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January 22, 2020

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

Regarding: Notice of Exempt Modification – AT&T Site CT2080
Address: 26 Washington Street, New London, CT 06320

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC (hereinafter "AT&T") currently maintains a wireless telecommunications facility on an existing lattice tower on the rooftop (the "Tower") at the above-referenced address, latitude 41.353881, longitude -72.097860. Said Tower is owned by EIP Communications I, LLC.

AT&T desires to modify its existing telecommunications facility on the Tower by swapping (6) antennas and (9) remote radio units as more particularly detailed and described on the enclosed Construction Drawings prepared by Hudson Design Group LLC dated February 25, 2019 and last revised December 16, 2019. The centerline heights of the antennas are and will remain at 196 feet and 105 feet.

AT&T received prior modification request approvals by the Council on December 24, 2002, under file number EM-CING-041-068-082-095-115-154-021212, on July 11, 2011 under file number EM-CING-095-110624, and, most recently, on July 10, 2017 under file number EM-AT&T-095-170619. Enclosed please find copies of the above-mentioned Council decisions. The proposed modifications comply with the conditions set forth by the Council.

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: The Honorable Michael Passero, Mayor, City of New London; Kirk Kripas, Building official, City of New London; Barry M. Levine, Chairman of the Planning and Zoning Commission, City of New London; EIP Communications I, LLC as the Tower owner; and Southern New England Telephone Company, as property owner. The City of New London, CT property card and GIS map are enclosed herein.

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 Commission safety standard. *Please see the RF Safety Survey Report Prediction enclosed herewith.*

5. The proposed modifications will not cause an ineligible change or alteration 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 Report dated February 22, 2019, last revised November 18, 2019 and prepared by Hudson Design Group LLC 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).

Sincerely,

Patricia Nowak
Site Acquisition Consultant
Centerline Communications, LLC
750 West Center Street, Suite 301
West Bridgewater, MA 02379
pnowak@clinellc.com

Enclosures: Exhibit 1 – Construction Drawings
Exhibit 2 – Prior CSC Approvals
Exhibit 3 – Property Card and Map
Exhibit 4 – RF Safety Survey Report
Exhibit 5 – Structural Analysis

cc: The Honorable Michael Passero, Mayor, City of New London
Kirk Kripas, Building official, City of New London
Barry M. Levine, Chairman of the Planning and Zoning Commission, City of New London;
EIP Communications I, LLC as the Tower owner
Southern New England Telephone Company, as property owner

EXHIBIT 1

PROJECT INFORMATION

SCOPE OF WORK:	ITEMS TO BE MOUNTED ON THE EXISTING ROOF: • INSTALL NEW HARD MOUNTED SECTOR FRAME (TYP. OF 1 PER SECTOR, TOTAL OF 3) (TO REPLACE EXISTING BALLAST FRAME) • NEW AT&T ANTENNAS (800-10964) @ POS. 2 (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T ANTENNAS (800-10965) @ POS. 3 (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 8843 B2/B66A (AWS/PCS) (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T RRUS: B14 4478 MOUNTED ON EXISTING BALLAST FRAME (TYP OF 1 PER SECTOR, TOTAL OF 3). ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION: • SWAP BB FOR (2) 6630 & ADD (1) IDLe CABLE. • ADD (1) XMU. • ADD 3RD 6630. • NEW AT&T RRUS-E2 B29 (700) (TYP. OF 1 PER SECTOR, TOTAL OF 3) WALL MOUNTED ON UNISTRUT WITH (6) (APTDC-BDFDM-DB) SURGE ARRESTORS. ITEMS TO REMAIN: • (6) ANTENNAS, (3) RRU'S, (6) TMA'S, (3) SURGE ARRESTORS ON THE TOWER, (3) SURGE ARRESTORS ON THE ROOF, (12) COAX CABLES, (12) DC POWER & (6) FIBER. ITEMS TO BE REMOVED: • EXISTING AT&T ANTENNA @ POS. 2 (TYP. OF 1 PER SECTOR, TOTAL OF 3). • EXISTING AT&T RRU'S (TYP. OF 3 PER SECTOR, TOTAL OF 9). • EXISTING TRI-POD ANTENNA MOUNTS OF 1 PER SECTOR, TOTAL OF 3).
SITE ADDRESS:	26 WASHINGTON STREET NEW LONDON, CT 06320
LATITUDE:	41.353881° N 41° 21' 13.97" N
LONGITUDE:	72.097860° W 72° 05' 52.29" W
TYPE OF SITE:	LATTICE TOWER, ROOFTOP, INDOOR EQUIPMENT
TOWER HEIGHT:	226'± A.G.L.
ROOF HEIGHT:	97'-2"± A.G.L.
RAD CENTER:	105'-0"± A.G.L (POSITIONS 2 & 3), 196'-7"± A.G.L (POSITIONS 1 & 4)
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

DRAWING INDEX

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SITE NUMBER: CT2080

SITE NAME: NEW LONDON-WASHINGTON ST

FA CODE: 10035053

PACE ID: MRCTB034912, MRCTB034981, MRCTB034994, MRCTB034940,

PROJECT: LTE 5C/6C/7C/4TX4RX 2019 UPGRADE

VICINITY MAP

DIRECTIONS TO SITE:

DEPART RT-30 W / COCHITUATE RD TOWARD BURR ST 0.3 MI. TURN BACK ON RT-30 E / COCHITUATE RD 0.3 MI. TAKE RAMP RIGHT FOR I-90 WEST TOWARD SPRINGFIELD / WORCESTER 27.4 MI. AT EXIT 10, TAKE RAMP RIGHT FOR I-395 SOUTH TOWARD NORWICH CT ENTERING CONNECTICUT 62.0 MI. AT EXIT 5, TAKE RAMP LEFT FOR MONTVILLE CONNECTOR TOWARD NEW LONDON 1.2 MI. KEEP STRAIGHT ONTO CT-32 / MOHEGAN AVE 4.3 MI. ROAD NAME CHANGES TO EUGENE ONEILL DR 0.3 MI. TURN RIGHT ONTO GOVERNOR WINTHROP BLVD 0.1 MI. TURN LEFT ONTO MERIDIAN ST 361 FT. TURN LEFT ONTO STATE ST, AND THEN IMMEDIATELY TURN RIGHT ONTO WASHINGTON ST 420 FT. ARRIVE AT 26 WASHINGTON ST

GENERAL NOTES

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.
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.
3. 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.
4. CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN.

72 HOURS

CALL
BEFORE YOU DIG
CALL TOLL FREE 1-800-922-4455
OR CALL 811

UNDERGROUND SERVICE ALERT

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: ET

STATE OF CONNECTICUT · DAVID P. HAMM · No. 24178 · LICENSED PROFESSIONAL ENGINEER

AT&T

TITLE SHEET
(LTE 5C/6C/7C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT2080	T-1	3

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 STANDARDS) 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 AND #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 GROUND BAR.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. 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

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

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

6. "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 THE CONTRACTOR.

9. 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. TOUCH UP 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 AFTER MIDNIGHT.

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 RF 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 STANDARDS:

    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-H, 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
BTCW	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	P	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
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT2080
SITE NAME: NEW LONDON-WASHINGTON ST

26 WASHINGTON STREET
NEW LONDON, CT 06320
NEW LONDON COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

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A	02/25/19	ISSUED FOR REVIEW	ET	AT	DPH

SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: ET

STATE OF CONNECTICUT · DANIEL P. HAMM · No.24178 · LICENSED PROFESSIONAL ENGINEER

AT&T

GENERAL NOTES
(LTE 5C/6C/7C/4TX4RX)

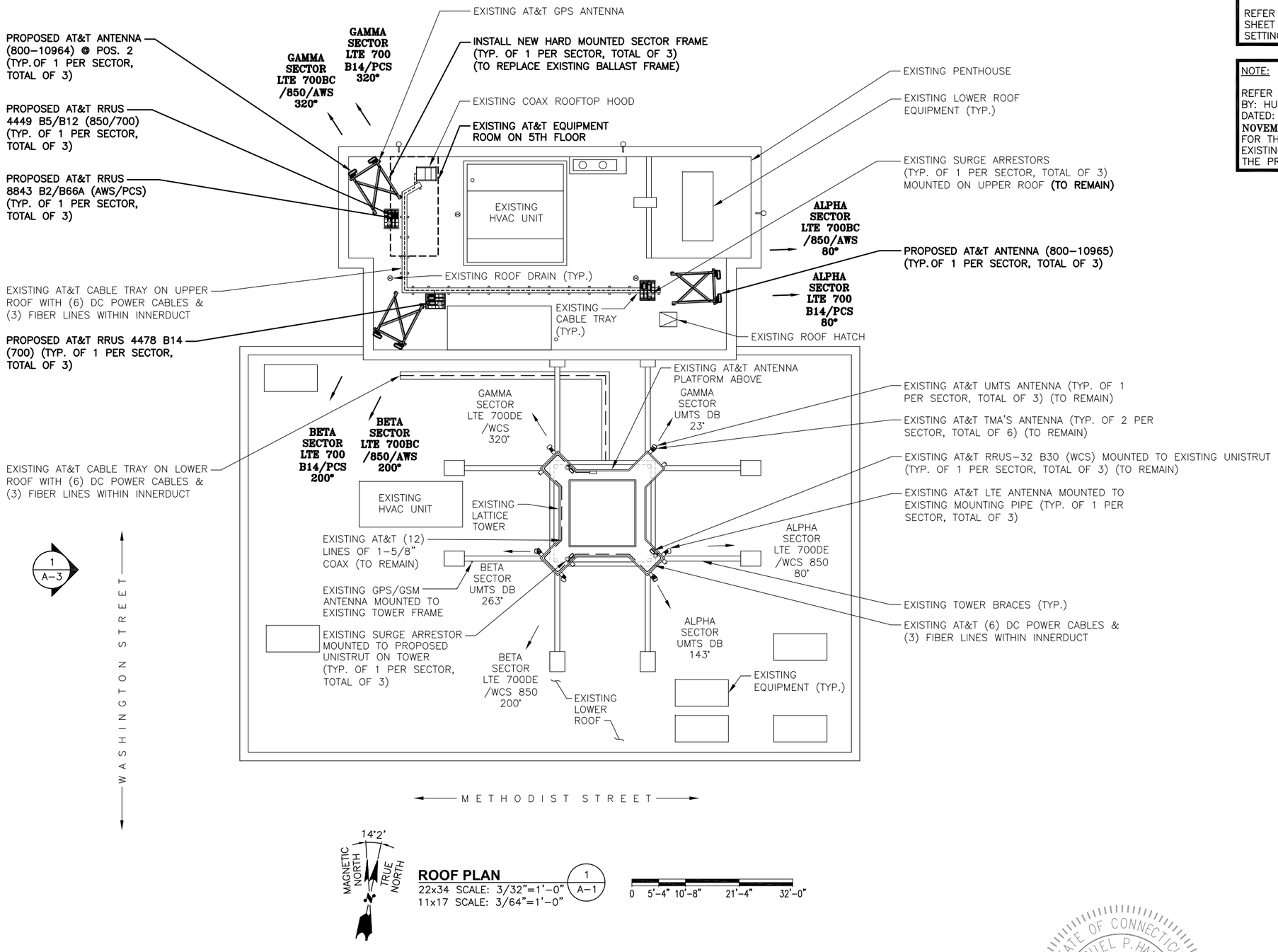
SITE NUMBER	DRAWING NUMBER	REV
CT2080	GN-1	3

NOTE:

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

NOTE:

REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED:
NOVEMBER 18, 2019, (REV.2)
FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.



ROOF PLAN (1 A-1)
22x34 SCALE: 3/32"=1'-0"
11x17 SCALE: 3/64"=1'-0"

0 5'-4" 10'-8" 21'-4" 32'-0"

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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: ET

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

ROOF PLAN
(LTE 5C/6C/7C/4TX4RX)

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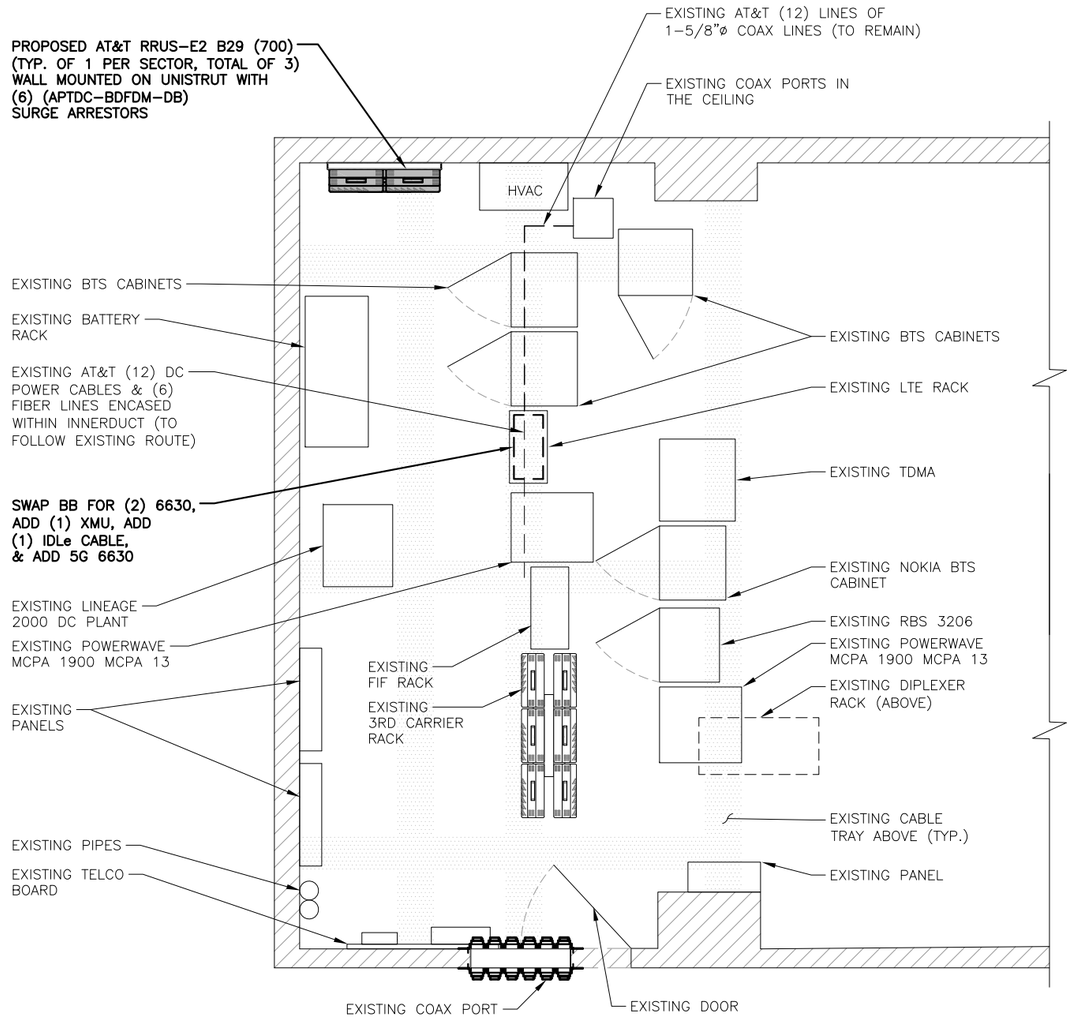

PROPOSED EQUIPMENT PLAN (1 / A-2)
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"

0 1'-0" 2'-0" 4'-0" 6'-0"

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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: ET

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

EQUIPMENT PLAN
(LTE 5C/6C/7C/4TX4RX)

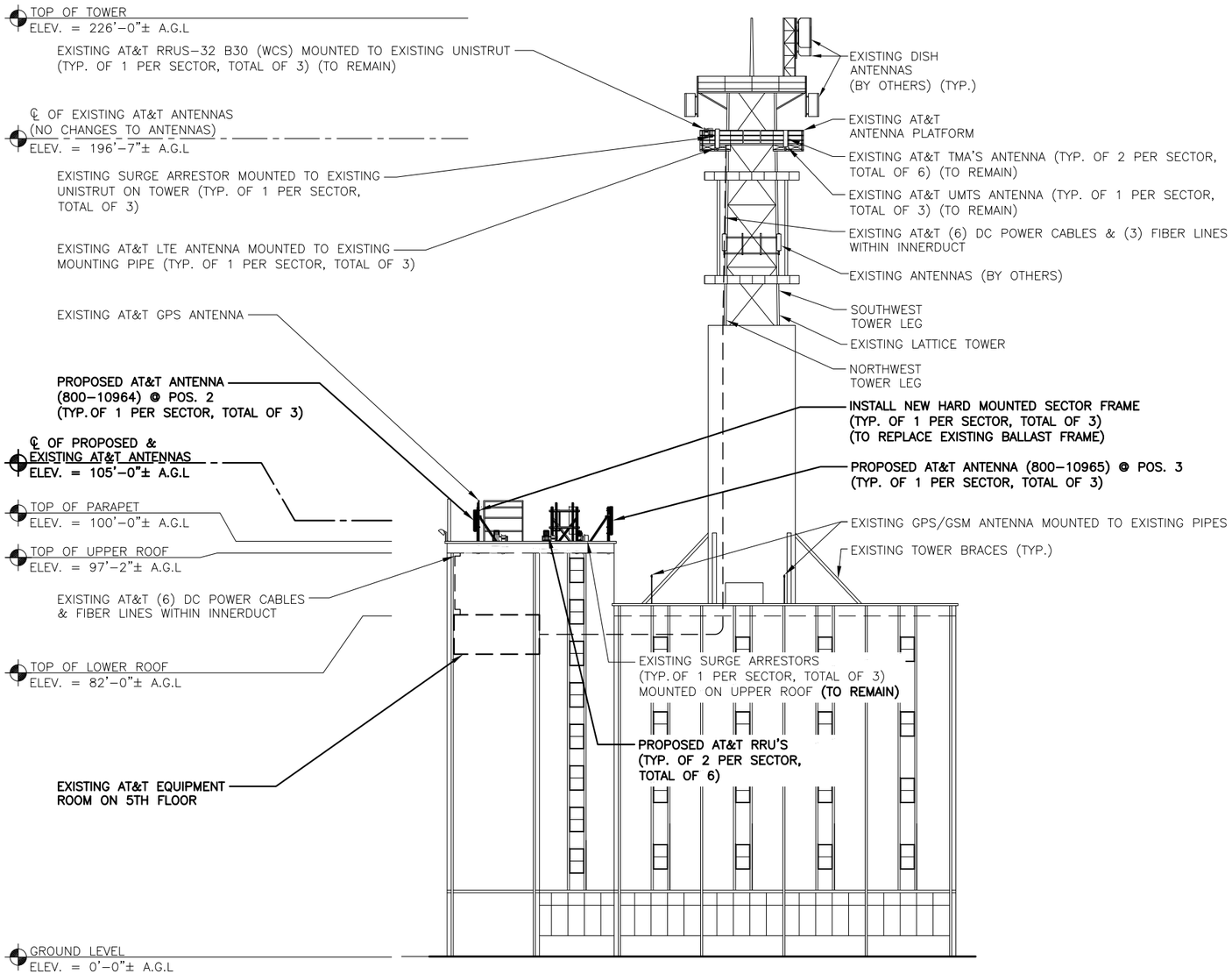
SITE NUMBER	DRAWING NUMBER	REV
CT2080	A-2	3

NOTE:

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

NOTE:

REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED:
NOVEMBER 18, 2019, (REV.2)
FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.



WEST ELEVATION (1 / A-3)
22x34 SCALE: 1/16"=1'-0"
11x17 SCALE: 1/32"=1'-0"

0 8'-0" 16'-0" 32'-0" 48'-0"

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FAX: (978) 336-5586

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT2080
SITE NAME: NEW LONDON-WASHINGTON ST

26 WASHINGTON STREET
NEW LONDON, CT 06320
NEW LONDON COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

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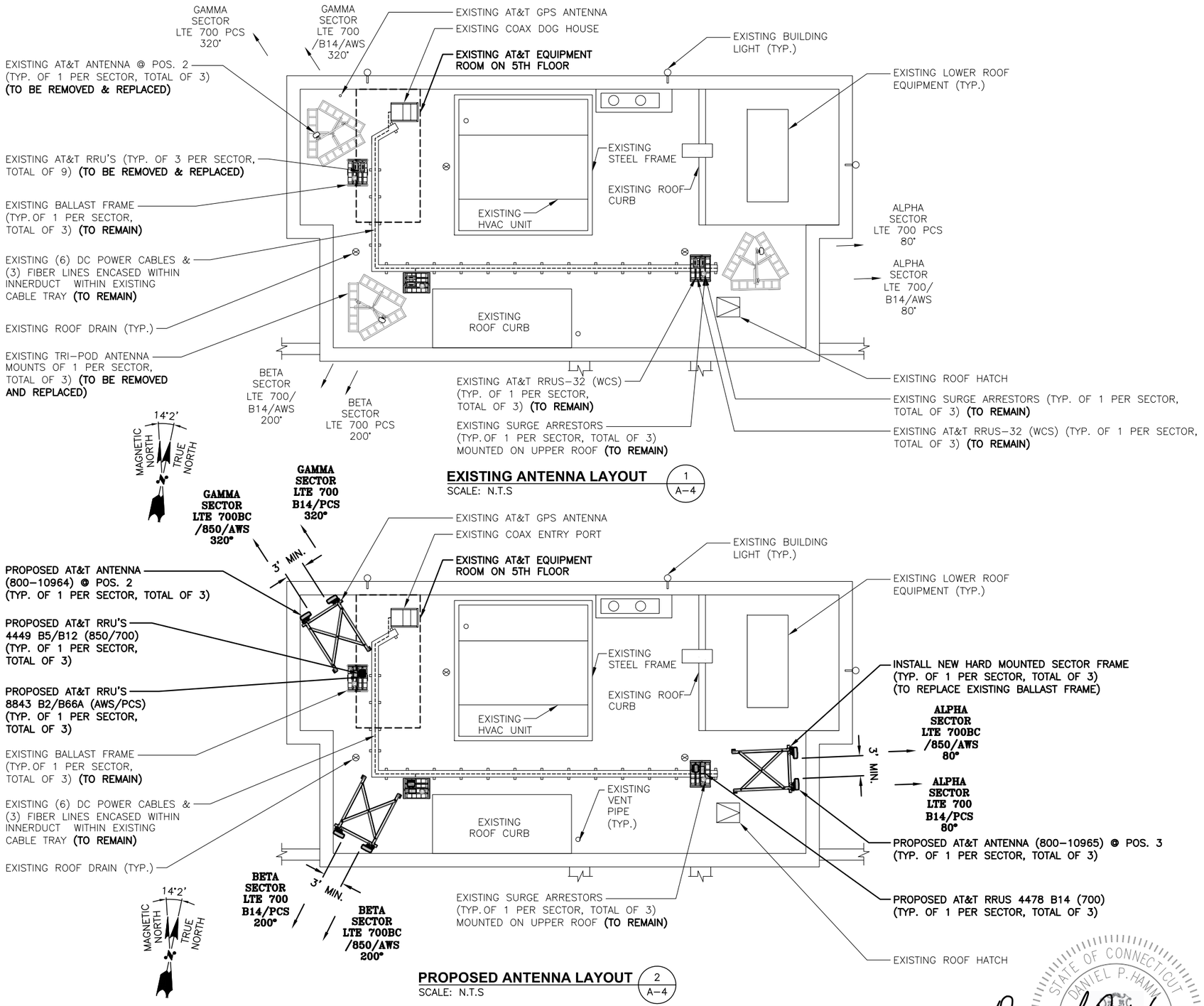
ELEVATION
(LTE 5C/6C/7C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT2080	A-3	3



NOTE:

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ANTENNA LAYOUTS
(LTE 5C/6C/7C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT2080	A-4	3

NOTE:

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

NOTE:

REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED:
NOVEMBER 18, 2019, (REV.2)
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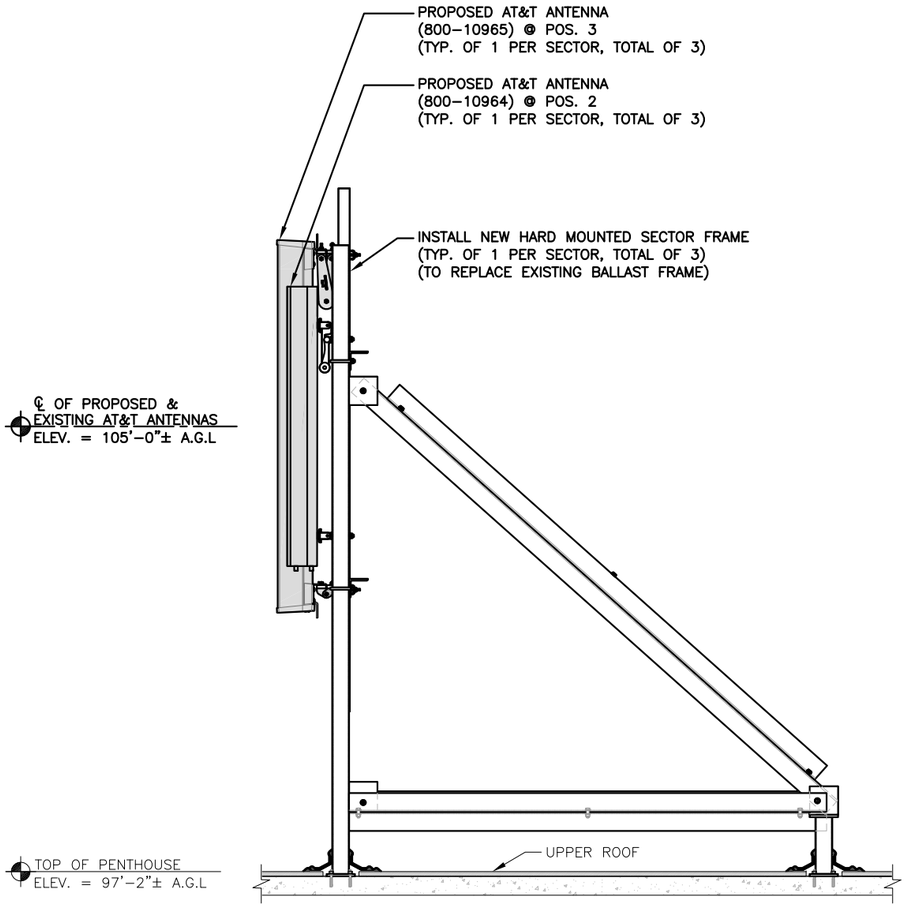
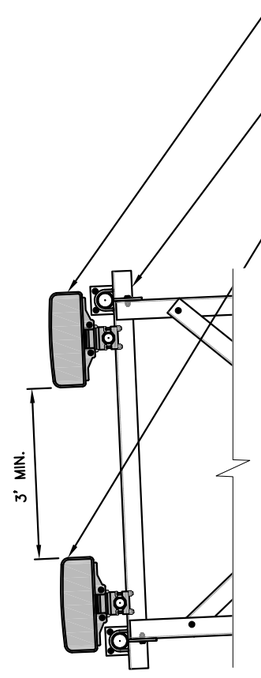


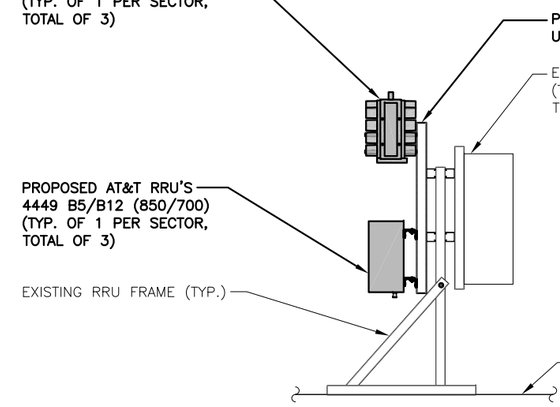
PROPOSED LTE ANTENNA @ 105' R.C.L MOUNTING DETAIL (1 / A-5)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
0 8" 1'-4" 2'-8" 4'-0"



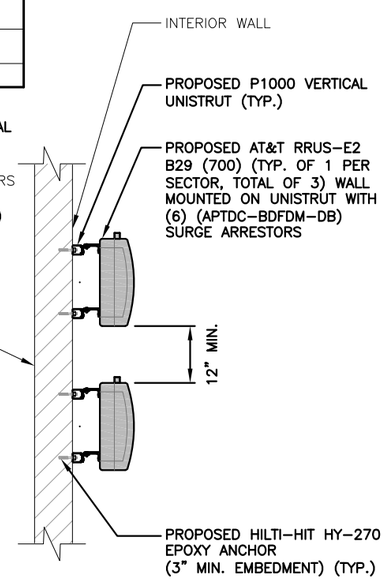
PROPOSED LTE ANTENNA @ 105' R.C.L MOUNTING PLAN DETAIL (2 / A-5)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
0 8" 1'-4" 2'-8" 4'-0"

MINIMUM BALLAST REQUIREMENTS

DESCRIPTION	PROPOSED	EXISTING
NUMBER OF BLOCKS	6 (PER SIDE)	6 (PER SIDE)
SIZE OF PROPOSED BLOCKS	4"x8"x16" SOLID	
WEIGHT OF PROPOSED BLOCKS	38 LBS./EA	
TOTAL BALLAST WEIGHT	456 LBS. (PER SIDE)	



PROPOSED RRH MOUNTING DETAIL (3 / A-5)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
0 8" 1'-4" 2'-8" 4'-0"



PROPOSED RRH MOUNTING DETAIL (EQUIPMENT ROOM) (4 / A-5)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"
0 8" 1'-4" 2'-8" 4'-0"

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AT&T

DETAILS
(LTE 5C/6C/7C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT2080	A-5	3

ANTENNA SCHEDULE

SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	EXISTING	UMTS DB	7770	55X11X5	196'-7"±	143°	(2)(E) POWERWAVE LGP21401 (2)(E)(G) POWERWAVE LGP21901	–	–	(2) 1-5/8 COAX	(E) (1) RAYCAP DC6-48-60-18-8C (E) (1) RAYCAP DC6-48-60-18-8C
A2	**PROPOSED**	**LTE 700BC/850/AWS**	**800-10964**	**59X20X6.9**	**105'-0"±**	**80°**	–	**(1)(P) 4449 B5/B12 (700BC/850)**	**14.9X13.2X10.4**	–	
A3	**PROPOSED**	**LTE 700 B14/PCS**	**800-10965**	**78.7X20X6.9**	**105'-0"±**	**80°**	–	**(1)(P) B14 4478 (700) (1)(P) 8843 B2/B66A (AWS/PCS)**	**18.1X13.4X8.3 14.9X13.2X10.9**	–	
A4	EXISTING	LTE 700DE/WCS	SBNHH-1D65A	55X11.9X7.1	196'-7"±	80°	–	(1)(E) RRUS-32 (WCS) **(1)(P)(G) RRUS-E2 (700)**	– **20.4X18.5X7.5**	(2) 1-5/8 COAX	
B1	EXISTING	UMTS DB	7770	55X11X5	196'-7"±	263°	(2)(E) POWERWAVE LGP21401 (2)(E)(G) POWERWAVE LGP21901	–	–	(2) 1-5/8 COAX	(E) (1) RAYCAP DC6-48-60-18-8C (E) (1) RAYCAP DC6-48-60-18-8C
B2	**PROPOSED**	**LTE 700BC/850/AWS**	**800-10964**	**59X20X6.9**	**105'-0"±**	**200°**	–	**(P)(1) 4449 B5/B12 (700BC/850)**	**14.9X13.2X10.4**	–	
B3	**EXISTING**	**LTE 700 B14/PCS**	**800-10965**	**78.7X20X6.9**	**105'-0"±**	**200°**	–	**(1)(P) B14 4478 (700) (1)(P) 8843 B2/B66A (AWS/PCS)**	**18.1X13.4X8.3 14.9X13.2X10.9**	–	
B4	EXISTING	LTE 700DE/WCS	SBNHH-1D65A	55X11.9X7.1	196'-7"±	200°	–	(E)(1) RRUS-32 (WCS)	–	(2) 1-5/8 COAX	
C1	EXISTING	UMTS DB	7770	55X11X5	196'-7"±	23°	(2)(E) POWERWAVE LGP21401 (2)(E)(G) POWERWAVE LGP21901	–	–	(2) 1-5/8 COAX	(E) (1) RAYCAP DC6-48-60-18-8C (E) (1) RAYCAP DC6-48-60-18-8C
C2	**PROPOSED**	**LTE 700BC/850/AWS**	**800-10964**	**59X20X6.9**	**105'-0"±**	**320°**	–	**(P)(1) 4449 B5/B12 (700BC/850)**	**14.9X13.2X10.4**	–	
C3	**EXISTING**	**LTE 700 B14/PCS**	**800-10965**	**78.7X20X6.9**	**105'-0"±**	**320°**	–	**(1)(P) B14 4478 (700) (1)(P) 8843 B2/B66A (AWS/PCS)**	**18.1X13.4X8.3 14.9X13.2X10.9**	–	
C4	EXISTING	LTE 700DE/WCS	SBNHH-1D65A	55X11.9X7.1	196'-7"±	320°	–	(E)(1) RRUS-32 (WCS)	–	(2) 1-5/8 COAX	

FINAL ANTENNA SCHEDULE (1 / A-6)
SCALE: N.T.S

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

NOTE:
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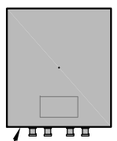
RRU CHART

QUANTITY	MODEL	L	W	D
3(E)	RRUS-32	27.2"	12.1"	7.0"
3(P)	4478 B14	18.1"	13.4"	8.3"
3(P)	4449	14.9"	13.2"	10.4"
3(P)	8843	14.9"	13.2"	10.9"
3(P)(G)	RRUS-E2	20.4"	18.5"	7.5"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

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.

PROPOSED RRUS DETAIL (2 / A-6)
SCALE: N.T.S

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DETAILS
(LTE 5C/6C/7C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT2080	A-6	3

STRUCTURAL NOTES:

1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-H STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
3. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
4. STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
5. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
6. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.
7. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
8. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
9. FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
10. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND DI.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL". 14TH EDITION.
11. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
12. UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
13. EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-270 AND OR HY-200 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
14. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
15. LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
16. WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
17. ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
18. NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
19. SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

GENERAL: WHERE APPLICATION IS MADE FOR CONSTRUCTION, THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE INSPECTION CHECKLIST ABOVE.

THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS THE SPECIAL INSPECTOR FOR THE WORK DESIGNED BY THEM, PROVIDED THOSE PERSONNEL MEET THE QUALIFICATION REQUIREMENTS.

STATEMENT OF SPECIAL INSPECTIONS: THE APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 107.1 AS A CONDITION FOR ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH SECTION 1705.

REPORT REQUIREMENT: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS SHALL BE SUBMITTED.

SPECIAL INSPECTION CHECKLIST	
BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	ENGINEER OF RECORD APPROVED SHOP DRAWINGS [1]
N/A	MATERIAL SPECIFICATIONS REPORT [2]
N/A	FABRICATOR NDE INSPECTION
N/A	PACKING SLIPS [3]
ADDITIONAL TESTING AND INSPECTIONS:	
DURING CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS [4]
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION [5]
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT
ADDITIONAL TESTING AND INSPECTIONS:	
AFTER CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS [6]
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
REQUIRED	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

NOTES:

1. REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
2. PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
3. PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
4. HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
5. ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH HAS BEEN BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO DRY HOLES DRILLED USING A CARBIDE BIT INTO CRACKED CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS REQUIRING CERTIFIED INSTALLATIONS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-11 D.9.2.2. INSTALLATIONS REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11 D.8.2.4.
6. AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.

NOTES:

1. ALL CONNECTIONS TO BE SHOP WELDED & FIELD BOLTED USING 3/4"ø A325-X BOLTS, UNLESS OTHERWISE NOTIFIED.
2. SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED BEFORE ORDERING MATERIAL.
3. SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED PRIOR TO STEEL FABRICATION.
4. VERIFICATION OF EXISTING ROOF CONSTRUCTION IS REQUIRED PRIOR TO THE INSTALLATION OF THE ROOF PLATFORM. ENGINEER OF RECORD IS TO APPROVE EXISTING CONDITIONS IN ORDER TO MOVE FORWARD.
5. CENTERLINE OF PROPOSED STEEL PLATFORM SUPPORT COLUMNS TO BE CENTRALLY LOCATED OVER THE EXISTING BUILDING COLUMNS.
6. EXISTING BRICK MASONRY COLUMNS/BEARING TO BE REPAIRED/REPLACED AT ALL PROPOSED PLATFORM SUPPORT POINTS. ENGINEER OF RECORD TO REVIEW AND APPROVE.

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT2080
SITE NAME: NEW LONDON-WASHINGTON ST

26 WASHINGTON STREET
NEW LONDON, CT 06320
NEW LONDON COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
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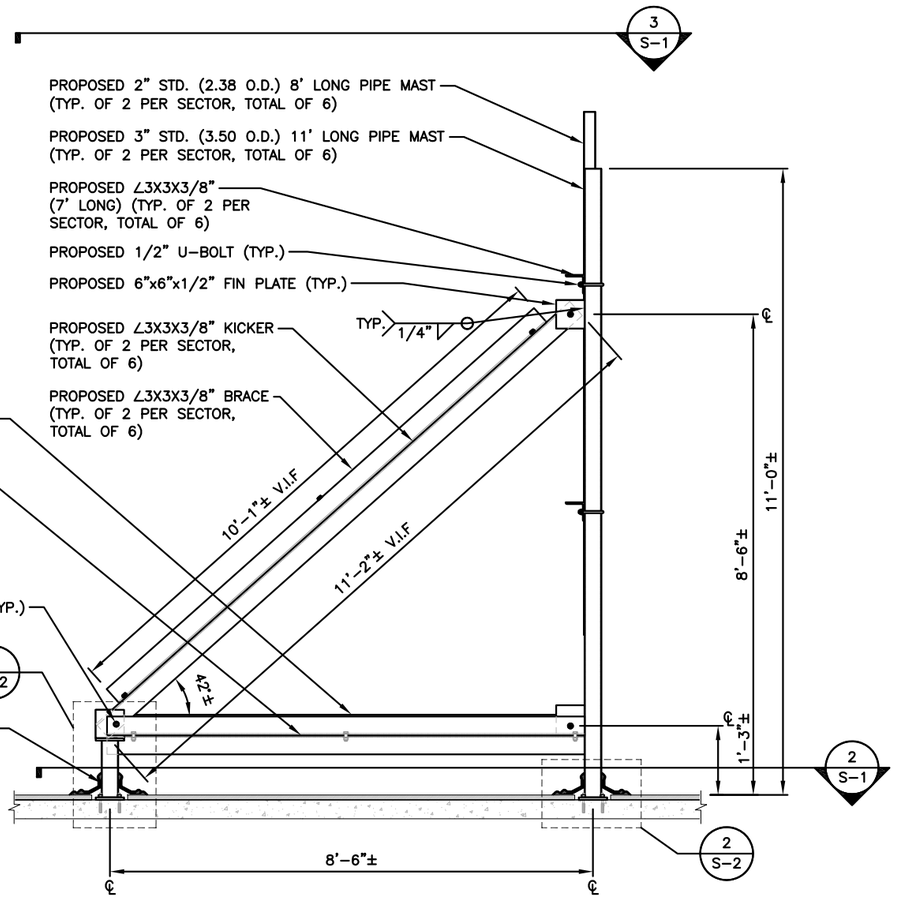
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: ET

STATE OF CONNECTICUT · DANIEL P. HAMM · No. 24178 · LICENSED PROFESSIONAL ENGINEER

AT&T

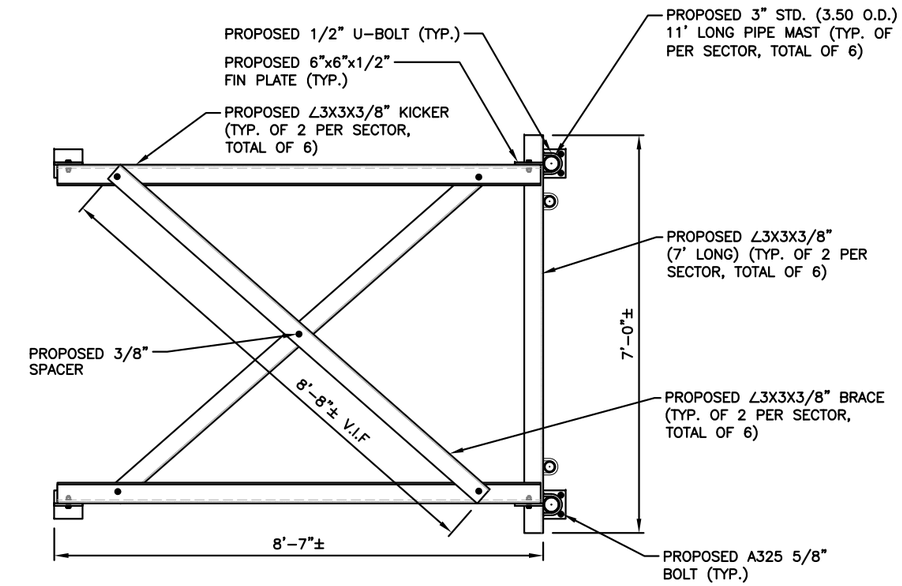
STRUCTURAL NOTES
(LTE 5C/6C/7C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT2080	SN-1	3



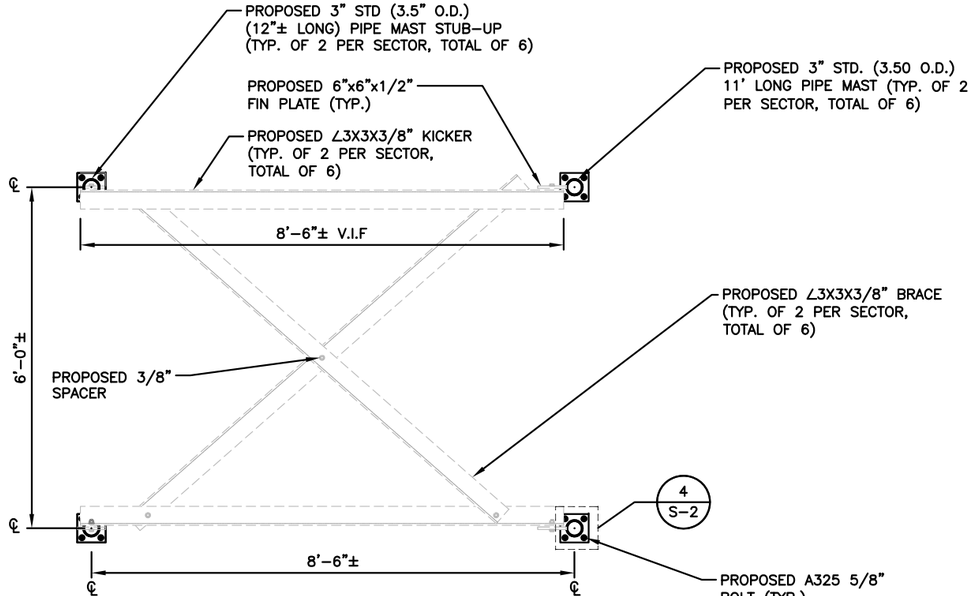
STEEL FRAME ELEVATION (1 S-1)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"

0 8" 1'-4" 2'-8" 4'-0"



STEEL FRAME PLAN (TOP) (3 S-1)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"

0 8" 1'-4" 2'-8" 4'-0"



STEEL FRAME PLAN (BOTTOM) (2 S-1)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"

0 8" 1'-4" 2'-8" 4'-0"

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

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED:
NOVEMBER 18, 2019, (REV.2)
FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

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at&t
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SITE NUMBER: CT2080
SITE NAME: NEW LONDON-WASHINGTON ST

26 WASHINGTON STREET
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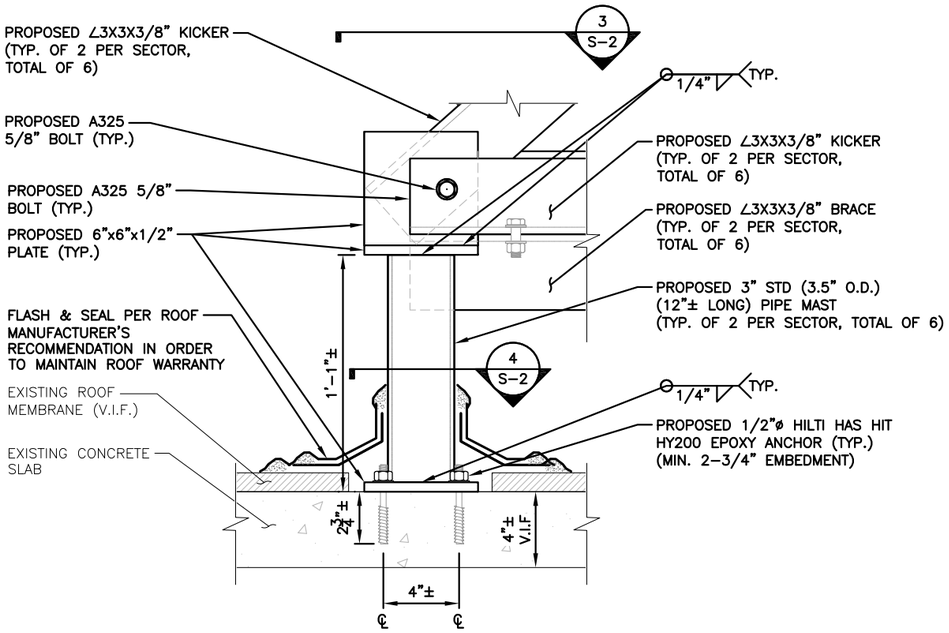
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: ET

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

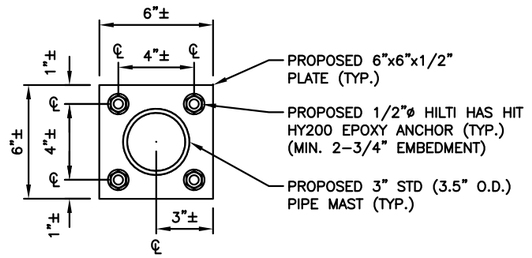
STRUCTURAL DETAILS
(LTE 5C/6C/7C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT2080	S-1	3



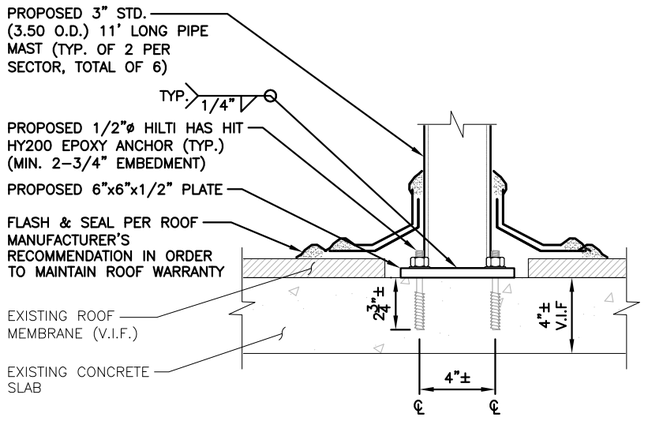
CONNECTION DETAIL (1 / S-2)
22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"

0 0'-2" 0'-4" 0'-8" 1'-0"



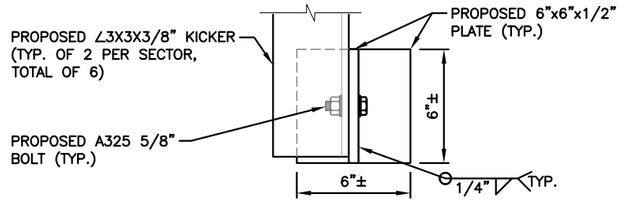
BASE PLATE CONNECTION DETAIL (4 / S-2)
22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"

0 0'-2" 0'-4" 0'-8" 1'-0"



CONNECTION DETAIL (2 / S-2)
22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"

0 0'-2" 0'-4" 0'-8" 1'-0"



BASE PLATE CONNECTION DETAIL (KICKER ANGLE) (3 / S-2)
22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"

0 0'-2" 0'-4" 0'-8" 1'-0"

NOTE:

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

NOTE:

REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED:
NOVEMBER 18, 2019, (REV.2)
FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

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WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT2080
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at&t
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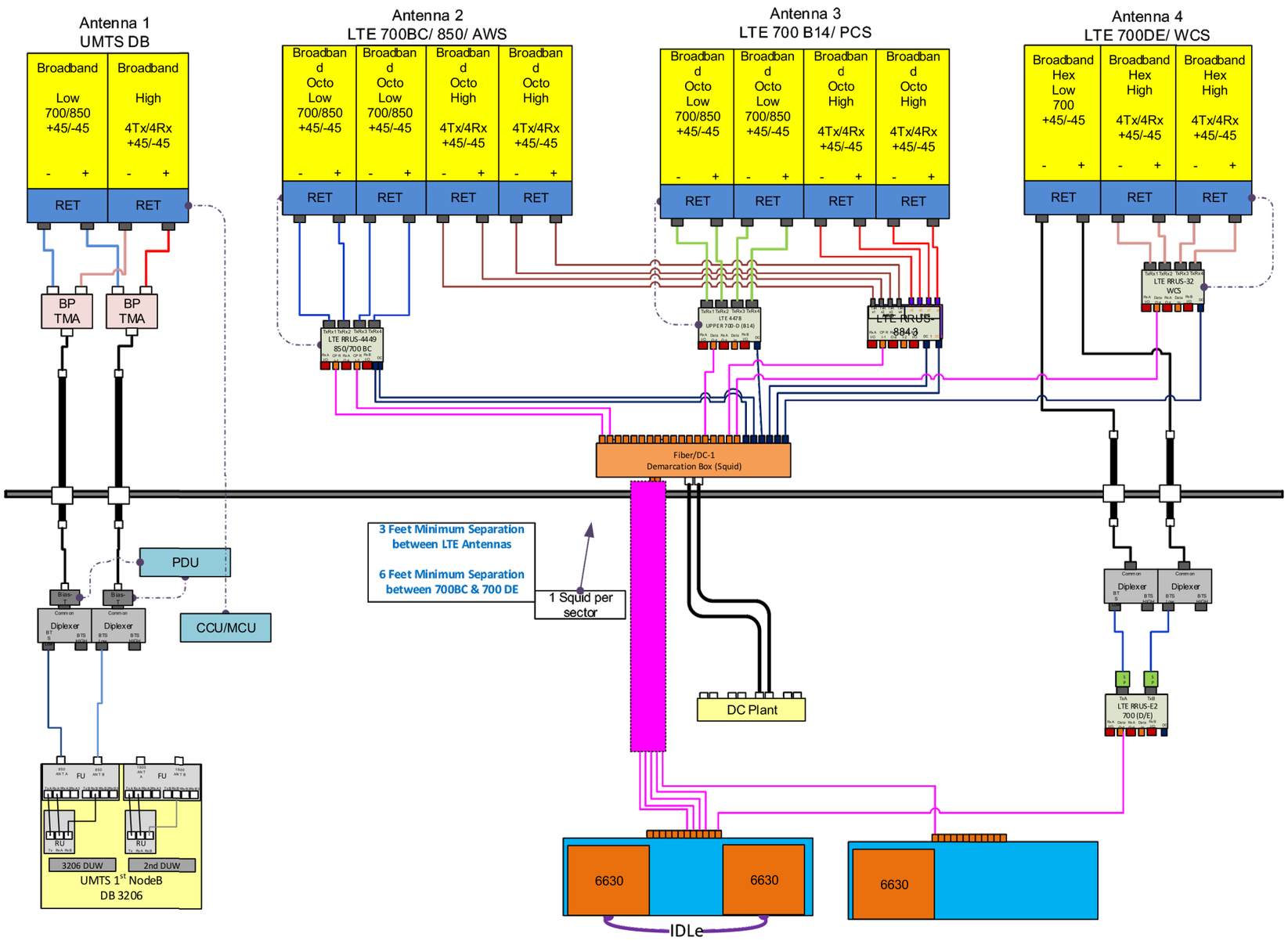
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: ET

STATE OF CONNECTICUT
DANIEL P. HAMM
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T

STRUCTURAL DETAILS
(LTE 5C/6C/7C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT2080	S-2	3



RF PLUMBING DIAGRAM 1 / RF–1
SCALE: N.T.S

NOTE:
1. CONTRACTOR TO CONFIRM ALL PARTS.
2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS

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

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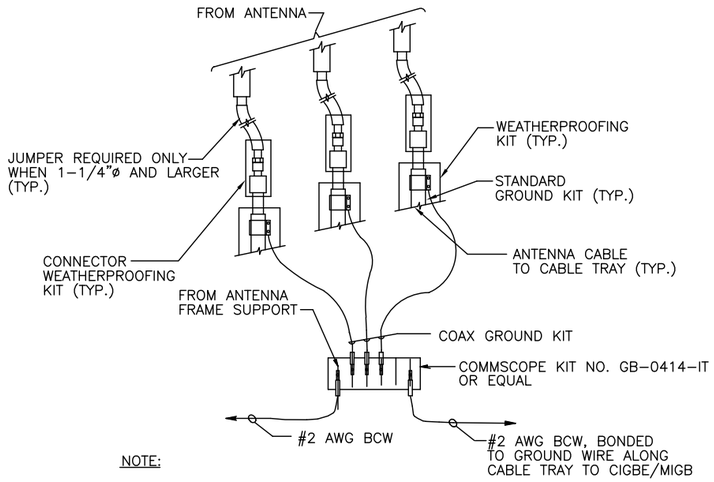
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: ET

STATE OF CONNECTICUT · DANIEL P. HAMM · No. 24178 · LICENSED PROFESSIONAL ENGINEER

AT&T

RF PLUMBING DIAGRAM
(LTE 5C/6C/7C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT2080	RF–1	3

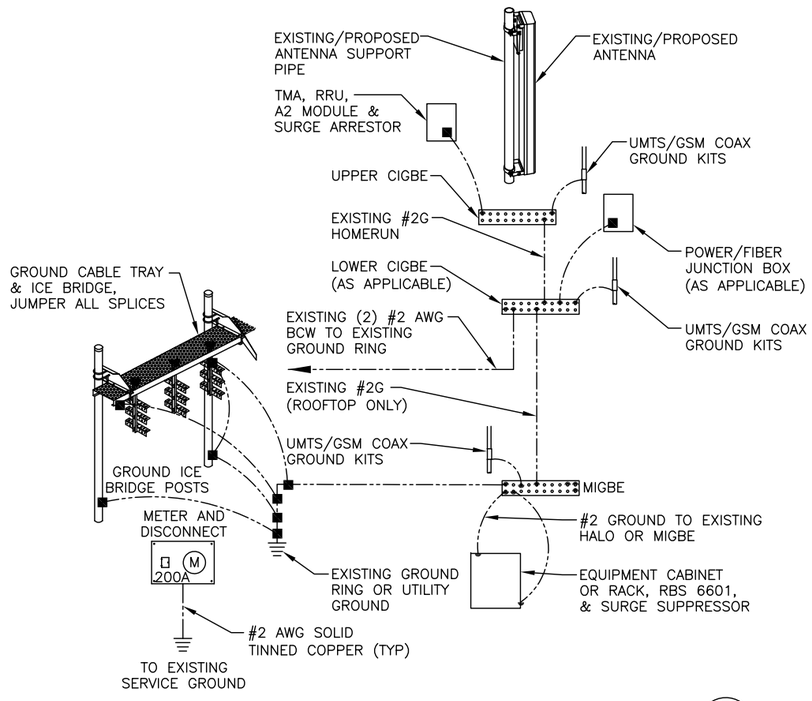


NOTE:

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

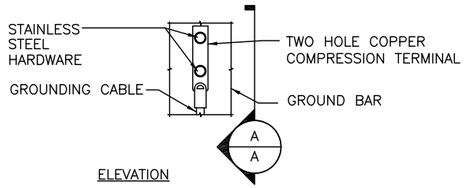
GROUND WIRE TO GROUND BAR CONNECTION DETAIL (1 / G-1)

SCALE: N.T.S



GROUNDING RISER DIAGRAM (2 / G-1)

SCALE: N.T.S



NOTES:

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

TYPICAL GROUND BAR CONNECTION DETAIL (3 / G-1)

SCALE: N.T.S

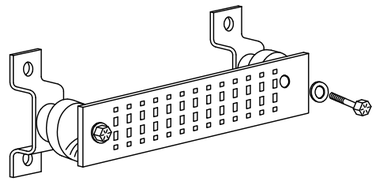
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" – SURGE PRODUCERS

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

SECTION "A" – SURGE ABSORBERS

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



GROUND BAR - DETAIL (AS REQUIRED) (4 / G-1)

SCALE: N.T.S

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
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ROCKY HILL, CT 06067

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STATE OF CONNECTICUT – DANIEL P. HAMM – No. 24178 – LICENSED PROFESSIONAL ENGINEER

AT&T

GROUNDING DETAILS
(LTE 5C/6C/7C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT2080	G-1	3

EXHIBIT 2

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square
New Britain, Connecticut 06051
Phone: (860) 827-2935
Fax: (860) 827-2950

December 24, 2002

Peter W. van Wilgen
Southwestern Bell Mobile Systems, LLC
500 Enterprise Drive
Rocky Hill, CT 06067-3900

RE: **EM-CING-041-068-082-095-115-154-021212** - Southwestern Bell Mobile Systems. LLC d/b/a Cingular Wireless notice of intent to modify existing telecommunications facilities located in East Haddam, Kent, Middlefield, New London, Prospect, and Westbrook, Connecticut.

Dear Mr. van Wilgen:

At a public meeting held on October 7, 2002, the Connecticut Siting Council (Council) acknowledged your notice to modify these existing telecommunications facilities, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the condition that, in New London, SBMS either strengthens the tower or removes existing antennas per the recommendations of Bayar Engineering and that a professional engineer certify to the Council the successful implementation of such measures.

The proposed modifications are to be implemented as specified here and in your notice dated December 11, 2002 and additional correspondence received on December 17, 2002. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility sites that would not increase tower heights, extend the boundaries of the tower site, increase noise levels at the tower site boundaries by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundaries to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. These facilities have also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on these towers.

This decision is under the exclusive jurisdiction of the Council. Any additional change to these facilities 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. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Thank you for your attention and cooperation.

Very truly yours,

Mortimer A. Gelston
Chairman

MAG/DM/laf

c: See attached list.

I:\siting\em\cing\multiple\021212\dc121902.doc

List Attachment.

c: Honorable Susan D. Merrow, First Selectman, Town of East Haddam
James Ventres, Land-Use Administrator, Town of East Haddam
Honorable Dolores R. Schiesel, First Selectman, Town of Kent
Judith Wick, Zoning Enforcement Officer, Town of Kent
Honorable Charles R. Augur, First Selectman, Town of Middlefield
Geoffrey Colegrove, Town Planner, Town of Middlefield
Honorable Lloyd H. Beachy, Mayor, City of New London
Richard M. Brown, City Manager, City of New London
Susan Brant, Zoning Enforcement Officer, City of New London
Honorable Robert J. Chatfield, Mayor, Town of Prospect
William J. Donovan, Zoning Enforcement Officer, Town of Prospect
Honorable Tony A. Palermo, First Selectman, Town of Westbrook
Anthony Beccia, Zoning Enforcement Officer, Town of Westbrook

BE BAYAR ENGINEERING, P.C.
Structural Engineers
P.O. Box 1287, Port Chester, N.Y. 10573-8287
TEL: (914) 681-8749 FAX: (914) 421-0416
Demirtas C. Bayar, P.E.

December 5, 2002

Mr. V. G. Duvall
Director of Engineering
o2wireless Solutions
10430 Rodgers Road
Houston, TX 77070

Re: New London, CT tower
BE Job No. 0217-B

Dear Mr. Duvall,

We analyzed the existing 128'-5" tower located on the roof of the SNET building at 26 Washington Street, New London, CT for a condition of replacing the existing 9 DB846H80 cellular antennas with 9 new cellular antennas that have maximum dimensions of 48"x14"x9". Two antennas in each sector will receive a TMA diplexer. Sketch No. 0217-B shows the existing and the proposed new antenna configuration.

This tower is composed of a 78'-5" building extension and a 50'-0" type "M" tower above the building extension. Our previous analysis of the tower was made for the existing antenna configuration as follows:

2 – 10' parabolic antennas 10' above the top platform.
2 – KS15676 horn antennas 7' above the top platform.
1 – 6' parabolic antenna 5' below the top platform.
1 – 8' parabolic antenna 11' below the top platform.
9 – DB840 cellular antennas 36' above the base of the type M tower.
6 – Sprint cellular antennas 23' above the base of the type M tower.

This previous analysis indicated that the cross bracing members at the second panel above the roof of the building extension was overstressed by 3.2%. Other parts of the tower were adequate. We believe that this condition exists at present. By replacing the (9) DB840 antennas with the new cellular antennas the overstress now will become 4.5%. Our latest analysis indicates that other than the above mentioned members all other members of the tower are adequate to support the proposed loading conditions.

One way to eliminate the overstress is to strengthen the tower. The alternative to strengthening the steel members in order to remove the overstresses would be to remove the existing 6' and the 8' parabolic antennas that are now located on the type M tower. The relative elevations of these antennas are shown on Sketch No. 0217-B. These removals will then make the type M tower and the building extension adequate to support the loads that are imposed on them without overstressing any member.

Removal of the two KS15676 horn antennas located above the type M tower will also make the type M tower and the building extension adequate to support the loads imposed on them.

Kindly give us a call should you wish to further discuss any of the items in this report.

Yours truly,

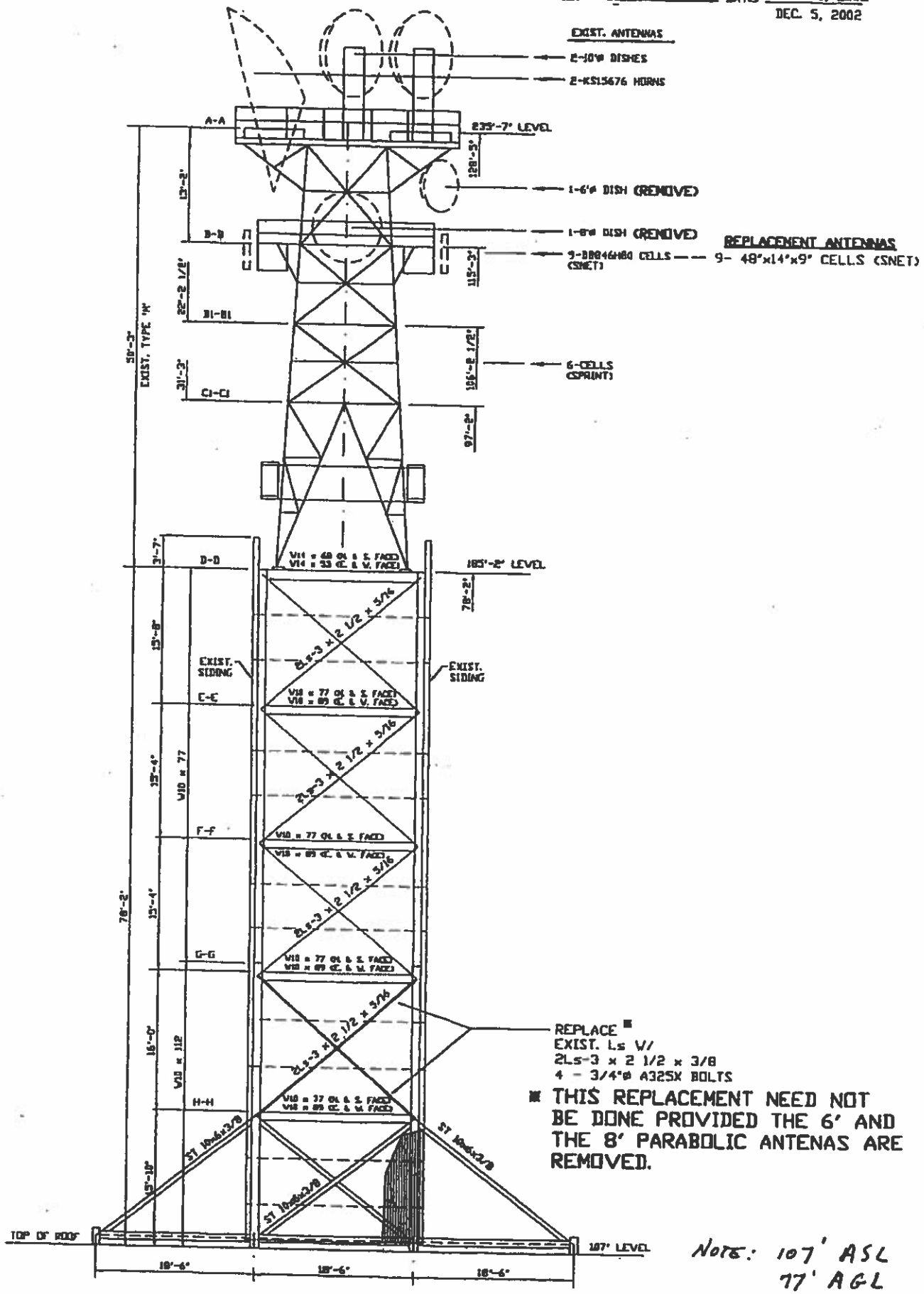
Dimitrios Bayar, P.E.
President

BAYAR ENGINEERING, P.C.

Project NEW LONDON, CT., 26 WASHINGTON ST. EXIST. 78'-2" STRUCTURE + 30' TYPE 'M'

SKETCH NO. 0217-B

DATE AUG. 15, 2002
DEC. 5, 2002



■ THIS REPLACEMENT NEED NOT BE DONE PROVIDED THE 6' AND THE 8' PARABOLIC ANTENAS ARE REMOVED.

TOWER ELEVATION

NOTE: 107' ASL
77' AGL
(SEE 1A)
- LOUIS CINGULAR

URS Greiner W. odward-Clyde, Inc. A .S

Site # 80
New London
26 Washington Street
New London, Connecticut

ELEVATIONS:

Ground Elevation: Note: All subsequent measurements are distances above ground elevation (AGL)	30' AMSL
Top of Structure *(description: lattice tower on building)*	206.1'
Highest Point *(description: lighting rod)*	225.3'
Top of Building *(top of parapet)*	82.2'

APPURTENANCES:

Top of SNET Antennas *(8)*	196.3'
(1)	194.3'
Top of Antenna *(1)*	220.4'
Top of Antenna *(1)*	220.1
Top of Antennas *(2)*	219.6'
Top of Antenna *(1)*	204.9'
Top of Antenna *(1)*	204.2'
Top of Antenna *(1)*	174.6'
Top of Lighting Rod	225.3'

SITE INFORMATION:

Latitude (Center of Structure)	41° 21' 13.61"
Longitude (Center of Structure)	72° 05' 54.05"
NAD 27 Values obtained by field survey.	
Latitude (Center of Structure)	41° 21' 13.97"
Longitude (Center of Structure)	72° 05' 52.33"
NAD 83 Values obtained with NADCON.	

FAA/FCC INFORMATION:

FCC Tower Registration Number: *"Not Evident"*
FAA Marking/Lighting: *Red Lights, Painted*

Locations were determined by traverse from CGS monuments. Elevations were determined using differential leveling from a CGS monument.

I certify that the latitude and longitude noted hereon are accurate to within ± 3 feet horizontally, and that the site elevation is accurate to within ± 1 foot vertically and meets FAA Accuracy Code of 1-A.

To my knowledge and belief this survey is substantially correct as noted hereon.

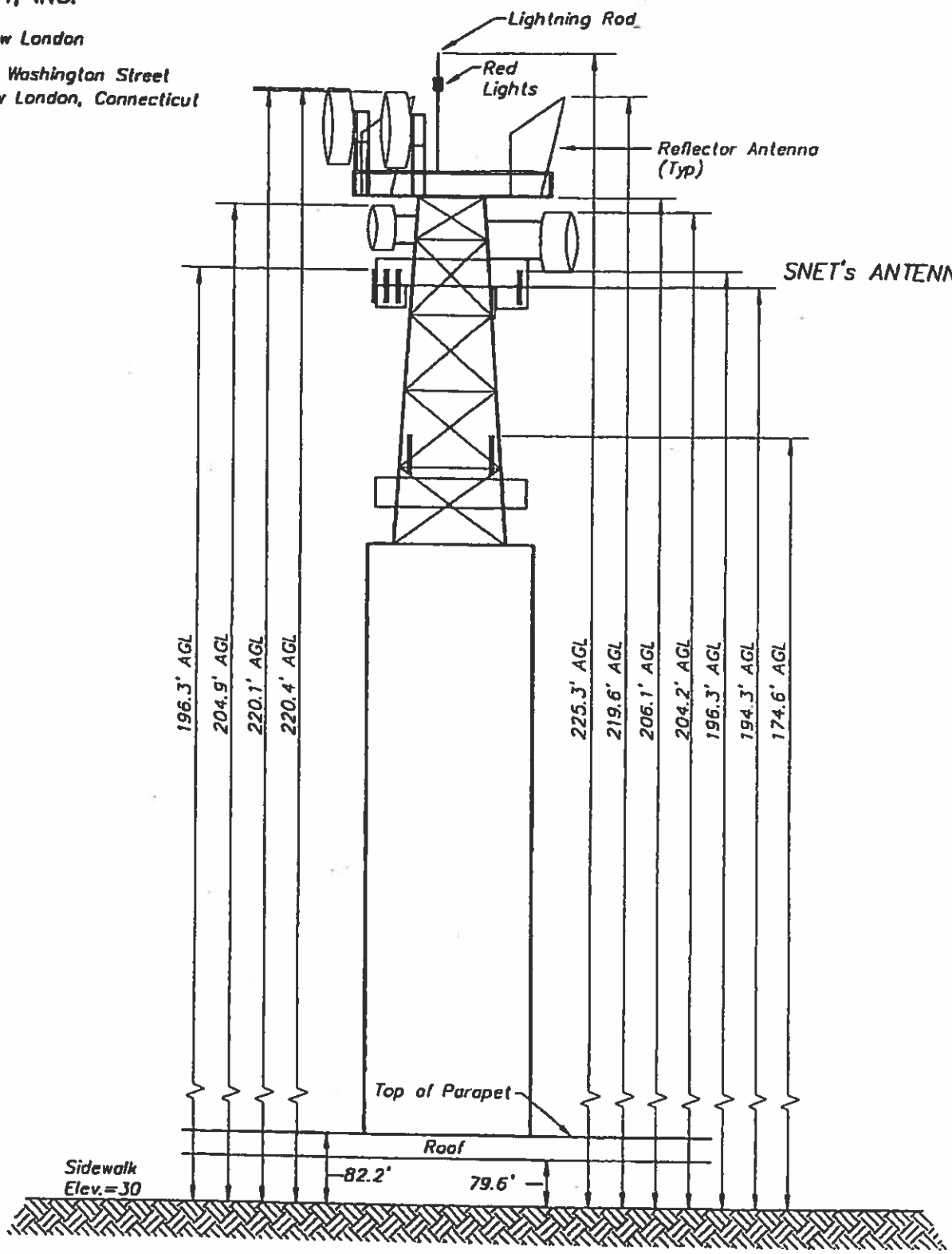
STATE OF CONNECTICUT
MICHAEL G. WILMES
No. 14206
LAND SURVEYOR

Michael G. Wilmes, L.S. — *License No.* 14206 — April 15, 1999

SNET MOBILITY, INC.

SITE NAME: New London

ADDRESS: 26 Washington Street
New London, Connecticut



EAST TOWER ELEVATION

NOTE:

1. ELEVATIONS REFER TO THE NATIONAL GEODETIC VERTICAL DATUM OF 1929.

URS Greiner Woodward Clyde
Surveying and Mapping by:
URS Greiner Woodward-Clyde, Inc. A·E·S
300 Enterprise Drive, Suite 38
Rocky Hill, Connecticut 06067-4002
Tel. (860) 529-8882

Scale: NTS
Date : APRIL 1999

Field book #	Crew Chief	Project #	
1467-47	F.SEGALINE	F3-00001787.17	
Search #	Drawn by	Checked by	Map file #
~	E.LEWIS		2 of 4

Southwestern Bell Mobile Systems, LLC
500 Enterprise Drive
Rocky Hill, Connecticut 06067-3900
Phone: (860) 513-7730
Fax: (860) 513-7190

Peter W. van Wilgen
Senior Manager - Construction

HAND DELIVERED

December 11, 2002

Mr. Mortimer A. Gelston, Chairman
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

Re: Southwestern Bell Mobile Systems, LLC notice of intent to modify existing telecommunications facilities located in East Haddam (GSM prev. EM-CING-041-020913), Kent (GSM prev. EM-CING-068-020730), Middlefield (GSM prev. EM-CING-082-020702), New London, and Prospect (GSM prev. EM-CING-115-020828); *with structural update for Westbrook (GSM prev. EM-CING-154-020828).*

Dear Mr. Gelston:

In order to accommodate technological changes, implement E-911 capability and enhance system performance, Southwestern Bell Mobile Systems, LLC ("SNET" or "Cingular Wireless"; formerly SNET Mobility, LLC) plans to modify the antenna configurations at its existing cell sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and attachments is being sent to the chief elected official of each of the municipalities in which an affected cell site is located.

Attached are summary sheets detailing the planned changes, including power density calculations reflecting the change in the effect of Cingular's operations at each site. Also included is documentation of the structural sufficiency of each tower to accommodate the revised antenna configuration.

The changes to the facilities do not constitute modifications as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facilities will not be significantly changed or altered. Rather, the planned changes to the

facilities fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

1. The height of the overall structure will be unaffected. At almost all sites, new panel antennas approximately the same size will replace those previously installed. Tower mount amplifiers, approximately 5" x 9" x 13", will be added to the platform on which the panel antennas are mounted to enhance signal reception at the cell site. In addition, the mandated provision of E-911 capability *may* require installation of one LMU ("location measurement unit"), approximately nine inches high, on either the tower, the equipment shelter, or the ice bridge. At this writing, however, it appears that the new panel antennas will serve this purpose as well. One GPS receive-only antenna will be attached to the equipment shelter at each site. None of the modifications will extend the height of the tower.

2. The proposed changes will not extend the site boundaries. There will be no effect on the site compound.

3. The proposed changes will not increase the noise level at the existing facility by six decibels or more.

4. Radio frequency power density will increase due to use of additional channels broadcasting at higher power. However, the changes will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site.

For the foregoing reasons, Cingular Wireless respectfully submits that the proposed changes at the referenced sites constitute exempt modifications under R.C.S.A. Section 16-50j-72(b)(2).

Also attached to this letter, please find the resolution of one or more conditional approval(s) recently granted by the Council.

Please feel free to call me at (860) 513-7730 with questions concerning these matters. Thank you for your consideration.

Sincerely,

Peter W. van Wilgen / SLL

Peter W. van Wilgen
Senior Manager - Construction

Enclosures

Southwestern Bell Mobile Systems, LLC
500 Enterprise Drive
Rocky Hill, Connecticut 06067-3900
Phone: (860) 513-7730
Fax: (860) 513-7190

Peter W. van Wilgen
Senior Manager - Construction

December 11, 2002

Hon. Richard M. Brown
City Manager, City of New London
City Hall, 181 State St.
New London, CT 06320

Re: Telecommunications facility – 26 Washington Street

Dear Mr. Brown:

In order to meet the requirements for improved E-911 capability and to implement a more advanced telecommunications system, Southwestern Bell Mobile Systems, LLC, a/k/a Cingular Wireless ("SBMS" or "Cingular"; formerly SNET Mobility, LLC) will be changing its antenna configuration at certain cell sites. As required by Regulations of Connecticut State Agencies ("R.C.S.A.") Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review Cingular's proposal. Please accept this letter as notification under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

The accompanying letter fully describes Cingular's proposal. However, if you have any questions or require any further information on our plans or the Siting Council's procedures, please call me at (860) 513-7730 or Mr. Derek Phelps, Executive Director, Connecticut Siting Council at (860) 827-2935.

Sincerely,

Peter W. van Wilgen /SLL

Peter W. van Wilgen
Senior Manager – Construction

Enclosure

CINGULAR WIRELESS
Antenna Modification

26 Washington Street, New London
Exempt Mod. approved 6/21/94

Tower Owner/Manager: Southern New England Telephone

Antenna configuration Rooftop Tower with antenna center lines 192 ft

Current and/or approved: 9 DB846H80 panel antennas at 198 ft c.l.

Planned: 9 CSS DUO1417-8690 panel antennas at 192 ft c.l.
6 tower mount amplifiers

Power Density:

Calculations for Cingular's current operations at the site indicate a radio frequency electromagnetic radiation power density, measured at ground level in front of the building, of approximately 3.0 % of the standard adopted by the FCC. As depicted in the second table below, the total radio frequency electromagnetic radiation power density for Cingular's planned operations would increase by 1.5 % of the standard, owing to lower centerline height, to approximately 4.5 % MPE. This power density remains within State and federal standards.

Cingular Current

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm^2)	Standard Limits (mW/cm^2)	Percent of Limit
Cingular TDMA	198	880 - 894	19	100	0.0174	0.5867	3.0

Cingular Planned

Company	Centerline Ht (feet)	Frequency (MHz)	Number of Channels	Power Per Channel (Watts)	Power Density (mW/cm2)	Standard Limits (mW/cm2)	Percent of Limit
Cingular TDMA	192	880 - 894	16	100	0.0156	0.5867	2.7
Cingular GSM	192	880 - 894	2	296	0.0058	0.5867	1.0
Cingular GSM	192	1930 - 1935	2	427	0.0083	1.0000	0.8
Total							**4.5%**

Structural information:

Please see the attached document, which is a draft structural analysis letter from Bayar Engineering. SBMS expects to receive the letter in final form (P.E. stamped) in the next few days, and we will make every effort to provide the final document prior to the Council meeting of December 19, 2002. Should the final letter not arrive in time for the meeting, we request that the New London matter be tabled.

According to this structural analysis, the tower would be overstressed if SBMS simply mounted its equipment without taking other measures. Removal of two existing parabolic antennas or two 1-ton microwave horn reflectors will restore more-than-ample structural capacity to accommodate the SBMS proposal. At this writing, SBMS' plan is to remove the horn reflectors.

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

July 11, 2011

Douglas L. Culp, Real Estate Consultant
New Cingular Wireless PCS, LLC
500 Enterprise Drive
Rocky Hill, CT 06067-3900

RE: **EM-CING-095-110624** - New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 26 Washington Street, New London, Connecticut.

Dear Mr. Culp:

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:

- The existing tower be rehabilitated in accordance with recommendations made in the Structural Analysis prepared by Malouf Engineering dated June 21, 2011 and stamped by Mark Malouf; and
- Prior to 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 rehabilitation measures have been completed and the tower will 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 less 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 June 23, 2011. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the 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 [illegible] additional change to this facility will require

CSC
CONNECTICUT SITING COUNCIL

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,

Linda Roberts
Executive Director

LR/CDM/laf

c: The Honorable Robert Pero, Mayor, City of New London
Martin H. Berliner, City Manager, City of New London
Michelle J. Johnson, Zoning Enforcement Officer, City of New London
Christopher B. Fisher, Esq., Cuddy & Feder LLP

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

July 10, 2017

David Barbagallo
Smartlink LLC
85 Rangeway Road,
Building #3, Suite 102
North Billerica, MA 01862-2105

RE: **EM-AT&T-095-170619** - AT&T notice of intent to modify an existing telecommunications facility located at 26 Washington Street, New London, Connecticut.

Dear Mr. Barbagallo:

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:

1. Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;

2. Any material changes to this modification as proposed shall require the filing of a new notice with the Council;

3. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;

4. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by AT&T shall be removed within 60 days of the date the antenna ceased to function;

5. The validity of this action shall expire one year from the date of this letter; and

6. 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 June 13, 2017. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the 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 by any dimension, increase noise levels at the tower site boundary by six decibels or more, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996 and by the state Department of Energy and Environmental Protection pursuant to Connecticut 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,

Melanie A. Bachman
Executive Director

MAB/CW/bm

c: The Honorable Michael E. Passero, Mayor, City of New London
Tammy Daugherty, Director of the Office of Development & Planning, City of New London
Frontier Communications, Tower Owner
Southern New England Telephone Company C/O SBC Communications, Property Owners

EXHIBIT 3

26 WASHINGTON ST

Location	26 WASHINGTON ST	**Mblu**	F12/ 144/ 9/ /
Acct#	F12 0144 0009	**Owner**	SOUTHERN NEW ENGLAND TEL CO
Assessment	$2,135,560	**Appraisal**	$3,050,800
PID	4665	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$2,662,500	$388,300	$3,050,800
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$1,863,750	$271,810	$2,135,560

Owner of Record

Owner	SOUTHERN NEW ENGLAND TEL CO	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	401 MERRITT SEVEN NORWALK, CT 06851	**Book & Page**	294/ 611
		Sale Date	01/01/1700

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
SOUTHERN NEW ENGLAND TEL CO	$0		294/ 611	01/01/1700

Building Information

Building 1 : Section 1

Year Built:	1961
Living Area:	66,688
Replacement Cost:	$5,256,121
Building Percent Good:	48
Replacement Cost Less Depreciation:	$2,522,900

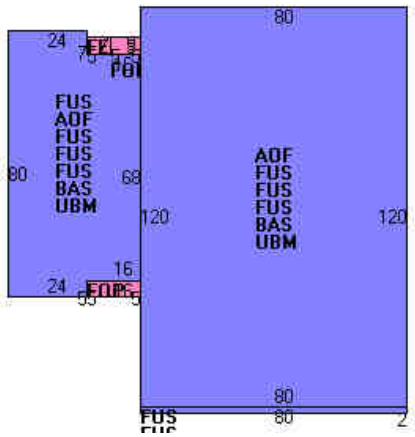
Building Attributes	
Field	**Description**

STYLE	Telephone Bldg
MODEL	Commercial
Grade	Average
Stories:	5
Occupancy	1
Exterior Wall 1	Brick Veneer
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Vinyl/Asphalt
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Hot Water
AC Type	Central
Bldg Use	OTH MTR SS
Total Rooms	
Total Bedrms	00
Total Baths	0
Conv Type	
1st Floor Use:	3380
Heat/AC	HEAT/AC SPLIT
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	16
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos/NewLondonCTPhotos//\00\01\16

Building Layout



(http://images.vgsi.com/photos/NewLondonCTPhotos//Sketches/

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
FUS	Upper Story, Finished	41,472	41,472
AOF	Office, (Average)	12,608	12,608
BAS	First Floor	12,608	12,608
FEP	Porch, Enclosed, Finished	35	0
FOP	Porch, Open, Finished	285	0
UBM	Basement, Unfinished	12,768	0
		79,776	66,688

Extra Features

Extra Features				Legend
Code	**Description**	**Size**	**Value**	**Bldg #**
ELS1	Pass Stops	6 UNITS	$10,800	1
ELV1	Elevator, Pass	1 UNITS	$38,400	1

SPR1	SPRINKLERS-WET	9600 S.F.	$4,600	1

Land

Land Use

Use Code	3380
Description	OTH MTR SS
Zone	CBD2
Neighborhood	CBD2
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	1.55
Frontage	0
Depth	0
Assessed Value	$271,810
Appraised Value	$388,300

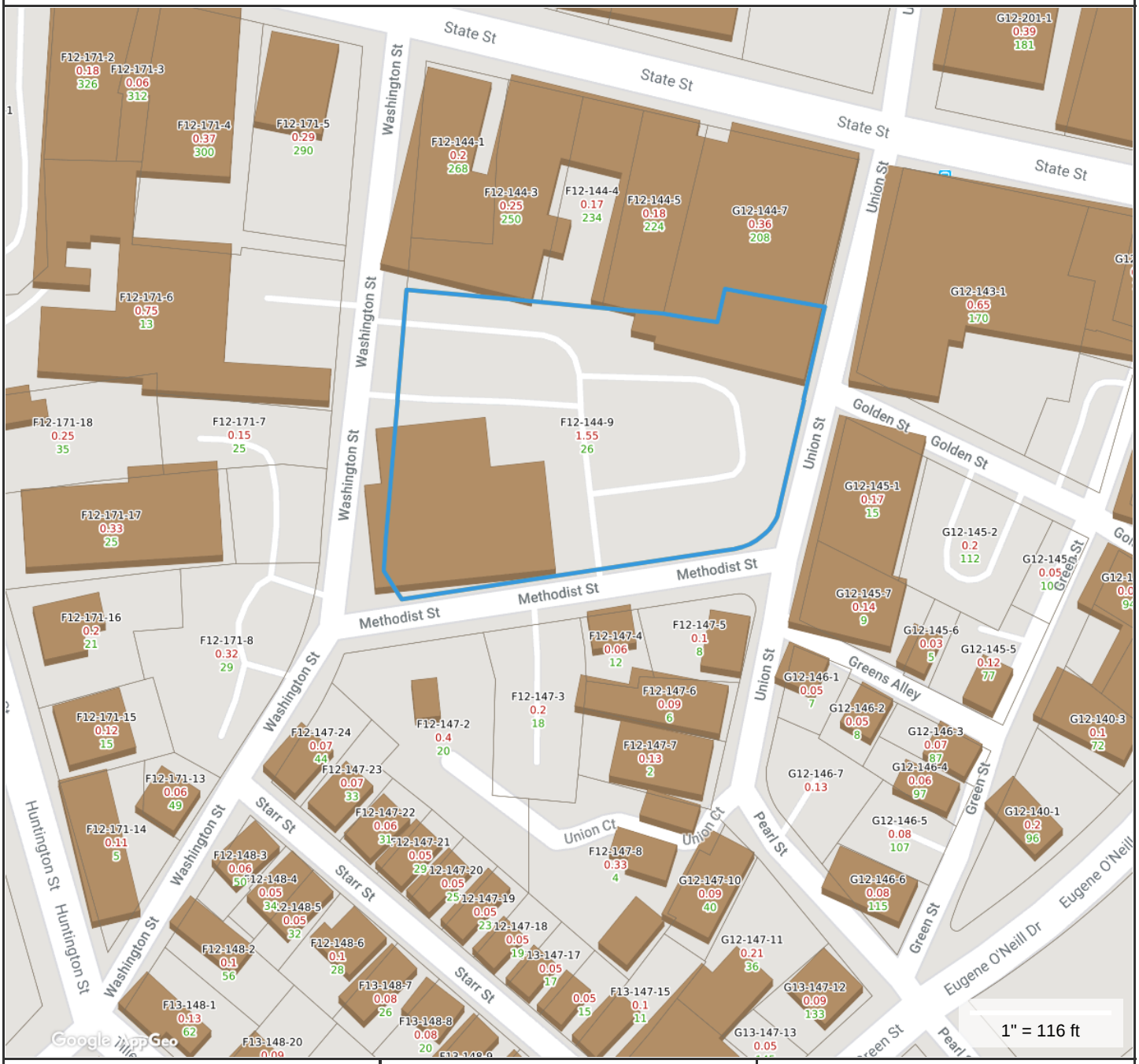
Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
PAV1	PAVING-ASPHALT			54000 S.F.	$81,000	1
FN2	FENCE-5' CHAIN			248 L.F.	$3,000	1
GT1	GATE			5 UNITS	$1,800	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$2,662,500	$388,300	$3,050,800
2017	$2,239,400	$310,600	$2,550,000
2016	$2,239,400	$310,600	$2,550,000

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$1,863,750	$271,810	$2,135,560
2017	$1,567,580	$217,420	$1,785,000
2016	$1,567,580	$217,420	$1,785,000



Property Information

Property ID	95-F12-144-9
Location	26 WASHINGTON ST
Owner	SOUTHERN NEW ENGLAND TEL CO

SCCOG

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

SCCOG makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 05/31/2017
Data updated 10/1/2013

EXHIBIT 4

Radio Frequency Safety Survey Report Prediction (RFSSRP)

AT&T Wireless Rooftop Facility

Site ID: CT2080 **Site Name:** New London-Washington St **Address:** 26 Washington Street, New London, CT 06320 **Latitude:** 41.353881 **Longitude:** -72.097860 **USID:** 65070 **FA**: 10035053	**Prepared for:** AT&T Mobility 550 Cochituate Road, Suite 13 Framingham, MA 01701 Report Writer: Michelle Stone Date: January 21, 2020 Report Reviewer: Brandon Green

Statement of Compliance

AT&T is compliant with FCC Regulations.

TABLE OF CONTENTS

1.0 GENERAL SUMMARY

Centerline Communications, LLC ("Centerline") has been contracted to provide a Radio Frequency (RF) Analysis for the following AT&T Mobility wireless rooftop facility to determine whether the facility is in compliance with federal standards and regulations regarding RF emissions. This analysis includes theoretical emissions calculations, for all equipment for AT&T Mobility and any other wireless carriers on site.

1.1 SITE SUMMARY

Analysis Site Data	
Site ID:	CT2080
Site USID:	65070
Site FA#:	10035053
Site Name:	New London-Washington St
Site Address:	26 Washington Street, New London CT 06320
Site Latitude:	41.353881 N
Site Longitude:	-72.097860 W
Facility Type:	Rooftop
Compliance Summary	
Compliance Status:	Compliant
Maximum Modeled MPE% on Walking Surface AT&T (General Public Limit):	700.29 %
Maximum Modeled MPE% at Ground Level AT&T (General Public Limit):	0.09 %
Maximum Modeled MPE% on Walking Surface Composite (General Public Limit):	700.29 %
Maximum Modeled MPE% at Ground Level Composite (General Public Limit):	0.09 %
Site Survey Data	
Is Access Locked or Controlled? :	Uncontrolled*
Lock or Control Measures if Present:	N/A
Parapet Height:	36""
Site Data Information	
CD:	CT2080_LTE_5C_6C_7C_CD_REV3_12-16-19.pdf
RFDS:	Not Provided

In addition to the AT&T antennas and radio equipment there are antennas and radio equipment for other carriers which have been included in this analysis as part of the overall site compliance determination. Other carriers are listed in section 3.0 – Antenna Inventory.

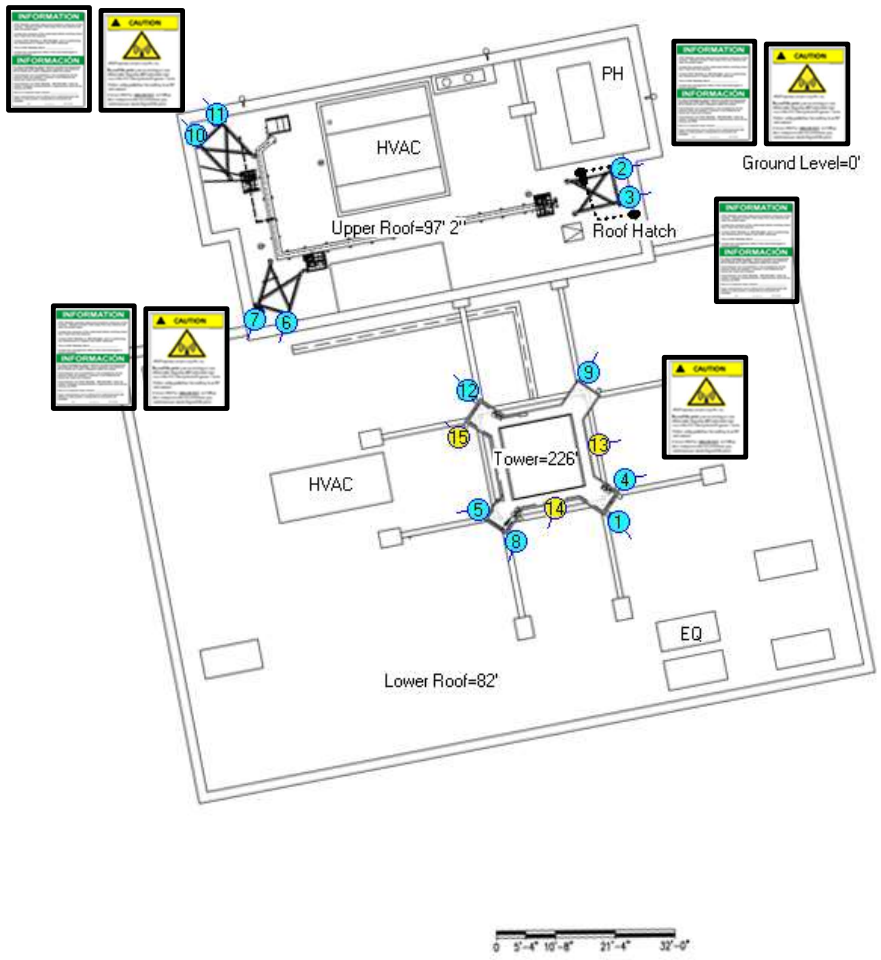
*To be conservative, all rooftop sites are considered uncontrolled for modeling purposes.

Signage and barriers are the primary means of mitigating access to accessible areas of exposure. Below is a summary of existing and recommended signage at this AT&T facility.

	Existing Signage and Barriers (AT&T Sectors)							
Location	Green Info 1	Green Info 2	Blue Notice	Blue Notice 2	Yellow Caution	Yellow Caution 2	Red Warning 2	Barriers
Access 1	1	0	0	0	0	0	0	0
Access 2	1	0	0	0	0	0	0	0
Tower Access	0	0	0	0	0	1	0	0
Alpha	1	0	0	0	0	1	0	X
Beta	1	0	0	0	0	1	0	0
Gamma	1	0	0	0	0	1	0	0

	Recommended Signage and Barriers (AT&T Sectors)							
Location	Green Info 1	Green Info 2	Blue Notice	Blue Notice 2	Yellow Caution	Yellow Caution 2	Red Warning 2	Barriers
Access 1	0	0	0	0	0	0	0	0
Access 2	0	0	0	0	0	0	0	0
Tower Access	0	0	0	0	0	0	0	0
Alpha	0	0	0	0	0	0	0	0
Beta	0	0	0	0	0	0	0	0
Gamma	0	0	0	0	0	0	0	0

2.0 SITE SCALE MAP



Operator Antenna Identifiers

- AT&T Mobility
- Verizon
- Clearwire
- Cricket
- T-Mobile
- Sprint
- US Cellular
- Metro PCS
- Unknown


INFO 1 Sign

Caution 1 Sign

INFO 2 Sign


Tower Caution Sign

Notice 1 Sign


Caution 2 Sign


Notice 2 Sign

Warning 2 Sign

Existing Sign

Proposed/ Installed Sign

Existing Barrier

Proposed Barrier

Signage/ Mitigation Plan

New London-Washington St / 10035053

3.0 ANTENNA INVENTORY

ANT ID	Operator	Antenna Make	Antenna Model	Type	Freq (MHz)	TPO (Watts)	# of TX	Azimuth (°)	BW (°)	Gain (dBd)	Misc. Loss	Total ERP (Watts)	Length (ft)	Antenna Z Value (ft)**
1	AT&T	POWERWAVE	7770 00	Panel	850	40	1	143	85	11.35	0.5	486.47	4.6	97.1
2	AT&T	KATHREIN	80010964	Panel	700	40	2	80	63.8	11.05	0.5	908.01	4.9	5.2
2	AT&T	KATHREIN	80010964	Panel	850	40	2	80	62.1	12.25	0.5	1196.99	4.9	5.2
2	AT&T	KATHREIN	80010964	Panel	2100	40	4	80	60	15.85	0.5	5484.28	4.9	5.2
3	AT&T	KATHREIN	80010965	Panel	700	40	4	80	62	12.15	0.5	2339.48	6.6	4.4
3	AT&T	KATHREIN	80010965	Panel	1900	40	4	80	64.1	15.65	0.5	5237.45	6.6	4.4
4	AT&T	COMMSCOPE	SBNHH-1D65A	Panel	700	40	2	80	66	11.21	0.5	942.08	4.6	97.1
4	AT&T	COMMSCOPE	SBNHH-1D65A	Panel	2300	25	4	80	61	14.79	0.5	2685.34	4.6	97.1
5	AT&T	POWERWAVE	7770 00	Panel	850	40	1	263	85	11.35	0.5	486.47	4.6	97.1
6	AT&T	KATHREIN	80010964	Panel	700	40	2	200	63.8	11.05	0.5	908.01	4.9	5.2
6	AT&T	KATHREIN	80010964	Panel	850	40	2	200	62.1	12.25	0.5	1196.99	4.9	5.2
6	AT&T	KATHREIN	80010964	Panel	2100	40	4	200	60	15.85	0.5	5484.28	4.9	5.2
7	AT&T	KATHREIN	80010965	Panel	700	40	4	200	62	12.15	0.5	2339.48	6.6	4.4
7	AT&T	KATHREIN	80010965	Panel	1900	40	4	200	64.1	15.65	0.5	5237.45	6.6	4.4
8	AT&T	COMMSCOPE	SBNHH-1D65A	Panel	700	40	2	200	66	11.21	0.5	942.08	4.6	97.1
8	AT&T	COMMSCOPE	SBNHH-1D65A	Panel	2300	25	4	200	61	14.79	0.5	2685.34	4.6	97.1
9	AT&T	POWERWAVE	7770 00	Panel	850	40	1	23	85	11.35	0.5	486.47	4.6	97.1
10	AT&T	KATHREIN	80010964	Panel	700	40	2	320	63.8	11.05	0.5	908.01	4.9	5.2
10	AT&T	KATHREIN	80010964	Panel	850	40	2	320	62.1	12.25	0.5	1196.99	4.9	5.2
10	AT&T	KATHREIN	80010964	Panel	2100	40	4	320	60	15.85	0.5	5484.28	4.9	5.2
11	AT&T	KATHREIN	80010965	Panel	700	40	4	320	62	12.15	0.5	2339.48	6.6	4.4
11	AT&T	KATHREIN	80010965	Panel	1900	40	4	320	64.1	15.65	0.5	5237.45	6.6	4.4
12	AT&T	COMMSCOPE	SBNHH-1D65A	Panel	700	40	2	320	66	11.21	0.5	942.08	4.6	97.1
12	AT&T	COMMSCOPE	SBNHH-1D65A	Panel	2300	25	4	320	61	14.79	0.5	2685.34	4.6	97.1
13	Sprint	GENERIC	PANEL 4FT	Panel	1900	20	1	80	65	14.65	3	292.44	4.0	32.9

13	Sprint	GENERIC	PANEL 4FT	Panel	850	20	6	80	61	11.52	3	853.46	4.0	32.9
14	Sprint	GENERIC	PANEL 4FT	Panel	1900	20	1	200	65	14.65	3	292.44	4.0	32.9
14	Sprint	GENERIC	PANEL 4FT	Panel	850	20	6	200	61	11.52	3	853.46	4.0	32.9
15	Sprint	GENERIC	PANEL 4FT	Panel	1900	20	1	320	65	14.65	3	292.44	4.0	32.9
15	Sprint	GENERIC	PANEL 4FT	Panel	850	20	6	320	61	11.52	3	853.46	4.0	32.9

*Table 1: Total Site data table **(Z Value is distance from bottom of antenna to the referenced level on the Emissions Diagrams in section 5.0)*

4.0 PREDICTED EMISSION LEVELS AND DISCUSSION

All calculations performed based upon the data listed for this facility have produced results that are above allowable limits for General Population and Occupational limits for exposure to RF emissions as specified by federal standards.

AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document states that microwave dishes are compliant if they are mounted 20 feet or greater above any accessible walking or working surface.

Maximum Predicted MPE Level on Site:	% of MPE Limit:	Location:
Accessible **General Population** MPE Limits:	**700.29%**	**AT&T Sector C**
Accessible **Occupational** MPE Limits:	**140.06%**	

Ground Level Assessment:	% of MPE Limit:
Ground Level **General Population** MPE Limits:	**0.09%**
Ground Level **Occupational** MPE Limits:	**0.02%**

Sector A: Transmitting over Upper Roof Level	% of MPE Limit:	*Distance from Antenna:
Accessible **General Population** MPE Limits:	**691.23%**	**2**
Accessible **Occupational** MPE Limits:	**138.25%**	**2**

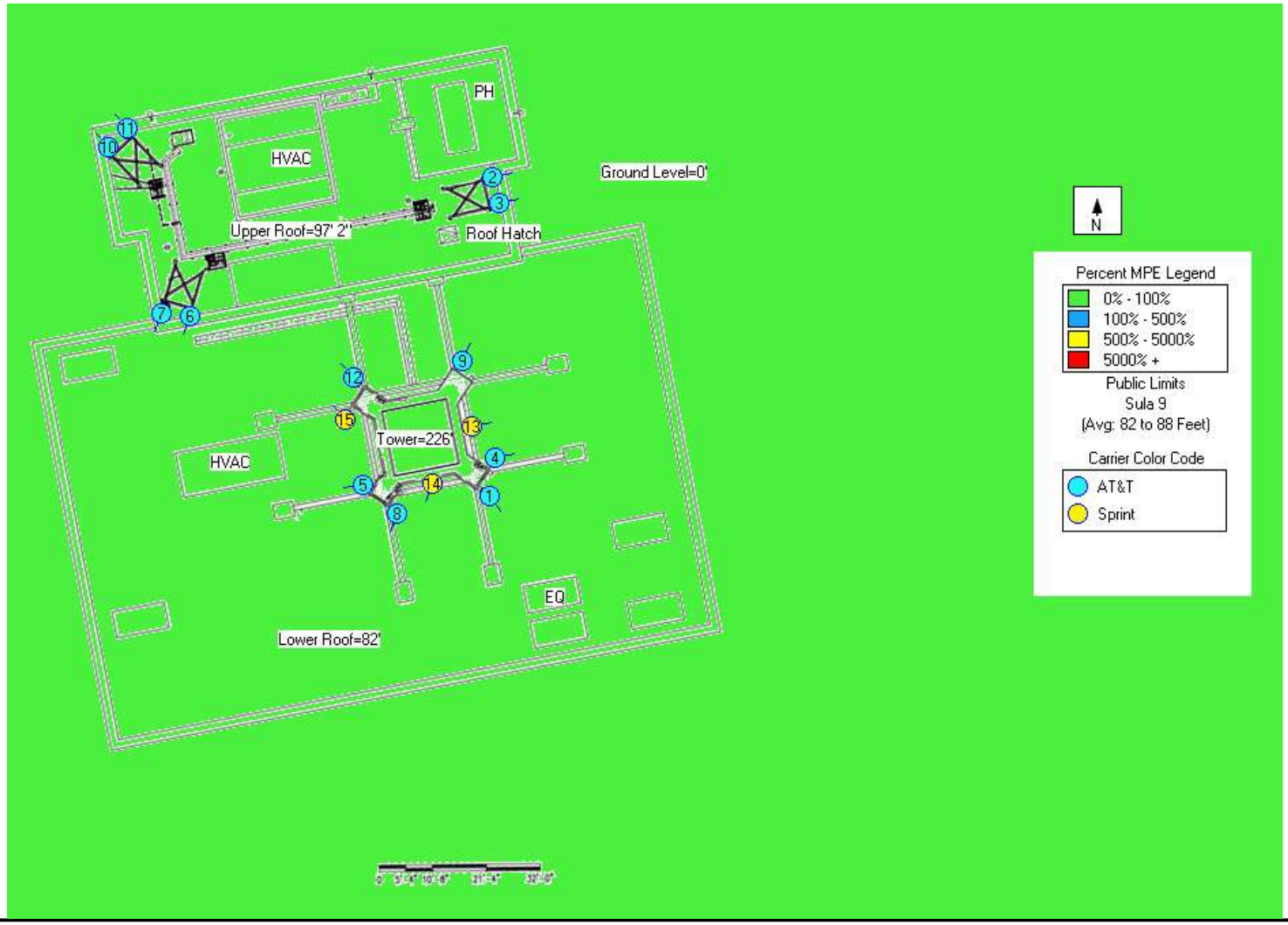
Sector B: Transmitting over Upper Roof Level	% of MPE Limit:	*Distance from Antenna:
Accessible **General Population** MPE Limits:	**686.37%**	**2**
Accessible **Occupational** MPE Limits:	**137.27%**	**2**

Sector G: Transmitting over Upper Roof Level	% of MPE Limit:	*Distance from Antenna:
Accessible **General Population** MPE Limits:	**700.29%**	**2**
Accessible **Occupational** MPE Limits:	**140.06%**	**2**

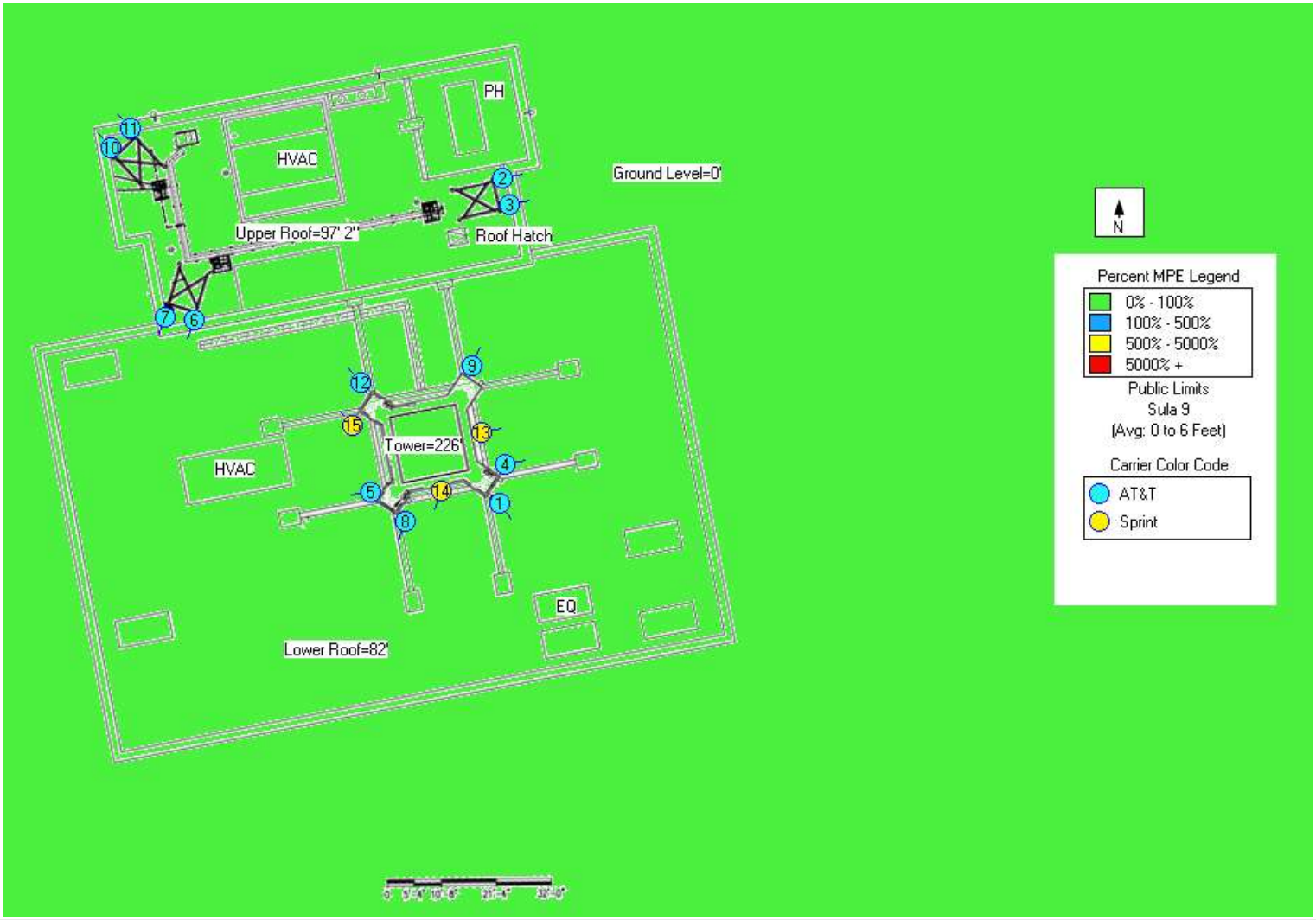
**Distance from Antenna is the distance that the MPE limits are exceeded from the front face of the antenna, outward across an accessible area.*

5.0 EMISSIONS DIAGRAMS

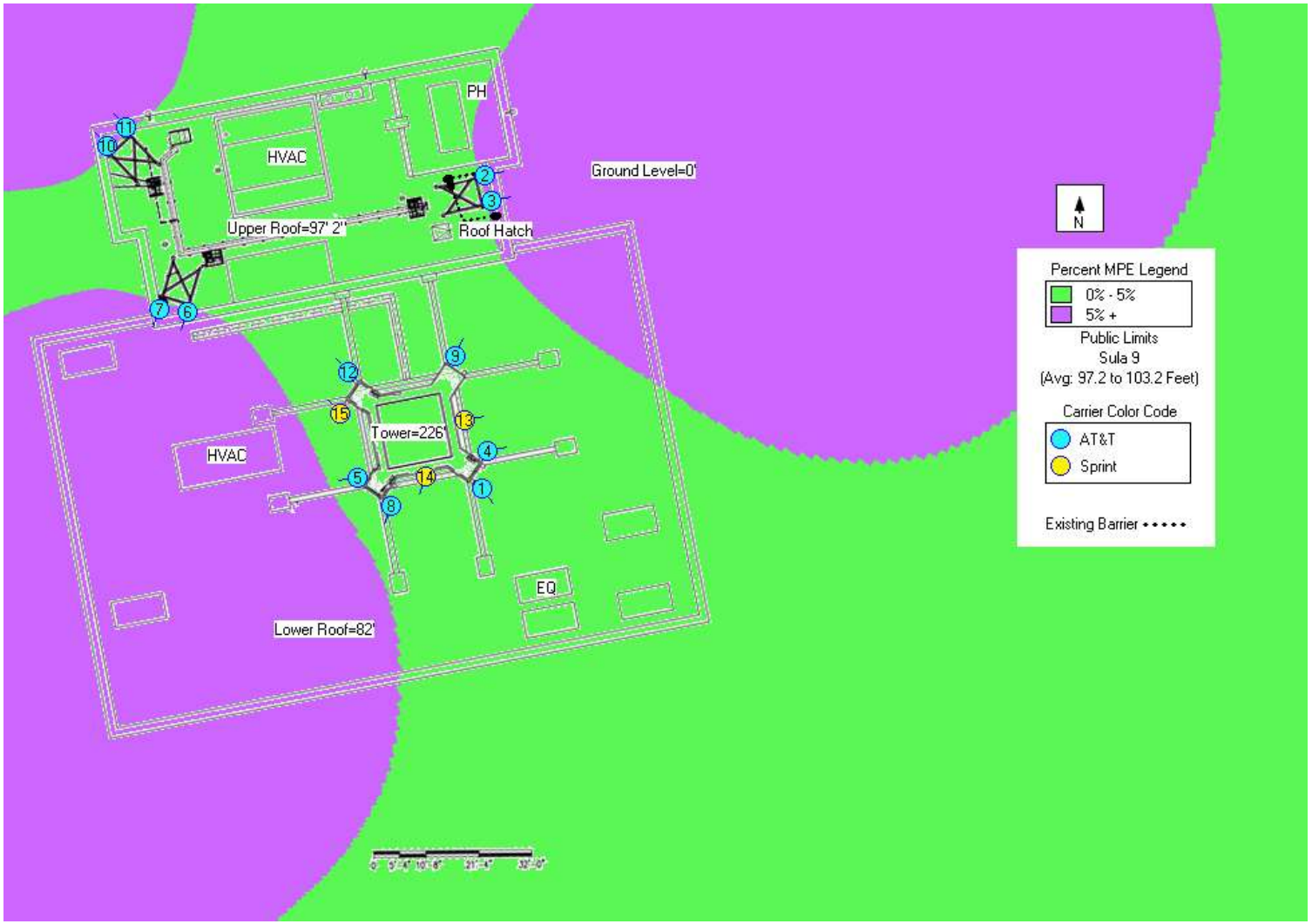
Emissions Thresholds for AT&T (Main Roof Level 97' 2") New London-Washington St / 10035053



Emissions Thresholds for All Sources (Lower Roof Level 82ft.) New London-Washington St / 10035053



Emissions Thresholds for AT&T (Ground Level 0ft.) North Philly / 10009778



5% Emissions Thresholds From AT&T (Main Roof Level 97' 2") New London-Washington St/ 10035053

6.0 STATEMENT OF COMPLIANCE

Centerline conducted worst case modeling to determine whether the rooftop facility located at 26 Washington Street in New London, Connecticut is in compliance with FCC Regulations.

6.1 STATEMENT OF AT&T MOBILITY COMPLIANCE

Based on the information analyzed, AT&T is in compliance with FCC Regulations. No additional action is required by AT&T.

6.2 RECOMMENDATIONS

Recommended Signage and Barriers (AT&T Sectors)								
Location	Green Info 1	Green Info 2	Blue Notice	Blue Notice 2	Yellow Caution	Yellow Caution 2	Red Warning 2	Barriers
Access 1	0	0	0	0	0	0	0	0
Access 2	0	0	0	0	0	0	0	0
Tower Access	0	0	0	0	0	0	0	0
Alpha	0	0	0	0	0	0	0	0
Beta	0	0	0	0	0	0	0	0
Gamma	0	0	0	0	0	0	0	0

Note: All Existing Information 1 signs should be removed per AT&T's Signage Policy.

7.0 FALL ARREST AND PARAPET INFORMATION

As per AT&T barrier policy, rooftop edges that are protected with a 36-inch parapet wall or guardrail are safe for work activity within six (6) feet of the edge. OSHA has stated that an existing 36-inch guardrail or parapet provides sufficient protection for employees. The height of the top rail or equivalent component of guardrail systems in new construction shall be at least 42 inches above the walking or working surface. It should also be noted that the height of the parapet or guardrail may be reduced to no less than 30 inches at any point provided the sum of the depth (horizontal distance) of the top edge, and the height of the top edge (vertical distance from the work surface to the top edge of the top member, is at least 48 inches. If there is no reason for working atop the roof, then edge protection is not required. In addition, workers may use personnel lifts or temporary fall protection measures to perform work within 6 feet of the roof edge in place of permanent edge protection. Reference: 29 CFR 1910.28, 29 CFR 1910.23 (NPRM-1990); OSHA Letters of Interpretation 2/9/83 and 3/8/9

APPENDIX A: RF SIGNAGE

AT&T RF Signage

Sign	Description	Sign	Description
	**Information 1 Sign** Gives guidelines on how to proceed and who to contact regarding areas that may exceed either the FCC's General Population or Occupational emissions limits.		**Information 2 Sign** Gives specific information on how to proceed and who to contact regarding antennas that are façade mounted, concealed or on stand-alone structures.
	**Blue Notice 1 Sign** Used to alert individuals that they are entering an area that may exceed the FCC's General Population emissions limit. Must be positioned such that persons approaching from any angle have ample warning to avoid the marked areas.		**Blue Notice 2 Sign** Used to alert individuals that they are entering an area that may exceed the FCC's General Population emissions limits. To be used on barriers or antenna sectors as a hybrid of the Information 1 and Blue Notice 1 signs.
	**Yellow Caution 1 Sign-Rooftop** Used to inform individuals that they are entering an area that may exceed the FCC's Occupational emissions limit. Must be positioned such that persons approaching from any angle have ample warning to avoid the marked areas.		**Yellow Caution 2 Sign-Rooftop** Used to alert individuals that they are entering an area that may exceed the FCC's Occupational emissions limit. To be used on barriers or antenna sectors as a hybrid of the Information 1 and Yellow Caution 1 signs.
	**Yellow Caution 1 Sign-Tower** Used to inform individuals that they are entering an area that may exceed the FCC's Occupational emissions limits. Must be placed at the base of the tower to warn tower climbers of potential for exposure.		**Warning 2 Sign** Used to inform individuals that they are entering an area that may exceed the FCC's Occupational emissions limit by a factor of 10 or greater. Must be positioned such that persons approaching from any angle have ample warning to avoid the marked areas.

APPENDIX B: FCC GUIDELINES AND EMISSIONS THRESHOLD LIMITS

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

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limit for the 700 and 800 MHz Bands is approximately 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively, and the general population exposure limit for the 1900 MHz PCS and 2100 MHz AWS bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/Controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure, have been properly trained in RF safety 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, have been trained in RF safety and can exercise control over his or her exposure by leaving the area or by some other appropriate means. The Occupational/Controlled exposure limits all utilized frequency bands is five (5) times the FCC's General Public / Uncontrolled exposure limit.

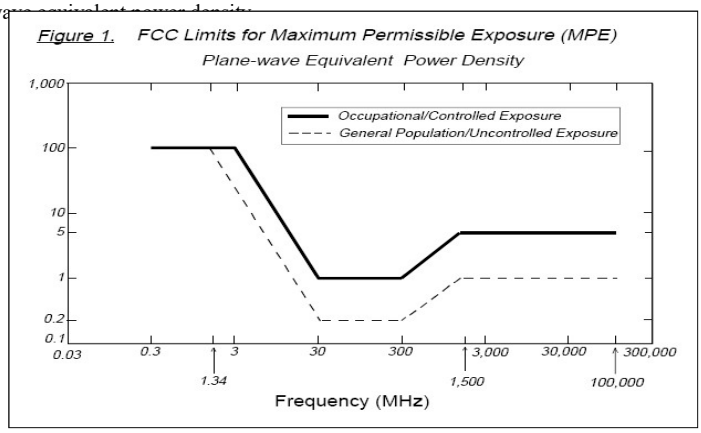
The FCC Mandates that if a site is found to be out of compliance with regard to emissions that any system operator contributing 5% or more to areas exceeding the FCC's allowable limits will be responsible for bringing the site into compliance.

Additional details can be found in FCC OET 65.

Table 1: Limits for Maximum Permissible Exposure (MPE)				
(A) Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength (H) (A/m)**	**Power Density (S) (mW/cm^2)**	**Averaging Time $[E]^2$, $[H]^2$, or S (minutes)**
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-I,500	--	--	f/300	6
1,500-100,000	--	--	5	6
(B) Limits for General Public/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength (H) (A/m)**	**Power Density (S) (mW/cm^2)**	**Averaging Time $[E]^2$, $[H]^2$, or S (minutes)**
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-I,500	--	--	f/1,500	30
1,500-100,000	--	--	1.0	30

f = Frequency in (MHz)

* Plane-wa



APPENDIX C: CALCULATION METHODOLOGY

Centerline Communications, LLC has performed theoretical modeling using Waterford Consultants' RoofMaster™ 2015 Version 19.9.7.19 which uses a cylindrical model for very conservative power density predictions within the near field of the antenna where the antenna pattern has not truly formed yet. Within this area power density values tend to decrease based upon an inverse distance function. At the point where it is appropriate for modeling to change from near-field calculations to far-field calculations the power decreases inversely with the square of the distance. This modeling technique is very accurate with very low antenna centerlines, such as rooftops, where persons can get very close to the antennas and pass through fields in close proximity.

The modeling is based on worst-case assumptions for the number of antennas and transmitter power.

APPENDIX D: CERTIFICATIONS

I, Michelle Stone, preparer of this report certify that I am fully trained and aware of the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation. I have been trained in the procedures and requirements outlined in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document.

Michelle Stone

1/21/2020

I, Brandon Green, reviewer and approver of this report certify that I am fully trained and aware of the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation. I have been trained in the procedures and requirements outlined in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document.

Brandon Green

1/21/2020

APPENDIX E: PROPRIETARY STATEMENT

This report was prepared for the use of AT&T Mobility, LLC to meet requirements specified in AT&T's corporate RF safety guidelines. It was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same locale under like circumstances. The conclusions provided by Centerline Communications, LLC are based solely on the information provided by AT&T Mobility and all observations in this report are valid on the date of the investigation. Any additional information that becomes available concerning the site should be provided to Centerline Communications, LLC so that our conclusions may be revised and modified, if necessary. This report has been prepared in accordance with Standard Conditions for Engagement and authorized proposal, both of which are integral parts of this report. No other warranty, expressed or implied, is made.

EXHIBIT 5

(REVISED)
STRUCTURAL ANALYSIS REPORT

For

CT2080 (LTE 5C/6C/7C)
NEW LONDON-WASHINGTON ST
26 Washington Street
New London, CT 06320

Antennas Mounted on Steel Frames and on Tower on Roof

Prepared for:

CENTERLINE COMMUNICATIONS

at&t

Dated: November 18, 2019 (Rev.2)
June 20, 2019 (Rev.1)
February 22, 2019

Prepared by:

HDG | HUDSON Design Group LLC

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

HUDSON Design Group LLC

SCOPE OF WORK:

Hudson Design Group LLC (HDG) has been authorized by AT&T to conduct a structural evaluation of the structure supporting the proposed equipment located in the areas depicted in the latest HDG construction drawings.

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

This office conducted an on-site visual survey of the above site on February 13, 2019. Attendees included Jon Schallack (HDG – Lead Designer).

The following documents were used for our reference:

- Previous HDG Structural Analysis dated December 11, 2017

CONCLUSION SUMMARY:

Based on our evaluation, we have determined that the existing roof framing **IS CAPABLE** of supporting the proposed equipment loading.

	Member	Stress Ratio	Pass/Fail
Concrete Slab	4" Concrete Slab	61%	**PASS**

Based on our evaluation, we have determined that the proposed connections **ARE CAPABLE** of supporting the proposed equipment loading.

	Member	Stress Ratio	Pass/Fail
Connection	1/2" Epoxy Anchors	49%	**PASS**

Based on our evaluation, we have determined that the proposed mounts **ARE CAPABLE** of supporting the proposed equipment loading.

	Member	Controlling Load Case	Stress Ratio	Pass/Fail
Steel Frame	1	LC4	89%	**PASS**

Reference the table below for the minimum ballast requirements:

MINIMUM BALLAST REQUIREMENTS		
	Proposed	***Total***
Number of Blocks per Side	6	6
Size of Blocks	4"x8"x16" Solid	4"x8"x16" Solid
Weight of Blocks	38 lbs. /each	38 lbs. /each
Total Ballast Weight	456 lbs.	456 lbs.

HDG did not perform a condition assessment of the entire roof but did perform an inspection of the existing roof members and structural bearing walls below the area where the equipment is proposed to be located.

HUDSON
Design Group LLC

APPURTENANCE CONFIGURATION:

Appurtenances	Dimensions	Weight	**Elevation	Mount
(3) 7770 Antennas	55.0"x11.0"x5.0"	35 lbs	196.6'	Tower
(3) SBNHH-1D65A Antennas	55.6"x11.9"x7.1"	34 lbs	196.6'	Tower
(6) LGP21401 TMA's	14.4"x9.0"x2.7"	19 lbs	196.6'	Tower
(3) RRUS-32 RRH's	27.2"x12.1"x7.0"	53 lbs	105'	Ballast Mount
(3) Squid Surge Arrestor	24.0"Φx9.7"	33 lbs	105'	Ballast Mount
(12) LGP 21901 Diplexers	6.3"x4.4"x3.0"	6 lbs	-	Ground
(3) 800-10964 Antennas	59.0"x20.0"x6.9"	84 lbs	105'	Steel Frame
(3) 800-10965 Antennas	78.7"x20.0"x6.9"	109 lbs	105'	Steel Frame
(3) B14 4478 RRH's	18.1"x13.4"x8.3"	60 lbs	105'	Steel Frame
(3) 4449 B5/B12 RRH's	14.9"x13.2"x10.4"	73 lbs	105'	Steel Frame
(3) 8843 B2/B66A RRH's	14.9"x13.2"x10.9"	72 lbs	105'	Steel Frame
(3) RRUS-E2 B29 RRH's	20.4"x18.5"x7.5"	53 lbs	-	Ground

** Proposed equipment shown in bold.*
*** Elevation to antenna centerline.*

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Design Group LLC

DESIGN CRITERIA:

International Building Code (IBC) 2015 with 2018 Connecticut State Building Code, and ASCE-10 (Minimum Design Loads for Buildings and Other Structures).		
Wind		
Reference Wind Speed:	135 mph	(2018 CTSBC Appendix N)
Exposure Category:	D	(ASCE 7-10 Chapter 26)
Risk Category:	II	(ASCE 7-10 Table 1.5-1)
Snow		
Ground Snow, P_g:	30	(2018 CTSBC Appendix N)
Importance Factor (I_s):	1.0	(ASCE 7-10 Table 1.5-2)
Exposure Factor (C_e):	1.0	(Partially Exposed, Table 7-2)
Thermal Factor (C_t):	1.0	(ASCE 7-10 Table 7-3)
Flat Roof Snow Load:	21 psf	(ASCE 7-10 Equation 7.3-1)
Min. Flat Roof Snow Load:	30 psf	
EIA/TIA-222-H Structural Standards for Steel Antenna Towers and Antenna Supporting Structures		
Wind		
City/Town:	New London	
County:	New London	
Wind Load:	135 mph	(TIA-222-H Annex B)
Ice		
Design Ice Thickness (t_i):	1.0 in	(TIA-222-H Annex B)
Structure Class:	II	(TIA-222-H Table 2-1)
Importance Factor (I_i):	1.0	(TIA-222-H Table 2-3)
Factored Thickness of Radial Ice (t_{iz}):	1.12 in	(TIA-222-H Sec. 2.6.10)

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EXISTING ROOF CONSTRUCTION:

The existing roof construction appears to consist of loose laid ballast stone over a roofing membrane on a reinforced concrete waffle slab supported by a system of reinforced concrete beams and columns.

ANTENNA SUPPORT RECOMMENDATIONS:

The new antennas are proposed to be installed on new pipe masts mounted to new custom steel frames secured to the existing reinforced concrete waffle slab with epoxy anchors. See the latest HDG construction drawings for details.

RRH SUPPORT RECOMMENDATIONS:

The new RRH's are proposed to be installed on new non-penetrating ballast sleds located on the roof. Reference the table on page 2 for the minimum ballast requirements.

Limitations and Assumptions:

1. Reference the latest HDG construction drawings for all the equipment locations.
2. All detail requirements will be designed and furnished in the construction drawings.
3. 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.
4. HDG is not responsible for any modifications completed prior to and hereafter which HDG was not directly involved.
5. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer requirements.
6. If field conditions differ from what is assumed in this report, then the engineer of record is to be notified as soon as possible.
7. A condition assessment of the existing roof was not part of the scope of work.

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Design Group LLC

FIELD PHOTOS:

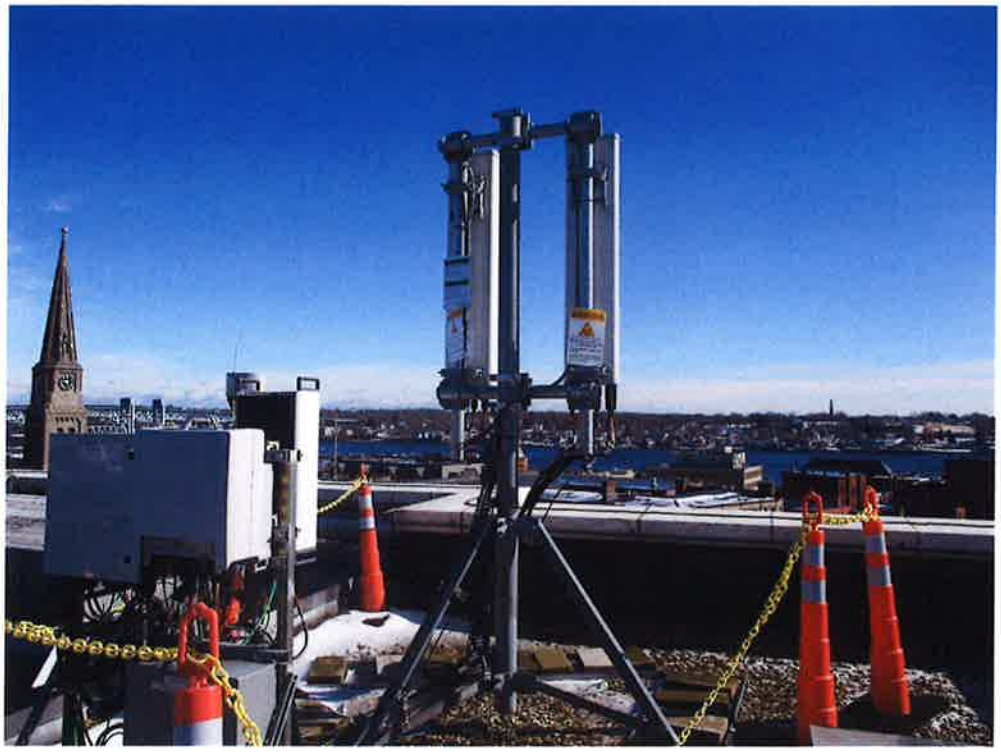

Photo 1: Sample photo illustrating the existing antenna mounted on the existing non-penetrating ballast mount (to be removed as part of the LTE 5C Project).

Photo 2: Sample photo illustrating the existing RRH's mounted on the existing Non-penetrating ballast mount.

FIELD PHOTOS (CONT.):

Photo 3: Sample photo illustrating the existing roof construction.

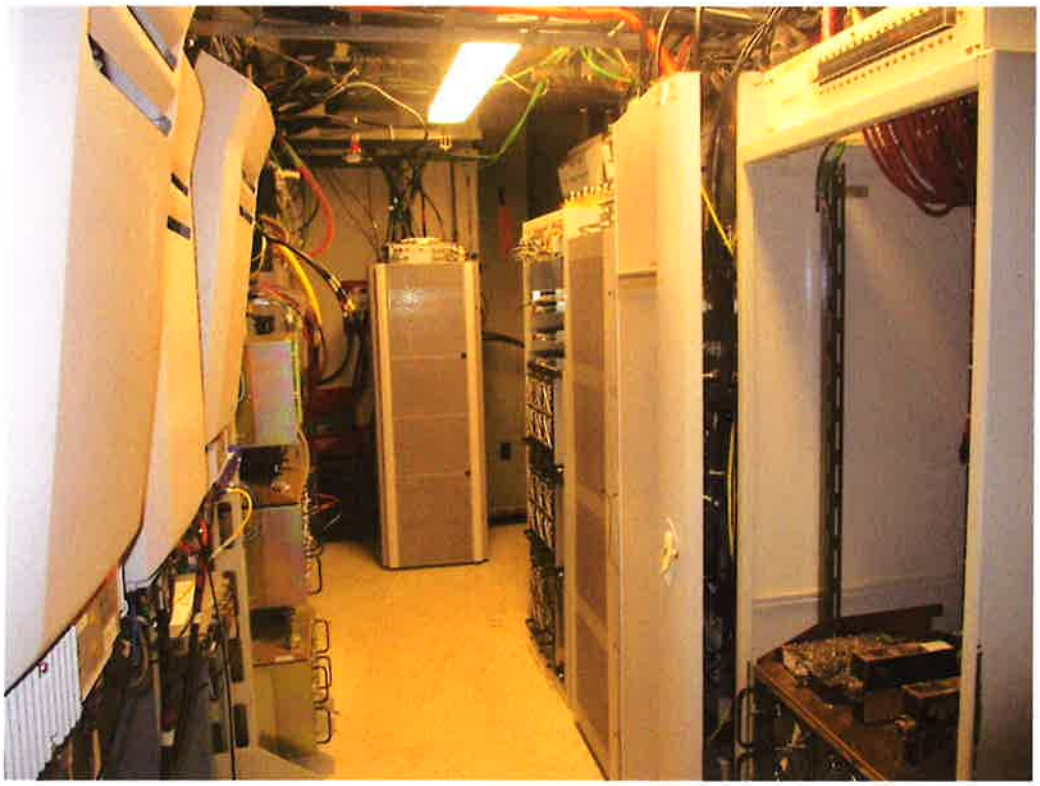

Photo 4: Sample photo illustrating the existing equipment room.

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Wind and Ice
Calculations

Date: 11/18/2019
Project Name: NEW LONDON-WASHINGTON ST
Project No.: CT2080
Designed By: JN **Checked By:** MSC

HUDSON Design Group LLC

2.6.5.2 Velocity Pressure Coeff:

$K_z = 2.01\ (z/z_g)^{2/\alpha}$

K_z=	1.445	
z=	105	(ft)
z_g=	700	(ft)
α=	11.5	

Kzmin ≤ Kz ≤ 2.01

Table 2-4

Exposure	Z_g	α	K_{zmin}	K_c
B	1200 ft	7.0	0.70	0.9
C	900 ft	9.5	0.85	1.0
D	700 ft	11.5	1.03	1.1

2.6.6.2 Topographic Factor:

Table 2-5

Topo. Category	K_t	f
2	0.43	1.25
3	0.53	2.0
4	0.72	1.5

$K_{zt} = [1+(K_c K_t/K_h)]^2$

$K_h = e^{(f*z/H)}$

K_{zt}=	#DIV/0!	
K_h=	#DIV/0!	
K_c=		(from Table 2-4)
K_t=		(from Table 2-5)
f=		(from Table 2-5)
z=	105	
z_s=	25	(Mean elevation of base of structure above se
H=	0	(Ht. of the crest above surrounding terrain)
K_{zt}=	1.00	(from 2.6.6.2.1)
K_e=	1.00	(from 2.6.8)

(If Category 1 then K_{zt} =1.0)

Category= 1

2.6.10 Design Ice Thickness

Max Ice Thickness = t_i = 1.00 in
Importance Factor = I= 1.0 (from Table 2-3)
K_{iz} = 1.12 (from Sec. 2.6.10)

$t_{iz} = t_i * I * K_{iz} * (K_{zt})^{0.35}$

t_{iz} = 1.12 in

Date: 11/18/2019
Project Name: NEW LONDON-WASHINGTON ST
Project No.: CT2080
Designed By: JN Checked By: MSC

HUDSON Design Group LLC

2.6.9 Gust Effect Factor

2.6.9.1 Self Supporting Lattice Structures

G_h = 1.0 Latticed Structures > 600 ft

G_h = 0.85 Latticed Structures 450 ft or less

G_h = 0.85 + 0.15 [h/150 - 3.0] h= ht. of structure

h=	97.2	G_h=	0.85
2.6.9.2 Guyed Masts		G_h=	0.85
2.6.9.3 Pole Structures		G_h=	1.1
2.6.9 Appurtenances		G_h=	1.0

2.6.9.4 Structures Supported on Other Structures

(Cantilivered tubular or latticed spines, pole, structures on buildings (ht. : width ratio > 5)

G_h=	1.35	**Gh=**	**1.00**

2.6.11.2 Design Wind Force on Appurtenances

$F = q_z * G_h * (EPA)_A$

$q_z = 0.00256 * K_z * K_{zt} * K_s * K_e * K_d * V_{max}^2$

q_z=	**63.99**	K_z=	1.445	(from 2.6.5.2)
$q_{z\ (ice)}$=	**8.78**	K_{zt}=	1.0	(from 2.6.6.2.1)
$q_{z\ (30)}$=	**3.16**	K_s=	1.0	(from 2.6.7)
		K_e=	1.00	(from 2.6.8)
		K_d=	0.95	(from Table 2-2)
		V_{max}=	135	mph (Ultimate Wind Speed)
		$V_{max\ (ice)}$=	50	mph
		V_{30}=	30	mph

Table 2-2

Structure Type	Wind Direction Probability Factor, Kd
Latticed structures with triangular, square or rectangular cross sections	0.85
Tubular pole structures, latticed structures with other cross sections, appurtenances	0.95
Tubular pole structures supporting antennas enclosed within a cylindrical shroud	1.00

Date: 11/18/2019
Project Name: NEW LONDON-WASHINGTON ST
Project No.: CT2080
Designed By: JN Checked By: MSC

HUDSON Design Group LLC

Determine Ca:

Table 2-9

Force Coefficients (Ca) for Appurtenances				
Member Type		Aspect Ratio ≤ 2.5	Aspect Ratio = 7	Aspect Ratio ≥ 25
		Ca	Ca	Ca
Flat		1.2	1.4	2.0
Square/Rectangular HSS		1.2 - 2.8(r_s) ≥ 0.85	1.4 - 4.0(r_s) ≥ 0.90	2.0 - 6.0(r_s) ≥ 1.25
Round	C < 39 (Subcritical)	0.7	0.8	1.2
	39 ≤ C ≤ 78 (Transitional)	$4.14/(C^{0.485})$	$3.66/(C^{0.415})$	$46.8/(C^{1.0})$
	C > 78 (Supercritical)	0.5	0.6	0.6

Aspect Ratio is the overall length/width ratio in the plane normal to the wind direction.
(Aspect ratio is independent of the spacing between support points of a linear appurtenance,

Note: Linear interpolation may be used for aspect ratios other than those shown.

Ice Thickness = **1.12** in | **Angle =** **0 (deg)** | **Equivalent Angle =** **180 (deg)**

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)	Force (lbs) (30 mph)
7770 Antenna	55.0	11.0	5.0	4.20	5.00	1.31	**353**	**61**	**17**
7770 Antenna (Side)	55.0	5.0	11.0	1.91	11.00	1.53	**187**	**39**	**9**
800-10964 Antenna	59.0	20.0	6.9	8.19	2.95	1.22	**640**	**101**	**32**
800-10964 Antenna (Side)	59.0	6.9	20.0	2.83	8.55	1.45	**263**	**50**	**13**
800-10965 Antenna	78.7	20.0	6.9	10.93	3.94	1.26	**884**	**139**	**44**
800-10965 Antenna (Side)	78.7	6.9	20.0	3.77	11.41	1.55	**373**	**70**	**18**
SBNHH-1D65A Antenna	55.6	11.9	7.1	4.59	4.67	1.30	**381**	**65**	**19**
SBNHH-1D65A Antenna (Side)	55.6	7.1	11.9	2.74	7.83	1.43	**250**	**47**	**12**
B14 4478 RRH	18.1	13.4	8.3	1.68	1.35	1.20	**129**	**23**	**6**
4449 B5/B12 RRH	14.9	13.2	10.4	1.37	1.13	1.20	**105**	**19**	**5**
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.20	**105**	**19**	**5**
RRUS-32 RRH	27.2	12.1	7.0	2.29	2.25	1.20	**176**	**31**	**9**
LGP21401 TMA	14.4	2.7	9.0	0.27	5.33	1.33	**23**	**7**	**1**
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	**72**	**13**	**4**
L 3x3 Angles	3.0	12.0		0.25	0.25	2.00	**32**	**9**	**2**
2" Pipe	2.4	12.0		0.20	0.20	1.20	**15**	**5**	**1**
3" Pipe	3.5	12.0		0.29	0.29	1.20	**22**	**6**	**1**

Date: 11/18/2019
Project Name: NEW LONDON-WASHINGTON ST
Project No.: CT2080
Designed By: JN **Checked By:** MSC

HUDSON Design Group

ICE WEIGHT CALCULATIONS

Thickness of ice: 1.12 in.
Density of ice: 56 pcf

7770 Antenna

Weight of ice based on total radial SF area:

Height (in):	55.0	
Width (in):	11.0	
Depth (in):	5.0	
Total weight of ice on object:		83 lbs
Weight of object:	35.0 lbs	
Combined weight of ice and object:		118 lbs

800-10964 Antenna

Weight of ice based on total radial SF area:

Height (in):	59.0	
Width (in):	20.0	
Depth (in):	6.9	
Total weight of ice on object:		150
Weight of object:	84.0 lbs	
Combined weight of ice and object:		234

800-10965 Antenna

Weight of ice based on total radial SF area:

Height (in):	78.7	
Width (in):	20.0	
Depth (in):	6.9	
Total weight of ice on object:		200 lbs
Weight of object:	109.0 lbs	
Combined weight of ice and object:		309 lbs

SBNHH-1D65A Antenna

Weight of ice based on total radial SF area:

Height (in):	55.6	
Width (in):	11.9	
Depth (in):	7.1	
Total weight of ice on object:		95
Weight of object:	34.0 lbs	
Combined weight of ice and object:		129

B14 4478 RRH

Weight of ice based on total radial SF area:

Height (in):	18.1	
Width (in):	13.4	
Depth (in):	8.3	
Total weight of ice on object:		35 lbs
Weight of object:	60.0 lbs	
Combined weight of ice and object:		95 lbs

4449 B5/B12 RRH

Weight of ice based on total radial SF area:

Height (in):	14.9	
Width (in):	13.2	
Depth (in):	10.4	
Total weight of ice on object:		30
Weight of object:	73.0 lbs	
Combined weight of ice and object:		103

8843 B2/B66A RRH

Weight of ice based on total radial SF area:

Height (in):	14.9	
Width (in):	13.2	
Depth (in):	10.9	
Total weight of ice on object:		31 lbs
Weight of object:	72.0 lbs	
Combined weight of ice and object:		103 lbs

RRUS-32 RRH

Weight of ice based on total radial SF area:

Height (in):	27.2	
Width (in):	12.1	
Depth (in):	7.0	
Total weight of ice on object:		47
Weight of object:	60.0 lbs	
Combined weight of ice and object:		107

LGP21401 TMA

Weight of ice based on total radial SF area:

Height (in):	14.4	
Width (in):	2.7	
Depth (in):	9.0	
Total weight of ice on object:		17 lbs
Weight of object:	19.0 lbs	
Combined weight of ice and object:		36 lbs

Squid Surge Arrestor

Weight of ice based on total radial SF area:

Depth (in):	24.0	
Diameter(in):	9.7	
Total weight of ice on object:		30
Weight of object:	33 lbs	
Combined weight of ice and object:		63

2" pipe

Per foot weight of ice:

diameter (in):	2.38	
Per foot weight of ice on object:		5 plf

3" Pipe

Per foot weight of ice:

diameter (in):	3.5	
Per foot weight of ice on object:		6

L 3x3 Angles

Weight of ice based on total radial SF area:

Height (in):	3	
Width (in):	3	
Per foot weight of ice on object:		7 plf

HUDSON
Design Group LLC

Antenna Mount Calculations
(Proposed Condition)

Bentley

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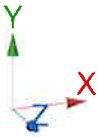
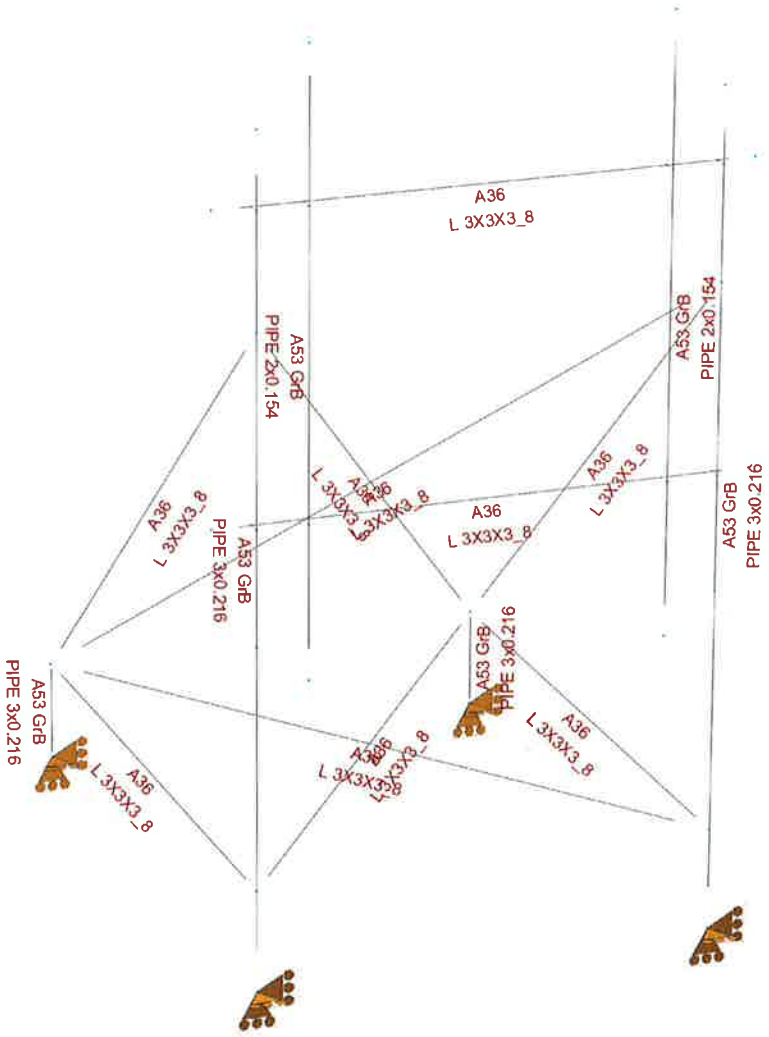
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\CT\CT2080\LTE 6C-7C\Rev.2\CT2080 (LTE 6C-7

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L 3X3X3_8
A53 GrB
PIPE 2x0.154
A53 GrB
PIPE 2x0.154
A36
L 3X3X3_8
A36
L 3X3X3_8
A36
L 3X3X3_8
A36
L 3X3X3_8
A53 GrB
PIPE 3x0.216
A53 GrB
PIPE 3x0.216
A53 GrB
PIPE 3x0.216
A53 GrB
PIPE 3x0.216
A36
L 3X3X3_8
A36
L 3X3X3_8
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Bentley

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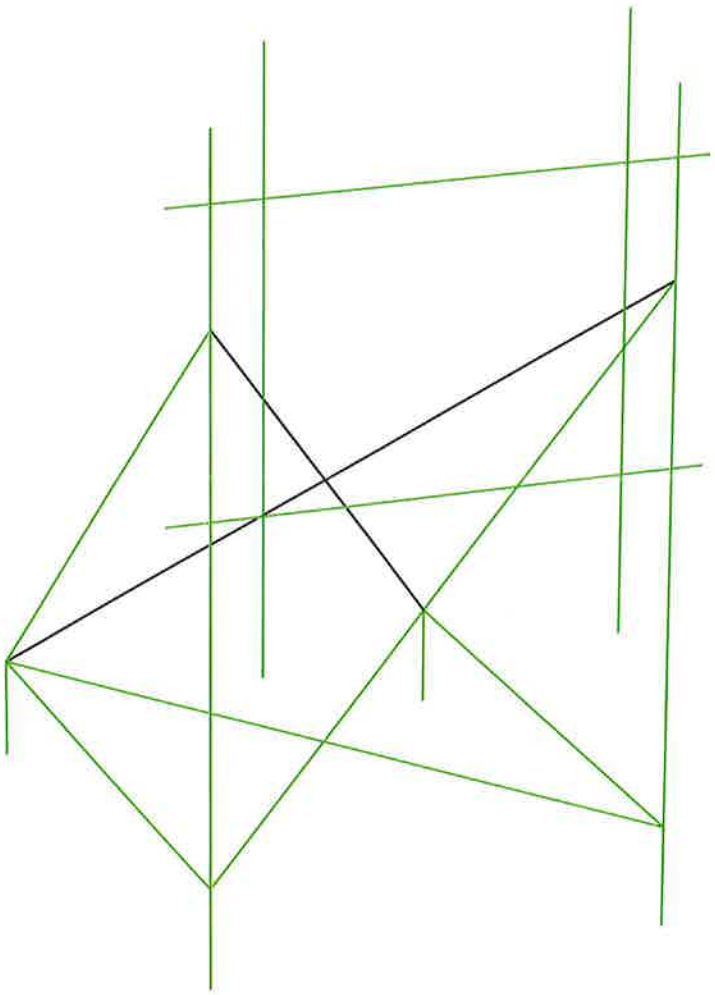
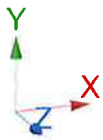
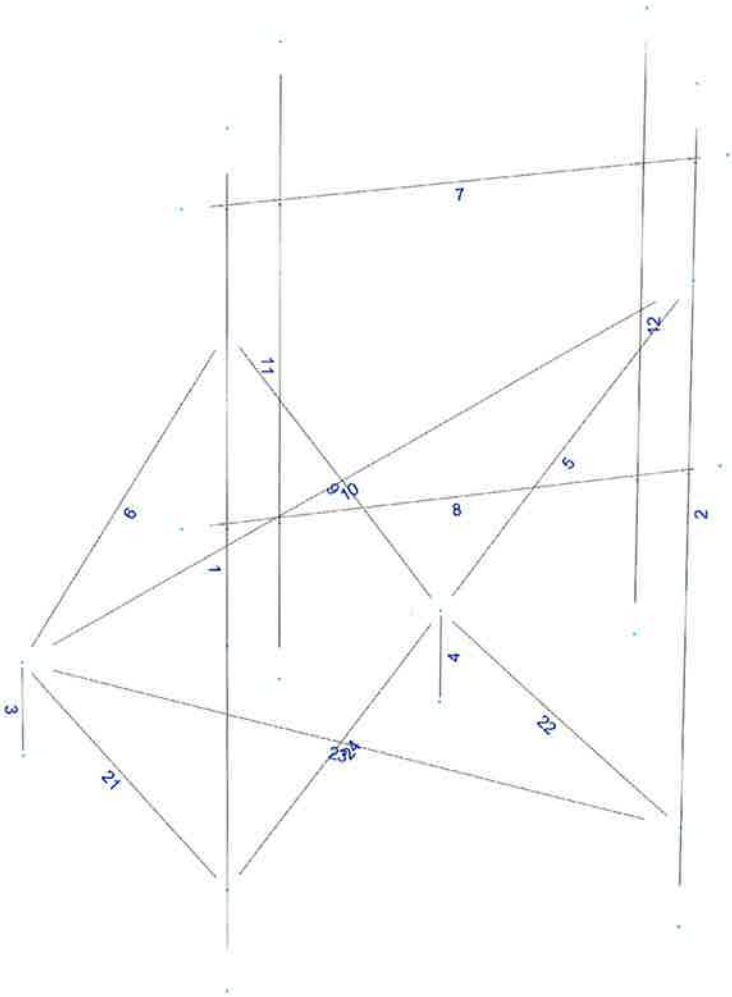
Design status
- Not designed
- Error on design
- Design O.K.
- With warnings



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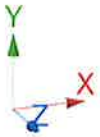
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Load data

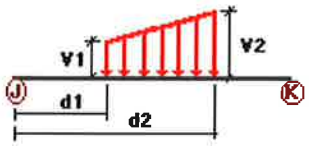
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
DL	Dead Load	No	DL
Wf	Wind Load (FRONT)	No	WIND
Ws	Wind Load (SIDE)	No	WIND
Wif	Wind with Ice (FRONT)	No	WIND
Wis	Wind with Ice (SIDE)	No	WIND
Di	Ice Load	No	LL

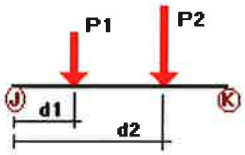
Distributed force on members



Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
Wf	1	z	-0.022	0.00	0.00	No	0.00	No
	2	z	-0.022	0.00	0.00	No	0.00	No
	3	z	-0.022	0.00	0.00	No	0.00	No
	4	z	-0.022	0.00	0.00	No	0.00	No
	5	z	-0.032	0.00	0.00	No	0.00	No
	6	z	-0.032	0.00	0.00	No	0.00	No
	7	z	-0.032	0.00	0.00	No	0.00	No
	8	z	-0.032	0.00	0.00	No	0.00	No
	9	z	-0.032	0.00	0.00	No	0.00	No
	10	z	-0.032	0.00	0.00	No	0.00	No
	23	z	-0.032	0.00	0.00	No	0.00	No
	24	z	-0.032	0.00	0.00	No	0.00	No
Ws	1	x	-0.022	0.00	0.00	No	0.00	No
	2	x	-0.022	0.00	0.00	No	0.00	No
	3	x	-0.022	0.00	0.00	No	0.00	No
	4	x	-0.022	0.00	0.00	No	0.00	No
	5	x	-0.032	0.00	0.00	No	0.00	No
	6	x	-0.032	0.00	0.00	No	0.00	No
	11	x	-0.015	0.00	0.00	No	0.00	No
	12	x	-0.015	0.00	0.00	No	0.00	No
	21	x	-0.032	0.00	0.00	No	0.00	No
	22	x	-0.032	0.00	0.00	No	0.00	No

Di	1	y	-0.006	0.00	0.00	No	0.00	No
	2	y	-0.006	0.00	0.00	No	0.00	No
	3	y	-0.006	0.00	0.00	No	0.00	No
	4	y	-0.006	0.00	0.00	No	0.00	No
	5	y	-0.007	0.00	0.00	No	0.00	No
	6	y	-0.007	0.00	0.00	No	0.00	No
	7	y	-0.007	0.00	0.00	No	0.00	No
	8	y	-0.007	0.00	0.00	No	0.00	No
	9	y	-0.007	0.00	0.00	No	0.00	No
	10	y	-0.007	0.00	0.00	No	0.00	No
	11	y	-0.005	0.00	0.00	No	0.00	No
	12	y	-0.005	0.00	0.00	No	0.00	No
	21	y	-0.007	0.00	0.00	No	0.00	No
	22	y	-0.007	0.00	0.00	No	0.00	No
	23	y	-0.007	0.00	0.00	No	0.00	No
	24	y	-0.007	0.00	0.00	No	0.00	No

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	11	y	-0.055	0.75	No
		y	-0.055	7.25	No
	12	y	-0.042	1.75	No
		y	-0.042	6.25	No
Wf	11	z	-0.442	0.75	No
		z	-0.442	7.25	No
	12	z	-0.32	1.75	No
		z	-0.32	6.25	No
Ws	11	x	-0.187	0.75	No
		x	-0.187	7.25	No
	12	x	-0.132	1.75	No
		x	-0.132	6.25	No
Wif	11	z	-0.07	0.75	No
		z	-0.07	7.25	No
	12	z	-0.051	1.75	No
		z	-0.051	6.25	No
Wis	11	x	-0.035	0.75	No
		x	-0.035	7.25	No
	12	x	-0.025	1.75	No
		x	-0.025	6.25	No
Di	11	y	-0.10	0.75	No
		y	-0.10	7.25	No
	12	y	-0.075	1.75	No
		y	-0.075	6.25	No

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
DL	Dead Load	No	0.00	-1.00	0.00
Wf	Wind Load (FRONT)	No	0.00	0.00	0.00
Ws	Wind Load (SIDE)	No	0.00	0.00	0.00
Wif	Wind with Ice (FRONT)	No	0.00	0.00	0.00
Wis	Wind with Ice (SIDE)	No	0.00	0.00	0.00
Di	Ice 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
Wf	0.00	0.00	0.00
Ws	0.00	0.00	0.00
Wif	0.00	0.00	0.00
Wis	0.00	0.00	0.00
Di	0.00	0.00	0.00

Bentley

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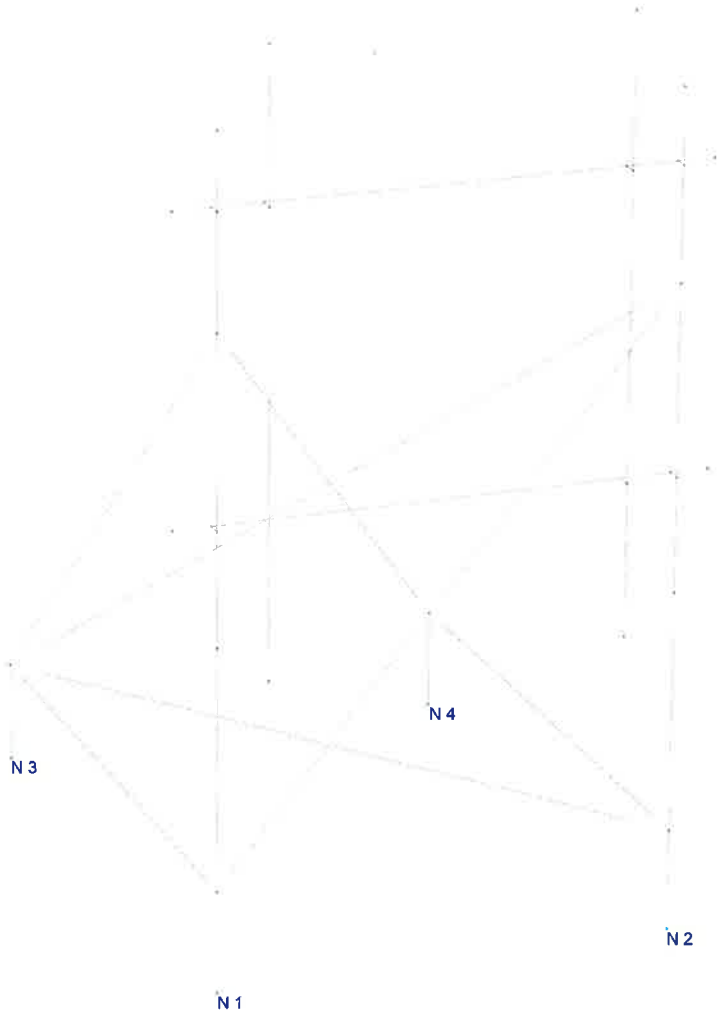
Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

LC1=1.2DL+Wf
LC2=1.2DL+Ws
LC3=1.2DL-Wf
LC4=1.2DL-Ws
LC5=0.9DL+Wf
LC6=0.9DL+Ws
LC7=0.9DL-Wf
LC8=0.9DL-Ws
LC9=1.2DL+Wif+Di
LC10=1.2DL+Wis+Di
LC11=1.2DL-Wif+Di
LC12=1.2DL-Wis+Di
LC13=1.2DL
LC14=0.9DL

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	L 3X3X3_8	**5**	LC4 at 50.00%	0.50	OK	Eq. H2-1
		6	LC2 at 50.00%	0.59	OK	Eq. H2-1
		7	LC1 at 7.50%	0.49	OK	Eq. H3-8
		8	LC3 at 7.50%	0.58	OK	Eq. H3-8
		9	LC4 at 0.00%	**0.72**	**With warnings**	Eq. H2-1
		10	LC2 at 100.00%	0.48	With warnings	Eq. H2-1
		21	LC8 at 50.00%	0.27	OK	Eq. H2-1
		22	LC6 at 50.00%	0.22	OK	Eq. H2-1
		23	LC4 at 50.00%	0.30	OK	Eq. H2-1
		24	LC2 at 50.00%	0.39	OK	Eq. H2-1
	PIPE 2x0.154	**11**	LC1 at 75.00%	**0.45**	**OK**	Eq. H1-1b
		12	LC2 at 25.00%	0.12	OK	Eq. H1-1b
	PIPE 3x0.216	**1**	LC4 at 11.46%	**0.89**	**OK**	Eq. H1-1b
		2	LC2 at 12.50%	0.76	OK	Eq. H1-1b
		3	LC2 at 100.00%	0.11	OK	Eq. H1-1b
		4	LC4 at 100.00%	0.16	OK	Eq. H1-1b


N 4
N 3
N 2
N 1
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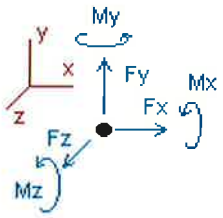
Analysis result

Reactions



Direction of positive forces and moments

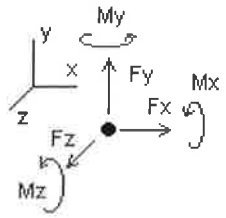
	Forces [Kip]			Moments [Kip*ft]		
Node	**FX**	**FY**	**FZ**	**MX**	**MY**	**MZ**
Condition **LC1=1.2DL+Wf**						
1	0.06655	-0.99934	2.01832	0.00000	0.00000	0.00000
2	-0.06354	-0.86235	1.83388	0.00000	0.00000	0.00000
3	0.01154	1.70284	0.05006	0.00000	0.00000	0.00000
4	-0.01455	1.53915	0.05328	0.00000	0.00000	0.00000
SUM	0.00000	1.38030	3.95555	0.00000	0.00000	0.00000
Condition **LC2=1.2DL+Ws**						
1	1.63713	0.46021	-1.04153	0.00000	0.00000	0.00000
2	1.20388	0.52646	0.95495	0.00000	0.00000	0.00000
3	-0.05463	2.56807	-0.16437	0.00000	0.00000	0.00000
4	-0.11015	-2.17443	0.25095	0.00000	0.00000	0.00000
SUM	2.67622	1.38030	0.00000	0.00000	0.00000	0.00000
Condition **LC3=1.2DL-Wf**						
1	-0.07572	2.01310	-2.01376	0.00000	0.00000	0.00000
2	0.07272	1.82192	-1.83639	0.00000	0.00000	0.00000
3	-0.01351	-1.30960	-0.05464	0.00000	0.00000	0.00000
4	0.01650	-1.14512	-0.05075	0.00000	0.00000	0.00000
SUM	0.00000	1.38030	-3.95555	0.00000	0.00000	0.00000
Condition **LC4=1.2DL-Ws**						
1	-1.64630	0.55355	1.04609	0.00000	0.00000	0.00000
2	-1.19469	0.43312	-0.95745	0.00000	0.00000	0.00000
3	0.05267	-2.17483	0.15979	0.00000	0.00000	0.00000
4	0.11210	2.56846	-0.24842	0.00000	0.00000	0.00000
SUM	-2.67622	1.38030	0.00000	0.00000	0.00000	0.00000

Condition	**LC5=0.9DL+Wf**					
1	0.06769	-1.12606	2.01775	0.00000	0.00000	0.00000
2	-0.06468	-0.98230	1.83420	0.00000	0.00000	0.00000
3	0.01179	1.65369	0.05063	0.00000	0.00000	0.00000
4	-0.01480	1.48990	0.05296	0.00000	0.00000	0.00000
SUM	0.00000	1.03523	3.95555	0.00000	0.00000	0.00000
Condition	**LC6=0.9DL+Ws**					
1	1.63827	0.33349	-1.04210	0.00000	0.00000	0.00000
2	1.20273	0.40651	0.95526	0.00000	0.00000	0.00000
3	-0.05438	2.51891	-0.16379	0.00000	0.00000	0.00000
4	-0.11040	-2.22369	0.25064	0.00000	0.00000	0.00000
SUM	2.67622	1.03523	0.00000	0.00000	0.00000	0.00000
Condition	**LC7=0.9DL-Wf**					
1	-0.07457	1.88638	-2.01433	0.00000	0.00000	0.00000
2	0.07157	1.70198	-1.83608	0.00000	0.00000	0.00000
3	-0.01326	-1.35876	-0.05407	0.00000	0.00000	0.00000
4	0.01626	-1.19438	-0.05107	0.00000	0.00000	0.00000
SUM	0.00000	1.03523	-3.95555	0.00000	0.00000	0.00000
Condition	**LC8=0.9DL-Ws**					
1	-1.64515	0.42683	1.04552	0.00000	0.00000	0.00000
2	-1.19584	0.31317	-0.95714	0.00000	0.00000	0.00000
3	0.05291	-2.22398	0.16036	0.00000	0.00000	0.00000
4	0.11186	2.51921	-0.24874	0.00000	0.00000	0.00000
SUM	-2.67622	1.03523	0.00000	0.00000	0.00000	0.00000
Condition	**LC9=1.2DL+Wif+Di**					
1	-0.00030	0.75372	0.13564	0.00000	0.00000	0.00000
2	0.00117	0.71554	0.10292	0.00000	0.00000	0.00000
3	-0.00119	0.45788	-0.00110	0.00000	0.00000	0.00000
4	0.00032	0.43048	0.00454	0.00000	0.00000	0.00000
SUM	0.00000	2.35762	0.24200	0.00000	0.00000	0.00000
Condition	**LC10=1.2DL+Wis+Di**					
1	0.06784	0.87393	-0.00558	0.00000	0.00000	0.00000
2	0.06674	0.82309	0.00640	0.00000	0.00000	0.00000
3	-0.00885	0.49767	-0.01507	0.00000	0.00000	0.00000
4	-0.00572	0.16293	0.01425	0.00000	0.00000	0.00000
SUM	0.12000	2.35762	0.00000	0.00000	0.00000	0.00000
Condition	**LC11=1.2DL-Wif+Di**					
1	-0.01349	1.01246	-0.12797	0.00000	0.00000	0.00000
2	0.01234	0.91232	-0.10819	0.00000	0.00000	0.00000
3	-0.00188	0.19914	-0.00617	0.00000	0.00000	0.00000
4	0.00303	0.23370	0.00033	0.00000	0.00000	0.00000
SUM	0.00000	2.35762	-0.24200	0.00000	0.00000	0.00000

Condition **LC12=1.2DL-Wis+Di**						
1	-0.08163	0.89226	0.01325	0.00000	0.00000	0.00000
2	-0.05323	0.80477	-0.01167	0.00000	0.00000	0.00000
3	0.00579	0.15934	0.00780	0.00000	0.00000	0.00000
4	0.00907	0.50126	-0.00937	0.00000	0.00000	0.00000
SUM	-0.12000	2.35762	0.00000	0.00000	0.00000	0.00000
Condition **LC13=1.2DL**						
1	-0.00459	0.50688	0.00228	0.00000	0.00000	0.00000
2	0.00459	0.47979	-0.00125	0.00000	0.00000	0.00000
3	-0.00098	0.19662	-0.00229	0.00000	0.00000	0.00000
4	0.00097	0.19701	0.00126	0.00000	0.00000	0.00000
SUM	0.00000	1.38030	0.00000	0.00000	0.00000	0.00000
Condition **LC14=0.9DL**						
1	-0.00344	0.38016	0.00171	0.00000	0.00000	0.00000
2	0.00345	0.35984	-0.00094	0.00000	0.00000	0.00000
3	-0.00074	0.14746	-0.00172	0.00000	0.00000	0.00000
4	0.00073	0.14776	0.00095	0.00000	0.00000	0.00000
SUM	0.00000	1.03523	0.00000	0.00000	0.00000	0.00000

Envelope for nodal reactions

Note.- **Ic** is the controlling load condition



Direction of positive forces and moments

Envelope of nodal reactions for :

LC1=1.2DL+Wf
LC2=1.2DL+Ws
LC3=1.2DL-Wf
LC4=1.2DL-Ws
LC5=0.9DL+Wf
LC6=0.9DL+Ws
LC7=0.9DL-Wf
LC8=0.9DL-Ws
LC9=1.2DL+Wif+Di
LC10=1.2DL+Wis+Di
LC11=1.2DL-Wif+Di
LC12=1.2DL-Wis+Di
LC13=1.2DL
LC14=0.9DL

Node		Forces						Moments					
		Fx [Kip]	lc	Fy [Kip]	lc	Fz [Kip]	lc	Mx [Kip*ft]	lc	My [Kip*ft]	lc	Mz [Kip*ft]	lc
1	Max	1.638	LC6	2.013	LC3	2.018	LC1	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-1.646	LC4	-1.126	LC5	-2.014	LC7	0.00000	LC1	0.00000	LC1	0.00000	LC1
2	Max	1.204	LC2	1.822	LC3	1.834	LC5	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-1.196	LC8	-0.982	LC5	-1.836	LC3	0.00000	LC1	0.00000	LC1	0.00000	LC1
3	Max	0.053	LC8	2.568	LC2	0.160	LC8	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.055	LC2	-2.224	LC8	-0.164	LC2	0.00000	LC1	0.00000	LC1	0.00000	LC1
4	Max	0.112	LC4	2.568	LC4	0.251	LC2	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.110	LC6	-2.224	LC6	-0.249	LC8	0.00000	LC1	0.00000	LC1	0.00000	LC1

Date: 11/19/2019
Project Name: NEW LONDON-WASHINGTON ST
Project No.: CT2080
Designed By: JN **Checked By:** MSC

HUDSON Design Group LLC

CHECK EPOXY ANCHOR CONNECTION CAPACITY → PROPOSED ANCHORS (WORST CASE)

Reference: Hilti North American Product Technical Guide, 19th Edition

Epoxy Type =	HIT-HY 200	
Anchor Diameter =	1/2 in.	(HAS Threaded Rod)
Embedment Depth =	2 3/4 in.	
f'c of Concrete =	3000 psi	(Assumed 4" Thick)

	Cracked Conc. Allowable Loads (lbs)	Spacing Reduct. Factor	Edge Reduct. Factor	Conc. Thickness Reduct. Factor	Reduced Loads (lbs)
Tensile Load	2760	0.63	1	1	1738.8
Shear Load	5945	0.58	1	0.58	1999.898

TENSILE FORCES

Reaction **F =** 1126 lbs. (See Bently Output)

SHEAR FORCES

Reactions in X direction: 1646 lbs. (See Bently Output)
Reactions in Z direction: 2014 lbs. (See Bently Output)

Resultant: 2601 lbs.

No. of Supports = 1
No. of Anchors / Support = 4

Tension Design Load / Anchor =

f_t= 281.50 lbs. < 1738.8 lbs. **Therefore, OK !**

Shear Design Load / Anchor=

f_v= 650.26 lbs. < 1999.9 lbs. **Therefore, OK !**

CHECK COMBINED TENSION AND SHEAR

f_t / F_T	+	f_v / F_V	≤	1.0			
0.162	+	0.325	=	0.487	<	1.0	**Therefore, OK !**

HUDSON
Design Group LLC

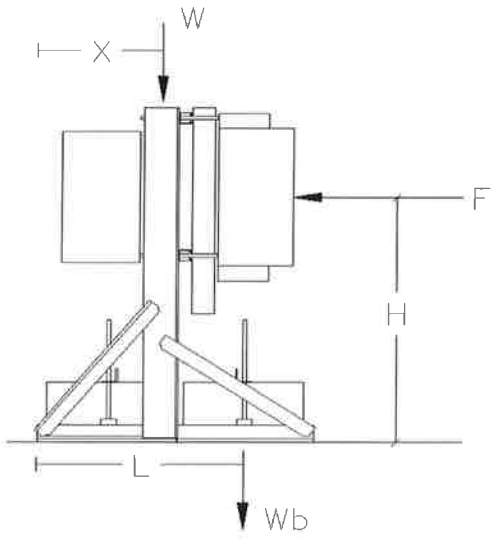
RRH Non-Penetrating Ballast Mount
Calculations

Date: 11/18/2019
Project Name: NEW LONDON-WASHINGTON ST
Project No.: CT2080
Designed By: JN **Checked By:** MSC

HUDSON Design Group LLC

Calculate Total Ballast Required for Ballast Mount

Assume (2) RRH's as projected area



Force (F) =	305	lbs.
Height (H) =	2.4	ft
Weight of Appurtenances (W) =	298	lbs.
Frame Width/2 (X) =	1.3	ft
Length (L) =	2.2	ft
Ballast (Wb) =	TBD	
Safety Factor (SF) =	1.5	

Overturning at Ballast

$\Sigma M = 0 = (F * H) - (W * X) - (Wb * L)$ ---> $Wb = [(F*H*SF-W*X)/L] =$ **217 lbs.**

Determine Number of Blocks Required

(assume 4"x8"x16" solid blocks @ 38 lbs. each)

Number of Blocks Required = **6 BLOCKS PER SIDE**

HUDSON
Design Group LLC

Roof Framing Calculations

Date: 11/18/2019
Project Name: NEW LONDON-WASHINGTON ST
Project No.: CT2080
Designed By: JN **Checked By:** MSC

HUDSON Design Group LLC

ONE WAY CONCRETE SLAB CHECK → WORST CASE

Slab Thickness, h:	4	in	
Cover:	0.75	in	(Assumed)
Reinforcing Steel Bars:	Unknown		
f'c of Concrete =	3000	psi	(Assumed)
fy of Steel Reinforcement =	40000	psi	(Assumed)
Span of Beam (ℓ) =	3	ft	

Minimum Slab Thickness:

$h_{min} = \ell / 20 =$ 0.15 ft = 1.8 in ($h_{min} > h$)

h = 4 in

Minimum Allowable Reinforcing Steel:

Depth to Steel Reinforc., d:	3	in	
"Web" Thickness, b_w:	12	in	
Min. Allowable Steel, $A_{s,min}$:	0.18	in^2/ft	(ACI 10.5.1)
Assume Steel:	#4	Quantity:	1
Steel Area, A_s:	0.2	in^2/ft	($A_s > A_{s,min}$)
Ratio of reinforc. in section, ρ:	0.0055556		

Concrete Check:

ρ min. : 0.0055 (Table A.8 from Design of Reinforc.Concrete 8th Ed)

$M_u/(\Phi * b_w * d^2)$ = 210.5 psi (Table A.8 from Design of Reinforc.Concrete 8th Ed)

Allowable Moment: M_u = 20460.60 in-lbs = 1705.05 ft-lbs

Allowable Uniform Roof Loads: $M_u = (w * \ell^2) / 8 \rightarrow w = 8 * M_u / \ell^2$ = 1515.60 psf per 12" of Slab

Capacity Check:

Slab Weight:	150 pcf * h/12 =	50	psf
Dead Load:		15	psf
Snow Load:		30	psf
Total Roof Load:		95	psf
Available Roof Capacity, P_{allow}:		1420.60	psf
Available Load Capacity, P_{allow}:		4261.80	lbs
Applied Punching Load, P_{pr}:		2568	lbs (See Bentley Results)

P_{pr}		P_{allow}		
	<		O.K!	
2568.00 lbs	<	4261.80 lbs	O.K!	60.26 %

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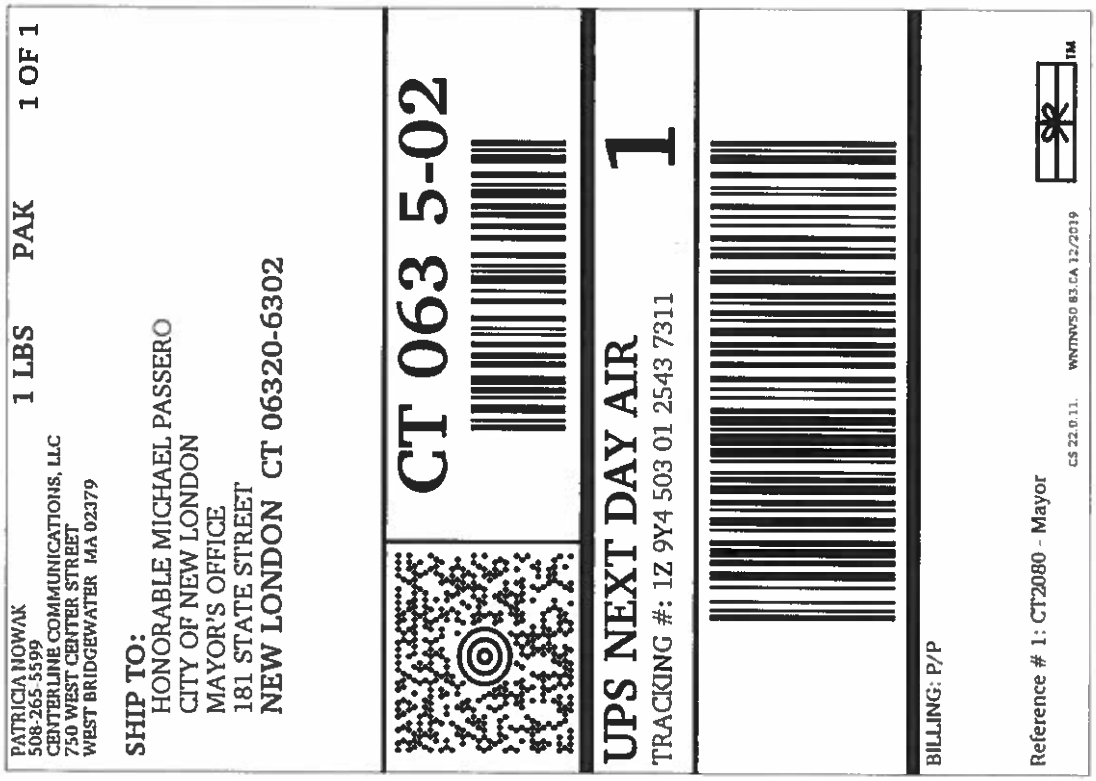

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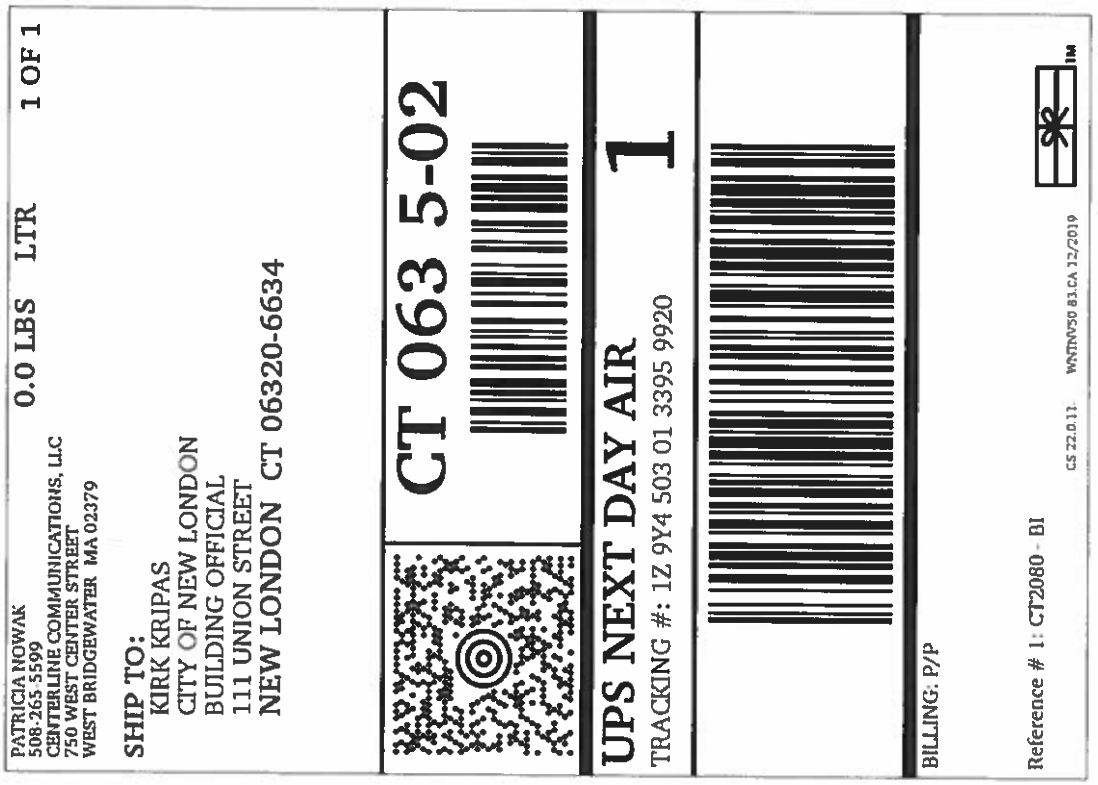

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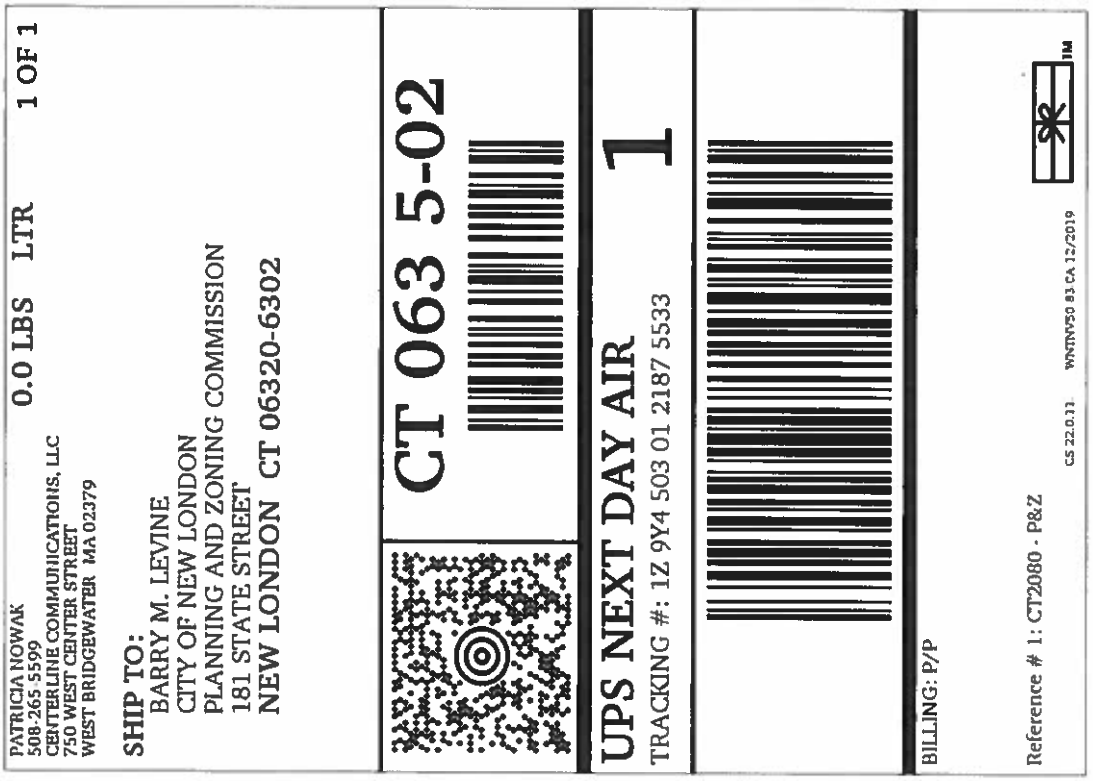

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