



April 18, 2018

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

Regarding: Notice of Exempt Modification – Addition of 3 Antennas, Addition of 6 Remote Radios, and Addition of 1 Squid.

Property Address: 450 West Main Street; Meriden, CT 06451 (Also known as 462 West Main Street, 450-478 West Main Street; Meriden, CT 06451 (the “Property”)

Applicant: AT&T Mobility (“AT&T”, Site # CT5378)

Dear Ms. Bachman:

AT&T currently maintains a wireless telecommunications facility on an existing 100-foot monopole at the above-referenced address, latitude 41.54003611, longitude -72.81903333. Said monopole is owned and operated by Crown Castle USA INC (CCATT LLC) and the ground space is owned by the Hunter Family Limited Partnership.

AT&T desires to modify its existing telecommunications facility by adding (3) antennas, (6) remote radios (RRUs), and (1) Squid Surge Suppressor. The centerline height of the antennas will remain at 99 feet.

Please accept this application as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72 (b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the City of Meriden’s Mayor, Interim City Manager, Director of Development and Enforcement, Associate City Planner, and Building Official. A copy of this letter is also being sent to Crown Castle USA Inc (CCATT LLC) owner and operator of the tower on which AT&T is located. The ground owner is the Hunter Family Limited Partnership

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

1. The planned modifications will not result in an increase in the height of the existing structure. AT&T’s antennas and associated lines will be installed at the existing mount height of 99’ on the Monopole tower.
2. The proposed modifications will not involve any changes to ground-space footprint and, therefore will not require an extension of the site boundary.



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

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

Sincerely,

Jennifer Iliades

Jennifer Iliades
Site Acquisition Specialist
Empire Telecom
kwhite@empiretelecomm.com
978.284.0701

Enclosures:

CC:

Hon. Kevin Scarpati, Mayor
Mr. Ken Morgan, Interim City Manager
Mr. Robert Seale, Director of Development and Enforcement
Mr. Paul Dickson, Associate City Planner
Mr. Don Angersola, Building Official
Paul Pedicone, Project Manager; CROWN CASTLE USA INC (CCATT LLC)
The Hunter Family Limited Partnership

Exhibit 1



WIRELESS COMMUNICATIONS FACILITY

CT5378 - LTE 4C-AWS/5C-700 UPPER D

MERIDEN WEST CENTRAL

CROWN CASTLE SITE NO.: 842869

450-478 WEST MAIN STREET

MERIDEN, CT 06451

PROJECT SUMMARY

1. THE PROPOSED SCOPE OF WORK CONSISTS OF A MODIFICATION TO THE WIRELESS COMMUNICATIONS FACILITY INCLUDING THE FOLLOWING:

A. AT ANTENNA SECTORS:

- INSTALL (3) NEW ANTENNAS AT POS.3. (1) PER SECTOR
- INSTALL (3) NEW RRIS-32 864 BEHIND PROPOSED POSITION 3 ANTENNA
- INSTALL (3) NEW B14 4478 BEHIND PROPOSED POSITION 3 ANTENNA
- INSTALL (1) SURGE ARRESTOR
- INSTALL (6) SWIVEL RRJ MOUNTS TO ACCOMMODATE ADDITIONAL RRIS BEHIND PROPOSED POSITION 3 ANTENNA

B. ANTENNA SUPPORT STRUCTURES:

- INSTALL (1) ADDITIONAL 2X4 UNIT WITHIN EXISTING PURCELL CABINET
- DECOMMISSION AND REMOVE EXISTING NOKIA GSM CABINET

PROJECT INFORMATION

AT&T SITE NUMBER: CT5378

AT&T SITE NAME: MERIDEN WEST CENTRAL

SITE ADDRESS: CROWN CASTLE SITE NO. 842869
450-478 WEST MAIN STREET
MERIDEN, CT 06451

LESSEE/APPLICANT: AT&T MOBILITY
500 ENTERPRISE DRIVE
ROCKY HILL, CT 06867

AT&T FA LOCATION CODE: 10071119

AT&T PAGE ID NUMBERS: MRCIB026908
MRCIB026901

ENGINEER: CENTEK ENGINEERING, INC.
1000 W. MAIN STREET
BRANFORD, CT 06405

PROJECT COORDINATES: LATITUDE: 41°37'24.14" N
LONGITUDE: 72°46'08.48" W
GROUND ELEVATION: ±170' AMSL
VERTICAL DATUM: NAVD83
HORIZONTAL DATUM: NAD83
REFERENCED FROM: 200506E001

SHEET INDEX

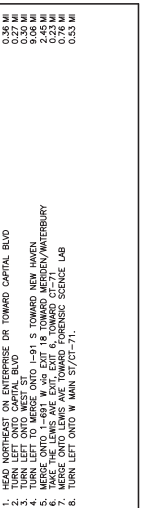
SHT. NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	0
N-1	NOTES, SPECIFICATIONS AND ANTENNA SCHEDULE	0
C-1	PLANS AND ELEVATION	0
C-2	LTE 4C AWS/5C 700 UPPER D ANTENNA LAYOUTS	0
C-3	DETAILS	0
E-1	LITE SCHEMATIC DIAGRAM AND NOTES	0
E-2	LITE WIRING DIAGRAM	0
E-3	TYPICAL ELECTRICAL DETAILS	0

SITE DIRECTIONS

FROM: 500 ENTERPRISE DRIVE, ROCKY HILL, CONNECTICUT

TO: 450-478 WEST MAIN STREET, MERIDEN, CONNECTICUT

1. HEAD NORTHEAST ON ENTERPRISE DR TOWARD CAPITAL BLVD
2. TURN LEFT ONTO WEST ST
3. TURN LEFT ONTO WEST ST
4. MERSE ONTO I-691 W 951 EXIT 18 TOWARD MERIDEN/WATERBURY
5. MERSE ONTO I-691 W 951 EXIT 18 TOWARD MERIDEN/WATERBURY
6. MERSE ONTO W MAIN ST
7. MERSE ONTO W MAIN ST
8. TURN LEFT ONTO W MAIN ST/CT-71.



GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2012 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2016 CONNECTICUT STATE BUILDING CODE, THE 2016 CONNECTICUT STATE FIRE CODE, THE 2016 CONNECTICUT STATE ELECTRICAL CODE, THE 2016 CONNECTICUT STATE PLUMBING AND MECHANICAL CODES, THE 2016 CONNECTICUT STATE GAS CODE, THE 2016 CONNECTICUT STATE SAFETY CODE AND NATIONAL ELECTRICAL CODE AND LOCAL CODES.
2. THE COMPOUND, TOWER, PRIMARY GROUND RING, ELECTRICAL SERVICE TO THE METER BANK AND TELEPHONE SERVICE TO THE FIELD CONDITIONS REGARDING THESE ITEMS SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH ANY AFFICED WORK.
3. THE CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. THE CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM THE LOCAL AND STATE GOVERNING AUTHORITIES AND OBTAIN NECESSARY INFORMATION FROM THE SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL PROVIDE ALL NECESSARY INFORMATION THAT AFFECTS THEIR WORK. SPECIFICATIONS FOR THE CONTRACTOR SHALL PROVIDE A COMPLETE BUILD-OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL AND ELECTRICAL COMPONENTS OR IN THE WRITTEN SPECIFICATIONS.
4. CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH THE LOCAL AND STATE GOVERNING AUTHORITIES AND OBTAIN NECESSARY PERMITS FROM THE LOCAL AND STATE GOVERNING AUTHORITIES AND OBTAIN NECESSARY INFORMATION FROM THE SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL PROVIDE ALL NECESSARY INFORMATION THAT AFFECTS THEIR WORK. SPECIFICATIONS FOR THE CONTRACTOR SHALL PROVIDE A COMPLETE BUILD-OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL AND ELECTRICAL COMPONENTS OR IN THE WRITTEN SPECIFICATIONS.
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6. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND ALL INSPECTIONS REQUIRED AND SHALL ALSO PAY FEES REQUIRED FOR THE GENERAL CONSTRUCTION, PLUMBING, ELECTRICAL AND HVAC PERMITS SHALL BE PAID FOR BY THE RESPONDING SUBCONTRACTORS.
7. SPECIFICATIONS ON SITE AT ALL TIMES AND INSURE DISTRIBUTION OF NEW DRAWINGS TO SUBCONTRACTORS AND OTHER RELEVANT PARTIES AS NECESSARY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MARKED VOID AND REMOVED FROM THE CONTRACT AREA. THE CONTRACTOR SHALL FURNISH A PHOTO-CREATED SET OF DRAWINGS TO THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF EQUIPMENT AND WORK SUPPLIED BY OTHERS THAT IS DETERMINED BY THIS CONTRACTOR. THE CONTRACTOR SHALL DETERMINE THE LOCATION OF EQUIPMENT AND WORK SUPPLIED BY OTHERS THAT IS DETERMINED BY THIS CONTRACTOR. THE CONTRACTOR SHALL DETERMINE THE LOCATION OF EQUIPMENT AND WORK SUPPLIED BY OTHERS THAT IS DETERMINED BY THIS CONTRACTOR.
8. THE CONTRACTOR SHALL COMPLY WITH OWNERS ENVIRONMENTAL ENGINEER ON ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES. ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES SHALL BE PROVIDED BY THE CONTRACTOR.
9. THE CONTRACTOR SHALL COMPLY WITH OWNERS ENVIRONMENTAL ENGINEER ON ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES. ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES SHALL BE PROVIDED BY THE CONTRACTOR.
10. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK TO MEET THE MINIMUM STANDARDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
11. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
12. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUBCONTRACTORS FOR ANY DEFICIENCIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, RULES OR REGULATIONS WITH NO INCREASE IN COSTS. THESE ITEMS ARE TO BE INCLUDED IN THE BID. NO "EXTRA" WILL BE ALLOWED FOR THESE ITEMS.
13. ANY AND ALL ERRORS, DISCREPANCIES, AND "MISSED" ITEMS ARE TO BE IDENTIFIED AND CORRECTED BY THE CONTRACTOR. ALL WORK SHALL BE ACCEPTED BY THE OWNER.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE SAFETY FROM THE TIME THE JOB IS AWARDED UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.
15. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO THE ARCHITECT FOR REVIEW. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, RULES OR REGULATIONS WITH NO INCREASE IN COSTS. CHECKER'S INITIALS BEFORE SUBMITTING TO THE CONSTRUCTION MANAGER FOR REVIEW.
16. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, AND LOCATIONS OF ALL UTILITIES AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
17. COORDINATION, LAYOUT, FURNISHING AND INSTALLATION OF CONDUIT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, RULES OR REGULATIONS WITH NO INCREASE IN COSTS. RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT HIS OWNERS RISK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, RULES OR REGULATIONS WITH NO INCREASE IN COSTS. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, RULES OR REGULATIONS WITH NO INCREASE IN COSTS. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
18. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE IDENTIFIED AND CLEARLY MARKED PRIOR TO ANY EXCAVATION AT 1-800-922-4455. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE IDENTIFIED AND CLEARLY MARKED PRIOR TO ANY EXCAVATION AT 1-800-922-4455. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE IDENTIFIED AND CLEARLY MARKED PRIOR TO ANY EXCAVATION AT 1-800-922-4455.
19. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, RULES OR REGULATIONS WITH NO INCREASE IN COSTS. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
20. THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" AT LEAST 48 HOURS PRIOR TO ANY EXCAVATIONS AT 1-800-922-4455. ALL UTILITIES SHALL BE IDENTIFIED AND CLEARLY MARKED PRIOR TO ANY EXCAVATION AT 1-800-922-4455. ALL UTILITIES SHALL BE IDENTIFIED AND CLEARLY MARKED PRIOR TO ANY EXCAVATION AT 1-800-922-4455.
21. CONTRACTOR SHALL COMPLY WITH OWNERS ENVIRONMENTAL ENGINEER ON ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES. ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES SHALL BE PROVIDED BY THE CONTRACTOR.

DATE	02/02/19
SCALE	AS NOTED
JOB NO.	1800007
TITLE SHEET	
Sheet No. 1 of 1	

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DATE					
PKMNM BY					
CHK'D BY					
DESCRIPTION					

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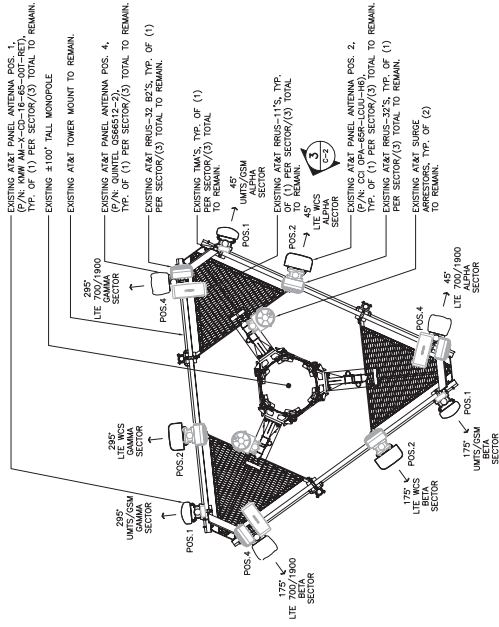


www.Centrik.com
 Centrik Engineering
 1000 Main Street
 Bridgeport, CT 06610
 Phone: 203-366-8888
 Fax: 203-366-8889

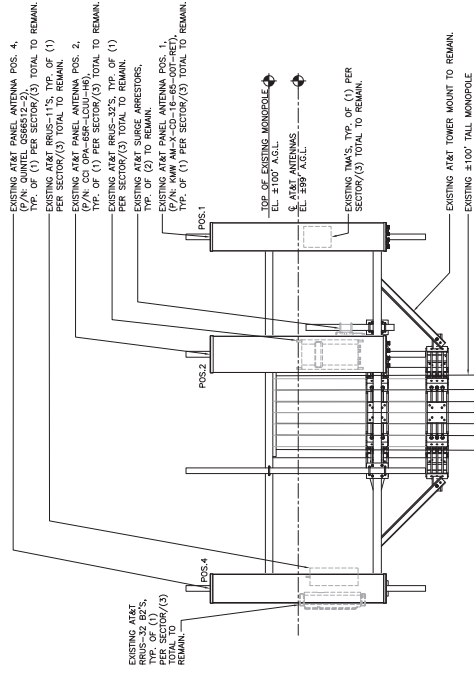
AT&T MOBILITY
 WIRELESS COMMUNICATIONS FACILITY
 MERIDEN WEST CENTRAL
 450-478 WEST MAIN STREET
 MERIDEN, CT 06451

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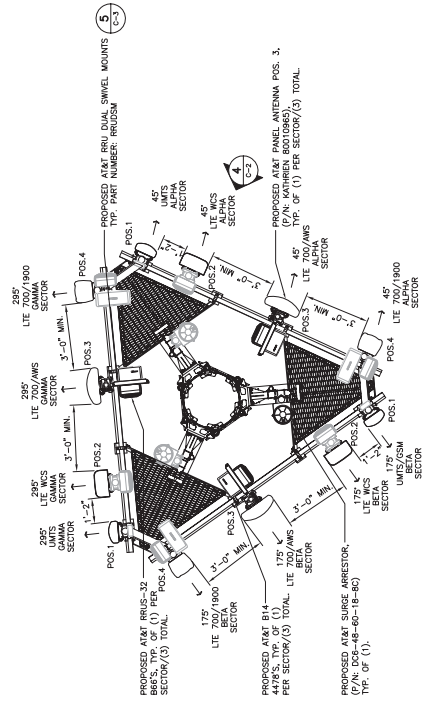
C-2
 Sheet No. 1 of 1



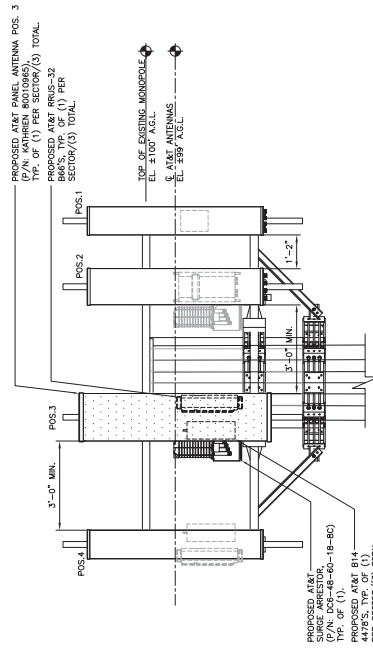
1 EXISTING ANTENNA PLAN NORTH
 SCALE: 3/8" = 1'-0"



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



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



4 PROPOSED ANTENNA ELEVATION
 SCALE: 1/2" = 1'-0"

REV	DATE	BY	DESCRIPTION
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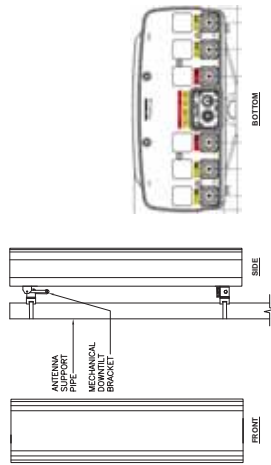


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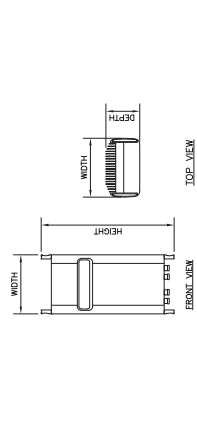
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 JOB NO.: 180007

DETAILS
C-3
 Sheet No. 3 of 3



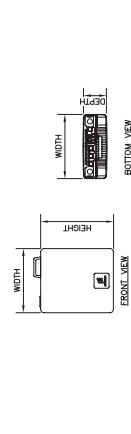
EQUIPMENT	ALPHABETICALLY	ANTENNA	WEIGHT
MAKE:	KATHREN		108.6-LBS
MODEL:	80010965		

1 PROPOSED ANTENNA DETAIL
 SCALE: 3" = 1'-0"



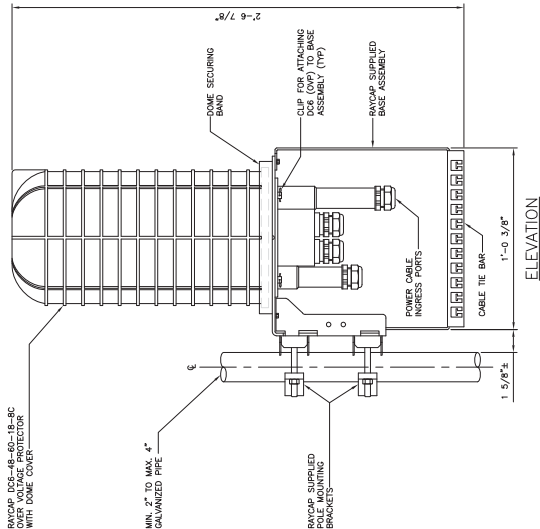
EQUIPMENT	ERICSSON	RRUS-32 B2 B66	WEIGHT	CLEARANCES
MAKE:	ERICSSON	RRUS-32 B2 B66	52.91 LBS.	ABOVE: 15" MIN.
MODEL:	ERICSSON	RRUS-32 B2 B66	52.91 LBS.	FRONT: 35" MIN.

2 ERICSSON RRUS 32 B2 B66 DETAIL
 SCALE: 1" = 1'-0"



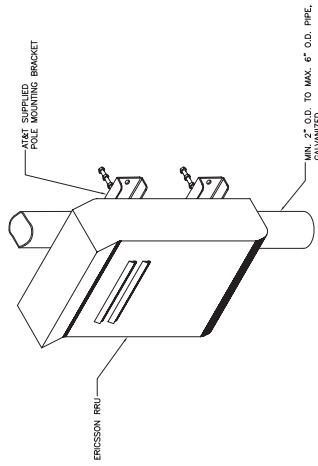
EQUIPMENT	ERICSSON	RRU B14 4478	WEIGHT	CLEARANCES
MAKE:	ERICSSON	RRU B14 4478	60 LBS.	ABOVE: 15" MIN.
MODEL:	ERICSSON	RRU B14 4478	60 LBS.	FRONT: 35" MIN.

3 ERICSSON B14 4478 DETAIL
 SCALE: 1" = 1'-0"



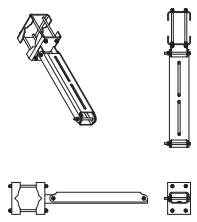
NOTES:
 1. BRACKETS MAY BE USED OVER VOLTAGE PROTECTOR AND PIPE MOUNTING.
 2. BRACKETS: SUBCONTRACTOR SHALL SUPPLY THE PIPE.

4 RAYCAP D08 MOUNTING DETAIL
 SCALE: 3" = 1'-0"



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

6 TYPICAL RRU MOUNTING DETAILS
 SCALE: NTS



EQUIPMENT	RRU DUAL SWIVEL MOUNT	WEIGHT
MAKE:	RRUSUM	39.4 LBS.
MODEL:	RRUSUM	

5 RRU DUAL SWIVEL MOUNT DETAIL
 SCALE: NOT TO SCALE

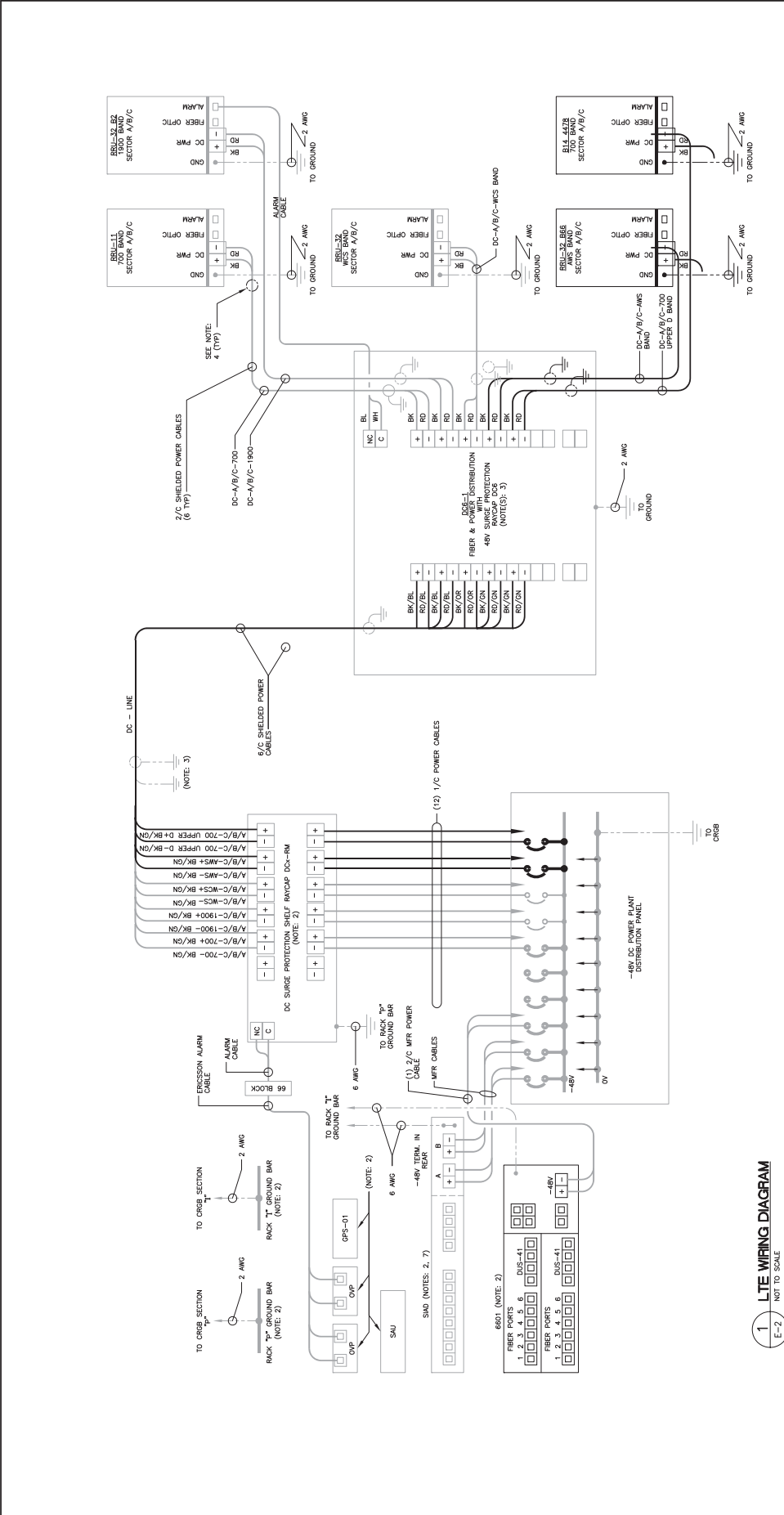
REV.	DATE	BY	DESCRIPTION
0	03/08/18	KAMR	CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION



AT&T MOBILITY
 WIRELESS COMMUNICATIONS FACILITY
 MERIDEN WEST CENTRAL
 CT53378 - LTE 4C-WMS + 5C-700 UPPER D
 450-478 WEST MAIN STREET
 MERIDEN CT 06451

DATE: 02/02/18
 SCALE: AS NOTED
 JOB NO.: 1806207

LTE WIRING
 DIAGRAM
 Sheet No. 1 of 1



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

Exhibit 2

Date: **February 06, 2018**

Marianne Dunst
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277

JACOBS
Jacobs Engineering Group, Inc.
5449 Bells Ferry Road
Acworth, GA 30102
770-701-2500

Subject: **Structural Analysis Report**

Carrier Designation: **AT&T Mobility Co-Locate**
Carrier Site Number: CT5378
Carrier Site Name: 10071118

Crown Castle Designation: **Crown Castle BU Number:** 842869
Crown Castle Site Name: MERIDEN WEST CENTRAL
Crown Castle JDE Job Number: 480521
Crown Castle Work Order Number: 1521060
Crown Castle Application Number: 422639 Rev. 0

Engineering Firm Designation: **Jacobs Engineering Group, Inc. Project Number:** 1521060

Site Data: **450-478 WEST MAIN STREET, MERIDEN, New Haven County, CT**
Latitude 41° 32' 24.11", Longitude -72° 49' 8.47"
100 Foot - Monopole Tower

Dear Marianne Dunst,

Jacobs Engineering Group, Inc. 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 1137276, in accordance with application 422639, revision 0.

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 I and Table II for the proposed and existing loading, respectively.

This analysis has been performed in accordance with the 2016 Connecticut State Building Code based upon an ultimate 3-second gust wind speed of 125 mph converted to a nominal 3-second gust wind speed of 97 mph per Section 1609.3 and Appendix N as required for use in the TIA-222-G Standard per Exception #5 of Section 1609.1.1. Exposure Category B and Risk Category II were used in this analysis.

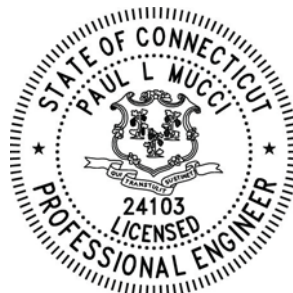
All modifications and equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

We at *Jacobs Engineering Group, Inc.* 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.

Structural analysis prepared by:



Donitha Chiu
Structural Engineer



Reviewed by:

Paul L Mucci, P.E.
Senior Project Engineer

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tnxTower Output

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Base Level Drawing

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Additional Calculations

1) INTRODUCTION

This tower is a 100 ft Monopole tower designed by Glen Martin Engineering, Inc. in December 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-222-G Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a 3-second gust wind speed of 97 mph with no ice, 50 mph with 0.75 inch ice thickness and 60 mph under service loads, exposure category B.

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
100.0	100.0	3	ericsson	RRUS 32	2	3/4	-
		3	ericsson	RRUS 32 B2			
		3	ericsson	RRUS 32 B66			
		3	ericsson	RRUS 4478 B14			
		3	kathrein	80010965			
		3	quintel technology	QS66512-2			
		1	raycap	DC6-48-60-0-8F			

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			
100.0	112.0	1	decibel	ASP-3711	8	1/2	2			
	106.0	3	decibel	DB201-A						
		1	kmw communications	HB-X-AW-19-65-00T						
	100.0	100.0	4	decibel	DB432-A	6	1-1/4	1		
			3	ericsson	RRUS 11-700					
			3	ericsson	RRUS A2 MODULE					
			3	kmw communications	AM-X-CD-16-65-00T-RET					
			3	cci antennas	DTMABP7819VG12A					
			3	cci antennas	OPA-65R-LCUU-H6					
			3	ericsson	RRUS 11	4	3/4			
			3	kmw communications	AM-X-CD-16-65-00T-RET					
			2	raycap	DC6-48-60-18-8F					
			1	tower mounts	Platform Mount [LP 1301-1]				2	3/8

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
86.0	90.0	3	commscope	LNX-6515DS-A1M w/ Mount Pipe	11 2	7/8 1-5/8	1
		3	ericsson	AIR -32 B2A/B66AA w/ Mount Pipe			
		3	ericsson	ERICSSON AIR 21 B2A B4P w/ Mount Pipe			
		3	ericsson	KRY 112 71			
		3	ericsson	RRUS 11 B12			
	86.0	1	tower mounts	Platform Mount [LP 305-1]			
78.0	78.0	3	alcatel lucent	800 EXTERNAL NOTCH FILTER	-	-	1
		3	alcatel lucent	TME-800MHZ RRH			
		1	tower mounts	Side Arm Mount [SO 104-3]			
	77.0	3	alcatel lucent	1900MHz RRH			
76.0	79.0	3	alcatel lucent	TD-RRH8x20-25	1 3 1	5/8 1-1/4 3/4	1
		3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe			
		3	rfs celwave	APXVTM14-C-120 w/ Mount Pipe			
	76.0	1	tower mounts	Platform Mount [LP 304-1]			
65.0	65.0	3	alcatel lucent	B4 RRH2X60-4R	2	1-5/8	1
		3	alcatel lucent	RRH2x60-700			
		3	antel	BXA-171063/12CF w/ Mount Pipe			
		3	antel	BXA-70063/6CF w/ Mount Pipe			
		6	commscope	SBNHH-1D45B w/ Mount Pipe			
		2	rfs celwave	DB-T1-6Z-8AB-0Z			
		1	tower mounts	Platform Mount [LP 303-1]			

- 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)
99.0	99.0	6	allgon	7920	12	1-5/8
89.0	89.0	9	generic	4' Panel Antenna	9	1-5/8
79.0	79.0	9	generic	4' Panel Antenna	9	1-5/8

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Tectonic Engineering & Surveying Consultants P.C.	4529388	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Glen Martin Engineering, Inc.	4529387	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Glen Martin Engineering, Inc.	4713237	CCISITES

3.1) Analysis Method

tnxTower (version 7.0.7.0), 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) Specifications of the weld connecting the tower shaft to the base plate have not been provided to Jacobs prior to this analysis and as a result are outside the scope of this report.
- 5) Porthole details and weld specifications were not provided to Jacobs prior to this analysis and as a result are outside the scope of this report.

This analysis may be affected if any assumptions are not valid or have been made in error. Jacobs Engineering Group, Inc. 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	100 - 47	Pole	TP40.72x28x0.313	1	-21.260	2675.230	31.9	Pass
L2	47 - 0	Pole	TP51.37x38.655x0.375	2	-35.744	4061.570	45.5	Pass
							Summary	
						Pole (L2)	45.5	Pass
						Rating =	45.5	Pass

Table 6 - Tower Component Stresses vs. Capacity - LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	50.9	Pass
1	Base Plate	0	31.0	Pass
1	Base Foundation Structural	0	21.6	Pass
1	Base Foundation Soil Interaction	0	50.6	Pass

Structure Rating (max from all components) =	50.9%
---	--------------

Notes:

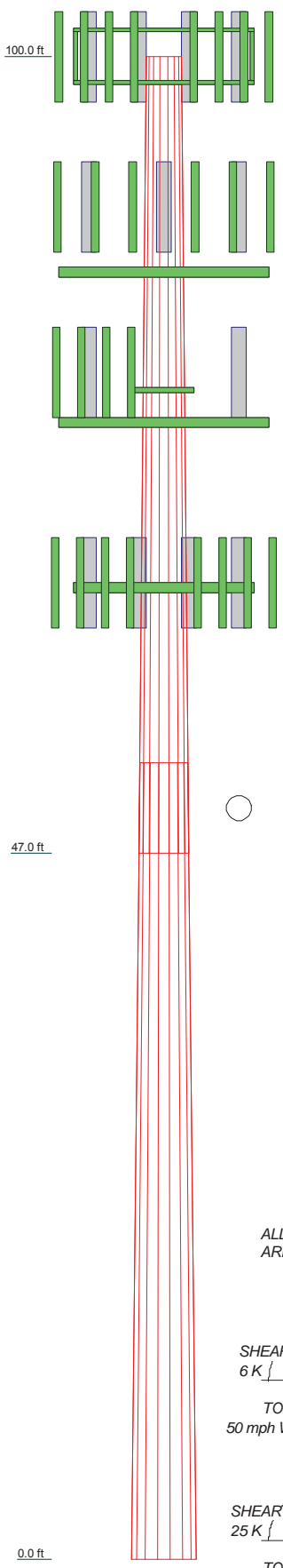
- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

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	1	53.000	16	0.313	6.000	28.000	40.720	A572-65	6.1
Length (ft)	2	53.000	16	0.375	38.655	51.370			9.6
Number of Sides									
Thickness (in)									
Socket Length (ft)									
Top Dia (in)									
Bot Dia (in)									
Grade									
Weight (K)									15.8



DESIGNED APPURTENANCE LOADING

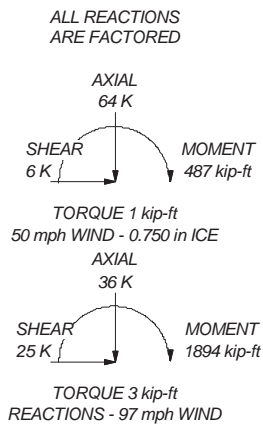
TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod 1"x7"	100	KRY 112 71	86
80010965	100	KRY 112 71	86
80010965	100	KRY 112 71	86
80010965	100	RRUS 11 B12	86
QS66512-2	100	RRUS 11 B12	86
QS66512-2	100	RRUS 11 B12	86
QS66512-2	100	Platform Mount [LP 305-1]	86
RRUS 32	100	TME-800MHZ RRH	78
RRUS 32	100	TME-800MHZ RRH	78
RRUS 32	100	TME-800MHZ RRH	78
RRUS 4478 B14	100	1900MHz RRH	78
RRUS 4478 B14	100	1900MHz RRH	78
RRUS 4478 B14	100	1900MHz RRH	78
RRUS 32 B66	100	800 EXTERNAL NOTCH FILTER	78
RRUS 32 B66	100	800 EXTERNAL NOTCH FILTER	78
RRUS 32 B66	100	800 EXTERNAL NOTCH FILTER	78
DC6-48-60-0-8F	100	6' x 2" Mount Pipe	78
RRUS 32 B2	100	6' x 2" Mount Pipe	78
RRUS 32 B2	100	6' x 2" Mount Pipe	78
RRUS 32 B2	100	Side Arm Mount [SO 104-3]	78
AM-X-CD-16-65-00T-RET	100	APXVSP18-C-A20 w/ Mount Pipe	76
AM-X-CD-16-65-00T-RET	100	APXV1M14-C-120 w/ Mount Pipe	76
AM-X-CD-16-65-00T-RET	100	(2) APXVSP18-C-A20 w/ Mount Pipe	76
OPA-65R-LCUU-H6	100	(2) APXV1M14-C-120 w/ Mount Pipe	76
OPA-65R-LCUU-H6	100	TD-RRHx20-25	76
OPA-65R-LCUU-H6	100	(2) TD-RRHx20-25	76
DTMABP7819VG12A	100	(2) 6' x 2" Mount Pipe	76
DTMABP7819VG12A	100	(4) 6' x 2" Mount Pipe	76
DTMABP7819VG12A	100	Platform Mount [LP 304-1]	76
(2) DC6-48-60-18-8F	100	(2) SBNHH-1D45B w/ Mount Pipe	65
RRUS 11	100	(2) SBNHH-1D45B w/ Mount Pipe	65
RRUS 11	100	(2) SBNHH-1D45B w/ Mount Pipe	65
RRUS 11	100	BXA-171063/12CF w/ Mount Pipe	65
Platform Mount [LP 1301-1]	100	BXA-171063/12CF w/ Mount Pipe	65
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	86	BXA-171063/12CF w/ Mount Pipe	65
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	86	BXA-70063/6CF w/ Mount Pipe	65
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	86	BXA-70063/6CF w/ Mount Pipe	65
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	86	BXA-70063/6CF w/ Mount Pipe	65
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	86	B4 RRH2X60-4R	65
AIR -32 B2A/B66AA w/ Mount Pipe	86	B4 RRH2X60-4R	65
AIR -32 B2A/B66AA w/ Mount Pipe	86	RRH2x60-700	65
AIR -32 B2A/B66AA w/ Mount Pipe	86	RRH2x60-700	65
LNx-6515DS-A11M w/ Mount Pipe	86	RRH2x60-700	65
LNx-6515DS-A11M w/ Mount Pipe	86	RRH2x60-700	65
LNx-6515DS-A11M w/ Mount Pipe	86	(2) DB-T1-6Z-8AB-0Z	65
LNx-6515DS-A11M w/ Mount Pipe	86	Platform Mount [LP 303-1]	65

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 Exposure B to the TIA-222-G Standard.
3. Tower designed for a 97 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TOWER RATING: 45.5%



Jacobs Engineering Group, Inc. 5449 Bells Ferry Road Acworth, GA 30102 Phone: 770-701-2500 FAX: 770-701-2501	Job: MERIDEN WEST CENTRAL
	Project: BU#842869 WO#1521060
	Client: Crown Castle Drawn by: Donitha F. Chiu App'd:
	Code: TIA-222-G Date: 02/06/18 Scale: NTS
	Path:
	Dwg No. E-1

Tower Input Data

There is a pole section.

This tower is designed using the TIA-222-G standard.

The following design criteria apply:

- 1) Tower is located in New Haven County, Connecticut.
- 2) Basic wind speed of 97 mph.
- 3) Structure Class II.
- 4) Exposure Category B.
- 5) Topographic Category 1.
- 6) Crest Height 0.000 ft.
- 7) Nominal ice thickness of 0.750 in.
- 8) Ice thickness is considered to increase with height.
- 9) Ice density of 56.000 pcf.
- 10) A wind speed of 50 mph is used in combination with ice.
- 11) Temperature drop of 50.000 °F.
- 12) Deflections calculated using a wind speed of 60 mph.
- 13) A non-linear (P-delta) analysis was used.
- 14) Pressures are calculated at each section.
- 15) Stress ratio used in pole design is 1.
- 16) Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification ✓ Use Code Stress Ratios ✓ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric	Distribute Leg Loads As Uniform Assume Legs Pinned ✓ Assume Rigid Index Plate ✓ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension ✓ Bypass Mast Stability Checks ✓ Use Azimuth Dish Coefficients ✓ Project Wind Area of Appurt. Autocalc Torque Arm Areas Add IBC .6D+W Combination Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder	Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation ✓ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-G Bracing Resist. Exemption Use TIA-222-G Tension Splice Exemption <div style="text-align: center; background-color: #e0e0e0; padding: 2px;">Poles</div> ✓ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets
--	--	---

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	100.000- 47.000	53.000	6.000	16	28.000	40.720	0.313	1.250	A572-65 (65 ksi)
L2	47.000-0.000	53.000		16	38.655	51.370	0.375	1.500	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	28.549	27.601	2673.045	9.857	14.280	187.188	5386.564	13.647	4.950	15.84
	41.518	40.281	8308.852	14.385	20.767	400.095	16743.510	19.917	7.481	23.94
L2	40.880	45.792	8477.194	13.628	19.714	430.008	17082.742	22.642	6.946	18.523
	52.376	61.003	20040.987	18.154	26.199	764.961	40385.419	30.163	9.476	25.27

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade Adjust. Factor A _r	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontal in	Double Angle Stitch Bolt Spacing Redundants in
L1 100.000-47.000			1	1	1			
L2 47.000-0.000			1	1	1			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
* MLE Hybrid 9Power/18Fiber RL 2(1 5/8) ***	A	Surface Ar (CaAa)	65.000 - 0.000	2	2	-0.410 -0.370	1.625		0.001
Safety Line 3/8 ***** ***	C	Surface Ar (CaAa)	100.000 - 0.000	1	1	0.250 0.250	0.375		0.000

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	C _{AA}	Weight klf
						ft ² /ft	
*** FACE A *** WR-VG86ST-BRD(3/4)	A	No	Inside Pole	100.000 - 0.000	2	No Ice 0.000 1/2" Ice 0.000 1" Ice 0.000	0.001 0.001 0.001
2 1/4" Flex Conduit	A	No	Inside Pole	100.000 - 0.000	2	No Ice 0.000 1/2" Ice 0.000 1" Ice 0.000	0.002 0.002 0.002
WR-VG86ST-BRD(3/4)	A	No	Inside Pole	100.000 - 0.000	2	No Ice 0.000 1/2" Ice 0.000 1" Ice 0.000	0.001 0.001 0.001
FB-L98B-034-XXXXXX(3/8)	A	No	Inside Pole	100.000 - 0.000	2	No Ice 0.000 1/2" Ice 0.000 1" Ice 0.000	0.000 0.000 0.000
WR-VG86ST-BRD(3/4)	A	No	Inside Pole	100.000 - 0.000	2	No Ice 0.000 1/2" Ice 0.000 1" Ice 0.000	0.001 0.001 0.001
LDF6-50A(1-1/4")	A	No	Inside Pole	100.000 - 0.000	6	No Ice 0.000 1/2" Ice 0.000 1" Ice 0.000	0.001 0.001 0.001
*** FACE B *** *							
LDF4.5-50(5/8")	B	No	Inside Pole	76.000 - 0.000	1	No Ice 0.000 1/2" Ice 0.000 1" Ice 0.000	0.000 0.000 0.000
EP185(3/4")	B	No	Inside Pole	76.000 - 0.000	1	No Ice 0.000 1/2" Ice 0.000 1" Ice 0.000	0.000 0.000 0.000

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C _{AA} A _A ft ² /ft	Weight klf
HB114-13U3M12-XXXF(1-1/4")	B	No	Inside Pole	76.000 - 0.000	3	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
*** FACE C *** LDF5-50A(7/8")	C	No	Inside Pole	86.000 - 0.000	11	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
MLE Hybrid 9Power/18Fiber RL 2(1 5/8) ***** ***	C	No	Inside Pole	86.000 - 0.000	2	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001

Feed Line/Linear Appurtenances Section Areas

Tower Section n	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} A _A In Face ft ²	C _{AA} A _A Out Face ft ²	Weight K
L1	100.000-47.000	A	0.000	0.000	5.850	0.000	0.694
		B	0.000	0.000	0.000	0.000	0.096
		C	0.000	0.000	1.987	0.000	0.237
L2	47.000-0.000	A	0.000	0.000	15.275	0.000	0.682
		B	0.000	0.000	0.000	0.000	0.156
		C	0.000	0.000	1.763	0.000	0.282

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section n	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} A _A In Face ft ²	C _{AA} A _A Out Face ft ²	Weight K
L1	100.000-47.000	A	1.623	0.000	0.000	14.616	0.000	0.851
		B		0.000	0.000	0.000	0.000	0.096
		C		0.000	0.000	19.191	0.000	0.447
L2	47.000-0.000	A	1.446	0.000	0.000	38.163	0.000	1.091
		B		0.000	0.000	0.000	0.000	0.156
		C		0.000	0.000	17.018	0.000	0.468

Feed Line Center of Pressure

Section	Elevation ft	CP _x in	CP _z in	CP _x Ice in	CP _z Ice in
L1	100.000-47.000	-0.200	0.098	-0.524	0.437
L2	47.000-0.000	-0.459	0.175	-0.950	0.538

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L1	9	MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	47.00 - 65.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L1	20	Safety Line 3/8	47.00 - 100.00	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
Lightning Rod 1"x7'	C	From Leg	0.000 0.000 3.500	0.000	100.000	No Ice	0.700	0.700	0.030
						1/2" Ice	1.417	1.417	0.037
						Ice	2.150	2.150	0.048
						1" Ice			
Lvl 100 80010965	A	From Leg	4.000 0.000 0.000	0.000	100.000	No Ice	13.814	5.833	0.098
						1/2" Ice	14.347	6.324	0.174
						Ice	14.888	6.821	0.258
						1" Ice			
80010965	B	From Leg	4.000 0.000 0.000	0.000	100.000	No Ice	13.814	5.833	0.098
						1/2" Ice	14.347	6.324	0.174
						Ice	14.888	6.821	0.258
						1" Ice			
80010965	C	From Leg	4.000 0.000 0.000	0.000	100.000	No Ice	13.814	5.833	0.098
						1/2" Ice	14.347	6.324	0.174
						Ice	14.888	6.821	0.258
						1" Ice			
QS66512-2	A	From Leg	4.000 0.000 0.000	0.000	100.000	No Ice	8.133	6.800	0.111
						1/2" Ice	8.590	7.267	0.168
						Ice	9.053	7.723	0.232
						1" Ice			
QS66512-2	B	From Leg	4.000 0.000 0.000	0.000	100.000	No Ice	8.133	6.800	0.111
						1/2" Ice	8.590	7.267	0.168
						Ice	9.053	7.723	0.232
						1" Ice			
QS66512-2	C	From Leg	4.000 0.000 0.000	0.000	100.000	No Ice	8.133	6.800	0.111
						1/2" Ice	8.590	7.267	0.168
						Ice	9.053	7.723	0.232
						1" Ice			
RRUS 32	A	From Leg	4.000 0.000 0.000	0.000	100.000	No Ice	2.857	1.777	0.055
						1/2" Ice	3.083	1.968	0.077
						Ice	3.316	2.166	0.103
						1" Ice			
RRUS 32	B	From Leg	4.000 0.000 0.000	0.000	100.000	No Ice	2.857	1.777	0.055
						1/2" Ice	3.083	1.968	0.077
						Ice	3.316	2.166	0.103
						1" Ice			
RRUS 32	C	From Leg	4.000 0.000 0.000	0.000	100.000	No Ice	2.857	1.777	0.055
						1/2" Ice	3.083	1.968	0.077
						Ice	3.316	2.166	0.103
						1" Ice			
RRUS 4478 B14	A	From Leg	4.000 0.000 0.000	0.000	100.000	No Ice	1.843	1.059	0.060
						1/2" Ice	2.012	1.197	0.076
						Ice	2.190	1.342	0.094
						1" Ice			
RRUS 4478 B14	B	From Leg	4.000 0.000 0.000	0.000	100.000	No Ice	1.843	1.059	0.060
						1/2" Ice	2.012	1.197	0.076
						Ice	2.190	1.342	0.094
						1" Ice			
RRUS 4478 B14	C	From Leg	4.000 0.000	0.000	100.000	No Ice	1.843	1.059	0.060
						1/2" Ice	2.012	1.197	0.076
						Ice			
						1" Ice			

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K	
			0.000			1/2" Ice	2.190	1.342	0.094
RRUS 32 B66	A	From Leg	4.000 0.000 0.000	0.000	100.000	1" Ice No Ice	2.743	1.668	0.053
						1/2" Ice	2.965	1.855	0.074
						1" Ice	3.194	2.049	0.098
RRUS 32 B66	B	From Leg	4.000 0.000 0.000	0.000	100.000	1" Ice No Ice	2.743	1.668	0.053
						1/2" Ice	2.965	1.855	0.074
						1" Ice	3.194	2.049	0.098
RRUS 32 B66	C	From Leg	4.000 0.000 0.000	0.000	100.000	1" Ice No Ice	2.743	1.668	0.053
						1/2" Ice	2.965	1.855	0.074
						1" Ice	3.194	2.049	0.098
DC6-48-60-0-8F	B	From Leg	4.000 0.000 0.000	0.000	100.000	1" Ice No Ice	2.200	2.200	0.033
						1/2" Ice	2.398	2.398	0.055
						1" Ice	2.604	2.604	0.081
RRUS 32 B2	A	From Leg	4.000 0.000 0.000	0.000	100.000	1" Ice No Ice	2.731	1.668	0.053
						1/2" Ice	2.953	1.855	0.074
						1" Ice	3.182	2.049	0.098
RRUS 32 B2	B	From Leg	4.000 0.000 0.000	0.000	100.000	1" Ice No Ice	2.731	1.668	0.053
						1/2" Ice	2.953	1.855	0.074
						1" Ice	3.182	2.049	0.098
RRUS 32 B2	C	From Leg	4.000 0.000 0.000	0.000	100.000	1" Ice No Ice	2.731	1.668	0.053
						1/2" Ice	2.953	1.855	0.074
						1" Ice	3.182	2.049	0.098
AM-X-CD-16-65-00T-RET	A	From Leg	4.000 0.000 0.000	0.000	100.000	1" Ice No Ice	8.024	4.642	0.049
						1/2" Ice	8.480	5.088	0.095
						1" Ice	8.943	5.542	0.147
AM-X-CD-16-65-00T-RET	B	From Leg	4.000 0.000 0.000	0.000	100.000	1" Ice No Ice	8.024	4.642	0.049
						1/2" Ice	8.480	5.088	0.095
						1" Ice	8.943	5.542	0.147
AM-X-CD-16-65-00T-RET	C	From Leg	4.000 0.000 0.000	0.000	100.000	1" Ice No Ice	8.024	4.642	0.049
						1/2" Ice	8.480	5.088	0.095
						1" Ice	8.943	5.542	0.147
OPA-65R-LCUU-H6	A	From Leg	4.000 0.000 0.000	0.000	100.000	1" Ice No Ice	9.658	5.517	0.073
						1/2" Ice	10.128	5.971	0.131
						1" Ice	10.606	6.434	0.196
OPA-65R-LCUU-H6	B	From Leg	4.000 0.000 0.000	0.000	100.000	1" Ice No Ice	9.658	5.517	0.073
						1/2" Ice	10.128	5.971	0.131
						1" Ice	10.606	6.434	0.196
OPA-65R-LCUU-H6	C	From Leg	4.000 0.000 0.000	0.000	100.000	1" Ice No Ice	9.658	5.517	0.073
						1/2" Ice	10.128	5.971	0.131
						1" Ice	10.606	6.434	0.196
DTMABP7819VG12A	A	From Leg	4.000 0.000 0.000	0.000	100.000	1" Ice No Ice	0.976	0.339	0.019
						1/2" Ice	1.100	0.419	0.026
						1" Ice	1.232	0.510	0.036
DTMABP7819VG12A	B	From Leg	4.000 0.000 0.000	0.000	100.000	1" Ice No Ice	0.976	0.339	0.019
						1/2" Ice	1.100	0.419	0.026
						1" Ice	1.232	0.510	0.036
DTMABP7819VG12A	C	From Leg	4.000 0.000	0.000	100.000	1" Ice No Ice	0.976	0.339	0.019
						1/2" Ice	1.100	0.419	0.026

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K	
			0.000			1/2" Ice 1" Ice	1.232	0.510	0.036
(2) DC6-48-60-18-8F	B	From Leg	4.000 0.000 0.000	0.000	100.000	No Ice 1/2" Ice 1" Ice	0.917 1.458 1.643	0.917 1.458 1.643	0.033 0.051 0.071
RRUS 11	A	From Leg	4.000 0.000 0.000	0.000	100.000	No Ice 1/2" Ice 1" Ice	2.784 2.992 3.207	1.187 1.334 1.490	0.051 0.072 0.095
RRUS 11	B	From Leg	4.000 0.000 0.000	0.000	100.000	No Ice 1/2" Ice 1" Ice	2.784 2.992 3.207	1.187 1.334 1.490	0.051 0.072 0.095
RRUS 11	C	From Leg	4.000 0.000 0.000	0.000	100.000	No Ice 1/2" Ice 1" Ice	2.784 2.992 3.207	1.187 1.334 1.490	0.051 0.072 0.095
Platform Mount [LP 1301-1]	C	None		0.000	100.000	No Ice 1/2" Ice 1" Ice	51.700 62.700 76.000	51.700 62.700 76.000	2.262 2.935 3.808
Lvl 86 ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Leg	4.000 0.000 4.000	0.000	86.000	No Ice 1/2" Ice 1" Ice	6.329 6.775 7.214	5.642 6.426 7.131	0.112 0.169 0.233
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Leg	4.000 0.000 4.000	0.000	86.000	No Ice 1/2" Ice 1" Ice	6.329 6.775 7.214	5.642 6.426 7.131	0.112 0.169 0.233
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Leg	4.000 0.000 4.000	0.000	86.000	No Ice 1/2" Ice 1" Ice	6.329 6.775 7.214	5.642 6.426 7.131	0.112 0.169 0.233
AIR -32 B2A/B66AA w/ Mount Pipe	A	From Leg	4.000 0.000 4.000	0.000	86.000	No Ice 1/2" Ice 1" Ice	6.747 7.202 7.648	6.070 6.867 7.583	0.153 0.214 0.282
AIR -32 B2A/B66AA w/ Mount Pipe	B	From Leg	4.000 0.000 4.000	0.000	86.000	No Ice 1/2" Ice 1" Ice	6.747 7.202 7.648	6.070 6.867 7.583	0.153 0.214 0.282
AIR -32 B2A/B66AA w/ Mount Pipe	C	From Leg	4.000 0.000 4.000	0.000	86.000	No Ice 1/2" Ice 1" Ice	6.747 7.202 7.648	6.070 6.867 7.583	0.153 0.214 0.282
LNx-6515DS-A1M w/ Mount Pipe	A	From Leg	4.000 0.000 4.000	0.000	86.000	No Ice 1/2" Ice 1" Ice	11.445 12.064 12.689	9.359 10.679 11.714	0.076 0.160 0.254
LNx-6515DS-A1M w/ Mount Pipe	B	From Leg	4.000 0.000 4.000	0.000	86.000	No Ice 1/2" Ice 1" Ice	11.445 12.064 12.689	9.359 10.679 11.714	0.076 0.160 0.254
LNx-6515DS-A1M w/ Mount Pipe	C	From Leg	4.000 0.000 4.000	0.000	86.000	No Ice 1/2" Ice 1" Ice	11.445 12.064 12.689	9.359 10.679 11.714	0.076 0.160 0.254
KRY 112 71	A	From Leg	4.000 0.000 4.000	0.000	86.000	No Ice 1/2" Ice 1" Ice	0.583 0.688 0.799	0.398 0.488 0.586	0.013 0.018 0.025
KRY 112 71	B	From Leg	4.000	0.000	86.000	No Ice	0.583	0.398	0.013

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K	
			0.000			1/2"	0.688	0.488	0.018
			4.000			Ice	0.799	0.586	0.025
KRY 112 71	C	From Leg	4.000	0.000	86.000	1" Ice			
			0.000			No Ice	0.583	0.398	0.013
			4.000			1/2"	0.688	0.488	0.018
						Ice	0.799	0.586	0.025
RRUS 11 B12	A	From Leg	4.000	0.000	86.000	1" Ice			
			0.000			No Ice	2.833	1.182	0.051
			4.000			1/2"	3.043	1.330	0.072
						Ice	3.259	1.485	0.095
RRUS 11 B12	B	From Leg	4.000	0.000	86.000	1" Ice			
			0.000			No Ice	2.833	1.182	0.051
			4.000			1/2"	3.043	1.330	0.072
						Ice	3.259	1.485	0.095
RRUS 11 B12	C	From Leg	4.000	0.000	86.000	1" Ice			
			0.000			No Ice	2.833	1.182	0.051
			4.000			1/2"	3.043	1.330	0.072
						Ice	3.259	1.485	0.095
Platform Mount [LP 305-1]	C	None		0.000	86.000	1" Ice			
						No Ice	18.010	18.010	1.121
						1/2"	23.330	23.330	1.352
						Ice	28.650	28.650	1.584
						1" Ice			
Lvl 78									
TME-800MHZ RRH	A	From Leg	2.000	0.000	78.000	No Ice	2.134	1.773	0.053
			0.000			1/2"	2.320	1.946	0.074
			0.000			Ice	2.512	2.127	0.098
						1" Ice			
TME-800MHZ RRH	B	From Leg	2.000	0.000	78.000	No Ice	2.134	1.773	0.053
			0.000			1/2"	2.320	1.946	0.074
			0.000			Ice	2.512	2.127	0.098
						1" Ice			
TME-800MHZ RRH	C	From Leg	2.000	0.000	78.000	No Ice	2.134	1.773	0.053
			0.000			1/2"	2.320	1.946	0.074
			0.000			Ice	2.512	2.127	0.098
						1" Ice			
1900MHz RRH	A	From Leg	2.000	0.000	78.000	No Ice	2.492	3.258	0.044
			0.000			1/2"	2.695	3.484	0.075
			-1.000			Ice	2.906	3.718	0.110
						1" Ice			
1900MHz RRH	B	From Leg	2.000	0.000	78.000	No Ice	2.492	3.258	0.044
			0.000			1/2"	2.695	3.484	0.075
			-1.000			Ice	2.906	3.718	0.110
						1" Ice			
1900MHz RRH	C	From Leg	2.000	0.000	78.000	No Ice	2.492	3.258	0.044
			0.000			1/2"	2.695	3.484	0.075
			-1.000			Ice	2.906	3.718	0.110
						1" Ice			
800 EXTERNAL NOTCH FILTER	A	From Leg	2.000	0.000	78.000	No Ice	0.660	0.321	0.011
			0.000			1/2"	0.763	0.398	0.017
			0.000			Ice	0.873	0.483	0.024
						1" Ice			
800 EXTERNAL NOTCH FILTER	B	From Leg	2.000	0.000	78.000	No Ice	0.660	0.321	0.011
			0.000			1/2"	0.763	0.398	0.017
			0.000			Ice	0.873	0.483	0.024
						1" Ice			
800 EXTERNAL NOTCH FILTER	C	From Leg	2.000	0.000	78.000	No Ice	0.660	0.321	0.011
			0.000			1/2"	0.763	0.398	0.017
			0.000			Ice	0.873	0.483	0.024
						1" Ice			
6' x 2" Mount Pipe	A	From Leg	2.000	0.000	78.000	No Ice	1.425	1.425	0.022
			0.000			1/2"	1.925	1.925	0.033
			0.000			Ice	2.294	2.294	0.048
						1" Ice			
6' x 2" Mount Pipe	B	From Leg	2.000	0.000	78.000	No Ice	1.425	1.425	0.022

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment t °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K	
			0.000			1/2"	1.925	1.925	0.033
			0.000			Ice	2.294	2.294	0.048
6' x 2" Mount Pipe	C	From Leg	2.000	0.000	78.000	1" Ice			
			0.000			No Ice	1.425	1.425	0.022
			0.000			1/2"	1.925	1.925	0.033
			0.000			Ice	2.294	2.294	0.048
Side Arm Mount [SO 104-3]	C	None		0.000	78.000	1" Ice			
						No Ice	3.300	3.300	0.287
						1/2"	4.130	4.130	0.317
						Ice	4.960	4.960	0.347
						1" Ice			
Lvl 76 APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.000	0.000	76.000	No Ice	8.262	6.946	0.083
			0.000			1/2"	8.822	8.127	0.151
			3.000			Ice	9.346	9.021	0.227
APXVTM14-C-120 w/ Mount Pipe	A	From Leg	4.000	0.000	76.000	1" Ice			
			0.000			No Ice	6.580	4.959	0.077
			0.000			1/2"	7.031	5.754	0.131
			3.000			Ice	7.473	6.472	0.193
(2) APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.000	0.000	76.000	1" Ice			
			0.000			No Ice	8.262	6.946	0.083
			0.000			1/2"	8.822	8.127	0.151
			3.000			Ice	9.346	9.021	0.227
(2) APXVTM14-C-120 w/ Mount Pipe	C	From Leg	4.000	0.000	76.000	1" Ice			
			0.000			No Ice	6.580	4.959	0.077
			0.000			1/2"	7.031	5.754	0.131
			3.000			Ice	7.473	6.472	0.193
TD-RRH8x20-25	A	From Leg	4.000	0.000	76.000	1" Ice			
			0.000			No Ice	4.045	1.533	0.070
			0.000			1/2"	4.298	1.712	0.097
			3.000			Ice	4.557	1.899	0.128
(2) TD-RRH8x20-25	C	From Leg	4.000	0.000	76.000	1" Ice			
			0.000			No Ice	4.045	1.533	0.070
			0.000			1/2"	4.298	1.712	0.097
			3.000			Ice	4.557	1.899	0.128
(2) 6' x 2" Mount Pipe	A	From Leg	4.000	0.000	76.000	1" Ice			
			0.000			No Ice	1.425	1.425	0.022
			0.000			1/2"	1.925	1.925	0.033
			3.000			Ice	2.294	2.294	0.048
(4) 6' x 2" Mount Pipe	B	From Leg	4.000	0.000	76.000	1" Ice			
			0.000			No Ice	1.425	1.425	0.022
			0.000			1/2"	1.925	1.925	0.033
			3.000			Ice	2.294	2.294	0.048
Platform Mount [LP 304-1]	C	None		0.000	76.000	1" Ice			
						No Ice	17.460	17.460	1.349
						1/2"	22.440	22.440	1.625
						Ice	27.420	27.420	1.900
						1" Ice			
Lvl 65 (2) SBNHH-1D45B w/ Mount Pipe	A	From Leg	4.000	0.000	65.000	No Ice	11.637	6.946	0.088
			0.000			1/2"	12.228	8.127	0.172
			0.000			Ice	12.784	9.021	0.265
(2) SBNHH-1D45B w/ Mount Pipe	B	From Leg	4.000	0.000	65.000	1" Ice			
			0.000			No Ice	11.637	6.946	0.088
			0.000			1/2"	12.228	8.127	0.172
			0.000			Ice	12.784	9.021	0.265
(2) SBNHH-1D45B w/ Mount Pipe	C	From Leg	4.000	0.000	65.000	1" Ice			
			0.000			No Ice	11.637	6.946	0.088
			0.000			1/2"	12.228	8.127	0.172
			0.000			Ice	12.784	9.021	0.265
BXA-171063/12CF w/ Mount Pipe	A	From Leg	4.000	0.000	65.000	1" Ice			
			0.000			No Ice	5.029	5.289	0.041
			0.000			1/2"	5.583	6.459	0.087
			0.000			Ice	6.103	7.348	0.140
						1" Ice			

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
BXA-171063/12CF w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	65.000	No Ice	5.029	5.289	0.041
						1/2"	5.583	6.459	0.087
						Ice	6.103	7.348	0.140
BXA-171063/12CF w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	65.000	1" Ice	5.029	5.289	0.041
						No Ice	5.029	5.289	0.041
						1/2"	5.583	6.459	0.087
BXA-70063/6CF w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	65.000	Ice	6.103	7.348	0.140
						1" Ice	7.819	5.407	0.042
						No Ice	7.819	5.407	0.042
BXA-70063/6CF w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	65.000	1/2"	8.370	6.558	0.101
						Ice	8.886	7.422	0.168
						1" Ice	8.886	7.422	0.168
BXA-70063/6CF w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	65.000	No Ice	7.819	5.407	0.042
						1/2"	8.370	6.558	0.101
						Ice	8.886	7.422	0.168
B4 RRH2X60-4R	A	From Leg	4.000 0.000 0.000	0.000	65.000	1" Ice	3.355	2.005	0.055
						No Ice	3.355	2.005	0.055
						1/2"	3.612	2.237	0.078
B4 RRH2X60-4R	B	From Leg	4.000 0.000 0.000	0.000	65.000	Ice	3.876	2.476	0.105
						1" Ice	3.355	2.005	0.055
						No Ice	3.355	2.005	0.055
B4 RRH2X60-4R	C	From Leg	4.000 0.000 0.000	0.000	65.000	1/2"	3.612	2.237	0.078
						Ice	3.876	2.476	0.105
						1" Ice	3.355	2.005	0.055
RRH2x60-700	A	From Leg	4.000 0.000 0.000	0.000	65.000	No Ice	3.500	1.816	0.060
						1/2"	3.761	2.052	0.083
						Ice	4.029	2.289	0.109
RRH2x60-700	B	From Leg	4.000 0.000 0.000	0.000	65.000	1" Ice	3.500	1.816	0.060
						No Ice	3.500	1.816	0.060
						1/2"	3.761	2.052	0.083
RRH2x60-700	C	From Leg	4.000 0.000 0.000	0.000	65.000	Ice	4.029	2.289	0.109
						1" Ice	3.500	1.816	0.060
						No Ice	3.500	1.816	0.060
(2) DB-T1-6Z-8AB-0Z	C	From Leg	4.000 0.000 0.000	0.000	65.000	1/2"	5.070	2.193	0.080
						Ice	5.348	2.393	0.120
						1" Ice	4.800	2.000	0.044
Platform Mount [LP 303-1]	C	None		0.000	65.000	No Ice	14.660	14.660	1.250
						1/2"	18.870	18.870	1.481
						Ice	23.080	23.080	1.713
						1" Ice			

Force Totals

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M _x kip-ft	Sum of Overturning Moments, M _z kip-ft	Sum of Torques kip-ft
Leg Weight	15.751					
Bracing Weight	0.000					
Total Member Self-Weight	15.751			0.624	2.020	
Total Weight	29.799			0.624	2.020	
Wind 0 deg - No Ice		0.141	-15.581	-1148.536	-8.557	-1.963
Wind 30 deg - No Ice		7.938	-13.565	-999.866	-583.321	-1.481
Wind 60 deg - No Ice		13.607	-7.913	-583.116	-1001.244	-0.602
Wind 90 deg - No Ice		15.631	-0.141	-9.953	-1150.342	0.438
Wind 120 deg - No Ice		13.466	7.668	566.044	-990.667	1.361
Wind 150 deg - No Ice		7.693	13.423	990.537	-565.002	1.919
Wind 180 deg - No Ice		-0.141	15.581	1149.784	12.597	1.963
Wind 210 deg - No Ice		-7.938	13.565	1001.114	587.361	1.481
Wind 240 deg - No Ice		-13.607	7.913	584.363	1005.283	0.602
Wind 270 deg - No Ice		-15.631	0.141	11.201	1154.382	-0.438
Wind 300 deg - No Ice		-13.466	-7.668	-564.796	994.706	-1.361
Wind 330 deg - No Ice		-7.693	-13.423	-989.289	569.041	-1.919
Member Ice	7.816					
Total Weight Ice	57.064			2.857	7.984	
Wind 0 deg - Ice		0.028	-6.351	-455.249	5.944	-0.664
Wind 30 deg - Ice		3.207	-5.514	-394.894	-223.299	-0.484
Wind 60 deg - Ice		5.526	-3.200	-227.962	-390.570	-0.174
Wind 90 deg - Ice		6.365	-0.028	0.818	-451.049	0.183
Wind 120 deg - Ice		5.498	3.151	230.144	-388.531	0.490
Wind 150 deg - Ice		3.158	5.486	398.569	-219.766	0.666
Wind 180 deg - Ice		-0.028	6.351	460.964	10.024	0.664
Wind 210 deg - Ice		-3.207	5.514	400.609	239.267	0.484
Wind 240 deg - Ice		-5.526	3.200	233.677	406.538	0.174
Wind 270 deg - Ice		-6.365	0.028	4.897	467.017	-0.183
Wind 300 deg - Ice		-5.498	-3.151	-224.429	404.498	-0.490
Wind 330 deg - Ice		-3.158	-5.486	-392.854	235.734	-0.666
Total Weight	29.799			0.624	2.020	
Wind 0 deg - Service		0.048	-5.334	-392.884	-1.871	-0.672
Wind 30 deg - Service		2.717	-4.644	-341.989	-198.634	-0.507
Wind 60 deg - Service		4.658	-2.709	-199.320	-341.705	-0.206
Wind 90 deg - Service		5.351	-0.048	-3.105	-392.747	0.150
Wind 120 deg - Service		4.610	2.625	194.080	-338.084	0.466
Wind 150 deg - Service		2.634	4.595	339.400	-192.363	0.657
Wind 180 deg - Service		-0.048	5.334	393.916	5.370	0.672
Wind 210 deg - Service		-2.717	4.644	343.021	202.134	0.507
Wind 240 deg - Service		-4.658	2.709	200.352	345.204	0.206
Wind 270 deg - Service		-5.351	0.048	4.137	396.246	-0.150
Wind 300 deg - Service		-4.610	-2.625	-193.048	341.583	-0.466
Wind 330 deg - Service		-2.634	-4.595	-338.368	195.862	-0.657

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice

Comb. No.	Description
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	100 - 47	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-43.968	7.425	-2.406
			Max. Mx	20	-21.268	658.472	-5.733
			Max. My	14	-21.271	7.261	-655.946
			Max. Vy	20	-21.044	658.472	-5.733
			Max. Vx	14	20.963	7.261	-655.946
			Max. Torque	3			3.119
L2	47 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-63.532	8.782	-3.119
			Max. Mx	20	-35.744	1880.587	-17.989
			Max. My	14	-35.744	19.708	-1873.665
			Max. Vy	20	-25.030	1880.587	-17.989
			Max. Vx	14	24.951	19.708	-1873.665
			Max. Torque	3			3.118

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	35	63.532	5.526	-3.200
	Max. H _x	20	35.759	25.009	-0.226

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Max. H _z	2	35.759	-0.226	24.930
	Max. M _x	2	1872.126	-0.226	24.930
	Max. M _z	8	1875.608	-25.009	0.226
	Max. Torsion	3	3.117	-0.226	24.930
	Min. Vert	13	26.819	-12.308	-21.477
	Min. H _x	8	35.759	-25.009	0.226
	Min. H _z	14	35.759	0.226	-24.930
	Min. M _x	14	-1873.665	0.226	-24.930
	Min. M _z	20	-1880.587	25.009	-0.226
	Min. Torsion	15	-3.113	0.226	-24.930

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturing Moment, M _x kip-ft	Overturing Moment, M _z kip-ft	Torque kip-ft
Dead Only	29.799	0.000	0.000	0.624	2.020	0.000
1.2 Dead+1.6 Wind 0 deg - No Ice	35.759	0.226	-24.930	-1872.126	-14.732	-3.109
0.9 Dead+1.6 Wind 0 deg - No Ice	26.819	0.226	-24.930	-1863.521	-15.291	-3.117
1.2 Dead+1.6 Wind 30 deg - No Ice	35.759	12.700	-21.703	-1629.809	-951.471	-2.336
0.9 Dead+1.6 Wind 30 deg - No Ice	26.819	12.700	-21.703	-1622.346	-947.630	-2.344
1.2 Dead+1.6 Wind 60 deg - No Ice	35.759	21.772	-12.661	-950.587	-1632.596	-0.936
0.9 Dead+1.6 Wind 60 deg - No Ice	26.819	21.772	-12.661	-946.317	-1625.554	-0.942
1.2 Dead+1.6 Wind 90 deg - No Ice	35.759	25.009	-0.226	-16.451	-1875.608	0.715
0.9 Dead+1.6 Wind 90 deg - No Ice	26.819	25.009	-0.226	-16.571	-1867.422	0.711
1.2 Dead+1.6 Wind 120 deg - No Ice	35.759	21.545	12.269	922.306	-1615.387	2.172
0.9 Dead+1.6 Wind 120 deg - No Ice	26.819	21.545	12.269	917.775	-1608.420	2.173
1.2 Dead+1.6 Wind 150 deg - No Ice	35.759	12.308	21.477	1614.138	-921.652	3.046
0.9 Dead+1.6 Wind 150 deg - No Ice	26.819	12.308	21.477	1606.358	-917.942	3.051
1.2 Dead+1.6 Wind 180 deg - No Ice	35.759	-0.226	24.930	1873.665	19.707	3.105
0.9 Dead+1.6 Wind 180 deg - No Ice	26.819	-0.226	24.930	1864.667	18.996	3.113
1.2 Dead+1.6 Wind 210 deg - No Ice	35.759	-12.700	21.703	1631.350	956.448	2.333
0.9 Dead+1.6 Wind 210 deg - No Ice	26.819	-12.700	21.703	1623.493	951.335	2.342
1.2 Dead+1.6 Wind 240 deg - No Ice	35.759	-21.772	12.661	952.128	1637.575	0.937
0.9 Dead+1.6 Wind 240 deg - No Ice	26.819	-21.772	12.661	947.464	1629.261	0.944
1.2 Dead+1.6 Wind 270 deg - No Ice	35.759	-25.009	0.226	17.989	1880.587	-0.711
0.9 Dead+1.6 Wind 270 deg - No Ice	26.819	-25.009	0.226	17.716	1871.130	-0.707
1.2 Dead+1.6 Wind 300 deg - No Ice	35.759	-21.545	-12.269	-920.769	1620.365	-2.170
0.9 Dead+1.6 Wind 300 deg - No Ice	26.819	-21.545	-12.269	-916.630	1612.127	-2.171
1.2 Dead+1.6 Wind 330 deg - No Ice	35.759	-12.308	-21.477	-1612.601	926.627	-3.048
0.9 Dead+1.6 Wind 330 deg - No Ice	26.819	-12.308	-21.477	-1605.213	921.647	-3.053

Load Combination	Vertical	Shear _x	Shear _z	Overturning Moment, M _x	Overturning Moment, M _z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Ice+1.0 Temp	63.532	-0.000	0.000	3.119	8.782	-0.001
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	63.532	0.028	-6.351	-472.407	6.754	-0.642
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	63.532	3.207	-5.514	-409.750	-231.219	-0.460
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	63.532	5.526	-3.200	-236.458	-404.861	-0.155
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	63.532	6.365	-0.028	1.037	-467.646	0.192
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	63.532	5.498	3.151	239.098	-402.750	0.487
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	63.532	3.158	5.486	413.936	-227.561	0.651
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	63.532	-0.028	6.351	478.704	10.978	0.641
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	63.532	-3.207	5.514	416.048	248.951	0.459
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	63.532	-5.526	3.200	242.756	422.593	0.154
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	63.532	-6.365	0.028	5.261	485.378	-0.193
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	63.532	-5.498	-3.151	-232.800	420.481	-0.488
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	63.532	-3.158	-5.486	-407.638	245.293	-0.653
Dead+Wind 0 deg - Service	29.799	0.048	-5.334	-398.909	-1.607	-0.667
Dead+Wind 30 deg - Service	29.799	2.717	-4.644	-347.216	-201.444	-0.501
Dead+Wind 60 deg - Service	29.799	4.658	-2.709	-202.317	-346.750	-0.202
Dead+Wind 90 deg - Service	29.799	5.351	-0.048	-3.035	-398.591	0.152
Dead+Wind 120 deg - Service	29.799	4.610	2.625	197.231	-343.076	0.465
Dead+Wind 150 deg - Service	29.799	2.634	4.595	344.820	-195.080	0.653
Dead+Wind 180 deg - Service	29.799	-0.048	5.334	400.186	5.741	0.667
Dead+Wind 210 deg - Service	29.799	-2.717	4.644	348.494	205.578	0.501
Dead+Wind 240 deg - Service	29.799	-4.658	2.709	203.595	350.885	0.202
Dead+Wind 270 deg - Service	29.799	-5.351	0.048	4.313	402.726	-0.152
Dead+Wind 300 deg - Service	29.799	-4.610	-2.625	-195.953	347.211	-0.465
Dead+Wind 330 deg - Service	29.799	-2.634	-4.595	-343.542	199.215	-0.654

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.000	-29.799	0.000	0.000	29.799	0.000	0.000%
2	0.226	-35.759	-24.930	-0.226	35.759	24.930	0.000%
3	0.226	-26.819	-24.930	-0.226	26.819	24.930	0.000%
4	12.700	-35.759	-21.703	-12.700	35.759	21.703	0.000%
5	12.700	-26.819	-21.703	-12.700	26.819	21.703	0.000%
6	21.772	-35.759	-12.661	-21.772	35.759	12.661	0.000%
7	21.772	-26.819	-12.661	-21.772	26.819	12.661	0.000%
8	25.009	-35.759	-0.226	-25.009	35.759	0.226	0.000%
9	25.009	-26.819	-0.226	-25.009	26.819	0.226	0.000%
10	21.545	-35.759	12.269	-21.545	35.759	-12.269	0.000%
11	21.545	-26.819	12.269	-21.545	26.819	-12.269	0.000%
12	12.308	-35.759	21.477	-12.308	35.759	-21.477	0.000%
13	12.308	-26.819	21.477	-12.308	26.819	-21.477	0.000%
14	-0.226	-35.759	24.930	0.226	35.759	-24.930	0.000%
15	-0.226	-26.819	24.930	0.226	26.819	-24.930	0.000%

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
16	-12.700	-35.759	21.703	12.700	35.759	-21.703	0.000%
17	-12.700	-26.819	21.703	12.700	26.819	-21.703	0.000%
18	-21.772	-35.759	12.661	21.772	35.759	-12.661	0.000%
19	-21.772	-26.819	12.661	21.772	26.819	-12.661	0.000%
20	-25.009	-35.759	0.226	25.009	35.759	-0.226	0.000%
21	-25.009	-26.819	0.226	25.009	26.819	-0.226	0.000%
22	-21.545	-35.759	-12.269	21.545	35.759	12.269	0.000%
23	-21.545	-26.819	-12.269	21.545	26.819	12.269	0.000%
24	-12.308	-35.759	-21.477	12.308	35.759	21.477	0.000%
25	-12.308	-26.819	-21.477	12.308	26.819	21.477	0.000%
26	0.000	-63.532	0.000	0.000	63.532	-0.000	0.000%
27	0.028	-63.532	-6.351	-0.028	63.532	6.351	0.000%
28	3.207	-63.532	-5.514	-3.207	63.532	5.514	0.000%
29	5.526	-63.532	-3.200	-5.526	63.532	3.200	0.000%
30	6.365	-63.532	-0.028	-6.365	63.532	0.028	0.000%
31	5.498	-63.532	3.151	-5.498	63.532	-3.151	0.000%
32	3.158	-63.532	5.486	-3.158	63.532	-5.486	0.000%
33	-0.028	-63.532	6.351	0.028	63.532	-6.351	0.000%
34	-3.207	-63.532	5.514	3.207	63.532	-5.514	0.000%
35	-5.526	-63.532	3.200	5.526	63.532	-3.200	0.000%
36	-6.365	-63.532	0.028	6.365	63.532	-0.028	0.000%
37	-5.498	-63.532	-3.151	5.498	63.532	3.151	0.000%
38	-3.158	-63.532	-5.486	3.158	63.532	5.486	0.000%
39	0.048	-29.799	-5.334	-0.048	29.799	5.334	0.000%
40	2.717	-29.799	-4.644	-2.717	29.799	4.644	0.000%
41	4.658	-29.799	-2.709	-4.658	29.799	2.709	0.000%
42	5.351	-29.799	-0.048	-5.351	29.799	0.048	0.000%
43	4.610	-29.799	2.625	-4.610	29.799	-2.625	0.000%
44	2.634	-29.799	4.595	-2.634	29.799	-4.595	0.000%
45	-0.048	-29.799	5.334	0.048	29.799	-5.334	0.000%
46	-2.717	-29.799	4.644	2.717	29.799	-4.644	0.000%
47	-4.658	-29.799	2.709	4.658	29.799	-2.709	0.000%
48	-5.351	-29.799	0.048	5.351	29.799	-0.048	0.000%
49	-4.610	-29.799	-2.625	4.610	29.799	2.625	0.000%
50	-2.634	-29.799	-4.595	2.634	29.799	4.595	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	0.00008262
3	Yes	4	0.00000001	0.00005380
4	Yes	4	0.00000001	0.00024608
5	Yes	4	0.00000001	0.00015656
6	Yes	4	0.00000001	0.00028346
7	Yes	4	0.00000001	0.00018112
8	Yes	4	0.00000001	0.00001939
9	Yes	4	0.00000001	0.00001203
10	Yes	4	0.00000001	0.00029559
11	Yes	4	0.00000001	0.00018973
12	Yes	4	0.00000001	0.00022960
13	Yes	4	0.00000001	0.00014641
14	Yes	4	0.00000001	0.00009332
15	Yes	4	0.00000001	0.00006069
16	Yes	4	0.00000001	0.00031058
17	Yes	4	0.00000001	0.00019851
18	Yes	4	0.00000001	0.00026279
19	Yes	4	0.00000001	0.00016676
20	Yes	4	0.00000001	0.00002916
21	Yes	4	0.00000001	0.00001847
22	Yes	4	0.00000001	0.00023645
23	Yes	4	0.00000001	0.00015046
24	Yes	4	0.00000001	0.00031304
25	Yes	4	0.00000001	0.00020111
26	Yes	4	0.00000001	0.00000852
27	Yes	4	0.00000001	0.00021627
28	Yes	4	0.00000001	0.00022154
29	Yes	4	0.00000001	0.00022062
30	Yes	4	0.00000001	0.00021210
31	Yes	4	0.00000001	0.00022206
32	Yes	4	0.00000001	0.00022403
33	Yes	4	0.00000001	0.00022080
34	Yes	4	0.00000001	0.00023421
35	Yes	4	0.00000001	0.00023506
36	Yes	4	0.00000001	0.00022477
37	Yes	4	0.00000001	0.00023048
38	Yes	4	0.00000001	0.00022858
39	Yes	4	0.00000001	0.00000001
40	Yes	4	0.00000001	0.00000001
41	Yes	4	0.00000001	0.00000001
42	Yes	4	0.00000001	0.00000001
43	Yes	4	0.00000001	0.00000580
44	Yes	4	0.00000001	0.00000001
45	Yes	4	0.00000001	0.00000001
46	Yes	4	0.00000001	0.00000619
47	Yes	4	0.00000001	0.00000001
48	Yes	4	0.00000001	0.00000001
49	Yes	4	0.00000001	0.00000001
50	Yes	4	0.00000001	0.00000681

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	100 - 47	5.315	47	0.417	0.002
L2	53 - 0	1.667	47	0.280	0.001

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
100.000	Lightning Rod 1"x7'	47	5.315	0.417	0.002	81428
86.000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	47	4.090	0.384	0.001	29081
78.000	TME-800MHZ RRH	47	3.421	0.363	0.001	18506
76.000	APXVSPP18-C-A20 w/ Mount Pipe	47	3.260	0.357	0.001	16964
65.000	(2) SBNHH-1D45B w/ Mount Pipe	47	2.429	0.324	0.001	11632

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	100 - 47	24.775	18	1.946	0.007
L2	53 - 0	7.778	18	1.307	0.004

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
100.000	Lightning Rod 1"x7'	18	24.775	1.946	0.007	17529
86.000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	18	19.068	1.789	0.006	6260
78.000	TME-800MHZ RRH	18	15.951	1.692	0.006	3983
76.000	APXVSPP18-C-A20 w/ Mount Pipe	18	15.200	1.666	0.006	3651
65.000	(2) SBNHH-1D45B w/ Mount Pipe	18	11.330	1.511	0.005	2503

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	KI/r	A in ²	P _u K	φP _n K	Ratio P _u / φP _n
L1	100 - 47 (1)	TP40.72x28x0.313	53.000	0.000	0.0	38.846	-21.260	2675.230	0.008
L2	47 - 0 (2)	TP51.37x38.655x0.375	53.000	0.000	0.0	61.003	-35.744	4061.570	0.009

Pole Bending Design Data

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{nx} kip-ft	Ratio M _{ux} / φM _{nx}	M _{uy} kip-ft	φM _{ny} kip-ft	Ratio M _{uy} / φM _{ny}
L1	100 - 47 (1)	TP40.72x28x0.313	662.653	2134.808	0.310	0.000	2134.808	0.000
L2	47 - 0 (2)	TP51.37x38.655x0.375	1894.258	4244.267	0.446	0.000	4244.267	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	100 - 47 (1)	TP40.72x28x0.313	21.224	1337.620	0.016	0.938	4303.658	0.000
L2	47 - 0 (2)	TP51.37x38.655x0.375	25.206	2030.790	0.012	0.937	8556.250	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	100 - 47 (1)	0.008	0.310	0.000	0.016	0.000	0.319	1.000	4.8.2 ✓
L2	47 - 0 (2)	0.009	0.446	0.000	0.012	0.000	0.455 ✓ ✓	1.000	4.8.2 ✓

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail	
L1	100 - 47	Pole	TP40.72x28x0.313	1	-21.260	2675.230	31.9	Pass	
L2	47 - 0	Pole	TP51.37x38.655x0.375	2	-35.744	4061.570	45.5	Pass	
							Summary		
							Pole (L2)	45.5	Pass
							RATING =	45.5	Pass

APPENDIX B
BASE LEVEL DRAWING

APPENDIX C
ADDITIONAL CALCULATIONS

Stiffened or Unstiffened, UngROUTed, Circular Base Plate - Any Rod Material

TIA Rev G Assumption: Clear space between bottom of leveling nut and top of concrete **not** exceeding (1)*(Rod Diameter)

Site Data

BU#: 842869
Site Name: MERIDEN WEST CENTRAL
App #: 422639 Rev. 0
Pole Manufacturer: Other

Anchor Rod Data

Qty:	20	
Diam:	2.5	in
Rod Material:	Other	
Strength (Fu):	50	ksi
Yield (Fy):	65	ksi
Bolt Circle:	59	in

Plate Data

Diam:	69	in
Thick:	3	in
Grade:	36	ksi
Single-Rod B-eff:	8.17	in

Stiffener Data (Welding at both sides)

Config:	0	*
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:	51.37	in
Thick:	0.375	in
Grade:	65	ksi
# of Sides:	16	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None

Reactions

Mu:	1894	ft-kips
Axial, Pu:	36	kips
Shear, Vu:	25	kips
Eta Factor, η	0.5	TIA G (Fig. 4-4)

If No stiffeners, Criteria: **AISC LRFD** <-Only Applicable to Unstiffened Cases

Anchor Rod Results

Max Rod (Cu+ Vu/η): 81.4 Kips
 Allowable Axial, Φ^*Fu^*Anet : 160.0 Kips
 Anchor Rod Stress Ratio: 50.9% **Pass**

Rigid
AISC LRFD
ϕ^*Tn

Base Plate Results

Base Plate Stress: 10.1 ksi
 Allowable Plate Stress: 32.4 ksi
 Base Plate Stress Ratio: 31.0% **Pass**

Flexural Check

Rigid
AISC LRFD
ϕ^*Fy
Y.L. Length: 29.02

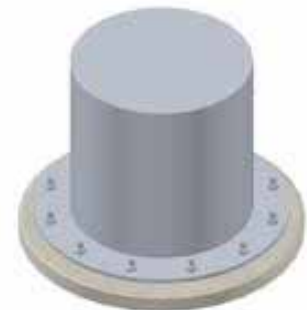
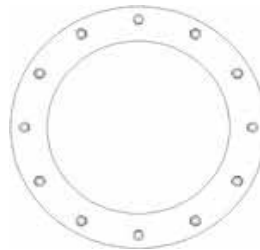
n/a

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



* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

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

Pier and Pad Foundation



BU # : 842869
Site Name: MERIDEN WEST CENTRAL
App. Number: 422639 Rev. 0

TIA-222 Revision: G
Tower Type: Monopole

Block Foundation?:

Superstructure Analysis Reactions		
Compression, P_{comp} :	36	kips
Base Shear, V_{u_comp} :	25	kips
Moment, M_u :	1894	ft-kips
Tower Height, H :	100	ft
BP Dist. Above Fdn, bp_{dist} :	0	in

Foundation Analysis Checks				
	Capacity	Demand	Rating	Check
<i>Lateral (Sliding) (kips)</i>	225.86	25.00	11.1%	Pass
<i>Bearing Pressure (ksf)</i>	6.62	2.30	34.8%	Pass
<i>Overtuning (kip*ft)</i>	4159.55	2106.50	50.6%	Pass
<i>Pier Flexure (Comp.) (kip*ft)</i>	16115.86	2044.00	12.7%	Pass
<i>Pier Compression (kip)</i>	40734.72	105.12	0.3%	Pass
<i>Pad Flexure (kip*ft)</i>	3474.94	570.43	16.4%	Pass
<i>Pad Shear - 1-way (kips)</i>	576.22	124.21	21.6%	Pass
<i>Pad Shear - 2-way (ksi)</i>	0.19	0.03	14.4%	Pass

Pier Properties		
Pier Shape:	Square	
Pier Diameter, $dpier$:	8.0	ft
Ext. Above Grade, E :	1	ft
Pier Rebar Size, S_c :	11	
Pier Rebar Quantity, mc :	60	
Pier Tie/Spiral Size, S_t :	4	
Pier Tie/Spiral Quantity, mt :	7	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	3	in

Soil Rating:	50.6%
Structural Rating:	21.6%

Pad Properties		
Depth, D :	7.5	ft
Pad Width, W :	20.0	ft
Pad Thickness, T :	2.5	ft
Pad Rebar Size, S_p :	9	
Pad Rebar Quantity, mp :	32	
Pad Clear Cover, cc_{pad} :	3	in

Material Properties		
Rebar Grade, F_y :	60000	psi
Concrete Compressive Strength, F'_c :	4000	psi
Dry Concrete Density, δ_c :	150	pcf

Soil Properties		
Total Soil Unit Weight, γ :	110	pcf
Ultimate Net Bearing, Q_{net} :	8.000	ksf
Cohesion, C_u :	0.000	ksf
Friction Angle, ϕ :	38	degrees
SPT Blow Count, N_{blows} :		
Base Friction, μ :	0.35	
Neglected Depth, N :	3.5	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, gw :	20	ft

<--Toggle between Gross and Net

Exhibit 3



Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT5378

FA#: 10071118

Meriden West Central
450-478 West Main Street
Meriden, CT 06451

March 12, 2018

Centerline Communications Project Number: 950006-102

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	67.21 %



March 12, 2018

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

Emissions Analysis for Site: **CT5378 – Meriden West Central**

Centerline Communications, LLC (“Centerline”) was directed to analyze the proposed AT&T facility located at **450-478 West Main Street, Meriden, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

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

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

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

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



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

Additional details can be found in FCC OET 65.



CALCULATIONS

Calculations were performed for the proposed AT&T Wireless antenna facility located at **450-478 West Main Street, Meriden, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

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

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

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

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
UMTS	850 MHz	2	30
LTE	2300 MHz (WCS)	4	30
LTE	700 MHz (Band 14)	4	40
LTE	2100 MHz (AWS)	4	30
LTE	700 MHz	2	40
LTE	1900 MHz (PCS)	4	40

Table 1: Channel Data Table



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

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	KMW AM-X-CD-16-65-00T-RET	100
A	2	CCI OPA-65R-LCUU-H6	100
A	3	Kathrein 800-10965	100
A	4	Quintel QS66512-2	100
B	1	KMW AM-X-CD-16-65-00T-RET	100
B	2	CCI OPA-65R-LCUU-H6	100
B	3	Kathrein 800-10965	100
B	4	Quintel QS66512-2	100
C	1	KMW AM-X-CD-16-65-00T-RET	100
C	2	CCI OPA-65R-LCUU-H6	100
C	3	Kathrein 800-10965	100
C	4	Quintel QS66512-2	100

Table 2: Antenna Data

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



RESULTS

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

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	KMW AM-X-CD-16-65-00T-RET	850 MHz	13.85	2	60	1,455.97	1.04
Antenna A2	CCI OPA-65R-LCUU-H6	2300 MHz (WCS)	15.45	4	120	4,209.02	1.71
Antenna A3	Kathrein 800-10965	700 MHz (Band 14) / 2100 MHz (AWS)	12.65 / 16.15	8	280	7,890.41	4.58
Antenna A4	Quintel QS66512-2	700 MHz / 1900 MHz (PCS)	10.85 / 13.85	6	240	4,855.52	2.43
Sector A Composite MPE%							9.76
Antenna B1	KMW AM-X-CD-16-65-00T-RET	850 MHz	13.85	2	60	1,455.97	1.04
Antenna B2	CCI OPA-65R-LCUU-H6	2300 MHz (WCS)	15.45	4	120	4,209.02	1.71
Antenna B3	Kathrein 800-10965	700 MHz (Band 14) / 2100 MHz (AWS)	12.65 / 16.15	8	280	7,890.41	4.58
Antenna B4	Quintel QS66512-2	700 MHz / 1900 MHz (PCS)	10.85 / 13.85	6	240	4,855.52	2.43
Sector B Composite MPE%							9.76
Antenna C1	KMW AM-X-CD-16-65-00T-RET	850 MHz	13.85	2	60	1,455.97	1.04
Antenna C2	CCI OPA-65R-LCUU-H6	2300 MHz (WCS)	15.45	4	120	4,209.02	1.71
Antenna C3	Kathrein 800-10965	700 MHz (Band 14) / 2100 MHz (AWS)	12.65 / 16.15	8	280	7,890.41	4.58
Antenna C4	Quintel QS66512-2	700 MHz / 1900 MHz (PCS)	10.85 / 13.85	6	240	4,855.52	2.43
Sector C Composite MPE%							9.76

Table 3: AT&T Emissions Levels



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

Site Composite MPE%	
Carrier	MPE%
AT&T – Max Sector Value	9.76 %
Hunters - Yagi 1	0.83 %
Hunters - Yagi 2	7.43 %
Hunters - Yagi 3	22.28 %
Hunters Whip	7.43 %
T-Mobile	8.08 %
Sprint	1.27 %
Verizon Wireless	10.13 %
Site Total MPE %:	67.21 %

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	9.76 %
AT&T Sector B Total:	9.76 %
AT&T Sector C Total:	9.76 %
Site Total:	67.21 %

Table 5: Site MPE Summary



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

AT&T _ Frequency Band / Technology Max Power Values (All Sectors)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
AT&T 850 MHz UMTS	2	727.98	100	5.92	850 MHz	567	1.04%
AT&T 2300 MHz (WCS) LTE	4	1,052.26	100	17.13	2300 MHz (WCS)	1000	1.71%
AT&T 700 MHz LTE	4	736.31	100	11.98	700 MHz	467	2.57%
AT&T 2100 MHz (AWS) LTE	4	1,236.29	100	20.12	2100 MHz (AWS)	1000	2.01%
AT&T 700 MHz LTE	2	486.47	100	3.96	700 MHz	467	0.85%
AT&T 1900 MHz (PCS) LTE	4	970.64	100	15.80	1900 MHz (PCS)	1000	1.58%
						Total:	9.76%

Table 6: AT&T Maximum Sector MPE Power Values



Summary

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

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

AT&T Sector	Power Density Value (%)
Sector A:	9.76 %
Sector B:	9.76 %
Sector C:	9.76 %
AT&T Maximum Total (per sector):	9.76 %
Site Total:	67.21 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **67.21 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

A handwritten signature in black ink, appearing to read 'Scott Heffernan', is positioned above the contact information.

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



CITY OF MERIDEN

GIS Services

Property Information: Address: 450 WEST MAIN ST Map/Lot: 0612-0202-0001-0002

Owner Information: HUNTER FAMILY LTD PRTSHP Owner Address: 450 W MAIN ST
MERIDEN, CT 06451

Building Information:

Card	Units	Rooms	Bed rooms	Year Built	Full Bath	Half Bath	Other Fixtures	Fire Places	Heat Type	Heat Fuel	Roof Mat	Grade	Type	Ext Wall	Finished Area
1				1980					Forced Air	Oil	Asphalt	C	Mixed Use-M	Brick	13,948
2	1			1933					Forced Air	Oil	Asphalt	C	Office	Brick	2,402
3	1			1999					Forced Air	Oil	Asphalt	C	Mixed Use-M	Vinyl	11,024

Sub Area Summary:

SubArea	Description	SketchedArea	Perimeter	AdjArea	Rate	AreaValue
CPT	CARPORT	4,312	284	4,312	9.17000	\$39,528.00
FFL	1st FLOOR	4,980	388	4,980	90.38000	\$450,076.91
FFL	1st FLOOR	3,988	272	3,988	90.38000	\$360,423.06
GAR	GARAGE	1,248	152	1,248	24.09000	\$30,060.00
OFP	OPEN PORCH	160	74	160	10.63000	\$1,700.00
SFL	2nd FLOOR	4,980	388	4,980	90.38000	\$450,076.91

Special Features:

Description	Condition	Year	Assessed Value
FENCE-5 CHAIN	AV	1980	\$3,700
PAVING ASPHALT	AV	1980	\$9,600

Appraisal Information: Tax District: 2 District Name: INNER DISTRICT District Mill Rate: 42.06

Current Values by Card Number					
Card	Building Value	Yard Items	Land Value	Total	Assessed
1	\$640,100	\$13,300	\$487,400	\$1,140,800	\$798,560
2	\$198,500	\$10,500	\$0	\$209,000	\$146,300
3	\$739,800	\$19,000	\$0	\$758,800	\$531,160
TOTAL PARCEL:					
	\$1,578,400	\$42,800	\$487,400	\$2,108,600	\$1,476,020

Previous Year Totals

Year	Building Value	Yard Items	Land Value

2016	\$1,578,400	\$42,800	\$487,400
------	-------------	----------	-----------

Special Land Value: \$0

Land Information:

Type	Lot Size	Lot Unit	Zoning*
Commercial Building	113,286.00	SF	C-2
Commercial Building	0.00	SF	C-2
Commercial Building	0.00	SF	C-2

Total Acreage:2.60

*Confirm zoning with Planning Office. Zoning map is the official document.

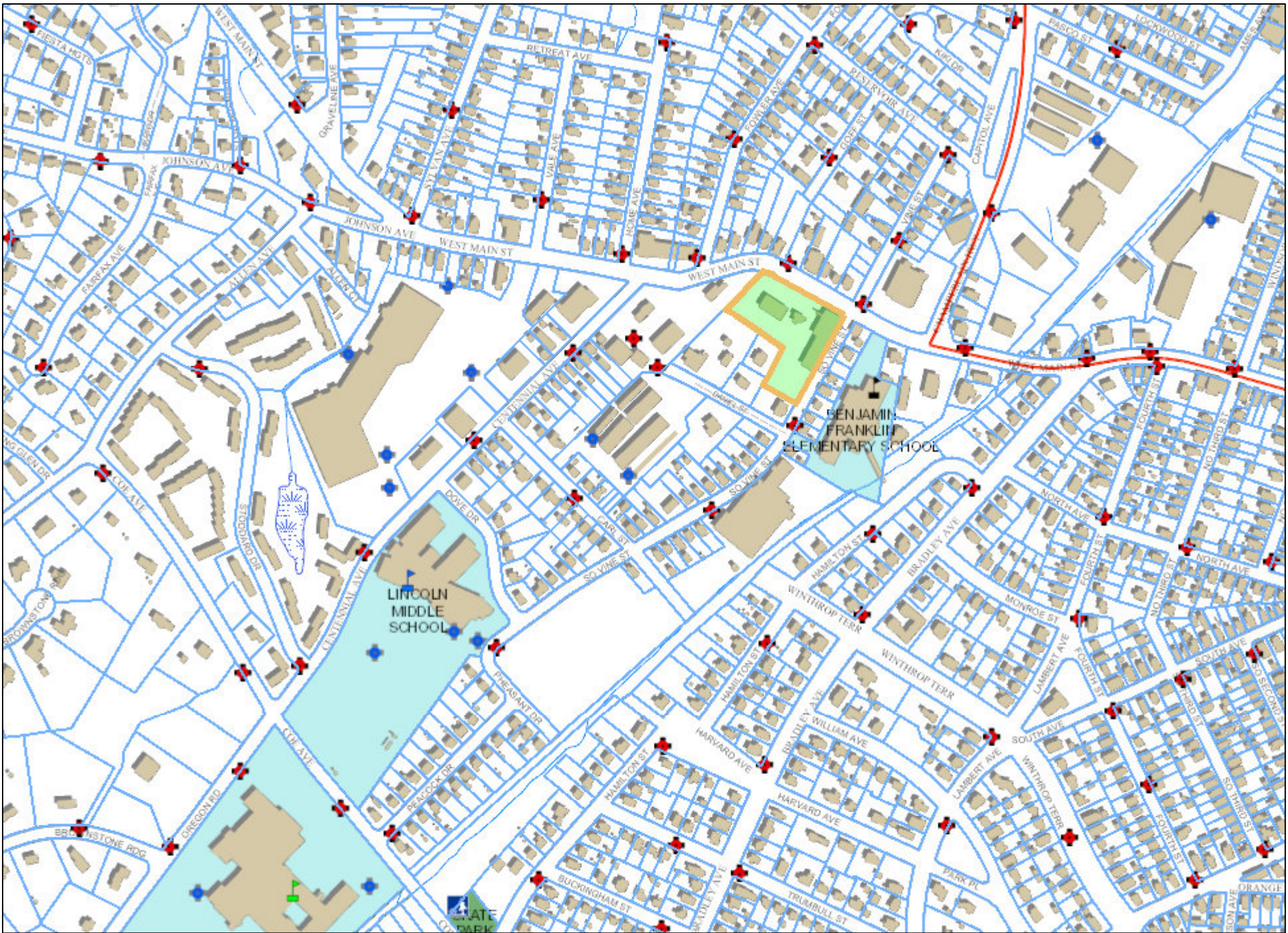
Sales Information:

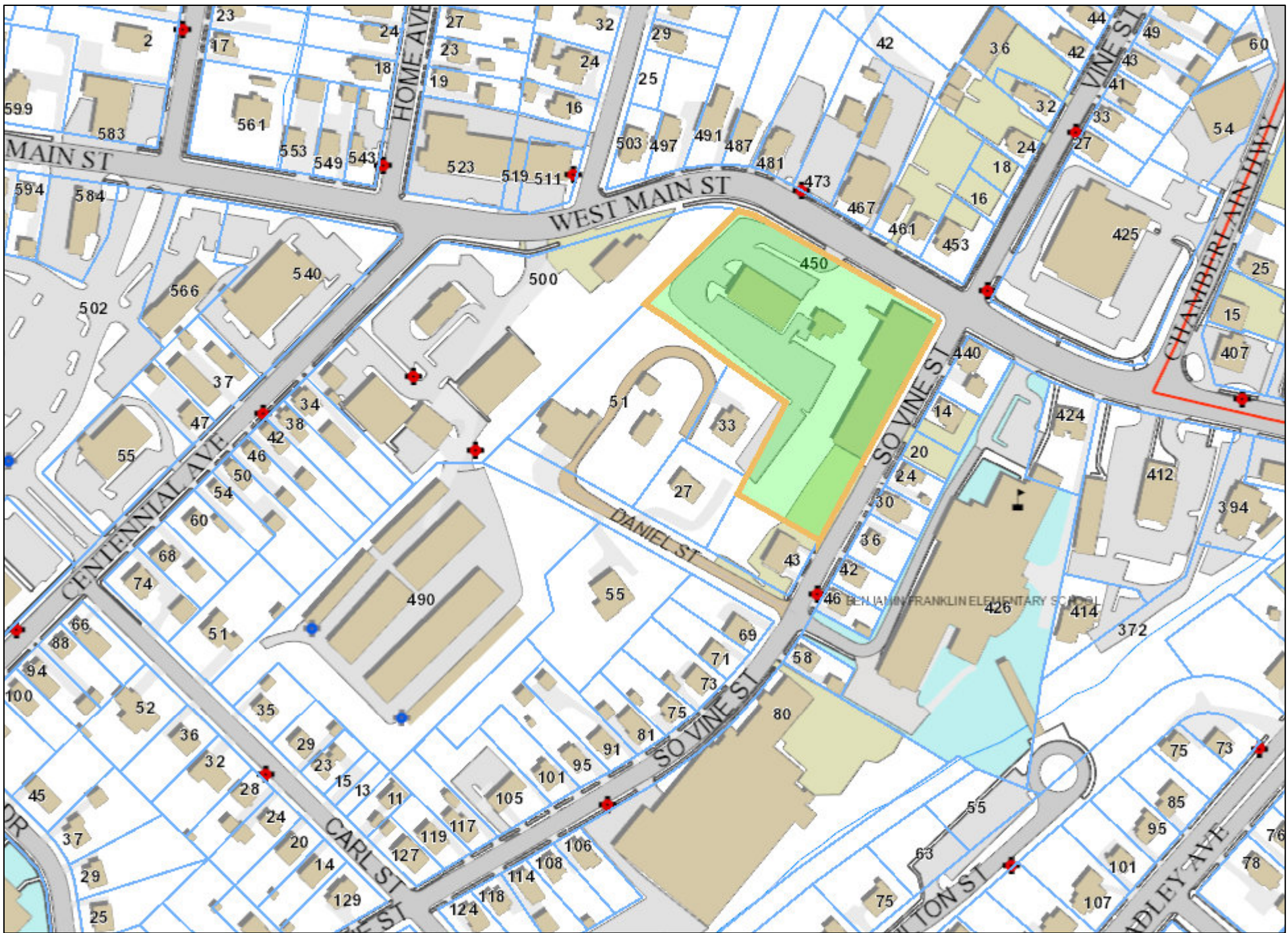
Book	Page	Grantor	Sale Date	Sale Price	Deed Type
2322	336		12/31/1997	\$650,000	

Assessor's Permit History:

Date	Permit Number	Notes	Type
5/10/2017	B-17-334	REPLACE ROOF.	
4/21/2017	B-17-267	REPLACE ANTENNA PANELS.ADD REMOTE RADIO HEADS TO CELL TOWER.	
3/6/2017	B-17-109	AT&T REPLACE 3 ANTENNA & 3 RRU'S TO EXISTING EQUIPMENT.	
7/15/2016	B-16-659	REPLACE 3 ANTENNAI W/NEW.	
9/24/2015	B-15-743	AT&T ADD 3 ANTENNAE/3 RRU'S/1 FIBER LINE TO EXISTING EQUIPMENT ON TOWER.	
6/22/2015	E-15-295	INSTALL NEW 150A SERVICE (VERIZON).APPROVED BY BLDG DEPT.	
5/18/2015	E-15-210	NEW 200A/3PH/4W/ SERVICE FROM MDP TO SHELTER BLDG.	
4/6/2015	P-15-64	NEW GAS SUPPLY TO GENERATOR INSTALLED.Est complete.	
2/20/2015	B-15-61	INSTALL ANTENNAE & GROUND EQUIPMENT FOR VERIZON WIRELESS TELE.Appears complete.	
1/5/2015	B-14-285	ADD ANTENNAE TO EXISTING TOWER.aPPEARS COMPLETE.	
7/21/2014	2157	3 NEW SPRINT ANTENNAS.Est complete.	
6/6/2014	1664	RRU'S TO TOWER/RADIO UNITS.Est complete.	
6/6/2014	1665	WIRE NEW RXAIT TOWER.Est complete.	
2/25/2013	473	SPRINT - MODIF. TO TELEC. INSTALLATION ON MONOPOLE TOWER, REPL. 3 ANTENNA & CABLES AND ADD RRH'S AND NOTCH FILTERS BEHIND THE NEW ANTENNA ON TOWER, ADD CIENA EQUIP. ENCL. & FIBER JUNCTION BOX & EITHER RETROFIT OR REPLACE BTS CABINET WITHIN EQUIP. SHELTER.	
12/21/2012	3950	AT&T - REMOVE & REPLACE ONE D.C. POWER CABINET, INSTALL NEW LTE EQUIPMENT ON OPEN SLAB, CONDUITS, AC & DC CIRCUITS, FIBER OPTICS, GROUNDING & BONDING.	
11/1/2012	3422	AT&T - ADD 3 LTE ANTENNAS, SURGE ARRESTOR, RRU'S, PURCELL CABINET, CONCRETE PAD & DC/FIBER LINES	
12/5/2003	4261	AT&T WIRELESS CELLSITE	CA
12/5/2003	4261	200 AMP SERV	CA
8/28/2003	3042	REP EX COMMUNI TOWER	CA
8/28/2003	3042	INSTALL COMMUNICA EQUIPME	CA

Exhibit 4





CITY OF MERIDEN, CT GIS

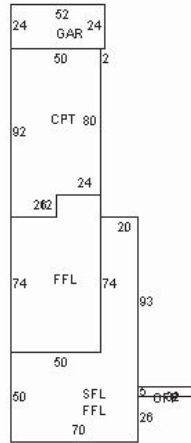
Date: 4/17/2018

450 WEST MAIN ST



1 inch = 200 feet

Property Images



96630612-0202-0001-0002 1

SENDER: COMPLETE THIS SECTION

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

1. Article Addressed to:

Hunter Family Limited Partnership
450 W MAIN ST
MERIDEN CT 06451

9590 9402 1864 6104 9436 75

7016 2140 0000 9458 6917

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

COMPLETE THIS SECTION ON DELIVERY

- A. Signature Agent
- B. Received by (Printed Name) Addressee
- C. Date of Delivery
- D. Is delivery address different from item 1? Yes
If YES, enter delivery address below: NO

B. Profile

4/23/18

3. Service Type
- Adult Signature
 - Adult Signature Restricted Delivery
 - Certified Mail®
 - Certified Mail Restricted Delivery
 - Collect on Delivery
 - Collect on Delivery Restricted Delivery
 - Insured Mail
 - Insured Mail Restricted Delivery (over \$500)
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Return Receipt for Merchandise
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

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

1. Article Addressed to:

Mr. Don Angersola, Building Official
City of Meriden City Hall
142 East Main Street
Meriden, CT 06450

9590 9402 1864 6104 9436 68

7016 2140 0000 9458 6900

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

COMPLETE THIS SECTION ON DELIVERY

- A. Signature Agent
- B. Received by (Printed Name) Addressee
- C. Date of Delivery
- D. Is delivery address different from item 1? Yes
If YES, enter delivery address below: NO

A. Amanda Burt

4/23/18

3. Service Type
- Adult Signature
 - Adult Signature Restricted Delivery
 - Certified Mail®
 - Certified Mail Restricted Delivery
 - Collect on Delivery
 - Collect on Delivery Restricted Delivery
 - Insured Mail
 - Insured Mail Restricted Delivery (over \$500)
- Priority Mail Express®
- Registered Mail™
- Registered Mail Restricted Delivery
- Return Receipt for Merchandise
- Signature Confirmation™
- Signature Confirmation Restricted Delivery

Domestic Return Receipt

**U.S. Postal Service™
CERTIFIED MAIL® RECEIPT**

Domestic Mail Only

For delivery information, visit our website at www.usps.com®

OFFICIAL USE

Certified Mail Fee \$3.45

0821 03

Extra Services & Fees (check box and fee)	
<input type="checkbox"/> Return Receipt (hardcopy)	\$0.00
<input type="checkbox"/> Return Receipt (electronic)	\$0.00
<input type="checkbox"/> Certified Mail Restricted Delivery	\$0.00
<input type="checkbox"/> Adult Signature Required	\$0.00
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00
Postage	\$2.05
Total Postage and Fees	\$5.25

Sent To: Hunter Family Limited Partnership
450 W MAIN ST
MERIDEN CT 06451

City, State, ZIP+4®: Meriden, CT 06451

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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OFFICIAL USE

Certified Mail Fee \$3.45

0821 03

Extra Services & Fees (check box and fee)	
<input type="checkbox"/> Return Receipt (hardcopy)	\$0.00
<input type="checkbox"/> Return Receipt (electronic)	\$0.00
<input type="checkbox"/> Certified Mail Restricted Delivery	\$0.00
<input type="checkbox"/> Adult Signature Required	\$0.00
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00
Postage	\$2.05
Total Postage and Fees	\$5.25

Sent To: Mr. Don Angersola, Building Official
City of Meriden City Hall
142 East Main Street
Meriden, CT 06450

City, State, ZIP+4®: Meriden, CT 06450

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

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

1. Article Addressed to:

**Paul Pedicone, Project Manager
CROWN CASTLE USA INC
3 Corporate Park Drive, Suite 101,
Clifton Park, NY 12065**

9590 9402 1864 6104 9436 82



2. Article Number (Transfer from service label)

7016 2140 0000 9458 6986

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

COMPLETE THIS SECTION ON DELIVERY

- A. Signature Agent
 Paul Pedicone Addressee
 B. Received by (Printed Name) Date of Delivery
Luca Bianco *4/23/18*
 D. Is delivery address different from item 1? Yes
 If YES, enter delivery address below: No

3. Service Type Priority Mail Express®
 Adult Signature Registered Mail™
 Adult Signature Restricted Delivery Registered Mail Restricted Delivery
 Certified Mail® Return Receipt for Merchandise
 Certified Mail Restricted Delivery Signature Confirmation™
 Collect on Delivery Signature Confirmation™ Restricted Delivery
 Collect on Delivery Restricted Delivery Signature Confirmation™ Restricted Delivery
 Insured Mail Signature Confirmation™ Restricted Delivery
 Insured Mail Restricted Delivery (over \$500)

Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

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

1. Article Addressed to:

**Mr. Ken Morgan, Interim City Manager
City of Meriden City Hall
142 East Main Street
Meriden, CT 06450**

9590 9402 1864 6104 9436 37



2. Article Number (Transfer from service label)

7016 2140 0000 9458 7006

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

COMPLETE THIS SECTION ON DELIVERY

- A. Signature Agent
 Ken Morgan Addressee
 B. Received by (Printed Name) Date of Delivery
Ken Morgan *4/23/18*
 D. Is delivery address different from item 1? Yes
 If YES, enter delivery address below: No

3. Service Type Priority Mail Express®
 Adult Signature Registered Mail™
 Adult Signature Restricted Delivery Registered Mail Restricted Delivery
 Certified Mail® Return Receipt for Merchandise
 Certified Mail Restricted Delivery Signature Confirmation™
 Collect on Delivery Signature Confirmation™ Restricted Delivery
 Collect on Delivery Restricted Delivery Signature Confirmation™ Restricted Delivery
 Insured Mail Signature Confirmation™ Restricted Delivery
 Insured Mail Restricted Delivery (over \$500)

Domestic Return Receipt

**U.S. Postal Service™
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For delivery information, visit our website at www.usps.com.
CLIFTON PARK, NY 12065

Certified Mail Fee	\$3.45	0821	03
Extra Services & Fees (check box, add fee)	\$7.75		
Return Receipt (hardcopy)	\$0.00		
Return Receipt (electronic)	\$0.00		
Certified Mail Restricted Delivery	\$4.00		
Adult Signature Required	\$4.00		
Adult Signature Restricted Delivery	\$2.05		
Postage	\$2.05		
Total Postage and Fees	\$21.25		

Sent To: **Paul Pedicone, Project Manager
CROWN CASTLE USA INC
3 Corporate Park Drive, Suite 101,
Clifton Park, NY 12065**

Street and Apt. No., or PO Box: **3 Corporate Park Drive, Suite 101**
 City, State, ZIP+4: **Clifton Park, NY 12065**

Postmark Here: **04/18/2018**

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

**U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only**

For delivery information, visit our website at www.usps.com.
MERIDEN, CT 06450

Certified Mail Fee	\$3.45	0821	03
Extra Services & Fees (check box, add fee)	\$7.75		
Return Receipt (hardcopy)	\$0.00		
Return Receipt (electronic)	\$0.00		
Certified Mail Restricted Delivery	\$4.00		
Adult Signature Required	\$4.00		
Adult Signature Restricted Delivery	\$2.05		
Postage	\$2.05		
Total Postage and Fees	\$21.25		

Sent To: **Mr. Ken Morgan, Interim City Manager
City of Meriden City Hall
142 East Main Street
Meriden, CT 06450**

Street and Apt. No.: **142 East Main Street**
 City, State, ZIP+4: **Meriden, CT 06450**

Postmark Here: **04/18/2018**

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

SENDER: COMPLETE THIS SECTION

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

1. Article Addressed to:

Hon. Kevin Scarpati, Mayor
City of Meriden City Hall
142 East Main Street
Meriden, CT 06450

9590 9402 1864 6104 9436 20



2. Article Number (Transfer from service label)

7016 2140 0000 9458 6993

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

COMPLETE THIS SECTION ON DELIVERY

- A. Signature Agent Addressee
- Monika Reim* *Amoré Ruiz*
- B. Received by (Printed Name) C. Date of Delivery *4.23.18*
- D. Is delivery address different from item 1? Yes No
If YES, enter delivery address below:

3. Service Type

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

Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

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

1. Article Addressed to:

Mr. Robert Seale
Director of Development and Enforcement
City of Meriden City Hall
142 East Main Street
Meriden, CT 06450

9590 9402 1864 6104 9436 44



2. Article Number (Transfer from service label)

7016 2140 0000 9458 7013

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

COMPLETE THIS SECTION ON DELIVERY

- A. Signature Agent Addressee
- Monika Reim* *Amoré Ruiz*
- B. Received by (Printed Name) C. Date of Delivery *4.23.18*
- D. Is delivery address different from item 1? Yes No
If YES, enter delivery address below:

3. Service Type

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

Domestic Return Receipt

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For delivery information, visit our website at www.usps.com®.

MERIDEN, CT 06450

Certified Mail Fee \$3.45

Extra Services & Fees (check box and fee)

- Return Receipt (hardcopy) \$2.75
- Return Receipt (electronic) \$0.00
- Certified Mail Restricted Delivery \$10.00
- Adult Signature Required \$0.00
- Adult Signature Restricted Delivery \$0.00

Total Postage and Fees \$8.25

Sent To

Hon. Kevin Scarpati, Mayor
City of Meriden City Hall
142 East Main Street
Meriden, CT 06450

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

Postmark Here 0821 03

04/18/2018

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Domestic Mail Only

For delivery information, visit our website at www.usps.com®.

MERIDEN, CT 06450

Certified Mail Fee \$3.45

- Extra Services & Fees (check box and fee)
- Return Receipt (hardcopy) \$2.75
- Return Receipt (electronic) \$0.00
- Certified Mail Restricted Delivery \$10.00
- Adult Signature Required \$0.00
- Adult Signature Restricted Delivery \$0.00

Total Postage and Fees \$8.25

Sent To

Mr. Robert Seale
Director of Development and Enforcement
City of Meriden City Hall
142 East Main Street
Meriden, CT 06450

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

Postmark Here 0821 03

04/18/2018

April 26, 2018, 10:13 am

Delivered, Left with Individual
MERIDEN, CT 06450

Your item was delivered to an individual at the address at 10:13 am on April 26, 2018 in MERIDEN, CT 06450.

April 26, 2018, 8:24 am

Available for Pickup
MERIDEN, CT 06450

April 26, 2018, 8:14 am

Sorting Complete
MERIDEN, CT 06450

April 26, 2018, 2:45 am

Arrived at Unit
MERIDEN, CT 06450

April 25, 2018

In Transit to Next Facility

April 24, 2018, 10:42 pm

Departed USPS Regional Facility
SPRINGFIELD MA NETWORK DISTRIBUTION CENTER

April 24, 2018, 12:34 pm

Arrived at USPS Regional Facility
SPRINGFIELD MA NETWORK DISTRIBUTION CENTER

April 23, 2018

In Transit to Next Facility

April 22, 2018, 6:20 pm

Arrived at USPS Regional Facility

SPRINGFIELD MA NETWORK DISTRIBUTION CENTER

April 22, 2018, 4:06 am

Departed USPS Regional Facility

SPRINGFIELD MA NETWORK DISTRIBUTION CENTER

April 21, 2018, 9:43 am

Arrived at USPS Regional Facility

SPRINGFIELD MA NETWORK DISTRIBUTION CENTER

April 20, 2018, 4:53 pm

Departed USPS Regional Origin Facility

BOSTON MA DISTRIBUTION CENTER

April 20, 2018

In Transit to Next Facility

April 19, 2018

In Transit to Next Facility

April 18, 2018, 10:11 pm

Arrived at USPS Regional Origin Facility

BOSTON MA DISTRIBUTION CENTER

April 18, 2018, 6:58 pm
Departed Post Office
BILLERICA, MA 01821

April 18, 2018, 4:37 pm
USPS in possession of item
BILLERICA, MA 01821

Product Information



See Less 

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FAQs (<http://faq.usps.com/?articleId=220900>)