



QC Development

PO Box 916

Storrs, CT 06268

860-670-9068

Mark.Roberts@QCDevelopment.net

March 30, 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) – CT2221
1000 Northrop Road, Wallingford, CT 06492
N 41-29-21.8
W 72-46-60.0

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 124-foot level of the existing 150-foot Monopole at 1000 Northrop Road, Wallingford, CT (also known as 992 Northrop Road per CSC records). The tower is owned by American Tower. The property is owned by AT&T. AT&T now intends to add (3) Kathrein 800-10965 antennas. AT&T also intends to swap (3) Ericsson RRUS-12 / A2 for (3) RRUS-32 B2 and add (3) new RRUS-32 B66 remote radio units (RRU). The new antennas and RRUs will also be installed at the 124-foot level of the tower.

This facility was approved by the Wallingford Planning & Zoning Commission on June 13, 1994. The approval included no conditions that would relate to the scope of this modification, which therefore complies with the aforementioned approval.

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 William W. Dickinson, Jr., Mayor of the Town of Wallingford, and the Wallingford Planning & Zoning Office, as well as the tower owner. Since the property is owned by AT&T, a

separate copy of this notification will not be mailed.

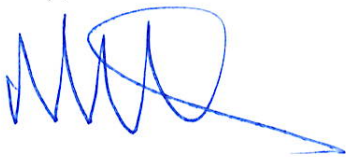
The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

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: Mayor William W. Dickinson, Jr - as Elected Official
Kacie Hand – Town Planner
Crown Castle - 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*							3.83%
AT&T GSM	2	414	127	0.0203	850	0.5667	0.36%
AT&T UMTS	2	552	127	0.0271	850	0.5667	0.48%
AT&T UMTS	2	656	127	0.0322	1900	1.0000	0.32%
AT&T LTE	2	877	127	0.0431	700	0.4667	0.92%
AT&T LTE	2	1833	127	0.0900	1900	1.0000	0.90%
AT&T LTE	2	2010	127	0.0987	2300	1.0000	0.99%
Site Total							7.80%

*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*							3.83%
AT&T UMTS	1	263	124	0.0068	850	0.5667	0.12%
AT&T LTE	2	2951	124	0.1524	700	0.4667	3.27%
AT&T LTE	2	4842	124	0.2501	1900	1.0000	2.50%
AT&T LTE	1	5070	124	0.1309	2100	1.0000	1.31%
AT&T LTE	1	1285	124	0.0332	2300	1.0000	0.33%
Site Total							11.36%

*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 & (3) 700-4478.
- NEW JUMPER CABLES: COAX JUMPER (3) PER SECTOR FROM EACH RRU (TOTAL OF 9)
- NEW FIBER JUMPERS: FIBER JUMPERS (4) FROM THE SQUID TO EACH RRU (TOTAL OF 12)
- NEW ANTENNA: (1) 800-10965 (TOTAL OF 3)
- NEW SURGE ARRESTOR: (1) SURGE ARRESTOR, (2) DC POWER CABLES, & (1) FIBER RUN.

ITEMS TO REMAIN:

- (9) ANTENNAS, (6) RRU'S, (2) SURGE ARRESTORS, (4) DC POWER CABLES, (2) FIBER RUN, AND (12) COAX.

SITE ADDRESS: 100 NORTHRUP ROAD
WALLINGFORD, CT 06492

LATITUDE: 41.4894000° N 41° 29' 21.84" N
LONGITUDE: 72.7682000° W 72° 46' 5.52" W

TYPE OF SITE: MONOPOLE / INDOOR EQUIPMENT

TOWER HEIGHT: 150'-0"±
RAD CENTER: 124'-0"±

JURISDICTION: NATIONAL, STATE & LOCAL CODES OR ORDINANCES

CURRENT USE: TELECOMMUNICATIONS FACILITY

PROPOSED USE: TELECOMMUNICATIONS FACILITY



SITE NUMBER: CT2221

SITE NAME: WALLINGFORD-NORTHRUP RD

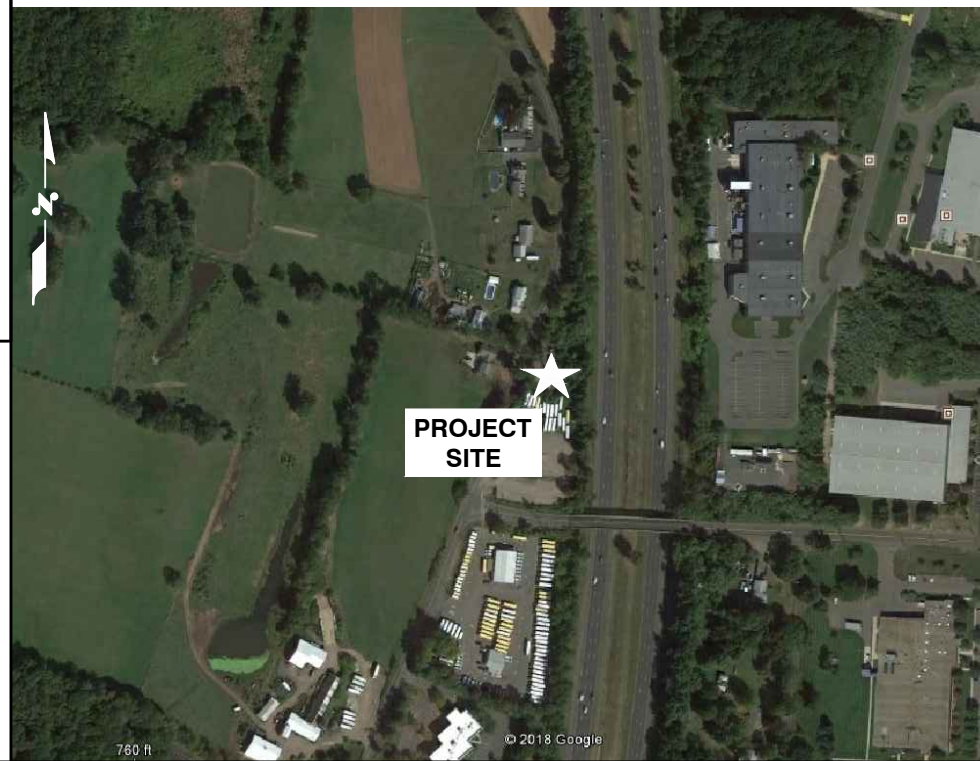
PROJECT: LTE 4C, 5C & RETROFIT 2018 UPGRADE

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:
I 91 TO EXIT 15 RT 68 WEST TO LIGHT TURN RIGHT ON NORTHRUP ROAD .5 MILE TO SITE ON RIGHT. GATE COMBO 2370.



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 #: 302538
ATC SITE NAME: PARSONAGE HILL AKA WALLIN



SITE NUMBER: CT2221
SITE NAME: WALLINGFORD-NORTHRUP RD
ATC SITE NUMBER: 302538

100 NORTHRUP ROAD
WALLINGFORD, CT 06492
NEW HAVEN COUNTY



B		03/08/18	ISSUED FOR PERMITTING	MR	AT	DPH		AT&T	
A		02/16/18	ISSUED FOR REVIEW	TB	AT	DPH		TITLE SHEET	
NO.	DATE	REVISIONS		BY	CHK	APP'D	LTE 4C, 5C RETROFIT 2018 UPGRADE		
SCALE: AS SHOWN		DESIGNED BY: AT		DRAWN BY: LL		SITE NUMBER		DRAWING NUMBER	REV
						CT2111		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: CT2221
 SITE NAME: WALLINGFORD-NORTHROP RD
 ATC SITE NUMBER: 302538

 100 NORTHROP ROAD
 WALLINGFORD, CT 06492
 NEW HAVEN COUNTY

550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
B	03/08/18	ISSUED FOR PERMITTING	MR	AT	DPH
A	02/16/18	ISSUED FOR REVIEW	TB	AT	DPH

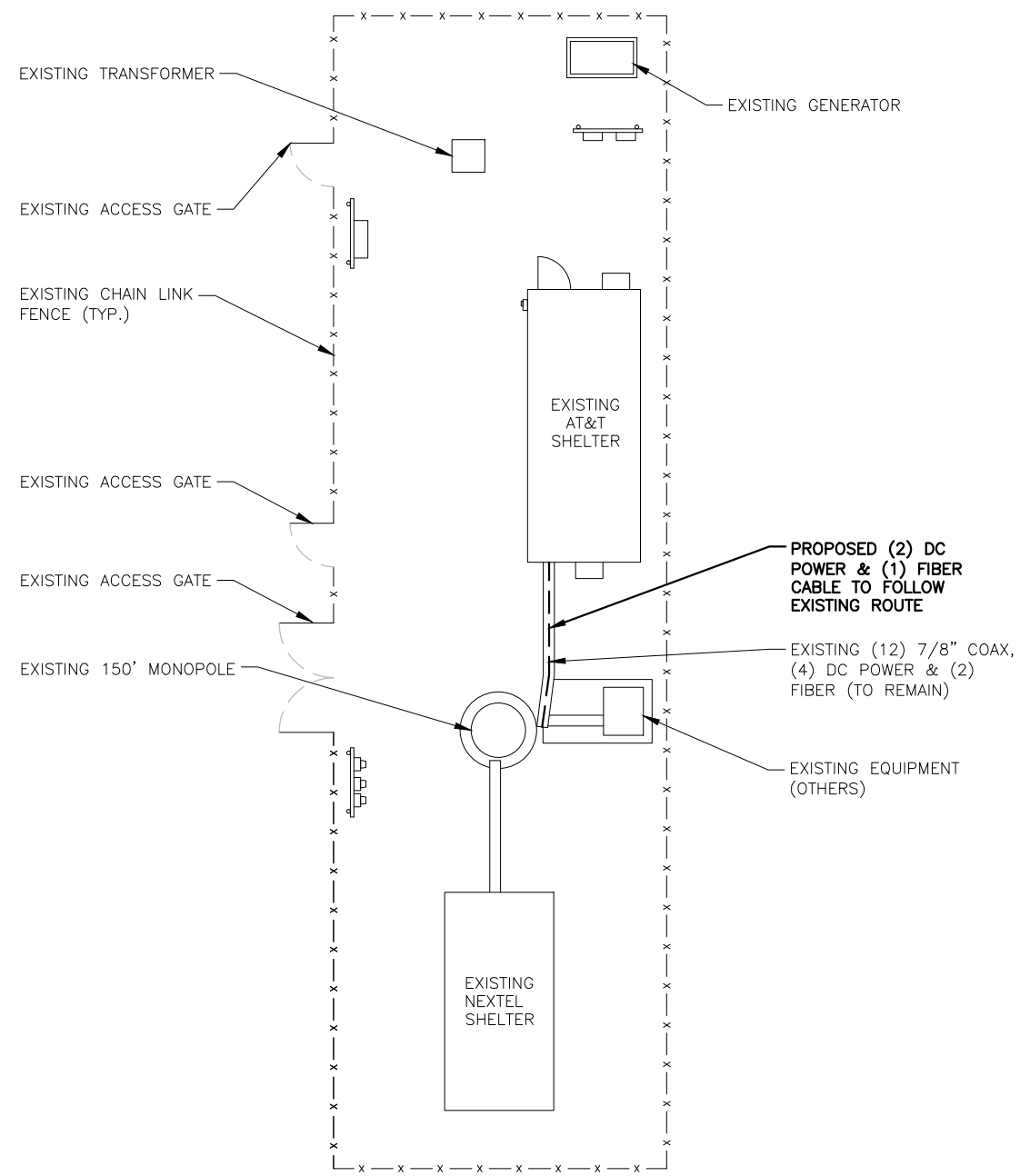
SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: LL

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

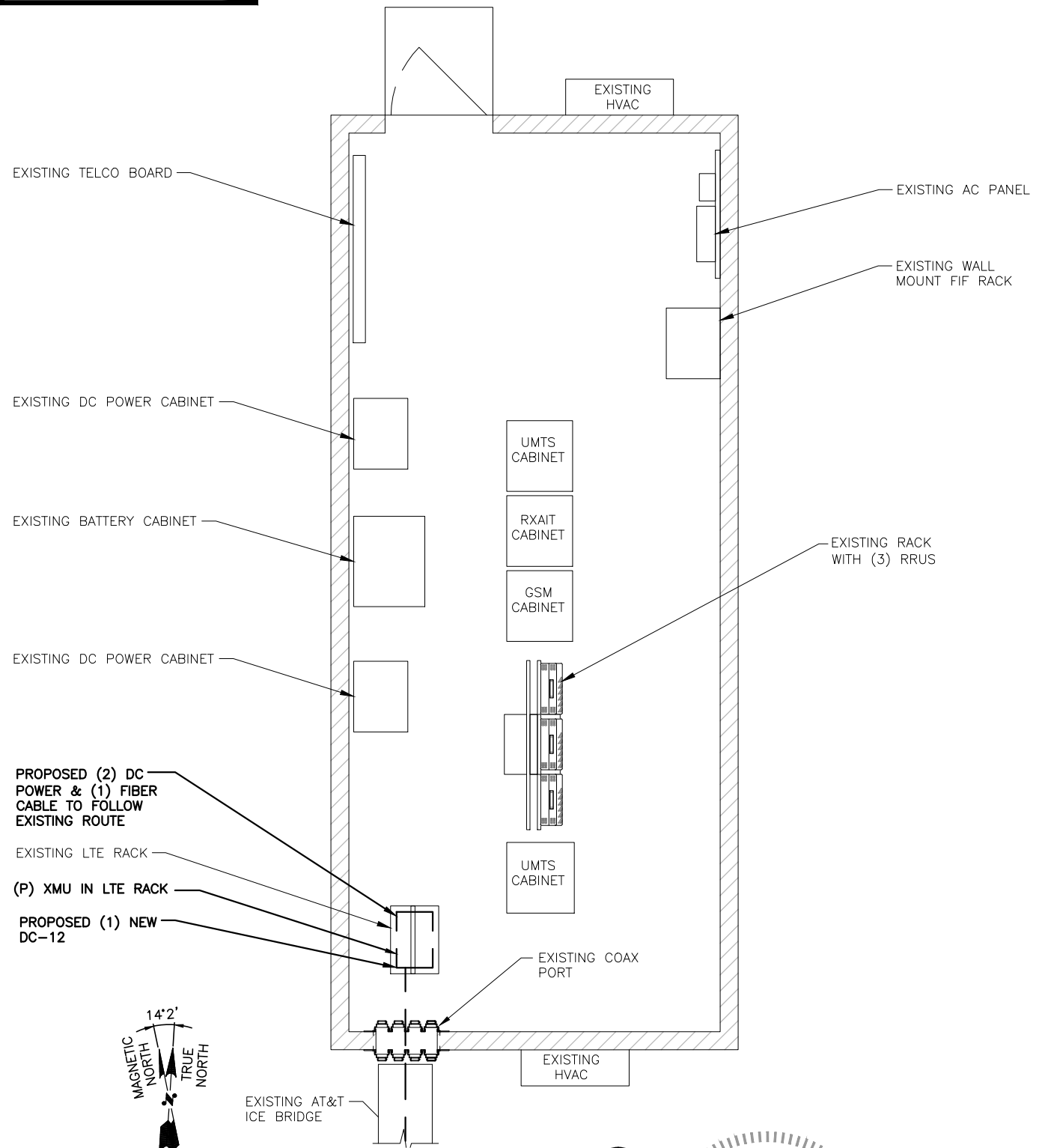
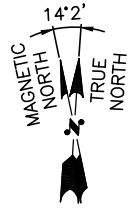
SITE NUMBER	DRAWING NUMBER	REV
CT2111	GN-1	B

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

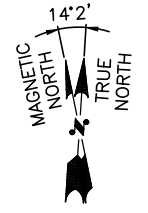
NOTE:
ALL ANTENNAS AND LINES TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY AMERICAN TOWER AND FINAL AT&T RF DATA SHEET.



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



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



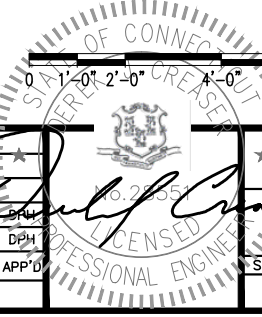
HG HUDSON
Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

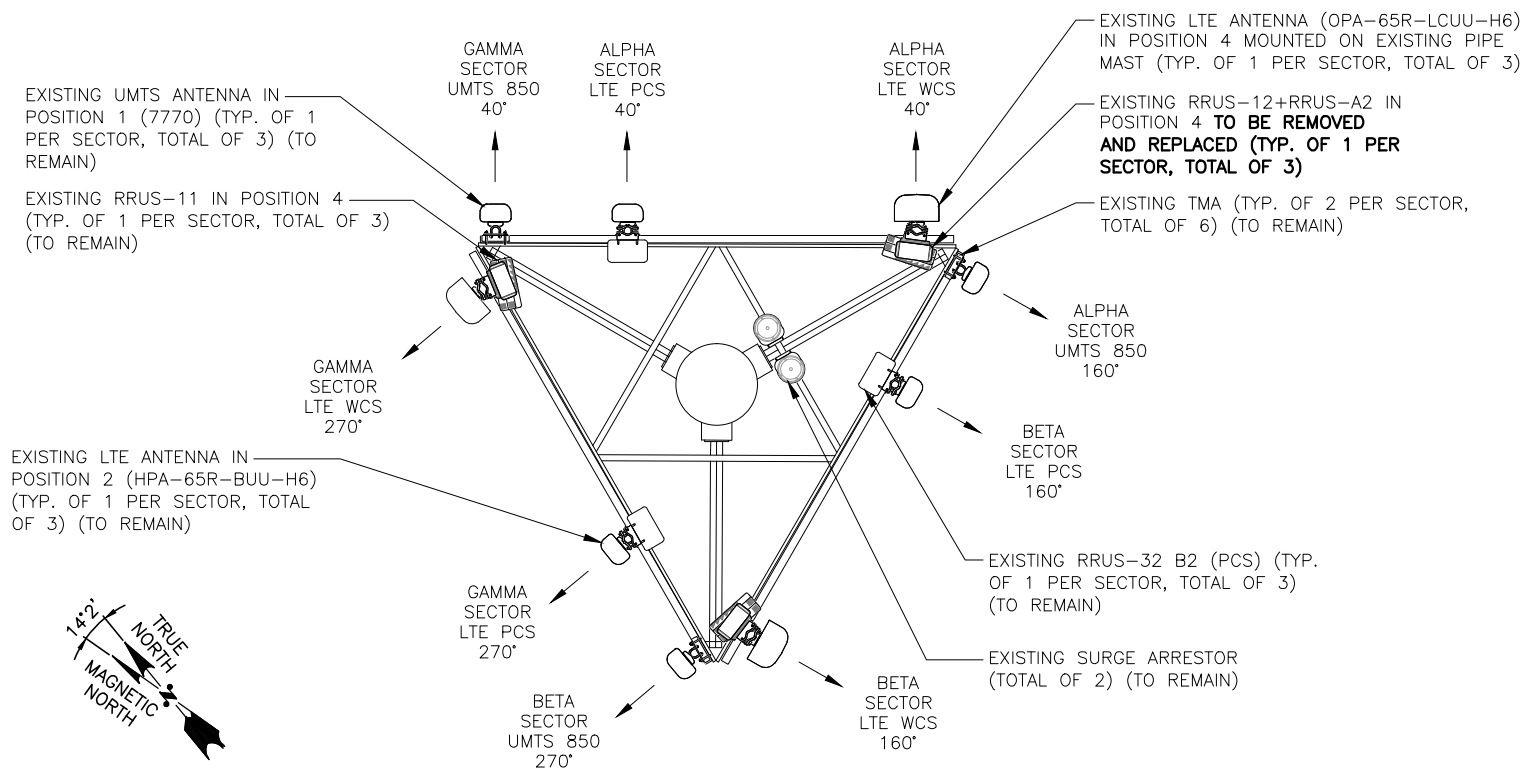
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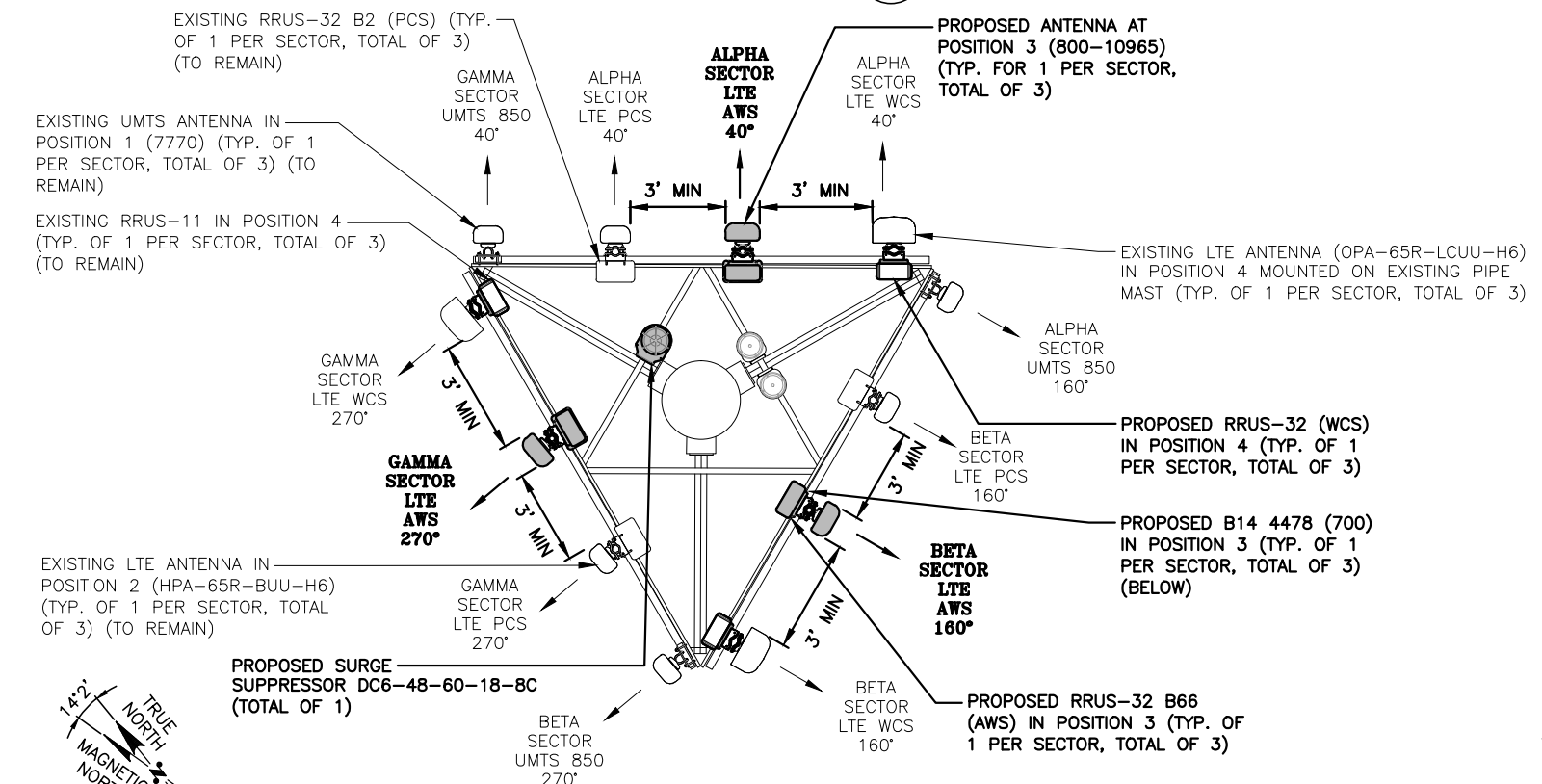
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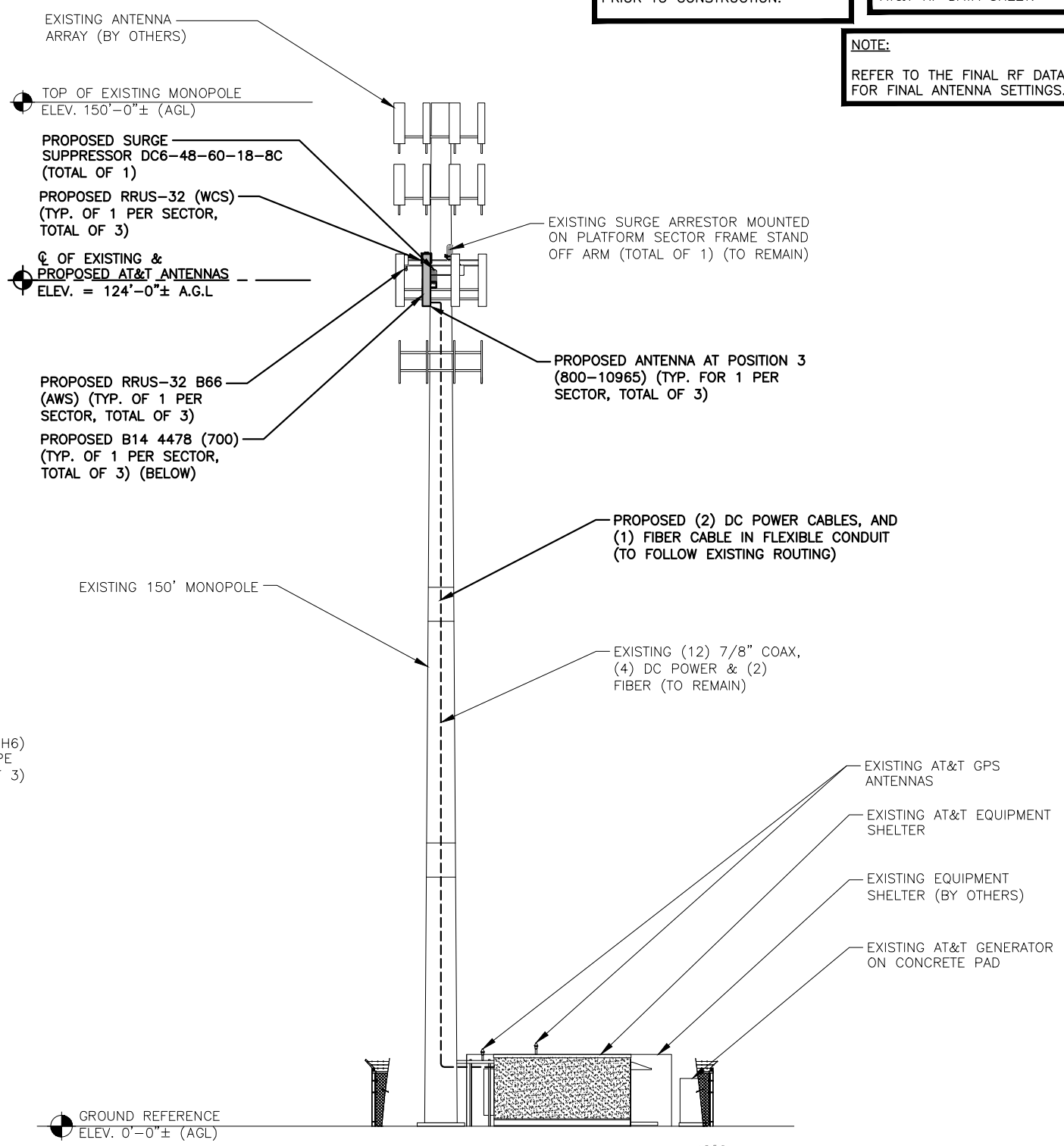
AT&T
COMPOUND & EQUIPMENT PLAN
LTE 4C, 5C RETROFIT 2018 UPGRADE
SITE NUMBER: CT2111
DRAWING NUMBER: A-1
REV: B



EXISTING ANTENNA LAYOUT (1)
SCALE: N.T.S. A-2



PROPOSED ANTENNA PLAN (2)
SCALE: N.T.S. A-2



WEST ELEVATION (3)
22x34 SCALE: 3/32"=1'-0"
11x17 SCALE: 3/64"=1'-0" A-2

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

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.

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

SAI
12 INDUSTRIAL WAY SALEM, NH 03079

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

STATE OF CONNECTICUT
DEREK J. CREASEY
LICENSED PROFESSIONAL ENGINEER

AT&T
ANTENNA LAYOUTS & ELEVATION
LTE 4C, 5C RETROFIT 2018 UPGRADE
SITE NUMBER: CT2111
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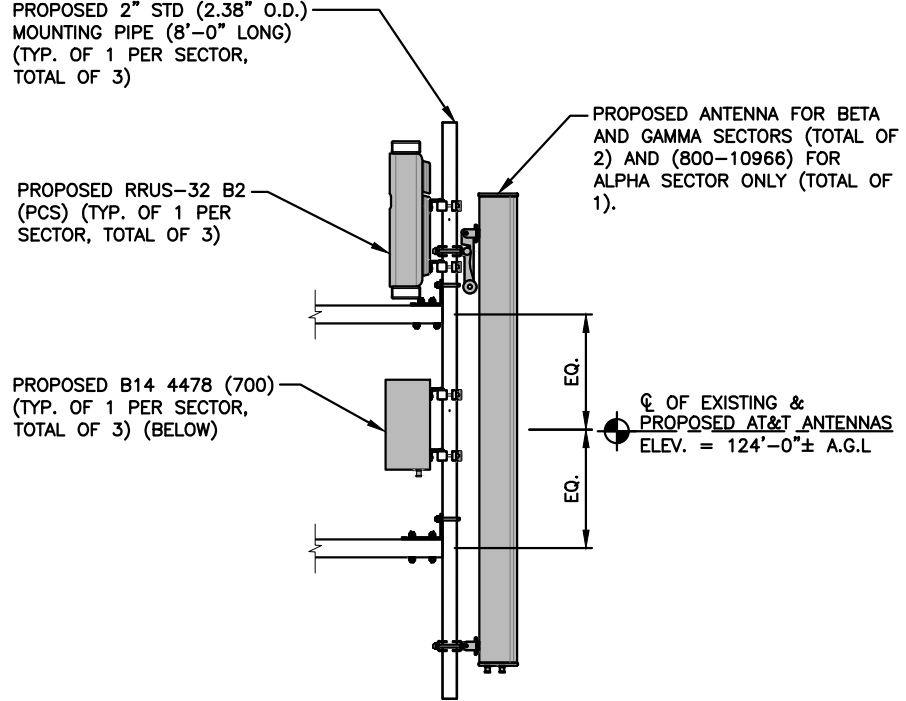
***COAX JUMPER NOTE:**
COAX JUMPERS (3) PER SECTOR, FROM EACH RRU (TOTAL OF 9).

****FIBER JUMPER NOTE:**
FIBER JUMPERS (4) PER SECTOR, FROM THE SQUID TO EACH RRU (TOTAL OF 12).

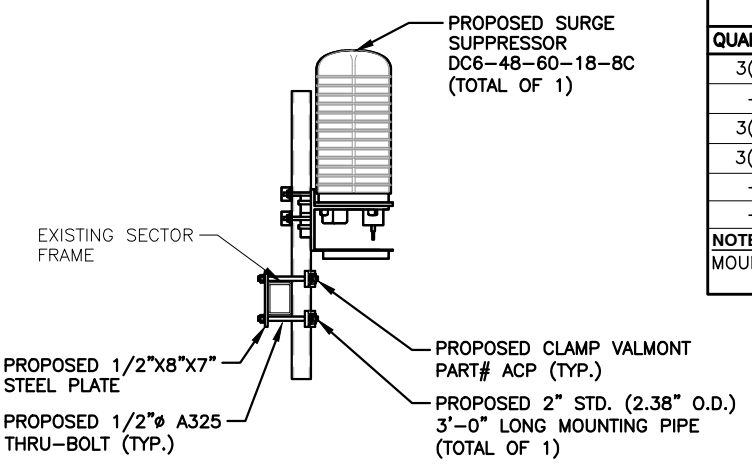
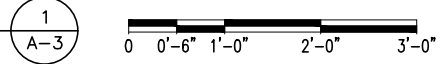
FINAL ANTENNA SCHEDULE														
SECTOR	BAND	ANTENNA	SIZE (INCHES) (L X W X D)	RAD CENTER	AZIMUTH	TMA'S	RRU'S	SIZE (INCHES) (L X W X D)	COAX JUMPERS	FIBER JUMPERS	COAX			
ALPHA	UMTS 850	EXISTING	7770	55X11X5	124'-0"±	160'	EXISTING	(2) 21401	-	-	-	-	(2) 7/8"	
	LTE PCS	EXISTING	HPA-65R-BUU-H6	72X14.8X9	124'-0"±	40'	-	-	EXISTING	RRUS-32 (WCS)	-	-	(2) 7/8"	
	LTE B-14/AWS	PROPOSED	80010965	78.7X20X6.9	124'-0"±	40'	-	-	PROPOSED	700-4478 (700) RRUS-32 B66 (AWS)	16.4X15.2X3.4 27.2X12.1X7.0	1* 1*	1** 2**	-
	LTE 700 BC/WCS	EXISTING	OPA-65R-LCUU-H6	72X14.8X7.4	124'-0"±	40'	-	-	EXISTING	RRUS-11 (700) RRUS-32 (WCS)	- 27.2X12.1X7.0	- 1*	- 1**	-
BETA	UMTS 850	EXISTING	7770	55X11X5	124'-0"±	270'	EXISTING	(2) 21401	-	-	-	-	(2) 7/8"	
	LTE PCS	EXISTING	HPA-65R-BUU-H6	72X14.8X9	124'-0"±	160'	-	-	EXISTING	RRUS-32 (PCS)	-	-	(2) 7/8"	
	LTE B-14/AWS	PROPOSED	80010965	78.7X20X6.9	124'-0"±	160'	-	-	PROPOSED	700-4478 (700) RRUS-32 B66 (AWS)	16.4X15.2X3.4 27.2X12.1X7.0	1* 1*	1** 2**	-
	LTE 700 BC/WCS	EXISTING	OPA-65R-LCUU-H6	72X14.8X7.4	124'-0"±	160'	-	-	EXISTING	RRUS-11 (700) RRUS-32 (WCS)	- 27.2X12.1X7.0	- 1*	- 1**	-
GAMMA	UMTS 850	EXISTING	7770	55X11X5	124'-0"±	270'	EXISTING	(2) 21401	-	-	-	-	(2) 7/8"	
	LTE PCS	EXISTING	HPA-65R-BUU-H6	72X14.8X9	124'-0"±	270'	-	-	EXISTING	RRUS-32 (WCS)	-	-	(2) 7/8"	
	LTE B-14/AWS	PROPOSED	80010965	78.7X20X6.9	124'-0"±	270'	-	-	PROPOSED	700-4478 (700) RRUS-32 B66 (AWS)	16.4X15.2X3.4 27.2X12.1X7.0	1* 1*	1** 2**	-
	LTE 700 BC/WCS	EXISTING	OPA-65R-LCUU-H6	72X14.8X7.4	124'-0"±	40'	-	-	EXISTING	RRUS-11 (700) RRUS-32 (WCS)	- 27.2X12.1X7.0	- 1*	- 1**	-

FINAL ANTENNA CONFIGURATION
SCALE: N.T.S

5
A-3



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

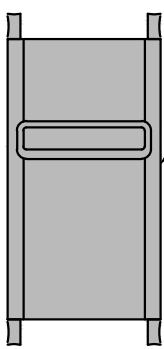


PROPOSED SURGE ARRESTOR MOUNTING DETAIL
SCALE: N.T.S

2
A-3

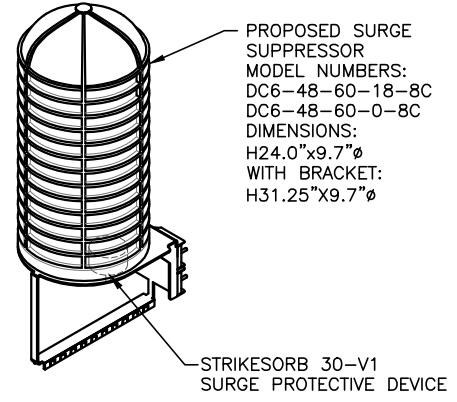
RRU CHART				
QUANTITY	MODEL	L	W	D
3(E)	RRUS-11	19.7"	17.0"	7.2"
-	RRUS-12	20.4"	18.5"	7.5"
3(E)	RRUS-32	27.2"	12.1"	7.0"
3(P)	B14 4478	15.0"	13.2"	7.4"
-	RRUS-E2	20.4"	18.5"	7.5"
-	LTE-A2	16.4"	15.2"	3.4"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS



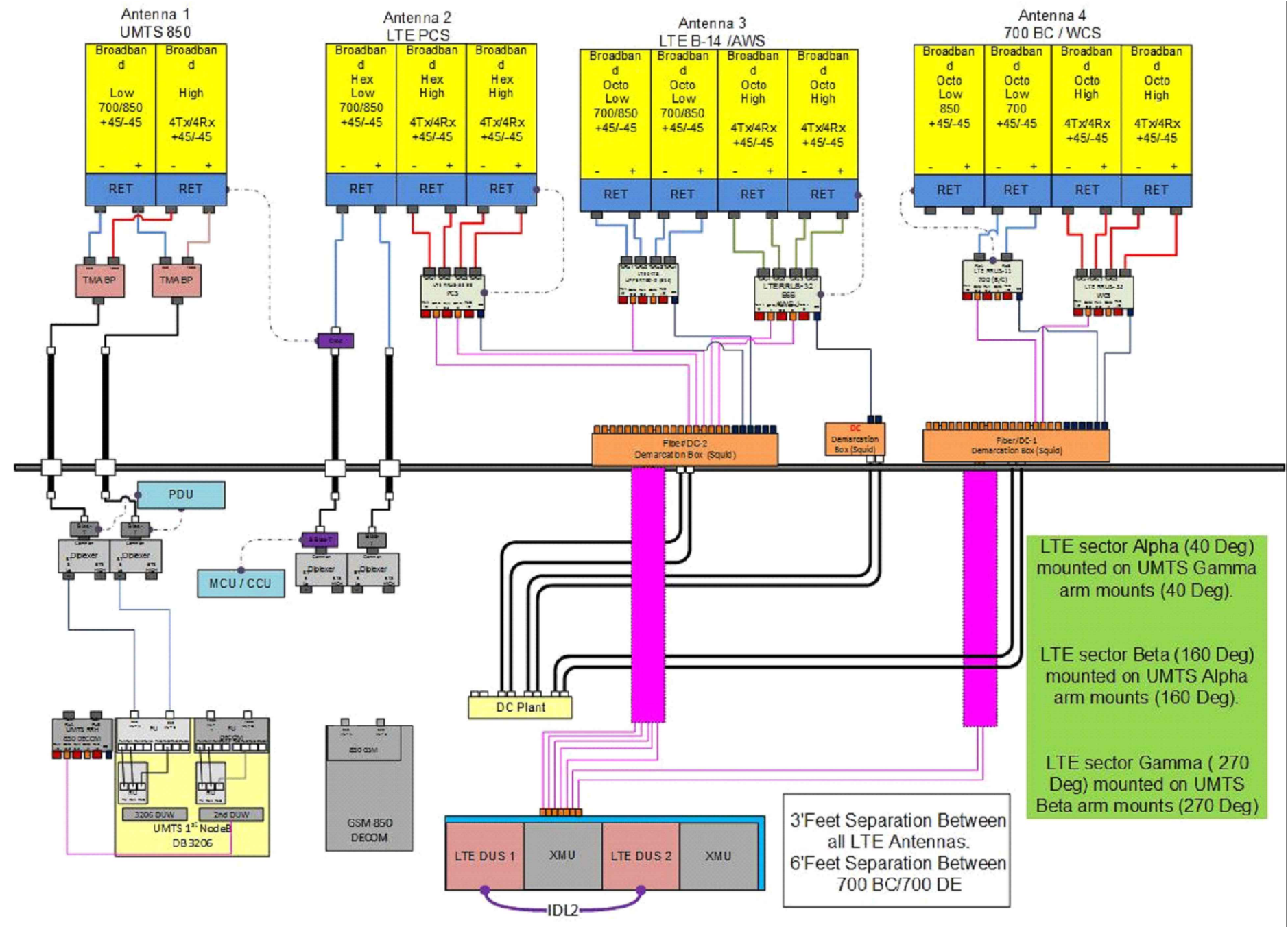
RRUS DETAIL
SCALE: N.T.S

3
A-3



DC SURGE SUPPRESSOR DETAIL
SCALE: N.T.S

4
A-3



LTE sector Alpha (40 Deg) mounted on UMTS Gamma arm mounts (40 Deg).

LTE sector Beta (160 Deg) mounted on UMTS Alpha arm mounts (160 Deg).

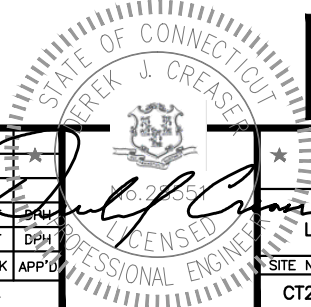
LTE sector Gamma (270 Deg) mounted on UMTS Beta arm mounts (270 Deg).

3' Feet Separation Between all LTE Antennas.
6' Feet Separation Between 700 BC/700 DE

RF PLUMBING DIAGRAM
SCALE: N.T.S

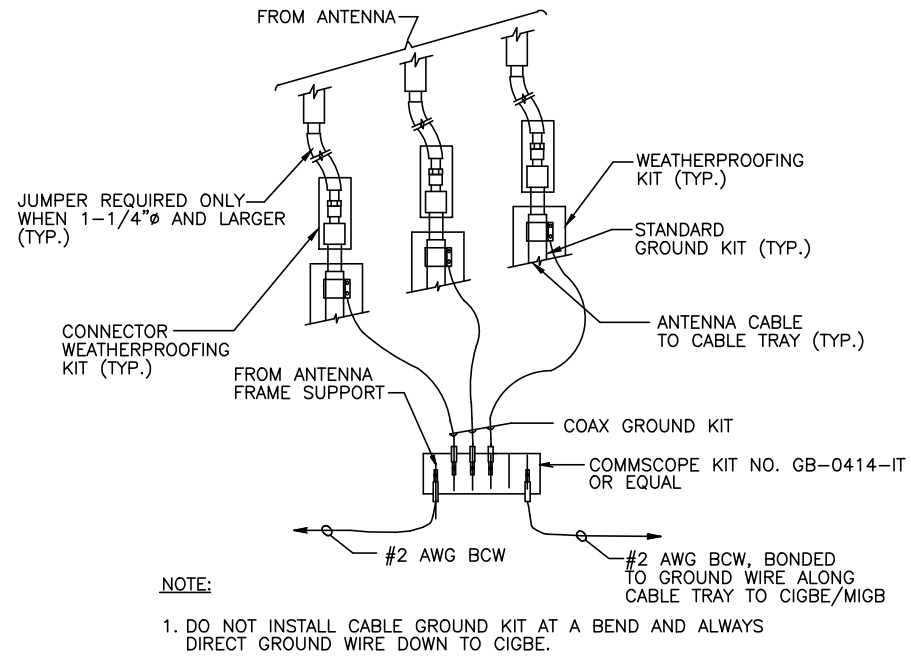
NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

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

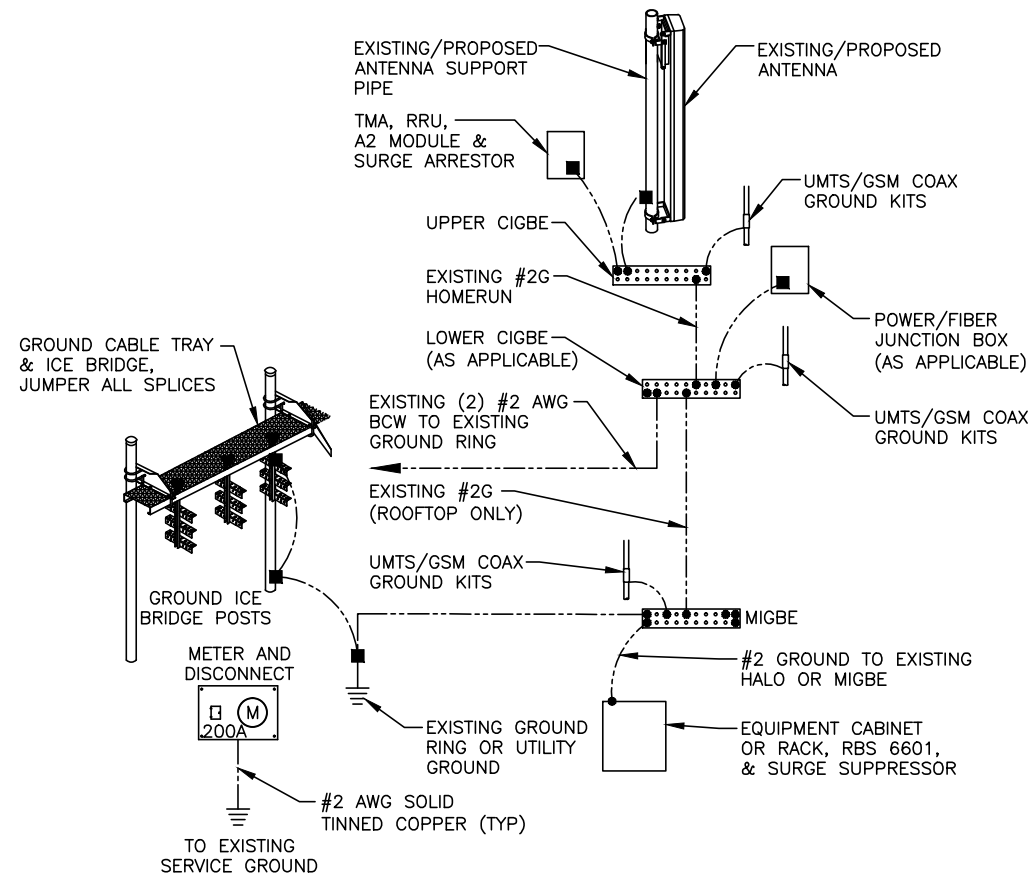


NO.	DATE	REVISIONS	BY	CHK	APP'D
B	03/08/18	ISSUED FOR PERMITTING	MR	AT	DPH
A	02/16/18	ISSUED FOR REVIEW	TB	AT	DPH
SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: LL		

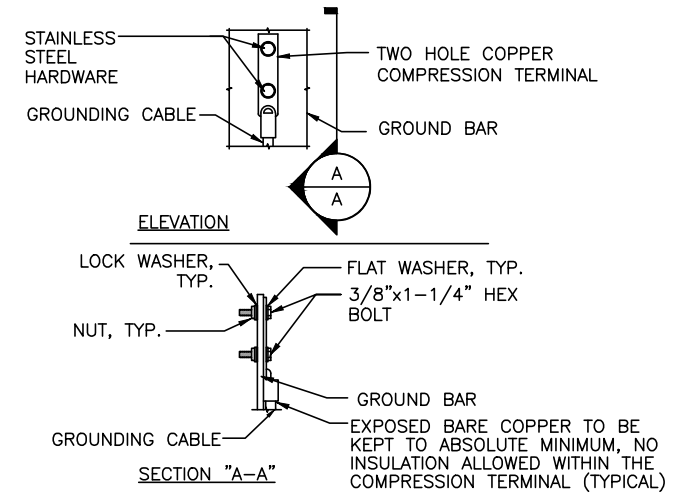
AT&T		
RF PLUMBING DIAGRAM LTE 4C, 5C RETROFIT 2018 UPGRADE		
SITE NUMBER	DRAWING NUMBER	REV
CT2111	RF-1	B



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

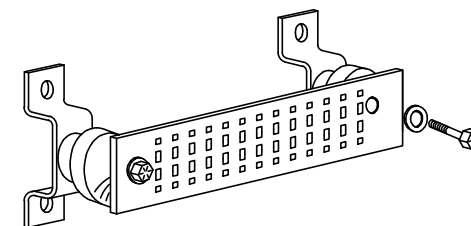
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

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 : 150 ft Monopole
ATC Site Name : Parsonage Hill Aka Wallin, CT
ATC Site Number : 302538
Engineering Number : OAA722111_C3_02
Proposed Carrier : AT&T Mobility
Carrier Site Name : Wallingford Nextel
Carrier Site Number : CT2221
Site Location : 922 Northrop Road
Wallingford, CT 06492-1910
41.489300,-72.768300
County : New Haven
Date : January 31, 2018
Max Usage : 81%
Result : Pass

Prepared By:
Nicole Davis
Engineer Intern

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
Proposed Equipment	2
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 150 ft monopole to reflect the change in loading by AT&T Mobility.

Supporting Documents

Tower Drawings	Valmont Drawing #DC1776A, dated June 29, 1994
Foundation Drawing	SAC Engineering, Valmont Order #11715-94, dated July 21, 1994
Geotechnical Report	AET Project #91294, dated July 8, 1994

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:	97 mph (3-Second Gust Vasd)/ 125 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:	C
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	$S_s = 0.18, S_1 = 0.06$
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					
150.0	150.0	2	DragonWave Horizon Compact	Round T-Arms	(6) 5/16" Coax (4) 1 1/4" Hybriflex (2) 2" Conduit (2) 1/2" Coax	Clearwire
		6	Alcatel-Lucent RRH2x50-08			
		3	Alcatel-Lucent 1900MHz 4x45 RRH			
		3	Alcatel-Lucent TD-RRH8x20-25 w/ S.S.			
		1	DragonWave A-ANT-11G-2-C			
		1	DragonWave A-ANT-18G-2-C			
		3	KMW ETCR-654L12H6			
140.0	140.0	3	Ericsson KRY 112 144/1	Round T-Arms	(12) 1 5/8" Coax (1) 1 1/4" Hybriflex	T-Mobile
		3	Ericsson RRUS 11 B12			
		3	Ericsson AIR 21, 1.3 M, B2A B4P			
		3	Ericsson AIR 21 B4A/B12P-B5P 6FT			
124.0	124.0	6	Powerwave LGP21401	Flat Platform w/ Handrails	(12) 1 5/8" Coax (2) 0.78" 8 AWG 6 (1) 0.39" Fiber Trunk (1) 3" Conduit	AT&T Mobility
		1	Raycap DC6-48-60-18-8F ("Squid")			
		3	Ericsson RRUS-11 (50 lbs.)			
		3	Powerwave 7770.00			
		6	CCI OPA-65R-LCUU-H6			
111.0	111.0	-	-	Empty Platform w/ Handrails	-	-
105.0	105.0	3	RFS APXV18-206517S-C	Flush	(6) 1 5/8" Coax	Metro PCS

Equipment to be Removed

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
126.0	126.0	3	Ericsson RRUS 12 w/ RRUS A2	-	-	AT&T Mobility

Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
124.0	124.0	1	Raycap DC6-48-60-18-8F ("Squid")	Platform w/ Handrails	(4) 0.78" 8 AWG 6 (2) 0.39" Fiber Trunk (1) 3" Conduit	AT&T Mobility
		3	Ericsson RRUS 4478 B14 (15")			
		3	Ericsson RRUS 32 B66A			
		3	Ericsson RRUS 32 B2			
		3	Ericsson RRUS 32 B30			
		1	Raycap DC6-48-60-18-8C			
		3	Kathrein 80010965			

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	77%	Pass
Shaft	81%	Pass
Base Plate	80%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	3,567.2	4,815.7	3,702.7	77%
Shear (Kips)	30.5	41.1	36.5	89%

* The design reactions are factored by 1.35 per ANSI/TIA-222-G, Sec. 15.5.1

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) (°)
124.0	Raycap DC6-48-60-18-8F ("Squid")	AT&T Mobility	1.518	1.305
	Ericsson RRUS 4478 B14 (15")			
	Ericsson RRUS 32 B66A			
	Ericsson RRUS 32 B30			
	Ericsson RRUS 32 B2			
	Raycap DC6-48-60-18-8C			
	Kathrein Scala 80010965			

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



Standard Conditions

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

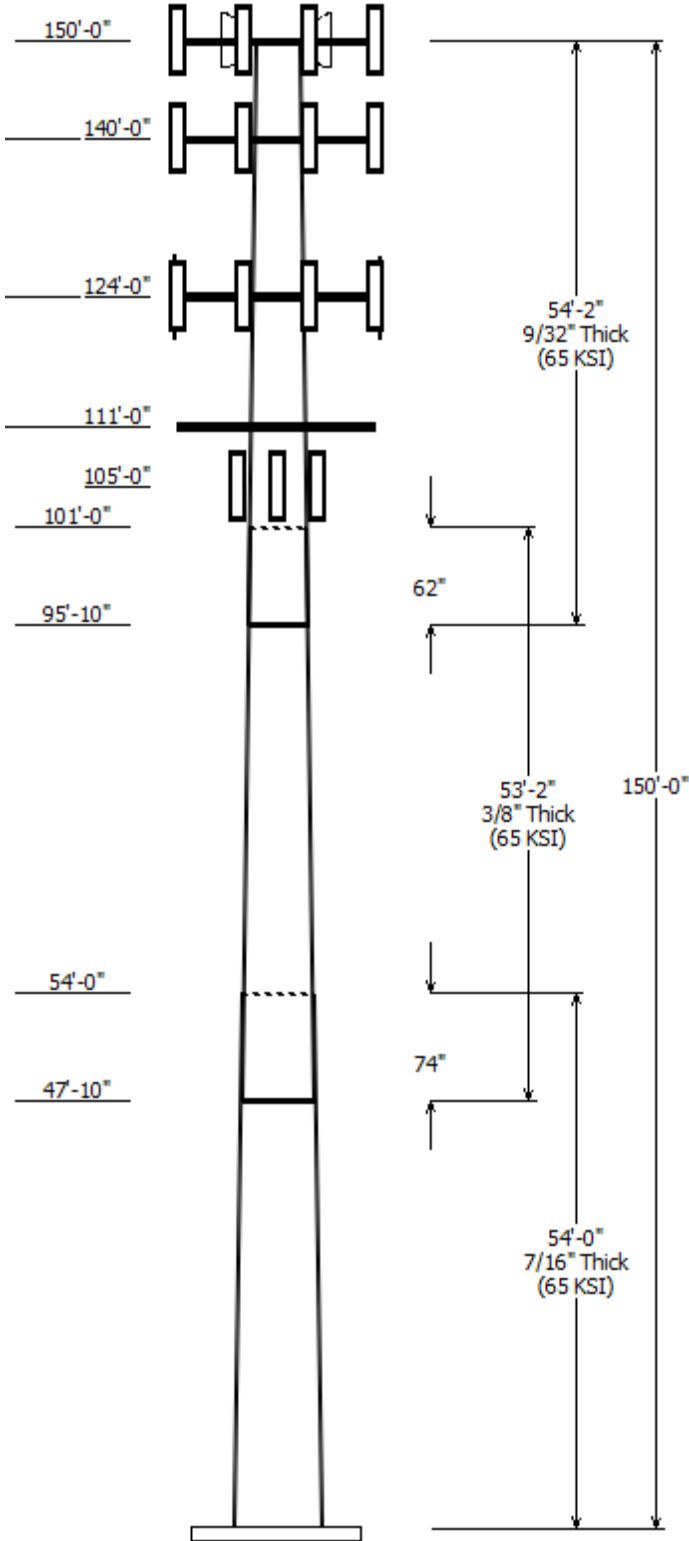
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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

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

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

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

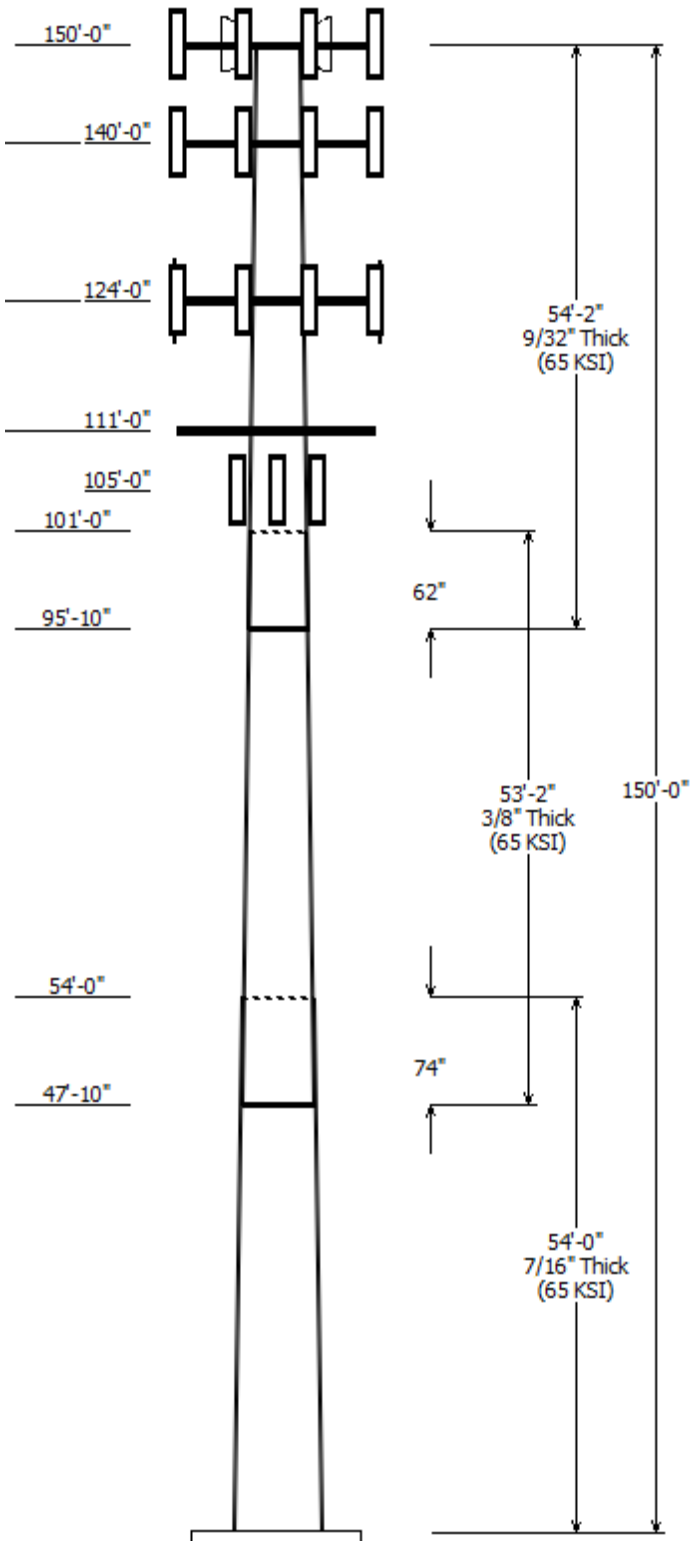


Job Information	
Pole : 302538	Code: ANSI/TIA-222-G
Location : Parsonage Hill Aka Wallin, CT	
Description : 150 ft Valmont Monopole	
Client : AT&T MOBILITY	Struct Class : II
Shape : 12 Sides	Exposure : C
Height : 150.00 (ft)	Topo : 1
Base Elev (ft): 0.00	
Taper: 0.18200@in/ft)	

Sections Properties							
Shaft Section	Length (ft)	Diameter (in)		Thick (in)	Joint Type	Overlap Length (in)	Steel Grade
		Top	Bottom				
1	54.000	39.77	49.60	0.438		0.000	12 Sides 65
2	53.167	31.96	41.64	0.375	Slip Joint	74.000	12 Sides 65
3	54.167	23.61	33.47	0.281	Slip Joint	62.000	12 Sides 65

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
150.000	150.000	3	KMW ETCR-654L12H6
150.000	150.000	3	Alcatel-Lucent TD-RRH8x20-25
150.000	150.000	3	Alcatel-Lucent 1900 MHz 4x45
150.000	150.000	6	Alcatel-Lucent RRH2x50-08
150.000	150.000	1	DragonWave A-ANT-18G-2-C
150.000	150.000	1	DragonWave A-ANT-11G-2-C
150.000	150.000	2	DragonWave Horizon Compact
150.000	150.000	3	Round T-Arm
140.000	140.000	3	Ericsson AIR 21 B4A/B12P-B5P
140.000	140.000	3	Round T-Arm
140.000	140.000	3	Ericsson AIR 21, 1.3 M, B2A B4
140.000	140.000	3	Ericsson RRUS 11 B12
140.000	140.000	3	Ericsson KRY 112 144/1
124.000	124.000	1	Raycap DC6-48-60-18-8F
124.000	124.000	3	Kathrein Scala 80010965
124.000	124.000	3	Ericsson RRUS 32 B2
124.000	124.000	3	Ericsson RRUS 32 B30
124.000	124.000	3	Ericsson RRUS 32 B66A
124.000	124.000	3	Ericsson RRUS 4478 B14 (15")
124.000	124.000	1	Raycap DC6-48-60-18-8C
124.000	124.000	1	Flat Platform w/ Handrails
124.000	124.000	6	CCI OPA-65R-LCUU-H6
124.000	124.000	3	Powerwave 7770.00
124.000	124.000	3	Ericsson RRUS-11 (50 lbs.)
124.000	124.000	1	Raycap DC6-48-60-18-8F
124.000	124.000	6	Powerwave Allgon LGP21401
111.000	111.000	1	Flat Platform w/ Handrails
105.000	105.000	3	RFS APXV18-206517S-C

Linear Appurtenance			
Elev (ft)	From To		Exposed To Wind
	From	To	
0.000	105.0	1 5/8" Coax	No
0.000	124.0	0.39" Fiber Trunk	No
0.000	124.0	0.39" Fiber Trunk	No
0.000	124.0	0.78" 8 AWG 6	No
0.000	124.0	0.78" 8 AWG 6	No
0.000	124.0	1 5/8" Coax	No
0.000	124.0	3" Conduit	No
0.000	124.0	3" Conduit	No
0.000	140.0	1 1/4" Hybriflex	No



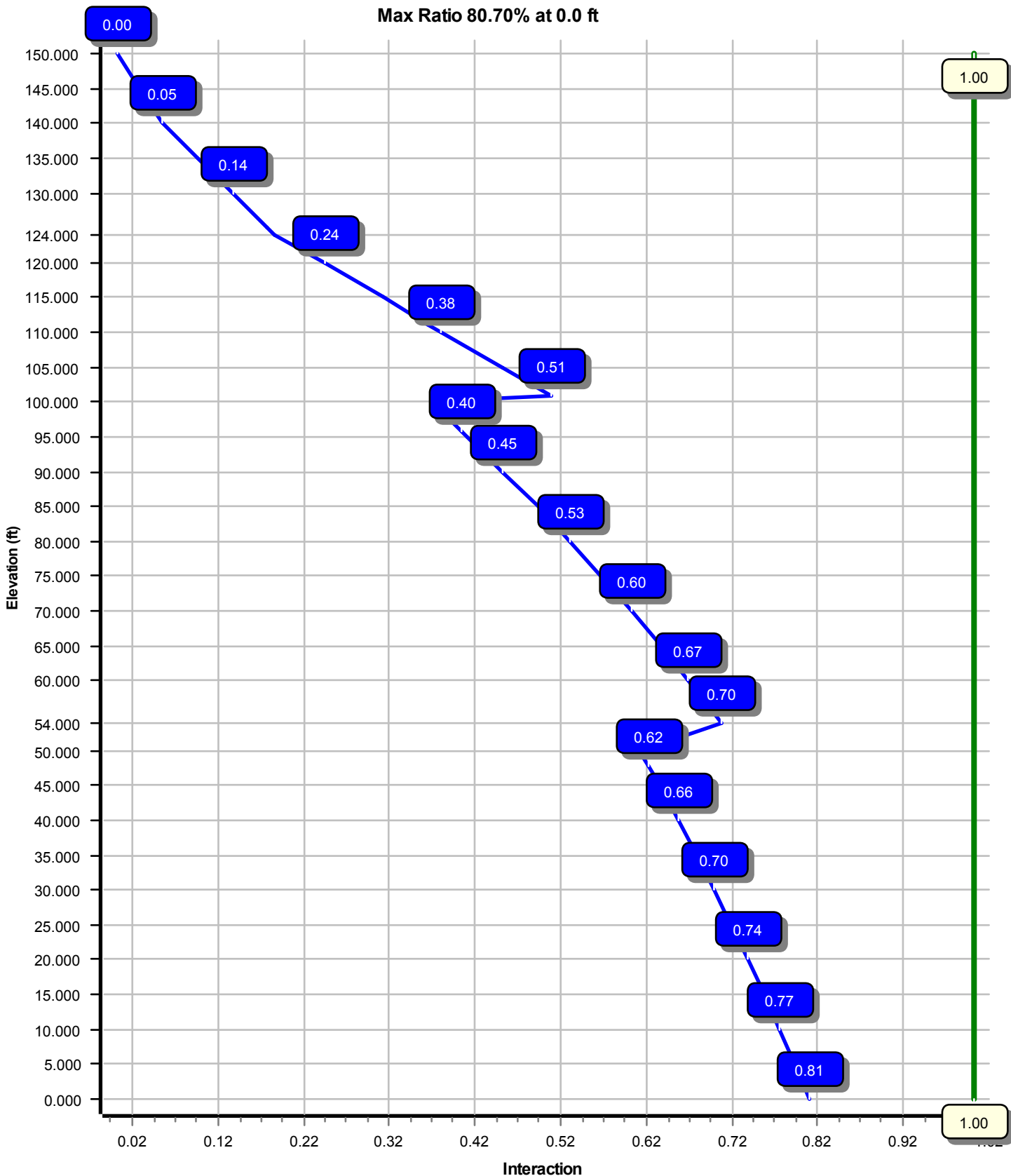
0.000	140.0	1 5/8" Coax	No
0.000	150.0	1 1/4" Hybriflex	Yes
0.000	150.0	1/2" Coax	Yes
0.000	150.0	2" Conduit	Yes
0.000	150.0	5/16" Coax	No

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

Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	3702.69	36.46	48.77
0.9D + 1.6W	3659.64	36.43	36.56
1.2D + 1.0Di + 1.0Wi	860.84	8.07	75.99
(1.2 + 0.2Sds) * DL + E ELFM	145.75	1.22	48.63
(1.2 + 0.2Sds) * DL + E EMAM	172.09	1.53	48.63
(0.9 - 0.2Sds) * DL + E ELFM	143.66	1.22	33.81
(0.9 - 0.2Sds) * DL + E EMAM	169.46	1.53	33.81
1.0D + 1.0W	879.78	8.71	40.70

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	150.00	25.541	1.364
1.0D + 1.0W	150.00	25.541	1.364

Load Case : 1.2D + 1.6W
Max Ratio 80.70% at 0.0 ft



Site Number: 302538

Code: ANSI/TIA-222-G

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Site Name: Parsonage Hill Aka Wallin, CT

Engineering Number: OAA722111_C3_02

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Customer: AT&T MOBILITY

Analysis Parameters

Location :	NEW HAVEN County, CT	Height (ft) :	150
Code :	ANSI/TIA-222-G	Base Diameter (in) :	49.60
Shape :	12 Sides	Top Diameter (in) :	23.61
Pole Type :	Taper	Taper (in/ft) :	0.182
Pole Manufacturer :	Valmont	Rotation (deg) :	0.00

Ice & Wind Parameters

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

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	2.33		
T _L (sec):	6	p:	1
S _s :	0.182	S ₁ :	0.063
F _a :	1.600	F _v :	2.400
S _{ds} :	0.194	S _{d1} :	0.101
		C _s :	0.030
		C _s Max:	0.030
		C _s Min:	0.030

Load Cases

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

Site Number: 302538

Code: ANSI/TIA-222-G

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Site Name: Parsonage Hill Aka Wallin, CT

Engineering Number: OAA722111_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)
1-12	54.000	0.4375	65		0.00	11,454	49.60	0.00	69.26	21365.7	27.70	113.37	39.77	54.00	55.41	10942.9	21.68	90.91	0.182000
2-12	53.167	0.3750	65	Slip	74.00	7,958	41.64	47.83	49.83	10833.0	27.08	111.05	31.96	101.00	38.15	4860.0	20.16	85.25	0.182000
3-12	54.167	0.2813	65	Slip	62.00	4,717	33.47	95.83	30.06	4226.0	29.21	119.01	23.61	150.00	21.13	1468.0	19.82	83.95	0.182000
Shaft Weight						24,130													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Distance From Face (ft)	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor
150.00	Alcatel-Lucent 1900 MHz 4x45 R	3	0.000	0.000	60.00	2.320	0.67
150.00	Alcatel-Lucent RRH2x50-08	6	0.000	0.000	52.90	1.700	0.50
150.00	Alcatel-Lucent TD-RRH8x20-25 w	3	0.000	0.000	70.00	4.050	0.67
150.00	DragonWave A-ANT-11G-2-C	1	0.000	0.000	27.00	4.690	1.00
150.00	DragonWave A-ANT-18G-2-C	1	0.000	0.000	27.10	4.690	1.00
150.00	DragonWave Horizon Compact	2	0.000	0.000	10.60	0.430	0.50
150.00	KMW ETCR-654L12H6	3	0.000	0.000	84.90	15.710	0.61
150.00	Round T-Arm	3	0.000	0.000	250.00	9.700	0.67
140.00	Ericsson AIR 21 B4A/B12P-B5P 6	3	0.000	0.000	110.00	10.610	0.69
140.00	Ericsson AIR 21, 1.3 M, B2A B4	3	0.000	0.000	83.00	6.050	0.71
140.00	Ericsson KRY 112 144/1	3	0.000	0.000	11.00	0.410	0.50
140.00	Ericsson RRUS 11 B12	3	0.000	0.000	50.70	2.790	0.67
140.00	Round T-Arm	3	0.000	0.000	250.00	9.700	0.67
124.00	CCI OPA-65R-LCUU-H6	6	0.000	0.000	73.00	9.660	0.66
124.00	Ericsson RRUS 32 B2	3	0.000	0.000	53.00	2.740	0.67
124.00	Ericsson RRUS 32 B30	3	0.000	0.000	60.00	2.740	0.67
124.00	Ericsson RRUS 32 B66A	3	0.000	0.000	50.70	2.720	0.67
124.00	Ericsson RRUS 4478 B14 (15")	3	0.000	0.000	59.40	1.650	0.50
124.00	Ericsson RRUS-11 (50 lbs.)	3	0.000	0.000	50.00	2.570	0.67
124.00	Flat Platform w/ Handrails	1	0.000	0.000	2000.00	42.400	1.00
124.00	Kathrein Scala 80010965	3	0.000	0.000	97.60	13.810	0.62
124.00	Powerwave 7770.00	3	0.000	0.000	35.00	5.510	0.65
124.00	Powerwave Allgon LGP21401	6	0.000	0.000	14.10	1.100	0.50
124.00	Raycap DC6-48-60-18-8C	1	0.000	0.000	16.00	3.050	0.67
124.00	Raycap DC6-48-60-18-8F ("Squid	1	0.000	0.000	31.80	1.280	1.00
124.00	Raycap DC6-48-60-18-8F ("Squid	1	0.000	0.000	31.80	1.280	1.00
111.00	Flat Platform w/ Handrails	1	0.000	0.000	2000.00	42.400	1.00
105.00	RFS APXV18-206517S-C	3	0.000	0.000	26.40	5.170	0.68
Totals	Num Loadings:28	78			9200.00		

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Projected Flat	Projected Width (in)	Exposed To Wind	Carrier
0.00	150.00	4	1 1/4" Hybriflex Cable	1.54	1.00	N	0.00	Y	Clearwire
0.00	150.00	2	1/2" Coax	0.63	0.15	N	0.00	Y	Clearwire
0.00	150.00	2	2" Conduit	2.38	3.65	N	2.38	Y	Clearwire
0.00	150.00	6	5/16" Coax	0.31	0.05	N	0.00	N	Clearwire
0.00	140.00	1	1 1/4" Hybriflex Cable	1.54	1.00	N	0.00	N	T-Mobile
0.00	140.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	T-Mobile
0.00	124.00	1	0.39" Fiber Trunk	0.39	0.06	N	0.00	N	AT&T Mobility
0.00	124.00	2	0.39" Fiber Trunk	0.39	0.06	N	0.00	N	AT&T Mobility

Site Number: 302538

Code: ANSI/TIA-222-G

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Site Name: Parsonage Hill Aka Wallin, CT

Engineering Number: OAA722111_C3_02

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Customer: AT&T MOBILITY

0.00	124.00	2	0.78"	8 AWG 6	0.78	0.59	N	0.00	N	AT&T Mobility
0.00	124.00	4	0.78"	8 AWG 6	0.78	0.59	N	0.00	N	AT&T Mobility
0.00	124.00	12	1 5/8"	Coax	1.98	0.82	N	0.00	N	AT&T Mobility
0.00	124.00	1	3"	Conduit	3.50	7.58	N	0.00	N	AT&T Mobility
0.00	124.00	1	3"	Conduit	3.50	7.58	N	0.00	N	AT&T Mobility
0.00	105.00	6	1 5/8"	Coax	1.98	0.82	N	0.00	N	Metro PCS

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		0.4375	49.600	69.257	21,365.7	27.70	113.37	74.5	832.2	0.0	0.0
5.00		0.4375	48.690	67.975	20,201.1	27.14	111.29	75.1	801.5	0.0	1,167.4
10.00		0.4375	47.780	66.693	19,079.5	26.58	109.21	75.7	771.4	0.0	1,145.6
15.00		0.4375	46.870	65.412	18,000.3	26.03	107.13	76.3	741.9	0.0	1,123.8
20.00		0.4375	45.960	64.130	16,962.6	25.47	105.05	76.9	713.0	0.0	1,102.0
25.00		0.4375	45.050	62.848	15,965.5	24.91	102.97	77.5	684.6	0.0	1,080.2
30.00		0.4375	44.140	61.566	15,008.3	24.35	100.89	78.2	656.9	0.0	1,058.4
35.00		0.4375	43.230	60.284	14,090.2	23.80	98.81	78.8	629.7	0.0	1,036.6
40.00		0.4375	42.320	59.002	13,210.3	23.24	96.73	79.4	603.0	0.0	1,014.8
45.00		0.4375	41.410	57.720	12,367.8	22.68	94.65	80.0	577.0	0.0	992.9
47.83	Bot - Section 2	0.4375	40.894	56.993	11,906.6	22.37	93.47	80.3	562.5	0.0	553.0
50.00		0.4375	40.500	56.438	11,561.9	22.12	92.57	80.6	551.5	0.0	783.8
54.00	Top - Section 1	0.3750	40.522	48.477	9,973.0	26.27	108.06	76.1	475.5	0.0	1,427.0
55.00		0.3750	40.340	48.257	9,838.0	26.14	107.57	76.2	471.1	0.0	164.6
60.00		0.3750	39.430	47.159	9,181.1	25.49	105.15	76.9	449.8	0.0	811.7
65.00		0.3750	38.520	46.060	8,554.2	24.84	102.72	77.6	429.0	0.0	793.0
70.00		0.3750	37.610	44.961	7,956.5	24.19	100.29	78.3	408.7	0.0	774.3
75.00		0.3750	36.700	43.862	7,387.3	23.54	97.87	79.0	388.9	0.0	755.6
80.00		0.3750	35.790	42.763	6,845.9	22.89	95.44	79.7	369.5	0.0	736.9
85.00		0.3750	34.880	41.665	6,331.6	22.24	93.01	80.5	350.7	0.0	718.2
90.00		0.3750	33.970	40.566	5,843.7	21.59	90.59	81.2	332.3	0.0	699.5
95.00		0.3750	33.060	39.467	5,381.6	20.94	88.16	81.9	314.5	0.0	680.8
95.83	Bot - Section 3	0.3750	32.908	39.284	5,307.0	20.83	87.76	81.9	311.5	0.0	111.7
100.00		0.3750	32.150	38.368	4,944.5	20.29	85.73	81.9	297.1	0.0	971.8
101.00	Top - Section 2	0.2813	32.530	29.206	3,876.9	28.31	115.66	73.8	230.2	0.0	229.8
105.00		0.2813	31.802	28.546	3,620.2	27.62	113.07	74.6	219.9	0.0	393.0
110.00		0.2813	30.892	27.722	3,315.7	26.75	109.84	75.5	207.3	0.0	478.7
111.00		0.2813	30.710	27.557	3,256.9	26.58	109.19	75.7	204.9	0.0	94.1
115.00		0.2813	29.982	26.898	3,028.7	25.88	106.60	76.5	195.1	0.0	370.6
120.00		0.2813	29.072	26.074	2,758.7	25.02	103.37	77.4	183.3	0.0	450.6
124.00		0.2813	28.344	25.415	2,554.7	24.32	100.78	78.2	174.1	0.0	350.4
125.00		0.2813	28.162	25.250	2,505.3	24.15	100.13	78.4	171.9	0.0	86.2
130.00		0.2813	27.252	24.426	2,267.9	23.28	96.90	79.3	160.8	0.0	422.6
135.00		0.2813	26.342	23.602	2,046.0	22.42	93.66	80.3	150.0	0.0	408.6
140.00		0.2813	25.432	22.777	1,839.1	21.55	90.43	81.2	139.7	0.0	394.5
145.00		0.2813	24.522	21.953	1,646.6	20.68	87.19	81.9	129.7	0.0	380.5
150.00		0.2813	23.612	21.129	1,468.0	19.82	83.95	81.9	120.1	0.0	366.5
											24,129.8

Load Case: 1.2D + 1.6W	97 mph with No Ice	24 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		362.9	0.0					0.0	0.0	362.9	0.0	0.0	0.0
5.00		719.0	1,400.9					0.0	338.1	719.0	1,739.0	0.0	0.0
10.00		705.6	1,374.7					0.0	338.1	705.6	1,712.8	0.0	0.0
15.00		703.0	1,348.6					0.0	338.1	703.0	1,686.7	0.0	0.0
20.00		719.0	1,322.4					0.0	338.1	719.0	1,660.5	0.0	0.0
25.00		739.0	1,296.2					0.0	338.1	739.0	1,634.3	0.0	0.0
30.00		752.6	1,270.1					0.0	338.1	752.6	1,608.2	0.0	0.0
35.00		761.6	1,243.9					0.0	338.1	761.6	1,582.0	0.0	0.0
40.00		766.9	1,217.7					0.0	338.1	766.9	1,555.8	0.0	0.0
45.00		602.5	1,191.5					0.0	338.1	602.5	1,529.6	0.0	0.0
47.83	Bot - Section 2	388.0	663.6					0.0	191.6	388.0	855.2	0.0	0.0
50.00		483.2	940.5					0.0	146.5	483.2	1,087.1	0.0	0.0
54.00	Top - Section 1	391.6	1,712.4					0.0	270.5	391.6	1,982.9	0.0	0.0
55.00		468.5	197.5					0.0	67.6	468.5	265.1	0.0	0.0
60.00		778.4	974.0					0.0	338.1	778.4	1,312.1	0.0	0.0
65.00		773.3	951.6					0.0	338.1	773.3	1,289.7	0.0	0.0
70.00		767.0	929.2					0.0	338.1	767.0	1,267.3	0.0	0.0
75.00		759.4	906.7					0.0	338.1	759.4	1,244.8	0.0	0.0
80.00		750.7	884.3					0.0	338.1	750.7	1,222.4	0.0	0.0
85.00		741.0	861.9					0.0	338.1	741.0	1,200.0	0.0	0.0
90.00		730.4	839.4					0.0	338.1	730.4	1,177.5	0.0	0.0
95.00		422.3	817.0					0.0	338.1	422.3	1,155.1	0.0	0.0
95.83	Bot - Section 3	361.7	134.0					0.0	56.4	361.7	190.3	0.0	0.0
100.00		373.6	1,166.1					0.0	281.7	373.6	1,447.9	0.0	0.0
101.00	Top - Section 2	356.5	275.8					0.0	67.6	356.5	343.4	0.0	0.0
105.00	Appurtenance(s)	634.6	471.6	543.1	0.0	0.0	95.0	0.0	270.5	1,177.7	837.2	0.0	0.0
110.00		419.1	574.4					0.0	308.6	419.1	883.0	0.0	0.0
111.00	Appurtenance(s)	343.0	112.9	2,209.2	0.0	0.0	2,400.0	0.0	61.7	2,552.2	2,574.6	0.0	0.0
115.00		609.7	444.7					0.0	246.9	609.7	691.6	0.0	0.0
120.00		599.1	540.8					0.0	308.6	599.1	849.3	0.0	0.0
124.00	Appurtenance(s)	328.3	420.5	6,529.6	0.0	0.0	4,583.2	0.0	246.9	6,858.0	5,250.5	0.0	0.0
125.00		385.6	103.4					0.0	27.3	385.6	130.7	0.0	0.0
130.00		633.2	507.1					0.0	136.3	633.2	643.4	0.0	0.0
135.00		616.9	490.3					0.0	136.3	616.9	626.5	0.0	0.0
140.00	Appurtenance(s)	600.2	473.5	2,597.8	0.0	0.0	1,816.9	0.0	136.3	3,197.9	2,426.6	0.0	0.0
145.00		583.0	456.6					0.0	71.2	583.0	527.8	0.0	0.0
150.00	Appurtenance(s)	287.1	439.8	3,423.4	0.0	0.0	2,144.9	0.0	71.2	3,710.6	2,655.9	0.0	0.0
Totals:										36,720.1	48,846.9	0.00	0.00

Load Case: 1.2D + 1.6W

97 mph with No Ice

24 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Calculated Forces

Seg	Pu	Vu	Tu	Mu	Mu	Resultant	phi	phi	phi	phi	Total		
Elev	FY (-)	FX (-)	MY	MZ	MX	Moment	Pn	Vn	Tn	Mn	Deflect	Rotation	Ratio
(ft)	(kips)	(kips)	(ft-kips)	(ft-kips)	(ft-kips)	(ft-kips)	(kips)	(kips)	(ft-kips)	(ft-kips)	(in)	(deg)	
0.00	-48.77	-36.46	0.00	-3,702.69	0.00	3,702.69	4,644.06	2,322.03	9,415.76	4,650.09	0.00	0.00	0.807
5.00	-46.88	-35.94	0.00	-3,520.38	0.00	3,520.38	4,595.29	2,297.65	9,142.89	4,515.33	0.13	-0.24	0.790
10.00	-45.02	-35.41	0.00	-3,340.70	0.00	3,340.70	4,545.11	2,272.56	8,870.98	4,381.04	0.51	-0.48	0.773
15.00	-43.20	-34.87	0.00	-3,163.65	0.00	3,163.65	4,493.53	2,246.77	8,600.18	4,247.31	1.15	-0.72	0.755
20.00	-41.40	-34.31	0.00	-2,989.29	0.00	2,989.29	4,440.55	2,220.28	8,330.66	4,114.20	2.04	-0.97	0.736
25.00	-39.64	-33.71	0.00	-2,817.76	0.00	2,817.76	4,386.17	2,193.08	8,062.58	3,981.80	3.18	-1.21	0.717
30.00	-37.91	-33.08	0.00	-2,649.24	0.00	2,649.24	4,330.38	2,165.19	7,796.08	3,850.19	4.58	-1.45	0.697
35.00	-36.21	-32.43	0.00	-2,483.86	0.00	2,483.86	4,273.19	2,136.59	7,531.34	3,719.45	6.23	-1.70	0.677
40.00	-34.55	-31.76	0.00	-2,321.74	0.00	2,321.74	4,214.59	2,107.30	7,268.52	3,589.65	8.14	-1.94	0.655
45.00	-32.94	-31.21	0.00	-2,162.96	0.00	2,162.96	4,154.60	2,077.30	7,007.76	3,460.87	10.30	-2.18	0.633
47.83	-32.03	-30.85	0.00	-2,074.54	0.00	2,074.54	4,119.98	2,059.99	6,860.98	3,388.38	11.64	-2.32	0.620
50.00	-30.89	-30.41	0.00	-2,007.69	0.00	2,007.69	4,093.20	2,046.60	6,749.23	3,333.19	12.72	-2.43	0.610
54.00	-28.86	-29.99	0.00	-1,886.07	0.00	1,886.07	3,318.39	1,659.20	5,491.78	2,712.18	14.83	-2.62	0.704
55.00	-28.54	-29.59	0.00	-1,856.08	0.00	1,856.08	3,309.51	1,654.75	5,452.02	2,692.55	15.39	-2.67	0.698
60.00	-27.14	-28.87	0.00	-1,708.15	0.00	1,708.15	3,264.25	1,632.12	5,253.88	2,594.69	18.31	-2.92	0.667
65.00	-25.77	-28.14	0.00	-1,563.83	0.00	1,563.83	3,217.59	1,608.79	5,056.96	2,497.44	21.51	-3.18	0.634
70.00	-24.43	-27.40	0.00	-1,423.15	0.00	1,423.15	3,169.52	1,584.76	4,861.43	2,400.88	24.97	-3.43	0.601
75.00	-23.12	-26.67	0.00	-1,286.13	0.00	1,286.13	3,120.06	1,560.03	4,667.43	2,305.07	28.69	-3.67	0.566
80.00	-21.85	-25.92	0.00	-1,152.81	0.00	1,152.81	3,069.19	1,534.59	4,475.14	2,210.10	32.65	-3.90	0.529
85.00	-20.61	-25.18	0.00	-1,023.19	0.00	1,023.19	3,016.92	1,508.46	4,284.71	2,116.06	36.86	-4.13	0.491
90.00	-19.40	-24.44	0.00	-897.29	0.00	897.29	2,963.24	1,481.62	4,096.29	2,023.00	41.30	-4.34	0.450
95.00	-18.23	-23.96	0.00	-775.12	0.00	775.12	2,909.11	1,454.55	3,911.32	1,931.65	45.95	-4.55	0.408
95.83	-18.03	-23.62	0.00	-755.15	0.00	755.15	2,895.61	1,447.80	3,874.90	1,913.67	46.75	-4.58	0.401
100.00	-16.58	-23.15	0.00	-656.75	0.00	656.75	2,828.11	1,414.06	3,695.36	1,825.00	50.82	-4.74	0.366
101.00	-16.23	-22.80	0.00	-633.59	0.00	633.59	1,940.77	970.39	2,581.63	1,274.97	51.81	-4.78	0.506
105.00	-15.43	-21.60	0.00	-542.41	0.00	542.41	1,916.40	958.20	2,491.16	1,230.29	55.87	-4.91	0.449
110.00	-14.55	-21.13	0.00	-434.43	0.00	434.43	1,884.66	942.33	2,378.55	1,174.68	61.12	-5.11	0.378
111.00	-12.18	-18.38	0.00	-413.30	0.00	413.30	1,878.15	939.07	2,356.11	1,163.59	62.19	-5.14	0.362
115.00	-11.51	-17.73	0.00	-339.79	0.00	339.79	1,851.53	925.76	2,266.63	1,119.40	66.55	-5.27	0.310
120.00	-10.68	-17.08	0.00	-251.12	0.00	251.12	1,816.99	908.49	2,155.56	1,064.55	72.14	-5.41	0.242
124.00	-6.10	-9.76	0.00	-182.80	0.00	182.80	1,788.35	894.17	2,067.42	1,021.02	76.71	-5.50	0.183
125.00	-6.00	-9.37	0.00	-173.05	0.00	173.05	1,781.05	890.52	2,045.49	1,010.19	77.87	-5.52	0.175
130.00	-5.41	-8.68	0.00	-126.21	0.00	126.21	1,743.70	871.85	1,936.59	956.41	83.69	-5.61	0.135
135.00	-4.84	-8.01	0.00	-82.80	0.00	82.80	1,704.95	852.48	1,829.01	903.28	89.59	-5.67	0.095
140.00	-2.74	-4.59	0.00	-42.74	0.00	42.74	1,664.80	832.40	1,722.91	850.88	95.55	-5.72	0.052
145.00	-2.27	-3.96	0.00	-19.79	0.00	19.79	1,618.18	809.09	1,613.39	796.79	101.54	-5.74	0.026
150.00	0.00	-3.71	0.00	0.00	0.00	0.00	1,557.43	778.72	1,493.87	737.76	107.54	-5.75	0.000

Load Case: 0.9D + 1.6W

97 mph with No Ice (Reduced DL)

23 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		362.9	0.0					0.0	0.0	362.9	0.0	0.0	0.0
5.00		719.0	1,050.7					0.0	253.6	719.0	1,304.3	0.0	0.0
10.00		705.6	1,031.1					0.0	253.6	705.6	1,284.6	0.0	0.0
15.00		703.0	1,011.4					0.0	253.6	703.0	1,265.0	0.0	0.0
20.00		719.0	991.8					0.0	253.6	719.0	1,245.4	0.0	0.0
25.00		739.0	972.2					0.0	253.6	739.0	1,225.7	0.0	0.0
30.00		752.6	952.5					0.0	253.6	752.6	1,206.1	0.0	0.0
35.00		761.6	932.9					0.0	253.6	761.6	1,186.5	0.0	0.0
40.00		766.9	913.3					0.0	253.6	766.9	1,166.9	0.0	0.0
45.00		602.5	893.6					0.0	253.6	602.5	1,147.2	0.0	0.0
47.83	Bot - Section 2	388.0	497.7					0.0	143.7	388.0	641.4	0.0	0.0
50.00		483.2	705.4					0.0	109.9	483.2	815.3	0.0	0.0
54.00	Top - Section 1	391.6	1,284.3					0.0	202.9	391.6	1,487.2	0.0	0.0
55.00		468.5	148.1					0.0	50.7	468.5	198.8	0.0	0.0
60.00		778.4	730.5					0.0	253.6	778.4	984.1	0.0	0.0
65.00		773.3	713.7					0.0	253.6	773.3	967.3	0.0	0.0
70.00		767.0	696.9					0.0	253.6	767.0	950.5	0.0	0.0
75.00		759.4	680.1					0.0	253.6	759.4	933.6	0.0	0.0
80.00		750.7	663.2					0.0	253.6	750.7	916.8	0.0	0.0
85.00		741.0	646.4					0.0	253.6	741.0	900.0	0.0	0.0
90.00		730.4	629.6					0.0	253.6	730.4	883.2	0.0	0.0
95.00		422.3	612.7					0.0	253.6	422.3	866.3	0.0	0.0
95.83	Bot - Section 3	361.7	100.5					0.0	42.3	361.7	142.8	0.0	0.0
100.00		373.6	874.6					0.0	211.3	373.6	1,085.9	0.0	0.0
101.00	Top - Section 2	356.5	206.9					0.0	50.7	356.5	257.6	0.0	0.0
105.00	Appurtenance(s)	634.6	353.7	543.1	0.0	0.0	71.3	0.0	202.9	1,177.7	627.9	0.0	0.0
110.00		419.1	430.8					0.0	231.4	419.1	662.2	0.0	0.0
111.00	Appurtenance(s)	343.0	84.6	2,209.2	0.0	0.0	1,800.0	0.0	46.3	2,552.2	1,930.9	0.0	0.0
115.00		609.7	333.5					0.0	185.1	609.7	518.7	0.0	0.0
120.00		599.1	405.6					0.0	231.4	599.1	637.0	0.0	0.0
124.00	Appurtenance(s)	328.3	315.4	6,529.6	0.0	0.0	3,437.4	0.0	185.1	6,858.0	3,937.9	0.0	0.0
125.00		385.6	77.6					0.0	20.4	385.6	98.0	0.0	0.0
130.00		633.2	380.3					0.0	102.2	633.2	482.5	0.0	0.0
135.00		616.9	367.7					0.0	102.2	616.9	469.9	0.0	0.0
140.00	Appurtenance(s)	600.2	355.1	2,597.8	0.0	0.0	1,362.7	0.0	102.2	3,197.9	1,820.0	0.0	0.0
145.00		583.0	342.5					0.0	53.4	583.0	395.9	0.0	0.0
150.00	Appurtenance(s)	287.1	329.9	3,423.4	0.0	0.0	1,608.7	0.0	53.4	3,710.6	1,991.9	0.0	0.0
Totals:										36,720.1	36,635.1	0.00	0.00

Load Case: 0.9D + 1.6W

97 mph with No Ice (Reduced DL)

23 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	-36.56	-36.43	0.00	-3,659.64	0.00	3,659.64	4,644.06	2,322.03	9,415.76	4,650.09	0.00	0.00	0.795
5.00	-35.11	-35.86	0.00	-3,477.48	0.00	3,477.48	4,595.29	2,297.65	9,142.89	4,515.33	0.13	-0.24	0.778
10.00	-33.68	-35.29	0.00	-3,298.19	0.00	3,298.19	4,545.11	2,272.56	8,870.98	4,381.04	0.50	-0.48	0.760
15.00	-32.28	-34.70	0.00	-3,121.76	0.00	3,121.76	4,493.53	2,246.77	8,600.18	4,247.31	1.13	-0.72	0.742
20.00	-30.90	-34.10	0.00	-2,948.24	0.00	2,948.24	4,440.55	2,220.28	8,330.66	4,114.20	2.01	-0.96	0.724
25.00	-29.55	-33.46	0.00	-2,777.76	0.00	2,777.76	4,386.17	2,193.08	8,062.58	3,981.80	3.14	-1.20	0.705
30.00	-28.22	-32.80	0.00	-2,610.47	0.00	2,610.47	4,330.38	2,165.19	7,796.08	3,850.19	4.52	-1.44	0.685
35.00	-26.92	-32.12	0.00	-2,446.48	0.00	2,446.48	4,273.19	2,136.59	7,531.34	3,719.45	6.15	-1.68	0.664
40.00	-25.65	-31.42	0.00	-2,285.90	0.00	2,285.90	4,214.59	2,107.30	7,268.52	3,589.65	8.04	-1.91	0.643
45.00	-24.43	-30.86	0.00	-2,128.80	0.00	2,128.80	4,154.60	2,077.30	7,007.76	3,460.87	10.17	-2.15	0.621
47.83	-23.74	-30.49	0.00	-2,041.37	0.00	2,041.37	4,119.98	2,059.99	6,860.98	3,388.38	11.49	-2.29	0.608
50.00	-22.86	-30.04	0.00	-1,975.30	0.00	1,975.30	4,093.20	2,046.60	6,749.23	3,333.19	12.55	-2.39	0.598
54.00	-21.33	-29.63	0.00	-1,855.15	0.00	1,855.15	3,318.39	1,659.20	5,491.78	2,712.18	14.63	-2.58	0.691
55.00	-21.08	-29.20	0.00	-1,825.53	0.00	1,825.53	3,309.51	1,654.75	5,452.02	2,692.55	15.18	-2.63	0.685
60.00	-20.01	-28.47	0.00	-1,679.51	0.00	1,679.51	3,264.25	1,632.12	5,253.88	2,594.69	18.07	-2.88	0.654
65.00	-18.96	-27.73	0.00	-1,537.18	0.00	1,537.18	3,217.59	1,608.79	5,056.96	2,497.44	21.22	-3.13	0.622
70.00	-17.95	-26.98	0.00	-1,398.55	0.00	1,398.55	3,169.52	1,584.76	4,861.43	2,400.88	24.63	-3.37	0.588
75.00	-16.95	-26.24	0.00	-1,263.64	0.00	1,263.64	3,120.06	1,560.03	4,667.43	2,305.07	28.29	-3.61	0.554
80.00	-15.99	-25.49	0.00	-1,132.45	0.00	1,132.45	3,069.19	1,534.59	4,475.14	2,210.10	32.19	-3.84	0.518
85.00	-15.05	-24.75	0.00	-1,005.00	0.00	1,005.00	3,016.92	1,508.46	4,284.71	2,116.06	36.33	-4.07	0.480
90.00	-14.13	-24.01	0.00	-881.26	0.00	881.26	2,963.24	1,481.62	4,096.29	2,023.00	40.70	-4.28	0.441
95.00	-13.25	-23.55	0.00	-761.23	0.00	761.23	2,909.11	1,454.55	3,911.32	1,931.65	45.29	-4.48	0.399
95.83	-13.10	-23.20	0.00	-741.61	0.00	741.61	2,895.61	1,447.80	3,874.90	1,913.67	46.07	-4.51	0.392
100.00	-12.01	-22.76	0.00	-644.97	0.00	644.97	2,828.11	1,414.06	3,695.36	1,825.00	50.07	-4.67	0.358
101.00	-11.75	-22.40	0.00	-622.21	0.00	622.21	1,940.77	970.39	2,581.63	1,274.97	51.05	-4.70	0.495
105.00	-11.16	-21.20	0.00	-532.62	0.00	532.62	1,916.40	958.20	2,491.16	1,230.29	55.05	-4.84	0.439
110.00	-10.50	-20.75	0.00	-426.60	0.00	426.60	1,884.66	942.33	2,378.55	1,174.68	60.21	-5.03	0.369
111.00	-8.77	-18.05	0.00	-405.86	0.00	405.86	1,878.15	939.07	2,356.11	1,163.59	61.27	-5.06	0.354
115.00	-8.27	-17.42	0.00	-333.66	0.00	333.66	1,851.53	925.76	2,266.63	1,119.40	65.56	-5.19	0.303
120.00	-7.66	-16.78	0.00	-246.58	0.00	246.58	1,816.99	908.49	2,155.56	1,064.55	71.07	-5.33	0.236
124.00	-4.37	-9.58	0.00	-179.48	0.00	179.48	1,788.35	894.17	2,067.42	1,021.02	75.56	-5.41	0.178
125.00	-4.30	-9.19	0.00	-169.89	0.00	169.89	1,781.05	890.52	2,045.49	1,010.19	76.70	-5.43	0.171
130.00	-3.87	-8.52	0.00	-123.92	0.00	123.92	1,743.70	871.85	1,936.59	956.41	82.43	-5.52	0.132
135.00	-3.46	-7.87	0.00	-81.31	0.00	81.31	1,704.95	852.48	1,829.01	903.28	88.23	-5.58	0.092
140.00	-1.95	-4.51	0.00	-41.98	0.00	41.98	1,664.80	832.40	1,722.91	850.88	94.09	-5.62	0.051
145.00	-1.62	-3.89	0.00	-19.44	0.00	19.44	1,618.18	809.09	1,613.39	796.79	99.99	-5.65	0.025
150.00	0.00	-3.71	0.00	0.00	0.00	0.00	1,557.43	778.72	1,493.87	737.76	105.90	-5.66	0.000

Load Case: 1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice	23 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		75.6	0.0					0.0	0.0	75.6	0.0	0.0	0.0
5.00		150.2	1,775.1					0.0	426.6	150.2	2,201.7	0.0	0.0
10.00		148.1	1,785.8					0.0	439.0	148.1	2,224.8	0.0	0.0
15.00		148.1	1,773.7					0.0	445.6	148.1	2,219.3	0.0	0.0
20.00		151.9	1,754.2					0.0	450.1	151.9	2,204.3	0.0	0.0
25.00		156.5	1,730.8					0.0	453.7	156.5	2,184.5	0.0	0.0
30.00		159.7	1,705.1					0.0	456.6	159.7	2,161.7	0.0	0.0
35.00		162.0	1,677.6					0.0	459.2	162.0	2,136.8	0.0	0.0
40.00		163.5	1,648.9					0.0	461.4	163.5	2,110.3	0.0	0.0
45.00		128.7	1,619.3					0.0	463.4	128.7	2,082.7	0.0	0.0
47.83	Bot - Section 2	82.9	905.3					0.0	263.4	82.9	1,168.6	0.0	0.0
50.00		103.4	1,127.9					0.0	201.8	103.4	1,329.7	0.0	0.0
54.00	Top - Section 1	83.8	2,054.6					0.0	373.3	83.8	2,427.9	0.0	0.0
55.00		100.5	283.1					0.0	93.5	100.5	376.6	0.0	0.0
60.00		167.2	1,395.0					0.0	468.3	167.2	1,863.3	0.0	0.0
65.00		166.5	1,366.8					0.0	469.7	166.5	1,836.5	0.0	0.0
70.00		165.5	1,338.2					0.0	471.0	165.5	1,809.2	0.0	0.0
75.00		164.3	1,309.3					0.0	472.2	164.3	1,781.5	0.0	0.0
80.00		162.8	1,280.0					0.0	473.4	162.8	1,753.4	0.0	0.0
85.00		161.1	1,250.5					0.0	474.5	161.1	1,725.0	0.0	0.0
90.00		159.3	1,220.7					0.0	475.6	159.3	1,696.2	0.0	0.0
95.00		92.2	1,190.7					0.0	476.6	92.2	1,667.2	0.0	0.0
95.83	Bot - Section 3	79.1	196.2					0.0	79.5	79.1	275.7	0.0	0.0
100.00		81.7	1,476.2					0.0	398.0	81.7	1,874.2	0.0	0.0
101.00	Top - Section 2	78.2	350.0					0.0	95.6	78.2	445.7	0.0	0.0
105.00	Appurtenance(s)	139.4	763.0	110.9	0.0	0.0	431.3	0.0	382.8	250.4	1,577.0	0.0	0.0
110.00		92.2	930.3					0.0	449.8	92.2	1,380.0	0.0	0.0
111.00	Appurtenance(s)	75.7	183.8	543.2	0.0	0.0	3,331.2	0.0	90.1	618.9	3,605.1	0.0	0.0
115.00		134.8	722.9					0.0	360.6	134.8	1,083.5	0.0	0.0
120.00		132.9	879.9					0.0	451.4	132.9	1,331.3	0.0	0.0
124.00	Appurtenance(s)	73.0	686.4	1,441.9	0.0	0.0	10,522.5	0.0	361.7	1,514.9	11,570.6	0.0	0.0
125.00		86.0	169.7					0.0	56.0	86.0	225.7	0.0	0.0
130.00		141.6	828.9					0.0	280.6	141.6	1,109.5	0.0	0.0
135.00		138.5	803.2					0.0	281.4	138.5	1,084.6	0.0	0.0
140.00	Appurtenance(s)	135.3	777.4	594.2	0.0	0.0	3,833.5	0.0	282.1	729.5	4,893.0	0.0	0.0
145.00		132.1	751.5					0.0	217.7	132.1	969.2	0.0	0.0
150.00	Appurtenance(s)	65.2	725.5	772.9	0.0	0.0	4,662.1	0.0	218.4	838.2	5,605.9	0.0	0.0
Totals:										8,103.09	75,992.5	0.00	0.00

Site Number: 302538

Code: ANSI/TIA-222-G

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Site Name: Parsonage Hill Aka Wallin, CT

Engineering Number: OAA722111_C3_02

1/31/2018 1:05:47 PM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

23 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	-75.99	-8.07	0.00	-860.84	0.00	860.84	4,644.06	2,322.03	9,415.76	4,650.09	0.00	0.00	0.201
5.00	-73.78	-7.99	0.00	-820.52	0.00	820.52	4,595.29	2,297.65	9,142.89	4,515.33	0.03	-0.06	0.198
10.00	-71.55	-7.91	0.00	-780.59	0.00	780.59	4,545.11	2,272.56	8,870.98	4,381.04	0.12	-0.11	0.194
15.00	-69.32	-7.82	0.00	-741.06	0.00	741.06	4,493.53	2,246.77	8,600.18	4,247.31	0.27	-0.17	0.190
20.00	-67.11	-7.73	0.00	-701.96	0.00	701.96	4,440.55	2,220.28	8,330.66	4,114.20	0.47	-0.23	0.186
25.00	-64.92	-7.63	0.00	-663.32	0.00	663.32	4,386.17	2,193.08	8,062.58	3,981.80	0.74	-0.28	0.181
30.00	-62.75	-7.52	0.00	-625.19	0.00	625.19	4,330.38	2,165.19	7,796.08	3,850.19	1.07	-0.34	0.177
35.00	-60.61	-7.40	0.00	-587.60	0.00	587.60	4,273.19	2,136.59	7,531.34	3,719.45	1.46	-0.40	0.172
40.00	-58.49	-7.28	0.00	-550.59	0.00	550.59	4,214.59	2,107.30	7,268.52	3,589.65	1.91	-0.46	0.167
45.00	-56.40	-7.18	0.00	-514.18	0.00	514.18	4,154.60	2,077.30	7,007.76	3,460.87	2.41	-0.51	0.162
47.83	-55.23	-7.11	0.00	-493.83	0.00	493.83	4,119.98	2,059.99	6,860.98	3,388.38	2.73	-0.55	0.159
50.00	-53.90	-7.03	0.00	-478.42	0.00	478.42	4,093.20	2,046.60	6,749.23	3,333.19	2.98	-0.57	0.157
54.00	-51.47	-6.95	0.00	-450.29	0.00	450.29	3,318.39	1,659.20	5,491.78	2,712.18	3.48	-0.62	0.182
55.00	-51.09	-6.88	0.00	-443.34	0.00	443.34	3,309.51	1,654.75	5,452.02	2,692.55	3.61	-0.63	0.180
60.00	-49.22	-6.74	0.00	-408.96	0.00	408.96	3,264.25	1,632.12	5,253.88	2,594.69	4.30	-0.69	0.173
65.00	-47.38	-6.60	0.00	-375.26	0.00	375.26	3,217.59	1,608.79	5,056.96	2,497.44	5.06	-0.75	0.165
70.00	-45.56	-6.46	0.00	-342.25	0.00	342.25	3,169.52	1,584.76	4,861.43	2,400.88	5.88	-0.81	0.157
75.00	-43.78	-6.31	0.00	-309.97	0.00	309.97	3,120.06	1,560.03	4,667.43	2,305.07	6.76	-0.87	0.149
80.00	-42.02	-6.16	0.00	-278.41	0.00	278.41	3,069.19	1,534.59	4,475.14	2,210.10	7.70	-0.93	0.140
85.00	-40.30	-6.01	0.00	-247.61	0.00	247.61	3,016.92	1,508.46	4,284.71	2,116.06	8.69	-0.98	0.130
90.00	-38.60	-5.85	0.00	-217.56	0.00	217.56	2,963.24	1,481.62	4,096.29	2,023.00	9.75	-1.03	0.121
95.00	-36.93	-5.75	0.00	-188.29	0.00	188.29	2,909.11	1,454.55	3,911.32	1,931.65	10.86	-1.08	0.110
95.83	-36.65	-5.68	0.00	-183.49	0.00	183.49	2,895.61	1,447.80	3,874.90	1,913.67	11.05	-1.09	0.109
100.00	-34.78	-5.58	0.00	-159.83	0.00	159.83	2,828.11	1,414.06	3,695.36	1,825.00	12.02	-1.13	0.100
101.00	-34.33	-5.50	0.00	-154.25	0.00	154.25	1,940.77	970.39	2,581.63	1,274.97	12.25	-1.14	0.139
105.00	-32.76	-5.24	0.00	-132.24	0.00	132.24	1,916.40	958.20	2,491.16	1,230.29	13.22	-1.17	0.125
110.00	-31.38	-5.14	0.00	-106.02	0.00	106.02	1,884.66	942.33	2,378.55	1,174.68	14.47	-1.22	0.107
111.00	-27.78	-4.45	0.00	-100.88	0.00	100.88	1,878.15	939.07	2,356.11	1,163.59	14.73	-1.23	0.102
115.00	-26.70	-4.31	0.00	-83.07	0.00	83.07	1,851.53	925.76	2,266.63	1,119.40	15.77	-1.26	0.089
120.00	-25.37	-4.16	0.00	-61.53	0.00	61.53	1,816.99	908.49	2,155.56	1,064.55	17.11	-1.29	0.072
124.00	-13.84	-2.38	0.00	-44.89	0.00	44.89	1,788.35	894.17	2,067.42	1,021.02	18.20	-1.31	0.052
125.00	-13.61	-2.30	0.00	-42.50	0.00	42.50	1,781.05	890.52	2,045.49	1,010.19	18.48	-1.32	0.050
130.00	-12.51	-2.13	0.00	-31.02	0.00	31.02	1,743.70	871.85	1,936.59	956.41	19.87	-1.34	0.040
135.00	-11.42	-1.97	0.00	-20.36	0.00	20.36	1,704.95	852.48	1,829.01	903.28	21.28	-1.36	0.029
140.00	-6.55	-1.13	0.00	-10.50	0.00	10.50	1,664.80	832.40	1,722.91	850.88	22.71	-1.37	0.016
145.00	-5.58	-0.97	0.00	-4.86	0.00	4.86	1,618.18	809.09	1,613.39	796.79	24.14	-1.37	0.010
150.00	0.00	-0.84	0.00	0.00	0.00	0.00	1,557.43	778.72	1,493.87	737.76	25.58	-1.38	0.000

Load Case: 1.0D + 1.0W

Serviceability 60 mph

22 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		86.8	0.0					0.0	0.0	86.8	0.0	0.0	0.0
5.00		171.9	1,167.4					0.0	281.8	171.9	1,449.2	0.0	0.0
10.00		168.7	1,145.6					0.0	281.8	168.7	1,427.4	0.0	0.0
15.00		168.1	1,123.8					0.0	281.8	168.1	1,405.6	0.0	0.0
20.00		171.9	1,102.0					0.0	281.8	171.9	1,383.7	0.0	0.0
25.00		176.7	1,080.2					0.0	281.8	176.7	1,361.9	0.0	0.0
30.00		180.0	1,058.4					0.0	281.8	180.0	1,340.1	0.0	0.0
35.00		182.1	1,036.6					0.0	281.8	182.1	1,318.3	0.0	0.0
40.00		183.4	1,014.8					0.0	281.8	183.4	1,296.5	0.0	0.0
45.00		144.1	992.9					0.0	281.8	144.1	1,274.7	0.0	0.0
47.83	Bot - Section 2	92.8	553.0					0.0	159.7	92.8	712.6	0.0	0.0
50.00		115.5	783.8					0.0	122.1	115.5	905.9	0.0	0.0
54.00	Top - Section 1	93.6	1,427.0					0.0	225.4	93.6	1,652.4	0.0	0.0
55.00		112.0	164.6					0.0	56.4	112.0	220.9	0.0	0.0
60.00		186.1	811.7					0.0	281.8	186.1	1,093.5	0.0	0.0
65.00		184.9	793.0					0.0	281.8	184.9	1,074.8	0.0	0.0
70.00		183.4	774.3					0.0	281.8	183.4	1,056.1	0.0	0.0
75.00		181.6	755.6					0.0	281.8	181.6	1,037.4	0.0	0.0
80.00		179.5	736.9					0.0	281.8	179.5	1,018.7	0.0	0.0
85.00		177.2	718.2					0.0	281.8	177.2	1,000.0	0.0	0.0
90.00		174.7	699.5					0.0	281.8	174.7	981.3	0.0	0.0
95.00		101.0	680.8					0.0	281.8	101.0	962.6	0.0	0.0
95.83	Bot - Section 3	86.5	111.7					0.0	47.0	86.5	158.6	0.0	0.0
100.00		89.3	971.8					0.0	234.8	89.3	1,206.6	0.0	0.0
101.00	Top - Section 2	85.2	229.8					0.0	56.4	85.2	286.2	0.0	0.0
105.00	Appurtenance(s)	151.7	393.0	129.9	0.0	0.0	79.2	0.0	225.4	281.6	697.6	0.0	0.0
110.00		100.2	478.7					0.0	257.2	100.2	735.8	0.0	0.0
111.00	Appurtenance(s)	82.0	94.1	528.3	0.0	0.0	2,000.0	0.0	51.4	610.3	2,145.5	0.0	0.0
115.00		145.8	370.6					0.0	205.7	145.8	576.3	0.0	0.0
120.00		143.3	450.6					0.0	257.2	143.3	707.8	0.0	0.0
124.00	Appurtenance(s)	78.5	350.4	1,561.5	0.0	0.0	3,819.3	0.0	205.7	1,640.0	4,375.4	0.0	0.0
125.00		92.2	86.2					0.0	22.7	92.2	108.9	0.0	0.0
130.00		151.4	422.6					0.0	113.6	151.4	536.1	0.0	0.0
135.00		147.5	408.6					0.0	113.6	147.5	522.1	0.0	0.0
140.00	Appurtenance(s)	143.5	394.5	621.2	0.0	0.0	1,514.1	0.0	113.6	764.7	2,022.2	0.0	0.0
145.00		139.4	380.5					0.0	59.4	139.4	439.9	0.0	0.0
150.00	Appurtenance(s)	68.7	366.5	818.7	0.0	0.0	1,787.4	0.0	59.4	887.3	2,213.3	0.0	0.0
Totals:										8,780.99	40,705.7	0.00	0.00

Site Number: 302538

Code: ANSI/TIA-222-G

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Site Name: Parsonage Hill Aka Wallin, CT

Engineering Number: OAA722111_C3_02

1/31/2018 1:05:51 PM

Customer: AT&T MOBILITY

Load Case: 1.0D + 1.0W

Serviceability 60 mph

22 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	-40.70	-8.71	0.00	-879.78	0.00	879.78	4,644.06	2,322.03	9,415.76	4,650.09	0.00	0.00	0.198
5.00	-39.24	-8.58	0.00	-836.21	0.00	836.21	4,595.29	2,297.65	9,142.89	4,515.33	0.03	-0.06	0.194
10.00	-37.81	-8.45	0.00	-793.31	0.00	793.31	4,545.11	2,272.56	8,870.98	4,381.04	0.12	-0.11	0.189
15.00	-36.39	-8.31	0.00	-751.07	0.00	751.07	4,493.53	2,246.77	8,600.18	4,247.31	0.27	-0.17	0.185
20.00	-35.00	-8.17	0.00	-709.51	0.00	709.51	4,440.55	2,220.28	8,330.66	4,114.20	0.48	-0.23	0.180
25.00	-33.63	-8.02	0.00	-668.66	0.00	668.66	4,386.17	2,193.08	8,062.58	3,981.80	0.76	-0.29	0.176
30.00	-32.29	-7.87	0.00	-628.55	0.00	628.55	4,330.38	2,165.19	7,796.08	3,850.19	1.09	-0.35	0.171
35.00	-30.96	-7.71	0.00	-589.21	0.00	589.21	4,273.19	2,136.59	7,531.34	3,719.45	1.48	-0.40	0.166
40.00	-29.66	-7.54	0.00	-550.67	0.00	550.67	4,214.59	2,107.30	7,268.52	3,589.65	1.93	-0.46	0.160
45.00	-28.38	-7.41	0.00	-512.95	0.00	512.95	4,154.60	2,077.30	7,007.76	3,460.87	2.45	-0.52	0.155
47.83	-27.66	-7.33	0.00	-491.96	0.00	491.96	4,119.98	2,059.99	6,860.98	3,388.38	2.76	-0.55	0.152
50.00	-26.76	-7.22	0.00	-476.08	0.00	476.08	4,093.20	2,046.60	6,749.23	3,333.19	3.02	-0.58	0.149
54.00	-25.10	-7.12	0.00	-447.21	0.00	447.21	3,318.39	1,659.20	5,491.78	2,712.18	3.52	-0.62	0.172
55.00	-24.88	-7.02	0.00	-440.09	0.00	440.09	3,309.51	1,654.75	5,452.02	2,692.55	3.65	-0.63	0.171
60.00	-23.78	-6.85	0.00	-404.99	0.00	404.99	3,264.25	1,632.12	5,253.88	2,594.69	4.35	-0.69	0.163
65.00	-22.70	-6.67	0.00	-370.75	0.00	370.75	3,217.59	1,608.79	5,056.96	2,497.44	5.11	-0.75	0.156
70.00	-21.64	-6.50	0.00	-337.39	0.00	337.39	3,169.52	1,584.76	4,861.43	2,400.88	5.93	-0.81	0.147
75.00	-20.60	-6.32	0.00	-304.91	0.00	304.91	3,120.06	1,560.03	4,667.43	2,305.07	6.81	-0.87	0.139
80.00	-19.58	-6.14	0.00	-273.31	0.00	273.31	3,069.19	1,534.59	4,475.14	2,210.10	7.75	-0.93	0.130
85.00	-18.57	-5.97	0.00	-242.59	0.00	242.59	3,016.92	1,508.46	4,284.71	2,116.06	8.75	-0.98	0.121
90.00	-17.59	-5.79	0.00	-212.76	0.00	212.76	2,963.24	1,481.62	4,096.29	2,023.00	9.80	-1.03	0.111
95.00	-16.63	-5.68	0.00	-183.81	0.00	183.81	2,909.11	1,454.55	3,911.32	1,931.65	10.91	-1.08	0.101
95.83	-16.47	-5.60	0.00	-179.07	0.00	179.07	2,895.61	1,447.80	3,874.90	1,913.67	11.10	-1.09	0.099
100.00	-15.26	-5.49	0.00	-155.76	0.00	155.76	2,828.11	1,414.06	3,695.36	1,825.00	12.06	-1.12	0.091
101.00	-14.98	-5.40	0.00	-150.27	0.00	150.27	1,940.77	970.39	2,581.63	1,274.97	12.30	-1.13	0.126
105.00	-14.28	-5.12	0.00	-128.65	0.00	128.65	1,916.40	958.20	2,491.16	1,230.29	13.26	-1.17	0.112
110.00	-13.54	-5.01	0.00	-103.05	0.00	103.05	1,884.66	942.33	2,378.55	1,174.68	14.51	-1.21	0.095
111.00	-11.41	-4.36	0.00	-98.04	0.00	98.04	1,878.15	939.07	2,356.11	1,163.59	14.77	-1.22	0.090
115.00	-10.84	-4.21	0.00	-80.61	0.00	80.61	1,851.53	925.76	2,266.63	1,119.40	15.80	-1.25	0.078
120.00	-10.13	-4.05	0.00	-59.58	0.00	59.58	1,816.99	908.49	2,155.56	1,064.55	17.13	-1.28	0.062
124.00	-5.79	-2.31	0.00	-43.37	0.00	43.37	1,788.35	894.17	2,067.42	1,021.02	18.22	-1.31	0.046
125.00	-5.68	-2.22	0.00	-41.05	0.00	41.05	1,781.05	890.52	2,045.49	1,010.19	18.49	-1.31	0.044
130.00	-5.15	-2.06	0.00	-29.95	0.00	29.95	1,743.70	871.85	1,936.59	956.41	19.87	-1.33	0.034
135.00	-4.63	-1.90	0.00	-19.65	0.00	19.65	1,704.95	852.48	1,829.01	903.28	21.27	-1.35	0.024
140.00	-2.63	-1.09	0.00	-10.14	0.00	10.14	1,664.80	832.40	1,722.91	850.88	22.69	-1.36	0.014
145.00	-2.19	-0.94	0.00	-4.70	0.00	4.70	1,618.18	809.09	1,613.39	796.79	24.11	-1.36	0.007
150.00	0.00	-0.89	0.00	0.00	0.00	0.00	1,557.43	778.72	1,493.87	737.76	25.54	-1.36	0.000

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_{s1}):	0.18
Spectral Response Acceleration at 1.0 Second Period (S_{s1}):	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}):	0.19
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Seismic Response Coefficient (C_s):	0.03
Upper Limit C_s	0.03
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	2.33
Redundancy Factor (ρ):	1.00
Seismic Force Distribution Exponent (k):	1.91
Total Unfactored Dead Load:	40.71 k
Seismic Base Shear (E):	1.22 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)
36	147.50	426	6,045	0.028	34	528
35	142.50	440	5,845	0.027	33	545
34	137.50	508	6,305	0.029	36	629
33	132.50	522	6,036	0.028	34	647
32	127.50	536	5,758	0.027	33	664
31	124.50	109	1,118	0.005	6	135
30	122.00	556	5,489	0.025	31	689
29	117.50	708	6,501	0.030	37	877
28	113.00	576	4,912	0.023	28	714
27	110.50	145	1,188	0.005	7	180
26	107.50	736	5,700	0.026	32	912
25	103.00	618	4,414	0.020	25	766
24	100.50	286	1,949	0.009	11	355
23	97.92	1,207	7,817	0.036	44	1,495
22	95.42	159	978	0.005	6	196
21	92.50	963	5,592	0.026	32	1,192
20	87.50	981	5,126	0.024	29	1,216
19	82.50	1,000	4,667	0.022	26	1,239
18	77.50	1,019	4,218	0.020	24	1,262
17	72.50	1,037	3,780	0.017	21	1,285
16	67.50	1,056	3,356	0.016	19	1,308
15	62.50	1,075	2,948	0.014	17	1,331
14	57.50	1,093	2,557	0.012	14	1,355

13	54.50	221	466	0.002	3	274
12	52.00	1,652	3,187	0.015	18	2,047
11	48.92	906	1,554	0.007	9	1,122
10	46.42	713	1,106	0.005	6	883
9	42.50	1,275	1,671	0.008	9	1,579
8	37.50	1,297	1,337	0.006	8	1,606
7	32.50	1,318	1,034	0.005	6	1,633
6	27.50	1,340	763	0.004	4	1,660
5	22.50	1,362	528	0.002	3	1,687
4	17.50	1,384	332	0.002	2	1,714
3	12.50	1,406	177	0.001	1	1,741
2	7.50	1,427	68	0.000	0	1,768
1	2.50	1,449	8	0.000	0	1,795
DragonWave Horizon C	150.00	21	311	0.001	2	26
Alcatel-Lucent RRH2x	150.00	317	4,653	0.022	26	393
Alcatel-Lucent 1900	150.00	180	2,639	0.012	15	223
Alcatel-Lucent TD-RR	150.00	210	3,078	0.014	17	260
DragonWave A-ANT-11G	150.00	27	396	0.002	2	33
DragonWave A-ANT-18G	150.00	27	397	0.002	2	34
Round T-Arm	150.00	750	10,994	0.051	62	929
KMW ETCR-654L12H6	150.00	255	3,734	0.017	21	316
Ericsson KRY 112 144	140.00	33	424	0.002	2	41
Ericsson RRUS 11 B12	140.00	152	1,954	0.009	11	188
Ericsson AIR 21, 1.3	140.00	249	3,199	0.015	18	308
Round T-Arm	140.00	750	9,634	0.045	54	929
Ericsson AIR 21 B4A/	140.00	330	4,239	0.020	24	409
Powerwave Allgon LGP	124.00	85	861	0.004	5	105
Raycap DC6-48-60-18-	124.00	32	324	0.001	2	39
Raycap DC6-48-60-18-	124.00	32	324	0.001	2	39
Ericsson RRUS 4478 B	124.00	178	1,814	0.008	10	221
Ericsson RRUS-11 (50	124.00	150	1,527	0.007	9	186
Ericsson RRUS 32 B66	124.00	152	1,549	0.007	9	188
Ericsson RRUS 32 B30	124.00	180	1,833	0.008	10	223
Ericsson RRUS 32 B2	124.00	159	1,619	0.007	9	197
Raycap DC6-48-60-18-	124.00	16	163	0.001	1	20
Powerwave 7770.00	124.00	105	1,069	0.005	6	130
CCI OPA-65R-LCUU-H6	124.00	438	4,460	0.021	25	543
Kathrein Scala 80010	124.00	293	2,981	0.014	17	363
Flat Platform w/ Han	124.00	2,000	20,364	0.094	115	2,478
Flat Platform w/ Han	111.00	2,000	16,474	0.076	93	2,478
RFS APXV18-206517S-C	105.00	79	587	0.003	3	98
		40,706	216,131	1.000	1,221	50,427

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)
36	147.50	426	6,045	0.028	34	367
35	142.50	440	5,845	0.027	33	379
34	137.50	508	6,305	0.029	36	438
33	132.50	522	6,036	0.028	34	450
32	127.50	536	5,758	0.027	33	462
31	124.50	109	1,118	0.005	6	94
30	122.00	556	5,489	0.025	31	479
29	117.50	708	6,501	0.030	37	610
28	113.00	576	4,912	0.023	28	496
27	110.50	145	1,188	0.005	7	125
26	107.50	736	5,700	0.026	32	634
25	103.00	618	4,414	0.020	25	533
24	100.50	286	1,949	0.009	11	246

Site Number: 302538

Code: ANSI/TIA-222-G

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Site Name: Parsonage Hill Aka Wallin, CT

Engineering Number: OAA722111_C3_02

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Customer: AT&T MOBILITY

23	97.92	1,207	7,817	0.036	44	1,039
22	95.42	159	978	0.005	6	137
21	92.50	963	5,592	0.026	32	829
20	87.50	981	5,126	0.024	29	845
19	82.50	1,000	4,667	0.022	26	861
18	77.50	1,019	4,218	0.020	24	877
17	72.50	1,037	3,780	0.017	21	893
16	67.50	1,056	3,356	0.016	19	909
15	62.50	1,075	2,948	0.014	17	926
14	57.50	1,093	2,557	0.012	14	942
13	54.50	221	466	0.002	3	190
12	52.00	1,652	3,187	0.015	18	1,423
11	48.92	906	1,554	0.007	9	780
10	46.42	713	1,106	0.005	6	614
9	42.50	1,275	1,671	0.008	9	1,098
8	37.50	1,297	1,337	0.006	8	1,117
7	32.50	1,318	1,034	0.005	6	1,135
6	27.50	1,340	763	0.004	4	1,154
5	22.50	1,362	528	0.002	3	1,173
4	17.50	1,384	332	0.002	2	1,192
3	12.50	1,406	177	0.001	1	1,210
2	7.50	1,427	68	0.000	0	1,229
1	2.50	1,449	8	0.000	0	1,248
DragonWave Horizon C	150.00	21	311	0.001	2	18
Alcatel-Lucent RRH2x	150.00	317	4,653	0.022	26	273
Alcatel-Lucent 1900	150.00	180	2,639	0.012	15	155
Alcatel-Lucent TD-RR	150.00	210	3,078	0.014	17	181
DragonWave A-ANT-11G	150.00	27	396	0.002	2	23
DragonWave A-ANT-18G	150.00	27	397	0.002	2	23
Round T-Arm	150.00	750	10,994	0.051	62	646
KMW ETCR-654L12H6	150.00	255	3,734	0.017	21	219
Ericsson KRY 112 144	140.00	33	424	0.002	2	28
Ericsson RRUS 11 B12	140.00	152	1,954	0.009	11	131
Ericsson AIR 21, 1.3	140.00	249	3,199	0.015	18	214
Round T-Arm	140.00	750	9,634	0.045	54	646
Ericsson AIR 21 B4A/	140.00	330	4,239	0.020	24	284
Powerwave Allgon LGP	124.00	85	861	0.004	5	73
Raycap DC6-48-60-18-	124.00	32	324	0.001	2	27
Raycap DC6-48-60-18-	124.00	32	324	0.001	2	27
Ericsson RRUS 4478 B	124.00	178	1,814	0.008	10	153
Ericsson RRUS-11 (50	124.00	150	1,527	0.007	9	129
Ericsson RRUS 32 B66	124.00	152	1,549	0.007	9	131
Ericsson RRUS 32 B30	124.00	180	1,833	0.008	10	155
Ericsson RRUS 32 B2	124.00	159	1,619	0.007	9	137
Raycap DC6-48-60-18-	124.00	16	163	0.001	1	14
Powerwave 7770.00	124.00	105	1,069	0.005	6	90
CCI OPA-65R-LCUU-H6	124.00	438	4,460	0.021	25	377
Kathrein Scala 80010	124.00	293	2,981	0.014	17	252
Flat Platform w/ Han	124.00	2,000	20,364	0.094	115	1,722
Flat Platform w/ Han	111.00	2,000	16,474	0.076	93	1,722
RFS APXV18-206517S-C	105.00	79	587	0.003	3	68
		40,706	216,131	1.000	1,221	35,055

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	-48.63	-1.22	0.00	-145.75	0.00	145.75	4,644.06	2,322.03	9,415.76	4,650.09	0.00	0.00	0.042
5.00	-46.86	-1.23	0.00	-139.63	0.00	139.63	4,595.29	2,297.65	9,142.89	4,515.33	0.01	-0.01	0.041
10.00	-45.12	-1.24	0.00	-133.47	0.00	133.47	4,545.11	2,272.56	8,870.98	4,381.04	0.02	-0.02	0.040
15.00	-43.41	-1.24	0.00	-127.28	0.00	127.28	4,493.53	2,246.77	8,600.18	4,247.31	0.05	-0.03	0.040
20.00	-41.72	-1.25	0.00	-121.07	0.00	121.07	4,440.55	2,220.28	8,330.66	4,114.20	0.08	-0.04	0.039
25.00	-40.06	-1.25	0.00	-114.84	0.00	114.84	4,386.17	2,193.08	8,062.58	3,981.80	0.13	-0.05	0.038
30.00	-38.43	-1.25	0.00	-108.60	0.00	108.60	4,330.38	2,165.19	7,796.08	3,850.19	0.18	-0.06	0.037
35.00	-36.82	-1.24	0.00	-102.37	0.00	102.37	4,273.19	2,136.59	7,531.34	3,719.45	0.25	-0.07	0.036
40.00	-35.24	-1.24	0.00	-96.15	0.00	96.15	4,214.59	2,107.30	7,268.52	3,589.65	0.33	-0.08	0.035
45.00	-34.36	-1.24	0.00	-89.96	0.00	89.96	4,154.60	2,077.30	7,007.76	3,460.87	0.41	-0.09	0.034
47.83	-33.24	-1.23	0.00	-86.46	0.00	86.46	4,119.98	2,059.99	6,860.98	3,388.38	0.47	-0.09	0.034
50.00	-31.19	-1.21	0.00	-83.80	0.00	83.80	4,093.20	2,046.60	6,749.23	3,333.19	0.51	-0.10	0.033
54.00	-30.91	-1.21	0.00	-78.96	0.00	78.96	3,318.39	1,659.20	5,491.78	2,712.18	0.60	-0.11	0.038
55.00	-29.56	-1.20	0.00	-77.75	0.00	77.75	3,309.51	1,654.75	5,452.02	2,692.55	0.62	-0.11	0.038
60.00	-28.23	-1.18	0.00	-71.77	0.00	71.77	3,264.25	1,632.12	5,253.88	2,594.69	0.74	-0.12	0.036
65.00	-26.92	-1.17	0.00	-65.86	0.00	65.86	3,217.59	1,608.79	5,056.96	2,497.44	0.87	-0.13	0.035
70.00	-25.63	-1.15	0.00	-60.03	0.00	60.03	3,169.52	1,584.76	4,861.43	2,400.88	1.01	-0.14	0.033
75.00	-24.37	-1.12	0.00	-54.30	0.00	54.30	3,120.06	1,560.03	4,667.43	2,305.07	1.17	-0.15	0.031
80.00	-23.13	-1.10	0.00	-48.69	0.00	48.69	3,069.19	1,534.59	4,475.14	2,210.10	1.33	-0.16	0.030
85.00	-21.92	-1.07	0.00	-43.21	0.00	43.21	3,016.92	1,508.46	4,284.71	2,116.06	1.50	-0.17	0.028
90.00	-20.73	-1.04	0.00	-37.87	0.00	37.87	2,963.24	1,481.62	4,096.29	2,023.00	1.69	-0.18	0.026
95.00	-20.53	-1.03	0.00	-32.69	0.00	32.69	2,909.11	1,454.55	3,911.32	1,931.65	1.88	-0.19	0.024
95.83	-19.03	-0.98	0.00	-31.83	0.00	31.83	2,895.61	1,447.80	3,874.90	1,913.67	1.91	-0.19	0.023
100.00	-18.68	-0.97	0.00	-27.73	0.00	27.73	2,828.11	1,414.06	3,695.36	1,825.00	2.08	-0.20	0.022
101.00	-17.91	-0.95	0.00	-26.76	0.00	26.76	1,940.77	970.39	2,581.63	1,274.97	2.12	-0.20	0.030
105.00	-16.90	-0.91	0.00	-22.97	0.00	22.97	1,916.40	958.20	2,491.16	1,230.29	2.29	-0.20	0.027
110.00	-16.72	-0.90	0.00	-18.42	0.00	18.42	1,884.66	942.33	2,378.55	1,174.68	2.51	-0.21	0.025
111.00	-13.53	-0.77	0.00	-17.52	0.00	17.52	1,878.15	939.07	2,356.11	1,163.59	2.55	-0.21	0.022
115.00	-12.66	-0.73	0.00	-14.43	0.00	14.43	1,851.53	925.76	2,266.63	1,119.40	2.73	-0.22	0.020
120.00	-11.97	-0.70	0.00	-10.77	0.00	10.77	1,816.99	908.49	2,155.56	1,064.55	2.97	-0.22	0.017
124.00	-7.10	-0.46	0.00	-7.97	0.00	7.97	1,788.35	894.17	2,067.42	1,021.02	3.16	-0.23	0.012
125.00	-6.44	-0.42	0.00	-7.51	0.00	7.51	1,781.05	890.52	2,045.49	1,010.19	3.20	-0.23	0.011
130.00	-5.79	-0.38	0.00	-5.41	0.00	5.41	1,743.70	871.85	1,936.59	956.41	3.45	-0.23	0.009
135.00	-5.16	-0.35	0.00	-3.49	0.00	3.49	1,704.95	852.48	1,829.01	903.28	3.69	-0.24	0.007
140.00	-2.74	-0.19	0.00	-1.75	0.00	1.75	1,664.80	832.40	1,722.91	850.88	3.94	-0.24	0.004
145.00	-2.21	-0.16	0.00	-0.79	0.00	0.79	1,618.18	809.09	1,613.39	796.79	4.19	-0.24	0.002
150.00	0.00	-0.15	0.00	0.00	0.00	0.00	1,557.43	778.72	1,493.87	737.76	4.44	-0.24	0.000

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

Seismic (Reduced DL) Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-33.81	-1.22	0.00	-143.66	0.00	143.66	4,644.06	2,322.03	9,415.76	4,650.09	0.00	0.00	0.038
5.00	-32.58	-1.23	0.00	-137.54	0.00	137.54	4,595.29	2,297.65	9,142.89	4,515.33	0.01	-0.01	0.038
10.00	-31.37	-1.23	0.00	-131.40	0.00	131.40	4,545.11	2,272.56	8,870.98	4,381.04	0.02	-0.02	0.037
15.00	-30.17	-1.23	0.00	-125.24	0.00	125.24	4,493.53	2,246.77	8,600.18	4,247.31	0.04	-0.03	0.036
20.00	-29.00	-1.24	0.00	-119.07	0.00	119.07	4,440.55	2,220.28	8,330.66	4,114.20	0.08	-0.04	0.035
25.00	-27.85	-1.24	0.00	-112.89	0.00	112.89	4,386.17	2,193.08	8,062.58	3,981.80	0.12	-0.05	0.035
30.00	-26.71	-1.23	0.00	-106.71	0.00	106.71	4,330.38	2,165.19	7,796.08	3,850.19	0.18	-0.06	0.034
35.00	-25.60	-1.23	0.00	-100.54	0.00	100.54	4,273.19	2,136.59	7,531.34	3,719.45	0.25	-0.07	0.033
40.00	-24.50	-1.22	0.00	-94.40	0.00	94.40	4,214.59	2,107.30	7,268.52	3,589.65	0.32	-0.08	0.032
45.00	-23.88	-1.22	0.00	-88.29	0.00	88.29	4,154.60	2,077.30	7,007.76	3,460.87	0.41	-0.09	0.031
47.83	-23.10	-1.21	0.00	-84.84	0.00	84.84	4,119.98	2,059.99	6,860.98	3,388.38	0.46	-0.09	0.031
50.00	-21.68	-1.19	0.00	-82.21	0.00	82.21	4,093.20	2,046.60	6,749.23	3,333.19	0.50	-0.10	0.030
54.00	-21.49	-1.19	0.00	-77.44	0.00	77.44	3,318.39	1,659.20	5,491.78	2,712.18	0.59	-0.10	0.035
55.00	-20.55	-1.18	0.00	-76.25	0.00	76.25	3,309.51	1,654.75	5,452.02	2,692.55	0.61	-0.11	0.035
60.00	-19.62	-1.16	0.00	-70.37	0.00	70.37	3,264.25	1,632.12	5,253.88	2,594.69	0.73	-0.12	0.033
65.00	-18.71	-1.14	0.00	-64.55	0.00	64.55	3,217.59	1,608.79	5,056.96	2,497.44	0.86	-0.13	0.032
70.00	-17.82	-1.12	0.00	-58.83	0.00	58.83	3,169.52	1,584.76	4,861.43	2,400.88	1.00	-0.14	0.030
75.00	-16.94	-1.10	0.00	-53.21	0.00	53.21	3,120.06	1,560.03	4,667.43	2,305.07	1.15	-0.15	0.029
80.00	-16.08	-1.08	0.00	-47.70	0.00	47.70	3,069.19	1,534.59	4,475.14	2,210.10	1.31	-0.16	0.027
85.00	-15.24	-1.05	0.00	-42.32	0.00	42.32	3,016.92	1,508.46	4,284.71	2,116.06	1.48	-0.17	0.025
90.00	-14.41	-1.01	0.00	-37.09	0.00	37.09	2,963.24	1,481.62	4,096.29	2,023.00	1.66	-0.18	0.023
95.00	-14.27	-1.01	0.00	-32.01	0.00	32.01	2,909.11	1,454.55	3,911.32	1,931.65	1.85	-0.18	0.021
95.83	-13.23	-0.96	0.00	-31.17	0.00	31.17	2,895.61	1,447.80	3,874.90	1,913.67	1.88	-0.19	0.021
100.00	-12.98	-0.95	0.00	-27.16	0.00	27.16	2,828.11	1,414.06	3,695.36	1,825.00	2.04	-0.19	0.019
101.00	-12.45	-0.93	0.00	-26.20	0.00	26.20	1,940.77	970.39	2,581.63	1,274.97	2.09	-0.19	0.027
105.00	-11.75	-0.89	0.00	-22.50	0.00	22.50	1,916.40	958.20	2,491.16	1,230.29	2.25	-0.20	0.024
110.00	-11.62	-0.88	0.00	-18.05	0.00	18.05	1,884.66	942.33	2,378.55	1,174.68	2.46	-0.21	0.022
111.00	-9.41	-0.76	0.00	-17.16	0.00	17.16	1,878.15	939.07	2,356.11	1,163.59	2.51	-0.21	0.020
115.00	-8.80	-0.72	0.00	-14.14	0.00	14.14	1,851.53	925.76	2,266.63	1,119.40	2.69	-0.21	0.017
120.00	-8.32	-0.69	0.00	-10.55	0.00	10.55	1,816.99	908.49	2,155.56	1,064.55	2.91	-0.22	0.014
124.00	-4.94	-0.45	0.00	-7.81	0.00	7.81	1,788.35	894.17	2,067.42	1,021.02	3.10	-0.22	0.010
125.00	-4.47	-0.41	0.00	-7.36	0.00	7.36	1,781.05	890.52	2,045.49	1,010.19	3.15	-0.23	0.010
130.00	-4.02	-0.38	0.00	-5.30	0.00	5.30	1,743.70	871.85	1,936.59	956.41	3.38	-0.23	0.008
135.00	-3.59	-0.34	0.00	-3.42	0.00	3.42	1,704.95	852.48	1,829.01	903.28	3.63	-0.23	0.006
140.00	-1.91	-0.19	0.00	-1.72	0.00	1.72	1,664.80	832.40	1,722.91	850.88	3.87	-0.23	0.003
145.00	-1.54	-0.15	0.00	-0.77	0.00	0.77	1,618.18	809.09	1,613.39	796.79	4.11	-0.23	0.002
150.00	0.00	-0.15	0.00	0.00	0.00	0.00	1,557.43	778.72	1,493.87	737.76	4.36	-0.23	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):	0.18
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}):	0.19
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	2.33
Redundancy Factor (p):	1.00

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
36	147.50	426	1.828	1.667	1.025	0.329	93	528
35	142.50	440	1.706	1.144	0.823	0.255	75	545
34	137.50	508	1.588	0.742	0.654	0.190	64	629
33	132.50	522	1.475	0.441	0.513	0.133	46	647
32	127.50	536	1.366	0.222	0.397	0.084	30	664
31	124.50	109	1.302	0.123	0.338	0.059	4	135
30	122.00	556	1.250	0.057	0.294	0.040	15	689
29	117.50	708	1.160	-0.030	0.226	0.010	5	877
28	113.00	576	1.073	-0.084	0.170	-0.013	-5	714
27	110.50	145	1.026	-0.103	0.144	-0.023	-2	180
26	107.50	736	0.971	-0.116	0.117	-0.032	-16	912
25	103.00	618	0.891	-0.122	0.084	-0.041	-17	766
24	100.50	286	0.848	-0.119	0.069	-0.043	-8	355
23	97.92	1,207	0.805	-0.113	0.055	-0.044	-35	1,495
22	95.42	159	0.765	-0.104	0.044	-0.042	-4	196
21	92.50	963	0.719	-0.092	0.034	-0.038	-24	1,192
20	87.50	981	0.643	-0.068	0.020	-0.027	-17	1,216
19	82.50	1,000	0.572	-0.043	0.012	-0.011	-7	1,239
18	77.50	1,019	0.505	-0.018	0.007	0.006	4	1,262
17	72.50	1,037	0.442	0.005	0.006	0.022	15	1,285
16	67.50	1,056	0.383	0.023	0.007	0.035	24	1,308
15	62.50	1,075	0.328	0.039	0.010	0.044	31	1,331
14	57.50	1,093	0.278	0.050	0.014	0.049	36	1,355
13	54.50	221	0.250	0.055	0.017	0.051	7	274
12	52.00	1,652	0.227	0.059	0.020	0.052	57	2,047
11	48.92	906	0.201	0.063	0.023	0.052	32	1,122
10	46.42	713	0.181	0.065	0.026	0.052	25	883
9	42.50	1,275	0.152	0.068	0.030	0.052	44	1,579
8	37.50	1,297	0.118	0.070	0.035	0.051	44	1,606
7	32.50	1,318	0.089	0.071	0.039	0.050	44	1,633
6	27.50	1,340	0.064	0.072	0.041	0.048	43	1,660
5	22.50	1,362	0.043	0.070	0.042	0.047	42	1,687
4	17.50	1,384	0.026	0.067	0.040	0.044	41	1,714
3	12.50	1,406	0.013	0.059	0.034	0.040	37	1,741

2	7.50	1,427	0.005	0.044	0.025	0.031	30	1,768
1	2.50	1,449	0.001	0.018	0.010	0.015	14	1,795
DragonWave Horizon C	150.00	21	1.890	1.980	1.140	0.369	5	26
Alcatel-Lucent RRH2x	150.00	317	1.890	1.980	1.140	0.369	78	393
Alcatel-Lucent 1900	150.00	180	1.890	1.980	1.140	0.369	44	223
Alcatel-Lucent TD-RR	150.00	210	1.890	1.980	1.140	0.369	52	260
DragonWave A-ANT-11G	150.00	27	1.890	1.980	1.140	0.369	7	33
DragonWave A-ANT-18G	150.00	27	1.890	1.980	1.140	0.369	7	34
Round T-Arm	150.00	750	1.890	1.980	1.140	0.369	185	929
KMW ETCR-654L12H6	150.00	255	1.890	1.980	1.140	0.369	63	316
Ericsson KRY 112 144	140.00	33	1.646	0.929	0.735	0.222	5	41
Ericsson RRUS 11 B12	140.00	152	1.646	0.929	0.735	0.222	22	188
Ericsson AIR 21, 1.3	140.00	249	1.646	0.929	0.735	0.222	37	308
Round T-Arm	140.00	750	1.646	0.929	0.735	0.222	111	929
Ericsson AIR 21 B4A/	140.00	330	1.646	0.929	0.735	0.222	49	409
Powerwave Allgon LGP	124.00	85	1.292	0.109	0.329	0.055	3	105
Raycap DC6-48-60-18-	124.00	32	1.292	0.109	0.329	0.055	1	39
Raycap DC6-48-60-18-	124.00	32	1.292	0.109	0.329	0.055	1	39
Ericsson RRUS 4478 B	124.00	178	1.292	0.109	0.329	0.055	6	221
Ericsson RRUS-11 (50	124.00	150	1.292	0.109	0.329	0.055	5	186
Ericsson RRUS 32 B66	124.00	152	1.292	0.109	0.329	0.055	6	188
Ericsson RRUS 32 B30	124.00	180	1.292	0.109	0.329	0.055	7	223
Ericsson RRUS 32 B2	124.00	159	1.292	0.109	0.329	0.055	6	197
Raycap DC6-48-60-18-	124.00	16	1.292	0.109	0.329	0.055	1	20
Powerwave 7770.00	124.00	105	1.292	0.109	0.329	0.055	4	130
CCI OPA-65R-LCUU-H6	124.00	438	1.292	0.109	0.329	0.055	16	543
Kathrein Scala 80010	124.00	293	1.292	0.109	0.329	0.055	11	363
Flat Platform w/ Han	124.00	2,000	1.292	0.109	0.329	0.055	73	2,478
Flat Platform w/ Han	111.00	2,000	1.035	-0.099	0.149	-0.021	-28	2,478
RFS APXV18-206517S-C	105.00	79	0.926	-0.121	0.098	-0.038	-2	98
		40,706	65.392	25.965	22.760	6.238	1,539	50,427

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)
36	147.50	426	1.828	1.667	1.025	0.329	93	367
35	142.50	440	1.706	1.144	0.823	0.255	75	379
34	137.50	508	1.588	0.742	0.654	0.190	64	438
33	132.50	522	1.475	0.441	0.513	0.133	46	450
32	127.50	536	1.366	0.222	0.397	0.084	30	462
31	124.50	109	1.302	0.123	0.338	0.059	4	94
30	122.00	556	1.250	0.057	0.294	0.040	15	479
29	117.50	708	1.160	-0.030	0.226	0.010	5	610
28	113.00	576	1.073	-0.084	0.170	-0.013	-5	496
27	110.50	145	1.026	-0.103	0.144	-0.023	-2	125
26	107.50	736	0.971	-0.116	0.117	-0.032	-16	634
25	103.00	618	0.891	-0.122	0.084	-0.041	-17	533
24	100.50	286	0.848	-0.119	0.069	-0.043	-8	246
23	97.92	1,207	0.805	-0.113	0.055	-0.044	-35	1,039
22	95.42	159	0.765	-0.104	0.044	-0.042	-4	137
21	92.50	963	0.719	-0.092	0.034	-0.038	-24	829
20	87.50	981	0.643	-0.068	0.020	-0.027	-17	845
19	82.50	1,000	0.572	-0.043	0.012	-0.011	-7	861
18	77.50	1,019	0.505	-0.018	0.007	0.006	4	877
17	72.50	1,037	0.442	0.005	0.006	0.022	15	893
16	67.50	1,056	0.383	0.023	0.007	0.035	24	909
15	62.50	1,075	0.328	0.039	0.010	0.044	31	926
14	57.50	1,093	0.278	0.050	0.014	0.049	36	942

13	54.50	221	0.250	0.055	0.017	0.051	7	190
12	52.00	1,652	0.227	0.059	0.020	0.052	57	1,423
11	48.92	906	0.201	0.063	0.023	0.052	32	780
10	46.42	713	0.181	0.065	0.026	0.052	25	614
9	42.50	1,275	0.152	0.068	0.030	0.052	44	1,098
8	37.50	1,297	0.118	0.070	0.035	0.051	44	1,117
7	32.50	1,318	0.089	0.071	0.039	0.050	44	1,135
6	27.50	1,340	0.064	0.072	0.041	0.048	43	1,154
5	22.50	1,362	0.043	0.070	0.042	0.047	42	1,173
4	17.50	1,384	0.026	0.067	0.040	0.044	41	1,192
3	12.50	1,406	0.013	0.059	0.034	0.040	37	1,210
2	7.50	1,427	0.005	0.044	0.025	0.031	30	1,229
1	2.50	1,449	0.001	0.018	0.010	0.015	14	1,248
DragonWave Horizon C	150.00	21	1.890	1.980	1.140	0.369	5	18
Alcatel-Lucent RRH2x	150.00	317	1.890	1.980	1.140	0.369	78	273
Alcatel-Lucent 1900	150.00	180	1.890	1.980	1.140	0.369	44	155
Alcatel-Lucent TD-RR	150.00	210	1.890	1.980	1.140	0.369	52	181
DragonWave A-ANT-11G	150.00	27	1.890	1.980	1.140	0.369	7	23
DragonWave A-ANT-18G	150.00	27	1.890	1.980	1.140	0.369	7	23
Round T-Arm	150.00	750	1.890	1.980	1.140	0.369	185	646
KMW ETCR-654L12H6	150.00	255	1.890	1.980	1.140	0.369	63	219
Ericsson KRY 112 144	140.00	33	1.646	0.929	0.735	0.222	5	28
Ericsson RRUS 11 B12	140.00	152	1.646	0.929	0.735	0.222	22	131
Ericsson AIR 21, 1.3	140.00	249	1.646	0.929	0.735	0.222	37	214
Round T-Arm	140.00	750	1.646	0.929	0.735	0.222	111	646
Ericsson AIR 21 B4A/	140.00	330	1.646	0.929	0.735	0.222	49	284
Powerwave Allgon LGP	124.00	85	1.292	0.109	0.329	0.055	3	73
Raycap DC6-48-60-18-	124.00	32	1.292	0.109	0.329	0.055	1	27
Raycap DC6-48-60-18-	124.00	32	1.292	0.109	0.329	0.055	1	27
Ericsson RRUS 4478 B	124.00	178	1.292	0.109	0.329	0.055	6	153
Ericsson RRUS-11 (50	124.00	150	1.292	0.109	0.329	0.055	5	129
Ericsson RRUS 32 B66	124.00	152	1.292	0.109	0.329	0.055	6	131
Ericsson RRUS 32 B30	124.00	180	1.292	0.109	0.329	0.055	7	155
Ericsson RRUS 32 B2	124.00	159	1.292	0.109	0.329	0.055	6	137
Raycap DC6-48-60-18-	124.00	16	1.292	0.109	0.329	0.055	1	14
Powerwave 7770.00	124.00	105	1.292	0.109	0.329	0.055	4	90
CCI OPA-65R-LCUU-H6	124.00	438	1.292	0.109	0.329	0.055	16	377
Kathrein Scala 80010	124.00	293	1.292	0.109	0.329	0.055	11	252
Flat Platform w/ Han	124.00	2,000	1.292	0.109	0.329	0.055	73	1,722
Flat Platform w/ Han	111.00	2,000	1.035	-0.099	0.149	-0.021	-28	1,722
RFS APXV18-206517S-C	105.00	79	0.926	-0.121	0.098	-0.038	-2	68
		40,706	65.392	25.965	22.760	6.238	1,539	35,055

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	-48.63	-1.53	0.00	-172.09	0.00	172.09	4,644.06	2,322.03	9,415.76	4,650.09	0.00	0.00	0.047
5.00	-46.86	-1.51	0.00	-164.45	0.00	164.45	4,595.29	2,297.65	9,142.89	4,515.33	0.01	-0.01	0.047
10.00	-45.12	-1.48	0.00	-156.91	0.00	156.91	4,545.11	2,272.56	8,870.98	4,381.04	0.02	-0.02	0.046
15.00	-43.41	-1.45	0.00	-149.51	0.00	149.51	4,493.53	2,246.77	8,600.18	4,247.31	0.05	-0.03	0.045
20.00	-41.72	-1.41	0.00	-142.28	0.00	142.28	4,440.55	2,220.28	8,330.66	4,114.20	0.10	-0.05	0.044
25.00	-40.06	-1.37	0.00	-135.23	0.00	135.23	4,386.17	2,193.08	8,062.58	3,981.80	0.15	-0.06	0.043
30.00	-38.43	-1.34	0.00	-128.35	0.00	128.35	4,330.38	2,165.19	7,796.08	3,850.19	0.22	-0.07	0.042
35.00	-36.82	-1.30	0.00	-121.67	0.00	121.67	4,273.19	2,136.59	7,531.34	3,719.45	0.29	-0.08	0.041
40.00	-35.24	-1.26	0.00	-115.17	0.00	115.17	4,214.59	2,107.30	7,268.52	3,589.65	0.38	-0.09	0.040
45.00	-34.36	-1.24	0.00	-108.87	0.00	108.87	4,154.60	2,077.30	7,007.76	3,460.87	0.49	-0.10	0.040
47.83	-33.24	-1.21	0.00	-105.36	0.00	105.36	4,119.98	2,059.99	6,860.98	3,388.38	0.55	-0.11	0.039
50.00	-31.19	-1.15	0.00	-102.74	0.00	102.74	4,093.20	2,046.60	6,749.23	3,333.19	0.60	-0.12	0.038
54.00	-30.91	-1.15	0.00	-98.13	0.00	98.13	3,318.39	1,659.20	5,491.78	2,712.18	0.71	-0.13	0.045
55.00	-29.56	-1.11	0.00	-96.99	0.00	96.99	3,309.51	1,654.75	5,452.02	2,692.55	0.73	-0.13	0.045
60.00	-28.23	-1.09	0.00	-91.42	0.00	91.42	3,264.25	1,632.12	5,253.88	2,594.69	0.88	-0.14	0.044
65.00	-26.92	-1.06	0.00	-85.99	0.00	85.99	3,217.59	1,608.79	5,056.96	2,497.44	1.03	-0.16	0.043
70.00	-25.63	-1.05	0.00	-80.67	0.00	80.67	3,169.52	1,584.76	4,861.43	2,400.88	1.21	-0.17	0.042
75.00	-24.37	-1.05	0.00	-75.42	0.00	75.42	3,120.06	1,560.03	4,667.43	2,305.07	1.39	-0.18	0.041
80.00	-23.13	-1.06	0.00	-70.17	0.00	70.17	3,069.19	1,534.59	4,475.14	2,210.10	1.59	-0.20	0.039
85.00	-21.92	-1.08	0.00	-64.88	0.00	64.88	3,016.92	1,508.46	4,284.71	2,116.06	1.81	-0.21	0.038
90.00	-20.72	-1.10	0.00	-59.49	0.00	59.49	2,963.24	1,481.62	4,096.29	2,023.00	2.04	-0.23	0.036
95.00	-20.53	-1.11	0.00	-53.98	0.00	53.98	2,909.11	1,454.55	3,911.32	1,931.65	2.28	-0.24	0.035
95.83	-19.03	-1.14	0.00	-53.06	0.00	53.06	2,895.61	1,447.80	3,874.90	1,913.67	2.33	-0.24	0.034
100.00	-18.68	-1.15	0.00	-48.31	0.00	48.31	2,828.11	1,414.06	3,695.36	1,825.00	2.54	-0.25	0.033
101.00	-17.91	-1.16	0.00	-47.16	0.00	47.16	1,940.77	970.39	2,581.63	1,274.97	2.60	-0.26	0.046
105.00	-16.90	-1.18	0.00	-42.50	0.00	42.50	1,916.40	958.20	2,491.16	1,230.29	2.82	-0.27	0.043
110.00	-16.72	-1.19	0.00	-36.60	0.00	36.60	1,884.66	942.33	2,378.55	1,174.68	3.10	-0.28	0.040
111.00	-13.53	-1.20	0.00	-35.41	0.00	35.41	1,878.15	939.07	2,356.11	1,163.59	3.16	-0.29	0.038
115.00	-12.65	-1.20	0.00	-30.60	0.00	30.60	1,851.53	925.76	2,266.63	1,119.40	3.41	-0.30	0.034
120.00	-11.96	-1.18	0.00	-24.61	0.00	24.61	1,816.99	908.49	2,155.56	1,064.55	3.73	-0.31	0.030
124.00	-7.10	-1.01	0.00	-19.88	0.00	19.88	1,788.35	894.17	2,067.42	1,021.02	3.99	-0.32	0.023
125.00	-6.43	-0.98	0.00	-18.87	0.00	18.87	1,781.05	890.52	2,045.49	1,010.19	4.06	-0.32	0.022
130.00	-5.79	-0.93	0.00	-13.98	0.00	13.98	1,743.70	871.85	1,936.59	956.41	4.40	-0.33	0.018
135.00	-5.16	-0.86	0.00	-9.33	0.00	9.33	1,704.95	852.48	1,829.01	903.28	4.75	-0.34	0.013
140.00	-2.74	-0.55	0.00	-5.01	0.00	5.01	1,664.80	832.40	1,722.91	850.88	5.11	-0.34	0.008
145.00	-2.21	-0.45	0.00	-2.27	0.00	2.27	1,618.18	809.09	1,613.39	796.79	5.47	-0.35	0.004
150.00	0.00	-0.44	0.00	0.00	0.00	0.00	1,557.43	778.72	1,493.87	737.76	5.84	-0.35	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	-33.81	-1.53	0.00	-169.46	0.00	169.46	4,644.06	2,322.03	9,415.76	4,650.09	0.00	0.00	0.044
5.00	-32.58	-1.50	0.00	-161.82	0.00	161.82	4,595.29	2,297.65	9,142.89	4,515.33	0.01	-0.01	0.043
10.00	-31.37	-1.47	0.00	-154.31	0.00	154.31	4,545.11	2,272.56	8,870.98	4,381.04	0.02	-0.02	0.042
15.00	-30.17	-1.44	0.00	-146.95	0.00	146.95	4,493.53	2,246.77	8,600.18	4,247.31	0.05	-0.03	0.041
20.00	-29.00	-1.40	0.00	-139.76	0.00	139.76	4,440.55	2,220.28	8,330.66	4,114.20	0.09	-0.04	0.041
25.00	-27.85	-1.36	0.00	-132.77	0.00	132.77	4,386.17	2,193.08	8,062.58	3,981.80	0.15	-0.06	0.040
30.00	-26.71	-1.32	0.00	-125.96	0.00	125.96	4,330.38	2,165.19	7,796.08	3,850.19	0.21	-0.07	0.039
35.00	-25.59	-1.28	0.00	-119.35	0.00	119.35	4,273.19	2,136.59	7,531.34	3,719.45	0.29	-0.08	0.038
40.00	-24.50	-1.24	0.00	-112.95	0.00	112.95	4,214.59	2,107.30	7,268.52	3,589.65	0.38	-0.09	0.037
45.00	-23.88	-1.22	0.00	-106.74	0.00	106.74	4,154.60	2,077.30	7,007.76	3,460.87	0.48	-0.10	0.037
47.83	-23.10	-1.19	0.00	-103.29	0.00	103.29	4,119.98	2,059.99	6,860.98	3,388.38	0.54	-0.11	0.036
50.00	-21.68	-1.13	0.00	-100.72	0.00	100.72	4,093.20	2,046.60	6,749.23	3,333.19	0.59	-0.11	0.036
54.00	-21.49	-1.13	0.00	-96.19	0.00	96.19	3,318.39	1,659.20	5,491.78	2,712.18	0.69	-0.12	0.042
55.00	-20.55	-1.09	0.00	-95.07	0.00	95.07	3,309.51	1,654.75	5,452.02	2,692.55	0.72	-0.13	0.042
60.00	-19.62	-1.06	0.00	-89.61	0.00	89.61	3,264.25	1,632.12	5,253.88	2,594.69	0.86	-0.14	0.041
65.00	-18.71	-1.04	0.00	-84.30	0.00	84.30	3,217.59	1,608.79	5,056.96	2,497.44	1.02	-0.15	0.040
70.00	-17.82	-1.03	0.00	-79.10	0.00	79.10	3,169.52	1,584.76	4,861.43	2,400.88	1.18	-0.17	0.039
75.00	-16.94	-1.02	0.00	-73.97	0.00	73.97	3,120.06	1,560.03	4,667.43	2,305.07	1.37	-0.18	0.038
80.00	-16.08	-1.03	0.00	-68.85	0.00	68.85	3,069.19	1,534.59	4,475.14	2,210.10	1.56	-0.20	0.036
85.00	-15.23	-1.05	0.00	-63.69	0.00	63.69	3,016.92	1,508.46	4,284.71	2,116.06	1.78	-0.21	0.035
90.00	-14.41	-1.08	0.00	-58.44	0.00	58.44	2,963.24	1,481.62	4,096.29	2,023.00	2.00	-0.22	0.034
95.00	-14.27	-1.08	0.00	-53.07	0.00	53.07	2,909.11	1,454.55	3,911.32	1,931.65	2.24	-0.24	0.032
95.83	-13.23	-1.11	0.00	-52.17	0.00	52.17	2,895.61	1,447.80	3,874.90	1,913.67	2.28	-0.24	0.032
100.00	-12.98	-1.12	0.00	-47.53	0.00	47.53	2,828.11	1,414.06	3,695.36	1,825.00	2.50	-0.25	0.031
101.00	-12.45	-1.14	0.00	-46.40	0.00	46.40	1,940.77	970.39	2,581.63	1,274.97	2.55	-0.25	0.043
105.00	-11.75	-1.16	0.00	-41.85	0.00	41.85	1,916.40	958.20	2,491.16	1,230.29	2.76	-0.26	0.040
110.00	-11.62	-1.16	0.00	-36.07	0.00	36.07	1,884.66	942.33	2,378.55	1,174.68	3.05	-0.28	0.037
111.00	-9.40	-1.18	0.00	-34.91	0.00	34.91	1,878.15	939.07	2,356.11	1,163.59	3.11	-0.28	0.035
115.00	-8.79	-1.18	0.00	-30.19	0.00	30.19	1,851.53	925.76	2,266.63	1,119.40	3.35	-0.29	0.032
120.00	-8.31	-1.16	0.00	-24.30	0.00	24.30	1,816.99	908.49	2,155.56	1,064.55	3.66	-0.31	0.027
124.00	-4.93	-1.00	0.00	-19.66	0.00	19.66	1,788.35	894.17	2,067.42	1,021.02	3.92	-0.31	0.022
125.00	-4.47	-0.97	0.00	-18.66	0.00	18.66	1,781.05	890.52	2,045.49	1,010.19	3.99	-0.32	0.021
130.00	-4.02	-0.92	0.00	-13.83	0.00	13.83	1,743.70	871.85	1,936.59	956.41	4.32	-0.33	0.017
135.00	-3.58	-0.85	0.00	-9.23	0.00	9.23	1,704.95	852.48	1,829.01	903.28	4.67	-0.33	0.012
140.00	-1.90	-0.54	0.00	-4.97	0.00	4.97	1,664.80	832.40	1,722.91	850.88	5.02	-0.34	0.007
145.00	-1.54	-0.45	0.00	-2.24	0.00	2.24	1,618.18	809.09	1,613.39	796.79	5.37	-0.34	0.004
150.00	0.00	-0.44	0.00	0.00	0.00	0.00	1,557.43	778.72	1,493.87	737.76	5.73	-0.34	0.000

Site Number: 302538

Code: ANSI/TIA-222-G

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Site Name: Parsonage Hill Aka Wallin, CT

Engineering Number: OAA722111_C3_02

1/31/2018 1:05:51 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	36.46	0.00	48.77	0.00	0.00	3702.69	0.00	0.81
0.9D + 1.6W	36.43	0.00	36.56	0.00	0.00	3659.64	0.00	0.80
1.2D + 1.0Di + 1.0Wi	8.07	0.00	75.99	0.00	0.00	860.84	0.00	0.20
(1.2 + 0.2Sds) * DL + E ELFM	1.22	0.00	48.63	0.00	0.00	145.75	0.00	0.04
(1.2 + 0.2Sds) * DL + E EMAM	1.53	0.00	48.63	0.00	0.00	172.09	0.00	0.05
(0.9 - 0.2Sds) * DL + E ELFM	1.22	0.00	33.81	0.00	0.00	143.66	0.00	0.04
(0.9 - 0.2Sds) * DL + E EMAM	1.53	0.00	33.81	0.00	0.00	169.46	0.00	0.04
1.0D + 1.0W	8.71	0.00	40.70	0.00	0.00	879.78	0.00	0.20

Site Number: 302538

Code: ANSI/TIA-222-G

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Site Name: Parsonage Hill Aka Wallin, CT

Engineering Number: OAA722111_C3_02

1/31/2018 1:05:51 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)	
3,567.17	35.87	30.48	3,702.69	75.99	36.46	76.89

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	2.750	63.850	Polygon	12	0.00	9.968	811.67	1017.64	0.80

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
57.85	16	2.25" 18J	2.25	75.00	100.00	Radial	0.00	0.0	196.76	260.00	0.77	187.27	260.00	0.74

Property Location: 1000 NORTHROP RD
 Vision ID: 133242

Account # N20000089

MAP ID: 54 / 10 / 4

Bldg #: 1 of 2

Bldg Name:

Sec #: 1 of 1

State Use: 4310

Print Date: 03/28/2018 11:05

CURRENT OWNER
 AT&T WIRELESS PCS INC
 C/O AT&T MOBILITY
 575 MOROSGO DR
 SUITE 13-F WEST TOWER
 ATLANTA, GA 30324
 Additional Owners:

UTILITIES
 1 Level
 2 Public Water
 1 Paved
 5 Industrial

STRT./ROAD
LOCATION

CURRENT ASSESSMENT
 Description Code Appraised Value Assessed Value
 UTIL BLDG 4-2 83,900 58,700
 UTIL OUTBL 4-3 2,800 2,000
 6148
 WALLINGFORD, CT

SUPPLEMENTAL DATA
 Other ID: 009001003004
 Census: P/Z MAP #
 Old MBLU ENG MAP #
 TC MAP # Esment
 TC MAP # Town Line?
 Record Lot IND PARKS II
 Record Lot
 GIS ID: 54/10/4
 ASSOC PID#

AT&T WIRELESS PCS INC

BK-VOL/PAGE

SALE DATE

q/u w/

SALE PRICE

V.C.

PREVIOUS ASSESSMENTS (HISTORY)

VISION

Year	Type	Description	Amount	Code	Description	Number	Amount	Comm. Int.
EXEMPTIONS								
OTHER ASSESSMENTS								
Total: 60,700								
PREVIOUS ASSESSMENTS (HISTORY)								
2017			4-2	58,700	2016	4-2	58,700	2015
2017			4-3	2,000	2016	4-3	2,000	2015
Total:				86,700	Total:			60,700

This signature acknowledges a visit by a Data Collector or Assessor

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card) 36,300
 Appraised XF (B) Value (Bldg) 0
 Appraised OB (L) Value (Bldg) 2,800
 Appraised Land Value (Bldg) 0
 Special Land Value 0
 Total Appraised Parcel Value 86,700
 Valuation Method: C
 Adjustment: 0
 Net Total Appraised Parcel Value 86,700

PREFAB EQUIPMENT BLDG
 VALUED @ \$36000
 NO LAND - CELL TOWER ONLY
 4 ANTENNA SITES

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Description	Amount	Insp. Date	% Comp.	Date Comp.	Comments	Date	Type	IS	ID	Ca.	Purpose/Result
30441	04/23/2016	CM	Commercial	25,000	08/26/2016	100		CHANGE 3 ANTENNA	08/26/2016	02		KC	63	Permit Check - No Measu
30289	03/09/2016	CM	Commercial	15,000	08/26/2016	100		ATTACH ANTENNAE	09/27/2013	02		TH	63	Permit Check - No Measu
27905	07/18/2013	CM	Commercial	15,000	09/27/2013	100		T-MOBILE-REPL EXN	07/11/2013	02		TH	63	Permit Check - No Measu
27658	05/13/2013	CM	Commercial	15,000	07/11/2013	100		RENOVATE TEL CAB	10/06/07/2012	03		KC	46	Photo
12503	01/10/2000	CM	Commercial	73,000		100		CELL TOWER EQUIP	05/17/2010	03		DT	29	Field Review

LAND LINE VALUATION SECTION

B Use # Code	Use Description	Zone	D Front	Depth	Units	Unit Price	I Factor	S.A. Disc	C Factor	ST. Ldx	Adj.	Notes- Adj	Special Pricing	S Adj Fact	Adj. Unit Price	Land Value
1	4310 TEL REL TW M96	IX			0 SF	0.00	1.0000	0	1.0000	1.00	0.00			.00	0.00	0

Total Card Land Units: 0.00

AC Parcel Total Land Area: 0 AC

Total Land Value: 0

CONSTRUCTION DETAIL

CONSTRUCTION DETAIL (CONTINUED)

Element	Cd.	Ch.	Description	Element	Cd.	Ch.	Description
Style	406		Telephone Building				
Model	96		Ind/Comm				
Grade	C						
Stories	1						
Occupancy	1						
Exterior Wall 1	22		Precast Panel				
Exterior Wall 2							
Roof Structure	01		Flat				
Roof Cover	04		Tar & Gravel				
Interior Wall 1	01		Minimum/Masonry				
Interior Wall 2							
Interior Floor 1	03		Concr-Finished				
Interior Floor 2							
Heating Fuel	04		Electric				
Heating Type	03		Hot Air-no Duc				
AC Type	02		Heat Pump				
Bldg Use	4310		TEL REL TW M96				
Total Rooms							
Total Bedrms							
Total Baths							
Heat/AC	01		Heat/AC Pkgs				
Frame Type	03		Masonry				
Baths/Plumbing	00		None				
Ceiling/Wall	00		None				
Rooms/Prtns	01		Light				
Wall Height	10						
% Comm Wall							

OB-OUTBUILDING & YARD ITEM(S) / XF-BUILDING EXTRA FEATURES(B)

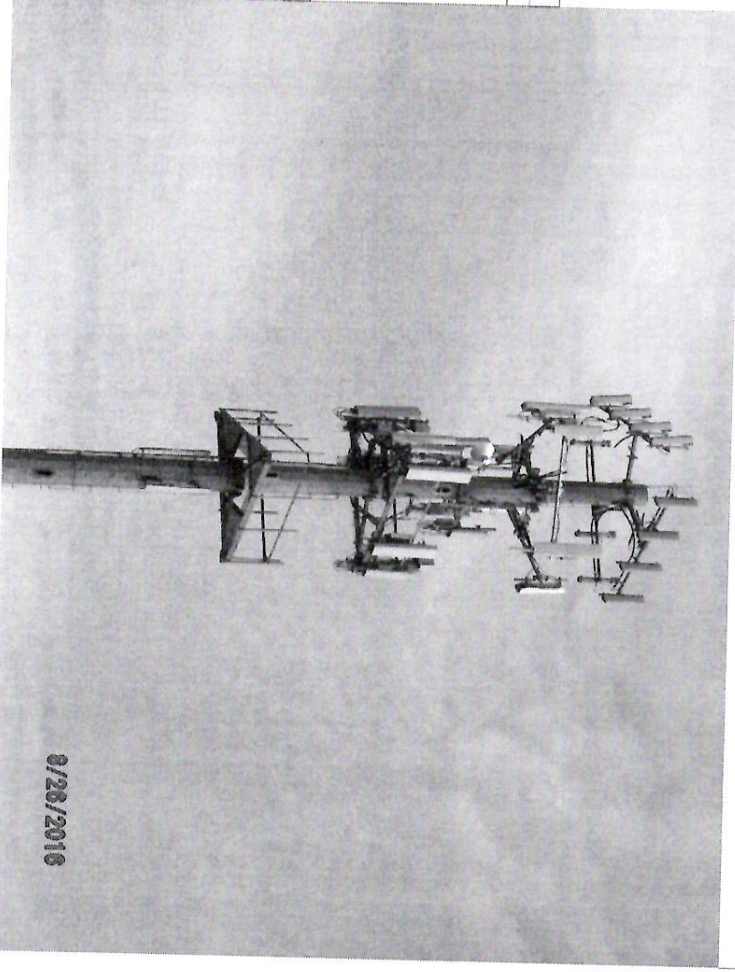
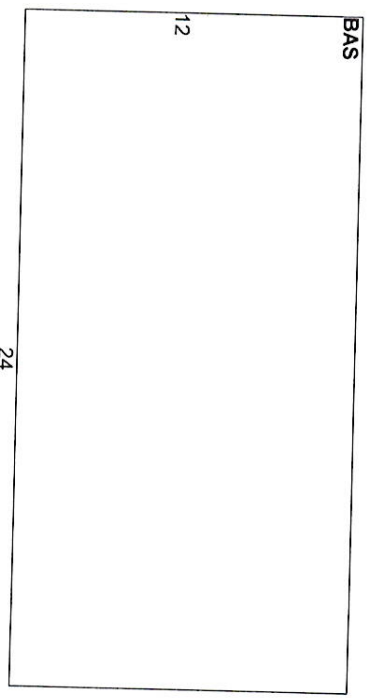
Code	Description	Sub	Sub Descript	L/B Units	Unit Price	Yr	Code	Dp Rt	Chd	%Chd	Apr Value
BUILDING SUB-AREA SUMMARY SECTION											
Code	Description	Living Area	Gross Area	Eff. Area	Unit Cost	Undeprec. Value					
BAS	First Floor	288	288	288	175.70	50,602					
Ttl. Gross Liv/Lease Area:		288	288	288	50,602						

MIXED USE

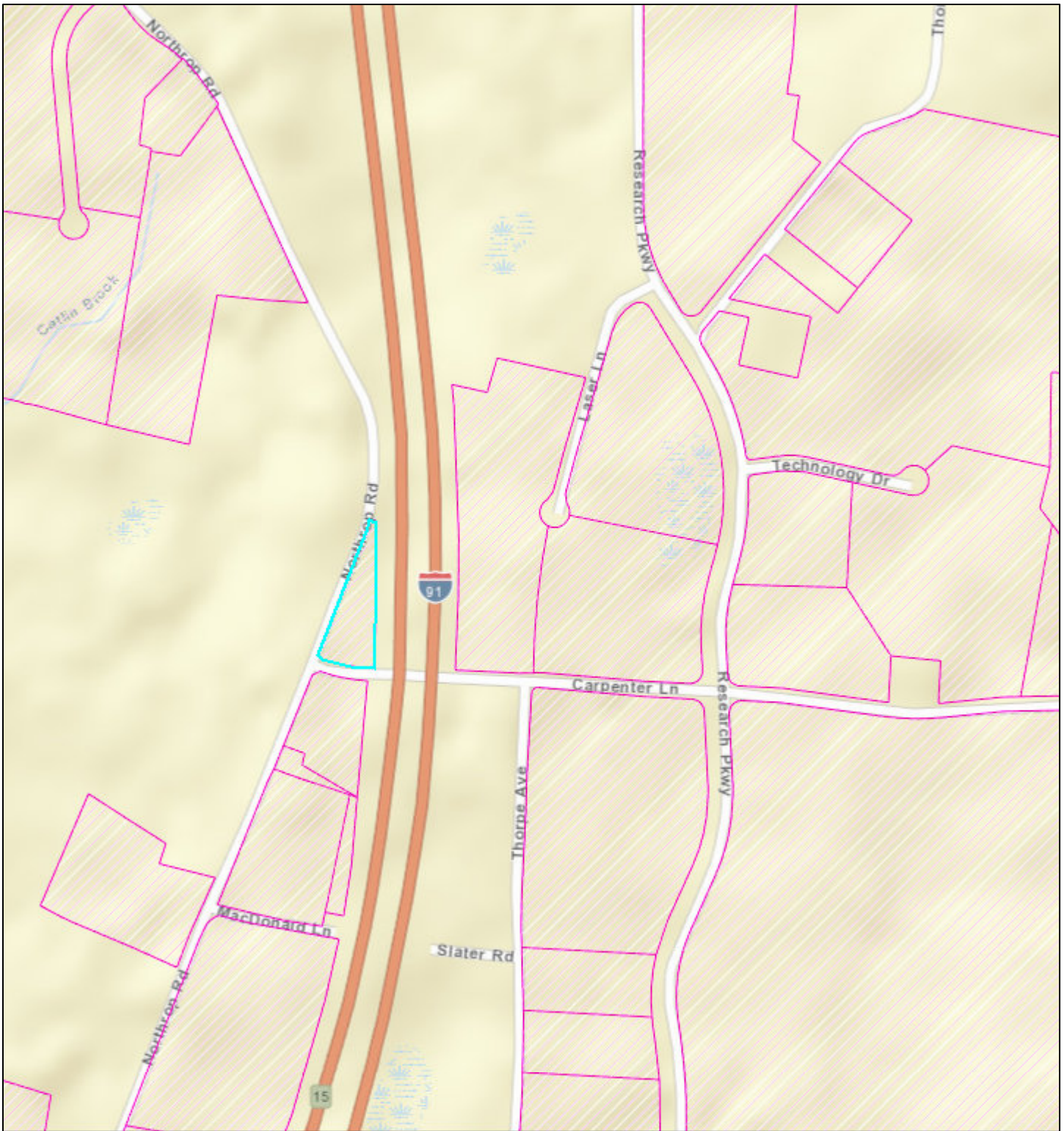
Code	Description	Percentage
4310	TEL REL TW M96	100

COST/MARKET VALUATION


Adj. Base Rate:	175.70
Net Other Adj:	50,602
Replace Cost	0.00
AYB	50,602
2009	2009
Dep Code	A
Remodel Rating	
Year Remodeled	
Dep %	6
Functional Obslnc	
External Obslnc	
Cost Trend Factor	
Status	
% Complete	
Overall % Cond	94
Apprais Val	47,600
Dep % Ovr	0
Dep Ovr Comment	
Misc Imp Ovr	0
Misc Imp Ovr Comment	
Cost to Cure Ovr	
Cost to Cure Ovr Comment	

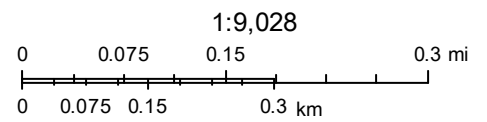


Town of Wallingford, CT



3 / 12 / 2018 9 : 48 : 24 PM

 Lot Boundaries



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community



Town of Wallingford, Connecticut

407-94

SPECIAL PERMIT

ISSUED TO:

NAME SMART SMR OF NEW YORK

ADDRESS 575 Corporate Drive, Suite 402, Mahwah, NJ 07430

ISSUED FOR: 1,650 sq. ft. mobile radio transmission facility

163 ft. radio tower

OWNER OF PROPERTY Anthony D. Autorino

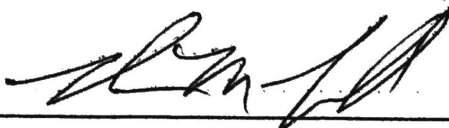
LEGAL DESCRIPTION OF PROPERTY 1000 990 Northrup Road

CONDITIONS OF PERMIT:

1. Mr. Costello's comments concerning the "T" driveway
2. _____
3. _____
4. _____

DATE APPROVED BY PZC June 13, 1994

WALLINGFORD PLANNING AND ZONING COMMISSION

BY 

ASSISTANT TOWN PLANNER

PUBLIC HEARINGS

1. Special Permit/SMART/SMR/Northrup - #407-94 (continued)

The applicant requested a special permit to install a telecommunications tower at 990 Northrup Road in Wallingford. The application is for a 150 ft. monopole with 13 ft. width antennas on top for an overall height of 163 ft.

Ms. Bogle presented the company's history. SMART SMR is building a telecommunications system throughout New York, New Jersey, and Connecticut. This system will provide digital communication by combining dispatch, interconnect, paging, and data transmission into one system. This is a dishless system which travels over the radio waves. In order for this system to operate it must have a line of sight from the transmitter to the receiver. This is why it is necessary to have a height of 150 ft. The system will cover Wallingford, Meriden, North Haven, and Rocky Hill.

This system is categorized as a public utility which requires a special permit. Towers are exempt under the regulations from having a variance.

The present site is near a parking lot occupied for Double A Transportation, Inc. This site is not suitable to build on because of the setback requirements. The site meets all the setbacks for this facility and enables the property to be developed without asking for any variances.


Ms. Bogle presented the criteria used by the applicant when looking for an appropriate site for the tower in order to provide sufficient coverage. They did investigate the possibility of putting the antenna on top of a hotel near the site. However, it would not allow adequate coverage for the area due to the rolling nature of the topography. Ms. Bogle presented the Commission with photographs to give them an idea of the structure, as well as the existing parcel.

Ms. Bogle stated in response to Ms. Bush's letter to Bristol-Myers Squibb (Attachment 1A), the applicant has to file a report with the FAA and notices are sent to surrounding airports. She did not foresee any special conditions that would be specified by the FAA for their request. The helicopters at Bristol-Myers are taking off straight up in the air and the applicant has not had a problem even being located adjacent to a helipad.

She stated it has been her experience that they would not have to light or stripe the pole because of its height. Additional photographs were distributed to the Commission showing other facilities the applicant has built in Connecticut (185 ft. in height).

Ms. Bogle stated the foundation for the tower will be 2,520 sq. ft. and the monopole will be on a 15' x 15' foundation. She spoke to the Water/Sewer Division because it is a watershed area. She was informed that this use did not contribute nor inhibit the watershed and therefore, was appropriate for the area.

Ms. Bogle addressed Mr. Costello's comments (Attachment 1B) stating the plans will reflect his request to configure the driveway off Northrop Road to improve sight distance to the north.




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 TOWN OF WALLINGFORD
 45 S MAIN ST
 RM 310
 WALLINGFORD CT 06492-4201

USPS TRACKING #



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Electronic Rate Approved #038555749



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 9405 8036 9930 0615 3201 28**

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Print Date:	03/30/2018	Insurance Fee	\$0.00
Ship Date:	03/31/2018	Total	\$6.70
Expected Delivery Date:	04/02/2018		
Insured Value:	\$50.00		

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

To: MAYOR WILLIAM W DICKSON, JR.
 TOWN OF WALLINGFORD
 45 S MAIN ST
 RM 310
 WALLINGFORD CT 06492-4201

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