



QC Development
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March 22, 2018

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

Notice of Exempt Modification – New Cingular Wireless PCS, LLC (AT&T) – CT2409
880 Andrew Mountain Road, Naugatuck, CT 06770
N 41-29-04.03
W 73-05-23.44

Dear Ms. Bachman:

AT&T currently maintains twelve (12) antennas at the 116-foot level of the existing 120-foot Monopole at 880 Andrew Mountain Road, Naugatuck, CT. The tower is owned by American Tower. The property is owned by the Russell B. Andrew, Sr.. AT&T now intends to remove three (3) CCI antennas and replace them with three (3) new Kathrein antennas (800-10966). AT&T also intends to swap (3) Ericsson RRUS-12 / A2 for three (3) RRUS-32 B2 and install (3) RRUS-32 B66 and (3) RRUS-4478 B14 Remote Radio Units (RRU), also at the 116-foot level.

This facility was approved by the Connecticut Siting Council in Petition # 973 on April 28, 2011. Since no further modification to the overall facility height is proposed, this modification therefore complies with the aforementioned approvals.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 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 Honorable N. Warren Hess III, Mayor of the Town of Naugatuck, and the Naugatuck Land Use Office, as well as the property owner and the tower owner.

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

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the 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 replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

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).

Please feel free to call me at (860) 670-9068 with any questions regarding this matter. Thank you for your consideration.

Sincerely,



Mark Roberts
QC Development
Consultant for AT&T

Attachments

cc: Honorable N. Warren Hess- as Elected Official
Tracy Kulikowski – Land Use Director
Russell B. Andrew, Sr. - as Property Owner
American Tower - Tower Owner (via e-mail)

Power Density

Existing Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm ²)	Freq. Band (MHz ^{**})	Limit S (mW/cm ²)	%MPE
Other Carriers*							4.55%
AT&T UMTS	2	500	116	0.0297	850	0.5667	0.52%
AT&T UMTS	2	500	116	0.0297	1900	1.0000	0.30%
AT&T LTE	2	500	116	0.0297	700	0.4667	0.64%
AT&T LTE	2	500	116	0.0297	2100	1.0000	0.30%
Site Total							6.30%

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

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

Proposed Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm ²)	Freq. Band (MHz ^{**})	Limit S (mW/cm ²)	%MPE
Other Carriers*							4.55%
AT&T UMTS	2	918	116	0.0546	850	0.5667	0.96%
AT&T UMTS	1	1746	116	0.0519	1900	1.0000	0.52%
AT&T LTE	2	1476	116	0.0877	700	0.4667	1.88%
AT&T LTE	2	3664	116	0.2178	1900	1.0000	2.18%
AT&T LTE	1	3837	116	0.1140	2100	1.0000	1.14%
AT&T LTE	1	1285	116	0.0382	2300	1.0000	0.38%
Site Total							11.61%

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

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

PROJECT INFORMATION

SCOPE OF WORK: ITEMS TO BE MOUNTED ON MONOPOLE:

- NEW AT&T RRUS: (3) RRUS-32 B66, (3) RRUS-32 B2 & (3) 4478-700.
- NEW JUMPER CABLES: COAX JUMPER (3) PER SECTOR FROM EACH RRU (TOTAL OF 9)
- NEW FIBER JUMPERS: FIBER JUMPERS (5) FROM THE SQUID TO EACH RRU (TOTAL OF 15)
- NEW ANTENNA: (1) 80010966 (TOTAL OF 3) TO REPLACE EXISTING ANTENNAS
- NEW SURGE ARRESTOR: (1) SURGE ARRESTOR, (2) DC POWER CABLES, & (1) FIBER RUN.

ITEMS TO REMAIN:

- (9) ANTENNAS, (6) RRU'S, (1) SURGE ARRESTOR, (6) DC POWER CABLES, AND (2) FIBER RUN.

SITE ADDRESS: 880 ANDREW MOUNTAIN ROAD
NAUGATUCK, CT 06770

LATITUDE: 41.4846389° N 41° 29' 4.7" N
LONGITUDE: 73.0899167° W 73° 5' 23.7" W

TYPE OF SITE: MONOPOLE / INDOOR EQUIPMENT

TOWER HEIGHT: 120'-0"±
RAD CENTER: 116'-0"±

JURISDICTION: NATIONAL, STATE & LOCAL CODES OR ORDINANCES

CURRENT USE: TELECOMMUNICATIONS FACILITY

PROPOSED USE: TELECOMMUNICATIONS FACILITY



SITE NUMBER: CT2409

SITE NAME: NAUGATUCK ANDREW MTN RD

PROJECT: LTE 4C, 5C & RETROFIT 2018 UPGRADE

DRAWING INDEX

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

VICINITY MAP

DIRECTIONS TO SITE:
FROM I-84, I-84 WEST TO WATERBURY. TAKE EXIT FOR RT 8 SOUTH. SOUTH ON RT. 8 TO EXIT 26 AT BOTTOM OF RAMP TURN RIGHT ONTO RT. 63. FOLLOW RT. 63 INTO TOWN AND BEAR RIGHT ONTO CHERRY STREET. FOLLOW CHERRY STREET 1/4 MILE AND TURN LEFT ONTO RUBBER STREET. GO APPROXIMATELY 1/3 MILE ON RUBBER STREET AND TURN RIGHT ONTO ANDREW AVE. GO APPROXIMATELY 1/3 MILE ON ANDREW AVE AND TURN RIGHT ONTO ANDREW MOUNTAIN ROAD. FOLLOW ANDREW MOUNTAIN ROAD APPROXIMATELY 1.6 MILES TO #888 ON LEFT. DRIVEWAY IS APPROXIMATELY 1/8 MILE PAST TOWER LANE. TAKE DRIVEWAY TO TOWER SITE 1/4 MILE ON LEFT.



GENERAL NOTES

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

72 HOURS



CALL BEFORE YOU DIG



CALL TOLL FREE 1-800-922-4455
OR CALL 811

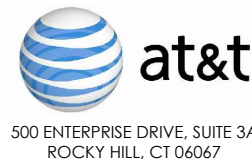
UNDERGROUND SERVICE ALERT

ATC SITE #: 283423
ATC SITE NAME: NAUGATUCK, CT



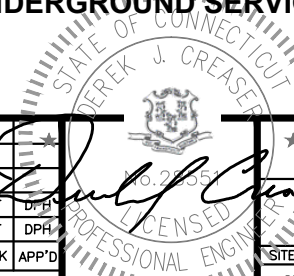
SITE NUMBER: CT2409
SITE NAME: NAUGATUCK ANDREW MTN RD
ATC SITE NUMBER: 283423

880 ANDREW MOUNTAIN ROAD
NAUGATUCK, CT 06770
NEW HAVEN COUNTY



NO.	DATE	REVISIONS	BY	CHK	APP'D
B	03/07/18	ISSUED FOR PERMITTING	SG	AT	[Signature]
A	02/16/18	ISSUED FOR REVIEW	TB	AT	[Signature]

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



AT&T		
TITLE SHEET		
LTE 4C, 5C RETROFIT 2018 UPGRADE		
SITE NUMBER	DRAWING NUMBER	REV
CT2409	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 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

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

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
16. CONSTRUCTION SHALL COMPLY WITH LTE 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 2012 WITH 2016 CT BUILDING CODE AMENDMENTS
 ELECTRICAL CODE: REFER TO ELECTRICAL DRAWINGS
 LIGHTENING CODE: REFER TO ELECTRICAL DRAWINGS

 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-G,
 STRUCTURAL STANDARDS FOR STEEL

 EQUIPMENT AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

 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

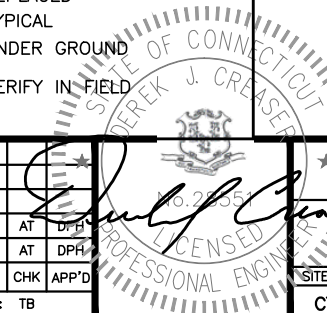
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT2409
 SITE NAME: NAUGATUCK ANDREW MTN RD
 ATC SITE NUMBER: 283423

 880 ANDREW MOUNTAIN ROAD
 NAUGATUCK, CT 06770
 NEW HAVEN COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
B	03/07/18	ISSUED FOR PERMITTING	SG	AT	DPH
A	02/16/18	ISSUED FOR REVIEW	TB	AT	DPH
SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: TB		

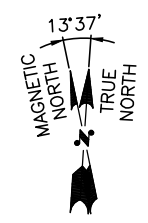
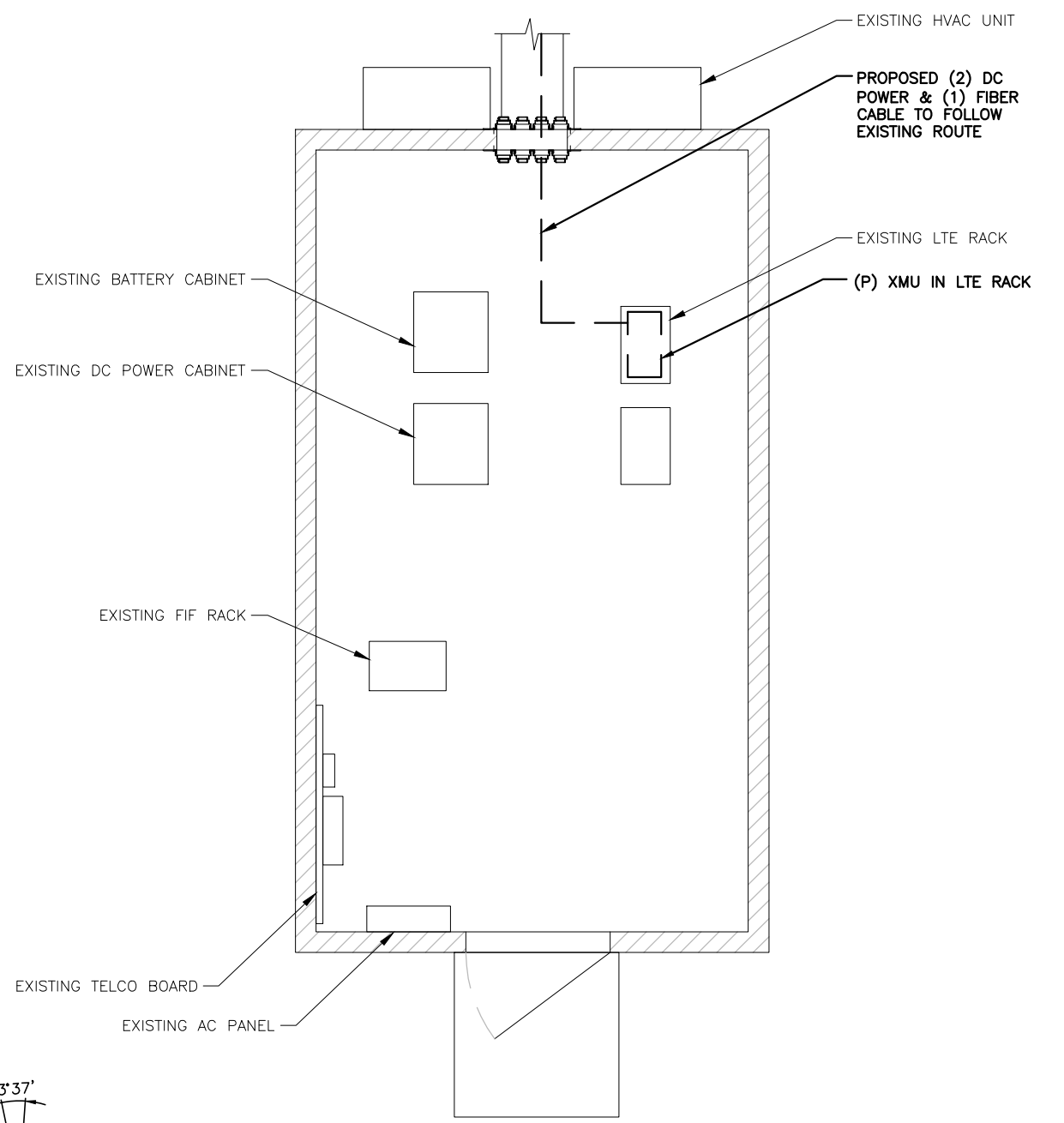
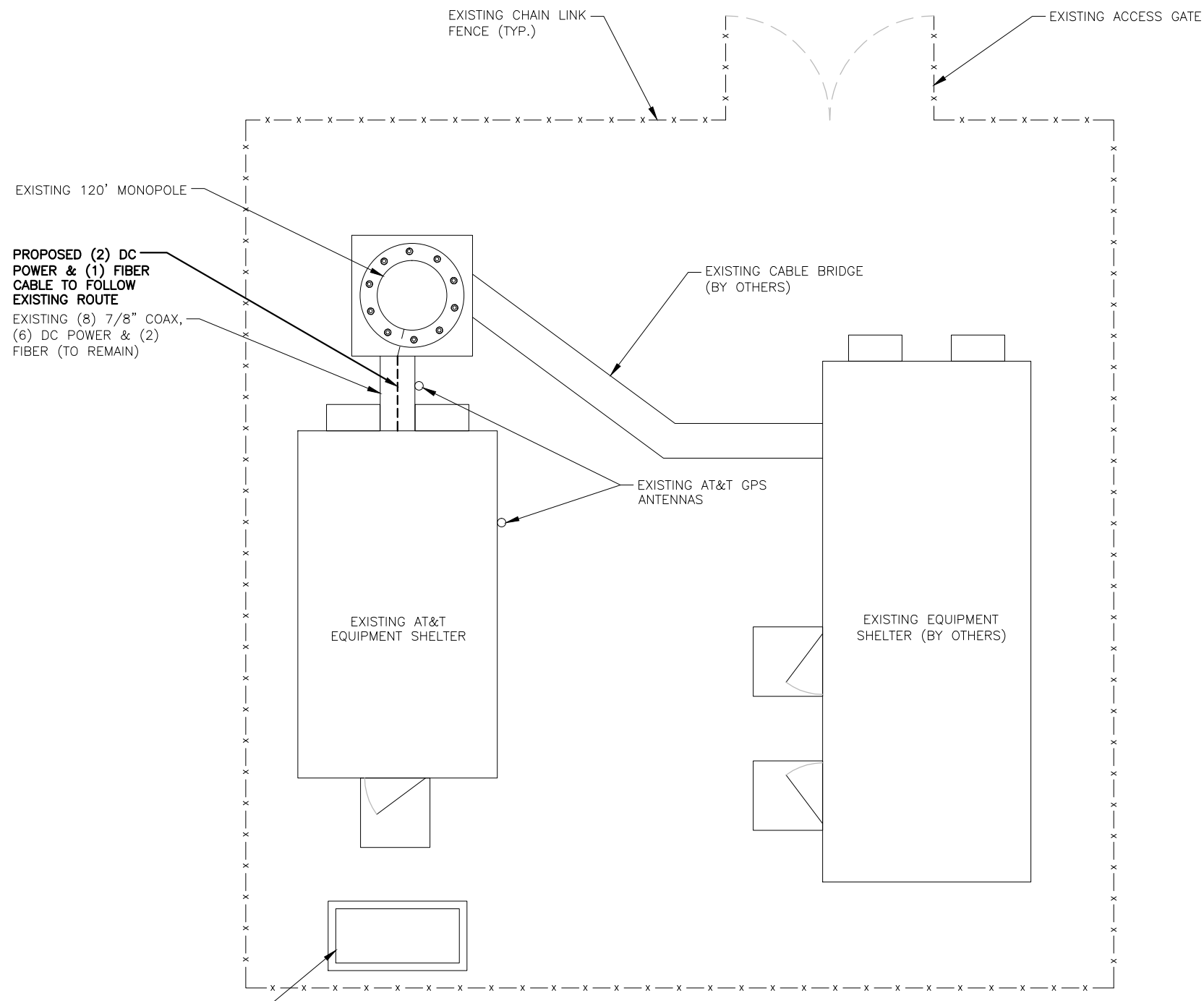


AT&T
 GENERAL NOTES
 LTE 4C, 5C RETROFIT 2018 UPGRADE

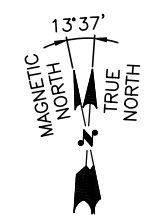
SITE NUMBER	DRAWING NUMBER	REV
CT2409	GN-1	B

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

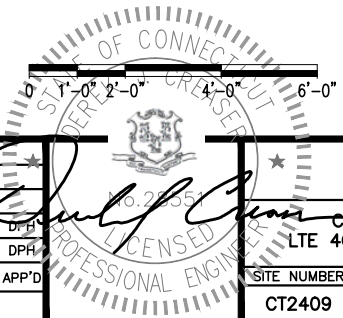
NOTE:
ALL ANTENNAS AND LINES TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY AMERICAN TOWER AND FINAL AT&T RF DATA SHEET.



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



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



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

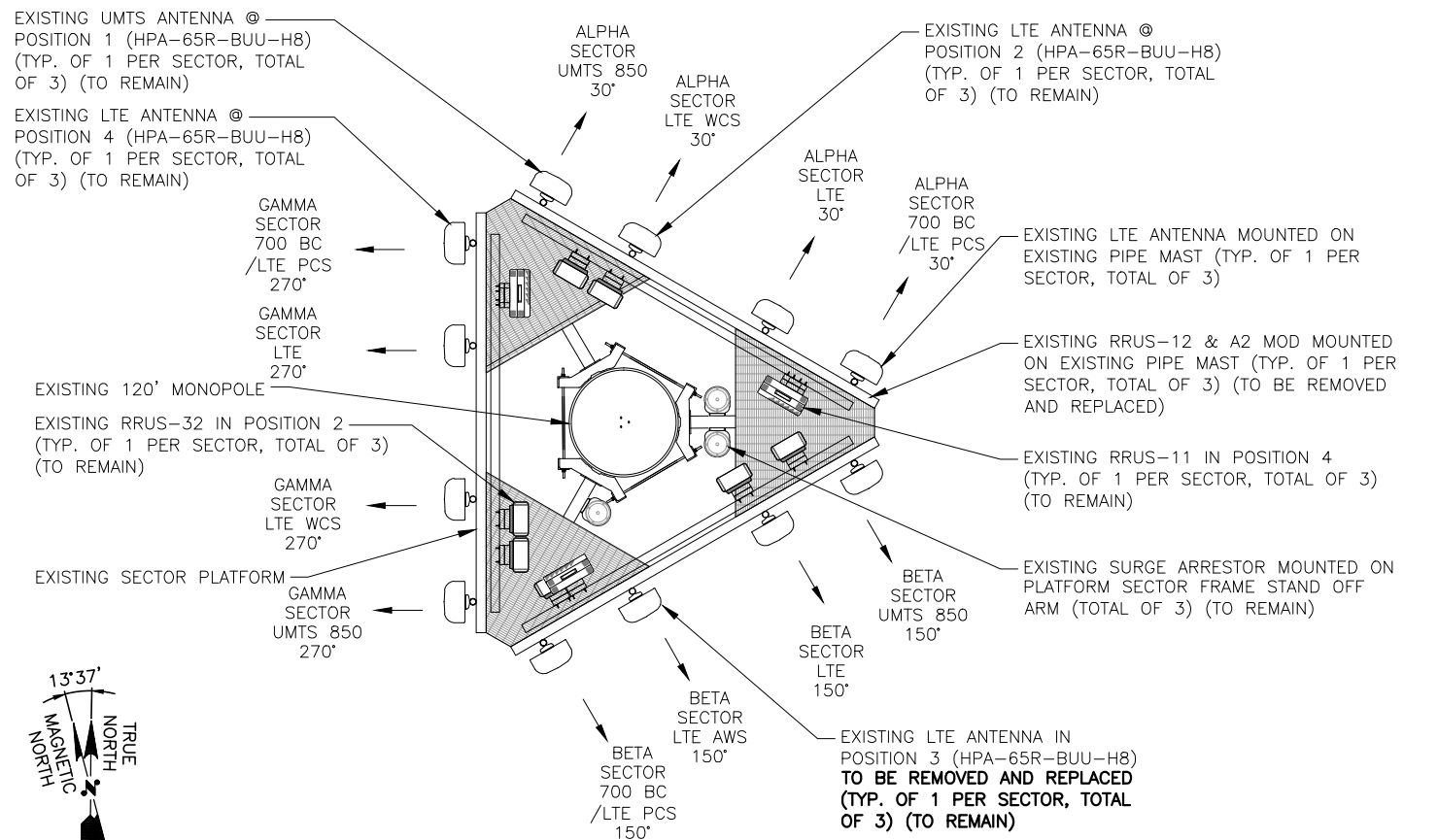
S&I
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT2409
SITE NAME: NAUGATUCK ANDREW MTN RD
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880 ANDREW MOUNTAIN ROAD
NAUGATUCK, CT 06770
NEW HAVEN COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
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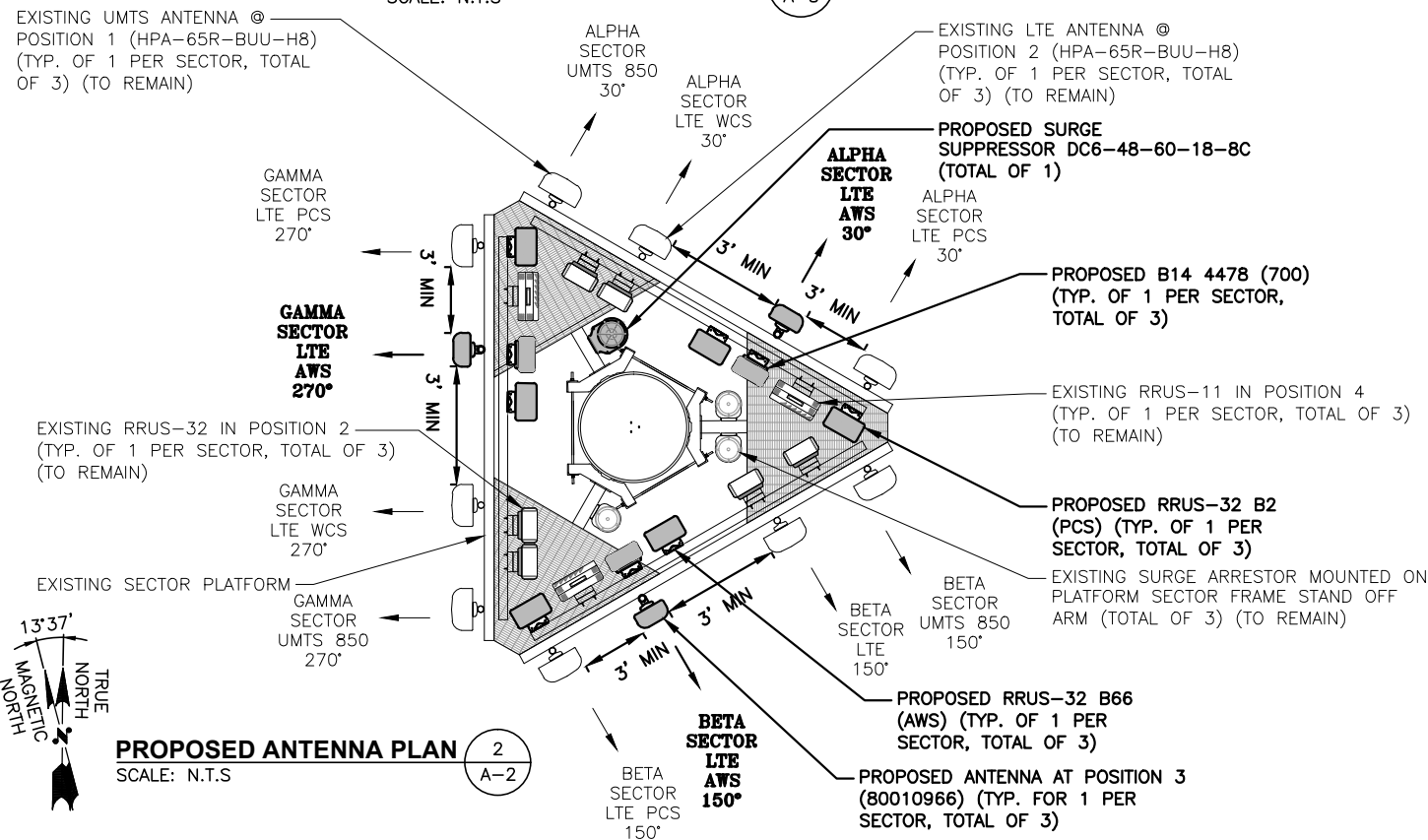
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A	02/16/18	ISSUED FOR REVIEW	TB	AT	DPP
SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: TB		

AT&T
COMPOUND & EQUIPMENT PLAN
LTE 4C, 5C RETROFIT 2018 UPGRADE
SITE NUMBER: CT2409
DRAWING NUMBER: A-1
REV: B



EXISTING ANTENNA LAYOUT
SCALE: N.T.S.

1
A-3



PROPOSED ANTENNA PLAN
SCALE: N.T.S.

2
A-2

PROPOSED SURGE SUPPRESSOR DC6-48-60-18-8C (TOTAL OF 1)

TOP OF EXISTING MONOPOLE
ELEV. 120'-0"± (AGL)

PROPOSED RRUS-32 B2 (PCS) (TYP. OF 1 PER SECTOR, TOTAL OF 3)

Q. OF EXISTING/PROPOSED AT&T ANTENNAS
ELEV. 116'-0"± (AGL)

PROPOSED RRUS-32 B66 (AWS) (TYP. OF 1 PER SECTOR, TOTAL OF 3)

PROPOSED B14 4478 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3) (BELOW)

EXISTING ANTENNA ARRAY (BY OTHERS)

EXISTING SURGE ARRESTOR MOUNTED ON PLATFORM SECTOR FRAME STAND OFF ARM (TOTAL OF 1) (TO REMAIN)

NOTE:

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

NOTE:

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

PROPOSED ANTENNA AT POSITION 3 (80010966) (TYP. FOR 1 PER SECTOR, TOTAL OF 3)

EXISTING 120' MONOPOLE

PROPOSED (2) DC POWER CABLES, AND (1) FIBER CABLE TO FOLLOW EXISTING ROUTING

EXISTING (8) 7/8" COAX, (6) DC POWER & (2) FIBER (TO REMAIN)

GROUND REFERENCE
ELEV. 0'-0"± (AGL)

WEST ELEVATION

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

3
A-2



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



12 INDUSTRIAL WAY
SALEM, NH 03079

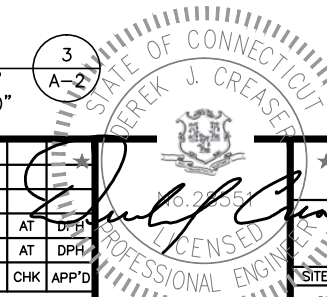
SITE NUMBER: CT2409
SITE NAME: NAUGATUCK ANDREW MTN RD
ATC SITE NUMBER: 283423

880 ANDREW MOUNTAIN ROAD
NAUGATUCK, CT 06770
NEW HAVEN COUNTY



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

NO.	DATE	REVISIONS	BY	CHK	APP'D	SITE NUMBER	DRAWING NUMBER	REV
B	03/07/18	ISSUED FOR PERMITTING	SG	AT	DPH	CT2409	A-2	B
A	02/16/18	ISSUED FOR REVIEW	TB	AT	DPH			
SCALE: AS SHOWN						DESIGNED BY: AT	DRAWN BY: TB	



AT&T

ANTENNA LAYOUTS & ELEVATION
LTE 4C, 5C RETROFIT 2018 UPGRADE

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

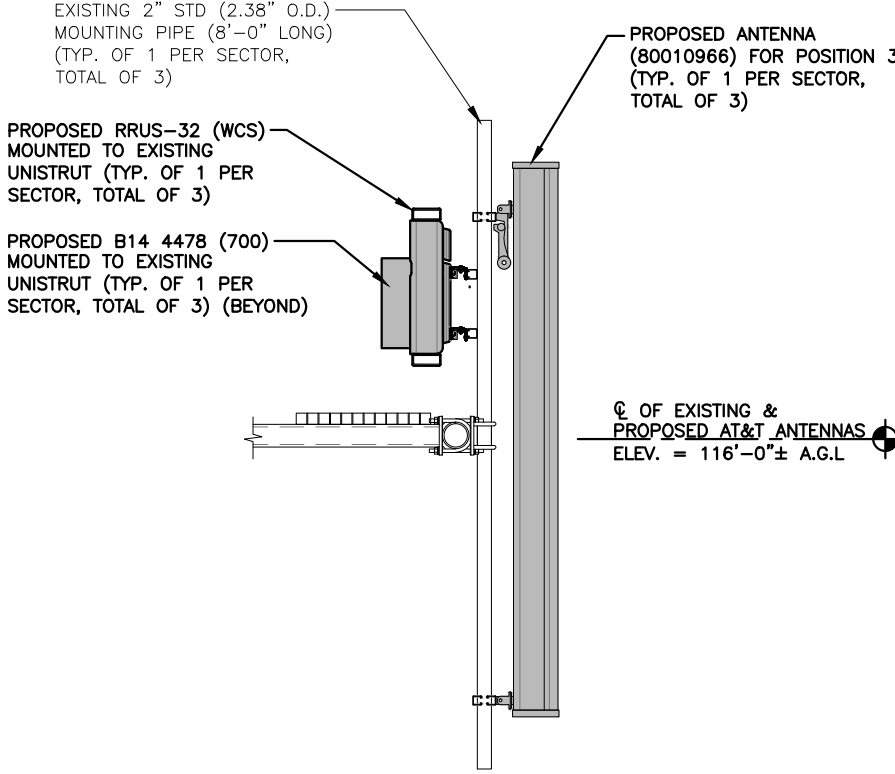
NOTE:
ALL ANTENNAS AND LINES TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY AMERICAN TOWER AND FINAL AT&T RF DATA SHEET.

***COAX JUMPER NOTE:**
COAX JUMPERS (3) PER SECTOR, FROM EACH RRU (TOTAL OF 9).

****FIBER JUMPER NOTE:**
FIBER JUMPERS (5) PER SECTOR, FROM THE SQUID TO EACH RRU (TOTAL OF 15).

FINAL ANTENNA SCHEDULE													
SECTOR	BAND	ANTENNA	SIZE (INCHES) (L X W X D)	RAD CENTER	AZIMUTH	TMA'S	RRU'S	SIZE (INCHES) (L X W X D)	COAX JUMPERS	FIBER JUMPERS	COAX		
ALPHA	UMTS 850	EXISTING	HPA-65R-BUU-H8	92.4X14.8X7.4	116'-0"±	30°	-	-	-	-	-	-	-
	LTE WCS	EXISTING	HPA-65R-BUU-H8	92.4X14.8X7.4	116'-0"±	30°	EXISTING	RRUS-32 (WCS)	27.2X12.1X7.0	-	-	-	-
	LTE B14 700/ AWS J	PROPOSED	80010966	96X20X6.9	116'-0"±	30°	PROPOSED	700-4478 (700) RRUS-32 B2 (AWS)	16.4X15.2X3.4 27.2X12.1X7.0	1*	1**	-	-
BETA	UMTS 850	EXISTING	HPA-65R-BUU-H8	92.4X14.8X7.4	116'-0"±	150°	-	-	-	-	-	-	-
	LTE WCS	EXISTING	HPA-65R-BUU-H8	92.4X14.8X7.4	116'-0"±	150°	EXISTING	RRUS-32 (WCS)	27.2X12.1X7.0	-	-	-	-
	LTE B14 700/ AWS J	PROPOSED	80010966	96X20X6.9	116'-0"±	150°	PROPOSED	700-4478 (700) RRUS-32 B2 (AWS)	16.4X15.2X3.4 27.2X12.1X7.0	1*	1**	-	-
GAMMA	UMTS 850	EXISTING	HPA-65R-BUU-H8	92.4X14.8X7.4	116'-0"±	270°	-	-	-	-	-	-	-
	LTE WCS	EXISTING	HPA-65R-BUU-H8	92.4X14.8X7.4	116'-0"±	270°	EXISTING	RRUS-32 (WCS)	27.2X12.1X7.0	-	-	-	-
	LTE B14 700/ AWS J	PROPOSED	80010966	96X20X6.9	116'-0"±	270°	PROPOSED	700-4478 (700) RRUS-32 B2 (AWS)	16.4X15.2X3.4 27.2X12.1X7.0	1*	1**	-	-
GAMMA	LTE 700 BC/LTE PCS	EXISTING	HPA-65R-BUU-H8	92.4X14.8X7.4	116'-0"±	270°	EXISTING	RRUS-11 (700) RRUS-32 B2 (PCS)	27.2X12.1X7.0	1*	2**	-	-

FINAL ANTENNA CONFIGURATION
SCALE: N.T.S.



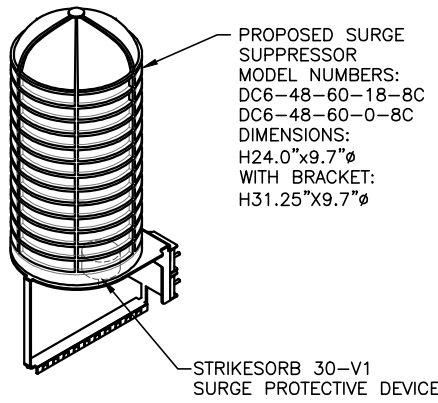
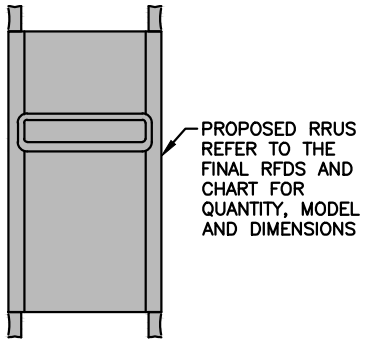
PROPOSED ANTENNA & RRU MOUNTING DETAIL
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

RRU CHART				
QUANTITY	MODEL	L	W	D
3(E)	RRUS-11	19.7"	17.0"	7.2"
-	RRUS-12	20.4"	18.5"	7.5"
6(P)	RRUS-32	27.2"	12.1"	7.0"
-	RRUS-E2	20.4"	18.5"	7.5"
-	LTE-A2	16.4"	15.2"	3.4"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

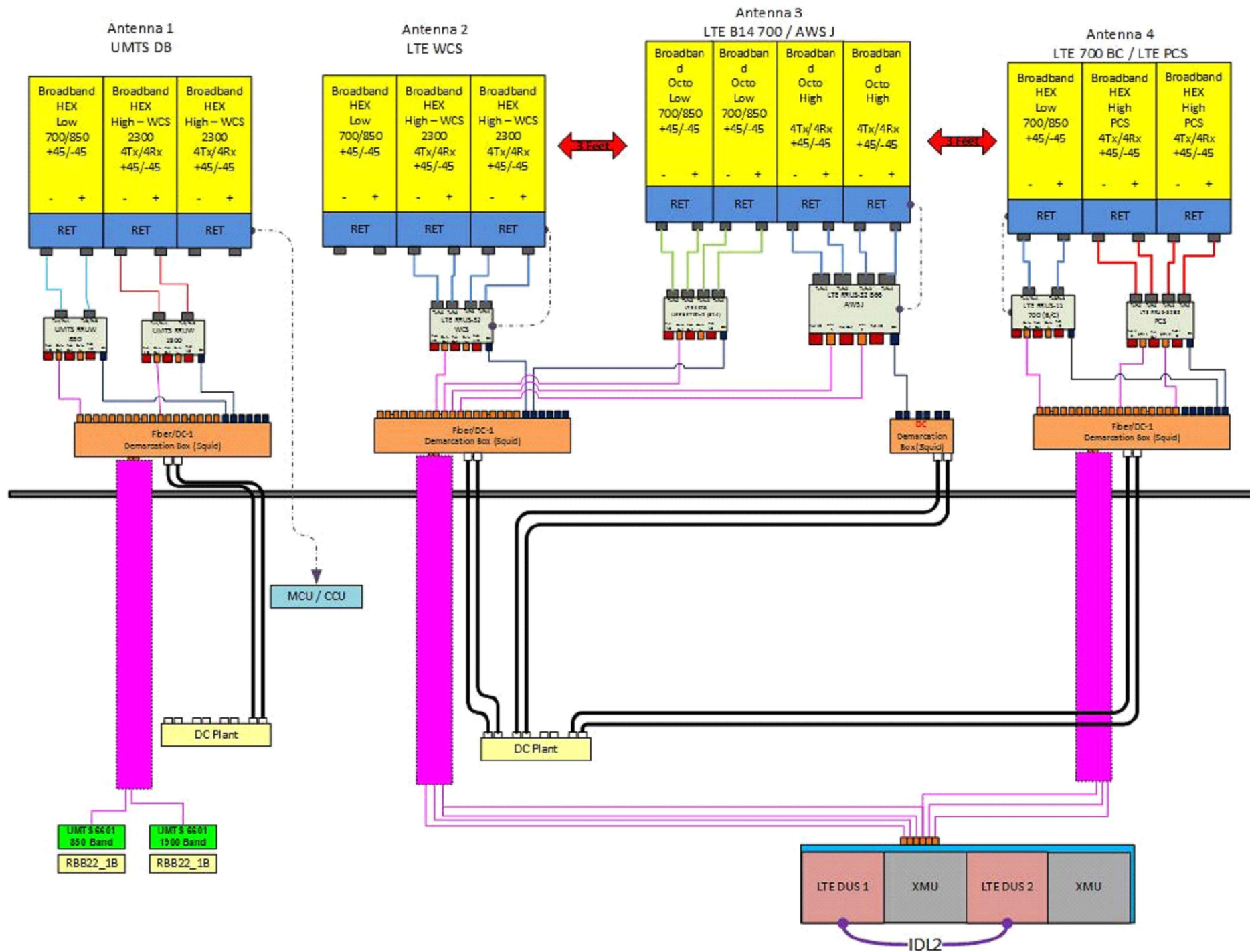
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

RRUS DETAIL
SCALE: N.T.S.



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

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



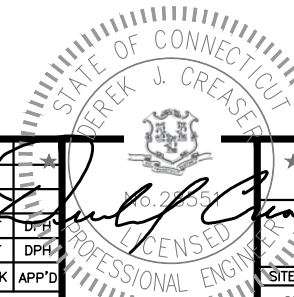
RF PLUMBING DIAGRAM
SCALE: N.T.S

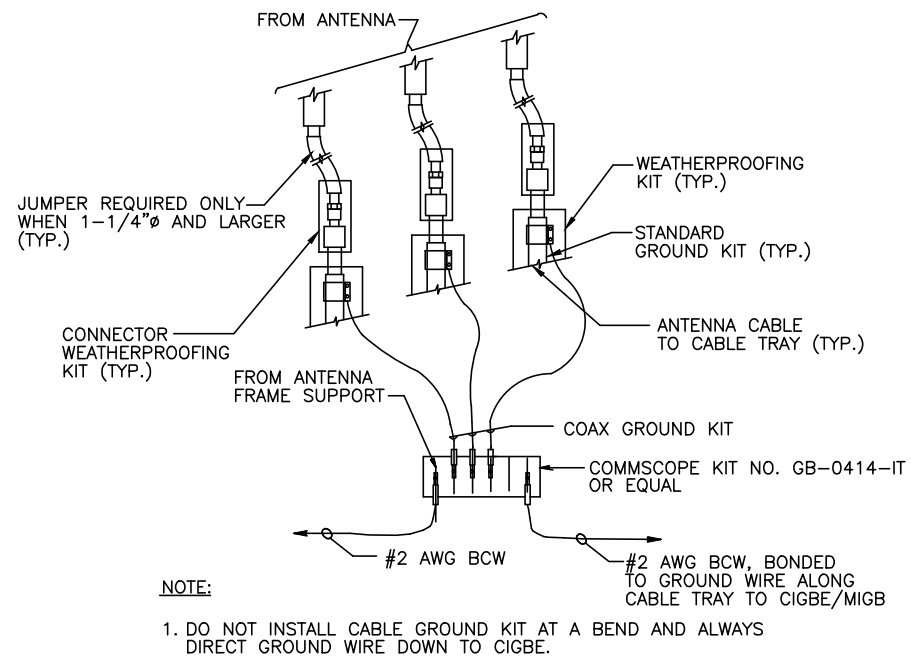
1
RF-1

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

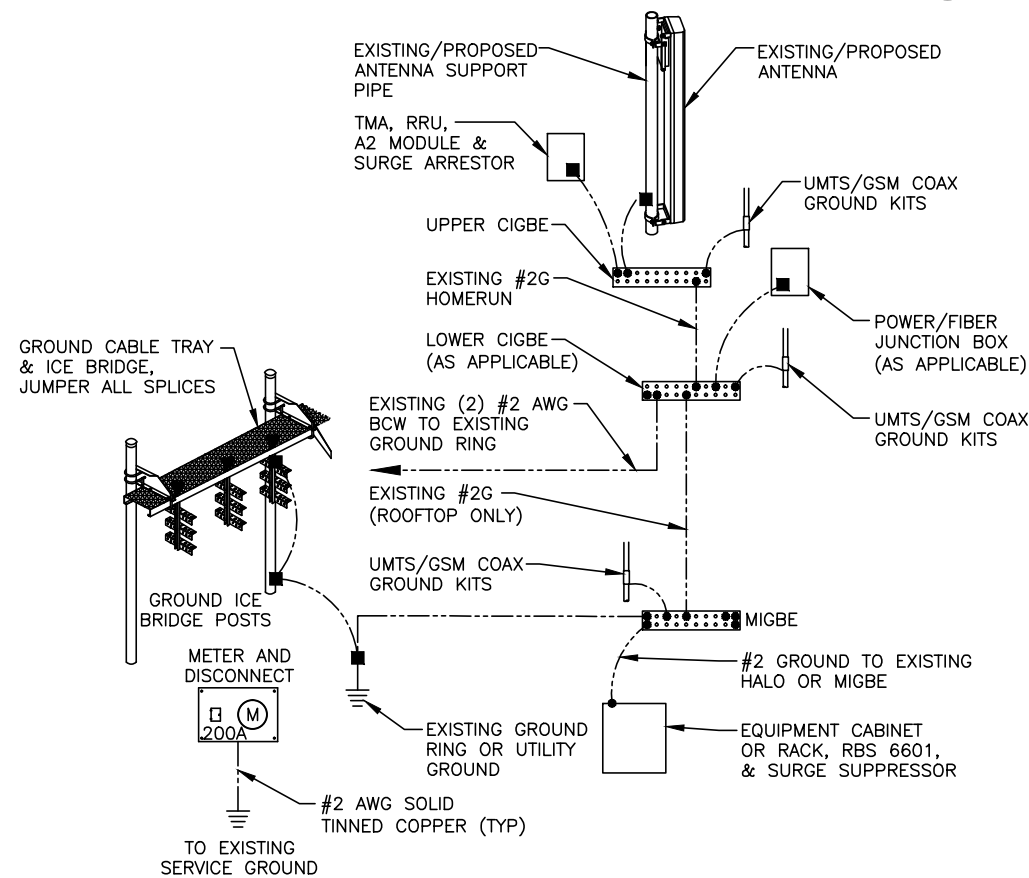
NOTE:
1. CONTRACTOR TO CONFIRM ALL PARTS.
2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS

B	03/07/18	ISSUED FOR PERMITTING	SG	AT	DPR
A	02/16/18	ISSUED FOR REVIEW	TB	AT	DPR
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: TB		

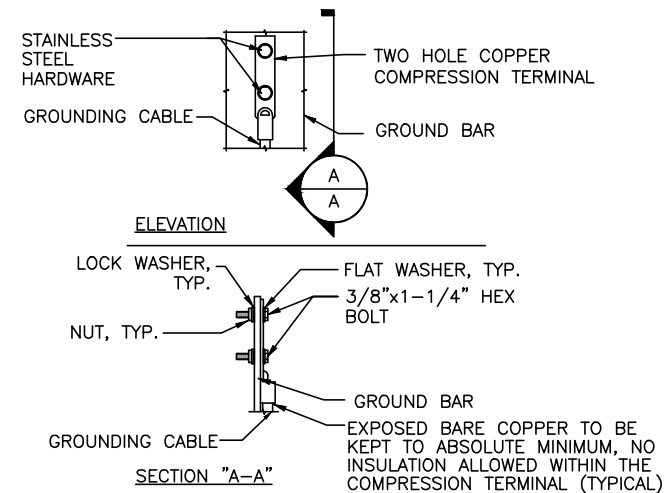




GROUND WIRE TO GROUND BAR CONNECTION DETAIL 1
SCALE: N.T.S. G-1



GROUNDING RISER DIAGRAM 2
SCALE: N.T.S. G-1



TYPICAL GROUND BAR CONNECTION DETAIL 3
SCALE: N.T.S. G-1

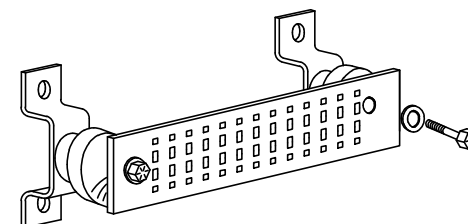
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" - SURGE PRODUCERS

- CABLE ENTRY PORTS (HATCH PLATES) (#2)
- 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 4
SCALE: N.T.S. G-1



AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 119 ft Monopole
ATC Site Name : Naugatuck CT, CT
ATC Site Number : 283423
Engineering Number : OAA720566_C3_02
Proposed Carrier : AT&T Mobility
Carrier Site Name : Naugatuck - Andrew Mountain Road
Carrier Site Number : CT2409
Site Location : 880 Andrew Mountain Road
Naugatuck, CT 06770-3656
41.484500,-73.089800
County : New Haven
Date : January 16, 2018
Max Usage : 42%
Result : Pass

Prepared By:
Kelsey Sargent, E.I.
Structural Engineer I

Reviewed By:

COA: PEC.0001553



Table of Contents

Introduction	1
Supporting Documents	1
Analysis	1
Conclusion.....	1
Existing and Reserved Equipment.....	2
Equipment to be Removed.....	2
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Structure Usages	3
Foundations	3
Deflection, Twist, and Sway.....	3
Standard Conditions	4
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

Tower Drawings	TransAmerican DaVinci Job #11235-1298, dated June 14, 2011
Foundation Drawing	TransAmerican DaVinci Job #11235-1298, dated June 14, 2011
Geotechnical Report	Terracon Project #J2115128, dated May 10, 2011

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.

Basic Wind Speed:	94 mph (3-Second Gust, Vasd) / 121 mph (3-Second Gust Vult)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	$S_s = 0.19, S_1 = 0.06$
Site Class:	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. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.



Existing and Reserved Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
116.0	119.0	4	Raycap DC6-48-60-18-8F	Platform w/ Handrails	(2) 0.40" Fiber	AT&T Mobility
		3	Ericsson RRUS 32 (50.8 lbs)			
		9	Ericsson RRUS-11			
		9	CCI HPA-65R-BUU-H8			
106.0	106.0	3	Nokia B5 RRH4x40-850	Low Profile Platform	(6) 1 5/8" Coax (2) 1 5/8" Fiber	Verizon
		3	Alcatel-Lucent RRH4x30W-B25			
		3	Alcatel-Lucent B13 RRH4x30-4R 700U			
		3	Alcatel-Lucent B66 RRH4x45			
		3	Antel BXA-70063-6CF-EDIN-X			
		4	Commscope JAHH-65B-R3B			
2	Commscope JAHH-45B-R3B					

Equipment to be Removed

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
116.0	116.0	9	Ericsson RRUS 12	-	(3) 1/2" Coax (6) 0.63" Cable	AT&T Mobility
		3	CCI HPA-65R-BUU-H8			
		6	Ericsson RRUS A2 B2			

Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
116.0	119.0	3	Ericsson RRUS 4478 B14 (15")	Platform w/ Handrails	(8) 0.78" 8 AWG 6 (4) 0.39" Fiber Trunk	AT&T Mobility
		3	Ericsson RRUS 32 B66A			
		3	Ericsson RRUS 32 B2			
		3	Kathrein 80010966			

¹Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Install proposed coax inside the pole shaft.



Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	39%	Pass
Shaft	40%	Pass
Base Plate	42%	Pass

Foundations

Reaction Component	Original Design Reactions	Analysis Reactions	% of Design
Moment (Kips-Ft)	3,850.0	1,510.6	39%
Shear (Kips)	42.0	17.1	41%

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
118.0	Ericsson RRUS 4478 B14 (15")	AT&T Mobility	0.562	0.493
	Ericsson RRUS 32 B66A			
	Ericsson RRUS 32 B2			
	Kathrein Scala 80010966			

*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

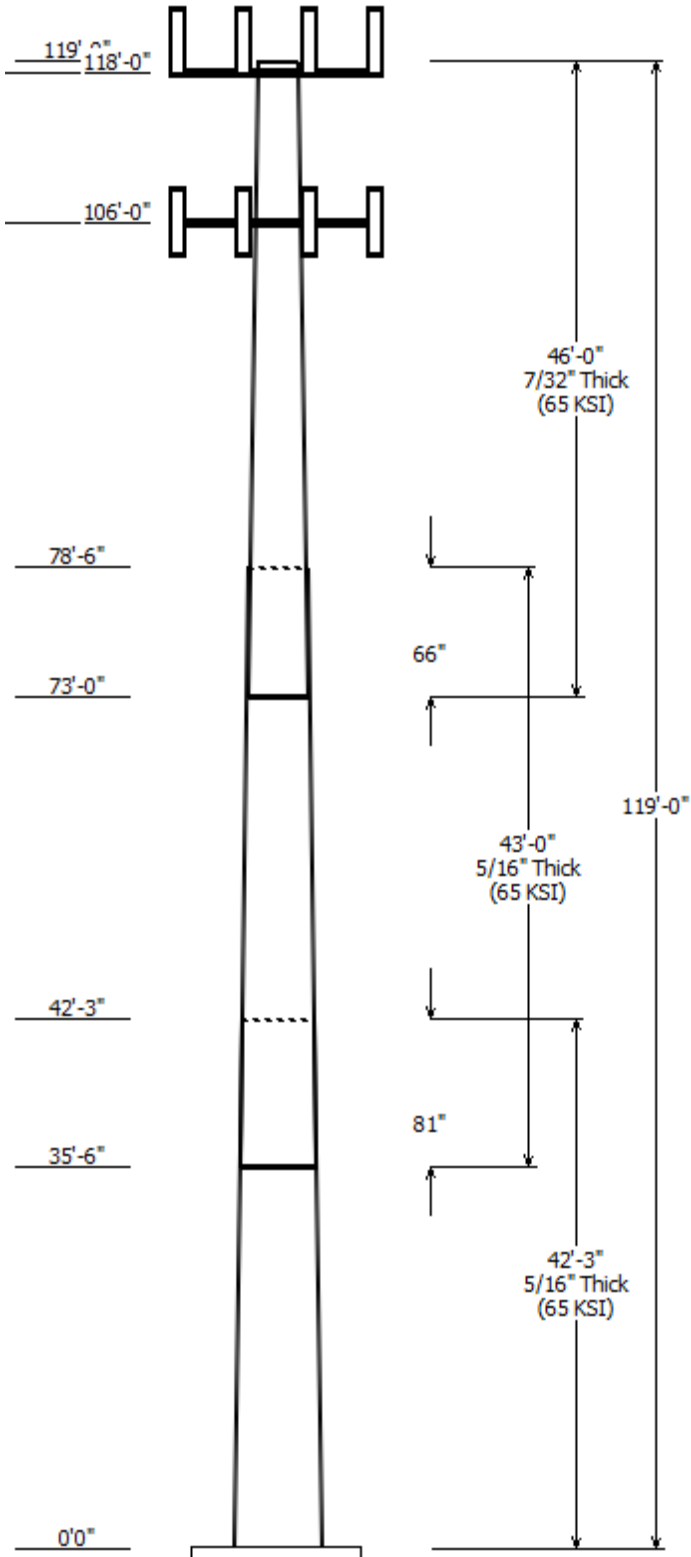
It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

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.

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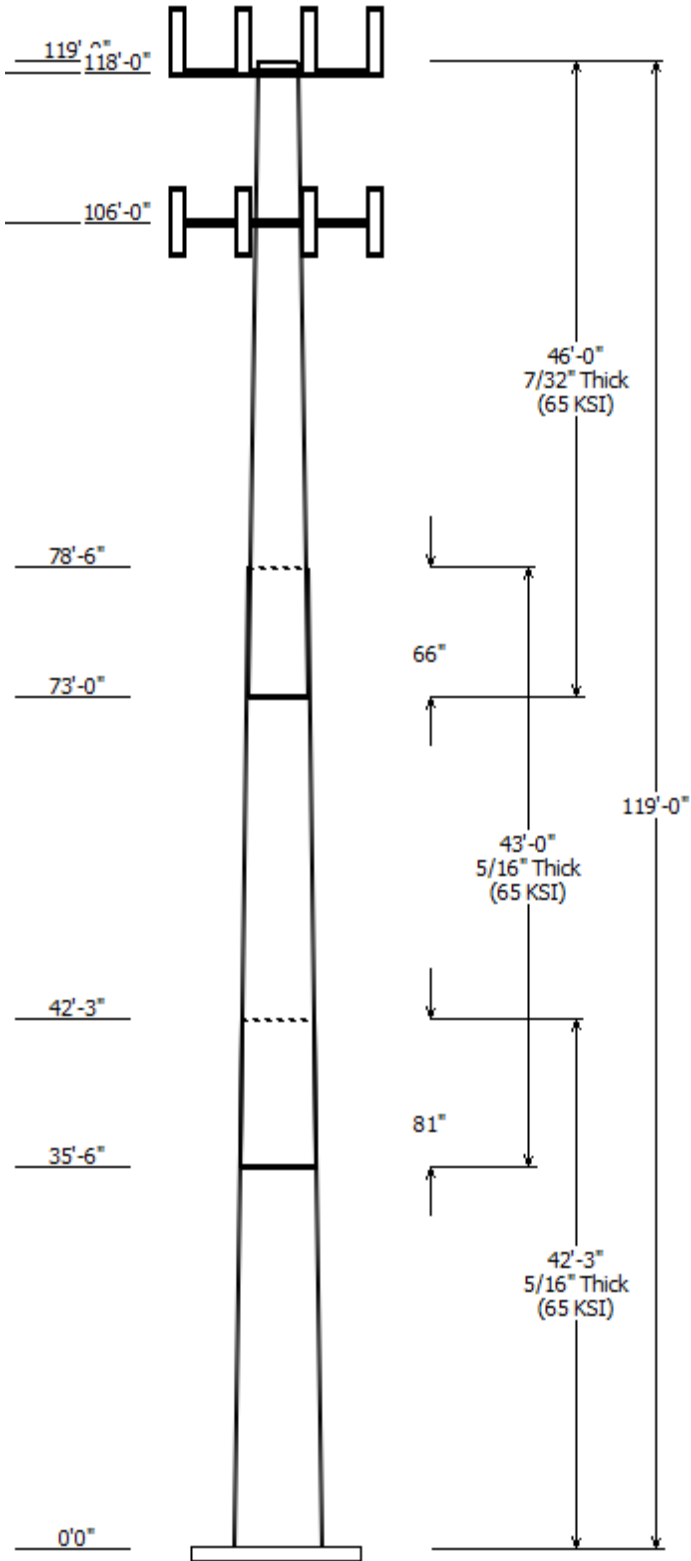
Job Information	
Pole : 283423	Code: ANSI/TIA-222-G
Location : NAUGATUCK CT, CT	
Description :	
Client : AT&T MOBILITY	Struct Class : II
Shape : 18 Sides	Exposure : B
Height : 119.00 (ft)	Topo : 1
Base Elev (ft): 0.00	
Taper: 0.257182in/ft)	

Sections Properties								
Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Joint Type	Overlap Length (in)	Steel Shape	Steel Grade (ksi)
		Top	Bottom					
1	42.250	46.13	57.00	0.313		0.000	Round	65
2	43.000	37.43	48.49	0.313	Slip Joint	81.000	Round	65
3	46.000	27.45	39.28	0.219	Slip Joint	66.000	Round	65

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
118.000	119.000	3	Kathrein Scala 80010966
118.000	119.000	3	Ericsson RRUS 32 B2
118.000	119.000	3	Ericsson RRUS 32 B66A
118.000	119.000	3	Ericsson RRUS 4478 B14 (15")
118.000	118.000	1	Round Platform w/ Handrails
118.000	119.000	9	CCI HPA-65R-BUU-H8
118.000	119.000	9	Ericsson RRUS-11
118.000	119.000	3	Ericsson RRUS 32 (50.8 lbs)
118.000	119.000	4	Raycap DC6-48-60-18-8F
106.000	106.000	3	Nokia B5 RRH4x40-850
106.000	106.000	3	Alcatel-Lucent RRH4x30W-B25
106.000	106.000	3	Alcatel-Lucent B13 RRH4x30-
106.000	106.000	2	Commscope JAHH-45B-R3B
106.000	106.000	4	Commscope JAHH-65B-R3B
106.000	106.000	3	Alcatel-Lucent B66 RRH4x45
106.000	106.000	1	Round Low Profile Platform
106.000	106.000	3	Antel BXA-70063-6CF-EDIN-X

Linear Appurtenance			
From Elev (ft)	To Elev (ft)	Description	Exposed To Wind
0.000	106.0	1 5/8" Coax	No
0.000	106.0	1 5/8" Fiber	No
0.000	118.0	0.39" Fiber Trunk	No
0.000	118.0	0.40" Fiber	No
0.000	118.0	0.78" 8 AWG 6	No

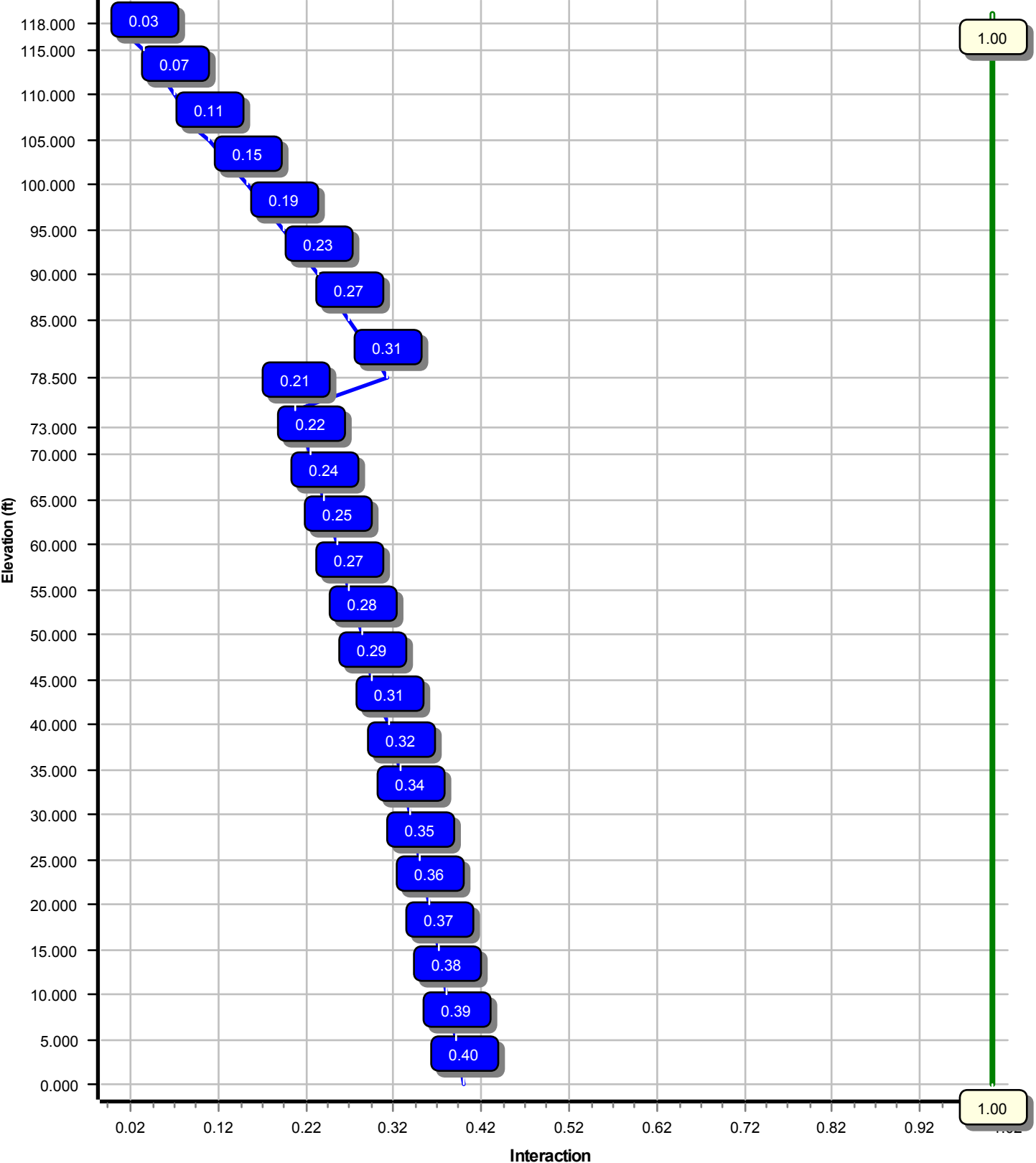
Load Cases	
1.2D + 1.6W	94 mph with No Ice
0.9D + 1.6W	94 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (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	1510.55	17.07	30.45
0.9D + 1.6W	1502.92	17.06	22.84
1.2D + 1.0Di + 1.0Wi	422.52	4.99	50.07
(1.2 + 0.2Sds) * DL + E ELFM	151.08	1.57	30.25
(1.2 + 0.2Sds) * DL + E EMAM	257.91	2.50	30.25
(0.9 - 0.2Sds) * DL + E ELFM	150.16	1.57	20.94
(0.9 - 0.2Sds) * DL + E EMAM	256.23	2.50	20.94
1.0D + 1.0W	383.36	4.34	25.39

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 39.82% at 0.0 ft



Site Number: 283423

Code: ANSI/TIA-222-G

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Site Name: NAUGATUCK CT, CT

Engineering Number: OAA720566_C3_02

1/16/2018 7:36:55 PM

Customer: AT&T MOBILITY

Analysis Parameters

Location :	NEW HAVEN County, CT	Height (ft) :	119
Code :	ANSI/TIA-222-G	Base Diameter (in) :	57.00
Shape :	18 Sides	Top Diameter (in) :	27.46
Pole Type :	Taper	Taper (in/ft) :	0.257
Pole Manufacturer :	TransAmerican	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	94 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):	1.43		
T _L (sec):	6	p:	1.3
S _s :	0.192	S ₁ :	0.064
F _a :	1.600	F _v :	2.400
S _{ds} :	0.205	S _{d1} :	0.102
		C _s :	0.048
		C _s Max:	0.048
		C _s Min:	0.030

Load Cases

1.2D + 1.6W	94 mph with No Ice
0.9D + 1.6W	94 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2S _{ds}) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2S _{ds}) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2S _{ds}) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2S _{ds}) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 283423

Code: ANSI/TIA-222-G

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Site Name: NAUGATUCK CT, CT

Engineering Number: OAA720566_C3_02

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Customer: AT&T MOBILITY

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Weight (lb)	Bottom					Top							
							Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	42.250	0.3125	65		0.00	7,309	57.00	0.00	56.22	22827.4	30.40	182.40	46.13	42.25	45.45	12056.0	24.27	147.63	0.257182
2-18	43.000	0.3125	65	Slip	81.00	6,190	48.49	35.50	47.79	14017.3	25.60	155.18	37.43	78.50	36.82	6411.4	19.36	119.80	0.257182
3-18	46.000	0.2188	65	Slip	66.00	3,604	39.28	73.00	27.13	5232.5	29.90	179.56	27.45	119.00	18.92	1773.3	20.36	125.49	0.257182
Shaft Weight						17,103													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Distance From Face (ft)	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor
118.00	CCI HPA-65R-BUU-H8	9	0.000	1.000	68.00	12.980	0.67
118.00	Ericsson RRUS 32 (50.8 lbs)	3	0.000	1.000	50.80	2.690	0.67
118.00	Ericsson RRUS 32 B2	3	0.000	1.000	53.00	2.740	0.67
118.00	Ericsson RRUS 32 B66A	3	0.000	1.000	50.70	2.720	0.67
118.00	Ericsson RRUS 4478 B14 (15")	3	0.000	1.000	59.40	1.650	0.50
118.00	Ericsson RRUS-11	9	0.000	1.000	55.00	3.790	0.67
118.00	Kathrein Scala 80010966	3	0.000	1.000	114.60	17.360	0.63
118.00	Raycap DC6-48-60-18-8F	4	0.000	1.000	20.00	1.110	1.00
118.00	Round Platform w/ Handrails	1	0.000	0.000	2000.00	27.200	1.00
106.00	Alcatel-Lucent B13 RRH4x30-4R	3	0.000	0.000	57.20	2.170	0.67
106.00	Alcatel-Lucent B66 RRH4x45	3	0.000	0.000	67.00	2.580	0.67
106.00	Alcatel-Lucent RRH4x30W-B25	3	0.000	0.000	55.10	1.970	0.50
106.00	Antel BXA-70063-6CF-EDIN-X	3	0.000	0.000	17.00	7.570	0.66
106.00	Commscope JAHH-45B-R3B	2	0.000	0.000	83.80	11.400	0.63
106.00	Commscope JAHH-65B-R3B	4	0.000	0.000	60.60	9.110	0.69
106.00	Nokia B5 RRH4x40-850	3	0.000	0.000	48.50	1.320	0.50
106.00	Round Low Profile Platform	1	0.000	0.000	1500.00	21.700	1.00
Totals	Num Loadings:17	60			6816.90		

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Flat	Projected Width (in)	Exposed To Wind	Carrier
0.00	118.00	4	0.39" Fiber Trunk	0.39	0.06	N	0.00	N	AT&T Mobility
0.00	118.00	2	0.40" Fiber	0.40	0.09	N	0.00	N	AT&T Mobility
0.00	118.00	8	0.78" 8 AWG 6	0.78	0.59	N	0.00	N	AT&T Mobility
0.00	106.00	6	1 5/8" Coax	1.98	0.82	N	0.00	N	Verizon Wireless
0.00	106.00	2	1 5/8" Fiber	1.63	1.61	N	0.00	N	Verizon Wireless

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in ³)	Z (in ³)	Weight (lb)
0.00		0.3125	57.000	56.225	22,827.4	30.40	182.40	65.6	788.8	0.0	0.0
5.00		0.3125	55.714	54.949	21,308.9	29.67	178.29	66.5	753.3	0.0	945.8
10.00		0.3125	54.428	53.674	19,859.3	28.95	174.17	67.4	718.7	0.0	924.1
15.00		0.3125	53.142	52.399	18,477.0	28.22	170.06	68.2	684.8	0.0	902.4
20.00		0.3125	51.856	51.123	17,160.3	27.50	165.94	69.1	651.8	0.0	880.7
25.00		0.3125	50.570	49.848	15,907.8	26.77	161.83	69.9	619.6	0.0	859.0
30.00		0.3125	49.285	48.572	14,717.7	26.05	157.71	70.8	588.2	0.0	837.3
35.00		0.3125	47.999	47.297	13,588.5	25.32	153.60	71.6	557.6	0.0	815.6
35.50	Bot - Section 2	0.3125	47.870	47.169	13,478.9	25.25	153.18	71.7	554.6	0.0	80.4
40.00		0.3125	46.713	46.022	12,518.6	24.59	149.48	72.5	527.8	0.0	1,436.5
42.25	Top - Section 1	0.3125	46.759	46.068	12,556.1	24.62	149.63	72.4	528.9	0.0	705.1
45.00		0.3125	46.052	45.366	11,991.2	24.22	147.37	72.9	512.9	0.0	427.8
50.00		0.3125	44.766	44.091	11,008.0	23.50	143.25	73.8	484.3	0.0	761.0
55.00		0.3125	43.480	42.815	10,080.1	22.77	139.14	74.6	456.6	0.0	739.3
60.00		0.3125	42.194	41.540	9,205.9	22.04	135.02	75.5	429.7	0.0	717.6
65.00		0.3125	40.908	40.264	8,383.7	21.32	130.91	76.3	403.7	0.0	695.9
70.00		0.3125	39.622	38.989	7,612.0	20.59	126.79	77.2	378.4	0.0	674.2
73.00	Bot - Section 3	0.3125	38.851	38.224	7,172.5	20.16	124.32	77.7	363.6	0.0	394.1
75.00		0.3125	38.336	37.714	6,889.1	19.87	122.68	78.0	353.9	0.0	441.8
78.50	Top - Section 2	0.2188	37.874	26.149	4,684.5	28.76	173.10	67.6	243.6	0.0	759.0
80.00		0.2188	37.488	25.882	4,542.0	28.45	171.33	67.9	238.6	0.0	132.8
85.00		0.2188	36.202	24.989	4,087.9	27.41	165.46	69.2	222.4	0.0	432.7
90.00		0.2188	34.916	24.096	3,665.1	26.38	159.58	70.4	206.7	0.0	417.6
95.00		0.2188	33.630	23.203	3,272.5	25.34	153.70	71.6	191.7	0.0	402.4
100.0		0.2188	32.344	22.310	2,909.0	24.30	147.83	72.8	177.1	0.0	387.2
105.0		0.2188	31.059	21.417	2,573.5	23.27	141.95	74.0	163.2	0.0	372.0
106.0		0.2188	30.801	21.238	2,509.6	23.06	140.77	74.3	160.5	0.0	72.6
110.0		0.2188	29.773	20.524	2,264.8	22.23	136.07	75.3	149.8	0.0	284.2
115.0		0.2188	28.487	19.631	1,981.9	21.19	130.20	76.5	137.0	0.0	341.6
118.0		0.2188	27.715	19.095	1,824.0	20.57	126.67	77.2	129.6	0.0	197.7
119.0		0.2188	27.458	18.916	1,773.3	20.36	125.49	77.4	127.2	0.0	64.7
											17,102.5

Load Case: 1.2D + 1.6W	94 mph with No Ice	19 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		205.2	0.0					0.0	0.0	205.2	0.0	0.0	0.0
5.00		405.6	1,134.9					0.0	79.7	405.6	1,214.6	0.0	0.0
10.00		396.3	1,108.9					0.0	79.7	396.3	1,188.5	0.0	0.0
15.00		386.9	1,082.8					0.0	79.7	386.9	1,162.5	0.0	0.0
20.00		377.6	1,056.8					0.0	79.7	377.6	1,136.5	0.0	0.0
25.00		368.2	1,030.7					0.0	79.7	368.2	1,110.4	0.0	0.0
30.00		363.1	1,004.7					0.0	79.7	363.1	1,084.4	0.0	0.0
35.00		199.6	978.7					0.0	79.7	199.6	1,058.3	0.0	0.0
35.50	Bot - Section 2	186.1	96.4					0.0	8.0	186.1	104.4	0.0	0.0
40.00		252.2	1,723.8					0.0	71.7	252.2	1,795.5	0.0	0.0
42.25	Top - Section 1	187.9	846.1					0.0	35.9	187.9	881.9	0.0	0.0
45.00		292.2	513.4					0.0	43.8	292.2	557.2	0.0	0.0
50.00		377.3	913.2					0.0	79.7	377.3	992.9	0.0	0.0
55.00		376.6	887.2					0.0	79.7	376.6	966.8	0.0	0.0
60.00		374.7	861.1					0.0	79.7	374.7	940.8	0.0	0.0
65.00		371.7	835.1					0.0	79.7	371.7	914.8	0.0	0.0
70.00		294.9	809.0					0.0	79.7	294.9	888.7	0.0	0.0
73.00	Bot - Section 3	183.6	472.9					0.0	47.8	183.6	520.7	0.0	0.0
75.00		201.5	530.2					0.0	31.9	201.5	562.1	0.0	0.0
78.50	Top - Section 2	182.2	910.8					0.0	55.8	182.2	966.6	0.0	0.0
80.00		233.6	159.3					0.0	23.9	233.6	183.2	0.0	0.0
85.00		355.1	519.3					0.0	79.7	355.1	599.0	0.0	0.0
90.00		348.2	501.1					0.0	79.7	348.2	580.7	0.0	0.0
95.00		340.6	482.8					0.0	79.7	340.6	562.5	0.0	0.0
100.00		332.4	464.6					0.0	79.7	332.4	544.3	0.0	0.0
105.00		196.4	446.4					0.0	79.7	196.4	526.1	0.0	0.0
106.00	Appurtenance(s)	159.6	87.1	2,921.8	0.0	0.0	3,173.3	0.0	15.9	3,081.4	3,276.3	0.0	0.0
110.00		282.1	341.1					0.0	24.7	282.1	365.7	0.0	0.0
115.00		245.4	409.9					0.0	30.8	245.4	440.7	0.0	0.0
118.00	Appurtenance(s)	120.3	237.2	5,697.9	0.0	4,632.0	5,007.0	0.0	18.5	5,818.2	5,262.7	0.0	0.0
119.00		29.8	77.6					0.0	0.0	29.8	77.6	0.0	0.0
Totals:										17,246.1	30,466.5	0.00	0.00

Site Number: 283423

Code: ANSI/TIA-222-G

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Site Name: NAUGATUCK CT, CT

Engineering Number: OAA720566_C3_02

1/16/2018 7:36:56 PM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.6W

94 mph with No Ice

19 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	-30.45	-17.07	0.00	-1,510.55	0.00	1,510.55	3,321.87	1,660.94	7,755.70	3,883.62	0.00	0.00	0.398
5.00	-29.21	-16.71	0.00	-1,425.23	0.00	1,425.23	3,288.72	1,644.36	7,503.17	3,757.16	0.05	-0.09	0.388
10.00	-28.00	-16.35	0.00	-1,341.70	0.00	1,341.70	3,253.61	1,626.81	7,249.81	3,630.29	0.20	-0.18	0.378
15.00	-26.81	-16.00	0.00	-1,259.94	0.00	1,259.94	3,216.54	1,608.27	6,995.93	3,503.16	0.44	-0.28	0.368
20.00	-25.65	-15.66	0.00	-1,179.92	0.00	1,179.92	3,177.52	1,588.76	6,741.83	3,375.93	0.78	-0.37	0.358
25.00	-24.52	-15.33	0.00	-1,101.61	0.00	1,101.61	3,136.53	1,568.26	6,487.84	3,248.74	1.22	-0.47	0.347
30.00	-23.41	-14.99	0.00	-1,024.98	0.00	1,024.98	3,093.58	1,546.79	6,234.27	3,121.77	1.76	-0.56	0.336
35.00	-22.34	-14.80	0.00	-950.02	0.00	950.02	3,048.68	1,524.34	5,981.43	2,995.16	2.40	-0.66	0.325
35.50	-22.23	-14.63	0.00	-942.62	0.00	942.62	3,044.08	1,522.04	5,956.20	2,982.53	2.47	-0.67	0.323
40.00	-20.42	-14.38	0.00	-876.76	0.00	876.76	3,001.81	1,500.91	5,729.64	2,869.08	3.14	-0.75	0.312
42.25	-19.53	-14.20	0.00	-844.40	0.00	844.40	3,003.54	1,501.77	5,738.69	2,873.61	3.50	-0.80	0.300
45.00	-18.96	-13.92	0.00	-805.36	0.00	805.36	2,976.96	1,488.48	5,600.73	2,804.53	3.98	-0.85	0.294
50.00	-17.95	-13.56	0.00	-735.74	0.00	735.74	2,927.13	1,463.57	5,351.11	2,679.53	4.92	-0.94	0.281
55.00	-16.97	-13.19	0.00	-667.95	0.00	667.95	2,875.34	1,437.67	5,103.32	2,555.45	5.95	-1.03	0.267
60.00	-16.01	-12.83	0.00	-601.98	0.00	601.98	2,821.60	1,410.80	4,857.67	2,432.44	7.08	-1.12	0.253
65.00	-15.09	-12.46	0.00	-537.86	0.00	537.86	2,765.89	1,382.94	4,614.48	2,310.67	8.30	-1.21	0.238
70.00	-14.19	-12.16	0.00	-475.57	0.00	475.57	2,708.22	1,354.11	4,374.05	2,190.28	9.62	-1.30	0.222
73.00	-13.67	-11.98	0.00	-439.09	0.00	439.09	2,672.68	1,336.34	4,231.26	2,118.77	10.45	-1.35	0.212
75.00	-13.10	-11.77	0.00	-415.14	0.00	415.14	2,648.59	1,324.30	4,136.71	2,071.43	11.02	-1.38	0.205
78.50	-12.13	-11.57	0.00	-373.94	0.00	373.94	1,590.36	795.18	2,465.70	1,234.68	12.06	-1.44	0.311
80.00	-11.94	-11.35	0.00	-356.58	0.00	356.58	1,582.58	791.29	2,428.36	1,215.98	12.51	-1.46	0.301
85.00	-11.33	-11.00	0.00	-299.84	0.00	299.84	1,555.39	777.69	2,303.81	1,153.62	14.10	-1.56	0.267
90.00	-10.74	-10.65	0.00	-244.85	0.00	244.85	1,526.24	763.12	2,179.35	1,091.30	15.79	-1.66	0.232
95.00	-10.18	-10.31	0.00	-191.60	0.00	191.60	1,495.12	747.56	2,055.31	1,029.18	17.58	-1.74	0.193
100.00	-9.63	-9.97	0.00	-140.07	0.00	140.07	1,462.05	731.03	1,931.99	967.43	19.44	-1.82	0.152
105.00	-9.11	-9.76	0.00	-90.22	0.00	90.22	1,427.02	713.51	1,809.71	906.20	21.38	-1.87	0.106
106.00	-5.93	-6.58	0.00	-80.46	0.00	80.46	1,419.78	709.89	1,785.41	894.03	21.77	-1.88	0.094
110.00	-5.57	-6.28	0.00	-54.16	0.00	54.16	1,390.04	695.02	1,688.79	845.65	23.36	-1.91	0.068
115.00	-5.14	-6.03	0.00	-22.74	0.00	22.74	1,351.09	675.54	1,569.52	785.93	25.38	-1.94	0.033
118.00	-0.08	-0.03	0.00	-0.03	0.00	0.03	1,326.78	663.39	1,498.89	750.56	26.60	-1.94	0.000
119.00	0.00	-0.03	0.00	0.00	0.00	0.00	1,318.52	659.26	1,475.52	738.86	27.01	-1.94	0.000

Load Case: 0.9D + 1.6W	94 mph with No Ice (Reduced DL)	19 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		205.2	0.0					0.0	0.0	205.2	0.0	0.0	0.0
5.00		405.6	851.2					0.0	59.8	405.6	910.9	0.0	0.0
10.00		396.3	831.6					0.0	59.8	396.3	891.4	0.0	0.0
15.00		386.9	812.1					0.0	59.8	386.9	871.9	0.0	0.0
20.00		377.6	792.6					0.0	59.8	377.6	852.3	0.0	0.0
25.00		368.2	773.1					0.0	59.8	368.2	832.8	0.0	0.0
30.00		363.1	753.5					0.0	59.8	363.1	813.3	0.0	0.0
35.00		199.6	734.0					0.0	59.8	199.6	793.8	0.0	0.0
35.50	Bot - Section 2	186.1	72.3					0.0	6.0	186.1	78.3	0.0	0.0
40.00		252.2	1,292.8					0.0	53.8	252.2	1,346.6	0.0	0.0
42.25	Top - Section 1	187.9	634.6					0.0	26.9	187.9	661.4	0.0	0.0
45.00		292.2	385.0					0.0	32.9	292.2	417.9	0.0	0.0
50.00		377.3	684.9					0.0	59.8	377.3	744.7	0.0	0.0
55.00		376.6	665.4					0.0	59.8	376.6	725.1	0.0	0.0
60.00		374.7	645.8					0.0	59.8	374.7	705.6	0.0	0.0
65.00		371.7	626.3					0.0	59.8	371.7	686.1	0.0	0.0
70.00		294.9	606.8					0.0	59.8	294.9	666.5	0.0	0.0
73.00	Bot - Section 3	183.6	354.7					0.0	35.9	183.6	390.6	0.0	0.0
75.00		201.5	397.6					0.0	23.9	201.5	421.5	0.0	0.0
78.50	Top - Section 2	182.2	683.1					0.0	41.8	182.2	724.9	0.0	0.0
80.00		233.6	119.5					0.0	17.9	233.6	137.4	0.0	0.0
85.00		355.1	389.5					0.0	59.8	355.1	449.2	0.0	0.0
90.00		348.2	375.8					0.0	59.8	348.2	435.6	0.0	0.0
95.00		340.6	362.1					0.0	59.8	340.6	421.9	0.0	0.0
100.00		332.4	348.5					0.0	59.8	332.4	408.2	0.0	0.0
105.00		196.4	334.8					0.0	59.8	196.4	394.5	0.0	0.0
106.00	Appurtenance(s)	159.6	65.3	2,921.8	0.0	0.0	2,380.0	0.0	12.0	3,081.4	2,457.2	0.0	0.0
110.00		282.1	255.8					0.0	18.5	282.1	274.3	0.0	0.0
115.00		245.4	307.4					0.0	23.1	245.4	330.6	0.0	0.0
118.00	Appurtenance(s)	120.3	177.9	5,697.9	0.0	4,632.0	3,755.2	0.0	13.9	5,818.2	3,947.0	0.0	0.0
119.00		29.8	58.2					0.0	0.0	29.8	58.2	0.0	0.0
Totals:										17,246.1	22,849.9	0.00	0.00

Site Number: 283423

Code: ANSI/TIA-222-G

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Site Name: NAUGATUCK CT, CT

Engineering Number: OAA720566_C3_02

1/16/2018 7:36:58 PM

Customer: AT&T MOBILITY

Load Case: 0.9D + 1.6W

94 mph with No Ice (Reduced DL)

19 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	-22.84	-17.06	0.00	-1,502.92	0.00	1,502.92	3,321.87	1,660.94	7,755.70	3,883.62	0.00	0.00	0.394
5.00	-21.90	-16.69	0.00	-1,417.62	0.00	1,417.62	3,288.72	1,644.36	7,503.17	3,757.16	0.05	-0.09	0.384
10.00	-20.98	-16.32	0.00	-1,334.18	0.00	1,334.18	3,253.61	1,626.81	7,249.81	3,630.29	0.19	-0.18	0.374
15.00	-20.09	-15.97	0.00	-1,252.57	0.00	1,252.57	3,216.54	1,608.27	6,995.93	3,503.16	0.44	-0.28	0.364
20.00	-19.21	-15.61	0.00	-1,172.74	0.00	1,172.74	3,177.52	1,588.76	6,741.83	3,375.93	0.78	-0.37	0.354
25.00	-18.35	-15.27	0.00	-1,094.67	0.00	1,094.67	3,136.53	1,568.26	6,487.84	3,248.74	1.21	-0.46	0.343
30.00	-17.52	-14.93	0.00	-1,018.32	0.00	1,018.32	3,093.58	1,546.79	6,234.27	3,121.77	1.75	-0.56	0.332
35.00	-16.72	-14.74	0.00	-943.68	0.00	943.68	3,048.68	1,524.34	5,981.43	2,995.16	2.38	-0.65	0.321
35.50	-16.63	-14.56	0.00	-936.31	0.00	936.31	3,044.08	1,522.04	5,956.20	2,982.53	2.45	-0.66	0.319
40.00	-15.27	-14.31	0.00	-870.78	0.00	870.78	3,001.81	1,500.91	5,729.64	2,869.08	3.12	-0.75	0.309
42.25	-14.60	-14.13	0.00	-838.58	0.00	838.58	3,003.54	1,501.77	5,738.69	2,873.61	3.48	-0.79	0.297
45.00	-14.17	-13.85	0.00	-799.73	0.00	799.73	2,976.96	1,488.48	5,600.73	2,804.53	3.95	-0.84	0.290
50.00	-13.41	-13.48	0.00	-730.49	0.00	730.49	2,927.13	1,463.57	5,351.11	2,679.53	4.89	-0.94	0.277
55.00	-12.67	-13.11	0.00	-663.10	0.00	663.10	2,875.34	1,437.67	5,103.32	2,555.45	5.92	-1.03	0.264
60.00	-11.95	-12.74	0.00	-597.55	0.00	597.55	2,821.60	1,410.80	4,857.67	2,432.44	7.04	-1.11	0.250
65.00	-11.25	-12.37	0.00	-533.85	0.00	533.85	2,765.89	1,382.94	4,614.48	2,310.67	8.25	-1.20	0.235
70.00	-10.58	-12.08	0.00	-471.98	0.00	471.98	2,708.22	1,354.11	4,374.05	2,190.28	9.56	-1.29	0.219
73.00	-10.18	-11.89	0.00	-435.76	0.00	435.76	2,672.68	1,336.34	4,231.26	2,118.77	10.38	-1.34	0.210
75.00	-9.76	-11.69	0.00	-411.98	0.00	411.98	2,648.59	1,324.30	4,136.71	2,071.43	10.95	-1.37	0.203
78.50	-9.03	-11.49	0.00	-371.07	0.00	371.07	1,590.36	795.18	2,465.70	1,234.68	11.98	-1.43	0.306
80.00	-8.88	-11.27	0.00	-353.83	0.00	353.83	1,582.58	791.29	2,428.36	1,215.98	12.43	-1.45	0.297
85.00	-8.43	-10.91	0.00	-297.50	0.00	297.50	1,555.39	777.69	2,303.81	1,153.62	14.01	-1.55	0.264
90.00	-7.98	-10.57	0.00	-242.93	0.00	242.93	1,526.24	763.12	2,179.35	1,091.30	15.69	-1.65	0.228
95.00	-7.56	-10.22	0.00	-190.10	0.00	190.10	1,495.12	747.56	2,055.31	1,029.18	17.46	-1.73	0.190
100.00	-7.15	-9.89	0.00	-138.98	0.00	138.98	1,462.05	731.03	1,931.99	967.43	19.32	-1.80	0.149
105.00	-6.76	-9.68	0.00	-89.55	0.00	89.55	1,427.02	713.51	1,809.71	906.20	21.24	-1.86	0.104
106.00	-4.40	-6.52	0.00	-79.87	0.00	79.87	1,419.78	709.89	1,785.41	894.03	21.63	-1.87	0.093
110.00	-4.13	-6.23	0.00	-53.77	0.00	53.77	1,390.04	695.02	1,688.79	845.65	23.21	-1.90	0.067
115.00	-3.81	-5.98	0.00	-22.60	0.00	22.60	1,351.09	675.54	1,569.52	785.93	25.22	-1.92	0.032
118.00	-0.06	-0.03	0.00	-0.03	0.00	0.03	1,326.78	663.39	1,498.89	750.56	26.43	-1.93	0.000
119.00	0.00	-0.03	0.00	0.00	0.00	0.00	1,318.52	659.26	1,475.52	738.86	26.83	-1.93	0.000

Site Number: 283423

Code: ANSI/TIA-222-G

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Site Name: NAUGATUCK CT, CT

Engineering Number: OAA720566_C3_02

1/16/2018 7:36:58 PM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice	18 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		

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		69.7	0.0					0.0	0.0	69.7	0.0	0.0	0.0
5.00		138.2	1,547.8					0.0	79.7	138.2	1,627.5	0.0	0.0
10.00		135.6	1,560.4					0.0	79.7	135.6	1,640.0	0.0	0.0
15.00		132.8	1,547.6					0.0	79.7	132.8	1,627.3	0.0	0.0
20.00		129.9	1,526.5					0.0	79.7	129.9	1,606.2	0.0	0.0
25.00		127.0	1,501.1					0.0	79.7	127.0	1,580.8	0.0	0.0
30.00		125.6	1,473.0					0.0	79.7	125.6	1,552.7	0.0	0.0
35.00		69.1	1,443.0					0.0	79.7	69.1	1,522.7	0.0	0.0
35.50	Bot - Section 2	64.5	143.1					0.0	8.0	64.5	151.1	0.0	0.0
40.00		87.5	2,142.5					0.0	71.7	87.5	2,214.2	0.0	0.0
42.25	Top - Section 1	65.3	1,054.8					0.0	35.9	65.3	1,090.6	0.0	0.0
45.00		101.7	766.3					0.0	43.8	101.7	810.1	0.0	0.0
50.00		131.6	1,364.5					0.0	79.7	131.6	1,444.2	0.0	0.0
55.00		131.7	1,330.5					0.0	79.7	131.7	1,410.2	0.0	0.0
60.00		131.4	1,295.9					0.0	79.7	131.4	1,375.6	0.0	0.0
65.00		130.7	1,260.8					0.0	79.7	130.7	1,340.4	0.0	0.0
70.00		103.9	1,225.1					0.0	79.7	103.9	1,304.8	0.0	0.0
73.00	Bot - Section 3	64.8	719.4					0.0	47.8	64.8	767.2	0.0	0.0
75.00		71.2	694.8					0.0	31.9	71.2	726.6	0.0	0.0
78.50	Top - Section 2	64.5	1,193.5					0.0	55.8	64.5	1,249.2	0.0	0.0
80.00		82.9	279.7					0.0	23.9	82.9	303.6	0.0	0.0
85.00		126.3	908.9					0.0	79.7	126.3	988.6	0.0	0.0
90.00		124.3	879.8					0.0	79.7	124.3	959.5	0.0	0.0
95.00		122.0	850.3					0.0	79.7	122.0	930.0	0.0	0.0
100.00		119.6	820.7					0.0	79.7	119.6	900.4	0.0	0.0
105.00		70.8	790.8					0.0	79.7	70.8	870.5	0.0	0.0
106.00	Appurtenance(s)	57.8	155.6	705.5	0.0	0.0	6,299.2	0.0	15.9	763.3	6,470.7	0.0	0.0
110.00		102.5	607.2					0.0	24.7	102.5	631.9	0.0	0.0
115.00		89.4	730.4					0.0	30.8	89.4	761.2	0.0	0.0
118.00	Appurtenance(s)	44.0	425.2	1,319.5	0.0	965.5	11,626.9	0.0	18.5	1,363.5	12,070.7	0.0	0.0
119.00		10.9	139.9					0.0	0.0	10.9	139.9	0.0	0.0
Totals:										5,052.60	50,068.4	0.00	0.00

Site Number: 283423

Code: ANSI/TIA-222-G

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Site Name: NAUGATUCK CT, CT

Engineering Number: OAA720566_C3_02

1/16/2018 7:37:00 PM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

18 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	-50.07	-4.99	0.00	-422.52	0.00	422.52	3,321.87	1,660.94	7,755.70	3,883.62	0.00	0.00	0.124
5.00	-48.44	-4.88	0.00	-397.55	0.00	397.55	3,288.72	1,644.36	7,503.17	3,757.16	0.01	-0.03	0.121
10.00	-46.80	-4.76	0.00	-373.17	0.00	373.17	3,253.61	1,626.81	7,249.81	3,630.29	0.05	-0.05	0.117
15.00	-45.17	-4.65	0.00	-349.37	0.00	349.37	3,216.54	1,608.27	6,995.93	3,503.16	0.12	-0.08	0.114
20.00	-43.56	-4.53	0.00	-326.13	0.00	326.13	3,177.52	1,588.76	6,741.83	3,375.93	0.22	-0.10	0.110
25.00	-41.98	-4.42	0.00	-303.46	0.00	303.46	3,136.53	1,568.26	6,487.84	3,248.74	0.34	-0.13	0.107
30.00	-40.42	-4.31	0.00	-281.35	0.00	281.35	3,093.58	1,546.79	6,234.27	3,121.77	0.49	-0.16	0.103
35.00	-38.90	-4.25	0.00	-259.79	0.00	259.79	3,048.68	1,524.34	5,981.43	2,995.16	0.67	-0.18	0.100
35.50	-38.75	-4.19	0.00	-257.66	0.00	257.66	3,044.08	1,522.04	5,956.20	2,982.53	0.69	-0.18	0.099
40.00	-36.53	-4.11	0.00	-238.80	0.00	238.80	3,001.81	1,500.91	5,729.64	2,869.08	0.87	-0.21	0.095
42.25	-35.44	-4.05	0.00	-229.55	0.00	229.55	3,003.54	1,501.77	5,738.69	2,873.61	0.97	-0.22	0.092
45.00	-34.63	-3.95	0.00	-218.42	0.00	218.42	2,976.96	1,488.48	5,600.73	2,804.53	1.10	-0.23	0.090
50.00	-33.18	-3.83	0.00	-198.65	0.00	198.65	2,927.13	1,463.57	5,351.11	2,679.53	1.36	-0.26	0.085
55.00	-31.77	-3.71	0.00	-179.50	0.00	179.50	2,875.34	1,437.67	5,103.32	2,555.45	1.65	-0.28	0.081
60.00	-30.40	-3.58	0.00	-160.97	0.00	160.97	2,821.60	1,410.80	4,857.67	2,432.44	1.96	-0.31	0.077
65.00	-29.05	-3.45	0.00	-143.08	0.00	143.08	2,765.89	1,382.94	4,614.48	2,310.67	2.29	-0.33	0.072
70.00	-27.75	-3.35	0.00	-125.81	0.00	125.81	2,708.22	1,354.11	4,374.05	2,190.28	2.65	-0.35	0.068
73.00	-26.98	-3.29	0.00	-115.76	0.00	115.76	2,672.68	1,336.34	4,231.26	2,118.77	2.88	-0.37	0.065
75.00	-26.26	-3.22	0.00	-109.19	0.00	109.19	2,648.59	1,324.30	4,136.71	2,071.43	3.03	-0.38	0.063
78.50	-25.01	-3.15	0.00	-97.93	0.00	97.93	1,590.36	795.18	2,465.70	1,234.68	3.31	-0.39	0.095
80.00	-24.70	-3.07	0.00	-93.21	0.00	93.21	1,582.58	791.29	2,428.36	1,215.98	3.44	-0.40	0.092
85.00	-23.71	-2.95	0.00	-77.87	0.00	77.87	1,555.39	777.69	2,303.81	1,153.62	3.87	-0.42	0.083
90.00	-22.75	-2.82	0.00	-63.13	0.00	63.13	1,526.24	763.12	2,179.35	1,091.30	4.33	-0.45	0.073
95.00	-21.82	-2.70	0.00	-49.01	0.00	49.01	1,495.12	747.56	2,055.31	1,029.18	4.81	-0.47	0.062
100.00	-20.92	-2.58	0.00	-35.50	0.00	35.50	1,462.05	731.03	1,931.99	967.43	5.31	-0.49	0.051
105.00	-20.05	-2.51	0.00	-22.59	0.00	22.59	1,427.02	713.51	1,809.71	906.20	5.83	-0.50	0.039
106.00	-13.59	-1.69	0.00	-20.08	0.00	20.08	1,419.78	709.89	1,785.41	894.03	5.94	-0.51	0.032
110.00	-12.96	-1.58	0.00	-13.34	0.00	13.34	1,390.04	695.02	1,688.79	845.65	6.37	-0.51	0.025
115.00	-12.20	-1.49	0.00	-5.43	0.00	5.43	1,351.09	675.54	1,569.52	785.93	6.91	-0.52	0.016
118.00	-0.14	-0.01	0.00	-0.01	0.00	0.01	1,326.78	663.39	1,498.89	750.56	7.24	-0.52	0.000
119.00	0.00	-0.01	0.00	0.00	0.00	0.00	1,318.52	659.26	1,475.52	738.86	7.35	-0.52	0.000

Load Case: 1.0D + 1.0W	Serviceability 60 mph	18 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		52.2	0.0					0.0	0.0	52.2	0.0	0.0	0.0
5.00		103.3	945.8					0.0	66.4	103.3	1,012.2	0.0	0.0
10.00		100.9	924.1					0.0	66.4	100.9	990.5	0.0	0.0
15.00		98.5	902.4					0.0	66.4	98.5	968.8	0.0	0.0
20.00		96.1	880.7					0.0	66.4	96.1	947.1	0.0	0.0
25.00		93.8	859.0					0.0	66.4	93.8	925.4	0.0	0.0
30.00		92.5	837.3					0.0	66.4	92.5	903.7	0.0	0.0
35.00		50.8	815.6					0.0	66.4	50.8	882.0	0.0	0.0
35.50	Bot - Section 2	47.4	80.4					0.0	6.6	47.4	87.0	0.0	0.0
40.00		64.2	1,436.5					0.0	59.8	64.2	1,496.2	0.0	0.0
42.25	Top - Section 1	47.8	705.1					0.0	29.9	47.8	734.9	0.0	0.0
45.00		74.4	427.8					0.0	36.5	74.4	464.3	0.0	0.0
50.00		96.1	761.0					0.0	66.4	96.1	827.4	0.0	0.0
55.00		95.9	739.3					0.0	66.4	95.9	805.7	0.0	0.0
60.00		95.4	717.6					0.0	66.4	95.4	784.0	0.0	0.0
65.00		94.6	695.9					0.0	66.4	94.6	762.3	0.0	0.0
70.00		75.1	674.2					0.0	66.4	75.1	740.6	0.0	0.0
73.00	Bot - Section 3	46.7	394.1					0.0	39.8	46.7	433.9	0.0	0.0
75.00		51.3	441.8					0.0	26.6	51.3	468.4	0.0	0.0
78.50	Top - Section 2	46.4	759.0					0.0	46.5	46.4	805.5	0.0	0.0
80.00		59.5	132.8					0.0	19.9	59.5	152.7	0.0	0.0
85.00		90.4	432.7					0.0	66.4	90.4	499.1	0.0	0.0
90.00		88.7	417.6					0.0	66.4	88.7	484.0	0.0	0.0
95.00		86.7	402.4					0.0	66.4	86.7	468.8	0.0	0.0
100.00		84.6	387.2					0.0	66.4	84.6	453.6	0.0	0.0
105.00		50.0	372.0					0.0	66.4	50.0	438.4	0.0	0.0
106.00	Appurtenance(s)	40.6	72.6	744.0	0.0	0.0	2,644.4	0.0	13.3	784.6	2,730.3	0.0	0.0
110.00		71.8	284.2					0.0	20.6	71.8	304.8	0.0	0.0
115.00		62.5	341.6					0.0	25.7	62.5	367.3	0.0	0.0
118.00	Appurtenance(s)	30.6	197.7	1,450.9	0.0	1,179.5	4,172.5	0.0	15.4	1,481.5	4,385.6	0.0	0.0
119.00		7.6	64.7					0.0	0.0	7.6	64.7	0.0	0.0
Totals:										4,391.56	25,388.7	0.00	0.00

Site Number: 283423

Code: ANSI/TIA-222-G

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Site Name: NAUGATUCK CT, CT

Engineering Number: OAA720566_C3_02

1/16/2018 7:37:02 PM

Customer: AT&T MOBILITY

Load Case: 1.0D + 1.0W

Serviceability 60 mph

18 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	-25.39	-4.34	0.00	-383.36	0.00	383.36	3,321.87	1,660.94	7,755.70	3,883.62	0.00	0.00	0.106
5.00	-24.37	-4.25	0.00	-361.64	0.00	361.64	3,288.72	1,644.36	7,503.17	3,757.16	0.01	-0.02	0.104
10.00	-23.38	-4.16	0.00	-340.39	0.00	340.39	3,253.61	1,626.81	7,249.81	3,630.29	0.05	-0.05	0.101
15.00	-22.41	-4.07	0.00	-319.60	0.00	319.60	3,216.54	1,608.27	6,995.93	3,503.16	0.11	-0.07	0.098
20.00	-21.46	-3.98	0.00	-299.26	0.00	299.26	3,177.52	1,588.76	6,741.83	3,375.93	0.20	-0.09	0.095
25.00	-20.54	-3.89	0.00	-279.36	0.00	279.36	3,136.53	1,568.26	6,487.84	3,248.74	0.31	-0.12	0.093
30.00	-19.63	-3.81	0.00	-259.89	0.00	259.89	3,093.58	1,546.79	6,234.27	3,121.77	0.45	-0.14	0.090
35.00	-18.75	-3.76	0.00	-240.86	0.00	240.86	3,048.68	1,524.34	5,981.43	2,995.16	0.61	-0.17	0.087
35.50	-18.66	-3.71	0.00	-238.98	0.00	238.98	3,044.08	1,522.04	5,956.20	2,982.53	0.63	-0.17	0.086
40.00	-17.16	-3.65	0.00	-222.27	0.00	222.27	3,001.81	1,500.91	5,729.64	2,869.08	0.80	-0.19	0.083
42.25	-16.43	-3.60	0.00	-214.06	0.00	214.06	3,003.54	1,501.77	5,738.69	2,873.61	0.89	-0.20	0.080
45.00	-15.96	-3.53	0.00	-204.15	0.00	204.15	2,976.96	1,488.48	5,600.73	2,804.53	1.01	-0.22	0.078
50.00	-15.13	-3.44	0.00	-186.49	0.00	186.49	2,927.13	1,463.57	5,351.11	2,679.53	1.25	-0.24	0.075
55.00	-14.33	-3.35	0.00	-169.29	0.00	169.29	2,875.34	1,437.67	5,103.32	2,555.45	1.51	-0.26	0.071
60.00	-13.54	-3.25	0.00	-152.57	0.00	152.57	2,821.60	1,410.80	4,857.67	2,432.44	1.80	-0.28	0.068
65.00	-12.78	-3.16	0.00	-136.31	0.00	136.31	2,765.89	1,382.94	4,614.48	2,310.67	2.11	-0.31	0.064
70.00	-12.04	-3.08	0.00	-120.52	0.00	120.52	2,708.22	1,354.11	4,374.05	2,190.28	2.44	-0.33	0.059
73.00	-11.60	-3.04	0.00	-111.27	0.00	111.27	2,672.68	1,336.34	4,231.26	2,118.77	2.65	-0.34	0.057
75.00	-11.14	-2.98	0.00	-105.20	0.00	105.20	2,648.59	1,324.30	4,136.71	2,071.43	2.80	-0.35	0.055
78.50	-10.33	-2.93	0.00	-94.76	0.00	94.76	1,590.36	795.18	2,465.70	1,234.68	3.06	-0.36	0.083
80.00	-10.18	-2.88	0.00	-90.36	0.00	90.36	1,582.58	791.29	2,428.36	1,215.98	3.17	-0.37	0.081
85.00	-9.68	-2.79	0.00	-75.98	0.00	75.98	1,555.39	777.69	2,303.81	1,153.62	3.58	-0.40	0.072
90.00	-9.19	-2.70	0.00	-62.04	0.00	62.04	1,526.24	763.12	2,179.35	1,091.30	4.00	-0.42	0.063
95.00	-8.72	-2.61	0.00	-48.55	0.00	48.55	1,495.12	747.56	2,055.31	1,029.18	4.46	-0.44	0.053
100.00	-8.27	-2.53	0.00	-35.50	0.00	35.50	1,462.05	731.03	1,931.99	967.43	4.93	-0.46	0.042
105.00	-7.83	-2.47	0.00	-22.87	0.00	22.87	1,427.02	713.51	1,809.71	906.20	5.42	-0.47	0.031
106.00	-5.11	-1.67	0.00	-20.40	0.00	20.40	1,419.78	709.89	1,785.41	894.03	5.52	-0.48	0.026
110.00	-4.80	-1.59	0.00	-13.73	0.00	13.73	1,390.04	695.02	1,688.79	845.65	5.93	-0.48	0.020
115.00	-4.44	-1.53	0.00	-5.77	0.00	5.77	1,351.09	675.54	1,569.52	785.93	6.44	-0.49	0.011
118.00	-0.06	-0.01	0.00	-0.01	0.00	0.01	1,326.78	663.39	1,498.89	750.56	6.75	-0.49	0.000
119.00	0.00	-0.01	0.00	0.00	0.00	0.00	1,318.52	659.26	1,475.52	738.86	6.85	-0.49	0.000

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.19
Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	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}):	0.20
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Seismic Response Coefficient (C_s):	0.05
Upper Limit C_s	0.05
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	1.43
Redundancy Factor (ρ):	1.30
Seismic Force Distribution Exponent (k):	1.47
Total Unfactored Dead Load:	25.39 k
Seismic Base Shear (E):	1.57 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)
30	118.50	65	71	0.005	8	80
29	116.50	213	229	0.017	27	264
28	112.50	367	374	0.028	44	456
27	108.00	305	293	0.022	34	378
26	105.50	86	80	0.006	9	107
25	102.50	438	390	0.029	45	544
24	97.50	454	375	0.028	44	563
23	92.50	469	359	0.027	42	582
22	87.50	484	341	0.025	40	601
21	82.50	499	323	0.024	38	619
20	79.25	153	93	0.007	11	190
19	76.75	805	469	0.035	55	1,000
18	74.00	468	258	0.019	30	581
17	71.50	434	228	0.017	27	539
16	67.50	741	357	0.026	42	919
15	62.50	762	328	0.024	38	946
14	57.50	784	299	0.022	35	973
13	52.50	806	269	0.020	31	1,000
12	47.50	827	238	0.018	28	1,027
11	43.63	464	118	0.009	14	576
10	41.13	735	171	0.013	20	912
9	37.75	1,496	307	0.023	36	1,857
8	35.25	87	16	0.001	2	108

Site Number: 283423

Code: ANSI/TIA-222-G

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Site Name: NAUGATUCK CT, CT

Engineering Number: OAA720566_C3_02

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Customer: AT&T MOBILITY

7	32.50	882	145	0.011	17	1,094
6	27.50	904	117	0.009	14	1,121
5	22.50	925	89	0.007	10	1,148
4	17.50	947	63	0.005	7	1,175
3	12.50	969	39	0.003	5	1,202
2	7.50	990	19	0.001	2	1,229
1	2.50	1,012	4	0.000	0	1,256
Raycap DC6-48-60-18-	118.00	80	87	0.006	10	99
Ericsson RRUS 4478 B	118.00	178	195	0.014	23	221
Ericsson RRUS 32 (50	118.00	152	167	0.012	19	189
Ericsson RRUS 32 B66	118.00	152	166	0.012	19	189
Ericsson RRUS 32 B2	118.00	159	174	0.013	20	197
Ericsson RRUS-11	118.00	495	541	0.040	63	614
CCI HPA-65R-BUU-H8	118.00	612	669	0.050	78	759
Kathrein Scala 80010	118.00	344	376	0.028	44	427
Round Platform w/ Ha	118.00	2,000	2,186	0.162	255	2,482
Nokia B5 RRH4x40-850	106.00	146	136	0.010	16	181
Alcatel-Lucent RRH4x	106.00	165	154	0.011	18	205
Alcatel-Lucent B13 R	106.00	172	160	0.012	19	213
Alcatel-Lucent B66 R	106.00	201	188	0.014	22	249
Antel BXA-70063-6CF-	106.00	51	48	0.004	6	63
Commscope JAHH-65B-R	106.00	242	226	0.017	26	301
Commscope JAHH-45B-R	106.00	168	157	0.012	18	208
Round Low Profile PI	106.00	1,500	1,401	0.104	163	1,861
		25,389	13,491	1.000	1,572	31,506

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

Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W _z (lb-ft)	C _{vx}	Horizontal Force (lb)	Vertical Force (lb)
30	118.50	65	71	0.005	8	56
29	116.50	213	229	0.017	27	183
28	112.50	367	374	0.028	44	316
27	108.00	305	293	0.022	34	262
26	105.50	86	80	0.006	9	74
25	102.50	438	390	0.029	45	377
24	97.50	454	375	0.028	44	390
23	92.50	469	359	0.027	42	403
22	87.50	484	341	0.025	40	416
21	82.50	499	323	0.024	38	429
20	79.25	153	93	0.007	11	131
19	76.75	805	469	0.035	55	692
18	74.00	468	258	0.019	30	402
17	71.50	434	228	0.017	27	373
16	67.50	741	357	0.026	42	636
15	62.50	762	328	0.024	38	655
14	57.50	784	299	0.022	35	673
13	52.50	806	269	0.020	31	692
12	47.50	827	238	0.018	28	711
11	43.63	464	118	0.009	14	399
10	41.13	735	171	0.013	20	631
9	37.75	1,496	307	0.023	36	1,285
8	35.25	87	16	0.001	2	75
7	32.50	882	145	0.011	17	758
6	27.50	904	117	0.009	14	776
5	22.50	925	89	0.007	10	795
4	17.50	947	63	0.005	7	814
3	12.50	969	39	0.003	5	832
2	7.50	990	19	0.001	2	851
1	2.50	1,012	4	0.000	0	869

Site Number: 283423

Code: ANSI/TIA-222-G

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Site Name: NAUGATUCK CT, CT

Engineering Number: OAA720566_C3_02

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Customer: AT&T MOBILITY

Raycap DC6-48-60-18-	118.00	80	87	0.006	10	69
Ericsson RRUS 4478 B	118.00	178	195	0.014	23	153
Ericsson RRUS 32 (50	118.00	152	167	0.012	19	131
Ericsson RRUS 32 B66	118.00	152	166	0.012	19	131
Ericsson RRUS 32 B2	118.00	159	174	0.013	20	137
Ericsson RRUS-11	118.00	495	541	0.040	63	425
CCI HPA-65R-BUU-H8	118.00	612	669	0.050	78	526
Kathrein Scala 80010	118.00	344	376	0.028	44	295
Round Platform w/ Ha	118.00	2,000	2,186	0.162	255	1,718
Nokia B5 RRH4x40-850	106.00	146	136	0.010	16	125
Alcatel-Lucent RRH4x	106.00	165	154	0.011	18	142
Alcatel-Lucent B13 R	106.00	172	160	0.012	19	147
Alcatel-Lucent B66 R	106.00	201	188	0.014	22	173
Antel BXA-70063-6CF-	106.00	51	48	0.004	6	44
Commscope JAHH-65B-R	106.00	242	226	0.017	26	208
Commscope JAHH-45B-R	106.00	168	157	0.012	18	144
Round Low Profile PI	106.00	1,500	1,401	0.104	163	1,289
		25,389	13,491	1.000	1,572	21,810

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	-30.25	-1.57	0.00	-151.08	0.00	151.08	3,321.87	1,660.94	7,755.70	3,883.62	0.00	0.00	0.048
5.00	-29.02	-1.58	0.00	-143.21	0.00	143.21	3,288.72	1,644.36	7,503.17	3,757.16	0.00	-0.01	0.047
10.00	-27.82	-1.58	0.00	-135.33	0.00	135.33	3,253.61	1,626.81	7,249.81	3,630.29	0.02	-0.02	0.046
15.00	-26.64	-1.57	0.00	-127.45	0.00	127.45	3,216.54	1,608.27	6,995.93	3,503.16	0.04	-0.03	0.045
20.00	-25.49	-1.57	0.00	-119.59	0.00	119.59	3,177.52	1,588.76	6,741.83	3,375.93	0.08	-0.04	0.043
25.00	-24.37	-1.56	0.00	-111.76	0.00	111.76	3,136.53	1,568.26	6,487.84	3,248.74	0.12	-0.05	0.042
30.00	-23.28	-1.54	0.00	-103.99	0.00	103.99	3,093.58	1,546.79	6,234.27	3,121.77	0.18	-0.06	0.041
35.00	-23.17	-1.54	0.00	-96.28	0.00	96.28	3,048.68	1,524.34	5,981.43	2,995.16	0.24	-0.07	0.040
35.50	-21.31	-1.51	0.00	-95.51	0.00	95.51	3,044.08	1,522.04	5,956.20	2,982.53	0.25	-0.07	0.039
40.00	-20.40	-1.49	0.00	-88.73	0.00	88.73	3,001.81	1,500.91	5,729.64	2,869.08	0.32	-0.08	0.038
42.25	-19.82	-1.47	0.00	-85.39	0.00	85.39	3,003.54	1,501.77	5,738.69	2,873.61	0.35	-0.08	0.036
45.00	-18.80	-1.45	0.00	-81.34	0.00	81.34	2,976.96	1,488.48	5,600.73	2,804.53	0.40	-0.09	0.035
50.00	-17.80	-1.42	0.00	-74.10	0.00	74.10	2,927.13	1,463.57	5,351.11	2,679.53	0.50	-0.10	0.034
55.00	-16.82	-1.38	0.00	-67.02	0.00	67.02	2,875.34	1,437.67	5,103.32	2,555.45	0.60	-0.10	0.032
60.00	-15.88	-1.35	0.00	-60.10	0.00	60.10	2,821.60	1,410.80	4,857.67	2,432.44	0.72	-0.11	0.030
65.00	-14.96	-1.30	0.00	-53.38	0.00	53.38	2,765.89	1,382.94	4,614.48	2,310.67	0.84	-0.12	0.029
70.00	-14.42	-1.28	0.00	-46.85	0.00	46.85	2,708.22	1,354.11	4,374.05	2,190.28	0.97	-0.13	0.027
73.00	-13.84	-1.25	0.00	-43.02	0.00	43.02	2,672.68	1,336.34	4,231.26	2,118.77	1.05	-0.14	0.025
75.00	-12.84	-1.19	0.00	-40.52	0.00	40.52	2,648.59	1,324.30	4,136.71	2,071.43	1.11	-0.14	0.024
78.50	-12.65	-1.18	0.00	-36.35	0.00	36.35	1,590.36	795.18	2,465.70	1,234.68	1.22	-0.14	0.037
80.00	-12.03	-1.14	0.00	-34.58	0.00	34.58	1,582.58	791.29	2,428.36	1,215.98	1.26	-0.15	0.036
85.00	-11.43	-1.10	0.00	-28.86	0.00	28.86	1,555.39	777.69	2,303.81	1,153.62	1.42	-0.16	0.032
90.00	-10.85	-1.06	0.00	-23.34	0.00	23.34	1,526.24	763.12	2,179.35	1,091.30	1.59	-0.17	0.028
95.00	-10.29	-1.02	0.00	-18.03	0.00	18.03	1,495.12	747.56	2,055.31	1,029.18	1.77	-0.17	0.024
100.00	-9.74	-0.97	0.00	-12.94	0.00	12.94	1,462.05	731.03	1,931.99	967.43	1.95	-0.18	0.020
105.00	-9.64	-0.96	0.00	-8.08	0.00	8.08	1,427.02	713.51	1,809.71	906.20	2.15	-0.19	0.016
106.00	-5.98	-0.63	0.00	-7.11	0.00	7.11	1,419.78	709.89	1,785.41	894.03	2.19	-0.19	0.012
110.00	-5.52	-0.58	0.00	-4.60	0.00	4.60	1,390.04	695.02	1,688.79	845.65	2.34	-0.19	0.009
115.00	-5.26	-0.56	0.00	-1.67	0.00	1.67	1,351.09	675.54	1,569.52	785.93	2.54	-0.19	0.006
118.00	0.00	0.00	0.00	0.00	0.00	0.00	1,326.78	663.39	1,498.89	750.56	2.66	-0.19	0.000
119.00	0.00	0.00	0.00	0.00	0.00	0.00	1,318.52	659.26	1,475.52	738.86	2.70	-0.19	0.000

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

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	-20.94	-1.57	0.00	-150.16	0.00	150.16	3,321.87	1,660.94	7,755.70	3,883.62	0.00	0.00	0.045
5.00	-20.09	-1.57	0.00	-142.29	0.00	142.29	3,288.72	1,644.36	7,503.17	3,757.16	0.00	-0.01	0.044
10.00	-19.26	-1.57	0.00	-134.42	0.00	134.42	3,253.61	1,626.81	7,249.81	3,630.29	0.02	-0.02	0.043
15.00	-18.44	-1.57	0.00	-126.56	0.00	126.56	3,216.54	1,608.27	6,995.93	3,503.16	0.04	-0.03	0.042
20.00	-17.65	-1.56	0.00	-118.72	0.00	118.72	3,177.52	1,588.76	6,741.83	3,375.93	0.08	-0.04	0.041
25.00	-16.87	-1.55	0.00	-110.92	0.00	110.92	3,136.53	1,568.26	6,487.84	3,248.74	0.12	-0.05	0.040
30.00	-16.11	-1.53	0.00	-103.18	0.00	103.18	3,093.58	1,546.79	6,234.27	3,121.77	0.18	-0.06	0.038
35.00	-16.04	-1.53	0.00	-95.51	0.00	95.51	3,048.68	1,524.34	5,981.43	2,995.16	0.24	-0.07	0.037
35.50	-14.75	-1.50	0.00	-94.75	0.00	94.75	3,044.08	1,522.04	5,956.20	2,982.53	0.25	-0.07	0.037
40.00	-14.12	-1.48	0.00	-88.01	0.00	88.01	3,001.81	1,500.91	5,729.64	2,869.08	0.31	-0.08	0.035
42.25	-13.72	-1.46	0.00	-84.69	0.00	84.69	3,003.54	1,501.77	5,738.69	2,873.61	0.35	-0.08	0.034
45.00	-13.01	-1.44	0.00	-80.66	0.00	80.66	2,976.96	1,488.48	5,600.73	2,804.53	0.40	-0.09	0.033
50.00	-12.32	-1.41	0.00	-73.47	0.00	73.47	2,927.13	1,463.57	5,351.11	2,679.53	0.49	-0.09	0.032
55.00	-11.65	-1.37	0.00	-66.43	0.00	66.43	2,875.34	1,437.67	5,103.32	2,555.45	0.60	-0.10	0.030
60.00	-10.99	-1.34	0.00	-59.57	0.00	59.57	2,821.60	1,410.80	4,857.67	2,432.44	0.71	-0.11	0.028
65.00	-10.35	-1.29	0.00	-52.89	0.00	52.89	2,765.89	1,382.94	4,614.48	2,310.67	0.83	-0.12	0.027
70.00	-9.98	-1.27	0.00	-46.42	0.00	46.42	2,708.22	1,354.11	4,374.05	2,190.28	0.96	-0.13	0.025
73.00	-9.58	-1.24	0.00	-42.62	0.00	42.62	2,672.68	1,336.34	4,231.26	2,118.77	1.05	-0.13	0.024
75.00	-8.89	-1.18	0.00	-40.14	0.00	40.14	2,648.59	1,324.30	4,136.71	2,071.43	1.10	-0.14	0.023
78.50	-8.76	-1.17	0.00	-36.01	0.00	36.01	1,590.36	795.18	2,465.70	1,234.68	1.21	-0.14	0.035
80.00	-8.33	-1.13	0.00	-34.25	0.00	34.25	1,582.58	791.29	2,428.36	1,215.98	1.25	-0.15	0.033
85.00	-7.91	-1.09	0.00	-28.58	0.00	28.58	1,555.39	777.69	2,303.81	1,153.62	1.41	-0.16	0.030
90.00	-7.51	-1.05	0.00	-23.11	0.00	23.11	1,526.24	763.12	2,179.35	1,091.30	1.58	-0.16	0.026
95.00	-7.12	-1.01	0.00	-17.85	0.00	17.85	1,495.12	747.56	2,055.31	1,029.18	1.75	-0.17	0.022
100.00	-6.74	-0.96	0.00	-12.81	0.00	12.81	1,462.05	731.03	1,931.99	967.43	1.94	-0.18	0.018
105.00	-6.67	-0.95	0.00	-8.00	0.00	8.00	1,427.02	713.51	1,809.71	906.20	2.13	-0.18	0.013
106.00	-4.14	-0.62	0.00	-7.04	0.00	7.04	1,419.78	709.89	1,785.41	894.03	2.17	-0.18	0.011
110.00	-3.82	-0.58	0.00	-4.55	0.00	4.55	1,390.04	695.02	1,688.79	845.65	2.32	-0.19	0.008
115.00	-3.64	-0.55	0.00	-1.66	0.00	1.66	1,351.09	675.54	1,569.52	785.93	2.52	-0.19	0.005
118.00	0.00	0.00	0.00	0.00	0.00	0.00	1,326.78	663.39	1,498.89	750.56	2.64	-0.19	0.000
119.00	0.00	0.00	0.00	0.00	0.00	0.00	1,318.52	659.26	1,475.52	738.86	2.68	-0.19	0.000

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):	0.19
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}):	0.20
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	1.43
Redundancy Factor (p):	1.30

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)
30	118.50	65	1.874	1.897	1.110	0.392	22	80
29	116.50	213	1.811	1.591	0.997	0.351	65	264
28	112.50	367	1.689	1.082	0.798	0.275	87	456
27	108.00	305	1.557	0.651	0.613	0.201	53	378
26	105.50	86	1.486	0.466	0.526	0.165	12	107
25	102.50	438	1.402	0.288	0.434	0.126	48	544
24	97.50	454	1.269	0.080	0.309	0.073	29	563
23	92.50	469	1.142	-0.043	0.214	0.034	14	582
22	87.50	484	1.022	-0.104	0.142	0.008	3	601
21	82.50	499	0.908	-0.122	0.091	-0.005	-2	619
20	79.25	153	0.838	-0.118	0.065	-0.007	-1	190
19	76.75	805	0.786	-0.109	0.050	-0.007	-5	1,000
18	74.00	468	0.731	-0.096	0.036	-0.004	-1	581
17	71.50	434	0.682	-0.081	0.027	0.001	0	539
16	67.50	741	0.608	-0.056	0.015	0.010	6	919
15	62.50	762	0.521	-0.024	0.008	0.022	15	946
14	57.50	784	0.441	0.005	0.006	0.033	23	973
13	52.50	806	0.368	0.028	0.008	0.041	29	1,000
12	47.50	827	0.301	0.045	0.012	0.046	33	1,027
11	43.63	464	0.254	0.055	0.017	0.047	19	576
10	41.13	735	0.226	0.059	0.020	0.047	30	912
9	37.75	1,496	0.190	0.064	0.024	0.047	61	1,857
8	35.25	87	0.166	0.067	0.028	0.046	3	108
7	32.50	882	0.141	0.069	0.031	0.045	34	1,094
6	27.50	904	0.101	0.071	0.037	0.043	33	1,121
5	22.50	925	0.068	0.072	0.041	0.041	33	1,148
4	17.50	947	0.041	0.070	0.042	0.038	31	1,175
3	12.50	969	0.021	0.065	0.038	0.034	29	1,202
2	7.50	990	0.008	0.051	0.029	0.027	23	1,229
1	2.50	1,012	0.001	0.022	0.012	0.013	11	1,256
Raycap DC6-48-60-18-	118.00	80	1.858	1.817	1.081	0.382	26	99
Ericsson RRUS 4478 B	118.00	178	1.858	1.817	1.081	0.382	59	221
Ericsson RRUS 32 (50	118.00	152	1.858	1.817	1.081	0.382	50	189
Ericsson RRUS 32 B66	118.00	152	1.858	1.817	1.081	0.382	50	189

Site Number: 283423

Code: ANSI/TIA-222-G

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Site Name: NAUGATUCK CT, CT

Engineering Number: OAA720566_C3_02

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Ericsson RRUS 32 B2	118.00	159	1.858	1.817	1.081	0.382	53	197
Ericsson RRUS-11	118.00	495	1.858	1.817	1.081	0.382	164	614
CCI HPA-65R-BUU-H8	118.00	612	1.858	1.817	1.081	0.382	202	759
Kathrein Scala 80010	118.00	344	1.858	1.817	1.081	0.382	114	427
Round Platform w/ Ha	118.00	2,000	1.858	1.817	1.081	0.382	661	2,482
Nokia B5 RRH4x40-850	106.00	146	1.500	0.500	0.542	0.172	22	181
Alcatel-Lucent RRH4x	106.00	165	1.500	0.500	0.542	0.172	25	205
Alcatel-Lucent B13 R	106.00	172	1.500	0.500	0.542	0.172	26	213
Alcatel-Lucent B66 R	106.00	201	1.500	0.500	0.542	0.172	30	249
Antel BXA-70063-6CF-	106.00	51	1.500	0.500	0.542	0.172	8	63
Commscope JAHH-65B-	106.00	242	1.500	0.500	0.542	0.172	36	301
Commscope JAHH-45B-	106.00	168	1.500	0.500	0.542	0.172	25	208
Round Low Profile PI	106.00	1,500	1.500	0.500	0.542	0.172	223	1,861
		25,389	49.375	26.399	19.848	6.990	2,511	31,506

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)
30	118.50	65	1.874	1.897	1.110	0.392	22	56
29	116.50	213	1.811	1.591	0.997	0.351	65	183
28	112.50	367	1.689	1.082	0.798	0.275	87	316
27	108.00	305	1.557	0.651	0.613	0.201	53	262
26	105.50	86	1.486	0.466	0.526	0.165	12	74
25	102.50	438	1.402	0.288	0.434	0.126	48	377
24	97.50	454	1.269	0.080	0.309	0.073	29	390
23	92.50	469	1.142	-0.043	0.214	0.034	14	403
22	87.50	484	1.022	-0.104	0.142	0.008	3	416
21	82.50	499	0.908	-0.122	0.091	-0.005	-2	429
20	79.25	153	0.838	-0.118	0.065	-0.007	-1	131
19	76.75	805	0.786	-0.109	0.050	-0.007	-5	692
18	74.00	468	0.731	-0.096	0.036	-0.004	-1	402
17	71.50	434	0.682	-0.081	0.027	0.001	0	373
16	67.50	741	0.608	-0.056	0.015	0.010	6	636
15	62.50	762	0.521	-0.024	0.008	0.022	15	655
14	57.50	784	0.441	0.005	0.006	0.033	23	673
13	52.50	806	0.368	0.028	0.008	0.041	29	692
12	47.50	827	0.301	0.045	0.012	0.046	33	711
11	43.63	464	0.254	0.055	0.017	0.047	19	399
10	41.13	735	0.226	0.059	0.020	0.047	30	631
9	37.75	1,496	0.190	0.064	0.024	0.047	61	1,285
8	35.25	87	0.166	0.067	0.028	0.046	3	75
7	32.50	882	0.141	0.069	0.031	0.045	34	758
6	27.50	904	0.101	0.071	0.037	0.043	33	776
5	22.50	925	0.068	0.072	0.041	0.041	33	795
4	17.50	947	0.041	0.070	0.042	0.038	31	814
3	12.50	969	0.021	0.065	0.038	0.034	29	832
2	7.50	990	0.008	0.051	0.029	0.027	23	851
1	2.50	1,012	0.001	0.022	0.012	0.013	11	869
Raycap DC6-48-60-18-	118.00	80	1.858	1.817	1.081	0.382	26	69
Ericsson RRUS 4478 B	118.00	178	1.858	1.817	1.081	0.382	59	153
Ericsson RRUS 32 (50	118.00	152	1.858	1.817	1.081	0.382	50	131
Ericsson RRUS 32 B66	118.00	152	1.858	1.817	1.081	0.382	50	131
Ericsson RRUS 32 B2	118.00	159	1.858	1.817	1.081	0.382	53	137
Ericsson RRUS-11	118.00	495	1.858	1.817	1.081	0.382	164	425
CCI HPA-65R-BUU-H8	118.00	612	1.858	1.817	1.081	0.382	202	526
Kathrein Scala 80010	118.00	344	1.858	1.817	1.081	0.382	114	295
Round Platform w/ Ha	118.00	2,000	1.858	1.817	1.081	0.382	661	1,718
Nokia B5 RRH4x40-850	106.00	146	1.500	0.500	0.542	0.172	22	125

Site Number: 283423

Code: ANSI/TIA-222-G

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Site Name: NAUGATUCK CT, CT

Engineering Number: OAA720566_C3_02

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Customer: AT&T MOBILITY

Alcatel-Lucent RRH4x	106.00	165	1.500	0.500	0.542	0.172	25	142
Alcatel-Lucent B13 R	106.00	172	1.500	0.500	0.542	0.172	26	147
Alcatel-Lucent B66 R	106.00	201	1.500	0.500	0.542	0.172	30	173
Antel BXA-70063-6CF-	106.00	51	1.500	0.500	0.542	0.172	8	44
Commscope JAHH-65B-	106.00	242	1.500	0.500	0.542	0.172	36	208
Commscope JAHH-45B-	106.00	168	1.500	0.500	0.542	0.172	25	144
Round Low Profile PI	106.00	1,500	1.500	0.500	0.542	0.172	223	1,289
		25,389	49.375	26.399	19.848	6.990	2,511	21,810

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	-30.25	-2.50	0.00	-257.91	0.00	257.91	3,321.87	1,660.94	7,755.70	3,883.62	0.00	0.00	0.076
5.00	-29.02	-2.49	0.00	-245.39	0.00	245.39	3,288.72	1,644.36	7,503.17	3,757.16	0.01	-0.02	0.074
10.00	-27.82	-2.47	0.00	-232.95	0.00	232.95	3,253.61	1,626.81	7,249.81	3,630.29	0.03	-0.03	0.073
15.00	-26.64	-2.44	0.00	-220.62	0.00	220.62	3,216.54	1,608.27	6,995.93	3,503.16	0.08	-0.05	0.071
20.00	-25.49	-2.42	0.00	-208.41	0.00	208.41	3,177.52	1,588.76	6,741.83	3,375.93	0.13	-0.06	0.070
25.00	-24.37	-2.39	0.00	-196.33	0.00	196.33	3,136.53	1,568.26	6,487.84	3,248.74	0.21	-0.08	0.068
30.00	-23.28	-2.36	0.00	-184.39	0.00	184.39	3,093.58	1,546.79	6,234.27	3,121.77	0.31	-0.10	0.067
35.00	-23.17	-2.36	0.00	-172.59	0.00	172.59	3,048.68	1,524.34	5,981.43	2,995.16	0.42	-0.12	0.065
35.50	-21.31	-2.30	0.00	-171.42	0.00	171.42	3,044.08	1,522.04	5,956.20	2,982.53	0.43	-0.12	0.064
40.00	-20.40	-2.27	0.00	-161.07	0.00	161.07	3,001.81	1,500.91	5,729.64	2,869.08	0.55	-0.13	0.063
42.25	-19.82	-2.25	0.00	-155.96	0.00	155.96	3,003.54	1,501.77	5,738.69	2,873.61	0.61	-0.14	0.061
45.00	-18.79	-2.22	0.00	-149.77	0.00	149.77	2,976.96	1,488.48	5,600.73	2,804.53	0.70	-0.15	0.060
50.00	-17.79	-2.20	0.00	-138.66	0.00	138.66	2,927.13	1,463.57	5,351.11	2,679.53	0.86	-0.17	0.058
55.00	-16.82	-2.18	0.00	-127.68	0.00	127.68	2,875.34	1,437.67	5,103.32	2,555.45	1.05	-0.19	0.056
60.00	-15.87	-2.16	0.00	-116.80	0.00	116.80	2,821.60	1,410.80	4,857.67	2,432.44	1.25	-0.20	0.054
65.00	-14.95	-2.16	0.00	-105.99	0.00	105.99	2,765.89	1,382.94	4,614.48	2,310.67	1.47	-0.22	0.051
70.00	-14.41	-2.16	0.00	-95.21	0.00	95.21	2,708.22	1,354.11	4,374.05	2,190.28	1.71	-0.24	0.049
73.00	-13.83	-2.16	0.00	-88.73	0.00	88.73	2,672.68	1,336.34	4,231.26	2,118.77	1.87	-0.25	0.047
75.00	-12.83	-2.16	0.00	-84.41	0.00	84.41	2,648.59	1,324.30	4,136.71	2,071.43	1.97	-0.25	0.046
78.50	-12.64	-2.16	0.00	-76.85	0.00	76.85	1,590.36	795.18	2,465.70	1,234.68	2.16	-0.27	0.070
80.00	-12.02	-2.17	0.00	-73.61	0.00	73.61	1,582.58	791.29	2,428.36	1,215.98	2.25	-0.27	0.068
85.00	-11.42	-2.16	0.00	-62.78	0.00	62.78	1,555.39	777.69	2,303.81	1,153.62	2.54	-0.29	0.062
90.00	-10.84	-2.15	0.00	-51.96	0.00	51.96	1,526.24	763.12	2,179.35	1,091.30	2.86	-0.31	0.055
95.00	-10.28	-2.12	0.00	-41.22	0.00	41.22	1,495.12	747.56	2,055.31	1,029.18	3.20	-0.33	0.047
100.00	-9.73	-2.07	0.00	-30.61	0.00	30.61	1,462.05	731.03	1,931.99	967.43	3.55	-0.35	0.038
105.00	-9.63	-2.06	0.00	-20.25	0.00	20.25	1,427.02	713.51	1,809.71	906.20	3.92	-0.36	0.029
106.00	-5.97	-1.59	0.00	-18.19	0.00	18.19	1,419.78	709.89	1,785.41	894.03	4.00	-0.36	0.025
110.00	-5.51	-1.50	0.00	-11.82	0.00	11.82	1,390.04	695.02	1,688.79	845.65	4.30	-0.37	0.018
115.00	-5.25	-1.44	0.00	-4.31	0.00	4.31	1,351.09	675.54	1,569.52	785.93	4.69	-0.37	0.009
118.00	0.00	0.00	0.00	0.00	0.00	0.00	1,326.78	663.39	1,498.89	750.56	4.92	-0.37	0.000
119.00	0.00	0.00	0.00	0.00	0.00	0.00	1,318.52	659.26	1,475.52	738.86	5.00	-0.37	0.000

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	-20.94	-2.50	0.00	-256.23	0.00	256.23	3,321.87	1,660.94	7,755.70	3,883.62	0.00	0.00	0.072
5.00	-20.09	-2.48	0.00	-243.72	0.00	243.72	3,288.72	1,644.36	7,503.17	3,757.16	0.01	-0.02	0.071
10.00	-19.26	-2.46	0.00	-231.30	0.00	231.30	3,253.61	1,626.81	7,249.81	3,630.29	0.03	-0.03	0.070
15.00	-18.44	-2.43	0.00	-219.00	0.00	219.00	3,216.54	1,608.27	6,995.93	3,503.16	0.07	-0.05	0.068
20.00	-17.65	-2.41	0.00	-206.83	0.00	206.83	3,177.52	1,588.76	6,741.83	3,375.93	0.13	-0.06	0.067
25.00	-16.87	-2.38	0.00	-194.80	0.00	194.80	3,136.53	1,568.26	6,487.84	3,248.74	0.21	-0.08	0.065
30.00	-16.11	-2.35	0.00	-182.92	0.00	182.92	3,093.58	1,546.79	6,234.27	3,121.77	0.30	-0.10	0.064
35.00	-16.04	-2.34	0.00	-171.19	0.00	171.19	3,048.68	1,524.34	5,981.43	2,995.16	0.41	-0.11	0.062
35.50	-14.75	-2.28	0.00	-170.02	0.00	170.02	3,044.08	1,522.04	5,956.20	2,982.53	0.43	-0.12	0.062
40.00	-14.12	-2.26	0.00	-159.74	0.00	159.74	3,001.81	1,500.91	5,729.64	2,869.08	0.54	-0.13	0.060
42.25	-13.72	-2.24	0.00	-154.67	0.00	154.67	3,003.54	1,501.77	5,738.69	2,873.61	0.61	-0.14	0.058
45.00	-13.01	-2.21	0.00	-148.51	0.00	148.51	2,976.96	1,488.48	5,600.73	2,804.53	0.69	-0.15	0.057
50.00	-12.32	-2.18	0.00	-137.48	0.00	137.48	2,927.13	1,463.57	5,351.11	2,679.53	0.86	-0.17	0.056
55.00	-11.64	-2.16	0.00	-126.59	0.00	126.59	2,875.34	1,437.67	5,103.32	2,555.45	1.04	-0.18	0.054
60.00	-10.99	-2.14	0.00	-115.80	0.00	115.80	2,821.60	1,410.80	4,857.67	2,432.44	1.24	-0.20	0.052
65.00	-10.35	-2.14	0.00	-105.08	0.00	105.08	2,765.89	1,382.94	4,614.48	2,310.67	1.46	-0.22	0.049
70.00	-9.98	-2.14	0.00	-94.39	0.00	94.39	2,708.22	1,354.11	4,374.05	2,190.28	1.70	-0.24	0.047
73.00	-9.57	-2.14	0.00	-87.98	0.00	87.98	2,672.68	1,336.34	4,231.26	2,118.77	1.85	-0.25	0.045
75.00	-8.88	-2.14	0.00	-83.70	0.00	83.70	2,648.59	1,324.30	4,136.71	2,071.43	1.96	-0.25	0.044
78.50	-8.75	-2.14	0.00	-76.20	0.00	76.20	1,590.36	795.18	2,465.70	1,234.68	2.15	-0.26	0.067
80.00	-8.32	-2.15	0.00	-72.98	0.00	72.98	1,582.58	791.29	2,428.36	1,215.98	2.23	-0.27	0.065
85.00	-7.90	-2.14	0.00	-62.25	0.00	62.25	1,555.39	777.69	2,303.81	1,153.62	2.52	-0.29	0.059
90.00	-7.50	-2.13	0.00	-51.53	0.00	51.53	1,526.24	763.12	2,179.35	1,091.30	2.84	-0.31	0.052
95.00	-7.11	-2.10	0.00	-40.87	0.00	40.87	1,495.12	747.56	2,055.31	1,029.18	3.17	-0.33	0.044
100.00	-6.73	-2.05	0.00	-30.36	0.00	30.36	1,462.05	731.03	1,931.99	967.43	3.52	-0.34	0.036
105.00	-6.66	-2.04	0.00	-20.09	0.00	20.09	1,427.02	713.51	1,809.71	906.20	3.89	-0.36	0.027
106.00	-4.13	-1.58	0.00	-18.05	0.00	18.05	1,419.78	709.89	1,785.41	894.03	3.96	-0.36	0.023
110.00	-3.81	-1.49	0.00	-11.73	0.00	11.73	1,390.04	695.02	1,688.79	845.65	4.27	-0.36	0.017
115.00	-3.63	-1.43	0.00	-4.28	0.00	4.28	1,351.09	675.54	1,569.52	785.93	4.65	-0.37	0.008
118.00	0.00	0.00	0.00	0.00	0.00	0.00	1,326.78	663.39	1,498.89	750.56	4.88	-0.37	0.000
119.00	0.00	0.00	0.00	0.00	0.00	0.00	1,318.52	659.26	1,475.52	738.86	4.96	-0.37	0.000

Site Number: 283423

Code: ANSI/TIA-222-G

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Site Name: NAUGATUCK CT, CT

Engineering Number: OAA720566_C3_02

1/16/2018 7:37:02 PM

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	17.07	0.00	30.45	0.00	0.00	1510.55	0.00	0.40
0.9D + 1.6W	17.06	0.00	22.84	0.00	0.00	1502.92	0.00	0.39
1.2D + 1.0Di + 1.0Wi	4.99	0.00	50.07	0.00	0.00	422.52	0.00	0.12
(1.2 + 0.2Sds) * DL + E ELFM	1.57	0.00	30.25	0.00	0.00	151.08	0.00	0.05
(1.2 + 0.2Sds) * DL + E EMAM	2.50	0.00	30.25	0.00	0.00	257.91	0.00	0.08
(0.9 - 0.2Sds) * DL + E ELFM	1.57	0.00	20.94	0.00	0.00	150.16	0.00	0.04
(0.9 - 0.2Sds) * DL + E EMAM	2.50	0.00	20.94	0.00	0.00	256.23	0.00	0.07
1.0D + 1.0W	4.34	0.00	25.39	0.00	0.00	383.36	0.00	0.11

Site Number: 283423

Code: ANSI/TIA-222-G

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Site Name: NAUGATUCK CT, CT

Engineering Number: OAA720566_C3_02

1/16/2018 7:37:02 PM

Customer: AT&T MOBILITY

Base Summary

Reactions

Original Design			Analysis			Moment Design %
Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment (kip-ft)	Axial (kip)	Shear (kip)	
3,850.00	42.00	42.00	1,510.55	50.07	17.07	39.24

Base Plate

Yield (ksi)	Thick (in)	Width (in)	Style	Poly Sides	Clip Len (in)	Effective Len (in)	Mu (kip-in)	Phi Mn (kip-in)	Ratio
60.0	2.000	70.000	Round	0	0.00	15.076	345.04	814.10	0.42

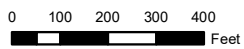
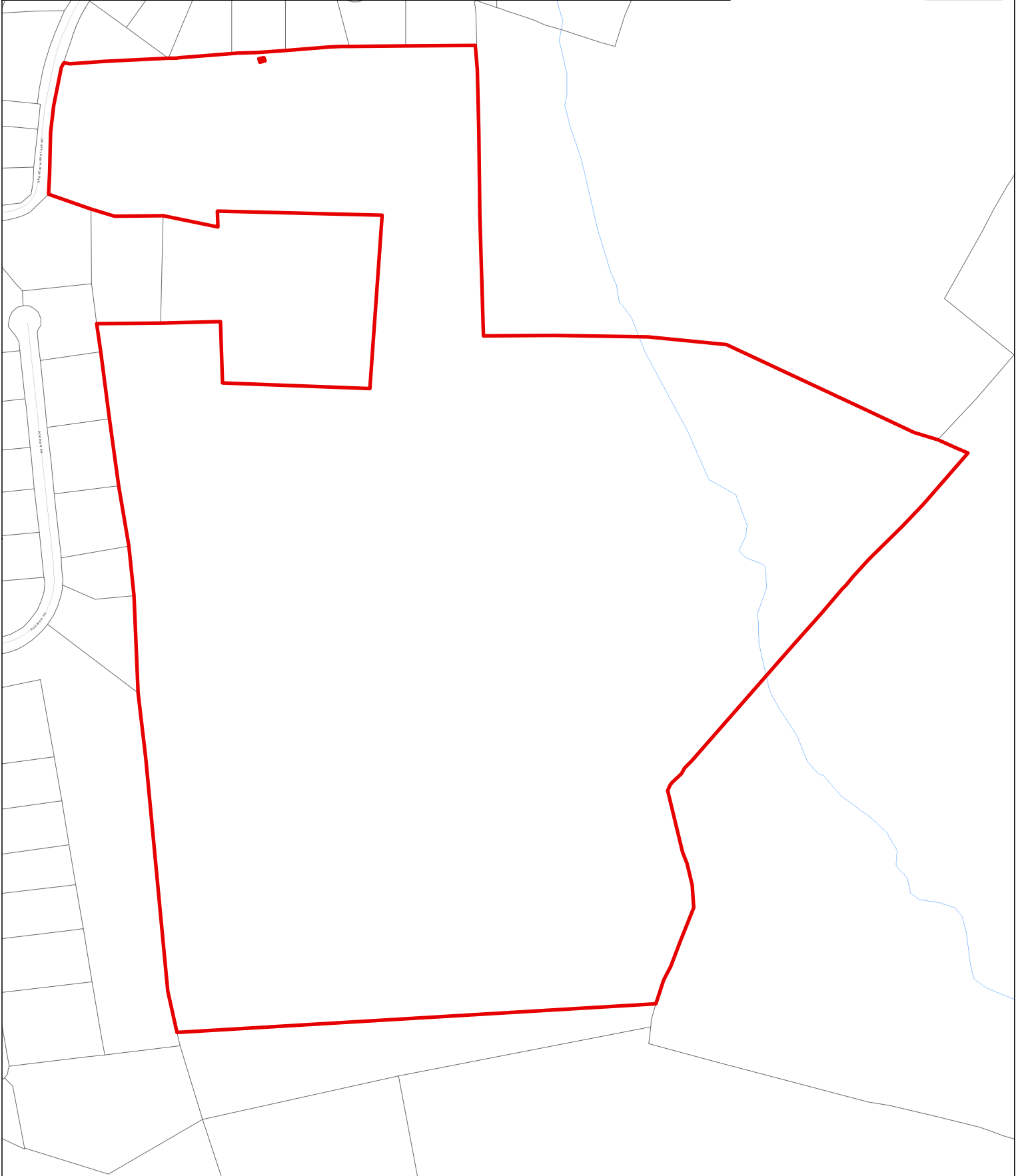
Anchor Bolts

Bolt Circle	Num Bolts	Bolt Type	Bolt Dia (in)	Yield (ksi)	Ultimate (ksi)	Arrange	Cluster Dist (in)	Start Angle (deg)	Compression			Tension		
									Force (kip)	Allow (kip)	Ratio	Force (kip)	Allow (kip)	Ratio
64.00	12	2.25" 18J	2.25	75.00	100.00	Radial	0.00	0.0	98.58	260.00	0.39	90.24	260.00	0.36

Borough of Naugatuck, Connecticut - Assessment Parcel Map

Parcel Account Number: 002-0300

Address: 0 ANDREW MTN RD



Disclaimer: This map is for informational purposes only.
All information is subject to verification by any user.
The Borough of Naugatuck and its mapping contractors
assume no legal responsibility for the information contained herein.

Map Produced March 2017



Borough of Naugatuck, CT

Property Listing Report

Map Block Lot

D-6W29-B

Account

002-0300

Property Information

Property Location	0 ANDREW MTN RD
Owner	ANDREW RUSSELL B SR
Co-Owner	
Mailing Address	861 ANDREW MTN RD NAUGATUCK CT 06770
Land Use	6100 Forest 490
Land Class	S
Zoning Code	
Census Tract	
Sub Lot	
Neighborhood	7
Acreage	104.48
Utilities	
Lot Setting/Desc	
Survey Map	
Additional Info	

Photo



Sketch

Primary Construction Details

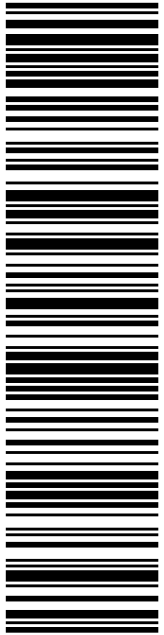
Year Built	
Stories	
Building Style	
Building Use	
Building Condition	
Floors	
Total Rooms	

Bedrooms	
Full Bathrooms	
Half Bathrooms	
Bath Style	
Kitchen Style	
Roof Style	
Roof Cover	

Exterior Walls	
Interior Walls	
Heating Type	
Heating Fuel	
AC Type	
Gross Bldg Area	
Total Living Area	

SHIP TO: MAYOR N. WARREN HESS III
BOROUGH OF NAUGATUCK
229 CHURCH ST
NAUGATUCK CT 06770-4145

USPS TRACKING #



9405 8036 9930 0610 2361 72

Electronic Rate Approved #038555749

P

03/22/2018

PRIORITY MAIL 1-DAY™

Expected Delivery Date: 03/23/18

C004

0024


UNITED STATES POSTAL SERVICE®

Click-N-Ship®

usps.com 9405 8036 9930 0610 2361 72 0067 0000 0010 6770

US POSTAGE \$6.70

Flat Rate Envoy



Mailed from 06268 024P



Cut on dotted line.

Instructions

1. Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.
2. Place your label so it does not wrap around the edge of the package.
3. Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.
4. To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
5. Mail your package on the "Ship Date" you selected when creating this label.

Click-N-Ship® Label Record

USPS TRACKING # / Insurance Number:
9405 8036 9930 0610 2361 72

Trans. #:	430474198	Priority Mail® Postage:	\$6.70
Print Date:	03/21/2018	Insurance Fee	\$0.00
Ship Date:	03/22/2018	Total	\$6.70
Expected Delivery Date:	03/23/2018		
Insured Value:	\$50.00		


From: MARK J ROBERTS
QC DEVELOPMENT
PO BOX 916
STORRS CT 06268-0916

To: MAYOR N. WARREN HESS III
BOROUGH OF NAUGATUCK
229 CHURCH ST
NAUGATUCK CT 06770-4145

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.



Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com



**UNITED STATES
POSTAL SERVICE®**

Click-N-Ship®

P

usps.com 9405 8036 9930 0610 2362 26 0067 0000 0010 6770
US POSTAGE \$6.70
 Flat Rate Env
 03/22/2018 Mailed from 06268 024P

PRIORITY MAIL 1-DAY™

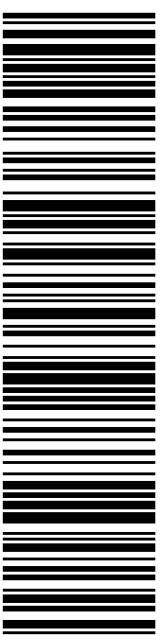
Expected Delivery Date: 03/23/18

MARK J ROBERTS
 QC DEVELOPMENT
 PO BOX 916
 STORRS CT 06268-0916

0024

SHIP TO:
 RUSSELL B ANDREW SR.
 861 ANDREW MOUNTAIN RD
 NAUGATUCK CT 06770-3622

USPS TRACKING #



9405 8036 9930 0610 2362 26

Electronic Rate Approved #038555749



Cut on dotted line.

Instructions

1. Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.
2. Place your label so it does not wrap around the edge of the package.
3. Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.
4. To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
5. Mail your package on the "Ship Date" you selected when creating this label.

Click-N-Ship® Label Record

**USPS TRACKING # / Insurance Number:
 9405 8036 9930 0610 2362 26**

Trans. #:	430474198	Priority Mail® Postage:	\$6.70
Print Date:	03/21/2018	Insurance Fee	\$0.00
Ship Date:	03/22/2018	Total	\$6.70
Expected Delivery Date:	03/23/2018		
Insured Value:	\$50.00		

From: MARK J ROBERTS
 QC DEVELOPMENT
 PO BOX 916
 STORRS CT 06268-0916

To: RUSSELL B ANDREW SR.
 861 ANDREW MOUNTAIN RD
 NAUGATUCK CT 06770-3622

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.



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