



December 12, 2016

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

Regarding: Notice of Exempt Modification – Radio Head (“RRH”) Swap
Property Address: 180A Bayberry Lane, Westport, CT 06880
AT&T Site: CT2107 – Westport Bayberry Lane

Dear Ms. Bachman:

AT&T currently maintains a wireless telecommunications facility on an existing 141-foot monopole at the above-referenced address, latitude 41.1716589, longitude -73.3284711. Said monopole is owned by American Tower Corporation. The equipment compound is 25' x 21.5' totaling 537.5 square feet.

AT&T desires to modify its existing telecommunications facility by swapping three (3) remote-radio heads (“RRHs”). The centerline height of said antennas is and will remain at 100 feet. Antennas are mounted utilizing a low profile platform.

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 Jim Marpe, First Selectmen for the Town of Westport. A copy of this letter is also being sent to the property owner and tower owner American Tower Corporation.

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). Specifically:

1. The planned modification will not result in an increase in the height of the existing structure. The antennas to be swapped will be installed at the existing height of 100 feet on the 141-foot monopole.
2. The proposed modifications will not involve any changes to ground-mounted equipment, and therefore will not require an extension of the site boundary.
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 Federal Communications Commission (FCC) safety standard. An RF emissions calculation (attached) for AT&T's modified facility is herein provided.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The monopole and its foundation can support AT&T's proposed modifications (please see attached structural analysis completed by American Tower dated October 31, 2016).

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

Sincerely,

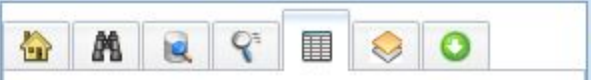
Sarah Snell

Sarah Snell
Site Acquisition Specialist

cc: Jim Marpe, First Selectmen for the Town of Wesport (Municipality)
American Tower Corporation, (Tower & Land Owner)

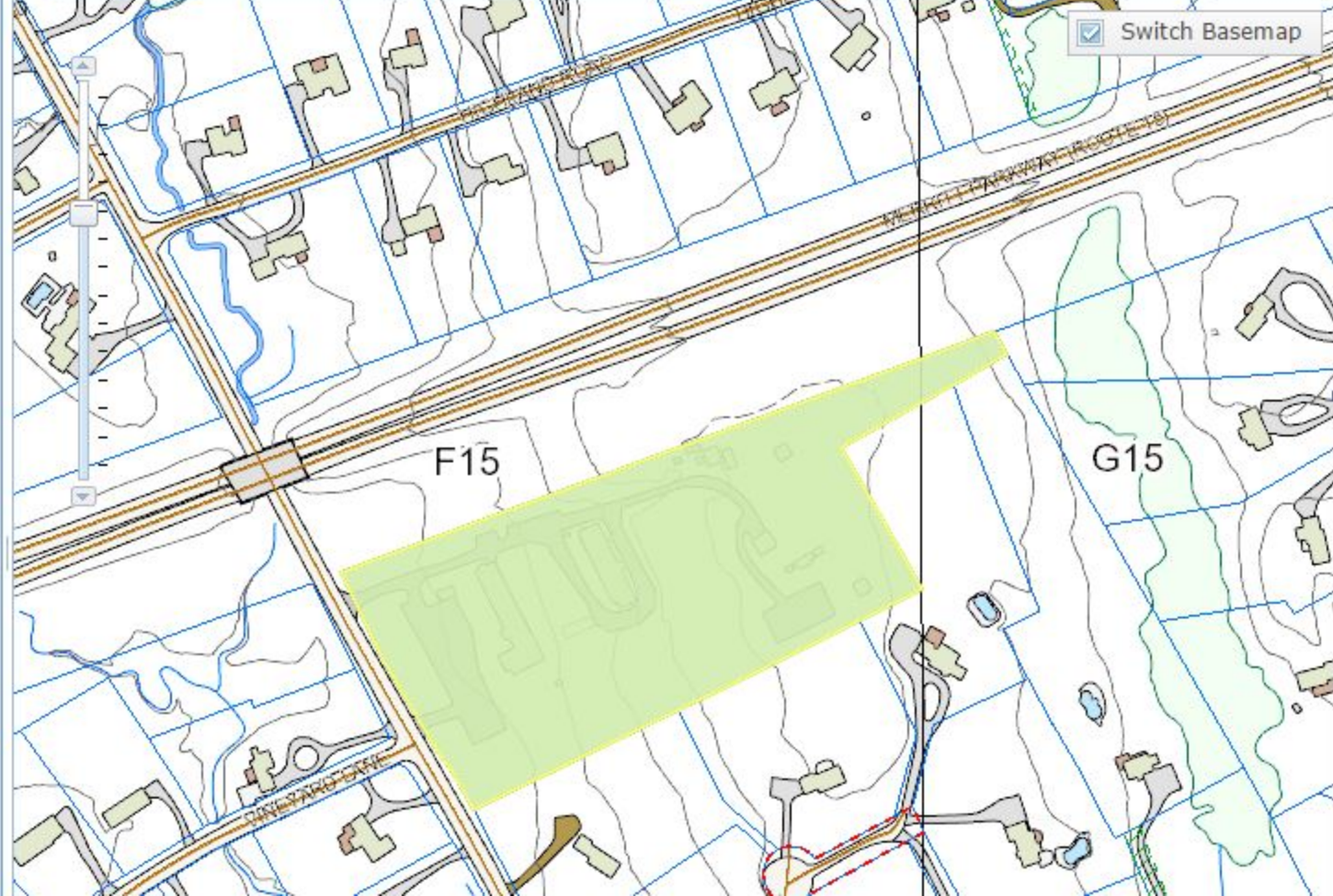
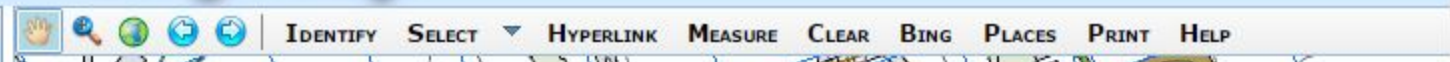
Westport CT - CityMap

Tasks



Parcel Details

Field	Value
OBJECTID	9445
VISION_PID	100658
GIS_ID	F15058000
ST_	180
STREET	BAYBERRY LN
UNIT	
ALTERNATE_PID	F1558CELL
MAP	F15
LOT	58
SUB_LOT	
GRANTEE	AMERICAN TOWERS, INC.
MAILING_ADDRES	PO BOX 723597
CITY	ATLANTA
ST	GA
ZIP	31139
BOOK_PAGE	000/ 000
LAND_USE	
SURVEY	
ACRE_S	0



PROJECT TEAM

CLIENT REPRESENTATIVE:
 EMPIRE TELECOM
 16 ESQUIRE ROAD
 BILLERICA, MA 01821
 DAVID COOPER
 617-639-4908
 dcooper@empiretelecomm.com

SITE ACQUISITION & ZONING:
 EMPIRE TELECOM
 16 ESQUIRE ROAD
 BILLERICA, MA 01821
 DAVID COOPER
 617-639-4908
 dcooper@empiretelecomm.com

ENGINEERING:
 TRYLON TSF
 1825 W. WALNUT HILL LANE SUITE 302
 IRVING, TX 75038
 KATYA SERAVALLE
 PHONE: 519-465-4125

RF ENGINEER:
 AT&T MOBILITY - NEW ENGLAND
 550 COCHITUATE ROAD
 SUITE 550 13 & 14
 FRAMINGHAM, MA 01701
 CAMERON SYME
 508-598-7146
 cs6970@att.com

CONSTRUCTION MANAGEMENT:
 EMPIRE TELECOM
 16 ESQUIRE ROAD
 BILLERICA, MA 01821
 GRZEGORZ "GREG" DORMAN
 484-683-1750
 gdorman@empiretelecomm.com

TOWER OWNER:
 UNKNOWN



**LTE BWE EXPANSION
 CT2107
 WESTPORT
 180A BAYBERRY LANE
 CT 06880
 FA CODE: 10034981**

APPROVALS

AT&T (RF): _____ DATE: _____
 AT&T (CONST.): _____ DATE: _____
 AT&T (OPS): _____ DATE: _____
 TOWER OWNER: _____ DATE: _____

JURISDICTIONAL APPROVAL

BASED ON INFORMATION PROVIDED BY AT&T REGULATORY COMPLIANCE PROFESSIONALS AND LEGAL COUNSEL, THIS TELECOMMUNICATIONS EQUIPMENT DEPLOYMENT IS CONSIDERED AN ELIGIBLE FACILITY UNDER THE MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF 2012, 47 USC 1455(A), SECTION 6409(A), AND IS SUBJECT TO AN ELIGIBLE FACILITY REQUEST, EXPEDITED REVIEW AND LIMITED/PARTIAL ZONING PRE-EMPTION FOR LOCAL DISCRETIONARY PERMITS (VARIANCE, SPECIAL PERMIT, SITE PLAN REVIEW OR ADMINISTRATIVE REVIEW).



1355 WEST UNIVERSITY DRIVE
 MESA, AZ 85201-5419



PLANS PREPARED BY:



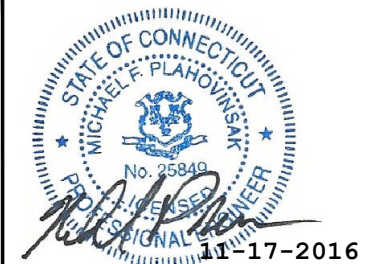
1825 W. WALNUT HILL LANE SUITE 302
 IRVING, TX 75038

NO.	DATE	DESCRIPTION	BY
A	10/24/16	FOR REVIEW	AC
0	11/17/16	ISSUE FOR CONSTRUCTION	AC

SITE INFORMATION:

**CT2107
 WESTPORT
 FA CODE: 10034981**
 180A BAYBERRY LANE
 CT 06880

SEAL:



MICHAEL F. PLAHOVINSAK, P.E. #25849
 Sole Proprietor - Independent Engineer
 18301 S.R. 161, Plain City, OH 43064
 614-398-6250 / mike@mpeng.com

SHEET TITLE:

TITLE SHEET

SHEET NUMBER:

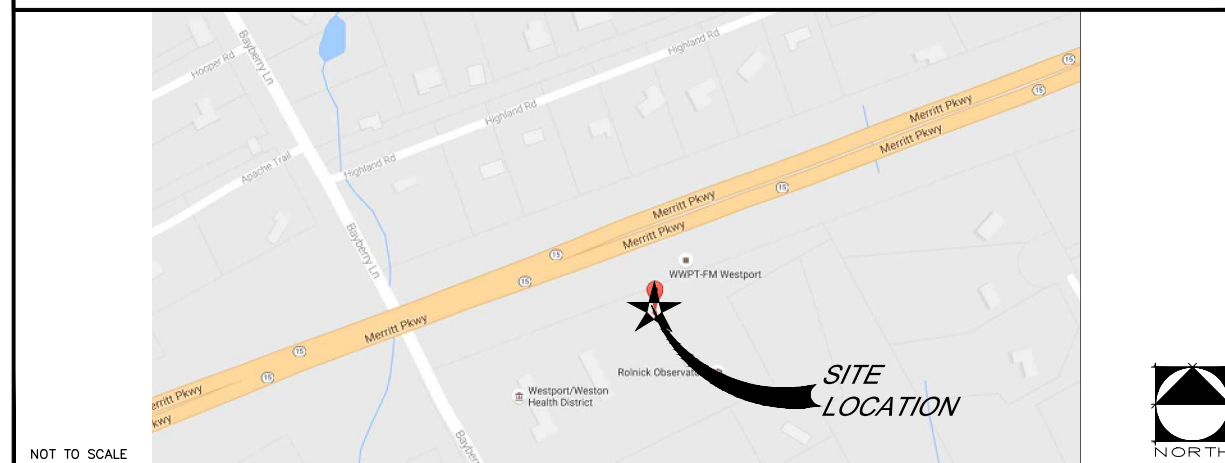
T-1

GENERAL NOTES

DO NOT SCALE DRAWINGS
 CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE; NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

VICINITY MAP



PROJECT DESCRIPTION

THIS PROJECT WILL BE COMPRISED OF:
CHANGES ON THE EXISTING SELF SUPPORTING TOWER:

- REMOVE (3) EXISTING RRUS-12 + RRUS-A2 (1) PER SECTOR FOR (3) SECTORS.
- INSTALL (3) NEW RRUS-32 B2, (1) PER SECTOR FOR (3) SECTORS.
- REUSE (1) EXISTING DC6 SQUID.
- REUSE (2) EXISTING DC POWER TRUNK.
- REUSE (1) EXISTING FIBER TRUNK.
- REUSE (12) EXISTING RF CABLES.

CHANGES IN THE EXISTING AT&T EQUIPMENT ENCLOSURE AREA:

- INSTALL (1) NEW XMU.

SITE INFORMATION

LATITUDE: 41° 10' 17.97204" N
 LONGITUDE: -73° 19' 42.49596" W
 LAT./LONG. TYPE: NAD 83
 GROUND ELEVATION: N/A
 APN/UPC: N/A
 AREA OF CONSTRUCTION: EXISTING
 ZONING/JURISDICTION: WESTPORT
 CURRENT ZONING: N/A
 EXISTING USE: TELECOMMUNICATIONS FACILITY
 COUNTY: FAIRFIELD
 HANDICAP REQUIREMENTS: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS NOT REQUIRED.

DRIVING DIRECTIONS

2107 WESTPORT EXIT 42 SOUTHBOUND PARKWAY TAKE RIGHT AT END OF EXIST LEFT ON EASTON ROAD FOR 17 MILES THEN TAKE RIGHT ON BAYBERRY LANE FOR 11 MILES FOLLOW UNTIL UNDER PASS NEXT LEFT.

CODE COMPLIANCE

BUILDING CODE: 2012 CONNECTICUT COMMERCIAL BUILDING CODE
 ELECTRICAL CODE: 2014 CONNECTICUT ELECTRICAL CODE
 LIGHTNING PROTECTION CODE: NFPA 780 - 2000, LIGHTNING PROTECTION CODE

SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

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



CONNECTICUT LAW REQUIRES
 TWO WORKING DAYS NOTICE PRIOR TO ANY EARTH
 MOVING ACTIVITIES BY CALLING 800-922-4455 OR
 DIAL 811

SHEET

T-1
 GN-1
 A-1
 A-2
 A-3
 A-4
 A-5
 G-1

DESCRIPTION

TITLE SHEET
 GROUNDING & GENERAL NOTES
 COMPOUND PLAN
 EQUIPMENT LAYOUTS
 ANTENNA LAYOUTS
 TOWER ELEVATION
 DETAILS
 GROUNDING, ONE-LINE DIAGRAM & DETAILS

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
 - CONTRACTOR - EMPIRE TELECOM
 - SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)
 - OWNER - AT&T MOBILITY
 - OEM - ORIGINAL EQUIPMENT MANUFACTURER
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
7. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
8. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR. ROUTING OF TRENCHING SHALL BE APPROVED BY CONTRACTOR
9. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
10. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OFF ALL SCR1 'AP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
11. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
12. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
13. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS UNLESS OTHERWISE SPECIFIED. ALL CONCRETING WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
14. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy=36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCH UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
15. CONSTRUCTION SHALL COMPLY WITH SPECIFICATION 25741-000-3APS-A00Z-00002, "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."
16. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
17. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK MAY NEED TO BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
18. SINCE THE CELL SITE MAY BE ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE REQUIRED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
19. SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
 - INTERNATIONAL BUILDING CODE: IBC 2009 WITH LOCAL & COUNTY AMENDMENTS
 - NATIONAL ELECTRICAL CODE: NEC 2011 WITH LOCAL & COUNTY AMENDMENTS
 - FIRE/LIFE SAFETY CODE: NFPA-101 2009 WITH LOCAL & COUNTY AMENDMENTS
20. SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:
 - AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
 - AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, THIRTEENTH EDITION
 - AMERICAN SOCIETY OF TESTING OF MATERIALS, ASTM
 - TELECOMMUNICATIONS INDUSTRY ASSOCIATION (ANSI/TIA-222-G-1), STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES:
 - TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS
 - OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION, OSHA
 - INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVELY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT
 - TELCORDIA GR-1503, COAXIAL CABLE CONNECTIONS
21. FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

GROUNDING NOTES:

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS. TESTS SHALL BE PERFORMED IN ACCORDANCE WITH 25471-000-3PS-E600-0001, DESIGN & TESTING OF FACILITY GROUNDING FOR CELL SITES.
4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED WITH STAINLESS STEEL HARDWARE TO THE BRIDGE AND THE TOWER GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
13. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF ANSI/TIA 222. FOR TOWERS BEING BUILT TO REV-G OF THE STANDARD, THE WIRE SIZE OF THE BURIED GROUND RING AND CONNECTIONS BETWEEN THE TOWER AND THE BURIED GROUND RING SHALL BE CHANGED FROM 2 AWG TO 2/0 AWG. IN ADDITION, THE MINIMUM LENGTH OF THE GROUND RODS SHALL BE INCREASED FROM EIGHT FEET (8') TO TEN FEET (10').
14. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE 1/2" OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID TINNED COPPER GROUND WIRE, PER NEC 250.50.



1355 WEST UNIVERSITY DRIVE
MESA, AZ 85201-5419



16 ESQUIRE ROAD
BILLERICA, MA 01821

PLANS PREPARED BY:



1825 W. WALNUT HILL LANE SUITE 302
IRVING, TX 75038

NO.	DATE	DESCRIPTION	BY
A	10/24/16	FOR REVIEW	AC
0	11/17/16	ISSUE FOR CONSTRUCTION	AC

SITE INFORMATION:

CT2107
WESTPORT
FA CODE: 10034981

180A BAYBERRY LANE
CT 06880

SEAL:



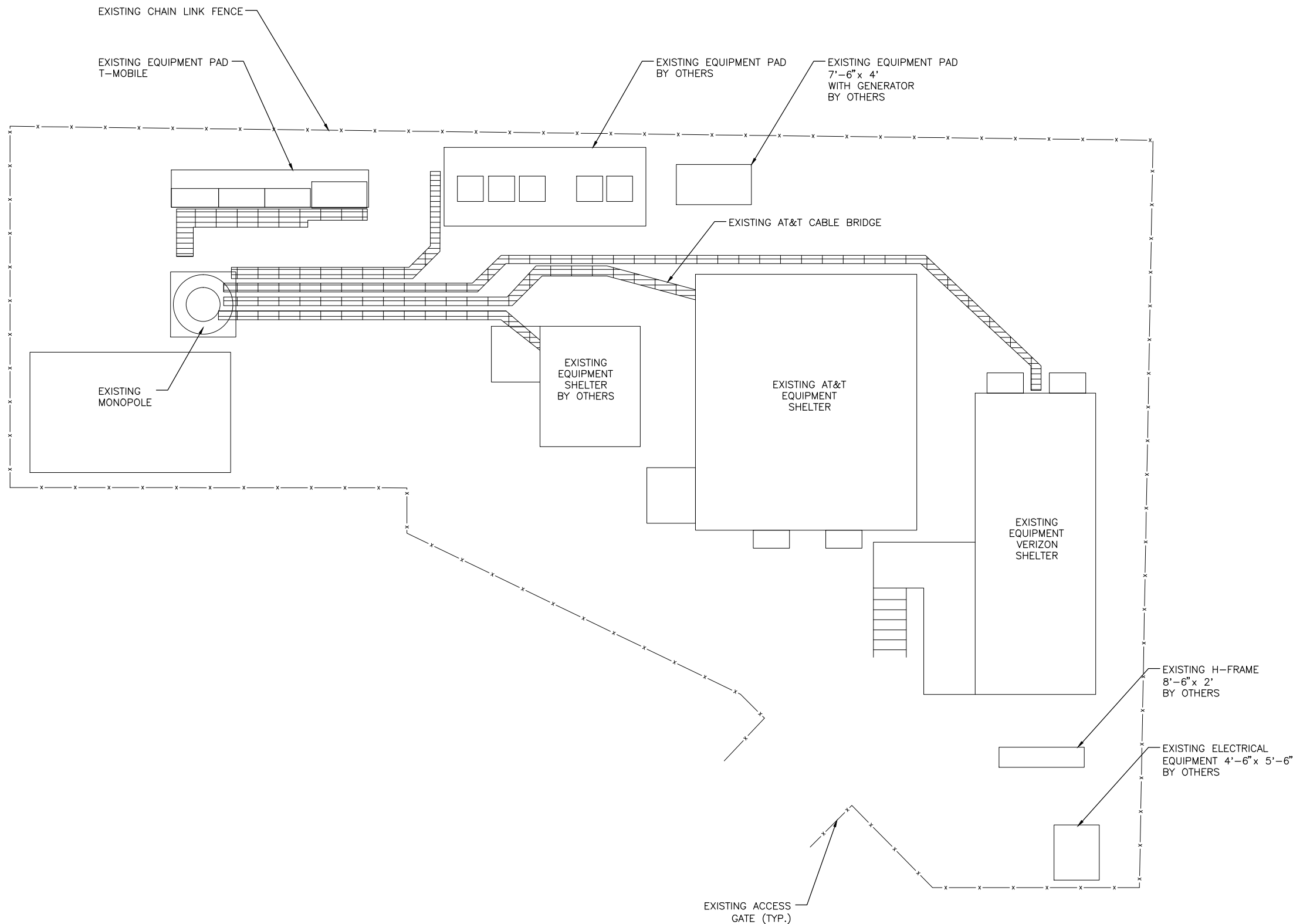
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Solo Proprietor - Independent Engineer
18301 S.R. 161, Plain City, OH 43064
614-398-6250 / mike@mfeng.com

SHEET TITLE:

GENERAL NOTES &
GROUNDING NOTES

SHEET NUMBER:

GN-1



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Sole Proprietor - Independent Engineer
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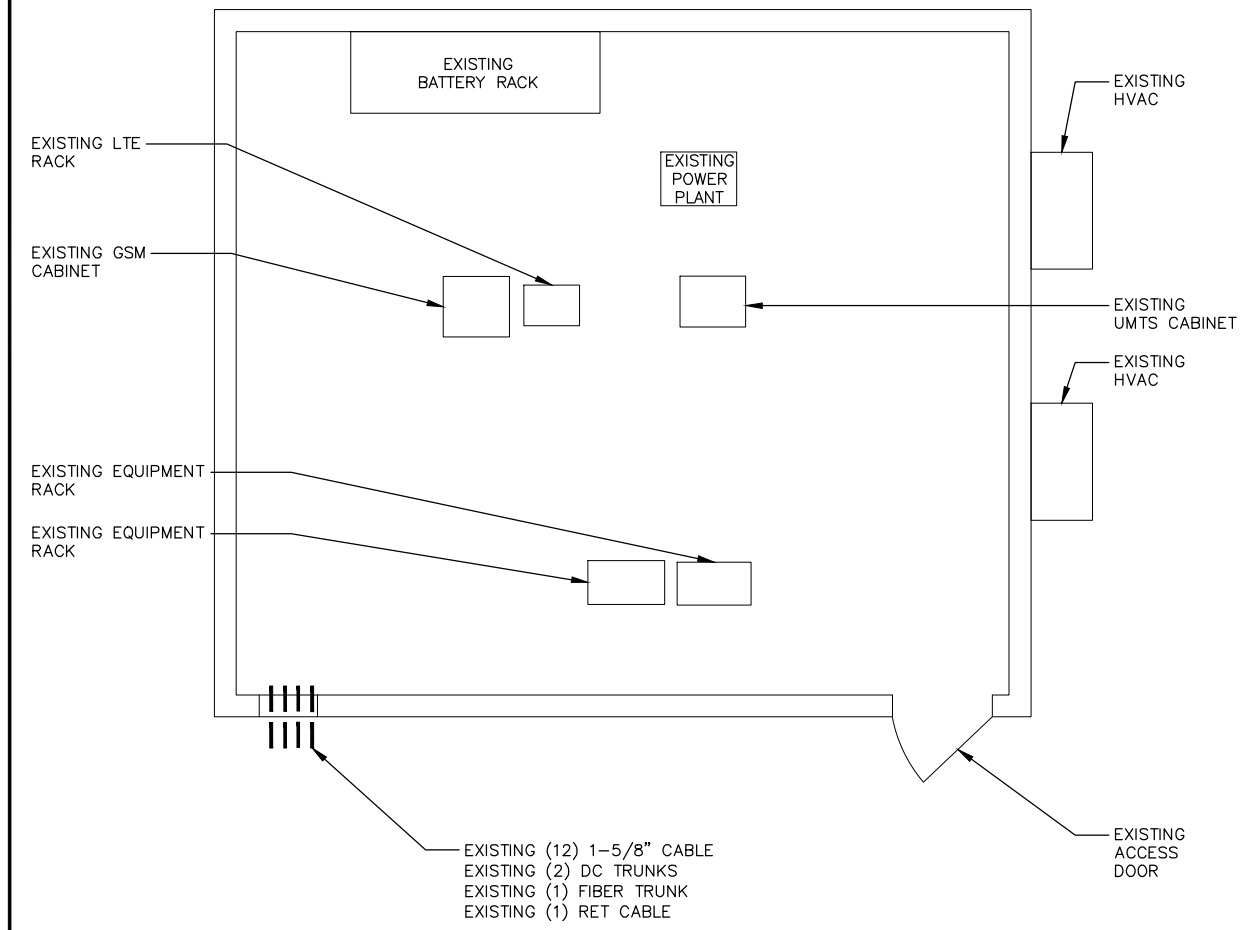
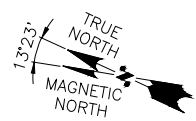
SHEET TITLE:

COMPOUND PLAN

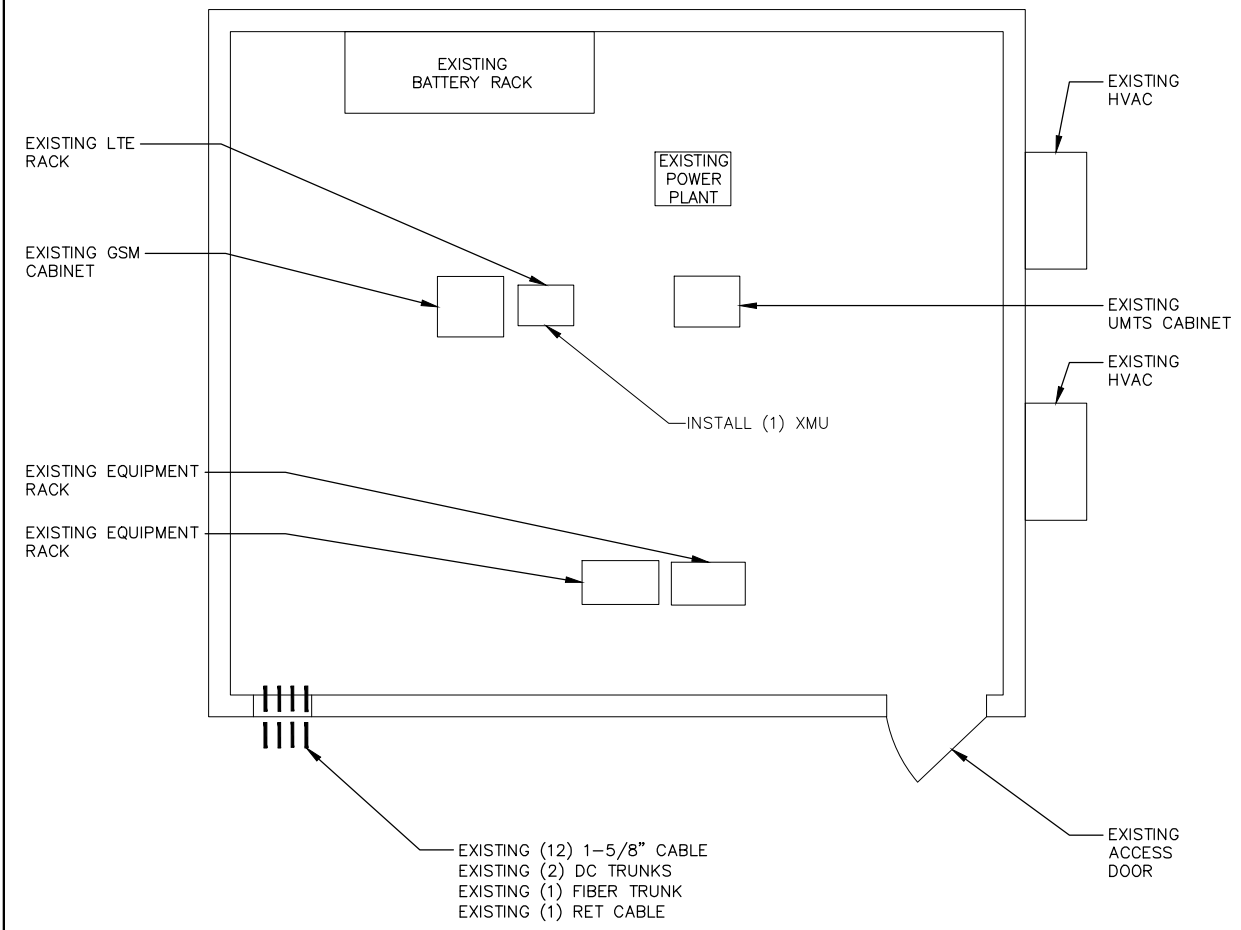
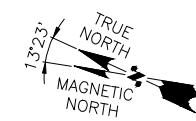
SHEET NUMBER:

A-1





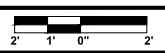
EXISTING (12) 1-5/8" CABLE
 EXISTING (2) DC TRUNKS
 EXISTING (1) FIBER TRUNK
 EXISTING (1) RET CABLE



EXISTING (12) 1-5/8" CABLE
 EXISTING (2) DC TRUNKS
 EXISTING (1) FIBER TRUNK
 EXISTING (1) RET CABLE

EXISTING EQUIPMENT LAYOUT

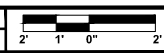
22"x34" SCALE: 3/8" = 1'-0"
 11"x17" SCALE: 3/16" = 1'-0"



1

PROPOSED EQUIPMENT LAYOUT

22"x34" SCALE: 3/8" = 1'-0"
 11"x17" SCALE: 3/16" = 1'-0"



2

1355 WEST UNIVERSITY DRIVE
 MESA, AZ 85201-5419

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MICHAEL F. PLAHOVINSAK, P.E. #25849
 Sole Proprietor - Independent Engineer
 18301 S.R. 161, Plain City, OH 43064
 614-398-6250 / mike@mfpeng.com

SHEET TITLE:

EQUIPMENT LAYOUTS

SHEET NUMBER:

A-2



1355 WEST UNIVERSITY DRIVE
MESA, AZ 85201-5419



16 ESQUIRE ROAD
BILLERICA, MA 01821

PLANS PREPARED BY:



1825 W. WALNUT HILL LANE SUITE 302
IRVING, TX 75038

NO.	DATE	DESCRIPTION	BY
A	10/24/16	FOR REVIEW	AC
0	11/17/16	ISSUE FOR CONSTRUCTION	AC

SITE INFORMATION:

CT2107
WESTPORT
FA CODE: 10034981
180A BAYBERRY LANE
CT 06880

SEAL:



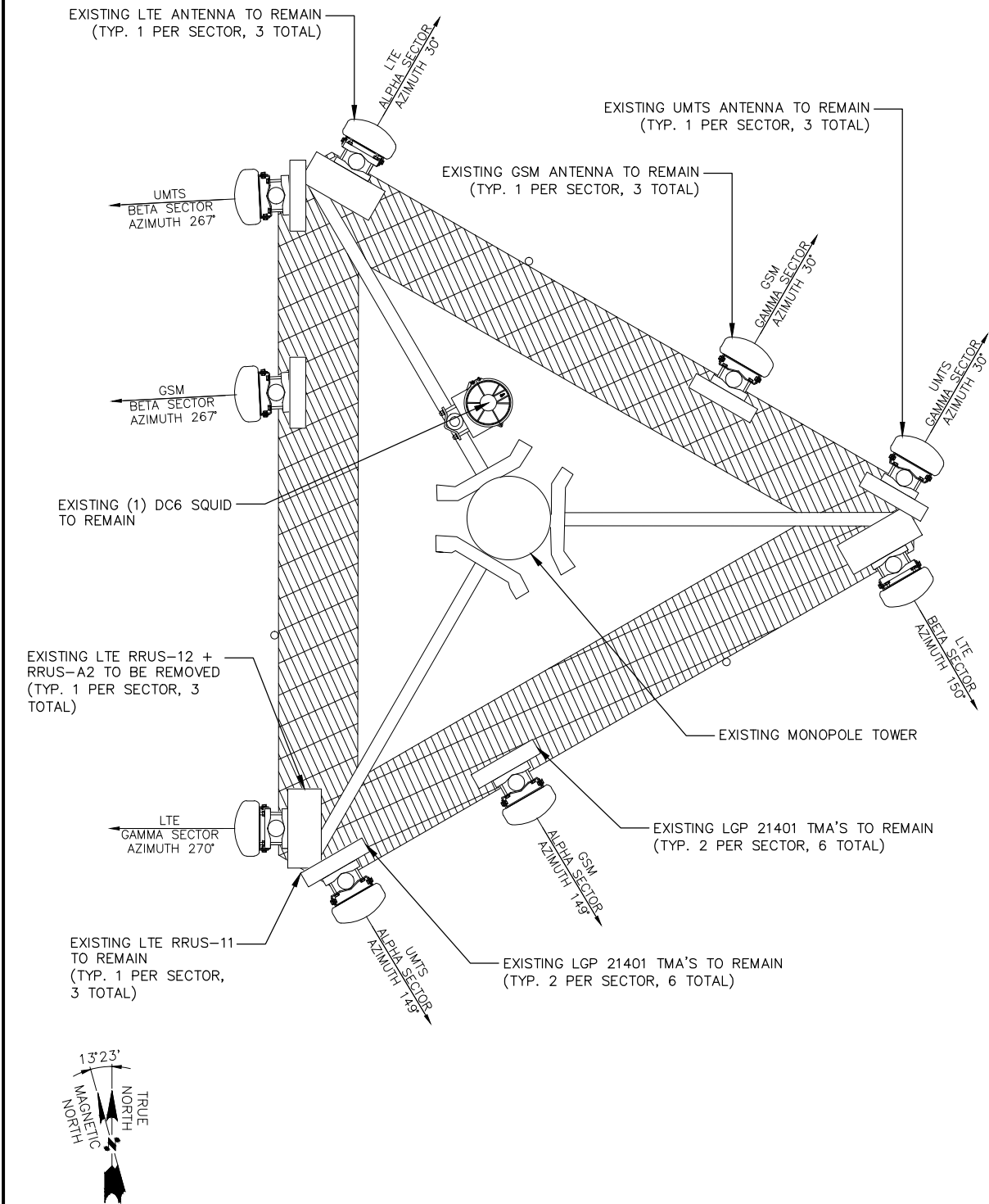
MICHAEL F. PLAHOVINSAK, P.E. #25849
Sole Proprietor - Independent Engineer
18301 S.R. 161, Plain City, OH 43064
614-398-6250 / mike@mfpeng.com

SHEET TITLE:

ANTENNA LAYOUTS

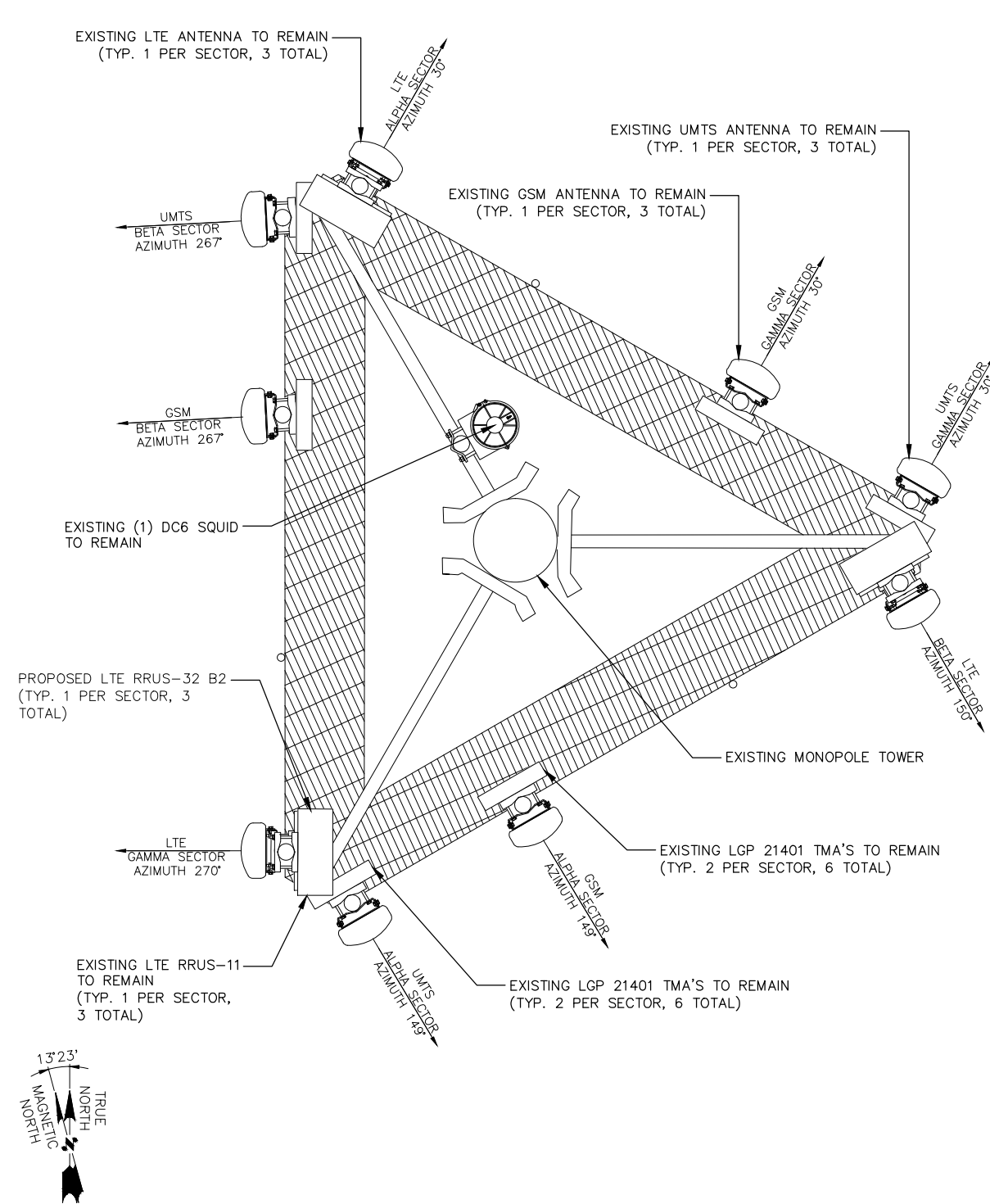
SHEET NUMBER:

A-3



EXISTING ANTENNA LAYOUT

NOT TO SCALE 1



PROPOSED ANTENNA LAYOUT

NOT TO SCALE 2



1355 WEST UNIVERSITY DRIVE
MESA, AZ 85201-5419



16 ESQUIRE ROAD
BILLERICA, MA 01821

PLANS PREPARED BY:



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NO.	DATE	DESCRIPTION	BY
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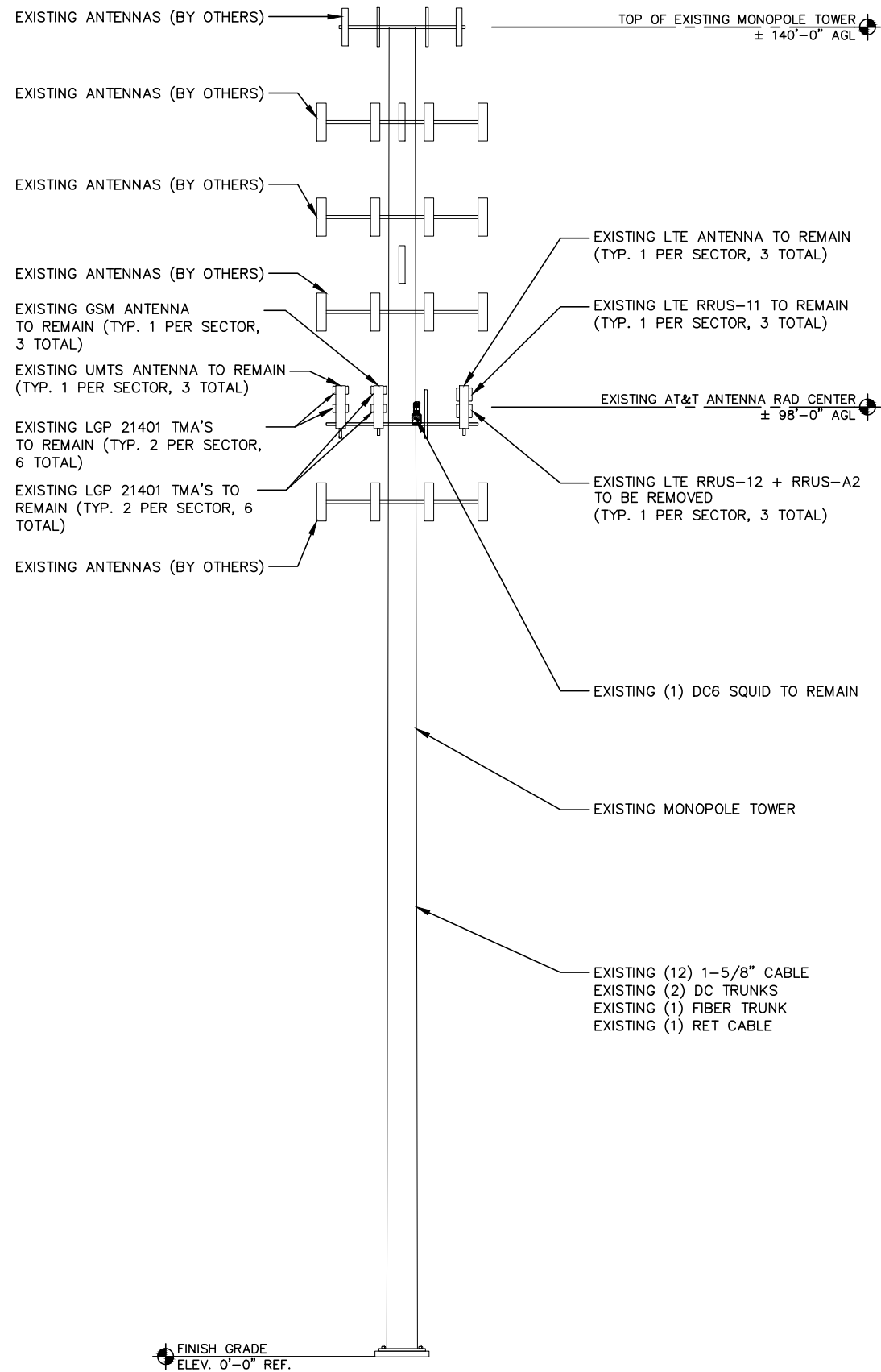
MICHAEL F. PLAHOVINSAK, P.E. #25849
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614-398-6250 / mike@mpeng.com

SHEET TITLE:

TOWER ELEVATION

SHEET NUMBER:

A-4

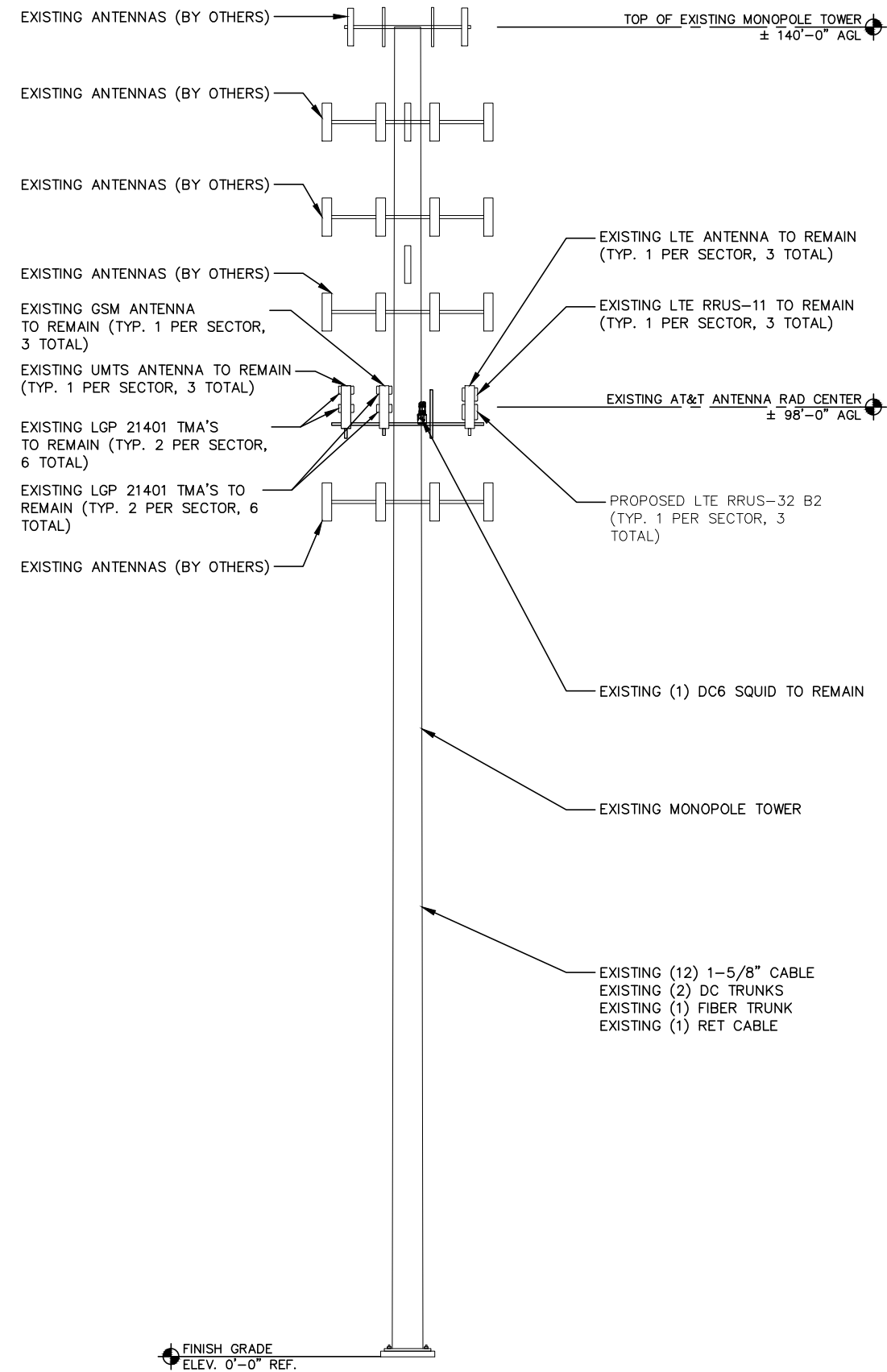


EXISTING TOWER ELEVATION

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



1



PROPOSED TOWER ELEVATION

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



2



1355 WEST UNIVERSITY DRIVE
MESA, AZ 85201-5419

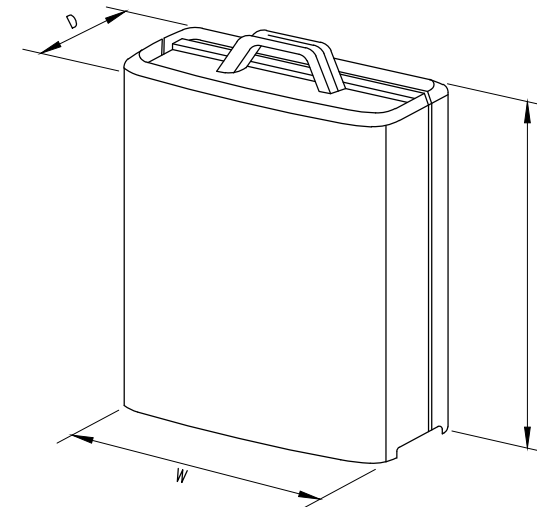


16 ESQUIRE ROAD
BILLERICA, MA 01821

PLANS PREPARED BY:



1825 W. WALNUT HILL LANE SUITE 302
IRVING, TX 75038



MODEL	L x W x H	WEIGHT
RRUS-11	19.69' x 16.97' x 7.17'	50.7 LBS
RRUS-12	20.4' x 18.5' x 7.5'	58 LBS
RRUS-32	29.9' x 13.3' x 9.5'	77 LBS
RRUS-32 B2	20.9' x 9.5' x 3.3'	77 LBS
RRUS-E2	20.4' x 18.5' x 7.5'	58 LBS
A2 MODULE	16.4' x 15.2' x 3.4'	22 LBS

NO.	DATE	DESCRIPTION	BY
A	10/24/16	FOR REVIEW	AC
0	11/17/16	ISSUE FOR CONSTRUCTION	AC

NOT USED

N.T.S 1

RRUS DETAILS

N.T.S 2

SITE INFORMATION:

CT2107
WESTPORT
FA CODE: 10034981
180A BAYBERRY LANE
CT 06880

SEAL:



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SHEET TITLE:

DETAILS

SHEET NUMBER:

A-5

NOT USED

N.T.S 3

NOT USED

N.T.S 4



1355 WEST UNIVERSITY DRIVE
MESA, AZ 85201-5419



PLANS PREPARED BY:



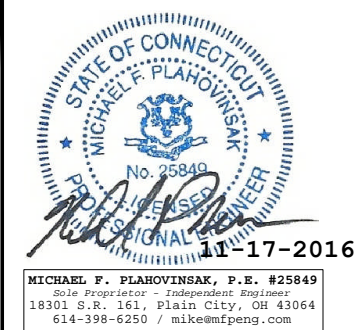
1825 W. WALNUT HILL LANE SUITE 302
IRVING, TX 75038

NO.	DATE	DESCRIPTION	BY
A	10/24/16	FOR REVIEW	AC
0	11/17/16	ISSUE FOR CONSTRUCTION	AC

SITE INFORMATION:

CT2107
WESTPORT
FA CODE: 10034981
180A BAYBERRY LANE
CT 06880

SEAL:

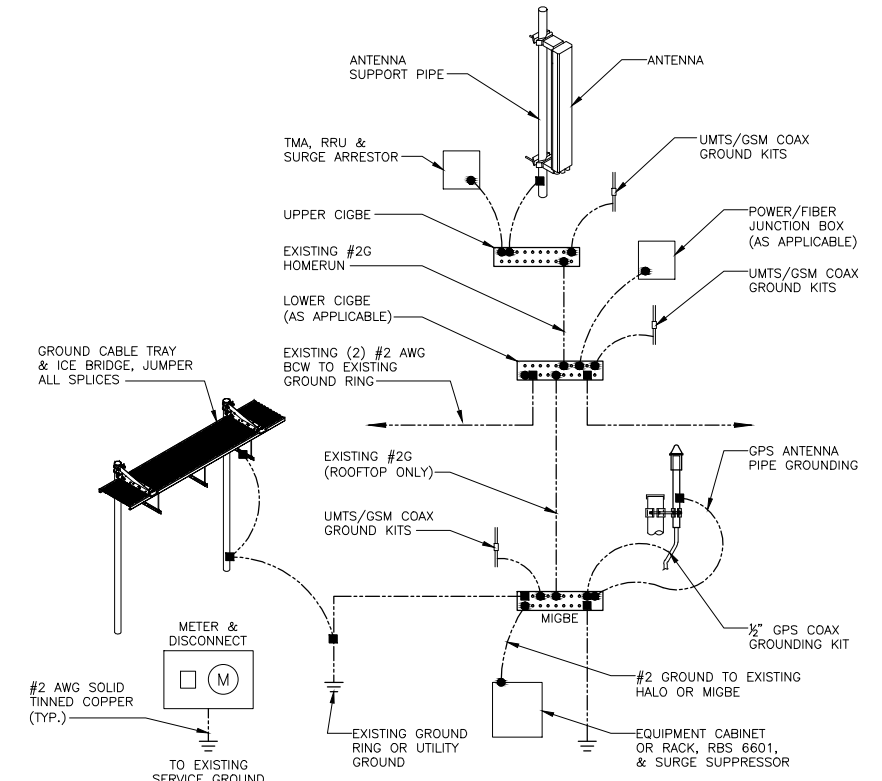
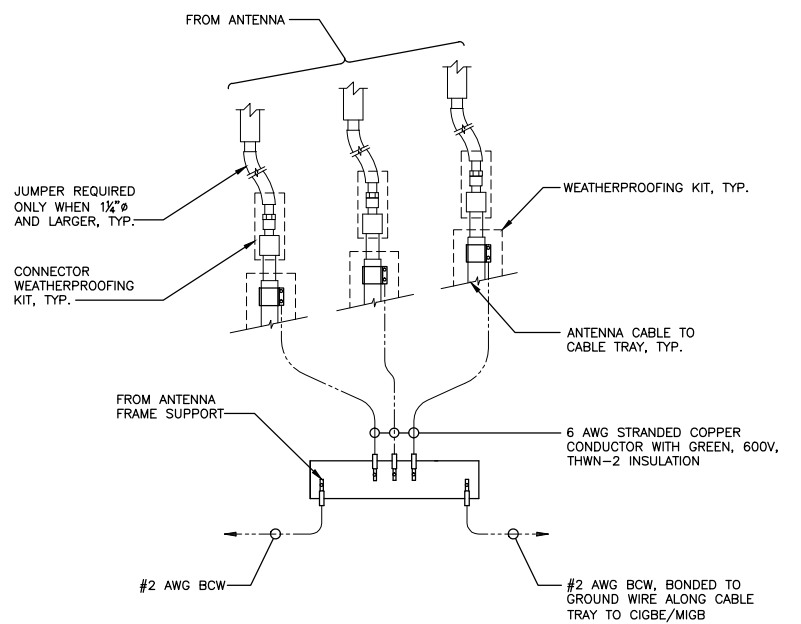


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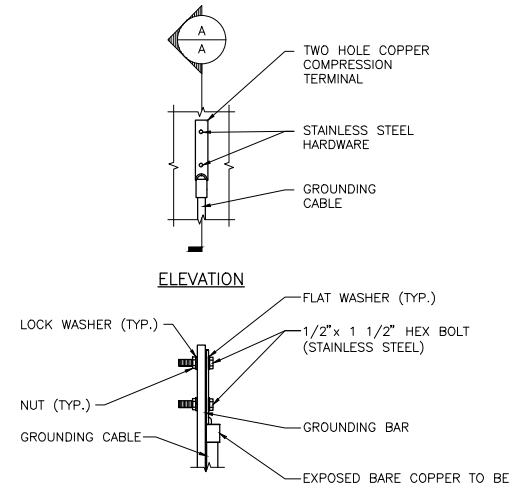
GROUNDING, ONE-LINE
DIAGRAM & DETAILS

SHEET NUMBER:

G-1



LEGEND
 ■ CADWELD BOND
 ● MECHANICAL BOND



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

GROUND WIRE TO GROUND BAR CONNECTION DETAILS

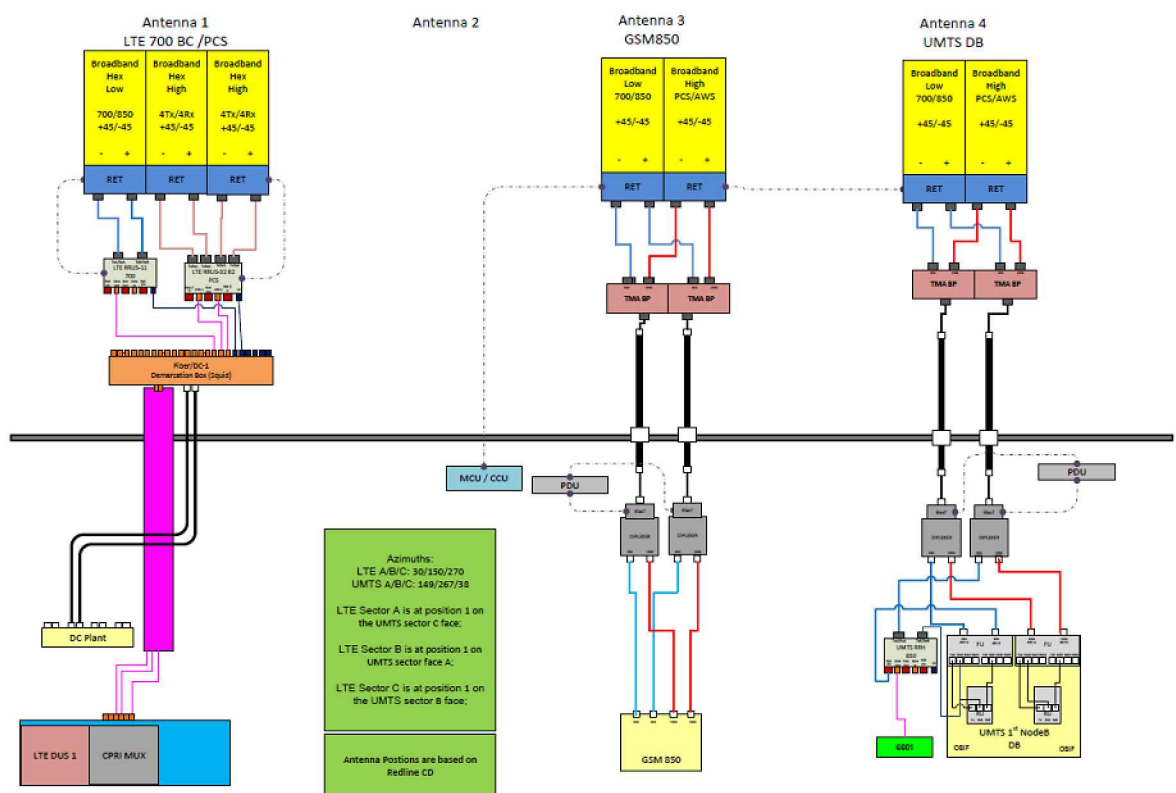
N.T.S 1

GROUND RISER DIAGRAM

N.T.S 2

TYPICAL GROUND BAR CONNECTION DETAILS

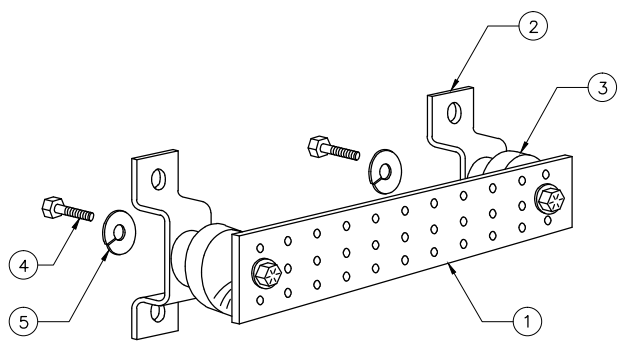
N.T.S 3



PLUMBING DIAGRAM

N.T.S 4

GROUND BAR DETAILS



ITEM NO.	QTY.	DESCRIPTION
1	1	SOLID GROUND BAR (20'x 4'x 1/2")
2	2	WALL MOUNTING BRACKET
3	2	INSULATORS
4	4	3/8"-11x1" HHCS.
5	4	3/8" LOCK WASHER

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

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

SECTION "A" - SURGE ABSORBERS
 • INTERIOR GROUND RING (#2)
 • EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
 • METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
 • BUILDING STEEL (IF AVAILABLE) (#2)

N.T.S 5



AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure : 140 ft Monopole
ATC Site Name : WSPT-Westport Rebuild CT, CT
ATC Site Number : 310968
Engineering Number : OAA687996_C3_02
Proposed Carrier : AT&T Mobility
Carrier Site Name : Westport
Carrier Site Number : CT2107
Site Location : 180A Bayberry Lane
Westport, CT 06880-2844
41.171667,-73.328467
County : Fairfield
Date : October 31, 2016
Max Usage : 58%
Result : Pass

Prepared By:
Tsega Melesse, E.I.
Structural Engineer I

Reviewed By:

COA: PEC.0001553



Table of Contents

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



Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 140 ft monopole to reflect the change in loading by AT&T Mobility.

Supporting Documents

Tower Drawings	PJF, Penn Summit Job #29204-0171, dated July 1, 2004
Foundation Drawing	PJF, Penn Summit Job #29204-0171, dated June 10, 2004
Geotechnical Report	GeoTechnologies Project #1-02-1190-EA, dated September 23, 2002

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:	93 mph (3-Second Gust, Vasd) / 120 mph (3-Second Gust, Vult)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	$S_s = 0.22, S_1 = 0.07$
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					
138.0	142.0	1	12' Dipole	Platform w/ Handrails	(1) 7/8" Coax	--
	141.0	1	6' Omni		(4) 7/8" Coax	
		1	6' FM antenna		(1) 1 5/8" Coax	
	138.0	1	4' HP Dish		(1) 1 1/4" Coax	American Messaging
	144.8	1	Andrew DB589		(2) 7/8" Coax	US Department Of Justice
131.0	131.0	3	Alcatel-Lucent 800MHz 2X50W RRH w/ Filter	Platform w/ Handrails	(4) 1 1/4" Hybriflex	Sprint Nextel
		3	Alcatel-Lucent 4x40W RRH (91 lb)			
		3	Alcatel-Lucent TD-RRH8x20-25 w/ Solar Shield			
		3	RFS RFS APXV9TM14-ALU-I20			
		3	RFS APXVSPP18-C-A20			
118.0	118.0	1	Andrew DB586	Low Profile Platform	(2) 1 1/4" Coax (1) 1/2" Coax	The Connecticut Light And Powe
110.0	110.0	2	Diamond X50A	Low Profile Platform	(1) 1 1/4" Hybriflex (1) 1 5/8" Hybriflex (2) 1 5/8" Coax	Verizon
		6	RFS FD9R6004/2C-3L			
		3	Alcatel-Lucent RRH2x40-AWS			
		3	Antel BXA-171063-8BF-EDIN-X			
		3	Antel BXA-171063-12CF-EDIN-X			
		1	RFS DB-T1-6Z-8AB-OZ			
		3	Antel BXA-70080/6CF			
		1	Antel BXA-70063/6CF			
		2	Powerwave P65-16-XL-2			
100.0	100.0	6	Powerwave LGP21401	Low Profile Platform	(12) 1 5/8" Coax (2) 0.74" 8 AWG 7 (1) 3/8" RET Control Cable	AT&T Mobility
		1	Raycap DC6-48-60-18-8F ("Squid")			
		6	Powerwave 7770.00			
		3	CCI HPA-65R-BUU-H6			
86.0	86.0	3	RFS ATMAA1412D-1A20	Low Profile Platform	(12) 1 5/8" Coax (1) 1 1/4" Fiber	T-Mobile
		3	Ericsson RRUS 11 B12			
		3	Ericsson AIR 21, 1.3 M, B2A B4P			
		3	Ericsson AIR 21, 1.3M, B4A B2P			
		3	Andrew LNX-6515DS-VTM			

Equipment to be Removed

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
100.0	100.0	3	Ericsson RRUS A2	-	-	AT&T Mobility
		3	Ericsson RRUS-12 1900MHz			
		6	Powerwave LGP21901			



Proposed Equipment

Elevation ¹ (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
100.0	100.0	12	Powerwave 7020.00 Dual Band RET	Low Profile Platform	(1) 0.28" Fiber	AT&T Mobility
		6	Powerwave LGP21401			
		3	Ericsson RRUS-11 (50 lbs.)			
		3	Ericsson RRUS 32 B2			

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

Install proposed coax inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	55%	Pass
Shaft	58%	Pass
Base Plate	25%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	2,753.0	3,716.6	2,461.0	66%
Shear (Kips)	27.3	36.9	24.0	65%

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

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
138.0	4' HP Dish	--	1.448	1.107
100.0	Powerwave Allgon 7020.00 Dual Band RET	AT&T Mobility	0.775	0.838
	Powerwave LGP21401			
	Ericsson RRUS-11 (50 lbs.)			
	Ericsson RRUS 32 B2			

*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 are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

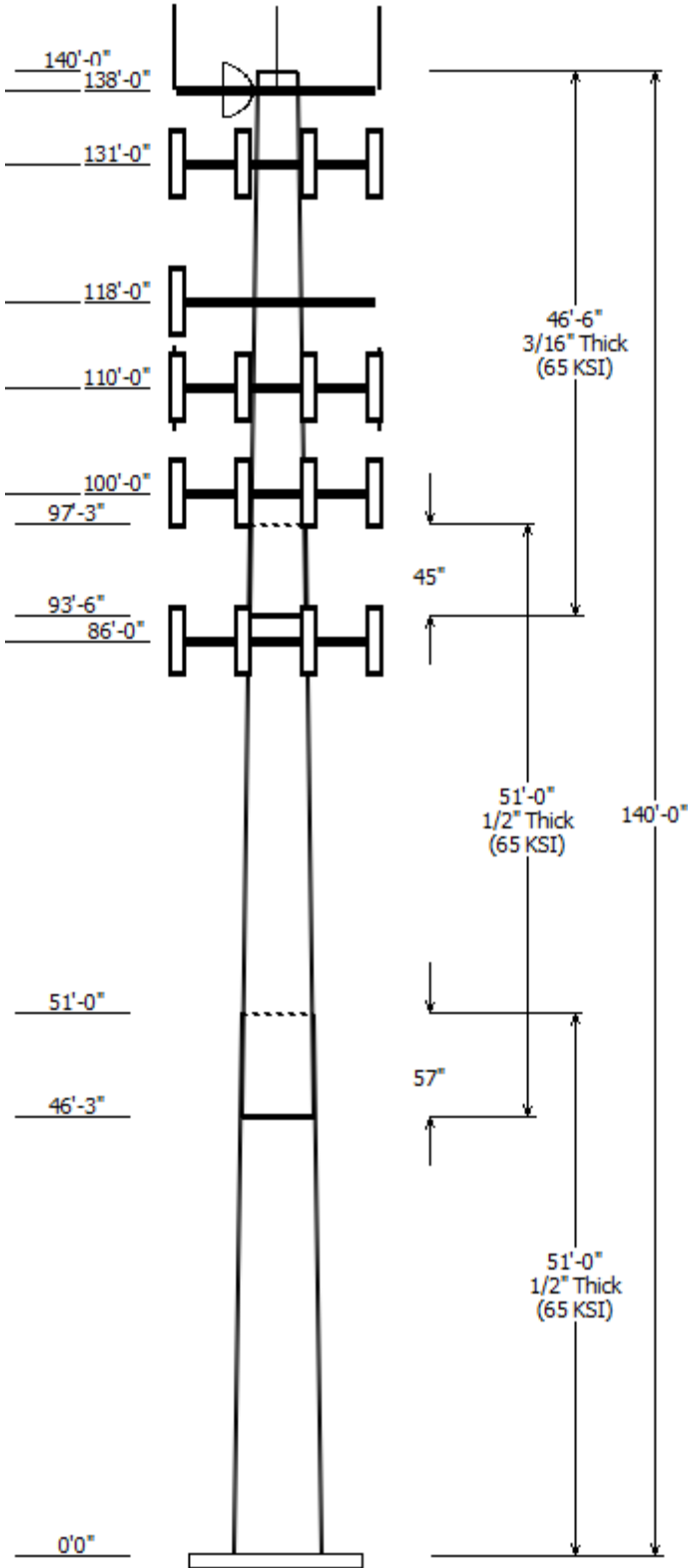
- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

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. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

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 we supply.

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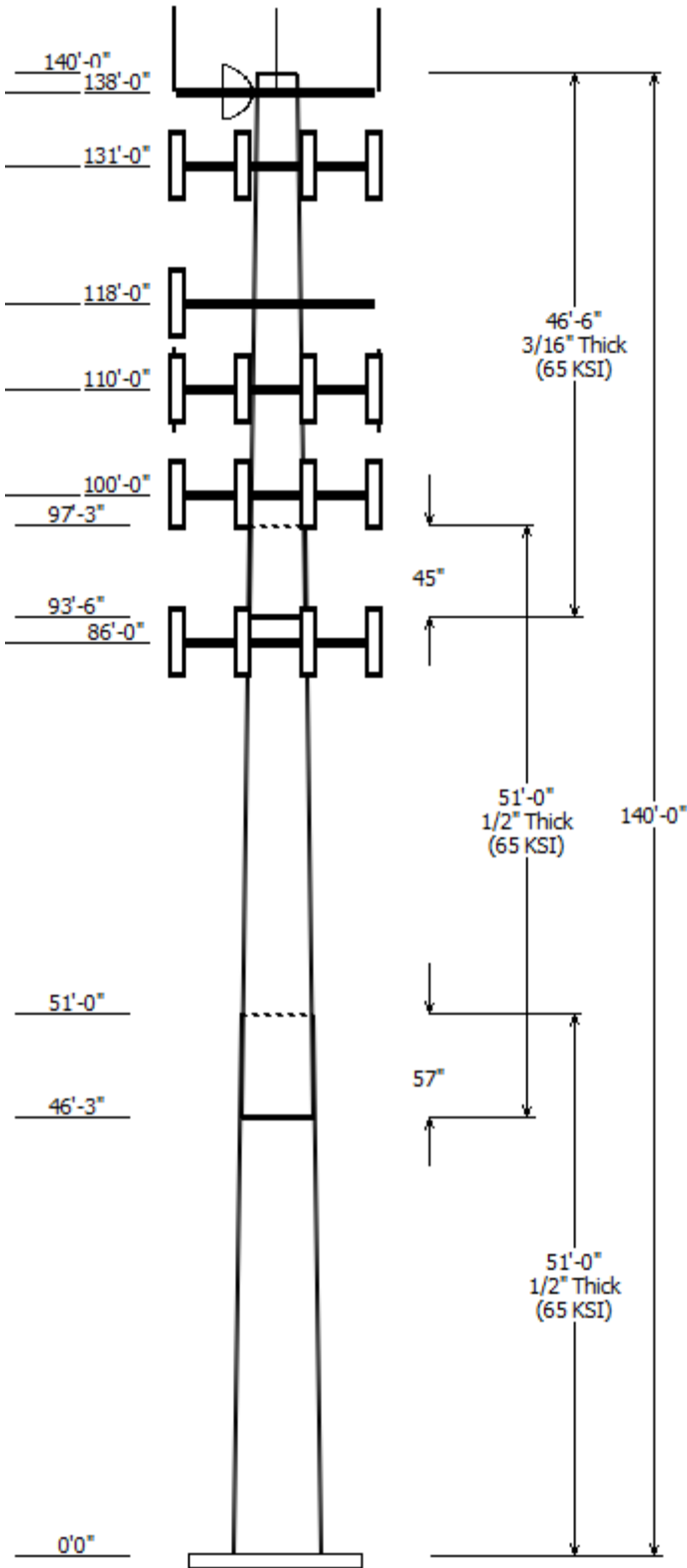


Job Information	
Pole :	310968
Code :	ANSI/TIA-222-G
Description :	140 ft Summit Monopole
Client :	AT&T MOBILITY
Struct Class :	II
Location :	WSPT-Westport Rebuild CT, CT
Shape :	18 Sides
Exposure :	B
Height :	140.00 (ft)
Topo :	1
Base Elev (ft):	0.00
Taper:	0.200036(in/ft)

Sections Properties							
Shaft Section	Length (ft)	Diameter (in)		Thick Joint (in)	Overlap Length (in)	Steel Taper (in/ft)	Steel Grade (ksi)
		Across Top	Flats Bottom				
1	51.000	36.92	47.13	0.500	0.000	0.200000	65
2	51.000	28.67	38.87	0.500	57.000	0.200000	65
3	46.500	20.50	29.80	0.188	45.000	0.200000	65

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
138.000	141.000	2	12' Omni
138.000	142.000	1	12' Dipole
138.000	144.800	1	Andrew DB589
138.000	138.000	1	Flat Platform w/ Handrails
138.000	141.000	1	6' Omni
138.000	138.000	1	4' HP Dish
138.000	141.000	1	6' FM antenna
131.000	131.000	1	Flat Platform w/ Handrails
131.000	131.000	3	RFS APXVSP18-C-A20
131.000	131.000	3	RFS RFS APXV9TM14-ALU-I20
131.000	131.000	3	Alcatel-Lucent TD-RRH8x20-25
131.000	131.000	3	Alcatel-Lucent 4x40W RRH (91 I
131.000	131.000	3	Alcatel-Lucent 800 MHz 2X50W
118.000	118.000	1	Flat Low Profile Platform
118.000	118.000	1	Andrew DB586
110.000	110.000	3	Alcatel-Lucent RRH2x40-AWS
110.000	110.000	1	RFS DB-T1-6Z-8AB-0Z
110.000	110.000	3	Antel BXA-70080/6CF
110.000	110.000	3	Antel BXA-171063-12CF-EDIN-X
110.000	110.000	3	Antel BXA-171063-8BF-EDIN-X
110.000	110.000	1	Antel BXA-70063/6CF
110.000	110.000	6	RFS FD9R6004/2C-3L
110.000	110.000	2	Powerwave P65-16-XL-2
110.000	110.000	1	Round Low Profile Platform
110.000	110.000	2	Diamond X50A
100.000	100.000	3	Ericsson RRUS 32 B2
100.000	100.000	12	Powerwave Allgon 7020.00
100.000	100.000	6	Powerwave LGP21401
100.000	100.000	3	CCI HPA-65R-BUU-H6
100.000	100.000	1	Raycap DC6-48-60-18-8F
100.000	100.000	6	Powerwave LGP21401
100.000	100.000	6	Powerwave 7770.00
100.000	100.000	3	Ericsson RRUS-11 (50 lbs.)
100.000	100.000	1	Flat Low Profile Platform
86.000	86.000	1	Flat Low Profile Platform
86.000	86.000	3	Andrew LNX-6515DS-VTM
86.000	86.000	3	Ericsson AIR 21, 1.3M, B4A B2P
86.000	86.000	3	Ericsson AIR 21, 1.3 M, B2A B4
86.000	86.000	3	Ericsson RRUS 11 B12
86.000	86.000	3	RFS ATMAA1412D-1A20

Linear Appurtenance			
Elev (ft) From	To	Description	Exposed To Wind



5.000	86.000	1 1/4" Fiber	No
5.000	86.000	1 5/8" Coax	No
5.000	100.0	0.28" Fiber	No
5.000	100.0	0.74" 8 AWG 7	No
5.000	100.0	1 5/8" Coax	No
5.000	100.0	3/8" RET Control	No
5.000	110.0	1 1/4" Hybriflex	No
5.000	110.0	1 5/8" Coax	No
5.000	110.0	1 5/8" Hybriflex	No
5.000	110.0	1/2" Coax	No
5.000	118.0	1 1/4" Coax	No
5.000	118.0	1/2" Coax	No
5.000	131.0	1 1/4" Hybriflex	No
5.000	138.0	1 1/4" Coax	No
5.000	138.0	1 5/8" Coax	No
5.000	138.0	7/8" Coax	No
5.000	138.0	7/8" Coax	No

Load Cases

1.2D + 1.6W	93 mph with No Ice
0.9D + 1.6W	93 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

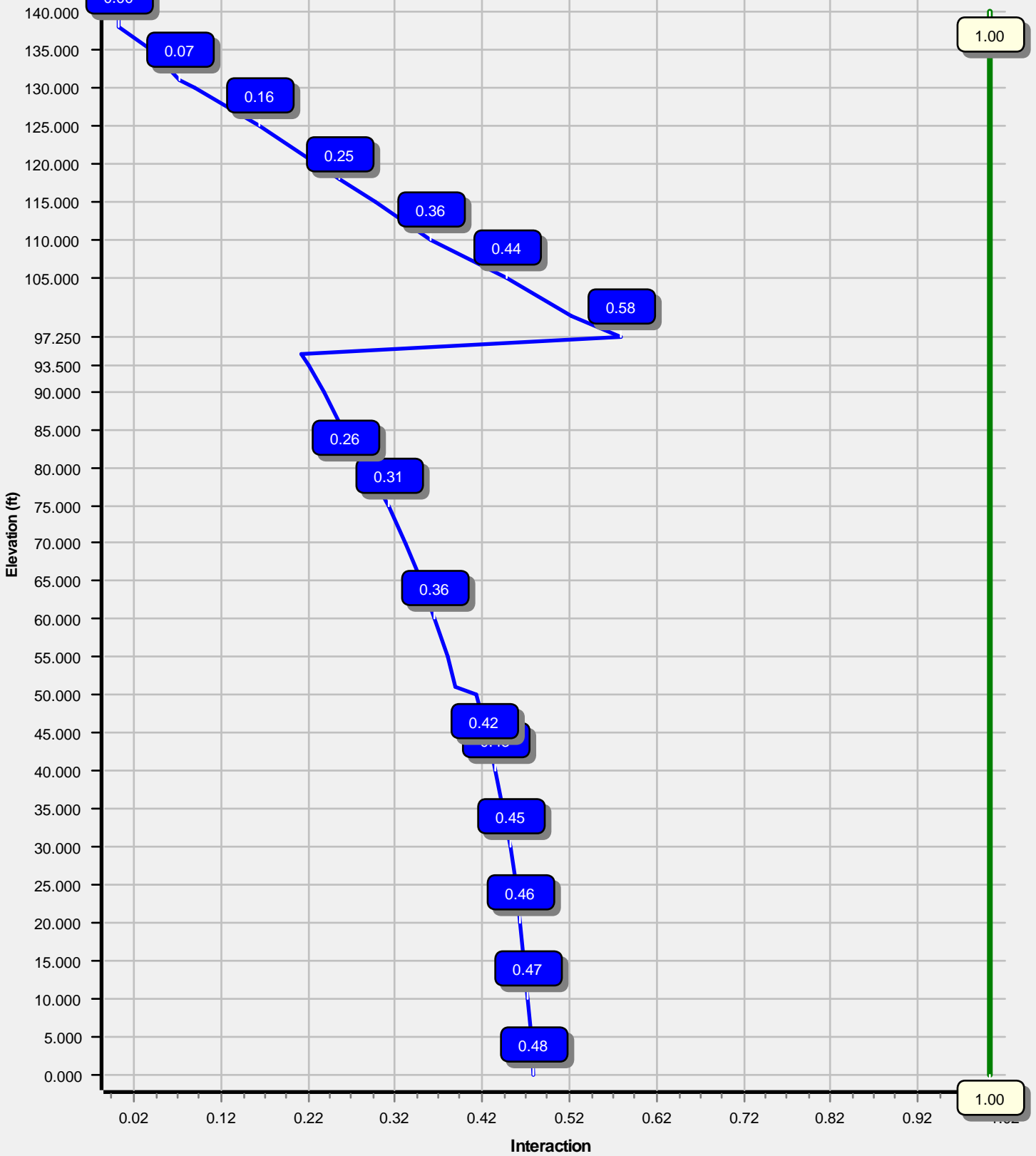
Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	2460.98	23.96	48.72
0.9D + 1.6W	2433.90	23.94	36.53
1.2D + 1.0Di + 1.0Wi	727.68	7.08	71.48
(1.2 + 0.2Sds) * DL + E ELFM	189.51	1.73	49.13
(1.2 + 0.2Sds) * DL + E EMAM	248.86	2.30	49.12
(0.9 - 0.2Sds) * DL + E ELFM	186.85	1.73	33.58
(0.9 - 0.2Sds) * DL + E EMAM	244.92	2.30	33.58
1.0D + 1.0W	635.88	6.23	40.63

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	138.00	17.376	1.107

Load Case : 1.2D + 1.6W
Max Ratio 57.60% at 97.3 ft



Site Number: 310968

Code: ANSI/TIA-222-G

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Site Name: WSPT-Westport Rebuild CT, CT Engineering Number:OAA687996_C3_02

10/31/2016 5:08:50 PM

Customer: AT&T MOBILITY

Analysis Parameters

Location:	Fairfield County, CT	Height (ft):	140
Code:	ANSI/TIA-222-G	Base Diameter (in):	47.13
Shape:	18 Sides	Top Diameter (in):	20.50
Pole Type:	Taper	Taper (in/ft) :	0.200
Pole Manufacturer:	PennSummit Tub		

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	93 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0.0 ft	Design Ice Thickness:	0.75 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	2.15		
T _L (sec):	6	p:	1.3
S _s :	0.222	S ₁ :	0.066
F _a :	1.600	F _v :	2.400
S _{ds} :	0.237	S _{d1} :	0.106
		C _s :	0.033
		C _s Max:	0.033
		C _s Min:	0.030

Load Cases

1.2D + 1.6W	93 mph with No Ice
0.9D + 1.6W	93 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2Sds) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom						Top							
							Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Taper (in/ft)	
1-18	51.000	0.5000	65		0.00	11,437	47.13	0.00	74.00	20328.7	14.86	94.26	36.92	51.00	57.81	9692.3	11.26	73.86	0.200036	
2-18	51.000	0.5000	65	Slip	57.00	9,165	38.87	46.25	60.90	11333.7	11.95	77.76	28.67	97.25	44.71	4485.1	8.35	57.35	0.200036	
3-18	46.500	0.1875	65	Slip	45.00	2,351	29.80	93.50	17.62	1952.7	26.26	158.94	20.50	140.00	12.09	630.1	17.52	109.33	0.200036	
Shaft Weight						22,952														

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	No Ice			Ice			Distance From Face (ft)	Vert Ecc (ft)
			Weight (lb)	EPAA (sf)	Orientation Factor	Weight (lb)	EPAA (sf)	Orientation Factor		
138.00	12' Dipole	1	40.00	4.510	1.00	172.36	11.615	1.00	0.000	4.000
138.00	12' Omni	2	40.00	3.600	1.00	197.28	7.617	1.00	0.000	3.000
138.00	4' HP Dish	1	170.00	15.860	1.00	486.94	18.174	1.00	0.000	0.000
138.00	6' FM antenna	1	30.00	13.450	1.00	705.74	18.017	1.00	0.000	3.000
138.00	6' Omni	1	25.00	1.760	1.00	105.98	3.059	1.00	0.000	3.000
138.00	Andrew DB589	1	11.50	1.380	1.00	94.14	4.527	1.00	0.000	6.800
138.00	Flat Platform w/ Handrails	1	1750.00	33.000	0.90	2,984.37	49.203	0.90	0.000	0.000
131.00	Alcatel-Lucent 4x40W RRH	3	91.00	3.290	0.67	214.86	3.127	0.67	0.000	0.000
131.00	Alcatel-Lucent 800 MHz	3	64.00	2.060	0.67	191.61	4.147	0.67	0.000	0.000
131.00	Alcatel-Lucent TD-RRH8x20-	3	70.00	4.050	0.67	161.22	5.728	0.67	0.000	0.000
131.00	Flat Platform w/ Handrails	1	2000.00	42.400	1.00	3,404.39	63.124	1.00	0.000	0.000
131.00	RFS APXVSP18-C-A20	3	57.00	8.020	0.83	253.40	9.296	0.83	0.000	0.000
131.00	RFS RFS APXV9TM14-ALU-I20	3	55.10	6.340	0.78	196.82	8.492	0.78	0.000	0.000
118.00	Andrew DB586	1	8.30	0.740	1.00	32.74	0.982	1.00	0.000	0.000
118.00	Flat Low Profile Platform	1	1500.00	26.100	0.90	2,133.02	44.754	0.90	0.000	0.000
110.00	Alcatel-Lucent RRH2x40-AWS	3	44.00	2.160	0.67	114.51	2.781	0.67	0.000	0.000
110.00	Antel BXA-171063-12CF-EDIN-	3	15.00	4.790	0.88	130.33	5.957	0.88	0.000	0.000
110.00	Antel BXA-171063-8BF-EDIN-X	3	10.50	2.940	0.87	90.26	3.777	0.87	0.000	0.000
110.00	Antel BXA-70063/6CF	1	14.90	7.580	1.00	180.67	8.808	1.00	0.000	0.000
110.00	Antel BXA-70080/6CF	3	18.00	5.840	0.88	163.01	7.035	0.88	0.000	0.000
110.00	Diamond X50A	2	2.30	1.120	1.00	59.69	2.467	1.00	0.000	0.000
110.00	Powerwave P65-16-XL-2	2	33.00	8.130	0.81	207.60	9.384	0.81	0.000	0.000
110.00	RFS DB-T1-6Z-8AB-OZ	1	44.00	4.800	0.67	182.21	5.643	0.67	0.000	0.000
110.00	RFS FD9R6004/2C-3L	6	2.60	0.370	0.50	15.04	0.569	0.50	0.000	0.000
110.00	Round Low Profile Platform	1	1500.00	21.700	1.00	2,127.95	40.308	1.00	0.000	0.000
100.00	CCI HPA-65R-BUU-H6	3	51.00	9.660	0.83	287.32	10.967	0.83	0.000	0.000
100.00	Ericsson RRUS 32 B2	3	53.00	2.740	0.67	136.66	3.441	0.67	0.000	0.000
100.00	Ericsson RRUS-11 (50 lbs.)	3	50.00	2.570	0.67	127.27	3.185	0.67	0.000	0.000
100.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	2,122.56	44.445	1.00	0.000	0.000
100.00	Powerwave 7770.00	6	35.00	5.510	0.77	163.41	6.519	0.77	0.000	0.000
100.00	Powerwave Allgon 7020.00	12	2.20	0.400	0.50	16.96	0.610	0.50	0.000	0.000
100.00	Powerwave LGP21401	6	14.10	1.100	0.50	45.85	1.542	0.50	0.000	0.000
100.00	Powerwave LGP21401	6	14.10	1.100	0.50	45.85	1.542	0.50	0.000	0.000
100.00	Raycap DC6-48-60-18-8F	1	31.80	1.280	1.00	120.11	2.824	1.00	0.000	0.000
86.00	Andrew LNX-6515DS-VTM	3	51.30	11.430	0.84	297.84	13.002	0.84	0.000	0.000
86.00	Ericsson AIR 21, 1.3 M, B2A	3	83.00	6.050	0.86	241.11	7.084	0.86	0.000	0.000
86.00	Ericsson AIR 21, 1.3M, B4A	3	81.50	6.090	0.85	239.57	7.129	0.85	0.000	0.000
86.00	Ericsson RRUS 11 B12	3	50.70	2.790	0.67	131.36	3.429	0.67	0.000	0.000
86.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	2,113.73	44.185	1.00	0.000	0.000
86.00	RFS ATMAA1412D-1A20	3	13.00	1.000	0.50	45.58	1.406	0.50	0.000	0.000
Totals		108	13271.60			28,788.66			Number of Loadings : 40	

Site Number: 310968

Code: ANSI/TIA-222-G

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Site Name: WSPT-Westport Rebuild CT, CT Engineering Number:OAA687996_C3_02

10/31/2016 5:08:50 PM

Customer: AT&T MOBILITY

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	138.00	1	1 1/4" Coax	1.55	0.63	N	0.00	N	American Messaging
5.00	138.00	1	1 5/8" Coax	1.98	0.82	N	0.00	N	--
5.00	138.00	5	7/8" Coax	1.09	0.33	N	0.00	N	--
5.00	138.00	2	7/8" Coax	1.09	0.33	N	0.00	N	US Department of Justice
5.00	131.00	4	1 1/4" Hybriflex	1.54	1.00	N	0.00	N	Sprint Nextel
5.00	118.00	2	1 1/4" Coax	1.55	0.63	N	0.00	N	The Connecticut Light And Powe
5.00	118.00	1	1/2" Coax	0.63	0.15	N	0.00	N	The Connecticut Light And Powe
5.00	110.00	1	1 1/4" Hybriflex Cable	1.54	1.00	N	0.00	N	Verizon
5.00	110.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	Verizon
5.00	110.00	1	1 5/8" Hybriflex	1.98	1.30	N	0.00	N	Verizon
5.00	110.00	2	1/2" Coax	0.63	0.15	N	0.00	N	Senet, Inc.
5.00	100.00	1	0.28" Fiber	0.28	0.04	N	0.00	N	AT&T Mobility
5.00	100.00	2	0.74" 8 AWG 7	0.74	0.49	N	0.00	N	AT&T Mobility
5.00	100.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	AT&T Mobility
5.00	100.00	1	3/8" RET Control Cable	0.38	0.23	N	0.00	N	AT&T Mobility
5.00	86.00	1	1 1/4" Fiber	1.25	1.05	N	0.00	N	T-Mobile
5.00	86.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	T-Mobile

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in ³)	Z (in ³)	Weight (lb)
0.00		0.5000	47.130	73.999	20,328.7	14.86	94.26	82.6	849.6	0.0	0.0
5.00		0.5000	46.130	72.412	19,048.5	14.50	92.26	82.6	813.3	0.0	1,245.5
10.00		0.5000	45.130	70.825	17,823.2	14.15	90.26	82.6	777.9	0.0	1,218.5
15.00		0.5000	44.129	69.237	16,651.5	13.80	88.26	82.6	743.2	0.0	1,191.5
20.00		0.5000	43.129	67.650	15,532.4	13.45	86.26	82.6	709.3	0.0	1,164.5
25.00		0.5000	42.129	66.063	14,464.6	13.09	84.26	82.6	676.2	0.0	1,137.5
30.00		0.5000	41.129	64.476	13,446.8	12.74	82.26	82.6	644.0	0.0	1,110.5
35.00		0.5000	40.129	62.889	12,478.0	12.39	80.26	82.6	612.5	0.0	1,083.5
40.00		0.5000	39.129	61.301	11,556.9	12.04	78.26	82.6	581.7	0.0	1,056.5
45.00		0.5000	38.128	59.714	10,682.2	11.68	76.26	82.6	551.8	0.0	1,029.5
46.25	Bot - Section 2	0.5000	37.878	59.317	10,470.7	11.59	75.76	82.6	544.5	0.0	253.1
50.00		0.5000	37.128	58.127	9,852.8	11.33	74.26	82.6	522.7	0.0	1,518.9
51.00	Top - Section 1	0.5000	37.928	59.396	10,512.6	11.61	75.86	82.6	545.9	0.0	399.9
55.00		0.5000	37.128	58.127	9,852.7	11.33	74.26	82.6	522.7	0.0	799.8
60.00		0.5000	36.128	56.539	9,067.4	10.98	72.26	82.6	494.3	0.0	975.5
65.00		0.5000	35.128	54.952	8,325.0	10.62	70.26	82.6	466.8	0.0	948.5
70.00		0.5000	34.128	53.365	7,624.3	10.27	68.26	82.6	440.0	0.0	921.4
75.00		0.5000	33.127	51.778	6,964.0	9.92	66.25	82.6	414.1	0.0	894.4
80.00		0.5000	32.127	50.190	6,343.0	9.57	64.25	82.6	388.9	0.0	867.4
85.00		0.5000	31.127	48.603	5,760.0	9.21	62.25	82.6	364.5	0.0	840.4
86.00		0.5000	30.927	48.286	5,647.9	9.14	61.85	82.6	359.7	0.0	164.8
90.00		0.5000	30.127	47.016	5,214.0	8.86	60.25	82.6	340.9	0.0	648.6
93.50	Bot - Section 3	0.5000	29.427	45.905	4,853.0	8.61	58.85	82.6	324.8	0.0	553.3
95.00		0.5000	29.127	45.429	4,703.5	8.51	58.25	82.6	318.1	0.0	322.6
97.25	Top - Section 2	0.1875	29.052	17.177	1,808.1	25.56	154.94	71.3	122.6	0.0	477.6
100.0		0.1875	28.501	16.850	1,706.7	25.04	152.01	71.9	117.9	0.0	159.2
105.0		0.1875	27.501	16.255	1,532.1	24.10	146.67	73.1	109.7	0.0	281.6
110.0		0.1875	26.501	15.659	1,369.9	23.16	141.34	74.2	101.8	0.0	271.5
115.0		0.1875	25.501	15.064	1,219.5	22.22	136.00	75.3	94.2	0.0	261.4
118.0		0.1875	24.901	14.707	1,134.8	21.65	132.80	75.9	89.8	0.0	152.0
120.0		0.1875	24.501	14.469	1,080.6	21.28	130.67	76.4	86.9	0.0	99.3
125.0		0.1875	23.501	13.874	952.7	20.34	125.34	77.5	79.8	0.0	241.1
130.0		0.1875	22.500	13.278	835.2	19.40	120.00	78.6	73.1	0.0	231.0
131.0		0.1875	22.300	13.159	813.0	19.21	118.94	78.8	71.8	0.0	45.0
135.0		0.1875	21.500	12.683	727.9	18.46	114.67	79.7	66.7	0.0	175.9
138.0		0.1875	20.900	12.326	668.1	17.89	111.47	80.4	63.0	0.0	127.7
140.0		0.1875	20.500	12.088	630.1	17.52	109.33	80.8	60.5	0.0	83.1
											22,952.4

Load Case: 1.2D + 1.6W	93 mph with No Ice	23 Iterations
Gust Response Factor :1.10		Wind Importance Factor :1.00
Dead Load Factor :1.20		
Wind Load Factor :1.60		

Applied Segment Forces Summary

Seg Elev	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX	Dead Load	Wind FX	Torsion MY	Moment MZ	Dead Load	Wind FX	Dead Load	Wind FX	Dead Load	Torsion MY	Moment MZ
(ft)		(lb)	(lb)	(lb)	(lb-ft)	(lb-ft)	(lb)	(lb)	(lb)	(lb)	(lb)	(lb-ft)	(lb)
0.00		166.2	0.0					0.0	0.0	166.2	0.0	0.0	0.0
5.00		328.8	1,494.6					0.0	0.0	328.8	1,494.6	0.0	0.0
10.00		321.6	1,462.2					0.0	261.5	321.6	1,723.7	0.0	0.0
15.00		314.5	1,429.8					0.0	261.5	314.5	1,691.3	0.0	0.0
20.00		307.4	1,397.4					0.0	261.5	307.4	1,658.9	0.0	0.0
25.00		300.2	1,365.0					0.0	261.5	300.2	1,626.5	0.0	0.0
30.00		296.6	1,332.6					0.0	261.5	296.6	1,594.1	0.0	0.0
35.00		298.9	1,300.2					0.0	261.5	298.9	1,561.7	0.0	0.0
40.00		302.8	1,267.8					0.0	261.5	302.8	1,529.3	0.0	0.0
45.00		190.4	1,235.4					0.0	261.5	190.4	1,496.9	0.0	0.0
46.25	Bot - Section 2	156.1	303.8					0.0	65.4	156.1	369.2	0.0	0.0
50.00		149.4	1,822.7					0.0	196.1	149.4	2,018.8	0.0	0.0
51.00	Top - Section 1	157.5	479.9					0.0	52.3	157.5	532.2	0.0	0.0
55.00		283.3	959.8					0.0	209.2	283.3	1,169.0	0.0	0.0
60.00		314.0	1,170.5					0.0	261.5	314.0	1,432.1	0.0	0.0
65.00		312.4	1,138.1					0.0	261.5	312.4	1,399.7	0.0	0.0
70.00		310.0	1,105.7					0.0	261.5	310.0	1,367.3	0.0	0.0
75.00		306.9	1,073.3					0.0	261.5	306.9	1,334.8	0.0	0.0
80.00		303.2	1,040.9					0.0	261.5	303.2	1,302.4	0.0	0.0
85.00		180.4	1,008.5					0.0	261.5	180.4	1,270.0	0.0	0.0
86.00	Appertunance(s)	148.3	197.8	2,794.2	0.0	0.0	2,806.2	0.0	52.3	2,942.5	3,056.3	0.0	0.0
90.00		220.8	778.3					0.0	156.9	220.8	935.2	0.0	0.0
93.50	Bot - Section 3	146.3	664.0					0.0	137.3	146.3	801.3	0.0	0.0
95.00		109.5	387.1					0.0	58.9	109.5	446.0	0.0	0.0
97.25	Top - Section 2	144.8	573.1					0.0	88.3	144.8	661.4	0.0	0.0
100.00	Appertunance(s)	221.2	191.0	3,017.2	0.0	0.0	2,879.3	0.0	107.9	3,238.3	3,178.2	0.0	0.0
105.00		280.5	337.9					0.0	129.7	280.5	467.6	0.0	0.0
110.00	Appertunance(s)	273.9	325.8	2,859.6	0.0	0.0	2,289.1	0.0	129.7	3,133.5	2,744.6	0.0	0.0
115.00		214.7	313.6					0.0	55.0	214.7	368.7	0.0	0.0
118.00	Appertunance(s)	131.7	182.3	929.4	0.0	0.0	1,810.0	0.0	33.0	1,061.1	2,025.3	0.0	0.0
120.00		180.2	119.1					0.0	18.6	180.2	137.8	0.0	0.0
125.00		252.0	289.3					0.0	46.6	252.0	335.9	0.0	0.0
130.00		148.3	277.2					0.0	46.6	148.3	323.7	0.0	0.0
131.00	Appertunance(s)	119.9	54.0	3,267.2	0.0	0.0	3,613.6	0.0	9.3	3,387.2	3,676.8	0.0	0.0
135.00		165.6	211.0					0.0	18.0	165.6	229.1	0.0	0.0
138.00	Appertunance(s)	115.7	153.2	2,970.4	0.0	3,824.4	2,527.8	0.0	13.5	3,086.1	2,694.5	0.0	0.0
140.00		45.8	99.7					0.0	0.0	45.8	99.7	0.0	0.0
Totals:										24,057.7	48,754.6	0.00	0.00

Load Case: 1.2D + 1.6W

93 mph with No Ice

23 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	-48.72	-23.96	0.00	-2,460.98	0.00	2,460.98	5,497.77	2,748.88	10,504.0	5,259.85	0.00	0.00	0.477
5.00	-47.15	-23.77	0.00	-2,341.16	0.00	2,341.16	5,379.84	2,689.92	10,055.9	5,035.45	0.09	-0.17	0.474
10.00	-45.36	-23.58	0.00	-2,222.30	0.00	2,222.30	5,261.92	2,630.96	9,617.62	4,815.96	0.36	-0.34	0.470
15.00	-43.60	-23.38	0.00	-2,104.41	0.00	2,104.41	5,144.00	2,572.00	9,189.04	4,601.35	0.80	-0.51	0.466
20.00	-41.88	-23.19	0.00	-1,987.49	0.00	1,987.49	5,026.07	2,513.04	8,770.23	4,391.63	1.43	-0.69	0.461
25.00	-40.18	-22.99	0.00	-1,871.56	0.00	1,871.56	4,908.15	2,454.08	8,361.19	4,186.81	2.25	-0.86	0.455
30.00	-38.52	-22.79	0.00	-1,756.61	0.00	1,756.61	4,790.23	2,395.11	7,961.92	3,986.88	3.25	-1.04	0.449
35.00	-36.90	-22.57	0.00	-1,642.67	0.00	1,642.67	4,672.31	2,336.15	7,572.42	3,791.84	4.43	-1.22	0.441
40.00	-35.30	-22.35	0.00	-1,529.80	0.00	1,529.80	4,554.38	2,277.19	7,192.68	3,601.69	5.81	-1.40	0.433
45.00	-33.77	-22.19	0.00	-1,418.06	0.00	1,418.06	4,436.46	2,218.23	6,822.72	3,416.43	7.37	-1.58	0.423
46.25	-33.37	-22.07	0.00	-1,390.33	0.00	1,390.33	4,406.98	2,203.49	6,731.76	3,370.88	7.79	-1.63	0.420
50.00	-31.32	-21.91	0.00	-1,307.56	0.00	1,307.56	4,318.54	2,159.27	6,462.53	3,236.07	9.13	-1.77	0.411
51.00	-30.76	-21.79	0.00	-1,285.64	0.00	1,285.64	4,412.85	2,206.43	6,749.84	3,379.93	9.50	-1.80	0.387
55.00	-29.54	-21.55	0.00	-1,198.50	0.00	1,198.50	4,318.52	2,159.26	6,462.46	3,236.03	11.08	-1.95	0.377
60.00	-28.06	-21.26	0.00	-1,090.77	0.00	1,090.77	4,200.59	2,100.30	6,112.04	3,060.56	13.21	-2.12	0.363
65.00	-26.62	-20.97	0.00	-984.46	0.00	984.46	4,082.67	2,041.33	5,771.38	2,889.98	15.51	-2.28	0.347
70.00	-25.21	-20.67	0.00	-879.60	0.00	879.60	3,964.75	1,982.37	5,440.50	2,724.29	17.98	-2.44	0.329
75.00	-23.83	-20.37	0.00	-776.23	0.00	776.23	3,846.82	1,923.41	5,119.38	2,563.49	20.62	-2.59	0.309
80.00	-22.49	-20.07	0.00	-674.37	0.00	674.37	3,728.90	1,864.45	4,808.03	2,407.59	23.42	-2.74	0.286
85.00	-21.21	-19.85	0.00	-574.05	0.00	574.05	3,610.98	1,805.49	4,506.45	2,256.57	26.36	-2.88	0.260
86.00	-18.28	-16.78	0.00	-554.19	0.00	554.19	3,587.39	1,793.70	4,447.30	2,226.96	26.97	-2.91	0.254
90.00	-17.33	-16.54	0.00	-487.07	0.00	487.07	3,493.05	1,746.53	4,214.63	2,110.45	29.45	-3.01	0.236
93.50	-16.52	-16.37	0.00	-429.17	0.00	429.17	3,410.51	1,705.25	4,016.18	2,011.07	31.69	-3.10	0.218
95.00	-16.07	-16.25	0.00	-404.62	0.00	404.62	3,375.13	1,687.57	3,932.59	1,969.22	32.67	-3.14	0.210
97.25	-15.40	-16.08	0.00	-368.06	0.00	368.06	1,102.89	551.44	1,309.83	655.89	34.16	-3.19	0.576
100.00	-12.38	-12.71	0.00	-323.83	0.00	323.83	1,091.10	545.55	1,270.97	636.43	36.02	-3.25	0.521
105.00	-11.88	-12.45	0.00	-260.30	0.00	260.30	1,068.74	534.37	1,200.66	601.22	39.55	-3.49	0.445
110.00	-9.30	-9.18	0.00	-198.07	0.00	198.07	1,045.19	522.60	1,130.92	566.30	43.33	-3.71	0.359
115.00	-8.93	-8.96	0.00	-152.18	0.00	152.18	1,020.46	510.23	1,061.89	531.74	47.31	-3.89	0.295
118.00	-6.97	-7.77	0.00	-125.30	0.00	125.30	1,005.06	502.53	1,020.89	511.20	49.78	-3.99	0.252
120.00	-6.83	-7.59	0.00	-109.76	0.00	109.76	994.55	497.27	993.73	497.61	51.46	-4.04	0.228
125.00	-6.50	-7.33	0.00	-71.79	0.00	71.79	967.45	483.72	926.59	463.98	55.76	-4.16	0.162
130.00	-6.19	-7.16	0.00	-35.14	0.00	35.14	939.16	469.58	860.60	430.94	60.17	-4.24	0.088
131.00	-2.77	-3.51	0.00	-27.98	0.00	27.98	933.36	466.68	847.55	424.41	61.06	-4.25	0.069
135.00	-2.55	-3.33	0.00	-13.93	0.00	13.93	909.69	454.85	795.92	398.55	64.63	-4.28	0.038
138.00	-0.10	-0.05	0.00	-0.11	0.00	0.11	891.44	445.72	757.80	379.46	67.33	-4.29	0.000
140.00	0.00	-0.05	0.00	0.00	0.00	0.00	879.04	439.52	732.69	366.89	69.13	-4.29	0.000

Load Case: 0.9D + 1.6W 93 mph with No Ice (Reduced DL) 23 Iterations

Gust Response Factor :1.10 Wind Importance Factor :1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		166.2	0.0					0.0	0.0	166.2	0.0	0.0	0.0
5.00		328.8	1,121.0					0.0	0.0	328.8	1,121.0	0.0	0.0
10.00		321.6	1,096.7					0.0	196.1	321.6	1,292.8	0.0	0.0
15.00		314.5	1,072.4					0.0	196.1	314.5	1,268.5	0.0	0.0
20.00		307.4	1,048.0					0.0	196.1	307.4	1,244.2	0.0	0.0
25.00		300.2	1,023.7					0.0	196.1	300.2	1,219.9	0.0	0.0
30.00		296.6	999.4					0.0	196.1	296.6	1,195.6	0.0	0.0
35.00		298.9	975.1					0.0	196.1	298.9	1,171.3	0.0	0.0
40.00		302.8	950.8					0.0	196.1	302.8	1,147.0	0.0	0.0
45.00		190.4	926.5					0.0	196.1	190.4	1,122.7	0.0	0.0
46.25	Bot - Section 2	156.1	227.8					0.0	49.0	156.1	276.9	0.0	0.0
50.00		149.4	1,367.0					0.0	147.1	149.4	1,514.1	0.0	0.0
51.00	Top - Section 1	157.5	359.9					0.0	39.2	157.5	399.1	0.0	0.0
55.00		283.3	719.8					0.0	156.9	283.3	876.7	0.0	0.0
60.00		314.0	877.9					0.0	196.1	314.0	1,074.0	0.0	0.0
65.00		312.4	853.6					0.0	196.1	312.4	1,049.7	0.0	0.0
70.00		310.0	829.3					0.0	196.1	310.0	1,025.4	0.0	0.0
75.00		306.9	805.0					0.0	196.1	306.9	1,001.1	0.0	0.0
80.00		303.2	780.7					0.0	196.1	303.2	976.8	0.0	0.0
85.00		180.4	756.4					0.0	196.1	180.4	952.5	0.0	0.0
86.00	Appertunance(s)	148.3	148.4	2,794.2	0.0	0.0	2,104.6	0.0	39.2	2,942.5	2,292.2	0.0	0.0
90.00		220.8	583.7					0.0	117.7	220.8	701.4	0.0	0.0
93.50	Bot - Section 3	146.3	498.0					0.0	103.0	146.3	601.0	0.0	0.0
95.00		109.5	290.3					0.0	44.1	109.5	334.5	0.0	0.0
97.25	Top - Section 2	144.8	429.9					0.0	66.2	144.8	496.1	0.0	0.0
100.00	Appertunance(s)	221.2	143.3	3,017.2	0.0	0.0	2,159.5	0.0	80.9	3,238.3	2,383.7	0.0	0.0
105.00		280.5	253.5					0.0	97.2	280.5	350.7	0.0	0.0
110.00	Appertunance(s)	273.9	244.3	2,859.6	0.0	0.0	1,716.8	0.0	97.2	3,133.5	2,058.4	0.0	0.0
115.00		214.7	235.2					0.0	41.3	214.7	276.5	0.0	0.0
118.00	Appertunance(s)	131.7	136.8	929.4	0.0	0.0	1,357.5	0.0	24.8	1,061.1	1,519.0	0.0	0.0
120.00		180.2	89.4					0.0	14.0	180.2	103.3	0.0	0.0
125.00		252.0	217.0					0.0	34.9	252.0	251.9	0.0	0.0
130.00		148.3	207.9					0.0	34.9	148.3	242.8	0.0	0.0
131.00	Appertunance(s)	119.9	40.5	3,267.2	0.0	0.0	2,710.2	0.0	7.0	3,387.2	2,757.6	0.0	0.0
135.00		165.6	158.3					0.0	13.5	165.6	171.8	0.0	0.0
138.00	Appertunance(s)	115.7	114.9	2,970.4	0.0	3,824.4	1,895.8	0.0	10.2	3,086.1	2,020.9	0.0	0.0
140.00		45.8	74.8					0.0	0.0	45.8	74.8	0.0	0.0
Totals:										24,057.7	36,565.9	0.00	0.00

Load Case: 0.9D + 1.6W

93 mph with No Ice (Reduced DL)

23 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-36.53	-23.94	0.00	-2,433.90	0.00	2,433.90	5,497.77	2,748.88	10,504.0	5,259.85	0.00	0.00	0.469
5.00	-35.34	-23.72	0.00	-2,314.18	0.00	2,314.18	5,379.84	2,689.92	10,055.9	5,035.45	0.09	-0.17	0.466
10.00	-33.98	-23.49	0.00	-2,195.59	0.00	2,195.59	5,261.92	2,630.96	9,617.62	4,815.96	0.35	-0.33	0.462
15.00	-32.64	-23.27	0.00	-2,078.14	0.00	2,078.14	5,144.00	2,572.00	9,189.04	4,601.35	0.80	-0.51	0.458
20.00	-31.33	-23.04	0.00	-1,961.81	0.00	1,961.81	5,026.07	2,513.04	8,770.23	4,391.63	1.42	-0.68	0.453
25.00	-30.05	-22.82	0.00	-1,846.61	0.00	1,846.61	4,908.15	2,454.08	8,361.19	4,186.81	2.22	-0.85	0.447
30.00	-28.79	-22.59	0.00	-1,732.54	0.00	1,732.54	4,790.23	2,395.11	7,961.92	3,986.88	3.21	-1.03	0.441
35.00	-27.55	-22.35	0.00	-1,619.60	0.00	1,619.60	4,672.31	2,336.15	7,572.42	3,791.84	4.38	-1.21	0.433
40.00	-26.35	-22.11	0.00	-1,507.84	0.00	1,507.84	4,554.38	2,277.19	7,192.68	3,601.69	5.74	-1.38	0.425
45.00	-25.19	-21.94	0.00	-1,397.31	0.00	1,397.31	4,436.46	2,218.23	6,822.72	3,416.43	7.28	-1.56	0.415
46.25	-24.88	-21.81	0.00	-1,369.90	0.00	1,369.90	4,406.98	2,203.49	6,731.76	3,370.88	7.70	-1.61	0.412
50.00	-23.34	-21.65	0.00	-1,288.10	0.00	1,288.10	4,318.54	2,159.27	6,462.53	3,236.07	9.01	-1.74	0.404
51.00	-22.91	-21.52	0.00	-1,266.45	0.00	1,266.45	4,412.85	2,206.43	6,749.84	3,379.93	9.38	-1.78	0.380
55.00	-21.98	-21.27	0.00	-1,180.37	0.00	1,180.37	4,318.52	2,159.26	6,462.46	3,236.03	10.94	-1.92	0.370
60.00	-20.86	-20.97	0.00	-1,074.04	0.00	1,074.04	4,200.59	2,100.30	6,112.04	3,060.56	13.04	-2.09	0.356
65.00	-19.77	-20.68	0.00	-969.17	0.00	969.17	4,082.67	2,041.33	5,771.38	2,889.98	15.31	-2.25	0.340
70.00	-18.70	-20.38	0.00	-865.78	0.00	865.78	3,964.75	1,982.37	5,440.50	2,724.29	17.75	-2.40	0.323
75.00	-17.66	-20.07	0.00	-763.90	0.00	763.90	3,846.82	1,923.41	5,119.38	2,563.49	20.35	-2.56	0.303
80.00	-16.65	-19.77	0.00	-663.54	0.00	663.54	3,728.90	1,864.45	4,808.03	2,407.59	23.11	-2.70	0.280
85.00	-15.68	-19.56	0.00	-564.71	0.00	564.71	3,610.98	1,805.49	4,506.45	2,256.57	26.01	-2.84	0.255
86.00	-13.52	-16.52	0.00	-545.15	0.00	545.15	3,587.39	1,793.70	4,447.30	2,226.96	26.61	-2.87	0.249
90.00	-12.80	-16.29	0.00	-479.05	0.00	479.05	3,493.05	1,746.53	4,214.63	2,110.45	29.05	-2.97	0.231
93.50	-12.19	-16.12	0.00	-422.04	0.00	422.04	3,410.51	1,705.25	4,016.18	2,011.07	31.26	-3.06	0.214
95.00	-11.85	-16.01	0.00	-397.86	0.00	397.86	3,375.13	1,687.57	3,932.59	1,969.22	32.23	-3.09	0.206
97.25	-11.35	-15.85	0.00	-361.84	0.00	361.84	1,102.89	551.44	1,309.83	655.89	33.70	-3.14	0.563
100.00	-9.12	-12.51	0.00	-318.27	0.00	318.27	1,091.10	545.55	1,270.97	636.43	35.53	-3.20	0.509
105.00	-8.74	-12.24	0.00	-255.74	0.00	255.74	1,068.74	534.37	1,200.66	601.22	39.01	-3.44	0.434
110.00	-6.84	-9.01	0.00	-194.55	0.00	194.55	1,045.19	522.60	1,130.92	566.30	42.73	-3.65	0.350
115.00	-6.56	-8.79	0.00	-149.51	0.00	149.51	1,020.46	510.23	1,061.89	531.74	46.65	-3.83	0.288
118.00	-5.11	-7.64	0.00	-123.14	0.00	123.14	1,005.06	502.53	1,020.89	511.20	49.09	-3.93	0.246
120.00	-5.01	-7.46	0.00	-107.87	0.00	107.87	994.55	497.27	993.73	497.61	50.75	-3.98	0.222
125.00	-4.76	-7.20	0.00	-70.59	0.00	70.59	967.45	483.72	926.59	463.98	54.98	-4.10	0.157
130.00	-4.52	-7.03	0.00	-34.61	0.00	34.61	939.16	469.58	860.60	430.94	59.32	-4.18	0.085
131.00	-2.02	-3.45	0.00	-27.58	0.00	27.58	933.36	466.68	847.55	424.41	60.20	-4.19	0.067
135.00	-1.86	-3.28	0.00	-13.76	0.00	13.76	909.69	454.85	795.92	398.55	63.72	-4.22	0.037
138.00	-0.07	-0.05	0.00	-0.10	0.00	0.10	891.44	445.72	757.80	379.46	66.37	-4.23	0.000
140.00	0.00	-0.05	0.00	0.00	0.00	0.00	879.04	439.52	732.69	366.89	68.14	-4.23	0.000

Load Case: 1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice	23 Iterations
Gust Response Factor :1.10	Ice Dead Load Factor :1.00	Wind Importance Factor :1.00
Dead Load Factor :1.20		Ice Importance Factor :1.00
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		58.1	0.0					0.0	0.0	58.1	0.0	0.0	0.0
5.00		115.4	1,837.9					0.0	0.0	115.4	1,837.9	0.0	0.0
10.00		113.5	1,838.3					0.0	261.5	113.5	2,099.8	0.0	0.0
15.00		111.4	1,817.7					0.0	261.5	111.4	2,079.2	0.0	0.0
20.00		109.2	1,790.1					0.0	261.5	109.2	2,051.6	0.0	0.0
25.00		107.0	1,759.0					0.0	261.5	107.0	2,020.5	0.0	0.0
30.00		106.0	1,725.6					0.0	261.5	106.0	1,987.1	0.0	0.0
35.00		107.1	1,690.7					0.0	261.5	107.1	1,952.2	0.0	0.0
40.00		108.8	1,654.6					0.0	261.5	108.8	1,916.1	0.0	0.0
45.00		68.5	1,617.6					0.0	261.5	68.5	1,879.1	0.0	0.0
46.25	Bot - Section 2	56.2	399.4					0.0	65.4	56.2	464.8	0.0	0.0
50.00		53.8	2,113.0					0.0	196.1	53.8	2,309.2	0.0	0.0
51.00	Top - Section 1	56.8	557.3					0.0	52.3	56.8	609.6	0.0	0.0
55.00		102.4	1,264.7					0.0	209.2	102.4	1,473.9	0.0	0.0
60.00		113.8	1,545.1					0.0	261.5	113.8	1,806.6	0.0	0.0
65.00		113.6	1,505.9					0.0	261.5	113.6	1,767.4	0.0	0.0
70.00		113.0	1,466.4					0.0	261.5	113.0	1,727.9	0.0	0.0
75.00		112.3	1,426.5					0.0	261.5	112.3	1,688.0	0.0	0.0
80.00		111.3	1,386.3					0.0	261.5	111.3	1,647.8	0.0	0.0
85.00		66.4	1,345.9					0.0	261.5	66.4	1,607.4	0.0	0.0
86.00	Appertunance(s)	54.7	265.1	675.9	0.0	0.0	5,247.8	0.0	52.3	730.6	5,565.2	0.0	0.0
90.00		81.6	1,041.7					0.0	156.9	81.6	1,198.7	0.0	0.0
93.50	Bot - Section 3	54.2	890.4					0.0	137.3	54.2	1,027.7	0.0	0.0
95.00		40.6	484.6					0.0	58.9	40.6	543.5	0.0	0.0
97.25	Top - Section 2	53.8	717.6					0.0	88.3	53.8	805.9	0.0	0.0
100.00	Appertunance(s)	82.4	365.0	751.0	0.0	0.0	5,910.5	0.0	107.9	833.4	6,383.4	0.0	0.0
105.00		104.8	644.9					0.0	129.7	104.8	774.5	0.0	0.0
110.00	Appertunance(s)	102.9	623.7	737.8	0.0	0.0	4,791.5	0.0	129.7	840.7	5,544.9	0.0	0.0
115.00		80.9	602.4					0.0	55.0	80.9	657.4	0.0	0.0
118.00	Appertunance(s)	49.8	352.4	285.9	0.0	0.0	2,267.4	0.0	33.0	335.7	2,652.8	0.0	0.0
120.00		68.5	231.0					0.0	18.6	68.5	249.7	0.0	0.0
125.00		96.1	559.2					0.0	46.6	96.1	605.8	0.0	0.0
130.00		56.8	537.5					0.0	46.6	56.8	584.0	0.0	0.0
131.00	Appertunance(s)	46.2	105.7	820.9	0.0	0.0	6,460.4	0.0	9.3	867.1	6,575.4	0.0	0.0
135.00		63.9	411.6					0.0	18.0	63.9	429.6	0.0	0.0
138.00	Appertunance(s)	44.9	300.1	835.4	0.0	1,359.8	4,452.8	0.0	13.5	880.3	4,766.4	0.0	0.0
140.00		17.8	196.1					0.0	0.0	17.8	196.1	0.0	0.0
Totals:										7,111.23	71,487.2	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

23 Iterations

Gust Response Factor :1.10

Ice Dead Load Factor :1.00

Wind Importance Factor :1.00

Dead Load Factor :1.20

Ice Importance Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-71.48	-7.08	0.00	-727.68	0.00	727.68	5,497.77	2,748.88	10,504.0	5,259.85	0.00	0.00	0.151
5.00	-69.64	-7.03	0.00	-692.26	0.00	692.26	5,379.84	2,689.92	10,055.9	5,035.45	0.03	-0.05	0.150
10.00	-67.53	-6.97	0.00	-657.11	0.00	657.11	5,261.92	2,630.96	9,617.62	4,815.96	0.11	-0.10	0.149
15.00	-65.45	-6.92	0.00	-622.25	0.00	622.25	5,144.00	2,572.00	9,189.04	4,601.35	0.24	-0.15	0.148
20.00	-63.39	-6.86	0.00	-587.68	0.00	587.68	5,026.07	2,513.04	8,770.23	4,391.63	0.42	-0.20	0.146
25.00	-61.37	-6.80	0.00	-553.39	0.00	553.39	4,908.15	2,454.08	8,361.19	4,186.81	0.66	-0.26	0.145
30.00	-59.37	-6.74	0.00	-519.40	0.00	519.40	4,790.23	2,395.11	7,961.92	3,986.88	0.96	-0.31	0.143
35.00	-57.41	-6.67	0.00	-485.71	0.00	485.71	4,672.31	2,336.15	7,572.42	3,791.84	1.31	-0.36	0.140
40.00	-55.49	-6.60	0.00	-452.35	0.00	452.35	4,554.38	2,277.19	7,192.68	3,601.69	1.72	-0.41	0.138
45.00	-53.61	-6.55	0.00	-419.33	0.00	419.33	4,436.46	2,218.23	6,822.72	3,416.43	2.18	-0.47	0.135
46.25	-53.14	-6.52	0.00	-411.15	0.00	411.15	4,406.98	2,203.49	6,731.76	3,370.88	2.30	-0.48	0.134
50.00	-50.83	-6.47	0.00	-386.71	0.00	386.71	4,318.54	2,159.27	6,462.53	3,236.07	2.70	-0.52	0.131
51.00	-50.22	-6.43	0.00	-380.24	0.00	380.24	4,412.85	2,206.43	6,749.84	3,379.93	2.81	-0.53	0.124
55.00	-48.74	-6.35	0.00	-354.54	0.00	354.54	4,318.52	2,159.26	6,462.46	3,236.03	3.28	-0.58	0.121
60.00	-46.93	-6.26	0.00	-322.79	0.00	322.79	4,200.59	2,100.30	6,112.04	3,060.56	3.91	-0.63	0.117
65.00	-45.16	-6.16	0.00	-291.51	0.00	291.51	4,082.67	2,041.33	5,771.38	2,889.98	4.59	-0.67	0.112
70.00	-43.43	-6.06	0.00	-260.71	0.00	260.71	3,964.75	1,982.37	5,440.50	2,724.29	5.32	-0.72	0.107
75.00	-41.74	-5.96	0.00	-230.40	0.00	230.40	3,846.82	1,923.41	5,119.38	2,563.49	6.10	-0.77	0.101
80.00	-40.09	-5.86	0.00	-200.60	0.00	200.60	3,728.90	1,864.45	4,808.03	2,407.59	6.93	-0.81	0.094
85.00	-38.48	-5.78	0.00	-171.32	0.00	171.32	3,610.98	1,805.49	4,506.45	2,256.57	7.80	-0.85	0.087
86.00	-32.92	-4.98	0.00	-165.54	0.00	165.54	3,587.39	1,793.70	4,447.30	2,226.96	7.98	-0.86	0.084
90.00	-31.72	-4.90	0.00	-145.62	0.00	145.62	3,493.05	1,746.53	4,214.63	2,110.45	8.71	-0.89	0.078
93.50	-30.70	-4.84	0.00	-128.48	0.00	128.48	3,410.51	1,705.25	4,016.18	2,011.07	9.38	-0.92	0.073
95.00	-30.15	-4.79	0.00	-121.23	0.00	121.23	3,375.13	1,687.57	3,932.59	1,969.22	9.67	-0.93	0.071
97.25	-29.35	-4.74	0.00	-110.44	0.00	110.44	1,102.89	551.44	1,309.83	655.89	10.11	-0.95	0.195
100.00	-22.97	-3.81	0.00	-97.42	0.00	97.42	1,091.10	545.55	1,270.97	636.43	10.66	-0.96	0.174
105.00	-22.20	-3.72	0.00	-78.35	0.00	78.35	1,068.74	534.37	1,200.66	601.22	11.71	-1.04	0.151
110.00	-16.67	-2.80	0.00	-59.73	0.00	59.73	1,045.19	522.60	1,130.92	566.30	12.83	-1.10	0.121
115.00	-16.01	-2.71	0.00	-45.75	0.00	45.75	1,020.46	510.23	1,061.89	531.74	14.01	-1.16	0.102
118.00	-13.36	-2.33	0.00	-37.61	0.00	37.61	1,005.06	502.53	1,020.89	511.20	14.75	-1.18	0.087
120.00	-13.11	-2.26	0.00	-32.95	0.00	32.95	994.55	497.27	993.73	497.61	15.25	-1.20	0.079
125.00	-12.51	-2.16	0.00	-21.64	0.00	21.64	967.45	483.72	926.59	463.98	16.53	-1.24	0.060
130.00	-11.92	-2.09	0.00	-10.85	0.00	10.85	939.16	469.58	860.60	430.94	17.84	-1.26	0.038
131.00	-5.37	-1.08	0.00	-8.75	0.00	8.75	933.36	466.68	847.55	424.41	18.10	-1.27	0.026
135.00	-4.94	-1.01	0.00	-4.43	0.00	4.43	909.69	454.85	795.92	398.55	19.17	-1.28	0.017
138.00	-0.20	-0.02	0.00	-0.04	0.00	0.04	891.44	445.72	757.80	379.46	19.97	-1.28	0.000
140.00	0.00	-0.02	0.00	0.00	0.00	0.00	879.04	439.52	732.69	366.89	20.51	-1.28	0.000

Load Case: 1.0D + 1.0W	Serviceability 60 mph	22 Iterations
Gust Response Factor :1.10		Wind Importance Factor :1.00
Dead Load Factor :1.00		
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		43.2	0.0					0.0	0.0	43.2	0.0	0.0	0.0
5.00		85.5	1,245.5					0.0	0.0	85.5	1,245.5	0.0	0.0
10.00		83.7	1,218.5					0.0	217.9	83.7	1,436.4	0.0	0.0
15.00		81.8	1,191.5					0.0	217.9	81.8	1,409.4	0.0	0.0
20.00		80.0	1,164.5					0.0	217.9	80.0	1,382.4	0.0	0.0
25.00		78.1	1,137.5					0.0	217.9	78.1	1,355.4	0.0	0.0
30.00		77.2	1,110.5					0.0	217.9	77.2	1,328.4	0.0	0.0
35.00		77.8	1,083.5					0.0	217.9	77.8	1,301.4	0.0	0.0
40.00		78.8	1,056.5					0.0	217.9	78.8	1,274.4	0.0	0.0
45.00		49.5	1,029.5					0.0	217.9	49.5	1,247.4	0.0	0.0
46.25	Bot - Section 2	40.6	253.1					0.0	54.5	40.6	307.6	0.0	0.0
50.00		38.9	1,518.9					0.0	163.4	38.9	1,682.3	0.0	0.0
51.00	Top - Section 1	41.0	399.9					0.0	43.6	41.0	443.5	0.0	0.0
55.00		73.7	799.8					0.0	174.3	73.7	974.2	0.0	0.0
60.00		81.7	975.5					0.0	217.9	81.7	1,193.4	0.0	0.0
65.00		81.3	948.5					0.0	217.9	81.3	1,166.4	0.0	0.0
70.00		80.6	921.4					0.0	217.9	80.6	1,139.4	0.0	0.0
75.00		79.8	894.4					0.0	217.9	79.8	1,112.4	0.0	0.0
80.00		78.9	867.4					0.0	217.9	78.9	1,085.4	0.0	0.0
85.00		46.9	840.4					0.0	217.9	46.9	1,058.4	0.0	0.0
86.00	Appertunance(s)	38.6	164.8	726.9	0.0	0.0	2,338.5	0.0	43.6	765.5	2,546.9	0.0	0.0
90.00		57.4	648.6					0.0	130.8	57.4	779.4	0.0	0.0
93.50	Bot - Section 3	38.1	553.3					0.0	114.4	38.1	667.8	0.0	0.0
95.00		28.5	322.6					0.0	49.0	28.5	371.6	0.0	0.0
97.25	Top - Section 2	37.7	477.6					0.0	73.6	37.7	551.2	0.0	0.0
100.00	Appertunance(s)	57.5	159.2	784.9	0.0	0.0	2,399.4	0.0	89.9	842.4	2,648.5	0.0	0.0
105.00		73.0	281.6					0.0	108.0	73.0	389.7	0.0	0.0
110.00	Appertunance(s)	71.3	271.5	743.9	0.0	0.0	1,907.6	0.0	108.0	815.2	2,287.1	0.0	0.0
115.00		55.9	261.4					0.0	45.8	55.9	307.2	0.0	0.0
118.00	Appertunance(s)	34.3	152.0	241.8	0.0	0.0	1,508.3	0.0	27.5	276.0	1,687.8	0.0	0.0
120.00		46.9	99.3					0.0	15.5	46.9	114.8	0.0	0.0
125.00		65.5	241.1					0.0	38.8	65.5	279.9	0.0	0.0
130.00		38.6	231.0					0.0	38.8	38.6	269.8	0.0	0.0
131.00	Appertunance(s)	31.2	45.0	850.0	0.0	0.0	3,011.3	0.0	7.8	881.2	3,064.0	0.0	0.0
135.00		43.1	175.9					0.0	15.0	43.1	190.9	0.0	0.0
138.00	Appertunance(s)	30.1	127.7	772.7	0.0	994.9	2,106.5	0.0	11.3	802.8	2,245.4	0.0	0.0
140.00		11.9	83.1					0.0	0.0	11.9	83.1	0.0	0.0
Totals:										6,258.51	40,628.8	0.00	0.00

Load Case: 1.0D + 1.0W

Serviceability 60 mph

22 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-40.63	-6.23	0.00	-635.88	0.00	635.88	5,497.77	2,748.88	10,504.0	5,259.85	0.00	0.00	0.128
5.00	-39.38	-6.17	0.00	-604.73	0.00	604.73	5,379.84	2,689.92	10,055.9	5,035.45	0.02	-0.04	0.127
10.00	-37.94	-6.12	0.00	-573.86	0.00	573.86	5,261.92	2,630.96	9,617.62	4,815.96	0.09	-0.09	0.126
15.00	-36.52	-6.06	0.00	-543.27	0.00	543.27	5,144.00	2,572.00	9,189.04	4,601.35	0.21	-0.13	0.125
20.00	-35.13	-6.01	0.00	-512.96	0.00	512.96	5,026.07	2,513.04	8,770.23	4,391.63	0.37	-0.18	0.124
25.00	-33.77	-5.95	0.00	-482.93	0.00	482.93	4,908.15	2,454.08	8,361.19	4,186.81	0.58	-0.22	0.122
30.00	-32.44	-5.89	0.00	-453.17	0.00	453.17	4,790.23	2,395.11	7,961.92	3,986.88	0.84	-0.27	0.120
35.00	-31.14	-5.83	0.00	-423.70	0.00	423.70	4,672.31	2,336.15	7,572.42	3,791.84	1.14	-0.32	0.118
40.00	-29.86	-5.77	0.00	-394.53	0.00	394.53	4,554.38	2,277.19	7,192.68	3,601.69	1.50	-0.36	0.116
45.00	-28.61	-5.73	0.00	-365.67	0.00	365.67	4,436.46	2,218.23	6,822.72	3,416.43	1.90	-0.41	0.113
46.25	-28.30	-5.70	0.00	-358.50	0.00	358.50	4,406.98	2,203.49	6,731.76	3,370.88	2.01	-0.42	0.113
50.00	-26.61	-5.66	0.00	-337.13	0.00	337.13	4,318.54	2,159.27	6,462.53	3,236.07	2.36	-0.46	0.110
51.00	-26.17	-5.62	0.00	-331.48	0.00	331.48	4,412.85	2,206.43	6,749.84	3,379.93	2.45	-0.47	0.104
55.00	-25.19	-5.56	0.00	-308.98	0.00	308.98	4,318.52	2,159.26	6,462.46	3,236.03	2.86	-0.50	0.101
60.00	-23.99	-5.48	0.00	-281.19	0.00	281.19	4,200.59	2,100.30	6,112.04	3,060.56	3.41	-0.55	0.098
65.00	-22.82	-5.41	0.00	-253.77	0.00	253.77	4,082.67	2,041.33	5,771.38	2,889.98	4.00	-0.59	0.093
70.00	-21.68	-5.33	0.00	-226.73	0.00	226.73	3,964.75	1,982.37	5,440.50	2,724.29	4.64	-0.63	0.089
75.00	-20.57	-5.25	0.00	-200.07	0.00	200.07	3,846.82	1,923.41	5,119.38	2,563.49	5.32	-0.67	0.083
80.00	-19.48	-5.17	0.00	-173.81	0.00	173.81	3,728.90	1,864.45	4,808.03	2,407.59	6.04	-0.71	0.077
85.00	-18.42	-5.12	0.00	-147.95	0.00	147.95	3,610.98	1,805.49	4,506.45	2,256.57	6.80	-0.74	0.071
86.00	-15.88	-4.33	0.00	-142.83	0.00	142.83	3,587.39	1,793.70	4,447.30	2,226.96	6.96	-0.75	0.069
90.00	-15.10	-4.26	0.00	-125.52	0.00	125.52	3,493.05	1,746.53	4,214.63	2,110.45	7.60	-0.78	0.064
93.50	-14.43	-4.22	0.00	-110.60	0.00	110.60	3,410.51	1,705.25	4,016.18	2,011.07	8.18	-0.80	0.059
95.00	-14.06	-4.19	0.00	-104.27	0.00	104.27	3,375.13	1,687.57	3,932.59	1,969.22	8.43	-0.81	0.057
97.25	-13.51	-4.15	0.00	-94.84	0.00	94.84	1,102.89	551.44	1,309.83	655.89	8.82	-0.82	0.157
100.00	-10.87	-3.28	0.00	-83.43	0.00	83.43	1,091.10	545.55	1,270.97	636.43	9.30	-0.84	0.141
105.00	-10.48	-3.21	0.00	-67.06	0.00	67.06	1,068.74	534.37	1,200.66	601.22	10.21	-0.90	0.121
110.00	-8.20	-2.36	0.00	-51.02	0.00	51.02	1,045.19	522.60	1,130.92	566.30	11.18	-0.96	0.098
115.00	-7.90	-2.31	0.00	-39.21	0.00	39.21	1,020.46	510.23	1,061.89	531.74	12.21	-1.00	0.081
118.00	-6.21	-2.00	0.00	-32.29	0.00	32.29	1,005.06	502.53	1,020.89	511.20	12.85	-1.03	0.069
120.00	-6.10	-1.96	0.00	-28.29	0.00	28.29	994.55	497.27	993.73	497.61	13.28	-1.04	0.063
125.00	-5.82	-1.89	0.00	-18.51	0.00	18.51	967.45	483.72	926.59	463.98	14.39	-1.07	0.046
130.00	-5.55	-1.85	0.00	-9.07	0.00	9.07	939.16	469.58	860.60	430.94	15.53	-1.09	0.027
131.00	-2.50	-0.91	0.00	-7.22	0.00	7.22	933.36	466.68	847.55	424.41	15.76	-1.10	0.020
135.00	-2.31	-0.86	0.00	-3.60	0.00	3.60	909.69	454.85	795.92	398.55	16.68	-1.10	0.012
138.00	-0.08	-0.01	0.00	-0.03	0.00	0.03	891.44	445.72	757.80	379.46	17.38	-1.11	0.000
140.00	0.00	-0.01	0.00	0.00	0.00	0.00	879.04	439.52	732.69	366.89	17.84	-1.11	0.000

Equivalent Lateral Forces Method Analysis

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

Spectral Response Acceleration for Short Period (S_s):	0.22
Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.07
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a :	1.60
Site Coefficient F_v :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.24
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.11
Seismic Response Coefficient (C_s):	0.03
Upper Limit C_s	0.03
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	2.15
Redundancy Factor (ρ):	1.30
Seismic Force Distribution Exponent (k):	1.83
Total Unfactored Dead Load:	40.63 k
Seismic Base Shear (E):	1.73 k

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):	0.22
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.07
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}):	0.24
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.11
Period Based on Rayleigh Method (sec):	2.15
Redundancy Factor (ρ):	1.30

Load Case (1.2 + 0.2Sds) * DL + E EFLM

Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
36	139.00	83	1.863	1.841	1.090	0.427	31	71
35	136.50	139	1.797	1.523	0.972	0.376	45	118
34	133.00	191	1.706	1.144	0.823	0.310	51	163
33	130.50	53	1.642	0.915	0.729	0.266	12	45
32	127.50	270	1.568	0.682	0.627	0.217	51	230
31	122.50	280	1.447	0.379	0.482	0.144	35	239
30	119.00	115	1.366	0.222	0.397	0.100	10	98
29	116.50	179	1.309	0.133	0.344	0.072	11	153
28	112.50	307	1.220	0.025	0.270	0.033	9	262
27	107.50	380	1.114	-0.061	0.196	-0.007	-2	324
26	102.50	390	1.013	-0.106	0.138	-0.035	-12	332
25	98.63	249	0.938	-0.120	0.103	-0.050	-11	212
24	96.13	551	0.891	-0.122	0.084	-0.055	-26	470
23	94.25	372	0.857	-0.120	0.072	-0.058	-19	317
22	91.75	668	0.812	-0.114	0.057	-0.059	-34	569
21	88.00	779	0.747	-0.100	0.040	-0.056	-38	665
20	85.50	208	0.705	-0.088	0.031	-0.051	-9	178
19	82.50	1,058	0.656	-0.073	0.022	-0.041	-38	902
18	77.50	1,085	0.579	-0.045	0.012	-0.021	-19	925
17	72.50	1,112	0.507	-0.019	0.007	0.003	3	948
16	67.50	1,139	0.439	0.005	0.006	0.026	26	971
15	62.50	1,166	0.377	0.025	0.007	0.044	44	995
14	57.50	1,193	0.319	0.041	0.011	0.056	58	1,018
13	53.00	974	0.271	0.051	0.015	0.062	52	831
12	50.50	443	0.246	0.056	0.018	0.064	25	378
11	48.13	1,682	0.223	0.060	0.020	0.065	95	1,434
10	45.63	308	0.201	0.063	0.023	0.066	18	262
9	42.50	1,247	0.174	0.066	0.027	0.066	71	1,064
8	37.50	1,274	0.136	0.069	0.032	0.065	71	1,087
7	32.50	1,301	0.102	0.071	0.037	0.063	71	1,110
6	27.50	1,328	0.073	0.072	0.040	0.061	71	1,133
5	22.50	1,355	0.049	0.071	0.042	0.060	70	1,156
4	17.50	1,382	0.030	0.068	0.040	0.057	68	1,179
3	12.50	1,409	0.015	0.061	0.036	0.052	63	1,202

Site Number: 310968

Code: ANSI/TIA-222-G

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Site Name: WSPT-Westport Rebuild CT, CT

Engineering Number: OAA687996_C3_02

10/31/2016 5:09:01 PM

Customer: AT&T MOBILITY

2	7.50	1,436	0.005	0.046	0.026	0.042	52	1,225
1	2.50	1,246	0.001	0.019	0.010	0.020	21	1,062
Andrew DB589	138.00	12	1.836	1.709	1.041	0.407	4	10
6' Omni	138.00	25	1.836	1.709	1.041	0.407	9	21
12' Omni	138.00	80	1.836	1.709	1.041	0.407	28	68
12' Dipole	138.00	40	1.836	1.709	1.041	0.407	14	34
6' FM antenna	138.00	30	1.836	1.709	1.041	0.407	11	26
4' HP Dish	138.00	170	1.836	1.709	1.041	0.407	60	145
Flat Platform w/ Han	138.00	1,750	1.836	1.709	1.041	0.407	617	1,492
Alcatel-Lucent 800 M	131.00	192	1.655	0.958	0.747	0.274	46	164
Alcatel-Lucent 4x40W	131.00	273	1.655	0.958	0.747	0.274	65	233
Alcatel-Lucent TD-RR	131.00	210	1.655	0.958	0.747	0.274	50	179
RFS RFS APXV9TM14-	131.00	165	1.655	0.958	0.747	0.274	39	141
RFS APXVSP18-C-A20	131.00	171	1.655	0.958	0.747	0.274	41	146
Flat Platform w/ Han	131.00	2,000	1.655	0.958	0.747	0.274	475	1,705
Andrew DB586	118.00	8	1.343	0.184	0.375	0.089	1	7
Flat Low Profile Pla	118.00	1,500	1.343	0.184	0.375	0.089	115	1,279
RFS FD9R6004/2C-3L	110.00	16	1.167	-0.024	0.231	0.012	0	13
Diamond X50A	110.00	5	1.167	-0.024	0.231	0.012	0	4
Alcatel-Lucent RRH2x	110.00	132	1.167	-0.024	0.231	0.012	1	113
Antel BXA-171063-8BF	110.00	32	1.167	-0.024	0.231	0.012	0	27
Antel BXA-171063-12C	110.00	45	1.167	-0.024	0.231	0.012	0	38
RFS DB-T1-6Z-8AB-0Z	110.00	44	1.167	-0.024	0.231	0.012	0	38
Antel BXA-70080/6CF	110.00	54	1.167	-0.024	0.231	0.012	1	46
Antel BXA-70063/6CF	110.00	15	1.167	-0.024	0.231	0.012	0	13
Powerwave P65-16-XL-	110.00	66	1.167	-0.024	0.231	0.012	1	56
Round Low Profile PI	110.00	1,500	1.167	-0.024	0.231	0.012	15	1,279
Powerwave Allgon 702	100.00	26	0.964	-0.117	0.114	-0.045	-1	23
Powerwave LGP21401	100.00	85	0.964	-0.117	0.114	-0.045	-3	72
Powerwave LGP21401	100.00	85	0.964	-0.117	0.114	-0.045	-3	72
Raycap DC6-48-60-18-	100.00	32	0.964	-0.117	0.114	-0.045	-1	27
Ericsson RRUS-11 (50	100.00	150	0.964	-0.117	0.114	-0.045	-6	128
Ericsson RRUS 32 B2	100.00	159	0.964	-0.117	0.114	-0.045	-6	136
Powerwave 7770.00	100.00	210	0.964	-0.117	0.114	-0.045	-8	179
CCI HPA-65R-BUU-H6	100.00	153	0.964	-0.117	0.114	-0.045	-6	130
Flat Low Profile Pla	100.00	1,500	0.964	-0.117	0.114	-0.045	-59	1,279
RFS ATMAA1412D-1A20	86.00	39	0.713	-0.091	0.032	-0.052	-2	33
Ericsson RRUS 11 B12	86.00	152	0.713	-0.091	0.032	-0.052	-7	130
Ericsson AIR 21, 1.3	86.00	249	0.713	-0.091	0.032	-0.052	-11	212
Ericsson AIR 21, 1.3	86.00	244	0.713	-0.091	0.032	-0.052	-11	208
Andrew LNX-6515DS-VT	86.00	154	0.713	-0.091	0.032	-0.052	-7	131
Flat Low Profile Pla	86.00	1,500	0.713	-0.091	0.032	-0.052	-67	1,279
		40,629	75.490	22.978	22.938	6.450	2,319	34,642

Load Case (1.2 + 0.2Sds) * DL + E EMAM

Seismic Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
36	139.00	83	1.863	1.841	1.090	0.427	31	71
35	136.50	139	1.797	1.523	0.972	0.376	45	118
34	133.00	191	1.706	1.144	0.823	0.310	51	163
33	130.50	53	1.642	0.915	0.729	0.266	12	45
32	127.50	270	1.568	0.682	0.627	0.217	51	230
31	122.50	280	1.447	0.379	0.482	0.144	35	239
30	119.00	115	1.366	0.222	0.397	0.100	10	98
29	116.50	179	1.309	0.133	0.344	0.072	11	153
28	112.50	307	1.220	0.025	0.270	0.033	9	262
27	107.50	380	1.114	-0.061	0.196	-0.007	-2	324
26	102.50	390	1.013	-0.106	0.138	-0.035	-12	332
25	98.63	249	0.938	-0.120	0.103	-0.050	-11	212

24	96.13	551	0.891	-0.122	0.084	-0.055	-26	470
23	94.25	372	0.857	-0.120	0.072	-0.058	-19	317
22	91.75	668	0.812	-0.114	0.057	-0.059	-34	569
21	88.00	779	0.747	-0.100	0.040	-0.056	-38	665
20	85.50	208	0.705	-0.088	0.031	-0.051	-9	178
19	82.50	1,058	0.656	-0.073	0.022	-0.041	-38	902
18	77.50	1,085	0.579	-0.045	0.012	-0.021	-19	925
17	72.50	1,112	0.507	-0.019	0.007	0.003	3	948
16	67.50	1,139	0.439	0.005	0.006	0.026	26	971
15	62.50	1,166	0.377	0.025	0.007	0.044	44	995
14	57.50	1,193	0.319	0.041	0.011	0.056	58	1,018
13	53.00	974	0.271	0.051	0.015	0.062	52	831
12	50.50	443	0.246	0.056	0.018	0.064	25	378
11	48.13	1,682	0.223	0.060	0.020	0.065	95	1,434
10	45.63	308	0.201	0.063	0.023	0.066	18	262
9	42.50	1,247	0.174	0.066	0.027	0.066	71	1,064
8	37.50	1,274	0.136	0.069	0.032	0.065	71	1,087
7	32.50	1,301	0.102	0.071	0.037	0.063	71	1,110
6	27.50	1,328	0.073	0.072	0.040	0.061	71	1,133
5	22.50	1,355	0.049	0.071	0.042	0.060	70	1,156
4	17.50	1,382	0.030	0.068	0.040	0.057	68	1,179
3	12.50	1,409	0.015	0.061	0.036	0.052	63	1,202
2	7.50	1,436	0.005	0.046	0.026	0.042	52	1,225
1	2.50	1,246	0.001	0.019	0.010	0.020	21	1,062
Andrew DB589	138.00	12	1.836	1.709	1.041	0.407	4	10
6' Omni	138.00	25	1.836	1.709	1.041	0.407	9	21
12' Omni	138.00	80	1.836	1.709	1.041	0.407	28	68
12' Dipole	138.00	40	1.836	1.709	1.041	0.407	14	34
6' FM antenna	138.00	30	1.836	1.709	1.041	0.407	11	26
4' HP Dish	138.00	170	1.836	1.709	1.041	0.407	60	145
Flat Platform w/ Han	138.00	1,750	1.836	1.709	1.041	0.407	617	1,492
Alcatel-Lucent 800 M	131.00	192	1.655	0.958	0.747	0.274	46	164
Alcatel-Lucent 4x40W	131.00	273	1.655	0.958	0.747	0.274	65	233
Alcatel-Lucent TD-RR	131.00	210	1.655	0.958	0.747	0.274	50	179
RFS RFS APXV9TM14-	131.00	165	1.655	0.958	0.747	0.274	39	141
RFS APXVSP18-C-A20	131.00	171	1.655	0.958	0.747	0.274	41	146
Flat Platform w/ Han	131.00	2,000	1.655	0.958	0.747	0.274	475	1,705
Andrew DB586	118.00	8	1.343	0.184	0.375	0.089	1	7
Flat Low Profile Pla	118.00	1,500	1.343	0.184	0.375	0.089	115	1,279
RFS FD9R6004/2C-3L	110.00	16	1.167	-0.024	0.231	0.012	0	13
Diamond X50A	110.00	5	1.167	-0.024	0.231	0.012	0	4
Alcatel-Lucent RRH2x	110.00	132	1.167	-0.024	0.231	0.012	1	113
Antel BXA-171063-8BF	110.00	32	1.167	-0.024	0.231	0.012	0	27
Antel BXA-171063-12C	110.00	45	1.167	-0.024	0.231	0.012	0	38
RFS DB-T1-6Z-8AB-0Z	110.00	44	1.167	-0.024	0.231	0.012	0	38
Antel BXA-70080/6CF	110.00	54	1.167	-0.024	0.231	0.012	1	46
Antel BXA-70063/6CF	110.00	15	1.167	-0.024	0.231	0.012	0	13
Powerwave P65-16-XL-	110.00	66	1.167	-0.024	0.231	0.012	1	56
Round Low Profile PI	110.00	1,500	1.167	-0.024	0.231	0.012	15	1,279
Powerwave Allgon 702	100.00	26	0.964	-0.117	0.114	-0.045	-1	23
Powerwave LGP21401	100.00	85	0.964	-0.117	0.114	-0.045	-3	72
Powerwave LGP21401	100.00	85	0.964	-0.117	0.114	-0.045	-3	72
Raycap DC6-48-60-18-	100.00	32	0.964	-0.117	0.114	-0.045	-1	27
Ericsson RRUS-11 (50	100.00	150	0.964	-0.117	0.114	-0.045	-6	128
Ericsson RRUS 32 B2	100.00	159	0.964	-0.117	0.114	-0.045	-6	136
Powerwave 7770.00	100.00	210	0.964	-0.117	0.114	-0.045	-8	179
CCI HPA-65R-BUU-H6	100.00	153	0.964	-0.117	0.114	-0.045	-6	130
Flat Low Profile Pla	100.00	1,500	0.964	-0.117	0.114	-0.045	-59	1,279
RFS ATMAA1412D-1A20	86.00	39	0.713	-0.091	0.032	-0.052	-2	33
Ericsson RRUS 11 B12	86.00	152	0.713	-0.091	0.032	-0.052	-7	130
Ericsson AIR 21, 1.3	86.00	249	0.713	-0.091	0.032	-0.052	-11	212
Ericsson AIR 21, 1.3	86.00	244	0.713	-0.091	0.032	-0.052	-11	208
Andrew LNX-6515DS-VT	86.00	154	0.713	-0.091	0.032	-0.052	-7	131
Flat Low Profile Pla	86.00	1,500	0.713	-0.091	0.032	-0.052	-67	1,279

			40,629	75,490	22,978	22,938	6,450	2,319	34,642
<u>Load Case (0.9 - 0.2Sds) * DL + E ELFM</u>			Seismic (Reduced DL) Equivalent Lateral Forces Method						
Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)	
36	139.00	83	1.863	1.841	1.090	0.427	31	71	
35	136.50	139	1.797	1.523	0.972	0.376	45	118	
34	133.00	191	1.706	1.144	0.823	0.310	51	163	
33	130.50	53	1.642	0.915	0.729	0.266	12	45	
32	127.50	270	1.568	0.682	0.627	0.217	51	230	
31	122.50	280	1.447	0.379	0.482	0.144	35	239	
30	119.00	115	1.366	0.222	0.397	0.100	10	98	
29	116.50	179	1.309	0.133	0.344	0.072	11	153	
28	112.50	307	1.220	0.025	0.270	0.033	9	262	
27	107.50	380	1.114	-0.061	0.196	-0.007	-2	324	
26	102.50	390	1.013	-0.106	0.138	-0.035	-12	332	
25	98.63	249	0.938	-0.120	0.103	-0.050	-11	212	
24	96.13	551	0.891	-0.122	0.084	-0.055	-26	470	
23	94.25	372	0.857	-0.120	0.072	-0.058	-19	317	
22	91.75	668	0.812	-0.114	0.057	-0.059	-34	569	
21	88.00	779	0.747	-0.100	0.040	-0.056	-38	665	
20	85.50	208	0.705	-0.088	0.031	-0.051	-9	178	
19	82.50	1,058	0.656	-0.073	0.022	-0.041	-38	902	
18	77.50	1,085	0.579	-0.045	0.012	-0.021	-19	925	
17	72.50	1,112	0.507	-0.019	0.007	0.003	3	948	
16	67.50	1,139	0.439	0.005	0.006	0.026	26	971	
15	62.50	1,166	0.377	0.025	0.007	0.044	44	995	
14	57.50	1,193	0.319	0.041	0.011	0.056	58	1,018	
13	53.00	974	0.271	0.051	0.015	0.062	52	831	
12	50.50	443	0.246	0.056	0.018	0.064	25	378	
11	48.13	1,682	0.223	0.060	0.020	0.065	95	1,434	
10	45.63	308	0.201	0.063	0.023	0.066	18	262	
9	42.50	1,247	0.174	0.066	0.027	0.066	71	1,064	
8	37.50	1,274	0.136	0.069	0.032	0.065	71	1,087	
7	32.50	1,301	0.102	0.071	0.037	0.063	71	1,110	
6	27.50	1,328	0.073	0.072	0.040	0.061	71	1,133	
5	22.50	1,355	0.049	0.071	0.042	0.060	70	1,156	
4	17.50	1,382	0.030	0.068	0.040	0.057	68	1,179	
3	12.50	1,409	0.015	0.061	0.036	0.052	63	1,202	
2	7.50	1,436	0.005	0.046	0.026	0.042	52	1,225	
1	2.50	1,246	0.001	0.019	0.010	0.020	21	1,062	
Andrew DB589	138.00	12	1.836	1.709	1.041	0.407	4	10	
6' Omni	138.00	25	1.836	1.709	1.041	0.407	9	21	
12' Omni	138.00	80	1.836	1.709	1.041	0.407	28	68	
12' Dipole	138.00	40	1.836	1.709	1.041	0.407	14	34	
6' FM antenna	138.00	30	1.836	1.709	1.041	0.407	11	26	
4' HP Dish	138.00	170	1.836	1.709	1.041	0.407	60	145	
Flat Platform w/ Han	138.00	1,750	1.836	1.709	1.041	0.407	617	1,492	
Alcatel-Lucent 800 M	131.00	192	1.655	0.958	0.747	0.274	46	164	
Alcatel-Lucent 4x40W	131.00	273	1.655	0.958	0.747	0.274	65	233	
Alcatel-Lucent TD-RR	131.00	210	1.655	0.958	0.747	0.274	50	179	
RFS RFS APXV9TM14-	131.00	165	1.655	0.958	0.747	0.274	39	141	
RFS APXVSPP18-C-A20	131.00	171	1.655	0.958	0.747	0.274	41	146	
Flat Platform w/ Han	131.00	2,000	1.655	0.958	0.747	0.274	475	1,705	
Andrew DB586	118.00	8	1.343	0.184	0.375	0.089	1	7	
Flat Low Profile Pla	118.00	1,500	1.343	0.184	0.375	0.089	115	1,279	
RFS FD9R6004/2C-3L	110.00	16	1.167	-0.024	0.231	0.012	0	13	
Diamond X50A	110.00	5	1.167	-0.024	0.231	0.012	0	4	
Alcatel-Lucent RRH2x	110.00	132	1.167	-0.024	0.231	0.012	1	113	

Antel BXA-171063-8BF	110.00	32	1.167	-0.024	0.231	0.012	0	27
Antel BXA-171063-12C	110.00	45	1.167	-0.024	0.231	0.012	0	38
RFS DB-T1-6Z-8AB-0Z	110.00	44	1.167	-0.024	0.231	0.012	0	38
Antel BXA-70080/6CF	110.00	54	1.167	-0.024	0.231	0.012	1	46
Antel BXA-70063/6CF	110.00	15	1.167	-0.024	0.231	0.012	0	13
Powerwave P65-16-XL-	110.00	66	1.167	-0.024	0.231	0.012	1	56
Round Low Profile PI	110.00	1,500	1.167	-0.024	0.231	0.012	15	1,279
Powerwave Allgon 702	100.00	26	0.964	-0.117	0.114	-0.045	-1	23
Powerwave LGP21401	100.00	85	0.964	-0.117	0.114	-0.045	-3	72
Powerwave LGP21401	100.00	85	0.964	-0.117	0.114	-0.045	-3	72
Raycap DC6-48-60-18-	100.00	32	0.964	-0.117	0.114	-0.045	-1	27
Ericsson RRUS-11 (50	100.00	150	0.964	-0.117	0.114	-0.045	-6	128
Ericsson RRUS 32 B2	100.00	159	0.964	-0.117	0.114	-0.045	-6	136
Powerwave 7770.00	100.00	210	0.964	-0.117	0.114	-0.045	-8	179
CCI HPA-65R-BUU-H6	100.00	153	0.964	-0.117	0.114	-0.045	-6	130
Flat Low Profile Pla	100.00	1,500	0.964	-0.117	0.114	-0.045	-59	1,279
RFS ATMAA1412D-1A20	86.00	39	0.713	-0.091	0.032	-0.052	-2	33
Ericsson RRUS 11 B12	86.00	152	0.713	-0.091	0.032	-0.052	-7	130
Ericsson AIR 21, 1.3	86.00	249	0.713	-0.091	0.032	-0.052	-11	212
Ericsson AIR 21, 1.3	86.00	244	0.713	-0.091	0.032	-0.052	-11	208
Andrew LNX-6515DS-VT	86.00	154	0.713	-0.091	0.032	-0.052	-7	131
Flat Low Profile Pla	86.00	1,500	0.713	-0.091	0.032	-0.052	-67	1,279
		40,629	75.490	22.978	22.938	6.450	2,319	34,642

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

Seismic (Reduced DL) Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
36	139.00	83	1.863	1.841	1.090	0.427	31	71
35	136.50	139	1.797	1.523	0.972	0.376	45	118
34	133.00	191	1.706	1.144	0.823	0.310	51	163
33	130.50	53	1.642	0.915	0.729	0.266	12	45
32	127.50	270	1.568	0.682	0.627	0.217	51	230
31	122.50	280	1.447	0.379	0.482	0.144	35	239
30	119.00	115	1.366	0.222	0.397	0.100	10	98
29	116.50	179	1.309	0.133	0.344	0.072	11	153
28	112.50	307	1.220	0.025	0.270	0.033	9	262
27	107.50	380	1.114	-0.061	0.196	-0.007	-2	324
26	102.50	390	1.013	-0.106	0.138	-0.035	-12	332
25	98.63	249	0.938	-0.120	0.103	-0.050	-11	212
24	96.13	551	0.891	-0.122	0.084	-0.055	-26	470
23	94.25	372	0.857	-0.120	0.072	-0.058	-19	317
22	91.75	668	0.812	-0.114	0.057	-0.059	-34	569
21	88.00	779	0.747	-0.100	0.040	-0.056	-38	665
20	85.50	208	0.705	-0.088	0.031	-0.051	-9	178
19	82.50	1,058	0.656	-0.073	0.022	-0.041	-38	902
18	77.50	1,085	0.579	-0.045	0.012	-0.021	-19	925
17	72.50	1,112	0.507	-0.019	0.007	0.003	3	948
16	67.50	1,139	0.439	0.005	0.006	0.026	26	971
15	62.50	1,166	0.377	0.025	0.007	0.044	44	995
14	57.50	1,193	0.319	0.041	0.011	0.056	58	1,018
13	53.00	974	0.271	0.051	0.015	0.062	52	831
12	50.50	443	0.246	0.056	0.018	0.064	25	378
11	48.13	1,682	0.223	0.060	0.020	0.065	95	1,434
10	45.63	308	0.201	0.063	0.023	0.066	18	262
9	42.50	1,247	0.174	0.066	0.027	0.066	71	1,064
8	37.50	1,274	0.136	0.069	0.032	0.065	71	1,087
7	32.50	1,301	0.102	0.071	0.037	0.063	71	1,110
6	27.50	1,328	0.073	0.072	0.040	0.061	71	1,133
5	22.50	1,355	0.049	0.071	0.042	0.060	70	1,156

4	17.50	1,382	0.030	0.068	0.040	0.057	68	1,179
3	12.50	1,409	0.015	0.061	0.036	0.052	63	1,202
2	7.50	1,436	0.005	0.046	0.026	0.042	52	1,225
1	2.50	1,246	0.001	0.019	0.010	0.020	21	1,062
Andrew DB589	138.00	12	1.836	1.709	1.041	0.407	4	10
6' Omni	138.00	25	1.836	1.709	1.041	0.407	9	21
12' Omni	138.00	80	1.836	1.709	1.041	0.407	28	68
12' Dipole	138.00	40	1.836	1.709	1.041	0.407	14	34
6' FM antenna	138.00	30	1.836	1.709	1.041	0.407	11	26
4' HP Dish	138.00	170	1.836	1.709	1.041	0.407	60	145
Flat Platform w/ Han	138.00	1,750	1.836	1.709	1.041	0.407	617	1,492
Alcatel-Lucent 800 M	131.00	192	1.655	0.958	0.747	0.274	46	164
Alcatel-Lucent 4x40W	131.00	273	1.655	0.958	0.747	0.274	65	233
Alcatel-Lucent TD-RR	131.00	210	1.655	0.958	0.747	0.274	50	179
RFS RFS APXV9TM14-	131.00	165	1.655	0.958	0.747	0.274	39	141
RFS APXVSP18-C-A20	131.00	171	1.655	0.958	0.747	0.274	41	146
Flat Platform w/ Han	131.00	2,000	1.655	0.958	0.747	0.274	475	1,705
Andrew DB586	118.00	8	1.343	0.184	0.375	0.089	1	7
Flat Low Profile Pla	118.00	1,500	1.343	0.184	0.375	0.089	115	1,279
RFS FD9R6004/2C-3L	110.00	16	1.167	-0.024	0.231	0.012	0	13
Diamond X50A	110.00	5	1.167	-0.024	0.231	0.012	0	4
Alcatel-Lucent RRH2x	110.00	132	1.167	-0.024	0.231	0.012	1	113
Antel BXA-171063-8BF	110.00	32	1.167	-0.024	0.231	0.012	0	27
Antel BXA-171063-12C	110.00	45	1.167	-0.024	0.231	0.012	0	38
RFS DB-T1-6Z-8AB-0Z	110.00	44	1.167	-0.024	0.231	0.012	0	38
Antel BXA-70080/6CF	110.00	54	1.167	-0.024	0.231	0.012	1	46
Antel BXA-70063/6CF	110.00	15	1.167	-0.024	0.231	0.012	0	13
Powerwave P65-16-XL-	110.00	66	1.167	-0.024	0.231	0.012	1	56
Round Low Profile PI	110.00	1,500	1.167	-0.024	0.231	0.012	15	1,279
Powerwave Allgon 702	100.00	26	0.964	-0.117	0.114	-0.045	-1	23
Powerwave LGP21401	100.00	85	0.964	-0.117	0.114	-0.045	-3	72
Powerwave LGP21401	100.00	85	0.964	-0.117	0.114	-0.045	-3	72
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Flat Low Profile Pla	86.00	1,500	0.713	-0.091	0.032	-0.052	-67	1,279
		40,629	75.490	22.978	22.938	6.450	2,319	34,642

Site Number: 310968

Code: ANSI/TIA-222-G

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Site Name: WSPT-Westport Rebuild CT, CT Engineering Number:OAA687996_C3_02

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Customer: AT&T MOBILITY

Analysis Summary

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	23.96	0.00	48.72	0.00	0.00	2460.98	97.25	0.58
0.9D + 1.6W	23.94	0.00	36.53	0.00	0.00	2433.90	97.25	0.56
1.2D + 1.0Di + 1.0Wi	7.08	0.00	71.48	0.00	0.00	727.68	97.25	0.20
(1.2 + 0.2Sds) * DL + E ELFM	1.73	0.00	49.13	0.00	0.00	189.51	97.25	0.06
(1.2 + 0.2Sds) * DL + E EMAM	2.30	0.00	49.12	0.00	0.00	248.86	97.25	0.12
(0.9 - 0.2Sds) * DL + E ELFM	1.73	0.00	33.58	0.00	0.00	186.85	97.25	0.06
(0.9 - 0.2Sds) * DL + E EMAM	2.30	0.00	33.58	0.00	0.00	244.92	97.25	0.11
1.0D + 1.0W	6.23	0.00	40.63	0.00	0.00	635.88	97.25	0.16

Site Number: 310968

Code: ANSI/TIA-222-G

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Site Name: WSPT-Westport Rebuild CT, CT Engineering Number:OAA687996_C3_02

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Customer: AT&T MOBILITY

Base Summary

Reactions

Original Design			Analysis			Moment Design %
Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment (kip-ft)	Axial (kip)	Shear (kip)	
2,753.00	37.00	27.30	2,460.98	71.48	23.96	66.22

Base Plate

Yield (ksi)	Thick (in)	Width (in)	Style	Poly Sides	Clip Len (in)	Effective Len (in)	Mu (kip-in)	Phi Mn (kip-in)	Ratio
50.0	3.250	54.000	Clipped	8	12.00	9.349	282.02	1110.93	0.25

Anchor Bolts

Bolt Circle	Num Bolts	Bolt Type	Bolt Dia (in)	Yield (ksi)	Ultimate (ksi)	Arrange	Cluster Dist (in)	Start Angle (deg)	Compression			Tension		
									Force (kip)	Allow (kip)	Ratio	Force (kip)	Allow (kip)	Ratio
54.00	16	2.25" 18J	2.25	75.00	100.00	Clustered	6.00	45.0	141.19	260.00	0.55	132.25	260.00	0.52



RADIO FREQUENCY EMISSIONS ANALYSIS REPORT EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

AT&T Existing Facility

Site ID: CT2107

Westport
180A Bayberry Lane
Westport, CT 06880

November 27, 2016

EBI Project Number: 6216005532

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	18.17 %



November 27, 2016

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

Emissions Analysis for Site: **CT2107 – Westport**

EBI Consulting was directed to analyze the proposed AT&T facility located at **180A Bayberry Lane, Westport, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

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

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

General population/uncontrolled exposure limits apply to situations in which the general public 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 public 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.

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



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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed AT&T Wireless antenna facility located at **180A Bayberry Lane, Westport, 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.

For all calculations, all equipment was calculated using the following assumptions:

- 1) 2 LTE channels (700 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 2) 2 LTE channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 3) 2 GSM channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 4) 2 UMTS channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 5) 2 UMTS channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.



- 6) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. 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. This is rarely the case, and if so, is never continuous.
- 7) For the following calculations the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 8) The antennas used in this modeling are the **CCI HPA-65R-BUU-H6 and the Powerwave 7770** for transmission in the 700 MHz, 850 MHz and 1900 MHz (PCS) (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.
- 9) The antenna mounting height centerlines of the proposed antennas are **98 feet** above ground level (AGL) for **Sector A**, **98 feet** above ground level (AGL) for **Sector B** and **98 feet** above ground level (AGL) for Sector C.
- 10) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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



AT&T Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	CCI HPA-65R-BUU-H6	Make / Model:	CCI HPA-65R-BUU-H6	Make / Model:	CCI HPA-65R-BUU-H6
Gain:	11.95 / 14.75 dBd	Gain:	11.95 / 14.75 dBd	Gain:	11.95 / 14.75 dBd
Height (AGL):	98 feet	Height (AGL):	98 feet	Height (AGL):	98 feet
Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240 Watts	Total TX Power(W):	240 Watts	Total TX Power(W):	240 Watts
ERP (W):	5,462.56	ERP (W):	5,462.56	ERP (W):	5,462.56
Antenna A1 MPE%	3.23 %	Antenna B1 MPE%	3.23 %	Antenna C1 MPE%	3.23 %
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770
Gain:	11.4 dBd	Gain:	11.4 dBd	Gain:	11.4 dBd
Height (AGL):	98 feet	Height (AGL):	98 feet	Height (AGL):	98 feet
Frequency Bands	850 MHz	Frequency Bands	850 MHz	Frequency Bands	850 MHz
Channel Count	2	Channel Count	2	Channel Count	2
Total TX Power(W):	60 Watts	Total TX Power(W):	60 Watts	Total TX Power(W):	60 Watts
ERP (W):	828.23	ERP (W):	828.23	ERP (W):	828.23
Antenna A2 MPE%	0.62 %	Antenna B2 MPE%	0.62 %	Antenna C2 MPE%	0.62 %
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770
Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd
Height (AGL):	98 feet	Height (AGL):	98 feet	Height (AGL):	98 feet
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120 Watts	Total TX Power(W):	120 Watts	Total TX Power(W):	120 Watts
ERP (W):	2,140.89	ERP (W):	2,140.89	ERP (W):	2,140.89
Antenna A3 MPE%	1.18 %	Antenna B3 MPE%	1.18 %	Antenna C3 MPE%	1.18 %

Site Composite MPE%	
Carrier	MPE%
AT&T – Max per sector	5.03 %
T-Mobile	6.13 %
Enertrac	0.00 %
Verizon	4.38 %
Westport Fire Dept	0.01 %
Sprint	0.81 %
CL&P	0.07 %
FBI	0.22 %
Westport Fire	0.99 %
Westport Fire Low Band	0.05 %
Westport Police	0.45 %
Westport Townwide	0.03 %
Site Total MPE %:	18.17 %

AT&T Sector A Total:	5.03 %
AT&T Sector B Total:	5.03 %
AT&T Sector C Total:	5.03 %
Site Total:	18.17 %

AT&T _ Frequency Band / Technology per Sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
AT&T 700 MHz LTE	2	940.05	98	7.99	700 MHz	467	1.71%
AT&T 1900 MHz (PCS) LTE	2	1,791.23	98	15.22	1900 MHz (PCS)	1000	1.52%
AT&T 850 MHz GSM	2	414.12	98	3.52	850 MHz	567	0.62%
AT&T 850 MHz UMTS	2	414.12	98	3.52	850 MHz	567	0.62%
AT&T 1900 MHz (PCS) UMTS	2	656.33	98	5.58	1900 MHz (PCS)	1000	0.56%
						Total:	5.03%



Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general public 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 public exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector A:	5.03 %
Sector B:	5.03 %
Sector C:	5.03 %
AT&T Maximum Total (per sector):	5.03 %
Site Total:	18.17 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **18.17 %** of the allowable FCC established general public 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.