March 27, 2018

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

Regarding:	Notice of Exempt Modification – Swap of 3 Antennas, Addition of 6 Remote Radios, and Addition of 1 Squid.
Property Address:	2 West Street; Rocky Hill, CT 06067 (also known by the Town of Rocky Hill as 699 West Street) (the "Property")
Applicant:	AT&T Mobility ("AT&T", Site # CT1009)

Dear Ms. Bachman:

AT&T currently maintains a wireless telecommunications facility on an existing 100-foot monopole at the above-referenced address, latitude 41.65172222, longitude -72.6685472222222. Said monopole is owned by American Tower Corporation and the ground space is owned by Connecticut Light & Power Co. (Eversource).

AT&T desires to modify its existing telecommunications facility by swapping (3) antennas, adding (6) remote radios, and adding (1) DC/Fiber squid surge suppressor. The centerline height of said antennas is and will remain at 103 feet.

Please accept this application as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72 (b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the Town Manager of the Town of Rocky Hill, The town's Building Official, the Zoning Enforcement Officer / Town Planner, and the Assistant Zoning Enforcement Officer / Town Planner. A copy of this letter is also being sent to Eversource, the ground owner; and American Tower, Corp., the owner of the structure on which AT&T is located.

The planned modifications to AT&T's facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The planned modifications will not result in an increase in the height of the existing structure. AT&T's antennas and associated lines will be installed at the existing mount height of 103' atop the Monopole tower.
2. The proposed modifications will not involve any changes to ground-space footprint and, therefore will not require an extension of the site boundary.

16 Esquire Road, Billerica, MA 01862 Phone 978-284-3801 Email: kwhite@empiretelecomm.com

3. The proposed modification will not increase the noise level at the facility by six decibel or more, or to levels that exceed state and local criteria.
4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. An RF emissions calculation is attached.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The tower and its foundation can support AT&T's proposed modifications. (Please see attached Structural analysis completed by Tower Engineering Professionals, Inc. dated January 16, 2018).

For the foregoing reasons AT&T respectfully requests that the proposed swap of antennas, addition of radios and addition of squids be allowed within the exempt modifications under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Kristen White

Kristen White
Site Acquisition Specialist
Empire Telecom
kwhite@empiretelecomm.com
978-284-3801

Enclosures:

CC: John Mehr, Town Manager
J-P Langlois, Town Building Official
Kim Ricci, Zoning Enforcement Officer; Town Planner
David Palmberg L.S / CZEO, Assistant Zoniung Enforcement Officer; Town Planner
Eversource, Ground Owner
American Tower Corporation c/o Shawn Dunn, Tower Owner

Town of Rocky Hill Property Summary Report

699 WEST STREET

PARCEL ID:	12-192	**ACCOUNT NUMBER:**	001195
LOCATION:	699 WEST STREET		
OWNER NAME:	CONNECTICUT LIGHT + POWER CO THE		

12-192-001 11/05/2012

OWNER OF RECORD
CONNECTICUT LIGHT + POWER CO THE
PO BOX 270
HARTFORD, CT 06141-0270

LIVING AREA:	null	**ZONING:**	R-20	**ACREAGE:**	9.98

SALES HISTORY

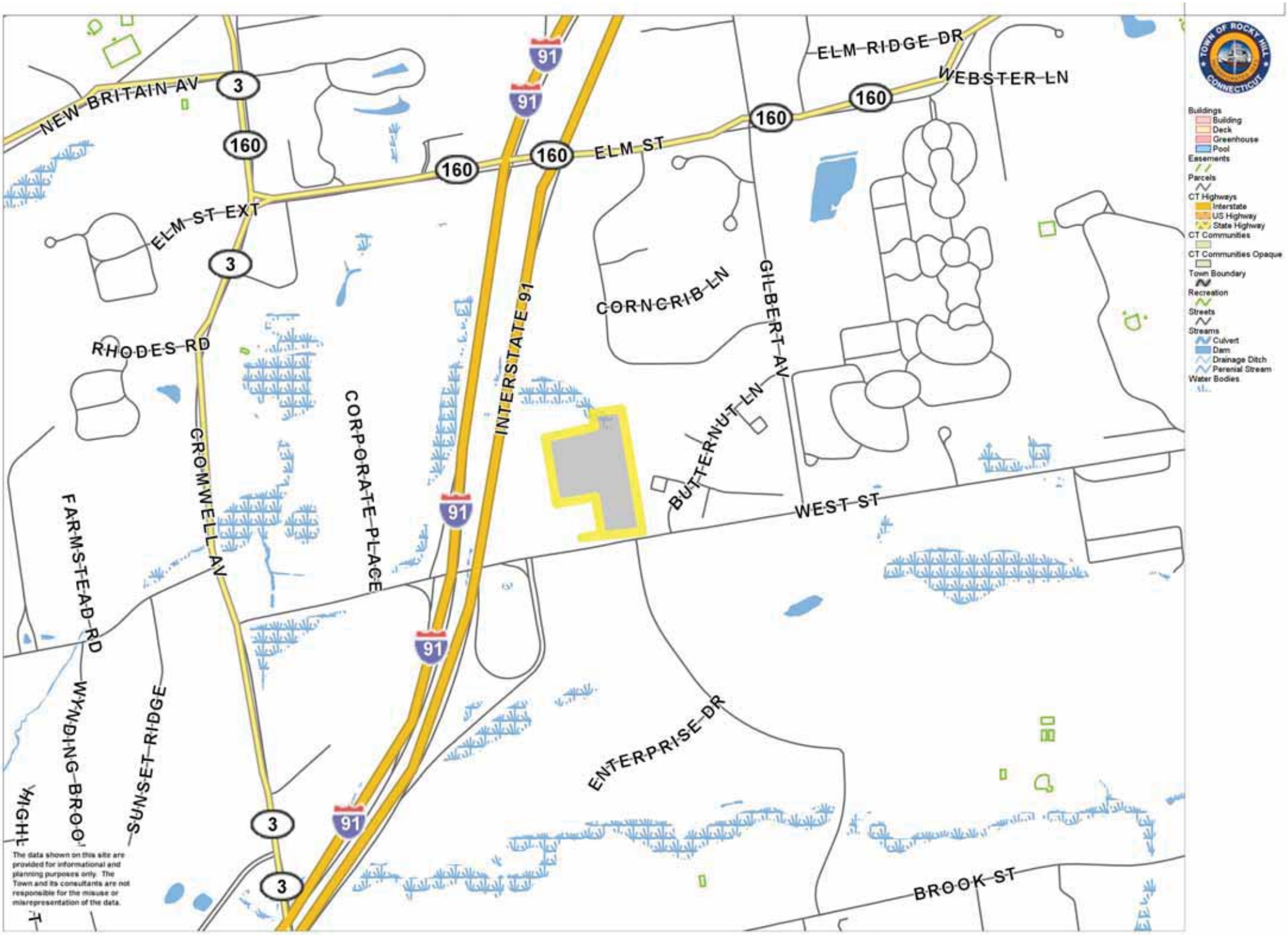
OWNER	BOOK / PAGE	SALE DATE	SALE PRICE
CONNECTICUT LIGHT + POWER CO THE	139/ 448	01-Jul-1982	$0.00

CURRENT PARCEL VALUE

TOTAL:	$1,229,340.00	**IMPROVEMENTS:**	$151,620.00	**LAND:**	$1,077,720.00

ASSESSING HISTORY

FISCAL YEAR	TOTAL VALUE	IMPROVEMENT VALUE	LAND VALUE
2017	$1,229,340.00	$151,620.00	$1,077,720.00
2007	$73,080.00	$0.00	$73,080.00
2006	$73,080.00	$0.00	$73,080.00
2016	$1,229,340.00	$151,620.00	$1,077,720.00
2014	$1,229,340.00	$151,620.00	$1,077,720.00
2013	$1,229,340.00	$151,620.00	$1,077,720.00
2012	$545,650.00	$0.00	$545,650.00
2011	$545,650.00	$0.00	$545,650.00
2010	$545,650.00	$0.00	$545,650.00
2009	$545,650.00	$0.00	$545,650.00
2008	$545,650.00	$0.00	$545,650.00


NEW BRITAIN AV
3
160
ELM ST EXT
ELM ST
ELM RIDGE DR
WEBSTER LN
RHODES RD
CROMWELL AV
CORPORATE PLACE
INTERSTATE 91
CORNCRIB LN
GILBERT AV
BUTTERNUT LN
WEST ST
FARMSTEAD RD
WYNDING BROOK
SUNSET RIDGE
HIGHLAND
ENTERPRISE DR
BROOK ST
91
Buildings
Building
Deck
Greenhouse
Pool
Easements
Parcels
CT Highways
Interstate
US Highway
State Highway
CT Communities
CT Communities Opaque
Town Boundary
Recreation
Streets
Streams
Culvert
Dam
Drainage Ditch
Perenial Stream
Water Bodies
The data shown on this site are provided for informational and planning purposes only. The Town and its consultants are not responsible for the misuse or misrepresentation of the data.
0
1200
2400 ft
Printed on 03/27/2018 at 11:28 AM
MapsOnline by PeopleGIS

WIRELESS COMMUNICATIONS FACILITY
CT1009 - LTE 3C/4C
ROCKY HILL WEST ST.
2 WEST STREET
ROCKY HILL, CT 06067

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2012 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2016 CONNECTICUT STATE BUILDING CODE, INCLUDING THE TIA-222 REVISION "G" STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES, 2016 CONNECTICUT FIRE SAFETY CODE AND, NATIONAL ELECTRICAL CODE AND LOCAL CODES.
2. THE COMPOUND, TOWER, PRIMARY GROUND RING, ELECTRICAL SERVICE TO THE METER BANK AND TELEPHONE SERVICE TO THE DEMARCATION POINT ARE PROVIDED BY SITE OWNER. AS BUILT FIELD CONDITIONS REGARDING THESE ITEMS SHALL BE CONFIRMED BY THE CONTRACTOR. SHOULD ANY FIELD CONDITIONS PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH ANY AFFECTED WORK.
3. CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.
4. CONTRACTOR SHALL PROVIDE A COMPLETE BUILD-OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS AND PROVIDE ALL ITEMS AS SHOWN OR INDICATED ON THE DRAWINGS OR IN THE WRITTEN SPECIFICATIONS.
5. CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH LOCAL AND STATE GOVERNING AUTHORITIES AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK.
6. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND ALL INSPECTIONS REQUIRED AND SHALL ALSO PAY FEES REQUIRED FOR THE GENERAL CONSTRUCTION, PLUMBING, ELECTRICAL AND HVAC. PERMITS SHALL BE PAID FOR BY THE RESPECTIVE SUBCONTRACTORS.
7. CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON SITE AT ALL TIMES AND INSURE DISTRIBUTION OF NEW DRAWINGS TO SUBCONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. ALL OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA. THE CONTRACTOR SHALL FURNISH AN "AS-BUILT" SET OF DRAWINGS TO OWNER UPON COMPLETION OF PROJECT.
8. LOCATION OF EQUIPMENT, AND WORK SUPPLIED BY OTHERS THAT IS DIAGRAMMATICALLY INDICATED ON THE DRAWINGS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE LOCATIONS AND DIMENSIONS SUBJECT TO STRUCTURAL CONDITIONS AND WORK OF THE SUBCONTRACTORS.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY. MAINTAIN EXISTING BUILDING'S/PROPERTY'S OPERATIONS, COORDINATE WORK WITH BUILDING/PROPERTY OWNER.
10. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
11. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
12. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUBCONTRACTORS FOR ANY CONDITION PER MFR.'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
13. ANY AND ALL ERRORS, DISCREPANCIES, AND "MISSED" ITEMS ARE TO BE BROUGHT TO THE ATTENTION OF THE AT&T CONSTRUCTION MANAGER DURING THE BIDDING PROCESS BY THE CONTRACTOR. ALL THESE ITEMS ARE TO BE INCLUDED IN THE BID. NO 'EXTRA' WILL BE ALLOWED FOR MISSED ITEMS.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE SAFETY FROM THE TIME THE JOB IS AWARDED UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.
15. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE CONSTRUCTION MANAGER FOR REVIEW.
16. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES, AND EXISTING CONDITIONS AT THE SITE, PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA.
17. COORDINATION, LAYOUT, FURNISHING AND INSTALLATION OF CONDUIT AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
18. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUB-CONTRACTORS FOR ANY CONDITION PER THE MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
19. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
20. THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" AT LEAST 48 HOURS PRIOR TO ANY EXCAVATIONS AT 1-800-922-4455. ALL UTILITIES SHALL BE IDENTIFIED AND CLEARLY MARKED PRIOR TO ANY EXCAVATION WORK. CONTRACTOR SHALL MAINTAIN AND PROTECT MARKED UTILITIES THROUGHOUT PROJECT COMPLETION.
21. CONTRACTOR SHALL COMPLY WITH OWNERS ENVIRONMENTAL ENGINEER ON ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES INCLUDING SOIL DISPOSAL. ALL BACKFILL MATERIALS TO BE PROVIDED BY THE CONTRACTOR.

SITE DIRECTIONS

FROM: 500 ENTERPRISE DRIVE, ROCKY HILL, CONNECTICUT

TO: 2 WEST STREET, ROCKY HILL, CONNECTICUT

1. TURN LEFT ONTO CAPITAL BLVD — 0.36 MI
2. PROCEED STRAIGHT ACROSS WEST STREET. DESTINATION IS ON YOUR LEFT.

VICINITY MAP

SCALE: 1" = 1000'

PROJECT SUMMARY

1. THE PROPOSED SCOPE OF WORK CONSISTS OF A MODIFICATION TO THE EXISTING UNMANNED TELECOMMUNICATIONS FACILITY INCLUDING THE FOLLOWING:

A. AT ANTENNA SECTORS:
- REMOVE POWERWAVE ANTENNA AT POS. 3.
- INSTALL QUNITEL ANTENNA AT POS. 2.
- INSTALL (1) DC/FIBER SQUID.
- INSTALL (3) RRUS-32 B66 AT POS. 2. (1) PER SECTOR.
- INSTALL (3) RRUS-32 AT POS. 4. (1) PER SECTOR.
- RELOCATE (3) RRUS-32 B2 FROM POS. 4 TO POS. 2.

B. EXISTING ANTENNA RELOCATIONS ARE REQUIRED TO ACCOUNT FOR THE NEWLY SCHEDULED POSITION 2 ANTENNA INSTALLATION. REFER TO THE ACCOMPANYING DRAWINGS FOR SPECIFIC ADDITIONAL INFORMATION.

C. AT THE EQUIPMENT SHELTER
- REPLACE (12) POWERWAVE LGP21901 DIPLEXERS WITH (6) LOW-BAND COMBINERS.
- DECOMMISSION (2) GSM CABINETS (850 GSM AND 1900 GSM)
- IN LTE RACK, UPGRADE DUS TO 5216.

PROJECT INFORMATION

AT&T SITE NUMBER:	CT1009
AT&T SITE NAME:	ROCKY HILL WEST ST.
SITE ADDRESS:	2 WEST STREET ROCKY HILL, CT 06067
LESSEE/APPLICANT:	AT&T MOBILITY 500 ENTERPRISE DRIVE, SUITE 3A ROCKY HILL, CT 06067
ENGINEER:	CENTEK ENGINEERING, INC. 63-2 NORTH BRANFORD RD. BRANFORD, CT 06405
PROJECT COORDINATES:	LATITUDE: 41°-39'-06.16" N LONGITUDE: 72°-40'-06.50" W GROUND ELEVATION: ±200' AMSL SITE COORDINATES AND GROUND ELEVATION REFERENCED FROM GOOGLE EARTH.

SHEET INDEX

SHT. NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	0
N-1	NOTES, SPECIFICATIONS AND ANTENNA SCHEDULE	0
C-1	PLANS AND ELEVATION	0
C-2	ANTENNA CONFIGURATION DETAILS	0
C-3	DETAILS	0
E-1	SCHEMATIC DIAGRAM AND NOTES	0
E-2	WIRING DIAGRAM	0
E-3	TYPICAL ELECTRICAL DETAILS	0

REV.	DATE	DRAWN BY	CHK'D	DESCRIPTION
0	03/19/18	TJR	DMD	CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER SEAL

at&t

EMPIRE telecom

CENTEK engineering
Centered on Solutions
(203) 488-0580
(203) 488-8587 Fax
63-2 North Branford Road
Branford, CT 06405
www.CentekEng.com

AT&T MOBILITY
WIRELESS COMMUNICATIONS FACILITY

ROCKY HILL WEST ST.
CT1009 - LTE 3C/4C
2 WEST STREET
ROCKY HILL, CT 06067

DATE: 02/26/18
SCALE: AS NOTED
JOB NO. 18000.01

TITLE SHEET

T-1

Sheet No. 1 of 8

NOTES AND SPECIFICATIONS

DESIGN BASIS:

GOVERNING CODE: 2012 INTERNATIONAL BUILDING (IBC) AS MODIFIED BY THE 2016 CT STATE BUILDING CODE AND AMENDMENTS.

1. DESIGN CRITERIA:

- WIND LOAD: PER TIA 222 G (ANTENNA MOUNTS): 90-110 MPH (3 SECOND GUST)
- RISK CATEGORY: II (BASED ON IBC TABLE 1604.5)
- NOMINAL DESIGN SPEED (OTHER STRUCTURE): 93 MPH (Vasd) (EXPOSURE B/IMPORTANCE FACTOR 1.0 BASED ON ASCE 7-10) PER 2012 INTERNATIONAL BUILDING CODE (IBC) AS MODIFIED BY THE 2016 CONNECTICUT STATE BUILDING CODE.
- SEISMIC LOAD (DOES NOT CONTROL): PER ASCE 7-10 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES.

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN COMPLIANCE WITH THE GOVERNING BUILDING CODE.
2. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
3. BEFORE BEGINNING THE WORK, THE CONTRACTOR IS RESPONSIBLE FOR MAKING SUCH INVESTIGATIONS CONCERNING PHYSICAL CONDITIONS (SURFACE AND SUBSURFACE) AT OR CONTIGUOUS TO THE SITE WHICH MAY AFFECT PERFORMANCE AND COST OF THE WORK.
4. DIMENSIONS AND DETAILS SHALL BE CHECKED AGAINST EXISTING FIELD CONDITIONS.
5. THE CONTRACTOR SHALL VERIFY AND COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS, SLEEVES AND ANCHOR BOLTS AS REQUIRED BY ALL TRADES.
6. ALL DIMENSIONS, ELEVATIONS, AND OTHER REFERENCES TO EXISTING STRUCTURES, SURFACE, AND SUBSURFACE CONDITIONS ARE APPROXIMATE. NO GUARANTEE IS MADE FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS, ELEVATIONS, ANGLES WITH EXISTING CONDITIONS AND WITH ARCHITECTURAL AND SITE DRAWINGS BEFORE PROCEEDING WITH ANY WORK.
7. AS THE WORK PROGRESSES, THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY CONDITIONS WHICH ARE IN CONFLICT OR OTHERWISE NOT CONSISTENT WITH THE CONSTRUCTION DOCUMENTS AND SHALL NOT PROCEED WITH SUCH WORK UNTIL THE CONFLICT IS SATISFACTORILY RESOLVED.
8. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING AND MAINTAINING ADEQUATE SHORING, BRACING, AND BARRICADES AS MAY BE REQUIRED FOR THE PROTECTION OF EXISTING PROPERTY, CONSTRUCTION WORKERS, AND FOR PUBLIC SAFETY.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY. MAINTAIN EXISTING SITE OPERATIONS, COORDINATE WORK WITH NORTHEAST UTILITIES
10. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER FOUNDATION REMEDIATION WORK IS COMPLETE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, TEMPORARY BRACING, GUYS OR TIEDOWNS, WHICH MIGHT BE NECESSARY.
11. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
12. SHOP DRAWINGS, CONCRETE MIX DESIGNS, TEST REPORTS, AND OTHER SUBMITTALS PERTAINING TO STRUCTURAL WORK SHALL BE FORWARDED TO THE OWNER FOR REVIEW BEFORE FABRICATION AND/OR INSTALLATION IS MADE. SHOP DRAWINGS SHALL INCLUDE ERECTION DRAWINGS AND COMPLETE DETAILS OF CONNECTIONS AS WELL AS MANUFACTURER'S SPECIFICATION DATA WHERE APPROPRIATE. SHOP DRAWINGS SHALL BE CHECKED BY THE CONTRACTOR AND BEAR THE CHECKER'S INITIALS BEFORE BEING SUBMITTED FOR REVIEW.
13. NO DRILLING WELDING OR TAPING ON EVERSOURCE OWNED EQUIPMENT.
14. REFER TO DRAWING T1 FOR ADDITIONAL NOTES AND REQUIREMENTS.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL IS DESIGNED BY ALLOWABLE STRESS DESIGN (ASD)
   - A. STRUCTURAL STEEL (W SHAPES)---ASTM A992 (FY = 50 KSI)
   - B. STRUCTURAL STEEL (OTHER SHAPES)---ASTM A36 (FY = 36 KSI)
   - C. STRUCTURAL HSS (RECTANGULAR SHAPES)---ASTM A500 GRADE B, (FY = 46 KSI)
   - D. STRUCTURAL HSS (ROUND SHAPES)---ASTM A500 GRADE B, (FY = 42 KSI)
   - E. PIPE---ASTM A53 (FY = 35 KSI)
   - F. CONNECTION BOLTS---ASTM A325-N
   - G. U-BOLTS---ASTM A36
   - H. ANCHOR RODS---ASTM F 1554
   - I. WELDING ELECTRODE---ASTM E 70XX
2. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING: SECTION PROFILES, SIZES, CONNECTION ATTACHMENTS, REINFORCING, ANCHORAGE, SIZE AND TYPE OF FASTENERS AND ACCESSORIES. INCLUDE ERECTION DRAWINGS, ELEVATIONS AND DETAILS.
3. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST PROVISIONS OF AISC MANUAL OF STEEL CONSTRUCTION.
4. PROVIDE ALL PLATES, CLIP ANGLES, CLOSURE PIECES, STRAP ANCHORS, MISCELLANEOUS PIECES AND HOLES REQUIRED TO COMPLETE THE STRUCTURE.
5. FIT AND SHOP ASSEMBLE FABRICATIONS IN THE LARGEST PRACTICAL SECTIONS FOR DELIVERY TO SITE.
6. INSTALL FABRICATIONS PLUMB AND LEVEL, ACCURATELY FITTED, AND FREE FROM DISTORTIONS OR DEFECTS.
7. AFTER ERECTION OF STRUCTURES, TOUCHUP ALL WELDS, ABRASIONS AND NON-GALVANIZED SURFACES WITH A 95% ORGANIC ZINC RICH PAINT IN ACCORDANCE WITH ASTM 780.
8. ALL STEEL MATERIAL (EXPOSED TO WEATHER) SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT DIPPED GALVANIZED) COATINGS" ON IRONS AND STEEL PRODUCTS.
9. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE".
10. THE ENGINEER SHALL BE NOTIFIED OF ANY INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON CONFORMING MATERIALS OR CONDITIONS TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER REVIEW.
11. CONNECTION ANGLES SHALL HAVE A MINIMUM THICKNESS OF 1/4 INCHES.
12. STRUCTURAL CONNECTION BOLTS SHALL CONFORM TO ASTM A325. ALL BOLTS SHALL BE 3/4" DIAMETER MINIMUM AND SHALL HAVE A MINIMUM OF TWO BOLTS, UNLESS OTHERWISE ON THE DRAWINGS.
13. LOCK WASHER ARE NOT PERMITTED FOR A325 STEEL ASSEMBLIES.
14. SHOP CONNECTIONS SHALL BE WELDED OR HIGH STRENGTH BOLTED.
15. MILL BEARING ENDS OF COLUMNS, STIFFENERS, AND OTHER BEARING SURFACES TO TRANSFER LOAD OVER ENTIRE CROSS SECTION.
16. FABRICATE BEAMS WITH MILL CAMBER UP.
17. LEVEL AND PLUMB INDIVIDUAL MEMBERS OF THE STRUCTURE TO AN ACCURACY OF 1:500, BUT NOT TO EXCEED 1/4" IN THE FULL HEIGHT OF THE COLUMN.
18. COMMENCEMENT OF STRUCTURAL STEEL WORK WITHOUT NOTIFYING THE ENGINEER OF ANY DISCREPANCIES WILL BE CONSIDERED ACCEPTANCE OF PRECEDING WORK.
19. INSPECTION AND TESTING OF ALL WELDING AND HIGH STRENGTH BOLTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY.
20. FOUR COPIES OF ALL INSPECTION TEST REPORTS SHALL BE SUBMITTED TO THE ENGINEER WITHIN TEN (10) WORKING DAYS OF THE DATE OF INSPECTION.

PAINT NOTES

PAINTING SCHEDULE:

1. ANTENNA PANELS:
   - A. SHERWIN WILLIAMS POLANE-B
   - B. COLOR TO BE MATCHED WITH EXISTING TOWER STRUCTURE.
2. COAXIAL CABLES:
   - A. ONE COAT OF DTM BONDING PRIMER (2-5 MILS. DRY FINISH)
   - B. TWO COATS OF DTM ACRYLIC PRIMER/FINISH (2.5-5 MILS. DRY FINISH)
   - C. COLOR TO BE FIELD MATCHED WITH EXISTING STRUCTURE.

EXAMINATION AND PREPARATION:

1. DO NOT APPLY PAINT IN SNOW, RAIN, FOG OR MIST OR WHEN RELATIVE HUMIDITY EXCEEDS 85%. DO NOT APPLY PAINT TO DAMP OR WET SURFACES.
2. VERIFY THAT SUBSTRATE CONDITIONS ARE READY TO RECEIVE WORK. EXAMINE SURFACE SCHEDULED TO BE FINISHED PRIOR TO COMMENCEMENT OF WORK. REPORT ANY CONDITION THAT MAY POTENTIALLY AFFECT PROPER APPLICATION.
3. TEST SHOP APPLIED PRIMER FOR COMPATIBILITY WITH SUBSEQUENT COVER MATERIALS.
4. PERFORM PREPARATION AND CLEANING PROCEDURE IN STRICT ACCORDANCE WITH COATING MANUFACTURER'S INSTRUCTIONS FOR EACH SUBSTRATE CONDITION.
5. CORRECT DEFECTS AND CLEAN SURFACES WHICH AFFECT WORK OF THIS SECTION. REMOVE EXISTING COATINGS THAT EXHIBIT LOOSE SURFACE DEFECTS.
6. IMPERVIOUS SURFACE: REMOVE MILDEW BY SCRUBBING WITH SOLUTION OF TRI-SODIUM PHOSPHATE AND BLEACH. RINSE WITH CLEAN WATER AND ALLOW SURFACE TO DRY.
7. ALUMINUM SURFACE SCHEDULED FOR PAINT FINISH: REMOVE SURFACE CONTAMINATION BY STEAM OR HIGH-PRESSURE WATER. REMOVE OXIDATION WITH ACID ETCH AND SOLVENT WASHING. APPLY ETCHING PRIMER IMMEDIATELY FOLLOWING CLEANING.
8. FERROUS METALS: CLEAN UNGALVANIZED FERROUS METAL SURFACES THAT HAVE NOT BEEN SHOP COATED; REMOVE OIL, GREASE, DIRT, LOOSE MILL SCALE, AND OTHER FOREIGN SUBSTANCES. USE SOLVENT OR MECHANICAL CLEANING METHODS THAT COMPLY WITH THE STEEL STRUCTURES PAINTING COUNCIL'S (SSPC) RECOMMENDATIONS. TOUCH UP BARE AREAS AND SHOP APPLIED PRIME COATS THAT HAVE BEEN DAMAGED. WIRE BRUSH, CLEAN WITH SOLVENTS RECOMMENDED BY PAINT MANUFACTURER, AND TOUCH UP WITH THE SAME PRIMER AS THE SHOP COAT.
9. GALVANIZED SURFACES: CLEAN GALVANIZED SURFACES WITH NON-PETROLEUM-BASED SOLVENTS SO SURFACE IS FREE OF OIL AND SURFACE CONTAMINANTS. REMOVE PRETREATMENT FROM GALVANIZED SHEET METAL FABRICATED FROM COIL STOCK BY MECHANICAL METHODS.
10. ANTENNA PANELS: REMOVE ALL OIL, DUST, GREASE, DIRT, AND OTHER FOREIGN MATERIAL TO ENSURE ADEQUATE ADHESION. PANELS MUST BE WIPED WITH METHYL ETHYL KETONE (MEK).
11. COAXIAL CABLES: REMOVE ALL OIL, DUST, GREASE. DIRT, AND OTHER FOREIGN MATERIAL TO ENSURE ADEQUATE ADHESION.

CLEANING:

1. COLLECT WASTE MATERIAL, WHICH MAY CONSTITUTE A FIRE HAZARD, PLACE IN CLOSED METAL CONTAINERS AND REMOVE DAILY FROM SITE.

APPLICATION:

1. APPLY PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. DO NOT APPLY FINISHES TO SURFACES THAT ARE NOT DRY.
3. APPLY EACH COAT TO UNIFORM FINISH.
4. APPLY EACH COAT OF PAINT SLIGHTLY DARKER THAN PRECEDING COAT UNLESS OTHERWISE APPROVED.
5. SAND METAL LIGHTLY BETWEEN COATS TO ACHIEVE REQUIRED FINISH.
6. VACUUM CLEAN SURFACES FREE OF LOOSE PARTICLES. USE TACK CLOTH JUST PRIOR TO APPLYING NEXT COAT.
7. ALLOW APPLIED COAT TO DRY BEFORE NEXT COAT IS APPLIED.

COMPLETED WORK:

1. SAMPLES: PREPARE 24" X 24" SAMPLE AREA FOR REVIEW.
2. MATCH APPROVED SAMPLES FOR COLOR, TEXTURE AND COVERAGE. REMOVE REFINISH OR REPAINT WORK NOT IN COMPLIANCE WITH SPECIFIED REQUIREMENTS.

PROPOSED ANTENNA AND APPURTENANCE SCHEDULE

ANTENNAS								APPURTENANCES		
SECTOR	POSITION	AZIMUTH	DOWNTILT (M)	MAKE & MODEL	RAD CENTER (AGL)	TECHNOLOGY	STATUS	TMA (QTY)	RRU (QTY)	FEEDER TYPE
ALPHA	POS. 1	19°	3°	POWERWAVE (7770)	103'	UMTS DB	REMAIN	PWAV: LGP21401 DB WITH 850BYPASS (2)		1¼" COAX (2)
ALPHA	POS. 2	40°	3°	QUINTEL (QS66512-2)	103'	LTE PCS/AWS	NEW		RUUS-32 B2 (1), RRUS-32 B66 (1)	FIBER AND DC POWER
ALPHA	POS. 4	40°	0°	CCI (HPA-65R-BUU-H6)	103'	700 BC/WCS	REMAIN		RRUS-11 (1), RRUS-32 (1)	FIBER AND DC POWER
BETA	POS. 1	144°	3°	POWERWAVE (7770)	103'	UMTS DB	REMAIN	PWAV: LGP21401 DB WITH 850BYPASS (2)		1¼" COAX (2)
BETA	POS. 2	150°	3°	QUINTEL (QS66512-2)	103'	LTE PCS/AWS	NEW		RUUS-32 B2 (1), RRUS-32 B66 (1)	FIBER AND DC POWER
BETA	POS. 4	150°	0°	CCI (HPA-65R-BUU-H6)	103'	700 BC/WCS	REMAIN		RRUS-11 (1), RRUS-32 (1)	FIBER AND DC POWER
GAMMA	POS. 1	261°	0°	POWERWAVE (7770)	103'	UMTS DB	REMAIN	PWAV: LGP21401 DB WITH 850BYPASS (2)		1¼" COAX (2)
GAMMA	POS. 2	270°	0°	QUINTEL (QS66512-2)	103'	LTE PCS/AWS	NEW		RUUS-32 B2 (1), RRUS-32 B66 (1)	FIBER AND DC POWER
GAMMA	POS. 4	270°	0°	CCI (HPA-65R-BUU-H6)	103'	700 BC/WCS	REMAIN		RRUS-11 (1), RRUS-32 (1)	FIBER AND DC POWER

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NOTES, SPECIFICATIONS AND ANTENNA SCHEDULE

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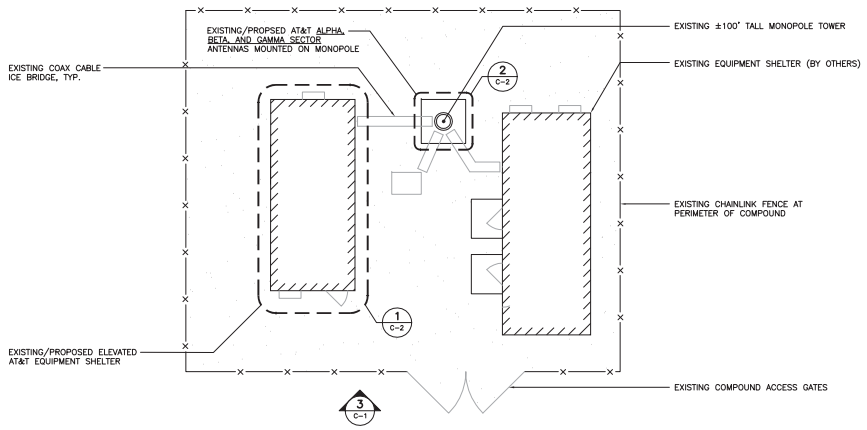
Sheet No. 2 of 8



1 C-1 PARTIAL SITE PLAN

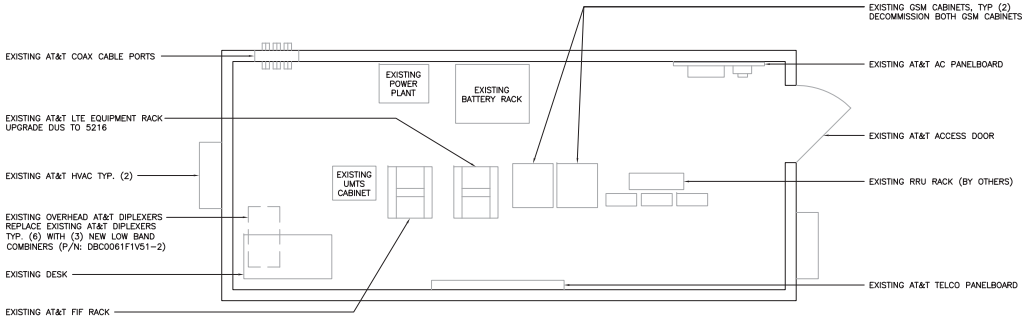
SCALE: 1/8" = 1'-0"

TRUE NORTH

GRAPHIC SCALE

(IN FEET)

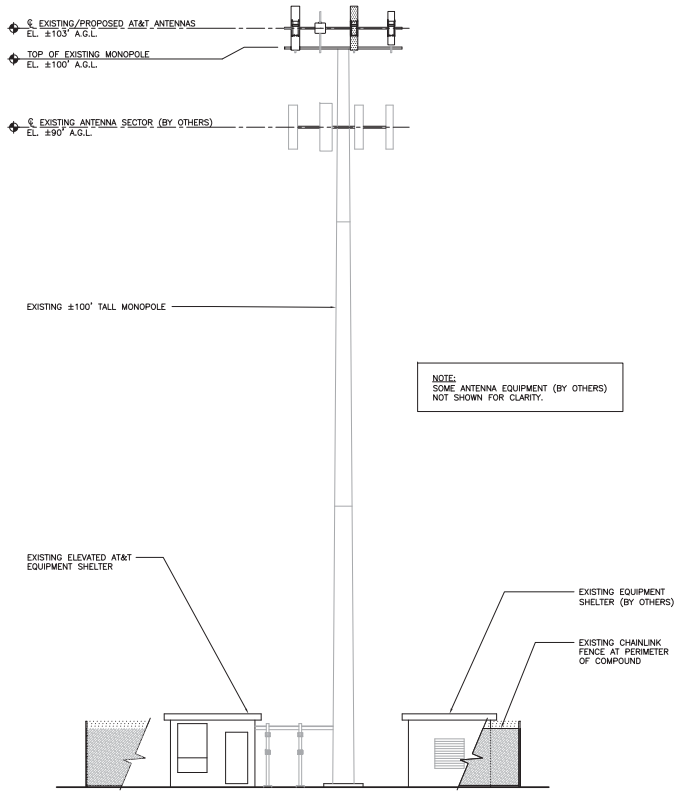
1/8 inch = 1 ft.



2 C-1 PROPOSED EQUIPMENT LAYOUT PLAN

SCALE: 3/8" = 1'-0"

TRUE NORTH



3 C-1 PROPOSED SOUTH ELEVATION

SCALE: 1/8" = 1'-0"

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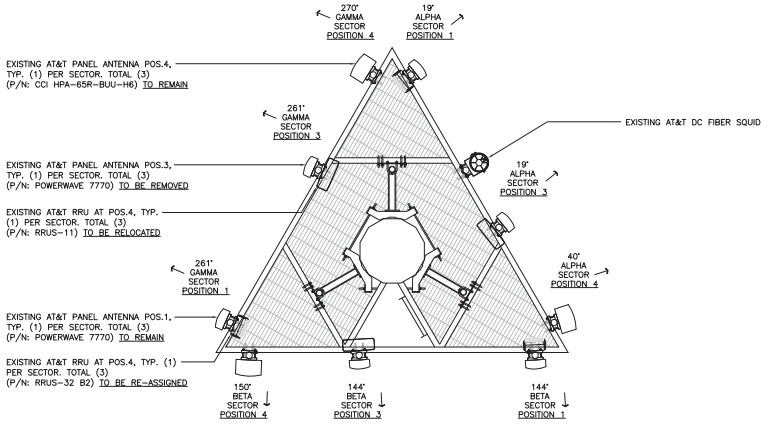
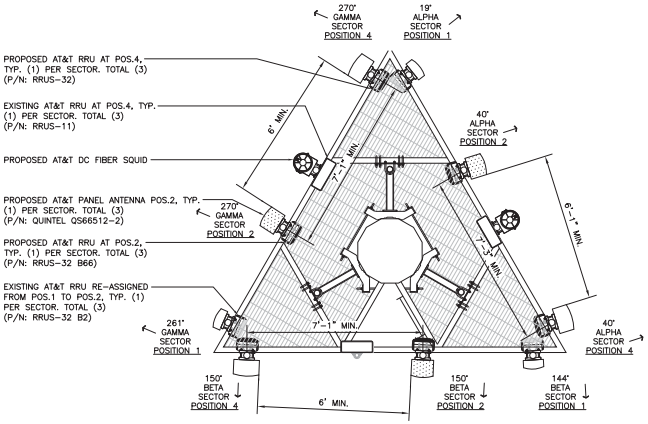
PLANS AND ELEVATION

C-1

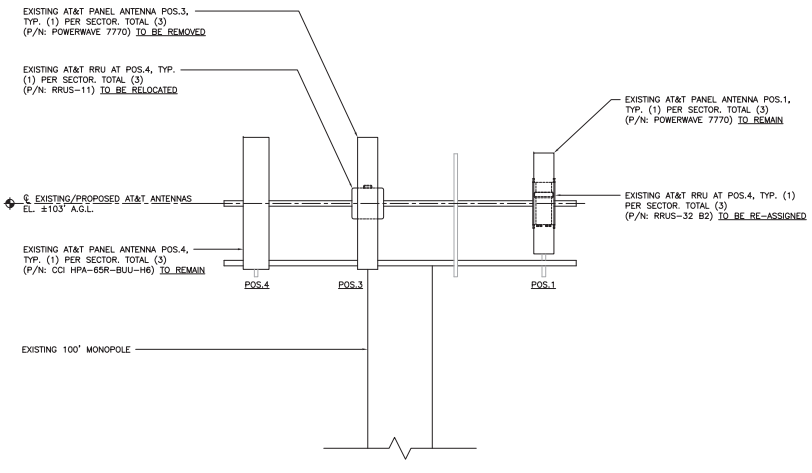
Sheet No. 3 of 8



1 C-2 **EXISTING ANTENNA PLAN**
SCALE: 3/8" = 1'-0"
TRUE NORTH

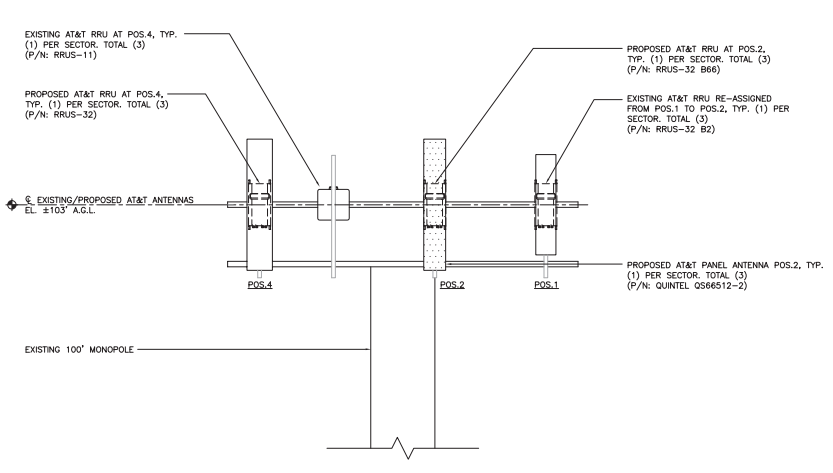


2 C-2 **PROPOSED ANTENNA PLAN**
SCALE: 3/8" = 1'-0"
TRUE NORTH



TYPICAL SECTOR

3 C-2 **EXISTING ANTENNA ELEVATION**
SCALE: 3/8" = 1'-0"



TYPICAL SECTOR

4 C-2 **PROPOSED ANTENNA ELEVATION**
SCALE: 3/8" = 1'-0"

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ANTENNA CONFIGURATION DETAILS

C-2

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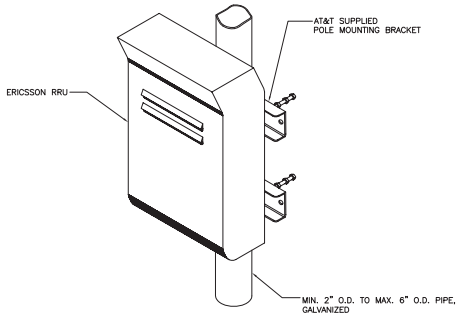


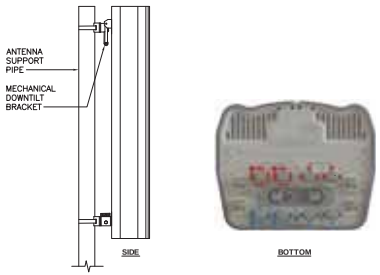
ISOMETRIC VIEW

NOTES:

1. AT&T SHALL SUPPLY RRU, AND RRU POLE-MOUNTING BRACKET. CONTRACTOR SHALL SUPPLY POLE/PIPE AND INSTALL ALL MOUNTING HARDWARE INCLUDING ERICSSON RRU POLE-MOUNTING BRACKET. CONTRACTOR SHALL INSTALLS RRU AND MAKES CABLE TERMINATIONS.
2. NO PAINTING OF THE RRU OR SOLAR SHIELD IS ALLOWED.

1 C-3 TYPICAL RRUS MOUNTING DETAILS

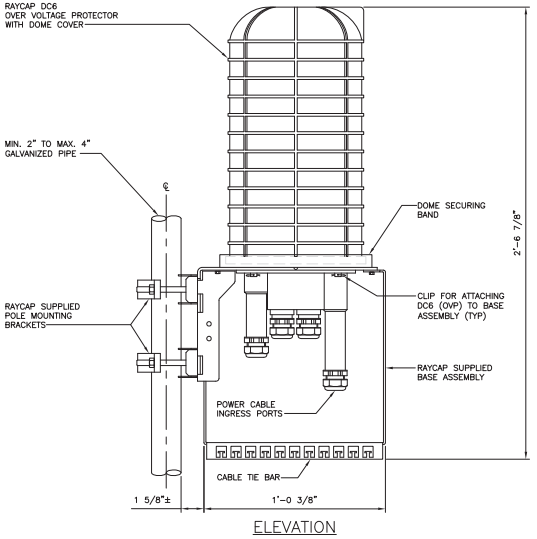
NOT TO SCALE



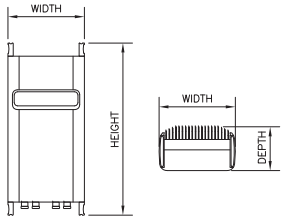
ALPHA/BETA/GAMMA ANTENNA		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: QUINTNTEL MODEL: QS66512-2	72"L x 12"W x 9.6"D	111 LBS.

2 C-3 PROPOSED ANTENNA DETAIL

NOT TO SCALE



ELEVATION



FRONT VIEW BOTTOM VIEW

RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: RRUS 32	27.17"L x 12.05"W x 7.01"D	52.91 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.
MAKE: ERICSSON MODEL: RRUS 32 B66	27.17"L x 12.05"W x 7.01"D	52.91 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.

NOTES:
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

3 C-3 ERICSSON RRUS 32 DETAIL

NOT TO SCALE

LOW BAND COMBINER

DIPLEXER 700/850		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: KAELUS MODEL: DBC0061F1V51-2	8"H x 6.45"W x 6.2"D	18.3 LBS.

NOTES:
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

4 C-3 KAELUS DBC0061F1V51-2 DETAIL

NOT TO SCALE

SITE TYPE	ARRESTOR MAKE/MODEL	QTY REQUIRED	ARRESTOR LOCATION	WEIGHT
	MAKE: RAYCAP (SQUID) MODEL: DC6-48-60-18-8F	(1) PER SITE	TOWER, ADJACENT TO AT&T ANTENNAS AND RRUs.	20 LBS. (WITHOUT MOUNT)

NOTES:
1. CONTRACTOR TO COORDINATE FINAL SURGE ARRESTOR MODEL SELECTION(S) WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.
2. CONTRACTOR TO INSTALL ARRESTOR IN CONFORMANCE WITH MANUFACTURERS RECOMMENDATIONS.
3. RAYCAP VIA AT&T SUPPLIES THE DC6 OVER VOLTAGE PROTECTOR AND PIPE MOUNTING BRACKETS. SUBCONTRACTOR SHALL SUPPLY THE PIPE.

5 C-3 TYPICAL DC FIBER SQUID DETAIL

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DETAILS

C-3

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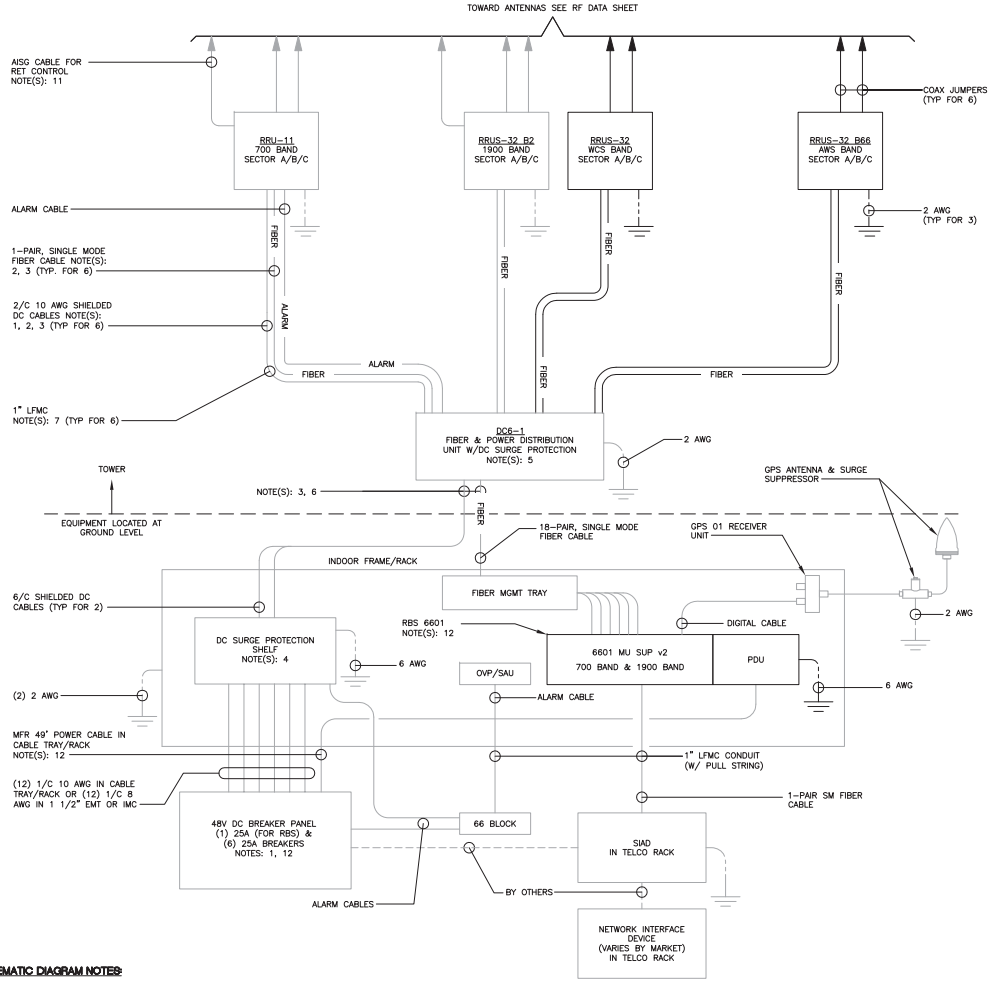

LTE SCHEMATIC DIAGRAM NOTES:

1. BREAKERS TO BE TAGGED AND LOCKED OUT. A 20A (MIN.) OR 30A (MAX.) BREAKER FOR RRUs MAY BE SUBSTITUTED FOR THE RECOMMENDED 25A BREAKER. SIZE 12 CONDUCTORS MAY BE USED ONLY WITH 20A BREAKERS.
2. LEAVE COILED AND PROTECTED UNTIL TERMINATED.
3. DC AND FIBER CABLE SHALL BE ROUTED WITH THE EXISTING COAX CABLE.
4. DC SURGE PROTECTION SHELF SHALL BE RAYCAP DCx-48-60-RM.
5. FIBER & DC DISTRIBUTION BOX W/DC SURGE PROTECTION SHALL BE RAYCAP DC6-48-60-18-8F.
6. SUPPORT FIBER & DC POWER CABLES WITH SNAP-IN HANGERS SPACED NO GREATER THAN 3 FEET APART ON TOWER. SUPPORT FIBER AND DC POWER CABLES INSIDE MONOPOLE WITH CABLE HOISTING GRIPS AT 250 FT MAXIMUM INTERVALS. DRESS CABLES TO PREVENT CONTACT WITH ENTRANCE AND EXIT OPENINGS.
7. CONDUIT TO BE USED ON A TOWER IF THE RRU IS MORE THAN 10' FROM THE DISTRIBUTION UNITS. MAX CABLE LENGTH IS 16 FEET.
8. SINGLE-CONDUCTOR DC POWER CABLES SHALL BE TELCOFLEX® OR KS24194™, COPPER, UL LISTED RHH NON-HALOGEN, LOW SMOKE WITH BRAIDED COVER, TYPE TC (1/0 AND LARGER). UNLESS OTHERWISE NOTED, STRANDING SHALL BE CLASS B (TYPE III) FOR CABLES SIZES 14, 12 & 10 AWG AND CLASS I (TYPE IV) FOR SIZES 8 AWG AND LARGER. CABLES SHALL BE COLOR CODED RED FOR +24V, BLUE FOR -48V AND GRAY FOR 24V AND 48V RETURN CONDUCTORS. MULTI-CONDUCTOR DC POWER CABLES SHALL BE COPPER, CLASS B STRANDING WITH FLAME RETARDANT PVC JACKET, TYPE TC, UL LISTED FOR 90°C DRY/ 75°C WET INSTALLATION.
9. GROUNDING WIRES SHALL BE COPPER, GREEN THHN/THWN UL LISTED FOR 90°C DRY/75°C WET INSTALLATION. MINIMUM SIZE IS 6 AWG UNLESS NOTED OTHERWISE.
10. FIBER OPTIC CABLES SHALL BE INSTALLED IN FLEXIBLE CONDUIT AS SCOPED BY MARKET.
11. RET CONTROL FROM THE RRU IS AN OPTIONAL METHOD OF CONNECTION. REFER TO RF DATA SHEET FOR APPLICABILITY.
12. RBS 6601 VARIANT 2 REQUIRES A 25A BREAKER AND 10 AWG (MIN.) CONDUCTORS. REPLACE EXISTING 15A OR 20A BREAKERS AND 12 AWG CONDUCTORS WHEN UPGRADING AN EXISTING RBS 6601 VARIANT 1.

1 / E-1 **LTE SCHEMATIC DIAGRAM**
NOT TO SCALE

ELECTRICAL NOTES

1. PRIOR TO START OF CONSTRUCTION CONTRACTOR SHALL COORDINATE WITH OWNER FOR ALL CONSTRUCTION STANDARDS AND SPECIFICATIONS, AND ALL MANUFACTURER DOCUMENTATION FOR ALL EQUIPMENT TO BE INSTALLED.
2. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH LOCAL BUILDING CODE, NATIONAL ELECTRIC CODE, OWNER AND MANUFACTURER'S SPECIFICATIONS.
3. CONNECT ALL NEW EQUIPMENT TO EXISTING TELCO AS REQUIRED BY MANUFACTURER.
4. MAINTAIN ALL CLEARANCES REQUIRED BY NEC AND EQUIPMENT MANUFACTURER.
5. PRIOR TO INSTALLATION CONTRACTOR SHALL MEASURE EXISTING ELECTRICAL LOAD AND VERIFY EXISTING AVAILABLE CAPACITY FOR PROPOSED INSTALLATION. IF INADEQUATE CAPACITY IS AVAILABLE, CONTRACTOR SHALL COORDINATE WITH LOCAL ELECTRIC UTILITY COMPANY TO UPGRADE EXISTING ELECTRIC SERVICE.
6. CONTRACTOR SHALL INSPECT EXISTING GROUNDING AND LIGHTNING PROTECTION SYSTEM AND ENSURE THAT IT IS IN COMPLIANCE WITH NEC, AND SITE OWNER'S SPECIFICATIONS. THE RESULTS OF THIS INSPECTION SHALL BE PRESENTED TO OWNERS REPRESENTATIVE, AND ANY DEFICIENCIES SHALL BE CORRECTED.
7. ALL TRANSMISSION TOWER SITES CONTAIN AN EXTENSIVE BURIED GROUNDING SYSTEM. ALL GROUNDING WORK MUST BE COORDINATED WITH, AND APPROVED BY, THE TOWER OWNER'S SITE REPRESENTATIVE. ALL OF THE TOWER OWNER'S SPECIFICATIONS MUST BE STRICTLY FOLLOWED.
8. PROVIDE AND INSTALL GROUND KITS FOR ALL NEW COAXIAL CABLES AND BOND TO EXISTING OWNERS GROUNDING SYSTEM PER OWNERS SPECIFICATIONS AND NEC.
9. ALL CONDUCTORS SHALL BE TYPE THWN (INT. APPLICATION) AND XHHW (EXT. APPLICATION), 75 DEGREE C, 600 VOLT INSULATION, SOFT ANNEALED STRANDED COPPER. #10 AWG AND SMALLER SHALL BE SPLICED USING ACCEPTABLE SOLDERLESS PRESSURE CONNECTORS. #8 AWG AND LARGER SHALL BE SPLICED USING COMPRESSION SPLIT-BOLT TYPE CONNECTORS. #12 AWG SHALL BE THE MINIMUM SIZE CONDUCTOR FOR LINE VOLTAGE BRANCH CIRCUITS. REFER TO PANEL SCHEDULE FOR BRANCH CIRCUIT CONDUCTOR SIZE(S). CONDUCTORS SHALL BE COLOR CODED FOR CONSISTENT PHASE IDENTIFICATION.
10. MINIMUM BENDING RADIUS FOR CONDUCTORS SHALL BE 12 TIMES THE LARGEST DIAMETER OF BRANCH CIRCUIT CONDUCTOR.
11. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE MADE IN STRICT ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES AND REGULATIONS WHICH MAY APPLY AND NOTHING IN THE DRAWINGS OR SPECIFICATIONS SHALL BE INTERPRETED AS AN INFRINGEMENT OF SUCH CODES OR REGULATIONS.
12. THE ELECTRICAL CONTRACTOR IS TO BE RESPONSIBLE FOR THE COMPLETE INSTALLATION AND COORDINATION OF THE ENTIRE ELECTRICAL SERVICE. ALL ACTIVITIES TO BE COORDINATED THROUGH OWNER'S REPRESENTATIVE, DESIGN ENGINEER AND OTHER AUTHORITIES HAVING JURISDICTION OF TRADES.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND PAY ALL FEES AS MAY BE REQUIRED FOR THE ELECTRICAL WORK AND FOR SCHEDULING OF ALL INSPECTIONS AS MAY BE REQUIRED BY THE LOCAL AUTHORITY.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE SITE AND/OR BUILDING OWNER FOR NEW AND/OR DEMOLITION WORK INVOLVED.
15. THE CONTRACTOR SHALL GUARANTEE ALL NEW WORK FOR A PERIOD OF ONE YEAR FROM THE ACCEPTANCE DATE BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING WARRANTIES FROM ALL EQUIPMENT MANUFACTURERS FOR SUBMISSION TO THE OWNER.
16. DRAWINGS INDICATE GENERAL ARRANGEMENT OF WORK INCLUDED IN CONTRACT. CONTRACTOR SHALL WITHOUT EXTRA CHARGE, MAKE MODIFICATIONS TO THE LAYOUT OF THE WORK TO PREVENT CONFLICT WITH WORK OF OTHER TRADES AND FOR THE PROPER INSTALLATION OF WORK. CHECK ALL DRAWINGS AND VISIT JOB SITE TO VERIFY SPACE AND TYPE OF EXISTING CONDITIONS IN WHICH WORK WILL BE DONE, PRIOR TO SUBMITTAL OF BID.
17. ALL NON-CURRENT CARRYING PARTS OF THE ELECTRICAL AND TELEPHONE CONDUIT SYSTEMS SHALL BE MECHANICALLY AND ELECTRICALLY CONNECTED TO PROVIDE AN INDEPENDENT RETURN PATH TO THE EQUIPMENT GROUNDING SOURCES.
18. GROUNDING SYSTEM WILL BE IN ACCORDANCE WITH THE LATEST ACCEPTABLE EDITION OF THE NATIONAL ELECTRICAL CODE AND REQUIREMENTS PER LOCAL INSPECTOR HAVING JURISDICTION.
19. EACH EQUIPMENT GROUND CONDUCTOR SHALL BE SIZED IN ACCORDANCE WITH THE N.E.C. ARTICLE 250-122. (MIN. #12 AWG).
20. CONTRACTOR SHALL PROVIDE A CELLULAR GROUNDING SYSTEM WITH THE MAXIMUM AC RESISTANCE TO GROUND OF 5 OHM BETWEEN ANY POINT ON THE GROUNDING SYSTEM AS MEASURED BY 3-POINT GROUNDING TEST. (REFER TO SECTION 16960).

TESTS BY INDEPENDENT ELECTRICAL TESTING FIRM

A. CONTRACTOR SHALL RETAIN THE SERVICES OF A LOCAL INDEPENDENT ELECTRICAL TESTING FIRM (WITH MINIMUM 5 YEARS COMMERCIAL EXPERIENCE IN THE ELECTRICAL TESTING INDUSTRY) AS SPECIFIED BY OWNER TO PERFORM:

TEST 1: RESISTANCE TO GROUND TEST ON THE CELLULAR GROUNDING SYSTEM.

THE TESTING FIRM SHALL INCLUDE THE FOLLOWING INFORMATION WITH THE REPORT:

1. TESTING PROCEDURE INCLUDING THE MAKE AND MODEL OF TEST EQUIPMENT.
2. CERTIFICATION OF TESTING EQUIPMENT CALIBRATION WITHIN SIX (6) MONTHS OF DATE OF TESTING. INCLUDE CERTIFICATION LAB ADDRESS AND TELEPHONE NUMBER.
3. GRAPHICAL DESCRIPTION OF TESTING METHOD ACTUALLY IMPLEMENTED.

B. TESTING SHALL BE PERFORMED IN THE PRESENCE AND TO THE SATISFACTION OF OWNERS CONSTRUCTION REPRESENTATIVE. TESTING DATA SHALL BE INITIALED AND DATED BY THE CONSTRUCTION AND INCLUDED WITH THE WRITTEN REPORT/ANALYSIS.

C. THE CONTRACTOR SHALL FORWARD SIX (6) COPIES OF THE INDEPENDENT ELECTRICAL TESTING FIRM REPORT/ANALYSIS TO ENGINEER A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO THE JOB TURNOVER.

D. CONTRACTOR TO PROVIDE A MINIMUM OF ONE (1) WEEK NOTICE TO OWNER AND ENGINEER FOR ALL TESTS REQUIRING WITNESSING.

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SCHEMATIC DIAGRAM AND NOTES

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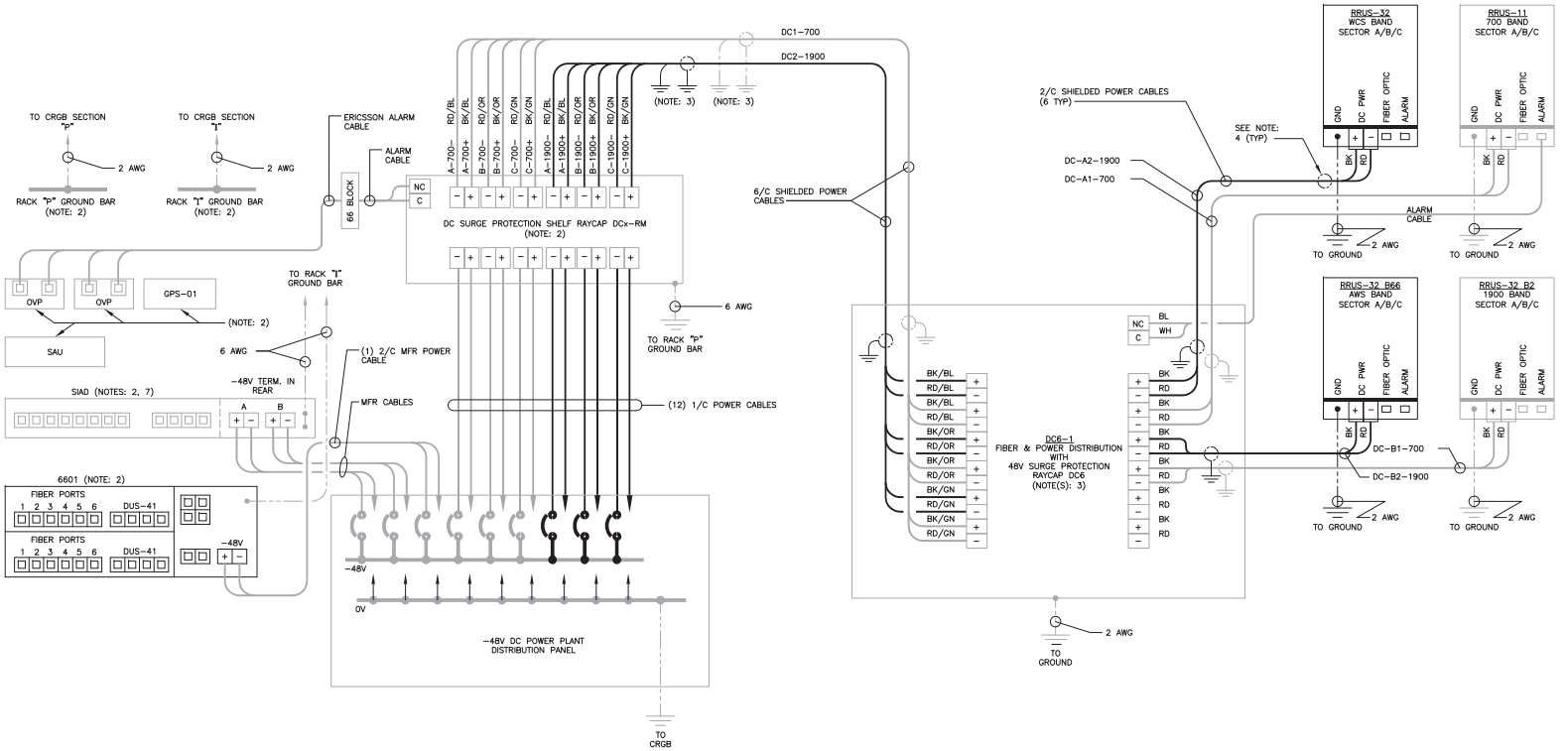

LTE WIRING DIAGRAM NOTES:

1. LABEL THE DC POWER CABLES AT BOTH ENDS OF EVERY WIRE AND IN ANY PULL BOX IF USED. LABEL SHALL BE DURABLE, SELF ADHESIVE, WRAPPED LONGITUDINALLY ALONG THE CABLE AND STATE THE SECTOR, FREQUENCY BAND AND POLARITY; I.E. "A-1900+". CABLE AND WIRE LABELS SHOWN ARE REPRESENTATIVE AND MAY BE MODIFIED AS DIRECTED BY AT&T.
2. INSTALL ON BASEBAND EQUIPMENT RACK.
3. THE BARE GROUND WIRE OF EACH MULTI-CONDUCTOR CABLE SHALL BE CONNECTED TO THE "P" GROUND BAR ON THE RACK. WHEN A SHIELDED CABLE IS USED, THE DRAIN WIRE ALSO SHALL BE CONNECTED TO THE "P" GROUND BAR.
4. CABLE GROUND WIRE AND SHIELD DRAIN WIRE TO BE LEFT UN-TERMINATED AT RRU AND DC POWER PLANT.
5. SEE LTE SCHEMATIC DIAGRAM DETAIL 1/E-1 FOR BREAKER RATING.

1 / E-2 **LTE WIRING DIAGRAM**
NOT TO SCALE

REV.	DATE	DRAWN BY	CHK'D	DWD	DESCRIPTION
0	03/19/18	TJR			CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION

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Centered on Solutions
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(203) 488-8587 Fax
63-2 North Branford Road
Branford, CT 06405
www.CentekEng.com

AT&T MOBILITY
WIRELESS COMMUNICATIONS FACILITY

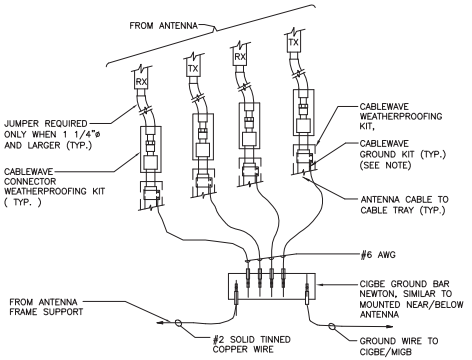
ROCKY HILL WEST ST.

CT1009 - LTE 3C/4C
2 WEST STREET
ROCKY HILL, CT 06067

DATE: 02/26/18
SCALE: AS NOTED
JOB NO. 18000.01

WIRING DIAGRAM

E-2
Sheet No. 7 of 8

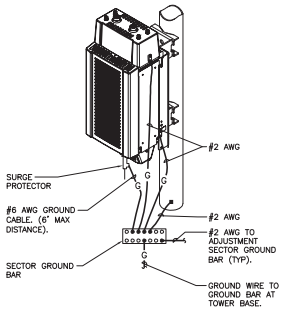


NOTE:

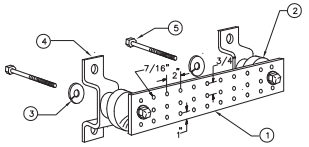
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE

1 E-3 **CONNECTION OF GROUND WIRES TO GROUND BAR**
NOT TO SCALE

EACH RRH CABINET SHALL BE GROUNDED IN THE FOLLOWING MANNER:
1. AT TOP OF THE CABINET
2. AT RIGHT SIDE OF THE CABINET.



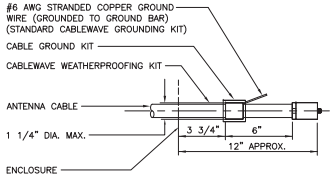
2 E-3 **RRU POLE MOUNT GROUNDING**
NOT TO SCALE



LEGEND

1. TINNED COPPER GROUND BAR, 1/4"x 4"x 20", NEWTON INSTRUMENT CO. HOLE CENTERS TO MATCH NEMA DOUBLE LUG .
2. INSULATORS, NEWTON INSTRUMENT CAT. NO. 2. 3061-4.
3. 3. 5/8" LOCK WASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8.
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. 4. CAT NO. A-6056.
5. STAINLESS STEEL SECURITY SCREWS.

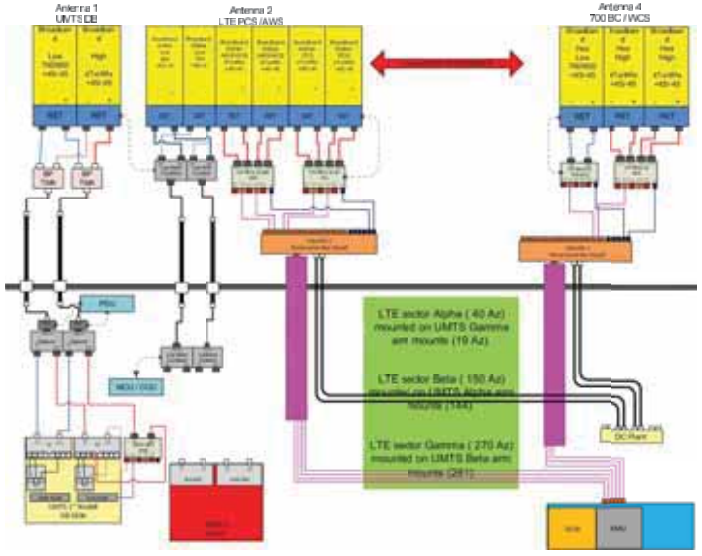
3 E-3 **GROUND BAR DETAIL**
NOT TO SCALE



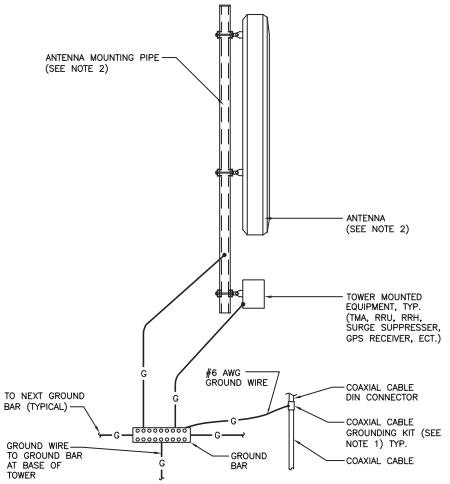
NOTE:

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

4 E-3 **ANTENNA CABLE GROUNDING DETAIL**
NOT TO SCALE



5 E-3 **RF PLUMBING DIAGRAM**
NOT TO SCALE



NOTES:

1. BOND COAXIAL CABLE GROUND KITS TO EACH OWNER'S GROUND BAR ALONG ENTIRE COAX RUN FROM ANTENNA TO SHELTER.
2. BOND ALL EQUIPMENT TO GROUND PER NEC AND MANUFACTURERS SPECIFICATIONS.
3. DETAIL IS TYPICAL FOR ALL ANTENNA SECTORS, INCLUDING GPS ANTENNA.

6 E-3 **TYPICAL ANTENNA GROUNDING DETAIL**
NOT TO SCALE

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	03/19/18	TJR	DMD	CONSTRUCTION DRAWINGS – ISSUED FOR CONSTRUCTION

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2 WEST STREET
ROCKY HILL, CT 06067

DATE: 02/26/18
SCALE: AS NOTED
JOB NO. 18000.01

TYPICAL ELECTRICAL DETAILS

E-3

Sheet No. 8 of 8

Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT1009
FA#: 10035027

Rocky Hill - West St.
2 West Street
Rocky Hill, CT 06067

March 12, 2018

Centerline Communications Project Number: 950006-100

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**19.08 %**

March 12, 2018

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

Emissions Analysis for Site: **CT1009 – Rocky Hill - West St.**

Centerline Communications, LLC ("Centerline") was directed to analyze the proposed AT&T facility located at **2 West Street, Rocky Hill, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed AT&T Wireless antenna facility located at **2 West Street, Rocky Hill, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

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

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

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

Table 1: Channel Data Table

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

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Powerwave 7770	103
A	2	Quintel QS66512-2	103
A	3	CCI HPA-65R-BUU-H6	105
B	1	Powerwave 7770	103
B	2	Quintel QS66512-2	103
B	3	CCI HPA-65R-BUU-H6	105
C	1	Powerwave 7770	103
C	2	Quintel QS66512-2	103
C	3	CCI HPA-65R-BUU-H6	105

Table 2: Antenna Data

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

RESULTS

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

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	Powerwave 7770	850 MHz / 1900 MHz (PCS)	11.4 / 13.4	4	120	2,140.89	1.06
Antenna A2	Quintel QS66512-2	2100 MHz (AWS) / 1900 MHz (PCS)	14.35 / 13.85	8	280	7,149.82	2.73
Antenna A3	CCI HPA-65R-BUU-H6	700 MHz / 2300 MHz (WCS)	11.95 / 15.25	6	200	5,272.99	2.46
						Sector A Composite MPE%	**6.25**
Antenna B1	Powerwave 7770	850 MHz / 1900 MHz (PCS)	11.4 / 13.4	4	120	2,140.89	1.06
Antenna B2	Quintel QS66512-2	2100 MHz (AWS) / 1900 MHz (PCS)	14.35 / 13.85	8	280	7,149.82	2.73
Antenna B3	CCI HPA-65R-BUU-H6	700 MHz / 2300 MHz (WCS)	11.95 / 15.25	6	200	5,272.99	2.46
						Sector B Composite MPE%	**6.25**
Antenna C1	Powerwave 7770	850 MHz / 1900 MHz (PCS)	11.4 / 13.4	4	120	2,140.89	1.06
Antenna C2	Quintel QS66512-2	2100 MHz (AWS) / 1900 MHz (PCS)	14.35 / 13.85	8	280	7,149.82	2.73
Antenna C3	CCI HPA-65R-BUU-H6	700 MHz / 2300 MHz (WCS)	11.95 / 15.25	6	200	5,272.99	2.46
						Sector C Composite MPE%	**6.25**

Table 3: AT&T Emissions Levels

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

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max Sector Value	**6.25 %**
Verizon Wireless	10.61 %
MetroPCS	2.22 %
Site Total MPE %:	**19.08 %**

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	6.25 %
AT&T Sector B Total:	6.25 %
AT&T Sector C Total:	6.25 %
Site Total:	19.08 %

Table 5: Site MPE Summary

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

AT&T _ Frequency Band / Technology Max Power Values (All Sectors)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
AT&T 850 MHz UMTS	2	414.12	103	3.16	850 MHz	567	0.56%
AT&T 1900 MHz (PCS) UMTS	2	656.33	103	5.02	1900 MHz (PCS)	1000	0.50%
AT&T 2100 MHz (AWS) LTE	4	816.81	103	12.48	2100 MHz (AWS)	1000	1.25%
AT&T 1900 MHz (PCS) LTE	4	970.64	103	14.83	1900 MHz (PCS)	1000	1.48%
AT&T 700 MHz LTE	2	626.70	105	4.60	700 MHz	467	0.98%
AT&T 2300 MHz (WCS) LTE	4	1,004.90	105	14.74	2300 MHz (WCS)	1000	1.47%
						Total:	**6.25%**

Table 6: AT&T Maximum Sector MPE Power Values

Summary

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

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

AT&T Sector	Power Density Value (%)
Sector A:	6.25 %
Sector B:	6.25 %
Sector C:	6.25 %
AT&T Maximum Total (per sector):	6.25 %
Site Total:	19.08 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **19.08 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

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

AMERICAN TOWER®
CORPORATION

This report was prepared for American Tower Corporation by

TOWER ENGINEERING PROFESSIONALS

Structural Analysis Report

Structure	:	**100 ft Monopole**
ATC Site Name	:	**Rkhl - Rocky Hill, CT**
ATC Site Number	:	**302479**
Engineering Number	:	**OAA721408_C3_01**
Proposed Carrier	:	**AT&T Mobility**
Carrier Site Name	:	**SNET 5641-0063**
Carrier Site Number	:	**CT1009**
Site Location	:	**699 West Street** **Rocky Hill, CT 06067-1924** **41.651800,-72.668500**
County	:	**Hartford**
Date	:	**January 16, 2018**
Max Usage	:	**88%**
Result	:	**Pass**

Prepared By:
Pedro Lopez
TEP

Reviewed By:

STATE OF CONNECTICUT
AARON THOMAS RUCKER
32608
LICENSED
PROFESSIONAL ENGINEER
01/18/2018

COA: PEC.0001553

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 100 ft monopole to reflect the change in loading by AT&T Mobility.

Supporting Documents

Tower Drawings	ITT Meyer Type D, AT&T Technologies #AT-8935, dated April 13, 1984 Mapping by Hightower Solutions, Project #1981, dated August 9, 2007
Foundation Drawing	SNET Site: Rocky Hill, Conn, dated November 12, 1991
Geotechnical Report	S&ME Job #1261-08-049Q, dated April 24, 2008
Modifications	ATC Engineering #40737338, dated May 5, 2008

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, V_{asd}) / 125 mph (3-Second Gust, V_{ult})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 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					
100.0	105.0	12	Powerwave Allgon 7020.00 Dual Band RET	Platform w/ Handrails	(12) 1 1/4" Coax (4) 0.78" 8 AWG 6 (2) 0.39" Fiber Trunk (2) 3" Conduit	AT&T Mobility
		3	CCI HPA-65R-BUU-H6			
	103.0	3	Powerwave Allgon 7770.00			
	100.0	6	Powerwave Allgon LGP21401			
		2	Raycap DC6-48-60-18-8F (23.5" Height)			
		3	Ericsson RRUS 11 (Band 12)			
		3	Ericsson RRUS 32 B2			
90.0	90.0	3	Alcatel-Lucent B25 RRH4x30	Low Profile Platform	(12) 1 5/8" Coax (2) 1 5/8" Hybriflex	Verizon
		3	Alcatel-Lucent B13 RRH4x30-4R 700U			
		3	Alcatel-Lucent RRH4X45-B66 w/ Solar Shield			
		2	RFS DB-T1-6Z-8AB-0Z			
		3	Antel BXA-70063-6CF-EDIN-X			
		3	Andrew LNX-6514DS-VTM			
		6	Andrew SBNHH-1D65B			
78.0	78.0	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					
100.0	103.0	3	Powerwave Allgon 7770.00	-	-	AT&T Mobility
	100.0	6	Powerwave Allgon LGP21901			

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
100.0	103.0	3	Quintel QS66512-2	Platform w/ Handrails	-	AT&T Mobility
	100.0	6	Kaelus DBC0061F1V51-2			
		3	Ericsson RRUS 32 B66			
		3	Ericsson RRUS 32 (55.1 lbs)			

[1]Mount 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	30%	Pass
Shaft	88%	Pass
Base Plate	53%	Pass
Reinforcement	69%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	1,256.0	48%
Axial (Kips)	52.5	11%
Shear (Kips)	17.1	20%

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
100.0	Kaelus DBC0061F1V51-2	AT&T Mobility	1.117	1.214
	Ericsson RRUS 32 B66			
	Ericsson RRUS 32 (55.1 lbs)			
	Quintel QS66512-2			

***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:

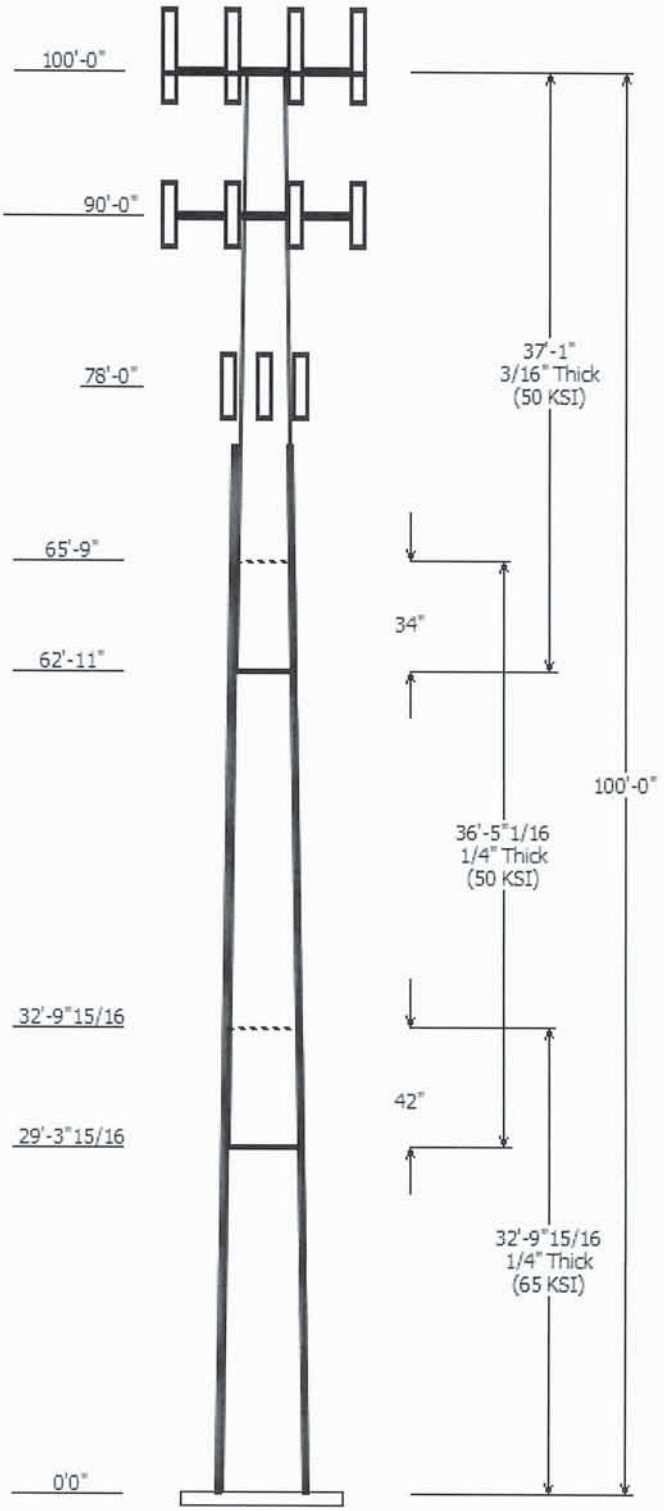
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

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 :	302479	Code:	ANSI/TIA-222-G
Location :	Rkhl - Rocky Hill, CT		
Description :	100 ft Monopole		
Client :	AT&T MOBILITY	Struct Class :	II
Shape :	12 Sides	Exposure :	B
Height :	100.00 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.163760 (in/ft)		

Sections Properties

Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	32.830	24.62	30.00	0.250		0.000	12 Sides	65
2	36.420	19.73	25.69	0.250	Slip Joint	42.000	12 Sides	50
3	37.083	14.50	20.57	0.188	Slip Joint	34.000	12 Sides	50

Discrete Appurtenance

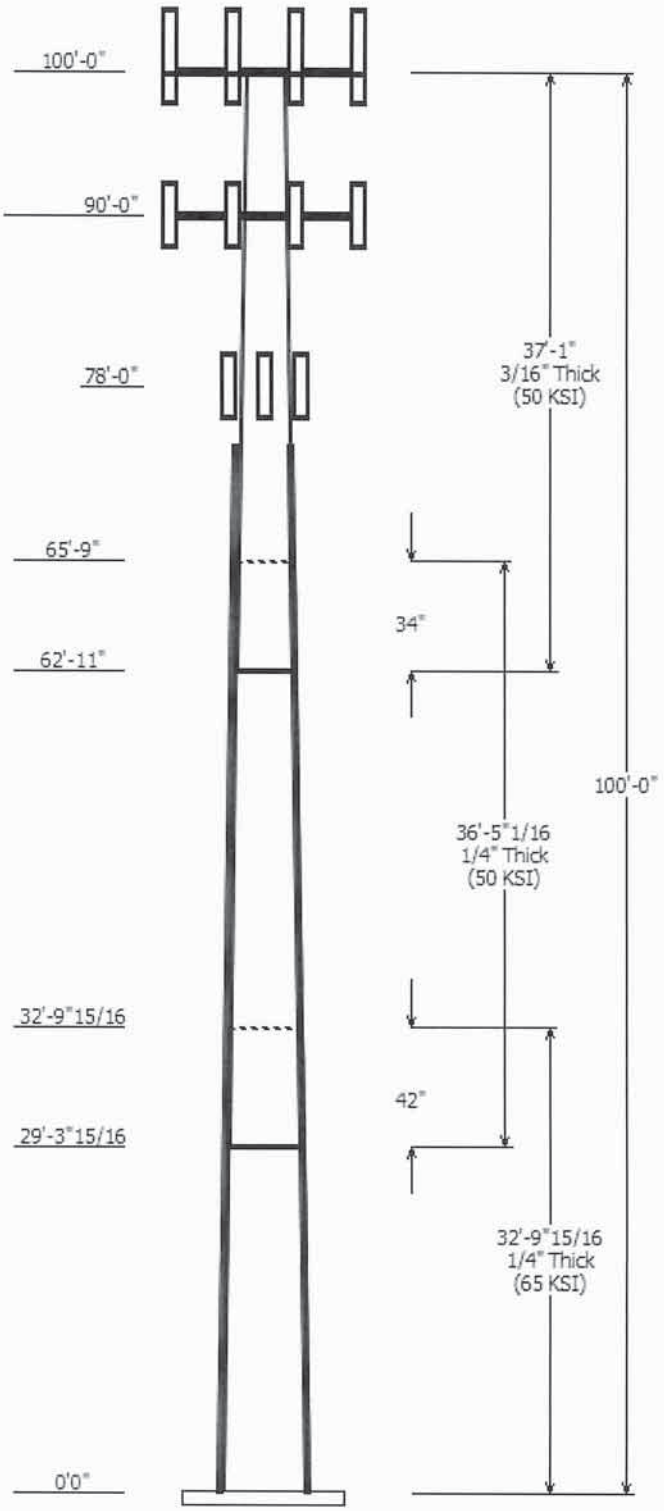
Attach Elev (ft)	Force Elev (ft)	Qty	Description
100.000	100.000	3	Ericsson RRUS 32 B66
100.000	100.000	3	Ericsson RRUS 32 (55.1 lbs)
100.000	100.000	6	Kaelus DBC0061F1V51-2
100.000	103.000	3	Quintel QS66512-2
100.000	103.000	3	Powerwave Allgon 7770.00
100.000	105.000	3	CCI HPA-65R-BUU-H6
100.000	105.000	12	Powerwave 7020.00 Dual Band
100.000	100.000	3	Ericsson RRUS 32 B2
100.000	100.000	3	Ericsson RRUS 11 (Band 12)
100.000	100.000	2	Raycap DC6-48-60-18-8F (23.5"
100.000	100.000	1	Flat Platform with Handrails
100.000	100.000	6	Powerwave LGP21401
90.000	90.000	6	Andrew SBNHH-1D65B
90.000	90.000	3	Alcatel-Lucent B13 RRH4x30-
90.000	90.000	3	Alcatel-Lucent B25 RRH4x30
90.000	90.000	2	RFS DB-T1-6Z-8AB-0Z
90.000	90.000	3	Alcatel-Lucent RRH4X45-B66
90.000	90.000	3	Andrew LNX-6514DS-VTM
90.000	90.000	3	Antel BXA-70063-6CF-EDIN-X
90.000	90.000	1	Round Low Profile Platform
78.000	78.000	3	RFS APXV18-206517S-C

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
5.000	90.000	1 5/8" Coax	Yes
5.000	90.000	1 5/8" Hybriflex	No
5.000	100.0	0.39" Fiber Trunk	No
5.000	100.0	0.78" 8 AWG 6	No
5.000	100.0	1 1/4" Coax	No
5.000	100.0	3" Conduit	No
5.000	78.000	1 5/8" Coax	Yes
0.000	78.406	Reinf.	Yes

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 1.00 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



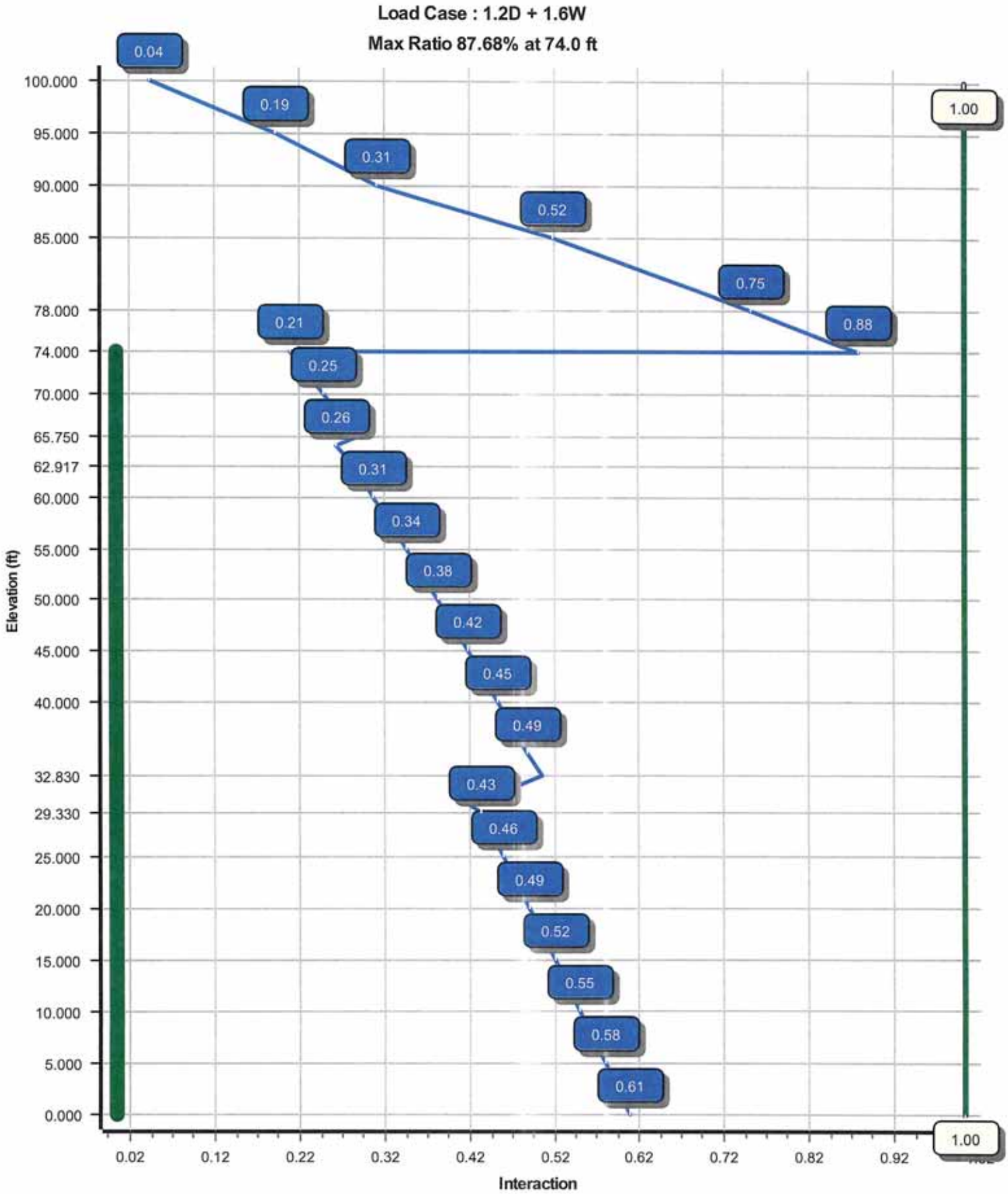
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	1255.96	17.13	27.22
0.9D + 1.6W	1241.90	17.10	20.41
1.2D + 1.0Di + 1.0Wi	316.79	4.03	52.54
(1.2 + 0.2Sds) * DL + E ELFM	86.71	1.03	27.23
(1.2 + 0.2Sds) * DL + E EMAM	176.49	1.98	27.23
(0.9 - 0.2Sds) * DL + E ELFM	85.54	1.03	18.94
(0.9 - 0.2Sds) * DL + E EMAM	173.93	1.98	18.94
1.0D + 1.0W	298.32	4.09	22.72

Dish Deflections

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


Load Case : 1.2D + 1.6W
Max Ratio 87.68% at 74.0 ft
0.04
0.19
0.31
0.52
0.75
0.88
1.00
0.21
0.25
0.26
0.31
0.34
0.38
0.42
0.45
0.49
0.43
0.46
0.49
0.52
0.55
0.58
0.61
1.00
100.000
95.000
90.000
85.000
78.000
74.000
70.000
65.750
62.917
60.000
55.000
50.000
45.000
40.000
32.830
29.330
25.000
20.000
15.000
10.000
5.000
0.000
Elevation (ft)
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
Interaction

Site Number: 302479
Site Name: Rkhl - Rocky Hill, CT
Customer: AT&T MOBILITY

Code: ANSI/TIA-222-G
Engineering Number:OAA721408_C3_01

1/18/2018 4:22:47 PM

Analysis Parameters

Location :	HARTFORD County, CT	Height (ft) :	100
Code :	ANSI/TIA-222-G	Base Diameter (in) :	30.00
Shape :	12 Sides	Top Diameter (in) :	14.50
Pole Type :	Taper	Taper (in/ft) :	0.164
Pole Manfacturer :	ITT Meyer	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	97 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0 ft	Design Ice Thickness:	1.00 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods				
Site Class:	D - Stiff Soil				
Period Based on Rayleigh Method (sec):	1.93				
T_L (sec):	6	p:	1.3	C_s:	0.035
S_s:	0.181	S_1:	0.063	C_s Max:	0.035
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.193	S_{d1}:	0.101		

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 1.00 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: 302479 | Code: ANSI/TIA-222-G |

Site Name: Rkhl - Rocky Hill, CT | Engineering Number:OAA721408_C3_01 | 1/18/2018 4:22:47 PM

Customer: AT&T MOBILITY

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-12	32.830	0.2500	65		0.00	2,434	30.00	0.00	23.95	2705.5	30.01	120.00	24.62	32.83	19.62	1487.8	24.25	98.50	0.163760
2-12	36.420	0.2500	50	Slip	42.00	2,241	25.69	29.33	20.48	1693.1	25.40	102.79	19.73	65.75	15.68	759.9	19.01	78.93	0.163760
3-12	37.083	0.1880	50	Slip	34.00	1,325	20.57	62.92	12.34	654.5	27.18	109.43	14.50	100.00	8.66	226.5	18.52	77.13	0.163760
				Shaft Weight		6,000													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Distance From Face (ft)	Vert Ecc (ft)	No Ice Weight (lb)	No Ice EPAa (sf)	Orientation Factor
100.00	CCI HPA-65R-BUU-H6	3	0.000	5.000	51.00	9.660	0.69
100.00	Ericsson RRUS 11 (Band 12)	3	0.000	0.000	50.00	2.570	0.67
100.00	Ericsson RRUS 32 (55.1 lbs)	3	0.000	0.000	55.10	2.850	0.67
100.00	Ericsson RRUS 32 B2	3	0.000	0.000	53.00	2.740	0.67
100.00	Ericsson RRUS 32 B66	3	0.000	0.000	53.00	2.740	0.67
100.00	Flat Platform with Handrails	1	0.000	0.000	2000.00	42.400	1.00
100.00	Kaelus DBC0061F1V51-2	6	0.000	0.000	25.50	0.510	0.50
100.00	Powerwave 7020.00 Dual Band	12	0.000	5.000	2.20	0.400	0.50
100.00	Powerwave Allgon 7770.00	3	0.000	3.000	35.00	5.510	0.65
100.00	Powerwave LGP21401	6	0.000	0.000	14.10	1.100	0.50
100.00	Quintel QS66512-2	3	0.000	3.000	111.00	8.130	0.74
100.00	Raycap DC6-48-60-18-8F (23.5"	2	0.000	0.000	20.00	1.110	1.00
90.00	Alcatel-Lucent B13 RRH4x30-4R	3	0.000	0.000	57.20	2.170	0.67
90.00	Alcatel-Lucent B25 RRH4x30	3	0.000	0.000	53.00	2.120	0.67
90.00	Alcatel-Lucent RRH4X45-B66 w/	3	0.000	0.000	64.00	2.660	0.67
90.00	Andrew LNX-6514DS-VTM	3	0.000	0.000	33.10	8.080	0.69
90.00	Andrew SBNHH-1D65B	6	0.000	0.000	50.70	8.170	0.69
90.00	Antel BXA-70063-6CF-EDIN-X	3	0.000	0.000	17.00	7.570	0.66
90.00	RFS DB-T1-6Z-8AB-0Z	2	0.000	0.000	44.00	4.800	0.67
90.00	Round Low Profile Platform	1	0.000	0.000	1500.00	21.700	1.00
78.00	RFS APXV18-206517S-C	3	0.000	0.000	26.40	5.170	0.68
Totals	Num Loadings:21	75			6172.60		

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Flat	Projected Width (in)	Exposed To Wind	Carrier
5.00	100.00	2	0.39" Fiber Trunk	0.39	0.06	N	0.00	N	AT&T Mobility
5.00	100.00	4	0.78" 8 AWG 6	0.78	0.59	N	0.00	N	AT&T Mobility
5.00	100.00	12	1 1/4" Coax	1.55	0.63	N	0.00	N	AT&T Mobility
5.00	100.00	2	3" Conduit	3.50	7.58	N	0.00	N	AT&T Mobility
5.00	90.00	12	1 5/8" Coax	1.98	0.82	N	3.96	Y	Verizon
5.00	90.00	2	1 5/8" Hybriflex Cable	1.98	1.30	N	0.00	N	Verizon
0.00	78.41	4	Reinf.	2.50	0.00	N	4.04	Y	
5.00	78.00	6	1 5/8" Coax	1.98	4.92	N	0.00	Y	Metro PCS

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Offset (in)	Intermediate Connections Description	Intermediate Connections Spacing (in)	Intermediate Connections Len (in)	Connectors	Continuation?
0.00	74.00	4	SOL #20 All Thread	80	2.20	6" Angle Bracket	30.0	3.31	5/8" A36 U-Bolt	No

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)	Additional Reinforcing Area (in^2)	Additional Reinforcing Ix (in^4)	Additional Reinforcing Weight (lb)
0.00		0.2500	30.000	23.949	2,705.5	30.01	120.00	72.0	174.2	0.0	0.0	19.64	3,350	0.0
5.00		0.2500	29.181	23.290	2,488.2	29.13	116.72	72.9	164.7	0.0	401.9	19.64	3,203	334.0
10.00		0.2500	28.362	22.630	2,282.8	28.26	113.45	73.9	155.5	0.0	390.6	19.64	3,060	334.0
15.00		0.2500	27.544	21.971	2,089.1	27.38	110.17	74.9	146.5	0.0	379.4	19.64	2,920	334.0
20.00		0.2500	26.725	21.312	1,906.7	26.50	106.90	75.8	137.8	0.0	368.2	19.64	2,783	334.0
25.00		0.2500	25.906	20.653	1,735.2	25.62	103.62	76.8	129.4	0.0	357.0	19.64	2,649	334.0
29.33	Bot - Section 2	0.2500	25.197	20.082	1,595.3	24.86	100.79	77.6	122.3	0.0	300.1	19.64	2,536	289.2
30.00		0.2500	25.087	19.994	1,574.3	24.74	100.35	77.7	121.2	0.0	92.3	19.64	2,598	44.8
32.83	Top - Section 1	0.2500	25.124	20.023	1,581.3	24.78	100.50	62.3	121.6	0.0	385.3	19.64	2,525	189.0
35.00		0.2500	24.768	19.737	1,514.5	24.40	99.07	62.6	118.1	0.0	146.8	19.64	2,469	145.0
40.00		0.2500	23.950	19.078	1,367.7	23.53	95.80	63.0	110.3	0.0	330.2	19.64	2,344	334.0
45.00		0.2500	23.131	18.419	1,230.8	22.65	92.52	63.0	102.8	0.0	319.0	19.64	2,221	334.0
50.00		0.2500	22.312	17.760	1,103.4	21.77	89.25	63.0	95.5	0.0	307.8	19.64	2,102	334.0
55.00		0.2500	21.493	17.101	985.0	20.89	85.97	63.0	88.5	0.0	296.6	19.64	1,986	334.0
60.00		0.2500	20.674	16.442	875.4	20.02	82.70	63.0	81.8	0.0	285.3	19.64	1,874	334.0
62.92	Bot - Section 3	0.2500	20.197	16.057	815.5	19.50	80.79	63.0	78.0	0.0	161.3	19.64	1,810	194.8
65.00		0.2500	19.856	15.783	774.3	19.14	79.42	63.0	75.3	0.0	199.6	19.64	1,814	139.2
65.75	Top - Section 2	0.1880	20.109	12.059	610.8	26.52	106.96	61.0	58.7	0.0	71.0	19.64	1,798	50.1
70.00		0.1880	19.413	11.638	549.0	25.52	103.26	61.8	54.6	0.0	171.4	19.64	1,707	283.9
74.00	Reinf. Top	0.1880	18.758	11.241	494.8	24.59	99.78	62.5	51.0	0.0	155.7	19.64	1,623	267.2
75.00		0.1880	18.594	11.142	481.8	24.36	98.90	62.6	50.1	0.0	38.1			
78.00		0.1880	18.103	10.845	444.3	23.66	96.29	63.0	47.4	0.0	112.2			
80.00		0.1880	17.775	10.647	420.3	23.19	94.55	63.0	45.7	0.0	73.1			
85.00		0.1880	16.956	10.151	364.3	22.02	90.19	63.0	41.5	0.0	176.9			
90.00		0.1880	16.138	9.655	313.5	20.86	85.84	63.0	37.5	0.0	168.5			
95.00		0.1880	15.319	9.160	267.7	19.69	81.48	63.0	33.8	0.0	160.1			
100.0		0.1880	14.500	8.664	226.5	18.52	77.13	63.0	30.2	0.0	151.6			
											6,000.0			4,943.2

Site Number: 302479 Code: ANSI/TIA-222-G

Site Name: Rkhl - Rocky Hill, CT Engineering Number:OAA721408_C3_01 1/18/2018 4:22:47 PM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.6W 97 mph with No Ice 21 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

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	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		197.1	0.0					0.0	0.0	197.1	0.0	0.0	0.0
5.00		407.1	482.2					0.0	400.8	407.1	883.0	0.0	0.0
10.00		413.9	468.8					112.8	803.8	526.7	1,272.5	0.0	0.0
15.00		401.9	455.3					112.8	803.8	514.7	1,259.1	0.0	0.0
20.00		390.0	441.9					112.8	803.8	502.8	1,245.6	0.0	0.0
25.00		353.5	428.4					112.8	803.8	466.2	1,232.2	0.0	0.0
29.33	Bot - Section 2	186.5	360.1					97.7	696.0	284.2	1,056.1	0.0	0.0
30.00		131.3	110.8					15.1	107.7	146.4	218.5	0.0	0.0
32.83	Top - Section 1	188.1	462.4					64.7	454.9	252.8	917.3	0.0	0.0
35.00		271.5	176.2					50.7	348.8	322.2	525.0	0.0	0.0
40.00		379.5	396.2					120.3	803.8	499.8	1,200.0	0.0	0.0
45.00		379.1	382.8					124.7	803.8	503.8	1,186.5	0.0	0.0
50.00		376.9	369.3					128.7	803.8	505.6	1,173.1	0.0	0.0
55.00		373.1	355.9					132.4	803.8	505.5	1,159.6	0.0	0.0
60.00		292.3	342.4					135.9	803.8	428.2	1,146.2	0.0	0.0
62.92	Bot - Section 3	183.9	193.5					80.8	468.8	264.7	662.4	0.0	0.0
65.00		104.7	239.5					58.4	334.9	163.1	574.5	0.0	0.0
65.75	Top - Section 2	182.5	85.2					21.1	120.5	203.6	205.8	0.0	0.0
70.00		298.1	205.6					121.1	683.2	419.2	888.8	0.0	0.0
74.00	Reinf. Top	178.6	186.8					115.9	643.0	294.5	829.9	0.0	0.0
75.00		140.4	45.7					29.3	80.6	169.7	126.3	0.0	0.0
78.00	Appurtenance(s)	174.1	134.7	391.0	0.0	0.0	95.0	88.5	241.8	653.6	471.5	0.0	0.0
80.00		238.4	87.8					35.6	90.3	274.0	178.1	0.0	0.0
85.00		333.4	212.3					74.6	225.8	408.0	438.1	0.0	0.0
90.00	Appurtenance(s)	296.1	202.2	3,493.2	0.0	0.0	3,078.1	75.9	225.8	3,865.1	3,506.1	0.0	0.0
95.00		259.1	192.1					0.0	151.2	259.1	343.3	0.0	0.0
100.00	Appurtenance(s)	127.1	181.9	4,096.6	0.0	5,989.8	4,234.0	0.0	151.2	4,223.6	4,567.1	0.0	0.0
									Totals:	17,261.2	27,266.5	0.00	0.00

Site Number: 302479 Code: ANSI/TIA-222-G

Site Name: Rkhl - Rocky Hill, CT Engineering Number:OAA721408_C3_01 1/18/2018 4:22:49 PM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.6W 97 mph with No Ice 21 Iterations

Gust Response Factor :1.10 Wind Importance Factor :1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-27.22	-17.13	0.00	-1,255.96	0.00	1,255.96	1,551.53	775.77	1,904.52	940.57	0.00	0.00	0.607
5.00	-26.26	-16.85	0.00	-1,170.30	0.00	1,170.30	1,528.89	764.45	1,824.65	901.13	0.15	-0.28	0.578
10.00	-24.91	-16.44	0.00	-1,086.03	0.00	1,086.03	1,505.12	752.56	1,745.00	861.79	0.60	-0.57	0.548
15.00	-23.58	-16.02	0.00	-1,003.83	0.00	1,003.83	1,480.21	740.10	1,665.70	822.62	1.35	-0.85	0.518
20.00	-22.27	-15.60	0.00	-923.71	0.00	923.71	1,454.16	727.08	1,586.85	783.69	2.38	-1.12	0.488
25.00	-20.98	-15.20	0.00	-845.69	0.00	845.69	1,426.98	713.49	1,508.58	745.03	3.70	-1.39	0.457
29.33	-19.90	-14.94	0.00	-779.87	0.00	779.87	1,402.52	701.26	1,441.35	711.83	5.06	-1.62	0.431
30.00	-19.66	-14.81	0.00	-769.86	0.00	769.86	1,398.66	699.33	1,430.99	706.71	5.29	-1.65	0.419
32.83	-18.72	-14.58	0.00	-727.93	0.00	727.93	1,122.95	561.48	1,150.62	568.25	6.32	-1.80	0.502
35.00	-18.16	-14.29	0.00	-696.30	0.00	696.30	1,111.89	555.94	1,122.84	554.53	7.16	-1.91	0.486
40.00	-16.93	-13.82	0.00	-624.84	0.00	624.84	1,081.73	540.87	1,055.54	521.29	9.28	-2.14	0.450
45.00	-15.71	-13.33	0.00	-555.75	0.00	555.75	1,044.36	522.18	983.50	485.71	11.65	-2.37	0.416
50.00	-14.51	-12.83	0.00	-489.11	0.00	489.11	1,006.99	503.49	914.00	451.39	14.25	-2.58	0.380
55.00	-13.34	-12.31	0.00	-424.98	0.00	424.98	969.61	484.81	847.05	418.33	17.06	-2.79	0.344
60.00	-12.18	-11.86	0.00	-363.41	0.00	363.41	932.24	466.12	782.65	386.52	20.08	-2.97	0.306
62.92	-11.52	-11.58	0.00	-328.83	0.00	328.83	910.44	455.22	746.26	368.55	21.93	-3.08	0.283
65.00	-10.94	-11.39	0.00	-304.71	0.00	304.71	894.87	447.43	720.79	355.97	23.29	-3.15	0.262
65.75	-10.73	-11.19	0.00	-296.17	0.00	296.17	662.47	331.23	543.96	268.64	23.79	-3.17	0.287
70.00	-9.85	-10.74	0.00	-248.60	0.00	248.60	646.97	323.48	512.50	253.10	26.67	-3.30	0.246
74.00	-9.02	-10.41	0.00	-205.63	0.00	205.63	631.88	315.94	483.32	238.69	29.49	-3.42	0.207
74.00	-9.02	-10.41	0.00	-205.63	0.00	205.63	631.88	315.94	483.32	238.69	29.49	-3.42	0.877
75.00	-8.88	-10.26	0.00	-195.22	0.00	195.22	628.03	314.01	476.10	235.13	30.21	-3.44	0.845
78.00	-8.40	-9.62	0.00	-164.43	0.00	164.43	614.90	307.45	453.58	224.01	32.48	-3.76	0.749
80.00	-8.19	-9.38	0.00	-145.19	0.00	145.19	603.66	301.83	437.06	215.85	34.10	-3.96	0.687
85.00	-7.73	-8.99	0.00	-98.30	0.00	98.30	575.56	287.78	397.11	196.12	38.48	-4.37	0.516
90.00	-4.52	-4.88	0.00	-53.36	0.00	53.36	547.45	273.73	359.07	177.33	43.22	-4.67	0.310
95.00	-4.19	-4.60	0.00	-28.99	0.00	28.99	519.35	259.67	322.95	159.49	48.22	-4.86	0.190
100.00	0.00	-4.22	0.00	-5.99	0.00	5.99	491.24	245.62	288.74	142.60	53.36	-4.95	0.042

Site Number: 302479 | Code: ANSI/TIA-222-G |

Site Name: Rkhl - Rocky Hill, CT | Engineering Number:OAA721408_C3_01 | 1/18/2018 4:22:50 PM

Customer: AT&T MOBILITY

Load Case: 0.9D + 1.6W — 97 mph with No Ice (Reduced DL) — 21 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

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	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		179.9	0.0					0.0	0.0	179.9	0.0	0.0	0.0
5.00		389.9	361.7					0.0	300.6	389.9	662.3	0.0	0.0
10.00		413.9	351.6					112.8	602.8	526.7	954.4	0.0	0.0
15.00		401.9	341.5					112.8	602.8	514.7	944.3	0.0	0.0
20.00		390.0	331.4					112.8	602.8	502.8	934.2	0.0	0.0
25.00		353.5	321.3					112.8	602.8	466.2	924.1	0.0	0.0
29.33	Bot - Section 2	186.5	270.1					97.7	522.0	284.2	792.1	0.0	0.0
30.00		131.3	83.1					15.1	80.8	146.4	163.9	0.0	0.0
32.83	Top - Section 1	188.1	346.8					64.7	341.2	252.8	688.0	0.0	0.0
35.00		271.5	132.1					50.7	261.6	322.2	393.8	0.0	0.0
40.00		379.5	297.2					120.3	602.8	499.8	900.0	0.0	0.0
45.00		379.1	287.1					124.7	602.8	503.8	889.9	0.0	0.0
50.00		376.9	277.0					128.7	602.8	505.6	879.8	0.0	0.0
55.00		373.1	266.9					132.4	602.8	505.5	869.7	0.0	0.0
60.00		292.3	256.8					135.9	602.8	428.2	859.6	0.0	0.0
62.92	Bot - Section 3	183.9	145.1					80.8	351.6	264.7	496.8	0.0	0.0
65.00		104.7	179.7					58.4	251.2	163.1	430.8	0.0	0.0
65.75	Top - Section 2	182.5	63.9					21.1	90.4	203.6	154.3	0.0	0.0
70.00		298.1	154.2					121.1	512.4	419.2	666.6	0.0	0.0
74.00	Reinf. Top	178.6	140.1					115.9	482.3	294.5	622.4	0.0	0.0
75.00		140.4	34.3					29.3	60.4	169.7	94.7	0.0	0.0
78.00	Appurtenance(s)	174.1	101.0	391.0	0.0	0.0	71.3	88.5	181.3	653.6	353.6	0.0	0.0
80.00		238.4	65.8					35.6	67.8	274.0	133.6	0.0	0.0
85.00		333.4	159.2					74.6	169.4	408.0	328.6	0.0	0.0
90.00	Appurtenance(s)	296.1	151.6	3,493.2	0.0	0.0	2,308.6	75.9	169.4	3,865.1	2,629.6	0.0	0.0
95.00		259.1	144.1					0.0	113.4	259.1	257.5	0.0	0.0
100.00	Appurtenance(s)	127.1	136.5	4,096.6	0.0	5,989.8	3,175.5	0.0	113.4	4,223.6	3,425.3	0.0	0.0
									Totals:	17,226.8	20,449.9	0.00	0.00

Site Number: 302479 Code: ANSI/TIA-222-G

Site Name: Rkhl - Rocky Hill, CT Engineering Number:OAA721408_C3_01 1/18/2018 4:22:52 PM

Customer: AT&T MOBILITY

Load Case: 0.9D + 1.6W — 97 mph with No Ice (Reduced DL) — 21 Iterations

Gust Response Factor :1.10 Wind Importance Factor :1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-20.41	-17.10	0.00	-1,241.90	0.00	1,241.90	1,551.53	775.77	1,904.52	940.57	0.00	0.00	0.598
5.00	-19.66	-16.80	0.00	-1,156.42	0.00	1,156.42	1,528.89	764.45	1,824.65	901.13	0.15	-0.28	0.568
10.00	-18.63	-16.36	0.00	-1,072.40	0.00	1,072.40	1,505.12	752.56	1,745.00	861.79	0.60	-0.56	0.539
15.00	-17.62	-15.92	0.00	-990.61	0.00	990.61	1,480.21	740.10	1,665.70	822.62	1.33	-0.83	0.509
20.00	-16.62	-15.48	0.00	-911.02	0.00	911.02	1,454.16	727.08	1,586.85	783.69	2.35	-1.10	0.479
25.00	-15.65	-15.06	0.00	-833.64	0.00	833.64	1,426.98	713.49	1,508.58	745.03	3.65	-1.37	0.449
29.33	-14.83	-14.79	0.00	-768.45	0.00	768.45	1,402.52	701.26	1,441.35	711.83	5.00	-1.59	0.423
30.00	-14.65	-14.66	0.00	-758.54	0.00	758.54	1,398.66	699.33	1,430.99	706.71	5.23	-1.63	0.411
32.83	-13.93	-14.41	0.00	-717.06	0.00	717.06	1,122.95	561.48	1,150.62	568.25	6.24	-1.77	0.493
35.00	-13.51	-14.12	0.00	-685.78	0.00	685.78	1,111.89	555.94	1,122.84	554.53	7.07	-1.88	0.477
40.00	-12.57	-13.64	0.00	-615.18	0.00	615.18	1,081.73	540.87	1,055.54	521.29	9.16	-2.11	0.441
45.00	-11.65	-13.15	0.00	-546.98	0.00	546.98	1,044.36	522.18	983.50	485.71	11.50	-2.33	0.407
50.00	-10.75	-12.64	0.00	-481.25	0.00	481.25	1,006.99	503.49	914.00	451.39	14.06	-2.55	0.373
55.00	-9.86	-12.13	0.00	-418.04	0.00	418.04	969.61	484.81	847.05	418.33	16.83	-2.75	0.337
60.00	-9.00	-11.68	0.00	-357.39	0.00	357.39	932.24	466.12	782.65	386.52	19.81	-2.93	0.299
62.92	-8.50	-11.41	0.00	-323.32	0.00	323.32	910.44	455.22	746.26	368.55	21.63	-3.03	0.277
65.00	-8.07	-11.23	0.00	-299.55	0.00	299.55	894.87	447.43	720.79	355.97	22.97	-3.10	0.256
65.75	-7.91	-11.02	0.00	-291.14	0.00	291.14	662.47	331.23	543.96	268.64	23.46	-3.13	0.280
70.00	-7.25	-10.58	0.00	-244.28	0.00	244.28	646.97	323.48	512.50	253.10	26.31	-3.26	0.240
74.00	-6.63	-10.26	0.00	-201.94	0.00	201.94	631.88	315.94	483.32	238.69	29.09	-3.37	0.202
74.00	-6.63	-10.26	0.00	-201.94	0.00	201.94	631.88	315.94	483.32	238.69	29.09	-3.37	0.858
75.00	-6.51	-10.11	0.00	-191.68	0.00	191.68	628.03	314.01	476.10	235.13	29.80	-3.39	0.827
78.00	-6.16	-9.46	0.00	-161.36	0.00	161.36	614.90	307.45	453.58	224.01	32.03	-3.71	0.731
80.00	-5.99	-9.21	0.00	-142.44	0.00	142.44	603.66	301.83	437.06	215.85	33.62	-3.90	0.671
85.00	-5.64	-8.81	0.00	-96.39	0.00	96.39	575.56	287.78	397.11	196.12	37.94	-4.31	0.502
90.00	-3.30	-4.77	0.00	-52.32	0.00	52.32	547.45	273.73	359.07	177.33	42.61	-4.60	0.301
95.00	-3.06	-4.50	0.00	-28.48	0.00	28.48	519.35	259.67	322.95	159.49	47.53	-4.78	0.185
100.00	0.00	-4.22	0.00	-5.99	0.00	5.99	491.24	245.62	288.74	142.60	52.59	-4.87	0.042

Site Number: 302479 | Code: ANSI/TIA-222-G |

Site Name: Rkhl - Rocky Hill, CT | Engineering Number:OAA721408_C3_01 | 1/18/2018 4:22:52 PM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.0Di + 1.0Wi — 50 mph with 1.00 in Radial Ice — 20 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 Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		39.5	0.0					0.0	0.0	39.5	0.0	0.0	0.0
5.00		78.4	789.4					0.0	485.9	78.4	1,275.3	0.0	0.0
10.00		77.0	804.4					34.9	1,204.2	111.9	2,008.7	0.0	0.0
15.00		75.4	800.0					35.7	1,226.1	111.1	2,026.1	0.0	0.0
20.00		73.7	789.1					36.3	1,241.4	110.0	2,030.4	0.0	0.0
25.00		67.2	774.8					36.7	1,253.2	103.9	2,028.0	0.0	0.0
29.33	Bot - Section 2	35.6	658.4					32.1	1,093.1	67.7	1,751.5	0.0	0.0
30.00		25.1	158.0					5.0	169.8	30.1	327.8	0.0	0.0
32.83	Top - Section 1	36.0	659.9					21.4	718.5	57.5	1,378.4	0.0	0.0
35.00		52.3	326.8					16.9	552.6	69.1	879.5	0.0	0.0
40.00		73.4	736.4					40.2	1,278.4	113.6	2,014.8	0.0	0.0
45.00		73.8	716.7					41.9	1,284.8	115.7	2,001.5	0.0	0.0
50.00		73.9	696.2					43.5	1,290.6	117.4	1,986.9	0.0	0.0
55.00		73.7	675.2					45.0	1,295.9	118.7	1,971.2	0.0	0.0
60.00		58.1	653.7					46.4	1,300.8	104.5	1,954.5	0.0	0.0
62.92	Bot - Section 3	36.7	372.6					27.7	760.9	64.4	1,133.5	0.0	0.0
65.00		20.9	368.2					20.1	544.4	41.0	912.7	0.0	0.0
65.75	Top - Section 2	36.7	131.4					7.3	196.1	43.9	327.5	0.0	0.0
70.00		60.1	460.1					41.7	1,113.4	101.8	1,573.5	0.0	0.0
74.00	Reinf. Top	36.2	420.6					40.1	1,050.5	76.2	1,471.1	0.0	0.0
75.00		28.6	103.9					10.1	182.8	38.8	286.7	0.0	0.0
78.00	Appurtenance(s)	35.6	305.6	84.6	0.0	0.0	567.7	30.7	549.4	150.9	1,422.7	0.0	0.0
80.00		49.1	200.3					12.4	200.6	61.5	400.9	0.0	0.0
85.00		69.2	483.3					26.1	477.4	95.3	960.7	0.0	0.0
90.00	Appurtenance(s)	67.7	463.3	839.8	0.0	0.0	8,130.2	26.6	478.9	934.1	9,072.3	0.0	0.0
95.00		66.1	443.0					0.0	151.2	66.1	594.2	0.0	0.0
100.00	Appurtenance(s)	32.6	422.5	977.5	0.0	1,231.7	10,177.1	0.0	151.2	1,010.1	10,750.8	0.0	0.0
								Totals:		4,033.36	52,541.0	0.00	0.00

Site Number: 302479 Code: ANSI/TIA-222-G

Site Name: Rkhl - Rocky Hill, CT Engineering Number:OAA721408_C3_01 1/18/2018 4:22:54 PM

Customer: AT&T MOBILITY

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 1.00 in Radial Ice 20 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	-52.54	-4.03	0.00	-316.79	0.00	316.79	1,551.53	775.77	1,904.52	940.57	0.00	0.00	0.169
5.00	-51.26	-4.01	0.00	-296.66	0.00	296.66	1,528.89	764.45	1,824.65	901.13	0.04	-0.07	0.162
10.00	-49.24	-3.96	0.00	-276.60	0.00	276.60	1,505.12	752.56	1,745.00	861.79	0.15	-0.14	0.155
15.00	-47.21	-3.90	0.00	-256.81	0.00	256.81	1,480.21	740.10	1,665.70	822.62	0.34	-0.21	0.147
20.00	-45.18	-3.83	0.00	-237.32	0.00	237.32	1,454.16	727.08	1,586.85	783.69	0.60	-0.28	0.139
25.00	-43.15	-3.77	0.00	-218.15	0.00	218.15	1,426.98	713.49	1,508.58	745.03	0.94	-0.35	0.131
29.33	-41.39	-3.71	0.00	-201.84	0.00	201.84	1,402.52	701.26	1,441.35	711.83	1.29	-0.41	0.124
30.00	-41.07	-3.70	0.00	-199.35	0.00	199.35	1,398.66	699.33	1,430.99	706.71	1.35	-0.42	0.121
32.83	-39.69	-3.65	0.00	-188.89	0.00	188.89	1,122.95	561.48	1,150.62	568.25	1.61	-0.46	0.146
35.00	-38.80	-3.61	0.00	-180.96	0.00	180.96	1,111.89	555.94	1,122.84	554.53	1.83	-0.49	0.142
40.00	-36.79	-3.51	0.00	-162.94	0.00	162.94	1,081.73	540.87	1,055.54	521.29	2.37	-0.55	0.132
45.00	-34.78	-3.41	0.00	-145.37	0.00	145.37	1,044.36	522.18	983.50	485.71	2.98	-0.61	0.123
50.00	-32.79	-3.30	0.00	-128.32	0.00	128.32	1,006.99	503.49	914.00	451.39	3.65	-0.66	0.113
55.00	-30.82	-3.19	0.00	-111.80	0.00	111.80	969.61	484.81	847.05	418.33	4.37	-0.72	0.103
60.00	-28.87	-3.08	0.00	-95.86	0.00	95.86	932.24	466.12	782.65	386.52	5.15	-0.77	0.093
62.92	-27.73	-3.01	0.00	-86.88	0.00	86.88	910.44	455.22	746.26	368.55	5.63	-0.80	0.087
65.00	-26.82	-2.96	0.00	-80.61	0.00	80.61	894.87	447.43	720.79	355.97	5.98	-0.81	0.081
65.75	-26.49	-2.92	0.00	-78.39	0.00	78.39	662.47	331.23	543.96	268.64	6.11	-0.82	0.089
70.00	-24.92	-2.81	0.00	-65.97	0.00	65.97	646.97	323.48	512.50	253.10	6.86	-0.86	0.078
74.00	-23.45	-2.72	0.00	-54.72	0.00	54.72	631.88	315.94	483.32	238.69	7.59	-0.89	0.067
74.00	-23.45	-2.72	0.00	-54.72	0.00	54.72	631.88	315.94	483.32	238.69	7.59	-0.89	0.266
75.00	-23.16	-2.70	0.00	-52.00	0.00	52.00	628.03	314.01	476.10	235.13	7.77	-0.89	0.258
78.00	-21.74	-2.55	0.00	-43.91	0.00	43.91	614.90	307.45	453.58	224.01	8.36	-0.98	0.231
80.00	-21.33	-2.51	0.00	-38.81	0.00	38.81	603.66	301.83	437.06	215.85	8.78	-1.03	0.215
85.00	-20.37	-2.43	0.00	-26.26	0.00	26.26	575.56	287.78	397.11	196.12	9.92	-1.14	0.169
90.00	-11.32	-1.32	0.00	-14.10	0.00	14.10	547.45	273.73	359.07	177.33	11.16	-1.22	0.100
95.00	-10.73	-1.25	0.00	-7.48	0.00	7.48	519.35	259.67	322.95	159.49	12.47	-1.27	0.068
100.00	0.00	-1.01	0.00	-1.23	0.00	1.23	491.24	245.62	288.74	142.60	13.81	-1.29	0.009

Load Case: 1.0D + 1.0W Serviceability 60 mph 20 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 Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		43.0	0.0					0.0	0.0	43.0	0.0	0.0	0.0
5.00		93.2	401.9					0.0	334.0	93.2	735.9	0.0	0.0
10.00		99.0	390.6					27.0	669.8	125.9	1,060.4	0.0	0.0
15.00		96.1	379.4					27.0	669.8	123.1	1,049.2	0.0	0.0
20.00		93.3	368.2					27.0	669.8	120.2	1,038.0	0.0	0.0
25.00		84.5	357.0					27.0	669.8	111.5	1,026.8	0.0	0.0
29.33	Bot - Section 2	44.6	300.1					23.4	580.0	68.0	880.1	0.0	0.0
30.00		31.4	92.3					3.6	89.8	35.0	182.1	0.0	0.0
32.83	Top - Section 1	45.0	385.3					15.5	379.1	60.5	764.4	0.0	0.0
35.00		64.9	146.8					12.1	290.7	77.1	437.5	0.0	0.0
40.00		90.7	330.2					28.8	669.8	119.5	1,000.0	0.0	0.0
45.00		90.7	319.0					29.8	669.8	120.5	988.8	0.0	0.0
50.00		90.1	307.8					30.8	669.8	120.9	977.6	0.0	0.0
55.00		89.2	296.6					31.7	669.8	120.9	966.4	0.0	0.0
60.00		69.9	285.3					32.5	669.8	102.4	955.1	0.0	0.0
62.92	Bot - Section 3	44.0	161.3					19.3	390.7	63.3	552.0	0.0	0.0
65.00		25.0	199.6					14.0	279.1	39.0	478.7	0.0	0.0
65.75	Top - Section 2	43.6	71.0					5.1	100.5	48.7	171.5	0.0	0.0
70.00		71.3	171.4					29.0	569.3	100.2	740.7	0.0	0.0
74.00	Reinf. Top	42.7	155.7					27.7	535.8	70.4	691.5	0.0	0.0
75.00		33.6	38.1					7.0	67.2	40.6	105.2	0.0	0.0
78.00	Appurtenance(s)	41.6	112.2	93.5	0.0	0.0	79.2	21.2	201.5	156.3	392.9	0.0	0.0
80.00		57.0	73.1					8.5	75.3	65.5	148.4	0.0	0.0
85.00		79.7	176.9					17.8	188.2	97.6	365.1	0.0	0.0
90.00	Appurtenance(s)	70.8	168.5	835.3	0.0	0.0	2,565.1	18.1	188.2	924.3	2,921.8	0.0	0.0
95.00		62.0	160.1					0.0	126.0	62.0	286.1	0.0	0.0
100.00	Appurtenance(s)	30.4	151.6	979.6	0.0	1,432.4	3,528.3	0.0	126.0	1,010.0	3,805.9	0.0	0.0
								Totals:		4,119.50	22,722.1	0.00	0.00

Site Number: 302479 Code: ANSI/TIA-222-G

Site Name: Rkhl - Rocky Hill, CT Engineering Number:OAA721408_C3_01 1/18/2018 4:22:56 PM

Customer: AT&T MOBILITY

Load Case: 1.0D + 1.0W Serviceability 60 mph 20 Iterations

Gust Response Factor :1.10 Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-22.72	-4.09	0.00	-298.32	0.00	298.32	1,551.53	775.77	1,904.52	940.57	0.00	0.00	0.150
5.00	-21.98	-4.02	0.00	-277.87	0.00	277.87	1,528.89	764.45	1,824.65	901.13	0.04	-0.07	0.143
10.00	-20.91	-3.92	0.00	-257.76	0.00	257.76	1,505.12	752.56	1,745.00	861.79	0.14	-0.13	0.135
15.00	-19.86	-3.81	0.00	-238.17	0.00	238.17	1,480.21	740.10	1,665.70	822.62	0.32	-0.20	0.128
20.00	-18.82	-3.71	0.00	-219.10	0.00	219.10	1,454.16	727.08	1,586.85	783.69	0.57	-0.27	0.120
25.00	-17.79	-3.61	0.00	-200.54	0.00	200.54	1,426.98	713.49	1,508.58	745.03	0.88	-0.33	0.113
29.33	-16.91	-3.55	0.00	-184.90	0.00	184.90	1,402.52	701.26	1,441.35	711.83	1.20	-0.38	0.106
30.00	-16.72	-3.52	0.00	-182.52	0.00	182.52	1,398.66	699.33	1,430.99	706.71	1.26	-0.39	0.103
32.83	-15.96	-3.46	0.00	-172.56	0.00	172.56	1,122.95	561.48	1,150.62	568.25	1.50	-0.43	0.124
35.00	-15.52	-3.39	0.00	-165.05	0.00	165.05	1,111.89	555.94	1,122.84	554.53	1.70	-0.45	0.120
40.00	-14.52	-3.28	0.00	-148.09	0.00	148.09	1,081.73	540.87	1,055.54	521.29	2.20	-0.51	0.111
45.00	-13.53	-3.16	0.00	-131.70	0.00	131.70	1,044.36	522.18	983.50	485.71	2.76	-0.56	0.103
50.00	-12.55	-3.04	0.00	-115.90	0.00	115.90	1,006.99	503.49	914.00	451.39	3.38	-0.61	0.094
55.00	-11.58	-2.92	0.00	-100.70	0.00	100.70	969.61	484.81	847.05	418.33	4.05	-0.66	0.085
60.00	-10.63	-2.81	0.00	-86.11	0.00	86.11	932.24	466.12	782.65	386.52	4.76	-0.71	0.076
62.92	-10.07	-2.74	0.00	-77.91	0.00	77.91	910.44	455.22	746.26	368.55	5.20	-0.73	0.071
65.00	-9.59	-2.70	0.00	-72.19	0.00	72.19	894.87	447.43	720.79	355.97	5.53	-0.75	0.065
65.75	-9.42	-2.65	0.00	-70.17	0.00	70.17	662.47	331.23	543.96	268.64	5.64	-0.75	0.072
70.00	-8.68	-2.55	0.00	-58.89	0.00	58.89	646.97	323.48	512.50	253.10	6.33	-0.78	0.062
74.00	-7.99	-2.47	0.00	-48.70	0.00	48.70	631.88	315.94	483.32	238.69	7.00	-0.81	0.052
74.00	-7.99	-2.47	0.00	-48.70	0.00	48.70	631.88	315.94	483.32	238.69	7.00	-0.81	0.217
75.00	-7.88	-2.43	0.00	-46.23	0.00	46.23	628.03	314.01	476.10	235.13	7.17	-0.82	0.209
78.00	-7.49	-2.28	0.00	-38.93	0.00	38.93	614.90	307.45	453.58	224.01	7.71	-0.89	0.186
80.00	-7.34	-2.22	0.00	-34.37	0.00	34.37	603.66	301.83	437.06	215.85	8.09	-0.94	0.171
85.00	-6.98	-2.13	0.00	-23.27	0.00	23.27	575.56	287.78	397.11	196.12	9.13	-1.04	0.131
90.00	-4.07	-1.15	0.00	-12.63	0.00	12.63	547.45	273.73	359.07	177.33	10.26	-1.11	0.079
95.00	-3.78	-1.09	0.00	-6.87	0.00	6.87	519.35	259.67	322.95	159.49	11.44	-1.15	0.050
100.00	0.00	-1.01	0.00	-1.43	0.00	1.43	491.24	245.62	288.74	142.60	12.66	-1.17	0.010

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.18
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coeffiecient 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):	1.93
Redundancy Factor (p):	1.30
Seismic Force Distribution Exponent (k):	1.71
Total Unfactored Dead Load:	22.72 k
Seismic Base Shear (E):	1.03 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)
26	97.50	278	713	0.026	27	344
25	92.50	286	671	0.024	25	354
24	87.50	357	761	0.028	28	442
23	82.50	365	704	0.025	26	452
22	79.00	148	266	0.010	10	184
21	76.50	314	532	0.019	20	389
20	74.50	105	170	0.006	6	130
19	72.00	692	1,056	0.038	39	857
18	67.87	741	1,022	0.037	38	917
17	65.37	171	222	0.008	8	212
16	63.96	479	597	0.022	22	593
15	61.46	552	643	0.023	24	684
14	57.50	955	992	0.036	37	1,183
13	52.50	966	859	0.031	32	1,197
12	47.50	978	732	0.026	27	1,211
11	42.50	989	612	0.022	23	1,225
10	37.50	1,000	499	0.018	19	1,239
9	33.91	438	184	0.007	7	542
8	31.41	764	282	0.010	10	947
7	29.66	182	61	0.002	2	226
6	27.16	880	253	0.009	9	1,090
5	22.50	1,027	214	0.008	8	1,272
4	17.50	1,038	140	0.005	5	1,286

3	12.50	1,049	80	0.003	3	1,300
2	7.50	1,060	34	0.001	1	1,313
1	2.50	736	4	0.000	0	911
Powerwave 7020.00 Du	100.00	26	71	0.003	3	33
Kaelus DBC0061F1V51-	100.00	153	410	0.015	15	190
Powerwave LGP21401	100.00	85	227	0.008	8	105
Raycap DC6-48-60-18-	100.00	40	107	0.004	4	50
Ericsson RRUS 11 (Ba	100.00	150	402	0.015	15	186
Ericsson RRUS 32 B2	100.00	159	426	0.015	16	197
Ericsson RRUS 32 B66	100.00	159	426	0.015	16	197
Ericsson RRUS 32 (55	100.00	165	443	0.016	17	205
Powerwave Allgon 777	100.00	105	282	0.010	10	130
Quintel QS66512-2	100.00	333	893	0.032	33	412
CCI HPA-65R-BUU-H6	100.00	153	410	0.015	15	190
Flat Platform with H	100.00	2,000	5,364	0.194	200	2,477
Alcatel-Lucent B25 R	90.00	159	356	0.013	13	197
Alcatel-Lucent B13 R	90.00	172	384	0.014	14	213
Alcatel-Lucent RRH4X	90.00	192	430	0.016	16	238
RFS DB-T1-6Z-8AB-0Z	90.00	88	197	0.007	7	109
Antel BXA-70063-6CF-	90.00	51	114	0.004	4	63
Andrew LNX-6514DS-VT	90.00	99	222	0.008	8	123
Andrew SBNHH-1D65B	90.00	304	681	0.025	25	377
Round Low Profile Pl	90.00	1,500	3,358	0.121	125	1,858
RFS APXV18-206517S-C	78.00	79	139	0.005	5	98
		22,722	27,645	1.000	1,029	28,144

Load Case (0.9 - 0.2Sds) * DL + E ELFM 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)
26	97.50	278	713	0.026	27	239
25	92.50	286	671	0.024	25	246
24	87.50	357	761	0.028	28	307
23	82.50	365	704	0.025	26	315
22	79.00	148	266	0.010	10	128
21	76.50	314	532	0.019	20	270
20	74.50	105	170	0.006	6	91
19	72.00	692	1,056	0.038	39	596
18	67.87	741	1,022	0.037	38	638
17	65.37	171	222	0.008	8	148
16	63.96	479	597	0.022	22	412
15	61.46	552	643	0.023	24	475
14	57.50	955	992	0.036	37	823
13	52.50	966	859	0.031	32	832
12	47.50	978	732	0.026	27	842
11	42.50	989	612	0.022	23	852
10	37.50	1,000	499	0.018	19	861
9	33.91	438	184	0.007	7	377
8	31.41	764	282	0.010	10	658
7	29.66	182	61	0.002	2	157
6	27.16	880	253	0.009	9	758
5	22.50	1,027	214	0.008	8	884
4	17.50	1,038	140	0.005	5	894
3	12.50	1,049	80	0.003	3	904
2	7.50	1,060	34	0.001	1	913
1	2.50	736	4	0.000	0	634
Powerwave 7020.00 Du	100.00	26	71	0.003	3	23
Kaelus DBC0061F1V51-	100.00	153	410	0.015	15	132
Powerwave LGP21401	100.00	85	227	0.008	8	73
Raycap DC6-48-60-18-	100.00	40	107	0.004	4	34

Ericsson RRUS 11 (Ba	100.00	150	402	0.015	15	129
Ericsson RRUS 32 B2	100.00	159	426	0.015	16	137
Ericsson RRUS 32 B66	100.00	159	426	0.015	16	137
Ericsson RRUS 32 (55	100.00	165	443	0.016	17	142
Powerwave Allgon 777	100.00	105	282	0.010	10	90
Quintel QS66512-2	100.00	333	893	0.032	33	287
CCI HPA-65R-BUU-H6	100.00	153	410	0.015	15	132
Flat Platform with H	100.00	2,000	5,364	0.194	200	1,723
Alcatel-Lucent B25 R	90.00	159	356	0.013	13	137
Alcatel-Lucent B13 R	90.00	172	384	0.014	14	148
Alcatel-Lucent RRH4X	90.00	192	430	0.016	16	165
RFS DB-T1-6Z-8AB-0Z	90.00	88	197	0.007	7	76
Antel BXA-70063-6CF-	90.00	51	114	0.004	4	44
Andrew LNX-6514DS-VT	90.00	99	222	0.008	8	86
Andrew SBNHH-1D65B	90.00	304	681	0.025	25	262
Round Low Profile Pl	90.00	1,500	3,358	0.121	125	1,292
RFS APXV18-206517S-C	78.00	79	139	0.005	5	68
		22,722	27,645	1.000	1,029	19,573

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	-27.23	-1.03	0.00	-86.71	0.00	86.71	1,551.53	775.77	1,904.52	940.57	0.00	0.00	0.051
5.00	-25.92	-1.04	0.00	-81.55	0.00	81.55	1,528.89	764.45	1,824.65	901.13	0.01	-0.02	0.049
10.00	-24.62	-1.05	0.00	-76.34	0.00	76.34	1,505.12	752.56	1,745.00	861.79	0.04	-0.04	0.047
15.00	-23.33	-1.05	0.00	-71.12	0.00	71.12	1,480.21	740.10	1,665.70	822.62	0.09	-0.06	0.044
20.00	-22.06	-1.05	0.00	-65.88	0.00	65.88	1,454.16	727.08	1,586.85	783.69	0.17	-0.08	0.042
25.00	-20.97	-1.04	0.00	-60.65	0.00	60.65	1,426.98	713.49	1,508.58	745.03	0.26	-0.10	0.040
29.33	-20.74	-1.04	0.00	-56.15	0.00	56.15	1,402.52	701.26	1,441.35	711.83	0.36	-0.11	0.038
30.00	-19.80	-1.03	0.00	-55.45	0.00	55.45	1,398.66	699.33	1,430.99	706.71	0.37	-0.12	0.037
32.83	-19.26	-1.03	0.00	-52.53	0.00	52.53	1,122.95	561.48	1,150.62	568.25	0.44	-0.13	0.044
35.00	-18.02	-1.01	0.00	-50.31	0.00	50.31	1,111.89	555.94	1,122.84	554.53	0.50	-0.14	0.043
40.00	-16.79	-0.99	0.00	-45.26	0.00	45.26	1,081.73	540.87	1,055.54	521.29	0.65	-0.15	0.040
45.00	-15.58	-0.96	0.00	-40.32	0.00	40.32	1,044.36	522.18	983.50	485.71	0.82	-0.17	0.037
50.00	-14.38	-0.93	0.00	-35.51	0.00	35.51	1,006.99	503.49	914.00	451.39	1.01	-0.18	0.034
55.00	-13.20	-0.89	0.00	-30.87	0.00	30.87	969.61	484.81	847.05	418.33	1.21	-0.20	0.031
60.00	-12.52	-0.87	0.00	-26.40	0.00	26.40	932.24	466.12	782.65	386.52	1.42	-0.21	0.028
62.92	-11.92	-0.85	0.00	-23.87	0.00	23.87	910.44	455.22	746.26	368.55	1.56	-0.22	0.026
65.00	-11.71	-0.84	0.00	-22.11	0.00	22.11	894.87	447.43	720.79	355.97	1.65	-0.23	0.024
65.75	-10.79	-0.80	0.00	-21.48	0.00	21.48	662.47	331.23	543.96	268.64	1.69	-0.23	0.026
70.00	-9.94	-0.75	0.00	-18.10	0.00	18.10	646.97	323.48	512.50	253.10	1.90	-0.24	0.023
74.00	-9.81	-0.75	0.00	-15.08	0.00	15.08	631.88	315.94	483.32	238.69	2.10	-0.24	0.020
74.00	-9.81	-0.75	0.00	-15.08	0.00	15.08	631.88	315.94	483.32	238.69	2.10	-0.24	0.079
75.00	-9.42	-0.73	0.00	-14.33	0.00	14.33	628.03	314.01	476.10	235.13	2.15	-0.25	0.076
78.00	-9.14	-0.72	0.00	-12.14	0.00	12.14	614.90	307.45	453.58	224.01	2.31	-0.27	0.069
80.00	-8.68	-0.69	0.00	-10.71	0.00	10.71	603.66	301.83	437.06	215.85	2.43	-0.28	0.064
85.00	-8.24	-0.66	0.00	-7.25	0.00	7.25	575.56	287.78	397.11	196.12	2.74	-0.32	0.051
90.00	-4.71	-0.41	0.00	-3.93	0.00	3.93	547.45	273.73	359.07	177.33	3.09	-0.34	0.031
95.00	-4.37	-0.38	0.00	-1.90	0.00	1.90	519.35	259.67	322.95	159.49	3.45	-0.35	0.020
100.00	0.00	-0.35	0.00	0.00	0.00	0.00	491.24	245.62	288.74	142.60	3.82	-0.36	0.000

Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-18.94	-1.03	0.00	-85.54	0.00	85.54	1,551.53	775.77	1,904.52	940.57	0.00	0.00	0.047
5.00	-18.02	-1.04	0.00	-80.38	0.00	80.38	1,528.89	764.45	1,824.65	901.13	0.01	-0.02	0.045
10.00	-17.12	-1.04	0.00	-75.20	0.00	75.20	1,505.12	752.56	1,745.00	861.79	0.04	-0.04	0.043
15.00	-16.23	-1.04	0.00	-70.00	0.00	70.00	1,480.21	740.10	1,665.70	822.62	0.09	-0.06	0.041
20.00	-15.34	-1.03	0.00	-64.81	0.00	64.81	1,454.16	727.08	1,586.85	783.69	0.16	-0.08	0.039
25.00	-14.58	-1.03	0.00	-59.64	0.00	59.64	1,426.98	713.49	1,508.58	745.03	0.26	-0.10	0.037
29.33	-14.43	-1.03	0.00	-55.19	0.00	55.19	1,402.52	701.26	1,441.35	711.83	0.35	-0.11	0.035
30.00	-13.77	-1.02	0.00	-54.50	0.00	54.50	1,398.66	699.33	1,430.99	706.71	0.37	-0.11	0.034
32.83	-13.39	-1.01	0.00	-51.62	0.00	51.62	1,122.95	561.48	1,150.62	568.25	0.44	-0.13	0.041
35.00	-12.53	-0.99	0.00	-49.42	0.00	49.42	1,111.89	555.94	1,122.84	554.53	0.50	-0.13	0.040
40.00	-11.68	-0.97	0.00	-44.45	0.00	44.45	1,081.73	540.87	1,055.54	521.29	0.64	-0.15	0.037
45.00	-10.83	-0.95	0.00	-39.58	0.00	39.58	1,044.36	522.18	983.50	485.71	0.81	-0.17	0.034
50.00	-10.00	-0.91	0.00	-34.85	0.00	34.85	1,006.99	503.49	914.00	451.39	0.99	-0.18	0.031
55.00	-9.18	-0.88	0.00	-30.28	0.00	30.28	969.61	484.81	847.05	418.33	1.19	-0.20	0.028
60.00	-8.70	-0.85	0.00	-25.89	0.00	25.89	932.24	466.12	782.65	386.52	1.40	-0.21	0.026
62.92	-8.29	-0.83	0.00	-23.40	0.00	23.40	910.44	455.22	746.26	368.55	1.53	-0.22	0.024
65.00	-8.14	-0.82	0.00	-21.67	0.00	21.67	894.87	447.43	720.79	355.97	1.63	-0.22	0.022
65.75	-7.51	-0.78	0.00	-21.06	0.00	21.06	662.47	331.23	543.96	268.64	1.66	-0.22	0.024
70.00	-6.91	-0.74	0.00	-17.73	0.00	17.73	646.97	323.48	512.50	253.10	1.87	-0.23	0.021
74.00	-6.82	-0.74	0.00	-14.77	0.00	14.77	631.88	315.94	483.32	238.69	2.06	-0.24	0.018
74.00	-6.82	-0.74	0.00	-14.77	0.00	14.77	631.88	315.94	483.32	238.69	2.06	-0.24	0.073
75.00	-6.55	-0.72	0.00	-14.03	0.00	14.03	628.03	314.01	476.10	235.13	2.12	-0.24	0.070
78.00	-6.35	-0.70	0.00	-11.88	0.00	11.88	614.90	307.45	453.58	224.01	2.28	-0.27	0.063
80.00	-6.04	-0.68	0.00	-10.48	0.00	10.48	603.66	301.83	437.06	215.85	2.39	-0.28	0.059
85.00	-5.73	-0.65	0.00	-7.09	0.00	7.09	575.56	287.78	397.11	196.12	2.70	-0.31	0.046
90.00	-3.28	-0.40	0.00	-3.84	0.00	3.84	547.45	273.73	359.07	177.33	3.04	-0.33	0.028
95.00	-3.04	-0.37	0.00	-1.85	0.00	1.85	519.35	259.67	322.95	159.49	3.39	-0.34	0.017
100.00	0.00	-0.35	0.00	0.00	0.00	0.00	491.24	245.62	288.74	142.60	3.75	-0.35	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
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	1.93
Redundancy Factor (p):	1.30

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

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
26	97.50	278	1.797	1.523	0.972	0.313	75	344
25	92.50	286	1.617	0.832	0.694	0.210	52	354
24	87.50	357	1.447	0.379	0.482	0.126	39	442
23	82.50	365	1.286	0.102	0.324	0.060	19	452
22	79.00	148	1.180	-0.014	0.240	0.025	3	184
21	76.50	314	1.106	-0.066	0.191	0.005	1	389
20	74.50	105	1.049	-0.094	0.157	-0.007	-1	130
19	72.00	692	0.980	-0.114	0.122	-0.019	-11	857
18	67.87	741	0.871	-0.121	0.076	-0.028	-18	917
17	65.37	171	0.808	-0.113	0.056	-0.029	-4	212
16	63.96	479	0.773	-0.106	0.046	-0.028	-12	593
15	61.46	552	0.714	-0.091	0.033	-0.023	-11	684
14	57.50	955	0.625	-0.062	0.018	-0.010	-9	1,183
13	52.50	966	0.521	-0.024	0.008	0.010	8	1,197
12	47.50	978	0.426	0.010	0.006	0.028	24	1,211
11	42.50	989	0.341	0.035	0.009	0.040	35	1,225
10	37.50	1,000	0.266	0.052	0.015	0.047	40	1,239
9	33.91	438	0.217	0.060	0.021	0.048	18	542
8	31.41	764	0.187	0.064	0.025	0.048	32	947
7	29.66	182	0.166	0.066	0.028	0.048	8	226
6	27.16	880	0.139	0.069	0.032	0.047	36	1,090
5	22.50	1,027	0.096	0.071	0.038	0.045	40	1,272
4	17.50	1,038	0.058	0.072	0.041	0.043	39	1,286
3	12.50	1,049	0.030	0.068	0.040	0.040	37	1,300
2	7.50	1,060	0.011	0.056	0.032	0.034	31	1,313
1	2.50	736	0.001	0.026	0.014	0.017	11	911
Powerwave 7020.00 Du	100.00	26	1.890	1.980	1.140	0.371	8	33
Kaelus DBC0061F1V51-	100.00	153	1.890	1.980	1.140	0.371	49	190
Powerwave LGP21401	100.00	85	1.890	1.980	1.140	0.371	27	105
Raycap DC6-48-60-18-	100.00	40	1.890	1.980	1.140	0.371	13	50
Ericsson RRUS 11 (Ba	100.00	150	1.890	1.980	1.140	0.371	48	186
Ericsson RRUS 32 B2	100.00	159	1.890	1.980	1.140	0.371	51	197
Ericsson RRUS 32 B66	100.00	159	1.890	1.980	1.140	0.371	51	197
Ericsson RRUS 32 (55	100.00	165	1.890	1.980	1.140	0.371	53	205

Powerwave Allgon 777	100.00	105	1.890	1.980	1.140	0.371	34	130
Quintel QS66512-2	100.00	333	1.890	1.980	1.140	0.371	107	412
CCI HPA-65R-BUU-H6	100.00	153	1.890	1.980	1.140	0.371	49	190
Flat Platform with H	100.00	2,000	1.890	1.980	1.140	0.371	644	2,477
Alcatel-Lucent B25 R	90.00	159	1.531	0.580	0.580	0.165	23	197
Alcatel-Lucent B13 R	90.00	172	1.531	0.580	0.580	0.165	25	213
Alcatel-Lucent RRH4X	90.00	192	1.531	0.580	0.580	0.165	28	238
RFS DB-T1-6Z-8AB-0Z	90.00	88	1.531	0.580	0.580	0.165	13	109
Antel BXA-70063-6CF-	90.00	51	1.531	0.580	0.580	0.165	7	63
Andrew LNX-6514DS-VT	90.00	99	1.531	0.580	0.580	0.165	14	123
Andrew SBNHH-1D65B	90.00	304	1.531	0.580	0.580	0.165	44	377
Round Low Profile Pl	90.00	1,500	1.531	0.580	0.580	0.165	215	1,858
RFS APXV18-206517S-C	78.00	79	1.150	-0.037	0.219	0.017	1	98
		22,722	52.788	31.044	22.261	6.885	1,986	28,144

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)
26	97.50	278	1.797	1.523	0.972	0.313	75	239
25	92.50	286	1.617	0.832	0.694	0.210	52	246
24	87.50	357	1.447	0.379	0.482	0.126	39	307
23	82.50	365	1.286	0.102	0.324	0.060	19	315
22	79.00	148	1.180	-0.014	0.240	0.025	3	128
21	76.50	314	1.106	-0.066	0.191	0.005	1	270
20	74.50	105	1.049	-0.094	0.157	-0.007	-1	91
19	72.00	692	0.980	-0.114	0.122	-0.019	-11	596
18	67.87	741	0.871	-0.121	0.076	-0.028	-18	638
17	65.37	171	0.808	-0.113	0.056	-0.029	-4	148
16	63.96	479	0.773	-0.106	0.046	-0.028	-12	412
15	61.46	552	0.714	-0.091	0.033	-0.023	-11	475
14	57.50	955	0.625	-0.062	0.018	-0.010	-9	823
13	52.50	966	0.521	-0.024	0.008	0.010	8	832
12	47.50	978	0.426	0.010	0.006	0.028	24	842
11	42.50	989	0.341	0.035	0.009	0.040	35	852
10	37.50	1,000	0.266	0.052	0.015	0.047	40	861
9	33.91	438	0.217	0.060	0.021	0.048	18	377
8	31.41	764	0.187	0.064	0.025	0.048	32	658
7	29.66	182	0.166	0.066	0.028	0.048	8	157
6	27.16	880	0.139	0.069	0.032	0.047	36	758
5	22.50	1,027	0.096	0.071	0.038	0.045	40	884
4	17.50	1,038	0.058	0.072	0.041	0.043	39	894
3	12.50	1,049	0.030	0.068	0.040	0.040	37	904
2	7.50	1,060	0.011	0.056	0.032	0.034	31	913
1	2.50	736	0.001	0.026	0.014	0.017	11	634
Powerwave 7020.00 Du	100.00	26	1.890	1.980	1.140	0.371	8	23
Kaelus DBC0061F1V51-	100.00	153	1.890	1.980	1.140	0.371	49	132
Powerwave LGP21401	100.00	85	1.890	1.980	1.140	0.371	27	73
Raycap DC6-48-60-18-	100.00	40	1.890	1.980	1.140	0.371	13	34
Ericsson RRUS 11 (Ba	100.00	150	1.890	1.980	1.140	0.371	48	129
Ericsson RRUS 32 B2	100.00	159	1.890	1.980	1.140	0.371	51	137
Ericsson RRUS 32 B66	100.00	159	1.890	1.980	1.140	0.371	51	137
Ericsson RRUS 32 (55	100.00	165	1.890	1.980	1.140	0.371	53	142
Powerwave Allgon 777	100.00	105	1.890	1.980	1.140	0.371	34	90
Quintel QS66512-2	100.00	333	1.890	1.980	1.140	0.371	107	287
CCI HPA-65R-BUU-H6	100.00	153	1.890	1.980	1.140	0.371	49	132
Flat Platform with H	100.00	2,000	1.890	1.980	1.140	0.371	644	1,723
Alcatel-Lucent B25 R	90.00	159	1.531	0.580	0.580	0.165	23	137
Alcatel-Lucent B13 R	90.00	172	1.531	0.580	0.580	0.165	25	148

Alcatel-Lucent RRH4X	90.00	192	1.531	0.580	0.580	0.165	28	165
RFS DB-T1-6Z-8AB-0Z	90.00	88	1.531	0.580	0.580	0.165	13	76
Antel BXA-70063-6CF-	90.00	51	1.531	0.580	0.580	0.165	7	44
Andrew LNX-6514DS-VT	90.00	99	1.531	0.580	0.580	0.165	14	86
Andrew SBNHH-1D65B	90.00	304	1.531	0.580	0.580	0.165	44	262
Round Low Profile Pl	90.00	1,500	1.531	0.580	0.580	0.165	215	1,292
RFS APXV18-206517S-C	78.00	79	1.150	-0.037	0.219	0.017	1	68
		22,722	52.788	31.044	22.261	6.885	1,986	19,573

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	-27.23	-1.98	0.00	-176.49	0.00	176.49	1,551.53	775.77	1,904.52	940.57	0.00	0.00	0.093
5.00	-25.92	-1.97	0.00	-166.56	0.00	166.56	1,528.89	764.45	1,824.65	901.13	0.02	-0.04	0.090
10.00	-24.62	-1.95	0.00	-156.70	0.00	156.70	1,505.12	752.56	1,745.00	861.79	0.09	-0.08	0.086
15.00	-23.33	-1.93	0.00	-146.95	0.00	146.95	1,480.21	740.10	1,665.70	822.62	0.19	-0.12	0.083
20.00	-22.06	-1.90	0.00	-137.31	0.00	137.31	1,454.16	727.08	1,586.85	783.69	0.34	-0.16	0.079
25.00	-20.96	-1.87	0.00	-127.82	0.00	127.82	1,426.98	713.49	1,508.58	745.03	0.53	-0.20	0.075
29.33	-20.74	-1.87	0.00	-119.71	0.00	119.71	1,402.52	701.26	1,441.35	711.83	0.73	-0.24	0.072
30.00	-19.79	-1.84	0.00	-118.46	0.00	118.46	1,398.66	699.33	1,430.99	706.71	0.76	-0.24	0.070
32.83	-19.25	-1.83	0.00	-113.25	0.00	113.25	1,122.95	561.48	1,150.62	568.25	0.91	-0.26	0.085
35.00	-18.01	-1.79	0.00	-109.28	0.00	109.28	1,111.89	555.94	1,122.84	554.53	1.04	-0.28	0.083
40.00	-16.78	-1.76	0.00	-100.34	0.00	100.34	1,081.73	540.87	1,055.54	521.29	1.35	-0.32	0.079
45.00	-15.57	-1.74	0.00	-91.54	0.00	91.54	1,044.36	522.18	983.50	485.71	1.71	-0.36	0.074
50.00	-14.37	-1.73	0.00	-82.85	0.00	82.85	1,006.99	503.49	914.00	451.39	2.10	-0.39	0.070
55.00	-13.19	-1.74	0.00	-74.20	0.00	74.20	969.61	484.81	847.05	418.33	2.53	-0.43	0.065
60.00	-12.51	-1.75	0.00	-65.50	0.00	65.50	932.24	466.12	782.65	386.52	2.99	-0.46	0.060
62.92	-11.91	-1.76	0.00	-60.40	0.00	60.40	910.44	455.22	746.26	368.55	3.28	-0.48	0.057
65.00	-11.70	-1.76	0.00	-56.73	0.00	56.73	894.87	447.43	720.79	355.97	3.49	-0.49	0.054
65.75	-10.78	-1.78	0.00	-55.41	0.00	55.41	662.47	331.23	543.96	268.64	3.57	-0.50	0.059
70.00	-9.92	-1.79	0.00	-47.85	0.00	47.85	646.97	323.48	512.50	253.10	4.02	-0.52	0.052
74.00	-9.79	-1.79	0.00	-40.71	0.00	40.71	631.88	315.94	483.32	238.69	4.47	-0.54	0.046
74.00	-9.79	-1.79	0.00	-40.71	0.00	40.71	631.88	315.94	483.32	238.69	4.47	-0.54	0.186
75.00	-9.40	-1.79	0.00	-38.92	0.00	38.92	628.03	314.01	476.10	235.13	4.58	-0.55	0.181
78.00	-9.12	-1.79	0.00	-33.56	0.00	33.56	614.90	307.45	453.58	224.01	4.95	-0.61	0.165
80.00	-8.67	-1.77	0.00	-29.98	0.00	29.98	603.66	301.83	437.06	215.85	5.22	-0.65	0.153
85.00	-8.22	-1.74	0.00	-21.11	0.00	21.11	575.56	287.78	397.11	196.12	5.95	-0.74	0.122
90.00	-4.70	-1.28	0.00	-12.40	0.00	12.40	547.45	273.73	359.07	177.33	6.76	-0.81	0.079
95.00	-4.35	-1.20	0.00	-6.00	0.00	6.00	519.35	259.67	322.95	159.49	7.63	-0.85	0.046
100.00	0.00	-1.14	0.00	0.00	0.00	0.00	491.24	245.62	288.74	142.60	8.53	-0.86	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	-18.94	-1.98	0.00	-173.93	0.00	173.93	1,551.53	775.77	1,904.52	940.57	0.00	0.00	0.089
5.00	-18.02	-1.96	0.00	-164.02	0.00	164.02	1,528.89	764.45	1,824.65	901.13	0.02	-0.04	0.086
10.00	-17.12	-1.94	0.00	-154.20	0.00	154.20	1,505.12	752.56	1,745.00	861.79	0.08	-0.08	0.083
15.00	-16.22	-1.91	0.00	-144.51	0.00	144.51	1,480.21	740.10	1,665.70	822.62	0.19	-0.12	0.079
20.00	-15.34	-1.88	0.00	-134.97	0.00	134.97	1,454.16	727.08	1,586.85	783.69	0.34	-0.16	0.076
25.00	-14.58	-1.85	0.00	-125.59	0.00	125.59	1,426.98	713.49	1,508.58	745.03	0.52	-0.20	0.072
29.33	-14.42	-1.84	0.00	-117.59	0.00	117.59	1,402.52	701.26	1,441.35	711.83	0.72	-0.23	0.069
30.00	-13.76	-1.81	0.00	-116.35	0.00	116.35	1,398.66	699.33	1,430.99	706.71	0.75	-0.24	0.067
32.83	-13.38	-1.80	0.00	-111.22	0.00	111.22	1,122.95	561.48	1,150.62	568.25	0.90	-0.26	0.081
35.00	-12.52	-1.76	0.00	-107.32	0.00	107.32	1,111.89	555.94	1,122.84	554.53	1.02	-0.28	0.079
40.00	-11.67	-1.73	0.00	-98.52	0.00	98.52	1,081.73	540.87	1,055.54	521.29	1.33	-0.31	0.075
45.00	-10.83	-1.71	0.00	-89.89	0.00	89.89	1,044.36	522.18	983.50	485.71	1.68	-0.35	0.071
50.00	-9.99	-1.70	0.00	-81.36	0.00	81.36	1,006.99	503.49	914.00	451.39	2.06	-0.38	0.067
55.00	-9.17	-1.71	0.00	-72.86	0.00	72.86	969.61	484.81	847.05	418.33	2.49	-0.42	0.062
60.00	-8.69	-1.72	0.00	-64.33	0.00	64.33	932.24	466.12	782.65	386.52	2.94	-0.45	0.057
62.92	-8.28	-1.73	0.00	-59.32	0.00	59.32	910.44	455.22	746.26	368.55	3.23	-0.47	0.054
65.00	-8.13	-1.73	0.00	-55.72	0.00	55.72	894.87	447.43	720.79	355.97	3.43	-0.48	0.051
65.75	-7.49	-1.75	0.00	-54.42	0.00	54.42	662.47	331.23	543.96	268.64	3.51	-0.49	0.056
70.00	-6.90	-1.76	0.00	-46.99	0.00	46.99	646.97	323.48	512.50	253.10	3.96	-0.51	0.049
74.00	-6.81	-1.76	0.00	-39.97	0.00	39.97	631.88	315.94	483.32	238.69	4.39	-0.53	0.043
74.00	-6.81	-1.76	0.00	-39.97	0.00	39.97	631.88	315.94	483.32	238.69	4.39	-0.53	0.178
75.00	-6.53	-1.76	0.00	-38.21	0.00	38.21	628.03	314.01	476.10	235.13	4.51	-0.54	0.173
78.00	-6.34	-1.76	0.00	-32.94	0.00	32.94	614.90	307.45	453.58	224.01	4.87	-0.60	0.157
80.00	-6.02	-1.74	0.00	-29.42	0.00	29.42	603.66	301.83	437.06	215.85	5.13	-0.64	0.146
85.00	-5.71	-1.71	0.00	-20.72	0.00	20.72	575.56	287.78	397.11	196.12	5.85	-0.73	0.116
90.00	-3.26	-1.26	0.00	-12.19	0.00	12.19	547.45	273.73	359.07	177.33	6.65	-0.79	0.075
95.00	-3.02	-1.18	0.00	-5.90	0.00	5.90	519.35	259.67	322.95	159.49	7.50	-0.83	0.043
100.00	0.00	-1.14	0.00	0.00	0.00	0.00	491.24	245.62	288.74	142.60	8.38	-0.85	0.000

Analysis Summary

Load Case	Reactions Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Max Usage Elev (ft)	Interaction Ratio
1.2D + 1.6W	17.13	0.00	27.22	0.00	0.00	1255.96	74.00	0.88
0.9D + 1.6W	17.10	0.00	20.41	0.00	0.00	1241.90	74.00	0.86
1.2D + 1.0Di + 1.0Wi	4.03	0.00	52.54	0.00	0.00	316.79	74.00	0.27
(1.2 + 0.2Sds) * DL + E ELFM	1.03	0.00	27.23	0.00	0.00	86.71	74.00	0.08
(1.2 + 0.2Sds) * DL + E EMAM	1.98	0.00	27.23	0.00	0.00	176.49	74.00	0.19
(0.9 - 0.2Sds) * DL + E ELFM	1.03	0.00	18.94	0.00	0.00	85.54	74.00	0.07
(0.9 - 0.2Sds) * DL + E EMAM	1.98	0.00	18.94	0.00	0.00	173.93	74.00	0.18
1.0D + 1.0W	4.09	0.00	22.72	0.00	0.00	298.32	74.00	0.22

Additional Steel Summary

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors VQ/I (lb/in)	Shear Applied (kips)	Shear phiVn (kips)	Upper Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Lower Termination Connectors MQ/I (kips)	phiVn (kips)	Num Reqd	Num Actual	Max Member Pu (kip)	phiPn (kip)	Ratio
0.00	74.0	(4) SOL-#20 All Thre	309.6	9.3	16.8	73.4	12.0	7	7	0.0	12.0	0	0	228.5	330.5	0.691

Base/Flange Plate	Plate Type	***Baseplate***	
	Pole Diameter	30	in
	Pole Thickness	0.25	in
	Plate Length	44	in
	Plate Thickness	2	in
	Plate Fy	60	ksi
	Weld Length	0.3125	in
	ϕ_s Resistance	1574.97	k-in
	Applied	830.79	k-in
Stiffeners	#	***0***	

Bolts	#	***8***	
	Bolt Circle	44	in
	(R)adial / (S)quare	S	
	Bolt Gap	6	in
●	Diameter	2.25	in
	Hole Diameter	2.625	in
	Type	A615-75	
	Fy	75	ksi
	Fu	100	ksi
	ϕ_s Resistance	259.82	k
	Applied	77.28	k
Reinforcement ●	#	***4***	
	DYW. Circle	36.879	in
	Offset Angle	0	°
	Type	#20	
	Diameter	2.5	in
	Fu	100	ksi
	ϕ_s Resistance	392.70	k
	Applied	162.64	k
Extra Bolts O	#	***0***	

Code Rev. ***G***

Moment 1256.0 k-ft
Axial 27.2 k

Date 1/18/2018
Engineer Pedro.Lopez
Site # 302479
Carrier AT&T MOBILITY

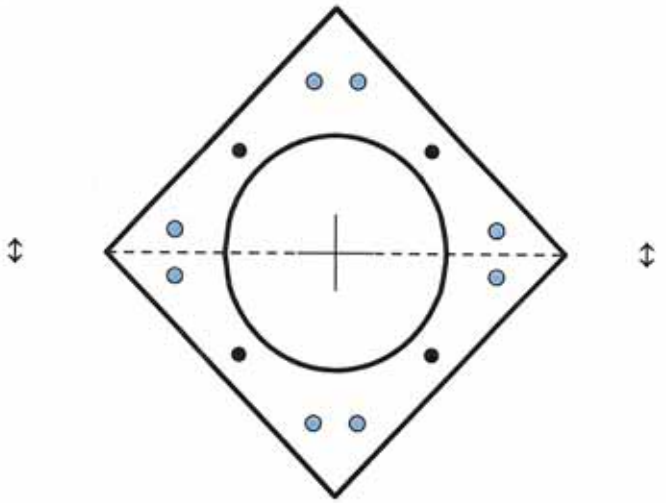


Plate Stress Ratio:
0.53 (Pass)

Bolt Stress Ratio:
0.30 (Pass)

Reinforcement Stress Ratio:
0.41 (Pass)

Site Name:	Rkhl-Rocky Hill, CT
Site Number:	302479
Engineering Number:	OAA721408
Engineer:	Pedro.Lopez
Date:	01/18/18
Tower Type:	MP

Program Last Updated: *5/13/2014*

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

Design / Analysis / Mapping:	Analysis				
Compression/Leg:	27.2	k	Concrete Strength (f'_c):	3000	psi
Uplift/Leg:	0.0	k	Pad Tension Steel Depth:	32.00	in
Total Shear:	17.1	k	ϕ_{Shear}:	0.75	
Moment:	1256.0	k-ft	$\phi_{Flexure\ /\ Tension}$:	0.90	
Tower + Appurtenance Weight:	52.6	k	$\phi_{Compression}$:	0.65	
Depth to Base of Foundation (l + t - h):	8.00	ft	β:	0.85	
Diameter of Pier (d):	6.00	ft	Bottom Pad Rebar Size #:	10	
Height of Pier above Ground (h):	0.50		# of Bottom Pad Rebar:	35	
Width of Pad (W):	18.00	ft	Pad Bottom Steel Area:	44.45	in^2
Length of Pad (L):	18.00	ft	Pad Steel F_y:	60000	psi
Thickness of Pad (t):	3.00	ft	Top Pad Rebar Size #:	5	
Tower Leg Center to Center:	0.00	ft	# of Top Pad Rebar:	35	
Number of Tower Legs:	1.0	(1 if MP or GT)	Pad Top Steel Area:	10.85	in^2
Tower Center from Mat Center:	0.00	ft	Pier Rebar Size #:	11	
Depth Below Ground Surface to Water Table:	99.00	ft	Pier Steel Area (Single Bar):	1.56	in^2
Unit Weight of Concrete:	150.0	pcf	# of Pier Rebar:	14	
Unit Weight of Soil Above Water Table:	100.0	pcf	Pier Steel F_y:	60000	psi
Unit Weight of Water:	62.4	pcf	Pier Cage Diameter:	64.0	in
Unit Weight of Soil Below Water Table:	50.0	pcf	Rebar Strain Limit:	0.008	
Friction Angle of Uplift:	0.0	Degrees	Steel Elastic Modulus:	29000	ksi
Ultimate Coefficient of Shear Friction:	0.35		Tie Rebar Size #:	4	
Ultimate Compressive Bearing Pressure:	30000.0	psf	Tie Steel Area (Single Bar):	0.20	in^2
Ultimate Passive Pressure on Pad Face:	0.0	psf	Tie Spacing:	12	in
$\phi_{Soil\ and\ Concrete\ Weight}$:	0.9		Tie Steel F_y:	60000	psi
ϕ_{Soil}:	0.75				

Overturning Moment Usage

Design OTM:	1401.6	k-ft
OTM Resistance:	2922.7	k-ft
Design OTM / OTM Resistance:	0.48	Result: OK

Soil Bearing Pressure Usage

Net Bearing Pressure:	2548	psf
Factored Nominal Bearing Pressure:	22500	psf
Net Bearing Pressure/Factored Nominal Bearing Pressure:	0.11	Result: OK
Load Direction Controling Design Bearing Pressure:	Diagonal to Pad Edge	

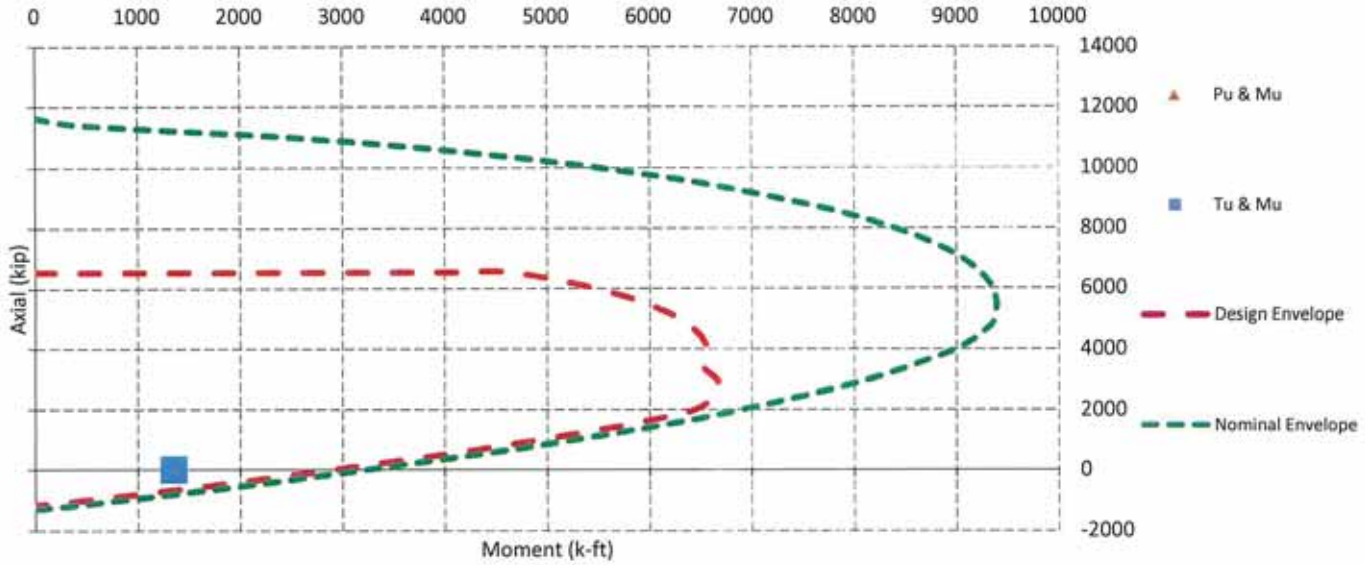
Sliding Factor of Safety

Total Factored Sliding Resistance:	94.7	k
Sliding Design / Sliding Resistance:	0.18	Result: OK

One Way Shear, Flexual Capacity, and Punching Shear

Factored One Way Shear (V_u):	89.5	k
One Way Shear Capacity (ϕV_c):	445.5	k - ACI11.3.1.1
$V_u / \phi V_c$:	0.20	Result: OK
Load Direction Controling Shear Capacity:	Diagonal to Pad Edge	
Lower Steel Pad Factored Moment (M_u):	543.1	k-ft
Lower Steel Pad Moment Capacity (ϕM_n):	6229.9	k-ft - ACI10.3
$M_u / \phi M_n$:	0.09	Result: OK
Load Direction Controling Flexural Capacity:	Diagonal to Pad Edge	
Upper Steel Pad Factored Moment (M_u):	265.4	k-ft
Upper Steel Pad Moment Capacity (ϕM_n):	1537.9	k-ft
$M_u / \phi M_n$:	0.17	Result: OK
Lower Pad Flexural Reinforcement Ratio:	0.0064	OK - Minimum Reinforcement Ratio Met - ACI10.5.1
Upper Pad Flexural Reinforcement Ratio:	0.0016	OK - Minimum Reinforcement Ratio Met - ACI10.5.1
Lower Pad Reinforcement Spacing:	6	in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Upper Pad Reinforcement Spacing:	6	in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Factored Punching Shear (V_u):	0.0	k
Nominal Punching Shear Capacity ($\phi_c V_n$):	1718.0	k - ACI11.12.2.1
$V_u / \phi V_c$:	0.00	Result: OK
Factored Moment in Pier (M_u):	1350.2	k-ft
Pier Moment Capacity (ϕM_n):	3087.5	k-ft
$M_u / \phi M_n$:	0.44	Result: OK
Factored Shear in Pier (V_u):	17.1	k
Pier Shear Capacity (ϕV_n):	335.6	k
$V_u / \phi V_c$:	0.05	Result: OK
Pier Shear Reinforcement Ratio:	0.0005	No Ties Necessary for Shear - ACI11.5.6.1
Factored Tension in Pier (T_u):	0.0	k
Pier Tension Capacity (ϕT_n):	1179.4	k
$T_u / \phi T_n$:	0.00	Result: OK
Factored Compression in Pier (P_u):	27.2	k
Pier Compression Capacity (ϕP_n):	5369.9	k - ACI10.3.6.2
$P_u / \phi P_n$:	0.01	Result: OK
Pier Compression Reinforcement Ratio:	0.005	OK - Reinforcement Ratio Met - ACI10.9.1 & 10.8.4
$M_u/\phi_B M_n + T_u/\phi_T T_n$:	0.44	Result: OK

Nominal and Design Moment Capacity and Factored Design Loads



SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

John Mehr, Town Manager
Town of Rocky Hill
761 Old Main St
Rocky Hill, CT 06067

9590 9402 1864 6104 9649 60

2. Article Number *(Transfer from service label)*

7016 2140 0000 9458 6160

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X Thaddeus D. Gintowt ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* THADDEUS D. GINTOWT C. Date of Delivery 4/2/16

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☒ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

PS Form 3811, July 2015 PSN 7530-02-000-9053 Domestic Return Receipt

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1. Article Addressed to:

Kim Ricci Zoning Enforcement
Town Planner
Town of Rocky Hill
761 Old Main St
Rocky Hill, CT 06067

9590 9402 1864 6104 9649 53

2. Article Number *(Transfer from service label)*

7016 2140 0000 9458 6177

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X Thaddeus D. Gintowt ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* THADDEUS D. GINTOWT C. Date of Delivery 4/2/16

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☒ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

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1. Article Addressed to:

J-P Langlois Building Official
Town of Rocky Hill
761 Old Main St.
Rocky Hill, CT 06067

9590 9402 1864 6104 9649 84

2. Article Number (Transfer from service label)

7016 2140 0000 9458 6146

COMPLETE THIS SECTION ON DELIVERY

A. Signature
x Thadd O. Gintowt ☐ Agent ☐ Addressee

B. Received by (Printed Name) THADDEUS O. GINTOWT
C. Date of Delivery 4/2/16

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☑ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
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- ☐ Signature Confirmation Restricted Delivery

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1. Article Addressed to: LSCZEO

David Palmberg
Assistant Zoning Enforcement Officer
Town of Rocky Hill
761 Old Main St.
Rocky Hill, CT 06067

9590 9402 1864 6104 9539 02

2. Article Number (Transfer from service label)

7016 2140 0000 9458 6153

COMPLETE THIS SECTION ON DELIVERY

A. Signature
x Thadd O. Gintowt ☐ Agent ☐ Addressee

B. Received by (Printed Name) THADDEUS O. GINTOWT
C. Date of Delivery 4/2/16

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type
- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☑ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
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1. Article Addressed to:

CT1009
Eversource
107 Selden St
Berlin, CT 06037

9590 9402 1864 6104 9538 96

2. Article Number (Transfer from service label)

7016 2140 0000 9458 6122

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) Keith Hayden | C. Date of Delivery 3/30/18

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☑ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
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- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
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1. Article Addressed to:

Shawn Dunn, APM
American Tower
10 Presidential Way
Woburn, MA 01801

9590 9402 1864 6104 9649 91

2. Article Number (Transfer from service label)

7016 2140 0000 9458 6139

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X [signature] ☐ Agent ☐ Addressee

B. Received by (Printed Name) Donna Long | C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☑ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- ☐ Insured Mail
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