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

May 03, 2019

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

Notice of Exempt Modification – New Cingular Wireless PCS, LLC (AT&T) – CT1013
27 Butler Street, Meriden, CT 06451
N 41.55833333
W 72.80722222

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the rooftop level (82' AGL) of the 4-story Central Office building at 27 Butler Street, Meriden, CT (25 Butler Street per Meriden GIS). The property is owned by AT&T (SNET). AT&T now intends to remove three (3) Powerwave and (3) KMW antennas and replace them with four (4) Kathrien 800-10964 and two (2) Kathrien 800-10965 antennas. AT&T will also remove (3) Ericsson RRUS-11 Remote Radio Units (RRU) and replace them with (3) Ericsson B5/B12 4449 and add (3) Ericsson B2/B66A 8843 RRUs.

AT&T's use of this facility was approved by the Connecticut Siting Council in Petition # 292 on October 14, 1992. The approval included no conditions that could feasibly be violated by this proposed modification, including total facility height and mounting restrictions. This modification therefore complies with the aforementioned approvals.

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

the property owner.

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

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

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

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

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

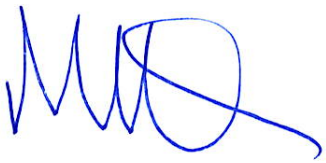
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

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

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

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

Sincerely,



Mark Roberts
QC Development
Consultant for AT&T

Attachments

cc: Mayor Kevin Scarpati - Elected Official
Renata Bertotti – Director of Planning, Development & Enforcement
SNET - Property Owner

Power Density

Existing Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm^2)	Freq. Band (MHz**)	Limit S (mW /cm^2)	%MPE
Other Carriers*							0%
AT&T GSM	2	500	82	0.0607	850	0.5667	1.07%
AT&T UMTS	2	500	82	0.0607	850	0.5667	1.07%
AT&T LTE	2	1476	82	0.1791	700	0.4667	3.84%
Site Total							5.98%

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

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

Proposed Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm^2)	Freq. Band (MHz**)	Limit S (mW /cm^2)	%MPE
Other Carriers*							0%
AT&T UMTS	1	500	82	0.0311	850	0.5667	0.55%
AT&T LTE	1	1476	82	0.0919	700	0.4667	1.97%
AT&T LTE	1	1000	82	0.0623	850	0.5667	1.10%
AT&T 5G	1	1000	82	0.0623	850	0.5667	1.10%
AT&T LTE	2	3664	82	0.4562	1900	1.0000	4.56%
AT&T LTE	1	3837	82	0.2389	2100	1.0000	2.39%
Site Total							11.67%

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

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

PROJECT INFORMATION

SCOPE OF WORK:	ITEMS TO BE MOUNTED ON THE EXISTING ROOF: • NEW AT&T ANTENNAS (800-10964) @ POSITION 2 & 4, (TYP. OF 2 PER ALPHA & GAMMA SECTORS, TOTAL OF 4). • NEW AT&T ANTENNAS (800-10965) @ POSITION 2 & 4, (TOTAL OF 2 FOR BETA SECTOR). • NEW AT&T RRUS 4449 B5/B12 (700/850) (TYP. OF 1 PER SECTOR, TOTAL OF 3). • NEW AT&T RRUS 8843 B2/B66A (1900/2100) (TYP. OF 1 PER SECTOR, TOTAL OF 3) • NEW SURGE ARRESTOR DC6-48-60-18-8C (TYP. OF 1 PER SECTOR, TOTAL OF 3). WITH (4) DC POWER, (1) ALARM CABLE, (2) FIBER & (3) 3/8" RET CABLES. ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION: • SWAP BASEBAND FOR RBS 6630. • ADD 5G RBS 6630. • BASEBAND CONFIGURATION AS PER PD / SECTION-7.
SITE ADDRESS:	27 BUTLER STREET MERIDEN, CT 06451
LATITUDE:	41.537603 N, 41° 32' 15.37" N
LONGITUDE:	72.806166 W, 72° 48' 22.19" W
TYPE OF SITE:	ROOFTOP/INDOOR EQUIPMENT
ROOFTOP HEIGHT:	78'±
RAD CENTER:	82'±
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY

SITE NUMBER: CT1013

SITE NAME: MERIDEN SBC CO

FA CODE: 10035054

PACE ID: MRCTB035103, MRCTB035267, MRCTB035132, MRCTB035304

PROJECT: LTE 2C/3C/4C/4TX4RX 2019 UPGRADE

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	1
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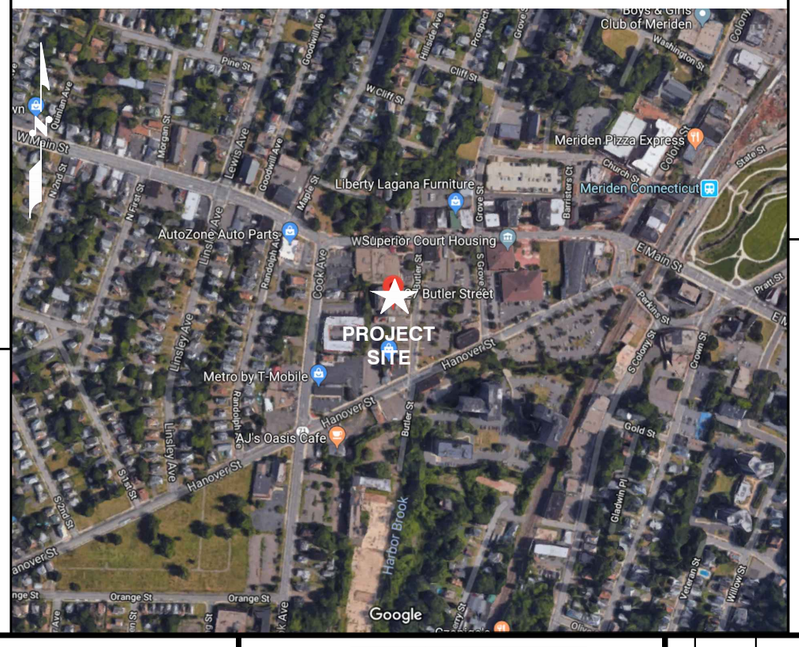
A-2	ELEVATION	1
A-3	ANTENNA LAYOUTS	1
A-4	DETAILS	1
A-5	PENETRATION DETAILS	1
RF-1	RF PLUMBING DIAGRAM	1
G-1	GROUNDING DETAILS	1

VICINITY MAP

DIRECTIONS TO SITE:

691 WEST EXIT 7 DOWNTOWN MERIDEN TAKE LEFT AT THE END OF THE EXIT DRIVE STRAIGHT ACROSS AT THE NEXT TRAFFIC LIGHT TAKE A RIGHT WEST MAIN ST GET INTO LEFT LANE AND THE 5TH TRAFFIC LIGHT IS BUTLER ST TAKE A LEFT BUILDING IS ON THE RIGHT NEXT TO THE YMCA ON THE CORNER ENTRANCE TO BUILDING IS AT THE BACK DOOR CELL ON THIRD FLOOR THIS IS A CENTRAL OFFICE LOCATION.



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

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1013
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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: EB

STATE OF CONNECTICUT · REGISTERED · No. 28955 · LICENSED PROFESSIONAL ENGINEER

AT&T

TITLE SHEET
(LTE 2C-3C-4C)

SITE NUMBER	DRAWING NUMBER	REV
CT1013	T-1	1

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.

6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO 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 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

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

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

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. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."

17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS 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-G, STRUCTURAL STANDARDS FOR STEEL

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

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	GC	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BBU	BATTERY BACKUP UNIT	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
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

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1013
SITE NAME: MERIDEN SBC CO

27 BUTLER STREET
MERIDEN, CT 06451
NEW HAVEN COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: EB

STATE OF CONNECTICUT
DEREK J. CREASER
26,235
LICENSED PROFESSIONAL ENGINEER

AT&T

GENERAL NOTES
(LTE 2C-3C-4C)

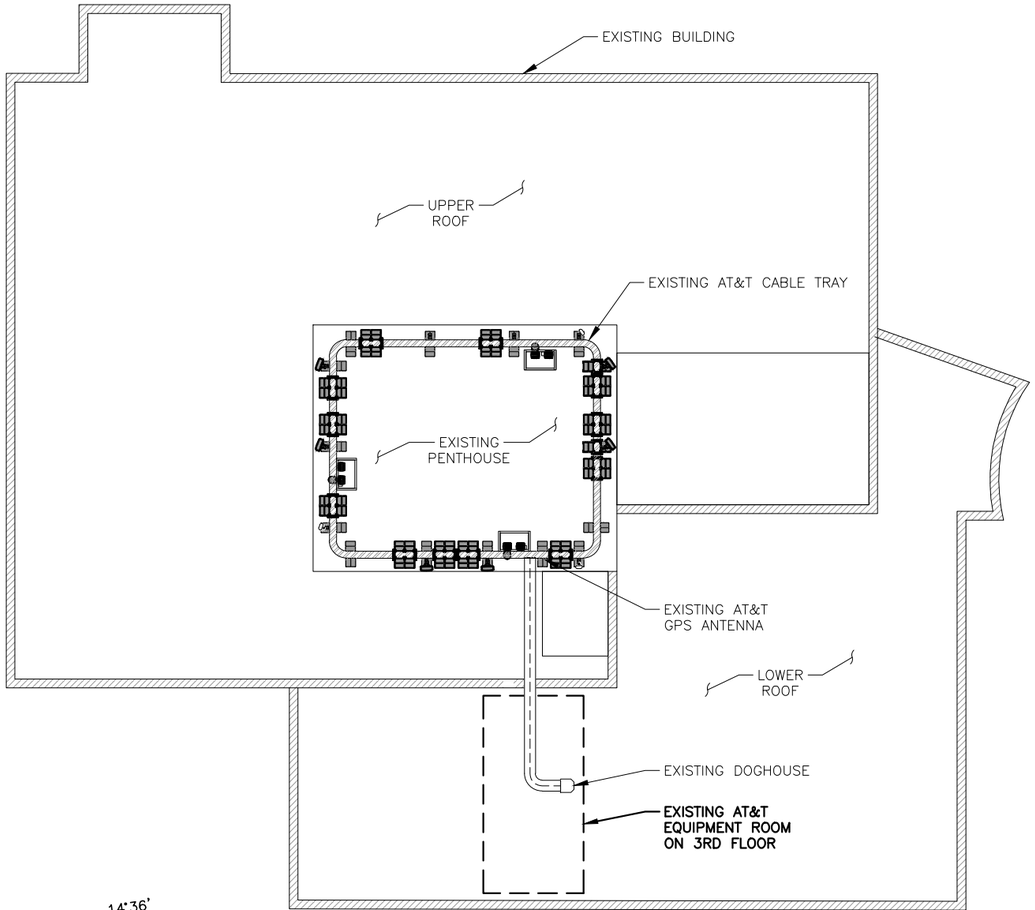
SITE NUMBER	DRAWING NUMBER	REV
CT1013	GN-1	1

NOTE:

REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED: FEBRUARY 25, 2019, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

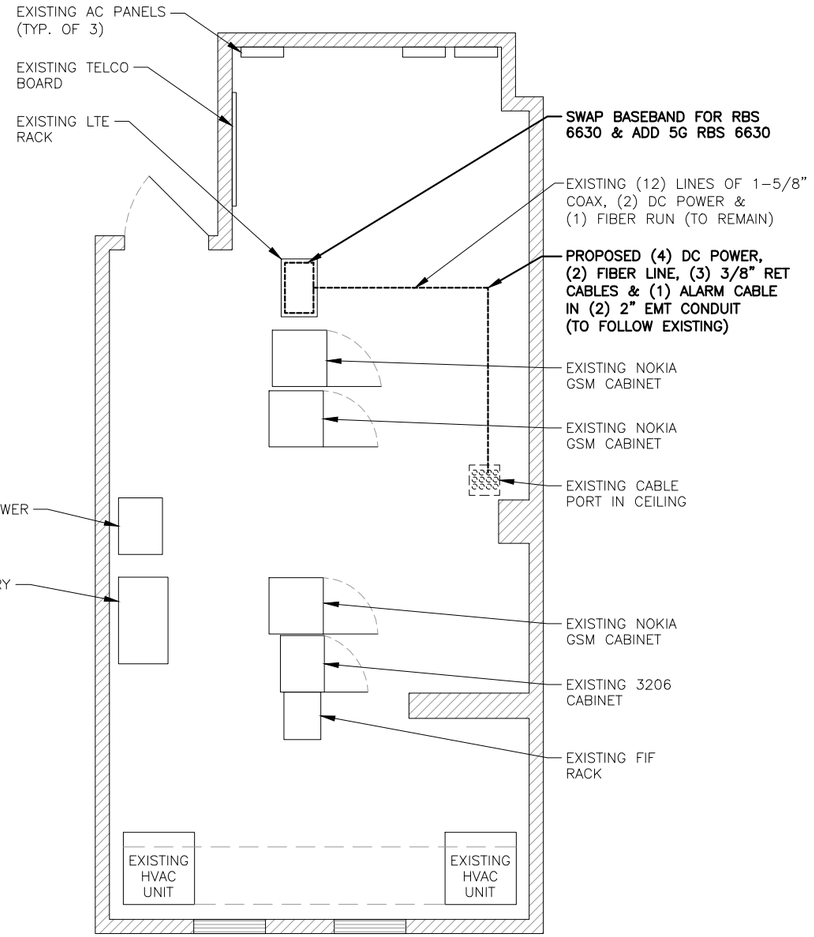
NOTE:

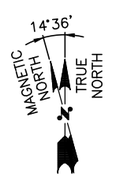
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.



ROOFTOP 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"





EQUIPMENT PLAN (2 / A-1)
22x34 SCALE: 3/8"=1'-0"
11x17 SCALE: 3/16"=1'-0"

0 1'-4" 2'-8" 5'-4" 8'-0"

HDG HUDSON Design Group LLC
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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: EB

STATE OF CONNECTICUT
DEREK J. CREASER
No. 29557
LICENSED PROFESSIONAL ENGINEER

AT&T

COMPOUND & EQUIPMENT PLAN
(LTE 2C-3C-4C)

SITE NUMBER	DRAWING NUMBER	REV
CT1013	A-1	1

NOTE:

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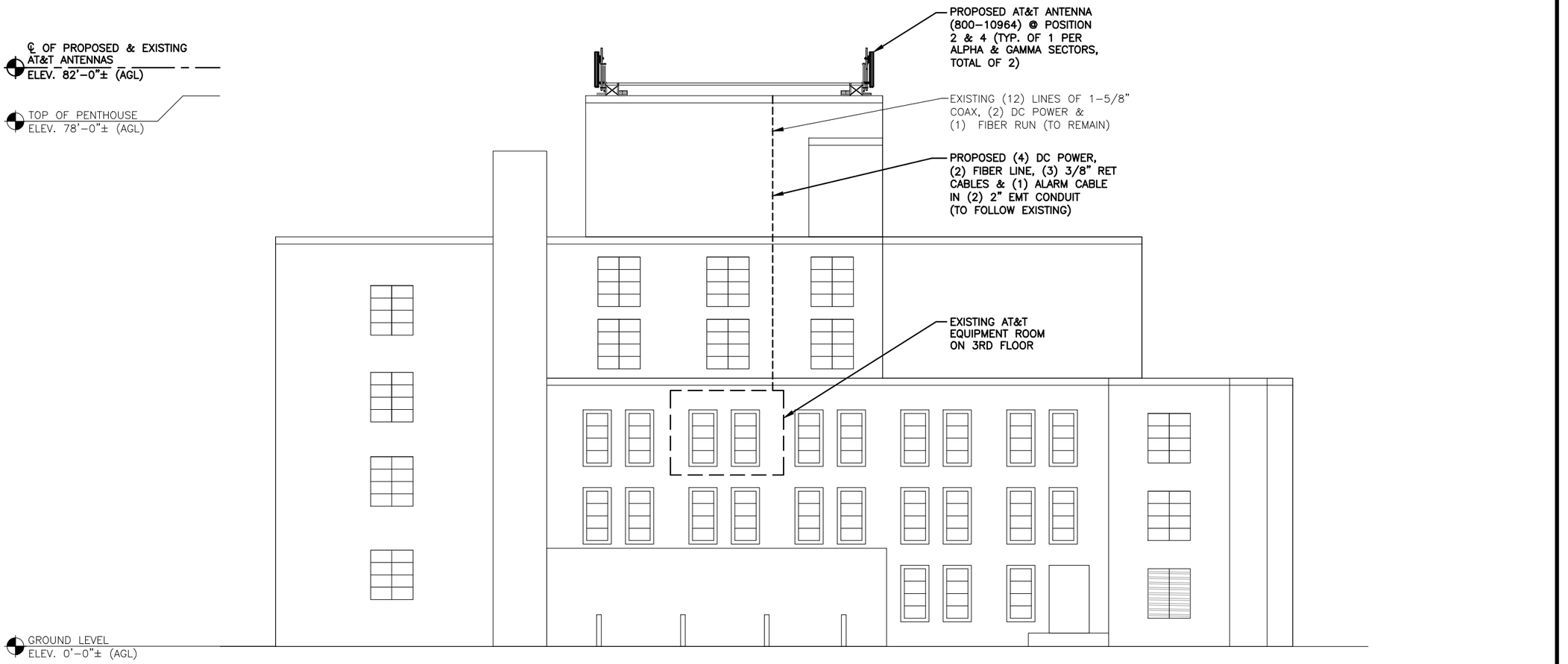

ELEVATION (1 / A-2)
22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0"

0 4'-0" 8'-0" 16'-0" 24'-0"

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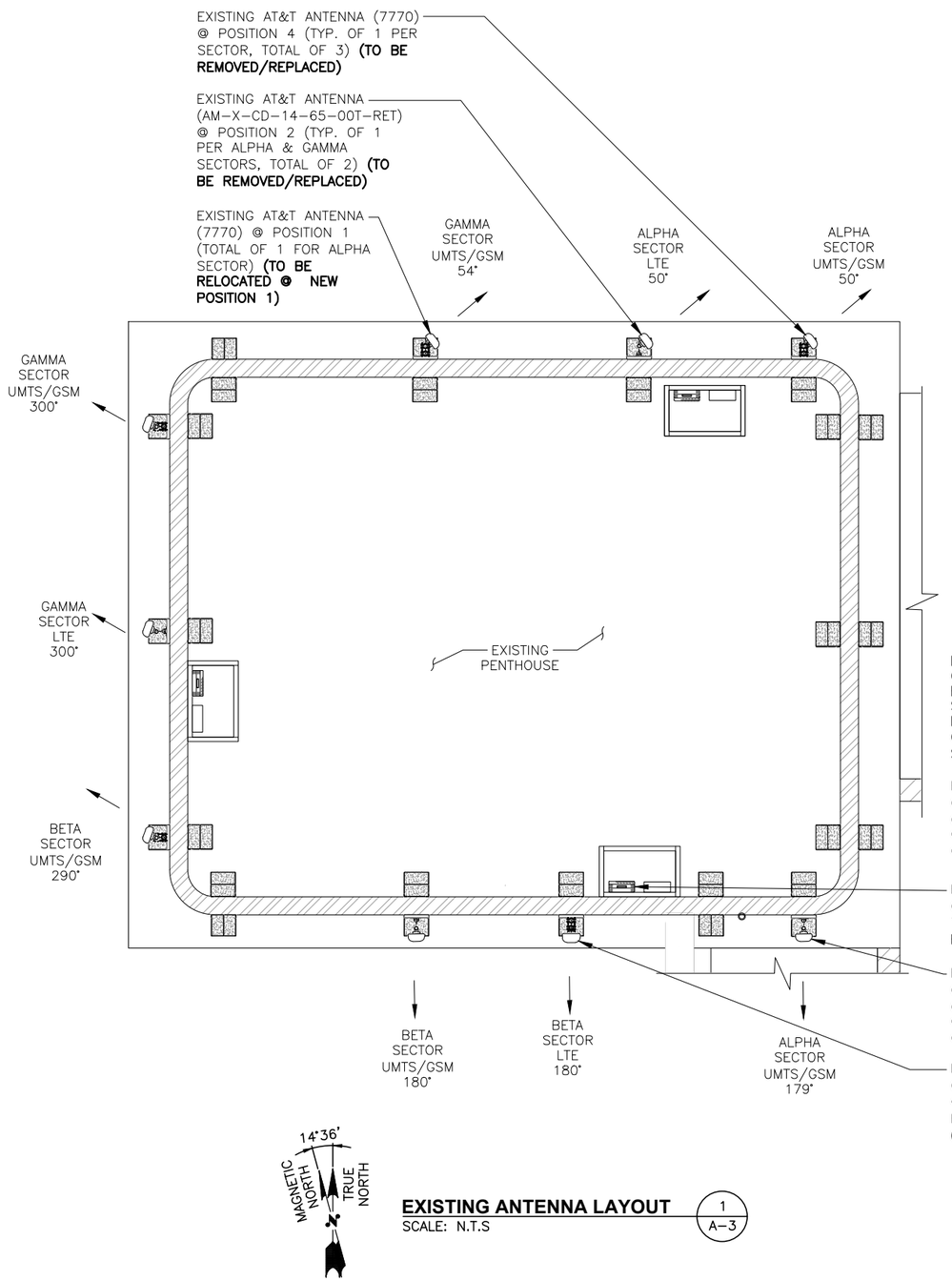
STATE OF CONNECTICUT · DEREK J. CREASER · No. 28057 · LICENSED PROFESSIONAL ENGINEER

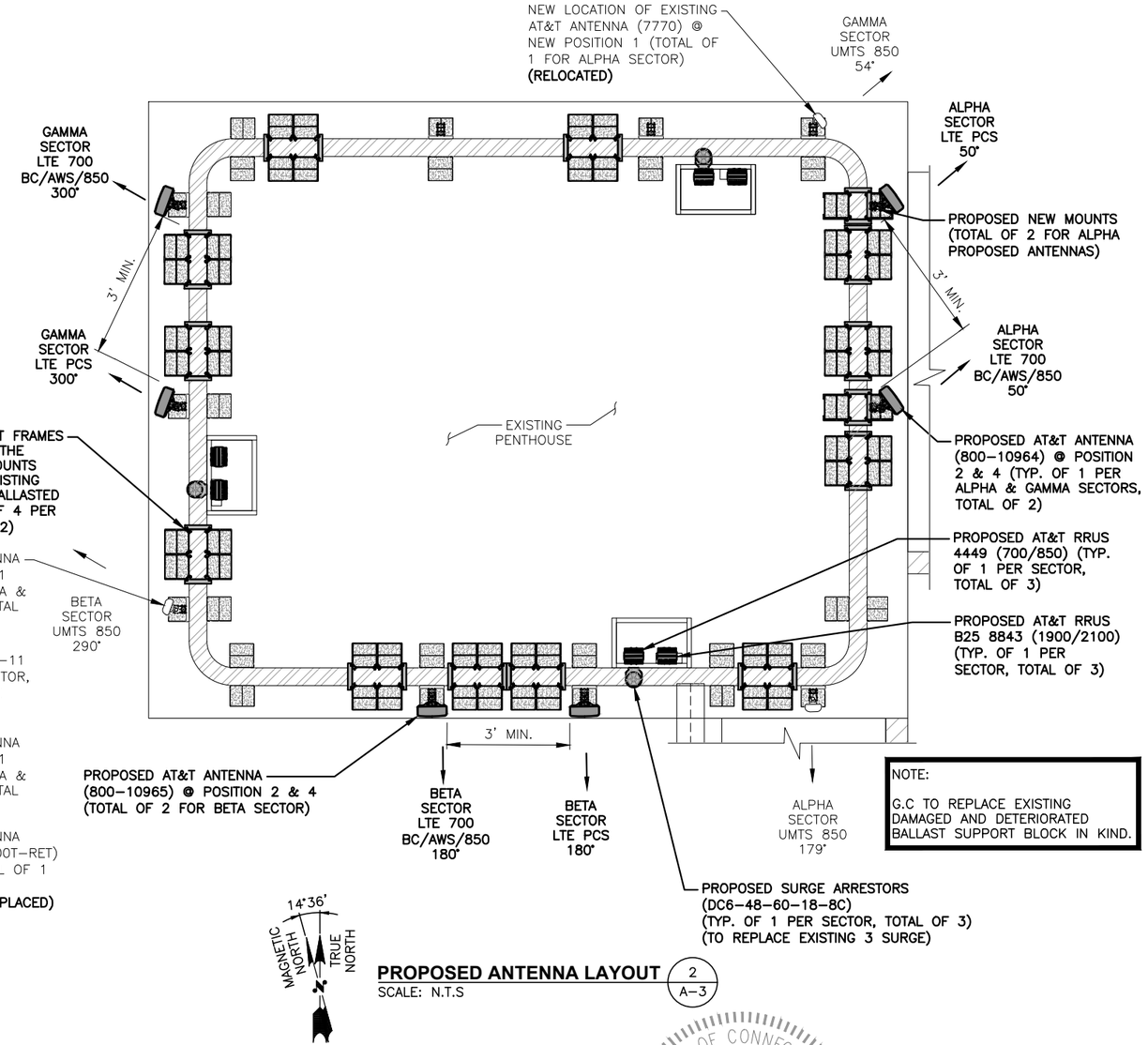
AT&T

ELEVATION
(LTE 2C-3C-4C)

SITE NUMBER	DRAWING NUMBER	REV
CT1013	A-2	1



EXISTING ANTENNA LAYOUT 1/A-3
SCALE: N.T.S



PROPOSED ANTENNA LAYOUT 2/A-3
SCALE: N.T.S

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED: FEBRUARY 25, 2019, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

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

NOTE:
G.C TO REPLACE EXISTING DAMAGED AND DETERIORATED BALLAST SUPPORT BLOCK IN KIND.

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

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1013
SITE NAME: MERIDEN SBC CO

27 BUTLER STREET
MERIDEN, CT 06451
NEW HAVEN COUNTY

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

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

STATE OF CONNECTICUT
DEREK J. CREASER
No. 23581
LICENSED PROFESSIONAL ENGINEER

AT&T

ANTENNA LAYOUTS
(LTE 2C-3C-4C)

SITE NUMBER	DRAWING NUMBER	REV
CT1013	A-3	1

NOTE:

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NOTE:

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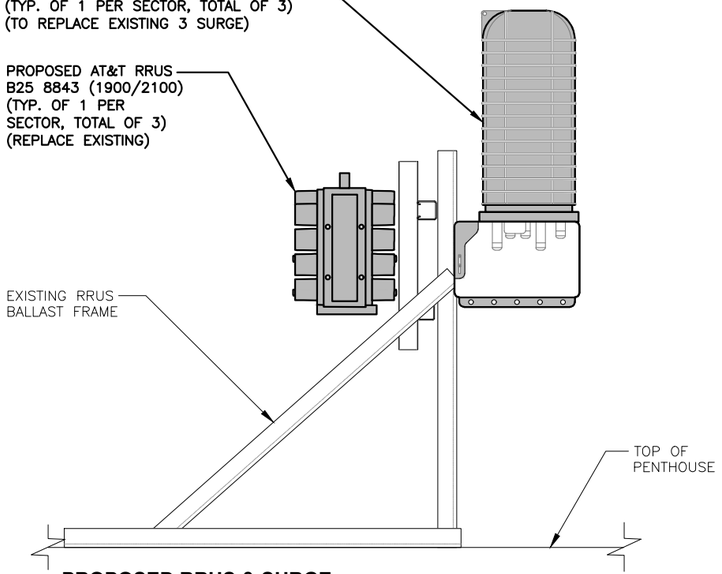
ANTENNA SCHEDULE

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 850	7770	55X11X5	±82'	179°	(E)(2) POWERWAVE LGP21401	–	–	(2) 1–5/8 COAX (LENGTH 210' ±)	(P)(1) RAYCAP DC6–48–60–18–8C
A2	–	–	–	–	–	–	–	–	–	–	
A3	**PROPOSED**	**LTE PCS**	**800–10964**	**59X20X6.9**	**±82'**	**50°**	–	**(P)(1) 4449 B5/B12 (700/850) (P)(1) 8843 B2/B66A (AWS/PCS)**	**17.9X13.2X9.4 14.9X13.2X10.9**	(2) 1–5/8 COAX (NOT USED)	
A4	**PROPOSED**	**LTE 700 BC /AWS/850**	**800–10964**	**59X20X6.9**	**±82'**	**50°**	–	–	–	–	
B1	EXISTING	UMTS 1900	7770	55X11X5	±82'	290°	(E)(2) POWERWAVE LGP21401	–	–	(2) 1–5/8 COAX (LENGTH 210' ±)	(P)(1) RAYCAP DC6–48–60–18–8C
B2	–	–	–	–	–	–	–	–	–	–	
B3	**PROPOSED**	**LTE PCS**	**800–10965**	**78.7X20X6.9**	**±82'**	**180°**	–	**(P)(1) 4449 B5/B12 (700/850) (P)(1) 8843 B2/B66A (AWS/PCS)**	**17.9X13.2X9.4 14.9X13.2X10.9**	(2) 1–5/8 COAX (NOT USED)	
B4	**PROPOSED**	**LTE 700 BC /AWS/850**	**800–10965**	**78.7X20X6.9**	**±82'**	**180°**	–	–	–	–	
C1	EXISTING	UMTS 1900	7770	55X11X5	±82'	54°	(E)(2) POWERWAVE LGP21401	–	–	(2) 1–5/8 COAX (LENGTH 210' ±)	(P)(1) RAYCAP DC6–48–60–18–8C
C2	–	–	–	–	–	–	–	–	–	–	
C3	**PROPOSED**	**LTE PCS**	**800–10964**	**59X20X6.9**	**±82'**	**300°**	–	**(P)(1) 4449 B5/B12 (700/850) (P)(1) 8843 B2/B66A (AWS/PCS)**	**17.9X13.2X9.4 14.9X13.2X10.9**	(2) 1–5/8 COAX (NOT USED)	
C4	**PROPOSED**	**LTE 700 BC /AWS/850**	**800–10964**	**59X20X6.9**	**±82'**	**300°**	–	–	–	–	

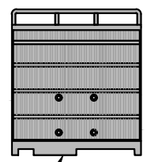
FINAL ANTENNA SCHEDULE (4 / A–4)
SCALE: N.T.S



PROPOSED RRUS & SURGE ARRESTOR MOUNTING DETAIL (1 / A–4)
22x34 SCALE: 1–1/2"=1'–0"
11x17 SCALE: 3/4"=1'–0"

0 0'–4" 0'–8" 1'–4" 2'–0"

RRU CHART				
QUANTITY	MODEL	L	W	D
3(P)	4449	14.9"	13.2"	10.4"
3(P)	8843	14.9"	13.2"	10.9"
NOTE: MOUNT PER MANUFACTURER'S SPECIFICATIONS				



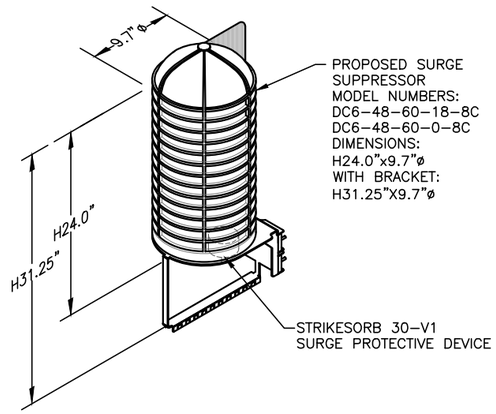
NOTE:

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–4)
SCALE: N.T.S



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE SUPPRESSOR DETAIL (3 / A–4)
SCALE: N.T.S

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: EB

STATE OF CONNECTICUT
DEREK J. CREASER
No. 23057
LICENSED PROFESSIONAL ENGINEER

AT&T

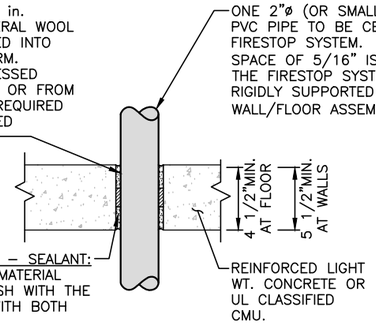
DETAILS
(LTE 2C–3C–4C)

SITE NUMBER	DRAWING NUMBER	REV
CT1013	A–4	1

PACKING MATERIAL: MIN 1–1/2 in. THICKNESS OF MIN 6 pcf MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.

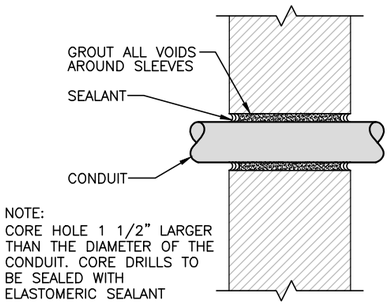
FILL, VOID OR CAVITY MATERIAL – SEALANT: MIN 2 in. THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS, FLUSH WITH THE TOP SURFACE OF FLOOR OR WITH BOTH SURFACES OF WALL.

SPECIFIED TECHNOLOGIES INC: SPECSEAL SERIES SSS SEALANT OR SPECSEAL LCI SEALANT.



UL SYSTEM NUMBER: C–AJ–2057
F RATING – 2 HR.

PVC CONDUIT PENETRATION
DETAIL IN CONCRETE OR MASONRY



NOTE:
CORE HOLE 1 1/2" LARGER THAN THE DIAMETER OF THE CONDUIT. CORE DRILLS TO BE SEALED WITH ELASTOMERIC SEALANT

PIPE AND CONDUIT PENETRATION
DETAIL IN NON-RATED PARTITION

FLOOR OR WALL	MIN FLOOR OR WALL THKNS. (in.)	MAX DIAM OF STEEL PIPE OR CONDUIT (in.)	MIN ANNULAR SPACE (in.)	MAX ANNULAR SPACE (in.)	MIN FILL MTL THKNS (in.)	MIN FORMING MTL THKNS (in.)	F RATING (HOURS)	T RATING (HOURS)
FLOOR	3–3/4	1–1/2	3/8	2–1/8	1	2–3/4	2	0
FLOOR	3–3/4	6	3/8	3/4	1	2–3/4	2	0
FLOOR	3–3/4	6	3/8	1	2	1–3/4	2	0
FLOOR	4–1/2	1–1/2	3/8	2–1/8	1	3–1/2	3	3/4
FLOOR	4–1/2	6	3/8	3/4	1	3–1/2	3	0
FLOOR	4–1/2	6	3/8	1	2	2–1/2	3	0
WALL	5–1/2	1–1/2	3/8	2–1/8	1	3–1/2	3	3/4
WALL	5–1/2	6	3/8	3/4	1	3–1/2	3	0
WALL	6–1/2	1–1/2	3/8	2–1/8	2	2–1/2	3	1
WALL	6–1/2	6	3/8	1	2	2–1/2	3	0

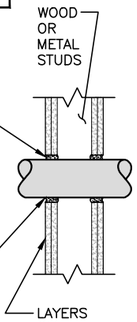
WALL HR	MAX DIAM OF THROUGH PENETRANT in.	T RATING HR
1	2	1
1	1–1/4	1
2	2	1
2	1–1/4	1 1/2

THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS EQUAL TO THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED.

THROUGH PENETRANTS: ONE 2"ø NONMETALLIC PIPE, CONDUIT OR RACEWAY TO BE CENTERED WITHIN THE FIRESTOP SYSTEM. A NOM ANNULAR SPACE OF 5/16 in. IS REQUIRED WITHIN THE FIRESTOP SYSTEM. PIPE, CONDUIT OR RACEWAY TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF THE FLOOR OR WALL ASSEMBLY.

FILL, VOID OR CAVITY MATERIAL – SEALANT: MIN 5/8 in. THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS, FLUSH WITH BOTH SURFACES OF WALL. ADDITIONAL FILL MATERIAL TO BE INSTALLED SUCH THAT A MIN 1/4 in. THICK CROWN IS FORMED AROUND THE PENETRATING ITEM AND LAPPING 1 in. BEYOND THE PERIPHERY OF THE OPENING.

SPECIFIED TECHNOLOGIES INC: SPECSEAL SERIES SSS SEALANT, SPECSEAL LCI SEALANT.



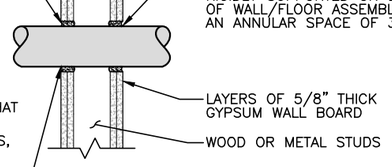
UL SYSTEM NUMBER: W–L–2093
F RATING – 1 & 2 HR.

PVC CONDUIT PENETRATION
DETAIL IN GYPSUM WALLBOARD

PACKING MATERIAL: MIN. 1 in. THICKNESS OF MIN. 3.5 pcf FIBERGLASS INSULATION SHALL BE WRAPPED AROUND THE THROUGH–PENETRANT AND SECURED TOGETHER BY MEANS OF NO. 24 AWG STEEL TIE WIRE. PACKING MATERIAL SHALL BE CENTERED AT MID–DEPTH OF OPENING AND RECESSED FROM BOTH SURFACES OF WALL ASSEMBLY REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.

FILL, VOID OR CAVITY MATERIAL – CAULK OR PUTTY: IN 2 HR FIRE RATED ASSEMBLIES MIN 3/4 IN. THICKNESS FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH BOTH SURFACES OF WALL. ADDITIONAL FILL MATERIAL TO BE INSTALLED SUCH THAT A MIN 1/4 in. CROWN IS FORMED AROUND THE PENETRATING ITEM. IN 1 HR FIRE RATED ASSEMBLIES, MIN 5/8 in. THICKNESS OF FILL MATERIAL APPLIED WITHIN ANNULUS ON BOTH SURFACES OF WALL. ADDITIONAL FILL MATERIAL TO BE INSTALLED SUCH THAT A MIN 3/8 in. CROWN IS FORMED AROUND THE PENETRATING ITEM AND LAPPING 1 in. BEYOND THE PERIPHERY OF THE OPENING.

SPECIFIED TECHNOLOGIES INC: SPECSEAL SERIES SSS SEALANT, SPECSEAL LCI SEALANT OR SPECSEAL PUTTY.



UL SYSTEM NUMBER: W–L–1029
F RATING – 1 & 2 HR.

PIPE AND CONDUIT PENETRATION
DETAIL IN GYPSUM WALLBOARD

ALL CORES THROUGH ELECTRIC ROOMS TO BE FIRE-STOPPED.

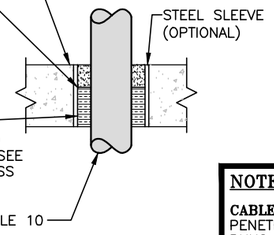
USE FULL CONDUIT RUNS THROUGH PENETRATIONS

CONCRETE FLOOR OR WALL ASSEMBLY, MINIMUM 3–3/4 in. THICKNESS FLOOR/ MINIMUM 6–1/2 in. WALL

TYPE AS OR TYPE SS: MINIMUM THICKNESS OF SEALANT AS SPECIFIED IN THE TABLE ABOVE, APPLIED WITHIN THE OPENING, FLUSH WITH THE TOP SURFACE OF THE FLOOR OR BOTH SURFACES OF THE WALL.

FORMING MATERIAL: MINERAL WOOL BATT INSULATION (MINIMUM 4.0 pcf) FIRMLY PACKED INTO THE OPENING AS A PERMANENT FORM; SEE TABLE FOR MINIMUM REQUIRED THICKNESS

METALLIC PIPE: STEEL PIPE: 6"ø (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE.
CONDUIT: 4"ø (OR SMALLER) ELECTRICAL METALLIC TUBING (EMT)
OR 6"ø RIGID STEEL CONDUIT.



UL SYSTEM NUMBER: C–AJ–1020
F RATING – 3 HR. (FOR PIPES GREATER THAN 4")
F RATING – 2 HR. (FOR PIPES LESS THAN 4")

PIPE AND CONDUIT PENETRATION
DETAIL IN CONCRETE OR MASONRY

NOTE:

CABLES IN VERTICAL RUNS. CABLES INSTALLED IN VERTICAL RUNS AND PENETRATING MORE THAN ONE FLOOR, OR CABLES INSTALLED IN VERTICAL RUNS IN A SHAFT, SHALL BE TYPE CMR. FLOOR PENETRATIONS REQUIRING TYPE CMR SHALL CONTAIN ONLY CABLES SUITABLE FOR RISER OR PLENUM USE. LISTED RISER COMMUNICATIONS RACEWAYS AND LISTED PLENUM COMMUNICATIONS RACEWAYS SHALL BE PERMITTED TO BE INSTALLED IN VERTICAL RISER RUNS IN A SHAFT FROM FLOOR TO FLOOR. **ONLY TYPE CMR CABLES SHALL BE PERMITTED TO BE INSTALLED IN THESE RISERS. ONLY CMP CABLES SHALL BE PERMITTED TO BE INSTALLED IN PLENUMS.**

METAL RACEWAYS OR FIREPROOF SHAFTS. LISTED COMMUNICATIONS CABLES SHALL BE ENCASED IN A METAL RACEWAY OR LOCATED IN A FIREPROOF SHAFT HAVING FIRESTOPS AT EACH FLOOR.

PENETRATION DETAILS (1 / A–5)
22x34 SCALE: N.T.S

HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
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STATE OF CONNECTICUT · DEREK J. CREASER · No. 29057 · LICENSED PROFESSIONAL ENGINEER

AT&T

PENETRATION DETAILS
(LTE 2C–3C–4C)

SITE NUMBER	DRAWING NUMBER	REV
CT1013	A–5	1

STRUCTURAL NOTES:

1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA–222–G 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
N/A	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

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1013
SITE NAME: MERIDEN SBC CO

27 BUTLER STREET
MERIDEN, CT 06451
NEW HAVEN COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	04/30/19	ISSUED FOR CONSTRUCTION	EB	AT	DJC
0	03/22/19	ISSUED FOR REVIEW	EB	AT	DJC
A	02/11/19	ISSUED FOR REVIEW	EB	AT	DJC

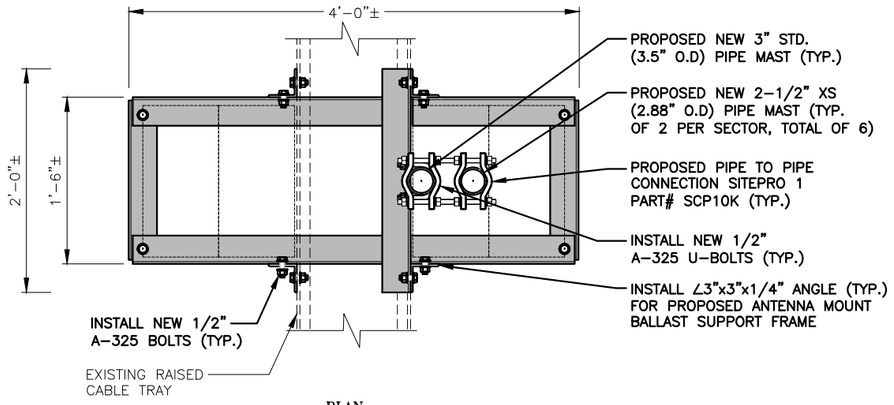
SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: EB

STATE OF CONNECTICUT · DEREK J. CREASER · No. 26,255 · LICENSED PROFESSIONAL ENGINEER

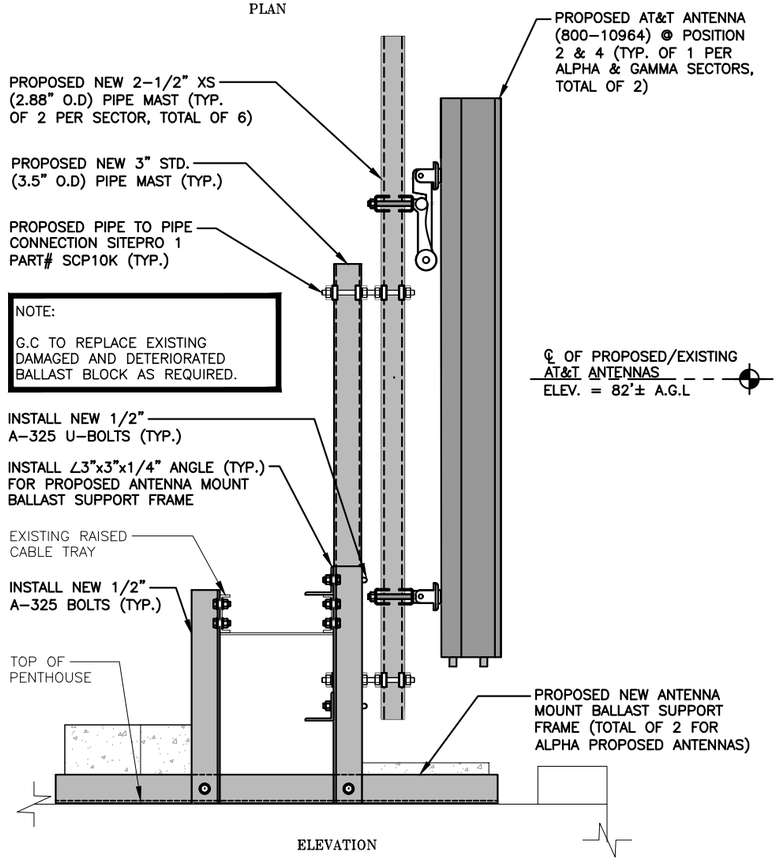
AT&T

STRUCTURAL DETAILS
(LTE 2C–3C–4C)

SITE NUMBER	DRAWING NUMBER	REV
CT1013	SN–1	1



PLAN



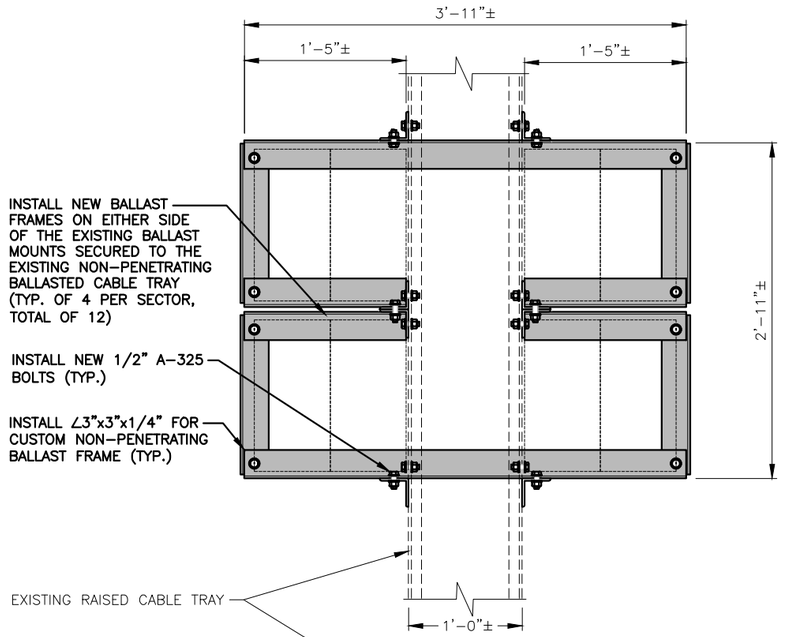
ELEVATION

PROPOSED LTE ANTENNA MOUNTING DETAIL (1 / S-1)

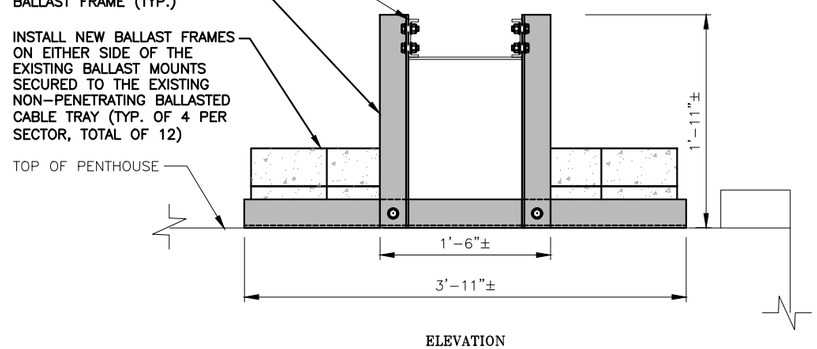
22x34 SCALE: 1-1/2"=1'-0"
11x17 SCALE: 3/4"=1'-0"

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

MINIMUM BALLAST REQUIREMENTS	
NUMBER OF BLOCKS PER SIDE	18
TOTAL NUMBER OF BLOCKS	36
SIZE OF BLOCKS	4"x8"x16" SOLID
WEIGHT OF BLOCKS	38 LBS./EA
BALLAST WEIGHT	1368 LBS.



PLAN



ELEVATION

PROPOSED CUSTOM BALLAST FRAME DETAIL (2 / S-1)

22x34 SCALE: 1-1/2"=1'-0"
11x17 SCALE: 3/4"=1'-0"

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

NOTE:

REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED: FEBRUARY 25, 2019, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:

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

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

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12 INDUSTRIAL WAY
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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: EB

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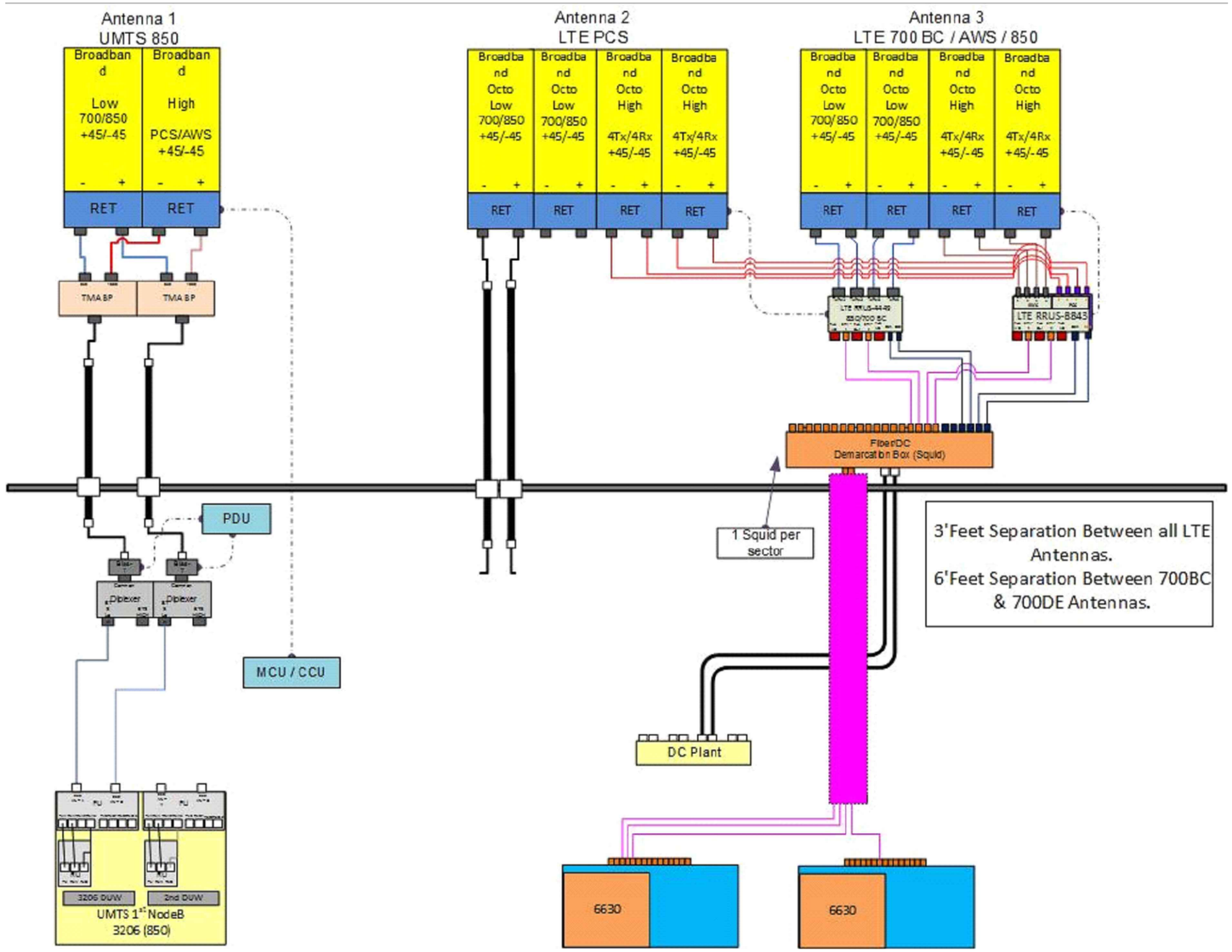
AT&T

STRUCTURAL DETAILS
(LTE 2C-3C-4C)

SITE NUMBER	DRAWING NUMBER	REV
CT1013	S-1	1



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.

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

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

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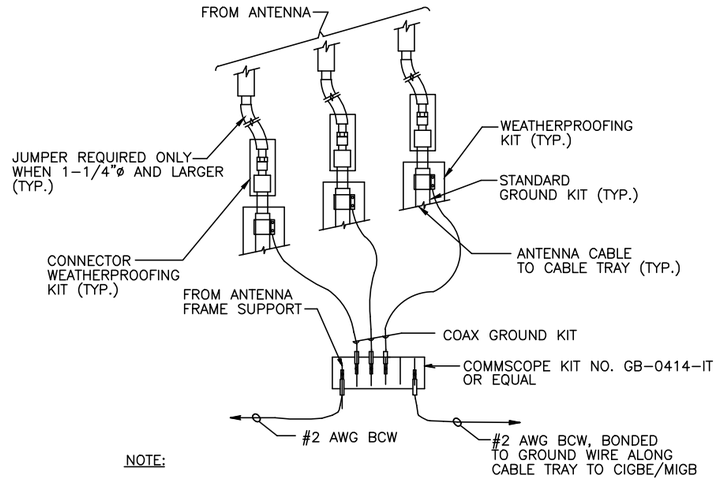
RF PLUMBING DIAGRAM
(LTE 2C–3C–4C)

SITE NUMBER	DRAWING NUMBER	REV
CT1013	RF–1	1



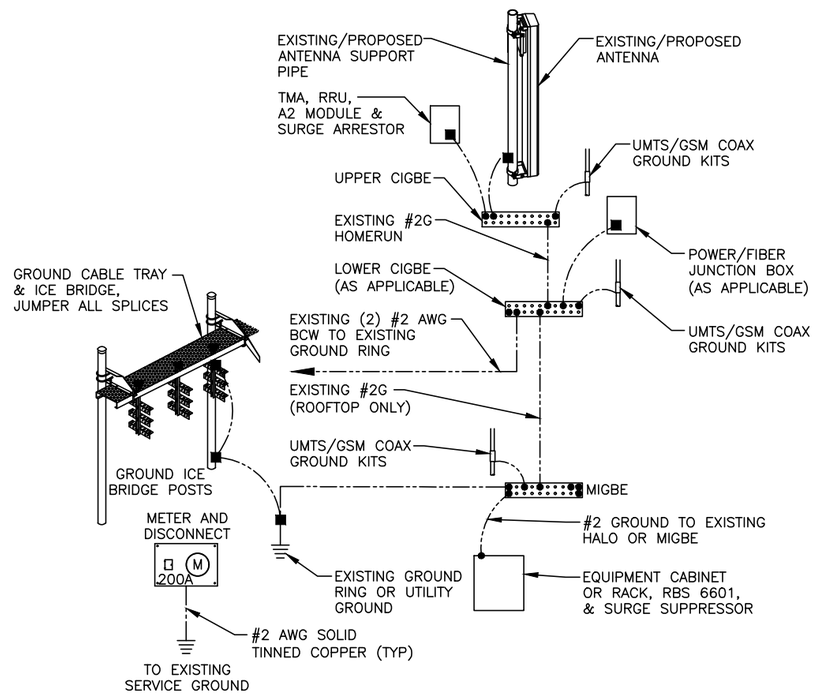
NOTE:

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

SCALE: N.T.S

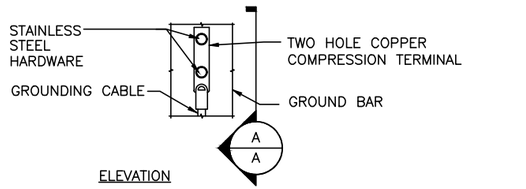
1 / G-1



GROUNDING RISER DIAGRAM

SCALE: N.T.S

2 / G-1



NOTE:

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

SCALE: N.T.S

3 / G-1

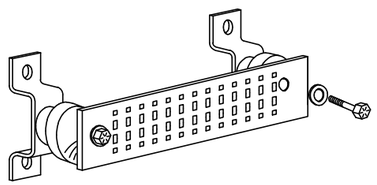
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" – SURGE PRODUCERS

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

SECTION "A" – SURGE ABSORBERS

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



GROUND BAR - DETAIL

SCALE: N.T.S

4 / G-1

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45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
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SCALE: AS SHOWN | DESIGNED BY: AT | DRAWN BY: EB

STATE OF CONNECTICUT
DEREK J. CREASER
16,255
LICENSED PROFESSIONAL ENGINEER

AT&T

GROUNDING DETAILS
(LTE 2C-3C-4C)

SITE NUMBER	DRAWING NUMBER	REV
CT1013	G-1	1

STRUCTURAL ANALYSIS REPORT

For

CT1013 (LTE 2C/3C/4C)

MERIDEN SBC CO

27 Butler Street
Meriden, CT 06451

Antennas Mounted on Non-Penetrating Ballasted Cable Tray on Roof

Prepared for:

SAI at&t

Dated: February 25, 2019

STATE OF CONNECTICUT
DANIEL HAMM
24178
LICENSED PROFESSIONAL ENGINEER

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 18, 2019. Attendees included Sergio Anastacio (HDG – Assistant Project Manager).

CONCLUSION SUMMARY:

Based on our evaluation, we have determined that the existing ballast mounts **ARE NOT CAPABLE** of supporting the proposed equipment loading. HDG recommends the following modifications:

- **Install new ballast frames on either side of the existing ballast mounts secured to the existing non-penetrating ballasted cable tray (typ. of 4 per sector, total of 12). Reference latest HDG construction drawings for details and locations.**
- **Replace existing damaged and deteriorated ballast support blocks in kind.**

	Ballast	Required Ballast	Stress Ratio	Pass/Fail
Ballast Mount	76 lbs	662 lbs	900%	**FAIL**
Modified Ballast Mount	684 lbs	647 lbs	95%	**PASS**

Based on our evaluation, we have determined that the existing pipe masts **ARE NOT CAPABLE** of supporting the proposed equipment loading. HDG recommends the following modifications:

- **Install new 2-1/2" XS (2.88" O.D.) pipe masts behind new 800-10965 and 800-10964 antennas secured to the existing ballast mounts (typ. of 2 per sector, total of 6).**

	Member	Controlling Load Case	Stress Ratio	Pass/Fail
Pipe Mast	1	Deflection	156%	**FAIL**
Modified Pipe Masr	1	Deflection	86%	**PASS**

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.

*Reference documents attached.

HUDSON Design Group LLC

APPURTENANCE CONFIGURATION:

Appurtenances	Dimensions	Weight	**Elevation	Mount
(3) 7770 Antennas	55.0"x11.0"x5.0"	35 lbs	82'	Ballast Mount
(6) LGP21401 TMA's	14.4"x9.0"x2.7"	19 lbs	82'	Ballast Mount
(4) 800-10964 Antennas	59.0"x20.0"x6.9"	84 lbs	82'	Ballast Mount
(2) 800-10965 Antennas	78.7"x20.0"x6.9"	109 lbs	82'	Ballast Mount
(3) 4449 B5/B12 RRH's	14.9"x13.2"x10.4"	73 lbs	82'	RRH Mount
(3) 8843 B2/B66A RRH's	14.9"x13.2"x10.9"	72 lbs	82'	RRH Mount
(3) Squid Surge Arrestors	24.0"Φx9.7"	33 lbs	82'	RRH Mount

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

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:	125 mph	(2018 CTSBC Appendix N)
Exposure Category:	B	(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-G Structural Standards for Steel Antenna Towers and Antenna Supporting Structures		
Wind		
City/Town:	Meriden	
County:	New Haven	
Wind Load:	119 mph	(TIA-222-H Annex B)
Ice		
Design Ice Thickness (t_i):	1.5 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}):	1.64 in	(TIA-222-H Sec. 2.6.10)

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EXISTING ROOF CONSTRUCTION:

The existing roof construction consists of a roofing membrane over rigid insulation over precast concrete planks supported by steel bar joists, beams and columns.

ANTENNA/RRH/JUNCTION BOX SUPPORT RECOMMENDATIONS:

The new antennas are proposed to be mounted on new pipe masts installed on existing non-penetrating ballasted cable tray located on the roof.

Reference the table below for minimum ballast requirements:

MINIMUM BALLAST REQUIREMENTS	
NUMBER OF BLOCKS PER SIDE	18
TOTAL NUMBER OF BLOCKS	36
SIZE OF BLOCKS	4"x8"X16" Solid
WEIGHT OF BLOCKS	38 lbs./ ea.
BALLAST WEIGHT	1368 lbs.

RRH/SURGE ARRESTOR SUPPORT RECOMMENDATIONS:

The RRH's and surge arrestors are proposed to be mounted on existing unistrut components on existing RHH mounts located on the penthouse roof secured to the existing ballasted cable tray.

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.

HUDSON
Design Group LLC

FIELD PHOTOS:

Photo 1: Sample photo illustrating the existing antennas and mounts

Photo 2: Sample photo illustrating the existing RRH mount.

FIELD PHOTOS (CONT.):

Photo 3: Sample photo illustrating the existing roof framing.

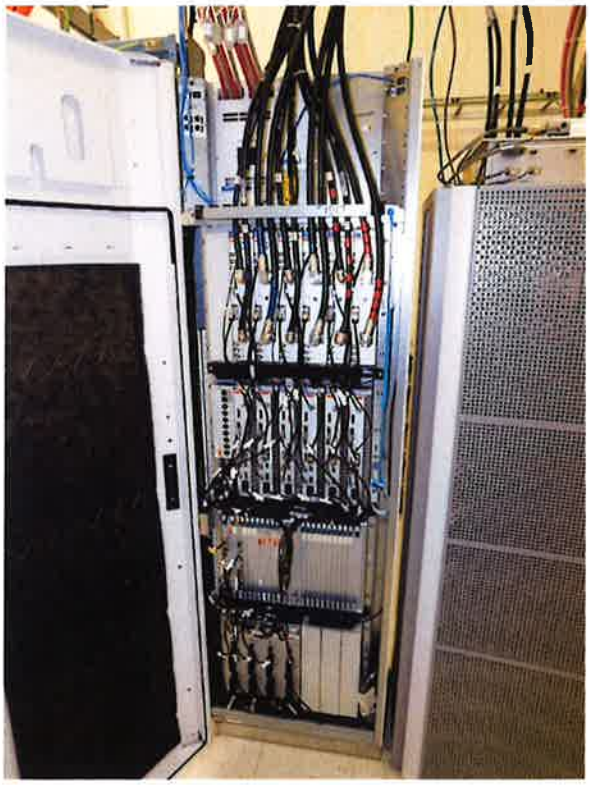

Photo 4: Sample photo illustrating the existing equipment cabinets.

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Design Group LLC

Wind
Calculations

Date: 2/25/2019
Project Name: MERIDEN SBC CO
Project No.: CT1013
Designed By: JN **Checked By:** MSC

HUDSON Design Group LLC

2.6.5.2 Velocity Pressure Coeff:

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

	z=	82 (ft)
	z_g=	1200 (ft)
K_z= 0.934	α=	7.0

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!

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

Category= **1**

K_h=	#DIV/0!	
K_c=	0	(from Table 2-4)
K_t=	0	(from Table 2-5)
f=	0	(from Table 2-5)
z=	82	
z_s=	120	(Mean elevation of base of structure above sea level)
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)

2.6.10 Design Ice Thickness

Max Ice Thickness =	t_i =	1.50	in
Importance Factor =	I=	1.0	(from Table 2-3)
	K_{iz} =	1.10	(from Sec. 2.6.10)

$t_{iz} = t_i * I * K_{iz} * (K_{zt})^{0.35}$ t_{iz} = 1.64 in

Date: 2/25/2019
Project Name: MERIDEN SBC CO
Project No.: CT1013
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=	78	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

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

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

		K_z=	0.934	(from 2.6.5.2)
		K_{zt}=	1.0	(from 2.6.6.2.1)
		K_s=	1.0	(from 2.6.7)
q_z=	**35.33**	K_e=	1.00	(from 2.6.8)
$q_{z\,(ice)}$=	**5.65**	K_d=	0.95	(from Table 2-2)
$q_{z\,(30)}$=	**2.03**	V_{max}=	125	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: 2/25/2019
Project Name: MERIDEN SBC CO
Project No.: CT1013
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 = **1.64 in** **Angle = 0 (deg)** **Equivalent Angle =**

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)
7770 Antenna	55.0	11.0	5.0	4.20	5.00	1.31	**195**
800-10965 Antenna	78.7	20.0	6.9	10.93	3.94	1.26	**488**
800-10964 Antenna	59.0	20.0	6.9	8.19	2.95	1.22	**353**
4449 B5/B12 RRH	14.9	13.2	10.4	1.37	1.13	1.20	**58**
8843 B2/B66A RRH	14.9	13.2	10.9	1.37	1.13	1.20	**58**
LGP21401 TMA	14.4	2.7	9.0	0.27	5.33	1.33	**13**
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	**40**

HUDSON
Design Group LLC

Non-penetrating Ballast Mount Calculations

Project: CT1013 (LTE 2C-3C-4C)

Location: Existing pipe Mast
Multi-Loaded Multi-Span Beam
[2015 International Building Code(AISC 14th Ed ASD)]
Pipe 2 Std. x 7.2 FT (1.2 + 6) / ASTM A53-GR.B
Section Inadequate By: 155.7%
Controlling Factor: Deflection

Jared Nash
Hudson Design Group LLC
45 Beechwood Drive
North Andover, MA 01845

StruCalc Version 10.0.1.6 2/25/2019 2:04:44 PM

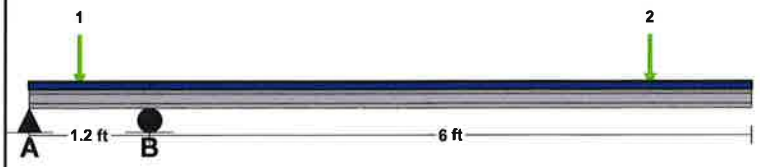
DEFLECTIONS	Center		Right	
Live Load	-0.01	IN L/1345	1.53	IN 2L/94
Dead Load	0.00	in	0.07	in
Total Load	-0.01	IN L/1277	1.61	IN 2L/90

Live Load Deflection Criteria: L/240 Total Load Deflection Criteria: L/180

REACTIONS	A	B
Live Load	142 lb	1362 lb
Dead Load	-53 lb	79 lb
Total Load	89 lb	1441 lb
Uplift (1.5 F.S)	**-1069 lb**	**0 lb**
Bearing Length	0.29 in	0.44 in

BEAM DATA	Center	Right
Span Length	1.2 ft	6 ft
Unbraced Length-Top	0 ft	0 ft
Unbraced Length-Bottom	1.2 ft	6 ft

LOADING DIAGRAM



UNIFORM LOADS	Center	Right
Uniform Live Load	0 plf	0 plf
Uniform Dead Load	0 plf	0 plf
Beam Self Weight	4 plf	4 plf
Total Uniform Load	4 plf	4 plf

POINT LOADS - CENTER SPAN

Load Number	One
Live Load	244 lb
Dead Load	0 lb
Location	0.5 ft

RIGHT SPAN

Load Number	Two
Live Load	244 lb
Dead Load	0 lb
Location	5 ft

STEEL PROPERTIES
Pipe 2 Std. - A53-GR.B

Properties:

Steel Yield Strength:	Fy =	35	ksi
Modulus of Elasticity:	E =	29000	ksi
Tube Steel Section (X Axis):	dx =	2.38	in
Tube Steel Section (Y Axis):	dy =	2.38	in
Tube Steel Wall Thickness:	t =	0.143	in
Area:	A =	1	in2
Moment of Inertia (X Axis):	Ix =	0.63	in4
Section Modulus (X Axis):	Sx =	0.53	in3
Plastic Section Modulus:	Z =	0.71	in3

Design Properties per AISC 14th Edition Steel Manual:

Flange Buckling Ratio:	FBR =	16.61	
Allowable Flange Buckling Ratio:	AFBR =	58	
Allowable Flange Buckling Ratio non-compact:	AFBR_NC =	256.86	
Nominal Flexural Strength w/ Safety Factor:	Mn =	1245	ft-lb
Controlling Equation:	F8-1		
Shear Buckling Stress Coefficient Eqn. G6-2a:	Fcr =	21	ksi
Nominal Shear Strength w/ Safety Factor:	Vn =	6287	lb

Controlling Moment: -1286 ft-lb
Over right support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 3
Controlling Shear: -1175 lb
1.0 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s

Comparisons with required sections:	Req'd	Provided
Moment of Inertia (deflection):	1.6 in4	0.63 in4
Moment:	-1286 ft-lb	1245 ft-lb
Shear:	-1175 lb	6287 lb

NOTES

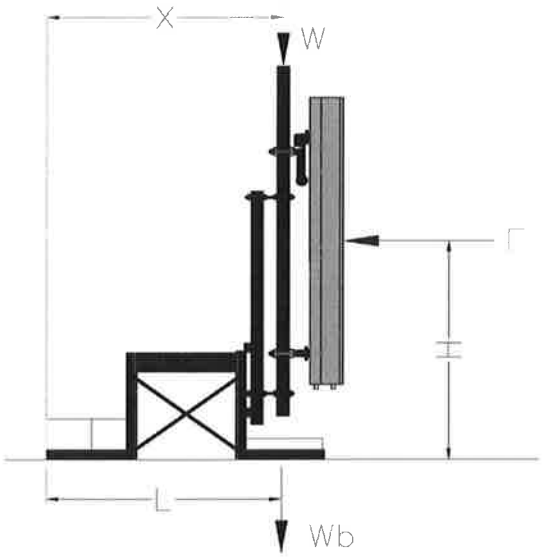
Date: 2/25/2019
Project Name: MERIDEN SBC CO
Project No.: CT1013
Designed By: JN **Checked By:** MSC

HUDSON Design Group LLC

Calculate Total Ballast Required for Ballast Mount - Existing Conditions

Assume (1) Antenna as projected area

Force (F) =	488 lbs.
Height (H) =	4 ft
Weight of Appurtenances (W) =	109 lbs.
Frame Width/2 (X) =	3 ft
Length (L) =	3 ft
Ballast (Wb) =	TBD
Safety Factor (SF) =	1.5



Overturning at Ballast

ΣM = 0 = (F * H) - (W * X) - (Wb * L) ---> Wb = [(F*H*SF-W*X)/L]= **662 lbs.**

Determine Number of Blocks Required
(assume 4"x8"x16" solid blocks @ 38 lbs. each)

Number of Blocks Required =	18 BLOCKS PER SIDE
Existing Blocks =	2 BLOCKS PER SIDE

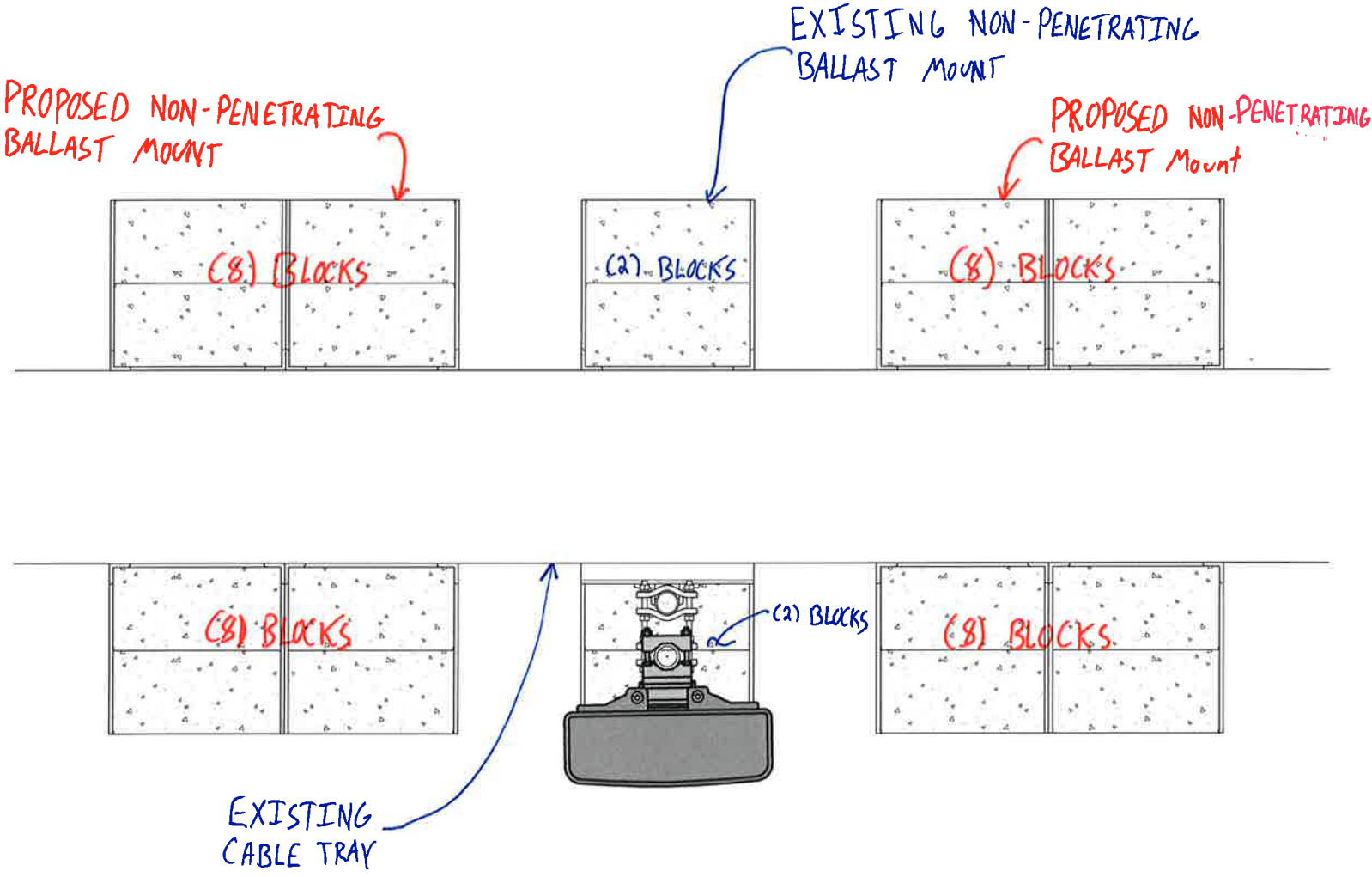
CHECK BLOCKS

Existing Blocks	-	New Blocks	≥	0.0			
2	-	18	=	-16.000	<	0.0	**THEREFORE NOT OK!**

Note: Additional blocks are required

HUDSON
Design Group LLC

Modified Ballast Mount Calculations



PROPOSED BALLAST PLAN VIEW

Project: CT1013 (LTE 2C-3C-4C)

Location: Proposed pipe Mast
Multi-Loaded Multi-Span Beam
[2015 International Building Code(AISC 14th Ed ASD)]
Pipe 2-1/2 x-Strong x 7.2 FT (1.2 + 6) / ASTM A53-GR.B
Section Adequate By: 14.1%
Controlling Factor: Deflection

Jared Nash
Hudson Design Group LLC
45 Beechwood Drive
North Andover, MA 01845

StruCalc Version 10.0.1.6 2/25/2019 2:05:04 PM

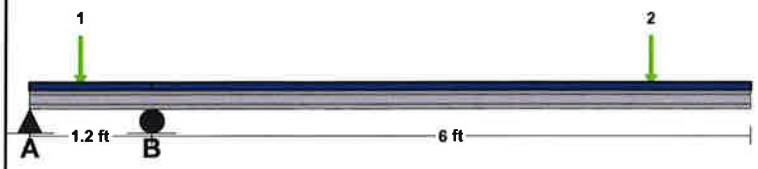
DEFLECTIONS	Center		Right	
Live Load	0.00	IN L/3924	0.53	IN 2L/274
Dead Load	0.00	in	0.05	in
Total Load	0.00	IN L/3529	0.58	IN 2L/250

Live Load Deflection Criteria: L/240 Total Load Deflection Criteria: L/180

REACTIONS	A	B
Live Load	142 lb	1362 lb
Dead Load	-111 lb	167 lb
Total Load	31 lb	1529 lb
Uplift (1.5 F.S)	**-1128 lb**	**0 lb**
Bearing Length	0.51 in	0.51 in

BEAM DATA	Center	Right
Span Length	1.2 ft	6 ft
Unbraced Length-Top	0 ft	0 ft
Unbraced Length-Bottom	1.2 ft	6 ft

LOADING DIAGRAM



UNIFORM LOADS	Center	Right
Uniform Live Load	0 plf	0 plf
Uniform Dead Load	0 plf	0 plf
Beam Self Weight	8 plf	8 plf
Total Uniform Load	8 plf	8 plf

POINT LOADS - CENTER SPAN

Load Number	One
Live Load	244 lb
Dead Load	0 lb
Location	0.5 ft

RIGHT SPAN

Load Number	Two
Live Load	244 lb
Dead Load	0 lb
Location	5 ft

STEEL PROPERTIES
Pipe 2-1/2 x-Strong - A53-GR.B

Properties:

Steel Yield Strength:	Fy =	35 ksi
Modulus of Elasticity:	E =	29000 ksi
Tube Steel Section (X Axis):	dx =	2.88 in
Tube Steel Section (Y Axis):	dy =	2.88 in
Tube Steel Wall Thickness:	t =	0.257 in
Area:	A =	2.11 in2
Moment of Inertia (X Axis):	Ix =	1.83 in4
Section Modulus (X Axis):	Sx =	1.27 in3
Plastic Section Modulus:	Z =	1.77 in3

Design Properties per AISC 14th Edition Steel Manual:

Flange Buckling Ratio:	FBR =	11.19
Allowable Flange Buckling Ratio:	AFBR =	58
Allowable Flange Buckling Ratio non-compact:	AFBR_NC =	256.86
Nominal Flexural Strength w/ Safety Factor:	Mn =	3091 ft-lb
Controlling Equation:	F8-1	
Shear Buckling Stress Coefficient Eqn. G6-2a:	Fcr =	21 ksi
Nominal Shear Strength w/ Safety Factor:	Vn =	13266 lb

Controlling Moment: -1359 ft-lb
Over right support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s) 3
Controlling Shear: -1239 lb
1.0 Ft from left support of span 2 (Center Span)
Created by combining all dead loads and live loads on span(s

Comparisons with required sections:	Req'd	Provided
Moment of Inertia (deflection):	1.6 in4	1.83 in4
Moment:	-1359 ft-lb	3091 ft-lb
Shear:	-1239 lb	13266 lb

NOTES

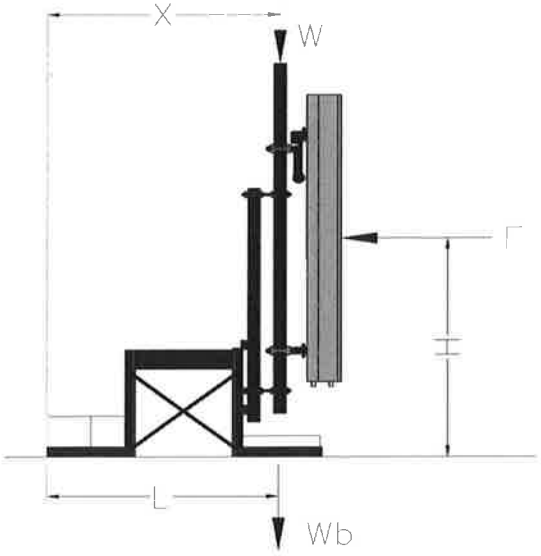
Date: 2/25/2019
Project Name: MERIDEN SBC CO
Project No.: CT1013
Designed By: JN **Checked By:** MSC

HUDSON Design Group LLC

Calculate Total Ballast Required for Ballast Mount - Proposed Conditions

Assume (1) Antenna as projected area

Force (F) =	488 lbs.
Height (H) =	4 ft
Weight of Appurtenances (W) =	109 lbs.
Frame Width/2 (X) =	3 ft
Length (L) =	3 ft
Ballast (Wb) =	TBD
Safety Factor (SF) =	1.5



Overturning at Ballast

$\Sigma M = 0 = (F * H) - (W * X) - (Wb * L)$ ---> $Wb = [(F*H*SF-W*X)/L]=$ **647 lbs.**

Determine Number of Blocks Required
(assume 4"x8"x16" solid blocks @ 38 lbs. each)

Number of Blocks Required = 18 BLOCKS PER SIDE

CITY OF MERIDEN
GIS Services

Property Information: Address: 25 BUTLER ST Map/Lot: 0111-0050-0019-0027

Owner Information: SOUTHERN NEW ENGLAND TEL CO SU
C/O FRONTIER COMMUNICATIONS

Owner Address: ATTN: TAX DEPT
401 MERRIT 7
NORWALK, CT 06851

Building Information:

Card	Units	Rooms	Bed rooms	Year Built	Full Bath	Half Bath	Other Fixtures	Fire Places	Heat Type	Heat Fuel	Roof Mat	Grade	Type	Ext Wall	Finished Area
1	4			1900					Conv	Oil		D+	Office		42,636
2	3			1900					Conv	Oil		D+	Office		14,407
3	1			1996					No Heat			D	Whse Strg		1,352

Sub Area Summary:

SubArea	Description	SketchedArea	Perimeter	AdjArea	Rate	AreaValue
AOL	OFFICE	3,159	264	3,159	95.14000	$300,544.53
AOL	OFFICE	3,159	264	3,159	95.14000	$300,544.53
AOL	OFFICE	7,500	368	7,500	95.14000	$713,543.50
AOL	OFFICE	7,500	368	7,500	95.14000	$713,543.50
AOL	OFFICE	7,500	368	7,500	95.14000	$713,543.50
AOL	OFFICE	7,500	368	7,500	95.14000	$713,543.50
BMT	BASEMENT	3,159	264	3,159	14.27000	$45,081.68
BMT	BASEMENT	7,500	368	7,500	14.27000	$107,031.53
STRG	C/I STRG	3,159	264	3,159	76.11000	$240,435.64
STRG	C/I STRG	3,159	264	3,159	76.11000	$240,435.64

Special Features:

Description	Condition	Year	Assessed Value
PAVING ASPHALT	AV	1900	$8,800
ELEVATOR - PASSENGER	AV	1900	$96,000

Appraisal Information: **Tax District:** 2 **District Name:** INNER DISTRICT **District Mill Rate:** 43.21

Current Values by Card Number

Card	Building Value	Yard Items	Land Value	Total	Assessed
1	$1,720,700	$8,800	$456,200	$2,185,700	$1,529,990
2	$519,800	$0	$0	$519,800	$363,860
3	$35,400	$0	$0	$35,400	$24,780

TOTAL PARCEL:

	$2,275,900	**$8,800**	**$456,200**	**$2,740,900**	**$1,918,630**

Previous Year Totals

Year	Building Value	Yard Items	Land Value
2018	$2,275,900	$8,800	$456,200

Special Land Value: $0

Land Information:

Type	Lot Size	Lot Unit	Zoning*
Commercial Building	60,113.00	SF	TODH
Commercial Building	0.00	SF	TODH
Commercial Building	0.00	SF	TODH

Total Acreage:1.38
*Confirm zoning with Planning Office.
Zoning map is the official document to determine zone.

Sales Information:

Book	Page	Grantor	Sale Date	Sale Price	Deed Type
256	507		6/12/1941	$0	

Assessor's Permit History:

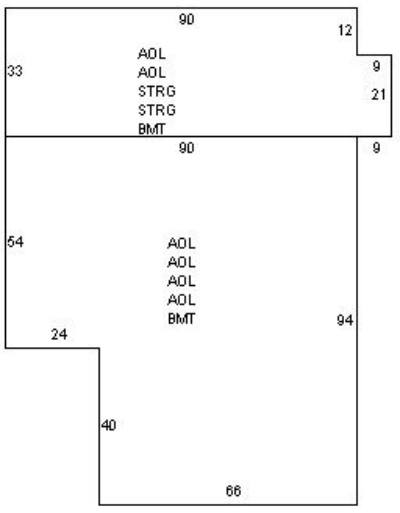
Date	Permit Number	Notes	Type

3/3/2017	B-17-76	2 SOLID OXIDE OUTDOOR NATURAL GAS POWERED BLOOM ES-5 ENERGY SERVER FUEL CELLS.	
10/30/2014	B-14-189	NEW SIGN INSTALLED.Est complete.	
9/4/2012	2800	AT&T ADD 3 LTE ANTENNAS, RRU`S SURGE ARRESTOR, GPS & NEW DC/FIBER LINES TO CODE	C
4/27/2010	1103	AT&T; wiring of unit CRU-4, dry cooler and pump set, related controls per code.	C
4/26/2010	1095	Install on liebert AC system on 2nd floor as per code.	C
8/19/2009	2441	REPLACE UNDERGROUND CONDUIT FOR FUEL TANK	
7/30/2009	2259	replace piping, sump pumps on existing, 1 waste oil, 3 diesel	
5/21/2009	1510	CONSTRUCTION, DUCT MODIFICATIONS, DETECTION, CONTROL PIPE AND WIRING INCLUDES ROOF MEMBRANE MODS, INSTALL 3 ROOFTOP CONDENSERS, WATER STEEL DUNNAGE, PIPING RISERS	
5/8/2009	1317	INSTALLATION OF 3 LIEBERT UNITSON 2ND FL	
4/28/2009	1175	INSTALL WIRING FOR 3 2ND FL ROOF-TOP CONDESOR UNITS PER CODE	
7/13/2007	2393	removal of existing areaway and construction of nes gas for cable vaui trenching and repaving associated with installation of new pie conduits. All work on ATT property	
7/7/2006	2538	REM 9 EX ANTENNAS	CA
7/7/2006	2538	REP W/6 POWER WAVE	CA
10/14/2004	3965	PIPING FOR GENERATOR	CA
10/1/2004	3780	REP STAND-BY GENERATOR	CA
8/27/2004	3294	19'X30' FOUNDATION (CONCR	C
6/3/2003	1838	INSTALL 1 30TON A/C SYSTE	CA
4/29/2003	1333	NEW COOLING SYSTEM	CA

Property Images

Building photo

Property Sketch



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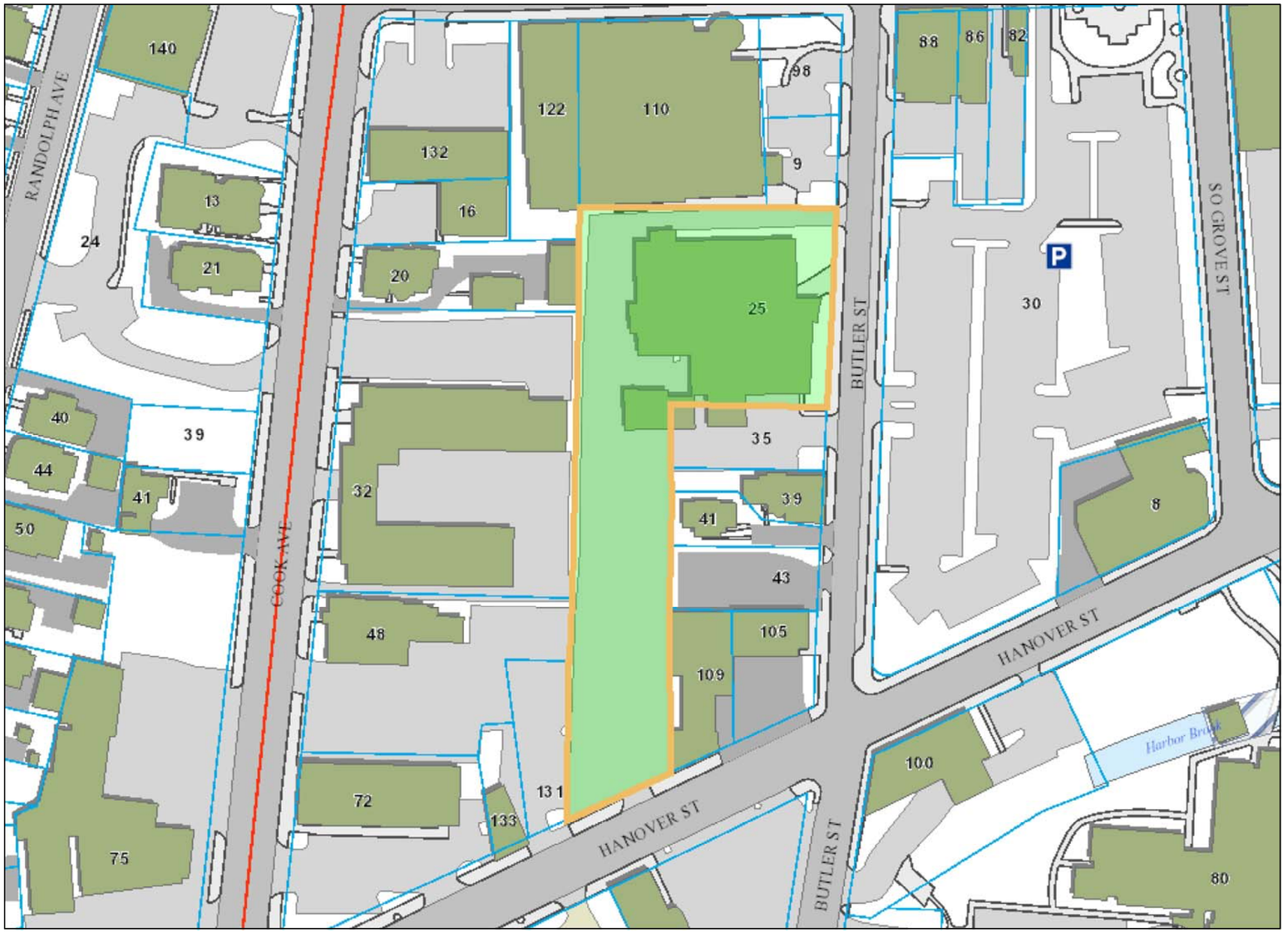


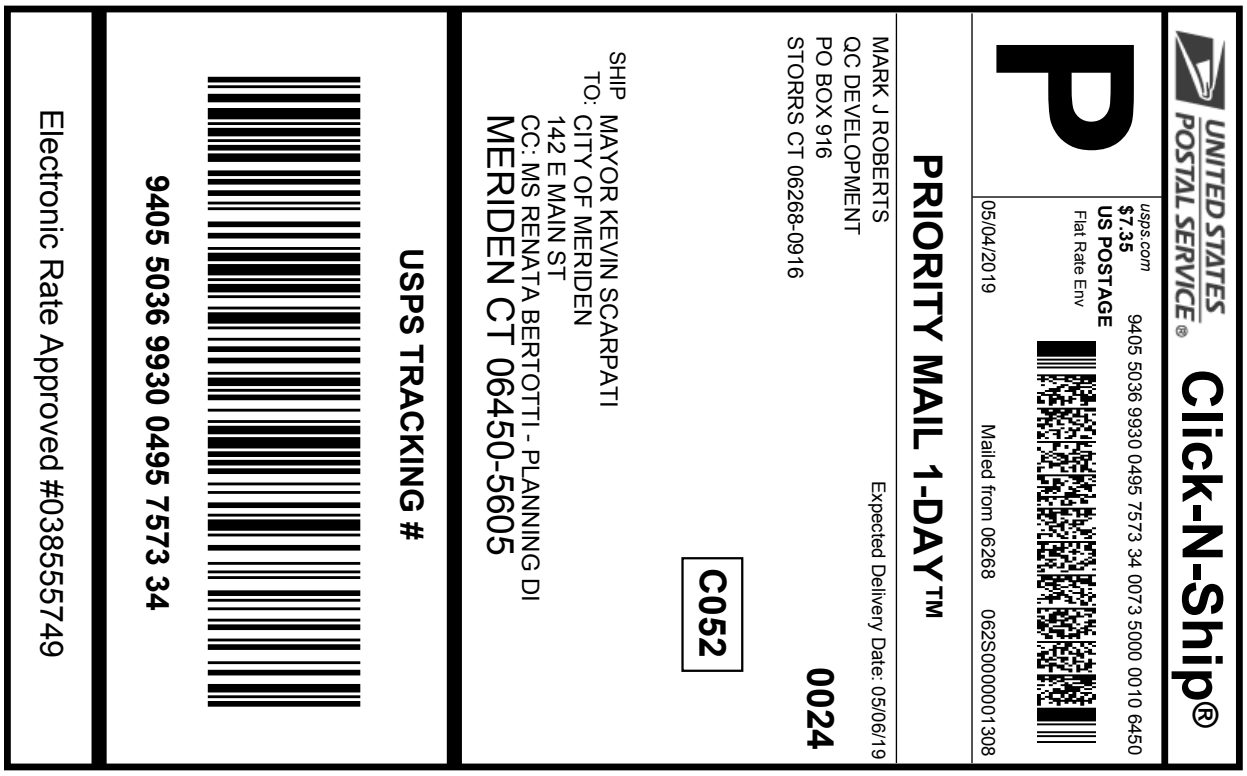
CITY OF MERIDEN

Date: 5/1/2019

CITY OF MERIDEN, CT GIS

25 BUTLER ST

1 inch = 100 feet



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

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0495 7573 34

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

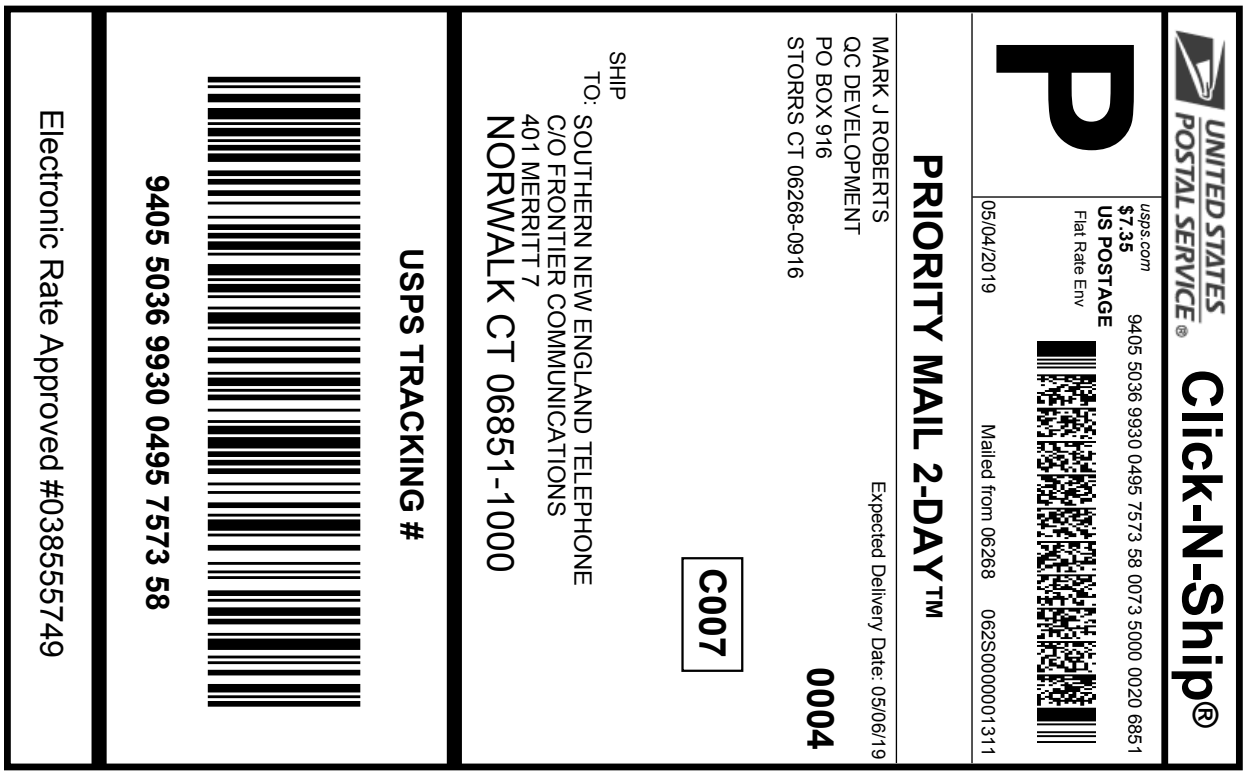
Priority Mail® Postage:	**$7.35**
Total	**$7.35**

From: MARK J ROBERTS
QC DEVELOPMENT
PO BOX 916
STORRS CT 06268-0916

To: MAYOR KEVIN SCARPATI
CITY OF MERIDEN
142 E MAIN ST
CC: MS RENATA BERTOTTI - PLANNING DI
MERIDEN CT 06450-5605

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

Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com



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5. **Mail your package on the "Ship Date" you selected when creating this label.**

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0495 7573 58

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

Priority Mail® Postage:	**$7.35**
Total	**$7.35**

From: MARK J ROBERTS
QC DEVELOPMENT
PO BOX 916
STORRS CT 06268-0916

To: SOUTHERN NEW ENGLAND TELEPHONE
C/O FRONTIER COMMUNICATIONS
401 MERRITT 7
NORWALK CT 06851-1000

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