

QC Development
PO Box 916
Storrs, CT 06268
860-670-9068
Mark.Roberts@QCDevelopment.net

May 03, 2019

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

Notice of Exempt Modification – New Cingular Wireless PCS, LLC (AT&T) – CT2124 39 West Street, Danbury, CT 06451 N 41.39290556 W 73.45411389

Dear Ms. Bachman:

AT&T currently maintains three (3) antennas at the 69' level and three (3) antennas at the 63' level of the self-supporting rooftop tower at 39 West Street, Danbury, CT. The property is owned by AT&T (SNET) and is also known as 41 West Street per City of Danbury GIS. AT&T now intends to add three (3) Kathrien 800-10964 antennas at the 54' level of the tower (all antenna heights referenced herein are "Above Ground Level" or AGL). AT&T will also remove (6) Ericsson RRUS-12 and (3) Ericsson RRUS-11 Remote Radio Units (RRU) and replace them with (3) Ericsson B5/B12 4449 and add (3) Ericsson B2/B66A 8843 RRUs.

AT&T's use of this facility was approved by the Connecticut Siting Council in Docket # 75 on May 13, 1987 and then in Petition # 448 on April 12, 2000. The approvals included no conditions that would be violated by this proposed modification, including total facility height and mounting restrictions. This modification therefore complies with the aforementioned approvals.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Mark D. Boughton, Mayor of the City of Danbury, and the Danbury Planning & Zoning Department as well

as the 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).

- 1. The proposed modifications will not result in an increase in the height of the existing structure.
- 2. The proposed modifications will not require the 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 replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
- 5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
- 6. The existing structure and its foundation can support the proposed loading.

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

Please feel free to call me at (860) 670-9068 with any questions regarding this matter. Thank you for your consideration.

Sincerely,

Mark Roberts

QC Development

Consultant for AT&T

Attachments

cc: Mayor Mark D. Boughton - Elected Official Sharon Calitro, AICP – Director of Planning & Zoning

SNET - Property Owner

Power Density

Existing Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm^2)	Freq. Band (MHz**)	Limit S (mW /cm^2)	%МРЕ
Other Carriers*							0%
AT&T GSM	2	414	69	0.0750	850	0.5667	1.32%
AT&T UMTS	2	414	69	0.0750	850	0.5667	1.32%
AT&T UMTS	2	656	69	0.1189	1900	1.0000	1.19%
AT&T LTE	2	730	63	0.1616	700	0.4667	3.46%
AT&T LTE	2	1456	63	0.3223	1900	1.0000	3.22%
AT&T LTE	2	1833	63	0.4058	2300	1.0000	4.06%
Site Total							14.58%

^{*}Per CSC Records (available upon request, includes calculation formulas)

Proposed Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm^2)	Freq. Band (MHz**)	Limit S (mW /cm^2)	%МРЕ
Other Carriers*							0%
AT&T UMTS	1	250	69	0.0227	850	0.5667	0.40%
AT&T LTE	2	3664	63	0.8111	1900	1.0000	8.11%
AT&T LTE	1	1285	63	0.1422	2300	1.0000	1.42%
AT&T LTE	1	1476	54	0.2304	700	0.4667	4.94%
AT&T LTE	1	1000	54	0.1561	850	0.5667	2.75%
AT&T 5G	1	1000	54	0.1561	850	0.5667	2.75%
AT&T LTE	1	3837	54	0.5989	2100	1.0000	5.99%
Site Total							26.37%

^{*}Per CSC Records (available upon request, includes calculation formulas)

^{**} If a range of frequencies are used, such as 880-894, enter the lowest value, i.e. 880

^{**} If a range of frequencies are used, such as 880-894, enter the lowest value, i.e. 880

PROJECT INFORMATION

SCOPE OF WORK:

ITEMS TO BE MOUNTED ON THE EXISTING ROOF:

NEW AT&T ANTENNAS: (800-10964) MOUNTED @ POSITION 4

(TYP. OF 1 PER SECTOR, TOTAL OF 3).

• NEW AT&T RRUS: 4449 B5/B12 (850/700) (TYP. OF 1 PER SECTOR, TOTAL OF 3)

• NEW AT&T RRUS: B2/B66A 8843 (AWS/1900) (TYP. OF 1 PER SECTOR, TOTAL OF 3)

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION: • SWAP BASEBAND FOR RBS 6630.

• ADD RBS 6630 FOR 5G.

SITE ADDRESS:

39 WEST STREET DANBURY, CT 06810

LATITUDE:

41.392686 N, 41° 23' 33.67" N

LONGITUDE:

73.454055 W, 73° 27' 14.60" W

TYPE OF SITE:

ROOF / INDOOR EQUIPMENT

STRUCTURE HEIGHT: 72'-6"±

RAD CENTER: 54'-6"±, 63'-0"± & 69'-0"±

TELECOMMUNICATIONS FACILITY

PROPOSED USE:

CURRENT USE:

TELECOMMUNICATIONS FACILITY



SITE NUMBER: CT2124

SITE NAME: DANBURY CENTRAL SBC CO

FA CODE: 10034988

PACE ID: MRCTB037984, MRCTB038075

PROJECT: LTE 4C_5C 2019 UPGRADE

	DRAWING INDEX	
SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	1
GN-1	GENERAL NOTES	1
A-1	ROOF & EQUIPMENT PLANS	1
A-2	ELEVATION	1
A-3	ANTENNA LAYOUTS	1
A-4	DETAILS	1
RF-1	RF PLUMBING DIAGRAM	1
G-1	GROUNDING DETAILS	1

VICINITY MAP

HEAD NORTHEAST. TURN RIGHT TOWARD SPEEN ST, TURN RIGHT ONTO SPEEN ST. TURN RIGHT ONTO COCHITUATE RD. TAKE THE RAMP TO I-90/MASSPIKE/SPRINGFIELD/BOSTON, TOLL ROAD, KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR INTERSTATE 90 W/MASSACHUSETTS, TURNPIKE/WORCESTER/SPRINGFIELD AND MERGE ONTO I-90/MASSACHUSETTS TURNPIKE, PARTIAL TOLL ROAD, TAKE EXIT 9 FOR I-84 TOWARD US-20/HARTFORD/NEW YORK CITY, TOLL ROAD, CONTINUE ONTO I-84, PARTIAL TOLL ROAD, ENTERING CONNECTICUT, TAKE EXIT 5 FOT CT-39 TOWARD CT-53 DOWNTOWN DANBURY/BETHEL, TURN RIGHT ONTO CT-39 S/N MAIN ST CONTINUE TO FOLLOW N MAIN ST, TURN



1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

GENERAL NOTES

- 2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
- CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T MOBILITY REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
- CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN.

72 HOURS



BEFORE YOU DIG

call toll free 1 - 800 - 922 - 4455

OR CALL 811

UNDERGROUND SERVICE ALERT



NORTH ANDOVER, MA 01845

TEL: (978) 557-5553 FAX: (978) 336-5586



SITE NUMBER: CT2124
SITE NAME: DANBURY CENTRAL SBC CO

DIRECTIONS TO SITE:

39 WEST STREET DANBURY, CT 06810 FAIRFIELD COUNTY



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1	04/23/19	ISSUED FOR	CONSTRUCTION			EB '	AT.	SIDE	بسا
Α	03/19/19	ISSUED FOR	REVIEW			AM	AT	DJC/	
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	* *	AT&T
J. J. Che	m//	TITLE SHEET (LTE 4C_5C)
SCENDAY!		
CLONIAL ENGINE	SITE NUMBER	DRAWING NUMBER
JUNIAL LININ	CT2124	T-1

GROUNDING NOTES

- 1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
- 2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
- 3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
- 4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT
- 5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
- 6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
- 7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
- 8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO
- 9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS
- 10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES. FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
- 11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
- 12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

CONTRACTOR - SAI SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION) OWNER - AT&T MOBILITY

- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
- 3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE
- 4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON
- "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
- 7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- 8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS. THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY
- SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
- 10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
- 11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
- 12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION
- 13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

- 14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
- 15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
- 16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."
- 17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
- 18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS
- 19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER.

 PERSONAL RE EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
- 20. APPLICABLE BUILDING CODES:

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

BUILDING CODE: IBC 2015 WITH 2018 CT STATE BUILDING CODE AMENDMENTS ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE (NFPA 70-2017)

SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING

AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE:

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION, ASD. FOURTEENTH EDITION:

TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G, STRUCTURAL STANDARDS FOR STEEL

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

			ABBREVIATIONS		
AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	GC	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BBU	BATTERY BACKUP UNIT	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
втсм	BARE TINNED SOLID COPPER WIRE	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BGR	BURIED GROUND RING	MIN	MINIMUM	TBRR	TO BE REMOVED AND REPLACED
BTS	BASE TRANSCEIVER STATION	Р	PROPOSED	TYP	TYPICAL
E	EXISTING	NTS	NOT TO SCALE	UG	UNDER GROUND
EGB	EQUIPMENT GROUND BAR	RAD	RADIATION CENTER LINE (ANTENNA)	VIF	VERIFY IN FIELD J. CRE
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		10/2



NORTH ANDOVER, MA 01845



SITE NUMBER: CT2124 SITE NAME: DANBURY CENTRAL SBC CO

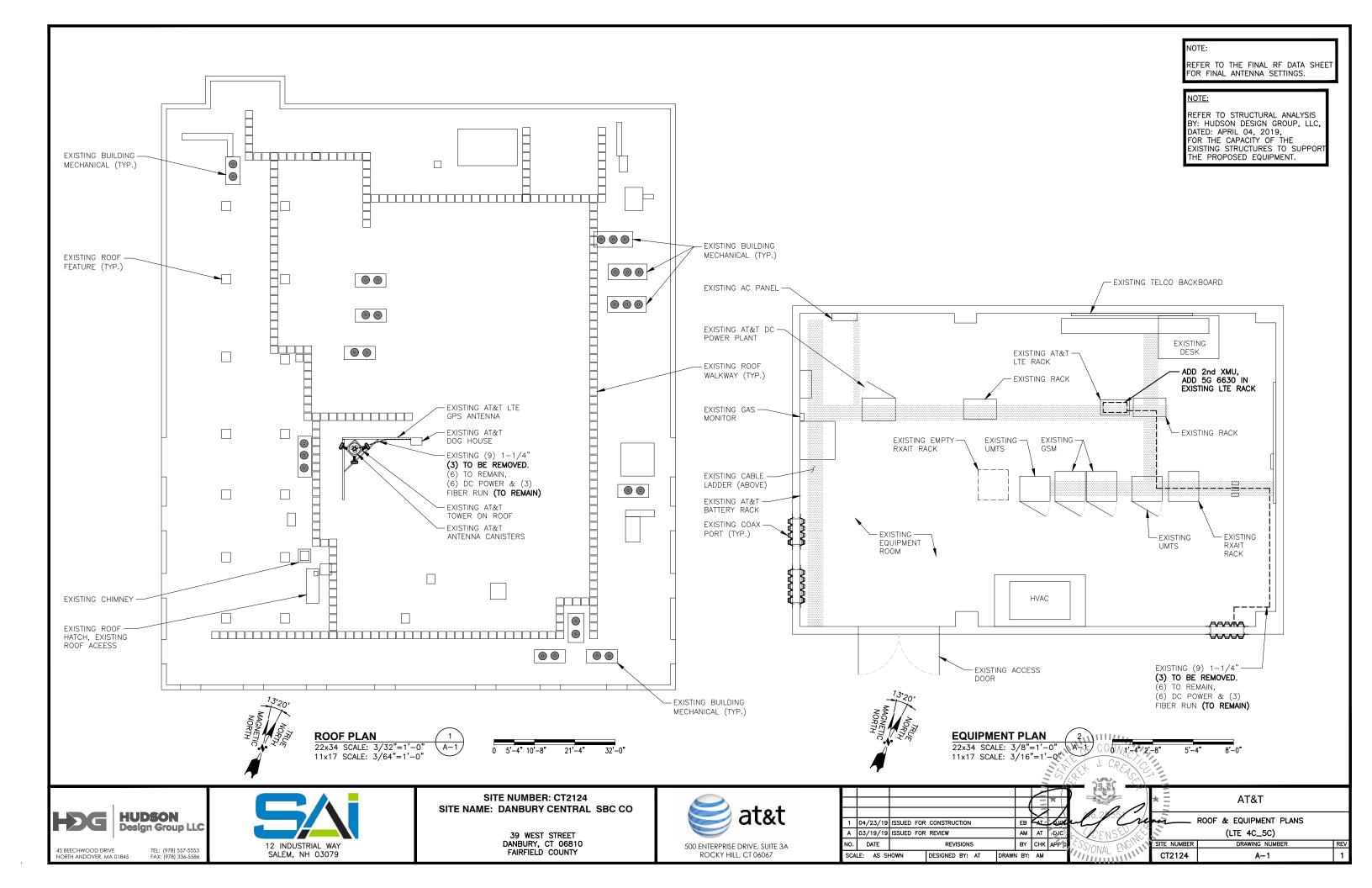
> 39 WEST STREET DANBURY, CT 06810 FAIRFIELD COUNTY

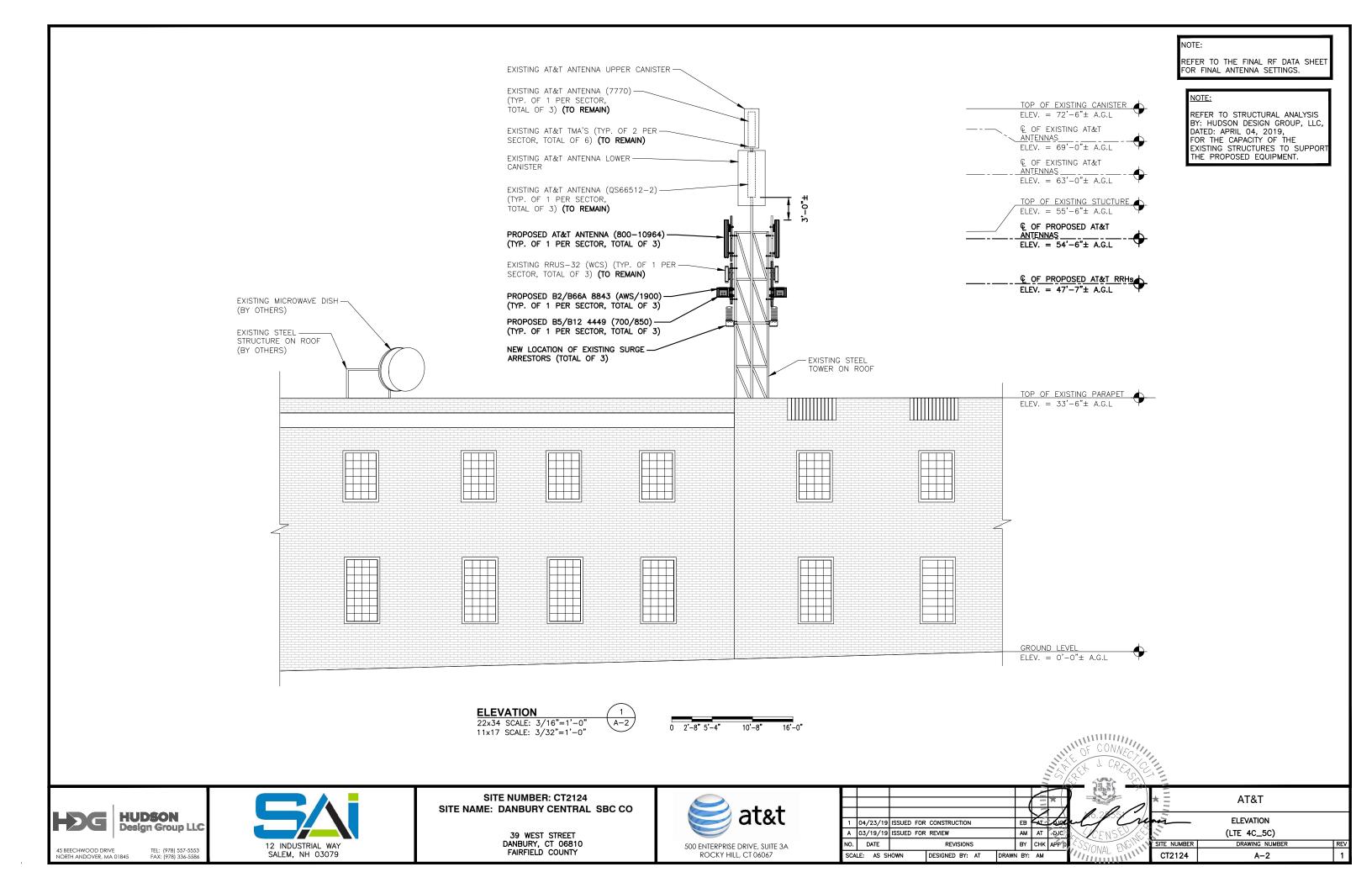


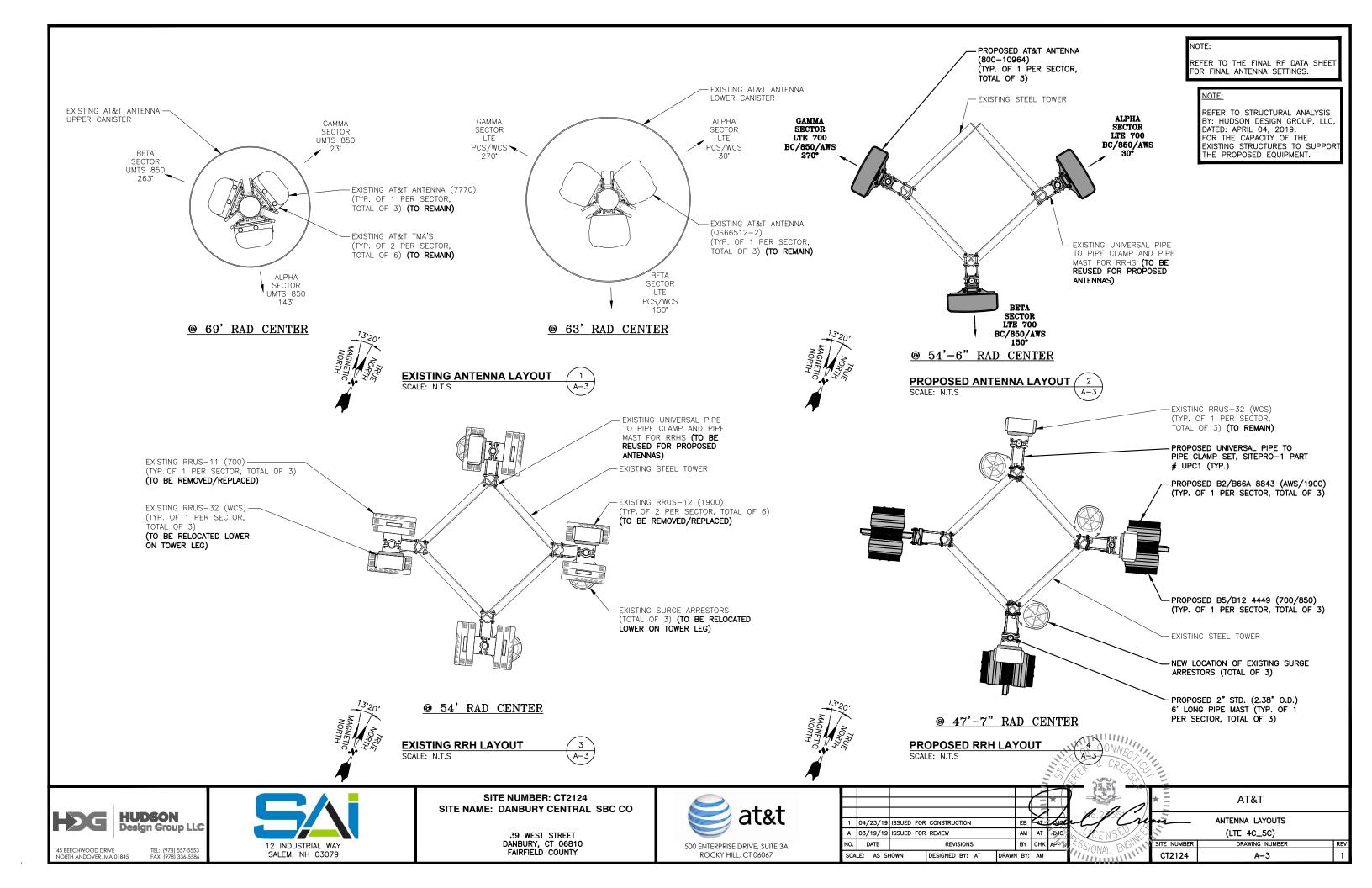
ROCKY HILL, CT 06067

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AT&T GENERAL NOTES (LTE 4C_5C) DRAWING NUMBE CT2124 GN-1





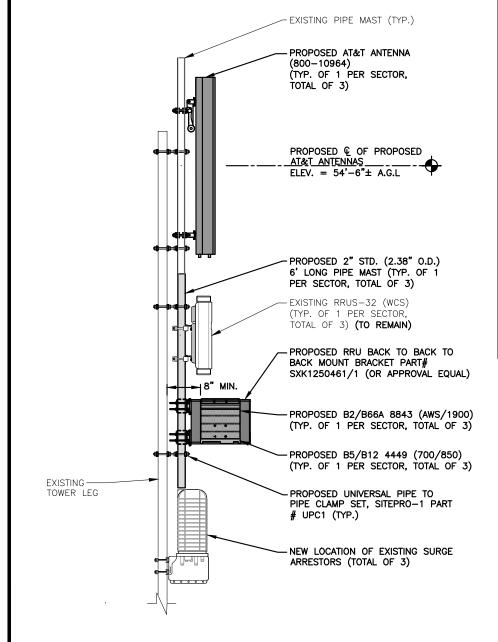


NOTE:

REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:

REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED: APRIL 04, 2019, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPOR'THE PROPOSED EQUIPMENT.



						ANTE	NNA SCHEDULE				
SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L × W × D)	ANTENNA © HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	EXISTING	UMTS 850	7770	55X11X5	±69'-0"	143*	(E)(2)(G) POWERWAVE/LGP 21901 (E)(2) POWERWAVE LGP21401	-	-	(2) 1-5/8" (LENGTH 130'±)	
A2	-	-	_	_	_	_	_	-	-	-	P -8C
A3	EXISTING	LTE PCS/WCS	QS66512-2	72X12X9.6	±63'-0"	30°	-	(E) RRUS 32 (WCS) (P) B2/B66A 8843 (AWS/1900)	_ 14.9X13.2X10.9	-	(E) (1) RAYCAP DC6-48-60-18-8C
A4	PROPOSED	LTE 700 BC/850/AWS	800-10964	59X20X6.9	±54'-6"	30°	-	(P) B5/B12 4449 (700/850)	14.9X13.2X10.4	-	(E) (3
B1	EXISTING	UMTS 850	7770	55X11X5	±69'-0"	263°	(E)(2)(G) POWERWAVE/LGP 21901 (E)(2) POWERWAVE LGP21401	-	-	(2) 1-5/8" (LENGTH 130'±)	
B2	-	-	_	_	_	_	-	-	-	-	P -8C
В3	EXISTING	LTE PCS/WCS	QS66512-2	72X12X9.6	±63'-0"	150°	-	(E) RRUS 32 (WCS) (P) B2/B66A 8843 (AWS/1900)	- 14.9X13.2X10.9	-	(E) (1) RAYCAP DC6–48–60–18–8C
B4	PROPOSED	LTE 700 BC/850/AWS	800-10964	59X20X6.9	±54'-6"	150°	-	(P) B5/B12 4449 (700/850)	14.9X13.2X10.4	-	(E) (DC6-48
C1	EXISTING	UMTS 850	7770	55X11X5	±69'-0"	23*	(E)(2)(G) POWERWAVE/LGP 21901 (E)(2) POWERWAVE LGP21401	-	-	(2) 1-5/8" (LENGTH 130'±)	
C2	-	-	-	-	_	_	-	-	-	-	-8С
С3	EXISTING	LTE PCS/WCS	QS66512-2	72X12X9.6	±63'-0"	270°	-	(E) RRUS 32 (WCS) (P) B2/B66A 8843 (AWS/1900)	- 14.9X13.2X10.9	-	(E) (1) RAYCAP DC6-48-60-18-8C
C4	PROPOSED	LTE 700 BC/850/AWS	800-10964	59X20X6.9	±54'-6"	270°	-	(P) B5/B12 4449 (700/850)	14.9X13.2X10.4	-	(E) (C)

FINAL ANTENNA SCHEDULE
SCALE: N.T.S

1 A-4

	RRU CH	ART		
QUANTITY	MODEL	L	W	D
3(E)	RRUS 32 (WCS)	27.2"	12.1"	7.0"
3(P)	4449 B5/B12 (700/850)	14.9"	13.2"	10.4"
3(P)	8843 B2/B66A (AWS/1900)	14.9"	13.2"	10.9"
NOTE:	MANUFACTURER'S S	PECIFICAT	IONS	

NOTE:

SEE RFDS FOR RRH
FREQUENCY AND
MODEL NUMBER

PROPOSED RRU REFER TO THE —— FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS

NOTE: MOUNT PER MANUFACTURER'S SPECIFICATIONS.

J. CREACE

PROPOSED ANTENNA, RRH & SURGE ARRESTOR MOUNTING DETAIL

22x34 SCALE: 3/4"=1'-0" 11x17 SCALE: 3/8"=1'-0"



PROPOSED RRUS DETAIL
SCALE: N.T.S

 $\frac{3}{A-4}$

HUDSON Design Group LLC

45 BEECHWOOD DRIVE NORTH ANDOVER, MA 01845 FAX: (978) 336-5586



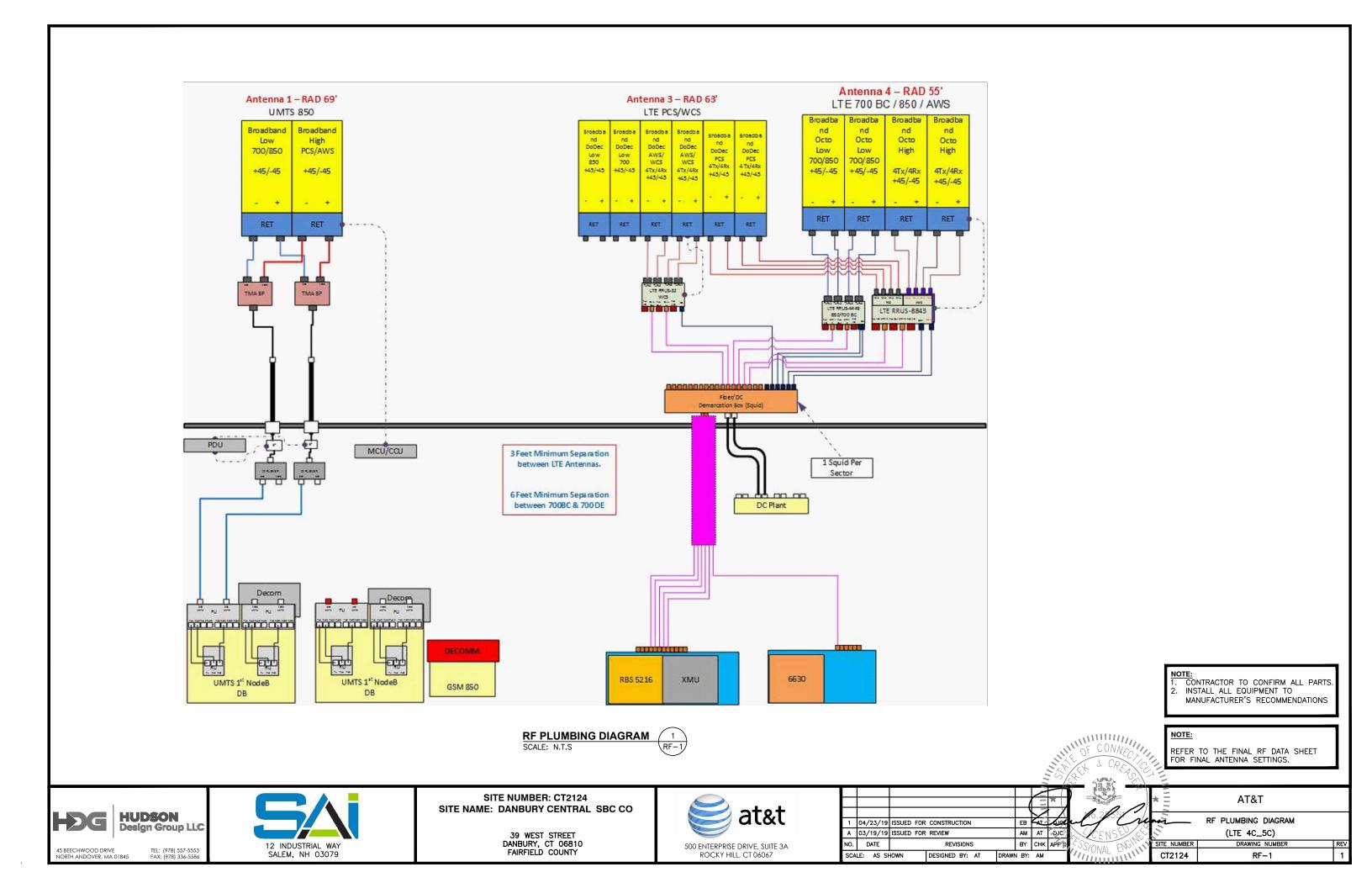
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SITE NAME: DANBURY CENTRAL SBC CO

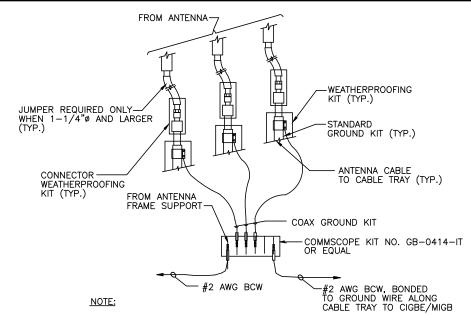
39 WEST STREET DANBURY, CT 06810 FAIRFIELD COUNTY



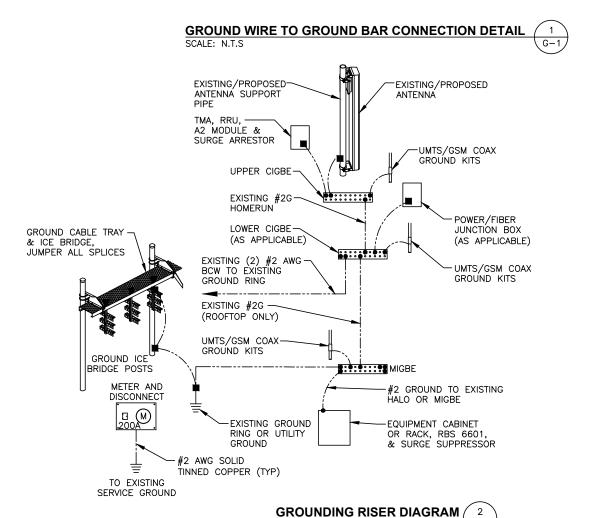
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1	04/23/19	ISSUED FOR	CONSTRUCTION			EB	¥	BUR	w
Α	03/19/19	ISSUED FOR	REVIEW			AM	AT	DIC	
NO.	DATE		REVISIONS	S		BY	СНК	APP D	`£`SS
SCA	LE: AS SI	HOWN	DESIGNED BY:	AT	DRAWN	N BY:	AM		111

DA EC			
	*===	AT&T	
left Cre	and_	DETAILS	
LCENSE (S)		(LTE 4C_5C)	
SCIONIN ENGLIS	SITE NUMBER	DRAWING NUMBER	RE
OTONAL ENLINE	CT2124	A-3	1

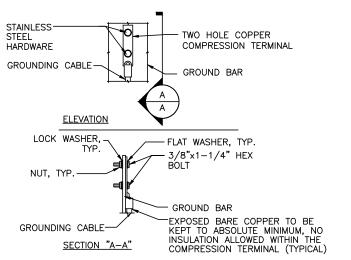




1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE.



SCALE: N.T.S



- 1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
- OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATION.
- CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB

TYPICAL GROUND BAR CONNECTION DETAIL SCALE: N.T.S



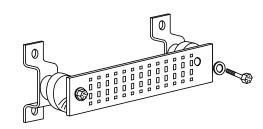
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" - SURGE PRODUCERS

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

SECTION "A" - SURGE ABSORBERS

INTERIOR GROUND RING (#2) EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2) METALLIC COLD WATER PIPE (IF AVAILABLE) (#2) BUILDING STEEL (IF AVAILABLE) (#2)









NORTH ANDOVER, MA 01845



SITE NUMBER: CT2124 SITE NAME: DANBURY CENTRAL SBC CO

> 39 WEST STREET DANBURY, CT 06810 FAIRFIELD COUNTY



						-	- /	Si si c			
					_		*		×Ξ	AT&T	
	04/23/10	ISSUED FOR	CONSTRUCTION		EB	2		1.2/5 / Ne		GROUNDING DETAILS	
-		ISSUED FOR			AM	AT	DJC)	CENSO		(LTE 4C_5C)	
	DATE		REVISIONS		BY	снк	APP D	ESSIONAL ENGLIS	SITE NUMBER	DRAWING NUMBER	REV
٩	LE: AS SH	HOWN	DESIGNED BY: AT	DRAWN	BY:	АМ		WAL LINE	CT2124	G-1	1

STRUCTURAL ANALYSIS REPORT

For

CT2124 DANBURY CENTRAL SBC CO

39 WEST STREET DANBURY, CT 06810

Antennas Mounted on the Tower



Prepared for:





Dated: April 4, 2019

Prepared by:



45 Beechwood Drive North Andover, MA 01845 (P) 978.557.5553 (F) 978.336.5586 www.hudsondesigngrouplic.com





SCOPE OF WORK:

Hudson Design Group LLC (HDG) has been authorized by AT&T to conduct a structural evaluation of the 38.5' self-supporting tower supporting the proposed AT&T's antennas located at elevation 47.6' & 54.5' above the ground level.

This report represents this office's findings, conclusions and recommendations pertaining to the support of AT&T's existing and proposed antennas listed below.

Record drawings of the existing tower structure were not available for our use. Previous structural analysis report prepared by Malouf Engineering Intl., Inc., dated July 11, 2017, was provided to this office.

CONCLUSION SUMMARY:

Based on our evaluation, we have determined that the existing tower and steel platform **are in conformance** with the ANSI/TIA-222-G Standard for the loadings considered under the criteria listed in this report. <u>The tower structure is rated at 60.3% - (Leg at Tower Section T1 from EL.35.5' to EL.55.5' Controlling)</u>.



APPURTENANCES CONFIGURATION:

Tenant	Appurtenances	Elev.	Mount
	Upper Canister	65.3' – 73.8'	Pole
	Lower Canister	57.8' – 65.2'	Pole
AT&T	(3) 800 10964 Antennas	54.5'	Tower Leg
AT&T	(3) RRUS-32	50'	Tower Leg
AT&T	(3) B2/B66A 8843	47.6'	Tower Leg
AT&T	(3) B5/B12 4449/B66A 8843	47.6'	Tower Leg
AT&T	(3) DC6-48-60-18-8C	45'	Tower Leg

^{*}Proposed AT&T Appurtenances shown in Bold.

AT&T EXISTING/PROPOSED COAX CABLES:

Tenant	Coax Cables	Elev.	Mount
AT&T	(6) 1 1/4" Cables	69'	Tower
AT&T	(6) DC Power Cables	63'	Tower
AT&T	(3) Fiber Cables	63'	Tower

^{*}Proposed AT&T Coax Cables shown in Bold.

ANALYSIS RESULTS SUMMARY:

Component	Max. Stress Ratio	Elev. of Component	Pass/Fail	Comments
		(ft)		
Pole	22.7 %	55.5 – 66	PASS	
Leg	60.3 %	35.5 – 55.5	PASS	Controlling
Diagonal	31.8 %	35.5 – 55.5	PASS	
Horizontal	10.2 %	35.5 – 55.5	PASS	
Top Girt	0.2 %	35.5 – 55.5	PASS	



DESIGN CRITERIA:

- 1. EIA/TIA-222-G Structural Standards for Steel Antenna Towers and Antenna Supporting Structures
- 2. Connecticut State Building Code

County: Fairfield
City/Town: Danbury
Wind Load: 93 mph
Structural Class: II
Exposure Category: B
Topographic Category: 1

Nominal Ice Thickness: 0.75 inch

3. Approximate height above grade to proposed antennas: 47.6' & 54.5'

Calculations and referenced documents are attached

ASSUMPTIONS:

- 1. The tower and support platform are properly constructed and maintained. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.
- 2. The appurtenances configuration is as stated in this report. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.
- 3. The support mounts and platforms are not analyzed and are considered adequate to support the loading. The analysis is limited to the primary support structure itself.
- 4. All prior structural modification, if any, are assumed to be as per the data supplied (if available), and installed properly.

SUPPORT RECOMMENDATIONS:

HDG recommends that the proposed antennas and RRHs be mounted on the tower leg.

Reference HDG's Latest Construction Drawings for all component and connection requirements (attached).





Photo 1: Photo illustrating the Tower with Appurtenances shown.



CALCULATIONS

74.0 ft P4x.337 Ä. 120.0 66.0 ft Z Z Z A. A. P8x.322 Ą. 300.1 in thickness with height. in trickness with height. 5. Deflections are based upon a 60 mph wind. 6. Tower Structure Class II. 7. Topographic Category 1 with Crest Height of 0.00 ft 8. TOWER RATING: 60.3% ALL REACTIONS ARE FACTORED MAX. CORNER REACTIONS AT BASE: DOWN: 17811 lb 1/2x2 1/2x3/16 L2 1/2x2 1/2x3/16 SHEAR: 1726 lb L3x3x1/4 L3x3x1/4 4 @ 5 A36 A36 847.6 UPLIFT: -15437 lb SHEAR: 974 lb AXIAL 12120 lb SHEAR MOMENT 1031 lb 21865 lb-ft TORQUE 208 lb-ft 50 mph WIND - 0.7500 in ICE AXIAL 5341 lb SHEAR MOMENT 3893 lb 72446 lb-ft 35.5 ft TORQUE 951 lb-ft 1267 REACTIONS - 93 mph WIND # Panels @ (ft) Diagonal Grade -ace Width (ft) Weight (lb) Leg Grade Top Girts

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Upper Canister 3' dia.x8.5' (CT2124)	69.5	B2/B66A 8843	47.6
Lower Canister 4' dia.x7.375'	61.5	B2/B66A 8843	47.6
(CT2124)		B2/B66A 8843	47.6
800 10964 w/ Mount Pipe	54.5	B5/B12 4449	47.6
800 10964 w/ Mount Pipe	54.5	B5/B12 4449	47.6
800 10964 w/ Mount Pipe	54.5	B5/B12 4449	47.6
Ericsson RRUS-32	50	DC6-48-60-18-8C	45
Ericsson RRUS-32	50	DC6-48-60-18-8C	45
Ericsson RRUS-32	50	DC6-48-60-18-8C	45

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

- 1. Tower is located in Fairfield County, Connecticut.
- 2. Tower designed for Exposure B to the TIA-222-G Standard.
- 3. Tower designed for a 93 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

iob: CT2124 Hudson Design Group LLC Project: 38.5 ft Self Supporting Tower 45 Beechwood Drive Client: AT&T Drawn by: kw North Andover, MA 01845 Code: TIA-222-G Date: 04/04/19 Scale: NTS Phone: (978) 557-5553 Dwg No. E-1 FAX: (978) 336-5586

Hudson Design Group LLC

45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 336-5586

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	AT&T	kw

Tower Input Data

The main tower is a 4x free standing tower with an overall height of 74.00 ft above the ground line.

The base of the tower is set at an elevation of 35.50 ft above the ground line.

The face width of the tower is 3.00 ft at the top and 3.00 ft at the base.

An index plate is provided at the 4x free standing -tower connection.

There is a pole section.

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

The following design criteria apply:

Tower is located in Fairfield County, Connecticut.

Basic wind speed of 93 mph.

Structure Class II.

Exposure Category B.

Topographic Category 1.

Crest Height 0.00 ft.

Nominal ice thickness of 0.7500 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 50 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

Stress ratio used in pole design is 1.

Stress ratio used in tower member design is 1.

Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Pole Section Geometry Pole Section Elevation Section PoleSocket Length Grade Length Size ftP4x.337 A53-B-35 L1 8.00 74.00-66.00 (35 ksi) L2 66.00-55.50 10.50 P8x.322 A53-B-35 (35 ksi)

		IOV	ver Section G	eometry		
Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of	Section Length
	£.			£.	Sections	<i>C</i> 4
T1	55.50-35.50			3.00	1	20.00

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	Tower Section Geometry (cont'd)								
Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace	Has Horizontals	Top Girt Offset	Bottom Girt Offset		
T1	ft 55.50-35.50	ft 5.00	Diag Up	End Panels No	Yes	in 0.0000	0.0000		

Tower Section Geometry (cont'd)								
Tower Elevation	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade		
T1 55.50-35.50	Equal Angle	L3x3x1/4	A36 (36 ksi)	Equal Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)		

Tower Section Geometry (cont'd)								
Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade		
T1 55.50-35.50	Equal Angle	L3x3x1/4	A36 (36 ksi)	Equal Angle		A36 (36 ksi)		

Tower Section Geometry (cont'd)							
Tower Elevation	No. of Mid	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
ft T1 55.50-35.50	Girts None	Equal Angle		A36	Equal Angle	L2 1/2x2 1/2x3/16	A36
11 33.30-33.30	None	Equal Aligie		(36 ksi)	Equal Aligie	L2 1/2x2 1/2x3/10	(36 ksi)

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or	Allow Shield	Exclude From	Component Type	Placement	Total Number	Number Per Row	Clear Spacing	Width or Diameter	Perimeter	Weight
	Leg		Torque	<i>31</i>	ft			in	in	in	plf
			Calculation								
Climbing Ladder	A	No	Yes	Af (CaAa)	55.50 - 35.50	1	1	0.0000	2.5000		7.90
Feedline Ladder (Af) ********	C	No	Yes	Af (CaAa)	55.50 - 35.50	1	1	0.0000	3.0000		8.40
1 1/4	C	No	Yes	Ar (CaAa)	55.50 - 35.50	6	6	0.0000	1.5500		0.66
WR-VG122ST-BRD A	C	No	Yes	Ar (CaAa)	55.50 - 35.50	6	6	0.0000	0.4000		0.25
FB-L98B-002	C	No	Yes	Ar (CaAa)	55.50 - 35.50	3	3	0.0000	0.4000		0.25

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Feed Line/Linear Appurtenances - Entered As Area

Description	Face	Allow	Exclude	Component	Placement	Total		$C_A A_A$	Weight
	or Leg	Shield	From Torque Calculation	Туре	ft	Number		ft²/ft	plf
1 1/4	C	No	Yes	Inside Pole	69.00 - 55.50	6	No Ice	0.00	0.66
							1/2" Ice	0.00	0.66
							1" Ice	0.00	0.66
WR-VG122ST-BRD	C	No	Yes	Inside Pole	63.00 - 55.50	6	No Ice	0.00	0.25
A							1/2" Ice	0.00	0.25
							1" Ice	0.00	0.25
FB-L98B-002	C	No	Yes	Inside Pole	63.00 - 55.50	3	No Ice	0.00	0.25
							1/2" Ice	0.00	0.25
							1" Ice	0.00	0.25

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral	Azimuth Adjustment	Placement		C _A A _A Front	C _A A _A Side	Weight
			Vert ft ft ft	0	ft		ft^2	ft^2	lb
Upper Canister 3' dia.x8.5' (CT2124)	D	None		0.0000	69.50	No Ice 1/2" Ice 1" Ice	12.94 18.69 19.36	12.94 18.69 19.36	850.00 1074.37 1307.74
Lower Canister 4' dia.x7.375' (CT2124)	D	None		0.0000	61.50	No Ice 1/2" Ice 1" Ice	14.75 21.32 22.00	14.75 21.32 22.00	850.00 1129.61 1418.77
Ericsson RRUS-32	A	From Leg	1.00 0.00	0.0000	50.00	No Ice 1/2" Ice	3.31 3.56	2.42 2.64	77.00 104.93
Ericsson RRUS-32	В	From Leg	0.00 1.00 0.00	0.0000	50.00	1" Ice No Ice 1/2" Ice	3.81 3.31 3.56	2.86 2.42 2.64	136.47 77.00 104.93
Ericsson RRUS-32	D	From Leg	0.00 1.00 0.00	0.0000	50.00	1" Ice No Ice 1/2" Ice	3.81 3.31 3.56	2.86 2.42 2.64	136.47 77.00 104.93
DC6-48-60-18-8C	A	From Leg	0.00 1.00 0.00	0.0000	45.00	1" Ice No Ice 1/2" Ice	3.81 0.80 1.27	2.86 0.80 1.27	136.47 20.00 35.12
DC6-48-60-18-8C	В	From Leg	0.00 1.00 0.00	0.0000	45.00	1" Ice No Ice 1/2" Ice	1.45 0.80 1.27	1.45 0.80 1.27	52.57 20.00 35.12
DC6-48-60-18-8C	D	From Leg	0.00 1.00 0.00 0.00	0.0000	45.00	1" Ice No Ice 1/2" Ice 1" Ice	1.45 0.80 1.27 1.45	1.45 0.80 1.27 1.45	52.57 20.00 35.12 52.57
************ 800 10964 w/ Mount Pipe	A	From Leg	1.00 0.00 0.00	0.0000	54.50	No Ice 1/2" Ice 1" Ice	10.25 10.77 11.27	5.53 6.41 7.16	112.90 187.51 269.56
800 10964 w/ Mount Pipe	В	From Leg	1.00 0.00 0.00	0.0000	54.50	No Ice 1/2" Ice 1" Ice	11.27 10.25 10.77 11.27	7.16 5.53 6.41 7.16	269.56 112.90 187.51 269.56
800 10964 w/ Mount Pipe	С	From Leg	1.00 0.00 0.00	0.0000	54.50	No Ice 1/2" Ice 1" Ice	10.25 10.77 11.27	5.53 6.41 7.16	112.90 187.51 269.56

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Description	Face or	Offset Type	Offsets: Horz	Azimuth Adjustment	Placement		C _A A _A Front	C _A A _A Side	Weight
	Leg		Lateral Vert ft	0	ft		ft ²	ft²	lb
			ft ft						
B2/B66A 8843	A	From Leg	1.00	0.0000	47.60	No Ice	1.65	0.93	40.00
			0.00			1/2" Ice	1.81	1.05	54.37
			0.00			1" Ice	1.98	1.19	71.23
B2/B66A 8843	В	From Leg	1.00	0.0000	47.60	No Ice	1.65	0.93	40.00
			0.00			1/2" Ice	1.81	1.05	54.37
			0.00			1" Ice	1.98	1.19	71.23
B2/B66A 8843	C	From Leg	1.00	0.0000	47.60	No Ice	1.65	0.93	40.00
			0.00			1/2" Ice	1.81	1.05	54.37
			0.00			1" Ice	1.98	1.19	71.23
B5/B12 4449	A	From Leg	1.00	0.0000	47.60	No Ice	1.97	1.40	71.00
		_	0.00			1/2" Ice	2.15	1.56	89.48
			0.00			1" Ice	2.33	1.72	110.77
B5/B12 4449	В	From Leg	1.00	0.0000	47.60	No Ice	1.97	1.40	71.00
		C	0.00			1/2" Ice	2.15	1.56	89.48
			0.00			1" Ice	2.33	1.72	110.77
B5/B12 4449	C	From Leg	1.00	0.0000	47.60	No Ice	1.97	1.40	71.00
		C	0.00			1/2" Ice	2.15	1.56	89.48
			0.00			1" Ice	2.33	1.72	110.77

Load Combinations

Comb.	Description
No.	
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
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

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	AT&T	kw

Comb.	Description
No.	
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 Reactions

Location	Condition	Gov.	Vertical	Horizontal, X	Horizontal, Z
		Load	lb	lb	lb
		Comb.			
Leg D	Max. Vert	18	17415.52	1561.97	-12.08
	Max. H _x	20	12896.35	1715.09	-3.61
	Max. H _z	5	-15437.09	-972.39	47.40
	Min. Vert	5	-15437.09	-972.39	47.40
	Min. H _x	8	-10606.77	-1736.07	11.89
	Min. H _z	13	5222.70	-810.91	-23.52
Leg C	Max. Vert	12	17527.36	-12.02	-1779.04
	Max. H _x	23	-15352.74	46.93	1134.11
	Max. H _z	2	-10091.15	11.07	1837.36
	Min. Vert	23	-15352.74	46.93	1134.11
	Min. H _x	7	5307.06	-23.34	864.17
	Min. Hz	14	12604.52	-3.29	-1816.79
Leg B	Max. Vert	6	17811.23	-1725.63	11.66
	Max. H _x	20	-10209.50	2013.67	-11.33
	Max. H _z	25	5519.82	1081.97	22.99
	Min. Vert	17	-15139.39	978.67	-47.27
	Min. H _x	8	13292.53	-1991.73	3.20
	Min. H _z	17	-15139.39	978.67	-47.27
Leg A	Max. Vert	24	17699.50	11.70	1508.55
	Max. H _x	19	5435.56	23.20	-1028.68
	Max. H _z	2	12777.06	3.49	1664.82
	Min. Vert	11	-15223.83	-47.78	-816.99
	Min. H _x	11	-15223.83	-47.78	-816.99
	Min. H _z	14	-9919.89	-11.12	-1684.05

Tower Mast Reaction Summary

Hudson Design Group LLC 45 Beechwood Drive

45 Beechwood Drive North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 336-5586

Job		Page
	CT2124	6 of 8
Project		Date
	38.5 ft Self Supporting Tower	10:45:10 04/04/19
Client		Designed by
	AT&T	kw

Dead Only	Load Combination	Vertical	Shear _x	Shearz	Overturning Moment, M_x	Overturning Moment, M _z	Torque
1.2 Dead 1.6 Wind 0 deg - No 5341.16 0.00 -3548.96 -68943.93 -339.30 458.03 160		lb	lb	lb			lb-ft
Ice		4450.96			-710.02		
0.9 Deadl 1.6 Wind 0 deg - No		5341.16	0.00	-3548.96	-68943.93	-339.30	458.03
1.2 Deadt 1.6 Wind 30 deg - No S341.16 1946.50 -3371.44 -62805.26 -36108.97 -20.09 fee 1.2 Deadt 1.6 Wind 30 deg - No 60.00 60.0		4005.87	0.00	-3548.96	-68666.84	-254.55	457.95
Ice							
Ice	•	5341.16	1946.50	-3371.44	-62805.26	-36108.97	-20.09
Lee 1.0	•	4005.87	1946.50	-3371.44	-62535.63	-35991.49	-19.95
0.9 Dead+1.6 Wind 90 deg - No	•	5341.16	3371.44	-1946.50	-36619.30	-62292.79	-492.80
1.2 Dead+1.6 Wind 90 deg - No 5341.16 3790.42 0.00 -849.90 -70848.00 -833.40 Ce 0.9 Dead+1.6 Wind 90 deg - No 4005.87 3790.42 0.00 -637.08 -70699.21 -832.98 1.2 Dead+1.6 Wind 120 deg - 5341.16 3371.44 1946.50 33699.88 62149.94 -950.24 No lee -950.24 -950.2	0.9 Dead+1.6 Wind 60 deg - No	4005.87	3371.44	-1946.50	-36373.86	-62151.77	-492.48
0.9 Dead+1.6 Wind 120 deg - No	1.2 Dead+1.6 Wind 90 deg - No	5341.16	3790.42	0.00	-849.90	-70848.00	-833.40
1.2 Dead+1.6 Wind 120 deg -	0.9 Dead+1.6 Wind 90 deg - No	4005.87	3790.42	0.00	-637.08	-70699.21	-832.98
0.9 Dead+1.6 Wind 120 deg - M05.87		5341.16	3371.44	1946.50	34919.57	-62290.07	-950.64
1.2 Dead+1.6 Wind 150 deg -		4005.87	3371.44	1946.50	35099.88	-62149.94	-950.24
0.9 Dead+1.6 Wind 150 deg - 4005.87 1946.50 3371.44 61260.53 -35987.70 -812.81		5341.16	1946.50	3371.44	61103.70	-36103.65	-813.10
No Ice 1.2 Dead+1.6 Wind 180 deg - 5341.16		4005.87	1946.50	3371.44	61260.53	-35987.70	-812.81
No Ice 0.9 Dead+1.6 Wind 180 deg - 4005.87 -0.00 3548.96 67389.32 -250.71 -457.56 No Ice 1.2 Dead+1.6 Wind 210 deg - 5341.16 -1946.50 3371.44 61099.88 35436.26 20.51 No Ice 0.9 Dead+1.6 Wind 210 deg - 4005.87 -1946.50 3371.44 61257.66 35487.05 20.39 No Ice 1.2 Dead+1.6 Wind 240 deg - 5341.16 -3371.44 1946.50 34912.96 61620.07 493.21 No Ice 0.9 Dead+1.6 Wind 240 deg - 4005.87 -3371.44 1946.50 35094.91 61647.34 492.92 No Ice 1.2 Dead+1.6 Wind 270 deg - 5341.16 -3790.42 -0.00 -856.91 70174.47 833.79 No Ice 1.2 Dead+1.6 Wind 270 deg - 4005.87 -3790.42 -0.00 -642.36 70193.94 833.40 No Ice 1.2 Dead+1.6 Wind 300 deg - 5341.16 -3371.44 -1946.50 -36625.92 61615.68 951.06 No Ice 1.2 Dead+1.6 Wind 300 deg - 5341.16 -3371.44 -1946.50 -36625.92 61615.68 951.06 No Ice 0.9 Dead+1.6 Wind 300 deg - 5341.16 -3371.44 -1946.50 -36625.92 61615.68 951.06 No Ice 0.9 Dead+1.6 Wind 300 deg - 5341.16 -3371.44 -1946.50 -36625.92 61615.68 951.06 No Ice 0.9 Dead+1.6 Wind 300 deg - 5341.16 -3371.44 -1946.50 -36625.92 61615.68 951.06 No Ice 0.9 Dead+1.6 Wind 300 deg - 5341.16 -1946.50 -3371.44 -62809.08 35429.26 813.52 No Ice 0.9 Dead+1.6 Wind 300 deg - 5341.16 -1946.50 -3371.44 -62809.08 35429.26 813.52 No Ice 1.2 Dead+1.0 Wind 30 deg - 5341.16 -1946.50 -3371.44 -62538.52 35481.56 813.25 No Ice 1.2 Dead+1.0 Wind 30 deg - 5341.16 -1946.50 -3371.44 -62538.52 35481.56 813.25 No Ice 1.2 Dead+1.0 Wind 0 deg+1.0 12119.83 0.00 -964.08 -21044.67 -849.04 92.10 Ice+1.0 Temp 1.2 Dead+1.0 Wind 30 deg+1.0 12119.83 892.76 -515.44 -11892.48 -17863.22 -116.06 Ice+1.0 Temp 1.2 Dead+1.0 Wind 60 deg+1.0 12119.83 892.76 -515.44 -11892.48 -17863.22 -116.06 Ice+1.0 Temp 1.2 Dead+1.0 Wind 120 deg+1.0 12119.83 1010.01 0.00 -2070.19 -20285.54 -187.44 Ice+1.0 Temp 1.2 Dead+1.0 Wind 120 deg+1.0 12119.83 892.76 -515.44 7752.71 -17863.44 -208.43 deg+1.0 Loc+1.0 Temp	No Ice	52/1 16	0.00	2549.06	67220.00	224.22	157.66
No Ice 1.2 Dead+1.6 Wind 210 deg - 5341.16 -1946.50 3371.44 61099.88 35436.26 20.51 No Ice 0.9 Dead+1.6 Wind 210 deg - 4005.87 -1946.50 3371.44 61257.66 35487.05 20.39 No Ice 1.2 Dead+1.6 Wind 240 deg - 5341.16 -3371.44 1946.50 34912.96 61620.07 493.21 No Ice 0.9 Dead+1.6 Wind 240 deg - 5341.16 -3371.44 1946.50 35094.91 61647.34 492.92 No Ice 1.2 Dead+1.6 Wind 270 deg - 5341.16 -3790.42 -0.00 -856.91 70174.47 833.79 No Ice 0.9 Dead+1.6 Wind 270 deg - 4005.87 -3790.42 -0.00 -642.36 70193.94 833.40 No Ice 1.2 Dead+1.6 Wind 300 deg - 5341.16 -3371.44 -1946.50 -36625.92 61615.68 951.06 No Ice 0.9 Dead+1.6 Wind 300 deg - 4005.87 -3371.44 -1946.50 -36625.92 61643.80 950.67 No Ice 0.9 Dead+1.6 Wind 300 deg - 5341.16 -1946.50 -3371.44 -62809.08 35429.26 813.52 No Ice 1.2 Dead+1.6 Wind 330 deg - 5341.16 -1946.50 -3371.44 -62809.08 35429.26 813.52 No Ice 1.2 Dead+1.6 Wind 330 deg - 5341.16 -1946.50 -3371.44 -62809.08 35429.26 813.52 No Ice 1.2 Dead+1.0 Wind 300 deg - 4005.87 -1946.50 -3371.44 -62809.08 35429.26 813.52 No Ice 1.2 Dead+1.0 Wind 300 deg - 4005.87 -1946.50 -3371.44 -6258.52 35481.56 813.25 No Ice 1.2 Dead+1.0 Wind 300 deg - 10 12119.83 0.00 0.00 -2070.02 -849.64 0.00 1.2 Dead+1.0 Wind 30 deg+1.0 12119.83 0.00 -964.08 -21044.67 -849.04 92.10 Ice+1.0 Temp 1.2 Dead+1.0 Wind 30 deg+1.0 12119.83 892.76 -515.44 -11892.48 -17863.22 -116.06 Ice+1.0 Temp 1.2 Dead+1.0 Wind 90 deg+1.0 12119.83 892.76 -515.44 -11892.48 -17863.22 -116.06 Ice+1.0 Temp 1.2 Dead+1.0 Wind 90 deg+1.0 12119.83 1010.01 0.00 -2070.19 -20285.54 -187.44 Ice+1.0 Temp 1.2 Dead+1.0 Wind 90 deg+1.0 12119.83 892.76 -515.44 -7752.71 -17863.44 -208.43	No Ice						
No Ice 0.9 Dead+1.6 Wind 210 deg - No Ice 1.2 Dead+1.6 Wind 240 deg - No Ice 1.2 Dead+1.6 Wind 270 deg - No Ice 1.2 Dead+1.6 Wind 270 deg - No Ice 1.2 Dead+1.6 Wind 270 deg - No Ice 1.2 Dead+1.6 Wind 300 deg - No Ice 1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp 1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp 1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp 1.2 Dead+1.0 Wind 120 Ice+1.0 Temp	No Ice	4005.87	-0.00	3548.96	67389.32	-250.71	
No Ice 1.2 Dead+1.6 Wind 240 deg - 5341.16		5341.16	-1946.50	3371.44	61099.88	35436.26	20.51
No Ice 0.9 Dead+1.6 Wind 240 deg - 4005.87		4005.87	-1946.50	3371.44	61257.66	35487.05	20.39
0.9 Dead+1.6 Wind 240 deg - No Ice 4005.87 -3371.44 1946.50 35094.91 61647.34 492.92 1.2 Dead+1.6 Wind 270 deg - No Ice 5341.16 -3790.42 -0.00 -856.91 70174.47 833.79 0.9 Dead+1.6 Wind 270 deg - No Ice 4005.87 -3790.42 -0.00 -642.36 70193.94 833.40 No Ice 1.2 Dead+1.6 Wind 300 deg - No Ice 5341.16 -3371.44 -1946.50 -36625.92 61615.68 951.06 No Ice 0.9 Dead+1.6 Wind 300 deg - Moto 8.7 -3371.44 -1946.50 -36378.85 61643.80 950.67 No Ice 1.2 Dead+1.6 Wind 330 deg - Moto 8.7 -1946.50 -3371.44 -62809.08 35429.26 813.52 No Ice 0.9 Dead+1.6 Wind 330 deg - Moto 8.7 -1946.50 -3371.44 -62809.08 35429.26 813.25 No Ice 0.9 Dead+1.0 Wind 30 deg - Moto 8.7 -1946.50 -3371.44 -62809.08 35481.56 813.25 No Ice 0.9 Dead+1.0 Wind 30 deg - Moto 8.7 -1946.50 -3371.44 -62538.52 35481.56 813.25 No Ice 1.2 Dead+1.0 Wind 0 deg+1.0 12119.83 0.00		5341.16	-3371.44	1946.50	34912.96	61620.07	493.21
1.2 Dead+1.6 Wind 270 deg	0.9 Dead+1.6 Wind 240 deg -	4005.87	-3371.44	1946.50	35094.91	61647.34	492.92
0.9 Dead+1.6 Wind 270 deg - 4005.87	1.2 Dead+1.6 Wind 270 deg -	5341.16	-3790.42	-0.00	-856.91	70174.47	833.79
1.2 Dead+1.6 Wind 300 deg - 5341.16	0.9 Dead+1.6 Wind 270 deg -	4005.87	-3790.42	-0.00	-642.36	70193.94	833.40
0.9 Dead+1.6 Wind 300 deg - 4005.87 -3371.44 -1946.50 -36378.85 61643.80 950.67 No Ice 1.2 Dead+1.6 Wind 330 deg - 5341.16 -1946.50 -3371.44 -62809.08 35429.26 813.52 No Ice 0.9 Dead+1.6 Wind 330 deg - 4005.87 -1946.50 -3371.44 -62538.52 35481.56 813.25 No Ice 1.2 Dead+1.0 Temp 12119.83 0.00 0.00 -2070.02 -849.64 0.00 1.2 Dead+1.0 Wind 0 deg+1.0 12119.83 0.00 -964.08 -21044.67 -849.04 92.10 Ice+1.0 Temp 1.2 Dead+1.0 Wind 30 deg+1.0 12119.83 515.44 -892.76 -19083.61 -10672.32 -13.94 Ice+1.0 Temp 1.2 Dead+1.0 Wind 60 deg+1.0 12119.83 892.76 -515.44 -11892.48 -17863.22 -116.06 Ice+1.0 Temp 1.2 Dead+1.0 Wind 90 deg+1.0 12119.83 1010.01 0.00 -2070.19 -20285.54 -187.44 Ice+1.0 Temp 1.2 Dead+1.0 Wind 90 deg+1.0 12119.83 892.76 515.44 7752.71 -17863.44 -208.43 deg+1.0 Ice+1.0 Temp	1.2 Dead+1.6 Wind 300 deg -	5341.16	-3371.44	-1946.50	-36625.92	61615.68	951.06
1.2 Dead+1.6 Wind 330 deg - 5341.16 -1946.50 -3371.44 -62809.08 35429.26 813.52 No Ice 0.9 Dead+1.6 Wind 330 deg - 4005.87 -1946.50 -3371.44 -62538.52 35481.56 813.25 No Ice 1.2 Dead+1.0 Ice+1.0 Temp 12119.83 0.00 0.00 -2070.02 -849.64 0.00 1.2 Dead+1.0 Wind 0 deg+1.0 12119.83 0.00 -964.08 -21044.67 -849.04 92.10 Ice+1.0 Temp 1.2 Dead+1.0 Wind 30 deg+1.0 12119.83 515.44 -892.76 -19083.61 -10672.32 -13.94 Ice+1.0 Temp 1.2 Dead+1.0 Wind 60 deg+1.0 12119.83 892.76 -515.44 -11892.48 -17863.22 -116.06 Ice+1.0 Temp 1.2 Dead+1.0 Wind 90 deg+1.0 12119.83 1010.01 0.00 -2070.19 -20285.54 -187.44 Ice+1.0 Temp 1.2 Dead+1.0 Wind 120 12119.83 892.76 515.44 7752.71 -17863.44 -208.43 deg+1.0 Ice+1.0 Temp	0.9 Dead+1.6 Wind 300 deg -	4005.87	-3371.44	-1946.50	-36378.85	61643.80	950.67
0.9 Dead+1.6 Wind 330 deg - 4005.87 -1946.50 -3371.44 -62538.52 35481.56 813.25 No Ice 1.2 Dead+1.0 Ice+1.0 Temp 12119.83 0.00 0.00 -2070.02 -849.64 0.00 1.2 Dead+1.0 Wind 0 deg+1.0 12119.83 0.00 -964.08 -21044.67 -849.04 92.10 Ice+1.0 Temp 1.2 Dead+1.0 Wind 30 deg+1.0 12119.83 515.44 -892.76 -19083.61 -10672.32 -13.94 Ice+1.0 Temp 1.2 Dead+1.0 Wind 60 deg+1.0 12119.83 892.76 -515.44 -11892.48 -17863.22 -116.06 Ice+1.0 Temp 1.2 Dead+1.0 Wind 90 deg+1.0 12119.83 1010.01 0.00 -2070.19 -20285.54 -187.44 Ice+1.0 Temp 1.2 Dead+1.0 Wind 90 deg+1.0 12119.83 892.76 515.44 7752.71 -17863.44 -208.43 deg+1.0 Ice+1.0 Temp	1.2 Dead+1.6 Wind 330 deg -	5341.16	-1946.50	-3371.44	-62809.08	35429.26	813.52
1.2 Dead+1.0 Ice+1.0 Temp 12119.83 0.00 0.00 -2070.02 -849.64 0.00 1.2 Dead+1.0 Wind 0 deg+1.0 12119.83 0.00 -964.08 -21044.67 -849.04 92.10 Ice+1.0 Temp 1.2 Dead+1.0 Wind 30 deg+1.0 12119.83 515.44 -892.76 -19083.61 -10672.32 -13.94 Ice+1.0 Temp 1.2 Dead+1.0 Wind 60 deg+1.0 12119.83 892.76 -515.44 -11892.48 -17863.22 -116.06 Ice+1.0 Temp 1.2 Dead+1.0 Wind 90 deg+1.0 12119.83 1010.01 0.00 -2070.19 -20285.54 -187.44 Ice+1.0 Temp 1.2 Dead+1.0 Wind 120 12119.83 892.76 515.44 7752.71 -17863.44 -208.43 deg+1.0 Ice+1.0 Temp 12119.83 892.76 515.44 7752.71 -17863.44 -208.43	0.9 Dead+1.6 Wind 330 deg -	4005.87	-1946.50	-3371.44	-62538.52	35481.56	813.25
1.2 Dead+1.0 Wind 0 deg+1.0 12119.83 0.00 -964.08 -21044.67 -849.04 92.10 Ice+1.0 Temp 1.2 Dead+1.0 Wind 30 deg+1.0 12119.83 515.44 -892.76 -19083.61 -10672.32 -13.94 Ice+1.0 Temp 1.2 Dead+1.0 Wind 60 deg+1.0 12119.83 892.76 -515.44 -11892.48 -17863.22 -116.06 Ice+1.0 Temp 1.2 Dead+1.0 Wind 90 deg+1.0 12119.83 1010.01 0.00 -2070.19 -20285.54 -187.44 Ice+1.0 Temp 1.2 Dead+1.0 Wind 120 12119.83 892.76 515.44 7752.71 -17863.44 -208.43 deg+1.0 Ice+1.0 Temp		12110.02	0.00	0.00	2070.02	040.64	0.00
Ice+1.0 Temp 1.2 Dead+1.0 Wind 30 deg+1.0 12119.83 515.44 -892.76 -19083.61 -10672.32 -13.94 Ice+1.0 Temp 1.2 Dead+1.0 Wind 60 deg+1.0 12119.83 892.76 -515.44 -11892.48 -17863.22 -116.06 Ice+1.0 Temp 1.2 Dead+1.0 Wind 90 deg+1.0 12119.83 1010.01 0.00 -2070.19 -20285.54 -187.44 Ice+1.0 Temp 1.2 Dead+1.0 Wind 120 12119.83 892.76 515.44 7752.71 -17863.44 -208.43 deg+1.0 Ice+1.0 Temp 1.2 Dead+1.0 Temp </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
1.2 Dead+1.0 Wind 30 deg+1.0 12119.83 515.44 -892.76 -19083.61 -10672.32 -13.94 Ice+1.0 Temp 1.2 Dead+1.0 Wind 60 deg+1.0 12119.83 892.76 -515.44 -11892.48 -17863.22 -116.06 Ice+1.0 Temp 1.2 Dead+1.0 Wind 90 deg+1.0 12119.83 1010.01 0.00 -2070.19 -20285.54 -187.44 Ice+1.0 Temp 1.2 Dead+1.0 Wind 120 12119.83 892.76 515.44 7752.71 -17863.44 -208.43 deg+1.0 Ice+1.0 Temp		14119.03	0.00	-904.08	-21044.0/	-049.04	92.10
1.2 Dead+1.0 Wind 60 deg+1.0 12119.83 892.76 -515.44 -11892.48 -17863.22 -116.06 Ice+1.0 Temp 1.2 Dead+1.0 Wind 90 deg+1.0 12119.83 1010.01 0.00 -2070.19 -20285.54 -187.44 Ice+1.0 Temp 1.2 Dead+1.0 Wind 120 12119.83 892.76 515.44 7752.71 -17863.44 -208.43 deg+1.0 Ice+1.0 Temp	1.2 Dead+1.0 Wind 30 deg+1.0	12119.83	515.44	-892.76	-19083.61	-10672.32	-13.94
1.2 Dead+1.0 Wind 90 deg+1.0 12119.83 1010.01 0.00 -2070.19 -20285.54 -187.44 Ice+1.0 Temp 1.2 Dead+1.0 Wind 120 12119.83 892.76 515.44 7752.71 -17863.44 -208.43 deg+1.0 Ice+1.0 Temp	1.2 Dead+1.0 Wind 60 deg+1.0	12119.83	892.76	-515.44	-11892.48	-17863.22	-116.06
1.2 Dead+1.0 Wind 120 12119.83 892.76 515.44 7752.71 -17863.44 -208.43 deg+1.0 Ice+1.0 Temp	1.2 Dead+1.0 Wind 90 deg+1.0	12119.83	1010.01	0.00	-2070.19	-20285.54	-187.44
	1.2 Dead+1.0 Wind 120	12119.83	892.76	515.44	7752.71	-17863.44	-208.43
		12119.83	515.44	892.76	14943.60	-10672.39	-173.35

Hudson Design Group LLC 45 Beechwood Drive

North Andover, MA 01845 Phone: (978) 557-5553 FAX: (978) 336-5586

Job		Page
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Project		Date
	38.5 ft Self Supporting Tower	10:45:10 04/04/19
Client		Designed by
	AT&T	kw

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M _x	Overturning Moment, M ₂	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 180	12119.83	-0.00	964.08	16904.79	-850.30	-92.17
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 210	12119.83	-515.44	892.76	14943.57	8973.04	13.95
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 240	12119.83	-892.76	515.44	7752.55	16163.90	116.37
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 270	12119.83	-1010.01	-0.00	-2069.69	18586.23	187.37
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 300	12119.83	-892.76	-515.44	-11892.79	16164.07	208.44
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 330	12119.83	-515.44	-892.76	-19083.50	8973.05	173.70
deg+1.0 Ice+1.0 Temp						
Dead+Wind 0 deg - Service	4450.96	0.00	-947.57	-19038.06	-280.83	119.11
Dead+Wind 30 deg - Service	4450.96	518.53	-898.13	-17358.62	-9893.14	-5.25
Dead+Wind 60 deg - Service	4450.96	898.13	-518.53	-10321.74	-16929.51	-128.20
Dead+Wind 90 deg - Service	4450.96	1010.38	0.00	-709.51	-19237.45	-216.78
Dead+Wind 120 deg - Service	4450.96	898.13	518.53	8902.67	-16928.81	-247.30
Dead+Wind 150 deg - Service	4450.96	518.53	898.13	15939.03	-9891.90	-211.53
Dead+Wind 180 deg - Service	4450.96	-0.00	947.57	17617.70	-279.76	-119.08
Dead+Wind 210 deg - Service	4450.96	-518.53	898.13	15938.22	9332.61	5.28
Dead+Wind 240 deg - Service	4450.96	-898.13	518.53	8901.27	16368.98	128.23
Dead+Wind 270 deg - Service	4450.96	-1010.38	-0.00	-710.99	18676.86	216.82
Dead+Wind 300 deg - Service	4450.96	-898.13	-518.53	-10323.14	16368.16	247.33
Dead+Wind 330 deg - Service	4450.96	-518.53	-898.13	-17359.43	9331.25	211.56

Maximum Tower Deflections - Service Wind

Section	Elevation	Horz.	Gov.	Tilt	Twist
No.		Deflection	Load		
	ft	in	Comb.	0	0
L1	74 - 66	0.503	40	0.1385	0.0342
L2	66 - 55.5	0.281	40	0.1052	0.0342
T1	55.5 - 35.5	0.107	40	0.0337	0.0342

Critical Deflections and Radius of Curvature - Service Wind

Elevation	Appurtenance	Gov.	Deflection	Tilt	Twist	Radius of
		Load				Curvature
ft		Comb.	in	0	0	ft
69.50	Upper Canister 3' dia.x8.5'	40	0.371	0.1223	0.0340	12261
	(CT2124)					
61.50	Lower Canister 4' dia.x7.375'	40	0.190	0.0749	0.0349	9533
	(CT2124)					
54.50	800 10964 w/ Mount Pipe	40	0.097	0.0283	0.0335	15012
50.00	Ericsson RRUS-32	40	0.059	0.0105	0.0288	19997
47.60	B2/B66A 8843	40	0.044	0.0048	0.0252	23963
45.00	DC6-48-60-18-8C	40	0.031	0.0011	0.0206	30522

Hudson Design Group LLC 45 Beechwood Drive

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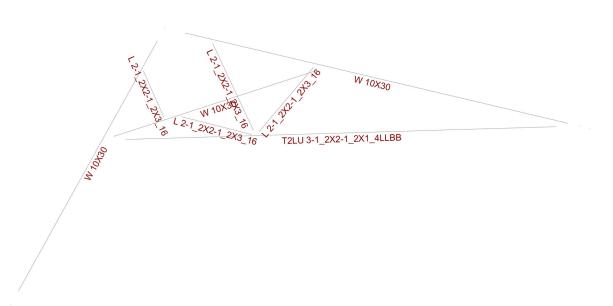
Job		Page
	CT2124	8 of 8
Project		Date
	38.5 ft Self Supporting Tower	10:45:10 04/04/19
Client		Designed by
	AT&T	kw

Section Capacity Table

Section	Elevation ft	Component Type	Size	Critical Element	P lb	$\phi P_{allow} \ lb$	% Capacity	Pass Fail
No.		**		Liemeni			Сириспу	
L1	74 - 66	Pole	P4x.337	1	-1173.87	44053.40	16.9	Pass
L2	66 - 55.5	Pole	P8x.322	2	-2625.30	197523.00	22.7	Pass
T1	55.5 - 35.5	Leg	L3x3x1/4	6	-16373.30	27167.80	60.3	Pass
T1	55.5 - 35.5	Diagonal	L2 1/2x2 1/2x3/16	13	-3841.61	12074.70	31.8	Pass
T1	55.5 - 35.5	Horizontal	L2 1/2x2 1/2x3/16	17	-1883.06	18475.10	10.2	Pass
T1	55.5 - 35.5	Top Girt	L3x3x1/4	8	-0.02	31072.10	0.2	Pass
		•					Summary	
						Pole (L2)	22.7	Pass
						Leg (T1)	60.3	Pass
						Diagonal	31.8	Pass
						(T1)		
						Horizontal	10.2	Pass
						(T1)		
						Top Girt	0.2	Pass
						(T1)		
						RATING =	60.3	Pass

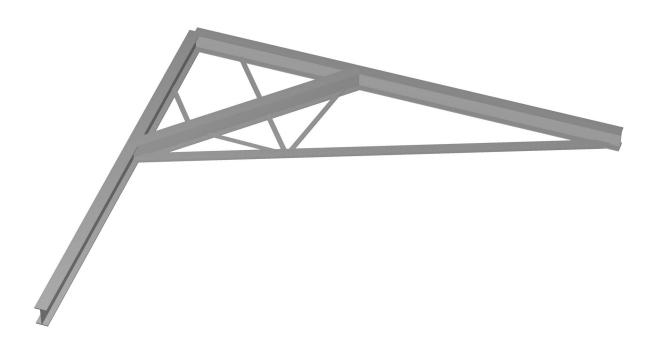


Current Date: 4/4/2019 2:34 PM
Units system: English
File name: C:\Users\kwang\Documents\HUDSON DESIGN GROUP\AAA\CT2124 - SST RT (AT&T SAI)\RAM\CT2124.etz\













Current Date: 4/4/2019 2:36 PM

Units system: English

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Load data

GLOSSARY

Comb : Indicates if load condition is a load combination

Load conditions

Condition	Description	Comb.	Category
 DL	Dead Load	No	DL
IL	Ice Load	No	DL
WL	Wind Load	No	WIND

Load on nodes

Condition	Node	FX	FY	FZ	MX	MY	MZ
		[Lb]	[Lb]	[Lb]	[Lb*ft]	[Lb*ft]	[Lb*ft]
DL	 7	0.00	-1113.00	0.00	0.00	0.00	0.00
	8	0.00	-1113.00	0.00	0.00	0.00	0.00
	16	0.00	-1113.00	0.00	0.00	0.00	0.00
	20	0.00	-1113.00	0.00	0.00	0.00	0.00
IL	7	0.00	-1695.00	0.00	0.00	0.00	0.00
	8	0.00	-1695.00	0.00	0.00	0.00	0.00
	16	0.00	-1695.00	0.00	0.00	0.00	0.00
	20	0.00	-1695.00	0.00	0.00	0.00	0.00
WL	7	0.00	1.03E+04	0.00	0.00	0.00	0.00
	8	0.00	-1.03E+04	0.00	0.00	0.00	0.00
	16	0.00	1.03E+04	0.00	0.00	0.00	0.00
	20	0.00	-1.03E+04	0.00	0.00	0.00	0.00

Self weight multipliers for load conditions

			Self weight multiplier				
Condition	Description	Comb.	MultX	MultY	MultZ		
DL	Dead Load	No	0.00	-1.00	0.00		
IL	Ice Load	No	0.00	0.00	0.00		
WL	Wind Load	No	0.00	0.00	0.00		

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
IL	0.00	0.00	0.00
WL	0.00	0.00	0.00



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Units system: English

File name: C:\Users\kwang\Documents\HUDSON DESIGN GROUP\AAA\CT2124 - SST RT (AT&T SAI)\RAM\CT2124.etz\

Steel Code Check

Report: Summary - For all selected load conditions

Load conditions to be included in design:

D1=1.4DL+1.4IL D2=1.2DL+1.2IL+0.8WL D3=1.2DL+1.2IL+1.6WL D4=0.9DL+0.9IL+1.6WL

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	L 2-1_2X2-1_2X3_16	5	D1 at 100.00%	0.01	 OK	 Eq. H3-8
			D2 at 0.00%	0.01	OK	Sec. E1
			D3 at 0.00%	0.02	OK	Sec. E1
			D4 at 0.00%	0.02	OK	Sec. E1
		14	D1 at 100.00%	0.01	OK	Eq. H3-8
			D2 at 0.00%	0.02	OK	Sec. E1
			D3 at 0.00%	0.04	OK	Sec. E1
			D4 at 0.00%	0.04	OK	Sec. E1
		15	D1 at 84.38%	0.15	 OK	Eq. H1-1b
			D2 at 100.00%	0.43	OK	Eq. H3-8
			D3 at 100.00%	0.85	OK	Eq. H3-8
			D4 at 100.00%	0.84	OK	Eq. H3-8
		16	D1 at 62.50%	0.10	 ОК	Eq. H1-1b
			D2 at 62.50%	0.39	OK	Eq. H1-1b
			D3 at 62.50%	0.86	OK	Eq. H1-1b
			D4 at 62.50%	0.88	OK	Eq. H1-1b
	T2LU 3-1_2X2-1_2X1_4LLBB	13	D1 at 50.00%	0.09	OK	Eq. H1-1b
			D2 at 31.25%	0.17	OK	Eq. H1-1b
			D3 at 31.25%	0.26	OK	Eq. H1-1b
			D4 at 31.25%	0.25	OK	Eq. H1-1b
	W 10X30	1	D1 at 40.00%	0.25	OK	Eq. H1-1b
			D2 at 40.00%	0.41	OK	Eq. H1-1b
			D3 at 40.00%	0.61	OK	Eq. H1-1b
			D4 at 40.00%	0.57	OK	Eq. H1-1b
		2	D1 at 43.75%	0.28	OK	Eq. H1-1b
			D2 at 43.75%	0.50	OK	Eq. H1-1b
			D3 at 43.75%	0.77	OK	Eq. H1-1b
			D4 at 43.75%	0.72	OK	Eq. H1-1b
		17	D1 at 58.75%	0.15	OK	Eq. H1-1b
			D2 at 58.75%	0.43	OK	Eq. H1-1b
			D3 at 58.75%	0.75	OK	Eq. H1-1b
			D4 at 58.75%	0.72	OK	Eq. H1-1b

Location 41 WEST ST **Mblu** I14/ / 45/ /

Owner SOUTHERN NEW ENGLAND Acct#

TELEPHONE CO

Assessment \$1,462,400 **Appraisal** \$2,089,100

> **Building Count** 1 **PID** 20437

Current Value

Appraisal							
Valuation Year	Improvements	Land	Total				
2017	\$1,936,500	\$152,600	\$2,089,100				
	Assessment						
Valuation Year	Improvements	Land	Total				
2017	\$1,355,600	\$106,800	\$1,462,400				

Owner of Record

Owner SOUTHERN NEW ENGLAND TELEPHONE CO

Co-Owner C/O FRONTIER COMMUNICATIONS

Address 401 MERRITT 7

NORWALK, CT 06851

Sale Price \$0

Book & Page 0203/0005

08/20/1938 Sale Date

Ownership History

Ownership History				
Owner Sale Price Book & Page Sale I				
SOUTHERN NEW ENGLAND TELEPHONE CO \$0		0203/0005	08/20/1938	

Building Information

Building 1 : Section 1

Year Built: 1942 Living Area: 41,451 **Replacement Cost:** \$3,208,339 60

Building Percent

Good:

Replacement Cost

\$1,925,000 **Less Depreciation:**

μ1,323,000			
Building Attributes			
Field Description			
STYLE	Telephone Bldg		
MODEL	Ind/Comm		
Grade	Good		
Stories:	2		
Occupancy	2		
Exterior Wall 1	Brick/Masonry		
Exterior Wall 2			
Roof Structure	Flat		
Roof Cover	Tar & Gravel		
Interior Wall 1	Minim/Masonry		

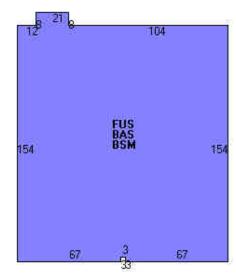
Building Photo



 $(http://images.vgsi.com/photos2/DanburyCTPhotos//\\ \ 00\\ \ 00$ \97/95.JPG)

Building Layout

Interior Wall 2	Drywall/Sheet
Interior Floor 1	Vinyl/Asphalt
Interior Floor 2	Carpet
Heating Fuel	Oil
Heating Type	Steam
AC Type	Central
Bldg Use	Commercial MDL-96
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	2001
Heat/AC	HEAT/AC SPLIT
Frame Type	REINF. CONCR
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	12
% Comn Wall	0



(http://images.vgsi.com/photos2/DanburyCTPhotos//Sketches/20

	Legend		
Code Description		Gross Area	Living Area
BAS	First Floor	21,257	21,257
FUS	Finished Upper Story	21,257	20,194
BSM	Basement	21,257	0
		63,771	41,451

< ____

Extra Features

Extra Features <u>Lege</u>				<u>Legend</u>
Code	Description	Size	Value	Bldg #
SPR3	Sprinklers-Dry	1694 S.F.	\$2,000	1

Land

Land Use Land Line \		Land Line Valua	uation	
Use Code	2001	Size (Acres)	0.5	
Description	Commercial MDL-96	Frontage	0	
Zone	CL10	Depth	0	
Neighborhood	6000	Assessed Value	\$106,800	
Alt Land Appr	No	Appraised Value	\$152,600	
Category				

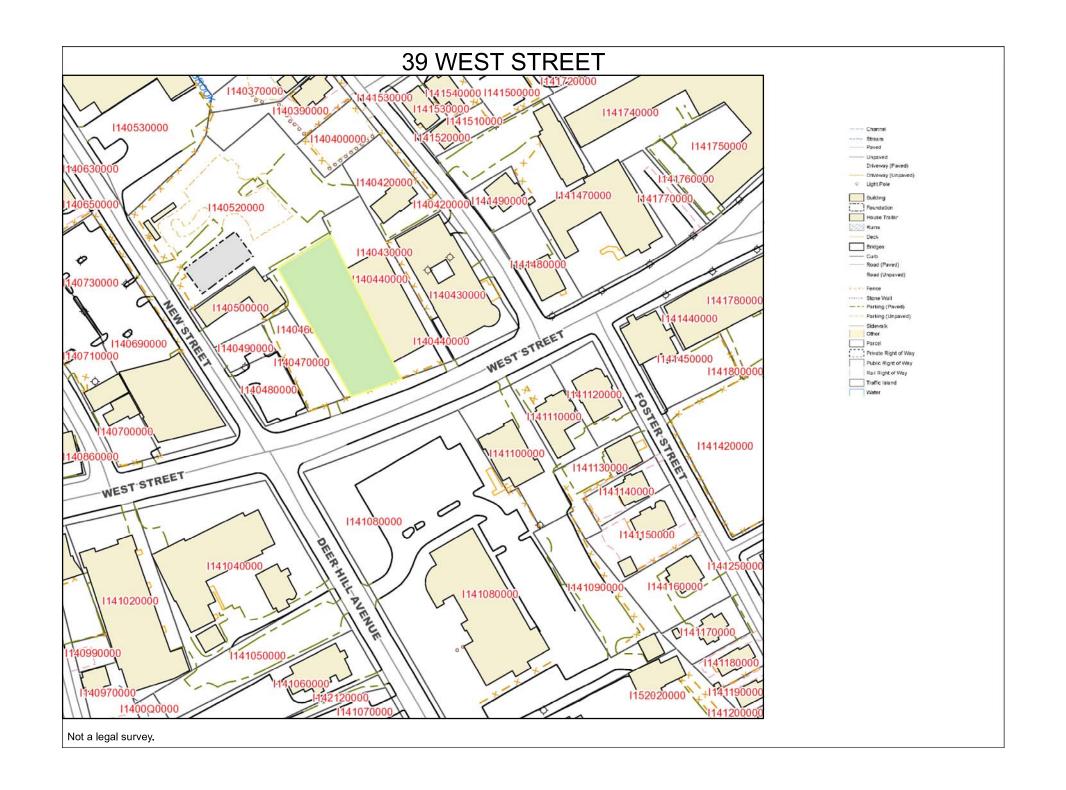
Outbuildings

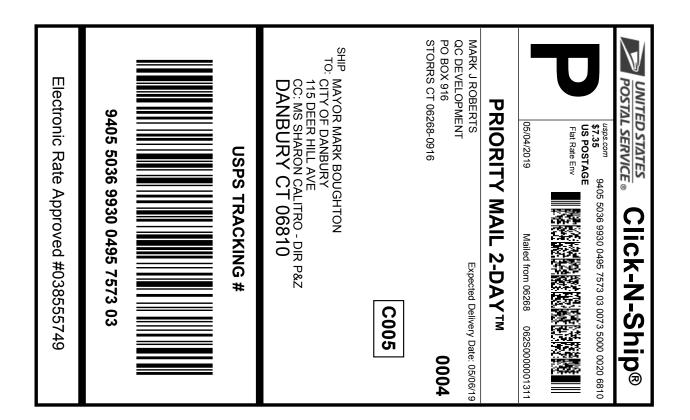
Outbuildings <u>Legen</u>					<u>Legend</u>	
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
PAV1	Paving-Asphalt			9000 S.F.	\$9,500	1

Valuation History

Appraisal				
Valuation Year	Improvements	Land	Total	
2017	\$1,936,500	\$152,600	\$2,089,100	
2016	\$1,841,600	\$145,400	\$1,987,000	
2015	\$1,841,600	\$145,400	\$1,987,000	

Assessment				
Valuation Year	Improvements	Land	Total	
2017	\$1,355,600	\$106,800	\$1,462,400	
2016	\$1,289,100	\$101,800	\$1,390,900	
2015	\$1,289,100	\$101,800	\$1,390,900	







Cut on dotted line.

Instructions

- 1. Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO **COPY OR ALTER LABEL.**
- 2. Place your label so it does not wrap around the edge of the package.
- 3. Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.
- 4. To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
- 5. Mail your package on the "Ship Date" you selected when creating this label.

Click-N-Ship® Label Record

USPS TRACKING #: 9405 5036 9930 0495 7573 03

463097859 05/02/2019 Trans. #: Print Date: Ship Date: 05/04/2019 05/06/2019 Delivery Date:

Priority Mail® Postage: Total

From: MARK J ROBERTS

QC DEVELOPMENT

PO BOX 916

STORRS CT 06268-0916

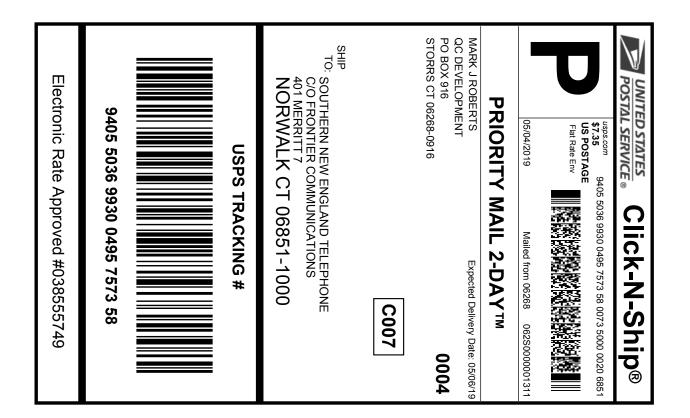
MAYOR MARK BOUGHTON

CITY OF DANBURY 115 DEER HILL AVE

CC: MS SHARON CALITRO - DIR P&Z

DANBURY CT 06810

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.





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Click-N-Ship® Label Record

USPS TRACKING #: 9405 5036 9930 0495 7573 58

463097859 05/02/2019 Trans. #: Print Date: Ship Date: 05/04/2019 05/06/2019 Delivery Date:

Priority Mail® Postage: Total

From: MARK J ROBERTS

QC DEVELOPMENT

PO BOX 916

STORRS CT 06268-0916

SOUTHERN NEW ENGLAND TELEPHONE

C/O FRONTIER COMMUNICATIONS

401 MERRITT 7

NORWALK CT 06851-1000

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