1.3671	-4.00	-3.6761	0
50	0.00	0.00	0.822	0
51	0.00	0.00	2.822	0
52	3.00	0.00	2.822	0
53	-3.00	0.00	2.822	0
54	-2.50	0.00	2.822	0
55	2.50	0.00	2.822	0
56	-2.50	0.00	3.022	0
57	2.50	0.00	3.022	0
58	2.50	4.00	3.022	0
59	-2.50	4.00	3.022	0
60	2.50	-4.00	3.022	0
61	-2.50	-4.00	3.022	0
62	3.8814	0.00	1.0788	0
63	1.0064	0.00	-3.9008	0
68	-3.8814	0.00	1.0788	0
69	-1.0064	0.00	-3.9008	0
70	2.875	0.00	2.822	0
71	-2.875	0.00	2.822	0
72	0.00	0.00	1.822	0
73	0.00	0.10	1.822	0

## Restraints

Node	TX	TY	TZ	RX	RY	RZ
2	1	1	1	1	1	1
38	1	1	1	1	1	1
50	1	1	1	1	1	1

## Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	Ig factor
3	5	4		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
4	2	3		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
5	11	13		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
6	10	12		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
21	41	40		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
22	38	39		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
23	47	49		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
24	46	48		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
27	53	52		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
28	50	51		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
29	59	61		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
30	58	60		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
31	71	68		PL 4x1/2	A36	0.00	0.00	0.00
32	70	62		PL 4x1/2	A36	0.00	0.00	0.00
33	63	69		PL 4x1/2	A36	0.00	0.00	0.00

## Orientation of local axes

---

Member	Rotation [Deg]	Axes23	NX	NY	NZ
5	0.00	2	-0.50	0.00	-0.866
6	0.00	2	-0.50	0.00	-0.866
23	0.00	2	-0.50	0.00	0.866
24	0.00	2	-0.50	0.00	0.866

---

# EXHIBIT 4



# Radio Frequency Emissions Analysis Report

AT&T Existing Facility

**Site ID: CT2381**

FA#: 12906923

Stratford Stonybrook Road  
23 Stonybrook Road  
Stratford, CT 06614

**March 22, 2019**

**Centerline Communications Project Number: 950012-208**

Site Compliance Summary	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general population allowable limit:	<b>25.65 %</b>





March 22, 2019

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

### Emissions Analysis for Site: **CT2381 – Stratford Stonybrook Road**

Centerline Communications, LLC (“Centerline”) was directed to analyze the proposed AT&T facility located at **23 Stonybrook Road, Stratford, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

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

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

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

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



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

Additional details can be found in FCC OET 65.



## CALCULATIONS

Calculations were performed for the proposed AT&T Wireless antenna facility located at **23 Stonybrook Road, Stratford, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

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

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

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

*Table 1: Channel Data Table*



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

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	CCI OPA-65R-LCUU-H6	117
A	2	Kathrein 800-10965	117
B	1	CCI OPA-65R-LCUU-H6	117
B	2	Kathrein 800-10965	117
C	1	CCI OPA-65R-LCUU-H6	117
C	2	Kathrein 800-10965	117

*Table 2: Antenna Data*

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



## RESULTS

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

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	CCI OPA-65R-LCUU-H6	1900 MHz (PCS) / 850 MHz	14.85 / 12.45	6	220	5,942.63	1.97
Antenna A2	Kathrein 800-10965	850 MHz / 2300 MHz (WCS) / 700 MHz	13.45 / 15.85 / 12.65	10	330	8,964.74	3.75
Sector A Composite MPE%							<b>5.72</b>
Antenna B1	CCI OPA-65R-LCUU-H6	1900 MHz (PCS) / 850 MHz	14.85 / 12.45	6	220	5,942.63	1.97
Antenna B2	Kathrein 800-10965	850 MHz / 2300 MHz (WCS) / 700 MHz	13.45 / 15.85 / 12.65	10	330	8,964.74	3.75
Sector B Composite MPE%							<b>5.72</b>
Antenna C1	CCI OPA-65R-LCUU-H6	1900 MHz (PCS) / 850 MHz	14.85 / 12.45	6	220	5,942.63	1.97
Antenna C2	Kathrein 800-10965	850 MHz / 2300 MHz (WCS) / 700 MHz	13.45 / 15.85 / 12.65	10	330	8,964.74	3.75
Sector C Composite MPE%							<b>5.72</b>

*Table 3: AT&T Emissions Levels*



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

<b>Site Composite MPE%</b>	
<b>Carrier</b>	<b>MPE%</b>
AT&T – Max Per Sector Value	<b>5.72 %</b>
T-Mobile	7.77 %
Verizon Wireless	12.16 %
<b>Site Total MPE %:</b>	<b>25.65 %</b>

*Table 4: All Carrier MPE Contributions*

AT&T Sector A Total:	5.72 %
AT&T Sector B Total:	5.72 %
AT&T Sector C Total:	5.72 %
<b>Site Total:</b>	<b>25.65 %</b>

*Table 5: Site MPE Summary*



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

AT&T _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ( $\mu\text{W}/\text{cm}^2$ )	Frequency (MHz)	Allowable MPE ( $\mu\text{W}/\text{cm}^2$ )	Calculated % MPE
AT&T 1900 MHz (PCS) LTE – Antenna 1	4	1,221.97	117	14.26	1900 MHz (PCS)	1000	1.43%
AT&T 850 MHz UMTS – Antenna 1	2	527.38	117	3.08	850 MHz	567	0.54%
AT&T 850 MHz LTE – Antenna 2	2	885.24	117	5.17	850 MHz	567	0.91%
AT&T 850 MHz 5G – Antenna 2	2	553.27	117	3.23	850 MHz	567	0.57%
AT&T 2300 MHz (WCS) LTE – Antenna 2	4	1,153.78	117	13.47	2300 MHz (WCS)	1000	1.35%
AT&T 700 MHz LTE – Antenna 2	2	736.31	117	4.30	700 MHz	467	0.92%
						<b>Total:</b>	<b>5.72%</b>

*Table 6: AT&T Maximum Sector MPE Power Values*



## Summary

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

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

AT&T Sector	Power Density Value (%)
Sector A:	5.72 %
Sector B:	5.72 %
Sector C:	5.72 %
AT&T Maximum Total (per sector):	5.72 %
Site Total:	25.65 %
Site Compliance Status:	<b>COMPLIANT</b>

The anticipated composite MPE value for this site assuming all carriers present is **25.65 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

A handwritten signature in black ink, appearing to read 'Scott Heffernan', is positioned above the contact information.

Scott Heffernan  
RF Engineering Director  
**Centerline Communications, LLC**  
95 Ryan Drive, Suite 1  
Raynham, MA 02767



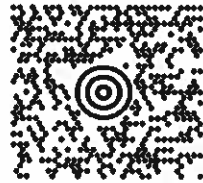
PATRICIA NOWAK  
508 265 5599  
CENTERLINE COMMUNICATIONS, LLC  
750 WEST CENTER STREET  
WEST BRIDGEWATER MA 02379

0.2 LBS LTR

1 OF 1

**SHIP TO:**

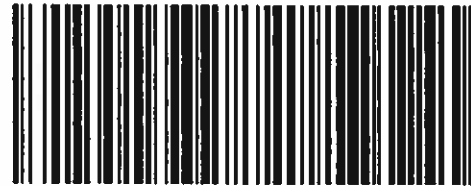
MAYOR LAURA R. HOYDICK  
203 385 4001  
TOWN OF STRATFORD  
2725 MAIN STREET  
**STRATFORD CT 06615-5818**



**CT 066 9-01**



**UPS NEXT DAY AIR SAVER 1P**  
TRACKING #: 1Z 9Y4 503 13 2614 7744



BILLING: P/P

Reference # 1: CT2381- Mayor

CS 21 0 21 WNTMVS0 09 CA 01/2019



**From:** UPS Quantum View <pkginfo@ups.com>  
**Sent:** Tuesday, April 2, 2019 9:48 AM  
**To:** Patricia Nowak  
**Subject:** UPS Delivery Notification, Tracking Number 1Z9Y45031326147744



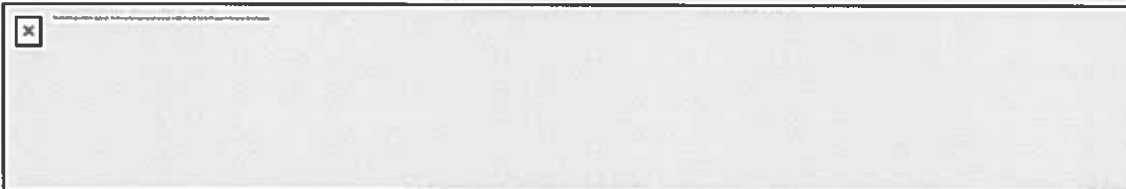
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**Tracking Number:** [1Z9Y45031326147744](#)  
**Ship To:** Mayor Laura R. Hoydick  
Town of Stratford  
2725 MAIN ST  
STRATFORD, CT 06615  
US  
**UPS Service:** UPS NEXT DAY AIR SAVER  
**Number of Packages:** 1  
**Weight:** 0.2 LBS  
**Delivery Location:** OFFICE  
WILLIAM  
**Reference Number 1:** CT2381- Mayor



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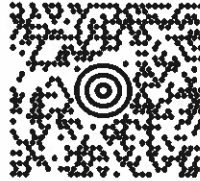
PATRICIA NOWAK  
508 265 5599  
CENTERLINE COMMUNICATIONS, LLC  
750 WEST CENTER STREET  
WEST BRIDGEWATER MA 02379

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**SHIP TO:**

RICHARD FREDETTE  
TOWN OF STRATFORD  
ZONING COMMISSION CHAIR  
73 FERRY COURT  
**STRATFORD CT 06615-6063**



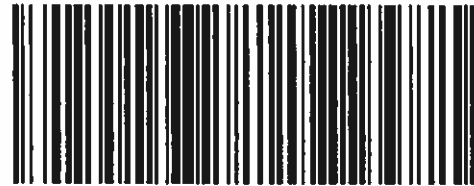
**CT 066 9-01**



**UPS NEXT DAY AIR**

**1**

TRACKING #: 1Z 9Y4 503 01 2648 5795



BILLING: P/P

Reference # 1: CT2381- Zoning Comm

CS 21.0 21

WNTNVS0 09 GA 01/2014



## Patricia Nowak

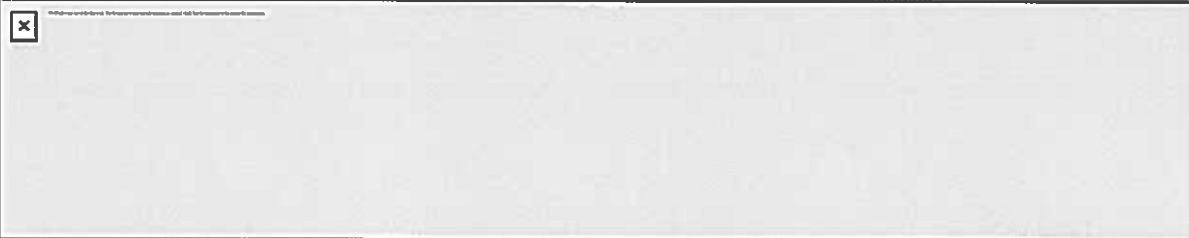
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**To:** Patricia Nowak  
**Subject:** UPS Delivery Notification, Tracking Number 1Z9Y45030126485795



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<b>Tracking Number:</b>	<u><a href="#">1Z9Y45030126485795</a></u>
<b>Ship To:</b>	Town of Stratford 73 FERRY CT STRATFORD, CT 06615 US
<b>UPS Service:</b>	UPS NEXT DAY AIR
<b>Number of Packages:</b>	1
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<b>Delivery Location:</b>	frnt porch
<b>Reference Number 1:</b>	CT2381- Zoning Comm

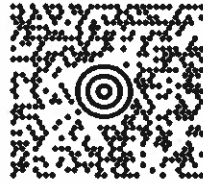
PATRICIA NOWAK  
508 265 5599  
CENTERLINE COMMUNICATIONS, LLC  
750 WEST CENTER STREET  
WEST BRIDGEWATER MA 02379

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1 OF 1

**SHIP TO:**

JOHN RUSATSKY  
2033854017  
TOWN OF STRATFORD  
ZONING ENFORCEMENT OFFICER  
2725 MAIN STREET  
**STRATFORD CT 06615-5818**



**CT 066 9-01**



**UPS NEXT DAY AIR**

**1**

TRACKING #: 1Z 9Y4 503 01 2463 2183



BILLING: P/P

Reference # 1: CT2381- ZEO

CS 21.0 21 WWTNVS0 09 DA 01/2019



## Patricia Nowak

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**Sent:** Tuesday, April 2, 2019 9:48 AM  
**To:** Patricia Nowak  
**Subject:** UPS Delivery Notification, Tracking Number 1Z9Y45030124632183



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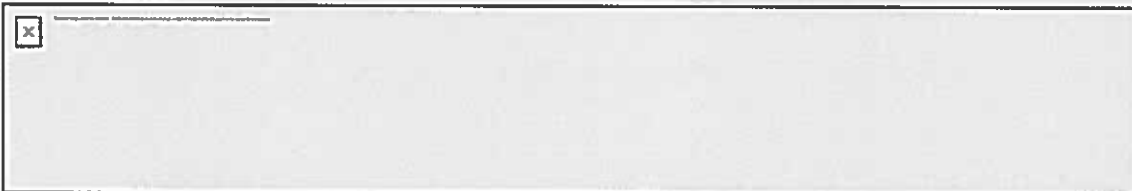
**Delivery Date:** Tuesday, 04/02/2019  
**Delivery Time:** 09:37 AM

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

## Shipment Detail

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<b>Tracking Number:</b>	<u><a href="#">1Z9Y45030124632183</a></u>
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<b>UPS Service:</b>	UPS NEXT DAY AIR
<b>Number of Packages:</b>	1
<b>Weight:</b>	0.2 LBS
<b>Delivery Location:</b>	OFFICE WILLIAM
<b>Reference Number 1:</b>	CT2381- ZEO



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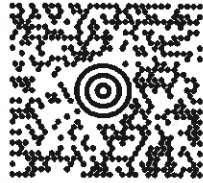
PATRICIA NOWAK  
508 265 5599  
CENTERLINE COMMUNICATIONS, LLC  
750 WEST CENTER STREET  
WEST BRIDGEWATER MA 02379

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1 OF 1

**SHIP TO:**

BRIAN DONOVAN  
2033854010  
TOWN OF STRATFORD  
BUILDING OFFICIAL  
2725 MAIN STREET  
**STRATFORD CT 06615-5818**



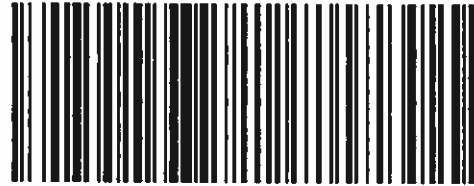
**CT 066 9-01**



**UPS NEXT DAY AIR**

**1**

TRACKING #: 1Z 9Y4 503 01 3640 3961



BILLING: P/P

Reference # 1: CT2381 - Building

CS 21.0 21

WNTVVS0 09 0A 01/2019



**From:** UPS Quantum View <pkginfo@ups.com>  
**Sent:** Tuesday, April 2, 2019 9:48 AM  
**To:** Patricia Nowak  
**Subject:** UPS Delivery Notification, Tracking Number 1Z9Y45030136403961



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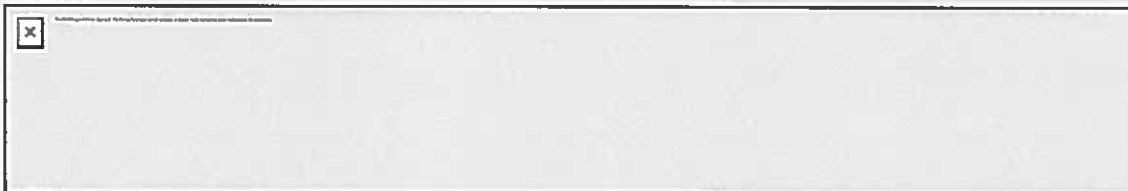
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**Delivery Time:** 09:37 AM

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## Shipment Detail

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<b>Number of Packages:</b>	1
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<b>Reference Number 1:</b>	CT2381- Building



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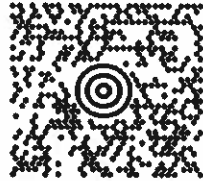
PATRICIA NOWAK  
508.265.5599  
CENTERLINE COMMUNICATIONS, LLC  
750 WEST CENTER STREET  
WEST BRIDGEWATER MA 02379

0.2 LBS LTR

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**SHIP TO:**

STONYBROOK MANAGEMENT LLC  
124 KNAPP STREET  
EASTON CT 06612-1078



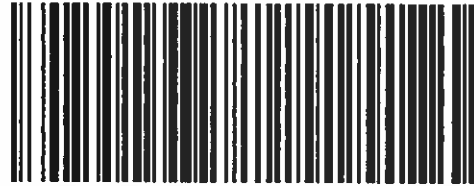
**CT 066 9-06**



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**1**

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BILLING: P/P

Reference # 1: CT2381- Stonybrook

CS 21 0 21

WMTNVS0 D9 CA 01/2019

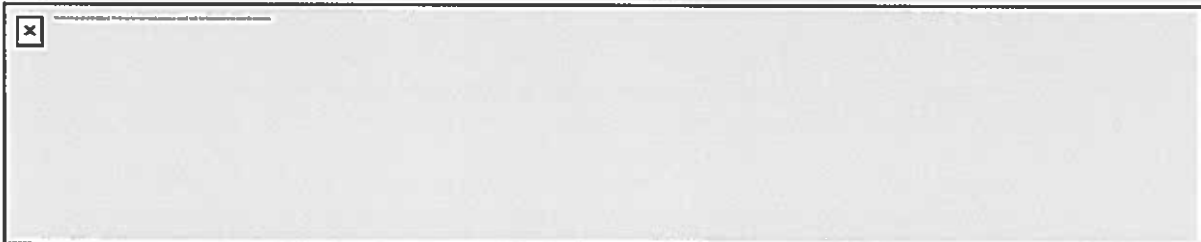


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**To:** Patricia Nowak  
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<b>Tracking Number:</b>	<u><a href="#">1Z9Y45030120172017</a></u>
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<b>Number of Packages:</b>	1
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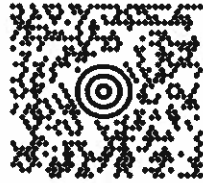
PATRICIA NOWAK  
508-265-5599  
CENTERLINE COMMUNICATIONS, LLC  
750 WEST CENTER STREET  
WEST BRIDGEWATER MA 02379

0.2 LBS LTR

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**SHIP TO:**

RYAN TIERNEY  
781-428-7250  
AMERICAN TOWERS LLC  
10 PRESIDENTIAL WAY  
**WOBURN MA 01801-1053**



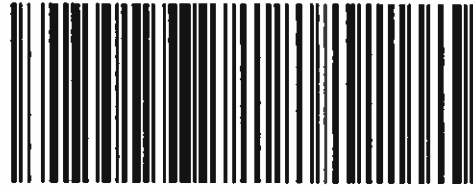
**MA 018 9-04**



**UPS NEXT DAY AIR**

TRACKING #: 1Z 9Y4 503 01 3803 2402

**1**



BILLING: P/P

Reference # 1: CT2381-ATC

CS 21.0 21 WNTNVS0 D9 0A 01/2019



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**Subject:** UPS Delivery Notification, Tracking Number 1Z9Y45030138032402



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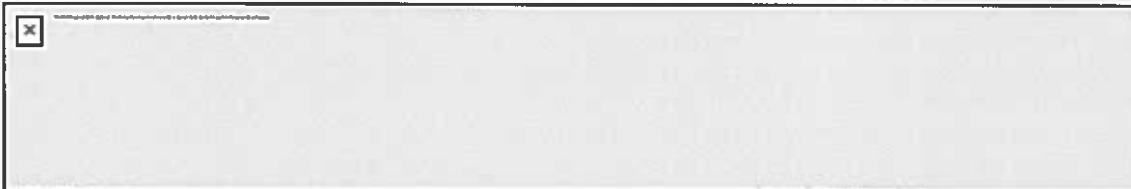
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**Delivery Time:** 09:57 AM

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<b>UPS Service:</b>	UPS NEXT DAY AIR
<b>Number of Packages:</b>	1
<b>Weight:</b>	0.2 LBS
<b>Delivery Location:</b>	FRONT DESK ANCRI
<b>Reference Number 1:</b>	CT2381-ATC



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