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 ahebel@clinellc.com
 215.588.7035

September 16, 2020

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

Re: Notice of Exempt Modifications – AT&T Site CT1186 AT&T Telecommunications Facility @ 5 Old Farm Road Barkhamsted, CT 06063

Dear Ms. Bachman,

New Cingular Wireless, PCS, LLC ("AT&T") currently maintains a wireless telecommunications facility on an existing +/- 144' monopole tower at the above referenced address, latitude 41.9145200, longitude - 73.0223319. Said monopole tower is owned and managed by American Tower Corporation.

AT&T desires to modify its existing telecommunications facility by replacing three (6) antennas, replacing (3) RRUs, adding three (3) new remote radio units, adding one (1) surge arrestor with the associated cables as more particularly detailed and described on the enclosed Construction Drawings prepared by Infinigy Engineering PLLC, last revised on July 30, 2020. The centerline height of the existing antennas is and will remain at 135 feet.

Please accept this letter 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 following individuals: Daniel Stein, Selectman for the Town of Barkhamsted: Debra Brydon Administrator Zoning & Inland/Wetlands Officer Tree Warden: American Tower Corporation as tower owner and John Lavieri and Ethel as property owner.

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

- 1. The proposed modifications will not result in an increase in the height of the existing structure.
- 2. The proposed modifications will not require an extension of the site boundary.
- 3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
- 4. The operation of the modified facility will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commissions safety standard. *Please see the RF emissions calculation for AT&T's modified facility enclosed herewith*.
- 5. The proposed modifications will not cause an ineligible change or alternation in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading. Please see the structural analysis dated June 17, 2020 and prepared by American Tower Corporation enclosed herewith.

For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under R.C.S.A §16-50j-72(b)(2).

Best Regards,

Allison Hebel

Site Acquisition Consultant – Agent for AT&T Centerline Communications LLC 750 West Center St. Ste 301 West Bridgewater, MA 02379 215-588-7035 ahebel@clinellc.com

Enclosures:	Exhibit 1 – Construction Drawings
	Exhibit 2 – Property Card and GIS
	Exhibit 3 – Structural Analysis
	Exhibit 4 – Mount Analysis
	Exhibit 5 – RF Emissions Analysis Report Evaluation
	Exhibit 6 – Available City of Hartford Original Tower Approval Records
	Exhibit 7 – Notice Deliver Confirmations
Cc:	Daniel Stein, as elected official, Town of Barkhamsted
	Debra Brydon Zoning Administrator, Town of Barkhamsted
	American Tower Corporation, Tower Owner
	John Lavieri, as Property Owner

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Date Recipient Page 3 of 11

EXHIBIT 1



AMERICAN TOWER®

ATC SITE NAME: BARKHAMSTEDW CT ATC SITE NUMBER: 411177 AT&T PACE NUMBER: MRCTB047269, MRCTB047229, MRCTB047177, MRCTB048212, MRCTB048197 AT&T SITE ID: BARKHAMSTED OLD FARM ROAD AT&T FA CODE: 10107955 SITE ADDRESS: 14 OLD NORTH ROAD BARKHAMSTED, CT 06063



CURRENT PROJECTS:

LTE 2C - PACE #: MRCTB047269 4TX4RX SOFTWARE RETROFIT - PACE #: MRCTB047229 5G NR 1DR-1 - PACE #: MRCTB047177 LTE 3C - PACE #: MRCTB048212 LTE 4C - PACE #: MRCTB048197

AT&T MOBILITY PROJECT ANTENNA AMENDMENT DRAWINGS

COMPLIANCE CODE	PROJECT SUMMARY	PROJECT DESCRIPTION		SHEET INDEX
ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE	SITE ADDRESS:	THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW:	SHEET NO:	DESCRIPTION:
FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNMENT AUTHORITIES. NOTHING IN THESE PLANS IS	14 OLD NORTH ROAD	TOWER SCOPE:	G-001	TITLE SHEET
TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO	BARKHAMSTED, CT 06063	REMOVE (6) ANTENNAS, (3) RRHs, (6) 1-5/8" GSM COAX CABLES	G-002	GENERAL NOTES
1. INTERNATIONAL BUILDING CODE, 2015 EDITION WITH CT		INSTALL (6) ANTENNAS, (3) 4449 B5/B12 RRHs, (3) 4478 B14 RRHs, (3) 8843 B2/B66A RRHs. (6) Y-CABLES, HANDRAIL KIT HRK14, (3) B2B	C-001	OVERALL SITE PLAN
STATE AMENDMENTS. 2. INTERNATIONAL RESIDENTIAL CODE, 2015 EDITION WITH	LATITUDE: 41.9145200°	BRACKETS, (3) RET HOME RUN CABLES, (1) 2" INNERDUCT, (1) SQUID, (1)	C-101	DETAILED SITE PLAN
CT STATE AMENDMENTS. 3. INTERNATIONAL MECHANICAL CODE, 2015 EDITIONWITH	LONGITUDE: -73.0223319°	EXISTING (3) ANTENNAS, (1) SQUID, (1) 12-PAIR FIBER TRUNK CABLES,	C-201	TOWER ELEVATION
CT STATE AMENDMENTS.	GROUND ELEVATION: 810' AMSL	(6) UMTS COAX CABLES, (2) #8 AWG, 6 CONDUCTOR DC CABLES TO REMAIN	C-401	ANTENNA INFORMATION & SCHEDULE
STATE AMENDMENTS.		GROUND SCOPE: REMOVE (12) DIPLEXERS	C-501	MOUNT DETAILS
 NPPA NATIONAL ELECTRICAL CODE 2017 EDITION INTERNATIONAL ENERGY CONSERVATION CODE, 2015 EDITION WITH CT OTATE AMENIMENTED 		INSTALL (2) BASEBAND 6630 5G, (1) DC12-48-60-RM, (1) FIBER MANAGEMENT	E-501	GROUNDING DETAILS
STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS		BOX, (1) IDLE, (21) CONVERTERS	R-601	SUPPLEMENTAL
AND ANTENNA SUPPORTING STRUCTURE (TIA/EIA-222-H)	PROJECT TEAM	EXISTING (6) DIPLEXERS TO REMAIN	R-602	SUPPLEMENTAL
	TOWER OWNER: APPLICANT:		R-603	SUPPLEMENTAL
	AMERICAN TOWER AT&T MOBILITY			
	10 PRESIDENTIAL WAY		-	
UTILITY COMPANIES	ENGINEER:	PROJECT NOTES		
POWER COMPANY: NORTHEAST UTILITY SERVICE	INFINIGY ENGINEERING, PLLC			
	2255 SEWELL MILL ROAD, SUITE 130 MARIETTA, GA 30062	A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE.		
PHONE: (555) 555-5555		 THE PROJECT WILL NOT RESOLT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE. A DO SANITARY SEVER POTABLE WATER OR TRACH 		
000	JOHN N LAVIERI & ETHEL C LAVIERI	4. NO SANITART SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED.		
	PO BOX 202 HICKORY RIDGE BARKHAMSTED, CT 06063			
		PROJECT LOCATION DIRECTIONS	-	
		FROM EAST HARTFORD I-84 WEST TO RT. 44 RT. PAST RT. 318 ON THE RIGHT. LOOK FOR STERLING ENGINEERING. TURN RIGHT IMMEDIATELY AFTER		
Know what's below.		ANTIQUE STORE ONTO OLD FARM RD. THEN TURN LEFT ONTO PRIVATE DRIVE. TURN RIGHT BEFORE HOUSE ONTO STONE DRIVE. TAKE ANOTHER LEFT SITE		
Call before you dig.		IS AT END OF ROAD. THIS SITE HAS DIESEL RESTRICTIONS NOTED IN EMIS		

GENERAL CONSTRUCTION NOTES:

- OWNER FURNISHED MATERIALS, AT&T "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL
 - A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)
 - AC/TELCO INTERFACE BOX (PPC)
 - ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)
 - D. TOWERS, MONOPOLES TOWER LIGHTING
 - GENERATORS & LIQUID PROPANE TANK
 - ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING
- ANTENNAS (INSTALLED BY OTHERS)
- TRANSMISSION LINE
- TRANSMISSION LINE JUMPERS
- TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS TRANSMISSION LINE GROUND KITS
- HANGERS
- HOISTING GRIPS
- O. BTS EQUIPMENT
- 2 THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF AT&T TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS
- ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS
- CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
- ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
- DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS 7
- 8 DETAILS SHOWN ARE TYPICAL: SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS
- THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION 9. SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR
- CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED 10. FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING ANCHOR BOLTS, ETC.
- CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES. GROUNDS 11. DRAINS, DRAIN PIPES, VENTS, ETC, BEFORE COMMENCING WORK
- INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE AT&T REP 12. PRIOR TO REMEDIAL OR CORRECTIVE ACTION, ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE AT&T REP PRIOR TO PROCEEDING.
- EACH CONTRACTOR SHALL COOPERATE WITH THE AT&T REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS. 13.
- CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS 14. PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE AT&T CONSTRUCTION MANAGER.
- ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING 15. INSTALLATION LISING A SILICONE SEALANT
- WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET. 16. CONTRACTOR SHALL NOTIFY THE AT&T REP AND ENGINEER OF RECORD IMMEDIATELY.
- CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE 17. AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT
- CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF 18. EACH DAY
- CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH AMERICAN TOWER 19. CORPORATION (ATC) AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY
- CONTRACTOR SHALL FURNISH AT&T AND AMERICAN TOWER CORPORATION (ATC) WITH 20. A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
- PRIOR TO SUBMISSION OF BID. CONTRACTOR SHALL COORDINATE WITH AT&T REP TO 21. DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.
- 22. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH AT&T REP TO

DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY AT&T MUST BE OBTAINED, AND PAID FOR, BY THE

- CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH AT&T 23. SPECIFICATIONS AND REQUIREMENTS
- 24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO AT&T FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
- ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S 25. SPECIFICATIONS AND LOCATED ACCORDING TO AT&T SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
- THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT
- CONTRACTOR SHALL NOTIFY AT&T REP A MINIMUM OF 48 HOURS IN ADVANCE OF 27. POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES. FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND
- CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH 28. ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC
 - THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
- ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP 30. SHALL BE SUBJECT TO THE APPROVAL OF THE AT&T REP. ANY WORK FOUND BY THE AT&T REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
- 31 IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE ALL TYPES OF MATERIALS LISTED HEREINATER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.
- 32 AT&T FURNISHED FOUIPMENT SHALL BE PICKED-UP AT THE AT&T WAREHOUSE NO ATTER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATE, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING IT UP
- 33. AT&T OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH. IN HIS OWN OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO AT&T OR THEIR ARCHITECT/ENGINEER

SPECIAL CONSTRUCTION ANTENNA INSTALLATION NOTES:

WORK INCLUDED

29.

- ANTENNA AND COAXIAL CABLES ARE FURNISHED BY AT&T UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OD COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL AND
- B. INSTALL ANTENNA AS INDICATE ON DRAWINGS AND AT&T SPECIFICATIONS.
- C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS
- D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE AND ROVIDE PRINTOUT OF THAT TEST.
- E. CONTRACTOR SHALL PROVIDE FOUR (4) SETS OF SWEEP TESTS USING ANRITZU-PACKARD 8713B RF SCALAR NETWORK ANALYZER. SUBMIT FREQUENCY DOMAIN REFLECTOMETER(FDR) TESTS RESULTS TO THE PROJECT MANAGER. SWEEP TESTS SHALL BE AS PER ATTACHED RFS "MINIMUM FIELD TESTING RECOMMENDED FOR ANTENNA AND HELIAX COAXIAL CABLE SYSTEMS" DATED 10/5/93. TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING SERVICE AND BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.
- INSTALL COAXIAL CABLES AND TERMINATING BETWEEN ANTENNAS AND F. EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS, WEATHERPROOF ALL CONNECTIONS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.
- G. ANTENNA AND COAXIAL CABLE GROUNDING:
- ALL EXTERIOR #6 GREED GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RES CONNECTORS/SPLICE WEATHERPROOFING KIT #221213 OR FOLIAL
- ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS)

RESPONSIBILITY OF THE GENERAL CONTRACTOR.



ALL DISCREPANCIES FROM WHAT IS SHOWN ON THESE CONSTRUCTION DRAWINGS SHALL BE COMMUNICATED TO ATC ENGINEERING IMMEDIATELY FOR CORRECTION OR RE-DESIGN. FAILURE TO COMMUNICATE DIRECTLY WITH ATC ENGINEERING OR ANY CHANGES FROM THE DESIGN CONDUCTED WITHOUT PRIOR APPROVAL FROM ATC ENGINEERING SHALL BE THE SOLE



SITE PLAN NOTES:

- . THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.
- 2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.









 TOWER NOTE:

 1.
 IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE AMERICAN TOWER

 CONSTRUCTION MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK.

 EXISTING AND PROPOSED TOWER

 APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
 ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY

STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.

TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)

PER MOUNT ANALYSIS COMPLETED BY SMJ INTERNATIONAL, DATED 07/20/2020, THE EXISTING MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING

PER STRUCTURAL ANALYSIS COMPLETED BY SMJ INTERNATIONAL, DATED 06/17/2020, THE EXISTING STRUCTURE CAN ADEQUATELY SUPPORT THE PROPOSED LOADING

> INFINIGY ENGINEERING HAS NOT EVALUATED THE TOWER OR MOUNTS FOR THIS PROJECT AND ASSUMES NO LIABILITY FOR ITS STRUCTURAL INTEGRITY. REFER TO STRUCTURAL ANALYSIS REPORT PRIOR TO CONSTRUCTION.

TZTO ANTENNA (TO REMAIN) (TYP. 3) EXISTING SOULD (TYP.) (REFER TO CHARTON) (TO REMAIN) (TYP. 1) AZ.= 270' C4 AZ.= 270' C3 EXISTING ERICSSON RRUS-11 B12 RRHs (TO BE REMOVED) (TYP. 3) AZ.= 270' C1 EXISTING AND FINAL CONFIGURATIONS ARE BASED ON RPDS. CONTRACTOR TO VERIFY EXISTING CONDITIONS. EXISTING CONDITIONS. EXISTING ANTENNA SCHEDULE LOCATION ANTENNA SUMMARY							EXISTING KMW AM-X-CD-16-65-00 ANTENNA (TO BE REMOVED) (TYP.	ISTING KM 1-X-CD-1 ITENNA D BE REMON BE REMON 2770 ANTI 7770 ANTI 7770 ANTI 7770 ANTI 7770 ANTI 7770 ANTI 10 REMAIN IT-RET 2)	W 4–65–00T–RET VED) (TYP. 1) POWERWAVE ENNA MOVED) (TYP. 3) POWERWAVE 1 TMA V) (TYP. 6)	BE INSTALLED A MINIMUM OF 8" AN FROM ALL ANTEN	ANAY NAS EXISTIN (REFER DETAILEI (TO 3 -601) PROPOSED 4478 PROPOSED 4478 PROPOSED 4478 I PER SECTO PROPOSED B (1 PER SECTO	G SQUIII TO REN G SQUIII TO CHA D INFOR REMAIN AZ. OSED EI 43 B2/86 SECTOR AZ. ERICSSC B14 RRH R) (TYP. AZ. D ERICSS 08 BRAC OR) (TYI PRO R-BUGD) & GAMM (TY	70 AN, MAIN) (T 0 (TYP. 2 ART FC PART FC FR PART FC PAR			3:0° N.		°0° CP °0° CP	POSED C 5R-BUGI ENNA 2 TOTAI
EXISTINO BASED C EXISTINO	G AND FII ON RFDS. G CONDIT	NAL CC CONTI FIONS.	NFIGUR RACTOR	ATIONS ARE TO VERIFY	EXISTING ANTE	NNA P	LAN .E: N.T.S.		X					2 <u>FI</u>	INAL ANTENN	NA PL	AN SCALE: N.T.S.	PER M INTEF MOUI PROF	MOUNT A RNATION NT CAN A POSED L
				EXISTING	ANTENNA SCHEDULE				NOT	ES					F	INAL ANT	ENNA SCHEDUL	=	
LO	CATION			ANTENN	A SUMMARY		NON ANTENNA SUM	MARY	1. BASED ON APPR APPLICATION 13	OVED ATC 242504, DATED	LC	CATION			AN	TENNA SL	JMMARY		
SECTOR	RAD	AZ	POS	ANTENNA	BAND	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS	06/08/2020. CON REP FOR APPLIC UPDATES/REVIS	FIRM WITH AT&T ABLE IONS AND MOST	SECTOR	RAD	AZ	POS	ANTENNA		BAND		STATU
	135'		A1	7770	UMTS 850/1900	RMN	(2) LGP 21401	RMN	CONFIGURATION	OR NSN I (CONFIG). GC TO		135'		A1	7770		UMTS 85	50	RMN
лі РНА	135'	30°	A2	_	-	-	_	-	2. ATC HAS NOT YE	T VERIFIED ANY	ALPHA	135'	30°	A2			-		-
7127777	135'	00	A3	AM-X-CD-14-65-00T-RL	ET LTE 700	RMV	(1) RRUS-11 B12	RMV	MOUNT CONFIG TO VERIFY MOU	CONTRACTOR NT CONFIG HAS		100						, 	
	135'		A4	7770	GSM 850/1900	RMV	_	-	SUFFICIENT SPA	CE FOR SEE EQUIPMENT		135		B1	7770			50	RMN
	135'		B1	7770	UMTS 850/1900	RMN	(2) LGP 21401	RMN		FFICIENT		135'		B2	-		-		-
BETA	135	150°	B2		-	-			3. ALL PROPOSED ANTENNAS, COA	EQUIP INCLUDING X, ETC. SHALL BE	BETA	135'	150°	В3	OPA65R-BU6DA-I	<	LTE 70	0	ADD
	135		65	AM-X-CD-10-03-001-R			(1) 1103-11 012		MOUNTED IN AC THE TOWER STR	CORDANCE WITH		135'		B4	DMP65R-BU6DA		LTE 700/850/?	5G 850	ADD
	135'		B4	7770	GSM 850/1900	RMV	-	-	4. CONFIRM SPACE	LE WITH ATC'S CM. NG OF PROPOSED		135'		C1	7770		UMTS 8 [,]	50	RMN
	135'		C1	7770	UMTS 850/1900	RMN	(2) LGP 21401	RMN	CONFLICTS NOF	IMPEDE TOWER		135'		C2	-		-		-
GAMMA	133	270*	02	- 4M-X-CD-16-65 007 P		RMV/	(1) RRUS_11 R12		5. POSITIONS STAF PIPE ON THE LEI	RT WITH FIRST FT SIDE (AS	GAMMA	135'	270°	СЗ	OPA65R-BU6DA-I	<	LTE 70(J	ADD
	135		00	7770	CSM 850 (1900				VIEWED FROM E MOUNT).	EHIND THE		135'		C4	DMP65R-BU6DA		LTE 700/850/	5G 850	ADD
	NG FIBER	DISTR		/SQUID EXISTING STATUS COAX (6) UMTS 1-5/8" 48	CABLING SUMMARY DC FIBER STATUS (2) AWG, 6 12-PAIR RMN	B RMV: 1 RMN: 7 REL: 7	STATUS ABBREVIATIONS TO BE REMOVED TO REMAIN TO BE RELOCATED		CABLE LENGTH FIBER DISTRIBU RRU TO ANTEN	<u>s for Jumpers</u> Ition/ovp to RRU: NA: 10'	15'		FINAL Mi (1) DC	FIBER DIS DDEL NUM	STRIBUTION/SQUID MBER STATUS 0-18-8F RMN	COAX (6) 1-5/8"	DC (2) #8 AWG, 6 CONDUCTOR	FINAL (RET	CABLING
(1) DC	6-48-6	i0—18	-8F	RMN CONL (6) GSM 1-5/8"	RMV	DSC: T	TO BE DISCONNECTED & REMAIN TO BE ADDED	3		NT SCHEDL	ILES		(1) D0	C6-48-60-1	8-8C-EV ADD	-	(2) #8 AWG, 6	(3) HOME RL	JN Y-CA

EXISTING POWERWAVE -

EXISTING POWERWAVE 7770 ANTENNA

PROPOSED RRUS MUST

BE INSTALLED A





RF REQUIREMENTS FOR 700 B14 FIRSTNET, 700 B12, 700D B29 ANTENNA SEPARATION

- □ Horizontal separation (side to side of antenna): >= 3'
- \Box Vertical separation (between the tips of the antennas): > 3'
- □ Inter-sector separation: > 3' between the center of the antenna backplanes.



D Please note additional horizontal separation may be required if B14 antennas azimuth are different from others or antennas are severely angled with respect to the mount.

9

Typical 3' horizontal separation can tolerate skew angle up to 6°.









ANTENNA SPECIFICATIONS													
ANTENNA MODEL	А	В	С	WEIGHT (LBS)									
CCI DMP65R-BU6DA	71.2"	20.7"	7.7"	79.4									
CCI DMP65R-BU4DA	48.0"	20.7"	7.7"	67.9									
CCI OPA65R-BU6DA-K	71.2"	21.0"	7.8"	60.2									
CCI OPA65R-BU4DA	48.2"	21.0"	7.8"	52.5									

PROPOSED ANTENNA DETAILS

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SCALE: N.T.S.

U

RAYCAP DC6-48-60-18-8C-EV DIMENSIONS, WxDxH:	260x464x797mm (10.2"x18.2"X31.4")
NOMINAL OPERATING VOLTAGE:	48 VDC
NOMINAL DISCHARGE CURRENT:	20 kA 8/20us
MAXIMUM SURGE CURRENT:	90 kA 8/20us
MAXIMUM CONTINUOUS OPERATION VOLTAGE:	60 VDC
VOLTAGE PROTECTION RATING:	330V
WIND LOADING:	150MPH SUSTAINED (105.7 LBS) 195 MPH GUST (213.6 LBS) 10.2"
TOTAL WEIGHT:	26.2 LBS
CONTRACTOR TO USE "THREAD LUBRICANT" ON MOUNTING POLTS DUPING INSTALLATION	
(2) PROPOSED DC6	-48-60-18-8C-EV DETAILS
	SCALE: N.T.



TOP VIEW



RRU	SPECIFICAT	IONS		
RRU MODEL	А	В	С	WEIGHT (LBS)
ERICSSON 4449 B5/B12	17.9"	13.2"	9.4"	71
ERICSSON 4478 B14	16.5"	13.4"	7.7"	59.9
ERICSSON 8843 B2/B66A	14.9"	13.2"	10.9"	72.0

PROPOSED RRU DETAILS (3)







UNIT WT.	NET WT.
55.75	167.24
12.92	38.76
3.71	44.50
0.73	43.90
0.03	4.08
0.01	1.67
0.07	8.58
OTAL WT. #	ITÉM





NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.



Date Recipient Page 4 of 11

EXHIBIT 2





5 Old Farm Rd

Barkhamsted, CT 06063



Date Recipient Page 6 of 11



Prope Vision	rty Locat ID 76	ion 5 OLD FARM 64	6400	Map ID 29/ 12/ 1/A / Bldg # 1						Bldg Name Sec # 1 of 1 Card # 1 of 2					2	State Use 101 Print Date 5/7/2020 5:59:08 PM									
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Roof Cover											0 0	
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Interior Flr 1					Adj. Ba	se Rate			0			
Interior Flr 2												
Heat Fuel					RCN	.:14						
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Date Recipient Page 7 of 11

EXHIBIT 3



Structural Analysis Report

Structure	:	144 ft Monopole	
ATC Site Name	:	BARKHAMSTEDW CT, CT	
ATC Asset Number	:	411177	
Engineering Number	:	13242504_C3_03	
Proposed Carrier	:	AT&T MOBILITY	
Carrier Site Name	:	MRCTB047269	
Carrier Site Number	:	CTL01186	
Site Location	:	14 Old North Road Barkhamsted, CT 06063-3440 41.914500,-73.022200)
County	:	Litchfield	
Date	:	June 17, 2020	LILLE KAUSHAL
Max Usage	:	74%	
Result	:	Pass	= D 32593



Prepared By: Lyle Morin Structural Engineer I

Sili mi

COA: PEC.0001553

Reviewed By:



Table of Contents

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



Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 144 ft monopole to reflect the change in loading by AT&T MOBILITY.

Supporting Documents

Tower Drawings	EEI Project #13841, dated December 8, 2005
Foundation Drawing	EEI Project #13841, dated December 8, 2005
Geotechnical Report	JGI Project #05704G, dated November 30, 2005
Modifications	Centeck Project #12063.CO32 Rev. 1, dated November 29, 2012

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	115 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	В
Risk Category:	Π
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Spectral Response:	$Ss = 0.17, S_1 = 0.05$
Site Class:	D - Stiff Soil

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.



Existing and Reserved Equipment

Elev. ¹ (ft)	Qty	Antenna	Mount Type	Lines	Carrier
	1	VZW Unused Reserve (12557.88 sqin)			
146.0	3	Antel BXA-70063/6CF (5" depth)	Low Profile Platform	(19) 1 5 /9" Coox	
	3	Antel BXA-171063/12CF2 FP		(10) 1 5/8 COax	VERIZON WIRELESS
145.0	6	Antel LPA-80080/4CF			
	1	Raycap DC6-48-60-18-8F(32.8 lbs)		(1) 0.39" (10mm)	
	6	Powerwave Allgon LGP21401		Fiber Trunk	
134.0	3	Powerwave Allgon 7770.00	Platform with Handrails	(2) 0.78" (19.7mm) 8 AWG 6 (6) 1 5/8" Coax	AT&T MOBILITY
	3	Ericsson KRY 112 144/1			
	3	Ericsson KRY 112 71			
125.0	6	RFS APX16DWV-16DWV-S-E-ACU	T-Arm	(18) 1 5/8" Coax	T-MOBILE
	3	Commscope LNX-6515DS-VTM]		
	3	Kathrein Scala Smart Bias Tee			

Equipment to be Removed

Elev. ¹ (ft)	Qty	Antenna	Mount Type	Lines	Carrier
	1	Andrew ABT-DMDF-ADBH			
	6	Powerwave Allgon LGP21401			
124.0	2	KMW AM-X-CD-16-65-00T-RET		(6) 1 5/8" Coax	
154.0	1	KMW AM-X-CD-14-65-00T-RET	-	(1) 3" conduit	ATATIVIOBILITT
	3	Powerwave Allgon 7770.00			
	6	Ericsson RRU for AWS - 1700/2100			

Proposed Equipment

Elev. ¹ (ft)	Qty	Antenna	Mount Type	Lines	Carrier
	3	Powerwave Allgon LGP13519			
	1	Raycap DC6-48-60-18-8F(32.8 lbs)		(4) 0 2011 (40	
	3	Ericsson RRUS 4478 B14		(1) 0.39" (10mm)	
124.0	3	Ericsson RRUS 4449 B5, B12	Diatform with Handrails	FIDET TTUTK	
154.0	1	CCI DMP65R-BU4D		(2) 0.76 (19.71111) 8 AWG 6	ATATIVIOBILITY
	1	CCI OPA65R-BU4DA-K		(2) 2" conduit	
	2	CCI DMP65R-BU6DA			
	2	CCI OPA65R-BU6D			

¹Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Install proposed coax inside the pole shaft.



Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	53%	Pass
Shaft	63%	Pass
Base Plate	46%	Pass
Reinforcement	74%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design		
Moment (Kips-Ft)	2,530.5	3,416.2	2,264.9	66%		
Shear (Kips)	24.2	32.7	20.6	63%		
* The design reactions are factored by 1.35 per ANSI/TIA-222-H, Sec. 15.6.2						

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

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
	Powerwave Allgon LGP13519			
	Raycap DC6-48-60-18-8F(32.8 lbs)			
	Ericsson RRUS 4478 B14			
124.0	Ericsson RRUS 4449 B5, B12		1 4 4 0	1 222
154.0	CCI DMP65R-BU4D		1.440	1.555
	CCI OPA65R-BU4DA-K			
	CCI DMP65R-BU6DA			
	CCI OPA65R-BU6D			

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



Standard Conditions

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

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

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

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

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

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

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EXHIBIT 4



SMJ International LLC 49030 Pontiac Trail, Suite 100 Wixom, MI 48393 (616) 745-4777 info@smj-llc.com

SITE INFORMATION:

Site Name: Site Type: Site Address: AT&T Mobility Site Number:

Mumming 07-14-20

STRUCTURAL EVALUATION LETTER ANTENNA MOUNT ANALYSIS

MRCTB047269 Monopole 5 Old Farm Road, Barkhamsted, Litchfield County, CT CTL01186

CURRENT WIND CRETERIA:

- 1. Meets 2018 Connecticut State Building Code / 2015 IBC
- 2. ANSI/TIA/EIA-222-H Standard

DATA SOURCES:

- 1. Preview Exhibit by American Tower Corporation, dated June 10, 2020
- 2. Radio Frequency Data Sheet (RFDS No. 3765297) by AT&T Mobility, dated June 01, 2020 3. Construction Drawings by Centek Engineering, dated December 03, 2012

ASSUMPTIONS:

- 1. Tower mount and connections were built in accordance with the manufacturer's specifications, TIA/EIA-222 standard,
- 2. The tower mounting system and connections have been maintained in accordance with the manufacturer's
- 3. Tower mount connections and attachments are assumed not to control the design of mounting system and have been assumed adequate based on main member capacities.

Mount	Antenna	Antenna Model	Mount Pipe	Antenna mount system
Centerline (ft)	Centerline (ft)	Allering Moods	3	
<u></u>		(1) CCI OPA65R-BU4DA-K	50-13M103366/12u-494/3100-1300-1954/1780-1468/14-14/0-30-1287-124/1781-124/1781-124/1781-124/1781-124/1781-124	
	- 1	(1) CCI DMP65R-BU4D		
		(2) CCI OPA65R-BU6D		
		(2) CCI DMP65R-BU6DA		14' Platform
	n Bannadorren	(3) Powerwave Allgon 7770.00	water and the second	
134.0	134.0	(6) Powerwave Allgon LGP21401		
one-and the former control of the second		(3) Powerwave Allgon LGP13519	Denorative experimental distance and the state of the	
	A REAL PROPERTY AND A REAL	(2) Raycap DC6-48-60-18-8F		
	No. of the local data and the	(3) Fricsson RRUS 4478 B14		or standing we will be a set of the set of t
	An and a second s	(3) Fricsson RRUS 4449 B5, B12		

Table 1 - Final Configuration

Based on our analysis, we have determined the existing mount structure IS sufficient for the final loading configuration. If existing condition in the field differ from those shown on the above referenced documents or the antenna loading is modified to be other than that shown on Table 1, this review letter will be required to be revised.

Table 2 - Mount Analysis Result

Mount Centerline (ft)	Mount Capacity	Necessary Modification
134.0	Sufficient (53.2%)	-

We at SMJ International, LLC appreciate the opportunity of providing our continuing professional services. If you have any questions or need further assistance on this or any other projects, please give us a call.

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EXHIBIT 5



Radio Frequency Emissions Report

SITE NAME: 411177 Barkhamstedw CT

LOCATION:

Barkhamsted, Connecticut



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POWER DENSITY CALCULATIONS	4					
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APPENDIX 3 AT&T ANTENNA INFORMATION	6					
APPENDIX 4 FCC OET-65 MPE LIMIT STUDY	7					
APPENDIX 5 SUMMARY OF POWER DENSITY	8					
APPENDIX 6 INFORMATION PERTAINING TO MPE STUDIES	9					
APPENDIX 7 MPE STANDARDS METHODOLOGY	11					





DISCLAIMER NOTICE

This work is based upon our best interpretation of available information. However, these data and their interpretation are constantly changing. Therefore, we do not warrant that any undertaking based on this report will be successful, or that others will not require further research or actions in support of this proposal or future undertaking. In the event of errors, our liability is strictly limited to replacement of this document with a corrected one. Liability for consequential damages is specifically disclaimed. Any use of this document constitutes an agreement to hold Lawrence Behr Associates, Inc. and its employees harmless and indemnify it for any and all liability, claims, demands, and litigation expenses and attorney's fees arising out of such use.

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RADIO FREQUENCY EMISSIONS REPORT 411177 Barkhamstedw CT

Barkhamsted, Connecticut

INTRODUCTION

Lawrence Behr Associates, Inc. (LBA) has been retained by American Tower Corporation (ATC) of Woburn, Massachusetts to evaluate the RF emissions of an existing tower at this location. AT&T is adding emitters to this site and the purpose of this study is to determine if, after the addition of the AT&T emitters, the site is in Compliance with FCC Regulations. This study determined that THIS SITE IS IN COMPLIANCE with Federal Regulations.

Details regarding the FCC Rules and the methodology used to determine compliance may be seen below.

SITE AND FACILITY CONSIDERATIONS

Site 411177 Barkhamstedw CT is located at 14 Old North Road in Barkhamsted, Connecticut at coordinates 41.91452, -73.02222. The support structure is a 145' monopole.

All data used in this study was provided by one or more of the following sources:

1. ATC furnished data

2. Compiled from carrier and manufacturer standard configurations

3. Empirical data collected by LBA

AT&T proposes to add antennas to the tower at the 137' level. The structure already supports several antennas. This study only considers the new AT&T facility in detail.

The load list may be seen in Appendix 1. Appendix 2 contains the AT&T channel counts, frequency bands, and power levels. AT&T Antenna information may be seen in Appendix 3.



POWER DENSITY CALCULATIONS

Based upon the provided information and the FCC limits for exposure as outlined in 47 CFR 1.1307(b)(1) - (b)(3), the power levels and percentages of the FCC's allowable general population limit are shown in Appendix 4. Calculations were done at industry standard average head height of six feet above ground level.

A summary of the power density from all emitters may be seen in Appendix 5.

These limits are based upon the Information Relating to MPE Standards found in Appendix 6. Study methodology may be seen in Appendix 7, which describes the Non-Ionizing Radiation Prediction Models. Approximate radiation patterns may be found in Appendix 5. This site <u>IS</u> in compliance with FCC OET-65 MPE limits.

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September 13 th , 2020 Kathryn (G. Tesh
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Load List

Proposed	Customer	RAD Height (ft)	Equipment Quantity	Equipment Type	Manufacturer	Model Number	Line Quantity	Line size	Mount Type	Azimuths	TX Frequency	RX Frequency
No	VERIZON WIRELESS	147	3	PANEL	Antel	BXA-70063/6CF (5" depth)			Low Profile Platform	40/130/320		
No	VERIZON WIRELESS	147	3	PANEL	Antel	BXA- 171063/12CF 2 FP	9	1 5/8" Coax	Low Profile Platform	40/130/320		
No	VERIZON WIRELESS	147	6	PANEL	Antel	LPA-80080/4CF	9	1 5/8" Coax	Low Profile Platform	40/130/320		
No	AT&T MOBILITY	137	1	PANEL	KMW	AM-X-CD-14-65- 00T-RET			Low Profile Platform	30/150/270		
No	AT&T MOBILITY	137	6	PANEL	Powerwave Allgon	7770.00	12	1 5/8" Coax	Low Profile Platform	30/150/270	1975-1982, 1982-1990, 704- 716	1975-1982, 1982- 1990, 704-716
No	AT&T MOBILITY	137	2	PANEL	KMW	AM-X-CD-16-65- 00T-RET			Low Profile Platform	30/150/270		
No	T-MOBILE	127	3	PANEL	RFS	APX16DWV- 16DWV-S-E-ACU	18	15/8" Coax	T-Arm	0/120/240	1935-1945, 2140-2155, 698- 734	1740-1755, 1855- 1865, 2140-2155, 698-734
No	T-MOBILE	127	3	PANEL	Commscope	LNX-6515DS- VTM			T-Arm	0/120/240	1935-1945, 2140-2155, 698- 734	1740-1755, 1855- 1865, 2140-2155, 698-734





AT&T Channels Used

Antenna	Technology	Frequency Band	Channel Count	Transmitter Power per Channel (W)
AT&T A1	LTE	1900	1	40
AT&T A2	LTE	1900	1	40
AT&T A3	LTE	700	1	40
AT&T B1	LTE	1900	1	40
AT&T B2	LTE	1900	1	40
AT&T B3	LTE	700	1	40
AT&T C1	LTE	1900	1	40
AT&T C2	LTE	1900	1	40
AT&T C3	LTE	700		40





AT&T Antenna Information

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
А	AT&T A1	Powerwave Allgon 7770.00	137
А	AT&T A2	Powerwave Allgon 7770.00	137
А	AT&T A3	Powerwave Allgon 7770.00	137
В	AT&T B1	Powerwave Allgon 7770.00	137
В	AT&T B2	Powerwave Allgon 7770.00	137
В	AT&T B3	Powerwave Allgon 7770.00	137
С	AT&T C1	Powerwave Allgon 7770.00	137
С	AT&T C2	Powerwave Allgon 7770.00	137
С	AT&T C3	Powerwave Allgon 7770.00	137





FCC OET-65 MPE Limit Study

Antenna ID	Antenna Make / Model	Frequency Band	Antenna Gain (dBd)	Antenna Height (ft)	Channel Count	TX Power (W)	ERP (W) (All Channels)	Total Power Density (μW/cm ²)	Allowable Public MPE (µW/cm ²)	Public MPE%
AT&T A1	Powerwave Allgon 7770.00	1900	13.35	137	1	40	1419.25	2.505683	1000.00	0.250568%
AT&T A2	Powerwave Allgon 7770.00	1900	13.35	137	1	40	1419.25	2.505683	1000.00	0.250568%
AT&T A3	Powerwave Allgon 7770.00	700	11.45	137	1	40	916.35	0.2404247	466.67	0.051520%
AT&T B1	Powerwave Allgon 7770.00	1900	13.35	137	1	40	1419.25	2.505683	1000.00	0.250568%
AT&T B2	Powerwave Allgon 7770.00	1900	13.35	137	1	40	1419.25	2.505683	1000.00	0.250568%
AT&T B3	Powerwave Allgon 7770.00	700	11.45	137	1	40	916.35	0.2404247	466.67	0.051520%
AT&T C1	Powerwave Allgon 7770.00	1900	13.35	137	1	40	1419.25	2.505683	1000.00	0.250568%
AT&T C2	Powerwave Allgon 7770.00	1900	13.35	137	1	40	1419.25	2.505683	1000.00	0.250568%
AT&T C3	Powerwave Allgon 7770.00	700	11.45	137	1	40	916.35	0.2404247	466.67	0.051520%
	AT&T All Sectors							Total:	1.6580%	





Summary of Power Density

	Power Density Value (%
Carriers	of General Population)
AT&T All Sectors:	1.6580%
Other Carriers:	54.6973%
Site Total:	56.3553%
Site Compliance Status:	Compliant





In 1985, the FCC first adopted guidelines to be used for evaluating human exposure to RF emissions. The FCC revised and updated these guidelines on August 1, 1996, as a result of a rule-making proceeding initiated in 1993. The new guidelines incorporate limits for Maximum Permissible Exposure (MPE) in terms of electric and magnetic field strength and power density for transmitters operating at frequencies between 300 kHz and 100 GHz.

The FCC's MPE limits are based on exposure limits recommended by the National Council on Radiation Protection and Measurements (NCRP) and, over a wide range of frequencies, the exposure limits were developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI) to replace the 1982 ANSI guidelines. Limits for localized absorption are based on recommendations of both ANSI/IEEE and NCRP.

The FCC's limits, and the NCRP and ANSI/IEEE limits on which they are based, are derived from exposure criteria quantified in terms of specific absorption rate (SAR). The basis for these limits is a whole-body averaged SAR threshold level of 4 watts per kilogram (4 W/kg), as averaged over the entire mass of the body, above which expert organizations have determined that potentially hazardous exposures may occur. The MPE limits are derived by incorporating safety factors that lead, in some cases, to limits that are more conservative than the limits originally adopted by the FCC in 1985. Where more conservative limits exist, they do not arise from a fundamental change in the RF safety criteria for whole-body averaged SAR, but from a precautionary desire to protect subgroups of the general population who, potentially, may be more at risk.

The FCC exposure limits are also based on data showing that the human body absorbs RF energy at some frequencies more efficiently than at others. The most restrictive limits occur in the frequency range of 30-300 MHz where whole-body absorption of RF energy by human beings is most efficient. At other frequencies, whole-body absorption is less efficient, and consequently, the MPE limits are less restrictive.

MPE limits are defined in terms of power density (units of milliwatts per centimeter squared: mW/cm^2), electric field strength (units of volts per meter: V/m) and magnetic field strength (units of amperes per meter: A/m). The far-field of a transmitting antenna is where the electric field vector (E), the



magnetic field vector (H), and the direction of propagation can be considered to be all mutually orthogonal ("plane-wave" conditions).

The FCC guidelines define two separate tiers of exposure limits. As defined by the FCC, these limits are:

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.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment-related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area. Additional details can be found in FCC OET 65.

For the purposes of this study, only General population/uncontrolled exposure limits were studied.



MPE Standards Methodology

This study predicts RF field strength and power density levels that emanate from communications system antennae. It considers all transmitter power levels (less filter and line losses) delivered to each active transmitting antenna at the communications site. Calculations are performed to determine power density and MPE levels for each antenna as well as composite levels from all antennas. The calculated levels are based on where a human (Observer) would be standing at various locations at the site. The point of interest where the MPE level is predicted is based on the height of the Observer.

Compliance with the FCC limits on RF emissions are determined by spatially averaging a person's exposure over the projected area of an adult human body, that is approximately six-feet or two-meters, as defined in the ANSI/IEEE C95.1 standard. The MPE limits are specified as time-averaged exposure limits. This means that exposure is averaged over an identifiable time interval. It is 30 minutes for the general population/uncontrolled RF environment and 6 minutes for the occupational/controlled RF environment. However, in the case of the general public, time averaging should not be applied because the general public is typically not aware of RF exposure and they do not have control of their exposure time. Therefore, it should be assumed that any RF exposure to the general public will be continuous.

The FCC's limits for exposure at different frequencies are shown in the following Tables.

Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	Electric Field Magnetic Strength (E) Field (V/m) Strength (H) (A/m)		Power Density (S) (mW/cm²)	Averaging Time E ², H ² or S (minutes)
0.3 - 3.0	614	1.63	100*	6
3.0 - 30	1842/f	4.89/f	900/F ²	6
30 - 300	61.4	0.163	1.0	6
300 - 1500			f/300	6
1500 - 100,000		0 0 R 0 0 0	5	6



Where:

f = frequency

* = Plane-wave equivalent power density

Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

Limits for General Population/Uncontrolled Exposure					
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm²)	Averaging Time E ², H ² or S (minutes)	
0.3 - 1.34	614	1.63	100*	30	
1.34 - 30	824/f	2.19/f	180/F ²	30	
30 -300	27.5	0.073	0.2	30	
300 -1500			f/1500	30	
1500 -100,000			1.0	30	

Where:

f = frequency

* = Plane-wave equivalent power density

General population/uncontrolled exposures apply in situations in which the general public may be exposed or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

It is important to understand that these limits apply cumulatively to all sources of RF emissions affecting a given area. For example, if several different communications system antennas occupy a shared facility such as a tower or rooftop, then the total exposure from all systems at the facility must be within compliance of the FCC guidelines.

The field strength emanating from an antenna can be estimated based on the characteristics of an antenna radiating in free space. There are basically two field areas associated with a radiating antenna. When close to the antenna, the region is known as the Near Field. Within this region, the characteristics of the RF fields are very complex and the wave front is extremely curved. As you move further from the antenna, the wave front has less curvature and becomes planar. The wave front still



has a curvature but it appears to occupy a flat plane in space (plane-wave radiation). This region is known as the Far Field.

Two models are utilized to predict Near and Far field power densities. They are based on the formulae in FCC OET 65. As this study is concerned only with Near Field calculations, we will only describe the model used for this study. For additional details, refer to FCC OET Bulletin 65.

Cylindrical Model (Near Field Predictions)

Spatially averaged plane-wave equivalent power densities parallel to the antenna may be estimated by dividing the antenna input power by the surface area of an imaginary cylinder surrounding the length of the radiating antenna. While the actual power density will vary along the height of the antenna, the average value along its length will closely follow the relation given by the following equation:

$$S = P \div 2\pi RL$$

Where:

S = Power Density

P = Total Power into antenna

- R = Distance from the antenna
- L = Antenna aperture length

For directional-type antennas, power densities can be estimated by dividing the input power by that portion of a cylindrical surface area corresponding to the angular beam width of the antenna. For example, for the case of a 120-degree azimuthal beam width, the surface area should correspond to 1/3 that of a full cylinder. This would increase the power density near the antenna by a factor of three over that for a purely omni-directional antenna. Mathematically, this can be represented by the following formula:

 $S = (180 / \theta_{BW}) P \div \pi RL$

Where:

S = Power Density θ_{BW} = Beam width of antenna in degrees (3 dB half-power point) P = Total Power into antenna R = Distance from the antenna L = Antenna aperture length

If the antenna is a 360-degree omni-directional antenna, this formula would be equivalent to the previous formula.



Spherical Model (Far Field Predictions)

Spatially averaged plane-wave power densities in the Far Field of an antenna may be estimated by considering the additional factors of antenna gain and reflective waves that would contribute to exposure.

The radiation pattern of an antenna has developed in the Far Field region and the power gain needs to be considered in exposure predictions. Also, if the vertical radiation pattern of the antenna is considered, the exposure predictions would most likely be reduced significantly at ground level, resulting in a more realistic estimate of the actual exposure levels.

Additionally, to model a truly "worst case" prediction of exposure levels at or near a surface, such as at ground-level or on a rooftop, reflection off the surface of antenna radiation power can be assumed, resulting in a potential four-fold increase in power density.

These additional factors are considered and the Far Field prediction model is determined by the following equation:



The EIRP includes the antenna gain. If the antenna pattern is considered, the antenna gain is relative based on the horizontal and vertical pattern gain values at that particular location in space, on a rooftop or on the ground. However, it is recommended that the antenna radiation pattern characteristics not be considered to provide a conservative "worst case" prediction. This is the equation is utilized for the Far Field exposure predictions herein.



Date Recipient Page 10 of 11

EXHIBIT 6

Allison Hebel

From:	Debbie Brydon <dbrydon@barkhamsted.us></dbrydon@barkhamsted.us>
Sent:	Wednesday, September 16, 2020 3:00 PM
То:	Allison Hebel
Subject:	RE: AT&T // CT1186 // 5 Old Farm Road

Allison:

I have final approval reports from the generator install in 2019. I do not have any approvals from 2006 when the original tower went in.

Let me know if any of this will help you.

Debbie Brydon Land Use Administrator Town of Barkhamsted

From: Allison Hebel [mailto:ahebel@clinellc.com] Sent: Wednesday, September 16, 2020 11:56 AM To: Debbie Brydon <dbrydon@barkhamsted.us> Subject: AT&T // CT1186 // 5 Old Farm Road

Hi Debra,

I am looking to obtain a copy of the original cell tower approval for the tower located at 5 old farm road? Can you provide this document? If not please let me know.

Best Regards,



Allison Hebel | Site Acquisition Consultant 750 West Center St. Suite 301 | West Bridgewater, MA 02379 Phone: 215.588.7035 Fax: 508.819.3017 ahebel@clinellc.com | www.centerlinecommunications.com



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051 Phone: (860) 827-2935 Fax: (860) 827-2950 E-Mail: siting.council@ct.gov www.ct.gov/csc

December 21, 2012

Melanie Howlett HPC Wireless Services 46 Mill Plain Road, Floor 2 Danbury, CT 06811

RE: **EM-CING-005-121207** –New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 5 Old Farms Road, Barkhamsted, Connecticut.

Dear Ms. Howlett:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- Prior to antenna installation, the tower modifications identified in the Structural Analysis Report and Reinforcement Design prepared by Centek Engineering dated November 29, 2012, and stamped by Carlo Centore shall be implemented; and
- Not more than 45 days following completion of the antenna installation, a signed letter from a Professional Engineer duly licensed in the State of Connecticut shall be submitted to the Council to certify that the recommended modifications have been completed and the tower does not exceed 100 percent of the post-construction structural rating.
- Any deviation from the proposed modification as specified in this notice and supporting materials with Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Not more than 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration;

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated December 7, 2012 Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency



emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Very truly yours,

Kohentos

Linda Roberts Executive Director

LR/CDM/cm

c: The Honorable Donald S. Stein, First Selectman, Town of Barkhamsted Debra Bryden, Zoning Enforcement Officer, Town of Barkhamsted Date Recipient Page 11 of 11

EXHIBIT 7

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3. GETTING YOUR SHIPMENT TO UPS

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Customers without a Daily Pickup

(including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS

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2. Fold the printed label at the solid line below. Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.

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