Crown Castle
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065

September 15, 2016

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

RE: **Notice of Exempt Modification for AT&T/ LTE 3C Crown Site BU: 842862**
AT&T Site ID: CT5048
259 Commerce Street, East Haven, CT 06512
Latitude: 41° 15' 22.88"/ Longitude: -72° 52' 32.8"

Dear Ms. Bachman:

AT&T currently maintains six (6) antennas at the 55-foot level of the existing 59-foot monopole tower at 259 Commerce Street in East Haven, CT. The tower is owned by Crown Castle. The property is owned by Stephen Viglione. AT&T now intends to replace three (3) antenna with three (3) new antennas. These antennas would be installed at the 55-foot level of the tower. AT&T also intends to install three (3) RRUS12/A2s.

This facility was approved by the by the Connecticut Siting Council in Petition No. 634 on July 8, 2003. This approval was given without conditions.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.S.C.A. § 16-50j-73, a copy of this letter is being sent to the Honorable Joseph A. Maturo, Jr., Mayor, Town of East Haven, as well as the property owner, and Crown Castle is the tower owner.

1. The proposed modifications will not result in an increase in the height of the existing tower.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modification will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communication Commission safety standard.

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

6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Please send approval/rejection letter to Attn: Jeffrey Barbadora.

Sincerely,

Jeffrey Barbadora
Real Estate Specialist
12 Gill Street, Suite 5800, Woburn, MA 01801
781-729-0053
Jeff.Barbadora@crowncastle.com

Attachments:

Tab 1: Exhibit-1: Compound plan and elevation depicting the planned changes
Tab 2: Exhibit-2: Structural Modification Report
Tab 3: Exhibit-3: General Power Density Table Report (RF Emissions Analysis Report)

cc: The Honorable Joseph A. Maturo, Jr., Mayor
Town of East Haven
250 Main Street
East Haven, CT 06512

Stephen Viglione
259 Commerce Street
East Haven, CT 06512

Petition No. 634
AT&T Wireless
East Haven, Connecticut
Staff Report
July 8, 2003

On June 10, 2003, Connecticut Siting Council (Council) member Philip T. Ashton and S. Derek Phelps of staff met with AT&T Wireless representatives at 259 Commerce Street in East Haven. Other persons in attendance were Lucia Chiocchio, Esq., of Cuddy & Feder LLP; Doug Frost, Engineering Technician, of NATCOMM, LLC; Kumar Rughoobur, RF Engineer, of WFI; Ray Vergati, Project Director, of Optasite, Inc.; and George Mingione, Planning and Zoning Administrator of the Town of East Haven. AT&T Wireless proposes to replace and expand an existing lattice tower and is petitioning the Council for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need (Certificate) is required for the modification.

Specifically, AT&T Wireless proposes to replace and expand an existing 48' lattice tower (with a whip antenna extending to 61') with a 57' monopole to be relocated approximately 8' to 10' from the location of the existing tower. AT&T would attach six panel antennas on T-arms to the replacement tower. The property owner's whip antenna would not be reinstalled.

The existing lattice tower is located adjacent to the west side of the existing tower. The replacement monopole is 9' taller than the existing tower, but the overall height of the proposed facility will be approximately 1' lower in total height.

The proposed tower needs to be relocated approximately 8' to 10' from the location of the existing lattice tower for construction purposes. Associated equipment cabinets will be installed on a 7' x 13' concrete pad located at the base of the pole surrounded by an 8' vinyl stockade fence, which will be screened with 6' evergreen trees. The utilities will be installed underground.

At the request of the Council, AT&T Wireless wrote to six nearby residents on June 12, 2003, whose homes are within sight of the proposed tower location to advise them of the petition application. Those homeowners are: Antonio Rossano; Robert A. Esposito; Rita Compano; Phyllis Naqstri and Linda Lawson; Sebatiano and Maria DiBona; and Anne M. Fitzgerald. These persons were asked to forward comments to the Council by June 3, 2003. One resident, Rita Compano, sent a letter stating that she is not in favor of the petition primarily on the basis of concerns that it will adversely affect the property value of her home.

George Mingione, Planning and Zoning Administrator of the Town of East Haven, wrote to the Council in a letter dated June 11, 2003, stating that the town's preference is for vinyl fencing around the tower compound, not less than six feet tall, with evergreen plantings.

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2011.

TOWN of EAST HAVEN
ASSESSOR

Information on the Property Records for the Municipality of East Haven was last updated on 9/15/2016.

Parcel Information

Location:	259 COMMERCE ST	Property Use:	Industrial	Primary Use:	Light Industrial
Unique ID:	V0098600	Map Block Lot:	090 1013 005	Acres:	0.49
490 Acres:	0.00	Zone:	LI-2	Volume / Page:	0322/0838
Developers Map / Lot:	PT.4&7	Census:	1801000		

Value Information

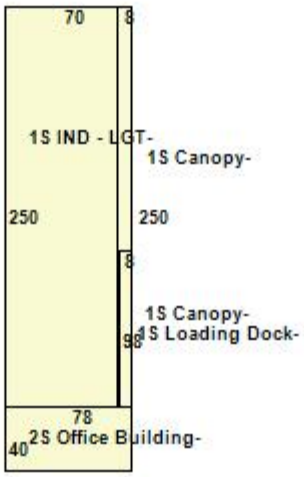
	Appraised Value	70% Assessed Value
Land	114,000	79,800

	Appraised Value	70% Assessed Value
Buildings	201,930	141,350
Detached Outbuildings	884,070	618,850
Total	1,200,000	840,000

Owner's Information

Owner's Data
VIGLIONE STEPHEN J 259 COMMERCE ST EAST HAVEN CT 06512

Building 1



Category:	Industrial	Use:	Light Manu	GLA:	20,660
Stories:	1.00	Construction:	Average	Year Built:	1956
Heating:	FHA	Fuel:	Gas	Cooling Percent:	20%
Siding:	Concrete Block/B. V. Solid	Roof Material:		Beds/Units:	0

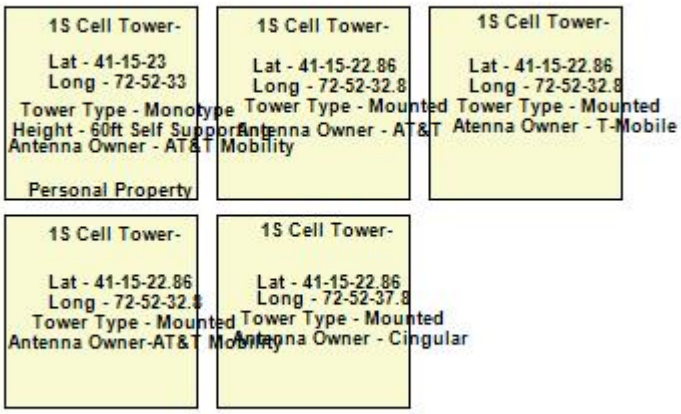
Special Features

Wet Sprinklers	3160

Attached Components

Type:	Year Built:	Area:
Canopy	1984	2,078
Covered Loading Dock	1984	783

Building 2



Category:	Cell Tower	Use:	Cell Tower	GLA:	1
Stories:	0.00	Construction:	Average	Year Built:	2011

Heating:		Fuel:		Cooling Percent:	0%
Siding:		Roof Material:		Beds/Units:	0

Special Features

Attached Components

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Monopole Cell Towers	2011			1
Monopole Cell Towers	2012			1
Cell Tower Mounted roof top	2011			1
Cell Tower Mounted roof top	2011			1
Fencing	1956			400
Paving	1956			12,000

Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Valid Sale	Sale Price
VIGLIONE STEPHEN J	322	838	03/19/1981		No	$0

Building Permits

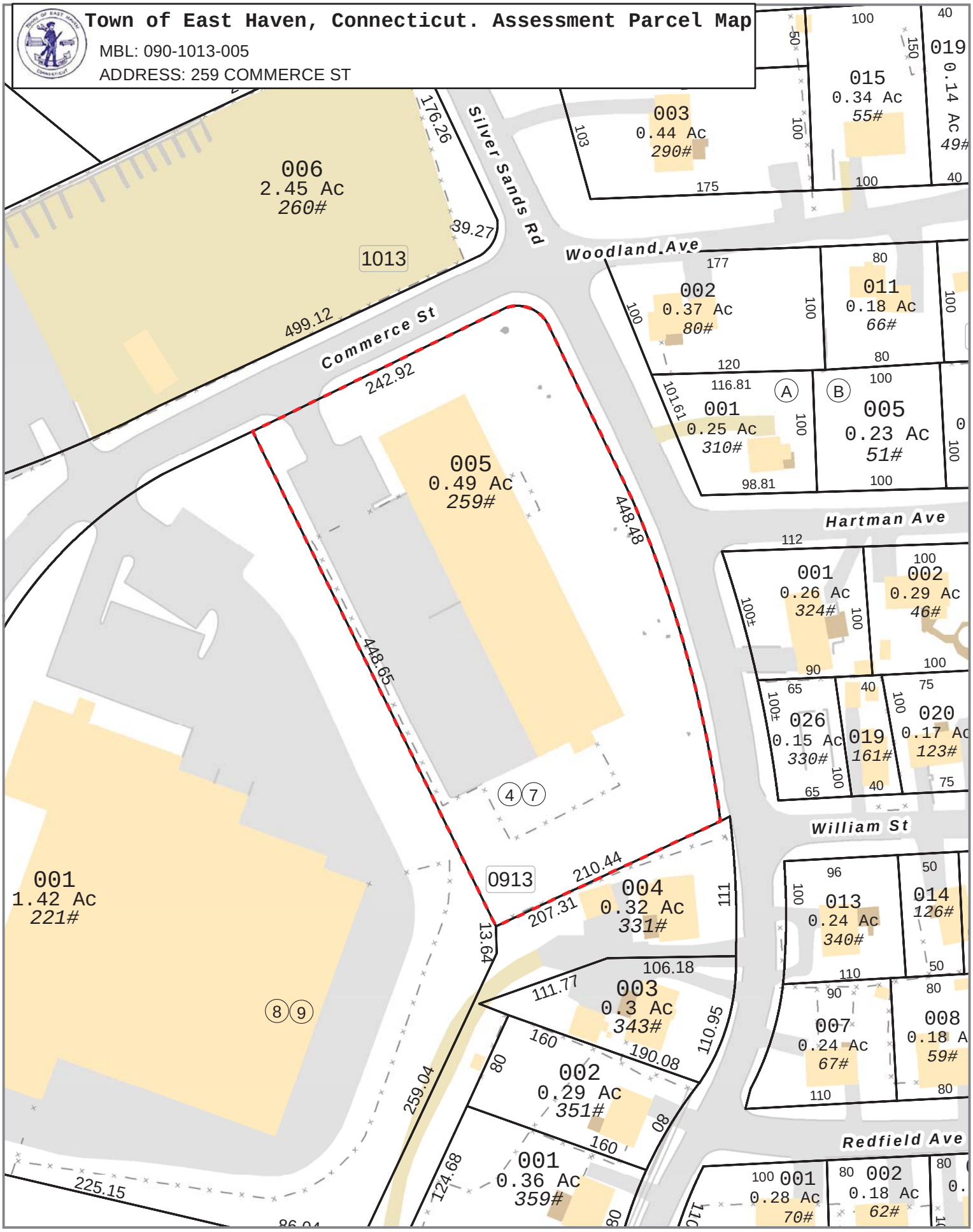
Permit Number	Permit Type	Date Opened	Date Closed	Permit Status	Reason
		09/04/2003		Permit Issued	448 X 226; 2003 WIRELESS COMMUNICATION SITE INSTALLED

Information Published With Permission From The Assessor

Town of East Haven, Connecticut. Assessment Parcel Map

MBL: 090-1013-005

ADDRESS: 259 COMMERCE ST



1 inch = 100 feet

0 50 100 150 200 Feet

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

Map Produced: September 2014

PROJECT:	LTE 2C
SITE NUMBER:	CTL05048
FA NUMBER:	10071016
PTN NUMBER:	2051A066G3
PACE NUMBER:	MRCTB018199
CROWN BU#:	842862
SITE NAME:	EAST HAVEN SOUTH
SITE ADDRESS:	259 COMMERCE ST. EAST HAVEN, CT 06512

PROJECT INFORMATION

SITE NAME:	EAST HAVEN SOUTH
SITE NUMBER:	CTL05048
SITE ADDRESS:	259 COMMERCE ST. EAST HAVEN, CT 06512
FA NUMBER:	10071016
PTN NUMBER:	2051A066G3
PACE NUMBER:	MRCTB018199
USID NUMBER:	24481
CROWN BU#:	842862
APPLICANT:	AT&T WIRELESS 550 COCHITUATE ROAD SUITE 550 13 AND 14 FRAMINGHAM, MA 01701
TOWER OWNER:	CROWN CASTLE INTERNATIONAL 12 GILL STREET, SUITE 5800 WOBURN, MA 01801
JURISDICTION:	NEW HAVEN COUNTY
COUNTY:	NEW HAVEN
SITE COORDINATES FROM	(RFDS)
LATITUDE:	41.256392°
LONGITUDE:	-72.875799°
GROUND ELEV.:	33'
PROPOSED USE:	TELECOMMUNICATIONS FACILITY
AT&T RF MANAGER:	CAMERON SYME
PHONE:	(508) 596-7146
EMAIL:	cs6970@att.com

PROJECT CONSULTANTS

PROJECT MANAGER:	SMARTLINK
ADDRESS:	85 RANGEWAY ROAD, SUITE 102 NORTH BILLERICA, MA 01862
CONTACT:	RYAN BURGDORFER (508) 665-8005
EMAIL:	Ryan.Burgdorfer@Smartlinkllc.com
SITE AQUISITION:	SMARTLINK
ADDRESS:	85 RANGEWAY ROAD, SUITE 102 NORTH BILLERICA, MA 01862
CONTACT:	SHARON KEEFE (978) 930-3918
EMAIL:	Sharon.Keefe@Smartlinkllc.com
ENGINEER/ARCHITECT:	FULLERTON ENGINEERING
ADDRESS:	1100 E. WOODFIELD ROAD, SUITE 500 SCHAUMBURG, IL 60173
CONTACT:	MILEN DIMITROV (847) 908-8439
EMAIL:	MDimitrov@fullertonengineering.com
CONSTRUCTION:	SMARTLINK
ADDRESS:	85 RANGEWAY ROAD, SUITE 102 NORTH BILLERICA, MA 01862
CONTACT:	MARK DONNELLY (617) 515-2080
EMAIL:	mark.donnelly@smartlinkllc.com

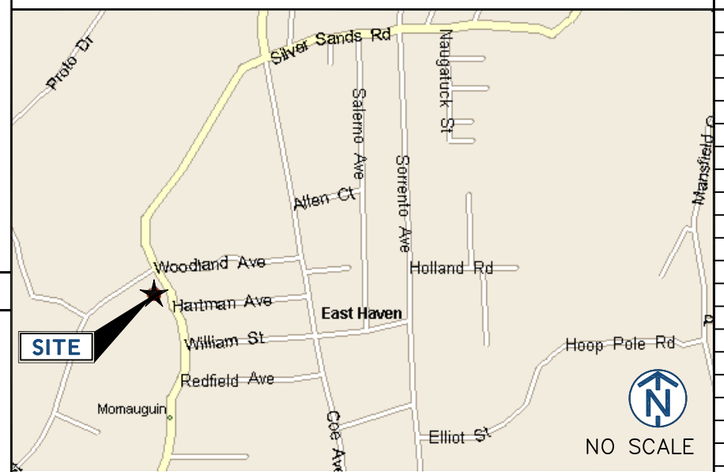
SCOPE OF WORK

LTE 1900 WILL BE 2C AT THE SITE WITH BRONZE CONFIGURATION.
PROPOSED 2C PROJECT SCOPE HEREIN BASED ON RFDS ID # 1123247, VERSION 3.00 LAST UPDATED 07/20/16.

- (3) NEW ANTENNAS TO REPLACE (3) EXISTING ANTENNAS
- (3) NEW RRUS-12 UNITS W/A2 MODULES
- (1) NEW LTE DUS
- (1) NEW XMU CARD
- (3) NEW 25A BREAKERS

- CONTRACTOR SHALL FURNISH ALL MATERIAL WITH THE EXCEPTION OF AT&T SUPPLIED MATERIAL.
- ALL MATERIAL SHALL BE INSTALLED BY THE CONTRACTOR, UNLESS STATED OTHERWISE.

SITE LOCATION MAP



DIRECTIONS

SCAN QR CODE FOR LINK
TO SITE LOCATION MAP

APPLICABLE BUILDING CODES AND STANDARDS

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES.

BUILDING CODE:	2003 INTERNATIONAL BUILDING CODE
ELECTRICAL CODE:	2011 NATIONAL ELECTRIC CODE

- FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.
- ADA ACCESS REQUIREMENTS ARE NOT REQUIRED.
- THIS FACILITY DOES NOT REQUIRE POTABLE WATER AND WILL NOT PRODUCE ANY SEWAGE

DRAWING INDEX

NOTE: DRAWING SCALES ARE FOR 11"x17" SHEETS UNLESS OTHERWISE NOTED

at&t
550 COCHITUATE ROAD
SUITE 550 13 AND 14
FRAMINGHAM, MA 01701

smartlink
1362 MELLON ROAD
SUITE 140
HANOVER, MD 21076

FULLERTON
ENGINEERING · DESIGN
1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001444
www.FullertonEngineering.com

REV	DATE	DESCRIPTION	BY
0	06/28/16	90% REVIEW	KC
1	08/16/16	FOR PERMIT	KC

I HEREBY CERTIFY THAT THESE DRAWING WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.

SITE NAME
EAST HAVEN SOUTH

SITE NUMBER:
CTL05048
CROWN BU # 842862

SITE ADDRESS
259 COMMERCE ST.
EAST HAVEN, CT 06512

SHEET NAME
TITLE SHEET

SHEET NUMBER
T1

FEC# 2016.0200. 0027

GENERAL CONSTRUCTION

1. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR/CM – SMARTLINK
   OWNER – AT&T WIRELESS

2. ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS AND AT&T PROJECT SPECIFICATIONS.

3. GENERAL CONTRACTOR SHALL VISIT THE SITE AND SHALL FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS, DIMENSIONS, AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.

4. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. GENERAL CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF WORK.

5. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES, AND APPLICABLE REGULATIONS.

6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

7. PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY UNLESS OTHERWISE NOTED. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS THE MINIMUM REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS, SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF WORK AND PREPARED BY THE ENGINEER PRIOR TO PROCEEDING WITH WORK.

8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

9. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE ENGINEER PRIOR TO PROCEEDING.

10. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF WORK AREA, ADJACENT AREAS AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFIRM TO ALL OSHA REQUIREMENTS AND THE LOCAL JURISDICTION.

11. GENERAL CONTRACTOR SHALL COORDINATE WORK AND SCHEDULE WORK ACTIVITIES WITH OTHER DISCIPLINES.

12. ERECTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMAN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST ACCEPTED PRACTICE. ALL MEMBERS SHALL BE LAID PLUMB AND TRUE AS INDICATED ON THE DRAWINGS.

13. SEAL PENETRATIONS THROUGH FIRE RATED AREAS WITH UL LISTED MATERIALS APPROVED BY LOCAL JURISDICTION. CONTRACTOR SHALL KEEP AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DEBRIS.

14. WORK PREVIOUSLY COMPLETED IS REPRESENTED BY LIGHT SHADED LINES AND NOTES. THE SCOPE OF WORK FOR THIS PROJECT IS REPRESENTED BY DARK SHADED LINES AND NOTES. CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR OF ANY EXISTING CONDITIONS THAT DEVIATE FROM THE DRAWINGS PRIOR TO BEGINNING CONSTRUCTION.

15. CONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO THE CONSTRUCTION MANAGER 48 HOURS PRIOR TO COMMENCEMENT OF WORK.

16. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.

17. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.

18. GENERAL CONTRACTOR SHALL COORDINATE AND MAINTAIN ACCESS FOR ALL TRADES AND CONTRACTORS TO THE SITE AND/OR BUILDING.

19. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SECURITY OF THE SITE FOR THE DURATION OF CONSTRUCTION UNTIL JOB COMPLETION.

20. THE GENERAL CONTRACTOR SHALL MAINTAIN IN GOOD CONDITION ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA, AND CHANGE ORDERS ON THE PREMISES AT ALL TIMES.

21. THE GENERAL CONTRACTOR SHALL PROVIDE PORTABLE FIRE EXTINGUISHERS WITH A RATING OF NOT LESS THAN 2–A OT 2–A:10–B:C AND SHALL BE WITHIN 25 FEET OF TRAVEL DISTANCE TO ALL PORTIONS OF WHERE THE WORK IS BEING COMPLETED DURING CONSTRUCTION.

22. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS SHALL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION, B) CONFINED SPACE, C) ELECTRICAL SAFETY, AND D) TRENCHING & EXCAVATION.

23. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED, CAPPED, PLUGGED OR OTHERWISE DISCONNECTED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE RESPONSIBLE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.

24. THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION.

25. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE FEDERAL AND LOCAL JURISDICTION FOR EROSION AND SEDIMENT CONTROL.

26. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUNDING. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

27. THE SUBGRADE SHALL BE BROUGHT TO A SMOOTH UNIFORM GRADE AND COMPACTED TO 95 PERCENT STANDARD PROCTOR DENSITY UNDER PAVEMENT AND STRUCTURES AND 80 PERCENT STANDARD PROCTOR DENSITY IN OPEN SPACE. ALL TRENCHES IN PUBLIC RIGHT OF WAY SHALL BE BACKFILLED WITH FLOWABLE FILL OR OTHER MATERIAL PRE–APPROVED BY THE LOCAL JURISDICTION.

28. ALL NECESSARY RUBBISH, STUMPS, DEBRIS, STICKS, STONES, AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LAWFUL MANNER.

29. ALL BROCHURES, OPERATING AND MAINTENANCE MANUALS, CATALOGS, SHOP DRAWINGS, AND OTHER DOCUMENTS SHALL BE TURNED OVER TO THE GENERAL CONTRACTOR AT COMPLETION OF CONSTRUCTION AND PRIOR TO PAYMENT.

30. CONTRACTOR SHALL SUBMIT A COMPLETE SET OF AS–BUILT REDLINES TO THE GENERAL CONTRACTOR UPON COMPLETION OF PROJECT AND PRIOR TO FINAL PAYMENT.

31. CONTRACTOR SHALL LEAVE PREMISES IN A CLEAN CONDITION.

32. THE PROPOSED FACILITY WILL BE UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SEWER SERVICE, AND IS NOT FOR HUMAN HABITAT (NO HANDICAP ACCESS REQUIRED).

33. OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION, APPROXIMATELY 2 TIMES PER MONTH, BY AT&T TECHNICIANS.

34. NO OUTDOOR STORAGE OR SOLID WASTE CONTAINERS ARE PROPOSED.

35. ALL MATERIAL SHALL BE FURNISHED AND WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST REVISION AT&T MOBILITY GROUNDING STANDARD "TECHNICAL SPECIFICATION FOR CONSTRUCTION OF GSM/GPRS WIRELESS SITES" AND "TECHNICAL SPECIFICATION FOR FACILITY GROUNDING". IN CASE OF A CONFLICT BETWEEN THE CONSTRUCTION SPECIFICATION AND THE DRAWINGS, THE DRAWINGS SHALL GOVERN.

36. CONTRACTORS SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS REQUIRED FOR CONSTRUCTION. IF CONTRACTOR CANNOT OBTAIN A PERMIT, THEY MUST NOTIFY THE GENERAL CONTRACTOR IMMEDIATELY.

37. CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE ON A DAILY BASIS.

38. INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM SITE VISITS AND/OR DRAWINGS PROVIDED BY THE SITE OWNER. CONTRACTORS SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

39. NO WHITE STROBE LIGHTS ARE PERMITTED. LIGHTING IF REQUIRED, WILL MEET FAA STANDARDS AND REQUIREMENTS.

ANTENNA MOUNTING

40. DESIGN AND CONSTRUCTION OF ANTENNA SUPPORTS SHALL CONFORM TO CURRENT ANSI/TIA–222 OR APPLICABLE LOCAL CODES.

41. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT–DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS NOTED OTHERWISE.

42. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC–COATING (HOT–DIP) ON IRON AND STEEL HARDWARE", UNLESS NOTED OTHERWISE.

43. DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.

44. ALL ANTENNA MOUNTS SHALL BE INSTALLED WITH LOCK NUTS, DOUBLE NUTS AND SHALL BE TORQUED TO MANUFACTURER'S RECOMMENDATIONS.

45. CONTRACTOR SHALL INSTALL ANTENNA PER MANUFACTURER'S RECOMMENDATION FOR INSTALLATION AND GROUNDING.

46. ALL UNUSED PORTS ON ANY ANTENNAS SHALL BE TERMINATED WITH A 50–OHM LOAD TO ENSURE ANTENNAS PERFORM AS DESIGNED.

47. PRIOR TO SETTING ANTENNA AZIMUTHS AND DOWNTILTS, ANTENNA CONTRACTOR SHALL CHECK THE ANTENNA MOUNT FOR TIGHTNESS AND ENSURE THAT THEY ARE PLUMB. ANTENNA AZIMUTHS SHALL BE SET FROM TRUE NORTH AND BE ORIENTED WITHIN +/– 5% AS DEFINED BY THE RFDS. ANTENNA DOWNTILTS SHALL BE WITHIN +/– 0.5% AS DEFINED BY THE RFDS. REFER TO ND–00246.

48. JUMPERS FROM THE TMA'S MUST TERMINATE TO OPPOSITE POLARIZATION'S IN EACH SECTOR.

49. CONTRACTOR SHALL RECORD THE SERIAL #, SECTOR, AND POSITION OF EACH ACTUATOR INSTALLED AT THE ANTENNAS AND PROVIDE THE INFORMATION TO AT&T.

50. TMA'S SHALL BE MOUNTED ON PIPE DIRECTLY BEHIND ANTENNAS AS CLOSE TO ANTENNA AS FEASIBLE IN A VERTICAL POSITION.

TORQUE REQUIREMENTS

51. ALL RF CONNECTIONS SHALL BE TIGHTENED BY A TORQUE WRENCH.

52. ALL RF CONNECTIONS, GROUNDING HARDWARE AND ANTENNA HARDWARE SHALL HAVE A TORQUE MARK INSTALLED IN A CONTINUOUS STRAIGHT LINE FROM BOTH SIDES OF THE CONNECTION.
   A. RF CONNECTION BOTH SIDES OF THE CONNECTOR.
   B. GROUNDING AND ANTENNA HARDWARE ON THE NUT SIDE STARTING FROM THE THREADS TO THE SOLID SURFACE. EXAMPLE OF SOLID SURFACE: GROUND BAR, ANTENNA BRACKET METAL.

FIBER & POWER CABLE MOUNTING

53. THE FIBER OPTIC TRUNK CABLES SHALL BE INSTALLED INTO CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY. WHEN INSTALLING FIBER OPTIC TRUNK CABLES INTO A CABLE TRAY SYSTEM, THEY SHALL BE INSTALLED INTO AN INTER DUCT AND A PARTITION BARRIER SHALL BE INSTALLED BETWEEN THE 600 VOLT CABLES AND THE INTER DUCT IN ORDER TO SEGREGATE CABLE TYPES. OPTIC FIBER TRUNK CABLES SHALL HAVE APPROVED CABLE RESTRAINTS EVERY (60) SIXTY FEET AND SECURELY FASTENED TO THE CABLE TRAY SYSTEM. NFPA 70 (NEC) ARTICLE 770 RULES SHALL APPLY.

54. THE TYPE TC–ER CABLES SHALL BE INSTALLED INTO CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY AND SHALL BE SECURED AT INTERVALS NOT EXCEEDING (6) SIX FEET. AN EXCEPTION; WHERE TYPE TC–ER CABLES ARE NOT SUBJECT TO PHYSICAL DAMAGE, CABLES SHALL BE PERMITTED TO MAKE A TRANSITION BETWEEN CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY WHICH ARE SERVING UTILIZATION EQUIPMENT OR DEVICES, A DISTANCE (6) SIX FEET SHALL NOT BE EXCEEDED WITHOUT CONTINUOUS SUPPORTING. NFPA 70 (NEC) ARTICLES 336 AND 392 RULES SHALL APPLY.

55. WHEN INSTALLING OPTIC FIBER TRUNK CABLES OR TYPE TC–ER CABLES INTO CONDUITS, NFPA 70 (NEC) ARTICLE 300 RULES SHALL APPLY.

COAXIAL CABLE NOTES

62. TYPES AND SIZES OF THE ANTENNA CABLE ARE BASED ON ESTIMATED LENGTHS. PRIOR TO

    ORDERING CABLE, CONTRACTOR SHALL VERIFY ACTUAL LENGTH BASED ON CONSTRUCTION LAYOUT AND NOTIFY THE PROJECT MANAGER IF ACTUAL LENGTHS EXCEED ESTIMATED LENGTHS.

63. CONTRACTOR SHALL VERIFY THE DOWN–TILT OF EACH ANTENNA WITH A DIGITAL LEVEL.

64. CONTRACTOR SHALL CONFIRM COAX COLOR CODING PRIOR TO CONSTRUCTION.

65. ALL JUMPERS TO THE ANTENNAS FROM THE MAIN TRANSMISSION LINE SHALL BE 1/2" DIA. LDF AND SHALL NOT EXCEED 6'–0".

66. ALL COAXIAL CABLE SHALL BE SECURED TO THE DESIGNED SUPPORT STRUCTURE, IN AN APPROVED MANNER, AT DISTANCES NOT TO EXCEED 4'–0" OC.

67. CONTRACTOR SHALL FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS REGARDING BOTH THE INSTALLATION AND GROUNDING OF ALL COAXIAL CABLES, CONNECTORS, ANTENNAS, AND ALL OTHER EQUIPMENT.

68. CONTRACTOR SHALL GROUND ALL EQUIPMENT. INCLUDING ANTENNAS, RET MOTORS, TMA'S, COAX CABLES, AND RET CONTROL CABLES AS A COMPLETE SYSTEM. GROUNDING SHALL BE EXECUTED BY QUALIFIED WIREMEN IN COMPLIANCE WITH MANUFACTURER'S SPECIFICATION AND RECOMMENDATION.

69. CONTRACTOR SHALL PROVIDE STRAIN–RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES, COAX CABLES, AND RET CONTROL CABLES. CABLE STRAIN–RELIEFS AND CABLE SUPPORTS SHALL BE APPROVED FOR THE PURPOSE. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

70. CONTRACTOR TO VERIFY THAT EXISTING COAX HANGERS ARE STACKABLE SNAP IN HANGERS. IF EXISTING HANGERS ARE NOT STACKABLE SNAP IN HANGERS THE CONTRACTOR SHALL REPLACE EXISTING HANGERS WITH NEW SNAP IN HANGERS IF APPLICABLE.

GENERAL CABLE AND EQUIPMENT NOTES

71. CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ANTENNA, TMAS, DIPLEXERS, AND COAX CONFIGURATION, MAKE AND MODELS PRIOR TO INSTALLATION.

72. ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER TOWER MANUFACTURER'S RECOMMENDATIONS.

73. CONTRACTOR SHALL REFERENCE THE TOWER STRUCTURAL ANALYSIS/DESIGN DRAWINGS FOR DIRECTIONS ON CABLE DISTRIBUTION/ROUTING.

74. ALL OUTDOOR RF CONNECTORS/CONNECTIONS SHALL BE WEATHERPROOFED, EXCEPT THE RET CONNECTORS, USING BUTYL TAPE AFTER INSTALLATION AND FINAL CONNECTIONS ARE MADE. BUTYL TAPE SHALL HAVE A MINIMUM OF ONE–HALF TAPE WIDTH OVERLAP ON EACH TURN AND EACH LAYER SHALL BE WRAPPED THREE TIMES. WEATHERPROOFING SHALL BE SMOOTH WITHOUT BUCKLING. BUTYL BLEEDING IS NOT ALLOWED.

75. IF REQUIRED TO PAINT ANTENNAS AND/OR COAX:
   A. TEMPERATURE SHALL BE ABOVE 50° F.
   B. PAINT COLOR MUST BE APPROVED BY BUILDING OWNER/LANDLORD.
   C. FOR REGULATED TOWERS, FAA/FCC APPROVED PAINT IS REQUIRED.
   D. DO NOT PAINT OVER COLOR CODING OR ON EQUIPMENT MODEL NUMBERS

76. ALL CABLES SHALL BE GROUNDED WITH COAXIAL CABLE GROUND KITS. FOLLOW THE MANUFACTURER'S RECOMMENDATIONS.
   A. GROUNDING AT THE ANTENNA LEVEL.
   B. GROUNDING AT MID LEVEL, TOWERS WHICH ARE OVER 200'–0", ADDITIONAL CABLE GROUNDING REQUIRED.
   C. GROUNDING AT BASE OF TOWER PRIOR TO TURNING HORIZONTAL.
   D. GROUNDING OUTSIDE THE EQUIPMENT SHELTER AT ENTRY PORT.
   E. GROUNDING INSIDE THE EQUIPMENT SHELTER AT THE ENTRY PORT.

77. ALL PROPOSED GROUND BAR DOWNLEADS ARE TO BE TERMINATED TO THE EXISTING ADJACENT GROUND BAR DOWNLEADS A MINIMUM DISTANCE OF 4'–0" BELOW GROUND BAR. TERMINATIONS MAY BE EXOTHERMIC OR COMPRESSION.

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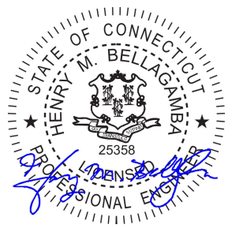

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EAST HAVEN SOUTH

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CROWN BU # 842862

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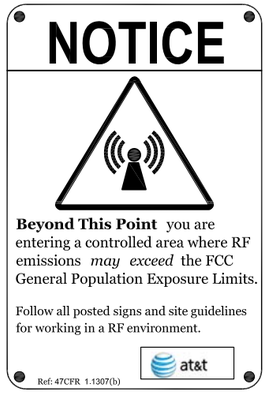
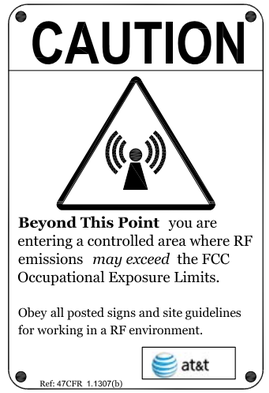
EAST HAVEN, CT 06512

SHEET NAME
NOTES AND SPECIFICATIONS

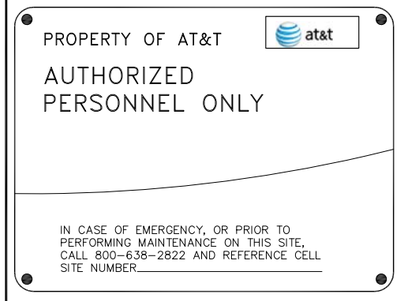
SHEET NUMBER
SP1





ALERTING SIGNS

ALERTING SIGN



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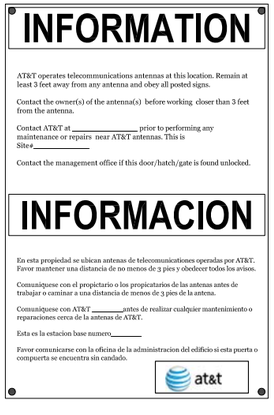

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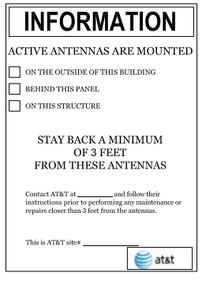

INFO SIGN #2

INFO SIGN #3

ALERTING SIGN (FOR CELL SITE BATTERIES)

ALERTING SIGN (FOR DIESEL FUEL)

ALERTING SIGN (FOR PROPANE)

GENERAL SIGNAGE GUIDELINES

STRUCURE TYPLE	INFO SIGN #1	INFO SIGN #2	INFO SIGN #3	INFO SIGN #4	STRIPING	NOTICE SIGN	CAUTION SIGN
TOWERS							
MONOPOLE/MONOPINE/MONOPALM	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	CLIMBING SIDE OF THE TOWER	ON BACKSIDE OF ANTENNAS	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS			AT THE HEIGHT OF THE FIRST CLIMBING STEP, MIN 9 FT ABOVE GROUND
SEC TOWERS/TOWERS WITH HIGH VOLTAGE	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	CLIMBING SIDE OF THE TOWER	ON BACKSIDE OF ANTENNAS	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS			
LIGHT POLES/FLAG POLES	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	ON THE POLE, NO LESS THAN 3FT BELOW THE ANTENNA AND LESS THAN 9FT ABOVE GROUND	ON BACKSIDE OF ANTENNAS	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS			
UTILITY WOOD POLES (JPA)	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	ON THE POLE, NO LESS THAN 3FT BELOW THE ANTENNA AND LESS THAN 9FT ABOVE GROUND	ON BACKSIDE OF ANTENNAS	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS		IF GP MAX VALUE OF MPE AT ANTENNA LEVEL IS: 0-99%; NOTICE SIGN; OVER 99%: CAUTION SIGN AT NO LESS THAN 3FT BELOW ANTENNA AND 9FT ABOVE GROUND	
MICROCELLS MOUNTED ON NON-JPA POLES	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	ON THE POLE, NO LESS THAN 3FT BELOW THE ANTENNA AND LESS THAN 9FT ABOVE GROUND	ON BACKSIDE OF ANTENNAS	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS		NOTICE OR CAUTION SIGN AT NO LESS THAN 9FT ABOVE GROUND: ONLY IF THE EXPOSURE EXCEEDS 90% OF THE GENERAL PUBLIC EXPOSURE AT EXPOSURE AT 6FT ABOVE GROUND OR AT OUTSIDE OF SURFACE OF ADJACENT BUILDING	
TOWERS							
AT ALL ACCESS POINTS TO THE ROOF	X			X			
ON ANTENNAS	X		X	X			
CONCEALED ANTENNAS	X	X		X			
ANTENNAS MOUNTED FACING OUTSIDE THE BUILDING	X	X		X			
ANTENNAS ON SUPPORT STRUCTURE	X	X		X			
ROOFVIEW GRAPH							
RADIATION AREA IS WITHIN 3FT FROM ANTENNA	X	ADJACENT TO EACH ANTENNA		X		EITHER NOTICE OR CAUTION SIGN (BASED ON ROOFVIEW RESULTS) AT ANTENNA /BARRIER	
RADIATION AREA IS BEYOND 3FT FROM ANTENNA	X	ADJACENT TO EACH ANTENNA		X	DIAGONAL, YELLOW STRIPING AS TO ROOFVIEW GRAPH		
CHURCH STEEPLES	ACCESS TO STEEPLE	ADJACENT TO ANTENNAS IF ANTENNAS ARE CONCEALED	ON BACKSIDE OF ANTENNAS	ACCESS TO STEEPLE			CAUTION SIGN AT THE ANTENNAS
WATER STATIONS	ACCESS TO LADDER	ADJACENT TO ANTENNAS IF ANTENNAS ARE CONCEALED	ON BACKSIDE OF ANTENNAS	ACCESS TO LADDER			CAUTION SIGN BESIDE INFO SIGN #1, MIN. 9FT ABOVE GROUND

NOTES FOR ROOFTOP SITES:

1. EITHER NOTICE OR CAUTION SIGNS NEED TO BE POSTED AT EACH SECTOR AS CLOSE AS POSSIBLE TO: THE OUTER EDGE OF THE STRIPED OFF AREA OR THE OUTER ANTENNAS OF THE SECTOR
2. IF ROOFVIEWS SHOWS: ONLY BLUE = NOTICE SIGN, BLUE AND YELLOW = CAUTION SIGN, ONLY YELLOW = CAUTION SIGN TO BE INSTALLED
3. SHOULD THE REQUIRED STRIPING AREAS INTERFERE WITH ANY STRUCTURE OR EQUIPMENT (A/C, VENTS, ROOF HATCH, DOORS, OTHER ANTENNAS, DISHES, ETC.). PLEASE NOTIFY AT&T TO MODIFY THE STRIPING AREA, PRIOR TO STARTING THE WORK.

SIGNAGE GUIDELINES CHART

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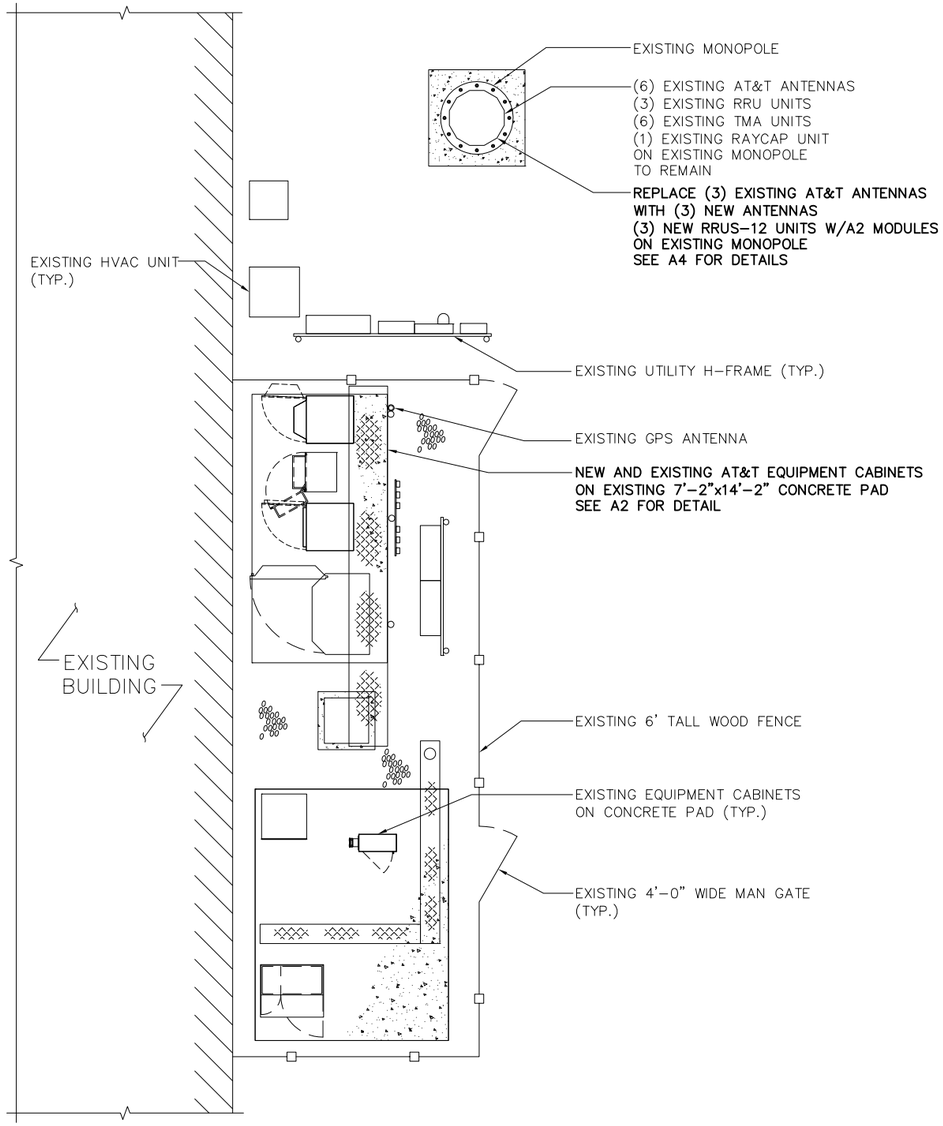
ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AGL	ABOVE GRADE LEVEL
AMSL	ABOVE MEAN SEA LEVEL
APPROX	APPROXIMATE
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
BTS	BASE TRANSMISSION STATION
℄	CENTERLINE
CLR	CLEAR
COL	COLUMN
CONC	CONCRETE
CND	CONDUIT
DWG	DRAWING
FT	FOOT(FEET)
EGB	EQUIPMENT GROUND BAR
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
ELEV	ELEVATION
EQUIP	EQUIPMENT
(E)	EXISTING
EXT	EXTERIOR
FND	FOUNDATION
F	FIBER
FIF	FACILITY INTERFACE FRAME
GA	GAUGE
GALV	GALVANIZED
GPS	GLOBAL POSITIONING SYSTEM
GND	GROUND
GSM	GLOBAL SYSTEM FOR MOBILE COMMUNICATION
LTE	LONG TERM EVOLUTION
MAX	MAXIMUM
MCPA	MULTI-CARRIER POWER AMPLIFIER
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
MTS	MANUAL TRANSFER SWITCH
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
OE/OT	OVERHEAD ELECTRIC/TELCO
PPC	POWER PROTECTION CABINET
PL	PROPERY LINE
RBS	RADIO BASED STATION
RET	REMOTE ELECTRIC TILT
RRU	REMOTE RADIO UNIT
RGS	RIGID GALVANIZED STEEL
IN	INCH(ES)
INT	INTERIOR
LB(S), #	POUND(S)
SF	SQUARE FOOT
STL	STEEL
TMA	TOWER MOUNTED AMPLIFIER
TYP	TYPICAL
UE/UT	UNDERGROUND ELECTRIC/TELCO
UNO	UNLESS NOTED OTHERWISE
UMTS	UNIVERSAL MOBILE TELE-COMMUNICATION SYSTEM
VIF	VERIFY IN FIELD
W/	WITH
XFMR	TRANSFORMER

SYMBOLS

- REVISION
- WORK POINT
- UTILITY POLE
- COMPRESSED STONE
- BRICK
- CONCRETE
- EARTH
- GRAVEL
- MASONRY
- STEEL
- CENTERLINE
- PROPERTY LINE
- LEASE LINE
- EASEMENT LINE
- CHAIN LINK FENCE
- WOOD FENCE
- UE — BELOW GRADE ELECTRIC
- UT — BELOW GRADE TELEPHONE
- OE/OT — OVERHEAD ELECTRIC/TELEPHONE
- SECTION REFERENCE (A / S-1)



COMPOUND PLAN — SCALE: 1/8" = 1'-0" — 1

SITE PHOTO 1 — SCALE: N.T.S. — 2

SITE PHOTO 2 — SCALE: N.T.S. — 3

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CROWN BU # 842862

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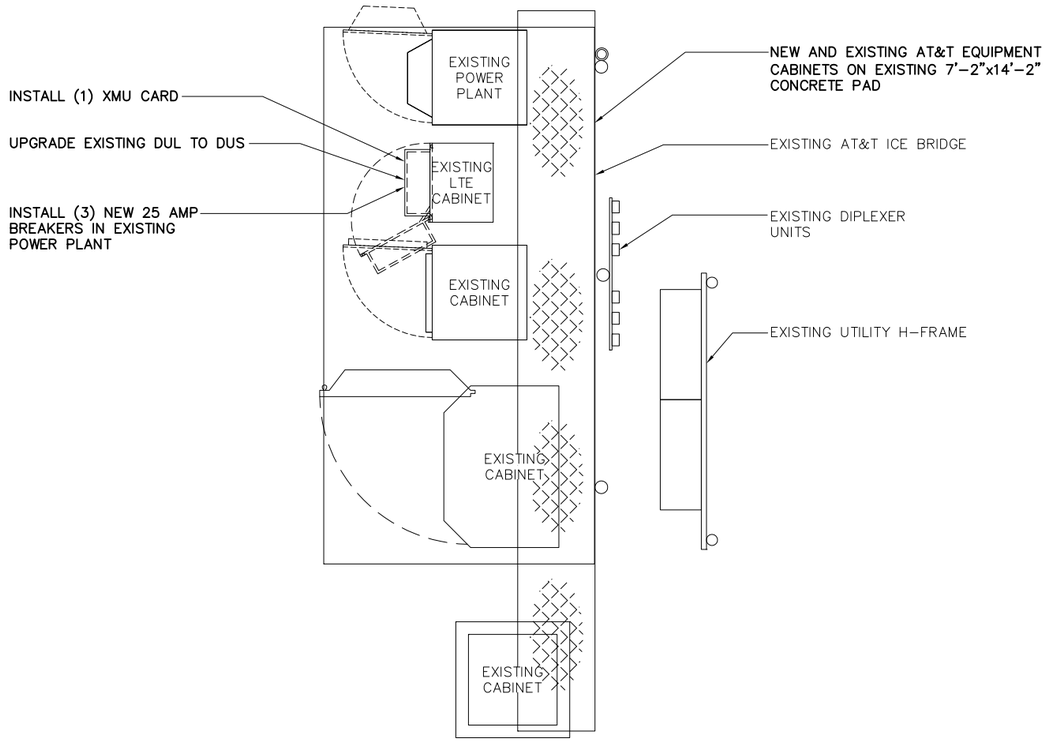
EAST HAVEN, CT 06512

SHEET NAME
COMPOUND PLAN

SHEET NUMBER
A1

FEC# 2016.0200. 0027



EQUIPMENT PLAN

SCALE: 1/4" = 1'-0"

1

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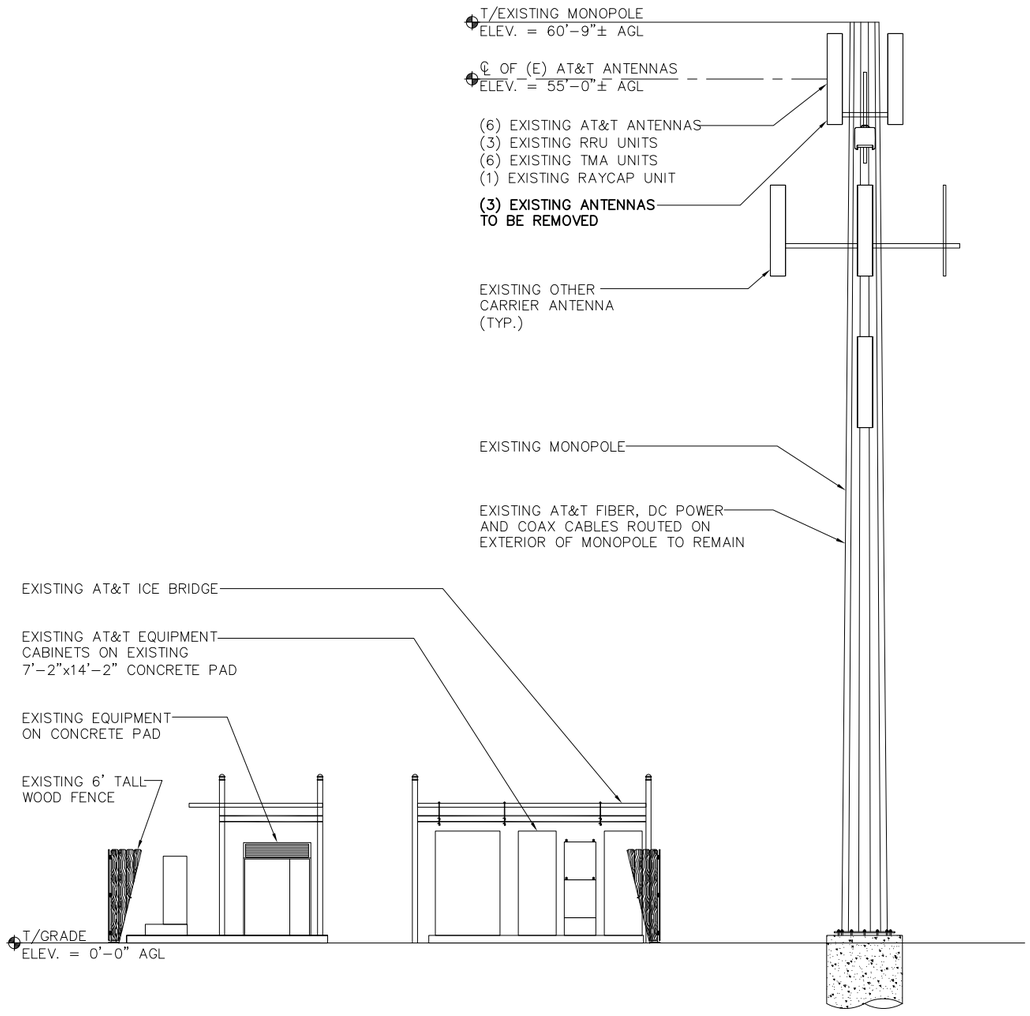
SHEET NAME
EQUIPMENT PLAN

SHEET NUMBER
A2

NOTES:

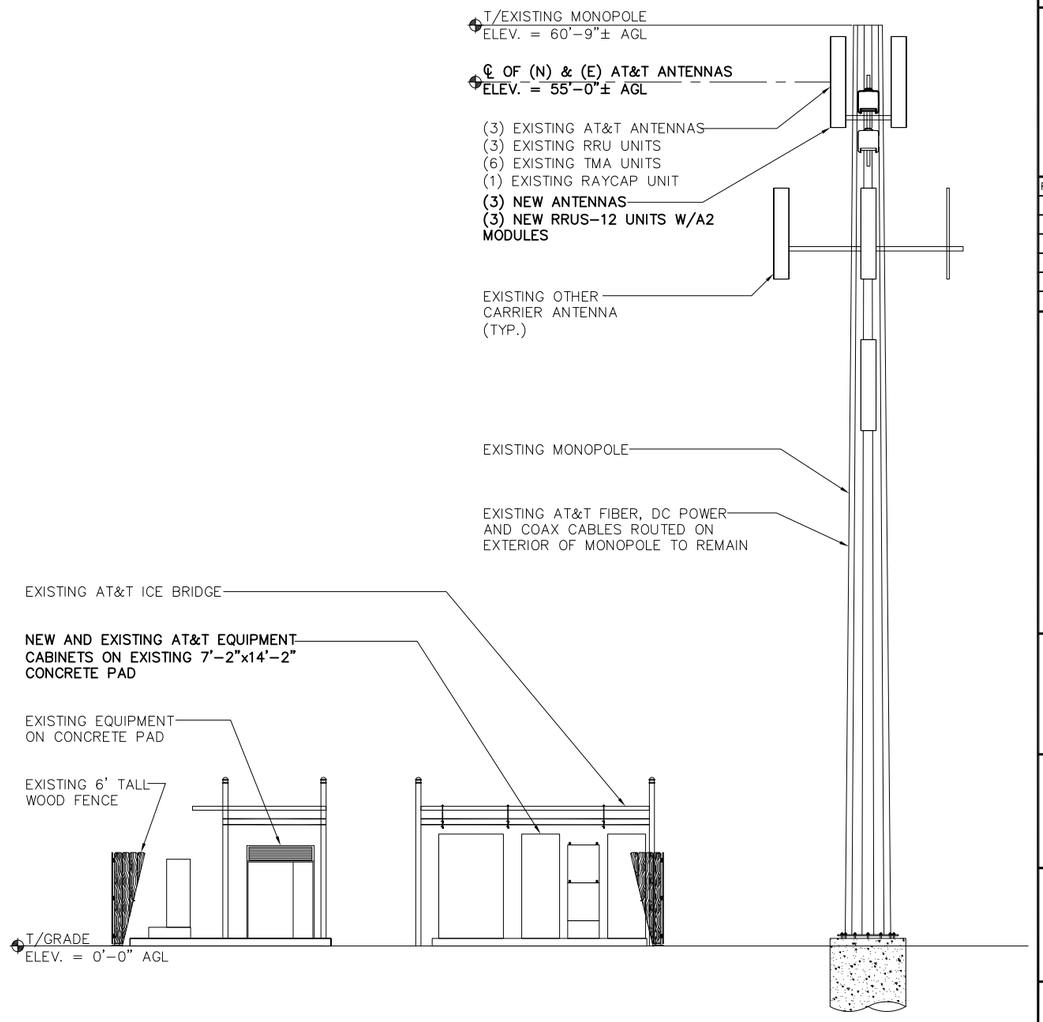
1. CALCULATIONS FOR THE STRUCTURE WERE PREPARED BY OTHERS AND THOSE CALCULATIONS CERTIFY THE CAPACITY OF THE STRUCTURE TO SUPPORT THE NEW EQUIPMENT
2. CALCULATIONS FOR THE ANTENNA MOUNTS WERE PREPARED BY FULLERTON AND THOSE CALCULATIONS CERTIFY THE CAPACITY OF THE STRUCTURE TO SUPPORT THE NEW EQUIPMENT
3. CABLES NOT SHOWN FOR CLARITY



EXISTING ELEVATION — SCALE 1" = 10'-0" — 1

NOTES:

1. ALL EQUIPMENT (ANTENNAS, LINES, ETC.) TO BE INSTALLED IN ACCORDANCE WITH PASSING STRUCTURAL ANALYSIS PROVIDED BY CROWN CASTLE.
2. TAPE DROP FORMS AND PHOTOGRAPHS TO BE SUBMITTED PER CCI AND ATT CLOSEOUT REQUIREMENTS



NEW ELEVATION — SCALE 1" = 10'-0" — 2

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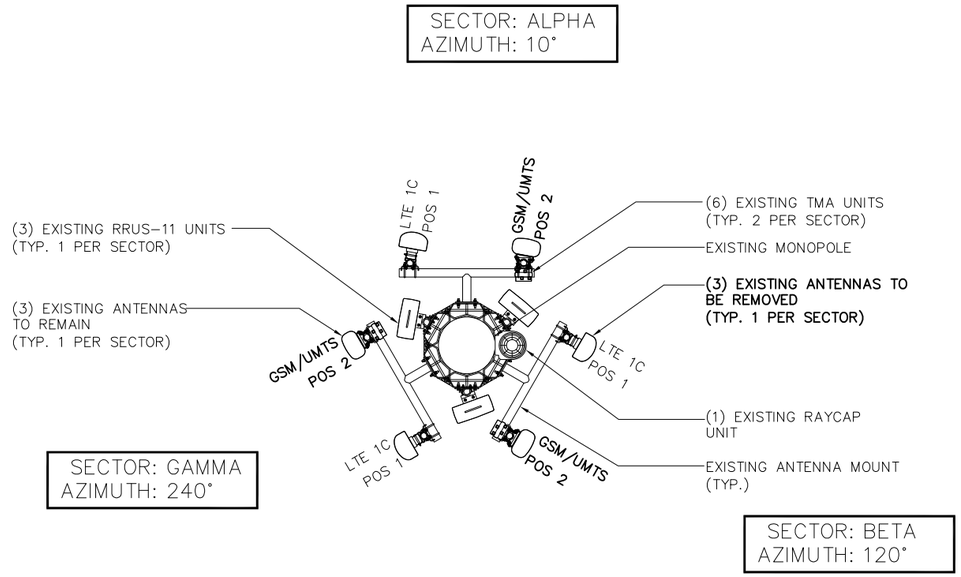
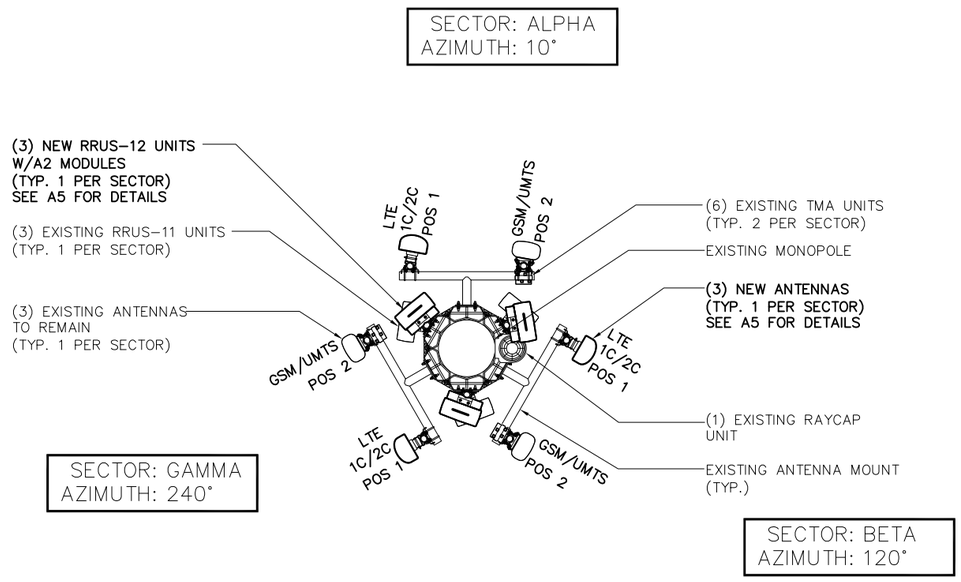
SHEET NAME
ELEVATIONS

SHEET NUMBER
A3

FEC# 2016.0200. 0027



EXISTING ANTENNA PLAN — SCALE: 3/16" = 1'–0" | 1



FINAL ANTENNA PLAN — SCALE: 3/16" = 1'–0" | 2

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SHEET NAME
ANTENNA PLANS

SHEET NUMBER
A4

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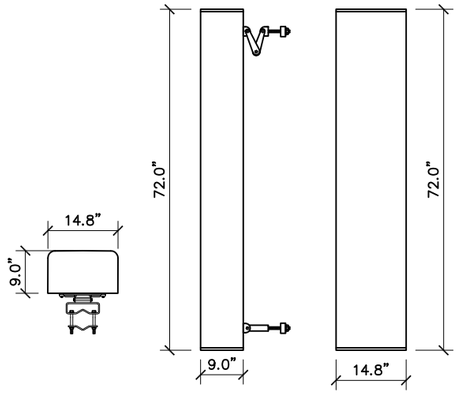


PLAN VIEW SIDE VIEW FRONT VIEW

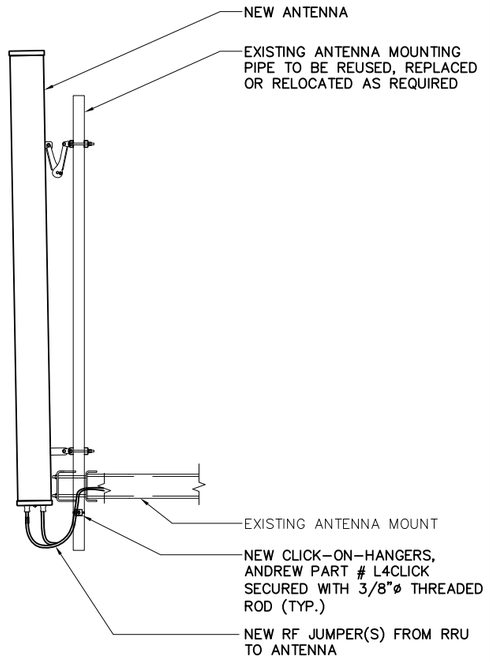
CCI – HPA–65R–BUU–H6

HEXPORT MULTI–BAND ANTENNA

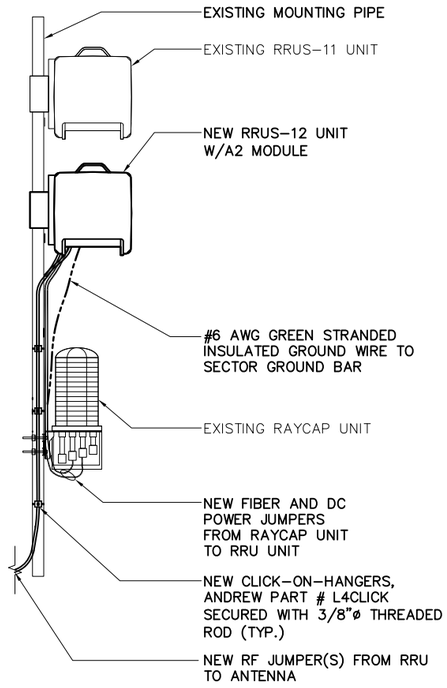
FREQUENCY RANGE	698–806 MHz
	824–894 MHz
	1850–1990 MHz
	1710–1755/2110–2170 MHz
	2305–2360 MHz
ANTENNA	51 Lbs
WITH BRACKET	61 Lbs

ANTENNA SPEC SCALE: N.T.S. 1

NOT USED SCALE: N.T.S. 2



ANTENNA SCHEMATIC SCALE: N.T.S. 3



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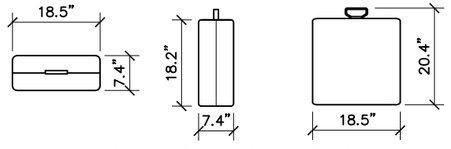


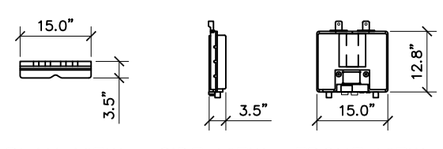
PLAN VIEW SIDE VIEW FRONT VIEW

ERICSSON – RRUS 12

WITH SOLAR SHIELD

UNIT WEIGHT	52.2 Lbs

RRU SPEC SCALE: N.T.S. 5



PLAN VIEW SIDE VIEW FRONT VIEW

ERICSSON – RRUS A2 MODULE

UNIT WEIGHT	22 Lbs

A2 BOX SPEC SCALE: N.T.S. 6

NOT USED SCALE: N.T.S. 7

NOT USED SCALE: N.T.S. 8

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EAST HAVEN, CT 06512

SHEET NAME
EQUIPMENT DETAILS

SHEET NUMBER
A5

FEC# 2016.0200. 0027

FINAL ANTENNA CONFIGURATION AND CABLE SCHEDULE
SUPPLIED BY AT&T WIRELESS, FROM RF CONFIG. DATED (07/20/16)

SECTOR	ANTENNA NUMBER	ANTENNA STATUS & TYPE	ANTENNA MODEL NUMBER	ANTENNA VENDOR	TMA/RRU UNIT	AZIMUTH	ANTENNA CL FROM GROUND	CABLE FEEDER TYPE	CABLE FEEDER LENGTH	RAYCAP UNIT
ALPHA	A–1	(N) LTE1C/2C ANTENNA	HPA–65R–BUU–H6	CCI	(1) EXISTING RRUS–11 UNIT AND (1) NEW RRUS–12 UNIT W/ A2 MODULE	10°	55'–0"	(1) EXISTING FIBER CABLE	90'–0"	(1) (E) DC6–48–60–18–8F UNIT
								(2) EXISTING DC POWER CABLES	90'–0"	
	A–2	(E) GSM/UMTS ANTENNA	800–10121	KATHREIN	(2) EXISTING TMA UNIT(S)	10°	55'–0"	7/8"ø LDF5–50A	90'–0"	
								(2) 7/8"ø LDF5–50A	90'–0"	
	–	–	–	–	–	–	–	–		
	–	–	–	–	–	–	–	–		
BETA	B–1	(N) LTE1C/2C ANTENNA	HPA–65R–BUU–H6	CCI	(1) EXISTING RRUS–11 UNIT AND (1) NEW RRUS–12 UNIT W/ A2 MODULE	120°	55'–0"	SEE ANTENNA A–1 FOR CABLE TYPE AND LENGTH		
	B–2	(E) GSM/UMTS ANTENNA	800–10121	KATHREIN	(2) EXISTING TMA UNIT(S)	120°	55'–0"	7/8"ø LDF5–50A	90'–0"	
								(2) 7/8"ø LDF5–50A	90'–0"	
	–	–	–	–	–	–	–	–		
	–	–	–	–	–	–	–	–		
GAMMA	C–1	(N) LTE1C/2C ANTENNA	HPA–65R–BUU–H6	CCI	(1) EXISTING RRUS–11 UNIT AND (1) NEW RRUS–12 UNIT W/ A2 MODULE	240°	55'–0"	SEE ANTENNA A–1 FOR CABLE TYPE AND LENGTH		
	C–2	(E) GSM/UMTS ANTENNA	800–10121	KATHREIN	(2) EXISTING TMA UNIT(S)	240°	55'–0"	7/8"ø LDF5–50A	90'–0"	
								(2) 7/8"ø LDF5–50A	90'–0"	
	–	–	–	–	–	–	–	–		
	–	–	–	–	–	–	–	–		

ANTENNA & CABLE CONFIGURATION

SCALE: N.T.S. | 1

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STATE OF CONNECTICUT · HENRY M. BELLAGAMBA · 25358 · LICENSED PROFESSIONAL ENGINEER

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SITE NUMBER:
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259 COMMERCE ST.
EAST HAVEN, CT 06512

SHEET NAME
ANTENNA & CABLE CONFIGURATION

SHEET NUMBER
A6

1. CONTRACTOR IS TO REFER TO AT&T'S MOST CURRENT RADIO FREQUENCY DATA SHEET (RFDS) PRIOR TO CONSTRUCTION.
2. THE SIZE, HEIGHT, AND DIRECTION OF THE ANTENNAS SHALL BE ADJUSTED TO ACHIEVE THE AZIMUTHS SPECIFIED AND LIMIT SHADOWING AND TO MEET THE SYSTEM REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY THE HEIGHT OF THE ANTENNA WITH THE AT&T WIRELESS PROJECT MANAGER.
4. VERIFY TYPE AND SIZE OF TOWER LEG PRIOR TO ORDERING ANY ANTENNA MOUNT.
5. UNLESS NOTED OTHERWISE THE CONTRACTOR MUST PROVIDE ALL MATERIAL NECESSARY.
6. ANTENNA AZIMUTHS ARE DEGREES OFF OF TRUE NORTH, BEARING CLOCKWISE, IN WHICH ANTENNA FACE IS DIRECTED. ALL ANTENNAS (AND SUPPORTING STRUCTURES AS PRACTICAL) SHALL BE ACCURATELY ORIENTED IN THE SPECIFIED DIRECTION.
7. CONTRACTOR SHALL VERIFY ALL RF INFORMATION PRIOR TO CONSTRUCTION.
8. SWEEP TEST SHALL BE PERFORMED BY GENERAL CONTRACTOR AND SUBMITTED TO AT&T WIRELESS CONSTRUCTION SPECIALIST. TEST SHALL BE PERFORMED PER AT&T WIRELESS STANDARDS.
9. CABLE LENGTHS WERE DETERMINED BASED ON THE DESIGN DRAWING. CONTRACTOR TO VERIFY ACTUAL LENGTH DURING PRE-CONSTRUCTION WALK.
10. CONTRACTOR TO USE ROSENBERGER FIBER LINE HANGER COMPONENTS (OR ENGINEER APPROVED EQUAL).

ANTENNA AND CABLING NOTES

SCALE: N.T.S. | 1

RF, DC, & COAX CABLE MARKING LOCATIONS TABLE	
NO	LOCATIONS
1	EACH TOP-JUMPER SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS.
2	EACH MAIN COAX SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS NEAR THE TOP-JUMPER CONNECTION AND WITH (1) SET OF 3/4" WIDE COLOR BANDS JUST PRIOR TO ENTERING THE BTS OR TRANSMITTER BUILDING.
3	CABLE ENTRY PORT ON THE INTERIOR OF THE SHELTER.
4	ALL BOTTOM JUMPERS SHALL BE COLOR CODED WITH (1) SET OF 3/4" WIDE BANDS ON EACH END OF THE BOTTOM JUMPER.
5	ALL BOTTOM JUMPERS SHALL BE COLOR CODED WITH (1) SET OF 3/4" WIDE BANDS ON EACH END OF THE BOTTOM JUMPER.

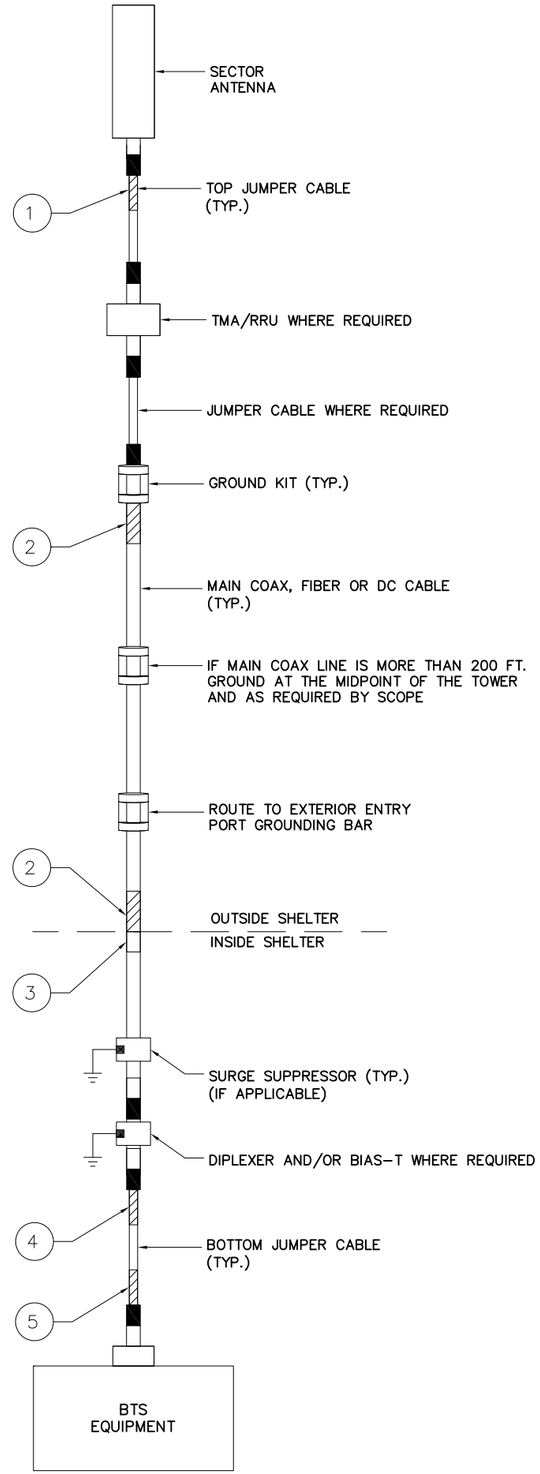
CABLE MARKING DIAGRAM

SCALE: N.T.S. | 2

1. THE ANTENNA SYSTEM COAX SHALL BE LABELED WITH VINYL TAPE.
2. THE STANDARD IS BASED ON EIGHT COLORED TAPES-RED, BLUE, GREEN, YELLOW, ORANGE, BROWN, WHITE, AND VIOLET. THESE TAPES MUST BE 3/4" WIDE & UV RESISTANT SUCH AS SCOTCH 35 VINYL ELECTRICAL COLOR CODING TAPE AND SHOULD BE READILY AVAILABLE TO THE ELECTRICIAN OR CONTRACTOR ON SITE.
3. USING COLOR BANDS ON THE CABLES, MARK ALL RF CABLE BY SECTOR AND CABLE NUMBER AS SHOWN ON "CABLE COLOR CHART".
4. WHEN AN EXISTING COAXIAL LINE THAT IS INTENDED TO BE A SHARED LINE BETWEEN TECHNOLOGIES IS ENCOUNTERED, THE CONTRACTOR SHALL REMOVE THE EXISTING COLOR CODING SCHEME AND REPLACE IT WITH THE COLOR CODING STANDARD. IN THE ABSENCE OF AN EXISTING COLOR CODING AND TAGGING SCHEME, OR WHEN INSTALLING PROPOSED COAXIAL CABLES, THIS GUIDELINE SHALL BE IMPLEMENTED AT THAT SITE REGARDLESS OF TECHNOLOGY.
5. ALL COLOR CODE TAPE SHALL BE 3M-35 AND SHALL BE INSTALLED USING A MINIMUM OF (3) THREE WRAPS OF TAPE AND SHALL BE NEATLY TRIMMED AND SMOOTHED OUT SO AS TO AVOID UNRAVELING.
6. ALL COLOR BANDS INSTALLED AT THE TOP OF THE TOWER SHALL BE A MINIMUM OF 3" WIDE, AND SHALL HAVE A MINIMUM OF 3/4" OF SPACE BETWEEN EACH COLOR.
7. ALL COLOR CODES SHALL BE INSTALLED SO AS TO ALIGN NEATLY WITH ONE ANOTHER FROM SIDE-TO-SIDE.
8. IF EXISTING CABLES AT THE SITE ALREADY HAVE A COLOR CODING SCHEME AND THEY ARE NOT INTENDED TO BE REUSED OR SHARED WITH THE NEW TECHNOLOGY, THE EXISTING COLOR CODING SCHEME SHALL REMAIN UNTOUCHED.

CABLE MARKING NOTES

SCALE: N.T.S. | 3



CABLE COLOR CODING DIAGRAM

SCALE: N.T.S. | 4

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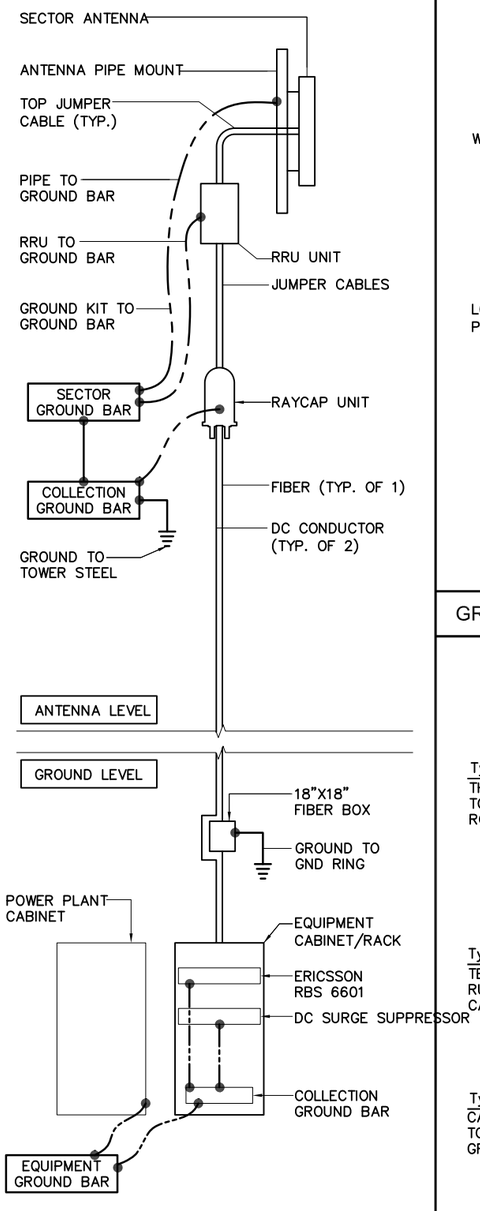
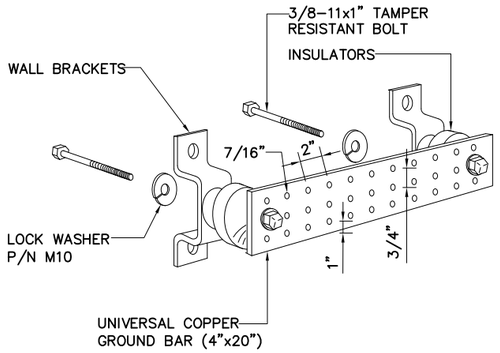
EAST HAVEN, CT 06512

SHEET NAME
CABLE NOTES AND COLOR CODING

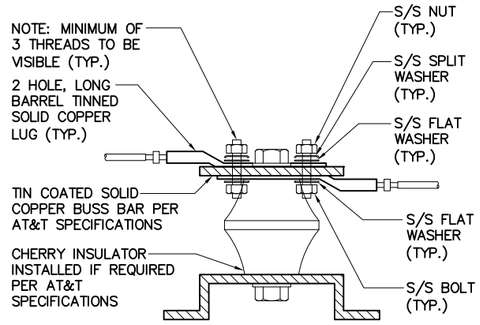
SHEET NUMBER
A7



GROUNDING SCHEMATIC SCALE: N.T.S. 1



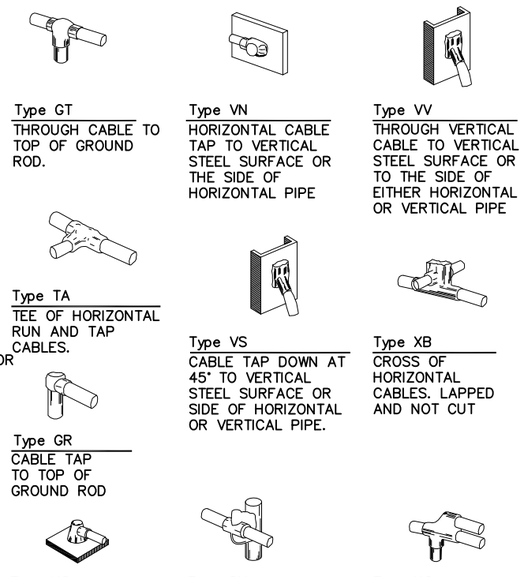
GROUND BAR DETAIL SCALE: N.T.S. 2



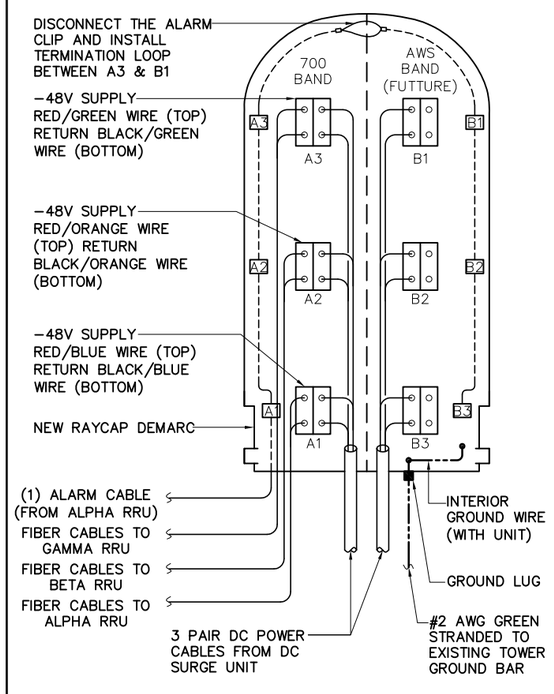
NOTES:

1. ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING SPLIT WASHERS.
2. COAT WIRE END WITH ANTI-OXIDATION COMPOUND PRIOR TO INSERTION INTO LUG BARREL AND CRIMPING.
3. APPLY ANTI-OXIDATION COMPOUND BETWEEN ALL LUGS AND BUSS BARS PRIOR TO MATING AND BOLTING.

LUG DETAIL SCALE: N.T.S. 3



EXOTHERMIC WELD DETAILS SCALE: N.T.S. 4



RAYCAP DC POWER AND ALARM DET. SCALE: N.T.S. 5

NOT USED SCALE: N.T.S. 6

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EAST HAVEN, CT 06512

SHEET NAME
GROUNDING DETAILS

SHEET NUMBER
A8

FEC# 2016.0200. 0027

July 20, 2016

Charles Trask
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277
(980) 209-8228

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630
btwo@btgrp.com

Subject: **Structural Analysis Report**

Carrier Designation:	***AT&T Mobility* Co-Locate**	
	Carrier Site Number:	CTL05048
	Carrier Site Name:	East Haven South
Crown Castle Designation:	**Crown Castle BU Number:**	842862
	Crown Castle Site Name:	East Haven South
	Crown Castle JDE Job Number:	380603
	Crown Castle Work Order Number:	1272843
	Crown Castle Application Number:	348867 Rev. 4
Engineering Firm Designation:	**B+T Group Project Number:**	98372.003.01
Site Data:	**259 Commerce Street, East Haven, New Haven County, CT** **Latitude *41° 15' 22.88"*, Longitude *-72° 52' 32.8"*** **58 Foot - Monopole Tower**	

Dear Charles Trask,

B+T Group is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 927506, in accordance with application 348867, revision 4.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC5: Existing + Proposed Equipment **Sufficient Capacity**
Note: See Table 1 and Table 2 for the proposed and existing loading, respectively.

This analysis has been performed in accordance with the TIA/EIA-222-F standard and 2005 CT State Building Code with 2009 amendment based upon a wind speed of 85 mph fastest mile.

All equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

We at *B+T Group* appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:
B+T Engineering, Inc.

Jason Brock, E.I.
Project Engineer

Chad E. Tuttle, P.E.
Engineer of Record
COA: PEC.0001564 Expires: 02/10/2017

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 58 ft. Monopole tower designed by FWT, Inc. in September of 2003. The tower was originally designed for a wind speed of 85 mph per TIA/EIA-222-F.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 85 mph with no ice, 37.6 mph with 0.75 inch ice thickness and 50 mph under service loads.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
54.0	55.0	3	CCI Antennas	HPA-65R-BUU-H6	--	--	--
		3	Ericsson	RRUS12/RRUS A2			

Table 2 - Existing Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
54.0	57.0	6	Kathrein	860 10025	6 2 1	7/8 5/8 3/8	1
		6	Powerwave Tech.	LGP 21403			
		3	Ericsson	RRUS 11			
		1	Raycap	DC6-48-60-18-8F			
	55.0	3	Kathrein	800 10121			
		3	**KMW Comm.**	**AM-X-CD-16-65-00T-RET**	**--**	**--**	**2**
	54.0	1	--	T-Arm Mount [TA 702-3]	--	--	1
47.0	47.0	3	Commscope	ATBT-BOTTOM-24V	12 6	7/8 1-5/8	1
		3	Commscope	LNX-6515DS-VTM			
		6	Ericsson	1900 MHZ G			
		3	Ericsson	KRY 112 144/1			
		3	RFS Celwave	APX16DWV-16DWVS-C			
		1	--	Platform Mount [LP 303-1]			
37.0	37.0	3	RFS Celwave	APXV18-206517S-C	6	1-5/8	1

Notes:
1) Existing Equipment
2) Equipment To Be Removed; Not Considered in This Analysis

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
57.0	57.0	1	Generic	10' L.P Sectored Mount	--	--
		9	Generic	6'x1'x3" Panel Antenna		
52.0	52.0	2	Generic	4' STD Dish	--	--
47.0	47.0	1	Generic	10' L.P Sectored Mount	--	--
		9	Generic	6'x1'x3" Panel Antenna		

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
Online Application	AT&T Mobility Co-Locate Rev# 4	348867	CCI Sites
Tower Manufacturer Drawing	FWT Inc., Job No.J030902001	4291655	CCI Sites
Foundation Drawing	FWT Inc., Job No.J030902001	4529325	CCI Sites
Geotech Report	Jaworski Geotech Inc., Project No.03368G	4291659	CCI Sites
Antenna Configuration	Crown CAD Package	Date:07/18/2016	CCI Sites

3.1) Analysis Method

tnxTower (version 7.0.5.1), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) When applicable, transmission cables are considered as structural components for calculating wind loads as allowed by TIA/EIA-222-F.
5) Mount areas and weights are assumed based on photographs provided.

This analysis may be affected if any assumptions are not valid or have been made in error. B+T Group should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	58 - 50.5	Pole	TP19.078x17.393x0.188	1	-0.859	584.448	3.4	Pass
L2	50.5 - 0	Pole	TP30.05x18.141x0.188	2	-7.969	899.526	68.7	Pass
							Summary	
						Pole (L2)	68.7	Pass
						RATING =	**68.7**	**Pass**

Table 6 - Tower Component Stresses vs. Capacity – LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	Base	61.4	Pass
1	Base Plate	Base	64.7	Pass
1	Base Foundation(Structure)	Base	31.9	Pass
1	Base Foundation (Soil Interaction)	Base	44.7	Pass

Structure Rating (max from all components) =	68.7%

Notes:
1) See additional documentation in "Appendix C - Additional Calculations" for calculations supporting the % capacity consumed.

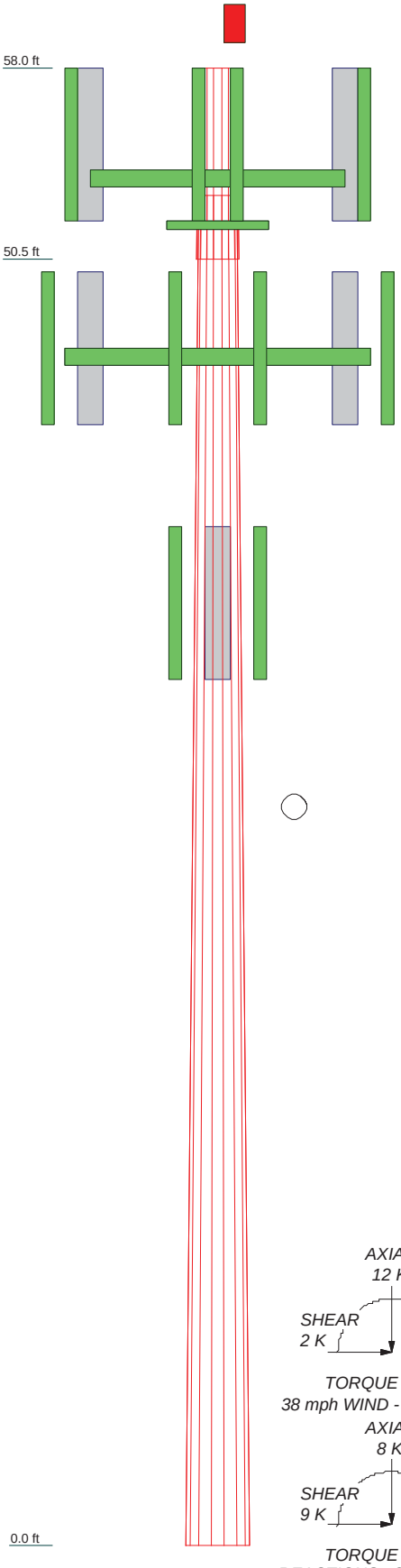
4.1) Recommendations

The tower and its foundation have sufficient capacity to carry the existing and proposed loads. No modifications are required at this time.

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	7.500	18	0.188	2.500	17.393	19.078	A572-65	0.3
2	53.000	18	0.188		18.141	30.050		2.6
								2.8



DESIGNED APPURTENANCE LOADING

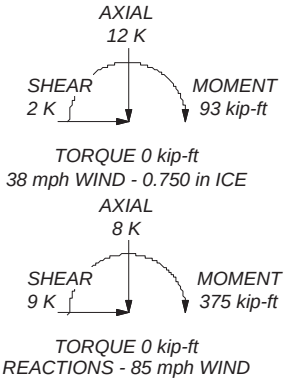
TYPE	ELEVATION	TYPE	ELEVATION
(2) Obstruction Lighting (E)	58	APX16DWV-16DWVS-C w/ Mount Pipe (E)	47
HPA-65R-BUU-H6 w/ Mount Pipe (P)	54	APX16DWV-16DWVS-C w/ Mount Pipe (E)	47
HPA-65R-BUU-H6 w/ Mount Pipe (P)	54	LNX-6515DS-VTM w/ Mount Pipe (E)	47
HPA-65R-BUU-H6 w/ Mount Pipe (P)	54	LNX-6515DS-VTM w/ Mount Pipe (E)	47
RRUS12/RRUS A2 (P)	54	LNX-6515DS-VTM w/ Mount Pipe (E)	47
RRUS12/RRUS A2 (P)	54	(2) 1900 MHZ G (E)	47
RRUS12/RRUS A2 (P)	54	(2) 1900 MHZ G (E)	47
800 10121 w/ Mount Pipe (E)	54	(2) 1900 MHZ G (E)	47
800 10121 w/ Mount Pipe (E)	54	KRY 112 144/1 (E)	47
800 10121 w/ Mount Pipe (E)	54	KRY 112 144/1 (E)	47
(2) 860 10025 (E)	54	KRY 112 144/1 (E)	47
(2) 860 10025 (E)	54	ATBT-BOTTOM-24V (E)	47
(2) 860 10025 (E)	54	ATBT-BOTTOM-24V (E)	47
(2) LGP 21403 (E)	54	ATBT-BOTTOM-24V (E)	47
(2) LGP 21403 (E)	54	7'x2" Antenna Mount Pipe (E)	47
(2) LGP 21403 (E)	54	7'x2" Antenna Mount Pipe (E)	47
RRUS 11 (E)	54	7'x2" Antenna Mount Pipe (E)	47
RRUS 11 (E)	54	Platform Mount [LP 303-1] (E)	47
RRUS 11 (E)	54	APXV18-206517S-C w/ Mount Pipe (E-Direct to mount pole)	37
DC6-48-60-18-8F (E)	54	APXV18-206517S-C w/ Mount Pipe (E)	37
6' x 2" Mount Pipe (E-per photo)	54	APXV18-206517S-C w/ Mount Pipe (E)	37
6' x 2" Mount Pipe (E-per photo)	54		
6' x 2" Mount Pipe (E-per photo)	54		
T-Arm Mount [TA 702-3] (E)	54		
Side Arm Mount [SO 102-3] (E)	52		
APX16DWV-16DWVS-C w/ Mount Pipe (E)	47		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. RE: Feedline Distribution Chart for transmission lines distribution.
6. TOWER RATING: 68.7%



B+T Group
1717 S Boulder Ave, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 98372.003.01 - EAST HAVEN SOUTH, CT (BU# 842862			
Project:			
Client: Crown Castle	Drawn by: jbrock	App'd:	
Code: TIA/EIA-222-F	Date: 07/20/16	Scale: NTS	
Path: S:\Projects\Crown Castle\98000\98372_842862_East Haven South\Engineering\tnxTower\98372_003_01_EAST HAVEN SOUTH_CT.eri		Dwg No. E-1	

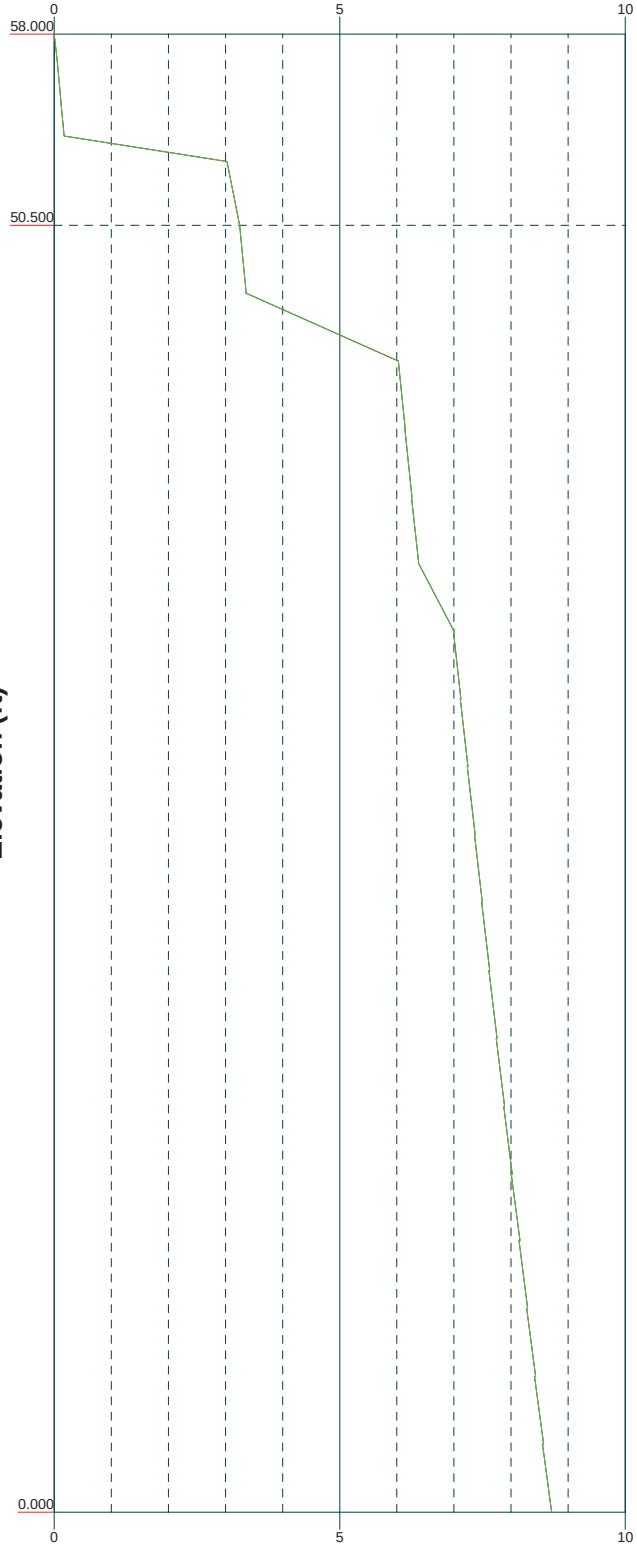
TIA/EIA-222-F - 85 mph/38 mph 0.750 in Ice

Vx Vz

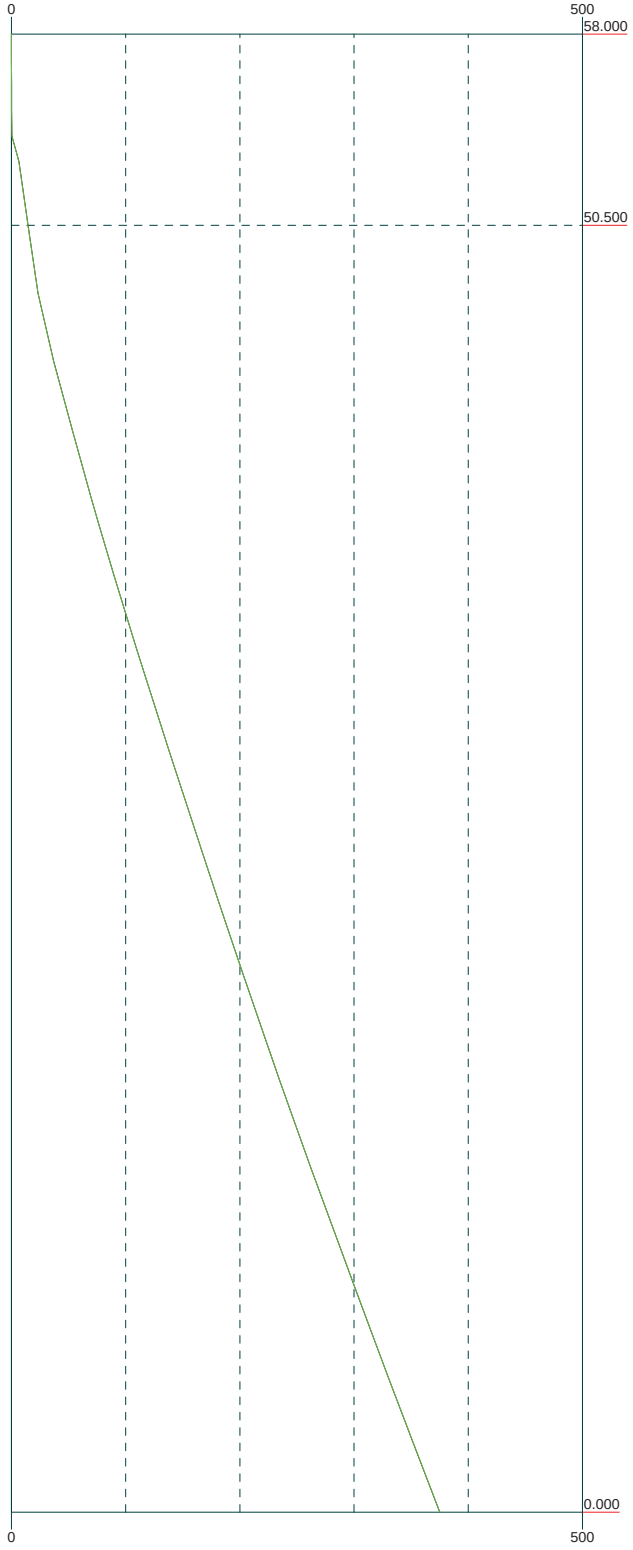
Maximum Values

Mx Mz

Global Mast Shear (K)



Global Mast Moment (kip-ft)



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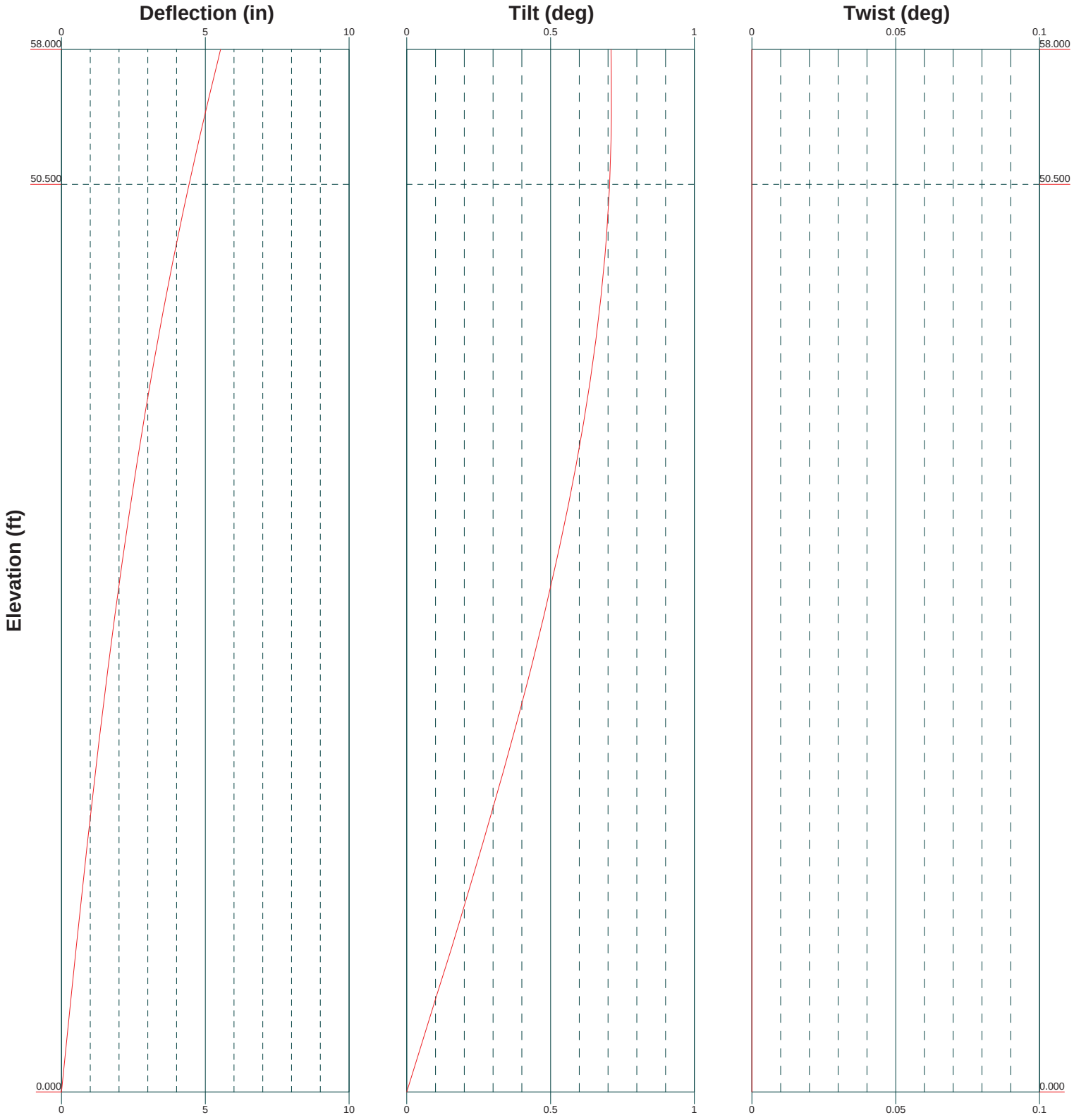
Job: 98372.003.01 - EAST HAVEN SOUTH, CT (BU# 84286			
Project:			
Client: Crown Castle	Drawn by: jbrock	App'd:	
Code: TIA/EIA-222-F	Date: 07/20/16	Scale: NTS	
Path: S:\Projects\Crown Castle\98000\98372_842862_East Haven South\Engineering\tnxTower\98372_003_01_EAST HAVEN SOUTH_CT.eri		Dwg No. E-4	

TIA/EIA-222-F - Service - 50 mph

Maximum Values



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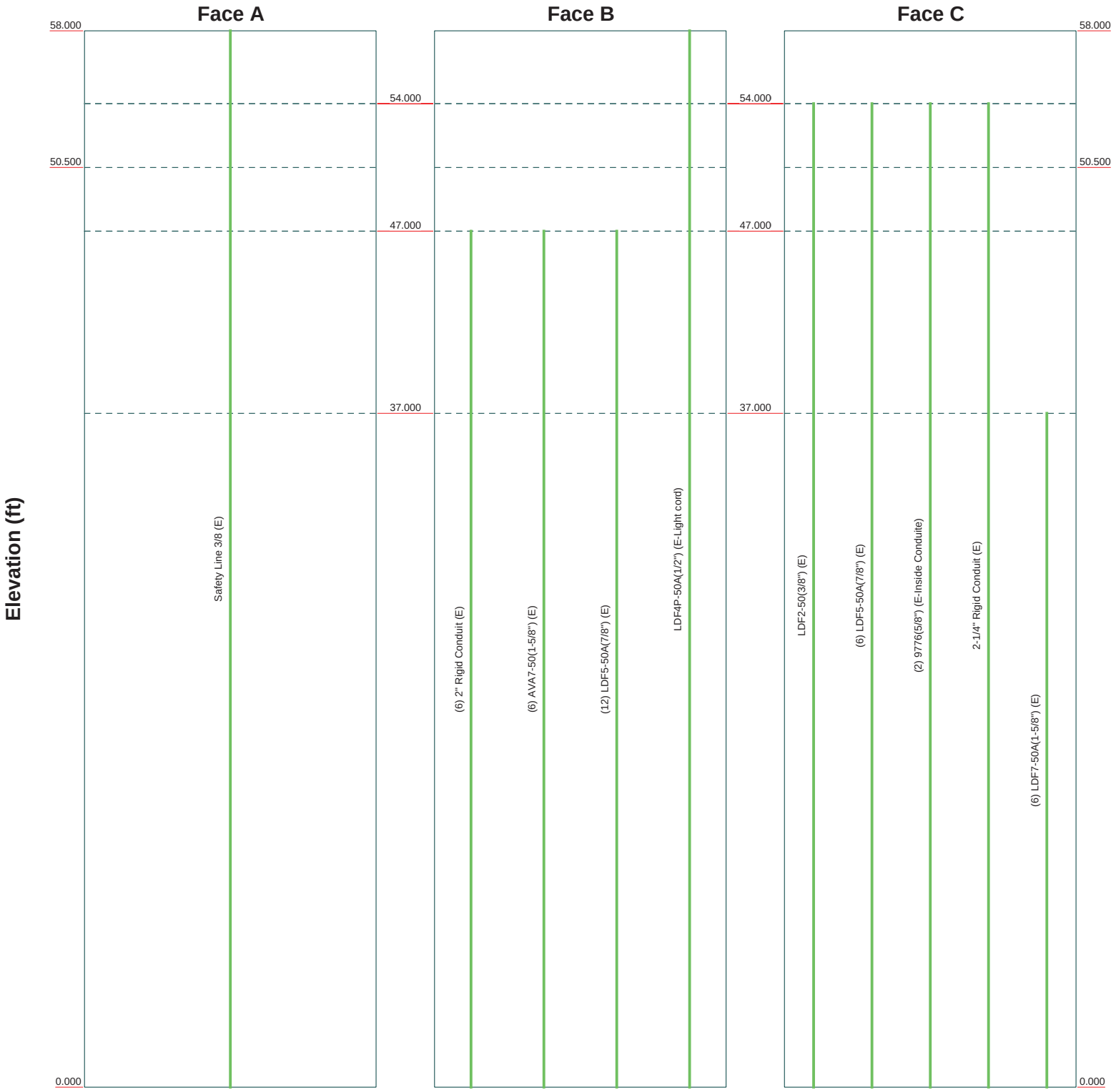
FAX: (918) 295-0265

Job:	***98372.003.01 - EAST HAVEN SOUTH, CT (BU# 842862***		
Project:			
Client: Crown Castle		Drawn by: jbrock	App'd:
Code: TIA/EIA-222-F		Date: 07/20/16	Scale: NTS
Path: S:\Projects\Crown Castle\98000\98372_842862_East Haven South\Engineering\tnxTower\98372_003_01_EAST HAVEN SOUTH_CT.eri			Dwg No. E-5

Feed Line Distribution Chart
0' - 58'

Round | Flat | App In Face | App Out Face | Truss Leg



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Job:	***98372.003.01 - EAST HAVEN SOUTH, CT (BU# 842862***		
Project:			
Client: Crown Castle		Drawn by: jbrock	App'd:
Code: TIA/EIA-222-F		Date: 07/20/16	Scale: NTS
Path: S:\Projects\Crown Castle\98000\98372_842862_East Haven South\Engineering\tnxTower\98372_003_01_EAST HAVEN SOUTH_CT.eri			Dwg No. E-7

Tower Input Data

There is a pole section.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in New Haven County, Connecticut.
Basic wind speed of 85 mph.
Nominal ice thickness of 0.750 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 38 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 50 mph.
RE: Feedline Distribution Chart for transmission lines distribution..
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.333.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned		Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area		SR Leg Bolts Resist Compression
√	Use Code Stress Ratios		Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys		Retension Guys To Initial Tension		Offset Girt At Foundation
√	Escalate Ice	√	Bypass Mast Stability Checks	√	Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients		Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-G Bracing Resist. Exemption
	Include Bolts In Member Capacity		Autocalc Torque Arm Areas		Use TIA-222-G Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
	Secondary Horizontal Braces Leg		Sort Capacity Reports By Component	√	Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric				

Tapered Pole Section Geometry

Section	*Elevation* *ft*	*Section Length* *ft*	*Splice Length* *ft*	*Number of Sides*	*Top Diameter* *in*	*Bottom Diameter* *in*	*Wall Thickness* *in*	*Bend Radius* *in*	*Pole Grade*
L1	58.000-50.500	7.500	2.500	18	17.393	19.078	0.188	0.750	A572-65 (65 ksi)
L2	50.500-0.000	53.000		18	18.141	30.050	0.188	0.750	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	17.661	10.239	382.955	6.108	8.836	43.342	766.414	5.121	2.731	14.566
	19.372	11.242	506.846	6.706	9.692	52.297	1014.359	5.622	3.028	16.148
L2	18.992	10.685	435.128	6.374	9.216	47.215	870.829	5.343	2.863	15.269
	30.514	17.772	2002.277	10.601	15.265	131.164	4007.188	8.888	4.959	26.447

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 58.000-50.500				1	1	1			
L2 50.500-0.000				1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
-										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
LDF2-50(3/8") (E)	C	No	Inside Pole	54.000 - 0.000	1	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
LDF5-50A(7/8") (E)	C	No	Inside Pole	54.000 - 0.000	6	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
9776(5/8") (E-Inside Conduite)	C	No	Inside Pole	54.000 - 0.000	2	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
2-1/4" Rigid Conduit (E)	C	No	CaAa (Out Of Face)	54.000 - 0.000	1	No Ice	0.225	0.003
						1/2" Ice	0.325	0.005
						1" Ice	0.425	0.007
						2" Ice	0.625	0.013
						4" Ice	1.025	0.034
-								
2" Rigid Conduit (E)	B	No	Inside Pole	47.000 - 0.000	6	No Ice	0.000	0.003
						1/2" Ice	0.000	0.003
						1" Ice	0.000	0.003

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
						2" Ice	0.000	0.003
						4" Ice	0.000	0.003
AVA7-50(1-5/8") (E)	B	No	Inside Pole	47.000 - 0.000	6	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
LDF5-50A(7/8") (E)	B	No	Inside Pole	47.000 - 0.000	12	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
-								
LDF7-50A(1-5/8") (E)	C	No	Inside Pole	37.000 - 0.000	6	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
-								
Safety Line 3/8 (E)	A	No	CaAa (Out Of Face)	58.000 - 0.000	1	No Ice	0.037	0.000
						1/2" Ice	0.137	0.001
						1" Ice	0.238	0.001
						2" Ice	0.437	0.002
						4" Ice	0.838	0.004
-								
LDF4P-50A(1/2") (E-Light cord)	B	No	Inside Pole	58.000 - 0.000	1	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
-								

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	58.000-50.500	A	0.000	0.000	0.000	0.281	0.002
		B	0.000	0.000	0.000	0.000	0.001
		C	0.000	0.000	0.000	0.787	0.020
L2	50.500-0.000	A	0.000	0.000	0.000	1.894	0.011
		B	0.000	0.000	0.000	0.000	1.181
		C	0.000	0.000	0.000	11.363	0.465

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	58.000-50.500	A	0.796	0.000	0.000	0.000	1.475	0.008
		B		0.000	0.000	0.000	0.000	0.001
		C		0.000	0.000	0.000	1.345	0.030
L2	50.500-0.000	A	0.750	0.000	0.000	0.000	9.933	0.054
		B		0.000	0.000	0.000	0.000	1.181
		C		0.000	0.000	0.000	19.402	0.619

Feed Line Center of Pressure

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L1	58.000-50.500	-0.128	0.022	-0.179	-0.118
L2	50.500-0.000	-0.259	0.100	-0.369	-0.005

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(2) Obstruction Lighting	B	From Leg	0.000		0.000	58.000	No Ice	0.133	0.133	0.005
(E)			0.000				1/2" Ice	0.194	0.194	0.007
			1.000				1" Ice	0.267	0.267	0.010
							2" Ice	0.444	0.444	0.019
							4" Ice	0.933	0.933	0.054
-										
HPA-65R-BUU-H6 w/ Mount Pipe	A	From Leg	3.000		0.000	54.000	No Ice	10.598	8.113	0.077
(P)			0.000				1/2" Ice	11.268	9.304	0.158
			1.000				1" Ice	11.906	10.209	0.248
							2" Ice	13.209	12.175	0.456
							4" Ice	15.934	16.354	1.020
HPA-65R-BUU-H6 w/ Mount Pipe	B	From Leg	3.000		0.000	54.000	No Ice	10.598	8.113	0.077
(P)			0.000				1/2" Ice	11.268	9.304	0.158
			1.000				1" Ice	11.906	10.209	0.248
							2" Ice	13.209	12.175	0.456
							4" Ice	15.934	16.354	1.020
HPA-65R-BUU-H6 w/ Mount Pipe	C	From Leg	3.000		0.000	54.000	No Ice	10.598	8.113	0.077
(P)			0.000				1/2" Ice	11.268	9.304	0.158
			1.000				1" Ice	11.906	10.209	0.248
							2" Ice	13.209	12.175	0.456
							4" Ice	15.934	16.354	1.020
RRUS12/RRUS A2	A	From Leg	3.000		0.000	54.000	No Ice	3.667	2.141	0.072
(P)			0.000				1/2" Ice	3.924	2.347	0.099
			1.000				1" Ice	4.189	2.563	0.130
							2" Ice	4.745	3.019	0.203
							4" Ice	5.960	4.035	0.398
RRUS12/RRUS A2	B	From Leg	3.000		0.000	54.000	No Ice	3.667	2.141	0.072
(P)			0.000				1/2" Ice	3.924	2.347	0.099
			1.000				1" Ice	4.189	2.563	0.130
							2" Ice	4.745	3.019	0.203
							4" Ice	5.960	4.035	0.398
RRUS12/RRUS A2	C	From Leg	3.000		0.000	54.000	No Ice	3.667	2.141	0.072
(P)			0.000				1/2" Ice	3.924	2.347	0.099
			1.000				1" Ice	4.189	2.563	0.130
							2" Ice	4.745	3.019	0.203
							4" Ice	5.960	4.035	0.398
800 10121 w/ Mount Pipe	A	From Leg	3.000		0.000	54.000	No Ice	5.685	4.600	0.066
(E)			0.000				1/2" Ice	6.182	5.351	0.114

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			1.000			1" Ice	6.676	6.046	0.168
						2" Ice	7.695	7.526	0.298
						4" Ice	9.858	10.832	0.675
800 10121 w/ Mount Pipe (E)	B	From Leg	3.000 0.000 1.000	0.000	54.000	No Ice 1/2" Ice 1" Ice	5.685 6.182 6.676	4.600 5.351 6.046	0.066 0.114 0.168
						2" Ice	7.695	7.526	0.298
						4" Ice	9.858	10.832	0.675
800 10121 w/ Mount Pipe (E)	C	From Leg	3.000 0.000 1.000	0.000	54.000	No Ice 1/2" Ice 1" Ice	5.685 6.182 6.676	4.600 5.351 6.046	0.066 0.114 0.168
						2" Ice	7.695	7.526	0.298
						4" Ice	9.858	10.832	0.675
(2) 860 10025 (E)	A	From Leg	3.000 0.000 3.000	0.000	54.000	No Ice 1/2" Ice 1" Ice	0.163 0.229 0.302	0.136 0.199 0.270	0.001 0.003 0.005
						2" Ice	0.476	0.439	0.014
						4" Ice	0.927	0.879	0.051
(2) 860 10025 (E)	B	From Leg	3.000 0.000 3.000	0.000	54.000	No Ice 1/2" Ice 1" Ice	0.163 0.229 0.302	0.136 0.199 0.270	0.001 0.003 0.005
						2" Ice	0.476	0.439	0.014
						4" Ice	0.927	0.879	0.051
(2) 860 10025 (E)	C	From Leg	3.000 0.000 3.000	0.000	54.000	No Ice 1/2" Ice 1" Ice	0.163 0.229 0.302	0.136 0.199 0.270	0.001 0.003 0.005
						2" Ice	0.476	0.439	0.014
						4" Ice	0.927	0.879	0.051
(2) LGP 21403 (E)	A	From Leg	3.000 0.000 3.000	0.000	54.000	No Ice 1/2" Ice 1" Ice	1.288 1.445 1.611	0.364 0.479 0.602	0.014 0.021 0.030
						2" Ice	1.969	0.874	0.055
						4" Ice	2.788	1.522	0.135
(2) LGP 21403 (E)	B	From Leg	3.000 0.000 3.000	0.000	54.000	No Ice 1/2" Ice 1" Ice	1.288 1.445 1.611	0.364 0.479 0.602	0.014 0.021 0.030
						2" Ice	1.969	0.874	0.055
						4" Ice	2.788	1.522	0.135
(2) LGP 21403 (E)	C	From Leg	3.000 0.000 3.000	0.000	54.000	No Ice 1/2" Ice 1" Ice	1.288 1.445 1.611	0.364 0.479 0.602	0.014 0.021 0.030
						2" Ice	1.969	0.874	0.055
						4" Ice	2.788	1.522	0.135
RRUS 11 (E)	A	From Leg	3.000 0.000 3.000	0.000	54.000	No Ice 1/2" Ice 1" Ice	3.249 3.491 3.741	1.373 1.551 1.738	0.048 0.068 0.092
						2" Ice	4.268	2.138	0.150
						4" Ice	5.426	3.042	0.310
RRUS 11 (E)	B	From Leg	3.000 0.000 3.000	0.000	54.000	No Ice 1/2" Ice 1" Ice	3.249 3.491 3.741	1.373 1.551 1.738	0.048 0.068 0.092
						2" Ice	4.268	2.138	0.150
						4" Ice	5.426	3.042	0.310
RRUS 11 (E)	C	From Leg	3.000 0.000 3.000	0.000	54.000	No Ice 1/2" Ice 1" Ice	3.249 3.491 3.741	1.373 1.551 1.738	0.048 0.068 0.092
						2" Ice	4.268	2.138	0.150

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						4" Ice	5.426	3.042	0.310
DC6-48-60-18-8F	A	From Leg	3.000	0.000	54.000	No Ice	1.467	1.467	0.019
(E)			0.000			1/2" Ice	1.667	1.667	0.037
			3.000			1" Ice	1.878	1.878	0.057
						2" Ice	2.333	2.333	0.105
						4" Ice	3.378	3.378	0.239
6' x 2" Mount Pipe	A	From Leg	1.000	0.000	54.000	No Ice	1.425	1.425	0.022
(E-per photo)			0.000			1/2" Ice	1.925	1.925	0.033
			-2.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
6' x 2" Mount Pipe	B	From Leg	1.000	0.000	54.000	No Ice	1.425	1.425	0.022
(E-per photo)			0.000			1/2" Ice	1.925	1.925	0.033
			-2.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
6' x 2" Mount Pipe	C	From Leg	1.000	0.000	54.000	No Ice	1.425	1.425	0.022
(E-per photo)			0.000			1/2" Ice	1.925	1.925	0.033
			-2.000			1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
Side Arm Mount [SO 102-3]	C	None		0.000	52.000	No Ice	3.000	3.000	0.081
(E)						1/2" Ice	3.480	3.480	0.111
						1" Ice	3.960	3.960	0.141
						2" Ice	4.920	4.920	0.201
						4" Ice	6.840	6.840	0.321
T-Arm Mount [TA 702-3]	C	None		0.000	54.000	No Ice	5.640	5.640	0.339
(E)						1/2" Ice	6.550	6.550	0.429
						1" Ice	7.460	7.460	0.519
						2" Ice	9.280	9.280	0.699
						4" Ice	12.920	12.920	1.059
-									
APX16DWV-16DWVS-C w/	A	From Leg	4.000	0.000	47.000	No Ice	7.466	3.494	0.061
Mount Pipe			0.000			1/2" Ice	7.994	4.263	0.110
(E)			0.000			1" Ice	8.518	4.960	0.165
						2" Ice	9.595	6.403	0.298
						4" Ice	11.873	9.490	0.683
APX16DWV-16DWVS-C w/	B	From Leg	4.000	0.000	47.000	No Ice	7.466	3.494	0.061
Mount Pipe			0.000			1/2" Ice	7.994	4.263	0.110
(E)			0.000			1" Ice	8.518	4.960	0.165
						2" Ice	9.595	6.403	0.298
						4" Ice	11.873	9.490	0.683
APX16DWV-16DWVS-C w/	C	From Leg	4.000	0.000	47.000	No Ice	7.466	3.494	0.061
Mount Pipe			0.000			1/2" Ice	7.994	4.263	0.110
(E)			0.000			1" Ice	8.518	4.960	0.165
						2" Ice	9.595	6.403	0.298
						4" Ice	11.873	9.490	0.683
LNX-6515DS-VTM w/	A	From Leg	4.000	0.000	47.000	No Ice	11.683	9.842	0.083
Mount Pipe			0.000			1/2" Ice	12.404	11.366	0.173
(E)			0.000			1" Ice	13.135	12.914	0.273
						2" Ice	14.601	15.267	0.506
						4" Ice	17.875	20.139	1.151
LNX-6515DS-VTM w/	B	From Leg	4.000	0.000	47.000	No Ice	11.683	9.842	0.083
Mount Pipe			0.000			1/2" Ice	12.404	11.366	0.173
(E)			0.000			1" Ice	13.135	12.914	0.273
						2" Ice	14.601	15.267	0.506
						4" Ice	17.875	20.139	1.151

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
LNX-6515DS-VTM w/ Mount Pipe (E)	C	From Leg	4.000 0.000 0.000	0.000	47.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	11.683 12.404 13.135 14.601 17.875	9.842 11.366 12.914 15.267 20.139	0.083 0.173 0.273 0.506 1.151
(2) 1900 MHZ G (E)	A	From Leg	4.000 0.000 0.000	0.000	47.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.272 0.348 0.432 0.627 1.119	0.506 0.620 0.743 1.015 1.664	0.018 0.024 0.032 0.055 0.129
(2) 1900 MHZ G (E)	B	From Leg	4.000 0.000 0.000	0.000	47.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.272 0.348 0.432 0.627 1.119	0.506 0.620 0.743 1.015 1.664	0.018 0.024 0.032 0.055 0.129
(2) 1900 MHZ G (E)	C	From Leg	4.000 0.000 0.000	0.000	47.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.272 0.348 0.432 0.627 1.119	0.506 0.620 0.743 1.015 1.664	0.018 0.024 0.032 0.055 0.129
KRY 112 144/1 (E)	A	From Leg	4.000 0.000 0.000	0.000	47.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.408 0.497 0.594 0.815 1.359	0.204 0.273 0.351 0.533 0.999	0.011 0.014 0.019 0.032 0.082
KRY 112 144/1 (E)	B	From Leg	4.000 0.000 0.000	0.000	47.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.408 0.497 0.594 0.815 1.359	0.204 0.273 0.351 0.533 0.999	0.011 0.014 0.019 0.032 0.082
KRY 112 144/1 (E)	C	From Leg	4.000 0.000 0.000	0.000	47.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.408 0.497 0.594 0.815 1.359	0.204 0.273 0.351 0.533 0.999	0.011 0.014 0.019 0.032 0.082
ATBT-BOTTOM-24V (E)	A	From Leg	4.000 0.000 0.000	0.000	47.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.121 0.172 0.232 0.377 0.771	0.075 0.119 0.172 0.303 0.668	0.003 0.004 0.006 0.013 0.045
ATBT-BOTTOM-24V (E)	B	From Leg	4.000 0.000 0.000	0.000	47.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.121 0.172 0.232 0.377 0.771	0.075 0.119 0.172 0.303 0.668	0.003 0.004 0.006 0.013 0.045
ATBT-BOTTOM-24V (E)	C	From Leg	4.000 0.000 0.000	0.000	47.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.121 0.172 0.232 0.377 0.771	0.075 0.119 0.172 0.303 0.668	0.003 0.004 0.006 0.013 0.045
7'x2" Antenna Mount Pipe (E)	A	From Leg	4.000 0.000 0.000	0.000	47.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.663 2.391 2.825 3.706 5.578	1.663 2.391 2.825 3.706 5.578	0.026 0.039 0.056 0.105 0.266
7'x2" Antenna Mount Pipe (E)	B	From Leg	4.000 0.000	0.000	47.000	No Ice 1/2" Ice	1.663 2.391	1.663 2.391	0.026 0.039

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1" Ice	2.825	2.825	0.056
						2" Ice	3.706	3.706	0.105
						4" Ice	5.578	5.578	0.266
7'x2" Antenna Mount Pipe	C	From Leg	4.000	0.000	47.000	No Ice	1.663	1.663	0.026
(E)			0.000			1/2" Ice	2.391	2.391	0.039
			0.000			1" Ice	2.825	2.825	0.056
						2" Ice	3.706	3.706	0.105
						4" Ice	5.578	5.578	0.266
Platform Mount [LP 303-1]	C	None		0.000	47.000	No Ice	14.660	14.660	1.250
(E)						1/2" Ice	18.870	18.870	1.481
						1" Ice	23.080	23.080	1.713
						2" Ice	31.500	31.500	2.175
						4" Ice	48.340	48.340	3.101
-									
APXV18-206517S-C w/	A	From Leg	1.000	0.000	37.000	No Ice	5.404	4.700	0.052
Mount Pipe			0.000			1/2" Ice	5.960	5.860	0.097
(E-Direct to mount pole)			0.000			1" Ice	6.481	6.734	0.150
						2" Ice	7.547	8.515	0.280
						4" Ice	9.919	12.277	0.679
APXV18-206517S-C w/	B	From Leg	1.000	0.000	37.000	No Ice	5.404	4.700	0.052
Mount Pipe			0.000			1/2" Ice	5.960	5.860	0.097
(E)			0.000			1" Ice	6.481	6.734	0.150
						2" Ice	7.547	8.515	0.280
						4" Ice	9.919	12.277	0.679
APXV18-206517S-C w/	C	From Leg	1.000	0.000	37.000	No Ice	5.404	4.700	0.052
Mount Pipe			0.000			1/2" Ice	5.960	5.860	0.097
(E)			0.000			1" Ice	6.481	6.734	0.150
						2" Ice	7.547	8.515	0.280
						4" Ice	9.919	12.277	0.679
-									

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice+Temp
15	Dead+Wind 0 deg+Ice+Temp
16	Dead+Wind 30 deg+Ice+Temp

Comb. No.	Description
17	Dead+Wind 60 deg+Ice+Temp
18	Dead+Wind 90 deg+Ice+Temp
19	Dead+Wind 120 deg+Ice+Temp
20	Dead+Wind 150 deg+Ice+Temp
21	Dead+Wind 180 deg+Ice+Temp
22	Dead+Wind 210 deg+Ice+Temp
23	Dead+Wind 240 deg+Ice+Temp
24	Dead+Wind 270 deg+Ice+Temp
25	Dead+Wind 300 deg+Ice+Temp
26	Dead+Wind 330 deg+Ice+Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	58 - 50.5	Pole	Max Tension	18	0.000	0.000	-0.000
			Max. Compression	14	-2.828	-0.001	0.175
			Max. Mx	11	-0.859	7.442	0.030
			Max. My	2	-0.859	0.001	7.476
			Max. Vy	11	-3.027	6.528	0.059
			Max. Vx	2	-3.027	-0.001	6.595
			Max. Torque	11			-0.200
L2	50.5 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-12.241	0.271	0.074
			Max. Mx	11	-7.969	375.234	-0.000
			Max. My	8	-7.969	0.136	-375.098
			Max. Vy	11	-8.711	375.234	-0.000
			Max. Vx	2	-8.711	0.136	375.098
			Max. Torque	11			-0.200

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	24	12.241	2.140	0.000
	Max. H_x	11	7.980	8.701	0.000
	Max. H_z	2	7.980	0.000	8.701
	Max. M_x	2	375.098	0.000	8.701
	Max. M_z	5	374.962	-8.701	0.000
	Max. Torsion	4	0.180	-7.535	4.350
	Min. Vert	1	7.980	0.000	0.000

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Min. H_x	5	7.980	-8.701	0.000
	Min. H_z	8	7.980	0.000	-8.701
	Min. M_x	8	-375.098	0.000	-8.701
	Min. M_z	11	-375.234	8.701	0.000
	Min. Torsion	10	-0.180	7.535	-4.350

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	7.980	0.000	0.000	0.001	0.134	0.000
Dead+Wind 0 deg - No Ice	7.980	0.000	-8.701	-375.098	0.136	-0.052
Dead+Wind 30 deg - No Ice	7.980	4.350	-7.535	-324.844	-187.413	-0.134
Dead+Wind 60 deg - No Ice	7.980	7.535	-4.350	-187.549	-324.708	-0.180
Dead+Wind 90 deg - No Ice	7.980	8.701	0.000	0.000	-374.962	-0.178
Dead+Wind 120 deg - No Ice	7.980	7.535	4.350	187.549	-324.708	-0.129
Dead+Wind 150 deg - No Ice	7.980	4.350	7.535	324.844	-187.413	-0.045
Dead+Wind 180 deg - No Ice	7.980	0.000	8.701	375.098	0.136	0.052
Dead+Wind 210 deg - No Ice	7.980	-4.350	7.535	324.844	187.685	0.134
Dead+Wind 240 deg - No Ice	7.980	-7.535	4.350	187.549	324.980	0.180
Dead+Wind 270 deg - No Ice	7.980	-8.701	0.000	0.000	375.234	0.179
Dead+Wind 300 deg - No Ice	7.980	-7.535	-4.350	-187.549	324.980	0.129
Dead+Wind 330 deg - No Ice	7.980	-4.350	-7.535	-324.844	187.685	0.045
Dead+Ice+Temp	12.241	0.000	0.000	-0.074	0.271	0.000
Dead+Wind 0 deg+Ice+Temp	12.241	0.000	-2.140	-93.198	0.278	-0.018
Dead+Wind 30 deg+Ice+Temp	12.241	1.070	-1.853	-80.722	-46.281	-0.041
Dead+Wind 60 deg+Ice+Temp	12.241	1.853	-1.070	-46.638	-80.365	-0.052
Dead+Wind 90 deg+Ice+Temp	12.241	2.140	0.000	-0.079	-92.841	-0.050
Dead+Wind 120 deg+Ice+Temp	12.241	1.853	1.070	46.481	-80.365	-0.034
Dead+Wind 150 deg+Ice+Temp	12.241	1.070	1.853	80.565	-46.281	-0.009
Dead+Wind 180 deg+Ice+Temp	12.241	0.000	2.140	93.040	0.278	0.018
Dead+Wind 210 deg+Ice+Temp	12.241	-1.070	1.853	80.565	46.838	0.041
Dead+Wind 240 deg+Ice+Temp	12.241	-1.853	1.070	46.481	80.922	0.052
Dead+Wind 270 deg+Ice+Temp	12.241	-2.140	0.000	-0.079	93.397	0.050
Dead+Wind 300 deg+Ice+Temp	12.241	-1.853	-1.070	-46.638	80.922	0.034
Dead+Wind 330 deg+Ice+Temp	12.241	-1.070	-1.853	-80.722	46.838	0.009
Dead+Wind 0 deg - Service	7.980	0.000	-3.011	-129.821	0.136	-0.018
Dead+Wind 30 deg - Service	7.980	1.505	-2.607	-112.428	-64.774	-0.046
Dead+Wind 60 deg - Service	7.980	2.607	-1.505	-64.911	-112.292	-0.062
Dead+Wind 90 deg - Service	7.980	3.011	0.000	0.000	-129.685	-0.062
Dead+Wind 120 deg - Service	7.980	2.607	1.505	64.911	-112.292	-0.045
Dead+Wind 150 deg - Service	7.980	1.505	2.607	112.428	-64.774	-0.015
Dead+Wind 180 deg - Service	7.980	0.000	3.011	129.821	0.136	0.018
Dead+Wind 210 deg - Service	7.980	-1.505	2.607	112.428	65.047	0.046
Dead+Wind 240 deg - Service	7.980	-2.607	1.505	64.911	112.565	0.062
Dead+Wind 270 deg - Service	7.980	-3.011	0.000	0.000	129.957	0.062
Dead+Wind 300 deg - Service	7.980	-2.607	-1.505	-64.911	112.565	0.045
Dead+Wind 330 deg - Service	7.980	-1.505	-2.607	-112.428	65.047	0.015

Solution Summary

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
1	0.000	-7.980	0.000	0.000	7.980	0.000	0.000%
2	0.000	-7.980	-8.701	0.000	7.980	8.701	0.000%
3	4.350	-7.980	-7.535	-4.350	7.980	7.535	0.000%
4	7.535	-7.980	-4.350	-7.535	7.980	4.350	0.000%
5	8.701	-7.980	0.000	-8.701	7.980	0.000	0.000%
6	7.535	-7.980	4.350	-7.535	7.980	-4.350	0.000%
7	4.350	-7.980	7.535	-4.350	7.980	-7.535	0.000%
8	0.000	-7.980	8.701	0.000	7.980	-8.701	0.000%
9	-4.350	-7.980	7.535	4.350	7.980	-7.535	0.000%
10	-7.535	-7.980	4.350	7.535	7.980	-4.350	0.000%
11	-8.701	-7.980	0.000	8.701	7.980	0.000	0.000%
12	-7.535	-7.980	-4.350	7.535	7.980	4.350	0.000%
13	-4.350	-7.980	-7.535	4.350	7.980	7.535	0.000%
14	0.000	-12.241	0.000	0.000	12.241	0.000	0.000%
15	0.000	-12.241	-2.140	0.000	12.241	2.140	0.000%
16	1.070	-12.241	-1.853	-1.070	12.241	1.853	0.000%
17	1.853	-12.241	-1.070	-1.853	12.241	1.070	0.000%
18	2.140	-12.241	0.000	-2.140	12.241	0.000	0.000%
19	1.853	-12.241	1.070	-1.853	12.241	-1.070	0.000%
20	1.070	-12.241	1.853	-1.070	12.241	-1.853	0.000%
21	0.000	-12.241	2.140	0.000	12.241	-2.140	0.000%
22	-1.070	-12.241	1.853	1.070	12.241	-1.853	0.000%
23	-1.853	-12.241	1.070	1.853	12.241	-1.070	0.000%
24	-2.140	-12.241	0.000	2.140	12.241	0.000	0.000%
25	-1.853	-12.241	-1.070	1.853	12.241	1.070	0.000%
26	-1.070	-12.241	-1.853	1.070	12.241	1.853	0.000%
27	0.000	-7.980	-3.011	0.000	7.980	3.011	0.000%
28	1.505	-7.980	-2.607	-1.505	7.980	2.607	0.000%
29	2.607	-7.980	-1.505	-2.607	7.980	1.505	0.000%
30	3.011	-7.980	0.000	-3.011	7.980	0.000	0.000%
31	2.607	-7.980	1.505	-2.607	7.980	-1.505	0.000%
32	1.505	-7.980	2.607	-1.505	7.980	-2.607	0.000%
33	0.000	-7.980	3.011	0.000	7.980	-3.011	0.000%
34	-1.505	-7.980	2.607	1.505	7.980	-2.607	0.000%
35	-2.607	-7.980	1.505	2.607	7.980	-1.505	0.000%
36	-3.011	-7.980	0.000	3.011	7.980	0.000	0.000%
37	-2.607	-7.980	-1.505	2.607	7.980	1.505	0.000%
38	-1.505	-7.980	-2.607	1.505	7.980	2.607	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00000001
3	Yes	4	0.00000001	0.00034964
4	Yes	4	0.00000001	0.00038664
5	Yes	4	0.00000001	0.00004772
6	Yes	4	0.00000001	0.00034386
7	Yes	4	0.00000001	0.00037329
8	Yes	4	0.00000001	0.00000001
9	Yes	4	0.00000001	0.00037740
10	Yes	4	0.00000001	0.00034288
11	Yes	4	0.00000001	0.00004775
12	Yes	4	0.00000001	0.00038508
13	Yes	4	0.00000001	0.00035314

14	Yes	4	0.00000001	0.00000001
15	Yes	4	0.00000001	0.00015424
16	Yes	4	0.00000001	0.00016722
17	Yes	4	0.00000001	0.00016774
18	Yes	4	0.00000001	0.00015358
19	Yes	4	0.00000001	0.00016633
20	Yes	4	0.00000001	0.00016673
21	Yes	4	0.00000001	0.00015346
22	Yes	4	0.00000001	0.00016762
23	Yes	4	0.00000001	0.00016730
24	Yes	4	0.00000001	0.00015456
25	Yes	4	0.00000001	0.00016865
26	Yes	4	0.00000001	0.00016804
27	Yes	4	0.00000001	0.00000001
28	Yes	4	0.00000001	0.00000001
29	Yes	4	0.00000001	0.00002837
30	Yes	4	0.00000001	0.00000001
31	Yes	4	0.00000001	0.00000001
32	Yes	4	0.00000001	0.00002567
33	Yes	4	0.00000001	0.00000001
34	Yes	4	0.00000001	0.00002648
35	Yes	4	0.00000001	0.00000001
36	Yes	4	0.00000001	0.00000001
37	Yes	4	0.00000001	0.00002805
38	Yes	4	0.00000001	0.00000001

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	58 - 50.5	5.532	37	0.713	0.001
L2	53 - 0	4.785	37	0.712	0.001

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
58.000	(2) Obstruction Lighting	37	5.532	0.713	0.001	4805
54.000	HPA-65R-BUU-H6 w/ Mount Pipe	37	4.931	0.713	0.001	4805
52.000	Side Arm Mount [SO 102-3]	37	4.642	0.710	0.001	4426
47.000	APX16DWV-16DWVS-C w/ Mount Pipe	37	3.973	0.692	0.001	4430
37.000	APXV18-206517S-C w/ Mount Pipe	36	2.829	0.611	0.001	5627

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	58 - 50.5	15.966	11	2.058	0.004
L2	53 - 0	13.812	11	2.055	0.004

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
58.000	(2) Obstruction Lighting	11	15.966	2.058	0.004	1669
54.000	HPA-65R-BUU-H6 w/ Mount Pipe	11	14.232	2.058	0.004	1669
52.000	Side Arm Mount [SO 102-3]	11	13.400	2.050	0.004	1537
47.000	APX16DWV-16DWVS-C w/ Mount Pipe	11	11.467	1.997	0.004	1538
37.000	APXV18-206517S-C w/ Mount Pipe	11	8.167	1.764	0.003	1953

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
L1	58 - 50.5 (1)	TP19.078x17.393x0.188	7.500	0.000	0.0	39.000	11.242	-0.859	438.446	0.002
L2	50.5 - 0 (2)	TP30.05x18.141x0.188	53.000	0.000	0.0	37.971	17.772	-7.969	674.813	0.012

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	58 - 50.5 (1)	TP19.078x17.393x0.188	7.476	1.715	39.000	0.044	0.000	0.000	39.000	0.000
L2	50.5 - 0 (2)	TP30.05x18.141x0.188	375.234	34.330	37.971	0.904	0.000	0.000	37.971	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V K	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
L1	58 - 50.5 (1)	TP19.078x17.393x0.188	1.718	0.153	26.000	0.012	0.002	0.000	26.000	0.000
L2	50.5 - 0 (2)	TP30.05x18.141x0.188	8.711	0.490	26.000	0.038	0.180	0.008	26.000	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	58 - 50.5 (1)	0.002	0.044	0.000	0.012	0.000	0.046 ✔	1.333	H1-3+VT ✔
L2	50.5 - 0 (2)	0.012	0.904	0.000	0.038	0.000	0.916 ✔	1.333	H1-3+VT ✔

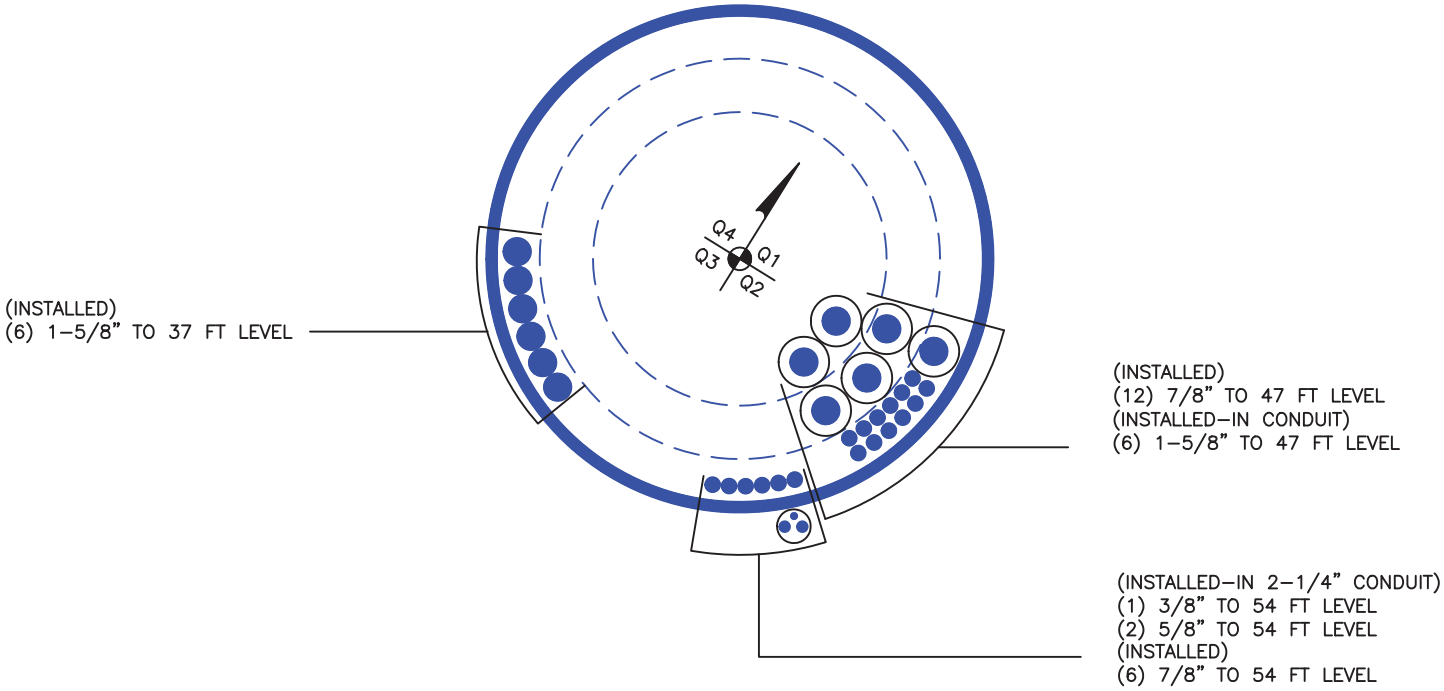
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
L1	58 - 50.5	Pole	TP19.078x17.393x0.188	1	-0.859	584.448	3.4	Pass
L2	50.5 - 0	Pole	TP30.05x18.141x0.188	2	-7.969	899.526	68.7	Pass
							Summary	
							Pole (L2) 68.7	Pass
							RATING = **68.7**	**Pass**

Program Version 7.0.5.1

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 842862

APPENDIX C

ADDITIONAL CALCULATIONS

Square, Stiffened / Unstiffened Base Plate, Any Rod Material - Rev. F /G

Assumptions: 1) Rod groups at corners. Total # rods divisible by 4. Maximum total # of rods = 48 (12 per Corner).
2) Rod Spacing = Straight Center-to-Center distance between any (2) adjacent rods (same corner)
3) Clear space between bottom of leveling nut and top of concrete **not** exceeding (1)*(Rod Diameter)

Site Data

BU#: *842862*
Site Name: *EAST HAVEN SOUTH, CT*
App #: *348867 Rev. 4*

Anchor Rod Data		
Eta Factor, η	0.5	TIA G (Fig. 4-4)
Qty:	4	
Diam:	2.25	in
Rod Material:	A615-J	
Yield, Fy:	75	ksi
Strength, Fu:	100	ksi
Bolt Circle:	37	in

Plate Data		
W=Side:	33	in
Thick:	2	in
Grade:	60	ksi
Clip Distance:	3	in

Stiffener Data (Welding at both sides)		
Configuration:	Unstiffened	
Weld Type:		**
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:		in
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

Pole Data		
Diam:	30.05	in
Thick:	0.1875	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round

Stress Increase Factor		
ASD ASIF:	1.333	

Base Reactions		
TIA Revision:	F	
Unfactored Moment, M:	375	ft-kips
Unfactored Axial, P:	8	kips
Unfactored Shear, V:	9	kips

Anchor Rod Results

TIA F --> Maximum Rod Tension	119.7 Kips
Allowable Tension:	195.0 Kips
Anchor Rod Stress Ratio:	61.4% **Pass**

Base Plate Results Flexural Check

Base Plate Stress:	38.8 ksi
Allowable PL Bending Stress:	60.0 ksi
Base Plate Stress Ratio:	64.7% **Pass**

PL Ref. Data	
Yield Line (in):	16.62
Max PL Length:	16.62

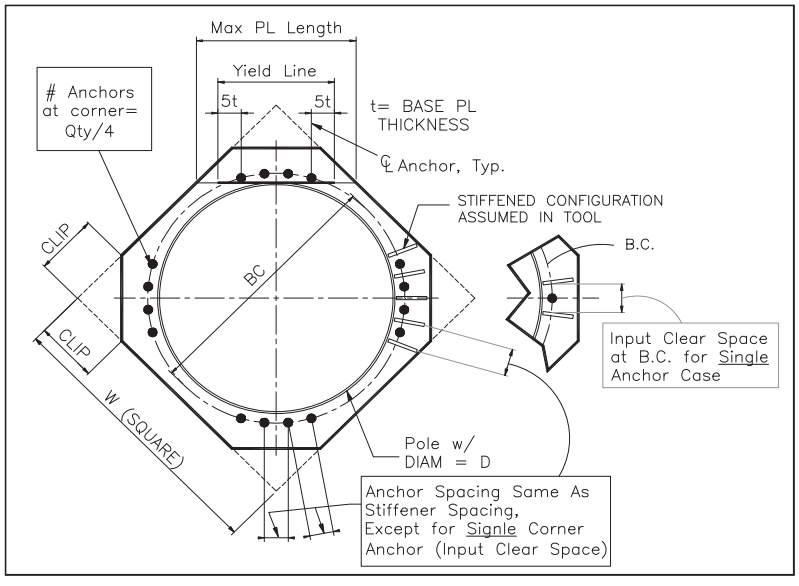
N/A - Unstiffened

Stiffener Results

Horizontal Weld :	N/A
Vertical Weld:	N/A
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	N/A
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	N/A
Plate Comp. (AISC Bracket):	N/A

Pole Results

Pole Punching Shear Check:	N/A



** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

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200 North Glebe Road, Suite 1000, Arlington, VA 22203-3728
703.276.1100 ● 703.276.1169 fax
info@sitesafe.com ● www.sitesafe.com

Smartlink LLC on behalf of AT&T Mobility, LLC
Site FA – 10071016
Site ID – CT5048 (2C)
USID – 24481
Site Name – East Haven South
Site Compliance Report

259 Commerce Street
East Haven, CT 06512

Latitude: N41-15-23.01
Longitude: W72-52-32.88
Structure Type: Monopole

Report generated date: September 13, 2016
Report by: Sam Cosgrove
Customer Contact: Kristen Smith

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

Table of Contents

1 General Site Summary

1.1 Report Summary

AT&T Mobility, LLC	Summary
Access to Antennas Locked?	Yes
RF Sign(s) @ access point(s)	None
RF Sign(s) @ antennas	None
Barrier(s) @ sectors	None
Max cumulative simulated RFE level on the Ground Level	<1% General Public Limit
FCC & AT&T Compliant?	Will Be Compliant

The following documents were provided by the client and were utilized to create this report:

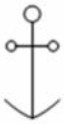
RFDS: NEW-ENGLAND_CONNECTICUT_CTU5048_2017-LTE-Next-Carrier_LTE-2C_om636a_PTN_...

CD's: 10071016_AE201_160816_CTL05048_REV1 (1) JW appvd 8-19-16

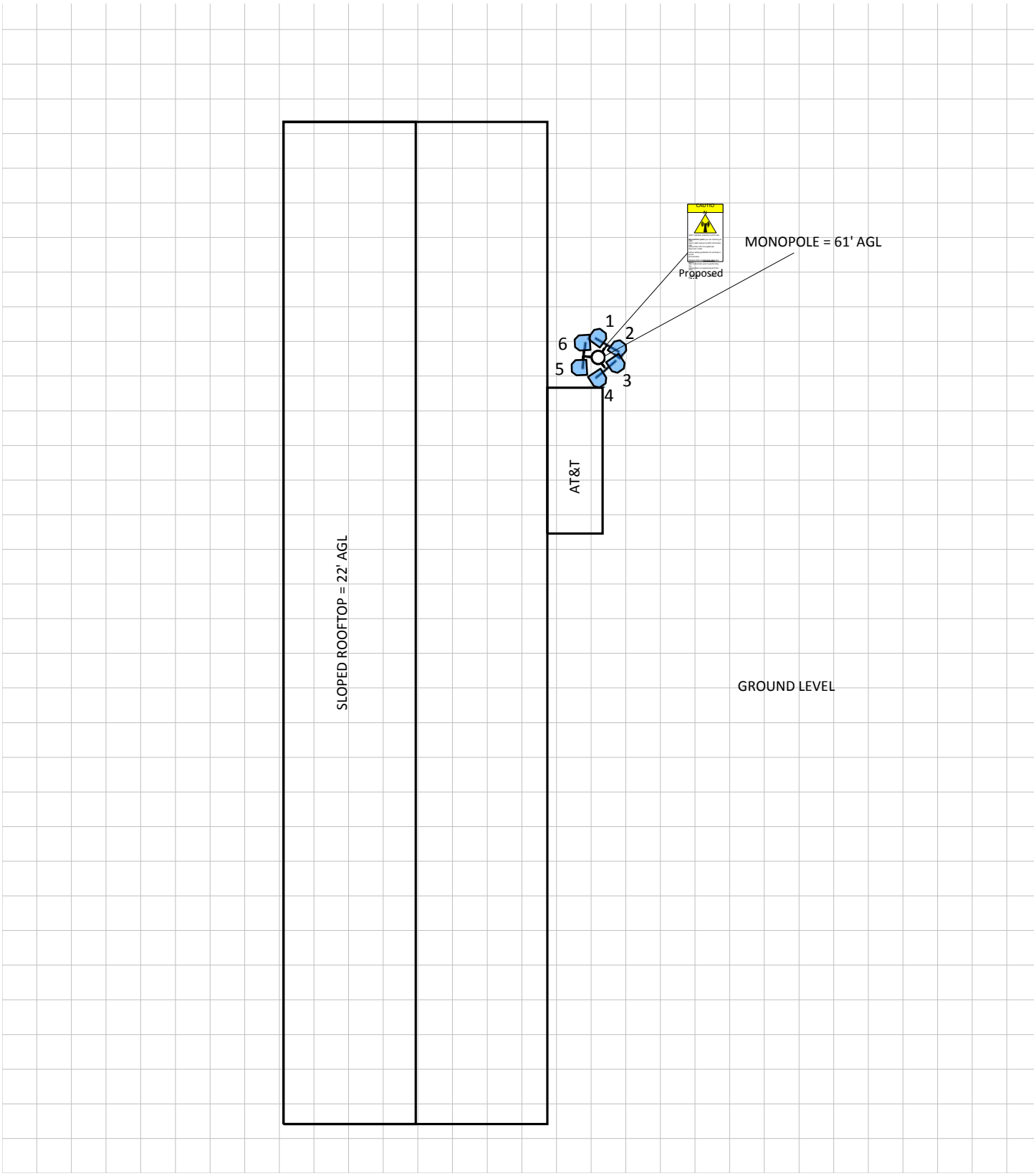
2 Scale Maps of Site

The following diagrams are included:

- Site Scale Map
- RF Exposure Diagram
- Elevation View

Scale Map Key		
 Existing Sign	Proposed Barrier	GPS Reading
 PROPOSED Proposed Sign	Existing Barrier	 Anchor Point

Site Scale Map For: East Haven South



(Feet)

0 19.9 39.7

www.sitesafe.com
Site Name:East Haven South
9/13/2016 11:35:22 AM

AT&T MOBILITY LLC	VERIZON WIRELESS	T-MOBILE	METROPCS	CRICKET COMMUNICATIONS	CLEARWIRE	SPRINT

3 Antenna Inventory

The following antenna inventory on this and the following page, were obtained by the customer and were utilized to create the site model diagrams:

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Ant Gain (dBd)	2G GSM Radio(s)	3G UMTS Radio(s)	4G Radio(s)	Total ERP (Watts)	X	Y	Z (AGL)
1	AT&T MOBILITY LLC (PROPOSED)	CCI Antennas HPA-65R-BUU-H6	Panel	737	10	66.2	6	11.68	0	0	1	827.9	185.7'	269.7'	54'
1	AT&T MOBILITY LLC (PROPOSED)	CCI Antennas HPA-65R-BUU-H6	Panel	1900	10	61.1	6	14.53	0	0	1	3258.4	185.7'	269.7'	54'
2	AT&T MOBILITY LLC	Kathrein-Scala 800-10121	Panel	850	10	87.6	4.5	11.35	0	1	0	304.1	191.4'	266.4'	54.7'
2	AT&T MOBILITY LLC	Kathrein-Scala 800-10121	Panel	850	10	87.6	4.5	11.35	1	0	0	155.6	191.4'	266.4'	54.7'
2	AT&T MOBILITY LLC	Kathrein-Scala 800-10121	Panel	1900	10	85.7	4.5	14.32	0	1	0	502.3	191.4'	266.4'	54.7'
3	AT&T MOBILITY LLC (PROPOSED)	CCI Antennas HPA-65R-BUU-H6	Panel	737	120	66.2	6	11.68	0	0	1	827.9	190.9'	261.8'	54'
3	AT&T MOBILITY LLC (PROPOSED)	CCI Antennas HPA-65R-BUU-H6	Panel	1900	120	61.1	6	14.53	0	0	1	3258.4	190.9'	261.8'	54'
4	AT&T MOBILITY LLC	Kathrein-Scala 800-10121	Panel	850	120	87.6	4.5	11.35	0	1	0	304.1	185.7'	257.5'	54.7'
4	AT&T MOBILITY LLC	Kathrein-Scala 800-10121	Panel	850	120	87.6	4.5	11.35	1	0	0	155.6	185.7'	257.5'	54.7'
4	AT&T MOBILITY LLC	Kathrein-Scala 800-10121	Panel	1900	120	85.7	4.5	14.32	0	1	0	479.7	185.7'	257.5'	54.7'
5	AT&T MOBILITY LLC (PROPOSED)	CCI Antennas HPA-65R-BUU-H6	Panel	737	240	66.2	6	11.68	0	0	1	827.9	180.2'	260.9'	54'
5	AT&T MOBILITY LLC (PROPOSED)	CCI Antennas HPA-65R-BUU-H6	Panel	1900	240	61.1	6	14.53	0	0	1	3258.4	180.2'	260.9'	54'
6	AT&T MOBILITY LLC	Kathrein-Scala 800-10121	Panel	850	240	87.6	4.5	11.35	0	1	0	299.9	181.1'	268'	54.7'
6	AT&T MOBILITY LLC	Kathrein-Scala 800-10121	Panel	850	240	87.6	4.5	11.35	1	0	0	152.8	181.1'	268'	54.7'
6	AT&T MOBILITY LLC	Kathrein-Scala 800-10121	Panel	1900	240	85.7	4.5	14.32	0	1	0	458.1	181.1'	268'	54.7'

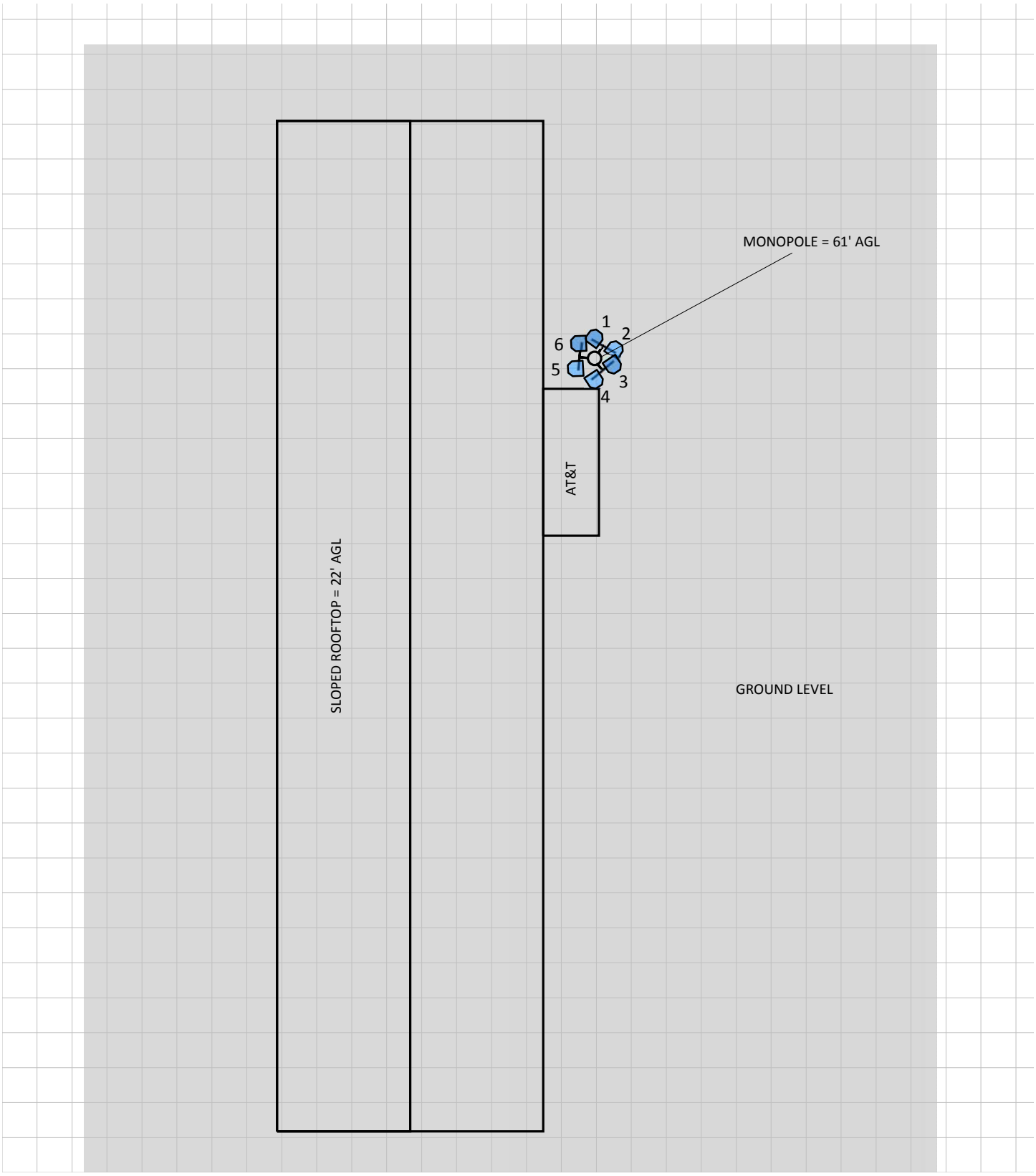
NOTE: X, Y and Z indicate relative position of the bottom of the antenna to the origin location on the site, displayed in the model results diagram. Specifically, the Z reference indicates the bottom of the antenna height above the main site level unless otherwise indicated. The distance to the bottom of the antenna is calculated by subtracting half of the length of the antenna from the antenna centerline. Effective Radiated Power (ERP) is provided by the operator or based on Sitesafe experience. The values used in the modeling may be greater than are currently deployed. For other operators at this site the use of "Generic" as an antenna model or "Unknown" for a wireless operator means the information with regard to operator, their FCC license and/or antenna information was not available nor could it be secured while on site. Other operator's equipment, antenna models and powers used for modeling are based on obtained information or Sitesafe experience.

4 Emission Predictions

In the RF Exposure Simulations below all heights are reflected with respect to main site level. In most rooftop cases this is the height of the main rooftop and in other cases this can be ground level. Each different height area, rooftop, or platform level is labeled with its height relative to the main site level. Emissions are calculated appropriately based on the relative height and location of that area to all antennas.

The Antenna Inventory heights are referenced to the same level.

RF Exposure Simulation For: East Haven South



% of FCC Public Exposure Limit
Spatial average 0' - 6'

(Feet)
0 19.7 39.4

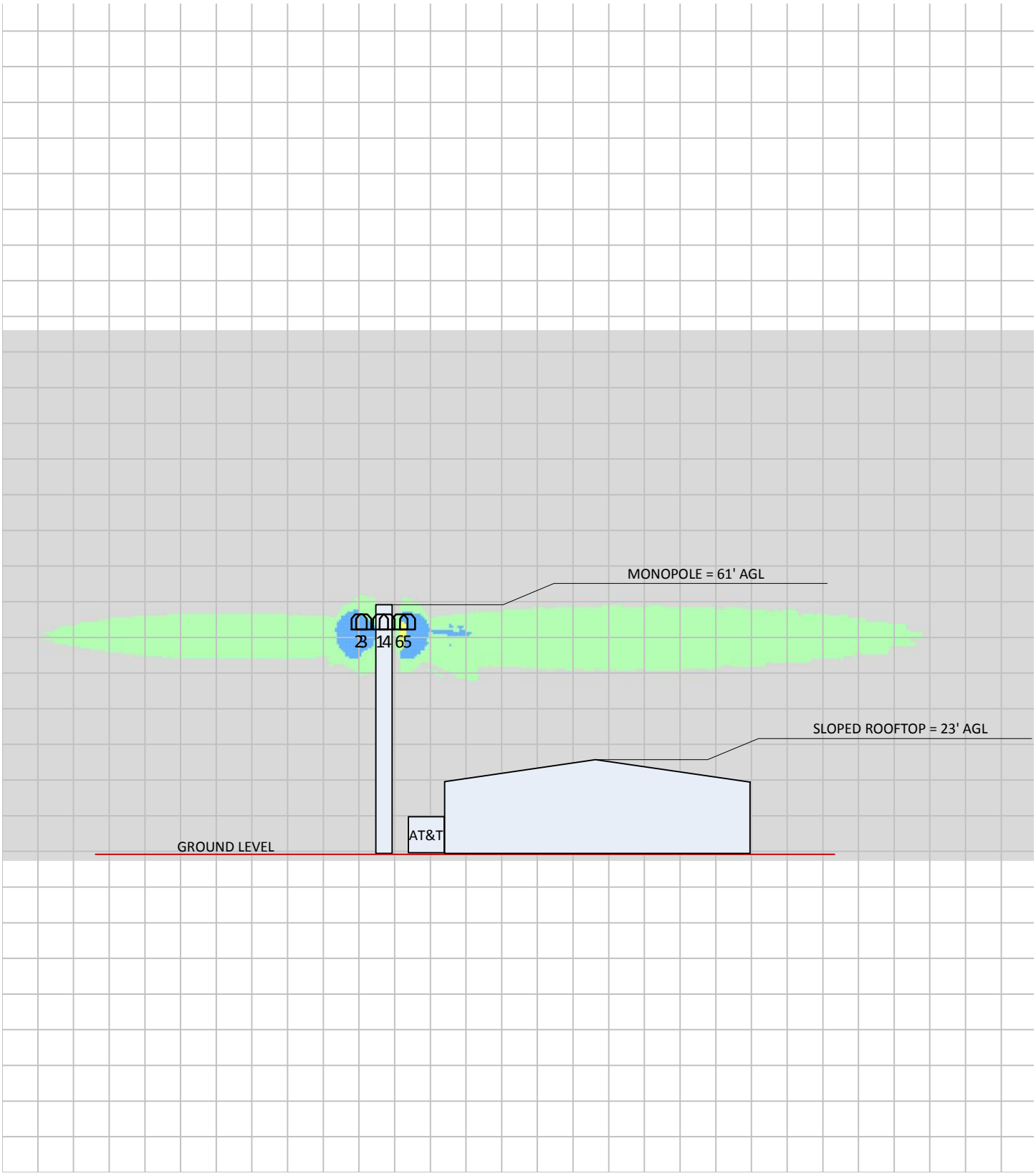
www.sitesafe.com
Site Name:East Haven South
9/13/2016 11:34:39 AM

>= 5000	>= 500	>= 100	>= 5	< 5

AT&T MOBILITY LLC	VERIZON WIRELESS	T-MOBILE	METROPCS	CRICKET COMMUNICATIONS	CLEARWIRE	SPRINT

SitesafeTC Version:1.0.0.0 - 0.0.0.249
Sitesafe OET-65 Model
Near Field Boundary: 1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

RF Exposure Simulation For: East Haven South
Elevation View



% of FCC Public Exposure Limit
Spatial average 0' - 6'

(Feet)

0 16.9 33.7

www.sitesafe.com
Site Name:East Haven South
9/13/2016 11:40:50 AM

>= 5000	>= 500	>= 100	>= 5	< 5

AT&T MOBILITY LLC	VERIZON WIRELESS	T-MOBILE	METROPCS	CRICKET COMMUNICATIONS	CLEARWIRE	SPRINT

SitesafeTC Version:1.0.0.0 - 0.0.0.249
Sitesafe OET-65 Model
Near Field Boundary: 1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

5 Site Compliance

5.1 Site Compliance Statement

Upon evaluation of the cumulative RF emission levels from all operators at this site, RF hazard signage and antenna locations, Sitesafe has determined that:

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

The compliance determination is based on General Public RFE levels derived from theoretical modeling, RF signage placement, proposed antenna inventory and the level of restricted access to the antennas at the site. Any deviation from the AT&T Mobility, LLC's proposed deployment plan could result in the site being rendered non-compliant.

Modeling is used for determining compliance and the percentage of MPE contribution.

5.2 Actions for Site Compliance

Based on FCC regulations, common industry practice, and our understanding of AT&T Mobility, LLC RF Safety Policy requirements, this section provides a statement of recommendations for site compliance. Recommendations have been proposed based on our understanding of existing access restrictions, signage, and an analysis of predicted RFE levels.

AT&T Mobility, LLC will be made compliant if the following changes are implemented:

Site Access Location

Yellow caution 2 sign required near the antenna area.

Note: the monopole is located in a public area. Signage should be installed near the antenna area.

6 Engineer Certification

The professional engineer whose seal appears on the cover of this document hereby certifies and affirms that:

I am registered as a Professional Engineer in the jurisdiction indicated in the professional engineering stamp on the cover of this document; and

That I am an employee of Sitesafe, Inc., in Arlington, Virginia, at which place the staff and I provide RF compliance services to clients in the wireless communications industry; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission (FCC) as well as the regulations of the Occupational Safety and Health Administration (OSHA), both in general and specifically as they apply to the FCC Guidelines for Human Exposure to Radio-frequency Radiation; and

That I have thoroughly reviewed this Site Compliance Report and believe it to be true and accurate to the best of my knowledge as assembled by and attested to by Sam Cosgrove.

September 13, 2016

Appendix A – Statement of Limiting Conditions

Sitesafe has provided computer generated model(s) in this Site Compliance Report to show approximate dimensions of the site, and the model is included to assist the reader of the compliance report to visualize the site area, and to provide supporting documentation for Sitesafe's recommendations.

Sitesafe may note in the Site Compliance Report any adverse physical conditions, such as needed repairs, that Sitesafe became aware of during the normal research involved in creating this report. Sitesafe will not be responsible for any such conditions that do exist or for any engineering or testing that might be required to discover whether such conditions exist. Because Sitesafe is not an expert in the field of mechanical engineering or building maintenance, the Site Compliance Report must not be considered a structural or physical engineering report.

Sitesafe obtained information used in this Site Compliance Report from sources that Sitesafe considers reliable and believes them to be true and correct. Sitesafe does not assume any responsibility for the accuracy of such items that were furnished by other parties. When conflicts in information occur between data collected by Sitesafe provided by a second party and data collected by Sitesafe, the data will be used.

Appendix B – Regulatory Background Information

FCC Rules and Regulations

In 1996, the Federal Communication Commission (FCC) adopted regulations for the evaluating of the effects of RF emissions in 47 CFR § 1.1307 and 1.1310. The guideline from the FCC Office of Engineering and Technology is Bulletin 65 ("OET Bulletin 65"), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996 the FCC periodically reviews these rules and regulations as per their congressional mandate.

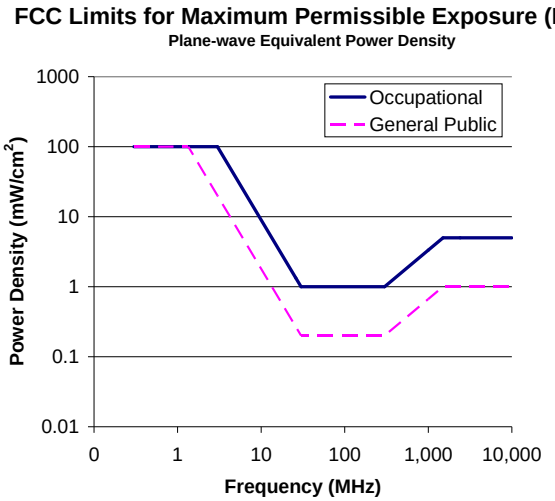
FCC regulations define two separate tiers of exposure limits: Occupational or "Controlled environment" and General Public or "Uncontrolled environment". The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* areas where workers or the general public may be exposed to Radio Frequency (RF) electromagnetic fields.

Occupational or Controlled limits apply in situations in which persons are exposed as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

An area is considered a Controlled environment when access is limited to these aware personnel. Typical criteria are restricted access (i.e. locked or alarmed doors, barriers, etc.) to the areas where antennas are located coupled with proper RF warning signage. A site with Controlled environments is evaluated with Occupational limits.

All other areas are considered Uncontrolled environments. If a site has no access controls or no RF warning signage it is evaluated with General Public limits.

The theoretical modeling of the RF electromagnetic fields has been performed in accordance with OET Bulletin 65. The Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following diagram:



Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz *Plane-wave equivalent power density

OSHA Statement

The General Duty clause of the OSHA Act (Section 5) outlines the occupational safety and health responsibilities of the employer and employee. The General Duty clause in Section 5 states:

(a) Each employer –

(1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;

(2) shall comply with occupational safety and health standards promulgated under this Act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA has defined Radiofrequency and Microwave Radiation safety standards for workers who may enter hazardous RF areas. Regulation Standards 29 CFR § 1910.147 identify a generic Lock Out Tag Out procedure aimed to control the unexpected energization or start up of machines when maintenance or service is being performed.

Appendix C – Safety Plan and Procedures

The following items are general safety recommendations that should be administered on a site by site basis as needed by the carrier.

General Maintenance Work: Any maintenance personnel required to work immediately in front of antennas and / or in areas indicated as above 100% of the Occupational MPE limits should coordinate with the wireless operators to disable transmitters during their work activities.

Training and Qualification Verification: All personnel accessing areas indicated as exceeding the General Population MPE limits should have a basic understanding of EME awareness and RF Safety procedures when working around transmitting antennas. Awareness training increases a workers understanding to potential RF exposure scenarios. Awareness can be achieved in a number of ways (e.g. videos, formal classroom lecture or internet based courses).

Physical Access Control: Access restrictions to transmitting antennas locations is the primary element in a site safety plan. Examples of access restrictions are as follows:

- Locked door or gate
- Alarmed door
- Locked ladder access
- Restrictive Barrier at antenna (e.g. Chain link with posted RF Sign)

RF Signage: Everyone should obey all posted signs at all times. RF signs play an important role in properly warning a worker prior to entering into a potential RF Exposure area.

Assume all antennas are active: Due to the nature of telecommunications transmissions, an antenna transmits intermittently. Always assume an antenna is transmitting. Never stop in front of an antenna. If you have to pass by an antenna, move through as quickly and safely as possible thereby reducing any exposure to a minimum.

Maintain a 3 foot clearance from all antennas: There is a direct correlation between the strength of an EME field and the distance from the transmitting antenna. The further away from an antenna, the lower the corresponding EME field is.

Site RF Emissions Diagram: Section 4 of this report contains an RF Diagram that outlines various theoretical Maximum Permissible Exposure (MPE) areas at the site. The modeling is a worst case scenario assuming a duty cycle of 100% for each transmitting antenna at full power. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.

Appendix D – RF Emissions

The RF Emissions Simulation(s) in this report display theoretical spatially averaged percentage of the Maximum Permissible Exposure for all systems at the site unless otherwise noted. These diagrams use modeling as prescribed in OET Bulletin 65 and assumptions detailed in Appendix E.

The key at the bottom of each RF Emissions Simulation indicates percentages displayed referenced to FCC General Public Maximum Permissible Exposure (MPE) limits. Color coding on the diagram is as follows:

- Areas indicated as Gray are predicted to be below 5% of the MPE limits. **Gray represents areas more than 20 times below the most conservative exposure limit**.
- Green represents areas are predicted to be between 5% and 100% of the MPE limits. **Green areas are accessible to anyone**.
- Blue represents areas predicted to exceed the General Public MPE limits but are less than Occupational limits. **Blue areas should be accessible only to RF trained workers**.
- Yellow represents areas predicted to exceed Occupational MPE limits. **Yellow areas should be accessible only to RF trained workers able to assess current exposure levels**.
- Red represents areas predicted to have exposure more than 10 times the Occupational MPE limits. **Red indicates that the RF levels must be reduced prior to access.** An RF Safety Plan is required which outlines how to reduce the RF energy in these areas prior to access.

Appendix E – Assumptions and Definitions

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at **full power at all times**. Software modeling was performed for all transmitting antennas located on the site. Sitesafe has further assumed a 100% duty cycle and maximum radiated power.

The modeling is based on recommendations from the FCC's OET-65 bulletin with the following variances per AT&T guidance. Reflection has not been considered in the modeling, i.e. the reflection factor is 1.0. The near / far field boundary has been set to 1.5 times the aperture height of the antenna and modeling beyond that point is the lesser of the near field cylindrical model and the far field model taking into account the gain of the antenna.

The site has been modeled with these assumptions to show the maximum RF energy density. Areas modeled with exposure greater than 100% of the General Public MPE level may not actually occur, but are shown as a prediction that could be realized. Sitesafe believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor).

Use of Generic Antennas

For the purposes of this report, the use of "Generic" as an antenna model, or "Unknown" for an operator means the information about a carrier, their FCC license and/or antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. If more specific information can be obtained for the unknown measurement criteria, Sitesafe recommends remodeling of the site utilizing the more complete and accurate data. Information about similar facilities is used when the service is identified and associated with a particular antenna. If no information is available regarding the transmitting service associated with an unidentified antenna, using the antenna manufacturer's published data regarding the antenna's physical characteristics makes more conservative assumptions.

Where the frequency is unknown, Sitesafe uses the closest frequency in the antenna's range that corresponds to the highest Maximum Permissible Exposure (MPE), resulting in a conservative analysis.

Definitions

5% Rule – The rules adopted by the FCC specify that, in general, at multiple transmitter sites actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitters produce field strengths or power density levels at the area in question in excess of 5% of the exposure limits. In other words, any wireless operator that contributes 5% or greater of the MPE limit in an area that is identified to be greater than 100% of the MPE limit is responsible taking corrective actions to bring the site into compliance.

Compliance – The determination of whether a site is safe or not with regards to Human Exposure to Radio Frequency Radiation from transmitting antennas.

Decibel (dB) – A unit for measuring power or strength of a signal.

Duty Cycle – The percent of pulse duration to the pulse period of a periodic pulse train. Also, may be a measure of the temporal transmission characteristic of an intermittently transmitting RF source such as a paging antenna by dividing average transmission duration by the average period for transmission. A duty cycle of 100% corresponds to continuous operation.

Effective (or Equivalent) Isotropic Radiated Power (EIRP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna.

Effective Radiated Power (ERP) – In a given direction, the relative gain of a transmitting antenna with respect to the maximum directivity of a half wave dipole multiplied by the net power accepted by the antenna from the connecting transmitter.

Gain (of an antenna) – The ratio of the maximum intensity in a given direction to the maximum radiation in the same direction from an isotropic radiator. Gain is a measure of the relative efficiency of a directional antennas as compared to an omni directional antenna.

General Population/Uncontrolled Environment – Defined by the FCC, as an area where exposure to RF energy may occur to persons who are **unaware** of the potential for exposure and who have no control of their exposure. General Population is also referenced as General Public.

Generic Antenna – For the purposes of this report, the use of "Generic" as an antenna model means the antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of antenna models to select a worst case scenario antenna to model the site.

Isotropic Antenna – An antenna that is completely non-directional. In other words, an antenna that radiates energy equally in all directions.

Maximum Measurement – This measurement represents the single largest measurement recorded when performing a spatial average measurement.

Maximum Permissible Exposure (MPE) – The maximum levels of RF exposure a person may be exposed to without harmful effect and with acceptable safety factor.

Occupational/Controlled Environment – Defined by the FCC, as an area where Radio Frequency Radiation (RFR) exposure may occur to persons who are **aware** of the

potential for exposure as a condition of employment or specific activity and can exercise control over their exposure.

OET Bulletin 65 – Technical guideline developed by the FCC's Office of Engineering and Technology to determine the impact of Radio Frequency radiation on Humans. The guideline was published in August 1997.

OSHA (Occupational Safety and Health Administration) – Under the Occupational Safety and Health Act of 1970, employers are responsible for providing a safe and healthy workplace for their employees. OSHA's role is to promote the safety and health of America's working men and women by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and encouraging continual process improvement in workplace safety and health. For more information, visit www.osha.gov.

Radio Frequency (RF) – The frequencies of electromagnetic waves which are used for radio communications. Approximately 3 kHz to 300 GHz.

Radio Frequency Exposure (RFE) – The amount of RF power density that a person is or might be exposed to.

Spatial Average Measurement – A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average power density an average sized human will be exposed to at a location.

Transmitter Power Output (TPO) – The radio frequency output power of a transmitter's final radio frequency stage as measured at the output terminal while connected to a load.

Appendix F – References

The following references can be followed for further information about RF Health and Safety.

Sitesafe, Inc.
http://www.sitesafe.com
FCC Radio Frequency Safety
http://www.fcc.gov/encyclopedia/radio-frequency-safety
National Council on Radiation Protection and Measurements (NCRP)
http://www.ncrponline.org
Institute of Electrical and Electronics Engineers, Inc., (IEEE)
http://www.ieee.org
American National Standards Institute (ANSI)
http://www.ansi.org
Environmental Protection Agency (EPA)
http://www.epa.gov/radtown/wireless-tech.html
National Institutes of Health (NIH)
http://www.niehs.nih.gov/health/topics/agents/emf/
Occupational Safety and Health Agency (OSHA)
http://www.osha.gov/SLTC/radiofrequencyradiation/
International Commission on Non-Ionizing Radiation Protection (ICNIRP)
http://www.icnirp.org
World Health Organization (WHO)
http://www.who.int/peh-emf/en/
National Cancer Institute
http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones
American Cancer Society (ACS)
http://www.cancer.org/docroot/PED/content/PED_1_3X_Cellular_Phone_Towers.asp?siteareа=PED
European Commission Scientific Committee on Emerging and Newly Identified Health Risks
http://ec.europa.eu/health/ph_risk/committees/04_scenihr/docs/scenihr_o_022.pdf
Fairfax County, Virginia Public School Survey
http://www.fcps.edu/fts/safety-security/RFEESurvey/
UK Health Protection Agency Advisory Group on Non-ionising Radiation
http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317133826368
Norwegian Institute of Public Health
http://www.fhi.no/dokumenter/545eea7147.pdf

PROJECT	**842862 - EAST HAVEN SOUTH, CT**				
SUBJECT	**Foundation Analysis**				
DATE	**07/20/16**	PAGE	1	OF	1

B+T GRP
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Monopole Pad & Pier Foundation Analysis

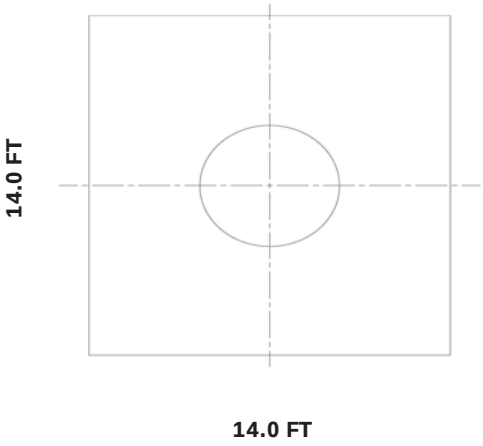
Rev. Type: F

Design Loads:

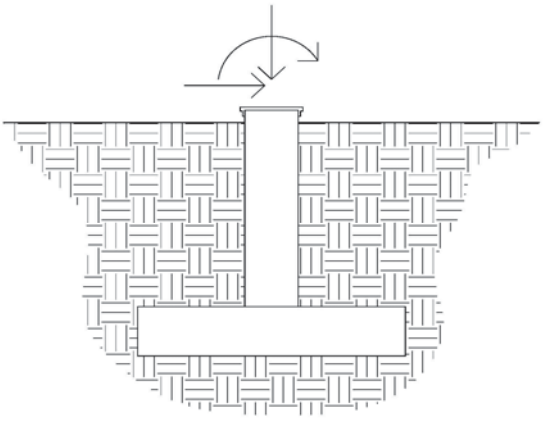
	Input unfactored loads	
Shear:	9.0	kips
Moment:	375.0	ft-kips
Tower Height:	58.0	ft
Tower Weight:	8.0	kips

Pad & Pier Dimensions / Properties:

Pole Diameter at Base:	30.05	in
Bearing Depth:	6.5	ft
Pad Width:	14.0	ft
Neglected Depth:	3.3	ft
Thickness:	2.5	ft
Pier Diameter:	5.0	ft
Pier Height Above Grade:	0.5	ft
BP Dist. Above Pier:	3.0	in
Clear Cover:	3.0	in
Pier Rebar Size:	9	
Pier Rebar Quanity:	15	
Pad Rebar Size:	8	
Pad Rebar Quanity:	13	
Pier Tie Size:	4	
Tie Quanity:	14	
Rebar Yield Strength:	60000	psi
Concrete Strength:	3000	psi
Concrete Unit Weight:	0.15	kcf



Elevation Overview



Soil Data:

	Allowable Values	
Soil Unit Weight:	0.120	kcf
Ult. Bearing Capacity:	10.780	ksf
Angle of Friction:	30.000	deg
Cohesion:	0.000	ksf
Passive Pressure:	0.000	ksf
Base Friction:	0.400	

Summary of Results

Req'd Pier Diam.	OK
Overturning	44.7%
Shear Capacity	21.0%
Bearing	25.7%
Pad Shear - 1-way	21.6%
Pad Shear - 2-way	3.1%
Pad Moment Capacity	12.3%
Pier Moment Capacity	31.9%

** Notes: